REGENERON

SHO - LOBBY / CONFERENCE CENTER RENOVATION

1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

DRAWING LISTS

ARCHITECTURAL DRAWING LIST

DRAWING NO.	DRAWING NAME	100% CDs - Page Turn	21-0613 - ISSUE FOR BID	21-0525 ISSUE PERMIT	21-0601 ISSUE FOR BID
G-001	COVER SHEET	•	•	•	•
G-002	MOUNTING HEIGHTS AND STANDARDS	•	•	•	•
G-003	LIFE SAFETY	•	•	•	•
A-001	SPECIFICATIONS	•	•	•	•
A-002	SPECIFICATIONS	•	•	•	•
A-003	SPECIFICATIONS	•	•	•	•
A-004	SPECIFICATIONS	•	•	•	•
A-005	SPECIFICATIONS	•	•	•	•
A-006	SPECIFICATIONS	•	•	•	•
A-007	SPECIFICATIONS		•	•	•
AD-100	2ND FLOOR - DEMOLITION PLAN	•	•	•	•
A-020	PARTITION TYPES	•	•	•	•
A-100	2ND FLOOR - ARCHITECTURAL PLAN	•	•	•	•
A-101	2ND FLOOR - ADD ALTERNATES	•	•	•	•
A-200	2ND FLOOR - REFLECTED CEILING PLAN	•	•	•	•
A-300	2ND FLOOR - POWER AND COMMUNICATIONS PLAN	•	•	•	•
A-500	FINISH SCHEDULE AND DETAILS	•	•	•	•
A-501	2ND FLOOR - FINISH EXTENT PLAN	•	•	•	•
A-700	INTERIOR ELEVATIONS	•	•	•	•
A-701	INTERIOR ELEVATIONS, CONT.	•	•	•	•
A-800	DETAILS	•	•	•	•
A-801	CEILING DETAILS	•	•	•	•
A-900	DOOR TYPES AND DETAILS	•	•	•	•

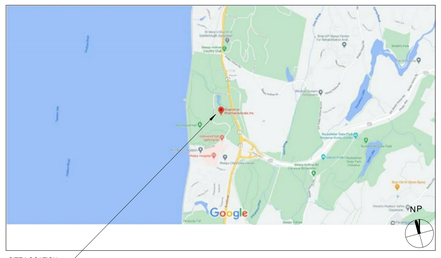
ENGINEERING DRAWING LIST

DRAWING NO.	DRAWING NAME	100% CDs - Page Turn	21-0613 ISSUE FOR BID	21-0525 ISSUE FOR PERMIT	210601 ISSUE FOR BID
M-001	HVAC LEGEND ABBREVIATION & GENERAL NOTES SHEET NO. 1	•	•	•	•
M-002	HVAC LEGEND ABBREVIATION & GENERAL NOTES SHEET NO. 2	•	•	•	•
M-003	HVAC SPECIFICATIONS SHEET NO. 1	•	•	•	•
M-004	HVAC SPECIFICATIONS SHEET NO. 2	•	•	•	•
MD-102	2ND FLOOR MECHANICAL DEMOLITION PART PLAN	•	•	•	•
MD-102A	2ND FLOOR MECHANICAL DEMOLITION PLAN ADD ALTERNATE - PART PLAN	•	•	•	•
M-102	2ND FLOOR MECHANICAL PLAN	•	•	•	•
M-102A	2ND FLOOR MECHANICAL PLAN ADD ALTERNATE	•	•	•	•
M-103	2ND FLOOR MECHANICAL PART PLAN - RESTROOMS		•	•	•
M-202	2ND FLOOR MECHANICAL PIPING PLAN		•	•	•
M-202A	2ND FLOOR MECHANICAL PIPING PLAN - ADD ALTERNATE		•	•	•
M-500	HVAC DETAILS SHEET NO. 1	•	•	•	•
M-501	HVAC DETAILS SHEET NO. 2	•	•	•	•
M-600	HVAC SCHEDULES	•	•	•	•
M-800	HVAC CONTROLS	•	•	•	•
M-801	HVAC CONTROLS				•
E-001	ELECTRICAL LEGENDS AND NOTES	•	•	•	•
E-002	ELECTRICAL SPECIFICATIONS	•	•	•	•
ED-102	2ND FLOOR ELECTRICAL DEMOLITION PLAN	•	•	•	•
E-102	2ND FLOOR ELECTRICAL POWER PLAN	•	•	•	•
E-152	2ND FLOOR ELECTRICAL LIGHTING PLAN	•	•	•	•
E-600	2ND FLOOR ELECTRICAL AND LIGHT FIXTURES SCHEDULES	•	•	•	•
FA-001	FIRE ALARM - SYMBOLS & ABBREVIATIONS	•	•	•	•
FAD-102	FIRE ALARM - 2ND FLOOR DEMOLITION PLAN	•	•	•	•
FA-102	FIRE ALARM - 2ND FLOOR PLAN	•	•	•	•
FA-102A	FIRE ALRAM - 2ND FLOOR ADD ALTERNATE	•	•	•	•
FA-500	FIRE ALARM - GENERAL NOTES AND SEQUENCE OF OPERATIONS	•	•	•	•
FA-600	FIRE ALARM - SPECIFICATIONS	•	•	•	•
FA-700	FIRE ALARM - DETAILS & RISER DIAGRAM		•	•	•
FX-001	FIRE SUPPRESSION - SYMBOLS, NOTES & ABBREVIATIONS	•	•	•	•
FXD-102	FIRE SUPPRESSION - 2ND FLOOR DEMOLITION PLAN		•	•	•
FX-102	FIRE SUPPRESSION - 2ND FLOOR PLAN	•	•	•	•
FX-102A	FIRE SUPPRESSION - 2ND FLOOR ADD ALTERNATE	•	•	•	•
FX-500	FIRE SUPPRESSION - DETAILS & RISER DIAGRAM	•	•	•	•
FX-600	FIRE SUPPRESSION - SPECIFICATIONS	•	•	•	•
T-001	TELECOM LEGEND AND NOTES	•	•	•	•
T-002	TELECOM SPECIFICATIONS	•	•	•	•
TD-102	2ND FLOOR LOW VOLTAGE DEMOLITION PLAN	•	•	•	•
T-102	2ND FLOOR TELECOM PLAN	•	•	•	•
T-102A	2ND FLOOR TELECOM ADD ALTERNATES	•	•	•	•

GENERAL NOTES

1. PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES AND ACCEPTED INDUSTRY STANDARDS. ANY WORK SHOWN ON DRAWINGS OR DESCRIBED TO BE INSTALLED ARE SUBJECT TO THE LAWS, ORDINANCES, OR REGULATIONS, OR REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION. ANY NEW WORK NOT INSTALLED PER RELEVANT CODES AND REGULATIONS SHALL BE MODIFIED TO BRING IT INTO CONFORMITY WITH THESE LAWS, ORDINANCES AND REGULATIONS, WITHOUT ADDITIONAL COST TO THE OWNER/TENANT. OBTAIN AND PAY FOR ALL PERMITS, LICENSES, ETC. REQUIRED BY AUTHORITIES HAVING JURISDICTION. OBTAIN ALL CERTIFICATES OF OCCUPANCY REQUIRED BY AUTHORITIES HAVING JURISDICTION.
2. VERIFY ALL EXISTING CONDITIONS AND ESTABLISH COMPATIBILITY OF ALL NEW WORK PRIOR TO COMMENCEMENT OF WORK.
3. SCHEDULE AND SEQUENCE ALL WORK WITH OWNER TENANT PRIOR TO BEGINNING WORK. COORDINATE ALL OWNER/TENANT FURNISHED VENDORS AND MATERIALS AS REQUIRED TO MAINTAIN THE CONSTRUCTION SCHEDULE.
4. PROTECT ALL EXISTING AND NEW CONSTRUCTION FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION ACTIVITIES.
5. THOROUGHLY CLEAN ALL AREAS AND SPACES USED TO ACCESS WORK AREAS WITHIN CONTRACT LIMITS AND BROOM CLEAN TWICE DAILY AT A MINIMUM. PROVIDE FIRE RETARDANT DUST MATS AT ALL EXITS AND ENTRANCES TO SPACES UNDER CONSTRUCTION. DUST MATS SHALL BE REPLACED AT A MIN. OF TWICE WEEKLY.
6. COORDINATE EXACT LOCATION OF ALL ASSOCIATED WORK WITH NEW FIXTURES, FURNITURE, AND EQUIPMENT PROVIDED EITHER AS A PART OF THE CONTRACT DOCUMENTS OR FURNISHED OR PROVIDED BY OTHERS.
7. THE ARCHITECT SHALL HAVE NO RESPONSIBILITY FOR THE DISCOVERY, PRESENCE, HANDLING, REMOVAL, DISPOSAL, OR EXPOSURE OF PEOPLE TO HAZARDOUS MATERIAL IN ANY FORM, INCLUDING BUT NOT LIMITED TO ASBESTOS PRODUCTS, POLYCHLORINATED BIPHENYL (PBC) OR OTHER TOXIC SUBSTANCES.
8. ALL PENETRATIONS IN RATED ASSEMBLIES WHETHER NEW OR EXISTING SHALL BE SEALED WITH UL/FM APPROVED MATERIALS AND PROCEDURES. SUBMIT ALL APPLICATION INFORMATION TO ARCHITECT PRIOR TO STARTING WORK.
9. ALL PARTIES RESPONSIBLE FOR WORK ASSOCIATED WITH THESE CONSTRUCTION DOCUMENTS SHALL REVIEW ALL SHEETS AND SPECIFICATIONS. IN THE CASE DISCREPANCIES ARE FOUND WITHIN THESE CONSTRUCTION DOCUMENTS, PROMPTLY NOTIFY ARCHITECT FOR CLARIFICATION AND DIRECTION. DO NOT PROCEED PRIOR TO DIRECTION FROM ARCHITECT. UNLESS DIRECTED OTHERWISE, ALL WORK SHALL REFLECT THE GREATEST QUANTITY, QUALITY, AND COMPLETENESS OF DISCREPANT ITEMS DEFINED WITHIN THESE CONSTRUCTION DOCUMENTS.
10. NOTIFY THE ARCHITECT IMMEDIATELY IF COMPLIANCE WITH ALL DRAWINGS AND NOTES CALLED FOR ON ALL CONTRACT DOCUMENTS IS NOT POSSIBLE.
11. PRIOR TO THE SUBMISSION OF ANY PROPOSAL, INSPECT THE SITE TO DETERMINE THE EXTENT OF THE WORK TO BE PERFORMED.
12. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN DRAWINGS, THESE NOTES, DIMENSIONS, SPECIFICATIONS AND FIELD CONDITIONS BEFORE COMMENCING ANY WORK.
13. FURNISH MASTER SCHEDULE AND DETAILED "LOOK AHEAD" SCHEDULE PRIOR TO COMMENCEMENT. PROVIDE FIELD PROGRESS SCHEDULES TO ARCHITECT, OWNER / TENANT FOR ALL PHASES OF WORK. PROVIDE PHOTOGRAPHIC IMAGES OF PROGRESS AT INTERVALS AGREED TO AT TIME OF COMMENCEMENT.
14. COORDINATE ALL BUILDING SERVICES, SECURITY, TEMPORARY FIRE PROTECTION, TRASH REMOVAL, AND COMPLIANCE WITH CONSTRUCTION REGULATIONS. COMPLY WITH BUILDING RULES AND REGULATIONS. AVOID CONFLICT OR INTERFERENCE WITH THE NORMAL BUILDING OPERATIONS. NOTIFY LANDLORD / TENANT / OWNER OF ANY SYSTEMS TESTING AND/OR SHUTDOWNS WITHIN 72 HOURS OF PLANNED ACTIVITY OR AT A TIME SPECIFIED WITHIN BUILDING REGULATIONS.
15. PROVIDE FINAL CLEANING UPON COMPLETION OF ALL TRADES IN PROJECT AREA AND THOSE AREAS AFFECTED BY CONSTRUCTION ACTIVITIES.
16. PROVIDE EACH TRADE WITH COMPLETE SET OF PLANS. THESE MUST ALWAYS BE USED AS A COMPLETE SET, DO NOT DISTRIBUTE SEPARATE SHEETS. IF CONTRACTOR DOES NOT DISTRIBUTE FULL SET, CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR COORDINATION. ANY ADDENDUM OR BULLETIN DOCUMENTATION SHALL BE DISTRIBUTED TO ALL TRADES WITHIN 2 DAYS OF THE ACCEPTANCE OF THOSE PLANS. ANY PLANS IN FIELD NOT CURRENT WILL BE TAKEN BY THE ARCHITECT.
17. A SCHEDULE FOR ALL WORK SHALL BE PROVIDED ALONG WITH THE COST ESTIMATES. A COPY OF THE SCHEDULE SHALL BE SENT TO ARCHITECT, CLIENT AND ALL RELEVANT PROJECT ENTITIES.
18. SUBMIT PENCIL COPY OF PAYMENT APPLICATION, OUTLINING ALL COMPLETED WORK AND RETAINAGE IN EACH SCHEDULED VALUE. UPON APPROVAL, PROVIDE FINAL COPY OF PAYMENT APPLICATION. PROVIDE PARTIAL AND FULL WAIVERS OF LIEN FROM ALL SCHEDULED TRADES WITH EACH PAYMENT APPLICATION. INCOMPLETE PENCIL COPIES AND PAYMENT APPLICATIONS WILL BE RETURNED WITHOUT ACTION.
19. PROVIDE ADEQUATE INSURANCE FOR THE PROJECT DURING THE PERIOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE PUBLIC LIABILITY INSURANCE, GENERAL LIABILITY INSURANCE, BODILY INJURY, PROPERTY DAMAGE INCLUDING AUTOMOBILE, THEFT AND VANDALISM, AND BUILDING RISK INSURANCE, AT ALL TIMES UNTIL FINAL ACCEPTANCE OF THE WORK.
20. REFER TO BASE BUILDING ARCHITECTURAL DRAWINGS, FOR BASE BUILDING ELECTRICAL, HVAC, SPRINKLER, MECHANICAL, AND PLUMBING INFORMATION.
21. UPON AWARD OF THE CONTRACT, PROVIDE A COMPLETE LIST OF SUBCONTRACTORS WORKING ON THE PROJECT, INCLUDING PHONE NUMBERS, EMAIL ADDRESSES, AND CONTACT NAMES.
22. GENERAL CONTRACTOR COORDINATE ALL TRADE QUESTIONS THROUGH ARCHITECT. ARCHITECT WILL NOT ENTERTAIN DIRECT QUESTIONS FROM TRADES. UNLESS NOTED OTHERWISE, NO DIRECT COMMUNICATION SHALL BE MADE FROM TRADE TO OWNER/TENANT.

PROXIMITY MAP



SITE LOCATION
SCALE: NTS

SITE MAP

SITE LOCATION
SCALE: NTS

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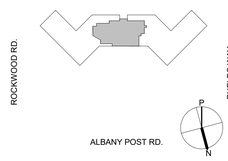
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:59:05 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

COVER SHEET

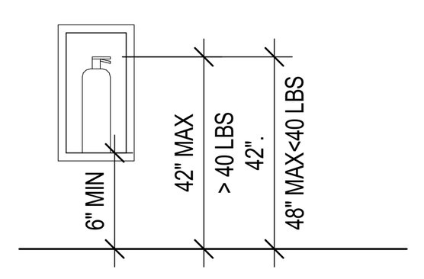
SCALE: 12" = 1'-0" FLOOR:

G-001

ABBREVIATIONS

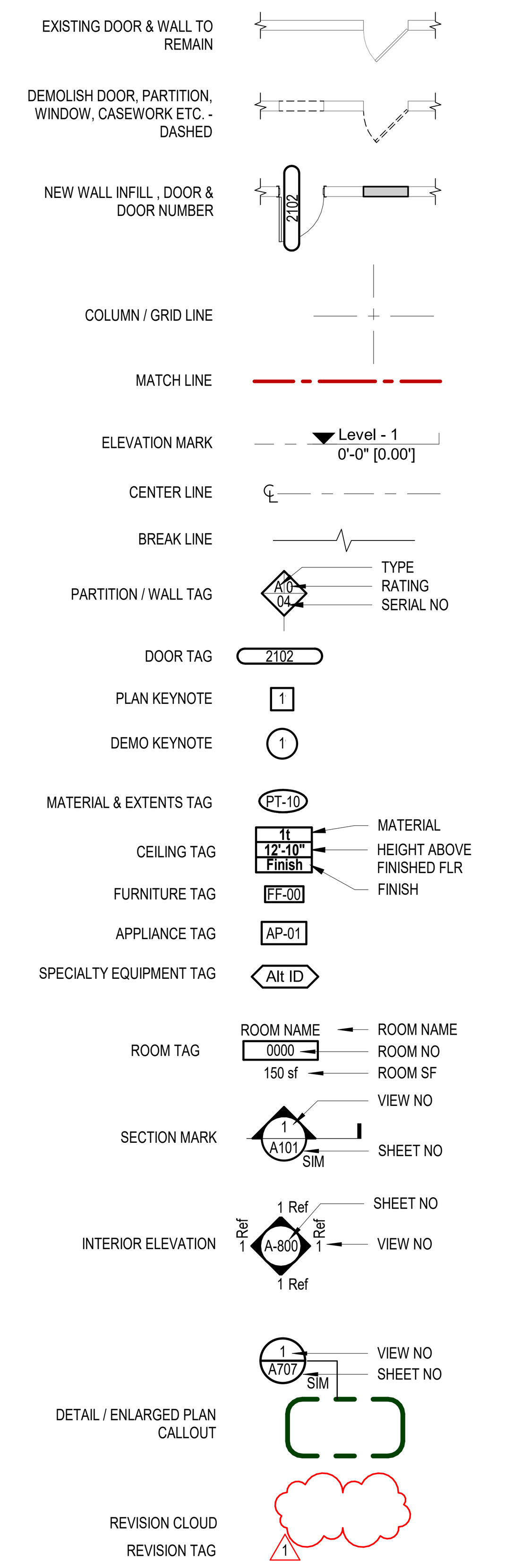
Abbreviation	Meaning
#	Pound Or Number
&	And
@	At
A	Air
A/C	Air Conditioning
ABV	Above
ACC	Access
ACOUS	Acoustic(Al)
ACT	Acoustical Ceiling Tile; Actual
AD	Area Drain
ADJ	Adjust, Adjustable, Adjacent
AFF	Above Finished Floor
AGGR	Aggregate
ALUM	Aluminum
ANOD	Anodized
ANT	Antenna
AP	Access Panel
APPROX	Approximate
ARCH	Architect (Ural)
ATTEN	Attenuation
AUTO	Automatic
AVG	Average
AX	Axis
BD	Board
BDY	Boundary
BEL	Below
BETW	Between
BF	Board Foot, Back Face, Bottom Face, Both Faces
BL	Base Line, Building Line
BLDG	Building
BLK	Block
BLKG	Blocking
BOS	Bottom Of Steel
BOT	Bottom
BR	Brick, Brass, Boiler Room Branch
BRG	Bearing
BS	Both Sides, Backset, Bluestone
BSMT	Basement
BTU	British Thermal Units
BTUH	British Thermal Units Per Hour
BUR	Built-Up Roofing
BUZ	Buzzer
BYND	Beyond
C J	Construction/Control Joint
C or CPT	Carpet (Ed)
C/C	Center To Center
CA	Compressed Air
CAB	Cabinet
CAP	Capacity
CCTV	Closed Circuit Tv
CCW	Counter Clockwise
CF	Cubic Feet
CFCI	Contractor Furnished / Contractor Installed
CFM	Cubic Feet Per Minute
CFOI	Contractor Furnished / Owner Installed
CG	Corner Guard
CHNL	Channel
CIP	Cast In Place
CIR	Circle, Circular, Circuit
CIRC	Circumference
CL	Center Line
CLG	Ceiling
CLR	Clear (Ance)
CMU	Concrete Masonry Unit
CNTR	Center, Counter
CO	Company, Cleanout, Cased Opening, Cut Out
COL	Column
COMPR	Compressible
CONC	Concrete
CONT	Continuous
CSWK	Casework
CTR	Counter
CW	Clockwise, Cold Water
CY	Cubic Yard, Cycle
DBL	Double
DEG or °	Degree
DEMO	Demolish
DEP	Depressed
DEPT	Department
DET or DTL	Detail
DF	Drinking Fountain
DIA/Ø	Diameter
DIAG	Diagonal
DIFF	Diffuser
DIM	Dimension
DIMS	Dimensions
DISP	Dispenser
DIV	Division
DMT	Demountable
DN	Down
DO	Door Opening
DR	Door, Drain, Dining Room
DW	Dishwasher
DWG	Drawing
DWR	Drawer
EA	Each
EIFS	Exterior Insulation And Finish System
EJ	Expansion Joint
EJECT	Ejector
EL	Elevation (Height)
ELEC	Electrical
ELEV	Elevator Or Elevation
EM	Emergency
ENCL	Enclosure (Enclosed)
ENTR	Entrance
EPDM	Ethylene Propylene Diene Monomer
EPF	Epoxy Floor (Poured Floor)
EQ	Equal
EQUIP	Equipment
ESC	Escalator
EX	Exist(Ing)
EXH	Exhaust
EXP	Expansion, Exposed
EXP JT	Expansion Joint
EXT	Exterior
F	Degrees Fahrenheit, Fuse
FA	Fire Alarm, Fresh Air
FAB	Fabricate
FAR	Floor Area Ratio
FC	File Cabinet, Foot Candle
FD	Floor Drain
FE	Fire Extinguisher
FEC	Fire Extinguisher Cabinet
FF	Finished Floor, Factory Finish
FFE	Furniture, Fixture, And Equipment
FFL	Finished Floor Line
FHC	Fire Hose Cabinet
FI	Film
FIN	Finish, Finished
FIXT	Fixture
FL	Floor, Fire Line
FLAM	Flammable
FLEX	Flexible
FLR	Floor
FLUOR	Fluorescent
FND	Foundation
FO	Face Of
FOC	Face Of Concrete
FOF	Face Of Finish
FOS	Face Of Studs Or Steel
FOW	Face Of Wall
FP	Fire Protection, Fireproof, Fireproof(Ing)
FR	Front, Fire Riser, Fire Rat(Ing)(Ed)
FRM	Frame
FRTW	Fire Retardant Treated Wood
FT or '	Foot/Feet
FTG	Footing, Fitting
FUR	Furred, Furring
FURN	Furnish, Furniture
G	Gas, Girder, Gutter, Gram
GA	Gauge, Gage
GALV	Galvanized
GC	General Contractor
GEN	Generator
GFCI	Ground Fault Circuit Interrupted
GFRC	Glass Fiber Reinforced Concrete
GL	Glass (Glazing)
GR	Grade (Grading)
GWB	Gypsum Wall Board
HB	Hose Bib
HC	Hollow Core, Handicapped
HD	Head, Heavy Duty
HDR	Header
HDWR	Hardware
HI	High
HM	Hollow Metal
HNDR	Handrail
HORZ	Horizontal
HOSP	Hospital
HP	High Point, High Pressure, Horse Power
HR	Hour
HRDW	Hardware
HT	Height
HVAC	Heating, Ventilating & Air Conditioning
HVY	Heavy
HWD	Hardwood
ID	Inside Diameter
IE	Invert Elevation
ILO	In Lieu Of
IN or "	Inch(Es)
INCAN	Incandescent
INFO	Information
INSUL	Insulate, Insulation
INT	Interior, Internal
INV	Invert
IRGWB	Impact Resistant Gypsum Wallboard
JB	Junction Box
JCT	Junction
JST	Joist
JT	Joint
KD	Knock Down
KG	Kilogram
KIP	Kilopound (1000 Pounds)
KM	Kilometer
KO	Knock Out
L	Angle, Left, Length, Lighting Panel, Long, Line
LAD	Ladder
LAM	Laminate(D)
LAT	Lateral
LAV	Lavatory
LB	Pound (Weight), Lag Bolt
LBL	Label
LBR	Lumber
LF	Linear Feet
LH	Left Hand
LIN	Linear
LL	Live Load
LO	Low
LOC	Locate, Location(S)
LP	Low Point, Low Pressure, Lighting Panel
LPT	Low Point
LTG	Lighting
LVR	Louver
LW	Light Weight
LWC	Light Weight Concrete
M	Meter, Motor, Bending Moment
MACH	Machine
MAINT	Maintenance
MAT	Material
MAX	Maximum
MECH	Mechanical
MED	Medium
MEMBR	Membrane
MEP	Mechanical, Electrical, Plumbing, Fire Protection, Fire Alarm
MEZZ	Mezzanine
MFD	Manufactured, Metal Floor Deck
MFG	Manufacturer, Manufacturing
MFR	Manufacturer
MGR	Manager
MH	Manhole
MIN	Minimum
MISC	Miscellaneous
MM	Millimeter
MO	Masonry Opening
MOD	Module
MONO	Monolithic
MRGWB	Moisture-Resistant Gypsum Wall Board
MTD	Mount, Mounted
MTL	Metal
N	North, Nitrogen
N/A	Not Applicable
NIC	Not In Contract
NO or #	Number
NOM	Nominal
NRC	Noise Reduction Coefficient
NTS	Not To Scale
O	Oxygen
OA	Outside Air, Overall
OC	On Center
OD	Outside Dimension Or Diameter
OFCI	Owner Furnished / Contractor Installed
OFOI	Owner Furnished / Owner Installed
OH	Overhead, Opposite Hand
OHD	Overhead Door
OPG	Opening
OPP	Opposite
OVFL	Overflow
OVHD	Overhead
OZ	Ounce
PART	Partition
PART BD	Particle Board
PB	Pull Box, Push Button, Panic Bar, Porcelain Base
PC	Pull Chain, Piece, Precast Concrete
PED	Pedestal
PERP	Perpendicular
PKG	Parking
PL	Plate, Plan, Property Line, Plastic
PLAM	Plastic Laminate
PLAS	Plaster
PLBG	Plumbing
PLYWD	Plywood
PMF	Premolded Filler
PNEU	Pneumatic
PNL	Panel
PP	Plaster, Painted, Power Panel, Precast Panel, Push Plate
PR	Pair
PRE	Prefinished
PREFAB	Prefabricate(D)
PREP	Preparation / Prepare
PRESS	Pressure
PROP	Property
PROT	Protection, Protective
PSF	Pounds Per Square Foot
PSI	Pounds Per Square Inch
PT	Paint, Point, Part, Potential Transformer
PVC	Polyvinyl Chloride
PVT	Private
PWR	Power
QTR	Quarter
QTY	Quantity
QUAL	Quality
R	Riser, Radius, Resistance, Relay Panel
RA	Return Air, Registered Architect
RAD	Radius, Radiator
RB	Rubber, Rubber Base, Resilient Base
RCP	Reflected Ceiling Plan, Reinforced Concrete Pipe
RD	Roof Drain, Round, Receptacle Distribution Panel
REC	Receiver, Recess
RECPT	Receptacle, Reception
REF	Refer, Reference
REFR	Refrigerate, Refrigerator
REG	Register, Regular
REINF	Reinforcement, Or Reinforce
REQ	Require, Required
RET	Return
REV	Reverse, Revise, Revision
RH	Right Hand, Reheat, Relative Humidity
RM	Room
RO	Rough Opening
S	South, Sealant, Supply, Sink
SALV	Salvage
SAN	Sanitary
SC	Solid Core, Short Circuit, Self Closing, Sill Cock
SCH	Schedule
SECT	Section
SEL	Select
SERV	Service
SF	Square Foot
SGL	Single
SH	Shelf, Sheet, Shower
SHLVG	Shelving
SHT	Sheet
SHWR	Shower
SI	Square Inch
SIM	Similar
SK	Sketch
SPEC	Specification, Specifications
SPKLR	Sprinkler
SPKR	Speaker
SQ	Square
ST. STL.	Stainless Steel
STC	Sound Transmission Class
STD	Standard
STL	Steel
STOR	Storage
STRUCT	Structural
SURF	Surface
SUSP	Suspended, Suspend
SY	Square Yard
SYM	Symmetrical
SYS	System
T	Tread, Thermostat, Tee
T&G	Tongue And Groove
TC	Top Of Curb, Terracotta
TD	Trench Drain
TEL	Telephone
TEMP	Temporary, Tempered, Temperature
THK	Thick, Thickness
TLT	Toilet
TO	Top Of
TOC	Top Of Concrete
TOL	Tolerance
TOS	Top Of Steel
TR	Tread, Transom, Transition
TV	Television
TW	Top Of Wall, Thin Wall (Conduit), Tempered Water
TYP	Typical
UC	Undercut
UL	Underwriters Laboratory
UNFIN	Unfinished
UNO	Unless Noted Otherwise
UON	Unless Otherwise Noted
V	Volt, Valve, Vinyl, Vent, Ventilator, Vacuum
VAC	Vacuum
VAR	Varnish, Varies
VENT	Ventilate, Ventilator
VERT	Vertical
VEST	Vestibule
VIF	Verify In Field
VLT	Vault
VNR	Veneer
VOL	Volume
VP	Vision Panel
VTR	Vent Through Roof
W	West, Width, Wide, Watt, Waste, Water
W/	With
W/O	Without
WAINS	Wainscot
WB	Wood Base
WC	Water Closet
WD	Wood
WDPNL	Wood Panel
WF	Wide Flange (Structural Steel), Window Film
WIN	Window
WO	Window Opening
WPT	Working Point
WT	Weight, Water Table, Watertight
WWF	Welded Wire Fabric
YD	Yard
YR	Year

GENERAL ELEMENTS

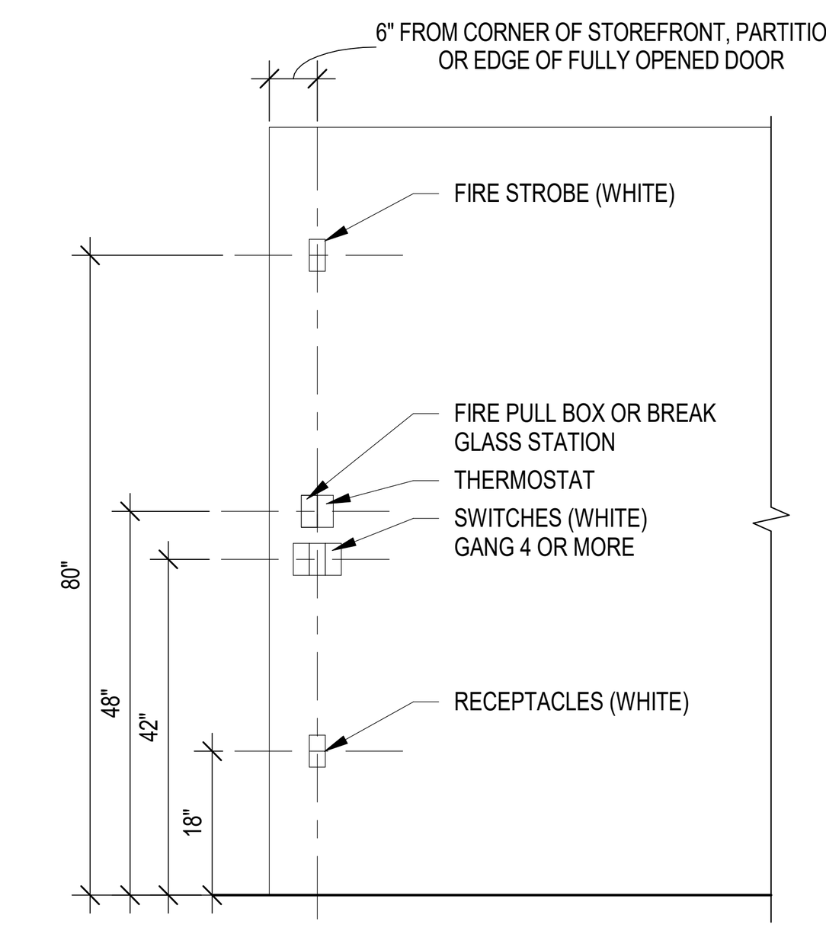


FIRE EXTINGUISHER CABINET

TYPICAL SYMBOLS

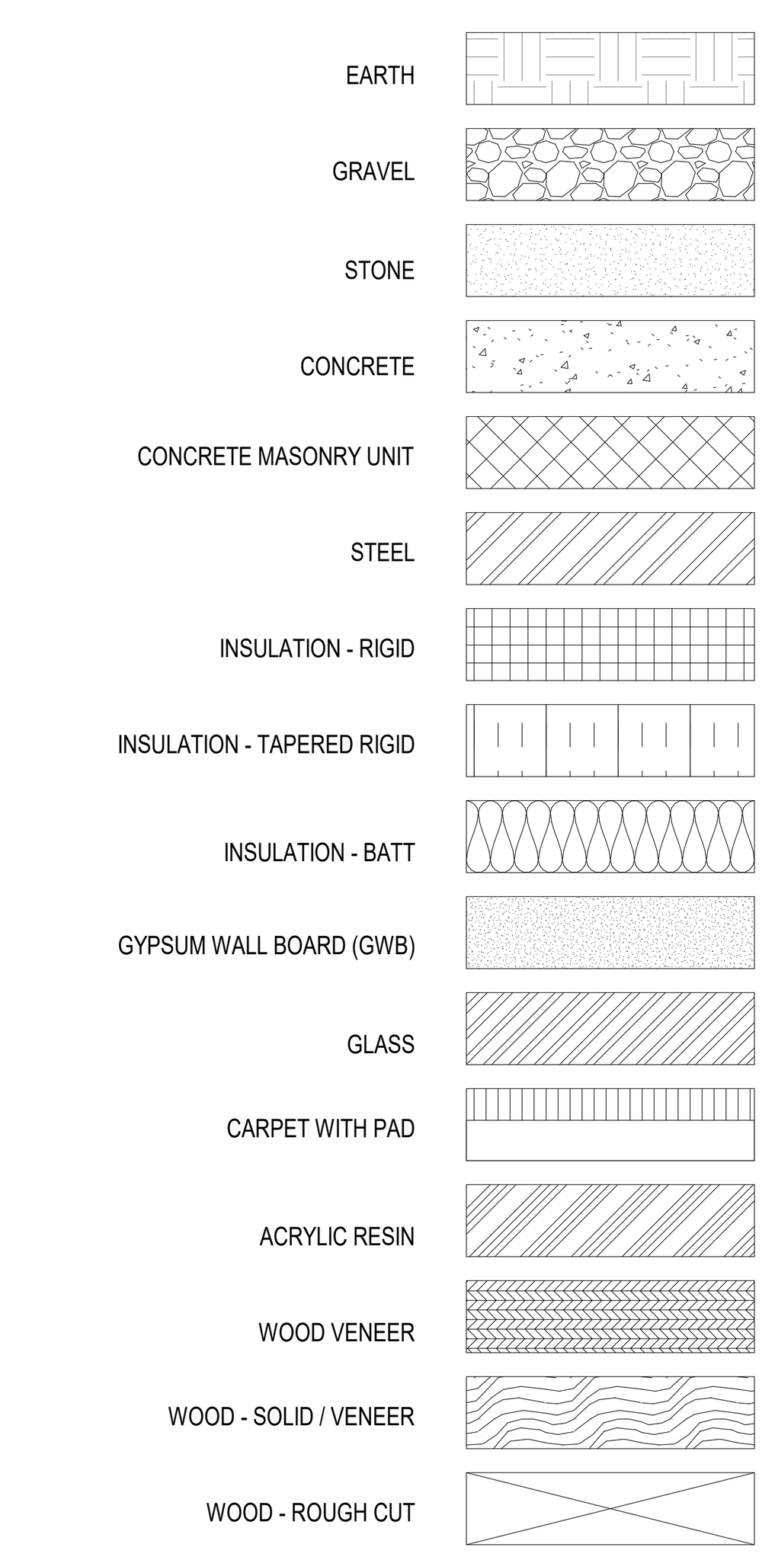


TYPICAL DEVICE MOUNTING HEIGHTS



GENERAL NOTE: WALL MOUNTED OUTLETS, FIRE STROBES, THERMOSTATS, ETC. SHOULD NEVER BE MOUNTED IN THE CENTER OF A SOLID WALL, UNLESS SPECIFICALLY NOTED OTHERWISE.

MATERIAL INDICATIONS



PLACEMENT NOTES

1. ALL DIMENSIONS ARE TO **FINISHED** FACES.
2. DOOR CLOSERS TO BE SET 90°-12°, 5 SECONDS MIN.
3. NOT ALL DEVICES ARE SHOWN. NOT ALL ITEMS SHOWN ARE USED.
4. DIMENSIONS SHOWN ARE TYPICAL. SPECIFIC CONDITIONS SHOWN ON OTHER DRAWINGS SHALL HAVE PRECEDENCE UNLESS CONTRADICTORY TO CODE REQUIREMENTS.
5. MEP DWGS SHOW QUANTITY AND GENERAL LAYOUT OF UTILITY OUTLETS. OTHER ARCHITECTURAL DWGS ALSO SHOW LOCATIONS. WHERE LOCATIONS ARE NOT SPECIFICALLY INDICATED ON OTHER DWGS, USE THE GUIDELINE ON THIS DWG. IF AN OUTLET IS FOR A SPECIFIC PIECE OF EQUIPMENT, CENTER OUTLET BEHIND EQUIPMENT. MEP CONTRACTORS SHALL COORDINATE BETWEEN ALL DWGS AND EQUIPMENT REQUIREMENTS.
6. SHOULD ANY CONDITIONS - BUILT OR UNBUILT - BE FOUND THAT CONTRADICT THE REQUIREMENTS SHOWN HEREIN, BRING THEM TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION, PRIOR TO PROCEEDING WITH WORK.
7. DRAWINGS / DIAGRAMS ARE NOT TO SCALE. DO NOT SCALE PRINTED DOCUMENTS.

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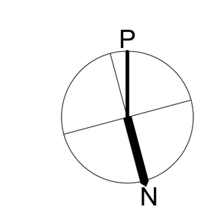
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:59:07 AM

Professional Seal and Signature:

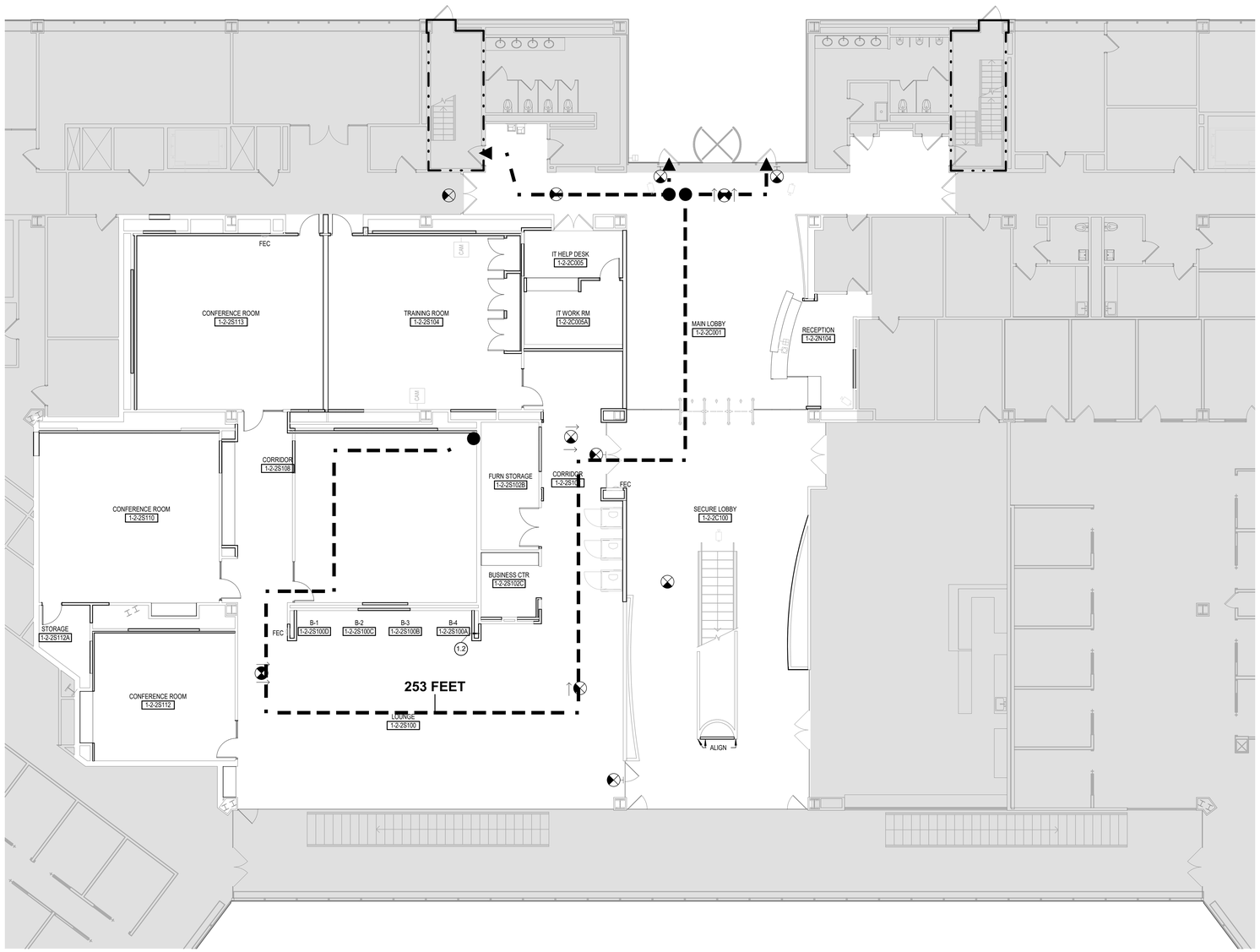
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

MOUNTING HEIGHTS AND STANDARDS

SCALE: As indicated FLOOR:

G-002



CODE PLAN LEGEND

B — OCCUPANCY TYPE (B - BUSINESS.)	EXIT SIGN - DIRECTION PER CEILING PLANS
XXX — TRAVEL DISTANCE	EXISTING 90 MIN. FIRE-RESISTIVE CONSTRUCTION
XX — NO. OF OCCUPANTS	PATH OF TRAVEL
BUILDING EXIT	COMMON PATH OF TRAVEL
NOT IN SCOPE	F.E. — FIRE EXTINGUISHER LOCATION

BUILDING CODE ANALYSIS

APPLICABLE CODES:
2020 International Building Code - NEW YORK STATE BUILDING CODE (WHICH ADDITION)
2020 International Energy Conservation Code NEW YORK STATE ENERGY CONSERVATION CODE
2020 International Existing Building Code OF NEW YORK STATE
2020 International Fire Code NEW YORK STATE FIRE CODE
2020 International Fuel Gas Code OF NEW YORK STATE
2020 International Mechanical Code OF NEW YORK STATE
2020 ICC Performance Code
2020 International Plumbing Code OF NEW YORK STATE

BUILDING SUMMARY:

TOTAL BUILDING AREA:	102,500 (VERIFY) SF
TOTAL PROJECT AREA:	2ND FLOOR = 10,750 SF
TOTAL:	10,750 SF
BUILDING HEIGHT:	EXISTING BUILDING - NO CHANGE
NUMBER OF STORIES:	4 STORY EXISTING BUILDING - NO CHANGE
AREA OF LARGEST FLOOR:	26,000 SF EXISTING GROUND FLOOR - NO CHANGE
CONSTRUCTION CLASSIFICATION:	IIB ASSUMED AS DEFINED BY 2020 IBC
FIRE PROTECTION:	FULLY SPRINKLERED EXISTING BUILDING
USE GROUP:	GROUP B - NO CHANGE
SEPARATION OF OCCUPANCIES:	NON-SEPARATED

PROJECT DESCRIPTION:
WORK INVOLVES THE ALTERATION OF THE 10,750 SF OF THE SECOND FLOOR.
EXISTING STAIRS AND CORE RESTROOMS TO REMAIN.

STRUCTURAL LOADS:
5:23-6.6 THE EXISTING BUILDING STRUCTURAL STRENGTH SHALL NOT BE DIMINISHED
IBC 1607 ALL NEW LOADS SHALL MEET CRITERIA OF IBC TABLE 1607.1

ACCESSIBILITY:
5:23-6.6 THE EXISTING BUILDING ACCESSIBILITY SHALL NOT BE DIMINISHED.
ENTRANCE SHALL BE MADE TO COMPLY WITH BFS.
5:23-6.6(e): NEW TOILET FIXTURES, PARTITIONS, AND HARDWARE SHALL COMPLY WITH BFS.
ELEVATOR SHALL COMPLY WITH BFS

MATERIALS AND METHODS:
MEANS OF EGRESS:
10.05.3 MAXIMUM PERMITTED OCCUPANT LOAD BASED ON EXISTING AVAILABLE EGRESS WIDTHS

FIRST FLOOR TENANT FIT-OUT:
DOORS: 32" CLEAR MIN.
(2 x 34") = 68" / 0.2" = 340 OCCUPANTS

STAIRS: 44" CLEAR MIN.
(2 x 44") = 68" / 0.3" = 227 OCCUPANTS

MAXIMUM AVAILABLE TENANT CAPACITY: 4 40 OCCUPANTS
ACTUAL TENANT CAPACITY: 120 OCCUPANTS

IBC 1016 COMMON PATH OF EGRESS TRAVEL: B USE: 100' A USE: 75'
IBC TABLE 1017.2 MAXIMUM TRAVEL DISTANCE TO EXIT ACCESS B USE: 300' A USE: 250'
IBC TABLE 1020.1 0HR FIRE RESISTANCE RATED CORRIDORS IN FULLY SPRINKLERED A AND B OCCUPANCIES
IBC 1020.4, EX2 MAXIMUM 50' DEAD END CORRIDOR IN FULLY SPRINKLERED BUILDING

*** CURRENT PROJECT CONFORMS TO THE ABOVE RESTRICTIONS**

EXITS:
5:23-6.17, (b) NO CHANGE TO NUMBER OF EGRESS DOORS. DOORS SWING IN DIRECTION OF EGRESS TRAVEL.

ACCESS CONTROLLED DOORS:
IBC 1010.1.9.8 PROVIDE OCCUPANCY SENSOR ON EGRESS SIDE. AUTOMATICALLY UNLOCK AT LOSS OF POWER.
AUTOMATICALLY UNLOCK AT ACTIVATION OF BUILDING FIRE ALARM SYSTEM.
AUTOMATICALLY UNLOCK AT ACTIVATION OF BUILDING AUTOMATIC SPRINKLER SYSTEM.
SHALL NOT BE SECURED FROM EGRESS SIDE DURING PERIODS THAT THE BUILDING IS OPEN TO THE GENERAL PUBLIC.

HANDRAILS & GUARDRAILS:
5:23-6.17, (g) EXISTING HANDRAILS COMPLY
5:23-6.17, (h) EXISTING GUARDRAILS COMPLY

VERTICAL OPENING PROTECTION:
5:23-6.17, (i), 3, i NOT REQUIRED IN BUILDINGS WITH AUTOMATIC SPRINKLER SYSTEM

ELEVATORS:
5:23-6.9, (a), 10 CHAPTER 30 OF THE BUILDING SUBCODE EXCEPT FOR SECTION 3002.4 AND SECTION 8.4 AND SECTION 8.5 OF ASME A17.1.
5:23-6.17A, (d) REQUIREMENTS OF 5:23-6.30(g). ELEVATOR DEVICES SERVING ANY PART OF THE WORK AREA SHALL COMPLY WITH THE

STRUCTURAL ELEMENTS:
5:23-6.17, (j) STRUCTURAL MODIFICATIONS TO EXISTING STRUCTURE SHALL COMPLY. NO CHANGE.

PLUMBING FIXTURES:
5:23-6.17, (k) TOILETS SHALL COMPLY WITH NSPC.

MECHANICAL VENTILATION:
5:23-6.17, (l), 2, i NEWLY INSTALLED EQUIPMENT SHALL COMPLY WITH IMC
5:23-6.17, (l), 2, ii MODIFICATIONS TO EXISTING SYSTEMS SHALL COMPLY

INTERIOR FINISHES:
5:23-6.8, (b), 3 NEWLY INSTALLED FINISHES SHALL COMPLY WITH IBC CHAPTER 8, EXCEPT 802
5:23-6.11, (c), 1 EXISTING FINISHES SHALL COMPLY

MANUAL FIRE ALARM:
5:23-6.8, (b), 3 A FIRE ALARM SYSTEM SHALL BE INSTALLED THROUGHOUT THE BUILDING

FIRE PROTECTION:
5:23-6.11, (c), 1 EXISTING SYSTEM COMPLIES
IBC 906.1 REQUIREMENTS. FIRE EXTINGUISHERS SHALL BE PROVIDED IN ACCORDANCE WITH LOCAL FIRE MARSHALL

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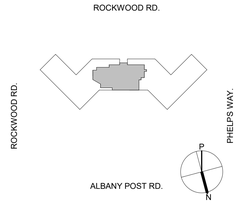
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

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Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

LIFE SAFETY
2ND FLOOR

SCALE: As indicated FLOOR: 2ND FLOOR

G-003

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes Demolition and removal of selected portions of interior building tenant construction, and Salvage of existing items to be reused.

B. Related Requirements:

1. Division 01 Section "Summary."
2. Division 01 Section "Execution."

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Tenant ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing construction items that are not to be permanently removed, removed and salvaged, or removed and reinstalled.

1.3 MATERIALS TENANTSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.4 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference and site walk through at Project Site prior to the start of construction.

1.5 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control, and for noise control. Indicate proposed locations and construction of barriers.

B. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure building manager's and other tenants' on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Tenant's continuing occupancy of portions of existing building and of Tenant's partial occupancy of completed Work.

C. Inventory: Submit a list of items to be removed and salvaged and deliver to Tenant prior to start of demolition.

D. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.6 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.7 FIELD CONDITIONS

A. Conditions existing at time of inspection for bidding purpose will be maintained by Tenant as far as practical.

B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

C. Hazardous Materials: During the course of demolition and construction activity, if any contractor, sub-contractor, or laborer suspects, any material and/or condition to be hazardous, contractor shall stop work immediately and notify the site supervisor and owner representative.

D. Storage or sale of removed items or materials on-site is not permitted.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1.8 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Building manager will arrange to shut off indicated services/systems when requested.
2. Arrange to shut off indicated utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
   a. Refer to Engineering Specifications for detailed instructions.

3.3 PREPARATION

A. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area.
2. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
8. Dispose of demolished items and materials promptly.

B. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated.

C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

A. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals using power-driven saw, then remove concrete between saw cuts.

B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Tenant's property, remove demolished materials from Project site. Do not allow demolished materials to accumulate on-site.

1. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
2. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
3. Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."

3.7 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 03 54 13 - GYPSUM CEMENT UNDERLAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Work Included: The Work of this Section includes, but is not limited to the following:

1. Self-leveling, gypsum cement underlayment for application below interior floor coverings, with the exception of areas to receive ceramic or porcelain tile finishes and in "wet" areas.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site and site walk through at Project Site prior to the start of construction.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical data, test reports and installation instructions for each concrete floor topping. Indicate compatibility with floor finishes.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Installer who is approved by manufacturer for application of underlayment products required for this Project.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original, unopened packages and protect from exposure to the elements.

B. Do not use materials that are damaged or have been deteriorated.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ventilation, ambient temperature and humidity, and other conditions affecting underlayment performance.

1. Place gypsum cement underlayment only when ambient temperature and temperature of substrates are between 50 and 80 degrees F.

PART 2 - PRODUCTS

2.1 GYPSUM CEMENT UNDERLAYMENTS

A. Gypsum Cement Underlayment: Self-leveling, gypsum cement product that can be applied in minimum uniform thickness of 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Products: Subject to compliance with requirements, provide one of the following to suit application, as approved by the Architect:
   a. ARDEX Americas; Ardex GS-Il or Ardex LU-100.
   b. MAPEI Corporation; Planitex SL3S.
   c. Maxxon Corporation; Dura-Cap.
   d. United States Gypsum Company; USG Durock Brand UltraCap Self-leveling Underlayment or USG Levelrock Brand 3500 Floor Underlayment.

B. Aggregate, where required by application: Well-graded, washed gravel, 1/8 to 1/4 inch; or coarse sand as recommended by underlayment manufacturer.

1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.

C. Water: Potable and at a temperature of not more than 70 deg F.

D. Reinforcement, where required by application: For underlayment applied to wood substrates, provide galvanized metal lath or other corrosion-resistant reinforcement recommended in writing by underlayment manufacturer.

E. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

F. Surface Sealer, where required by application: Designed to reduce porosity as recommended by manufacturer for type of floor covering to be applied to underlayment.

2.2 TOPPING MIX

A. Self-Leveling Topping: Provide mixture of engineered cement and water as recommended by the material manufacturer.

2.3 MIXING

A. Provide mechanical mixer for mixing topping material with water at project site. Equip mixer with a suitable water-measuring device.

B. Use only mixers which are capable of mixing cement and water into a uniform mix.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for conditions affecting performance of the Work.

B. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Prepare and clean substrate according to manufacturer's written instructions.

1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through underlayment.
2. Fill substrate voids to prevent underlayment from leaking.

B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.

1. Moisture Testing: Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 3 lbs. of water/1000 sq. ft. in 24 hours.

C. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.

3.3 APPLICATION

A. General: Mix and apply underlayment components according to manufacturer's written instructions.

1. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.
2. Coordinate application of components to provide optimum adhesion to substrate and between coats.
3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.

B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

C. Apply underlayment to produce uniform, level surface.

1. Apply a final layer without aggregate to product surface.
2. Feather edges to match adjacent floor elevations.

D. Cure underlayment according to manufacturer's written instructions. Prevent contamination during application and curing processes.

E. Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.

F. Apply surface sealer at rate recommended by manufacturer.

G. Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

3.4 PROTECTION

A. Protect underlayment from concentrated and rolling loads for remainder of construction period.

END OF SECTION 03 54 13

SECTION 064023 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Interior standing and running trim, painted.
2. Wood Veneer Paneling.
3. Plastic-laminate cabinets.
4. Reception Desk.
5. Solid-surfacing-material countertops.
6. Shop finishing of interior woodwork.

1.2 DEFINITIONS

A. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.

1. Show details full size.
2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
3. Show locations and sizes of cutouts and holes for plumbing fixtures faucets soap dispensers and other items installed in architectural woodwork.
4. Show veneer leaves with dimensions, grain direction, exposed face, and identification numbers indicating the flitch and sequence within the flitch for each leaf.

C. Samples for Verification:

1. Veneer leaves representative of and selected from flitches to be used for transparent- finished woodwork.
2. Veneer-faced panel products with or for transparent finish, 8 by 10 inches (200 by 250 mm), for each species and cut. Include at least one face-veneer seam and finish as specified.
3. Lumber and panel products with shop-applied opaque finish, 50 sq. in. (300 sq. cm) for lumber and 8 by 10 inches (200 by 250 mm) for panels, for each finish system and color, with 1/2 of exposed surface finished.
4. Plastic laminates, 8 by 10 inches (200 by 250 mm), for each type, color, pattern, and surface finish, with 1 sample applied to core material and specified edge material applied to 1 edge.
5. Solid-surfacing materials, 6 inches (150 mm) square.
6. Corner pieces as follows:
   a. Cabinet-front frame joints between stiles and rails, as well as exposed end pieces, 18 inches (450 mm) high by 18 inches (450 mm) wide by 6 inches (150 mm) deep.
   b. Miter joints for standing trim.
8. Exposed cabinet hardware and accessories, one unit for each type and finish.

D. Product Certificates: For each type of product, signed by product manufacturer.

E. Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

F. Qualification Data: For Installer and fabricator.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in- service performance.

B. Installer Qualifications: Fabricator of products.

C. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork with sequence-matched wood veneers.

D. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.

1. Provide AWI Quality Certification Program certificates indicating that woodwork, including installation, complies with requirements of grades specified.

E. Fire-Test-Response Characteristics: Where fire-retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.

F. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.
2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.7 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. General: Provide materials that comply with requirements of AWI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.

B. Wood Species and Cut for Transparent Finish: As Indicated in the drawings.

C. Wood Species for Opaque Finish: Any closed-grain hardwood.

D. Wood Products: Comply with the following:

1. Hardboard: AHA A135.4.
2. Medium-Density Fiberboard: ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde.
3. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
4. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.

F. High-Pressure Decorative Laminate: As Indicated in the Drawings.

G. Solid-Surfacing Material: As indicated in the Drawings.

2.2 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this Article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified.

1. Do not use treated materials that do not comply with requirements of referenced woodworking standard or that are warped, discolored, or otherwise defective.
2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
3. Identify fire-retardant-treated materials with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Comply with performance requirements of AWPA C20 (lumber) and AWPA C27 (plywood). Use the following treatment type:

1. Exterior Type: Organic-resin-based formulation thermally set in wood by kiln drying.
2. Interior Type A: Low-hygroscopic formulation.
3. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking plant certified by testing and inspecting agency.
4. Mill lumber before treatment and implement special procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.
5. Kiln-dry materials before and after treatment to levels required for untreated materials.

C. Fire-Retardant Particleboard: Panels complying with the following requirements, made from softwood particles and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 25 or less per ASTM E 84.

1. For panels 3/4 inch (19 mm) thick and less, comply with ANSI A208.1 for Grade M-2 except for the following minimum properties: modulus of rupture, 1600 psi (11 MPa); modulus of elasticity, 300,000 psi (2070 MPa); internal bond, 80 psi (550 kPa); and screw-holding capacity on face and edge, 250 and 225 lbf (1100 and 1000 N), respectively.
2. For panels 13/16 to 1-1/4 inches (20 to 32 mm) thick, comply with ANSI A208.1 for Grade M-1 except for the following minimum properties: modulus of rupture, 1300 psi (9 MPa); modulus of elasticity, 250,000 psi (1720 MPa); linear expansion, 0.50 percent; and screw-holding capacity on face and edge, 250 and 175 lbf (1100 and 780 N), respectively.
3. Product:Subject to compliance with requirements, provide "Duraflake FR" by Weyerhaeuser.

D. Fire-Retardant Fiberboard: Medium-density fiberboard panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.

1. Product: Subject to compliance with requirements, provide "Medite FR" by SierraPine Ltd.; Medite Div.

SECTION 064023 - INTERIOR ARCHITECTURAL WOODWORK CONTINUED

2.3 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items specified in Division 08 Section "Door Hardware (Scheduled by Describing Products)."

B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 170 degrees of opening.

C. Back-Mounted Pulls: As Indicated in the drawings.

D. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081

E. Shelf Rests: BHMA A156.9, B04013; metal.

F. Drawer Slides: BHMA A156.9, B05091.

1. Heavy Duty (Grade 1HD-100 and Grade 1HD-200): Side mounted; full-extension type; zinc-plated steel ball-bearing slides.

G. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for finish indicated in the drawings.

1. Satin Stainless Steel: BHMA 630.

H. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.4 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln dried to less than 15 percent moisture content.

B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

C. Adhesives, General: Do not use adhesives that contain urea formaldehyde.

D. VOC Limits for Installation Adhesives and Glues: Use installation adhesives that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Wood Glues: 30 g/L.
2. Contact Adhesive: 250 g/L.

E. Adhesive for Bonding Plastic Laminate: Urea formaldehyde.

1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.5 FABRICATION, GENERAL

A. Interior Woodwork Grade: Unless otherwise indicated, provide Premium-grade interior woodwork complying with referenced quality standard.

B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.

C. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

D. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members 3/4 Inch (19 mm) Thick or Less: 1/16 inch (1.5 mm).
2. Edges of Rails and Similar Members More Than 3/4 Inch (19 mm) Thick: 1/8 inch (3 mm).
3. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members and Rails: 1/16 inch (1.5 mm).

E. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

F. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

2.6 WOOD CABINETS FOR TRANSPARENT FINISH

A. Grade: Premium.

B. Wood Species and Cut for Exposed Surfaces: As Indicated in the Drawings.

C. Semiexposed Surfaces: Provide surface materials indicated in the drawings.

D. Scoping: All Cabinets in Public/Semi-Public areas.

2.7 RECEPTION DESK

A. As Indicated in the Drawings.

2.8 SOLID-SURFACING-MATERIAL COUNTERTOPS

A. Grade: Premium.

B. Solid-Surfacing-Material Thickness: As Indicated.

C. Colors, Patterns, and Finishes: As Indicated in Drawings.

D. Fabricate tops in one piece, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.

1. Fabricate tops with shop-applied edges of materials and configuration indicated.
2. Fabricate tops with loose backsplashes for field application.

E. Drill holes in countertops for plumbing fittings.

2.9 SHOP FINISHING

A. Grade: Provide finishes of same grades as items to be finished.

B. General: Finish architectural woodwork at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.

C. General: Shop finish transparent-finished interior architectural woodwork at fabrication shop as specified in this Section. Refer to Division 09 painting Sections for finishing opaque-finished architectural woodwork.

D. General: Drawings indicate items that are required to be shop finished. Finish such items at fabrication shop as specified in this Section. Refer to Division 09 painting Sections for finishing architectural woodwork not indicated to be shop finished.

E. Shop Priming: Shop apply the prime coat including backpriming, if any, for items specified to be field finished. Refer to Division 09 painting Sections for material and application requirements.

F. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.

1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end-grain surfaces. Concealed surfaces of plastic-laminate-clad woodwork do not require backpriming when surfaced with plastic laminate, backing paper, or thermoset decorative panels.

G. Transparent Finish:

1. Grade: Premium.
2. AWI Finish System: Catalyzed lacquer.
3. Staining: Match Architect's sample.
4. Wash Coat for Stained Finish: Apply wash-coat sealer to woodwork made from closed- grain wood before staining and finishing.
5. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.
6. Filled Finish for Open-Grain Woods: After staining (if any), apply paste wood filler to open-grain woods and wipe off excess. Tint filler to match stained wood.
   a. Apply wash-coat sealer after staining and before filling.
7. Sheen: Satin, 31-45 gloss units measured on 60-degree gloss meter per ASTM D 523.

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:58:09 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SPECIFICATIONS

SCALE: 12" = 1'-0" FLOOR:

A-001

SECTION 064023 - INTERIOR ARCHITECTURAL WOODWORK CONTINUED

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.

B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

A. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.

B. Assemble woodwork and complete fabrication at Project site to comply with requirements for fabrication in Part 2, to extent that it was not completed in the shop.

C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).

D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with chemical treatment manufacturer's written instructions, including those for adhesives used to install woodwork.

F. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

G. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 96 inches (2400 mm) long, except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.

1. Fill gaps, if any, between top of base and wall with plastic wood filler, sand smooth, and finish same as wood base if finished.
2. Install wall railings on indicated metal brackets securely fastened to wall framing.
3. Install standing and running trim with no more variation from a straight line than 1/8 inch in 96 inches (3 mm in 2400 mm).

H. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

1. Install cabinets with no more than 1/8 inch in 96-inch (3 mm in 2400-mm) sag, bow, or other variation from a straight line.
2. Maintain veneer sequence matching of cabinets with transparent finish.

I. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.

1. Align adjacent solid-surfacing-material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
2. Install countertops with no more than 1/8 inch in 96-inch (3 mm in 2400-mm) sag, bow, or other variation from a straight line.
3. Caik space between backsplash and wall with sealant specified in Division 07 Section "Joint Sealants."

J. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean woodwork on exposed and semiexposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064023

SECTION 078413 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1. SUMMARY

A. Section Includes Penetration Firestopping in fire-resistance rated walls and partitions, horizontal assemblies, and smoke barriers.

1. SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Schedule: For each penetration firestopping system.

C. Qualification Data: For qualified Installer.

D. Installer Certificates: From Installer indicating penetration firestopping has been installed in compliance with requirements and manufacturer's written recommendations.

1. QUALITY ASSURANCE

A. Installer Qualifications: A firm experienced in installing penetration firestopping similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance.

B. Preinstallation Conference: Conduct conference at Project Site.

1. PROJECT CONDITIONS

A. Environmental Limitations: Do not install penetration firestopping when ambient or substrate temperatures are outside limits permitted by penetration firestopping manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.

B. Install and cure penetration firestopping per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1. COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping is installed according to specified requirements.

B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping.

C. Notify Owner's testing agency at least seven days in advance of penetration firestopping installations; confirm dates and times on day preceding each series of installations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. A/D Fire Protection Systems Inc.
2. Grace Construction Products.
3. Hilti, Inc.
4. Johns Manville.
5. Nelson Firestop Products.
6. NUCO Inc.
7. Passive Fire Protection Partners.
8. RectorSeal Corporation.
9. Specified Technologies Inc.
10. 3M Fire Protection Products.
11. Tremco, Inc.; Tremco Fire Protection Systems Group.
12. USG Corporation.

2.2 PENETRATION FIRESTOPPING

A. Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.

B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).

1. Fire-resistance-rated walls include fire walls, fire partitions, and smoke partitions.
2. F-Rating: Not less than the fire-resistance rating of constructions penetrated.

C. Penetrations in Horizontal Assemblies: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).

1. Horizontal assemblies include floors and roof assemblies.
2. F-Rating: At least 2-hour, but not less than the fire-resistance rating of constructions penetrated.
3. T-Rating: At least 2-hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.

D. Penetrations in Smoke Barriers: Provide penetration firestopping with ratings determined per UL 1479.

1. L-Rating: Not exceeding 5.0 cfm/sq. ft. (0.025 cu. m/s per sq. m) of penetration opening at 0.30-inch wg (74.7 Pa) at both ambient and elevated temperatures.

E. W-Rating: Provide penetration firestopping showing no evidence of water leakage when tested according to UL 1479.

F. Exposed Penetration Firestopping: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

G. VOC Content: Provide penetration firestopping that complies with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

H. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping manufacturer and approved by qualified testing and inspecting agency for firestopping indicated.

1. Permanent forming/damming/backing materials, including the following:

a. Slag-wool-fiber or rock-wool-fiber insulation.
b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
c. Fire-rated form board.
d. Fillers for sealants.

2. Temporary forming materials.
3. Substrate primers.
4. Collars.
5. Steel sleeves

SECTION 078413 - PENETRATION FIRESTOPPING CONTINUED

2.3 FILL MATERIALS

A. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer metallic sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket.

B. Latex Sealants: Single-component latex formulations that do not re-emulsify after cure during exposure to moisture.

C. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.

D. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized-steel sheet.

E. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.

F. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.

G. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.

H. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

I. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:

1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces, and nonsag formulation for openings in vertical and sloped surfaces, unless indicated firestopping limits use of nonsag grade for both opening conditions.

2.4 MIXING

A. For those products requiring mixing before application, comply with penetration firestopping manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Clean out openings immediately before installing penetration firestopping to comply with manufacturer's written instructions and with the following requirements:

1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping.
2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping. Remove loose particles remaining from cleaning operation.
3. Remove laitance and form-release agents from concrete.

B. Priming: Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

C. Masking Tape: Use masking tape to prevent penetration firestopping from contacting adjoining surfaces that will remain exposed on completion of the Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove stains. Remove tape as soon as possible without disturbing firestopping's seal with substrates.

3.3 INSTALLATION

A. General: Install penetration firestopping to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.

B. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.

C. Install fill materials for firestopping by proven techniques to produce the following results:

1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

A. Identify penetration firestopping with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches (150 mm) of firestopping edge so labels will be visible to anyone seeking to remove penetrating items or firestopping. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed.

3.5 FIELD QUALITY CONTROL

A. Where deficiencies are found or penetration firestopping is damaged or removed because of testing, repair or replace penetration firestopping to comply with requirements.

3.6 CLEANING AND PROTECTION

A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping manufacturers and that do not damage materials in which openings occur.

B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping is without damage or deterioration at time of Substantial Completion.

END OF SECTION 078413

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1. SUMMARY

A. Section Includes Silicone joint sealants, Latex joint sealants, and Acoustical joint sealants.

B. Related Sections:

1. Division 08 Section "Glazing."
2. Division 09 Section "Gypsum Board."

1. SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

D. Warranties: Sample of special warranties.

1. QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

C. Preinstallation Conference: Conduct conference at Project Site.

1. PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1. WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two (2) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

D. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Dow Corning Corporation; 790.
b. GE Advanced Materials - Silicones; SilPruf LM SCS2700.
c. May National Associates, Inc.; Bondaflex Sil 290.
d. Pecora Corporation; 301 NS.
e. Sika Corporation, Construction Products Division; SikaSil-C990.
f. Tremco Incorporated; Spectrem 1.

2.3 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. BASF Building Systems; Sonolac.
b. Bostik, Inc.; Chem-Calk 600.
c. May National Associates, Inc.; Bondaflex 6000.
d. Pecora Corporation; AC-20+.
e. Schnee-Morehead, Inc.; SM 8200.
f. Tremco Incorporated; Tremflex 834.

2.4 ACOUSTICAL JOINT SEALANTS

A. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Pecora Corporation; AC-20 FTR.
b. USG Corporation; SHEETROCK Acoustical Sealant.

2.5 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin)] [Type O (open-cell material), Type B (bicellular material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant- substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles by vacuuming or blowing out joints with oil-free compressed air.
3. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
4. Remove laitance and form-release agents from concrete.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer. Apply primer to comply with joint-sealant manufacturer's written instructions.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with ASTM C 1193.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

G. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion.

3.6 JOINT-SEALANT SCHEDULE

A. Interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

a. Control and expansion joints on exposed interior surfaces of exterior walls.
b. Perimeter joints of exterior openings where indicated.
c. Tile control and expansion joints.
d. Vertical joints on exposed surfaces of partitions.
e. Perimeter joints between interior wall surfaces and frames of doors and windows.
f. Other joints as indicated.

2. Joint Sealant: Latex.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Interior Acoustical Joints:

1. Joint Location: Acoustical joints where indicated.

2. Joint Sealant: Acoustical.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

END OF SECTION 079200

SECTION 081213 - HOLLOW METAL FRAMES

PART 1 - GENERAL

1. SUMMARY

A. Section includes Interior standard steel frames.

B. Related Requirements:

1. Section 087100 "Door Hardware" for door hardware for hollow-metal doors.

1. DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1. COORDINATION

A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1. PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1. ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, fire-resistance ratings, temperature- rise ratings, and finishes.

B. Shop Drawings: Include the following:

1. Elevations of each frame type.
2. Frame details for each frame type, including dimensioned profiles and metal thicknesses.

3. Locations of reinforcement and preparations for hardware.
4. Details of each different wall opening condition.
5. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of moldings, removable stops, and glazing.

C. Product Schedule: For hollow-metal frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1. INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each type of hollow-metal frame assembly, for tests performed by a qualified testing agency.

1. DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow-metal frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

1. Provide additional protection to prevent damage to factory-finished units.

B. Store hollow-metal frames vertically under cover at Project site with head up. Place on minimum 4-inch- (102-mm-) high wood blocking. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings and temperature-rise limits indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

1. Smoke- and Draft-Control Assemblies: Provide assemblies with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.

2.2 FRAME ANCHORS

A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches (610 mm) of frame height above 7 feet (2.1 m).
3. Postinstalled Expansion Anchor: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.

2.3 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

F. Glazing: Comply with requirements in Section 088000 "Glazing."

2.4 FABRICATION

A. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.

1. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
2. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.

a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

B. Hardware Preparation: Factory prepare hollow-metal frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce frames to receive nontemplated, mortised, and surface-mounted door hardware.
2. Comply with BHMA A156.115 for preparing hollow-metal frames for hardware.

2.5 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.

B. Drill and tap frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

A. General: Install hollow-metal frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.

B. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.

1. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
2. Install frames with removable stops located on secure side of opening.

C. Fire-Rated Openings: Install frames according to NFPA 80.

D. Solidly pack mineral-fiber insulation inside frames.

E. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:

1. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
2. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
3. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
4. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.

F. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow- metal manufacturer's written instructions.

3.3 CLEANING AND TOUCHUP

A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

C. Factory-Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.

D. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081213

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:58:10 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SPECIFICATIONS

SCALE: 12" = 1'-0" FLOOR:

A-002

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1. SUMMARY

A. Section Includes the following Solid-core Flush Wood Doors:
   1. Solid Core Primed for Opaque Field Finish
   2. Factory Finished Veneer Doors with Transparent Finish

B. Related Section(s):

   1. Division 08 Section "Hollow Doors and Frames"
   2. Division 08 Section "Door Hardware"
   3. Division 09 Section "Interior Painting"
   4. Division 09 Section "Non-Structural Metal Framing"
   5. Division 09 Section "Gypsum Board"

1. SUBMITTALS

A. Product Data: For each type of door indicated. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.

B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.

C. Samples for Verification.

D. Warranty: Sample of special warranty.

1. QUALITY ASSURANCE

A. Source Limitations: Obtain flush wood doors from single manufacturer.

B. Preinstallation Conference: Conduct conference at Project site.

1. DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of referenced standard and manufacturer's written instructions.

B. Package doors individually in plastic bags or cardboard cartons.

C. Mark each door on top and bottom rail with opening number used on Shop Drawings.

1. PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.

1. WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.

   1. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
   2. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Base Building Standard - VT Industries Architectural Wood Doors - Heritage Door Type.

B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   1. Algoma Hardwoods, Inc.
   2. Ampco, Inc.
   3. Buell Door Company Inc.
   4. Chappell Door Co.
   5. Eagle Plywood & Door Manufacturing, Inc.
   6. Eggers Industries.
   7. Graham; an Assa Abloy Group company.
   8. Haley Brothers, Inc.
   9. Ideal Architectural Doors & Plywood.
   10. Ipik Door Company.
   11. Lambton Doors.
   12. Marlite.
   13. Marshfield Door Systems, Inc.
   14. Mohawk Flush Doors, Inc.; a Masonite company.
   15. Oshkosh Architectural Door Company.
   16. Poncraft Door Company.
   17. Vancouver Door Company.
   18. VT Industries Inc.

2.2 DOOR CONSTRUCTION, GENERAL

A. WDMA I.S.1-A Performance Grade:

   1. Heavy Duty unless otherwise indicated.

B. Particleboard-Core Doors:
   1. Particleboard: ANSI A208.1, Grade LD-1 or Grade LD-2 , made with binder containing no urea-formaldehyde resin.
   2. Blocking: Provide wood blocking in particleboard-core doors as needed to eliminate through-bolting hardware.
   3. Provide doors with either glued-wood-stave or structural-composite-lumber cores instead of particleboard cores for doors indicated to receive exit devices.

C. Mineral-Core Doors:
   1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
   2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through- bolting hardware.
   3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

2.3 DOORS FOR TRANSPARENT FINISH

A. Interior Solid-Core Doors:
   1. Grade: Premium.
   2. Faces: Wood Veneer
      a. Species:
         1. Doors entirely within Tenant Space:
            a. Species: MAPLE
            b. Cut: Flat Cut
            c. Color: Match Building Standard
   3. Exposed Vertical and Top Edges to match faces.
   4. Core: Either glued wood stave or structural composite lumber.
   5. Construction: Five or Seven plies. Stiles and rails are bonded to core, then entire unit abrasive planed before veneering.
   6. WDMA I.S.1-A Performance Grade: Heavy Duty.

2.4 DOORS FOR OPAQUE FINISH

A. Interior Solid-Core Doors:
   1. Grade: Premium.
   2. Faces: Any Closed Grain Hardwood
   3. Finish: Primed for Field Painting
   4. Exposed Vertical and Top Edges to match faces.
   5. Core: Either glued wood stave or structural composite lumber.
   6. Construction: Five or Seven plies. Stiles and rails are bonded to core, then entire unit abrasive planed before veneering.
   7. WDMA I.S.1-A Performance Grade: Heavy Duty.

2.5 FABRICATION

A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, DHI A115-W series standards, and hardware templates.

   1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

C. Openings: Cut and trim openings through doors in factory.

   1. Light Openings: Trim openings with moldings of material and profile indicated.
   2. Louvers: Factory install louvers in prepared openings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and installed door frames before hanging doors.

   1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
   2. Reject doors with defects.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Hardware: For installation, see Division 08 Section "Door Hardware."

B. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced quality standard, and as indicated.

C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.

D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

A. Operation: Rehang or replace doors that do not swing or operate freely.

B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

SECTION 087100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

   1. Mechanical door hardware for the following:
      a. Swinging doors.

   2. Cylinders for door hardware specified in other Sections.

B. Products furnished, but not installed, under this Section include the products listed below. Coordinating and scheduling the purchase and delivery of these products remain requirements of this Section.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Details of electrified door hardware.

C. Samples: For each exposed product and for each color and texture specified.

D. Other Action Submittals:

   1. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

      a. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
      b. Content: Include the following information:

         1. Identification number, location, hand, fire rating, size, and material of each door and frame.
         2. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
         3. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
         4. Description of electrified door hardware sequences of operation and interfaces with other building control systems.

   2. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and an Architectural Hardware Consultant who is available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.

B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.

C. Source Limitations: Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

D. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.

E. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meet requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

   1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at the tested pressure differential of 0.3-inch wg (75 Pa) of water.

F. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.

G. Accessibility Requirements: For door hardware on doors in an accessible route, comply with ICC/ANSI A117.1

   1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
   2. Comply with the following maximum opening-force requirements:

      a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
      b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
      c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

   3. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.

H. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

B. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.5 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

   1. Warranty Period: Three (3) years from date of Substantial Completion, unless otherwise indicated.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article to comply with requirements in this Section.

   1. Door Hardware Sets: Provide quantity, item, size, finish or color indicated.

B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by using door hardware designations, as follows:

   1. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Schedule" Article.

2.2 HINGES

A. Hinges: BHMA A156.1.

   1. Basis-of-Design Product: Provide the product listed in the schedule.

2.3 CONTINUOUS HINGES

A. Continuous Hinges: BHMA A156.26; minimum 0.120-inch- (3.0-mm-) thick, hinge leaves with minimum overall width of 4 inches (102 mm); fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.

2.4 MECHANICAL LOCKS AND LATCHES

A. Strikes: Provide manufacturer's standard strike for each latchbolt complying with requirements indicated for applicable lock or latch and with strike box and curved lip extended to protect frame; finished to match lock or latch.

B. Mortise Locks: BHMA A156.13

   1. Product: Provide product indicated on schedule.

2.5 AUTOMATIC AND SELF-LATCHING FLUSH BOLTS

A. Automatic and Self-Latching Flush Bolts: BHMA A156.16; minimum 3/4-inch (19-mm) throw; designed for mortising into door edge.

   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

      a. Cal-Royal Products, Inc.
      b. Door Controls International, Inc.
      c. IVES Hardware; an Ingersoll-Rand company.
      d. Trimco.

2.6 LOCK CYLINDERS

A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver.

   1. Manufacturer: Same manufacturer as for locking devices.

B. Construction Master Keys: Provide cylinders with feature that permits voiding of construction keys without cylinder removal. Provide 10 construction master keys.

C. Construction Cores: Provide construction cores that are replaceable by permanent cores. Provide 10 construction master keys.

2.7 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A. Incorporate decisions made in keying conference.

   1. Master Key System: Change keys and a master key operate cylinders.

2.8 ACCESSORIES FOR PAIRS OF DOORS

A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release; and with internal override.

B. Astragals: BHMA A156.22.

SECTION 087100 - DOOR HARDWARE CONTINUED

2.9 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm, Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

   1. Product: As Indicated in the Schedule.

2.10 CONCEALED CLOSERS

A. Concealed Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

      a. DORMA Architectural Hardware; Member of The DORMA Group North America.
      b. LCN Closers; an Ingersoll-Rand company.
      c. Norton Door Controls; an ASSA ABLOY Group company.
      d. Rixson Specialty Door Controls; an ASSA ABLOY Group company.
      e. SARGENT Manufacturing Company; an ASSA ABLOY Group company.

2.11 DOOR STOPS

Unless otherwise noted, all door stops shall be wall mounted with concealed fasteners Rockwood 400series. Where wall stops will not function properly furnish floor-mounted stops Rockwood 440.

2.12 HINGES

A. All hinges shall be full mortise five knuckle ball bearing type, template, with non-rising loose pins. All out-swing doors shall have non-removable pins (NRP).

B. All hinges for 1-3/4" thick doors shall be 4-1/2" wide in the open position. For other thickness doors, and trim projections, hinges shall be of a width to permit unobstructed swing of the doors.

C. Size and weight of hinges shall conform to the following unless otherwise noted in hardware sets:

   Up to 36" ----------4-1/2" Standard Weight
   From 36" to 44" ----------5" Heavy Weight
   Over 44" ---------- Continuous Hinge Legacy 1019

D. Quantity of hinges shall be provided to conform to the following: Doors up to 60" in height ----------2 hinges
   Doors 60" to 90" in height ----------3 hinges Doors 90" and over ----------4 hinge every 30" in height

E. All hinges shall be the products of one manufacturer.

2.13 DOOR CLOSING DEVICES

A. All door closers shall meet ANSI A156.4 Grade 1 barrier free and delayed action. Furnish all required brackets, filler plates and any others items required to insure proper installation and operation.

B. All closers shall be installed so that closer bodies are positioned on room side of doors to and from corridors, i.e., in-swing doors shall be regular arm. Out-swing doors shall have a parallel arm. Regular arm shall be used in connecting doors between rooms.

2.14 FLUSH BOLTS

A. Flush Bolts: Shall be Trimco W3917 / W3913 series, furnish 3910 dustproof strikes for all bottom bolts. Top bolts shall be furnished with proper extensions to allow for easy operation.

B. Automatic Flush Bolts: Shall be Trimco 3810/3815L series, furnish 3910 dustproof strikes for all bottom bolts. Furnish wear plates as required.

C. Self -Latching Flush Bolts: Shall be Trimco 3820/3825L series, furnish 3910 dustproof strikes for all bottom bolts. Furnish wear plates as required.

2.15 OVERHEAD STOPS

A. Unless otherwise noted all overhead stops for wood doors shall be surface mounted Dorma 700S series and concealed mounted 710S series for hollow metal doors.

2.16 DOOR GASKETING

A. Door Gasketing: BHMA A156.22; air leakage not to exceed 0.50 cfm per foot (0.000774 cu. m/s per m) of crack length for gasketing other than for smoke control, as tested according to ASTM E 283; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.

   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

      a. Hager Companies.
      b. M-D Building Products, Inc.
      c. National Guard Products.
      d. Pemko Manufacturing Co.; an ASSA ABLOY Group company.
      e. Reese Enterprises, Inc.
      f. Sealeze; a unit of Jason Incorporated.
      g. Zero International.

2.17 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6

   1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on schedule or comparable product by one of the following:

      a. Baldwin Hardware Corporation.
      b. Burns Manufacturing Incorporated.
      c. Don-Jo Mfg., Inc.
      d. Hiawatha, Inc.
      e. IPC Door and Wall Protection Systems, Inc.; Div. of InPro Corporation.
      f. IVES Hardware; an Ingersoll-Rand company.
      g. Pawling Corporation.
      h. Rockwood Manufacturing Company.
      i. Trimco.

2.18 Protection Plates

A. All kick plates shall be 18" high x 2" less door width x 0.50 thick x beveled 3 sides

2.19 AUXILIARY DOOR HARDWARE

A. Auxiliary Hardware: BHMA A156.16.

2.20 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

B. Wood Doors: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

C. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.

   1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
   2. Custom Steel Doors and Frames: HMMA 831.
   3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

D. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 09 Sections. Do not install surface- mounted items until finishes have been completed on substrates involved.

   1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
   2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

E. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

F. Intermediate Offset Pivots: Where offset pivots are indicated, provide intermediate offset pivots in quantities indicated in door hardware schedule but not fewer than one intermediate offset pivot per door and one additional intermediate offset pivot for every 30 inches (750 mm) of door height greater than 90 inches (2286 mm).

G. Lock Cylinders: Install construction cores to secure building and areas during construction period.

   1. Replace construction cores with permanent cores as directed by Owner.
   2. Furnish permanent cores to Owner for installation.

H. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

I. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

J. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

K. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

L. Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

SECTION 087100 - DOOR HARDWARE CONTINUED

3.2 Hardware Sets

A. The following is a general listing of hardware requirements and is not intended for use as a final hardware schedule. Any items of hardware required by established standards or practices, or to meet state and local codes or proper door operation shall be furnished whether or not specifically called out in the following listed groups.

B. Products listed are Facility Standard products, furnish asspecified.

HARDWARE SET #1
Each to have:

Hinges
1 Passage Set McKinney (see description) x US26D Sargent 1- 82-15 LE2E x 32D
1 Overhead Closer LCN 4040XP series x 689
1. Stop Rockwood (see description) x US26D
2. Kick Plate Rockwood (see description) x US32D
2 Mop Plate Trimco (see description) x US32D
1 Automatic Bottom Seal Zero International 364
1 Door Jamb Seals Zero International 188 and 119
1. Threshold Threshold 564

HARDWARE SET #1.1
Each to have:

Hinges
1 Passage Set McKinney (see description) x US26D Sargent 1- 82-15 LE2E x 32D
1 Overhead Closer LCN 4040XP series x 689
1. Stop Rockwood (see description) x US26D
1 Automatic Bottom Seal Zero International 364
1 Door Jamb Seals Zero International 188 and 119
1. Threshold Threshold 564

HARDWARE SET #2
Each to have:

Hinges
2 Flush Bolts McKinney (see description) x US26D Rockwood 555 (see de-
1 Storeroom Lock Sargent 1- 82-04 LE2E x 32D
1 Overhead Closer Dorma (see description)
1. Stop Rockwood (see description) x
2. Kick Plate Rockwood (see description) x
3. set Smoke Seal Legacy Mfg. 5883S-BK jambs/head
4. Astragal Seals Legacy Mfg. 5584CA x 689

HARDWARE SET #2.1
Each to have:

Hinges
2 Flush Bolts McKinney (see description) x US26D Rockwood 555 (see de-
1 Storeroom Lock Sargent 1- 82-04 LE2E x 32D
1 Overhead Stop Rockwood (see description) x

HARDWARE SET #3
NOT USED

HARDWARE SET #4
NOT USED

HARDWARE SET #5
Each to have:

Hinges
1 Store-room Lock Stanley (see description) x US26D Sargent 1- 82-04 LE2E x 32D
1 Kick Plate Rockwood (see description) x (see description) x US32D
3 Silencers Trimco 1229A

END OF SECTION 087100

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:58:11 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SPECIFICATIONS

SCALE: 12" = 1'-0" FLOOR:

A-003

SECTION 088000 - GLAZING

PART 1 - GENERAL

1. RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

accidents, and vandalism, during construction period.

1. SUMMARY

A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1. Interior Windows.
2. Doors.
3. Glazed entrances.
4. Interior borrowed lites.
5. Decorative Finishes.

1. SUBMITTALS

A. Product Data: For each glass product and glazing material indicated.

B. Glass Samples: For each type of glass, 12 inches (300 mm) square.

C. Glazing Schedule: List glass types and thicknesses for each size opening and location. Use same designations indicated on Drawings.

1. DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

B. Comply with insulating-glass manufacturer's written recommendations for venting and sealing units to avoid hermetic seal ruptures due to altitude change.

C. Glazing contractor to obtain compatibility and adhesion test reports from sealant manufacturer indicating that glazing materials were tested for compatibility and adhesion with glazing sealants and other glazing materials.

1. DELIVERY, STORAGE, AND HANDLING

A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by the glazing material manufacturers and when glazing channel substrates are wet from rain, frost condensation, or other causes.

1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 40 deg F (4.4 deg C).

PART 2 - PRODUCTS

2.1 GLASS PRODUCTS, GENERAL

A. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thickness as needed to comply with requirements indicated.

B. Edges: Polished edges unless otherwise required by manufacturer.

2.2 GLASS PRODUCTS

A. Flat Glass:

1. ASTM C 1036, Type 1, Class 1 (clear) or Class 2 (tinted), and Quality q3.1.ASTM C 1048 Heat Treated Flat Glass.

a. Kind heat-strenghtened (HS).
b. Kind fully tempered (FT).

1.) Heat treated flat glass to be horizontally rolled (roller hearth) process with inherent rollerwave distortion parallel to the bottom edge of the glass as installed.

B. Safety Glass:

1. ANSI Z97.1 -2004 and testing requirements of 16 CFR Part 1201 for Category II materials.

2.3 MONOLITHIC-GLASS TYPES

A. Glass Types: As Indicated in the drawings.

2.4 DECORATIVE GLASS PANELS

A. Decorative Glass Panels: As Indicated in the Drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following:

1. Manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
2. Presence and functioning of weep systems.
3. Minimum required face and edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings not firmly bonded to substrates.

B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that will leave visible marks in the completed work.

3.3 GLAZING, GENERAL

A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.

B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances.

C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.

D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction testing.

E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

G. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm).

1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

I. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

J. Set glass lites with proper orientation so that coatings face exterior or interior as specified.

K. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.

L. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 CLEANING AND PROTECTION

A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels and clean surfaces.

B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended in writing by glass manufacturer.

C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits, or stains; remove as recommended in writing by glass manufacturer.

D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

END OF SECTION 088000

SECTION 092216 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1. SUMMARY

A. Section Includes Non-load-bearing steel framing systems for interior gypsum board assemblies and Suspension systems for interior gypsum ceilings, soffits, and grid systems.

1. ACTION SUBMITTALS

A. Product Data: For each type of product.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754.

B. Studs and Runners: ASTM C 645. Steel, 20 gauge minimum, unless noted otherwise.

C. Slip-Type Head Joints: Where indicated, provide the following:

1. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

D. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.

E. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

F. Cold-Rolled Channel Bridging: Steel, 0.053-inch (1.34-mm) minimum base-metal thickness, with minimum 1/2-inch- (13-mm-) wide flanges.

G. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

2.3 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.

B. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch (4.12 mm) in diameter.

C. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.053 inch (1.34 mm) and minimum 1/2-inch- (13-mm-) wide flanges.

D. Furring Channels (Furring Members): Cold-Rolled Channels: 0.053-inch (1.34-mm) uncoated- steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges, 3/4 inch (19 mm) deep.

E. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645.

1. Products: Available products that may be incorporated into the Work include, but are not limited to, the following:

a. Armstrong World Industries, Inc.; Drywall Grid Systems.
b. Chicago Metallic Corporation; Drywall Grid System.
c. USG Corporation; Drywall Suspension System.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

B. Coordination with Sprayed Fire-Resistive Materials:

1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling runners (tracks) to surfaces indicated to receive sprayed fire-resistive materials.
2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing.

3.3 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754.

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Install bracing at terminations in assemblies.

D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Install studs so flanges within framing system point in same direction.

C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

a. Install two studs at each jamb unless otherwise indicated.
b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.

c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.

a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance- rated assembly indicated.

5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
6. Curved Partitions:

a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches (150 mm) o.c.

D. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

3.5 INSTALLING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.
2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.
3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.

4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Grid suspension systems are suitable for use with gypsum board. They might be unacceptable for gypsum veneer plaster; consult gypsum veneer plaster and grid suspension system manufacturers.

F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

END OF SECTION 092216

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1. SUMMARY

A. Section Includes the following:

1. Interior gypsum board.
2. Tile backing panels.

B. Related Requirements:

1. Division 09 Section "Non-Structural Metal Framing."

1. ACTION SUBMITTALS

A. Product Data: For each type of product.

1. DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1. FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119.
B. STC -Rated Assemnlies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL
A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD
A. Manufacturers: Available manufacturere offering products that may be incorporated into the Work include, but are not limited to, the following:
1. American Gypsum
2. CertainTeed Corp.
3. Georgia-Pacic Gypsum LLC
4. Lafarge North America Inc.
5.National Gypsum Company
6.PABCO Gypsum
7. Temple-Inland
8. USG Corporation

B. Gypsum Wallboard: ASTM C 1396/C 1396M

1. Thickness: As Indicated.
2. Long Edges: Tapered.

2.4 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A118.9 and ASTM C 1288 or 1325, with manufacturer's standard edges.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. C-Cure; C-Cure Board 990.
b. CertainTeed Corp.; FiberCement Backer Board.
c. Custom Building Products; Wonderboard.
d. FinPan, Inc.; Util-A-Crete Concrete Backer Board.
e. James Hardie Building Products, Inc.; Hardiebacker.
f. National Gypsum Company, Permabase Cement Board.
g. USG Corporation; DUROCK Cement Board.

2. Thickness: 3/8 inch (12.7 mm).
3. Mold Resistance: ASTM D 3273, score of 10.

2.5 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, or paper-faced galvanized steel sheet.
2. Shapes:

a. Cornerbead.
b. Bullnose bead.
c. LC-Bead: J-shaped; exposed long flange receives joint compound.
d. L-Bead: L-shaped; exposed long flange receives joint compound.
e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
f. Expansion (control) joint.
g. Curved-Edge Cornerbead: With notched or flexible flanges.

B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

1. Manufacturers: Available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Fry Reglet Corp.
b. Gordon, Inc.
c. Pittcon Industries.

2.6 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound

2.7 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

1. Laminating adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.

D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

E. Acoustical Joint Sealant: As Indicated in Division 07 Section "Joint Sealants."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

SECTION 092900 - GYPSUM BOARD CONT'D

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc., except in chases braced internally.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919.

J. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Wallboard Type: Vertical surfaces unless otherwise indicated.
2. Type X: As indicated on Drawings.
3. Flexible Type: As indicated on Drawings.
4. Ceiling Type: Ceiling surfaces.
5. Moisture- and Mold-Resistant Type: Toilet Rooms, Showers, Wet Areas.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches (400 mm) minimum, from parallel base-layer joints, unless otherwise indicated or required by fire- resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

A. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners unless otherwise indicated.
2. LC-Bead: Use at exposed panel edges unless otherwise indicated.
3. L-Bead: Use where indicated.
4. Curved-Edge Cornerbead: Use at curved openings.

D. Aluminum Trim: Install in locations indicated on Drawings.

3.6 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints, rounded or beveled edges, and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
2. Level 2: Panels that are substrate for tile.
3. Level 3: Where indicated on Drawings.
4. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
5. Level 5: At panel surfaces scheduled to received high gloss paint finishes, wallcoverings, and curved surfaces.

3.7 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 092900

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:58:12 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SPECIFICATIONS

SCALE: 12" = 1'-0" FLOOR:

A-004

SECTION 093000 - TILING

PART 1 - GENERAL

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required.
2. Full-size units of each type of trim and accessory for each color and finish required.
3. Stone thresholds in 6-inch (150-mm) lengths.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.

C. Product Certificates: For each type of product, signed by product manufacturer.

1.5 QUALITY ASSURANCE

A. Source Limitations for Tile: Obtain tile from one source or producer.

1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.

B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.

C. Source Limitations for Other Products: Obtain each of the following products specified in this Section from a single manufacturer for each product:

1. Crack isolation membrane.
2. Joint sealants.
3. Cementitious backer units.

D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

E. Preinstallation Conference: Conduct conference at Project Site.

1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained, and contamination can be avoided.

D. Store liquid materials in unopened containers and protected from freezing.

E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types, compositions, and other characteristics indicated.

1. Provide tile complying with Standard grade requirements unless otherwise indicated.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.

2.2 TILE PRODUCTS

A. Floor Tile Types: As indicated in drawings and available trim.

1. Grout Color: As selected by Architect from manufacturer's full range.

2.3 SETTING MATERIALS

A. Dry-Set Portland Cement Mortar (Thin Set): ANSI A118.1.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Boiardi Products; a QEP company.
b. Bonsal American; an Oldcastle company.
c. Bostik, Inc.
d. C-Cure.
e. Custom Building Products.
f. Jamo Inc.
g. Laticrete International, Inc.
h. MAPEI Corporation.
i. Southern Grouts & Mortars, Inc.
j. Summitville Tiles, Inc.
k. TEC, a subsidiary of H. B. Fuller Company.

2.4 GROUT MATERIALS

A. Standard Cement Grout: ANSI A118.6.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following

a. Boiardi Products; a QEP company.
b. Bonsal American; an Oldcastle company.
c. Bostik, Inc.
d. C-Cure.
e. Custom Building Products.
f. Jamo Inc.
g. Laticrete International, Inc.
h. MAPEI Corporation.
i. Southern Grouts & Mortars, Inc.
j. Summitville Tiles, Inc.
k. TEC, a subsidiary of H. B. Fuller Company.
l. USG Corporation.

2.7 MISCELLANEOUS MATERIALS

A. Backer Boards: As indicated in Division 09 Section "Gypsum Board."

B. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

C. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

D. Tile Sealer: Manufacturer's standard or recommended product for sealing tile pores if required. Confirm all sealing requirements with Manufacturer prior to installation.

E. Grout Sealer: Manufacturer's standard product for sealing grout joints and that does not change color or appearance of grout.

2.8 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.

B. Add materials, water, and additives in accurate proportions.

C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.
2. Verify that concrete substrates for tile floors installed with thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.

a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.
b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.

3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.
4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

SECTION 093000 - TILING CONTINUED

3.2 PREPARATION

A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with thin-set mortar with trowelable leveling and patching compound specifically recommended by tile- setting material manufacturer.

B. Blending: For tile exhibiting color variations, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

C. Field-Applied Temporary Protective Coating: If indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 TILE INSTALLATION

A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

C. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Provide manufacturer's standard trim shapes where necessary to eliminate exposed tile edges.

E. Jointing Pattern: Lay tile in grid pattern unless otherwise indicated. Lay cut tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.
2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.
3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.

F. Joint Widths: Unless otherwise indicated, install tile with the following joint widths:

1. Ceramic Mosaic Tile: 1/16 inch (1.6 mm).

G. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

H. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors according to grout- sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.4 CLEANING AND PROTECTING

A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

1. Remove grout residue from tile as soon as possible.
2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.

B. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.

C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.

D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from tile surfaces.

END OF SECTION 093000

SECTION 095113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes acoustical panels and exposed suspension systems for interior ceilings.

B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified, 6 inches (150 mm) in size.

C. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of sizes indicated below:
1. Acoustical Panels: Set of 6-inch- (150-mm-) square Samples of each type, color, pattern, and texture.
2. Exposed Suspension-System Members, Moldings, and Trim: Set of 6-inch- (150-mm-) long Samples of each type, finish, and color.
3. Clips: Full-size hold-down impact and seismic clips.

D. Delegated-Design Submittal: For seismic restraints for ceiling systems.
1. Include design calculations for seismic restraints including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:
1. Ceiling suspension-system members.
2. Structural members to which suspension systems will be attached.
3. Method of attaching hangers to building structure.

a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.

4. Carrying channels or other supplemental support for hanger-wire attachment where conditions do not permit installation of hanger wires at required spacing.
5. Size and location of initial access modules for acoustical panels.
6. Items penetrating finished ceiling and ceiling-mounted items including the following:

a. Lighting fixtures.
b. Diffusers.
c. Grilles.
d. Speakers.
e. Sprinklers.
f. Access panels.

7. Show operation of hinged and sliding components covered by or adjacent to acoustical panels.
8. Minimum Drawing Scale: 1/8 inch = 1 foot (1:96).

B. Qualification Data: For testing agency.

C. Field quality-control reports.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels, suspension-system components, and accessories to Project site and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

PART 2 - PRODUCTS

2.1 ACOUSTICAL PANEL CEILINGS

A. Products: Provide the Products listed in the drawings.

2.2 METAL SUSPENSION SYSTEM

A. Metal Suspension-System Standard: Provide manufacturer's standard, direct-hung, metal suspension system and accessories according to ASTM C 635/C 635M and designated by type, structural classification, and finish indicated.

