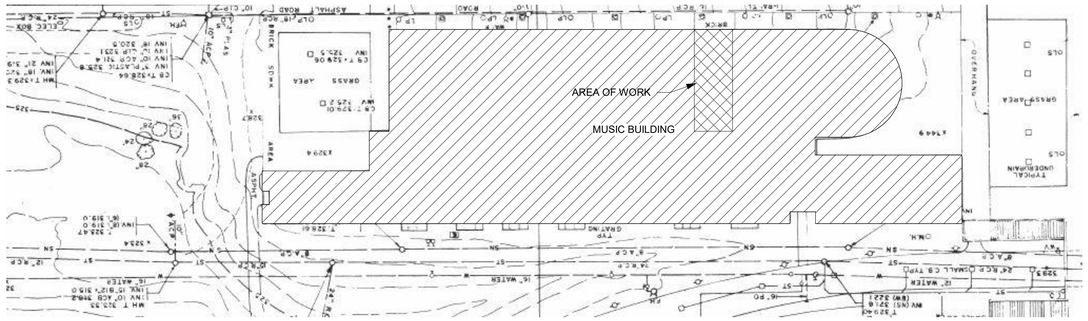
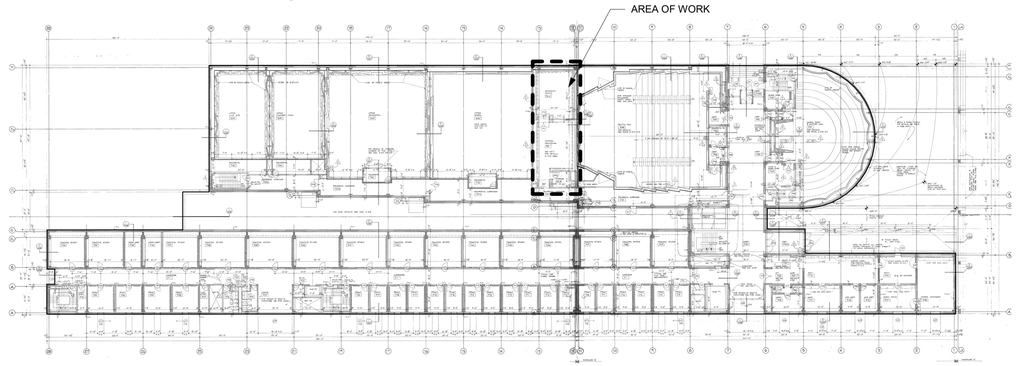


BUILDING KEY PLAN



FLOOR PLAN

GENERAL NOTES

1. ALL WORK CALLED FOR ON THESE DOCUMENTS SHALL BE IN COMPLIANCE WITH CODES, RULES, AND REGULATIONS OF ALL FEDERAL, STATE, AND LOCAL GOVERNMENTAL AGENCIES HAVING JURISDICTION."

2. BEFORE COMMENCING THE WORK THE CONTRACTOR SHALL SUBMIT ALL REQUIRED CERTIFICATES INCLUDING INSURANCES, PERMITS, AND OTHER REQUIRED DOCUMENTATION, OUTLINED IN THE PROJECT MANUAL OR INDICATED ON THE BID DOCUMENTS.

3. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO COMMENCING WORK, AND SHALL REPORT ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS TO THE ARCHITECT BEFORE PROCEEDING WITH WORK. ANY WORK STARTED BEFORE CONSULTATION AND ACCEPTANCE BY THE ARCHITECT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBJECT TO CORRECTIONS BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION.

4. MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER CONSTRUCTION OF ANY PART OF THE WORK SHALL BE INCLUDED AS IF THEY WERE INDICATED IN THE DRAWINGS.

5. THE CONTRACTOR SHALL COORDINATE ALL WORK PROCEDURES WITH REQUIREMENTS OF CAMPUS PROJECT REPRESENTATIVE .

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL CONDITIONS AND MATERIALS WITHIN THE PROPOSED CONSTRUCTION AREA. THE CONTRACTOR SHALL DESIGN AND INSTALL ADEQUATE SHORING AND BRACING FOR ALL STRUCTURAL OR REMOVAL TASKS. THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY FOR ANY DAMAGE OR INJURIES CAUSED BY OR DURING THE EXECUTION OF THE WORK.

7. THE CONTRACTOR SHALL LAY OUT HIS OWN WORK, AND SHALL PROVIDE ALL DIMENSIONS REQUIRED FOR THE OTHER TRADES (PLUMBING, ELECTRICAL, ETC.).

8. THE PLUMBING AND ELECTRICAL WORK SHALL BE PERFORMED BY PERSONS LICENSED IN THEIR TRADES, WHO SHALL ARRANGE FOR AND OBTAIN INSPECTIONS AND REQUIRED SIGN-OFFS AND INSPECTIONS. CONTRACTOR IS RESPONSIBLE FOR VERIFYING LOCAL JURISDICTIONAL REQUIREMENTS.

9. THE CONTRACTOR SHALL DO ALL CUTTING, PATCHING, REPAIRING AS REQUIRED TO PERFORM ALL OF THE WORK INDICATED ON THE DRAWINGS, AND ALL OTHER WORK THAT MAY BE REQUIRED TO COMPLETE THE JOB.

10. ALL PIPING AND WIRING SHALL BE PULLED BACK TO THE SOURCE.

11.THE CONTRACTOR, UPON COMPLETION OF THE WORK, SHALL APPLY FOR DEPARTMENT OF BUILDINGS INSPECTIONS AND SIGN-OFFS AS REQUIRED.

12. BUILDING RISERS, INCLUDING PLUMBING AND ELECTRICAL ARE NOT PERMITTED TO BE RELOCATED.

13. ALL WORK TO BE IN COMPLIANCE WITH ALL SECTIONS FOR THE ALTERATIONS AGREEMENT AND CAMPUS SPECIAL CONDITIONS FOR CONSTRUCTION FOR ADDITIONAL INFORMATION & REQUIREMENTS, IF APPLICABLE.

14. CUTTING IN DEMISING OR EXTERIOR WALLS FOR ANY SERVICE, INCLUDING ELECTRICAL IS NOT PERMITTED UNLESS REVIEWED AND APPROVED BY THE BUILDING'S ARCHITECT.

15. PROVIDE OR MAINTAIN FIRE RATED CONSTRUCTION AS REQUIRED AT SHAFTS, STRUCTURAL MEMBERS, ETC.

16. THE USE OF POWER DEVICES SUCH AS ELECTRIC HAMMERS OR OTHER PNEUMATIC TOOLS WILL NOT BE ALLOWED UNLESS APPROVED BY THE CAMPUS PROJECT REPRESENTATIVE. NO POWER-ACTUATED DEVICES MAY BE USED TO ATTACH STUDS TO EXISTING FLOORS, CEILINGS OR WALLS UNLESS A LIST OF PROPOSED TOOLS IS SUBMITTED AND APPROVED BY THE CAMPUS PROJECT REPRESENTATIVE. POWER-ACTUATED DEVICES MAY NOT BE UTILIZED WITHOUT PRIOR CONSENT FROM THE BOARD, AS PER THE ALTERATION AGREEMENT.

17. NOTE THAT THE BUILDING'S PLUMBING, GAS, TELEPHONE OR ELECTRIC RISERS MAY NOT BE DISTURBED; PROVIDE PROTECTION THROUGHOUT THE WORK. SHUTDOWN OF SYSTEM RISERS MUST BE COORDINATED WITH THE CAMPUS PROJECT REPRESENTATIVE.

18. PROVIDE FOR FIRE SAFETY AS PER THE ALTERATION AGREEMENT, AS REQUIRED. MAINTAIN FIRE EXTINGUISHERS AND SMOKE/CO DETECTORS IN WORKING ORDER ON THE SITE AT ALL TIMES DURING CONSTRUCTION. REFER TO CAMPUS SPECIAL CONDITIONS FOR CONSTRUCTION FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

19. CONTRACTOR TO PROVIDE FOR PAINT, DUST, DEBRIS AND NOISE CONTAINMENT AS DIRECTED BY THE CAMPUS PROJECT REPRESENTATIVE. ALL VENTS AND EXHAUSTS MUST BE FULLY SEALED TO PREVENT INFILTRATION OF DUST AND DIRT.

20. WHERE CHASES, SHAFTS, DEMISING WALLS AND STRUCTURAL ELEMENTS ARE OPENED DURING CONSTRUCTION, PROVIDE FIRESTOPPING AS REQUIRED BY CODE AT ALL EXISTING OR NEW OPENINGS. A UL RATED FIRESTOPPING SYSTEM IS TO BE PROVIDED AS MANUFACTURED BY STI, HILTI OR EQUAL. NOTE THAT FIRESTOPPING MUST BE COMPLETE ONCE DEMOLITION HAS BEEN COMPLETED.

21. CONTRACTOR IS TO NOTIFY THE CAMPUS PROJECT REPRESENTATIVE AND/OR ARCHITECT ON THE FOLLOWING MILESTONES SO THAT OBSERVATION VISITS MAY BE SCHEDULED OF THE WORK:
- COMPLETION OF DEMOLITION
- COMPLETION OF ROUGHING
- COMPLETION OF WATERPROOFING AND SOUNDPROOFING
- COMPLETION OF PROJECT

22. ANY CHANGES TO THE SCOPE OF WORK MUST BE SUBMITTED TO THE CLIENT AND THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO THE COMMENCEMENT OF THAT WORK.

23. COMPLY WITH MANUFACTURERS PRINTED INSTRUCTIONS, AND THE STANDARDS OF RECOGNIZED AGENCIES AND ASSOCIATIONS FOR MATERIALS, WORKMANSHIP AND INSTALLATION.

24. DO NOT SCALE DRAWINGS. DETAILS, NOTES, AND THE LIKE ARE TYPICAL AND APPLY IN GENERAL TO SIMILAR CONDITIONS.

25. SUBMIT REQUESTS FOR SUBSTITUTIONS, REVISIONS OR CHANGES TO ARCHITECT FOR REVIEW PRIOR TO PURCHASE, FABRICATION OR INSTALLATION.

26. SECURE CONSTRUCTION MATERIALS AT ALL TIMES. OWNER WILL NOT BE RESPONSIBLE FOR MATERIALS PRIOR TO FINAL ACCEPTANCE. OWNER MAY DESIGNATE AREA ON SITE FOR STORAGE PURPOSES AND/OR OFFICE PURPOSES.

27. BE CAUTIONED THAT THE SITE WILL BE IN USE DURING THE ENTIRE CONSTRUCTION OPERATION. EXTREME CARE AND CAUTION MUST BE TAKEN TO PROTECT PEDESTRIANS AND PROPERTY. PROVIDE ADEQUATE WARNING SIGNS, LIGHTS, BARRICADES, AND ALL ELSE NECESSARY TO PROTECT PEOPLE AND PROPERTY.

28. WORK PREFORMED OVER ANY SURFACE CONSTITUTES CONTRACTOR ACCEPTANCE OF THAT SURFACE FOR THE SPECIFIED QUALITY OF THE WORK BEING PREFORMED THEREON.

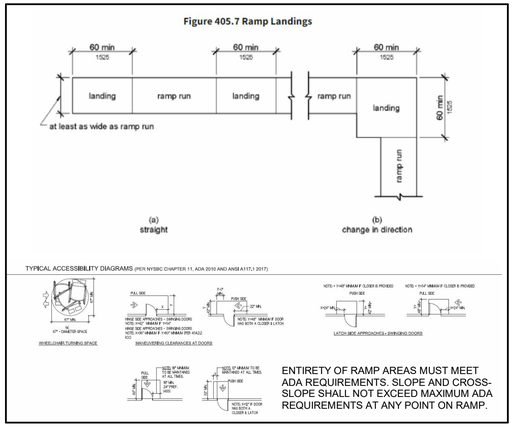
29. MAINTAIN PREMISES FREE FROM ACCUMULATIONS OF WASTE, DEBRIS, AND RUBISH, CAUSED BY OPERATIONS. DEBRIS SHALL BE REMOVED FROM JOB SITE DAILY. ALL DEBRIS TO BE STORED IN METAL, CLOSED CONTAINERS SUPPLIED BY CONTRACTOR.

30. IT IS ESSENTIAL THAT ALL WORK PROCEED WITH THE MAXIMUM COOPERATION OF ALL PARTIES AND WITH MINIMUM INTERFERENCE TO THE OCCUPANTS WITHIN THE BUILDING. THE OWNER'S DIRECTIONS IN THIS REGARD SHALL BE FULLY COMPLIED WITH.

31. CONTRACTOR SHALL SCHEDULE AND SEQUENCE WORK SO AS NOT TO INTERFERE WITH OTHER ONGOING OR SCHEDULED WORK, OR WITH ACTIVITIES OF THE OWNER. COORDINATE WITH OWNER'S REPRESENTATIVE.

32. AT ALL TIMES IN THE COURSE OF CONSTRUCTION, ADEQUATE EGRESS IS REQUIRED AND MUST BE MAINTAINED AT ALL TIMES. REQUIRED EGRESS PATHS MUST NOT BE OBSTRUCTED AT ANY TIME.

ADA RAMP AND DOOR ACCESS STANDARDS



ENTIRETY OF RAMP AREAS MUST MEET ADA REQUIREMENTS. SLOPE AND CROSS-SLOPE SHALL NOT EXCEED MAXIMUM ADA REQUIREMENTS AT ANY POINT ON RAMP.

ENERGY CODE COMPLIANCE

ENERGY CONSERVATION CONSTRUCTION CODE (NYCECC 2020)
CLIMATE ZONE: 4

NEW SCOPE OF WORK: NEW HVAC SYSTEM

TYPE OF PROJECT: INTERIOR RENOVATION

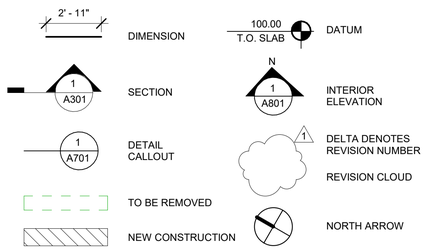
NYS ECC 2020 COMPLIANCE (LIGHTING)

ROOM	ROOM AREA (SQ. FT.)	WATTAGE	WATTS/SQ. FT.	ALLOWABLE WATTS	ALLOWABLE WATTS/SQ. FT.	LIGHTING CONTROLS
SOUND LOCK	37	61	1.65	24.5	0.66	MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
RECORDING BOOTH	62	62	1.00	26	0.42	MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
IT CLOSET	10	10.5	1.05	4.6	0.46	MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
CONTROL ROOM	400	368.5	0.92	532	1.33	MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
LIVE ROOM	CONNECTED LIGHTING POWER IN THIS ROOM IS EXEMPT AS PER SECTION C405.3.1.					MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
	TOTAL:	502	--	587.1	--	--

ABBREVIATIONS

ACT- ACOUSTIC CEILING TILE
AFF- ABOVE FINISH FLOOR
BFF- BELOW FINISH FLOOR
BOT- BOTTOM
CIP- CAST IN PLACE CONCRETE
CLG- CEILING
CLR- CLEAR
CMU- CONCRETE MASONRY UNIT
CONC- CONCRETE
CONT- CONTINUOUS
CPT- CARPET
CT- CERAMIC TILE
DEMO- DEMOLITION
DIA- DIAMETER
DIM(S)- DIMENSION(S)
DN- DOWN
DWG- DRAWING
EA- EACH
ELEV- ELEVATION
EQ- EQUAL
EXIST- EXISTING
HVAC- HEATING, VENTILATION AND AIR CONDITIONING
INT- INTERIOR
MAX- MAXIMUM
MECH- MECHANICAL
MIN- MINIMUM
MTL- METAL
NIC- NOT IN CONTRACT
OC- ON CENTER
PLUMB- PLUMBING
PLYD- PLYWOOD
PNT- PAINT
RCP- REFLECTED CEILING PLAN
RD- ROOF DRAIN
REQD- REQUIRED
RM- ROOM
SIM- SIMILAR
SPEC- SPECIFICATION
STC- SOUND TRANSMISSION RATING
STL- STEEL
STRUCT- STRUCTURAL
T&G- TONGUE AND GROOVE
TELE- TELEPHONE
TO- TOP OF
TYP- TYPICAL
VIF- VERIFY IN FIELD
WD- WOOD

SYMBOLS LEGEND



DRAWING LIST

Sheet Number	Sheet Name
A-001	COVER SHEET
A-101	AS BUILT & DEMOLITION PLAN
A-102	RAISED PLATFORM PLAN
A-103	AUDIO TROUGH & PIPING PLAN
A-104	CONSTRUCTION PLAN
A-105	FINISH PLAN
A-106	ELECTRICAL PLAN
A-107	EQUIPMENT PLAN
A-201	REFLECTED CEILING PLAN
A-202	REFLECTED SOFFIT FRAMING
A-203	REFLECTED CEILING FRAMING
A-301	SECTIONS & ELEVATIONS
A-401	DETAILS - SHELL CONSTRUCTION
A-402	DETAILS - MISC
A-403	TROUGH & PIPING DETAILS
A-404	TROUGH & PIPING DETAILS
A-405	DETAILS - ACOUSTIC TREATMENTS
A-406	DETAILS - ACOUSTIC TREATMENTS
A-407	DETAILS - ACOUSTIC TREATMENTS
A-408	DETAILS - ACOUSTIC TREATMENTS
A-409	DETAILS - ACOUSTIC TREATMENTS
A-410	DETAILS - ACOUSTIC TREATMENTS
A-411	DETAILS - ACOUSTIC TREATMENTS
A-601	DOOR SCHEDULE
A-602	DETAILS - DOORS
A-603	DETAILS - WINDOWS
A-604	DETAILS - WINDOWS
M-001	MECHANICAL SYMBOL LIST, GENERAL NOTES & ABBREVIATIONS
M-002	MECHANICAL SPECIFICATIONS (SHEET 1)
M-003	MECHANICAL SPECIFICATIONS (SHEET 2)
M-100	MECHANICAL DEMOLITION PLAN
M-101	MECHANICAL CONSTRUCTION PLAN
M-102	MECHANICAL ROOF PLAN
M-200	MECHANICAL ELEVATIONS
M-300	MECHANICAL DETAILS
M-400	MECHANICAL SCHEDULES
E-001	ELECTRICAL SYMBOLS LIST, ABBREVIATIONS, LIGHTING SCHEDULE, ENERGY CODE COMPLIANCE TABLE, GENERAL NOTES AND DRAWING LIST
E-002	ELECTRICAL SUB-BASEMENT PLAN
E-003	ELECTRICAL PLAZA LEVEL PLAN
E-100	ELECTRICAL DEMOLITION PLAN
E-101	ELECTRICAL POWER PLAN
E-102	ELECTRICAL LIGHTING PLAN
E-103	ELECTRICAL ROOF PLAN
E-200	ELECTRICAL PANEL SCHEDULES
E-300	ELECTRICAL DETAILS (SHEET 1)
E-301	ELECTRICAL DETAILS (SHEET 2)
E-302	ELECTRICAL DETAILS (SHEET 3)
E-400	ELECTRICAL SPECIFICATIONS
FA-001	FIRE ALARM SYMBOLS LIST, MATRIX, DEVICE MOUNTING DETAIL, RISER DIAGRAM, GENERAL NOTES AND DRAWING LIST.
FA-100	FIRE ALARM PLAZA LEVEL AND STUDIO A PLANS
S-001	STRUCTURAL NOTES
S-101	PROPOSED ADDITION TO EXIST. FRAMING PLAN
S-301	ENLARGED DETAILS

PROJECT DIRECTORY

OWNER: EMAIL: ADDRESS:	SUNY PURCHASE COLLEGE sean.connolly@purchase.edu 735 ANDERSON ROAD PURCHASE NY 10577
OWNER'S REPRESENTATIVE: EMAIL: PHONE: ADDRESS:	SAYIM MALIK sayim.malik@purchase.edu 914.251.5916 735 ANDERSON ROAD PURCHASE NY 10577
ARCHITECT: EMAIL: PHONE: ADDRESS:	LYNN FRITZLEN ARCHITECT lynn@lynnfritzlen.com 646.921.2285 140 RIVERSIDE DRIVE SUITE 6 E, NEW YORK, NY 10024
ACOUSTICAL CONSULTANT: EMAIL: PHONE: ADDRESS:	FRANCIS MANZELLA DESIGN LIMITED fmdesign@fmdesign.com 914.248.7680 961 ROUTE 6 MAHOPAC, NY 10541
MEP: EMAIL: PHONE: ADDRESS:	COLLADO AAmedeo@collado-eng.com 914.332.7658 445 HAMILTON AVE, SUITE 608 WHITE PLAINS, NY 10601

PROJECT DESCRIPTION

PURCHASE COLLEGE IS A FULL RENOVATION OF IT'S MAIN RECORDING STUDIO (STUDIO A) IN THE MUSIC BUILDING. THE STUDIO IS ROUGHLY 1,300 SQ.FT. AND DIVIDED INTO TWO SPACES, A RECORDING SPACE AND TEACHING/CONTROL ROOM SPACE.

FINAL REVIEW SET

LYNN FRITZLEN ARCHITECT
140 RIVERSIDE DRIVE, SUITE 6E
NEW YORK, NY 10024
PHONE 646-921-2285
E-MAIL lynn@lynnfritzlen.com

FRANCIS MANZELLA DESIGN LIMITED
961 ROUTE 6
MAHOPAC, NY 10541
914.248.7680
fmdesign@fmdesign.com

COLLADO
445 HAMILTON AVE, SUITE 608
WHITE PLAINS, NY 10601
914.332.7658
AAmedeo@collado-eng.com

No.	Description	Date

LYNN FRITZLEN
ARCHITECT
Office/Mailing: 140 Riverside Dr
Suite 6 New York, NY 10024
www.Lynnfritzlen.com

OPERATOR: Owner

OPERATOR ADDRESS:

PURCHASE COLLEGE STUDIO A REHABILITATION #SU-072721

LOCATION: 735 ANDERSON ROAD PURCHASE NY 10577

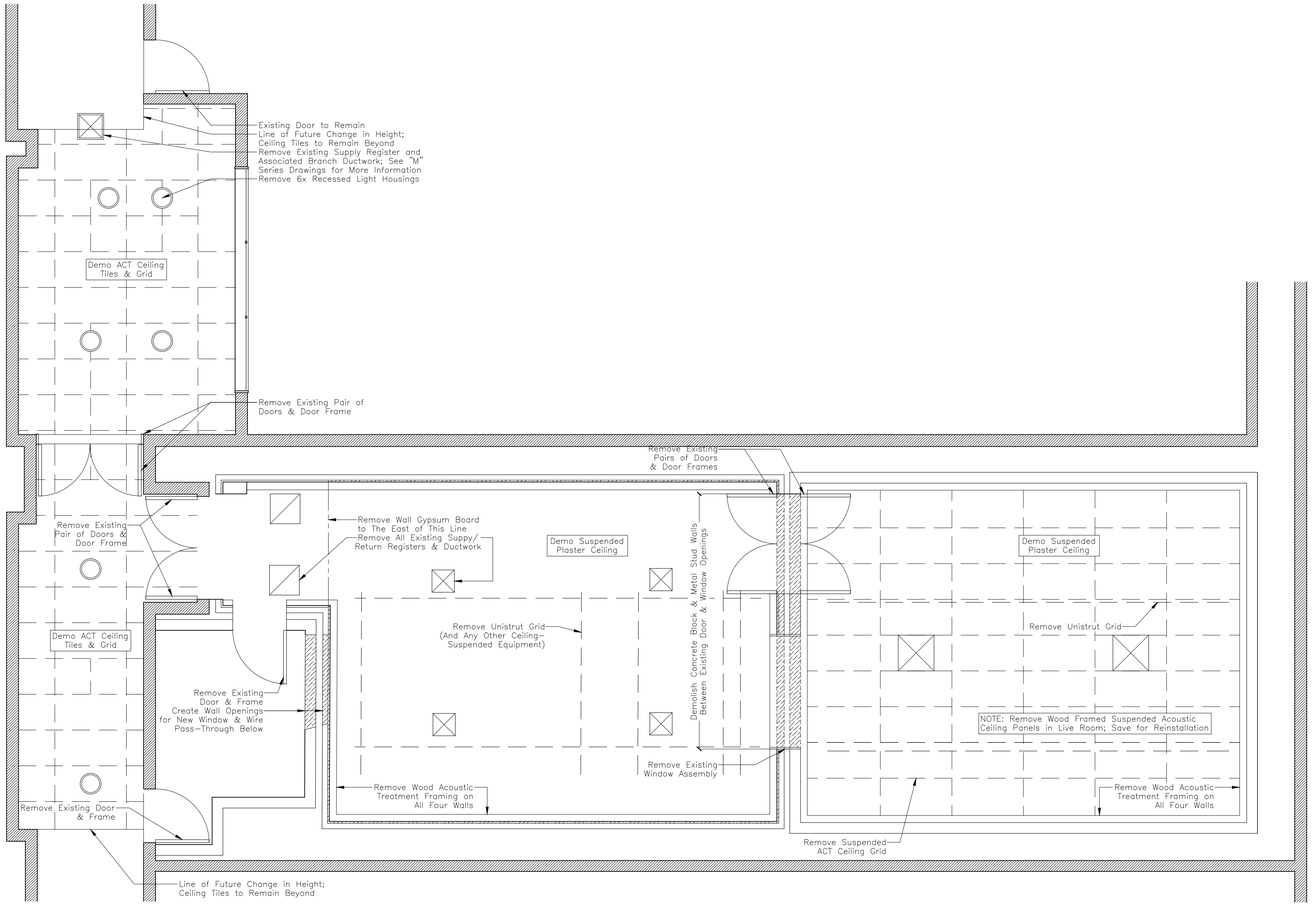
COVER SHEET

SEAL & SIGNATURE

Date	07/27/21
Project number	2020-13
Drawn by	GF
Checked by	LF
	A-001
Scale	As indicated
	1 of 53

Issued: 07/27/21

Sheet Size: 22"x 34"



SYMBOLS

A — SECTION OR ELEVATION DESIGNATION
A12 — REFER TO PAGE

EXISTING BUILDING DEMISING WALL

EXISTING PARTITION TO REMAIN

EXISTING PARTITION TO DEMOLISH

ELEMENT ABOVE

ELEMENT HIDDEN OR BELOW

Revisions

REVISION #	DATE	REVISION	APPROVED
01	07/13/21	100% CD	GM

FRANCIS MANZELLA DESIGN LIMITED
Acoustic Consulting and Studio Design

914.248.7680 Voice
914.248.7780 Fax
frmdesign@frmdesign.com
www.FMDesign.com

961 Route 6
Mahopac NY, 10541

ARCHITECT

LYNN FRITZLEN ARCHITECT
Office: The Yard 33 W 60th St. 2nd Floor
New York, NY 10023
Mailing: 140 Riverside Drive Suite 6E,
New York, NY 10024

PROJECT

Purchase College Studio A Renovations

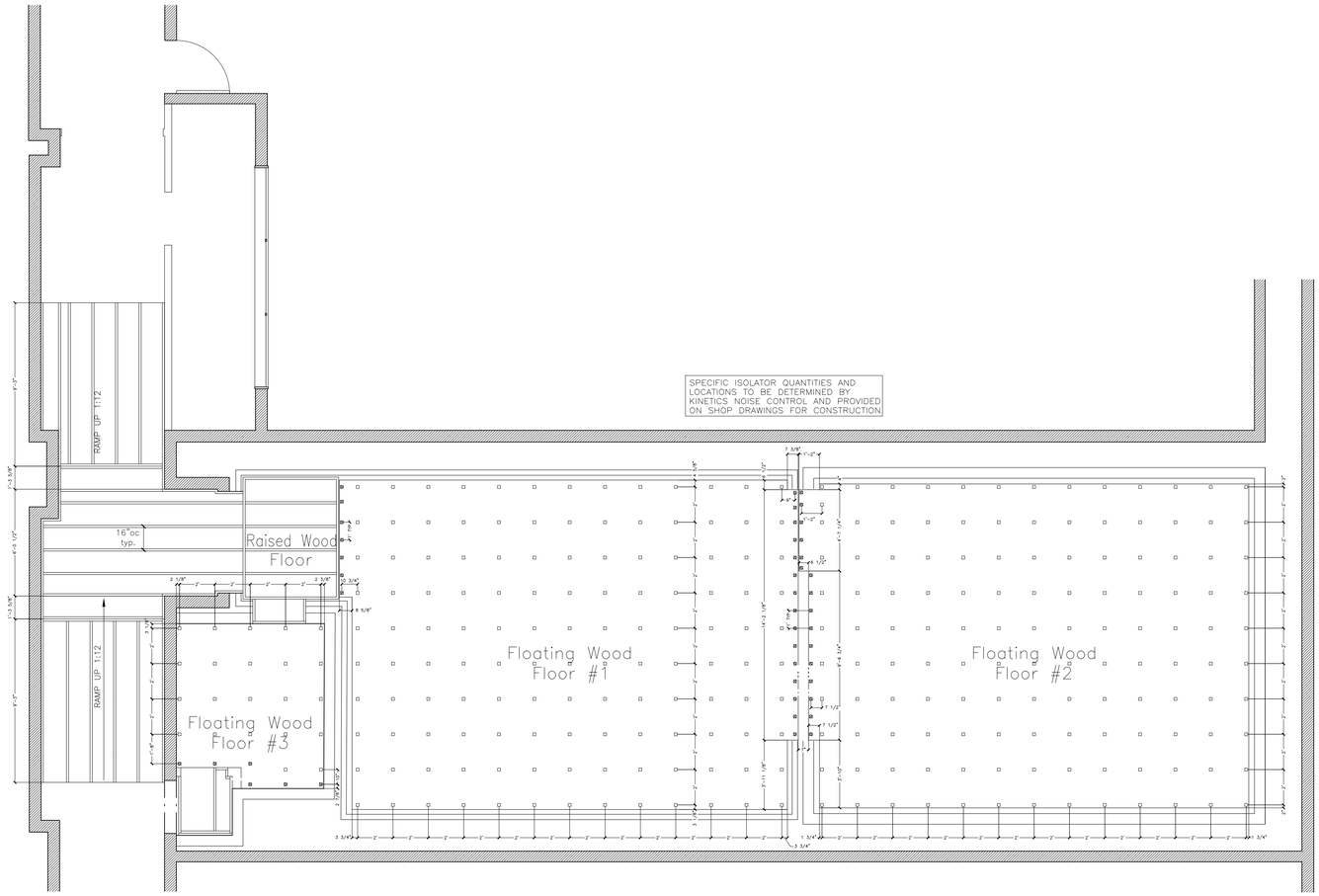
Purchase, NY

DRAWING NAME

AS BUILT & DEMOLITION PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"
DATE 07/13/2021
CAD FILE#
DRAWING NUMBER
A-101.00
SHEET



SYMBOLS

- A / A12 — SECTION OR ELEVATION DESIGNATION; REFER TO PAGE
- EXISTING BUILDING DEMISING WALL
- EXISTING PARTITION TO REMAIN; NEW FURRING AND GYP. BOARD
- A / A43 — DETAIL DESIGNATION; REFER TO PAGE
- KINETICS KIP PAD (ADDT'L AT PERIMETER PER KNC)
- KINETICS KIP PAD (INTEGRAL TO RIM SYSTEM)

Revisions

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914.248.7780 Fax
frmdesign@frmdesign.com
www.FMDesign.com

961 Route 6
Mahopac NY, 10541

ARCHITECT
LYNN FRITZLEN ARCHITECT
Office: The Yard 33 W 60th St. 2nd Floor
New York, NY 10023
Mailing: 140 Riverside Drive Suite 6E,
New York, NY 10024

PROJECT

Purchase College Studio A Renovations

Purchase, NY

DRAWING NAME

RAISED PLATFORM PLAN

SEAL & SIGNATURE

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DATE 07/13/2021
CAD FILE#

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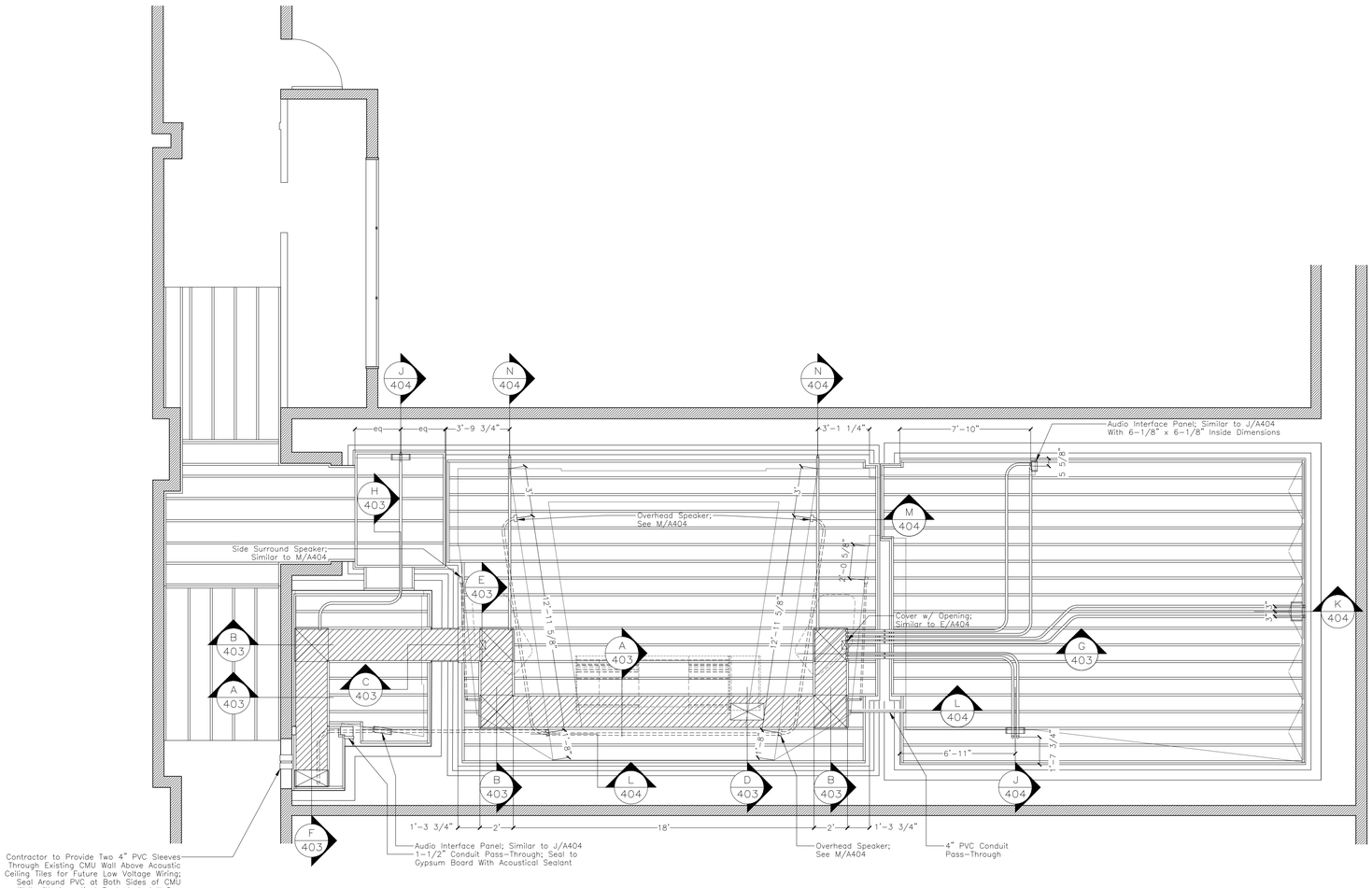

SYMBOLS

- SECTION OR ELEVATION DESIGNATION (A / A12)
- REFER TO PAGE
- EXISTING BUILDING DEMISING WALL
- EXISTING PARTITION TO REMAIN
- NEW FURRING AND GYP. BOARD
- DETAIL DESIGNATION (A / A43)
- REFER TO PAGE
- KINETICS KIP PAD
- WIRE TROUGH IN FLOOR SYSTEM
- REMOVABLE COVER OVER WIRE TROUGH IN FLOOR SYSTEM
- OPEN UNCOVERED AREA OF WIRE TROUGH
- FLR. MT'D QUAD IG RECEPTACLE SEE ELECTRICAL PLAN
- INDICATES WIRE RUN DIRECTION
- I.G. GROUND BUSS BOX. SEE ELECTRICAL PLAN
- PIPE (EMT OR PVC) FROM FLOOR TROUGH SYSTEM. SEE NOTES.

Revisions

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Acoustic Consulting and Studio Design

914.248.7680 Voice
914.248.7780 Fax
frmdesign@frmdesign.com
www.FMDesign.com

961 Route 6
Mahopac NY, 10541

ARCHITECT

LYNN FRITZLEN ARCHITECT
Office: The Yard 33 W 60th St. 2nd Floor
New York, NY 10023
Mailing: 140 Riverside Drive Suite 6E,
New York, NY 10024

PROJECT

Purchase College Studio A Renovations

Purchase, NY

DRAWING NAME

AUDIO TROUGH & PIPING PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"

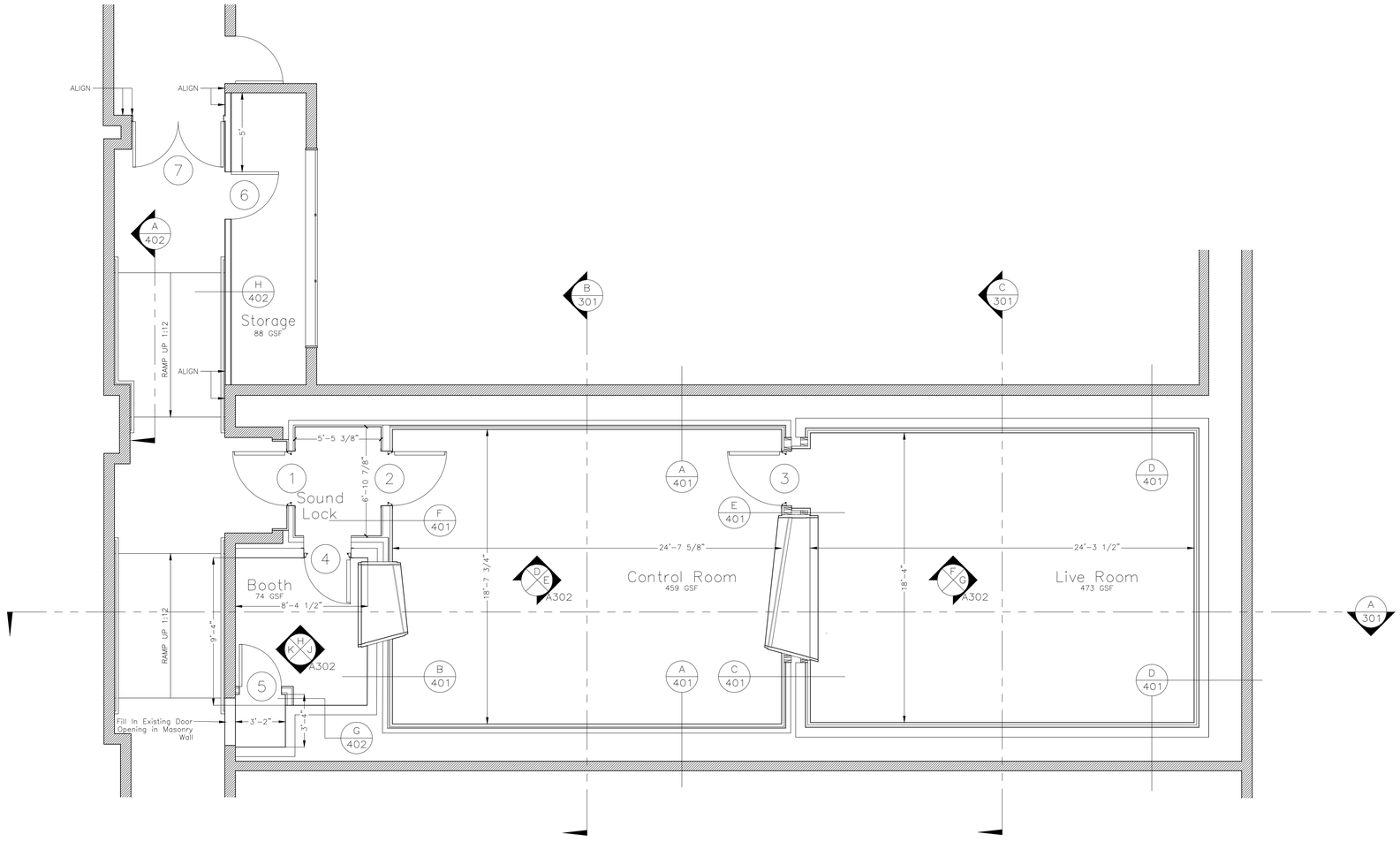
DATE 07/13/2021

CAD FILE#

DRAWING NUMBER

A-103.00

SHEET



SYMBOLS

- A / A12 — SECTION OR ELEVATION DESIGNATION, REFER TO PAGE
- EXISTING BUILDING DEMISING WALL
- EXISTING PARTITION TO REMAIN
- 2 / A41 — DETAIL DESIGNATION, REFER TO PAGE
- NEW PARTITION, SEE DETAIL
- ELEMENT ABOVE
- ELEMENT HIDDEN OR BELOW
- INSULATION AS NOTED
- DOOR OPENING REFERENCE
- B — WINDOW TYPE DESIGNATION
- DIM — DIMENSION TO STUDLINE
- DIM — DIMENSION TO SURFACE

Revisions

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Mailing: 140 Riverside Drive Suite 6E,
New York, NY 10024

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Purchase, NY

DRAWING NAME

CONSTRUCTION PLAN

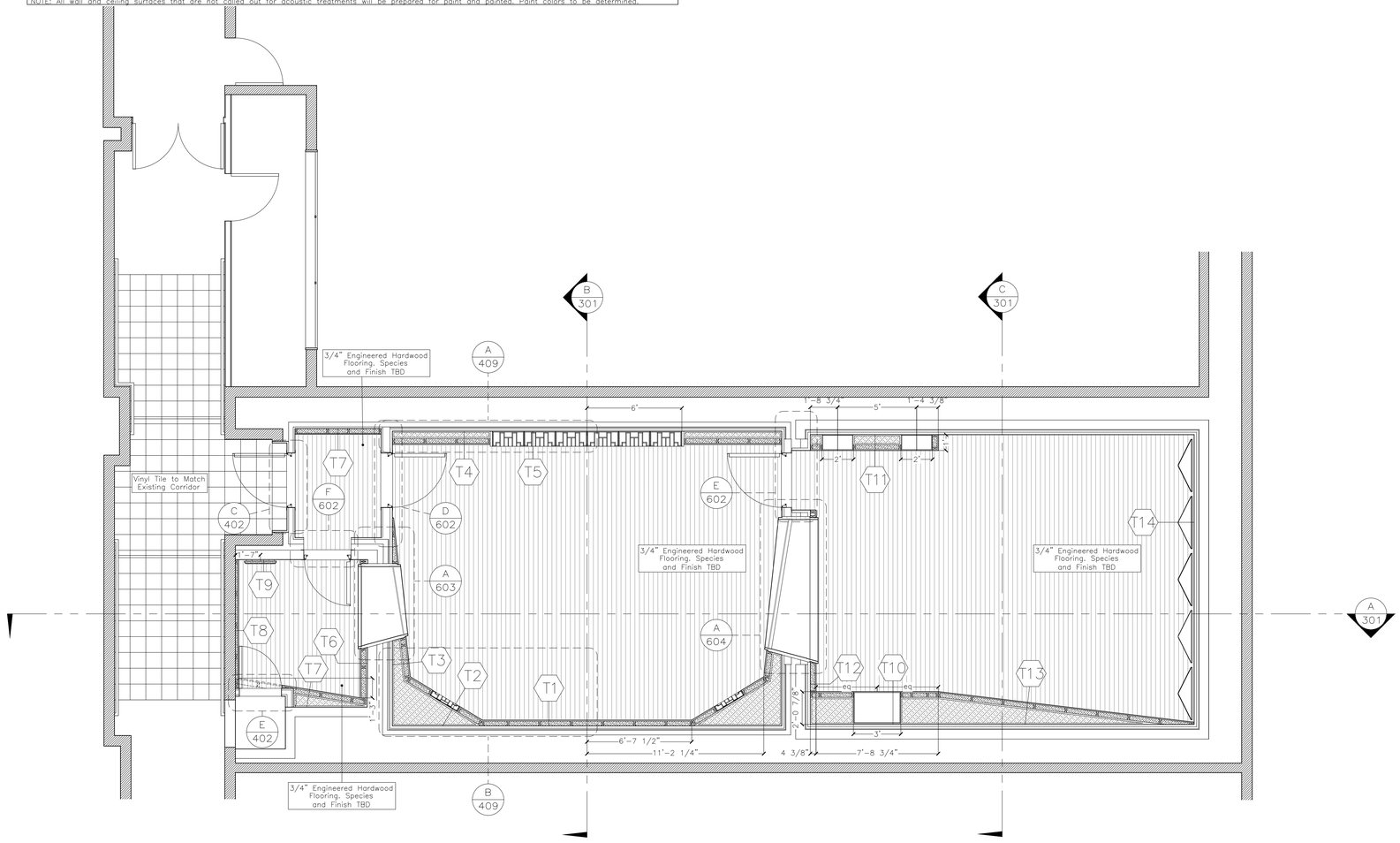
SEAL & SIGNATURE

SCALE 1/4"=1'-0"
DATE 07/13/2021
CAD FILE#
DRAWING NUMBER
A-104.00
SHEET

Acoustic Finish and Treatments Schedule

TREATMENT	DESCRIPTION	DETAIL(S)	MANUFACTURER/SUPPLIER
T1	Fixed Depth Absorptive Treatment. 2x4 Finish Wall Framing 24"oc. 4" #703 Unfaced Rigid Insulation Friction Fit in Framing Bays. Stretched Fabric on Fabric Track Applied to Framing.	A410/T1	Contractor
T2	Varying Depth w/ Solar 2 Abffusor. 2x4 Finish Wall Framing 24"oc. Loosely Fill Cavity Behind Framing with 3" Unfaced Batt Insulation. 4" #703 Unfaced Rigid Insulation Friction Fit in Framing Bays. RPG Fabric Covered Abffussor Installed in Finished Framing as Shown. Stretched Fabric on Fabric Track Applied to Framing.	A410/T2	Solar 2/Contractor
T3	Varying Depth Absorptive Treatment. 2x4 Finish Wall Framing 24"oc. Loosely Fill Cavity Behind Framing with 3" Unfaced Batt Insulation. 4" #703 Unfaced Rigid Insulation Friction Fit in Framing Bays. Stretched Fabric on Fabric Track Applied to Framing.	A410/T3	Contractor
T4	See T3.	A411/T4	Contractor
T5	Solar2 QRD & Omniffusor Diffusers. Diffusers Installed in 2x 3/4" MultiLam Plywood Framed Finish. Plywood Finish Around all 4 Sides of Diffractal Units. See Detail for Diffractal Unit Sizing. Plywood Finish Installed in T3 Varying Depth Absorptive Treatment.	A411/T5	Solar 2/Contractor
T6	See T1.	A411/T6	Contractor
T7	See T3.	A412/T7	Contractor
T8	Fixed Depth Absorptive Treatment. 2x4 Finish Wall Framing 24"oc on Flat. 2" #703 Unfaced Rigid Insulation Friction Fit in Framing Bays. Stretched Fabric on Fabric Track Applied to Framing.	A412/T8	Contractor
T9	Fabric Wrapped Absorber Panel Attached Directly to Partition as Shown.	A412/T9	Contractor
T10	See T3.	A413/T10	Contractor
T11	Varying Depth Helmholtz Slat Treatment. 2x4 Finish Wall Framing 24"oc. Loosely Fill Cavity Behind Framing with 3" Unfaced Batt Insulation. 4" #703 Rigid Insulation Friction Fit in Framing Bays. Stretched Fabric Stapled Directly to Finish Framing. Install Solid Wood Slats Directly to Finish Framing as Shown in Detail(s). Run Fabric Horizontally to Conceal Seam Behind Wood Slats. See Detail For Spacing.	A413/T11	Contractor
T12	See T1.	A413/T12	Contractor
T13	Acoustic Pyramid Finish.	x	Contractor
T14	Custom Shelving/Storage Set in T10 Finish.	x	Contractor
T15	See T14.	x	Contractor

NOTE: All wall and ceiling surfaces that are not called out for acoustic treatments will be prepared for paint and painted. Paint colors to be determined.



SYMBOLS

A / A12 — SECTION OR ELEVATION DESIGNATION; REFER TO PAGE

T9 — FINISH CALLOUT

ELEMENT ABOVE

ELEMENT HIDDEN OR BELOW

Revisions

REVISION #	DATE	REVISION	APPROVED
01	07/13/21	100% CD	GM

FRANCIS MANZELLA DESIGN LIMITED
Acoustic Consulting and Studio Design

914.248.7680 Voice
914.248.7780 Fax
fmdesign@fmdesign.com
www.FMDesign.com

961 Route 6
Mahopac NY, 10541

ARCHITECT

LYNN FRITZLEN ARCHITECT
Office: The Yard 33 W 60th St. 2nd Floor
New York, NY 10023
Mailing: 140 Riverside Drive Suite 6E,
New York, NY 10024

PROJECT

Purchase College Studio A Renovations

Purchase, NY

DRAWING NAME

FINISH PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"

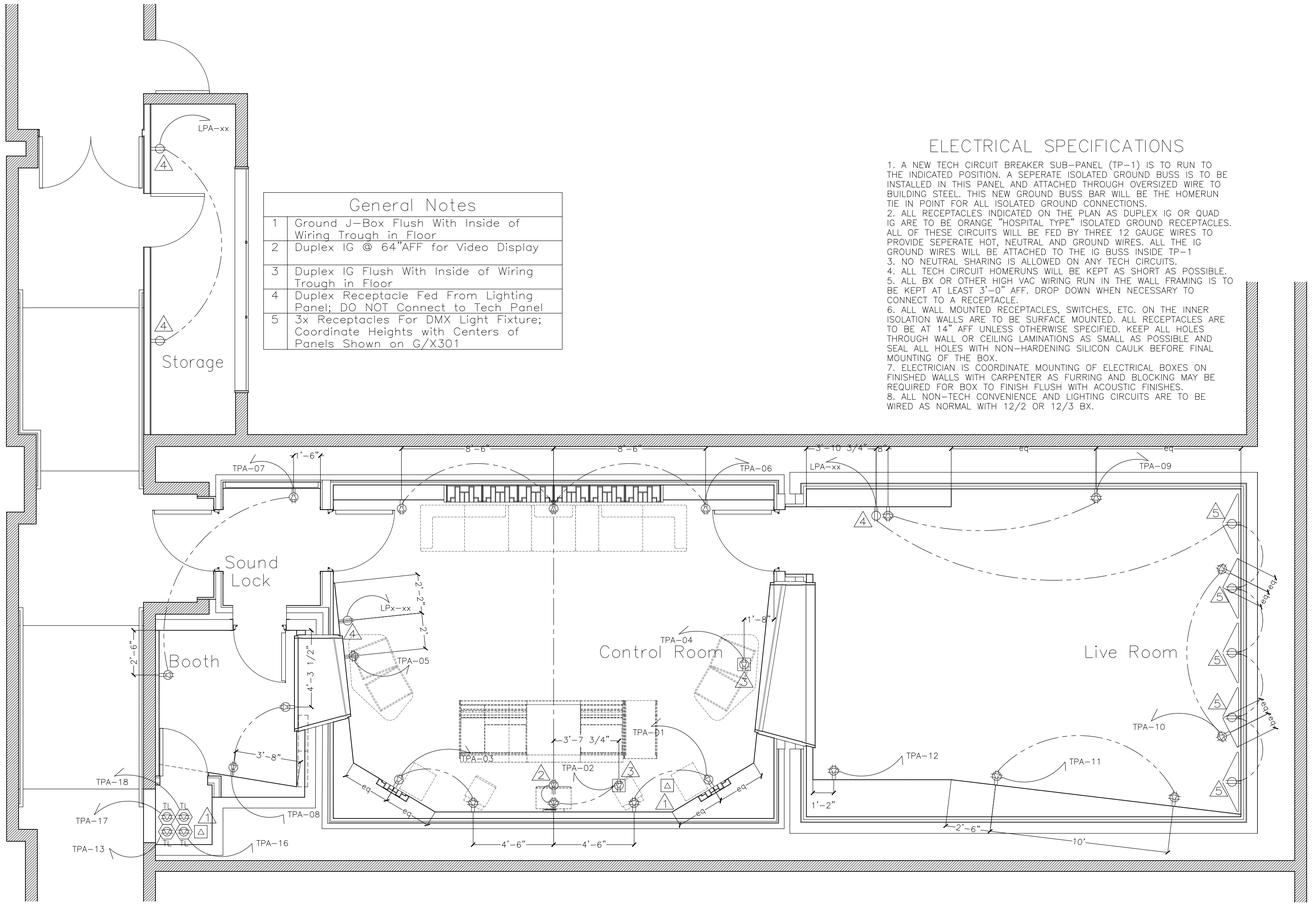
DATE 07/13/2021

CAD FILE#

DRAWING NUMBER

A-105.00

SHEET



General Notes

1	Ground J-Box Flush With Inside of Wiring Trough in Floor
2	Duplex IG @ 64"AFF for Video Display
3	Duplex IG Flush With Inside of Wiring Trough in Floor
4	Duplex Receptacle Fed From Lighting Panel; DO NOT Connect to Tech Panel
5	3x Receptacles For DMX Light Fixture; Coordinate Heights with Centers of Panels Shown on G/X301

ELECTRICAL SPECIFICATIONS

1. A NEW TECH CIRCUIT BREAKER SUB-PANEL (TP-1) IS TO RUN TO THE INDICATED POSITION. A SEPERATE ISOLATED GROUND BUSS IS TO BE INSTALLED IN THIS PANEL AND ATTACHED THROUGH OVERSIZED WIRE TO BUILDING STEEL. THIS NEW GROUND BUSS BAR WILL BE THE HOMERUN TIE IN POINT FOR ALL ISOLATED GROUND CONNECTIONS.
2. ALL RECEPTACLES INDICATED ON THE PLAN AS DUPLEX IG OR QUAD IG ARE TO BE ORANGE "HOSPITAL TYPE" ISOLATED GROUND RECEPTACLES. ALL OF THESE CIRCUITS WILL BE FED BY THREE 12 GAUGE WIRES TO PROVIDE SEPERATE HOT, NEUTRAL AND GROUND WIRES. ALL THE IG GROUND WIRES WILL BE ATTACHED TO THE IG BUSS INSIDE TP-1
3. NO NEUTRAL SHARING IS ALLOWED ON ANY TECH CIRCUITS.
4. ALL TECH CIRCUIT HOMERUNS WILL BE KEPT AS SHORT AS POSSIBLE.
5. ALL BX OR OTHER HIGH VAC WIRING RUN IN THE WALL FRAMING IS TO BE KEPT AT LEAST 3'-0" AFF, DROP DOWN WHEN NECESSARY TO CONNECT TO A RECEPTACLE.
6. ALL WALL MOUNTED RECEPTACLES, SWITCHES, ETC. ON THE INNER ISOLATION WALLS ARE TO BE SURFACE MOUNTED. ALL RECEPTACLES ARE TO BE AT 14" AFF UNLESS OTHERWISE SPECIFIED. KEEP ALL HOLES THROUGH WALL OR CEILING LAMINATIONS AS SMALL AS POSSIBLE AND SEAL ALL HOLES WITH NON-HARDENING SILICON CAULK BEFORE FINAL MOUNTING OF THE BOX.
7. ELECTRICIAN IS COORDINATE MOUNTING OF ELECTRICAL BOXES ON FINISHED WALLS WITH CARPENTER AS FURRING AND BLOCKING MAY BE REQUIRED FOR BOX TO FINISH FLUSH WITH ACOUSTIC FINISHES.
8. ALL NON-TECH CONVENIENCE AND LIGHTING CIRCUITS ARE TO BE WIRED AS NORMAL WITH 12/2 OR 12/3 BX.

TECH POWER PANEL TPA

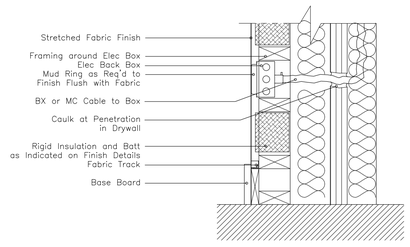
SERVICE	PHASE	POLES	WIRES	SIZE	ISOLATED GROUND	BALANCED POWER
120/208V	3	3	5	100A	YES	NO

CKT #	DESIGNATION	BREAKER TRIP	POLE	VOLT	KVA LOAD	WIRE SIZE		CKT #	DESIGNATION	BREAKER TRIP	POLE	VOLT	KVA LOAD	WIRE SIZE
TPA-1	MON/SUB LEFT	20A	1	120	1.1	#12	A	TPA-2	MON CTR/DISPLAY	20A	1	120	0.8	#12
TPA-3	MON/SUB RIGHT	20A	1	120	1.1	#12	B	TPA-4	CREDENZA LEFT	20A	1	120	0.8	#12
TPA-5	CREDENZA RIGHT	20A	1	120	0.8	#12	C	TPA-6	CONTROL RM CONV	20A	1	120	0.3	#12
TPA-7	SOUND LOCK/ISO	20A	1	120	0.3	#12	A	TPA-8	ISO BOOTH	20A	1	120	0.3	#12
TPA-9	LIVE RM CONV 3	20A	1	120	0.3	#12	B	TPA-10	LIVE RM CONV 2	20A	1	120	0.3	#12
TPA-11	LIVE RM CONV 5	20A	1	120	0.3	#12	C	TPA-12	LIVE RM CONV 4	20A	1	120	0.3	#12
TPA-13	EQUIP RACK 1	20A	1	120	1.7	#12	A	TPA-14	--spare--	20A	1	120		
TPA-15	--spare--	20A	1	120			B	TPA-16	EQUIP RACK 2	20A	1	120	1.7	#12
TPA-17	EQUIP RACK 3	20A	1	120	1.3	#12	C	TPA-18	EQUIP RACK 4	20A	1	120	1.3	#12
TPA-19							A	TPA-20						
TPA-21							B	TPA-22						
TPA-23							C	TPA-24						
TPA-25							A	TPA-26						
TPA-27							B	TPA-28						
TPA-29							C	TPA-30						

A = 4.2 KVA B = 4.2 KVA C = 4.3 KVA TOTAL KVA FOR PANEL = 12.7 KVA

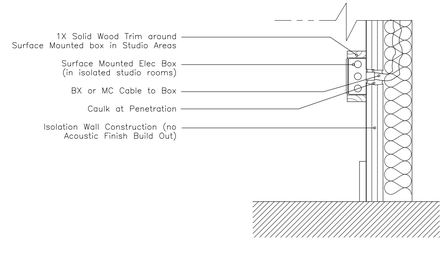
ELECTRICAL RECEPTACLE IN FABRIC FINISH WALL

SCALE: 1 1/2" = 1'-0"



SURFACE MOUNTED ELECTRICAL RECEPTACLE

SCALE: 1 1/2" = 1'-0"



SYMBOLS

- STANDARD DUPLEX RECEPTACLE
- GFI — GROUND FAULT INDICATING DUPLEX RECEPTACLE
- ISOLATED GROUND DUPLEX RECEPTACLE
- TL — ISOLATED GROUND L5-20 TWISTLOCK RECEPTACLE
- TL — ISOLATED GROUND L5-20 TWISTLOCK RECEPTACLE MOUNTED OVERHEAD IN CEILING
- 30 — 30AMP ISOLATED GROUND CIRCUIT. USE #10 WIRE AND 30AMP BREAKER AT PANEL.
- ISOLATED GROUND QUAD RECEPTACLE
- FLOOR MT'D ISOLATED GROUND QUAD RECEPT.
- DIRECTION OF WIRE RUN TO RECEPT.
- GROUND J -BOX
- T1/D1 — TELCO/DATA JACK NUMBER OF CAT6 WIRES TO EACH
- HOMERUN CIRCUITING
- CKT X — CIRCUIT DESIGNATION

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DRAWING NAME

ELECTRICAL PLAN

SEAL & SIGNATURE

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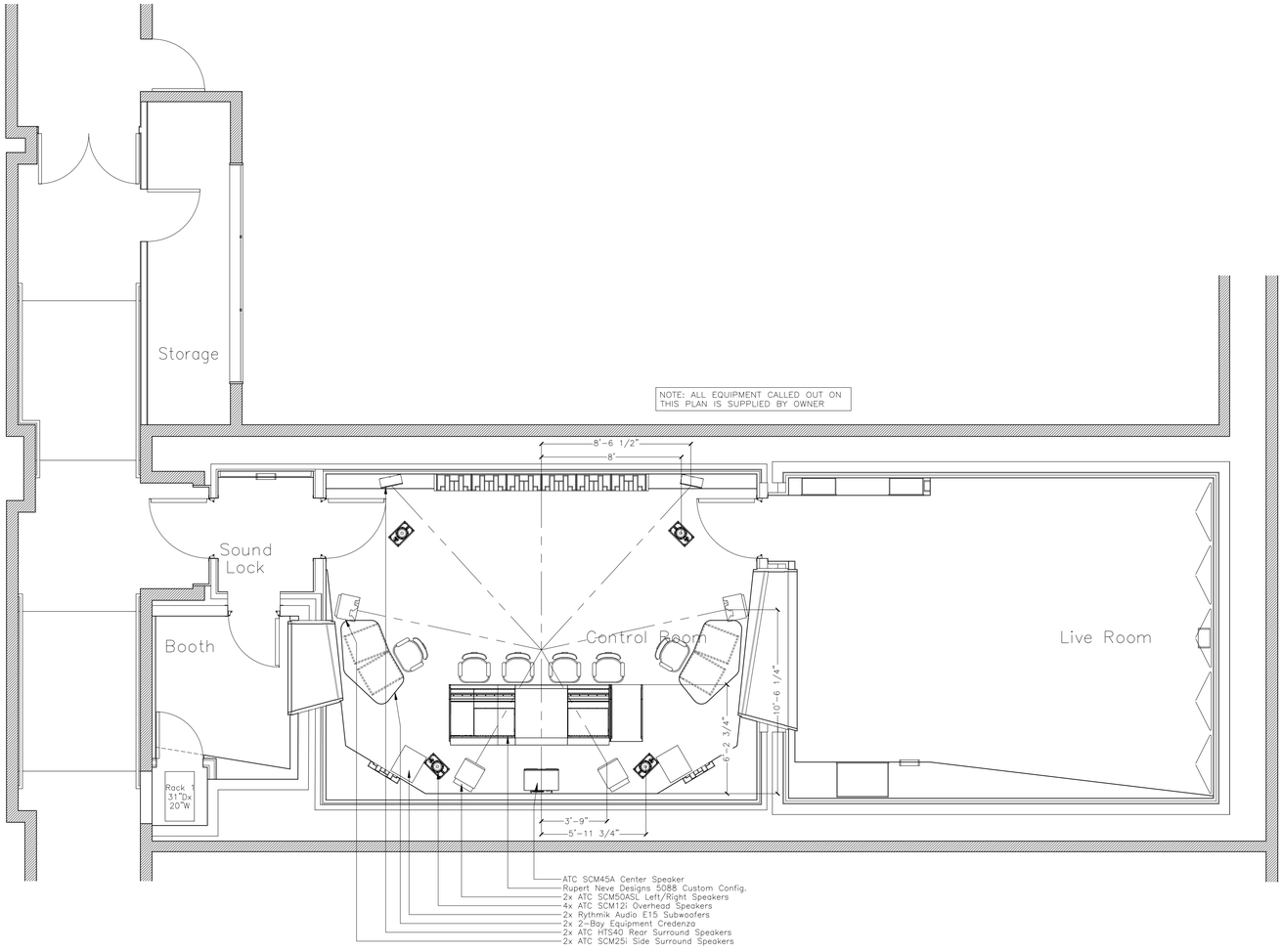
CAD FILE#
DRAWING NUMBER A-106.00
SHEET



SYMBOLS

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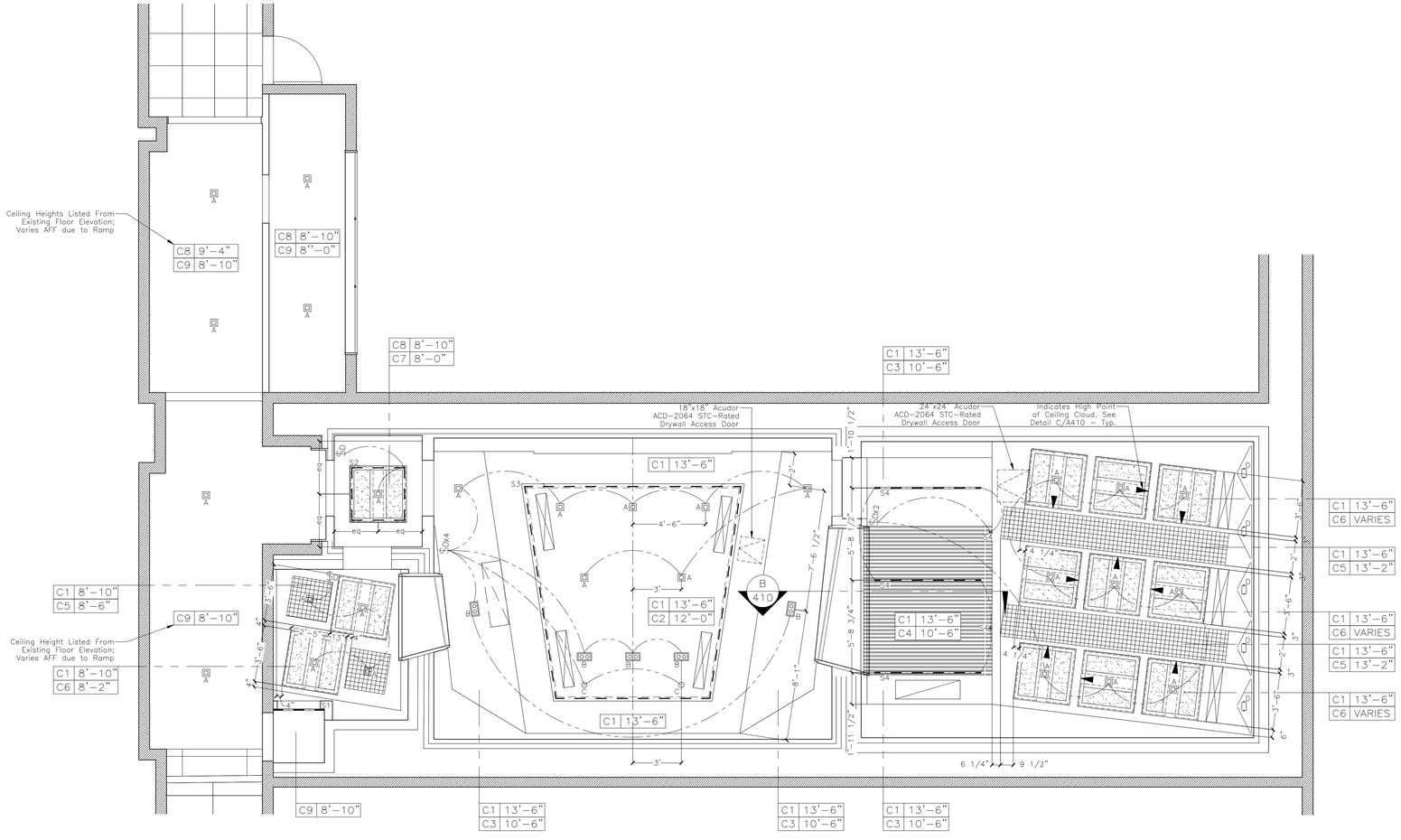
SHEET

LIGHTING FIXTURE SCHEDULE

FIXTURE	MANUFACTURER AND MODEL	LAMP INFO	COLOR INFO	CUT OUT
A	WAC Aether 3.5" 0°–30° Adjustable Trim Square; R3ASAT–F830–HZWT Trim And HR–3LED–H17A IC Rated Housing.	15.5W 3K LED	Haze/White	4 5/8"
B	WAC 2–Light 4" LED Precision Multiples; MT–4LD216T–WT Trim And MT–4LD211NE–F–930–BK ELV Dimming IC Rated Housing.	2x 23W 3K LEDs	White/Black	9 3/4" x 5 1/8"
C	WAC Exterminator II Monopoint Luminaire; MO–1014F–930–BK	14W 3K LED	Black	--ng--
D	Chauvet DJ SlimPAR 16BT RGB Wash Light (14 Total Fixtures); Provide Hardware as Req. to Mount to Square Tubing Behind T14 Panels; Refer to E Series Drawings for DMX Control	6x 2.5W RGB LEDs	Black	--ng--
S1	PLT 2835–60–IP65–WW2450NHC 3K 24V 90CRI LED Tape Light (≈3') Mounted in KLUS LIPOD Channel with LIGER–22 Frosted Cover. Magnitude M40L24DC–AR Dimmable LED Driver.	3.5W/ft. 3K LEDs	--ng--	--ng--
S2	PLT 2835–60–IP65–WW2450NHC 3K 24V 90CRI LED Tape Light (≈14' Total) With Magnitude M60L24DC–AR Dimmable LED Driver.	3.5W/ft. 3K LEDs	--ng--	--ng--
S3	PLT 5050–60–IP65–RGB2450 Nano RGB 24V 90CRI LED Tape Light (≈50' Total) Mounted in KLUS MICRO–ALU Channel With Mean Well LRS–350–24 Power Supply; Refer to E Series Drawings for Controls.	4.5W/ft. RGB LEDs	--ng--	--ng--
S4	PLT 2835–60–IP65–WW2450NHC 3K 24V 90CRI LED Tape Light (≈26' Total) Mounted in KLUS LIPOD Channel with LIGER–22 Frosted Cover. Magnitude M150L24DC–AR Dimmable LED Driver.	3.5W/ft. 3K LEDs	--ng--	--ng--

Ceiling Type Schedule

C1	3 Layers Laminations, 7/8" Drywall Furring Channel, 1–1/2" "C" Channel, & Kinetics Gotham Ceiling Isolation Hangers	See A401
C2	Stretched Fabric Wood Framed Acoustic "Cloud" With Cove Light Lip Detail	See A410
C3	Stretched Fabric Wood Framed Acoustic Soffit	See A405
C4	Wood Slat Ceiling Inset Into C3 Wood Framed Acoustic Soffit	See A410
C5	Surface Mounted Omniffusor Style Acoustic Diffuser	See A407
C6	Refinished Wood Frames Salvaged From Existing Studio; New Fabric–Wrapped Panel Inserts & Openings for Recessed Lighting	See A410
C7	Similar to C6 With LED Uplighting Detail	See A410
C8	5/8" Type–X Gypsum Board Ceiling (2 Layers at Sound Lock) on 7/8" Drywall Furring Channel & 1–1/2" "C" Channel	See A402
C9	Armstrong Calla Acoustic Ceiling Tiles in Suspended 2'x2' Square Grid	See A402



SYMBOLS

C4 | 9'–0" — CEILING DESIGNATION / HEIGHT ABOVE FINISHED FLOOR

HVAC SUPPLY REGISTER, CEILING MT'D

HVAC RETURN REGISTER, CEILING MT'D

HVAC SUPPLY REGISTER, SIDE MT'D

HVAC RETURN REGISTER, SIDE MT'D

SPRINKLER HEAD LOCATION

THERMOSTAT

RECESSED LIGHT FIXTURE. SEE SCHEDULE

TRACK FIXTURE. SEE SCHEDULE

SCONSE FIXTURE. SEE SCHEDULE

$ LIGHT SWITCH 48" AFF

$D DIMMED LIGHT SWITCH 48" AFF

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DRAWING NAME

REFLECTED CEILING PLAN

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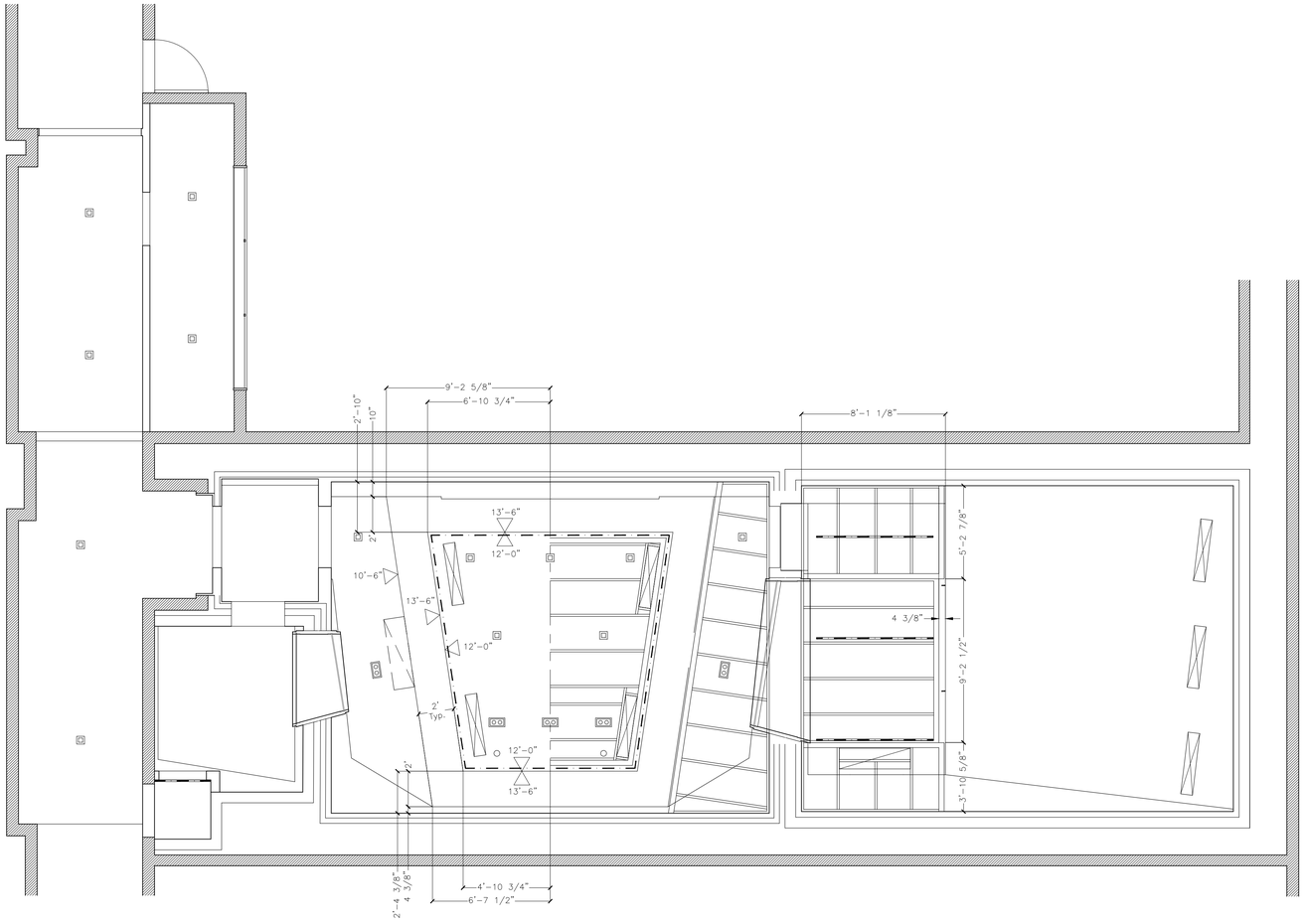

SYMBOLS

- SPOT ELEVATION INDICATION
- HVAC SUPPLY REGISTER, CEILING MT'D
- HVAC RETURN REGISTER, CEILING MT'D
- HVAC SUPPLY REGISTER, SIDE MT'D
- HVAC RETURN REGISTER, SIDE MT'D
- SPRINKLER HEAD LOCATION
- THERMOSTAT

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DRAWING NAME

REFLECTED SOFFIT FRAMING

SEAL & SIGNATURE

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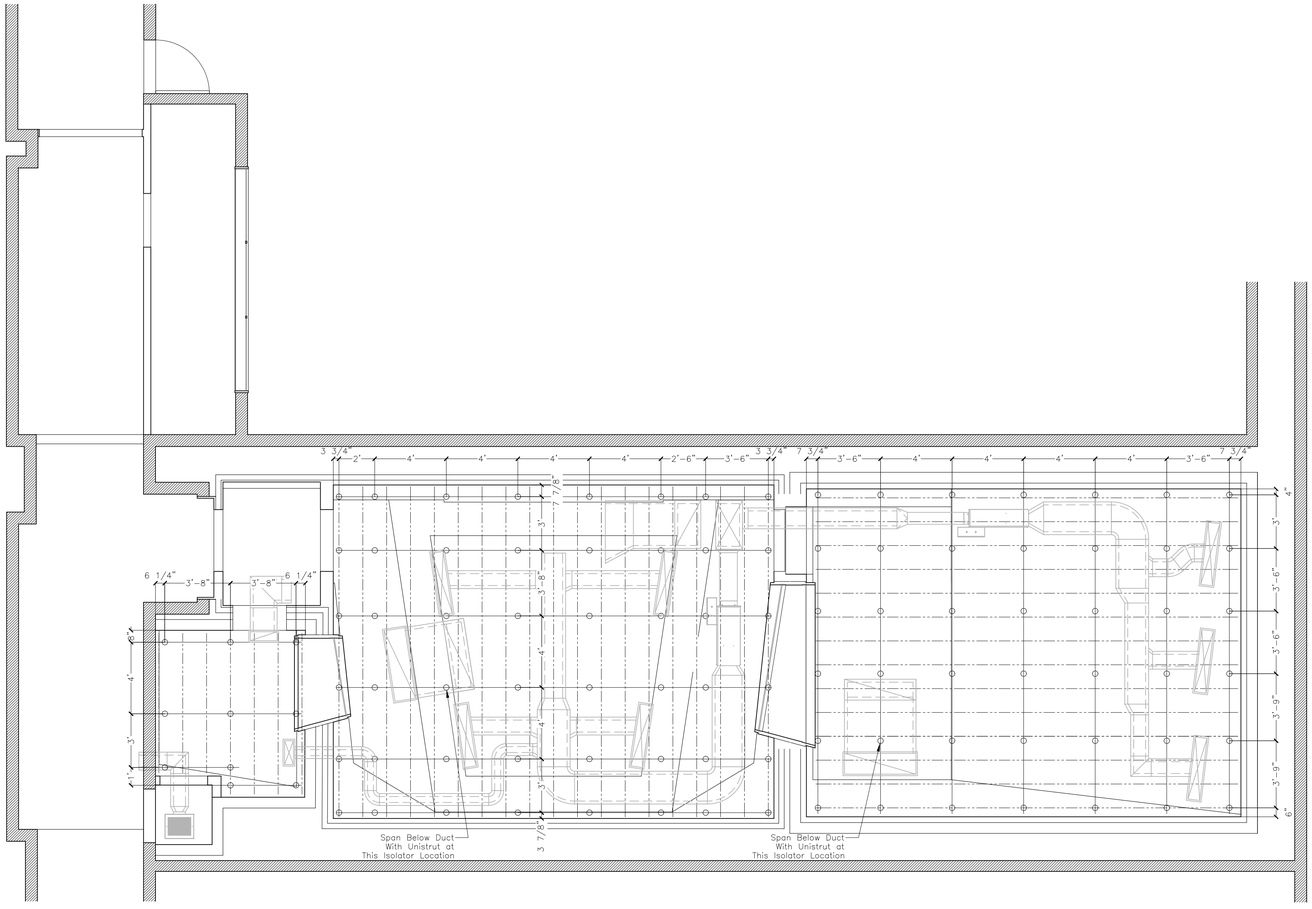
CAD FILE#

DRAWING NUMBER

A-202.00

SHEET



SYMBOLS

DIRECTION OF 1-1/2" COLD ROLLED STEEL CHANNEL

DIRECTION OF 7/8" DRYWALL FURRING CHANNEL

KINETICS GOTHAM SPRING ISOLATION CEILING HANGER (CAPACITIES PER KINETICS SHOP DRAWINGS)

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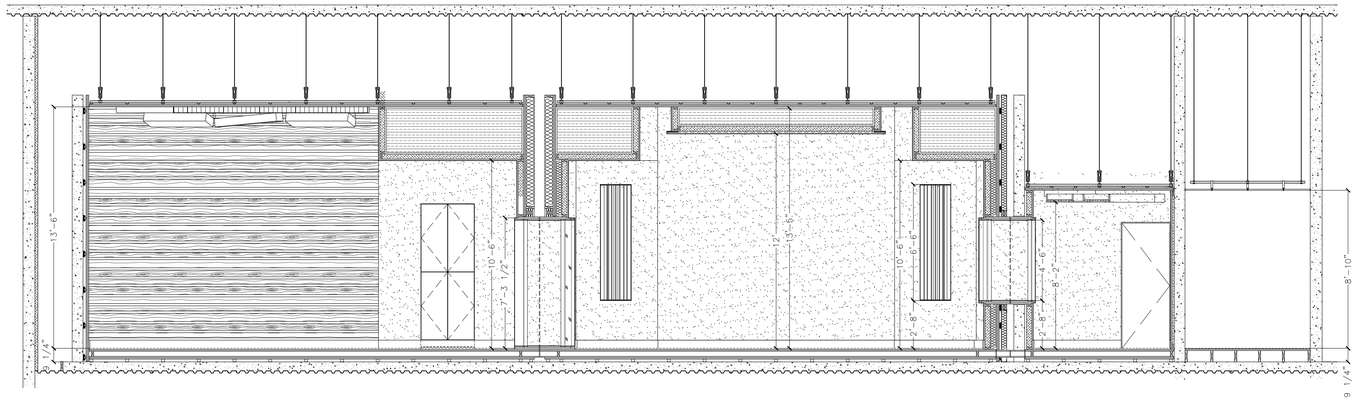
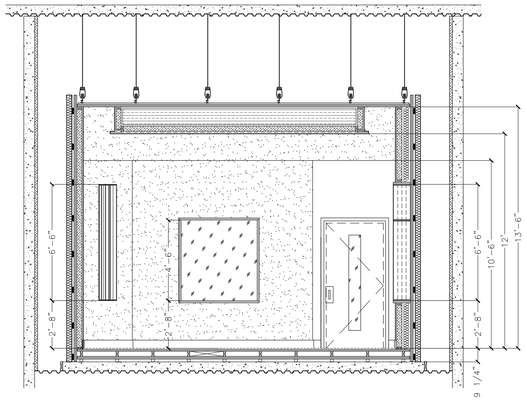
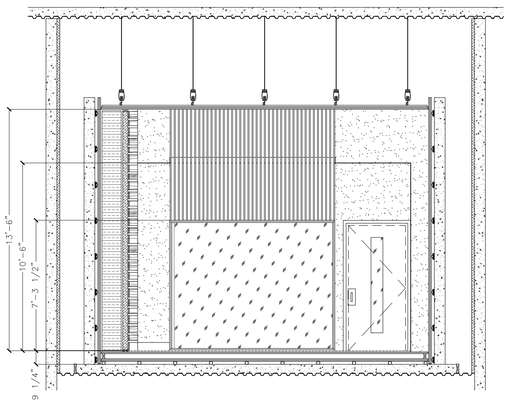


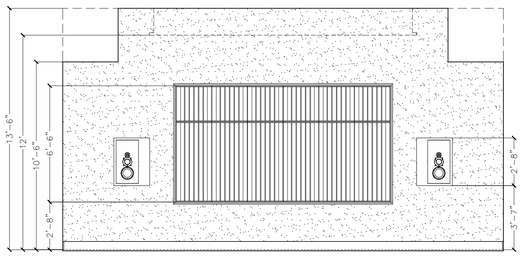
A Section
South



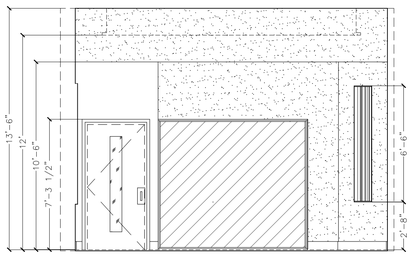
B Section
West



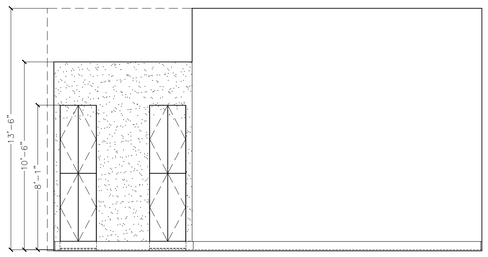
C Section
West



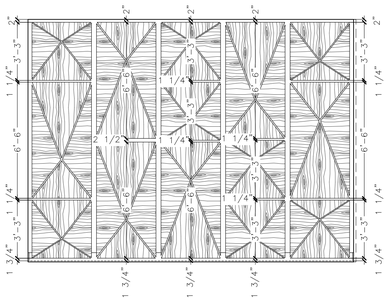
D Elevation Control Room
North



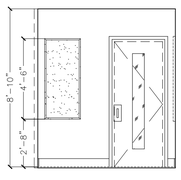
E Elevation Control Room
East



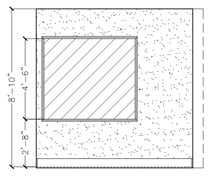
F Elevation Live Room
North



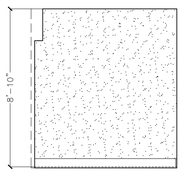
G Elevation Live Room
East



H Elevation Sound Lock
North



J Elevation Live Room
East



K Elevation Live Room
West

SYMBOLS

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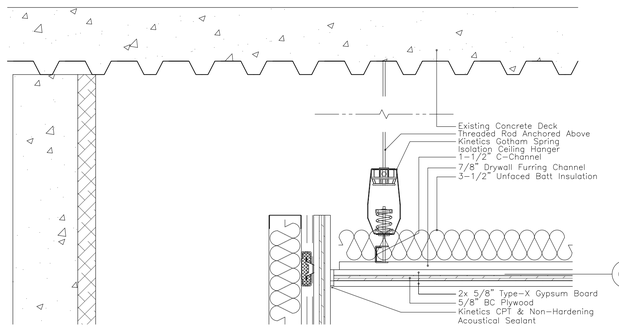
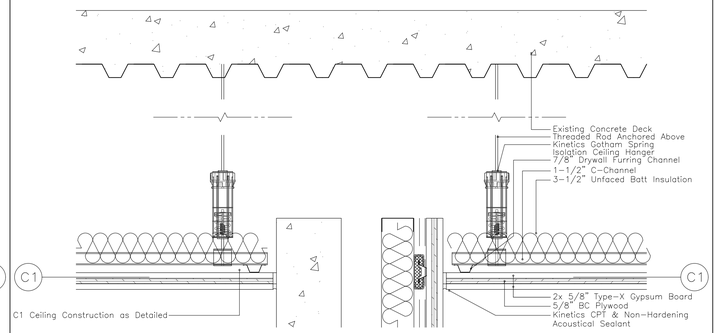
SHEET



A Shell Construction



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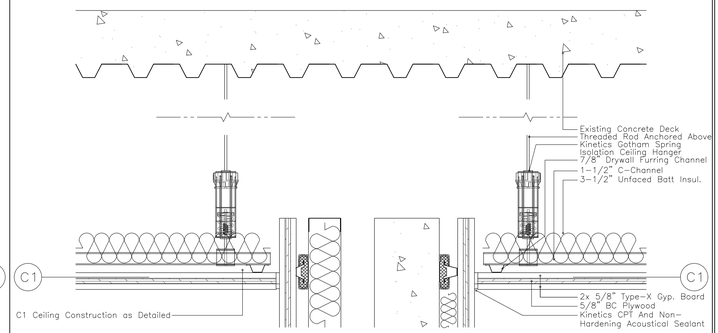
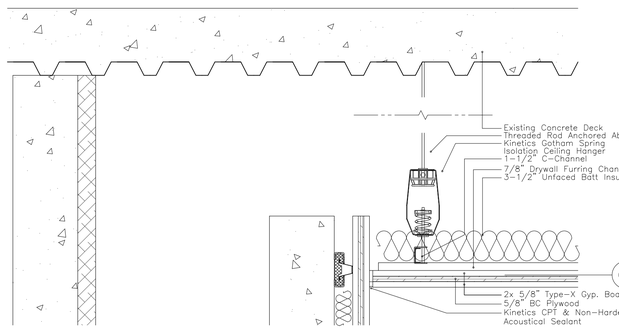
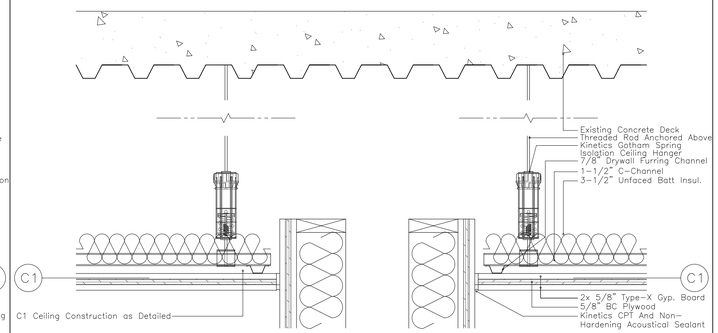


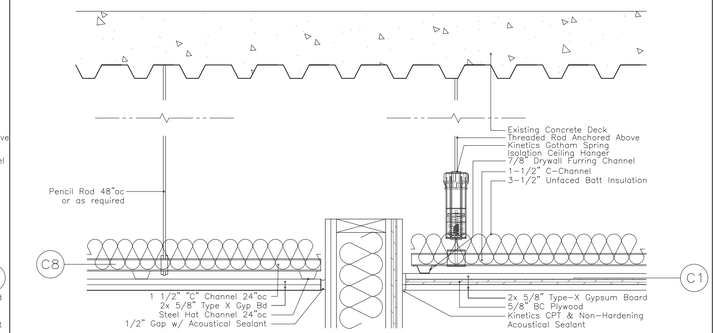
C Shell Construction



D Shell Construction



E Shell Construction



F Shell Construction

SYMBOLS

ACOUSTIC CONSTRUCTION NOTES

1. WHERE INDICATED, DRYWALL IS TO BE SEALED AT CEILING, FLOOR AND VERTICAL JOINTS USING ACOUSTIC SEALANT BEAD NOT LESS THAN 1/2"

2. ALL DRYWALL CORNER JOINTS ARE OVERLAPPED AS SHOWN IN PRINCIPAL ON THE DRAWING DETAILS. ALL DRYWALL BOARDS ARE TO BE STAGGERED FROM PRECEEDING LAYER AND JOINTS TAPED. ALL LAYERS OF LAMINATIONS ARE SCREWED AND GLUED W/ CONSTRUCTION ADHESIVE TO THE PRECEEDING LAYER.

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4. WHERE RESILIENT CHANNEL IS SPECIFIED, USE USG RC-1 RESILIENT CHANNEL INSTALLED IN ACCORDANCE WITH USG STANDARDS. INSTALL CHANNEL WITH "FREE LEG" UP.

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RIGID INSULATION SPECIFICATIONS

#703 OWENS CORNING=3lb/cf UNFACED RIGID FIBERGLASS INSULATION. SUITABLE SUBSTITUTES FROM ALTERNATE MANUFACTURER IS ACCEPTABLE WITH PRIOR APPROVAL

#705 OWENS CORNING=6lb/cf UNFACED RIGID FIBERGLASS INSULATION. SUITABLE SUBSTITUTES FROM ALTERNATE MANUFACTURER IS ACCEPTABLE WITH PRIOR APPROVAL

Revisions

REVISION #	DATE	REVISION	APPROVED
01	07/13/21	100% CD	GM

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Acoustic Consulting and Studio Design
914.248.7680 Voice
914.248.7780 Fax
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www.FMDesign.com
961 Route 6
Mahopac NY, 10541

ARCHITECT

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Office: The Yard 33 W 60th St. 2nd Floor
New York, NY 10023
Mailing: 140 Riverside Drive Suite 6E,
New York, NY 10024

PROJECT

Purchase College Studio A Renovations

Purchase, NY

DRAWING NAME

DETAILS—SHELL CONSTRUCTION

SEAL & SIGNATURE

SCALE 1 1/2"=1'-0"
DATE 07/13/2021
CAD FILE#

DRAWING NUMBER
A-401.00
SHEET

(A) Ramp Detail

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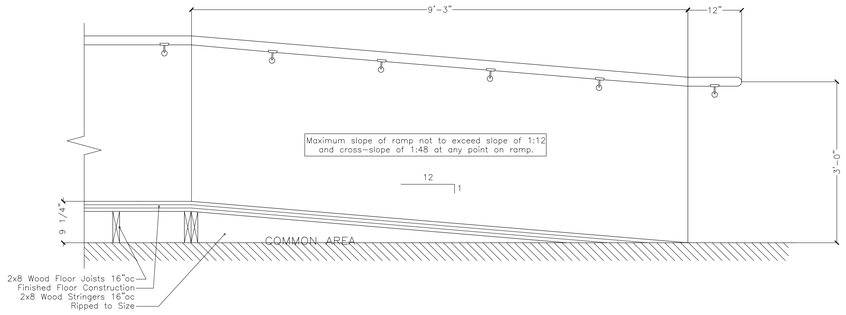
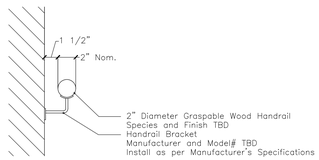
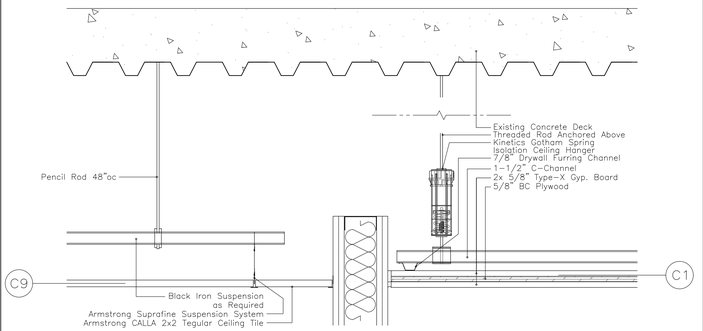
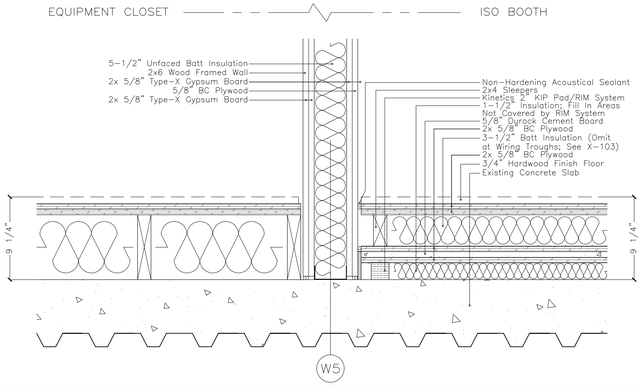


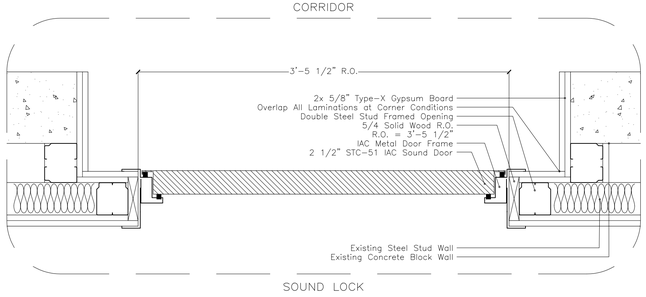
(B) Ramp Handrail Detail



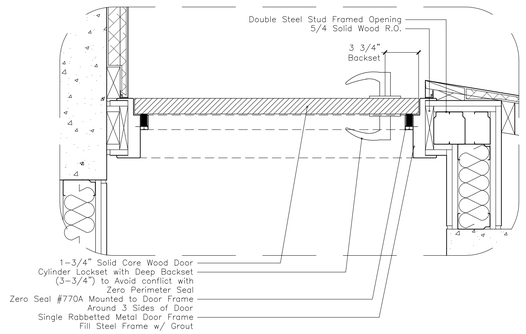




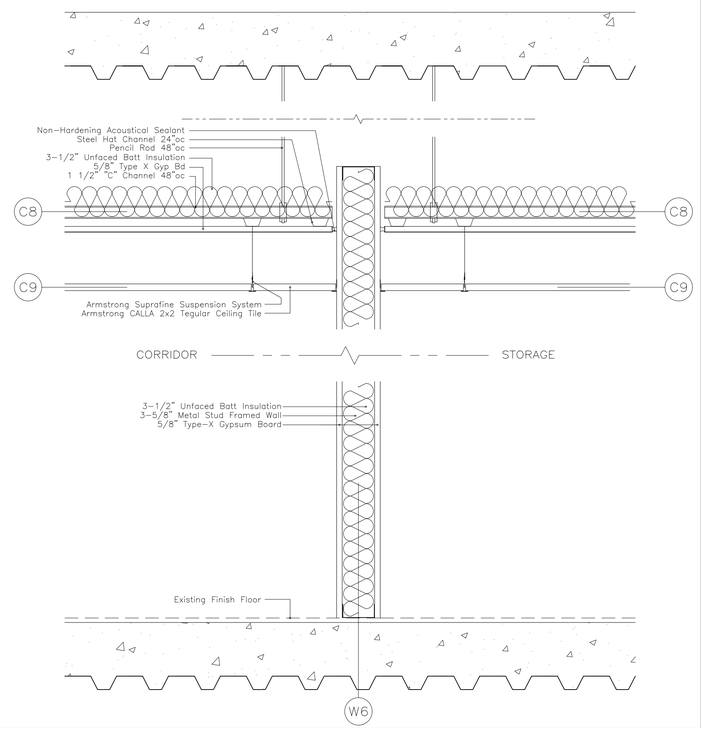
(C) Plan Section at Door #1

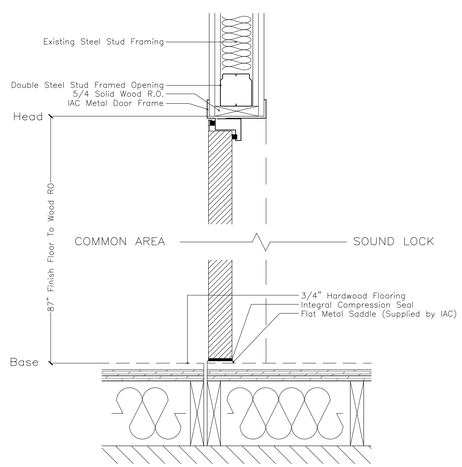


(E) Plan Section at Door #5

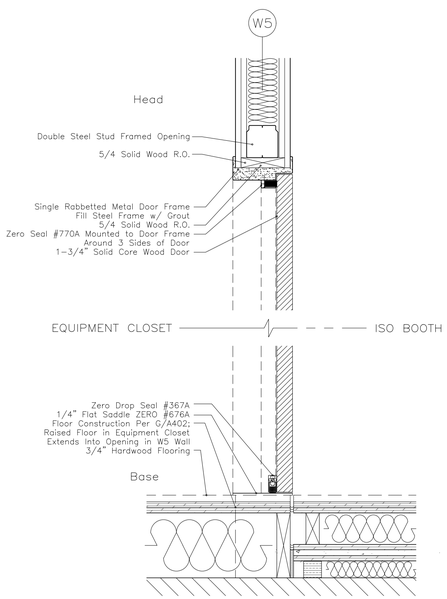


(G) Shell Construction





(D) Section at Door #1



(F) Section at Door #5

(H) Shell Construction

SYMBOLS

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PROJECT

Purchase College Studio A Renovations

Purchase, NY

DRAWING NAME

DETAILS–MISC

SEAL & SIGNATURE

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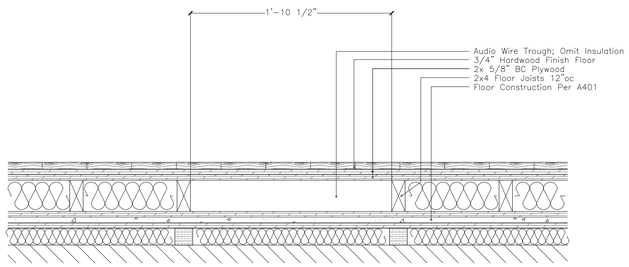
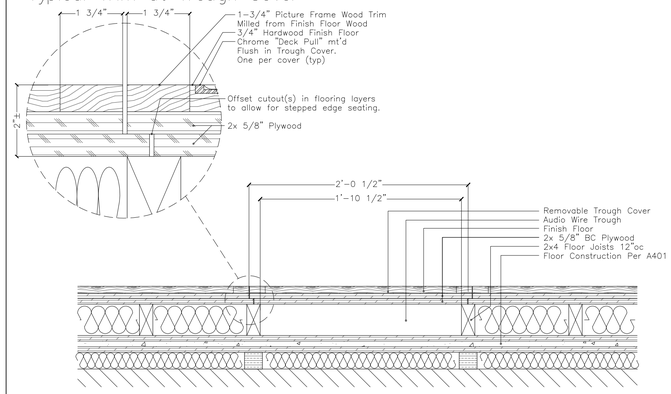
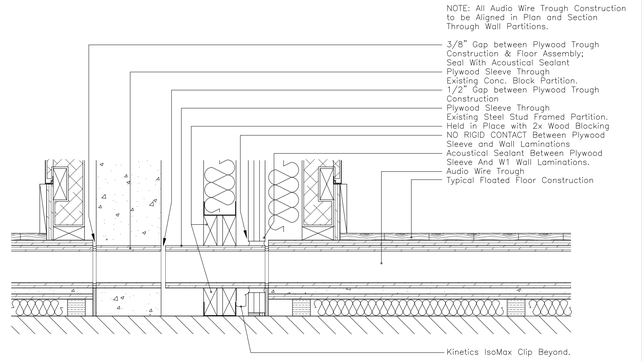


