LOCATION PLAN

NOT TO SCALE

WELLES TURNER MEMORIAL LIBRARY
PHASE 1 - INTERIOR RENOVATIONS

2407 Main St, Glastonbury, CT 06033

March 6, 2017

PROGRESS DRAWINGS

TLBA Project Number: 2016.0036

DRAWING LIST

	COVER SHEET		
G1.1	GENERAL INFORMATION & WALL TYPES	FPD1.1	LOWER LEVEL FIRE PROTECTION DEMOLITION PLAN
G1.2	CODE INFORMATION – NOT INCLUDED	FPD1.2	MAIN LEVEL FIRE PROTECTION DEMOLITION PLAN
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AD1.1	ARCHITECTURAL DEMOLITION	FP1.2	MAIN LEVEL FIRE PROTECTION PLAN
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A2.1	ARCHITECTURAL REFLECTED CEILING PLANS		
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A4.1	FINISH PLANS, DOORS & GLAZING	M2.0	MECHANICAL SPECIFICATIONS
E0.0	ELECTRICAL LEGEND AND NOTES		
E0.1	ELECTRICAL SPECIFICATIONS		
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ED1.2	MAIN LEVEL ELECTRICAL DEMOLITION PLAN		
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EL1.2	MAIN LEVEL ELECTRICAL LIGHTING PLAN		
EP1.1	LOWER LEVEL ELECTRICAL POWER PLAN		
EP1.2	MAIN LEVEL ELECTRICAL POWER PLAN		

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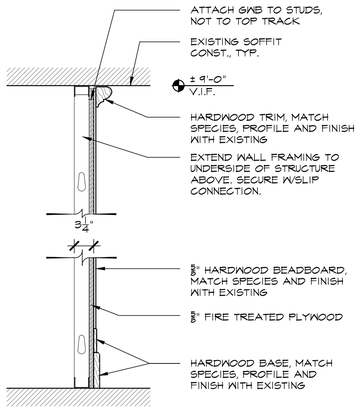
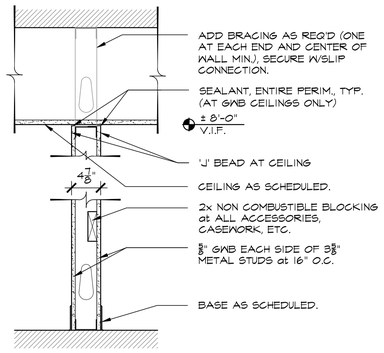
M/E/P/FP ENGINEER:

CONSULTING ENGINEERING
SERVICES, LLC
811 MIDDLE STREET,
MIDDLETOWN, CT 06457
TEL: 860-632-1682

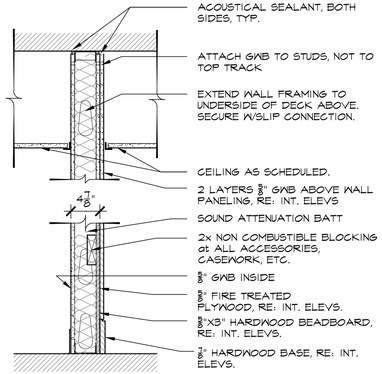


C 2½" METAL STUD WALL

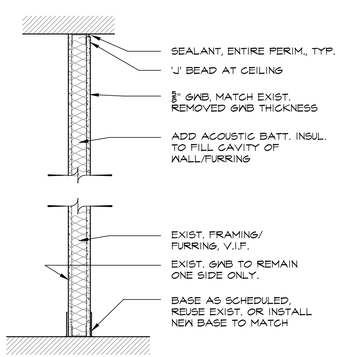


D TO CEILING
3⅝" METAL STUD WALL

D1 WITH SOUND ATTENUATION

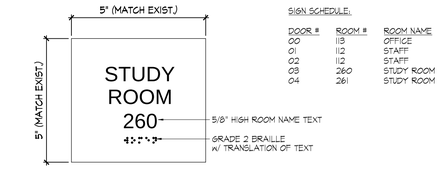


A FULL HEIGHT
3⅝" METAL STUD WALL



B NEW WORK AT EXISTING WALL CONSTRUCTION

13 WALL TYPES
SCALE 1"=1'-0"



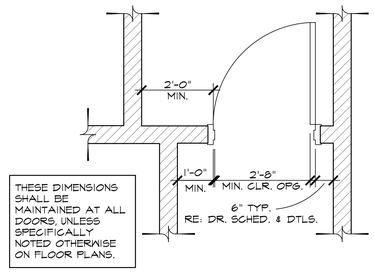
TYPE: A

SIGN SCHEDULE:

DOOR #	ROOM #	ROOM NAME
00	113	OFFICE
01	112	STAFF
02	112	STAFF
03	260	STUDY ROOM
04	261	STUDY ROOM

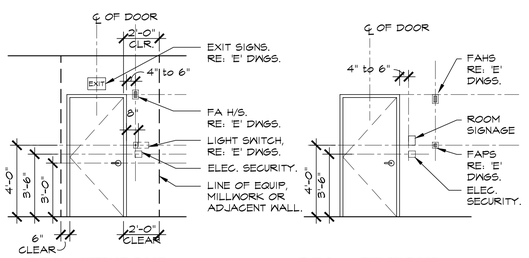
NOTES:
1. ALL TEXT SHALL BE CENTER JUSTIFIED.
2. TEXT SHOWN IS NOT REPRESENTATIVE OF ACTUAL SIGN MESSAGE.
3. ROOM TEXT SIZE TO BE 5/8" WITH 3/8" SPACING. ROOM NUMBER SIZE TO BE 1" HIGH.
4. ALL TEXTS & SYMBOLS TO BE WHITE ON CONTRASTING GREEN (TO MATCH EXISTING) BACKGROUND.
5. TEXT & SYMBOLS SHALL BE 1/32" RAISED, HELVETICA CHARACTERS (MATCH EXIST.).
6. TEXT SHALL HAVE A WIDTH TO HEIGHT RATIO BETWEEN 3:5 & 1:1, AND A STROKE WIDTH TO HEIGHT RATIO BETWEEN 1:5 & 1:10.
7. ALL SIGNS TO HAVE BRAILLE CHARACTERS.
8. SIGNS TO BE INSTALLED ON LATCH SIDE OF DOOR AT 4'-0" TO 5'-0", A.F.F. AND 6" TO < FROM FRAME
9. WHERE THERE IS NO WALL SPACE ON LATCH SIDE OF DOOR, SIGNS TO BE PLACED ON NEAREST ADJACENT WALL.

5 SIGNAGE
SCALE N.T.S.



THESE DIMENSIONS SHALL BE MAINTAINED AT ALL DOORS, UNLESS SPECIFICALLY NOTED OTHERWISE ON FLOOR PLANS.

6 TYPICAL DOOR OFFSET and HCA CLEARANCES
SCALE: 1/2" = 1'-0"



TYPICAL INTERIOR DOOR ROOM SIDE

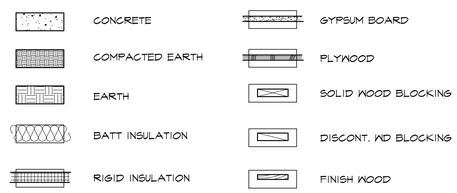
TYPICAL INTERIOR DOOR CORRIDOR SIDE

NOTE: WHERE ELECTRIC SECURITY or LIGHT SWITCH EXISTS CONCURRENTLY W/ SIGNAGE, PROVIDE ADD'L CLEAR HORIZ. DIMENSION OF 2" TO ELECTRIC SECURITY or LIGHT SWITCH, UON.

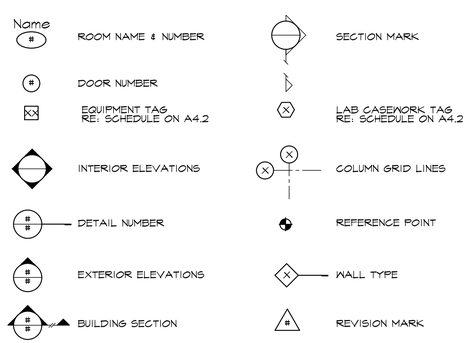
5 TYP. DEVICE MOUNTING HTS.
SCALE 1/4"=1'-0"

ACOUST	ACOUSTICAL	GWB	GYPSUM WALL BOARD
AFF	ABOVE FINISH FLOOR	HARDBD	HARDBOARD
ALUM	ALUMINUM	HCA	HANDICAPPED ACCESSIBLE
APPROX	APPROXIMATE	HD	HIGH DENSITY
ASSOC	ASSOCIATION	HM	HOLLOW METAL
BARR	BARRIER	HNDRL	HANDRAIL
B.O.	BOTTOM OF	HR	HOUR
BD	BOARD	HRDWR	HARDWARE
BIT	BITUMINOUS	HSS	HOLLOW STRUCTURAL STEEL
BLDG	BUILDING	INSUL	INSULATION
CBB	CEMENTITIOUS BACKER BOARD	JTS	JOINTS
CL	CHAIN LINK	K.S.	KICK SPACE
CLR	CLEAR	L.C.C.	LEAD COATED COPPER
CLG	CEILING	L.O.	LINE OF
CLOS	CLOSET	LT	LIGHT
CNTR	COUNTERTOP	MFR	MANUFACTURER
CONC	CONCRETE	MAS	MASONRY
CONT	CONTINUOUS	MAX	MAXIMUM
COORD	COORDINATE	MIN	MINIMUM
CMU	CONCRETE MASONRY UNIT	MTL	METAL
CPT	CARPET	M.R.	MOISTURE RESISTANT
CR	CARD READER	NIC	NOT IN CONTRACT
DF	DRINKING FOUNTAIN	OC	ON CENTER
DIST	DISTANCE	PLYWD	PLYWOOD
DN	DOWN	POLY	POLYETHYLENE
DR	DOOR	PRE-FAB	PREFABRICATED
DTL.	DETAIL	PRE-FIN	PRE-FINISHED
DWGS	DRAWINGS	PRE-MANF	PRE-MANUFACTURED
EA	EACH	PROV	PROVIDE
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	PT	PRESERVATIVE TREATED
		PTD	PAINTED
ELEV	ELEVATION	REINF	REINFORCEMENT
EQ	EQUAL	REQ'D	REQUIRED
EXIST	EXISTING	RLGS	RAILINGS
EXP	EXPANSION	RM	ROOM
EXT	EXTERIOR	RWL	RAINWATER LEADER
FA	FIRE ALARM	SCHED.	SCHEDULE
FAHS	FIRE ALARM HORN / STROBE	SPEC.	SPECIFICATIONS
FBRGLS	FIBERGLASS	S.STL	STAINLESS STEEL
FE	FIRE EXTINGUISHER	ST	STORAGE
FEC	FIRE EXTINGUISHER CABINET	STRUCT	STRUCTURE
FD	FLOOR DRAIN	SUSP	SUSPENDED
FDC	FIRE DEPT. CONNECTION	T&G	TONGUE AND GROOVE
FC	FIRE CODE	T.O.	TOP OF
FFEL	FINISHED FLOOR ELEVATION	TLT	TOILET
FIN	FINISH	TYP	TYPICAL
FL/FLR	FLOOR	UON	UNLESS OTHERWISE NOTED
F.O.	FACE OF	U/C	UNDER COUNTER
FNDTN	FOUNDATION	U/S	UNDERSIDE
FTG	FOOTING	VEST	VESTIBULE
GA	GAUGE	VIF	VERIFY IN FIELD
GALV	GALVANIZED	W/	WITH
GD	GREASE DUCT	WD	WOOD
GYP	GYPSUM	WNDW	WINDOW
GL	GLASS	WWF	WELDED WIRE FABRIC

3 ABBREVIATIONS
NO SCALE



2 MATERIAL LEGEND
NO SCALE



1 SYMBOLS LEGEND
NO SCALE

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RENOVATIONS
PHASE 1
2407 MAIN STREET
GLASTONBURY, CT 06033

DATE: 03/06/17
PROJECT NO: 2016.036
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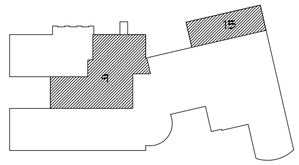
CHECKED:
ISSUED FOR:
CONSTRUCTION DOCUMENTS
REVISIONS:

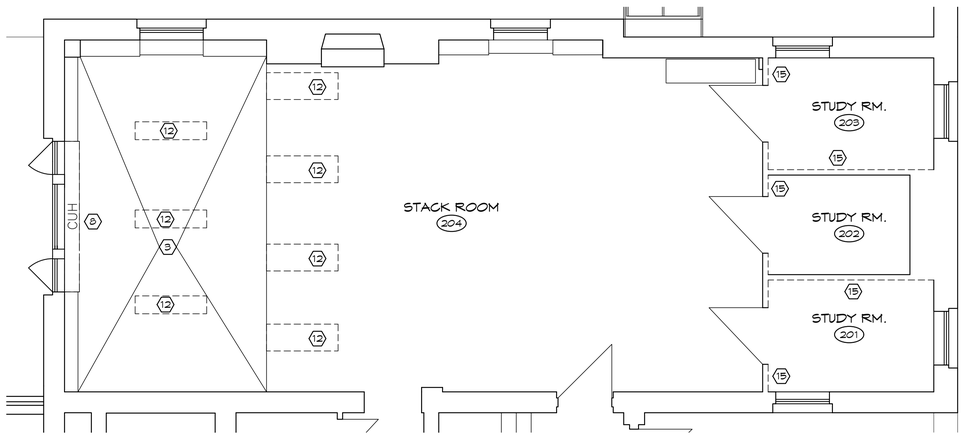
G1.1
GENERAL INFORMATION & WALL TYPES

1. REMOVE AND PROPERLY DISPOSE OF DOOR, FRAME, TRIM AND ASSOCIATED HARDWARE
2. REMOVE, SAVE AND STORE CASENORK, FOR REINSTALLATION. CUT BACK COUNTER AS REQUIRED, PATCH WALLS AT ANCHOR LOCATIONS
3. REMOVE AND PROPERLY DISPOSE OF EXISTING CARPET, ADHESIVE AND VINYL BASE COMPLETE TO TOP OF CONCRETE SUBSTRATE. WOOD BASE TO BE REMOVED AND SAVED.
4. REMOVE AND/OR MODIFY EXISTING SUSPENDED ACOUSTICAL CEILING COMPLETE INCLUDING TILES, SUSPENSION GRID AND WIRES. SAVE CEILING TILES FOR REINSTALLATION.
5. REMOVE, SAVE AND STORE EXISTING WALL SHELVING AND SUPPORTS. FOR REINSTALLATION.
6. REMOVE EXIST GWB PARTITION, PATCH ADJACENT WALL ONCE REMOVED
7. REMOVE AND PROPERLY DISPOSE OF EXISTING CASENORK, COLUMNS AND COLUMN ENCLOSURES.
8. REMOVE AND PROPERLY DISPOSE OF RADIATOR ENCLOSURE AND ASSOCIATED SUPPORTS AND ANCHORS
9. REMOVE, SAVE AND STORE ALL CEILING MOUNTED LIGHTING, DIFFUSERS, DEVICES, ETC. FOR REINSTALLATION OR TO BE TURNED OVER TO THE OWNER. RE: M/E/P/FP DRAWINGS
10. REMOVE AND DISPOSE OF CEILING PERIMETER ANGLE AND CUT TILES AND GRID AT REMOVED WALLS. PREPARE FOR EXIST. GRID TO BE EXTENDED, RE: CEILING PLANS.
11. REMOVE, TERMINATE AND SAVE FOR REINSTALLATION (3) EXISTING LIGHT FIXTURES IN SOFFIT, PATCH HOLES IN SOFFIT.
12. REMOVE, TERMINATE, SAVE AND STORE (6) EXISTING LIGHT FIXTURES FOR REINSTALLATION AND (1) TO TURN OVER TO OWNER.
13. CUT BACK CEILING GRID AS REQ'D TO COORDINATE WITH NEW WALL CONST. EXIST CEILING TO REMAIN AND BE TIED INTO NEW WALL CONST.
14. REMOVE AND PROPERLY DISPOSE OF SOFFIT CONSTRUCTION AT WALL BEING REMOVED.
15. REMOVE AND DISPOSE OF EXIST. GYPSUM BOARD ON ONE SIDE OF WALL, PREP FOR ACOUSTIC BATT. INSUL. AND NEW GWB TO BE INSTALLED. REMOVE AND SAVE WOOD TRIM AND BASE TO REINSTALL.

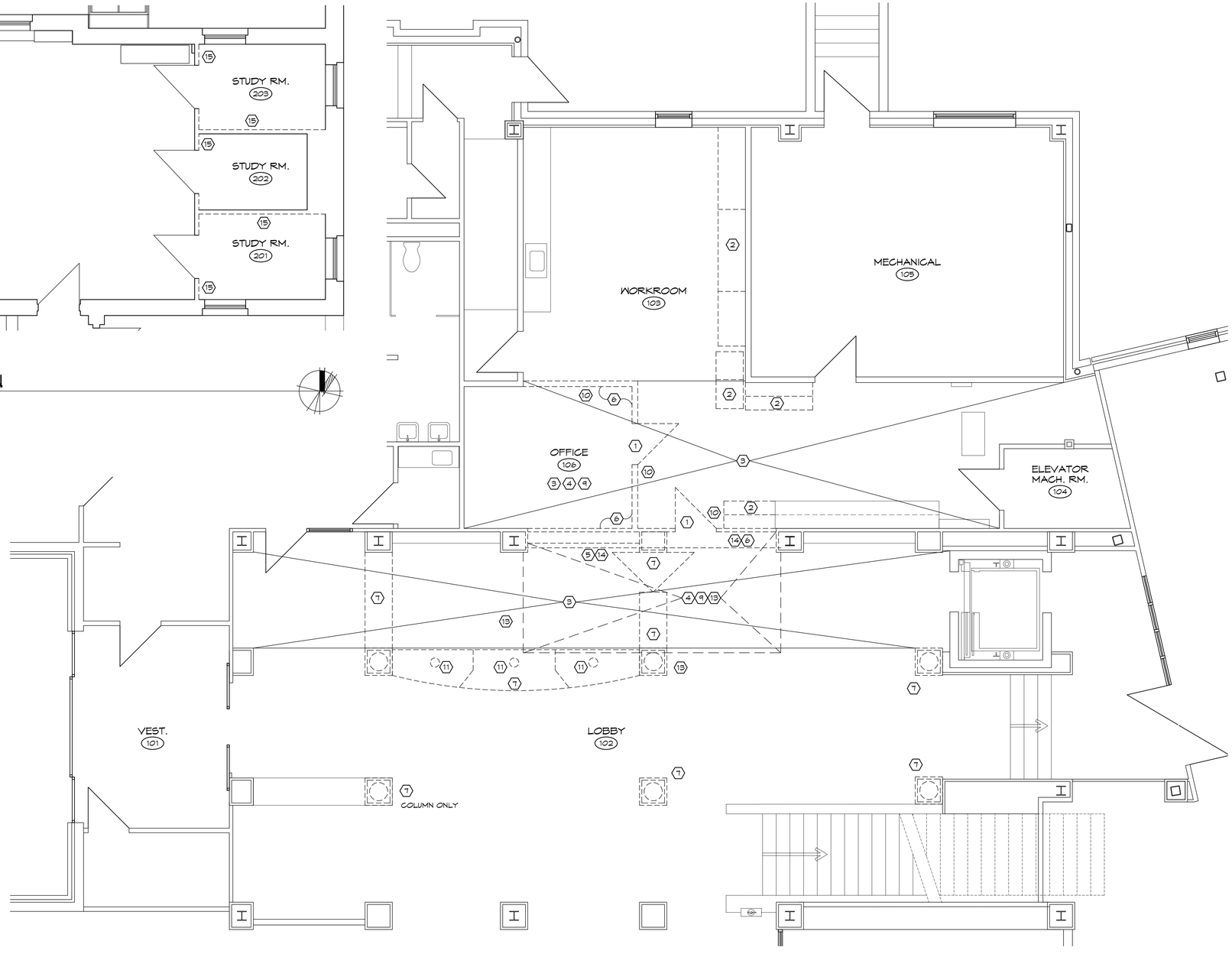
16 DEMOLITION SCOPE NOTES
NO SCALE



4 KEY PLAN
N.T.S.



15 MAIN LEVEL DEMOLITION PLAN
1/4" = 1'-0"



THE DEMOLITION SHOWN HERE IS DIAGRAMMATIC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REMOVALS REQUIRED TO ACCOMMODATE ALL NEW WORK COMPLETELY AND ORDERLY. BUILDING WILL BE OCCUPIED DURING DEMOLITION AND CONSTRUCTION, PROVIDE TEMPORARY LIGHTING AS REQUIRED. REFER TO SPEC, TEMPORARY FACILITIES AND CONTROLS. COORDINATE WITH ALL DRAWINGS FOR REQUIRED CUT AND PATCH LOCATIONS. PATCH EXISTING SURFACES SCHEDULED TO REMAIN, BUT DAMAGED OR EXPOSED DURING DEMOLITION, TO MATCH EXISTING ADJACENT SURFACES, TYP. AND PREP. FOR FINISH.

THE INTENT OF THE WORK IS:

TO PROVIDE A CLEAR, ORDERLY and CRAFTSMAN-LIKE INTERFACE BETWEEN NEW WORK AND EXISTING CONSTRUCTION TO REMAIN AT ALL AREAS OF RENOVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INCIDENTAL WORK REQUIRED TO INTERFACE NEW AND EXISTING WORK.

ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES.

IN ALL AREAS WHERE INCIDENTAL SELECTIVE DEMOLITION IS REQUIRED TO ACCOMMODATE M/E/P/FP WORK, CUT AND PATCH ALL DISTURBED MATERIALS TO MATCH ADJACENT MATERIALS TO REMAIN, AND PRIME AND PAINT PATCHED AREAS. THE CONTRACTOR IS REQUIRED TO DETERMINE SCOPE OF DEMOLITION IN THESE AREAS, INCLUDING LOCATIONS, SIZES AND METHODOLOGY FOR DEMOLITION, AND SHALL BE RESPONSIBLE TO PERFORM ALL REQUIRED WORK WITHIN THE BASE BID.

ALL DEMOLITION MATERIALS ARE TO BE REMOVED FROM SITE AS DIRECTED BY THE OWNER. ALL MATERIALS ARE TO BE DISPOSED OF OFF-SITE IN A LEGAL MANNER. THE OWNER WILL HAVE FIRST RIGHT OF REFUSAL FOR ALL SALVAGEABLE MATERIAL, INCLUDING, BUT NOT LIMITED TO FURNISHINGS, FIXTURES AND EQUIPMENT. ALL MATERIALS THAT THE OWNER DOES NOT TAKE POSSESSION OF SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE REMOVED FROM THE SITE.

CLEAN AND PREPARE ALL SURFACES TO RECEIVE NEW FINISH. REMOVE ALL RESIDUAL ADHESIVES OR FASTENERS AND PATCH WHERE NECESSARY. ALL LOOSE PAINT SHALL BE REMOVED FROM ALL SURFACES, INCLUDING ALL PTD. UTILITIES AND EQUIP. TO BE PREPARED FOR NEW FINISHES AS SCHEDULED.

REFER TO M/E/P/FP DRAWINGS FOR SCOPE OF M/E/P/FP REMOVALS AND ADDITIONAL REQUIREMENTS. ALL GENERAL TRADES DEMOLITION, CUTTING AND PATCHING REQUIRED TO ACCOMMODATE M/E/P DEMOLITION SHALL BE PROVIDED WITHIN THE BASE BID.

13 GENERAL DEMO NOTES
NO SCALE

9 LOWER LEVEL DEMOLITION PLAN
1/4" = 1'-0"

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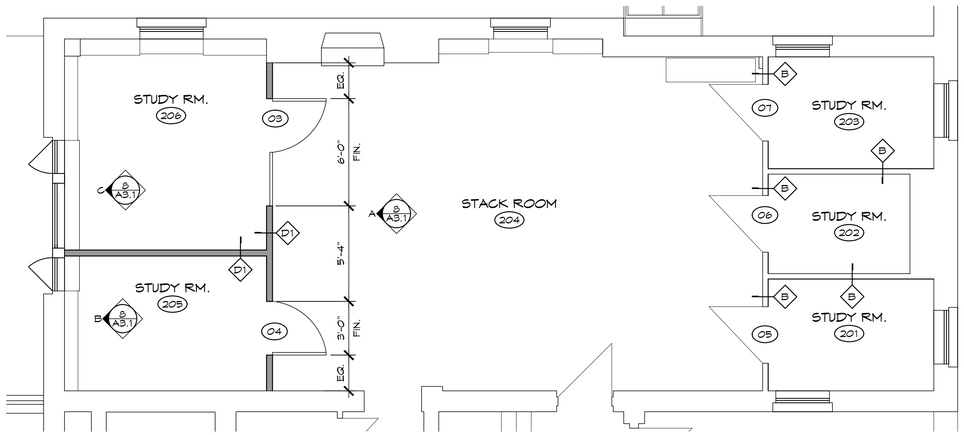
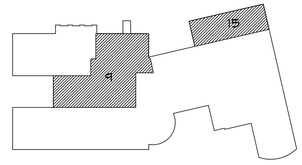
AD1.1

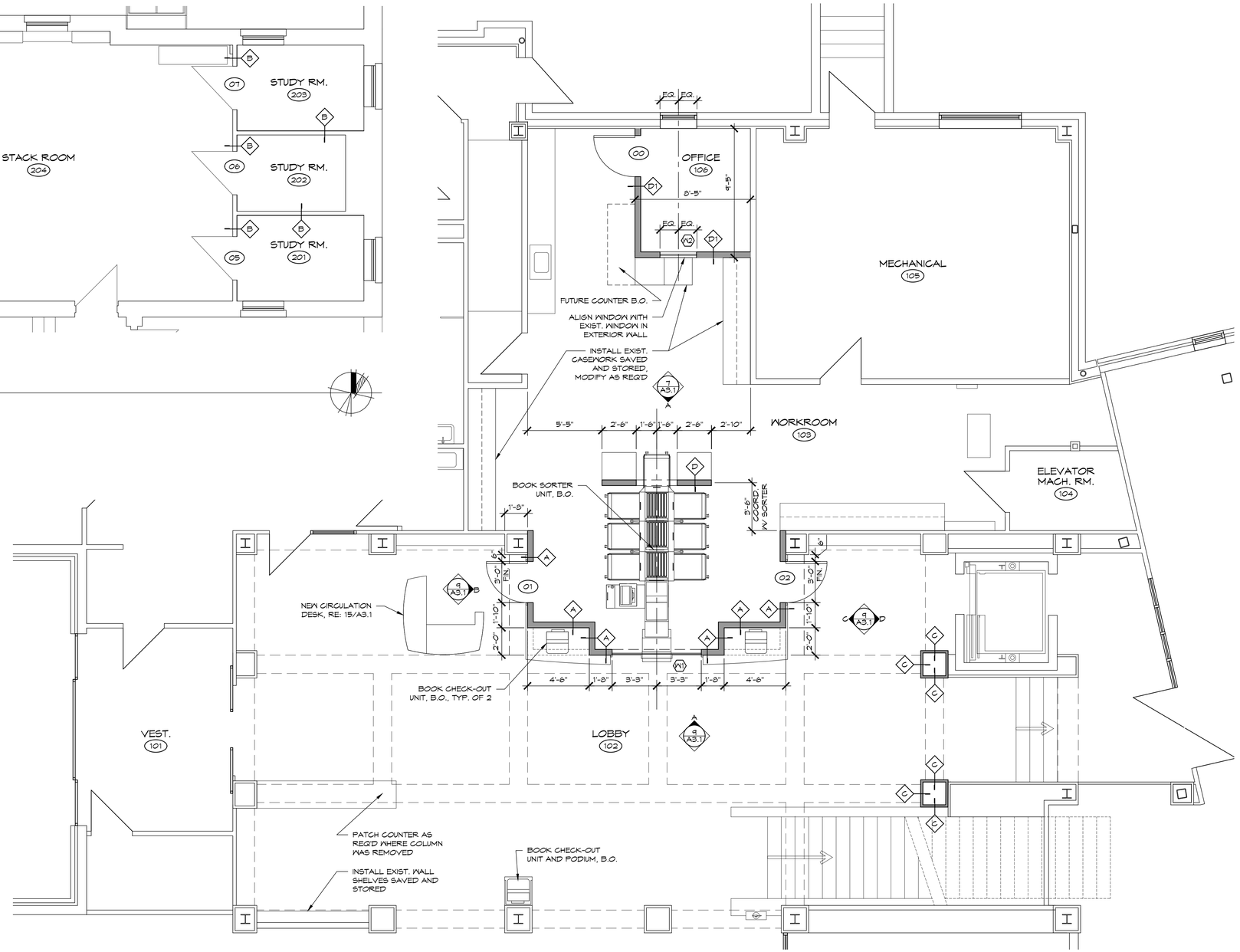
LOWER LEVEL & MAIN LEVEL DEMOLITION PLANS