B. Products: Provide the Products listed in the drawings.

2.3 ACCESSORIES

A. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

B. Wire Hangers, Braces, and Ties: Provide wires as follows:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
2. Stainless-Steel Wire: ASTM A 580/A 580M, Type 304, nonmagnetic.
3. Nickel-Copper-Alloy Wire: ASTM B 164, nickel-copper-alloy UNS No. N04400.

C. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.

D. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.

E. Angle Hangers: Angles with legs not less than 7/8 inch (22 mm) wide; formed with 0.04-inch- (1-mm-) thick, galvanized-steel sheet complying with ASTM A 653/A 653M, G90 (Z275) coating designation; with bolted connections and 5/16-inch- (8-mm-) diameter bolts.

F. Hold-Down Clips: Manufacturer's standard hold-down.

G. Seismic Clips: Manufacturer's standard seismic clips designed to secure acoustical panels in place during a seismic event.

H. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.

I. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.

2.4 ACOUSTICAL SEALANT

A. Acoustical Sealant: As specified in Section 079219 "Acoustical Joint Sealants."

SECTION 095113 - ACOUSTICAL PANEL CEILINGS CONTINUED

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.

B. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

A. Install acoustical panel ceilings according to ASTM C 636/C 636M, seismic design requirements, and manufacturer's written instructions.

1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, counter splaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
8. Do not attach hangers to steel deck tabs.
9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
10. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member.
11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

D. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

E. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide precise fit.

1. Arrange directionally patterned acoustical panels as follows:
   a. As indicated on reflected ceiling plans.
   b. Install panels in a basket-weave pattern.
2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
3. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
4. For reveal-edged panels on suspension-system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension-system surfaces and panel faces flush with bottom face of runners.
5. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
6. Install seismic clips in areas indicated; space according to panel manufacturer's written instructions unless otherwise indicated.
7. Protect lighting fixtures and air ducts according to requirements indicated for fire-resistance-rated assembly.

3.4 ERECTION TOLERANCES

A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet (3 mm in 3.6 m) non-cumulative.

B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3 mm in 3.6 m) non-cumulative.

3.5 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.

B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

SECTION 096513 - RESILIENT WALL BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes Resilient base.

B. Related Sections:
1. Division 09 Section "Carpeting" for associated carpeting.
2. Division 09 Section "Resilient Tile Flooring" for associated resilient flooring.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: Manufacturer's Standard.

1.3 PROJECT CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer in spaces to receive resilient products.

B. Install resilient products after all other finishing operations have been completed.

PART 2 - PRODUCTS

2.1 RESILIENT BASE

A. Product: Provide the products indicated in the drawings.

2.2 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated. Limit VOC content to the following:
1. Cove Base Adhesives: Not more than 50 g/L.
2. Rubber Floor Adhesives: Not more than 60 g/L.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

C. Do not install resilient products until they are same temperature as the space where they are to be installed.

D. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.2 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Install resilient base at corners for an appearance of a sharp corner. Backside of base to be scored.

F. Do not stretch resilient base during installation.

G. Do not apply resilient base to woodworking.

3.3 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.

B. Floor Polish: Remove soil, visible adhesive, and surface blemishes from resilient stair treads before applying liquid floor polish. Apply two coats.

C. Cover resilient products until Substantial Completion.

END OF SECTION 096513

SECTION 096519 - RESILIENT TILE FLOORING

PART 1 - GENERAL

1. SUMMARY

A. Section Includes Resilient Tile Flooring.

B. Related Sections:

1. Division 09 Section "Resilient Base and Accessories"
2. Division 09 Section "Carpeting"

1. SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For each type of floor tile.

C. Samples for Verification: Full-size units of each color and pattern of floor tile required.

D. Product Schedule: For floor tile. Use same designations indicated on Drawings.

E. Qualification Data: For qualified Installer.

F. Maintenance Data: For each type of floor tile to include in maintenance manuals.

1. QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs workers for this Project who are competent in techniques required by manufacturer for floor tile installation indicated.

B. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.

1. DELIVERY, STORAGE, AND HANDLING

A. Store floor tile and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C). Store floor tiles on flat surfaces.

1. PROJECT CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive floor tile during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

A. manufacturer for applications indicated.

B. Close spaces to traffic during floor tile installation.

C. Close spaces to traffic for 48 hours after floor tile installation.

D. Install floor tile after other finishing operations, including painting, have been completed.

1. EXTRA MATERIALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Floor Tile: Furnish 1 box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

PART 2 - PRODUCTS

2.1 RESILIENT FLOOR TILE

A. Products: As Indicated in the Drawings.

2.2 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit floor tile and substrate conditions indicated.

1. Limit VOC content to the following:

a. VCT and Asphalt Tile Adhesives: Not more than 50 g/L.
b. Rubber Floor Adhesives: Not more than 60 g/L.

C. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer.

D. Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.
1. Manufacturer: Ceramic Tool Company
2. Product: "CTV" Anodized Aluminum

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of floor tile.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
4. Moisture Testing: Perform tests recommended by manufacturer and as follows. Proceed with installation only after substrates pass testing.

a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.

b. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have a maximum 75% relative humidity level measurement.

C. Access Flooring Panels:Remove protective film of oil or other coating using method recommended by access flooring manufacturer.

D. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

E. Do not install floor tiles until they are same temperature as space where they are to be installed.

1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 FLOOR TILE INSTALLATION

A. Comply with manufacturer's written instructions for installing floor tile.

B. Lay tiles in pattern indicated.

C. Lay tiles in pattern of colors and sizes indicated.

D. Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.

E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings. Extend floor tiles to center of door openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates.

G. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in finished floor areas.

H. Adhere floor tiles to flooring substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

3.4 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protection of floor tile.

B. Perform the following operations immediately after completing floor tile installation:

1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect floor tile products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Floor Polish: Remove soil, visible adhesive, and surface blemishes from floor tile surfaces before applying liquid floor polish. Apply two coat(s).

E. Joint Sealant: Apply sealant to resilient terrazzo floor tile perimeter and around columns, at door frames, and at other joints and penetrations.

F. Cover floor tile until Substantial Completion.

G. Do not apply resilient base to woodworking.

END OF SECTION 096519

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:58:13 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SPECIFICATIONS

SCALE: 12" = 1'-0" FLOOR:

A-005

SECTION 096816 CARPETING

PART 1 - GENERAL

1. SUMMARY

A. Section Includes Carpeting.

B. Related Requirements:

1. Division 09 Section "Resilient Base and Accessories"
2. Division 09 Section "Resilient Tile Flooring"

1. PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project Site.

1. ACTION SUBMITTALS

A. Product Data: For the following, including installation recommendations for each type of substrate:

B. Shop Drawings: Show the following, as applicable:

1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet.
2. Carpet type, color, and dye lot.
3. Locations where dye lot changes occur.
4. Seam locations, types, and methods.
5. Type of subfloor.
6. Type of installation.
7. Pattern type, repeat size, location, direction, and starting point.
8. Pile direction.
9. Type, color, and location of insets and borders.
10. Type, color, and location of edge, transition, and other accessory strips.
11. Transition details to other flooring materials.
12. Type of carpet cushion.

C. Samples: 12" x 12" minimum, for each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.

1.9 WARRANTY

A. Special Warranty for Carpet: Manufacturer agrees to repair or replace components of carpet installation that fail in materials or workmanship within specified warranty period.

1. Warranty does not include deterioration or failure of carpet due to unusual traffic, failure of substrate, vandalism, or abuse.
2. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, runs, loss of tuft bind strength, and delamination.
3. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CARPET

A. Products: As Indicated in the drawings.

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet manufacturer.

B. Adhesives: Water-resistant, mildew-resistant, nonstaining type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed carpet and is recommended or provided by carpet manufacturer.

1. Use adhesives with VOC content not more than 50 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Seam Adhesive: Hot-melt adhesive tape or similar product recommended by carpet manufacturer for sealing and taping seams and butting cut edges at backing to form secure seams and to prevent pile loss at seams.

D. Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile and width shown, of height required to protect exposed edge of carpet, and of maximum lengths to minimize running joints.
1. Manufacturer: Schluter
2. Product: "Schiene", Satin Anodized aluminum (AE)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet performance.

B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:

1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet manufacturer.
2. Subfloor finishes comply with requirements specified in Division 03 Section "Cast-in- Place Concrete" for slabs receiving carpet.
3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with CRI 104, Section 7.3, "Site Conditions; Floor Preparation," and with carpet manufacturer's written installation instructions for preparing substrates.

B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch (3 mm) wide or wider, and protrusions more than 1/32 inch (0.8 mm), unless more stringent requirements are required by manufacturer's written instructions.

C. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet manufacturer.

D. Broom and vacuum clean substrates to be covered immediately before installing carpet.

3.3 INSTALLATION

A. Comply with CRI 104, Section 9, and carpet manufacturer's written installation instructions for Direct-Glue-Down Installation.

B. Comply with carpet manufacturer's written recommendations and Shop Drawings for seam locations and direction of carpet; maintain uniformity of carpet direction and lay of pile. At doorways, center seams under the door in closed position.

C. Do not bridge building expansion joints with carpet.

D. Cut and fit carpet to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet manufacturer.

E. Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device.

G. Install pattern parallel to walls and borders to comply with CRI 104, Section 15, "Patterned Carpet Installations" and with carpet manufacturer's written recommendations.

3.4 CLEANING AND PROTECTING

A. Perform the following operations immediately after installing carpet:

1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.
2. Remove yarns that protrude from carpet surface.
3. Vacuum carpet using commercial machine with face-beater element.

B. Protect installed carpet to comply with CRI 104, Section 16, "Protecting Indoor Installations."

C. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet manufacturer.

D. Do not apply resilient base to woodworking.

END OF SECTION 096816

SECTION 097713 – STRETCHED-FABRIC WALL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Condition apply to this Section.

1.2 SUMMARY
A. Section includes site-upholstered wall systems.

1.3 DEFINITIONS
A. NRC: Noise reduction coefficient.
B. SAA: Sound absorption average

1.4 PREINSTALLATION MEETINGS
A. Pre-installation Conference: Conduct conference at Project Site.

1.5 ACTION SUBMITTALS
A. Product Data: For each product type.
1. Incude construction details, material descriptions, dimensions of individual components and profiles, and finishes for stretched-fabric systems.
2. Include furnished specialties and accessories.

B. Shop Drawings: For each stretched-fabric system. Include installation and system details; details at head, base, joints, and corners; and details at ceiling, floor base, and wall intersections. Indicate frame edge and core materials.

1. Include elevations showing panel sizes and direction of fabric weave and pattern matching.
2. Show sewn-seam locations, types, and methods.

C. Samples for Verification: For the following products prepared on Samples of size indicated below.

1. Fabric: 12" x 12" Sample, but not smaller than required to show complete pattern repeat, from dye lot to be used for the Work, and with specified treatments applied. Mark top and face of fabric.
2. Frame System: 12" square Sample(s) showing each edge profile and corner.
3. Core Material: 12" square Sample at corner.
4. Assembled System: Approximately 12" x 12" including joints and seams in mockup.

1.6 INFORMATIONAL SUBMITTALS
A. Coordination Drawings: Elevations and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Electrical outlets, switches, and thermostats.
2. Items penetrating or covered by stretched-fabric systems including the following:

a. Air outlets and inlets.
b. Speakers.
c. Alarms.
d. Sprinklers.
e. Access panels.

3. Show operation of hinged and sliding components covered by or adjacent to stretched- fabric systems.

B. Qualification Data: For Installer.
C. Product Certificates: For each type of stretched-fabric system.
D. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For stretched-fabric systems to include in maintenance manuals. Include fabric manufacturer's written cleaning, stain-removal, re-stretching, and reupholstering recommendations.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of systems required for this Project.
B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials, fabrication, and installation.

1. Build mockup of typical wall area as directed by Architect. Include intersection of wall and ceiling, corners, and perimeters.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

1.9 DELIVERY, STORAGE, AND HANDLING
A. Comply with fabric and stretched-fabric system manufacturers' written instructions for minimum and maximum temperature and humidity requirements for shipment, storage, and handling.
B. Deliver materials in unopened bundles and store in a temperature-controlled dry place with adequate air circulation.

1.10 FIELD CONDITIONS
A. Environmental Limitations: Do not install stretched-fabric systems until wet work in spaces is complete and dry, work at and above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
B. Lighting: Do not install stretched-fabric systems until a permanent level of lighting is provided on surfaces to receive stretched-fabric systems.
C. Air-Quality Limitations: Protect stretched-fabric systems from exposure to airborne odors such as tobacco smoke, and install systems under conditions free from odor contamination of ambient air.

1.11 WARRANTY
A. Special Warranty: Manufacturer and Installer agree to repair or replace components of stretched-fabric systems that fail in performance, materials, or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Acoustical performance.
b. Fabric sagging, distorting, or releasing from panel edge.
c. Warping of core.

2. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated in the drawings.

B. Source Limitations: Obtain stretched-fabric systems from single source from single manufacturer.

2.2 STRETCHED-FABRIC WALL SYSTEMS

A. Stretched-Fabric Wall System: Manufacturer's standard system consisting of facing material stretched taught over a frame and core material and secured in the frame.

1. Basis-of-Design Product: Indicated on Drawings.
2. Core Materials: Fiberglass Panel

a. Core-Face Layer: Manufacturer's standard tackable, impact-resistant, high- density board.
b. Nominal Core Thickness: 1 inch.

3. Performance Requirement: NRC of 0.8 Minimum
4. Facing Materials: fabrics as indicated on Drawings.
5. Lining Material: Fabrics as selected by Architect from manufacturer's full range.

2.3 FABRICATION

A. General: Use manufacturer's standard construction except as otherwise indicated; with facing material applied to face, edges, and back border of dimensionally stable core; and with rigid edges to reinforce panel perimeter against warpage and damage.

B. Mineral-Fiber Board Cores: Chemically harden core edges and areas of core where mounting devices are attached.

C. Core-Face Layer: Evenly stretched over core face and edges and securely attached to core; free from puckers, ripples, wrinkles, or sags.

D. Lining Material: Apply fabric fully covering visible surfaces of panel; with material stretched straight, on the grain, tight, square, and free from puckers, ripples, wrinkles, sags, blisters, seams, adhesive, or other visible distortions or foreign matter.

1. Square Corners: Tailor corners.
2. Radius and Other Nonsquare Corners: Attach material so there are no seams or gathering of material.
3. Fabrics with Directional or Repeating Patterns or Directional Weave: Mark fabric top and attach fabric in same direction so pattern or weave matches in adjacent panels.

E. Dimensional Tolerances of Finished Panels: Plus or minus 1/16 inch.

2.4 INSTALLATION MATERIALS

A. Installation Products, General: Concealed on back of system, recommended by stretched- fabric system manufacturer to support weight of system, fabric tension, and as follows:

B. Mounting Devices: Concealed on back of panel, recommended by manufacturer to support weight of panel, and as follows:

1. Splines: Manufacturer's standard concealed metal or plastic splines that engage the kerfed edges of the panel, with other moldings and trim for interior corners, exterior corners, and exposed edges, with factory-uppplied finish on exposed items.
2. Adhesives: As recommended by fabric-wrapped, wall panel manufacturer and with a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
3. Adhesive Tape Strips: Manufacturer's standard 1/16-inch- (1.6-mm-) thick, double-sided foam tape.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fabric, materials, substrates, areas, and conditions, with Installer present, for compliance with requirements, installation tolerances, and other conditions affecting performance of stretched-fabric systems.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

SECTION 097713 – STRETCHED-FABRIC WALL SYSTEMS CONTINUED

3.2 PREPARATION

A. Measure each area and establish layout of panels and joints sizes indicated on Drawings within a given area.

B. Before installation, allow fabric to adjust and become stable in spaces where it will be installed in accordance with stretched-fabric system manufacturer's written instructions. Acclimatize

fabric for minimum of 24 hours at ambient temperature and humidity conditions indicated for spaces when occupied for their intended use.

3.3 INSTALLATION

A. General: Install stretched-fabric systems in accordance with system manufacturer's written instructions.

1. Provide continuous perimeter frames of each profile indicated, designed to be inconspicuous when covered by fabric facing, with smooth edges, and with surface finish that will not telegraph through fabric facing.
2. Install framing around penetrations.
3. Tightly fit framing to adjacent construction and securely attach to substrate.
4. Install core material with full coverage, flush with face of stretched-fabric system frame.
5. Attach frame and core to substrate with adhesive or fasteners or both to support system and prevent deformation of components.
6. Install stretched-fabric systems vertical and plumb, unless otherwise indicated; true in plane; and with fabric square to the grain as indicated.
7. Install jointed panels as indicated.

B. Fabric Installation: Apply fabric monolithically in continuous run over area, without joints or reveals, except where panel joints or mid-span frames are indicated.

1. Fabric Direction: Run fabric as indicated.
2. Fabric Sequence: Maintain sequence of fabric drops; match and level fabric pattern and grain.
3. Fabric Alignment: Install fabric with patterns or directional weaves as indicated.
4. Core Overlay: Evenly stretch over core face and edges; free from puckers, ripples, wrinkles, and sags.
5. Stretch and secure fabric to frame edges and so frame and frame attachment method are concealed by fabric unless otherwise indicated.
6. Stretch fabric taught and square without puckers, ripples, or distortions. Acclimatize and re-stretch if recommended by stretched-fabric system manufacturer. Repair distortions, wrinkles, and sagging.

3.4 INSTALLATION TOLERANCES

A. Edge Straightness: Plus or minus 1/32 inch.

B. Variation from Level and Plumb: Plus or minus 1/16 inch.

C. Variation of Panel-Joint Width: Not more than 1/16 inch.

3.5 CLEANING

A. Clip loose threads; remove pills and extraneous materials.

B. Clean panels on completion of installation to remove dust and other foreign materials according to manufacturer's written instructions.

END OF SECTION 09 77 13

SECTION 099123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes surface preparation and the application of paint systems on
1. Steel.
2. Wood.
3. Gypsum board.

1.2 DEFINITIONS

A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.3.SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches (200 mm) square.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.

4. Label each Sample for location and application area.

C. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.
3. VOC content.

1.4 EXTRA MATERIALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: One un-opened gallon of each material and color applied.

1.5 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Tenant.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: As Indicated in the drawings.

B. Products: As Indicated in the drawings.

2.2 PAINT, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction or the following:

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Dry-Fog Coatings: 400 g/L.
4. Primers, Sealers, and Undercoaters: 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Floor Coatings: 100 g/L.

SECTION 099123 - INTERIOR PAINTING CONTINUED

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMU): 12 percent.
3. Wood: 15 percent.
4. Gypsum Board: 12 percent.
5. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer.

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

H. Aluminum Substrates: Remove loose surface oxidation.

I. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Tenant may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. Steel Substrates:

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer, rust-inhibitive, water based MPI #107.
b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (Gloss Level 5), MPI #147

B. Wood Substrates: Including wood trim, doors, and millwork.

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer, latex, for interior wood, MPI #39.
b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
c. Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (Gloss Level 5), MPI #147.

C. Gypsum Board Partition Substrates:

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.
b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
c. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 3), MPI #145.

D. Gypsum Board Ceiling Horizontal and Vertical Substrates:

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.
b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
c. Topcoat: Latex, interior, institutional low odor/VOC, flat (Gloss Level 1), MPI #143.

END OF SECTION 099123

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
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Plot Date:: 6/1/2021 11:58:14 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SPECIFICATIONS

SCALE: 12" = 1'-0" FLOOR:

A-006

SECTION 102219 - GLASS WALL SYSTEMS

PART 1 - GENERAL

1. SUMMARY

A. Section includes fixed, framed glass panel partitions with the following:
   1. Swing single wood door
   2. Swing glass door
   3. Sliding glass door
   4. Sliding pair of glass door

1. ADMINISTRATIVE REQUIREMENTS

A. Coordination:

   1. Coordinate installation of glass panel partitions with installation of floor, wall, and ceiling construction to comply with substrate tolerance requirements of partition manufacturer.
   2. Coordinate installation of anchors and secondary structural members indicated on approved glass panel partition shop drawings and specified in other sections.

B. Preinstallation Conference: Conduct conference at Project Site.

1. ACTION SUBMITTALS

A. Product Data: For each glass panel partition and door component specified, including:

   1. Glass panels.
   2. Frame and sill tracks.
   3. Door hardware and accessories.

B. Shop Drawings: For demountable partitions.

   1. Include plans, elevations, sections, and details. Provide numbered panel installation sequence.
   2. Show locations and requirements for tracks, bracing, blocking, and attachments to other work.

C. Samples for Verification: For each exposed component including hardware, for each color and finish selected, of size indicated below:

   1. Glass: Units 12 inches (300 mm) square.
   2. Exposed Frame, Track, and Sill Members: Not less than 6 inches (150 mm) long.
   3. Hardware: One of each type of exposed door hardware items.

1. INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from the installers of the items involved.

   1. Suspended-ceiling components and dimensioned ceiling-grid layout.
   2. Locations of fixed door and window mullions.

B. Product Certificates: For each type of demountable partition.

C. Product Test Reports: For each type of demountable-partition assembly, for tests performed by manufacturer and witnessed by a qualified testing agency.

D. Warranty: Sample of unexecuted manufacturer warranty.

E. Qualification Data: For qualified installer.

1. CLOSEOUT SUBMITTALS

A. Maintenance Data: For demountable partitions to include in maintenance manuals.

1. QUALITY ASSURANCE

A. Installer Qualifications: Experienced Installer equipped and trained for installation of glass panel partitions required for this Project with record of successful completion of not less than five projects of similar scope.

B. Single Source Responsibility: Provide glass panel partitions and associated hardware by a single manufacturer through a single source.

C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

   1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
   2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1. FIELD CONDITIONS

A. Finished Spaces: Do not deliver or install Glass Wall Systems until finishes in spaces to receive them are complete, including suspended ceilings, floors, carpeting, and painting.

B. Field Measurements: Indicate measurements on Shop Drawings.

1. WARRANTY

A. Special Manufacturer's Warranty: Standard form in which manufacturer agrees to repair or replace components of glass panel partitions that demonstrate deterioration or faulty operation due to defects in materials or workmanship under normal use within warranty period specified.

   1. Warranty Period: [Five] years date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Acoustical Performance: Where acoustical rating is indicated, provide demountable-partition assembly tested by a qualified testing agency for sound transmission loss performance according to ASTM E 90, calculated according to ASTM E 413, and rated for not less than the STC value indicated

2.2 GLASS PANEL PARTITIONS

A. Fixed Glass Panel Partitions: Framed glass panel partition with perimeter channel frames, butt- glazed dry joint and framed joints between panels, equipped with swinging doors where indicated.

   1. Product:Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

      a. Muraflex: Mimo Single Glazed 3/8" Clear Tempered Glass. All details and finishes to match Building Standard system.

B. Acoustical Rating:

   1. Framed Partition: STC 38
   2. Swinging Door with 12.0 mm laminated glass: STC 15

2.10 DOOR HARDWARE AND FITTINGS

A. Door Hardware, General: All-glass door hardware units in types, sizes, quantities, and mounting locations recommended by manufacturer for glass door types, sizes, and operation. For exposed components, match metal and finish of exposed partition fittings unless otherwise noted.

B. Pulls and Handles: As indicated in Division 08 Section "Door Hardware."

C. Rail Fittings for Swinging Doors: 4" Top and Bottom.

D. Concealed Floor Closers and Top Pivots: As indicated in Division 08 Section "Door Hardware."

E. Accessory Fittings: Floor stops.

2.11 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Mitered corners to be cut in factory prior to applying factory finish. No field cut mitered joints will be accepted.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine partition substrates to determine if work is within glass panel partition manufacturer's required tolerances and ready to receive work. Proceed with installation of partitions once conditions affecting installation and performance of partitions meet manufacturer's requirements.

B. Verify that partition construction adjacent to acoustically-rated glass panel partitions complies with requirements of ASTM E557.

SECTION 102219 - GLASS WALL SYSTEMS CONTINUED

3.2 PARTITION INSTALLATION

A. General: Comply with glass panel partition manufacturer's written installation instructions and approved shop drawings.

B. Install glass panel partitions after other finishing operations have been completed.

C. Set units level, plumb, and true to line, with uniform joints.

D. Fasten glass panel partition framing to building structure and supports as indicated on approved shop drawings, utilizing approved fasteners and spacing.

E. Set framing in continuous bed of sealant or in positive contact with preformed gasket where indicated.

F. Set, seal, and grout floor closer cases.

3.3 ADJUSTING

A. Adjust doors and hardware to produce smooth operation and tight, uniform fit.

B. Adjust door closers to required timing and force.

C. Adjust latches and locks for smooth operation.

D. Test and adjust hardware linked to access control system.

E. Replace damaged panels and accessories.

3.4 CLEANING

A. Clean glass panels in accordance with glass manufacturer's written instructions. Do not use cleaning agents or methods not approved by glass manufacturer.

B. Clean exposed metal surfaces to factory new appearance.

END OF SECTION 102215

SECTION 104413 - FIRE EXTINGUISHERS AND CABINETS

PART 1 - GENERAL

1. SUMMARY

A. Section Includes: Fire-protection cabinets for portable fire extinguishers. Hand-carried fire extinguishers

1. SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for fire protection cabinets.

   1. Fire Protection Cabinets: Include roughing-in dimensions, details showing mounting methods, relationships of box and trim to surrounding construction, door hardware, cabinet type, trim style, and panel style.

B. Shop Drawings: For fire protection cabinets. Include plans, elevations, sections, details, and attachments to other work.

C. Product Schedule: For portable fire extinguishers and fire protection cabinets. Coordinate final fire protection cabinet schedule with fire extinguisher schedule to ensure proper fit and function. Use same designations indicated on Drawings.

D. Maintenance Data: For fire protection cabinets to include in maintenance manuals.

1. QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site.

1. COORDINATION

A. Coordinate size of fire protection cabinets to ensure that type and capacity of fire extinguishers indicated are accommodated.

B. Coordinate size of fire protection cabinets to ensure that type and capacity of fire hoses, hose valves, and hose racks indicated are accommodated.

C. Coordinate sizes and locations of fire protection cabinets with wall depths.

PART 2 - PRODUCTS

2.1 FIRE PROTECTION CABINET (FEC)

A. Cabinet Material: One-piece Steel sheet.

B. Fully recessed Cabinet: Cabinet box fully recessed in new walls to suit style of trim indicated, with one-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend).

C. Basis-of-Design Product: Subject to compliance with requirements, provide products indicated in the drawings.

D. Cabinet Door and Trim Material: One-piece Steel sheet.

E. Finish: White, baked enamel.

2.2 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

A. Fire Extinguishers: Type, size, and capacity for each fire protection cabinet and mounting bracket indicated.

   1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

      a. Amerex Corporation.
      b. Ansul Incorporated; Tyco International Ltd.
      c. Badger Fire Protection; a Kidde company.
      d. Buckeye Fire Equipment Company.
      e. Fire End & Croker Corporation.
      f. J. L. Industries, Inc.; a division of Activar Construction Products Group.
      g. Kidde Residential and Commercial Division; Subsidiary of Kidde plc.
      h. Larsen's Manufacturing Company.
      i. Moon-American.
      j. Pem All Fire Extinguisher Corp.; a division of PEM Systems, Inc.
      k. Potter Roemer LLC.
      l. Pyro-Chem; Tyco Safety Products.

   2. Valves: Manufacturer's standard.
   3. Handles and Levers: Manufacturer's standard.
   4. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B and bar coding for documenting fire extinguisher location, inspections, maintenance, and recharging.

B. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 2-A:10-B:C, 5-lb (2.3-kg) nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in for hose valves and cabinets to verify actual locations of piping connections before cabinet installation.

B. Examine walls and partitions for suitable framing depth and blocking where recessed cabinets will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare recesses for recessed fire protection cabinets as required by type and size of cabinet and trim style.

3.3 INSTALLATION

A. General: Install fire protection cabinets in locations and at mounting heights indicated or, if not indicated, at heights indicated below:

   1. Fire Protection Cabinets: 54 inches (1372 mm) above finished floor to top of cabinet.

B. Fire Protection Cabinets: Fasten cabinets to structure, square and plumb.

   1. Unless otherwise indicated, provide recessed fire protection cabinets. If wall thickness is not adequate for recessed cabinets, provide semirecessed fire protection cabinets.
   2. Provide inside latch and lock for break-glass panels.
   3. Fasten mounting brackets to inside surface of fire protection cabinets, square and plumb.

3.4 ADJUSTING AND CLEANING

A. Remove temporary protective coverings and strippable films, if any, as fire protection cabinets are installed unless otherwise indicated in manufacturer's written installation instructions.

B. Adjust fire protection cabinet doors to operate easily without binding. Verify that integral locking devices operate properly.

C. On completion of fire protection cabinet installation, clean interior and exterior surfaces as recommended by manufacturer.

D. Touch up marred finishes or replace fire protection cabinets that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by fire protection cabinet and mounting bracket manufacturers.

E. Replace fire protection cabinets that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 104413

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Plot Date:: 6/1/2021 11:58:14 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SPECIFICATIONS

SCALE: 12" = 1'-0" FLOOR:

A-007

1 Level 2 DEMOLITION PLAN
AD-100 SCALE: 1/8" = 1'-0"

DEMOLITION PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING PARTITION TO BE DEMOLISHED
- EXISTING DOOR TO REMAIN
- EXISTING DOOR TO BE DEMOLISHED
- NOT IN SCOPE

GENERAL DEMOLITION NOTES

1. PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND COORDINATE AS REQUIRED TO COMPLETE ALL DEMOLITION SCOPE SHOWN IN THESE DOCUMENTS.
2. REMOVE OR REPAIR ANY ITEM NOT SPECIFICALLY IDENTIFIED, BUT REQUIRED TO BE REMOVED OR REPAIRED TO PREPARE FOR THE NEW WORK OR OTHERWISE PRODUCE A FINISHED PRODUCT AS INDICATED IN THE DOCUMENTS.
3. ITEMS TO BE REMOVED SHALL INCLUDE ALL ACCESSORIES (SUCH AS SWITCHES, THERMOSTATS, OUTLETS, MILLWORK, ETC.) IN ANY AREA WHERE ADJOINING PARTITIONS ARE SHOWN TO BE REMOVED. REVIEW ANY QUESTIONABLE ITEMS TO BE REMOVED WITH THE ARCHITECT BEFORE PROCEEDING.
4. DEMOLITION PLANS SHOW THE APPROXIMATE LAYOUT OF EXISTING PARTITIONS, DOORS, WINDOWS, ETC., AND ARE NOT INTENDED TO REPRESENT EXACT AS-BUILT CONDITIONS. ALL INFORMATION SHALL BE VERIFIED IN FIELD BY THE CONTRACTOR. THE INTENT OF THE SELECTIVE DEMOLITION WORK IS TO REMOVE EXISTING FIT-OUT CONSTRUCTION ALLOWING ALL NEW CONSTRUCTION TO PROCEED. THE DEMOLITION DRAWINGS MAY NOT INDICATE ALL ITEMS TO BE REMOVED AND ARE TO BE USED AS A PART OF THE GENERAL CONTRACTOR'S ON SITE SURVEY TO DETERMINE THE COMPLETE SCOPE OF THE DEMOLITION WORK, AS INDICATED BY THE CONTRACT DOCUMENTS AND REQUIRED BY THE ON-SITE CONDITIONS.
5. COORDINATE ALL SHUTDOWNS AND/OR SERVICE INTERRUPTIONS WITH THE OWNER AND/OR AUTHORITIES HAVING JURISDICTION. NO SHUTDOWNS AND/OR SERVICE INTERRUPTIONS SHALL TAKE PLACE WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER. FAILURE TO COORDINATE PROPOSED SHUTDOWNS IN A TIMELY FASHION IS NOT CAUSE FOR A DELAY CLAIM.
6. DEMOLITION OPERATIONS SHALL TAKE PLACE ONLY WITHIN THE PARAMETERS OF THE APPROVED DEMOLITION SCHEDULE.
7. PROVIDE TEMPORARY UTILITIES, SAFETY DEVICES, FIRE PROTECTION IN ACCORDANCE WITH LOCAL FIRE DEPARTMENT, BARRIERS, ETC., AS REQUIRED, TO MAINTAIN A SAFE WORKING ENVIRONMENT DURING DEMOLITION OPERATIONS.
8. PATCH AND/OR REPAIR ANY ITEMS TO REMAIN THAT ARE DAMAGED BY REMOVAL OPERATIONS. REFINISH TO MATCH EXISTING ADJACENT FINISH, OR AS NOTED HEREIN. DOCUMENT ANY PRE-EXISTING DAMAGE AND NOTIFY THE ARCHITECT OF ANY DAMAGE PRIOR TO PRICING OR, AFTER AWARD, PRIOR TO PROCEEDING WITH ADJACENT WORK.
9. WHERE FINISHES ARE TO BE REMOVED, SUCH AS FLOORING, BASE, WALLCOVERING, ETC., UTILIZE A HIGH "STANDARD OF CARE" DURING REMOVAL TO MAINTAIN A SMOOTH AND LEVEL SUBSTRATE WHICH CAN BE PREPARED TO RECEIVE NEW FINISHES.
10. SCRAPE AND REMOVE ALL EXISTING IRREGULAR MATERIALS WHICH CAUSE RISES OR DEPRESSIONS IN THE FLOORING SURFACE, SUCH AS FASTENERS, OUTLET CORES, COVER PLATES, RESILIENT FLOOR COVERINGS, CARPET, CARPET PAD, FLASH PATCH, CONCRETE FILL, PLYWOOD, ETC.
11. TERMINATE AND REMOVE ALL PROJECT-RELEVANT POWER AND COMMUNICATION CONDUITS, DEVICES, RACEWAYS, ETC., BACK TO PANELS OR JUNCTIONS.
12. ALL DEVICES IN PARTITIONS SLATED TO BE REMOVED, SHALL ALSO BE REMOVED, BROUGHT BACK TO SOURCE OR RE-ROUTED / RELOCATED TO MAINTAIN FUNCTIONALITY IF REQUIRED.
13. ANY ITEMS NOT SPECIFICALLY IDENTIFIED, BUT REQUIRED TO BE REMOVED OR REPAIRED TO PREPARE FOR NEW WORK AS SHOWN IN THE CONTRACT DOCUMENTS, IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
14. REMOVE ALL MATERIALS IN A WORKMANLIKE MANNER AS APPROVED BY THE OWNER. OPENINGS, HOLES, ETC., SHALL BE NEATLY CUT, PLUMB, SQUARE, AND TRUE TO THE DIMENSIONS REQUIRED.
15. LEGALLY DISPOSE OF DEMOLISHED MATERIALS; RECYCLE MATERIALS AS REQUIRED BY SPECIFICATIONS.
16. PROTECT ITEMS OR MATERIALS INDICATED TO BE REUSED OR SALVAGED. COORDINATE WITH THE OWNER FOR DELIVERY OF SALVAGED ITEMS OR MATERIALS.
17. RESTORE ANY SURFACES OF FINISHES WHICH ARE SCRATCHED, MARRIED OR OTHERWISE DAMAGED BY THE INSTALLATION, MOVEMENT OR REMOVAL OF EQUIPMENT ASSOCIATED WITH DEMOLITION PROCEDURES (E.G. SCAFFOLDING, CONTAINERS, ETC.)
18. ALL LIFE SAFETY SYSTEMS SHALL REMAIN ACTIVE DURING DEMOLITION. THE SPACE SHALL BE MAINTAINED AND LEFT IN A SAFE CONDITION. ALL FLOOR OPENINGS, HAZARDS, AND UNSAFE CONDITIONS SHALL BE IDENTIFIED AND THE GENERAL CONTRACTOR SHALL PROVIDE PROPER NOTIFICATION AND OBSTACLES TO SECURE PUBLIC SAFETY.
19. PROTECT ALL ITEMS TO REMAIN THAT ARE EXPOSED TO SELECTIVE DEMOLITION. LOCATE DUST-PROOF TEMPORARY BARRIERS/PARTITIONS AS REQUIRED TO CONTROL WORK/OCCUPIED AREAS. ALL FIRE EGRESS AND LIFE SAFETY ROUTES FOR OCCUPIED AREAS ARE TO REMAIN ACCESSIBLE DURING ALL PHASES OF WORK.
20. SCHEDULE ALL SHUTDOWNS THAT AFFECT UTILITIES AND PORTIONS OF THE BUILDING THAT MUST REMAIN IN OPERATION WITH THE OWNER AND PROPER AUTHORITIES PRIOR TO IMPLEMENTING.
21. DEMOLITION WORK SHALL BE SCHEDULED AT ALL TIMES AND BE SUBJECT TO THE DIRECTION AND APPROVAL OF THE OWNER AND IMPLEMENTED WITHOUT DISTRIBUTION TO OCCUPIED AREAS OF THE BUILDING SURROUNDING THE DEMOLITION ZONE.
22. ALL DOORS, FRAMES, HARDWARE, MECHANICAL ITEMS, PLUMBING FIXTURES, LIGHT FIXTURES, AND SPECIAL EQUIPMENT SHOWN TO BE REUSED OR SALVAGED, SHALL BE CLEAN AND FREE OF DEFECTS, PROTECTED, SAVED AND REUSED, RETURNED TO BUILDING STOCK, OR DISPOSED OF AS DIRECTED.
23. FURNISH A SYSTEM OF TEMPORARY LIGHT AND POWER IN THE SPACE DURING DEMOLITION AND CONSTRUCTION.
24. DESIGN, PROVIDE, ERECT, AND MAINTAIN NECESSARY TEMPORARY SHORING, BRACING, FRAMING, OR SUPPORT WHERE LOAD BEARING STRUCTURAL OR SUPPORTING MEMBERS ARE WEAKENED BY CUT OR OPENINGS OR SUBJECT TO DAMAGE FROM DEMOLITION OPERATIONS AND OTHERWISE AS REQUIRED FOR SAFETY OR TO PROTECT FINISH SURFACES FROM DAMAGE.
25. IN ACCORDANCE WITH OWNER PROVIDED ASBESTOS ABATEMENT REPORT, ABATE ASBESTOS WITHIN THE AREAS OF DEMOLITION AND CONSTRUCTION DEFINED BY THESE DOCUMENTS.
26. ALL MECHANICAL, ELECTRICAL AND PLUMBING DEMOLITION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, RULES, REGULATIONS OF LOCAL CITY, TOWNSHIP, COUNTY, AND STATE REQUIREMENTS.
27. LEVEL AND PREPARE CONCRETE FLOOR SLABS AS REQUIRED TO RECEIVE SPECIFIED NEW FLOOR FINISH. FILL AND FIRESTOP ALL OPENINGS IN FLOORS, CEILINGS AND OTHER RATED ASSEMBLIES TO MAINTAIN RATING INTEGRITY.
28. THE GENERAL CONTRACTOR SHALL IDENTIFY EQUIPMENT AND MATERIALS TO BE RELOCATED AND COORDINATE THEIR METHODS OF REMOVAL, SAFE STORAGE, INVENTORY, ETC. PRIOR TO START OF DEMOLITION WORK.
29. PROVIDE A DUST PROOF BARRIER AROUND AREAS OF CONSTRUCTION FOR DURATION OF WORK. FOREIGN OBJECTS AND ODORS ARE TO BE PREVENTED FROM ENTERING THE BUILDING VENTILATION SYSTEM.
30. DO NOT CUT OR REMOVE CONSTRUCTION WHICH MIGHT WEAKEN OR IMPAIR THE STRUCTURAL INTEGRITY OR STRENGTH OF THE STRUCTURAL FRAMING OR SUPPORT SYSTEMS WHICH ARE TO REMAIN.
31. THE BUILDING AND SITE SHALL BE LEFT BROOM CLEAN & DRY AT THE END OF EACH DAY AND AT THE COMPLETION OF ALL DEMOLITION WORK.

KEYNOTES

Note	Description
0.1	REMOVE ALL EXISTING SUSPENDED CEILINGS, DRYWALL SOFFITS, LIGHTS, AND DIFFUSERS, ETC. TYPICAL THROUGHOUT. IF NEW HUNG CEILING IS NOT TO BE INSTALLED - REMOVE BLACK IRON AND HANGERS. PATCH SLAB ABOVE AS REQUIRED TO NEW LIKE FINISH
0.2	REMOVE EXISTING DOOR, HARDWARE, AND FRAME
0.4	REMOVE EXISTING MILLWORK WAINSCOTTING, CHAIR RAIL, ACOUSTIC WRAPPED PANELS, DIRECT GLUE FABRIC WALLCOVERING, FLOOR MATERIAL AND VINYL BASE. PATCH AND REPAIR SURFACES TO RECEIVE NEW WORK.
0.5	REMOVE EXISTING CHERRY WALL PANELING AND AV EQUIPMENT BACK TO BASE BUILDING WALL/STRUCTURE. PATCH AND REPAIR EXISTING STRUCTURE TO RECEIVE NEW WORK.
0.6	REMOVE EXISTING OPERABLE PARTITION, TRACK, HARDWARE AND POCKET DOORS.
0.7	REMOVE EXISTING ACOUSTICAL CEILINGS, GRID AND LIGHT FIXTURES. REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION/SCOPE.
0.9	REMOVE EXISTING SECURITY TURNSTILES AND MODIFY EXISTING PARTIAL HEIGHT GLASS PARTITION AS REQUIRED TO ACCEPT NEW TURNSTILE CONFIGURATION.
0.10	REMOVE EXISTING MILLWORK DESK. PROTECT EXISTING FLOOR TILE FROM DAMAGE. COIL EXISTING SECURITY, ELECTRICAL AND ANCILLARY CABLING ABOVE CEILING/IN WALL FOR REUSE IN NEW DESK. REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION/SCOPE.
0.11	REMOVE EXISTING TILE WALL BASE ONLY TAKING ALL APPROPRIATE STEPS NECESSARY TO PROTECT EXISTING FLOOR TILE DURING CONSTRUCTION. EXISTING FLOOR TILE TO REMAIN, UNLESS NOTED OTHERWISE.
0.12	REMOVE EXISTING STONE FLOOR TILE TO EXTENTS INDICATED. REMOVE/ CLEAN ALL TILE RELATED MUDSET/ UNDERLAY MATERIAL FROM EXISTING SLAB. TAKE ALL APPROPRIATE STEPS NECESSARY TO SALVAGE EXISTING STONE FLOOR TILE TO BE REMOVED FOR REUSE AND PATCHING AREAS OF NEW WORK.
0.13	REMOVE EXISTING CARPET INSERT AND ASSOCIATED TRANSITION STRIP. PREPARE EXISTING SURFACES TO RECEIVE NEW WORK/ FINISHES. COORDINATE WITH NEW WORK FINISH EXTENT PLANS FOR SCOPE OF NEW WORK.
0.14	REMOVE EXISTING CARPET AT STAIRCASE.
0.15	REMOVE EXISTING CARPET AND WALL BASE BEHIND RECEPTION DESK.
0.16	REMOVE EXISTING PLASTIC LAMINATE PANELS AND DISPLAY SYSTEM. EXISTING SUB-STRUCTURE TO REMAIN AND PREPARED TO RECEIVE NEW FINISH.
0.17	REMOVE EXISTING PLASTIC LAMINATE MILLWORK AND RECESSED DOWNLIGHTS, WHERE PRESENT, IN SOFFITS ONLY. EXISTING GWB PARTITIONS TO REMAIN.
0.19	EXISTING FIRE ALARM DEVICE TO BE REMOVED AND REINSTALLED. REFER TO ENGINEERING DRAWINGS FOR MORE INFORMATION.
0.20	REMOVE EXISTING CARPET TILE TO EXTENTS INDICATED. SALVAGE AND RETURN CARPET TO OWNER FOR ATTIC STOCK. EXISTING WALL BASE TO REMAIN.
0.21	REMOVE AND SALVAGE EXISTING DEFIBRILLATOR CABINET. CONTRACTOR TO STORE AND REINSTALL AS INDICATED IN NEW WORK PLANS.
0.23	REMOVE EXISTING LOGO SIGNAGE AND RETURN TO OWNER.
0.25	REMOVE AND STORE EXISTING SECURITY CAMERAS PER OWNER'S INSTRUCTION. CAMERAS TO BE REINSTALLED DURING CONSTRUCTION PHASE.
0.26	EXISTING CEILING GRID TO REMAIN. REMOVE EXISTING ACOUSTIC CEILING TILES AND SALVAGE NON-CHIPPED/ NON-STAINED TILES FOR RE-USE.
0.27	EXISTING SOFFITS, GRID AND ACOUSTICAL TILES TO REMAIN. COORDINATE REMOVAL OF ACOUSTICAL CEILING TILES AS REQUIRED TO GAIN ACCESS ABOVE CEILING.
0.28	REMOVE ALL EXISTING LIGHT FIXTURES AND AV EQUIPMENT. REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL SCOPE OF WORK AND INFORMATION. EXISTING ELECTRICAL FOR LIGHT FIXTURES TO BE REWORKED AS REQUIRED TO RECEIVE NEW FIXTURES/ LAYOUT.
0.29	REMOVE EXISTING SECURITY DEVICES, REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION AND SCOPE.
0.30	GC TO REMOVE AND STORE EXISTING CEILING TILE AND GRID AS REQUIRED TO PERFORM MECHANICAL WORK. REFER TO MECHANICAL DRAWINGS. GC TO RE-INSTALL CEILING/CEILING TILES AS REQUIRED.
0.31	GC TO PERFORM SELECTIVE DEMO AS SHOWN TO FACILITATE IN MECHANICAL DEMOLITION. REFER TO MECHANICAL DRAWINGS. SELECTIVE DEMO OF EXISTING HARD CEILING AS TIGHT TO EXTENT REQUIRED AS NECESSARY TO PERFORM WORK.

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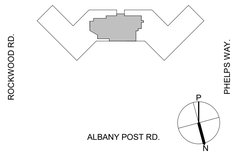
Key Plan:



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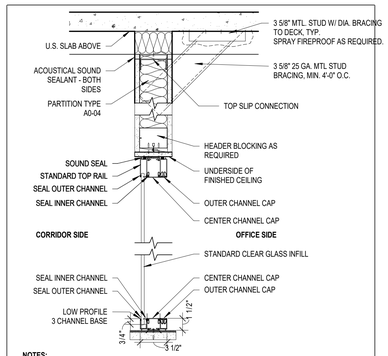
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

2ND FLOOR - DEMOLITION PLAN

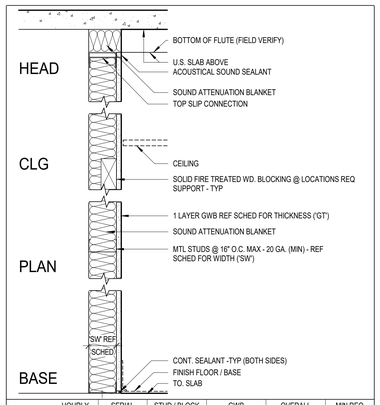
SCALE: As indicated FLOOR:

AD-100

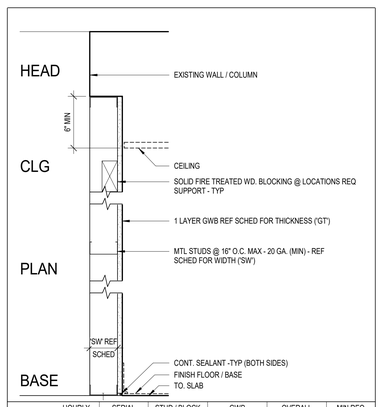


NOTES:
- #12 COUNTERSUNK @ 457mm (18") SPACING FASTENER (SUITABLE TO SUBSTRATE) RECOMMENDED MINIMUM DETAIL ONLY
- DETAIL MAY BE SLIGHTLY DIFFERENT FROM PROPER MANUFACTURER INSTALLATION INSTRUCTIONS. THOSE INSTRUCTIONS SHALL TAKE PRECEDENCE ON ALL STOREFRONTS.

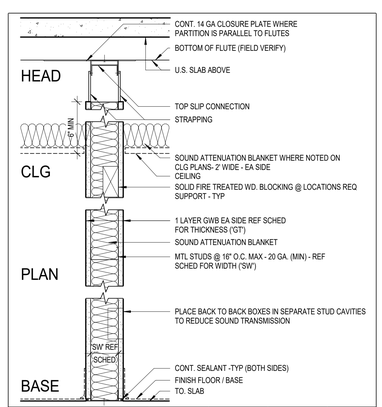
TYPE	HOURLY RATING	SERIAL NUMBER	STUD / BLOCK WIDTH (SW)	GWB THK (GT)	OVERALL WIDTH (OW)	MIN. REQ'D STC
G	0	00	-	-	-	-
		01	-	-	-	-
		02	-	-	-	-
		03	-	-	-	
		04	-	-	3 1/2"	
		05	-	-	-	
UL DESIGN N/A		06	-	-	-	
		07	-	-	-	



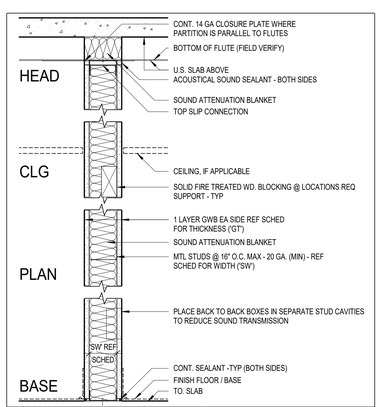
TYPE	HOURLY RATING	SERIAL NUMBER	STUD / BLOCK WIDTH (SW)	GWB THK (GT)	OVERALL WIDTH (OW)	MIN REQ STC
F	0	00	-	-	-	-
		01	-	-	-	-
		02	1 5/8"	5/8"	2 1/4"	-
		03	2 1/2"	5/8"	3 1/8"	-
		04	3 5/8"	5/8"	4 1/4"	-
		05	-	-	-	-
UL DESIGN N/A		06	-	-	-	-
		07	-	-	-	-



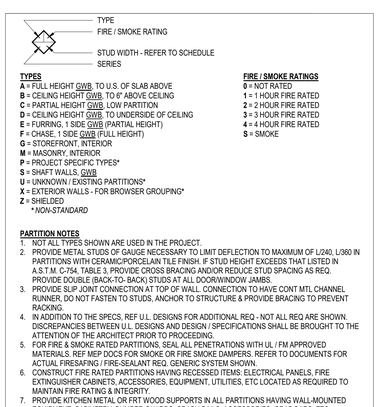
TYPE	HOURLY RATING	SERIAL NUMBER	STUD / BLOCK WIDTH (SW)	GWB THK (GT)	OVERALL WIDTH (OW)	MIN REQ STC
E	0	10	-	-	-	-
		11	-	-	-	-
		12	1 5/8"	5/8"	2 1/4"	-
		13	2 1/2"	5/8"	3 1/8"	-
		14	3 5/8"	5/8"	4 1/4"	-
		15	-	-	-	-
UL DESIGN N/A		16	-	-	-	-
		17	-	-	-	-



TYPE	HOURLY RATING	SERIAL NUMBER	STUD / BLOCK WIDTH (SW)	GWB THK (GT)	OVERALL WIDTH (OW)	MIN REQ STC
B	0	00	-	-	-	-
		01	-	-	-	-
		02	1 5/8"	5/8"	2 7/8"	-
		03	2 1/2"	5/8"	3 3/4"	-
		04	3 5/8"	5/8"	4 7/8"	TBD
		05	-	-	-	-
UL DESIGN N/A		06	-	-	-	-
		07	-	-	-	-



TYPE	HOURLY RATING	SERIAL NUMBER	STUD / BLOCK WIDTH (SW)	GWB THK (GT)	OVERALL WIDTH (OW)	MIN REQ STC
A	0	00	-	-	-	-
		01	-	-	-	-
		02	1 5/8"	5/8"	2 7/8"	-
		03	2 1/2"	5/8"	3 3/4"	47
		04	3 5/8"	5/8"	4 7/8"	50
		05	6"	5/8"	7 1/4"	50
UL DESIGN U419- 0 HR		06	-	-	-	-
		07	-	-	-	-



TYPES
A = FULL HEIGHT GWB, TO U.S. OF SLAB ABOVE
B = CEILING HEIGHT GWB, TO 6" ABOVE CEILING
C = PARTIAL HEIGHT GWB, LOW PARTITION
D = CEILING HEIGHT GWB, TO UNDERSIDE OF CEILING
E = FURRING, 1 SIDE GWB (PARTIAL HEIGHT)
F = CHASE, 1 SIDE GWB (FULL HEIGHT)
G = STOREFRONT, INTERIOR
M = MASONRY, INTERIOR
P = PROJECT SPECIFIC TYPES*
S = SHAFT WALLS, GWB
U = UNKNOWN / EXISTING PARTITIONS*
X = EXTERIOR WALLS - FOR BROWSER GROUPING*
Z = SHIELDED
*NON-STANDARD

FIRE / SMOKE RATINGS
0 = NOT RATED
1 = 1 HOUR FIRE RATED
2 = 2 HOUR FIRE RATED
3 = 3 HOUR FIRE RATED
4 = 4 HOUR FIRE RATED
S = SMOKE

PARTITION NOTES
1. NOT ALL TYPES SHOWN ARE USED IN THE PROJECT.
2. PROVIDE METAL STUDS OF GAUGE NECESSARY TO LIMIT DEFLECTION TO MAXIMUM OF L/240, L/360 IN PARTITIONS WITH CERAMIC/PORCELAIN TILE FINISH. IF STUD HEIGHT EXCEEDS THAT LISTED IN A.S.T.M. C-754, TABLE 5, PROVIDE CROSS BRACING AND/OR REDUCE STUD SPACING AS REQ. PROVIDE DOUBLE (BACK-TO- BACK) STUDS AT ALL DOOR/WINDOW JAMBS.
3. PROVIDE SLIP JOINT CONNECTION AT TOP OF WALL. CONNECTION TO HAVE CONT MTL CHANNEL RUNNER, DO NOT FASTEN TO STUDS, ANCHOR TO STRUCTURE & PROVIDE BRACING TO PREVENT RACKING.
4. IN ADDITION TO THE SPECS, REF U.L. DESIGNS FOR ADDITIONAL REQ - NOT ALL REQ ARE SHOWN. DISCREPANCIES BETWEEN U.L. DESIGNS AND DESIGN / SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO PROCEEDING.
5. FOR FIRE & SMOKE RATED PARTITIONS, SEAL ALL PENETRATIONS WITH UL / FM APPROVED MATERIALS. REF MEP DOCS FOR SMOKE OR FIRE SMOKE DAMPERS. REFER TO DOCUMENTS FOR ACTUAL FIRESAFING / FIRE-SEALANT REQ. GENERIC SYSTEM SHOWN.
6. CONSTRUCT FIRE RATED PARTITIONS HAVING RECESSED ITEMS: ELECTRICAL PANELS, FIRE EXTINGUISHER CABINETS, ACCESSORIES, EQUIPMENT, UTILITIES, ETC LOCATED AS REQUIRED TO MAINTAIN FIRE RATING & INTEGRITY.
7. PROVIDE KITCHEN METAL OR FRT WOOD SUPPORTS IN ALL PARTITIONS HAVING WALL-MOUNTED EQUIPMENT, CABINETRY, BUMPER GUARDS, CRASH RAILS, ACCESSORIES, GRAB BARS, ETC. SUPPORTS SHALL SUPPORT 500 LBF LIVE LOAD MIN & 1000 LBF LIVE LOAD AT ALL BARIATRIC USE SPACES.
8. PROVIDE WATER & MOLD RESISTANT GWB AT ALL LOCATIONS WITH PLUMBING FIXTURES. PROVIDE CEMENTITIOUS BACKER BOARD AT ALL CERAMIC / PORCELAIN TILE LOCATIONS.
9. PROVIDE CONTROL JOINTS AS REQUIRED
10. MINIMUM STC PERFORMANCE REQ IS NOTED. REFER TO MANUF DESIGNS FOR CONST REQ TO MEET ACOUSTICAL PERFORMANCE.
11. FOR PENTRATIONS IN RATED ASSEMBLIES VISIBLE TO VIEW TO HAVE ALL FIRE RATED PENTRATION SEALANTS AND FIRE STOPPING SYSTEMS TO BE TOOLED. TOOL SEALANT TO FORM SMOOTH, UNIFORM BEADS SEALANT. USE MASKING TAPE AS REQUIRED TO STRIKE STRAIGHT LINES AND PREVENT EXCESS SEALANT FROM ADJACENT SURFACES OF JOINTS

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Professional Seal and Signature:

NOT FOR CONSTRUCTION

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

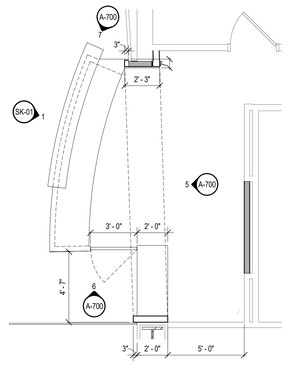
Drawing:

PARTITION TYPES

SCALE: 1 1/2" = 1'-0" FLOOR:

A-020

1 Level 2 CONSTRUCTION PLAN
A-100 SCALE: 1/8" = 1'-0"



2 ENLARGED PLAN - SECURITY DESK
A-100 SCALE: 1/4" = 1'-0"

ARCHITECTURAL PLAN LEGEND

- EXISTING PARTITION TO REMAIN
- EXISTING DOOR TO REMAIN
- NEW PARTITION
- A0 04 — PARTITION TYPE DESIGNATION. SEE DRAWING SYMBOLS FOR DETAILS.
- ABOVE, BELOW, BEYOND
- NEW DOOR
- 210Z — DOOR NUMBER DESIGNATION. SEE DOOR SCHEDULE FOR DETAILS.
- NEW MILLWORK- REFER TO ELEVATION DRAWINGS
- NOT IN SCOPE

GENERAL NOTES

1. VERIFY ALL FIELD DIMENSIONS. NOTIFY ARCHITECT IN WRITING OF ANY DISCREPANCIES OR CONFLICTS IN THE LOCATION(S) OF NEW CONSTRUCTION. UPON COMPLETION OF PARTITION LAYOUT, NOTIFY THE ARCHITECT FOR VERIFICATION OF THE LAYOUT PRIOR TO PARTITION INSTALLATION.
2. INSTALL ALL PARTITIONS TO CONFORM TO MANUFACTURERS INSTRUCTIONS, ANCHORED FIRMLY TO SLAB AND TIGHTLY SECURED TO DECK ABOVE. ALL DEMISING AND PARTITION WALLS TO BE SEALED AGAINST WINDOW MULLIONS, EXISTING WALLS, ETC. WHERE A PARTITION WALL TERMINATES AGAINST A WINDOW, CONTRACTOR TO SUPPLY ALUMINUM END CAP WITH NEOPRENE GASKET TO ENSURE TIGHT, BUT FLEXIBLE SEAL TAPE AND SPACKLE ALL GWB WHERE EXPOSED OR REQUIRED BY CODE. USE METAL CORNER BEADS AND METAL "J" BEADS ON EXPOSED EDGES.
3. DIMENSIONS MARKED ± MEAN A TOLERANCE NOT GREATER NOR SMALLER THAN 1/4 INCHES FROM INDICATED DIMENSION, U.O.N. VERIFY FIELD DIMENSIONS EXCEEDING TOLERANCE WITH THE ARCHITECT.
4. SET FINISH DOOR OPENINGS AT 6" FROM ADJACENT PERPENDICULAR PARTITION UNLESS OTHERWISE NOTED. DIMENSIONS LOCATING DOORS ARE TO THE INSIDE EDGE OF JAMB.
5. MAINTAIN REQUIRED ACOUSTICAL RATING OR FIRE RATING WHEREVER PARTITIONS PENETRATING FINISHED CEILING ARE PIERCED BY CONDUIT, DUCTS, PIPES, CABLE TRAYS, STEEL OR SIMILAR SERVICES. DEMISING WALL OR SLAB PENETRATIONS ARE TO HAVE FIRE DAMPERS AND PACKED WITH FIREPROOF SAFING.
6. REAPPLY FIRE PROOFING TO MAINTAIN FIRE RATING WHEREVER NEW CONSTRUCTION IS ANCHORED FIRMLY AND DIRECTLY TO EXISTING FIRE RATED CONSTRUCTION. PROVIDE FIREPROOFING MATERIAL TO NEW CONSTRUCTION AS REQUIRED BY APPLICABLE CODES.
7. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TO FINISH FACE OF PARTITION, CENTERLINE OF COLUMN OR CENTERLINE OF WINDOW MULLION.
8. NO MECHANICAL FASTENERS TO PUNCTURE OR MAR PERIMETER WINDOW FRAMES OR MULLIONS PROVIDE ACOUSTICAL SEALER BETWEEN EXISTING PERIMETER WINDOW MULLION/COLUMN.
9. PROVIDE CONCEALED BLOCKING IN ALL PARTITIONS INCLUDING, BUT NOT LIMITED TO, OPEN AND CLOSED SHELVING, COAT RODS AND SHELVES, AUDIO-VISUAL EQUIPMENT, CABINETRY, COUNTERS, DOOR FRAMES AND HEADER.
10. EXISTING FLOOR SLAB SHALL BE ADDITIONALLY PATCHED, REPAIRED REFINISHED AND LEVELED AS REQUIRED TO RECEIVE NEW FINISH MATERIALS.
11. PROVIDE ELECTRICAL SERVICE JUNCTION BOXES, CONTINUOUS CONDUIT RUNS AND ADDITIONAL BLOCKING AS REQUIRED TO ACCOMMODATE ELECTRICALLY CONTROLLED SECURITY ACCESS SYSTEMS. MODIFY AND PREPARE SCHEDULED DOOR, FRAME AND HARDWARE TO COORDINATE WITH SECURITY REQUIREMENTS.
12. ALL EXISTING SURFACES TO REMAIN SHALL BE PATCHED, SANDED SMOOTH, SKIM COATED AS REQUIRED AND PREPARED TO RECEIVE NEW FINISHES. NEW CONSTRUCTION SHOWN ALIGNED WITH EXISTING CONSTRUCTION SHALL BE INSTALLED FLUSH AND SMOOTH.
13. PATCH OR PROVIDE NEW FIREPROOFING/ FIRE STOPPING AT ALL EXISTING AND NEW SHAFT WALL, FLOOR SLAB, AND EXTERIOR WALL PENETRATIONS INCLUDING, BUT NOT LIMITED TO DUCTWORK, PIPEWAYS, AND CONDUIT RUNS.
14. USE TYPE "X" GWB ON FIRE RATED PARTITIONS. WHERE SCHEDULED PARTITION TYPE IS TO RECEIVE CERAMIC TILE, OR IS TO BE LOCATED IN A WET AREA, OMIT GWB AND PROVIDE GREEN-BOARD TYPE PRODUCT.
15. EXISTING MATERIAL OR ITEMS SCHEDULED TO REMAIN THAT ARE DAMAGED BY CONSTRUCTION, SHALL BE REPAIRED, PATCHED AND REFINISHED TO THE NEAREST INTERSECTION, RESTORING SURFACE TO ITS ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
16. ALL GLASS SHALL BE CLEAR TEMPERED GLASS, U.O.N. GLAZING TONG MARKS SHALL NOT BE VISIBLE. CLEAN AND POLISH ALL GLASS PRIOR TO PROJECT DELIVERY & AFTER INSTALLATION.
17. TRIM THE BOTTOMS OF DOORS TO CLEAR THE TOP OF FINISHED FLOOR, AS APPLICABLE, BY 1/4" INCH MAXIMUM, UNLESS OTHERWISE NOTED. VERIFY SLAB CONDITIONS. TRIM EACH DOOR TO FIT CONDITION. WHERE RADICAL VARIATIONS IN FLOOR ELEVATION EXIST, DOORS SHALL BE ORDERED WITH BOTTOM STILE SIZED TO ACCOMMODATE THESE UNDERCUT CONDITIONS.
18. CEILING HEIGHT PARTITIONS SHALL BE INSTALLED TIGHT TO FINISHED CEILING, WITH NO JOINTS VARYING MORE THAN 1/8" OVER 6'-0" AND NO JOINTS GREATER THAN 3/16", U.O.N..
19. INSTALL ALL NEW WORK TO COMPLY WITH ALL APPLICABLE CODES.
20. IN AREAS WHERE CORE DRILLING OR SAW CUTTING IS REQUIRED FOR PLUMBING OR STRUCTURAL SUPPORT, PATCH THE CONCRETE SLAB WITH MATERIAL TO MATCH EXISTING BUILDING STANDARD.
21. EXISTING MATERIAL OR ITEMS SCHEDULED TO REMAIN THAT ARE DAMAGED BY CONSTRUCTION SHALL BE REPAIRED, PATCHED AND REFINISHED TO THE NEAREST INTERSECTION; RESTORING SURFACE TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
22. FINISH FLOOR ELEVATIONS ARE TO THE TOP OF CONCRETE, UNLESS OTHERWISE NOTED.

KEYNOTES

Note	Description
1.2	ALL AREAS WHERE MILLWORK, WHITEBOARDS OR AV EQUIPMENT IS NOTED, NEW PARTITIONS SHALL RECEIVE FIRE RETARDANT WOOD BLOCKING; EXISTING STUDS RECEIVE PLYWOOD BACKER, TYPICAL. COORDINATE WITH AV/IT/ENGINEERING DRAWINGS
1.3	INSTALL SALVAGED DEFIBRILLATOR CABINET AT THIS LOCATION.
1.4	GC TO PATCH AND REPAIR ALL EXISTING WALLS AS REQUIRED AND PREPARE EXISTING WALL FOR NEW FINISHES. EXISTING RATINGS TO BE MAINTAINED THROUGHOUT CONSTRUCTION. TYPICAL
1.5	PROVIDE LEVEL 5 FINISH GWB TO EXTENTS INDICATED FOR BRANDING / SIGNAGE. BRANDING / SIGNAGE BY OTHERS.
1.6	NEW SECURITY TURNSTILES (SLIM LINE BARRIER OPTICAL TURNSTILES BY AUTOMATIC SYSTEMS) AND GLASS DIVIDING PANEL SUPPLIED AND INSTALLED BY REGENERON'S VENDOR. GC TO PROVIDE AND COORDINATE ALL REQUIRED INFRASTRUCTURE NECESSARY TO SUPPORT NEW TURNSTILES. REFER TO ENGINEERING AND SECURITY DRAWINGS FOR MORE INFORMATION.
1.7	PROVIDE AND INSTALL MEETING BOOTHS, QTY. 4. SPACESTOR - RAILWAY CARRIAGE NEW #RYP-FAB-4PS-BKU, FLAT ROOF (ARCH), 4-PERSON, UPHOLSTERED BACK, CLADDING- MFC GROUP 2 (COLOR: TBD), UPHOLSTERY GROUP 2 (COLOR: TBD) GC TO COORDINATE CONNECTIONS REQUIRED FOR POWER AND LIGHTING. COORDINATE DEPTH OF ALCOVE WITH REQUIRED DIMENSIONS PROVIDED BY MANUFACTURERS WRITTEN INSTRUCTIONS.
1.8	GC TO INFILL WALL WITH CONSISTENT CONSTRUCTION. PATCH, PRIME AND PREPARE WALL FOR CONTINUOUS SMOOTH SURFACE AND APPLICATION OF SCHEDULED FINISH.

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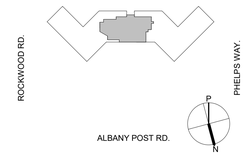

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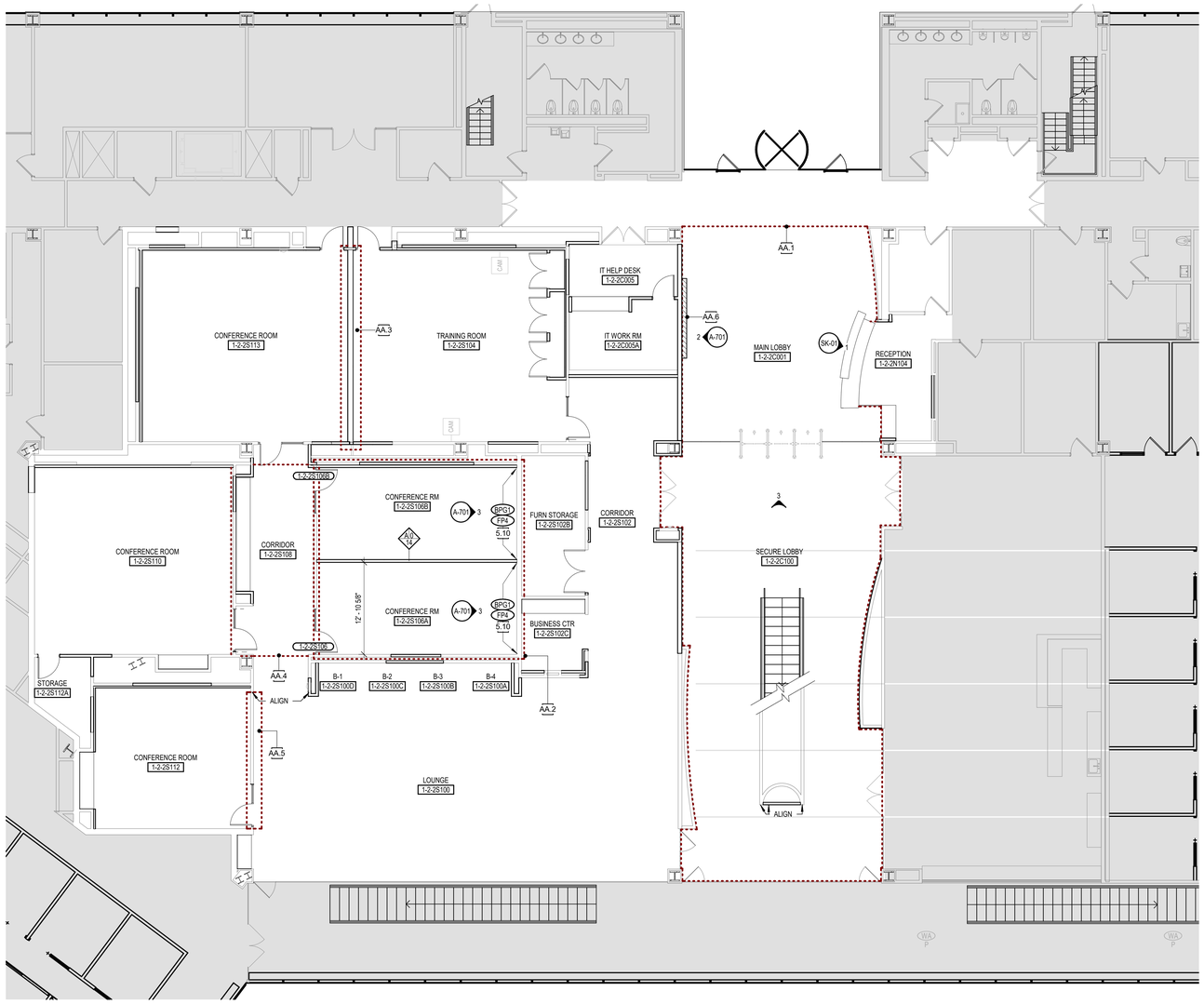
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

2ND FLOOR - ARCHITECTURAL PLAN

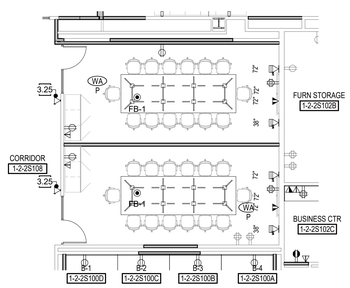
SCALE: As indicated FLOOR:

A-100



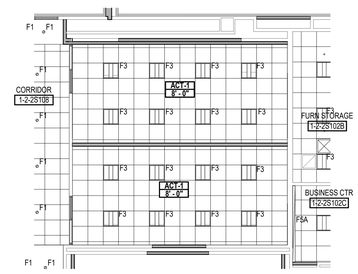
1 Level 2 CONSTRUCTION PLAN -ADD ALTERNATE

A-101 SCALE: 1/8" = 1'-0"



3 Level 2 POWER PLAN - ADD ALTERNATE - AA.2

A-101 SCALE: 1/8" = 1'-0"



2 Level 2 REFLECTED CEILING PLAN - ADD ALTERNATE - AA.2

A-101 SCALE: 1/8" = 1'-0"

KEYNOTES

Note	Description
3.25	GC TO PROVIDE ONE (1) HORIZONTAL JUNCTION BOX FOR DATA CONNECTION TO POWER SCHEDULER. REFER TO AV DRAWINGS FOR SPECIFICATION. SCHEDULER TO BE MOUNTED HORIZONTALLY TO HORIZONTAL JUNCTION.
5.10	REFER TO ELEVATION FOR EXTENT OF FABRIC WRAPPED PANELS.
AA.1	REMOVE EXISTING FLOOR TILE AND PREPARE SURFACE TO RECEIVE NEW FINISH. INSTALL NEW 24" X 24" PORCELAIN FLOOR TILE AS SPECIFIED. REFER TO FINISH PLAN FOR ADDITIONAL INFORMATION.
AA.2	DIVIDE EXISTING CONFERENCE ROOM INTO (2) 12-PERSON CONFERENCE ROOMS AS ILLUSTRATED ON PLAN (A-101.00). REFER TO MEP SCOPE OF WORK FOR ADDITIONAL INFORMATION REGARDING MECHANICAL SYSTEMS.
AA.3	DEDUCT ALTERNATE: EXISTING OPERABLE PARTITION TO REMAIN. REPLACE FABRIC PANELS WITH NEW FABRIC, ALLOW $25/YD MATERIAL COST ONLY FOR NEW FABRIC.
AA.4	DEDUCT ALTERNATE: EXISTING FURNITURE STORAGE ROOM AND AV CLOSETS TO REMAIN AT THIS LOCATIONS. DOORS FROM AV CLOSET CONFERENCE ROOMS TO BE REMOVED AND INFILLED WITH NEW STAINED WOOD DOOR AND HARDWARE TO MATCH BUILDING STANDARD. EXISTING WALLS TO BE PATCHED, REPAIRED, AND PAINTED. EXISTING VCT FLOOR TO REMAIN AND POLISHED. REMOVE AND REPLACE EXISTING LIGHT FIXTURES WITH NEW LED, (2) 2 X 4 FIXTURES AND (4) 6" DOWNLIGHTS. REPLACE DAMAGED ACOUSTIC CEILING TILES, AS NECESSARY.
AA.5	PROVIDE NEW MURAFLEX GLASS SYSTEM AND DOOR AT CONFERENCE ROOM WALL. (APPROXIMATELY 17'- 2 1/2").
AA.6	PROVIDE AND INSTALL NEW LIVING MOSS FEATURE WALL, APPROXIMATELY 11'-0"W X 9'-0"H BY ASTISAN MOSS (HTTPS://WWW.ARTISANMOSS.COM/) OR APPROVED EQUAL. PLANT MATERIALS TO BE A VARIETY OF PRESERVED BALL MOSS, PROVENCE MOSS, AND FLAT MOSS . PROVIDE FRT BLOCKING IN WALL TO SUPPORT MOSS FEATURE WALL. INSTALL INFRASTRUCTURE REQUIRED TO SUPPORT AV MONITOR WALL.

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:58:27 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

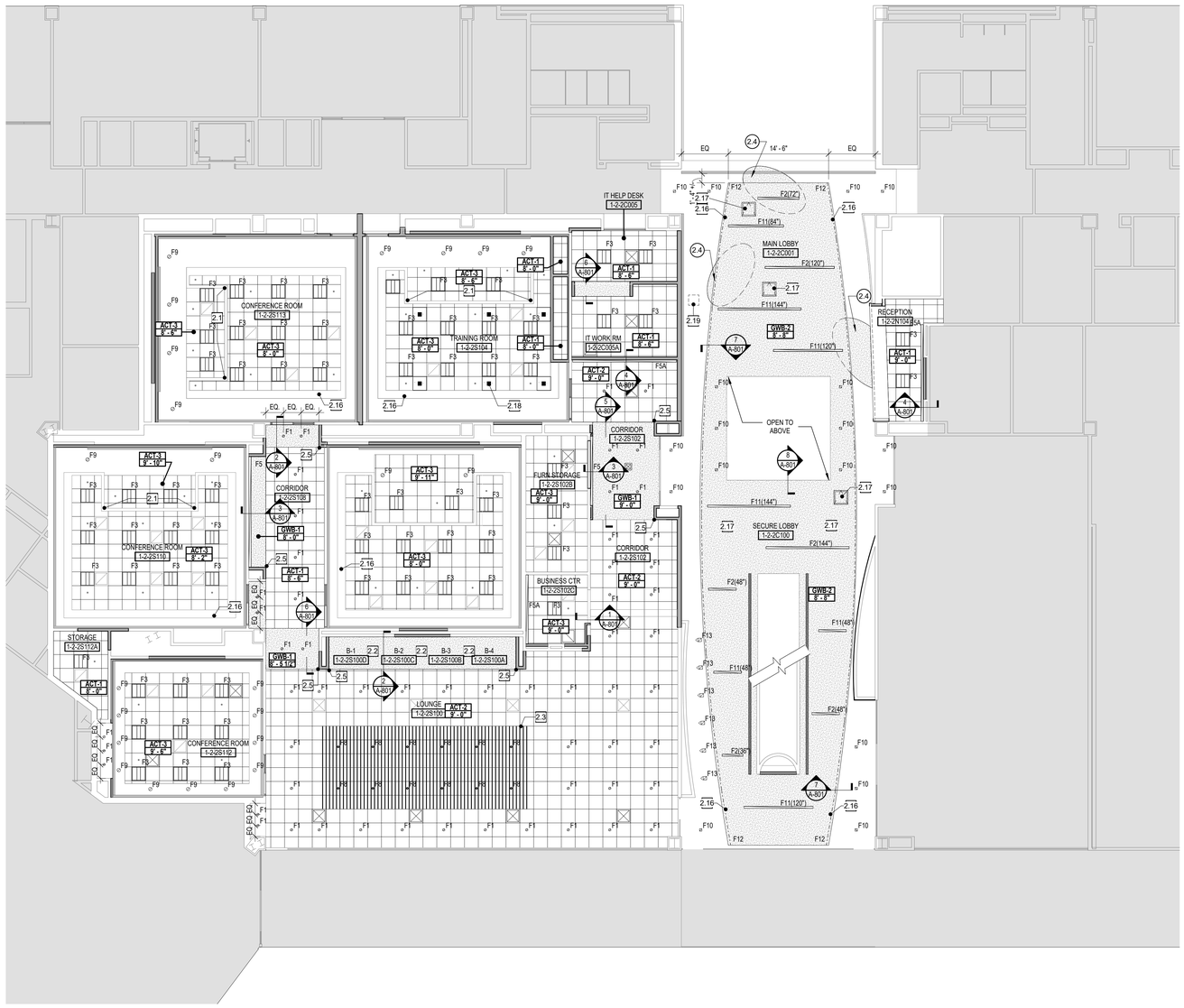
2ND FLOOR - ADD ALTERNATES

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

A-101

LIGHTING FIXTURE SCHEDULE

TAG	TYPE	MANUFACTURER	MODEL	COLOR/ FINISH	MOUNTING	COMMENTS
F1	5" ROUND RECESSED DOWNLIGHT	LIGHTOLIER	LYTE CASTER LED 5" / FRAME-IN KIT: L5R-15-AN-Z10-U-VA / LIGHT ENGINE: L5R-15-8-35-VA / TRIM: L5R-D-D	WHITE / CLEAR DIFFUSE		0-10V DIMMABLE / 80CRI / 3500K
F2(36")	3" LINEAR RECESSED LED	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-RG-3-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFCAE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F2(48")	3" LINEAR RECESSED LED	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-RG-4-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFCAE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F2(72")	3" LINEAR RECESSED LED	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-RG-6-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFCAE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F2(120")	3" LINEAR RECESSED LED	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-RG-10-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFCAE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F2(144")	3" LINEAR RECESSED LED	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-RG-12-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFCAE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F3	2 X 2 LED RECESSED TROFFER	HE WILLIAMS	PT LED SHALLOW PLENUM TROFFER / PT-22-L43-8-35-RA-DIM-UNV	DIFFUSE RIBBED ACRYLIC, ROUND	SURFACE: CEILING, ACT / INTERFACE: RECESSED, 9/16" T-BAR	0-10V DIMMABLE / 80CRI / 3500K
F5	3" PERIMETER - RECESSED LED	AXIS LIGHTING	BEAM 3 LED / BMPRLED-1000-80-35-RG2-(FIELD VERIFY)-W-UNV-DP-1-DF	WHITE / REGRESSED 2"	SURFACE: CEILING , GWB / INTERFACE: RECESSED, FLANG TO GWB	LENGTH VARIES. REFER TO RCPs. EXTEND WALL FINISH INTO REGRESS.
F5A	3" PERIMETER - RECESSED LED	AXIS LIGHTING	BEAM 3 LED / BMPRLED-1000-80-35-RG2-(FIELD VERIFY)-W-UNV-DP-1-TG9	WHITE / REGRESSED 2"	SURFACE: CEILING, ACT / INTERFACE: RECESSED, 9/16" T-BAR	LENGTH VARIES. REFER TO RCPs. EXTEND WALL FINISH INTO REGRESS.
F8	3" PENDANT MOUNTED LED CAN FIXTURE	LIGHTOLIER	CALCULITE 3" CYLINDER / FIXTURE: C3CR-PCS-DL-20-935-Z10U-W / REFLECTOR: C3CRM-CL	WHITE (MATTE) / CLEAR	SURFACE: CEILING ACT / INTERFACE: 9/16" T-BAR	0-10V DIMMABLE / 80CRI / 3500K, CONFIRM MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION
F9	6" ROUND RECESSED DOWNLIGHT	LIGHTOLIER	LYTE CASTER LED 6" / FRAME-IN KIT: L6R-15-AN-Z10-U-VA / LIGHT ENGINE: L6R-15-8-35-VA / TRIM: L6R-D-D	WHITE / CLEAR DIFFUSE	SURFACE: CEILING, EXISTING GWB / INTERFACE: RECESSED, FLANGE TO GWB	0-10V DIMMABLE / 80CRI / 3500K
F10	5" SQUARE RECESSED DOWNLIGHT	LIGHTOLIER	LYTE CASTER LED 5" / FRAME-IN KIT: L5R-15-AN-Z10U-VA / LIGHT ENGINE: L5R-15-835-VA / TRIM: L5S-D-D	WHITE / CLEAR DIFFUSE	SURFACE: CEILING, GWB / INTERFACE: RECESSED, FLANGE TO GW	0-10V DIMMABLE / 80CRI / 3500K
F11(48")	3" LINEAR RECESSED LED - STEP LENS	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-1.25M-4-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFACE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F11(84")	3" LINEAR RECESSED LED - STEP LENS	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-1.25M-7-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFACE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F11(120")	3" LINEAR RECESSED LED - STEP LENS	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-1.25M-10-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFACE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F11(144")	3" LINEAR RECESSED LED - STEP LENS	AXIS LIGHTING	BEAM 3 LED RECESSED / BMRLED-1000-90-35-1.25M-12-W-UNV-DP-1-D	WHITE / SPOTLESS LENS	SURFACE: CEILING, GWB / INTERFACE: RECESSED, SPACKLE FLANGE	0-10V DIMMABLE / 90CRI / 3500K
F12	LED TAPE LIGHT FIXTURE	OPTIC ARTS BY LUMINII	LINE LED LL SERIES / LL30-35K-xx-xx-VERIFY LENGTH IN FIELD / LENS: K45 CHANNEL #K45VC-C		SURFACE: CEILING, GWB / INTERFACE: SURFACE, LIGHTING COVE	0-10V DIMMABLE / 90CRI / 3500K, PROVIDE ALL CONNECTORS AND MOUNTING HARDWARE AS REQ'D
F13	5" SQUARE RECESSED WALLWASHER	LIGHTOLIER	LYTE CASTER LED 5" SQUARE WALLWASHER / L3SLWW	WHITE / CLEAR DIFFUSE	SURFACE: CEILING, GWB / INTERFACE: RECESSED, FLANGE TO GW	0-10V DIMMABLE / 80CRI / 3500K



1 Level 2 REFLECTED CEILING PLAN
A-200 SCALE: 1/8" = 1'-0"

REFLECTED CEILING LEGEND

ACT-1: 24 x 24 ACOUSTICAL CLG AND GRID. HEIGHT AS INDICATED
MFG: ARMSTRONG
TYPE: ULTIMA HIGH NRC 24 X 24 BEVELED TEGULAR
GRID: 9/16" SUPRAFINE - CENTERED IN ROOM AS GRAPHICALLY SHOWN

ACT-2: EXISTING GRID WITH NEW 24 x 24 ACOUSTICAL CLG TILE
MFG: ARMSTRONG
TYPE: ULTIMA HIGH NRC 24 X 24 BEVELED TEGULAR
GRID: EXISTING

ACT-3: EXISTING 24 x 24 ACOUSTICAL CLG TILE AND GRID
MFG: EXISTING
TYPE: PROVIDE NEW OR SALVAGED CEILING TILES AS NECESSARY
GRID: EXISTING
NOTE: ADD ALTERNATE - PROVIDE NEW 24 x 24 ACOUSTIC CEILING TILE

GWB-1: NEW GWB CEILING. HEIGHT AS INDICATED. FINISH TO BE PAINTED (P3)

GWB-2: SEAMLESS ACOUSTICAL GWB CEILING SYSTEM. FINISH TO BE PAINTED (P3)
MFG: ARMSTRONG
TYPE: ACOUSTIBUILT - FINE TEXTURE - STC 0.90 / CAC 46
NOTE: ATTACH PANELS TO ARMSTRONG DRYWALL GRID SYSTEM

EXISTING GWB CEILING. FINISH TO BE PAINTED (P3)

FELT BAFFLE CEILING
MFG: TURF
TYPE: RIDGE ACOUSTIC CEILING BAFFLE / 12'-0"Wx29'-6"L (BAFFEL LENGTH: 83"LONG PER SECTION / SPACED: 6" O.C.)
COLOR: LT BROWN #48
NOTE: MAGNETIC CONNECTION TO EXISTING CEILING GRID
PROVIDE FLAT LAY IN CEILING TILES ABOVE AREA OF BAFFLES, ARMSTRONG ULTIMA HIGH NRC FLAT LAY-IN

CEILING TAG
F# — INDICATES MATERIAL
12'-0" — INDICATES HEIGHT ABOVE FINISHED FLOOR

F# — LAY-IN LIGHT FIXTURE INDICATES FIXTURE TAG

F# — RECESSED LIGHT FIXTURE INDICATES FIXTURE TAG

F# — COVE LIGHT FIXTURE (ADD ALTERNATE) INDICATES FIXTURE TAG

REFLECTED CEILING NOTES

1. COORDINATE THE WORK OF ALL TRADES INVOLVED IN THE CEILING WORK TO INSURE CLEARANCES FOR FIXTURES, DUCTS, PIPING, CEILING SUSPENSION SYSTEM, ETC., NECESSARY TO MAINTAIN THE FINISHED CEILING HEIGHTS INDICATED ON ARCHITECT'S DRAWINGS. VERIFY IN FIELD.
2. THIS BUILDING IS PROTECTED BY A FULLY AUTOMATIC SPRINKLER SYSTEM. THE SPRINKLER CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, FABRICATION, AND INSTALLATION OF THE SPRINKLER SYSTEM FOR NEW CONSTRUCTION OR MODIFICATION TO THE EXISTING SYSTEM. ALL WORK SHALL BE APPROVED BY THE JURISDICTIONAL CODE AUTHORITIES PRIOR TO CONSTRUCTION.
3. A REFLECTED CEILING PLAN IS TO BE SUBMITTED BY CONTRACTOR WHICH LOCATES ALL LIGHTS, SMOKE DETECTORS, EXIT SIGNS, EMERGENCY LIGHTS, AND ALL OTHER ITEMS RELATED TO ELECTRICAL WORK THESE ARE ITEMS TO BE SHOWN ON A SINGLE PLAN WHICH COORDINATES THIS WORK DIFFUSERS, GRILLS, SPRINKLER HEADS, AND ALL OTHER HVAC AND PLUMBING WORK.
4. NOTIFY ARCHITECT OF ANY CONFLICTS OF LIGHT FIXTURE LOCATIONS WITH MAIN RUNNERS, DUCTS, STRUCTURES, HVAC, AND/OR CONDUIT, PRIOR TO FRAMING FOR LIGHTS. ANY DISCREPANCIES BETWEEN ARCHITECT'S CEILING GRID LOCATION & ACTUAL FIELD CONDITIONS ARE TO BE CLARIFIED WITH THE ARCHITECT PRIOR TO FRAMING.
5. ALL SOFFITS AND CEILING HEIGHTS ARE DIMENSIONED FROM CONCRETE SLAB TO BOTTOM OF FINISHED GYPSUM BOARD OR CEILING TILE, U.N.O.
6. CONTRACTOR TO PROVIDE BLOCKING AND SUPPORT FOR CEILING MOUNTED ITEMS INCLUDING BUT NOT LIMITED TO PROJECTIONS SCREENS, CAMERAS, AND AV. EQUIPMENT.
7. PERIMETER CEILING ANGLE, WHERE OCCURS, SHALL BE INSTALLED TIGHT TO VERTICAL SURFACES, FREE FROM CURVES, BREAKS, OR OTHER IRREGULARITIES AND PAINTED TO MATCH CEILING FINISH.
8. FURNISH AND INSTALL UNDERWRITERS LABORATORIES INC. (UL) LABELED DEVICES THROUGHOUT.
9. FURNISH AND INSTALL ALL FIXTURES, ASSOCIATED TRIM, FIXTURE LAMPS, AND BRACING AS REQUIRED. LIGHT FIXTURES SHALL BE PROTECTED WITH FILM OR SIMILAR COVER OVER LOUVER, LENS, BAFFLE, AND THE LIKE TO AVOID FIXTURE SOILING OR DAMAGE. EXISTING FIXTURES SHALL BE MAINTAINED, CLEANED AND AS NEW. LAMPS SHALL BE NEW AT PROJECT COMPLETION, FURNISHED BY G.C., COLOR TEMPERATURE AS SPECIFIED BY ARCHITECT.
10. REFER TO ENGINEERS DRAWINGS FOR ALL CIRCUITING, SWITCHING, EMERGENCY LIGHT FIXTURES AND ALL LIFE SAFETY DEVICES REQUIRED BY CODE. ARCHITECTURAL DRAWINGS DETERMINE LOCATION AND TYPE OF ALL FIXTURES AND TAKE PRECEDENCE OVER ALL OTHERS, U.N.O.. IN THE EVENT OF DISCREPANCIES BETWEEN THE ARCHITECT'S REFLECTED CEILING PLAN AND ENGINEER'S LIGHTING PLAN, NOTIFY THE ARCHITECT IN WRITING BEFORE ORDERING MATERIALS OR PROCEEDING WITH THE WORK.
11. ALL CUT TILE TEGULAR EXPOSED EDGES TO BE PAINTED WHITE BEFORE FINAL INSTALLATION.
12. LOCATION OF ALL REMOTE BALLASTS, TRANSFORMERS, OR DRIVERS TO BE DETERMINED IN FIELD, U.O.N. CONSULT VOLTAGE DROP CHART BEFORE DETERMINING DISTANCE FOR REMOTE DEVICES.
13. WHERE INDIRECT LIGHTING IS SPECIFIED (COVE LIGHTS, SCONCES, ECT.) CEILING MUST BE MATTE/FLAT FINISH TO AVOID REFLECTIONS OF LAMPS IN FINISH. INSIDES OF COVES OR LIGHT BOXES TO BE FLAT WHITE FINISH FOR MAXIMUM LIGHT OUTPUT, U.O.N.
14. ALL LINEAR LIGHT FIXTURES IN CEILING, COVES, MILLWORK, OR FURNITURE TO BE MEASURED PRIOR TO PURCHASE.
15. WALLS LIT WITH WALL GRAZER TYPE FIXTURE TO BE LEVEL 5 FINISH.
16. PROVIDE TRIMLESS CEILING ACCESS AS REQUIRED FOR EQUIPMENT AND SYSTEM MAINTENANCE FINISHED TO MATCH ADJACENT CEILING FINISH, U.O.N. FINAL LOCATIONS TO BE REVIEWED AND APPROVED BY ARCHITECT.

KEYNOTES

Note	Description
2.1	INFILL EXISTING OPENINGS/ALCOVES IN FACE OF SOFFIT WITH NEW GWB PARTITION TO ALIGN TO ALIGN FLUSH WITH EXISTING PARTITION
2.2	LIGHT FIXTURE INCLUDED WITH BANQUET FURNITURE. GC TO COORDINATE FINAL CONNECTION OF INTEGRATED LIGHTING.
2.3	DECORATIVE FELT BAFFLE CEILING SYSTEM, ATTACHED TO EXISTING CEILING GRID WITH MAGNETS. REFER TO REFLECTED CEILING LEGEND FOR MORE INFORMATION AND SPECIFICATION.
2.4	NEW GWB INFILL AT EXISTING OPENING. CEILING HEIGHT TO MATCH EXISTING.
2.5	ALIGN SOFFIT AND ADJACENT WALL AS INDICATED
2.16	LIGHTING ADD ALTERNATE: LED CONTINUOUS TAPE LIGHT COVE LIGHT FIXTURE. MANUF: OPTIC ARTS (OR EQUAL)STYLE: FLEX DC RADIUS NUMBER: FLEXRAD-40-35-J-24-30 W/ELECTRONIC DRIVER W/0-10V MODULE.
2.17	GC TO PROVIDE 24 X 24 SOUND RATED TRIMLESS CEILING ACCESS PANEL W/GWB PAN INSERT FOR HVAC AND OTHER MISC. EQUIPMENT. REFER TO ENGINEERING DRAWINGS FOR QUANTITIES AND ADDITIONAL INFORMATION. COORDINATE FINAL LOCATIONS IN FIELD W/ARCHITECT PRIOR TO INSTALLATION. GC TO PAINT PANEL TO MATCH ADJACENT CEILING FINISH.
2.18	SPEAKER LOCATIONS SHOWN FOR GENERAL LOCATION ONLY. GC TO REFER TO AV DRAWINGS FOR SPECIFIC SPACING REQUIREMENTS. GC TO COORDINATE ANY INFIELD DISCREPANCY ASSOCIATED WITH SPEAKER INSTALL WITH AV VENDOR.
2.19	GC TO PROVIDE 18 X 18 SOUND RATED TRIMLESS CEILING ACCESS PANEL W/ GWB PAN INSERT FOR ACCESS TO ELECTRICAL SURGE PROTECTOR ABOVE CEILING. EXACT LOCATION ABOVE MONITORS TO BE COORDINATED WITH AV VENDOR.

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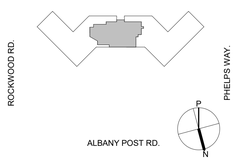

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Professional Seal and Signature:

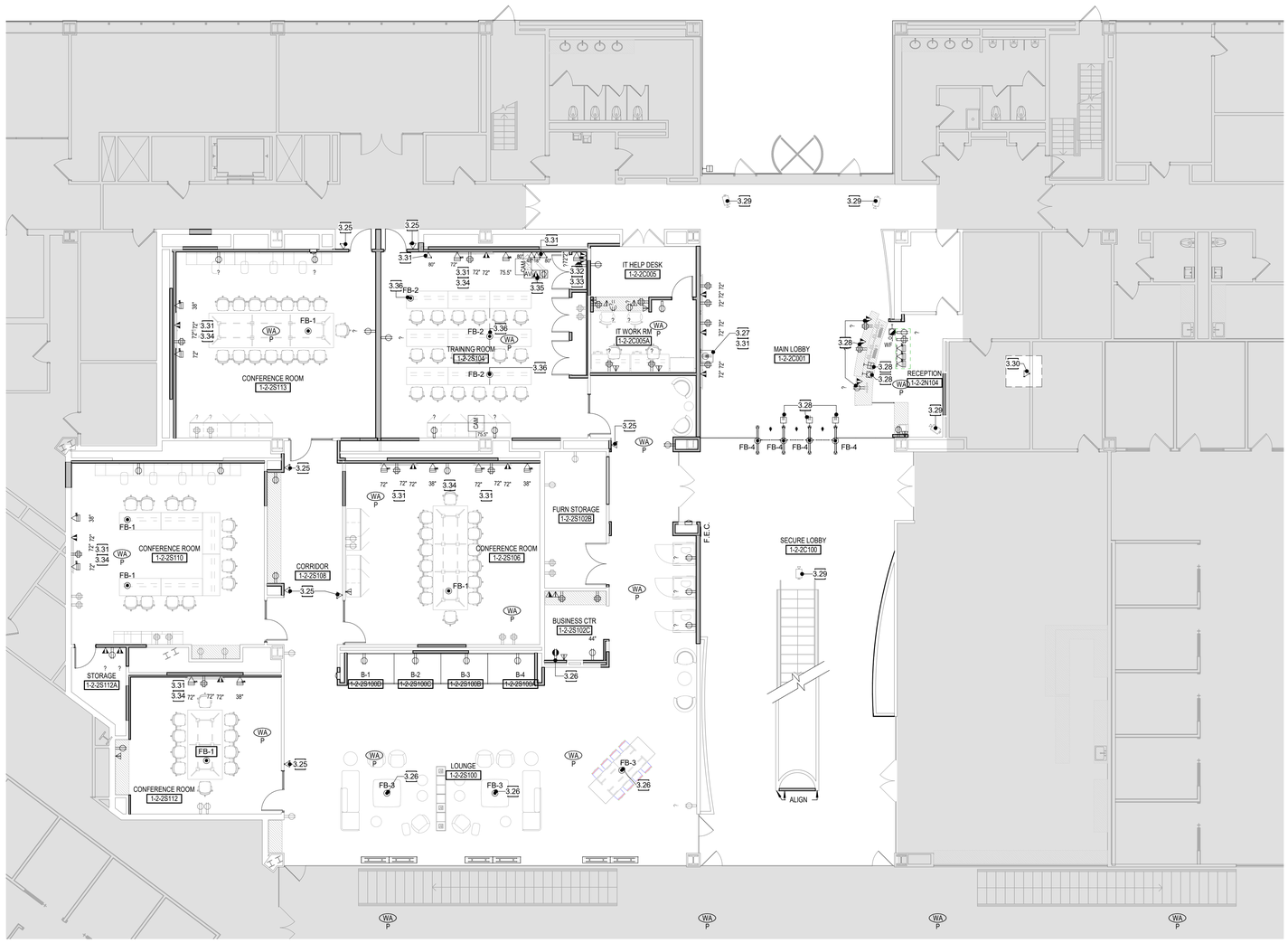
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

2ND FLOOR - REFLECTED CEILING PLAN

SCALE: As indicated FLOOR:

A-200



1 Level 2 POWER PLAN

A-300 SCALE: 1/8" = 1'-0"

POWER / DATA GENERAL NOTES

1. THIS DRAWING ILLUSTRATES THE ELECTRICAL DESIGN INTENT AND LOCATES KEY ELECTRICAL DEVICES. IT IS NOT MEANT TO BE A COMPREHENSIVE ELECTRICAL POWER OR TELEPHONE/DATA PLAN. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
2. OUTLETS ARE DIMENSIONED FROM FINISHED FACES OF WALLS TO THE CENTERLINES OF OUTLETS.
3. ALL OUTLETS SHOWN GROUPED TOGETHER SHALL NOT BE MORE THAN 6" APART ON EITHER SIDE OF THE GROUP CENTERLINE, UNLESS OTHERWISE NOTED. DATA AND POWER SHOWN TOGETHER SHALL INSTALLED BE AS CLOSE AS POSSIBLE.
4. ALL OUTLETS OF NONSTANDARD MOUNTING HEIGHT SHALL BE INSTALLED AT THE DESIGNATED HEIGHT ABOVE THE FLOOR SLAB TO THE CENTERLINE OF THE OUTLET. ALL OTHER OUTLETS ARE TO BE MOUNTED AT THE STANDARD HEIGHT ABOVE THE FLOOR SLAB TO THE CENTERLINE OF THE OUTLET.
5. ALL FLOOR OUTLET AND POWER/TELEPHONE/DATA FEED LOCATIONS ARE TO BE "MARKED" AND APPROVED BY THE ARCHITECT AND/OR THE CLIENT'S FURNITURE VENDOR IN THE FIELD PRIOR TO INSTALLATION.
6. VERIFY AND COORDINATE ELECTRICAL DEVICE LOCATIONS WITH MILLWORK.
7. PROVIDE GROMMETS IN COUNTER TOPS ABOVE EACH OUTLET AT LOCATIONS WHERE THERE ARE NO ABOVE COUNTER OUTLETS. VERIFY TYPE, SIZE, AND COLOR WITH THE ARCHITECT.
8. ALL OUTLETS ON COLUMNS SHALL BE INSTALLED ON COLUMN CENTERLINE, UNLESS OTHERWISE NOTED.
9. OUTLETS SHOWN ON OPPOSITE SIDES OF A PARTITION SHALL BE STAGGERED 6" UNLESS OTHERWISE NOTED.
10. OUTLETS ADJACENT TO WET AREAS ARE TO BE GROUND FAULT INTERRUPTION TYPE.
11. ALL QUADRAPLEX OUTLETS ARE TO BE IN A SINGLE QUAD BOX WITH A SINGLE FACE PLATE.
12. ALL WALL SWITCHES ADJACENT TO ONE ANOTHER ARE TO BE GANGED WITH A SINGLE COVER PLATE.
13. VERIFY EXISTING AND NEW OUTLET COVER PLATE COLOR(S) AND NEW DEVICE COLORS WITH THE ARCHITECT PRIOR TO ORDERING IF NOT SPECIFIED ON THE DRAWINGS.
14. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTORS. EXACT ELECTRICAL REQUIREMENTS SHALL BE VERIFIED IN THE FIELD WITH THE EQUIPMENT'S NAMEPLATE DATA. THE CONTRACTOR SHALL MAKE APPROPRIATE ADJUSTMENTS TO WIRE AND FUSE SIZES IN ACCORDANCE WITH THE NAMEPLATE DATA.
15. VERIFY THE ELECTRICAL WIRING, CONNECTION, AND PROTECTION REQUIREMENTS OF OWNER FURNISHED EQUIPMENT WITH THE OWNER'S EQUIPMENT SUPPLIER. FURNISH THE PROPER NEMA RECEPTACLE CONFIGURATIONS, CONNECTIONS, AND CIRCUITS IN ACCORDANCE WITH THESE REQUIREMENTS.
16. COORDINATE TELEPHONE AND DATA WORK WITH TENANT'S TELEPHONE/DATA CONTRACTOR.
17. SEE DOOR HARDWARE SCHEDULE FOR ELECTRIC STRIKE AND MAGLOCK ADDITIONAL INFORMATION.
18. ALL POWER & DATA ON STOREFRONT PLACED AT SPECIFIED MULLIONS.
19. REFER TO ENGINEERING DWGS FOR POWER/DATA IN IT CLOSET AND ELECTRICAL CLOSETS.
20. REFER TO TYPICAL MOUNTING HEIGHTS ON GENERAL NOTES SHEET.
21. POWER AND DATA BOX LOCATIONS ARE TO BE LOCATED AND INSTALLED AS PER ARCHITECTURAL DRAWINGS. THIS SHEET AND GENERAL NOTES SHEET. MEP DOCUMENTATION FOR CIRCUITING AND PANEL INFORMATION ONLY. DO NOT SCALE DRAWINGS. ANY OUTLET BOX LOCATION NOT DIMENSIONED SHALL BE VERIFIED IN FIELD OR VIA RFI BY ARCHITECT.
22. GC TO COORDINATE WITH FURNITURE VENDOR / OWNER TO PROVIDE TEMPLATES TO LOCATE ALL FLOOR MOUNTED DEVICES, PRIOR TO INSTALLATION.

