RENOVATIONS TO 163 IVY STREET

163 IVY STREET
NEW HAVEN, CT - 06511

ARCHITECT'S PROJECT NUMBER:
2020.025

BID DOCUMENTS
JULY 28, 2022

PROJECT TEAM

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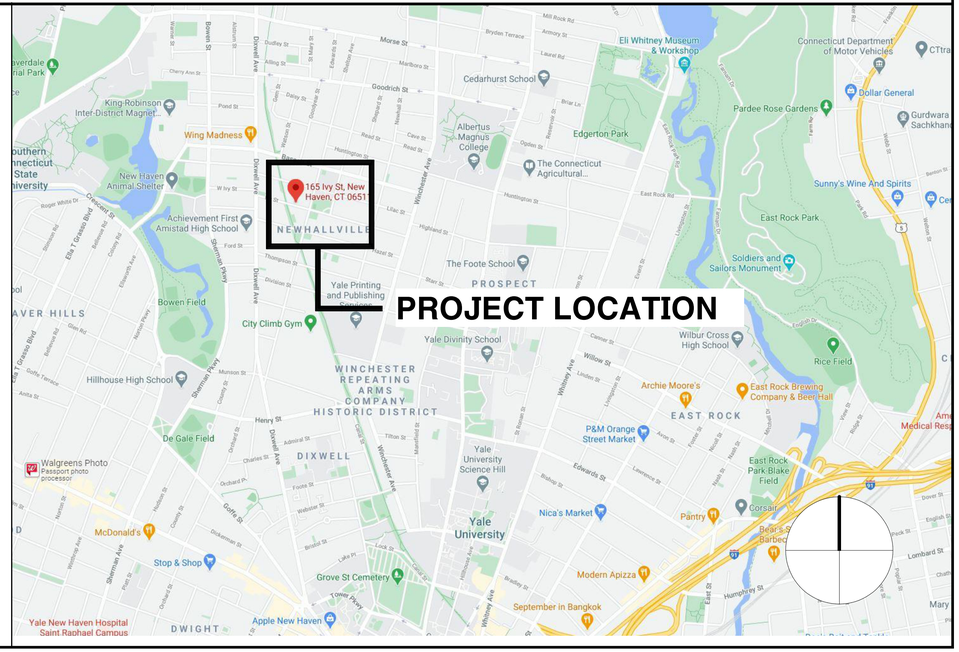
DRAWING LIST

SITE LOCATION



ABBREVIATIONS

@	AT
&	AND
"	INCH; DITTO (SAME AS ABOVE)
#	NUMBER OR POUND
AB	ANCHOR BOLT
ABV	ABOVE
A/C	AIR CONDITIONING
ACC	ACCESS
ACOUST	ACOUSTICAL
ACPL	ACOUSTICAL PLASTER
ACR	ACRYLIC
ACST	ACOUSTIC
ACT	ACOUSTICAL CEILING TILE
A.D.	AREA DRAIN
AD	ACCESS DOOR
ADA	AMERICANS WITH DISABILITIES ACT
ADAAG	AMERICANS WITH DISABILITIES ACT ARCHITECTURAL GUIDELINES
ADD	ADDENDUM; ADDITION
ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJACENT
ADJT	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGG.	AGGREGATE
AIA	AMERICAN INSTITUTE OF ARCHITECTS
AL	ALUMINUM
ALM	ALARM
ALS	ACRYLIC LATEX SEALANT
ALT	ALTERNATE
AMT	AMOUNT
ANN	ANNUNCIATOR
ANOD	ANODIZED
ANT	ANTENNA
AP	ACCESS PANEL
APPD	APPROVED
APPROX	APPROXIMATE(LY)
APT	APARTMENT
ARCH	ARCHITECT(URAL)
AS	ACOUSTIC SEALANT
ASB	ASBESTOS
ASPH	ASPHALT
ASR	AUTOMATIC SPRINKLER RISER ASSEM ASSEMBLE
AT	ASPHALT TILE
ATTEN	ATTENUATION
AUTH	AUTHORIZED
AUTO	AUTOMATIC
AVG	AVERAGE
AX	AXIS
B TO B	BACK TO BACK
BAL	BALANCE
BBD	BULLETIN BOARD
BC	BROOM CLOSET
BD	BOARD
BDRM	BEDROOM
BDY	BOUNDRY
BEL	BELOW
BET	BETWEEN
BEV	BEVEL
BHD	BULKHEAD
BIT	BITUMINOUS
BJF	BITUMINOUS JOINT FILLER
BJT	BED JOINT
BKR	BREAKER
BL	BASE LINE
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BLR	BOILER
BLT-IN	BUILT-IN
BM	BEAM, BENCH MARK
BN	BULLNOSE
B.O.	BOTTOM OF
BOT	BOTTOM
BP	BASE PLATE
BPL	BEARING PLATE
BRDG	BRIDGE(ING)
BRG	BEARING
BRK	BRICK
BRKT	BRACKET
BRS	BRASS
BRZ	BRONZE
BS	BOTH SIDES
BSMT	BASEMENT
BT	BATH TUB
BTU	BRITISH THERMAL UNITS
BUR	BUILT-UP ROOF
BW	BOTH WAYS
CAB	CABINET
CAD	COMPUTER-AIDED DRAFTING
CAT	CATALOG
CAV	CAVITY
CB	CATCH BASIN
CBD	CHALK BOARD
CCT	CIRCUIT
CCTV	CLOSED CIRCUIT TV
CCW	COUNTER CLOCKWISE
CEM	CEMENT
CER	CERAMIC
CFL	COUNTER FLASHING
CFT	CUBIC FOOT
CG	CORNER GUARD
CG	CORNER GUARD
CH	COAT HOOK
CI	CAST IRON
CIRC	CIRCUMFERENCE
CJ	CONTROL JOINT
CK	CAULKING
CL	CENTERLINE
CLL	CONTRACT LIMIT LINE
CLG	CEILING
CLR	CLEAR
CLS	CLOSURE
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
COAX	COAXIAL
C.O.	CASED OPENING
CO	CLEAN OUT
COEF	COEFFICIENT
COL	COLUMN
COMB	COMBINATION
COMP	COMPRESS
COMPO	COMPOSITION
CONC	CONCRETE
CONN	CONNECT(ION)
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COR	CORRUGATED
COV	COVER
CPR	COPPER
CPT	CARPET,CARPETING
CR	COLD ROLLED
CRG	CROSS GRAIN
CRS	COURSE
CS	COUNTERSINK
CSMT	CASEMENT
CT	CERAMIC TILE
CTR	CENTER
CU	CUBIC
CV	CHECK VALVE
CW	COLD WATER
CYD	CUBIC YARD
D	DRAIN
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLISH(TION)
DEP	DEPRESSED
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DFD	DEDICATED FLOOR DRAIN
DGM	DIAGRAM
DH	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DIST	DISTANCE
DIV	DIVISION
DL	DEAD LOAD
DMT	DEMOUNTABLE
DN	DOWN
DO	DOOR OPENING
DP	DAMPROOFING
DPR	DAMPER
DR	DOOR
DS	DOWN SPOUT
DT	DRAIN TILE
DTL	DETAIL
DVTL	DOVETAIL
DW	DUMB WAITER
DWG	DRAWING
DWL	DOWEL
DWR	DRAWER
E	EAST
E TO E	END TO END
EBW	EYE & BODY WASH
EA	EACH
EB	EXPANSION BOLT
EC	EXPOSED CONSTRUCTION
EE	EACH END
EF	EACH FACE
EG	EDGE GRAIN
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELB	ELBOW
ELEC	ELECTRIC(AL)
ELE	ELEVATOR
ELEV	ELEVATION
EMER	EMERGENCY
ENAM	ENAMEL
ENC	ENCLOSED
ENG	ENGINEER
ENJF	EXPANDED NEOPRENE JOINT FILLER
ENTR	ENTRANCE
EP	ELECTRICAL PANEL BOARD
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
EQPT	EQUIPMENT
EST	ESTIMATE
EA	EACH WAY
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXC	EXCAVATE(ION)
EXEC	EXECUTIVE
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPOSED
EXPN	EXPANSION
EXT	EXTERIOR
EXTR	EXTRUDE
F	DEGREES FAHRENHEIT
F TO F	FACE TO FACE
FA	FIRE ALARM
FAB	FABRICATE
FACP	FIRE ALARM CONTROL PANEL
FB	FIRE BLANKET
FC	FILE CABINET
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FACTORY FINISH
FFE	FINISH FLOOR ELEVATION
FF&E	FIXTURES, FURNISHINGS & EQUIPMENT
FGL	FIBERGLASS
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIN	FINISHED
FIXT	FIXTURE
FJT	FLUSH JOINT
FLASH	FLASHING
FLG	FLOORING
FLR	FLOOR
FLR.D	FLOOR DRAIN
FLUR.	FLUORESCENT
FND	FOUNDATION
FO	FINISHED OPENING
FP	FIREPROOF
FPL	FIREPLACE
FPM	FEET PER MINUTE
FR	FRAME
FRG	FORGED
FRT	FIRE RETARDANT
FS	FULL SIZE
FT	FOOT, FEET
FTG	FOOTING
FUR	FURRED
FURN	FURNISH, FURNITURE
FUT	FUTURE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GCMU	GLAZED CMU
GD	GRADE
GEN	GENERAL
GF	GROUND FACE
GFI	GROUND FAULT INTERRUPTED
GL	GLASS
GLB	GLASS BLOCK
GLM	GLAZED MASONRY UNIT
GND	GROUND
GOVT	GOVERNMENT
GPL	GYPSUM LATH
GPPL	GYPSUM PLASTER
GRAN	GRANULAR
GST	GLAZED STRUCTURAL TILE
GT	GROUT
GV.&B	GATE VALVE & BOX
GVL	GRAVEL
GYP	GYPSUM
GWB	GYPSUM WALL BOARD
H	HARDNER
HB	HOSE BIB
HC	HOLLOW CORE
HD	HEAVY DUTY
HDCP	HANDICAPPED
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HGT	HEIGHT
HM	HOLLOW METAL
HOR	HORIZONTAL
HOSP	HOSPITAL
HP	HIGH POINT
HR	HOUR
HSG	HOUSING
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HV	HIGH VOLTAGE
HVAC	HEATING/ VENTILATING/ AIR CONDITIONING
HW	HOT WATER
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
INCL	INCLUDE(ED)
INSTL	INSTALL
INSUL	INSULATE(D) (ION)
INT	INTERIOR
INTM	INTERMEDIATE
INV	INVERT
J	JOIST
JAN	JANITOR
JB	JUNCTION BOX
JC	JANITOR'S CLOSET
JT	JOINT
KIT	KITCHEN
KO	KNOCK OUT
KPL	KICK PLATE
LAB	LABORATORY
LAM	LAMINATE
LAV	LAVATORY
LB	POUND (WEIGHT)
LBL	LABEL
LD	LEADER DRAIN
LGMF	LIGHT GAUGE METAL FRAME
LH	LEFT HAND
LIB	LIBRARY
LIN	LINEAR
LL	LIVE LOAD
LP	LOW POINT
LS	LOUD SPEAKER
LTG	LIGHTING
LV	LOW VOLTAGE
LVR	L
MACH	MACHINE
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB-P	MARKER BOARD
MBR	MEMBER
MC	MINERAL CORE
MECH	MECHANICAL
MED	MEDIUM
MEZZ	MEZZANINE
MFD	METAL FLOOR DECK
MFG	MANUFACTURING
MFR	MANUFACTURE(R)
MH	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MK	MARK
MLAP	METAL LATH & PLASTER
MLD	MOLDING
MMB	MEMBRANE
MO	MASONRY OPENING
MOV	MOVABLE
MR	MOP RECEPTOR
MT	MOUNT
MTD	MOUNTED
MTHR	METAL THRESHOLD
MTR	MOTOR
MTL	METAL
MTRF	METAL ROOF DECK
MUL	MULLION MULL
MWK	MILLWORK
N	NORTH
NAT	NATURAL
NEUT	NEUTRAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
O TO O	OUT TO OUT
OA	OVERALL
OBS	OBSCURE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OFF	OFFICE
OH	OVERHEAD
OHD	OVERHEAD DOOR
OI	ORNAMENTAL IRON
OP	OPAQUE
OPG	OPENING
OPH	OPPOSITE HAND
OPP	OPPOSITE
OR	OUTSIDE RADIUS
ORD	OVERFLOW ROOF DRAIN
ORN	ORNAMENTAL
ORD	OVERFLOW ROOF DRAIN
ORN	ORNAMENTAL
OVFL	OVERFLOW
OZ	OUNCE
PA	PUBLIC ADDRESS
PAR	PARALLEL
PASS	PASSAGE
PB	PANIC BAR
PBD	PARTICLE BOARD
PCC	PRECAST CONCRETE
PCSB	PRECAST SPLASH BLOCK
PE	PROFESSIONAL ENGINEER
PED	PEDESTAL
PERF	PERFORATE
PERIM	PERIMETER
PERP	PERPENDICULAR
PFB	PREFABRICATED
PFN	PRE-FINISHED
PH	PHASE
PJF	PREFORMED JOINT FILLER
PKG	PARKING
PKWY	PARKWAY
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLF	POUNDS PER LINEAR FOOT
PLMBG	PLUMBING
PNL	PANEL
POL	POLISH
PORC	PORCELAIN
PRI	PRIMARY
PROP	PROPERTY
PROT	PROTECTION
PRSC	PROJECTION SCREEN
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT
PTD	PAINTED
PTN	PARTITION
PVC	POLY VINYL CHLORIDE
PVG	PAVING
PVMT	PAVEMENT
PVT	PRIVATE
PWD	PLYWOOD
PWR	POWER
QUAL	QUALITY
QT	QUARRY TILE
QTY	QUANTITY
R	RISER
RA	RETURN AIR
RAD	RADIUS
RCMU	REINFORCED CONCRETE MASONRY
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REBAR	REINFORCING BAR
REC	RECESS(ED)
REF	REFERENCE
REFR.	REFRIGERATOR
REG	REGISTER
REINF	REINFORCE
RETG	RETAINING
REV	REVISION
RF	ROOF
RFH	ROOF HATCH
RFL	REFLECT
RGH	ROUGH
RH	RIGHT HAND
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RPM	REVOLUTIONS PER MINUTE
RPT	REPEAT
RR	RAILROAD
RWC	RAIN WATER CONDUCTOR
RWL	RAINWATER LEADER
S	SOUTH
SALV	SALVAGE
SAN	SANITARY
SB	SPLASH BLOCK
SB-P	SMART BOARD WITH PROJECTION SCREEN
SC	SOLID CORE
SCH	SCHEDULE
SCR	SCREEN
SCT	STRUCTURAL CLAY TILE
SCUP	SCUPPER
SD	STORM DRAIN
SEAL	SEALANT
SECT	SECTION
SERV	SERVICE
SF	SQUARE FOOT
SFGL	SAFTY GLASS
SG	SHEET GLASS
SHELV	SHELVING
SHR	SHOWER
SHT	SHEET
SIG	SIGNAL
SIM	SIMILAR
SL	SLEEVE
SM	SMALL
SNR	SANITARY NAPKIN RECEPTACLE
SP	SOUNDPROOF
SPEC	SPECIFICATION(S)
SPK	SPEAKER
SPL	SPECIAL
SPLR	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STG	SEATING
STL	STEEL
STOR	STORAGE
STR	STRUCTURAL
SUPP	SUPPLEMENT(ARY)
SUR	SURFACE
SUSP	SUSPENDED
SW	SWITCH
SY	SQUARE YARD
SYM	SYMMETRICAL
SYN	SYNTHETIC
SYS	SYSTEM
T	TREAD
T&G	TONGUE AND GROOVE
TAN	TANGENT
TB	TACK BOARD
TC	TERRA COTTA
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY
TEN	TENANT
THR	THRESHOLD
TKS	TACK STRIP
T.O.	TOP OF
TOU	TOP OF UNDERLAYMENT
TP	TOP OF PAVEMENT
TPD	TOILET PAPER DISPENSER
TPTN	TOILET PARTITION
TRANS	TRANSLUCENT
TS	TOP OF STEEL
TSL	TOP OF SLAB
TV	TELEVISION
TW	TOP OF WALL
TYP	TYPICAL
TZ	TERRAZZO
UC	UNDERCUT
UH	UNIT HEATER
UL	UNDERWRITERS' LABORATORIES
UNF	UNFINISHED
UON	UNLESS OTHERWISE NOTED
UP	UNPAINTED
UR	URINAL
USG	UNITED STATES GYPSUM COMPANY
USS	UNITED STATES STANDARD
UT	UTILITY
VAC	VACUUM
VAR	VARIES
VAT	VINYL ASBESTOS TILE
VB	VAPOR BARRIER, VINYL BASE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VG	VERTICAL GRAIN
VIF	VERIFY IN FIELD
VIT	VITREOUS
VLT	VAULT
VNR	VENEER
VOL	VOLUME
VP	VENT PIPE
VR	VAPOR RETARDER
VS	VENT STACK
VT	VINYL TILE
VTR	VENT THROUGH ROOF
VWC	VINYL WALL COVERING
W	WEST
W/	WITH
W/O	WITHOUT
WB	WOOD BASE
WC	WATER CLOSET
WD	WOOD
WF	WIDE FLANGE
WG	WIRE-GLASS
WIN	WINDOW
WM	WIRE MESH
WP	WATERPROOF
WR	WATER RESISTANT
WRSTP	WEATHERSTRIPPING
WS	WATER STOP
WSCT	WAINSCOT
WT	WEIGHT
WTW	WALL TO WALL
WWF	WELDED WIRE FABRIC
XH	EXTRA HEAVY
YD	YARD
YR	YEAR

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN A CODE COMPLIANT MANNER. CONTRACTORS SHALL BE RESPONSIBLE FOR PERFORMING THEIR WORK IN STRICT ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, & LOCAL CODES, REGULATIONS, LAWS, & ORDINANCES.

2. ALL POTENTIAL CODE VIOLATIONS OR DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT IN WRITING PRIOR TO COMMENCEMENT OF WORK.

3. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS & THE PROPOSED SCOPE OF WORK PRIOR TO COMMENCEMENT OF WORK. COMMENCEMENT OF WORK SHALL BE CONSIDERED AN ACCEPTANCE OF THESE TERMS.

4. ALL INCORRECT OR SUBSTANDARD WORK SHALL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

5. ALL WORK EITHER IMPLIED OR REASONABLY INFERABLE FROM THE CONTRACT DOCUMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL DRAWINGS & SPECIFICATIONS ARE DIRECTED TO THE ATTENTION OF THE CONTRACTOR & THE INCLUSION OF ANY WORK BY MENTION, NOTE, DETAIL, ITEMIZATION, OR IMPLICATION, HOWEVER BRIEF, MEANS THAT THE SUBCONTRACTORS SHALL PROVIDE & INSTALL SAME. ALL WORK PERFORMED SHALL INCLUDE ALL APPURTENANCES & APPARATUS NORMALLY DEEMED TO BE A PART OF A COMPLETED PACKAGE WITHIN THE DEFINITIONS OF NORMAL INDUSTRY STANDARDS.

6. ALL DIMENSIONS ARE ACTUAL UNLESS NOTED AS NOMINAL. DO NOT SCALE THE DRAWINGS.

7. EACH TRADE CONTRACTOR, IN COORDINATION WITH OWNER IS RESPONSIBLE TO SECURE & PAY FOR ALL PERMITS & GOVERNMENT FEES, LICENSES, & INSPECTIONS NECESSARY TO COMPLETE THEIR WORK.

8. CONTRACTOR SHALL PROVIDE A CONSTRUCTION SCHEDULE TO THE OWNER AT THE TIME OF CONTRACT SIGNING. CONTRACTOR SHALL BE RESPONSIBLE FOR THE TIMELY & PROPER COMPLETION OF ALL WORK SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR REVISING THE SCHEDULE THROUGHOUT THE ENTIRE DURATION OF CONSTRUCTION TO REFLECT THE CURRENT JOB CONDITIONS.

9. ALL CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN A LEGAL FASHION & SHALL BE DONE IN SUCH A WAY AS TO NOT OVERLY DISRUPT THE DAILY OPERATION OF THE BUILDING. COORDINATE DUMPSTER LOCATIONS WITH THE OWNER PRIOR TO COMMENCEMENT OF WORK.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING & PATCHING OF EXISTING WALLS, FLOORS, & CEILINGS REQUIRED FOR THE SUCCESSFUL & PROPER COMPLETION OF THE WORK SHOWN & IMPLIED IN THESE DRAWINGS. ALL NEW FINISHES SHALL MATCH THE EXISTING ADJACENT FINISHES TO REMAIN. ALL PATCHING SHALL BE SEAMLESS IN NATURE.

11. INSURANCE & BONDING SHALL BE PROVIDED ACCORDING TO THE BID DOCUMENTS. CONTRACTOR SHALL VERIFY THESE REQUIREMENTS PRIOR TO CONTRACT SIGNING AS NO EXTRAS WILL BE PERMITTED FOR UNFORESEEN LOGISTICAL REQUIREMENTS. VERIFY ALL SCHEDULING & PROCEDURAL REQUIREMENTS RELATED PAYMENT PRIOR TO CONTRACT SIGNING AS WELL.

12. THESE DRAWINGS ARE NOT INTENDED TO ADDRESS ANY HAZARDOUS MATERIALS WHICH MAY ON MAY NOT BE PRESENT ON THE SITE. ALL WORK RELATED TO HAZARDOUS MATERIALS SHALL BE PERFORMED UNDER A SEPARATE CONTRACT, ARCHITECTS' SERVICES DO NOT INCLUDE ANY SERVICES RELATED TO DETECTION, REPORTING, PERMITTING, ANALYSIS, OR ABATEMENT OF ASBESTOS, RADON, OR OTHER HAZARDOUS OR TOXIC MATERIALS INCLUDING MOLDS OR FUNGUS (COLLECTIVELY, "HAZARDOUS MATERIALS") AT THE PROJECT SITE.

13. REFER TO LEAD ABATEMENT PLANS AND ASSOCIATED DOCUMENTS FOR 165 IVY STREET NEW HAVEN CT, DATED 4/13/2022, COMPLETED AND DOCUMENTED BY CONNECTICUT SERVICES, LLC.

GRAPHIC SYMBOLS

- 101 / ROOM NAME — ROOM NAME
- 101 — DOOR NUMBER
- X — WINDOW TYPE
- 1 / A101 / 1 — INTERIOR ELEVATION IDENTIFICATION
- EL. EL. 0'-0" / F.F.E. — ELEVATION POINT
- 1 / B — STRUCTURAL GRID
- 1/ A101 — DETAIL
- 1 / A101 — CALLOUT
- 1 / A101 — BUILDING SECTION
- 1 / A101 — WALL SECTION
- HANDICAP ACCESSIBLE ROUTE
- XX — WALL TYPE
- ALIGN — ALIGN SURFACE
- +12'-0" — SPOT GRADE ELEVATION
- MATCH LINE
- REVISION MARK
- XXX = X PEOPLE — ROOM OCCUPANCY LOAD: AREA IN SQUARE FEET / OCCUPANCY LOAD FACTOR: MORE POEPLE THAN ACTUAL SQUARE FOOTAGE PROVIDES (1008.1)
- 39 / 165 — EXIT CAPACITY: ACTUAL EGRESS OCCUPANCY OF DOOR OR STAIR / MAXIMUM ALLOWABLE EGRESS OCCUPANCY OF DOOR OR STAIR
- XXX — MILLWORK
- XXX / X — EXTERIOR ELEVATION MARKERS

MATERIALS LEGEND

- CONCRETE
- CONCRETE MASONRY UNITS
- COMPACTED GRAVEL
- WOOD FRAMING
- WOOD FRAMING - THROUGH MENBER
- WOOD FRAMING - INTERRUPTED MENBER
- PLYWOOD
- FINISHED WOOD
- BATT INSULATION
- ACOUSTICAL INSULATION
- RIGID INSULATION
- GYPSUM WALL BOARD
- GYPSUM SHEATHING
- NEW STUD PARTITION
- EXISTING PARTITION

APPLICABLE CODE INFORMATION

* 2018 CT STATE BUILDING CODE (CSBC)

* INTERNATIONAL EXISTING BUILDING CODE IEBC 2015:
  - LEVLEL 3 ALTERATION
  - EXISTING VB CONSTRUCITON, R3 OCCUPANCY TO REMAIN VB CONSTRUCTION R3 OCCUPANCY

* DATE OF PROPOSED CONSTRUCTION: 2022

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NO.	DATE	REVISION
		ISSUE/REVISION

PROJECT NAME
RENOVATIONS TO 165 IVY STREET

BID DOCUMENTS

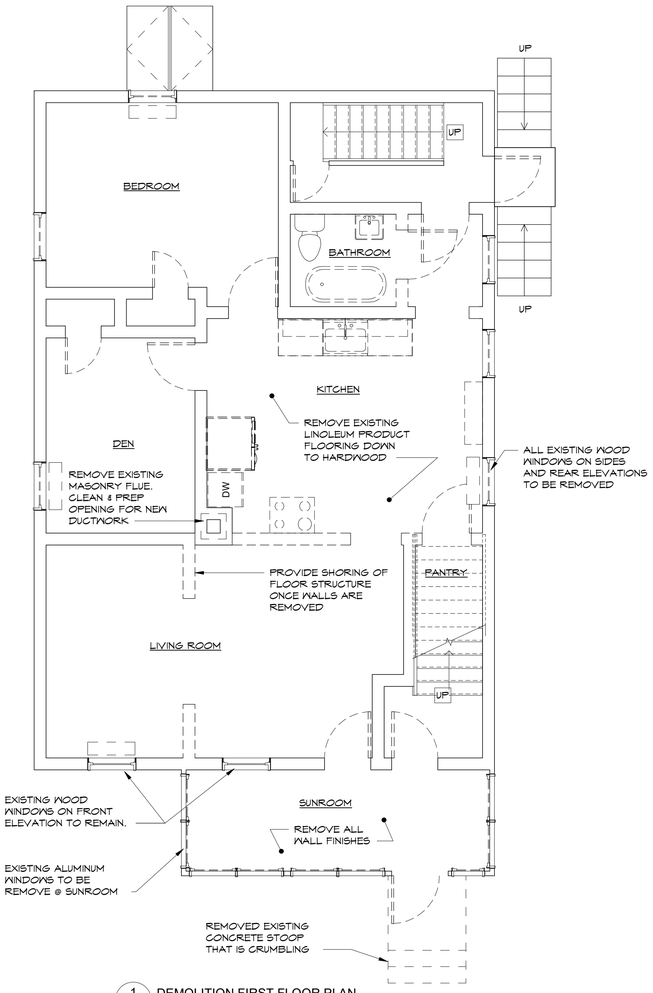
BUILDING NAME & ADDRESS
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SIZE NUMBER
2020.025	N / A

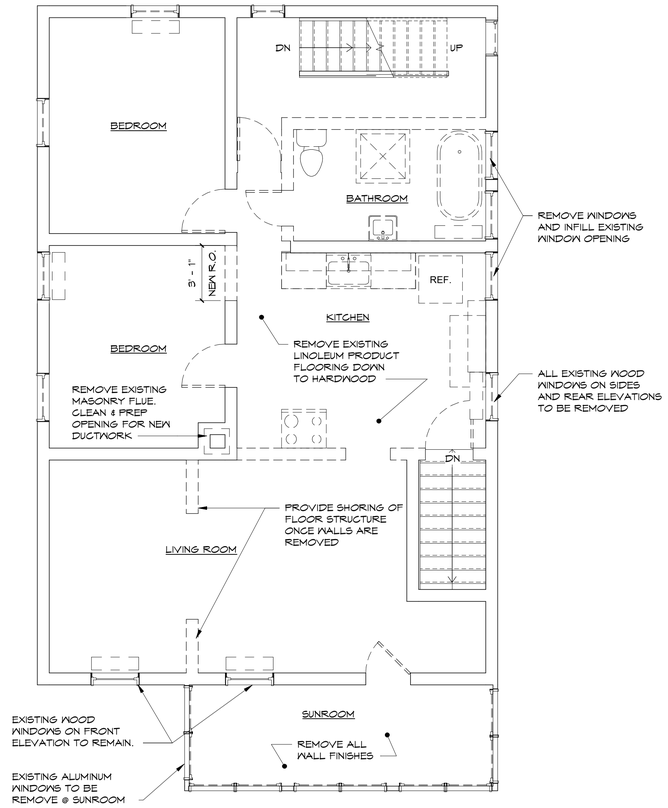
DRAWING TITLE
PROJECT INFORMATION SHEET

SCALE	DRAWN BY
As Indicated	NL
FILENAME	DATE
FILE	JULY 28, 2022

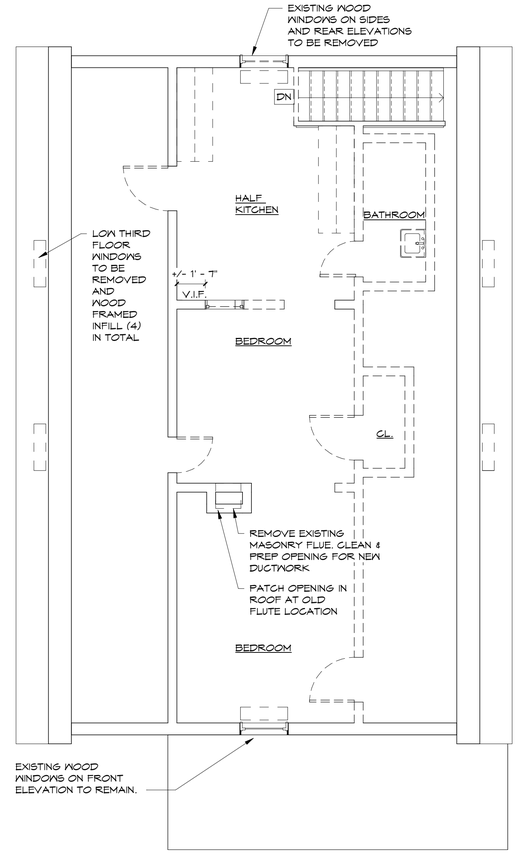
DRAWING NUMBER
A0.01



1 AD2.01 DEMOLITION FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"



2 AD2.01 DEMOLITION SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"



3 AD2.01 DEMOLITION THIRD FLOOR
SCALE: 1/4" = 1'-0"

SPECIAL NOTES

1. PER THE DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT, STATE HISTORIC PRESERVATIONS OFFICE AND LIVABLE CITY INITIATIVE.

A. FRONT ELEVAITON HISTORIC WOOD WINDOWS TO BE RETAINED AND REPAIRED (PART OF EXISTING WINDOWS TO BE REMOVED TO BE USED TO REAPIR THE FRONT ELEVAITON WINDOWS AS NECESSARY).

B. INTERIOR WOOD FLOORING TO BE RETAINED AND REFINISHED

C. INTERIOR WINDOWS AND DOOR, PAST THROUGH TRIM TO BE RETAINED AND REFINISHED AND REINSTALLED WITH ORIGINAL LOCATION

DEMOLITION NOTES

1. REMOVE ALL EXISTING DOORS INCLUDING HARDWARE.

2. REMOVE ALL EXISTING G.W.B. & LATH/PLASTER FINISHES TO BARE STUDS/ JOISTS/RAFTERS/EXTERIOR WALLS & CEILING. REMOVE EXISTING FINISHES FLOOR OTHER THAN HARDWOOD FLOORS TO SUB FLOOR.

3. CONTRACTOR IS RESPONSIBLE FOR SHORING OF ALL BUILDING SYSTEMS WHERE DEMOLITION IS OCCURRING.

4.REMOVE ALL EXISTING MEP SYSTEMS (INCLUDING ALL APPLIANCES, EQUIPMENT, & FIXTURES)

5. DESIGN INTENT IS TO UTILIZE EXISTING BEARING CONDITIONS WHEN POSSIBLE. CONTRACTOR TO NOTIFY ARCHITECT ACCORDINGLY.

6. CONTRACTOR TO REMOVE ALL CLOSET RODS, SHELVING, BUILT-INS, ETC.

7. CONTRACTOR TO REMOVE EXTERIOR FINISHES TO ACCETABLE SUBSTRATE FOR THE INSTALATION OF NEW VINYL SIDING.

DEMOLITION LEGEND

- EXISTING WALL CONSTRUCTION TO REMAIN
- EXISTING WALL CONSTRUCTION TO BE REMOVED
- EXISTING WINDOW TO BE REMOVED
- EXISTING DOOR AND FRAME TO BE REMOVED
- EXISTING TOILET TO BE REMOVED
- EXISTING SINK TO BE REMOVED
- EXISTING CAST IRON RADIATORS TO BE REMOVED

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NO.	DATE	REVISION
ISSUE/REVISION		

PROJECT NAME
RENOVATIONS TO 165 IVY STREET

BID DOCUMENTS

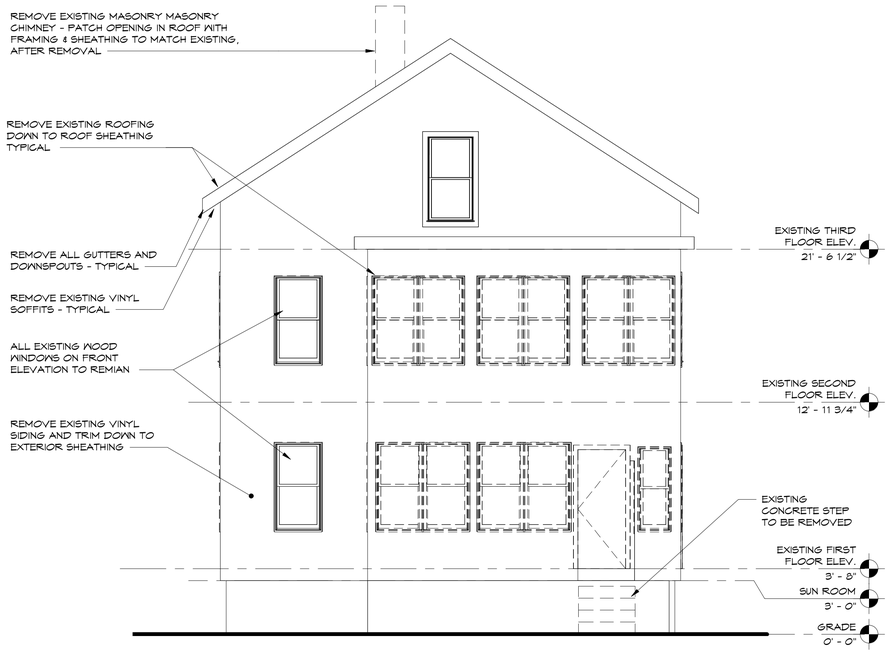
BUILDING NAME & ADDRESS
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

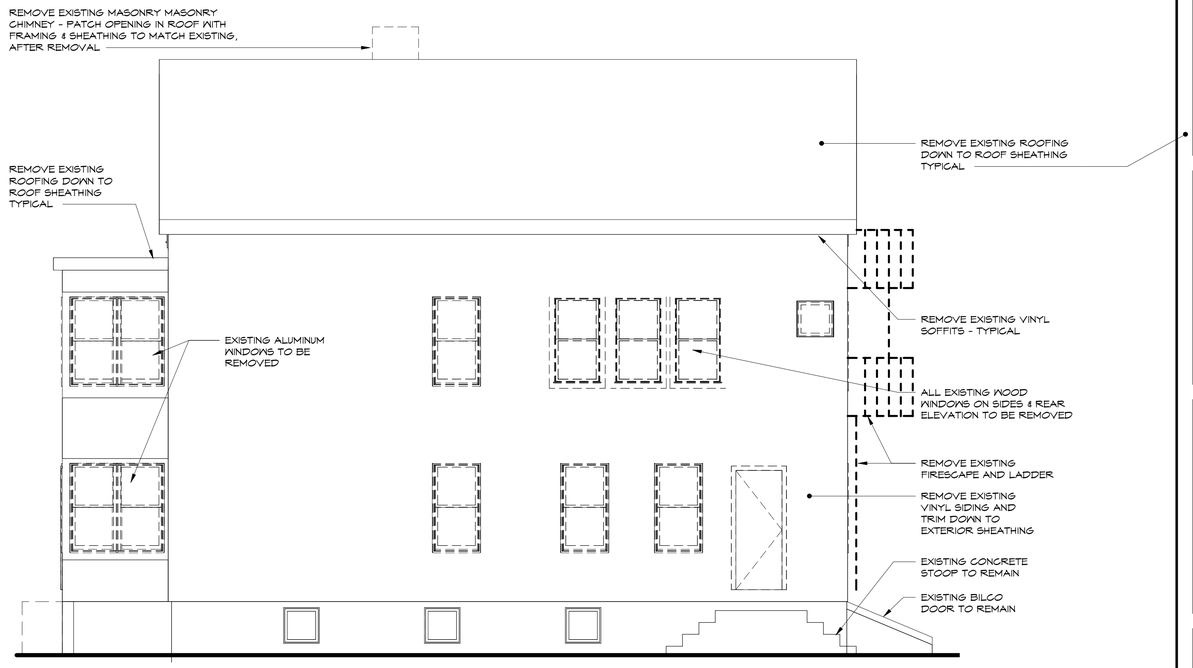
DRAWING TITLE
DEMOLITION FLOOR PLANS

SCALE	DRAWN BY
As indicated	NL
FILENAME	DATE
FILE	JULY 28, 2022

DRAWING NUMBER
AD2.01



1 AD5.01 SOUTH ELEVATION - DEMO ELEVATION
SCALE: 1/4" = 1'-0"



2 AD5.01 EAST ELEVATION - DEMO ELEVATION
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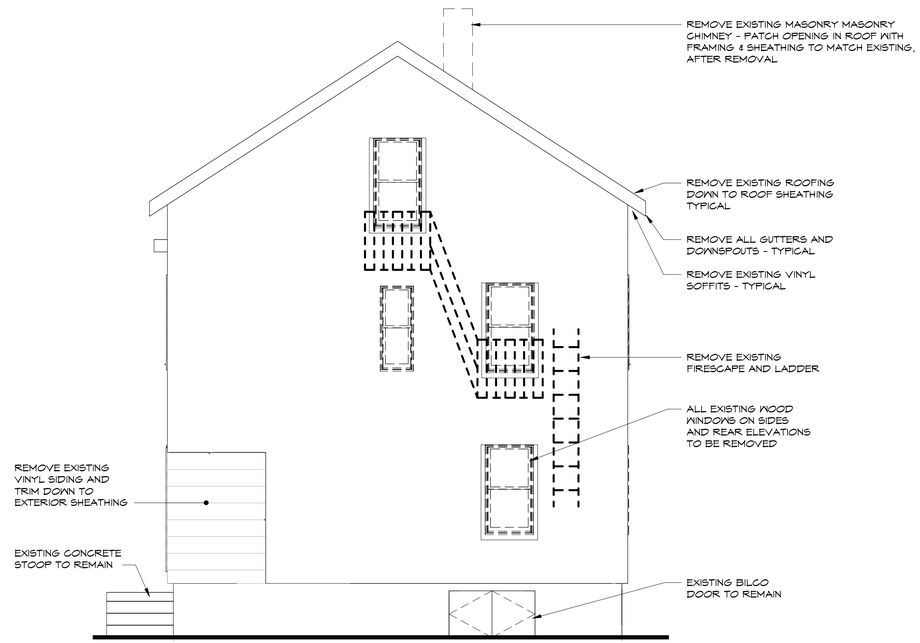
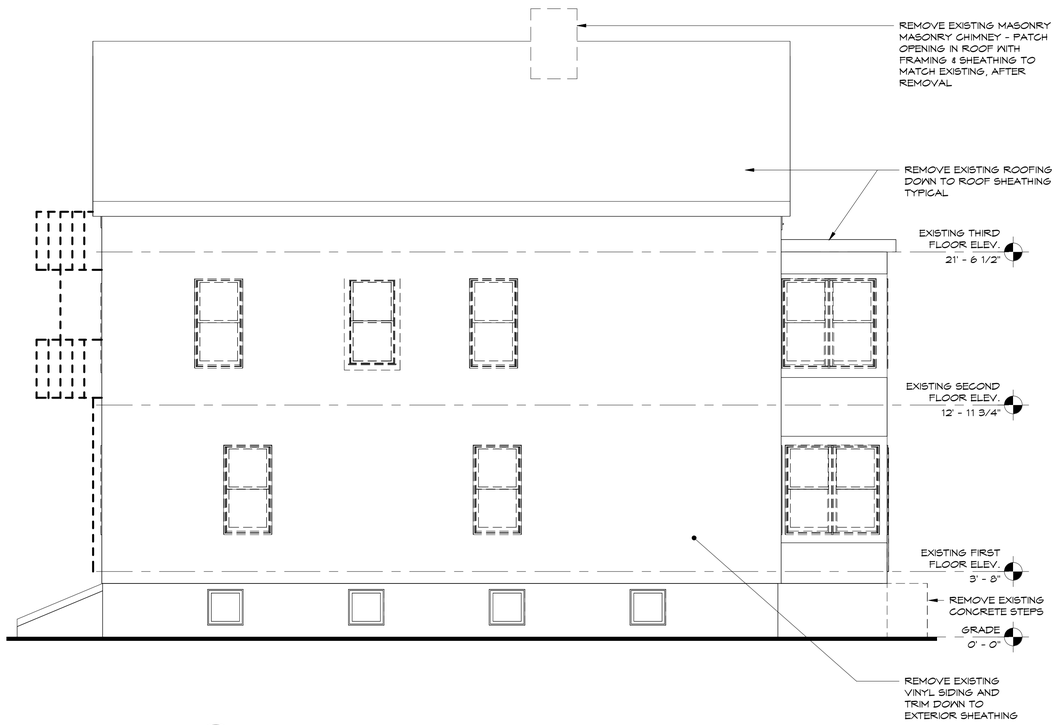


3 AD5.01 NORTH ELEVATION - DEMOLITION ELEVATION
SCALE: 1/4" = 1'-0"



4 AD5.01 WEST ELEVATION - DEMO ELEVATION
SCALE: 1/4" = 1'-0"

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BID DOCUMENTS

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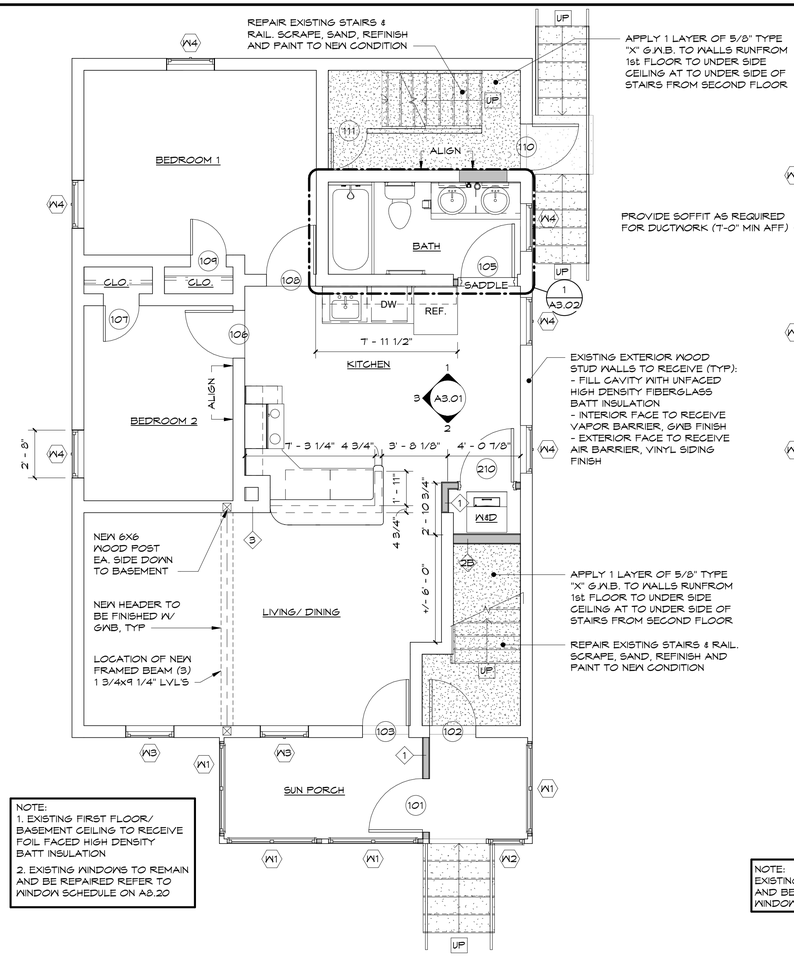
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

DRAWING TITLE
DEMOLITION EXTERIOR ELEVATIONS

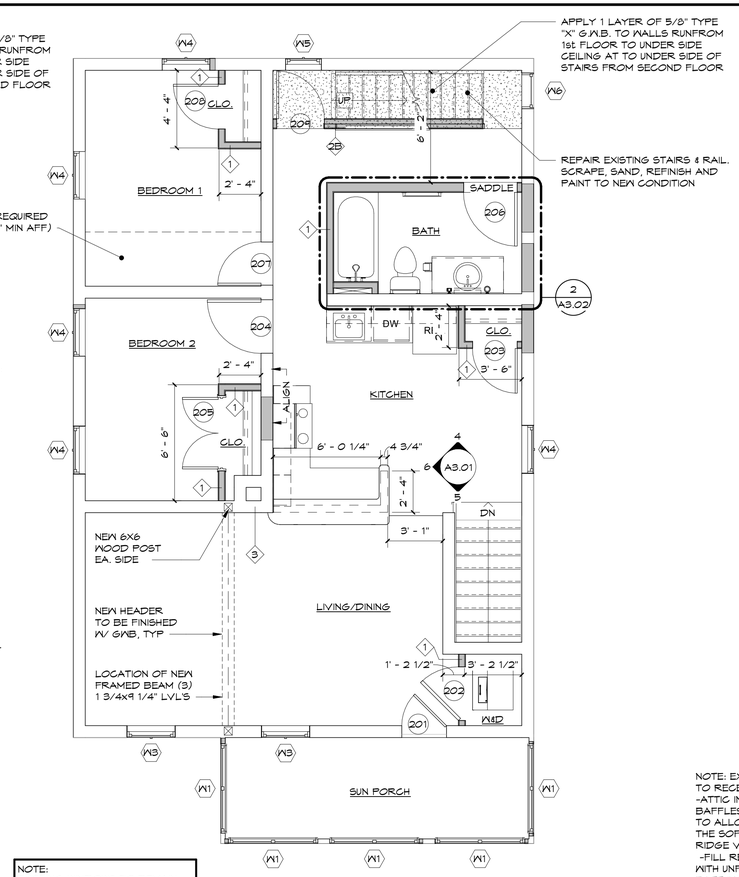
SCALE	DRAWN BY
1/4" = 1'-0"	NL/JT
FILENAME	DATE
FILE	JULY 28, 2022

DRAWING NUMBER
AD5.01

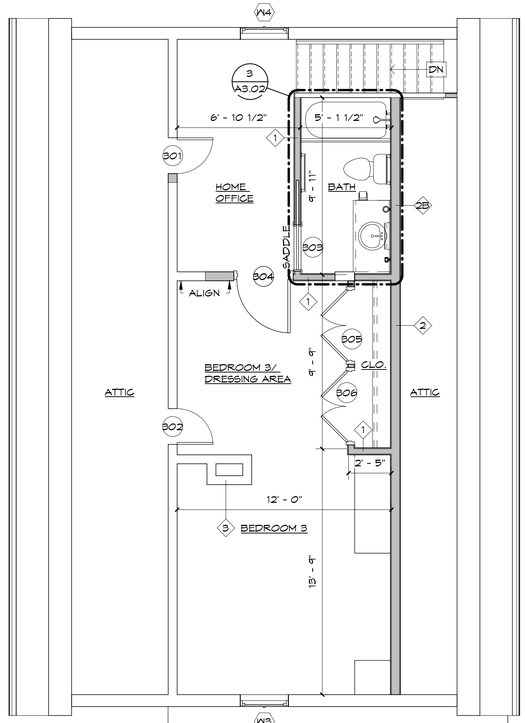


NOTE:
1. EXISTING FIRST FLOOR/ BASEMENT CEILING TO RECEIVE FOIL FACED HIGH DENSITY BATT INSULATION

2. EXISTING WINDOWS TO REMAIN AND BE REPAIRED REFER TO WINDOW SCHEDULE ON A8.20



NOTE:
EXISTING WINDOWS TO REMAIN AND BE REPAIRED REFER TO WINDOW SCHEDULE ON A8.20

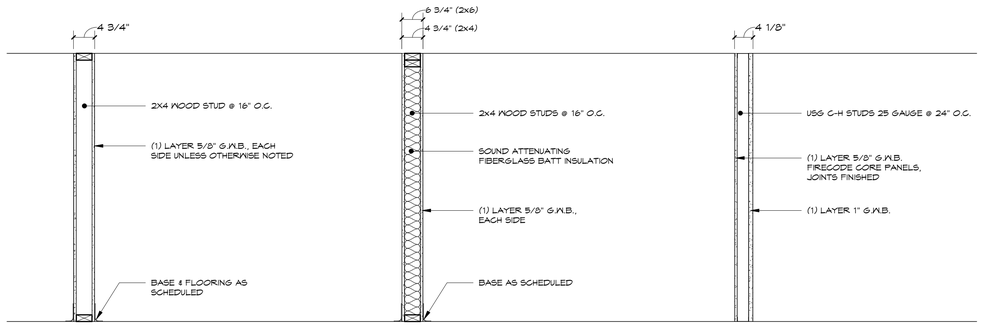


NOTE: EXISTING ROOF RAFTERS TO RECEIVE:
-ATTIC INSULATION RAFTER BAFFLES THEIR ENTIRE LENGTH TO ALLOW VENTILATION FROM THE SOFFIT VENTS TO THE RIDGE VENT
-FILL REMAINDER OF RAFTER WITH UNFACED HIGH DENSITY BATT INSULAITON
-VAPOR BARRIER
-GWB FINISH

1 A2.01 PROPOSED FIRST FLOOR PLAN - UNIT 1 - TWO BEDROOM
SCALE: 1/4" = 1'-0"

2 A2.01 PROPOSED SECOND FLOOR PLAN - UNIT 2 - THREE BEDROOM + OFFICE
SCALE: 1/4" = 1'-0"

3 A2.01 PROPOSED THIRD FLOOR PLAN - UNIT 2 - UPPER FLOOR
SCALE: 1/4" = 1'-0"



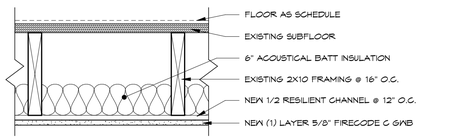
1 NEW GWB PARTITION
NEW 2x4 WOOD STUDS @ 16" O.C.
DOUBLE TOP PLATE, SINGLE SOLE PLATE W/ (1) LAYER GWB EACH SIDE (MOISTURE RESISTANT GWB @ WET AREAS - KITCHENS, BATHROOMS, LAUNDRY CLOSETS, SPRINKLER CLOSETS, & MECHANICAL CLOSETS). INCLUDE 3 1/2" SOUND ATTENUATING FIBERGLASS INSULATION @ BATHROOM LOCATIONS.

2 NEW GWB PARTITION
NEW 2x4 WOOD STUDS @ 16" O.C.
DOUBLE TOP PLATE, SINGLE SOLE PLATE W/ (1) LAYER 5/8" GWB EACH SIDE (MOISTURE RESISTANT GWB @ WET AREAS - KITCHENS, BATHROOMS, LAUNDRY CLOSETS, SPRINKLER CLOSETS, & MECHANICAL CLOSETS), & 3 1/2" SOUND ATTENUATED FIBERGLASS BATT INSULATION.

2B NEW GWB PARTITION, 1 HR RATED (UL #U333)
NEW 2x6 WOOD STUDS @ 16" O.C.
DOUBLE TOP PLATE, SINGLE SOLE PLATE W/ (1) LAYER TYPE "X" 5/8" GWB EACH SIDE (MOISTURE RESISTANT GWB @ WET AREAS - KITCHENS, BATHROOMS, LAUNDRY CLOSETS, SPRINKLER CLOSETS, & MECHANICAL CLOSETS) & 3 1/2" SOUND ATTENUATED FIBERGLASS BATT INSULATION.