15 MAIN LEVEL FLOOR PLAN
1/4" = 1'-0"



4 KEY PLAN
N.T.S.



9 LOWER LEVEL FLOOR PLAN
1/4" = 1'-0"

EXISTING WALL TO REMAIN

NEW WALL

NEW DOOR & FRAME UNLESS OTHERWISE NOTED

EXISTING DOOR & FRAME TO REMAIN UNLESS OTHERWISE NOTED

WALL TAG, RE: WALL TYPES

DOOR TAG

KEY NOTE

INTERIOR ELEVATION TAG

14 LEGEND
NO SCALE

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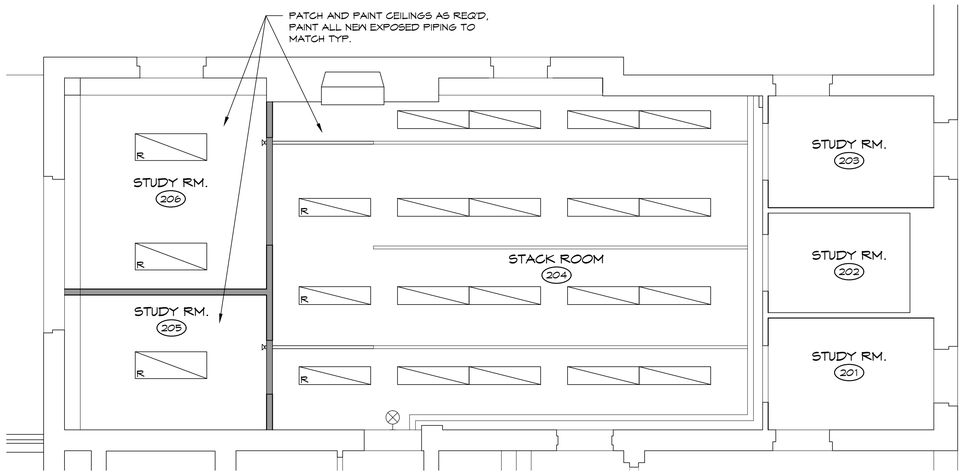
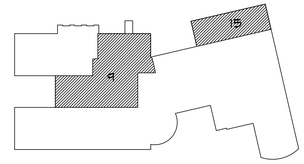
LOWER LEVEL FLOOR PLAN



15 MAIN LEVEL DEMOLITION PLAN
1/4" = 1'-0"



4 KEY PLAN
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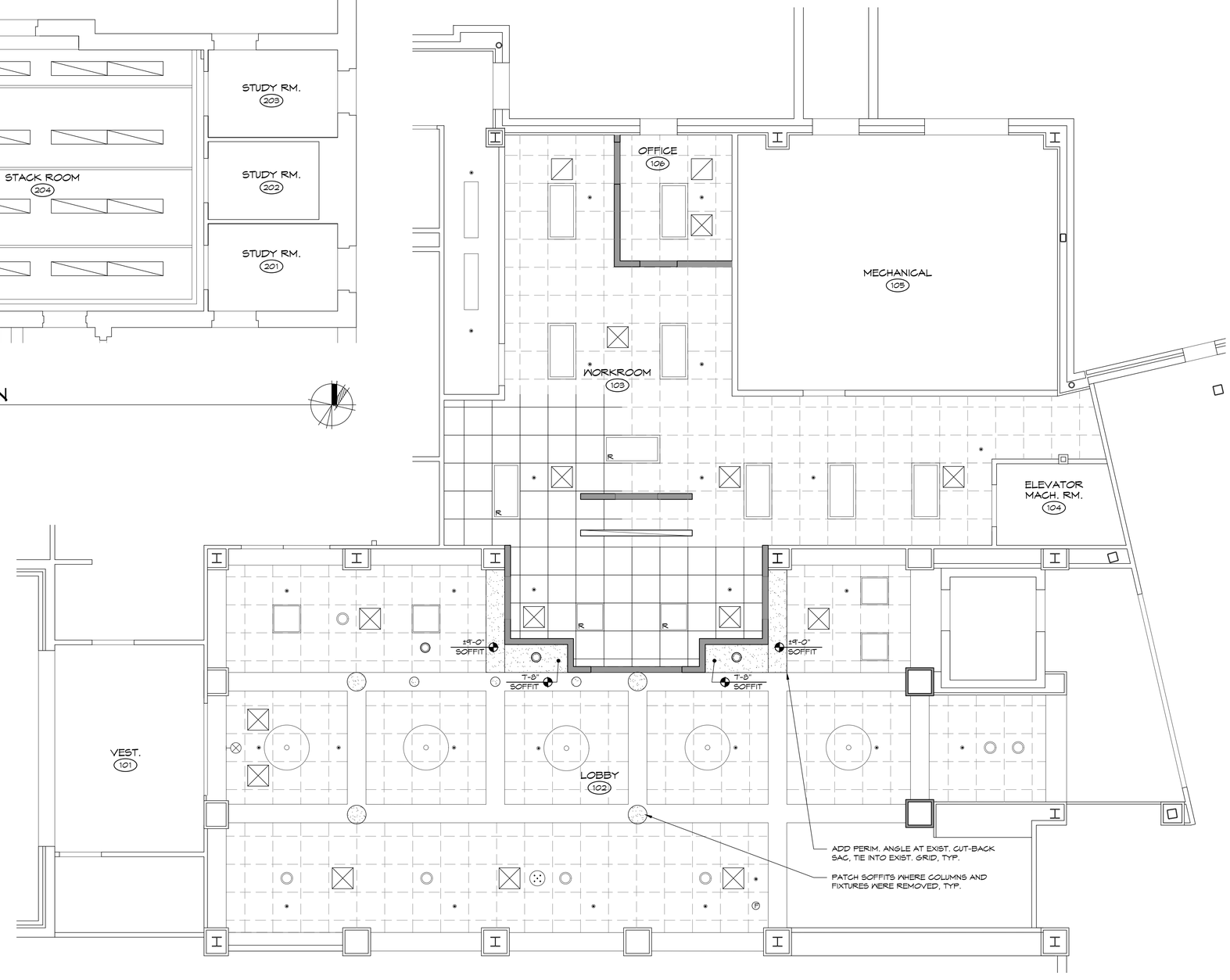

9 LOWER LEVEL CEILING PLAN
1/4" = 1'-0"

EXISTING TO REMAIN 2' x 2' SUSPENDED ACOUSTICAL CEILING SYSTEM

NEW 2' x 2' SUSPENDED ACOUSTICAL CEILING SYSTEM

GYPSUM CEILING/SOFFIT

SUPPLY AIR DIFFUSER

RETURN AIR REGISTER

SPRINKLER HEAD

FIRE DETECTION / ALARM DEVICE

CEILING SPEAKER

RECESSED 2' x 4' LIGHT FIXTURE (EXISTING RELOCATED)

RECESSED 2' x 2' LIGHT FIXTURE (EXISTING RELOCATED)

RECESSED 2' x 4' LIGHT FIXTURE

RECESSED 2' x 2' LIGHT FIXTURE

RECESSED LIGHT FIXTURE

ACCENT FIXTURE

SURFACE MTD. LIGHT FIXTURE

SURFACE MTD. LIGHT FIXTURE (EXISTING RELOCATED)

PENDANT LIGHT FIXTURE

EXIT SIGN - WALL MOUNTED

EXIT SIGN - CEILING MOUNTED

13 LEGEND
NO SCALE

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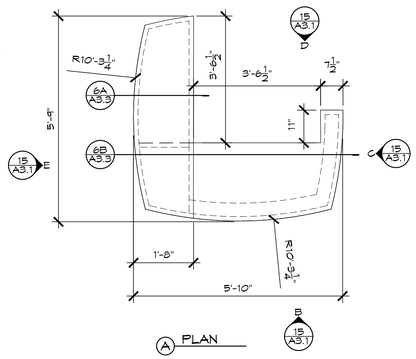
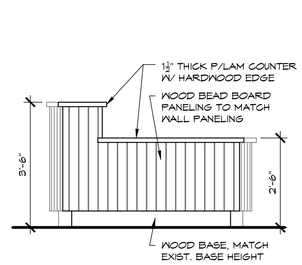
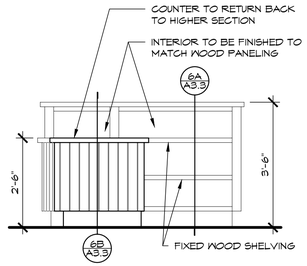
LOWER LEVEL CEILING PLAN



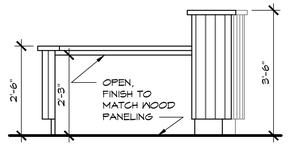
A PLAN



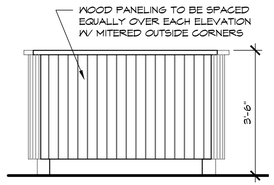
B ELEVATION



C ELEVATION

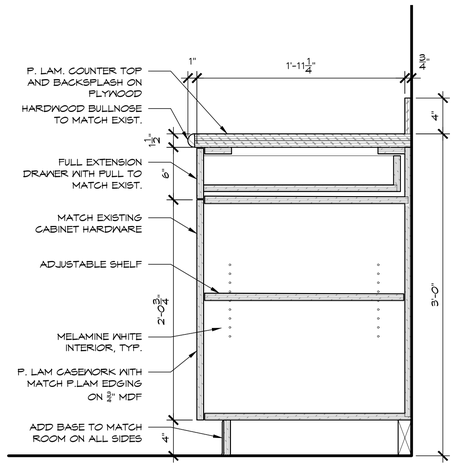


D ELEVATION

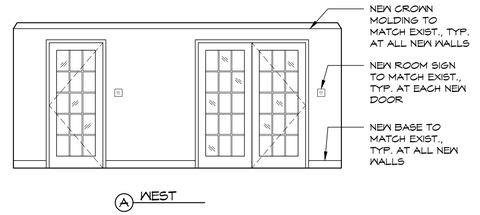


E ELEVATION

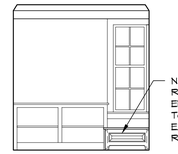
15 CIRCULATION DESK
1/2" = 1'-0"



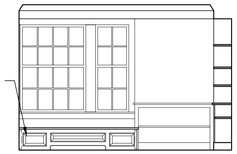
13 CASEWORK DETAIL
1 1/2" = 1'-0"



A WEST

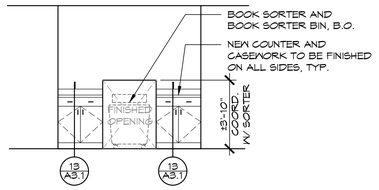


B WEST



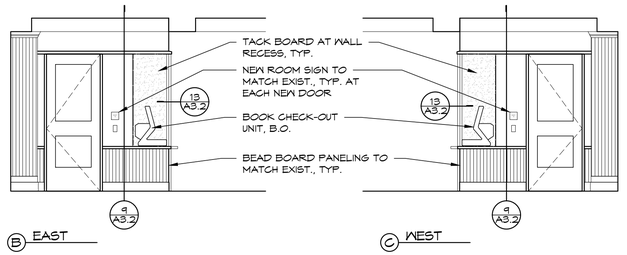
C WEST

8 INTERIOR ELEVATIONS - STACK RM 204 & STUDY RM 205 / 206
1/4" = 1'-0"



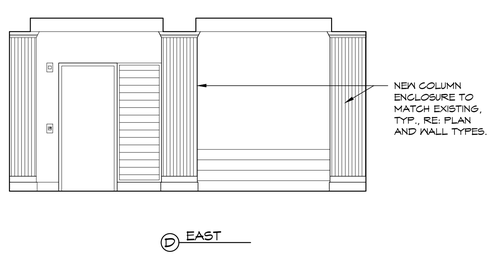
A SOUTH

7 INTERIOR ELEVATIONS - WORKROOM 103
1/4" = 1'-0"

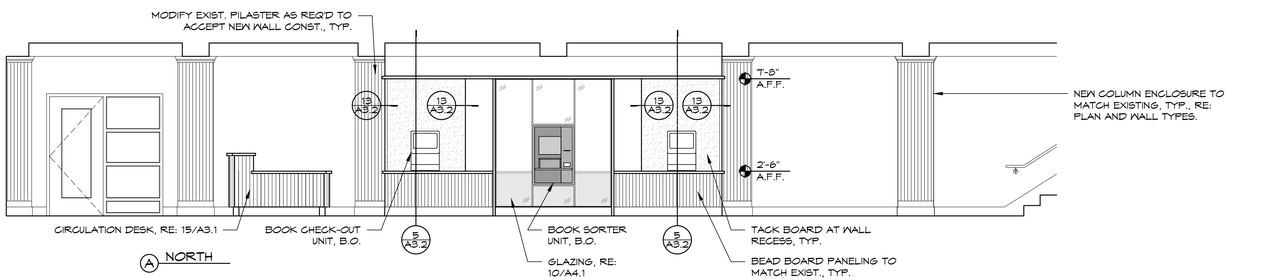


B EAST

C WEST



D EAST



A NORTH

9 INTERIOR ELEVATIONS - LOBBY 102
1/4" = 1'-0"

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CHECKED:
ISSUED FOR:
CONSTRUCTION DOCUMENTS
REVISIONS:

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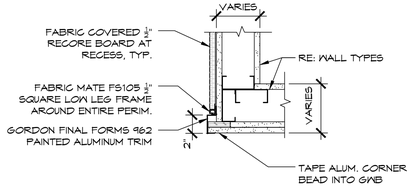
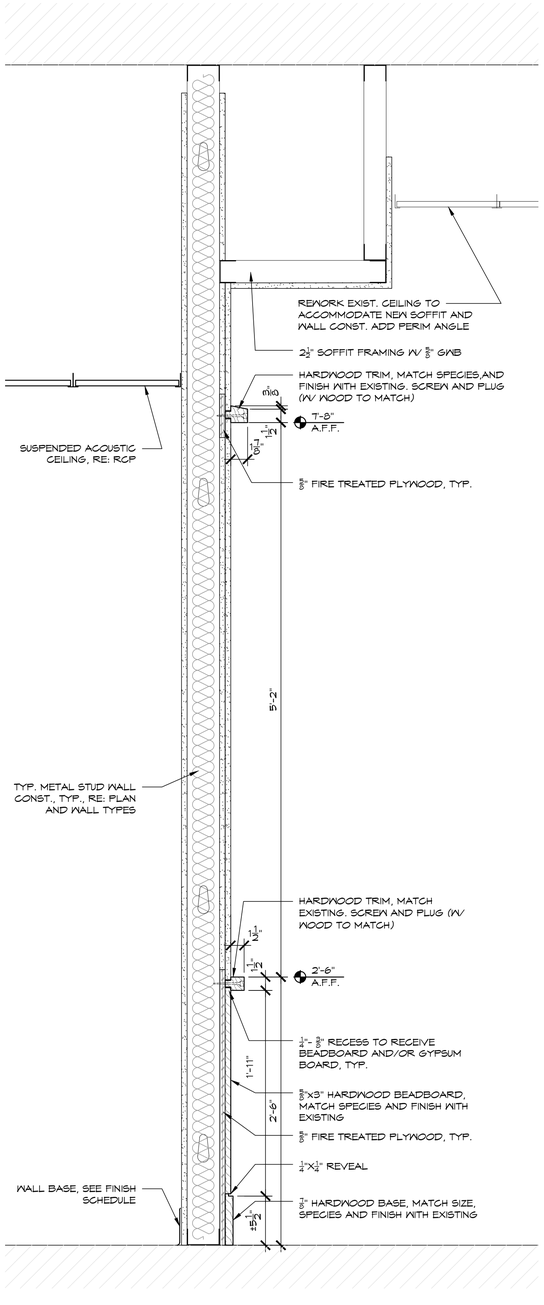
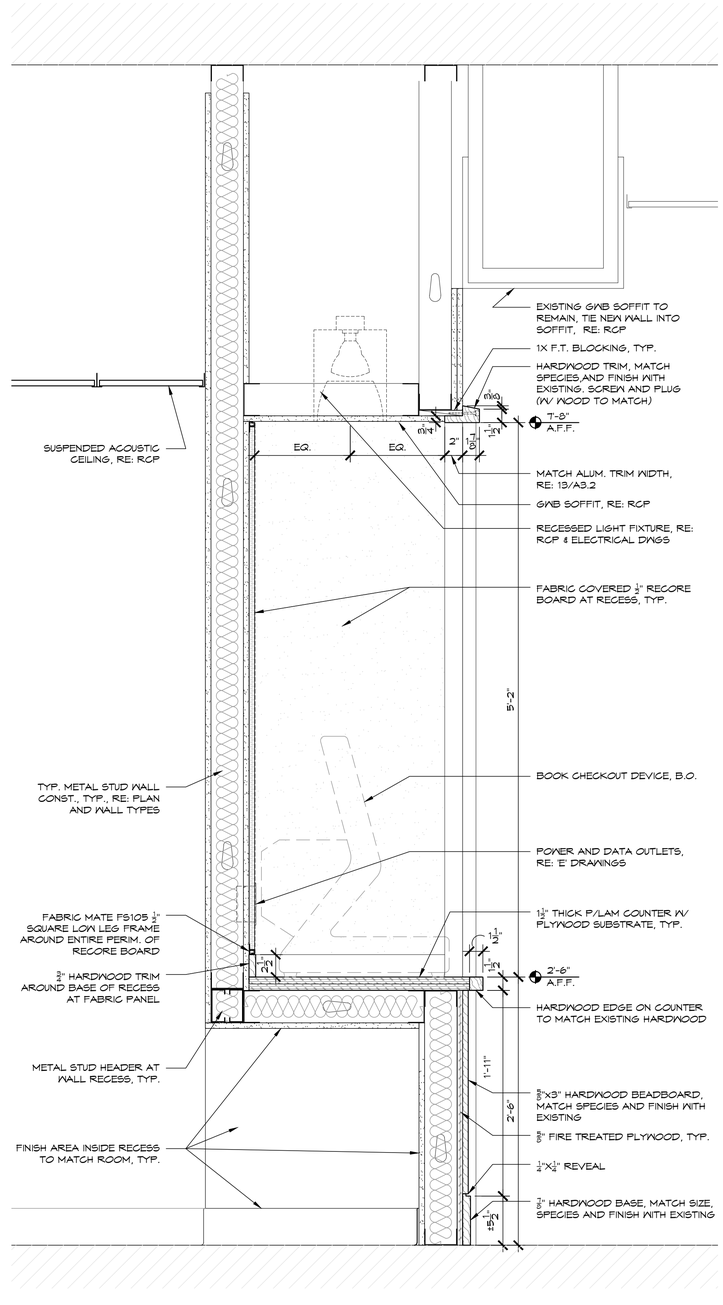
INTERIOR ELEVATIONS & DETAILS



13 INTERIOR DETAIL
1 1/2" = 1'-0"



9 DETAIL AT TYPICAL WALL WITH MILLWORK
1 1/2" = 1'-0"



5 DETAIL AT CHECKOUT STATION
1 1/2" = 1'-0"

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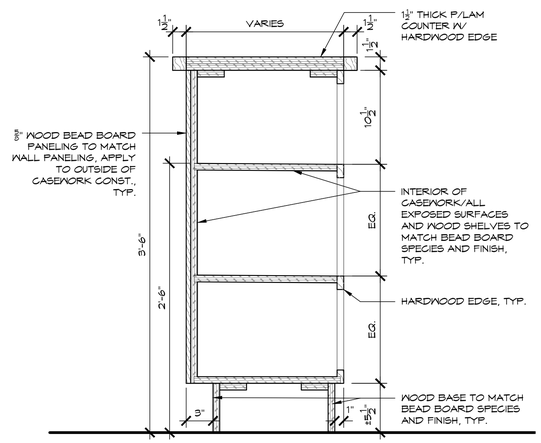
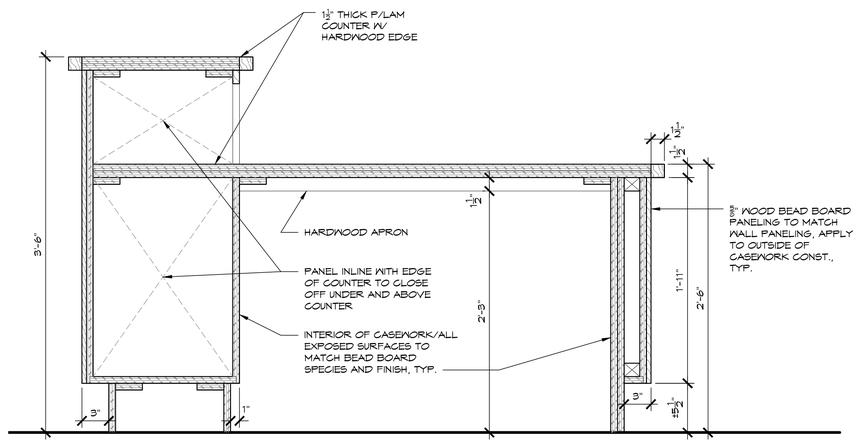
A3.2
INTERIOR ELEVATIONS & DETAILS



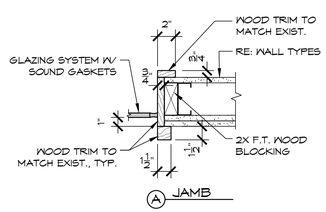
A SECTION



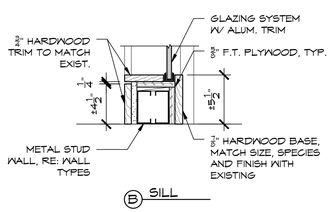
B SECTION

6 CIRCULATION DESK DETAIL

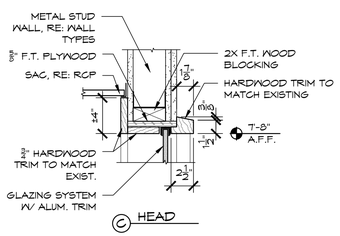
1 1/2" = 1'-0"



A JAMB



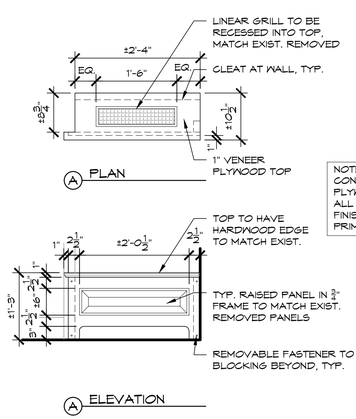
B SILL



C HEAD

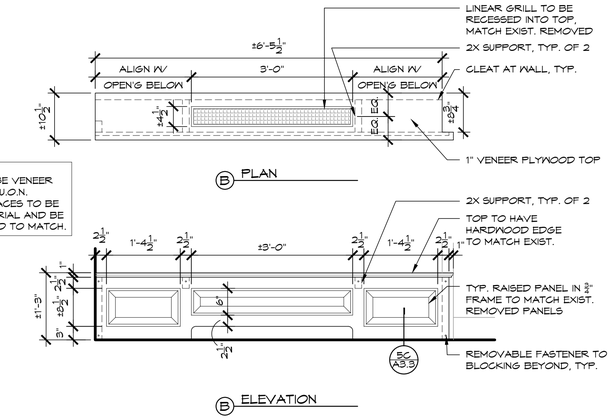
13 GLAZING DETAILS

1 1/2" = 1'-0"

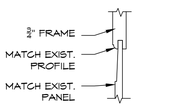


A PLAN / A ELEVATION

NOTE:
CONSTRUCTION TO BE VENEER PLYWOOD OR MDF, U.O.N.
ALL EXPOSED SURFACES TO BE FINISH GRADE MATERIAL AND BE PRIMED AND PAINTED TO MATCH.



B PLAN / B ELEVATION



C PANEL DETAIL

5 RADIATOR ENCLOSURE DETAIL

3/4" = 1'-0"

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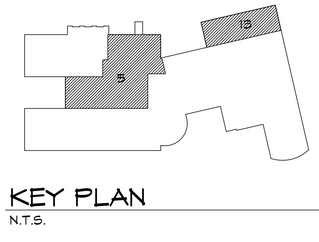
INTERIOR ELEVATIONS & DETAILS

DOOR NUMBER	ROOM NAME	DOORS			FRAME				FIRE RATING					HARDWARE - SEE SPECS											REMARKS
		DOUBLE DOOR LEAF	SIZE: (W X H)	TYPE / MATERIAL: SEE DOOR ELEVS.	TYPE / MATERIAL: SEE FRAME ELEVS.	DETAIL/SHEET. NO. HEAD DETAIL: RE: 15/A4.1 U.O.N.	DETAIL/SHEET. NO. JAMB DETAIL: RE: 15/A4.1 U.O.N.	SILL DETAIL	20 MIN.	45 MIN. 'C' LABEL	60 MIN 'B' LABEL	90 MIN 'B' LABEL	120 MIN 'A' LABEL	POSITIVE LATCHING	DELAYED ACTION CLOSER	ELECTROMAG. HOLD OPEN	PANIC HARDWARE	LEVER HANDLE	KICKPLATE	TACTILE WARNING	ACCESSIBLE THRESHOLD	GASKETING	SIGNAGE - RE: TYPICAL ELEVATION & SPECS	HARDWARD GROUP	● INDICATES REQUIRED WORK
00	OFFICE		3° x 7°	A/HM	A/HM	A	A	-						●				●				●		1	
01	WORKROOM		3° x 7°	D/WD	B/WD	B	B	-						●	●			●	●					2	
02	WORKROOM		3° x 7°	D/WD	B/WD	B	B	-						●	●			●	●					2	
03	STUDY ROOM	●	6° x 7°	C/WD	A/HM	A	A	-						●				●				●		3	ACOUSTIC SEALS AND SWEEP
04	STUDY ROOM		3° x 7°	B/WD	A/HM	A	A	-						●				●				●		3	ACOUSTIC SEALS AND SWEEP
05	STUDY ROOM		3° x 7°	-	-	-	-	-						●				●				●		4	ADD ACOUSTIC SEALS AND SWEEP
06	STUDY ROOM		3° x 7°	-	-	-	-	-						●				●				●		4	ADD ACOUSTIC SEALS AND SWEEP
07	STUDY ROOM		3° x 7°	-	-	-	-	-						●				●				●		4	ADD ACOUSTIC SEALS AND SWEEP

16 DOOR SCHEDULE
NTS

GENERAL NOTES

1. DOOR SCHEDULE IS INTENDED TO PROVIDE SCOPE OF WORK REQUIRED FOR EACH DOOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF ALL HARDWARE AND SHALL VERIFY ALL CONDITIONS IN THE FIELD PRIOR TO SUBMITTING SCHEDULE FOR ARCHITECTS REVIEW (SHOP DRAWINGS).
2. CONTRACTOR SHALL ADJUST CLOSERS TO MEET THE FOLLOWING CRITERIA:
   A. SWEEP TIME SHALL BE AT LEAST 3 SECONDS FROM A POSITION 70 DEGREES OPEN TO A POINT 3" FROM THE STRIKE, MEASURED AT THE LEADING EDGE OF THE DOOR.
   B. MAXIMUM FORCE REQ'D TO OPEN THE DOOR SHALL BE NOT GREATER THAN 5LBF.
3. ALL DOORS / FRAMES SHOWN TO HAVE GLAZING:
   A. INTERIOR DOORS / FRAMES TO RECEIVE 1/4" GLASS, RE: SPEC.
   B. PROVIDE TEMPERED GLAZING IN FRAMES WHERE TEMPERED DOOR GLAZING IS NOTED ON SCHEDULE AND AS REQ'D. BY CODE.