POWER AND DATA PLAN LEGEND

- Electrical Outlet Duplex, Wall Mounted, Vertical
- Electrical Outlet Duplex, Wall Mounted, Dedicated
- Electrical Outlet Duplex, Wall Mounted, TV
- Electrical Outlet Quadruplex, Wall Mounted Quad
- Electrical Junction Box, 1-Gang
- Electrical Junction Box, 2-Gang
- Electrical Junction Box, 3-Gang
- AV Receptacle
- LVR PANEL SINGLE GANG BOX WITH 1" CONDUIT TO BEHING MONITOR FOR LVR PANEL
- Data Receptacle
- Data Receptacle (2)
- Receptacle Wall Feed PROVIDE (2) QUAD RECEPTACLES, (3) DOUBLE GANG BOX FOR NETWORK CONNECTION AT SECURITY DESK, ALL OTHER REQUIREMENTS FOR SECURITY AND CONDUITS TO BE VERIFIED AND COORDINATED WITH REGENERON. ALL WIRES TO RUN THRU ELECTRICAL CHASE IN DESK.
- FB-1 STUB UP CONNECTION PROVIDE 1 STUB UP WITH CONDUIT FOR POWER AND DATA. PROVIDE (4) DATA CONNECTIONS, (1) QUAD RECEPTACLE BELOW TABLE SURFACE, (1) AV CONNECTION PROVIDE (1) 1 1/4" CONDUITS/PULL STRINGS BELOW FLOOR TO STUB BEHIND 1 GANG LOW VOLTAGE RING BEHIND MONITOR/DISPLAY.
- FB-2 Electrical Floor Mounted, Poke through 6" POKE THRU FOR POWER AND DATA PROVIDE (2) DATA CONNECTIONS, (1) QUAD RECEPTACLE FOR TRAINING TABLES, TABLES SHALL HAVE DAISY-CHAIN CONNECTIONS BETWEEN TABLES.
- FB-3 Electrical Floor Mounted, Poke through 4" POKE THRU DEVICE FOR POWER AND DATA PROVIDE (1) DATA CONNECTION, (1) DUPLEX.
- FB-4 STUB UP CONNECTION PROVIDE STUB UPS WITH CONDUITS FOR EACH SECURITY TURNSTILES LANE. INDIVIDUAL CONDUIT TO TERMINATE AT INTERNAL/EXTERNAL OUTLET PER MANUFACTURER'S WRITTEN SPECIFICATIONS. GC TO COORDINATE.
- FB-5 ELECTRICAL FLOOR MOUNTED, POKE THROUGH 4" POKE THRU DEVICE FOR POWER AND DATA. PROVIDE (4) DATA CONNECTIONS, (1) QUAD.
- WH POWER/NETWORK/AV AT DISPLAY PROVIDE (1) QUAD RECEPTACLE, (1) SINGLE GANG BOX WITH 1" CONDUIT/PULL STRING TO ABV. ACCESSIBLE CEILING FOR NETWORK, (1) DOUBLE GANG BOX WITH (2) 1" CONDUIT/PULL STRING TO ABV ACCESSIBLE CEILING AND DOWN TO BELOW FLOOR FOR ACCESS TO CONFERENCE TABLES WHERE NOTED, AND (1) TRIPLE GANG BOX BELOW MONITOR FOR CAMERA WITH 1" CONDUIT TO LVR PANEL.

- DOOR RELEASE
- SECURITY CAMERA
- INTERCOM MASTER
- INTERCOM STATION
- Card Reader Receptacle
- CAM WALL CAMERA (RECEPTACLE)
- REFER TO AV DRAWINGS.

KEYNOTES

Note	Description
3.25	GC TO PROVIDE ONE (1) HORIZONTAL JUNCTION BOX FOR DATA CONNECTION TO POWER SCHEDULER. REFER TO AV DRAWINGS FOR SPECIFICATION. SCHEDULER TO BE MOUNTED HORIZONTALLY TO HORIZONTAL JUNCTION.
3.26	GC TO PROVIDE DEDICATED CIRCUIT. REFER TO ELECTRICAL DRAWINGS.
3.27	GC TO PROVIDE ABOVE JUNCTION BOX FOR SURGE PROTECTOR. REFER TO ELECTRICAL DRAWINGS.
3.28	PROVIDE ELECTRICAL DEVICE AND FEED FOR SECURITY/AV. GC TO LOCATE DEVICES AND FEED PER AV/SECURITY DRAWINGS. REFER TO SECURITY/AV DRAWINGS FOR ADDITIONAL INFORMATION.
3.29	STORED EXISTING CAMERAS TO BE REINSTALLED AFTER COMPLETION OF NEW CEILING WORK PER CONTRACT DOCUMENTS.
3.30	TURNSTILE ENCLOSURE PANEL. REFER TO AV/SECURITY DRAWINGS FOR ADDITIONAL INFORMATION.
3.31	REFER TO AV DRAWINGS FOR EXACT MOUNTING HEIGHTS AND REQUIREMENTS FOR ALL AV EQUIPMENT.
3.32	GC TO PROVIDE (4) 1-1/4" EMT CONDUITS WITH PULL STRINGS IN WALL FROM AV RACK TO ABOVE CEILING. PROVIDE GOOSENECK (RADIUS) WITH NYLON BUSHINGS. REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE EXACT REQUIREMENTS WITH AV VENDOR.
3.33	GC TO PROVIDE (1) 1-1/4" EMT CONDUIT WITH PULL STRINGS IN WALL FROM AV RACK TO BELOW FOR. PROVIDE GOOSENECK (RADIUS) WITH NYLON BUSHINGS. REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE EXACT REQUIREMENTS WITH AV VENDOR.
3.34	PROVIDE SURGE PROTECTOR ABOVE CEILING. REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION.
3.35	REFER TO AV DRAWINGS. LOCATION OF FLOOR BOX TO BE COORDINATED IN THE FIELD WITH THE PLACEMENT OF LECTERN.
3.36	FURNITURE VENDOR TO PROVIDE AND COORDINATE FINAL LOCATIONS AND DIMENSIONS PRIOR TO LOCATION OF FLOOR BOX. GC TO COORDINDATE FLOOR BOX INSTALL AND ALIGNMENT WITH FURNITURE.

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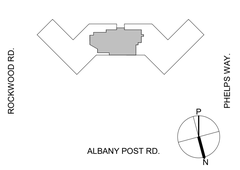
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

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Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

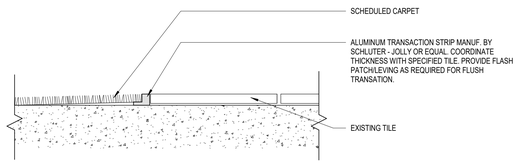
2ND FLOOR - POWER AND COMMUNICATIONS PLAN

SCALE: As indicated FLOOR:

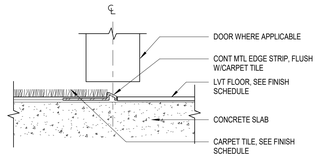
A-300

FINISH TYPE LEGEND

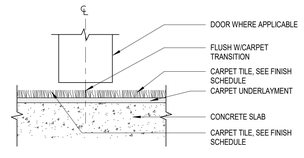
TAG	TYPE	MANUFACTURER	SPEC	COLOR	STYLE/FINISH	INSTALL	LOCATION	COMMENTS
ARCHITECTURAL VINYL								
AV1	ARCHITECTURAL VINYL	DESIGNTEX	3M DI0NOC FINE WOOD	FW-236	FINE WOOD	--	LOBBY CEILING	REFER TO CEILING DETAILS, DWG A-801, FOR LOCATIONS
BACK PAINTED GLASS								
BPG1	BACK PAINTED GLASS	FORMS AND SURFCAES	VIVID GLASS, 1/4" TH. TEMPERED W/ POLISHED EDGES	ULTRA WHITE	REFER TO ELEVATIONS FOR SIZE AND EXTENT	-	CONFERENCE ROOMS	
BPG2	BACK PAINTED GLASS	CARVART	1/4" TH. TEMPERED CLEAR GLASS W/ POLISHED EDGES	TO MATCH SHERWIN WILLIAMS #SW-6811 HONORABLE BLUE	--	--	LOBBY SECURITY DESK BACK WALL	FLOOR TO CEILING
CARPET								
C1	CARPET	MILLIKEN	COLOR FIELD / #COL21	NEW SILVER	9.8"x39.4" CARPET TILE	ASHLAR	LOUNGE / CORRIDORS	CONTACT: KATIE CIANI (P) 917.526.2368 EMAIL: KATIE.CIANI@MILLIKEN.COM
C2	CARPET	MILLIKEN	COLOR FIELD / #COL134-21	PASTEL GREY	9.8"x39.4" CARPET TILE	LOUNGE: ASHLAR / CONF R: HERRINGBONE	LOUNGE ACCENT CARPET / CON RM	CONTACT: KATIE CIANI (P) 917.526.2368 EMAIL: KATIE.CIANI@MILLIKEN.COM
C3	CARPET	MILLIKEN	COLOR FIELD / #COL134	FLAXEN	9.8"x39.4" CARPET TILE	ASHLAR	LOUNGE ACCENT CARPET	CONTACT: KATIE CIANI (P) 917.526.2368 EMAIL: KATIE.CIANI@MILLIKEN.COM
C4	CARPET	MILLIKEN	LAYLINES / BLUEBELL (SOLID BRIGHT)	BLUEBELL LLN157	19.7"x19.7" CARPET TILE	MONOLITHIC	LOBBY CARPET INSET	CONTACT: KATIE CIANI (P) 917.526.2368 EMAIL: KATIE.CIANI@MILLIKEN.COM
C5	CARPET	MILLIKEN	LAYLINES / SLATE (SOLID NEUTRAL)	SLATE LLN154	19.7"x19.7" CARPET TILE	MONOLITHIC	LOBBY CARPET INSET	CONTACT: KATIE CIANI (P) 917.526.2368 EMAIL: KATIE.CIANI@MILLIKEN.COM
C6	CARPET	MILLIKEN	LAYLINES / BLUEBELL-SLATE (HORIZONTAL TRANSITION)	BLUEBELL / SLATE LTH157-154	19.7"x19.7" CARPET TILE	MONOLITHIC	LOBBY CARPET INSET	CONTACT: KATIE CIANI (P) 917.526.2368 EMAIL: KATIE.CIANI@MILLIKEN.COM
C7	CARPET	MILLIKEN	QBEX-CUT / FIZZ / FZC27	GREY 173	19.7"x19.7" CARPET TILE	MONOLITHIC	LOBBY	CONTACT: KATIE CIANI (P) 917.526.2368 EMAIL: KATIE.CIANI@MILLIKEN.COM
C8	CARPET	MILLIKEN	FORMWORK	FOUNDATION #FWK120	13.6" W BROADLOOM	BROADLOOM	LOBBY STAIRS TO 3RD FL	SPECIFICATION FOR REFERENCE ONLY, TO BE INSTALLED BY A SEPERATE PROJECT SCOPE. GC TO COORDINATE WITH OWNER.
FABRIC PANEL								
FP1	FABRIC PANEL	KNOLL TEXTILES	FORMATION / #WC2380	DOVER / 01	ACRYLIC BACKING	-	LOBBY	CONTACT: NICOLE NARDINI (P) 215-988-2134 EMAIL: NICOLE_NARDINI@KNOLL.COM
FP2	FABRIC PANEL	MAHARAM	MELD / #466387	FOX / #024	-	-	CONF RM #2115	CONTACT: LINDA NAMAIS (P) 212-614-2946 EMAIL: LNAMIS@MAHARAM.COM
FP3	FABRIC PANEL	MAHARAM	MELD / #466387	KALE / #034	-	-	CONF RM #2113 / #2124	CONTACT: LINDA NAMAIS (P) 212-614-2946 EMAIL: LNAMIS@MAHARAM.COM
FP4	FABRIC PANEL	MAHARAM	MELD / #466387	SEED / #033	-	-	CONF RM #2118	CONTACT: LINDA NAMAIS (P) 212-614-2946 EMAIL: LNAMIS@MAHARAM.COM
FP5	FABRIC PANEL	MAHARAM	MELD / #466387	MERLOT / #019	-	-	CONF RM #2125	CONTACT: LINDA NAMAIS (P) 212-614-2946 EMAIL: LNAMIS@MAHARAM.COM
FP6	FABRIC PANEL	MAHARAM	MELD / #466387	SEASHELL / #012	-	-	CONF RM #2124	CONTACT: LINDA NAMAIS (P) 212-614-2946 EMAIL: LNAMIS@MAHARAM.COM
NATURAL STONE FLOOR TILE								
CT1	NATURAL STONE FLOOR TILE	TBD	TRAVERTINE	GREY/BEIGE, REFER TO EXISTING INSTALLED TILE	18" x 18"	--	LOBBY	GC TO PROVIDE SEVERAL SAMPLES FROM DIFFERENT PALLETES FOR ARCHITECT AND OWNER TO REVIEW
PAINT								
P1	PAINT	SHERWIN WILLIAMS	PROMAR 200 ZERO VOC INTERIOR LAYTEX	WHITE DUCK SW7010	EGGSHELL (WALLS) / SEMI-GLOSS (TRIM)	-	GENERAL PAINT	
P2	PAINT	SHERWIN WILLIAMS	PROMAR 200 ZERO VOC INTERIOR LAYTEX	WHITE DUCK SW7010	EGGSHELL	-	LOBBY WALL PAINT	
P3	PAINT	SHERWIN WILLIAMS	PROMAR 200 ZERO VOC INTERIOR LAYTEX	EXTRA WHITE SW7006	FLAT	-	CEILING PAINT	
P4	PAINT	SHERWIN WILLIAMS	PROMAR 200 ZERO VOC INTERIOR LAYTEX	PAVERSTONE SW7642	EGGSHELL (WALLS) / SEMI-GLOSS (TRIM)	-	ACCENT PAINT AT STAIR	
P5	PAINT	SHERWIN WILLIAMS	PROMAR 200 ZERO VOC INTERIOR LAYTEX	HONORABLE BLUE SW-6811	EGGSHELL	-	ACCENT PAINT - CONFERENCE CENTER LOUNGE	
PLASTIC LAMINATE								
PL1	PLASTIC LAMINATE	WILSONART	BEIGEWOOD	7850-60	MATTE	-	GENERAL MILLWORK - VERTICAL SURFACE	CONTACT: KEITH JONES (P) 516.286.9603
PL2	PLASTIC LAMINATE	WILSONART	TBD	TBD	MATTE	-	SECURITY DESK - USER SIDE VERTICAL SURFACES	
PORCELIAN TILE (ADD ALTERNATE)								
PT1	PORCELIAN TILE (ADD ALTERNATE)	CROSSVILLE	ALASKA / ASK01	ICE	24x24	MONOLITHIC	LOBBY	ADD ALTERNATE
SOLID SURFACE								
SS1	SOLID SURFACE	DUPONT	QUARTZ	CALACATTA NATURA	--	--	CREDENZA HORIZONTAL SURFACES	CONTACT: DEBORAH TAPERELL (P) 973.864.4780
SS2	SOLID SURFACE	DUPONT	CORIAN	GLACIER ICE	--	--	GENERAL MILLWORK HORIZONTAL SURFACE	CONTACT: DEBORAH TAPERELL (P) 973.864.4780
SS3	SOLID SURFACE	DUPONT	CORIAN	VENARO WHITE	--	--	SECURITY DESK	CONTACT: DEBORAH TAPERELL (P) 973.864.4780
WALL BASE								
WB1	WALL BASE	JOHNSONITE	RUBBER WALL BAS	IRONSTONE CG #178	4" STRAIGHT	-	GENERAL WALL BASE	
WB2	WALL BASE	JOHNSONITE	MILLWORK WALL BASE	IRONSTONE CG #178	4-1/4" REVEAL	-	LOBBY	
WOOD VENEER								
WD1	WOOD VENEER	CROWN VENEER CORP. -OR- EQUAL	WHITE OAK - RIFT, EUROPEAN #54	STAINED TO MATCH AV1	-	-	SECURITY DESK	



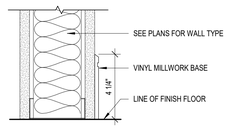
5 FLOORING TRANSITION - CARPET / TILE
A-500 SCALE: 6" = 1'-0"



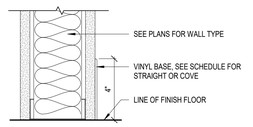
4 FLOORING TRANSITION - LVT OR VCT / CARPET
A-500 SCALE: 6" = 1'-0"



3 FLOORING TRANSITION - CARPET / CARPET
A-500 SCALE: 6" = 1'-0"



2 BASE DETAIL - VINYL MILLWORK BASE
A-500 SCALE: 3" = 1'-0"



1 BASE DETAIL - VINYL BASE
A-500 SCALE: 3" = 1'-0"

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Professional Seal and Signature:

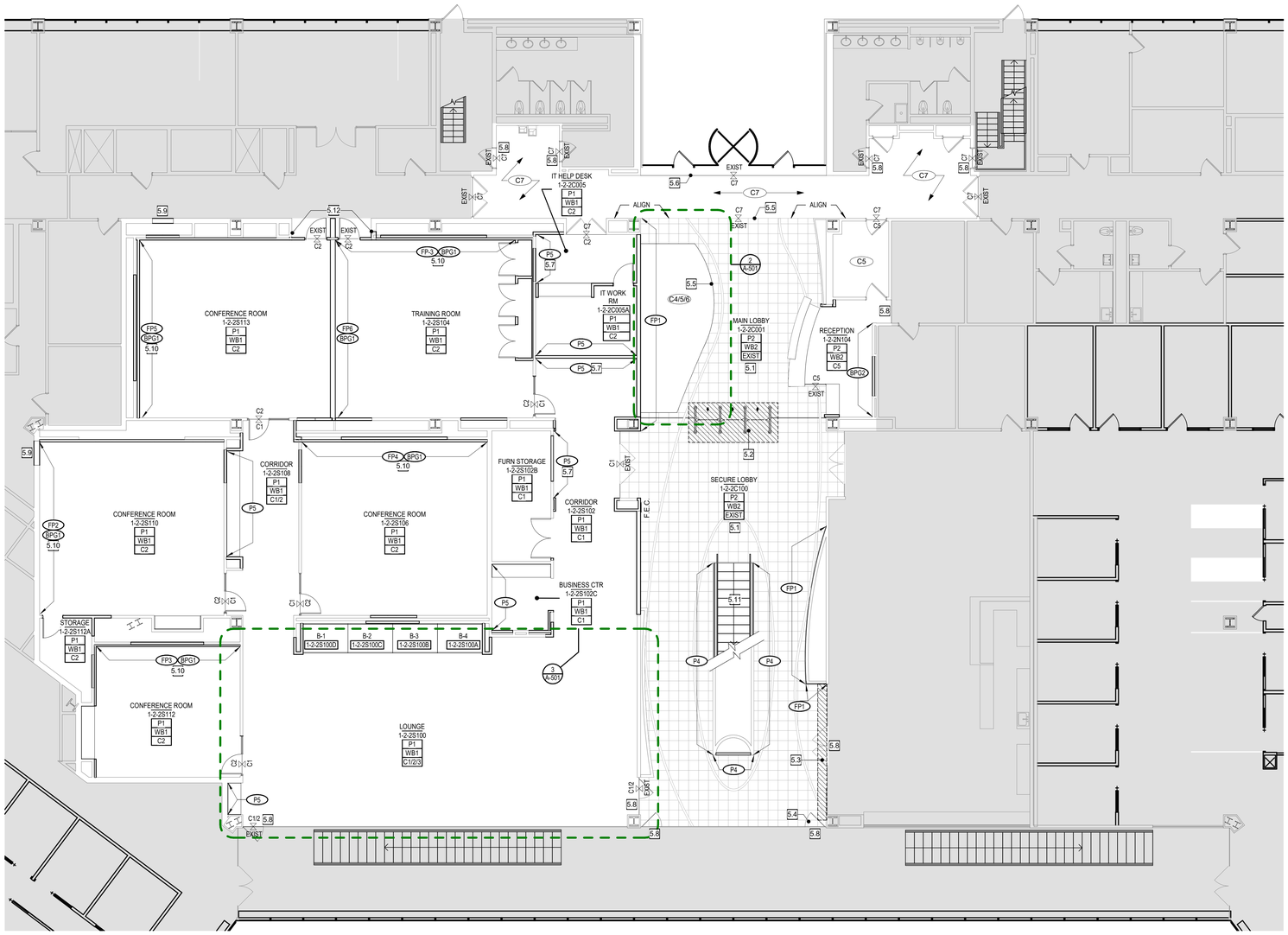
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

FINISH SCHEDULE AND DETAILS

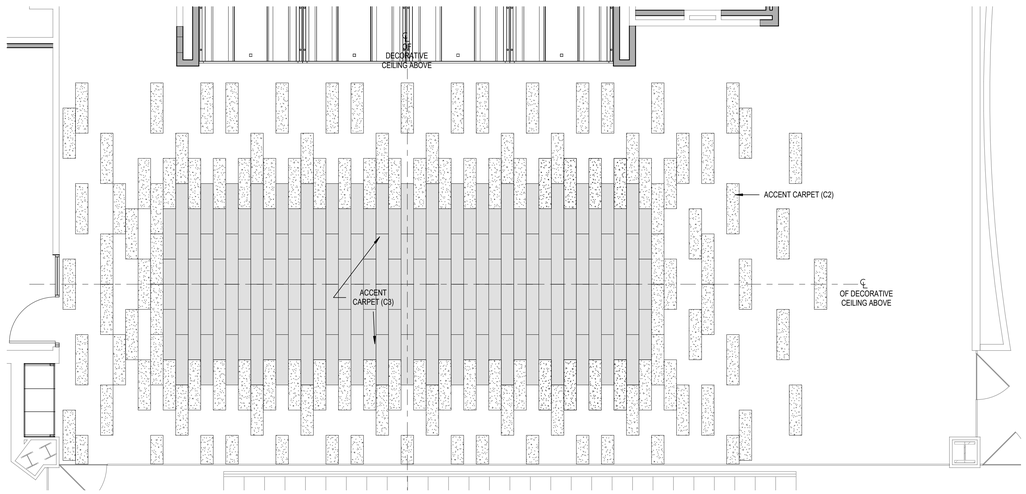
SCALE: As indicated FLOOR:

A-500



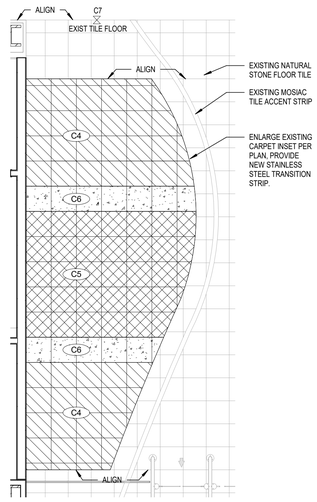
1 FINISH EXTENT PLAN

A-501 SCALE: 1/8" = 1'-0"



3 LOUNGE #2150 - CARPET PATTERN PLAN

A-501 SCALE: 1/4" = 1'-0"



2 LOBBY #2137 - CARPET INSET PLAN

A-501 SCALE: 1/4" = 1'-0"

FINISH LEGEND

WALL FINISH
BASE FINISH
FLOOR FINISH

INDICATES CHANGE IN FLOORING MATERIAL

FINISH NOTES

1. PROTECT EXISTING AREAS DURING CONSTRUCTION AND CLEAN AS REQUIRED AT COMPLETION OF CONSTRUCTION.
2. ALL FINISH MATERIALS TO BE ORDERED AND INSTALLED AS SPECIFIED IN THE FINISH SCHEDULE AND MANUFACTURER'S SPECIFICATIONS.
3. ALL WALLS TO BE PAINTED EGGSHELL FINISH. ALL DRYWALL CEILINGS & SOFFITS TO BE PAINTED FLAT FINISH. ALL DOOR FRAMES & TRIM TO BE PAINTED SEMI-GLOSS FINISH. PAINT ALL DIFFUSERS, GRILLES, ACCESS PANELS, ETC. TO MATCH ADJACENT SURFACES. ALL CONVECTORS TO BE ELECTROSTATICALLY PAINTED. ALL TRIM WORK TO BE HAND PAINTED.
4. ALL WALLS AND COLUMN SURFACES AND PERIPHERAL WINDOW DETAILS TO BE PROPERLY PREPARED, SPACKLED AND SANDED, ETC. TO PROVIDE A PERFECTLY SMOOTH SURFACE TO RECEIVE ONE (1) PRIMER COAT AND A MINIMUM OF TWO (2) FINISH COATS OF PAINT.
5. ALL INTERIOR FINISHES SHALL HAVE A FLAME SPREAD INDEX NOT GREATER THAN THAT SPECIFIED BY IBC. ALL WALL & CEILING TO HAVE CLASS B RATING. FLOORING MATERIAL TO BE NOT LESS THAN CLASS II PER I.B.C AND IN ACCORDANCE WITH NFPA 253.
6. ALL FLOOR PATTERNS TO BE CENTERED IN CORRIDORS AND ROOMS UNLESS OTHERWISE NOTED. AT LOCATIONS WHERE MULTIPLE V.C.T. COLORS ARE SPECIFIED, CONTRACTOR TO CONFIRM PATTERN WITH ARCHITECT.
7. PROVIDE INSTALLATION DRAWING FOR REVIEW AND APPROVAL BY ARCHITECT, FLOORING INSTALLATION TO BE COORDINATED WITH FURNITURE INSTALLATION.
8. FLOORING MATERIAL TO EXTEND IN TO ALL COAT CLOSETS AND SUPPLY CLOSETS OF ADJACENT AREA UNLESS OTHERWISE NOTED.
9. ALL SEAMS WHERE FLOORING MATERIAL CHANGES ARE TO BE JOINED TO ACHIEVE FLAT SURFACES. THE SEAMS SHALL FALL EXACTLY UNDER THE CENTER LINE OF THE DOOR OR OPENING, U.O.N.
10. USE MANUFACTURER'S ADHESIVE TO CEMENT ALL SEAMS, JOINTS, AND EDGES TO FLOOR TO ASSURE STABILITY.
11. PREPARE EXISTING FLOOR SURFACE TO RECEIVE INSTALLATION OF ALL FLOOR COVERINGS AS PER MANUFACTURER'S SPECIFICATIONS. PREPARATION INCLUDES REMOVAL OF ALL LUMPS OR PROJECTIONS AND FILLING OF ALL UNEVEN AREAS WHICH ARE CONSIDERED DETRIMENTAL TO THE PROPER INSTALLATION OF ALL FLOOR COVERINGS. COMMENCEMENT OF THE INSTALLATION SHALL INDICATE THE CONTRACTOR HAS COMPLIED WITH THE ABOVE AND PROPER INSTALLATION WILL RESULT. ANY DISSATISFACTION ON THE PART OF THE CONTRACTOR IS TO BE REPORTED TO THE OWNER AND ARCHITECT IMMEDIATELY.
12. CHECK ALL DIMENSIONS IN THE FIELD TO VERIFY ACCURACY OF QUANTITIES PRIOR TO COMMENCEMENT OF WORK.
13. PROVIDE SUITABLE PROTECTION FOR ANY VERTICAL SURFACES THAT COULD BE DAMAGED IN ANY WAY DURING FLOORING INSTALLATION.
14. EXAMINE ALL AREAS OF CONSTRUCTION AFTER COMPLETION OF WORK BY ALL TRADES (INCLUDING CABLING, TELEPHONE AND FLOORING INSTALLATION, ETC) AND ANY AREAS DAMGED BY OTHER TRADES TO HAVE 'TOUCH UP' PAINTING AND OR PATCHING AS REQUIRED TO PROVIDE AS NEW FINISH. UPON COMPLETION, REMOVE ALL PAINT FROM WHERE IT SPILLED, SPLASHED, OR SPATTERED ON ALL SURFACES.
15. UPON COMPLETION, ALL FLOORING WORK SHALL BE CLEANED BY THE CONTRACTOR REMOVING ALL SPOTS OF ADHESIVE AND SURFACE STAINS AND ALL SCRAPS, CARTONS AND CONTAINERS SHALL BE REMOVED FROM BUILDING.
16. INSTALL WALL COVERINGS WHERE DESIGNATED PER THE MANUFACTURERS INSTRUCTIONS. ALL WALL COVERINGS SHALL BE SMOOTH WITH NO WRINKLES, BUBBLES OR LOOSE EDGES. ALL PASTE AND BRUSH MARKS SHALL BE THOROUGHLY REMOVED. WALL COVERING ADJOINING WOOD OR METAL TRIM SHALL BE CUT STRAIGHT AND SQUARE. ALL WORKMANSHIP WHICH IS NOT JUDGED TO BE TOP QUALITY BY ARCHITECT WILL NOT BE ACCEPTED.
17. METAL SURFACES: IN AREAS WHERE METAL SURFACES ARE SCHEDULED TO BE PAINTED, PREP ALL SURFACES THOROUGHLY TO REMOVE ALL DIRT, OIL, GREASE, OR OTHER SURFACE DEPOSITS. APPLY ACRYLIC LATEX PRIMER AND A MINIMUM (2) COATS HIGH PERFORMANCE ACRYLIC LATEX, COLOR TO MATCH SURROUNDING GWB SURFACES.
18. ALL FINISH MATERIALS TO BE ORDERED AND INSTALLED AS SPECIFIED IN THE FINISH SCHEDULE AND MANUFACTURER'S SPECIFICATIONS.
19. ALL WALLS TO BE PAINTED EGGSHELL FINISH. ALL DRYWALL CEILINGS & SOFFITS TO BE PAINTED FLAT FINISH. ALL DOOR FRAMES & TRIM TO BE PAINTED SEMI-GLOSS FINISH. PAINT ALL DIFFUSERS, GRILLES, ACCESS PANELS, ETC. TO MATCH ADJACENT SURFACES. ALL CONVECTORS TO BE ELECTROSTATICALLY PAINTED. ALL TRIM WORK TO BE HAND PAINTED.
20. ALL FLOOR PATTERNS TO BE CENTERED IN CORRIDORS AND ROOMS UNLESS OTHERWISE NOTED. AT LOCATIONS WHERE MULTIPLE V.C.T. COLORS ARE SPECIFIED, CONTRACTOR TO CONFIRM PATTERN WITH ARCHITECT.

KEYNOTES

Note	Description
5.1	EXISTING FLOOR TILE PATTERN. REFER TO ADD ALTERNATE FOR MORE INFORMATION
5.2	GC TO PROVIDE NEW NATURAL STONE TILE, TO MATCH EXISTING, TO INFILL TILES DAMAGED DURING INSTALLATION OF NEW SECURITY TURNSTILES. REFER TO FINISH SPECIFICATION CT1 FOR MORE INFORMATION. PROVIDE SAMPLES TO ARCHITECT AND OWNER FOR REVIEW AND APPROVAL
5.3	REPLACE DAMAGED TILES WITH NEW NATURAL STONE TILE, TO MATCH EXISTING. GC TO PROVIDE SAMPLES OF NEW TILE TO ARCHITECT AND OWNER FOR APPROVAL.
5.4	BUFF AND REFINISH EXISTING TILE SURFACE TO REMOVE SCRATCHES CAUSED BY PREVIOUS CONSTRUCTION.
5.5	GC TO INSTALL NEW STAINLESS STEEL TRANSITION STRIP AT CARPET INSET. SCHLUTER-JOLLY OR APPROVED EQUAL.
5.6	INSTALL NEW STAINLESS STEEL TRANSITION STRIP AT TRANSITION BETWEEN EXISTING GRANITE PAVERS AND NEW WALK-OFF CARPET TILE. SCHLUTER-JOLLY OR APPROVED EQUAL.
5.7	PROVIDE LEVEL 5 FINISH GWB WALL AT THIS LOCATION FOR FUTURE BRANDING BY OTHERS.
5.8	GC TO MAINTAIN EXISTING THRESHOLD AT THIS LOCATION
5.9	PROVIDE AND INSTALL NEW CARPET, WALL BASE AND PAINT TO MATCH EXISTING BUILDING CORRIDOR FINISHES. COORDINATE WITH OWNER FOR EXACT SPECIFICATIONS.
5.10	REFER TO ELEVATION FOR EXTENT OF FABRIC WRAPPED PANELS.
5.11	NEW BROADLOOM CARPET TO BE INSTALLED AND PROVIDED UNDER SEPARATE PROJECT SCOPE. GC TO COORDINATE WITH OWNER REPRESENTATIVE FOR COORDINATION OF INSTALLATION OF NEW CARPET. REFER TO FINISH SPECIFICATIONS FOR STYLE AND COLOR.
5.12	GC TO PROVIDE PAINT FINISH TO MATCH EXISTING ADJACENT FINISH.

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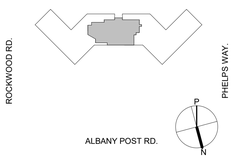

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	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:58:50 AM

Professional Seal and Signature:

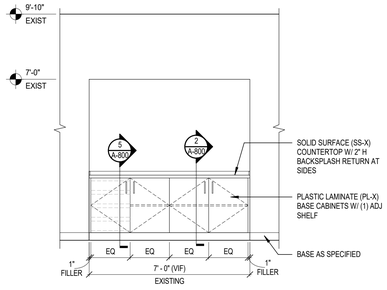
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

2ND FLOOR - FINISH EXTENT PLAN

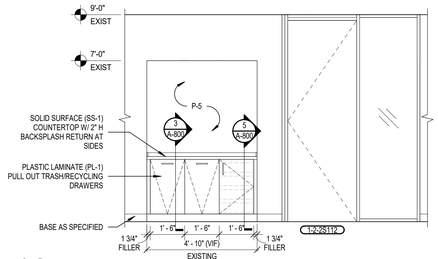
SCALE: As indicated FLOOR:

A-501



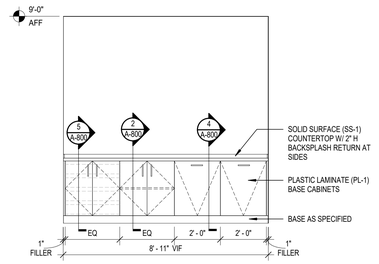
13 CREDENZA - CONFERENCE #2115

A-700 SCALE: 3/8" = 1'-0"



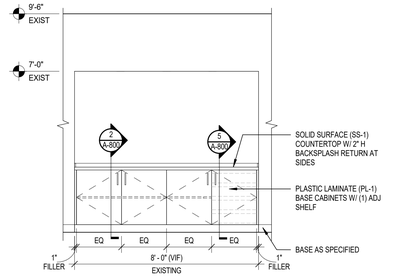
12 CREDENZA - LOUNGE #2150

A-700 SCALE: 3/8" = 1'-0"



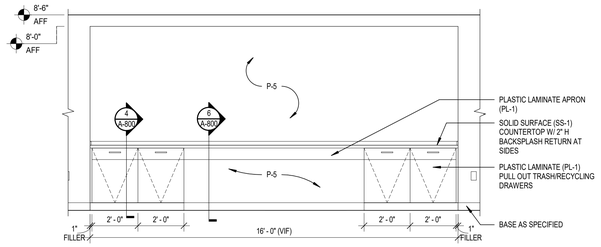
11 ELEVATION - BUSINESS CENTER #2121

A-700 SCALE: 3/8" = 1'-0"



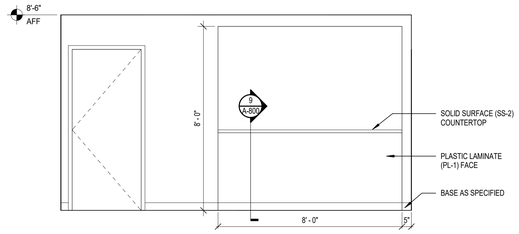
10 CREDENZA - CONFERENCE RM #2113

A-700 SCALE: 3/8" = 1'-0"



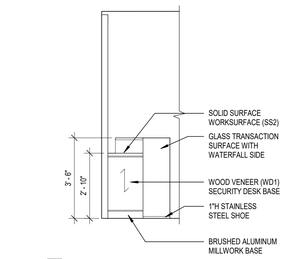
9 CREDENZA - CORRIDOR #2117

A-700 SCALE: 3/8" = 1'-0"



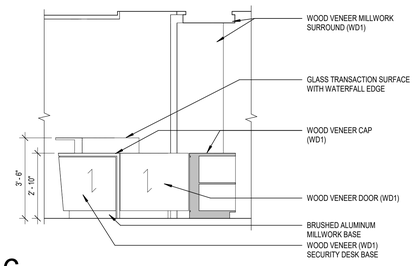
8 IT HELP DESK #2123

A-700 SCALE: 3/8" = 1'-0"



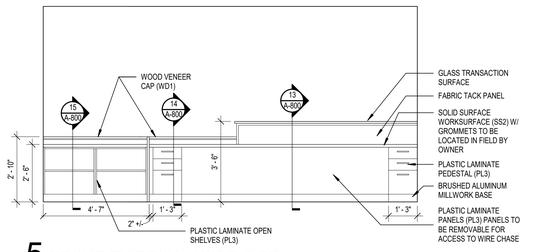
7 SECURITY DESK SIDE

A-700 SCALE: 3/8" = 1'-0"



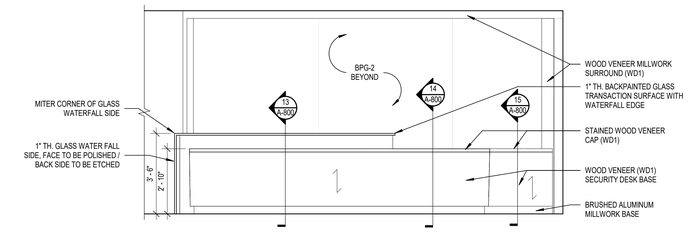
6 SECURITY DESK ACCESS SIDE

A-700 SCALE: 3/8" = 1'-0"



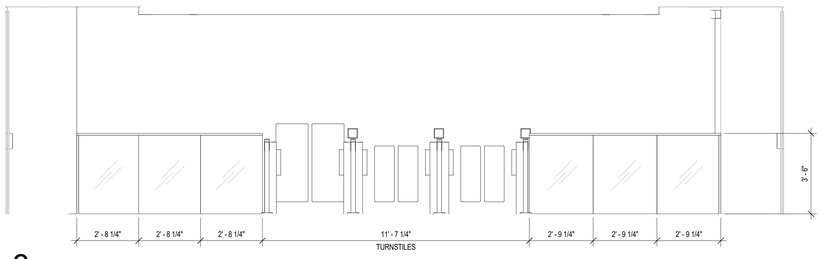
5 SECURITY DESK - USER SIDE

A-700 SCALE: 3/8" = 1'-0"



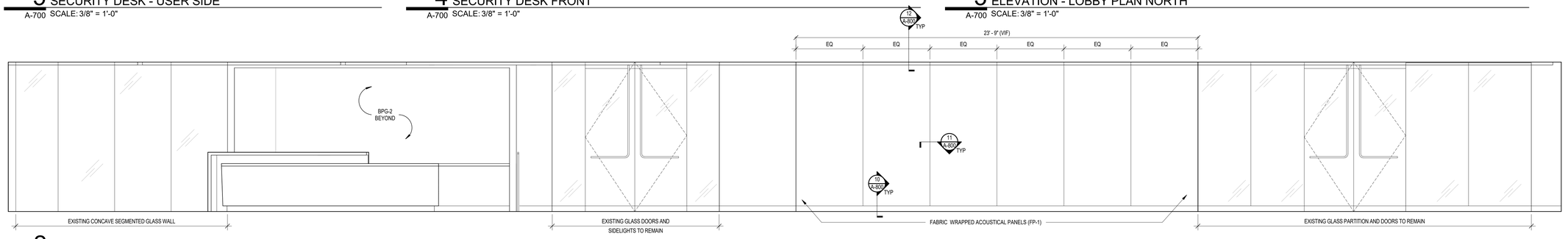
4 SECURITY DESK FRONT

A-700 SCALE: 3/8" = 1'-0"



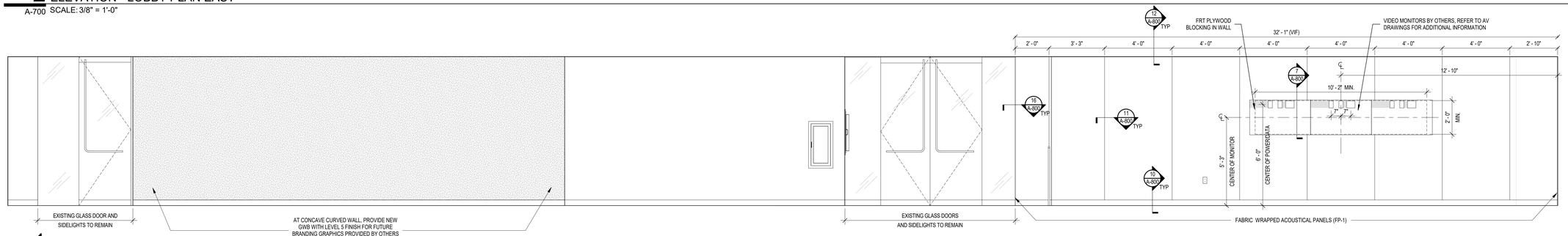
3 ELEVATION - LOBBY PLAN NORTH

A-700 SCALE: 3/8" = 1'-0"



2 ELEVATION - LOBBY PLAN EAST

A-700 SCALE: 3/8" = 1'-0"



1 ELEVATION - LOBBY PLAN WEST

A-700 SCALE: 3/8" = 1'-0"

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Key Plan:

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Plot Date:: 6/1/2021 11:58:53 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

INTERIOR ELEVATIONS

SCALE: 3/8" = 1'-0" FLOOR:

A-700

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Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

INTERIOR ELEVATIONS, CONT.

SCALE: 3/8" = 1'-0" FLOOR:

A-701

A. WALL MOUNTED AV DISPLAY BY OWNER - COORDINATE ROUGH IN LOCATIONS WITH AV VENDOR, AS REQUIRED

B. FRT PLYWOOD BLOCKING - RUN BETWEEN STUD CAVITIES TO ASSURE FLUSH GWB INSTALLATION

C. QUAD RECEPTACLE

D. (2) RJ45 DATA JACKS - PROVIDE 1-1/4" EMT CONDUIT STUB WITH PULL STRINGS IN WALL TO ABOVE CEILING. TERMINATE STUB WITH NYLON BUSHING. CABLING AND PLATE BY IT/CABLING VENDOR.

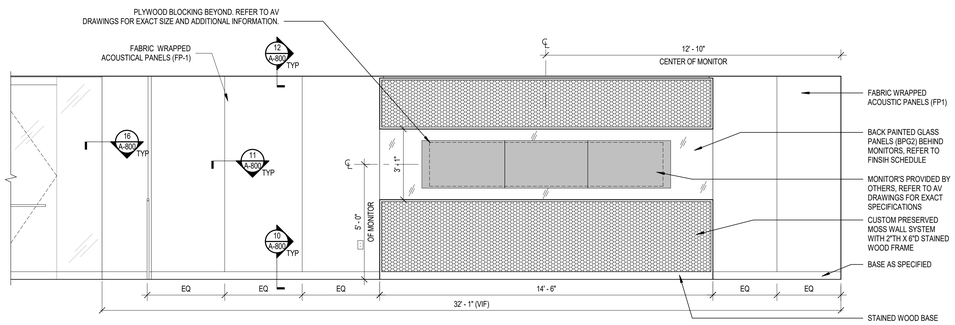
E. LOW VOLTAGE RING CONNECTION - PROVIDE 1-1/4" EMT CONDUIT WITH PULL STRINGS IN WALL FROM BOX TO FLOOR BOX AT CONFERENCE TABLE. CABLING AND PLATE BY IT/CABLING VENDOR.

F. 2-GANG BOX FOR L-WALL CAMERA - PROVIDE 1-1/4" CONDUIT STUB WITH PULL STRINGS IN WALL TO FLOOR BOX AT CONFERENCE TABLE. TEMINATE STUB WITH NYLON BUSHINGS.

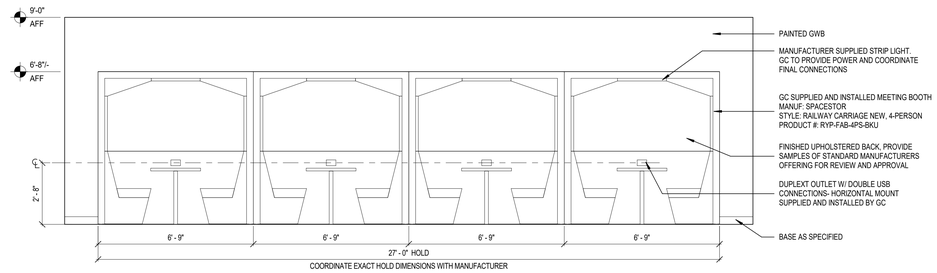
G. 1-1/4" EMT CONDUIT STUB WITH PULL STRINGS IN WALL FROM SLAB TO ABOVE CEILING. PROVIDE GOOSENECK (RADIUS) AT BOTH ENDS. TERMINATE STUBS WITH NYLON BUSHINGS.

NOTE: REFER TO AND COORDINATE WITH AV DRAWINGS AND ENGINEERING DRAWINGS FOR ADDITIONAL INFORMATION.

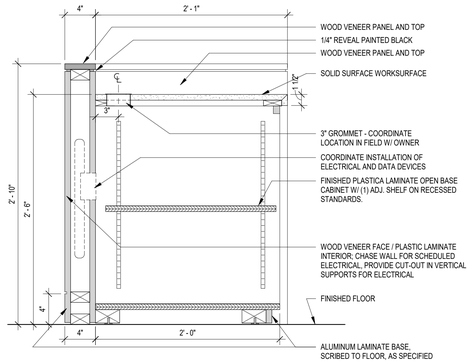
3 TYPICAL CONFERENCE RM MONITOR WALL
A-701 SCALE: 3/8" = 1'-0"



2 ELEVATION - MOSS WALL (ADD ALTERNATE)
A-701 SCALE: 3/8" = 1'-0"

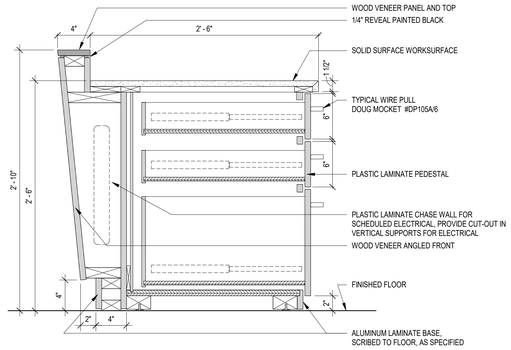


1 ELEVATION - MEETING BOOTHS / LOUNGE #2150
A-701 SCALE: 3/8" = 1'-0"



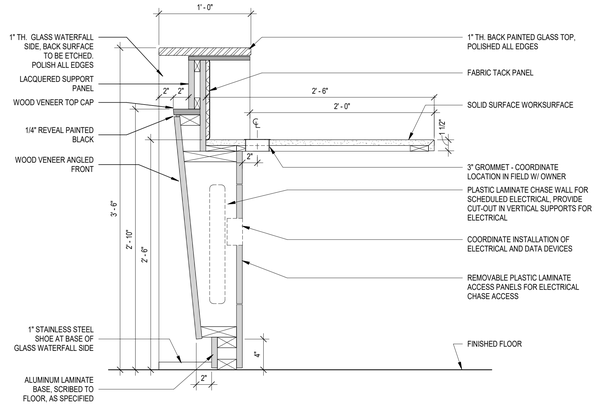
15 DETAIL - SECURITY DESK OPEN STORAGE

A-800 SCALE: 1 1/2" = 1'-0"



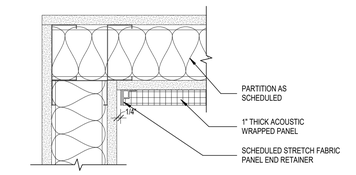
14 DETAIL - SECURITY DESK PEDESTAL

A-800



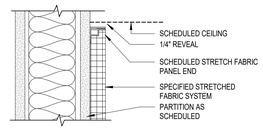
13 DETAIL - SECURITY DESK TRANSACTION

A-800 SCALE: 1 1/2" = 1'-0"



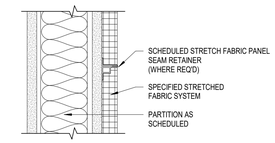
16 SFS DETAIL - WALL CORNER

A-800 SCALE: 3" = 1'-0"



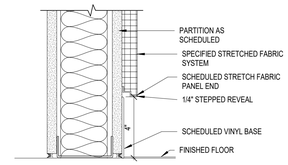
12 SFS DETAIL - CEILING

A-800 SCALE: 3" = 1'-0"



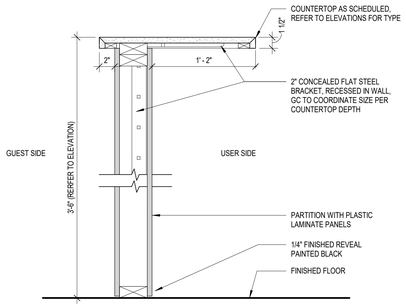
11 SFS DETAIL - ADJOINING PANEL

A-800 SCALE: 3" = 1'-0"



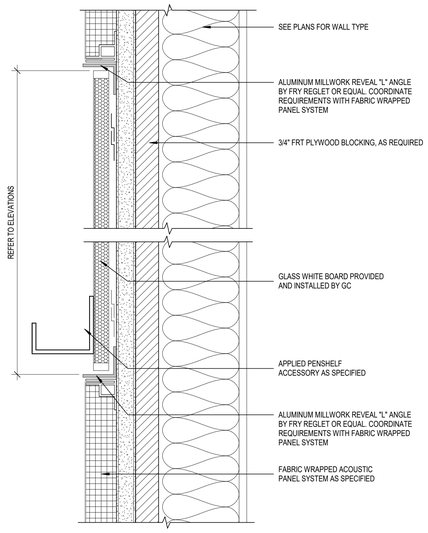
10 SFS DETAIL - VINYL BASE

A-800 SCALE: 3" = 1'-0"



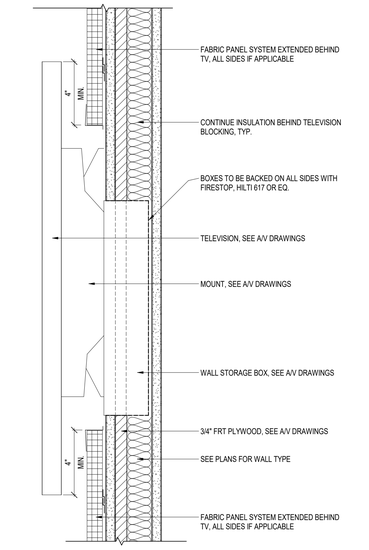
9 TRANSACTION COUNTER

A-800 SCALE: 1 1/2" = 1'-0"



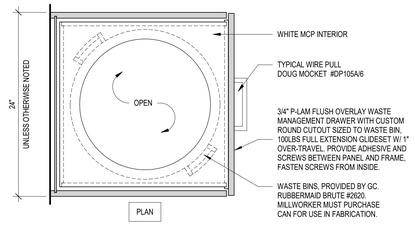
8 WHITEBOARD MOUNTING AT FABRIC PANEL

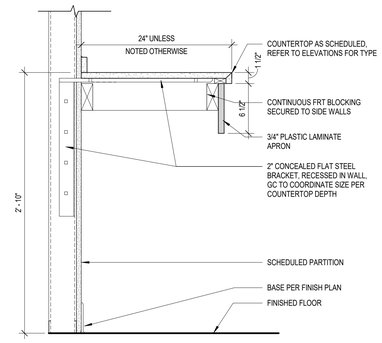
A-800 SCALE: 6" = 1'-0"



7 TV MOUNT DETAIL AT FABRIC PANEL

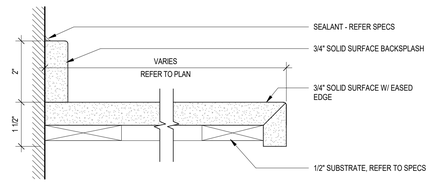
A-800 SCALE: 3" = 1'-0"

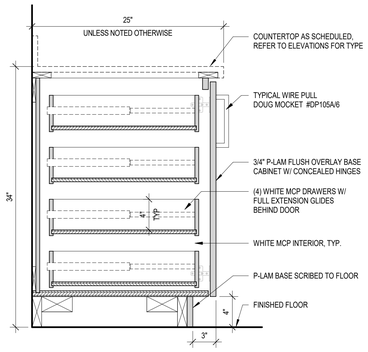




6 BASE - WORKSURFACE

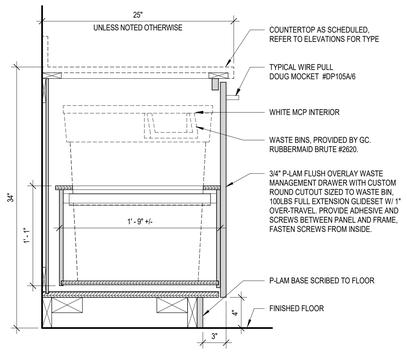
A-800 SCALE: 1 1/2" = 1'-0"





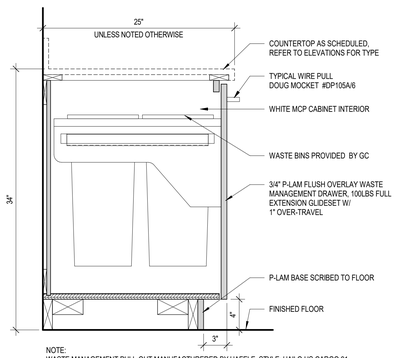
5 BASE - 1 DOOR / DRAWERS

A-800 SCALE: 1 1/2" = 1'-0"



4 BASE - WASTE DRAWER - 24"W

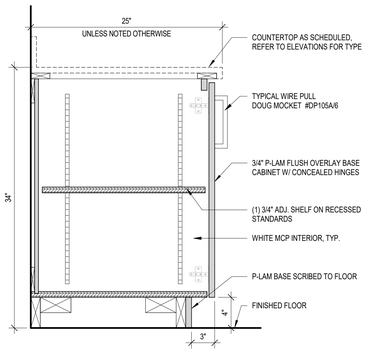
A-800 SCALE: 1 1/2" = 1'-0"



NOTE:
WASTE MANAGEMENT PULL-OUT MANUFACTURERED BY HAFELE, STYLE: HAILO US CARGO 21
-OR- APPROVED EQUAL. REFER TO ELEVATIONS FOR LOCATIONS.

3 BASE - WASTE / REC DRAWER - 18"W

A-800 SCALE: 1 1/2" = 1'-0"



2 BASE - 1 DOOR

A-800 SCALE: 1 1/2" = 1'-0"

1 CNTR - SS - 2" BS

A-800 SCALE: 6" = 1'-0"

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Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

DETAILS

SCALE: As indicated FLOOR:

A-800

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8 ACOUSTIC GWB TRANSITION AT SKYLIGHT
A-801 SCALE: 1 1/2" = 1'-0"

Key Plan:

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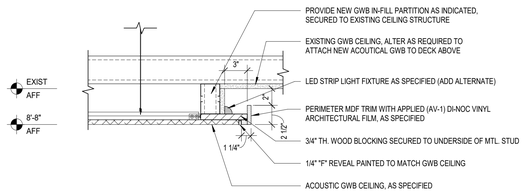
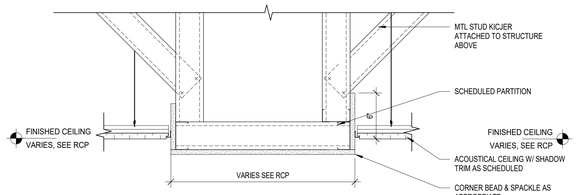
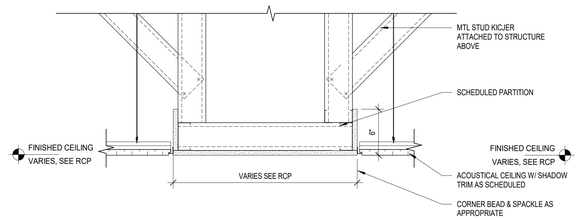


7 ACOUSTIC GWB TRANSITION AT LOBBY
A-801 SCALE: 1 1/2" = 1'-0"



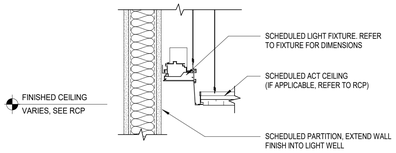
6 GWB STEP SOFFIT TO ACT
A-801 SCALE: 1 1/2" = 1'-0"



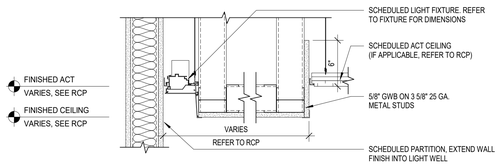
5 GWB SOFFIT TO ACT
A-801 SCALE: 1 1/2" = 1'-0"

Plot Date:: 6/1/2021 11:58:58 AM

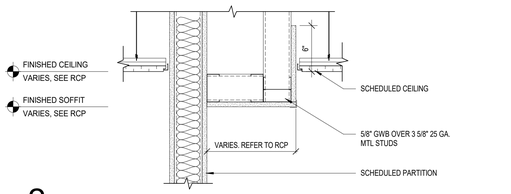
Professional Seal and Signature:



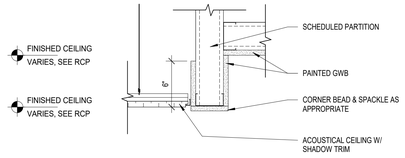
4 PERIMETER COVE AT ACT
A-801 SCALE: 1 1/2" = 1'-0"



3 PERIMETER COVE AT GWB SOFFIT
A-801 SCALE: 1 1/2" = 1'-0"



2 GWB SOFFIT TO ACT
A-801 SCALE: 1 1/2" = 1'-0"



1 BULKHEAD AT STEPPED CEILING
A-801 SCALE: 1 1/2" = 1'-0"

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

CEILING DETAILS

SCALE: 1 1/2" = 1'-0" FLOOR:

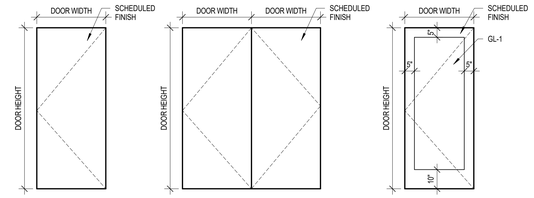
A-801

DOOR SCHEDULE - 2ND FLOOR

TAG	TYPE	DOOR				FRAME		HARDWARE SET	FIRE RATING	COMMENTS
		WIDTH	HEIGHT	THICKNESS	MATERIAL	TYPE	MATERIAL			
1-2-2C005A	D1	3' - 0"	7' -0"	1 5/8"	WD	F1	HM	3.0	N/A	
1-2-2S102B	D2	6' - 0"	7' - 0"	1 3/4"	HM	F2	HM	2.0	N/A	
1-2-2S104A	D3	3' - 0"	8' - 9"	3"	WD	F2	HM	1.1	N/A	
1-2-2S104B	D2	3' - 0"	8' - 9"	3"	WD	F3	HM	1.0	N/A	
1-2-2S104C	D2	5' - 0"	7' - 0"	1 3/4"	HM	F2	HM	2.1	N/A	
1-2-2S104D	D2	5' - 0"	7' - 0"	1 3/4"	HM	F2	HM	2.1	N/A	
1-2-2S104E	D2	5' - 0"	7' - 0"	1 3/4"	HM	F2	HM	2.1	N/A	
1-2-2S106	D2	3' - 0"	8' - 9"	3"	WD	F3	HM	1.0	N/A	
1-2-2S106B	D2	3' - 0"	8' - 9"	3"	WD	F3	HM	1.0	N/A	ADD ALTERNATE AA.2
1-2-2S110	D2	3' - 0"	8' - 9"	3"	WD	F3	HM	1.0	N/A	
1-2-2S112	D2	3' - 0"	8' - 9"	3"	WD	F3	HM	1.0	N/A	
1-2-2S112A	D1	3' - 0"	7' -0"	1 5/8"	WD	F1	HM	5.0	N/A	
1-2-2S113A	D3	3' - 0"	8' - 9"	3"	WD	F2	HM	1.1	N/A	
1-2-2S113B	D2	3' - 0"	8' - 9"	3"	WD	F3	HM	1.0	N/A	

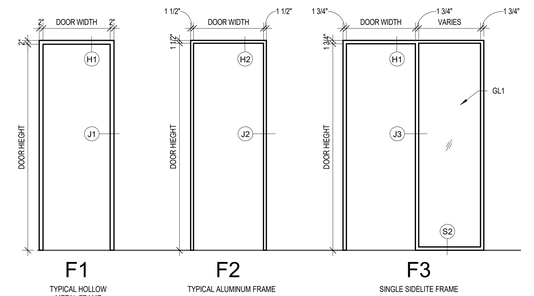
NOTE: DOORS TO BE UNDERCUT 1/2"

DOOR TYPES



D1 D2 D3

FRAME TYPES



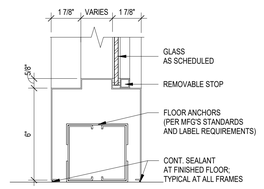
F1 TYPICAL HOLLOW METAL FRAME

F2 TYPICAL ALUMINUM FRAME

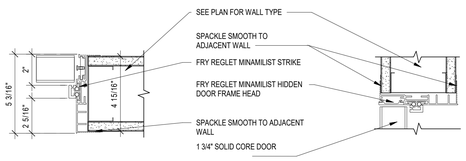
F3 SINGLE SIDELITE FRAME

GLAZING TYPES

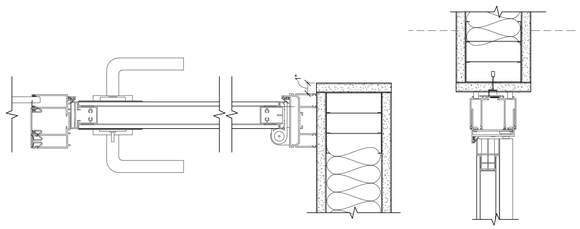
GL-1: 3/8" TEMPERED GLASS



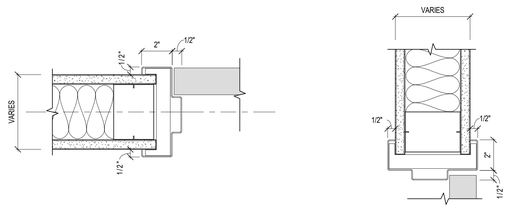
4 HOLLOW METAL SIDELITE FRAME S2
A-900 SCALE: 3" = 1'-0"



3 HIDDEN DOOR FRAME
A-900 SCALE: 3" = 1'-0"



2 STOREFRONT SWING DOOR FRAME
A-900 SCALE: 3" = 1'-0"



1 HOLLOW METAL FRAME H1/JI
A-900 SCALE: 3" = 1'-0"

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04-07-2021	ISSUE FOR BID
	05-13-2021	ISSUE FOR BID
	05-25-2021	ISSUE FOR PERMIT
	06-01-2021	ISSUE FOR BID

Plot Date:: 6/1/2021 11:59:00 AM

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

DOOR TYPES AND DETAILS

SCALE: As indicated FLOOR:

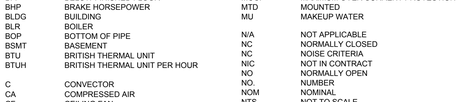
A-900

GENERIC HVAC ABBREVIATIONS

(REFER TO CONTROLS LEGEND ABBREVIATIONS FOR ADDITIONAL NOMENCLATURE)

°F	DEGREES FAHRENHEIT	ID	INSIDE DIAMETER
°C	DEGREES CELSIUS	IN	INCHES
Ø	DIAMETER	INSUL	INSULATION
AD	ACCESS DOOR	KW	KILOWATT
ADA	AMERICANS WITH DISABILITIES ACT	KVA	KILOVOLT AMPERE
ADJ	ADJUSTABLE		
ADDL	ADDITIONAL	L	LENGTH
AFF	ABOVE FINISHED FLOOR	LB	POUND
AFG	ABOVE FINISHED GRADE	LAB	LABORATORY
ALT	ALTERNATE	LF	LINEAR FEET
AP	ACCESS PANEL	LVG	LEAVING
ARCH	ARCHITECT		
ATC	AUTOMATIC TEMPERATURE CONTROL	M	ONE THOUSAND
ATCC	ATC COMPRESSOR	MAX	MAXIMUM
ATCD	ATC COMPRESSOR DRYER	MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
ATCR	ATC COMPRESSOR RECEIVER	MCA	MINIMUM CIRCUIT AMPS
ATV	ATMOSPHERIC VENT	MCC	MOTOR CONTROL CENTER
AVG	AVERAGE	MECH	MECHANICAL
		MEZZ	MEZZANINE
BBD	BOILER BLOW DOWN	MFR	MANUFACTURER
BDT	BLOWDOWN TANK	MH	MANHOLE
BF	BOILER FEED WATER	MIN	MINIMUM
BFF	BELOW FINISHED FLOOR	MOCP	MAXIMUM OVER CURRENT PROTECTION
BHP	BRAKE HORSEPOWER	MTD	MOUNTED
BLDG	BUILDING	MU	MAKEUP WATER
BLR	BOILER		
BOP	BOTTOM OF PIPE	N/A	NOT APPLICABLE
BSMT	BASEMENT	NC	NORMALLY CLOSED
BTU	BRITISH THERMAL UNIT	NC	NOISE CRITERIA
BTUH	BRITISH THERMAL UNIT PER HOUR	NIC	NOT IN CONTRACT
		NO	NORMALLY OPEN
C	CONVECTOR	NO.	NUMBER
CA	COMPRESSED AIR	NOM	NOMINAL
CF	CEILING FAN	NTS	NOT TO SCALE
CL	CENTERLINE		
CLG	CEILING	OB	OCTAVE BAND
CO	CLEAN-OUT	OC	ON CENTER
COL	COLUMN	OD	OUTSIDE DIAMETER
COMP	COMPRESSOR	ODP	OPEN DRIP PROOF
CONC	CONCRETE	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
CONN	CONNECTION	OFOI	OWNER FURNISHED OWNER INSTALLED
CONTR	CONTRACTOR	OV	OUTLET VELOCITY
CORR	CORRIDOR		
CUF	CUBIC FEET	PCF	POUNDS PER CUBIC FOOT
CUH	CABINET UNIT HEATER	PD	PRESSURE DROP
CYL	CYLINDER	PH	PHASE
		PLBG	PLUMBING
D	DRAIN	POS	PROVIDED BY OTHER SECTION(S)
DB	DRY BULB TEMPERATURE	PRESS	PRESSURE
DC	DRY COOLER	PRIM	PRIMARY
DDC	DIRECT DIGITAL CONTROL	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DDCFP	DIRECT DIGITAL CONTROL FIELD PANEL	PSID	POUNDS PER SQUARE INCH DIFFERENTIAL
DIA	DIAMETER	PSIG	POUNDS PER SQUARE INCH GAUGE
DIM	DIMENSION	PVC	POLYVINYL CHLORIDE
DN	DOWN		
DWG	DRAWING	REP	REPRESENTATIVE
		RET	RETURN
EA	EACH	REQD	REQUIRED
EFF	EFFICIENCY	REQS	REQUIREMENTS
ECUH	ELECTRIC CABINET UNIT HEATER	RH	RELATIVE HUMIDITY
ELEC	ELECTRICAL	RM	ROOM
ELEV	ELEVATION	RPM	REVOLUTIONS PER MINUTE
EMER	EMERGENCY		
EMS	ENERGY MANAGEMENT SYSTEM	SCCR	SHORT CIRCUIT CURRENT RATING
ENT	ENTERING	SCH	SCHEDULE
EQUIP	EQUIPMENT	SOV	SOLENOID OPERATED VALVE
EUH	ELECTRIC UNIT HEATER	SPECS	SPECIFICATIONS
EXH	EXHAUST	SQ	SQUARE
EXP	EXPANSION	SQFT	SQUARE FEET
		SS	STAINLESS STEEL
FTR	FINNED TUBE RADIATION	STD	STANDARD
FCV	FLOW CONTROL VALVE	STDBY	STANDBY
FFOP	FIREFIGHTERS OVERRIDE PANEL	STL	STEEL
FG	FIBERGLASS	SUCT	SUCTION
FLEX	FLEXIBLE	SUP	SUPPLY
FLR	FLOOR		
FLRDR	FLOOR DRAIN	TA	THROW-AWAY
FP	FIRE PROTECTION	TAV	THERMOSTATIC AIR VENT
FPM	FEET PER MINUTE	TEFC	TOTALLY ENCLOSED FAN COOLED
FT	FEET	TEL	TELEPHONE
FT/SEC	FEET PER SECOND	TEMP	TEMPERATURE
FURN	FURNISHED	TOD	TOP OF DUCT
FVNR	FULL VOLTAGE NON-REVERSING	TOP	TOP OF PIPE
		TYP	TYPICAL
G	GAS		
GA	GAUGE	UH	UNIT HEATER
GAL	GALLONS		
GALV	GALVANIZED	V	VENT
GC	GENERAL CONTRACTOR	VEL	VELOCITY
GND	GROUND	VERT	VERTICAL
GPH	GALLONS PER HOUR	VFC	VARIABLE FREQUENCY CONTROLLER
GPM	GALLONS PER MINUTE	VTR	VENT THROUGH ROOF
GRD	GRADE (GROUND LEVEL)		
GWB	GYPSUM WALL BOARD	W	WIDTH
		W/	WITH
H	HEIGHT	W/O	WITHOUT
HCPD	HANDICAPPED	WB	WET BULB TEMPERATURE
HD	HEAD	WF	WIDE FLANGE
HP	HORSEPOWER	WG	WATER GAUGE
HPG	HIGH PRESSURE GAS	WRT	WITH RESPECT TO
HR	HOUR		
HZ	HERTZ	X	EXISTING EQUIPMENT TO BE REMOVED
HX	HEAT EXCHANGER	XM	EXISTING EQUIPMENT TO REMAIN
		XN	NEW LOCATION OF RELOCATED EQUIPMENT
		XR	EXISTING EQUIPMENT TO BE RELOCATED

EQUIPMENT TAG SYMBOLS & ABBREVIATIONS



EXAMPLE EQUIPMENT TAGS:

P 1	PUMP	UH 1	UNIT HEATER
SATT 1	SOUND ATTENUATOR	RHC 1 / RHC 1	REHEAT COIL
SDET	SMOKE DETECTOR	AHU 1	AIR HANDLING UNIT
CP 1	CONDENSATE PUMP	ACV 1	AUTOMATIC CONTROL VALVE

VV-1 — VARIABLE VOLUME SUPPLY AIR TERMINAL BOX **
600/200 — OCCUPIED MAXIMUM/OCCUPIED MINIMUM CFM
150 — UNOCCUPIED MINIMUM CFM
0.5 GPM — REHEAT COIL FLOW (GPM)

VVE-1 — VARIABLE VOLUME EXHAUST AIR TERMINAL BOX **
600/200 — OCCUPIED MAXIMUM/OCCUPIED MININMUM CFM
150 — UNOCCUPIED MINIMUM CFM

** NOTE: CONSTANT VOLUME BOX INDICATED WHEN MAX AND MIN CFM'S ARE EQUAL

HYDRONIC SYSTEM SPECIFIC ABBREVIATIONS

ACV	AUTOMATIC CONTROL VALVE	LWT	LEAVING WATER TEMPERATURE
AS	AIR SEPARATOR		
AAV	AUTOMATIC AIR VENT	MAV	MANUAL AIR VENT
CH	CHILLER	NPSH	NET POSITIVE SUCTION HEAD
CHEM	CHEMICAL FEED		
CHW	CHILLED WATER	OS&Y	OUTSIDE STEM AND YOKE
CHWR	CHILLED WATER RETURN		
CHWS	CHILLED WATER SUPPLY	P	PUMP
COND	COOLING COIL CONDENSATE DRAIN PIPING	PHX	PLATE HEAT EXCHANGER
CT	COOLING TOWER	PROCHW	PROCESS CHILLED WATER
CTBD	COOLING TOWER BLOW DOWN	PROCHWR	PROCESS CHILLED WATER RETURN
CTW	COOLING TOWER WATER	PROCHWS	PROCESS CHILLED WATER SUPPLY
CTWR	COOLING TOWER WATER RETURN		
CTWS	COOLING TOWER WATER SUPPLY	S(XXX)	SECONDARY (SYSTEM DEPENDANT PREFIX)
CWR	CONDENSER WATER RETURN		
CWS	CONDENSER WATER SUPPLY	T(XXX)	TERTIARY (SYSTEM DEPENDANT PREFIX)
		TDH	TOTAL DYNAMIC HEAD
DOV	DRAIN OFF VALVE		
		UV	UNIT VENTILATOR
ET	EXPANSION TANK		
EWT	ENTERING WATER TEMPERATURE	WCC	WATER COOLED CONDENSER
		WCCU	WATER COOLED CONDENSING UNIT
GR	GLYCOL RETURN		
GS	GLYCOL SUPPLY	ALTERNATE HYDRONIC PIPING SYSTEM LABELING:	
HB	HOSE BIBB CONN W/CHAINED CAP	HWS180	HOT WATER SUPPLY 180 DEG F SYSTEM
HCR	HOT OR COLD WATER RETURN (DUAL TEMP)	HWR180	HOT WATER RETURN 180 DEG F SYSTEM
HCS	HOT OR COLD WATER SUPPLY (DUAL TEMP)	CHWS42	CHILLED WATER SUPPLY 42 DEG F SYSTEM
HRC	HEAT RECOVERY COIL - GLYCOL	CHWR42	CHILLED WATER RETURN 42 DEG F SYSTEM
HW	HOT WATER		
HWCUH	HOT WATER CABINET UNIT HEATER		
HWHC	HOT WATER HEATING COIL		
HWPHC	HOT WATER PREHEAT COIL		
HWRHC	HOT WATER REHEAT COIL		
HWR	HOT WATER RETURN		
HWS	HOT WATER SUPPLY		
HWUH	HOT WATER UNIT HEATER		

AIR SYSTEM SPECIFIC ABBREVIATIONS

AC	AIR CONDITIONING	IH	INTAKE HOOD
ACC	AIR COOLED CONDENSER		
ACCU	AIR COOLED CONDENSING UNIT	LAT	LEAVING AIR TEMPERATURE
ACD	AUTOMATIC CONTROL DAMPER	LD	LINEAR DIFFUSER
ACU	AIR CONDITIONING UNIT	LUVR	LOUVER
AF	AIR FOIL	LVDR	LOUVERED DOOR
AHU	AIR HANDLING UNIT		
ALD	ACOUSTICALLY LINED DUCTWORK	OA	OUTSIDE AIR
ATD	AIR TERMINAL DEVICE	OAI	OUTSIDE AIR INTAKE
AVS	AIR VOLUME TRAVERSE STATION	OBD	OPPOSED BLADE DAMPER
		OED	OPEN END DUCT
BDD	BACKDRAFT DAMPER		
BI	BACKWARD INCLINED	PHC	PREHEAT COIL
BOD	BOTTOM OF DUCT		
		RA	RETURN AIR
CACU	COMPUTER ROOM AIR CONDITIONING UNIT	RD	REFRIGERANT DISCHARGE (HOT GAS)
CC	COOLING COIL	RF	RETURN FAN
CD	CEILING DIFFUSER	RG	RETURN GRILLE
CFM	CUBIC FEET PER MINUTE	RHC	REHEAT COIL
CG	CEILING GRILLE	RL	REFRIGERANT LIQUID
		RLF	RELIEF
DD	DUAL DUCT SUPPLY AIR TERMINAL	RR	RETURN REGISTER
DIFF	DIFFUSER	RS	REFRIGERANT SUCTION
DWDI	DOUBLE WIDTH DOUBLE INLET	RTU	ROOF TOP UNIT
DWSI	DOUBLE WIDTH SINGLE INLET	RV	ROOF VENT
DX	DIRECT EXPANSION		
		SA	SUPPLY AIR
EAT	ENTERING AIR TEMPERATURE	SATT	SOUND ATTENUATOR
EF	EXHAUST FAN	SCR	SCREEN
EG	EXHAUST GRILLE	SD	SMOKE DAMPER
EHC	ELECTRICAL HEATING COIL	SDET	SMOKE DETECTOR
EPHC	ELECTRIC PREHEAT COIL	SEF	SMOKE EXHAUST FAN
ER	EXHAUST REGISTER	SF	SUPPLY FAN
ERHC	ELECTRIC REHEAT COIL	SG	SUPPLY GRILLE
ESP	EXTERNAL STATIC PRESSURE	SGD	SLIDE GATE DAMPER
		SM	SHEETMETAL
F	FAN	SP	STATIC PRESSURE
F&B	FACE AND BYPASS	SR	SUPPLY REGISTER
FB	FAN BOX	SWDI	SINGLE WIDTH DOUBLE INLET
FC	FORWARD CURVED	SWSI	SINGLE WIDTH SINGLE INLET
FA	FREE AREA		
FCU	FAN COIL UNIT	TE	TOILET EXHAUST
FD	FIRE DAMPER (W/ ACCESS DOOR)	TF	TRANSFER FAN
FLTR	FILTER	TG	TRANSFER GRILLE
FPI	FINS PER INCH	TR	TRANSFER
FSD	COMBINATION AUTOMATIC FIRE/SMOKE DAMPER WITH ACCESS DOOR	TSP	TOTAL STATIC PRESSURE
GE	GENERAL EXHAUST	UC	UNDERCUT DOOR
GH	GRAVITY HOOD		
		VD	VOLUME DAMPER
HC	HEATING COIL	VV	VARIABLE VOLUME SUPPLY AIR TERMINAL BOX
HEGA	HIGH EFFICIENCY GAS ABSORBER AIR FILTER	VVE	VARIABLE VOLUME EXHAUST AIR TERMINAL BOX
HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER		
HPU	HEAT PUMP UNIT	WMS	WIRE MESH SCREEN
HRU	HEAT RECOVERY UNIT		
HV	HEATING & VENTILATING UNIT		
HU	HUMIDIFIER		

HVAC GENERAL NOTES

GENERAL:

1. HVAC GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL "M" SERIES DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE CAPACITY, SIZE, APPROXIMATE LOCATION AND GENERAL ARRANGEMENT. DETERMINE EXACT LOCATION OF SYSTEMS AND COMPONENTS IN FIELD.
3. DRAWINGS CANNOT BE FULLY AND CORRECTLY INTERPRETED WITHOUT REFERENCE TO LEGENDS, DETAILS, SCHEDULES AND SPECIFICATIONS. IT IS THE INTENT OF THE DRAWINGS TO SHOW THE INSTALLATION, AS DETAILED BY THE TYPICAL ARRANGEMENTS. ITEMS SHOWN ONCE ON FLOOR PLANS, ELEVATIONS, DETAILS OR DIAGRAMS MAY NOT BE REPEATED IN FULL FOR OTHER TYPICAL INSTANCES.
4. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. PROVIDE INFORMATION AND HARDWARE TO COORDINATE CONCRETE PADS AND STEEL PLATFORMS REQUIRED FOR MECHANICAL WORK.
6. COORDINATE ROOF AND WALL PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. COORDINATE SLAB PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH EXISTING POST-TENSION CABLES.
7. RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS. ALL DUCTWORK SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO WALL AND UNDERSIDE OF BEAMS AND JOISTS.
8. INSTALL SENSORS (TEMPERATURE, HUMIDITY, CO2, THERMOSTATS) AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY ARCHITECT. MOUNTING HEIGHT AFF SHALL COMPLY WITH ADA AND SHALL BE MOUNTED LEVEL WITH ADJACENT SWITCHES (E.G. LIGHT SWITCHES).
9. COORDINATE WORK OF THIS SECTION WITH THAT OF OTHER SECTIONS. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST.
10. ACCESS PANELS SHALL BE PROVIDED TO CLEAN COILS AND SERVICE DAMPERS, HEATERS, VALVES AND ALL CONCEALED MECHANICAL EQUIPMENT. PROVIDE ACCESS PANELS THROUGH BUILDING ASSEMBLIES TO SERVICE AND MAINTAIN EQUIPMENT UNLESS SUCH EQUIPMENT IS INSTALLED IN EXPOSED LOCATIONS OR ABOVE LAY-IN CEILINGS. COORDINATE THE LOCATION OF ACCESS DOORS AND PANELS AND VERIFY THE EXACT QUANTITY, SIZE, AND LOCATIONS AFTER THE SYSTEMS AND EQUIPMENT REQUIRING ACCESS HAVE BEEN INSTALLED AND PRIOR TO THE CLOSURE OF THE AFFECTED CEILINGS AND BUILDING ASSEMBLIES. MINIMUM ACCESS PANEL AND DOOR SIZE SHALL BE 18"x18" UNLESS OTHERWISE NOTED. OBTAIN APPROVAL FOR ALL PANEL LOCATIONS FROM ARCHITECT
14. ELEMENTS OF THE WORK SHALL BE INSTALLED IN A MANNER SUCH THAT AT SUBSTANTIAL COMPLETION THE FOLLOWING ITEMS, NEW OR EXISTING SHALL BE "FULLY AND REASONABLY ACCESSIBLE": HVAC CONTROL BOXES, JUNCTION BOXES, VALVES (OF EVERY SHAPE, SORT AND FUNCTION), DDC CONTROL BOXES, ELECTRICAL PANELS, FILTERS, BELTS, WATER COILS, DISCONNECT SWITCHES, AND MAINTENANCE ACCESS ELEMENTS INCLUDING PULL SPACE.
    a. "FULLY AND REASONABLY ACCESSIBLE" SHALL BE DEFINED AS: NATIONAL ELECTRIC CODE REQUIRED CLEARANCE FOR POWERED EQUIPMENT AND CAPABLE OF BEING ACCESSED FOR SERVICE, REPAIR OR REPLACEMENT BY AN AVERAGE SIZED INDIVIDUAL (ON A LADDER IF NECESSARY) AND CAPABLE OF BEING SERVICED OR REMOVED WITHOUT REMOVING OR MODIFYING OR DISTORTING OTHER COMPONENTS OF THE WORK. THE DESIGN INTENT PROVIDES A MINIMUM 2' x 2' x 2' ZONE FOR MAINTENANCE. INCREASE WHERE REQUIRED BY MANUFACTURER INSTALLATION INSTRUCTIONS.
    b. CONFLICT WITH MEETING THESE REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IN A TIMELY MANNER AND SHALL BE CORRECTED AT NO ADDITIONAL COST.
15. SUPPORT ALL EQUIPMENT, PIPING AND DUCTWORK FROM BUILDING STRUCTURE. PROVIDE VIBRATION ISOLATION. FOR ROTATING EQUIPMENT, DUCTWORK AND PIPING IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE TO THE CONSTRUCTION MANAGER OR GENERAL CONTRACTOR A LIST OF ALL WEIGHTS AND METHODS OF SUPPORT FOR COORDINATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
16. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NATIONAL ELECTRIC CODE AND DIVISION 26.
17. ALL MATERIAL AND EQUIPMENT SHALL BE NEW.

AIR SYSTEM SPECIFIC NOTES:

1. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
2. SHEETMETAL FITTINGS SHOWN ARE TO BE PROVIDED. NO SUBSTITUTES SHALL BE ALLOWED WITHOUT PRIOR CONSENT FROM ARCHITECT/ENGINEER.
3. REFER TO SPECIFICATIONS FOR DUCTWORK CONSTRUCTION CLASSES, SEAL, AND LEAKAGE CLASSES.
4. EXTERIOR LOUVERS ARE INDICATED FOR LOCATION ONLY.
5. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED TO THE FIRE ALARM SYSTEM BY DIVISION 28. DIVISION 23 SHALL MOUNT THE DETECTORS IN DUCTWORK, WHERE REQUIRED BY CODE AND DIVISION 23, DIVISION 23 SHALL WIRE THE DETECTORS TO THE BAS SYSTEM AND FAN STARTERS FOR SHUTDOWN.
6. SMOKE DAMPERS SHALL BE UL555S LISTED. FIRE DAMPERS SHALL BE UL555 LISTED. PROVIDE FIRE DAMPERS, SMOKE DAMPERS AND FIRE/SMOKE DAMPERS AND ASSOCIATED ACCESS PANELS IN COMPLIANCE WITH APPLICABLE BUILDING AND MECHANICAL CODES AND NFPA 90A. ACCESS DOOR DIMENSIONS SHALL MEET REQUIREMENTS OF NFPA 90A AND NFPA 80.
7. REFER TO REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR TERMINAL DEVICES.
8. INTERNAL AIR FLOW DIMENSIONS ARE SHOWN FOR DUCTS. CONTRACTOR SHALL INCREASE SIZE FOR LINER IF APPLICABLE.
9. DIFFUSER SIZES SHOWN ARE NECK SIZES; REGISTER AND GRILLE SIZE ARE NOMINAL. REFER TO DIFFUSER SCHEDULE FOR DUCT RUN-OUT SIZES.
10. PROVIDE FLEXIBLE CONNECTIONS ON ALL DUCTS CONNECTING TO FANS AND AIR HANDLING UNITS UNLESS INTERNALLY ISOLATED. ALL DUCTS TO BE GROUNDED ACROSS FLEXIBLE CONNECTION WITH FLEXIBLE COPPER GROUNDING STRAPS.
11. THE INSIDE OF DUCTWORK AND ALL MECHANICAL COMPONENTS VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.
12. ALL RETURN AIR OPENINGS ABOVE CEILING SHALL BE PROVIDED WITH A 1/2" MESH ALUMINUM SCREEN (80% FREE AREA MINIMUM).
13. INSULATE DUCTWORK: PERFORM TESTS BEFORE INSULATING.
14. ELBOWS IN DUCT SYSTEMS SHALL BE FULL RADIUS (CENTERLINE RADIUS = 1.5 DUCT WIDTH) WHERE SPACE PERMITS. WHERE LIMITED CLEARANCE OCCURS, PROVIDE SHORT RADIUS ELBOW WITH FULL LENGTH SPLITTER VANES PER SMACNA. MITERED (SQUARE) ELBOWS WITH TURNING VANES SHALL NOT BE USED.
15. UNLESS INDICATED OTHERWISE AND AS A MINIMUM PROVIDE 24"x24" MINIMUM SIZE CLEANOUTS IN KITCHEN EXHAUST DUCTS AT CHANGES IN DIRECTION, AT BASES OF RISERS, AND EVERY 10 FEET IN STRAIGHT RUNS.
16. MANUAL DAMPERS ARE NOT SHOWN ON THE DRAWINGS IN ORDER FOR DRAWING CLARITY. PROVIDE MANUAL ADJUSTABLE DAMPERS ON EACH LOW PRESSURE SUPPLY RETURN AND EXHAUST DUCT TAKE OFF, AND AT EACH TAKE OFF TO REGISTERS, GRILLES AND DIFFUSERS.

PIPING SPECIFIC NOTES:

1. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER CERTIFIED DRAWINGS. VERIFY AND PROVIDE FITTINGS TO TRANSITION TO FURNISHED EQUIPMENT CONNECTION SIZES. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
2. ALL CONDENSATE DRAIN LINES SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, CONNECTED TO BUILDING DRAINAGE SYSTEMS. SIZE DEPTH OF TRAP FOR ASSOCIATED AIR PRESSURE DIFFERENTIAL. REFER TO DETAIL ON DRAWINGS.
3. PERFORM TEST BEFORE INSULATING PIPING.
4. PROVIDE HANGERS, CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES TO PREVENT STRESS ON PIPING.
5. PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
6. PROVIDE AT LEAST THREE-ELBOW SWING FOR PIPE TAKE-OFFS TO TERMINAL EQUIPMENT AND RISERS.
7. ISOLATION VALVES IN PIPING SYSTEMS ARE NOT SHOWN ON PLANS (FOR CLARITY) BUT ARE REQUIRED AT ALL PIPE BRANCHES AND CONNECTIONS TO EQUIPMENT REFER TO DETAIL SHEETS AND FLOW DIAGRAMS.
8. PITCH HYDRONIC (WATER) PIPING UPWARD IN DIRECTION OF FLOW. PITCH STEAM AND CONDENSATE PIPING DOWNWARD IN DIRECTION OF FLOW. PITCH FUEL OIL PIPING TOWARD TANK. REFER TO SPECIFICATIONS FOR REQUIRED PITCH (I.E. GRADE OR SLOPE).
9. REFER TO EQUIPMENT SCHEDULES FOR PIPE RUN-OUT SIZES TO INDIVIDUAL PIECES OF EQUIPMENT.

RENOVATION PRE-BID SITE VISIT AND DEMOLITION NOTES

PRE-DEMOLITION TESTING, ADJUSTING AND BALANCING

1. CONFIRM SUPPLY AND EXHAUST SYSTEM AIRFLOW CAPACITY THROUGH PRE-CONSTRUCTION TESTING AND BALANCING REPORTS OF SYSTEMS TO BE EXTENDED. REPORTS SHALL INCLUDE COMPLETE FAN INFORMATION, CFM, ESP, TSP, RPM, VOLTS, AMPS AND VFD SPEEDS. PROVIDE AIRFLOW IN CFM AND DUCT STATIC PRESSURE MEASUREMENTS IN DUCT SYSTEMS TO DOCUMENT PERFORMANCE AT ALL SPACES SERVED BY SYSTEM, BOTH WITHIN PROJECT WORK SCOPE AREA AND BEYOND PROJECT WORK SCOPE AREA.
2. CONFIRM HYDRONIC SYSTEM CAPACITY THROUGH PRE-CONSTRUCTION TESTING AND BALANCING REPORTS OF SYSTEMS TO BE EXTENDED. REPORTS SHALL INCLUDE PIPE SIZE, FLOW RATE, SUPPLY PRESSURE AND RETURN PRESSURE. PROVIDE HYDRONIC SYSTEM FLOW (GPM) AND PIPE SYSTEM PRESSURE (PSIG) MEASUREMENTS IN PIPING SYSTEMS TO DOCUMENT PERFORMANCE AT ALL SPACES SERVED BY SYSTEM, BOTH WITHIN PROJECT WORK SCOPE AREA AND BEYOND PROJECT WORK SCOPE AREA.

DEMOLITION NOTES

1. SITE VISIT: BEFORE SUBMITTING BID, VISIT AND CAREFULLY EXAMINE SITE TO IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK OF THIS SECTION. NO EXTRA PAYMENT WILL BE ALLOWED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUED BY EXPERIENCED OBSERVER. SITE VISIT IS PARTICULARLY IMPORTANT BECAUSE THIS IS RENOVATION WORK.
2. EXISTING CONDITIONS AND PREPARATORY WORK: BEFORE STARTING WORK IN A PARTICULAR AREA OF THE PROJECT, VISIT SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED INCLUDING PREPARATORY WORK DONE UNDER OTHER SECTIONS OR CONTRACTS BY OWNER. REPORT CONDITIONS THAT MIGHT AFFECT WORK ADVERSELY IN WRITING TO ARCHITECT AND OWNER. DO NOT PROCEED WITH WORK UNTIL DEFECTS HAVE BEEN CORRECTED AND CONDITIONS ARE SATISFACTORY. COMMENCEMENT OF WORK SHALL BE CONSTRUED AS COMPLETE ACCEPTANCE OF EXISTING CONDITIONS AND PREPARATORY WORK.
3. DEMOLITION SHALL BE COORDINATED WITH OWNER, ARCHITECT, GENERAL CONTRACTOR, CONSTRUCTION MANAGER AND ENGINEER.
4. PROVIDE MECHANICAL DEMOLITION TERMINATION; CUT, VALVE AND CAP. DROP MECHANICAL DISTRIBUTION TO FLOOR. REMOVAL OF SYSTEM EQUIPMENT SHALL BE BY THE HVAC CONTRACTOR.
5. PROVIDE 2 WEEKS NOTICE TO OWNER OPERATIONS FOR SHUT DOWN OF ANY SERVICES AND/OR SYSTEMS.
6. REFER TO ALL DRAWINGS FOR GENERAL DESCRIPTION OF AREAS REQUIRING DEMOLITION.
7. REFER TO CONSTRUCTION MANAGER INSTRUCTIONS FOR ALL EXISTING EQUIPMENT AND MATERIALS THAT SHALL REMAIN THE PROPERTY OF THE OWNER.
8. ITEMS OF VALUE WHICH ARE NOT DIRECTED TO BE RETURNED TO THE OWNER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM SITE AND LEGALLY DISPOSED OF. STORAGE OR SALE OF ITEMS ON THE PROJECT SITE IS PROHIBITED.
9. PROTECTION: ENSURE THE SAFE PASSAGE OF PERSONS IN AND AROUND THE BUILDING DURING DEMOLITION. PREVENT INJURY TO PERSONS AND DAMAGE TO PROPERTY. PROVIDE ADEQUATE SHORING AND BRACING TO PREVENT COLLAPSE. IMMEDIATELY REPAIR DAMAGED PROPERTY TO THE CONDITION BEFORE BEING DAMAGED. TAKE EFFECTIVE MEASURES TO PREVENT WINDBLOWN DUST.
10. UTILITIES: MAINTAIN ALL UTILITIES EXCEPT THOSE REQUIRING REMOVAL OR RELOCATION. KEEP UTILITIES IN SERVICE AND PROTECT FROM DAMAGE. DO NOT INTERRUPT UTILITIES SERVING OCCUPIED AREAS WITHOUT FIRST OBTAINING PERMISSION FROM THE CLINET IN WRITING. PROVIDE TEMPORARY SERVICES.
11. DRAWINGS ARE DIAGRAMMATIC ONLY AND REFLECT OVERALL SYSTEM REMOVAL. NOT EVERY ITEM OR COMPONENT OF A SYSTEM IS SHOWN.
12. PROVIDE SHUT DOWN OF SERVICES (FANS, PUMPS, AHUS, ETC.) AND TRACING OF ALL RISERS WITHIN BASE BID.