3 1 HR RATED SHAFT WALL UL U415

4 A2.01 WALL TYPES
SCALE: 3/4" = 1'-0"



APPLY THIS DETAIL TO FIRST FLOOR CEILING

UL L 545

USG LEVELROCK SOUND MAT (SAM-N40 3/8" MAT)
USG LEVELROCK, USG DUROCK UNDERLAYMENT 1"
3 1/2" ACOUSTICAL BATT INSULATION
2X10 FRAMING @ 16" O.C.
RC DELUXE 12" O.C.
(1) LAYER 5/8" FIRECODE C GWB

GENERAL INSULATION NOTES:
1. PROVIDE R-21 FIBERGLASS BATT INSULATION WITH KRAFT FACE AT EXTERIOR WALLS
2. PROVIDE R-39 FIBERGLASS INSULATION IN ATTIC SPACES.

5 A2.01 FLOOR ASSEMBLY
SCALE: 1 1/2" = 1'-0"

SPECIAL NOTES

1. PER THE DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT, STATE HISTORIC PRESERVATIONS OFFICE AND LIVABLE CITY INITIATIVE.

A. FRONT ELEVAITON HISTORIC WOOD WINDOWS TO BE RETAINED AND REPAIRED (PART OF EXISTING WINDOWS TO BE REMOVED TO BE USED TO REAPIR THE FRONT ELEVAITON WINDOWS AS NECESSARY).

B. INTERIOR WOOD FLOORING TO BE RETAINED AND REFINISHED

C. INTERIOR WINDOWS AND DOOR, PAST THROUGH TRIM TO BE RETAINED AND REFINISHED AND REINSTALLED WITH ORIGINAL LOCATION

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PROJECT NAME
RENOVATIONS TO 165 IVY STREET

BID DOCUMENTS

BUILDING NAME & ADDRESS
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

DRAWING TITLE
PROPOSED FLOOR PLANS & DETAILS

SCALE	DRAWN BY
As indicated	JT/ RS
FILENAME	DATE
FILE	JULY 28, 2022

DRAWING NUMBER
A2.01

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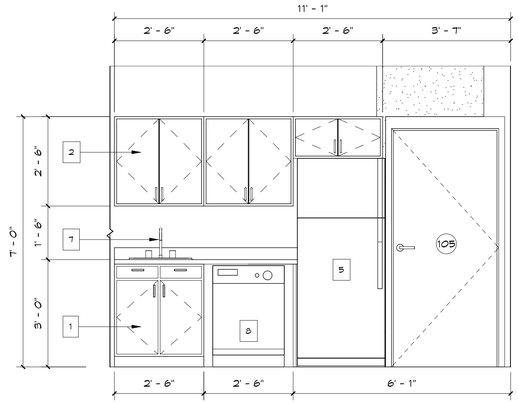
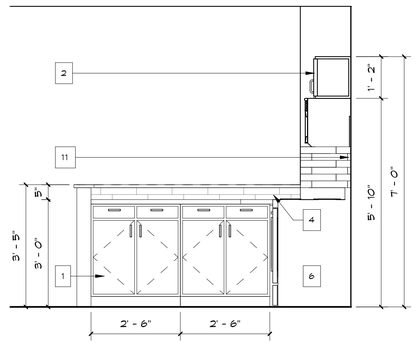
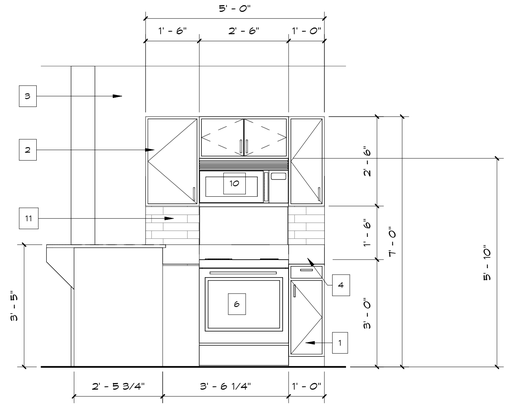


1 A3.01 UNIT 1 KITCHEN ELEVATION A
SCALE: 1/2" = 1'-0"



2 A3.01 UNIT 1 KITCHEN ELEVATION B
SCALE: 1/2" = 1'-0"



3 A3.01 UNIT 1 KITCHEN ELEVATION C
SCALE: 1/2" = 1'-0"

4 A3.01 UNIT 2 KITCHEN ELEVATION A
SCALE: 1/2" = 1'-0"

5 A3.01 UNIT 2 KITCHEN ELEVATION B
SCALE: 1/2" = 1'-0"

6 A3.01 UNIT 2 KITCHEN ELEVATION C
SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. CONTRACTOR TO PROVIDE SOLID BLOCKING AS REQUIRED FOR INSULATION OF ALL ACCESSORIES & MOUNTING LOCATIONS OF BATHROOM ACCESSORIES

2. ALL APPLIANCES EXCEPT FOR CLOTHES WASHERS AND DRYERS ARE TO BE SUPPLIED & INSTALLED BY CONTRACTOR. (HOOK UPS FOR CLOSES WASHERS TO BE PROVIDED BY THE CONTRACTOR - REFER TO MEP DWGS FOR ADDITIONAL INFO.)

3. REFER TO A0.01 FOR TYPICAL MOUNTING HEIGHTS OF ACCESSORIES & FIXTURES

4. ALL BATHROOMS AND KITCHENS TO RECEIVE MOISTURE RESISTANT GWB.

5. FR LAMINATE BACKSPLASH BEHIND RANGE SHALL EXTEND FROM THE FLOOR TO THE UNDERSIDE OF THE UPPER CABINET ABOVE THE RANGE HOOD. CEMENTATIOUS BACKER BOARD SHALL BE INSTALLED DIRECTLY ONTO STUDS IN PLACE OF GWB.

KITCHEN KEY NOTES

1	BASE CABINETS
2	UPPER CABINETS
3	PTD. GWB
4	4" MIN. GRANITE BACKSPLASH
5	REFRIGERATOR
6	RANGE/STOVE COMBO
7	KITCHEN SINK
8	DISHWASHER
9	CORNER BASE CABINET
10	MICRONAVE WITH RECIRCULATING VENT
11	CERAMIC TILE: SUBWAY STYLE

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BID DOCUMENTS

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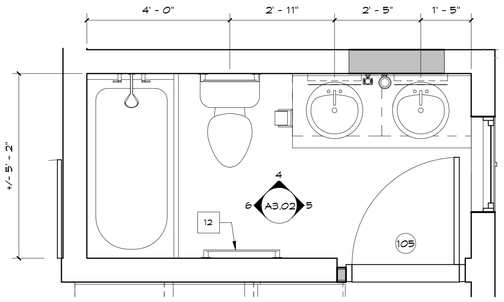
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

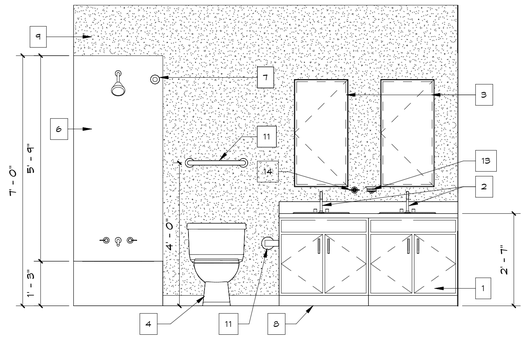
DRAWING TITLE
KITCHEN ELEVATIONS

SCALE	DRAWN BY
As indicated	NL
FILENAME	DATE
FILE	JULY 28, 2022

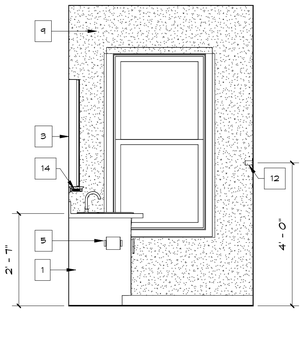
DRAWING NUMBER
A3.01



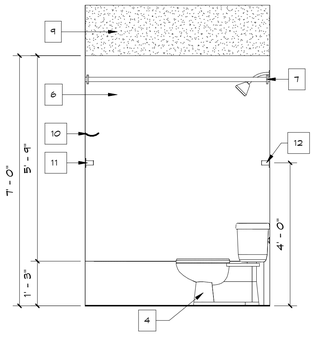
1 A3.02 UNIT 1 - BATHROOM PLAN
SCALE: 1/2" = 1'-0"



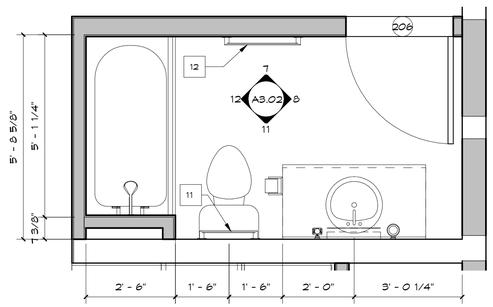
4 UNIT 1 BATHROOM ELEVATION A
1/2" = 1'-0"



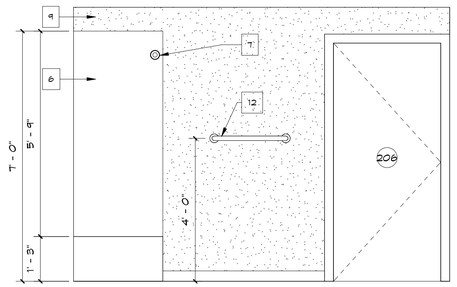
5 UNIT 1 BATHROOM ELEVATION B
1/2" = 1'-0"



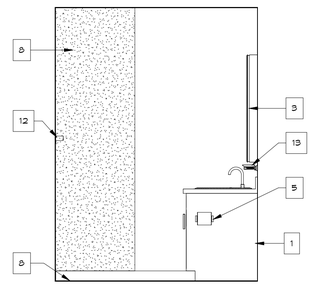
6 UNIT 1 BATHROOM ELEVATION C
1/2" = 1'-0"



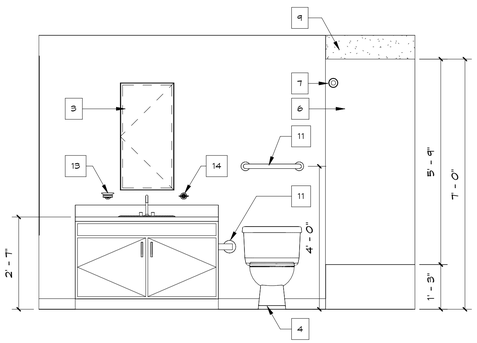
2 A3.02 UNIT 2 - BATHROOM PLAN - THREE BEDROOM + OFFICE -
SCALE: 1/2" = 1'-0"



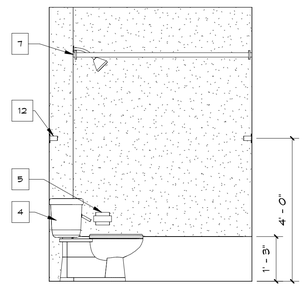
7 UNIT 2 BATHROOM ELEVATION A
1/2" = 1'-0"



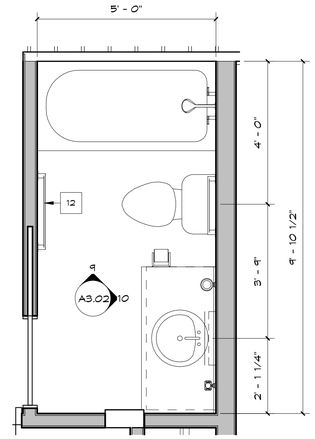
8 UNIT 2 BATHROOM ELEVATION B
1/2" = 1'-0"



11 UNIT 2 BATHROOM ELEVATION C
1/2" = 1'-0"



12 UNIT 2 BATHROOM ELEVATION D
1/2" = 1'-0"



3 A3.02 UNIT 2 - BATHROOM PLAN - UPPER FLOOR
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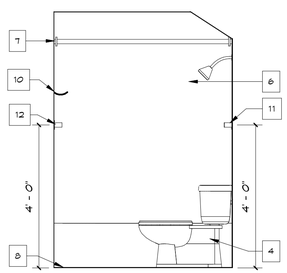
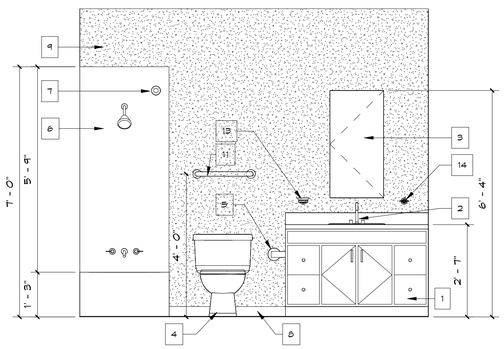


9 UNIT 2 - BATHROOM ELEVATION
UPPER FLOOR A
1/2" = 1'-0"



10 UNIT 2 - BATHROOM ELEVATION
UPPER FLOOR B
1/2" = 1'-0"

GENERAL NOTES

1. CONTRACTOR TO PROVIDE SOLID BLOCKING AS REQUIRED FOR INSULATION OF ALL ACCESSORIES & MOUNTING LOCATIONS OF BATHROOM ACCESSORIES.

2. REFER TO A0.01 FOR TYPICAL MOUNTING HEIGHTS OF ACCESSORIES & FIXTURES.

3. ALL BATHROOMS TO RECEIVE MOISTURE RESISTANT GWB.

4. PROVIDE BLOCKING AS NECESSARY AT ALL GRAB BAR LOCATIONS.

RESTROOM KEY NOTES

1	VANITY & VANITY BASE
2	TOP MOUNTED SINK & FAUCET
3	SURFACE MOUNTED MEDICINE CABINET W/ MIRROR
4	TOILET
5	TOILET PAPER HOLDER
6	NEW FOUR-PIECE ACRYLIC TUB/ SHOWER ENCLOSURE
7	SHOWER CURTAIN ROD
8	FLOORING & BASE AS SCHEDULED
9	PAINTED GWB
10	ROBE HOOK
11	18" BATH TOWEL BAR
12	24" BATH TOWEL BAR
13	SOAP DISH
14	TOOTHBRUSH & TUMBLER HOLDER

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PROJECT NAME
RENOVATIONS TO 165 IVY STREET

BID DOCUMENTS

BUILDING NAME & ADDRESS
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

DRAWING TITLE
BATHROOM PLANS & ELEVATIONS

SCALE	DRAWN BY
As Indicated	NL
FILENAME	DATE
FILE	JULY 28, 2022

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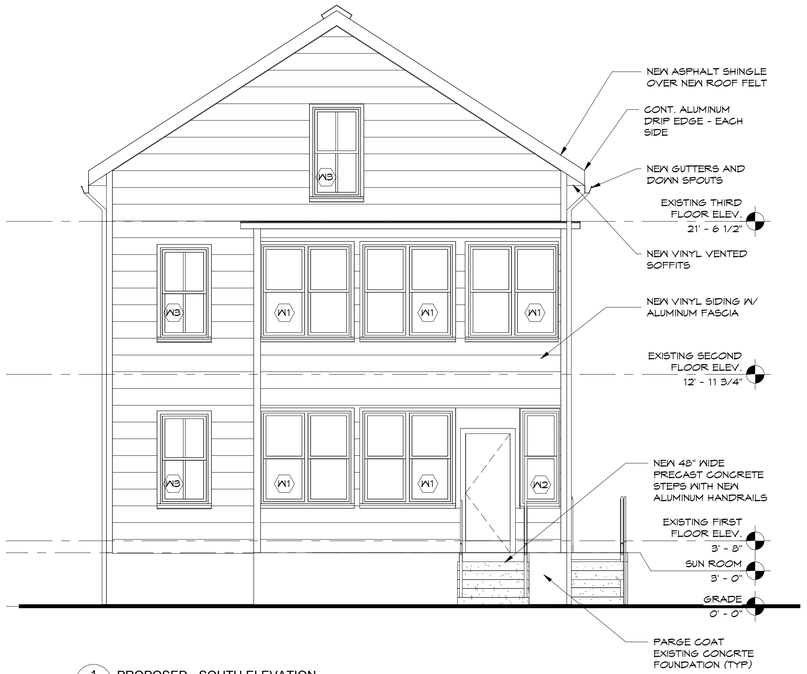
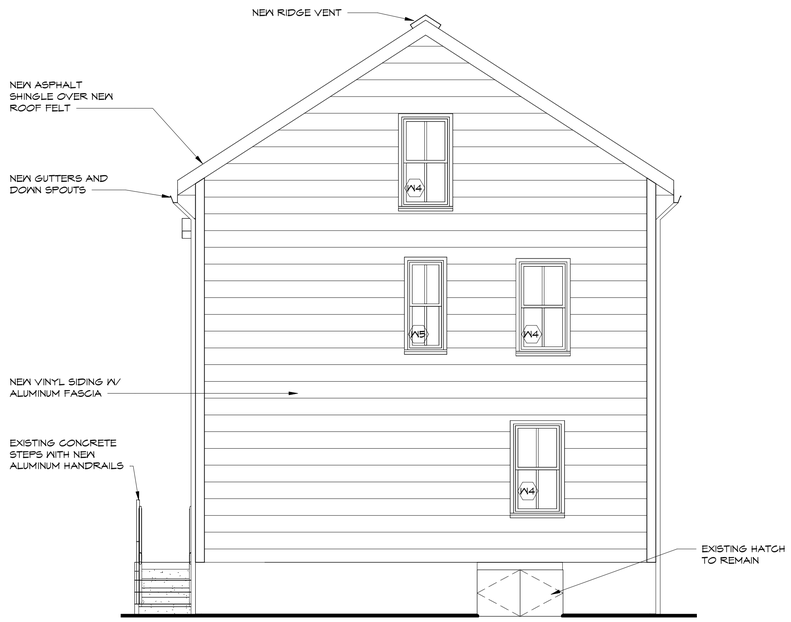
A3.02

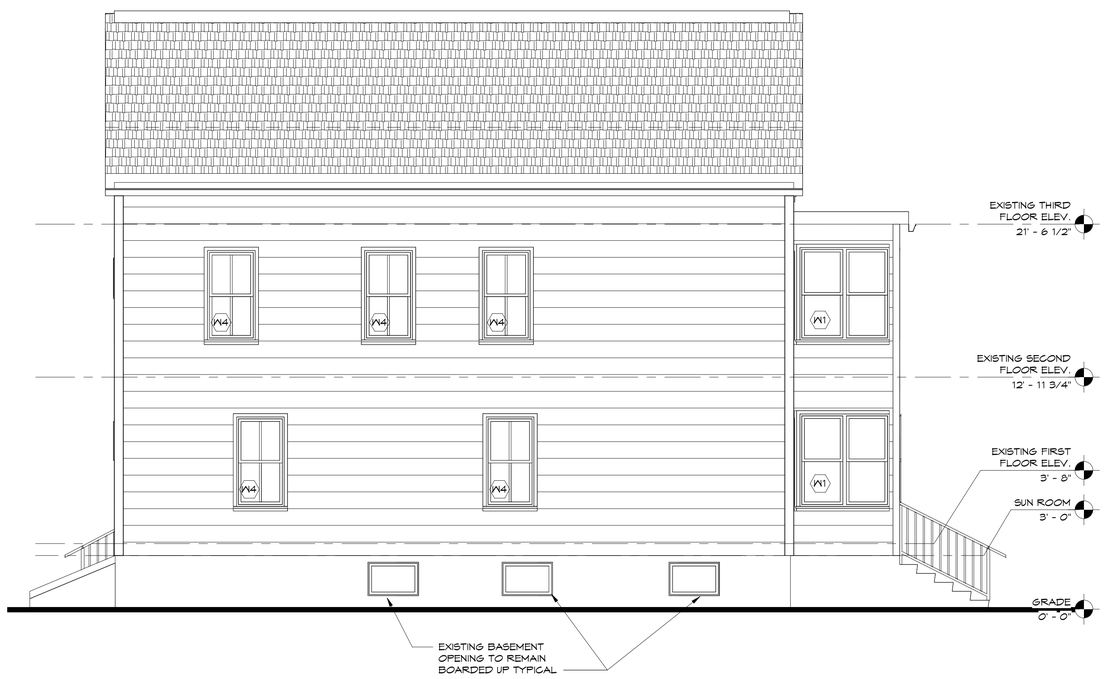


1 A5.01 PROPOSED - SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

2 A5.01 PROPOSED - EAST ELEVATION
SCALE: 1/4" = 1'-0"



3 A5.01 PROPOSED - NORTH ELEVATION
SCALE: 1/4" = 1'-0"



4 A5.01 PROPOSED - WEST ELEVATION
SCALE: 1/4" = 1'-0"

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NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

DRAWING TITLE
EXTERIOR ELEVATIONS

SCALE	DRAWN BY
1/4" = 1'-0"	NL
FILENAME	DATE
FILE	JULY 28, 2022

DRAWING NUMBER
A5.01

DOOR SCHEDULE & NOTES

DOOR NUMBER	DOOR EXTERIOR	DOOR INTERIOR	DOOR SIZE WIDTH	DOOR SIZE HEIGHT	DOOR SIZE THICKNESS	DOOR MATERIAL	DOOR ELEVATION - SEE A3.20	FIRE RATING (MINUTES) 20	FIRE RATING (MINUTES) 40	FIRE RATING (MINUTES) 60	REMARKS
101	●		3' - 0"	6' - 8"	0' - 1 3/4"	INSUL. STL.					X = REQUIRED NEW WORK
102	●		2' - 7"	6' - 8"	0' - 1 3/4"	INSUL. STL.				●	
103			2' - 7"	6' - 8"	0' - 1 3/4"	INSUL. STL.					
104			2' - 9"	6' - 8"	0' - 1 3/8"	H.C WOOD					
105		●	3' - 0"	6' - 8"	0' - 1 3/4"	H.C WOOD					
106			2' - 8"	6' - 8"	0' - 1 3/8"	H.C WOOD					
107		●	2' - 0"	6' - 8"	0' - 1 3/8"	H.C WOOD					
108			2' - 9"	6' - 8"	0' - 1 3/8"	H.C WOOD					
109		●	2' - 0"	6' - 8"	0' - 1 3/8"	H.C WOOD					
110	●		2' - 7"	6' - 8"	0' - 1 3/4"	INSUL. STL.					
111		●	2' - 0"	6' - 8"	0' - 1 3/8"	H.C WOOD				●	
201		●	2' - 6"	6' - 8"	0' - 1 3/8"	H.C WOOD					
202		●	3' - 0"	6' - 8"	0' - 2"	H.C WOOD					
203		●	2' - 6"	6' - 8"	0' - 1 3/8"	H.C WOOD					
204		●	3' - 0"	6' - 8"	0' - 1 3/4"	H.C WOOD					
205		●	4' - 0"	6' - 8"	0' - 1 3/8"	H.C WOOD					
206		●	3' - 0"	6' - 8"	0' - 1 3/4"	H.C WOOD					
207		●	2' - 5"	6' - 8"	0' - 1 3/8"	H.C WOOD					
208		●	2' - 6"	6' - 8"	0' - 1 3/8"	H.C WOOD					
209		●	2' - 8"	6' - 8"	0' - 1 3/8"	H.C WOOD				●	
210			3' - 0"	6' - 8"	0' - 1 3/4"						
301		●	2' - 0"	6' - 8"	0' - 1 3/8"	H.C WOOD					
302		●	2' - 0"	6' - 8"	0' - 1 3/8"	H.C WOOD					
303		●	2' - 6"	6' - 8"	0' - 1 3/8"	H.C WOOD					
304		●	3' - 0"	6' - 8"	0' - 1 3/4"	H.C WOOD					
305		●	4' - 0"	6' - 8"	0' - 1 3/8"	H.C WOOD					
306		●	4' - 0"	6' - 8"	0' - 1 3/8"	H.C WOOD					

HARDWARE SCHEDULE:

ENTRY SET:
FALCON INTERCONNECTED ENTRY WITH SCHLAGE KEY WAY
CERTIFIED ANSI/BHMA A156.12-2013 GRADE 2
UL LISTED 3-HOUR FIRE DOOR, A LABEL
BACKSET 2 3/8" OR 2 ¾"
LATCHES: 1" X 2 ¼" DUAL OPTION FACEPLATE / DEADBOLT 1" PROJECTION SCHLAGE KEY WAY

PASSAGE, PRIVACY AND DUMMY SETS
SCHLAGE F - SERIES RESIDENTIAL HARDWARE
LEVER: ACCENT
LATCH FACEPLATE: RADIUS CORNER
STRIKEPLATE FACEPLATE: RADIUS CORNER
HARDWARE PREP: 2 1/8" DIAMETER SINGLE BORE ON-SITE ADJUSTABLE BACKSET (2 3/8" OR 2 ¾")

HARDWARE SET #1 – ENTRY DOOR #101, #102, #103, #110 #111, & #209
1 ¾" THICK DOOR
EACH TO HAVE:

QTY	ITEM	UNIT	DESCRIPTION	MODEL	FINISH	MFG
3		EA	BALL BEARING RADIUS CORNER HINGES	BY DOOR FABRICATOR	US15	
1		EA	ENTRY LOCKSET	FA-H2101-DANE-619 619		FA
1		EA	COMPOSITE ADJUSTABLE THRESHOLD	BY DOOR FABRICATOR	ALUM	
1		SET	COMPRESSION FOAM WEATHER-STRIPPING	BY DOOR FABRICATOR	BRONZE OR WHITE	
1		EA	DOOR SWEEP	BY DOOR FABRICATOR	ALUM	
1		EA	VISION LENS	BY DOOR FABRICATOR	US15	
1		EA	KEYED AND MASTER KEYED	COORDINATE WITH OWNER		

HARDWARE SET #2 – PRIVACY DOOR #105, #106, #108, #204, #206, #207 & #304
1 3/8" THICK DOOR
EACH TO HAVE:

QTY	ITEM	UNIT	DESCRIPTION	MODEL	FINISH	MFG
3		EA	BALL BEARING RADIUS CORNER HINGES	BY DOOR FABRICATOR	US15	
1		EA	PRIVACY FUNCTION WITH EMERGENCY RELEASE	F40ACC619	619	SCH

HARDWARE SET #3 – PASSAGE DOOR #104, #107, #109, #202, #203, #205, #208, #301, & #302
1 3/8" THICK DOOR
EACH TO HAVE:

QTY	ITEM	UNIT	DESCRIPTION	MODEL	FINISH	MFG
3		EA	BALL BEARING RADIUS CORNER HINGES	BY DOOR FABRICATOR	US15	
1		EA	PASSAGE FUNCTION	F10ACC619	619	SCH

HARDWARE SET #4 – CLOSET DOOR #305 & #306
1 3/8" THICK DOOR
EACH TO HAVE:

QTY	ITEM	UNIT	DESCRIPTION	MODEL	FINISH	MFG
6		EA	BALL BEARING RADIUS CORNER HINGES	BY DOOR FABRICATOR	US15	
1		EA	DUMMY FUNCTION LH	F170ACC619LH	619	SCH
1		EA	DUMMY FUNCTION RH	F170ACC619RH	619	SCH
2		EA	CONCEALED MAGNETS	BY DOOR FABRICATOR		

HARDWARE SET #5 – POCKET DOOR #303
1 3/8" THICK DOOR
EACH TO HAVE:

QTY	ITEM	UNIT	DESCRIPTION	MODEL	FINISH	MFG
1		EA	POCKET DOOR KIT	1500FF SERIES		JOHNSON
1		EA	POCKET DOOR PRIVACY W/EMERGENCY RELEASE	155650709	619	SCH

ROOM FINISH SCHEDULE & NOTES

NAME	FLOOR: RESILIENT FLOORING / LVT.	FLOOR: EXISTING WOOD FLOORING	FLOOR: CERAMIC TILE	FLOOR: VINYL SHEET FLOORING	FLOOR: EXISTING TO REMAIN	BASE: CERAMIC TILE	BASE: RESILIENT	BASE: WOOD (MDF)	BASE: PAINTED GWB	CEILING: PAINTED GWB	CEILING: EXPOSED STRUCTURE - PAINTED	CEILING: EXISTING TO REMAIN	CEILING: HEIGHT	WALLS: NORTH: PAINTED GWB	WALLS: NORTH: PAINTED CMU	WALLS: NORTH: PAINTED PLASTER	WALLS: NORTH: CERAMIC TILE	WALLS: NORTH: EXISTING TO REMAIN	WALLS: SOUTH: PAINTED GWB	WALLS: SOUTH: PAINTED CMU	WALLS: SOUTH: PAINTED PLASTER	WALLS: SOUTH: CERAMIC TILE	WALLS: SOUTH: EXISTING TO REMAIN	WALLS: EAST: PAINTED GWB	WALLS: EAST: PAINTED CMU	WALLS: EAST: PAINTED PLASTER	WALLS: EAST: CERAMIC TILE	WALLS: EAST: EXISTING TO REMAIN	WALLS: WEST: PAINTED GWB	WALLS: WEST: PAINTED CMU	WALLS: WEST: PAINTED PLASTER	WALLS: WEST: CERAMIC TILE	WALLS: WEST: EXISTING TO REMAIN	REMARKS
SUN PORCH		●						●	●					●					●						●					●					SAND, PRIME, & REPAINT EXISTING FLOORING TO REMAIN
LIVING/ DINNING		●						●	●					●					●						●					●					
KITCHEN	●							●	●					●					●						●					●					
BATH			●			●			●					●					●						●					●					
BEDROOM 1		●						●	●					●					●						●					●					
BEDROOM 2		●						●	●					●					●						●					●					
SUN PORCH		●						●	●					●					●						●					●					SAND, PRIME, & REPAINT EXISTING FLOORING TO REMAIN
LIVING/ DINNING		●						●	●					●					●						●					●					
KITCHEN	●							●	●					●					●						●					●					
BATH			●			●			●					●					●						●					●					
BEDROOM 1		●						●	●					●					●						●					●					
BEDROOM 2		●						●	●					●					●						●					●					
BEDROOM 3	●							●	●					●					●						●					●					
BEDROOM 3 DRESS AREA	●							●	●					●					●						●					●					
HOME OFFICE	●							●	●					●					●						●					●					
BATH		●	●			●			●					●					●						●					●					

SPECIAL NOTES

1. PER THE DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT, STATE HISTORIC PRESERVATIONS OFFICE AND LIVABLE CITY INITIATIVE.

A. FRONT ELEVAITON HISTORIC WOOD WINDOWS TO BE RETAINED AND REPAIRED (PART OF EXISTING WINDOWS TO BE REMOVED TO BE USED TO REAPIR THE FRONT ELEVAITON WINDOWS AS NECESSARY).

B. INTERIOR WOOD FLOORING TO BE RETAINED AND REFINISHED

C. INTERIOR WINDOWS AND DOOR, PAST THROUGH TRIM TO BE RETAINED AND REFINISHED AND REINSTALLED WITH ORIGINAL LOCATION

GENERAL NOTES:

1. ALL DOORS ARE UNDERCUT 5/8" UNLESS OTHERWISE NOTED

2. ALL WOOD DOORS TO BE FACTORY PRIMED

REMARKS:

1. PROVIDE GASKETS AND SMOKE SEALS AT RATED ROORS

2. PROVIDE METAL THRESHOLDS @ EXTERIOR DOORS & MARBLE THRESHOLDS @ BATHROOM DOORS

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NO.	DATE	REVISION
ISSUE/REVISION		

PROJECT NAME
RENOVATIONS TO 165 IVY STREET

BID DOCUMENTS

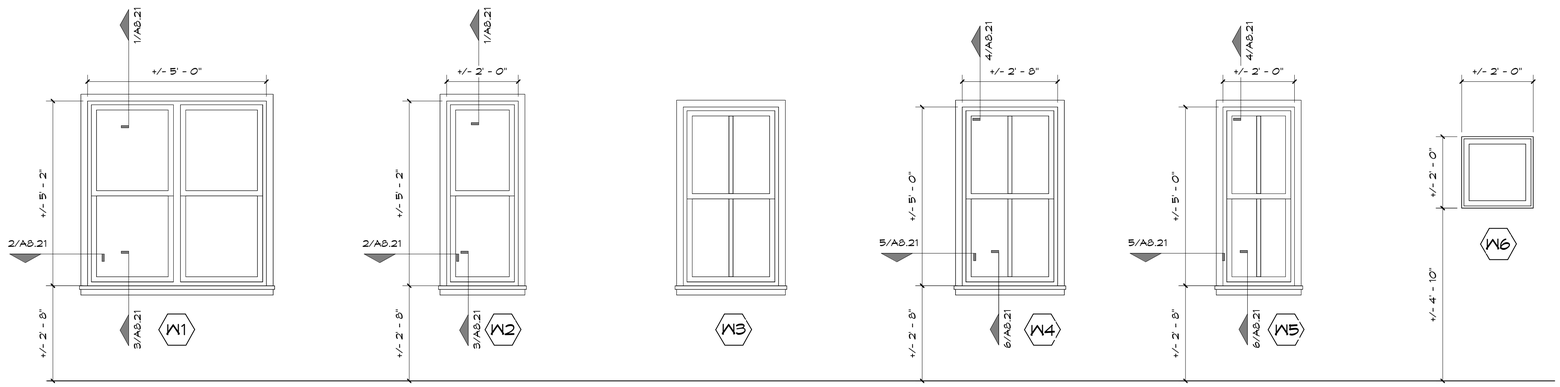
BUILDING NAME & ADDRESS
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

DRAWING TITLE
DOOR & FINSH SCHEDULE

SCALE	DRAWN BY
As Indicated	NL
FILENAME	DATE
FILE	JULY 28, 2022

DRAWING NUMBER
A8.20



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

WINDOW SCHEDULE & NOTES

TYPE MARK	WIDTH R.O.	HEIGHT R.O.	OPERATION	COMMENTS
W1	5' - 0 1/2"	5' - 2 1/2"	D.H.	COMMENTS
W2	2' - 0 1/2"	5' - 2 1/2"	D.H.	
W3	EXISTING WINDOWS TO BE RESTORED- REFER TO RESTORATION OF HISTORIC WINDOWS AND TRIM SCOPE OF WORK BELOW			
W4	2' - 8 1/2"	5' - 0 1/2"	D.H.	
W5	2' - 0 1/2"	5' - 0 1/2"	D.H.	
W6	2' - 0 1/2"	2' - 0 1/2"	FIX	

WINDOW GENERAL NOTES:

1. CONTRACTOR TO VERIFY ALL WINDOW SIZES PRIOR TO ORDERING WINDOWS.
2. ALL WINDOW JAMBS AND SILLS TO BE WRAPPED WITH PERMABARRIER FLEXIBLE FASHING

RESTORATION OF HISTORIC WINDOWS AND TRIM SCOPE OF WORK

HISTORIC WINDOWS RESTORATION CONTRACTOR TO REFER TO THE LEAD ABATEMENT PLAN & ASSOCIATED DOCUMENTS FOR 165 IVY ST, NEW HAVEN, CT, DATED 4/13/2022, PREPARED BY CONNECTICUT LEAD SERVICES, LLC. THE HISTORIC WINDOWS RESTORATION CONTRACTOR TO BE A SOLE SOURCE FOR THE ABATEMENT AND RESTORATION OF THE HISTORIC WINDOWS (NONE OF THE ABATEMENT, NOR RESTORATION TO BE SUBCONTRACTED OUT TO ADDITIONAL PARTIES). THE HISTORIC WINDOWS ARE TO BE RESTORED TO LIKE NEW, ORIGINAL CONDITIONS, WITH EXTERIOR STORM WINDOWS ADDED.
THE CONTRACTOR IS TO USE A GRAPHIC OR PHOTOGRAPHIC SYSTEM TO RECORD EXISTING CONDITIONS AND ILLUSTRATE THE SCOPE OF ANY NECESSARY REPAIRS. CONTRACTOR TO PROVIDE A WINDOW RESTORATION SCHEDULE WHICH LISTS ALL OF THE PARTS OF EACH WINDOW UNIT. THE SCHEDULE IS TO INCLUDE THE PRECISE TASKS TO BE PERFORMED IN THE REPAIR OF EACH UNIT.

THE SCHEDULE IS TO INCLUDE THE FOLLOWING:
1. WINDOW LOCATION
2. CONDITION OF THE PAINT (REFER TO LEAD ABATEMENT PLAN & ASSOCIATED DOCUMENTS NOTED ABOVE)
3. CONDITION OF THE FRAME AND SILL
4. CONDITION OF THE SASH (RAILS, STILES AND MUNTINS)
5. CONDITION AND TYPE OF HARDWARE
6. THE OVERALL CONDITION OF THE WINDOW (RESTORATION CLASS LEVEL 1 THROUGH 4, 1 BEING EXCELLENT. REFER TO THE BELOW).

THE CONTRACTOR WILL SUBMIT THE GRAPHIC OR PHOTOGRAPHIC SYSTEM AND WINDOW SCHEDULE NOTED ABOVE TO THE OWNER AND ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.

THE CONTRACTOR IS TO INSPECT ALL WINDOW UNITS TO SEE IF WATER IS ENTERING AROUND THE EDGES OF THE FRAME AND, IF SO, THE JOINTS OR SEAMS SHOULD BE CAULKED TO ELIMINATE THIS DANGER. THE GLAZING PUTTY SHOULD BE CHECKED FOR CRACKED, LOOSE, OR MISSING SECTIONS WHICH ALLOW WATER TO SATURATE THE WOOD, ESPECIALLY AT THE JOINTS. THE BACK PUTTY ON THE INTERIOR SIDE OF THE PANE SHOULD ALSO BE INSPECTED, BECAUSE IT CREATES A SEAL WHICH PREVENTS CONDENSATION FROM RUNNING DOWN INTO THE JOINERY. THE SILL SHOULD BE EXAMINED TO ENSURE THAT IT SLOPES AWAY FROM THE SILL.

THE CONTRACTOR IS TO EXAMINE EACH WINDOW FOR AREAS OF PAINT FAILURE. EXCESSIVE MOISTURE IS DETRIMENTAL TO THE PAINT BOND. AREAS OF PAINT BLISTERING, CRACKING, FLAKING, AND PEELING USUALLY IDENTIFY POINTS OF WATER PENETRATION, MOISTURE SATURATION, AND POTENTIAL DETERIORATION. FAILURE OF THE PAINT SHOULD NOT BE MISTAKEN FOR FAILED WOOD. WOOD IS FREQUENTLY IN SOUND PHYSICAL CONDITION BENEATH UNSIGHTLY PAINT. AFTER NOTING AREAS OF PAINT FAILURE, THE NEXT STEP IS TO INSPECT THE CONDITION OF THE WOOD, PARTICULARLY AT THE POINTS IDENTIFIED DURING THE PAINT EXAMINATION.

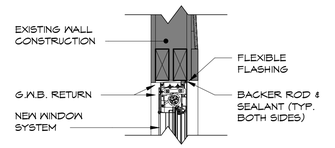
THE CONTRACTOR IS TO EXAMINE EACH WINDOW FOR OPERATIONAL SOUNDNESS BEGINNING WITH THE LOWER PORTIONS OF THE FRAME AND SASH. THE SILL, JOINTS BETWEEN THE SILL AND JAMB, CORNERS OF THE BOTTOM RAILS AND MUNTIN JOINTS ARE TYPICAL POINTS WHERE WATER COLLECTS AND DETERIORATION BEGINS. THE OPERATION OF THE WINDOW (CONTINUOUS OPENING AND CLOSING OVER THE YEARS AND SEASONAL TEMPERATURE CHANGES) WEAKENS THE JOINTS, CAUSING MOVEMENT AND SLIGHT SEPARATION. THIS PROCESS MAKES THE JOINTS MORE VULNERABLE TO WATER WHICH IS READILY ABSORBED INTO THE END GRAIN OF THE WOOD. IF SEVERE DETERIORATION EXISTS IN THESE AREAS, IT WILL USUALLY BE APPARENT ON VISUAL INSPECTION, BUT OTHER LESS SEVERELY DETERIORATED AREAS OF THE WOOD ARE TO BE TESTED BY TWO TRADITIONAL METHODS USING A SMALL ICE PICK OR KNIFE. THE TECHNIQUE IS SIMPLY TO JAB THE PICK INTO A WETTED WOOD SURFACE AT AN ANGLE AND PRY UP A SMALL SECTION OF THE WOOD. SOUND WOOD WILL SEPARATE IN LONG FIBROUS SPLINTERS, BUT DECAYED WOOD WILL LIFT UP IN SHORT IRREGULAR PIECES DUE TO THE BREAKDOWN OF FIBER STRENGTH.

RESTORATION CLASS LEVELS:
THE CONTRACTOR IS TO REFER TO THE RESTORATION CLASS LEVELS OUTLINED BELOW, DETERMINE THE RESTORATION LEVEL TO RETURN EACH WINDOW TO LIKE NEW CONDITIONS, AND DOCUMENT THIS IN THEIR WINDOW RESTORATION SCHEDULE NOTED ABOVE.

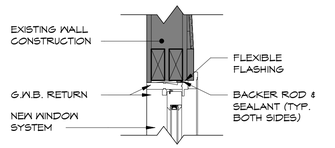
RESTORATION CLASS I: MINOR REPAIR
THE ROUTINE MAINTENANCE REQUIRED TO UPGRADE A WINDOW TO "LIKE NEW" CONDITION NORMALLY INCLUDES THE FOLLOWING STEPS:
1. STRIPPING LEAD-BASED PAINT AND GLAZING WITH STEAM STRIPPERS
2. REMOVAL AND REPAIR OF SASH (INCLUDING RE-GLAZING)
3. REPAIRS TO THE FRAME (INCLUDING MARINE EPOXY CONSOLIDATION AND SANDING)
4. WEATHERSTRIPPING AND REINSTALLATION OF THE SASH
5. PRIMING, BEDDING, GLAZING AND REPAINTING. THE REPAINTING IS TO BE DONE IN OUR PROFESSIONAL SPRAY BOOTH WITH BENJAMIN MOORE OR OTHER HIGH QUALITY EXTERIOR PAINT.

RESTORATION CLASS II: INTERMEDIATE RESTORATION
PARTIALLY DECAYED WOOD TO BE "HARDENED" WITH THINNED MARINE EPOXY. THE CONTRACTOR TO INJECT AND BRUSH THE THINNED EPOXY ON AND INTO THE DECAYED WOOD AND CURE PER THE MANUFACTURER'S REQUIREMENTS. ONCE CURED, THE CONTRACTOR IS TO BUILD BUILT-UP, OR CONSOLIDATE THE AFFECTED AREA THEN PAINT TO ACHIEVE A SOUND CONDITION AND GOOD APPEARANCE. THE CONTRACTOR IS TO PERFORM THIS WORK ON ONE WINDOW FOR THE OWNER'S AND ARCHITECTS REVIEW PRIOR TO CONTINUING ONTO OTHER WINDOWS.
WOOD THAT IS SPLIT, CHECKED OR SHOWS SIGNS OF ROT, IS TO UNDERGO THE FOLLOWING:
1. DRY THE WOOD
2. REMOVE ANY DECAYED WOOD AND REPLACE WITH A WOOD DUTCHMAN WHICH IS SECURED WITH MARINE EPOXY
3. HAND PLANE AND SAND TO MATCH THE EXISTING PROFILE
4. FILL ANY DIVOTS, OPEN SEAMS, CRACKS AND IMPERFECTIONS WITH THICKENED MARINE EPOXY
5. AFTER THE EPOXY HAS CURED, SAND AND LEVEL TO MAKE THE REPAIR HOMOGENOUS WITH THE SURROUNDING WOOD
6. PRIMING, BEDDING, GLAZING AND PAINTING

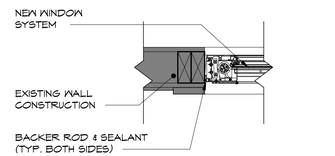
REPAIR CLASS III: MAJOR RESTORATION/SASH REPLACEMENT
IF PARTS OF THE FRAME OR SASH ARE SO BADLY DETERIORATED THAT THEY CANNOT BE STABILIZED THE CONTRACTOR IS TO UTILIZE METHODS THAT PERMIT THE RETENTION OF SOME OF THE EXISTING OR ORIGINAL FABRIC. THESE METHODS MAY INVOLVE REPLACING THE DETERIORATED PARTS WITH NEW MATCHING PIECES OR SPLICING NEW WOOD INTO EXISTING MEMBERS. IT MAY BE NECESSARY TO REMOVE THE SASH AND/OR THE AFFECTED PARTS OF THE FRAME AND THE CONTRACTOR'S WOODWORKING MILL SHOP REPRODUCE THE DAMAGED OR MISSING PARTS. THE CONTRACTOR IS TO DUPLICATE ALL PARTS, SUCH AS MUNTINS, RAILS, TRIM, AND ALL OTHER ARCHITECTURAL COMPONENTS ASSOCIATED WITH WINDOW REPRODUCTION.
THERE MIGHT BE CONDITIONS WHERE THE SASH IS TOO FAR GONE AND THE CONTRACTOR WILL HAVE TO MAKE A DUPLICATE SASH REPLACEMENT. THE CONTRACTOR IS MAKE EVERY ATTEMPT TO DUPLICATE THE SASH TO THE EXACT DIMENSIONS INCLUDING HEIGHT AND WIDTH AND ALL PROFILES TO MATCH THE ADJACENT WINDOWS. THIS ALSO MAY INCLUDE RESTORATION GLASS WHICH HAS BUBBLES, WAVINESS AND OTHER IMPERFECTIONS TO MATCH HISTORIC GLASS.
WINDOWS THAT REQUIRE MAJOR RESTORATION ARE TO UNDERGO THE FOLLOWING:
1. THE PATTERN OF THE OPENINGS AND THEIR SIZES ARE TO BE DOCUMENTED IN THE WINDOW RESTORATION SCHEDULE, AND REPLICATED IN THE RESTORATION
2. PROPORTIONS OF THE FRAME AND SASH ARE TO BE DOCUMENTED IN THE WINDOW RESTORATION SCHEDULE, AND REPLICATED IN THE RESTORATION
3. CONFIGURATION OF WINDOW-PANES ARE TO BE DOCUMENTED IN THE WINDOW RESTORATION SCHEDULE, AND REPLICATED IN THE RESTORATION
4. MUNTIN PROFILES ARE TO BE DOCUMENTED IN THE WINDOW RESTORATION SCHEDULE, AND REPLICATED IN THE RESTORATION
5. TYPE OF WOOD E.G. EASTERN WHITE PINE, SPANISH CEDAR, AFRICAN MAHOGANY ARE TO BE DOCUMENTED IN THE WINDOW RESTORATION SCHEDULE, AND REPLICATED IN THE RESTORATION
6. PAINT TO BE BENJAMIN MOORE OR SHERWIN WILLIAMS EXTERIOR GRADE PAINT
7. CHARACTERISTICS OF THE GLASS; E.G. FLOAT, FLAT, OR RESTORATION ARE TO BE DOCUMENTED IN THE WINDOW RESTORATION SCHEDULE, AND REPLICATED IN THE RESTORATION
8. ASSOCIATED DETAILS SUCH AS ARCHED TOPS, HOODS, OR OTHER DECORATIVE ELEMENTS ARE TO BE DOCUMENTED IN THE WINDOW RESTORATION SCHEDULE, AND REPLICATED IN THE RESTORATION
9. PRIMING, BEDDING, GLAZING, AND PAINTING ARE TO BE PROVIDED TO RESTORE THE WINDOWS TO LIKE NEW CONDITIONS.



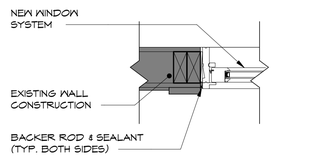
1 A8.21 WINDOW HEAD DETAIL @ FRONT PORCH
SCALE: 1 1/2" = 1'-0"



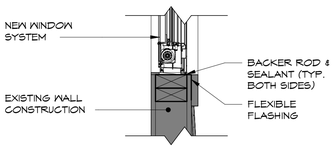
4 A8.21 WINDOW HEAD DETAIL
SCALE: 1 1/2" = 1'-0"



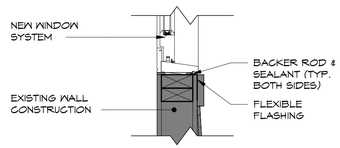
2 A8.21 WINDOW JAMB DETAIL @ FRONT PORCH
SCALE: 1 1/2" = 1'-0"



5 A8.21 WINDOW JAMB DETAIL
SCALE: 1 1/2" = 1'-0"



3 A8.21 WINDOW SILL DETAIL @ FRONT PORCH
SCALE: 1 1/2" = 1'-0"



6 A8.21 WINDOW SILL DETAIL
SCALE: 1 1/2" = 1'-0"

SPECIAL NOTES

1. PER THE DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT, STATE HISTORIC PRESERVATIONS OFFICE AND LIVABLE CITY INITIATIVE.

A. FRONT ELEVAITON HISTORIC WOOD WINDOWS TO BE RETAINED AND REPAIRED (PART OF EXISTING WINDOWS TO BE REMOVED TO BE USED TO REAPIR THE FRONT ELEVAITON WINDOWS AS NECESSARY).

B. INTERIOR WOOD FLOORING TO BE RETAINED AND REFINISHED

C. INTERIOR WINDOWS AND DOOR, PAST THROUGH TRIM TO BE RETAINED AND REFINISHED AND REINSTALLED WITH ORIGINAL LOCATION

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NO.	DATE	REVISION
ISSUE/REVISION		

PROJECT NAME
RENOVATIONS TO 165 IVY STREET

BID DOCUMENTS

BUILDING NAME & ADDRESS
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

DRAWING TITLE
WINDOW SCHEDULE & DETAILS

SCALE	DRAWN BY
As indicated	NL
FILENAME	DATE
FILE	JULY 28, 2022

DRAWING NUMBER
A8.21

DIVISION ONE - GENERAL REQUIREMENTS

1. GENERAL CONDITIONS SHALL BE AS SET FORTH IN AIA DOCUMENT A107 STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR, LATEST EDITION, ARTICLES 7 THROUGH 24, AND SHALL GOVERN WORK UNDER THE CONTRACT AS IF REPRODUCED IN FULL. CONTRACTOR TO COMPLY WITH HUD GENERAL CONDITIONS.

2. CONTRACTORS AT THE DIRECTION OF THE OWNER, SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS A ND INSPECTIONS, AND PAY ALL APPLICABLE FEES.

3. WORK SHALL CONFORM TO APPLICABLE STATE AND LOCAL BUILDING AND FIRE CODES AND REQUIREMENTS OF UTILITIES AND AUTHORITIES HAVING JURISDICTION.

4. PROVIDE TEMPORARY UTILITIES, CLOSURES, BARRICADES, SHORING AND PROTECTION AS REQUIRED.

5. PROVIDE CERTIFICATES FOR WORKMEN'S COMPENSATION, COMPREHENSIVE LIABILITY, PROPERTY DAMAGE INSURANCE, BUILDER'S RISK AND AUTOMOBILE TO LIMITS OF LIABILITY AS REQUIRED BY OWNER.

6. SUBSTITUTIONS FOR SPECIFIED ITEMS WILL BE CONSIDERED ONLY UPON WRITTEN REQUEST, WHICH SHALL INCLUDE SPECIFICATIONS, DIMENSIONS, ILLUSTRATIONS OR SAMPLES, AND PRICE NO SUBSTITUTION SHALL BE MADE WITHOUT ARCHITECT'S REVIEW AND WRITTEN AUTHORIZATION OF OWNER.

7. DEFINITIONS:

A. FURNISH: SUPPLY AND DELIVER TO PROJECT SITE, READY FOR UNLOADING, PACKING ASSEMBLY, INSTALLATION AND SIMILAR SUBSEQUENT REQUIREMENTS.

B. INSTALL: OPERATIONS AT PROJECT SITE, INCLUDING UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR REQUIREMENTS.

C. PROVIDE: FURNISH AND INSTALL, COMPLETE AND READY FOR INTENDED USE.

DIVISION TWO - SITE WORK: REFER TO SHEET A2.00

DIVISION THREE - CONCRETE: REFER TO STRUCTURAL DRAWINGS

DIVISION FOUR - CONCRETE MASONRY UNITS, BRICKS AND STONE: **NOT APPLICABLE**

DIVISION SIX - WOOD AND PLASTICS:

A. INTERIOR FINISH WORK AND MOLDINGS: "C" SELECT, WHITE PINE OR YELLOW POPLAR, OR TO MATCH EXISTING CONDITIONS WHERE POSSIBLE. MOLDING PROFILES TO MATCH EXISTING CONDITIONS OR ADJACENT SURFACES.

B. SHELVING: NUMBER 2 SHELVING BOARDS (1x8) EXCEPT AS OTHERWISE NOTED.

C. GROUNDS, SHOES, NAILING STRIPS, BLOCKING: MERCHANTABLE FIR OR SPRUCE.

D. ROUGH HARDWARE: FURNISH AND INSTALL NAILS, SCREWS, BOLTS, RODS, ANCHORS, CLIPS, ETC., AS REQUIRED.

1. BLOCKING: PROVIDE SOLID BLOCKING AS REQUIRED TO SUPPORT FIXTURES, RAILINGS, SHELVES, CLEATS, TRIM ETC. AND AS REQUIRED TO SUPPORT EDGES OF PLYWOOD AND WALL BOARD, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND/OR GOOD CONSTRUCTION PRACTICE.

2. MILLWORK: SHALL BE FABRICATED ACCORDING TO CURRENT "ARCHITECTURAL WOODWORKING QUALITY STANDARDS" OF THE ARCHITECTURAL WOODWORKING INSTITUTE. MAKE AMPLE ALLOWANCE FOR SCRIBBING AND FITTING AT SITE.

3. NOTCHING: NOTCHING SHALL NOT EXCEED 1/6th OF THE DEPTH OF JOISTS OR RAFTER AND SHALL OCCUR ONLY IN THE OUTER QUARTER OF THE SPAN. NOTCHES SHALL NOT BE PERMITTED IN THE MIDDLE HALF OF THE SPAN NOR SHALL THEY EXCEED 1/6th THE DEPTH.

4. RESIDENTIAL CASEWORK: HUD SEVERE USE ARMSTRONG XTREME CABINETRY, ECC STANDARD. PLANTATION WOOD- HONEY FINISH, NO KNOBS, HINGES ARE TO BE HEAVY DUTY; (OWNER TO REVIEW AND CONFIRM CABINETS MEET HUD SPECIFICATIONS STYLE: "CORONET." COUNTER TOPS: HIGH PRESSURE PLASTIC LAMINATE COUNTERTOPS: PROVIDE AWI CUSTOM GRADE MATERIALS AND WORKMANSHIP. PROVIDE PLASTIC LAMINATE FULLY LAMINATED WITH WATERPROOF PHENOLIC RESIN ADHESIVE TO ¾" THICK MEDIUM DENSITY FIBERBOARD. PLASTIC LAMINATE: PROVIDE PF42, 0.042" THICK POST FORMING LAMINATE WITH NO JOINTS WITHIN 24" OF SINK. PROVIDE COLORS, TEXTURES, PATTERNS AND APPEARANCES SELECTED BY ARCHITECT FROM MANUFACTURER'S COMPLETE RANGE OF STANDARD OPTIONS. COUNTER TOP CONSTRUCTION: PROVIDE MINIMUM NEMA LD-3 BK20 0.020 BACKER SHEETS FOR ALL WORK TO PROVIDE BALANCED CONSTRUCTION TO REDUCE WARPING. COVER ALL EXPOSED TO VIEW SURFACES INCLUDING CORE WITH DECORATIVE FACE LAMINATE. BACKSPLASH: PROVIDE 4" HIGH INTEGRAL SPLASHES UNLESS OTHERWISE INDICATED. LAMINATE SHALL BE MOUNTED ON PLYWOOD SUBSTRATE. COVER EXPOSED SURFACES WITH MATCHING FACE LAMINATE. HARDWARE: 1. HARDWARE: MANUFACTURER'S STANDARD 2. DRAWER & DOOR PULLS: CHROME HANDLES ON 4 INCH CENTERS 3. CATCHES; MAGNETIC 4. DRAWER SLIDES: EXTENSION ARMS, STEEL & BALL BEARING CONSTRUCTION 5. HINGES: OFFSET PIN

5. SOLID SURFACE FABRICATIONS:
A. MANUFACTURER'S:

1. PROVIDE PRODUCTS BY CORIAN SURFACES FROM THE DUPONT COMPANY.
APPROVED MANUFACTURES: LG AND AVONITE

2. PROVIDE RECESSED SOAP DISH, MODEL #C2-RSD, MANUFACTURED BY TOP NOTCH PRODUCTS, INC. (STANDARD ECC)

B. SUBMITTALS:

1. SHOP DRAWINGS: SHOW LOCATION OF EACH ITEM, DIMENSIONED PLANS AND ELEVATIONS, LARGE-SCALE DETAILS, ATTACHMENT DEVICES AND OTHER COMPONENTS.

a. SHOW FULL-SIZE DETAILS, EDGE DETAILS, THERMOFORMING REQUIREMENTS, ATTACHMENTS, ETC.

b. SHOW LOCATIONS AND SIZES OF FURRING, BLOCKING, INCLUDING CONCEALED BLOCKING AND REINFORCEMENT SPECIFIED IN OTHER SECTIONS.

2. SHOW LOCATIONS AND SIZES OF CUTOUTS AND HOLES FOR PLUMBING FIXTURES, FAUCETS, SOAP DISPENSERS, WASTE RECEPTACLE AND OTHER ITEMS INSTALLED IN SOLID SURFACE.

3. SAMPLES: FOR EACH TYPE OF PRODUCT INDICATED.

a. SUBMIT MINIMUM 6-INCH BY 6-INCH SAMPLE IN SPECIFIED GLOSS.
b. CUT SAMPLE AND SEAM TOGETHER FOR REPRESENTATION OF INCONSPICUOUS SEAM.
c. INDICATE FULL RANGE OF COLOR AND PATTERN VARIATION.
d. APPROVED SAMPLES WILL BE RETAINED AS A STANDARD FOR WORK.

4. PRODUCT DATA:

a. INDICATE PRODUCT DESCRIPTION, FABRICATION INFORMATION AND COMPLIANCE WITH SPECIFIED PERFORMANCE REQUIREMENTS.

5. MANUFACTURER CERTIFICATES: SIGNED BY MANUFACTURERS CERTIFYING THAT THEY COMPLY WITH REQUIREMENTS.

6. MAINTENANCE DATA: SUBMIT MANUFACTURER'S CARE AND MAINTENANCE DATA, INCLUDING REPAIR AND CLEANING INSTRUCTIONS.

a. SUBMIT MAINTENANCE KIT FOR FINISHES (TO BE INCLUDED IN PROJECT CLOSEOUT DOCUMENTS. PROVIDE A LIST OF SIZES FOR DISPOSABLE FILTERS INSTALLED IN FURNACES FOR UNITS WHERE NEW FURNACES ARE BEING INSTALLED.

C. QUALITY ASSURANCE:

1. QUALIFICATIONS: SHOP THAT EMPLOYS SKILLED WORKERS WHO CUSTOM FABRICATE PRODUCTS SIMILAR TO THOSE REQUIRED FOR THIS PROJECT AND WHOSE PRODUCTS HAVE A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.

2. FABRICATOR/INSTALLER QUALIFICATIONS: WORK OF THIS SECTION SHALL BE BY A CERTIFIED FABRICATOR/INSTALLER, CERTIFIED IN WRITING BY THE MANUFACTURER.

3. APPLICABLE STANDARDS:

a. STANDARDS OF THE FOLLOWING, AS REFERENCED HEREIN: AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), NSF INTERNATIONAL

b. FIRE TEST RESPONSE CHARACTERISTICS: PROVIDE WITH THE FOLLOWING CLASS A (CLASS I) SURFACE BURNING CHARACTERISTICS AS DETERMINED BY TESTING IDENTICAL PRODUCTS PER UL 723 (ASTM E84) OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION:

1) FLAME SPREAD INDEX: 25 OR LESS.
2) SMOKE DEVELOPED INDEX: 450 OR LESS.

D. DELIVERY, STORAGE AND HANDLING:

1. DELIVER NO COMPONENTS TO PROJECT SITE UNTIL AREAS ARE READY FOR INSTALLATION.

2. STORE COMPONENTS INDOORS PRIOR TO INSTALLATION, HANDLE MATERIALS TO PREVENT DAMAGE TO FINISHED SURFACES AND PROVIDE PROTECTIVE COVERINGS TO PREVENT PHYSICAL DAMAGE/STAINING FOLLOWING INSTALLATION.

E. WARRANTY:

1. PROVIDE MANUFACTURER'S WARRANTY AGAINST DEFECTS IN MATERIALS.

a) WARRANTY SHALL PROVIDE MATERIAL AND LABOR TO REPAIR OR REPLACE DEFECTIVE MATERIALS.
b) DAMAGE CAUSED BY PHYSICAL OR CHEMICAL ABUSE OR DAMAGE FROM EXCESSIVE HEAT WILL NOT BE WARRANTED.

2. INSTALLATION WARRANTY: TO QUALIFY FOR THE INSTALLATION WARRANTY, FABRICATION AND INSTALLATION MUST BE PERFORMED BY A DUPONT CERTIFIED FABRICATION/INSTALLATION SOURCE WHO WILL PROVIDE A BRAND PLATE FOR THE APPLICATION.

a) THIS WARRANTY COVERS ALL FABRICATION AND INSTALLATION PERFORMED BY THE CERTIFIED/APPROVED SOURCE SUBJECT TO THE SPECIFIC WORDING CONTAINED IN THE INSTALLED WARRANTY CARD.

3. SOLID SURFACE MANUFACTURER'S WARRANTY PERIOD: TEN YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

F. MATERIALS:
1. SOLID POLYMER COMPONENTS
a) CAST, NONPOROUS, FILLED POLYMER, NOT COATED, LAMINATED OR OF COMPOSITE CONSTRUCTION WITH THROUGH BODY COLORS MEETING ANSI Z124.3 OR ANSI Z124.6, HAVING MINIMUM PHYSICAL AND PERFORMANCE PROPERTIES SPECIFIED.
b) SUPERFICIAL DAMAGE TO A DEPTH OF 0.010 INCH (.25 MM) SHALL BE REPAIRABLE BY SANDING AND/OR POLISHING.

2. THICKNESS:

a) 1/4 INCH (VERTICAL APPLICATION)
b) 1/2 INCH (HORIZONTAL APPLICATION)

3. INTEGRAL VANITY: 300 SERIES VANITY TOP - SINGLE BOWL.

a) SIZE: CUSTOM 17"X20" VANITY TOP.
b) BACKSPLASH: COVED.
c) SIDESPLASH: APPLIED

G. ACCESSORIES:

1. JOINT ADHESIVE: MANUFACTURER'S STANDARD ONE- OR TWO-PART ADHESIVE KIT TO CREATE INCONSPICUOUS, NONPOROUS JOINTS.

2. SEALANT: MANUFACTURER'S STANDARD MILDEW-RESISTANT, FDA-COMPLIANT, NSF 51-COMPLIANT, UL-LISTED SILICONE SEALANT IN COLORS MATCHING COMPONENTS.

H. FACTORY FABRICATION:

1. SHOP ASSEMBLY

a) FABRICATE COMPONENTS TO GREATEST EXTENT PRACTICAL TO SIZES AND SHAPES INDICATED, IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND MANUFACTURER'S PRINTED INSTRUCTIONS AND TECHNICAL BULLETINS.
b) FORM JOINTS BETWEEN COMPONENTS USING MANUFACTURER'S STANDARD JOINT ADHESIVE WITHOUT CONSPICUOUS JOINTS.
c) REINFORCE WITH STRIP OF SOLID POLYMER MATERIAL, 2" WIDE.
d) PROVIDE FACTORY CUTOUTS FOR PLUMBING FITTINGS AND BATH ACCESSORIES AS INDICATED ON THE DRAWINGS.
e) ROUT AND FINISH COMPONENT EDGES WITH CLEAN, SHARP RETURNS.
f) ROUT CUTOUTS, RADII AND CONTOURS TO TEMPLATE.
g) SMOOTH EDGES.
a) REPAIR OR REJECT DEFECTIVE AND INACCURATE WORK.
b) THERMOFORMING: COMPLY WITH MANUFACTURER'S DATA.

I. FINISHES: SELECT FROM THE MANUFACTURER'S STANDARD COLOR CHART. TO BE SELECTED BY OWNER.

J. EXAMINATION:

1. EXAMINE SUBSTRATES AND CONDITIONS, WITH FABRICATOR PRESENT FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF WORK.

2. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

K. INSTALLATION:

1. INSTALL COMPONENTS PLUMB, LEVEL AND RIGID, SCRIBED TO ADJACENT FINISHES, IN ACCORDANCE WITH APPROVED SHOP DRAWINGS AND PRODUCT DATA.

a) PROVIDE PRODUCT IN THE LARGEST PIECES AVAILABLE.
b) FORM FIELD JOINTS USING MANUFACTURER'S RECOMMENDED ADHESIVE, WITH JOINTS INCONSPICUOUS IN FINISHED WORK.

1) EXPOSED JOINTS/SEAMS SHALL NOT BE ALLOWED.

c) REINFORCE FIELD JOINTS WITH SOLID SURFACE STRIPS EXTENDING A MINIMUM OF 1 INCH ON EITHER SIDE OF THE SEAM WITH THE STRIP BEING THE SAME THICKNESS AS THE TOP.
d) CUT AND FINISH COMPONENT EDGES WITH CLEAN, SHARP RETURNS.
e) ROUT RADII AND CONTOURS TO TEMPLATE.
f) ANCHOR SECURELY TO BASE CABINETS OR OTHER SUPPORTS.
g) ALIGN ADJACENT COUNTERTOPS AND FORM SEAMS TO COMPLY WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS USING ADHESIVE IN COLOR TO MATCH COUNTERTOP.
h) CAREFULLY DRESS JOINTS SMOOTH, REMOVE SURFACE SCRATCHES AND CLEAN ENTIRE SURFACE.
i) INSTALL COUNTERTOPS WITH NO MORE THAN 1/8-INCH (3 MM) SAG, BOW OR OTHER VARIATION FROM A STRAIGHT LINE.

2. COVED BACKSPLASHES AND APPLIED SIDESPLASHES:

a) INSTALL APPLIED SIDESPLASHES USING MANUFACTURER'S STANDARD COLOR-MATCHED SILICONE SEALANT.
b) ADHERE APPLIED SIDESPLASHES TO COUNTERTOPS USING MANUFACTURER'S STANDARD COLOR-MATCHED SILICONE SEALANT.

3. COVED BACKSPLASHES AND SIDESPLASHES:

a) PROVIDE COVED BACKSPLASHES AND SIDESPLASHES AT ALL WALLS AND ADJACENT MILLWORK.
b) FABRICATE RADIUS COVE AT INTERSECTION OF COUNTERS WITH BACKSPLASHES TO DIMENSIONS SHOWN ON THE DRAWINGS.
c) ADHERE TO COUNTERTOPS USING MANUFACTURER'S STANDARD COLOR-MATCHED JOINT ADHESIVE.

4. INTEGRAL SINKS/VANITIES: PROVIDE SOLID SURFACE MATERIALS BOWLS AND/OR LAVATORIES SINKS WITH OVERFLOWS IN LOCATIONS SHOWN ON THE DRAWINGS.

5. REPAIR: REPAIR OR REPLACE DAMAGED WORK WHICH CANNOT BE REPAIRED TO ARCHITECT'S SATISFACTION.

6. CLEANING AND PROTECTION:
a) KEEP COMPONENTS CLEAN DURING INSTALLATION.
b) REMOVE ADHESIVES, SEALANTS AND OTHER STAINS.

DIVISION SEVEN - THERMAL AND MOISTURE PROTECTION:

1. FIRE STOPPING:

A. SUBMITTALS: FOR EACH TYPE OF FIRE STOPPING DESCRIBE THE PRODUCTS AND METHODS TO BE USED, ACCORDING TO SELECTED MANUFACTURER'S RECOMMENDATIONS. SUBMIT FIRE TEST APPROVAL CERTIFICATES FOR EACH APPLICATION. FOR EACH TYPE OF PENETRATION, LIST APPROVAL NUMBER FOR U.L. OR OTHER TESTING AGENCY. SUBMIT MANUFACTURER'S APPLICATION INSTRUCTIONS.

B. FIRE STOPPING SYSTEM SHALL BE MANUFACTURED BY U.S. GYPSUM CO., OR SHALL BE MANUFACTURED BY ISOLATEK INTERNATIONAL, WITH EQUIVALENT COMPONENTS:

1. MINERAL FIBER BATT INSULATION: "THERMAFIBER SAFING INSULATION."

2. 3 1/2" SOUND ATTENUATING FIBERGLASS INSULATION.

3. SEALANT FOR FIRE STOPPING PENETRATIONS: "FIRECODE COMPOUND".

C. FIRESTOPPING SYSTEM SHALL CONFORM TO THE FOLLOWING REFERENCE REQUIREMENTS:

1. ALL MATERIALS SPECIFIED IN THIS SECTION SHALL CONFORM TO THE REQUIREMENTS OF ASTM E84 AS FOLLOWS:

a) WHERE CONCEALED AS INSTALLED SHALL HAVE A FLAME SPREAD RATING OF 75 OR LESS AND A SMOKE DEVELOPED RATING OF 450 OR LESS.

2. FIRE RESISTIVE JOINT SYSTEMS WHERE JOINTS ARE MADE IN OR BETWEEN FIRE-RESISTANCE RATED ASSEMBLIES: PROVIDE JOINT SYSTEMS DETAIL TESTED IN ACCORDANCE WITH ASTM E119.

D. APPLY PRODUCTS ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND THE REQUIREMENTS. THE GENERAL CONTRACTOR SHALL CERTIFY THAT ALL FIRE STOPPING HAS BEEN INSTALLED PROPERLY.

E. PROVIDE FIRESTOPPING AT OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS AND FIREPLACES AT CEILING AND FLOOR LEVELS, WITH NONCOMBUSTIBLE MATERIALS. WHERE CEILINGS OR FLOORS ARE REQUIRED TO BE FIRE RESISTANCE RATED, THE OPENINGS AROUND VENTS, PIPES, DUCTS, CHIMNEYS AND FIREPLACES SHALL BE PROTECTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 712.2.

F. APPLICATOR SHALL BE LICENSED BY THE MANUFACTURER. WORK SHALL CONFORM TO THE REQUIREMENTS OF THE MANUFACTURER'S SPECIFICATIONS AS TO PREPARATION AND APPLICATION.

VINYL SIDING

PART 1 GENERAL
1.1 SECTION INCLUDES
A. SOLID VINYL SIDING.
B. SOLID VINYL SOFFIT.
C. VENTED VINYL SOFFIT.
D. VINYL TRIM.

1.2 RELATED SECTIONS
A. SECTION 06100 - ROUGH CARPENTRY: FRAMING AND SHEATHING.
B. SECTION 07260 - VAPOR RETARDERS.
C. SECTION 07900 - JOINT SEALERS.

1.3 REFERENCES
A. ASTM D 256 - STANDARD TEST METHOD FOR DETERMINING THE PENDULUM IMPACT RESISTANCE OF NOTCHED SPECIMENS OF PLASTICS.
B. ASTM D 635 - STANDARD TEST METHOD FOR RATE OF BURNING AND/OR EXTENT AND TIME OF BURNING OF SELF-SUPPORTING PLASTICS IN A HORIZONTAL POSITION.
C. ASTM D 638 - STANDARD TEST METHOD FOR TENSILE PROPERTIES OF PLASTICS.
D. ASTM D 648 - STANDARD TEST METHOD FOR DEFLECTION TEMPERATURE OF PLASTICS UNDER FLEXURAL LOAD.
E. ASTM D 696 - STANDARD TEST METHOD FOR COEFFICIENT OF LINEAR THERMAL EXPANSION OF PLASTICS BETWEEN -30 DEGREES C. AND 30 DEGREES C.
F. ASTM D 1784 - STANDARD SPECIFICATION FOR RIGID POLY (VINYL CHLORIDE) (PVC) COMPOUNDS AND CHLORINATED POLY (VINYL CHLORIDE) (CPVC) COMPOUNDS.
G. ASTM D 2843 - STANDARD TEST METHOD FOR DENSITY OF SMOKE FROM THE BURNING OR DECOMPOSITION OF PLASTICS.
H. ASTM D 3679 - STANDARD SPECIFICATION FOR RIGID POLY (VINYL CHLORIDE) (PVC) SIDING.
I. ASTM D 4477 - STANDARD SPECIFICATION FOR RIGID UNPLASTICIZED POLY(VINYL CHLORIDE) (PVC) SOFFIT.
J. ASTM D 6864 - STANDARD SPECIFICATION FOR COLOR AND APPEARANCE RETENTION OF SOLID COLORED PLASTIC SIDING PRODUCTS.
K. ASTM D7251 - STANDARD SPECIFICATION FOR COLOR AND APPEARANCE RETENTION OF VARIEGATED COLOR PLASTIC SIDING PRODUCTS
L. ASTM D 7856 - STANDARD SPECIFICATION FOR COLOR AND APPEARANCE RETENTION OF SOLID AND VARIEGATED COLOR PLASTIC SIDING PRODUCTS USING CIELAB COLOR SPACE.
M. ASTM E 84 - STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS.
N. ASTM E 119 - STANDARD TEST METHODS FOR FIRE TESTS OF BUILDING CONSTRUCTION AND MATERIALS; 2000.
O. UBC STD 26-9 - METHOD OF TEST FOR THE EVALUATION OF FLAMMABILITY CHARACTERISTICS OF EXTERIOR, NONLOAD-BEARING WALL ASSEMBLIES CONTAINING COMBUSTIBLE COMPONENTS USING THE INTERMEDIATE-SCALE, MULTISTORY TEST APPARATUS; 1997.

1.4 DESIGN / PERFORMANCE REQUIREMENTS
A. REGULATORY REQUIREMENTS: CODE COMPLIANCE IN ACCORDANCE WITH THE FOLLOWING:
1. ICC EVALUATION SERVICE.

1.5 SUBMITTALS
A. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:
1. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
3. INSTALLATION METHODS.
4. MAINTENANCE AND CARE REQUIREMENTS.
B. VERIFICATION SAMPLES: FOR EACH FINISH PRODUCT SPECIFIED, TWO SAMPLES, MINIMUM SIZE 6 INCHES (150 MM) SQUARE, REPRESENTING ACTUAL PRODUCT, COLOR, AND PATTERNS.
1.6 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: PROVIDE INSTALLER WITH NOT LESS THAN THREE YEARS OF EXPERIENCE WITH PRODUCTS SPECIFIED.
B. MOCK-UP: PROVIDE A MOCK-UP FOR EVALUATION OF SURFACE PREPARATION TECHNIQUES AND APPLICATION WORKMANSHIP.
1. FINISH AREAS DESIGNATED BY ARCHITECT.
2. DO NOT PROCEED WITH REMAINING WORK UNTIL WORKMANSHIP, COLOR, AND SHEEN ARE REVIEWED BY ARCHITECT.
3. REFINISH MOCK-UP AREA AS REQUIRED TO PRODUCE ACCEPTABLE WORK.
4. ACCEPTED MOCK-UPS SHALL BE COMPARISON STANDARD FOR REMAINING WORK.

1.7 DELIVERY, STORAGE, AND HANDLING
A. STORE PRODUCTS IN MANUFACTURER'S UNOPENED PACKAGING UNTIL READY FOR INSTALLATION.
B. STORE ON A FLAT SURFACE UNDER COVER, STACKED NO MORE THAN 12 BOXES HIGH. DO NOT STORE IN LOCATION WHERE TEMPERATURES MAY EXCEED 130 DEGREES F.

1.8 PROJECT CONDITIONS
A. MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY, AND VENTILATION) WITHIN LIMITS RECOMMENDED BY MANUFACTURER FOR OPTIMUM RESULTS. DO NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE MANUFACTURER'S ABSOLUTE LIMITS.

1.9 WARRANTY
A. PROVIDE MANUFACTURER'S STANDARD LIMITED LIFETIME WARRANTY.

PART 2 PRODUCTS
2.1 MANUFACTURERS
A. ACCEPTABLE MANUFACTURER: PLY GEM INDUSTRIES, INC., 2600 GRAND BLVD., SUITE 900, KANSAS CITY, MO 64108. ASD. TELEPHONE TOLL FREE: (800) 962-6973 OR (800) 788-1964. FAX: (866) 656-1900, WEBSITE: WWW.GPVINYLSIDING.COM. EMAIL: HYPERLINK "MAILTO:SUPPORT@MASTICHOMESINFO.COM" SUPPORT@MASTICHOMESINFO.COM.
B. REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED WITH ARCHITECT'S REVIEW AND OWNER'S APPROVAL

Kenneth Boroson
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www.kbarch.com

NO.	DATE	REVISION

ISSUE/REVISION

PROJECT NAME
RENOVATIONS TO 165 IVY STREET

BID DOCUMENTS

BUILDING NAME & ADDRESS
163 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SDE NUMBER
2020.025	N / A

DRAWING TITLE
SPECIFICATION SHEET

SCALE	DRAWN BY
	Author
FILENAME	DATE
FILE	JULY 28, 2022

DRAWING NUMBER
SPEC-01

2.2 MATERIALS
A. SIDING AND SOFFIT - GENERAL REQUIREMENTS: POLYVINYL CHLORIDE PRODUCTS WITH THE FOLLOWING CHARACTERISTICS:
1. SIDING: COMPLY WITH ASTM D 3679, CLASS 2.
2. PVC CELL CLASSIFICATION IN ACCORDANCE WITH ASTM D 1784: 13334.
3. COEFFICIENT OF LINEAR EXPANSION IN ACCORDANCE WITH ASTM D 696: 0.000029 INCH PER INCH PER DEGREE F.
4. TENSILE STRENGTH WHEN TESTED IN ACCORDANCE WITH ASTM D 638: MINIMUM 6,326 POUNDS PER SQUARE INCH.
5. MODULUS OF ELASTICITY WHEN TESTED IN ACCORDANCE WITH ASTM D 638: MINIMUM 360,000 POUNDS PER SQUARE INCH, AVERAGE.
6. IZOD IMPACT, STANDARD 1/8 INCH BAR WHEN TESTED IN ACCORDANCE WITH ASTM D 256: 3.30 FOOT-POUNDS PER INCH, AVERAGE.
7. SHORE D HARDNESS: MINIMUM 82.
8. SPECIFIC GRAVITY: MINIMUM 1.34.
9. DEFLECTION TEMPERATURE WHEN TESTED IN ACCORDANCE WITH ASTM D 648: 170 DEGREES F, 264 POUNDS PER SQUARE INCH.
10. SMOKE DENSITY RATING WHEN TESTED IN ACCORDANCE WITH ASTM D 2843: 48 PERCENT, AVERAGE.
11. HORIZONTAL FLAMMABILITY, WHEN TESTED IN ACCORDANCE WITH ASTM D 635: A. BURN DISTANCE: 20 MM.
B. BURN TIME: LESS THAN 5 SECONDS.
12. SURFACE BURNING CHARACTERISTICS WHEN TESTED IN ACCORDANCE WITH ASTM E 84: FLAME SPREAD LESS THAN 20, FUEL CONTRIBUTION 0, SMOKE DENSITY 275.
13. FIRE RESISTANCE - SIDING: 1 HOUR, WHEN TESTED IN ACCORDANCE WITH ASTM E 119, WITH SIDING APPLIED OVER GYPSUM SHEATHING.
14. FLAMMABILITY - SIDING: COMPLY WITH REQUIREMENTS OF UBC STD 26-9.
15. CALIBER DOUBLE 6 INCH, FOAMED BACKED SIDING WITH EPS FOAM BACKING HAS A PERMEABILITY RATING OF 5.
B. FASTENERS: ALUMINUM NAILS, ALLOY 5056 OR 6110, HAVING MINIMUM TENSILE STRENGTH 63,000 POUNDS PER SQUARE INCH.

2.3 VINYL SIDING AND TRIM
A. CALIBER HIGH PERFORMANCE INSULATED VINYL SIDING:
1. PRODUCT DESCRIPTION: DOUBLE 6 TRADITIONAL, R VALUE 2.8, 12 INCHES EXPOSURE; NOMINAL 0.044 INCH MATERIAL THICKNESS (VINYL), OVERALL THICKNESS 1-1/8 INCHES; 12 FOOT 6 INCH PANEL LENGTH.
A. NAILING HEM: ENHANCED 1-3/8 INCH WIDE NAIL HEM WITH 1-1/4 INCH ELONGATED NAIL SLOTS ON 1-5/8 INCH CENTERS.
B. FINISH: LOW GLOSS.
C. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.
D. VSI CERTIFIED INSULATED SIDING WITH COLOR RETENTION: MEETS OR EXCEEDS REQUIREMENTS OF ASTM E 7856, ASTM D 6864, AND ASTM D 7251.
2. WINDOW AND DOOR SURROUND: 3-1/2 INCH EXPOSURE, 12 FOOT 6 INCH LENGTH.
A. FINISH: LOW GLOSS.
A. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.

3. OUTSIDE CORNER POST: 12 FOOT LENGTH.
A. FINISH: LOW GLOSS.
B. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.
4. INSIDE CORNER POST: 12 FOOT LENGTH.
A. FINISH: LOW GLOSS.
B. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.
5. J-CHANNEL 1-1/4 INCH: 12 FOOT 6 INCH LENGTH.
A. FINISH: LOW GLOSS.
B. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.
6. STARTER STRIP: 12 FOOT 6 INCH LENGTH.
7. EXTENDED CROWN BACKPLATE: 12 FOOT 6 INCH LENGTH.
A. COLOR: WHITE.
8. TRANSITION MOLD, 3-1/2 INCH: 12 FOOT 6 INCH LENGTH.
A. FINISH: LOW GLOSS.
B. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.
B. COMPASS VINYL SIDING:
1. PRODUCT DESCRIPTION: DOUBLE 4 INCH STANDARD LAP, 8 INCHES EXPOSURE; NOMINAL 0.044 INCH MATERIAL THICKNESS (VINYL); 12 FOOT 6 INCH PANEL LENGTH.
A. NAILING HEM: REVERSE FULL ROLL DOUBLE THICKNESS NAIL HEM.
B. FINISH: LOW GLOSS.
C. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.
D. VSI CERTIFIED VINYL SIDING WITH COLOR RETENTION: MEETS OR EXCEEDS REQUIREMENTS OF ASTM D 7856, ASTM D 6864, AND ASTM D 7251.
2. PRODUCT DESCRIPTION: DOUBLE 4.5 INCH STANDARD LAP, 9 INCHES EXPOSURE; NOMINAL 0.044 INCH MATERIAL THICKNESS (VINYL); 12 FOOT 1 INCH PANEL LENGTH.
A. NAILING HEM REVERSE FULL ROLL DOUBLE THICKNESS NAIL HEM.
B. FINISH: LOW GLOSS.
C. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.
D. VSI CERTIFIED VINYL SIDING WITH COLOR RETENTION: MEETS OR EXCEEDS REQUIREMENTS OF ASTM D 7856, ASTM D 6864, AND ASTM D 7251.

2.4 VINYL SOFFIT AND TRIM

A. VINYL T/4 SOFFIT: USE WITH 1/2 INCH INSTALLATION ACCESSORIES.
1. PRODUCT DESCRIPTION: TRIPLE 4 INCH SOLID SOFFIT WITH PEBBLE FINISH, NOMINAL 0.035 INCH MATERIAL THICKNESS; NOMINAL 12 FEET PIECE LENGTH.
2. PRODUCT DESCRIPTION: TRIPLE 4 INCH FULL-VENT SOFFIT WITH PEBBLE FINISH, NOMINAL 0.035 INCH MATERIAL THICKNESS; NOMINAL 12 FEET PIECE LENGTH. BASKETWEAVE VENTING, WITH NET FREE AIR SPACE OF 14.34 SQ. INCHES / SQUARE FOOT.

3. PRODUCT DESCRIPTION: TRIPLE 4 INCH CENTER VENT SOFFIT WITH PEBBLE FINISH, NOMINAL 0.035 INCH MATERIAL THICKNESS; NOMINAL 12 FEET PIECE LENGTH. BASKETWEAVE VENTING, WITH NET FREE AIR SPACE OF 4.78 SQ. INCHES / SQUARE FOOT.
4. NAILING HEM: SINGLE-ROW, WITH ELONGATED NAILING HOLES 1-1/4 INCHES LONG AT 1-5/8 INCHES ON CENTER.
5. COLOR: AS SELECTED FROM MANUFACTURER'S FULL RANGE OF STANDARD COLORS.
6. VSI CERTIFIED VINYL SIDING WITH COLOR RETENTION: MEETS OR EXCEEDS REQUIREMENTS OF ASTM D 7856, ASTM D 6864, AND ASTM D 7251.

F. VINYL TRIM:
1. SOFFIT J-TRIM 3/8 INCH: CHANNEL, 1-1/2 INCHES NAILING LEG, 3/4 INCH FORWARD LEG, 3/8 INCH CHANNEL WIDTH; COLOR, LENGTH 12 FOOT 6 INCHES.
2. SOFFIT J-TRIM 1/2 INCH: CHANNEL, 1-1/2 INCHES NAILING LEG, 3/4 INCH FORWARD LEG, 1/2 INCH CHANNEL WIDTH; COLOR, LENGTH 12 FOOT 6 INCHES.
3. SOFFIT F-TRIM: CHANNEL, 1-1/2 INCHES REVEAL, 1/2 INCH FORWARD LEG, 3/4 INCH DEPTH; COLOR, LENGTH 12 FOOT 6 INCHES.
4. H-MOLD: 5/8 INCH WITH PEBBLE FINISH, 1-7/8 EXPOSED FACE. LENGTH 12 FOOT 6 INCHES.
5. FASCIA: 8 INCH WITH WOOD GRAIN FINISH, LENGTH 12 FOOT 6 INCHES.
6. J-CHANNEL: CHANNEL, 1-1/2 INCH NAILING LEG, 3/4 INCH FORWARD LEG, 1/2 INCH CHANNEL WIDTH; COLOR.

PART 3 EXECUTION
3.1 EXAMINATION
A. DO NOT BEGIN INSTALLATION UNTIL SUBSTRATES HAVE BEEN PROPERLY PREPARED. VERIFY DIMENSIONS AND ACCEPTABILITY OF SUBSTRATE
B. IF SUBSTRATE PREPARATION IS THE RESPONSIBILITY OF ANOTHER INSTALLER, NOTIFY ARCHITECT OF UNSATISFACTORY PREPARATION BEFORE PROCEEDING.

3.2 PREPARATION
A. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION.
B. PREPARE SURFACES USING THE METHODS RECOMMENDED BY THE MANUFACTURER FOR ACHIEVING THE BEST RESULT FOR THE SUBSTRATE UNDER THE PROJECT CONDITIONS.

3.3 INSTALLATION
A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATION.
B. INSTALLATION OF VAPOR RETARDER IS SPECIFIED IN SECTION 07260.
C. ATTACH VINYL PRODUCTS TO SUBSTRATE FOR WEATHERTIGHT INSTALLATION; ENSURE THAT HORIZONTAL COMPONENTS ARE INSTALLED TRUE TO LEVEL, THAT VERTICAL COMPONENTS ARE INSTALLED TRUE TO PLUMB.
D. STAGGER LAP JOINTS IN HORIZONTAL SIDING IN UNIFORM PATTERN AS SUCCESSIVE COURSES OF SIDING ARE INSTALLED.
E. INSTALL JOINT SEALERS ARE SPECIFIED IN SECTION 07900.

3.4 ADJUSTING AND CLEANING
A. CLEAN DIRT FROM SURFACE OF INSTALLED PRODUCTS, USING MILD SOAP AND WATER.
B. AFTER COMPLETING INSTALLATION, REMOVE FROM PROJECT SITE EXCESS MATERIALS AND DEBRIS RESULTING FROM INSTALLATION OF VINYL PRODUCTS.

3.5 PROTECTION
A. PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT.
B. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

DIVISION EIGHT - DOORS AND WINDOWS

1. DOORS:

H. QUALITY STANDARDS: COMPLY WITH NWDA 1.S.1 AND AWI "ARCHITECTURAL WOODWORK QUALITY STANDARDS".

I. WARRANTY: PROVIDE 2 YEAR WARRANTY, AGREEING TO REPLACE, REFINISH AND REINSTALL DEFECTIVE DOORS, INCLUDING
DOORS WHICH HAVE WARPED OR SHOW PHOTOGRAPHING OF CONSTRUCTION BEHIND FACE, OR NON-COMPLIANCE TO TOLERANCE LIMITATIONS AS DEFINED BY NAMA.

2. INTERIOR DOORS:

A. GENERAL: THICKNESS, STYLE AND MATERIAL TO MATCH EXISTING HOUSE.

DIVISION EIGHT- ALUMINUM WINDOWS (SUN PORCH)

MANUFACTURE LOCATION:
A. LARSON MANUFACTURING, INC. - BROOKINGS, SOUTH DAKOTA.

CONSTRUCTION:
A. THE MASTER FRAME SHALL BE ACCURATELY MACHINED, HAVE MITERED CORNERS AND SHALL BE SECURELY FASTENED AT EACH CORNER WITH TWO (2) SCREWS AND AN INTERNAL SELF LOCKING CORNER KEY. HEAD, JAMBS AND SILL ARE HOLLOW ALUMINUM EXTRUSION FOR ADDED STRENGTH.
B. SASH FRAMES SHALL HAVE ACCURATELY MACHINED, MITERED CORNERS. EACH SASH CORNER SHALL BE SCREWED TOGETHER FOR ADDED RIGIDITY.
C. FOR UNITS WITH RETRACTABLE SCREEN, EACH SASH IS ATTACHED TO A RETRACTABLE SCREEN ROLL. OPERATING ONE SASH WILL MOVE BOTH SASHES AT THE SAME TIME. WHEN SASH ARE OPERATED, A RETRACTABLE SCREEN WILL APPEAR AT THE TOP AND THE BOTTOM OF THE WINDOW, WHEN SASHES ARE IN THE CLOSED POSITION, BOTH SCREENS ARE RETRACTED INTO THE HEAD AND SILL OF THE WINDOW AND CAN NOT BE SEEN.
D. WINDOW SILL AREA SHALL BE SLOPED TO THE EXTERIOR AND A LOUVERED WEEP HOLE COVER INSTALLED TO AID IN WATER DRAINAGE.
E. WEATHERSTRIP SHALL BE INSTALLED INTO MASTERFRAME ON BOTH SIDES OF EACH SASH.
F. FASTENERS SHALL BE INCLUDED FOR ATTACHING WINDOW TO TYPICAL WOOD OPENINGS.

MATERIALS:
A. ALL ALUMINUM MEMBERS, INCLUDING SILL, JAMBS AND HEADER SHALL BE EXTRUDED OF 6063-T6 ALUMINUM ALLOY AND SHALL HAVE MINIMUM WALL THICKNESS OF .050 INCHES. ALL EXPOSED EXTRUDED ALUMINUM COMPONENTS SHALL BE PAINTED IN ACCORDANCE WITH AAMA 2603 SPECIFICATIONS. MULTIPLE COLORS AVAILABLE.
B. GLASS SHALL BE 3/16" TEMPERED SAFETY GLASS MEETING THE 16CFR 1201 AND ANSI Z97.1, CSPC STANDARDS.
C. GLAZING SPLINE SHALL BE MARINE GLAZING.

GENERAL:
A. WINDOW SHALL BE ALUMINUM, SINGLE GLAZED. IT SHALL HAVE AN UPPER AND LOWER SASH THAT ARE COUPLED TOGETHER USING STAINLESS STEEL AIRCRAFT CABLE AND A PULLEY SYSTEM TO TO COUNTERBALANCE EACH OTHER. FOR UNITS WITH RETRACTABLE SCREEN, DOUBLE HUNG STYLE WINDOW WHERE BOTH SASH OPERATE SIMULTANEOUSLY TO EXPOSE AN UPPER AND LOWER RETRACTABLE SCREEN.

SCREEN PORCH WINDOW SPECIFICATIONS
© 2019 LARSON MANUFACTURING 0452938
CERTIFICATIONS:
WINDOWS WERE TESTED BY AN INDEPENDENT TEST LAB IN ACCORDANCE WITH THE REQUIREMENTS OF AAMA/NPEA/NSA 2100-12
SUNROOM SPECIFICATIONS FOR CATEGORY II SUNROOMS. OPERABLE UP TO 60" IN WIDTH, AND FIXED PANELS UP TO 72" IN
WIDTH, MEET OR EXCEED ALL APPLICABLE REQUIREMENTS. WINDOWS ARE CERTIFIED IN ACCORDANCE WITH ASTM E330M STANDARD TEST METHOD FOR STRUCTURAL PERFORMANCE OF EXTERIOR WINDOWS, DOORS, SKYLIGHTS AND CURTAIN WALLS BY UNIFORM STATIC AIR PRESSURE DIFFERENCE.
WARRANTY REGISTRATION NUMBER:
EACH WINDOW SHALL HAVE A REGISTRATION LABEL DISPLAYING AN IDENTIFCATION NUMBER, WHICH IS TO BE REGISTERED UPON INSTALLATION OF THE WINDOW PER WARRANTY CARD PROVIDED.

DIVISION EIGHT- WOOD DOUBLE HUNG WINDOWS (SIDE AND REAR ELEVATIONS)

MANUFACTURE LOCATION:
A. NORWOOD WINDOWS & DOORS

STANDARD FEATURES:
A. NATURAL EASTERN WHITE PINE
B. 4 9/16" JAMB
C. CLEAR INSULATED GLASS
D. 2 PIECE PAN (BEIGE)
E. BLOCK N' TACKLE BALANCE (BEIGE)
F. CHOICE GRAY SPACER BAR
G. COPPERTONE HARDWARE
H. COPPERTONE SCREEN
I. EM600 CASING & 566 SUBSILL

FRAME:
A. 11/16" THICK SIDE JAMB & ¾" THINK HEAD JAMB X 4 9/16" WIDTH (BASE) IN PINE
B. JAMB EXTENSION IS 21/32" THICK AND IS AVAILABLE UP TO 16" WIDE

SASH:
A. 1 5/8" THICK IN PINE
B. INTERIOR PROFILING IS RESTORATION

WEATHER-STIPPING:
A. OPTIM (BEIGE)
B. POLY FLEX (BLACK) ON SILL LINER
HARDWARE:
A. RESTORATION LOCK & KEEPER (COPPERTONE)

TILT LATCH:
A. HIDDEN TILT LATCH(COPPERTONE)

SCREENS:
A. FULL ALLUMINUM SCREEN EXTERIOR APPLICATION (COPPERTONE)

GRILLES:
A. SIMULTATED DIVIDED LITE (SDL)- PUTTY EXTERIOR & RESTORATION INTERIOR, 7/8" AND 1' ¼"

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NO.	DATE	REVISION
ISSUE/REVISION		

PROJECT NAME
RENOVATIONS TO 165 IVY STREET

BID DOCUMENTS

BUILDING NAME & ADDRESS
165 IVY STREET
NEW HAVEN, CT - 06511

PROJECT NUMBER	SCE NUMBER
2020.025	N / A

DRAWING TITLE
SPECIFICATION SHEET

SCALE	DRAWN BY
	Author
FILENAME	DATE
FILE	JULY 28, 2022

DRAWING NUMBER
SPEC-02

MECHANICAL SYMBOLS - GENERAL

	NEW PIPING, DUCTWORK, OR EQUIPMENT
	EXISTING PIPING, DUCTWORK, OR EQUIPMENT TO REMAIN
	EXISTING PIPING, DUCTWORK, OR EQUIPMENT TO BE REMOVED
	NEW EQUIPMENT
ER	EXISTING EQUIPMENT TO BE REMOVED
E	EXISTING EQUIPMENT TO REMAIN
ERR	EXISTING EQUIPMENT TO BE REMOVED AND RELOCATED
RE	RELOCATED POSITION OF EXISTING EQUIPMENT
	CONTINUATION FOR DUCTWORK OR PIPING
	POINT OF CONNECTION (OF NEW WORK TO EXISTING WORK)
	POINT OF DISCONNECTION (TO REMOVE AND PATCH EXISTING WORK)
#	DRAWING NOTE TAG
	REVISION SYMBOL
T	THERMOSTAT OR TEMPERATURE SENSOR TO BE WALL OR DUCT MOUNTED. REFER TO PLANS FOR LOCATION.
TS	HIGH TEMPERATURE SENSOR. REFER TO PLANS FOR LOCATION.
SD	SMOKE DETECTOR
	THERMOSTAT/SENSOR WIRING FROM SENSING DEVICE TO CONTROLLED DEVICE
SP	STATIC PRESSURE SENSOR
	STARTER / DISCONNECT SWITCH
	STARTER
	DISCONNECT
18X12	DUCT SIZE (FIRST FIGURE INDICATES HORIZONTAL SIZE)
18ø	ROUND DUCT DIAMETER
	SUPPLY DUCT UP
	SUPPLY DUCT DOWN
	RETURN OR EXHAUST DUCT UP
	RETURN OR EXHAUST DUCT DOWN
	ACOUSTICAL LINING IN DUCT
	TRANSITION FROM RECTANGULAR TO ROUND OR OVAL DUCT
AD	ACCESS DOOR IN DUCT
R	SLOPING RISE IN DUCT IN DIRECTION OF ARROW
D	SLOPING DROP IN DUCT IN DIRECTION OF ARROW
	MITERED ELBOW WITH TURNING VANES
	RADIUS ELBOW (INNER RADIUS = WIDTH)
	DUCT SPLIT
	90° BRANCH TAP (USE 45° BOOT, OR CONICAL TAP FOR BRANCH SERVING A SINGLE DIFFUSER/REGISTER ONLY)
	45° BRANCH TAP
	SPLIT (SUPPLY) OR CONVERGENCE (RETURN/EXHAUST) RADIUS ELBOW TYPE

MECHANICAL SYMBOLS - DUCTWORK

	SPLIT (SUPPLY) OR CONVERGENCE (RETURN/EXHAUST) MITERED ELBOW TYPE WITH TURNING VANES
	SPLIT (SUPPLY) OR CONVERGENCE (RETURN/EXHAUST) BULLHEAD TYPE
	OFFSET (WITH RADIUS ELBOWS)
	SUPPLY REGISTER
	RETURN OR EXHAUST REGISTER
VD	VOLUME DAMPER
FD	FIRE DAMPER W/DUCT ACCESS DOOR (FD/AD)
M	MOTORIZED DAMPER W/DUCT ACCESS DOOR
	FLEXIBLE DUCT
VD, 4'-0" MAX.	SUPPLY SIDEWALL LINEAR DIFFUSER (W/SHEET METAL PLENUM W/1" LINING & BRANCH CONN FOR EVERY 4' OF LINEAR DIFFUSER)
VD	MODULAR LINEAR DIFFUSER WITH PLENUM
VD	BRANCH TAKEOFF TO CEILING DIFFUSER/REGISTER
	SUPPLY CEILING DIFFUSER (4-WAY BLOW)
	SUPPLY CEILING DIFFUSER (3-WAY BLOW)
	SUPPLY CEILING DIFFUSER (2-WAY BLOW)
	SUPPLY CEILING DIFFUSER (1-WAY BLOW)
CD-B(500)	DIFFUSER TYPE AND CFM (CUBIC FEET PER MINUTE). REFER TO SCHEDULE.
	RETURN CEILING GRILLE OR REGISTER
VAV-B(500)	TERMINAL BOX (CV, VAV, FP). DESIGNATION INDICATES TYPE, BOX SIZE, AND CFM. QUANTITY (REFER TO SCHEDULES).
L	DOOR LOUVER
U	UNDERCUT DOOR
SQ.FT.	TRANSFER GRILLES ON BOTH SIDES OF WALL/PARTITION AND SQ. FT. OPENING SIZE
SQ.FT.	TRANSFER OPENING IN WALL/PARTITION AND SQ. FT. OPENING SIZE

MECHANICAL SYMBOL LIST - PIPING

	DIRECTION OF FLOW IN PIPE
	PITCH PIPE DOWN IN DIRECTION OF ARROW
	ELBOW TURNED UP
	ELBOW TURNED DOWN
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
CP	CONDENSATE PUMP (SEE SCHEDULES FOR TYPE)

MECHANICAL ABBREVIATIONS

AD	ACCESS DOOR
ATC	AUTOMATIC TEMPERATURE CONTROL
(X500)	DIFFUSER TYPE - REFER TO SCHEDULE
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CP	CONDENSATE PUMP
CR	CEILING REGISTER
CV	CONSTANT VOLUME
E	EXISTING
EAT	ENTERING AIR TEMPERATURE
ER	EXISTING EQUIPMENT TO REMOVED
ERR	EXISTING EQUIPMENT TO REMOVED AND RELOCATED
FXC	FLEXIBLE CONNECTION
FD	FIRE DAMPER WITH ACCESS DOOR
FLA	FULL LOAD AMPS
GPM	GALLONS PER MINUTE
HZ	HERTZ
IU	INDUCTION UNIT
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MD	MOTORIZED DAMPER
NIC	NOT IN CONTRACT
NK	NECK SIZE
NTS	NOT TO SCALE
OED	OPEN END DUCT
PH	PHASE
PSI	POUND PER SQUARE INCH
RE	RELOCATED POSITION OF EXISTING EQUIPMENT
SD	SMOKE DETECTOR
TRD	TRANSFER DUCT
TAO	TRANSFER AIR OPENING
TR	TOP REGISTER
TYP	TYPICAL
V	VOLTS
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
WMS	WIRE MESH SCREEN

CONNECTICUT STATE CODES & STANDARDS

- 2018 CONNECTICUT STATE BUILDING CODE
- 2015 INTERNATIONAL EXISTING BUILDING CODE
- 2015 INTERNATIONAL PLUMBING CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2017 NATIONAL ELECTRICAL CODE (NFPA 70)
- LOCAL FIRE DEPARTMENT/FIRE MARSHAL
- ALL OTHER LOCAL AUTHORITIES HAVING JURISDICTION

CONNECTICUT STATE ENERGY CODES

- 2015 INTERNATIONAL ENERGY CONSERVATION CODE

REFERENCED STANDARDS

APPLICABLE REFERENCE STANDARDS SHALL BE AS REFERENCED BY ALL STATE AND LOCAL CODES. THE LIST BELOW IS FOR QUICK REFERENCE AND DOES NOT INCLUDE ALL APPLICABLE REFERENCE STANDARDS.

- 2013 NFPA 13 – STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
- 2013 NFPA 14 – STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS
- 2013 NFPA 20 – STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
- 2015 NFPA 54 – NATIONAL FUEL GAS CODE
- 2017 NFPA 70 – NATIONAL ELECTRICAL CODE
- 2013 NFPA 72 – NATIONAL FIRE ALARM AND SIGNALING CODE

MECHANICAL DRAWING LIST

MASTROLUCA ENGINEERING ASSOCIATES, LLC

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PROJECT ISSUANCES/REVISIONS

#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE

ISSUED FOR BID/PERMIT

PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: NONE

DRAWING TITLE

MECHANICAL
COVER PAGE

DRAWING #

M-001

8/2/2022 4:01 PM jcsep U:\WORK\MEA_PROJECTS\2022\MEA.2022.00034_165_IVY_ST\DESIGN\DRAWINGS\MEP_FP\MEA.2022.00034_M_001.DWG

MECHANICAL GENERAL NOTES

1. THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AS WELL AS INDICATE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTWORK AND PIPING. THE CONTRACTOR SHALL ADHERE TO THESE DRAWINGS AS CLOSELY AS POSSIBLE. HOWEVER, THE RIGHT IS RESERVED TO VARY THE RUNS OF DUCTWORK AND PIPING AND TO MAKE OFFSETS, WHERE NECESSARY, TO ACCOMMODATE CONDITIONS ARISING AT THE JOB SITE. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL. NO WORK SHALL BE PERFORMED PRIOR TO RECEIPT OF EQUIPMENT, DUCTWORK, AND PIPING FABRICATION SHOP DRAWING APPROVAL.

2. THE DRAWINGS AND SPECIFICATIONS SHALL BE INTERPRETED SO AS TO REQUIRE THE MOST SUBSTANTIAL AND COMPREHENSIVE PERFORMANCE OF THE WORK, CONSISTENT WITH THE INTENT AND REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND SUCH WORK SHALL BE PERFORMED BY THE CONTRACTOR WITHOUT EXTRA COST TO THE OWNER. IN THE CASE OF A DISCREPANCY WITHIN THE CONTRACT DOCUMENTS, THE WORST CASE OR HIGHEST COST SHALL APPLY FOR BIDDING PURPOSES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY VIA RFI PRIOR TO PERFORMING THE ASSOCIATED WORK.

3. ANY MATERIAL, WORK, OR INCIDENTAL ACCESSORIES OR MINOR DETAILS NOT SHOWN BUT NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SHOWN ON THE DRAWINGS, SHALL BE PROVIDED BY THE CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER.

4. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. WHERE ACOUSTICALLY LINED DUCT IS SPECIFIED, OUTER DUCT DIMENSIONS SHALL BE INCREASED TO ACCOMMODATE LINING.

5. WHERE WORK IS INDICATED TO BE BY OTHER CONTRACTORS, FOR EXAMPLE: "BY GENERAL CONSTRUCTION CONTRACTOR", THIS WORK IS NOT IN THE HVAC/MECHANICAL CONTRACT. EACH CONTRACTOR WILL BE RESPONSIBLE FOR CLOSE COORDINATION WITH OTHER CONTRACTORS' WORK.

6. REFER TO APPROPRIATE SPECIFICATION SECTION FOR EQUIPMENT SELECTION PARAMETERS WHERE DRAWINGS DO NOT CONTAIN EQUIPMENT SCHEDULES.

7. FOR AIR SYSTEMS, THE MECHANICAL CONTRACTOR SHALL INCLUDE IN BID PRICING SUPPLYING AND INSTALLING BRANCH VOLUME DAMPERS FOR ALL SUPPLY, RETURN, AND EXHAUST BRANCH DUCTWORK, REGARDLESS IF VOLUME DAMPERS ARE NOT SHOWN IN CONTRACT DOCUMENTS. ALL VOLUME DAMPERS SHALL BE ADJUSTABLE HANDLE TYPE FOR LAY-IN ACCESSIBLE CEILING OR CABLE OPERATED FOR CONCEALED TYPE OF CEILING. ALL BRANCH DUCT VOLUME DAMPERS SERVING DIFFUSERS IN GYPSUM BOARD CEILINGS (OR OTHERWISE INACCESSIBLE) SHALL BE REMOTELY (CORD OR CABLE) OPERABLE THROUGH THE FACE OF THE DIFFUSER.

8. INSTALL THERMOSTATS, FAN SPEED CONTROLLERS, AND OTHER ROOM OCCUPANT ADJUSTABLE CONTROL DEVICES 4'-0" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT. COORDINATE EXACT LOCATIONS WITH THE ARCHITECTURAL PLANS. DEVICE COLORS TO BE SELECTED BY THE ARCHITECT. MANUFACTURER'S LOGO SHALL NOT BE EXPOSED.

9. WHERE PIPING CONNECTIONS FOR EQUIPMENT SUCH AS PUMPS, AC UNITS, COILS, ETC. DIFFER FROM THE LINE SIZE PIPING, IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO FURNISH AND INSTALL THE NECESSARY REDUCER/EXPANDER FITTINGS TO ENABLE CONNECTION BETWEEN THE PIPING SYSTEM AND THE EQUIPMENT.

10. SOME PRESSURE AND TEMPERATURE GAUGES ARE SCHEMATICALLY SHOWN ON THE PLANS AND DETAILS. REFER TO THE SPECIFICATIONS FOR EXACT TYPES AND LOCATIONS.

11. PROVIDE UL LISTED AND LABELED FIRE DAMPERS AT ALL DUCT PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS, REGARDLESS IF FIRE DAMPERS ARE NOT SHOWN IN CONTRACT DOCUMENTS. PROVIDE 1-1/2 HOUR RATED FIRE DAMPERS AT WALLS/FLOORS WITH 2 HOUR OR LESS RATING. PROVIDE 3 HOUR RATED FIRE DAMPERS AT WALLS/FLOORS WITH 3 HOUR OR MORE RATING. ALL FIRE DAMPERS SHALL BE TYPE "B" WITH SHUTTER OUT OF AIRSTREAM, AND SHALL BE RATED FOR DYNAMIC AIRFLOW CONDITIONS 2,000 FT/MIN AND 4.0 IN-WC. PROVIDE ACCESS DOORS IN DUCTWORK, 18"x18" UNLESS OTHERWISE NOTED. COORDINATE WITH GENERAL CONTRACTOR FOR LOCATIONS AND SIZES OF ACCESS DOORS IN GENERAL CONSTRUCTION.

12. PROVIDE UL LISTED AND LABELED COMBINATION FIRE/SMOKE DAMPERS AT ALL DUCT PENETRATIONS THROUGH FIRE AND SMOKE RATED WALLS AND FLOORS, REGARDLESS IF FIRE DAMPERS ARE NOT SHOWN IN CONTRACT DOCUMENTS. ALL COMBINATION FIRE/SMOKE DAMPERS SHALL BE PROVIDED WITH AN END SWITCH FOR STATUS SIGNAL TO THE BMS AND FIRE SMOKE CONTROL PANEL. ALL COMBINATION FIRE/SMOKE DAMPERS SHALL BE RATED FOR DYNAMIC AIRFLOW CONDITIONS 2,000 FT/MIN AND 4.0 IN-WC. PROVIDE ACCESS DOORS IN DUCTWORK, 18"x18" UNLESS OTHERWISE NOTED. COORDINATE WITH GENERAL CONTRACTOR FOR LOCATIONS AND SIZES OF ACCESS DOORS IN GENERAL CONSTRUCTION.

13. PROVIDE FIRESTOPPING FOR ALL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED PARTITIONS.

14. THE MECHANICAL CONTRACTOR SHALL INCLUDE IN BID PRICING SUPPLYING AND INSTALLING THERMOSTATS FOR ANY EQUIPMENT THAT REQUIRES CONTROL, SUCH AS VAV BOXES, FCU, FANS, HEATERS, FINNED TUBE RADIATION, RTU'S, ETC., REGARDLESS IF THERMOSTATS ARE NOT SHOWN IN CONTRACT DOCUMENTS. ALL THERMOSTATS SHALL BE DIRECT DIGITAL PROGRAMMABLE TYPE, UNLESS OTHERWISE NOTED. PROVIDE ONE THERMOSTAT FOR EACH FAN COIL UNIT, FAN UNIT, VAV, FPB, ENTRANCE HEATER, BASEBOARD RADIATION, ETC. THERMOSTAT LOCATIONS SHALL BE AS SHOWN ON PLANS AND/OR WHERE DIRECTED AND APPROVED BY THE ARCHITECT AND ENGINEER.

15. ALL DUCTWORK AND PIPING REQUIRING FIRE RATING AND WHERE SHOWN ON PLANS SHALL BE PROVIDED WITH A 2-HOUR FIRE RATED ENCLOSURE (PROVIDED UNDER ANOTHER SECTION OF THE SPECIFICATIONS).

16. ALL LINEAR DIFFUSERS ARE TO BE COORDINATED WITH ARCHITECTURAL PLANS FOR EXACT LENGTHS AND LOCATIONS. ACTIVE PLENUM SECTIONS SHALL BE OF THE SIZES AS SHOWN ON PLANS. EACH BRANCH TAP SERVING THE LINEAR DIFFUSER SHALL BE PROVIDED WITH A VOLUME DAMPER WHICH SHALL BE OPERABLE THROUGH THE DIFFUSER FACE. ACTIVE SUPPLY SECTION OF LINEAR DIFFUSER SHALL BE PROVIDED WITH PATTERN CONTROL DEVICES AND EQUALIZING GRIDS. ACTIVE OR INACTIVE RETURN SECTIONS SHALL NOT BE FURNISHED WITH PATTERN CONTROL OR EQUALIZING GRIDS.

MECHANICAL GENERAL NOTES (CONTINUED)

17. BORDER TYPES AND METHOD OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES, AND REGISTERS SHALL BE COORDINATED WITH THE ARCHITECTURAL CEILING DETAILS AND SPECIFICATIONS.

18. REFER TO SPECIFICATIONS FOR ACOUSTIC LINING REQUIREMENTS NOT SHOWN ON THE DRAWINGS.

19. ALL HVAC WATER PIPING RUNNING ABOVE ELECTRICAL SERVICES SHALL BE PROVIDED WITH A DRAIN PAN UNDERNEATH BY THE MECHANICAL CONTRACTOR. PIPING FROM DRAIN PAN SHALL BE PROVIDED BY MECHANICAL CONTRACTOR AND EXTEND TO NEAREST FLOOR DRAIN.

20. THE MECHANICAL CONTRACTOR SHALL INCLUDE IN BID PRICING SUPPLYING AND INSTALLING SECONDARY DRAIN PANS FOR ALL AIR CONDITIONING CEILING HUNG EQUIPMENT REGARDLESS IF DRAIN PANS ARE NOT SHOWN IN CONTRACT DOCUMENTS. REFER TO DETAIL FOR INSTALLATION OF DRAIN PANS. IF NO DETAIL IS SHOWN, CONTRACTOR MUST REQUEST DRAIN PAN DETAIL THRU RFI PROCESS DURING BIDDING.

21. THE MECHANICAL CONTRACTOR SHALL INCLUDE IN BID PRICING SUPPLYING AND INSTALLING CONDENSATE PIPING FOR ALL COOLING TYPE EQUIPMENT REGARDLESS IF CONDENSATE PIPING IS NOT SHOWN IN CONTRACT DOCUMENTS. ALL CONDENSATE PIPING SHALL BE INSULATED AND ROUTED TO NEAREST DRAIN OR JANITORS CLOSET. IF NO CONDENSATE PIPING IS SHOWN, CONTRACTOR MUST REQUEST CONDENSATE PIPING ROUTING THRU RFI PROCESS DURING BIDDING.

22. GENERAL NOTES, SYMBOLS, ABBREVIATIONS, AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.

23. COORDINATE THIS WORK WITH THAT OF OTHER TRADES.

24. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL, EXCEPT IN WAY OF STRUCTURAL STEEL, DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.

25. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS' RECOMMENDATIONS.

26. PROVIDE ACCESS PANELS IN DUCTWORK IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS FOR ALL CONCEALED EQUIPMENT THAT REQUIRES PERIODIC SERVICE, INCLUDING AIR CONDITIONING UNITS, FANS, CONDENSATE PUMPS, FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, AND DUCT MOUNTED SMOKE DETECTORS. COORDINATE WITH GENERAL CONTRACTOR FOR LOCATIONS AND SIZES OF ACCESS DOORS IN GENERAL CONSTRUCTION.

27. PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE.

28. SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERING WITH EXISTING OPERATIONS IN THE FACILITY.

29. COORDINATE ALL ROOF PENETRATIONS WITH THE WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. COORDINATE ALL ROOF PENETRATION LOCATIONS WITH THE OWNER/LANDLORD. NOTIFY THE OWNER/LANDLORD PRIOR TO STARTING WORK AND VERIFY COMPLIANCE WITH BOND AND WARRANTY OF THE ROOF.

30. RUN DUCTS AND PIPING CONCEALED, UNLESS OTHERWISE SPECIFIED, AND CLEAR OF CEILING INSERTS.

31. PROVIDE CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND EQUIPMENT MANUFACTURERS' REQUIREMENTS.

32. ALL MOTOR STARTERS FOR HVAC EQUIPMENT SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED/WIRED BY THE ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.

33. ALL DISCONNECT SWITCHES FOR HVAC EQUIPMENT SHALL BE FURNISHED, INSTALLED, AND WIRED BY THE ELECTRICAL CONTRACTOR, UNLESS INTEGRAL TO HVAC EQUIPMENT OR OTHERWISE NOTED.

34. USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.

35. BRANCH DUCTS TO INDIVIDUAL DIFFUSERS AND REGISTERS SHALL BE THE SAME SIZE AS THE DIFFUSER OR REGISTER NECK, UNLESS OTHERWISE NOTED.

36. ALL DUCTWORK AND PIPING SHALL BE INSTALLED TIGHT TO BOTTOM OF STRUCTURAL MEMBERS UNLESS OTHERWISE NOTED OR ABSOLUTELY REQUIRED BY FIELD CONDITIONS.

37. DO NOT INSTALL DUCTWORK OR PIPING DIRECTLY UNDER AND PARALLEL TO THE WEB OF STRUCTURAL MEMBERS. OFFSET IN ORDER TO ALLOW FUTURE DUCTWORK AND PIPING TO CROSS OVER IN BETWEEN STRUCTURAL MEMBERS.

38. BRANCH DUCTS TO INDIVIDUAL DIFFUSERS AND REGISTERS SHALL BE PROVIDED WITH VOLUME DAMPERS, WHETHER OR NOT THE VOLUME DAMPERS ARE SHOWN ON PLAN.

39. VOLUME DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS SHALL BE CABLE OPERATED TYPE, WITH CABLE OPERATORS LOCATED IN ACCESSIBLE LOCATIONS AND CLEARLY LABELED FOR DIFFUSER OR REGISTER SERVED.

40. UNLESS OTHERWISE NOTED, ALL EXPOSED DUCTWORK IN FINISHED SPACES SHALL BE SPIRAL ROUND OR FLAT OVAL TYPE, WITH SOLID OUTER WALL, PERFORATED INNER WALL, AND 1 INCH THICK INTERSTITIAL ACOUSTICAL LINING.

41. CONDENSATE DRAIN (CD) AND CONDENSATE PUMP DISCHARGE (PD) PIPING SHALL BE RIGID COPPER, TYPE L, MINIMUM 3/4" NOMINAL PIPE SIZE, BRAZED OR SOLDERED, WITH 1" INSULATION, UNLESS OTHERWISE NOTED ON DRAWINGS.

42. NEW AND EXISTING PERMANENT HVAC AIR EQUIPMENT MAY BE USED BY CONTRACTORS DURING CONSTRUCTION FOR TEMPORARY HEATING, COOLING, AND VENTILATION, ONLY UNDER THE FOLLOWING CONDITIONS:
    - 1.1. CONTRACTOR TO PROVIDE TEMPORARY FILTERS IN EACH UNIT DURING CONSTRUCTION, WHICH SHALL BE REPLACED WITH NEW CLEAN FILTERS AFTER GENERAL CONSTRUCTION IS COMPLETED.
    - 1.2. CONTRACTOR TO PROVIDE FILTER FABRIC AT ALL RETURN AND EXHAUST REGISTERS, GRILLES, AND OPENINGS DURING CONSTRUCTION.
    - 1.3. THE WARRANTY PERIOD FOR ALL EQUIPMENT SHALL NOT BEGIN UNTIL CONSTRUCTION IS COMPLETED. IF THE EQUIPMENT MANUFACTURER'S WARRANTY PERIOD BEGINS WHILE THE UNIT USED DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH EXTENDING THE WARRANTY TO PROVIDE THE FULL PERIOD OF COVERAGE TO THE OWNER.

MECHANICAL GENERAL NOTES (CONTINUED)

- 1.4. IF NEW PERMANENT HVAC AIR EQUIPMENT INSTALLED UNDER THIS PROJECT WILL NOT BE OPERATED BY THE CONTRACTOR DURING CONSTRUCTION, ALL OPEN OR INCOMPLETE DUCTWORK SHALL BE CAPPED AIRTIGHT WITH WITH HEAVY POLYETHYLENE PLASTIC. AFTER THE INSTALLATION OF DUCTWORK, REGISTERS, GRILLES, AND DIFFUSERS, THE CONTRACTOR SHALL BLANK OFF ALL REGISTERS, GRILLES, AND DIFFUSERS WITH HEAVY POLYETHYLENE PLASTIC AND TAPE AIR TIGHT, IN AREAS THAT ARE UNDER CONSTRUCTION, UNTIL WORK IS COMPLETE IN THOSE AREAS.
- 1.5. IF THE ABOVE CONDITIONS ARE NOT MET, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY NECESSARY TEMPORARY HEATING, COOLING, AND VENTILATION EQUIPMENT, DUCTWORK, CONTROLS, PIPING, AND POWER AT HIS OWN EXPENSE.
- 1.6. IF PERMANENT HVAC EQUIPMENT IS USED DURING CONSTRUCTION BUT NOT PROPERLY PROTECTED AS DESCRIBED ABOVE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OUT DUST AND DEBRIS FROM DUCTWORK AND EQUIPMENT, AS WELL AS ANY NECESSARY REPAIR OR REPLACEMENT OF DAMAGED EQUIPMENT AT HIS OWN EXPENSE.
- 1.7. WHEN GENERAL CONSTRUCTION IS COMPLETE, VACUUM CLEAN ALL DIFFUSERS, REGISTERS, GRILLES, AND HVAC EQUIPMENT IN THE PROJECT AREA OR SERVING THE PROJECT AREA. REMOVE ANY CONSTRUCTION DEBRIS.

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PROJECT ISSUANCES/REVISIONS

#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE

ISSUED FOR BID/PERMIT

PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: NONE

DRAWING TITLE

MECHANICAL GENERAL NOTES

DRAWING #

M-002

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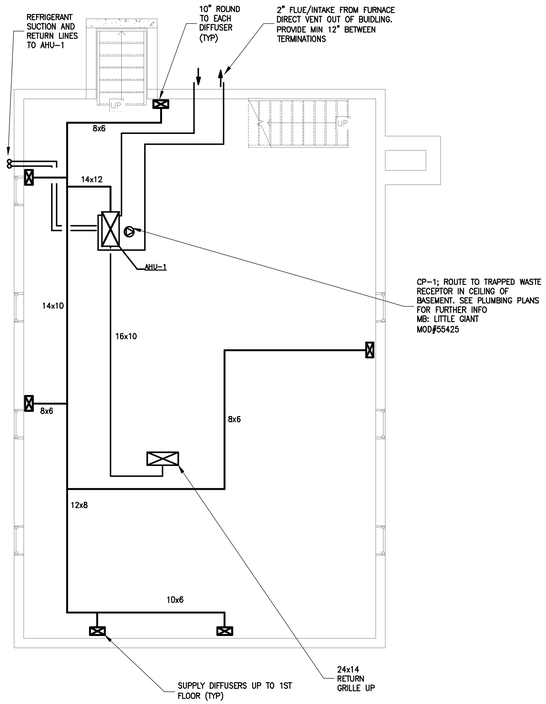
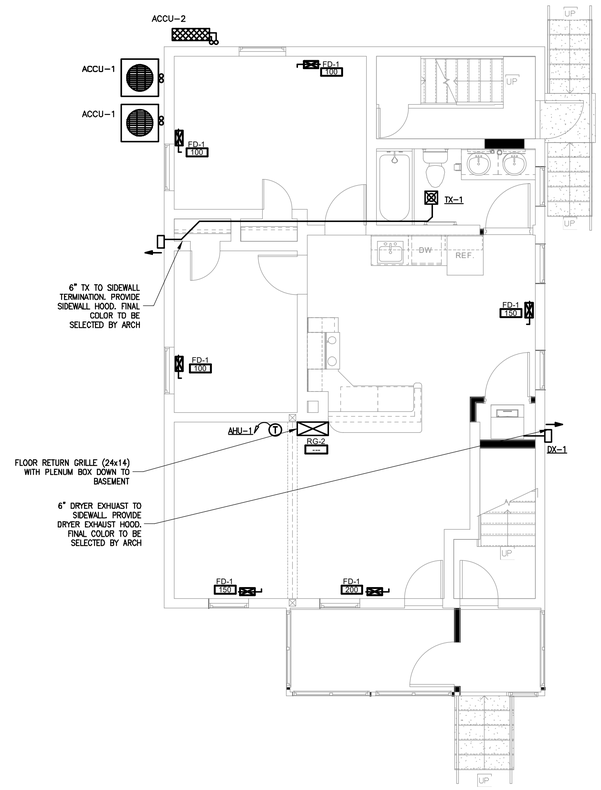


BASEMENT FLOOR PLAN

1/4" = 1'-0"



FIRST FLOOR PLAN

1/4" = 1'-0"

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PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE

MECHANICAL
FLOOR PLANS

DRAWING #

M-101

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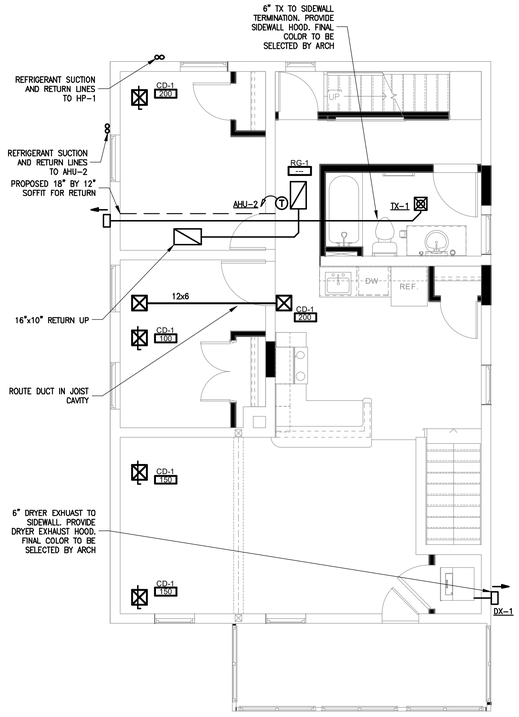
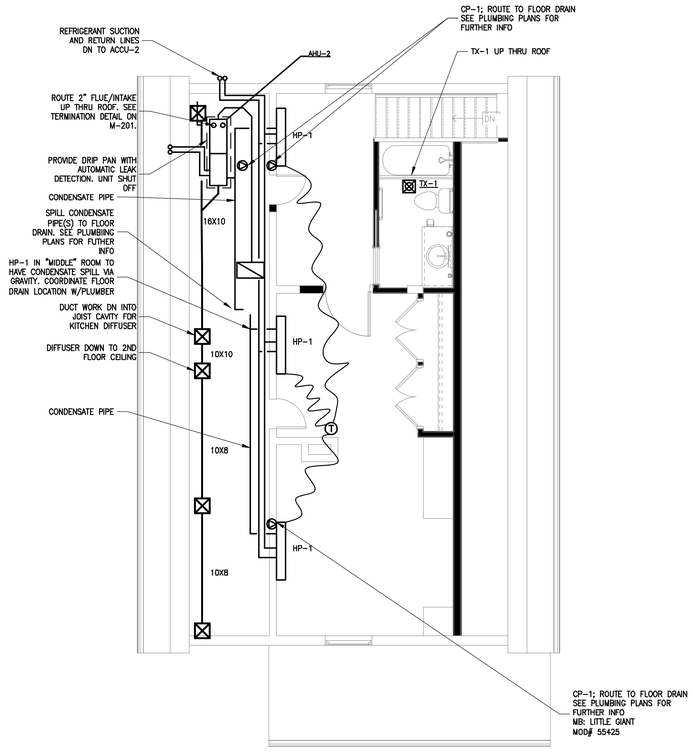


SECOND FLOOR PLAN

1/4" = 1'-0"



THIRD FLOOR PLAN

1/4" = 1'-0"

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PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE

MECHANICAL
FLOOR PLANS

DRAWING #

M-102

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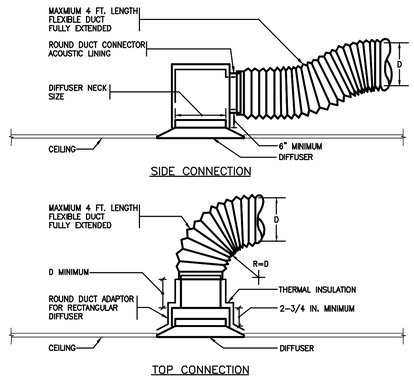
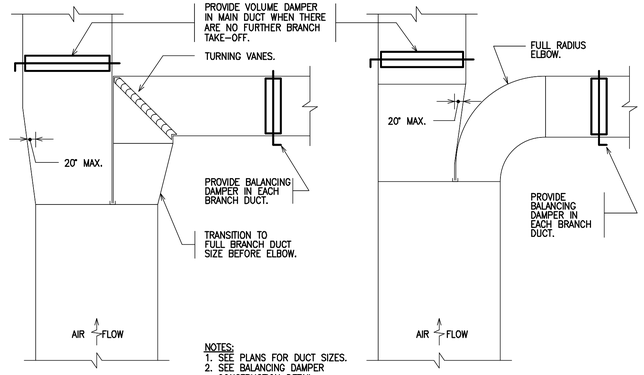


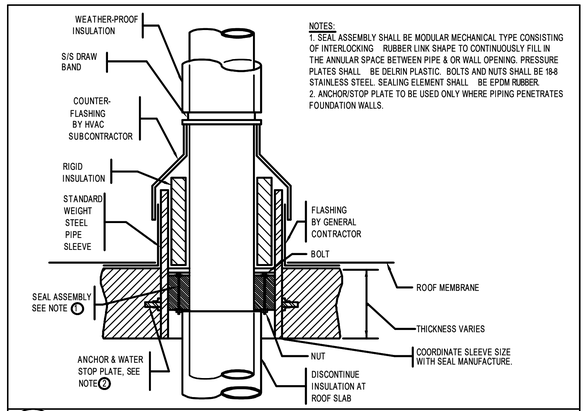
DIFFUSER CONNECTION DETAIL

NOT TO SCALE

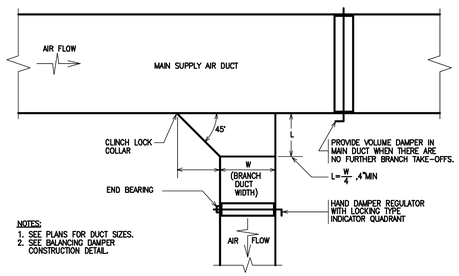


DETAIL OF SUPPLY AIR DUCT NECK CONNECTIONS (WITH VOLUME DAMPERS)

NOT TO SCALE

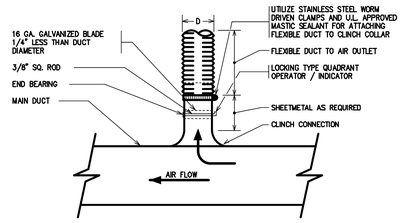


12 INSULATED PIPE THROUGH ROOF OR WALL



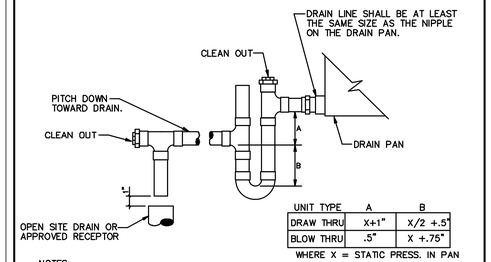
TYPICAL DETAIL OF RECTANGULAR SUPPLY AIR DUCT TAP (WITH VOLUME DAMPERS)

NOT TO SCALE



CIRCULAR BRANCH CONNECTION TO SINGLE AIR OUTLET

NOT TO SCALE



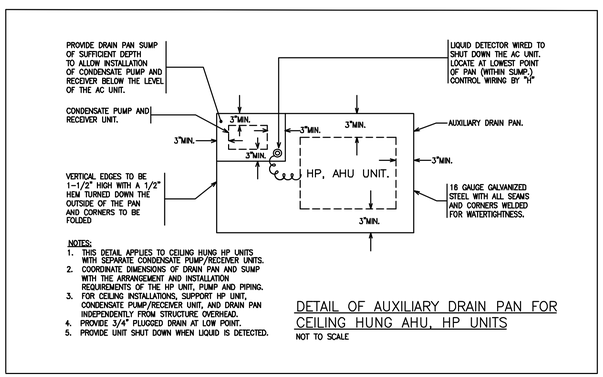
UNIT TYPE	A	B
DRAW THRU	X+1"	X/2 +.5"
BLOW THRU	.5"	X +.75"

WHERE X = STATIC PRESS. IN PAN

NOTES:
1. COIL MUST BE MOUNTED HIGH ENOUGH TO PERMIT TRAP TO BE INSTALLED.
2. PROVIDE SHIMS OR STRUCTURAL PLATFORMS REQUIRED TO ELEVATE FACTORY PACKAGED AIR HANDLING UNITS TO OBTAIN REQUIRED TRAP HEIGHT.

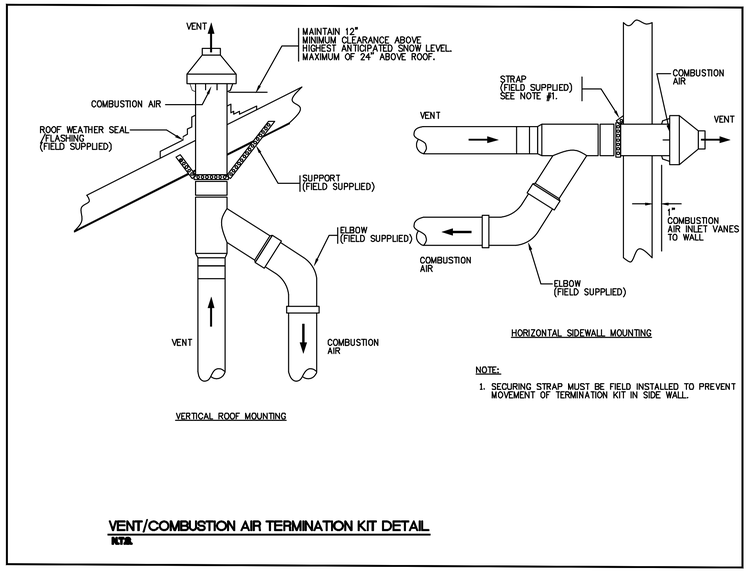
AIR HANDLING UNIT DRAIN TRAP

NO SCALE



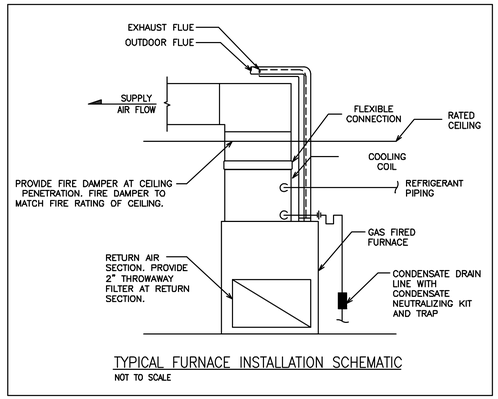
DETAIL OF AUXILIARY DRAIN PAN FOR CEILING HUNG AHU, HP UNITS

NOT TO SCALE



VENT/COMBUSTION AIR TERMINATION KIT DETAIL

N.T.S.



TYPICAL FURNACE INSTALLATION SCHEMATIC

NOT TO SCALE

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PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: NONE

DRAWING TITLE

MECHANICAL DETAILS

DRAWING #

M-201

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. INSTALL ALL NEW WORK IN A NEAT WORKMANLIKE MANNER READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR.

B. CODES, PERMITS AND INSPECTIONS:

1. ALL REQUIREMENTS OF THE BUILDING DEPARTMENT, BUILDING MANAGEMENT, AND ALL AUTHORITIES HAVING JURISDICTION, AND ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK, SHALL BE INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS. CONTRACTOR IS TO INFORM ENGINEER OF ANY EXISTING WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE BY THIS CONTRACTOR AND AT NO EXPENSE TO THE OWNER.

2. THIS CONTRACTOR SHALL OBTAIN ALL EQUIPMENT APPROVALS AS REQUIRED BY STATE AND LOCAL AUTHORITIES. PERMITS SHALL BE TURNED OVER TO OWNER AT JOB COMPLETION.

C. SITE VERIFICATION:

1. PRIOR TO SUBMISSION OF THE BID, THIS CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN THE ACTUAL FIELD CONDITIONS AS THEY RELATE TO THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED HEREIN. DISCREPANCIES, IF ANY, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO SUBMISSION OF THE BID, AND IF NOT RESOLVED TO SATISFACTION, SHALL BE SUBMITTED AS A WRITTEN QUALIFICATION OF THE BID. SUBMISSION OF A BID SHALL BE EVIDENCE THAT SITE VERIFICATION HAS BEEN PERFORMED AS DESCRIBED ABOVE.

D. CONTRACT DOCUMENTS:

1. PRIOR TO SUBMISSION OF A FORMAL BID, THIS CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THE ENTIRE PROJECT INCLUDING GENERAL CONSTRUCTION, DEMOLITION, ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SPRINKLER AND SHALL INCLUDE ANY WORK REQUIRED IN THE BID WHICH IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK.

2. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND APPROXIMATE LOCATION OF EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND COORDINATE FINAL LOCATIONS OF DIFFUSERS, GRILLES, REGISTERS, THERMOSTATS, SENSORS, SWITCHES AND ANY WALL MOUNTED DEVICES. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT.

3. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.

E. GUARANTEE:

1. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE MECHANICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE SYSTEM.

2. THE CONTRACTOR SHALL GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL INCLUDE RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THIS CONTRACTOR.

3. THIS CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF ALL SYSTEMS UNTIL THE FINAL ACCEPTANCE OF THE WORK.

4. ALL AIR CONDITIONING UNIT COMPRESSORS AND REFRIGERATION COMPONENTS SHALL HAVE A 5–YEAR WARRANTY.

F. THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENT A201, LATEST EDITION, OR AS REQUIRED BY THE ARCHITECT'S DOCUMENTS, AND/OR THE STRUCTURAL ENGINEER'S DOCUMENTS, AS APPLICABLE, ARE PART OF THIS CONTRACT.

G. DEFINITIONS:

1. MECHANICAL CONTRACTOR, "THIS CONTRACTOR" – THE PARTY OR PARTIES HAVE BEEN DULY AWARDED THE CONTRACT FOR AND ARE THEREBY MADE RESPONSIBLE FOR THE MECHANICAL WORK AS DESCRIBED HEREIN.

2. "THIS CONTRACT", "THE CONTRACT" – THE AGREEMENT COVERING THE WORK TO BE PERFORMED BY THIS CONTRACTOR.

3. "APPROVED", "EQUAL", "SATISFACTORY", "ACCEPTED", "ACCEPTABLE", "EQUIVALENT" – SUITABLE FOR USE ON THE PROJECT, AS DETERMINED BY THE ENGINEER BASED ON DOCUMENTS PRESENTED FOR SUCH DETERMINATION.

4. "THESE SPECIFICATIONS", "THIS SECTION, PART, DIVISION" (OF THE SPECIFICATION) – THE DOCUMENT SPECIFYING THE WORK TO BE PERFORMED BY "THIS CONTRACTOR".

5. "THE MECHANICAL WORK", "THIS WORK" – ALL LABOR MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES, AND OTHER ITEMS REQUIRED FOR A PROPER AND COMPLETE INSTALLATION BY THE MECHANICAL CONTRACTOR.

6. "ARCHITECT", "ENGINEER", "OWNER'S REPRESENTATIVE" – THE PARTY OR PARTIES RESPONSIBLE FOR INTERPRETING, ACCEPTING AND OTHERWISE RULING ON THE PERFORMANCE UNDER THIS CONTRACT.

7. "FURNISH" – PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK.

8. "INSTALL" – UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING INSTALLATION AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.

9. "PROVIDE" – "FURNISH" AND "INSTALL".

10. "NEW" – MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

11. "RELOCATE" – MOVE EXISTING EQUIPMENT AND ALL ACCESSORIES AS REQUIRED.

12. "REMOVE" – DISMANTLE AND CART AWAY FROM SITE INCLUDING ALL RELATED ACCESSORIES. ALL ITEMS SHALL BE LEGALLY DISPOSED OF. ALL OTHER EQUIPMENT AND OPERATIONS IN ANY WAY AFFECTED BY THE REMOVAL IS TO REMAIN IN FULL OPERATION. PROVIDE ALL NECESSARY COMPONENTS TO MAINTAIN SUCH OPERATION.

1.02 SCOPE OF WORK

A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE, SAFE INSTALLATION OF ALL MECHANICAL WORK. THE SCOPE OF WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

1. DEMOLITION AND REMOVAL OF ITEMS AS REQUIRED.
2. DUCTWORK AND DUCTWORK ACCESSORIES.
3. AIR DISTRIBUTION SYSTEM (AIR OUTLETS, VAV BOXES, ETC.).
4. PIPING AND PIPING ACCESSORIES INCLUDING ALL VALVING.
5. EQUIPMENT, INCLUDING BUT NOT LIMITED TO CAV BOX, HEAT PUMP UNITS, CONDENSATE PUMPS, ETC.
6. INSULATION OF CONDENSATE PIPING, REFRIGERANT PIPING, EQUIPMENT AND DUCTWORK.
7. SOUND LINING.
8. AUTOMATIC TEMPERATURE CONTROLS.
9. TESTING AND BALANCING.
10. CUTTING AND PATCHING.
11. SHOP DRAWINGS.
12. AS–BUILT DRAWINGS.
13. OPERATING AND MAINTENANCE MANUALS.
14. FULL COORDINATION WITH OTHER TRADES.
15. WARRANTY AND GUARANTY.
16. PHASING AS REQUIRED BY OWNER, CONSTRUCTION MANAGER, GENERAL CONTRACTOR OR BUILDING MANAGEMENT.
17. PREMIUM TIME FOR WORK TO BE PERFORMED AFTER–HOURS AS REQUIRED BY BUILDING MANAGEMENT AND/OR OWNER.
18. FILING AND PERMITS.
19. FULL TESTING AND STARTUP OF ALL SYSTEMS.
20. COMMISSIONING.

B. SECURE CERTIFICATES, PAY ALL FEES AND CHARGES FOR ALL WORK INSTALLED, CERTIFYING COMPLIANCE WITH ALL AUTHORITIES. CONTRACTOR TO COORDINATE WITH OWNER FOR REQUIRED SPECIAL INSPECTIONS AND OBTAIN ALL APPROVALS. DELIVER CERTIFICATES TO OWNER FOR SIGNING BEFORE FILING.

1.03 COORDINATION WITH BUILDING MANAGEMENT

A. THIS CONTRACTOR IS TO OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS PRIOR TO BID SUBMISSION TO DETERMINE THE REQUIREMENTS AND THE EXTENT OF PREMIUM TIME WORK REQUIRED BY THE BUILDING.

B. THIS CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE BUILDING OWNER'S RULES AND REGULATIONS. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE BUILDING RULES AND REGULATIONS SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT/ENGINEER FOR REVIEW WITH BID SUBMISSION.

C. COORDINATE WITH BUILDING OWNER FOR ANY SERVICE INTERRUPTION OF EXISTING SYSTEMS AND GIVE NOTICE AS REQUIRED BY BUILDING RULES AND REGULATIONS, OR CONTRACTOR TO PROVIDE A MINIMUM OF TWO (2) DAYS NOTICE PRIOR TO ANY WORK BEING PERFORMED, WHICHEVER IS THE MORE STRINGENT. CONTRACTOR IS TO PERFORM WORK ON PREMIUM TIME, IF SO DIRECTED BY BUILDING OWNER, SO AS NOT TO DISTURB EXISTING TENANTS ON OTHER FLOORS.

1.04 SHOP DRAWINGS

A. SUBMIT SHOP DRAWINGS CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN COMPLETED. SUBMIT ALL CERTIFIED EQUIPMENT CUTS WITH CONSTRUCTION WIRING DIAGRAMS AND AUTOMATIC TEMPERATURE CONTROL REQUIREMENTS. SHOP DRAWINGS SUBMISSION SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. DUCTWORK – PROVIDE DUCT SHOP STANDARDS AND LEAKAGE TEST CERTIFICATION, AS REQUIRED, AND 3/8 SCALE DUCT LAYOUT.
2. PIPING LAYOUT AND APPURTENANCES – PROVIDE PIPING, VALVING, CHEMICAL TREATMENT, SHOP STANDARDS AND 3/8 SCALE PIPING LAYOUT WITH ALL VALVING.
3. INSULATION FOR DUCTWORK, PIPING AND EQUIPMENT.
4. EQUIPMENT CATALOG CUTS FOR ALL ITEMS TO BE UTILIZED ON PROJECT (FANS, PUMPS, AC UNITS, VAV BOXES, ETC.).
5. AIR OUTLETS (DIFFUSERS, REGISTERS, GRILLES, ETC.).
6. AUTOMATIC TEMPERATURE CONTROL DIAGRAMS, DEVICES AND SEQUENCE OF OPERATION.
7. CERTIFIED AIR BALANCING REPORT.
8. AS–BUILT DRAWINGS AT PROJECT COMPLETION OF THE INSTALLED CONDITION OF WORK.

B. ALL SHOP DRAWINGS SHALL BE SUBMITTED AS PDF FILES. SPECIFIC JOB REQUIREMENTS MAY BE MORE STRINGENT AND CONTRACTOR IS RESPONSIBLE TO OBTAIN REQUIREMENTS FROM OWNER, CONSTRUCTION MANAGER, GENERAL CONTRACTOR, OR ARCHITECT.

C. THE CONTRACTOR SHALL INCLUDE IN THE BID SKETCHING TIME FOR ANY REVISIONS REQUIRED DUE TO THE ENGINEER'S REVIEW OF SHOP DRAWINGS FOR EQUIPMENT, DUCTWORK AND PIPING LAYOUTS.

1.05 MAINTENANCE MANUALS

A. SUBMIT TWO (2) LOOSE–LEAF BOUND OPERATING AND MAINTENANCE MANUALS WITH INDEX AND INDEX TABS. IN ADDITION, SUBMIT TWO (2) PDF COPIES OF THE COMPLETE MANUALS ON CD'S. INCLUDE THE FOLLOWING:

1. OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL SYSTEMS.
2. MANUFACTURERS' CATALOG CUTS ON ALL EQUIPMENT.
3. AUTOMATIC TEMPERATURE CONTROL SYSTEMS WITH SEQUENCE OF OPERATIONS, CATALOG CUTS OF ALL DEVICES AND POINT–TO–POINT WIRING DIAGRAMS.
4. CERTIFIED FINAL AIR AND WATER BALANCING REPORT.
5. DUCT AND PIPING AS–BUILT DRAWINGS WITH VALVE CHART AND KEY PLAN DRAWINGS INSERTED IN BINDER.
6. ALL ITEMS SUBMITTED FOR REVIEW IN SHOP DRAWING SECTION.

1.06 AS–BUILT DRAWINGS

A. CONTRACTOR SHALL MAINTAIN RECORD DRAWING PRINTS ON JOB SITE AND RECORD, AT TIME OF OCCURRENCE, DEVIATIONS FROM CONTRACT DOCUMENTS DUE TO FIELD COORDINATION, BULLETINS, OR ADDENDA.

B. CONTRACTOR SHALL REVISE SHOP DRAWINGS TO CONFORM TO RECORD DRAWINGS AND SUBMIT AS–BUILT CONDITION (PIPING AND DUCTWORK) DRAWINGS UPON COMPLETION OF THE PROJECT. FINAL SUBMISSION OF REPRODUCIBLE AS–BUILT DRAWINGS ARE TO BE SIGNED AND CERTIFIED BY THE INSTALLING CONTRACTOR THAT THIS IS THE AS–BUILT CONDITION OF THE WORK.

C. ALSO PROVIDE TWO (2) COPIES OF ALL AS–BUILT DRAWINGS AS PDF FILES ON CD'S.

1.07 SERVICE AND WARRANTY (MAINTENANCE CONTRACT)

A. THIS CONTRACTOR SHALL PROVIDE AS AN ADD ALTERNATE PRICE, A FULL ONE YEAR SERVICE AND WARRANTY OF ALL MECHANICAL COMPONENTS AND SYSTEMS, WITH PRICES FOR YEARS 2, 3 AND 4 FOLLOWING THIS FIRST YEAR. AT THE TIME OF ACCEPTANCE OF PROJECT, THE TENANT OR OWNER'S REPRESENTATIVE WILL DECIDE TO ACCEPT WHICH ALTERNATE, IF ANY.

1.08 SUBSTITUTIONS

A. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS, OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM SUBSTITUTION. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE SUBSTITUTION. ANY SUBSTITUTION MUST BE SUBMITTED WITH AN EXPLANATION AS TO WHY A SUBSTITUTION IS BEING UTILIZED. IF THE SUBSTITUTED ITEM DEVIATES FROM THE SPECIFIED ITEM, THOSE DEVIATIONS ARE TO BE IDENTIFIED ON A LINE–BY–LINE BASIS. IF THE SUBSTITUTE IS BEING UTILIZED FOR FINANCIAL REASONS, THE ASSOCIATED CREDIT MUST BE SIMULTANEOUSLY SUBMITTED.

B. ALL SUBSTITUTED EQUIPMENT SHALL CONFORM TO SPACE REQUIREMENTS AND PERFORMANCE REQUIREMENTS SHOWN ON CONTRACT DOCUMENTS. CONTRACTOR SHALL REPLACE ANY EQUIPMENT THAT DOES NOT MEET THESE REQUIREMENTS AT HIS OWN EXPENSE. ANY MODIFICATIONS TO ASSOCIATED SYSTEMS OR ADDITIONAL COSTS ATTRIBUTED TO THIS SUBSTITUTION SHALL BE AT THIS CONTRACTOR'S EXPENSE.

C. CONTRACTOR SHALL SUBMIT BID BASED ON SPECIFIED ITEMS AND SHALL SUPPLY AS AN ALTERNATE PRICE ANY SUBSTITUTIONS.

1.09 ACCESS DOORS IN GENERAL CONSTRUCTION

A. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, VALVES, DAMPERS AND CONTROLS. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLATION OF ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE BID. ACCESS DOORS SHALL BE OF ADEQUATE SIZE TO PROVIDE ACCESS TO CONCEALED ITEMS FOR OPERATION AND MAINTENANCE, WITH A MINIMUM SIZE OF 18" X 18".

1.10 DEMOLITION, REMOVAL AND RELOCATION

A. REMOVAL, TEMPORARY CONNECTIONS AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT TO BE COMPLETELY DETAILED ON THE DRAWINGS. THE CON–TRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK.

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

C. EQUIPMENT REQUIRED TO BE TEMPORARILY DISCONNECTED AND RELOCATED SHALL BE CAREFULLY REMOVED, STORED, CLEANED, REINSTALLED, RECONNECTED, AND MADE OPERATIONAL.

D. ALL EXISTING WORK NOT INDICATED FOR DEMOLITION SHALL BE PROTECTED FROM DAMAGE. WHERE EXISTING WORK TO REMAIN IS DAMAGED OR DISTURBED, THE CONTRACTOR SHALL REPAIR OR REPLACE TO OWNER'S AND BUILDING MANAGER'S SATISFACTION AT NO COST TO THE OWNER OR BUILDING MANAGEMENT.

E. GENERAL CONTRACTOR REMOVE ALL CEILING IN AREAS WHERE NEW DUCTWORK OR PIPING IS TO BE INSTALLED OR EXISTING IS ALTERED, AS PER ARCHITECT'S INSTRUCTIONS.

F. ALL NECESSARY CUTTING AND PATCHING TO ACCOMMODATE THE NEW HVAC WORK SHALL BE PERFORMED BY THIS CONTRACTOR AND COORDINATED WITH BUILDING MANAGEMENT SO AS TO MINIMIZE DISRUPTION OF EXISTING TENANTS AND SERVICES. RESTORE ALL ITEMS TO MATCH EXISTING CONDITIONS.

G. ALL EXISTING MATERIAL AND EQUIPMENT TO BE REMOVED UNDER THIS CONTRACT WILL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE LEGALLY DISPOSED OF BY THIS CONTRACTOR AS DIRECTED BY THE ARCHITECT OR OWNER. REFRIGERATION CONTAINED IN EXISTING EQUIPMENT TO BE REMOVED SHALL BE RECLAIMED OR LEGALLY DISPOSED OF IN ACCORDANCE WITH EPA REQUIREMENTS AND ASHRAE.

H. PROVIDE FOR LEGAL REMOVAL AND DISPOSAL OF ALL RUBBISH AND DEBRIS FROM THE BUILDING AND SITE. COORDINATE ALL DEMOLITION AND REMOVALS WITH BUILDING MANAGEMENT.

1.11 CONNECTION TO EXISTING WORK

A. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING MANAGEMENT. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. INSTALL ISOLATION DAMPERS AT CONNECTION TO EXISTING DUCTWORK. PROVIDE TEMPORARY DUCTWORK AND PIPING CONNECTIONS AS REQUIRED TO MINIMIZE SHUTDOWN TIME.

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

B. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES.

1.12 CHASING, CHOPPING OR CORE DRILLING

A. PRIOR TO ANY CHASING, CHOPPING, OR CORE DRILLING BEING PERFORMED, THIS CONTRACTOR SHALL FIELD INVESTIGATE EXISTING CONDITIONS AND COORDINATE WITH ALL APPROPRIATE TRADES AND BUILDING MANAGEMENT TO ENSURE THAT WORK WILL BE IN HARMONY WITH OTHER WORK AND NOT AFFECT ANY EXISTING BUILDING SYSTEMS. THIS WORK MUST BE APPROVED BY BUILDING MANAGEMENT PRIOR TO PROCEEDING.

1.13 SYSTEM COMMISSIONING

A. PRIOR TO FULL OPERATION, A COMPLETE DEMONSTRATION AND TESTING OF THE SYSTEM OPERATING FUNCTIONS AND ALARMS SHALL BE PERFORMED BY THIS CONTRACTOR IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND ENGINEER. THIS TESTING SHALL TAKE PLACE AFTER HAVING SATISFACTORILY MET THE REQUIREMENTS OF SHOP DRAWING ACCEPTANCE. COMMISSIONING OF THE SYSTEM SHALL BE SCHEDULED BEFORE THE SPACE IS OCCUPIED LEAVING ENOUGH TIME TO CORRECT THE SYSTEM'S DEFICIENCIES AND AFTER SHOP DRAWING ACCEPTANCE. UPON SUCCESSFUL COMPLETION OF SYSTEM OPERATION, THE CONTRACTOR SHALL SUBMIT A STATEMENT STATING THAT THE FULL OPERATION OF ALL SYSTEMS, FUNCTIONS AND ALARMS HAS BEEN DEMONSTRATED AND ARE OPERATIONAL AS WELL AS A LISTING OF ALL SYSTEMS, ALARMS AND FUNCTIONS THAT HAVE BEEN COMMISSIONED. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW AND ACCEPTANCE TO THE OWNER, OWNER'S REPRESENTATIVE AND ENGINEER BEFORE FINAL ACCEPTANCE CAN TAKE PLACE.

PART 2 – PRODUCTS/APPLICATIONS

2.01 DUCTWORK AND ACCESSORIES

A. ALL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE, LATEST EDITION, SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL, LATEST EDITION, NFPA 90A LATEST EDITION, AND ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES. THE MOST STRINGENT REQUIREMENT OF ANY CODES SHALL APPLY.

B. PROVIDE ALL SUPPORTING AND HANGING DEVICES IN ACCORDANCE WITH BUILDING CODE AND SMACNA.

A. DUCTWORK LAYOUT AND ROUTING IS SCHEMATIC AND THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ALL DUCT SIZE CHANGES AND RELOCATIONS TO ACCOMMODATE SPACE AND STRUCTURAL CONDITIONS. OFFSETS AND TRANSFORMATIONS SHALL PRESERVE THE FULL INSIDE CROSS–SECTIONAL AREA OF DUCTWORK SHOWN ON THE DRAWINGS.

B. DUCTWORK (NEW AND EXISTING TO BE REUSED) SHALL HAVE PRESSURE CLASSIFICATION, SEALING REQUIREMENTS AND LEAKAGE TESTING IN ACCORDANCE WITH SMACNA AND AS LISTED BELOW UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS.

1. 4" CLASS: ALL SUPPLY DUCTWORK FROM DISCHARGE OF AIR UNITS TO INLETS OF TERMINAL BOXES. SEAL CLASS A, LEAKAGE CLASS 6 (RECTANGULAR) OR CLASS 3 (ROUND).
2. 2" CLASS: ALL OTHER LOW PRESSURE DUCTWORK. SEAL CLASS C, LEAKAGE CLASS 24 (RECTANGULAR) OR CLASS 12 (ROUND).
3. LEAKAGE TESTING:
   A) DUCTS DESIGNED TO OPERATE AT STATIC PRESSURES IN EXCESS OF 3 INCHES W.G. SHALL BE LEAK–TESTED BY THIS CONTRACTOR IN ACCORDANCE WITH THE SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL, WITH THE RATE OF AIR LEAKAGE (CL) LESS THAN OR EQUAL TO 6.0 AS DETERMINED IN ACCORDANCE WITH THE EQUATION CL = F/P^0.65, WHERE F = THE MEASURED LEAKAGE RATE IN CFM PER 100 SQUARE FEET OF DUCT SURFACE; P = THE STATIC PRESSURE OF THE TEST IN INCHES W.G. DOCUMENTATION SHALL BE FURNISHED BY THE CONTRACTOR DEMONSTRATING THAT REPRESENTATIVE SECTIONS TOTALING AT LEAST 25 PERCENT OF THE DUCT AREA HAVE BEEN TESTED AND THAT ALL TESTED SECTIONS MEET THESE REQUIREMENTS.
   B) ALL TESTING SHALL BE DONE IN THE PRESENCE OF THE ENGINEER OR OWNER'S REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COLLARS, CAPS, ELECTRIC POWER, ETC. NECESSARY TO PERFORM THE TESTS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR SCHEDULING THE TEST NO LESS THAN THREE (3) BUSINESS DAYS PRIOR TO ITS INTENDED OCCURRENCE. LOW PRESSURE DUCTWORK (2" CLASS) SHALL BE TESTED ON AN AS–NEEDED BASIS AT THE ENGINEER'S DIRECTION. IF A SPECIMEN FAILS TO MEET ALLOTTED LEAKAGE LEVEL, THE CONTRACTOR SHALL MODIFY TO BRING IT INTO COMPLIANCE AND SHALL RETEST IT UNTIL ACCEPTABLE LEAKAGE IS DEMONSTRATED. TESTS AND NECESSARY REPAIR SHALL BE COMPLETED PRIOR TO CONCEALMENT OF DUCTS.

C. MATERIALS:

1. GALVANIZED STEEL: UNLESS OTHERWISE SPECIFIED OR INDICATED, DUCTS SHALL BE CONSTRUCTED OF HOT–DIPPED GALVANIZED SHEETMETAL WITH 60 COMMERCIAL COATING ACCORDING TO ASTM 653 AND A924.
2. FLEXIBLE CONNECTIONS AT FANS SHALL BE NEOPRENE COATED, FLAME RETARDANT GLASS FABRIC (COMPLYING WITH NFPA 90 AND 96), 30 OZ./SQ. YD. WITH SOWN AND CEMENTED SEAMS.
3. FLEXIBLE DUCTWORK SHALL BE LIMITED TO THE LAST 6 FEET OF BRANCH DUCTWORK TO A SINGLE DIFFUSER OR REGISTER, UNLESS OTHERWISE NOTED. DO NOT INSTALL FLEXIBLE DUCTWORK IN LOCATIONS EXPOSED TO VIEW.

D. FABRICATION:

1. CONFORM TO SMACNA AND MECHANICAL CODE REQUIREMENTS FOR METAL THICKNESS, REINFORCING, JOINTS, AND SEALING FOR MAXIMUM STATIC PRESSURES INVOLVED. ALL SEAMS AND JOINTS SHALL BE SEALED AND TAPED.
2. ELBOWS SHALL CONFORM TO SMACNA REQUIREMENTS AND THE FOLLOWING:

MASTROLUCA ENGINEERING ASSOCIATES, LLC
51 ZEPHYR RD TRUMBULL CT 06611
203-581-3838
JMASTROLUCA.MEA@GMAIL.COM

PROJECT ISSUANCES/REVISIONS

#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE

ISSUED FOR BID/PERMIT

PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: NONE

DRAWING TITLE

MECHANICAL SPECIFICATIONS

DRAWING #

M-301

8/2/2022 4:01 PM jsep U:\WORK\MEA_PROJECTS\2022\MEA.2022.00034_165_IVY_ST\DESIGN\DRAWINGS\MEP_FP\MEA.2022.00034_M_301.DWG

A) PROVIDE LONG RADIUS TYPE WITH CENTERLINE RADIUS MINIMUM 1.5 TIMES DUCT WIDTH. PROVIDE SHORT RADIUS OR SQUARE ELBOWS WHERE INDICATED OR WHERE REQUIRED TO FIT RESTRICTED SPACES. PROVIDE DOUBLE THICKNESS TURNING VANES ON ALL SHORT RADIUS AND MITERED ELBOWS. CONFORM TO SMACNA FOR THE NUMBER OF VANES FOR FITTINGS.

3. BRANCH CONNECTIONS: PROVIDE 45 DEGREE ENTRY OR CONICAL TAPS. PROVIDE RADIUS TYPE FITTINGS FOR DIVIDED FLOW BRANCHES.

E. ACOUSTICALLY LINED DUCTWORK:

1. PROVIDE MATTE-FACED GLASS DUCT LINER, 1-INCH THICK -2 LB/CF DENSITY. DUCT DIMENSIONS INDICATED ARE CLEAR (NET) INSIDE DIMENSIONS. FOR DUCT VELOCITIES GREATER THAN 2,000 FPM, FACE DUCT LINER WITH 24 GAUGE PERFORATED ALUMINUM OR GALVANIZED STEEL, FULLY COVERING DUCT LINER, AND SUPPORTED 12" ON CENTER. DO NOT EXTERNALLY INSULATE ACOUSTICALLY LINED DUCTWORK. CONFORM TO SMACNA REQUIREMENTS FOR INSTALLATION. PROVIDE ACOUSTICALLY LINED DUCT WHERE LISTED BELOW AND/OR SHOWN ON THE DRAWINGS:

A) WITHIN A MINIMUM OF 20 FEET OF FAN INLET AND DISCHARGES.

B) WITHIN A MINIMUM OF 10 FEET DOWNSTREAM OF THE TERMINAL BOXES (VAV).

F. VOLUME DAMPERS:

1. GALVANIZED STEEL OR SAME AS DUCT CONSTRUCTION. CONFORM TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS, 1995 OR LATEST EDITION, OPPOSED BLADE TYPE. PROVIDE BEARING AT BOTH ENDS OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW, AT ONE END. INSTALL WITH LEVERS ACCESSIBLE THROUGH INSULATION. SPLITTER DAMPER OR AIR EXTRACTORS SHALL NOT BE USED ON THIS PROJECT.

2. PROVIDE MANUAL BALANCING VOLUME DAMPERS AS REQUIRED TO PROPERLY BALANCE THE AIR DISTRIBUTION SYSTEM. IF THE LOCATION OF BALANCING DAMPERS ARE NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUM STANDARDS SHALL GOVERN:

A) LOW PRESSURE: ALL SUPPLY AIR MAIN BRANCHES FROM TRUNK, EACH SPLIT, AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.

B) LOW PRESSURE: ALL EXHAUST AND RETURN BRANCHES FROM TRUNK, EACH SPLIT AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.

C) AS NOTED ON PLANS.

G. DUCT ACCESS DOORS:

1. CONFORM TO SMACNA WITH PIANO HINGES, TWO SASH LOCKS AND DOOR GASKETS. SCREWED ACCESS PANELS ARE NOT PERMITTED. PROVIDE REMOVABLE ACCESS DOORS WHERE DOOR SWING CANNOT BE ACCOMMODATED.

2. SIZE: MINIMUM 20"X14" EXCEPT DUCTS LESS THAN 16", ONE DIMENSION 20" AND THE OTHER DIMENSION, 2" LESS THAN THE DUCT WIDTH.

3. PROVIDE ACCESS DOORS: AT ALL EQUIPMENT REQUIRING ACCESS AND AS INDICATED ON DRAWINGS.

H. FIRE DAMPERS:

1. DYNAMIC FIRE DAMPERS:

A) FUSIBLE LINK DYNAMIC RATED FIRE DAMPERS SHALL BE FURNISHED AND INSTALLED WHERE SHOWN ON PLANS AND/OR AS DESCRIBED ON SCHEDULES. DAMPERS SHALL MEET THE REQUIREMENTS OF NFPA 80, 90A & 101 AND FURTHER SHALL BE TESTED, RATED AND LABELED IN ACCORDANCE WITH THE LATEST EDITION OF UL STANDARD 555. DAMPERS SHALL HAVE A UL555 FIRE RATING OF 1 1/2 HOURS OR 3 HOURS.

B) DAMPERS SHALL BE CONSTRUCTED WITH A GALVANIZED STEEL FRAME, GALVANIZED CURTAIN STYLE BLADES IN GAUGES REQUIRED BY UL LISTING R13317. EACH FIRE DAMPER SHALL BE SUPPLIED AS A SINGLE ASSEMBLY WITH A FACTORY SLEEVE. EACH FIRE DAMPERS SHALL BE EQUIPPED WITH A FACTORY INSTALLED HEAT RESPONSIVE DEVICE, FUSIBLE LINK (REPLACEABLE), RATED TO CLOSE THE DAMPER WHEN TEMPERATURE AT THE DAMPERS REACHES 165°F.

C) DAMPERS SHALL HAVE A MINIMUM UL555 DIFFERENTIAL PRESSURE RATING OF 4IN. WG. DAMPERS SHALL ALSO A MINIMUM UL555 VELOCITY RATING OF 2,000 FPM.

D) EACH DAMPER SHALL BE SUPPLIED WITH FACTORY RETAINING ANLES SIZED TO PROVIDE INSTALLATION OVERLAP IN ACCORDANCE WITH THE MANUFACTURER'S UL LISTING.

E) FIRE DAMPERS SHALL BE TYPE B WITH SHUTTER OUT OF AIRSTREAM. DO NOT USE TYPE A WITH SHUTTER IN AIRSTREAM.

F) FIRE DAMPER SHALL BE MANUFACTURED BY POTTORFF MODEL DFD-10D (1-1/2 HR. RATED) OR MODEL DFD-30D (3-HOUR RATED), OR APPROVED EQUAL.

I. SEAL OPENINGS AROUND DUCTS THROUGH WALLS WITH MINERAL WOOL OR OTHER NON-COMBUSTIBLE MATERIAL. SEAL ALL DUCT PENETRATIONS THROUGH WALLS AIRTIGHT.

J. ALL DUCTS EXPOSED TO MOISTURE SHALL BE ALUMINUM, SLOPED AND DRAINED AND SHALL NOT BE INTERNALLY LINED.

K. EXISTING DUCTWORK TO BE REUSED:

1. THIS CONTRACTOR SHALL INSPECT, SEAL PER SMACNA REQUIREMENTS, LEAK TEST, AND INSULATE ALL EXISTING DUCTWORK TO BE REUSED. EXISTING DUCTWORK TO BE REUSED SHALL CONFORM TO SPECIFICATIONS FOR NEW DUCTWORK LISTED HEREIN. ALL REQUIRED WORK SHALL BE PART OF BID.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR LEAK TESTING THE ENTIRE EXISTING MAIN SUPPLY DUCT LOOP ON THE FLOOR. SCHEDULE THIS LEAK TESTING AFTER DEMOLITION AND BEFORE NEW CONSTRUCTION. TO FACILITATE THIS WORK, REMOVE EXISTING DUCT INSULATION, CAP ALL OPENINGS, SEAL ALL JOINTS PER THIS SPEC, AND PROVIDE NEW INSULATION PER THIS SPEC.

M. AUTOMATIC CONTROL DAMPERS:

1. PROVIDE DAMPERS WITH PARALLEL BLADES FOR 2-POSITION CONTROL, OR OPPOSED BLADES FOR MODULATING CONTROL OF CONSTANT OR VARIABLE VOLUME SYSTEM.

2. AUTOMATIC DAMPERS TO BE VERY LOW LEAKING TYPE WITH JAMB AND BLADE SEALS RATED FOR SMOKE DAMPER APPLICATION. CONSTRUCT BLADES OF 16 GAUGE GALVANIZED STEEL. PROVIDE HEAVY-DUTY MOLDED SELF-LUBRICATING NYLON BEARINGS, 1/2" DIAMETER STEEL AXLES SPACED ON 9" CENTERS, BLADES TO BE MAXIMUM 10" HIGH. FRAME SHALL BE CONSTRUCTED OF 16 GAUGE X 4-3/8" GALVANIZED HAT SHAPED STEEL PROPERLY BRACED WITH GALVANIZED STEEL FINISH AND ALUMINUM TOUCH-UP.

3. AUTOMATIC DAMPERS SHALL HAVE A MAXIMUM LEAKAGE RATE OF 4 CFM/FT2 AT 1.0 INCHES W.G. WHEN TESTED IN ACCORDANCE WITH AMCA 500D.

4. DAMPERS INSTALLED IN ALUMINUM DUCTS SHALL BE ALUMINUM WITH WEATHERPROOF COMPONENTS.

DAMPERS TO BE MANUFACTURED BY IMPERIAL OR APPROVED EQUAL.

2.02 PIPING AND ACCESSORIES

A. PROVIDE ALL PIPING, FITTINGS, VALVES, SPECIALTIES, THERMOMETERS, AND PRESSURE GAUGES REQUIRED FOR THE OPERATING AND MAXIMUM PRESSURE AND TEMPERATURE OF THE PIPING SYSTEMS.

B. ALL PIPING SHALL BE NEW, STANDARD SIZE, FREE FROM SCALE OR RUST WITH ENDS CAPPED FOR DELIVERY AND STORAGE. EACH LENGTH OF PIPING SHALL BE PROPERLY MARKED AT THE MILL FOR PROPER IDENTIFICATION WITH NAME OR SYMBOL OF MANUFACTURER.

C. ALL HORIZONTAL CONDENSATE PIPING SHALL BE PITCHED A MINIMUM OF 1/8" PER FOOT OF LENGTH. CONDENSATE PIPING SHALL NOT BE LESS THAN ¾" DIAMETER.

2.03 INSULATION

A. ALL INSULATION SHALL MEET THE REQUIREMENTS OF ASTM, NFPA, THE ENERGY CODE AND ALL AUTHORITIES HAVING JURISDICTION. ALL MECHANICAL INSULATION (JACKETING, COVERINGS, ADHESIVES, MASTICS, FACINGS, TAPES, ETC.), SHALL HAVE RATINGS NOT EXCEEDING A FLAME SPREAD OF 25 OR LESS AND SMOKE DEVELOPED INDEX OF 50 OR LESS.

B. BEFORE APPLYING INSULATION, ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED. FURNISH AND INSTALL AS PER MANUFACTURER'S REQUIREMENTS.

C. INSULATION FOR FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

D. PIPE INSULATION:

1. FIBERGLASS PIPE INSULATION: ONE-PIECE MOLDED SECTIONAL FIBERGLASS INSULATION, CONFORMING TO ASTM C-547, CLASS 1, 2, 3 TO 850EF WITH 4 LB./CU. FT. DENSITY WITH A THERMAL CONDUCTIVITY OF NOT OVER 0.23 AT 75EF MEAN. PROVIDE WITH FACTORY-APPLIED ALL SERVICE JACKET AND DOUBLE ADHESIVE SELF-SEALING LAP. COLD WATER PIPE INSULATION JACKET SHALL BE OF THE CONTINUOUS VAPOR BARRIER TYPE. THE INSULATION SHALL BE SIMILAR TO OWENS-CORNING FIBERGLASS ASJ/SSL-II PIPE INSULATION.

2. INSULATION FOR FITTINGS, FLANGES, AND VALVES: PROVIDE INSULATION FOR FITTINGS, FLANGES, AND VALVES PREMOLDED, PRECUT, OR JOB FABRICATED OF THE SAME THICKNESS AND CONDUCTIVITY AS USED ON ADJACENT PIPING.

3. INSULATION THICKNESS FOR PIPING, FITTINGS, FLANGES AND VALVES SHALL BE AS FOLLOWS, BASED ON INSULATION HAVING A CONDUCTIVITY (K) NOT EXCEEDING 0.27 BTU/H PER INCH/H*FT2*DEGF AT A MEAN TEMPERATURE OF 75 DEGF. ADJUST THICKNESS FOR DIFFERENT CONDUCTIVITY.

a. FOR HOT WATER PIPING 1-1/2 INCHES IN DIAMETER OR SMALLER, INSULATION THICKNESS SHALL BE 1-1/2 INCHES.

b. FOR HOT WATER PIPING 2 INCHES IN DIAMETER OR LARGER, INSULATION THICKNESS SHALL BE 2 INCHES.

E. DUCT INSULATION:

1. GENERAL

A) INSULATION SHALL BE APPLIED WITH MASTICS, ADHESIVES, AND COATINGS, WITH COVERS, WEATHER-PROTECTION AND OTHER WORK AS REQUIRED BY MANUFACTURER'S RECOMMENDATIONS. MATERIALS SHALL MEET REQUIREMENTS OF ADHESIVE AND SEALANT COUNCIL STANDARDS AND SMACNA.

B) ALL SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-5 INSULATION WHEN LOCATED IN UNCONDITIONED SPACES AND A MINIMUM OF R-8 INSULATION WHEN LOCATED OUTSIDE THE BUILDING. WHEN LOCATED WITHIN A BUILDING ENVELOPE ASSEMBLY, THE DUCT OR PLENUM SHALL BE SEPARATED FROM THE BUILDING EXTERIOR OR UNCONDITIONED OR EXEMPT SPACES BY A MINIMUM OF R-8 INSULATION.

C) WHERE INDOOR DUCTWORK IS INTERNALLY ACOUSTICALLY LINED, EXTERNAL INSULATION THICKNESS MAY BE REDUCED SUBJECT TO MAINTAINING THE R-VALUES SPECIFIED BELOW.

2. CONCEALED DUCTWORK

A) INSULATE SUPPLY AND FRESH AIR DUCTS AND PLENUMS IN CONCEALED SPACES AND RETURN DUCT NOT IN CEILING PLENUM WITH AT LEAST 1-1/2" THICK FIBROUS GLASS DUCT WRAP, WITH A MINIMUM R-VALUE OF R-5 AND FOIL-KRAFT FLAME RESISTANT VAPOR BARRIER.

2.04 ELECTRICAL WORK

A. GENERAL

1. ELECTRICAL POWER WIRING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACT; CONTROL WIRING SHALL BE BY THE HVAC CONTRACT. CONTROL WIRING SHALL BE DEFINED AS ANY 12V, 24V, OR 120V WIRING INSTALLED FOR PURPOSES OTHER THAN PROVIDING PRIMARY ELECTRICAL POWER TO EQUIPMENT.

2. MOTOR STARTERS SHALL BE FURNISHED BY THE HVAC CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

3. DUCT MOUNTED SMOKE DETECTORS, WHERE REQUIRED, SHALL BE PROVIDED BY AD WIRED BY THE ELECTRICAL CONTRACTOR, AND MOUNTED BY THE HVAC CONTRACTOR.

4. ALL ELECTRICAL CONTROL WIRING SHALL COMPLY WITH LOCAL ELECTRICAL CODE, ALL AUTHORITIES HAVING JURISDICTION AND THE PROJECT ELECTRICAL SPECIFICATIONS.

5. MECHANICAL CONTRACTOR TO OBTAIN QUANTITY OF CONTROLLERS REQUIRED AND COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR ALL OPERATING REQUIREMENTS, INTERLOCKS AND CONNECTIONS FOR STARTERS.

6. THE MECHANICAL CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL POINT-TO-POINT, COMPLETELY COORDINATED WIRING DIAGRAMS AND INDICATE ALL SOURCE POWER REQUIREMENTS AND ALL FIELD WIRING TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR.

B. MOTORS:

1. MOTORS SHALL HAVE THE ELECTRICAL CHARACTERISTICS AS LISTED ON THE DRAWINGS. COORDINATE ALL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR. ALL MOTORS SHALL COMPLY WITH NEMA MG-1 STANDARD AND SHALL BE OF THE HIGH EFFICIENCY TYPE AND MEET THE 1992 EPA ENERGY EFFICIENCY ACT AND UTILITY COMPANY REBATE REQUIREMENTS.

2. IF CONTRACTOR ELECTS TO SUBSTITUTE OR INCREASE MOTOR HORSEPOWER OVER THAT WHICH IS SPECIFIED, THE COST OF MOTOR AND ELECTRICAL CHANGES SHALL BE BORNE BY THIS CONTRACTOR.

E. STARTERS:

1. EACH MOTOR EXCEPT AS NOTED, SHALL BE PROVIDED WITH A COMBINATION FUSED DISCONNECT AND ACROSS-THE-LINE MAGNETIC STARTER WITH PUSHBUTTON STATIONS MOUNTED ON THE COVER. COORDINATE REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR. FOR AUTOMATICALLY OR REMOTELY CONTROLLED MOTORS, FURNISH HAND OFF AUTO (HOA) SELECTOR SWITCHES IN PLACE OF THE PUSH BUTTONS.

2. FURNISH MANUALLY OPERATED MOTOR STARTERS OF THE PROPER SIZE FOR ALL MOTORS LESS THAN 1/2 HP WHICH ARE NOT AUTOMATICALLY CONTROLLED. STARTERS FOR MOTORS 175 WATTS OR LESS SHALL CONSIST OF A SNAP SWITCH WITH THERMAL OVERLOAD PROTECTION WHERE SUCH PROTECTION IS NOT AN INTEGRAL PART OF THE MOTOR.

3. COMBINATION MAGNETIC STARTERS FOR ALL MOTORS SHALL HAVE THERMAL OVERLOAD, PILOT LIGHT, LOW VOLTAGE PROTECTION IN ALL THREE PHASES. INCLUDE A CONTROL TRANSFORMER FOR EACH MAGNETIC STARTER TO PROVIDE 120 VOLT CONTROL POWER WITH THREE (3) SETS OF SPARE NORMALLY CLOSED OR NORMALLY OPEN CONTACTS.

4. ALL STARTERS SHALL BE ASSEMBLED AND INTERNALLY WIRED WITH ALL DEVICES IN CONFORMANCE WITH NEMA STANDARDS.

5. DISCONNECT SWITCHES ARE PROVIDED BY THE ELECTRICAL CONTRACTOR IF NOT INTEGRAL WITH EQUIPMENT.

2.05 VIBRATION ISOLATION PRODUCTS

A. FURNISH AND INSTALL ALL NECESSARY VIBRATION ISOLATORS, VIBRATION HANGERS, MOUNTING PADS, RAILS, ETC., TO ISOLATE VIBRATION AND SOUND FROM BEING TRANSMITTED TO THE BUILDING CONSTRUCTION. ALL VIBRATION ISOLATION PRODUCTS SHALL BE SPECIFICALLY DESIGNED FOR THEIR INTENDED USE.

B. MANUFACTURER OF VIBRATION ISOLATION EQUIPMENT SHALL HAVE THE FOLLOWING RESPONSIBILITIES:

1. DETERMINE VIBRATION ISOLATOR SIZES AND LOCATIONS.

2. PROVIDE SUITABLE PIPING AND EQUIPMENT VIBRATION ISOLATION SYSTEMS.

3. GUARANTEE SPECIFIED ISOLATION SYSTEM ATTENUATION AND DEFLECTION.

4. PROVIDE INSTALLATION INSTRUCTIONS, DRAWINGS AND FIELD SUPERVISION TO ASSURE PROPER INSTALLATION AND PERFORMANCE.

C. ISOLATION SYSTEMS SHALL BE MANUFACTURED BY MASON INDUSTRIES OR APPROVED EQUAL BY THE ENGINEER.

D. MOUNTING TYPES:

1. STATIC DEFLECTION OF ISOLATORS SHALL BE A MINIMUM OF 90% EFFICIENCY. PROVIDE CORROSION PROTECTION FOR EQUIPMENT MOUNTED IN MECHANICAL ROOM.
2. MOUNTING OF CEILING-SUPPORTED FANS, AND AIR HANDLING UNITS - SPRING ISOLATORS - (TYPE DNHS).
3. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL FANS AND DUCTWORK (REFER TO DUCTWORK SECTION FOR SPECIFICATIONS).

2.07 TESTING AND BALANCING

A. GENERAL:

1. TESTING AND BALANCING WORK SHALL BE PERFORMED BY AN INDEPENDENT COMPANY (NOT ASSOCIATED WITH THE HVAC CONTRACTOR), AABC CERTIFIED OR AS APPROVED BY THE ENGINEER BEFORE COMMENCEMENT OF WORK. APPROVED COMPANIES INCLUDE MERENDINO ASSOCIATES, R.H. MCDERMOTT, INTERNATIONAL TESTING AND BALANCING OR AS APPROVED BY THE ENGINEER AND BUILDING MANAGEMENT.

2. AFTER ALL PROJECT HVAC WORK IS COMPLETE, TESTED, AND IN FULL WORKING ORDER, THE AGENCY SHALL PERFORM THE BALANCING AND TESTING OF THE PROJECT HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS.

3. UPON THE COMPLETION OF THE AIR CONDITIONING SYSTEM, THE BALANCING AGENCY SHALL PERFORM TESTING AND BALANCING AND COMPILE ALL TEST DATA IN A CERTIFIED REPORT AND SUBMIT TWO (2) COPIES FOR REVIEW AND APPROVAL TO THE ENGINEER.

4. THE REPORT SHALL INCLUDE DESIGN AND ACTUAL READINGS FOR ALL EQUIPMENT AND LOCATION PLAN INDICATING WHERE ALL WORK HAS BEEN PERFORMED, AND METHODS OF BALANCING AND DETAILS OF INSTRUMENTS USED.

5. IF DISCREPANCIES EXIST IN THE REPORT THAT REQUIRE FIELD VERIFICATION, THE TESTING AND BALANCING COMPANY IN THE PRESENCE OF THE ENGINEER SHALL VISIT THE JOBSITE FOR FIELD VERIFICATION OF THE REPORT.

6. AFTER SUBMISSION OF THE FIELD VERIFIED BALANCING REPORT, THE AIR BALANCING COMPANY SHALL RETURN TO THE JOB SITE TO PERFORM TWO (2) OCCUPANT COMFORT BALANCES AS DIRECTED BY THE OWNER OR ENGINEER.

7. THE FINAL REPORT AFTER THE COMFORT BALANCE IS TO BE INCLUDED IN PROJECT OPERATING AND MAINTENANCE MANUAL.

8. THE TESTING AND BALANCING AGENCY SHALL INCLUDE AS PART OF THEIR WORK AN EXTENDED WARRANTY OF 90 DAYS AFTER COMPLETION OF TEST AND BALANCE WORK. THE ENGINEER AT HIS DISCRETION DURING THE WARRANTY PERIOD MAY REQUEST A RECHECK OR RESETTING OF ANY EQUIPMENT. THE MECHANICAL CONTRACTOR AND THE BALANCING CONTRACTOR SHALL PROVIDE THE NECESSARY TECHNICIANS TO FACILITATE THIS WORK.

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

B. AIR BALANCING

1. PRE-CONSTRUCTION AIR TESTING: MEASURE PRESSURE, TEMPERATURE, AND VOLUME OF AIR FROM THE EXISTING BASE BUILDING SYSTEM BEFORE STARTING WORK. TRAVERSE MAIN SUPPLY AND RETURN DUCTS BEFORE WORK TO OBTAIN TOTAL FLOW. SUBMIT REPORT TO THE ENGINEER IMMEDIATELY AFTER COMPLETION OF THE TEST.

2. HVAC CONTRACTOR SHALL ENSURE THAT A FIRST SET OF AIR FILTERS ARE IN PLACE, WHENEVER FANS ARE RUNNING AND REPLACED WITH A NEW CLEAN SET OF FILTERS BEFORE TESTING IS COMMENCED.

3. TEST, ADJUST, REPLACE SHEAVES, AND BALANCE ALL EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE AIR QUANTITIES INDICATED ON PLANS WITHIN PLUS OR MINUS 5 PERCENT.

4. TEST REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:

A) FLOW, LEAKAGE CLASS, TEMPERATURE, STATIC PRESSURE OF AIR AT ALL TRUNK DUCTS SERVING AREAS OF WORK.

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

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

D) PROVIDE FOR ALL FANS, FAN MOTOR HP, AMPS, VOLTS, FAN RPM, CFM, INLET AND DISCHARGE STATIC PRESSURE, SHEAVE POSITION.

E) PROVIDE FOR ALL INDUCTION UNITS, SUPPLY CFM, MIXED AIR AND SUPPLY AIR TEMPERATURES (DRY BULB - COOLING AND HEATING, WET-BULB-COOLING). INDICATE UNIT OPERATING MODE DURING TEST.

F) CALIBRATE ALL NEW AND EXISTING TO BE REUSED TERMINAL BOXES (VAV, FAN POWERED OR DUAL DUCT)AS REQUIRED TO MEET SPECIFIED MINIMUM/MAXIMUM CFM.

G) LISTING OF DESIGN AND ACTUAL READINGS AS WELL AS ALL MANUFACTURER'S DATA FOR EQUIPMENT.

2.08 EQUIPMENT

A. PROVIDE ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS SCHEDULED AND AS INDICATED ON THE DRAWINGS.

B. INSTALL EQUIPMENT IN ACCORDANCE WITH APPROVED SHOP DRAWINGS, MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS, AND ALL AUTHORITIES HAVING JURISDICTION.

C. PROVIDE EQUIPMENT SUPPORTS AND/OR MOUNTINGS AS INDICATED ON THE DRAWING, IN VIBRATION SPECIFICATION AND AS FOLLOWS:

1. CEILING MOUNTED EQUIPMENT - PROVIDE SUPPORTS WITH APPROVED SUITABLE ANCHORS SUSPENDED DIRECTLY FROM BUILDING STEEL STRUCTURE.

2. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE EQUIPMENT LOAD.

D. EQUIPMENT SHALL BE INSTALLED WITH VIBRATION ISOLATION, REFER TO VIBRATION ISOLATION SECTION.

E. INDUCTION UNITS:

A) UPON COMPLETION OF CONSTRUCTION, CONTRACTOR TO PERFORM THE FOLLOWING ITEMS TO IU
1) VACUUM CLEAN UNIT ENCLOSURE.

2) CALIBRATE NEW CONTROL VALVES.

B) PROVIDE NEW UNIT THERMOSTATS AND CONTROL VALVES AS SHOWN ON DETAIL. PROVIDE NEW TO MATCH BASE BUILDING STANDARD WHERE SHOWN ON PLAN.

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PROJECT ISSUANCES/REVISIONS

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RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

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MECHANICAL SPECIFICATIONS

DRAWING #

M-302

F. DIFFUSERS, GRILLES AND REGISTERS

1. GENERAL

A) GRILLES, REGISTERS AND DIFFUSERS SHALL BE TESTED IN ACCORDANCE WITH ASHRAE STANDARD 70–1991 OR LATEST EDITION. THE MANUFACTURER SHALL PROVIDE PUBLISHED PERFORMANCE DATA FOR ALL AIR INLETS AND OUTLETS TO BE USED ON PROJECT AS PART OF THE SUBMISSION.

B) THE MECHANICAL CONTRACTOR TO COORDINATE THE LOCATION OF DIFFUSERS, GRILLES AND REGISTERS WITH OTHER TRADES AND WITH CEILING AND WALL CONSTRUCTION. THE MECHANICAL CONTRACTOR IS TO VERIFY THAT ALL DIFFUSERS, GRILLES AND REGISTERS ARE COMPATIBLE WITH CEILING CONSTRUCTION TO WHICH THEY ARE TO BE INSTALLED.

C) COORDINATE ALL WORK WITH THE GENERAL CONTRACTOR AND REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION, LENGTHS AND FOR FRAMING AND MITERING ARRANGEMENTS THAT MAY DIFFER FROM THOSE SHOWN ON HVAC DRAWINGS. PROVIDE ALL REQUIRED GENERAL CONSTRUCTION, FRAMING, BLOCKING, PLASTERING AND SUPPORTS TO MATCH CEILING, SOFFIT OR WALL CONSTRUCTION AS PART OF THE PROJECT.

D) INLETS AND OUTLETS SHALL HANDLE AIR QUANTITIES INDICATED AT OPERATING VELOCITIES WITH SOUND PRESSURE LEVEL NOT TO EXCEED NC–30, UNLESS NOTED OTHERWISE.

E) DIFFUSERS, GRILLES AND REGISTERS SHALL BE INSTALLED WITH FACES SET LEVEL AND PLUM AND MOUNTED TIGHTLY AGAINST MOUNTING SERVICE.

F) ALL AIR INLETS AND OUTLETS SHALL BE STEEL OR ALUMINUM CONSTRUCTION. USE ALUMINUM FOR APPLICATIONS EXPOSED TO MOISTURE. FINISHES TO BE SELECTED BY THE ARCHITECT.

G) DIFFUSERS, GRILLES AND REGISTERS SHALL BE MANUFACTURED BY TITUS, ANEMOSTAT OR APPROVED EQUAL.

H) SUBMIT FOR APPROVAL A COMPLETE SCHEDULE OF ALL AIR INLETS AND OUTLETS TO BE USED ON PROJECT INCLUDING MANUFACTURER'S MODELS, SIZES, PERFORMANCES, ACCESSORIES, ACOUSTIC INFORMATION, FINISHES, ETC., BEFORE RELEASE FOR FABRICATION. NOTE ANY DEVIATIONS FROM SPECIFICATIONS AND SCHEDULES SHALL BE INDICATED ON SUBMITTAL.

2. AIR INLET AND OUTLET DEVICES:

A) PROVIDE DIFFUSERS, GRILLES AND REGISTERS FOR SUPPLY, RETURN AND EXHAUST INLETS AND OUTLETS, OF THE SIZE, TYPE AND DESIGN INDICATED ON DRAWINGS.

B) ALL CEILING DIFFUSERS SHALL BE PROVIDED WITH EQUALIZING GRIDS.

C) ALL SUPPLY, RETURN, AND EXHAUST AIR REGISTERS SHALL BE PROVIDED WITH AN OPPOSED BLADE DAMPER.

D) SUPPLY REGISTERS SHALL HAVE TWO SETS OF DIRECTIONAL CONTROL BLADES.

E) ONLY 4–WAY DIFFUSERS SHALL BE USED. PROVIDE BLANK–OFF SHEETMETAL BAFFLE FOR ALL 1–WAY, 2–WAY AND 3–WAY DIFFUSERS.

F) ALL LINEAR DIFFUSERS SHALL BE PROVIDED WITH CABLE OPERATED OPPOSED BLADE DAMPER ADJUSTABLE THROUGH THE FACE OF THE DIFFUSER. DAMPERS AND PLENUM TAPS SHALL BE SPACED AT A MAXIMUM OF 4 FEET ON CENTER. PROVIDE DIFFUSERS WITH ADJUSTABLE AIR PATTERN CONTROL VALVES.

2.09 AUTOMATIC TEMPERATURE CONTROLS

G. GENERAL:

1. FURNISH AND INSTALL AS HEREIN SPECIFIED, A COMPLETE AUTOMATIC TEMPERATURE CONTROL SYSTEM OF THE DDC TYPE.

2. SUBJECT TO COMPLIANCE WITH THE PROJECT REQUIREMENTS, MANUFACTURER SHALL BE SCHNEIDER.

3. ALL TEMPERATURE CONTROL SYSTEMS AND COMPONENTS UNDER THIS SUBCONTRACT ARE TO BE FULLY MODULATING TYPE, EXCEPT WHERE NOTED OTHERWISE. THE SYSTEM SHALL BE COMPLETE IN ALL RESPECTS INCLUDING ALL ASSOCIATED CONTROL EQUIPMENT, THERMOSTATS, CONTROL VALVES, VALVE ACTUATORS, DAMPER OPERATORS, RELAYS, PILOT POSITIONERS, CONTROL WIRING, CONTROL AIR PIPING, SWITCHES, INTERLOCK WIRING, ELECTRICAL OR PNEUMATIC CONTROL COMPONENTS AND ASSOCIATED PIPING OR WIRING, APPURTENANCES, ETC., TO PROVIDE THE FUNCTIONS DESCRIBED IN THESE SPECIFICATIONS AND PLANS, REGARDLESS OF WHETHER OR NOT SAID DEVICE RELAY, ETC. IS SPECIFICALLY MENTIONED HEREAFTER.

4. THE SYSTEM SHALL BE SUPERVISED AND CHECKED OUT COMPLETELY IN ALL RESPECTS BY COMPETENT MECHANICS, REGULARLY EMPLOYED BY THE MANUFACTURER.

5. ALL CONTROLS MUST BE THE PRODUCT OF ONE MANUFACTURER. ALL AUTOMATIC CONTROL VALVES, SENSORS AND DAMPER OPERATORS SHALL BE BY THE SAME MANUFACTURER.

6. THE CONTROL SYSTEMS SHALL BE IN ACCORDANCE WITH THE FOLLOWING DESCRIPTION OF SYSTEM OPERATIONS AND/OR DETAIL INFORMATION SHOWN ON THE PLANS AND AS DESCRIBED HEREIN.

A) THE MANUFACTURER OF THE AUTOMATIC CONTROL EQUIPMENT SHALL SUBMIT THE FOLLOWING FOR APPROVAL: A SCHEMATIC DIAGRAM OF EACH CONTROL SYSTEM WHICH SHALL INDICATE THE PROPER SEQUENCE OF OPERATION AND RANGE OF THE CONTROLS FOR ALL CYCLES. PROVIDE A COMPLETE DESCRIPTION OF THE AUTOMATIC OPERATION OF EACH SYSTEM. THE DESCRIPTION SHOULD INCLUDE THE DUTY OF EACH THERMOSTAT, VALVE, SWITCH, ETC., INCORPORATED IN THE CONTROL SYSTEM WITH A SCHEDULE AND ILLUSTRATION OF ALL CONTROL INSTRUMENTS AND EQUIPMENT INCLUDING CONTROL PANELS AND DEVICES FOR EACH SYSTEM.

A. ELECTRIC WIRING:

1. ALL ELECTRICAL WORK (EXCEPT FOR MOTOR FEEDERS, WIRING BETWEEN MOTORS, MOTOR CONTROLLERS, FEEDER PANELS, FUSES, CIRCUIT BREAKERS AND BUS BARS) REQUIRED FOR THE AUTOMATIC TEMPERATURE CONTROL SYSTEM SHALL BE PROVIDED BY THIS CONTRACTOR. WORK SHALL INCLUDE BUT NOT BE LIMITED TO TIME SWITCHES, DAMPER MOTORS, DAMPER SWITCHES, ELECTRIC THERMOSTATS, ELECTRIC RELAYS, E/P SWITCHES, INTERLOCKING WIRING, WIRE, CONDUIT, ETC.

2. ALL 115 VOLT POWER REQUIRED FOR CONTROL PURPOSES SHALL BE PROVIDED BY THE CONTROL CONTRACTOR FROM A SOURCE ESTABLISHED BY THE ELECTRICAL CONTRACTOR.

3. THE CONTROL MANUFACTURER SHALL INCLUDE WIRING DIAGRAMS IN HIS SHOP DRAWINGS SUBMITTALS FULLY COORDINATED WITH THE ELECTRICAL CONTRACTOR'S WORK. IT SHALL BE THE AUTOMATIC TEMPERATURE CONTROL CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL WIRING AND CONDUIT AS REQUIRED TO ACHIEVE THE FUNCTION CALLED FOR IN THESE SPECIFICATIONS, CONFORMING WITH LOCAL CODES FOR MATERIAL AND INSTALLATION. THE ELECTRICAL SPECIFICATION FOR THE PROJECT'S ELECTRICAL WORK IS TO BE FOLLOWED.

4. FURNISH A CERTIFICATE INDICATING THE METHOD OF WIRING COMPLIANCE WITH LOCAL CODES AS PART OF THE FIRST SHOP DRAWING SUBMITTAL.

D. ROOM THERMOSTAT AND SWITCH LOCATIONS:

1. ALL ROOM THERMOSTATS AND SWITCH LOCATIONS (WHETHER SHOWN ON PLANS OR NOT) SHALL BE SELECTED AND SUBMITTED BY THE TEMPERATURE CONTROL MANUFACTURER FOR APPROVAL BY THE ARCHITECT AND ENGINEER PRIOR TO ACTUAL INSTALLATION.

2. EACH PROGRAMMABLE THERMOSTAT SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING LOSS OF POWER FOR AT LEAST 10 HOURS.

3. EACH PROGRAMMABLE THERMOSTAT SHALL BE CAPABLE OF MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2–HOURS.

4. EACH PROGRAMMABLE THERMOSTAT SHALL INCLUDE MANUAL SET POINT ADJUSTMENT BY THE ROOM OCCUPANT.

5. HEATING AND COOLING THERMOSTATS SHALL BE PROVIDED WITH A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F.

6. COLOR SHALL BE WHITE, UNLESS OTHERWISE NOTED.

7. LABEL EACH THERMOSTAT AND SWITCH WITH THE BMS DESIGNATION FOR THE EQUIPMENT SERVED (I.E. VAV–3–7).

E. SEQUENCE OF OPERATIONS:

1. ABBREVIATIONS

A) BMS: BUILDING MANAGEMENT SYSTEM.

B) DDC: DIRECT DIGITAL CONTROL.

C) VAV: VARIABLE AIR VOLUME.

D) CV: CONSTANT VOLUME.

E) AI: ANALOG INPUT.

F) AO: ANALOG OUTPUT.

G) DI: DIGITAL INPUT.

H) DO: DIGITAL OUTPUT.

2. GENERAL

A) ALL POINTS REQUIRED BY THE SEQUENCE OF OPERATION AND ALL ASSOCIATED VALUES SHALL BE AVAILABLE TO THE OPERATOR AT THE BMS OPERATOR INTERFACE, AS A GRAPHICAL DISPLAY THAT DEPICTS ALL MECHANICAL SYSTEMS CONTROLLED.

B) ALL SETPOINTS SHALL BE ADJUSTABLE FROM THE BMS OPERATOR INTERFACE. THIS INCLUDES SETPOINTS INTERNAL TO CONTROL ALGORITHMS. ALL COMMANDS SHALL BE SUBJECT TO OVERRIDE FROM THE BMS OPERATOR INTERFACE. ALL CONTROL POINTS SHALL BE ADJUSTABLE OR SUBJECT TO OVERRIDE FROM THE SAME GRAPHICAL PAGE ON WHICH THE POINTS ARE DISPLAYED.

C) ALL POINTS FOR A SPECIFIC PIECE OF EQUIPMENT SHALL BE CONTROLLED BY THE SAME DDC CONTROLLER UNLESS OTHERWISE NOTED. FOR EXAMPLE, AND AIR HANDLER FAN CANNOT BE ON A DIFFERENT DDC CONTROLLER THAN THE HYDRONIC CONTROL VALVES.

D) WHEN A PIECE OF EQUIPMENT IS DISABLED, ALL ASSOCIATED ALARMS SHALL BE INHIBITED.

E) WHEN A MOTOR CONTROLLER IS EQUIPPED WITH A HAND–OFF–AUTO (HOA) SWITCH, THE MOTOR SHALL ONLY BE CONTROLLED BY THE BMS WHEN THE SWITCH IS IN THE "AUTO" POSITION.

F) POINTS LISTS ARE PROVIDED FOR CONVENIENCE, BUT ARE NOT ALL INCLUSIVE. THE AUTOMATIC TEMPERATURE CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL POINTS, DEVICES, SENSORS, AND CONTROL WIRING NECESSARY TO ACCOMPLISH THE SPECIFIED SEQUENCES OF OPERATIONS. ALL POINTS REQUIRED TO PROVIDE THE SEQUENCE OF OPERATIONS SHALL BE INCLUDED IN THE AUTOMATIC TEMPERATURE CONTROLS CONTRACTOR 'S BID AS IF LISTED.

G) IN THE CASE OF A DISCREPANCY, THE WORST CASE OR HIGHEST COST SHALL APPLY. THE BMS CONTACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY.

F. DX SPLIT SYSTEM COIL AND AIR CONDITIONING UNITS

A) THE CONTRACTOR SHALL MOUNT AND WIRE ALL CONTROL COMPONENTS THAT ARE SHIPPED WITH THE UNIT THAT ARE NOT FACTORY INSTALLED. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE MANUFACTURER–SUPPLIED WALL MOUNTED TEMPERATURE SENSOR, WALL–MOUNTED CONTROLLER, ETC.

B) THE A CONTRACTOR SHALL FURNISH, MOUNT, AND WIRE ANY ADDITIONAL COMPONENTS NOT PROVIDED BY THE UNIT MANUFACTURER TO ACHIEVE A COMPLETELY OPERATIONAL SYSTEM. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, ANY DEVICES REQUIRED TO INTERFACE TO THE UNIT.

C) THE A CONTRACTOR SHALL PROVIDE A LEAK DETECTOR IN THE EXTERNAL DRIP PAN BELOW EACH UNIT.

1) LEAK DETECTOR SHALL BE HARDWIRE INTERLOCKED TO SHUT DOWN THE AC UNIT COMPRESSOR.

D) A "COMMON ALARM" DRY CONTACT OUTPUT AT THE UNIT SHALL BE HARDWIRED BY AUTOMATIC TEMPERATURE CONTROLS CONTRACTOR TO A DRY CONTACT AT THE TENANT'S SECURITY PANEL. COORDINATE SPECIFIC DRY CONTACT WITH THE SECURITY CONTRACTOR.

E) THE UNIT SHALL OPERATE AS PER THE MANUFACTURER PROVIDED CONTROLS AND SEQUENCE OF OPERATION DESCRIBED BELOW. PROVIDE ALL NECESSARY PROGRAMMING FOR THE MANUFACTURER'S PACKAGED CONTROLS, INCLUDING SPACE TEMPERATURE HEATING/COOLING OCCUPIED/UNOCCUPIED SETPOINTS IN AND OCCUPANCY SCHEDULES.

F) DURING OCCUPIED HOURS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY, COOLING SETPOINT SHALL BE 75°F (ADJ), AND HEATING SETPOINT SHALL BE 75°F (ADJ).

G) DURING UNOCCUPIED HOURS, THE SUPPLY FAN SHALL CYCLE UPON CALL FOR COOLING OR HEATING BUT OTHERWISE BE OFF, COOLING SETPOINT SHALL BE 85°F (ADJ), AND HEATING SETPOINT SHALL BE 65°F (ADJ).

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RENOVATIONS TO 163 IVY ST

163 IVY ST
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MECHANICAL SPECIFICATIONS

DRAWING #

M-303

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF OUTDOOR UNIT SCHEDULE

Serves	Tag Reference	M-NET Address	Model Number	Modules	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Efficiency IEER/EER [SEER]	Heating COP @ 47°F [HSPF]	Nom System Connected Capacity (% of NOM)	Design Cooling Outdoor Temp DB (°F)	Design Heating Outdoor Temp WB (°F)	Max Pipe Length from BC or 1st Joint (feet)	Refrig Pipe Dim High/Low Pressure (inch) (See Note 4)	Corrected Cooling Total Capacity (BTU/h)	Corrected Heating Capacity (BTU/h)	Electrical-Per Module 208/230 or [460V]				Notes / Options
																Voltage / Phase	MCA 208/230 or [460V]	RFS	MOCP	
HP-1/2	ACCU-2	N/A	NTXMPH24A132BA		22,000.0	25,000.0	11.75 [17.25]	0 [9.5]	100.0%	95.0	43.0	20.0	0 / 0	22,161.4	24,821.1	208/230V / 1-phase	30.5	40	40	1, 2, 3, 4, 5

Notes & Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)
2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
3 Efficiency values for EER, IEER, COP are based on AHRI 1230 test method for mixture of ducted & non-ducted indoor units.
4 For systems with multiple modules, refrigerant pipe dimensions indicate total system combined piping downstream of module twinning.
5 Added field charge listed is in addition to factory charge, this must be updated based upon final as-built piping layout.

MITSUBISHI ELECTRIC TRANE HVAC US: CITY MULTI VRF INDOOR UNIT SCHEDULE

System Tag	Room Name	Tag Reference	Model	Type	Nominal Cooling Capacity (BTU/h)	Nominal Heating Capacity (BTU/h)	Cooling Design Entering Temp DB/WB (°F) / [Water in temp]	Heating Design Entering Temp DB/WB (°F) / [Water in temp]	Corrected Capacity					Estimated Cooling Coil LAT (°F) / [LWT]	Estimated Heating Coil LAT (°F) / [LWT]	Refrig Pipe Dim Liquid/Suction (inch)	Fan Speed Setting	Peak Fan Airflow (cfm) / [Design gpm G(US)/min]	Max Fan ESP Setting 208V/230V (IN WG)	Voltage / Phase	Power Cooling 208V/230V (kW)	Power Heating 208V/230V (kW)	Electrical MCA/MFS	Notes / Options
									Cooling Diversity Full/Partial (See Note 5, 6)	Cooling Total Capacity (BTU/h)	Cooling Sensible Capacity (BTU/h)	Heating Diversity Full/Partial (See Note 5, 6)	Heating Capacity (BTU/h)										
HP-1		IDU-1	NTXWST09A112AA	Wall -Mounted	8,300.0	9,400.0	80.0/67.0	70.0	FULL DEMAND	8,323.1	7,757.3	FULL DEMAND	9,295.6	62.0	91.2	1/4 / 3/8	HIGH	406		208/230V/1-phase			Powered by Outdoor	1, 2, 3, 4, 5, 6
HP-1		IDU-2	NTXWST09A112AA	Wall -Mounted	8,300.0	9,400.0	80.0/67.0	70.0	FULL DEMAND	8,323.1	7,757.3	FULL DEMAND	9,295.6	62.0	91.2	1/4 / 3/8	HIGH	406		208/230V/1-phase			Powered by Outdoor	1, 2, 3, 4, 5, 6
HP-2		IDU-3	NTXWST06A112AA	Wall -Mounted	5,500.0	6,300.0	80.0/67.0	70.0	FULL DEMAND	5,515.3	5,515.3	FULL DEMAND	6,230.0	67.2	84.2	1/4 / 3/8	HIGH	406		208/230V/1-phase			Powered by Outdoor	1, 2, 3, 4, 5, 6

Notes & Options:

1 Nominal cooling capacities are based on indoor coil EAT of 80/67°F (DB/WB), outdoor of 95°F (DB)
2 Nominal heating capacities are based on indoor coil EAT of 70°F (DB), outdoor of 43°F (WB)
3 See outdoor unit schedule for outdoor ambient conditions, connected capacity, and other factors associated with corrected capacities
4 See schematic piping/control diagram for indication of required indoor unit remote controllers, system controllers, and integration devices.
5 Full demand corrected capacity includes de-rate associated with indoor vs. outdoor connected capacity indicated on outdoor unit schedule for associated system.
Partial corrected capacity assumes sufficient diversity exists such that the connected capacity de-rate does not apply.
It is the designer's responsibility to ensure "Diamond System Builder" is set in the appropriate output capacity setting (full demand/partial demand) prior to generating this schedule.
6 It is recommended to always base heating corrected capacity on full demand.
7 Provide condensate pump kit for HP-1 only

DIFFUSER, REGISTER, & GRILLE SCHEDULE

UNIT TAG	APPLICATION	FACE/SLOTS WxL (IN.)	NECK/INLET (IN.)	CFM RANGE	T.S.P. (IN. W.G.)	NC	MANUFACTURER	MODEL	REMARKS
CD-1	SUPPLY	6x6	6"	35-135	0.10	11-24	TITUS	TDV ROUND	SEE NOTES
RG-1	RETURN	VARIES	10.5" X 23"	VARIES	0.10	-	TITUS	25RS-NT	CEILING MOUNTED
RG-2	RETURN	VARIES	10.5" X 23"	VARIES	0.10	-	TRUAIRE	154R-14X24	FLOOR MOUNTED

NOTES:
1. COORDINATE BORDER, FRAME AND FINISH OF AIR OUTLETS WITH ARCHITECT.
2. PROVIDE LEVER OPERATED DAMPERS FOR SUPPLY, RETURN, AND EXHAUST DEVICES, IN INACCESSIBLE CEILINGS;

TRANE 1.5 - 5 Ton Unitary Split Systems

Unit Tags	Quantity	Condensing Unit Type (ACCU-1)	Coil Type	Furnace Type	Cooling nominal capacity (MBH)	Furnace Heating (MBH)	Airflow	Electrical Requirements (OUTDOOR)	Electrical Requirements (INDOOR)
AHU-1/AHU-2	2	4TTR4024L1	4TXCB003DS3HC	S9X2B040U3PSB	24	40	Conv-upflow/dnflw,left airflow coil	200-230/1/60	115/1/60

1. Provide Condensate pump for AHU-1 & AHU 2

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PROJECT ISSUANCES/REVISIONS

#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE
ISSUED FOR BID/PERMIT

PROJECT NAME
RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE
MECHANICAL SCHEDULE SHEET

DRAWING #
M-401

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GENERAL NOTES

1. ALL REFERENCES HEREIN TO THE CONTRACTOR SHALL REFER TO THE PLUMBING CONTRACTOR UNLESS OTHERWISE NOTED.
2. THE ENTIRE INSTALLATION SHALL BE COORDINATED WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. THE CONTRACTOR SHALL VERIFY, IN THE FIELD, THE EXACT LOCATION OF ALL EXISTING PLUMBING SYSTEMS PRIOR TO MAKING NEW CONNECTIONS TO EXISTING LINES. THE CONTRACTOR SHALL PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
3. DO NOT SCALE FROM THESE DRAWINGS.
4. DO NOT MAKE ANY CHANGES OR SUBSTITUTIONS WITHOUT SPECIFIC WRITTEN APPROVAL FROM THE ARCHITECT OR ENGINEER.
5. ANY DISCREPANCIES OR INADEQUACIES WITHIN BID DOCUMENTS, BETWEEN THESE BID DOCUMENTS AND RELATED HVAC, FIRE PROTECTION, ELECTRICAL, STRUCTURAL, ARCHITECTURAL, INTERIOR DECOR, AND STRUCTURAL BID DOCUMENTS, OR BETWEEN THESE BID DOCUMENTS AND FIELD CONDITIONS MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER PRIOR TO BID SUBMISSION.
6. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF RECORD "AS BUILT" DRAWINGS INDICATING THE PRECISE LOCATION OF ALL SYSTEMS, EQUIPMENT, CONCEALED OR EMBEDDED PIPING, EXPOSED PIPING, PIPING CONNECTIONS, AND ACCESS PANELS/DOORS. THESE DRAWINGS SHALL INCLUDE ALL CHANGES AND DEVIATIONS FROM CONSTRUCTION DOCUMENTS. THESE DOCUMENT SHALL ALSO BE PROVIDED TO THE OWNER IN AN APPROVED AUTOCAD FORMAT.
7. THE CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS OF ALL PLUMBING EQUIPMENT WITH THE ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR. THE CONTRACTOR SHALL FURNISH PLUMBING EQUIPMENT WIRED FOR THE VOLTAGES SHOWN IN CONTRACT DOCUMENTS AND COORDINATED WITH ELECTRICAL CONTRACTOR.
8. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND ALL APPLICABLE CODES. THE CONTRACTOR SHALL PROVIDE ALL FITTINGS, TRANSITIONS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
9. THE CONTRACTOR SHALL SUBMIT, PRIOR TO ANY FABRICATION OR INSTALLATION, ALL NECESSARY DRAWINGS, EQUIPMENT/MATERIAL PRODUCT DATA, DOCUMENTATION, AND CALCULATIONS REQUIRED TO COMPLETE THE WORK OUTLINED IN THE CONTRACT DOCUMENTS.
10. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE AUTHORITIES HAVING JURISDICTION PRIOR TO ANY FABRICATION OR INSTALLATION. ALL FEES FOR PERMITS AND INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. ALL ABOVE GRADE PIPING SHALL BE PROPERLY SUPPORTED FROM THE BUILDING STRUCTURE. NO PIPING SHALL REST ON CEILING TILES OR CEILING STRUCTURE.
12. THE CONTRACTOR SHALL PROVIDE INSULATION ON ALL COLD WATER, HOT WATER, AND HOT WATER RECIRCULATION PIPING. THE CONTRACTOR SHALL PROVIDE INSULATION ON ALL HORIZONTAL STORM WATER PIPING.
13. THE CONTRACTOR SHALL PROVIDE REDUCING FITTING AT ALL CHANGES IN DIAMETER OF SANITARY, WASTE, AND STORM PIPING.
14. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SERVICE CONNECTIONS TO ALL EQUIPMENT AND FIXTURE INDICATED ON THE ARCHITECTURAL AND PLUMBING DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SERVICE CONNECTIONS TO HVAC AND FIRE PROTECTION EQUIPMENT.

ABBREVIATIONS LIST

(NOT ALL ABBREVIATIONS SHOWN ARE NECESSARILY USED ON THIS PROJECT)

BLDG	BUILDING
CO	CLEANOUT
CODP	CLEANOUT DECKPLATE
CLG	CEILING
CONN	CONNECT / CONNECTION
CONT	CONTINUE / CONTINUATION
CV	CHECK VALVE
CW	DOMESTIC COLD WATER
DIA	DIAMETER
DCV	DOUBLE CHECK VALVE BACKFLOW PREVENTER
DN	DOWN (PENETRATES FLOOR SLAB)
DW	DISHWASHER
DWG	DRAWING
EX	EXISTING
FD	FLOOR DRAIN
FT	FEET
FU	FIXTURE UNIT(S)
G	GAS
GV	GATE VALVE
GW	GREASE WASTE
GAL	GALLONS
GPM	GALLONS PER MINUTE
HW	DOMESTIC HOT WATER
HWR	DOMESTIC HOT WATER RECIRCULATION
IN	INCH
JS	JANITOR'S SINK
LAV	LAVATORY
LB	LAUNDRY BOX
MAX	MAXIMUM
MB	MANUFACTURED BY
MIN	MINIMUM
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PSI	POUNDS PER SQUARE INCH – GAUGE
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
S	SANITARY/SOIL
SK	SINK
SQFT	SQUARE FEET
ST	STORM
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UP	UP (PENETRATES FLOOR SLAB)
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THROUGH ROOF
W	WASTE
WC	WATER CLOSET

SYMBOL LIST

(NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED ON THIS PROJECT)

S	SANITARY/SOIL PIPING
S	BURIED SANITARY/SOIL PIPING
GW	GREASE WASTE PIPING
GW	BURIED GREASE WASTE PIPING
ST	STORM WATER PIPING
	VENT PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER RECIRCULATION PIPING
G	NATURAL GAS PIPING
	ARROW REPRESENTS DIRECTION OF FLOW
X X	PIPING TO BE DEMOLISHED
	PIPE BREAK
	CAPPED OUTLET
	CLEANOUT / PLUGGED OUTLET
	CLEANOUT DECK PLATE
	P-TRAP
	PIPE DROP / DOWN
	PIPE RISE / UP
	PIPE BOTTOM CONNECTION
	PIPE TOP CONNECTION
	PIPE SIDE CONNECTION
	VACUUM BREAKER
	SHOCK ARRESTOR
	DRAIN
	PUMP
	VENT THROUGH ROOF
	WATERPROOF SLEEVE
	CHECK VALVE
	BALL VALVE
	GATE VALVE
	PLUG VALVE
	OUTSIDE SCREW & YOKE VALVE
	WATER METER
	MIXING VALVE
	PRESSURE REDUCING VALVE
	SOLENOID VALVE
	GAS PRESSURE REGULATOR
	GAS SHUTOFF
	POINT OF DISCONNECTION FROM EXISTING PIPING
	POINT OF CONNECTION TO EXISTING PIPING
P	PLUMBING RISER DESIGNATION — P — RISER NUMBER
G	GAS RISER DESIGNATION — G — RISER NUMBER
L	STORM RISER DESIGNATION — L — RISER NUMBER

CONNECTICUT STATE BUILDING CODES

- 2018 CONNECTICUT STATE BUILDING CODE
- 2015 INTERNATIONAL EXISTING BUILDING CODE
- 2015 INTERNATIONAL PLUMBING CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2017 NATIONAL ELECTRICAL CODE (NFPA 70)
- LOCAL FIRE DEPARTMENT/FIRE MARSHAL
- ALL OTHER LOCAL AUTHORITIES HAVING JURISDICTION

CONNECTICUT STATEENERGY CODES

- 2015 INTERNATIONAL ENERGY CONSERVATION CODE

REFERENCED STANDARDS

APPLICABLE REFERENCE STANDARDS SHALL BE AS REFERENCED BY ALL STATE AND LOCAL CODES. THE LIST BELOW IS FOR QUICK REFERENCE AND DOES NOT INCLUDE ALL APPLICABLE REFERENCE STANDARDS.

- 2013 NFPA 13 – STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
- 2013 NFPA 14 – STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS
- 2013 NFPA 20 – STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
- 2015 NFPA 54 – NATIONAL FUEL GAS CODE
- 2017 NFPA 70 – NATIONAL ELECTRICAL CODE
- 2013 NFPA 72 – NATIONAL FIRE ALARM AND SIGNALING CODE

PLUMBING DRAWING LIST

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PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: NONE

DRAWING TITLE

PLUMBING
COVER PAGE

DRAWING #

P-001

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WATER HEATER SCHEDULE

DESIGNATION	MANUFACTURER	MODEL NUMBER	WATER STORAGE TEMPERATURE (°F)	WATER STORAGE CAPACITY (GAL)	RECOVERY RATE	TEMPERATURE RISE (°F)	ELECTRICAL DATA				GAS DATA							APPLICABLE AREAS
							TOTAL KW LOAD IN SIMULTANEOUS USE	ELEMENT LOAD (KW)	VOLTAGE	PHASE	NATURAL GAS	PROPANE	FUEL OIL	DUAL FUEL	LOAD (CFH)	MINIMUM OPERATING PRESSURE (IN WC)	GAS SERVICE CONNECTION (IN)	
HTR-1	NAVIEN	NPE-240/A2	–	–	5.6 GPM	67	–	–	120	1	●				199	4-14"WC	¾"	PROVIDE ACID NEUTRALIZATION KIT (NAVIEN) & CONDENSATE PUMP (MN:LITTLE GIANT). ALSO PROVIDE DIRECT INTAKE FOR EACH HTR. FLUE PIPING TO BE COMBINED WITH COMMON TERMINATION POINT VIA SIDEWALL

PIPE, FITTING, AND JOINT MATERIAL SCHEDULE

(NOT ALL PIPE, FITTING, AND JOINT MATERIALS SHOWN ARE NECESSARILY USED ON THIS PROJECT)

PIPING SYSTEM	PIPING LOCATION	PIPING SIZE	PIPING SPECIFICATION	FITTING SPECIFICATION	JOINT SPECIFICATION
SANITARY/WASTE/ VENT	ALL	ALL	PVC SOLID CORE; SCHEDULE 40	PVC SOLID CORE; SCHEDULE 40	PVC CEMENT
INDIRECT WASTE	ALL	ALL	PVC SOLID CORE; SCHEDULE 40	PVC	PVC CEMENT
COLD WATER/HOT WATER/ HOT WATER CIRCULATION	ALL	ALL	PEX/CPVC SCHEDULE 40	PEX/CPVC SCHEDULE 40	PEX JOING / CPVC CEMENT
GAS	ALL	ALL	SCHEDULE 40 BLACK STEEL	MALLEABLE IRON WITH THREADED ENDS	THREADED

OPENING / SLEEVE SCHEDULE

INSULATED DOMESTIC COLD WATER, HOT WATER, AND HOT WATER RECIRCULATION PIPING		
PIPE DIAMETER	WALL / FLOOR SLEEVE DIAMETER	BEAM OPENING DIAMETER
½" & ¾"	3"	4"
1"	4"	4½"
1¼"	4"	5"
1½"	4"	5"
2" & 2½"	5"	6"
3"	6"	6½"
UNINSULATED SANITARY, WASTE, VENT, STORM, AND GAS PIPING		
PIPE DIAMETER	WALL / FLOOR SLEEVE DIAMETER	BEAM OPENING DIAMETER
1½"	3"	3"
2"	4"	3½"
2½"	4"	4"
3"	5"	4½"
4"	6"	5½"
5"	8"	6½"
6"	8"	7½"

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PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: NONE

DRAWING TITLE

PLUMBING SCHEDULES

DRAWING #

P-002

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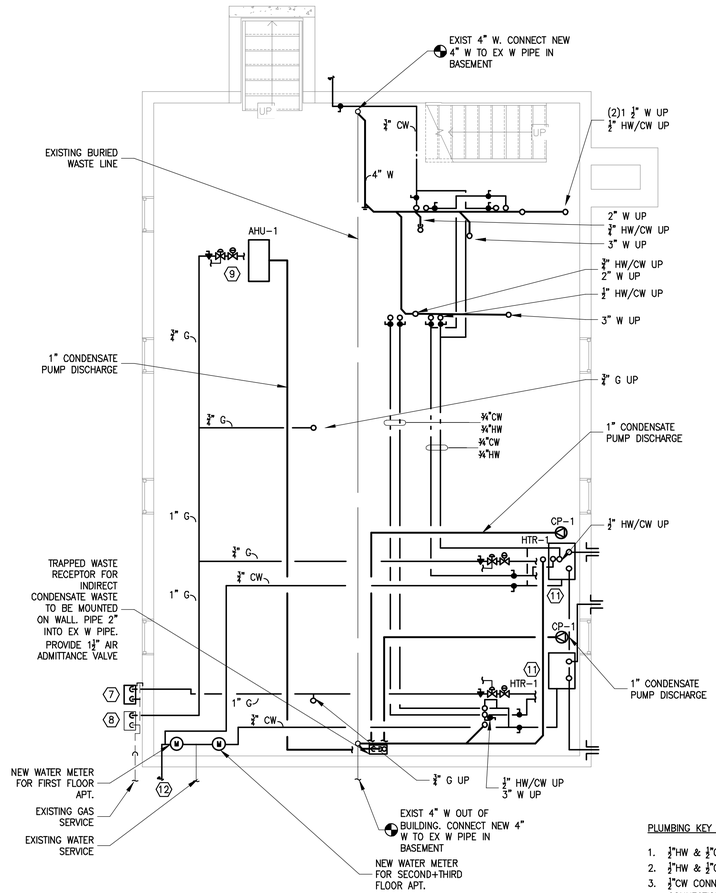
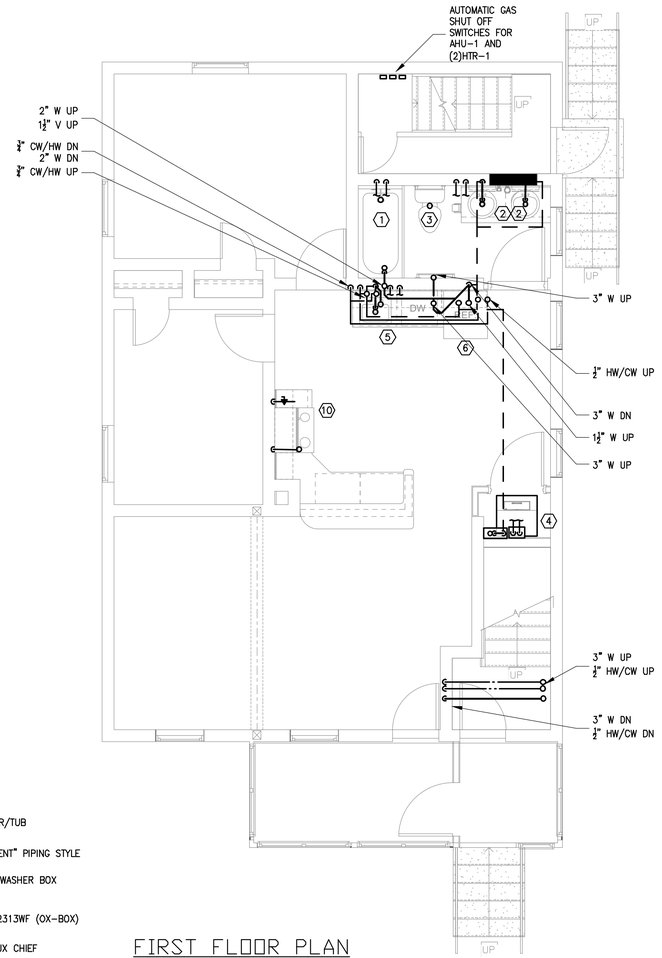


BASEMENT FLOOR PLAN

1/4" = 1'-0"



FIRST FLOOR PLAN

1/4" = 1'-0"

PLUMBING KEY NOTES

1. ¾"HW & ¾"CW CONN., 2"W DN & 1½" V RISE TO SHOWER/TUB
2. ¾"HW & ¾"CW CONN., 2"W DN & 1½" V RISE TO LAV
3. ¾"CW CONN. 3" W DN TO W.C. VENT TO BE BY "WET VENT" PIPING STYLE CONNECTION
4. ¾"HW & ¾"CW CONN. 2"W, 1½"V ROSE TO WM. PROVIDE WASHER BOX W/WATER HAMMER ARRESTORS AND LEAK DETECTION.
   - 4.1. LEAK DETECTION MB:FLOOD-STOP MOD#FS3/4H90
   - 4.2. WASHER MACHINE BOX MB:SIOUX CHIEF MOD#696G2313WF (OX-BOX)
5. ¾"HW & ¾"CW CONN. 2" W DN, 1½" V RISE TO KS/DW.
6. ¾"CW CONN TO REF. PROVIDE ICE MAKER BOX MB: SIOUX CHIEF MOD#696-G1010MF
7. PROVIDE NEW GAS METER IN LOCATION OF OLD GAS METER. COORDINATE WITH GAS COMPANY METER ACTIVATION REQUIREMENTS. ROUTE 1"G INTO BASEMENT. Meter outlet to be 10" W.C. MAX
8. EX GAS METER TO REMAIN. PROVIDE NEW 1" PIPE FROM GAS METER INTO BASEMENT. METER OUTLET TO BE 10" W.C. MAX
9. PROVIDE ¾" G TO GAS FIRED AHU/FURNACE IN ATTIC. PROVIDE REGULATOR WITH VENT LIMITING DEVICE & SOLENOID VALVE TO PRODUCE OUTLET PRESSURE WITHIN EQUIPMENT RANGE PER EQUIPMENT MANUAL. PROVIDE AUTOMATIC GAS SHUT OFF AT TOP OF BASEMENT STAIRS. PROVIDE AUTOMATIC UNIT SHUT DOWN WITH DRIP PAN & LEAK SENSOR.
10. PROVIDE ¾" G TO STOVE. SHUT OFF VALVE TO BE LOCATED WITHIN 3' OF APPLIANCE AND PLACED IN A READILY ACCESSIBLE LOCATION. CONTRACTOR TO VERIFY APPLIANCE REGULATOR TO PRODUCE NECESSARY PRESSURE OPERATING RANGE BASED ON EQUIPMENT SPECIFICATION AN 10" W.C INLET.
11. HTR-1: SEE HOT WATER HEATER SCHEDULE AND DETAIL FOR FURTHER DIRECTIONS. PROVIDE ¾"HW & CW CONNECTION TO HEATER.
    - 11.1. PROVIDE AUTOMATIC SOLENOID GAS SHUT OFF SWTICH TO HEATER. PROVIDE PLUG VALVE SHUT OFF AND REGULATOR W/ VENT LIMITING DEVICE. LOCATE AT TOP OF BASEMENT STAIRS
    - 11.2. PROVIDE 4" COMBINED FLUE OUT OF BUILDING. KEEP 5' FROM ANY OPERABLE WINDOW. FLUE PIPE TO BE PITCHED 1/4" / FOOT UP TOWARDS TERMINATION POINT
    - 11.3. PROVIDE DIRECT VENT INTAKE FOR EACH HTR-1
    - 11.4. PROVIDE ACID NEUTRALIZATION KIT(MB: NAVIEN) AND WALL MOUNT CONDENSATE PUMP (MB: LITTLE GIANT; MOD#55425).
12. PROVIDE FREEZELESS WALL HYDRANT. PROVIDE ¾" CW LINE. SHUT OFF TO BE LOCATED IN UNIT KITCHEN CABINET FOR WINTER DRAIN DOWN.

MASTROLUCA ENGINEERING ASSOCIATES, LLC
51 ZEPHYR RD TRUMBULL CT 06611
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JMASTROLUCA.MEA@GMAIL.COM

PROJECT ISSUANCES/REVISIONS

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PHASE

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PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

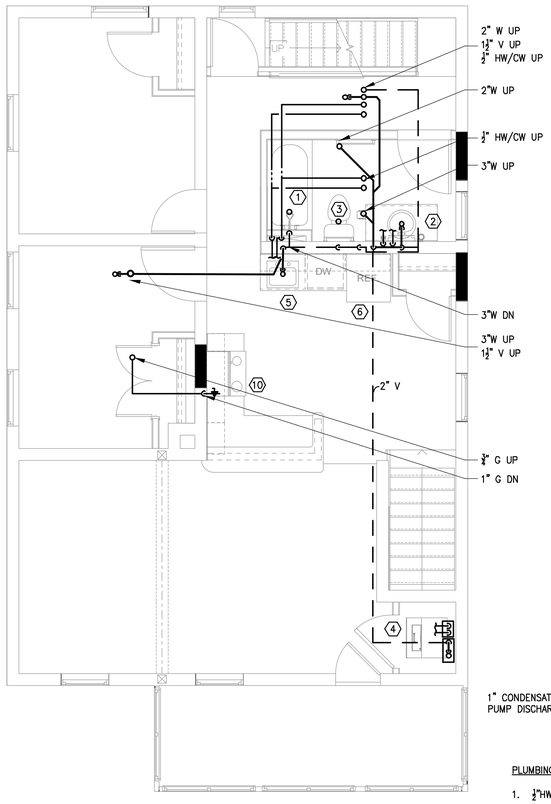
SCALE: AS NOTED

DRAWING TITLE

PLUMBING
FLOOR PLANS

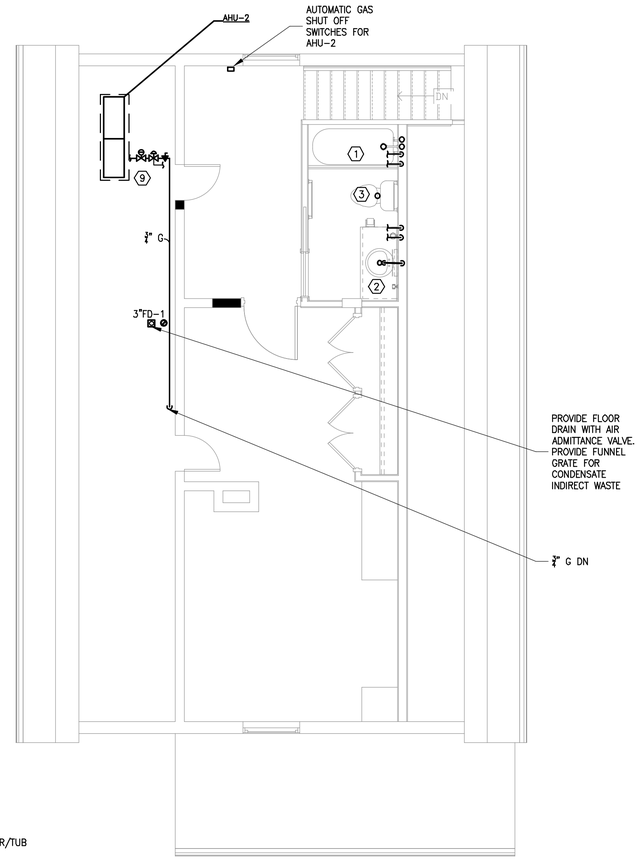
DRAWING #

P-101



SECOND FLOOR PLAN

1/4" = 1'-0"



THIRD FLOOR PLAN

1/4" = 1'-0"

PLUMBING KEY NOTES

1. ¾"HW & ¾"CW CONN., 2"W DN & 1½" V RISE TO SHOWER/TUB
2. ¾"HW & ¾"CW CONN., 2"W DN & 1½" V RISE TO LAV
3. ¾"CW CONN. 3" W DN TO W.C. VENT TO BE BY "WET VENT" PIPING STYLE CONNECTION
4. ¾"HW & ¾"CW CONN. 2"W, 1½"V ROSE TO WM. PROVIDE WASHER BOX W/WATER HAMMER ARRESTORS AND LEAK DETECTION.
   - 4.1. LEAK DETECTION MB:FLOOD-STOP MOD#FS3/4H90
   - 4.2. WASHER MACHINE BOX MB:SIOUX CHIEF MOD#696G2313WF (OX-BOX)
5. ¾"HW & ¾"CW CONN. 2" W DN, 1½" V RISE TO KS/DW.
6. ¾"CW CONN TO REF. PROVIDE ICE MAKER BOX MB: SIOUX CHIEF MOD#696-G1010MF
7. PROVIDE NEW GAS METER IN LOCATION OF OLD GAS METER. COORDINATE WITH GAS COMPANY METER ACTIVATION REQUIREMENTS. ROUTE 1"G INTO BASEMENT. Meter outlet to be 10" W.C. MAX
8. EX GAS METER TO REMAIN. PROVIDE NEW 1" PIPE FROM GAS METER INTO BASEMENT. METER OUTLET TO BE 10" W.C. MAX
9. PROVIDE ¾" G TO GAS FIRED AHU/FURNACE IN ATTIC. PROVIDE REGULATOR WITH VENT LIMITING DEVICE & SOLENOID VALVE TO PRODUCE OUTLET PRESSURE WITHIN EQUIPMENT RANGE PER EQUIPMENT MANUAL. PROVIDE AUTOMATIC GAS SHUT OFF AT TOP OF BASEMENT STAIRS. PROVIDE AUTOMATIC UNIT SHUT DOWN WITH DRIP PAN & LEAK SENSOR.
10. PROVIDE ¾" G TO STOVE. SHUT OFF VALVE TO BE LOCATED WITHIN 3' OF APPLIANCE AND PLACED IN A READILY ACCESSIBLE LOCATION. CONTRACTOR TO VERIFY APPLIANCE REGULATOR TO PRODUCE NECESSARY PRESSURE OPERATING RANGE BASED ON EQUIPMENT SPECIFICATION AN 10" W.C INLET.
11. HTR-1: SEE HOT WATER HEATER SCHEDULE AND DETAIL FOR FURTHER DIRECTIONS. PROVIDE ¾"HW & CW CONNECTION TO HEATER.
    - 11.1. PROVIDE AUTOMATIC SOLENOID GAS SHUT OFF SWITCH TO HEATER. PROVIDE PLUG VALVE SHUT OFF AND REGULATOR W/ VENT LIMITING DEVICE. LOCATE AT TOP OF BASEMENT STAIRS
    - 11.2. PROVIDE 4" COMBINED FLUE OUT OF BUILDING. KEEP 5' FROM ANY OPERABLE WINDOW. FLUE PIPE TO BE PITCHED 1/4" / FOOT UP TOWARDS TERMINATION POINT
    - 11.3. PROVIDE DIRECT VENT INTAKE FOR EACH HTR-1
    - 11.4. PROVIDE ACID NEUTRALIZATION KIT(MB: NAVIEN) AND WALL MOUNT CONDENSATE PUMP (MB: LITTLE GIANT; MOD#55425).
12. PROVIDE FREEZELESS WALL HYDRANT. PROVIDE ¾" CW LINE. SHUT OFF TO BE LOCATED IN UNIT KITCHEN CABINET FOR WINTER DRAIN DOWN.

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JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE

PLUMBING
FLOOR PLANS

DRAWING #

P-102

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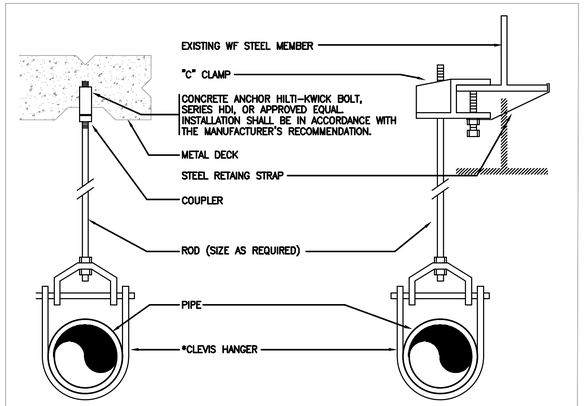
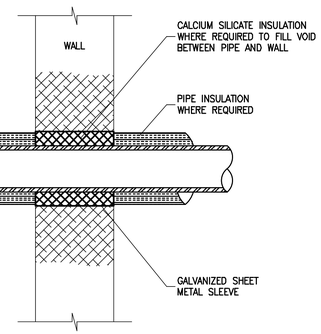


CLEVIS HANGERS REQUIRED ON PIPING LARGER THAN 1".
GENERAL PURPOSE HANGERS MAY BE USED ON PIPING 1" OR SMALLER.

TYPICAL HANGER DETAIL

SCALE: NTS

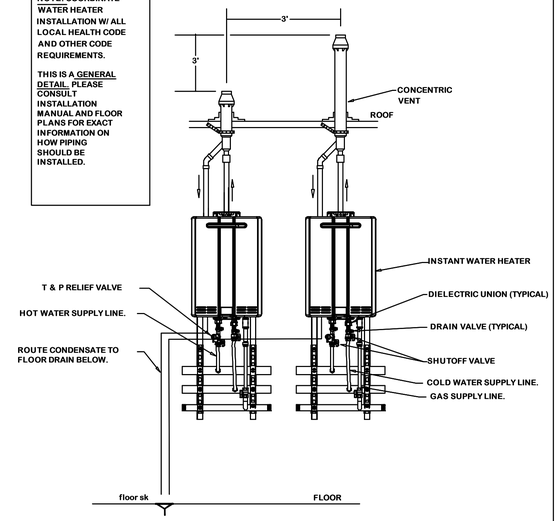


FIRE/SMOKE STOPPING WALL PENETRATION DETAIL

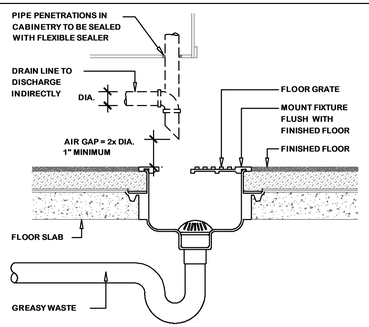
SCALE: NTS

NOTE: COORDINATE WATER HEATER INSTALLATION W/ ALL LOCAL HEALTH CODE AND OTHER CODE REQUIREMENTS.

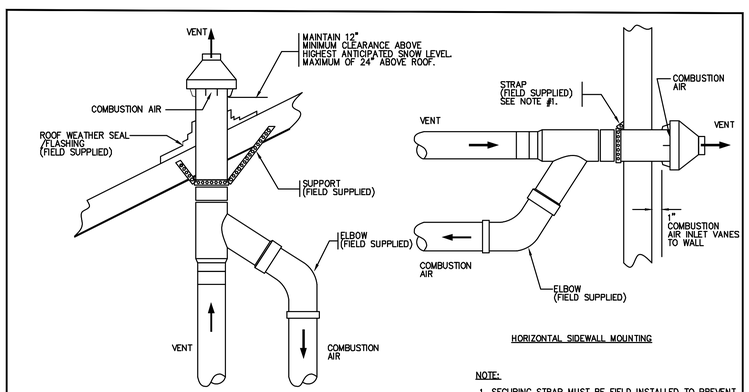
THIS IS A GENERAL DETAIL. PLEASE CONSULT INSTALLATION MANUAL AND FLOOR PLANS FOR EXACT INFORMATION ON HOW PIPING SHOULD BE INSTALLED.



	WATER HEATER DETAIL
NONE	



	FLOOR SINK DETAIL
NONE	

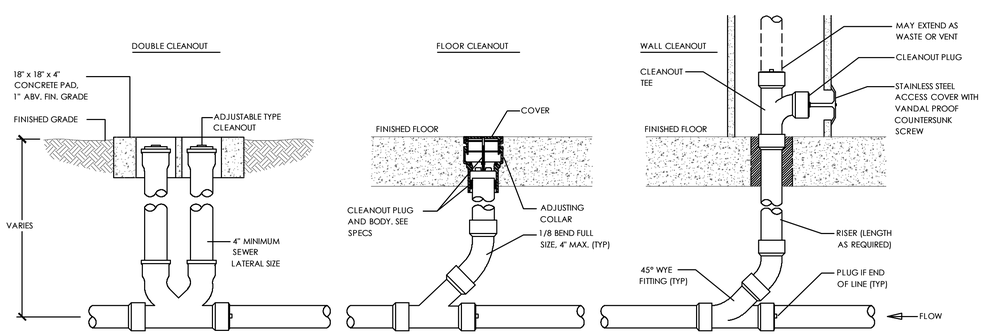


NOTE:

1. SECURING STRAP MUST BE FIELD INSTALLED TO PREVENT MOVEMENT OF TERMINATION KIT IN SIDE WALL.

VENT/COMBUSTION AIR TERMINATION KIT DETAIL

N.T.S.



1	**CLEANOUT DETAILS**
N.T.S.	NOTE:

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51 ZEPHYR RD TRUMBULL CT 06611
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PROJECT ISSUANCES/REVISIONS

#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE

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PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: NONE

DRAWING TITLE

PLUMBING DETAILS

DRAWING #

P-401

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PART 1 - GENERAL

1.01 DESCRIPTION

A. THE PLUMBING CONTRACTOR SHALL BE A LICENSED INSTALLER OF PLUMBING SYSTEMS IN THE STATE OF CONNECTICUT.

B. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE OF CONNECTICUT BUILDING CODE.

C. THE ARCHITECT'S SPECIFICATIONS AS APPLICABLE ARE PART OF THIS CONTRACT.

D. THE CONTRACTOR IS ADVISED TO CLOSELY COORDINATE HIS WORK WITH THE BUILDING ENGINEER, SO THAT THE INTERRUPTION OF EXISTING BUILDING SERVICES, IN ORDER TO CONNECT NEW PIPING TO EXISTING SHALL BE MADE AT SUCH TIME AS TO CAUSE THE LEAST INTERFERENCE WITH ESTABLISHED BUILDING OPERATING PROCEDURE. CONTRACTOR SHALL NOT INTERRUPT THE SERVICES WITHOUT EXPRESS WRITTEN PERMISSION OF THE OWNER.

1.02 VERIFYING CONDITIONS

A. EXAMINE ALL DRAWINGS COVERING THE WORK OF THIS SECTION AND REFER TO ALL OTHER DRAWINGS, INCLUDING ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, WHICH MAY AFFECT THE WORK OF THIS SECTION OR REQUIRE COORDINATION BY SAME.

B. BEFORE STARTING ANY WORK, EXAMINE EXISTING CONDITIONS, AND THOROUGHLY CHECK DRAWINGS, DIMENSIONS, SPECIFICATIONS, AND ADJOINING OR UNDERLYING CONDITIONS IN WHICH THE WORK OF THIS SECTION IS TO BE PERFORMED.

C. REPORT, IN WRITING, TO THE ARCHITECT ANY AND ALL CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE WORK OF THIS SECTION. DO NOT COMMENCE WORK UNTIL ANY AND ALL SUCH CONDITIONS HAVE BEEN CORRECTED BY THE TRADE OR TRADES RESPONSIBLE.

D. FAILURE TO NOTIFY THE ARCHITECT OF UNSATISFACTORY CONDITIONS WILL BE CONSTRUED AS AN ACCEPTANCE OF ALL CONDITIONS.

E. THE EXECUTION OF THE WORK OF THIS SECTION CONSTITUTES ACCEPTANCE OF THE BASE OR ADJOINING WORK AND OTHER CONDITIONS AS BEING SATISFACTORY IN EVERY RESPECT AND LATER CLAIMS OF DEFECTS IN SUCH CASES WILL NOT BE ALLOWED.

F. THE DRAWINGS INDICATE AND THE SPECIFICATIONS DESCRIBE THE GENERAL ARRANGEMENT AND THE APPROXIMATE LOCATION OF EQUIPMENT, FIXTURES, PIPING, ETC. EXACT LOCATIONS MAY BE ADJUSTED IN THE FIELD TO SUIT EXISTING CONDITIONS.

G. THE CONTRACTOR SHALL, WITHOUT EXTRA COST TO THE OWNER, MAKE ALL REASONABLE MODIFICATIONS IN THE WORK AS MAY BE REQUIRED TO PREVENT CONFLICT WITH THE WORK OF OTHER TRADES, OR FOR THE PROPER INSTALLATION OF THE WORK.

1.03 AS-BUILT DRAWINGS

A. PREPARE AND SUBMIT "AS-BUILT" DRAWINGS AT THE COMPLETION OF THE PROJECT.

1.04 TESTS

A. THE PLUMBING SYSTEMS SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE.

1.05 CLEANING

A. ALL PIPING, FIXTURES, EQUIPMENT, ETC., INSTALLED UNDER THIS CONTRACT SHALL BE THOROUGHLY CLEANED AND PROTECTED DURING CONSTRUCTION AND PUT INTO FIRST-CLASS OPERATING CONDITION BEFORE BEING OFFERED FOR ACCEPTANCE.

B. UPON COMPLETION OF ALL WORK, THE PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN ALL PLUMBING FIXTURES, SINKS AND TRIM AND LEAVE ALL ITEMS READY FOR USE BY THE OWNER. ALL FLOOR DRAINS SHALL BE CLEANED AND MANUFACTURERS PROTECTIVE COVERINGS SHALL BE REMOVED.

1.06 LAWS, ORDINANCES, ETC.

A. THE WORK OF THIS CONTRACTOR MUST COMPLY WITH ALL LOCAL LAWS, ORDINANCES AND RULES. THIS CONTRACTOR MUST HAVE THE NECESSARY INSPECTIONS MADE BY THESE AUTHORITIES, PAY ALL THE REQUIRED FEES, AND FURNISH THE OWNER WITH CERTIFICATES OF APPROVAL BEFORE FINAL PAYMENT ON THIS CONTRACT IS MADE. HE SHALL APPLY, PAY FOR, AND OBTAIN ALL PERMITS.

1.07 SUPERVISION

A. THIS CONTRACTOR SHALL HAVE A COMPETENT FOREMAN IN RESPONSIBLE CHARGE OF THE WORK WHO SHALL BE ON THE SITE DURING THE INSTALLATION OF THE MATERIAL FURNISHED UNDER THIS SPECIFICATION UNTIL SAME HAS BEEN PUT IN COMPLETE OPERATIVE CONDITION AND ACCEPTED BY THE OWNER.

1.08 CUTTING AND PATCHING

A. THIS CONTRACTOR SHALL DO ALL CUTTING AND PATCHING FOR PLUMBING WORK AND SHALL COORDINATE SAME WITH ALL OTHER TRADES. ALL CUTTING SHALL BE SUBJECT TO TRADE REGULATIONS. NO CUTTING OF STRUCTURAL MEMBERS SHALL BE DONE WITHOUT THE APPROVAL OF THE ARCHITECT.

PART 2 - MATERIAL

2.01 GENERAL

A. THE PLUMBING SYSTEMS SHALL BE COMPLETE WITH ALL PIPES, FITTINGS, TRAPS, SUPPLIES, VALVES, HANGERS AND SUPPORTS, INSULATION, ETC. AND ALL OTHER ITEMS NECESSARY FOR COMPLETE, SATISFACTORY OPERATING AND APPROVED TYPE SYSTEM.

B. ALL PIPE FITTINGS, VALVES, FIXTURES, HANGERS, SUPPORTS, INSULATION, ETC. SHALL CONFORM TO THE REQUIREMENTS OF THE CONNECTICUT STATE BUILDING CODE.

2.02 SOIL, WASTE, AND VENT PIPE AND FITTINGS

A. PLEASE SEE P-002 FOR PIPE SCHEDULE

2.04 COLD WATER AND HOT WATER PIPE AND FITTINGS

A. PLEASE SEE P-002 FOR PIPE SCHEDULE

2.05 HANGERS AND SUPPORTS

A. FURNISH ALL NECESSARY HANGERS, SUPPORTS, INSERTS, CLAMPS, ETC. AS REQUIRED. ALL HANGERS AND SUPPORTS SHALL BE OF HEAVY CONSTRUCTION AND SUITABLE FOR THE SIZE OF PIPE TO BE SUPPORTED. ALL INSERTS AND HANGERS SHALL BE INSTALLED TO CLEAR WORK OF OTHER TRADES.

B. ALL HORIZONTAL CAST IRON PIPING SHALL BE SUPPORTED ON FIVE (5) FOOT CENTERS AND AT ALL JOINTS. ALL HORIZONTAL SCREWED PIPING SHALL BE SUPPORTED BY HANGERS SPACED NOT OVER TEN (10) FEET APART. ALL BRANCHES SHALL HAVE SEPARATE HANGERS. HANGERS SHALL BE CLEVIS TYPE, CONSTRUCTED OF HEAVY BAR STEEL STOCK, WITH PROPER SIZE SUSPENSION ROD AND LOCKNUTS. WHERE PIPING IS SUPPORTED FROM THE FLOOR, PROVIDE ADJUSTABLE PIPE SADDLE SUPPORT WITH U-BOLT.

C. WHERE PIPES ARE TO BE INSULATED, THE HANGERS SHALL BE OF AMPLE SIZE TO PROVIDE FOR THE COVERING SPECIFIED AND BE PROVIDED WITH GALVANIZED STEEL INSULATION SHIELDS.

D. ALL HANGERS, RODS, BEAM CLAMPS, ETC. SHALL BE SHOP ZINC COATED.

E. ALL HORIZONTAL COPPER TUBING SHALL BE SUPPORTED BY HANGERS NOT OVER SIX (6) FEET APART FOR PIPING 1-1/4 INCH AND SMALLER AND NOT OVER TEN (10) FEET APART FOR PIPING 1-1/2 INCH AND LARGER. ALL BRANCHES SHALL HAVE SEPARATE HANGERS. HANGERS SHALL BE CLEVIS TYPE WITH COPPER BOTTOM SUPPORT. IF CHANNEL OR ANGLE IRON TRAPEZE HANGERS ARE USED, THE SPACE ON HANGERS FOR THE COPPER TUBING SHALL BE WRAPPED WITH LEAD SHIELDS TO ISOLATE TUBING.

F. IN AREAS OF STEEL CONSTRUCTION, PIPE HANGERS SHALL BE SUPPORTED BY BEAM CLAMPS. COORDINATE WITH ENGINEER FOR MAXIMUM LOADING. BEAM CLAMPS SHALL BE STEEL WITH BOLT, NUT AND SOCKET THREADED FOR ROD CONNECTION AND SHALL BE F & S MANUFACTURING COMPANY FIG. #45, CENTRAL IRON, GRINNELL COMPANY, OR APPROVED EQUAL.

2.07 INSULATION

A. COVER ALL HOT WATER AND HOT WATER RECIRCULATION PIPE WITH 1 INCH THICK AND ALL COLD WATER PIPE WITH 1/2 INCH THICK MANVILLE MICRO-LOK AP-T PLUS FIBERGLASS INSULATION. FITTINGS AND VALVES SHALL BE INSULATED WITH MANVILLE ZESTION 2000 PVC INSULATED FITTING COVERS. INSTALL ALL INSULATION AS PER MANUFACTURERS RECOMMENDATIONS. ALL INSULATION MATERIAL SHALL COMPLY WITH THE NEW YORK CITY BUILDING CODE REQUIREMENT OF A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DEVELOPED RATING NOT TO EXCEED 50.

2.08 VALVES

A. STOP VALVES, EXCEPT FIXTURE STOPS, ON HOT AND COLD WATER LINES 2 IN. AND SMALLER SHALL BE FULL PORT 400 LB. NON-SHOCK BRONZE BALL VALVES, NIBCO T-595-Y FOR THREADED CONNECTIONS, AND NIBCO S-595-Y FOR COPPER TO COPPER, OR APPROVED OTHER.

B. GLOBE VALVES UP TO AND INCLUDING 3 IN. SHALL BE SCREW-OVER BONNET, COMPOSITION DISC, BRASS, NIBCO T-211 FOR THREADED CONNECTIONS AND S-211 FOR SOLDER CONNECTIONS, OR APPROVED OTHER.

C. CHECK VALVES SHALL BE OF THE SWING-TYPE, SIZES UP TO AND INCLUDING 3 IN. SHALL BE ALL BRASS, 125 LB. S.W.P., NIBCO T-413 FOR THREADED CONNECTIONS AND NIBCO S-413 FOR SOLDER CONNECTIONS, OR APPROVED OTHER.

2.15 GUARANTEE

A. THIS CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE BY THE OWNERS, ALL MATERIALS, APPARATUS AND WORKMANSHIP WHETHER FURNISHED BY HIMSELF OR BY HIS SUBCONTRACTORS AND HE SHALL REPLACE OR REPAIR IN A MANNER APPROVED BY THE ARCHITECTS, WITHOUT COST TO THE OWNER, ANY PARTS OR PARTS OF THE WORK WHICH MAY PROVE DEFECTIVE OR UNSATISFACTORY WITHIN THE PERIOD OF THE GUARANTEE.

B. WHERE SPECIAL GUARANTEES COVERING INSTALLATION, OPERATION OR PERFORMANCE OF ANY SYSTEMS OR APPLIANCES FURNISHED UNDER THIS CONTRACTOR ARE REQUIRED, THE FULL RESPONSIBILITY FOR THE FULFILLMENT OF SUCH GUARANTEES MUST BE ASSUMED BY THE CONTRACTOR, WHO SHALL OBTAIN WRITTEN GUARANTEES, IN TRIPLICATE, WHICH SHALL BE FILED WITH THE ARCHITECT BEFORE FINAL ACCEPTANCE.

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SCALE: NONE

DRAWING TITLE

PLUMBING SPECIFICATIONS

DRAWING #

P-501

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ELECTRICAL SYMBOL LIST

(NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED ON THIS PROJECT)

SYMBOL	DESCRIPTION
	20A, 125V DECORA STYLE DUPLEX RECEPTACLE – FLUSH WALL MOUNTED
USB	20A, 125V DECORA STYLE DUPLEX RECEPTACLE WITH DUAL USB PORTS
	20A, 125V SINGLE RECEPTACLE – FLUSH WALL MOUNTED
	20A, 125V DECORA STYLE QUADRUPLEX RECEPTACLE – FLUSH WALL MOUNTED
	20A, 125V DECORA STYLE GFCI TYPE DUPLEX RECEPTACLE–FLUSH WALL MOUNTED
WP	20A, 125V GFCI TYPE WEATHER RESISTANT DUPLEX RECEPTACLE IN WEATHER PROOF ENCLOSURE
	SPECIAL PURPOSE RECEPTACLE – FLUSH WALL MOUNTED
	20A, 125V DECORA STYLE HALF SWITCHED DUPLEX RECEPTACLE – FLUSH WALL MOUNTED. BOTTOM HALF OF DUPLEX RECEPTACLE TO BE SWITCHED VIA WALL SWITCH
OV	FLUSH FLOOR MOUNTED COMBINATION VOICE/DATA & POWER OUTLET
J	CEILING MOUNTED JUNCTION BOX WITH FINAL EQUIPMENT CONNECTION
J	FLUSH WALL MOUNTED JUNCTION BOX WITH FINAL EQUIPMENT CONNECTION
J	FLUSH FLOOR MOUNTED JUNCTION BOX WITH FINAL EQUIPMENT CONNECTION
	UNFUSED DISCONNECT SWITCH – 30A, 3P, U.O.N.
100A / 60A	FUSED DISCONNECT SWITCH – 100 AMP SWITCH, 60 AMP FUSE, UNFUSED (EXCEPT WHERE FUSE SIZE IS INDICATED) 3–POLE (EXCEPT WHERE NOTED)
M	COMBINATION MOTOR CONTROLLER AND DISCONNECT SWITCH FURNISHED BY MECHANICAL CONTRACTOR INSTALLED BY ELECTRICAL CONTRACTOR. COOR. LOCATION W/MECH. CONT.
CB 100A / 60A	CIRCUIT BREAKER 100A FRAME/60A TRIP, 3 POLE, U.O.N. ST – SHUNT TRIP
VFD	VARIABLE FREQUENCY DRIVE (VFD), FURNISHED BY MECHANICAL CONTRACTOR INSTALLED BY ELECTRICAL CONTRACTOR. COORD. LOCATION WITH MECH. CONTRACTOR
LVSS	SURGE SUPPRESSER, LIEBERT ACCUVAR #ACV–120–Y–111–RKE FED WITH 30A/3P C/B MOUNT WITHIN 3ft OF TOTAL WIRE LENGTH FROM SOURCE
FSD	COMBINATION FIRE/SMOKE DAMPER – COORD. LOCATION WITH MECH. CONTRACTOR INTERCONNECT TO FIRE ALARM SYSTEM
M	MOTOR
	PULLBOX, SIZED PER NEC
T	DRY TYPE 480–208V TRANSFORMER DELTA–WYE WITH GROUNDED SECONDARY SIDE, UON.
	FLUSH MOUNTED PANELBOARD
	SURFACE MOUNTED PANELBOARD
GND	GROUND BAR
	2#12+1#12G–3/4"C FOR ONE CKT. HOMERUN, U.O.N.
	3#12+1#12G–3/4"C FOR TWO CKT. HOMERUN, U.O.N.
	4#12+1#12G–3/4"C FOR THREE CKT. HOMERUN, U.O.N.
	3#12+1#12G–3/4"C HOMERUN, U.O.N.
	CONCEALED CONDUIT
	CONDUIT TURNING UP
	CAPPED CONDUIT
	FLEXIBLE EQUIPMENT CONNECTION
	GROUND CONNECTION
	CIRCUIT BREAKER – MOLDED CASE TYPE
	DRAW OUT TYPE CIRCUIT BREAKER
	FUSED SWITCH, TYPE 'FA' FUSE
	FUSE
	UNFUSED SWITCH – 100 AMP SWITCH
M	UTITLITY METER WITH CT. COMPARTMENT
SUB M	DIGITAL SUB–METER E–MON D–MON 2000 CLASS #208400D KIT, PROVIDE A 20A/3–POLE BREAKER IN LOCAL POWER PANEL
DB / CHIME DBT	DOOR BELL PUSH BUTTON / DOOR BELL CHIME AND ASSOCIATED TRANSFORMER
TV	WALL MOUNTED TELEVISION OUTLET WITH 3/4" EMPTY CONDUIT & DRAG LINE TERMINATED IN A 90° BEND 6" INTO NEAREST ACCESSIBLE CEILING
V	VOICE/VOICE & DATA OUTLET LOCATION WITH 1" EMPTY CONDUIT & DRAG LINE TERMINATED IN A 90 DEG. BEND 6" INTO NEAREST ACCESSIBLE CEILING
$H	ADA "CALL FOR ASSISTANCE" PULL CORD SWITCH, HORN/STROBE & 24V TRANS., EST EDWARDS KIT MODEL #6538–G5
$T	MANUAL STARTER – TOGGLE TYPE WITH THERMAL ELEMENT – 250V HP RATED, FURNISHED BY ELEC CONTRACTOR
	CEILING MOUNTED EDGE–LIT LED EXIT SIGN WITH EMERGENCY BATTERY BACKUP, DUAL–LITE LE SERIES
	WALL MOUNTED EDGE–LIT LED EXIT SIGN WITH EMERGENCY BATTERY BACKUP, DUAL–LITE LE SERIES
	WALL MOUNTED EMERGENCY LIGHTING UNIT, DUAL–LITE #LZ–30–I–03L
	RECESSED CEILING MOUNTED EMERGENCY LIGHTING UNIT, LIGHTALARMS PHANTOM SERIES #PHN100–2LD7–IDNA WITH REMOTE TEST SWITCH PSW–1

LIGHTING CONTROL SYMBOL LIST

(NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED ON THIS PROJECT)

SYMBOL	DESCRIPTION
$	SINGLE POLE LINE VOLTAGE SWITCH
$3	3–WAY LINE VOLTAGE SWITCH
$K	KEY ACTIVATED LINE VOLTAGE SWITCH
D	LUTRON NOVA T SERIES DIMMER SWITCH, U.O.N., EXACT DEVICE SPEC SHALL BE COORDINATED WITH LIGHT FIXTURE DIMMING CAPABILITIES
PP	POWER PACK MOUNTED IN JUNCTION BOX LOCATED ABOVE FINISHED CEILING LUTRON #RMJS–16R–DV–B
PP EM	POWER PACK MOUNTED IN JUNCTION BOX LOCATED ABOVE FINISHED CEILING LUTRON #RMJS–16R–DV–B–EM
DM	0–10V DIMMING MODULE MOUNTED IN JUNCTION BOX LOCATED ABOVE FINISHED CEILING, LUTRON #RMJS–8T–DV–B
DM EM	0–10V EMERGENCY DIMMING MODULE MOUNTED IN JUNCTION BOX LOCATED ABOVE FINISHED CEILING, LUTRON #RMJS–8T–DV–B–EM
LC	CFL/LED PLENUM RATED MAESTRO WIRELESS DIMMER MOUNTED IN JUNCTION BOX LOCATED ABOVE FINISHED CEILING, LUTRON #MRF2S–6CL–GR
WS	WIRELESS OCCUPANCY SENSOR, CEILING MOUNTED, LUTRON #LRF2–OCR2B–P–WH
WH	VIVE WIRELESS HUB, FLUSH MOUNTED, LUTRON #HJS–2–FM + #PS–J–20W–UNV POWER SUPPLY MOUNTED IN JUNCTION BOX
OS	DUAL TECHNOLOGY VACANCY SENSOR, WALL MTD. LUTRON #MS–B102
DS	WIRELESS DAYLIGHT SENSOR, CEILING MOUNTED, LUTRON #LRF2–DCRB–WH
WS	WALL MTD WIRELESS OCCUPANCY SENSOR, LUTRON #LRF2–O–W–LB–P–WH
$WS	WIRELESS 2–BUTTON SWITCH, LUTRON #PJ2–2B–GWH–L01 + #CW–1–WH
$DS	WIRELESS 3–BUTTON RAISE/LOWER SWITCH, LUTRON #PJ2–3BRL–GWH–L01 + #CW–1–WH
$SS	WIRELESS 4–BUTTON SCENE SWITCH, LUTRON #PJ2–4B–GWH–L31 + #CW–1–WH
$OR	REMOTE TIMED OVERRIDE SWITCH TORK #SSA200R–24
TC	DIGITAL TIME CLOCK TORK DLC SERIES #DLC400BP
G	SINGLE FIXTURE GENERATOR TRANSFER DEVICE, PHILLIPS BODINE #GTD
BLCD	SINGLE CIRCUIT GENERATOR TRANSFER DEVICE WITH OVERRIDE, PHILLIPS BODINE #BLCD–20B
GTD	SINGLE CIRCUIT GENERATOR TRANSFER DEVICE WITH DIMMING CONTROL AND OVERRIDE, PHILLIPS BODINE #GTD–20A
CR	CARD READER/KEY PAD – RECESSED JUNCTION BOX WITH 3/4" CONDUIT TO ACCESSIBLE CEILING WITH DRAG LINE
ML	MAGLOCK– RECESSED JUNCTION BOX WITH 3/4" CONDUIT TO ACCESSIBLE CEILING WITH DRAG LINE
CA	CAMERA– RECESSED JUNCTION BOX WITH 3/4" CONDUIT TO ACCESSIBLE CEILING WITH DRAG LINE

FIRE ALARM SYMBOL LIST

(NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED ON THIS PROJECT)

SYMBOL	DESCRIPTION
S	CEILING MOUNTED ADDRESSABLE SMOKE DETECTOR
S E	ELEVATOR RECALL ADDRESSABLE SMOKE DETECTOR
S CO	CEILING MOUNTED LINE VOLTAGE (RESIDENTIAL TYPE) COMBINATION SMOKE/CARBON MONOXIDE DETECTOR
S SB	CEILING MOUNTED ADDRESSABLE COMBINATION SMOKE/CARBON MONOXIDE DETECTOR WITH SOUNDER BASE
S/V	WALL MOUNTED ADDRESSABLE COMBINATION SMOKE/CARBON MONOXIDE DETECTOR WITH SOUNDERBASE
H	CEILING MOUNTED ADDRESSABLE THERMAL DETECTOR RATE–OF–RISE
D	DUCT SMOKE DETECTOR
TS	SPRINKLER TAMPER SWITCH
WF	SPRINKLER WATER FLOW SWITCH
DGP	FIRE ALARM DATA GATHERING PANEL
FACP	FIRE ALARM CONTROL PANEL
FAP	FIRE ALARM REMOTE ANNUNCIATOR PANEL
F	COMBINATION FIRE ALARM AUDIBLE/STROBE LIGHT UNIT – FLUSH WALL MOUNTED (WITH ADJUSTABLE CANDELA RATING)
F	FIRE ALARM STROBE LIGHT UNIT – FLUSH WALL MOUNTED (WITH ADJUSTABLE CANDELA RATING)
F	FIRE ALARM AUDIBLE UNIT – FLUSH WALL MOUNTED
F	FIRE ALARM PULL STATION
DH	DOOR HOLDER
MM	FIRE ALARM MONITOR MODULE
CM	FIRE ALARM CONTROL MODULE
FP	FIREFIGHTERS PHONE
L	REMOTE LED INDICATOR FOR SMOKE OR DUCT DETECTOR

ELECTRICAL ABBREVIATIONS

(NOT ALL SYMBOLS SHOWN ARE NECESSARILY USED ON THIS PROJECT)

A	AMPERE	KCM	THOUSAND CIRCULAR MILS
AC	ABOVE COUNTER	KV	KILOVOLT
AFF	ABOVE FINISHED FLOOR	KVA	KILOVOLT AMPERE
AIC	AMP INTERRUPTING CAPACITY	KW	KILOWATT
ATS	AUTOMATIC TRANSFER SWITCH	KWH	KILOWATT HOUR
AUTO	AUTOMATIC	LTG	LIGHTING
AWG	AMERICAN WIRE GAUGE	MAX	MAXIMUM
BLDG	BUILDING	MCB	MAIN CIRCUIT BREAKER
C	CONDUIT	MCC	MOTOR CONTROL CENTER
CB	CIRCUIT BREAKER	MIN	MINIMUM
CCTV	CLOSED CIRCUIT TELEVISION	MTD	MOUNTED
CKT	CIRCUIT	N	NEUTRAL
CO	CARBON MONOXIDE	NIC	NOT IN CONTRACT
COMM	COMMUNICATION	NTS	NOT TO SCALE
CT	CURRENT TRANSFORMER	OC	ON CENTER
CU	COPPER	P	POLE
DEG	DEGREE	Φ or PH	PHASE
DGP	DATA GATHERING PANEL	PNL	PANEL
DISC	DISCONNECT	PWR	POWER
DN	DOWN	R	RELOCATED
DWG	DRAWING	RECEPT	RECEPTACLE
E/EX	EXISITNG TO REMAIN	TEL	TELEPHONE
EC	ELECTRICAL CONTRACTOR	TOS	TOP OF SHAFT
EM	EMERGENCY	TV	TELEVISION
ER	EXISTING TO BE REMOVED	TYP	TYPICAL
FA	FIRE ALARM	UON	UNLESS OTHERWISE NOTED
FACP	FIRE ALARM CONTROL PANEL	V	VOLT OR VOLTAGE
FL	FLOOR	VA	VOLT AMPERE
FT	FEET OR FOOT	VIF	VERIFY IN FIELD
GRD	GROUND	W	WATT
GFI	GROUND FAULT INTERRUPTER	WP	WEATHERPROOF
HID	HIGH INTENSITY DISCHARGE	WT	WATERTIGHT
HP	HORSE POWER	XP	EXPLOSION PROOF
HZ	HERTZ		
JB	JUNCTION BOX		

CONNECTICUT STATE CODES & STANDARDS

- 2018 CONNECTICUT STATE BUILDING CODE
- 2015 INTERNATIONAL EXISTING BUILDING CODE
- 2015 INTERNATIONAL PLUMBING CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2017 NATIONAL ELECTRICAL CODE (NFPA 70)
- LOCAL FIRE DEPARTMENT/FIRE MARSHAL
- ALL OTHER LOCAL AUTHORITIES HAVING JURISDICTION

CONNECTICUT STATE ENERGY CODES

- 2015 INTERNATIONAL ENERGY CONSERVATION CODE

REFERENCED STANDARDS

APPLICABLE REFERENCE STANDARDS SHALL BE AS REFERENCED BY ALL STATE AND LOCAL CODES. THE LIST BELOW IS FOR QUICK REFERENCE AND DOES NOT INCLUDE ALL APPLICABLE REFERENCE STANDARDS.

- 2013 NPFA 13 – STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
- 2013 NFPA 14 – STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS
- 2013 NFPA 20 – STANDARD FOR THE INSTALLATION OF STATIONARY PUMPS FOR FIRE PROTECTION
- 2015 NFPA 54 – NATIONAL FUEL GAS CODE
- 2017 NFPA 70 – NATIONAL ELECTRICAL CODE
- 2013 NFPA 72 – NATIONAL FIRE ALARM AND SIGNALING CODE

ELECTRICAL DRAWING LIST	
SHEET NUMBER	SHEET NAME
E-001	ELECTRICAL COVER PAGE
E-002	ELECTRICAL NOTES
E-101	ELECTRICAL POWER PLANS
E-102	ELECTRICAL POWER PLANS
E-201	ELECTRICAL LIGHTING PLANS
E-202	ELECTRICAL LIGHTING PLANS
E-301	ELECTRICAL DETAILS
E-401	ELECTRICAL SPECIFICATIONS
E-402	ELECTRICAL SPECIFICATIONS

ELECTRICAL POWER NOTES

A. CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS AND ARCHITECT IN FIELD FOR EXACT LOCATION, QUANTITY AND ELEVATION OF POWER AND TELEPHONE/DATA OUTLETS PRIOR TO INSTALLATION.

B. RECEPTACLES SHALL BE CIRCUITED IN ACCORDANCE WITH CIRCUIT NUMBER INDICATED ADJACENT TO EACH DEVICE. CIRCUITRY MAY BE SHOWN IN CERTAIN INSTANCES.

C. CIRCUIT NUMBERS ARE INDICATED FOR INTENT ONLY. THE ELECTRICAL CONTRACTOR SHALL ADJUST ACCORDINGLY IN THE FIELD, TO BALANCE THE CIRCUITS EVENLY ON ALL PHASES.

D. MECHANICAL EQUIPMENT IS LOCATED ABOVE THE HUNG CEILING UNLESS OTHERWISE NOTED. EXACT LOCATION SHALL BE DETERMINED FROM MECHANICAL DRAWINGS.

E. WHERE APPLICABLE, RUN 1" EMPTY CONDUIT TO NEAREST ACCESSIBLE HUNG CEILING WITH GROMMETED END FITTING FOR TELEPHONE/DATA & PROVIDE DRAG LINES FOR PULLING CABLE.

F. ALL 20A, 120V BRANCH CIRCUIT HOME RUNS SHALL BE 2#12 & 1#12 GRD IN 3/4" OR NM CABLE, TO PANEL & CIRCUIT INDICATED. MAXIMUM OF THREE HOMERUNS PER CONDUIT.

ELECTRICAL LIGHTING NOTES

A. ALL JUNCTION OR OUTLET BOXES SHALL BE INSTALLED SO AS TO ALLOW ACCESS TO COVER. PROVIDE ARCHITECT APPROVED ACCESS DOORS OR PLATES AS REQUIRED IN AREAS WHERE UNOBSTRUCTED ACCESS TO BOX OR OUTLET IS NOT POSSIBLE.

B. FOR EXACT LOCATION, QUANTITY AND ELEVATION OF LIGHTING FIXTURES AND SWITCHES REFER TO ARCHITECTURAL DRAWINGS AND COORDINATE WITH ARCHITECT IN THE FIELD.

C. LIGHTING FIXTURES SHALL BE CIRCUITED IN ACCORDANCE WITH CIRCUIT NUMBER INDICATED ADJACENT TO EACH FIXTURE. CIRCUITRY MAY BE SHOWN IN CERTAIN INSTANCES.

D. ALL JUNCTION OR OUTLET BOXES SHALL BE INSTALLED SO AS TO ALLOW ACCESS TO COVER. PROVIDE ARCHITECT APPROVED ACCESS DOORS OR PLATES AS REQUIRED IN AREAS WHERE UNOBSTRUCTED ACCESS TO BOX OR OUTLET IS NOT POSSIBLE.

E. CIRCUIT NUMBERS ARE INDICATED FOR INTENT ONLY. THE ELECTRICAL CONTRACTOR SHALL ADJUST ACCORDINGLY IN THE FIELD TO BALANCE THE CIRCUITS EVENLY ON ALL PHASES.

F. MULTIPLE SWITCHES SHOWN IN SAME LOCATION SHALL BE GANGED TOGETHER WITH A COMMON FACEPLATE.

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PROJECT ISSUANCES/REVISIONS

#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE

ISSUED FOR BID/PERMIT

PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE

ELECTRICAL
COVER PAGE

DRAWING #

E-001

ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE NATIONAL ELECTRIC CODE, BUILDING DEPARTMENT, BUILDING MANAGEMENT, ALL AUTHORITIES HAVING JURISDICTION, AND APPLICABLE NATIONAL, STATE, AND LOCAL CODES. LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK SHALL BE INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS. CONTRACTOR IS TO INFORM THE ENGINEER OF ANY EXISTING WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION OF LAWS AND REGULATIONS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE BY THIS CONTRACTOR AND AT NO EXPENSE TO THE OWNER.

2. PRIOR TO SUBMISSION OF BID, THIS CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN THE ACTUAL FIELD CONDITIONS AS THEY RELATED TO THE WORK AS INDICATED ON THE DRAWINGS AND DESCRIBED HEREIN. DISCREPANCIES, IF ANY, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO SUBMISSION OF BID, AND, IF NOT RESOLVED TO SATISFACTION, SHALL BE SUBMITTED AS A WRITTEN QUALIFICATION OF THE BID. SUBMISSION OF A BID SHALL BE EVIDENCE THAT SITE VERIFICATION HAS BEEN PERFORMED AS DESCRIBED ABOVE.

3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND APPROXIMATE LOCATION OF EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND COORDINATE FINAL LOCATIONS OF SWITCHES, LIGHT FIXTURES, RECEPTACLES, ETC. WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICTS. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWINGS, THE MORE STRINGENT SITUATION SHALL APPLY.

4. PRIOR TO SUBMISSION OF BID, THIS CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THE ENTIRE PROJECT INCLUDING GENERAL CONSTRUCTIONS, DEMOLITION, ARCHITECTURAL, MECHANICAL, ELECTRICAL, TELECOM/AV/SECURITY, PLUMBING, AND FIRE PROTECTION AND SHALL INCLUDE ANY WORK REQUIRED IN THE BID WHICH IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK.

5. ANY EQUIPMENT, PARTS, MATERIALS, ACCESSORIES, OR LABOR THAT IS NECESSARY FOR PROPER PERFORMANCE OF THE ELECTRICAL WORK, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL WITHOUT ADDITIONAL COST.

6. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE ELECTRICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURER'S SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP, OPERATION, AND SERVICING OF EQUIPMENT.

7. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, AND CONTRACTOR'S SERVICES NECESSARY FOR THE COMPLETE AND SAFE INSTALLATION OF ALL ELECTRICAL WORK. THE SCOPE OF WORK SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   - ELECTRICAL REQUIREMENTS SHALL BE IN CONFORMANCE WITH ENGINEERING BID DOCUMENTS AS WELL AS DOCUMENTS (SPECIFICATIONS & DRAWINGS) PREPARED BY LOCAL UTILITY COMPANY AND REFERENCED DRAWINGS IN THE UTILITY COMPANY DOCUMENTS NOT INCLUDED SHALL BE PART OF THIS CONTRACT.
   - CONTRACTOR SHALL COORDINATE AND ARRANGE TO RECEIVE AND/OR PICK UP SPECIFIC EQUIPMENT OUTLINED PRE-PURCHASE ITEMS.
   - REMOVAL AND RELOCATION OF EQUIPMENT AS REQUIRED WHEN INTERFERING WITH NEW WORK.
   - INSTALLATION OF NEW RACEWAY AND CONDUCTORS.
   - CUTTING, CHANNELING, CHASING, AND ROUGH PATCHING REQUIRED TO ACCOMMODATE THE ELECTRICAL INSTALLATION.
   - ADDITION OR MODIFICATION OF EXISTING ELECTRICAL DISTRIBUTION EQUIPMENT.
   - INSTALLATION OF CONDUIT, JUNCTION BOXES, PULL BOXES, ETC., REQUIRED FOR THE AFOREMENTIONED EQUIPMENT.
   - MAINTENANCE AND PROPER OPERATION OF EXISTING BASE BUILDING SYSTEMS WITHIN THE CONTRACT AREA IN ACCORDANCE WITH THE REQUIREMENTS OF BUILDING MANAGEMENT.
   - TEMPORARY LIGHT AND POWER DURING CONSTRUCTION.
   - GROUNDING OF ALL EQUIPMENT AS REQUIRED BY CODE AND SPECIFIED.

8. THIS CONTRACTOR IS TO OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS PRIOR TO BID SUBMISSION TO DETERMINE REQUIREMENTS AND THE EXTENT OF PREMIUM TIME WORK REQUIRED BY BUILDING MANAGEMENT. FOR THE PURPOSE OF BID, ASSUME ANY NOISY WORK (E.G., CHOPPING, CORE DRILLING, ETC.) AND BASE BUILDING SYSTEM INTERRUPTIONS ARE TO BE PERFORMED OUTSIDE NORMAL BUSINESS HOURS.

9. "THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" AIA DOCUMENT A201 LATEST EDITION, OR AS REQUIRED BY THE ARCHITECTS DOCUMENTS AND/OR THE STRUCTURAL ENGINEERS DOCUMENTS, AS APPLICABLE, ARE PART OF THIS DOCUMENT.

10. SUBMIT SHOP DRAWINGS CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT ALL CERTIFIED EQUIPMENT CUTS WITH CONSTRUCTIONS WIRING DIAGRAMS. PROVIDE DIGITAL COPIES OF ALL DRAWINGS. SPECIFIC JOB REQUIREMENTS MAY BE MORE STRINGENT AND CONTRACTOR IS RESPONSIBLE TO OBTAIN REQUIREMENTS FROM CONSTRUCTION MANAGER, GENERATOR CONTRACTOR, OR ARCHITECT.

11. SUBMIT (4) LOOSE-LEAF BOUND OPERATING AND MAINTENANCE MANUALS WITH INDEX AND INDEX TABS TO INCLUDE ALL SHOP DRAWINGS AND OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL SYSTEMS.

12. CONTRACTOR SHALL REVISE SHIP DRAWINGS TO CONFORM TO RECORD DRAWINGS AND SUBMIT AN AS-BUILT CONDITION (DEVICES, EQUIPMENT, CIRCUITRY, ETC.) DRAWINGS UPON COMPLETION OF THE PROJECT. FINAL SUBMISSION OF REPRODUCIBLE AS-BUILT DRAWINGS ARE TO BE SIGNED AND CERTIFIED BY THE INSTALLING CONTRACTOR THAT THIS IS AS-BUILT CONDITION OF THE WORK.

13. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSION, PERFORMANCE, AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS, OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM SUBSTITUTION.

14. THIS CONTRACTOR SHALL SUBMIT FOR APPROVAL, A PLAN INDICATING THE SIZE AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, JUNCTION BOXES, PULL BOXES, ETC. THIS CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLATION OF ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE BID.

15. REMOVAL, TEMPORARY CONNECTIONS, AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE INSTALLATION OF THE NEW SYSTEMS. ALL EXISTING CONDITIONS ARE NOT COMPLETELY

ELECTRICAL GENERAL NOTES (CONTINUED)

DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND MAKE ALL NECESSARY CHANGES REQUIRED BASED ON EXISTING CONDITIONS FOR PROPER INSTALLATION OF NEW WORK.

16. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE ORGANIZED WITH BUILDING MANAGEMENT. PROVIDE TEMPORARY FEEDERS, CIRCUITRY, ETC., AS REQUIRED TO MINIMIZE DOWNTIME.

17. DISCONNECTS SHALL BE 'QUICK-BREAK' HEAVY DUTY TYPE IN NEMA 1 ENCLOSURE FUSED OR UN-FUSED AS INDICATED ON THE DRAWINGS. FUSES FOR SWITCHES SHALL BE CURRENT LIMITING TYPE WITH AN INTERRUPTING CAPACITY OF 200,000 RMS AMPERES AND OF THE CONTINUOUS CURRENT RATING AS SHOWN ON THE DRAWINGS.

18. CIRCUIT BREAKERS SHALL BE 'THERMAL MAGNETIC' TYPE, QUICK-MAKE, QUICK-BREAK WITH NON-WELDING CONTACTS COMPENSATED FOR AMBIENT TEMPERATURES AND SHALL HAVE A MINIMUM SHORT CIRCUIT RATING OF 10,000 AMPERES SYMMETRICAL FOR 120/208V PANELS AND 14,000 AMPERES SYMMETRICAL FOR 277/480V PANELS OR HIGHER WHERE NOTES.

19. CONDUIT SHALL BE RIGID THREADED REGARDLESS OF SIZE.

20. ALL CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN INSULATED. ALL CONDUCTORS SHALL HAVE 600 VOLT RATED INSULATION, UNLESS OTHERWISE NOTED. UNLESS SPECIFIED ALL WIRE #10 AWG AND SMALLER SHALL BE SOLID CONDUCTORS AND 8 AWG AND LARGER SHALL BE STRANDED.

21. BRANCH CIRCUIT WIRE SIZE: THE MINIMUM WIRE SIZE FOR BRANCH CIRCUITS SHALL BE NO. 12 AWG EXCEPT 120V CIRCUITS OVER 80 FEET IN LENGTH SHALL BE 10 AWG.

22. PULL BOXES, JUNCTION BOXES, AND OUTLET BOXES SHALL BE MANUFACTURED FROM GALVANIZED INDUSTRY STANDARD SHALL STEEL.

23. PROVIDE PULL BOXES AND JUNCTION BOXES IN LONG STRAIGHT RUNS OF RACEWAY TO ASSURE THAT CABLES ARE NOT DAMAGED WHEN THEY ARE PULLED, TO FULFILL REQUIREMENTS AS TO THE NUMBER OF BENDS PERMITTED IN RACEWAY BETWEEN CABLE ACCESS POINTS, THE ACCESSIBILITY OF CABLE JOINTS AND SPLICES, AND THE APPLICATION OF CABLE SUPPORTS.

24. PULL BOXES AND JUNCTION BOXES SHALL BE SIZED SO THAT THE MINIMUM BENDING RADIUS CRITERIA SPECIFIED FOR THE WIRES AND CABLE ARE MAINTAINED.

25. ALL EQUIPMENT, DEVICE BOXES, JUNCTION BOXES, PULL BOXES, AND OUTLET BOXES SHALL BE INSTALLED SO AS TO ALLOW ACCESS TO THE BOX. IF NECESSARY AND APPROVED BY OWNER/ENGINEER, PROVIDE ACCESS DOOR OR COVER PLATES IN AREAS WHERE UNOBSTRUCTED ACCESS IS NOT POSSIBLE.

26. PROVIDE EXPANSION JOINT FITTINGS ON ALL CONDUITS CROSSING EXPANSION JOINTS.

27. OPENINGS AROUND ELECTRICAL PENETRATION THROUGH FIRE RESISTANCE RATED WALL, PARTITIONS, FLOOR OR CEILING SHALL BE FIRE STOPPED USING APPROVED METHODS. SEALANT SHALL BE RATED FOR THREE (3) HOURS.

28. HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLET:
   - RECEPTACLES AND TELEPHONES 1' 6"
   - GENERALLY 3' 6"
   - OVER WORK BENCHES 4' 0"
   - WALL SWITCHES 4' 0"
   - WALL FIXTURES 6' 0"
   - MOTOR CONTROLLERS 5' 0"
   - FIRE ALARM PULL STATIONS 4' 0"
   - FIRE ALARM HORN/SPEAKER/STROBES 6' 8" AFF OR 6" BELOW CEILING (WHICHEVER IS GREATER)

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

29. PROVIDE WEIGHTS, LOCATIONS, AND DIMENSIONS OF EQUIPMENT IN EXCESS OF 200 LBS. SUPPORTED ON FLOOR OR HUNG FROM BUILDING STRUCTURE TO BASE BUILDING STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.

30. THE ELECTRICAL CONTRACTOR SHALL COORDINATE HIS WORK WITH HVAC, PLUBMING, FIRE PROTECTION, TELECOM/AV/SECURITY, AND OTHER TRADES FOR EXACT LOCATION OF ALL MOTOR AND CONTROL DEVICES, BACK BOXES, AND CONDUIT REQUIREMENTS. LOCATIONS AS SHOWN ON ELECTRICAL DRAWINGS ARE APPROXIMATE.

31. PROVIDE PRICING FOR EXTENDED WARRANTIES (2-5 YEARS) FOR THE SYSTEMS NOTED ON THE ELECTRICAL DRAWINGS AND SPECIFICATIONS. PROVIDE PRICING FOR WARRANTIES BEYOND 5-YEARS WHERE POSSIBLE.

32. EXTERIOR RECEPTACLES SHALL BE PROVIDED WITH WEATHERPROOF "WHILE IN USE" COVERS.

- THIS CONTRACTOR IS TO OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS PRIOR TO BID SUBMISSION TO DETERMINE THE REQUIREMENTS AND THE EXTENT OF PREMIUM TIME WORK REQUIRED BY THE BUILDING.
- THIS CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE BUILDING OWNER'S RULES AND REGULATIONS. ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE BUILDING RULES AND REGULATIONS SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT/ENGINEER FOR REVIEW WITH BID SUBMISSION.
- COORDINATE WITH BUILDING OWNER FOR ANY SERVICE INTERRUPTION OF EXISTING SYSTEMS AND GIVE NOTICE AS REQUIRED BY BUILDING RULES AND REGULATIONS, OR CONTRACTOR TO PROVIDE A MINIMUM OF TWO (2) DAYS NOTICE PRIOR TO ANY WORK BEING PERFORMED, WHICHEVER IS THE MORE STRINGENT. CONTRACTOR IS TO PERFORM WORK ON PREMIUM TIME, IF SO DIRECTED BY BUILDING OWNER, SO AS NOT TO DISTURB EXISTING TENANTS ON OTHER FLOORS.
- ALL NEW ELECTRICAL DEVICES SHALL MATCH THE BASE BUILDING STANDARD.

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#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE

ISSUED FOR BID/PERMIT

PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE

ELECTRICAL NOTES

DRAWING #

E-002

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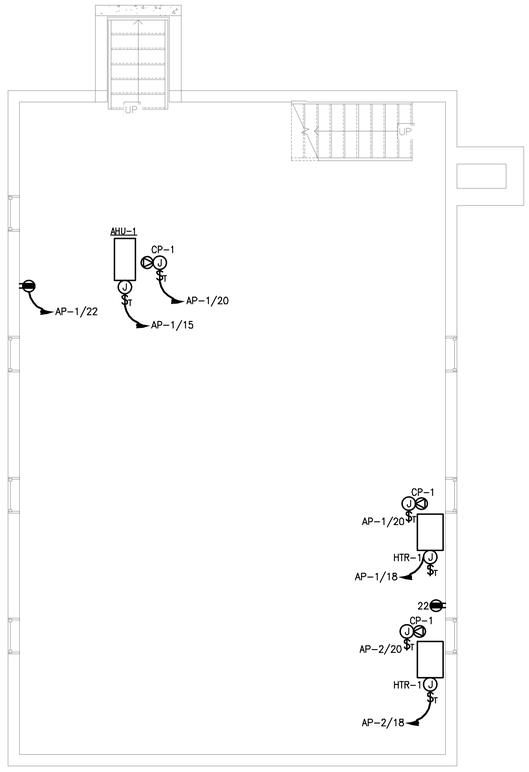
UNIT POWER NOTES:

1. ALL 120V 15A OR 20A BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES SHALL BE PROVIDED WITH AN ARC FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER, EXCEPT THOSE CIRCUITS SERVING BATHROOMS.
2. ALL 120V 15A OR 20A RECEPTACLES IN LAUNDRY ROOMS OR AREAS, WITHIN 6' OF THE EDGE OF SINKS, OR INSTALLED ON KITCHEN COUNTERTOPS SHALL BE PROVIDED WITH GROUND FAULT PROTECTION.
3. ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE.
4. KITCHEN ISLAND OUTLETS SHALL HAVE PANCAKE BOXES AND BE INTEGRATED INTO CABINETS. PROVIDE CONDUIT DOWN FROM LOAD CENTER AND ROUTED IN CEILING CAVITY OF FLOOR BELOW TO KITCHEN ISLAND.
5. UNIT LOAD CENTERS SHALL BE MOUNTED SO THAT THE HEIGHT OF TALLEST CIRCUIT BREAKER IS 48" MAXIMUM.
6. ELECTRICAL DEVICE HEIGHTS TO COMPLY WITH ADA REQUIREMENTS, COORDINATE WITH ARCHITECT FOR EXACT HEIGHTS AND LOCATIONS.
   -16" AFF MINIMUM TO BOTTOM OF RECEPTACLE
   -47" AFF MAXIMUM TO TOP OF SWITCH
   -46" AFF MAXIMUM TO TOP OF COUNTERTOP RECEPTACLES & SWITCHES.
7. SYMBOLS INDICATE THE FOLLOWING WIRING:

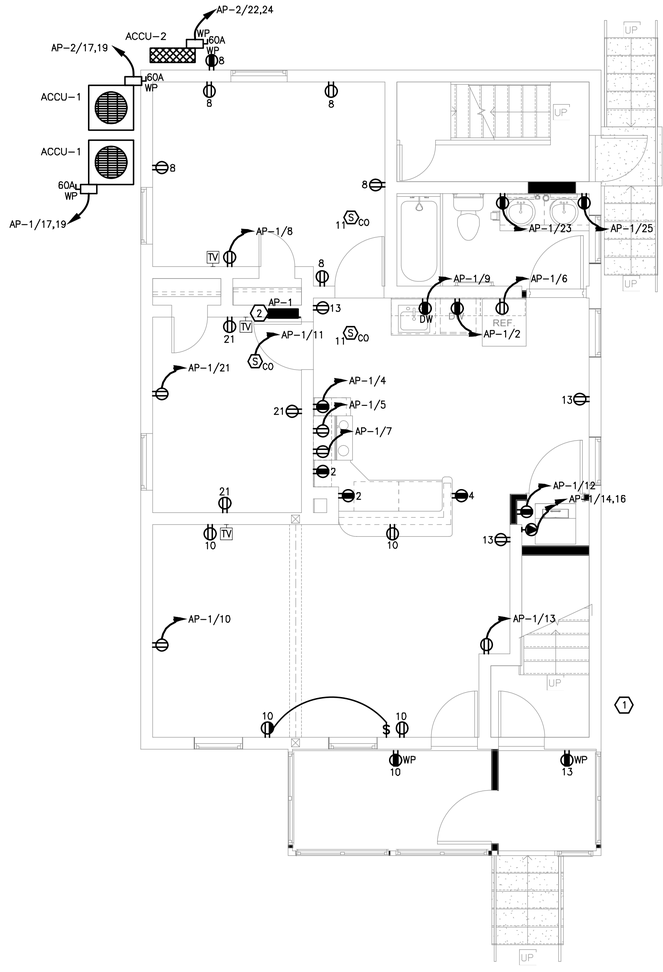
   TV – PROVIDE (1) CAT-6E AND (1) COAX RG6 FROM THE NID PANEL

POWER KEY NOTES:

1. NEW 225A, 120/240V, 1 PHASE, 3 WIRE, NEMA 3R METERBANK, SQUARE D #MPL32225 WITH:
   (1) 100A/2P CIRCUIT BREAKER
   (1) 125A/2P CIRCUIT BREAKER
2. PROVIDE 3#3 + 1#8 GRD – 1 1/4"C. FROM NEW 100A/2P METER BRANCH UNIT.
3. PROVIDE 3#1 + 1#6 GRD – 1 1/2"C. FROM NEW 125A/2P METER BRANCH UNIT.



BASEMENT FLOOR PLAN
1/4" = 1'-0"



FIRST FLOOR PLAN
1/4" = 1'-0"

PANEL DESIGNATION : **AP-1**

VOLTAGE	120/240 V	NEUTRAL	100%	QUANTITY OF POLES	30
PHASE	1 Ø	SCC RATING (SYM)	22 K.A.I.C.	MAIN LUGS ONLY	100 A
WIRE	3 W + G			MAIN BUS	100 A
FLUSH MOUNTED	X	NEMA 1 ENCLOSURE	X	GROUND BUS	X
FEED THROUGH LUGS					

REMARKS : * INDICATES GFCI TYPE CIRCUIT BREAKER

CKT #	TRIP	LOAD DESCRIPTION	ØA (VA)	ØB (VA)	LOAD DESCRIPTION	TRIP	CKT #
1	20A	LIGHTING	1540		GFI RECEPTACLES	20A	2
3	20A	BASEMENT LIGHTING		360	GFI RECEPTACLES	20A	4
5	20A	MICROWAVE/HOOD	1800		REFRIGERATOR *	20A	6
7	20A	RANGE		1260	BEDROOM RECEPTACLES	20A	8
9	20A	DISHWASHER	2280		LIVING ROOM RECEPTACLES	20A	10
11	20A	SMOKE DETECTOR		1525	WASHER	20A	12
13	20A	GENERAL RECEPTACLES	3400		DRYER 2#10 + 1#10 GRD - 3/4"C	30A	14
15	20A	AHU-1		3300			16
17	40A	ACCU-1 2#8 + 1#10 GRD - 3/4"C.	2718		HTR-1	20A	18
19				3378	CONDENSATE PUMPS	20A	20
21	20A	BEDROOM RECEPTACLES	1080		BASEMENT GFI REC.	20A	22
23	20A	BATHROOM GFI RECEPTACLES		180	**SPARE**	20A	24
25	20A	BATHROOM GFI RECEPTACLES	180		SPACE	20A	26
27	20A	SPARE AFCI/GFCI		0	SPACE	20A	28
29	20A	SPARE AFCI/GFCI	0		SPACE		30
		TOTAL CONNECTED LOAD PER PHASE	13.00	10.00			
		TOTAL CONNECTED LOAD	23.00 KVA		95.8 A		
		TOTAL DEMAND LOAD	18.21 KVA		75.9 A		

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#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE
ISSUED FOR BID/PERMIT

PROJECT NAME
RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE
ELECTRICAL POWER PLANS

DRAWING #
E-101

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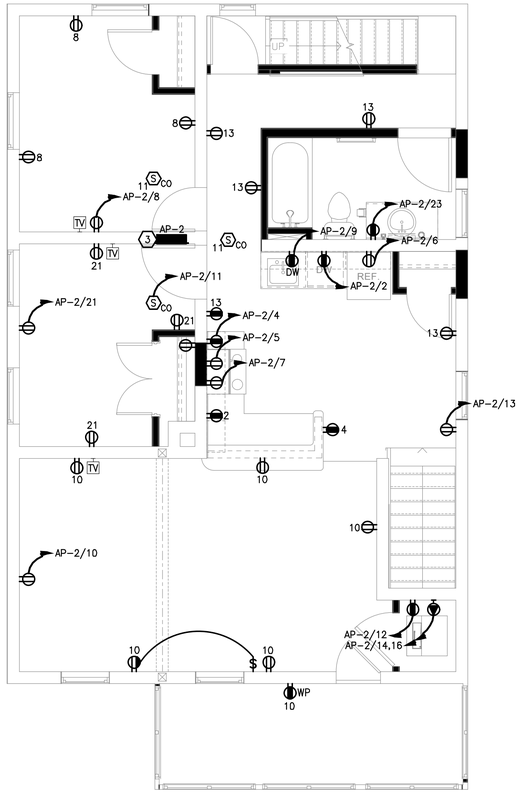
UNIT POWER NOTES:

1. ALL 120V 15A OR 20A BRANCH CIRCUITS SUPPLYING OUTLETS OR DEVICES SHALL BE PROVIDED WITH AN ARC FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER, EXCEPT THOSE CIRCUITS SERVING BATHROOMS.
2. ALL 120V 15A OR 20A RECEPTACLES IN LAUNDRY ROOMS OR AREAS, WITHIN 6' OF THE EDGE OF SINKS, OR INSTALLED ON KITCHEN COUNTERTOPS SHALL BE PROVIDED WITH GROUND FAULT PROTECTION.
3. ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE.
4. KITCHEN ISLAND OUTLETS SHALL HAVE PANCAKE BOXES AND BE INTEGRATED INTO CABINETS. PROVIDE CONDUIT DOWN FROM LOAD CENTER AND ROUTED IN CEILING CAVITY OF FLOOR BELOW TO KITCHEN ISLAND.
5. UNIT LOAD CENTERS SHALL BE MOUNTED SO THAT THE HEIGHT OF TALLEST CIRCUIT BREAKER IS 48" MAXIMUM.
6. ELECTRICAL DEVICE HEIGHTS TO COMPLY WITH ADA REQUIREMENTS, COORDINATE WITH ARCHITECT FOR EXACT HEIGHTS AND LOCATIONS.
   -16" AFF MINIMUM TO BOTTOM OF RECEPTACLE
   -47" AFF MAXIMUM TO TOP OF SWITCH
   -46" AFF MAXIMUM TO TOP OF COUNTERTOP RECEPTACLES & SWITCHES.
7. SYMBOLS INDICATE THE FOLLOWING WIRING:

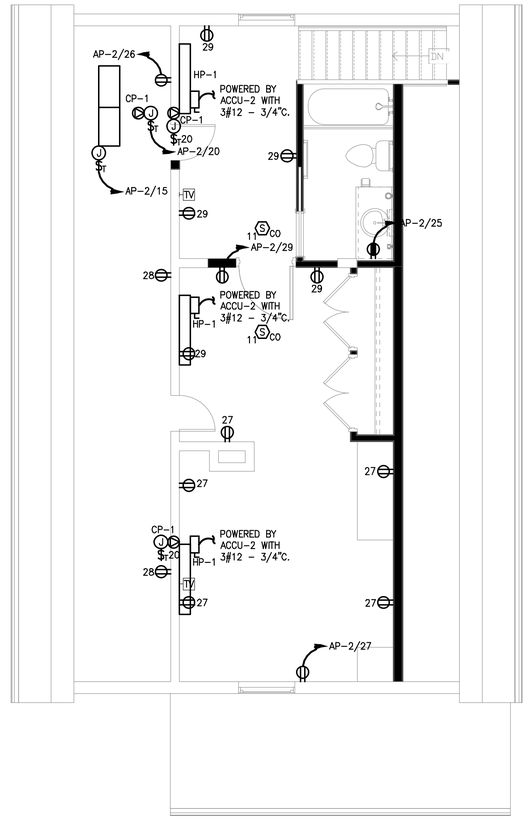
   TV –PROVIDE (1) CAT-6E AND (1) COAX RG6 FROM THE NID PANEL

POWER KEY NOTES:

1. NEW 225A, 120/240V, 1 PHASE, 3 WIRE, NEMA 3R METERBANK, SQUARE D #HPL32225 WITH:
   (1) 100A/2P CIRCUIT BREAKER
   (1) 125A/2P CIRCUIT BREAKER
2. PROVIDE 3#3 + 1#8 GRD – 1 1/4"C. FROM NEW 100A/2P METER BRANCH UNIT.
3. PROVIDE 3#1 + 1#6 GRD – 1 1/2"C. FROM NEW 125A/2P METER BRANCH UNIT.



SECOND FLOOR PLAN
1/4" = 1'-0"



THIRD FLOOR PLAN
1/4" = 1'-0"

PANEL DESIGNATION : **AP-2**

VOLTAGE	120/240 V	NEUTRAL	100%	QUANTITY OF POLES	36
PHASE	1 Ø	SCC RATING (SYM)	22 K.A.I.C.	MAIN LUGS ONLY	125 A
WIRE	3 W + G			MAIN BUS	125 A
FLUSH MOUNTED	X	NEMA 1 ENCLOSURE	X	GROUND BUS	X
FEED THROUGH LUGS					

REMARKS : * INDICATES GFCI TYPE CIRCUIT BREAKER

CKT #	TRIP	LOAD DESCRIPTION	ØA (VA)	ØB (VA)	LOAD DESCRIPTION	TRIP	CKT #
1	20A	LIGHTING	1540		GFI RECEPTACLES	20A	2
3	20A	LIGHTING		860	GFI RECEPTACLES	20A	4
5	20A	MICROWAVE/HOOD	1800		REFRIGERATOR *	20A	6
7	20A	RANGE		1260	BEDROOM RECEPTACLES	20A	8
9	20A	DISHWASHER	2280		LIVING ROOM RECEPTACLES	20A	10
11	20A	SMOKE DETECTOR		1525	WASHER	20A	12
13	20A	GENERAL RECEPTACLES	3400		DRYER 2#10 + 1#10 GRD - 3/4"C	30A	14
15	20A	AHU-1		3300			16
17	40A	ACCU-1 2#8 + 1#10 GRD - 3/4"C.	2718		HTR-1	20A	18
19				3378	CONDENSATE PUMPS	20A	20
21	20A	BEDROOM RECEPTACLES	3258		ACCU-2 2#8 + 1#10 GRD - 3/4"C.	40A	22
23	20A	BATHROOM GFI RECEPTACLES		2718			24
25	20A	BATHROOM GFI RECEPTACLES	180		3RD FLOOR RECEPTACLES	20A	26
27	20A	3RD FLOOR RECEPTACLES		0	SPACE	20A	28
29	20A	3RD FLOOR RECEPTACLES	0		SPACE	20A	30
31	20A	**SPARE AFCI/GFCI**		0	**SPACE**	20A	32
33	20A	**SPARE AFCI/GFCI**	0		**SPARE**	20A	34
35	20A	**SPARE**		0	**SPARE**	20A	36
		TOTAL CONNECTED LOAD PER PHASE	15.18	13.04			
		TOTAL CONNECTED LOAD	28.22 KVA		117.6 A		
		TOTAL DEMAND LOAD	23.99 KVA		100.0 A		

MASTROLUCA ENGINEERING ASSOCIATES, LLC
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PROJECT ISSUANCES/REVISIONS

#	DATE	ISSUE/REVISION DESCRIPTION
-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE
ISSUED FOR BID/PERMIT

PROJECT NAME
RENOVATIONS TO 163 IVY ST

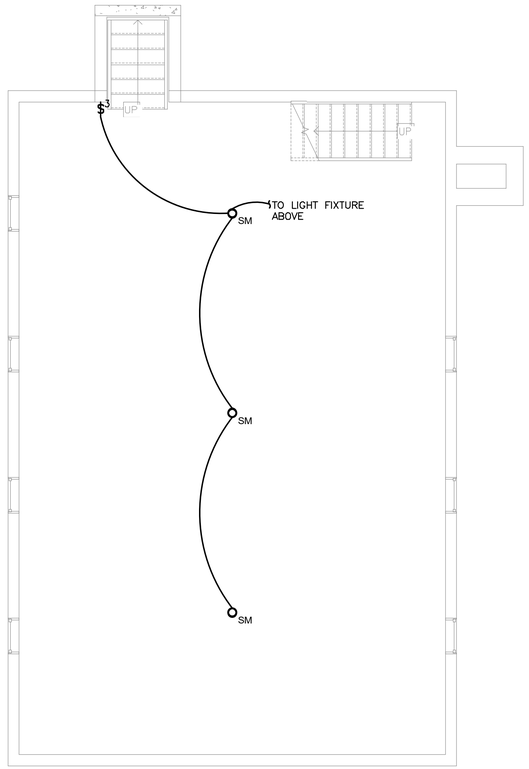
163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

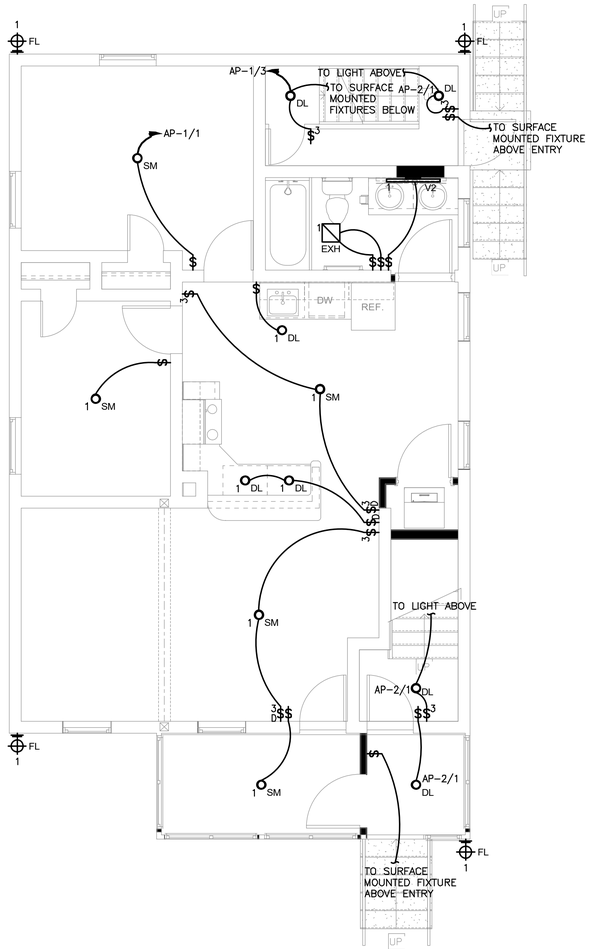
SCALE: AS NOTED

DRAWING TITLE
ELECTRICAL
POWER PLANS

DRAWING #
E-102



BASEMENT
1/4" = 1'-0"



FIRST FLOOR PLAN
1/4" = 1'-0"

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RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE

ELECTRICAL
LIGHTING PLANS

DRAWING #

E-201

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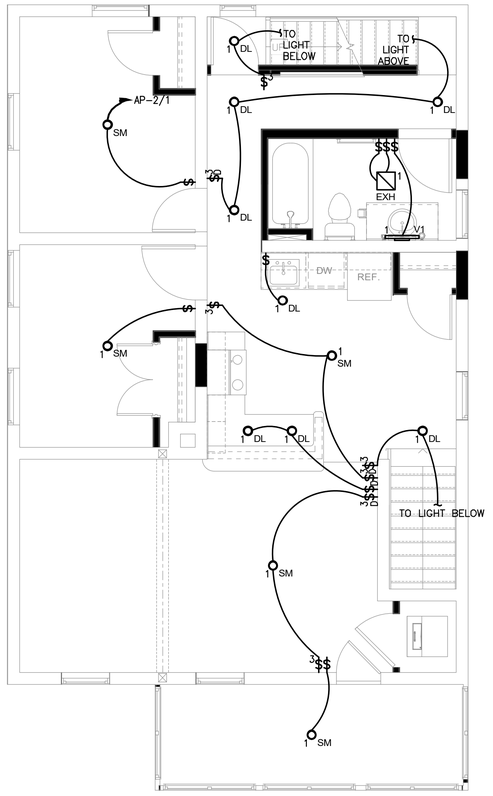
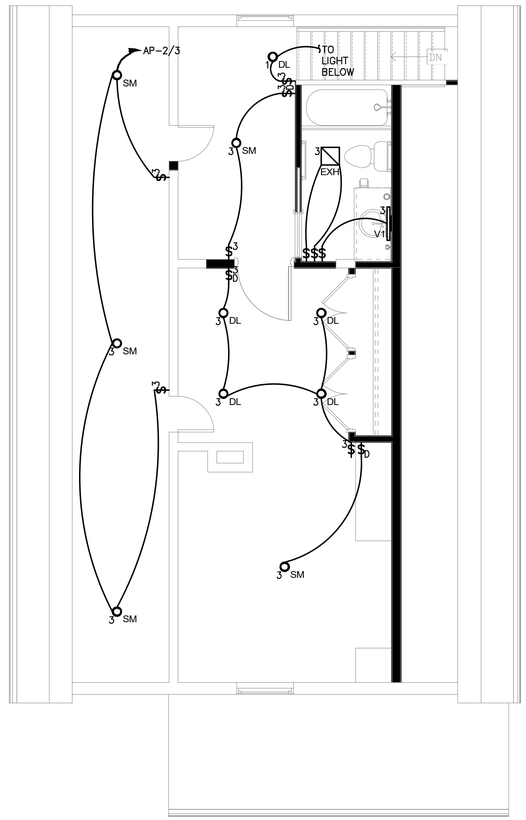


SECOND FLOOR PLAN
1/4" = 1'-0"



THIRD FLOOR PLAN
1/4" = 1'-0"

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PROJECT NAME
RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE
ELECTRICAL
LIGHTING PLANS

DRAWING #
E-202

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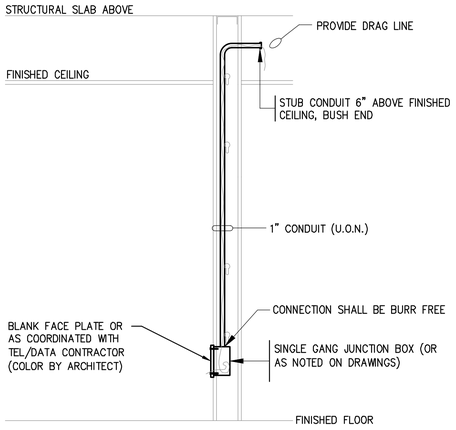
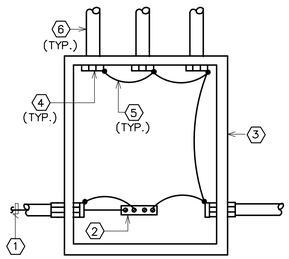


NOTE: ALL DATA AND TEL. CABLING IS BY OTHERS

COMMUNICATION RECEPTACLE DETAIL (TYPCIAL)

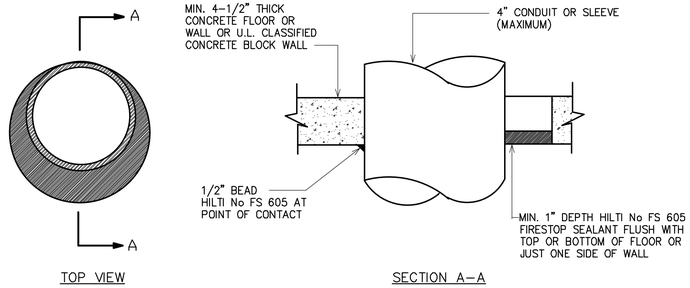
N.T.S.



RACEWAY EQUIPMENT GROUNDING SYSTEM

N.T.S.

1. SYSTEM EQUIPMENT GROUNDING CONDUCTOR SIZED AS PER NEC TABLE 250.122
2. PANELBOARD EQUIPMENT GROUND BUS
3. SERVICE ENTRANCE EQUIPMENT SWITCHBOARD/ PANELBOARD ENCLOSURE.
4. GROUNDING BUSHING
5. BONDING JUMPER INSTALLED AS PER NEC ARTICLE 250
6. METAL CONDUIT, TYPICAL

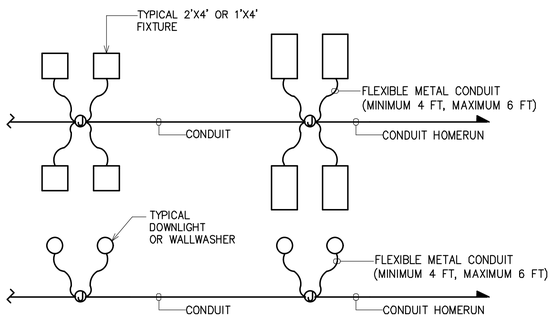


DETAIL OF CONDUIT THROUGH CONCRETE FLOOR/WALL OR BLOCK WALL

N.T.S.

NOTES:

1. CONDUIT MAY BE CENTERED OR OFFSET IN HOLE. MAXIMUM DIAMETER OF HOLE OPENING IS 14 INCHES.
2. TEMPORARY FORMS MAY BE REQUIRED TO SUPPORT THE FIRESTOP SEALANT WHILE IT CURES.
3. FOR CONDUIT SLEEVE INSTALATIONS PROVIDE AROUND CONDUCTORS WITHIN SLEEVE.

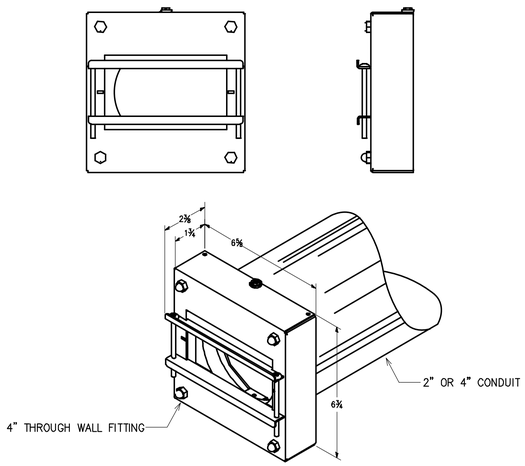


TYPICAL LIGHTING FIXTURE CIRCUITING DETAIL

N.T.S.

NOTE:

1. LIGHTING FIXTURES SHALL BE CIRCUITED IN ACCORDANCE WITH CIRCUIT NUMBER INDICATED ADJACENT TO EACH FIXTURE ON THE LIGHTING DRAWINGS.
2. ARMORED CABLE MAYBE PROPOSED AS AN ALTERNATE TO CONDUIT. REFER TO SPECIFICATION.



TYPICAL CONDUIT THRU-WALL FIRESTOPPING DETAIL

N.T.S.

NOTES:

1. CONTRACTOR TO PROVIDE FITTING ON EACH END OF CONDUIT(S). FOR 4" CONDUITS UTILIZE WIREMOLD FLAMSTOPPER CAT No.FS4-FY. FOR 2" CONDUITS UTILIZE WIREMOLD FLAMSTOPPER CAT No.FS2-FY. AT CONTRACTORS OPTION, UTILIZE PRE-CUT 2", 4" CONDUITS, WIREMOLD CAT No.FSPCC2725 OR FSPCC4725 RESPECTIVELY. PRE-CUT CONDUITS ARE 7-5/16" IN LENGTH. PROVIDE ADEQUATE SPACING BETWEEN CONDUIT BANKS TO ALLOW FOR INSTALLATION OF FITTING.
2. DETAIL/SPECIFICATIONS APPLICABLE FOR ALL LOW VOLTAGE CABLING PASSING THROUGH ALL FIRE RATED WALLS. CONTRACTOR SHALL REFERENCE ARCHITECTURAL DRAWINGS FOR RATED WALL LOCATIONS.
3. IF UTILIZED IN CONJUNCTION WITH CABLE TRAY, PROVIDE GROUND HARDWARE AND CONNECTIONS AS REQUIRED.

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163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE

ELECTRICAL DETAILS

DRAWING #

E-301

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ELECTRICAL SPECIFICATIONS

PART 1 – GENERAL:

1.1 SCOPE OF WORK:

FURNISH ALL REQUIRED LABOR, MATERIALS, EQUIPMENT AND CONTRACTOR'S SERVICES NECESSARY FOR THE COMPLETE INSTALLATION OF ELECTRICAL ITEMS AS INDICATED ON THE DRAWINGS, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:

A. DEMOLITION AND REMOVAL OF ELECTRICAL EQUIPMENT AS REQUIRED INCLUDING ALL CONDUCTORS AND CONDUIT BACK TO ITS SOURCE.

B. INSTALLATION OF LIGHT FIXTURES AND LAMPS INCLUDING EXIT AND EMERGENCY LIGHTING.

C. INSTALLATION OF WALL SWITCHES, RECEPTACLES, TELEPHONE OUTLETS, ETC.

D. INSTALLATION OF NEW RACEWAY AND CONDUCTORS FOR LIGHTING AND POWER.

E. CUTTING, CHANNELLING AND CHASING REQUIRED TO ACCOMMODATE THE INSTALLATION OF ELECTRICAL WORK AND ROUGH PATCHING.

F. ADDITION AND/OR MODIFICATION OF EXISTING ELECTRICAL DISTRIBUTION EQUIPMENT.

G. INSTALLATION OF HVAC POWER WIRING AND FINAL CONNECTIONS TO HVAC EQUIPMENT.

H. INSTALLATION OF CONDUIT, JUNCTION BOXES, PULL BOXES, ETC. REQUIRED FOR THE AFOREMENTIONED EQUIPMENT.

I. MAINTENANCE OF PROPER OPERATION OF EXISTING BASE BUILDING SYSTEMS WITHIN THE CONTRACT AREA IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING.

J. TEMPORARY LIGHT AND POWER DURING CONSTRUCTION.

K. GROUNDING OF ALL EQUIPMENT AS REQUIRED BY CODE.

L. MODIFICATION OF EXISTING FIRE ALARM SYSTEM.

1.2 INTERPRETATION OF DOCUMENTS:

A. AS USED IN THE DRAWINGS AND SPECIFICATIONS FOR ELECTRICAL WORK, CERTAIN NON-TECHNICAL WORDS SHALL BE UNDERSTOOD TO HAVE SPECIFIC MEANINGS AS FOLLOWS REGARDLESS OF INDICATIONS TO THE CONTRARY IN THE GENERAL CONDITIONS OF OTHER DOCUMENTS GOVERNING THE ELECTRICAL WORK.

1. "ELECTRICAL CONTRACTOR," "THIS CONTRACTOR," – THE PARTY OR PARTIES WHO HAVE BEEN DULY AWARDED THE CONTRACT FOR AND ARE THEREBY MADE RESPONSIBLE FOR THE ELECTRICAL WORK AS DESCRIBED HEREIN.

2. "THIS CONTRACT," "THE CONTRACT" – THE AGREEMENT COVERING THE WORK TO BE PERFORMED BY "THIS CONTRACTOR."

3. "EQUAL," "SATISFACTORY," "ACCEPTED," "ACCEPTABLE" "EQUIVALENT" – ACCEPTABLE FOR USE ON THE PROJECT, AS DETERMINED BY THE ENGINEER BASED ON DOCUMENTS PRESENTED FOR SUCH DETERMINATION.

4. "THESE SPECIFICATIONS," "THIS SECTION, PART, DIVISION" (OF THE SPECIFICATION) – THE DOCUMENT SPECIFYING THE WORK TO BE PERFORMED BY "THIS CONTRACTOR."

5. "THE ELECTRICAL WORK," "THIS WORK" – ALL LABOR MATERIALS, EQUIPMENT APPARATUS, CONTROLS, ACCESSORIES, AND OTHER ITEMS REQUIRED FOR A PROPER AND COMPLETE INSTALLATION BY THE ELECTRICAL CONTRACTOR.

6. "ARCHITECT," "ENGINEER," "OWNER'S REPRESENTATIVE" – THE PARTY OR PARTIES RESPONSIBLE FOR INTERPRETING, ACCEPTING AND OTHERWISE RULING ON THE PERFORMANCE UNDER THIS CONTRACT.

7. "FURNISH" – PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE ELECTRICAL WORK.

8. "INSTALL" – UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE ELECTRICAL WORK.

9. "PROVIDE" – "FURNISH" AND "INSTALL."

10. "NEW" – MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

1.3 GENERAL REQUIREMENTS:

A. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES, REGULATIONS, BUILDING STANDARDS AND THE BEST PRACTICES OF THE TRADE FOR INSTALLATION OF ELECTRICAL WORK.

B. THE ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, LOCAL CODES/REQUIRMENTS, STANDARD OF THE NATIONAL BOARD OF UNDERWRITERS, OSHA AND ALL AUTHORITIES HAVING JURISDICTION. WORK SHALL ALSO COMPLY WITH APPLICABLE BUILDING RULES AND REGULATIONS. THE BUILDING RULES AND REGULATIONS WHERE MORE STRINGENT THAN THIS SPECIFICATION, SHALL TAKE PRECEDENCE OVER THE SPECIFICATION UNLESS OTHERWISE NOTED. THIS CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF THE REGULATIONS PRIOR TO SUBMISSION OF BID. THE CONTRACTOR SHALL SECURE ALL CERTIFICATES OF REQUIRED ORDINANCES, AND DELIVER THEM TO THE OWNER'S REPRESENTATIVE.

C. THE CONTRACTOR SHALL VISIT AND EXAMINE CAREFULLY THE AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND WITH DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. THE CONTRACTOR SHALL PERFORM THIS PRIOR TO SUBMITTING HIS PROPOSAL. THIS WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

D. UPON REVIEW OF ELECTRICAL DRAWINGS AND PRIOR TO SUBMITTING HIS PROPOSAL, THE ELECTRICAL CONTRACTOR SHALL INFORM THE ARCHITECT AND/OR ENGINEER OF ANY DISCREPANCIES OR REQUEST CERTIFICATION, IF NECESSARY, CONCERNING THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION. WHERE ANY INFORMATION OR DIRECTION IS CONFLICTING BETWEEN THIS SPECIFICATION AND THE DRAWINGS OR BETWEEN DIFFERENT SPECIFICATION SECTIONS, OR BETWEEN DIFFERENT DRAWINGS AND CLARIFICATION CANNOT BE OBTAINED, THE MORE EXPENSIVE AND STRINGENT REQUIREMENT OR DIRECTION SHALL BE ADHERED TO. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS SHOULD THIS PROCEDURE NOT BE FOLLOWED.

E. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS WHOSE WORK MIGHT AFFECT THIS INSTALLATION. CONTRACTOR SHALL ARRANGE ALL PARTS OF THIS WORK AND EQUIPMENT IN PROPER RELATION TO THE WORK AND EQUIPMENT OF OTHERS AND WITH BUILDING CONSTRUCTION AND ARCHITECTURAL FINISH SO THAT IT WILL HARMONIZE IN SERVICE AND APPEARANCE.

F. THE DRAWINGS INDICATE SIZE AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. THE EXACT LOCATION AND ELEVATION OF ALL LIGHTING FIXTURES, RECEPTACLES, ETC., SHALL BE DETERMINED FROM THE ARCHITECTURAL DRAWINGS.

G. THE CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR, THE ARCHITECT AND THE OWNER PRIOR TO SUBMISSION OF BID TO DETERMINE WHAT WORK MUST BE PERFORMED AFTER NORMAL BUSINESS HOURS. UNLESS OTHERWISE DIRECTED ANY NOISY WORK (CHOPPING, CORE DRILLING, HAMMERING, ETC.) AND BUILDING POWER INTERRUPTIONS SHALL BE PERFORMED OUTSIDE OF NORMAL BUSINESS HOURS. CONFIRM NORMAL BUSINESS HOURS WITH BUILDING MANAGEMENT.

H. WHERE PANELBOARDS, SWITCHES, CIRCUIT BEAKERS, TRANSFORMERS, ETC. ARE EXISTING TO BE REUSED THE CONTRACTOR SHALL CLEAN AND REFURBISH THE EQUIPMENT. THIS SHALL INCLUDE TIGHTENING ALL CONNECTIONS, REPLACING DEFECTIVE MECHANISMS, EXERCISING MECHANISMS AND PROVIDING ANY MISCELLANEOUS COMPONENTS SO THE EQUIPMENT IS IN FIRST CLASS WORKING ORDER. ALL TRANSFORMER WINDINGS SHALL BE MEGGER TESTED.

PART 2 – PRODUCTS

2.1 PANELBOARDS:

A. PANELBOARD BOX SHALL BE MADE OF SHEET STEEL "BENT-UP" OR RIVETED OR BOLTED TOGETHER WITH EXTERIOR ANGLE IRON FRAME. BOX SHALL BE OF SUFFICIENT SIZE TO ALLOW A GUTTER AT LEAST 5-3/4" IN WIDTH ENTIRELY SURROUNDING EACH SECTION OF BOARD. INCREASE SIZE TO ACCOMMODATE FEEDER SIZE. PANELBOARDS SHALL BE SURFACE OR FLUSH TYPE AS NOTED ON THE DRAWINGS. PANEL BOXES SHALL BE GIVEN TWO COATS OF GREY ENAMEL PAINT.

B. PROVIDE CODE GAUGE STEEL DOORS AND TRIMS (DOOR WITHIN A DOOR) FOR ALL PANELBOARD BOXES.

C. TRIMS SHALL BE ATTACHED DIRECTLY TO BOX BY A FULL LENGTH PIANO HINGE. PROVIDE LOCKS AND KEYS.

D. PANEL BUS BARS SHALL BE COPPER PROPORTIONED FOR A CURRENT DENSITY OF 1000 AMPERES PER SQUARE INCH OF CROSS-SECTIONAL AREA. PROVIDE A COPPER GROUND BAR IN EACH PANEL. PROVIDE AN ISOLATED GROUND BAR IN PANELS AS INDICATED ON PANEL SCHEDULES.

E. PANELS SHALL BE PROVIDED WITH NEUTRAL BARS SIZED AT 200% OF THE PHASE BUS BARS AS CALLED FOR ON PANEL SCHEDULES.

F. A TYPEWRITTEN LIST OF CIRCUITS SHOWING CLEARLY THE LOADS SUPPLIED BY EACH CIRCUIT SHALL BE INSTALLED ON THE INSIDE OF EACH PANELBOARD DOOR. THIS LIST SHALL BE MOUNTED IN A STEEL FRAME UNDER A PLASTIC WINDOW. EACH PANEL SHALL BE EXTERNALLY TAGGED WITH PERMANENT LAMACOID PLATE INDICATING PANEL IDENTIFICATION AND VOLTAGE.

G. PHASE LEGS OF ALL PANELS SHALL BE BALANCED AT SUPPLY POINT. ANY PANEL FOUND WITH UNBALANCED LOADS SHALL HAVE ITS CIRCUITS REARRANGED AS REQUIRED TO BALANCE PHASE LEGS WITHIN 10%.

H. PANELS SHALL BE AS MANUFACTURED BY WESTINGHOUSE, GENERAL ELECTRIC OR SQUARE "D" OR APPROVED EQUAL.

2.2 DISCONNECT SWITCHES:

A. UNLESS OTHERWISE NOTED, DISCONNECT SWITCHES SHALL BE "QUICK-MAKE, QUICK-BREAK," HEAVY DUTY TYPE IN NEMA 1 ENCLOSURES FUSED OR UNFUSED AS INDICATED ON THE DRAWINGS. PROVIDE ALL FUSES AS REQUIRED. PROVIDE WEATHERPROOF DISCONNECT SWITCHES WHERE INSTALLED OUTDOORS OR AS INDICATED ON DRAWINGS.

B. DISCONNECT SWITCHES SHALL BE AS MANUFACTURED BY ITE, WESTINGHOUSE, GENERAL ELECTRIC, OR SQUARE 'D'.

2.3 CIRCUIT BREAKERS:

A. CIRCUIT BREAKERS SHALL BE BOLTED TO THE PANELBOARD BUS BARS. WHERE CIRCUIT BREAKERS ARE INSTALLED IN EXISTING PANELBOARDS. BREAKERS SHALL BE OF THE SAME MANUFACTURER AND BE COMPATIBLE WITH EXISTING PANELBOARD.

B. CIRCUIT BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK WITH NON-WELDING CONTACTS COMPENSATED FOR AMBIENT TEMPERATURES AND SHALL HAVE A MINIMUM SHORT CIRCUIT RATING OF 10,000 AMPERES SYMMETRICAL FOR 120/280V PANELS AND 14,000 AMPERES SYMMETRICAL FOR 277/480V PANELS OR HIGHER WHERE NOTED.

C. CIRCUIT BREAKERS SHALL BE OF THE "THERMAL-MAGNETIC" TYPE HAVING A BIMETALLIC ELEMENT FOR TIME DELAY OVERLOAD PROTECTION AND A MAGNETIC ELEMENT FOR SHORT CIRCUIT PROTECTION.

D. THE CIRCUIT BREAKER SHALL BE CONTAINED IN AN INDIVIDUAL CASE ENCLOSING ONLY THE NUMBER OF POLES REQUIRED FOR THE PARTICULAR BREAKER.

E. ANY CIRCUIT BREAKER MADE AVAILABLE DUE TO DEMOLITION SHALL BE DESIGNATED AS SPARE ON PANELBOARD DIRECTORIES.

F. CIRCUIT BREAKERS SHALL BE AS MANUFACTURED BY ITE, WESTINGHOUSE, GENERAL ELECTRIC, OR SQUARE "D".

2.4 FUSES:

A. FUSES SHALL BE CURRENT LIMITING TYPE WITH A MINIMUM INTERRUPTING CAPACITY OR 200,000 RMS AMPERES AND OF THE CONTINUOUS CURRENT RATINGS AS SHOWN ON THE DRAWINGS.

B. THEY SHALL HAVE AVERAGE MELTING TIME-CURRENT CHARACTERISTICS TO MEET THE UNDERWRITERS' LABORATORIES REQUIREMENTS FOR "CLASS K" 0-600 AMP FUSES AND "CLASS L" OVER 600 AMP FUSES. FUSES SHALL BE AS MANUFACTURED BY BUSSMAN OR SHAWMUTT.

2.5 RACEWAYS:

A. ALL WIRES SHALL BE RUN IN CONDUIT AS SPECIFIED HEREINAFTER, EACH LENGTH OF CONDUIT SHALL BEAR THE MAKER'S TRADEMARK OR STAMP. THE PLANS INDICATE THE GENERAL LOCATION OF OUTLET BOXES AND CIRCUITING. THE CONDUIT RUNS FOR THESE CIRCUITS MAY BE MODIFIED AT THE TIME OF INSTALLATION TO ADAPT SAME TO BUILDING CONSTRUCTION.

B. FOR ALL SIZES OF CONDUIT LARGER THAN 1-1/2", USE STANDARD ELBOWS; IN SMALLER SIZES, FIELD BENDS WILL BE PERMITTED INSTEAD OF USING MANUFACTURED ELBOWS BUT CARE MUST BE TAKEN NOT TO DAMAGE THE CONDUIT. THE RADIUS OF THE INNER CURVE OF ANY BEND SHALL NOT BE ANY LESS THAN THAT PERMITTED BY CODE.

C. CONDUIT SHALL BE SECURELY FASTENED IN PLACE AND HANGERS, SUPPORTS OR FASTENINGS SHALL BE PROVIDED AT EACH ELBOW AND AT EACH END OF EACH STRAIGHT RUN TERMINATED AT A BOX OR CABINET. WHERE RISER CONDUITS PIERCE FLOOR SLABS, THEY SHALL REST ON EACH FLOOR WITH APPROVED BEAM CLAMPS, PIPE STRAPS OR HEAVY IRON TIES WIRED TO THE STRUCTURAL MEMBERS SUPPORTING EQUIPMENT. SIZE AND TYPE OF ANCHOR SHALL BE BASED ON THE COMBINED WEIGHTS OF CONDUIT, HANGER AND CABLES. ALL HANGERS AND RODS SHALL BE PAINTED WITH ONE COAT OF ENAMEL.

D. INSTALL CONDUIT EXPANSION FITTINGS IN EACH CONDUIT RUN WHEREVER IT CROSSES AN EXPANSION JOINT AND WHEREVER THE CONDUIT LENGTH EXCEEDS 200 FEET. EXPANSION FITTINGS AS MANUFACTURED BY OZ/GEDNEY.

E. RUNNING THREADS SHALL NOT BE USED. WHERE CONDUIT WITH TAPERED THREADS CANNOT BE COUPLED WITH STANDARD CONDUIT COUPLINGS, O.Z./GEDNEY SPLIT COUPLINGS, OR ERICKSON COUPLINGS SHALL BE USED.

F. LAY OUT AND INSTALL ALL CONDUIT RUNS TO AVOID PROXIMITY TO STEAM AND HOT WATER PIPES. DO NOT RUN CONDUIT WITHIN THREE INCHES OF SUCH PIPES EXCEPT WHERE CROSSINGS ARE UNAVOIDABLE, THEN THE CONDUIT SHALL BE KEPT AT LEAST 1 INCH FROM THE COVERING OF THE PIPE CROSSING.

G. FEEDERS AND BRANCH CIRCUITRY ABOVE HUNG CEILING AND IN PARTITIONS SHALL BE RUN IN ELECTRICAL METALLIC TUBING (EMT) UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO MOTORS, LIGHT FIXTURES, ETC. MAY BE DONE WITH FLEXIBLE METALLIC CONDUIT (NO LONGER THAN SIX FEET).

H. ALL CONDUIT IN MECHANICAL ROOMS, ELECTRICAL CLOSETS AND WHERE CONCEALED IN CONCRETE SHALL BE RIGID THREADED REGARDLESS OF SIZE.

I. ELECTRIC METALLIC TUBING SHALL BE INDUSTRY STANDARD THIN WALL CONDUIT, EMT SHALL BE HOT DIPPED GALVANIZED STEEL ONLY. IT SHALL NOT BE LESS THAN 3/4" TRADE SIZE. IT SHALL BE USED FOR TRADE SIZE UP TO 4" UNLESS OTHERWISE NOTED.

J. FLEXIBLE METALLIC CONDUIT SHALL BE OF THE GROUNDING TYPE. IT SHALL CONSIST OF GALVANIZED STEEL TAPS FORMED INTO AN INDUSTRY STANDARD INTERLOCKING COIL. IT SHALL NOT BE LESS THAN 3/4" TRADE SIZE.

K. RIGID METAL CONDUIT SHALL BE INDUSTRY STANDARD STEEL CONDUIT. IT SHALL NOT BE LESS THAN 3/4" TRADE SIZE. STEEL CONDUIT SHALL BE HOT DIPPED GALVANIZED. IT SHALL BE USED FOR TRADE SIZE GREATER THAN 4" UNLESS OTHERWISE NOTED.

L. THREADED FITTINGS SHALL BE USED WITH RIGID CONDUIT. SET SCREW OR COMPRESSION FITTINGS SHALL BE USED WITH EMT.

M. EMPTY CONDUIT FOR NEW TELEPHONE AND DATA OUTLETS IN PARTITIONS SHALL BE 1" THIN WALL RUN CONCEALED IN WALLS, TERMINATED AND BUSHED 6" IN ACCESSIBLE HUNG CEILING AND DIRECTED TOWARDS PARTICULAR TELEPHONE/DATA ROOM OR CLOSET. FURNISH DRAG LINE.

N. RACEWAY SHALL BE MANUFACTURED BY NATIONAL WIRE PRODUCTS, TRIANGLE OR REPUBLIC.

2.6 WIRE AND CABLE:

A. METAL CLAD CABLE (TYPE MC) FOR CONCEALED BRANCH CIRCUITRY MAYBE USED WHEN AN ALTERNATE PRICE IS SUBMITTED FOR ITS USE AND WHEN WRITTEN APPROVAL IS GIVEN TO THE CONTRACTOR FROM THE BUILDING OWNER AND ENGINEER. IT SHALL ONLY BE INSTALLED WHERE PERMITTED BY CODE. ARMORED CABLE SHALL BE AS MANUFACTURED BY AFC OR APPROVED EQUAL.

B. ALL CONDUCTORS SHALL BE COPPER, TYPE THHN/THWN INSULATED. ALL CONDUCTORS SHALL HAVE 600 VOLT RATED INSULATION UNLESS OTHERWISE NOTED.

C. THE MINIMUM WIRE SIZE FOR BRANCH CIRCUITS SHALL BE NO. 12 AWG EXCEPT 120 VOLT CIRCUITS OVER 100' IN LENGTH SHALL BE NO. 10 AWG.

D. UNLESS SPECIFIED OTHERWISE, ALL WIRES #10 AWG AND SMALLER SHALL BE SOLID, CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.

E. FACTORY COLOR CODING SHALL BE AS FOLLOWS:

120/208 VOLT SYSTEM: PHASE 'A' – BLACK, PHASE 'B' – RED, PHASE 'C' – BLUE, NEUTRAL – WHITE , EQUIPMENT GROUND – GREEN.

277/480 VOLT SYSTEM: PHASE 'A' – BROWN, PHASE 'B' – YELLOW, PHASE 'C' – ORANGE, NEUTRAL – WHITE, EQUIPMENT GROUND – GREEN.

F. INSTALL AND CONNECT UP COMPLETE CONDUCTORS FOR ALL CIRCUITS AND WIRING SYSTEMS (NOT MORE THAN A SINGLE 3 CIRCUIT HOMERUN IN A CONDUIT) UNLESS OTHERWISE NOTED.

G. NO CONDUCTORS SHALL BE PULLED INTO ANY CONDUIT RUN BEFORE ALL CONDUIT JOINTS ARE MADE UP TIGHTLY, AND THE ENTIRE RUN IS SECURED IN PLACE. WHEN REQUIRED TO EASE THE PULLING OF WIRES INTO CONDUIT, USE POWDERED SOAPSTONE, MINERALLAC #100 OR APPROVED EQUAL BY THOMAS AND BETTS.

H. TAG ALL FEEDERS IN ALL PULL BOXES, GUTTER SPACES, AND WIREWAYS THROUGH WHICH THEY PASS.

I. LEAVE ALL WIRES WITH SUFFICIENT SLACK AT TERMINAL ENDS FOR CONVENIENT LOCATIONS TO DEVICES AND FOR CONVENIENT SERVICING.

J. MAKE SPLICES IN FEEDER TAPS IN PANEL BOX GUTTERS WITH PRESSURE TYPE CONNECTORS – BURNDY, NEPCO, OR O.Z./GEDNEY WITH COMPOSITION INSULATING COVERS.

K. SPLICES IN BRANCH WIRING SHALL BE TWISTED AND MADE MECHANICALLY TIGHT; THEN SECURED WITH 3M, SCOTCHLOCK OR THOMAS AND BETTS PIGTAIL CONNECTORS, CRIMP TYPE CONNECTORS SHALL NOT BE USED.

L. SUPPORT CONDUCTORS IN VERTICAL RACEWAYS AT THE TOP OF ANY RACEWAY LONGER THAN 20 FEET. INCLUDE ADDITIONAL SUPPORTS SPACED AT INTERVALS WHICH ARE NOT GREATER THAN 40 FEET. SUPPORT SHALL BE O.Z./GEDNEY TYPE R.

M. WIRE AND CABLE SHALL BE MANUFACTURED BY ROME, PHELPS DODGE, GENERAL CABLE, SIMPLEX, GENERAL ELECTRIC CO. OR ANACONDA.

2.7 DEVICES:

A. WIRING DEVICES SHALL BE SPECIFICATION GRADE UNLESS OTHERWISE NOTED. ALL DEVICES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE NOTED. REFER TO SYMBOL LIST.

B. SINGLE POLE SWITCHES SHALL BE 120/277 VOLTS, RATED AT 20 AMPERES, QUIET OPERATION TYPE. FINISH OF TOGGLE AND DEVICE PLATE AS DIRECTED BY ARCHITECT.

C. THREE WAY SWITCHES SHALL BE 120/277 VOLT, 20 AMPERES.

D. DIMMER SWITCHES SHALL BE LUTRON NOVA T STAR SERIES OR APPROVED EQUAL. UTILIZE NT SERIES FOR STANDARD INCANDESCENT AND NTLV SERIES FOR LOW VOLTAGE LIGHTING WHICH UTILIZE TRANSFORMERS. DIMMERS SHALL BE RATED AT 120 VOLT, WATTAGE SIZE AS REQUIRED. FINISH AS DIRECTED BY ARCHITECT. WHERE DIMMER SWITCHES ARE LOCATED NEXT TO SINGLE POLE LOCK AND TOGGLE TYPE SWITCHES, THE SINGLE POLE SWITCH SHALL MATCH THE DIMMING SWITCH STYLE.

E. SWITCH AND RECEPTACLE PLATES SHALL BE PLUMB AND SHALL FIT FLAT AGAINST THE WALL.

F. ALL SWITCH AND RECEPTACLE MOUNTING HEIGHTS AND LOCATIONS SHALL BE TAKEN FROM ARCHITECT'S DRAWING UNLESS OTHERWISE NOTED.

G. MULTIPLE DEVICES AT A COMMON LOCATION SHALL BE INSTALLED IN A COMMON MULTIGANG BOX WITH A COMMON FACEPLATE. DERATE DIMMER SWITCHES PER MANUFACTURER'S REQUIREMENTS WHEN GANGED.

2.8 PULLBOXES, JUNCTION BOXES AND OUTLET BOXES:

A. PULLBOXES, JUNCTION BOXES AND OUTLET BOXES SHALL BE MANUFACTURED FROM GALVANIZED INDUSTRY STANDARD GAUGE SHEET STEEL.

B. PROVIDE PULL BOXES AND JUNCTION BOXES IN LONG STRAIGHT RUNS OF RACEWAY TO ASSURE THAT CABLES ARE NOT DAMAGED WHEN THEY ARE PULLED, TO FULFILL REQUIREMENTS AS TO THE NUMBER OF BENDS PERMITTED IN RACEWAY BETWEEN CABLE ACCESS POINTS, THE ACCESSIBILITY OF CABLE JOINTS AND SPLICES, AND THE APPLICATION OF CABLE SUPPORTS.

C. PULLBOXES AND JUNCTION BOXES SHALL BE SIZED SO THAT THE MINIMUM BENDING RADIUS CRITERIA SPECIFIED FOR THE WIRES AND CABLE ARE MAINTAINED.

D. SWITCH, RECEPTACLE AND WALL OUTLET BOXES SHALL BE A NOMINAL 4 INCH SQUARE, 1-1/2 INCH OR 2-1/8 INCH DEEP AS REQUIRED BY CODE WITH A RAISED COVER, UNLESS OTHERWISE INDICATED ON THE DRAWING. PROVIDE 3/8 INCH FIXTURE STUD AS REQUIRED. GANGED OUTLET BOXES SHALL BE SUFFICIENT LENGTH TO SUIT CONDITIONS.

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-	07/28/2022	ISSUED FOR BID/PERMIT

PHASE

ISSUED FOR BID/PERMIT

PROJECT NAME

RENOVATIONS TO 163 IVY ST

163 IVY ST
NEW HAVEN, CT 06611

JOB NO.: MEA.2022.00034

SCALE: AS NOTED

DRAWING TITLE

ELECTRICAL SPECIFICATIONS

DRAWING #

E-401

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E. LIGHTING FIXTURE BOXES SHALL BE 4 INCH OCTAGON WITH 3/8 INCH FIXTURE STUD. FOR SUSPENDED CEILING WORK, PROVIDE A 4 INCH OCTAGON BOX WITH REMOVABLE BACKPLATE WHERE REQUIRED.

F. INCLUDE ALL REQUIRED JUNCTION/PULL BOXES AND OUTLET BOXES REGARDLESS OF INDICATIONS ON THE DRAWINGS (WHICH DUE TO SYMBOLIC METHODS OF NOTATION, MAY NOT SHOW ALL THAT ARE ACTUALLY REQUIRED).

G. WHERE BOXES HAVE ANY SINGLE HORIZONTAL DIMENSION LARGER THAN 36", THEY SHALL BE FITTED WITH CABLE SUPPORT RACKS CONSISTING OF 3/4" DIAMETER STEEL PIPES WITH FLANGED ENDS BOLTED TO THE SIDES OR FRAME OF THE PULL BOXES. EACH PIPE SUPPORT SHALL BE FITTED WITH A CONTINUOUS FIBER INSULATING SLEEVE. THE PIPE SUPPORTS SHALL BE ARRANGED IN TIERS CORRESPONDING TO THE CABLES ENTERING AND LEAVING THE BOX. SUFFICIENT PIPE SUPPORT RACKS WILL BE INCLUDED WITH THE PULL BOX SO THAT NO CABLE SHALL REMAIN UNSUPPORTED FOR A HORIZONTAL DISTANCE GREATER THAN 36". IN NO CASE SHALL CABLE SUPPORT PIPE RACKS BE MOUNTED SO THAT THEY INTERFERE WITH THE REMOVAL OF SCREW COVERS.

H. WHERE THE WIRES AND CABLES FOLLOWING THE SAME ROUTING ARE INDICATED AS RUNNING IN SEPARATE PULL BOXES, IT SHALL BE UNDERSTOOD THAT A SEGREGATION OF THE WIRES AND CABLES IS REQUIRED.

I. BARRIERS SHALL BE PROVIDED FOR SYSTEMS AS FOLLOWS:

1. BETWEEN WIRING WITH DIFFERENT VOLTAGE INSULATION RATINGS.
2. BETWEEN NORMAL AND EMERGENCY WIRING.
3. BETWEEN 277 VOLT WIRING CONNECTED TO DIFFERENT PHASES WITHIN THE SAME LIGHT SWITCH OUTLET BOX.

J. BARRIERS IN JUNCTION AND PULL BOXES SHALL BE OF NON-CURRENT CARRYING MATERIAL OF ADEQUATE THICKNESS FOR MECHANICAL STRENGTH BUT IN NO CASE LESS THAN 1/4". EACH BARRIER SHALL HAVE AN ANGLE IRON FRAMING SUPPORT ALL AROUND.

K. ALL EQUIPMENT, DEVICE BOXES, JUNCTION BOXES, PULLBOXES AND OUTLET BOXES SHALL BE INSTALLED SO AS TO ALLOW ACCESS TO THE COVER. IF NECESSARY AND APPROVED BY ARCHITECT, PROVIDE ACCESS DOOR OR COVERPLATES IN AREAS WHERE UNOBSTRUCTED ACCESS IS NOT POSSIBLE.

L. BOXES SHALL BE MANUFACTURED BY APPLETON ELECTRIC, CROUSE HINDS OR O.Z./GEDNEY CO.

2.9 SLEEVES AND INSERTS

A. FURNISH AND INSTALL SLEEVES AND INSERTS AS INDICATED ON DRAWINGS. ALL CONDUITS AND BOXES PENETRATING WATERPROOF CONSTRUCTION SHALL BE FLASHED AND MADE WATERTIGHT.

B. SLEEVES FOR INTERIOR PARTITIONS AND FLOORS SHALL BE 16-GAUGE AND GALVANIZED.

C. SLEEVES THROUGH FLOORS SHALL EXTEND TWO (2) INCHES ABOVE FINISHED FLOOR EXCEPT AS NOTED. ALL FUTURE SLEEVES SHALL BE CAPPED.

D. ALL SLEEVES SHALL BE SECURELY ANCHORED IN PLACE AND PROPERLY CAPPED TO PREVENT SEEPAGE OF CONCRETE INTO SLEEVE.

E. SLEEVES SHALL BE SEALED WITH AN APPROVED FIREPROOF MATERIAL AFTER INSTALLATION OF FEEDERS.

2.10 SUPPORTS AND FASTENINGS

A. ALL SUPPORTS AND FASTENINGS NECESSARY FOR THE SUPPORT OF ELECTRICAL EQUIPMENT SHALL BE IN ACCORDANCE WITH THE BEST INDUSTRY PRACTICE AND AS SPECIFIED HEREIN.

B. FURNISH AND INSTALL ALL STEEL SUPPORTING MEMBERS, HANGERS, BRACKETS OR OTHER SPECIAL DETAILS REQUIRED AND NECESSARY FOR THE PROPER INSTALLATION OF ELECTRIC EQUIPMENT.

C. ALL CHANNELS, JOINERS, HANGERS AND CAPS, NUTS AND BOLTS AND ASSOCIATED PARTS SHALL BE PLATED ELECTROLYTICALLY WITH ZINC OR SHALL BE DIPPED GALVANIZED.

D. SUPPORT LESS THAN 2" TRADE SIZE, VERTICALLY RUN CONDUIT AT INTERVALS NO GREATER THAN 8 FEET. SUPPORT SUCH CONDUITS 2" TRADE SIZE OR LARGER, AT INTERVALS NO GREATER THAN THE STORY HEIGHT, OR 15 FT. WHICHEVER IS SMALLER.

E. WHERE THEY ARE NOT EMBEDDED IN CONCRETE, SUPPORT LESS THAN 1" TRADE SIZE, HORIZONTALLY RUN CONDUITS AT INTERVALS NO GREATER THAN 7 FT. SUPPORT SUCH CONDUITS, 1" TRADE SIZE OR LARGER, AT INTERVALS NO GREATER THAN 10 FT.

F. INCLUDE SUPPORTING FRAMES OR RACKS EXTENDING FROM SLAB TO SLAB FOR WORK INDICATED AS BEING SUPPORTED FROM WALLS WHERE THE WALLS ARE INCAPABLE OF SUPPORTING THE WEIGHT.

G. INCLUDE SUPPORTING FRAMES OR RACKS FOR EQUIPMENT, INTENDED FOR VERTICAL SURFACE MOUNTING, WHICH IS REQUIRED IN A FREE STANDING POSITION.

H. EXCEPT FOR BRANCH CIRCUITRY INSTALL ALL CONDUIT IN HUNG CEILING SPACE ON ACCEPTABLE HANGERS AND INSERTS. CONDUIT OR ARMORED CABLE FOR BRANCH CIRCUITRY SHALL BE SUPPORTED BY CLAMPS OR PIPE STRAPS SECURED TO THE CEILING SUPPORT SYSTEM (BLACK IRON) OR FROM STRUCTURAL MEMBERS OR FROM THE DECK.

2.11 INSULATING BUSHINGS

A. ALL METAL CONDUIT AND ELECTRIC METALLIC TUBING 3/4" AND LARGER TERMINATING IN CABINETS, PULL BOXES AND SIMILAR BOXES SHALL HAVE INSULATED BUSHINGS. TYPE "B" OR TYPE "BLDG" (FOR GROUNDING BUSHING) AS MANUFACTURED BY O.Z./GEDNEY CO.

2.12 GROUNDING:

A. PROVIDE A GREEN GROUND CONDUCTOR IN CIRCUIT CONDUITS AS INDICATED.

B. PROVIDE SUPPLEMENTARY GROUND BONDING WHERE METALLIC CONDUITS TERMINATE AT METAL CLAD EQUIPMENT (OR AT THE METAL PULL BOX OF EQUIPMENT) FOR WHICH A GROUND BUS IS SPECIFIED. ACCOMPLISH THIS BY EQUIPPING THE CONDUITS WITH A BUSHING OF THE GROUNDING TYPE CONNECTED INDIVIDUALLY TO GROUND BUS.

C. ALL GROUND WIRES SHALL BE SUITABLY PROTECTED FROM MECHANICAL INJURY.

2.13 TEMPORARY LIGHTING AND POWER

A. FURNISH AND INSTALL WIRING FOR ADEQUATE LIGHT AND SMALL TOOLS POWER FOR THE PROJECT. THIS SHALL INCLUDE INSTALLING ALL LAMPS, BREAKERS, AND FUSING, AS IS NECESSARY.

B. TEMPORARY MAINTENANCE FOR THE ABOVE SHALL BE BASED ON OPERATION 1/2 HOUR BEFORE START OF FIRST TRADE THROUGH 1/2 HOUR AFTER END OF LAST TRADE'S NORMAL WORK DAY.

C. TEMPORARY LIGHT AND POWER SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH CODES AND AUTHORITIES HAVING JURISDICTION.

2.14 FIRE ALARM SYSTEM:

A. THE ELECTRICAL CONTRACTOR SHALL FURNISH NEW FIRE ALARM EQUIPMENT AS SHOWN AND CONNECT TO THE EXISTING FIRE ALARM SYSTEM. COORDINATE WITH BUILDING MANAGEMENT AND FIRE ALARM SYSTEM VENDOR PRIOR TO ANY WORK. THE CONTRACTOR'S BID SHALL INCLUDE ANY FIRE ALARM VENDOR'S COST FOR TIE-IN'S, PROGRAMMING, PARTS, ETC.

B. WHERE CONSTRUCTION INTERFERES WITH EXISTING FIRE ALARM EQUIPMENT, OR IT IS LOCATED ON EXISTING WALLS TO BE DEMOLISHED, IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO NOTIFY THE BUILDING OWNER AND RELOCATE AT OWNER'S DIRECTION.

C. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO MAINTAIN FIRE ALARM SPEAKERS, STROBES, SMOKE DETECTORS, FIRE WARDEN STATIONS AND OTHER FIRE SAFETY DEVICES IN OPERATION AT ALL TIMES.

D. AT THE COMPLETION OF THE LIFE SAFETY SYSTEM INSTALLATION THE CONTRACTOR SHALL TEST ALL FIRE ALARM DEVICES AND EMERGENCY LIGHTING DEVICES AND SUBMIT A REPORT TO THE ENGINEER VERIFYING THAT THE SYSTEMS ARE FULLY OPERATIONAL.

E. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS THAT INCLUDE MANUFACTURER'S CUT SHEETS THAT INCLUDE EQUIPMENT MODEL NUMBERS, BATTERY CALCULATIONS, CONDUCTOR TYPE AND SIZES, AND VOLTAGE DROP CALCULATIONS.

2.15 LIGHT FIXTURES

A. ALL LIGHT FIXTURE MOUNTING HARDWARE SHALL MATCH AND BE COORDINATED WITH THE NEW OR EXISTING CEILING SYSTEM TYPE.

B. FLUORESCENT BALLASTS SHALL BE UL'S CLASS "P" AND SHALL CONFORM TO ANSI AND UL SPECIFICATION WITH LABELS OF APPROVAL BY UL AND CERTIFICATION BY C.B.M. BALLASTS SHALL COMPLY WITH THE STATE OF CONNECTICUT ENERGY CODE AND SHALL QUALIFY FOR ALL APPLICABLE CON EDISON REBATES. [SPECIFIER: CHANGE TO OTHER MUNICIPALITY AS REQUIRED.] BALLASTS FOR FLUORESCENT LAMPS SHALL BE OF THE ENERGY SAVING SUPER LOW HEAT DESIGN WITH HIGH POWER FACTOR (0.9 MINIMUM) AND A HIGH BALLAST FACTOR (0.95 MINIMUM), AS MANUFACTURED BY MOTOROLA, UNIVERSAL, OR ESB.

C. ELECTRONIC BALLASTS SHALL BE HIGH-FREQUENCY, FULL OUTPUT TYPE FOR USE ON 265 MA RAPID START T-8 LAMPS. THEY SHALL HAVE A 'A' SOUND RATING OR BETTER. ALL ELECTRONIC BALLASTS SHALL HAVE LESS THAN 20 PERCENT TOTAL HARMONIC DISTORTION (THD). BALLASTS SHALL MEET OR EXCEED FCC REGULATIONS PART 18. ELECTRONIC BALLASTS FOR 1, 2, 3, OR 4 LAMP COMBINATIONS SHALL BE USED AS REQUIRED TO ACCOMMODATE THE FIXTURE DESCRIBED IN THE FIXTURE SCHEDULE.

D. PROVIDE LAMPS SUITABLE FOR LIGHTING FIXTURES IN WHICH THEY ARE USED AND AS INDICATED ON THE DRAWINGS. FLUORESCENT LAMPS SHALL BE "RAPID START" AND SHALL DELIVER NOT LESS THAN 3150 LUMENS. COLOR SHALL BE WARM WHITE UNLESS OTHERWISE NOTED. INCANDESCENT LAMPS SHALL BE INSIDE FROSTED AND RATED AT 130 VOLTS UNLESS OTHERWISE SPECIFIED. LAMPS SHALL BE AS MANUFACTURED BY G.E., SYLVANIA, PHILIPS UNLESS OTHERWISE SPECIFIED ON DRAWINGS.

E. REFER TO LIGHTING FIXTURE SCHEDULE FOR TYPES.

2.16 TRANSFORMERS

A. THREE PHASE TRANSFORMERS SHALL BE 480 VOLT DELTA PRIMARY AND 208/120 VOLT WYE SECONDARY UNLESS OTHERWISE NOTED. TRANSFORMERS SHALL HAVE A MINIMUM OF TWO 2-1/2% FULL CAPACITY PRIMARY TAPS ABOVE AND FOUR 2-1/2% FULL CAPACITY PRIMARY TAPS BELOW NORMAL PRIMARY VOLTAGE.

B. TRANSFORMERS 15 KVA AND ABOVE SHALL BE 115 DEGREE CENTIGRADE TEMPERATURE RISE ABOVE 40 DEGREES CENTIGRADE AMBIENT. ALL INSULATING MATERIALS TO BE IN ACCORDANCE WITH NEMA

C. ALL COILS SHALL BE OF CONTINUOUS WOUND COPPER CONSTRUCTION AND IMPREGNATED WITH NON-HYDROSCOPIC, THERMO-SETTING VARNISH. ALL CORES TO BE CONSTRUCTED OF HIGH GRADE, NON AGING SILICON STEEL WITH HIGH MAGNETIC PERMEABILITY AND LOW HYSTERESIS AND EDDY CURRENT LOSSES.

D. THE TRANSFORMERS SHALL BE IN A HEAVY GAUGE, SHEET METAL VENTILATED ENCLOSURE.

E. IN ADDITION TO THE ABOVE TRANSFORMERS SUPPLYING PERSONAL COMPUTERS, LASER PRINTERS AND SIMILAR TYPE OF EQUIPMENT SHALL HAVE THE FOLLOWING CHARACTERISTICS TO COMPENSATE FOR NON-LINEAR LOAD CONDITIONS:

1. THE TRANSFORMER SHALL HAVE A U.L. K-FACTOR RATING OF NOT LESS THAN K-13.
2. AN ELECTROSTATIC SHIELD SHALL BE INSERTED BETWEEN THE PRIMARY AND SECONDARY WINDING TO ATTENUATE HIGH FREQUENCY HARMONICS.
3. THE SECONDARY NEUTRAL SHALL BE 200% RATED WITH DOUBLE LUGS.

F. TRANSFORMERS SHALL BE MANUFACTURED BY ITE, WESTINGHOUSE, GENERAL ELECTRIC OR SQUARE 'D'.

PART 3 - EXECUTION

3.1 GENERAL

A. ALL CONTROL WIRING ASSOCIATED WITH MECHANICAL EQUIPMENT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

B. ALL DATA/VOICE/COMMUNICATION WIRING SHALL BE INSTALLED BY OTHERS. COORDINATE WITH THE RESPECTIVE INSTALLER.

C. OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE RESISTANCE RATED WALLS, PARTITIONS, FLOORS, OR CEILINGS SHALL BE FIRE STOPPED USING APPROVED METHODS. ALL SLEEVES SHALL HAVE BUSHINGS. SEALANT SHALL BE 3 HOUR.

D. PREPARE "AS-BUILT" TRACINGS SHOWING ALL CHANGES IN WIRE SIZE, CIRCUIT NUMBERING, CIRCUIT ROUTING, EQUIPMENT LOCATIONS AND ELECTRICAL WORK AS ACTUALLY INSTALLED SUBMIT "AS-BUILTS" ALONG WITH THREE (3) COPIES OF ALL APPROPRIATE MAINTENANCE AND OPERATIONS MANUALS TO THE OWNER.

E. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE INSTALLATION.

F. FURNISH 480 VOLT DANGER SIGNS AT ALL 480/277 VOLT EQUIPMENT PER CODE.

G. AT COMPLETION OF ELECTRICAL WORK ALL "IN SLAB" TRENCH DUCT COVERS SHALL BE REPLACED.

H. COORDINATE WITH BUILDING MANAGER FOR ANY SERVICE INTERRUPTION OF EXISTING LIGHTING OR POWER PANELS AND GIVE NOTICE TWO (2) DAYS PRIOR TO ANY WORK. ELECTRICAL CONTRACTOR TO DO WORK ON PREMIUM TIME SO AS NOT TO DISTURB EXISTING TENANTS ON OTHER FLOORS.

I. ALL PANELBOARD COVERS SHALL BE REPLACED AT THE COMPLETION OF EACH DAYS WORK.

J. MAINTAIN GROUND CONTINUITY THROUGHOUT ALL SYSTEMS.

K. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ANY EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW INSTALLATION. ALL EXPOSED ABANDONED CONDUIT AND WIRING SHALL BE REMOVED. THE CONTRACTOR SHALL CUT BACK ALL ABANDONED CONDUIT AND WIRING TO FLOOR, WALL, OR HUNG CEILING. THIS WORK MAY NOT BE REPRESENTED ON THE DRAWINGS, BUT SHOULD BE TAKEN INTO ACCOUNT BY THE CONTRACTOR IN HIS PROPOSAL.

L. INSULATION RESISTANCE TESTS SHALL BE PERFORMED ON ALL EXISTING CONDUCTORS AND EQUIPMENT DESIGNATED TO REMAIN. MEASURED INSULATION RESISTANCE SHALL CONFORM TO REQUIREMENTS OF THE LATEST EDITION OF THE CODE.

M. ELECTRICAL CONTRACTOR SHALL MAINTAIN CONTINUITY OF CIRCUITRY FOR EXISTING EQUIPMENT AND DEVICES THAT ARE TO REMAIN. WHERE OUTLETS ARE REMOVED AND ARE NOT AT THE CIRCUIT DEAD END, EXTEND CIRCUITRY AS REQUIRED TO MAINTAIN INTEGRITY OF ORIGINAL CIRCUIT. WHERE A WIRING DEVICE IS TO BE REMOVED AND THAT WALL IS TO REMAIN THE ELECTRICAL CONTRACTOR SHALL REMOVE BRANCH CIRCUITRY FROM ITS SOURCE AND FILL-IN OUTLET BOX. BLANK PLATES WILL NOT BE PERMITTED.

N. PRIOR TO ANY CHASING, CHOPPING, OR CORE DRILLING IS PERFORMED, THE CONTRACTOR SHALL FIELD INVESTIGATE CONDITIONS AND COORDINATE WITH ALL APPROPRIATE TRADES TO ENSURE THAT WORK WILL BE IN HARMONY WITH OTHER WORK AND NOT AFFECT ANY EXISTING BUILDING SYSTEMS. THIS WORK MUST BE APPROVED BY BUILDING MANAGEMENT PRIOR TO PROCEEDING.

3.2 SHOP DRAWINGS

A. SUBMIT SIX (6) SETS OF SHOP DRAWINGS FOR THE FOLLOWING:

1. PANELBOARDS
2. LIGHTING FIXTURES.
3. DEVICES.
4. FIRE ALARM SYSTEM EQUIPMENT.

3.3 IDENTIFICATION OF EQUIPMENT

A. ALL PANELBOARDS, CONTROL PANELS, AND CABINETS SPECIFIED HEREIN SHALL BE CLEARLY IDENTIFIED WITH THE EQUIPMENT DESIGNATION, VOLTAGE AND AMPERE RATING, EQUIPMENT SERVED AND ORIGIN OF THE INCOMING FEED. CONTROL PANELS SHALL BE IDENTIFIED WITH SYSTEM NAME. IDENTIFICATION SHALL BE BY WHITE ON BLACK PLASTIC NAMEPLATE WITH 1/2" MINIMUM LETTERING ATTACHED BY SCREWS.

B. JUNCTION BOXES, SPLICE BOXES, ETC., SHALL BE IDENTIFIED WITH PANEL AND CIRCUIT NUMBERS, FOR CIRCUITS CONTAINED THEREIN. FACEPLATE OF SWITCHES FOR EQUIPMENT SUCH AS PANTRY EXHAUST FANS, MOTORIZED SCREENS, ETC., SHALL BE IDENTIFIED WITH THE NAME OF THE DEVICE CONTROLLED. IDENTIFICATION SHALL BE BY INDELIBLE MARKER IN CONCEALED LOCATIONS AND ADHESIVE ('P' TOUCH TYPE) LABELS IN EXPOSED LOCATIONS. EMERGENCY DEVICES SHALL BE IDENTIFIED IN RED AND UPS DEVICES IN BLUE.

C. EMPTY CONDUITS SHALL BE IDENTIFIED WITH TAGS AT BOTH ENDS INDICATING THE LOCATION OF TERMINATION OF THE OPPOSITE END.

D. FIRE ALARM SYSTEM JUNCTION BOXES SHALL BE PAINTED FIRE DEPARTMENT RED. APPROVED IDENTIFICATION CARDS SHALL BE FURNISHED ADJACENT TO ALL CONTROL PANELS AND MANUAL STATIONS.

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