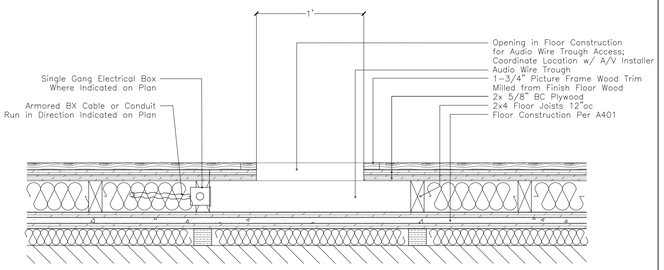
A Trough Detail



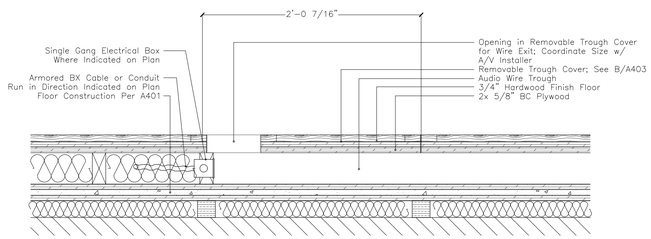
B Removable Trough Cover



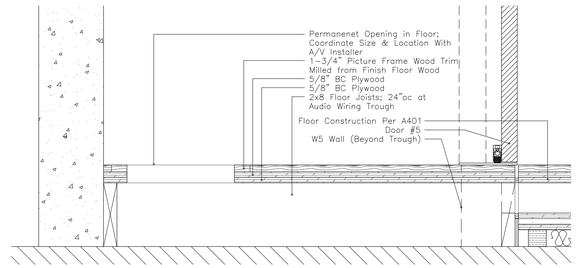
C Audio Trough Crossing Adjacent Floated Floors



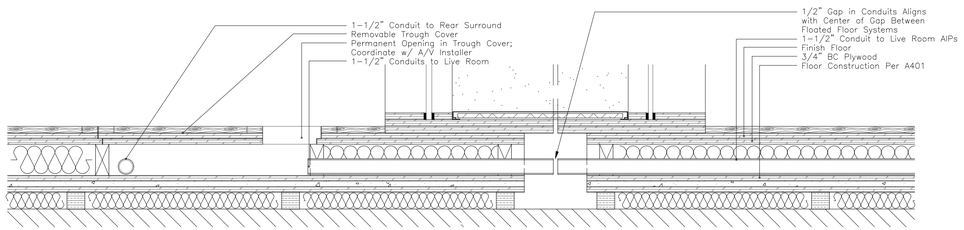
D Detail at Opening in Trough



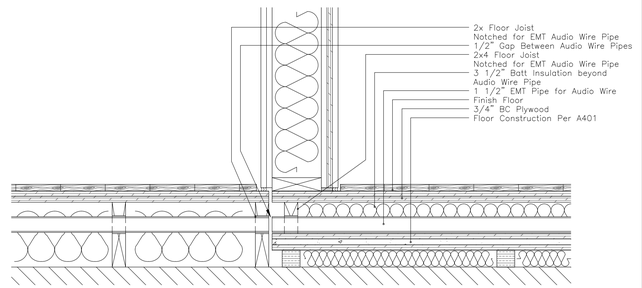
E Removable Trough Cover w/Wire Exit



F Detail at Opening in Trough



G Audio Pipes Exiting Trough at Removable Cover



H Audio Pipe Exiting Isolated Floor

SYMBOLS

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TROUGH & PIPING DETAILS

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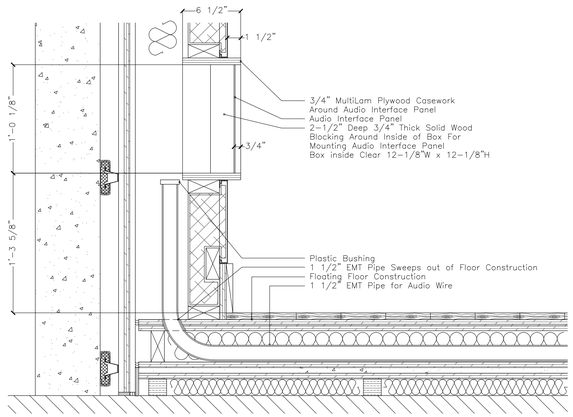
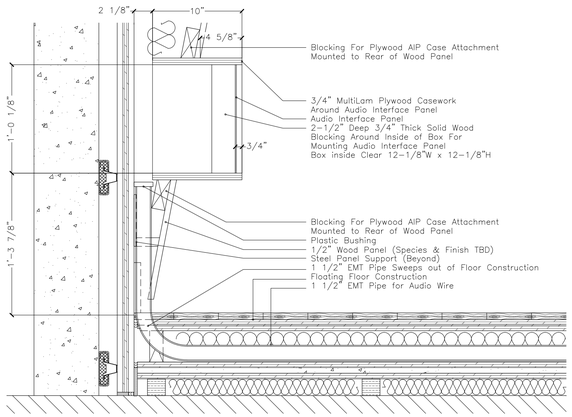
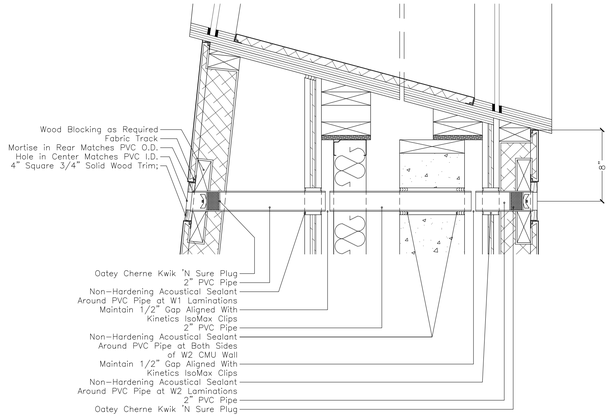


J Audio Interface Panel in Fabric Wall



K Audio Interface Panel in T13 Wood Panel



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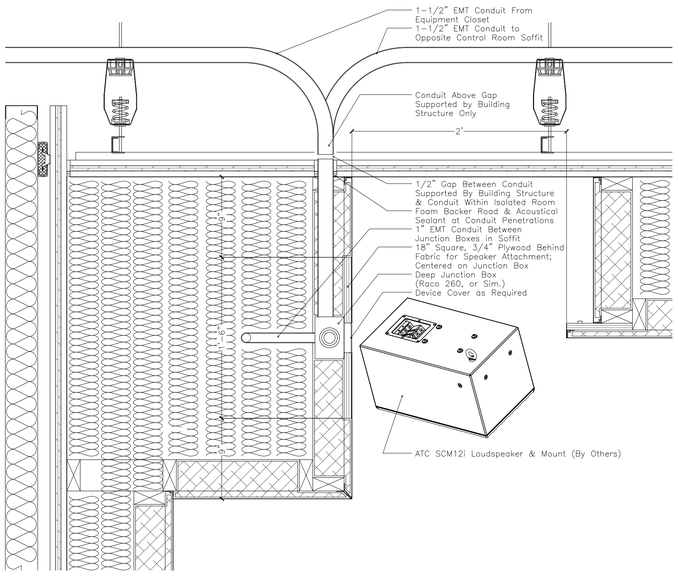
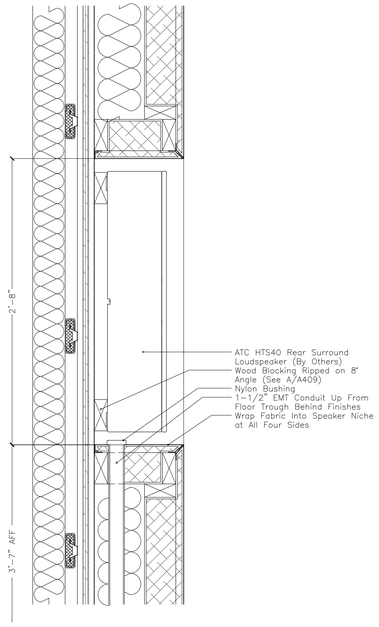


M Detail at Overhead Speaker



N Detail at Rear Surround Speaker

SYMBOLS

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ARCHITECT

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PROJECT

Purchase College
Studio A
Renovations

Purchase, NY

DRAWING NAME

TROUGH & PIPING DETAILS

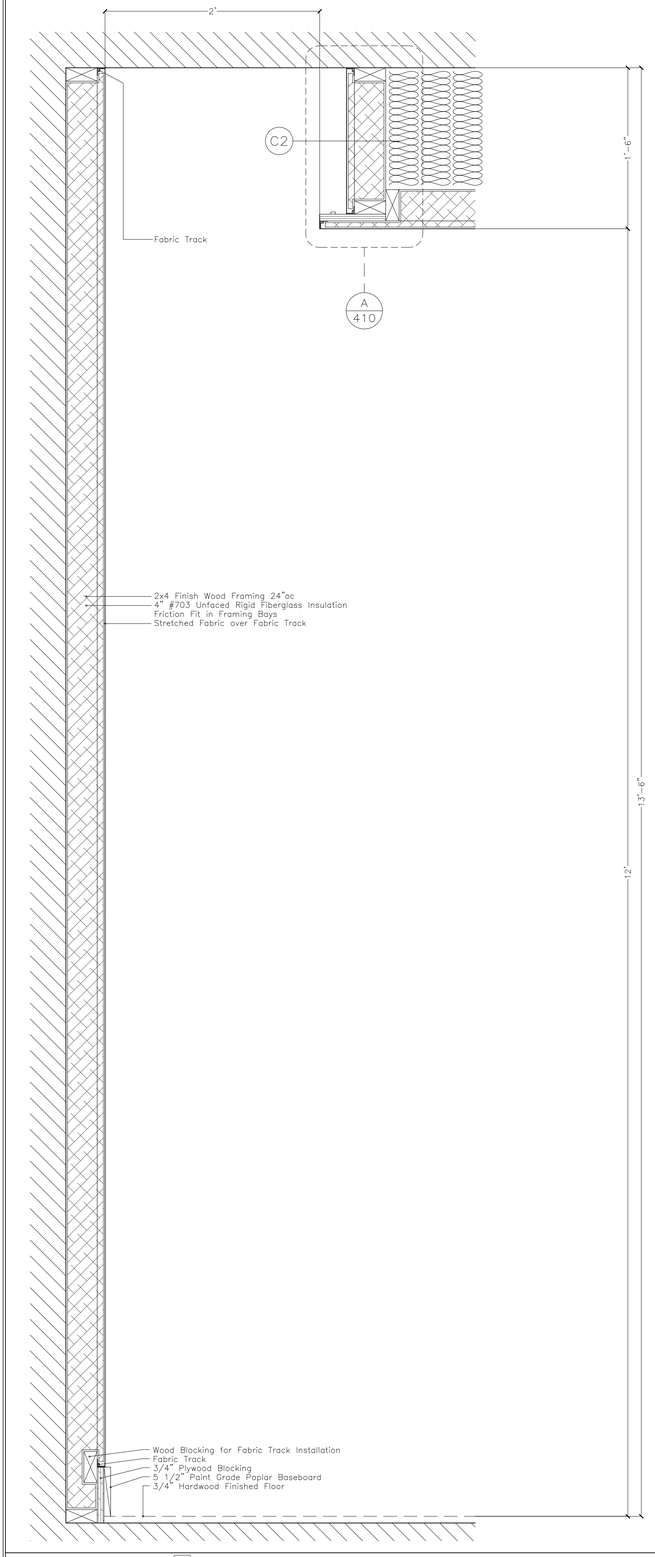
SEAL & SIGNATURE

SCALE 1/4"=1'-0"
DATE 07/13/2021
CAD FILE#

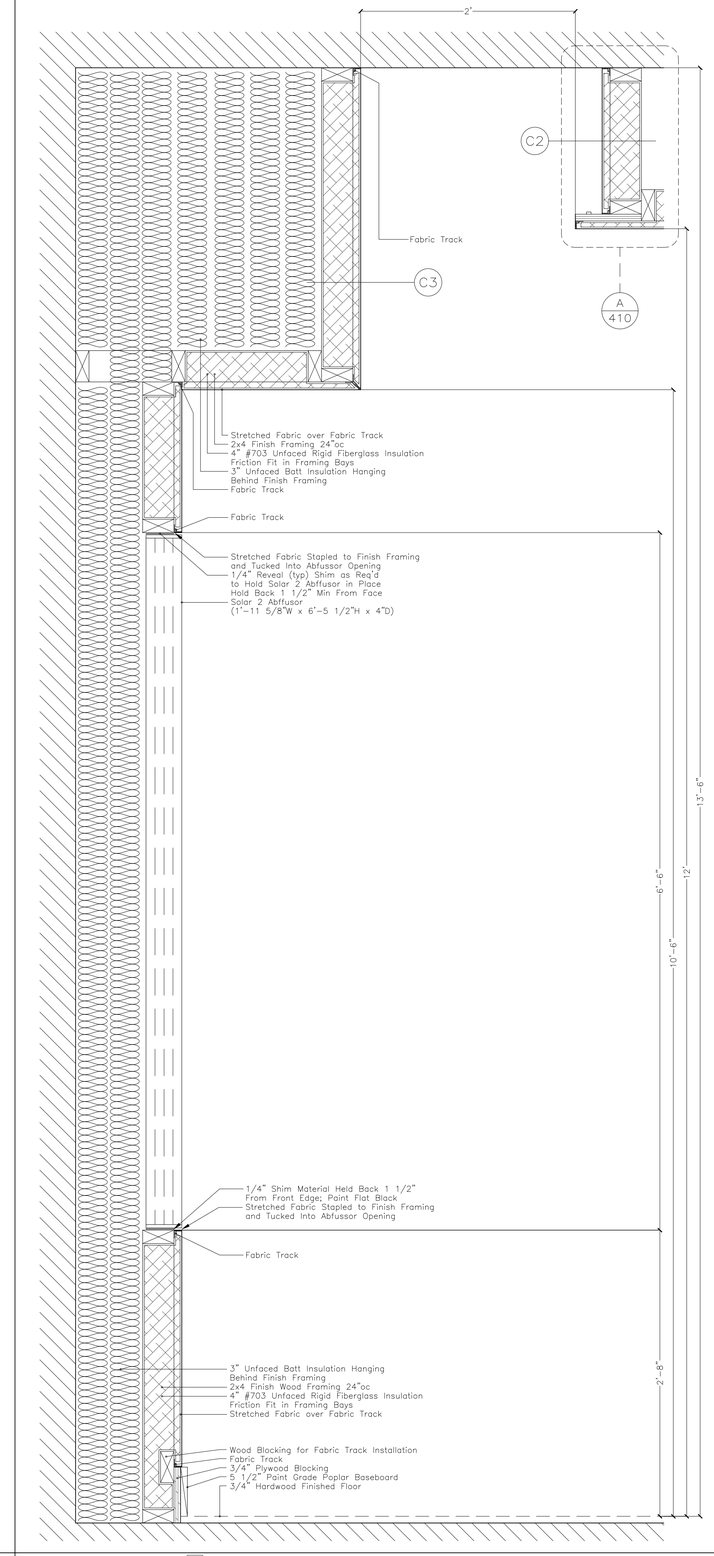
DRAWING NUMBER

A-404.00

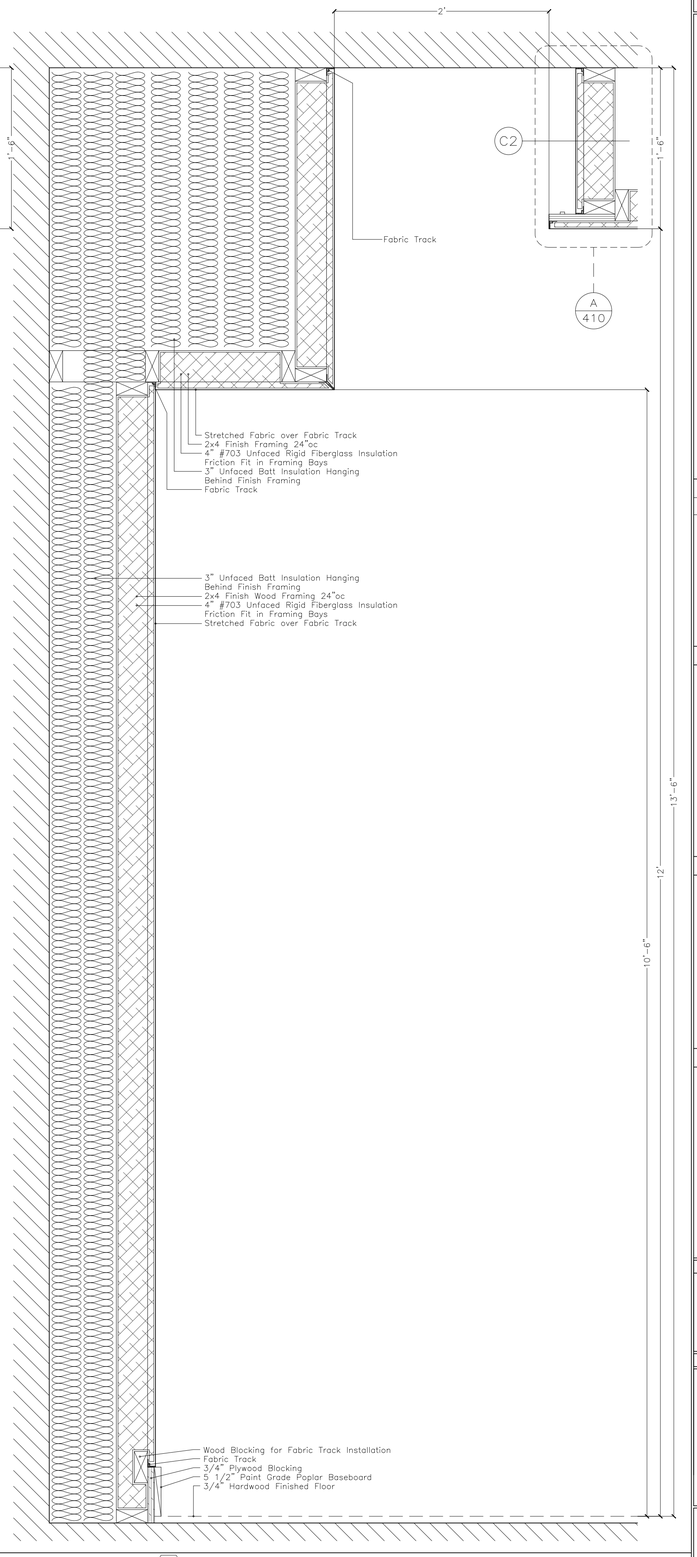
SHEET



T1 Fixed Depth Acoustic Treatment



T2 Varying Depth w/Abfussor



T3 Varying Depth Acoustic Treatment

SYMBOLS

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Purchase, NY

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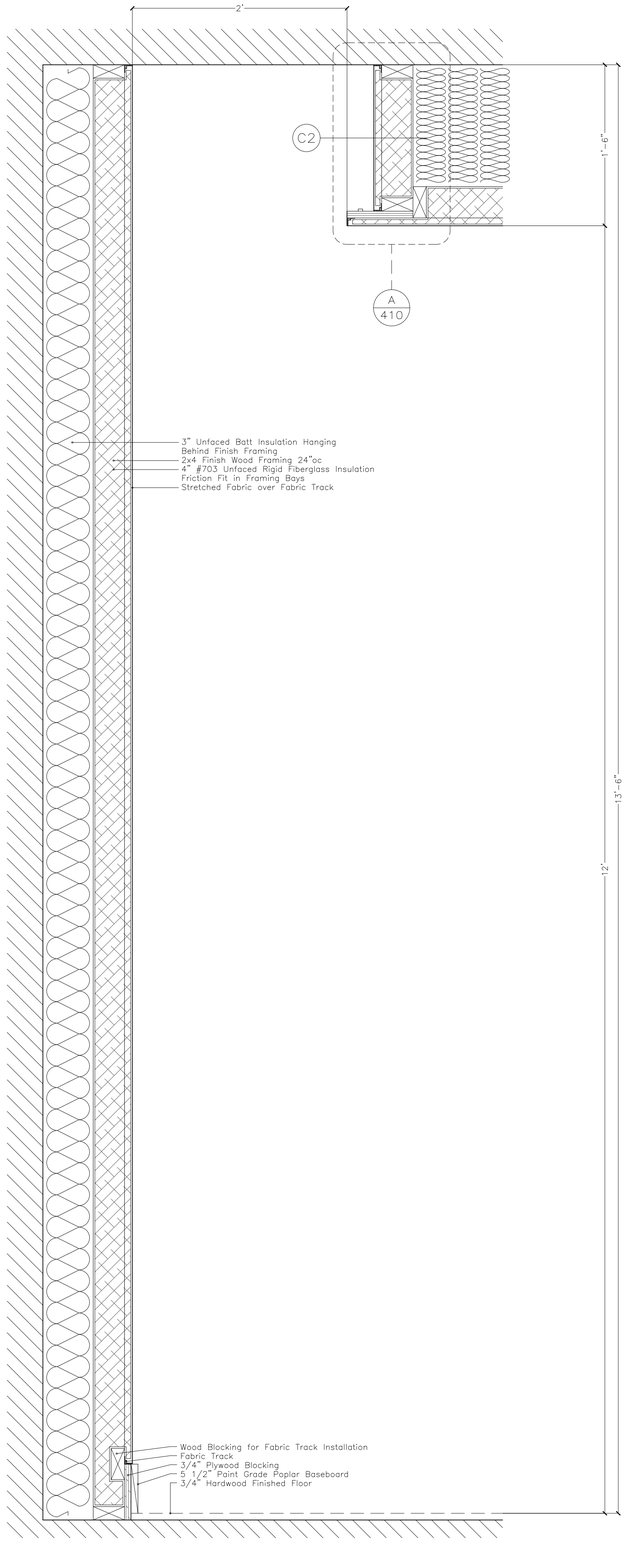
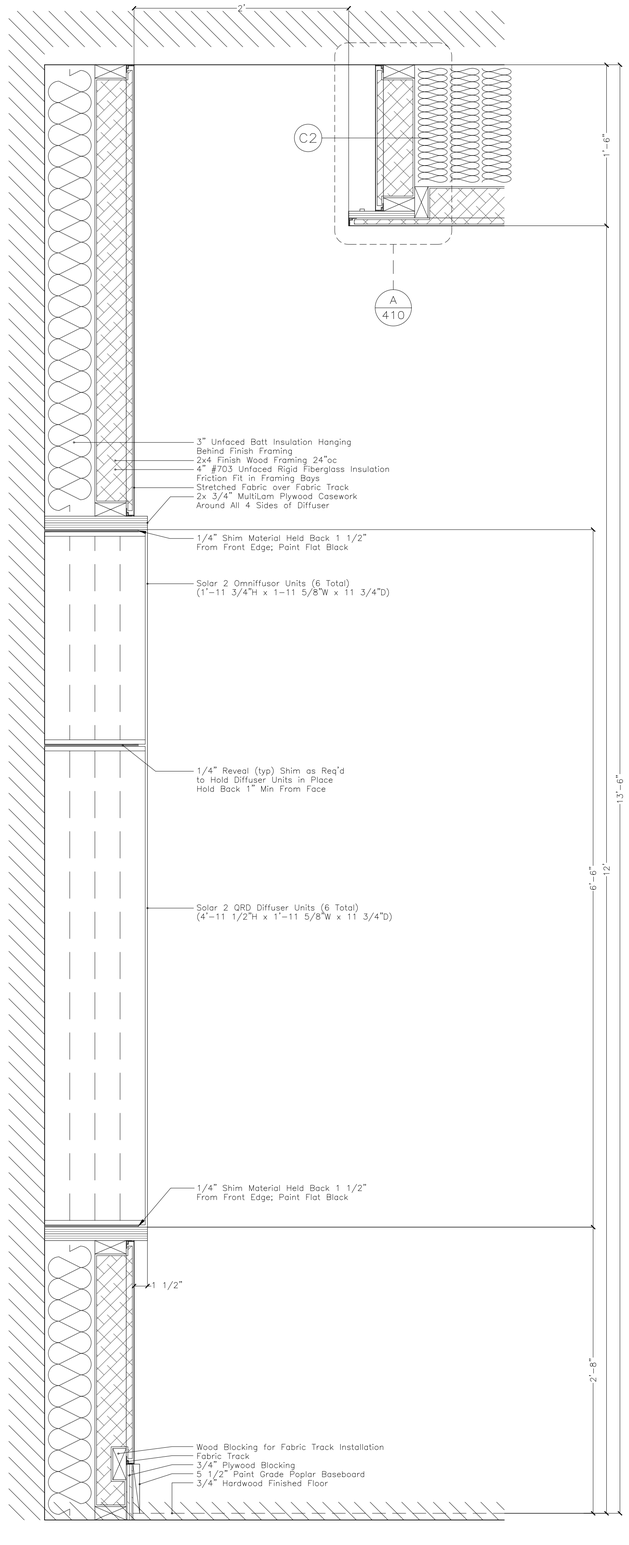
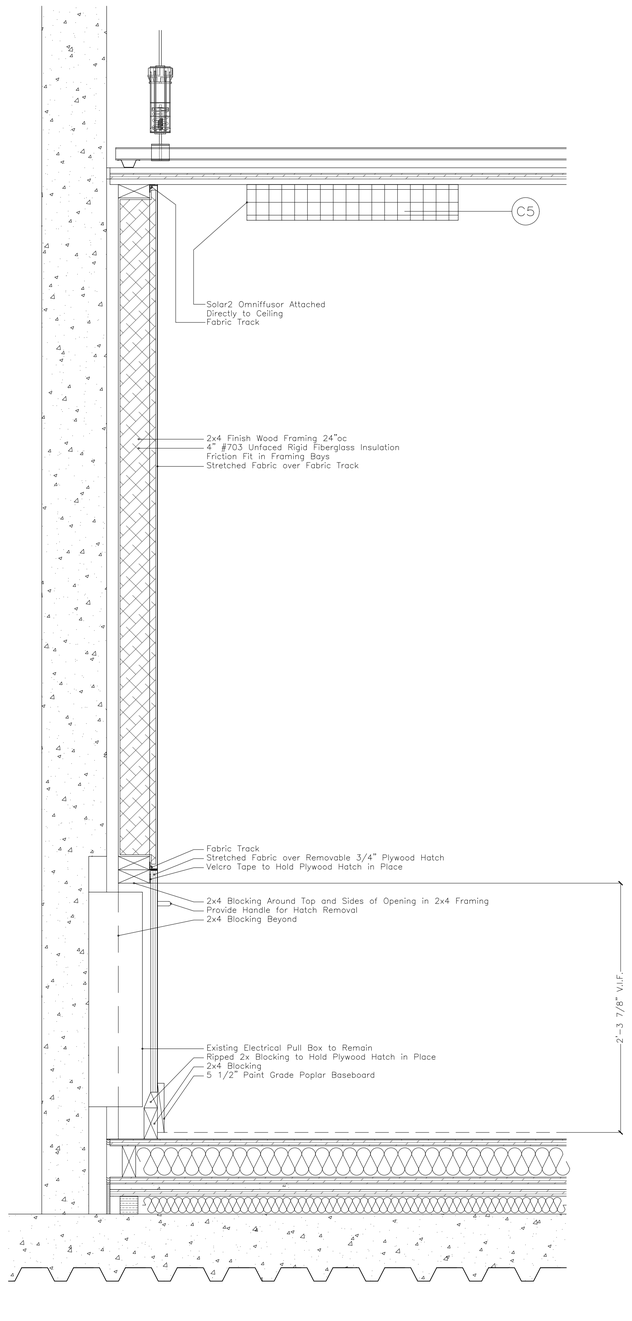


T4 Varying Depth Acoustic Treatment



T5 RPG QRD Diffractal Units



T6 Fixed Depth Acoustic Treatment

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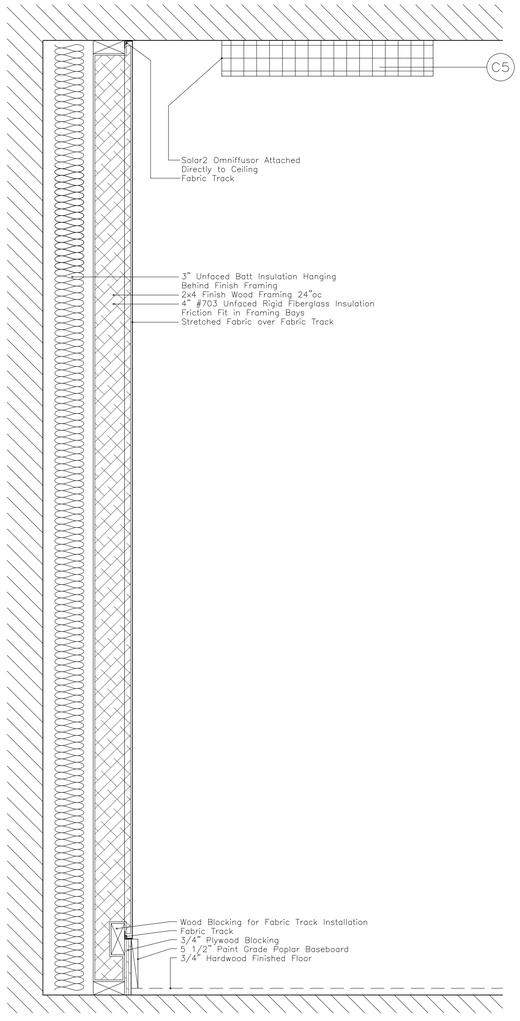
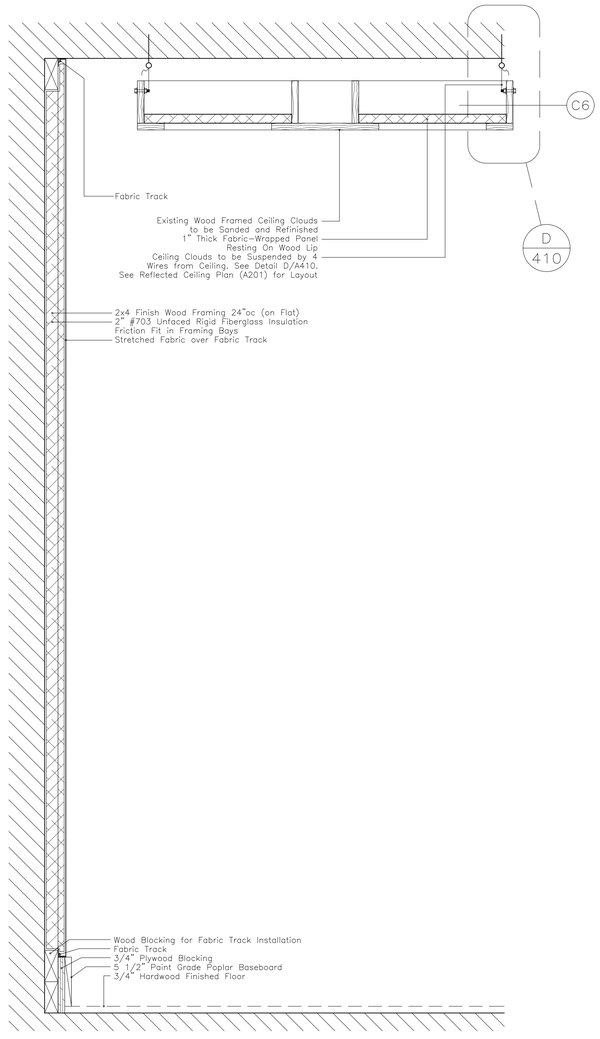
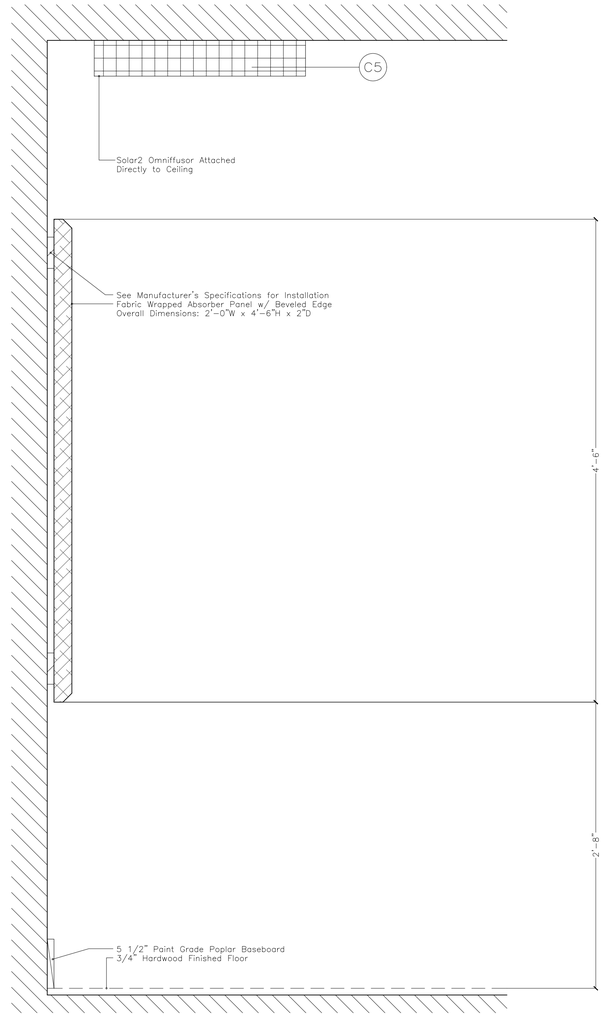


T7 Varying Depth Acoustic Treatment



T8 Fixed Depth Acoustic Treatment



T9 Fabric Wrapped Absorber Panel

SYMBOLS

ACOUSTIC CONSTRUCTION NOTES

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PROJECT

Purchase College Studio A Renovations

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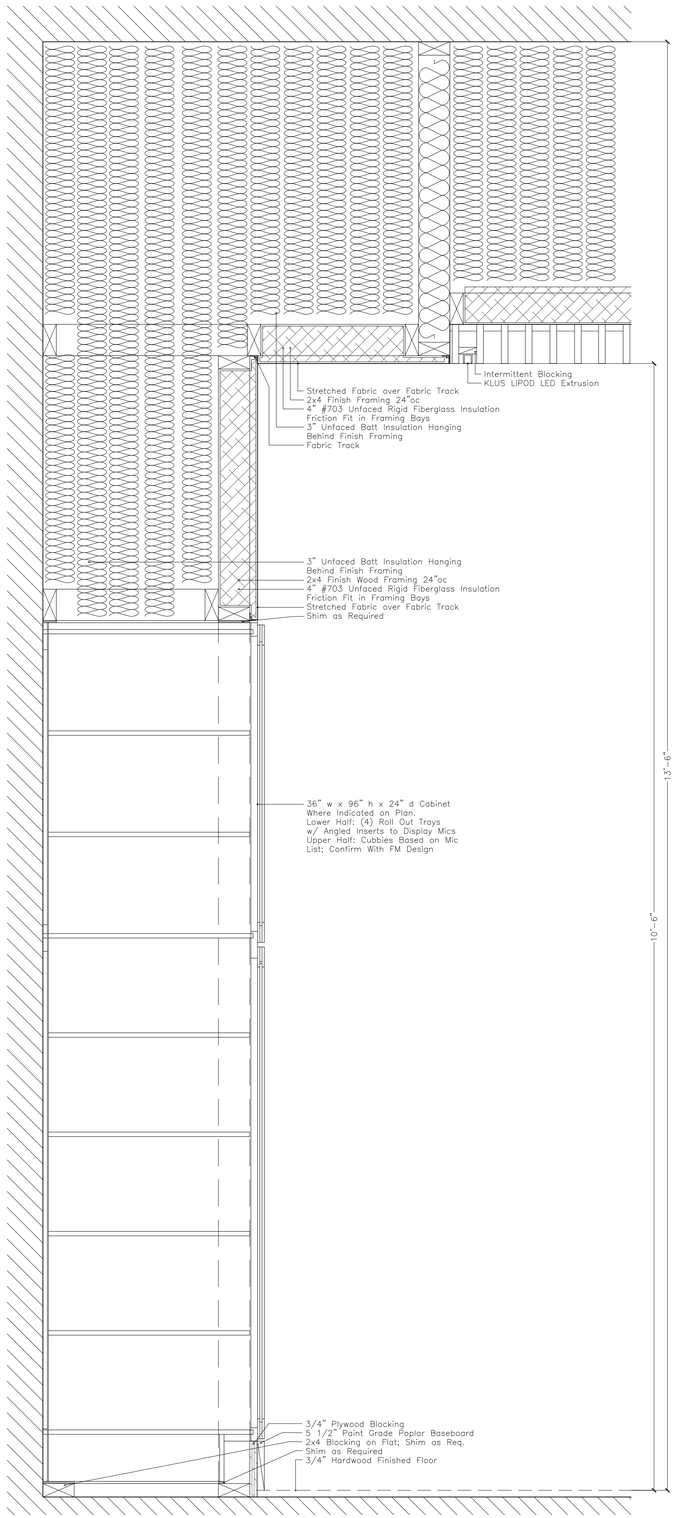
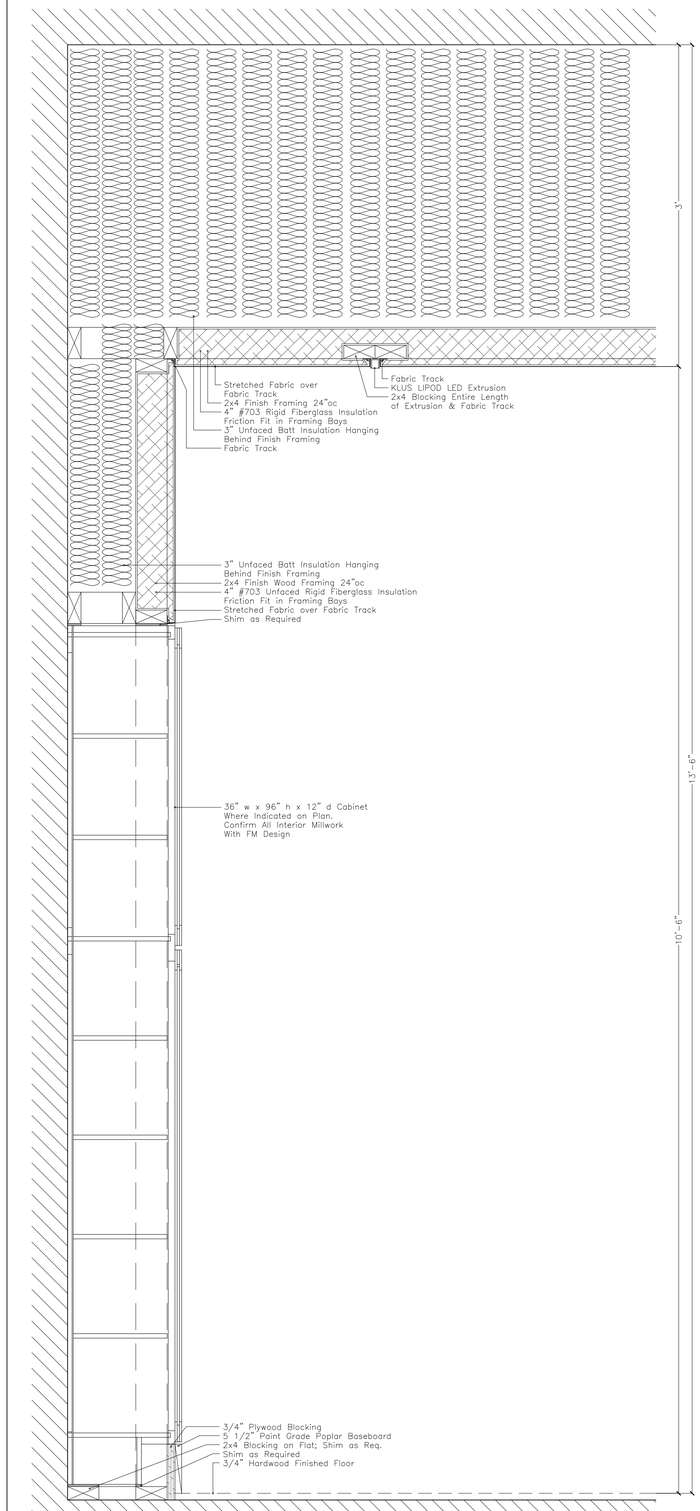
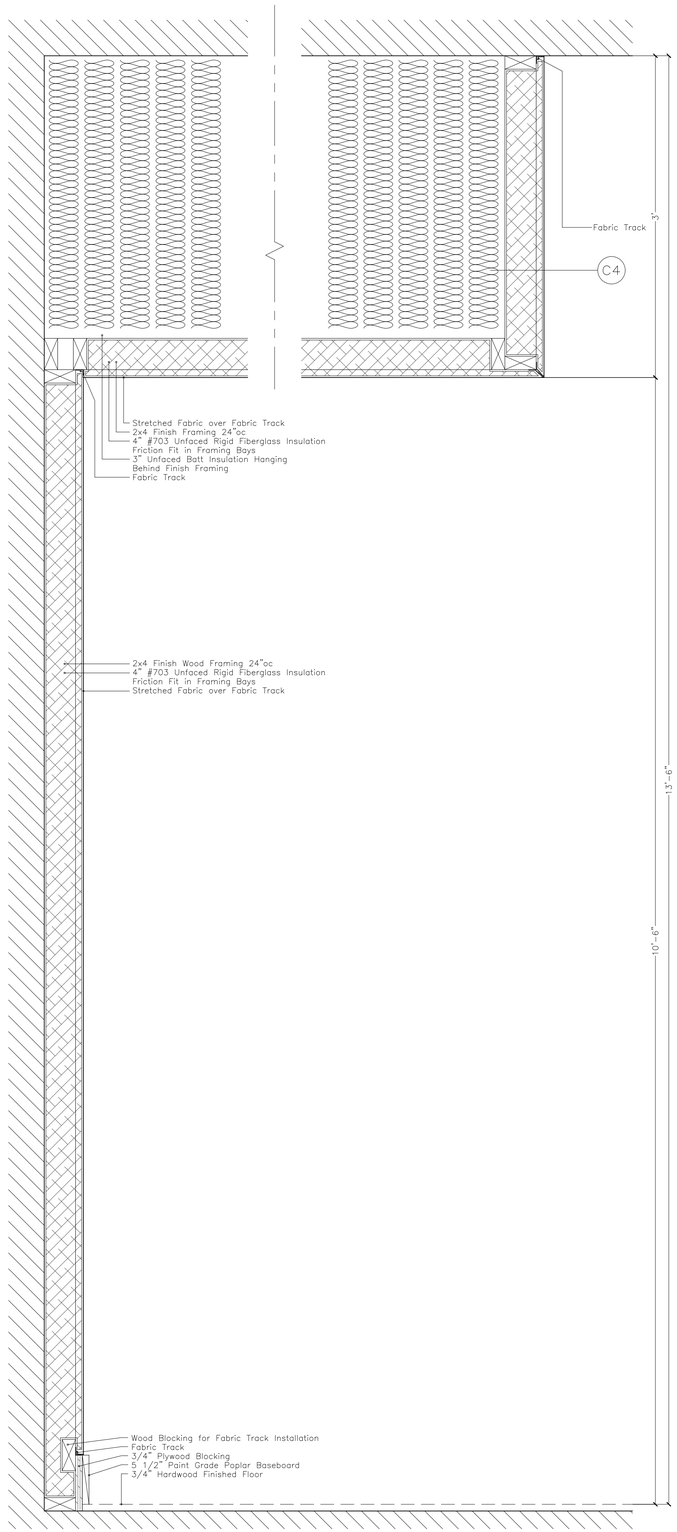


T10 24" Deep Treatment w/ Inset Cabinet



T11 12" Deep Treatment w/ Inset Cabinet



T12 Fixed Depth Acoustic Treatment

SYMBOLS

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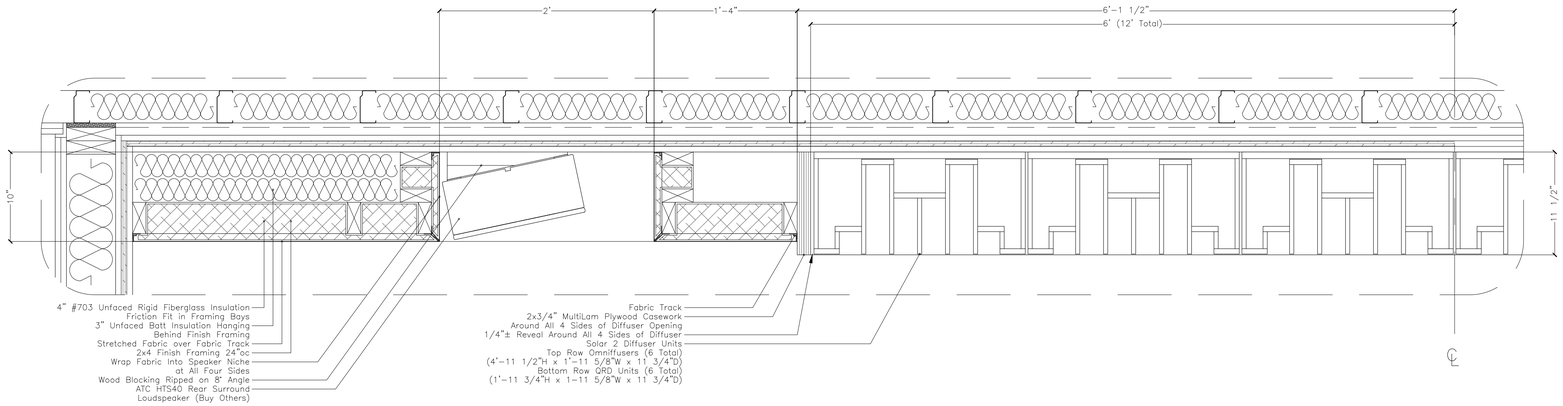
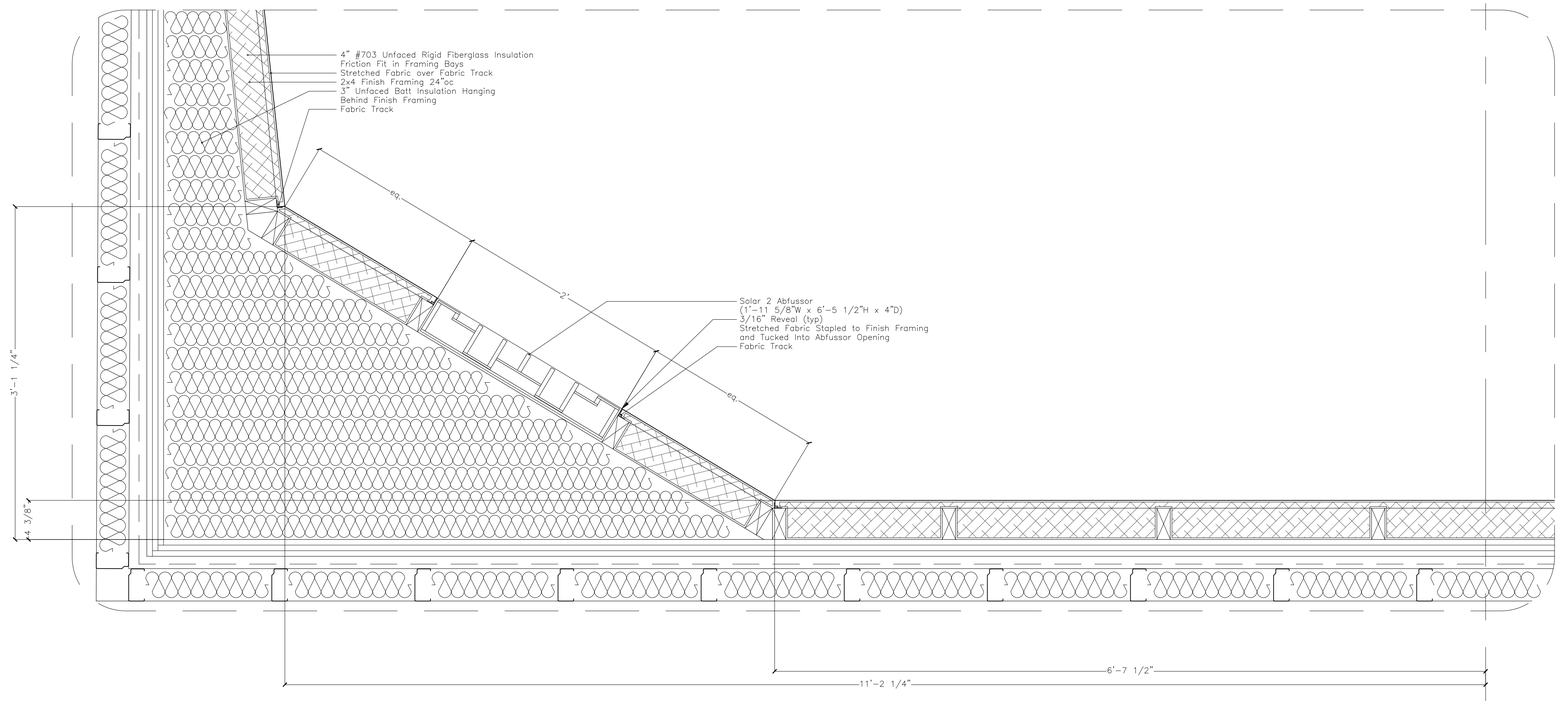


Ⓐ Control Room Rear Wall Plan Detail



Ⓑ Control Room Front Wall Plan Detail

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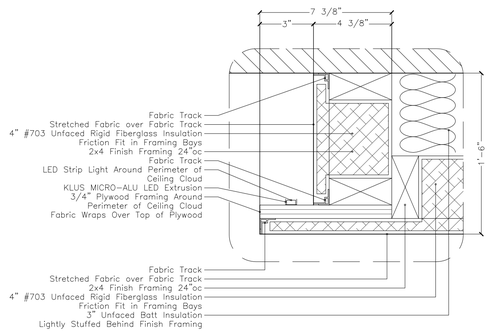
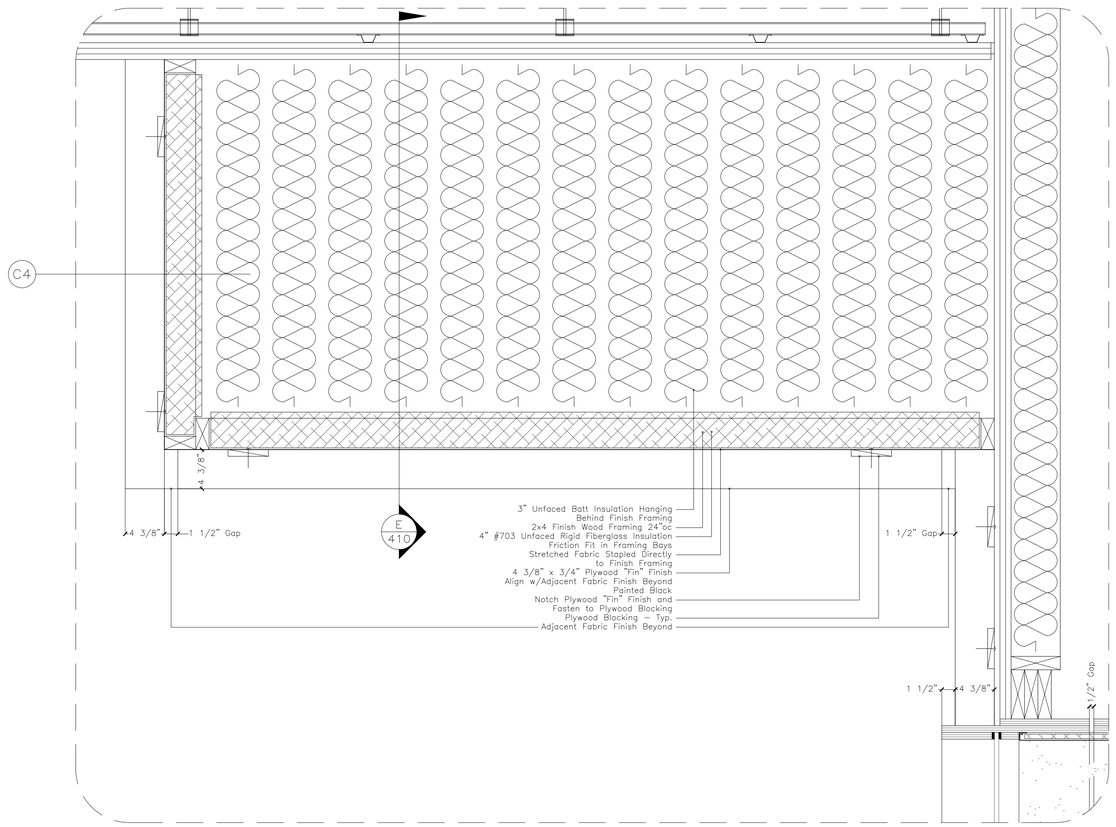
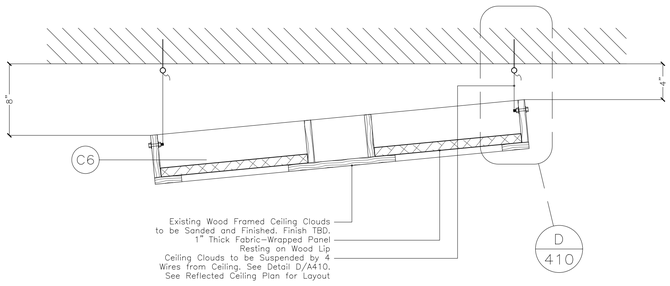
A Section Detail at Control Rm Ceiling Cloud



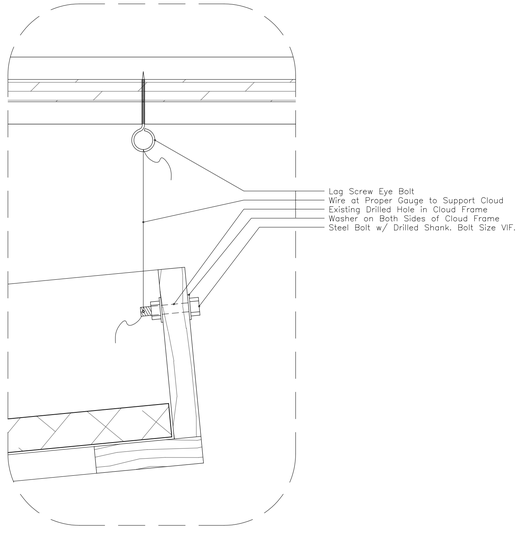
B Section Detail at Live Room Soffit



C Ceiling Cloud Section Detail



D Ceiling Cloud Suspension Detail



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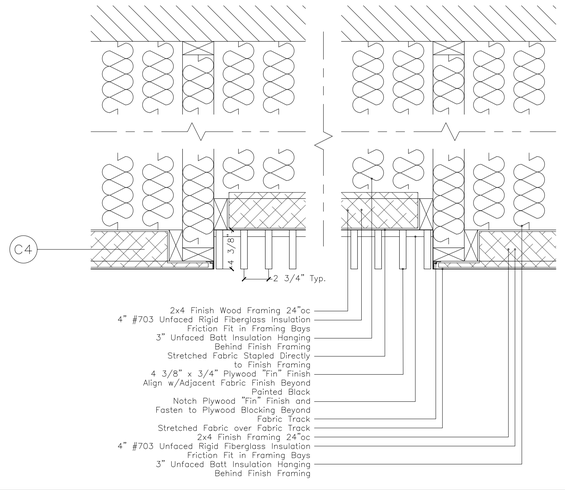

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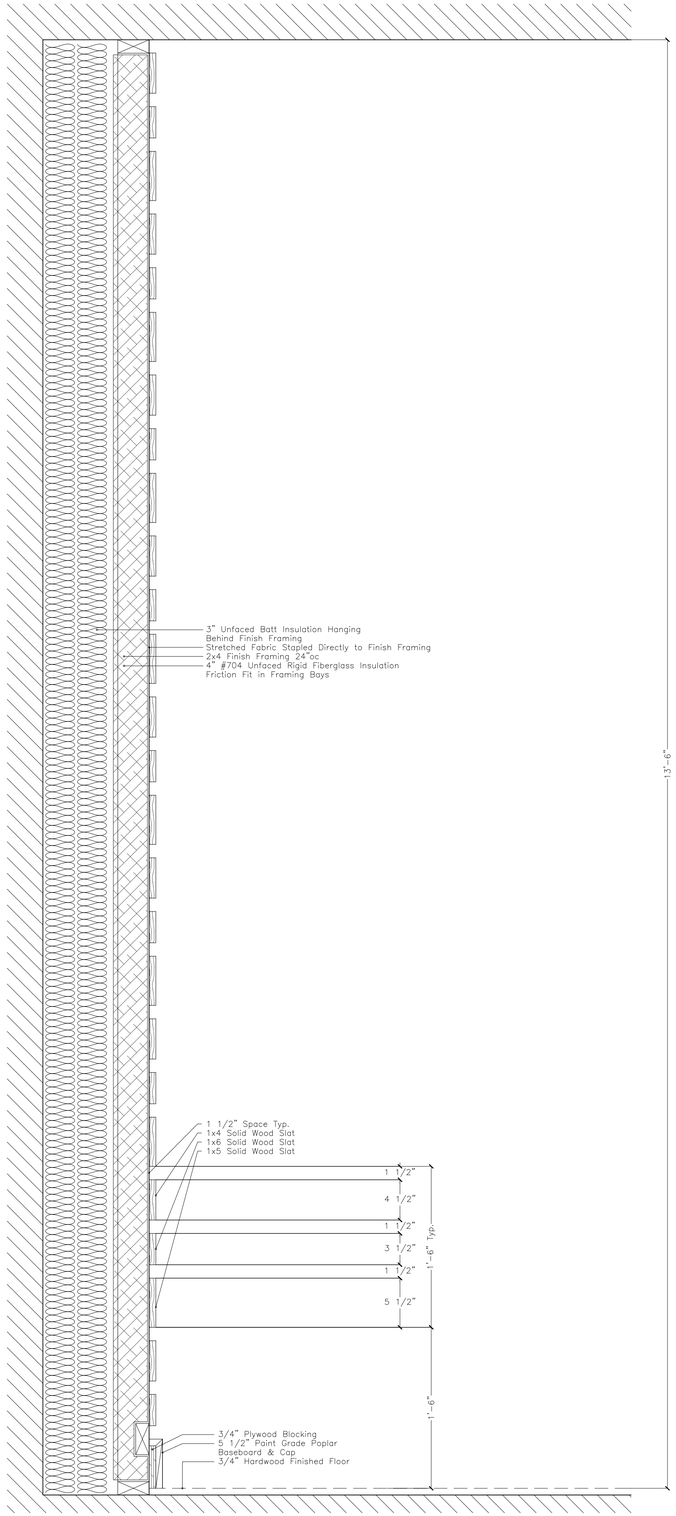
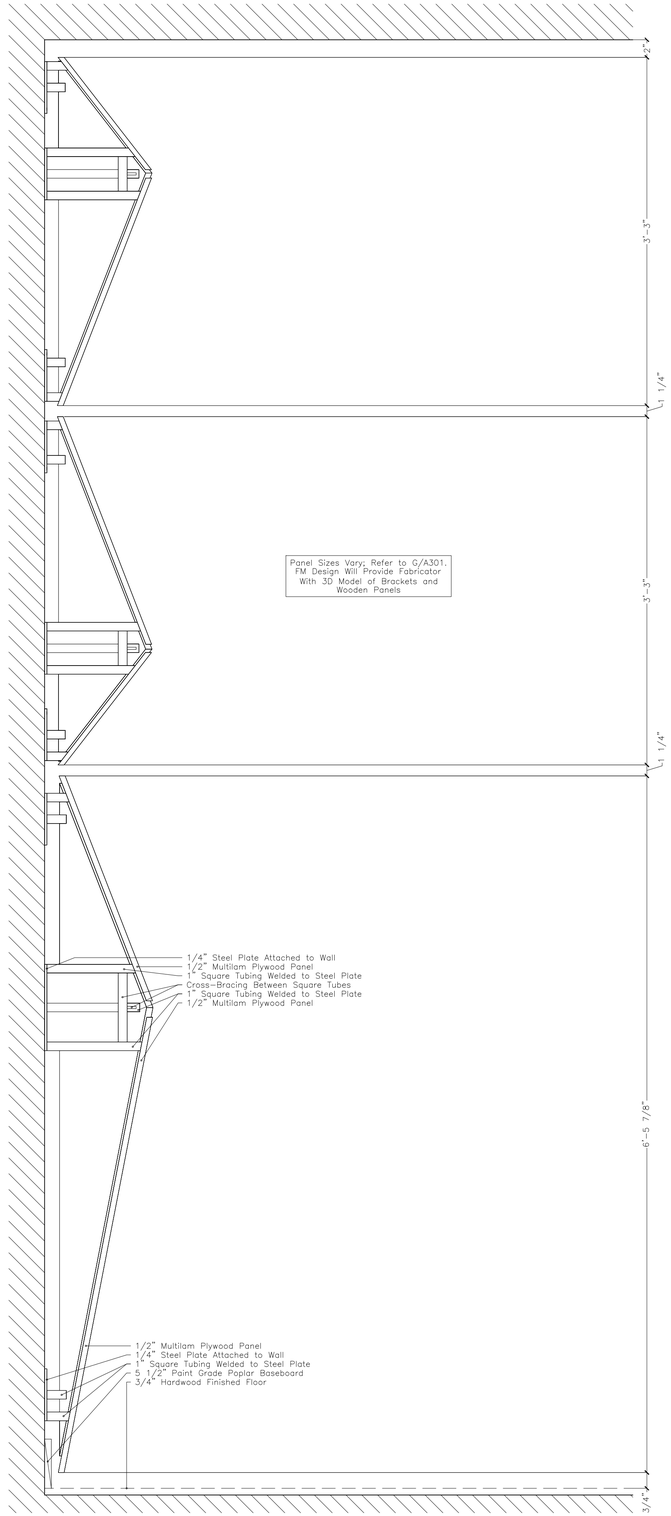
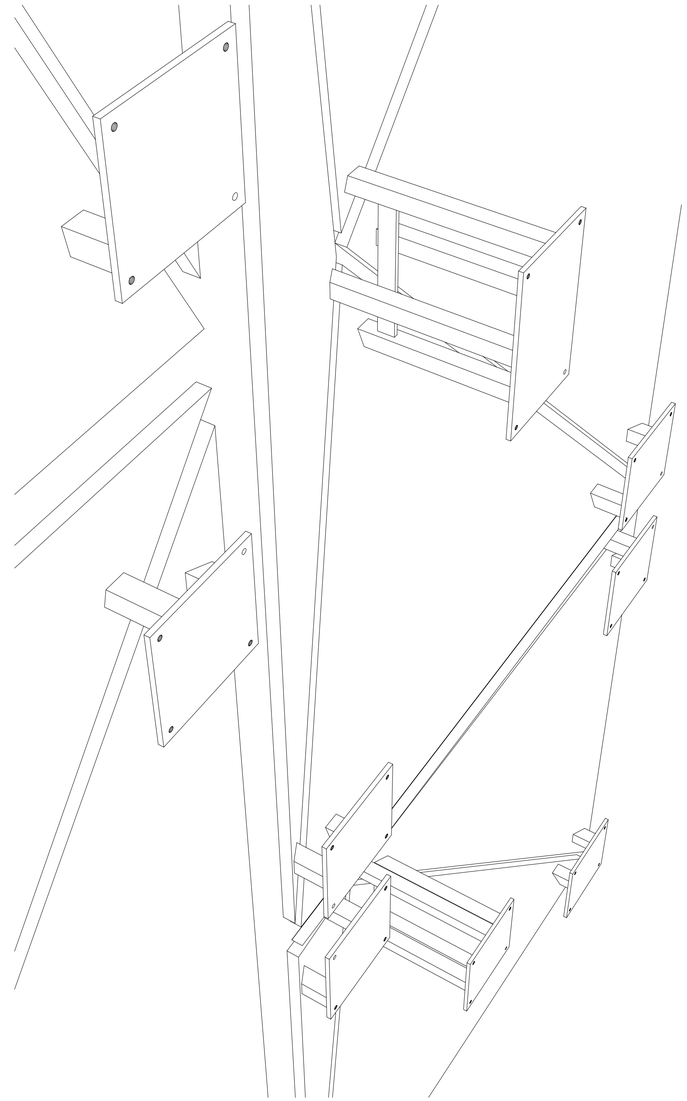


T13 Varying Depth Helmholtz Slat Treatment



T14 Backlit Pyramid Diffuser Treatments



A Isometric View Behind T14 Panels

SYMBOLS

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DOOR SCHEDULE

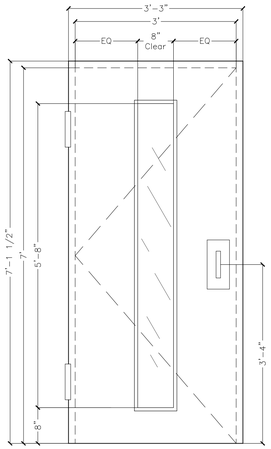
DOOR #	DIMENSIONS			MATERIALS			DETAIL			GLAZING	HARDWARE																TYPE	RATING	NOTES
	WD	HT	THK	DOOR MATERIAL	FRAME MATERIAL	GROUT FILLED	JAMB	HEAD	THRESH		DOOR CLOSER	DROP SEAL	PERIMETER SEALS	METAL THRESHOLD	LEVER MORTISED PASSAGE	LEVER MORTISED PRIVACY	LEVER MORTISED DEAD BOLT	PUSH/PULL PLATE	ASTRAGAL SEAL	BALL BEARING BUTT HINGES	CAM HINGES	FLOOR STOP	KICK PLATE	CARD READER			
1	3'-0"	7'-0"	2-1/2"	Metal IAC STC-51	Integral Metal		C/402	D/402	D/402	Factory Glazing	X			X		X		X			X	X	X	X	A		
2	3'-0"	7'-0"	2-1/2"	Metal IAC STC-51	Integral Metal		A/602	D/602	D/602	Factory Glazing	X			X				X			X	X	X		A		
3	3'-0"	7'-0"	2-1/2"	Metal IAC STC-51	Integral Metal		B/602	E/602	E/602	Factory Glazing	X			X				X			X	X	X		A		
4	2'-6"	7'-0"	2-1/2"	Metal IAC STC-51	Integral Metal		C/602	F/602	F/602		X			X				X			X	X	X		B		
5	2'-8"	7'-0"	1-3/4"	Solid Core Wood	Metal	Yes	E/402	F/402	F/402		X	X	X			X				X		X			C		
6	3'-0"	7'-0"	1-3/4"	Hollow Metal	Metal						X						X			X		X			D		
7	5'-9"	7'-0"	1-3/4"	Hollow Metal	Metal						X						X			X		X			E	60 Min	

ALL SOUND SEAL HARDWARE IS FROM ZERO INTERNATIONAL, BRONX NY. (800) 635-5335 or (718) 585-3230

DROP SEALS = ZERO 367A
PERIMETER SEALS = 770A
METAL THRESHOLD = ZERO 566A

(A) 3070 2 1/2" IAC STC-51 Metal Sound Door

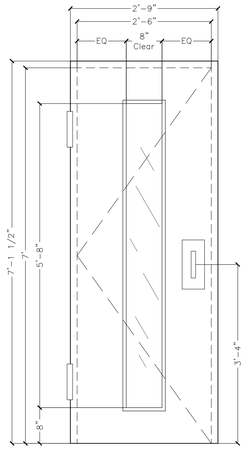
SCALE: 3/4"=1'-0"



NOTE: Rough Opening for IAC Doors is to be 41 1/2"W x 87"H Exact and Plumb Solid Wood RO.

(B) 2670 2 1/2" IAC STC-51 Metal Sound Door

SCALE: 3/4"=1'-0"



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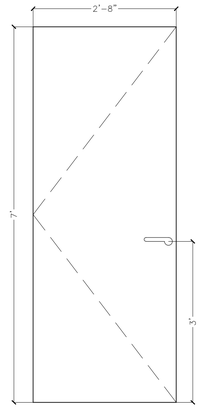
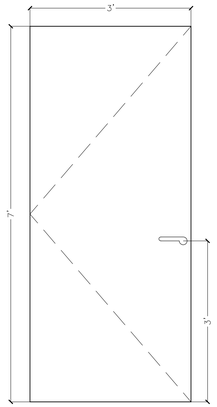
(C) 1 3/4" 2870 Solid Core Wood Door

SCALE: 3/4"=1'-0"



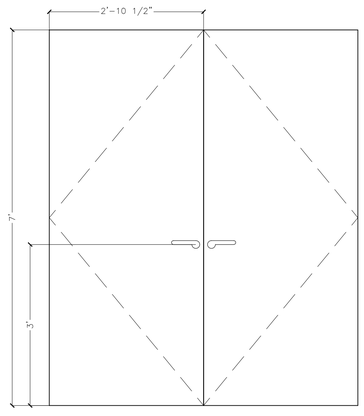
(D) 1 3/4" 3070 Hollow Metal Door

SCALE: 3/4"=1'-0"



(E) 1 3/4" 3070 Hollow Metal Door

SCALE: 3/4"=1'-0"



SYMBOLS

Revisions

REVISION #	DATE	REVISION	APPROVED
01	07/13/21	100% CD	GM

FRANCIS MANZELLA DESIGN LIMITED
Acoustic Consulting and Studio Design

914.248.7680 Voice
914.248.7780 Fax
frmdesign@frmdesign.com
www.FMDesign.com

961 Route 6
Mahopac NY, 10541

ARCHITECT

LYNN FRITZLEN ARCHITECT
Office: The Yard 33 W 60th St. 2nd Floor
New York, NY 10023
Mailing: 140 Riverside Drive Suite 6E,
New York, NY 10024

PROJECT

Purchase College Studio A Renovations

Purchase, NY

DRAWING NAME

DOOR SCHEDULE AND

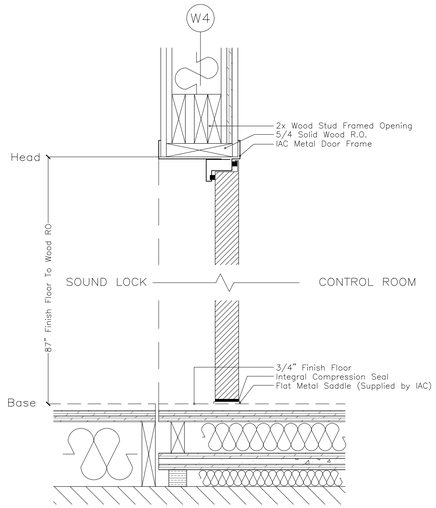
SEAL & SIGNATURE

SCALE As Noted
DATE 07/13/2021
CAD FILE#

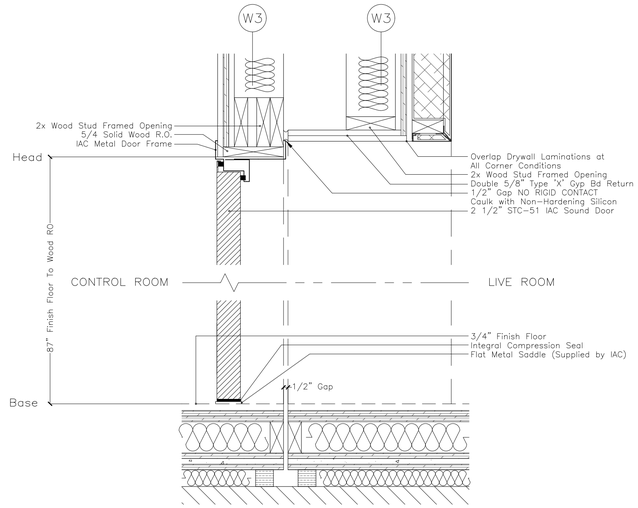
DRAWING NUMBER

A-601.00

SHEET



A Section at Door #2



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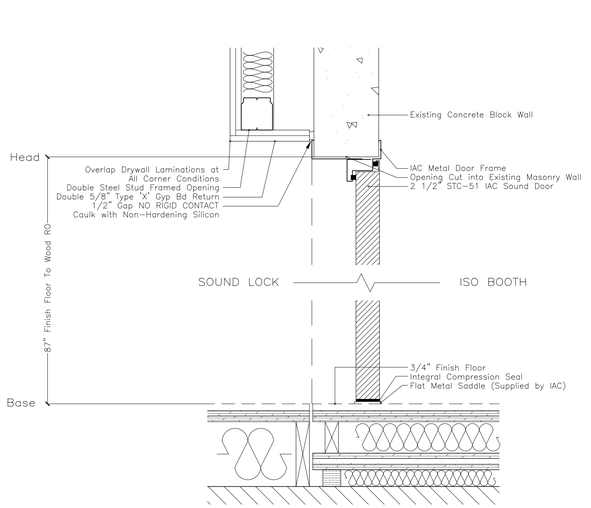

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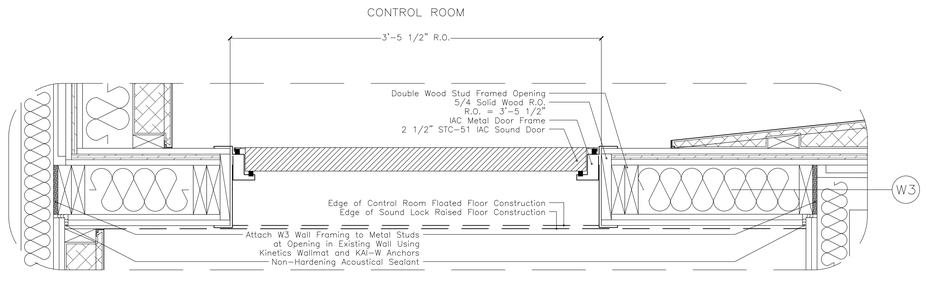

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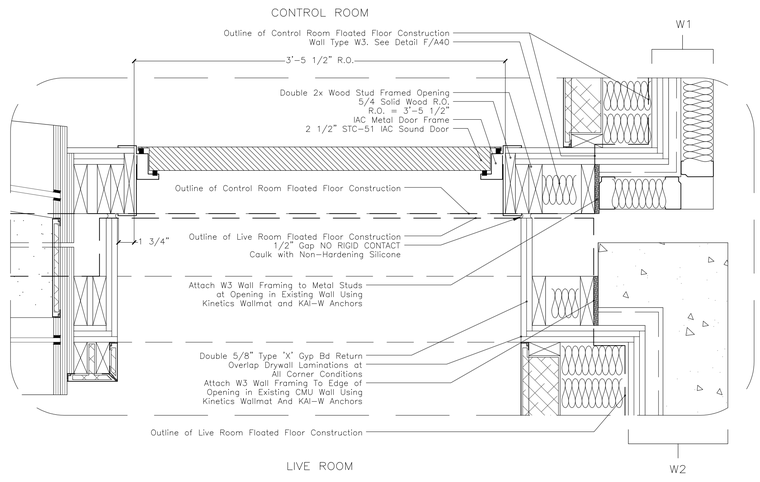
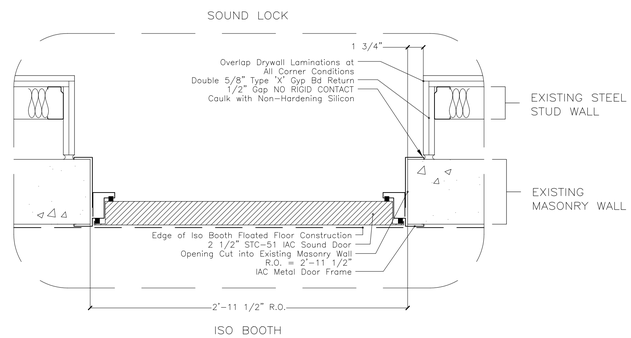


E Plan Section at Door #3



F Plan Section at Door #4

SYMBOLS

ACOUSTIC CONSTRUCTION NOTES

1. WHERE INDICATED, DRYWALL IS TO BE SEALED AT CEILING, FLOOR AND VERTICAL JOINTS USING ACOUSTIC SEALANT BEAD NOT LESS THAN 1/2".

2. ALL DRYWALL CORNER JOINTS ARE OVERLAPPED AS SHOWN IN PRINCIPAL ON THE DRAWING DETAILS. ALL DRYWALL BOARDS ARE TO BE STAGGERED FROM PRECEEDING LAYER AND JOINTS TAPED. ALL LAYERS OF LAMINATIONS ARE SCREWED AND GLUED W/ CONSTRUCTION ADHESIVE TO THE PRECEEDING LAYER.

3. ACCURATE CUTTING OF DRYWALL IS ESSENTIAL. PATCHING IS NOT ACCEPTABLE.

4. WHERE RESILIENT CHANNEL IS SPECIFIED, USE USG RC-1 RESILIENT CHANNEL INSTALLED IN ACCORDANCE WITH USG STANDARDS. INSTALL CHANNEL WITH "FREE LEG" UP.

5. UNDER NO CIRCUMSTANCES IS THERE TO BE ANY RIGID CONTACT BETWEEN THE FLOATING INNER SHELL OF THE ISOLATED ROOMS AND THE REST OF THE BUILDING STRUCTURE. WHERE AIR CONDITIONING DUCTS, SPRINKLER PIPES OR ELECTRICAL CONDUITS MUST PENETRATE THE WALL OR CEILING, A FRAMED OPENING MUST BE MADE OVERSIZED TO ALLOW FOR A SEALED SOFT JOINT.

6. THE ACOUSTIC DESIGNER MUST HAVE THE RIGHT OF REVIEW AND APPROVAL OVER ANY CHANGES MADE TO THESE SPECIFICATIONS. INSPECTION MUST BE COMPLETED OF ALL MAJOR SYSTEMS BEFORE THEY ARE COVERED BY THE NEXT PHASE OF CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE ACOUSTIC DESIGNER AS THESE MAJOR ELEMENTS ARE COMPLETED.

7. ALL TIMBER FRAMING AND PLYWOOD LAMINATIONS ARE TO BE FIRE TREATED AS PER LOCAL BUILDING CODES.

RIGID INSULATION SPECIFICATIONS

#703 OWENS CORNING=3lb/cf UNFACED RIGID FIBERGLASS INSULATION. SUITABLE SUBSTITUTES FROM ALTERNATE MANUFACTURER IS ACCEPTABLE WITH PRIOR APPROVAL
#705 OWENS CORNING=6lb/cf UNFACED RIGID FIBERGLASS INSULATION. SUITABLE SUBSTITUTES FROM ALTERNATE MANUFACTURER IS ACCEPTABLE WITH PRIOR APPROVAL

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PROJECT

Purchase College Studio A Renovations

Purchase, NY

DRAWING NAME

DETAILS-DOORS

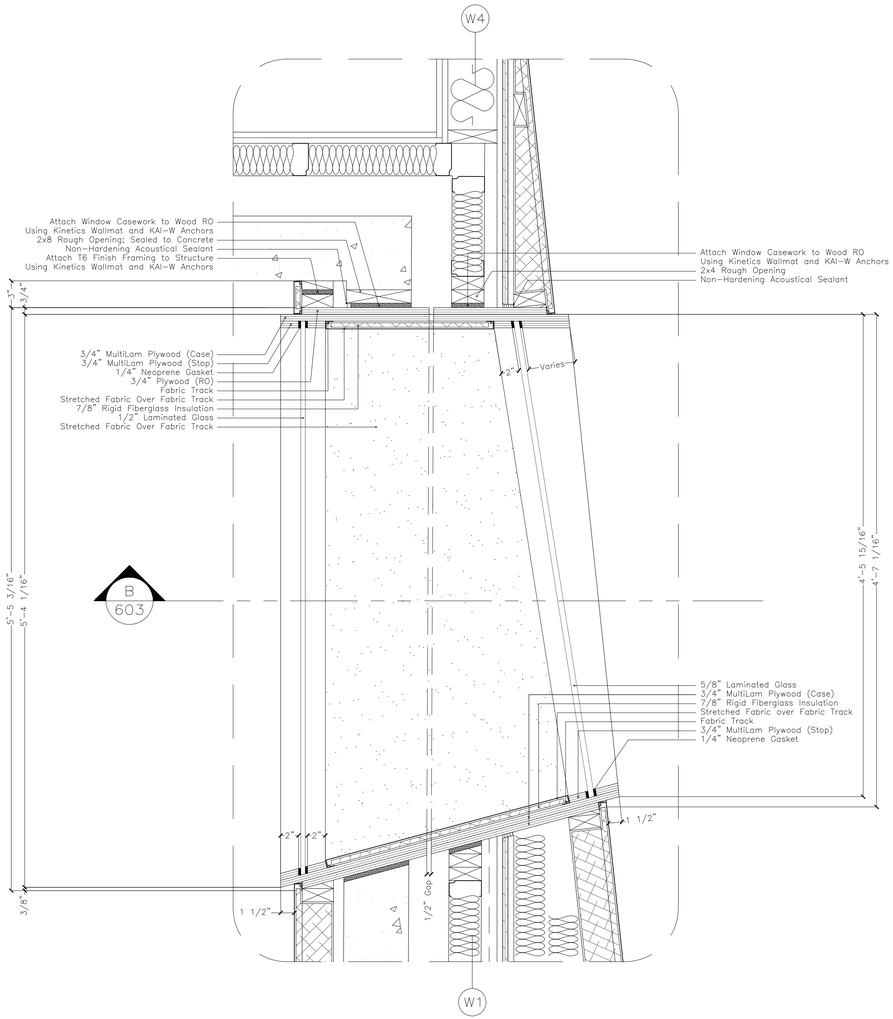
SEAL & SIGNATURE

SCALE	1 1/2"=1'-0"
DATE	07/13/2021
CAD FILE#	

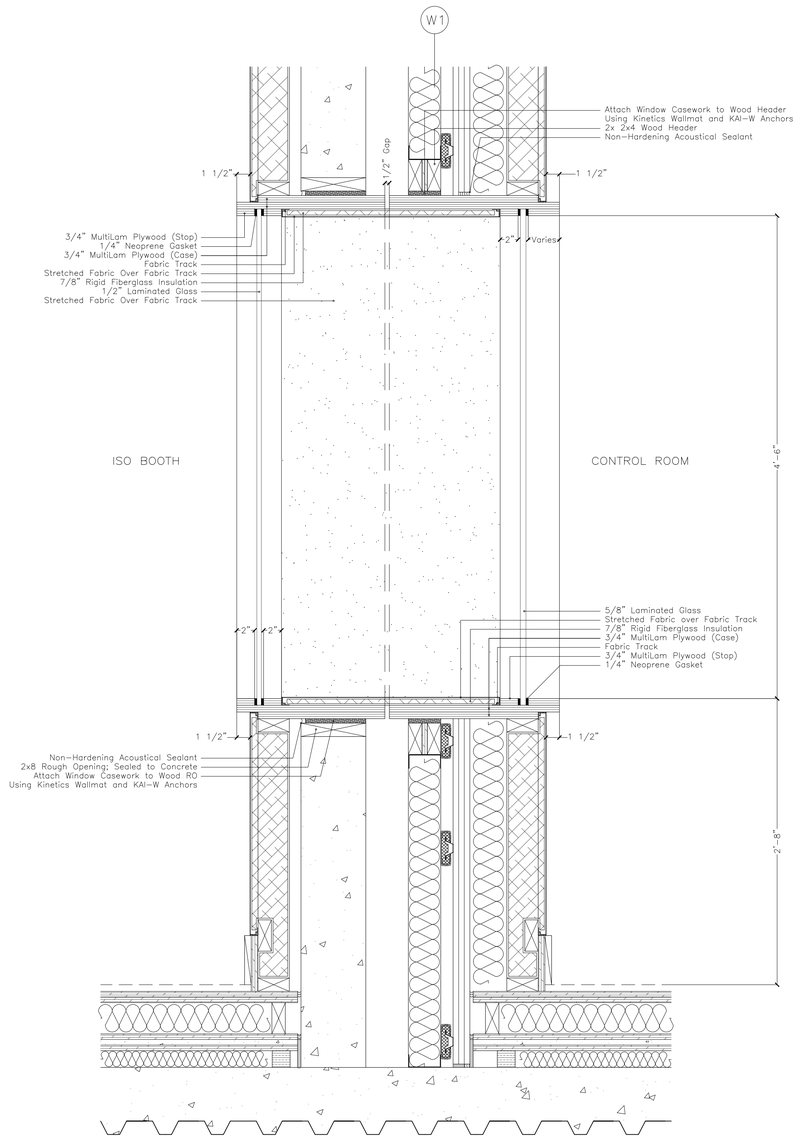
DRAWING NUMBER

A-602.00

SHEET



A Window Plan Detail



B Window Section Detail

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PROJECT

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Purchase, NY

DRAWING NAME

DETAILS—WINDOWS

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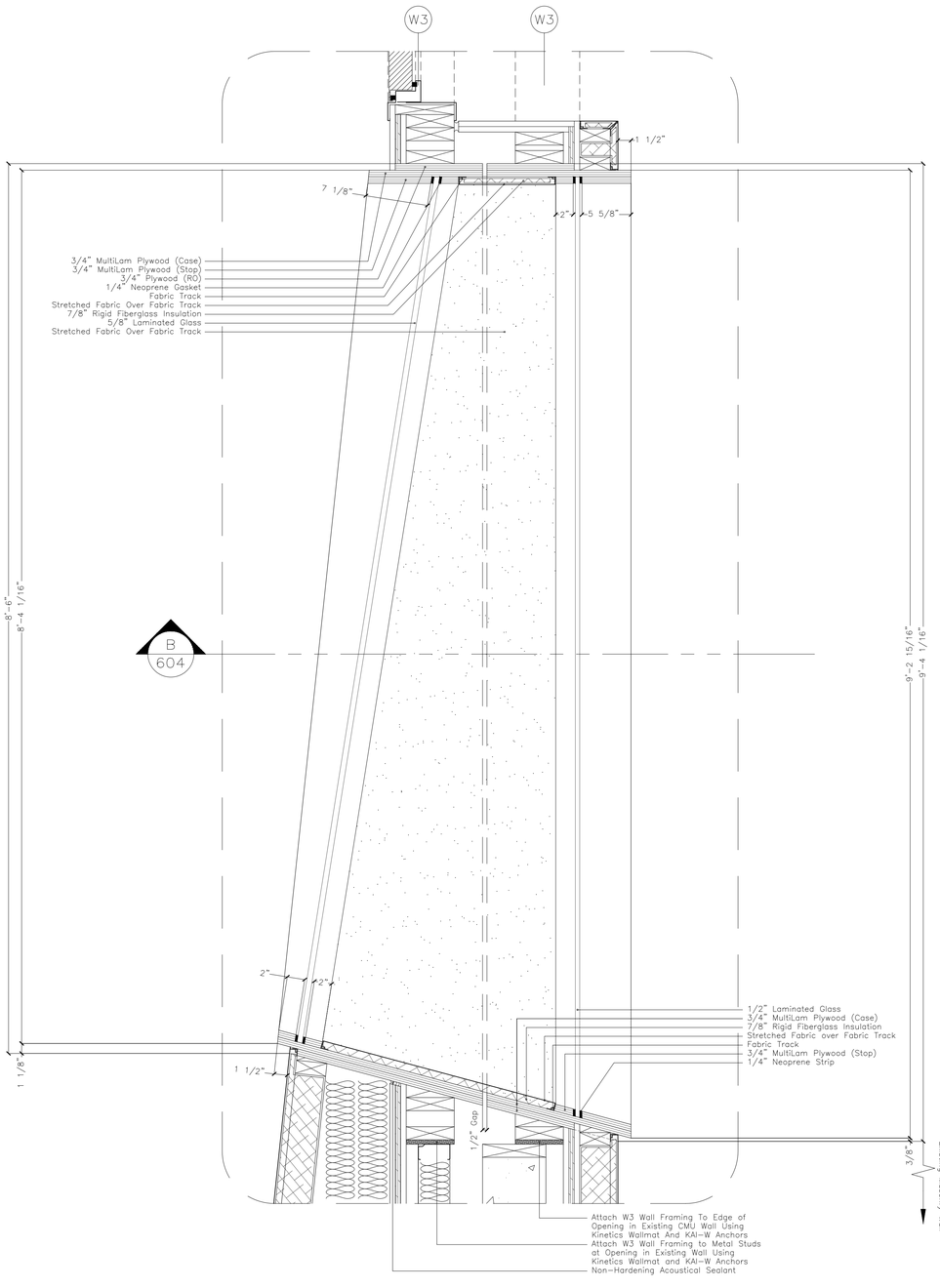
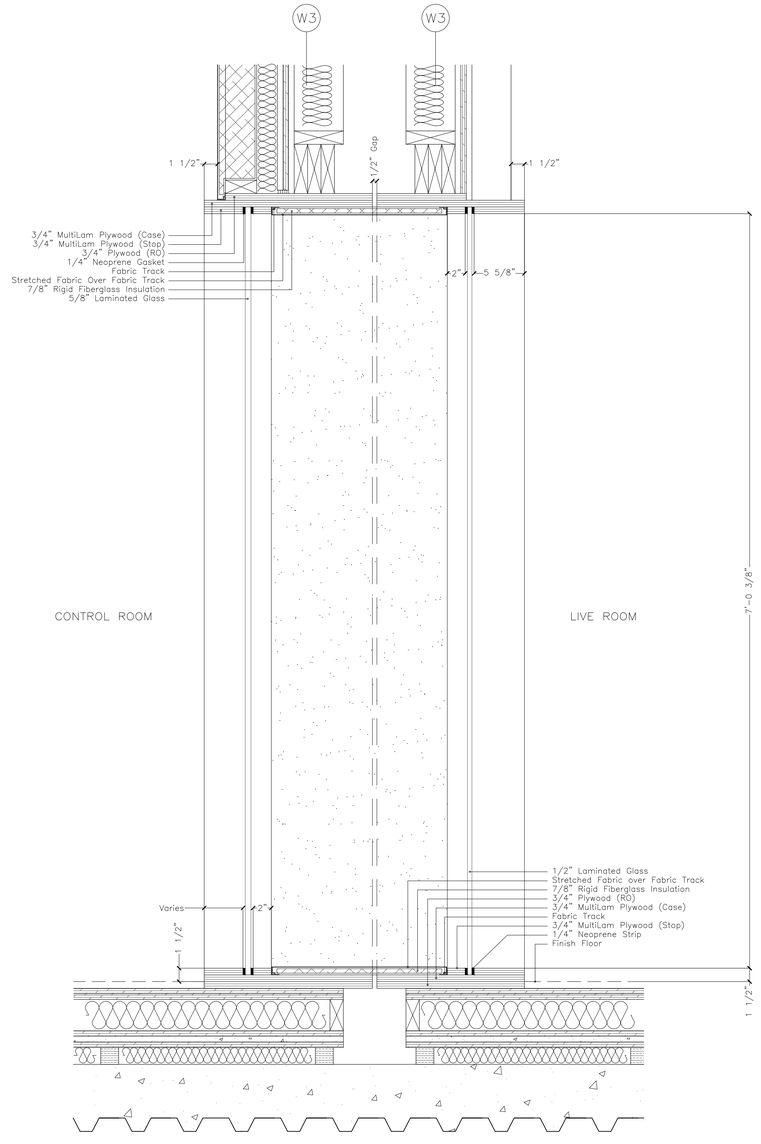


A Window Plan Detail



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ABBREVIATIONS

A	AMPERES
AV	AUTOMATIC AIR VENT
AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTICAL LINING
AP	ACCESS PANEL
BDD	BACK DRAFT DAMPER
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
BTUH	BTUH PER HOUR
CCW	COUNTER CLOCKWISE
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	CEILING
COND	CONDENSATE
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CU FT	CU FT
CU IN	CU IN
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
DWG	DRAWING
CV	CONSTANT VOLUME
CW	CLOCKWISE
D	DROP
DB	DRY BULB
DX	DIRECT EXPANSION
DHW	DOMESTIC HOT WATER
DIAM	DIAMETER
DN	DOWN
(E)	EXISTING TO REMAIN
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRIC
EQ	EQUAL
(ER)	EXISTING TO BE REMOVED
(ERR)	EXISTING TO REMOVED AND RELOCATED
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXP	EXPANSION
EXIST	EXISTING
°F	DEGREES FAHRENHEIT
F&T	FLOAT AND THERMOSTATIC
FA	FREE AREA (SQ.FT.)
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FLA	FULL LOAD AMPERES
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND

FT	FEET
FTR	FINNED TUBE RADIATION
G	GAUGE
GAL	GALLON
HC	HEATING COIL
HD	HEAD
HR	HOUR
HT	HEIGHT
HV	HEATING AND VENTILATING
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HZ	FREQUENCY
IN	INCH OR INCHES
KW	KILOWATT
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LBD	LEAVING DRY BULB TEMPERATURE
LIN FT	LINEAR FEET
LPS	LOW PRESSURE SUPPLY
LPR	LOW PRESSURE RETURN
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BTUH PER HOUR
MER	MECHANICAL EQUIPMENT ROOM
MHP	MOTOR HORSEPOWER
MIN	MINIMUM
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OED	OPEN ENDED DUCT
PD	PRESSURE DROP
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
R	RISE
RA	RETURN AIR
RG	RETURN GRILLE
RLA	RUNNING LOAD AMPS
RM	ROOM
ROT	ROTATION
RPM	REVOLUTIONS PER MINUTE
(RRO)	EXISTING TO BE REMOVED AND RETURNED TO OWNER
RTU	ROOFTOP AIR-CONDITIONING UNIT
SA	SUPPLY AIR
SG	SUPPLY GRILLE
SP	STATIC PRESSURE
SPEC	SPECIFICATION
TEMP	TEMPERATURE
TR	TOP REGISTER
TRD	TRANSFER DUCT
TYP	TYPICAL
TX	TOILET EXHAUST
V	VOLTS
VA	VENTILATION AIR
WMS	WIRE MESH SCREEN

SYMBOL LIST

	SINGLE LINE DUCTWORK OR EQUIPMENT – NEW
	SINGLE LINE DUCTWORK OR EQUIPMENT – EXISTING
	DUCTWORK OR EQUIPMENT TO BE REMOVED
	DUCTWORK WITH ACOUSTICAL LINING
	DUCTWORK UNDER POSITIVE PRESSURE (SUPPLY AIR OR FAN DISCHARGE)
	DUCT UNDER NEGATIVE PRESSURE (RETURN,EXHAUST, OR OUTSIDE AIR)
VD	VOLUME DAMPER
FD/AD	FIRE DAMPER AND ACCESS DOOR
BDD	BACK DRAFT DAMPER
M	MOTORIZED DAMPER
M FSD/AD	COMBINATION SMOKE AND FIRE DAMPER (ELECTRIC) AND ACCESS DOOR
℄	CENTER LINE
CFM	CUBIC FEET PER MINUTE
⌀	DIAMETER
	AIRFLOW DIRECTION
	SQUARE FEET
L 1.0 Φ F.A.	LOUVER IN DOOR – MIN. 1.0 SF FREE AREA
UC	UNDERCUT DOOR
	POINT OF CONNECTION
	POINT OF DISCONNECTION
CD-A 400	TYPE A CEILING DIFFUSER (400 CFM SUPPLY AIR)
	RECTANGULAR DIFFUSER WITH BLANKING PLATE
	VANED ELBOW
	RADIUS ELBOW
	SEE DUCT DETAILS FOR TYPE OF BRANCH CONNECTION
	DUCT FLEXIBLE CONNECTION
	VERTICAL DUCT DROP (IN DIRECTION OF AIRFLOW)
	VERTICAL DUCT RISE (IN DIRECTION OF AIRFLOW)
T	THERMOSTAT
SD	DUCT SMOKE DETECTOR
	SECTION DESIGNATION SHEET NO. WHERE SECTION IS SHOWN
	NEW PIPE WITH DIRECTION OF FLOW
	EXISTING PIPING
	PIPING TO BE REMOVED
	PIPE DROP
	PIPE RISE

GENERAL NOTES

1. GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
2. DRAWINGS ARE DIAGRAMMATIC. DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING WORK THAT INTERFERES WITH WORK OF THIS CONTRACT.
3. COORDINATE THIS WORK WITH THAT OF OTHER TRADES.
4. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT IN WAY OF STRUCTURAL STEEL, DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
5. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S REQUIREMENTS.
6. RUN DUCTS AND PIPING CONCEALED WITHIN WALLS, CEILINGS, OR SOFFITS, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING INSERTS. COORDINATE ROUTING WITH ARCHITECT AND CONSTRUCTION METHODS.
7. INSTALL THERMOSTATS 4'–6" ABOVE FINISHED FLOOR UNLESS OTHERWISE DIRECTED BY ARCHITECT.
8. SPECIFICATIONS ARE PART OF THESE DOCUMENTS AND SCOPE OF WORK.
9. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
10. PROVIDE 36" CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.

DEMOLITION NOTES

1. THE CONTRACTOR SHALL INCLUDE IN HIS PRICE ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF HVAC WORK AS DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE OWNER/ENGINEER.
2. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE TO FUNCTIONING HVAC SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED.
3. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.
4. THE CONTRACTOR SHALL REMOVE ALL DUCT AND PIPING SUPPORTS, ETC. FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING PIPING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL AND PROVIDE BYPASS CONNECTIONS AS NECESSARY.
5. PORTIONS OF PIPING AND DUCTWORK TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ACTIVE, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND RECONNECTED.
6. THE CONTRACTOR SHALL NOTIFY THE CAMPUS, AT THE APPROPRIATE TIME, OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED MECHANICAL SERVICES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS.
7. ALL EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACTOR, SHALL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THE HVAC CONTRACTOR, AS DIRECTED BY THE OWNER.
8. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVERTIME IF REQUIRED, TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
9. THE SHUTDOWN OF EXISTING BUILDING HVAC SERVICES SHALL BE COORDINATED WITH THE CAMPUS SERVICES. MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.

AIR SYSTEMS

1. INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED.
2. PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.

MECHANICAL DRAWING LIST

SYMBOLS

Revisions

REVISION #	DATE	REVISION	APPROVED
–	7/8/21	FINAL REVIEW SET	
–	9/14/21	ISSUED FOR BID	

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MEP CONSULTANT

collado
445 HAMILTON AVE, SUITE 608
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PROJECT

Purchase College
Studio A
Renovations

DRAWING NAME

MECHANICAL SYMBOL LIST, NOTES & ABBREVIATONS

SEAL & SIGNATURE

SCALE NONE

DATE

CAD FILE#

DRAWING NUMBER

M-001.00

SHEET

01 of 09

HVAC SPECIFICATIONS

1. GENERAL

A. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.

B. INVESTIGATE EACH SPACE THROUGH WITH EQUIPMENT MUST BE MOVED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.

C. DUCTWORK IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF DUCTWORK TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.

D. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.

E. INSTALL WORK AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

F. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.

G. 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 OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME.

H. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.

I. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.

J. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

K. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH APPROVED FIRESTOPPING METHODS.

L. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

M. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

N. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.

O. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

P. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.

Q. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.

R. ALL MATERIAL AND EQUIPMENT SHALL HAVE A UL, CSA, OR OTHER TESTING APPROVED AGENCY NUMBER. THIS INFORMATION MUST BE INCLUDED IN THE SUBMITTAL PACKAGE.

S. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

T. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC) AND CONDITIONS.

U. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

V. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

W. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

X. DEFINITIONS:

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

2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.

3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.

5) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.

6) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.

7) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

2. SCOPE OF WORK

A. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.

B. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

D. PROGRESS AND SPECIAL INSPECTIONS SHALL BE PERFORMED BY A LICENSED PROFESSIONAL ENGINEER TO BE HIRED BY THE OWNER.

E. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, DUCTWORK, PIPING AND CONTROL SYSTEMS INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

3. SHOP DRAWINGS

A. INDICATE ON EACH SUBMISSION: PROJECT NAME AND LOCATION, ARCHITECT AND ENGINEER, ITEM IDENTIFICATION AND APPROVAL STAMP OF PRIME CONTRACTOR.

B. SUBMISSIONS:

1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.

2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.

C. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1) DUCTWORK LAYOUT AND SHEET METAL DESIGNS.

2) ROOFTOP AIR-CONDITIONING UNIT

3) AIR OUTLETS AND INLETS.

4) AIR BALANCE REPORT.

5) OPERATING SEQUENCES.

6) VIBRATION ISOLATION.

7) AUTOMATIC CONTROL SYSTEMS AND DEVICES.

8) VAV BOXES.

9) DUCTWORK INSULATION AND LINER.

4. AS-BUILTS AND EQUIPMENT OPERATION INSTRUCTIONS

A. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS, EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE-RING BINDERS WITH CLEAR ACETATE COVERS. THE CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.

D. REPRODUCIBLE "AS-BUILT" DRAWINGS INDICATING AS INSTALLED CONDITIONS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

5. SHEET METAL WORK

A. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE RECTANGULAR GALVANIZED SHEET STEEL AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. DUCT CONSTRUCTION STANDARDS, PRESSURE CLASSIFICATION 2 IN. W.G.

B. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY MANUAL," EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION. INSTALL WITH LEVERS ACCESSIBLE.

C. ACCESS DOORS: INSULATED OR UNINSULATED, SAME AS DUCT.

1) PROVIDE MINIMUM 12 IN. X 12 IN. ON MAIN DUCTS, AND 8 IN. X 8 IN. ON BRANCH DUCTS, UNLESS OTHERWISE APPROVED, AT FIRE DAMPERS, AND AT ALL DUCT ACCESSORIES SUCH AS DUCT SMOKE DETECTORS, AUTO DAMPERS, AND LOUVERS.

2) ALL ACCESS DOORS TO BE HINGED, WITH LATCH SIMILAR TO VENTLOCK NO. 100. REFER TO MECHANICAL DETAIL DRAWING FOR ADDITIONAL INFORMATION.

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

E. TURNING VANES: GALVANIZED STEEL SMALL DOUBLE-THICKNESS VANES WITH 2 IN. INSIDE RADIUS.

F. ALL DUCT DIMENSIONS INDICATED ON PLANS ARE INSIDE CLEAR DIMENSIONS.

G. WIRE MESH SCREEN (WMS): NO. 16 USSG, 3/4 SQUARE MESH, IN 1 IN. WIDE GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO RECEIVE FRAME.

H. LOW PRESSURE FLEXIBLE DUCT: SHALL BE A FACTORY FABRICATED HIGH TEMPERATURE COPOLYMER IMPREGNATED GLASS FABRIC, LOCKED TO COLD ROLLED FLAT STEEL SPIRAL. SIMILAR TO WIREMOLD 57. MAXIMUM INSTALLED LENGTH SHALL NOT EXCEED 18 IN.

6. AIR OUTLETS

A. GENERAL:

1) MARGIN TYPES, COLORS, FINISH AND METHODS OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING AND WALL DETAILS AND SPECIFICATIONS.

2) FRAME TYPE SUITABLE FOR MOUNTING IN CEILING OR WALL CONSTRUCTION AS INDICATED ON ARCHITECTURAL PLANS.

3) EXACT LOCATION OF ALL AIR OUTLETS AS PER ARCHITECTURAL PLANS.

4) SUITABLE FOR OPERATION AT 20% EXCESS AND 20% LESS THAN NOTED CAPACITY FOR CONSTANT VOLUME SYSTEMS AND AT 20% EXCESS AND 60% LESS THAN NOTED CAPACITY FOR VARIABLE VOLUME SYSTEMS. MANUFACTURER RESPONSIBLE FOR EXAMINING APPLICATION OF EACH OUTLET AND GUARANTEE THAT EACH WILL PROVIDE REQUIRED NC LEVELS AND COMFORT SPACE CONDITIONS WITHOUT DRAFTS THROUGHOUT OPERATING RANGE.

5) ALL REGISTERS AND DIFFUSERS SHALL BE PROVIDED WITH OPPOSED BLADE VOLUME DAMPERS. DAMPER OPERATING LEVERS SHALL BE ACCESSIBLE AT THE FACE OF AIR OUTLETS.

B. REGISTERS AND GRILLES:

1) RETURN AND EXHAUST REGISTERS: STEEL CONSTRUCTION WITH VOLUME DAMPER. SIMILAR TO TITUS 300RL.

2) SUPPLY REGISTERS: ALUMINUM CONSTRUCTION, SINGLE DEFLECTION BAR GRILLE, WITH VOLUME DAMPER. SIMILAR TO TITUS CT-580.

3) TRANSFER GRILLES: STEEL CONSTRUCTION WITHOUT VOLUME DAMPER. SIMILAR TO TITUS 300RL.

7. NOISE CONTROL

A. ALL ROOM NC LEVELS SHALL BE 20 OR LESS.

B. PROVIDE SOUND LINING FOR THE FOLLOWING DUCTWORK:

1) ALL SUPPLY & RETURN DUCTWORK ON EACH SIDE OF ALL FANS AND AC UNITS.

2) AIR TRANSFER DUCTS.

3) ENTIRE DISTANCE DOWNSTREAM OF ALL VARIABLE AIR VOLUME BOXES.

4) ALSO WHERE NOTED ON A DRAWING.

C. SOUND LINING IN DUCTWORK: FIBROUS GLASS, MINIMUM 3 LB DENSITY, 2 IN. THICKNESS, MAXIMUM 0.25 K FACTOR AT 75 DEG F MEAN TEMPERATURE WITH ACRYLIC COATED FINISH FACTORY APPLIED EDGE COATING AND STENCILED IN ACCORDANCE WITH NFPA 90. FLAMESPREAD SHALL BE A MAXIMUM OF 25. LINING SHALL NOT SUPPORT MICROBIAL GROWTH AND SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1071 AND ASTM G21/G22.

D. ALL SOUND LINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, EXCEPT AS OTHERWISE NOTED.

8. TESTING AND BALANCING

A. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS AND BRANCH DAMPERS FOR MAJOR ADJUSTMENTS. ADJUSTMENT OF TERMINAL DAMPERS AND DEVICES SHALL BE FOR TRIM OR MINOR ADJUSTMENT ONLY. THIS SHALL BE DONE TO PERMIT THE LEAST NOISE GENERATION IN THE TERMINAL AREAS AND UTILIZE MINIMUM FAN ENERGY.

B. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL REBALANCE ANY EXISTING PORTIONS OF AIR DISTRIBUTION SYSTEM AND WATER DISTRIBUTION SYSTEM AFFECTED BY THE RENOVATION AND ALSO BALANCE ALL NEW WORK.

C. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PRESSURE GAUGES, FLOW METERS, SHEAVES, AND BELTS REQUIRED TO BALANCE SYSTEMS.

D. FANS, AIR HANDLING UNITS, AND COILS SHALL BE BALANCED TO WITHIN +5% OF THEIR DESIGN CAPACITIES. ALL OTHER AIR QUANTITIES SHALL BE BALANCED TO WITHIN +10% OF THE DESIGN QUANTITIES.

E. BALANCING AND TESTING SHALL BE PERFORMED AND SUPERVISED BY ONE OF THE FOLLOWING INDEPENDENT FIRMS SPECIALIZING IN TESTING AND BALANCING:

1) PRECISION TESTING AND BALANCING, INC.

2) AIR CONDITIONING TEST AND BALANCING CORP.

3) CFM TESTING AND BALANCING CO.

F. THE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT TO BE DEMONSTRATED BY THE CONTRACTOR.

9. INSULATION - GENERAL REQUIREMENTS

A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAMESPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.

B. DEFINITIONS:

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

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

10. DUCTWORK INSULATION

A. INSULATE ALL DUCTWORK IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.

INSULATION SCHEDULE - DUCTWORK

SERVICE	LOCATION	THICKNESS	MATERIAL	FINISH
SUPPLY/RETURN	CONCEALED	1-1/2"	D-1	VAPORSEAL

B. REINSULATE ALL DUCTWORK AND PIPING WHICH IS EXISTING AND DAMAGED DURING CONSTRUCTION OR SHOWN OR REQUIRED TO BE RELOCATED. INSULATE WITH SAME MATERIAL AND THICKNESS.

C. NON-INSULATED DUCTWORK:

1) WHERE SOUND LINING IS OF MINIMUM THICKNESS SPECIFIED FOR INSULATION.

D. MATERIAL:

1) TYPE D-1: MINIMUM 1-LB DENSITY FIBERGLASS BLANKET, MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FOIL-SKRIM-KRAFT FACING SIMILAR TO MANVILLE MICROLITE.

2) TYPE D-2: 3 LB. FIBERGLASS BOARD. THE MAXIMUM K FACTOR SHALL BE 0.23 AT 75 DEG F MEAN TEMPERATURE WITH A MINIMUM DENSITY OF 3 LB. THE INSULATION SHALL BE PROVIDED WITH A FACTORY-APPLIED ALL PURPOSE OR ALL SERVICE FACING. THE INSULATION SHALL BE EQUAL TO MANVILLE TYPE 814 SPIN-GLASS AP.

3) TYPE D-3: MINIMUM 6 LB FIBERGLASS BOARD. MAXIMUM 0.22 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY APPLIED ALL PURPOSE OR ALL SERVICE FACING. SIMILAR TO MANVILLE 817 SPIN-GLASS AP.

E. INSTALLATION:

1) FIBERGLASS BLANKET: 2 IN. LAP STRIPS AT ALL SEAMS. SECURE BOTTOM OF ALL DUCTS OVER 24 IN. WIDE WITH MIN. 2 ROWS OF WELD PINS 12 IN. ON CENTER. SECURE ALL SEAMS WITH FOIL VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE.

2) FIBERGLASS BOARD: SEAL JOINTS AND BREAKS IN FACING WITH 3 IN. WIDE TAPE TO MATCH FACING AND ADHERE WITH VAPOR SEAL ADHESIVE. APPLY 5 IN. WIDE TAPE AT CORNERS, WELD PINS ON TOP, SIDES AND BOTTOM.

11. VIBRATION ISOLATION

A. GENERAL:

1) PROVIDE ISOLATION FOR EQUIPMENT, PIPING AND DUCTWORK.

2) INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3) PROVIDE LEVELING DEVICES AND APPROVED RESILIENT RESTRAINING DEVICES AS REQUIRED TO LIMIT EQUIPMENT AND PIPING MOTION IN EXCESS OF 1/4 IN.

4) ACCEPTABLE MANUFACTURERS:

a. MASON INDUSTRIES, INC.

b. VIBRATION ELIMINATOR CO.

c. KORFUND DYNAMICS CORP.

12. MOTORS:

A. MOTORS (UNDER HVAC WORK): IN ACCORDANCE WITH NEMA, IEEE AND ANSI C50 STANDARDS:

1) STANDARD EFFICIENCY UNLESS OTHERWISE NOTED.

2) 1.15 SERVICE FACTOR.

13. EQUIPMENT

A. ROOFTOP AIR-CONDITIONING UNIT (RTU)

1) GENERAL: THE UNITS SHALL BE CONVERTIBLE AIRFLOW. THE OPERATING RANGE SHALL BE BETWEEN 115°F AND 0°F IN COOLING AS STANDARD FROM THE FACTORY FOR UNITS WITH MICROPROCESSOR CONTROLS. COOLING PERFORMANCE SHALL BE RATED IN ACCORDANCE WITH ARI TESTING PROCEDURES. ALL UNITS SHALL BE FACTORY ASSEMBLED, INTERNALLY WIRED, FULLY CHARGED WITH R-410A, AND 100 PERCENT RUN TESTED TO CHECK COOLING OPERATION, FAN AND BLOWER ROTATION, AND CONTROL SEQUENCE BEFORE LEAVING THE FACTORY. WIRING INTERNAL TO THE UNIT SHALL BE COLORED AND NUMBERED FOR SIMPLIFIED IDENTIFICATION. UNITS SHALL BE cULus LISTED AND LABELED, CLASSIFIED IN ACCORDANCE FOR CENTRAL COOLING AIR CONDITIONERS.

2) CASE: UNIT CASING SHALL BE CONSTRUCTED OF ZINC COATED, HEAVY GAUGE, AND GALVANIZED STEEL. EXTERIOR SURFACES SHALL BE CLEANED, PHOSPHATIZED, AND FINISHED WITH A WEATHER-RESISTANT BAKED ENAMEL FINISH. UNIT'S SURFACE SHALL BE TESTED 672 HOURS IN A SALT SPRAY TEST IN COMPLIANCE WITH ASTM B117. CABINET CONSTRUCTION SHALL ALLOW FOR ALL MAINTENANCE ON ONE SIDE OF THE UNIT. ALL EXPOSED VERTICAL PANELS AND TOP COVERS IN THE INDOOR AIR SECTION SHALL BE INSULATED WITH A CLEANABLE FOIL-FACED, FIRE-RETARDANT PERMANENT, ODORLESS GLASS FIBER MATERIAL. ALL INSULATION EDGES SHALL BE EITHER CAPTURED OR SEALED. THE UNIT'S BASE PAN SHALL HAVE NO PENETRATIONS WITHIN THE PERIMETER OF THE CURB OTHER THAN THE RAISED 1 1/8" HIGH DOWNFLOW SUPPLY/RETURN OPENINGS TO PROVIDE AN ADDED WATER INTEGRITY PRECAUTION, IF THE CONDENSATE DRAIN BACKS UP. THE BASE OF THE UNIT SHALL HAVE PROVISIONS FOR FORKLIFT AND CRANE LIFTING, WITH FORKLIFT CAPABILITIES ON THREE SIDES OF THE UNIT.

3) UNIT TOP: THE TOP COVER SHALL BE ONE PIECE CONSTRUCTION OR, WHERE SEAMS EXIST, IT SHALL BE DOUBLE-HEMMED AND GASKET-SEALED. THE RIBBED TOP ADDS EXTRA STRENGTH AND ENHANCES WATER REMOVAL FROM UNIT TOP.

4) COMPRESSORS: ALL UNITS SHALL HAVE DIRECT-DRIVE, HERMETIC, SCROLL TYPE COMPRESSORS WITH CENTRIFUGAL TYPE OIL PUMPS. MOTOR SHALL BE SUCTION GAS-COOLED AND SHALL HAVE A VOLTAGE UTILIZATION RANGE OF PLUS OR MINUS 10 PERCENT OF UNIT NAMEPLATE VOLTAGE. INTERNAL OVERLOADS SHALL BE PROVIDED WITH THE SCROLL COMPRESSORS.

5) REFRIGERANT CIRCUITS: SERVICE PRESSURE PORTS, AND REFRIGERANT LINE FILTER DRIERS ARE FACTORY-INSTALLED AS STANDARD. AN AREA SHALL BE PROVIDED FOR REPLACEMENT SUCTION LINE DRIERS.

6) EVAPORATOR AND CONDENSER COILS: INTERNALLY FINNED, 5/16" COPPER TUBES MECHANICALLY BONDED TO A CONFIGURED ALUMINUM PLATE FIN SHALL BE STANDARD. COILS SHALL BE LEAK TESTED AT THE FACTORY TO ENSURE THE PRESSURE INTEGRITY. THE EVAPORATOR COIL AND CONDENSER COIL SHALL BE LEAK TESTED TO 650 PSIG AND PRESSURE TESTED TO 450 PSIG. THE CONDENSER COIL SHALL HAVE A PATENT PENDING 1+1+1 HYBRID COIL DESIGNED WITH SLIGHT GAPS FOR EASE OF CLEANING. A REMOVABLE, REVERSIBLE, DOUBLE-SLOPED CONDENSATE DRAIN PAN WITH THROUGH THE BASE CONDENSATE DRAIN IS STANDARD.

7) FANS: THE OUTDOOR FAN SHALL BE DIRECT-DRIVE, STATICALLY AND DYNAMICALLY BALANCED, DRAW-THROUGH IN THE VERTICAL DISCHARGE POSITION. THE FAN MOTOR SHALL BE PERMANENTLY LUBRICATED AND SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.

8) HINGED ACCESS DOORS: SHEET METAL HINGES ARE AVAILABLE ON THE FILTER/EVAPORATOR, SUPPLY FAN/HEAT, AND THE COMPRESSOR/CONTROL ACCESS DOORS.

9) LOW LEAK ECONOMIZER: THIS ACCESSORY MEETS LOW LEAK REQUIREMENTS FOR ASHRAE 90.1, IECC, AND CA TITLE 24 STANDARDS (3 CFM/SQ.FT. AT 1" WG EXTERIOR AIR, 4 CFM/SQ.FT. AT 1" WG RETURN AIR). THIS OPTION ALLOWS 100% OUTDOOR AIR SUPPLY FROM 0-100% MODULATING DAMPERS AND IS STANDARD WITH BAROMETRIC RELIEF. IT CAN BE PAIRED WITH POWERED EXHAUST FOR ADDITIONAL BUILDING PRESSURE RELIEF. AVAILABLE ON DOWNFLOW UNITS ONLY.

SYMBOLS

Revisions

REVISION #	DATE	REVISION	APPROVED
-	7/8/21	FINAL REVIEW SET	
-	9/14/21	ISSUED FOR BID	

FRANCIS MANZELLA DESIGN LIMITED
Acoustic Consulting and Studio Design
914.248.7680 Voice
914.248.7780 Fax
fmdesign@fmdesign.com
www.FMDesign.com
961 Route 6
Mahopac NY, 10541

MEP CONSULTANT

collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

PROJECT

Purchase College
Studio A
Renovations

DRAWING NAME

MECHANICAL SPECIFICATIONS (SHEET 1)

SEAL & SIGNATURE

SCALE NONE

DATE

CAD FILE//

DRAWING NUMBER

M-002.00

SHEET

02 of 09

10) PHASE MONITOR: PHASE MONITOR SHALL PROVIDE 100% PROTECTION FOR MOTORS AND COMPRESSORS AGAINST PROBLEMS CAUSED BY PHASE LOSS, PHASE IMBALANCE, AND PHASE REVERSAL. PHASE MONITOR IS EQUIPPED WITH AN LED THAT PROVIDES AN ON OR FAULT INDICATOR. THERE ARE NO FIELD ADJUSTMENTS. THE MODULE WILL AUTOMATICALLY RESET FROM A FAULT CONDITION.

11) FILTERS: ALL UNIT FILTERS SHALL BE MIN. 4" THICK MERV-13 RATED.

12) CONTROLS: UNIT SHALL BE COMPLETELY FACTORY-WIRED WITH NECESSARY CONTROLS AND CONTACTOR PRESSURE LUGS OR TERMINAL BLOCK FOR POWER WIRING. UNIT SHALL PROVIDE AN EXTERNAL LOCATION FOR MOUNTING A FUSED DISCONNECT DEVICE. A CHOICE OF MICROPROCESSOR OR ELECTROMECHANICAL CONTROLS SHALL BE AVAILABLE. MICROPROCESSOR CONTROLS PROVIDE FOR VOLT CONTROL FUNCTIONS. THE RESIDENT CONTROL ALGORITHMS SHALL MAKE ALL HEATING, COOLING, AND/OR VENTILATING DECISIONS IN RESPONSE TO ELECTRONIC SIGNALS FROM SENSORS MEASURING INDOOR AND OUTDOOR TEMPERATURES. THE CONTROL ALGORITHM MAINTAINS ACCURATE TEMPERATURE CONTROL, MINIMIZES DRIFT FROM SET POINT, AND PROVIDES BETTER BUILDING COMFORT. A CENTRALIZED MICROPROCESSOR SHALL PROVIDE ANTI-SHORT CYCLE TIMING AND TIME DELAY BETWEEN COMPRESSORS TO PROVIDE A HIGHER LEVEL OF MACHINE PROTECTION.

B. VAV BOXES

1) FURNISH AND INSTALL TITUS MODEL DESV SINGLE DUCT, VARIABLE AIR VOLUME TERMINALS OF THE SIZES AND CAPACITIES SHOWN IN THE PLANS.

2) TERMINALS SHALL BE CERTIFIED UNDER THE ARI STANDARD 880 CERTIFICATION PROGRAM AND CARRY THE ARI SEAL. NONCERTIFIED TERMINALS MAY BE SUBMITTED AFTER TESTING AT AN INDEPENDENT TESTING LABORATORY UNDER CONDITIONS SELECTED BY THE ENGINEERING CONSULTANT IN FULL COMPLIANCE WITH ARI STANDARD 880. THESE TESTS MUST BE WITNESSED BY THE ENGINEERING CONSULTANT WITH ALL COSTS TO BE BORNE BY THE TERMINAL MANUFACTURER. TESTING DOES NOT ENSURE ACCEPTANCE.

3) THE TERMINAL CASING SHALL BE MINIMUM 22-GAUGE GALVANIZED STEEL, INTERNALLY LINED WITH ½-INCH DUAL DENSITY INSULATION WHICH COMPLIES WITH UL 181 AND NFPA 90A. ALL EXPOSED INSULATION EDGES SHALL BE COATED WITH NFPA 90A APPROVED SEALANT TO PREVENT ENTRAINMENT OF FIBERS IN THE AIRSTREAM. THE DISCHARGE CONNECTION SHALL BE SLIP AND DRIVE CONSTRUCTION FOR ATTACHMENT TO METAL DUCTWORK. THE CASING SHALL BE CONSTRUCTED TO HOLD LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE CASING LEAKAGE TABLE.

4) THE DAMPER SHALL BE HEAVY GAUGE STEEL WITH SHAFT ROTATING IN DELRIN® SELF-LUBRICATING BEARINGS. NYLON BEARINGS ARE NOT ACCEPTABLE. SHAFT SHALL BE CLEARLY MARKED ON THE END TO INDICATE DAMPER POSITION. STICKERS OR OTHER REMOVABLE MARKINGS ARE NOT ACCEPTABLE. THE DAMPER SHALL INCORPORATE A MECHANICAL STOP TO PREVENT OVER STROKING AND A SYNTHETIC SEAL TO LIMIT CLOSE-OFF LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE DAMPER LEAKAGE TABLE.

5) ACTUATORS SHALL BE CAPABLE OF SUPPLYING AT LEAST 35-INCH LBS. OF TORQUE TO THE DAMPER SHAFT AND SHALL BE MOUNTED EXTERNALLY FOR SERVICE ACCESS. TERMINALS WITH INTERNAL ACTUATOR MOUNTING OR LINKAGE CONNECTION MUST INCLUDE GASKETED ACCESS PANEL, REMOVABLE WITHOUT DISTURBING DUCTWORK. CASING WITH ACCESS PANEL SHALL BE CONSTRUCTED TO HOLD LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE CASING LEAKAGE TABLE.

6) AT AN INLET VELOCITY OF 2000 FPM, THE MINIMUM STATIC PRESSURE REQUIRED TO OPERATE ANY TERMINAL SIZE SHALL NOT EXCEED 0.13-INCH WG FOR THE BASIC TERMINAL.

7) SOUND RATINGS FOR THE TERMINAL SHALL NOT EXCEED 25 NC AT 0.25 STATIC PRESSURE. SOUND PERFORMANCE SHALL BE ARI CERTIFIED.

8) ACCESSORIES

a. THE PROPORTIONAL ELECTRONIC AIRFLOW SENSOR SHALL BE TOTALLY INDEPENDENT OF THE DUCT STATIC PRESSURE AND SHALL ADJUST THE HEATER CAPACITY ACCORDING TO THE AVAILABLE AIRFLOW. THE HEATERS SHALL DELIVER MAXIMUM HEATING WHEN NEEDED WITH NORMAL MINIMUM AIRFLOW, REDUCE HEATING WITH LOWER THAN MINIMUM AIRFLOW AND STOP HEATING WITH NO AIRFLOW. UNIT SHALL INCLUDE AN INTEGRAL DOOR INTERLOCK TYPE DISCONNECT SWITCH WHICH WILL NOT ALLOW THE ACCESS DOOR TO BE OPENED WHILE POWER IS ON. NON-INTERLOCKING TYPE DISCONNECTS ARE NOT ACCEPTABLE. ALL INDIVIDUAL COMPONENTS SHALL BE UL LISTED OR RECOGNIZED.

b. FACTORY INTEGRAL SOUND ATTENUATOR

c. ULTRALOC LINER:
THE TERMINAL CASING SHALL BE MINIMUM 22-GAUGE GALVANIZED STEEL. THE UNITS SHALL BE LINED WITH 1-INCH THICK MATTE FACED INSULATION, MEETING UL 181 AND NFPA 90A, ENCLOSED BETWEEN THE UNIT CASING AND A NON-PERFORATED INTERNAL 22-GAUGE SHEET METAL COVER EXTENDING OVER THE FIBERGLASS INSULATION, AS WELL AS COVERING THE LINER CUT EDGES. THE DISCHARGE CONNECTION SHALL BE SLIP AND DRIVE CONSTRUCTION FOR ATTACHMENT TO METAL DUCTWORK. THE CASING SHALL BE CONSTRUCTED TO HOLD LEAKAGE TO THE MAXIMUM VALUES SHOWN IN THE CASING LEAKAGE TABLE.

14. AUTOMATIC CONTROLS – GENERAL REQUIREMENTS

A. FURNISH AND INSTALL A COMPLETE ELECTRIC OR ELECTRONIC CONTROL SYSTEM TO PROVIDE TEMPERATURE CONTROL AS SPECIFIED UNDER DESCRIPTION OF OPERATION.

B. WORK SHALL INCLUDE ALL WIRING, CONTROL EQUIPMENT, AND ACCESSORIES NECESSARY TO MAKE THIS SYSTEM COMPLETE. ALL WIRING SHALL BE 24 VOLT. COORDINATE WITH MANUFACTURER FOR INTERCONNECTION WITH CONTROLS INCLUDED IN EQUIPMENT. ALL CONTROL WORK SHALL BE INSTALLED BY HVAC CONTRACTOR.

C. THE CONTROLS CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED HARDWARE, SUCH AS CONTROLLERS, TRANSMITTERS, SENSORS, AND CONTROL WIRING TO ENABLE THE INDICATED SEQUENCES OF OPERATION. THE BUILDING CONTROLS SHALL BE LOCAL/ STANDALONE TYPE CONSISTING OF DIRECT DIGITAL CONTROL (DDC) OR ELECTRONIC DEVICES, UNLESS INDICATED OTHERWISE.

D. ACCEPTABLE MANUFACTURERS:

1) JOHNSON SERVICE CO.

2) HONEYWELL, INC.

3) OR APPROVED EQUAL

E. SEQUENCE OF OPERATIONS:

1) ROOFTOP AIR-CONDITIONING UNIT (RTU-1)

a. UNIT SHALL BE PROVIDED WITH A PACKAGED MICROPROCESSOR CONTROLLER. THIS CONTRACTOR SHALL FURNISH, MOUNT AND WIRE ANY ADDITIONAL COMPONENTS NOT PROVIDED BY THE UNIT MANUFACTURER TO ACHIEVE A COMPLETELY OPERATIONAL SYSTEM.

b. OCCUPIED MODE:

a) EACH VAV TERMINAL SHALL USE PRESSURE-INDEPENDENT CONTROL, WITH AIRFLOW MEASUREMENT, TO VARY PRIMARY AIRFLOW TO MAINTAIN ZONE TEMPERATURE AT ITS OCCUPIED SETPOINT. THE RTU SHALL MODULATE THE SUPPLY FAN TO MAINTAIN DUCT STATIC PRESSURE AT SETPOINT AND MODULATE (OR CYCLE) COMPRESSORS, MODULATE (OR STAGE) HEAT, AND/OR ENABLE AIRSIDE ECONOMIZING TO MAINTAIN DISCHARGE AIR TEMPERATURE AT SETPOINT. THE OA DAMPER SHALL MODULATE, IN PROPORTION TO CHANGING SUPPLY FAN SPEED, TO BRING IN THE REQUIRED AMOUNT OF VENTILATION.

c. MORNING WARM-UP/PRE-COOL:

a) EACH VAV TERMINAL UNIT SHALL VARY PRIMARY AIRFLOW TO RAISE/LOWER ZONE TEMPERATURE TO ITS OCCUPIED SETPOINT. THE RTU SHALL MODULATE THE SUPPLY FAN TO MAINTAIN DUCT STATIC PRESSURE AT SETPOINT AND MODULATE (OR CYCLE) COMPRESSORS OR MODULATE (OR STAGE) HEAT TO MAINTAIN DISCHARGE AIR TEMPERATURE AT SETPOINT. THE OA DAMPER SHALL REMAIN CLOSED, UNLESS ECONOMIZING.

c. FAN-PRESSURE OPTIMIZATION:

a) THE SYSTEM CONTROLLER SHALL MONITOR ALL VAV DAMPER POSITIONS AND RESET THE RTU'S DUCT STATIC PRESSURE SETPOINT BASED ON THE POSITION OF THE FURTHEST-OPEN DAMPER.

d. DISCHARGE AIR TEMPERATURE RESET:

a) THE SYSTEM CONTROLLER SHALL RESET THE RTU'S DISCHARGE AIR TEMPERATURE SETPOINT BASED ON CURRENT ZONE COOLING/HEATING DEMANDS.

e. COOLING/HEATING CHANGEOVER LOGIC:

a) THE SYSTEM CONTROLLER SHALL DETERMINE THE OVERALL SYSTEM COOLING/HEATING MODE BASED ON "VOTING" FROM EACH ZONE. WHEN THE MAJORITY OF ZONES REQUIRE COOLING, THE RTU SHALL OPERATE IN COOLING MODE AND ANY ZONE THAT REQUIRES HEATING SHALL REDUCE PRIMARY AIRFLOW TO MINIMUM. WHEN THE MAJORITY OF ZONES REQUIRE HEATING, THE RTU SHALL OPERATE IN HEATING MODE AND ANY ZONE THAT REQUIRES COOLING SHALL REDUCE PRIMARY AIRFLOW TO MINIMUM.

f. SMOKE DETECTOR (FURNISHED BY ELECTRICAL CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR) LOCATED IN THE SUPPLY AIR DUCTWORK SHALL AUTOMATICALLY SHUTDOWN FANS UPON THE DETECTION OF SMOKE. ELECTRICAL CONTRACTOR SHALL INTERLOCK ALARM SIGNAL WITH BASE BUILDING FIRE ALARM SYSTEM.

2) VARIABLE AIR VOLUME BOXES (VAV BOXES)

a. COORDINATE FACTORY MOUNTING AND WIRING OF SECONDARY CONTROL PANEL, ACTUATOR AND TRANSFORMER WITH THE VAV BOX MANUFACTURER. THE BMS CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING AND WIRING OF CONTROLS NOT FURNISHED, INSTALLED OR WIRED BY OTHERS THAT ARE REQUIRED FOR AN OPERATIONAL SYSTEM.

b. OCCUPIED MODE

a) IF THE VAV BOX ENTERING TEMPERATURE IS LESS THAN 70°F, THE VAV BOX SHALL OPERATE IN COOLING MODE. UPON A FALL IN SPACE TEMPERATURE BELOW SETPOINT, THE BOX DAMPER SHALL MODULATE CLOSED TO THE MINIMUM CFM SETPOINT. UPON A RISE IN SPACE TEMPERATURE, THE BOX DAMPER SHALL MODULATE FROM THE MINIMUM TO THE MAXIMUM CFM SETTING AS NECESSARY TO MAINTAIN THE CFM SETPOINT AS RESET BY THE SPACE TEMPERATURE. THE MINIMUM AND MAXIMUM CFM SETTINGS SHALL BE THOSE SCHEDULED ON THE MECHANICAL DRAWINGS.

b) IF THE VAV BOX ENTERING TEMPERATURE IS GREATER THAN 70°F PLUS A DIFFERENTIAL, THE VAV BOX SHALL OPERATE IN HEATING MODE. UPON A RISE IN SPACE TEMPERATURE ABOVE SETPOINT, THE BOX DAMPER SHALL MODULATE CLOSED TO THE MINIMUM CFM SETPOINT. UPON A FALL IN SPACE TEMPERATURE, THE BOX DAMPER SHALL MODULATE FROM THE MINIMUM TO THE MAXIMUM CFM SETTING AS NECESSARY TO MAINTAIN THE CFM SETPOINT AS RESET BY THE SPACE TEMPERATURE. THE MINIMUM AND MAXIMUM CFM SETTINGS SHALL BE THOSE SCHEDULED ON THE MECHANICAL DRAWINGS.

c. UNOCCUPIED MODE

a) WHEN THE PRIMARY FAN SYSTEM SERVING THE VAV BOX IS NOT RUNNING, THE VAV BOX DAMPER SHALL CLOSE.

b) IF THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED SETBACK TEMPERATURE SETPOINT OF 60°F (ADJ.) OR RISES ABOVE THE UNOCCUPIED SETUP TEMPERATURE SETPOINT OF 80°F (ADJ.), THE FAN SYSTEM SERVING THE VAV BOX SHALL BE ENABLED AND THE VAV BOX SHALL BE INDEXED TO THE MAXIMUM CFM SETTING. THE FAN SYSTEM SHALL RUN FOR A MINIMUM OF 1/2 HOUR (ADJ.).

c) THE VAV DDC CONTROLLER SHALL BE PROGRAMMED FOR OCCUPANCY OVERRIDE. BY DEPRESSING THE OCCUPANCY OVERRIDE BUTTON LOCATED ON THE SPACE TEMPERATURE SENSOR, THE VAV BOX AND THE FAN SYSTEM SERVING THE VAV BOX SHALL BE RESTORED TO THE OCCUPIED MODE.

c. THE VAV BOX SHALL NOT OPEN BEYOND THE MAXIMUM CFM SETTING. PROVIDE ONE (1) DDC CONTROLLER AND ONE (1) WALL-MOUNTED TEMPERATURE SENSOR FOR EACH VAV BOX.

3) EXHAUST FAN (EF-1):

a. FAN SHALL ENERGIZE WHENEVER THE SPACE TEMPERATURE RISES ABOVE THE TEMPERATURE SETPOINT OF 80°F (ADJUSTABLE). FAN SHALL BE DE-ENERGIZED WHEN SPACE TEMPERATURE IS AT OR BELOW SETPOINT.

15. EXECUTION

A. PROVIDE AND INSTALL ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS SCHEDULED AND AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND MANUFACTURERS RECOMMENDATIONS. PROVIDE ALL MOTOR STARTERS AS REQUIRED; MOTOR STARTERS WILL BE INSTALLED BY THIS CONTRACTOR AND WIRED BY ELECTRICAL TRADE.

B. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL REQUIRED CLEARANCES FOR SERVICING AND MAINTENANCE. COORDINATE REQUIREMENTS WITH ALL TRADES.

C. IDENTIFICATION OF EQUIPMENT AND CONTROLS

1) ALL EQUIPMENT SHALL BE STENCILED OR LABELED WITH LAMACOID PLATES SCREWED THEREON WHICH SHALL INDICATE SYSTEMS SERVICE.

16. EQUIPMENT START-UP AND TESTING

A. UPON COMPLETION OF THE INSTALLATION, THIS CONTRACTOR SHALL ENSURE THAT ALL EQUIPMENT AND SYSTEMS ARE TESTING AND BALANCED UNDER FIELD OPERATING CONDITIONS TO DEMONSTRATE ITS COMPLIANCE WITH SPECIFICATION REQUIREMENTS.

B. SHOULD ANY PART OF THE EQUIPMENT OR SYSTEM FAIL TO MEET THE CONTRACT REQUIREMENTS, THIS CONTRACTOR SHALL ADJUST, REPAIR OR REPLACE ALL DEFECTIVE OR INOPERATIVE PARTS AND AGAIN CONDUCT THE COMPLETE START-UP TEST.

17 SYSTEM TESTING AND BALANCING (AIR BALANCING)

A. AIR SYSTEM BALANCING SHALL BE PERFORMED BY AN APPROVED INDEPENDENT CERTIFIED TESTING AND BALANCING FIRM. THE TESTING AND BALANCING FIRM SHALL BE AABC, NEBB, TABB CERTIFIED OR DIRECTLY SUPERVISED BY A STAFFED LICENCED PROFESSIONAL ENGINEER WITH A MINIMUM OF FIVE YEARS EXPERIENCE. AIR SYSTEM BALANCING SHALL BE PERFORMED IN THE PRESENCE OF A BUILDING REPRESENTATIVE.

B. SUBMIT A DIGITAL COPY OF AIR BALANCING REPORT FOR REVIEW CONSISTING OF DESIGN AND ACTUAL READINGS OF ALL EQUIPMENT/DEVICES, LOCATION PLANS OF ALL EQUIPMENT/ DEVICES BALANCED, BALANCING EQUIPMENT USED AND METHODS OF BALANCING.

C. CONTRACTOR SHALL SUBMIT AIR BALANCE DATA SHEETS AND REPORTS WHICH TABULATE TEST DATA FROM FINAL ADJUSTED SYSTEM CONDITIONS WITHIN 10% OF DESIGN QUANTITIES FOR SYSTEM COMPONENTS AIR OUTLETS, RETURNS AND TERMINAL UNITS INDICATING CFM AND PRESSURE DROP; PERFORMANCE CHARACTERISTICS FOR ALL FANS AND AIR CONDITIONING EQUIPMENT INDICATING RPM, CFM, PRESSURE DROP ACROSS EACH COMPONENT (FILTERS, COILS, DAMPERS, ETC), AMPS, SUCTION AND DISCHARGE STATIC PRESSURE, OUTSIDE AIR CFM, BHP AND HP AT DESIGN CONDITIONS; AIR OUTLET DISCHARGE TEMPERATURE AND CFM; TERMINAL BOX INLET SP, MINIMUM AND MAXIMUM AIR SETTINGS.

D. CONTRACTOR SHALL INCLUDE IN THEIR BID ONE (1) JOB SITE COMFORT BALANCE UPON ACCEPTANCE OF THE FINAL BALANCING REPORT.

18. ELECTRICAL WORK

A. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR POWER WIRING UNDER A SEPARATE DIVISION OF CONTRACT WORK. AUTOMATIC TEMPERATURE, SAFETY AND INTERLOCKING CONTROLS FOR MOTORS, MOTOR STARTERS AND OTHER ELECTRICAL APPARATUS AND DEVICES SHALL BE PROVIDED BY THE HVAC CONTRACTOR. CONTROL WIRING SHALL INCLUDE BUT NOT LIMITED TO ALL 12, 24, AND 120 VOLT WIRING.

B. THE MECHANICAL CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL TERMINAL POINT TO TERMINAL POINT, COMPLETELY COORDINATED AND INTEGRATED WIRING DIAGRAMS FOR ALL WIRING REQUIRING FIELD INSTALLATION BY THE ELECTRICAL CONTRACTOR.

C. SPECIFIC WIRING DIAGRAMS OF FACTORY INSTALLED EQUIPMENT WIRING SHALL ALSO BE SUBMITTED FOR APPROVAL AND FURNISHED TO THE ELECTRICAL CONTRACTOR FOR HIS INSTALLATION REQUIREMENTS AND OTHER USES.

D. HVAC CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR THE INSTALLATION OF DUCT DETECTORS. DUCT DETECTOR SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR AND MOUNTED BY THE HVAC CONTRACTOR.

SYMBOLS

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MEP CONSULTANT

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White Plains, NY 10601
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PROJECT

Purchase College
Studio A
Renovations

DRAWING NAME

MECHANICAL SPECIFICATIONS
(SHEET 2)

SEAL & SIGNATURE

SCALE NONE

DATE

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M-003.00

SHEET

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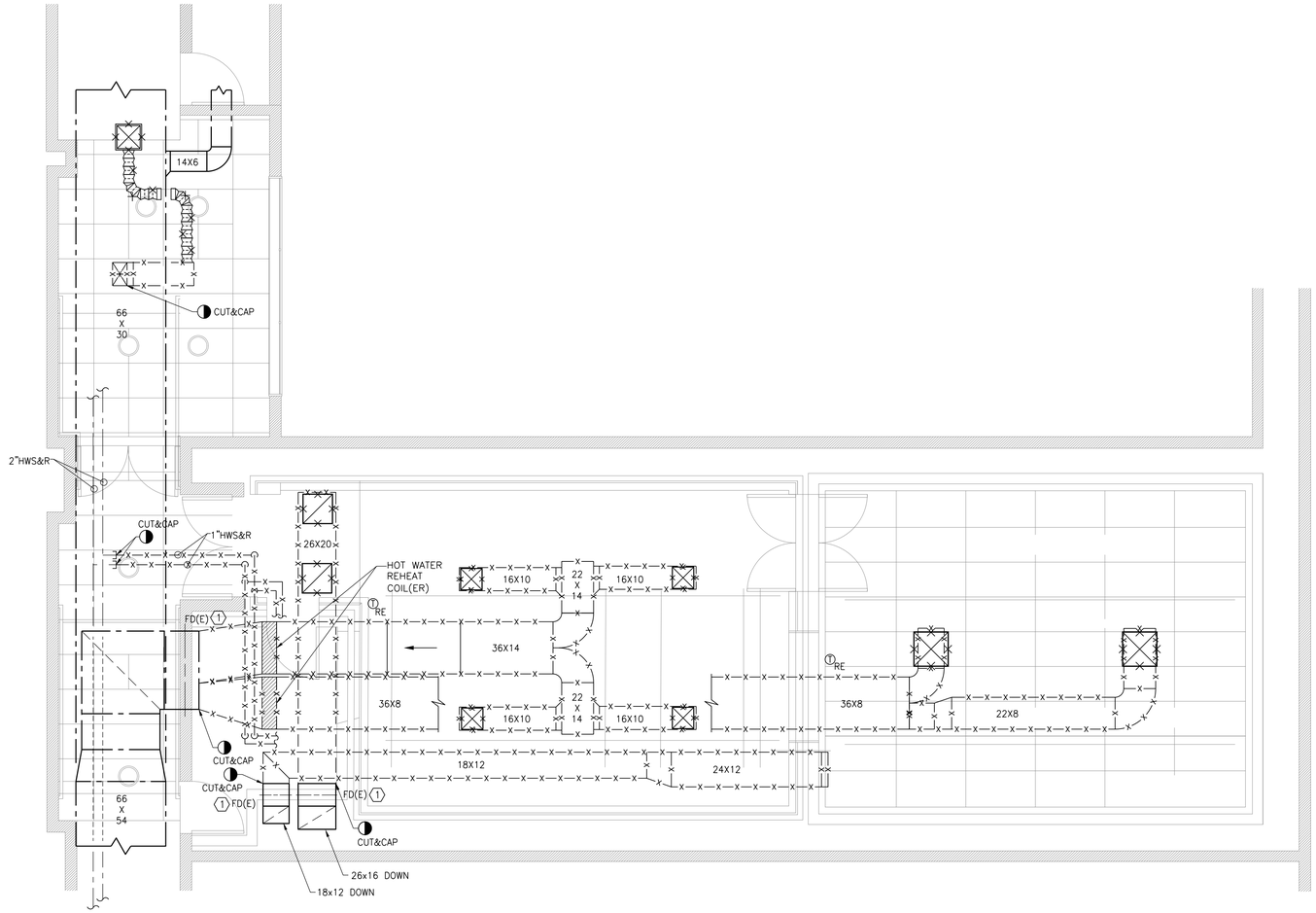

DRAWING NOTES:

1. ALL EXISTING SUPPLY AND RETURN DUCTWORK WITH ASSOCIATED DIFFUSERS/GRILLES SHALL BE REMOVED IN ITS ENTIRETY BACK TO SHAFT/CORRIDOR WALL AS INDICATED.
2. REMOVE ALL EXISTING THERMOSTATS AND PNEUMATIC CONTROLS IN ITS ENTIRETY.
3. ALL EXISTING HOT WATER PIPING, HOT WATER COILS AND ASSOCIATED CONTROLS SHALL BE REMOVED IN ITS ENTIRETY. HOT WATER BRANCH LINES SHALL BE CAPPED OFF AT THE MAIN IN THE CORRIDOR.
4. CONTRACTOR SHALL REPAIR/RESTORE FIRE-RATING OF ALL EXISTING WALLS AFFECTED BY DEMOLITION WORK. COORDINATE ALL REPAIR WORK WITH ARCHITECT.

KEY NOTES:

(1) EXISTING FIRE DAMPER TO REMAIN, REMOVE FUSIBLE LINK AND CLOSE DAMPER CURTAIN.

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PROJECT

Purchase College
Studio A
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DRAWING NAME

MECHANICAL
DEMOLITION PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"
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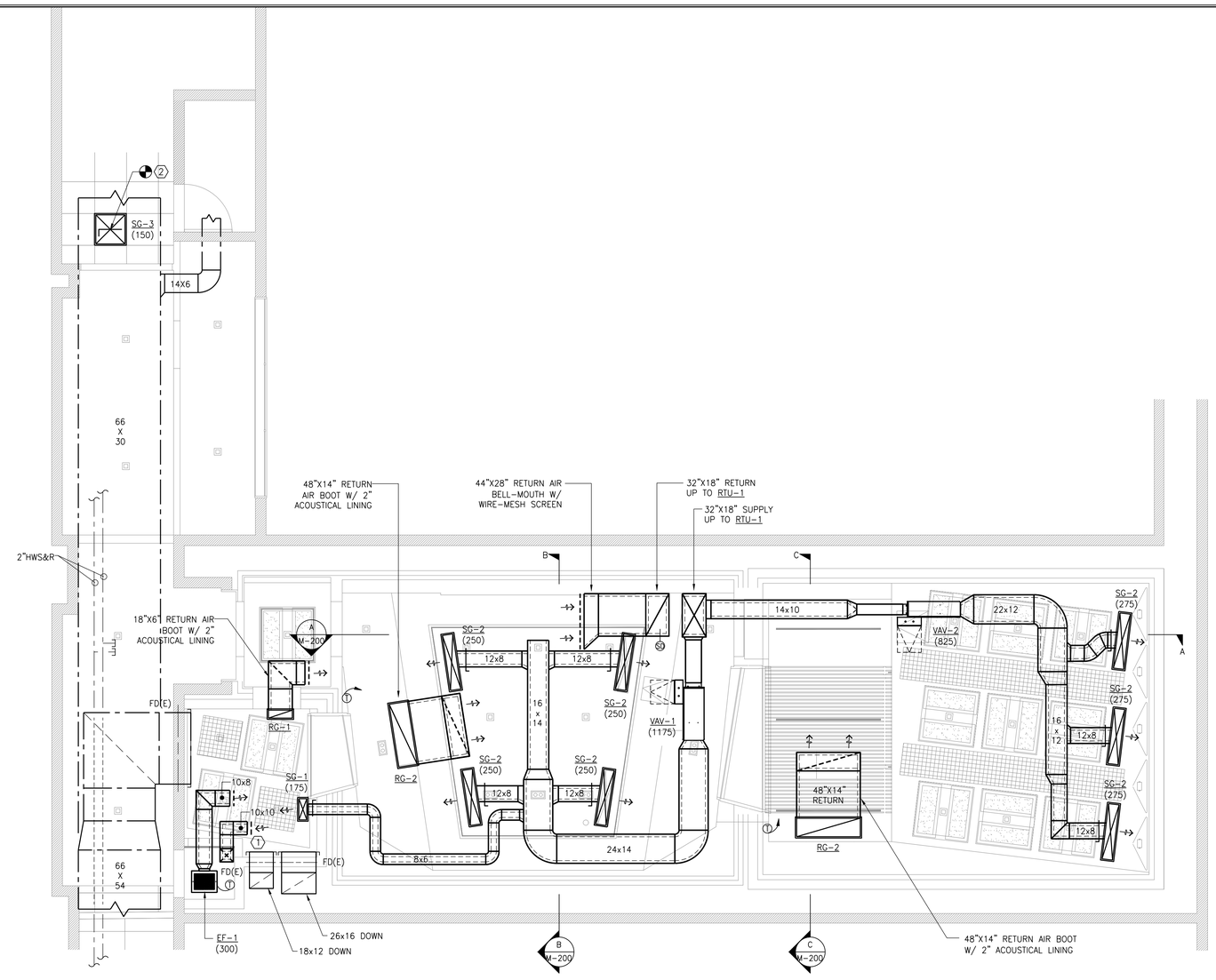

DRAWING NOTES:

1. CONTRACTOR SHALL INSTALL ALL HVAC EQUIPMENT AS REQUIRED TO ALLOW FOR PROPER SERVICE ACCESS.
2. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS. ALL SUPPLY, RETURN AND EXHAUST DUCTWORK SHALL BE PROVIDED WITH MIN. 2" THICK INTERNAL ACOUSTICAL LINING, UNLESS OTHERWISE NOTED.
3. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS.
4. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS CONNECTED TO RTU AND FANS. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED. PROVIDE FLEXIBLE CONNECTORS AT ALL DUCTWORK CONNECTIONS PENETRATING ACOUSTICAL CEILING.
5. ALL DUCTWORK SHALL BE INSTALLED AT MAXIMUM HEIGHTS ALLOWABLE OR AS REQUIRED TO CLEAR NEW CEILING. DUCTWORK SHALL BE OFFSET AS REQUIRED TO AVOID CONFLICTS EVEN IF NOT SPECIFICALLY INDICATED ON PLAN.
6. PROVIDE ALL REQUIRED BRANCH SUPPLY DUCTWORK TO SERVE NEW AIR OUTLETS IN LOCATIONS INDICATED. ALL AIR OUTLETS SUPPLY DUCT BRANCH CONNECTIONS SHALL BE PROVIDED WITH CABLE OPERATED DAMPERS.
7. TERMINAL AIR BOX LOCATIONS SHOWN ARE DIAGRAMMATIC. CONTRACTOR TO COORDINATE EXACT BOX LOCATIONS TO AVOID CONFLICTS WITH CEILING CONSTRUCTION AND OTHER TRADES.
8. EXACT LOCATIONS OF ALL THERMOSTATS SHALL BE AS PER ARCHITECT/ENGINEER. TYPICALLY THEY ARE LOCATED NEAR NEW LIGHT SWITCHES. REFER TO ARCHITECTURAL DWGS FOR THERMOSTAT MOUNTING HEIGHT. MECHANICAL CONTRACTOR SHALL SUBMIT THERMOSTAT LOCATIONS TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
9. ALL OPENINGS IN FIRE WALLS/ROOF DUE TO DUCTWORK, CONDUITS, ETC. SHALL BE FIRE-STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL AS SPECIFIED IN THE ARCHITECTURAL CONTRACT DRAWINGS.
10. ALL OPEN-ENDED DUCTWORK SHALL BE PROVIDED WITH WIRE-MESH SCREEN.
11. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT AS REQUIRED TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

KEY NOTES:

(1) TERMINATE TRANSFER DUCT IN RACK CLOSET MINIMUM 12" ABOVE FINISHED FLOOR.

(2) BOTTOM TAP EXISTING SUPPLY AIR MAIN IN CORRIDOR TO NEW CEILING DIFFUSER, PROVIDE MANUAL VOLUME DAMPER AS REQUIRED.

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DRAWING NAME

MECHANICAL
CONSTRUCTION PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"

DATE

CAD FILE#

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M-101.00

SHEET

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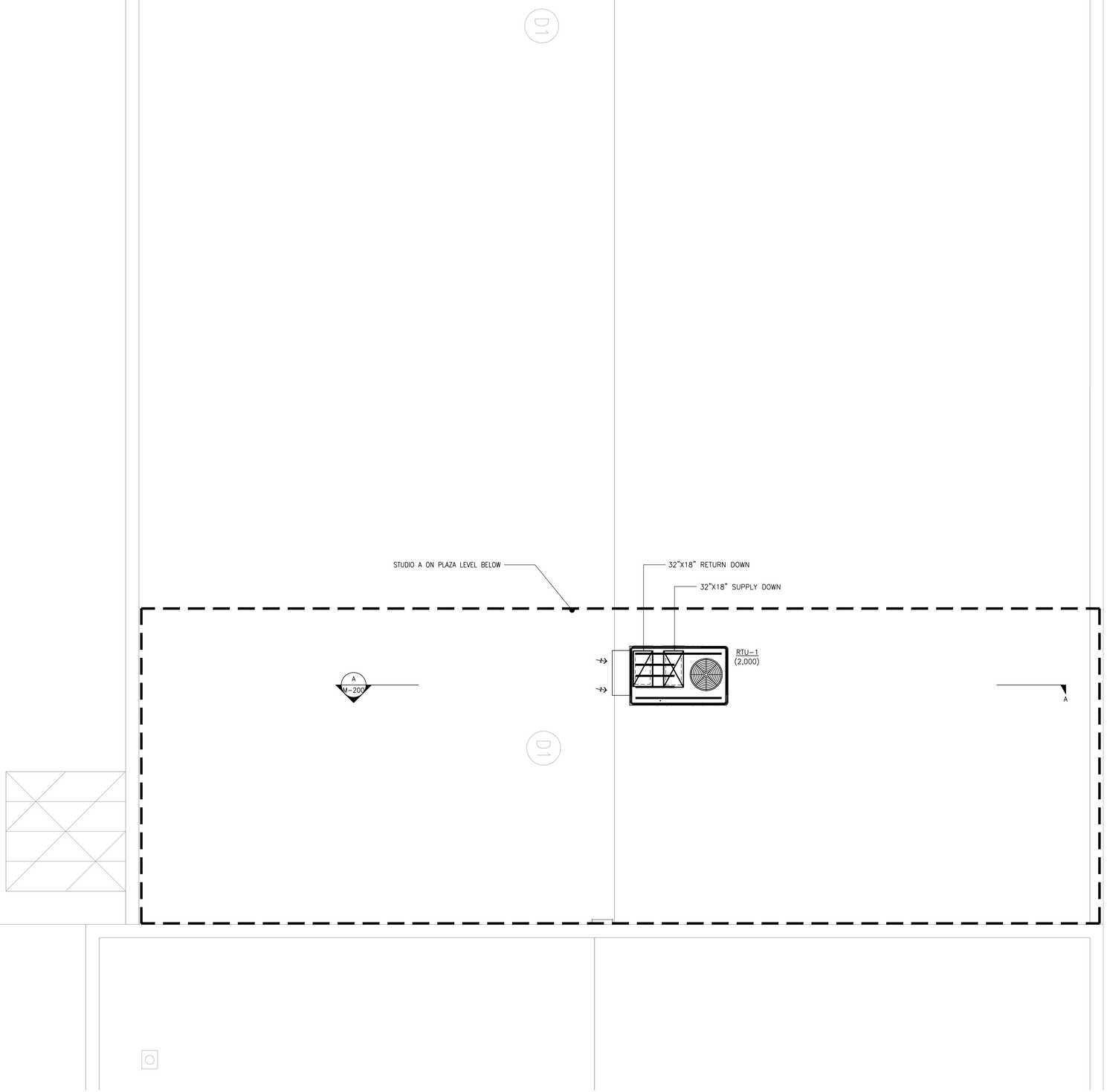

DRAWING NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL NEW ROOFTOP HVAC EQUIPMENT AS PER MANUFACTURERS RECOMMENDATIONS AND REQUIRED SERVICE CLEARANCES.
2. CONDENSATE DRAIN LINE FROM RTU SHALL BE PIPED FULL SIZE OF UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO NEAREST ROOF DRAIN.
3. CONTRACTOR SHALL COORDINATE AND RETAIN THE CAMPUS APPROVED ROOFING CONTRACTOR TO PERFORM ALL FLASHING WORK FOR NEW ROOF CURB INSTALLATION. REFER TO ROOF CURB INSTALLATION DETAIL ON DWG. M-300.
4. ROOF DUCT OPENINGS TO BE PROVIDED BY OTHERS. CONTRACTOR SHALL COORDINATE LOCATIONS OF ALL ROOF OPENINGS WITH STRUCTURAL ENGINEER & ARCHITECT, PROVIDE STRUCTURAL FRAMING REINFORCEMENT AS REQUIRED.

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PROJECT

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DRAWING NAME

MECHANICAL ROOF PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"
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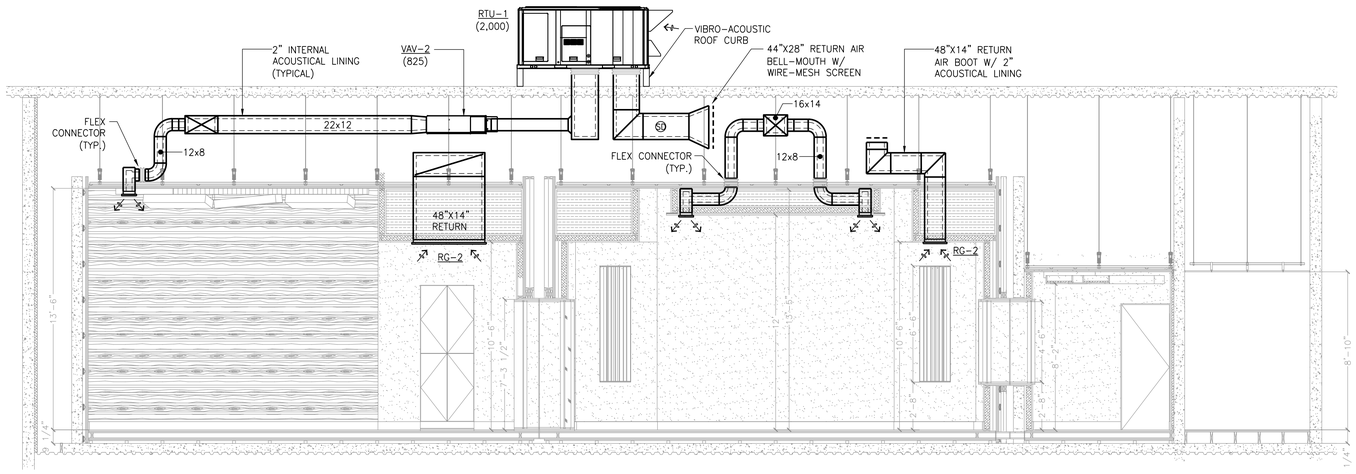
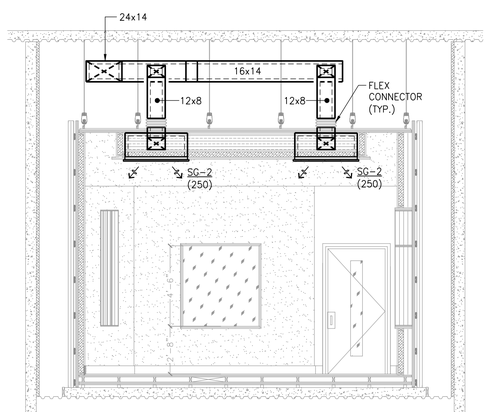


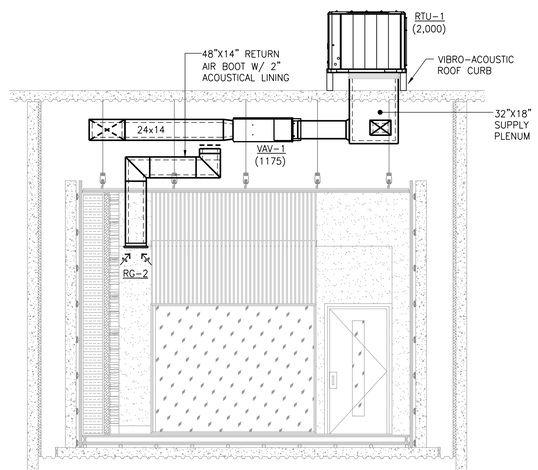
A MECHANICAL ELEVATION – SOUTH

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



B MECHANICAL ELEVATION – CONTROL ROOM

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



C MECHANICAL ELEVATION – LIVE ROOM

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

SYMBOLS

Revisions

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FRANCIS MANZELLA DESIGN LIMITED
Acoustic Consulting and Studio Design

914.248.7680 Voice
914.248.7760 Fax
fmdesign@fmdesign.com
www.FMDesign.com

961 Route 6
Mahopac NY, 10541

MEP CONSULTANT

collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

PROJECT

Purchase College
Studio A
Renovations

DRAWING NAME

MECHANICAL ELEVATIONS

SEAL & SIGNATURE

SCALE AS NOTED

DATE

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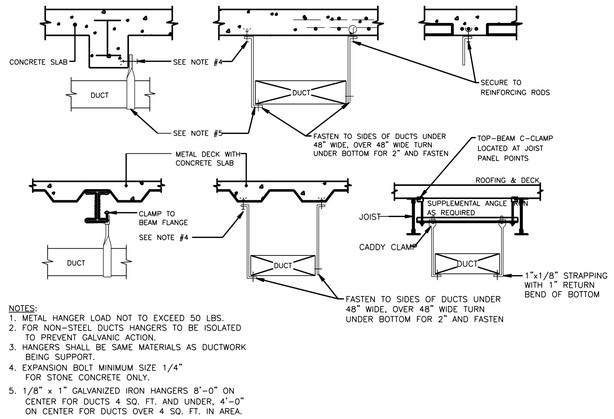
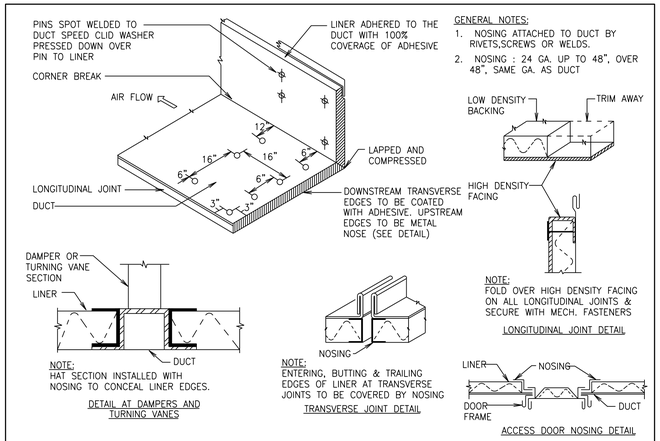


NOTES:
1. METAL HANGER LOAD NOT TO EXCEED 50 LBS.
2. FOR NON-STEEL DUCTS HANGERS TO BE ISOLATED TO PREVENT GALVANIC ACTION.
3. HANGERS SHALL BE SAME MATERIALS AS DUCTWORK BEING SUPPORT.
4. EXPANSION BOLT MINIMUM SIZE 1/4" FOR STONE CONCRETE ONLY.
5. 1/8" x 1" GALVANIZED IRON HANGERS 8'-0" ON CENTER FOR DUCTS 4 SQ. FT. AND UNDER, 4'-0" ON CENTER FOR DUCTS OVER 4 SQ. FT. IN AREA.

TYPICAL DUCT HANGING DETAILS



GENERAL NOTES:
1. NOSING ATTACHED TO DUCT BY RIVETS,SCREWS OR WELDS.
2. NOSING : 24 GA. UP TO 48", OVER 48", SAME GA. AS DUCT

NOTE:
HAT SECTION INSTALLED WITH NOSING TO CONCEAL LINER EDGES.

DETAIL AT DAMPERS AND TURNING VANES

NOTE:
ENTERING, BUTTING & TRAILING EDGES OF LINER AT TRANSVERSE JOINTS TO BE COVERED BY NOSING

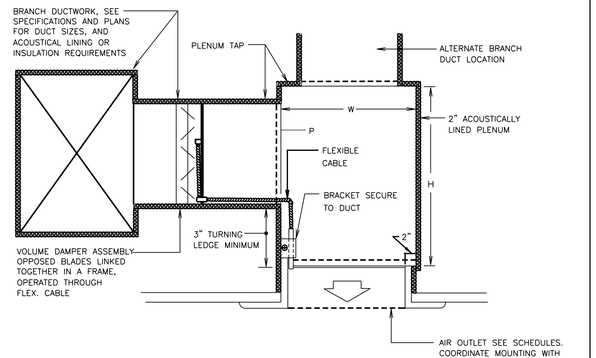
TRANSVERSE JOINT DETAIL

NOTE:
FOLD OVER HIGH DENSITY FACING ON ALL LONGITUDINAL JOINTS & SECURE WITH MECH. FASTENERS

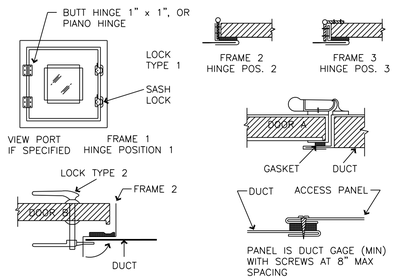
LONGITUDINAL JOINT DETAIL

ACCESS DOOR NOSING DETAIL

ACOUSTICAL DUCT LINER DETAIL



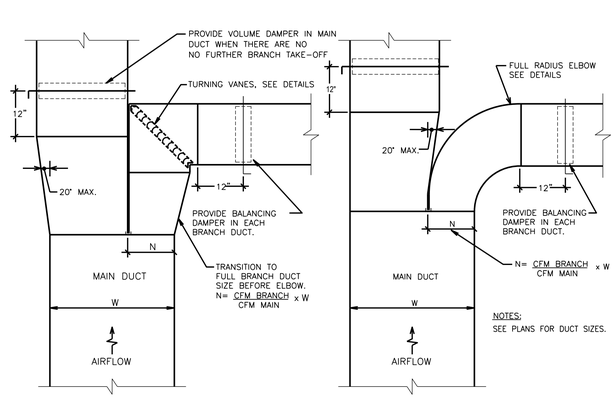
PLENUM BOX INSTALLATION DETAIL



	DOOR SIZE	NO HINGES	NO LOCKS	METAL GAGE FRAME	DOOR	BACK
2" W.G. STATIC & LESS	12"X12"	2	1-S	24	26	26
	16"X20"	2	2-S	22	24	26
	24"X24"	3	2-S	22	22	26
3" W.G. STATIC	12"X12"	2	1-S	22	22	26
	16"X20"	2	1-S,1-T,1-B	20	20	26
	24"X24"	3	2-S,1-T,1-B	20	20	24
4" W.G. TO 10" W.G.	12"X12"	2	1-S,1-T,1-B	20	20	26
	16"X20"	3	2-S,1-T,1-B	20	18	24
	24"X24"	3	2-S,2-T,2-B	18	18	24

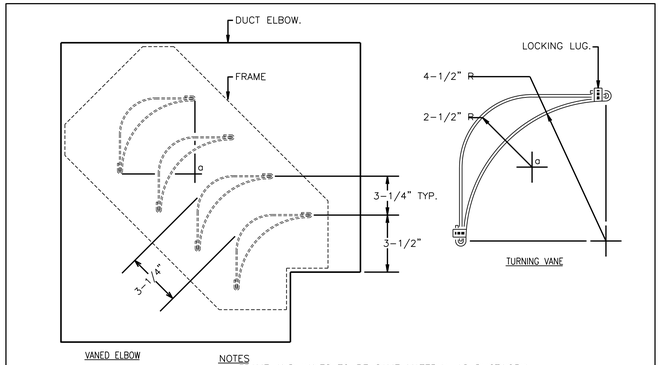
S=SIDE OPPOSITE HINGES, T=TOP, B=BOTTOM

DUCT ACCESS DOORS DETAIL



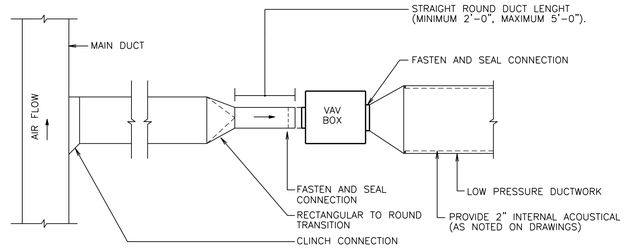
NOTES:
SEE PLANS FOR DUCT SIZES.

SUPPLY AIR DUCT NECK CONNECTIONS



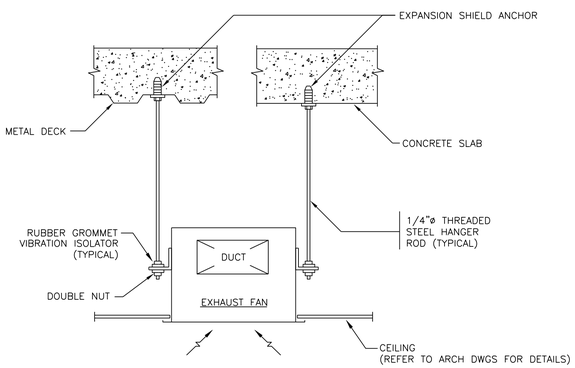
NOTES
1. FRAME AND VANES TO BE SAME MATERIAL AS DUCTWORK.
2. LOCKING LUGS TO BE INTEGRAL WITH THE TURNING VANE.
3. MAXIMUM UNSUPPORTED FRAME LENGTH TO BE 48".
4. FRAMES TO BE BOLTED OR RIVETED TO THE ELBOW.
5. VANES AND FRAMES TO BE SAME GAUGE AS THE ELBOW. (MINIMUM 20 GAUGE)
6. SQUARE ELBOWS ARE TO BE USED ONLY WHEN SPECIFICALLY INDICATED ON THE DESIGN DRAWINGS.

MITERED ELBOWS WITH DOUBLE THICKNESS TURNING VANES

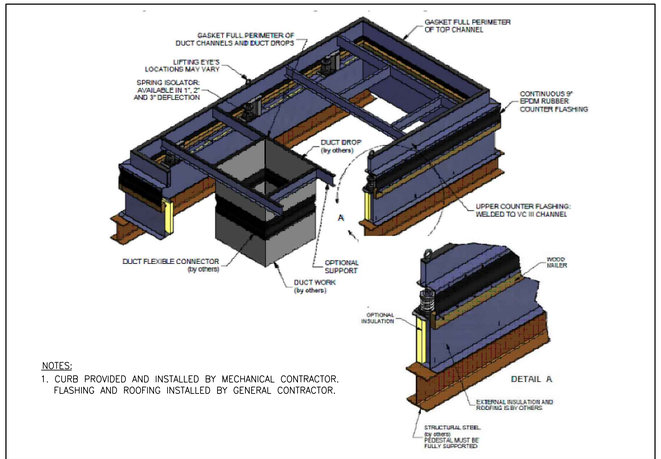


NOTES:
1. THE OPERATION OF VARIABLE VOLUME TERMINAL UNITS ARE AFFECTED BY EXCESSIVE TURBULENCE ON THE ENTERING SIDE OF EACH TERMINAL UNIT THEREFORE, TERMINAL UNITS MUST NOT BE INSTALLED TOO CLOSE TO MAIN DUCTS, ELBOWS AND FITTINGS.
2. WHEN MINIMUM UPSTREAM STRAIGHT DUCT CONNECTION TO TERMINALS AS INDICATED ABOVE CANNOT BE MAINTAINED, PROVIDE ORIFICE PLATE, STRAIGHTENING VANES OR OTHER DEVICE AS RECOMMENDED BY TERMINAL UNIT MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.
3. MANUFACTURER OF TERMINAL UNIT SHALL PROVIDE CONTROLS ON LEFT OR RIGHT SIDE AS REQUIRED BY FIELD CONDITIONS.
4. ARRANGE ACCESS TO PERMIT EASY FIELD BALANCE AND MAINTENANCE OF TERMINAL UNIT. MAINTAIN MIN. 12" CLEARANCE ALL AROUND VAV BOX.

VAV TERMINAL UNIT INSTALLATION DETAIL



CEILING EXHAUST FAN HANGING DETAIL



NOTES:
1. CURB PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR. FLASHING AND ROOFING INSTALLED BY GENERAL CONTRACTOR.

VIBRATION ISOLATION ROOF CURB DETAIL

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ROOF TOP AIR CONDITIONING UNIT SCHEDULE

TAG	LOCATION	SERVICE	MIN. OUTSIDE AIR (CFM)	SUPPLY FAN DATA					COOLING PERFORMANCE							HEATING PERFORMANCE						ELECTRICAL DATA				EFFICIENCY		WEIGHT (LBS.)	UNIT DIMENSIONS	MANUFACTURER / MODEL	NOTES
				CFM	FAN QTY.	ESP (IN. W.C.)	RPM	BHP	COIL SIZE		EAT (°F)		LAT (°F)		TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	HEATING TYPE	OUTDOOR AMBIENT TEMP (°F)	EAT (°F)		LAT (°F)		TOTAL CAPACITY (MBH)	V/PH/HZ	FLA	MCA	MOP	EER	IEER/SEER				
									ROWS	FPI	DB	WB	DB	WB					DB	WB	DB	WB										
RTU-1	ROOF	SEE PLANS	300	2,000	1	0.75	–	–	–	–	80.0	67.0	57.2	57.1	58.9	46.9	ELECTRIC	13.0	60.0	–	85.0	–	30.5	208/3/60	–	27.0	40.0	13.0	16.4	1,100	89"L X 53"W X 41"H	TRANE / WHC060H3R0A	1-9

NOTES:

1. CONTRACTOR TO COORDINATE UNIT CONFIGURATIONS WITH FIELD CONDITIONS. MAINTAIN ALL SERVICE CLEARANCES AS REQUIRED.
2. UNIT SHALL BE CONFIGURED WITH BOTTOM SUPPLY, BOTTOM RETURN CONNECTIONS.
3. PROVIDE FACTORY CONTROLS WITH VAV DISCHARGE AIR CONTROL, STATIC PRESSURE CONTROL, VARIABLE SPEED DRIVE AND ENTHALPY ECONOMIZER CONTROL.
4. PROVIDE WITH FACTORY DISCONNECT SWITCH AND GFI CONVENIENCE OUTLET TO BE FIELD WIRED.
5. PROVIDE WITH VIBRO-ACOUSTIC ROOF CURB, SIMILAR TO THYBAR MODEL 'VIBRO-CURB III', WITH MIN. 2" DEFLECTION.
6. PROVIDE SINGLE-POINT ELECTRICAL CONNECTION TO UNIT.
7. PROVIDE WITH AIR FILTERS RATED FOR 4" THICK, MERV-13.
8. PROVIDE WEATHER-HOOD ON INTAKE/RELIEF OPENINGS.
9. PROVIDE BAROMETRIC RELIEF HOOD.
10. PROVIDE BMS COMMUNICATION CARD.

Acoustics

Sound Path	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Ducted Discharge	80 dB	84 dB	71 dB	68 dB	65 dB	62 dB	63 dB	55 dB
Ducted Inlet	75 dB	73 dB	62 dB	59 dB	57 dB	53 dB	51 dB	44 dB
Outdoor Noise	90 dB	90 dB	85 dB	85 dB	83 dB	79 dB	74 dB	68 dB

DIFFUSER, GRILLE & REGISTER SCHEDULE

TAG	SERVICE	CEILING TYPE	CFM RANGE	NO. OF SLOTS	NECK SIZE (IN.)	FACE OVERALL DIMENSIONS WXL (IN.)	MATERIAL	MAX P.D	NOISE CRITERIA (NC)	MANUFACTURER / MODEL	NOTES
SG-1	SUPPLY	SEE RCP	0-175	–	16"X6"	18"X8"	ALUMINUM	0.01	<20	TITUS / CT-580	1-4
SG-2	SUPPLY	SEE RCP	0-700	–	42"X8"	44"X10"	ALUMINUM	0.01	<20	TITUS / CT-580	1-4
SG-3	SUPPLY	SEE RCP	0-300	–	22"X22"	24"X24"	ALUMINUM	0.03	<20	TITUS / 250-AA	1-4
RG-1	RETURN	SEE RCP	0-200	–	16"X6"	18"X8"	STEEL	0.02	<20	TITUS / 300RL	1-4
RG-2	RETURN	SEE RCP	0-1500	–	48"X14"	50"X16"	STEEL	0.01	<20	TITUS / 300RL	1-4

NOTES:

1. DIFFUSERS SHALL BE SUITABLE FOR THE TYPE OF CEILING CONSTRUCTION BEING INSTALLED IN.
2. COORDINATE BORDER TYPES WITH CEILING/WALL CONSTRUCTION.
3. PROVIDE CABLE-OPERATED DAMPERS FOR DIFFUSERS IN INACCESSIBLE CEILINGS.
4. COORDINATE COLOR AND FINISH WITH ARCHITECT.

EXHAUST FAN SCHEDULE

TAG	LOCATION	AREA SERVED	CFM	ESP (IN. WC)	FAN RPM	TYPE	ELECTRICAL DATA				INLET dBA (dB)	WEIGHT	MANUFACTURER / MODEL	NOTES
							VOLTAGE	PHASE	WATTS	FLA (A)				
EF-1	RACK CLOSET	RACK CLOSET	300	0.3	935	CEILING-MOUNTED	115	1	43.0	3.4	47	32	GREENHECK / SP-A510-VG	CONTROLLED VIA WALL-MOUNTED THERMOSTAT

NOTES:

1. PROVIDE EC MOTOR WITH MOUNTED POTENTIOMETER DIAL.
2. PROVIDE FACTORY DISCONNECT SWITCH.
3. PROVIDE VIBRATION ISOLATION KIT AND MOUNTING ACCESSORIES.

VARIABLE AIR VOLUME (VAV) BOX SCHEDULE

TAG	SIZE	CAPACITY RANGE CFM	MIN CFM	MAX CFM	MINIMUM INLET PRESSURE	CONTROLLER	SOUND ATTENUATOR	RADIANT SOUND PRESSURE (NC)	DISCHARGE SOUND PRESSURE (NC)	MANUFACTURER AND MODEL	NOTES
VAV-1	12"ø	300-1175	170	2,000	1" W.C.	DDC	YES	20	24	TITUS / DESV	1-8
VAV-2	10"ø	210-825	130	1,400	1" W.C.	DDC	YES	22	25	TITUS / DESV	1-8

NOTES:

1. REFER TO PLANS FOR ACTUAL DESIGN AIRFLOW VALUES.
2. ALL TERMINAL BOXES TO BE DDC.
3. CONTRACTOR TO COORDINATE UNIT CONFIGURATIONS WITH FIELD CONDITIONS. MAINTAIN ALL SERVICE CLEARANCES AS REQUIRED.
4. PROVIDE WALL-MOUNTED TEMPERATURE CONTROLLER FOR EACH VAV BOX.
5. PROVIDE 1" ULTRALOC LINER FOR ALL VAV'S.
6. PROVIDE FACTORY MOUNTED CONTROLS.
7. PROVIDE TOGGLE DISCONNECT SWITCH.
8. PROVIDE MULTI-POINT CENTER AVERAGING INLET VELOCITY SENSOR.

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SYMBOL LIST

ELECTRICAL AND IT DEVICES

	DUPLEX RECEPTACLE RATED AT 20-AMPS, 120 VOLTS.
	ISOLATED GROUND DUPLEX RECEPTACLE RATED AT 20-AMPS, 120 VOLTS IN ONE 4"X4" BOX.. MANUFACTURER: PASS AND SEYMOUR MODEL: IG5362
TL	ISOLATED GROUND L5-20 TWISTLOCK RECEPTACLE MOUNTED OVERHEAD IN CEILING. MANUFACTURER: PASS AND SEYMOUR MODEL: IGL520R
	ISOLATED GROUND DOUBLE DUPLEX RECEPTACLE RATED AT 20 AMPS, 120 VOLTS IN ONE 4"X4" BOX. MANUFACTURER: PASS AND SEYMOUR MODEL: IG5362
	RECESSED FLUSH FLOOR BOX. REPLACE INCLUDED RECEPTACLE WITH DUPLEX ISOLATED GROUND RECEPTACLE. MANUFACTURER: PASS AND SEYMOUR FLOOR BOX MODEL: PS862ITRTAL IG RECEPTACLE MODEL: IG5362
J	CEILING MOUNTED JUNCTION BOX (J-BOX) WITH HOMERUN CIRCUIT AND FLEXIBLE CONNECTION TO EQUIPMENT. USE SEALTITE FOR OUTDOOR CONNECTIONS.
JH	WALL MOUNTED JUNCTION BOX (J-BOX) WITH HOMERUN CIRCUIT AND FLEXIBLE CONNECTION TO EQUIPMENT. USE SEALTITE FOR OUTDOOR CONNECTIONS.
△	FLUSH FLOOR MOUNTED JUNCTION BOX FOR AV.
VAV	VAV DAMPER WITH 120V, 20AMP, SINGLE POLE TOGGLE

ELECTRICAL DISTRIBUTION

	CONDUIT
	PULL BOX
	FUSED DISCONNECT SWITCH; FUSE TO BE EQUAL TO OR LESS THAN THE WIRING AMPACITY.
	UNFUSED DISCONNECT SWITCH; SWITCH SIZE TO BE GREATER THAN OR EQUAL TO OVER CURRENT PROTECTION. U.O.N.
M	MOTOR, NUMBER INDICATES HORSEPOWER RATING
	CIRCUIT BREAKER
T	TRANSFORMER
A / 001	SECTION A
PP-KIT/21,23,25 (PANEL DESIGNATION, CIRCUIT NUMBER)	HOMERUN NOTATION

LIGHTING CONTROLS
BASIS OF DESIGN: ACUITY CONTROLS
ALTERNATE ACCEPTABLE MANUFACTURERS: WATTSTOPPER OR DOUGLAS LIGHTING CONTROLS

MS a	CEILING-MOUNTED MOTION SENSOR. REFER TO E-300 FOR LIGHTING CONTROL TYPICAL WIRING DIAGRAM MODEL: nCM PDT 9 RJB LOWERCASE LETTER INDICATES LIGHTING FIXTURES CONTROLLED
PP a OS	POWER PACK. REFER TO E-300 FOR LIGHTING CONTROL TYPICAL WIRING DIAGRAM. 'VS' INDICATES NON-DIMMING VACANCY-TYPE MODEL (nPP16 SA) 'VSD' INDICATES 0-10V DIMMING VACANCY-TYPE MODEL (nPP16 D SA) 'MLV' INDICATES MAGNETIC LOW VOLTAGE DIMMING MODEL (nSP5 PCD MLV) 'ELV' INDICATES ELECTRONIC LOW VOLTAGE DIMMING MODEL (nSP5 PCD ELV 120) *'MLV' AND 'ELV' POWER PACKS SHALL BE PROGRAMMED FOR VACANCY-TYPE OPERATION. LOWERCASE LETTER INDICATES LIGHTING FIXTURES CONTROLLED.
$ D a	WALL SWITCH. REFER TO E-300 FOR LIGHTING CONTROL TYPICAL WIRING DIAGRAM. STANDARD MODEL: nPODMA 'D' INDICATES SINGLE-POLE DIMMING MODEL (nPODMA DX WH) '2PD' INDICATES TWO-POLE DIMMING MODEL (nPODMA 2P DX WH) '4PD' INDICATES FOUR-POLE DIMMING MODEL (nPODMA 4P DX WH) LOWERCASE LETTER INDICATES LIGHTING FIXTURES CONTROLLED.
VS a	COMBINATION WALL VACANCY SENSOR AND NON-DIMMING SWITCH. REFER TO E-300 FOR LIGHTING CONTROL TYPICAL WIRING DIAGRAM. MODEL: WSX PDT SA WH LOWERCASE LETTER INDICATES LIGHTING FIXTURES CONTROLLED.
VSD a	COMBINATION WALL VACANCY SENSOR AND DIMMING SWITCH. REFER TO E-300 FOR LIGHTING CONTROL TYPICAL WIRING DIAGRAM. MODEL: WSX PDT D SA WH LOWERCASE LETTER INDICATES LIGHTING FIXTURES CONTROLLED.
DMX	DMX LIGHTING CONTROLLER. REFER TO E-301 FOR DMX LIGHTING CONTROL WIRING DIAGRAM. MODEL: EZSOLO MVOLT WH

ABBREVIATIONS

@	"AT" OR "EACH AT"
A	AMPERE
AC	ABOVE COUNTER
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
AT	AMPERE TRIP
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
°C	DEGREE CELSIUS
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CLOS	CLOSET
COMM	COMMUNICATION
CONT	CONTINUATION
CT	CURRENT TRANSFORMER
CU	COPPER
DB	DECIBEL
DEG	DEGREE
DN	DOWN
DP	DISTRIBUTION PANELBOARD
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
°F	DEGREE FAHRENHEIT
FDS	FUSED DISCONNECT SWITCH
FIXT	FIXTURE
FL	FLOOR
FT	FEET OR FOOT
G	GROUND
GFI	GROUND FAULT INTERUPTER
HP	HORSEPOWER
HV	HIGH VOLTAGE
HZ	HERTZ
INST	INSTANTANEOUS
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
LTG	LIGHTING
LV	LOW VOLTAGE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCM	THOUSAND CIRCULAR MILS
MIN	MINIMUM
MLO	MAIN LUGS ONLY
N	NEUTRAL
NTS	NOT TO SCALE
PB	PULLBOX
ø	PHASE
PWR	POWER
RECEPT	RECEPTACLE
REQ	REQUIRED
RM	ROOM
SECT	SECTION
SP	SINGLE POLE
SPEC	SPECIFICATION
SW	SWITCH
SYS	SYSTEMS
TBD	TO BE DETERMINED
TD	TIME DELAY
TEL	TELEPHONE
TEMP	TEMPERATURE
TV	TELEVISION
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLT OR VOLTAGE
VA	VOLT AMPERE
W	WATT
WP	WEATHERPROOF

ELECTRICAL GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWING IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS.
2. HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS ARE NOT PERMITTED.
3. PROVIDE PULLBOXES AS INDICATED, REQUIRED BY CODE AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULLBOX LOCATIONS WITH OTHER TRADES.
4. COVERS OF JUNCTION AND PULLBOXES SHALL BE READILY ACCESSIBLE.
5. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT; MINIMUM 18 IN. IN LENGTH AND 50% SLACK. DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
6. COORDINATE ALL EXPOSED CONDUIT RUNS WITH ARCHITECT PRIOR TO EXPOSED CONDUIT INSTALLATION.
7. WIRE COLOR CODING: AS PER CODE. WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE SELECTED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.
8. SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK) OR MACHINE SCREWS (METAL). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART.
9. ALL LIGHT FIXTURES AND INSTRUMENTS THAT ARE REMOVED SHOULD BE CAREFULLY DISPOSED OF. COORDINATE REMOVAL ALL EQUIPMENT WITH FACILITIES MANAGER.
10. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
11. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS. COORDINATE WITH ARCHITECT AND INSTALL SWITCH ON SIDE OPPOSITE HINGE. VERIFY FINAL HINGE LOCATIONS IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION.
12. POWER INTERRUPTIONS AND CORE DRILLING ONLY PERMITTED AS APPROVED BY FACILITIES MANAGER.
13. ALL OUTDOOR ELECTRICAL EQUIPMENT SHALL BE RATED NEMA-3R.
14. PRIOR TO CORING FOR CONDUIT PENETRATIONS, XRAY SLAB AND SUBMIT TO FACILITIES MANAGER FOR APPROVAL.
15. USE MC CABLE WHEREVER ELECTRICAL CONDUITS CROSS OVER ISOLATED CEILING OR WALLS.

LIGHTING FIXTURE SCHEDULE

FIXTURE SYMBOL	FIXTURE TAG	FIXTURE DESCRIPTION	MANUFACTURER	MODEL NUMBER	LAMP TYPE	VOLTS	WATTS	DIMMING
A	A	RECESSED DOWNLIGHT FIXTURE	WAC LIGHTING	HOUSING: HR-3LED-H17A TRIM: R3ASAT-F830-HZWT	LED	UNV	15.5	0-10V
B	B	RECESSED MULTI-POINT SPOTLIGHT FIXTURE	WAC LIGHTING	HOUSING: MT-4LD211NE-F-930-BK TRIM: MT-4LD216T-WT	LED	UNV	46	ELV
C	C	RECESSED MONOPOINT SPOTLIGHT FIXTURE	WAC LIGHTING	MO-1014F-930-BK	LED	120V	14	ELV
D	D	WALL WASH LIGHT FIXTURE	CHAUVET DJ	SLIMPAR T6BT	LED	UNV	15	DMX
S1	S1	LED TAPE LIGHTING FIXTURE	PLT	2835-60-IP65-WW2450NHC 3K 24V 90CRI *MOUNTED IN KLUS LIPOD CHANNEL WITH LIGER-22 FROSTED COVER AND MAGNITUDE M150L240C-AR DIMMABLE LED DRIVER	LED	120V	3.5W/FT.	NONE
S2	S2	LED TAPE LIGHTING FIXTURE	PLT	2835-60-IP65-WW2450NHC 3K 24V 90CRI *WITH MAGNITUDE M150L240C-AR DIMMABLE LED DRIVER	LED	120V	3.5W/FT.	MLV
S3	S3	LED TAPE LIGHTING FIXTURE	PLT	5050-60-IP65-RGB2450 NANO RGB 24V 90CRI LED TAPE LIGHT WITH MEAN WELL LRS-350-24 SE SERIES POWER SUPPLY, SUPERBRIGHTLEDS.COM EZD-RGBW3-WM WALL SWITCH AND EZD-4C8A CONTROLLER. REFER TO E-300 FOR S3 FIXTURE CONTROLS WIRING DIAGRAM.	LED	120	4.5W/FT.	RGB
S4	S4	LED TAPE LIGHTING FIXTURE	PLT	2835-60-IP65-WW2450NHC 3K 24V 90CRI *MOUNTED IN KLUS LIPOD CHANNEL WITH LIGER-22 FROSTED COVER AND MAGNITUDE M150L240C-AR DIMMABLE LED DRIVER	LED	120V	3.5W/FT.	MLV
	--	EMERGENCY LIGHTING FIXTURE	THE LIGHTING SOURCE	MINI-SQ-L-W-SDT NOTE: DEDICATED EMERGENCY LIGHT. CONNECT TO UNSWITCHED LIGHTING CIRCUIT SERVING SPACE.	LED	UNV	6	NONE
EM	--	CORRIDOR EMERGENCY DOWNLIGHT FIXTURE	THE EXIT LIGHT CO	EL-RG6 W/B6V4A BATTERY NOTE: DEDICATED EMERGENCY LIGHT. CONNECT TO UNSWITCHED LIGHTING CIRCUIT SERVING SPACE.	HALOGEN	UNV	8	NONE
	--	WALL-MOUNTED EDGE-LIT EXIT SIGN FIXTURE	THE EXIT LIGHT COMPANY	ELSM-R	LED	UNV	5	NONE

NYS ECC 2020 COMPLIANCE (LIGHTING)

ROOM	ROOM AREA (SQ. FT.)	WATTAGE	WATTS/SQ. FT.	ALLOWABLE WATTS	ALLOWABLE WATTS/SQ. FT.	LIGHTING CONTROLS
SOUND LOCK	37	61	1.65	24.5	0.66	MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
RECORDING BOOTH	62	62	1.00	26	0.42	MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
IT CLOSET	10	10.5	1.05	4.6	0.46	MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
CONTROL ROOM	400	368.5	0.92	532	1.33	MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
LIVE ROOM	CONNECTED LIGHTING POWER IN THIS ROOM IS EXEMPT AS PER SECTION C405.3.1.					MANUAL-ON CONTROLS (VACANCY SENSORS WITH MANUAL OVERRIDE SWITCHES)
	TOTAL:	502	--	587.1	--	--

ELECTRICAL DRAWING LIST

SYMBOLS

Revisions

REVISION #	DATE	REVISION	APPROVED
-	7/8/21	FINAL REVIEW SET	
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Acoustic Consulting and Studio Design
914.248.7680 Voice
914.248.7780 Fax
frmdesign@frmdesign.com
www.FMDesign.com
961 Route 6
Mahopac NY, 10541

MEP CONSULTANT
collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

PROJECT

Purchase College
Studio A
Renovations

DRAWING NAME

ELECTRICAL SYMBOLS LIST, ABBREVIATIONS, LIGHTING SCHEDULE, ENERGY CODE COMPLIANCE TABLE, GENERAL NOTES AND DRAWING LIST

SEAL & SIGNATURE

SCALE N/A

DATE

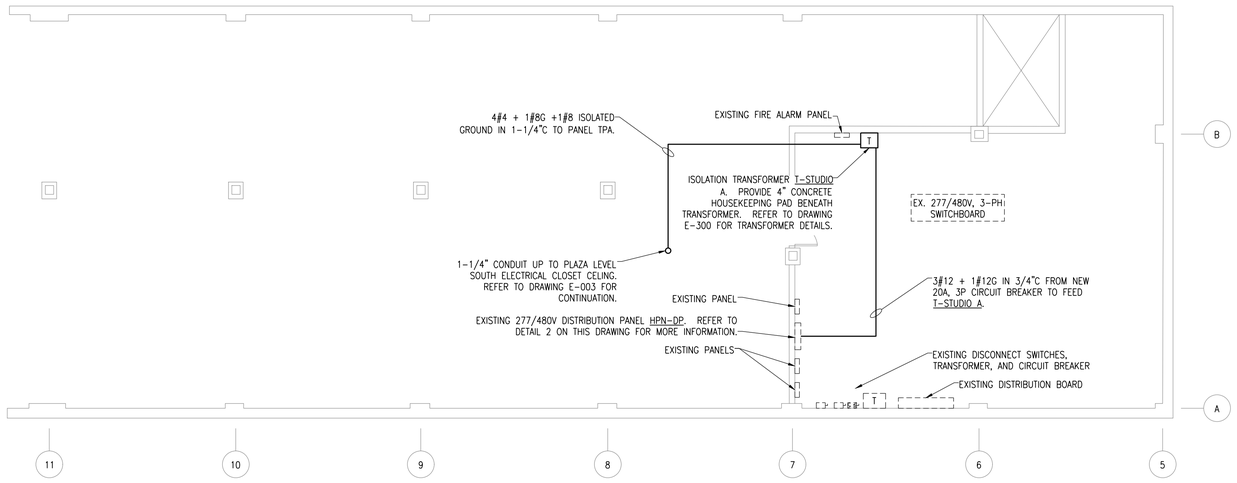
CAD FILE#

DRAWING NUMBER

E-001.00

SHEET

1 of 12



1 ELECTRICAL SUB-BASEMENT PLAN
SCALE: 1/8" = 1'-0"

2 DISTRIBUTION PANEL HPN-DP DETAIL
SCALE: N/A

SYMBOLS

Revisions

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MEP CONSULTANT

collado
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White Plains, NY 10601
(914) 332-7658

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DRAWING NAME

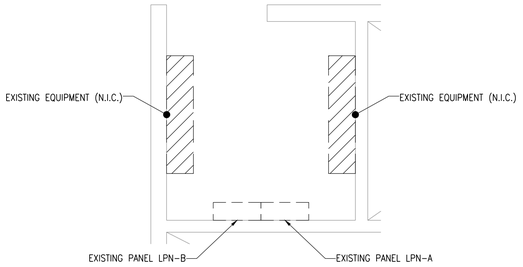
ELECTRICAL SUB-BASEMENT PLAN

SEAL & SIGNATURE

SCALE AS NOTED
DATE
CAD FILE#

DRAWING NUMBER
E-002.00

SHEET
2 of 12

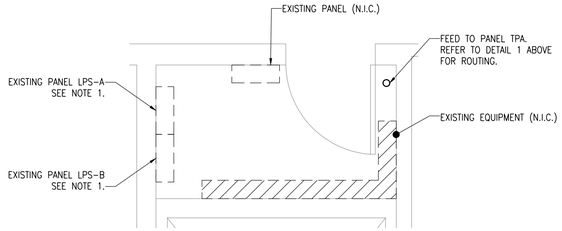


2 NORTH ELECTRICAL CLOSET DETAIL

SCALE: 1/2" = 1'-0"

NOTES:

1. (3) BRANCH CIRCUIT SUPPLYING EXISTING PLUGMOLD IN STUDIO A ARE SUPPLIED BY PANELS LPN-A AND LPN-B. ONE OF THESE CIRCUITS IS LPN-A/24. CONTRACTOR SHALL TRACE THE REMAINING CIRCUITS AND UPDATE DIRECTORIES, THESE CIRCUITS SHALL BE DISCONNECTED AND CUT BACK.



3 SOUTH ELECTRICAL CLOSET DETAIL

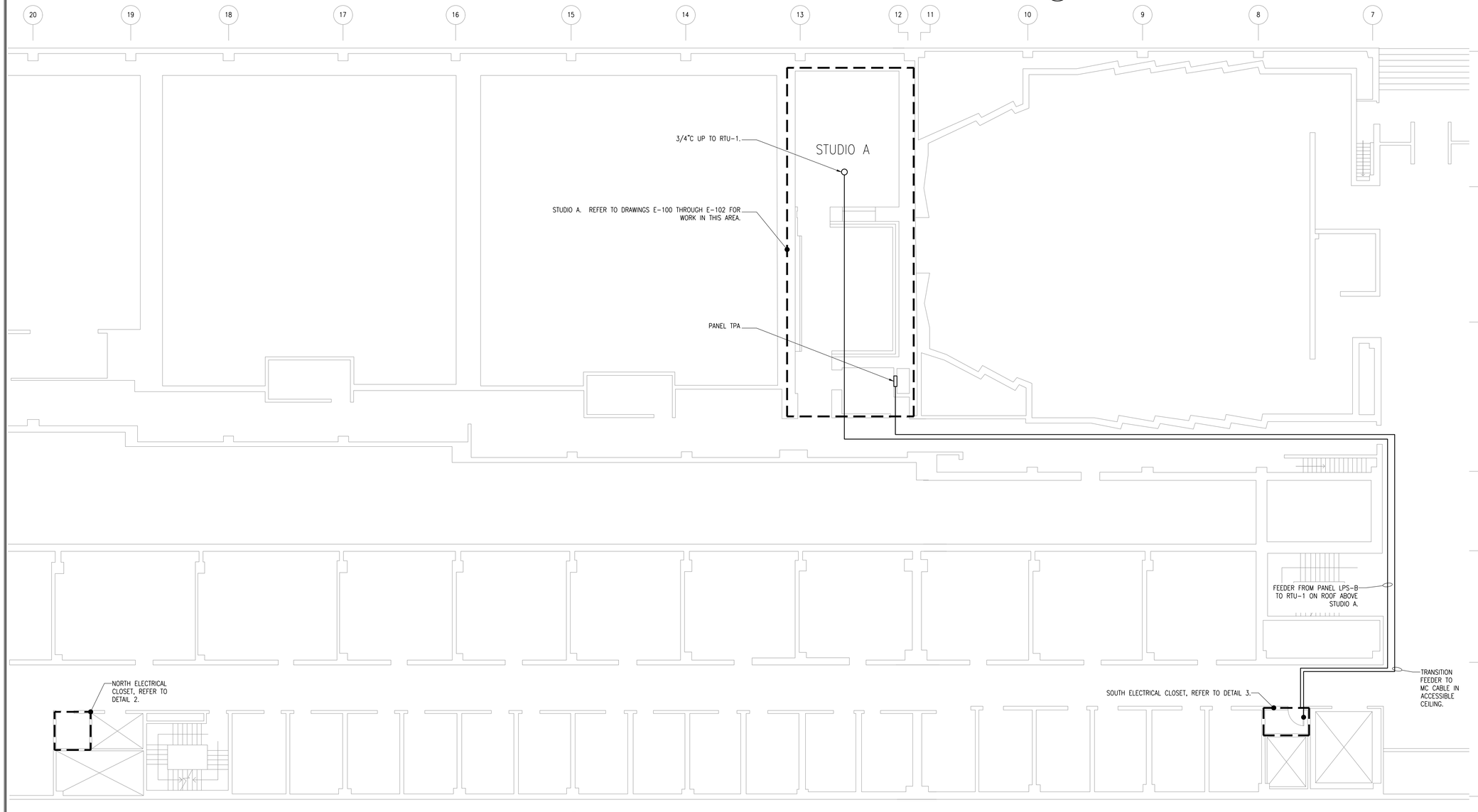
SCALE: 1/2" = 1'-0"

NOTES:

1. REMOVE ASCO 920 REMOTE CONTROL SWITCHES FROM LPS-A AND LPS-B AND CONNECT SPLIT BUS DIRECTLY TO MAIN BUS. REFER TO DETAIL 4.

4 PANEL LPS-A & LPS-B DETAIL

SCALE: N/A



1 ELECTRICAL PLAZA LEVEL PLAN

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

SYMBOLS

Revisions

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Acoustic Consulting and Studio Design

914.248.7680 Voice
914.248.7780 Fax
fmdesign@fmdesign.com
www.FMDesign.com

961 Route 6
Mahopac NY, 10541

MEP CONSULTANT

collado
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White Plains, NY 10601
(914) 332-7658

PROJECT

Purchase College
Studio A
Renovations

DRAWING NAME

ELECTRICAL PLAZA LEVEL PLAN

SEAL & SIGNATURE

SCALE: AS NOTED

DATE:

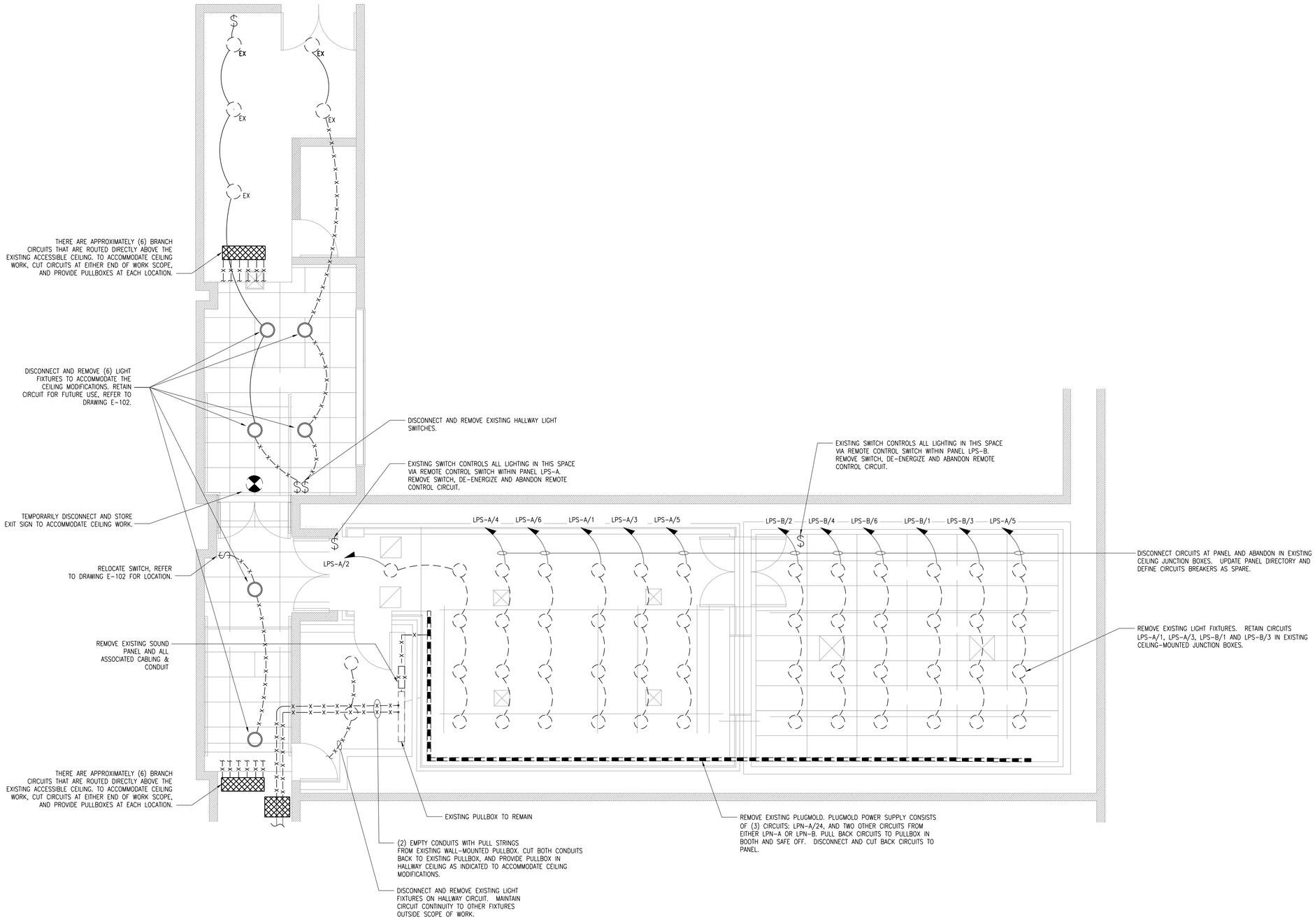
CAD FILE#:

DRAWING NUMBER

E-003.00

SHEET

3 of 12



SYMBOLS

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frmdesign@frmdesign.com
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961 Route 6
Mahopac NY, 10541

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collado
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White Plains, NY 10601
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Renovations

DRAWING NAME

ELECTRICAL DEMOLITION PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"

DATE

CAD FILE#

DRAWING NUMBER

E-100.00

SHEET

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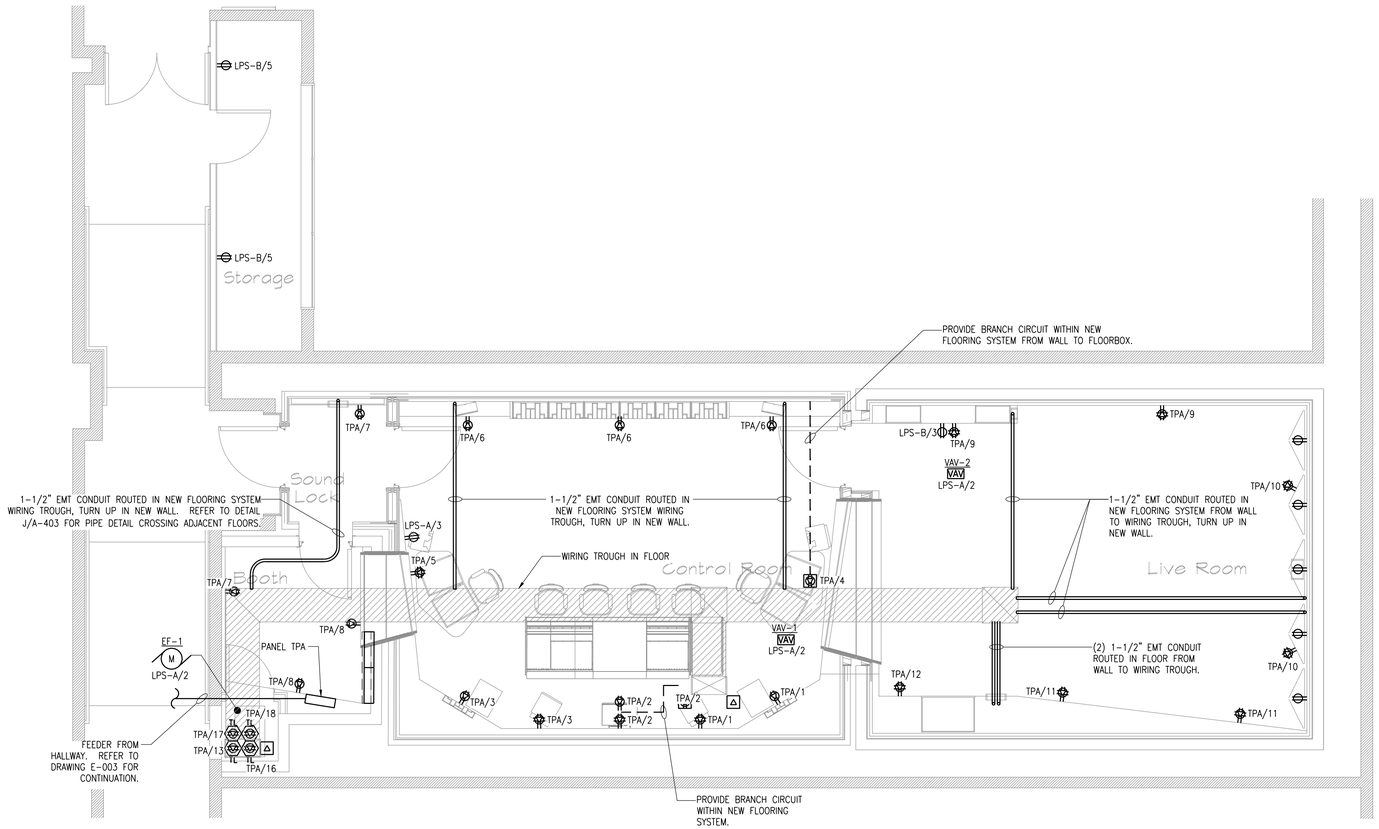

ELECTRICAL NOTES:

1. REFER TO DRAWINGS A-103 AND A-403 FOR CONDUIT ROUTING DETAILS IN NEW FLOORING SYSTEM.
2. REFER TO ARCHITECTURAL DRAWINGS FOR ACOUSTICAL TREATMENT REQUIREMENTS.
3. DEVICE LOCATIONS AND PENETRATIONS SHALL BE COORDINATED WITH ARCHITECT.

SYMBOLS

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fmdesign@fmdesign.com
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961 Route 6
Mahopac NY, 10541

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collado
445 HAMILTON AVE, SUITE 608
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Purchase College
Studio A
Renovations

DRAWING NAME

ELECTRICAL POWER PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"

DATE

CAD FILE

DRAWING NUMBER

E-101.00

SHEET

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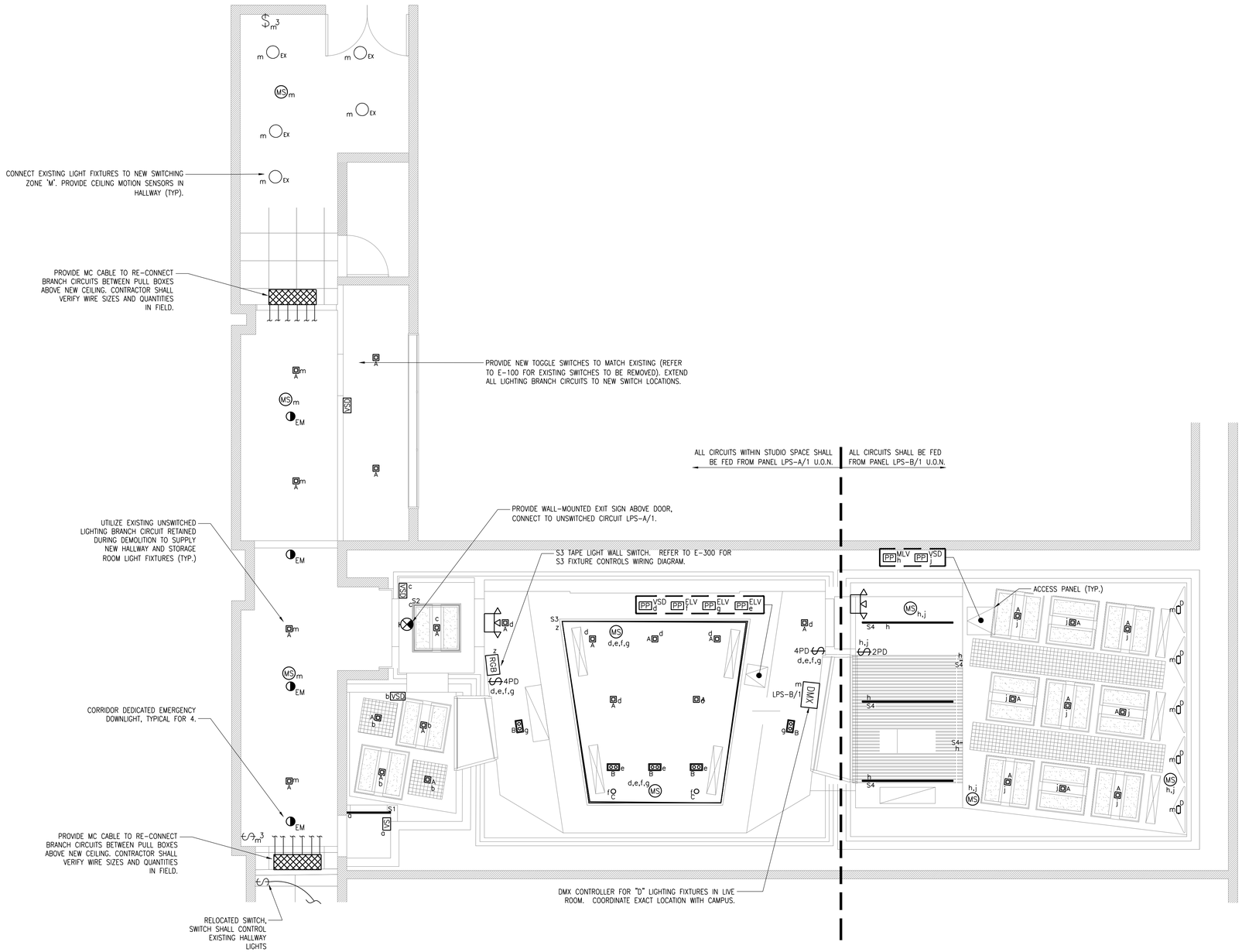

NOTE: REFER TO DRAWING A-201 FOR CEILING ARCHITECTURAL DETAILS.

SYMBOLS

Revisions

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914.248.7680 Voice
914.248.7780 Fax
fmdesign@fmdesign.com
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961 Route 6
Mahopac NY, 10541

MEP CONSULTANT

collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

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Purchase College
Studio A
Renovations

DRAWING NAME

ELECTRICAL LIGHTING PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"

DATE

CAD FILE#

DRAWING NUMBER

E-102.00

SHEET

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STUDIO A ON PLAZA LEVEL BELOW

RTU-1
M
WP LPS-B/2,4,6

D1

SYMBOLS

Revisions

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914.248.7780 Fax
fmdesign@fmdesign.com
www.FMDesign.com

961 Route 6
Mahopac NY, 10541

MEP CONSULTANT

collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

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DRAWING NAME

ELECTRICAL ROOF PLAN

SEAL & SIGNATURE

SCALE 1/4"=1'-0"
DATE
CAD FILE#
DRAWING NUMBER
E-103.00
SHEET
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PANEL NO. LPS-A SECTION – | EXISTING PANEL | ☐ RECESSED | ☐ MAIN LUG ONLY
VOLTS 120/208 PH 3 W 4 G 1 | ☒ SURFACE MOUNTED | ☒ MAIN CB
MAIN CB 225A BUS 225A MIN. INTERRUPTING RATING – SYMM. | ☐ FEED THRU LUG

CKT NO.	GFCI BKR	TRIP (AMPS)	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE KVA A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP (AMPS)	GFCI BKR	CKT NO.
1	☐	20	① STUDIO A LIGHTING	0.71	0.91			0.2	EF-1, VAV-1 AND VAV-2 ①	20	☐	2
3	☐	20	① CONTROL ROOM CONVENIENCE RECEPT.	0.18		0.18		0	SPARE ④	20	☐	4
5	☐	20	① STORAGE CLOSET RECEPT.	0.36			0.36	0	SPARE ④	20	☐	6
7	☐		EXISTING SPACE	0	0			0	EXISTING SPACE		☐	8
9	☐		EXISTING SPACE	0		0		0	EXISTING SPACE		☐	10
11	☐		EXISTING SPACE	0			0	0	EXISTING SPACE		☐	12
			ASCO 920 REMOTE CONTROL SWITCH ⑤		#	#	#		ASCO 920 REMOTE CONTROL SWITCH ⑤			
13	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	14
15	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	16
17	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	18
19	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	20
21	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	22
23	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	24
25	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	26
27	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	28
29	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	30
31	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	32
33	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	50	☐	34
35	☐	20	EXISTING CIRCUIT	0			0	0			☐	36
37	☐	20	EXISTING CIRCUIT	0	0			0			☐	38
39	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	40
41	☐			0			0	0			☐	42
43	☐	50	EXISTING CIRCUIT	0	0			0			☐	44
45	☐			0		0		0	EXISTING CIRCUIT	20	☐	46
47	☐	20	EXISTING CIRCUIT	0			0	0			☐	48
					0.91	0.18	0.36					

PANEL NO. LPS-B SECTION – | EXISTING PANEL | ☐ RECESSED | ☐ MAIN LUG ONLY
VOLTS 120/208 PH 3 W 4 G 1 | ☒ SURFACE MOUNTED | ☒ MAIN CB
MAIN CB 225A BUS 225A MIN. INTERRUPTING RATING – SYMM. | ☐ FEED THRU LUG

CKT NO.	GFCI BKR	TRIP (AMPS)	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE KVA A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP (AMPS)	GFCI BKR	CKT NO.
1	☐	20	① STUDIO A LIGHTING	0.3	2.6			2.3			☐	2
3	☐	20	① LIVE ROOM CONVENIENCE RECEPTACLE	0.18		2.48		2.3	RTU-1 3#8 + 1#8G IN 3/4"C ②	35	☐	4
5	☐	20	④ SPARE	0			2.3	2.3			☐	6
7	☐		EXISTING SPACE	0	0			0	EXISTING SPACE		☐	8
9	☐		EXISTING SPACE	0		0		0	EXISTING SPACE		☐	10
11	☐		EXISTING SPACE	0			0	0	EXISTING SPACE		☐	12
			ASCO 920 REMOTE CONTROL SWITCH ⑤		#	#	#		ASCO 920 REMOTE CONTROL SWITCH ⑤			
13	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	14
15	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	16
17	☐	20	EXISTING CIRCUIT	0			0	0			☐	18
19	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	20
21	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	22
23	☐			0			0	0	EXISTING CIRCUIT	20	☐	24
25	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	26
27	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	28
29	☐	20	EXISTING CIRCUIT	0			0	0			☐	30
31	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	32
33	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	34
35	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	36
37	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	38
39	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	40
41	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	42
43	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	44
45	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	46
47	☐		EXISTING SPACE	0			0	0	EXISTING SPACE		☐	48
					2.6	2.48	2.3					

PANEL NO. LPN-A SECTION – | EXISTING PANEL | ☐ RECESSED | ☐ MAIN LUG ONLY
VOLTS 120/208 PH 3 W 4 G 1 | ☒ SURFACE MOUNTED | ☒ MAIN CB
MAIN CB 100A BUS 100A MIN. INTERRUPTING RATING – SYMM. | ☐ FEED THRU LUG

CKT NO.	GFCI BKR	TRIP (AMPS)	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE KVA A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP (AMPS)	GFCI BKR	CKT NO.
1	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING SPACE		☐	2
3	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING SPACE		☐	4
5	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	6
7	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	8
9	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	10
11	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	12
13	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	14
15	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	16
17	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	18
19	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	20
21	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	22
23	☐	20	EXISTING CIRCUIT	0			0	0	SPARE ③	20	☐	24
25	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING SPACE		☐	26
27	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING SPACE		☐	28
29	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING SPACE		☐	30
					0	0	0					

PANEL NO. LPN-B SECTION – | EXISTING PANEL | ☐ RECESSED | ☐ MAIN LUG ONLY
VOLTS 120/208 PH 3 W 4 G 1 | ☒ SURFACE MOUNTED | ☒ MAIN CB
MAIN CB 100A BUS 100A MIN. INTERRUPTING RATING – SYMM. | ☐ FEED THRU LUG

CKT NO.	GFCI BKR	TRIP (AMPS)	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE KVA A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP (AMPS)	GFCI BKR	CKT NO.
1	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	2
3	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	4
5	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	6
7	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	8
9	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	10
11	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	12
13	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	14
15	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	16
17	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	20	☐	18
19	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	20
21	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING CIRCUIT	20	☐	22
23	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING CIRCUIT	30	☐	24
25	☐	20	EXISTING CIRCUIT	0	0			0	EXISTING CIRCUIT	20	☐	26
27	☐	20	EXISTING CIRCUIT	0		0		0	EXISTING SPACE		☐	28
29	☐	20	EXISTING CIRCUIT	0			0	0	EXISTING SPACE		☐	30
					0	0	0					

PANEL NO. PANEL TPA SECTION – | ☒ RECESSED | ☒ MAIN LUG ONLY
VOLTS 120/208 PH 3 W 4 G 1 IG 1 | ☐ SURFACE MOUNTED | ☐ MAIN CB
MAIN CB – BUS 100A MIN. INTERRUPTING RATING – SYMM. | ☐ FEED THRU LUG

CKT NO.	GFCI BKR	TRIP (AMPS)	DESCRIPTION OF LOAD	LOAD (KVA)	PER PHASE KVA A	B	C	LOAD (KVA)	DESCRIPTION OF LOAD	TRIP (AMPS)	GFCI BKR	CKT NO.
1	☐	20	MON/SUB LEFT	1.1	1.9			0.8	MON CTR/DISPLAY	20	☐	2
3	☐	20	MON/SUB RIGHT	1.1		1.9		0.8	CREDENZA LEFT	20	☐	4
5	☐	20	CREDENZA RIGHT	0.8			1.1	0.3	CONTROL ROOM CONV.	20	☐	6
7	☐	20	SOUND LOCK ISO	0.3	0.6			0.3	ISO BOOTH	20	☐	8
9	☐	20	LIVE ROOM CONV. 1	0.3		0.6		0.3	LIVE ROOM CONV. 2	20	☐	10
11	☐	20	LIVE ROOM CONV. 3	0.3			0.6	0.3	LIVE ROOM CONV. 4	20	☐	12
13	☐	20	EQUIP RACK 1	1.7	1.7			0	SPARE	20	☐	14
15	☐	20	SPARE	0		1.7		1.7	EQUIP RACK 2	20	☐	16
17	☐	20	EQUIP RACK 3	1.3			2.6	1.3	EQUIP RACK 4	20	☐	18
19	☐	20	SPARE	0	0			0	SPARE	20	☐	20
21	☐	20	SPARE	0		0		0	SPARE	20	☐	22
23	☐	20	SPARE	0			0	0	SPARE	20	☐	24
25	☐	20	SPARE	0	0			0	SPARE	20	☐	26
27	☐	20	SPARE	0		0		0	SPARE	20	☐	28
29	☐	20	SPARE	0			0	0	SPARE	20	☐	30
					4.2	4.2	4.3					

NOTES:

1. PANEL TPA IS AN ISOLATED GROUND PANEL. PROVIDE SEPARATE ISOLATED GROUND BUS IN PANEL.
2. ALL PANEL TPA CIRCUITS SHALL CONSIST OF 2#12 + 1#12EGC + 1#12 ISOLATED GROUND. ISOLATED GROUND SHALL TERMINATE TO IG RECEPTACLE GROUND TERMINALS SEPERATELY FROM EQUIPMENT GROUNDING CONDUCTOR.

ELECTRICAL KEY NOTES:

① INDICATES NEW CIRCUIT UTILIZING EXISTING CIRCUIT BREAKER. REUSE EXISTING CIRCUITING IN STUDIO A AND EXTEND AS NECESSARY.

② REPLACE (3) EXISTING 1P, 20A CIRCUIT BREAKERS WITH (1) 3P, 35A CIRCUIT BREAKER AND PROVIDE NEW CIRCUIT TO FEED RTU-1.

③ INDICATES EXISTING STUDIO A PLUGMOLD CIRCUIT. UPDATE DIRECTORY AS SPARE

④ UPDATE DIRECTORY AS SPARE.

⑤ REMOVE ASCO REMOTE CONTROL SWITCH. SEE DETAIL 4 ON DRAWING E-003.

SYMBOLS

Revisions

REVISION #	DATE	REVISION	APPROVED
–	7/8/21	FINAL REVIEW SET	
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Acoustic Consulting and Studio Design
914.248.7680 Voice
914.248.7780 Fax
fmdesign@fmdesign.com
www.FMDesign.com
961 Route 6
Mahopac NY, 10541

MEP CONSULTANT

collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

PROJECT

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Studio A
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DRAWING NAME

ELECTRICAL PANEL SCHEDULES

SEAL & SIGNATURE

SCALE AS NOTED

DATE

CAD FILE#

DRAWING NUMBER

E-200.00

SHEET

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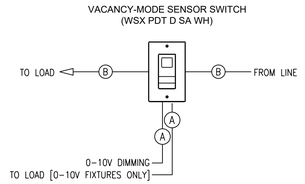
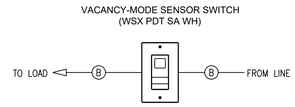
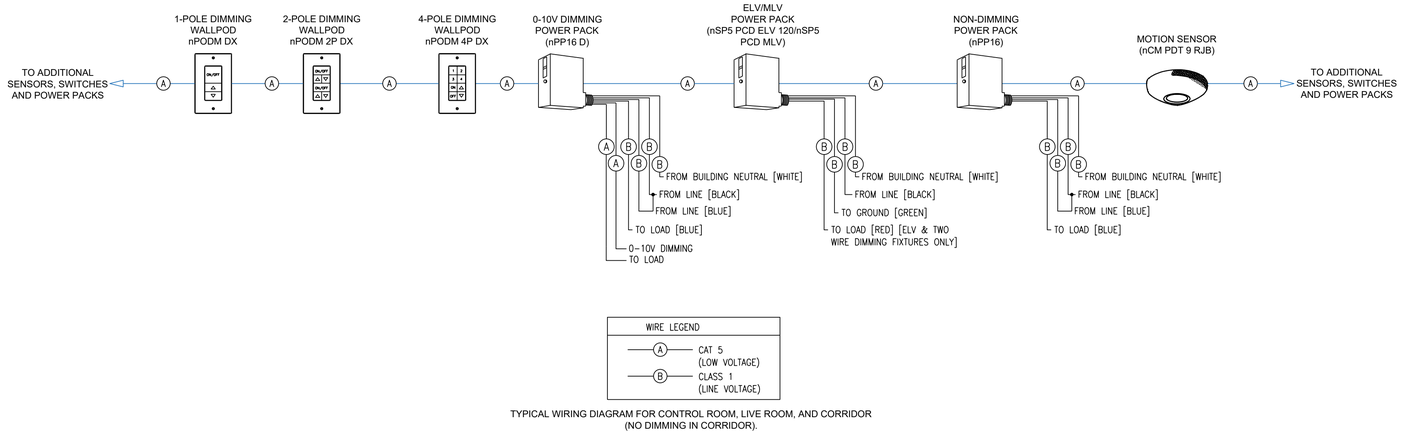


TYPICAL WIRING DIAGRAM BOOTH AND SOUND LOCK

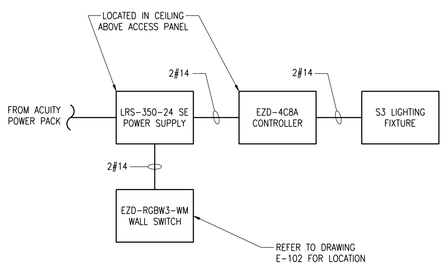


TYPICAL WIRING DIAGRAM FOR IT CLOSET, STORAGE CLOSET

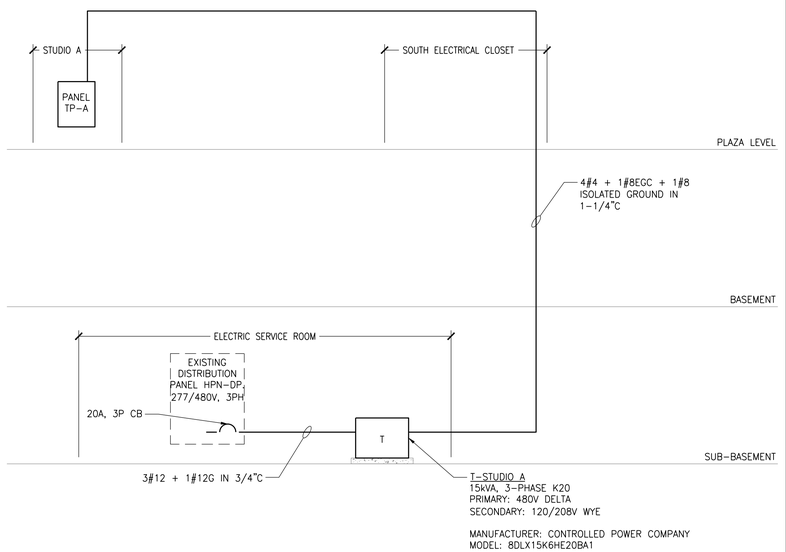


TYPICAL WIRING DIAGRAM FOR CONTROL ROOM, LIVE ROOM, AND CORRIDOR (NO DIMMING IN CORRIDOR).

LIGHTING CONTROL TYPICAL WIRING DIAGRAM



S3 FIXTURE CONTROLS WIRING DIAGRAM



ELECTRICAL RISER DIAGRAM

SYMBOLS

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914.248.7780 Fax
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White Plains, NY 10601
(914) 332-7658

PROJECT

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DRAWING NAME

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DATE

CAD FILE#

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E-300.00

SHEET

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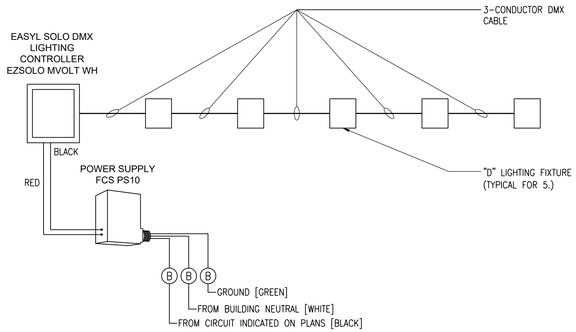
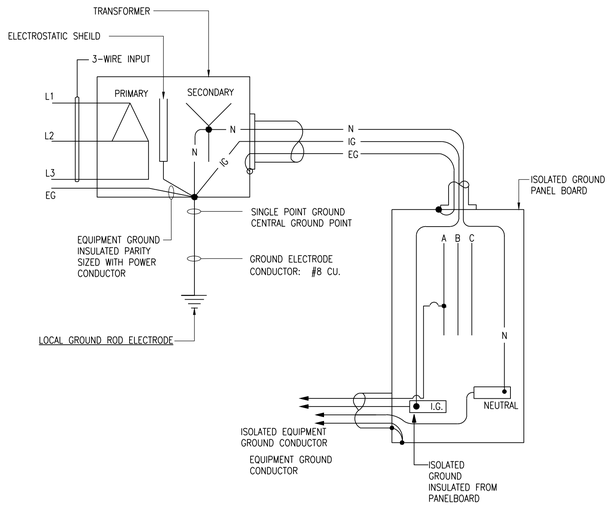


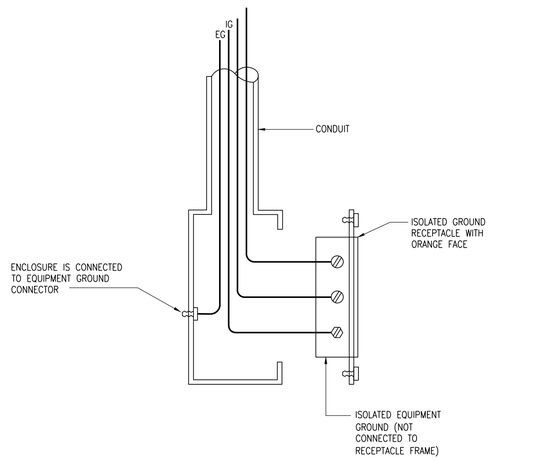
DMX LIGHTING CONTROL WIRING DIAGRAM



LEGEND:

N – NEUTRAL
IG – ISOLATED GROUND
EG – EQUIPMENT GROUND

ISOLATED GROUND PANELBOARD WIRING DETAIL



NOTES:

1. PROVIDE DEDICATED ISOLATED GROUND, EQUIPMENT GROUND AND NEUTRAL CONDUCTOR FOR EACH CIRCUIT SERVING TELEVISION BROADCAST EQUIPMENT, AUDIO VISUAL EQUIPMENT AND SOUND SYSTEM EQUIPMENT.

LEGEND:

ϕ – PHASE CONDUCTOR

N – NEUTRAL CONDUCTOR

EG – EQUIPMENT GROUND CONDUCTOR

IG – ISOLATED EQUIPMENT GROUND CONDUCTOR CONNECTED TO "SINGLE POINT GROUND" AT LOCAL TRANSFORMER OR RDU

ISOLATED GROUND RECEPTACLE WIRING DETAIL

SYMBOLS

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914.248.7780 Fax
fmdesign@fmdesign.com
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Mahopac NY, 10541

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collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

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DATE

CAD FILE#

DRAWING NUMBER

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SHEET

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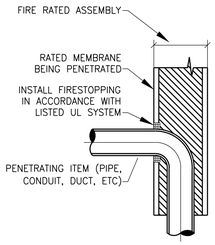
GENERAL GUIDELINE FOR SELECTING APPROPRIATE FIRESTOPPING SYSTEMS:

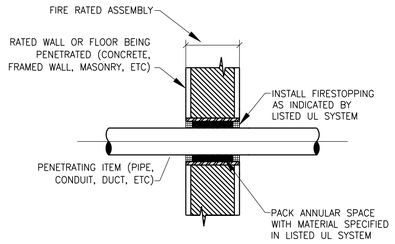
DETERMINE SYSTEM COMPONENTS:
- –TYPE OF PENETRATION (MEMBRANE OR THROUGH)
- –PENETRATING ITEM
- –ASSEMBLY BEING PENETRATED
- –MINIMUM AND MAXIMUM ANNULAR SPACES, POINTS OF CONTACT

DETERMINE RATING REQUIREMENTS:
- –F–RATING, T–RATING, L–RATING, AND W–RATING

FOR EACH PENETRATION, SELECT A SYSTEM LISTED BY AN APPROVED TESTING AGENCY (UL, FM, ETC) THAT MEETS ALL OF THE ABOVE PARAMETERS



MEMBRANE PENETRATION



THROUGH PENETRATION

F–RATING: THE AMOUNT OF TIME (IN HOURS) BEFORE FLAMES CAN PASS THROUGH A PENETRATION FROM THE SIDE OF A WALL OR FLOOR EXPOSED TO FLAMES TO THE UNEXPOSED SIDE

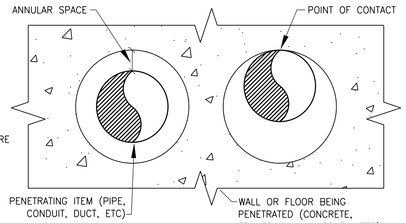
T–RATING: THE AMOUNT OF TIME (IN HOURS) BEFORE THE SURFACE OF AN ASSEMBLY AND/OR PENETRATING ITEM ON THE SIDE OF A WALL OR FLOOR NOT EXPOSED TO FLAMES RISES TO A TEMPERATURE OF 325°F

L–RATING: THE AMOUNT OF AIR/SMOKE (IN CUBIC FEET PER MINUTE PER SQUARE FOOT) THAT CAN LEAK THROUGH THE PENETRATION

W–RATING: A FIRESTOPPING PRODUCT'S ABILITY TO RESIST THE PASSAGE OF WATER THROUGH FLOOR ASSEMBLIES

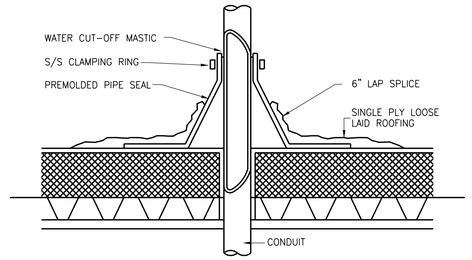
REFER TO PROJECT SPECIFICATIONS FOR RATINGS AND ADDITIONAL FIRESTOPPING REQUIREMENTS

DEFINITIONS AND NOTES



ANNULAR SPACE

FIRESTOPPING PENETRATIONS GUIDELINE



CONDUIT ROOF PENETRATION DETAIL

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White Plains, NY 10601
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DRAWING NAME

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SEAL & SIGNATURE

SCALE N/A

DATE

CAD FILE#

DRAWING NUMBER

E-302.00

SHEET

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ELECTRICAL WORK

1.GENERAL:

A. THESE SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

B. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.

C. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.

D. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.

E. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSAL.

F. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES, AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.

G. DISCONNECT OR REMOVE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.

H. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.

I. SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL.

J. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AS REQUIRED.

K. ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.

L. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.

M. UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.

N. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.

O. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. THE CONTRACTOR IS RESPONSIBLE TO INDICATE ANY DISCREPANCIES BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS PRIOR TO SUBMITTAL OF BID. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING CONDUIT (SIZES, CLEARANCES, ETC) AND CONDITIONS.

P. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.

Q. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, TESTED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.

2. SCOPE OF WORK:

A. SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMITY WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL OTHER APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.

B. ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLEMENTED OR SPECIFIED HEREIN.

C. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

D. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.

3. SHOP DRAWINGS

A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND ENGINEER.

B. INDICATE ON EACH SHOP DRAWING SUBMITTED:

1) PROJECT NAME AND LOCATION
2) NAME OF ARCHITECT AND ENGINEER
3) ITEM IDENTIFICATION
4) APPROVAL STAMP OF PRIME CONTRACTOR

C. SUBMISSIONS:

1) CONTRACTOR SHALL SUBMIT A PDF FILE TO ARCHITECT THROUGH PREVIOUSLY DISCUSSED AND APPROVED METHOD (EMAIL, SUBMITTAL EXCHANGE PROGRAM, ETC). SUBMITTAL WILL THEN BE FORWARDED TO RELEVANT PARTIES FOR REVIEW.
2) UNLESS OTHERWISE DISCUSSED & AGREED, PROVIDE ALL EQUIPMENT SUBMITTALS AND SHOP DRAWINGS AT ONE TIME, THE SAME TIME; AT LEAST, THREE WEEKS BEFORE A RESPONSE IS REQUIRED.
3) PROVIDE A SEPARATE TRANSMITTAL FOR EACH SUBMITTAL ITEM. TRANSMITTALS SHALL INDICATE PRODUCT BY SPECIFICATION SECTION NAME AND NUMBER. SEPARATE ALL SUBMITTALS INTO APPROPRIATE SPECIFICATION SECTION NUMBER. DO NOT COMBINE SPECIFICATION SECTIONS.
4) DO NOT SUBMIT ENTIRE MANUFACTURER'S CATALOG; IT WILL NOT BE REVIEWED. SUBMIT ONLY PAGES WHICH ARE PERTINENT TO THE PROJECT. ALL OPTIONS WHICH ARE INDICATED ON THE PRODUCT DATA SHALL BECOME PART OF THE CONTRACT AND SHALL BE REQUIRED WHETHER SPECIFIED ARE NOT.
5) MARK EACH COPY OF STANDARD PRINTED DATA TO IDENTIFY PERTINENT PRODUCTS, REFERENCED TO SPECIFICATION SECTION AND ARTICLE NUMBER.
6) SHOW REFERENCE STANDARDS, PERFORMANCE CHARACTERISTICS AND CAPACITIES; WIRING AND PIPING DIAGRAMS AND CONTROLS; COMPONENT PARTS; FINISHES; DIMENSIONS AND REQUIRED CLEARANCES.
7) MODIFY MANUFACTURER'S STANDARD SCHEMATIC DRAWINGS AND DIAGRAMS TO SUPPLEMENT STANDARD INFORMATION AND TO PROVIDE INFORMATION SPECIFICALLY APPLICABLE TO THE WORK. DELETE INFORMATION NOT APPLICABLE.
8) THE ENGINEER WILL REVIEW THE ORIGINAL SUBMITTAL AND ONE RESUBMITTAL FOR THE SAME PRODUCT. ADDITIONAL RESUBMITTALS WILL BE REVIEWED ON A HOURLY RATE, PAYABLE BY THE CONTRACTOR.
9) PARTIAL SUBMITTALS OR SUBMITTALS NOT PROPERLY FORMATTED AS INDICATED ABOVE, ARE SUBJECT TO RETURN WITHOUT REVIEW FOR THE CONTRACTOR TO CORRECT.

D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

1) SWITCHES
2) CIRCUIT BREAKERS
3) PANELBOARDS (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).
4) TRANSFORMERS
5) RACEWAYS
6) WIRE AND CABLE
7) RECEPTACLES
8) LIGHTING FIXTURES
9) TESTED AND LISTED FIRESTOPPING SYSTEMS

4. AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS

A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.

C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.

D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED INDICATING THE AS INSTALLED CONDITIONS OF THE WORK. "AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT AFTER COMPLETION OF THE INSTALLATION.

5. GENERAL PROVISIONS FOR ELECTRICAL WORK:

A. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.

B. DEFINITIONS:

1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
3) "FURNISH" OR "SUPPLY: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
5) "WIRING": RACEWAY, FITTINGS, WIRE, BOXES AND RELATED ITEMS.
6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.

C. QUALITY ASSURANCE

1) QUALITY AND GAUGE OF MATERIALS: NEW, BEST OF THEIR RESPECTIVE KINDS, FREE FROM DEFECTS AND LISTED BY UNDERWRITERS LABORATORIES, INC., OR OTHER NATIONALLY APPROVED TESTING AGENCY AND BEARING THEIR LABEL. MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.
2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C.
3) CURRENT CHARACTERISTICS:
   a. DISTRIBUTION: 277/480 VOLT (AND 120/208 VOLT), 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.
4) HEIGHTS OF OUTLETS: FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR:
   a. RECEPTACLES: 1 FT-6 IN. UNLESS OTHERWISE NOTED BY ARCHITECT
   b. WALL SWITCHES: 4 FT-0 IN.

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

E. PRODUCT DELIVERY, STORAGE AND HANDLING

1) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS SHALL BE PERMITTED. CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.

F. MATERIALS

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

G. PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.

H. BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF MATERIAL AND EQUIPMENT.

I. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH ARCHITECT.

J. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.

6. LOW-VOLTAGE DISTRIBUTION EQUIPMENT:

A. PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES, CIRCUIT BREAKERS, PANELS AND TRANSFORMERS.

B. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI AND IEEE STANDARDS.

C. DISCONNECT SWITCHES SHALL BE NONFUSED AS NOTED. VOLTAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, EXCEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. TOGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 20 AMP AT 600 VOLTS AND 30 AMP AT 240 VOLTS. TWO-POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 6808F. THREE-POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 7810F.

KNIFE-BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK-MAKE-QUICK-BREAK, UL CLASS R UP TO 600 AMP. MAXIMUM RATING EXCEPT AS NOTED SHALL BE 800 AMP. ARC QUENCHERS SHALL BE PROVIDED. SWITCHES SHALL BE SIMILAR TO GENERAL ELECTRIC QMR. ALL SWITCH ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED.

D. CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL-MAGNETIC, QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE. MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT-TRIPPING, OPEN AND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:

1) 120 VOLTS, 100-AMP FRAME: 10,000 AMPS, 1 POLE.
2) 240 VOLTS, 100-AMP FRAME: 18,000 AMPS, 2 AND 3 POLES.

F. TRANSFORMERS SHALL BE OPEN-VENTILATED, DRY TYPE, CLASS H INSULATION, 115 °C TEMPERATURE RISE. WINDINGS SHALL BE COPPER. PRIMARY AND SECONDARY VOLTAGES SHALL BE AS NOTED. PRIMARY TAPS (6-2 1/2% TAPS, 2 ABOVE AND 4 BELOW RATED VOLTAGE) SHALL BE PROVIDED. ADJUST FOR REQUIRED VOLTAGE.

G. BALANCE THE LOAD OVER PHASES WHEN NEW CIRCUITS ARE ADDED TO NEW OR EXISTING PANELS. PROVIDE MULTI-CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING SHALL NOT BE PERMITTED. MOUNTING HEIGHT SHALL BE A MAXIMUM OF 6 FT-6 IN. FROM FLOOR TO TOP SWITCH UNIT. UPDATE DIRECTORIES ON EXISTING PANELBOARDS WHERE CIRCUITING IS CHANGED.

H. TESTS: OPEN AND CLOSE LOAD BREAK SWITCHING DEVICES UNDER LOAD.

7. RACEWAYS:

A. PROVIDE RACEWAYS COMPLETE WITH BOXES, FITTINGS AND ACCESSORIES. CONDUIT OR TUBING SIZES REFERRED TO IN SPECIFICATIONS AND ON DRAWINGS ARE NOMINAL DIAMETERS. MINIMUM DIAMETER SHALL BE 3/4 IN.

B. MATERIALS

1) RACEWAYS:
   a. RIGID STEEL CONDUIT: FULL-WEIGHT PIPE, GALVANIZED, THREADED.
   b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.
   c. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON.
   d. SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN., COVER 0.25 IN. MATERIAL SHALL BE STEEL. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON.
2) FITTINGS AND ACCESSORIES:
   a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE CAST NOT PERMITTED.
   b. ELECTROMETALLIC TUBING: COMPRESSION TYPE. GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER.
   c. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH INSULATED THROAT.
   d. BUSHINGS: METALLIC INSULATED TYPE.
3) BOXES:
   a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1-1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2-3/4 IN. DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK-TO-BACK OUTLETS WITH MINIMUM 6 IN. SEPARATION.
   b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. PROVIDE BARRIERS IN NEW AND RENOVATED BOXES BETWEEN 120/208 VOLT AND 265/460 VOLT WIRING. FLOOR BOXES SHALL BE SUITABLE FOR CONDUIT AND DEVICES NOTED.

C. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED. RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS. PROVIDE U-BOLTS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND CONNECTED TO ACCEPTABLE SUPPORTS. PROVIDE RISER CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND RESTING ON SLAB. FOR ABOVE FLOOR FITTINGS, POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED.

SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK AND MACHINE SCREWS ON METAL. NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPLATES.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT MALE THREADS OF FIELD-THREADED CONDUIT WITH GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED.

EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS, DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS.

FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL. FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS, CROSS AT RIGHT ANGLES AND ANCHOR ENDS.

CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.

ALL COUPLINGS SHALL BE COMPRESSION TYPE. NO SET SCREW FITTINGS.

EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION.

RACEWAYS PASSING THROUGH FIRE-RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT.

D. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.

E. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR-TO-CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.

F. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.

8. WIRE AND CABLE:

A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG EXCEPT AS NOTED.

B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER). GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 100 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. AT 265 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM.

CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 12 MINIMUM.

OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.

C. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE SFF-2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90 °C. FOR UNGROUNDED ISOLATED BRANCH CIRCUITS, PROVIDE CROSS-LINKED POLYETHYLENE INSULATION (TYPE XHHW).

D. METAL CLAD CABLE CABLE (MC) SHALL BE UTILIZED FOR BRANCH CIRCUITS IN DRY HOLLOW LOCATIONS, HUNG CEILINGS, AND BLOCK WALLS. WHEN USED IN LIEU OF WIRING IN CONDUIT, STATE IN PROPOSAL THAT PRICE IS BASED UPON THE USE OF BX.

E. COLOR CODING SHALL BE AS FOLLOWS:

1) 120/208 VOLT SYSTEM:
   BLACK FOR A PHASE
   RED FOR B PHASE
   BLUE FOR C PHASE
2) 277/480 VOLT SYSTEM:
   BROWN FOR A PHASE
   ORANGE FOR B PHASE
   YELLOW FOR C PHASE
3) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR TAPING IN ACCESSIBLE LOCATIONS.

F. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING, INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS.

G. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION-TYPE OF TWIST-ON SPRING-LOADED CONNECTORS AND CLEAR NYLON-INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISEIZE COMPOUND ON TANG.

H. NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 °F.

I. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.

J. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS OVER 25 HP.

PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

9. DEVICES:

A. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS NOTED.

B. INSERTION RECEPTACLES SHALL BE SPECIFICATION GRADE DUPLEX CONVENIENCE 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT. GROUNDED, EXCEPT AS NOTED. MEETING NEMA STANDARDS, PUBLICATION WD-1-1971. SIMILAR TO PASS & SEYMOUR NOS. 26342W (20 AMP) AND 26242W (15 AMP).

1) SINGLE, EXCEPT AS NOTED:

   a. 20 AMP STRAIGHT BLADE, SIMILAR TO PASS & SEYMOUR NO. 5361W.

   b. 125 VOLT, 2 POLE, 3 WIRE, GROUNDED.

2) SPECIAL USE: NONINTERCHANGEABLE TYPES AND RATINGS.

D. DEVICE PLATES: SEE ARCHITECT FOR TYPE. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.

E. COLORS: COORDINATE COLORS WITH ARCHITECT.

F. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

10. LIGHTING FIXTURES:

A. PROVIDE FIXTURES ("LUMINARIES"), COMPONENTS AND LAMPS. FIXTURES SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY SOCKETS, BALLASTS, SUPPORTING HARDWARE AND ACCESSORIES. REFER TO DRAWINGS FOR INDIVIDUAL FIXTURE DESCRIPTIONS.

B. FIXTURE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. PROVIDE ACCESSORIES TO SUIT.

C. BALLAST: CLASS P, HIGH POWER FACTOR, LOWEST AVAILABLE NEMA RATED NOISE LEVEL, ET1 AND CBM APPROVED. ENERGY SAVING TYPE. TRIGGER START FOR 24-INCH LAMPS AND RAPID START FOR 48-INCH. TWO LAMP BALLASTS; NO THREE LAMP BALLASTS. BALLASTS SHALL BE ADVANCE MAGNETEK, UNIVERSAL OR EQUAL.

11. LIGHTING CONTROLS:

A. BASIS OF DESIGN FOR ALL LIGHTING CONTROL SYSTEMS AND DEVICES IS ACUITY LIGHTING CONTROLS. OTHER ACCEPTABLE MANUFACTURERS ARE:

   a. SENSOR SWITCH LIGHTING CONTROLS
   b. WATTSTOPPER LIGHTING CONTROLS
   c. DOUGLAS LIGHTING CONTROLS
   d. OTHER APPROVED EQUAL.

B. ALL OCCUPANCY/VACANCY SENSORS SHALL BE WIRED TYPE UNLESS OTHERWISE NOTED. ROOMS CONTAINING MOVING EQUIPMENT, SUCH AS MECHANICAL ROOMS, PUMP ROOMS, ETC. SHALL BE EQUIPPED WITH PIR SENSORS. ALL OTHER SPACES SHALL BE PROVIDED WITH DUAL TECHNOLOGY SENSORS.

C. PROVIDE COMBINATION WALL SWITCH OCCUPANCY/VACANCY SENSORS AS INDICATED ON DRAWINGS. ALL COMBINATION SWITCH SENSORS SHALL BE LINE VOLTAGE TYPE.

D. ALL POWER PACKS SHALL BE CAPABLE OF SUPPORTING LIGHTING LOADS AS INDICATED ON DRAWINGS. POWER PACKS SHALL BE COMPATIBLE WITH LOAD DIMMING TYPE, WHERE REQUIRED (0-10V, ELV, 2-WIRE DIMMING, ETC.). ALL POWER PACKS SHALL BE LOCATED IN ACCESSIBLE LOCATIONS, AWAY FROM PUBLIC VIEW WHEREVER POSSIBLE.

E. IDENTIFY ALL LIGHTING CONTROL EQUIPMENT WITH LOAD SERVED.

F. ALL LIGHTING CONTROL COMPONENTS, INCLUDING BUT NOT LIMITED TO SENSORS, SWITCHES, AND POWER PACKS, SHALL BE TESTED FOR PROPER OPERATION. THIS INCLUDES TIME DELAYS AND DIMMING FUNCTIONALITY. ALL SENSORS SHALL BE ADJUSTED TO ACHIEVE OPTIMAL COVERAGE AS REQUIRED.

12. GROUNDING

A. PROVIDE ALL COMPONENTS REQUIRED FOR A COMPLETE GROUNDING SYSTEM CONSISTING OF GROUND ELECTRODES IN ACCORDANCE WITH THE 2017 NEC WITH NYC AMENDMENTS.

B. THE GROUNDING SYSTEM RESISTANCE SHALL BE LESS THAN 25 OHMS. PROVIDE ADDITIONAL GROUND ELECTRODES, IF REQUIRED, TO ACHIEVE THIS CRITERIA (MINIMUM 6 FEET AWAY).

C. SUBMIT SHOP DRAWINGS OF GROUNDING SYSTEM COMPONENTS, SYSTEM CONFIGURATION AND TEST REPORTS.

D. GROUND ELECTRODES SHALL BE COPPER-CLAD STEEL MINIMUM ¾ INCH DIAMETER AND 10 FEET LONG.

E. GROUND CONNECTORS SHALL BE TIN-PLATED ALUMINUM ALLOY, UL APPROVED AND STAMPED FOR USE WITH EITHER ALUMINUM OR COPPER CONDUCTORS.

F. GROUND CABLES SHALL BE BARE OR GREEN COLOR CODED, INSULATED, ANNEALED STRANDED TINNED COPPER WIRE AS INDICATED ON DRAWINGS.

G. PROVIDE CONTINUOUS GROUND PATH FOR ALL ELECTRICAL CIRCUITS, FROM POINT OF UTILIZATION BACK TO SOURCE THROUGH GROUND WIRES, CONDUIT RUNS, AND RELATED ITEMS.

H. ALL GROUND WIRES AND BONDING JUMPERS SHALL BE STRANDED COPPER INSTALLED IN CONDUIT. ALL GROUND WIRES SHALL BE WITHOUT JOINTS AND SPLICES OVER ITS ENTIRE LENGTH.

I. MECHANICAL EQUIPMENT SHALL BE BONDED TO THE BUILDING EQUIPMENT GROUNDING SYSTEM, INCLUDING FANS, PUMPS, ETC.

J. PROVIDE GROUNDING TYPE BUSHINGS FOR CONDUIT TERMINATED THROUGH MULTIPLE CONCENTRIC KNOCKOUTS NOT FULLY KNOCKED OUT, ON INSIDE OF PANELBOARDS AND LOAD CENTERS, GROUND BUSHING WITH #12 BARE COPPER TO PANELBOARD GROUND BUS.

13. FIRESTOPPING

A. QUALITY ASSURANCE:
12) USE FIRESTOPPING SYSTEMS THAT HAVE BEEN TESTED IN ACCORDANCE WITH ASTM E814 OR UL 1479. LISTING BY UL (DIR), UL (FDR), FM (AG), OR ITS (DIR) IN THEIR CERTIFICATION DIRECTORIES WILL BE CONSIDERED EVIDENCE OF SUCCESSFUL TESTING.
13) MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING THE PRODUCTS FOR USE IN FIRE RATED ASSEMBLIES WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE.

A. FIRESTOPPING ASSEMBLY REQUIREMENTS
1) FOR MEMBRANE AND THROUGH PENETRATIONS, PROVIDE FIRESTOPPING MATERIALS TO CREATE A LISTED SYSTEM, FOR THE ASSEMBLY BEING PENETRATED AND FIELD CONDITIONS, THAT HAVE THE FOLLOWING PROPERTIES, EXCEPT AS OTHERWISE PERMITTED BY THE BUILDING CODE:
   a. FIRE RESISTANCE: PROVIDE SYSTEMS THAT HAVE BEEN TESTED TO SHOW F-RATING EQUAL TO REQUIRED FIRE RATING OF PENETRATED ASSEMBLY.
   b. TEMPERATURE RISE: PROVIDE SYSTEMS THAT HAVE BEEN TESTED TO SHOW T-RATING EQUAL TO OR GREATER THAN THE F-RATING.
   c. AIR LEAKAGE: PROVIDE SYSTEMS THAT HAVE BEEN TESTED TO SHOW L-RATING IS EQUAL TO OR GREATER THAN THE L-RATING OF JOINTS IN ASSEMBLY BEING PENETRATED.
   d. WATERTIGHTNESS: PROVIDE SYSTEMS THAT HAVE BEEN TESTED TO MEET A CLASS 1 W-RATING FOR FLOOR PENETRATIONS.

C. FIELD CONDITIONS
1) COMPLY WITH FIRESTOPPING MANUFACTURER'S RECOMMENDATIONS FOR TEMPERATURE AND CONDITIONS DURING AND AFTER INSTALLATION; MAINTAIN MINIMUM TEMPERATURE BEFORE, DURING, AND FOR THREE DAYS AFTER INSTALLATION OF MATERIALS.
2) PROVIDE VENTILATION IN AREAS WHERE SOLVENT-CURED MATERIALS ARE BEING INSTALLED.

D. INSPECTION OF FIRESTOPPING SYSTEMS
1) METHOD OF INSPECTION SHALL BE AT THE DISCRETION OF THE SPECIAL INSPECTOR. CONTRACTOR SHALL PROVIDE ALL REQUIRED INFORMATION, COORDINATE WITH SPECIAL INSPECTOR AT LEAST 10 DAYS IN ADVANCE OF FIRE STOP INSTALLATION, AND ARRANGE SITE ACCESS. CONTRACTOR SHALL COMPLETELY REMOVE AND RESTORE ALL FIRESTOPPING THAT HAS UNDERGONE DESTRUCTIVE TESTING. NO CLAIMS FOR ADDITIONAL COST OR TIME WILL BE ALLOWED.
2) VISUAL INSPECTION: SPECIAL INSPECTOR SHALL BE ONSITE DURING INSTALLATION AND RANDOMLY WITNESS A MINIMUM OF 10% OF EACH TYPE OF FIRE STOP BEING INSTALLED.
3) DESTRUCTIVE TESTING: VERIFICATION OF FIRESTOPPING AFTER INSTALLATION HAS TAKEN PLACE. A MINIMUM OF 2%, BUT NOT LESS THEN ONE, OF EACH TYPE OF FIRE STOP SHALL BE INSPECTED PER FLOOR OR EACH AREA OF A FLOOR WHEN A FLOOR AREA IS LARGER THAN 10,000 SQ. FT.

SYMBOLS

Revisions

REVISION #	DATE	REVISION	APPROVED
-	7/8/21	FINAL REVIEW SET	
-	9/14/21	ISSUED FOR BID	

FRANCIS MANZELLA DESIGN LIMITED
Acoustic Consulting and Studio Design
914.248.7680 Voice
914.248.7780 Fax
fmdesign@fmdesign.com
www.FMDesign.com
961 Route 6
Mahopac NY, 10541

MEP CONSULTANT

collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

PROJECT

Purchase College Studio A Renovations

DRAWING NAME

ELECTRICAL SPECIFICATIONS

SEAL & SIGNATURE

SCALE N/A

DATE

CAD FILE#

DRAWING NUMBER

E-400.00

SHEET

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SYMBOL LIST

PANELS AND CONTROL UNITS

FACP	FIRE ALARM CONTROL PANEL

INITIATION DEVICES

(S)	SMOKE DETECTOR 'EL' INDICATES ELEVATOR RECALL 'SP' INDICATES STAIR PRESSURIZATION 'SB' INDICATES SOUNDER BASE

NOTIFICATION DEVICES

	STROBE 'C' INDICATES CEILING-MOUNTED '15' INDICATES CANDELA RATING
	COMBINATION HORN AND STROBE 'C' INDICATES CEILING-MOUNTED '15' INDICATES CANDELA RATING

ABBREVIATIONS

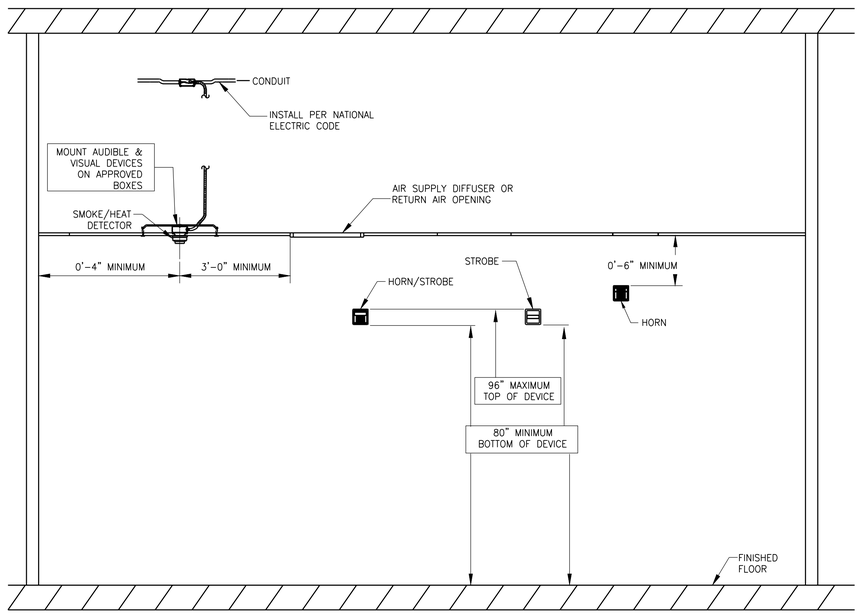
EXR	INDICATES EXISTING TO BE RELOCATED
RL	INDICATES RELOCATED POSITION OF DEVICE

FIRE ALARM GENERAL NOTES

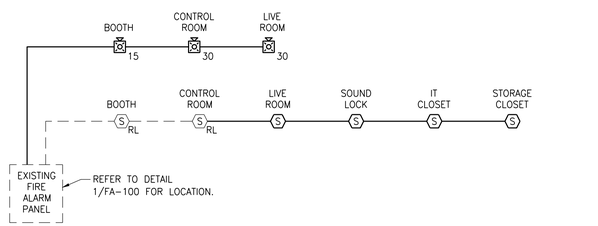
1. FIRE ALARM CIRCUITS SHALL BE SIZED TO A MAXIMUM OF 80% OF CAPACITY.
2. CLASS AND STYLE OF WIRE: FIRE ALARM CIRCUITS SHALL BE WIRED NFPA CLASS B. NETWORK CIRCUIT RETURNS SHALL BE SEPARATED BY A MINIMUM OF 15 FEET.
3. LOW VOLTAGE FIRE ALARM CONDUCTORS SHALL BE PROTECTED BY EITHER BUILDING CONSTRUCTION OR CONDUIT TO 8 FEET ABOVE THE FINISHED FLOOR. MECHANICAL AND ELECTRICAL ROOMS AND OTHER LOCATIONS SUBJECT TO PHYSICAL DAMAGE SHALL BE IN FULL RIGID CONDUIT. IN ALL OTHER AREAS, APPROVED WIRE MAY BE RUN WITHOUT CONDUIT ABOVE 8 FT. PROVIDED IT CONNECTS TO BUILDING CONSTRUCTION USING AN APPROVED MEANS.
4. FIRE ALARM CABLES SHALL NOT BE MIXED WITH NON FIRE ALARM CABLING. LOW VOLTAGE FIRE ALARM CABLING SHALL NOT BE MIXED OR WIRED NEAR ANY AC CIRCUIT.
5. ALL NOTIFICATION CIRCUITS SHALL BE A MINIMUM OF 14 AWG AND OTHER LOW VOLTAGE FIRE ALARM CIRCUITS SHALL BE 16 AWG MINIMUM.
6. POLARITY SHALL BE OBSERVED ON ALL CIRCUITS. T-TAPPING SHALL NOT BE ALLOWED ON ANY NOTIFICATION CIRCUITS (HORN, STROBE OR SPEAKER). T-TAPPING SHALL NOT BE PERMITTED ON ADDRESSABLE CIRCUITS WITHOUT THE EXPRESS PERMISSION OF THE ENGINEER.
7. WIRING, POWER, CONDUCTORS, CONDUITS ETC. SHALL MEET THE 2017 NATIONAL ELECTRICAL CODE.
8. WORK SHALL BE IN ACCORDANCE WITH THE 2020 NYS BUILDING CODE.
9. CONDUITS MAY NOT ENTER THE TOP OF ANY FIRE ALARM CONTROL EQUIPMENT CABINET.
10. FIRE ALARM EQUIPMENT SHALL BE INSTALLED WITH AESTHETICS IN MIND. CABINETS SHALL BE SEMI FLUSH MOUNTED AND CABLE TRAYS SHALL BE HIDDEN.
11. FIRE ALARM CABINETS AND JUNCTION BOXES SHALL BE PAINTED FIRE DEPARTMENT RED. FIRE ALARM CABINETS SHALL BE CLEARLY LABELED WITH AN APPROVED LAMINATE ENGRAVED LABEL.
12. FIRE ALARM WIRE SHALL BE CLEARLY LABELED IN JUNCTION BOXES AND CABINETS. TERMINALS SHALL BE NUMBERED AND LABELED. CONNECTIONS SHALL BE EITHER SOLDERED, APPROVED TERMINAL STRIPS OR SCOTCH LOCKS.
13. WIRING SHALL BE INSPECTED TO ASSURE THERE ARE NO OPENS, SHORTS OR EARTH GROUNDS.
14. AREA SMOKE DETECTORS SHALL BE PHOTO-ELECTRIC TYPE.
15. SMOKE DETECTORS SHALL BE MOUNTED AT LEAST 3 FT AWAY FROM ANY AIR REGISTER.
16. ALL CEILING MOUNT DEVICES SHALL BE SECURELY FASTENED TO BUILDING CONSTRUCTION.
17. DEVICE LOCATIONS SHALL BE READILY ACCESSIBLE TO ALLOW FOR MAINTENANCE AND REPAIR.
18. STROBE LIGHTS SHALL BE UL-1971 APPROVED/LISTED. THE MINIMUM CANDELA IS 15 UNLESS OTHERWISE NOTED.
19. NOTIFICATION DEVICES THAT INCLUDE A STROBE SHALL BE MOUNTED 80 INCHES OFF THE FINISHED FLOOR TO THE BOTTOM OF THE STROBE, NOT NECESSARILY THE ELECTRICAL BOX.
20. LOCATIONS OF ALL FIRE ALARM EQUIPMENT SHALL BE SUBJECT TO THE DEPARTMENT OF BUILDINGS AND FIRE DEPARTMENT APPROVAL. NO CHANGE OR MODIFICATION TO THE SYSTEM OR PLANS SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER OF RECORD. IF ANY CHANGES ARE MADE TO THE DRAWINGS PRIOR TO OR DURING INSTALLATION, AS BUILT PLANS SHALL BE PREPARED BY THE ENGINEER AND FILED WITH THE APPROPRIATE AGENCIES FOR FINAL ACCEPTANCE.
21. THE CONTRACTOR SHALL PREPARE, SIGN AND SEAL ALL NECESSARY DOCUMENTS REQUIRED FOR INSPECTION AND TO OBTAIN A FINAL LETTER OF APPROVAL.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY AND ALL ABANDONED FIRE ALARM DEVICES AND WIRE. PAINT, PATCH AND CLEANUP SHALL ALSO BE INCLUDED.

		CONTROL UNIT ANNUNCIATION									NOTIFICATION		REQUIRED FIRE SAFETY CONTROL			
		A ACTUATE COMMON ALARM SIGNAL	B ACTUATE AUDIBLE ALARM SIGNAL	C ACTUATE COMMON TROUBLE SIGNAL INDICATOR	D ACTUATE AUDIBLE COMMON TROUBLE SIGNAL	E ACTIVATE VISUAL/AUDIO DEVICES ON THE FIRE FLOOR, FLOOR ABOVE AND FLOOR BELOW. SOUND INQUIRY TONE ON ALL OTHER FLOORS.	F ACTIVATE AUDIO DEVICES IN DORM ROOM IN ALARM	G ACTIVATE VISUAL/AUDIO DEVICES IN HEARING IMPAIRED DORM ROOMS	H ACTIVATE AUDIO/VISUAL DEVICES	I DISPLAY/PRINT CHANGE OF STATUS	J TRANSMIT AUTOMATIC ALARM SIGNAL TO SUPERVISING STATION	K TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	L CLOSE SMOKE/FIRE DAMPERS IN RATED WALLS	M SHUT DOWN ALL FANS OVER 2000 CFM	N CLOSE ASSOCIATED SMOKE DAMPER	
1	AREA SMOKE DETECTORS	X	X			X	X	X	X	X	X		X	X	X	1
2	FIRE ALARM AC FAILURE			X	X					X		X				2
3	FIRE ALARM SYSTEM LOW BATTERY			X	X					X		X				3
4	OPEN CIRCUIT			X	X					X		X				4
5	GROUND FAULT			X	X					X		X				5
6	NOTIFICATION APPLIANCE CIRCUIT SHORT			X	X					X		X				6
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	

1 FIRE ALARM MATRIX
SCALE: N/A



2 FIRE ALARM DEVICE MOUNTING DETAIL
SCALE: N/A



PLAZA LEVEL

3 FIRE ALARM RISER DIAGRAM
SCALE: N/A

NOTES
1. COORDINATE EXTENT OF WORK WITH FIRE ALARM VENDOR PRIOR TO COMMENCING WORK.
2. FIRE ALARM VENDOR CONTACT INFO:
   COMPANY: RED HAWK
   CONTACT PERSON: MR. NICK DELFICO
   TEL: 914-769-8900
3. ALL NEW COMPONENTS SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM.
4. INCLUDE ALL FIRE ALARM VENDORS AND FIRE DEPARTMENT COSTS.
5. TEST SYSTEM TO ENSURE COMPLETE FUNCTIONALITY OF ALL NEW AND EXISTING EQUIPMENT AND DEVICES.
6. SECURE FIRE DEPARTMENT APPROVAL FOR THE SYSTEM.
7. CONTRACTOR SHALL COORDINATE LOCATION OF LANDLORD'S EXISTING TTB LOCATION ON FIRST FLOOR OR CELLAR FOR CONNECTION TO FIRE ALARM CONTROL SYSTEM.

FIRE ALARM DRAWING LIST

FA-001.00	FIRE ALARM SYMBOLS LIST, MATRIX, DEVICE MOUNTING DETAIL, RISER DIAGRAM, GENERAL NOTES AND DRAWING LIST
FA-100.00	FIRE ALARM PLAZA LEVEL AND STUDIO A PLANS

SYMBOLS

Revisions

REVISION #	DATE	REVISION	APPROVED
-	7/8/21	FINAL REVIEW SET	
-	9/14/21	ISSUED FOR BID	

FRANCIS MANZELLA DESIGN LIMITED
Acoustic Consulting and Studio Design
914.248.7680 Voice
914.248.7780 Fax
fmdesign@fmdesign.com
www.FMDesign.com
961 Route 6
Mahopac NY, 10541

MEP CONSULTANT

collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

PROJECT

Purchase College
Studio A
Renovations

DRAWING NAME

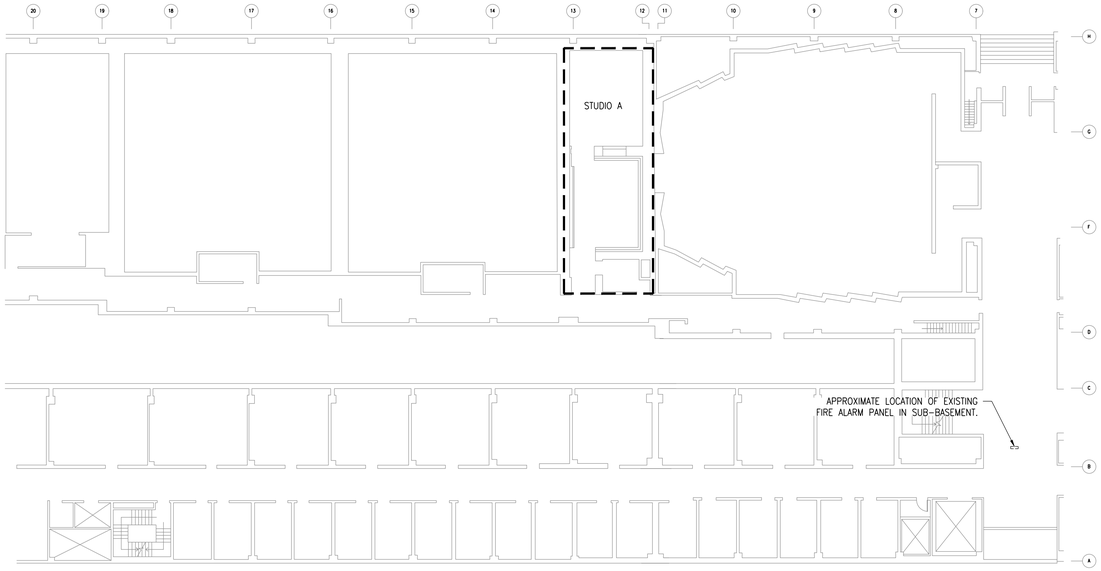
FIRE ALARM SYMBOLS LIST, MATRIX, DEVICE MOUNTING DETAIL, RISER DIAGRAM GENERAL NOTES AND DRAWING LIST.

SEAL & SIGNATURE

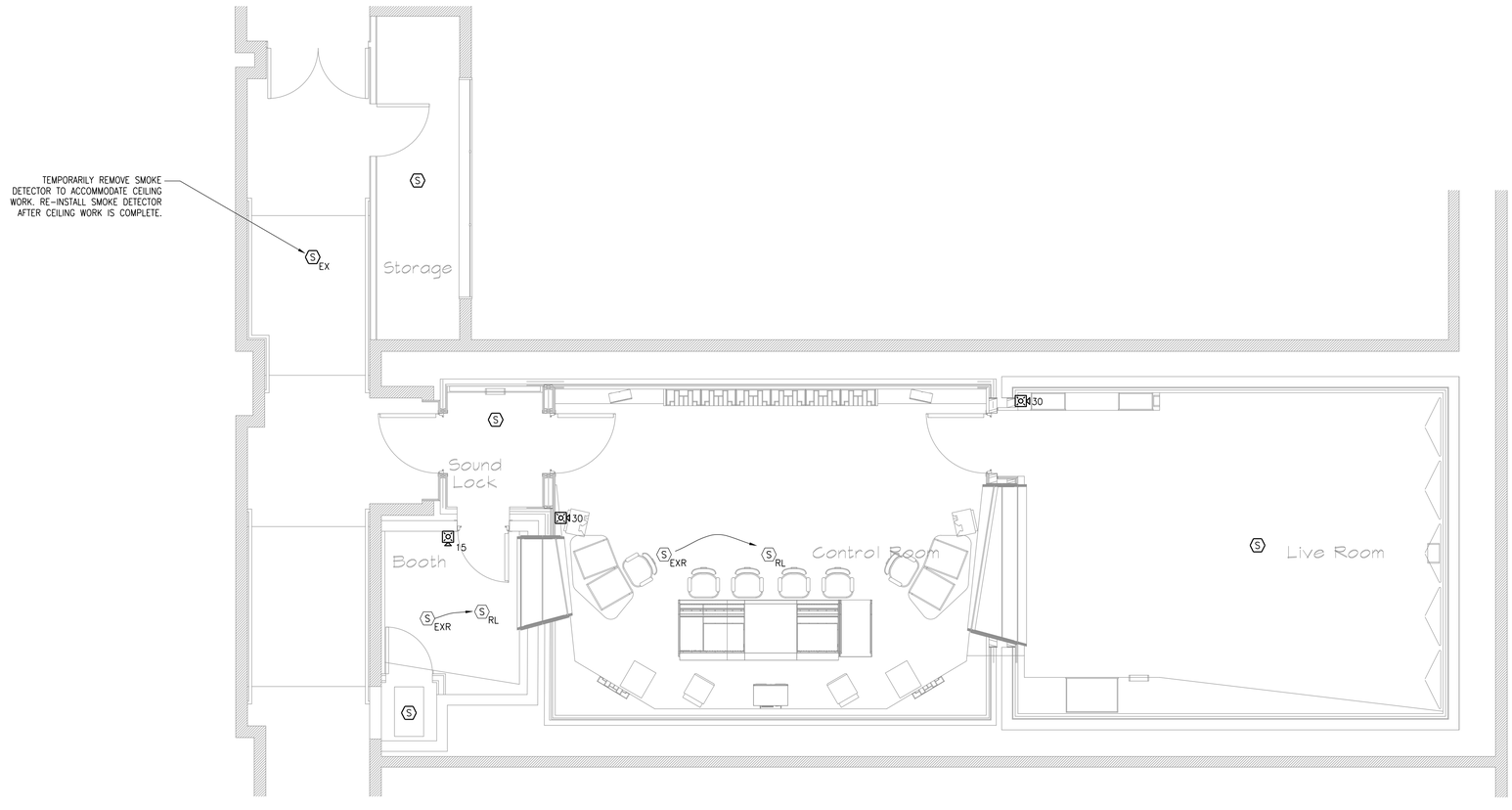
SCALE N/A
DATE
CAD FILE#

DRAWING NUMBER
FA-001.00

SHEET
1 of 2



1 FIRE ALARM PLAZA LEVEL PLAN
SCALE: 1/16" = 1'-0"



2 FIRE ALARM STUDIO A PLAN
SCALE: 1/4" = 1'-0"

SYMBOLS

Revisions

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FRANCIS MANZELLA DESIGN LIMITED
Acoustic Consulting and Studio Design
914.248.7680 Voice
914.248.7780 Fax
fmdesign@fmdesign.com
www.FMDesign.com
961 Route 6
Mahopac NY, 10541

MEP CONSULTANT
collado
445 HAMILTON AVE, SUITE 608
White Plains, NY 10601
(914) 332-7658

PROJECT

Purchase College
Studio A
Renovations

DRAWING NAME

FIRE ALARM PLAZA LEVEL AND STUDIO A PLANS

SEAL & SIGNATURE

SCALE 1/4"=1'-0"
DATE
CAD FILE#
DRAWING NUMBER
FA-100.00
SHEET
2 of 2

GENERAL NOTES

1. DESIGN IS IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2014 NEW YORK CITY BUILDING CODE AND ASCE 7–10 "MINIMUM DESIGN LOADS FOR BUILDINGS".
2. THE CONTRACTOR SHOULD VERIFY ALL FIELD DIMENSIONS BY MEASUREMENT AT THE JOB SITE BEFORE SUBMITTING SHOP DRAWINGS.
3. COORDINATE THE STRUCTURAL DRAWINGS WITH THE MECHANICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND COORDINATING DIMENSIONS, CLEARANCE, ETC. WITH WORK OF ALL TRADES AND SUBMITTING SHOP DRAWINGS FOR APPROVAL.
4. PROVIDE ONE SHOP COAT AND ONE FIELD COAT OF PRIMER PAINT ON STRUCTURAL STEEL THAT IS: NOT ENCASED IN CONCRETE; NOT RECEIVING SPRAYED FIREPROOFING; OR NOT MEETING OTHER CONDITIONS LISTED IN THE SPECIFICATIONS.
5. PROVIDE ALL TEMPORARY BRACING OF THE STEEL FRAME REQUIRED TO MAINTAIN PLUMBNESS AND STABILITY DURING CONSTRUCTION.
6. DETAILS, SECTIONS AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE, UNLESS SPECIFICALLY SHOWN OTHERWISE.

STRUCTURAL STEEL NOTES:

1. MATERIALS:
   a. STRUCTURAL STEEL GRADE 50 — ASTM A572
   b. CHANNELS, ANGLES, PLATES — ASTM A36
   c. BASE PLATES & SPLICES — ASTM A572
   d. HIGH STRENGTH BOLTS A490 — ASTM A325 OR
   e. WELDED ELECTRODES — AWS A5.1
2. ALL DESIGN, DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO AISC MANUAL OF STEEL CONSTRUCTION, LATEST EDITION, AS MODIFIED BY THE 2014 NYC BUILDING CODE.
3. THE STEEL CONTRACTOR SHALL FURNISH MILL TEST REPORTS FROM THE PRODUCER OF STEEL CERTIFYING THAT THE STEEL MEETS THE MINIMUM REQUIREMENTS AS SPECIFIED BY THE ASTM SPECIFICATIONS.
4. SUBMIT SHOP DRAWINGS SHOWING ALL DIMENSION AND CONNECTION DETAILS FOR APPROVAL.
5. VERIFICATION, TESTING AND INSPECTIONS SHALL CONFORM TO THE SCHEDULE IN THE TABLE 1704.3 OF THE NYC BUILDING CODE. INSPECTIONS SHALL VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AND SHOP DRAWINGS.
6. SPECIAL INSPECTION OF SHOP FABRICATION IS NOT REQUIRED WHEN FABRICATOR HAS AISC CERTIFICATION FOR THE TYPE OF CONSTRUCTION OF THE PROJECT.
7. VERIFY MATERIAL (ID MARKS) OF HIGH STRENGTH BOLTS, NUTS AND WASHERS.
8. VISUALLY INSPECT ALL FIELD WELDS AND BOLTED CONNECTIONS.
9. 10% OF ALL FIELD WELDS SHALL BE TESTED BY THE MAGNETIC PARTICLE METHOD.
10. TEST ANY WELD FOR WHICH VISUAL EXAMINATION INDICATES AN UNUSUAL CONDITION AND/OR POOR QUALITY.
11. WELDING INSPECTION AND TESTING PROCEDURES SHALL BE IN ACCORDANCE WITH THE STRUCTURAL WELDING CODE AWS D1.3 LATEST EDITION.
12. TESTING AGENCY: OWNER SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTION AGENCY TO INSPECT FIELD WELDS AND HIGH–STRENGTH BOLTED CONNECTIONS.
13. BOLTED CONNECTIONS: SHOP BOLTED CONNECTIONS WILL BE TESTED AND INSPECTED ACCORDING TO RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC)'S SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 AND ASTM A490 BOLTS.
14. WELDED CONNECTIONS:
    a. FIELD WELDS SHALL BE VISUALLY INSPECTED ACCORDING TO AWS D1.1.
    b. IN ADDITION TO VISUAL INSPECTION, FIELD WELDS SHALL BE TESTED ACCORDING TO AWS D1.1 AND THE FOLLOWING:
    i. LIQUID PENETRATE INSPECTION (ASTM E 165).
    ii. MAGNETIC PARTIAL INSPECTION (ASTM E 709).
    iii. ULTRASONIC INSPECTION. (ASTM E164).
    iv. RADIOGRAPHIC INSPECTION (ASTM E 94).
19. ALL FILLET WELDING SIZES NOT SHOWN ON THE DRAWINGS SHALL BE NOT LESS THAN SIZE AS PER AISC MANUAL LATEST EDITION.
20. ALL WELDING SHALL BE PERFORMED BY THE N.Y.C. LICENSED WELDER AND IS SUBJECTED TO SPECIAL INSPECTION AS REQUIRED BY THE N.Y.C. BUILDING CODE.
21. STEEL CONNECTIONS ARE SHOWN SCHEMATICALLY. FABRICATOR IS RESPONSIBLE FOR DESIGN AND DETAILING OF CONNECTIONS IN ACCORDANCE WITH AISC MANUAL.
22. CONNECTIONS SHALL BE DESIGNED BY THE FABRICATOR'S ENGINEER REGISTERED IN THE PROJECT'S JURISDICTION. CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED BEARING THE ENGINEER'S SEAL AND SIGNATURE.
23. FABRICATOR AND ERECTOR SHALL HAVE AISC CERTIFICATION FOR THE TYPE AND COMPLEXITY OF BUILDING INDICATED.
24. ALL CONNECTIONS NOT SPECIFICALLY DETAILED ON THE DRAWINGS SHALL BE EITHER WELDED CONNECTIONS, OR BOLTED CONNECTIONS USING ASTM A325 BOLTS.
25. UNLESS SPECIFICALLY DETAILED OTHERWISE, SPLICES SHALL BE DESIGNED TO DEVELOP THE FULL CAPACITY OF THE MEMBER AT THE POINT OF THE SPLICE.
26. CUTS, HOLES, COPES, ETC., REQUIRED FOR WORK OF OTHER TRADES SHALL BE SHOWN ON SHOP DRAWINGS AND MADE IN THE SHOP. FILED CUTTING OR BURNING WILL NOT BE PERMITTED.
27. ALL WELDING, BOTH SHOP AND FIELD, SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D1.1 SPECIFICATIONS. WELDING ELECTRODES SHALL CONFORM TO ASTM A233, E70XXX. MINIMUM WELD SIZE SHALL BE 1/4 INCH FILLET UNLESS OTHERWISE NOTED. WELDED CONNECTIONS SHALL BE DESIGNED TO BE STRESSES TO LESS THAN 50% OF THEIR ALLOWABLE CAPACITIES.
28. A325 BOLTS SUBJECT TO DIRECT TENSION OR DESIGNATED AS SC (SLIP–CRITICAL) SHALL BE PRE–TENSIONED IN ACCORDANCE WITH ONE OF THE FOLLOWING METHODS AS DESCRIBED IN THE AISC "MANUAL OF STEEL CONSTRUCTION": TURN–OF–NUT TIGHTENING OR DIRECT TENSION INDICATOR TIGHTENING.
29. PERMANENT FRAMING AND FINAL CONNECTION DETAILS ARE SHOWN ON THE DRAWINGS. THE FABRICATOR AND ERECTOR ARE RESPONSIBLE FOR THE DESIGN OF TEMPORARY BRACING, GUYING AND PROCEDURES TO ERECT AND HOLD THE FRAME FOR WIND AND CONSTRUCTION LOADS.
30. COORDINATE PRIME PAINTING OF STRUCTURAL STEEL WITH ARCH. DWGS.
31. SHEAR CONNECTORS: PREPARE STEEL SURFACES AS RECOMMENDED BY MANUFACTURER OF SHEAR CONNECTORS. USE AUTOMATIC END WELDING OF HEADED–STUD SHEAR CONNECTORS ACCORDING TO AWS D1.1 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
32. ALL SHIMS OR COMBINATIONS OF SHIMS RESULTING IN A THICKNESS GREATER THAN 1/4 INCH SHALL BE WELDED TO ONE ANOTHER AND TO THE BASE MATERIAL.

BOLTING NOTES:

1. HIGH–STRENGTH BOLTED CONNECTIONS SHALL BE INSTALLED AND CONFORM TO AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
2. ALL BOLTS SHALL HAVE HARDENED WASHERS UNDER THE TURNING ELEMENT (INCLUDING TURN OF THE NUT METHOD), UNLESS OTHERWISE NOTED.
3. ALL CONTACT SURFACES, INCLUDING SURFACES ADJACENT TO THE BOLT HEAD AND NUT, SHALL BE FREE OF SCALE, OIL, PAINT, LACQUER, AND OTHER FOREIGN MATERIAL. BURRS THAT WOULD PREVENT SOLID SEATING OF THE CONNECTED PARTS IN THE SNUG TIGHT CONDITION SHALL BE REMOVED. CONTACT SURFACES THAT ARE HOT–DIP GALVANIZED IN ACCORDANCE WITH ASTM A123 AND ROUGHENED BY MEANS OF HAND WIRE BRUSHING (POWER BRUSHING IS PROHIBITED) WILL BE PERMITTED.
4. ALL BOLTED CONNECTIONS SHALL MEET STRUCTURAL INTEGRITY REQUIREMENTS OF BC 2212.2 AND BC 2204

MEP EQUIPMENT AND PIPING COORDINATION NOTES:

1. CONTRACTOR TO PROTECT AND SECURE EXISTING ELECTRICAL AND MECHANICAL EQUIPMENT DURING WORK.
2. IF ANY EQUIPMENT/PIPING DISCOVERED TO BE DAMAGED DUE TO THE STRUCTURAL WORK, CONTRACTOR TO BRING IT IN EOR's ATTENTION.
3. IN THE EVENT ANY PIPING AND/OR EQUIPMENT IS DAMAGED DURING THE COURSE OF WORK, CONTRACTOR SHALL REPLACE/ REPAIR IT IN KIND, TO THE SATISFACTION OF THE EOR AND AUTHORITY WITH NO ADDITIONAL COST TO THE AUTHORITY.

No.	Date	Revision
	07/27/2021	BID DOCUMENT

AFRIDI ASSOCIATES
□ONSULTIN□ EN□INEERS
19 West 21st Street
Ne□ Y□r□, NY 10010
Tel□ (212) 243-0725
Fa□□ (212) 243-0725
510 □r□adh□ll□□ R□ad
Mel□lle, NY 11747
Tel□ (631) 465-0786
Fa□□ (631) 465-0788
aa□ridi□ a□ridiass□□iates.□□□

Designer:	AKBER AFRIDI, P.E.
Drawn by:	AZHER MALIK
Checked by:	AKBER AFRIDI, P.E.

Project:
PURCHASE COLLEGE
STUDIO A REHABILITATION
SU-072721

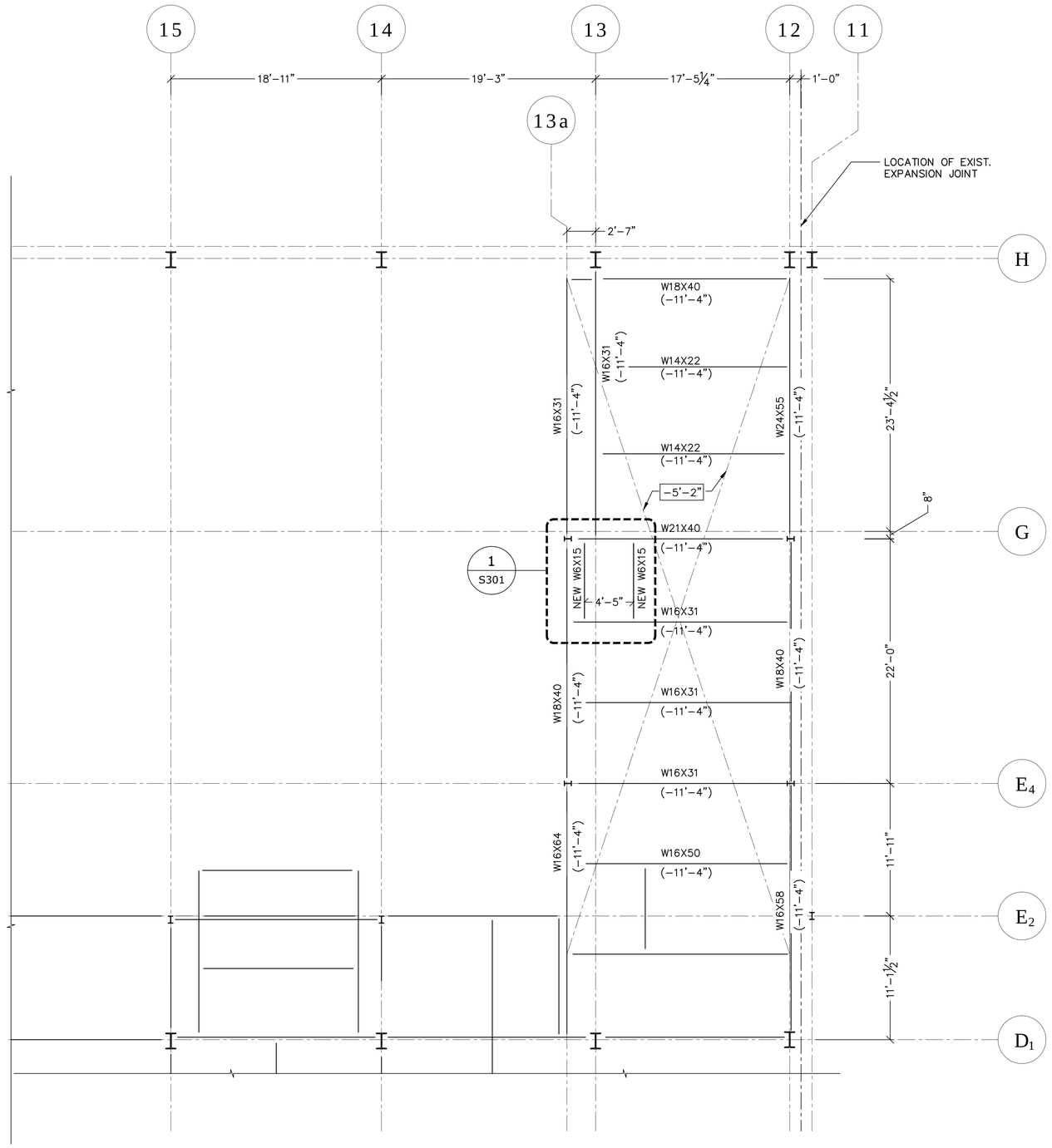
Address:
735 Anderson Hill Road
Purchase NY 10577

Drawing Title:
STRUCTURAL NOTES

Drawing No.:
S001.00

Scale: AS NOTED

Date: 06/04/2021



1 S101 PLAZA-NORTH FRAMING PARTIAL PLAN @ EL. 345'-0"

0 4' 8' 16'

SCALE: 3/16" = 1'–0"

No.	Date	Revision
	07/27/2021	BID DOCUMENT

AFRIDI ASSOCIATES
□ONSULTIN□ EN□INEERS

19 West 21st Street
Ne□ Y□r□, NY 10010
Tel□ (212) 243-0725
Fa□□ (212) 243-0725

510 □r□adh□ll□□ R□ad
Mel□lle, NY 11747
Tel□ (631) 465-0786
Fa□□ (631) 465-0788

aa□ridi□ a□ridiass□□iates.□□□

Designer:	AKBER AFRIDI, P.E.
Drawn by:	AZHER MALIK
Checked by:	AKBER AFRIDI, P.E.

Project:
PURCHASE COLLEGE
STUDIO A REHABILITATION
SU-072721

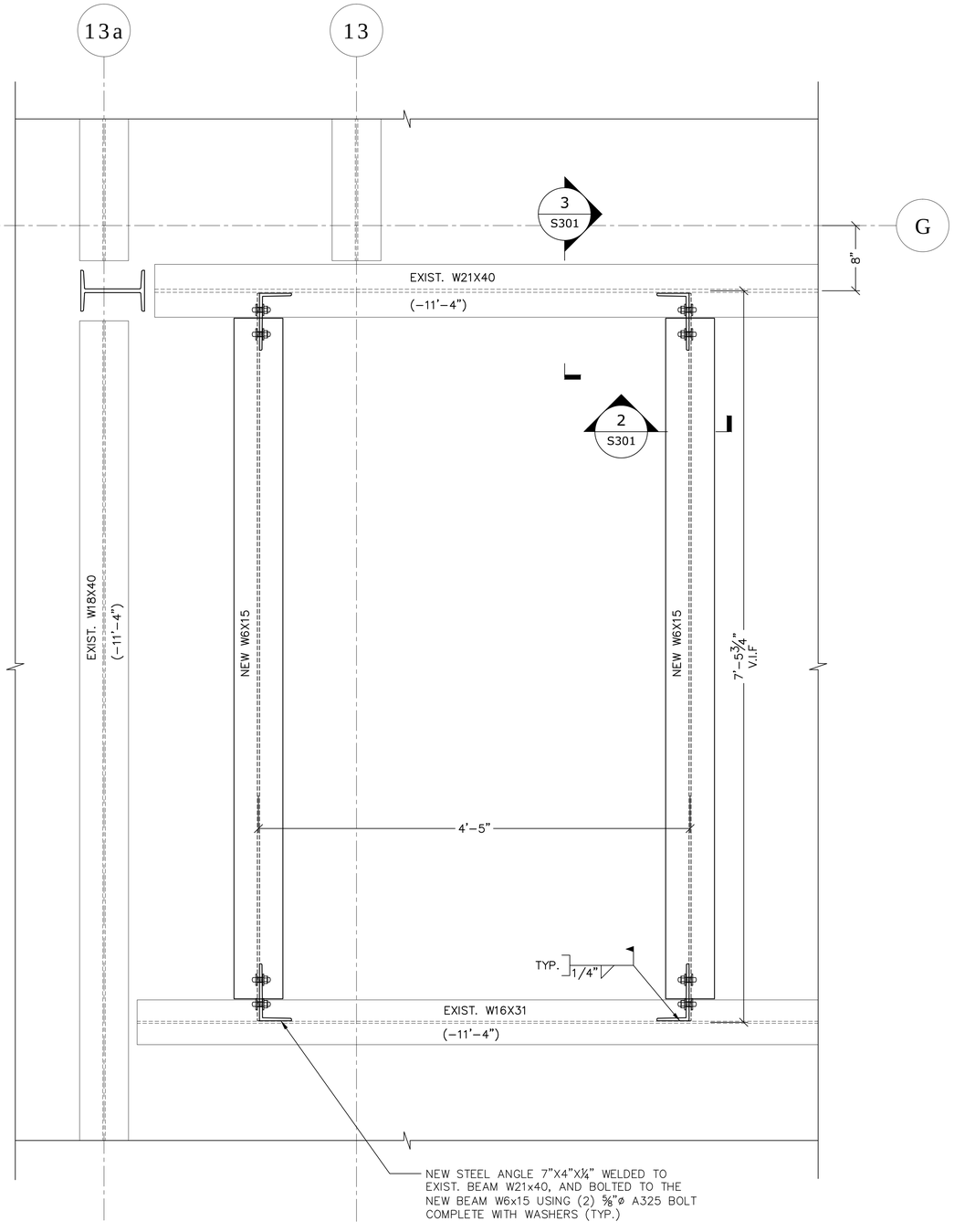
Address:
735 Anderson Hill Road
Purchase NY 10577

Drawing Title:
PROPOSED ADDITION TO
EXIST. FRAMING PLAN

Drawing No.:
S101.00

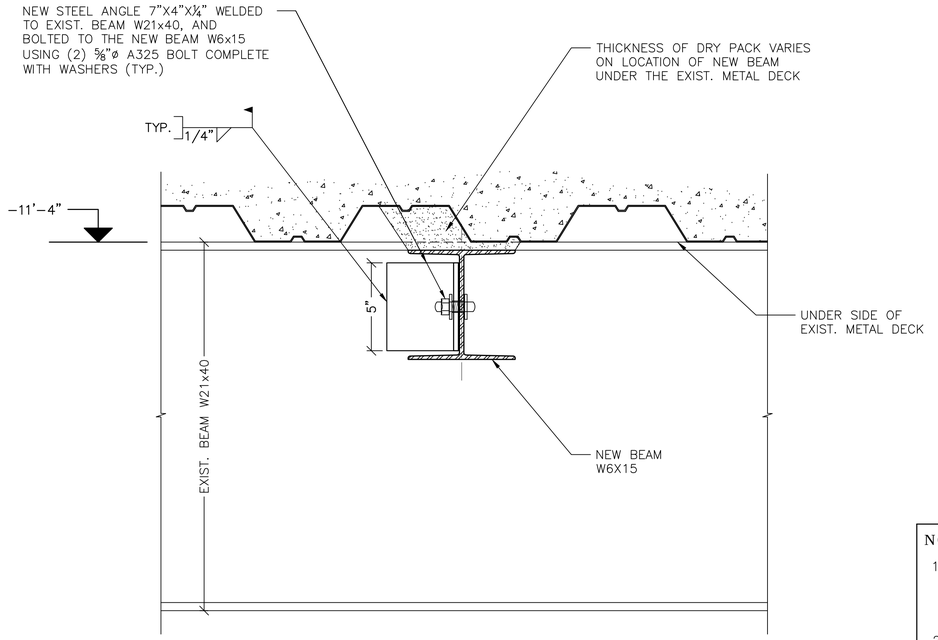
Scale: AS NOTED

Date: 06/04/2021



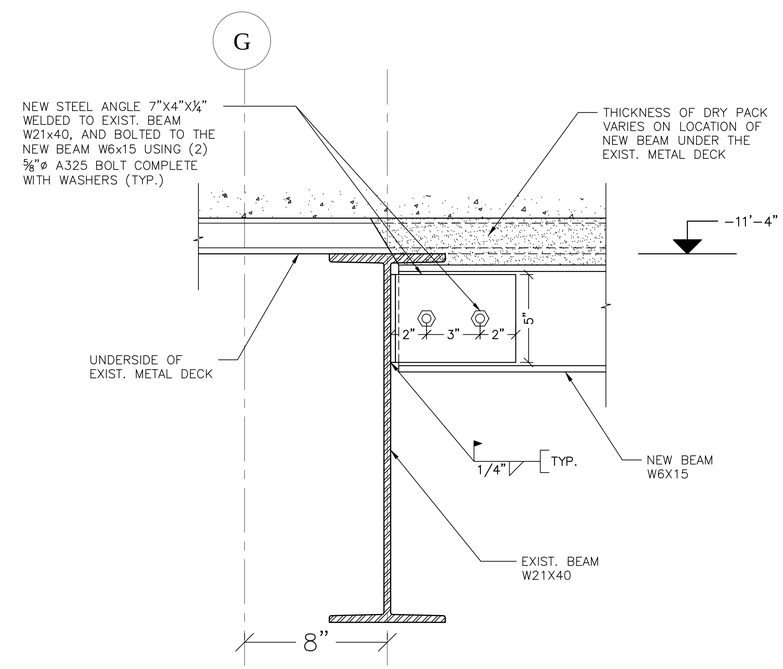
1 S301 ENLARGED PLAN
PROPOSED REINFORCEMENT BEAMS

0 6" 1' 2'
SCALE: 1 1/2" = 1'–0"



2 S301 ENLARGED CONNECTION DETAIL
THROUGH NEW BEAM (TYP.)

0 3" 6" 1'
SCALE: 3" = 1'–0"



3 S301 ENLARGED CONNECTION DETAIL
THROUGH EXIST. BEAM (TYP.)

0 3" 6" 1'
SCALE: 3" = 1'–0"

NOTE:

1. ALL NEW STRUCTURAL STEEL, INCLUDING BEAMS, CONNECTIONS, ANGLES ETC. SHALL BE ASTM A572.
2. FOR WELDING NEW STEEL MEMBERS TO EXISTING MEMBERS, USE E7018 LOW HYDROGEN ELECTRODE. BEFORE WELDING WORK, THE CONTRACTOR SHALL MACHINE TOOL CLEAN ALL EXISTING SURFACES TO BARE METAL. FOLLOW ALL PREHEAT AND INTERPASS HEATING REQUIREMENTS.
3. ALL WELDING SHALL BE PERFORMED BY A NYC LICENSED WELDER AND IS SUBJECT TO SPECIAL INSPECTION AS REQUIRED BY THE NYC BUILDING CODE.

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AFRIDI ASSOCIATES
□ONSULTIN□ EN□INEERS
19 West 21st Street
Ne□ Y□□, NY 10010
Tel□ (212) 243-0725
Fa□□ (212) 243-0725
510 □r□adh□ll□□ R□ad
Mel□lle, NY 11747
Tel□ (631) 465-0786
Fa□□ (631) 465-0788
aa□ridi□ a□ridiass□□lates.□□□

Designer:	AKBER AFRIDI, P.E.
Drawn by:	AZHER MALIK
Checked by:	AKBER AFRIDI, P.E.

Project:
PURCHASE COLLEGE
STUDIO A REHABILITATION
SU-072721

Address:
735 Anderson Hill Road
Purchase NY 10577

Drawing Title:
ENLARGED DETAILS

Drawing No.: S301.00
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