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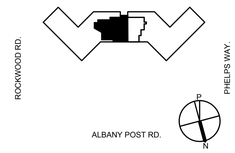

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Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing: HVAC LEGEND, ABBREVIATION & GENERAL NOTES, SHEET NO. 1

SCALE: As indicated FLOOR:

M-001

PRINTED: FILE:

PIPING LEGEND

- GATE VALVE
- BALL VALVE
- BALL VALVE WITH MEMORY STOP (BALANCING VALVE)
- BALL VALVE WITH HOSE BIBB, CAP & CHAIN (DRAIN VALVES)
- BUTTERFLY VALVE
- BUTTERFLY VALVE WITH MEMORY STOP (BALANCING VALVE)
- GLOBE VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- CHECK VALVE
- STRAINER W/BALL VALVE, HOSE BIBB & CAP (GATE VALVE FOR STEAM)
- FLOAT OPERATED VALVE
- STRAINER, DUPLEX
- ANGLE VALVE (SECTION VIEW)
- ANGLE VALVE (PLAN VIEW)
- STRAINER, BASKET TYPE W/DRAIN VALVE, HOSE BIBB & CAP
- SOLENOID VALVE
- AUTOMATIC CONTROL VALVE, MODULATING ACTUATOR
- AUTOMATIC CONTROL VALVE, TWO POSITION ACTUATOR
- THREE WAY AUTOMATIC CONTROL VALVE, MODULATING ACTUATOR
- THREE WAY AUTOMATIC CONTROL VALVE, TWO POSITION ACTUATOR
- AUTOMATIC FLOW CONTROL VALVE (PRESSURE INDEPENDENT)
- COMBINATION FLOWMETER/SHUT OFF/BALANCING VALVE (CIRCUIT SETTER)
- FM — FLOW MEASURING DEVICE
- FLOW SWITCH
- SAFTEY RELIEF VALVE
- UNION OR FLANGE (AS INDICATED BY PIPE SIZE - SEE SPEC.)
- BLIND FLANGE
- END CAP
- PRESSURE GAUGE WITH GAUGE CLOCK
- STEAM PRESSURE GAUGE WITH A GAUGE COCK AND COIL SYPHON
- THERMOMETER
- FAT — FLOAT & THERMOSTATIC STEAM TRAP
- IB — INVERTED BUCKET STEAM TRAP
- T — THERMOSTATIC STEAM TRAP
- TD — THERMODYNAMIC STEAM TRAP
- VB — VACUUM BREAKER
- PT — PRESSURE/TEMPERATURE WELL
- OR AAV — AUTOMATIC AIR VENT WITH ISOLATION VALVE
- MAV — MANUAL AIR VENT
- TAV — THERMOSTATIC AIR VENT (STEAM ONLY)
- REDUCER (ECCENTRIC-FLAT ON BOTTOM OR FLAT ON TOP)
- REDUCER (CONCENTRIC)
- FLEXIBLE CONNECTION
- E — EXPANSION JOINT
- PIPE GUIDE
- ANCHOR
- QUICK OPENING VALVE (USED WITH BLOW DOWN)
- QUICK CLOSING VALVE, FUSIBLE LINK (USED WITH FUELS)
- RISE (SINGLE LINE - PLAN VIEW)
- DROP (SINGLE LINE - PLAN VIEW)
- VALVE IN VERTICAL
- TOP TAKEOFF
- BOTTOM TAKEOFF
- PIPE BREAK (SINGLE LINE)
- WM — WATER METER DIAL TYPE
- DIRT LEG
- CO — CLEAN-OUT FOR CONDENSATE DRAIN
- RISE (DOUBLE LINE - PLAN VIEW)
- DROP (DOUBLE LINE - PLAN VIEW)
- PIPE BREAK (DOUBLE LINE)
- DIRECTION OF FLOW IN PIPE
- UP — PITCH PIPE UP IN DIRECTION OF FLOW
- DN — PITCH PIPE DOWN IN DIRECTION OF FLOW
- NEW WORK
- NEW SUPPLY LINES
- NEW RETURN LINES
- EXISTING PIPING TO REMAIN
- OR — DEMO/EXISTING TO BE REMOVED
- FUTURE

FLOW DIAGRAM EQUIPMENT SYMBOLS

- FILTER BANK
- HEATING COIL
- PREHEAT COIL
- REHEAT COIL
- COOLING COIL
- CABINET HEATER
- UNIT HEATER
- VFD — VARIABLE FREQUENCY DRIVE
- FINNED TUBE RADIATION
- SDET — SMOKE DETECTOR
- PUMP
- CENTRIFUGAL FAN WITH INLET GUIDE VANES
- CENTRIFUGAL FAN
- PROPELLER FAN
- TUBEAXIAL OR VANEAXIAL FAN
- INLINE CENTRIFUGAL FAN
- OPPOSED BLADE DAMPER W/ TWO POSITION ACTUATOR
- OPPOSED BLADE DAMPER W/ MODULATING ACTUATOR
- PARALLEL BLADE DAMPER W/ TWO POSITION ACTUATOR
- PARALLEL BLADE DAMPER W/ MODULATING ACTUATOR
- BACKDRAFT DAMPER
- AIR TERMINAL BOX
- AIR TERMINAL BOX WITH REHEAT COIL

CALL OUT SYMBOLS

- CONNECT NEW TO EXISTING
- POINT OF DISCONNECT
- 1 / H3.1 — SECTION DESIGNATION / SHEET NUMBER
- 1 / H3.1 — DETAIL DESIGNATION / SHEET NUMBER
- 1 — REVISION NUMBER
- S/R 1 — SUPPLY OR RETURN AIR RISER DESIGNATION
- HWS 1 — PIPING SYSTEM RISER DESIGNATION
- EQUIPMENT ACCESS ZONE
- TEXT INDICATES DRAWING TO REFERENCE FOR CONTINUATION
- SYMBOL DESIGNATES ASSOCIATED SYSTEM OR SERVICE (CHW, HW, S15, LPS, LPR)
- DIFFUSER, GRILLE, REGISTER LETTER DESIGNATOR (SEE SCHEDULE FOR ATD TYPE)
- DESIGN CFM
- A(200) / (200) — ALTERNATE CFM LOCATION

REFER TO CONTROLS LEGEND SHEET FOR SYMBOLS USED ON FLOOR PLANS TO INDICATE LOCATION OF TEMPERATURE SENSORS/THERMOSTATS, HUMIDITY SENSORS, PRESSURE SENSORS AND GAS SENSORS (E.G. CARBON DIOXIDE)

DUCTWORK

SINGLE LINE	DOUBLE LINE
NEW DUCT LINETYPE	
ROUND SUPPLY DUCT UP	
SUPPLY DUCT UP	
ROUND SUPPLY DUCT DN	
SUPPLY DUCT DOWN	
STANDARD RADIUS ELBOW (R = W) SUPPLY/RETURN EXHAUST	
BULLHEAD SPLIT SUPPLY	GOOD FOR TAKEOFF TO RING DUCT
TAKEOFF TO DIFF/GRILLE W/BRANCH TAKE-OFF VOLUME DAMPER	HARD ELBOW
CEILING DUCT MTD DIFF/GRILLE W/BRANCH TAKE-OFF VOLUME DAMPER	
ACOUSTICALLY LINED DUCT	
EXISTING DUCT TO REMAIN	
OR — EXISTING DUCT TO BE REMOVED	OR
OPEN END DUCT W/VD & 1/2"x1/2" WMS	

SINGLE LINE	DOUBLE LINE
EXISTING DUCT LINETYPE	
ROUND RETURN OR EXHAUST DUCT UP	
RETURN/EXHAUST DUCT UP	
RETURN/EXHAUST DUCT DOWN	
ROUND RETURN OR EXHAUST DUCT DN	
HORIZONTAL OFFSET SUPPLY/RETURN /EXHAUST	
RISE/DROP — RISE OR DROP SUPPLY/RETURN/ EXHAUST	RISE/DROP
90° TAKE-OFF W/BRANCH TAKE-OFF VOLUME DAMPER (VD IN LOW PRESSURE SYSTEMS ONLY)	RING DUCT
BULLHEAD CONVERGE RETURN/EXHAUST W/BRANCH TAKE-OFF VOLUME DAMPER	
SIDEWALL DUCT MTD REGISTER/GRILLE W/BRANCH TAKE-OFF VOLUME DAMPER	
SUPPLY SIDEWALL LINEAR DIFFUSER (W/ 1" INTERNALLY LINED SM PLENUM) BRANCH CONN W/VD FOR EVERY 4' OF LINEAR	
SUPPLY CEILING LINEAR DIFFUSER (W/ 1" INTERNALLY LINED SM PLENUM) BRANCH CONN W/VD FOR EVERY 4' OF LINEAR	BOOT BY LD MFR
FLEXIBLE DUCT	

- AVS — AIR VOLUME TRAVERSE STATION
- SGD — SLIDE GATE DAMPER
- VD — MANUAL VOLUME DAMPER
- FD — SELF-CLOSING FIRE DAMPER W/ACCESS DOOR
- ACD — AUTOMATIC CONTROL DAMPER W/ACCESS DOOR
- SD — AUTOMATIC SMOKE DAMPER W/ACCESS DOOR
- FSD — COMBINATION FIRE/SMOKE DAMPER W/ACCESS DOOR
- BDD — BACKDRAFT DAMPER
- STANDARD 4-WAY BLOW SUPPLY DIFFUSER
- BLANKED FOR 3-WAY BLOW SUPPLY DIFFUSER
- OR — BLANKED FOR 2-WAY BLOW SUPPLY DIFFUSER
- BLANKED FOR 1-WAY BLOW SUPPLY DIFFUSER

- OR — ROOF EXHAUST FAN SHOWN ON ROOF
- OR — ROOF EXHAUST FAN SHOWN ON FLOOR PLAN
- UC 1/2" — UNDERCUT DOOR
- LVDR 1.5 SF — LOUVERED DOOR
- RETURN OR EXHAUST AIR FLOW
- SUPPLY AIR FLOW
- T — THERMOSTAT

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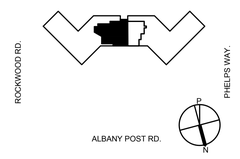

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FCA Project: 20-7168 Author
ARCHITECTURE

Drawing: HVAC LEGEND, ABBREVIATION & GENERAL NOTES, SHEET NO. 2

SCALE: As indicated FLOOR:

M-002

PRINTED: FILE:

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. INSTALL ALL NEW WORK IN A NEAT WORKMANLIKE MANNER READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR.

B. CODES, PERMITS AND INSPECTIONS:

1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE 2014 NYC BUILDING CODE, NYC BUILDING DEPARTMENT, BUILDING MANAGEMENT, AND ALL AUTHORITIES HAVING JURISDICTION AND APPLICABLE NATIONAL, STATE AND LOCAL CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK SHALL BE INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS. CONTRACTOR IS TO INFORM ENGINEER OF ANY EXISTING WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE BY THIS CONTRACTOR AND AT NO EXPENSE TO THE OWNER.
2. THIS CONTRACTOR SHALL OBTAIN ALL EQUIPMENT APPROVALS AS REQUIRED BY STATE AND LOCAL AUTHORITIES. PERMITS SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.

C. SITE VERIFICATION:

1. PRIOR TO SUBMISSION OF THE BID, THIS CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN THE ACTUAL FIELD CONDITIONS AS THEY RELATE TO THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED HEREIN. DISCREPANCIES, IF ANY, SHALL BE BROUGHT TO THE ENGINEER=S ATTENTION PRIOR TO SUBMISSION OF THE BID, AND IF NOT RESOLVED TO SATISFACTION, SHALL BE SUBMITTED AS A WRITTEN QUALIFICATION OF THE BID. SUBMISSION OF A BID SHALL BE EVIDENCE THAT SITE VERIFICATION HAS BEEN PERFORMED AS DESCRIBED ABOVE.

D. CONTRACT DOCUMENTS:

1. PRIOR TO SUBMISSION OF A FORMAL BID, THIS CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THE ENTIRE PROJECT INCLUDING GENERAL CONSTRUCTION, DEMOLITION, ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SPRINKLER AND SHALL INCLUDE ANY WORK REQUIRED IN THE BID WHICH IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK.
2. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND APPROXIMATE LOCATION OF EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND COORDINATE FINAL LOCATIONS OF DIFFUSERS, GRILLES, REGISTERS, THERMOSTATS, SENSORS, SWITCHES AND ANY WALL MOUNTED DEVICES. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT.
3. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.

E. 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 OWNER'S PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE SYSTEM.
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 WORK 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 WORK.
4. ALL AIR CONDITIONING UNIT COMPRESSORS AND REFRIGERATION COMPONENTS SHALL HAVE A 5-YEAR WARRANTY.

F. THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A201, LATEST EDITION, OR AS REQUIRED BY THE ARCHITECT'S DOCUMENTS, AND/OR THE STRUCTURAL ENGINEER'S DOCUMENTS, AS APPLICABLE, ARE PART OF THIS CONTRACT.

G. DEFINITIONS:

1. MECHANICAL CONTRACTOR, “THIS CONTRACTOR” - THE PARTY OR PARTIES HAVE BEEN DULY AWARDED THE CONTRACT FOR AND ARE THEREBY MADE RESPONSIBLE FOR THE MECHANICAL WORK AS DESCRIBED HEREIN.
2. “THIS CONTRACT”, “THE CONTRACT” - THE AGREEMENT COVERING THE WORK TO BE PERFORMED BY THIS CONTRACTOR.
3. “APPROVED”, “EQUAL”, “SATISFACTORY”, “ACCEPTED”, “ACCEPTABLE”, “EQUIVALENT” - SUITABLE FOR USE ON THE PROJECT, AS DETERMINED BY THE ENGINEER BASED ON DOCUMENTS PRESENTED FOR SUCH DETERMINATION.
4. “THESE SPECIFICATIONS”, “THIS SECTION, PART, DIVISION” (OF THE SPECIFICATION) - THE DOCUMENT SPECIFYING THE WORK TO BE PERFORMED BY “THIS CONTRACTOR”.
5. “THE MECHANICAL WORK”, “THIS WORK” - ALL LABOR MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES, AND OTHER ITEMS REQUIRED FOR A PROPER AND COMPLETE INSTALLATION BY THE MECHANICAL CONTRACTOR.
6. “ARCHITECT”, “ENGINEER”, “OWNER'S REPRESENTATIVE” - THE PARTY OR PARTIES RESPONSIBLE FOR INTERPRETING, ACCEPTING AND OTHERWISE RULING ON THE PERFORMANCE UNDER THIS CONTRACT.
7. “FURNISH” - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK.
8. “INSTALL” - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING INSTALLATION AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
9. “PROVIDE” - “FURNISH” AND “INSTALL”.
10. “NEW” - MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.
11. “RELOCATE” - MOVE EXISTING EQUIPMENT AND ALL ACCESSORIES AS REQUIRED.
12. “REMOVE” - DISMANTLE AND CART AWAY FROM SITE INCLUDING ALL RELATED ACCESSORIES. ALL ITEMS SHALL BE LEGALLY DISPOSED OF. ALL OTHER EQUIPMENT AND OPERATIONS IN ANY WAY AFFECTED BY THE REMOVAL IS TO REMAIN IN FULL OPERATION. PROVIDE ALL NECESSARY COMPONENTS TO MAINTAIN SUCH OPERATION.

1.02 SCOPE OF WORK: ADDITION OF VAV BOXES, DUCTWORK, PIPING, UNIT HEATERS, AND CONTROLS. REPLACEMENT OF VAV BOXES, FPVAV BOX, CONTROL UPGRADES AND AIR AND WATER BALANCING.

A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE, SAFE INSTALLATION OF ALL MECHANICAL WORK. THE SCOPE OF WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

1. DEMOLITION AND REMOVAL OF ITEMS AS REQUIRED.
2. DUCTWORK AND DUCTWORK ACCESSORIES.
3. AIR DISTRIBUTION SYSTEM (AIR OUTLETS, VAV BOXES, ETC.).
4. PIPING AND PIPING ACCESSORIES INCLUDING ALL VALVING.
5. INSULATION OF PIPING AND DUCTWORK.
6. AUTOMATIC TEMPERATURE CONTROLS.
7. TESTING AND BALANCING.
8. CUTTING AND PATCHING.
9. SHOP DRAWINGS.
10. AS-BUILT DRAWINGS.
11. OPERATING AND MAINTENANCE MANUALS.
12. FULL COORDINATION WITH OTHER TRADES.
13. WARRANTY AND GUARANTY.
14. PREMIUM TIME FOR WORK TO BE PERFORMED AFTER-HOURS AS REQUIRED BY BUILDING MANAGEMENT AND/OR OWNER.
15. FILING, PERMITS, SPECIAL INSPECTIONS.
16. FULL TESTING AND STARTUP OF ALL SYSTEMS.
17. COMMISSIONING

B. SECURE CERTIFICATES, PAY ALL FEES AND CHARGES FOR ALL WORK INSTALLED, CERTIFYING COMPLIANCE WITH ALL AUTHORITIES. CONTRACTOR TO COORDINATE WITH OWNER FOR REQUIRED SPECIAL INSPECTIONS AND OBTAIN ALL APPROVALS. DELIVER CERTIFICATES TO OWNER FOR SIGNING BEFORE FILING.

1.03 COORDINATION WITH BUILDING MANAGEMENT

A. THIS CONTRACTOR IS TO OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS PRIOR TO BID SUBMISSION TO DETERMINE THE REQUIREMENTS AND THE EXTENT OF PREMIUM TIME WORK REQUIRED BY THE BUILDING.

B. THIS CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE BUILDING OWNER'S RULES AND REGULATIONS. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE BUILDING RULES AND REGULATIONS SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT/ENGINEER FOR REVIEW WITH BID SUBMISSION.

C. COORDINATE WITH BUILDING OWNER FOR ANY SERVICE INTERRUPTION OF EXISTING SYSTEMS AND GIVE NOTICE AS REQUIRED BY BUILDING RULES AND REGULATIONS, OR CONTRACTOR TO PROVIDE A MINIMUM OF TWO (2) DAYS NOTICE PRIOR TO ANY WORK BEING PERFORMED, WHICHEVER IS THE MORE STRINGENT. CONTRACTOR IS TO PERFORM WORK ON PREMIUM TIME, IF SO DIRECTED BY BUILDING OWNER, SO AS NOT TO DISTURB EXISTING TENANTS ON OTHER FLOORS.

1.04 SHOP DRAWINGS

A. SUBMIT SHOP DRAWINGS CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN COMPLETED. SUBMIT ALL CERTIFIED EQUIPMENT CUTS WITH CONSTRUCTION WIRING DIAGRAMS AND AUTOMATIC TEMPERATURE CONTROL REQUIREMENTS. SHOP DRAWINGS SUBMISSION SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. DUCTWORK - PROVIDE DUCT SHOP STANDARDS AND LEAKAGE TEST CERTIFICATION, AS REQUIRED, AND 3/8 SCALE DUCT LAYOUT.
2. PIPING LAYOUT AND APPURTENANCES - PROVIDE PIPING, VALVING, CHEMICAL TREATMENT, SHOP STANDARDS AND 3/8 SCALE PIPING LAYOUT WITH ALL VALVING.
3. INSULATION FOR DUCTWORK AND PIPING.
4. EQUIPMENT CATALOG CUTS FOR ALL ITEMS TO BE UTILIZED ON PROJECT (VAV BOXES, ETC.).
5. AIR OUTLETS (DIFFUSERS, REGISTERS, GRILLES, ETC.).
6. AUTOMATIC TEMPERATURE CONTROL DIAGRAMS, DEVICES AND SEQUENCE OF OPERATION.
7. CERTIFIED AIR AND WATER BALANCING REPORT.
8. AS-BUILT DRAWINGS AT PROJECT COMPLETION OF THE INSTALLED CONDITION OF WORK.

B. THE QUANTITY OF SHOP DRAWINGS SHALL AS A MINIMUM BE FOUR (4) COPIES OF 8-1/2" X 11" SUBMISSIONS AND FIVE (5) PRINTS OF ALL DRAWINGS. SPECIFIC JOB REQUIREMENTS MAY BE MORE STRINGENT, AND CONTRACTOR IS RESPONSIBLE TO OBTAIN REQUIREMENTS FROM OWNER, CONSTRUCTION MANAGER, AND GENERAL CONTRACTOR OR ARCHITECT.

C. THE CONTRACTOR SHALL ALLOW AN ADDITIONAL EIGHT (8) HOURS OF SKETCHING TIME FOR ANY REVISIONS REQUIRED DUE TO THE ENGINEER'S REVIEW OF SHOP DRAWINGS FOR EQUIPMENT, DUCTWORK AND PIPING LAYOUTS.

1.05 MAINTENANCE MANUALS

A. SUBMIT FOUR (4) LOOSE-LEAF BOUND OPERATING AND MAINTENANCE MANUALS WITH INDEX AND INDEX TABS TO INCLUDE THE FOLLOWING:

1. OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL SYSTEMS.
2. MANUFACTURERS= CATALOG CUTS ON ALL EQUIPMENT.
3. AUTOMATIC TEMPERATURE CONTROL SYSTEMS WITH SEQUENCE OF OPERATIONS, CATALOG CUTS OF ALL DEVICES AND POINT-TO-POINT WIRING DIAGRAMS.
4. CERTIFIED FINAL AIR AND WATER BALANCING REPORT.
5. DUCT AND PIPING AS-BUILT DRAWINGS WITH VALVE CHART AND KEY PLAN DRAWINGS INSERTED IN BINDER.
6. ALL ITEMS SUBMITTED FOR REVIEW IN SHOP DRAWING SECTION.

1.06 AS-BUILT DRAWINGS

A. CONTRACTOR SHALL MAINTAIN RECORD DRAWING PRINTS ON JOB SITE AND RECORD, AT TIME OF OCCURRENCE, DEVIATIONS FROM CONTRACT DOCUMENTS DUE TO FIELD COORDINATION, BULLETINS, OR ADDENDA.

B. CONTRACTOR SHALL REVISE SHOP DRAWINGS TO CONFORM TO RECORD DRAWINGS AND SUBMIT AS-BUILT CONDITION (PIPING AND DUCTWORK) DRAWINGS UPON COMPLETION OF THE PROJECT. FINAL SUBMISSION OF REPRODUCIBLE AS-BUILT DRAWINGS ARE TO BE SIGNED AND CERTIFIED BY THE INSTALLING CONTRACTOR THAT THIS IS THE AS-BUILT CONDITION OF THE WORK.

1.07 SERVICE AND WARRANTY (MAINTENANCE CONTRACT)

A. THIS CONTRACTOR SHALL PROVIDE AS AN ADD ALTERNATE PRICE, A FULL ONE YEAR SERVICE AND WARRANTY 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.

1.08 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 SUBSTITUTION. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE SUBSTITUTION. ANY SUBSTITUTION MUST BE SUBMITTED WITH AN EXPLANATION AS TO 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.

1.09 ACCESS DOORS IN GENERAL CONSTRUCTION

A. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE 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 ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE BID. ACCESS DOORS SHALL BE OF ADEQUATE SIZE TO PROVIDE ACCESS TO CONCEALED ITEMS FOR OPERATION AND MAINTENANCE, WITH A MINIMUM SIZE OF 24" X 24".

B. APPROVED MANUFACTURERS: KARP, MIL-COR, RUSKIN.

1.10 UNIT PRICES

A. GENERAL:

1. AMOUNTS INDICATED SHALL BE FOR WORK FULLY INSTALLED, COMPLETE WITH ALL ASSOCIATED COMPONENTS. AMOUNTS INDICATED SHALL BE BINDING FOR THE DURATION.
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 DOCUMENTS.
3. UNIT PRICES ARE TO BE OF MAXIMUM PRICE, NOT TO EXCEED COST UNDER ANY CIRCUMSTANCES.

B. LIST OF UNIT PRICES:

1. MECHANICAL

a. PIPING - STEEL SCHEDULE 40 ($/LIN. FT.)
- STEEL SCHEDULE 80 ($/LIN. FT.)

DESCRIPTION	ADD	DEDUCT
INCH (INSULATED)		
INCH (UNINSULATED)		

a. PIPING - COPPER ($/LIN. FT.)

DESCRIPTION	ADD	DEDUCT
INCH (INSULATED)		
INCH (UNINSULATED)		

b. VALVES ($/EACH):

SIZE	GATE	GLOBE VALVE*	PLUG VALVE*	BALL	CHECK	BUTTERFLY	CONTROL

CONTROL VALVES:
*BALL VALVES FOR 2-1/2 IN. AND SMALLER
*BUTTERFLY VALVES FOR 4 IN. AND LARGER

c. INSULATION ($/SQ. FT.)

DESCRIPTION	ADD	DEDUCT
PIPING FIBERGLASS		
CALCIUM SILICATE		
DUCTWORK (FIBERGLASS)		

d. DUCTWORK AND ACCESSORIES

DESCRIPTION	ADD	DEDUCT
$/LB. OF LOW PRESSURE DUCTWORK		
$/LB. OF MEDIUM PRESSURE DUCTWORK		
$/LB. OF DOUBLE-WALL DUCTWORK WITH PERFORATED LINER		
$/FT. OF LINEAR DIFFUSER INSTALLED		
$/DIFFUSER INSTALLED		
$/FIRE/SMOKE DAMPER INSTALLED		
FIRE DAMPER		
SMOKE DAMPER		
ELECTRIC MOTOR AND WIRING		
$/VOLUME DAMPER INSTALLED		
$/MOTORIZED DAMPER INSTALLED		
$/SOUND ATTENUATORS		
$/SQ. FT. ACCESS BOX		
$/VAV BOX		
$/VAV DIFFUSER		
$/THERMOSTAT		
$/SENSOR		

PART 2 - PRODUCTS/APPLICATIONS

2.01 DUCTWORK AND ACCESSORIES

A. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, LATEST EDITION, SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL, LATEST EDITION, NFPA 90A LATEST EDITION, AND 2014 NEW YORK CITY BUILDING CODE. THE MORE STRINGENT REQUIREMENT OF ANY CODES SHALL APPLY.

B. PROVIDE ALL SUPPORTING AND HANGING DEVICES IN ACCORDANCE WITH NEW YORK CITY BUILDING CODE AND SMACNA.

C. DUCTWORK LAYOUT AND ROUTING IS SCHEMATIC, AND THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL DUCT SIZE CHANGES AND RELOCATIONS TO ACCOMMODATE SPACE AND STRUCTURAL CONDITIONS. OFFSETS AND TRANSFORMATIONS SHALL PRESERVE THE FULL INSIDE CROSS-SECTIONAL AREA OF DUCTWORK SHOWN ON THE DRAWINGS.

D. DUCTWORK (NEW AND EXISTING TO BE REUSED) SHALL HAVE PRESSURE CLASSIFICATION, SEALING REQUIREMENTS AND LEAKAGE TESTING IN ACCORDANCE WITH SMACNA AND AS LISTED BELOW UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS.

1. 4" CLASS: ALL SUPPLY DUCTWORK FROM DISCHARGE OF AIR UNITS TO INLETS OF TERMINAL BOXES. SEAL CLASS B, LEAKAGE CLASS 4.
2. 2" CLASS: ALL OTHER LOW-PRESSURE DUCTWORK (SUPPLY, RETURN, EXHAUST). SEAL CLASS B, LEAKAGE CLASS 6.
3. LEAKAGE TESTING:
ALL TESTING SHALL BE DONE IN THE PRESENCE OF THE ENGINEER OR OWNERS REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COLLARS, CAPS, ELECTRIC POWER, ETC. NECESSARY TO PERFORM THE TESTS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR SCHEDULING THE TEST NO LESS THAN THREE (3) BUSINESS DAYS PRIOR TO ITS INTENDED OCCURRENCE. MEDIUM PRESSURE SUPPLY DUCTWORK (4”CLASS) SHALL BE LEAK TESTED IN ITS ENTIRETY. LEAKAGE TEST PROCEDURES SHALL FOLLOW THE OUTLINES AND CLASSIFICATIONS IN THE SMACNA HVAC DUCT LEAKAGE TEST MANUAL. IF SPECIMEN FAILS TO MEET ALLOTTED LEAKAGE LEVEL, THE CONTRACTOR SHALL MODIFY TO BRING IT INTO COMPLIANCE AND SHALL RETEST IT UNTIL ACCEPTABLE LEAKAGE IS DEMONSTRATED. TESTS AND NECESSARY REPAIR SHALL BE COMPLETED PRIOR TO CONCEALMENT OF DUCTS.

E. MATERIALS:

1. SHEETMETAL: UNLESS OTHERWISE SPECIFIED OR INDICATED, DUCTS SHALL BE CONSTRUCTED OF HOT-DIPPED GALVANIZED SHEETMETAL WITH 60 COMMERCIAL COATING ACCORDING TO ASTM 653 AND A924.
2. FLEXIBLE CONNECTIONS AT FANS SHALL BE NEOPRENE COATED, FLAME RETARDANT GLASS FABRIC (COMPLYING WITH NFPA 90 AND 96), 30 OZ./SQ. YD. WITH SOWN AND CEMENTED SEAMS.
3. FLEXIBLE DUCTWORK SHALL NOT BE USED ON THIS PROJECT.

F. FABRICATION:

1. CONFORM TO SMACNA AND 2014 NEW YORK CITY MECHANICAL CODE REQUIREMENTS FOR METAL THICKNESS, REINFORCING, JOINTS, AND SEALING FOR MAXIMUM STATIC PRESSURES INVOLVED. ALL SEAMS AND JOINTS SHALL BE SEALED AND TAPED.
2. ELBOWS SHALL CONFORM TO SMACNA REQUIREMENTS AND THE FOLLOWING:
A) PROVIDE LONG RADIUS TYPE WITH CENTERLINE RADIUS MINIMUM 1.5 TIMES DUCT WIDTH. PROVIDE SHORT RADIUS OR SQUARE ELBOWS WHERE INDICATED OR WHERE REQUIRED TO FIT RESTRICTED SPACES. PROVIDE DOUBLE THICKNESS TURNING VANES ON ALL SHORT RADIUS AND MITERED ELBOWS. CONFORM TO SMACNA FOR THE NUMBER OF VANES FOR FITTINGS.
3. BRANCH CONNECTIONS: PROVIDE 45 DEGREE ENTRY OR CONICAL TAPS. PROVIDE RADIUS TYPE FITTINGS FOR DIVIDED FLOW BRANCHES.
4. THE FOLLOWING LONGITUDUNAL SEAMS ARE NOT PERMITTED:
A) BUTTON PUNCH/SNAP LOCK (L-2)
B) STANDING SEAM (L-4)
C) SINGLE-CORNER SEAM (L-5)
5. THE FOLLOWING TRAVERSE JOINTS ARE NOT PERMITTED:
A) LAP (T-4)
B) REINFORCED STANDING SEAM (T-16)
C) REINFORCED S SLIP (T-7)
D) STANDING SEAM (T-15)
E) REINFORCED STANDING SEAM (T-16)
F) POCKET LOCK (T-17)
G) REINFORCED POCKET LOCK (T-18 AND T-19)
H) CAPPED FLANGE (T-20)
6. WHERE MANUFACTURED TRANSVERSE JOINTS ARE USED (SMACNA T-25A, T-25B, I.E., DUCTMATE, TDC, TDF, ETC.), THEY SHALL BE SUBMITTED WITH THE MANUFACTURER'S STANDARDS FOR CONSTRUCTION AND INSTALLATION AND INSTALLED IN ACCORDANCE WITH THOSE STANDARDS.

G. VOLUME DAMPERS:

1. GALVANIZED STEEL OR SAME AS DUCT CONSTRUCTION. CONFORM TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS, 1995 OR LATEST EDITION, OPPOSED BLADE TYPE. PROVIDE BEARING AT BOTH ENDS OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW, AT ONE END. INSTALL WITH LEVERS ACCESSIBLE THROUGH INSULATION. SPLITTER DAMPER OR AIR EXTRACTORS SHALL NOT BE USED ON THIS PROJECT.
2. 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.
C) MEDIUM PRESSURE: ALL BRANCHES AND TAKEOFFS DOWNSTREAM OF TERMINAL BOXES (VAV OR CAV) SHALL BE PROVIDED WITH BALANCING DAMPERS.
D) AS NOTED ON PLANS.
E) PROVIDE CABLE OPERATED DAMPERS FOR ALL DAMPERS LOCATED ARE GYPSUM CEILINGS OR OTHER INACCESSIBLE CEILING AND HINGED.

H. DUCT ACCESS DOORS:

1. CONFORM TO SMACNA WITH TWO SASH LOCKS AND DOOR GASKETS. SCREWED ACCESS PANELS ARE NOT PERMITTED. PROVIDE REMOVABLE ACCESS DOORS WHERE DOOR SWING CANNOT BE ACCOMMODATED.
2. SIZE: MINIMUM 20"X14" EXCEPT DUCTS LESS THAN 16", ONE DIMENSION 20" AND THE OTHER DIMENSION, 2" LESS THAN THE DUCT WIDTH.
3. PROVIDE ACCESS DOORS: AT ENTERING AND LEAVING SIDES OF COILS IN DUCTS; AUTOMATIC DAMPERS ON LINKAGE SIDE, MANUAL VOLUME DAMPERS 2 SQ. FT. AND LARGER, FIRE DAMPERS, SMOKE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, SMOKE DETECTION HEADS, FAN BEARINGS ENCLOSED IN DUCTS, SUCTION AND DISCHARGE SIDES OF CEILING MOUNTED FANS, FILTERS, REHEAT COILS, AT ALL EQUIPMENT REQUIRING ACCESS AND AS INDICATED ON DRAWINGS.

I. SEAL OPENINGS AROUND DUCTS THROUGH WALLS WITH MINERAL WOOL OR OTHER NON-COMBUSTIBLE MATERIAL. SEAL ALL DUCT PENETRATIONS THROUGH WALLS AIRTIGHT.

J. ALL DUCTS EXPOSE TO MOISTURE SHALL BE ALUMINUM, SLOPED AND DRAINED AND SHALL NOT BE INTERNALLY LINED.

2.02 PIPING AND ACCESSORIES

A. PROVIDE ALL PIPING, FITTINGS, VALVES, SPECIALTIES, THERMOMETERS, AND PRESSURE GAUGES REQUIRED FOR THE OPERATING AND MAXIMUM PRESSURE AND TEMPERATURE OF THE PIPING SYSTEMS.

B. ALL PIPING SHALL BE NEW, STANDARD SIZE, FREE FROM SCALE OR RUST WITH ENDS CAPPED FOR DELIVERY AND STORAGE. EACH LENGTH OF PIPING SHALL BE PROPERLY MARKED AT THE MILL FOR PROPER IDENTIFICATION WITH NAME OR SYMBOL OF MANUFACTURER.

C. ALL HORIZONTAL CONDENSATE PIPING SHALL BE PITCHED A MINIMUM OF 1/8” PER FOOT OF LENGTH. CONDENSATE PIPING SHALL NOT BE LESS THAN ¾” DIAMETER.

D. PIPE APPLICATION SCHEDULE:

				JOINT		
SERVICE	SIZE	MATERIAL	WEIGHT	STANDARD	TYPE	FITTING
HOT WATER	ALL	HARD COPPER	TYPE L	ASTM B88	SILVER SOLDER 95/5 OR PROPRESS	WROUGHT COPPER

PROVIDE DIELECTRIC FITTING AT ALL PIPING CONNECTIONS JOINING DISSIMILAR METALS, SUCH AS STEEL AND COPPER.

E. VALVES

1. VALVES SHALL HAVE NAME OF MANUFACTURER AND GUARANTEED WORKING PRESSURE CAST OR STAMPED ON BODIES. VALVES OF SIMILAR TYPE SHALL BE BY A SINGLE MANUFACTURER. VALVES LOCATED 7 FEET OR MORE ABOVE OPERATING FLOOR, OR PLATFORM SHALL BE PROVIDED WITH CHAIN OPERATED HANDWHEELS, RUSTPROOF CHAIN AND CHAIN GUIDE. GASKETS AND PACKINGS SHALL NOT CONTAIN ASBESTOS.
2. ALL VALVING AND VALVE MATERIALS SHALL BE SUITABLE FOR THE OPERATING TEST AND MAXIMUM PRESSURE AND TEMPERATURE REQUIREMENTS OF THE PIPING SYSTEM FOR WHICH THEY ARE BEING UTILIZED.
3. ALL VALVING SHALL BE RATED AS FOLLOWS FOR EACH SYSTEM TYPE:

SYSTEM	PRESSURE RATING
CONDENSER WATER	150 PSIG

4. VALVING SHALL BE AS SHOWN ON THE DRAWINGS AND INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
A) GATE VALVES (CRANE)
GLOBE VALVES (CRANE, GRINNELL, MILWAUKEE, NORDSTROM, POWELL)
SWING CHECK VALVES (CRANE GRINNELL, MILWAUKEE, NORDSTROM, STOCKHAM)
BALL VALVES (APOLLO, JAMESBURY, MILWAUKEE, ROCKWELL)
HIGH PERFORMANCE BUTTERFLY VALVES - LUG TYPE (JAMESBURY)
PLUG VALVES (ROCKWELL-NORDSTROM)
STRAINERS (MUELLER/MUESSCO)
BALANCING VALVES (T&A, ARMSTRONG, AUTOFLOW, FLOW DESIGN, MILLIKEN, BELL & GOSSET)
STRAINERS (MUELLER, SARCO)
B) ALL VALVE MANUFACTURERS SHALL BE AS LISTED OR APPROVED EQUAL BY THE ENGINEER.
C) BALANCING VALVES: 2” AND SMALLER - BALL OR GLOBE VALVE; 2 1/2” AND LARGER - BALL OR PLUG VALVE.
D) SHUT-OFF VALVE: 2 1/2” AND SMALLER - BALL VALVE; 3” AND LARGER - HIGH PERFORMANCE BUTTERFLY.
E) CHECK VALVES: ALL SIZES - SWING CHECK.
5. CONTROL VALVES: REFER TO AUTOMATIC TEMPERATURE CONTROL SECTION.

F. ALL INSTRUMENTAL (PRESSURE GAUGES AND THERMOMETERS) SHALL BE RATED FOR THE SAME PRESSURE AND TEMPERATURE AS PIPING SYSTEM AND RATED SPECIFICALLY FOR THE SAME SERVICE AS THE PIPING. PRESSURE GAUGES ARE TO BE LIQUID FILLED WITH 1% ACCURACY. SELECT GAUGES AND THERMOMETERS SO THAT THE MIDPOINT IS AT THE WORKING PRESSURE AND TEMPERATURE.

1. PROVIDE THERMOMETERS IN PIPING AS INDICATED ON THE DRAWINGS AND AT THE INLET AND OUTLET OF EACH PIECE OF EQUIPMENT THAT INVOLVES A DIFFERENTIAL TEMPERATURE.
2. PIPE THERMOMETERS SHALL BE STEM-TYPE WITH CAST-GLASS/MINERAL-REINFORCED POLYESTER CASES WITH ENVIRONMENTALLY SAFE ORGANIC SPIRIT-FILL, RED READING, 9 INCH (230 MM) SCALE, HAVING A SEPARABLE SOCKET AND BE FIELD-ADJUSTABLE IN ALL PLANES TO PERMIT A CONVENIENT VIEWING ANGLE.
3. PROVIDE PRESSURE GAUGES IN PIPING AS INDICATED ON THE DRAWINGS AND AT EACH PIECE OF EQUIPMENT THAT INVOLVES A DIFFERENTIAL PRESSURE.
4. PRESSURE GAUGES FOR WATER SYSTEMS SHALL BE PHOSPHOR BRONZE BOURDON TYPE, WITH 1/4 INCH (6 MM) NPT BOTTOM OUTLET, 4-1/2 INCH (114 MM) DIALS, ADJUSTABLE POINTERS, ALUMINUM CASES WITH RUBBER BLOW-OUT DISCS IN REAR AND ACRYLIC LENSES. GAUGES SHALL BE FITTED WITH PULSATION SNUBBERS AND BRASS BAR STOCK NEEDLE VALVES OR BALL VALVES RATED AT 600 PSI (40 BAR) WOG (BALL COCKS WITH PLUG-TYPE MECHANISMS ARE NOT ACCEPTABLE).
5. THERMOMETER APPROVED MANUFACTURERS: ASHCROFT, H.O. TRERICE CO., WEISS, WEKSLER.
6. PRESSURE GAUGE APPROVED MANUFACTURERS: ASHCROFT, H.O. TRERICE CO., WEISS, WEKSLER.

G. ALL PIPING TO BE VENTED AT HIGH POINTS AND PROVIDED WITH ASSOCIATED DRAIN VALVES AT LOW POINTS. PROVIDE AUTOMATIC AIR VENTS WITH GATE VALVES PIPED TO DISCHARGE TO THE NEAREST DRAIN UNLESS DRAWINGS INDICATE MANUAL AIR VENTS.

H. PROVIDE CORE DRILLED OPENINGS WITH PIPE SLEEVES AT ALL SLAB AND SHAFT PENETRATIONS. PROVIDE FIREPROOFING AS REQUIRED TO MAINTAIN WALL, SHAFT AND SLAB FIRE RATINGS.

I. PROVIDE LABELING OF ALL PIPING (BOTH EXPOSED AND CONCEALED) IN ACCORDANCE WITH ANSI STANDARDS AND COLOR-CODED AS PER BUILDING MANAGEMENT STANDARDS. LABELS TO BE SECURELY FASTENED TO PIPING WITH LETTERING OF SUFFICIENT SIZE FOR EASY IDENTIFICATION BY OPERATING PERSONNEL.

J. ALL PIPING TO BE MAINTAINED AT THE HIGHEST ELEVATIONS POSSIBLE SO AS NOT TO INTERFERE WITH EXISTING OPERATIONS AND SERVICE/MAINTENANCE REQUIREMENTS.

K. HANGERS AND SUPPORTS:

1. PROVIDE ALL PIPE HANGERS, HANGAR RODS SUPPORTS, INSERTS, ATTACHMENTS, CLAMPS, GUIDES, SUPPLEMENTAL STEEL AND ANCHORS AS REQUIRED TO INSTALL PIPING SYSTEM SIZED TO ACCOMMODATE THE SYSTEM LOADS. HANGERS AND SUPPORTS ARE TO BE IN ACCORDANCE WITH MSS RECOMMENDATIONS AND TO BE MANUFACTURED BY GRINNELL OR APPROVED EQUAL.
2. PROVIDE INSULATED PROTECTIVE SADDLES FOR INSULATED PIPING.
3. HANGERS SUPPORTS, AND ANCHORS SHALL BE INSTALLED WITH THREMAL BREAKS TO AVOID CONDENSATION.
4. PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH RECOMMENDATIONS OF MSS SP-69 AND ALL APPLICABLE CODES. ALL THREADED ROD IS TO BE GALVANIZED. PROVIDE 2" VERTICAL ADJUSTMENT FOR ALL HANGERS. PROVIDE ADDITIONAL SUPPORTS AT CHANGES IN DIRECTION, BRANCH PIPING OVER 5 FEET, AND CONCENTRATED LOADS DUE TO VALVES, STRAINERS AND OTHER ACCESSORIES.

L. EXPANSION COMPENSATION:

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.

M. TESTING:

1. GENERAL
A) TESTS SHALL BE CONDUCTED AFTER COMPLETION AND ASSEMBLY OF PIPING SYSTEM, BEFORE ANY INSULATION OR PAINT IS APPLIED TO JOINTS, INCLUDING WELDS AND PRIOR TO MAKING THE SYSTEM OPERABLE. INSULATION MATERIALS INSTALLED PRIOR TO THE TESTS SHALL BE REMOVED.
B) THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY PIPING CONNECTIONS, TEES, VALVES, EQUIPMENT, AND LABOR TO PRESSURE TEST PIPING AND EQUIPMENT.
C) EQUIPMENT THAT IS NOT SUBJECTED TO THE PRESSURE TEST SHALL BE EITHER DISCONNECTED FROM THE SYSTEM OR ISOLATED BY A BLANK OR SIMILAR MEANS. VALVES MAY BE USED FOR THIS PURPOSE PROVIDED THAT VALVE CLOSURE IS SUITABLE FOR THE PROPOSED TEST PRESSURE.
D) SUBMIT TO THE ENGINEER AND OWNER REPRESENTATIVE A RECORD OF TEST PRESSURE APPLIED TO EACH PIPING SYSTEM.
2. WATER PIPING
A) ALL PIPING IS TO BE HYDROSTATICALLY TESTED FOR A PERIOD OF FOUR HOURS, DURING WHICH TIME PIPING IS TO SHOW NO LEAKS. PIPING WHICH IS NOT TIGHT UNDER THE TESTS SHALL BE TAKEN DOWN AND REASSEMBLED. ALL TESTING SHALL BE DONE USING WATER AS A TEST MODEM.
B) PIPING SHALL BE HYDROSTATICALLY 1-1/2 TIMES THE NORMAL OPERATING PRESSURE BUT NOT EXCEEDING 225 PSI FOR A MINIMUM OF 2 HOURS.

N. WATER TREATMENT AND PIPE CLEANING:

1. NEW PIPING SYSTEMS SHALL BE ISOLATED, CLEANED AND CHEMICALLY TREATED WHEN THE INSTALLATION IS COMPLETED TO REMOVE ANY CONSTRUCTION DEBRIS AND PROVIDE CORROSION PROTECTION.
2. PROVIDE THE NECESSARY APPARATUS, COMPLETE WITH RELIEF VALVES, ISOLATING VALVES, CHECK VALVES, PIPING, POWER, WIRING, CHEMICALS, FEED TANKS, AND SERVICE TO PROVIDE PROPER WATER TREATMENT FOR THE CONTROL OF SCALE, CORROSION AND MICROBIOLOGICAL GROWTHS IN THE PIPING SYSTEMS. ALL CHEMICALS USED SHALL COMPLY WITH POLLUTION CONTROLS ESTABLISHED BY ALL AUTHORITIES HAVING JURISDICTION. CHLORATES SHALL NOT BE USED.
3. PIPE CLEANING
A) FURNISH ALL REQUIRED PIPE CLEANING CHEMICALS, PORTABLE PUMPS, CHEMICAL FEED EQUIPMENT, MATERIALS, AND LABOR NECESSARY TO CLEAN ALL PROJECT PIPING SYSTEMS.
B) PROVIDE A PRE-STARTUP NON-FOAMING, LIQUID DETERGENT DISPERSANT CLEANER FOR CLEANING OF ALL SYSTEMS TO REMOVE OIL AND FOREIGN MATTER FROM THE PIPING AND EQUIPMENT PRIOR TO THE FINAL FILLING OF THE SYSTEMS. USE CHEMICAL THAT IS NOT INJURIOUS TO PERSONS, PIPING, PIPE JOINT COMPOUNDS, PACKING, COILS, VALVES, PUMPS AND THEIR MECHANICAL SEALS OR OTHER PARTS OF THE SYSTEM. AFTER FINAL FILL, PERFORM A CHEMICAL TEST TO TEST THAT THE PH OF THE NEW SYSTEM IS WITHIN 0.5 OF FRESH INCOMING WATER.
C) THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY PIPING CONNECTIONS, TEES, VALVES, EQUIPMENT AND LABOR TO PERFORM PIPE CLEANING.

2.03 INSULATION

A. ALL INSULATION SHALL MEET THE REQUIREMENTS OF ASTM, NFPA, 2014 NEW YORK CITY ENERGY CODE AND ALL AUTHORITIES HAVING JURISDICTION. ALL MECHANICAL INSULATION (JACKETING, COVERINGS, ADHESIVES, MASTICS, FACINGS, TAPES, ETC.), SHALL HAVE RATINGS NOT EXCEEDING A FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED INDEX OF 50 OR LESS.

B. BEFORE APPLYING INSULATION, ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED. FURNISH AND INSTALL AS PER MANUFACTURERS REQUIREMENTS.

C. INSULATION FOR FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

D. APPROVED MANUFACTURERS: ARMSTRONG, JOHNS-AMNVILLE, OWWNS-CORNING.

E. PIPE INSULATION:

1. FIBERGLASS PIPE INSULATION: ONE-PIECE MOLDED SECTIONAL FIBERGLASS INSULATION, CONFORMING TO ASTM C-547, CLASS 1, 2, 3 TO 850EF WITH 4 LB./CU. FT. DENSITY WITH A THERMAL CONDUCTIVITY OF NOT OVER 0.23 AT 75EF MEAN. PROVIDE WITH FACTORY-APPLIED ALL SERVICE JACKET AND DOUBLE ADHESIVE SELF-SEALING LAP. COLD WATER PIPE INSULATION JACKET SHALL BE OF THE CONTINUOUS VAPOR BARRIER TYPE.
2. INSULATION FOR FITTINGS, FLANGES, AND VALVES: PROVIDE INSULATION FOR FITTINGS, FLANGES, AND VALVES PREMOLDED, PRECUT, OR JOB FABRICATED OF THE SAME THICKNESS AND CONDUCTIVITY AS USED ON ADJACENT PIPING.
3. VALVES INSTALLED IN INSULATED PIPING LINES SHALL HAVE REMOVABLE INSULATED JACKETS AND VALVE HANDLE EXTENSIONS THAT CLEAR THE OTER INSULATION SURFACE. AFFIX LABELS FOR VALVE LOCTIONS AND DIRECTIONAL FLOW.
4. PIPE LABELING AND COLOR CODE REQUIREMENTS:
A) CONDENSER WATER SUPPLY AND RETURN:
a) MARKINGS - CWS/CWR
b) COLOR - LIGHT GREEN
c) SHERWIN WILLIAMS N0. - CIRCUIT BREAKER SW4077
B) HEATING HOT WATER WATER SUPPLY AND RETURN
a) MARKINGS - HWS/HWR
b) COLOR - YELLOW
c) SHERWIN WILLIAMS N0. - SAFETY GREEN SW4085
5. HANGERS SUPPORTS, AND ANCHORS SHALL BE INSTALLED WITH THREMAL BREAKS TO AVOID CONDENSATION.
6. PROVIDE INSULATION FOR PIPING, FITTINGS, FLANGES AND VALVES.
7. INSULATION THICKNESS: CONDENSER WATER & HOT WATER SUPPLY AND RETURN - 1 1/2 INCHES; CONDENSATE PIPING - 1 INCH.

F. DUCT INSULATION:

1. GENERAL
A) INSULATION SHALL BE APPLIED WITH MASTICS, ADHESIVES, AND COATINGS, WITH COVERS, WEATHER-PROTECTION AND OTHER WORK AS REQUIRED BY MANUFACTURER'S RECOMMENDATIONS. DO NOT INSULATE SOUND LINED DUCTWORK. MATERIALS SHALL MEET REQUIREMENTS OF ADHESIVE AND SEALANT COUNCIL STANDARDS AND SMACNA.
B) ALL SUPPLY AND RETURN DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHEN LOCATED IN UNCONDITIONED SPACES, WHEN A DUCT OR PLENUM IS LOCATED WITHIN THE BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPERATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED SPACES BY A MINIMUM OF R-12 INSULATION.
2. CONCEALED DUCTWORK
A) INSULATE SUPPLY AND FRESH AIR DUCTS AND PLENUMS IN CONCEALED SPACES AND RETURN DUCT NOT IN CEILING PLENUM WITH AT LEAST 2" THICK, 1 LB DENSITY, FIBROUS GLASS DUCT WRAP, WITH A MINIMUM R VALUE OF R-6 AND FOIL-KRAFT FLAME RESISTANT VAPOR BARRIER.
3. THE FOLLOWING DUCTWORK SHALL BE INSULATED: SUPPLY AIR.

2.04 ELECTRICAL WORK

A. GENERAL

1. ELECTRICAL POWER WIRING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACT; CONTROL WIRING SHALL BE BY THE HVAC CONTRACT. CONTROL WIRING SHALL BE DEFINED AS ANY 12V, 24V, OR 120V WIRING INSTALLED FOR PURPOSES OTHER THAN PROVIDING PRIMARY ELECTRICAL POWER TO EQUIPMENT.
2. ALL ELECTRICAL CONTROL WIRING SHALL COMPLY WITH LOCAL ELECTRICAL CODE, ALL AUTHORITIES HAVING JURISDICTION AND THE PROJECT ELECTRICAL SPECIFICATIONS.
3. MECHANICAL CONTRACTOR TO OBTAIN QUANTITY OF CONTROLLERS REQUIRED AND COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL OPERATING REQUIREMENTS, INTERLOCKS AND CONNECTIONS FOR STARTERS.
4. 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.

2.05 VIBRATION ISOLATION PRODUCTS

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 CONSTRUCTION. ALL VIBRATION ISOLATION PRODUCTS SHALL BE SPECIFICALLY DESIGNED FOR THEIR INTENDED USE.

B. MANUFACTURER OF VIBRATION ISOLATION EQUIPMENT SHALL HAVE THE FOLLOWING RESPONSIBILITIES:

1. DETERMINE VIBRATION ISOLATOR SIZES AND LOCATIONS.
2. PROVIDE SUITABLE PIPING AND EQUIPMENT VIBRATION ISOLATION SYSTEMS.
3. GUARANTEE SPECIFIED ISOLATION SYSTEM ATTENUATION AND DEFLECTION.
4. PROVIDE INSTALLATION INSTRUCTIONS, DRAWINGS AND FIELD SUPERVISION TO ASSURE PROPER INSTALLATION AND PERFORMANCE.

C. APPROVED MANUFACTURES: MASON INDUSTRIES (M.I.I.), VIBRATION ELIMINATOR COMPANY (V.E.C.), OR VIBRATION MOUNTINGS & CONTROLS (V.M.C.I.).

D. MOUNTING TYPES:

1. STATIC DEFLECTION OF ISOLATORS SHALL BE A MINIMUM OF 90% EFFICIENCY.
2. SUPPORT OF PIPING IN EQUIPMENT ROOMS AND WHERE EXPOSED ON ROOF.
A) ALL WATER PIPING WITHIN 50 FEET OF CONNECTED ROTATING EQUIPMENT TO BE SUPPLIED WITH ISOLATORS.
B) HANGER ROD ISOLATORS (M.I.I TYPE DNHS) MOUNTINGS.
C) FLOOR SUPPORTED PIPING ISOLATORS (TYPE SLR).
3. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL DUCTWORK (REFER TO DUCTWORK SECTION FOR SPECIFICATIONS).

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
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FCA Project: 20-7168 Author
ARCHITECTURE

Drawing: HVAC SPECIFICATIONS
SHEET NO. 1

SCALE: As indicated FLOOR:

M-003

PRINTED FILE

2.07 TESTING AND BALANCING

A. GENERAL:

1. TESTING AND BALANCING WORK SHALL BE PERFORMED BY AN INDEPENDENT COMPANY (NOT ASSOCIATED WITH THE HVAC CONTRACTOR), AABC CERTIFIED OR AS APPROVED BY THE ENGINEER BEFORE COMMENCEMENT OF WORK. APPROVED COMPANIES INCLUDE MERENDINO ASSOCIATES, R.H. MCDERMOTT, INTERNATIONAL TESTING AND BALANCING OR AS APPROVED BY THE ENGINEER AND BUILDING MANAGEMENT.
2. AFTER ALL PROJECT HVAC WORK IS COMPLETE, TESTED, AND IN FULL WORKING ORDER, THE AGENCY SHALL PERFORM THE BALANCING AND TESTING OF THE PROJECT HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS.
3. UPON THE COMPLETION OF THE AIR CONDITIONING SYSTEM, THE BALANCING AGENCY SHALL PERFORM TESTING AND BALANCING AND COMPILE ALL TEST DATA IN A CERTIFIED REPORT AND SUBMIT FOUR (4) COPIES FOR REVIEW AND APPROVAL TO THE ENGINEER.
4. THE REPORT SHALL INCLUDE DESIGN AND ACTUAL READINGS FOR ALL EQUIPMENT AND LOCATION PLAN INDICATING WHERE ALL WORK HAS BEEN PERFORMED, AND METHODS OF BALANCING AND DETAILS OF INSTRUMENTS USED.
5. IF DISCREPANCIES EXIST IN THE REPORT THAT REQUIRE FIELD VERIFICATION, THE TESTING AND BALANCING COMPANY IN THE PRESENCE OF THE ENGINEER SHALL VISIT THE JOBSITE FOR FIELD VERIFICATION OF THE REPORT.
6. 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 ENGINEER.
7. THE FINAL REPORT AFTER THE COMFORT BALANCE IS TO BE INCLUDED IN PROJECT OPERATING AND MAINTENANCE MANUAL.
8. THE TESTING AND BALANCING AGENCY SHALL INCLUDE AS PART OF THEIR 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 CONTRACTOR SHALL PROVIDE THE NECESSARY TECHNICIANS TO FACILITATE THIS WORK.
9. THE BALANCING AGENCY SHALL PERMANENTLY MARK ALL ADJUSTMENT DEVICES (VALVES, DAMPERS, ETC.) TO ENABLE THE SETTING TO BE RESTORED.

B. AIR BALANCING

1. 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.
2. 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) INDIVIDUAL AIR INLET/OUTLETS ARE TO BE BALANCED AT AIR QUANTITIES INDICATED ON PLANS WITHIN PLUS OR MINUS 10 PERCENT.
3. TEST REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   A) FLOW, LEAKAGE CLASS, TEMPERATURE, STATIC PRESSURE OF AIR AT ALL TRUNK DUCTS SERVING AREAS OF WORK.
   B) TEMPERATURE OF AIR LEAVING OUTLETS AT TWO (2) TYPICAL AIR OUTLETS.
   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 POSITION. MIXED AIR AND SUPPLY AIR TEMPERATURES (DRY BULB - COOLING AND HEATING, WET-BULB-COOLING). INDICATE UNIT OPERATING
   E) PROVIDE FOR ALL AIR CONDITIONING UNITS, SUPPLY CFM, OUTSIDE AIR CFM, RETURN AIR CFM, MIXED AIR CFM. PROVIDE OUTSIDE AIR, MODE DURING TEST.
   F) CALIBRATE ALL NEW TERMINAL BOXES (VAV,) AS REQUIRED TO MEET SPECIFIED MINIMUM/MAXIMUM CFM.
   G) LISTING OF DESIGN AND ACTUAL READINGS AS WELL AS ALL MANUFACTURER'S DATA FOR EQUIPMENT.

C. WATER BALANCING

1. TEST, ADJUST, AND BALANCE NEW DISTRIBUTION SYSTEMS TO PROVIDE FLOW QUANTITIES INDICATED N THE DRAWINGS WITHIN PLUS OR MINUS 2 PERCENT.
2. PLACE SYSTEM IN FULL AUTOMATIC OPERATION, WITH AUTOMATIC CONTROLS SET IN ACCORDANCE WITH DESIGN CONDITIONS, AND ALLOW WATER TO REACH DESIGN TEMPERATURE AND PRESSURE.
3. ALL PIPE TESTING SHALL BE COMPLETED BEFORE COMMENCING BALANCING.
4. SET ZONE OR CIRCUIT BALANCING VALVES AT EACH PIECE OF EQUIPMENT (AIR HANDLING UNIT, ETC.) TO HANDLE THE DESIGN FLOW.
5. AIR HANDLING UNITS CONTAINING COILS, CHECK AND ADJUST EACH UNIT TO INSURE THE PROPER VOLUME OF AIR IS PASSING THROUGH THE COILS, WHILE THE BALANCING PROCEDURE IS IN PROGRESS.
6. THE TEST REPORT SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
   A) THE PRESSURE DROP ACROSS AND FLOW AT EACH PIECE OF EQUIPMENT AND AT EACH MAIN.
7. PROVIDE FLOW DIAGRAMS INDICATING PIPING LAYOUT, FLOW BALANCING VALVES AND WHERE THE READING OF EACH INDIVIDUAL PIECE OF EQUIPMENT HAS BEEN TAKEN.
8. MARK VALVE TAG AFTER BALANCING OF EACH BALANCING VALVE TO INDICATE POSITION OF VALVE.

2.08 EQUIPMENT

A. PROVIDE ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS SCHEDULED AND AS INDICATED ON THE DRAWINGS.

B. INSTALL EQUIPMENT IN ACCORDANCE WITH APPROVED SHOP DRAWINGS, MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS, AND ALL AUTHORITIES HAVING JURISDICTION.

C. PROVIDE EQUIPMENT SUPPORTS AND/OR MOUNTINGS AS INDICATED ON THE DRAWING, IN VIBRATION SPECIFICATION AND AS FOLLOWS:

1. FLOOR MOUNTED EQUIPMENT - PROVIDE DIMENSIONS FOR A 4" CONCRETE HOUSEKEEPING PAD WITH ALL REQUIRED WATERPROOFING TO THE CONSTRUCTION MANAGER.
2. EQUIPMENT ON FLOOR STANDS - PROVIDE FLOOR STAND OF STRUCTURAL STEEL OR STEEL PIPES AND FITTINGS AND BOLT TO FLOOR.
3. CEILING MOUNTED EQUIPMENT - PROVIDE SUPPORTS WITH APPROVED SUITABLE ANCHORS SUSPENDED DIRECTLY FROM BUILDING STEEL STRUCTURE.
4. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE EQUIPMENT LOAD.

D. EQUIPMENT SHALL BE INSTALLED WITH VIBRATION ISOLATION, REFER TO VIBRATION ISOLATION SECTION.

E. DIFFUSERS, GRILLES AND REGISTERS

1. GENERAL
   A) GRILLES, REGISTERS AND DIFFUSERS SHALL BE TESTED IN ACCORDANCE WITH ASHRAE STANDARD 70-1991 OR LATEST EDITION. THE MANUFACTURER SHALL PROVIDE PUBLISHED PERFORMANCE DATA FOR ALL AIR INLETS AND OUTLETS TO BE USED ON PROJECT AS PART OF THE SUBMISSION.
   B) THE MECHANICAL CONTRACTOR TO COORDINATE THE LOCATION OF DIFFUSERS, GRILLES AND REGISTERS WITH OTHER TRADES AND WITH CEILING AND WALL CONSTRUCTION. THE MECHANICAL CONTRACTOR IS TO VERIFY THAT ALL DIFFUSERS, GRILLES AND REGISTERS ARE COMPATIBLE WITH CEILING CONSTRUCTION TO WHICH THEY ARE TO BE INSTALLED.
   C) COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR AND REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION, LENGTHS AND FOR FRAMING AND MITERING ARRANGEMENTS THAT MAY DIFFER FROM THOSE SHOWN ON HVAC DRAWINGS. PROVIDE ALL REQUIRED GENERAL CONSTRUCTION, FRAMING, BLOCKING, PLASTERING AND SUPPORTS TO MATCH CEILING, SOFFIT OR WALL CONSTRUCTION AS PART OF THE PROJECT.
   D) INLETS AND OUTLETS SHALL HANDLE AIR QUANTITIES INDICATED AT OPERATING VELOCITIES WITH SOUND PRESSURE LEVEL NOT TO EXCEED NC-30, UNLESS NOTED OTHERWISE.
   E) DIFFUSERS, GRILLES AND REGISTERS SHALL BE INSTALLED WITH FACES SET LEVEL AND PLUM AND MOUNTED TIGHTLY AGAINST MOUNTING SERVICE.
   F) ALL AIR INLETS AND OUTLETS TO BE STEEL OR ALUMINUM IF EXPOSED TO MOISTURE UNLESS OTHERWISE INDICATED. FINISHES TO BE SELECTED BY THE ARCHITECT.
   H) SUBMIT FOR APPROVAL A COMPLETE SCHEDULE OF ALL AIR INLETS AND OUTLETS TO BE USED ON PROJECT INCLUDING MANUFACTURER'S MODELS, SIZES, PERFORMANCES, ACCESSORIES, ACOUSTIC INFORMATION, FINISHES, ETC., BEFORE RELEASE FOR FABRICATION. NOTE ANY DEVIATIONS FROM SPECIFICATIONS AND SCHEDULES SHALL BE INDICATED ON SUBMITTAL.
2. AIR INLET AND OUTLET DEVICES:
   A) PROVIDE DIFFUSERS, GRILLES AND REGISTERS FOR SUPPLY, RETURN AND EXHAUST INLETS AND OUTLETS, OF THE SIZE, TYPE AND DESIGN INDICATED ON DRAWINGS.
   B) ALL SUPPLY RETURN AND EXHAUST AIR INLETS AND OUTLETS SHALL BE PROVIDED WITH AN OPPOSED BLADE DAMPER AND GRID (ADJUSTABLE THROUGH THE FACE) FOR TRIM BALANCING.
   C) SUPPLY REGISTERS SHALL HAVE TWO SETS OF DIRECTIONAL CONTROL BLADES.
   D) ONLY 4-WAY DIFFUSERS SHALL BE USED. PROVIDE BLANK-OFF SHEETMETAL BAFFLE FOR ALL 1-WAY, 2-WAY AND 3-WAY DIFFUSERS.
   E) ALL LINEAR DIFFUSERS SHALL BE PROVIDED WITH CABLE OPERATED OPPOSED BLADE DAMPER ADJUSTABLE THROUGH THE FACE OF THE DIFFUSER. DAMPERS AND PLENUM TAPS SHALL BE SPACED AT A MAXIMUM OF 4 FEET ON CENTER. PROVIDE DIFFUSERS WITH ADJUSTABLE AIR PATTERN CONTROL VALVES.

2.09 AUTOMATIC TEMPERATURE CONTROLS

A. GENERAL:

1. FURNISH AND INSTALL AS HEREIN SPECIFIED, A COMPLETE DDC AUTOMATIC TEMPERATURE CONTROL SYSTEM.
2. APPROVED MANUFACTURERS: JCI
3. ALL TEMPERATURE CONTROL SYSTEMS AND COMPONENTS UNDER THIS SUBCONTRACT ARE TO BE FULLY MODULATING TYPE, EXCEPT WHERE NOTED OTHERWISE. THE SYSTEM SHALL BE COMPLETE IN ALL RESPECTS INCLUDING ALL ASSOCIATED CONTROL EQUIPMENT, THERMOSTATS, CONTROL VALVES, VALVE ACTUATORS, DAMPER OPERATORS, RELAYS, PILOT POSITIONERS, CONTROL WIRING, SWITCHES, INTERLOCK WIRING, ELECTRICAL CONTROL COMPONENTS AND ASSOCIATED WIRING, APPURTENANCES, ETC., TO PROVIDE THE FUNCTIONS DESCRIBED IN THESE SPECIFICATIONS AND PLANS, REGARDLESS OF WHETHER OR NOT SAID DEVICE RELAY, ETC. IS SPECIFICALLY MENTIONED HEREAFTER.
4. THE SYSTEM SHALL BE SUPERVISED AND CHECKED OUT COMPLETELY IN ALL RESPECTS BY COMPETENT MECHANICS, REGULARLY EMPLOYED BY THE MANUFACTURER.
5. THE SYSTEM AND COMPONENTS PROVICDED SHALL BE THE MOST CURRENT SYSTEM THE MANUFACTURER HAS TO OFFER AT THE TIME OF INSTALLATION.
6. ALL CONTROLS MUST BE THE PRODUCT OF ONE MANUFACTURER. ALL AUTOMATIC CONTROL VALVES, SENSORS AND DAMPER OPERATORS SHALL BE MANUFACTURED BY THE TEMPERATURE CONTROL MANUFACTURER.
7. FIELD MOUNTED SENSORS AND TRANSMITTERS FOR TEMPERATURE, RELATIVE HUMIDITY AND STATIC PRESSURE INPUTS TO DIRECT DIGITAL CONTROLLERS SHALL BE ELECTRONIC WITH A 4-20 MA CURRENT OUTPUT SIGNAL.
8. ACTUATION OF AUTOMATIC CONTROL VALVES AND DAMPERS SHALL BE ELECTRIC.
9. OPEN SYSTEM ARCHITECTURE: THE BMS SYSTEM MUST ENSURE OPEN ARCHITECTURE. THE BMS SHALL HAVE OPEN BACNET COMMUNICATION PROTOCOL. IT SHALL HAVE THE ABILITY TO COMMUNICATE THROUGH KNX, LONWORKS, MODBUS, M-BUS, DALI, ETC.
10. THE CONTROL SYSTEMS SHALL BE IN ACCORDANCE WITH THE FOLLOWING DESCRIPTION OF SYSTEM OPERATIONS AND/OR DETAIL INFORMATION SHOWN ON THE PLANS AND AS DESCRIBED HEREIN.
    A) THE MANUFACTURER OF THE AUTOMATIC CONTROL EQUIPMENT SHALL SUBMIT THE FOLLOWING FOR APPROVAL: A SCHEMATIC DIAGRAM OF EACH CONTROL SYSTEM WHICH SHALL INDICATE THE PROPER SEQUENCE OF OPERATION AND RANGE OF THE CONTROLS FOR ALL CYCLES. A COMPLETE DESCRIPTION OF THE AUTOMATIC OPERATION OF EACH SYSTEM. THE DESCRIPTION SHOULD INCLUDE THE DUTY OF EACH THERMOSTAT, VALVE, SWITCH, ETC., INCORPORATED IN THE CONTROL SYSTEM WITH A SCHEDULE AND ILLUSTRATION OF ALL CONTROL INSTRUMENTS AND EQUIPMENT INCLUDING CONTROL PANELS AND DEVICES FOR EACH SYSTEM.

B. DIRECT DIGITAL CONTROL SYSTEM

1. THE DIRECT DIGITAL CONTROL SYSTEM SHALL CONSIST OF A NETWORK OF ALC, SCHNEIDER, OR SIEMENS SOFTWAREA ND MICROPROCESSOR BASED DIRECT DIGITAL CONTROL UNITS (DDC). EACH DIRECT DIGITAL CONTROL UNIT SHALL PERFORM ALL SPECIFIED CONTROL AND MONITORING FUNCTIONS INDEPENDENTLY. FAILURE OF ONE CONTROL UNIT SHALL HAVE NO EFFECT UPON ANY OTHER UNIT IN THE NETWORK. THE DIRECT DIGITAL CONTROL UNITS SHALL COMMUNICATE WITH EACH OTHER AND AN EXISTING CAMPUS PC BASED NETWORK COMPUTERS.
2. THE BMS SYSTEM MUST ENSURE OPEN ARCHITECTURE. THE BMS SHALL HAVE OPEN BACNET COMMUNICATION PROTOCOL. IT SHALL HAVE THE ABILITY TO COMMUNICATE THROUGH LONWORKS, MODBUS, ETC.
3. THE OPERATOR, THROUGH ANY WCMC ITS TAGGED NETWORK DEVICE, SHALL HAVE THE ABILITY TO MONITOR DDC APPLICATION AND SENSOR DAT, OVERRIDE SET POINTS AND SCHEDULES, SET AND RESET CONTROL POINTS, AND DOWNLOAD PROGRAMS TO THE LOCA; DIRECT DIGITA CONTROL UNITS.
4. SYSTEM INPUT/OUTPUT POINT CAPACITY SHALL BE EXPANDABLE BY THE ADDITION OF DDC UNITS OR OTHER CONTROLLERS TO THE COMMUNICATIONS NETWORK. INSTALLED CABINETS SHALL HAVE 10% SPARE OF EACH TYPE OF INPUT/OUTPUT USED IN THE CABINET (I.E. DI, DO, AI, AO, ETC.), WITH A MINIMUM OF TWO (2) SPARES FOR EACH TYPE USED.
5. PROVIDE 10% SPARE PARTS (MINIMUM 1) OF EACH TYPE OF SENSOR USED (I.E. THERMOSTATS, PRESSURE SENSOR, TEMPERATURE SENSOR, AIRFLOW, WATER FLOW, DIFFERENTIAL PRESSURE, ETC.).

C. ELECTRIC WIRING:

1. ALL ELECTRICAL WORK (EXCEPT FOR MOTOR FEEDERS, WIRING BETWEEN MOTORS, MOTOR CONTROLLERS, FEEDER PANELS, FUSES, CIRCUIT BREAKERS AND BUS BARS) REQUIRED FOR THE AUTOMATIC TEMPERATURE CONTROL SYSTEM SHALL BE PROVIDED BY THIS CONTRACTOR. WORK SHALL INCLUDE BUT NOT BE LIMITED TO TIME SWITCHES, DAMPER MOTORS, DAMPER SWITCHES, ELECTRIC THERMOSTATS, ELECTRIC RELAYS, E/P SWITCHES, INTERLOCKING WIRING, WIRE, CONDUIT, ETC.
2. ALL 115 VOLT POWER REQUIRED FOR CONTROL PURPOSES SHALL BE PROVIDED BY THE CONTROL CONTRACTOR FROM A SOURCE ESTABLISHED BY THE ELECTRICAL CONTRACTOR.
3. THE CONTROL MANUFACTURER SHALL INCLUDE WIRING DIAGRAMS IN THE SHOP DRAWINGS SUBMITTALS FULLY COORDINATED WITH THE ELECTRICAL CONTRACTOR'S WORK. IT SHALL BE THE AUTOMATIC TEMPERATURE CONTROL CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL WIRING AND CONDUIT AS REQUIRED TO ACHIEVE THE FUNCTION CALLED FOR IN THESE SPECIFICATIONS, CONFORMING WITH LOCAL CODES FOR MATERIAL AND INSTALLATION. THE ELECTRICAL SPECIFICATION FOR THE PROJECT'S ELECTRICAL WORK IS TO BE FOLLOWED.
4. FURNISH A CERTIFICATE INDICATING THE METHOD OF WIRING COMPLIANCE WITH LOCAL CODES AS PART OF THE FIRST SHOP DRAWING SUBMITTAL.

D. INSTRUMENTATION

1. TEMPERATURE TRANSMITTERS
   A) DUCT MOUNTED AVERAGING TYPE TRANSMITTERS SHALL CONSIST OF A 1000-OHM PLATINUM RTD AVERAGING ELEMENT WITH AN ACCURACY OF ±1°F. OVER ENTIRE OPERATING SPAN. PROBE LENGTH SHALL BE ONE (1) LINEAR FOOT PER FOUR (4) SQUARE FEET OF DUCT AREA.
   B) DUCT MOUNTED NON-AVERAGING TYPE TRANSMITTERS SHALL CONSIST OF A 1000-OHM PLATINUM RTD ELEMENT WITH AN ACCURACY OF ±0.5°F. OVER THE ENTIRE OPERATING SPAN. PROBE LENGTH SHALL BE FULL LENGTH OF DUCT.
   C) LIQUID INSERTION TYPE TRANSMITTERS SHALL CONSIST OF A SPRING LOADED 1000-OHM PLATINUM RTD WITH AN ACCURACY OF ± 1.0°F. OVER ENTIRE OPERATING SPAN.
   D) SPACE TRANSMITTER SHALL CONSIST OF A 1000-OHM PLATINUM RTD ELEMENT WITH AN ACCURACY OF ±1°F. OVER ENTIRE OPERATING SPAN.
   E) SPACE THERMOSTATS SHALL BE PROVIDED WITH A USER ACCESSIBLE OVERRIDE BUTTON SO THAT USERS CAN MANUALLY OVERRIDE A NIGHT SETBACK SETTING FOR A PRE-DETERMINED TIME PERIOD. THE DEFAULT SETTING FOR SUCH TIME PERIOD IS ONE HOUR. DEVICES SHOULD NOT DISPLAY TEMPERATURES LOCALLY.
   F) ALL SENSORS SHALL BE PROVIDED WITH A COMMUNICATIONS PORT ACCESS TO OPERATIONS INFORMATION. AN OPERATOR SHALL BE CAPABLE OF ACCESSING THE INFORMATION VIA A HAND-HELD TERMINAL UNIT.
   G) HEATING AND COOLING THERMOSTATS SHALL BE PROVIDED WITH A TEMPAERATURE RANGE OR DEADBAND OF AT LEAST 5°F.

CONTROL VALVES:

1. ALL AUTOMATIC CONTROL VALVES SHALL BE OF THE ELECTRONIC TYPE, FULLY PROPORTIONING, UNLESS OTHERWISE SPECIFIED, QUIET IN OPERATION, AND SHALL BE ARRANGED TO FAIL SAFE, IN EITHER A NORMALLY OPEN OR NORMALLY CLOSED POSITION, IN THE EVENT OF POWER FAILURE. THE OPEN OR CLOSED POSITION SHALL BE AS SPECIFIED OR AS REQUIRED TO SUIT JOB CONDITIONS. PROVISIONS SHALL BE MADE FOR VALVES OPERATING IN SEQUENCE WITH OTHER VALVES OR DAMPER OPERATORS TO HAVE ADJUSTABLE OPERATING RANGES AND STARTING POINTS TO PROVIDE FLEXIBILITY OF ADJUSTMENT IN SEQUENCING AND THROTTLING RANGE. MODULATING VALVES SHALL BE PROVIDED WITH PILOT POSITIONERS. VALVES SHALL BE SIZED BY THE TEMPERATURE CONTROL MANUFACTURER AND GUARANTEED TO MEET THE HEATING OR COOLING REQUIREMENTS AS SPECIFIED. ALL VALVE BODIES SHALL HAVE THE SAME PRESSURE CHARACTERISTICS AS THE PIPE IN WHICH IT IS INSTALLED.
2. VALVES 2 INCHES AND SMALLER UNLESS OTHERWISE SPECIFIED SHALL HAVE BRONZE BODIES WITH SCREWED CONNECTIONS. VALVES SHALL BE FISHER TYPE ED, WARREN TYPE 20/70, K&M SERIES GCG, OR AS APPROVED.
3. WHENEVER THE FLOW RATE IS SUCH AS TO REQUIRE A SINGLE VALVE LARGER THAN 2-1/2 INCHES, PROVIDE TWO VALVES IN PARALLEL, ARRANGED TO OPERATE IN SEQUENCE. PROVIDE A SEPARATE CONTROL SIGNAL TO EACH VALVE.
4. CONTROL VALVES OPERATING IN SEQUENCE WITH OTHER VALVES OR DAMPERS IN MODULATING SERVICE SHALL BE PROVIDED WITH PILOT POSITIONING RELAYS. PROVIDE A SEPARATE CONTROL SIGNAL TO EACH VALVE.

D) ALARMS
   a. ALARM FEATURE SHALL ALLOW USER CONFIGURATION OF CRITERIA TO CREATE, ROUTE, AND MANAGE ALARMS AND EVENTS. IT SHALL BE POSSIBLE FOR SPECIFIC ALARMS FROM SPECIFIC POINTS TO BE ROUTED TO SPECIFIC ALARM RECIPIENTS. THE ALARM MANAGEMENT PORTION OF THE USER INTERFACE SHALL, AT THE MINIMUM, PROVIDE THE FOLLOWING FUNCTIONS:
      (1) ALLOW CONFIGURATION TO GENERATE ALARMS ON ANY NUMERIC, BINARY, OR DATA POINT IN THE SYSTEM.
      (2) GENERATE ALARM RECORDS THAT CONTAIN A MINIMUM OF A TIMESTAMP, ORIGINAL STATE, ACKNOWLEDGED STATE, ALARM CLASS AND PRIORITY.
   b. ALLOW THE ESTABLISHMENT OF ALARM CLASSES THAT PROVIDE THE ROUTING OF ALARMS WITH SIMILAR CHARACTERISTICS TO COMMON RECIPIENTS.
      (1) ALLOW A USER, WITH THE APPROPRIATE SECURITY LEVEL, TO MANAGE ALARMS - INCLUDING SORTING, ACKNOWLEDGING, AND TAGGING ALARMS.

E) PASSWORD
   a. MULTIPLE-LEVEL PASSWORD ACCESS PROTECTION SHALL BE PROVIDED TO ALLOW THE USER/MANAGER TO USER INTERFACE CONTROL, DISPLAY, AND DATABASE MANIPULATION CAPABILITIES DEEMED APPROPRIATE FOR EACH USER, BASED ON AN ASSIGNED PASSWORD.

F) DYNAMIC COLOR GRAPHICS
   a. THE GRAPHICS APPLICATION PROGRAM SHALL BE SUPPLIED AS AN INTEGRAL PART OF THE USER INTERFACE. THE GRAPHICS APPLICATIONS SHALL INCLUDE A CREATE/EDIT FUNCTION AND A RUNTIME FUNCTION. THE SYSTEM ARCHITECTURE SHALL SUPPORT AN UNLIMITED NUMBER OF GRAPHICS DOCUMENTS (GRAPHIC DEFINITION FILES) TO BE GENERATED AND EXECUTED. THE GRAPHICS SHALL BE ABLE TO DISPLAY REAL-TIME DATA THAT IS ACQUIRED, DERIVED, OR ENTERED.

2. NETWORK AREA CONTROLLER (NAC)
   A) THE NAC MUST PROVIDE THE FOLLOWING HARDWARE FEATURES AS A MINIMUM:
   a. COMMUNICATIONS
      (1) ONE 10/100 MB ETHERNET PORT - RJ-45 CONNECTION
      (2) ONE RS-485 PORT (UP TO 57,600 BAUD)
      (3) ALL REQUIRED PROTOCOL DRIVERS ARE INCLUDED.
   b. BATTERY BACKUP
      (1) BATTERY BACKUP PROVIDED FOR ALL ON BOARD FUNCTIONS INCLUDING I/O
      (2) BATTERY IS MONITORED, AND TRICKLE CHARGED
      (3) BATTERY MAINTAINS PROCESSOR OPERATION THROUGH POWER FAILURES FOR A PRE-DETERMINED INTERVAL, AND THEN WRITES ALL DATA TO FLASH MEMORY, SHUTS THE PROCESSOR DOWN, AND MAINTAINS THE CLOCK FOR FIVE YEARS.
   c. ENVIRONMENT
      (1) MUST BE CAPABLE OF OPERATION OVER A TEMPERATURE RANGE OF 0ºC TO 55ºC.
      (2) MUST BE CAPABLE OF WITHSTANDING STORAGE TEMPERATURES OF BETWEEN 0ºC AND 70ºC.
      (3) MUST BE CAPABLE OF OPERATION OVER A HUMIDITY RANGE OF 5% TO 95% RH, NON-CONDENSING
   d. PERFORMANCE
      (1) SUPPORTS UP TO 100 DEVICES.
      (2) THE NETWORK AREA CONTROLLER (NAC) SHALL BE A FULLY USER-PROGRAMMABLE DEVICE.
   e. AUTOMATION NETWORK - THE NETWORK AREA CONTROLLER (NAC) SHALL RESIDE ON THE AUTOMATION NETWORK. EACH NAC SHALL SUPPORT ONE OR MORE SUB-NETWORKS OF CONTROLLERS.
   f. USER INTERFACE - EACH NETWORK AREA CONTROLLER (NAC) SHALL HAVE THE ABILITY TO DELIVER A WEB BASED USER INTERFACE AS PREVIOUSLY DESCRIBED. ALL COMPUTERS CONNECTED PHYSICALLY OR VIRTUALLY TO THE AUTOMATION NETWORK SHALL HAVE ACCESS TO THE WEB BASED UI.
   g. POWER FAILURE - IN THE EVENT OF THE LOSS OF NORMAL POWER, THE NETWORK AREA CONTROLLER (NAC) SHALL CONTINUE TO OPERATE FOR A DEFINED PERIOD AFTER WHICH THERE SHALL BE AN ORDERLY SHUTDOWN OF ALL PROGRAMS TO PREVENT THE LOSS OF DATABASE OR OPERATING SYSTEM SOFTWARE. FLASH MEMORY SHALL BE INCORPORATED FOR ALL CRITICAL CONTROLLER CONFIGURATION DATA. DURING A LOSS OF NORMAL POWER, THE CONTROL SEQUENCES SHALL GO TO THE NORMAL SYSTEM SHUTDOWN CONDITIONS. UPON RESTORATION OF NORMAL POWER AND AFTER A MINIMUM OFF-TIME DELAY, THE CONTROLLER SHALL AUTOMATICALLY RESUME FULL OPERATION WITHOUT MANUAL INTERVENTION THROUGH A NORMAL SOFT-START SEQUENCE.
   h. CERTIFICATION - ALL CONTROLLERS SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL).
3. LOCAL WEB BROWSER / OPERATOR WORKSTATION PC
   A) A NEW OPERATOR WORKSTATION PC/PORTABLE LAPTOP SHALL BE INSTALLED AT A LOCATION TO BE DETERMINED BY THE OWNER.
   B) MONITOR: MINIMUM 19” HIGH DEFINITION FLAT PANEL DISPLAY.
   C) REMOTE ACCESS: LOCAL AREA NETWORK INSTALLATIONS SHALL HAVE REMOTE ACCESS TO THE BMS PROVIDED VIA THE INTERNET. THE OWNER SHALL PROVIDE A CONNECTION TO THE INTERNET TO ENABLE THIS ACCESS VIA ISDN, ADSL, HIGH-SPEED CABLE, OR T1 CONNECTION, OR VIA THE CUSTOMER'S INTRANET TO A CORPORATE SERVER PROVIDING ACCESS TO AN INTERNET SERVICE PROVIDER (ISP).

I. SEQUENCE OF OPERATIONS: REFER TO CONTROL DRAWINGS FOR SEQUENCE OF OPERATIONS.

PART 3 - EXECUTION

3.01 DEMOLITION, REMOVAL AND RELOCATION

A. REMOVAL, TEMPORARY CONNECTIONS AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT TO BE COMPLETELY DETAILED ON THE DRAWINGS. THE CON-TRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK.

B. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT, AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.

C. EQUIPMENT REQUIRED TO BE TEMPORARILY DISCONNECTED AND RELOCATED SHALL BE CAREFULLY REMOVED, STORED, CLEANED, REINSTALLED, RECONNECTED, AND MADE OPERATIONAL.

D. ALL EXISTING WORK NOT INDICATED FOR DEMOLITION SHALL BE PROTECTED FROM DAMAGE. WHERE EXISTING WORK TO REMAIN IS DAMAGED OR DISTURBED, THE CONTRACTOR SHALL REPAIR OR REPLACE TO OWNER'S AND BUILDING MANAGER'S SATISFACTION AT NO COST TO THE OWNER OR BUILDING MANAGEMENT.

E. GENERAL CONTRACTOR REMOVE ALL CEILING IN AREAS WHERE NEW DUCTWORK OR PIPING IS TO BE INSTALLED OR EXISTING IS ALTERED, AS PER ARCHITECT'S INSTRUCTIONS.

F. ALL NECESSARY CUTTING AND PATCHING TO ACCOMMODATE THE NEW HVAC WORK SHALL BE PERFORMED BY THIS CONTRACTOR AND COORDINATED WITH BUILDING MANAGEMENT SO AS TO MINIMIZE DISRUPTION OF EXISTING TENANTS AND SERVICES. RESTORE ALL ITEMS TO MATCH EXISTING CONDITIONS.

G. ALL EXISTING MATERIAL AND EQUIPMENT TO BE REMOVED UNDER THIS CONTRACT WILL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE LEGALLY DISPOSED OF BY THIS CONTRACTOR AS DIRECTED BY THE ARCHITECT OR OWNER. REFRIGERATION CONTAINED IN EXISTING EQUIPMENT TO BE REMOVED SHALL BE RECLAIMED OR LEGALLY DISPOSED OF IN ACCORDANCE WITH EPA REQUIREMENTS AND ASHRAE.

H. PROVIDE FOR LEGAL REMOVAL AND DISPOSAL OF ALL RUBBISH AND DEBRIS FROM THE BUILDING AND SITE. COORDINATE ALL DEMOLITION AND REMOVALS WITH BUILDING MANAGEMENT.

3.02 CONNECTION TO EXISTING WORK

A. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. INSTALL ISOLATION DAMPERS AT CONNECTION TO EXISTING DUCTWORK. PROVIDE TEMPORARY DUCTWORK AND PIPING CONNECTIONS AS REQUIRED TO MINIMIZE SHUTDOWN TIME.

B. CONNECT NEW WORK TO EXISTING WORK IN A NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT AND BUILDING MANAGER.

C. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES.

3.03 CHASING, CHOPPING OR CORE DRILLING

A. PRIOR TO ANY CHASING, CHOPPING, OR CORE DRILLING BEING PERFORMED, THIS CONTRACTOR SHALL FIELD INVESTIGATE EXISTING CONDITIONS AND COORDINATE WITH ALL APPROPRIATE TRADES AND BUILDING MANAGEMENT TO ENSURE THAT WORK WILL BE IN HARMONY WITH OTHER WORK AND NOT AFFECT ANY EXISTING BUILDING SYSTEMS. THIS WORK MUST BE APPROVED BY BUILDING MANAGEMENT PRIOR TO PROCEEDING.

3.04 COMMISSIONING REQUIREMENTS FOR MECHANICAL SYSTEMS

A. GENERAL

1. COMMISSIONING IS A QUALITY-ORIENTED PROCESS FOR ACHIEVING, VERIFYING, AND DOCUMENTING THAT THE PERFORMANCE OF FACILITIES, SYSTEMS, AND ASSEMBLIES MEET DEFINED OBJECTIVES AND CRITERIA. THE COMMISSIONING PROCESS BEGINS AT PROJECT INCEPTION, DURING THE PRE-DESIGN PHASE, AND CONTINUES THROUGH THE LIFE OF THE FACILITY. THE COMMISSIONING PROCESS INCLUDES SPECIFIC TASKS TO BE CONDUCTED DURING EACH PHASE IN ORDER TO VERIFY THAT DESIGN, CONSTRUCTION, AND TRAINING MEETS THE OWNER'S PROJECT REQUIREMENTS.
2. THE GOALS OF THE COMMISSIONING PROCESS ARE TO:
3. VERIFY THAT APPLICABLE EQUIPMENT AND SYSTEMS ARE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS, MANUFACTURER'S RECOMMENDATIONS, AND INDUSTRY ACCEPTED MINIMUM STANDARDS AND THAT THEY RECEIVE ADEQUATE OPERATIONAL CHECKOUT BY INSTALLING CONTRACTORS.
4. VERIFY AND DOCUMENT PROPER PERFORMANCE OF EQUIPMENT AND SYSTEMS.
5. VERIFY THAT O&M DOCUMENTATION LEFT ON SITE IS COMPLETE.
6. VERIFY THAT THE OWNER'S OPERATING PERSONNEL ARE ADEQUATELY TRAINED.
7. THE COMMISSIONING PROCESS DOES NOT TAKE AWAY FROM OR REDUCE THE RESPONSIBILITY OF THE SYSTEM DESIGNERS OR INSTALLING CONTRACTORS TO PROVIDE A FINISHED AND FULLY FUNCTIONING PRODUCT.

1.2 SUMMARY

1. THIS SECTION INCLUDES GENERAL REQUIREMENTS THAT APPLY TO THE IMPLEMENTATION OF THE COMMISSIONING PROCESS AS RELATED TO MECHANICAL SYSTEMS, ASSEMBLIES, AND COMPONENTS.

1.3 SUBMITTALS

1. PRODUCT DATA SUBMITTALS
2. CERTIFICATES OF READINESS
3. CERTIFICATES OF COMPLETION OF INSTALLATION, PRESTART, AND STARTUP ACTIVITIES.
4. O&M MANUALS
5. TEST REPORTS
6. AS-BUILT RECORD DOCUMENTS

1.4 EQUIPMENT/SYSTEMS TO BE COMMISSIONED

1. THE FOLLOWING EQUIPMENT/SYSTEMS WILL BE COMMISSIONED IN THIS PROJECT:
1. MECHANICAL SYSTEMS
   a. DX AIR HANDLING UNIT
   b. VARIABLE AIR VOLUME BOXES WITH HEATING COILS
   c. FAN POWERED VARIABLE AIR VOLUME BOXES WITH HEATING COILS
   d. IT ROOM AIR CONDITIONING UNIT
   e. EXHAUST FANS
   f. UNIT HEATER

1.5 QUALITY ASSURANCE

1. TEST EQUIPMENT CALIBRATION REQUIREMENTS
1. CONTRACTORS WILL COMPLY WITH TEST MANUFACTURER'S CALIBRATION PROCEDURES AND INTERVALS. RECALIBRATE TEST INSTRUMENTS IMMEDIATELY AFTER INSTRUMENTS HAVE BEEN REPAIRED RESULTING FROM BEING DROPPED OR DAMAGED. AFFIX CALIBRATION TAGS TO TEST INSTRUMENTS. FURNISH CALIBRATION RECORDS TO CXA UPON REQUEST.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

1. ALL STANDARD TESTING EQUIPMENT REQUIRED TO PERFORM STARTUP, INITIAL CHECKOUT AND FUNCTIONAL PERFORMANCE TESTING SHALL BE PROVIDED BY THE CONTRACTOR FOR THE EQUIPMENT BEING TESTED. FOR EXAMPLE, THE MECHANICAL CONTRACTOR OF DIVISION 23 SHALL ULTIMATELY BE RESPONSIBLE FOR ALL STANDARD TESTING EQUIPMENT FOR THE HVAC&R SYSTEM AND CONTROLS SYSTEM IN DIVISION 23, EXCEPT FOR EQUIPMENT SPECIFIC TO AND USED BY TAB CONTRACTOR IN THEIR COMMISSIONING RESPONSIBILITIES. A SUFFICIENT QUANTITY OF TWO-WAY RADIOS SHALL BE PROVIDED BY EACH SUBCONTRACTOR, AS NECESSARY.
2. SPECIAL EQUIPMENT, TOOLS AND INSTRUMENTS (SPECIFIC TO A PIECE OF EQUIPMENT AND ONLY AVAILABLE FROM VENDOR) REQUIRED FOR TESTING SHALL BE INCLUDED.
3. PROPRIETARY TEST EQUIPMENT AND SOFTWARE REQUIRED BY ANY EQUIPMENT MANUFACTURER FOR PROGRAMMING AND/OR START-UP, WHETHER SPECIFIED OR NOT, SHALL BE PROVIDED BY THE MANUFACTURER OF THE EQUIPMENT. MANUFACTURER SHALL PROVIDE THE TEST EQUIPMENT, DEMONSTRATE ITS USE, AND ASSIST IN THE COMMISSIONING PROCESS AS NEEDED. PROPRIETARY TEST EQUIPMENT (AND SOFTWARE) SHALL BECOME THE PROPERTY OF THE OWNER UPON COMPLETION OF THE COMMISSIONING PROCESS.
4. IF REQUIRED AND NECESSARY, DATA LOGGING EQUIPMENT AND SOFTWARE REQUIRED FOR TESTING WILL BE PROVIDED BY THE CXA, BUT SHALL NOT BECOME THE PROPERTY OF THE OWNER.
5. ALL TESTING EQUIPMENT SHALL BE OF SUFFICIENT QUALITY AND ACCURACY TO TEST AND/OR MEASURE SYSTEM PERFORMANCE WITH THE TOLERANCES SPECIFIED IN THE SPECIFICATIONS. IF NOT OTHERWISE NOTED, THE FOLLOWING MINIMUM REQUIREMENTS APPLY: TEMPERATURE SENSORS AND DIGITAL THERMOMETERS SHALL HAVE A CERTIFIED CALIBRATION WITHIN THE PAST YEAR TO AN ACCURACY OF 0.5°F AND A RESOLUTION OF + OR - 0.1°F. PRESSURE SENSORS SHALL HAVE AN ACCURACY OF + OR - 2.0% OF THE VALUE RANGE BEING MEASURED (NOT FULL RANGE OF METER) AND HAVE BEEN CALIBRATED WITHIN THE LAST YEAR.

PART 3 - EXECUTION

3.1 CONSTRUCTION CHECKLISTS

1. THE CXA SHALL PROVIDE PRE-FUNCTIONAL EQUIPMENT CHECKLISTS TO THE CONTRACTORS FOR EXECUTION THAT WILL INDICATE EXPECTED QUALITY CONTROL FEATURES REQUIRED FOR A HIGHEST-QUALITY INSTALLATION. THE CONTRACTOR SHALL COMPLETE THE CHECKLISTS AS CONSTRUCTION PROGRESSES AND RETURN THEM TO THE CXA AS INDICATED IN SECTION 01 91 00 COMMISSIONING GENERAL REQUIREMENTS.
2. THE MANUFACTURER AND CONTRACTOR SHALL DEVELOP THE DETAILED STARTUP PLANS FOR ALL EQUIPMENT, INCLUDING FIELD CHECKOUT SHEETS. THE PRIMARY ROLE OF THE CXA IN THIS PROCESS IS TO ENSURE THAT THERE IS WRITTEN DOCUMENTATION THAT EACH OF THE MANUFACTURER-RECOMMENDED PROCEDURES HAVE BEEN COMPLETED BY THE INSTALLING CONTRACTOR(S).

3.2 PREREQUISITES TO TESTING

1. PRIOR TO THE TESTING OF THESE SYSTEMS, THE CONTRACTOR SHALL CERTIFY IN WRITING THAT:
1. THE SYSTEM IS COMPLETELY INSTALLED, FUNCTIONAL, AND DOCUMENTED.
2. WORK PERFORMED BY OTHER TRADES, BUT ESSENTIAL FOR THIS SYSTEM OR ASSEMBLY'S OPERATION, IS COMPLETE (E.G., ELECTRICAL COMPONENTS ARE WIRED AND POWER IS PROVIDED)
3. ALL CONTRACTOR-PERFORMED START-UP PROCEDURES AND TESTS ARE COMPLETE AND DOCUMENTED.
4. THE SYSTEM OR ASSEMBLY IS READY FOR THE OWNER TO TAKE BENEFICIAL USE.

3.3 TESTING, ADJUSTING, AND BALANCING

1. AIR AND WATER TESTING, BALANCING AND EQUIPMENT PERFORMANCE VERIFICATION SHALL BE ACCOMPLISHED BY AN INDEPENDENT TEST AND BALANCE FIRM. THE CXA SHALL SPOT CHECK THIS WORK TO VERIFY ACCURACY OF RESULTS.
2. PRIOR TO PERFORMANCE OF TESTING, ADJUSTING, AND BALANCING WORK, PROVIDE COPIES OF REPORTS, SAMPLE FORMS, CHECKLISTS, AND CERTIFICATES TO THE CXA.
3. NOTIFY THE CXA AT LEAST TEN (10) DAYS IN ADVANCE OF TESTING AND BALANCING WORK, AND PROVIDE ACCESS FOR THE CXA TO WITNESS TESTING AND BALANCING WORK.
4. PROVIDE TECHNICIANS, INSTRUMENTATION, AND TOOLS TO VERIFY TESTING AND BALANCING OF HVAC&R SYSTEMS AT THE DIRECTION OF THE CXA.
5. SUBMIT THE FINAL, STAMPED REPORT.
6. ONCE THE SUBMITTED REPORT IS APPROVED BY THE MECHANICAL ENGINEER AND ALL COMMENTS ARE ADDRESSED, THE CXA WILL NOTIFY TESTING AND BALANCING SUBCONTRACTOR TEN (10) DAYS IN ADVANCE OF THE DATE OF FIELD VERIFICATION. NOTICE WILL NOT INCLUDE DATA POINTS TO BE VERIFIED.
7. THE TESTING AND BALANCING SUBCONTRACTOR SHALL USE THE SAME INSTRUMENTS (BY MODEL AND SERIAL NUMBER) THAT WERE USED WHEN ORIGINAL DATA WERE COLLECTED.
8. VERIFIED RESULTS ARE EXPECTED TO BE WITHIN +/- 10% OR THE REPORT VALUES. RESULTS OUTSIDE OF THESE VALUES WILL CONSTITUTE A FAILED TEST AND WILL REQUIRE RETESTING BY THE TESTING, ADJUSTING, AND BALANCING CONTRACTOR.

3.4 GENERAL TESTING REQUIREMENTS

1. PROVIDE TECHNICIANS, INSTRUMENTATION, AND TOOLS TO PERFORM COMMISSIONING TEST AT THE DIRECTION OF THE CXA.
2. SCOPE OF MECHANICAL TESTING SHALL INCLUDE ENTIRE MECHANICAL INSTALLATION. TESTING SHALL INCLUDE VERIFICATION OF DYNAMIC OPERATION OF THE SYSTEM.
3. TEST ALL OPERATING MODES, INTERLOCKS, CONTROL RESPONSES, AND RESPONSES TO ABNORMAL OR EMERGENCY CONDITIONS, AND VERIFY PROPER RESPONSE OF BUILDING AUTOMATION SYSTEM CONTROLLERS AND SENSORS.
4. THE CXA ALONG WITH THE MECHANICAL CONTRACTOR, TESTING AND BALANCING SUBCONTRACTOR, AND HVAC&R INSTRUMENTATION AND CONTROL SUBCONTRACTOR SHALL PREPARE DETAILED TESTING PLANS, PROCEDURES, AND CHECKLISTS FOR MECHANICAL SYSTEMS, SUBSYSTEMS, AND EQUIPMENT.
5. TESTS WILL BE PERFORMED USING DESIGN CONDITIONS WHENEVER POSSIBLE.
6. SIMULATED CONDITIONS MAY NEED TO BE IMPOSED USING AN ARTIFICIAL LOAD WHEN IT IS NOT PRACTICAL TO TEST UNDER DESIGN CONDITIONS. BEFORE SIMULATING CONDITIONS, CALIBRATE TESTING INSTRUMENTS. PROVIDE EQUIPMENT TO SIMULATE LOADS. SET SIMULATED CONDITIONS AS DIRECTED BY THE CXA AND DOCUMENT SIMULATED CONDITIONS AND METHODS OF SIMULATION. AFTER TESTS, RETURN SETTINGS TO NORMAL OPERATING CONDITIONS.
7. THE CXA MAY DIRECT TO ALTER SET POINTS WHEN SIMULATING CONDITIONS IS NOT PRACTICAL.
8. IF TESTS CANNOT BE COMPLETED BECAUSE OF A DEFICIENCY OUTSIDE THE SCOPE OF THE HVAC&R SYSTEM, DOCUMENT THE DEFICIENCY AND REPORT IT TO THE OWNER. AFTER DEFICIENCIES ARE RESOLVED, RESCHEDULE TESTS.