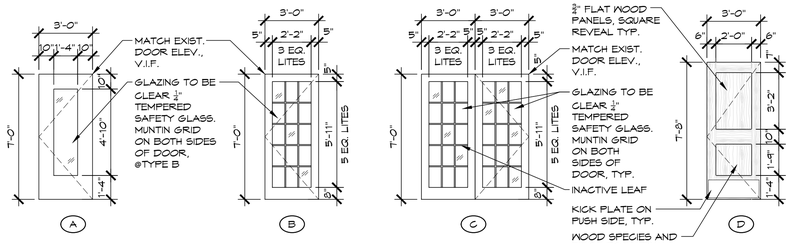
4 KEY PLAN
N.T.S.

8 DOOR GENERAL NOTES
NTS

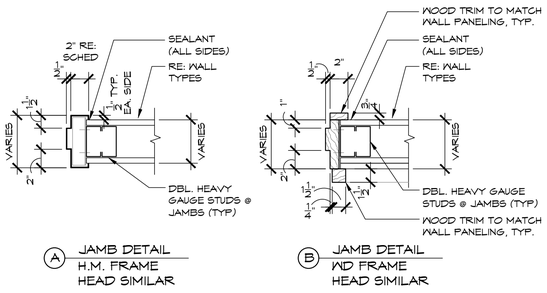
RM. NO.	RM. NAME	FLOOR	BASE	WALLS				TRIM	CLG	HT	REMARKS
				NORTH	EAST	SOUTH	WEST				
102	LOBBY	CPT/ CT (ETR)	WD/ETR	PT/WD	PT	PT	PT	PT	PT/SAC	-	REMOVE AND REINSTALL EXIST. BASE AS REQ'D. ADD NEW BASE TO MATCH AT NEW WALL CONST. PAINT NEW WALLS TO MATCH EXISTING.
103	WORKROOM	CPT	GVB	PT	PT	PT	PT	PT	SAC	-	PAINT NEW WALLS TO MATCH EXISTING
106	OFFICE	CPT/ETR	GVB	PT	PT	PT	PT	PT	SAC/ETR		ADD CVB TO NEW WALL CONSTRUCTION TO MATCH EXIST.
201	STUDY ROOM	CPT/ETR	WD/ETR	PT	PT	PT	PT	PT	PT	-	ADD BASE TO MATCH AT NEW WALL CONST. PAINT NEW WALLS TO MATCH EXISTING
202	STUDY ROOM	CPT/ETR	WD/ETR	PT	PT	PT	PT	PT	PT	-	ADD BASE TO MATCH AT NEW WALL CONST. PAINT NEW WALLS TO MATCH EXISTING
203	STUDY ROOM	CPT/ETR	WD/ETR	PT	PT	PT	PT	PT	PT	-	ADD BASE TO MATCH AT NEW WALL CONST. PAINT NEW WALLS TO MATCH EXISTING
204	STACK ROOM	CPT/ETR	WD/ETR	PT	PT	PT	PT	PT	PT	-	ADD NEW BASE AND CROWN MOULDING TO MATCH EXISTING AT NEW WALL CONST. PAINT NEW WALLS TO MATCH EXISTING. TOUCH UP CEILING AS REQ'D.
205	STUDY ROOM	CPT	WD/ETR	PT	PT	PT	PT	PT	PT	-	REMOVE AND REINSTALL EXIST. BASE AND CROWN MOULDING AS REQ'D. ADD NEW BASE AND CROWN TO MATCH AT NEW WALL CONST.
206	STUDY ROOM	CPT	WD/ETR	PT	PT	PT	PT	PT	PT	-	REMOVE AND REINSTALL EXIST. BASE AND CROWN MOULDING AS REQ'D. ADD NEW BASE AND CROWN TO MATCH AT NEW WALL CONST.

GVB= COVE VINYL BASE
WD= WOOD
SAC= SUSPENDED ACOUSTIC CEILING
PT= PAINT
CT= CERAMIC TILE
CPT= CARPET
ETR= EXISTING TO REMAIN

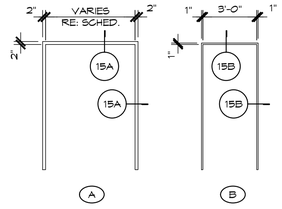
15 DOOR DETAILS
SCALE: 1 1/2"=1'-0"



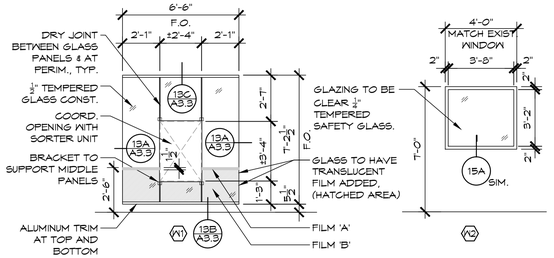
14 DOOR TYPES
SCALE: 1/4"=1'-0"



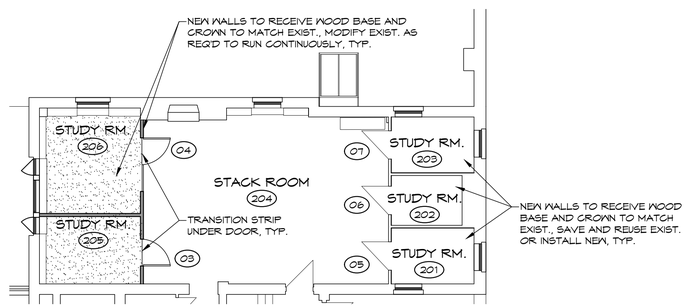
11 FRAME TYPES
SCALE: 1/4"=1'-0"



10 GLAZING TYPES
SCALE: 1/4"=1'-0"

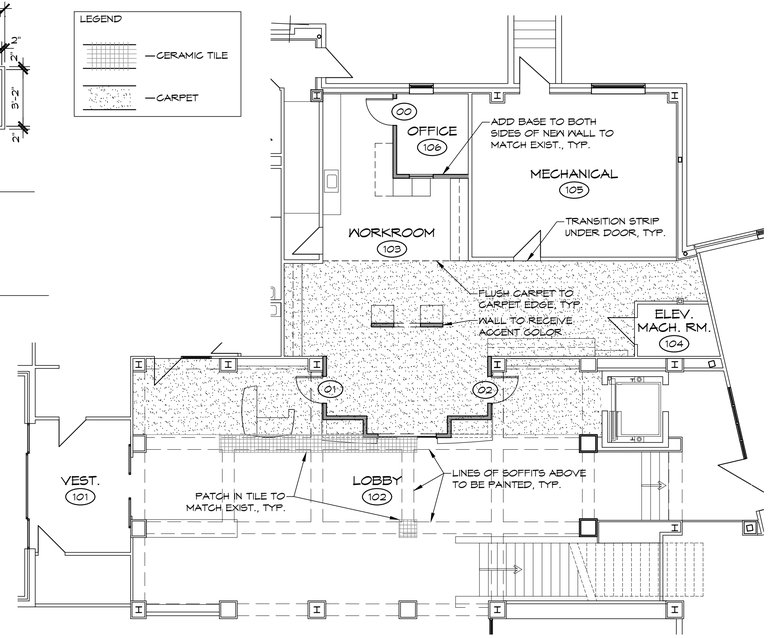


13 MAIN LEVEL FINISH PLAN
1/8" = 1'-0"



7 FINISH SCHEDULE
NTS

5 LOWER LEVEL FINISH PLAN
1/8" = 1'-0"



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A4.1
FINISH PLANS
DOORS & GLAZING

GENERAL FIRE ALARM NOTES

1. THE SCOPE OF WORK FOR THIS PROJECT IS TO EXTEND THE EXISTING FIRE ALARM SYSTEM THROUGHOUT THE PROJECT AREAS OF WORK IN COMPLIANCE WITH NFPA 72.

2. COORDINATE DEVICE LOCATIONS WITH THE ARCHITECTURAL PLANS AND THE WORK OF ALL OTHER DIVISIONS.

3. COORDINATE FIRE ALARM INTERFACE REQUIREMENTS WITH:

   A. DIV. 8 – DOOR HARDWARE, COILING DOORS, OVERHEAD DOORS.
   B. DIV. 14 – ELEVATORS
   C. DIV. 21 – FIRE SUPPRESSION SYSTEMS
   D. DIV. 23 – HVAC SYSTEMS
   E. DIV. 27 – PUBLIC ADDRESS AND SPECIALIZED SOUND SYSTEMS
   F. DIV. 28 – SECURITY SYSTEMS
   G. FOOD SERVICE EQUIPMENT

   FAILURE TO COORDINATE INTERFACE REQUIREMENTS WILL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLETE THE WORK.

GENERAL TELECOMMUNICATIONS SYSTEM NOTES

1. THE SCOPE OF WORK FOR THIS PROJECT IS TO PROVIDE THE INFRASTRUCTURE TO SUPPORT THE INSTALLATION OF TELECOMMUNICATIONS WIRING AND EQUIPMENT PROVIDED BY THE OWNER.

2. INFRASTRUCTURE REQUIREMENTS INCLUDE:

   A. BACKBOXES AND PATHWAYS TO ABOVE AN ACCESSIBLE CEILING AT DEVICE LOCATIONS.
   B. PATHWAYS (SLEEVES) THROUGH PARTITIONS AND FLOORS FOR TELECOMMUNICATIONS WIRING.
   C. PATHWAYS ACROSS INACCESSIBLE CEILINGS FOR TELECOMMUNICATIONS WIRING.
   D. POWER FOR EQUIPMENT.
   E. NYLON DRAG LINES IN ALL EMPTY RACEWAYS.

3. COORDINATE DEVICE LOCATIONS WITH THE ARCHITECTURAL PLANS AND THE WORK OF ALL OTHER DIVISIONS.

4. MEET WITH THE TELECOMMUNICATIONS CONTRACTOR PRIOR TO PROVIDING ANY INFRASTRUCTURE REQUIREMENTS TO COORDINATE WORK. SCHEDULE MEETINGS AS NECESSARY (MIN. BI-WEEKLY) TO COORDINATE WORK AND SCHEDULE SEQUENCE OF WORK.

   FAILURE TO COORDINATE INFRASTRUCTURE REQUIREMENTS WILL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLETE THE WORK.

ELECTRICAL ABBREVIATIONS

A/AMP	AMPERE	JB	JUNCTION BOX
AC	ALTERNATING CURRENT	KCMIL	THOUSAND CIRCULAR MILS
ACU	AIR CONDITIONING UNIT	KVA	KILOVOLT AMPERE
AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
AFG	ABOVE FINISHED GRADE	MAX	MAXIMUM
AHU	AIR HANDLING UNIT	MAU	MAKE UP AIR UNIT
AIC	AMPS INTERRUPTING CURRENT	MCC	MOTOR CONTROL CENTER
ATS	AUTOMATIC TRANSFER SWITCH	MCCB	MOLDED CASE CIRCUIT BREAKER
AWG	AMERICAN WIRE GAUGE	MH	METAL HALIDE
BSMT	BASEMENT	MIN	MINIMUM
C	CONDUIT	MLO	MAIN LUGS ONLY
CATV	CABLE TELEVISION	NA	NOT APPLICABLE
C/B	CIRCUIT BREAKER	NEC	NATIONAL ELECTRIC CODE
CKT	CIRCUIT	NIC	NOT IN CONTRACT
COMP	COMPRESSOR	NL	NEW LOCATION OF EXISTING RELOCATED
CP	CONDENSATE PUMP	NR	NEW TO REPLACE EXISTING
CT	CURRENT TRANSFORMER	NTS	NOT TO SCALE
CU	CONDENSING UNIT, COPPER	P	POLE
CUH	CABINET UNIT HEATER	PE	PRIMARY ELECTRICAL SERVICE
°	DEGREE	PF	POWER FACTOR
DIA/ø	DIAMETER	PH/ø	PHASE
DN	DOWN	PNL	PANEL
DWG	DRAWING	PVC	POLYVINYL CHLORIDE CONDUIT
E/ETR	EXISTING TO REMAIN	RE	REMOVE EXISTING
EF	EXHAUST FAN	RGS	RIGID GALVANIZED STEEL CONDUIT
ELEC	ELECTRICAL	RL	RELOCATE EXISTING
ELEV	ELEVATOR	RM	ROOM
EMT	ELECTRIC METALLIC TUBING	RR	REMOVE AND REPLACE ON NEW SURFACE
EUH	ELECTRIC UNIT HEATER	RTU	ROOFTOP UNIT
EWC	ELECTRIC WATER COOLER	SE	SECONDARY ELECTRICAL SERVICE
EWH	ELECTRIC WATER HEATER	SPEC	SPECIFICATION
F	FAHRENHEIT	SWBD	SWITCHBOARD
FA	FIRE ALARM	TELE	TELECOMMUNICATIONS/TELEPHONE
FACP	FIRE ALARM CONTROL PANEL	TV	TELEVISION
FC	FOOT CANDLE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
FCU	FAN COIL UNIT	T/TX	TRANSFORMER
G	GROUND	TYP	TYPICAL
GFI	GROUND FAULT INTERRUPTER	UH	UNIT HEATER
HP	HORSE POWER	V	VOLTS
HPS	HIGH PRESSURE SODIUM	VA	VOLT AMPERE
HR	HOUR	VAC	VOLTS ALTERNATING CURRENT
HZ	HERTZ	W	WATT, WIRE
IG	ISOLATED GROUND	WG	WIRE GUARD
IN	INCHES	WP	WEATHERPROOF

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	VOLTAGE	LAMPS	FIXTURE DESCRIPTION
A	NEO-RAY S23X-R-1-T5-ETG-8-D-UNV-E8-SI	UNV	(1) T5 32 W 4200K	8' LINEAR WALL WASH RECESSED DEEP LOUVER, PARABOLIC FLUORESCENT LIGHTING FIXTURE; AIR HANDLING FUNCTION; PROGRAM START ELECTRONIC BALLAST; COLD ROLLED STEEL HOUSING; COORDINATE MOUNTING IN APPROVED GRID;

LIGHTING FIXTURE NOTES:

1. BIDS SHALL BE BASED ON THE LIGHTING FIXTURE SCHEDULE.
2. ALL FIXTURES SHALL BE UL LISTED.
3. HIGH FREQUENCY, ELECTRONIC TYPE BALLASTS SHALL BE USED WITH ALL FLUORESCENT LAMPS WHEN POSSIBLE. ALL FLUORESCENT BALLASTS SHALL HAVE A MIN. POWER FACTOR OF 0.9, A CLASS "A" RATING WHERE POSSIBLE, BE UL LISTED AND BE ON THE NORTHEAST UTILITIES LIST OF APPROVED BALLASTS. FLUORESCENT BALLASTS USED IN EXTERIOR FIXTURES SHALL HAVE A MIN. STARTING TEMPERATURE OF -20° F.
4. ALL NECESSARY MOUNTING HARDWARE, HANGERS, BRACKETS, RAILS, YOKES, STEMS, CHAINS, ROW JOINERS, ETC. SHALL BE FURNISHED AND INSTALLED.
5. REFER TO ARCHITECTURAL DRAWINGS FOR SPECIFIC DETAILS, ARRANGEMENT, MOUNTING HEIGHTS, WALL CONSTRUCTION, ETC. ALL COLORS AND FINISHES SHALL BE VERIFIED BY THE ARCHITECT.

ELECTRICAL SYMBOL LIST

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SURFACE MOUNTED PANELBOARD		SITE LIGHTING FIXTURE
	RECESSED PANELBOARD		EXTERIOR BUILDING MOUNTED LIGHTING FIXTURE
	DISCONNECT SWITCH		EXTERIOR BUILDING MOUNTED ENMERGENCY LIGHTING FIXTURE
	FUSED DISCONNECT SWITCH		SURFACE MOUNTED EMERGENCY LIGHTING FIXTURE
	COMBINATION STARTER/DISCONNECT SWITCH		SURFACE MOUNTED LIGHTING FIXTURE
M	ELECTRICAL MOTOR		PENDANT MOUNTED LIGHTING FIXTURE
T	TRANSFORMER		PENDANT MOUNTED EMERGENCY LIGHTING FIXTURE
M	ELECTRICAL METER		RECESSED LIGHTING FIXTURE
SPD	SURGE PROTECTION DEVICE		RECESSED EMERGENCY LIGHTING FIXTURE
	BRANCH CIRCUIT WIRING, CONCEALED IN WALLS OR CEILINGS		WALL MOUNTED LIGHTING FIXTURE
	HOMERUN TO PANELBOARD, UNLESS INDICATED OTHERWISE SHALL BE CONNECTED TO A 1 POLE, 20 AMP CIRCUIT BREAKER		WALL MOUNTED EMERGENCY LIGHTING FIXTURE
	BRANCH CIRCUIT WIRING, SWITCHED		INDUSTRIAL OR STRIP TYPE FIXTURE
	CONDUIT RUN ON SURFACE OF WALLS/CEILING		RECESSED DOWNLIGHT FIXTURE
	BRANCH CIRCUIT WIRING BELOW GRADE/SLAB		RECESSED DOWNLIGHT EMERGENCY FIXTURE
J , J	JUNCTION BOX		SURFACE MOUNTED DOWNLIGHT FIXTURE
	WIREMOLD, LOCATE DEVICES AS INDICATED ON DRAWINGS		SURFACE MOUNTED DOWNLIGHT EMERGENCY FIXTURE
	DUPLEX WALL MOUNTED RECEPTACLE		ROUND PENDANT MOUNTED LIGHTING FIXTURE
	DOUBLE DUPLEX WALL MOUNTED RECEPTACLE		ROUND PENDANT MOUNTED EMERGENCY LIGHTING FIXTURE
	DUPLEX RECEPTACLE, MOUNT ABOVE COUNTER HEIGHT	OR	PENDANT LIGHTING FIXTURE
C	CEILING MOUNTED DUPLEX RECEPTACLE		WALL SCONCE
GFI	DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTION		WALL WASHER
WP	DUPLEX RECEPTACLE WITH WEATHERPROOF COVER		WALL MOUNTED LIGHTING FIXTURE
TP	DUPLEX RECEPTACLE, TAMPER PROOF		WALL MOUNTED EMERGENCY LIGHTING FIXTURE
EWC	DUPLEX RECEPTACLE FOR WALL MOUNTED ELECTRICAL WATER COOLER WITH GROUND FAULT CIRCUIT INTERRUPTION		SELF CONTAINED EMERGENCY LIGHTING FIXTURE WITH BATTERY
	SPECIAL PURPOSE CONNECTION		WALL MOUNTED EXIT SIGN, DOUBLE FACED
	SPECIAL PURPOSE RECEPTACLE, NEMA CONFIGURATION AS INDICATED		WALL MOUNTED EXIT SIGN
S	CEILING MOUNTED SPEAKER		CEILING MOUNTED EXIT SIGN
	TELEPHONE OUTLET, TWO GANG BACKBOX WITH 3/4" CONDUIT STUBBED INTO AN ACCESSIBLE CEILING, PROVIDE NYLON PULL STRING AND BUSHING		CEILING MOUNTED EXIT SIGN, DOUBLE FACED
	COMPUTER OUTLET, TWO GANG BACKBOX WITH 3/4" CONDUIT STUBBED INTO ACCESSIBLE CEILING. PROVIDE NYLON PULL STRING AND BUSHING		WALL MOUNTED COMBINATION SPEAKER/STROBE LIGHT WITH AN MULTI-CANDELA STROBE MOUNT AT 6'-8" AFF
	COMBINATION TELEPHONE / COMPUTER OUTLET, TWO GANG BACKBOX WITH 3/4" CONDUIT STUBBED INTO ACCESSIBLE CEILING. PROVIDE NYLON PULL STRING AND BUSHING		WALL MOUNTED MULTI-CANDELA STROBE UNIT ONLY
W	TELEPHONE OUTLET, TWO GANG BACKBOX WITH 3/4" CONDUIT STUBBED INTO AN ACCESSIBLE CEILING, PROVIDE NYLON PULL STRING AND BUSHING, MOUNTED 48"AFF		SURVEILLANCE CAMERA
S	SINGLE POLE TOGGLE SWITCH	F	WALL MOUNTED FIRE ALARM MANUAL PULL STATION, MOUNT AT 48" AFF
S_3	THREE WAY TOGGLE SWITCH	S	CEILING MOUNTED SMOKE DETECTOR
S_4	FOUR WAY TOGGLE SWITCH	S D	DUCT MOUNTED SMOKE DETECTOR AND HOUSING
S_D	DIMMER SWITCH	RTS	REMOTE DUCT SMOKE DETECTOR TEST SWITCH
S_{LV}	LOW VOLTAGE SWITCH	MM	MONITOR MODULE
S_O	OCCUPANCY SENSOR SWITCH	CM	CONTROL MODULE
S_V	VACNACY SENSOR SWITCH	TS	SPRINKLER ALARM TAMPER SWITCH
R	RELAY	FS	SPRINKLER ALARM FLOW SWITCH
PP	POWER PACK	PS	SPRINKLER ALARM PRESSURE SWITCH
LS	LIGHT SENSING PHOTOCELL FOR DAYLIGHT HARVESTING		EMERGENCY CALL FOR AID COMBINATION BUZZER/LIGHT
TC	TIME CLOCK	M	MAGNETIC DOOR HOLD OPEN
OS	OCCUPANCY SENSOR		EMERGENCY SHUT-OFF BUTTON
OS V	VACANCY SENSOR		
LS	WALL MOUNT OCCUPANCY SENSOR		

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PROJECT NO: 2016.036
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REVISIONS:

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ELECTRICAL LEGEND AND NOTES

ELECTRICAL SPECIFICATIONS

1. THIS PROJECT COMPRISES ALTERATIONS AND RENOVATIONS TO THE EXISTING BUILDING. THE EXISTING BUILDING IS CURRENTLY OCCUPIED AND THE PROJECT WILL PROCEED IN A MANNER WHICH WILL MINIMIZE ANY INCONVENIENCE TO THE BUILDING OCCUPANTS.

2. PRIOR TO SUBMITTING BID, VISIT SITE AND IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK TO BE PERFORMED. NO COMPENSATION WILL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY IDENTIFIED BY EXPERIENCED OBSERVERS. INCLUDE IN THE BID ALL DEMOLITION WORK REQUIRED.

3. THE SCOPE OF WORK CONSISTS OF INSTALLATION OF MATERIALS TO BE FURNISHED UNDER THE CONTRACT DOCUMENTS AND WITHOUT LIMITING GENERALITY THEREOF CONSISTS OF FURNISHING LABOR, MATERIALS, EQUIPMENT, HOISTING, PLANT, TRANSPORTATION, RIGGING, STAGING, APPURTENANCES, AND SERVICES NECESSARY AND/OR INCIDENTAL TO PROPERLY COMPLETE ALL ELECTRICAL WORK AS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.

4. THE FOLLOWING DEFINITIONS APPLY TO THIS CONTRACT:

   A. FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

   B. INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

   C. PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

   D. REMOVE: THE TERM "REMOVE" MEANS " TO DISCONNECT FROM ITS PRESENT POSITION, REMOVE FROM THE PREMISES AND TO DISPOSE OF IN A LEGAL MANNER."

5. PROVIDE ALL NECESSARY MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK OUTLINED ON THESE CONTRACT DOCUMENTS. THE CONTRACTOR IS TO NOTE THAT THESE DOCUMENTS ARE DIAGRAMMATIC ONLY AND THAT FINAL PLACEMENT OF EQUIPMENT OR DEVICES IN THE FIELD MAY NOT DIRECTLY CORRESPOND TO THAT IN WHICH IS SHOWN ON THE DRAWINGS. IF A CONFLICT IN POSITIONING OCCURS THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY TO ASCERTAIN WHAT THE INTENT WAS BY THE DESIGN PROFESSIONAL.

6. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST STATE OF CONNECTICUT ACCEPTED REVISION OF THE NATIONAL ELECTRIC CODE (NEC), NFPA 70, BOCA, AND ALL CURRENT STATE OF CONNECTICUT BUILDING AND FIRE CODES.

7. OBTAIN IN OWNER'S NAME WRITTEN EQUIPMENT AND MATERIAL WARRANTIES OFFERED IN MANUFACTURER'S PUBLISHED PRODUCT DATA WITHOUT EXCLUSION OR LIMITATION.

8. GUARANTEE WORK OF THESE CONTRACT DOCUMENTS IN WRITING FOR NOT LESS THAN ONE YEAR FROM DATE OF FINAL NOTICE OF ACCEPTANCE. REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATION THAT DEVELOP WITHIN THIS PERIOD, PROMPT AND TO OWNER'S SATISFACTION AND CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEE WITHIN CONTRACT PRICE.

9. SUPPLY TO THE OWNER AN OFFICIAL CERTIFICATE OF INSURANCE FOR THEIR RECORDS.

10. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING AND BEING AVAILABLE FOR INSPECTIONS BY THE AUTHORITY HAVING JURISDICTION.

11. USE ADEQUATE NUMBERS OF SKILLED WORKMEN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS NEEDED FOR PROPER PERFORMANCE OF THE WORK.

12. ARRANGE INSTALLATION TO PROVIDE ACCESS TO EQUIPMENT FOR EASY MAINTENANCE AND REPAIR.

13. DO NOT SCALE DRAWINGS. SCALE INDICATED ON DRAWINGS IS FOR ESTABLISHING REFERENCE POINTS ONLY. ACTUAL FIELD CONDITIONS SHALL GOVERN ALL DIMENSIONS.

14. MATERIALS AND EQUIPMENT SHALL BE UL LISTED WHERE STANDARD HAS BEEN ESTABLISHED.

15. DO NOT BURN WASTE MATERIALS. DO NOT BURY DEBRIS OR EXCESS MATERIALS ON THE OWNER'S PROPERTY. DO NOT DISCHARGE VOLATILE, HARMFUL OR DANGEROUS MATERIALS INTO DRAINAGE SYSTEMS. REMOVE AND DISPOSE OF ALL WASTE MATERIALS, PACKAGING MATERIAL, SKIDS ETC. FROM THE SITE AND DISPOSE OF IN A LAWFUL MANNER IN ACCORDANCE WITH MUNICIPAL, STATE AND FEDERAL REGULATIONS.

16. PRIOR TO ORDERING ANY MATERIALS AND EQUIPMENT, THOROUGHLY REVIEW THE SITE CONDITIONS TO DETERMINE IF ADEQUATE CLEARANCE AND ACCESS IS ALLOWED TO INSTALL THE COMPONENTS. ORDER EQUIPMENT BROKEN DOWN AS NECESSARY TO ALLOW FOR PROPER HANDLING THROUGH THE PROJECT AREA. PROVIDE ALL NECESSARY ALTERATIONS TO THE STRUCTURE OF THE BUILDING AS NECESSARY TO RIG THE EQUIPMENT IN PLACE. CAREFULLY INSPECT ALL BUILDING ELEMENTS PRIOR TO CUTTING OR DRILLING INTO WALL, FLOORS OR CEILINGS.

17. THE CONTRACTOR SHALL BE REQUIRED TO PROPERLY STORE MATERIALS AND EQUIPMENT SO AS TO AVOID THEFT OR VANDALISM. IF THEFT OR VANDALISM OCCURS, THE CONTRACTOR SHALL REPAIR OR REPLACE SUCH ITEMS AT THE DIRECTION OF THE ENGINEER.