3.5 MECHANICAL SYSTEMS, SUBSYSTEMS, AND EQUIPMENT TESTING PROCEDURES

1. PROVIDE SUBMITTALS, TEST DATA, INSPECTOR RECORD, AND CERTIFICATIONS TO THE CXA.
2. THE WORK INCLUDED IN THE COMMISSIONING PROCESS INVOLVES A COMPLETE AND THOROUGH EVALUATION OF THE OPERATION AND PERFORMANCE OF ALL COMPONENTS, SYSTEMS AND SUB-SYSTEMS. THE FOLLOWING EQUIPMENT AND SYSTEMS SHALL BE EVALUATED:
3. VARIABLE AIR VOLUME TERMINAL UNITS WITH REHEAT COILS
4. WATER COOLED AIR HANDLING UNIT
5. EXHAUST FANS
6. BUILDING AUTOMATION SYSTEM
7. DUCTWORK AND ACCESSORIES
8. TESTING, ADJUSTING AND BALANCING

3.6 TRAINING OF OWNER PERSONNEL

1. PROVIDE THE CXA WITH A TRAINING PLAN TWO WEEKS BEFORE THE PLANNED TRAINING.
2. PROVIDE DESIGNATED OWNER PERSONNEL WITH COMPREHENSIVE ORIENTATION AND TRAINING IN THE UNDERSTANDING OF THE SYSTEMS AND THE OPERATION AND MAINTENANCE OF EACH PIECE OF PLUMBING EQUIPMENT.
3. TRAINING SHALL OCCUR AFTER FUNCTIONAL TESTING IS COMPLETE, UNLESS APPROVED OTHERWISE BY THE OWNER.

PART 4 - CLOSEOUT PHASE

4.1 PROJECT RECORD DOCUMENTS

1. THE CONTRACTOR WILL VERIFY ALL EQUIPMENT, SYSTEMS, INSTRUMENTATION, WIRING AND COMPONENTS ARE SHOWN CORRECTLY ON “AS-BUILT” RECORD DRAWINGS. PRIOR TO FULL OPERATION, A COMPLETE DEMONSTRATION AND TESTING OF THE SYSTEM OPERATING FUNCTIONS AND ALARMS SHALL BE PERFORMED BY THIS AN APPROVED COMMISSIONING AGENT IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND ENGINEER. THIS TESTING SHALL TAKE PLACE AFTER HAVING SATISFACTORILY MET THE REQUIREMENTS OF SHOP DRAWING ACCEPTANCE. COMMISSIONING OF THE SYSTEM SHALL BE SCHEDULED BEFORE THE SPACE IS OCCUPIED LEAVING ENOUGH TIME TO CORRECT THE SYSTEM'S DEFICIENCIES AND AFTER SHOP DRAWING ACCEPTANCE. UPON SUCCESSFUL COMPLETION OF SYSTEM OPERATION, THE CONTRACTOR SHALL SUBMIT A STATEMENT STATING THAT THE FULL OPERATION OF ALL SYSTEMS, FUNCTIONS AND ALARMS HAS BEEN DEMONSTRATED AND ARE OPERATIONAL AS WELL AS A LISTING OF ALL SYSTEMS, ALARMS AND FUNCTIONS THAT HAVE BEEN COMMISSIONED. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW AND ACCEPTANCE TO THE OWNER, OWNER'S REPRESENTATIVE AND ENGINEER BEFORE FINAL ACCEPTANCE CAN TAKE PLACE.

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:
HVAC SPECIFICATIONS
SHEET NO. 2

SCALE: As indicated FLOOR:

M-004

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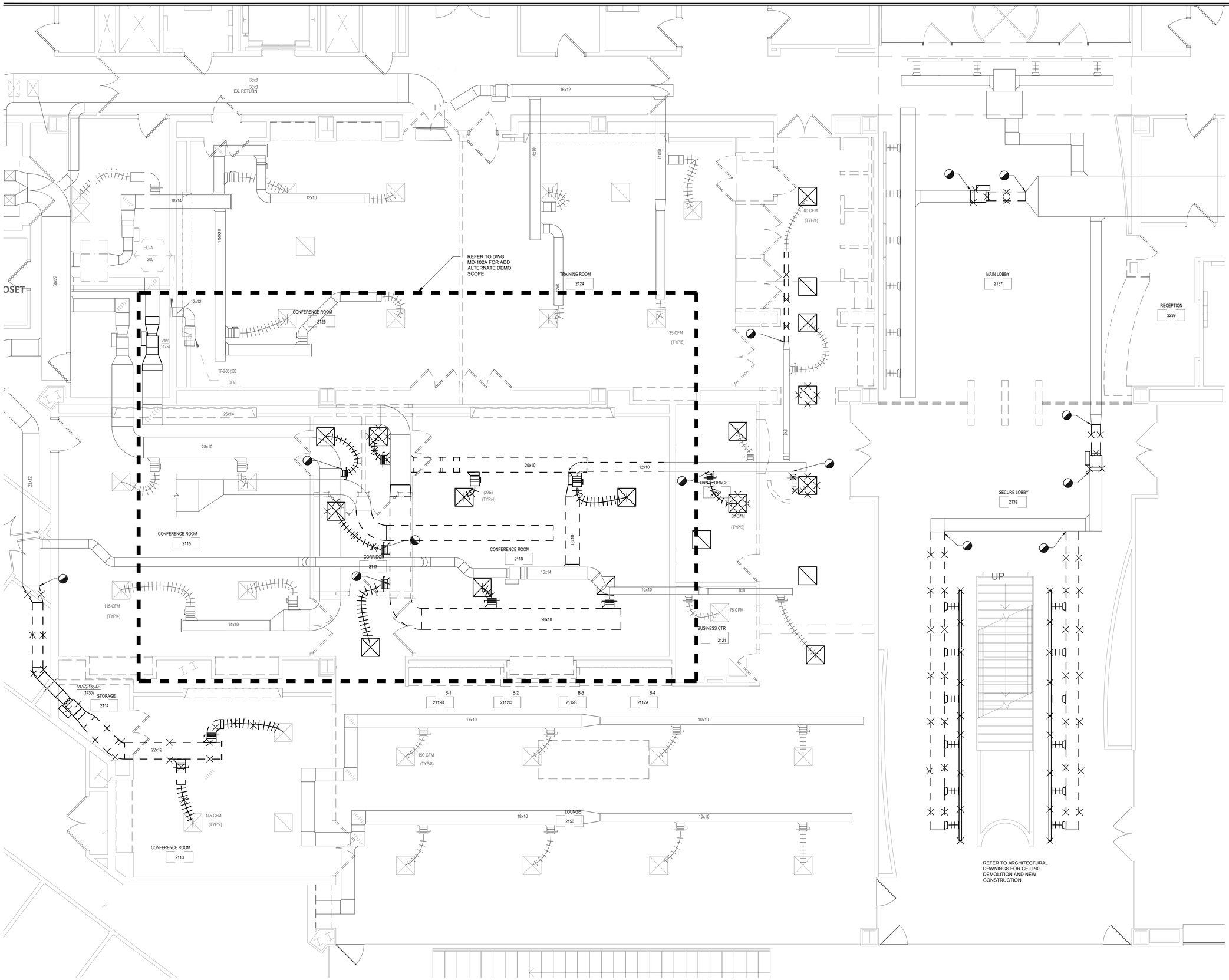

1 LEVEL 2 MECHANICAL DEMOLITION PLAN - PART PLAN

MD-102 SCALE: 1/4" = 1'-0"

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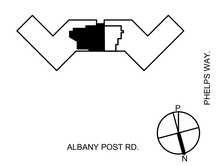

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Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SECOND FLOOR MECHANICAL DEMOLITION - PART PLAN

SCALE: As indicated FLOOR:

MD-102

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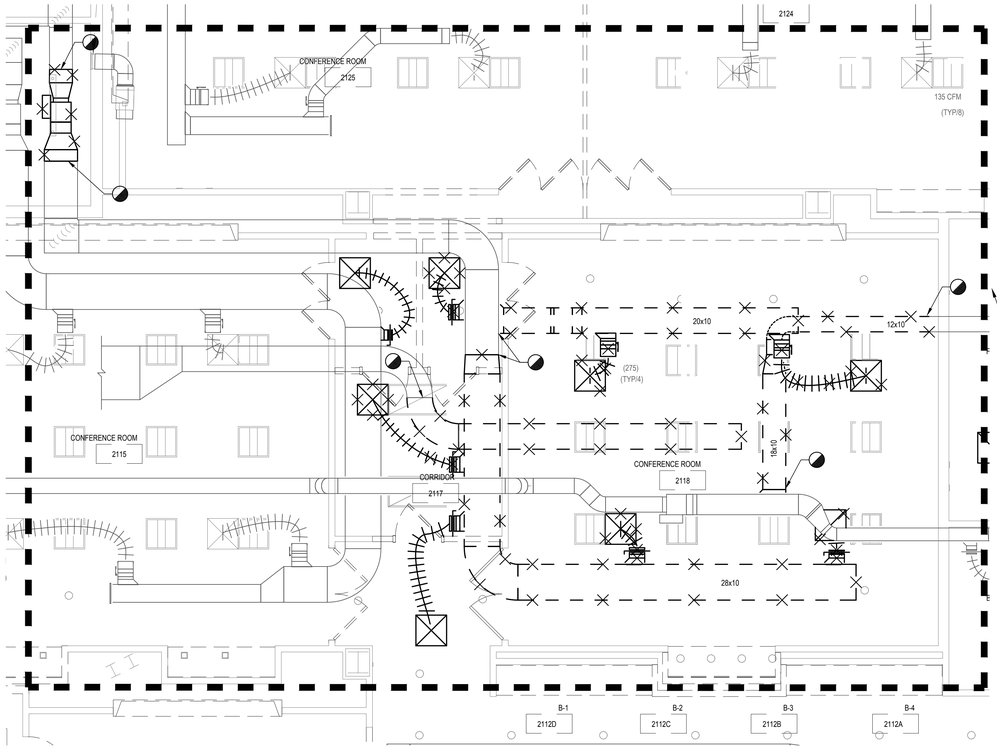

1 LEVEL 2 MECHANICAL DEMOLITION PLAN ADD ALTERNATE - PART PLAN

MD-102A SCALE: 1/4" = 1'-0"

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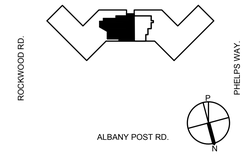

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Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

SECOND FLOOR MECH DEMOLITION ADD ALTERNATE - PART PLAN

SCALE: As indicated FLOOR:

MD-102A

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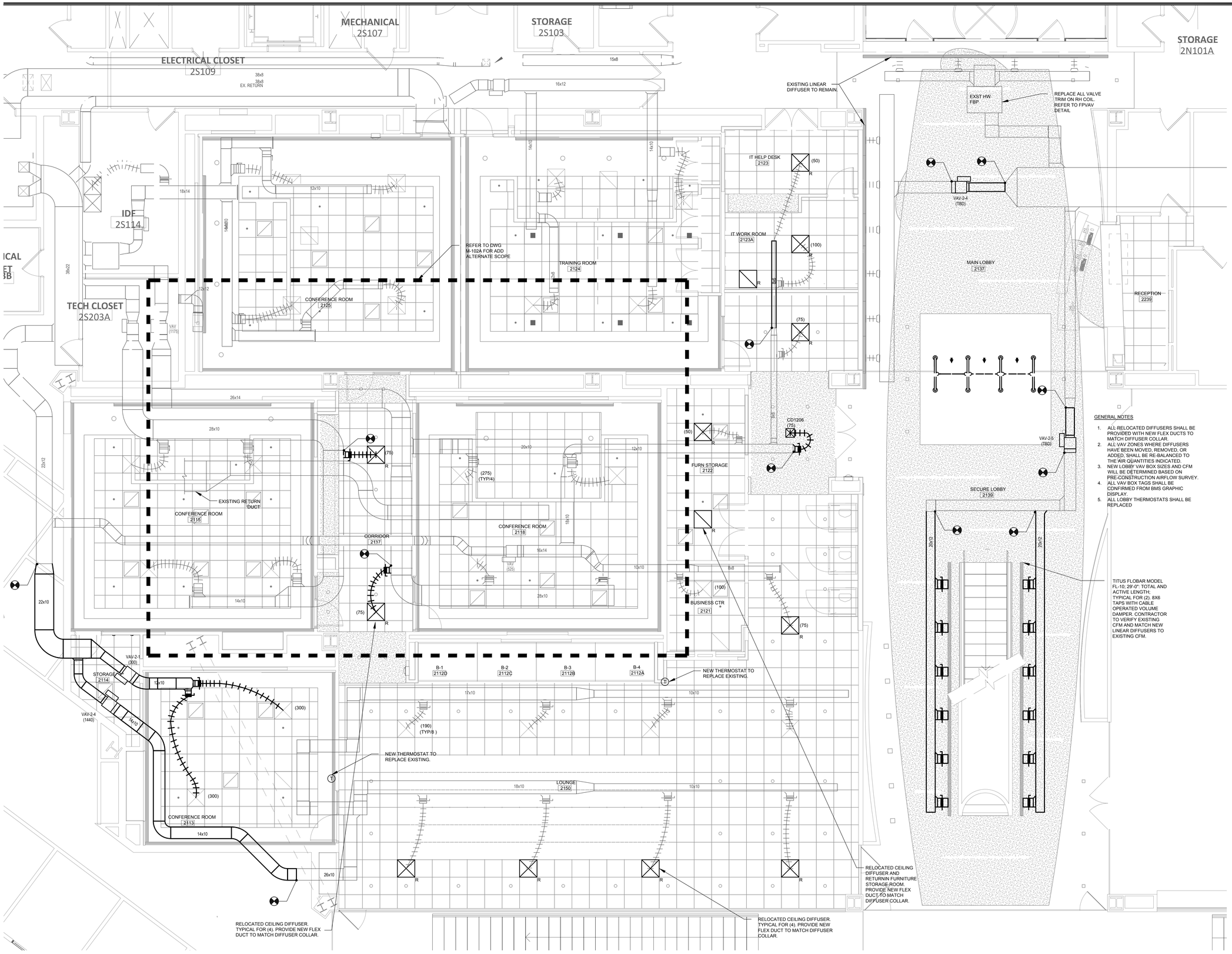

1 LEVEL 2 MECHANICAL CONSTRUCTION PLAN

M-102 SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. ALL RELOCATED DIFFUSERS SHALL BE PROVIDED WITH NEW FLEX DUCTS TO MATCH DIFFUSER COLLAR.
2. ALL VAV ZONES WHERE DIFFUSERS HAVE BEEN MOVED, REMOVED, OR ADDED, SHALL BE RE-BALANCED TO THE AIR QUANTITIES INDICATED.
3. NEW LOBBY VAV BOX SIZES AND CFM WILL BE DETERMINED BASED ON PRE-CONSTRUCTION AIRFLOW SURVEY.
4. ALL VAV BOX TAGS SHALL BE CONFIRMED FROM BMS GRAPHIC DISPLAY.
5. ALL LOBBY THERMOSTATS SHALL BE REPLACED

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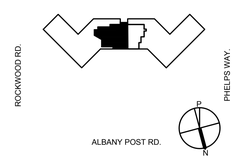
TEL 212.370.1776

Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

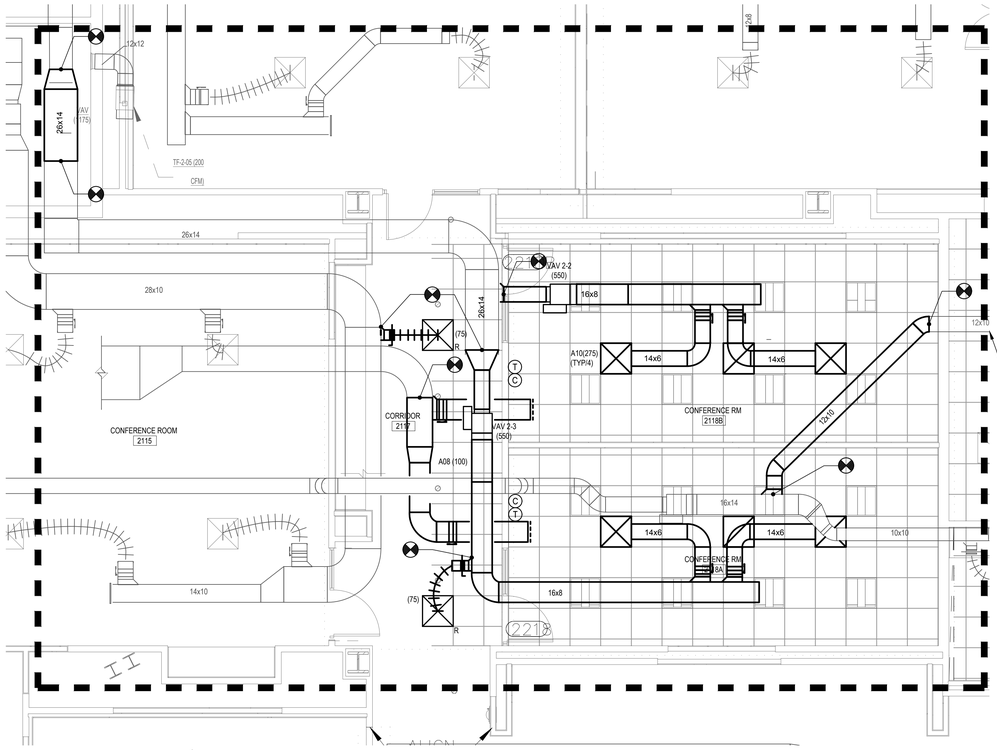
Drawing:

2ND FLOOR
MECHANICAL PLAN

SCALE: As indicated FLOOR:

M-102

PRINTED: FILE:



NOTES

1. EXTEND EXISTING 1" HWS&R PIPING FROM REHEAT COIL TO NEW VAV BOX REHEAT COILS SERVING CONFERENCE ROOMS.
2. THE SCOPE OF THIS DRAWING IS IN ADDITION TO M-102.
3. ALL VAV BOX TAGS SHALL BE CONFIRMED FROM BMS GRAPHIC DISPLAY.

REFER TO M-102 FOR CONTINUATION

1 LEVEL 2 MECHANICAL CONSTRUCTION PLAN - ADD ALTERNATE

M-102A SCALE: 1/4" = 1'-0"

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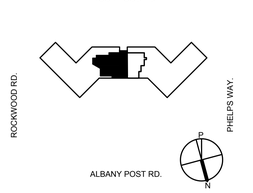
TEL 212.921.4142

ACOUSTICS

CERAMI ASSOCIATES
1001 AVENUE OF THE AMERICAS 4TH FLOOR
NEW YORK, NY 10018

TEL 212.370.1776

Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	**ISSUE FOR BID**
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

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FCA Project: 20-7168 Author
ARCHITECTURE

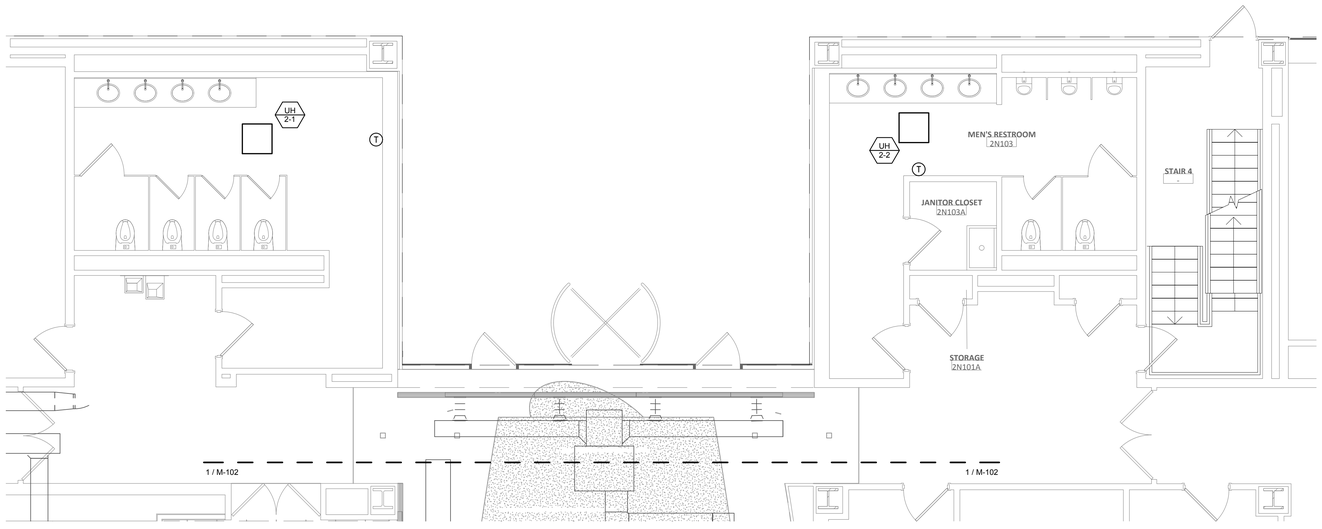
Drawing:

2ND FLOOR - ADD ALTERNATES

SCALE: As indicated FLOOR:

M-102A

PRINTED: FILE:



1 LEVEL 2 MECHANICAL CONSTRUCTION PART PLAN - RESTROOM

M-103 SCALE: 1/4" = 1'-0"

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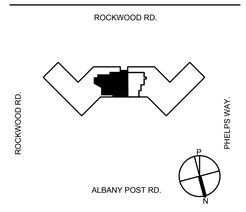
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	**ISSUE FOR BID**
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS

FCA Project: 20-7168 Author

ARCHITECTURE

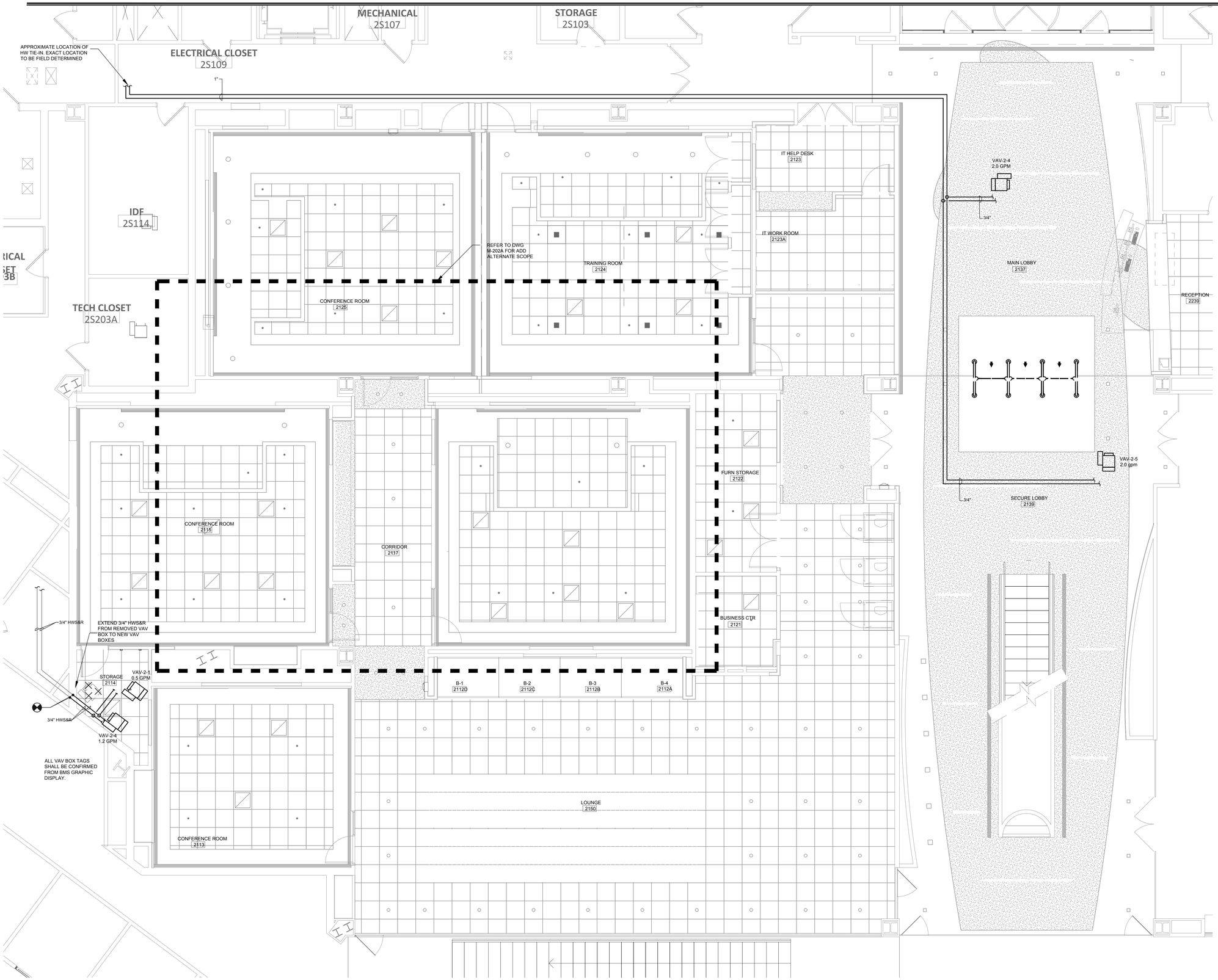
Drawing:

2ND FLOOR
MECHANICAL PART
PLAN - RESTROOMS

SCALE: As indicated FLOOR:

M-103

PRINTED: FILE:



1 LEVEL 2 MECHANICAL PIPING PLAN

M-202 SCALE: 1/4" = 1'-0"

PRINTED: FILE:

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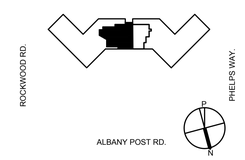
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

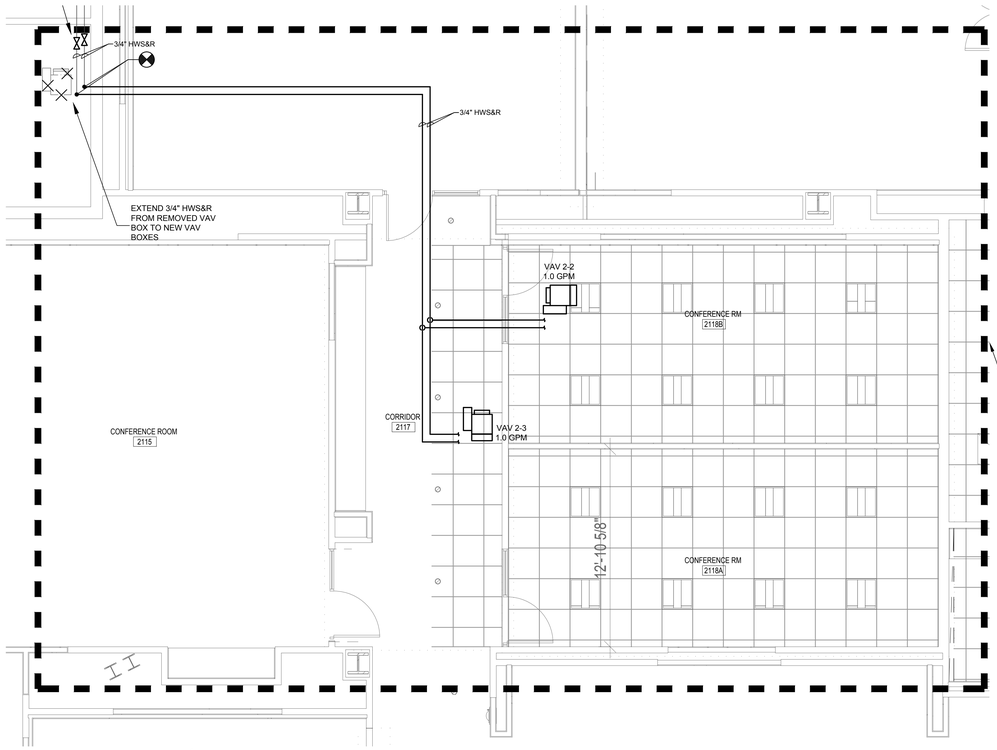
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

2ND FLOOR MECHANICAL PIPING PLAN

SCALE: As indicated FLOOR:

M-202



NOTES

1. EXTEND EXISTING 3/4" HWS&R PIPING FROM REHEAT COIL TO NEW VAV BOX REHEAT COILS SERVING CONFERENCE ROOMS.
2. THE SCOPE OF THIS DRAWING IS IN ADDITION TO M-202.

1 LEVEL 2 MECHANICAL PIPING PLAN - ADD ALTERNATE

M-202A SCALE: 1/4" = 1'-0"

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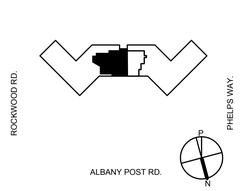
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	**ISSUE FOR BID**
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

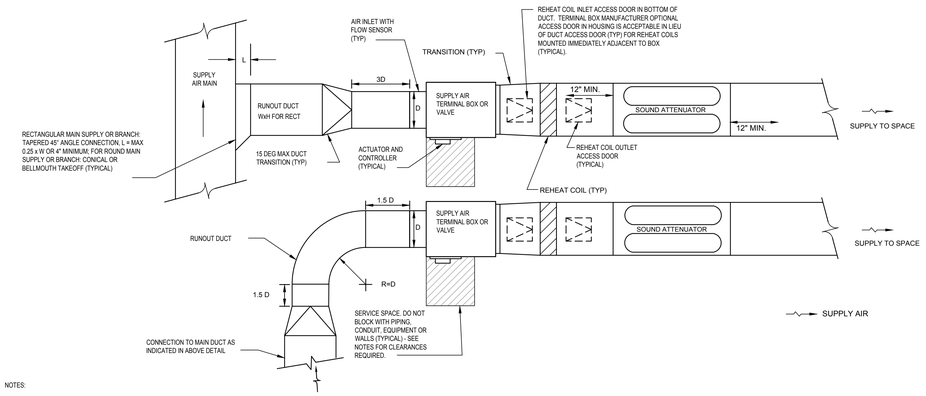
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing: 2ND FLOOR MECHANICAL PIPING PLAN- ADD ALTERNATE

SCALE: As indicated FLOOR:

M-202A

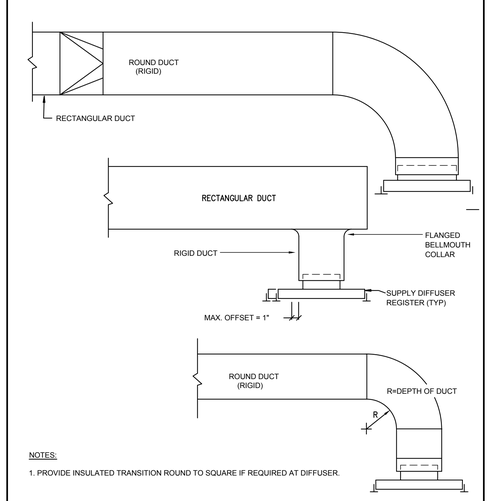
PRINTED: FILE:



NOTES:

1. CONNECTIONS APPLY TO ALL TERMINAL BOXES INCLUDING THOSE WITHOUT REHEAT COILS OR WITHOUT SOUND ATTENUATORS. REFER TO PLANS AND SCHEDULES FOR REHEAT COIL AND SOUND ATTENUATOR REQUIREMENTS.
2. IF STRAIGHT RUN CANNOT BE MADE PROVIDE FLOW STRAIGHTENER AT BOX INLET.
3. PROVIDE RECTANGULAR OR ROUND TO OVAL TRANSITIONS WHEN BOX INLET IS OVAL.
4. FOR CONTROLLERS WITH INSULATED ELECTRICAL CONNECTORS (NO EXPOSED LIVE PARTS), ACCESS DEPTH SHALL BE 24 INCHES MINIMUM. FOR CONTROLLERS WITH EXPOSED CONNECTORS/TERMINAL STRIPS, ACCESS DEPTH SHALL BE 36 INCHES MINIMUM PER THE NEC. WIDTH OF ACCESS ZONE SHALL MATCH WIDTH OF CONTROLLER PANEL COVER OR 24 INCH MINIMUM.

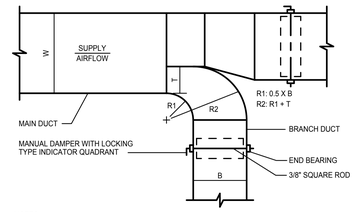
1 SUPPLY AIR BOX AND TERMINAL VALVE - DUCT CONNECTIONS
SCALE: NTS



NOTES:

1. PROVIDE INSULATED TRANSITION ROUND TO SQUARE IF REQUIRED AT DIFFUSER.

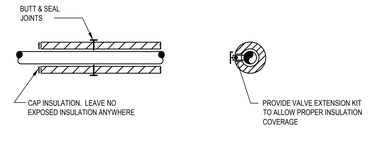
2 TYPICAL SUPPLY DIFFUSER/REGISTER DUCTWORK & CONNECTION
SCALE: NTS



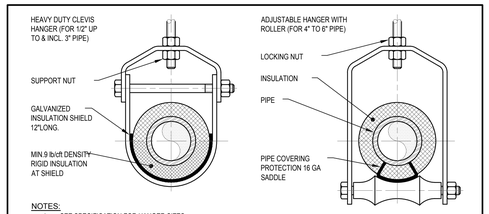
NOTES:

1. FURNISH THIS TYPE CONNECTION WHERE NOTED AND WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS ⊥. FOR LOW PRESSURE BRANCHES WITH MORE THAN 700 CFM AND MEDIUM PRESSURE BRANCHES WITH MORE THAN 1,000 CFM.
2. FURNISH THIS TYPE CONNECTION WITHOUT MANUAL DAMPER FOR ALL MEDIUM PRESSURE DUCTWORK BRANCHES.
3. MUST BE USED WHEN W ≥ 36".
4. T= $\frac{\text{CFM IN B}}{\text{CFM IN W}}$ x W, MINIMUM 4 INCHES.

3 RECTNGULAR DUCT BRANCH WITH THROAT & VOLUME DAMPER
SCALE: NTS



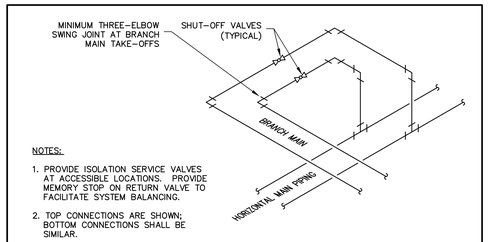
4 TYPICAL PIPE INSULATION & VALVE HANDLE EXTENSION
SCALE: NTS



NOTES:

1. SEE SPECIFICATION FOR HANGER SIZES.
2. PIPE 8" AND LARGER SHALL HAVE ROLLER SUPPORTED WITH DUAL RODS.
3. FOR CHW SERVICE OVER 3" REPLACE SADDLE WITH 12" LONG 14 GA SHIELD WITH RIGID INSULATION BETWEEN PIPE AND SHIELD.

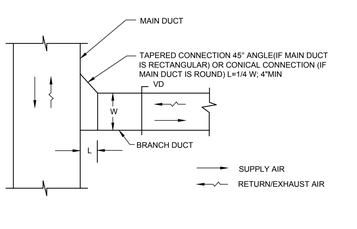
5 PIPE HANGER SUPPORT
SCALE: NTS



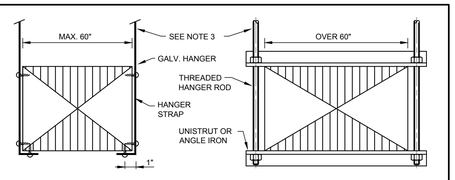
NOTES:

1. PROVIDE ISOLATION SERVICE VALVES AT ACCESSIBLE LOCATIONS. PROVIDE MEMORY STOP ON RETURN VALVE TO FACILITATE SYSTEM BALANCING.
2. TOP CONNECTIONS ARE SHOWN; BOTTOM CONNECTIONS SHALL BE SIMILAR.

9 HYDRONIC PIPING BRANCH TAKE-OFFS
SCALE: NTS



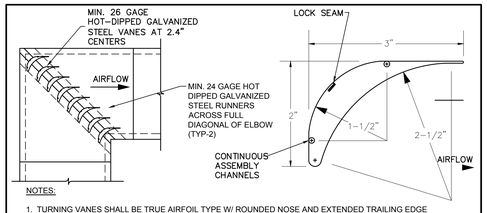
14 LOW PRESSURE BRANCH TAKE-OFFS
SCALE: NTS



NOTES:

1. ON DUCTS OVER 48" WIDE, BOTTOM SHALL BE BRACED BY ANGLE. FOR CROSS SECTION AREA MORE THAN 8 SQ FT, DUCT SHALL BE BRACED BY ANGLES ON ALL FOUR SIDES.
2. CUTTING AND PATCHING SHALL BE LIMITED TO A MINIMUM AS REQUIRED FOR PROPER INSTALLATION.
3. SUPPORTS SHALL BE SPACED AND SIZED AS PER SMACNA.

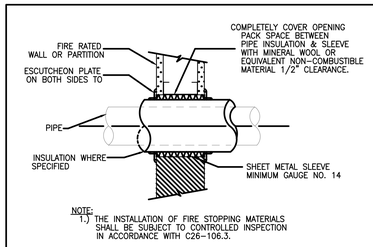
6 DUCT HANGER SUPPORT
SCALE: NTS



NOTES:

1. TURNING VANES SHALL BE TRUE AIRFOIL TYPE W/ ROUNDED NOSE AND EXTENDED TRAILING EDGE
2. PROVIDE HIGH EFFICIENCY PROFILE AS MANUFACTURED BY AERODYNE CO. OR EQUAL.
3. ASSEMBLIES SHALL INCLUDE SIDE RAILS BY THE SAME MANUFACTURER AND BE ATTACHED BY NAILS AT EACH END THAT CONNECT TO TWO CONTINUOUS ASSEMBLY CHANNELS.

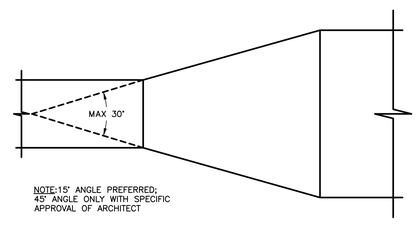
7 DOUBLE THICKNESS TURNING VANES FOR SQUARE ELBOWS
SCALE: NTS



NOTE:

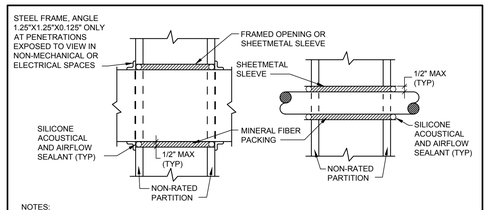
1.) THE INSTALLATION OF FIRE STOPPING MATERIALS SHALL BE SUBJECT TO CONTROLLED INSPECTION IN ACCORDANCE WITH C26-106.3.

10 PIPE SLEEVE THRU INTERIOR WALL
SCALE: NTS



NOTE:15° ANGLE PREFERRED; 45° ANGLE ONLY WITH SPECIFIC APPROVAL OF ARCHITECT

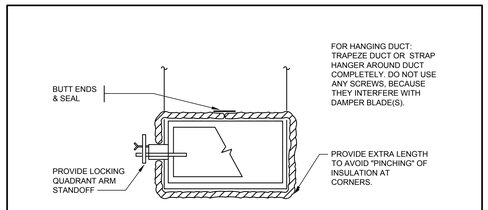
11 DUCT TRANSITION DETAIL
SCALE: NTS



NOTES:

1. AT FIRE RATED PARTITIONS WITHOUT FIRE DAMPER, REPLACE PACKING AND SILICONE SEALANT WITH UL LISTED FIRE STOP SYSTEM. INSTALL IN ACCORDANCE WITH UL LISTING.
2. FIRE STOP DUCT PENETRATIONS THRU RATED AND NON-RATED CORRIDOR WALLS ABOVE CEILINGS.

12 DUCT PENETRATION OF FULL HEIGHT PARTITIONS
SCALE: NTS



13 TYPICAL DUCT INSULATION & SUPPORTS NEAR VOLUME DAMPERS
SCALE: NTS

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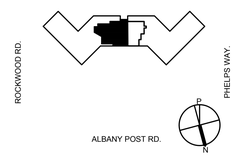
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	08/13/21	**ISSUE FOR BID**
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

HVAC DETAILS
SHEET NO. 1

SCALE: As indicated FLOOR:

M-500

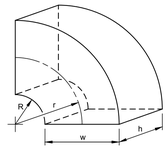
PRINTED: FILE:

RADIUS ELBOW AND SPLITTER VANE REQUIREMENTS

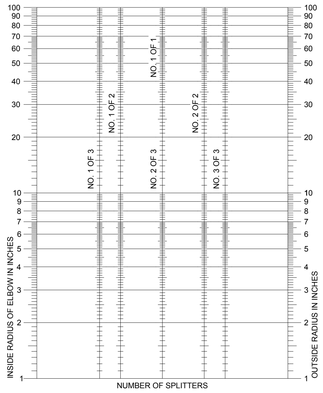
r/w RATIO:	NO. OF VANES FOR 1 ELBOW:	NO. OF VANES WHEN 2 ELBOWS ARE WITHIN 2 EQUIV. DIA.:
r/w >= 1.50	0	1
1.5 > r/w >= 0.70	1	2
0.7 > r/w >= 0.60	2	3
0.6 > r/w >= 0.55	3	3

EQUIVALENT DIAMETER = (w+h)/2

NOTE:
r/w < 0.55 (SQUARE THROAT ELBOW) SHALL NOT BE USED.
MINIMUM INSIDE RADIUS R SHALL BE 2".



r = CENTERLINE RADIUS
R = INSIDE RADIUS
w = DUCT WIDTH
H = DUCT HEIGHT

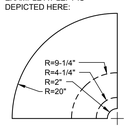


TERMINOLOGY:

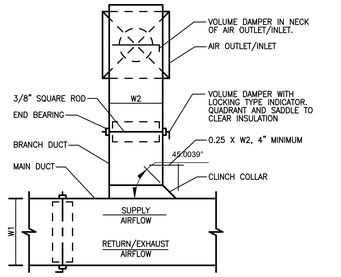
"NO. 1 OF 3" =
NO. 1 VANE OF A TOTAL OF 3 VANES.

"NO. 2 OF 3" =
NO. 2 VANE OF A TOTAL OF 3 VANES.

EXAMPLE AT LEFT IS DEPICTED HERE:



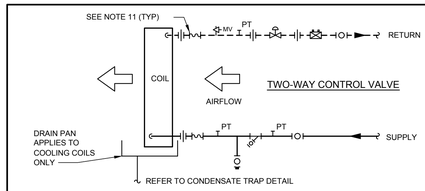
1 QUANTITY & SPACING OF DUCT SPLITTER VANES FOR SHORT RADIUS ELBOWS
SCALE: NTS

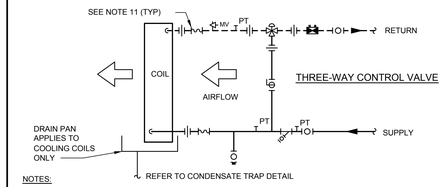


NOTES:

1. FURNISH THIS TYPE CONNECTION WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS: FOR LOW PRESSURE BRANCHES WITH LESS THAN 700 CFM.
2. NOT TO BE USED AS A SUBSTITUTE FOR AN ELBOW.
3. VOLUME DAMPER IN BRANCH RUN-OUT TO BE USED FOR BALANCING. VOLUME DAMPER IN NECK OF AIR OUTLET/INLET TO BE USED FOR FINAL ADJUSTMENT ONLY.

2 BRANCH RUN-OUT TO SINGLE AIR OUTLET/INLET
SCALE: NTS





NOTES:

1. DETAIL APPLIES TO SINGLE DUCT MOUNTED OR VAV BOX COILS, TERMINAL HEATING AND COOLING UNIT COILS INCLUDING FAN COIL UNITS, CABINET HEATERS, UNIT HEATERS, CRAC UNITS, ETC...
2. PIPING FOR MULTIPLE ROW COILS SHALL BE CONNECTED IN COUNTERFLOW ARRANGEMENT.
3. RELOCATE MANUAL AIR VENT TO COIL IF CONNECTION IS PROVIDED BY THE COIL MANUFACTURER.
4. SUBSTITUTE BUTTERFLY VALVES FOR BALL VALVES IF PIPING IS 2-1/2" NPS OR LARGER.
5. RELOCATE DRAIN OFF VALVE TO COIL IF CONNECTION IS PROVIDED BY THE COIL MANUFACTURER.
6. PROVIDE DRAIN OFF VALVES AND AIR VENTS IN PIPING SYSTEM.
7. REMOVE STRAINER BASKETS AFTER INITIAL STARTUP AND SYSTEM FLUSH IS COMPLETE.
8. WHERE COIL CONNECTIONS ARE IN SAME VERTICAL PLANE, PROVIDE COIL VENT AND DRAIN OFF CONNECTIONS.
9. WHERE COIL CONNECTIONS ARE NOT IN SAME VERTICAL PLANE, SUPPLY SHALL BE THROUGH THE BOTTOM CONNECTION.
10. WHERE WATER COIL IS INSTALLED IN A FLOOR MOUNTED CABINET TYPE UNITS, ALL VALVES SHALL FIT WITHIN CABINET. COOLING COIL PIPING AND VALVES NOT LOCATED OVER AN EXTENDED COIL DRAIN PAN SHALL BE INSULATED, INCLUDING WITHIN THE TERMINAL UNIT CABINET.
11. PROVIDE 12 INCH LONG SS BRAIDED HOSE ONLY ON FAN COILS, FAN POWERED TERMINAL BOXES, UNIT AND CABINET HEATERS, CRAC UNITS AND OTHER TERMINAL UNITS THAT INCLUDE FANS.

3 VAV MOUNTED COIL AND TERMINAL UNIT HYDRONIC PIPING
SCALE: NTS

H12-23

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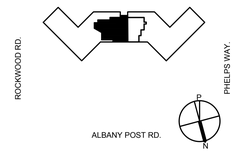
Key Plan:

ROCKWOOD RD.



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	**ISSUE FOR BID**
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

HVAC DETAILS
SHEET NO. 2

SCALE: As indicated FLOOR:

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DIFFUSER, GRILLE & REGISTER SCHEDULE

TAG	SERVICE	TYPE	MATERIALS	FACE SIZE (INCHES)	MAXIMUM AIRFLOW (CFM)							MAX NC	MAX SP	MFR	MODEL	SERVICE	NOTES
					6" NECK	8" NECK	10" NECK	12" NECK	14" NECK	15" NECK	22x22						
A	SUPPLY	SQUARE PLAQUE DIFFUSER	ALUMINUM	24x24	100	175	275	400	535	615	-	20	0.15	TITUS	OMNI	OFFICE AREAS WHERE INDICATED ON PLANS	1,2,3,4
B	RETURN	SQUARE PLAQUE GRILLE	ALUMINUM	24x24	-	-	-	-	-	-	1,115	20	0.15	TITUS	350 RL	OFFICE AREAS WHERE INDICATED ON PLANS	1,2,3,4

NOTES:
1. PROVIDE REQUIRED SHEET METAL TRANSITION FROM SQUARE DIFFUSER CONNECTION SIZE LISTED TO ROUND DIAMETER INDICATED BY DIFFUSER DESIGNATION ON PLANS.
2. COORDINATE MOUNTINGS WITH ADJACENT TYPE OF CONSTRUCTION - REFER TO ARCHITECTURAL DRAWINGS. PROVIDE CONCEALED MOUNTINGS WHEN AVAILABLE
3. PROVIDE SECTORIZING BAFFLES OR BLANK-OFFS FOR DIRECTIONAL THROW CONTROL WHERE INDICATED ON PLANS
4. ADJUST THROW PATTERNS IN FIELD AFTER BALANCING TO AVOID DRAFTS IN OCCUPIED ZONE.
5. ARCHITECT TO COORDINATE EDGE STYLE, COLOR AND FINISH TYPES

VAV BOX SCHEDULE & HOT WATER REHEAT

UNIT NO.	PRIMARY CFM (RANGE)	LOWEST TURN DOWN CFM	PRIMARY INLET COLLAR SIZE	DISCHARGE COLLAR SIZE (IN. x IN.)	MIN. INLET SP (IN. WG)	NC RATING @ 1" INLET S.P.		SOUND POWER LEVELS @ 1.0" INLET PRESSURE (IN. WG)							HOT WATER REHEAT COIL										MANUFACTURER MODEL NUMBER (OR APPROVED EQUAL)	NOTES
						RADIATED	DISCHARGE	OCTAVE BAND / REFERENCE	2	3	4	5	6	7	MBH	ROWS	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	WPD (FT. WG)	APD (FT. WG)	COIL GPM	BRANCH PIPE RUNOUT SIZE		
VAV-2-1	200-400	120	6"	8.75x8.75	0.18	15	19	DISCHARGE RADIATED	59 55	60 52	56 44	52 37	47 31	48 29	8.4	1	55	84.5	180	140	0.2	0.10	PER PLAN	3/4"	TITUS DESV	(1) (2)
VAV-2-2 VAV-2-3	401-680	200	8"	10.75x8.75	0.38	15	15	DISCHARGE RADIATED	59 58	59 51	56 45	53 39	49 35	47 31	12.6	1	55	82.2	180	140	0.5	0.36	PER PLAN	3/4"	TITUS DESV	(1) (2)
VAV-2-4	1101-1400	420	12"	14.75x13.75	0.21	19	15	DISCHARGE RADIATED	60 56	61 52	60 50	56 43	54 39	52 34	29.3	1	55	84.3	180	140	3.0	0.19	PER PLAN	3/4"	TITUS DESV	(1) (2)
VAV-2-5	TBD	TBD	TBD																							
VAV-2-6	TBD	TBD	TBD																							

(1) DDC CONTROLLER TO BE PROVIDED BY THE CONTROLS CONTRACTOR.
(2) UNIT SHALL BE PROVIDED WITH NON-FUSED DISCONNECT, SWITCH AND 120/24 VOLT TRANSFORMER.
(3) ALL VAV BOX TAAGS SHALL BE CONFIRMED FROM BMS GRAPHIC DISPLAY.
(4) VAV-2-5 AND 2-6 SIZE TO BE CONFIRMED BY PRE-CONSTRUCTION AIRFLOW.

UNIT HEATER SCHEDULE (ELECTRIC)

UNIT NO.	LOCATION	TYPE	INPUT (KW)	MBH	AIR			MOTOR		ELEC. DATA			MANUFACTURER MODEL NUMBER (AS STANDARD)	REMARKS
					CFM	EAT (°F)	LAT (°F)	HP	RPM	VOLTS	PHASE	HZ		
UH-02-1	SECOND FLOOR RESTROOM	ELECTRIC	3.0	--	300	72	103	--	--	208	3	60	DAYTON 2YU39	WITH CEILING TRIM KIT
UH-02-2	SECOND FLOOR RESTROOM	ELECTRIC	3.0	--	300	72	103	--	--	208	3	60	DAYTON 2YU39	WITH CEILING TRIM KIT

NOTES:
1. RECESSED MOUNTING IN T-BAR CEILING
2. 208/24 VOLT TRANSFORMER
3. TIME DELAY RELAY (24V)
4. WALL MOUNTED THERMOSTAT

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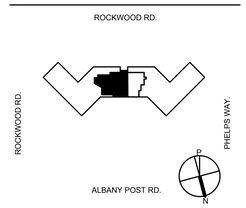

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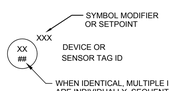
FIRST LETTER(S)			SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		USERS CHOICE(*)	USERS CHOICE(*)	USERS CHOICE(*)
C	CARBON DIOXIDE			CONTROL	
D	DEWPOINT	DIFFERENTIAL		DAMPER	
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO			
G	GAS		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE	RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOISTURE	MOMENTARY			
N	USERS CHOICE(*)		USERS CHOICE(*)	USERS CHOICE(*)	USERS CHOICE(*)
O	USERS CHOICE(*)		ORIFICE, RESTRICTION		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT(*)	INTEGRATE	INTEGRATE		
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE(*)		MULTIFUNCTION(*)	MULTIFUNCTION(*)	MULTIFUNCTION(*)
V	VIBRATION, MECH ANALYSIS			VALVE	
W	WEIGHT OR FORCE		WELL		
X	SMOKE		UNCLASSIFIED(*)	TRANSFORMER	UNCLASSIFIED(*)
Y	EVENT (STATUS)			RELAY OR COMPUTE(*)	
Z	POSITION, DIMENSION			DRIVER, ACTUATOR OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS.
EXAMPLE: PT=PRESSURE TRANSMITTER, HS=HAND SWITCH

INSTRUMENT IDENTIFICATION LETTERS

CONTROL DEVICE OR INSTRUMENT TAG



BAS INPUT/OUTPUT IDENTIFIER

X = ANALOG(A) OR DIGITAL(D)
Y = OUTPUT(O) OR INPUT(I)

NOTE:
INSTRUMENTATION IDENTIFICATION TAGS SHOWN ON THE ENCLOSED CONTROL DRAWINGS ARE INTENDED TO BE SPECIFIC FOR EACH SEQUENCE. NO ATTEMPT HAS BEEN MADE TO COORDINATE SEQUENTIAL TAGS IN ALL SEQUENCES AS THIS EFFORT WOULD NOT AID IN THE UNDERSTANDING OF THE DESIGN INTENT. THEREFORE THERE MAY BE INSTRUMENTS ON THE CONTROL DRAWINGS WHICH APPEAR TO HAVE THE SAME IDENTIFICATION NUMBER.

PROVIDE AND COORDINATE A COMPLETE LIST OF INSTRUMENTATION, THE ASSOCIATED IDENTIFICATION TAGS AND A CROSS REFERENCE TO BE USED IN THE BAS (BUILDING AUTOMATION SYSTEM) PROGRAM CODE.

MODIFIER SYMBOLS AND DESCRIPTIONS SHOWN BELOW

OC	OPEN/CLOSE
OO	ON/OFF
SS	START/STOP
AUTO	AUTO
PAL	PRESSURE ALARM LOW LIMIT
PAH	PRESSURE ALARM HIGH LIMIT
TSL	TEMPERATURE ALARM LOW LIMIT
TSH	TEMPERATURE ALARM HIGH LIMIT
MAL	MOISTURE ALARM LOW LIMIT
MAH	MOISTURE ALARM HIGH LIMIT
R	MANUAL RESET

SAMPLE DEVICE TAGS

DUCT SMOKE DETECTOR WITH AUXILIARY CONTACTS AND MANUAL RESET

HIGH & LOW MOISTURE "OUT OF RANGE" LIMITS FOR FAULTY SENSOR ALARM

PILOT LIGHT

LINE TYPE LEGEND

PROCESS LINE

INSTRUMENT LINE

GENERAL INSTRUMENT / FUNCTION SYMBOLS

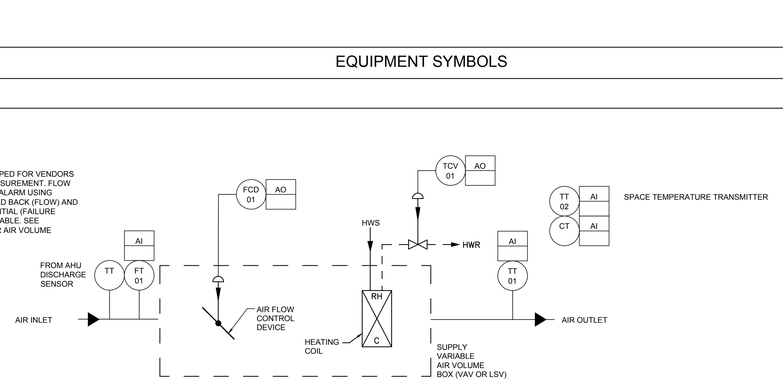
HVAC CONTROL SYSTEM GENERAL REQUIREMENTS:

1. UNLESS OTHERWISE NOTED, ALL CONTROLS SHALL BE DIRECT DIGITAL TYPE (DDC). SEQUENCES OUTLINED SHALL BE PERFORMED BY LOCALLY MOUNTED TERMINAL UNIT DIRECT DIGITAL CONTROLLERS AND DIRECT DIGITAL CONTROL FIELD PANELS (DDCFP). REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. ALL SEQUENCES SHALL BE MONITORED BY THE CENTRAL BUILDING AUTOMATION SYSTEM (BAS) HEAD END COMPUTER WORKSTATION.
2. ALL MEASURED DATA, CONTROL SETPOINTS, FUNCTIONS AND TIME DELAYS SHALL BE ACCESSIBLE AND ADJUSTABLE AT THE BAS HEAD END COMPUTER WORKSTATION AND VIA A LAPTOP SERVICE TOOL CONNECTED TO ANY DDCFP WITHOUT ANY HARDWARE OR SOFTWARE REVISIONS.
3. BAS SHALL MONITOR GENERATOR SWITCHGEAR TO OBTAIN STATUS OF NORMAL (STREET) POWER. INPUT SHALL BE PROVIDED INDEPENDENTLY TO AT LEAST TWO DDCFP.
4. DEFINED OCCUPIED/UNOCCUPIED PERIODS SHALL BE ADJUSTABLE GLOBALLY (SO THAT ALL CAN BE ON THE SAME TIME FRAME) AND INDIVIDUALLY (SO THAT ANY ONE ZONE OR SYSTEM OPERATION CAN HAVE DIFFERENT TIME PERIODS).
5. ALL BAS COMPONENTS (E.G. CONTROL PANELS, WORKSTATION COMPUTER, ETC…) SHALL BE CONNECTED TO STANDBY POWER.
6. BAS SHALL MONITOR AND PROVIDE CONTROL SIGNALS TO MANUFACTURERS PACKAGED CONTROL PANELS. PROVIDE COMMUNICATION INTERFACE INCLUDING SOFTWARE BETWEEN EQUIPMENT MANUFACTURERS PACKAGED CONTROL PANELS AND THE BAS COMMUNICATION CONTROL PANELS. INTERFACE SHALL BE CAPABLE OF READING AND DISPLAYING ALL DATA USED BY THE MANUFACTURER CONTROL PANEL. SOFTWARE INTERFACE MAY BE THROUGH OPEN PROTOCOL INTERFACE CARDS. PROVIDE INTERFACE TO ACCESS AND CONTROL ALL SETPOINT, INPUTS AND OUTPUTS.
7. ALL DDCFPS AND LABORATORY ZONE CONTROLLERS SHALL BE CAPABLE OF INDEPENDENT OPERATION REGARDLESS OF THE STATUS OF THE BAS NETWORK COMMUNICATION.
8. ALL COMMON INFORMATION (OUTSIDE AIR TEMP & HUMIDITY, ETC…) SHALL BE MEASURED AND COMMUNICATED TO THE BAS IN AT LEAST (2) LOCATIONS.
9. ALL WALL MOUNTED TEMPERATURE OR HUMIDITY TRANSMITTERS SHALL HAVE ALL PENETRATIONS SEALED.
10. ALL INSTALLED CONTROL DEVICES SHALL BE INSTALLED IN SUCH A WAY TO BE ACCESSIBLE FOR MAINTENANCE AND REPAIR.
11. PROVIDE MENU DRIVEN CAPABILITY TO OVERRIDE AUTOMATED START/STOP OR OPERATING MODES FOR EACH PIECE OF EQUIPMENT (INCLUDING PUMPS, AIR HANDLING UNITS, VV BOXES, ETC…). IF A SEQUENCE IS DISABLED BY MANUAL INPUT AND THE BAS ATTEMPTS AN AUTOMATED CHANGE IN OPERATING MODE, AN ALARM SHALL BE INITIATED AT THE BAS STATING THAT THE SYSTEM WAS UNABLE TO CHANGE THE MODE DUE TO USER INPUT. WHERE APPLICABLE A MANUAL INPUT COMMAND WILL THEN BE REQUIRED FROM THE USER INSTRUCTING THE BAS TO START THE NEXT SEQUENTIAL PIECE OF EQUIPMENT.
12. THE DESIGN INTENT IS FOR THE BAS TO MONITOR PRESSURES, TEMPERATURES AND FLOWS AND TO CONTROL VALVES, VARIABLE FREQUENCY DRIVES (VFDS), AHUS, PUMPS, ETC.... MONITORED DATA WILL BE USED TO ENERGIZE OR DE-ENERGIZE EQUIPMENT IN ACCORDANCE WITH THE SEQUENCES OUTLINED.
13. ALL EQUIPMENT CONTROLLED BY THE BAS SHALL BE CAPABLE OF MANUAL OPERATION THROUGH HAND-OFF-AUTOMATIC (HOA) SWITCHES LOCATED IN THE MOTOR STARTERS OR VARIABLE SPEED DRIVES. POSITIONING OF ALL VALVES CONTROLLED BY THE BAS SHALL BE CAPABLE OF MANUAL POSITIONING (OPEN, CLOSED, MODULATED, AUTO) VIA LABELED POTENTIOMETERS AND SWITCHES. SAFETY DEVICES SHALL FUNCTION AND SHUT DOWN THE ASSOCIATED EQUIPMENT WHEN THE MANUAL SWITCHES ARE IN BOTH THE HAND AND AUTO POSITIONS.
14. COORDINATE ALL SENSOR INSTALLATION LOCATIONS AND SUBMIT PROPOSED POSITIONS ON PIPING AND DUCTWORK COORDINATION SUBMITTALS. COORDINATE AND ENSURE MANUFACTURER'S RECOMMENDED UPSTREAM AND DOWNSTREAM PIPE OR DUCT DIAMETERS ARE PROVIDED. SPECIAL ATTENTION REQUIRED FOR FLOW MEASUREMENT.
15. DAMPER END SWITCHES SHALL BE MOUNTED OUTSIDE CONTAMINATED AIRSTREAM FOR ALL LABORATORY EXHAUST SYSTEMS.
16. FAIL SAFE POSITIONS INDICATED ARE POSITIONS THAT DEVICES WILL GO TO WHEN THE ASSOCIATED EQUIPMENT IS DE-ENERGIZED.
17. PROVIDE DAMPING OF MODULATING CONTROL LOOPS TO PREVENT HUNTING. MAXIMUM RESPONSE TIME SHALL BE 30 SECONDS. TUNE CONTROL P&ID LOOPS TO OBTAIN STABLE OPERATION OF THE CONTROL DEVICE. P&ID LOOP TUNING MAY BE REQUIRED TO BE PERFORMED MULTIPLE TIMES (E.G. DURING MULTIPLE CONTROL SCENARIOS).
18. FOR ALARMS AND SAFETY SHUT DOWN OF A UNIT, BAS SHALL RETAIN IN MEMORY READINGS AND SETPOINTS TO HELP ISOLATE CAUSE OF THE ALARM OR SAFETY SHUT DOWN. BAS SHALL INCLUDE AN ON SCREEN MANUAL RESTART BUTTON FOR EACH SYSTEM AND PIECE OF EQUIPMENT TO ALLOW REMOTE RESTART AT HEAD END COMPUTER.
19. IF A DDCFP OR EQUIPMENT MANUFACTURER CONTROL PANEL LOSES COMMUNICATION WITH THE BAS NETWORK, AN ALARM SHALL BE INITIATED AT THE BAS INDICATING THE LOCATION OF THE FAULT.
20. WHENEVER A PIECE OF EQUIPMENT IS TAKEN OFFLINE FOR MAINTENANCE, ALARMS RELATED TO THIS PIECE OF EQUIPMENT SHALL BE INHIBITED.
21. WHERE CURRENT TRANSMITTERS ARE USED TO DETERMINE FAN OR EQUIPMENT STATUS, A BELT OFF TEST SHALL BE PERFORMED TO DETERMINE CURRENT LOW POINT FOR STATUS VERIFICATION.
22. OCCUPANCY SCHEDULES: OCCUPANCY SCHEDULING SHALL BE CAPABLE OF SCHEDULING BY AREA, ZONE, GROUPS OF ZONES, INDIVIDUALLY CONTROLLED EQUIPMENT AND GROUPS OF INDIVIDUALLY CONTROLLED EQUIPMENT. EACH SCHEDULE SHALL PROVIDE BEGINNING AND ENDING DATES AND TIMES (HOURS: MINUTES). A WEEKLY REPEATING SCHEDULE (E.G. BETWEEN 8:00 A.M. AND 6:00 P.M., MONDAY THROUGH FRIDAY) SHALL CONSTITUTE ONE SCHEDULE. NOT FIVE. DATED SCHEDULES MAY BE ENTERED IN ONE-YEAR ADVANCE. DATED SCHEDULES SHALL BE SELF-DELETING WHEN EFFECTIVE DATES HAVE PASSED. LEAP YEARS SHALL BE ADJUSTED AUTOMATICALLY WITHOUT OPERATOR INTERVENTION.
23. REFER TO ZONE SEQUENCES FOR INITIAL SETPOINTS AND SCHEDULES.

CONTROLS SYSTEM GENERAL REQUIREMENTS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CENTRIFUGAL FAN		VARIABLE AIR VOLUME TERMINAL BOX OR VALVE WITH REHEAT COIL		MODULATING ACTUATOR WITHOUT INTEGRAL PILOT POSITIONER
	TUBULAR CENTRIFUGAL OR VANEAXIAL FAN		VARIABLE AIR VOLUME TERMINAL BOX OR VALVE		MODULATING ACTUATOR WITHOUT PILOT POSITIONER - FAILS OPEN
	PLUG FAN		PUMP		MODULATING ACTUATOR WITHOUT PILOT POSITIONER - FAILS CLOSED
	PROP FAN	MS	MOTOR STARTER		TWO POSITION ACTUATOR, FAILS OPEN
		VSD	VARIABLE SPEED DRIVE		TWO POSITION ACTUATOR, FAILS CLOSED
	DYNAMIC PLUG FAN (ARRAY)		AIR FLOW STATION		BACKPRESSURE REGULATOR, SELF CONTAINED
					PRESSURE REDUCING REGULATOR SELF CONTAINED
C H RH PH C C C C	COIL: CC - COOLING COIL HC - HEATING COIL RHC- REHEAT COIL PHC- PREHEAT COIL		HUMIDIFIER	HOA	HAND-OFF-AUTOMATIC CONTROL STATION REFER TO DIVISION 26 DWGS
			FILTER		TWO WAY VALVE ASSOCIATED WITH ACTUATOR - SEE DRAWINGS & SPECS FOR VALVE TYPE
					THREE WAY VALVE ASSOCIATED WITH ACTUATOR - SEE DRAWINGS & SPECS FOR VALVE TYPE
					OPPOSED BLADE DAMPER ASSOCIATED WITH ACTUATOR
					PARALLEL BLADE DAMPER ASSOCIATED WITH ACTUATOR

EQUIPMENT SYMBOLS



NOTES:

THIS DETAIL DEVELOPED FOR VENDORS THAT USE FLOW MEASUREMENT. FLOW CONFIRMATION AND ALARM USING POSITION BASED FEED BACK (FLOW) AND PRESSURE DIFFERENTIAL (FAILURE ALARM) ARE ACCEPTABLE. SEE SPECIFICATIONS FOR AIR VOLUME TERMINAL BOXES.

GENERAL

1. REQUIREMENTS OF "SEQUENCE OF CONTROLS - GENERAL", "SEQUENCE OF CONTROLS - STANDBY POWER" AND "CONTROL SYSTEM NOTES" ON DRAWING H701 APPLY TO ALL SEQUENCES.
2. VARIABLE AIR VOLUME BOX (LSV/VAV) SHALL BE CONTROLLED BY A LOCAL (BOX MOUNTED) DIRECT DIGITAL CONTROLLER COMMUNICATING WITH THE BAS. ALL BOXES SHALL BE CAPABLE OF VARIABLE, TWO POSITION AND CONSTANT AIR VOLUME OPERATION. PROVIDE INPUT/OUTPUT EXPANSION MODULES TO PERFORM SEQUENCES OUTLINED. SEE TYPICAL SPACE SEQUENCES FOR OPERATING REQUIREMENTS.
3. SETPOINTS AND OCCUPANCY SCHEDULING SHALL BE ADJUSTABLE FROM THE BAS. THE BAS SHALL BE CAPABLE OF ADJUSTING SETPOINTS AND STATUS GLOBALLY AS WELL AS ON AN INDIVIDUAL BOX BASIS.
4. LOCAL SPACE TEMPERATURE TRANSMITTER (TT-01) SHALL BE CAPABLE OF SETPOINT ADJUSTMENT WITHIN A 2F, ADJUSTABLE RANGE.
5. ALL SUPPLY BOXES SHALL BE NORMALLY CLOSED UNLESS NOTED OTHERWISE.
6. SV OR VV BOX AIR FLOW RATE SETPOINT AS MEASURED AT FT-01 (OR VIA POSITION FEEDBACK) SHALL BE MAINTAINED BY THE LOCAL CONTROLLER REGARDLESS OF UPSTREAM PRESSURE (PRESSURE INDEPENDENT OPERATION). THE BAS SHALL MONITOR AND DISPLAY (UPON REQUEST) THE FLOW RATE OF ANY LSV OR VAV BOX.

ALARMS

1. THE FOLLOWING SHALL INITIATE A SPECIFIC ALARM NOTICE AT THE BAS:
   a. SPACE TEMPERATURE ABOVE 95 DEGREES F - TIME DELAY 10 MINUTES.
   b. SPACE TEMPERATURE BELOW 55 DEGREES F - TIME DELAY 10 MINUTES.
   c. AIRFLOW RATE 10% ABOVE SETPOINT FOR 5 CONSECUTIVE MINUTES.
   d. AIRFLOW RATE 10% BELOW SETPOINT FOR 5 CONSECUTIVE MINUTES.
   e. CO2 LEVEL ABOVE 1000 PPM FOR 5 CONSECUTIVE MINUTES.

MONITOR

1. THE DISCHARGE AIR TEMPERATURE SHALL BE PROVIDED FOR MONITORING ONLY.

OCCUPIED MODE

1. SV OR VV BOX SHALL OPERATE BETWEEN PRESET FLOW RATES (CFM) SHOWN ON THE PLANS (OCCUPIED MAXIMUM TO OCCUPIED MINIMUM). THE LOCAL CONTROLLER AND THE BAS SHALL MONITOR ROOM TEMPERATURE AT TT-01 AND AIR FLOW RATE AT FT-01 (OR VIA POSITION FEEDBACK). UPON A RISE IN SPACE TEMPERATURE FCD SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE SET POINT. UPON A DROP IN SPACE TEMPERATURE, THE FCD SHALL MODULATE TO MINIMUM POSITION, AND UPON FURTHER DROP IN TEMPERATURE, THE REHEAT CONTROL VALVE TCV-01 SHALL MODULATE OPEN. ON A RISE IN TEMPERATURE, THE REVERSE SHALL OCCUR.
2. CARBON DIOXIDE SENSORS LOCATED IN EACH CONFERENCE ROOM SHALL MONITOR CO2 LEVELS IN THE SPACE. WHENEVER THE SPACE CO2 LEVEL EXCEEDS 800 PP.M, THE CO2 CONTROL LOOP WILL BE ACTIVATED. WHEN THE CO2 CONTROL LOOP IS ACTIVATED THE SPACE TEMPERATURE SENSOR SHALL BE OVERRIDDEN AND THE FCD-01 SHALL MODULATE OPEN. IF THE SPACE TEMPERATURE IS EXCEEDED, TCV-01 SHALL MODULATE OPEN TO MAINTAIN SPACE TEMPERATURE SET POINT. VAV BOXES SHALL RESUME NORMAL OPERATION WHEN CO2 LEVELS RETURN TO LESS THAN 700 PPM.

UNOCCUPIED MODE

1. SV BOX SHALL OPERATE WITHIN PRESET AIRFLOW RANGE (CFM) SHOWN ON THE PLANS (UNOCCUPIED SETPOINT). THE LOCAL CONTROLLER AND THE BAS SHALL MONITOR ROOM TEMPERATURE AT TRANSMITTER TT-01 AND AIR FLOW RATE AT FT-01. THE LOCAL CONTROLLER SHALL MODULATE AIR FLOW RATE VIA FCD-01 AND HOT WATER FLOW VIA TCV-01.
2. WHEN THE SPACE TEMPERATURE IS AT OR ABOVE THE UNOCCUPIED SETPOINT AT TT-01, HOT WATER VALVE TCV-02 SHALL BE FULLY CLOSED, AIRFLOW CONTROL DAMPER FCD-01 SHALL MODULATE TO MAINTAIN UNOCCUPIED FLOW SETPOINT AT FT-01. AS THE SPACE TEMPERATURE DROPS, HOT WATER VALVE TCV-01 SHALL BE MODULATED OPEN IN ORDER TO MAINTAIN UNOCCUPIED SETPOINT AT TT-01. UPON A RISE IN TEMPERATURE AT TT-01, TCV-02 SHALL MODULATE CLOSED.

HISTORIES/TRENDING & REPORTS

1. THE BAS SOFTWARE SHALL BE CAPABLE OF RECORDING AND PRODUCING REPORTS TO DOCUMENT ALL READINGS ASSOCIATED WITH EACH SUPPLY SV OR VV BOX. REFER TO TYPICAL ZONE SEQUENCES FOR ADDITIONAL REQUIREMENTS.

TYPICAL VARIABLE AIR VOLUME BOX (VAV) OR VALVE (LSV) CONTROL DETAIL

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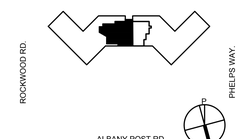

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	05/13/21	**ISSUE FOR BID**
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

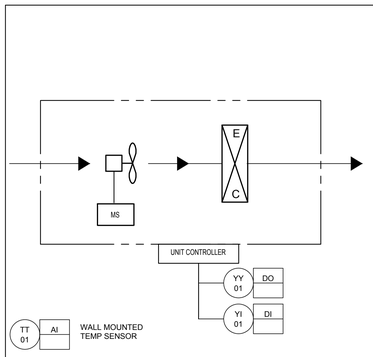
Drawing:

HVAC CONTROLS

SCALE: As indicated FLOOR:

M-800

PRINTED: FILE:



GENERAL

1. REQUIREMENTS OF "SEQUENCE OF CONTROLS - GENERAL" "SEQUENCE OF CONTROLS - STANDBY POWER" AND "CONTROL SYSTEM NOTES" ON DRAWING H801 APPLY TO ALL SEQUENCES.
2. THIS CONTROL SEQUENCE APPLIES TO UNIT HEATERS.
3. SEQUENCES SHALL BE PERFORMED BY A LOCAL CONTROL UNIT.

START/STOP SEQUENCE

1. NORMALLY ALL UNIT HEATERS SHALL BE AVAILABLE FOR OPERATION 24 HOURS PER DAY SEVEN DAYS PER WEEK.
2. UNIT SHALL START AND STOP IN ACCORDANCE WITH TEMPERATURE CONTROL SEQUENCE.

TEMPERATURE CONTROL SEQUENCE

1. WHEN THE TEMPERATURE AT TT-01 FALLS BELOW SETPOINT FAN SHALL START AT FIXED SPEED AND HOT WATER VALVE SHALL OPEN. AS TEMPERATURE RISES ABOVE SETPOINT REVERSE SHALL OCCUR.
2. ONCE THE TEMPERATURE SETPOINT AT TT-01 IS MET, THE REVERSE SHALL OCCUR

ELECTRIC UNIT HEATER CONTROLS

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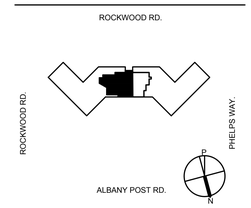

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

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GENERAL ABBREVIATIONS

A	AMPERES
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUE
ARCH	ARCHITECT
ATS	AUTOMATIC TRANSFER SWITCH
ATC	AUTOMATIC TEMPERATURE CONTROL
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISH GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATALOG
CB	CIRCUIT BREAKER
CBM	CERTIFIED BALLAST MANUFACTURERS
CKT	CIRCUIT
CL	CENTERLINE
CLF	CURRENT LIMITING FUSE
COL	COLUMN
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
CUH	CABINET UNIT HEATER
DDL	DIRECT DIGITAL CONTROL
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
EWC	ELECTRIC WATER COOLER
F	FUSE
FA	FIRE ALARM
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPERES
FMC	FLEXIBLE METAL CONDUIT
FT	FEET
GFI	GROUND FAULT INTERRUPTER
GND,G	GROUND OR GROUNDING
GRMC	GALVANIZED RIGID METALLIC CONDUIT
HOA	HAND, OFF, AUTOMATIC SWITCH
HPF	HIGH POWER FACTOR
IG	ISOLATED GROUND
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
IMC	INTERMEDIATE METAL CONDUIT
INT	INTERLOCK
kcmil	THOUSAND CIRCULAR MILS
kVA	KILOVOLT AMPERES
kW	KILOWATTS
LTG	LIGHTING
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCATION
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN OR NUMBER
P	NOT TO SCALE
NTS	POLE
PB	PUSHBUTTON
PNL	PANEL
POS	PROVIDED UNDER OTHER SECTIONS
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
REQ'D	REQUIRED
RMC	RIGID METAL CONDUIT
RMS	ROOT MEAN SQUARED
RNMC	RIGID NON-METALLIC CONDUIT
RTU	ROOF TOP UNIT
SP	SPARE
SW	SWITCH
SYM	SYMMETRICAL
TEL	TELEPHONE
TMCB	THERMAL MAGNETIC CIRCUIT BREAKER
UG	UNDERGROUND OR UNDERGRADE
UL	UNDERWRITERS LABORATORIES
U.O.N.	UNLESS OTHERWISE NOTED
UH	UNIT HEATER
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLT
W	WIRE
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER
	DELTA
Y	WYE
Φ	PHASE

WIRING DEVICES LEGEND

2	125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DUPLEX RECEPTACLE. "2" DENOTES CIRCUIT NUMBER.
	125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DOUBLE DUPLEX RECEPTACLE.
G	125 VOLT, 2 POLE, 3 WIRE, 20 AMP., DUPLEX RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT INTERRUPTER.
	DUAL TYPE A USB WALL OUTLET CHARGER WITH 20A, 125 VOLT, DUPLEX RECEPTACLE, LEVITO T5833 OR EQUAL.
SP	AMETEK, MODEL SX-20NE-RT BRANCH CIRCUIT SURGE PROTECTION AND CONDITION IN 12" x 12" x 4" NEMA RATED MAGNETIC SHIELDING STEEL ENCLOSURE INSTALLED ABOVE CEILING.
FB2	EVOLUTION 6 RECESSED PREWIRED FLUSH STYLE POWER/ DATA POKE-THRU ASSEMBLY, WITH (2) DUPLEX RECEPTACLES AND BRACKETS FOR COMMUNICATION. MODEL #6AT2PB BY WIREMOLD. PROVIDE (1) 3/4"C POWER, REFER TO TC SERIES DWGS FOR LV CONDUIT REQUIREMENTS.
FB3	4" RECESSED PREWIRED POWER/ DATA POKE-THRU ASSEMBLY, WITH (2) DUPLEX RECEPTACLES AND BRACKETS FOR COMMUNICATION. MODEL RC4 BY WIREMOLD. PROVIDE (1) 3/4"C POWER, REFER TO TC SERIES DWGS FOR LV CONDUIT REQUIREMENTS.
FB4	ELECTRICAL POWER CONDUIT STUB UP FOR SECURITY TURNSTILE . COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS.
RP-2AV	PANEL DESIGNATION TAG. ALL CIRCUITS IN INDICATED SERVING AREA/SPACE SHALL BE RUN TO PANEL SPECIFIED IN TAG, UNLESS NOTED OTHERWISE. REFER TO PANEL SCHEDULE DRAWINGS FOR CONDUIT AND WIRING INFORMATION.

NOTES:

1. ALL RECEPTACLES SHALL BE INSTALLED WITH GROUND PRONG IN THE UP POSITION.
2. ALL RECEPTACLES SHALL BE SIDE WIRED.

EQUIPMENT LEGEND

	208Y/120 VOLT, 3Φ, 4 WIRE PANEL
	480Y/277 VOLT, 3Φ 4 WIRE PANEL
	DISCONNECT SWITCH (UNFUSED)
	DISCONNECT SWITCH (FUSED)
J	JUNCTION AND/OR PULL BOX
PANEL	PANELBOARD

AV SYSTEM LEGEND

A1	2-GANG AV BOX. REFER TO A/V DRAWINGS FOR DETAILS.
A2	1-GANG AV BOX BEHIND DISPLAY. PROVIDE (1) 1-1/4" C TO ADC AND (1) 1-1/4"C TO FB1 LOCATION.
A3	10"x4" TROUGH BEHIND AV RACK. PROVIDE (4) 2" C TO ADC AND (1) 1-1/4"C TO FB1 LOCATION.
A4	10"x4" TROUGH BEHIND AV RACK. PROVIDE (4) 2" C TO ADC AND (1) 1-1/4"C TO POKE-TROUGH FB5 AND (1) 1-1/4"C TO AV BOX A1.
A5	2-GANG AV BOX BEHIND DISPLAY. PROVIDE (1) 1-1/4" C TO ADC AND (1) 1-1/4"C TO FB1 LOCATION.
FB1	POWER/DATA/AV CONDUITS STUB UP FROM BELOW. PROVIDE (1) 3/4" C FOR POWER, (1) 1-1/2" C FOR DATA, AND (1) 1-1/4"C FOR A/V. RUN CONDUITS IN THE CEILING BELOW. STUB UP 4" AFF. PROVIDE FIREPROOFING BETWEEN CONDUITS AND SLEEVE.
FB5	EVOLUTION 6 RECESSED PREWIRED FLUSH STYLE POWER/ DATA/AV POKE-THRU ASSEMBLY, WITH (2) DUPLEX RECEPTACLES AND BRACKETS FOR COMMUNICATION AND AV. MODEL 6ATC2PAV BY WIREMOLD. PROVIDE (1) 3/4"C FOR POWER AND 1-1/4" CONDUIT TO AV TROUGH "A3". REFER TO TC SERIES DWGS FOR LV CONDUITS REQUIREMENT.
AV	DOUBLE DUPLEX RECEPTACLE MOUNTED BELOW TABLE SURFACE. RUN ELECTRICAL CIRCUIT THROUGH POWER CONDUIT AT FB1 LOCATION. EXTEND CIRCUITS TO RECEPTACLE.
AV	DOUBLE DUPLEX RECEPTACLE BEHIND DISPLAY.

DEMOLITION NOTES

1. REFER TO ARCHITECTURAL DRAWINGS AND OTHER TRADES FOR ADDITIONAL DEMOLITION SCOPE OF WORK.
2. DEMOLITION SCOPE OF WORK MUST FOLLOW THE CONSTRUCTION PHASING SEQUENCE AND MUST BE COORDINATED WITH THE GENERAL AND MECHANICAL DRAWINGS AND CONTRACTORS.
3. REMOVE ALL THE DEVICES, EQUIPMENT, MATERIAL AND CIRCUITS IN THEIR ENTIRETY, INSIDE AREA OF DEMOLITION. FIELD VERIFY SYSTEM PRIOR TO STARTING WORK AT SITE. THE TERM ASSOCIATED CIRCUITRY MEAN CONDUIT, FITTINGS, SUPPORTS, JUNCTION BOXES, CONDUCTORS, ETC. BACK TO THE RESPECTIVE PANELBOARD (POWER SOURCE); OR TO THE LAST JUNCTION BOX OR DEVICE IF THE REMAINING PORTION OF THE CIRCUIT SERVES EXISTING EQUIPMENT OR AREAS WHICH SHALL REMAIN.
4. MAINTAIN AND RESTORE CIRUITS, CONDUITS AND FEEDERS PASSING THROUGH AND SERVING UNDISTURBED AREAS (SHOWN OR NOT SHOWN) AFFECTED. VERIFY CIRCUITS, DEVICES, AND EQUIPMENT SCHEDULED FOR REMOVAL TO ASSURE THAT THEIR REMOVAL WILL NOT ADVERSELY AFFECT ADJACENT AREAS NOT BEING RENOVATED.
5. VERIFY ALL LIGHTING CIRCUITS WITHIN THE CONSTRUCTION AREA BEFORE DISCONNECTING POWER. PROVIDE NECESSARY WIRING TO MAINTAIN LIGHTING IN THE AREAS ADJACENT TO THIS CONSTRUCTION AREA WHICH WOULD BE AFFECTED BY THIS DEMOLITION WORK.
6. ALL EXISTING CONDUITS STABBED THROUGH FLOOR SERVING ITEMS TO BE REMOVED AND NOT SHOWING OR NOT REQUIRED TO BE REUSED, SHALL BE CUT OFF FLUSH WITH SLAB LEVEL.
7. INVENTORY MAJOR ELECTRICAL ITEMS THAT ARE REMOVED AND PROVIDE A LIST TO THE OWNER FOR THEIR SELECTION OF ITEMS TO BE RETAINED. ALL ITEMS REJECTED BY THE OWNER SHALL BE REMOVED FROM THE SITE.
8. ELECTRICAL DEMOLITION WORK IS NOT STRICTLY LIMITED TO AREA OF DEMOLITION. IT MAY BE NECESSARY TO PERFORM DEMOLITION WORK OUTSIDE INDICATED AREAS OF DEMOLITION TO REMOVE WIRES, CONDUIT, AND OTHER EQUIPMENT OR DEVICES THAT SERVE EQUIPMENT WITHIN AREA OF DEMOLITION.OR OTHERWISE SCHEDULED TO BE REMOVED.
9. PROVIDE PROTECTION AROUND EXISTING PANELBOARDS AND OTHER ELECTRICAL EQUIPMENT SCHEDULED TO REMAIN UNTIL COMPETITION OF DEMOLITION WORK. PROVIDE UPDATED, TYPE-WRITTEN PANEL SCHEDULE DIRECTORIES FOR PANELBOARDS AFFECTED BY DEMOLITION WORK.
10. CONTRACTOR SHALL VERIFY ALL EXISTING SOURCES OF POWER TO EQUIPMENT PRIOR TO FINAL REMOVAL.
11. COORDINATE ALL SHUTDOWN PROCEDURES WITH THE OWNER PRIOR TO DISCONNECTING OF ANY CIRCUITS.
12. THE EXISTING BUILDING IS TO REMAIN IN OPERATION DURING DEMOLITION. THE CONTRACTOR SHALL COORDINATE ALL WORK THAT WILL INTERFERE WITH THE PRESENT OPERATION OF THE FACILITY WITH THE OWNER AND CONSTRUCTION MANAGER.
13. DURING DEMOLITION AND CONSTRUCTION PHASE, THE FIRE ALARM SYSTEM, EXIT SIGNS AND CORRIDOR LIFE SAFETY LIGHTING SHALL REMAIN ACTIVE.

DEMOLITION LEGEND

SYMBOL	DESCRIPTION
XM	EXISTING EQUIPMENT TO REMAIN.
XN	EXISTING EQUIPMENT TO BE REMOVED AND REPLACED WITH NEW UTILIZING EXISTING CIRCUIT CURRENTLY SERVING THIS DEVICE, MODIFY AND EXTEND EXISTING CONDUIT AND WIRING AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.
XR	EXISTING EQUIPMENT TO BE REMOVED WITH ALL ASSOCIATED WIRING AND APPURTENANCES, BACK TO SOURCE. MAINTAIN POWER TO EXISTING DEVICES WHICH ARE ON THE SAME CIRCUIT AND SCHEDULED TO REMAIN.
XRE	EXISTING EQUIPMENT TO BE REMOVED AND RELOCATED AS SHOWN ON PLANS. MODIFY AND EXTEND EXISTING CONDUIT AND WIRING TO NEW LOCATION AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO POWER PLAN FOR NEW LOCATION OF DEVICES.

LIGHTING EQUIPMENT LEGEND

(REFER TO LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION)

A 13 a	LIGHT FIXTURE "A" INDICATES FIXTURE TYPE "13" INDICATES CIRCUIT NUMBER "a" INDICATES SWITCH CONTROL
EM / EM	LIGHTING FIXTURES INDICATED WITH "EM" DENOTES CIRCUITED TO EMERGENCY SUPPLY.
	ILLUMINATED "EXIT" SIGN LIGHTING FIXTURE. CEILING MOUNTED OR WALL MOUNTED PROVIDE DIRECTIONAL ARROWS AS INDICATED ON FLOOR PLANS. SHADING DENOTES SIDE WITH FACE.

LIGHTING SYSTEM CONTROLS (BY ENLIGHTED)

S4	SINGLE FIXTURE SENSOR / CONTROL UNIT FIELD INSTALLED ADJACENT TO THE FIXTURE.
S5	MULTIPLE FIXTURES SENSOR / CONTROL UNIT.
WS	WIRELESS ROOM CONTROLLER
PoE	NETWORK SWITCH
GWI	CONTROL GETAWAY
LVS	UL924 EMERGENCY POWER CONTROL DEVICE.

GENERAL ELECTRICAL NOTES

1. ALL WIRING SHALL BE RUN CONCEALED WHENEVER POSSIBLE UNLESS SPECIFIED OTHERWISE. EXPOSED WIRING SHALL BE WIREMOLD TYPE RACEWAY AND SURFACE BOXES IN LIEU OF EMT. ALL EXPOSED WIRING IN FINISHED SPACES (INCLUDING ITEMS SCHEDULED AS NEW, RELOCATED AND EXISTING TO REMAIN) SHALL UTILIZE THE WIREMOLD TYPE RACEWAY.
2. ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, RECTILINEAR TO BUILDING STRUCTURE.
3. ALL COMPONENTS SHOWN ON THE DIAGRAMS, BUT NOT ON THE PLAN OR VICE VERSA, SHALL BE INCLUDED AS IF SHOWN ON BOTH.
4. EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL DRAWINGS.
5. ALL RACEWAYS RUNNING THROUGH BUILDING EXPANSION JOINTS SHALL BE EQUIPPED WITH EXPANSION FITTINGS.
6. FOR QUANTITIES OF ALL WIRING AND CONDUIT INDICATED ON THE PLANS, REFER TO PANEL SCHEDULES AND WIRING DIAGRAM. NO EXCEPTIONS SHALL BE TAKEN TO THESE DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
7. CONTRACTOR SHALL REVIEW ALL TRADES' CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING LOCATIONS FOR ELECTRICAL EQUIPMENT. COORDINATE EXACT MOUNTING LOCATIONS WITH THE ARCHITECT.
8. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHTS AND EXACT LOCATIONS OF ALL DEVICES.
9. THE CONTRACTOR SHALL INSTALL ALL WIRING IN CONDUIT PER THE BID SPECIFICATION OR SHALL UTILIZE PLENUM RATED CABLE WHICH COMPLIES WITH NEC.
10. MINIMUM CONDUIT SIZE SHALL BE 3/4". MINIMUM WIRE SIZE SHALL BE THWN, STRANDED #12 AWG.
11. THE USE OF SHARED NEUTRALS IS PROHIBITED, FOR EXISTING BRANCH CIRCUIT WIRING SCHEDULED AS EXISTING TO REMAIN (XM), REUSING EXISTING CIRCUITS (XE) AND ALL OTHER EXISTING WIRING TO BE REUSED, CONTRACTOR SHALL IDENTIFY CIRCUITS WITH SHARED NEUTRALS AND NOTIFY ENGINEER AND OWNER BEFORE ROUGH-IN COMMENCES.
12. WIRING DEVICES SHALL BE LABELED IN ACCORDANCE WITH THE ELECTRICAL SPECIFICATIONS
13. METAL-CLAD CABLE, TYPE MC IS ACCEPTABLE IN MAXIMUM LENGTH OF 25' WHERE IS INSTALLED COMPLETELY WITHIN THE SPACE UTILIZED.
14. ALL EQUIPMENT SHALL BE LISTED AND LABELED FOR ITS SPECIFIC USE.
15. ELEMENTS OF THE ELECTRICAL WORK SHALL BE INSTALLED SUCH THAT AT COMPLETION THE ELEMENT SHALL BE "FULLY AND REASONABLY ACCESSIBLE". ELEMENTS OF THE ELECTRICAL WORK INCLUDE, BUT ARE NOT LIMITED TO PANELS, SWITCHBOARDS, MOTOR CONTROLS, TRANSFORMER, DISCONNECTS, JUNCTION BOXES, AND ALL MAINTENANCE ACCESS POINTS INCLUDING CABLE PULL SPACE. "FULLY AND REASONABLE ACCESSIBLE" SHALL BE DEFINED AS: CAPABLE OF BEING ACCESSED FOR SERVICE, REPAIR OR REPLACEMENT BY AN AVERAGE SIZED INDIVIDUAL, ON A LADDER IF NECESSARY, AND CAPABLE OF BEING SERVICED OR REMOVED WITHOUT REMOVING, MODIFYING OR DISTORTING OTHER COMPONENTS OF THE WORK OF OTHER TRADES. CONFLICTS WITH MEETING THIS REQUIREMENT SHALL BE BROUGHT TO THE ATTENTION OF THE OWNERS REPRESENTATIVE IN A TIMELY MANNER.
16. DESIGN AND INSTALLATION SHALL MEET OR EXCEED THE 2017 NEC.
17. WHERE CIRCUITS IN THE EXISTING PANELS IDENTIFIED AS "EXISTING" UTILIZE THE EXISTING SCHEDULE ALONG WITH NEW CIRCUITING INFORMATION TO PROVIDE A NEW AND COMPLETE UPDATED PANEL DIRECTORY IN ACCORDANCE WITH NEC 408.4.
18. FOR EACH PANEL REVISED, REBALANCE CIRCUITS AND LIST AMPERAGE AT PANEL.

LIGHTING CONTROL NOTES:

LIGHTING CONTROL NOTES:

LIGHTING CONTROL IN RENOVATED AREAS SHALL MATCH EXISTING.

SEQUENCE OF OPERATION:

UPON DETECTION OF OCCUPANCY, LIGHTING ZONES (NO MORE THAN 600 SQ FT), AUTOMATICALLY TURN ON TO NOT MORE THAN 50% POWER. WHEN ZONE IS VACATED, LIGHTS TO REDUCE TO 20%. WHEN ALL ZONES WITHIN THE DEFINED AREA ARE VACATED, THE ENTIRE AREA IS TO TURN OFF.

DAYLIGHT SENSOR TO DIM GENERAL LIGHTING CONTINUOUSLY TO OFF WHEMN SUFFICIENT NATURAL LIGHT IS PRESENT.

LIGHTING REDUCTION DEVICES (DIMMERS, ROOM CONTROLLERS) TO BE LOCATED WITHIN FIELD OF VIEW OF LIGHTING THE DEVICE CONTROL.

CORRIDORS AUTOMATICALLY TURN ON WHEN OCCUPIED AND REDUCE OUTPUT TO 50% WHEN UNOCCUPIED.

EMERGENCY FIXTURES CONNECTED TO NORMAL /EMERGENCY POWER TO BE WIRED VIA UL924 EMERGENCY POWER CONTROL DEVICE. EMERGENCY FIXTURES SHALL BE CONTROLLED WITH THE REST OF THE LIGHTING FIXTURES IN THE AREA, AND SHALL TURN ON TO FULL ON DURING POWER OUTAGE.

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16010 BASIC ELECTRICAL REQUIREMENTS

REFERENCES

CONDITIONS OF THE CONTRACT AND DIVISION 1, GENERAL REQUIREMENTS APPLY TO WORK OF THIS SECTION. EXAMINE DRAWINGS AND OTHER SPECIFICATIONS FOR REQUIREMENTS THAT AFFECT WORK OF THIS SECTION.

EXAMINE DRAWINGS AND OTHER SECTIONS OF SPECIFICATIONS FOR REQUIREMENTS THAT AFFECT WORK OF THIS SECTION.

AS USED IN THIS SECTION, "PROVIDE" MEANS "FURNISH AND INSTALL" AND "POS" MEANS "PROVIDED UNDER OTHER SECTIONS". "FURNISH" MEANS "TO PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT," AND "INSTALL" MEANS "TO UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT."

PERFORM WORK AND PROVIDE MATERIAL AND EQUIPMENT AS SHOWN ON DRAWINGS AND AS SPECIFIED OR INDICATED IN THIS SECTION OF THE SPECIFICATIONS. PROVIDE WORK SPECIFIED AND NOT SHOWN, AND WORK SHOWN AND NOT SPECIFIED AS THOUGH EXPLICITLY REQUIRED BY BOTH. ALTHOUGH WORK IS NOT SPECIFICALLY SHOWN OR SPECIFIED, PROVIDE SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES, DEVICES AND MATERIALS OBVIOUSLY NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION. REMOVE ALL DEBRIS CAUSED BY CONTRACTORS WORK.

AS WORK PROGRESSES AND FOR DURATION OF CONTRACT, MAINTAIN COMPLETE AND SEPARATE SET OF PRINTS OF CONTRACT DRAWINGS AT JOB SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN.

ITEMS REFERRED TO IN SINGULAR NUMBER IN CONTRACT DOCUMENTS SHALL BE PROVIDED IN QUANTITIES NECESSARY TO COMPLETE WORK.

CONTRACT DOCUMENTS

EXCEPT WHERE MODIFIED BY A SPECIFIC NOTATION TO THE CONTRARY, IT SHALL BE UNDERSTOOD THAT THE INDICATION AND/OR DESCRIPTION OF ANY ITEM, IN THE DRAWINGS OR SPECIFICATIONS OR BOTH, CARRIES WITH IT THE INSTRUCTION TO FURNISH AND INSTALL THE ITEM, REGARDLESS OF WHETHER OR NOT THIS INSTRUCTION IS EXPLICITLY STATED AS PART OF THE INDICATION OR DESCRIPTION.

DRAWINGS ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE ABSOLUTELY PRECISE; THEY ARE NOT INTENDED TO SPECIFY OR TO SHOW EVERY OFFSET, FITTING, AND COMPONENT. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEMS CONCEPT, THE MAIN COMPONENTS OF THE SYSTEMS, AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS. BASED ON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS, AND THE APPROXIMATE GEOMETRICAL RELATIONSHIPS, THE CONTRACTOR SHALL PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL.

BRANCH CIRCUIT WIRING MAY NOT BE GRAPHICALLY SHOWN ON DRAWINGS AND MAY BE SHOWN BY CIRCUIT NUMBERS BESIDE DEVICES AND EQUIPMENT. PROVIDE COMPLETE WIRING SYSTEM WHETHIER OR NOT SHOWN GRAPHICALLY. WIRING IS SHOWN BY CONDUIT RUNS ON DRAWINGS WHERE SPECIFIC ROUTING IS REQUIRED OR FOR SPECIAL REASONS. ONLY ROOMS WITH MULTIPLE SWITCHING HAVE "SWITCH CONTROL LETTERS" ASSIGNED.

REMOVE, EXTEND, ALTER AND RECONNECT EXISTING CONDUITS AS DIRECTED BY OWNER. RECONNECT EXISTING CONDUIT THAT IS CUT AND DISCONNECTED TO ACCOMMODATE WORK. PROVIDE NEW CONDUIT WHERE WIRE CANNOT BE PULLED IN EXISTING. CONNECT NEW AND EXISTING WORK TO FUNCTION AS COMPLETE, CONTINUOUSLY GROUNDED SYSTEM. REMOVE CONDUIT AND EQUIPMENT NOT INTENDED FOR REUSE AND STORE WHERE

THE E.C. SHALL FURNISH AND INSTALL ALL INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE ELECTRICAL WORK COMPLETE AND READY FOR OPERATION.

INSPECTION

EXACT LOCATION OF MECHANICAL EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS ARE SHOWN ON THE MECHANICAL DRAWINGS.

DISCREPANCIES IN DOCUMENTS

ADDRESS QUESTIONS REGARDING DRAWINGS TO OWNER IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, OWNER'S INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.

CODES, STANDARDS, AUTHORITIES AND PERMITS

PERFORM WORK IN STRICT ACCORDANCE WITH THE RULES, REGULATIONS, STANDARDS, CODES, ORDINANCES, AND LAWS OF LOCAL, STATE, AND OTHER AUTHORITIES HAVING LEGAL JURISDICTION OVER THE SITE.

MATERIAL AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS' LABORATORIES (UL).

GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACKCHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION.

GUARANTEE

GUARANTEE WORK IN WRITING FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS OR INSTALLATION AT NO COST TO OWNER. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE AT NO COST TO OWNER.

SUBMIT GUARANTEE TO OWNER BEFORE FINAL PAYMENT.

STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERPRETED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.

SUBMITTALS

SUBMIT SHOP DRAWINGS AND PRODUCT DATA WITHIN 30 DAYS AFTER AWARD OF CONTRACT. CHECK, STAMP AND MARK WITH PROJECT NAME SUBMITTALS BEFORE TRANSMITTING TO OWNER. INDICATE DEVIATIONS FROM CONTRACT DOCUMENTS.

DEVIATIONS FROM CONTRACT DOCUMENTS, OR PROPOSED SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED SHALL BE REQUESTED IN SEPARATE LETTER WHETHER DEVIATIONS ARE DUE TO FIELD CONDITIONS, STANDARD SHOP PRACTICE, OR OTHER

SCHEDULE AT LEAST TEN WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, FOR SUBMITTAL REVIEW.

CAUTION

MATERIAL AND EQUIPMENT REQUIRING SHOP DRAWING AND PRODUCT DATA SUBMITTAL SHALL INCLUDE CABLE, CONDUIT, DISCONNECTS, VFD'S AND FILTERS.

NAMEPLATES

PROVIDE NAMEPLATES IN OR ON PANELBOARDS. NAMEPLATES SHALL BE WHITE BAKELITE WITH 1/4" HIGH BLACK RECESSED LETTERS. NAMEPLATES SHALL BE SECURED TO EQUIPMENT WITH GALVANIZED SCREWS.

MATERIALS AND WORKMANSHIP

WORK SHALL BE EXECUTED IN WORKMANLIKE MANNER AND SHALL PRESENT NEAT, RECTILINEAR AND MECHANICAL APPEARANCE WHEN COMPLETED. MAINTAIN MAXIMUM HEADROOM AT ALL TIMES. DO NOT RUN RACEWAYS EXPOSED UNLESS SHOWN EXPOSED ON DRAWINGS. MATERIAL AND EQUIPMENT SHALL BE NEW AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDED BEST PRACTICE SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.

CONTINUITY OF SERVICES

DO NOT INTERRUPT EXISTING SERVICES WITHOUT OWNER'S AND ENGINEER'S APPROVALS.

16070 TESTING, INSPECTION AND CLEANING

TEST WIRING AND CONNECTIONS FOR CONTINUITY AND GROUNDS BEFORE CONNECTING; DEMONSTRATE INSULATION RESISTANCE BY MEGGER TEST AS REQUIRED. INSULATION RESISTANCE BETWEEN CONDUCTORS AND GROUNDS FOR SECONDARY DISTRIBUTIONS SYSTEMS SHALL MEET NEC REQUIREMENTS.

VERIFY AND CORRECT AS NECESSARY: VOLTAGES, TRIP SETTINGS AND PHASING ON EQUIPMENT FROM SECONDARY DISTRIBUTION SYSTEM TO POINTS OF USE. TEST SECONDARY VOLTAGES AT PANELBOARDS, AND AT OTHER LOCATIONS ON DISTRIBUTION SYSTEMS AS NECESSARY. TEST SECONDARY VOLTAGES UNDER NO-LOAD AND FULL-LOAD CONDITIONS.

PROVIDE NECESSARY TESTING EQUIPMENT AND TESTING.

FAILURE OR DEFECTS IN WORKMANSHIP OR MATERIALS REVEALED BY TESTS OR INSPECTION SHALL BE CORRECTED PROMPTLY AND RETESTED. REPLACE DEFECTIVE MATERIAL.

CLEAN PANELS. PANELBOARD INTERIORS SHALL BE CLEANED AND VACUUMED.

BEFORE ENERGIZING ANY MOTOR, IT SHALL BE VISUALLY INSPECTED FOR SERVICEABILITY. VERIFY THAT PROPER ALIGNMENT HAS BEEN PERFORMED. CHECK NAMEPLATE FOR ELECTRICAL POWER REQUIREMENTS.

CHECK BOLT TORQUES FOR FEEDER TERMINATIONS AND OTHER ASSOCIATED EQUIPMENT IN THIS SECTION BY CALIBRATED TORQUE WRENCH METHOD.

TEST RUN ALL MOTORS PREFERABLY UNCOUPLED OR UNLOADED, BEFORE PLACING INTO REGULAR SERVICE. A CHECK ON THE MOTOR FOR ROTATION, SPEED, CURRENT AND TEMPERATURE RISE SHALL BE MADE AND RESULTS RECORDED.

16120 RACEWAY & WIRING

RACEWAYS

RIGID METALLIC CONDUIT (RMC) AND ELECTRICAL METALLIC TUBING (EMT) SHALL BE OF ZINC-COATED STEEL MANUFACTURED BY ALLIED TUBE AND CONDUIT, WHEATLAND TUBE, OR APPROVED EQUAL.

FLEXIBLE METALLIC CONDUIT SHALL BE GALVANIZED STEEL, SPIRAL WRAPPED METALLIC CONDUIT (GREENFIELD).

CONDUIT EXPANSION FITTINGS SHALL BE THREADED HOT-DIPPED GALVANIZED MALLEABLE IRON WITH INTERNAL BONDING ASSEMBLY BY O.Z./GEDNEY OR APPROVED EQUAL.

CONDUIT FIRE SEAL FITTINGS SHALL HAVE HEAT-ACTIVATED INTUMESCENT MATERIAL FOR FIRE RATING EQUAL TO OR HIGHER THAN THAT OF FLOOR OR WALL BY O.Z./GEDNEY OR APPROVED EQUAL.

PROVIDE THREADED MALLEABLE IRON OR STEEL CONNECTORS AND COUPLINGS WITH INSULATED THROATS; MANUFACTURED ELBOWS; LOCKNUTS; AND PLASTIC OR BAKELITE BUSHINGS AT TERMINATIONS, AS NECESSARY. COUPLINGS AND CONNECTORS SHALL BE GLAND AND RING COMPRESSION OR STAINLESS STEEL MULTIPLE POINT LOCKING OR STEEL CONCRETE-TIGHT SET SCREW. COMPRESSION COUPLINGS AND CONNECTORS SHALL FORM POSITIVE GROUND. BUSHINGS FOR RIGID STEEL AND CONNECTORS FOR EMT SHALL HAVE INSULATING INSERTS THAT MEET REQUIREMENTS OF UL 514 FLAME TEST.

WIRE AND CABLE (600 V INSULATION)

PROVIDE SINGLE-CONDUCTOR, ANNEALED COPPER WIRE AND CABLE WITH INSULATION RATED 600 V, OF SIZES SPECIFIED AND SCHEDULED ON DRAWINGS BY ROME, OKONITE OR APPROVED EQUAL. WIRE SIZES SHOWN AND SPECIFIED ARE AMERICAN WIRE GAUGE FOR COPPER.

WIRE #10 AND LARGER SHALL BE STRANDED. WIRE AND CABLE SHALL HAVE THWN-THHN OR XHHW INSULATION.

TERMINATIONS

PROVIDE STANDARD BOLT-ON LUGS WITH HEX SCREWS TO ATTACH COPPER WIRE AND CABLE TO PANELBOARDS AND ELECTRICAL EQUIPMENT.

COLOR CODING

MAKE TERMINATIONS AND SPLICES FOR CONDUCTORS #6 AND LARGER WITH CORROSION-RESISTANT, HIGH-CONDUCTIVITY PRESSURE INDENT, HEX SCREW OR BOLT-CLAMP CONNECTORS, WITH OR WITHOUT TONGUES, DESIGNED SPECIFICALLY FOR INTENDED SERVICE.

COLOR CODE SECONDARY SERVICE, FEEDERS AND BRANCH CIRCUIT CONDUCTORS AS FOLLOWS: 208/120 VOLTS, 3ø, 4W - BLACK, RED, BLUE, WHITE, GREEN 480/277 VOLTS, 3ø, 4W - BROWN, ORANGE, YELLOW, WHITE, GREEN

WIRING METHODS

EMT SHALL BE USED GENERALLY, 8' ABOVE FINISHED FLOOR. RSC SHALL BE USED BELOW 8'.

INSTALL CONNECTORS AND COUPLINGS AS RECOMMENDED BY MANUFACTURERS. COMPRESSION FITTINGS SHALL NOT BE USED WITH RIGID STEEL OR INTERMEDIATE METALLIC CONDUITS.

SIZE RIGID STEEL CONDUIT, EMT AND FLEXIBLE METALLIC CONDUIT AS REQUIRED BY NEC EXCEPT AS SPECIFIED OR SHOWN ON DRAWINGS OTHERWISE.

INSTALL CONDUIT SYSTEMS COMPLETE BEFORE DRAWING IN CONDUCTORS. BLOW THROUGH AND CLEAN CONDUIT FREE OF DEBRIS BEFORE CONDUCTORS ARE INSTALLED.

CHECK RACEWAY SIZES TO DETERMINE THAT GREEN EQUIPMENT GROUND CONDUCTOR FITS IN SAME RACEWAY WITH PHASE AND NEUTRAL CONDUCTORS TO MEET NEC PERCENTAGE OF FILL REQUIREMENTS. INCREASE DUCT, CONDUIT, TUBING AND RACEWAY SIZES SHOWN OR SPECIFIED AS REQUIRED TO ACCOMMODATE CONDUCTORS.

EXPANSION/DEFLECTION FITTINGS: CONDUIT OR EMT SECURED RIGIDLY ON OPPOSITE SIDES OF BUILDING EXPANSION JOINTS AND LONG RUNS OF EXPOSED RACEWAY SUBJECT TO STRESS SHALL HAVE EXPANSION FITTINGS. FITTINGS SHALL SAFELY DEFLECT AND EXPAND TO TWICE DISTANCE OF STRUCTURAL MOVEMENT.PROVIDE SEPARATE EXTERNAL COPPER BONDING JUMPER SECURED WITH GROUNDING STRAPS ON EACH END OF FITTING.

ATTACH PULL ROPES TO CONDUCTORS WITH BASKET-WEAVE GRIPS ON PULLING EYES. PULL CABLES THAT SHARE CONDUIT AT SAME TIME.

WIRE AND CONDUIT SIZES INDICATED ON HOMERUNS SHALL BE CONTINUOUS THROUGHOUT THE CIRCUIT. CONDUIT HOMERUNS SHOWN ON THE DRAWING WITH MORE THAN 3 CURRENT CARRYING CONDUCTORS ARE SHOWN DIAGRAMATICALLY. THIS CONTRACTOR SHALL NOT INSTALL MORE THAN 3 CURRENT CARRYING CONDUCTORS IN A RACEWAY UNLESS DONE SO STRICTLY BY THE NATIONAL ELECTRIC CODE.

THE E.C. IS RESPONSIBLE FOR ALL NECESSARY CORE DRILLING. ALSO, THE E.C. SHALL PROVIDE FIRE STOPPING AND WEATHERPROOF SEALANT AROUND THE ANNULAR OF EACH CONDUIT THAT IS CORE DRILLED.

ALL CONDUITS SHALL BE SUPPORTED BY USE OF HOT DIPPED GALVANIZED POWER STRUT, RACKS, THREADED ROD, BEAM CLAMPS, POWER TRAP AND ALL NECESSARY ACCESSORIES FOR A COMPLETE WIRING SYSTEM. ALL RACKS SHALL BE PROVIDED WITH DOUBLE TIERS FOR FUTURE CONDUITS.

ALL WIRING SHALL BE RUN CONCEALED WHERE POSSIBLE.

M.C. CABLE IS PERMITTED WHEN CONCEALED BEHIND PARTITION WALLS. HOME RUN FROM PANELBOARD TO FIRST DEVICE SHALL BE IN RACEWAY.

16130 BOXES AND DEVICES

OUTLET BOXES

OUTLET BOXES ON CONCEALED WORK SHALL BE AT LEAST 4" SQUARE OR OCTAGONAL, GALVANIZED PRESSED STEEL WITH PLASTER RINGS AS REQUIRED. OUTLET BOXES FOR EXPOSED CONDUIT WORK SHALL BE CAST ALUMINUM ALLOY WITH CAST ALUMINUM ALLOY COVERS, TYPE "FS" BOX.

SWITCH BOXES, RECEPTACLE BOXES AND OTHER OUTLET BOXES SHALL BE STANDARD 4" SQUARE WITH PLASTER RINGS OR GANG COVER AS REQUIRED.

OUTLET BOXES SHALL BE BY STEEL CITY ELECTRIC COMPANY, APPLETON ELECTRIC COMPANY, NATIONAL ELECTRIC PRODUCTS COMPANY OR APPROVED EQUAL.

PROVIDE ONLY ENOUGH CONDUIT OPENINGS TO ACCOMMODATE CONDUITS AT INDIVIDUAL LOCATION. EACH BOX SHALL BE LARGE ENOUGH TO ACCOMMODATE NUMBER AND SIZES OF CONDUITS, WIRES AND SPLICES TO MEET NEC REQUIREMENTS, BUT SHALL BE AT LEAST SIZE SHOWN OR SPECIFIED. NECESSARY VOLUME SHALL BE OBTAINED BY USING BOXES OF PROPER DIMENSIONS. BOX DEPTHS GREATER THAN 2 " SHALL NOT BE USED TO OBTAIN NECESSARY VOLUME, BUT MAY BE USED WITH ARCHITECT'S APPROVAL TO FACILITATE INSTALLATION. OCTAGONAL HUNG CEILING BOXES WITH SUSPENSION BARS MAY BE 3 1/2 " DEEP. RECTANGULAR BOXES FOR INTER-CONNECTION OF BRANCH CIRCUIT CONDUITS MAY BE 2 1/2 " DEEP.

JUNCTION BOXES, PULL BOXES AND CABLE TROUGHS

PROVIDE CODE GAUGE GALVANIZED STEEL JUNCTION AND PULL BOXES FOR CONDUIT 11/4" TRADE SIZE AND LARGER, WHERE INDICATED AND AS NECESSARY TO FACILITATE INSTALLATION, OF REQUIRED DIMENSIONS, WITH ACCESSIBLE, REMOVABLE SCREW-ON COVERS. PROVIDE JUNCTION AND PULL BOXES IN SPECIAL SIZES AND SHAPES DETERMINED IN FIELD WHERE NECESSARY. JUNCTION BOXES FOR EXPOSED CONDUIT WORK IN FINISHED AREAS SHALL BE CAST ALUMINUM ALLOY WITH CAST ALUMINUM ALLOY COVERS.

JUNCTION BOX COVERS SHALL BE READILY ACCESSIBLE. DO NOT INSTALL JUNCTION BOXES ABOVE SUSPENDED CEILINGS EXCEPT WHERE CEILING IS REMOVABLE OR WHERE ACCESS PANEL IS PROVIDED.

WIRING DEVICES AND PLATES

PROVIDE WIRING DEVICES BY SINGLE MANUFACTURER: CATALOG DESIGNATIONS OF HUBBELL ARE SPECIFIED TO ESTABLISH STANDARDS OF QUALITY FOR MATERIALS AND PERFORMANCE ACCEPTABLE ALTERNATES ARE ARROW-HART, LEVITON, BRYANT, OR APPROVED EQUAL.

DEVICES SHALL BE GRAY. FACEPLATES SHALL BE 0.040" BRUSHED STAINLESS STEEL. NAMEPLATE DESIGNATIONS FOR DEVICE PLATES SHALL BE STICK-ON TYPE WITH PANEL AND CIRCUIT NUMBER.

TOGGLE SWITCHES: SINGLE-POLE SHALL BE HBL NO. 1221, 20A., 120-277 V AC. THREE-WAY SHALL BE HBL NO. 1223, 20A., 120-277 V AC. FOUR-WAY SHALL BE HBL NO. 1224, 20A., 120-277 V AC.

RECEPTACLES: DUPLEX SHALL BE HBL NO. 5362, 125 V, 20 A, 2-POLE, 3 W, GROUNDING. GROUND FAULT CIRCUIT INTERRUPTOR RECEPTACLES SHALL BE HOSPITAL GRADE.

16510 LIGHTING

LIGHTING FIXTURES

PROVIDE LIGHTING FIXTURES, EQUIPMENT AND COMPONENTS WHERE SHOWN ON DRAWINGS, AS LISTED IN FIXTURE SCHEDULES AND AS SPECIFIED, WIRED AND ASSEMBLED. PROVIDE APPROVED LIGNER CANOPIES, HANGERS AND OTHER APPURTENANCES AS REQUIRED.

FLUORESCENT FIXTURES SHALL HAVE LOW LOSS, HIGH EFFICIENCY, HIGH POWER FACTOR, 277V BALLASTS, WITH SOUND RATING A AND SHALL BE CBM-CERTIFIED. FLUORESCENT LIGHTING FIXTURES SHALL HAVE TYPE P SLH OR APPROVED EQUAL BY GE PROVIDE FUSE HOLDER AND FUSE FOR EACH BALLAST.

VERIFY CEILING CONSTRUCTIONS, AND PROVIDE FIXTURES, BALLASTS, AND OTHER ACCESSORIES SUITABLE FOR CONSTRUCTION ENCOUNTERED.

REFER TO FIXTURE SCHEDULE FOR SPECIFIC LAMP REQUIREMENTS.

INSTALLATION OF LIGHT FIXTURES

COORDINATE INSTALLATION OF FIXTURES WITH INSTALLATION OF CEILING MATERIALS AND SUSPENSION SYSTEMS.

DO NOT INSTALL FIXTURES UNTIL WORK OF OTHER TRADES THAT MAY DAMAGE FIXTURES IS COMPLETED.

INVESTIGATE LIGHTING FIXTURE LOCATIONS AND SUPPORTS TO ENSURE THAT NO INTERFERENCE EXISTS WITH HANGERS, DUCTS, SPRINKLERS, PIPES AND OTHER EQUIPMENT.

DO NOT SUSPEND OR SUPPORT LIGHTING FIXTURES OR SAFETY CHAINS FROM HUNG CEILING CONDUIT OR DUCT. SUPPORT FIXTURES WITH THREADED ROD FROM STRUCTURAL MEMBERS ONLY.

PROVIDE UNISTRUT BELOW DUCTS WHERE FIXTURE LOCATIONS COINCIDE WITH DUCT RUNS. PROVIDE THREADED RODS TO SUPPORT UNISTRUT.

16410 SAFETY DISCONNECT SWITCHES

PROVIDE UL-LISTED QUICK-MAKE/QUICK-BREAK SAFETY SWITCHES. CURRENT-CARRYING PARTS SHALL BE HIGH-CONDUCTIVITY COPPER. CONTACTS SHALL BE SILVER-TUNGSTEN OR PLATED.

TYPE HD, (HEAVY DUTY), UNLESS SPECIFIED OTHERWISE. PROVIDE [DUST PROOF] NEMA 1 ENCLOSURE FOR DRY APPLICATION. PROVIDE NEMA 12 ENCLOSURE FOR MECHANICAL SPACES IN DRY APPLICATIONS. PROVIDE NEMA 3R FOR WET APPLICATIONS. SWITCHES SHALL BE RATED 600V MINIMUM AS REQUIRED FOR VOLTAGE OF ASSOCIATED CIRCUIT AND SHALL BE RATED IN HORSEPOWER. FUSES SHALL INTERRUPT LOCKED ROTOR CURRENT OF ASSOCIATED MOTOR OR TEN TIMES FULL RATED LOAD CURRENT, WHICHEVER IS GREATER.

CURRENT-CARRYING PARTS SHALL BE HIGH-CONDUCTIVITY COPPER. CONTACTS SHALL BE SILVER-TUNGSTEN OR PLATED. PROVIDE POSITIVE PRESSURE FUSE CLIPS AND SWITCH OPERATING MECHANISM SUITABLE FOR CONTINUOUS USE AT RATED CAPACITY WITHOUT AUXILIARY SPRINGS IN CURRENT PATH.

SWITCHES SHALL WITHSTAND AVAILABLE FAULT CURRENT OR LET-THROUGH CURRENT BEFORE OPERATING, WITHOUT DAMAGE OR RATING CHANGE.

16060 GROUNDING AND BONDING

GROUNDING

PROVIDE EQUIPMENT GROUNDING SYSTEM AS PER N.E.C.

SYSTEM SHALL MEET NEC REQUIREMENTS, MODIFIED AS SHOWN ON DRAWINGS AND AS SPECIFIED.

A GROUNDING CONDUCTOR SHALL BE INCLUDED IN EACH RACEWAY AND SIZED IN ACCORDANCE WITH THE N.E.C.

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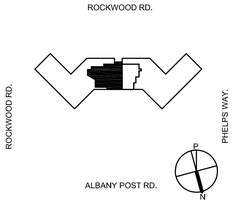
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

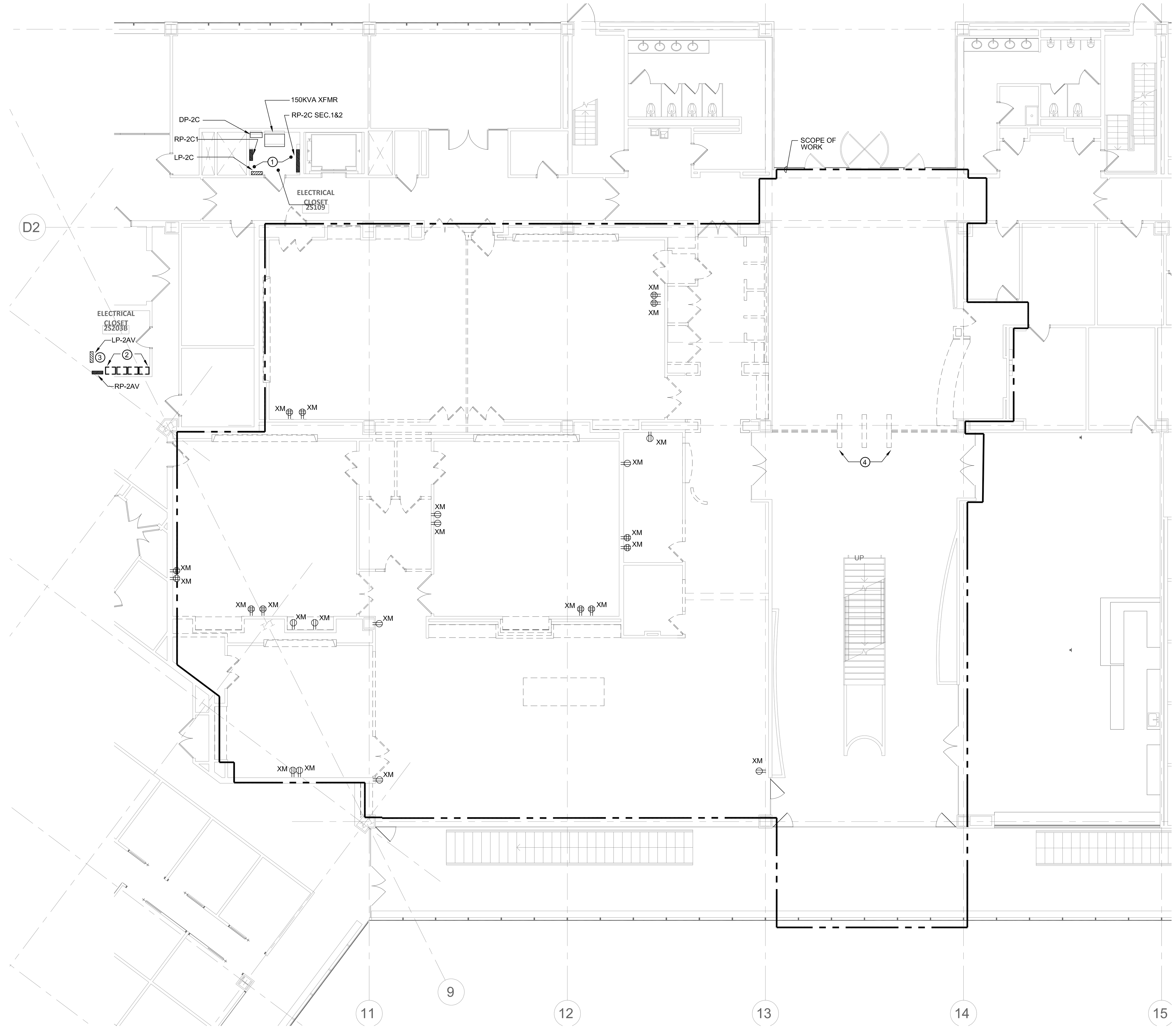
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing: ELECTRICAL SPECIFICATIONS

SCALE: As Indicated FLOOR:

E-002

PRINTED: FILE:



1 ED100 LEVEL 2 ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

KEY NOTES:

1. - ELECTRICAL EQUIPMENT IS EXISTING, U.N.O.
2. - GRAFIK EYE DIMMING PANELS SERVING LIGHTS IN CONFERENCE ROOMS IN DEMOLITION AREA SHALL BE DEMOLISHED IN IT'S ENTIRETY. ASSOCIATED 480V, 30A ELECTRICAL FEEDERS SHALL BE DISCONNECTED. REMOVE WIRING AND CONDUITS BACK TO PANEL "LP-2AV" .
3. - MARK "SPARE" 30A/3P CIRCUIT BREAKERS SERVING GRAFIK EYE DIMMING PANELS,
4. - EXISTING TURNSTILE SYSTEM SHALL BE DEMOLISHED IN IT'S ENTIRETY. DEMOLITION SHALL INCLUDE BUT NOT BE LIMITED TO SYSTEM POWER SUPPLIES, ASSOCIATED ELECTRICAL AND DATA WIRES AND CONDUITS.

DEMOLITION NOTES:

1. DEMOLITION WORK MUST FOLLOW THE CONSTRUCTION PHASING SEQUENCE AND MUST BE COORDINATED WITH THE GENERAL AND MECHANICAL DRAWINGS AND CONTRACTORS.
2. UNLESS NOTED OTHERWISE, REMOVE ELECTRICAL DEVICES, OUTLET BOXES, PULL BOXES, ASSOCIATED CONDUITS AND WIRING BACK TO SOURCE OR TO THE LAST JUNCTION BOX OR DEVICE IF THE REMAINING PORTION OF THE CIRCUIT SERVES EXISTING EQUIPMENT OR AREAS WHICH SHALL REMAIN.
3. MAINTAIN AND RESTORE, IF INTERRUPTED BY REMOVALS OR IN PATH OF NEW CONSTRUCTION, ALL CIRCUITS, CONDUITS AND FEEDERS PASSING THROUGH AND SERVING UNDISTURBED AREAS (SHOWN OR NOT SHOWN). VERIFY CIRCUITS, DEVICES, AND EQUIPMENT SCHEDULED FOR REMOVAL TO ASSURE THAT THEIR REMOVAL WILL NOT ADVERSELY AFFECT ADJACENT AREAS NOT BEING RENOVATED.
4. DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURES, EXIT SIGNS. LUTRON GRAFIK EYE SYSTEM INCLUDING (4) DIMMING PANELS SHALL BE DEMOLISHED IN IT'S ENTIRETY. DEMOLITION SHALL INCLUDE ALL POWER AND CONTROL CIRCUITS, OCCUPANCY SENSORS, WALL CONTROLS, WIRING AND CONDUITS.
5. REMOVE EXISTING EMERGENCY LIGHTING CIRCUIT TO OUTSIDE THE DEMOLITION AREA AND MAKE SAFE FOR REUSE.
6. BRANCH CIRCUIT WIRING TO DEVICES IN AREAS OF DEMOLITION SHALL BE DISCONNECTED, MADE SAFE AND REMOVED COMPLETELY BACK TO THE PANELBOARD. THE CONTRACTOR SHALL NOT ABANDON BRANCH CIRCUIT WIRING IN EXISTING WALLS AND CEILINGS. MAINTAIN THE CONTINUITY OF BRANCH CIRCUIT WIRING TO ANY AREAS WHICH ARE TO REMAIN BUT ARE AFFECTED BY THE DEMOLITION OR NEW CONSTRUCTION.
7. REFER TO HVAC DEMOLITION DRAWINGS FOR ADDITIONAL DEMOLITION SCOPE OF WORK.

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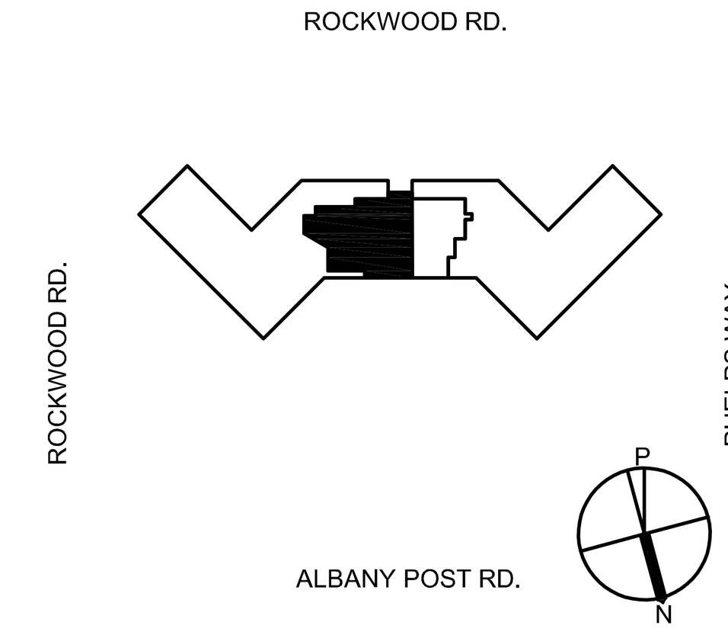

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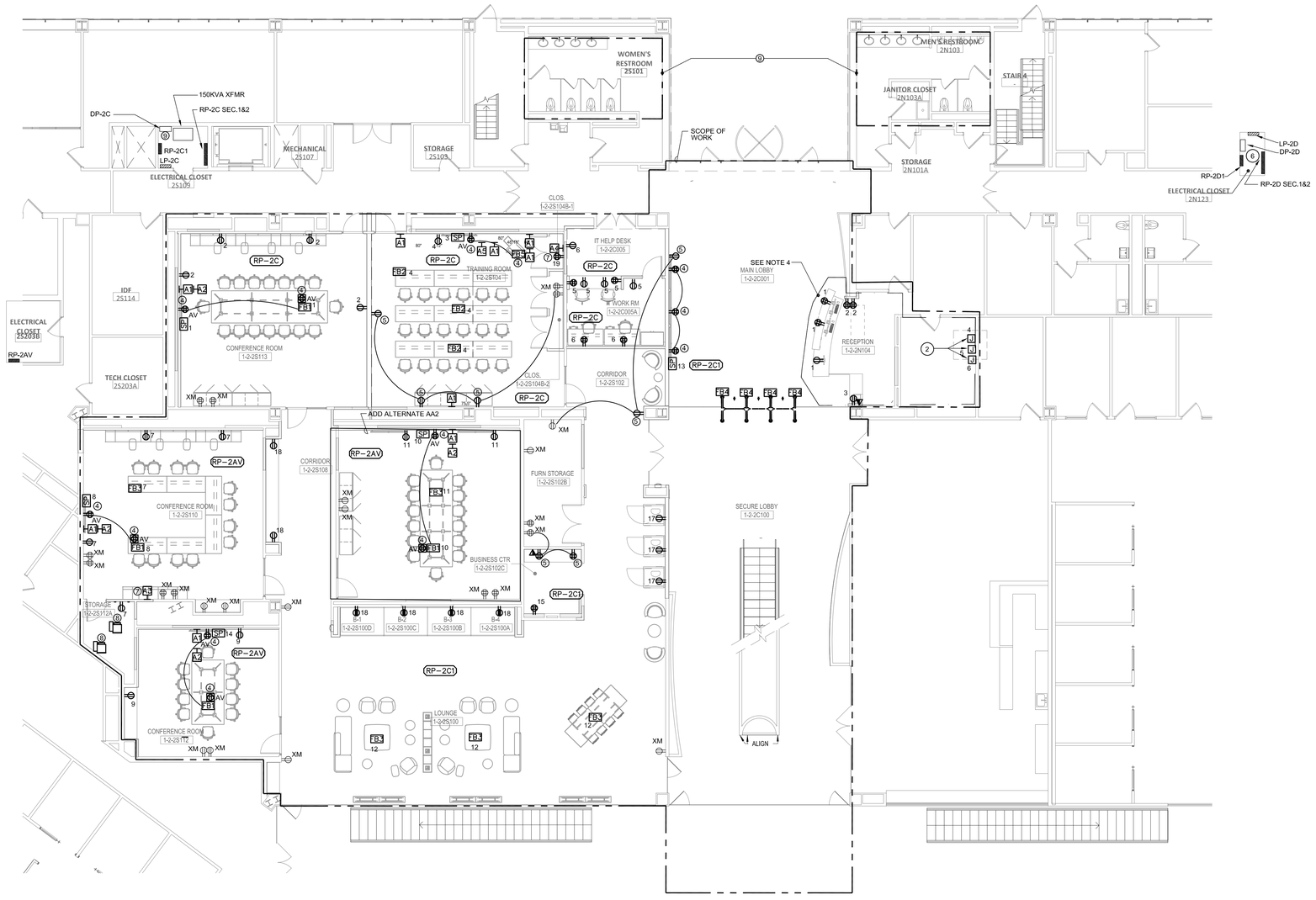
Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing: 2ND FLOOR ELECTRICAL DEMOLITION PLAN

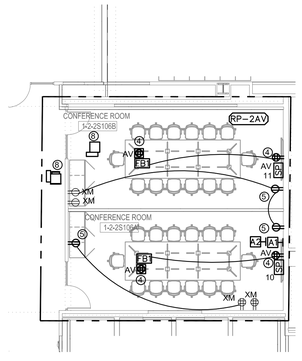
SCALE: As indicated FLOOR:

ED-102



1 E100 LEVEL 2 ELECTRICAL DEMOLITION PLAN

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



2 E100 LEVEL 2 ELECTRICAL POWER PLAN - ADD ALTERNATE AA2

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

KEY NOTES:

1. ELECTRICAL EQUIPMENT IS EXISTING, U.N.O.
2. CONNECTION TO TURNSTILE POWER SUPPLY. PROVIDE 1"C FROM POWER SUPPLY TO "FB4". COORDINATE ADDITIONAL CONDUIT REQUIREMENTS WITH SECURITY DRAWINGS.
3. MARK "SPARE" 30A/3P CIRCUIT BREAKERS SERVING GRAFIK EYE DIMMING PANELS.
4. SUPPLIED FROM SURGE PROTECTION AND CONDITIONING SYSTEM, UTILIZE 2#12.
5. WIRE TO EXISTING CIRCUIT SERVING RECEPTACLE. MODIFY AND EXTEND WIRES AND CONDUIT TO NEW DEVICES.
6. ELECTRICAL CLOSET APPROXIMATELY 100' FROM MAIN LOBBY. ALL ELECTRICAL EQUIPMENT IS EXISTING.
7. FINAL AV RACK LOCATIONS TBD.
8. WIRE TO EXISTING 120V CKT SERVING VAV BOXES. PROVIDE DISCONNECT SWITCH.
9. PROVIDE 208V, 30A, 3-PHASE ELECTRICAL CIRCUIT TO FEED (2) NEW 3KW UNIT HEATERS IN BATHROOMS 2N103 AND 2S101 WIRE NEW CIRCUIT TO AVAILABLE SPARE 30A/3P CIRCUIT BREAKER IN PANEL "DP-2C", UTILIZE 3#10-#10G, IN 3/4"C, PROVIDE 240V, 30A FUSED DISCONNECT SWITCH WITH 20A FUSES AT EACH UH. .

POWER NOTES:

1. FOR EXACT MOUNTING HEIGHTS OF ALL DEVICES REFER TO ARCHITECTURAL PLANS AND ELEVATIONS. MOUNT DEVICES IN A COMMON VERTICAL PLANE, AND PROVIDE MULTI-GANG DEVICE PLATES WHEREVER POSSIBLE.
2. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT.
3. UNLESS NOTED OTHERWISE, ALL ELECTRICAL CIRCUITS SHALL BE WIRED TO AVAILABLE 20A/1P SPARE CIRCUIT BREAKERS IN EXISTING PANELS "RP-2AV", "RP-2C" AND "RP-2C1". ALL CIRCUIT NUMBERS ARE FOR DESCRIPTIVE PURPOSES ONLY. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AFTER COMPLETION OF THE DEMOLITION IN THE AREA. UPDATE PANEL SCHEDULES AND AS-BUILT DRAWINGS WITH ASSIGNED PANEL AND CIRCUIT DESIGNATIONS.
4. ALL ELECTRICAL CIRCUITS IN THIS AREA SHALL BE WIRED TO AVAILABLE 20A/1P SPARE CIRCUIT BREAKERS IN EXISTING PANELS "RP-2D". ALL CIRCUIT NUMBERS ARE FOR DESCRIPTIVE PURPOSES ONLY. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AFTER COMPLETION OF THE DEMOLITION IN THE AREA. UPDATE PANEL SCHEDULES AND AS-BUILT DRAWINGS WITH ASSIGNED PANEL AND CIRCUIT DESIGNATIONS.

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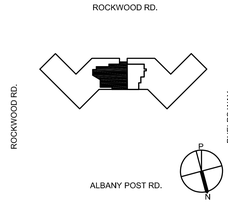

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FCA FRANCIS CAUFFMAN ARCHITECTS
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ARCHITECTURE

Drawing: 2ND FLOOR ELECTRICAL POWER PLAN

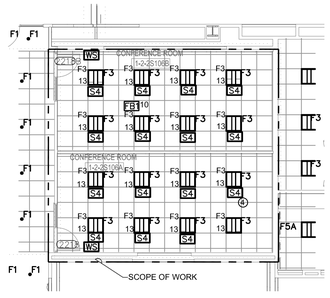
SCALE: As Indicated FLOOR:

E-102

PRINTED: FILE:

1 E150 LEVEL 2 ELECTRICAL LIGHTING PLAN

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



2 E150 LEVEL 2 ELECTRICAL LIGHTING PLAN - ADD ALTERNATE AA2

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

ADD ALTERNATE

a. PROVIDE LINEAR LED STRIP LIGHT TYPE "F12". REFER TO ARCHITECTURAL DRAWING A-200 FOR EXACT ROUGHTING.

b. PROVIDE ENLIGHTED ENABLE DIMMING POWER SUPPLIES MODEL "PSV-92-24-ELN-E" AND SENSOR UNITS AS REQUIRED. INSTALL POWER SUPPLIES IN THE MIDDLE OF TWO ADJACENT RUNS.

c. UTILIZE EXISTING LIGHTING CIRCUIT SERVING THE ADJACENT LIGHTING FIXTURES. STRIP LIGHT SHALL BE WIRED TO CONTROL ZONE "b" IN CONFERENCE ROOMS, AND ZONE "a" IN THE LOBBY.

LIGHTING NOTES:

1. ALL LIGHTING FIXTURES WIRED TO PANEL "LP-C2".
2. PROVIDE (2) 277V, 20A CIRCUIT FROM PANEL LP-C2 TO FEED NEW LIGHTING FIXTURES. UTILIZE AVAILABLE SPARE 20A/1P CIRCUIT BREAKERS #13 AND #15.
3. UTILIZE EXISTING EMERGENCY LIGHTING CIRCUIT SAVED OUTSIDE SCOPE AREA TO WIRE NEW EMERGENCY LIGHTING FIXTURES. MODIFY AND EXTEND EXISTING WIRING AND CONDUIT AS REQUIRED.
4. ALL EXIT SIGNS SHALL BE CONNECTED TO A CONSTANT, UNSWITCHED SOURCE ON THE EMERGENCY BRANCH.

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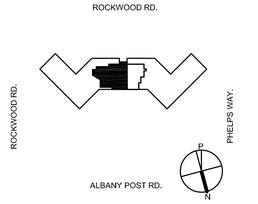
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

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Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author

ARCHITECTURE

Drawing: 2ND FLOOR ELECTRICAL LIGHTING PLAN

SCALE: As Indicated FLOOR:

E-152

PRINTED: FILE:

BRANCH CIRCUIT SCHEDULE (600-VOLT COPPER CONDUCTORS)

2w20	3/4"C, 2#12 & 1#12G	3/4"C, 2#10 & 1#10G	1"C, 2#8 & 1#8G	1"C, 2#6 & 1#6G	1"C, 3#6 & 1#6G	1-1/4"C, 2#4 & 1#4G
3w20	3/4"C, 3#12 & 1#12G	3/4"C, 3#10 & 1#10G	1"C, 3#8 & 1#8G	1"C, 3#6 & 1#6G	1"C, 3#6 & 1#6G	1-1/4"C, 3#4 & 1#4G
4w20	3/4"C, 4#12 & 1#12G	3/4"C, 4#10 & 1#10G	1"C, 4#8 & 1#8G	1-1/4"C, 4#6 & 1#6G	1-1/4"C, 4#6 & 1#6G	1-1/2"C, 4#4 & 1#4G
120V/1ø	CL ≤ 80ft	80ft < CL ≤ 130ft	130ft < CL ≤ 200ft	200ft < CL ≤ 320ft	320ft < CL ≤ 500ft	
208V/1ø	CL ≤ 140ft	140ft < CL ≤ 220ft	220ft < CL ≤ 350ft	350ft < CL ≤ 560ft	560ft < CL ≤ 900ft	
208V/3ø	CL ≤ 280ft	280ft < CL ≤ 450ft	450ft < CL ≤ 700ft	700ft < CL ≤ 1150ft	-	
277V/1ø	CL ≤ 180ft	180ft < CL ≤ 300ft	300ft < CL ≤ 470ft	470ft < CL ≤ 750ft	750ft < CL ≤ 1200ft	
480V/1ø	CL ≤ 320ft	320ft < CL ≤ 520ft	520ft < CL ≤ 820ft	820ft < CL ≤ 1300ft	-	
480V/3ø	CL ≤ 650ft	650ft < CL ≤ 1030ft	-	-	-	
2w25 3w30	3/4"C, 2#10 & 1#10G	1"C, 2#8 & 1#8G	1"C, 2#6 & 1#6G	1-1/4"C, 2#4 & 1#4G	1-1/4"C, 2#2 & 1#2G	
3w25 3w30	3/4"C, 3#10 & 1#10G	1"C, 3#8 & 1#8G	1-1/4"C, 3#6 & 1#6G	1-1/4"C, 3#4 & 1#4G	1-1/2"C, 3#2 & 1#2G	
4w25 4w30	3/4"C, 4#10 & 1#10G	1"C, 4#8 & 1#8G	1-1/4"C, 4#6 & 1#6G	1-1/2"C, 4#4 & 1#4G	2"C, 4#2 & 1#2G	
120V/1ø	CL ≤ 80ft	80ft < CL ≤ 130ft	130ft < CL ≤ 210ft	210ft < CL ≤ 350ft	350ft < CL ≤ 550ft	
208V/1ø	CL ≤ 150ft	150ft < CL ≤ 240ft	240ft < CL ≤ 380ft	380ft < CL ≤ 600ft	600ft < CL ≤ 960ft	
208V/3ø	CL ≤ 300ft	300ft < CL ≤ 480ft	480ft < CL ≤ 750ft	750ft < CL ≤ 1200ft	-	
277V/1ø	CL ≤ 200ft	200ft < CL ≤ 320ft	320ft < CL ≤ 500ft	500ft < CL ≤ 800ft	800ft < CL ≤ 1260ft	
480V/1ø	CL ≤ 340ft	340ft < CL ≤ 550ft	550ft < CL ≤ 860ft	860ft < CL ≤ 1350ft	-	
480V/3ø	CL ≤ 680ft	680ft < CL ≤ 1100ft	-	-	-	
2w35 2w40	1"C, 2#8 & 1#10G	1"C, 2#6 & 1#8G	1-1/4"C, 2#4 & 1#6G	1-1/4"C, 2#2 & 1#4G	1-1/2"C, 2#1 & 1#2G	
3w35 3w40	1"C, 3#8 & 1#10G	1-1/4"C, 3#6 & 1#8G	1-1/4"C, 3#4 & 1#6G	1-1/2"C, 3#2 & 1#4G	2"C, 3#1 & 1#2G	
4w35 4w40	1"C, 4#8 & 1#10G	1-1/4"C, 4#6 & 1#8G	1-1/2"C, 4#4 & 1#6G	2"C, 4#2 & 1#4G	2"C, 4#1 & 1#2G	
120V/1ø	CL ≤ 100ft	100ft < CL ≤ 160ft	160ft < CL ≤ 260ft	260ft < CL ≤ 410ft	410ft < CL ≤ 520ft	
208V/1ø	CL ≤ 180ft	180ft < CL ≤ 280ft	280ft < CL ≤ 450ft	450ft < CL ≤ 710ft	710ft < CL ≤ 890ft	
208V/3ø	CL ≤ 360ft	360ft < CL ≤ 570ft	570ft < CL ≤ 900ft	-	-	
277V/1ø	CL ≤ 240ft	240ft < CL ≤ 380ft	380ft < CL ≤ 600ft	600ft < CL ≤ 950ft	-	
480V/1ø	CL ≤ 420ft	420ft < CL ≤ 660ft	660ft < CL ≤ 1050ft	-	-	
480V/3ø	CL ≤ 820ft	820ft < CL ≤ 1300ft	-	-	-	
2w45 2w50	1-1/4"C, 2#6 & 1#8G	1-1/4"C, 2#4 & 1#6G	1-1/2"C, 2#2 & 1#4G	1-1/2"C, 2#1 & 1#2G	2"C, 2#1/0 & 1#1G	
3w45 3w50	1-1/4"C, 3#6 & 1#8G	1-1/4"C, 3#4 & 1#6G	1-1/2"C, 3#2 & 1#4G	2"C, 3#1 & 1#2G	2"C, 3#1/0 & 1#1G	
4w45 4w50	1-1/4"C, 4#6 & 1#8G	1-1/4"C, 4#4 & 1#6G	1-1/2"C, 4#2 & 1#4G	2"C, 2#1 & 1#2G	2"C, 4#1/0 & 1#1G	
120V/1ø	CL ≤ 130ft	130ft < CL ≤ 210ft	210ft < CL ≤ 330ft	330ft < CL ≤ 420ft	420ft < CL ≤ 520ft	
208V/1ø	CL ≤ 230ft	230ft < CL ≤ 360ft	360ft < CL ≤ 570ft	570ft < CL ≤ 720ft	720ft < CL ≤ 910ft	
208V/3ø	CL ≤ 450ft	450ft < CL ≤ 720ft	720ft < CL ≤ 1150ft	-	-	
277V/1ø	CL ≤ 300ft	300ft < CL ≤ 480ft	480ft < CL ≤ 760ft	760ft < CL ≤ 960ft	-	
480V/1ø	CL ≤ 520ft	520ft < CL ≤ 840ft	840ft < CL ≤ 1300ft	-	-	
480V/3ø	CL ≤ 1050ft	-	-	-	-	
2w60 2w70	1-1/4"C, 2#4 & 1#6G	1-1/4"C, 2#2 & 1#6G	1-1/2"C, 2#1 & 1#4G	1-1/2"C, 2#1/0 & 1#2G	2"C, 2#2/0 & 1#1G	
3w60 3w70	1-1/4"C, 3#4 & 1#8G	1-1/2"C, 3#2 & 1#6G	2"C, 3#1 & 1#4G	2"C, 3#1/0 & 1#2G	2"C, 3#2/0 & 1#1G	
4w60 4w70	1-1/4"C, 4#4 & 1#8G	1-1/2"C, 4#2 & 1#6G	2"C, 4#1 & 1#4G	2"C, 4#1/0 & 1#2G	2-1/2"C, 4#2/0 & 1#1G	
120V/1ø	CL ≤ 150ft	150ft < CL ≤ 240ft	240ft < CL ≤ 300ft	300ft < CL ≤ 370ft	370ft < CL ≤ 470ft	
208V/1ø	CL ≤ 260ft	260ft < CL ≤ 410ft	410ft < CL ≤ 520ft	520ft < CL ≤ 650ft	650ft < CL ≤ 810ft	
208V/3ø	CL ≤ 510ft	510ft < CL ≤ 810ft	810ft < CL ≤ 1020ft	-	-	
277V/1ø	CL ≤ 340ft	340ft < CL ≤ 540ft	540ft < CL ≤ 680ft	680ft < CL ≤ 860ft	860ft < CL ≤ 1080ft	
480V/1ø	CL ≤ 600ft	600ft < CL ≤ 940ft	-	-	-	
480V/3ø	CL ≤ 1150ft	-	-	-	-	

NOTES:

1. THIS SCHEDULE DEFINES MINIMUM WIRE AND CONDUIT SIZES FOR EACH CIRCUIT TAG INDICATED. WHEREVER CIRCUIT TAGS ARE INDICATED ON DRAWINGS, DETERMINE MINIMUM WIRE AND CONDUIT SIZE REQUIRED BY SELECTING THE APPROPRIATE ROW FOR ACTUAL CIRCUIT VOLTAGE/PHASE AND THEN SELECTING THE APPROPRIATE COLUMN FOR ACTUAL CABLE LENGTH OF CIRCUIT (CL) BASED ON PROPOSED FIELD ROUTING. ONCE THE APPROPRIATE COLUMN IS SELECTED, THE REQUIRED MINIMUM WIRE AND CONDUIT SIZES ARE IDENTIFIED BY THE INTERSECTION OF THAT COLUMN AND THE ROW FOR THE ASSOCIATED CIRCUIT TAG.
2. WIRE AND CONDUIT TAGS REPRESENT BASE AMPACITY AND NUMBER OF WIRES (NOT INCLUDING GROUNDS.) BASE AMPACITIES INDICATED ARE VALID FOR 90°C RATED COPPER CONDUCTORS (APPLIED AT THEIR 60°C RATING) IN 30°C AMBIENT TEMPERATURE. INCREASE WIRE AND CONDUIT SIZES TO COMPENSATE FOR LOWER TEMPERATURE RATED WIRES AND HIGHER AMBIENT TEMPERATURES.
3. WHERE OVERSIZED CONDUCTORS ARE TOO LARGE TO DIRECTLY CONNECT TO SOURCE OR DEVICE TERMINALS, TRANSITION TO SMALLER CONDUCTORS (NO LESS THAN MINIMUM SIZE SHOWN FOR THAT CIRCUIT TAG IN SCHEDULE ABOVE) TO ACCOMMODATE REQUIRED TERMINATIONS. PROVIDE SPLICES, WIRE REDUCERS OR POWER BLOCKS IN APPROPRIATELY SIZED JUNCTION BOXES TO TRANSITION BETWEEN DIFFERENT SIZE CONDUCTORS. LENGTHS OF CONDUCTOR BETWEEN TRANSITION TO SMALLER CABLE AND FINAL TERMINATION SHOULD BE LIMITED TO NO MORE THAN 10 FEET WHEREVER POSSIBLE.
4. 240V/1Ø CIRCUITS SHALL USE WIRE AND CONDUIT SIZES INDICATED ABOVE FOR 208V/1Ø CIRCUITS, EXCEPT MAXIMUM ALLOWABLE DISTANCES INDICATED MAY BE INCREASED BY 15%.
5. FOR CIRCUIT LENGTHS EXCEEDING MAXIMUM LENGTHS SHOWN IN SCHEDULE ABOVE, UPSIZE WIRE AND CONDUIT SIZES AS REQUIRED TO LIMIT VOLTAGE DROP TO NO MORE THAN 3% (FOR BRANCH CIRCUITS) AT 70% CIRCUIT LOADING. (FOR EXAMPLE, 20-AMP CIRCUIT CONDUCTORS ARE ASSUMED TO BE CARRYING 14 AMPS.) VOLTAGE DROP SHALL BE LIMITED TO 2% WHEN CIRCUITS ARE TO BE USED AS FEEDERS.
6. WHERE CIRCUITS ARE TO BE USED FOR FEEDERS, RATHER THAN BRANCH CIRCUITS, VOLTAGE DROP SHALL BE LIMITED TO NO MORE THAN 2%. ALLOWABLE MAXIMUM DISTANCES INDICATED IN SCHEDULE ABOVE SHALL BE REDUCED BY 33%.
7. CONDUIT SIZES INDICATED ARE VALID FOR THHN/THWN AND XHHW CONDUCTOR TYPES INSTALLED IN EMT, ENT, FMC, IMC, LFMC, RMC AND RIGID PVC (SCHEDULE 80, SCHEDULE 40, TYPE A, AND TYPE EB) CONDUIT TYPES. INCREASE CONDUIT SIZES AS REQUIRED TO COMPENSATE FOR CONDUCTOR TYPES WITH LARGER OVERALL DIAMETERS AND FOR CONDUIT TYPES WITH SMALLER INTERNAL DIAMETERS.
8. w25 CIRCUIT TAGS SHALL USE w30 CHART ABOVE; w35 CIRCUIT TAGS SHALL USE w40 CHART ABOVE; w45 CIRCUIT TAGS SHALL USE w50 CHART ABOVE; w60 CIRCUIT TAGS SHALL USE w70 CHART ABOVE.
9. CONDUIT SIZES INDICATED ARE REQUIRED MINIMUM SIZES AND MAY BE INCREASED FOR LONG RUNS OR WHERE
10. CONDUITS SMALLER THAN 3 INCHES SHALL BE UPGRADED TO THE NEXT LARGER TRADE SIZE WHEN USED FOR DIRECT-BURIED AND IN-SLAB INSTALLATIONS.
11. UPGRADE CONDUIT SIZES FOR CIRCUITS RUN IN CONCRETE-ENCASED UNDERGROUND DUCTBANKS TO THE SIZES INDICATED FOR THE DUCTBANK CONDUITS.
12. TAGS WITH ISOLATED GROUND (-IG) INDICATED SHALL INCLUDE A SEPARATE IG CONDUCTOR, SAME SIZE AS ASSOCIATED CIRCUIT GROUND CONDUCTOR, TIED TO THE IG BUS. CONDUIT SIZES INDICATED IN SCHEDULE ABOVE ARE LARGE ENOUGH TO ACCOMMODATE AN IG CONDUCTOR IN ADDITION TO CONDUCTORS SHOWN.

RACEWAY USE SCHEDULE

		EMT	FMC	RGS	EPDM	RNC	LFMC	LFNC	MC CABLE
OUTDOOR APPLICATIONS	EXPOSED			X					
	UNDERGROUND					X			
	CONCEALED ABOVE GND			X					
	CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT)							X	
	ON ROOF / EXPOSED TO WEATHER			X				X	
INDOOR APPLICATIONS	EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE WITHIN MECHANICAL, ELECTRICAL AND UNFINISHED AREAS DEFINED BY ARCHITECT	X							
	EXPOSED AND SUBJECT TO SEVERE PHYSICAL DAMAGE INCLUDING LOADING DOCK, CORRIDORS USED FOR TRAFFIC OF MECHANIZED CARTS, FORKLIFTS, AND PALLET-HANDLING UNITS			X					
	UNDERGROUND BELOW SLAB ON GRADE CONDUIT					X			
	UNDERGROUND BELOW SLAB ON GRADE, UNDER AREAS OF STRUCTURAL LOADING			X					
	CONCEALED IN CEILINGS AND INTERIOR WALLS AND PARTITIONS	X							X
	CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT)		X						
	CONNECTION TO VIBRATING EQUIPMENT IN DAMP OR WET LOCATIONS (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT)						X		
	DAMP OR WET LOCATIONS			X			X		
	INSTALLATION IN SLABS (WHERE APPROVED BY STRUCTURAL ENGINEER)			X					
	PENETRATIONS FROM CONCRETE SLAB INCLUDING ELBOWS AND FITTINGS TO 12" AFF			X					
	INSTALLATION IN VICINITY OF SENSITIVE LAB EQUIPMENT SPACE			X					
	WHERE CONCEALED FOR FINAL CONNECTION TO DEVICES (MAXIMUM LENGTH 6'-0")								X

NOTES:

1. RIGID STEEL ELBOWS OR STUBS SHALL BE USED FOR PENETRATIONS FROM BELOW SLAB OR THROUGH EXTERIOR WALLS INTO BUILDING. BONDING OF THESE ELBOWS IS NOT REQUIRED.
2. RACEWAY AND FITTINGS SHALL BE PROCURED THROUGH SAME MANUFACTURER.
3. COUPLINGS FOR RIGID METAL CONDUIT SHALL BE THREADED TYPE.
4. COUPLINGS FOR EMT CONDUIT SHALL BE WATERTIGHT COMPRESSION TYPE. SET SCREW FITTINGS ALLOWED ABOVE 2". ALL FITTINGS SHALL BE CONCRETE TIGHT WHERE REQUIRED.
5. FOR BRANCH CIRCUITS, THE CONTRACTOR SHALL PROVIDE CABLE TRAY AS A MEANS OF CABLE MANAGEMENT WHERE MORE THAN FIVE (5) MC CABLES ARE BUNDLED TOGETHER HORIZONTALLY.
6. MC CABLE AND ASSOCIATED APPURTENANCES INSTALLED WITHIN PLENUM SPACES SHALL BE PLENUM RATED. REFER TO HVAC PLANS FOR PLENUM LOCATIONS. COORDINATE WITH MECHANICAL CONTRACTOR.
7. EMT SHALL BE UTILIZED FOR HOME RUNS TO AREA SERVED. MC CABLE IS ACCEPTABLE ONLY IN AREA SERVED.

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	DESCRIPTION	MANUFACTURER AND CATALOG NUMBER	LAMP TYPE	VOLTAGE	WATTAGE	NOTES
F1	5" ROUND RECESSED DOWNLIGHT	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	120-277	13W	
F2	3" LINEAR RECESSED LED	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	277	9.7W/FT	
F3	2' x 2' LED RECESSED TROFFER	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	120-277	37.4W	
F5	3" PERIMETER RECESSED LED	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	277	9.7W/FT	
F5A	3" PERIMETER RECESSED LED	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	277	9.7W/FT	
F8	3" PENDANT MOUNTED LED FIXTURE	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	120-277	29W	
F9	6" ROUND RECESSED DOWNLIGHT	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	120-277	16W	
F10	5" SQUARE RECESSED DOWNNLIGHT	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	120-277	14W	
F11	3" LINERA RECESSED LED- STEP LENS	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	120-277	9.5W/FT	
F12	LED TAPE LIGHT FIXTURE	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	120-277	2.7W/FT	
F13	LED TAPE LIGS" SQUARE RECESSED WALLWASHER	REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING A-200	LED	120-277	2.714W	

LIGHTING FIXTURES COORDINATION AND INSTALLATION NOTES

1. *COORDINATE FIXTURE HOUSING, MOUNTIONG HARDWARE AND TRIM WITH CEILING CONSTRUCTION.*
2. *CONTRACTOR SHALL VERIFY FINAL VOLTAGES.*
3. *ALL FIXTURES SHALL BE PROVIDED WITH APPROPRIATE DRIVER'S THAT HAVE UL AND CBM LABELS AND COMPATIBLE WITH THE LIGHTING CONTROL SYSTEM*
4. *REFER TO ARCHITECTURAL DRAWING FOR QUANTITIY, LENGTH AND LOCATIONS.CONTRACTOR MUST VERIFY SYSTEM COMPATIBILITY PRIOR TO ORDERING THE SPECIFIED CONTROL DEVICES INCLUDING, BUT NOT LIMITED TO DIMMERS AND SENSORS. HE IS RESPONSIBLE FOR NOTIFYING THE ARCHITECT AND ENGINEER CONSULTANT OF ANY INCOMPATIBILITY PRIOR TO ORDERING EQUIPMENT.*
5. *DIMMERS SHALL BE COMPATIBLE WITH THE DRIVERS OR BALLAST IN THE LIGHTING FIXTURES.*
6. *ALL REMOTE TRANSFORMER/ BALLAST/ LED-DRIVERS SHALL BE HIDDEN IN HANG CEILING OR CLOSEST CLOSET AREA. LOCATIONS SHALL BE ACCESSIBLE AND WELL VENTILATED AND SHALL BE DESIGNATED AND APPROVED BY THE ARCHITECT.*
7. *COORDINATE MAXIMUM DISTANCE OF REMOTE GEAR AND THE WIRE GAUGE REQUIREMENTS WITH LIGHTING MANUFACTURER SPECIFIC PARAMETERS TO AVOID VOLTAGE DROP. CONTRACTOR AND MANUFACTURER TO COORDINATE REMOTE DEVISE V.A. RATING AND TYPE.*
8. *RELAYS USED FOR CONTROL OF LIGHTING (IF ANY) SHALL BE LOCATED IN THE PLENUM AND THE LOCATION SHALL BE ACCESSIBLE AND SOUNDPROOFED SO AS TO BE INAUDIBLE FROM NORMALLY OCCUPIED AREAS WHEN ACTIVATED.*
9. *ELECTRICAL CONTRACTOR TO VERIFY AND COORDINATE EMERGENCY OPERATION AS PER ELECTRICAL PLANS ALL FIXTURES MARKED WITH "EM" SHALL BE CONNECTED TO EMERGENCY POWER. COORDINATE LOCATION WITH ARCHITECT.*
10. *CONTRACTOR TO COORDINATE ALL PRODUCTS SUCH THAT ALL NECESSARY PARTS, ACCESSORIES, ETC. ARE INSTALLED FOR A COMPLETE FUNCTIONING SYSTEM AS PER DESIGN INTENT. CONTRACTOR TO VERIFY FIXTURE MOUNTING REQUIREMENTS AND COORDINATE WITH CEILING SYSTEM DETAILS AS PER ARCHITECTURAL SPECIFICATION FOR CEILING TYPE.*

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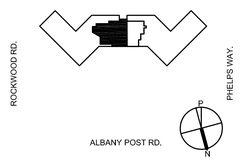

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FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:
ELECTRICAL AND LIGHTING FIXTURES SCHEDULES

SCALE: As Indicated FLOOR:

E-600

PRINTED: FILE:

SYMBOLS

EQUIPMENT & COMPONENTS

ACE	ACCESSORY CABINET ENCLOSURE
ADSP	AIR SAMPLING SMOKE DETECTOR POWER SUPPLY
AMP	AMPLIFIER
BATT	BATTERY CABINET
DACR	DIGITAL ALARM COMMUNICATOR RECEIVER
DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER
DARR	DIGITAL ALARM RADIO RECEIVER
DART	DIGITAL ALARM RADIO TRANSMITTER
DCCR	DIGITAL CELLULAR COMMUNICATION RECEIVER
DCCT	DIGITAL CELLULAR COMMUNICATION TRANSMITTER
DOCS	DOCUMENT STORAGE CABINET
MICR	EMERGENCY VOICE MICROPHONE MODULE
EOL	END OF LINE RESISTOR
FAA	FIRE ALARM REMOTE ANNUNCIATOR
FACU (#)	FIRE ALARM CONTROL UNIT (# = NODE DESIGNATION)
FATC	FIRE ALARM TERMINAL CABINET
FFSCP	FIRE FIGHTER'S SMOKE CONTROL PANEL
FSRU	FIRE SUPPRESSION RELEASING CONTROL UNIT
FSRUC	FIRE SUPPRESSION RELEASING CONTROL UNIT (CONVENTIONAL)
GAP	GRAPHIC ANNUNCIATOR PANEL
IPCR	INTERNET PROTOCOL COMMUNICATION RECEIVER
IPCT	INTERNET PROTOCOL COMMUNICATION TRANSMITTER
IS	ISOLATION MODULE
JB	JUNCTION BOX
KB	KEY BOX
MD	MAGNETIC DOOR HOLDER
MB	MUNICIPAL MASTER BOX
PRN	PRINTER
RAI	REMOTE ALARM INDICATOR
RPS	REMOTE POWER SUPPLY
RTP	ROOM TEMPERATURE SWITCH
RTS	REMOTE TEST SWITCH AND INDICATOR
SPD	SURGE PROTECTICE DEVICE
WS	WORKSTATION
WFM	WORKSTATION MONITOR
UPS	UNITERUPTABLE POWER SUPPLY

INTERFACE MODULES

CM	CONTROL MODULE
MM	MONITOR MODULE
RM	RELAY MODULE

MANUAL INITIATING DEVICES AND CONTROLS

F	FIRE ALARM MANUAL PULL STATION
Fc	FIRE ALARM MANUAL PULL STATION (CONVENTIONAL)
FX	MANUAL PULL STATION - FIRE SUPPRESSION SYSTEM RELEASE
FXC	MANUAL PULL STATION (CONVENTIONAL) - FIRE SUPPRESSION SYSTEM RELEASE
A	MANUAL PUSH BUTTON - FIRE SUPPRESSION SYSTEM ABORT
Ec	MANUAL PULL STATION (CONVENTIONAL) - EMERGENCY ALARM (HAZMAT)

SYMBOLS

SYSTEM SPOT-TYPE FIRE DETECTORS

- BASIC SYMBOL FOR SPOT-TYPE FIRE DETECTOR - WALL MOUNT
- BASIC SYMBOL FOR SPOT-TYPE FIRE DETECTOR - CLNG MOUNT
- BASIC SYMBOL FOR SPOT-TYPE FIRE DETECTOR - W/ SOUNDER BASE
- PHOTOELECTRIC SMOKE DETECTOR
- PHOTOELECTRIC IN-DUCT SMOKE DETECTOR
- PHOTOELECTRIC SAMPLING-TUBE DUCT SMOKE DETECTOR
- FIXED TEMPERATURE / RATE OF RISE HEAT DETECTOR (t = ACTIVATION TEMPERATURE OF FIXED TEMP THERMAL ELEMENT)
- COMBINATION PHOTOELECTRIC SMOKE / FIXED TEMP HEAT DETECTOR (t = ACTIVATION TEMPERATURE OF THERMAL ELEMENT)
- COMBINATION PHOTOELECTRIC SMOKE / CO DETECTOR
- MULTI-CRITERIA PHOTOELECTRIC SMOKE / FIXED TEMP HEAT / CO DETECTOR (t = ACTIVATION TEMPERATURE OF THERMAL ELEMENT)

SPECIAL TECHNOLOGY FIRE DETECTORS

- BASIC SYMBOL FOR SPECIAL TECHNOLOGY FIRE DETECTOR - WALL MOUNT
- BASIC SYMBOL FOR SPECIAL TECHNOLOGY FIRE DETECTOR - CLNG MOUNT
- AIR SAMPLING SMOKE DETECTOR (AS)
- AIR SAMPLING TYPE DUCT DETECTOR (AS)
- COMBINATION AIR SAMPLING SMOKE / CO DETECTOR (AS)
- COMBINATION AIR SAMPLING SMOKE / H2 DETECTOR (AS)
- END-TO-END OPTICAL BEAM SMOKE DETECTOR (TRANSMITTER UNIT) (BT)
- END-TO-END OPTICAL BEAM SMOKE DETECTOR (RECEIVER UNIT) (BR)
- SINGLE-END OPTICAL BEAM SMOKE DETECTOR (TRANSMITTER / RECEIVER UNIT) (BTR)
- SINGLE-END OPTICAL BEAM SMOKE DETECTOR (REFLECTOR PANEL) (BRF)
- ULTRAVIOLET SPECTRUM FLAME DETECTOR (UV)
- INFRARED SPECTRUM FLAME DETECTOR (IR)
- COMBINATION ULTRAVIOLET / INFRARED SPECTRUM FLAME DETECTOR (UVIR)

CONVENTIONAL SPOT-TYPE FIRE DETECTORS

- BASIC SYMBOL FOR CONVENTIONAL FIRE DETECTOR - WALL MOUNT
- BASIC SYMBOL FOR CONVENTIONAL FIRE DETECTOR - CEILING MOUNT
- CONVENTIONAL PHOTOELECTRIC SMOKE DETECTOR
- CONVENTIONAL FIXED TEMPERATURE HEAT DETECTOR (t = ACTIVATION TEMPERATURE)

SINGLE / MULTIPLE STATION SMOKE ALARMS

- BASIC SYMBOL FOR SMOKE ALARM - WALL MOUNT
- BASIC SYMBOL FOR SMOKE ALARM - CEILING MOUNT
- SINGLE / MULTIPLE STATION SMOKE ALARM
- SINGLE / MULTIPLE STATION COMBINATION SMOKE / CO ALARM

RADIO PES COMMUNICATIONS ENHANCEMENT SYSTEMS

BDA	BI-DIRECTIONAL RADIO SIGNAL AMPLIFIER
BDAA	BI-DIRECTIONAL RADIO SIGNAL AMPLIFIER ALARM PANEL

WIRED FIRE FIGHTER COMMUNICATION SYSTEMS

FFPC	FIRE FIGHTER'S PHONE CONTROLLER / HANDSET - PRIORITY COMMAND LOCATION
FFP	FIRE FIGHTER'S PHONE HANDSET
FFJ	FIRE FIGHTER'S PHONE PLUG-IN PHONE JACK

SYMBOLS

NOTIFICATION APPLIANCES

- AUDIBLE HORN - WALL MOUNT
- AUDIBLE HORN - CLNG MOUNT
- VISUAL STROBE - WALL MOUNT
- VISUAL STROBE - CLNG MOUNT
- COMBINATION AUDIBLE HORN / VISUAL STROBE - WALL MOUNT
- COMBINATION AUDIBLE HORN / VISUAL STROBE - CLNG MOUNT
- AUDIBLE & INTELLIGIBLE SPEAKER - WALL MOUNT
- AUDIBLE & INTELLIGIBLE SPEAKER - CLNG MOUNT
- COMBINATION AUDIBLE & INTELLIGIBLE SPEAKER / VISUAL STROBE - WALL MOUNT
- COMBINATION AUDIBLE & INTELLIGIBLE SPEAKER / VISUAL STROBE - CLNG MOUNT
- VISUAL FLASHING BEACON
- AUDIBLE ALARM BELL

NOTIFICATION APPLIANCE ANNOTATION

C	=	CEILING MOUNT
cd	=	VISUAL STROBE CANDELA OUTPUT
E	=	EMERGENCY ALARM
FX	=	FIRE SUPPRESSION
w	=	SPEAKER WATTAGE TAP

EXISTING EQUIPMENT DESIGNATIONS

XM	EXISTING EQUIPMENT TO REMAIN. WHERE ARCHITECTURAL WORK IS REQUIRED AT DEVICE LOCATION, DISCONNECT, REMOVE AND REINSTALL DEVICE AS NECESSARY TO ACCOMMODATE ARCHITECTURAL WORK. FOR SURFACE MOUNTED RACEWAY, THIS DESIGNATION SHALL INDICATE RACEWAY AND DEVICES TO REMAIN UNLESS OTHERWISE NOTED.
XN	EXISTING EQUIPMENT TO BE DISCONNECTED, REMOVED AND REPLACED WITH NEW. EXISTING CIRCUIT WIRING AND PATHWAY TO BE MAINTAINED AND REUSED FOR NEW EQUIPMENT CONNECTION.
XR	EXISTING EQUIPMENT TO NEW "XL" LOCATION. CUT BACK AND/OR EXTEND EXISTING CIRCUIT WIRING AND PATHWAY AS REQUIRED SO AS TO PROVIDE A COMPLETE OPERATIONAL INSTALLATION.
XL	EXISTING RELOCATED "XR" EQUIPMENT AT "XL" NEW LOCATION.
XD	REMOVE EXISTING EQUIPMENT. PROVIDE NOTICE TO OWNER OF EQUIPMENT REMOVED. AS DIRECTED BY THE OWNER, BOX REMOVED EQUIPMENT AND RETURN TO THE OWNER AS SPARE INVENTORY.

GENERAL ANNOTATION

- SECTION NUMBER / DRAWING NUMBER (x / dwg)
- ELEVATION NUMBER / DRAWING NUMBER (y / dwg)
- DETAIL / PART-PLAN NUMBER / DRAWING NUMBER (z / dwg)
- CONNECT TO EXISTING
- KEY NOTE (##)

NOTE - NOT ALL SYMBOLS USED FOR THIS PROJECT

ABBREVIATIONS

GENERAL

A	AMPERES
ACT	ACOUSTICAL CEILING TILE
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ARCH	ARCHITECT
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CO	CARBON MONOXIDE
CONT	CONTINUATION
DWG	DRAWING
ELEC	ELECTRICAL
ELEV	ELEVATION
EX	EXISTING
FT	FEET
GALV	GALVANIZED
GND	GROUND
GWB	GYPSUM WALL BOARD
HAZMAT	HAZARDOUS MATERIAL
M	METERS
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETERS
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NRTL	NATIONALLY RECOGNIZED TESTING LABORATORY
NTS	NOT TO SCALE
PES	PUBLIC EMERGENCY SERVICE
QTY	QUANTITY
SQFT	SQUARE FEET
SQM	SQUARE METERS
TEMP	TEMPERATURE
TYP	TYPICAL
V	VOLTS
W	WITH
WP	WEATHER PROOF
XP	EXPLOSION PROOF

SYSTEMS, EQUIPMENT, AND MATERIALS

ACU	AUTONOMOUS CONTROL UNIT
AMP	AMPLIFIER
ASSD	AIR-SAMPLING SMOKE DETECTOR
AUX	AUXILIARY 24V POWER CIRCUIT
AVC	ANALOG VOICE CIRCUIT
BDA	BI-DIRECTIONAL AMPLIFIER
BDAA	BI-DIRECTIONAL AMPLIFIER ALARM PANEL
CAX	COAXIAL CABLE
COM	NETWORK COMMUNICATION CIRCUIT
DVC	DIGITAL VOICE CIRCUIT
ECS	EMERGENCY COMMUNICATION SYSTEM
EMT	ELECTRICAL METALLIC TUBING
EOL	END OF LINE RESISTOR
FACU	FIRE ALARM CONTROL UNIT
FAS	FIRE ALARM SYSTEM
FATC	FIRE ALARM TERMINAL CABINET
FMC	FLEXIBLE METALLIC CONDUIT
FMCL	LIQUID TIGHT FLEXIBLE METALLIC CONDUIT
FO	FIBER OPTIC CABLE
FPL	POWER LIMITED FIRE ALARM CABLE
FPLP	POWER LIMITED FIRE ALARM CABLE - PLENUM
FPLR	POWER LIMITED FIRE ALARM CABLE - RISER
FSRU	FIRE SUPPRESSION RELEASING UNIT
FT	FIXED TEMPERATURE
GAP	GRAPHIC ANNUNCIATOR PANEL
HLI	HIGH LEVEL INTERFACE
IDC	INITIATING DEVICE CIRCUIT
IM	INTERFACE MODULE
JB	JUNCTION BOX
MC	METAL CLAD CABLE
MD	MAGNETIC DOOR HOLD-OPEN
MFVN	MANAGED FACILITIES-BASED VOICE NETWORK
NAC	NOTIFICATION APPLIANCE CIRCUIT
PP	PROTECTED PREMISES
PRN	PRINTER
PSTN	PUBLIC-SWITCHED TELEPHONE NETWORK
RAI	REMOTE ALARM INDICATOR
RCES	RADIO COMMUNICATION ENHANCEMENT SYSTEM
ROR	RATE OF RISE
RMC	RIGID METALLIC CONDUIT
RPS	REMOTE POWER SUPPLY
RS	RELEASING SERVICE
SLC	SIGNALING LINE CIRCUIT
SPK	SPEAKER CIRCUIT
STR	STROBE CIRCUIT
TB	TERMINAL BLOCK

DRAWING LIST

DRAWING NO.	DRAWING NAME
FA-001	FIRE ALARM - SYMBOLS & ABBREVIATIONS
FAD-102	FIRE ALARM - 2ND FLOOR DEMOLITION PLAN
FA-102	FIRE ALARM - 2ND FLOOR PLAN
FA-102A	FIRE ALARM - 2ND FLOOR ADD ALTERNATE
FA-500	FIRE ALARM - GENERAL NOTES & SEQUENCE OF OPERATIONS
FA-600	FIRE ALARM - SPECIFICATIONS
FA-700	FIRE ALARM - DETAILS & RISER DIAGRAM

ABBREVIATIONS

FAS INTERFACE MODULE / FIRE SUPPRESSION

FSA	FSRU COMMON ALARM OUTPUT (MM)
FSAD	FSRU CLEAN AGENT DISCHARGE OUTPUT (MM)
FSS	FSRU COMMON SUPERVISORY OUTPUT (MM)
FST	FSRU COMMON TROUBLE OUTPUT (MM)
FSWF	FSRU WATER FLOW OUTPUT (MM)
FSAI	FSRU COMMON ALARM INPUT (MM)
FSAO	FSRU COMMON ALARM OUTPUT (RM)
FSDI	FSRU CLEAN AGENT DISCHARGE INPUT (MM)
FSDO	FSRU CLEAN AGENT DISCHARGE OUTPUT (RM)
FSSI	FSRU COMMON SUPERVISORY INPUT (MM)
FSSO	FSRU COMMON SUPERVISORY OUTPUT (RM)
FSTI	FSRU COMMON TROUBLE INPUT (MM)
FSTO	FSRU COMMON TROUBLE OUTPUT (RM)
FWFI	FSRU WATERFLOW INPUT (MM)
FWFO	FSRU WATERFLOW OUTPUT (RM)
HPS	HIGH WATER SYSTEM PRESSURE (MM)
KMS	KEY MAINTENANCE SWITCH (MM)
LPS	LOW AIR, WATER OR CLEAN AGENT SYSTEM PRESSURE (MM)
N2P	NITROGEN GENERATOR LOW PURITY (MM)
RCA	ENERGIZE CLEAN AGENT RELEASING ACTUATOR (RM)
RPA	ENERGIZE PREACTION SPRINKLER RELEASING SOLENOID (RM)
TS	SPRINKLER / STANDPIPE VALVE TAMPER SWITCH IN OFF-NORMAL POSITION (MM)
TSC	CLEAN AGENT ACTUATOR CONTROL HEAD TAMPER SWITCH IN OFF-NORMAL POSITION (MM)
WF	SPRINKLER / STANDPIPE SYSTEM WATER FLOW (MM)
WTH	FIRE WATER TANK HIGH LEVEL ALARM (MM)
WTL	FIRE WATER TANK LOW LEVEL ALARM (MM)
WTVL	FIRE WATER TANK VERY LOW LEVEL ALARM (MM)

FAS / ELECTRIC FIRE PUMP INTERFACES

FPCS	FIRE PUMP CONNECTED TO STANDBY POWER (MM)
FPLT	FIRE PUMP LOW TEMPERATURE (MM)
FPPL	FIRE PUMP POWER PHASE LOSS (MM)
FPPV	FIRE PUMP POWER PHASE REVERSAL (MM)
FPRN	FIRE PUMP RUNNING (MM)
FPVB	FIRE PUMP VFD BYPASS ENGAGED (MM)
FPVF	FIRE PUMP VFD FAILURE (MM)
FPVO	FIRE PUMP VFD OVERPRESSURE (MM)

FAS / DIESEL FIRE PUMP INTERFACES

FPET	FIRE PUMP ENGINE TROUBLE (MM)
FPLF	FIRE PUMP LOW FUEL (MM)
FPLT	FIRE PUMP LOW TEMPERATURE (MM)
FPMS	FIRE PUMP MAIN SWITCH IN OFF OR MANUAL POSITION (MM)
FPRN	FIRE PUMP RUNNING (MM)

FAS / ELEVATOR INTERFACES

ELAI	ACTIVATE "FLASHING HAT" ALARM INDICATOR (RM)
ELHV	OPEN ELEVATOR HOISTWAY VENT (RM)
ELRA	RECALL CAB(S) TO ALTERNATE RECALL LEVEL (RM)
ELRP	RECALL CAB(S) TO PRIMARY RECALL LEVEL (RM)
ELSP	SHUNT ELEVATOR POWER (RM)
OEE	OCCUPANT EVACUATION ELEVATOR INTERFACE (RM)

FAS / HVAC & SMOKE CONTROL INTERFACES

@-AFL	SMOKE CONTROL FAN ID "@" AIRFLOW VERIFICATION (MM)
@-DSC	SMOKE CONTROL FAN ID "@" LOCAL POWER DISCONNECT OPEN (MM)
@-CL	DAMPER / COMPONENT ID "@" IN CLOSED POSITION (MM)
@-OP	DAMPER / COMPONENT ID "@" IN OPEN POSITION (MM)
OC-@	OPEN / CLOSE DAMPER / COMPONENT ID "@" (RM)
FSD	FIRE SMOKE DAMPER (RM)
SD	SMOKE DAMPER (RM)
STA-@	START HVAC / SMOKE CONTROL FAN ID "@" (RM)
STP-@	STOP HVAC / SMOKE CONTROL FAN ID "@" (RM)
XDCT	CONVENTIONAL DUCT SMOKE DETECTOR ALARM (MM)

BI-DIRECTIONAL AMPLIFIER INTERFACES

BDAC	LOSS OF AC POWER (MM)
BDAM	ANTENNA MALFUNCTION (MM)
BDBF	BATTERY CHARGER FAILURE (MM)
BDLB	LOW BATTERY (MM)
BDSM	SIGNAL BOOSTER FAILURE (MM)

CONVENTIONAL INITIATING DEVICES

CO	CONVENTIONAL CO DETECTOR ALARM (MM)
FC	CONVENTIONAL FIRE ALARM MANUAL PULL STATION (MM)
HDA	CONVENTIONAL HEAT DETECTOR ALARM (MM)
SDA	CONVENTIONAL SMOKE DETECTOR ALARM (MM)

FAS / OTHER SYSTEM INTERFACES

@-PW	EQUIPMENT ID "@" POWER OFF NORMAL (MM)
AV	OVERRIDE SOUND CONTROLS - SHUTDOWN AV SYSTEMS (RM)
BMSA	FAS COMMON ALARM TO BMS (RM)
BMSS	FAS COMMON SUPERVISORY TO BMS (RM)
BMST	FAS COMMON TROUBLE TO BMS (RM)
DR	RELEASE DOOR(S) (RM)
FOP	SHUT DOWN FUEL OIL PUMP(S) (RM)
GAS	DE-ENERGIZE NATURAL GAS SUPPLY SHUTOFF SOLENOID (RM)
GENR	EMERGENCY / STANDBY GENERATOR RUNNING (MM)
KH	KITCHEN HOOD SUPPRESSION SYSTEM DISCHARGE (MM)
LTG	OVERRIDE LIGHTING CONTROLS TO NORMAL (RM)
PASO	OVERRIDE PUBLIC ADDRESS SYSTEM - MUTE SOUND (RM)
RT	ROOM TEMPERATURE SWITCH (MM)
SECA	FAS COMMON ALARM SIGNAL TO SECURITY SYSTEM (RM)
SECS	FAS COMMON SUPERVISORY SIGNAL TO SECURITY SYSTEM (RM)
SECT	COMMON TROUBLE SIGNAL TO SECURITY SYSTEM (RM)
SM	OVERRIDE SOUND MASKING CONTROLS (RM)

SPECIAL TECHNOLOGY DETECTION

ASD1	AIR SAMPLING SMOKE DETECTION FIRE 1
ASD2	AIR SAMPLING SMOKE DETECTION FIRE 2
ASDP	AIR SAMPLING SMOKE DETECTION PRE-ALARM (ALERT/ACTION)
ASDT	AIR SAMPLING SMOKE DETECTOR / POWER SUPPLY TROUBLE
BEDA	BEAM DETECTOR ALARM (MM)
BEDT	BEAM DETECTOR TROUBLE (MM)

NOTE - NOT ALL ABBREVIATIONS USED FOR THIS PROJECT

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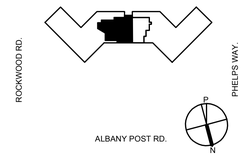
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
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Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:

FIRE ALARM
SYMBOLS & ABBREVIATIONS

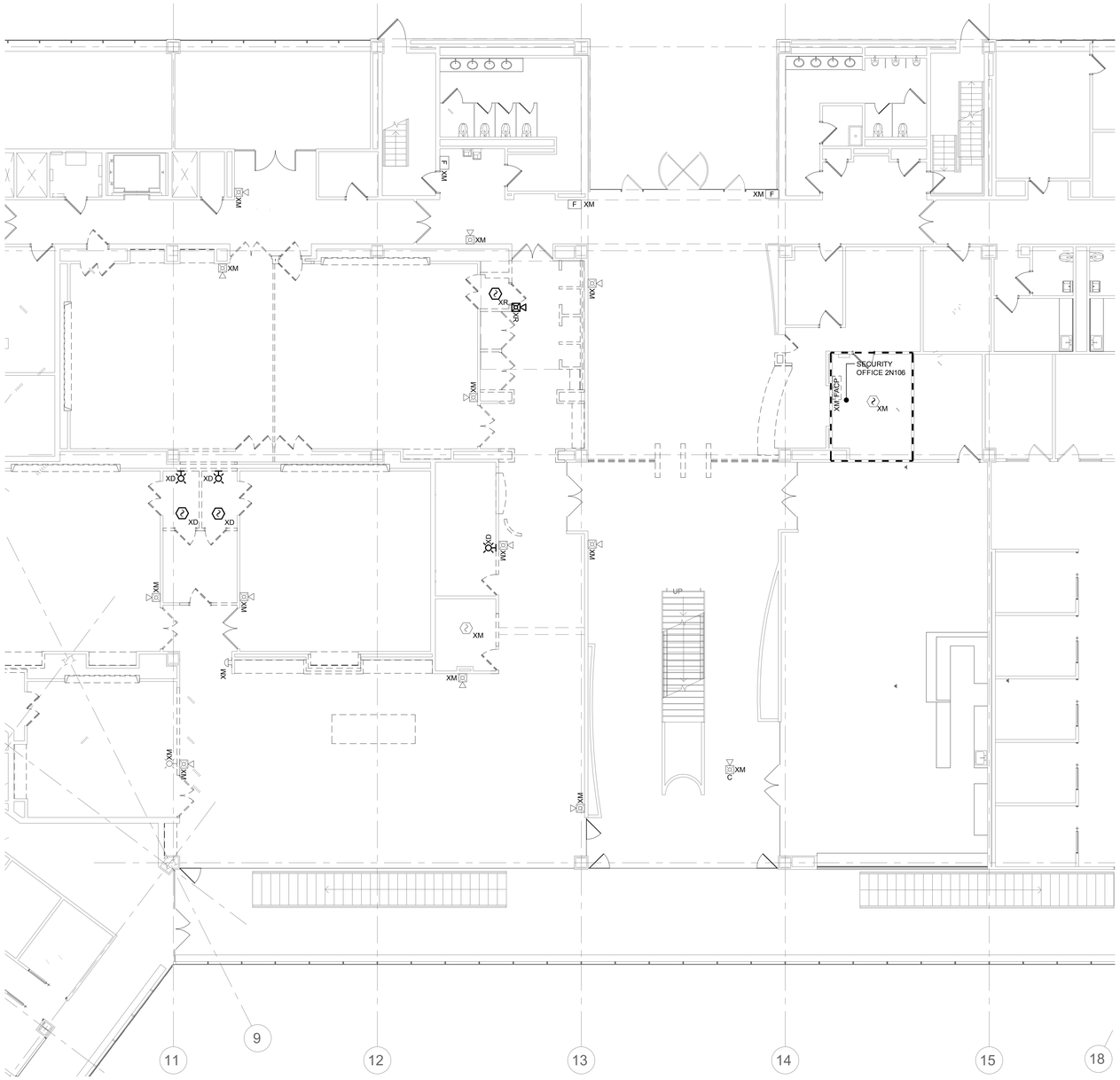
SCALE: As indicated FLOOR:

FA-001

PRINTED:
FILE:

GENERAL NOTES:

1. THE INTENT OF THE DEMOLITION / REMOVAL PLANS IS TO REPRESENT THE TOTAL REMOVAL SCOPE IN A FINAL STATE. DETERMINATION OF NECESSARY INTERMEDIATE SYSTEM REMOVAL STAGES OR PHASES INCLUDING TEMPORARY PROTECTION IN AGREEMENT WITH THE AHJ APPROVED IMPAIRMENT PLAN AND NFPA 241 FIRE SAFETY PROGRAM IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. REFER TO ARCHITECTURAL & STRUCTURAL DEMOLITION SERIES DRAWINGS FOR STRUCTURAL FRAMING PLANS, DETAILED REFLECTED CEILING PLANS, ELEVATIONS, AND SECTIONS.
3. INITIATING DEVICES AND NOTIFICATION APPLIANCES IN AREAS ADJACENT TO THE RENOVATION WORK AREA MUST REMAIN IN SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION. PROVIDE TEMPORARY CIRCUIT CONNECTIONS AS NECESSARY TO MAINTAIN SERVICE UNTIL NEW CIRCUITS ARE COMPLETED.
4. MAINTAIN MANUAL PULL BOXES AT EXITS WITHIN AREA OF RENOVATION. REPLACE PULL BOXES WITH NEW AT THE CONCLUSION OF CONSTRUCTION.
5. MAINTAIN NOMINAL AUDIBLE AND VISIBLE SIGNALING WITHIN THE RENOVATION WORK AREA. AT A MINIMUM, LOCATE COMBINATION AUDIBLE / VISIBLE NOTIFICATION APPLIANCES AT EACH EXIT FROM THE WORK AREA.
6. PROTECT EXISTING DETECTORS TO REMAIN FROM DUST AND DEBRIS THROUGHOUT THE DURATION OF CONSTRUCTION. REPLACE DETECTORS WITH NEW AT THE CONCLUSION OF CONSTRUCTION.
7. MAINTAIN THE OPERATION OF EXISTING INPUT AND OUTPUT INTERFACE MODULES TO EXISTING EQUIPMENT THROUGHOUT THE DURATION OF CONSTRUCTION.
8. PROTECT EXISTING FIRE ALARM DEVICES, APPLIANCES, AND EQUIPMENT FROM DUST, DEBRIS, PAINT, SPRAY-ON FIRE-PROOFING, AND SIMILAR THROUGHOUT THE DURATION OF CONSTRUCTION.
9. INSTALL TEMPORARY FIXED-TEMPERATURE (190°F) LINEAR HEAT DETECTION IN RENOVATION WORK AREAS WHERE THE SPRINKLER SYSTEM WILL BE IMPAIRED FOR LONGER THAN ONE (1) WORK SHIFT OR AS OTHERWISE REQUIRED BY THE AUTHORITY HAVING JURISDICTION.



1 2ND FLOOR DEMOLITION PLAN
FAD-102 SCALE: 1/8" = 1'-0"

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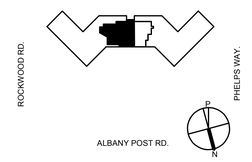

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ARCHITECTURE

Drawing:
FIRE ALARM
2ND FLOOR DEMOLITION PLAN

SCALE: As indicated FLOOR:

FAD-102

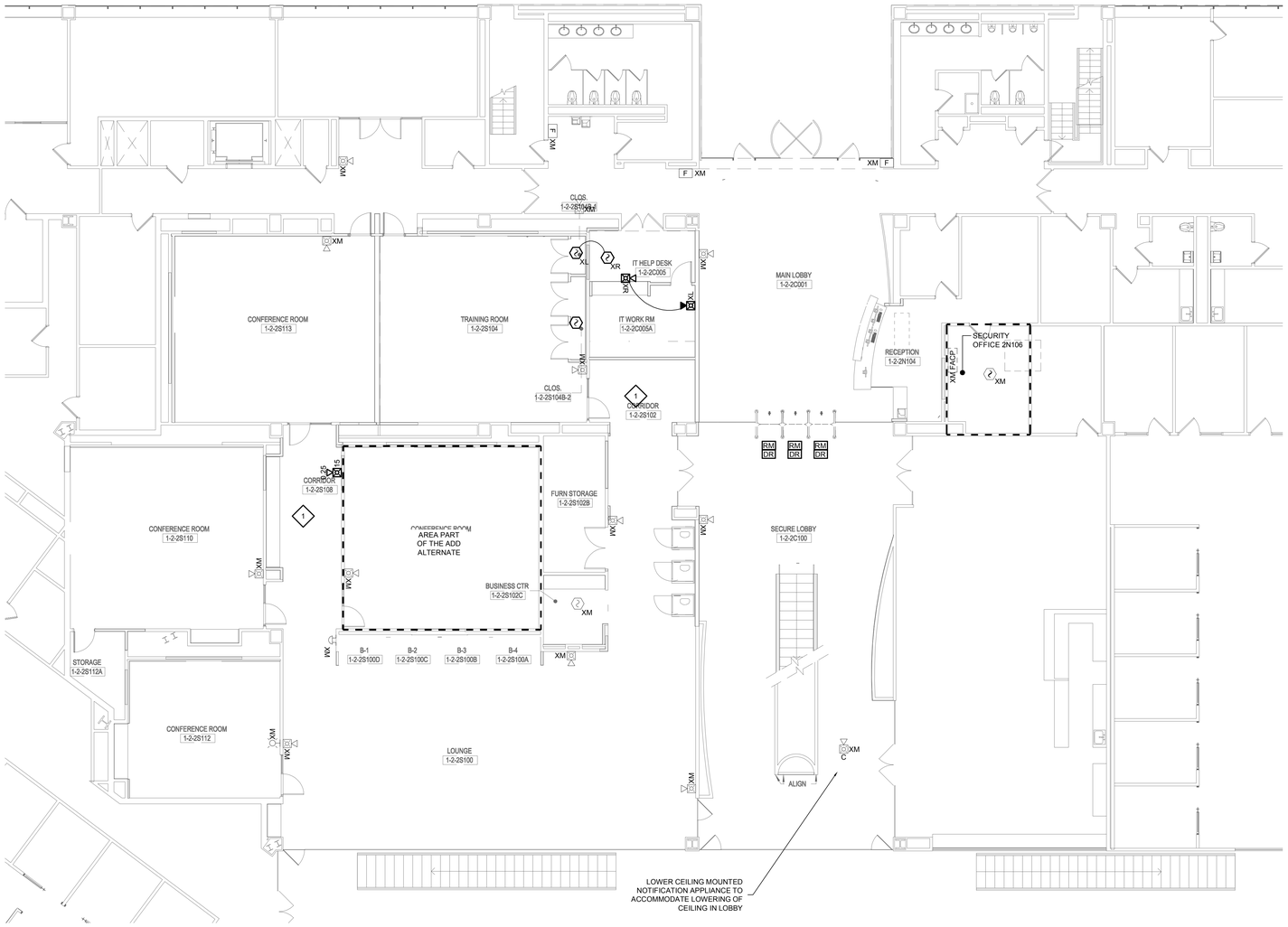
PRINTED: FILE:

GENERAL NOTES:

1. REFER TO ARCHITECTURAL & STRUCTURAL SERIES DRAWINGS FOR STRUCTURAL FRAMING PLANS, DETAILED REFLECTED CEILING PLANS, ELEVATIONS, AND SECTIONS.
2. IN AREAS WITH FINISHED CEILINGS, LOCATE CEILING MOUNTED DEVICES AND APPLIANCES IN THE CENTER OF SUSPENDED CEILING TILES, ALONG THE CENTER-LINE OF CEILING FEATURES AND IN-LINE WITH ADJACENT CEILING FIXTURES.
3. LOCATE WALL MOUNTED DEVICES AND APPLIANCES IN ACCORDANCE WITH NFPA 72 REQUIREMENTS AND IN ALIGNMENT WITH ADJACENT WALL MOUNT SWITCHES, WALL PLATES AND SIMILAR ELEMENTS.
4. LOCATE CEILING MOUNTED SMOKE AND HEAT DETECTORS WITH RESPECT TO CEILING POCKETS AND OBSTRUCTIONS SUCH AS EXPOSED BEAMS AND SOFFITS IN ACCORDANCE WITH NFPA 72.
5. COMPLY WITH NFPA 72 AND THE DESIGN INTENT INDICATED ON THE DRAWINGS WITH RESPECT TO INTERFACES REQUIRED FOR EMERGENCY CONTROL FUNCTIONS SUCH AS (BUT NOT LIMITED TO) ELEVATOR RECALL, FIRE / SMOKE DAMPER OPERATION, AND HVAC UNIT SHUTDOWN. DETERMINATION OF THE EXACT QUANTITY AND ARRANGEMENT OF INTERFACE MODULES REQUIRED SHALL BE THE RESPONSIBILITY OF THE INSTALLER'S QUALIFIED DESIGNER.
6. SHOP DRAWINGS INCLUSIVE OF DEVICE AND APPLIANCE LAYOUTS, PATHWAYS AND CIRCUITING, COMPONENT ADDRESSES, EMERGENCY CONTROL INTERFACES AND CORRESPONDING CALCULATIONS SHALL BE PREPARED BY THE INSTALLER'S QUALIFIED ENGINEERING TECHNICIAN. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND SHALL BE USED FOR FIRE ALARM SYSTEM INSTALLATION PERMITS.

KEY NOTES:

1 EXISTING NOTIFICATION APPLIANCE CIRCUITS WITHIN THE RENOVATION WORK AREA WILL BE MODIFIED TO ACCOMMODATE THE NEW WORK NOTIFICATION APPLIANCES. NEW CIRCUITS MAY BE REQUIRED, DEPENDENT ON CAPACITY OF THE EXISTING CIRCUITS, POWER SUPPLIES, AND AMPLIFIERS AS DETERMINED BY THE SYSTEM DESIGNER. THE CLASS AND STYLE OF CIRCUITS SHALL MATCH THAT OF THE EXISTING FIRE ALARM / EMERGENCY COMMUNICATION NOTIFICATION SYSTEM.