18. THE CONTRACTOR MUST COORDINATE ALL INTERRUPTIONS OF SERVICES AND LIMITATIONS OF ACCESS WITH THE OWNER NO LESS THAN 3 DAYS PRIOR TO THE INTERRUPTION.

19. PROVIDE TEMPORARY ELECTRIC POWER OF SUFFICIENT SIZE, CAPACITY AND POWER CHARACTERISTICS DURING CONSTRUCTION PERIOD.

20. MOUNT PANELBOARDS, CIRCUIT BREAKERS, AND DISCONNECTING SWITCHES SO HEIGHT OF OPERATING HANDLE AT ITS HIGHEST POSITION IS MAXIMUM 78 INCHES ABOVE FLOOR.

21. PROVIDE LAMINATED PLASTIC NAMEPLATES FOR EACH PANELBOARD, EQUIPMENT ENCLOSURE, RELAY, SWITCH, AND DEVICE. EACH NAMEPLATE INSCRIPTION SHALL IDENTIFY THE FUNCTION AND, WHEN APPLICABLE, THE POSITION. NAMEPLATES SHALL BE MELAMINE PLASTIC, 0.125–INCH THICK, WHITE WITH BLACK CENTER CORE. SURFACE SHALL BE MATTE FINISH. CORNERS SHALL BE SQUARE. ACCURATELY ALIGN LETTERING AND ENGRAVE INTO THE CORE. MINIMUM SIZE OF NAMEPLATES SHALL BE 1 BY 2.5 INCHES. LETTERING SHALL BE A MINIMUM OF 0.25–INCH HIGH NORMAL BLOCK STYLE.

22. GROUNDING SHALL BE COMPLETED IN ACCORDANCE WITH NFPA 70. GROUND EXPOSED, NON–CURRENT–CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, GROUNDING CONDUCTOR IN METALLIC AND NONMETALLIC RACEWAYS, GROUNDING CONDUCTOR OF NONMETALLIC SHEATHED CABLES, AND NEUTRAL CONDUCTOR OF WIRING SYSTEMS. WHERE GROUND FAULT PROTECTION IS EMPLOYED, ENSURE THAT CONNECTION OF GROUND AND NEUTRAL DOES NOT INTERFERE WITH CORRECT OPERATION OF FAULT PROTECTION.

23. CONDUCTORS NO. 8 AWG AND LARGER DIAMETER SHALL BE STRANDED ANNEALED COPPER. CONDUCTORS NO. 10 AWG AND SMALLER DIAMETER SHALL BE SOLID ANNEALED COPPER, EXCEPT THAT CONDUCTORS FOR REMOTE CONTROL, ALARM, AND SIGNAL CIRCUITS, CLASSES 1, 2, AND 3, SHALL BE STRANDED UNLESS SPECIFICALLY INDICATED OTHERWISE. CONDUCTOR SIZES AND AMPACITIES SHOWN ARE BASED ON COPPER, UNLESS INDICATED OTHERWISE. UNLESS SPECIFIED OR INDICATED OTHERWISE OR REQUIRED BY NFPA 70, POWER WIRES SHALL BE 600–VOLT, TYPE THWN/THHN ANNEALED COPPER, REMOTE–CONTROL AND SIGNAL CIRCUITS SHALL BE TYPE TW, THW, OR TF ANNEALED COPPER.

24. MAKE ALL SPLICES IN ACCESSIBLE LOCATIONS. MAKE SPLICES IN CONDUCTORS NO. 10 AWG AND SMALLER DIAMETER WITH INSULATED, PRESSURE–TYPE CONNECTOR. MAKE SPLICES IN CONDUCTORS NO. 8 AWG AND LARGER DIAMETER WITH SOLDERLESS CONNECTOR, AND COVER WITH INSULATION MATERIAL EQUIVALENT TO CONDUCTOR INSULATION.

25. PHASE CONDUCTORS SHALL BE IDENTIFIED BY COLOR CODING. THE COLOR OF THE INSULATION ON PHASES A, B, AND C RESPECTIVELY (FOR THREE PHASE) OR PHASES A AND B RESPECTIVELY (FOR SINGLE PHASE) OF DIFFERENT VOLTAGE SYSTEMS SHALL BE AS FOLLOWS: 120/208 VOLT, 3–PHASE: BLACK, RED, AND BLUE. 277/480 VOLT, 3–PHASE: BROWN, ORANGE, AND YELLOW.

26. UNLESS OTHERWISE INDICATED, THE WIRING METHOD SHALL CONSIST OF THE INSTALLATION OF INSULATED CONDUCTORS INSTALLED IN RIGID ZINC–COATED STEEL CONDUIT. PROVIDE INSULATED GREEN EQUIPMENT GROUNDING CONDUCTOR IN FEEDER AND BRANCH CIRCUITS, INSTALLED IN CONDUIT OR RACEWAYS. GROUNDING CONDUCTOR SHALL BE SEPARATE FROM ELECTRICAL SYSTEM NEUTRAL CONDUCTOR. METAL CONDUIT SHALL EXTEND THROUGH SHAFTS FOR MINIMUM DISTANCE OF 6 INCHES. CONDUIT SIZES SHOWN ARE BASED ON USE OF COOPER CONDUCTORS WITH INSULATION TYPES AS INDICATED HEREIN. MINIMUM SIZE OF RACEWAYS SHALL BE 3/4 INCH. ONLY METAL CONDUITS WILL BE PERMITTED WHEN CONDUITS ARE REQUIRED FOR SHIELDING OR OTHER SPECIAL PURPOSES INDICATED, OR WHEN REQUIRED BY CONFORMANCE TO NFPA 70.

27. ELECTRICAL METALLIC TUBING (EMT) MAY BE INSTALLED ONLY WITHIN BUILDINGS. EMT MAY NOT BE INSTALLED IN CONCRETE OR EXTERIOR TO BUILDINGS. EMT SHALL NOT BE INSTALLED IN DAMP OR WET LOCATIONS. DO NOT USE IN AREAS SUBJECT TO SEVERE PHYSICAL DAMAGE INCLUDING, BUT NOT LIMITED TO EQUIPMENT ROOMS WHERE MOVING OR REPLACING EQUIPMENT COULD PHYSICALLY DAMAGE THE EMT. BUSHINGS, MANUFACTURED FITTINGS, OR BOXES PROVIDING EQUIVALENT MEANS OF PROTECTION SHALL BE INSTALLED ON THE ENDS OF ALL CONDUIT AND SHALL BE OF THE INSULATING TYPE, WHERE REQUIRED BY NFPA 70. ONLY UL LISTED ADAPTERS SHALL BE SUED TO CONNECT EMT TO RIGID METAL CONDUIT, CAST BOXES AND CONDUIT BODIES. METALLIC CONDUIT AND TUBING SHALL BE SECURELY AND RIGIDLY FASTENED IN PLACE AS REQUIRED BY NFPA 70.

28. PROVIDE ALL NECESSARY JUNCTION BOXES, PULL BOXES, PULL WIRES, COVER PLATES AND OTHER MISCELLANEOUS EQUIPMENT WHICH IS NOT SHOWN ON THE CONTRACT DOCUMENTS BUT NECESSARY TO COMPLETE THE WORK.

29. PROVIDE FIRE STOPPING AROUND ELECTRICAL PENETRATIONS IN ACCORDANCE WITH FIRE STOPPING REQUIREMENTS. PROVIDE ASBESTOS FREE FIRE STOPPING SYSTEM CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME AND GASES. SYSTEM SHALL BE UL LISTED AND COMPLY WITH ASTM E 814.

30. PROVIDE PRE–LABELED, SNAP AROUND PIPE MARKERS ON ALL CONDUITS. MARKERS SHALL COMPLY WITH ANSI A 13.1–1988 STANDARDS AND INDICATED VOLTAGE.

31. COORDINATE ALL WORK WITH OTHER TRADES AND ARRANGE INSTALLATION TO AVOID CLASHES BETWEEN EQUIPMENT, WORK OF OTHER TRADES AND BUILDING STRUCTURE.

32. ALL FIRE ALARM WIRING SHALL BE INSTALLED TO MATCH SYSTEM/BUILDING STANDARD. ALL WIRING IN FINISHED SPACES SHALL BE CONCEALED. CONDUIT IN BACK–OF–HOUSE UNFINISHED SPACES MAY BE EXPOSED. COORDINATE WITH PROPERTY MANAGER'S FIRE ALARM CONTRACTOR. CONTRACTOR TO PROVIDE ANY/ALL ADDITIONAL AMPLIFIERS, POWER SUPPLIES, ETC. AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

33. SINGLE AND DUPLEX RECEPTACLES SHALL BE HEAVY–DUTY SPECIFICATION GRADE,RATED 20 AMPERES, 125 VOLTS, TWO–POLE, THREE–WIRE, GROUNDING TYPE WITH POLARIZED PARALLEL SLOTS. BODY COLOR SHALL BE SELECTED BY ARCHITECT. RECEPTACLE SHALL BE SIDE– OR BACK–WIRED WITH TWO SCREWS PER TERMINAL. THE THIRD GROUNDING POLE SHALL BE CONNECTED TO THE METAL MOUNTING YOKE. SWITCHED RECEPTACLES SHALL BE THE SAME AS OTHER RECEPTACLES SPECIFIED EXCEPT THAT THE UNGROUNDED POLE OF EACH SUITABLE RECEPTACLE SHALL BE PROVIDED WITH A SEPARATE TERMINAL. ONLY THE TOP RECEPTACLE OF A DUPLEX RECEPTACLE SHALL BE WIRED FOR SWITCHING APPLICATION. RECEPTACLES WITH GROUND FAULT CIRCUIT INTERRUPTERS SHALL HAVE THE CURRENT RATING AS INDICATED, AND SHALL BE UL CLASS A TYPE UNLESS OTHERWISE SHOWN. GROUND FAULT CIRCUIT PROTECTION SHALL BE PROVIDED AS REQUIRED BY NFPA 70 AND AS INDICATED ON THE DRAWINGS.

34. WEATHERPROOF RECEPTACLES SHOWN SHALL BE MOUNTED IN A BOX WITH A GASKETED, WEATHERPROOF, CAST–METAL COVER PLATE AND GASKETED CAP OVER EACH RECEPTACLE OPENING.

35. WALL SWITCHES SHALL BE OF THE TOTALLY ENCLOSED TUMBLER TYPE. THE WALL SWITCH HANDLE AND SWITCH PLATE COLOR SHALL BE SELECTED BY ARCHITECT. WIRING TERMINALS SHALL BE OF THE SCREW TYPE OR OF THE SOLDERLESS PRESSURE TYPE HAVING SUITABLE CONDUCTOR–RELEASE ARRANGEMENT. SWITCHES SHALL BE RATED 20–AMPERE 120/277–VOLT FOR USE ON ALTERNATING CURRENT ONLY. DIMMING SWITCHES SHALL BE SLIDE TYPE, SOLID–STATE, FLUSH MOUNTED, WITH PRESET LIGHT SETTINGS AND SIZED FOR THE LOADS.

36. DEVICE PLATES SHALL BE ONE–PIECE TYPE AND BE PROVIDED FOR ALL RECEPTACLES, OUTLETS, SWITCHES AND FITTINGS. PLATES ON UNFINISHED WALLS AND ON FITTINGS SHALL BE STAINLESS STEEL. PLATES ON FINISHED WALLS SHALL BE IMPACT–RESISTANT PLASTIC, COLOR SELECTED BY ARCHITECT. PLATES SHALL BE INSTALLED WITH ALL FOUR EDGES IN CONTINUOUS CONTACT WITH FINISHED WALL SURFACES WITHOUT THE USE OF MATS OR SIMILAR DEVICES. PLASTER FILLINGS WILL NOT BE PERMITTED. PLATES SHALL BE INSTALLED WITH AN ALIGNMENT TOLERANCE OF 1/16 INCH. THE USE OF SECTIONAL–TYPE DEVICE PLATES WILL NOT BE PERMITTED. PLATES INSTALLED IN WET LOCATIONS SHALL BE GASKETED AND PROVIDED WITH A HINGED, GASKETED COVER, UNLESS OTHERWISE SPECIFIED.

37. MOUNT LIGHTING SWITCHES 48 INCHES ABOVE FINISHED FLOOR, RECEPTACLES 18 INCHES ABOVE FINISHED FLOOR, AND OTHER DEVICES AS INDICATED. MEASURE MOUNTING HEIGHTS OF WIRING DEVICES AND OUTLETS TO TOP OF DEVICE OR OUTLET.

38. OUTLET BOXES FOR WALL TELEPHONE STATIONS SHALL BE MOUNTED AT A HEIGHT OF 48 INCHES ABOVE FINISHED FLOOR.

39. CEILING FIXTURES SHALL BE COORDINATED WITH AND SUITABLE FOR INSTALLATION IN, ON, OR FROM THE CEILING SPECIFIED ON THE ARCHITECTURAL PLANS. THE CONTRACTOR MUST VERIFY THE CEILING TYPES PRIOR TO ORDERING THE FIXTURES. INSTALLATION AND SUPPORT OF FIXTURES SHALL BE IN ACCORDANCE WITH THE NFPA 70 AND MANUFACTURER'S RECOMMENDATIONS. PROVIDE SEISMIC RESTRAINTS FOR ALL LIGHT FIXTURES SPECIFIED HEREIN. RECESSED FIXTURES SHALL HAVE ADJUSTABLE FITTINGS TO PERMIT ALIGNMENT WITH CEILING PANELS. RECESSED FIXTURES INSTALLED IN FIRE–RESISTIVE TYPE OF SUSPENDED CEILING CONSTRUCTION SHALL HAVE THE SAME FIRE RATING AS THE CEILING OR SHALL BE PROVIDED WITH FIREPROOFING BOXES HAVING MATERIALS OF THE SAME FIRE RATING AS THE CEILING PANELS, IN CONFORMANCE WITH UL–03. SURFACE–MOUNTED FIXTURES SHALL BE SUITABLE FOR FASTENING TO THE STRUCTURAL SUPPORT FOR CEILING PANELS.

40. PROVIDE SHOP DRAWINGS FOR PANELBOARDS, TRANSFORMERS, CIRCUIT BREAKERS, DISCONNECT SWITCHES, LIGHT FIXTURES, WIRING DEVICES, CONDUIT, RACEWAYS, FLOOR BOXES, POWER POLES, FITTINGS, CONDUCTORS AND CABLES, HANGERS AND SUPPORTS, BOXES AND FIRE ALARM DEVICES.

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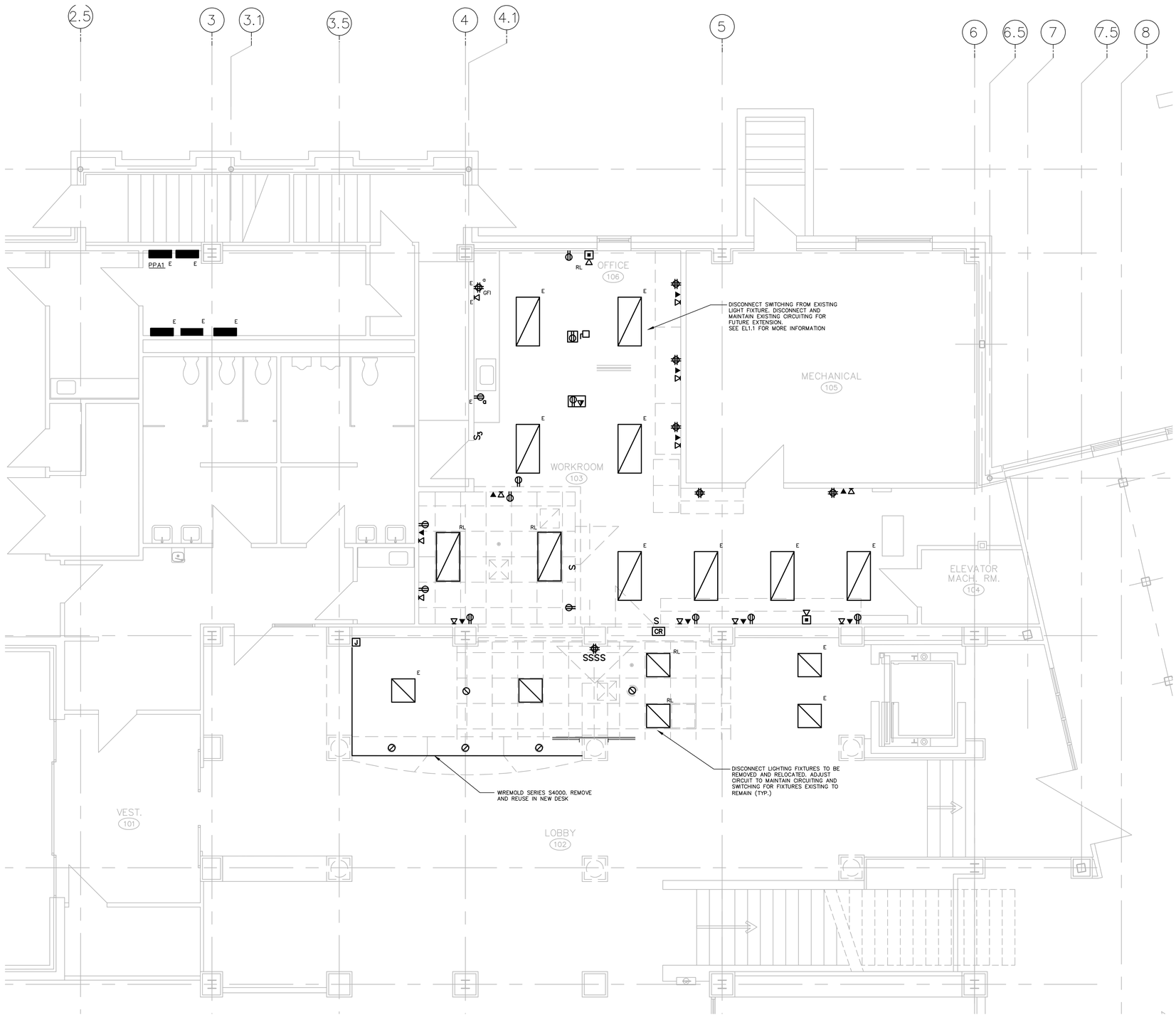
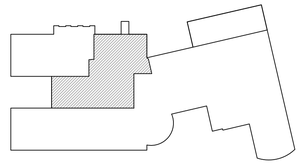
ELECTRICAL LEGEND AND NOTES



1 LOWER LEVEL ELECTRICAL DEMOLITION PLAN

SCALE: 1/4"=1'0"



KEY PLAN

N.T.S.

GENERAL ELECTRICAL DEMOLITION NOTES

1. UNLESS NOTED OTHERWISE ALL ELECTRICAL DEVICES SHOWN TO BE REMOVED. REMOVAL OF DEVICES SHALL BE COMPLETE INCLUDING BOXES, BRACKETS, HANGERS AND BRANCH CIRCUIT WIRING BACK TO SOURCE PANELBOARD OR LAST ACTIVE ACTIVE DEVICE TO REMAIN (EXCEPT WHERE NOTED).
2. CONTRACTOR SHALL BE RESPONSIBLE FOR LEGAL DISPOSAL OF MERCURY-CONTAINING LAMPS AND PCB BALLASTS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR STORAGE AND HANDLING OF EXISTING TO BE RELOCATED EQUIPMENT.
4. CONTRACTOR SHALL MODIFY EXISTING CIRCUITS, WHEN EXISTING DEVICES ARE REMOVED, AS REQUIRED TO MAINTAIN CIRCUIT CONTINUITY.
5. THIS PLAN IS DIAGRAMMATIC AND NOT INTENDED TO DEPICT THE ENTIRE SCOPE OF ELECTRICAL DEMOLITION. ADDITIONAL DEMOLITION AND MODIFICATION WORK NOT SHOWN SHOULD BE ANTICIPATED.
6. REFER TO DRAWING E0.0 FOR SYMBOL LIST.
7. UNLESS OTHERWISE NOTED, EXISTING FIRE ALARM DEVICES ARE TO BE REMOVED BACK TO NEXT DEVICE DEVICE SCHEDULED TO REMAIN OR OUTSIDE OF THE AREA OF WORK. EXTEND CIRCUITS WITH WIRING TO MATCH EXISTING CLASS AND STYLE AS REQUIRED TO MAINTAIN CONTINUITY OF CIRCUITS UPSTREAM AND DOWNSTREAM OF THE WORK AFFECTED BY DEMOLITION. PROTECT EXISTING DEVICES DURING CONSTRUCTION. TAKE DEVICE OFF-LINE IF NECESSARY, COORDINATE BYPASSING AND REACTIVATION OF THE DEVICE WITH THE OWNER.
8. DEMOLITION IS TO BE PERFORMED IN A PHASED FASHION AND PERFORMED TO MAINTAIN EXISTING SYSTEMS IN AREAS REMAINING OPERATIONAL. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE DISRUPTION OF SYSTEMS OR CIRCUITS AND TO INVESTIGATE ALL CIRCUITING AND DEVICES SCHEDULED FOR REMOVAL. PROVIDE TEMPORARY MEASURES TO MAINTAIN EXISTING SYSTEMS AND CIRCUITS AS REQUIRED.
9. ALL EXISTING TELECOMMUNICATIONS CABLING REMOVED TO BE STORED IN A SAFE PLACE AND RETURNED TO THE OWNER.

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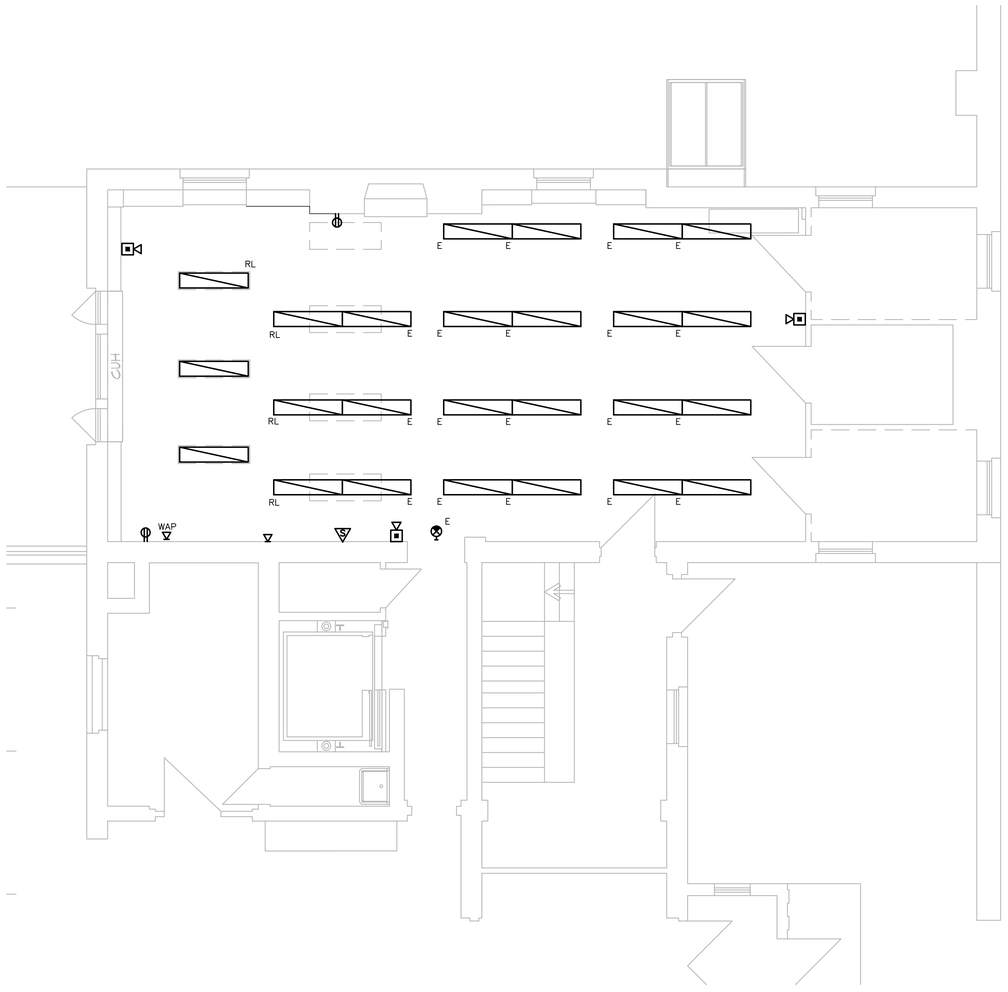
LOWER LEVEL
ELECTRICAL DEMOLITION PLAN



1 MAIN LEVEL ELECTRICAL DEMOLITION PLAN
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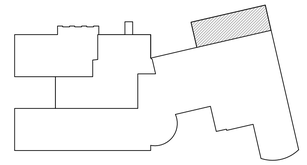

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3. CONTRACTOR SHALL BE RESPONSIBLE FOR STORAGE AND HANDLING OF EXISTING TO BE RELOCATED EQUIPMENT.
4. CONTRACTOR SHALL MODIFY EXISTING CIRCUITS, WHEN EXISTING DEVICES ARE REMOVED, AS REQUIRED TO MAINTAIN CIRCUIT CONTINUITY.
5. THIS PLAN IS DIAGRAMMATIC AND NOT INTENDED TO DEPICT THE ENTIRE SCOPE OF ELECTRICAL DEMOLITION. ADDITIONAL DEMOLITION AND MODIFICATION WORK NOT SHOWN SHOULD BE ANTICIPATED.
6. REFER TO DRAWING E0.0 FOR SYMBOL LIST.
7. UNLESS OTHERWISE NOTED, EXISTING FIRE ALARM DEVICES ARE TO BE REMOVED BACK TO NEXT DEVICE DEVICE SCHEDULED TO REMAIN OR OUTSIDE OF THE AREA OF WORK. EXTEND CIRCUITS WITH WIRING TO MATCH EXISTING CLASS AND STYLE AS REQUIRED TO MAINTAIN CONTINUITY OF CIRCUITS UPSTREAM AND DOWNSTREAM OF THE WORK AFFECTED BY DEMOLITION. PROTECT EXISTING DEVICES DURING CONSTRUCTION. TAKE DEVICE OFF–LINE IF NECESSARY, COORDINATE BYPASSING AND REACTIVATION OF THE DEVICE WITH THE OWNER.
8. DEMOLITION IS TO BE PERFORMED IN A PHASED FASHION AND PERFORMED TO MAINTAIN EXISTING SYSTEMS IN AREAS REMAINING OPERATIONAL. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE DISRUPTION OF SYSTEMS OR CIRCUITS AND TO INVESTIGATE ALL CIRCUITING AND DEVICES SCHEDULED FOR REMOVAL. PROVIDE TEMPORARY MEASURES TO MAINTAIN EXISTING SYSTEMS AND CIRCUITS AS REQUIRED.
9. ALL EXISTING TELECOMMUNICATIONS CABLING REMOVED TO BE STORED IN A SAFE PLACE AND RETURNED TO THE OWNER.

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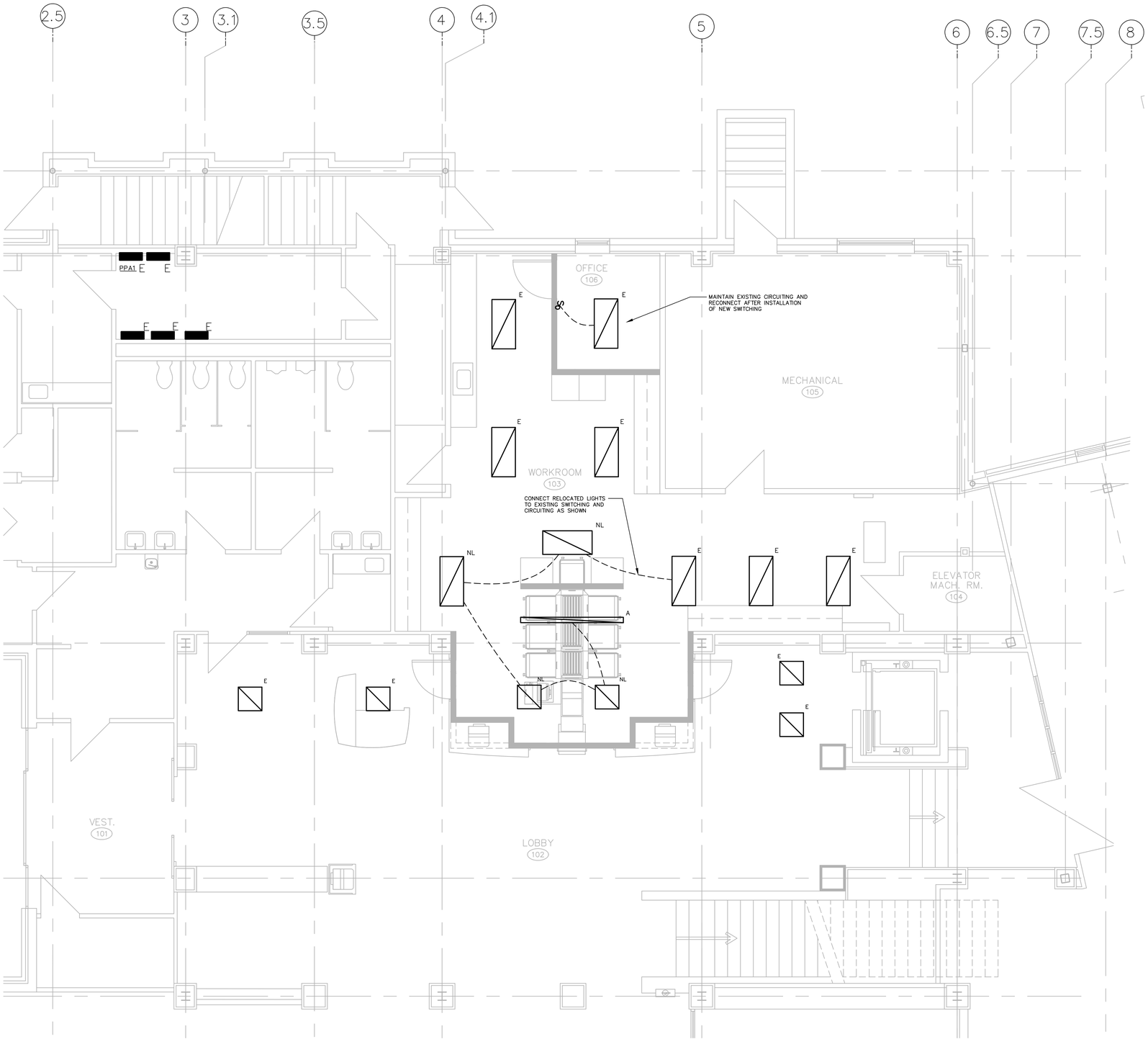
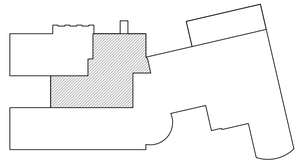
MAIN LEVEL
ELECTRICAL DEMOLITION PLAN



1 **LOWER LEVEL ELECTRICAL LIGHTING PLAN**
SCALE: 1/4"=1'0"



KEY PLAN
N.T.S.

GENERAL ELECTRICAL LIGHTING NOTES

1. ALL NEW CIRCUITS SHALL BE 2#12,1#12G.,3/4"C., TO NEW 20A-1P CIRCUIT BREAKER IN PANEL INDICATED UNLESS NOTED OTHERWISE.
2. EXTENSION OF EXISTING CIRCUITS SHALL MATCH EXISTING WIRING UNLESS NOTED OTHERWISE, MINIMUM CIRCUIT REQUIREMENTS ARE 2#12,1#12G.,3/4"C.
3. ALL 120VAC BRANCH CIRCUITS EXCEEDING 150' IN LENGTH SHALL BE INCREASED TO 2#10,1#10G.,3/4"C., UNLESS OTHERWISE NOTED.
4. EXIT SIGNS SHALL BE WIRED TO LINE SIDE OF LOCAL LIGHTING BRANCH CIRCUIT, AHEAD OF ALL SWITCHING DEVICES.
5. REFER TO ARCHITECTS REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF CEILING MOUNTED DEVICES.
6. REFER TO E0.0 FOR SYMBOLS LIST AND LIGHTING FIXTURE SCHEDULE.

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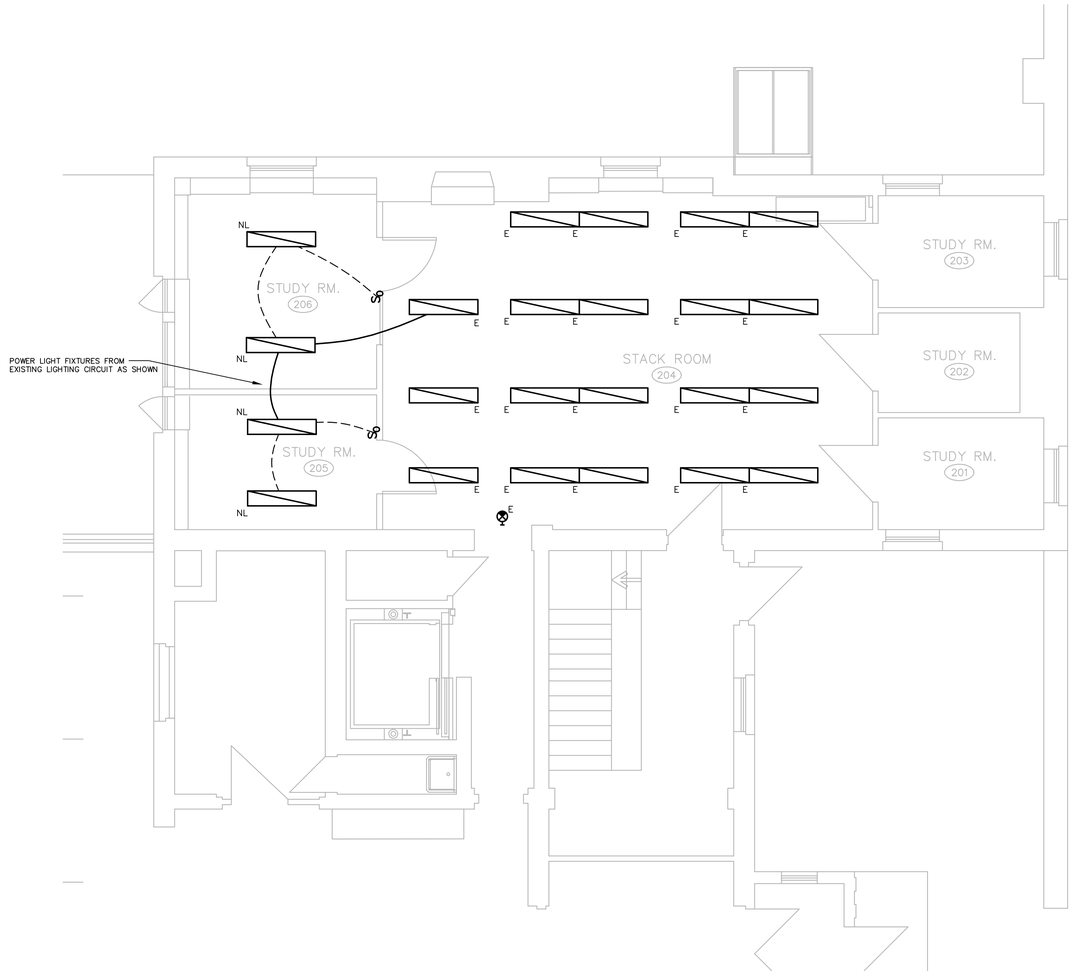
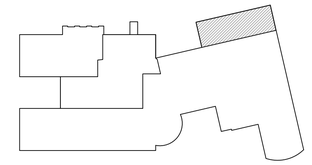
LOWER LEVEL
ELECTRICAL LIGHTING PLAN



1 MAIN LEVEL ELECTRICAL LIGHTING PLAN

SCALE: 1/4"=1'0"



KEY PLAN

N.T.S.

GENERAL ELECTRICAL LIGHTING NOTES

1. ALL NEW CIRCUITS SHALL BE 2#12,1#12G.,3/4"C., TO NEW 20A-1P CIRCUIT BREAKER IN PANEL INDICATED UNLESS NOTED OTHERWISE.
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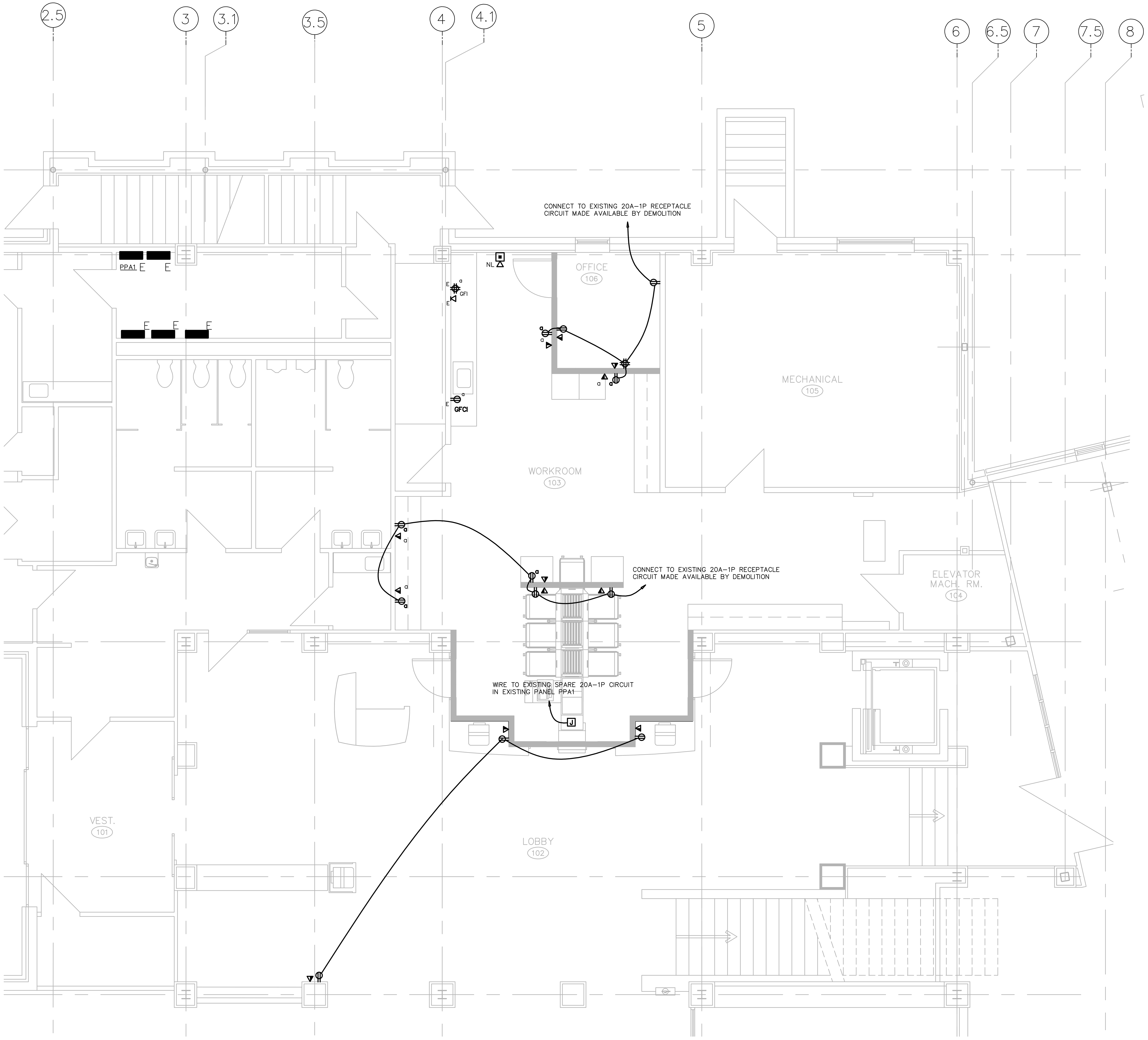
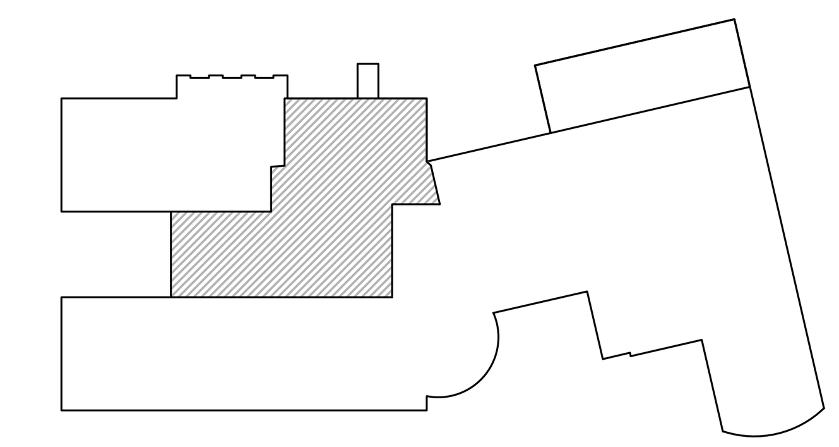
MAIN LEVEL
ELECTRICAL LIGHTING PLAN



1 **LOWER LEVEL ELECTRICAL POWER PLAN**
SCALE: 1/4"=1'0"



KEY PLAN
N.T.S.

GENERAL ELECTRICAL POWER NOTES

1. ALL NEW CIRCUITS SHALL BE 2#12,1#12G.,3/4"C., TO NEW 20A-1P CIRCUIT BREAKER IN PANEL INDICATED UNLESS OTHERWISE NOTED.
2. ALL 120VAC BRANCH CIRCUITS EXCEEDING 150' LENGTH SHALL BE INCREASED TO 2#10,1#10G.,3/4"C., UNLESS OTHERWISE NOTED.
3. ALL RECEPTACLES WITHIN 6' OF SOURCES OF WATER SHALL BE GFI.
4. ALL DEVICES SHALL BE LABELED WITH SOURCE PANEL AND CIRCUIT NUMBER.
5. REFER TO DRAWING E0.0 FOR SYMBOLS LIST.
6. REFER TO ARCHITECTS REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING MOUNTED ELECTRICAL DEVICES.

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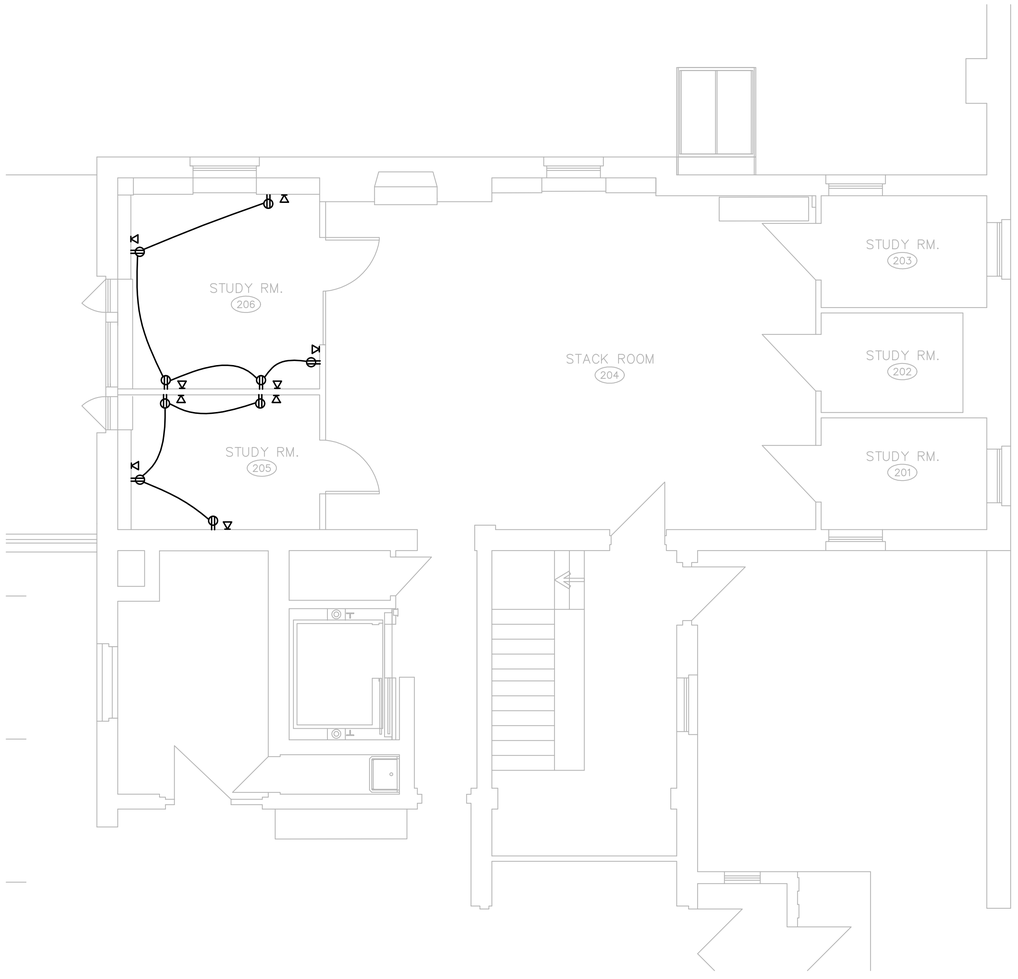
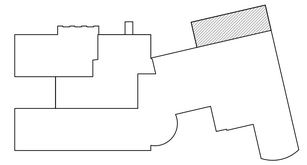
LOWER LEVEL
ELECTRICAL POWER PLAN



1 MAIN LEVEL ELECTRICAL POWER PLAN
SCALE: 1/4"=1'0"



KEY PLAN
N.T.S.

GENERAL ELECTRICAL POWER NOTES

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3. ALL RECEPTACLES WITHIN 6' OF SOURCES OF WATER SHALL BE GFI.
4. ALL DEVICES SHALL BE LABELED WITH SOURCE PANEL AND CIRCUIT NUMBER.
5. REFER TO DRAWING E0.0 FOR SYMBOLS LIST.
6. REFER TO ARCHITECTS REFLECTED CEILING PLAN FOR EXACT LOCATION OF CEILING MOUNTED ELECTRICAL DEVICES.

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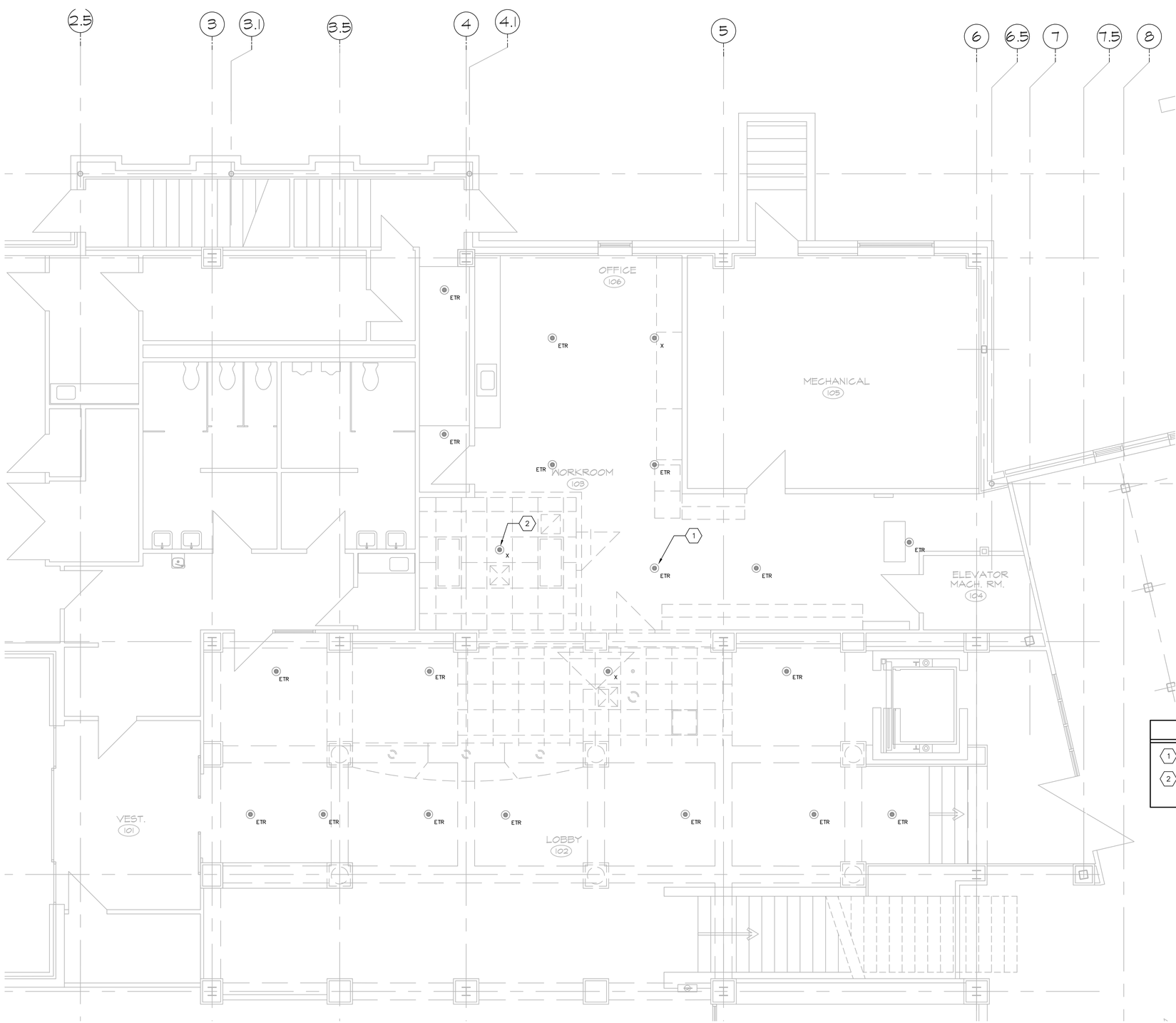
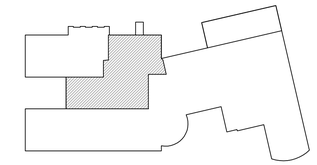
MAIN LEVEL
ELECTRICAL POWER PLAN





KEY PLAN
N.T.S.

FIRE PROTECTION DEMOLITION NOTES

1. EXISTING SPRINKLER AND PIPING TO REMAIN. (TYPICAL WHERE NOTED WITH "ETR".)
2. REMOVE EXISTING SPRINKLER. MODIFY AND EXTEND ASSOCIATED BRANCH PIPING AS REQUIRED FOR CONNECTION TO NEW SPRINKLER. (TYPICAL WHERE NOTED WITH "X")

1 LOWER LEVEL FIRE PROTECTION DEMOLITION PLAN

SCALE: 1/4"=1'0"

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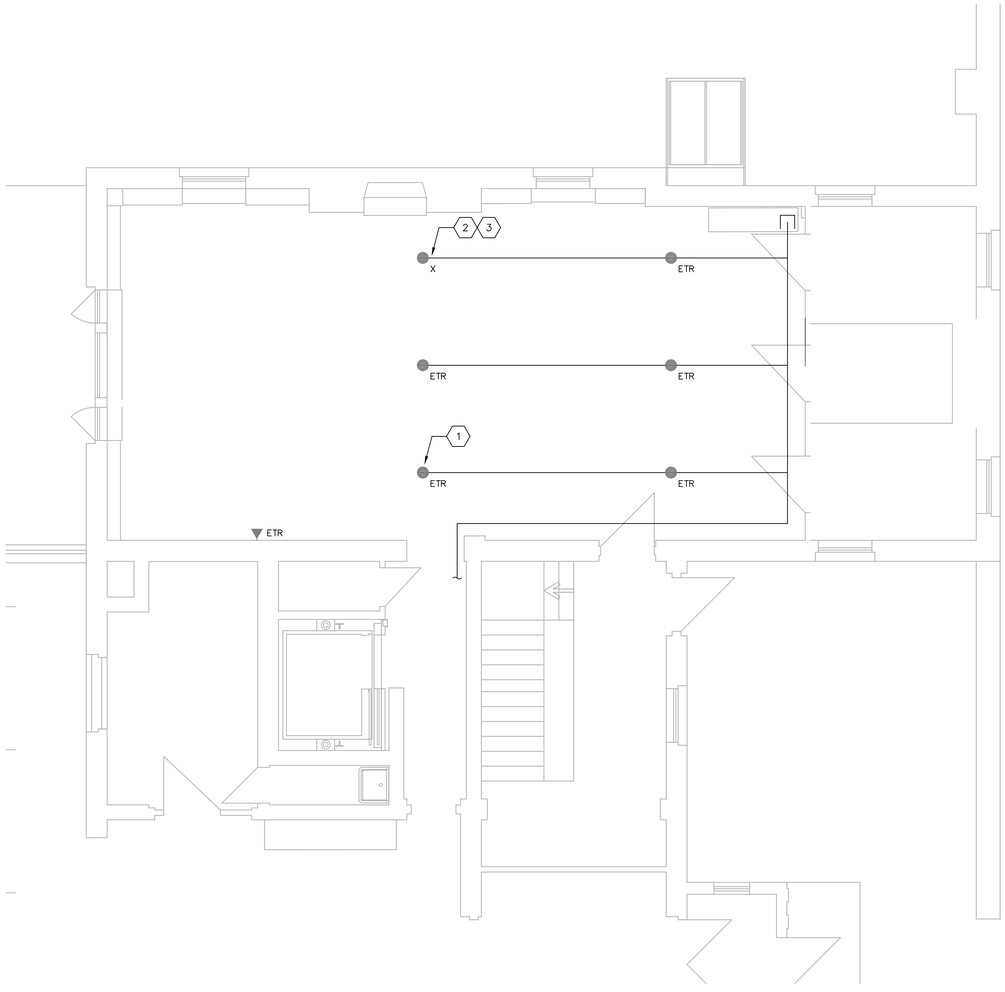
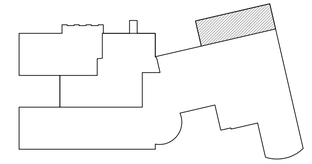
LOWER LEVEL FIRE PROTECTION DEMOLITION PLAN



1 **MAIN LEVEL FIRE PROTECTION DEMOLITION PLAN**
SCALE: 1/4"=1'0"



KEY PLAN
N.T.S.

FIRE PROTECTION DEMOLITION NOTES

1. EXISTING SPRINKLER AND PIPING TO REMAIN. (TYPICAL WHERE NOTED WITH "ETR".)
2. REMOVE EXISTING ELBOW AT EXISTING SPRINKLER. MODIFY EXISTING PIPING AS REQUIRED FOR CONNECTION TO SUPPLY NEW SPRINKLER. REFER TO NEW WORK FIRE PROTECTION PLAN FOR CONTINUATION.
3. REMOVE EXISTING PENDANT SPRINKLER, MAINTAIN PIPING AS REQUIRED FOR CONNECTION TO NEW SPRINKLER. (TYPICAL WHERE NOTED WITH "X")

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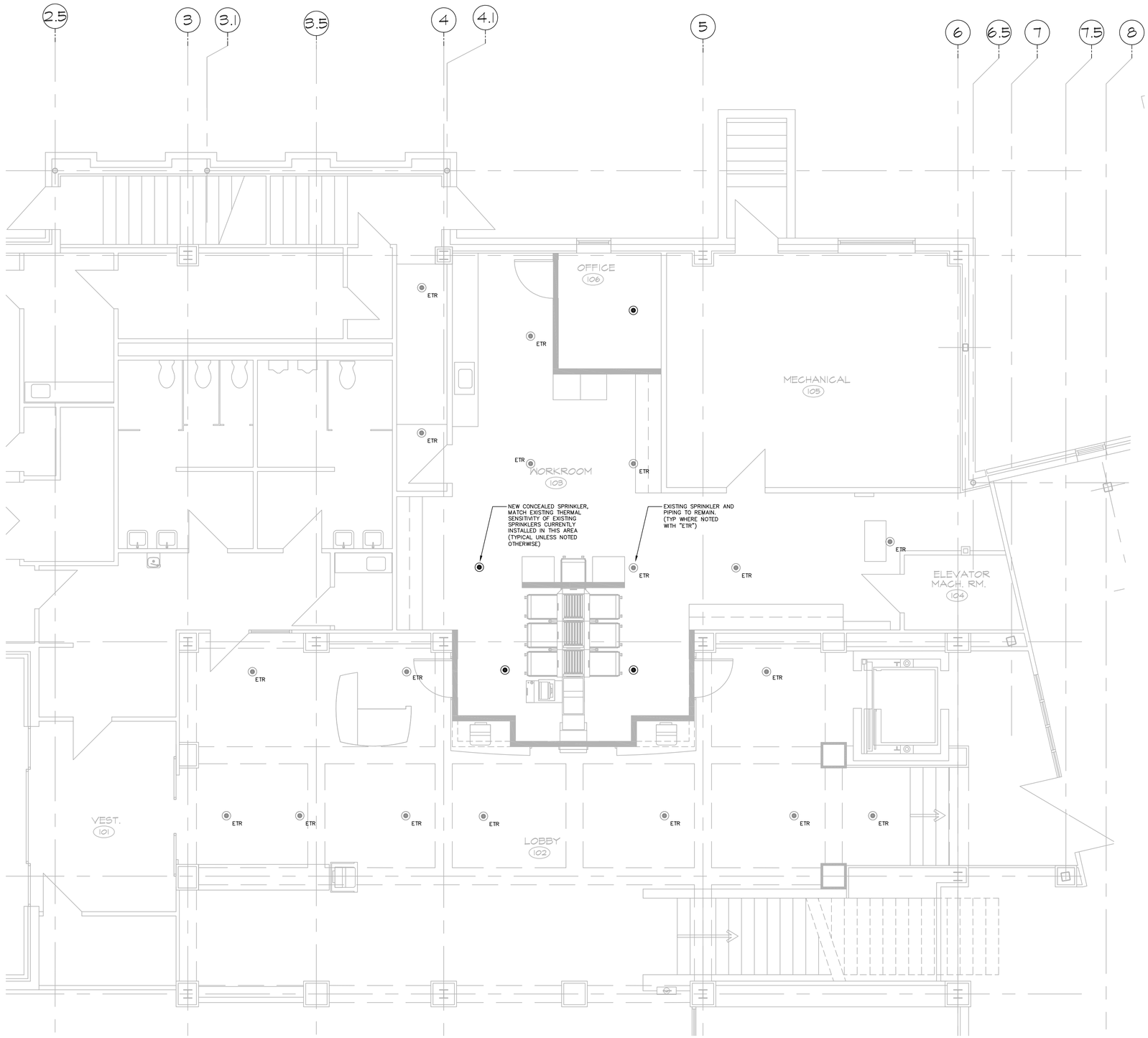
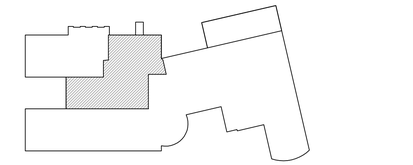
MAIN LEVEL FIRE PROTECTION DEMOLITION PLAN



1 LOWER LEVEL FIRE PROTECTION PLAN

SCALE: 1/4"=1'0"



KEY PLAN

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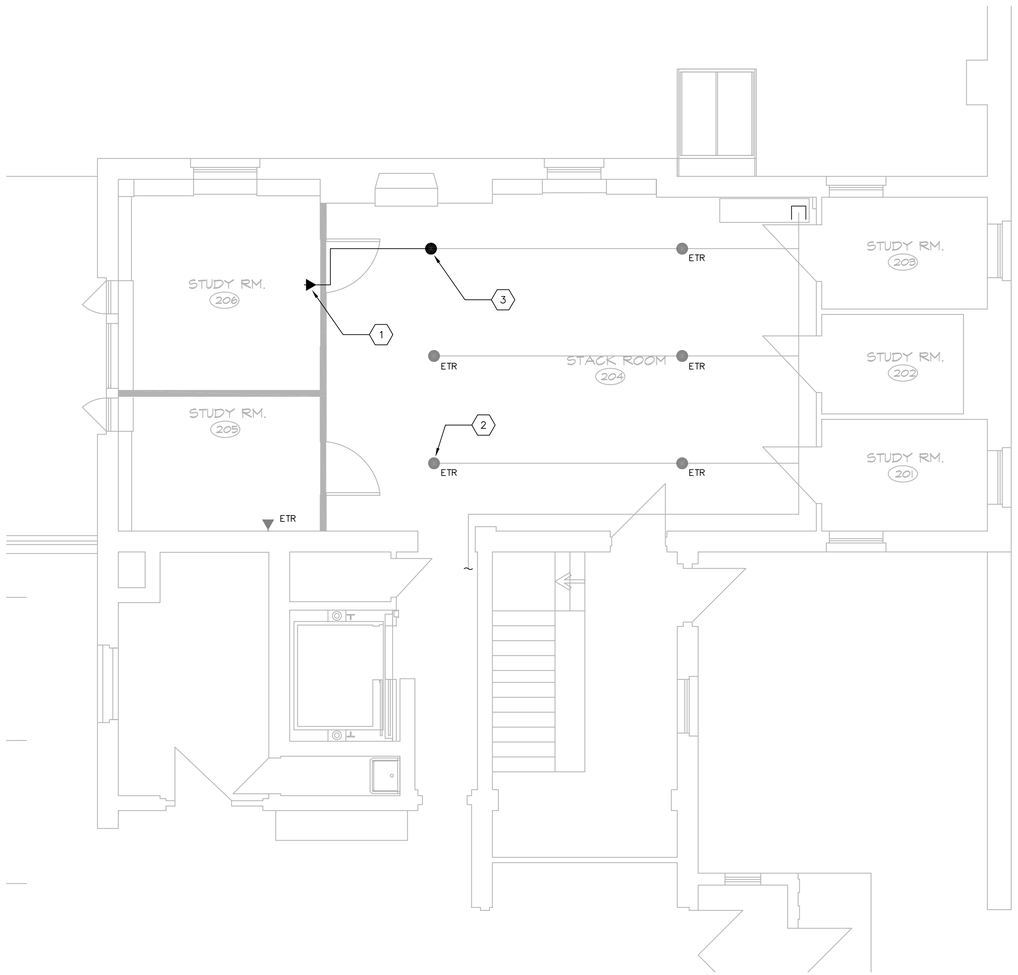
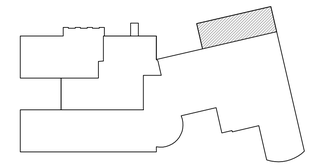
LOWER LEVEL
FIRE PROTECTION PLAN



1 **MAIN LEVEL FIRE PROTECTION PLAN**
SCALE: 1/4"=1'0"



KEY PLAN
N.T.S.

NEW WORK FIRE PROTECTION NOTES

1. NEW QUICK RESPONSE SIDE WALL SPRINKLER. PROVIDE SUPPLY BRANCH FROM EXISTING BRANCH PIPING EXPOSED BELOW EXISTING CEILING.
2. EXISTING SPRINKLER TO REMAIN. TYPICAL WHERE NOTED WITH "ETR".
3. NEW PENDANT SPRINKLER. MATCH THERMAL SENSITIVITY OF EXISTING SPRINKLERS WITHIN ROOM. CONNECT TO EXISTING BRANCH PIPING.

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MAIN LEVEL
FIRE PROTECTION PLAN

FIRE PROTECTION DEMOLITION NOTES

FIRE PROTECTION DEMOLITION NOTES

1. THE FIRE PROTECTION CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING SYSTEMS AND CONDITIONS IN AREAS OF RENOVATION.
2. ALL EXISTING PIPING AND EQUIPMENT SHOWN HAS BEEN TAKEN FROM THE BEST AVAILABLE EXISTING INFORMATION. THE DRAWINGS ARE DIAGRAMMATIC AND ALL PIPING AND DEVICES MAY NOT BE SHOWN. THE INTENT OF THESE DRAWINGS IS THAT IN ALL AREAS OF RENOVATIONS THAT THESE SYSTEMS ARE REMOVED OR MODIFIED AS NOTED WHETHER OR NOT SHOWN.
3. ALL PIPING TO BE REMOVED SHALL BE REMOVED COMPLETELY OR CAPPED AS SHOWN WITHOUT LEAVING ANY DEAD ENDED PIPING OR ABANDONED PIPING.
4. NO FIRE PROTECTION EQUIPMENT OR DEVICES THAT HAVE BEEN DISCONNECTED OR ABANDONED SHALL REMAIN.
5. IT IS THE INTENT OF THESE DRAWINGS THAT ANY AND ALL DEVICES REMOVED SHALL NOT BE REUSED SUCH AS SPRINKLERS, BUT ONLY NEW SHALL BE INSTALLED.
6. ANY SYSTEM OR EQUIPMENT TO REMAIN ACTIVE DURING RENOVATION SHALL BE KEPT IN OPERATION BY PROVIDING TEMPORARY CONNECTIONS AS REQUIRED UNTIL NEW SYSTEMS ARE INSTALLED AND OPERATIONAL.
7. ALL SERVICE INTERRUPTIONS SHALL BE COORDINATED WITH THE OWNER AND A REPRESENTATIVE OF THE OFFICE OF THE STATE FIRE MARSHAL MUST BE CONTACTED IN ADVANCE PRIOR TO COMMENCEMENT OF ANY WORK.
8. THE OFFICE OF THE STATE FIRE MARSHAL AND THE OWNER'S INSURANCE UNDERWRITER SHALL BE CONTACTED TO REVIEW AND APPROVE THE EXTENT OR PHASING OF THE FIRE PROTECTION DEMOLITION IN ORDER TO PROTECT THE OCCUPANTS AND PROPERTY. THESE DOCUMENTS DO NOT ADDRESS THE PHASING OF THE SYSTEM REMOVAL, ONLY THE EXTENT.
9. THE FIRE PROTECTION CONTRACTOR SHALL ALSO REVIEW THE ARCHITECTURAL DEMOLITION DRAWINGS AS PART OF THIS CONTRACT FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

SPRINKLER SYSTEM NOTES

1. THESE GENERAL NOTES ARE APPLICABLE TO ALL FIRE PROTECTION DRAWNGS.
2. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL INTENT OF WORK, SEE DETAILS, RISERS, AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. THE DRAWINGS INDICATE A SUGGESTED SPRINKLER HEAD LAYOUT AND THAT EACH AREA IS COVERED BY SPRINKLER PROTECTION AS REQUIRED BY ALL APPLICABLE STATE OF CT BUILDING AND FIRE CODES. THE SPRINKLER QUANTITIES SHALL NOT BE COUNTED. AS A TAKE OFF OR AS EXACT LOCATIONS. EXACT SPACING, DENSITY, AND LOCATION REQUIREMENTS SHALL BE AS DICTATED BY NFPA 13.
4. THE CONTRACTOR SHALL PERFORM A FLOW TEST TO VERIFY THE EXISTING FLOW DATA INFORMATION. INFORMATION FROM THE CONTRACTOR'S FLOW TEST SHALL BE USED FOR HYDRAULIC CALCULATIONS.
5. COMBINED INSIDE AND OUTSIDE HOSE STREAM ALLOWANCE FOR HYDRAULIC CALCULATIONS SHALL BE 250 GPM.
6. HYDRAULIC CALCULATIONS SHALL INCLUDE A SAFETY FACTOR OF 10%
7. PIPE VELOCITY AT ANY POINT OF THE SYSTEM SHALL NOT EXCEED 18FPS.
8. INSTALLATION OF SPRINKLERS SHALL BE BASED ON THE FOLLOWNG:

AREA	OCCUPANCY CLASSIFICATION	DENSITY (GPM/SF)	AREA OF APPLICATION (SF)
STORAGE ROOMS	ORDINARY HAZARD GROUP 1	0.15	1500
REMAINDER OF THE BUILDING	LIGHT HAZARD	0.10	1500

FIRE ALARM GENERAL NOTES

GENERAL FIRE ALARM NOTES

1. THE SCOPE OF WORK FOR THIS PROJECT IS TO RECONFIGURE AND EXTEND THE EXISTING FIRE ALARM SYSTEM TO THE RENOVATED SPACES AS INDICATED ON THE DRAWINGS.
2. CONTRACT WITH THE SERVICES OF A FACTORY AUTHORIZED DEALER OF THE EXISTING SYSTEM TO PROVIDE ALL EQUIPMENT, SUPERVISION, FINAL CONNECTIONS PROGRAMMING AND TESTING OF THE SYSTEM.
3. PRIOR TO BEGINNING WORK, TEST THE EXISTING SYSTEM AS APPROPRIATE AND DOCUMENT ALL DEFICIENCIES AFFECTING THE WORK UNDER THIS CONTRACT TO THE ARCHITECT AND OWNER. PROVIDE A COST PROPOSAL FOR RECOMMENDED SOLUTIONS. DO NOT PROCEED WITH THE CORRECTIVE WORK UNTIL AUTHORIZED BY THE OWNER OR THEIR APPOINTED REPRESENTATIVES.
4. PROVIDE WIRING MATCHING THE EXISTING SYSTEM FOR DEVICES INSTALLED UNDER THIS CONTRACT. PROVIDE ALL WIRING PER MANUFACTURER'S RECOMMENDATIONS AND SIZE FOR VOLTAGE DROP FOR THE ENTIRE LENGTH OF THE CIRCUIT.
5. ALL NEW DEVICES SHALL BE 100% COMPATIBLE WITH THE EXISTING SYSTEM.
6. PROVIDE NOTIFICATION APPLIANCE SIGNAL BOOSTERS, BATTERIES, RELAYS, SYNCHRONIZATION MODULES AND PERIPHERAL DEVICES AS REQUIRED FOR A COMPLTETE AND OPERATIONAL SYSTEM.

FIRE PROTECTION GENERAL NOTES

FIRE PROTECTION GENERAL NOTES:

1. THESE GENERAL NOTES ARE APPLICABLE TO ALL FIRE PROTECTION DRAWNGS.
2. THE FIRE PROTECTION CONTRACTOR SHALL REVIEW THE ARCHITECTURAL REFLECTED CEILING, ELEVATION AND SECTION PLANS AS PART OF THIS CONTRACT FOR ADDITIONAL INFORMATION SUCH AS CEILING HEIGHTS, TYPES, SOFFITS AND OR OTHER DEVICE LOCATIONS.
3. THE FIRE PROTECTION CONTRACTOR SHALL REVIEW THE ELECTRICAL DIVISION DRAWINGS AND COORDINATE THE FIRE PROTECTION WORK WITH LOCATIONS OF LIGHTS, AND CEILING MOUNTED DEVICES WHICH MAY INTERFERE WITH SPRINKLER HEAD LOCATIONS OR SPRAY PATTERNS.
4. THE FIRE PROTECTION CONTRACTOR SHALL REVIEW THE HVAC DIVISION DRAWNGS AND COORDINATE THE FIRE PROTECTION WORK WITH LOCATIONS OF CEILING MOUNTED DEVICES SUCH AS DIFFUSERS, GRILLS, REGISTORS, AND ALSO THE LOCATIONS OF HEAT PRODUCING EQUIPMENT AND DUCTWORK REQUIRING SPRINKLER PROTECTION BELOW IT.
5. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE PIPE EXPANSION JOINTS ALL BUILDING EXPANSION JOINT LOCATIONS AND EXPANSION LOOPS AT ALL BUILDING EXPANSION/SEISMIC JOINT LOCATIONS AS REQUIRED PER NFPA 13 AND BUILDING CODES. REVIEW ARCHITECTURAL AND STRUCTURAL DRAWNGS FOR EXACT LOCATIONS OF EXPANSION AND SEISMIC JOINTS. SEISMIC SEPARATION ASSEMBLIES SHALL BE INSTALLED WHERE SPRINKLER PIPING, REGARDLESS OF SIZE, CROSSES BUILDING SEISMIC SEPARATION JOINTS ABOVE GROUND LEVEL IN ACCORDANCE WITH NFPA 13.
6. THIS PROJECT INVOLVES THE RENOVATION OF AN EXISTING FACILITY. BEFORE SUBMITTING A BID, THE FIRE PROTECTION CONTRACTOR SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING FIRE PROTECTION CONDITIONS AND THAT OF THE OTHER TRADES (STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, SITE, ETC.) THIS CONTRACT INCLUDES ALL MODIFICATIONS OF EXISTING SYSTEMS REQUIRED FOR THE INSTALLATION OF THE NEW SYSTEM. THIS CONTRACT INCLUDES ALL NECESSARY OFFSETS, TRANSITIONS, AND MODIFICATIONS REQUIRED TO INSTALL ALL NEW EQUIPMENT. ALL NEW EQUIPMENT AND SYSTEMS SHALL BE FULLY OPERATIONAL UNDER THIS CONTRACT BEFORE THE JOB IS CONSIDERED COMPLETE. THE FIRE PROTECTION CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS, OR ERRORS MADE AS A RESULT OF THE CONTRACTOR'S FAILURE TO BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS OF ALL TRADES.
7. ALL PIPE SIZES SHOWN ON THE CONTRACT DOCUMENTS ARE ADEQUATELY SIZED FOR THE NEW SPRINKLER SYSTEM. THE PIPE SIZES SHOWN ARE SUBJECT TO CHANGE UPON THE COMPLETION OF THE FIRE PROTECTION CONTRACTOR'S HYDRAULIC CALCULATIONS.
8. THE CONTRACTOR SHALL MAKE PROVISIONS FOR DRAINING THE ENTIRE SYSTEM PER NFPA 13.
9. THE CONTRACTOR SHALL PROVIDE SPRINKLER LAYOUT SHOP DRAWINGS, SEISMIC BRACING CALCULATION AND HYDRAULIC CALCULATIONS, SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. THESE DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL TO THE ENGINEER. THESE SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO AND APPROVED BY THE OFFICE OF THE STATE FIRE MARSHAL AND OWNER'S INSURANCE CARRIER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL PROVIDE COPIES OF THE STATE FIRE MARSHAL'S AND OWNER'S INSURANCE CARRIER'S APPROVALS WITH THEIR SHOP DRAWNG SUBMITTAL.
10. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE ALL SPRINKLER WORK WITH EXISTING/NEW LIGHTING FIXTURES, DIFFUSERS, DUCTWORK. THE CONTRACTOR SHALL PROVIDE PROPER SPRINKLER COVERAGE PER NFPA 13.
11. SPRINKLERS SHALL BE INSTALLED UNDER FIXED OBSTRUCTIONS OVER 4 FT. (1.2M) WIDE PER NFPA 13, EDITION 2002. THE CONTRACTOR SHALL VERIFY ALL DUCTWORK DIMENSIONS IN THE FIELD AND INSTALL SPRINKLERS AS REQUIRED.
12. ALL SPRINKLER PIPING SHOWN SHALL BE RUN ABOVE LIGHTING FIXTURES SHOWN ON THE LIGHTING DRAWNGS. COORDINATE THE ROUTING OF SPRINKLER PIPING WITH OTHER TRADES IN THE FIELD. COORDINATE SPRINKLERS AND ASSOCIATED PIPING WITH THE ARCHITECTURAL CEILING/SOFFIT CONFIGURATIONS.
13. PROVIDE U.L. LISTED SWING JOINT ASSEMBLIES ("METRAFLEX" FIRELOOP, OR EQUAL) WHERE SPRINKLER PIPING CROSSES BUILDING EXPANSION JOINTS.
14. ALL SPRINKLER PIPE HANGERS AND SUPPORTS SHALL BE PROVIDED AND INSTALLED WITH SEISMIC RESTRAINT BRACING AS REQUIRED PER NFPA 13, STATE AND LOCAL REQUIREMENTS.
15. THE FIRE PROTECTION DESIGN IS BASED ON MANUFACTURERS AND MODEL NUMBERS LISTED HEREIN. THE FIRE PROTECTION CONTRACTOR MAY AT HIS/HER DISCRETION CHOOSE ANOTHER OF THE APPROVED EQUALS LISTED IN THE APPROPRIATE SPECIFICATION SECTIONS AND CONTRACT DOCUMENTS. HOWEVER, BY DOING SO, THE FIRE PROTECTION CONTRACTOR ALSO UNDERTAKES THE RESPONSIBILITY OF COORDINATION WITH EXISTING CONDITIONS, NOTIFICATION OF OTHER TRADES AND ADDITIONAL COST INCURRED BY OTHER TRADES REQUIRED AS A RESULT OF THE SUBSTITUTION.

FIRE PROTECTION SYMBOL LEGEND

SYMBOL	DESCRIPTION
	DRAIN PIPING
	SPRINKLER MAIN (WET)
	90° ELBOW DOWN
	90° ELBOW UP
	TEE UP
	TEE DOWN
	DROP AND RUN
	TEE OFF TOP OF PIPE
	TEE OFF BOTTOM OF PIPE
	UNION
	FLANGE
	END CAP
	OS&Y GATE VALVE
	GATE VALVE
	DIRECTION OF FLOW
	CONNECT NEW TO EXISTING
FS	FLOW SWITCH
TS	TAMPER SWITCH

FIRE PROTECTION ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
ELEV	ELEVATION
ETR	EXISTING TO REMAIN
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
GPM	GALLONS PER MINUTE
HD	TOTAL DEVELOPED HEAD
NL	NEW LOCATION
NTS	NOT TO SCALE
PD	PRESSURE DROP
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
TYP	TYPICAL
V	VOLTS
VEL	VELOCITY
X	REMOVE

SPRINKLER SYMBOL LEGEND

SYMBOL	DESCRIPTION
●	PENDANT SPRINKLER
▼	SIDEWALL SPRINKLER
○	UPRIGHT SPRINKLER
◉	CONCEALED PENDANT SPRINKLER

FIRE PROTECTION SPECIFICATIONS

1. PROVIDE ALL NECESSARY LABOR, MATERIALS AND OTHER MISCELLANEOUS EQUIPMENT WHICH ARE NOT SHOWN ON THE CONTRACT DOCUMENTS BUT ARE NECESSARY TO COMPLETE THE WORK.
2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST STATE OF CONNECTICUT ACCEPTED REVISION OF INTERNATIONAL PLUMBING AND MECHANICAL CODES.
3. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING FOR INSPECTIONS BY THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BEING AVAILABLE FOR INSPECTIONS BY THE AUTHORITY HAVING JURISDICTION.
4. PROVIDE FIRESTOPPING AROUND MECHANICAL PENETRATIONS IN ACCORDANCE WITH FIRESTOPPING REQUIREMENTS. PROVIDE ASBESTOS FREE FIRESTOPPING SYSTEM CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME AND GASES. SYSTEM SHALL BE UL LISTED AND COMPLY WITH ASTM E 814.
5. PRIOR TO ORDERING ANY MATERIALS AND EQUIPMENT, THOROUGHLY REVIEW THE SITE CONDITIONS TO DETERMINE IF ADEQUATE CLEARANCES AND ACCESS IS ALLOWED TO INSTALL THE COMPONENTS. ORDER EQUIPMENT BROKEN DOWN AS NECESSARY TO ALLOW FOR PROPER HANDLING THROUGH THE PROJECT AREA. PROVIDE ALL NECESSARY ALTERATIONS TO THE STRUCTURE OF THE BUILDING AS NECESSARY TO RIG THE EQUIPMENT IN PLACE. CAREFULLY INSPECT ALL BUILDING ELEMENTS PRIOR TO CUTTING OR DRILLING INTO WALL, FLOORS OR CEILINGS. PATCH AND PAINT SURFACES DISTURBED BY WORK UNDER THIS CONTRACT AS REQUIRED TO RESTORE THEM TO THEIR ORIGINAL CONDITION.
6. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND SHOW THE GENERAL INTENT OF WORK. SEE DETAILS, RISERS, AND SPECIFICATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR A COMPLETE SYSTEM FOR FULL BUILDING COVERAGE. ADDITIONAL SPRINKLERS AND PIPING MAY BE REQUIRED TO ACCOMMODATE CONDITIONS SUCH AS SOFFITS, DUCTWORK, STRUCTURE, LIGHTING, EQUIPMENT, BOOK STACKS, ETC. THE CONTRACTOR SHALL PROVIDE A COMPLETE SPRINKLER INSTALLATION IN CONFORMANCE WITH NFPA 13 2002 EDITION, FEDERAL AND STATE CODES AND THE REQUIREMENTS OF THE OFFICE OF THE STATE FIRE MARSHAL.
7. THE DRAWNGS INDICATE A SUGGESTED SPRINKLER HEAD LAYOUT AND THAT EACH AREA IS COVERED BY SPRINKLER PROTECTION AS REQUIRED PER CODE. THE SPRINKLER QUANTITIES SHALL NOT BE COUNTED, AS A TAKE OFF OR AS EXACT LOCATIONS. REFER TO NFPA 13 FOR EXACT SPACING, DENSITY, AND LOCATION REQUIREMENTS. CONTRACTOR SHALL INSTALL QUICK RESPONSE TYPE SPRINKLER IN ENTIRE BUILDING. USE OF EXTENDED COVERAGE QUICK RESPONSE, TYPE SPRINKLER MAY BE USED WITH THE APPROVAL OF THE OFFICE OF THE STATE FIRE MARSHAL. CONTRACT DOCUMENTS SHOW STANDARD COVERAGE SPRINKLERS WITH STANDARD SPACING BETWEEN SPRINKLERS PER NFPA 13.
8. ALL WORK SHALL MEET THE REQUIREMENTS OF THE OWNERS INSURANCE CARRIER, N.F.P.A. AND ALL AUTHORITIES HAVING JURISDICTION. INSTALLATION PROCEDURES SHALL COMPLY WITH THE SAFETY RULES OF O.S.H.A. AND THE STATE OF CONNECTICUT.
9. SUBMIT NEWLY PREPARED INFORMATION, DRAWN TO ACCURATE SCALE. HIGHLIGHT, ENCIRCLE, OR OTHERWISE INDICATE DEVIATIONS FROM THE CONTRACT DOCUMENTS. DO NOT REPRODUCE CONTRACT DOCUMENTS OR COPY STANDARD INFORMATION AS THE BASIS OF SHOP DRAWNGS. STANDARD INFORMATION PREPARED WITHOUT SPECIFIC REFERENCE TO THE PROJECT IS NOT CONSIDERED SHOP DRAWNGS.
9. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO OBTAIN APPROVAL OF SHOP DRAWNGS FROM THE OWNERS INSURANCE CARRIER, THE FIRE PREVENTION BUREAU, AND ALL LOCAL AUTHORITIES HAVING JURISDICTION. ANY INSTALLATION OF THE SPRINKLER SYSTEM WITHOUT APPROVED PLANS SHALL BE AT THE SOLE RISK AND EXPENSE OF THE CONTRACTOR.
10. SPRINKLER CONTRACTOR SHALL CONTACT THE OWNERS CONSTRUCTION COORDINATOR AND COORDINATE THE SPRINKLER MAIN TO BE ISOLATED AND/OR DRAINED. THIS PROCEDURE SHALL BE ADHERED TO WHEN PRESSURE TESTING AND/OR PLACING SYSTEM IN OR OUT OF SERVICE.
11. AS PER THE CONSTRUCTION PHASING OF THE PROJECT, THE EXISTING AREAS OF FIRE PROTECTION MUST BE MAINTAINED. THE FIRE PROTECTION CONTRACTOR IS TO PROVIDE SERVICE TO THESE AREAS FROM THE NEW FIRE PROTECTION SERVICE AS REQUIRED.
12. CONSTRUCTION COORDINATOR AND AUTHORITIES HAVING JURISDICTION SHALL WITNESS ALL SYSTEM PRESSURE TESTS WITH 72 HOURS NOTICE FROM THE CONTRACTOR PERFORMING TESTS.
13. CONTRACTOR MUST PROVIDE A FIRE WATCH WHENEVER ANY WELDING IS DONE WITHIN THE BUILDING DURING THE WELDING OPERATION AND FOR ONE HOUR AFTER.
14. FINAL CONNECTIONS TO THE SPRINKLER MAINS SHALL NOT BE MADE UNTIL THE ENTIRE SYSTEM IS COMPLETED, PRESSURE TESTED AND READY FOR SERVICE.
15. NO STOCK OF FURNISHINGS SHALL BE ALLOWED ON THE PREMISES UNTIL THE ENTIRE SYSTEM IS COMPLETED IN ACCORDANCE WITH THE ABOVE NOTE AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION.
16. FIRE EXTINGUISHERS SHALL BE PROVIDED IN ACCORDANCE WITH AUTHORITIES HAVING JURISDICTION AND INSURANCE CARRIER DURING AND AFTER CONSTRUCTION.
17. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE A MATERIAL TEST AND CERTIFICATION FORM TO THE OFFICE OF THE STATE FIRE MARSHAL AND THE OWNER'S INSURANCE CARRIER SO AS TO CERTIFY THAT THE SPRINKLER SYSTEM WAS INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, SPECIFICATIONS, FEDERAL, STATE, AND LOCAL CODES AND PROCEDURES.
18. COORDINATE FIRE PROTECTION INSTALLATION WITH WORK OF ALL OTHER TRADES.
19. SPRINKLERS SHALL BE LOCATED IN THE CENTER OF TILE IN ALL LOCATIONS WITH EITHER A 2X2 OR 2X4 CEILING GRID. ALL PIPING SHOWN SHALL BE LOCATED ABOVE THE CEILING OR IN SOFFIT SPACES UNLESS NOTED OTHERWISE OR IF THE ROOM HAS NO CEILING.
20. BRANCHES TO INDIVIDUAL SPRINKLERS SHALL BE TOP TAKE-OFFS WITH A RETURN BEND CONFIGURATION.
21. PIPE, PIPE HANGERS AND SUPPORTS SHALL MEET THE REQUIREMENTS OF NFPA 13.
22. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN END FERROUS PIPE.
23. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE BEFORE ASSEMBLY.
24. PITCH PIPING AND ARRANGE SYSTEMS TO DRAIN AT LOW POINTS.
25. CONCEALED SPRINKLER: GLASS BULB, QUICK RESPONSE, AUTOMATIC SPRINKLER, ½" ORIFICE, 165 DEGREE TEMPERATURE RATING UNLESS NOTED OTHERWISE, 5.6 K-FACTOR, WITH WHITE COVERPLATE. SPRINKLER SHALL BE MODEL V3086 AS MANUFACTURED BY VICTAULIC, NO SUBSTITUTIONS SHALL BE ALLOWED.
26. UPRIGHT SPRINKLER: GLASS BULB, QUICK RESPONSE, AUTOMATIC SPRINKLER, ½" ORIFICE, 165 DEGREE TEMPERATURE RATING UNLESS NOTED OTHERWISE, 5.6 K-FACTOR, WITH WHITE ESCUTCHEON. SPRINKLER SHALL BE MODEL V2703 AS MANUFACTURED BY VICTAULIC, NO SUBSTITUTIONS SHALL BE ALLOWED.
27. SIDEWALL SPRINKLER: GLASS BULB, QUICK RESPONSE, AUTOMATIC SPRINKLER, ½" ORIFICE, 165 DEGREE TEMPERATURE RATING UNLESS NOTED OTHERWISE, 5.6 K-FACTOR, WITH WHITE ESCUTCHEON. SPRINKLER SHALL BE MODEL V2744 AS MANUFACTURED BY VICTAULIC, NO SUBSTITUTIONS SHALL BE ALLOWED.
28. STEEL PIPE: ASTM A53; SCHEDULE 40 SEAMLESS CARBON STEEL. SCHEDULE 10 PIPE SHALL BE ALLOWED FOR PIPE SIZES LARGER THAN 2" DIAMETER WHEN ROLL GROOVED MECHANICAL COUPLINGS ARE USED. WELDED OUTLET FITTINGS SHALL NOT BE USED. PLAIN END JOINT CONNECTIONS SHALL NOT BE USED.
29. FITTINGS: GROOVED MECHANICAL FITTINGS: ANSI A21.10/AWWA C-110 DUCTILE IRON; ASTM A47 GRADE 32510 MALLEABLE IRON; WITH GROOVES OR SHOULDERS DESIGNED TO ACCEPT GROOVED END COUPLINGS. GROOVED MECHANICAL COUPLINGS: ASTM A536 DUCTILE OR MALLEABLE IRON HOUSING, EPDM GASKET WITH NUTS, BOLTS, LOCKING PIN, LOCKING TOGGLE, OR LUGS TO SECURE ROLL GROOVED PIPE AND FITTINGS. ALL GROOVED PRODUCTS SHALL BE AS MANUFACTURED BY VICTAULIC.
30. FITTINGS-ANSI/ASME B16.3 MALLEABLE IRON FITTINGS, SCREWED, CLASS 300 TYPE, THREADS SHALL CONFORM TO ANSI/ASTM A47.
32. PIPING: THE COMPLETE SYSTEM SHALL BE SUBJECT TO A PRESSURE TEST, AND TO SUCH OTHER TESTS AS THE AUTHORITIES HAVING JURISDICTION MAY REQUIRE. THE PRESSURE TESTS SHALL BE A HYDROSTATIC PRESSURE OF 200 POUNDS PER SQUARE INCH FOR A PERIOD OF TWO HOURS. THE ABOVE GROUND PIPING AND ATTACHED APPURTENANCES SHALL SHOW NO PRESSURE LOSS OR LEAKS. REFER TO NFPA STANDARD 13 HYDROSTATIC TESTS. BEFORE APPLYING SPECIFIED TEST PRESSURE, ALL AIR MUST BE EXPELLED FROM THE SYSTEM. ALL DEFECTS OF WHATEVER TYPE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE AND AUTHORITIES HAVING JURISDICTION AND AT NO ADDITIONAL COST TO THE OWNER. TESTING SHALL BE COMPLETED PRIOR TO PERMANENT SEALING OF WALLS AND PARTITIONS.
33. PREPARE 6 MAINTENANCE MANUALS BOUND IN BOOKLET FORM, PROVIDE WITH INDEX. INCLUDE THE FOLLOWING INFORMATION, SHOP DRAWING DATA, MANUFACTURERS PRINTED PROCEDURES AND INSTRUCTIONS AND ROUTINE MAINTENANCE PROCEDURES.

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FP2.0
FIRE PROTECTION SPECIFICATIONS

DIFFUSER AND REGISTER SCHEDULE

SYMBOL	MANUFACTURER/ MODEL NUMBER	DUTY	TYPE	BORDER TYPE	CONSTRUCTION			MAX NC	REMARKS
					OBD	FRAME	BLADES		
A	KRUEGER SH	SUPPLY	LF	NOTE #2	–	STEEL	STEEL	24	1
B	KRUEGER S80	RETURN EXHAUST	LF	NOTE #2	–	STEEL	STEEL	24	–
C	KRUEGER 880	SUPPLY	LF	FLUSH	–	STEEL	STEEL	24	–
D	KRUEGER S480	RETURN EXHAUST	HD	FLUSH	–	STEEL	STEEL	24	5
E	EXISTING DIFFUSER OR GRILLE	–	–	–	–	–	–	24	3,4

TYPES:
DD – DIRECTIONAL DIFFUSER
HD – HEAVY DUTY
LF – LOUVERED FACE

INDICATES DIFFUSER → A | 12x12 ← INDICATES NECK SIZE; 300 ← INDICATES UNIT CFM CAPACITY

REMARKS:
1. SQUARE TO ROUND TRANSITION. ALSO SEE FLEXIBLE DUCT SCHEDULE NOTES.
2. PROVIDE T-BAR MOUNTING FOR NECK SIZES 18X18 AND LARGER. PROVIDE FLUSH MOUNTING FOR SIZES LESS THAN 18X18.
3. REBALANCE EXISTING DEVICE TO AIRFLOW SHOWN ON THE PLAN DRAWINGS.
4. CLEAN ALL DEVICES LABELED 'E'.

PIPING LEGEND

SYMBOL	DESCRIPTION
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
RL	REFRIGERANT LIQUID
RG	REFRIGERANT HOT GAS BYPASS
RS	REFRIGERANT SUCTION
CD	CONDENSATE DRAIN
CPD	CONDENSATE PUMP DISCHARGE
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	UNION
	STRAINER WITH VALVED BLOWDOWN
PA	PIPE ANCHOR
	PIPE DROP
	PIPE RISE

HVAC DUCTWORK LEGEND

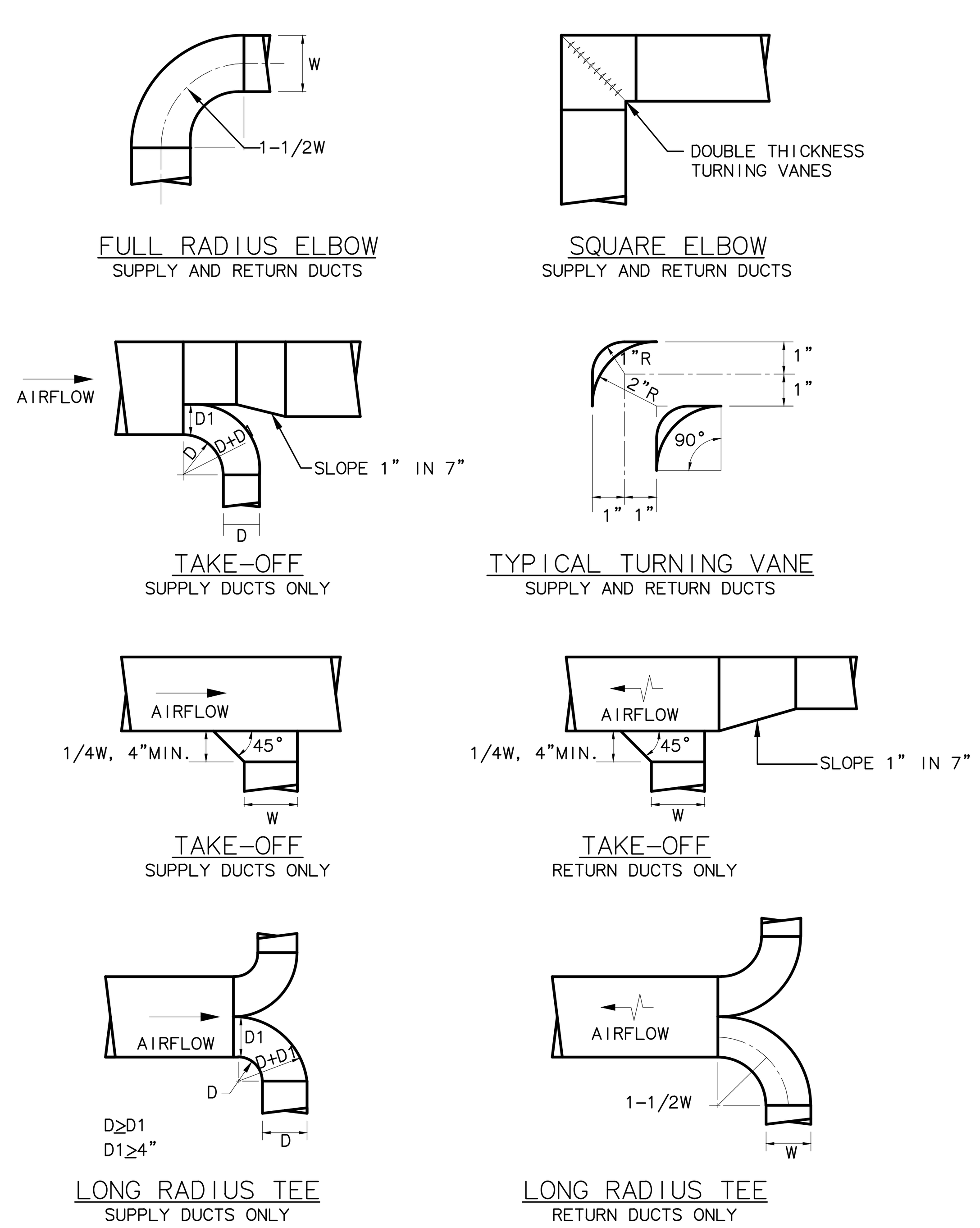
SYMBOL	DESCRIPTION
	ACOUSTICAL LINED DUCTWORK (DOUBLE LINED)
	ACOUSTICAL LINED DUCTWORK (SINGLE LINED)
	FLEXIBLE DUCTWORK
	EXISTING DUCTWORK (DOUBLE LINE)
	EXISTING DUCTWORK (SINGLE LINE)
	NEW DUCTWORK (DOUBLE LINE)
	NEW DUCTWORK (SINGLE LINE)
	RETURN DUCT DROP (DOUBLE LINE)
	RETURN DUCT DROP (SINGLE LINE)
	RETURN DUCT RISE (DOUBLE LINE)
	RETURN DUCT RISE (SINGLE LINE)
	SUPPLY DUCT DROP (DOUBLE LINE)
	SUPPLY DUCT DROP (SINGLE LINE)
	SUPPLY DUCT RISE (DOUBLE LINE)
	SUPPLY DUCT RISE (SINGLE LINE)
	VOLUME DAMPER
FD	FIRE DAMPER
BD	BACKDRAFT DAMPER
MD	MOTORIZED DAMPER
SD	SMOKE DAMPER
F/SD	COMBINATION FIRE AND SMOKE DAMPER
S D	DUCT MOUNTED SMOKE DETECTOR
	RETURN/EXHAUST/OUTSIDE AIR ARROW
	SUPPLY ARROW
UD	UNDERCUT DOOR
	ROOF MOUNTED EQUIPMENT
	CONNECTION TO EXISTING
	POINT OF DISCONNECTION
	OPEN ENDED DUCT WITH 1/2" SQUARE GALVANIZED STEEL WIRE MESH SCREEN.
	SUPPLY DIFFUSER (ARROWS DESIGNATE PATTERN REQUIREMENTS)
	RETURN/EXHAUST REGISTER

ABBREVIATIONS

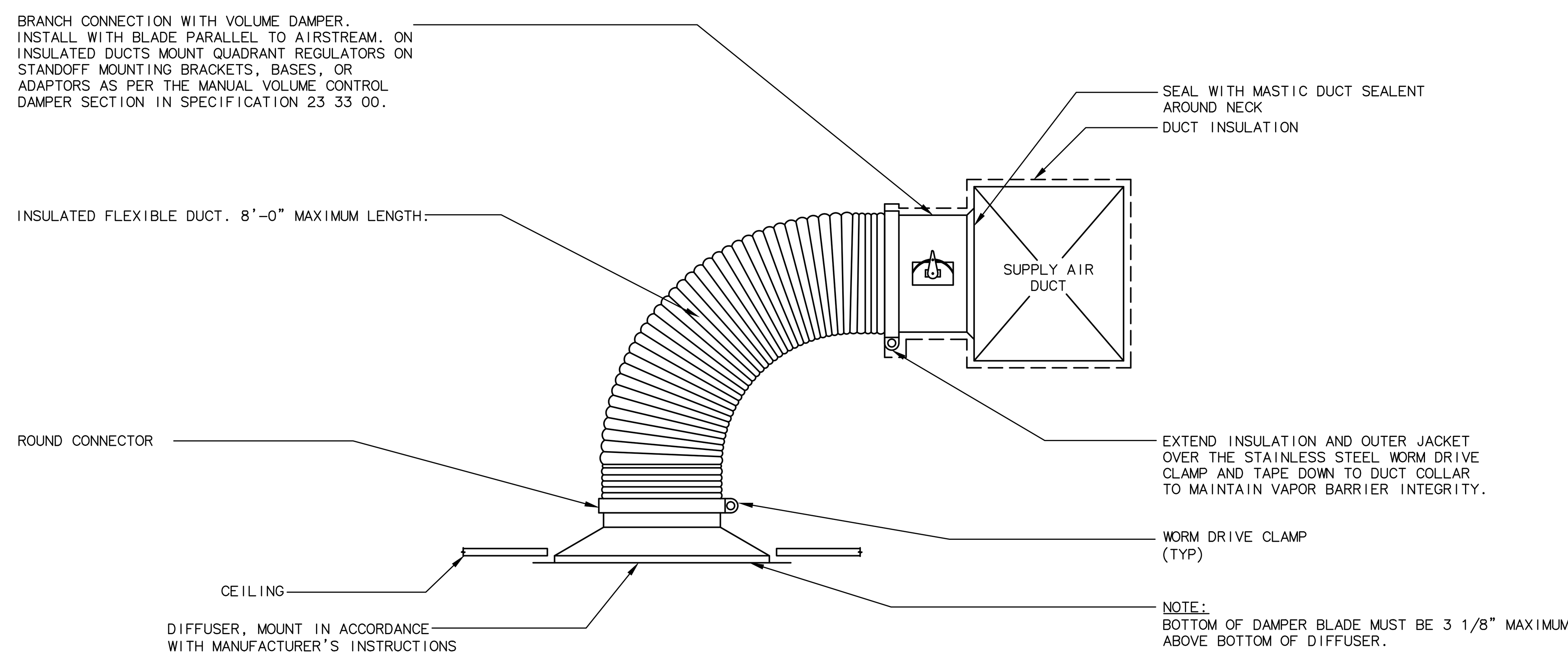
ABBREVIATION	DESCRIPTION
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
AS	AIR SEPARATOR
AWT	AVERAGE WATER TEMPERATURE
B	BOILER
BAL	BALANCE
BF	BYPASS FEEDER
BHP	BREAK HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
BTUH	BTU / HOUR
CA	COMBUSTION AIR
CAP	CAPACITY
COP	COEFFICIENT OF PERFORMANCE
CO	CLEANOUT
CFM	CUBIC FEET PER MINUTE
CNV	CONVECTOR
CRD	CEILING RADIATION DAMPER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
DAH	DUCTLESS AIR HANDLER
dB	DECIBELS
DCU	DUCTLESS CONDENSING UNIT
DEA	DISHWASER EXHAUST AIR
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE (DRY BULB)
EA	EXHAUST AIR
EDB	ENTERING DRY BULB
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
°F	DEGREES FAHRENHEIT
FD	FIRE DAMPER
FO	FLAT OVAL DUCTWORK
FT	FEET OR FIN TUBE
FTR	FIN TUBE RADIATION
FT WG	FEET WATER GAUGE
FLA	FULL LOAD AMPS
FPM	FEET PER MINUTE
FSD	COMBINATION FIRE SMOKE DAMPER
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GSWS	GEOTHERMAL SUPPLY
GSWR	GEOTHERMAL RETURN
GRD	GRILLE, REGISTER, DIFFUSER
HP	HORSEPOWER
HSPF	HEATING SEASON PERFORMANCE FACTOR
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
IN	INCHES
IN WG	INCHES WATER GAUGE
IPLV	INTEGRATED PART LOAD VALUE
KEA	KITCHEN EXHAUST AIR
KW	KILOWATTS
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRY BULB
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MD	MOTORIZED DAMPER
MBH	THOUSANDS OF BTU / HOUR
MCA	MINIMUM CIRCUIT AMPACITY
MIN	MINIMUM
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OED	OPEN END DUCTWORK
OEP	OPEN END PIPE
P	PUMP
PH	PHASE
PRV	PRESSURE REDUCING VALVE
PSIG	POUNDS PER SQUARE INCH GAUGE
QTY	QUANTITY
RA	RETURN AIR
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SG	SIGHT GLASS
SP	STATIC PRESSURE
SPD	STATIC PRESSURE DROP
SST	SATURATED SUCTION PRESSURE
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UH	UNIT HEATER
UOI	UNLESS OTHERWISE INDICATED
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
WMS	WIRE MESH SCREEN
WPD	WATER PRESSURE DROP

TEMPERATURE CONTROL LEGEND

SYMBOLS	DESCRIPTION
AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
A	AQUASTAT
T	TEMPERATURE SENSOR
T	THERMOSTAT
H	RELATIVE HUMIDITY SENSOR



2 TYPICAL DUCT DETAILS
N.T.S.



NOTES:
1. SUPPORT FLEXIBLE DUCT FROM STRUCTURE AS SPECIFIED. DUCT SHALL NOT KINK, SAG OR REST ON LIGHT FIXTURES, CEILING SUPPORT TEES OR TILE.
2. PROVIDE REGULATORS WHERE VOLUME DAMPER IS ACCESSIBLE.
3. IN UNCONDITIONED CEILING PLENUMS, INSULATE BACK OF DIFFUSER WITH 1" DUCT WRAP AND SEAL WITH VAPOR BARRIER TAPE.

1 CEILING DIFFUSER WITH FLEXIBLE DUCT DETAIL
N.T.S.

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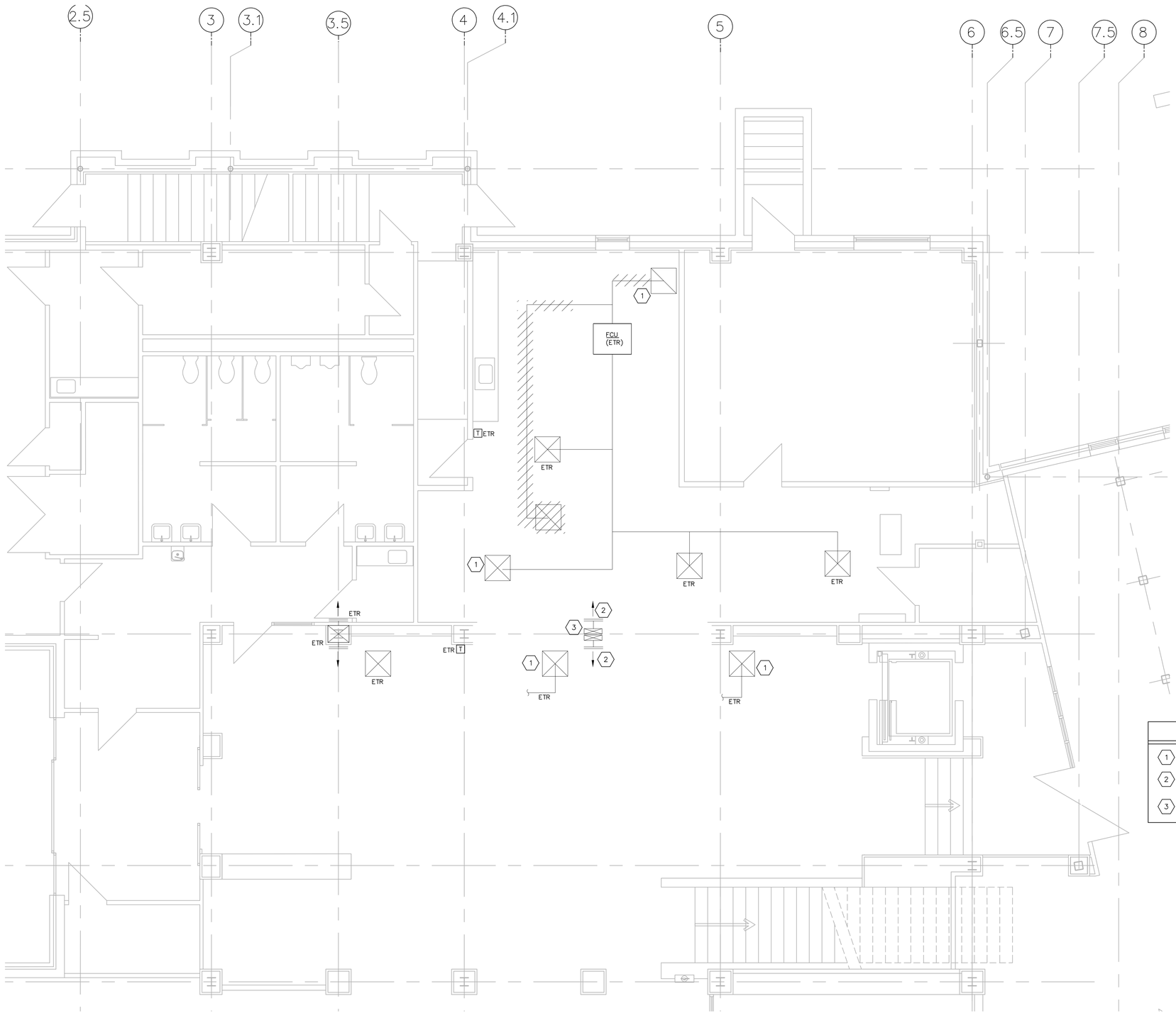
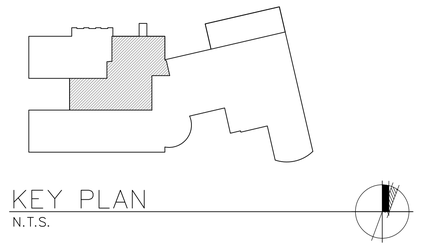
MECHANICAL DETAILS, LEGEND AND SCHEDULES





KEY PLAN
N.T.S.

KEYED NOTES

1. EXISTING RGD TO BE REMOVED AND REINSTALLED IN NEW LOCATION. REFER TO NEW PLANS FOR LOCATION.
2. EXISTING SUPPLY DUCT AND DIFFUSERS TO BE REMOVED. DUCT SHALL BE CUT BACK TO 12" BELOW SLAB ABOVE FOR RECONNECTION TO NEW DUCTWORK.
3. (2) EXISTING 17X5 OUTSIDE AIR DUCTS UP.

1 LOWER LEVEL MECHANICAL DEMOLITION PLAN

SCALE: 1/4"=1'0"

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Job#2016377.00

DATE: 02/15/17
PROJECT NO: 2016.036
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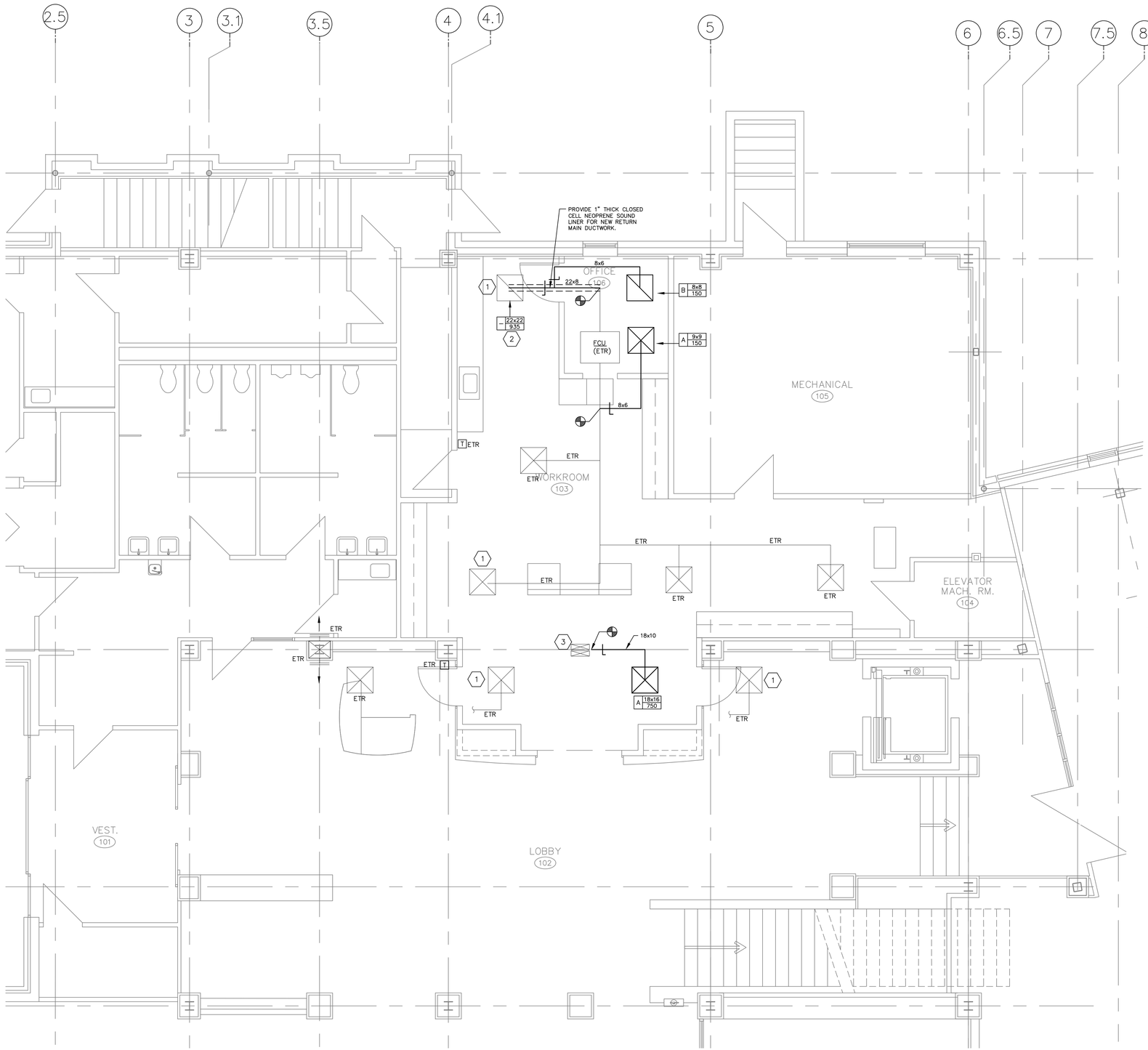
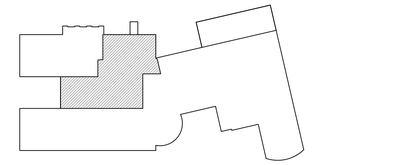
LOWER LEVEL MECHANICAL DEMOLITION PLAN



1 **LOWER LEVEL MECHANICAL PLAN**
SCALE: 1/4"=1'0"



KEY PLAN
N.T.S.

KEYED NOTES

1. NEW LOCATION OF EXISTING RGD. PROVIDE NEW FLEX DUCT AS REQUIRED FOR NEW LOCATION.
2. REBALANCE EXISTING RETURN GRILLE.
3. CONNECT (2) EXISTING 17X5 DUCTS INTO A SINGLE 18X10 OUTSIDE AIR DUCT AS SHOWN. CONNECT TO NEW DIFFUSER AS SHOWN.

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LOWER LEVEL MECHANICAL PLAN

MECHANICAL SPECIFICATIONS

1. PROVIDE ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE WORK OUTLINED ON THESE CONTRACT DOCUMENTS. THE CONTRACTOR IS TO NOTE THAT THESE DOCUMENTS ARE DIAGRAMMATIC ONLY AND THAT FINAL PLACEMENT OF EQUIPMENT OR DEVICES IN THE FIELD MAY NOT DIRECTLY CORRESPOND TO THAT WHICH IS SHOWN ON THE DRAWINGS. IF A CONFLICT IN POSITIONING OCCURS THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY TO ASCERTAIN WHAT THE INTENT WAS BY THE DESIGN PROFESSIONAL.

2. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST STATE OF CONNECTICUT BUILDING CODE AND LIFE SAFETY CODE.

3. PROVIDE ALL NECESSARY ELECTRICAL WORK, MATERIALS, EQUIPMENT AND LABOR TO PROVIDE POWER AND CONTROL WIRING TO ALL ITEMS OF MECHANICAL EQUIPMENT INDICATED ON THESE CONTRACT DOCUMENTS. PROVIDE ALL NECESSARY JUNCTION BOXES, PULL BOXES, PULL WIRES, COVER PLATES AND OTHER MISCELLANEOUS EQUIPMENT WHICH ARE NOT SHOWN ON THE CONTRACT DOCUMENTS BUT NECESSARY TO COMPLETE THE WORK.

4. ALL ELECTRICAL WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE LATEST STATE OF CONNECTICUT ACCEPTED REVISION OF THE NATIONAL ELECTRIC CODE (NEC), NFPA 70, BOCA AND THE NFPA 101 LIFE SAFETY CODE.

5. THE FOLLOWING DEFINITIONS APPLY TO THIS CONTRACT:

   A. FURNISH: THE TERM "FURNISH" MEANS TO "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

   B. INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

   C. PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."

   D. REMOVE: THE TERM "REMOVE" MEANS " TO DISCONNECT FROM ITS PRESENT POSITION, REMOVE FROM THE PREMISES AND TO DISPOSE OF IN A LEGAL MANNER."

   E SUBSTITUTIONS: "SUBSTITUTIONS" ARE REQUESTS FOR CHANGES IN PRODUCTS, MATERIALS AND METHODS OF CONSTRUCTION AS PROPOSED BY THE CONTRACTOR AFTER AWARD OF THE CONTRACT.

6 INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

7. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING FOR INSPECTIONS AND BEING AVAILABLE FOR INSPECTIONS BY THE AUTHORITY HAVING JURISDICTION.

8. SUBMIT TO THE OWNER AN OFFICIAL CERTIFICATE OF INSURANCE FOR THEIR RECORDS.

9. DO NOT BURN WASTE MATERIALS. DO NOT BURY DEBRIS OR EXCESS MATERIALS ON THE OWNER'S PROPERTY. DO NOT DISCHARGE VOLATILE, HARMFUL OR DANGEROUS MATERIALS INTO DRAINAGE SYSTEMS. REMOVE AND DISPOSE OF ALL WASTE MATERIALS, PACKAGING MATERIAL, SKIDS ETC. FROM THE SITE AND DISPOSE OF IN A LAWFUL MANNER IN ACCORDANCE WITH MUNICIPAL, STATE AND FEDERAL REGULATIONS.

10. PROVIDE TEMPORARY HEAT DURING CONSTRUCTION PERIOD AS REQUIRED TO MAINTAIN THE BUILDING TEMPERATURE AT 50 DEGREES F. PROVIDE TEMPORARY VENTILATION AS REQUIRED TO MAINTAIN TOLERABLE WORKING CONDITIONS IN RESPECT TO FRESH AIR, TEMPERATURE AND FILTRATION.

11. PROVIDE FIRESTOPPING AROUND ALL MECHANICAL PENETRATIONS THROUGH FIRE RATED PARTITIONS. PROVIDE ASBESTOS FREE FIRESTOPPING SYSTEM CAPABLE OF MAINTAINING AN EFFECTIVE BARRIER AGAINST FLAME AND GASES. SYSTEM SHALL BE UL LISTED AND COMPLY WITH ASTM E 814.

12 PRIOR TO ORDERING ANY MATERIALS AND EQUIPMENT, THOROUGHLY REVIEW THE SITE CONDITIONS TO DETERMINE IF ADEQUATE CLEARANCES AND ACCESS IS ALLOWED TO INSTALL THE COMPONENTS. ORDER EQUIPMENT BROKEN DOWN AS NECESSARY TO ALLOW FOR PROPER RIGGING THROUGH THE PROJECT AREA. PROVIDE ALL NECESSARY ALTERATIONS TO THE STRUCTURE OF THE BUILDING AS NECESSARY TO RIG THE EQUIPMENT IN PLACE.

13 CAREFULLY INSPECT ALL BUILDING ELEMENTS PRIOR TO CUTTING OR DRILLING INTO WALL, FLOORS OR CEILINGS. PATCH AND PAINT SURFACES DISTURBED BY WORK UNDER THIS CONTRACT AS REQUIRED TO RESTORE THEM TO THEIR ORIGINAL CONDITION.

14. THE CONTRACTOR SHALL BE REQUIRED TO PROPERLY STORE MATERIALS AND EQUIPMENT SO AS TO AVOID THEFT OR VANDALISM. IF THEFT OR VANDALISM OCCURS, THE CONTRACTOR SHALL REPAIR OR REPLACE SUCH ITEMS AT THE DIRECTION OF THE ENGINEER.

15 THE CONTRACTOR SHALL COORDINATE ALL INTERRUPTIONS OF SERVICES AND LIMITATIONS OF ACCESS WITH THE OWNER NO LESS THAN 5 DAYS PRIOR TO THE INTERRUPTION.

16. ACCESS DOORS SHALL BE PROVIDED IN CEILINGS, WALLS AND FLOORS AT ALL DAMPERS, VALVES, CONTROL DEVICES, AND OTHER APPARATUS AND EQUIPMENT REQUIRING PERIODIC SERVICE AND INSPECTION. COORDINATE TYPE AND LOCATION WITH ARCHITECTURAL PLANS.

17. DUCTWORK AND ACCESSORIES

   A. ALL DUCTWORK AND ACCESSORIES AS ITEMIZED HERE–IN SHALL BE GALVANIZED STEEL CONSTRUCTION, INCLUDING ALL FITTINGS AND FASTENERS AND SHALL COMPLY WITH THE LATEST EDITION OF SMACNA STANDARDS FOR 1" PRESSURE CLASS. ALL DUCTWORK DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS. ALL SQUARE DUCT ELBOWS ARE TO BE INSTALLED WITH TURNING VANES. ALL RADIUSED DUCT ELBOWS SHALL HAVE MINIMUM CENTER LINE RADIUS EQUAL TO 1–1/2 TIMES THE DUCT WIDTH.

   B. FLEXIBLE DUCT RUNOUTS SHALL NOT EXCEED 5 FEET IN LENGTH, SHALL BE PREINSULATED WITH VAPOR BARRIER, CPE INNER LINER, FACTORY FABRICATED, AND SHALL COMPLY WITH NFPA 90A AND UL 181. THE INSULATION MATERIAL SURFACE SHALL NOT BE EXPOSED TO THE AIR STREAM. FLEXIBLE DUCT RUNOUTS SHALL BE INSTALLED FULLY EXTENDED AND SUPPORTED TO MINIMIZE BENDS. FLEXIBLE DUCT SHALL BE AS MANUFACTURERD BY THERMAFLEX, TUTTLE AND BAILEY OR APPROVED EQUAL. FLEXIBLE DUCT CONNECTORS APPROXIMATELY 6 INCHES IN LENGTH SHALL BE PROVIDED WHERE SHEET METAL CONNECTIONS ARE MADE TO AIR HANDLING EQUIPMENT.

   C. DUCT ACCESS DOORS SHALL BE PROVIDED IN DUCTWORK AT ALL AUTOMATIC DAMPERS, COILS, CONTROL DEVICES, AND OTHER APPARATUS REQUIRING SERVICE AND INSPECTION.DUCT ACCESS DOORS SHALL BE HINGED TYPE.

   D. MANUAL BALANCING DAMPERS SHALL BE PROVIDED FOR EACH DIFFUSER, GRILLE AND REGISTER, EACH BRANCH OF THE MAIN TRUNK DUCT AND AS INDICATED ON THE DRAWINGS.

   E. INSTALLATION OF DIFFUSERS GRILLES AND REGISTERS SHALL BE COORDINATED WITH AND SUITABLE FOR INSTALLATION IN, ON, OR FROM CEILING, WALL OR FLOORS SPECIFIED ON THE ARCHITECTURAL PLANS. THE CONTRACTOR MUST VERIFY THE CEILING OR WALL TYPES PRIOR TO ORDERING.

18. INSULATION

   A. INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH LATEST EDITION OF ASHRAE 90.1 AND IECC EXCEPT THAT PIPE INSULATION SHALL NOT BE LESS THAN 1" THICK AND, FLEXIBLE DUCTWORK INSULATION SHALL NOT BE LESS THAN 1–1/2" THICK. ALL INSULATION MATERIALS, ADHESIVES, COATINGS, AND OTHER ACCESSORIES SHALL HAVE FLAME SPREAD RATINGS OF 25 OR LESS, AND SMOKE DEVELOPED RATINGS OF 50 OR LESS AS TESTED BY ASTM E–84 (NFPA 255) METHOD. ALL INSULATION MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA AND ASHRAE STANDARDS.

   B. DUCT INSULATION MATERIALS SHALL BE FLEXIBLE FIBERGLASS DUCTWORK INSULATION WITH VAPOR BARRIER JACKET. DUCT INSULATION INSTALLED WITHIN MECHANICAL ROOMS SHALL BE RIGID, BOARD TYPE, MINIMUM 1" THICK. DUCTWORK ACOUSTIC LINING SHALL BE CELLULAR GLASS WITH FACE BONDED TO PROVIDE A SMOOTH DAMAGE RESISTANT FINISH. PROVIDE INSULATION FOR THE FOLLOWING DUCTWORK SYSTEMS:

      1. SUPPLY AIR DUCTWORK

      2. RETURN AIR DUCTWORK IN UNCONDITIONED SPACES (WHERE SPACE TEMPERATURE IS MORE THAN 10 DEGREES F DIFFERENT FROM DUCT TEMPERATURE)

19. MECHANICAL IDENTIFICATION

   A. MECHANICAL IDENTIFICATION WORK SHALL COMPLY WITH ANSI A13.1. NAMES, ABBREVIATIONS AND OTHER DESIGNATIONS USED IN MECHANICAL IDENTIFICATION WORK, SHALL CORRESPOND WITH ANSI A13.1 OR OWNER'S STANDARDS.

   B. WHERE IDENTIFICATION IS TO BE APPLIED TO SURFACES WHICH REQUIRE INSULATION, PAINTING OR OTHER COVERING OR FINISH, INSTALL IDENTIFICATION AFTER COMPLETION OF COVERING AND PAINTING. INSTALL IDENTIFICATION PRIOR TO INSTALLATION OF ACOUSTICAL CEILINGS AND SIMILAR REMOVABLE CONCEALMENT.

   C. DUCTWORK IDENTIFICATION:

      1. DUCTWORK IDENTIFICATION SHALL BE EITHER LAMINATED PLASTIC DUCT MARKERS; OR STENCILED SIGNS. DUCTWORK IDENTIFICATION SHALL INDICATE DUCTWORK SERVICE AND DIRECTION OF FLOW.

      2. WHERE DUCTWORK IS EXPOSED (OR CONCEALED ONLY BY REMOVABLE CEILING), LOCATE DUCT MARKERS OR SIGNS NEAR POINTS WHERE DUCTWORK ORIGINATES OR CONTINUES INTO CONCEALED ENCLOSURES (SHAFT, UNDERGROUND OR SIMILAR CONCEALMENT), AND AT 50' SPACINGS ALONG EXPOSED RUNS.

20. SHOP DRAWINGS:

   A. SUBMIT NEWLY PREPARED INFORMATION, DRAWN TO ACCURATE SCALE OF 1/4"=1'0". HIGHLIGHT, ENCIRCLE, OR OTHERWISE INDICATE DEVIATIONS FROM THE CONTRACT DOCUMENTS. DO NOT REPRODUCE CONTRACT DOCUMENTS OR COPY STANDARD INFORMATION AS THE BASIS OF SHOP DRAWINGS. STANDARD INFORMATION PREPARED WITHOUT SPECIFIC REFERENCE TO THE PROJECT IS NOT CONSIDERED SHOP DRAWINGS.

   B. SHOP DRAWINGS INCLUDE EQUIPMENT SUBMITTALS, FABRICATION AND INSTALLATION DRAWINGS, SETTING DIAGRAMS, SCHEDULES, PATTERNS, TEMPLATES AND SIMILAR DRAWINGS. INCLUDE THE FOLLOWING INFORMATION:

      1. DIMENSIONS.

      2. IDENTIFICATION OF PRODUCTS AND MATERIALS INCLUDED.

      3. COMPLIANCE WITH SPECIFIED STANDARDS AND PERFORMANCE DATA AS INDICATED.

      4. NOTATION OF COORDINATION REQUIREMENTS.

      5. NOTATION OF DIMENSIONS ESTABLISHED BY FIELD MEASUREMENT.

   C. SUBMIT 3 BLACK–LINE PRINTS AND 2 ADDITIONAL PRINTS WHERE REQUIRED FOR MAINTENANCE MANUALS, PLUS THE NUMBER OF PRINTS NEEDED BY THE ENGINEER FOR DISTRIBUTION. ONE PRINT WILL BE RETAINED; THE REMAINDER RETURNED. ONE OF THE PRINTS RETURNED SHALL BE MARKED–UP AND MAINTAINED AS A "RECORD DOCUMENT".

   D. DO NOT USE SHOP DRAWINGS WITHOUT AN APPROPRIATE FINAL STAMP INDICATING ACTION TAKEN IN CONNECTION WITH CONSTRUCTION.

   E. DO NOT ORDER ANY MATERIALS OR EQUIPMENT PRIOR TO RECEIVING FINAL APPROVED SHOP DRAWINGS.

21. TESTING, ADJUSTING AND BALANCING

   A. THE MECHANICAL CONTRACTOR SHALL PROVIDE THE SERVICES OF AN INDEPENDENT TESTING, ADJUSTING, AND BALANCING (TAB) AGENCY TO PROVIDE TAB SERVICES FOR THE MECHANICAL SYSTEMS. THE TAB AGENCY SHALL BE CERTIFIED BY NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) OR THE ASSOCIATED AIR BALANCE COUNCIL (AABC) IN THOSE TESTING AND BALANCING DISCIPLINES REQUIRED FOR THIS PROJECT. THE TAB AGENCY SHALL HAVE AT LEAST ONE PROFESSIONAL ENGINEER REGISTERED IN THE STATE IN WHICH THE SERVICES ARE TO BE PERFORMED AND CERTIFIED BY NEBB OR AABC AS A TEST AND BALANCE ENGINEER.

   B. PRIOR TO TESTING, ADJUSTING, AND BALANCING, THE MECHANICAL CONTRACTOR SHALL VERIFY THAT THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING AS SPECIFIED. APPROVED SHOP DRAWINGS, AS BUILT DRAWINGS, AND ALL OTHER DATA REQUIRED FOR EACH SYSTEM AND/OR COMPONENT TO BE TESTED SHALL BE MADE AVAILABLE AT THE JOB SITE DURING THE ENTIRE TAB EFFORT. THE OWNER SHALL BE NOTIFIED IN WRITING OF ALL EQUIPMENT, COMPONENTS, OR BALANCING DEVICES, THAT ARE DAMAGED, INCORRECTLY INSTALLED, OR MISSING, AS WELL AS ANY DESIGN DEFICIENCIES THAT WILL PREVENT PROPER TESTING, ADJUSTING, AND BALANCING. TESTING, ADJUSTING, AND BALANCING SHALL NOT COMMENCE UNTIL APPROVED BY THE OWNER.

   C. PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM IDENTIFIED, IN ACCORDANCE WITH THE DETAILED PROCEDURES OUTLINED IN EITHER NEBB: "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS" OR AABC: "NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE." THE TAB AGENCY SHALL TEST, ADJUST, AND BALANCE THE FOLLOWING MECHANICAL SYSTEMS:

      1. ALL SUPPLY AIR SYSTEMS

      2. ALL RETURN AIR SYSTEMS

      3. VERIFY OPERATION OF ALL TEMPERATURE CONTROL SYSTEMS

      4. TEST SYSTEMS FOR PROPER SOUND AND VIBRATION LEVELS

   D. SUBMIT TESTING, ADJUSTING, AND BALANCING REPORTS BEARING THE SEAL AND SIGNATURE OF THE TAB PROFESSIONAL ENGINEER. PREPARE A REPORT OF RECOMMENDATIONS FOR CORRECTING UNSATISFACTORY MECHANICAL PERFORMANCES WHEN A SYSTEM CANNOT BE SUCCESSFULLY BALANCED.

22. AS–BUILT DRAWINGS

   A. PREPARE AS–BUILT DRAWINGS TO A SCALE OF 1/4"=1'–0" OR LARGER; DETAILING THE ACTUAL INSTALLATION OF MAJOR ELEMENTS, COMPONENTS, AND SYSTEMS OF MECHANICAL EQUIPMENT AND MATERIALS. WHERE SHOP DRAWINGS ARE USED, RECORD A CROSS–REFERENCE AT THE CORRESPONDING LOCATION ON THE AS–BUILT DRAWINGS. GIVE PARTICULAR ATTENTION TO CONCEALED ELEMENTS THAT WOULD BE DIFFICULT TO MEASURE AND RECORD AT A LATER DATE.

   B. MARK NEW INFORMATION THAT IS IMPORTANT TO THE OWNER, BUT WAS NOT SHOWN ON CONTRACT DRAWINGS OR SHOP DRAWINGS.

   C. NOTE RELATED CHANGE ORDER NUMBERS WHERE APPLICABLE.

   D. ORGANIZE AS–BUILT DRAWINGS INTO MANAGEABLE SETS, BIND WITH DURABLE PAPER COVER SHEETS, AND PRINT SUITABLE TITLES, DATES AND OTHER IDENTIFICATION ON THE COVER OF EACH SET.

23. CLEAN, PRIME AND PAINT MECHANICAL EQUIPMENT AND THE EXPOSED PORTION OF THE DUCTWORK AND PIPING SYSTEMS TO MATCH THE FINISH OF THE ADJACENT SURFACES OR TO MEET THE INDICATED OR SPECIFIED SAFETY CRITERIA OR TO MEET THE COLOR SCHEME SET BY THE ARCHITECT.

24. SUBSTITUTIONS

   A. SUBSTITUTION REQUEST SUBMITTAL: REQUESTS FOR SUBSTITUTION WILL BE CONSIDERED IF RECEIVED WITHIN 45 DAYS AFTER COMMENCEMENT OF THE WORK. REQUESTS RECEIVED MORE THAN 45 DAYS AFTER COMMENCEMENT OF THE WORK MAY BE CONSIDERED OR REJECTED AT THE DISCRETION OF THE ENGINEER.

   B SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION FOR CONSIDERATION.

   C. IDENTIFY THE PRODUCT, OR THE FABRICATION OR INSTALLATION METHOD TO BE REPLACED IN EACH REQUEST. INCLUDE RELATED DRAWING NUMBERS. PROVIDE COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS, AND THE FOLLOWING INFORMATION, AS APPROPRIATE.

      1. PRODUCT DATA, INCLUDING DRAWINGS AND DESCRIPTIONS OF PRODUCTS, FABRICATION AND INSTALLATION PROCEDURES.

      2. SAMPLES, WHERE APPLICABLE OR REQUESTED.

      3. A DETAILED COMPARISON OF SIGNIFICANT QUALITIES OF THE PROPOSED SUBSTITUTION WITH THOSE OF THE WORK SPECIFIED, SIGNIFICANT QUALITIES MAY INCLUDE ELEMENTS SUCH AS SIZE, WEIGHT, DURABILITY, PERFORMANCE AND VISUAL EFFECT.

      4. COORDINATION INFORMATION, INCLUDING A LIST OF CHANGES OR MODIFICATIONS NEEDED TO OTHER PARTS OF THE WORK AND TO CONSTRUCTION PERFORMED BY THE OWNER AND SEPARATE CONTRACTORS, THAT WILL BECOME NECESSARY TO ACCOMMODATE THE PROPOSED SUBSTITUTION.

      5. A STATEMENT INDICATING THE SUBSTITUTION'S EFFECT ON THE CONTRACTOR'S CONSTRUCTION SCHEDULE COMPARED TO THE SCHEDULE WITHOUT APPROVAL OF THE SUBSTITUTION. INDICATE THE EFFECT OF THE PROPOSED SUBSTITUTION ON OVERALL CONTRACT TIME.

      6. COST INFORMATION, INCLUDING A PROPOSAL OF THE NET CHANGE, IF ANY IN THE CONTRACT SUM.

      7. CERTIFICATION BY THE CONTRACTOR THAT THE SUBSTITUTION PROPOSED IS EQUAL TO OR BETTER IN EVERY SIGNIFICANT RESPECT TO THAT REQUIRED BY THE CONTRACT DOCUMENTS AND THAT IT WILL PERFORM ADEQUATELY IN THE APPLICATION INDICATED. INCLUDE THE CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME, THAT MAY SUBSEQUENTLY BECOME NECESSARY BECAUSE OF THE FAILURE OF THE SUBSTITUTION TO PERFORM ADEQUATELY.

   D. ENGINEER'S ACTION: WITHIN ONE WEEK OF RECEIPT OF THE REQUEST FOR SUBSTITUTION, THE ENGINEER WILL REQUEST ADDITIONAL INFORMATION OR DOCUMENTATION NECESSARY FOR EVALUATION OF THE REQUEST. WITHIN 2 WEEKS OF RECEIPT OF THE REQUEST, OR ONE WEEK OF RECEIPT OF THE ADDITIONAL INFORMATION OR DOCUMENTATION, WHICHEVER IS LATER, THE ENGINEER WILL NOTIFY THE CONTRACTOR OF ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTION. IF A DECISION ON USE OF A PROPOSED SUBSTITUTE CANNOT BE MADE OR OBTAINED WITH THE TIME ALLOCATED, USE THE PRODUCT SPECIFIED BY NAME. ACCEPTANCE OF A PRODUCT SUBSTITUTION WILL BE IN THE FORM OF A CHANGE ORDER.

   E. OTHER CONDITIONS: THE CONTRACTOR'S SUBSTITUTION REQUEST WILL BE RECEIVED AND CONSIDERED BY THE ENGINEER WHEN ONE OR MORE OF THE FOLLOWING CONDITIONS ARE SATISFIED, AS DETERMINED BY THE ENGINEER; OTHERWISE REQUESTS WILL BE RETURNED WITHOUT ACTION EXCEPT TO RECORD NONCOMPLIANCE WITH THESE REQUIREMENTS.

      1. THE REQUEST IS DIRECTLY RELATED TO AN "OR EQUAL" CLAUSE OR SIMILAR LANGUAGE IN THE CONTRACT DOCUMENTS.

      2. THE SPECIFIED PRODUCT OR METHOD OF CONSTRUCTION CANNOT BE PROVIDED WITHIN THE CONTRACT TIME. THE REQUEST WILL NOT BE CONSIDERED IF THE PRODUCT OR METHOD CANNOT BE PROVIDED AS A RESULT OF FAILURE TO PURSUE THE WORK PROMPTLY OR COORDINATE ACTIVITIES PROPERLY.

      3. A SUBSTANTIAL ADVANTAGE IS OFFERED THE OWNER, IN TERMS OF COST, TIME, ENERGY CONSERVATION OR OTHER CONSIDERATIONS OF MERIT, AFTER DEDUCTING OFFSETTING RESPONSIBILITIES THE OWNER MAY BE REQUIRED TO BEAR. ADDITIONAL RESPONSIBILITIES FOR THE OWNER MAY INCLUDE ADDITIONAL COMPENSATION TO THE ENGINEER FOR REDESIGN AND EVALUATION SERVICES, INCREASED COST OF OTHER CONSTRUCTION BY THE OWNER OR SEPARATE CONTRACTORS, AND SIMILAR CONSIDERATIONS.

25. PROVIDE ALL NECESSARY CONTROL DEVICES, EQUIPMENT, MATERIALS, LABOR, WIRE AND CONDUIT TO OPERATE ALL NEW TERMINAL DEVICES (VAVS), INCLUDING BUT NOT LIMITED TO CONNECTION TO EXISTING BMS SYSTEM. ALL NEW VAVS TO BE ADDED TO EXISTING SOFTWARE INTERFACE, INCLUDING ANY INTEGRATION REQUIRED. EXISITNG BMS IS A METSYS JOHNSON SYSTEM BUT MAINTAINED BY SEIMANS.

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