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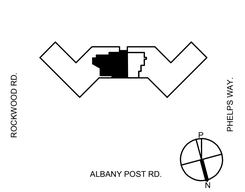

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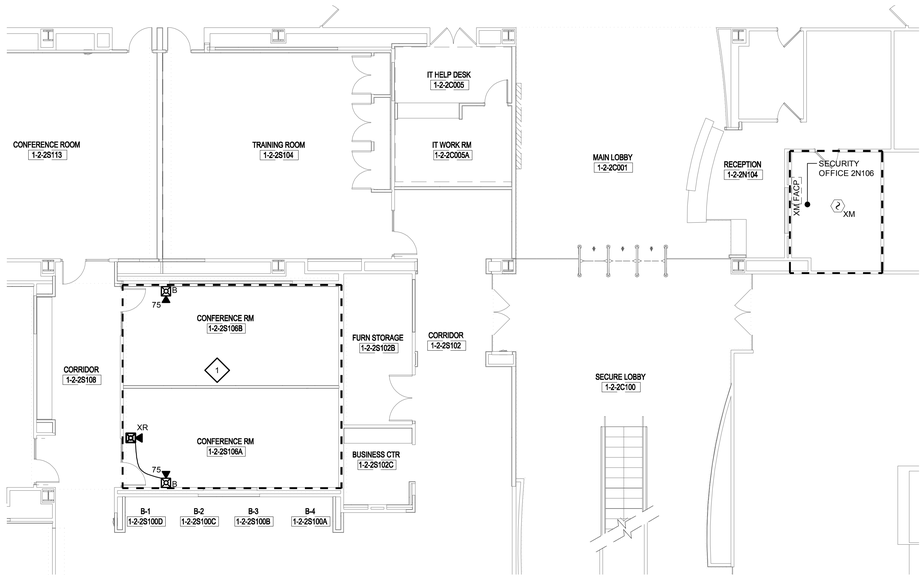
KEY NOTES:

1 EXISTING NOTIFICATION APPLIANCE CIRCUITS WITHIN THE RENOVATION WORK AREA WILL BE MODIFIED TO ACCOMMODATE THE NEW WORK NOTIFICATION APPLIANCES. NEW CIRCUITS MAY BE REQUIRED, DEPENDENT ON CAPACITY OF THE EXISTING CIRCUITS, POWER SUPPLIES, AND AMPLIFIERS AS DETERMINED BY THE SYSTEM DESIGNER. THE CLASS AND STYLE OF CIRCUITS SHALL MATCH THAT OF THE EXISTING FIRE ALARM / EMERGENCY COMMUNICATION NOTIFICATION SYSTEM.



1 2ND FLOOR CONSTRUCTION PLAN - ADD ALTERNATE
FA-102A SCALE: 1/8" = 1'-0"

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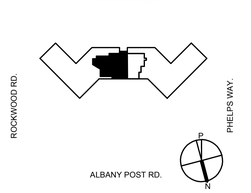
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:
FIRE ALARM
2ND FLOOR ADD ALTERNATE

SCALE: As indicated FLOOR:

FA-102A

PRINTED: FILE:

DOCUMENT SUBMITTAL PROCESS

1. THE DESIGN CONTENT OF THESE DRAWINGS IS INTENDED TO SATISFY THE STATE BUILDING CODE REQUIREMENTS FOR CONSTRUCTION DOCUMENTS. WHEN STAMPED AND SEALED BY THE ENGINEER OF RECORD THEY ARE INTENDED TO BE USED AS PART OF THE BUILDING PERMIT APPLICATION ONLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COMPLETE SHOP DRAWING SUBMITTAL INCLUSIVE OF ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS. SHOP DRAWINGS REVIEWED BY THE ENGINEER OF RECORD SHALL BE USED FOR SUPPLEMENTAL FIRE PROTECTION SYSTEM INSTALLATION PERMITS OR SUBMITTALS WHERE SUCH PERMITS OR SUBMITTALS ARE REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COMPLETE RECORD DRAWING SUBMITTAL INCLUSIVE OF ALL FIELD CHANGES AND ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS.
4. SHOP DRAWINGS AND RECORD DRAWING SUBMITTALS SHALL BE PREPARED BY THE CONTRACTOR'S QUALIFIED ENGINEERING TECHNICIAN AND SHALL INDICATE THE TECHNICIAN'S NICET CERTIFICATION NUMBER OR PROFESSIONAL ENGINEERING SEAL & SIGNATURE AS REQUIRED BY THE CONSTRUCTION DOCUMENTS.
5. THE ENGINEER OF RECORD SHALL NOT SIGN AND SEAL SHOP DRAWING OR RECORD DRAWING SUBMITTALS PREPARED BY THE CONTRACTOR. WHERE THE AUTHORITY HAVING JURISDICTION REQUIRES SHOP DRAWING OR RECORD DRAWING SUBMITTALS TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, THE SUBMITTALS SHALL BE PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR.

INSPECTION AND TESTING

1. PREPARE A TYPEWRITTEN COMPUTER-OUTPUT TEST PLAN THAT CLEARLY ESTABLISHES THE SCOPE OF FIRE ALARM AND SIGNALING SYSTEM TESTING. INCLUDE AT A MINIMUM TESTING METHODS, PERSONNEL, DURATION, PLANNED IMPAIRMENTS, AND REQUIRED COORDINATION FOR INTEGRATED TESTING OF EMERGENCY CONTROL FUNCTION INTERFACES. COORDINATE NFPA 3 "RECOMMENDED PRACTICE FOR COMMISSIONING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS" AND NFPA 4 "STANDARD FOR INTEGRATED FIRE PROTECTION AND LIFE SAFETY SYSTEM TESTING" REQUIREMENTS WITH THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA) WHERE AN FCxA IS CONTRACTED BY THE OWNER.
2. FUNCTIONAL FIELD TESTS SHALL BE WITNESSED BY THE CONSTRUCTION MANAGER (CM), THEIR DESIGNEES, AND WHEN CONTRACTED BY THE OWNER THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA); PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.
3. ACCEPTANCE FIELD TESTING SHALL BE WITNESSED BY THE CM, THEIR DESIGNEES, AND AUTHORITIES HAVING JURISDICTION (AHJ); PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.
4. PERFORM VISUAL INSPECTIONS IN ACCORDANCE WITH FIRE ALARM SYSTEM MANUFACTURER RECOMMENDATIONS AND NFPA 72 FOR INITIAL ACCEPTANCE INSPECTIONS. CORRECT DEFICIENCIES.
5. DOCUMENT INSPECTIONS BY COMPLETING APPLICABLE SECTIONS OF THE NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT.
6. PROVIDE WRITTEN NOTIFICATIONS FOR FUNCTIONAL FIELD TESTS; INCLUDE TEST PLAN.
7. PERFORM FUNCTIONAL TESTING IN ACCORDANCE WITH ACCORDANCE WITH FIRE ALARM SYSTEM MANUFACTURER RECOMMENDATIONS NFPA 72 FOR "INITIAL ACCEPTANCE TESTING". CORRECT DEFICIENCIES. REPEAT FUNCTIONAL TESTING INCLUDING RETESTING OF UNAFFECTED COMPONENTS IN ACCORDANCE WITH NFPA 72 FOR "REACCEPTANCE TESTING".
8. REPEAT FUNCTIONAL TESTING AS REQUIRED BY THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA) WHERE AN FCxA IS CONTRACTED BY THE OWNER.
9. DOCUMENT 100 PERCENT SATISFACTORY FUNCTIONAL TESTS BY COMPLETING REMAINING SECTIONS OF THE NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT.
10. SUBMIT NFPA 72 "STATEMENT OF COMPLETION" AND COMPLETED NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT.
11. PROVIDE WRITTEN NOTIFICATIONS FOR ACCEPTANCE FIELD TESTS; INCLUDE TEST PLAN. NFPA 72 "STATEMENT OF COMPLETION". NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT, AND NFPA 72 "SYSTEM RECORD OF COMPLETION".
12. PERFORM ACCEPTANCE FIELD TESTING. DEMONSTRATE SYSTEM OPERATION TO THE SATISFACTION OF THE AHJ. CORRECT AHJ NOTED DEFICIENCIES. REPEAT FUNCTIONAL TESTING INCLUDING RETESTING OF UNAFFECTED COMPONENTS IN ACCORDANCE WITH NFPA 72 FOR "REACCEPTANCE TESTING". AMEND NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT, AND NFPA 72 "SYSTEM RECORD OF COMPLETION".
13. PLACE SYSTEM INTO NORMAL OPERATING SERVICE WITHOUT SYSTEM FAULTS OR OUTSTANDING WORK.

GENERAL REQUIREMENTS

1. PURPOSE OF ENGINEERING DRAWINGS. THE DRAWINGS ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE ABSOLUTELY PRECISE; THEY ARE NOT INTENDED TO SPECIFY OR TO SHOW EVERY REQUIRED COMPONENT OF THE SYSTEMS DESCRIBED. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEM CONCEPT, THE MAIN COMPONENTS OF THE SYSTEMS, AND THEIR APPROXIMATE GEOMETRIC RELATIONSHIPS. BASED UPON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS, AND THEIR APPROXIMATE GEOMETRIC RELATIONSHIPS, PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL. GENERIC PERFORMANCE CRITERIA WIRING DIAGRAMS ARE REPRESENTED BY THE ENGINEERING DRAWINGS. ADAPT DIAGRAM ARRANGEMENT AS NECESSARY TO ACHIEVE SPECIFIED PERFORMANCE WITH FAS MANUFACTURER-SPECIFIC TECHNOLOGY.
2. MINIMUM PERFORMANCE REQUIREMENTS. INTERPRET DRAWING AND SPECIFICATION REQUIREMENTS THAT ARE MORE STRINGENT THAN FEDERAL, STATE, & MUNICIPAL CODE-MINIMUM AS DELIBERATELY CONSIDERED PERFORMANCE CRITERIA THAT ARE A MANDATORY PART OF THE WORK. WHERE DRAWINGS AND SPECIFICATIONS ARE SILENT ON A CODE REGULATED CONDITION, COMPLY WITH FEDERAL, STATE, & MUNICIPAL CODE-MINIMUM. COMPLY WITH NFPA STANDARD EDITIONS REFERENCED BY APPLICABLE FEDERAL, STATE, & MUNICIPAL CODES.
3. DESIGN STANDARDS. COMPLY WITH

   2020 BUILDING CODE OF NEW YORK STATE
   2020 FIRE CODE - NEW YORK STATE
   NFPA 70
   NFPA 72.
4. APPROVALS. PRODUCTS SHALL BE UL LISTED AND FM APPROVED FOR FIRE PROTECTION DUTY AND THE INTENDED SERVICE APPLICATION.
5. ALL WORK IS NEW. UNLESS SPECIFICALLY NOTED AS EXISTING, ALL COMPONENTS INDICATED BY THE DRAWINGS ARE NEW.
6. RELATED DOCUMENTS. THE NECESSARY UNDERSTANDING OF THE PROJECT SCOPE AND FIRE ALARM AND SIGNALING WORK CANNOT BE OBTAINED WITHOUT REVIEW OF ALL PROJECT DOCUMENTS. REVIEW COMPLETE PACKAGE OF PROJECT DRAWINGS, SPECIFICATIONS, AND NARRATIVES TO FULLY UNDERSTAND THE PROJECT SCOPE AND TO COORDINATE THE FIRE ALARM AND SIGNALING WORK WITH OTHER DIVISIONS.
7. GENERAL INSTALLATION. INSTALL SYSTEM IN A WORKMANLIKE FASHION AND IN A RECTILINEAR ARRANGEMENT WITH PATHWAYS, EQUIPMENT, DEVICES, AND APPLIANCE PERPENDICULAR AND PARALLEL WITH BUILDING ARCHITECTURAL AND STRUCTURAL ELEMENTS. CONDUIT SHALL BE TIGHT TO UNDERSIDE OF DECK. EXPOSED CONDUIT SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION AND SHALL MAINTAIN NECESSARY CLEARANCES.
8. FIRE DEPARTMENT OPERATIONS. INSTALL FIRE ALARM DISPLAYS, AND CONTROLS, PRIVATE-MODE SIGNALING APPLIANCES, SIGNAGE, AND OTHER COMPONENTS REQUIRING FIRE FIGHTER PERSONNEL INTERFACE DURING EMERGENCY OPERATIONS IN READILY IDENTIFIABLE LOCATIONS, WITH ADEQUATE OPERATIONAL CLEARANCES, AND IN ACCORDANCE WITH RESPONDING FIRE DEPARTMENT STANDARD EMERGENCY OPERATIONAL PROCEDURES.
9. RACEWAY. UNLESS OTHERWISE NOTED, WIRE AND CABLE PATHWAYS SHALL BE DEDICATED CONTINUOUS METAL RACEWAY THROUGHOUT. COMPLY WITH NFPA 72 REQUIREMENTS - BOTH MANDATORY AND RECOMMENDED - FOR MINIMUM PHYSICAL SEPARATION OF SUPPLY AND RETURN PATHWAYS.CONDUIT SHALL BE MINIMUM 3/4-IN NOMINAL WITH RED MARKINGS EVERY 10-FT OR SOLID RED COLOR.
10. WIRE AND CABLE. FPL POWER-LIMITED FIRE ALARM SHALL BE CABLE RUN CONTINUOUS BETWEEN COMPONENT TERMINALS WITHOUT SPLICES. POWER LIMITED CIRCUITS SHALL NOT BE RUN IN THE SAME RACEWAY AS NON-POWER LIMITED CIRCUITS.
11. SURVIVABILITY. FIRE ALARM EQUIPMENT AND PATHWAYS SHALL BE SURVIVABLE AGAINST THE EFFECTS OF FIRE DAMAGE AS INDICATED.
12. T-TAPPING. CIRCUITS SHALL BE ARRANGED WITHOUT T-TAPS.
13. INTERFACES. DIVISION 28 WORK INCLUDES WIRING AND TERMINATIONS FROM INTERFACE MODULES TO ASSOCIATED EQUIPMENT TERMINALS. COORDINATE VOLTAGE REQUIREMENTS OF CONTROLLED EQUIPMENT WITH THE RATINGS OF THE ASSOCIATED FIRE ALARM INTERFACE MODULE. PROVIDE INTERPOSING RELAYS WHERE INDICATED OR OTHERWISE REQUIRED. UNLESS NOTED AS PERMISSIBLE FOR FAIL-SAFE CONTROL CIRCUITS, ADDRESSABLE RELAY MODULES SHALL BE LOCATED WITHIN 3-FT OF THE ASSOCIATED DEVICE OR CIRCUIT BEING CONTROLLED.
14. PRIMARY POWER SUPPLY SHALL BE FROM A SEPARATE FUSED CIRCUIT FREE FROM FAULTS INCLUDING GROUNDS, SHORTS, OPENS, STRAY VOLTAGE, OR INDUCED VOLTAGE. EACH BREAKER SHALL BE LOCKABLE AND IDENTIFIED AT BOTH THE POWER PANEL AND THE POWERED EQUIPMENT. A SURGE PROTECTIVE DEVICE SHALL BE PROVIDED FOR EACH PRIMARY POWER CIRCUIT.
15. COORDINATION. MAKE REASONABLE AND NECESSARY MODIFICATIONS IN LAYOUTS AND COMPONENT ARRANGEMENT NEEDED TO PREVENT CONFLICT WITH AND TO ACCOMMODATE OTHER DIVISIONS OF THE WORK.
16. CLEARANCES. INSTALL CONDUIT, BOXES, CABINETS, AND SYSTEM COMPONENTS TO MAINTAIN MINIMUM CLEARANCES REQUIRED TO OPERATE AND MAINTAIN FIRE ALARM AND SIGNALING EQUIPMENT; TO INSTALL, OPERATE AND MAINTAIN EQUIPMENT AND FEATURES OF OTHER DIVISIONS; TO ACCOMMODATE FINISHED CEILING HEIGHTS; AND TO MAINTAIN MAXIMUM HEADROOM IN AREAS OPEN TO STRUCTURE ABOVE.
17. PENETRATIONS. USE SPECIFIED SLEEVES, SLEEVE SEALS, AND ESCUTCHEONS AT RACEWAY PENETRATIONS. AT FIRE RESISTANCE RATED PENETRATIONS, THE PENETRATED FLOOR OR WALL, PENETRATING RACEWAY, SLEEVE OR SLEEVE SEAL, AND FIRESTOP MATERIAL AS AN ASSEMBLY SHALL COMPLY WITH A DESIGNATED UL THROUGH-PENETRATION FIRESTOP SYSTEM.
18. ACCESS TO COMPONENTS. INSTALL WALL MOUNT EQUIPMENT CABINETS WITH CONTROLS AND DISPLAYS SUCH THAT THEY ARE READILY ACCESSIBLE AND VISIBLE TO RESPONDING PERSONNEL. INSTALL EQUIPMENT TO READILY PERMIT TESTING SERVICING, AND BATTERY REPLACEMENT. INSTALL FIRE DETECTORS SUCH THAT THEY WILL BE READILY ACCESSIBLE FOR TESTING AND MAINTENANCE FROM THE FLOOR SURFACE BELOW.
19. SUPPORT. CONDUITS, CABLES, AND RACEWAY SHALL NOT BE SUPPORTED BY CEILING GRID SYSTEMS. SECURE CONDUITS, CABLES, AND RACEWAYS TO THE BUILDING STRUCTURE.
20. IDENTIFICATION. PROVIDE IDENTIFICATION AT ALL DEVICES, APPLIANCES, MODULES, AND CABINET ENCLOSURES.
21. FIRE PROTECTION DURING CONSTRUCTION. PROVIDE FIRE PROTECTION DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO SPRINKLER / STANDPIPE SUPERVISION, AUDIBLE AND VISIBLE ALARMS, AND CENTRAL STATION SUPERVISION AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
22. ON-SITE AS-BUILT DOCUMENTATION. MAINTAIN COMPLETE AND SEPARATE SET OF INSTALLATION DRAWINGS ON SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL MODIFICATIONS CLEARLY AND ACCURATELY.

MODIFICATIONS TO EXISTING SYSTEMS

1. PREPARE, IN NARRATIVE AND DRAWING FORMAT AS DIRECTED BY THE AUTHORITY OF HAVING JURISDICTION, A FORMAL IMPAIRMENT PLAN.
2. COORDINATE IMPAIRMENT PLAN WITH GENERAL CONTRACTOR FOR INCORPORATION INTO THE NFPA 241 FIRE SAFETY PROGRAM PREPARED BY THE GENERAL CONTRACTOR.
3. IMPAIRMENT PLAN SHALL IDENTIFY THE BUILDING OCCUPANCY (OR VACANCY) DURING CONSTRUCTION AND NATURE OF THE SYSTEM IMPAIRMENT.
4. IMPAIRMENT PLAN SHALL IDENTIFY MAXIMUM IMPAIRMENT DURATION PERMITTED BY THE AUTHORITY HAVING JURISDICTION BEFORE ALTERNATE PROTECTION OR FIRE WATCHES ARE NECESSARY.
5. IMPAIRMENT PLAN SHALL IDENTIFY THE DURATION AND TIMING OF FIRE ALARM SYSTEM SHUTDOWNS AND RESULTANT REQUIREMENT FOR TEMPORARY PROTECTION MEASURES OR FIRE WATCHES, IF ANY.
6. IMPAIRMENT PLAN SHALL IDENTIFY THE NECESSARY PROVISIONS FOR TEMPORARY CIRCUIT CONNECTIONS TO EXISTING FIRE ALARM DEVICES AND APPLIANCES TO REMAIN IN SERVICE.
7. IMPAIRMENT PLAN SHALL IDENTIFY ADDITIONAL PROTECTION FEATURES INCLUDING FIRE WATCHES AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
8. FIRE ALARM OUTSIDE OF RENOVATION WORK AREA. INITIATING DEVICES AND NOTIFICATION APPLIANCES IN AREAS ADJACENT TO THE RENOVATION WORK AREA MUST REMAIN IN SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION. PROVIDE TEMPORARY CIRCUIT CONNECTIONS AS NECESSARY TO MAINTAIN SERVICE UNTIL NEW CIRCUITS ARE COMPLETED.
9. STROBE SYNCHRONIZATION ALLOWANCE. THE FLASH PATTERN OF EXISTING STROBE NOTIFICATION APPLIANCES ADJACENT TO THE RENOVATION WORK AREA BUT OPEN TO VIEW OF NEW STROBE NOTIFICATION APPLIANCES WITHIN THE RENOVATION WORK AREA SHALL BE SYNCHRONIZED. INCLUDE A COST ALLOWANCE FOR THE REPLACEMENT OF EXISTING NOTIFICATION APPLIANCES, NEW POWER SUPPLIES, SYNC-MODULES, AND OTHER NECESSARY MODULES REQUIRED FOR SYNCHRONIZATION WHERE THE EXISTING FIRE ALARM SYSTEM IS DETERMINED IN THE FIELD TO NOT BE CAPABLE OF SYNCHRONIZATION BETWEEN EXISTING AND NEW NOTIFICATION APPLIANCES.
10. FIRE ALARM PULL BOXES WITHIN RENOVATION WORK AREA. MAINTAIN MANUAL PULL BOXES AT EXITS WITHIN AREA OF RENOVATION. REPLACE PULL BOXES WITH NEW AT THE CONCLUSION OF CONSTRUCTION.
11. FIRE ALARM NOTIFICATION APPLIANCES WITHIN RENOVATION WORK AREA. MAINTAIN NOMINAL AUDIBLE AND VISIBLE SIGNALING WITHIN THE RENOVATION WORK AREA. AT A MINIMUM, LOCATE COMBINATION AUDIBLE / VISIBLE NOTIFICATION APPLIANCES AT EACH EXIT FROM THE WORK AREA.
12. SMOKE AND HEAT DETECTORS WITHIN RENOVATION WORK AREA. PROTECT EXISTING DETECTORS TO REMAIN FROM DUST AND DEBRIS THROUGHOUT THE DURATION OF CONSTRUCTION. REPLACE DETECTORS WITH NEW AT THE CONCLUSION OF CONSTRUCTION.
13. FIRE ALARM INTERFACE MODULES WITHIN RENOVATION WORK AREA. MAINTAIN THE OPERATION OF EXISTING INPUT AND OUTPUT INTERFACE MODULES TO EXISTING EQUIPMENT THROUGHOUT THE DURATION OF CONSTRUCTION.
14. PROTECTION. PROTECT EXISTING FIRE ALARM DEVICES, APPLIANCES, AND EQUIPMENT FROM DUST, DEBRIS, PAINT, SPRAY-ON FIRE-PROOFING, AND SIMILAR THROUGHOUT THE DURATION OF CONSTRUCTION.
15. FIXED-TEMPERATURE LINEAR HEAT DETECTION. INSTALL TEMPORARY FIXED-TEMPERATURE (190°F) LINEAR HEAT DETECTION IN RENOVATION WORK AREAS WHERE THE SPRINKLER SYSTEM WILL BE IMPAIRED FOR LONGER THAN ONE (1) WORK SHIFT OR AS OTHERWISE REQUIRED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE REQUIREMENTS FOR TEMPORARY LINEAR HEAT DETECTION WITH DIVISION 21 WORK. WHERE REQUIRED, INSTALL LINEAR HEAT DETECTION WITHIN EACH BEAM POCKET WITH CABLES PARALLEL TO STRUCTURAL BEAMS. LINEAR HEAT DETECTION SHALL BE SUPERVISED BY THE BUILDING FIRE ALARM SYSTEM. ACTIVATION OF THE LINEAR HEAT DETECTION SYSTEM SHALL INITIATE THE BUILDING ALARM SEQUENCE OF OPERATION.
16. PROGRAMMING. UPDATE FIRE ALARM SYSTEM PROGRAMMING AS REQUIRED TO INCLUDE NEW ADDRESSES, DELETED ADDRESSES AND SEQUENCE OF OPERATIONS CHANGES. MATCH EXISTING DEVICE ADDRESS NOMENCLATURE. VERIFY BUILDING ROOM NAMES AND NUMBERS IN FIELD.
17. EXISTING WORK STATIONS. UPDATE PROGRAMMING AND GRAPHICS FILES OF EXISTING WORKSTATIONS AS REQUIRED TO ACCURATELY REFLECT FIRE ALARM SYSTEM MODIFICATIONS.
18. EXISTING GRAPHIC ANNUNCIATORS & SWITCHES. REPLACE EXISTING GRAPHIC ANNUNCIATOR, OPERATOR SWITCHES, LABELS AND SIMILAR AS REQUIRED TO ACCURATELY REFLECT THE FIRE ALARM SYSTEM MODIFICATIONS.
19. EXISTING IDENTIFICATION. REPLACE EXISTING FIRE ALARM SIGNAGE, GRAPHICS, FRAMED MAPS, AND SIMILAR WITH NEW AS REQUIRED TO ACCURATELY REFLECT FIRE ALARM SYSTEM MODIFICATIONS.
20. EXISTING DOCUMENTATION. AMEND EXISTING PROPERTY RECORDS WITH SUPPLEMENTAL FIRE ALARM RECORD DOCUMENTATION INCLUDING DRAWINGS AND TEST REPORTS FOR THE ALTERATION WORK PERFORMED.

FIRE ALARM SYSTEM INPUTS		FIRE ALARM SYSTEM INPUT								
		A ANNUNCIATES ALARM SIGNAL AT FACP	B ACTIVATE CENTRAL OFFICE TRANSMITTER ALARM	C ACTIVATE CENTRAL OFFICE TRANSMITTER TROUBLE SUPERVISORY	D ACTIVATE AUDIBLE/VISUAL FLOOR ALARM	E ACTIVATE FAN SHUTDOWN	F CLOSE ASSOCIATED FIRE/SMOKE DAMPERS	G ACTIVATE ELEVATOR RECALL	H ACTIVATE DOOR RELEASE
1	MANUAL PULL STATION	●	●		●	●			●
2	AREA SMOKE DETECTOR	●	●		●	●	●		●
3	ELEVATOR SMOKE DETECTOR	●	●		●	●		●	●
4	DUCT SMOKE DETECTOR	●	●		●	●	●		●
5	HEAT DETECTOR	●	●		●	●			●
6	WATER FLOW	●	●		●	●	●	●	●
7	SPRINKLER TAMPER			●					
8	OPEN CIRCUIT			●					
9	GROUNDED WIRE			●					
10	AC FAILURE			●					
11	BATTERY FAULT			●					
12	WIRE TO WIRE SHORT			●					

1 FIRE ALARM SEQUENCE OF OPERATION

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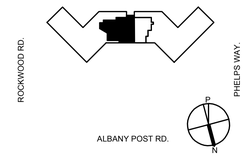

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FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:
FIRE ALARM - GENERAL NOTES AND SEQUENCE OF OPERATIONS

SCALE: As indicated FLOOR:

FA-500

PRINTED: FILE:

PART 1 - GENERAL

PART 1 - GENERAL

SUMMARY

THE WORK UNDER THIS SECTION INCLUDES ALL LABOR, MATERIALS, FEES, AND ACTIVITIES REQUIRED TO INSTALL AND / OR MODIFY, TEST, AND COMMISSION AN ADDRESSABLE FIRE ALARM AND SIGNALING SYSTEM.

RELATED DOCUMENTS

THE WORK REQUIREMENTS DESCRIBED WITHIN DIVISION 20 "COMMON MECHANICAL / ELECTRICAL REQUIREMENTS" FORM COMPLIMENTARY REQUIREMENTS TO THE SCOPE OF WORK OF THIS SECTION.

SUBMITTALS

COMPLY WITH DRAWINGS; STATE/LOCAL REGULATIONS; AND NFPA 72 CHAPTER "DOCUMENTATION". FOR PURPOSES OF APPLYING NFPA 72, ALL IDENTIFIED DOCUMENTATION REQUIREMENTS ARE A MANDATORY PART OF THE WORK, INCLUDING THOSE THAT "APPLY ONLY WHERE REQUIRED BY OTHER GOVERNING LAWS, CODES, OR STANDARDS, BY OTHER PARTS OF THE CODE; OR BY PROJECT SPECIFICATIONS OR DRAWINGS".

SUBMIT ACTION SUBMITTALS PRIOR TO APPLYING FOR AUTHORITY HAVING JURISDICTION INSTALLATION PERMITS (WHERE REQUIRED) AND SYSTEM INSTALLATION.

SUBMIT INFORMATIONAL SUBMITTALS AFTER SUCCESSFUL INITIAL SYSTEM TESTING AND PRIOR TO SCHEDULING AUTHORITY HAVING JURISDICTION FINAL APPROVAL DEMONSTRATION TESTING.

SUBMIT CLOSEOUT SUBMITTALS AS PART OF PROJECT CLOSEOUT PROCEDURE.

ACTION SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF PRODUCT, INCLUDING FURNISHED OPTIONS AND ACCESSORIES. INCLUDE STATEMENT FROM MANUFACTURER THAT ALL EQUIPMENT AND COMPONENTS HAVE BEEN TESTED AS A SYSTEM AND MEET ALL REQUIREMENTS OF THIS SPECIFICATION AND OF NFPA 72. INCLUDE STATEMENT ENDORSED BY THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE THAT THE ELECTRICAL CHARACTERISTICS OF THE SUBMITTED FIRE ALARM CABLES ARE WITHIN ALL OPERATING PARAMETERS OF THE FIRE ALARM SYSTEM AS DESIGNED AND REPRESENTED BY THE DETAILED FIRE ALARM SYSTEM SHOP DRAWINGS.

SHOP DRAWINGS: FOR FIRE ALARM SYSTEM AND FIRE SAFETY CONTROL INTERFACES. INCLUDE FLOOR PLANS, RISER DIAGRAM, COMPONENT WIRING DIAGRAMS, VOLTAGE DROP CALCULATIONS, POWER SUPPLY AND BATTERY CALCULATIONS, AMPLIFIER LOADING CALCULATIONS, SPEAKER CIRCUIT DB LOSS CALCULATIONS, CONDUIT FILL CALCULATIONS, AND SEQUENCE OF OPERATIONS.

INFORMATIONAL SUBMITTALS

QUALIFICATION DATA: FOR QUALIFIED INSTALLER AND CERTIFIED ENGINEERING TECHNICIAN.

RECORD OF INSPECTION AND TESTING. DETAILED DOCUMENTATION OF COMPLETED 100 PERCENT FIRE ALARM AND SIGNALING SYSTEM INITIAL ACCEPTANCE TESTING; OR FOR EXISTING SYSTEMS RE-ACCEPTANCE TESTING. USE NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" FORMS.

STATEMENT OF COMPLETION: WRITTEN STATEMENT THAT SYSTEM HAS BEEN INSTALLED IN ACCORDANCE WITH APPROVED PLANS AND TESTED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS AND APPROPRIATE NFPA 72 REQUIREMENTS.

CLOSEOUT SUBMITTALS

RECORDS OF COMPLETION. PROVIDE DETAILED DESCRIPTION OF INSTALLED, TESTED, AND APPROVED FIRE ALARM AND SIGNALING SYSTEM; INCLUDING DESCRIPTION OF PROTECTED PREMISES, FIRE ALARM SYSTEM AND COMPONENT SUB-SYSTEMS, FIRE SAFETY FUNCTION INTERFACES, MONITORING SERVICE, AND ALL OTHER INFORMATION REQUIRED BY NFPA 72. USE NFPA 72 "SYSTEM RECORD OF COMPLETION" FORMS. FOR MODIFICATIONS TO EXISTING SYSTEMS, FORMAT AS A DATED REVISION TO THE ORIGINAL RECORD OF COMPLETION.

RECORD DRAWINGS. PROVIDE COMPLETE SHOP DRAWING RE-SUBMITTAL UPDATED TO REFLECT ACTUAL FINAL SYSTEM INSTALLATION AND SEQUENCE OF OPERATION OF ALL COMPONENTS. FOR MODIFICATIONS TO EXISTING SYSTEMS, FORMAT AS A DATED REVISION TO THE ORIGINAL RECORD DRAWINGS.

DEVICE ADDRESS LIST. PROVIDE COMPLETE DEVICE ADDRESS LIST ORGANIZED BY SLC LOOP AND SYSTEM NODE. FOR MODIFICATIONS TO EXISTING SYSTEMS, FORMAT AS A DATED REVISION TO THE ORIGINAL DEVICE ADDRESS LIST. OPERATION AND MAINTENANCE DATA: FOR FIRE ALARM SYSTEMS AND COMPONENTS TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.

QUALITY ASSURANCE

INSTALLER QUALIFICATIONS: PERSONNEL LICENSED BY THE GOVERNING LICENSING AUTHORITY FOR THE INSTALLATION OF FIRE ALARM SYSTEMS. SUCCESSFULLY INSTALLED, TESTED, OBTAINED APPROVALS FOR, AND PUT INTO SERVICE NO LESS THAN THREE (3) FIRE ALARM SYSTEMS SIMILAR IN TYPE, SIZE, AND COMPLEXITY TO THAT OF THE WORK OF THIS SECTION.

CERTIFIED ENGINEERING TECHNICIAN QUALIFICATIONS: PERSONNEL TRAINED AND CERTIFIED BY THE FIRE ALARM SYSTEM MANUFACTURER AS AN APPROVED TECHNICIAN. SHOP DRAWINGS AND CALCULATIONS PREPARED BY PERSONNEL CERTIFIED BY NICET AS FIRE ALARM LEVEL III OR IV TECHNICIAN, OR LICENSED AS A PROFESSIONAL FIRE PROTECTION ENGINEER BY THE GOVERNING LICENSING AUTHORITY.

SOURCE LIMITATIONS FOR FIRE ALARM SYSTEM AND COMPONENTS: SINGLE VENDOR SOURCE TO PROVIDE FIRE ALARM SYSTEM COMPONENTS AND CONNECTED NON-SYSTEM COMPONENTS AS A SINGLE LISTED ADDRESSABLE FIRE ALARM AND SIGNALING SYSTEM.

MODIFICATIONS TO EXISTING SYSTEMS: COMPONENTS COMPATIBLE WITH, AND OPERATE AS AN EXTENSION OF, EXISTING SYSTEM

PRODUCT STANDARDS: LISTED IN THE "FIRE PROTECTION EQUIPMENT DIRECTORY" PUBLISHED BY UL OR THE "APPROVAL GUIDE" PUBLISHED BY FM GLOBAL.

SUBJECT TO COMPLIANCE WITH REQUIREMENTS, INDICATION OF A UL PRODUCT REQUIREMENT WITHIN PART 2 SHALL BE CONSTRUED TO BE INCLUSIVE OF A CORRESPONDING FM GLOBAL APPROVED PRODUCT, WITH OR WITHOUT UL LISTING.

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

COORDINATION

COORDINATE CONSTRUCTION OPERATIONS WITH THOSE OF OTHER SECTIONS OF THE WORK AND OTHER ENTITIES TO ENSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK. COORDINATE OPERATIONS AND PRODUCT SELECTIONS OF THIS SECTION WITH OPERATIONS AND PRODUCT SELECTIONS INCLUDED IN DIFFERENT SECTIONS THAT DEPEND ON EACH OTHER FOR PROPER INSTALLATION, CONNECTION, AND OPERATION. SCHEDULE CONSTRUCTION OPERATIONS IN SEQUENCE REQUIRED TO OBTAIN THE BEST RESULTS WHERE INSTALLATION OF ONE PART OF THE WORK DEPENDS ON INSTALLATION OF OTHER COMPONENTS, BEFORE OR AFTER ITS OWN INSTALLATION. COORDINATE INSTALLATION OF DIFFERENT COMPONENTS WITH OTHER SECTIONS OF THE WORK TO ENSURE MAXIMUM PERFORMANCE AND ACCESSIBILITY FOR REQUIRED MAINTENANCE, SERVICE, AND REPAIR. MAKE ADEQUATE PROVISIONS TO ACCOMMODATE ITEMS SCHEDULED FOR LATER INSTALLATION.

COORDINATION DRAWINGS: CONTRIBUTE TO PREPARATION OF COORDINATION DRAWINGS IN THE SEQUENCE ESTABLISHED UNDER DIVISION 1 AND DIVISION 20; INDICATE WATER-BASED FIRE SUPPRESSION SYSTEM WORK COORDINATED WITH OTHER SECTIONS OF THE WORK.

WARRANTY

SPECIAL WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE FIRE ALARM SYSTEM EQUIPMENT AND COMPONENTS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.

WARRANTY EXTENT: ALL EQUIPMENT AND COMPONENTS NOT COVERED IN THE MAINTENANCE SERVICE AGREEMENT.

WARRANTY PERIOD: ONE (1) YEAR FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

PART 2 - PRODUCTS

MANUFACTURERS

SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS LISTED AS A COMPONENT OF A SINGLE ADDRESSABLE FIRE ALARM AND SIGNALING SYSTEM TECHNOLOGY PLATFORM BY THE FOLLOWING:

- THE EXISTING BUILDING FIRE ALARM SYSTEM MANUFACTURER, SIEMENS MXL.

WHERE ADDITIONAL MANUFACTURER LISTINGS OR BASIS OF DESIGN PRODUCTS ARE INDICATED, PROVIDE PRODUCTS LISTED AND DUTY-RATED AS COMPATIBLE WITH THE SELECTED FIRE ALARM AND SIGNALING TECHNOLOGY PLATFORM.

PERFORMANCE REQUIREMENTS

OPERATIONAL PERFORMANCE: FIRE ALARM SYSTEM SHALL PROCESS ALARM, SUPERVISORY, AND TROUBLE STATUS SIGNALS AND PERFORM ASSOCIATED OUTPUT FUNCTIONS IN COMPLIANCE WITH NFPA 72, DIVISION 28 AND DRAWINGS.

CIRCUIT INTEGRITY AND FAULT PERFORMANCE: FIRE ALARM SYSTEM CIRCUIT INTEGRITY AND FUNCTIONAL PERFORMANCE CAPABILITY UNDER FAULT CONDITIONS SHALL COMPLY WITH THE NFPA 72 CIRCUIT CLASS DESIGNATIONS.

SURVIVABILITY PERFORMANCE: FIRE ALARM SYSTEM FIRE RESISTIVE PERFORMANCE CAPABILITY SHALL COMPLY WITH THE NFPA 72 CIRCUIT LEVEL DESIGNATIONS.

SYSTEM FIRE DETECTORS

GENERAL: ANALOG ADDRESSABLE SYSTEM SMOKE, SYSTEM HEAT, OR OTHER SYSTEM DETECTORS FOR SENSING PRODUCTS OF COMBUSTION; LISTED AS COMPATIBLE WITH FIRE ALARM SYSTEM CONTROL UNIT AND WITH INTEGRAL ADDRESSABLE MODULE CAPABLE OF TWO-WAY ANALOG COMMUNICATION WITH FIRE ALARM CONTROL UNIT PERMITTING REMOTE SENSITIVITY CONTROL, IDENTIFICATION OF DEVICE ADDRESS, ALARM STATUS, TROUBLE STATUS, AND TRENDING OF MAINTENANCE DATA.

DETECTOR HOUSING: LOW PROFILE, WHITE-POLYCARBONATE THERMOPLASTIC, IMPACT RESISTANT, AND FLAME RETARDANT DETECTOR HOUSING FOR MOUNTING INTO TWIST-LOCK BASE; WITH LED INDICATOR FOR INDICATION OF DETECTOR STATUS-POLING (FLASHING) OR IN OPERATION (CONSTANT).

DETECTOR BASES: CEILING- AND WALL-MOUNT, LOW PROFILE, WHITE-POLYCARBONATE THERMOPLASTIC, IMPACT RESISTANT, AND FLAME RETARDANT PLASTIC TWIST-LOCK FIXED BASE; WITH TERMINALS FOR SLC CONDUCTOR TERMINATIONS.

SELF-RESTORING: DETECTORS DO NOT REQUIRE RESETTING OR READJUSTMENT AFTER ACTUATION TO RESTORE THEM TO NORMAL OPERATION.

SYSTEM SMOKE DETECTORS

COMPLY WITH "SYSTEM FIRE DETECTORS".

UL 268, PHOTOELECTRIC SPOT-TYPE WITH INSECT-SCREEN PROTECTED SENSING CHAMBER; FOR INSTALLATION IN TWIST-LOCK SYSTEM BASES.

OPERATING TEMPERATURE RANGE: 32 – 100 DEG F (0 – 38DEG C).

OPERATING HUMIDITY RANGE: 10 - 95 PERCENT RH.

SENSITIVITY RANGE: 0.2 - 3.7 PERCENT OBS/FT.

AIR VELOCITY RATING: 0 - 4,000 FPM (0 - 1220 MPM).

NOTIFICATION APPLIANCES

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:

- SAME MANUFACTURER AS THE SELECTED MANUFACTURER OF THE FIRE ALARM AND SIGNALING SYSTEM TECHNOLOGY PLATFORM.

MOUNTING: WALL OR CEILING MOUNT AS INDICATED ON DRAWINGS.

HOUSING: THERMOPLASTIC, IMPACT RESISTANT, AND FLAME RETARDANT.

FINISH: MATCH THE EXISTING FIRE ALARM SYSTEM.

IDENTIFICATION: MATCH THE EXISTING FIRE ALARM SYSTEM.

VISIBLE NOTIFICATION APPLIANCES

COMPLY WITH "NOTIFICATION APPLIANCES".

STROBES: UL 1971, XENON STROBE WITH CLEAR POLYCARBONATE LENS MOUNTED ON AN ALUMINUM FACEPLATE AND FIELD SELECTABLE CANDELA OUTPUT SETTING WITHIN DEDICATED HOUSING, 24-V DC; WITH CANDELA SETTING INDICATOR VISIBLE THROUGH VIEWING WINDOW. STROBE FLASHING IN TEMPORAL PATTERN, SYNCHRONIZED THROUGHOUT EACH EVACUATION ZONE AND SYNCHRONIZED BETWEEN EVACUATION ZONES WHERE STROBES FROM MULTIPLE EVACUATION ZONES CAN BE OBSERVED BY A SINGLE VIEWER. COMPLY WITH DRAWINGS FOR APPLIANCE CANDELA OUTPUT.

COMBINATION AUDIBLE AND VISIBLE NOTIFICATION APPLIANCES

COMBINATION AUDIBLE AND VISIBLE NOTIFICATION APPLIANCE WITH AUDIBLE AND VISIBLE SIGNALING ELEMENTS ASSEMBLED WITHIN A COMMON HOUSING.

AUDIBLE HORN - COMPLY WITH "AUDIBLE NOTIFICATION APPLIANCES".

VISIBLE STROBE - COMPLY WITH "VISIBLE NOTIFICATION APPLIANCES".

PART 3 -EXECUTION

PART 3 - EXECUTION

PREPARATION

PREPARE AND SUBMIT "ACTION SUBMITTALS" PRIOR TO EQUIPMENT PROCUREMENT.

TECHNICIAN DESIGN AND LAYOUT

ROLES AND RESPONSIBILITIES SHALL BE AS SET FORTH IN NSPE POSITION STATEMENT NO. 1749 "SFPE/NSPE/NICET JOINT POSITION OF THE ENGINEER AND THE ENGINEERING TECHNICIAN DESIGNING THE FIRE PROTECTION SYSTEM", AVAILABLE AT NSPE.ORG. AS APPLIED TO THE WORK, THE CONTRACT DOCUMENTS HAVE BEEN PREPARED BY THE "ENGINEER" AND SHOP DRAWINGS REQUIRED BY THIS SECTION OF THE WORK ARE PREPARED BY THE "CERTIFIED ENGINEERING TECHNICIAN".

AS THE CERTIFIED ENGINEERING TECHNICIAN, PREPARE SHOP DRAWINGS INCLUDING DRAWINGS, CALCULATIONS, CERTIFICATIONS, AND STATEMENTS INDICATING SYSTEM LAYOUT, CIRCUITING, AND CAPACITIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

DESIGN AND INSTALLATION STANDARD(S):

- 2020 BUILDING CODE OF NEW YORK STATE
- 2020 FIRE CODE OF NEW YORK STATE
- NFPA 70
- NFPA 72.

COMPLY WITH THE PERFORMANCE REQUIREMENTS INDICATED BY THE CONTRACT DOCUMENTS WHERE SUCH REQUIREMENTS ARE MORE STRINGENT THAN THOSE OF THE DESIGN AND INSTALLATION STANDARD(S); OTHERWISE, COMPLY WITH THE PERFORMANCE REQUIREMENTS OF THE DESIGN AND INSTALLATION STANDARD(S).

EXAMINATION

EXAMINE AREAS AND CONDITIONS FOR COMPLIANCE WITH REQUIREMENTS FOR VENTILATION, TEMPERATURE, HUMIDITY, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK. VERIFY THAT MANUFACTURERS WRITTEN INSTRUCTIONS FOR ENVIRONMENTAL CONDITIONS HAVE BEEN PERMANENTLY ESTABLISHED IN SPACES WHERE EQUIPMENT AND WIRING ARE INSTALLED, BEFORE INSTALLATION BEGINS.

CONFIRM FIRE RESISTANCE RATING OF BUILDING CONSTRUCTION REQUIRED TO PERFORM AS FIRE ALARM SYSTEM SURVIVABILITY PROTECTION BEFORE INSTALLATION.

EXAMINE DEPTH OF STUD WALLS TO VERIFY CLEARANCE FOR FLUSH-MOUNT EQUIPMENT BEFORE INSTALLATION.

EXAMINE ROUGHING-IN FOR ELECTRICAL CONNECTIONS TO VERIFY ACTUAL LOCATIONS OF CONNECTIONS BEFORE INSTALLATION.

EXAMINE PROPOSED MOUNTING LOCATIONS OF EQUIPMENT CABINETS WITH USER DISPLAYS AND/OR CONTROLS WITH THE LOCAL FIRE OFFICIAL TO VERIFY SATISFACTORY ACCESS AND EASE OF IDENTIFICATION BEFORE INSTALLATION. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

EQUIPMENT INSTALLATION

COMPLY WITH THE MOST RESTRICTIVE REQUIREMENTS OF THIS SECTION AND APPLICABLE DIVISION 26 SECTIONS FOR THE INSTALLATION OF LOW VOLTAGE ELECTRICAL SYSTEMS.

COMPLY WITH NFPA 72, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION FOR INSTALLATION AND TESTING OF FIRE ALARM EQUIPMENT. INSTALL ALL ELECTRICAL WIRING TO COMPLY WITH REQUIREMENTS IN NFPA 70 INCLUDING, BUT NOT LIMITED TO, ARTICLE 760, "FIRE ALARM SYSTEMS."

INSTALL FIRE ALARM SYSTEM IN ACCORDANCE WITH THE REVIEWED FIRE ALARM SYSTEM SHOP DRAWINGS. WHERE FIELD MODIFICATIONS OF LAYOUT ARE NECESSARY, OBTAIN PRIOR APPROVAL FROM THE FIRE ALARM SYSTEM VENDOR'S QUALIFIED FIRE ALARM SYSTEM DESIGNER.

ARRANGE EQUIPMENT CABINETS, WIRE-WAYS, AND CONDUITS WITH ADEQUATE CLEARANCES TO FACILITATE ACCESS FOR INSPECTION, MAINTENANCE, AND COMPONENT REPLACEMENT.

INSTALL FIRE ALARM SYSTEM MODULES AND AUXILIARY COMPONENTS IN ACCESSIBLE LOCATIONS WITH BOTTOM OF MODULES AND COMPONENTS NOT LESS THAN 12 INCHES.

FLUSH-MOUNT EQUIPMENT CABINETS/BACK-BOXES NOT LOCATED IN DESIGNATED EQUIPMENT ROOMS.

FLUSH-MOUNT WALL- AND CEILING-MOUNTED INITIATING DEVICES, MODULES, INDICATORS, AND NOTIFICATION APPLIANCES UNLESS OTHERWISE INDICATED.

SURFACE-MOUNT EQUIPMENT CABINETS/BACK-BOXES LOCATED IN DESIGNATED EQUIPMENT ROOMS.

SURFACE-MOUNT INITIATING DEVICES, MODULES, INDICATORS, AND NOTIFICATION APPLIANCES INSTALLED ON CONCRETE OR MASONRY UNIT WALLS.

SURFACE-MOUNT INITIATING DEVICES INSTALLED TO THE UNDERSIDE OF BUILDING STRUCTURE.

SURFACE-MOUNT OR PENDANT-MOUNT NOTIFICATION APPLIANCES INSTALLED TO THE UNDERSIDE OF STRUCTURE.

INSTALL CEILING MOUNTED DEVICES, MODULES, INDICATORS AND NOTIFICATION APPLIANCES IN ALIGNMENT WITH ADJACENT CEILING FIXTURES AND CENTERED WITHIN CEILING TILES.

INSTALL WALL MOUNTED DEVICES, MODULES, INDICATORS AND NOTIFICATION APPLIANCES IN ALIGNMENT WITH ADJACENT SWITCHES AND WALL FIXTURES.

DO NOT INSTALL ADDRESSABLE DEVICES IN AREAS SUBJECT TO TEMPERATURE EXTREMES. USE CONVENTIONAL INITIATING DEVICES SUPERVISED BY ADDRESSABLE MONITOR MODULES REMOTELY LOCATED WITHIN AN ADJACENT CONDITIONED SPACE.

FIRE ALARM PATHWAY INSTALLATION

PATHWAYS FOR FIRE ALARM: THE PATHWAY SYSTEM FOR FIRE ALARM SHALL BE DEDICATED CONTINUOUS METAL RACEWAY THROUGHOUT.

COMPLY WITH DIVISION 26 FOR APPLICATION AND INSTALLATION OF EMT, IMC, RGS, FMC, AND LFMC WITH RESPECT TO ENVIRONMENTAL CONDITIONS AND RESISTANCE TO PHYSICAL DAMAGE.

MC FIRE ALARM CABLE SHALL BE PERMITTED IN PLACE OF CONTINUOUS METAL RACEWAY FOR THE FOLLOWING APPLICATIONS:

- CONCEALED, NON-EXPOSED AREAS.

PATHWAYS BENEATH SLAB, WITHIN SLAB, AND BURIED: COMPLY WITH ELECTRICAL DIVISION 26 FOR APPLICABLE RNC INSTALLATION REQUIREMENTS.

CLASS A AND X PATHWAYS: UNLESS GREATER DISTANCES ARE INDICATED ON THE DRAWINGS OR SPECIFICATIONS, INSTALL CLASS A AND X PATHWAYS IN COMPLIANCE WITH NFPA 72 RECOMMENDATIONS FOR MINIMUM HORIZONTAL AND VERTICAL SEPARATION BETWEEN SUPPLY AND RETURN PATHWAYS.

SYSTEM SPOT-TYPE FIRE DETECTOR INSTALLATION

LOCATE SPOT-TYPE FIRE DETECTORS IN A MANNER THAT READILY PERMITS ACCESS – WITHOUT THE NEED OF A LIFT - FROM THE FLOOR BELOW FOR DETECTOR INSPECTION, TESTING, AND MAINTENANCE.

INSTALL FIRE DETECTORS ONLY AFTER ALL DUST AND DEBRIS PRODUCING WORK IS COMPLETED.

MAINTAIN FACTORY PROVIDED DETECTOR COVERS ON FIRE DETECTORS UNTIL FIRE ALARM SYSTEM IS APPROVED FOR CLOSEOUT AND TURNOVER.

INSTALL REMOTE ALARM INDICATORS IN A VISIBLE LOCATION AS REQUIRED BY NFPA 72 FOR CONCEALED FIRE DETECTORS AND AS INDICATED BY THE DRAWINGS.

SPOT-TYPE SMOKE- AND HEAT-DETECTOR LOCATIONS AND SPACING:

- COMPLY WITH DRAWINGS, AND;
- COMPLY WITH NFPA 72 "SMOKE-SENSING FIRE DETECTORS".
- COMPLY WITH NFPA 72 "HEAT-SENSING FIRE DETECTORS".

PART 3 -EXECUTION

NOTIFICATION APPLIANCE INSTALLATION

COMPLY WITH DRAWINGS AND NFPA 72 "NOTIFICATION APPLIANCES".

WALL-MOUNTED AUDIBLE NOTIFICATION APPLIANCES: INSTALL WITH TOP OF APPLIANCE NOT LESS THAN 6 INCHES BELOW THE FINISHED CEILING AND NOT LESS THAN 90 INCHES BELOW THE FINISHED FLOOR.

WALL-MOUNTED VISIBLE AND -COMBINATION AUDIBLE/VISIBLE NOTIFICATION APPLIANCES: INSTALL WITH TOP OF APPLIANCE NOT LESS THAN 6 INCHES BELOW THE FINISHED CEILING AND THE ENTIRE APPLIANCE STROBE LENS NOT LESS THAN 80 INCHES AND NOT MORE THAN 96 INCHES ABOVE THE FINISHED FLOOR.

INSTALL ALL WALL-MOUNTED NOTIFICATION APPLIANCES WITH TOP OF APPLIANCE AT A COMMON ELEVATION WITH RESPECT TO FINISHED FLOOR.

IDENTIFICATION

IDENTIFY SYSTEM COMPONENTS, WIRING, CABLING, AND TERMINALS. COMPLY WITH DIVISION 26.

LABEL ADDRESSABLE INITIATING DEVICES AND BASES AND NOTIFICATION APPLIANCES. COMPLY WITH DRAWINGS.

GROUNDING

COMPLY WITH DIVISION 26.

COMPLY WITH FIRE ALARM SYSTEM MANUFACTURER INSTALLATION GUIDELINES FOR GROUNDING.

GROUND FIRE ALARM CONTROL UNIT AND ASSOCIATED CIRCUITS; COMPLY WITH IEEE 1100. INSTALL A GROUND WIRE FROM MAIN SERVICE GROUND TO FIRE ALARM CONTROL UNIT.

FIELD QUALITY CONTROL

DEVICES INSTALLED BUT NOT YET PLACED IN SERVICE SHALL BE PROTECTED FROM CONSTRUCTION DUST, DEBRIS, DIRT, MOISTURE, AND DAMAGE ACCORDING TO MANUFACTURER'S WRITTEN STORAGE INSTRUCTIONS.

DEVICES PLACED IN SERVICE BEFORE ALL OTHER TRADES HAVE COMPLETED CLEANUP SHALL BE REPLACED.

FIELD INSPECTIONS AND TESTING SHALL BE PERFORMED BY FIRE ALARM SYSTEM MANUFACTURER'S FACTORY-AUTHORIZED SERVICE TECHNICIANS.

PREPARE A TYPEWRITTEN COMPUTER-OUTPUT TEST PLAN THAT CLEARLY ESTABLISHES THE SCOPE OF FIRE ALARM AND SIGNALING SYSTEM TESTING. INCLUDE AT A MINIMUM TESTING METHODS, PERSONNEL, DURATION, PLANNED IMPAIRMENTS, AND REQUIRED COORDINATION FOR INTEGRATED TESTING OF EMERGENCY CONTROL FUNCTION INTERFACES.

FUNCTIONAL FIELD TESTS SHALL BE WITNESSED BY THE CONSTRUCTION MANAGER (CM) AND THEIR DESIGNEES; PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.

ACCEPTANCE FIELD TESTING SHALL BE WITNESSED BY THE CM, THEIR DESIGNEES, AND AUTHORITIES HAVING JURISDICTION (AHJ); PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.

PERFORM VISUAL INSPECTIONS IN ACCORDANCE WITH FIRE ALARM SYSTEM MANUFACTURER RECOMMENDATIONS AND NFPA 72 FOR INITIAL ACCEPTANCE INSPECTIONS. CORRECT DEFICIENCIES.

DOCUMENT INSPECTIONS BY COMPLETING APPLICABLE SECTIONS OF THE NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT.

PROVIDE WRITTEN NOTIFICATIONS FOR FUNCTIONAL FIELD TESTS; INCLUDE TEST PLAN.

PERFORM FUNCTIONAL TESTING IN ACCORDANCE WITH ACCORDANCE WITH FIRE ALARM SYSTEM MANUFACTURER RECOMMENDATIONS AND NFPA 72 FOR "INITIAL ACCEPTANCE TESTING". CORRECT DEFICIENCIES. REPEAT FUNCTIONAL TESTING INCLUDING RETESTING OF UNAFFECTED COMPONENTS IN ACCORDANCE WITH NFPA 72 FOR "REACCEPTANCE TESTING". FOR MODIFICATIONS OF EXISTING SYSTEMS, PERFORM FUNCTIONAL TESTING IN ACCORDANCE WITH FIRE ALARM SYSTEM MANUFACTURER RECOMMENDATIONS AND NFPA 72 FOR "REACCEPTANCE TESTING".

DOCUMENT 100 PERCENT SATISFACTORY FUNCTIONAL TESTS BY COMPLETING REMAINING SECTIONS OF THE NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT.

SUBMIT NFPA 72 "STATEMENT OF COMPLETION" AND COMPLETED NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT, AND NFPA 72 "SYSTEM RECORD OF COMPLETION".

PROVIDE WRITTEN NOTIFICATIONS FOR ACCEPTANCE FIELD TESTS; INCLUDE TEST PLAN, NFPA 72 "STATEMENT OF COMPLETION", NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT, AND NFPA 72 "SYSTEM RECORD OF COMPLETION".

PERFORM ACCEPTANCE FIELD TESTING. DEMONSTRATE SYSTEM OPERATION TO THE SATISFACTION OF THE AHJ. CORRECT AHJ NOTED DEFICIENCIES. REPEAT FUNCTIONAL TESTING INCLUDING RETESTING OF UNAFFECTED COMPONENTS IN ACCORDANCE WITH NFPA 72 FOR "REACCEPTANCE TESTING". AMEND NFPA 72 "SYSTEM RECORD OF INSPECTION AND TESTING" REPORT, AND NFPA 72 "SYSTEM RECORD OF COMPLETION".

PLACE SYSTEM INTO NORMAL OPERATING SERVICE WITHOUT SYSTEM FAULTS OR OUTSTANDING WORK.

DEMONSTRATION

ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN FIRE ALARM SYSTEM.

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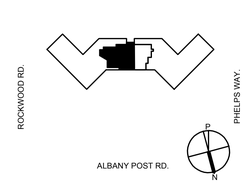
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

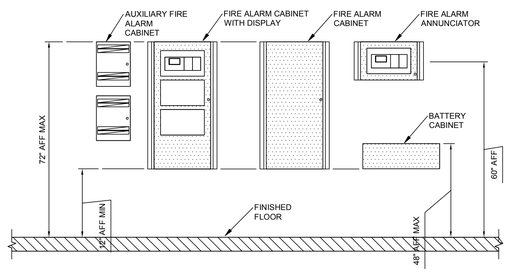
Drawing:

FIRE ALARM SPECIFICATIONS

SCALE: As indicated FLOOR:

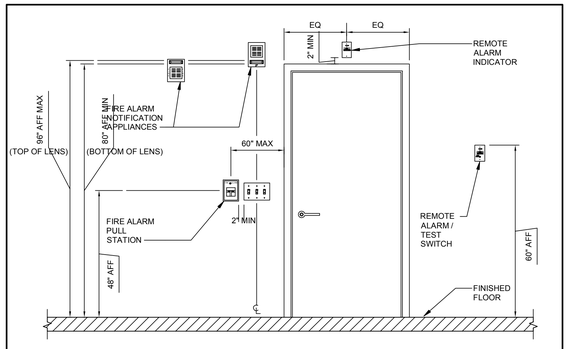
FA-600

PRINTED FILE



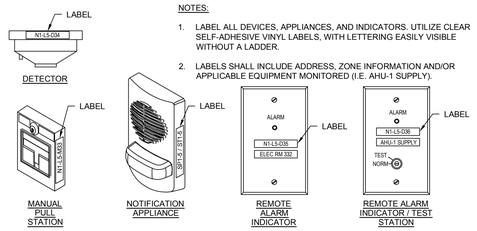
FA01 **CABINET MOUNTING HEIGHTS**

SCALE: NONE



FA02 **WALL-MOUNT DEVICE AND APPLIANCE MOUNTING LOCATION CRITERIA**

SCALE: NONE

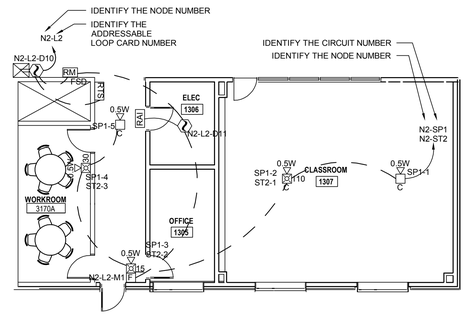


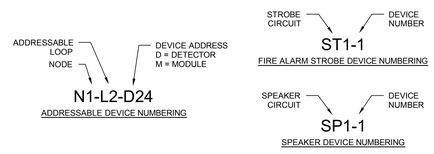
NOTES:

1. LABEL ALL DEVICES, APPLIANCES, AND INDICATORS. UTILIZE CLEAR SELF-ADHESIVE VINYL LABELS, WITH LETTERING EASILY VISIBLE WITHOUT A LADDER.
2. LABELS SHALL INCLUDE ADDRESS, ZONE INFORMATION AND/OR APPLICABLE EQUIPMENT MONITORED (I.E. AHU-1 SUPPLY).

FA03 FIRE ALARM DEVICE LABEL REQUIREMENTS

SCALE: NONE



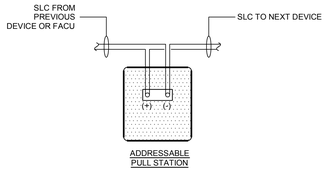


NOTES:

1. SHOP DRAWINGS SHALL INCLUDE ALL SIGNALING LINE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS WITH ALL CONNECTED DEVICES, APPLIANCES, AND COMPONENTS.
2. SHOP DRAWINGS SHALL INCLUDE EACH ADDRESS FOR EACH DEVICE ON THE ADDRESSABLE LOOP. ALL MODULES SHALL BE LABELED FOR FUNCTION (I.E. FSD FOR FIRE SMOKE DAMPER, ETC).
3. SHOP DRAWINGS SHALL INCLUDE EACH AUDIBLE DEVICE SPEAKER TAP SETTING AND SPEAKER CIRCUIT NUMBER.
4. SHOP DRAWINGS SHALL INCLUDE EACH VISIBLE DEVICE STROBE SETTING AND NAC CIRCUIT NUMBER.

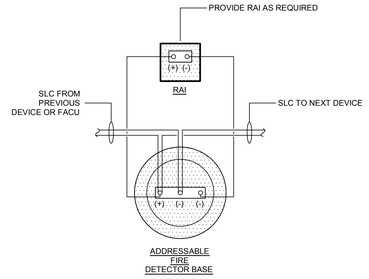
FA04 FIRE ALARM SHOP DRAWING CONTENT REQUIREMENTS

SCALE: NONE



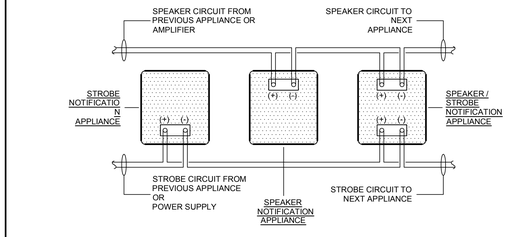
FA05 **MANUAL PULL STATION WIRING SCHEMATIC**

SCALE: NONE



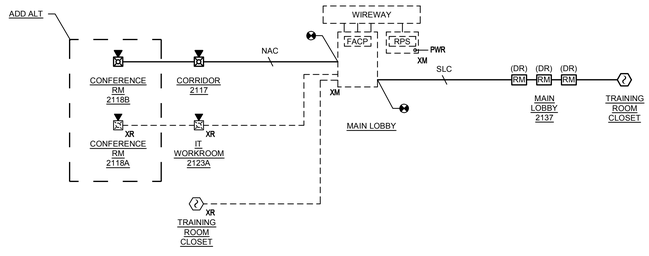
FA06 **SYSTEM FIRE DETECTOR BASE WIRING SCHEMATIC**

SCALE: NONE



FA07 **NOTIFICATION APPLIANCE (VOICE) WIRING SCHEMATIC**

SCALE: NONE



1 FIRE ALARM - RISER DIAGRAM

SCALE: NONE

GENERAL NOTES:

1. CONNECT NEW DEVICE AND NOTIFICATION APPLIANCES TO EXISTING FA SYSTEMS

FIRE ALARM CIRCUIT LEGEND

AUX	24V DC POWER CIRCUIT
COM	FIRE ALARM DATA COMMUNICATIONS CIRCUIT
FTC	FIREFIGHTER'S TELEPHONE CIRCUIT
PWR	120V AC POWER (BY ELECTRICAL)
SLC	SIGNALING LINE CIRCUIT
SPK	SPEAKER CIRCUIT
STR	STROBE CIRCUIT
———	SOLID LINE DENOTES NEW WIRE
———	THIN LINE DENOTES EXISTING WIRE

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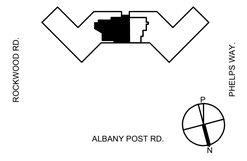
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:

FIRE ALARM
DETAILS & RISER DIAGRAM

SCALE: As indicated FLOOR:

FA-700

PRINTED FILE:

SYMBOLS

SINGLE-LINE SYMBOLS - VALVES AND PIPE ACCESSORIES

- CHECK VALVE
- FM — FLOW METER
- INDICATING ISOLATION VALVE
- INDICATING PRESSURE REGULATING ISOLATION VALVE
- NON-INDICATING (DRAIN) VALVE
- PILOT OPERATED PRESSURE CONTROL VALVE
- PILOT OPERATED PRESSURE RELIEF VALVE
- POST INDICATING ISOLATION VALVE
- PRESSURE GAUGE
- PRESSURE RELIEF VALVE (SPRING OPERATED)
- PS — PRESSURE SWITCH
- SELECTOR VALVE (GASEOUS AGENTS / WATER MIST)
- TEST AND DRAIN VALVE
- WATER FLOW SWITCH
- AR — WET SYSTEM AIR RELEASE VENT

SINGLE-LINE SYMBOLS - RISER AND ALARM CHECK VALVES

- WET-PIPE RISER CHECK VALVE
- WET-PIPE ALARM CHECK VALVE
- DRY-PIPE ALARM CHECK VALVE
- PREACTION ALARM CHECK VALVE
- DELUGE ALARM CHECK VALVE

SINGLE-LINE SYMBOLS - BACKFLOW PREVENTERS

- BACKFLOW PREVENTER - DOUBLE CHECK VALVE ASSEMBLY
- BACKFLOW PREVENTER - REDUCED PRESSURE ZONE ASSEMBLY

SINGLE-LINE SYMBOLS - FIRE HOSE VALVES

- FIRE HOSE VALVE
- FIRE HOSE VALVE - PRESSURE REGULATING TYPE
- FIRE HOSE VALVE AND HOSE REEL
- FIRE HOSE VALVE CABINET
- FIRE HOSE VALVE / HOSE REEL CABINET

SINGLE-LINE SYMBOLS - CONNECTIONS

- FDC — FIRE DEPARTMENT INLET CONNECTION
- FDH — FIRE DEPARTMENT OUTLET HYDRANT CONNECTION
- TH — FIRE PUMP TEST HEADER CONNECTION

SYMBOLS

SPRINKLERS AND NOZZLES

- PENDENT FRAME STANDARD SPRAY PATTERN SPRINKLER
- UPRIGHT FRAME STANDARD SPRAY PATTERN SPRINKLER
- SIDEWALL FRAME STANDARD SPRAY PATTERN SPRINKLER
- EC — PENDENT FRAME EXTENDED COVERAGE SPRAY PATTERN SPRINKLER
- EC — UPRIGHT FRAME EXTENDED COVERAGE SPRAY PATTERN SPRINKLER
- EC — SIDEWALL FRAME EXTENDED COVERAGE SPRAY PATTERN SPRINKLER
- DRY — PENDENT FRAME STANDARD SPRAY PATTERN DRY SPRINKLER
- DRY — UPRIGHT FRAME STANDARD SPRAY PATTERN DRY SPRINKLER
- DRY — SIDEWALL FRAME STANDARD SPRAY PATTERN DRY SPRINKLER
- ESFR — PENDENT FRAME ESFR SPRINKLER
- ESFR — UPRIGHT FRAME ESFR SPRINKLER
- CMSA — PENDENT FRAME CMSA STORAGE PROTECTION SPRINKLER
- CMSA — UPRIGHT FRAME CMSA STORAGE PROTECTION SPRINKLER
- WS — PENDENT-VERTICAL SIDEWALL FRAME NRTL LISTED WINDOW SPRINKLER
- WS — HORIZONTAL SIDEWALL FRAME NRTL LISTED WINDOW SPRINKLER
- A — UPRIGHT FRAME NRTL LISTED ATTIC SPRINKLER
- CC — UPRIGHT FRAME NRTL LISTED COMBUSTIBLE CONCEALED SPACE SPRINKLER
- R — PENDENT FRAME RESIDENTIAL SPRINKLER
- R — SIDEWALL FRAME RESIDENTIAL SPRINKLER
- PENDENT FRAME STANDARD SPRAY PATTERN OPEN DELUGE SPRINKLER
- UPRIGHT FRAME STANDARD SPRAY PATTERN OPEN DELUGE SPRINKLER
- SIDEWALL FRAME STANDARD SPRAY PATTERN OPEN DELUGE SPRINKLER
- 360-DEGREE DISCHARGE NOZZLE
- 180-DEGREE DISCHARGE NOZZLE

EXISTING EQUIPMENT*

* LINE-TYPE APPLIES UNIFORMLY TO EXISTING DIV. 21 EQUIPMENT AND PIPING; SYMBOLS SHOWN ARE REPRESENTATIVE.

- EXISTING DIV. 21 EQUIPMENT AND PIPING
- REMOVAL OF EXISTING DIV. 21 EQUIPMENT AND PIPING
- EXISTING SPRINKLER OR NOZZLE
- D — REMOVAL OF EXISTING SPRINKLER OR NOZZLE
- R — RELOCATION OF EXISTING SPRINKLER OR NOZZLE

GENERAL ANNOTATION

- x / dwg — SECTION NUMBER / DRAWING NUMBER
- y / dwg — ELEVATION NUMBER / DRAWING NUMBER
- z / dwg — DETAIL / PART-PLAN NUMBER / DRAWING NUMBER
- r / # — RISER DESIGNATION - SYSTEM TYPE / RISER DESIGNATION - RISER NUMBER
- BEAM PENETRATION
- CONNECT TO EXISTING
- DIRECTION OF SLOPE
- FLOW ARROW
- XXX — HYDRAULIC CALCULATION NODE
- ### — KEY NOTE

NOTE - NOT ALL SYMBOLS USED FOR THIS PROJECT

ABBREVIATIONS

GENERAL

ACT	ACOUSTICAL CEILING TILE
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AHJ	AUTHORITY HAVING JURISDICTION
ARCH	ARCHITECT
BLDG	BUILDING
BOP	BOTTOM OF PIPE
BOR	BOTTOM OF RISER
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CONT	CONTINUATION
DN	DOWN
DWG	DRAWING
ELEC	ELECTRICAL
ELEV	ELEVATION
EX	EXISTING
FT	FEET
GALV	GALVANIZED
GPM	GALLONS PER MINUTE
GWB	GYPSUM WALL BOARD
HAZMAT	HAZARDOUS MATERIAL
INV	INVERT
INT	INTERLOCK
LPM	LITERS PER MINUTE
M	METERS
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETERS
NA	NOT APPLICABLE
NAS	NO AUTOMATIC SPRINKLERS
NHS	NATIONAL HOSE STANDARD
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NRTL	NATIONALLY RECOGNIZED TESTING LABORATORY
NTS	NOT TO SCALE
OED	OPEN-END DRAIN
QTY	QUANTITY
SQFT	SQUARE FEET
SQM	SQUARE METERS
TEMP	TEMPERATURE
TOR	TOP OF RISER
TYP	TYPICAL
W/	WITH

SYSTEM DESIGNATIONS

CA	CLEAN AGENT
DFM	DRY STANDPIPE FEED-MAIN
DSP	DRY SPRINKLER
DST	DRY STANDPIPE
FDC	FIRE DEPARTMENT CONNECTION
FSP	FOAM-WATER SPRINKLER
FWS	FIRE WATER SERVICE
HCO2	HIGH PRESSURE CARBON DIOXIDE
LCO2	LOW PRESSURE CARBON DIOXIDE
PSP	PREACTION SPRINKLER
SD	SPRINKLER DRAIN
TH	TEST HEADER
WBFS	WATER-BASED FIRE SUPPRESSION
WCST	WET COMBINATION SPRINKLER / STANDPIPE
WFM	WET STANDPIPE FEED-MAIN
WSP	WET SPRINKLER
WST	WET STANDPIPE
WMST	WATER MIST

EQUIPMENT & MATERIALS

ACV	ALARM CHECK VALVE
ATS	AUTOMATIC TRANSFER SWITCH
BFP	BACKFLOW PREVENTER
BV	BUTTERFLY OR BALL INDICATING VALVE
CKV	CHECK VALVE
DAV	DRY-PIPE ALARM VALVE
DVCA	DOUBLE CHECK VALVE ASSEMBLY
DCDA	DOUBLE CHECK VALVE DETECTOR ASSEMBLY
DRA	DRY-PIPE MAIN RISER ASSEMBLY
FHV	FIRE HOSE VALVE
FHVC	FIRE HOSE VALVE CABINET
FHZC	FIRE HOSE VALVE & ZONE CONTROL ASSEMBLY
FPU-#	FIRE PUMP
FPUC-#	FIRE PUMP CONTROLLER
FRA	FOAM-WATER SPRINKLER MAIN RISER ASSEMBLY
FS	FLOW SWITCH
LPS	LOW PRESSURE SWITCH
NRS	NON RISING STEM GATE VALVE
OSY	OUTSIDE SCREW & YOKE INDICATING VALVE
PIV	POST INDICATING VALVE
PIVW	POST INDICATING VALVE - WALL MOUNT
PMP-#	PRESSURE MAINTENANCE PUMP
PMPC-#	PRESSURE MAINTENANCE PUMP CONTROLLER
PRA	PREACTION MAIN RISER ASSEMBLY
PRAC	PREACTION MAIN RISER ASSEMBLY CABINET
PRV	PRESSURE REGULATING VALVE
PS	PRESSURE SWITCH
RPZA	REDUCED PRESSURE ZONE ASSEMBLY
SDR	SPRINKLER DRAIN RISER
TH	TEST HEADER
TS	TAMPER SWITCH
VFD	VARIABLE FREQUENCY DRIVE
WAV	WET-PIPE ALARM VALVE
WRA	WET-PIPE MAIN RISER ASSEMBLY
ZCA	ZONE CONTROL ASSEMBLY
ZCAC	ZONE CONTROL ASSEMBLY CABINET

NOTE - NOT ALL ABBREVIATIONS USED FOR THIS PROJECT

DOCUMENT SUBMITTAL PROCESS

1. THE DESIGN CONTENT OF THESE DRAWINGS IS INTENDED TO SATISFY THE STATE BUILDING CODE REQUIREMENTS FOR CONSTRUCTION DOCUMENTS. WHEN STAMPED AND SEALED BY THE ENGINEER OF RECORD THEY ARE INTENDED TO BE USED AS PART OF THE BUILDING PERMIT APPLICATION ONLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COMPLETE SHOP DRAWING SUBMITTAL INCLUSIVE OF ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS. SHOP DRAWINGS REVIEWED BY THE ENGINEER OF RECORD SHALL BE USED FOR SUPPLEMENTAL FIRE PROTECTION SYSTEM INSTALLATION PERMITS OR SUBMITTALS WHERE SUCH PERMITS OR SUBMITTALS ARE REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COMPLETE RECORD DRAWING SUBMITTAL INCLUSIVE OF ALL FIELD CHANGES AND ALL INFORMATION REQUIRED BY THE STATE BUILDING CODE AND THE CONSTRUCTION DOCUMENTS.
4. SHOP DRAWINGS AND RECORD DRAWING SUBMITTALS SHALL BE PREPARED BY THE CONTRACTOR'S QUALIFIED ENGINEERING TECHNICIAN AND SHALL INDICATE THE TECHNICIAN'S NICET CERTIFICATION NUMBER OR PROFESSIONAL ENGINEERING SEAL & SIGNATURE AS REQUIRED BY THE CONSTRUCTION DOCUMENTS.
5. THE ENGINEER OF RECORD SHALL NOT SIGN AND SEAL SHOP DRAWING OR RECORD DRAWING SUBMITTALS PREPARED BY THE CONTRACTOR. WHERE THE AUTHORITY HAVING JURISDICTION REQUIRES SHOP DRAWING OR RECORD DRAWING SUBMITTALS TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER, THE SUBMITTALS SHALL BE PREPARED BY A QUALIFIED PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR.

INSPECTION AND TESTING

1. PREPARE A TYPEWRITTEN COMPUTER-OUTPUT TEST PLAN THAT CLEARLY ESTABLISHES THE SCOPE OF FIRE SUPPRESSION SYSTEM TESTING. INCLUDE AT A MINIMUM TESTING METHODS, PERSONNEL, DURATION, PLANNED IMPAIRMENTS, AND REQUIRED COORDINATION FOR INTEGRATED TESTING OF EMERGENCY CONTROL FUNCTION INTERFACES. COORDINATE NFPA 3 "RECOMMENDED PRACTICE FOR COMMISSIONING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS" AND NFPA 4 "STANDARD FOR INTEGRATED FIRE PROTECTION AND LIFE SAFETY SYSTEM TESTING" REQUIREMENTS WITH THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA) WHERE AN FCxA IS CONTRACTED BY THE OWNER.
2. FUNCTIONAL FIELD TESTS SHALL BE WITNESSED BY THE CONSTRUCTION MANAGER (CM), THEIR DESIGNEES, AND WHEN CONTRACTED BY THE OWNER THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA); PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.
3. ACCEPTANCE FIELD TESTING SHALL BE WITNESSED BY THE CM, THEIR DESIGNEES, AND AUTHORITIES HAVING JURISDICTION (AHJ); PROVIDE NOTIFICATIONS A MINIMUM OF TWO (2) WEEKS IN ADVANCE.
4. FLUSH, TEST, AND INSPECT SYSTEM PIPING IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS.
5. HYDROSTATICALLY TEST SYSTEM PIPING IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.
6. INSPECT AND ADJUST ALARM AND DELAY SETTINGS OF ALARM DEVICES.
7. INSPECT AND ADJUST ALARM VALVE TRIM SETTINGS.
8. INSPECT AND ADJUST AIR / NITROGEN SUPPLY AND DELIVERY SYSTEM SETTINGS.
9. INSPECT AND ADJUST PRESSURE RELIEF VALVES SUCH THAT NO WATER IS DISCHARGED UNDER NORMAL SYSTEM WORKING CONDITIONS.
10. INSPECT AND ADJUST PRESSURE REGULATING VALVES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
11. VERIFY THAT EQUIPMENT HOSE THREADS ARE SAME AS LOCAL
12. PROVIDE WRITTEN NOTIFICATIONS FOR FUNCTIONAL FIELD TESTS; INCLUDE TEST PLAN.
13. FUNCTIONALLY TEST WATER-BASED FIRE SUPPRESSION SYSTEMS, INCLUDING REQUIRED FULL-FLOW TESTS, IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. COMBINE TESTS TO CONSERVE WATER. CORRECT DEFICIENCIES AND RETEST SATISFACTORY RESULTS ARE ACHIEVED.
14. REPEAT FUNCTIONAL TESTING AS REQUIRED BY THE FIRE AND LIFE SAFETY COMMISSION AGENT (FCxA) WHERE AN FCxA IS CONTRACTED BY THE OWNER.
15. PREPARE TEST AND INSPECTION REPORTS. USE NFPA "CONTRACTOR'S MATERIAL AND TEST CERTIFICATE" FORMAT.
16. PLACE SYSTEM INTO NORMAL OPERATING SERVICE WITHOUT SYSTEM IMPAIRMENTS OR OUTSTANDING WORK.

DRAWING LIST

GENERAL REQUIREMENTS

1. PURPOSE OF ENGINEERING DRAWINGS. THE DRAWINGS ARE DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE ABSOLUTELY PRECISE; THEY ARE NOT INTENDED TO SPECIFY OR TO SHOW EVERY REQUIRED COMPONENT OF THE SYSTEMS DESCRIBED. THE PURPOSE OF THE DRAWINGS IS TO INDICATE A SYSTEM CONCEPT, THE MAIN COMPONENTS OF THE SYSTEMS, AND THEIR APPROXIMATE GEOMETRIC RELATIONSHIPS. BASED UPON THE SYSTEMS CONCEPT, THE MAIN COMPONENTS, AND THEIR APPROXIMATE GEOMETRIC RELATIONSHIPS, PROVIDE ALL OTHER COMPONENTS AND MATERIALS NECESSARY TO MAKE THE SYSTEMS FULLY COMPLETE AND OPERATIONAL.
2. MINIMUM PERFORMANCE REQUIREMENTS. INTERPRET DRAWING AND SPECIFICATION REQUIREMENTS THAT ARE MORE STRINGENT THAN FEDERAL, STATE, & MUNICIPAL CODE-MINIMUM AS DELIBERATELY CONSIDERED PERFORMANCE CRITERIA THAT ARE A MANDATORY PART OF THE WORK. WHERE DRAWINGS AND SPECIFICATIONS ARE SILENT ON A CODE REGULATED CONDITION, COMPLY WITH FEDERAL, STATE, & MUNICIPAL CODE-MINIMUM. COMPLY WITH NFPA STANDARD EDITIONS REFERENCED BY APPLICABLE FEDERAL, STATE, & MUNICIPAL CODES.
3. DESIGN STANDARDS. COMPLY WITH:
   - 2020 BUILDING CODE OF NEW YORK STATE
   - 2020 FIRE CODE NEW YORK STATE
   - NFPA 13
   - NFPA 14
4. APPROVALS. PRODUCTS SHALL BE UL LISTED AND | OR FM APPROVED FOR FIRE PROTECTION DUTY AND THE INTENDED SERVICE APPLICATION.
5. ALL WORK IS NEW. UNLESS SPECIFICALLY NOTED AS EXISTING, ALL COMPONENTS INDICATED BY THE DRAWINGS ARE NEW.
6. RELATED DOCUMENTS. THE NECESSARY UNDERSTANDING OF THE PROJECT SCOPE AND FIRE SUPPRESSION WORK CANNOT BE OBTAINED WITHOUT REVIEW OF ALL PROJECT DOCUMENTS. REVIEW COMPLETE PACKAGE OF DRAWINGS, SPECIFICATIONS, AND NARRATIVES TO FULLY UNDERSTAND THE PROJECT SCOPE AND TO COORDINATE THE FIRE SUPPRESSION WORK WITH OTHER DIVISIONS.
7. GENERAL INSTALLATION. INSTALL SYSTEM IN A WORKMANLIKE FASHION AND IN A RECTILINEAR ARRANGEMENT WITH PIPING AND SYSTEM COMPONENTS PERPENDICULAR AND PARALLEL WITH BUILDING ARCHITECTURAL AND STRUCTURAL ELEMENTS. PIPING SHALL BE CONCEALED ABOVE CEILING FINISHES. EXPOSED PIPING SHALL BE APPROVED BY THE ARCHITECT PRIOR TO INSTALLATION AND SHALL MAINTAIN NECESSARY CLEARANCES.
8. FIRE DEPARTMENT OPERATIONS. INSTALL FIRE HOSE VALVES, INLET CONNECTIONS, OUTLET CONNECTIONS, ISOLATION VALVES, PUMP CONTROLLERS, SIGNAGE AND OTHER COMPONENTS REQUIRING FIRE FIGHTER PERSONNEL INTERFACE DURING EMERGENCY OPERATIONS IN READILY IDENTIFIABLE LOCATIONS, WITH ADEQUATE OPERATIONAL CLEARANCES, AND IN ACCORDANCE WITH RESPONDING FIRE DEPARTMENT STANDARD EMERGENCY OPERATIONAL PROCEDURES.
9. ALIGNMENT. SPRINKLERS INSTALLED IN FINISHED CEILINGS SHALL BE CENTER OF TILE OR ALIGNED WITH CEILING COMPONENTS WITH NO VISIBLE DEVIATION AND IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS.
10. RETURN BENDS. INSTALL PENDENT SPRINKLERS IN FINISHED CEILINGS WITH RETURN BENDS CONNECTED TO THE TOP OF THE SUPPLYING BRANCH PIPE OR FLEXIBLE SPRINKLER CONNECTION.
11. BUSHINGS. USE CONCENTRIC REDUCING FITTINGS FOR PIPE SIZE TRANSITIONS AND SPRINKLER NPT CONNECTIONS. BUSHINGS SHALL NOT BE USED.
12. TEMPERATURE RATING. PROVIDE ORDINARY TEMPERATURE RATED SPRINKLERS UNLESS OTHERWISE NOTED. PROVIDE INTERMEDIATE OR HIGH TEMPERATURE RATED SPRINKLERS WHERE REQUIRED BY NFPA 13 BASED UPON PROXIMITY TO HEAT SOURCES OR AMBIENT CEILING TEMPERATURE.
13. GUARDS. INSTALL GUARDS ON SPRINKLERS SUSCEPTIBLE TO MECHANICAL DAMAGE INCLUDING, BUT NOT LIMITED TO SPRINKLERS IN MECHANICAL ROOMS AND SPRINKLERS INSTALLED LESS THEN 7 FT AFF.
14. DRAINAGE. PRE-PLAN SYSTEM INSTALLATION WITH OTHER DIVISIONS OF WORK TO MINIMIZE THE NEED FOR AUXILIARY DRAIN VALVES. ARRANGE SYSTEM PIPING TO DRAIN BACK TO MAIN RISER DRAIN VALVE OR ZONE CONTROL ASSEMBLY DRAIN VALVE.
15. COORDINATION. MAKE REASONABLE AND NECESSARY MODIFICATIONS IN LAYOUTS AND COMPONENT ARRANGEMENT NEEDED TO PREVENT CONFLICT WITH AND TO ACCOMMODATE OTHER DIVISIONS OF THE WORK.
16. CLEARANCES. INSTALL PIPING, VALVES, AND SYSTEM COMPONENTS TO MAINTAIN MINIMUM CLEARANCES REQUIRED TO OPERATE AND MAINTAIN FIRE SUPPRESSION VALVES AND EQUIPMENT; TO INSTALL, OPERATE AND MAINTAIN EQUIPMENT AND FEATURES OF OTHER DIVISIONS; TO ACCOMMODATE FINISHED CEILING HEIGHTS; AND TO MAINTAIN MAXIMUM HEADROOM IN AREAS OPEN TO STRUCTURE ABOVE.
17. PENETRATIONS. USE SPECIFIED SLEEVES, SLEEVE SEALS, AND ESCUTCHEONS AT PIPE PENETRATIONS. AT FIRE RESISTANCE RATED PENETRATIONS, THE PENETRATED FLOOR OR WALL, PENETRATING PIPE, SLEEVE OR SLEEVE SEAL, AND FIRESTOP MATERIAL AS AN ASSEMBLY SHALL COMPLY WITH A DESIGNATED UL THROUGH-PENETRATION FIRESTOP SYSTEM.
18. ACCESS TO VALVES. INSTALL VALVES SUCH THAT THEY ARE READILY ACCESSIBLE AND VISIBLE. LOCATE OVERHEAD VALVES SUCH THAT THEY ARE ACCESSIBLE VIA 8-FT (MAX) LADDER AND WITH POSITION INDICATOR CLEARLY VISIBLE FROM THE FLOOR BELOW.
19. SUPPORT. ATTACH HANGERS AND SUPPORTS DIRECTLY TO STRUCTURAL BEAMS, COLUMNS AND FLOOR SLABS. DO NOT ATTACH TO METAL-DECK ROOF / CEILING PANS. DO NOT ATTACH OR SUPPORT ANY DIVISION 21 WORK FROM NON-STRUCTURAL ELEMENTS OF ANY KIND. THREADED ROD SHALL NOT BE FORMED OR BENT. ALL BOWED, BENT OR OTHERWISE DEFORMED THREADED ROD SHALL BE REPLACED WITH NEW.
20. RESTRAINT AGAINST MOVEMENT. INDEPENDENT OF CONSIDERATION OF SEISMIC PROTECTION, FIRE SUPPRESSION FEED-MAIN, STANDPIPE, AND SYSTEM RISER PIPING SUPPLIED BY FIRE PUMPS SHALL BE RIGIDLY RESTRAINED AGAINST MOVEMENT RESULTING FROM PUMP-INDUCED WATER PRESSURE AND VELOCITY FORCES.
21. IDENTIFICATION. INSTALL VALVE SIGNAGE AND TAGS AT EACH CONTROL VALVE. INSTALL PIPE IDENTIFICATION LABELS; INSTALL HYDRAULIC DATA SIGNS AT EACH SYSTEM RISER; INSTALL SIGNAGE AT FIRE DEPARTMENT CONNECTIONS INDICATING SYSTEMS SERVED AND REQUIRED PRESSURE; INSTALL SUPPLEMENTAL SIGNAGE AS DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
22. FIRE PROTECTION DURING CONSTRUCTION. PROVIDE FIRE PROTECTION DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO MANUAL AND AUTOMATIC DRY-PIPE STANDPIPES AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
23. ON-SITE AS-BUILT DOCUMENTATION. MAINTAIN COMPLETE AND SEPARATE SET OF INSTALLATION DRAWINGS ON SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL MODIFICATIONS CLEARLY AND ACCURATELY.

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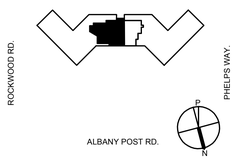

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FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:

FIRE SUPPRESSION SYMBOLS, NOTES & ABBREVIATIONS

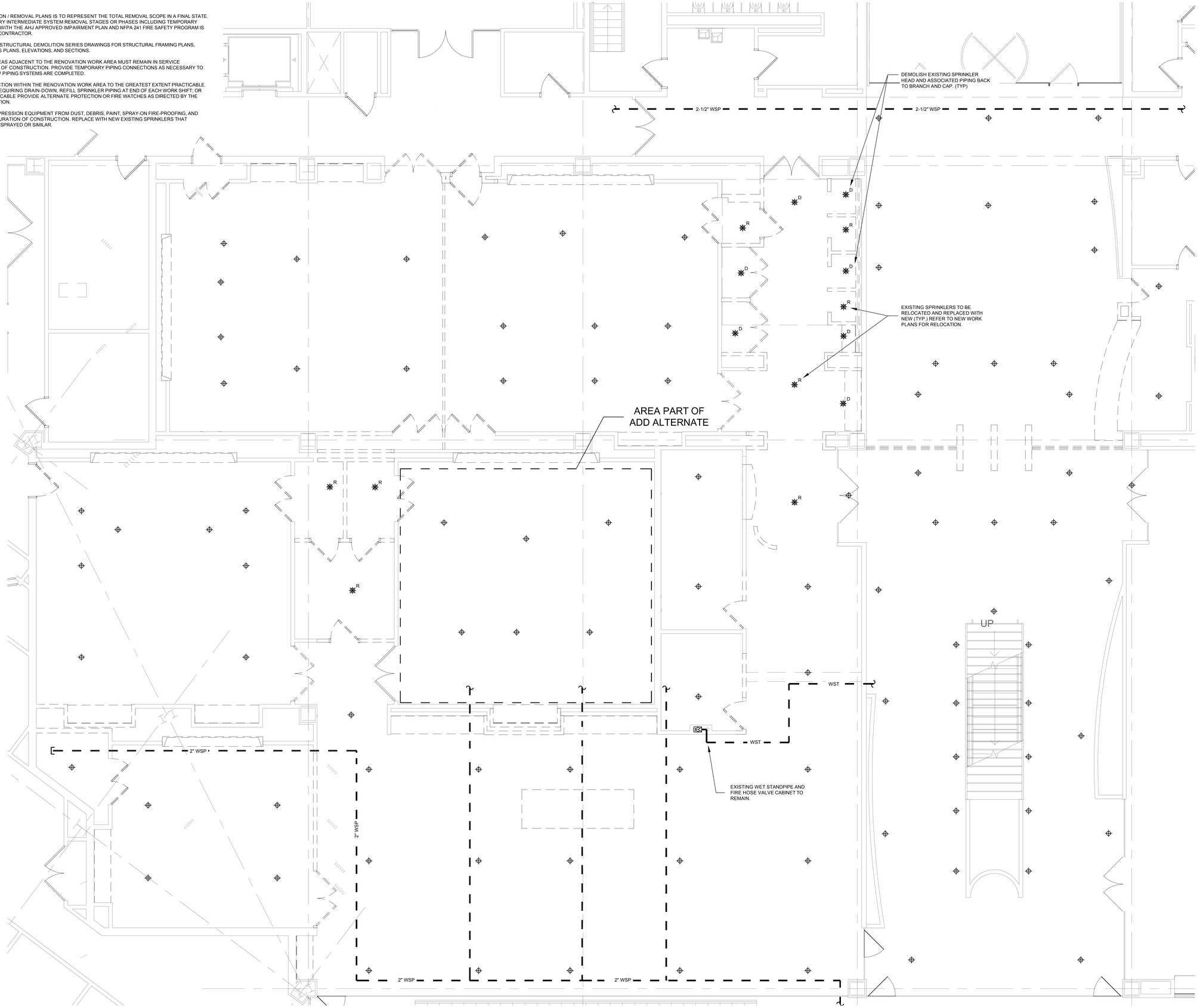
SCALE: As indicated FLOOR:

FX-001

PRINTED: FILE:

GENERAL NOTES:

1. THE INTENT OF THE DEMOLITION / REMOVAL PLANS IS TO REPRESENT THE TOTAL REMOVAL SCOPE IN A FINAL STATE. DETERMINATION OF NECESSARY INTERMEDIATE SYSTEM REMOVAL STAGES OR PHASES INCLUDING TEMPORARY PROTECTION IN AGREEMENT WITH THE AHJ APPROVED IMPAIRMENT PLAN AND NFPA 241 FIRE SAFETY PROGRAM IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. REFER TO ARCHITECTURAL & STRUCTURAL DEMOLITION SERIES DRAWINGS FOR STRUCTURAL FRAMING PLANS, DETAILED REFLECTED CEILING PLANS, ELEVATIONS, AND SECTIONS.
3. SPRINKLERS PROTECTING AREAS ADJACENT TO THE RENOVATION WORK AREA MUST REMAIN IN SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION. PROVIDE TEMPORARY PIPING CONNECTIONS AS NECESSARY TO MAINTAIN SERVICE UNTIL NEW PIPING SYSTEMS ARE COMPLETED.
4. MAINTAIN SPRINKLER PROTECTION WITHIN THE RENOVATION WORK AREA TO THE GREATEST EXTENT PRACTICABLE. FOR SPRINKLERS SYSTEMS REQUIRING DRAIN-DOWN, REFILL SPRINKLER PIPING AT END OF EACH WORK SHIFT; OR WHERE REFILL IS NOT PRACTICABLE PROVIDE ALTERNATE PROTECTION OR FIRE WATCHES AS DIRECTED BY THE AUTHORITY HAVING JURISDICTION.
5. PROTECT EXISTING FIRE SUPPRESSION EQUIPMENT FROM DUST, DEBRIS, PAINT, SPRAY-ON FIRE-PROOFING, AND SIMILAR THROUGHOUT THE DURATION OF CONSTRUCTION. REPLACE WITH NEW EXISTING SPRINKLERS THAT BECOME DAMAGED, PAINTED, SPRAYED OR SIMILAR.



1 2ND FLOOR DEMOLITION PLAN
FXD-102 SCALE: 1/4" = 1'-0"

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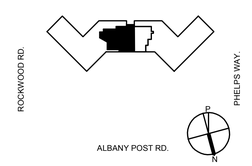

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2ND FLOOR DEMOLITION
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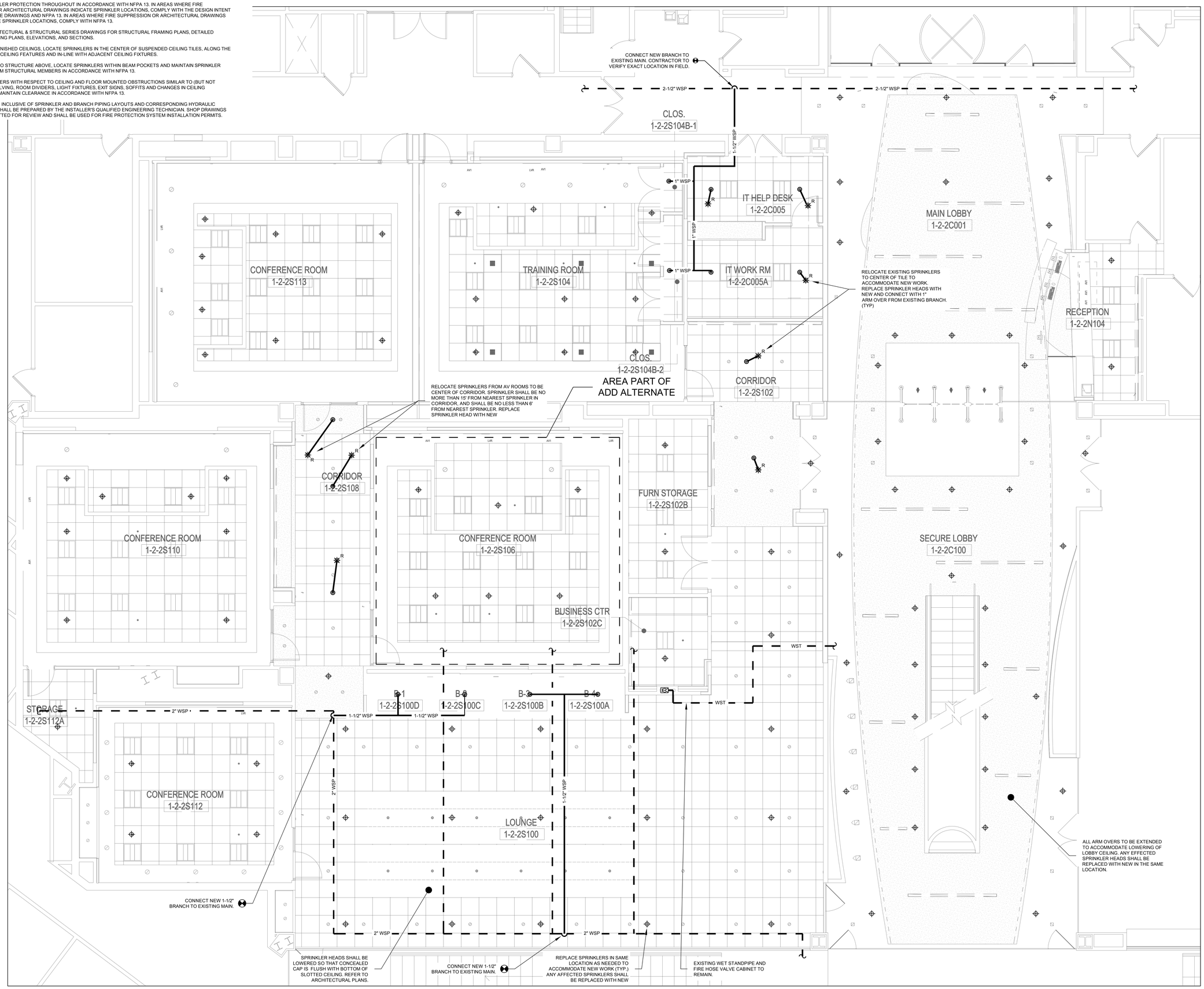
SCALE: As indicated FLOOR:

FXD-102

PRINTED: FILE:

GENERAL NOTES:

1. PROVIDE SPRINKLER PROTECTION THROUGHOUT IN ACCORDANCE WITH NFPA 13. IN AREAS WHERE FIRE SUPPRESSION OR ARCHITECTURAL DRAWINGS INDICATE SPRINKLER LOCATIONS, COMPLY WITH THE DESIGN INTENT INDICATED BY THE DRAWINGS AND NFPA 13. IN AREAS WHERE FIRE SUPPRESSION OR ARCHITECTURAL DRAWINGS DO NOT INDICATE SPRINKLER LOCATIONS, COMPLY WITH NFPA 13.
2. REFER TO ARCHITECTURAL & STRUCTURAL SERIES DRAWINGS FOR STRUCTURAL FRAMING PLANS, DETAILED REFLECTED CEILING PLANS, ELEVATIONS, AND SECTIONS.
3. IN AREAS WITH FINISHED CEILINGS, LOCATE SPRINKLERS IN THE CENTER OF SUSPENDED CEILING TILES, ALONG THE CENTER-LINE OF CEILING FEATURES AND IN-LINE WITH ADJACENT CEILING FIXTURES.
4. IN AREAS OPEN TO STRUCTURE ABOVE, LOCATE SPRINKLERS WITHIN BEAM POCKETS AND MAINTAIN SPRINKLER CLEARANCE FROM STRUCTURAL MEMBERS IN ACCORDANCE WITH NFPA 13.
5. LOCATE SPRINKLERS WITH RESPECT TO CEILING AND FLOOR MOUNTED OBSTRUCTIONS SIMILAR TO (BUT NOT LIMITED TO) SHELVING, ROOM DIVIDERS, LIGHT FIXTURES, EXIT SIGNS, SOFFITS AND CHANGES IN CEILING ELEVATION AND MAINTAIN CLEARANCE IN ACCORDANCE WITH NFPA 13.
6. SHOP DRAWINGS INCLUSIVE OF SPRINKLER AND BRANCH PIPING LAYOUTS AND CORRESPONDING HYDRAULIC CALCULATIONS SHALL BE PREPARED BY THE INSTALLER'S QUALIFIED ENGINEERING TECHNICIAN. SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND SHALL BE USED FOR FIRE PROTECTION SYSTEM INSTALLATION PERMITS.



1 2ND FLOOR CONSTRUCTION PLAN
FX-102 SCALE: 1/4" = 1'-0"

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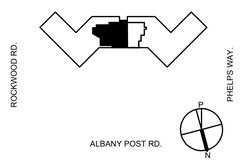
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:

FIRE SUPPRESSION
2ND FLOOR PLAN

SCALE: As indicated FLOOR:

FX-102

GENERAL NOTES:

1. PROVIDE SPRINKLER PROTECTION THROUGHOUT IN ACCORDANCE WITH NFPA 13. IN AREAS WHERE FIRE SUPPRESSION OR ARCHITECTURAL DRAWINGS INDICATE SPRINKLER LOCATIONS, COMPLY WITH THE DESIGN INTENT INDICATED BY THE DRAWINGS AND NFPA 13. IN AREAS WHERE FIRE SUPPRESSION OR ARCHITECTURAL DRAWINGS DO NOT INDICATE SPRINKLER LOCATIONS, COMPLY WITH NFPA 13.
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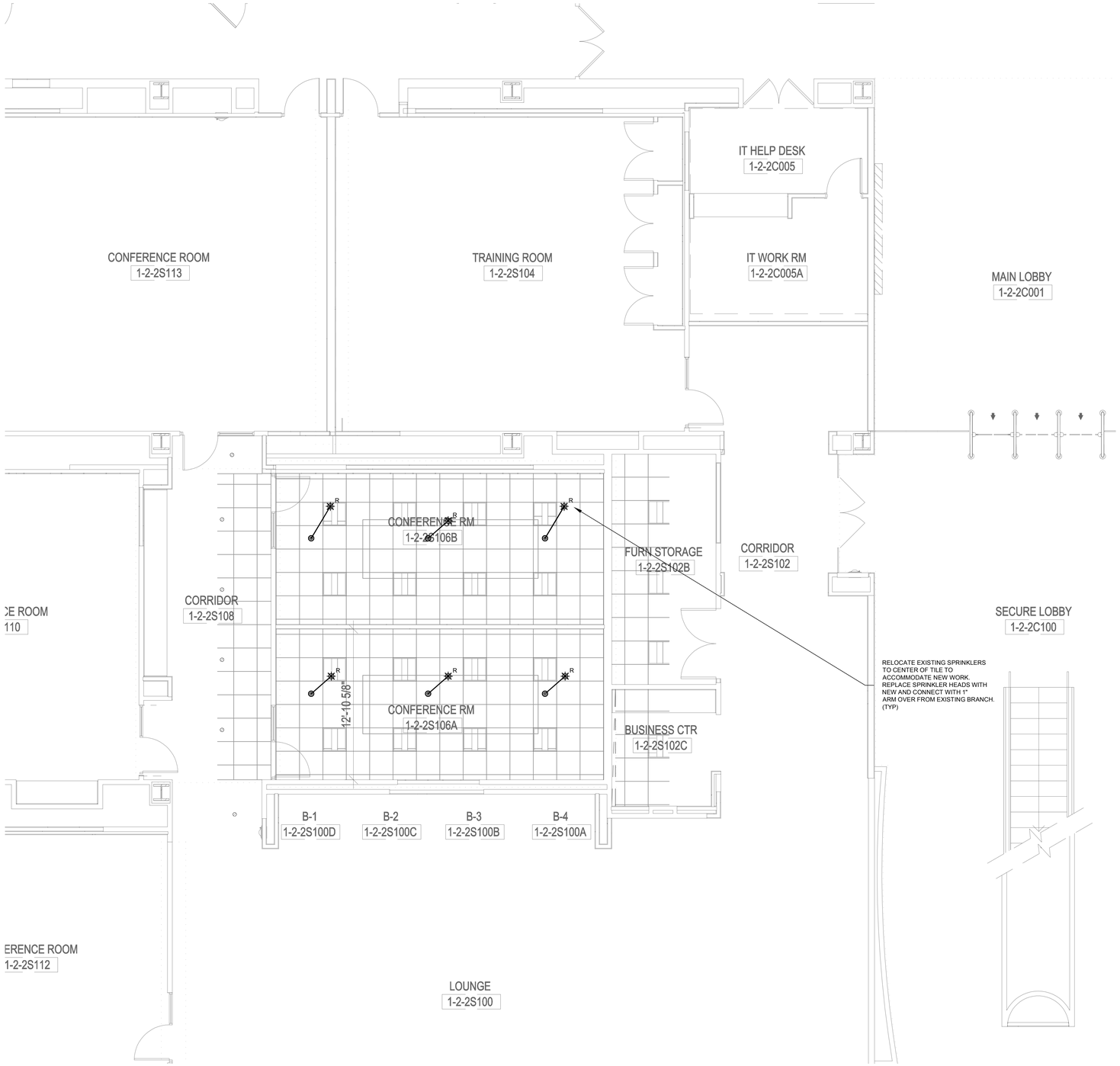

1 2ND FLOOR CONSTRUCTION PLAN -ADD ALTERNATE
SP-202A SCALE: 1/4" = 1'-0"

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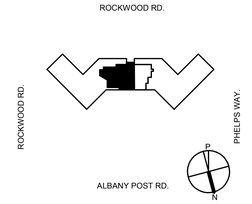
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

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Plot Date::

Professional Seal and Signature:

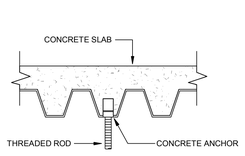
FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:
FIRE SUPPRESION
2ND FLOOR ADD
ALTERNATE

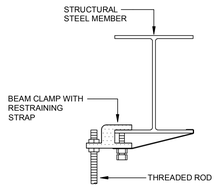
SCALE: As indicated FLOOR:

FX-102A

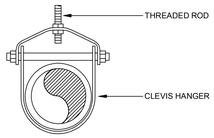
PRINTED: FILE:



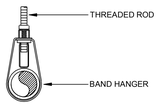
ATTACHMENT TO
CONCRETE STRUCTURE



ATTACHMENT TO
STEEL STRUCTURE



PIPE HANGERS FOR
NPS 4" AND LARGER



PIPE HANGERS FOR
NPS 3" AND SMALLER

NOTE: SPRINKLER PIPING SHALL NOT BE
SUPPORTED FROM METAL ROOF DECKING

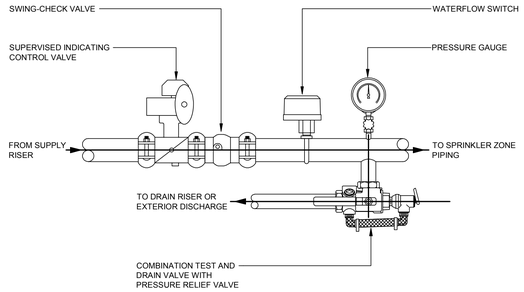
NFPA 13 MINIMUM REQUIRED HANGER ROD SIZES	
PIPE SIZE	DIAMETER OF ROD
UP TO AND INCLUDING 4"	3/8"
5", 6", 8"	1/2"
10", 12"	5/8"

SURGE RESTRAINT

PROVIDE SURGE RESTRAINT AT HANGER VIA RESTRAINT CLIP OR THREADED ROD EXTENSION TO PIPE SURFACE AS REQUIRED BY NFPA 13.

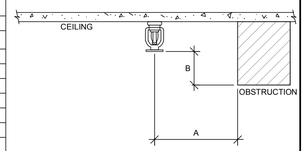
1. END OF BRANCH PIPING WHERE MAXIMUM SYSTEM PRESSURE EXCEEDS 100 PSI.
2. RETURN BEND OFFSETS GREATER THAN 12" WHERE MAXIMUM SYSTEM PRESSURE EXCEEDS 100 PSI.
3. RETURN BEND OFFSETS GREATER THAN 24"

FS01 PIPING SUPPORT
SCALE: NONE

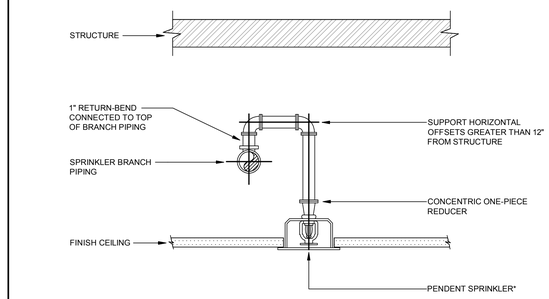


FS02 ZONE CONTROL ASSEMBLY
SCALE: NONE

NFPA 13 POSITIONING OF SPRINKLER TO AVOID OBSTRUCTION TO DISCHARGE	
DISTANCE FROM SPRINKLERS TO SIDE OF OBSTRUCTION (A)	MAXIMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (INCHES) (B)
LESS THAN 1 FT	0
1'-0" TO LESS THAN 1'-6"	0'-2 1/2"
1'-6" TO LESS THAN 2'-0"	0'-3 1/2"
2'-0" TO LESS THAN 2-6"	0'-5 1/2"
2'-6" TO LESS THAN 3'-0"	0'-7 1/2"
3'-0" TO LESS THAN 3'-6"	0'-9 1/2"
3'-6" TO LESS THAN 4'-0"	1'-0"
4'-0" TO LESS THAN 4'-6"	1'-2"
4'-6" TO LESS THAN 5'-0"	1'-4 1/2"
5'-0" TO LESS THAN 5'-6"	1'-6"
5'-6" TO LESS THAN 6'-0"	1'-8"
6'-0" TO LESS THAN 6'-6"	2'-0"
6'-6" TO LESS THAN 7'-0"	2'-6"
7'-0" TO LESS THAN 7'-6"	2'-11"

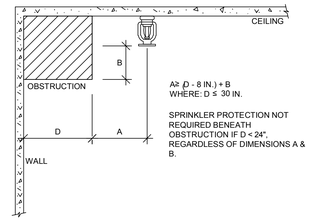


FS03 STANDARD SPRAY PENDENT SPRINKLER CLEARANCE TO CEILING OBSTRUCTION
SCALE: NONE

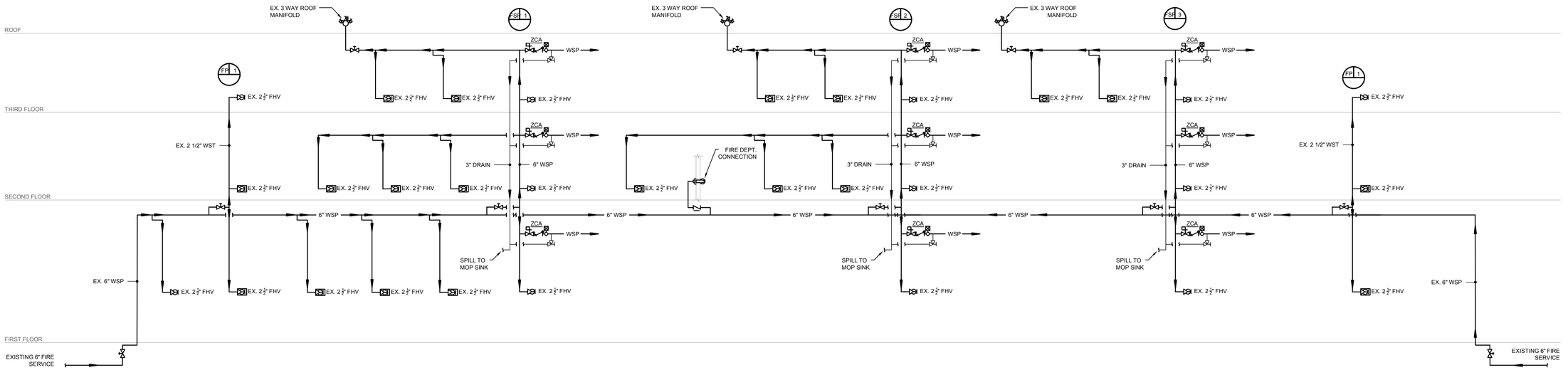


*CONCEALED SHOWN FOR ILLUSTRATION ONLY, SEE
SPECIFICATIONS FOR PROJECT SPECIFIC REQUIREMENTS

FS04 RETURN-BEND PIPING
SCALE: NONE



FS05 STANDARD SPRAY PENDENT SPRINKLER CLEARANCE TO CEILING OBSTRUCTION ALONG WALL
SCALE: NONE



1 SPRINKLER RISER DIAGRAM
Scale: NTS

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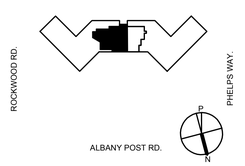
Key Plan:



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FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:

FIRE SUPPRESSION
DETAILS & RISER DIAGRAM

SCALE: As indicated FLOOR:

FX-500

PRINTED: FILE:

PART 1 - GENERAL

SUMMARY

THE WORK UNDER THIS SECTION INCLUDES ALL LABOR, MATERIALS, FEES, AND ACTIVITIES REQUIRED TO INSTALL AND / OR MODIFY, TEST, AND COMMISSION A WATER-BASED FIRE SUPPRESSION SYSTEM.

RELATED DOCUMENTS

THE WORK REQUIREMENTS DESCRIBED WITHIN DIVISION 20 “COMMON MECHANICAL / ELECTRICAL REQUIREMENTS” FORM COMPLIMENTARY REQUIREMENTS TO THE SCOPE OF WORK OF THIS SECTION.

SUBMITTALS

SUBMIT ACTION SUBMITTALS PRIOR TO APPLYING FOR AUTHORITY HAVING JURISDICTION INSTALLATION PERMITS (WHERE REQUIRED) AND SYSTEM INSTALLATION.

SUBMIT INFORMATIONAL SUBMITTALS RELATED TO TESTING AND INSPECTIONS AFTER SUCCESSFUL SYSTEM TESTING AND PRIOR TO SCHEDULING AUTHORITY HAVING JURISDICTION FINAL APPROVAL DEMONSTRATION TESTING.

SUBMIT CLOSEOUT SUBMITTALS AS PART OF PROJECT CLOSEOUT PROCEDURE.

ACTION SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE RATED CAPACITIES, OPERATING CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND FURNISHED SPECIALTIES AND ACCESSORIES.

SHOP DRAWINGS: FOR WATER-BASED FIRE SUPPRESSION SYSTEMS. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK. INCLUDE ALL INFORMATION REQUIRED BY THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION STANDARD(S) FOR “WORKING PLANS”. COMPLY WITH PART 3 “TECHNICIAN DESIGN AND LAYOUT”.

HYDRAULIC CALCULATIONS: PERFORM CALCULATIONS IN ACCORDANCE WITH APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION DESIGN AND INSTALLATION STANDARD(S) FOR “HYDRAULIC CALCULATIONS”.

INFORMATIONAL SUBMITTALS

QUALIFICATION DATA: FOR QUALIFIED INSTALLER AND CERTIFIED ENGINEERING TECHNICIAN.

WATER SUPPLY EVALUATION REPORT: INCLUDE WATER SUPPLY FLOW TEST REPORT AND CERTIFIED ENGINEERING TECHNICIAN EVALUATION REPORT CONFIRMING ADEQUACY OF WATER SUPPLY AND SIGNIFICANT DEVIATIONS FROM HISTORICAL DATA OR CONTRACT DOCUMENTS.

FIELD TEST REPORTS AND CERTIFICATES: INDICATE AND INTERPRET TEST RESULTS FOR COMPLIANCE WITH PERFORMANCE REQUIREMENTS AND AS DESCRIBED IN NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. INCLUDE "CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING" CORRESPONDING TO EACH WATER-BASED FIRE SUPPRESSION SYSTEM.

FIELD QUALITY-CONTROL REPORTS.

CLOSEOUT SUBMITTALS

RECORD DRAWINGS: COMPLETE SHOP DRAWING RE-SUBMITTAL UPDATED TO REFLECT ACTUAL FINAL SYSTEM INSTALLATION.

OPERATION AND MAINTENANCE DATA: FOR WATER-BASED FIRE SUPPRESSION SYSTEM SPECIALTIES TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.

QUALITY ASSURANCE

INSTALLER QUALIFICATIONS: PERSONNEL LICENSED BY THE GOVERNING LICENSING AUTHORITY FOR THE INSTALLATION OF WATER-BASED FIRE SUPPRESSION SYSTEMS. SUCCESSFULLY INSTALLED, TESTED, OBTAINED APPROVALS FOR, AND PUT INTO SERVICE NO LESS THAN THREE (3) WATER-BASED FIRE SUPPRESSION SYSTEMS SIMILAR IN TYPE, SIZE, AND COMPLEXITY TO THAT OF THE WORK OF THIS SECTION.

CERTIFIED ENGINEERING TECHNICIAN QUALIFICATIONS: SHOP DRAWINGS AND CALCULATIONS PREPARED BY PERSONNEL LICENSED AS A PROFESSIONAL FIRE PROTECTION ENGINEER BY THE GOVERNING LICENSING AUTHORITY OR, WHERE PERMITTED BY LOCAL AUTHORITIES HAVING JURISDICTION, NICET CERTIFIED AS A FIRE PROTECTION, WATER-BASED SYSTEMS LAYOUT LEVEL III OR IV TECHNICIAN.

SOURCE LIMITATIONS: OBTAIN PRODUCTS FOR EACH PRODUCT CATEGORY FROM A SINGLE MANUFACTURER.

PRODUCT STANDARDS: LISTED IN THE "FIRE PROTECTION EQUIPMENT DIRECTORY" PUBLISHED BY UL OR THE "APPROVAL GUIDE" PUBLISHED BY FM GLOBAL.

> SUBJECT TO COMPLIANCE WITH REQUIREMENTS, INDICATION OF A UL PRODUCT REQUIREMENT WITHIN PART 2 SHALL BE CONSTRUED TO BE INCLUSIVE OF A CORRESPONDING FM GLOBAL APPROVED PRODUCT, WITH OR WITHOUT UL LISTING.

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

COORDINATION

COORDINATE CONSTRUCTION OPERATIONS WITH THOSE OF OTHER SECTIONS OF THE WORK AND OTHER ENTITIES TO ENSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK. COORDINATE OPERATIONS AND PRODUCT SELECTIONS OF THIS SECTION WITH OPERATIONS AND PRODUCT SELECTIONS INCLUDED IN DIFFERENT SECTIONS THAT DEPEND ON EACH OTHER FOR PROPER INSTALLATION, CONNECTION, AND OPERATION. SCHEDULE CONSTRUCTION OPERATIONS IN SEQUENCE REQUIRED TO OBTAIN THE BEST RESULTS WHERE INSTALLATION OF ONE PART OF THE WORK DEPENDS ON INSTALLATION OF OTHER COMPONENTS, BEFORE OR AFTER ITS OWN INSTALLATION. COORDINATE INSTALLATION OF DIFFERENT COMPONENTS WITH OTHER SECTIONS OF THE WORK TO ENSURE MAXIMUM PERFORMANCE AND ACCESSIBILITY FOR REQUIRED MAINTENANCE, SERVICE, AND REPAIR. MAKE ADEQUATE PROVISIONS TO ACCOMMODATE ITEMS SCHEDULED FOR LATER INSTALLATION.

COORDINATION DRAWINGS: CONTRIBUTE TO PREPARATION OF COORDINATION DRAWINGS IN THE SEQUENCE ESTABLISHED UNDER DIVISION 1 AND DIVISION 20; INDICATE WATER-BASED FIRE SUPPRESSION SYSTEM WORK COORDINATED WITH OTHER SECTIONS OF THE WORK.

MAINTENANCE MATERIALS

FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.

> SPRINKLER CABINETS: FINISHED, WALL-MOUNTED, STEEL CABINET WITH HINGED COVER, AND WITH SPACE FOR MINIMUM OF SIX SPARE SPRINKLERS PLUS SPRINKLER WRENCH. INCLUDE NUMBER OF SPRINKLERS REQUIRED BY NFPA 13 AND SPRINKLER WRENCH. INCLUDE SEPARATE CABINET WITH SPRINKLERS AND WRENCH FOR EACH TYPE OF SPRINKLER USED ON PROJECT.
>
> CUSTOM-FINISH SPRINKLERS: PROVIDE A MINIMUM OF SIX SPARE COVER-PLATES OR SPRINKLERS FOR EACH CUSTOM FINISH IN ADDITION TO SPARES REQUIRED BY NFPA 13.

PART 2 - PRODUCTS

PERFORMANCE REQUIREMENTS

DESIGN AND INSTALLATION STANDARD(S):
- SPRINKLER SYSTEMS: COMPLY WITH NFPA 13.

STANDARD-PRESSURE PIPING SYSTEM COMPONENT: LISTED FOR 175 PSIG MINIMUM WORKING PRESSURE.

PIPING AND FITTINGS

STANDARD-PRESSURE WET-PIPE WATER-BASED FIRE SUPPRESSION:

APPLICATIONS:

WET-PIPE SPRINKLER AND STANDPIPE. PIPE AND FITTINGS (SHALL BE ONE OF THE FOLLOWING):
- ASTM A 53, A795 OR A135 SCHEDULE 40 STEEL PIPE WITH THREADED ENDS; UNCOATED ASME B16.4 CAST IRON THREADED FITTINGS; AND THREADED JOINTS.
- ASTM A 53, A795 OR A135 SCHEDULE 40 STEEL PIPE WITH CUT-GROOVED ENDS; UL 213 GROOVED-END FITTINGS; UL 213 GROOVED-END PIPE COUPLINGS; AND GROOVED JOINTS.
- PERMITTED FOR NPS 2-1/2 AND LARGER: ASTM A 135 OR ASTM A 795 SCHEDULE 10 STEEL PIPE WITH ROLL-GROOVED ENDS; UL 213 GROOVED-END FITTINGS; UL 213 GROOVED-END PIPE COUPLINGS; AND GROOVED JOINTS.

PIPE AND FITTINGS (SHALL BE ONE OF THE FOLLOWING):
- ASTM A 53, A795 OR A135 SCHEDULE 40 GALVANIZED-COATED STEEL PIPE WITH THREADED ENDS; GALVANIZED-COATED ASME B16.4 CAST IRON THREADED FITTINGS; AND THREADED JOINTS.
- ASTM A 53, A795 OR A135 SCHEDULE 40 GALVANIZED-COATED STEEL PIPE WITH CUT-GROOVED ENDS; GALVANIZED-COATED UL 213 GROOVED-END FITTINGS; GALVANIZED-COATED UL 213 GROOVED-END PIPE COUPLINGS; AND GROOVED JOINTS.

GROOVED-JOINT FITTINGS AND COUPLINGS

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- ANVIL INTERNATIONAL, INC.
- TYCO FIRE & BUILDING PRODUCTS LP.
- VICTAULIC COMPANY.

STEEL WELDED OUTLET FITTINGS

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- ANVIL INTERNATIONAL, INC.
- VICTAULIC COMPANY.

SPECIALTY FIRE-PROTECTION PIPE FITTINGS

FLEXIBLE SPRINKLER CONNECTIONS:
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- FLEXHEAD INDUSTRIES, INC.
- VICTAULIC COMPANY.
- STANDARD: UL 1474.

SPRINKLERS

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- RELIABLE AUTOMATIC SPRINKLER CO., INC.
- TYCO FIRE & BUILDING PRODUCTS LP.
- VICTAULIC COMPANY.
- VIKING CORPORATION.

UNLESS OTHERWISE INDICATED OR REQUIRED BY APPLICATION, SPRINKLER PRESSURE RATING SHALL BE 175 PSIG.
MINIMUM PRESSURE RATING FOR HIGH-PRESSURE APPLICATIONS: 250 PSIG.

UNLESS OTHERWISE INDICATED OR REQUIRED BY APPLICATION, SPRINKLER K-FACTOR AND THERMAL SENSITIVITY SHALL COMPLY WITH THE FOLLOWING:
- LIGHT HAZARD: QUICK RESPONSE, MINIMUM 5.6 K-FACTOR.
- ORDINARY HAZARD: QUICK RESPONSE, MINIMUM 8.0 K-FACTOR.
- EXTRA HAZARD: STANDARD RESPONSE, MINIMUM 8.0 K-FACTOR.

UNLESS OTHERWISE INDICATED OR REQUIRED BY APPLICATION, SPRINKLERS SHALL BE NFPA 13 ORDINARY TEMPERATURE CLASSIFICATION.

SPRINKLERS SHALL BE HIGHER TEMPERATURE CLASSIFICATION IN ACCORDANCE WITH NFPA 13 FOR MAXIMUM AMBIENT CEILING TEMPERATURES GREATER THAN 100 DEG F.

SPRINKLERS SHALL BE HIGHER TEMPERATURE CLASSIFICATION IN ACCORDANCE WITH NFPA 13 FOR SPECIFIC LOCATIONS INCLUDING, BUT NOT LIMITED TO:
- STEAM EQUIPMENT AND HEATING DUCTS.
- SKYLIGHTS AND DISPLAY WINDOWS.
- CONCEALED BUILDING SPACES, ATTICS, PEAKED ROOFS, AND METAL ROOFS.
- COMMERCIAL COOKING EQUIPMENT.
- RESIDENTIAL AREAS.
- AUTO-DEFROST WALK-IN COOLERS AND FREEZERS.

SPRINKLERS SHALL BE HIGH TEMPERATURE CLASSIFICATION FOR EXTRA HAZARD OR HIGH-PILE / RACK STORAGE OCCUPANCIES WHERE CORRESPONDING NFPA 13 HIGH TEMPERATURE SPRINKLER DESIGN CRITERIA IS UTILIZED FOR HYDRAULIC CALCULATIONS.

CONCEALED SPRINKLER COVER-PLATES: FLAT, NON-PERFORATED; FOR CEILING- AND WALL-MOUNT. FINISHES: POLISHED CHROME-PLATED, PAINTED, AND SPECIAL APPLICATION. SEISMIC APPLICATIONS: OVERSIZED TO CONCEAL SPRINKLER CEILING PENETRATION INCLUDING REQUIRED 1 INCH ANNULAR CLEARANCE AROUND PENETRATING SPRINKLER ASSEMBLY.

PIPE HANGERS AND FASTENERS

PIPE HANGERS:
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- TOLCO.
- COOPER B-LINE.
- ANVIL INTERNATIONAL.

GENERAL: STEEL, GALVANIZED ADJUSTABLE BAND TYPE AND BAND TYPE HANGERS USED ON CPVC PIPING SHALL HAVE FLARED OR BEVELED EDGES.

HANGER ROD: CARBON STEEL, GALVANIZED.

ATTACHMENTS TO STEEL:
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- TOLCO.
- COOPER B-LINE.
- ANVIL INTERNATIONAL.
- GENERAL: CARBON OR MALLEABLE STEEL, GALVANIZED BEAM CLAMP.

DROP IN ANCHORS:
MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- HILTI CORP.
- ITW RED HEAD.
- POWERS FASTNERS, INC.
- GENERAL: UL 203; MILD STEEL WITH ZINC PLATING.

PART 3 - EXECUTION

PREPARATION

SCHEDULE AND CONDUCT WATER SUPPLY FLOW TESTS PROMPTLY TO ESTABLISH AVAILABLE WATER SUPPLY FLOW AND PRESSURE CHARACTERISTICS.

SCHEDULE AND SEQUENCE WATER SUPPLY FLOW TESTS AND SHOP DRAWING PREPARATION SUCH THAT THE FLOW TEST DATE IS NO MORE THAN TWELVE (12) MONTHS PRIOR TO THE SHOP DRAWING SUBMITTAL DATE.

TESTS SHALL BE CONDUCTED DURING TIME OF SEASONAL AND DAILY PEAK DEMAND BASED UPON REVIEW WITH LOCAL WATER AUTHORITY.

> WHERE TESTING DURING TIME OF PEAK DEMAND IS NOT PERMITTED OR FEASIBLE, OBTAIN HISTORICAL DATA REGARDING SEASONAL AND DAILY SYSTEM PRESSURE VARIATIONS FROM LOCAL WATER AUTHORITY.

TECHNICIAN DESIGN AND LAYOUT

GENERAL:

> ROLES AND RESPONSIBILITIES SHALL BE AS SET FORTH IN NSPE POSITION STATEMENT NO. 1749 “SFPE/NSPE/NICET JOINT POSITION OF THE ENGINEER AND THE ENGINEERING TECHNICIAN DESIGNING THE FIRE PROTECTION SYSTEM”, AVAILABLE AT NSPE.ORG. AS APPLIED TO THE WORK, THE CONTRACT DOCUMENTS HAVE BEEN PREPARED BY THE “ENGINEER” AND SHOP DRAWINGS REQUIRED BY THIS SECTION OF THE WORK ARE PREPARED BY THE “CERTIFIED ENGINEERING TECHNICIAN”.
>
> AS THE CERTIFIED ENGINEERING TECHNICIAN, PREPARE SHOP DRAWINGS INDICATING SYSTEM LAYOUT AND SIZING IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO:
> - EVALUATION OF WATER SUPPLY ADEQUACY.
> - DETAILED SIZING AND LAYOUT OF PIPING AND APPURTENANCES INCLUDING FEED-MAINS, RISERS, CROSS MAINS, BRANCH LINES, VALVES, DRAINAGE PROVISIONS, HANGERS, RESTRAINTS, SUPPORTS, AND SIMILAR.
> - DETAILED SPRINKLER LAYOUTS.
> - HYDRAULIC CALCULATIONS.
> - INSTALLATION DETAILS FOR THE SPECIFIC EQUIPMENT BEING FURNISHED.

DESIGN AND INSTALLATION STANDARD(S): COMPLY WITH PART 2 ARTICLE “PERFORMANCE REQUIREMENTS”.

COMPLY WITH THE PERFORMANCE REQUIREMENTS INDICATED BY THE CONTRACT DOCUMENTS WHERE SUCH REQUIREMENTS ARE MORE STRINGENT THAN THOSE OF THE DESIGN AND INSTALLATION STANDARD(S); OTHERWISE,

COMPLY WITH THE PERFORMANCE REQUIREMENTS OF THE DESIGN AND INSTALLATION STANDARD(S).

WATER SUPPLY EVALUATION:

> EVALUATE WATER SUPPLY FLOW TEST DATA OBTAINED AS PART OF THE WORK OF THIS SECTION AGAINST HISTORICAL DATA OBTAINED FROM THE WATER AUTHORITY AND, WHERE INCLUDED, WATER SUPPLY FLOW TEST DATA INDICATED BY THE CONTRACT DOCUMENTS.
>
> PROMPTLY REPORT IN WRITING SIGNIFICANT DEVIATIONS BETWEEN WATER SUPPLY TEST RESULTS OBTAINED AS PART OF THE WORK OF THIS SECTION AND THOSE INDICATED BY THE CONTRACT DOCUMENTS OR HISTORICAL DATA; AND ANTICIPATED SYSTEM DESIGN IMPACTS.
>
> COMPLETE THE EVALUATION OF WATER SUPPLY FLOW TEST DATA PRIOR TO PREPARING SHOP DRAWINGS AND ASSOCIATED HYDRAULIC CALCULATIONS.

DESIGN AND LAYOUT FIRE SUPPRESSION PIPING TO SATISFY PERFORMANCE REQUIREMENTS:

> RECTILINEAR FIRE SUPPRESSION PIPING ARRANGEMENT WITH RESPECT TO BUILDING PARTITIONS AND STRUCTURAL ELEMENTS.
>
> CONCEALED FIRE SUPPRESSION PIPING INSTALLATION THROUGHOUT FINISHED SPACES AND MAXIMUM HEADROOM BENEATH EXPOSED FIRE SUPPRESSION PIPING IN AREAS EXPOSED TO STRUCTURE ABOVE.
>
> NO FIRE SUPPRESSION PIPING WITHIN ELECTRICAL, INFORMATION TECHNOLOGY, OR SIMILAR SPACES OTHER THAN BRANCH PIPING SERVING SPRINKLERS PROTECTING SUCH ELECTRICAL, INFORMATION TECHNOLOGY, OR SIMILAR SPACE SPACES.
>
> NO FIRE SUPPRESSION PIPING DIRECTLY ABOVE ELECTRICAL EQUIPMENT, ELECTRICAL PANELS, INFORMATION TECHNOLOGY EQUIPMENT, OR SIMILAR ENERGIZED EQUIPMENT.
>
> NO FIRE SUPPRESSION PIPING WITHIN EXIT ENCLOSURES EXCEPT STANDPIPES SUPPLYING HOSE VALVES WITHIN THE EXIT ENCLOSURE, SPRINKLER ZONE CONTROL ASSEMBLIES AND PIPING IMMEDIATELY DOWNSTREAM, BRANCH PIPING SUPPLYING SPRINKLERS WITHIN THE EXIT ENCLOSURE, AND ASSOCIATED DRAIN CONNECTIONS AND RISERS.
>
> NO FIRE SUPPRESSION PIPING WITHIN OR IN PROXIMITY TO HAZARDOUS MATERIALS STORAGE OR PROCESSING OPERATIONS OTHER THAN BRANCH PIPING SERVING SPRINKLERS PROTECTING SUCH HAZARDOUS MATERIALS STORAGE OR PROCESSING OPERATIONS.
>
> FIRE SUPPRESSION PIPING SUPPORTED FROM PRIMARY BUILDING STRUCTURAL ELEMENTS OR APPROVED SUPPLEMENTAL SUPPORTS CAPABLE OF SUPPORTING THE ATTACHED LOAD.
>
> FIRE SUPPRESSION PIPING CROSSING BUILDING EXPANSION JOINTS PROVIDED WITH EXPANSION FITTINGS APPROPRIATE TO THE JOINT DESIGN DEFLECTION VALUE.
> FIRE SUPPRESSION PIPING PROTECTED AGAINST DAMAGE WHERE SUBJECT TO EARTHQUAKES.
>
> FIRE SUPPRESSION PIPING PROTECTED AGAINST DAMAGE WHERE SUBJECT TO FREEZING WITHOUT THE USE OF HEAT-TRACE CABLES UNLESS INDICATED OTHERWISE.
>
> FIRE SUPPRESSION PIPING ARRANGED SUCH THAT PIPING DRAINS BACK TO MAIN DRAINS AND DRAIN RISERS WITHOUT THE USE OF AUXILIARY DRAINS.

PART 3 - EXECUTION

DESIGN AND LAYOUT SPRINKLERS TO SATISFY PERFORMANCE REQUIREMENTS:

- SPRINKLERS LOCATED TO PROVIDE AUTOMATIC SPRINKLER PROTECTION THROUGHOUT AS REQUIRED BY THE CONTRACT DOCUMENTS AND THE REQUIREMENTS OF THE DESIGN AND INSTALLATION STANDARDS.
- COMPLY WITH GRAPHIC SPRINKLER LAYOUTS AND NARRATIVE LAYOUT PARAMETERS INDICATED BY THE CONTRACT DOCUMENTS. WHERE SPRINKLER LAYOUTS OR LAYOUT PARAMETERS ARE NOT INDICATED BY THE CONTRACT DOCUMENTS, COMPLY WITH DESIGN AND INSTALLATION STANDARD(S).
- SPRINKLERS LOCATED ACCORDING TO THE PER-SPRINKLER PROTECTION AREA LIMITATIONS CORRESPONDING TO THE PROTECTED OCCUPANCY HAZARD AND CONSTRUCTION TYPE.
- SPRINKLERS WITHIN FINISHED-SPACES FLUSH OR RECESSED MOUNT AS INDICATED; LOCATED IN THE CENTER OF SUSPENDED CEILING TILES, ALONG THE CENTER-LINE OF CEILING FEATURES, AND IN-LINE WITH ADJACENT CEILING FIXTURES.
- SPRINKLERS LOCATED WITH RESPECT TO STRUCTURAL MEMBERS AND CONSTRUCTION TYPE AND BEAM POCKET ARRANGEMENT WITHIN SPACES EXPOSED TO STRUCTURE ABOVE.
- SPRINKLERS LOCATED WITH RESPECT TO OBSTRUCTIONS TO SPRINKLER DISCHARGE; CONSIDERING ALL OBSTRUCTIONS SUCH AS DUCTWORK, PIPING, LIGHTING, CABLE TRAYS, FLOATING ORNAMENTAL CEILINGS, AND SIMILAR.
  SPRINKLER PROTECTION PROVIDED ABOVE AND BELOW SUCH OBSTRUCTIONS WHERE PROTECTION CANNOT BE PROVIDED IN ACCORDANCE WITH THE DESIGN AND INSTALLATION STANDARDS VIA SPRINKLERS LOCATED SOLELY ABOVE OR BELOW OBSTRUCTIONS.
- SPRINKLERS LOCATED WITHIN CONSTRUCTION VOIDS OR ENCLOSED SPACES THAT DO NOT MEET THE NFPA 13 DEFINITION OF CONCEALED SPACES DUE TO OPENINGS OR SIMILAR FEATURES.
- SPRINKLERS LOCATED WITHIN COMBUSTIBLE CONCEALED SPACES INCLUDING ATTICS, CEILING VOIDS, AND SIMILAR.
- SPRINKLER LOCATIONS AT WATER CURTAINS COORDINATED WITH CORRESPONDING DRAFT STOPS OR PROTECTED GLAZING ASSEMBLIES.
- SPECIFIC-APPLICATION SPRINKLERS LOCATED IN ACCORDANCE WITH CORRESPONDING SPRINKLER LISTING REQUIREMENTS AND RESTRICTIONS.

HYDRAULICALLY DESIGN WATER-BASED FIRE SUPPRESSION SYSTEM PIPING USING THE HAZEN-WILLIAMS OR DARCY-WEISBACH FORMULAS IN ACCORDANCE WITH THE DESIGN AND INSTALLATION STANDARD(S).
- SPRINKLER SYSTEM OCCUPANCY HAZARD AND DISCHARGE CRITERIA: COMPLY WITH CRITERIA INDICATED BY DRAWINGS AS APPROVED BY AUTHORITIES HAVING JURISDICTION.
  - CALCULATION AREAS SHALL NOT BE REDUCED FOR QUICK RESPONSE SPRINKLER APPLICATIONS.
- STANDPIPE SYSTEM FLOW AND PRESSURE CRITERIA: COMPLY WITH CRITERIA INDICATED BY DRAWINGS AS APPROVED BY AUTHORITIES HAVING JURISDICTION.
- MARGIN OF SAFETY BETWEEN AVAILABLE AND REQUIRED PRESSURE AT DESIGN FLOWRATE: 10 PSI MINIMUM, INCLUDING LOSSES THROUGH WATER-SERVICE PIPING,VALVES, AND BACKFLOW PREVENTERS.
- FOR APPLICATIONS WITH SYSTEM PRESSURES GREATER THAN 175 PSIG, PREPARE A CALCULATION AT MAXIMUM STATIC PRESSURE TO IDENTIFY BUILDING FLOOR ELEVATIONS REQUIRING PRESSURE REGULATING VALVES.
  - RISER DIAGRAM: INDICATE MAXIMUM STATIC PRESSURE AT EACH FLOOR ELEVATION,INCLUDING INLET AND OUTLET PRESSURE AT PRESSURE REGULATING VALVES WHERE PROVIDED.

HYDRAULIC CALCULATIONS FOR SPRINKLER PIPING:
- SPRINKLER MAINS INCLUDING ZONE CONTROL AND RISER VALVE ASSEMBLIES SHALL BE NO SMALLER THAN AS INDICATED BY THE DRAWINGS.
  - HYDRAULICALLY DETERMINE PIPE SIZES FOR SPRINKLER BRANCH PIPING.
- SPRINKLER ZONE CONTROL AND RISER VALVE ASSEMBLIES SHALL BE NO SMALLER THAN AS INDICATED BY THE DRAWINGS.
  - HYDRAULICALLY DETERMINE PIPE SIZES FOR SPRINKLER PIPING DOWNSTREAM OF ZONE CONTROL ASSEMBLIES.
- WHERE SPRINKLER SYSTEMS ARE SUPPLIED BY TWO (2) RISERS, PIPE SIZING SHALL BE BASED UPON SUPPLY FROM THE HYDRAULICALLY MOST REMOTE RISER ONLY.
- INCLUDE ADDITIONAL HYDRAULIC CALCULATIONS AS REQUIRED WHEN THE HYDRAULICALLY MOST REMOTE AREA IS NOT CLEAR (NOT THE GEOMETRICALLY MOST REMOTE).
- INCLUDE A MINIMUM OF THREE (3) CALCULATION AREAS FOR GRIDDED SYSTEMS DEMONSTRATING THAT THE HYDRAULICALLY MOST DEMANDING AREA IS IDENTIFIED.
- DO NOT UTILIZE NFPA 13 AREA REDUCTION FOR QUICK RESPONSE SPRINKLERS UNLESS OTHERWISE INDICATED.

FLEXIBLE SPRINKLER CONNECTIONS:
- HYDRAULIC CALCULATIONS: INCLUDE PRESSURE LOSSES THROUGH FLEXIBLE SPRINKLER CONNECTIONS. INDICATE INSTALLATION PARAMETERS FOR MAXIMUM HOSE LENGTH, MAXIMUM BEND RADIUS, MAXIMUM QUANTITY OF BENDS, AND FITTING PATTERNS ASSOCIATED WITH THE CALCULATED PRESSURE LOSS.
- SHOP DRAWINGS: INCLUDE LOCATIONS OF FLEXIBLE SPRINKLER CONNECTIONS WITH LIMITING INSTALLATION PARAMETERS AS DETERMINED VIA HYDRAULIC CALCULATIONS CLEARLY INDICATED.

ON-SITE AS-BUILT DRAWINGS

AS WORK PROGRESSES AND FOR THE DURATION OF THE CONSTRUCTION OPERATIONS, MAINTAIN COMPLETE AND SEPARATE SET OF PRINTS OF SHOP DRAWINGS (WORKING PLANS) AT PROJECT SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL DEVIATIONS FROM REVIEWED SHOP DRAWINGS (WORKING PLANS) CLEARLY AND ACCURATELY. INCLUDE ACTUAL LOCATIONS OF EXISTING UTILITIES IF THEY DIFFER FROM DESIGN DOCUMENTS. RECORD VALVE TAG DESIGNATIONS AS INSTALLED.

EXAMINATION

EXAMINE SLEEVED PENETRATIONS THROUGH CONCRETE AND STRUCTURAL PENETRATIONS THROUGH STEEL AND VERIFY THAT THEY ARE SUITABLE FOR INTENDED PIPING INSTALLATION.

EXAMINE WALLS AND PARTITIONS AND VERIFY THAT THEY ARE SUITABLE FOR INSTALLATION OF PIPING, CABINETS, INLET CONNECTIONS AND SIMILAR PRODUCTS.

EXAMINE AREAS TO CONTAIN STANDPIPE HOSE OUTLETS INCLUDING STAIRWELLS AND VESTIBULES AND VERIFY THAT DOOR SWINGS OR OTHER OBSTRUCTIONS WILL NOT INTERFERE WITH THE INSTALLATION OR FUTURE OPERATION OF HOSE VALVES.

REPORT CONFLICTS WITH PROPOSED SOLUTIONS. PROCEED WITH INSTALLATION AFTER CONFLICTS HAVE BEEN RESOLVED.

PART 3 - EXECUTION

PIPING INSTALLATION

LOCATIONS AND ARRANGEMENTS: DRAWING PLANS, SCHEMATICS, AND DIAGRAMS INDICATE GENERAL LOCATION AND ARRANGEMENT OF PIPING. INSTALL PIPING AS INDICATED.

DEVIATIONS FROM APPROVED SHOP DRAWINGS REQUIRE WRITTEN APPROVAL FROM AUTHORITIES HAVING JURISDICTION. FILE WRITTEN APPROVAL WITH ARCHITECT BEFORE DEVIATING FROM APPROVED WORKING PLANS.

INSTALL HANGERS, FASTENERS, AND STRUCTURAL ATTACHMENTS:
- NPS 6 AND LARGER: USE CLEVIS TYPE HANGERS ONLY.
- NPS 4 AND SMALLER: USE CLEVIS OR ADJUSTABLE BAND TYPE HANGERS.
- INSTALL BEAM CLAMPS WITH RETAINING STRAPS REGARDLESS OF SEISMIC CLASSIFICATION.
- POWDER-DRIVEN OR PRE-EXPANDED INSERTS SHALL NOT BE USED.
- THREADED CONNECTIONS SHALL NOT BE USED FOR ATTACHMENTS TO CONCRETE.

INSTALL WATER-BASED FIRE SUPPRESSION PIPING SUCH THAT PIPING DRAINS BACK TO MAIN DRAINS AND DRAIN RISERS WITHOUT THE USE OF AUXILIARY DRAINS.

INSTALL "INSPECTOR'S TEST CONNECTIONS" IN SPRINKLER SYSTEM PIPING, COMPLETE WITH SHUTOFF VALVE, AND SIZED AND LOCATED ACCORDING TO NFPA 13.

INSTALL ALARM DEVICES IN PIPING SYSTEMS.

INSTALL AUTOMATIC AIR RELEASE VENTS.

INSTALL PRESSURE GAGES AT LOCATIONS INDICATED AND AS REQUIRED BY NFPA. INCLUDE PRESSURE GAGES WITH CONNECTION NOT LESS THAN NPS $\frac{1}{4}$ AND WITH SOFT METAL SEATED GLOBE VALVE, ARRANGED FOR DRAINING PIPE BETWEEN GAGE AND VALVE. INSTALL GAGES TO PERMIT REMOVAL, AND INSTALL WHERE THEY WILL NOT BE SUBJECT TO FREEZING.

SPRINKLER INSTALLATION

INSTALL SPRINKLERS IN SUSPENDED CEILINGS IN CENTER OF ACOUSTICAL CEILING PANELS WITH NO VISIBLE DEVIATION.

DO NOT INSTALL PENDENT OR SIDEWALL, WET-TYPE SPRINKLERS IN AREAS SUBJECT TO FREEZING. INSTALL DRY-TYPE SPRINKLERS WITH WATER SUPPLY FROM HEATED SPACE.

PIPING USED FOR SPRINKLER CONNECTION RETURN-BENDS, DROP-NIPPLES, AND RISER-SPRINGS SHALL BE NO SMALLER THAN NPS 1.

SUPPLY PENDENT SPRINKLERS USING A RETURN-BEND PIPING ARRANGEMENT WITH CONNECTION AT THE TOP OF THE BRANCH PIPE TO PREVENT THE ACCUMULATION OF PIPING CORROSION, SCALE, AND SEDIMENT AT THE SPRINKLER.

INSTALL SPRINKLERS SUCH THAT COVER PLATE OR ESCUTCHEON IS FLUSH AND UNIFORM WITH RESPECT TO PENETRATED CEILING OR WALL FINISH AND COMPLIES WITH MANUFACTURER INSTALLATION REQUIREMENTS. CORRECT SPRINKLERS THAT ARE NOT FLUSH BY ADJUSTING THEM IN ACCORDANCE WITH THE MANUFACTURER’S INSTRUCTIONS AND/OR RE-INSTALLING SPRINKLERS.

> ADJUSTABLE SPRINKLER DROP NIPPLES ARE NOT PERMITTED.

INSTALL SPRINKLERS IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13 REGARDING OBSTRUCTIONS TO SPRINKLER DISCHARGE. CONSIDER ALL OBSTRUCTIONS SUCH AS STRUCTURAL ELEMENTS, DUCTWORK, PIPING, LIGHTING, CABLE TRAYS, AND FLOATING ORNAMENTAL CEILINGS. ADJUST SPRINKLER LOCATIONS AND/OR ADD SPRINKLERS AS A UNIT-COST ALLOWANCE WHERE INSTALLATIONS ARE NOT COORDINATED AND OBSTRUCTIONS CANNOT BE RELOCATED TO ACCOMMODATE SPRINKLERS AS INSTALLED.

> COORDINATE THE INSTALLATION OF SOLID BARRIERS BENEATH “NON FLAT”, “NON SOLID”, OR “NON CONTINUOUS” OBSTRUCTIONS REQUIRED BY FM GLOBAL WITH THE CONSTRUCTION MANAGER.

PROVIDE AND INSTALL GUARDS ON SPRINKLERS SUSCEPTIBLE TO MECHANICAL DAMAGE. AT A MINIMUM PROVIDE GUARDS FOR PENDENT AND UPRIGHT SPRINKLERS LOCATED IN THE FOLLOWING LOCATIONS: ELECTRICAL ROOMS AND CLOSETS, NEAR ADJACENT TO CEILING MOUNTED EQUIPMENT REQUIRING MAINTENANCE, BENEATH OBSTRUCTIONS SUCH AS DUCTWORK OR CATWALKS, WALK-IN FREEZERS OR COLD ROOMS, AND BENEATH STAIR LANDINGS.

WHERE NOT PROVIDED UNDER OTHER SECTIONS OF THE WORK, PROVIDE AND INSTALL NON-COMBUSTIBLE BAFFLES BETWEEN SPRINKLERS LESS THAN 6 FEET APART TO PREVENT COLD-SOLDERING.

INSTALLATION OF FLEXIBLE SPRINKLER CONNECTIONS

INSTALL FLEXIBLE SPRINKLER CONNECTIONS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS.

INSTALL EACH FLEXIBLE SPRINKLER CONNECTION ACCORDING TO THE CRITERIA AND LIMITATIONS ESTABLISHED BY THE SUBMITTED PRODUCT DATA, SHOP DRAWINGS AND HYDRAULIC CALCULATIONS WITH RESPECT TO QUANTITY AND TYPE OF FITTING CONNECTIONS, MAXIMUM HOSE LENGTH, MAXIMUM QUANTITY OF BENDS, AND MINIMUM BEND RADIUS.

BRANCH CONNECTIONS SHALL BE MADE A MINIMUM 45 DEGREES FROM HORIZONTAL. WHERE CONNECTIONS FROM THE SIDE OR BOTTOM OF BRANCH ARE REQUIRED DUE TO COORDINATION, LOCATIONS SHALL BE CLEARLY INDICATED OR SHOP DRAWINGS AND APPROVED BY THE ENGINEER.

IDENTIFICATION

INSTALL LABELING AND PIPE MARKERS ON EQUIPMENT AND PIPING ACCORDING TO NFPA 13 FOR IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT.

FIELD QUALITY CONTROL

FLUSH, TEST, AND INSPECT SPRINKLER SYSTEMS ACCORDING TO APPLICABLE NFPA "SYSTEMS ACCEPTANCE" CHAPTER.

HYDROSTATICALLY TEST SYSTEM PIPING IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.

INSPECT SYSTEM COMPONENTS IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. ADJUST SETTINGS OR REPLACE DAMAGED OR MALFUNCTIONING COMPONENTS AND RETEST UNTIL PROPER OPERATION IS ACHIEVED.

FUNCTIONALLY TEST WATER-BASED FIRE SUPPRESSION SYSTEMS, INCLUDING REQUIRED FULL-FLOW TESTS, IN ACCORDANCE WITH THE APPLICABLE NFPA WATER-BASED FIRE SUPPRESSION SYSTEM DESIGN AND INSTALLATION STANDARDS. COMBINE TESTS TO CONSERVE WATER. CORRECT DEFICIENCIES AND RETEST SATISFACTORY RESULTS ARE ACHIEVED.

WATER-BASED FIRE SUPPRESSION SYSTEM WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.

PREPARE TEST AND INSPECTION REPORTS. USE NFPA “CONTRACTOR’S MATERIAL AND TEST CERTIFICATE” FORMAT.

CLEANING

CLEAN DIRT AND DEBRIS FROM SYSTEM COMPONENTS. REMOVE AND REPLACE SPRINKLERS WITH PAINT OTHER THAN FACTORY FINISH OR SIMILAR.

DEMONSTRATION

TRAIN OWNER’S MAINTENANCE PERSONAL TO ADJUST, OPERATE, AND MAINTAIN WATER-BASED FIRE SUPPRESSION SYSTEMS.

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Key Plan:

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author CM
ARCHITECTURE

Drawing:

FIRE SUPPRESSION SPECIFICATIONS

SCALE: As indicated FLOOR:

FX-600

PRINTED FILE

GENERAL DEMOLITION NOTES

1. THIS EXISTING FLOOR PLAN HAS BEEN DEVELOPED UTILIZING EXISTING DOCUMENTS AND READILY OBSERVABLE SITE CONDITIONS. ALL DEVICES, CONDUITS,TELECOMMUNICATIONS EQUIPMENT, ETC. SHOWN ARE FOR REFERENCE ONLY AND MAY NOT INDICATE CORRECT IDENTIFICATION, AND SIZE; AND TOTAL QUANTITIES OF ITEMS SCHEDULED FOR DEMOLITION. VISIT SITE AND FIELD VERIFY THE NUMBER OF DEVICES WITHIN THE CONSTRUCTION PHASE AREA PRIOR TO THE BID AND REMOVAL. THE DRAWINGS DO NOT LIMIT THE AMOUNT OF DEMOLITION WORK REQUIRED. THE TELECOMMUNICATIONS CONTRACTOR MUST PERFORM THE DEMOLITION WORK AS INDICATED ON THE DEMOLITION DRAWINGS AND AS REQUIRED FOR THE NEW WORK.
2. DEMOLITION WORK MUST FOLLOW THE CONSTRUCTION PHASING SEQUENCE AND MUST BE COORDINATED WITH THE CONSTRUCTION DRAWINGS AND CONTRACTORS.
3. REMOVE ALL DEVICES, EQUIPMENT, MATERIAL, AND ASSOCIATED CABLING IN THEIR ENTIRETY, WHICH INTERFERE WITH THE NEW CONSTRUCTION AS DIRECTED BY THE CONSTRUCTION MANAGER. ALWAYS FIELD VERIFY SYSTEM PRIOR TO STARTING WORK AT SITE. THE TERM ASSOCIATED CABLING SHALL MEAN CONDUIT, FITTINGS, SUPPORTS, JUNCTION BOXES, CABLES, ETC. BACK TO THE RESPECTIVE EQUIPMENT ROOM.
4. MAINTAIN AND RESTORE, IF INTERRUPTED BY REMOVALS OR IN PATH OF NEW CONSTRUCTION, ALL CABLES AND CONDUITS PASSING THROUGH AND SERVING UNDISTURBED AREAS (SHOWN OR NOT SHOWN). VERIFY CABLES, DEVICES, AND EQUIPMENT SCHEDULED FOR REMOVAL TO ASSURE THAT THEIR REMOVAL WILL NOT ADVERSELY AFFECT ADJACENT AREAS NOT BEING RENOVATED.
5. IN ANY AREA REQUIRING THE PERFORMANCE OF ANY TRADE'S WORK, THIS CONTRACTOR SHALL CAREFULLY REMOVE AND STORE ANY OR ALL TELECOMMUNICATIONS ITEMS IN PATH OF WORK, REINSTALLING AND RECONNECTING SAME AS REQUIRED, AFTER COMPLETION OF OTHER TRADE'S WORK IN THAT AREA, IN ACCORDANCE WITH THE PLANS AND/OR AS DIRECTED.
6. IN ALL EXISTING OR NEW AREAS SPECIFIED OR SHOWN TO BE PAINTED, THIS CONTRACTOR SHALL REMOVE BAG AND PROTECT DURING WORK ALL TELECOMMUNICATIONS ITEMS AS REQUIRED INCLUDING BUT NOT LIMITED TO DEVICE PLATES, DEVICES, ETC., REINSTALLING SAME AFTER COMPLETION OF PAINTING. ANY ITEM NOT REMOVED AND PAINTED OVER SHALL BE SUITABLY CLEANED OR REPLACED WITH NEW ITEM BY THIS CONTRACTOR.
7. INVENTORY MAJOR TELECOMMUNICATIONS ITEMS THAT ARE REMOVED AND PROVIDE A LIST TO THE OWNER FOR THEIR SELECTION OF ITEMS TO BE RETAINED. ALL ITEMS REJECTED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
8. DISCONNECT, MAKE SAFE AND REMOVE ALL TEMPORARY AND ABANDONED WIRE WITHIN THE SPACE.
9. FLAG, LABEL AND CLEARLY IDENTIFY CABLES AND ITEMS TO REMAIN IN PLACE, AND OR SERVICE, THROUGHOUT THE PROJECT OR ANY PORTION OF THE PROJECT. REPAIR AND/OR REPLACE ANY CABLE OR DEVICE DAMAGED DURING THE PROJECT, WITHIN 24 HOURS OF NOTIFICATION OF DAMAGES OR DISRUPTION.

TELECOM CONDUIT FILL CHART - 40% FILL

			CONDUIT INNER DIAMETER SIZE							
CABLE TYPE	JACKET	CABLE O.D.	0.75"	1"	1.25"	1.5"	2"	2.5"	3"	4"
CAT6	CMR	0.2	5	9	14	20	36	56	81	100
CAT6A	CMR	0.34	1	3	4	6	12	19	27	48
CAT6A	CMR	0.307	2	4	7	10	18	28	41	73
CAT6	CMP	0.2	5	9	14	21	37	57	83	110
CAT6A	CMP	0.34	2	3	5	7	13	21	30	53

TELECOM BACKBOX REQUIREMENTS

1. WALL MOUNTED OUTLETS AND WALL MOUNTED INFEEDS WILL BE INSTALLED USING BOX ELIMINATORS AND THE CABLING WILL RUN FREE AIR.
2. COORDINATE BOX ELIMINATORS LOCATIONS AND DIMENSIONS WITH ARCHITECTURAL AND ELECTRICAL PLANS.
3. FOR FLOOR MOUNTED LOCATIONS:
   PROVIDE A CONDUIT SIZED AS REQUIRED BASED ON THE CABLE FILL CHART, WITH CONNECTORS, BUSHINGS AND PULL STRING TO THE NEAREST ACCESSIBLE CEILING SPACE ON THE SAME FLOOR AS THE ROOM BEING SERVED BY THE OUTLET LOCATION.

GENERAL NOTES

1. THE WORK REQUIREMENTS DESCRIBED WITHIN DIVISION 20 SPECIFICATION SECTION "COMMON MECHANICAL / ELECTRICAL REQUIREMENTS" FORM COMPLIMENTARY REQUIREMENTS TO THE SCOPE OF WORK CONTAINED WITHIN DIVISION 27 AND 28.
2. CONDITIONS OF THE CONTRACT AND DIVISION 1, GENERAL REQUIREMENTS APPLY TO WORK OF THIS SECTION. EXAMINE DRAWINGS AND OTHER SPECIFICATIONS FOR REQUIREMENTS THAT AFFECT WORK OF THIS SECTION.
3. PROVIDE ITEMS REFERRED TO IN SINGULAR OR PLURAL NUMBERS IN CONTRACT DOCUMENTS IN QUANTITIES NECESSARY TO COMPLETE WORK.
4. PERFORM WORK AS REQUIRED BY CODES, REGULATIONS AND LAWS OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES WITH LAWFUL JURISDICTION.
5. MATERIAL AND EQUIPMENT SHALL BE UL, NEMA, ANSI, IEEE, ADA & CBM APPROVED FOR INTENDED SERVICE. MATERIAL AND INSTALLATION SHALL MEET REQUIREMENTS OF NATIONAL AND STATE ELECTRICAL CODE.
6. MAINTAIN RECORD DRAWINGS ON SITE. RECORD SET MUST BE COMPLETE AND CURRENT AND AVAILABLE FOR INSPECTION WHEN REQUISITIONS FOR PAYMENT ARE SUBMITTED.
7. GUARANTEE WORK IN WRITING FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS OR INSTALLATION AT NO COST TO OWNER. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE AT NO COST TO OWNER.
8. SUBMIT GUARANTEE TO ARCHITECT BEFORE APPLICATION FOR FINAL PAYMENT.
9. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERPRETED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.
10. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. PROVIDE INFORMATION AND COMPONENTS SHOWN ON RISER DIAGRAMS BUT NOT SHOWN ON PLANS, AND VICE VERSA, AS IF EXPRESSLY REQUIRED ON BOTH.
11. ALL WIRING SHALL BE RUN CONCEALED UNLESS SPECIFIED OTHERWISE.
12. ALL RACEWAYS RUNNING THROUGH BUILDING EXPANSION JOINTS SHALL BE EQUIPPED WITH EXPANSION FITTINGS.
13. CONTRACTOR SHALL REVIEW ALL TRADES' CONTRACT DOCUMENTS TO DETERMINE SPECIFIC MOUNTING HEIGHTS AND LOCATIONS FOR TELECOM EQUIPMENT. COORDINATE EXACT MOUNTING LOCATIONS WITH THE ARCHITECT.
14. ALL GROUNDING SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL AND STATE ELECTRICAL CODES.
15. REFER TO SPECIFICATION FOR CABLE COLORS
16. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT, JUNCTION BOXES, CABLE TRAYS, PANELS, PULL STRINGS, ENCLOSURES, FLOOR BOXES, POWER CIRCUITS, TELCOM GROUNDING SYSTEM, POWER CABLE AND POWER CONNECTIONS UNDER THIS SECTION.
17. CONDUIT SHALL NOT EXCEED 100'-0" OR A TOTAL OF 180 DEGREES IN BENDS BETWEEN PULL BOXES FOR DISTRIBUTION OF TELE/DATA CABLE.
18. VERIFY ALL DEVICE PLATE FINISHES WITH ARCHITECT AND/OR OWNER.
19. LABEL ALL CABLE, CONDUIT AND BACK BOXES FOR EASE OF IDENTIFICATION.
20. ALL CABLE RUNS MUST BE CONTINUOUS FROM SOURCE TO DESTINATION. NO EXCEPTIONS.
21. PROVIDE A SERVICE LOOP OF 15'-0" MINIMUM AT ALL BACKBONE TERMINATION LOCATIONS AND SPLICE POINTS.
22. INTERBUILDING AND INTRABUILDING OPTICAL FIBER CABLING SHALL BE CLEARLY AND VISIBLY IDENTIFIED BY THE CONTRACTOR IN ALL MANHOLES, PULL BOXES, ENTRANCE POINTS, SERVICE ENTRENCES AND 3'-0" BEFORE ENTERING A FREE STANDING RACK, WALL MOUNTED ENCLOSURE OR SURFACE MOUNT FIBER CABINET UTILIZING AN OPTICAL FIBER CABLE MARKER TAG SYSTEM.
23. WHEN ROUTING COMMUNICATIONS CABLES USING OPEN CABLING METHODS, MAINTAIN A MINIMUM SPACING OF 1'-0" FROM ELECTRICAL FEEDERS, BRANCH CIRCUIT WIRING AND AUXILIARY SYSTEM CABLING.
24. WHEN ROUTING COMMUNICATIONS CABLES USING OPEN CABLING METHODS, MINIMUM SPACING FROM ELECTRICAL APPARATUS SUCH AS MOTOR DRIVEN EQUIPMENT AND TRANSFORMERS SHALL BE 4'-0". SPACING REQUIREMENTS SHALL APPLY TO OPEN CABLE PATHS WHERE EQUIPMENT IS LOCATED ON THE SAME FLOOR, FLOOR ABOVE, FLOOR BELOW OR IN ROOMS ADJACENT TO SUCH EQUIPMENT AS THOUGH WALLS AND FLOORS DID NOT EXIST. EXCEPTION: BUILDING CONSTRUCTION THAT RESULTS IN METALLIC BARRIER BETWEEN ELECTRICAL APPARATUS AND CABLE PATHWAYS SHALL BE CONSIDERED SUITABLE SEPARATION.

TELECOM SYMBOLS LEGEND

W	WALL MOUNTED WIRELESS LOCATION (1) - CAT 6 CMP CABLES
W	CEILING MOUNTED WIRELESS LOCATION (1) - CAT 61 CMP CABLES CEILING MOUNTED WIRELESS DATA LOCATIONS ARE TO BE MOUNTED TO THE BUILDING STRUCTURE ABOVE THE CEILING. THE CEILING MOUNTED WIRELESS DATA DEVICE BOX ASSEMBLY IS TO BE (UL) RATED FOR PLENUM.
1	WALL MOUNTED DATA 1 LOCATION (1) - CAT 6 CMP CABLE
2	WALL MOUNTED DATA 2 LOCATION (2) - CAT 6 CMP CABLES
3	WALL MOUNTED DATA 3 LOCATION (3) - CAT 6 CMP CABLES
4	WALL MOUNTED DATA 4 LOCATION (4) - CAT 6 CMP CABLES
1	FLOOR MOUNTED DATA 1 LOCATION (1) - CAT 6 CMP CABLE WHERE FURNITURE IS FIXED OUTLETS ARE INSTALLED IN BISCUIT BOX AND MOUNTED TO UNDERSIDE OF TABLE.
2	FLOOR MOUNTED DATA 2 LOCATION (2) - CAT 6 CMP CABLES WHERE FURNITURE IS FIXED OUTLETS ARE INSTALLED IN BISCUIT BOX AND MOUNTED TO UNDERSIDE OF TABLE.
3	FLOOR MOUNTED DATA 3 LOCATION (3) - CAT 6 CMP CABLES WHERE FURNITURE IS FIXED OUTLETS ARE INSTALLED IN BISCUIT BOX AND MOUNTED TO UNDERSIDE OF TABLE.
4	FLOOR MOUNTED DATA 4 LOCATION (4) - CAT 6 CMP CABLES WHERE FURNITURE IS FIXED OUTLETS ARE INSTALLED IN BISCUIT BOX AND MOUNTED TO UNDERSIDE OF TABLE.
1	CEILING MOUNTED DATA 1 LOCATION (1) - CAT 6 CMP CABLE
2	CEILING MOUNTED DATA 2 LOCATION (2) - CAT 6 CMP CABLES
3	CEILING MOUNTED DATA 3 LOCATION (3) - CAT 6 CMP CABLES
4	CEILING MOUNTED DATA 4 LOCATION (4) - CAT 6 CMP CABLES
CAM	CEILING MOUNTED DATA 1 LOCATION - FOR CAMERA (1) - CAT 6 CMP CABLE
W	WALL MOUNTED PHONE VOICE 1 LOCATION (1) - CAT 6 CMP CABLE
TV	WALL MOUNTED TV DATA 1 LOCATION (2) - CAT 6 CMP CABLE
TV	FLOOR MOUNTED TV DATA 1 LOCATION (2) - CAT 6 CMP CABLE
F #	FEED LOCATION (# DENOTES THE NUMBER OF CABLES AT THE FEED LOCATION) PROVIDE A 2-GANG MUDRING WITH GROMMET FACEPLATE AT FEED LOCATIONS AS IDENTIFIED ON PLANS. PROVIDE POLYETHYLENE SLEEVE FROM GROMMET TO MODULAR FURNITURE ENTRY POINT.

VANDERWEIL PROJECT INFO

PROJECT NUMBER	K1178
PROJECT NAME	RPH-SHO

TELECOM DRAWING LIST

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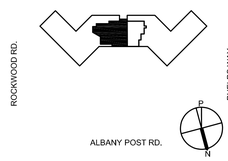
Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

TELECOM
LEGEND AND NOTES

SCALE: As Indicated FLOOR:

T-001

PRINTED: FILE:

SECTION 271000 - STRUCTURED CABLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Where Paragraphs of this Section conflict with similar paragraphs of the General and Supplementary Conditions and Division 1, requirements of this Section shall prevail.

1.2 SUMMARY

A. Description, this project consists of, but is not limited to, the following:

1. A complete and operational horizontal cabling distribution system consisting of:
   a. Plenum rated Category 5E UTP cabling;
   b. Associated terminations, connections, connectors, mounts, brackets, enclosures and accessories to ensure a complete system.
2. A 20 year applications and system warranty.

B. Section Includes:

1. Pathways.
2. UTP cable
3. UTP cable hardware.
4. Grounding.
5. Identification products.

1.3 STANDARDS

A. ANSI/TIA-568-C.0: Generic Telecommunications Cabling for Customer Premises.

B. ANSI/TIA-568-C.1: Commercial Building Telecommunications Cabling Standard

C. ANSI/TIA-568-C.2: Balanced Twisted-Pair Telecommunications Cabling and Components Standards.

D. ANSI/TIA/EIA-569-B: Commercial Building Standard for Telecommunications Pathways and Spaces.

E. ANSI/TIA/EIA-606-A: Administration Standard for the Telecommunicatlons Infrastructure of Commercial Buildings

F. ANSI/J-STD-607-A: Commercial Building Grounding and Bonding Requirements for Telecommunications.

G. ANSI/TIA-1152, Requirements for Field Test Instruments and Measurements for Balance Twisted-Pair Cabling.

1.4 DEFINITIONS

A. ANSI: American National Standards institute.

B. BICSI: Building Industry Consulting Service International.

C. Cross-Connect: A facility enabling the termination of cable elements and their interconnection or cross-connection.

D. EIA: Electronic Industries Alliance.

E. EMI: Electromagnetic interference.

F. ER: Equipment Room.

G. HC: Horizontal Cross-Connect

H. IDC: Insulation displacement connector.

I. ITSIM: Information Technology Systems Installation Methods Manual

J. LAN: Local area network.

K. Telecommunications Outlet/Connectors: A connecting device in the work area on which horizontal cable terminates.

L. RCDD: Registered Communications Distribution Designer.

M. TIA: Telecommunications Industry Association.

N. TDMM: Telecommunications Distribution Methods Manual.

O. TR: Telecommunications Room.

P. UTP: Unshielded twisted pair.

1.5 ADMINISTRATIVE REQUIREMENTS

A. Coordinate layout and installation of telecommunications cabling with Owner, Architect and architectural drawings and elevations.

B. Review the related drawings and specifications for other trades/sections, including but not limited to: Architectural, Mechanical, Electrical, Electrical, Structural and Civil.

C. Coordinate telecommunications outlet/connector locations with location of power receptacles.

1.6 ACTION SUBMITTALS

A. Shop Drawings:

1. System Labeling Schedules: Electronic copy of labeling schedules, in software and format selected by Owner.
2. Electronic form cabling administration drawings.
3. Wiring diagrams for each system and subsystem to show typical wiring schematics, including the following:
   a. Cross-connects.
   b. Horizontal cable.
   c. Patch panels.
   d. Patch cords and work area cords.
4. Cross-connects and patch panels. Detail mounting assemblies, and show elevations and physical relationship between the installed components.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer, qualified layout technician, installation supervisor, and field inspector.

B. Submit documentation regarding the manufacturer's warranty. The documentation will include a sample of the warranty that would be provided to the customer when the installation is complete and documentation of the support procedure for warranty issues. Provide an application assurance manual documenting the vendor supported applications and application guidelines. In addition the contractor will furnish manufacturer's documentation stating the contractor is certified to perform warranty work.

1.8 CLOSEOUT SUBMITTALS

A. Submit, upon completion of the installation:

1. Electronic copies of complete operating manuals and user guide for each system and record drawings. Instructions must include part numbers and names, addresses, and telephone numbers of parts source.
2. Test reports, as specified in field quality control article under execution, on CDs using excel or other similar software. If the software used to document test results is proprietary, than the contractor will include the necessary software and licenses to read and store the test results.
3. Electronic floor plans showing communications outlets and identification numbers for each system. Submit completed cable schedules for each cable by system, using the final room numbers. This submittal must be approved prior to authorization for final payment.

1.9 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI on staff.

1. Project Manager: Shall be an RCDD.
2. Layout Responsibility: Preparation of Shop Drawings, Cabling Administration Drawings, and field testing program development by an RCDD.
3. Installation Supervision: Installation shall be under the direct supervision of BICSI Certified ITS Technician, who shall be present at all times when Work of this Section is performed at Project site.

B. Provide evidence that the contractor is authorized by the manufacturer to furnish warranty services, components, and systems.

C. Provide and/or warranty section a warranty for all parts, components, and materials against defects, faulty workmanship, and/or failure for one full year following system(s) acceptance.

D. Meet with designated representative of the owner, architect and consultant for coordination meeting prior to commencement of work.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Schedule, arrange, and coordinate with involved parties/trades for shipment, arrivals, loading dock, elevators (as applicable), acceptance, storage, and security of equipment and materials. Assure that these activities do not interfere with other trades or the progress of this project.

B. Store and protect materials according to manufacturer's specifications and recommendations.

1.11 WARRANTY

A. Extended Warranty: Manufacturer's standard form in which manufacturer agrees to repair or place horizontal UTP cabling and components that fail within specified warranty period.

1. Warranty Period: Twenty years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PATHWAYS

A. General Requirements: Comply with ANSI/TIA/EIA-569-B.

B. Cable Support: Cable supports shall be sized to allow a fill ratio that meets the standards specified herein and identified to support the Category of cabling being installed, designed to prevent degradation of cable performance and pinch points that could damage cable.

1. Spools, J-hooks, Velcro straps and D-rings.

2.2 UTP CABLE

A. FOUR PAIR CATEGORY 6 (MANUFACTURER BRANDED CATEGORY 6E) UNSHIELDED TWISTED PAIR CABLE (RISER, PLENUM AS REQUIRED)

1. Description
   1.1. (4) 23 AWG solid copper unshielded twisted pairs.
   1.2. Compliant with Category 6 performance criteria as defined in ANSI/TIA 568
   1.3. Cable shall be Listed CMP or CMR for the environment where the cable is installed. Listing shall be by a NRTL acceptable to the AHJ.

B. Manufacturers

1. Mohawk AdvanceNet Cable M57193

C. Patch and Work Area Cords Description: Factory-made, four-pair cables in various colors and lengths; terminated with 8-position 8-contact modular plug at each end.

1. Patch cords shall have bend-relief-compliant boots. Provide one Patch Cord per cable terminated on patch panel in the following lengths:
   a. Length:
      1) 50 percent 10 foot.
      2) 40 percent 7 foot.
      3) 10 percent 4 foot.
2. Work Area cords shall have bend-relief-compliant anti-snag boots and color-coded icons. Provide one Work Area Cord per telecommunications outlet connector terminated in the following lengths:
   a. Length:
      1) 40 percent 10 foot.
      2) 40 percent 7 foot.
      3) 20 percent 4 foot.

2.3 UTP CABLE HARDWARE

A. Copper Patch Panels

1. Manufacturers: Hubbell, part number Next Speed V-shaped (P648AU for 48 port patch panels), no alternates accepted

B. 4-Pair Copper UTP Connectors

1. Hubbell HXJOW, jack icons 1W100C, no alternates accepted.

C. 8-POSITION, 8-CONTACT (8P8C) MODULAR CONNECTOR

1. The connector shall meet or exceed the industry recognized performance category rating of the cable. For example:
   A. Category 5e cable shall have category 5 rated connectors.
   B.Category 6 cable shall have category 6 rated connectors.
2. Use shielded jacks with STP, FTP, and ScTP cables and unshielded jacks for UTP cables.
3. The connector module shall have labeling for both the T568A and T568B wiring configurations.
4. Connector colors shall be:
   A. White

D. Workstation Faceplate: Multi-port-connector assemblies mounted in single gang faceplate.

1. Plastic Faceplate: High-impact plastic.
2. Hubbell, no alternates
3. Legend: Machine printed, in the field, using adhesive-tape label.

2.4 IDENTIFICATION PRODUCTS

A. Comply with ANSI/TIA/EIA-606-A for labeling materials, including label stocks, laminating adhesives, and inks used by label printers.

PART 3 - EXECUTION

3.1 WIRING METHODS

A. Install cables in pathways and cable trays except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces and in gypsum board partitions where unenclosed wiring method may be used unless otherwise noted. Conceal pathways and cables unless otherwise noted.

3.2 INSTALLATION OF CABLES

A. Comply with NECA 1.

B. Four pair UTP cabling wiring scheme: T568B.

C. General Requirements for Cabling:

1. Comply with ANSI/TIA-568-C.1.
2. Comply with BICSI ITSIM, Cable Termination Practices.
3. Install 110-style IDC termination hardware unless otherwise indicated.
4. Terminate conductors; no cable shall contain unterminated elements unless otherwise noted. Make terminations only at indicated outlets, terminals, cross-connects, and patch panels.
5. Cables may not be spliced. Secure and support cables at intervals not exceeding 5 feet. Install lacing bars to restrain cables, to prevent straining connections, and to prevent bending cables to smaller radii than minimums recommended by manufacturer.
6. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIM, "Cabling Termination Practices" Chapter. Install lacing bars and distribution spools.
7. Install conductors parallel with or at right angles to sides and back of enclosure.
8. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
9. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
10. Route cables, in bundles of no more than fifty. Bundle cables using Hook and Loop wire management straps, tie wraps are not acceptable.
11. In the communications equipment room, install a 10 foot long cable service loop.
12. In the ceiling above the work area outlet, install a 3 foot long cable service loop.
13. Pulling Cable: Comply with BICSI ITSIM, monitor cable pull tensions.

D. Group connecting hardware for cables into separate logical fields.

E. Separation from EMI Sources:

1. Comply with BICSI TDMM and ANSI/TIA-569-B for separating unshielded copper voice and data communication cable from potential EMI sources, including electrical power lines and equipment.
2. Separation between open communications cables or cables in nonmetallic raceways and unshielded power conductors and electrical equipment shall be as follows:
   a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 5 inches.
   b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 12 inches.
   c. Electrical Equipment Rating More Than 5 kVA: A minimum of 24 inches .
3. Separation between communications cables in grounded metallic raceways and unshielded power lines or electrical equipment shall be as follows:
   a. Electrical Equipment Rating Less Than 2 kVA: A minimum of 2-1/2 inches.
   b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 6 inches.
   c. Electrical Equipment Rating More Than 5 kVA: A minimum of 12 inches.
4. Separation between communications cables in grounded metallic raceways and power lines and electrical equipment located in grounded metallic conduits or enclosures shall be as follows:
   a. Electrical Equipment Rating Less Than 2 kVA: No requirement.
   b. Electrical Equipment Rating between 2 and 5 kVA: A minimum of 3 inches.
   c. Electrical Equipment Rating More Than 5 kVA: A minimum of 6 inches.
5. Separation between Communications Cables and Electrical Motors and Transformers, 5 kVA or HP and Larger: A minimum of 48 inches.
6. Separation between Communications Cables and Fluorescent Fixtures: A minimum of 5 inches.

3.3 FIRESTOPPING

A. Comply with requirements in Section 078413 "Penetration Firestopping."

B. Comply with ANSI/TIA-569-B, Annex A, "Firestopping."

C. Comply with BICSI TDMM, "Firestopping Systems" Article.

3.4 GROUNDING

A. Install grounding according to BICSI TDMM, "Bonding and Grounding (Earthing)" Chapter.

B. Comply with ANSI/J-STD-607-A.

3.5 IDENTIFICATION

A. Identify system components, wiring, and cabling complying with ANSI/TIA/EIA-606-A.

1. Administration Class: 2.
2. Color-code cross-connect fields. Apply colors to voice and data service backboards, connections, covers, and labels.

B. Paint and label colors for equipment identification shall comply with ANSI/TIA/EIA-606-A for Class 2 level of administration.

C. Cable Schedule: Post in prominent location in communications each equipment room. List incoming and outgoing cables and their designations, origins, and destinations. Protect with rigid frame and clear plastic cover. Furnish an electronic copy of final comprehensive schedules for Project.

D. Cabling Administration Drawings: Show building floor plans with cabling administration-point labeling. Identify labeling convention and show labels for telecommunications closets, hardware, horizontal cables, work areas, grounding buses and pathways, and equipment grounding conductors. Follow convention of ANSI/TIA/EIA-606-A. Furnish electronic record of all drawings, in software and format selected by Owner.

E. Cable Identification:

1. Label each horizontal cable within 4 inches of each termination, where it is accessible in a rack, cabinet, junction box or outlet box.
2. Identification within Connector Fields in Equipment Rooms and Wiring Closets: Prior to labeling, coordinate with owner for labeling scheme. Label each connector, faceplate, 110-block or other connecting hardware.

F. Labels shall be preprinted or computer-printed type with printing area and font color that contrasts with cable jacket color but still complies with requirements in ANSI/TIA/EIA-606-A.

1. Cables use flexible vinyl or polyester that flex as cables are bent.

3.6 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:

1. Visually inspect cable jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with standards.
2. Visually confirm correct marking of outlets, cover plates, outlet/connectors, and patch panels.
3. Visually inspect cable placement, cable termination, grounding and bonding, equipment, patch cords and work area cords, and labeling of all components.
4. Test instruments shall meet or exceed applicable requirements in standards specified herein.
5. Horizontal UTP Performance Tests:
   a. Test for each outlet. Perform the following tests according to ANSI/TIA-568-C.2:
      1) Wire map.
      2) Length (physical vs. electrical, and length requirements).
      3) DC loop resistance.
      4) Return loss.
      5) Insertion loss.
      6) ACRF.
      7) PSACRF.
      8) Propagation delay skew.
      9) PSANEXT loss.
      10) Average PSANEXT loss.
      11) PSAACRF.
      12) Average PSAACRF loss.
      13) Return loss.
      14) Propagation delay.

B. End-to-end cabling will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.7 CLEANING

A. Clean equipment any work areas prior to presentation for acceptance by client. This work will include wiping of work areas, removal of streaks, dust, stains, etc., and assurances that systems and components as represented are new and undamaged.

3.8 DEMONSTRATION

A. Train Owner's maintenance personnel in cable-plant management operations, including changing signal pathways for different workstations, rerouting signals in failed cables, and keeping records of cabling assignments and revisions when extending wiring to establish new workstation outlets.

3.9 SYSTEM ACCEPTANCE

A. Obtain written acceptance from the owner or the owner's representative at the completion of system installation, testing, documentation and training. Failure of the contractor to obtain sign off will result in the contractor remaining responsible for extending, at no charge to the owner, conditions of the warranty and guarantees until such time that sign off had occurred. Time included in the above condition will be presented to the owner in addition to the standard warranties.

END OF SECTION

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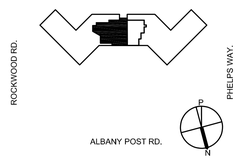

Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

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Professional Seall and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

TELECOM SPECIFICATIONS

SCALE: As Indicated FLOOR:

T-002

PRINTED: FILE:

GENERAL DEMOLITION NOTES

1. THIS EXISTING FLOOR PLAN HAS BEEN DEVELOPED UTILIZING EXISTING DOCUMENTS AND READILY OBSERVABLE SITE CONDITIONS. ALL DEVICES, CONDUITS,TELECOMMUNICATIONS EQUIPMENT, ETC. SHOWN ARE FOR REFERENCE ONLY AND MAY NOT INDICATE CORRECT IDENTIFICATION, AND SIZE; AND TOTAL QUANTITIES OF ITEMS SCHEDULED FOR DEMOLITION. VISIT SITE AND FIELD VERIFY THE NUMBER OF DEVICES WITHIN THE CONSTRUCTION PHASE AREA PRIOR TO THE BID AND REMOVAL. THE DRAWINGS DO NOT LIMIT THE AMOUNT OF DEMOLITION WORK REQUIRED. THE TELECOMMUNICATIONS CONTRACTOR MUST PERFORM THE DEMOLITION WORK AS INDICATED ON THE DEMOLITION DRAWINGS AND AS REQUIRED FOR THE NEW WORK.

2. DEMOLITION WORK MUST FOLLOW THE CONSTRUCTION PHASING SEQUENCE AND MUST BE COORDINATED WITH THE CONSTRUCTION DRAWINGS AND CONTRACTORS.

3. REMOVE ALL DEVICES, EQUIPMENT, MATERIAL, AND ASSOCIATED CABLING IN THEIR ENTIRETY, WHICH INTERFERE WITH THE NEW CONSTRUCTION AS DIRECTED BY THE CONSTRUCTION MANAGER. ALWAYS FIELD VERIFY SYSTEM PRIOR TO STARTING WORK AT SITE. THE TERM ASSOCIATED CABLING SHALL MEAN CONDUIT, FITTINGS, SUPPORTS, JUNCTION BOXES, CABLES, ETC. BACK TO THE RESPECTIVE EQUIPMENT ROOM.

4. MAINTAIN AND RESTORE, IF INTERRUPTED BY REMOVALS OR IN PATH OF NEW CONSTRUCTION, ALL CABLES AND CONDUITS PASSING THROUGH AND SERVING UNDISTURBED AREAS (SHOWN OR NOT SHOWN). VERIFY CABLES, DEVICES, AND EQUIPMENT SCHEDULED FOR REMOVAL TO ASSURE THAT THEIR REMOVAL WILL NOT ADVERSELY AFFECT ADJACENT AREAS NOT BEING RENOVATED.

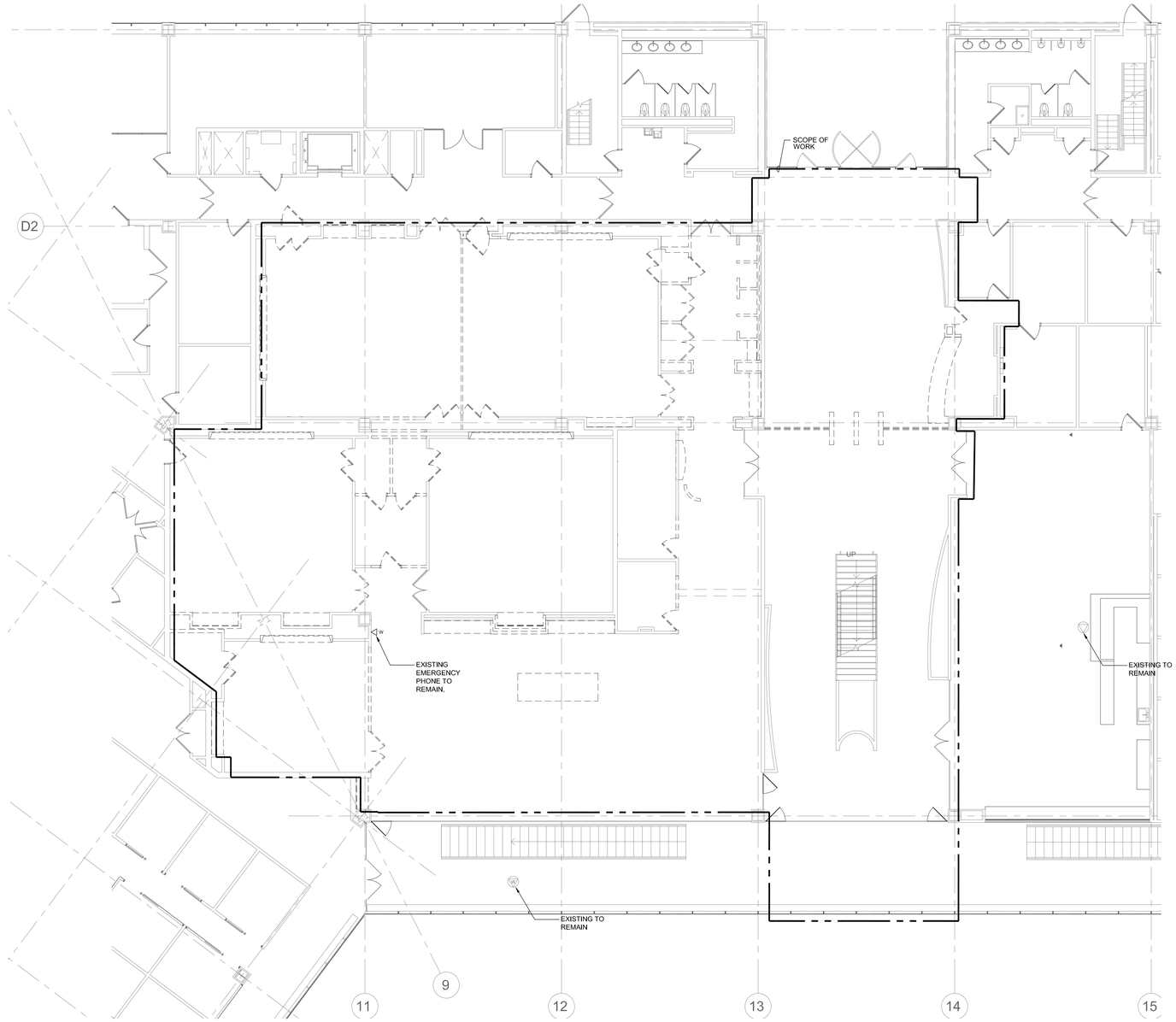
5. IN ANY AREA REQUIRING THE PERFORMANCE OF ANY TRADE'S WORK, THIS CONTRACTOR SHALL CAREFULLY REMOVE AND STORE ANY OR ALL TELECOMMUNICATIONS ITEMS IN PATH Of WORK, REINSTALLING AND RECONNECTING SAME AS REQUIRED, AFTER COMPLETION OF OTHER TRADE'S WORK IN THAT AREA, IN ACCORDANCE WITH THE PLANS AND/OR AS DIRECTED.

6. IN ALL EXISTING OR NEW AREAS SPECIFIED OR SHOWN TO BE PAINTED, THIS CONTRACTOR SHALL REMOVE BAG AND PROTECT DURING WORK ALL TELECOMMUNICATIONS ITEMS AS REQUIRED INCLUDING BUT NOT LIMITED TO DEVICE PLATES, DEVICES, ETC., REINSTALLING SAME AFTER COMPLETION OF PAINTING. ANY ITEM NOT REMOVED AND PAINTED OVER SHALL BE SUITABLY CLEANED OR REPLACED WITH NEW ITEM BY THIS CONTRACTOR.

7. INVENTORY MAJOR TELECOMMUNICATIONS ITEMS THAT ARE REMOVED AND PROVIDE A LIST TO THE OWNER FOR THEIR SELECTION OF ITEMS TO BE RETAINED. ALL ITEMS REJECTED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.

8. DISCONNECT, MAKE SAFE AND REMOVE ALL TEMPORARY AND ABANDONED WIRE WITHIN THE SPACE.

9. FLAG, LABEL AND CLEARLY IDENTIFY CABLES AND ITEMS TO REMAIN IN PLACE, AND OR SERVICE, THROUGHOUT THE PROJECT OR ANY PORTION OF THE PROJECT. REPAIR AND/OR REPLACE ANY CABLE OR DEVICE DAMAGED DURING THE PROJECT, WITHIN 24 HOURS OF NOTIFICATION OF DAMAGES OR DISRUPTION.



TELECOM DEMOLITION NOTES

- LABEL, PHOTOGRAPH, AND INVENTORY THE DEVICES THAT HAVE BEEN REMOVED, PACK THEM INTO BOXES, AND DELIVER THEM TO THE DESIGNATED REPRESENTATIVE OF THE OWNER. OBTAIN A SIGNED RECEIPT FOR THE SPECIFIC INVENTORY OF DEVICES.
- DISCONNECT AND REMOVE EXISTING TELECOM EQUIPMENT, ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE OF SUPPLY , CUT ALL PENETRATIONS THROUGH EXISTING FLOOR SLABS FLUSH WITH EXISTING SLAB.SEAL OPENINGS WITH U.L. APPROVED FIRE STOPPING SEALANT.
- DISCONNECT AND REMOVE ALL TELEVISIONS AND MISC. SYSTEMS CONDUIT AND WIRING BACK TO SOURCE OF SUPPLY .
- DISCONNECT AND REMOVE ALL ,ACCESS CONTROL DEVICES AND ASSOCIATED CONDUIT UNLESS NOTED. AND WIRING .
- AT THE END OF PROJECT DEMOLISH ORIGINAL PATHWAYS, PUNCH DOWN BLOCKS AND CABLING WHICH HAVE BEEN VERIFIED TO NO LONGER BE OPERATIONAL.

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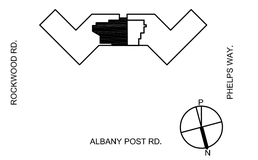
CERAMI ASSOCIATES
1001 AVENUE OF THE AMERICAS 4TH FLOOR
NEW YORK, NY 10018

TEL 212.370.1776

Key Plan:



Project Address: 1 ROCKWOOD ROAD SLEEPY HOLLOW NY 10591

Revision	Date	Description
	04/07/21	ISSUE FOR BID
	05/13/21	ISSUE FOR BID
	05/25/21	ISSUE FOR PERMIT
	06/01/21	ISSUE FOR BID

Plot Date::

Professional Seal and Signature:

FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

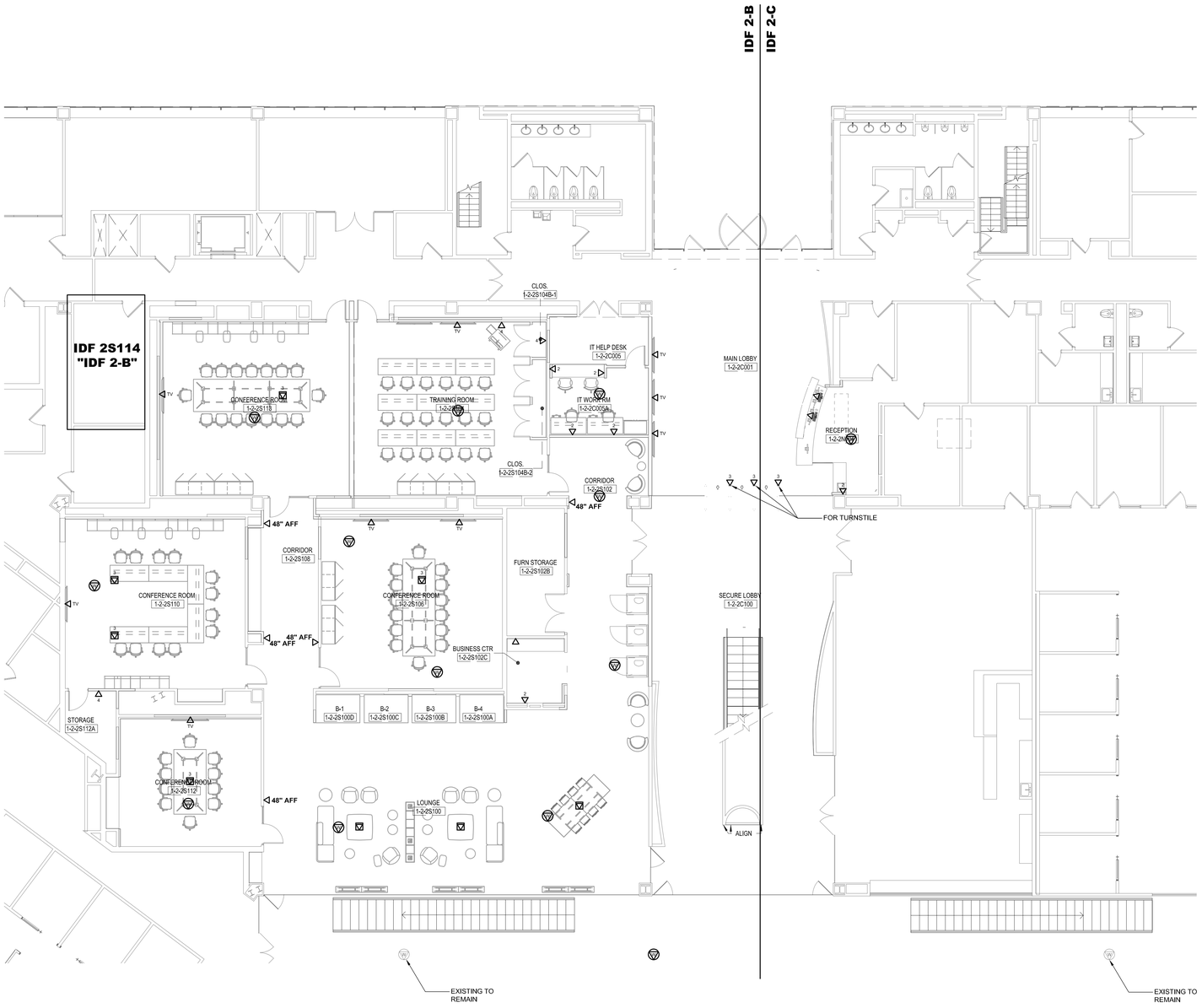
Drawing:

2ND FLOOR TELECOM DEMOLITION PLAN

SCALE: As Indicated FLOOR:

TD-102

PRINTED: FILE:



IDF
2N134
"IDF 2-C"

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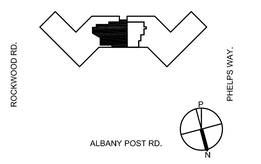

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FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

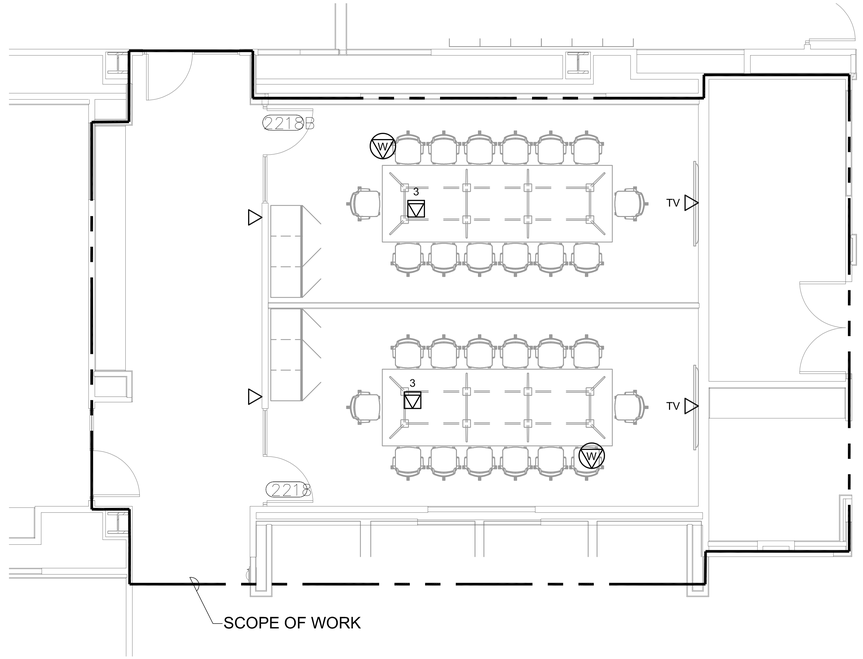
Drawing:

2ND FLOOR -
TELECOM PLAN

SCALE: As indicated FLOOR:

T-102

PRINTED: FILE:



1 Level 2 CONSTRUCTION PLAN - ADD ALTERNATE
T-101A SCALE: 1/4" = 1'-0"

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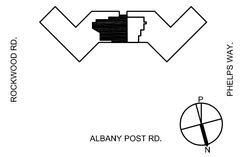

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FCA FRANCIS CAUFFMAN ARCHITECTS
FCA Project: 20-7168 Author
ARCHITECTURE

Drawing:

2ND FLOOR TELECOM
ADD ALTERNATES

SCALE: As Indicated FLOOR:

T-102A

PRINTED: FILE: