HICKORY STREET APARTMENTS

273 HICKORY STREET
BUFFALO, NEW YORK 14204

S.A. PROJECT # 24037.01
DATE: 05-23-2025

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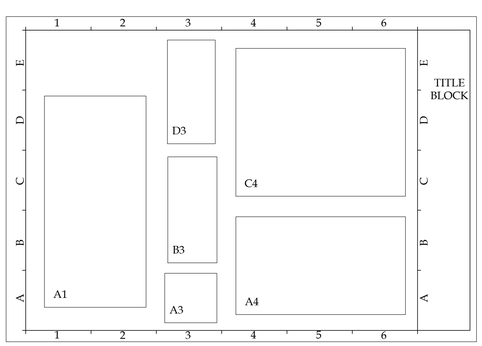
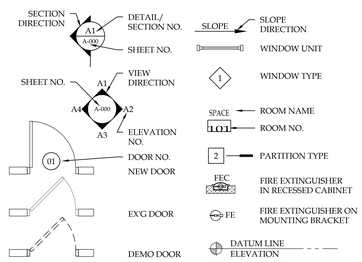


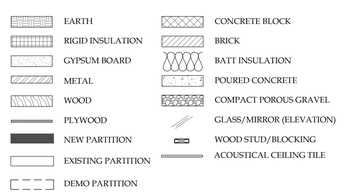
ABBREVIATIONS

AFF	ABOVE FINISH FLOOR
ACT	ACOUSTICAL CEILING TILE
AC	AIR CONDITION (ING)
ALT	ALTERNATE
ALUM	ALUMINUM
APPX	APPROXIMATE
ARCH	ARCHITECTURAL
AUTO	AUTOMATIC
BM	BEAM
BRG	BEARING
BM	BENCH MARK
BLK	BLOCK
BLKG	BLOCKING
BD	BOARD
BOT	BOTTOMS
BRK	BRICK
BEJ	BRICK EXPANSION JOINT
BC	BRICK COURSE
BLDG	BUILDING
BUR	BUILT-UP ROOFING
CLG	CEILING
CAB	CABINET
CPT	CARPET
CW	CASEWORK
CB	CATCH BASIN
CEM	CEMENT
CT	CERAMIC TILE
CHBD	CHALK BOARD
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONT	CONTINUOUS
CONTR	CONTRACTOR
CJ	CONTROL JOINT
CG	CORNER GUARD
CRS	COURSE
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
DF	DRINKING FOUNTAIN
DIFF	DIFFUSER
EA	EACH
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
ELEC	ELECTRICAL
EL	ELEVATOR
ELEV	ELEVATION
EQ	EQUAL
EF	EXHAUST FAN
EXIST EXG	EXISTING
EJ	EXPANSION JOINT
FB	FACE BRICK
FIN	FINISH (ED)
FA	FIRE ALARM
FEC	FIRE EXTINGUISHER CABINET
FHC	FIRE HOSE CABINET
FP	FIRE PROOFING
FL	FLOOR
FD	FLOOR DRAIN
FT	FOOT
FWC	FACE WALL COVERING
FTG	FOOTING
FDTN	FOUNDATION
FUR	FURRING
GAL	GALLON
GA	GAGE
GC	GENERAL CONTRACTOR
GL	GLASS
GB	GRAB BAR
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HDW	HARDWARE
WD	HARDWOOD
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HT	HEIGHT
HC	HOLLOW CORE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HB	HOSE BIB
HW	HOT WATER
INSUL	INSULATE (D) (ION)
INS GL	INSULATED GLASS
INV	INVERT
JAN	JANITOR
JT	JOINT
KIT	KITCHEN
KO	KNOCK OUT
LAM	LAMINATED
LAV	LAVATORY
LH	LEFT HAND
LGT	LENGTH
LT	LIGHT
LF	LINEAR FEET
LTL	LINTEL
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LMF	LIGHT GAUGE METAL FRAMING
LVR	LOUVER
LP	LOW POINT
LVT	LUXURY VINYL TILE
MACH	MACHINE
MH	MANHOLE
MFR	MANUFACTURER
MAS	MASONRY
MO	MASONRY OPENING
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MET	METAL
MTP	METAL TOILET PARTITION
MIN	MINIMUM
MISC	MISCELLANEOUS
MULL	MULLION
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NOM	NOMINAL
NO	NUMBER
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
OPPH	OPPOSITE HAND
OH	OVERHEAD
PMBC	PRENGINEERED METAL BUILDING CONTRACTOR
PNT	PAINT (ED)
PNL	PANEL
PTD	PAPER TOWEL DISPENSER
PTR	PAPER TOWEL RECEPTACLE
PVMT	PAVEMENT
PGBD	PEG BOARD
PLAS	PLASTER
PLAM	PLASTIC LAMINATE
PL	PLATE
POL	POLISHED
PWD	PLYWOOD
PT	POINT
PSI	POUNDS PER SQ. INCH
PSF	POUNDS PER SQ. FOOT
PREFAB	PREFABRICATED
PREF	PREFINISHED
PROJ	PROJECTION
PL	PROPERTY LINE
QT	QUARRY TILE
RAD	RADIUS
RWL	RAIN WATER LEADER
RECPT	RECEPTACLE, ELECTRIC
REC	RECESS
REFR	REFRIGERATOR
REG	REGISTER
REINF	REINFORCE (D) (ING)
REQ'D	REQUIRED
RES	RECESS (ED)
RCP	REFLECTED CEILING PLAN
RET	RETURN
RA	RETURN AIR
RVS	REVERSE
REV	REVISION
RH	RIGHT HAND
ROW	RIGHT OF WAY
R	RISER
RD	ROOF DRAIN
RFG	ROOFING
RM	ROOM
RND	ROUND
SDL	SADDLE
STG	SEATING
SHTH	SHEATHING
SHT	SHEET
SHR	SHOWER
SIM	SIMILAR
SPKR	SPEAKER
SPEC	SPECIFICATIONS
SQ	SQUARE
SST	STAINLESS STEEL
SP	STAND PIPE
STD	STANDARD
SD	STORM DRAIN
SGT	STRUCTURAL GLAZED TILE
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SW	SWITCH
SV	SHEET VINYL
TB	TACKBOARD
TEL	TELEPHONE
TEMP	TEMPERATURE
TEX	TEXTURE
THK	THICK (NESS)
THR	THRESHOLD
TP	TOILET PAPER HOLDER
T/O	TOP OF
TB	TOWEL BAR
TYP	TYPICAL
UCL	UNDER CABINET LIGHT
UC	UNDERCUT
UR	URINAL
VTR	VENT THRU ROOF
VENT	VENTILATOR
VERT	VERTICAL
VEST	VESTIBULE
VCT	VINYL COMPOSITE TILE
VIF	VERIFY IN FIELD
VWC	VINYL WALL COVERING
WSCT	WAINSCOT
WS	WEATHER STRIP
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WCDF	WHEELCHAIR DRINKING FOUNTAIN
W/	WITH
W/O	WITHOUT
WD	WOOD

DRAFTING SYMBOLS



MATERIAL SYMBOLS



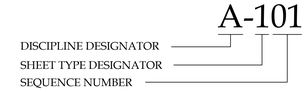
BUILDING DATA

OCCUPANCY CLASSIFICATION:
CONSTRUCTION TYPE:
PROJECT AREA:
SPRINKLERED:

ISSUE

05-23-2025	100% REVIEW SET
06-11-2026	REV. 3 3

SHEET IDENTIFICATION LOGIC



DISCIPLINE DESIGNATOR		SHEET TYPE DESIGNATOR	
G	GENERAL	0	GENERAL
C	CIVIL	1	PLANS
L	LANDSCAPE	2	ELEVATIONS
S	STRUCTURAL	3	SECTIONS
A	ARCHITECTURAL	4	LARGE SCALE VIEWS
F	FIRE PROTECTION	5	DETAILS
P	PLUMBING	6	SCHEDULES & DIAGRAMS
M	MECHANICAL		
E	ELECTRICAL		

HICKORY STREET APARTMENTS
273 HICKORY STREET
BUFFALO, NEW YORK 14204

SA PROJECT TEAM: PRINCIPAL: P.Silvestri PROJ. ARCHITECT: S.Hunt INTERIORS: K.Hamann DRAFTER: K.Hamann DRAFTER: B.Pacos

S.A. PROJECT # 24037.01
DATE: 05-23-2025

GENERAL STRUCTURAL NOTES:

1. DESIGN AND CONSTRUCTION SHALL CONFORM TO THE 2020 NEW YORK STATE BUILDING CODE.

2. THE DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AS A COMPLETE UNIT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS, METHODS, AND SEQUENCES OF ALL PHASES OF CONSTRUCTION AND DEMOLITION INCLUDING TEMPORARY SHORING, BRACING, COLD AND HOT-WEATHER PROTECTION, AND FOUNDATION UNDERPINNING. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND STANDARDS THAT PERTAIN TO MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION.

3. THE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION AND COORDINATED WITH ALL OTHER CONTRACT DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE SUCH REQUIREMENTS INTO THEIR WORK.

4. DETAILS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR THE MOST NEARLY SIMILAR CONDITION AS DETERMINED BY THE ARCHITECT OR ENGINEER.

5. CONTRACTOR TO COORDINATE ALL OPENINGS, EQUIPMENT LOCATIONS, AND INSERTS SHOWN ON THE STRUCTURAL DRAWINGS WITH THE TRADES THAT REQUIRE THEM. PENETRATIONS THROUGH STRUCTURAL MEMBERS ARE NOT PERMITTED EXCEPT AS DETAILED.

6. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES, ALL DIMENSIONS TO THE EXISTING STRUCTURE AND ALL STRUCTURAL SIZES AND DEPICTIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

7. WHERE DEMOLITION OR OTHER MODIFICATIONS TO THE EXISTING STRUCTURE ARE REQUIRED, THE CUTTING, DRILLING, AND REMOVALS SHALL OCCUR IN A MANNER WHICH WILL PREVENT DAMAGE TO ADJOINING CONSTRUCTION WHICH IS TO REMAIN. UNLESS OTHERWISE INDICATED, PROVIDE NEW MATERIALS TO MATCH THE APPEARANCE AND PERFORMANCE OF EXISTING CORRESPONDING MATERIALS WHERE DEMOLITION OCCURS.

8. STRUCTURAL MEMBERS MARKED (EX) ARE EXISTING AND ARE TO BE VERIFIED IN THE FIELD.

9. SHOP DRAWINGS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED AND SIGNED AND STAMPED BY THE CONTRACTOR PRIOR TO SUBMISSION TO THE ARCHITECT AND ENGINEER. REPRODUCTIONS OF THE STRUCTURAL DRAWINGS SHALL NOT BE USED FOR THE PREPARATION OF SHOP DRAWINGS. MANUFACTURED COMPONENTS SHALL BE SIGNED AND STAMPED BY A LICENSED PROFESSIONAL ENGINEER PRIOR TO SUBMISSION.

DESIGN LOADS:

1. LIVE LOAD:
   - FIRST FLOOR PUBLIC = 100 PSF
   - EGRESS = 100 PSF
   - PRIVATE ROOMS = 40 PSF

2. SNOW LOADS:
   - Pg = 50psf
   - Pf = 39.5psf
   - I = 1.0
   - Ct =1.1

   DRIFT LOADS IN ACCORDANCE WITH ASCE 7

3. WIND LOADS:
   - Vult = 109mph
   - Iw = 1.0
   - EXPOSURE = B

SEISMIC

EXISTING BUILDING STRUCTURE USE

FOUNDATIONS:

1. SOIL BEARING SURFACES SHALL BE DRY AND FREE FROM FROST OR LOOSE MATERIAL. EXISTING SOIL TO BE REMOVED AND REPLACED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. ALL SOIL BEARING SURFACES AND BACKFILL SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER OR OTHER APPROVED TESTING AGENT.

2. CONTRACTOR SHALL VERIFY AND LOCATE ALL EXISTING BELOW GRADE UTILITIES PRIOR TO CONSTRUCTION.

3. CONTRACTOR TO PROVIDE TEMPORARY PROTECTION AS REQUIRED FOR FOUNDATIONS EXPOSED TO WATER OR FREEZING.

4. ALL FILL PLACED UNDER AND AROUND FOOTINGS, SLABS, AND FOUNDATION WALLS SHALL BE GRANULAR MATERIAL SIMILAR TO NYSDOT ITEM 304.12 TYPE 2 SUBBASE OR AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. EACH LIFT SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR METHOD. THE DEPTH AND EXTENT OF FILL PLACEMENT SHALL BE AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

5. ALL PIPING SLEEVES THROUGH FOUNDATION WALLS AND FOOTING STEPS TO ACCOMMODATE PIPING SHALL BE COORDINATED WITH THE PLUMBING CONTRACTOR/DRAWINGS.

6. BOTTOM OF ALL FOOTINGS SHALL BE A MINIMUM OF 4'-0" BELOW GRADE EXCEPT WHERE FIELD CONDITIONS REQUIRE AN ADJUSTMENT.

7. REFERENCE ARCHITECTURAL AND PLUMBING PLANS FOR SLOPED FLOOR SLABS. ALL SLABS TO MAINTAIN FULL THICKNESS.

8. BACKFILLING OF FOUNDATION WALLS IS NOT BEGIN UNLESS WALLS ARE ADEQUATELY BRACED OR FILLING IS BALANCED.

9. JOINTS IN CONCRETE FOUNDATION WALLS SHALL BE LOCATED SO THAT NO SINGLE POUR IS LONGER THAN 40 FEET. A JOINT SHALL BE LOCATED WITHIN 3'-0" FROM ANY CORNER.

10. COORDINATE PERIMETER FOUNDATION DRAINS WITH ARCH., PLUMBING, & CIVIL DRAWINGS. THE LINE OF SLOPE BETWEEN ADJACENT FOOTINGS OR EXCAVATIONS OR ALONG STEPPED FOOTINGS SHALL NOT EXCEED A RISE OF 1:0 IN A RUN OF 2:0.

11. PROVIDE CONTROL JOINT FOR ALL SLABS-ON-GRADE AT COLUMN CENTERLINES AND AT A MAXIMUM OF 12' 0" O.C., UNLESS SHOWN OTHERWISE ON PLANS.

STRUCTURAL STEEL:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC CODE OF STANDARD PRACTICE.

2. STRUCTURAL STEEL GRADES (UNLESS NOTED OTHERWISE):
   - A) STRUCTURAL STEEL (W-): ASTM A992, Fy=50ksi
   - B) STRUCTURAL STEEL (L-, C- PLATES): ASTM A36, fy = 36ksi
   - C) STRUCTURAL TUBING: ASTM A500, fy=46ksi
   - D) STRUCTURAL STEEL PIPE: ASTM A53 GRADE B, Fy=35ksi
   - E) BOLTS: ASTM A325
   - F) ANCHOR RODS: F1554 GR. 55 WELDABLE
   - G) WELDS: E70xx
   - H) GALVANIZING,
     - i) STRUCTURAL STEEL: ASTM A123
   - J) ADHESIVE ANCHORS (BASIS OF DESIGN):
     - i) HILTI HY150
     - ii)POWERS AC100 PLUS

3. WELDS NOT INDICATED FOR STEEL-TO-STEEL CONNECTIONS SHALL BE AN ALL AROUND FILLET WELD WITH A MINIMUM THROAT THICKNESS PER AISC AND AWS STANDARDS.

4. ALL STRUCTURAL STEEL SHALL BE COATED AS INDICATED BELOW. APPLY COATINGS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, INCLUDING SURFACE PREPARATIONS AND COMPATIBILITY REQUIREMENTS BETWEEN ALL COATINGS. AFTER ERECTION TOUCH UP ALL AREAS WHERE PAINT OR GALVANIZING IS MISSING OR DAMAGED INCLUDING FIELD WELDS. COLOR SHALL BE AS DETERMINED BY THE OWNER OR ARCHITECT.

   (A) EXTERIOR EXPOSED STEEL AND LINTELS WITHIN EXTERIOR WALLS TO BE HOT-DIPPED GALVANIZED.

   (B) ALL OTHER STRUCTURAL STEEL SHALL BE SHOP PAINTED WITH A RUST INHIBITIVE PRIMER.

5. ALL CONNECTIONS AND DETAILS NOT SPECIFICALLY INDICATED ON THE DRAWINGS ARE SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND ENGINEER.

6. SUBMIT SHOP DRAWINGS FOR STRUCTURAL STEEL FOR REVIEW PRIOR TO CONSTRUCTION.

CONCRETE:

1. CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM TO ACI 318 AND ACI 301.

2. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE:
   - 2.1. FOOTINGS 3,000psi, MAX. W/C RATIO = 0.49
   - 2.2. PIERS, FND. WALLS 3,500psi, MAX. W/C RATIO = 049
   - 2.3. SLAB ON GRADE 3,500psi, MAX. W/C RATIO = 0.50
   - 2.4. ELEVATED SLABS 3,500psi, MAX. W/C RATIO = 0.50

3. LEVELING GROUT SHALL BE NON-SHRINK CONFORMING TO ASTM C1107 WITH A MINIMUM 2-DAY STRENGTH OF 5,000psi.

4. ALL CONCRETE EXPOSED TO EARTH OR WEATHER SHALL HAVE ENTRAINED AIR AS FOLLOWS:

MAXIMUM AGGREGATE SIZE	AIR CONTENT
2 in.	4% TO 6.5%
1.5 in.	4% TO 7%
1 in	4.5% TO 7%
0.75 in.	4.5% TO 7%

5. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, AND SHALL BE SUPPLIED IN SHEETS ONLY. THE WELDING Of REINFORCING BARS SHALL CONFORM TO ASTM A706 AND AWS D1.4.

6. THE CONTRACTOR SHALL FABRICATE ALL REINFORCEMENT AND FURNISH ALL ACCESSORIES, CHAIRS, SPACER BARS AND SUPPORTS NECESSARY TO SECURE THE REINFORCEMENT PRIOR TO POURING CONCRETE.

7. CLEAR COVER TO REINFORCING SHALL BE AS FOLLOWS UNLESS SHOWN OTHERWISE
   - 7.1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH – 3"
   - 7.2. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:
     - #6 AND LARGER – 2"
     - #5 AND SMALLER – 1 1/2"
   - 7.3. CONCRETE NOT EXPOSED TO EARTH OR WEATHER;
     - SLABS, WALLS – 3/4"
     - ALL OTHER 1 – 1/2"

8. LAP SPLICES SHALL CONFORM TO THE REQUIREMENTS OF ACI 318 FOR CLASS "B" TENSION LAP SPLICES, UNLESS NOTED OTHERWISE.

9. HOOKS AND BENDS IN REINFORCING BARS SHALL CONFORM TO ACI 318 UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

10. UNLESS SHOWN OTHERWISE, DOWELS INTO FOUNDATION ELEMENTS SHALL HAVE A STANDARD 90 DEGREE HOOK AND SHALL BE THE SAME SIZE AND QUANTITY PROVIDED IN PIERS AND WALLS ABOVE THE FOUNDATION.

11. PROVIDE A #4x4'-0"@ REBAR IN CONCRETE SLABS ACROSS ALL REENTRANT CORNERS OF RECTANGULAR SLAB OPENINGS AND AROUND THE PERIMETER OF ROUND SLAB OPENINGS.

12. PROVIDE CORNER BARS TO MATCH HORIZONTAL REINFORCING IN ALL WALLS AND FOOTINGS.

13. CONCRETE TESTING SHALL BE AS FOLLOWS:
   - 13.1. OBTAIN ONE COMPOSITE SAMPLE FOR EACH DAY'S POUR OF EACH CONCRETE MIX EXCEEDING 5 CU. YD., BUT LESS THAN 25 CU. YD. PLUS ONE SET FOR EACH ADDITIONAL 50 CU. YD. OR FRACTION THEREOF (ASTM C172).
   - 13.2. OBTAIN: SLUMP (ASTM C143), AIR CONTENT (ASTM C231), TEMPERATURE (ASTM C1064), UNIT WEIGHT; (ASTM C567), COMPRESSION TEST SPECIMENS (ASTM C31) FOR EACH COMPOSITE SAMPLE.
   - 13.3. CAST AND FIELD CURE ONE SET OF FOUR STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE. TEST (1) AT 7 DAYS, (2) AT 28 DAYS AND (1) AT 56 DAYS.

14. SUBMIT SHOP DRAWINGS FOR REINFORCING STEEL AND CONCRETE MIX DESIGNS TO THE ARCHITECT FOR REVIEW BEFORE CONSTRUCTION.

MASONRY:

1. CONCRETE MASONRY DESIGN AND CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION Of ACI 530.

2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C-90, TYPE I, GRADE N, MOISTURE CONTROLLED UNITS WITH f'm = 2,000psi.

3. MORTAR SHALL BE TYPE M OR S AND SHALL CONFORM TO ASTM CC70.

4. GROUT FOR FILLING BLOCK CORES SHALL CONFORM TO ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,000psi AT 28 DAYS. GROUT SHALL BE PLACED IN LIFTS NOT EXCEEDING 7 COURSES IN HEIGHT UNLESS OTHERWISE APPROVED BY THE ENGINEER.

5. FULL HEAD AND BED JOINTS SHALL BE PROVIDED.

6. COORDINATE LOCATION OF ALL MASONRY WALLS, PARTITIONS AND OPENINGS WITH ARCHITECTURAL DRAWINGS.

7. ALL LINTELS AT MASONRY OPENINGS SHALL HAVE 4" MIN. OR 1" FOR EACH FOOT OF SPAN OF BEARING AT EACH END. ALL EXTERIOR LINTELS SHALL BE HOT DIPPED GALVANIZED.

8. SUBMIT GROUT AND MORTAR MIX DESIGNS, AND CMU PRODUCT DATA TO THE ARCHITECT FOR REVIEW BEFORE CONSTRUCTION.

SOLID SAWN & LAMINATED LUMBER:

(REFERENCE STANDARD: AF & PA 2018–NATIONAL DESIGN SPECIFICATIONS)

1. ALL LUMBER SHALL BE VISUALLY GRADED, DIMENSION LUMBER, SEASONED AND WITH 19% MAX. MOISTURE CONTENT, U.N.O., AND IN ACCORDANCE WITH THE FOLLOWING MINIMUM GRADE & MATERIAL PROPERTIES REQUIREMENTS:

STUDS	DFL, SPF NO. 2
JOISTS	DO
BEAMS (2"–4" THICK)	DO
POSTS	DO
PLATE STOCK	DO

2. GRADES SHALL BE DETERMINED IN ACCORDANCE WITH SPIB GRADING RULES AGENCY.

3. BRACE STUD WALL UNTIL ALL WOOD DECKING, ROOF TRUSSES, AND SHEAR PANELS ARE IN PLACE.

4. USE WATER-BORNE PRESSURE TREATED WOOD (CBA-A, ACQ-C, ACQ-D, CA-B, SBX-DOT) FOR ALL LUMBER EXPOSED TO WEATHER OR POOL MOISTURE AND SILL PLATES IN CONTACT WITH MASONRY OR CONCRETE. IN ADDITION, FOR LUMBER EXPOSED TO WEATHER, A POLYMER SEALER/BINDER IS ALSO RECOMMENDED.

5. ALL FASTENERS IN CONTACT w/ PRESSURE TREATED LUMBER SHALL BE BATCH/POST HOT-DIP GALVANIZED (PER ASTM A153) OR MECHANICALLY GALVANIZED (PER ASTM B695, CLASS 55 OR GREATER).

   EXCEPTION: BOLTS & LAG SCREWS w/ SHANK DIAMETERS GREATER THAN 1/2" IN DIAMETER AND PROTECTED FROM THE WEATHER ARE NOT REQUIRED TO BE GALVANIZED.

6. AS A MINIMUM, ALL CONNECTORS EXPOSED TO WEATHER SHALL HAVE A G185 (SIMPSON ZMAX) GALVANIZED FINISH.

7. ALL FOUNDATION PLATES OR SILLS SHALL BE ANCHORED TO THE FOUNDATION WITH NOT LESS THAN 1/2" DIA. STEEL BOLTS OR SIMPSON MAS ANCHORS @ 48" O.C. MAX. BOLTS SHALL BE EMBEDDED AT LEAST 7" INTO CONCRETE OR MASONRY. THERE SHALL BE A MIN. OF 2 ANCHORS PER PIECE w/ ONE ANCHOR NOT MORE THAN 12" OR LESS THAN 4" FROM EACH END OF EACH PIECE.

   EXCEPTIONS:

   - 7.1. INTERIOR SILL PLATES MAY BE ANCHORED WITH HILTI X-CP 72 P8 S23 POWDER ACTUATED FASTENERS @ 18" O.C. MAX. PROVIDE PINS @ 6" AND 10" FROM ENDS OF PLATE WITH 2 PINS MIN IN ANY PLATE

ALL OTHER CONNECTIONS SHALL BE DESIGNED TO TRANSFER THE FULL DESIGN STRENGTH Of THE MEMBERS IN QUESTION, UNLESS SPECIFICALLY DETAILED OTHERWISE.

8. ALL HANDRAILS, GUARDRAILS AND STAIR STRINGERS INCLUDING COMPONENTS AND ASSOCIATED CONNECTION SHALL BE DESIGNED BY THE SUPPLIER IN ACCORDANCE WITH THE LOCAL BUILDING CODE.

SPECIAL INSPECTIONS:

1. SPECIAL INSPECTIONS SHALL CONFORM TO THE LATEST CODE

2. SPECIAL INSPECTIONS AND TESTING REQUIREMENTS INDICATED IN THIS SECTION ARE THE OWNER'S RESPONSIBILITY, OWNER WILL ENGAGE QUALIFIED SPECIAL INSPECTORS AND TESTING AGENCIES TO PERFORM THESE SERVICES.

COLUMN SCHEDULE

MARK	SIZE	BASE PL	ANCHOR BOLTS	BOTTOM OF COLUMN
C1	HSS8x8x$\frac{1}{4}$"	14x14x1"	(4) $\frac{3}{4}$" EPOXY ANCHORS x 9" EMBED	WF
C2	HSS4x4x$\frac{1}{4}$"	9x9x$\frac{3}{4}$"	(4) $\frac{3}{4}$" DIA WEDGE ANCH. x 5"EMBED	WF
C3	HSS6x6x$\frac{1}{4}$"	12x12x$\frac{3}{4}$"	(4) $\frac{3}{4}$" WEDGE ANCH.	WF

FOOTING SCHEDULE

3000psf BEARING PER SUMMIT GEOTECHNICAL

MARK	SIZE	REINFORCING	REMARKS
F1	2'–8x4'–0	SEE DETAILS	
F2	5'–0x5'–0x1'–0	#4 BARS @ 9" O.C. E.W., TOP & BOT.	
F3	18" DIA.	N/A	48" DEPTH

NOTE: FOUNDATIONS TO BEAR ON APPROVED SOIL

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
3-17-2025: 50% REVIEW SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

STATE OF NEW YORK · DONALD PETRILLI · 070041 · LICENSED PROFESSIONAL ENGINEER

TITLE:

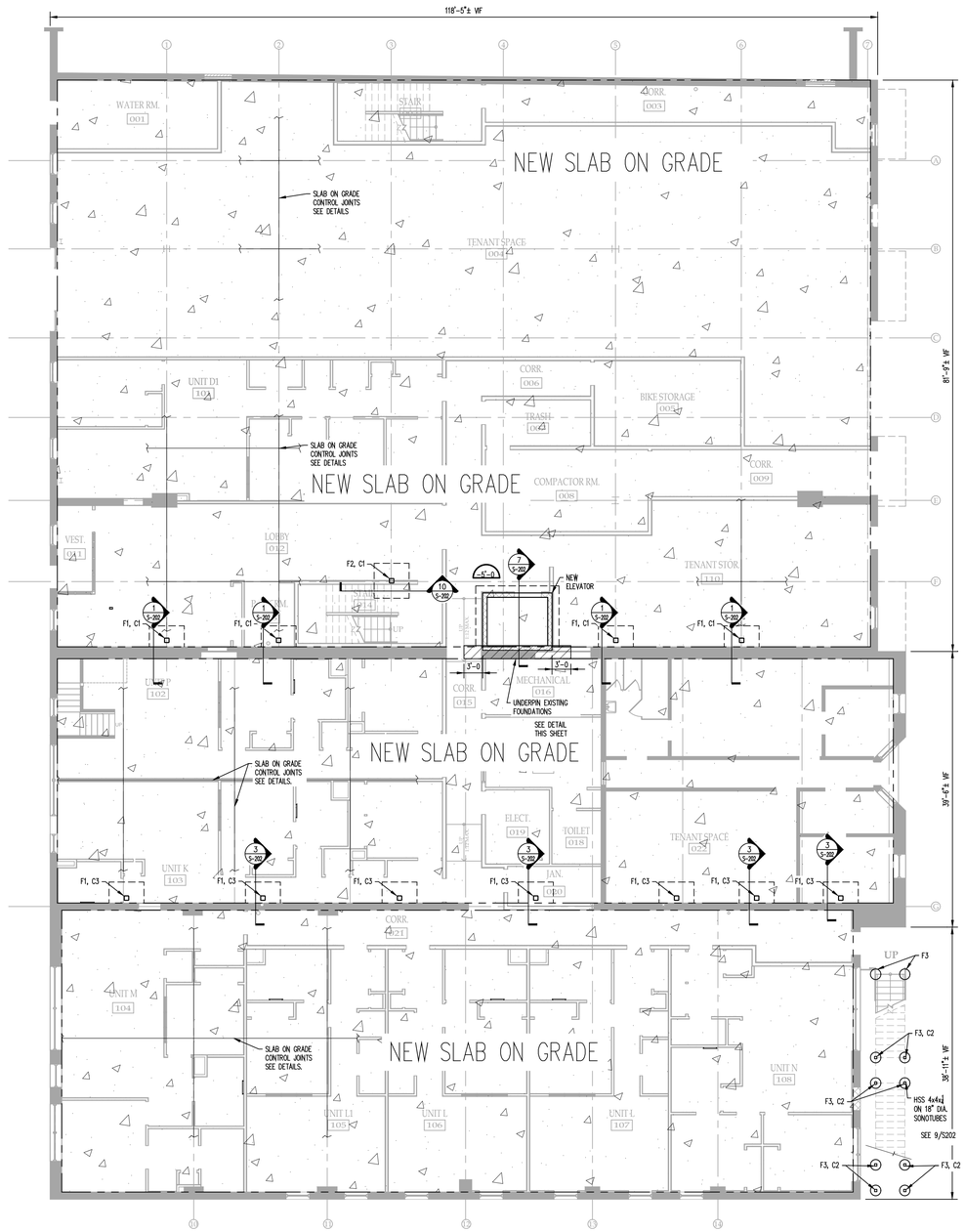
GENERAL NOTES

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

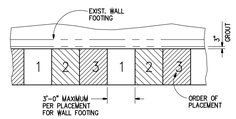
SA JOB #: 24037.01

DATE: 3-17-2025

DRAWING #: S100



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



SIDE ELEVATION

1. INSTALL UNDERPINNING IN 3 PLACEMENTS AS SHOWN. USE CONCRETE WHICH OBTAINS 3000 PSI @ 7 DAYS AND GROUT WHICH OBTAINS 3000 PSI @ 3 DAYS.
2. AFTER EXCAVATION OF ALL PLACEMENT "1" SECTIONS, THOROUGHLY CLEAN UNDERSIDE OF EXIST. FOOTING.
3. FORM AND INSTALL FIRST PLACEMENT, LEAVING 3" MIN. SPACE UNDER EXIST. FOOTING FOR GROUTING.
4. ON THE FOURTH DAY AFTER FIRST PLACEMENT, REMOVE DIRT, LAITANCE, OIL, GREASE, ETC. FROM BOTH NEW AND OLD SURFACES. SATURATE SURFACES WITH WATER.
5. REMOVE FREE WATER & COMPLETELY PACK VOID SPACE WITH LOW SLUMP NON-SHRINK GROUT.
6. 3 DAYS AFTER GROUT PLACEMENT REPEAT THE ABOVE OPERATIONS ON THE PLACEMENT "2" SECTIONS, ETC.

PLAN NOTES

1) FF AS NOTED FROM THE REFERENCE ELEVATION 0.0
SLAB AREAS NOTED AND REINFORCED AS FOLLOWS

4" SLAB ON GRADE WITH 1 LAYER 6x6xW2.1xW2.1 WWF ON 10MIL POLY VAPOR BARRIER ON 6" NO. CRUSHED STONE

2) BOTTOM OF NEW FOOTINGS ARE INDICATED ON PLAN FROM FROM THE REFERENCE ELEVATION THUSLY

CURING OF SLAB SHALL BEGIN 4 HRS AFTER CONCRETE PLACEMENT.

CONTROL JOINTS, SHALL BE SAWCUT IN, AND SHALL BE CUT THE SAME DAY AS THE CONCRETE PLACEMENT.

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PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

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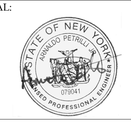

TITLE:

SECOND FLOOR FRAMING/ LOW ROOF

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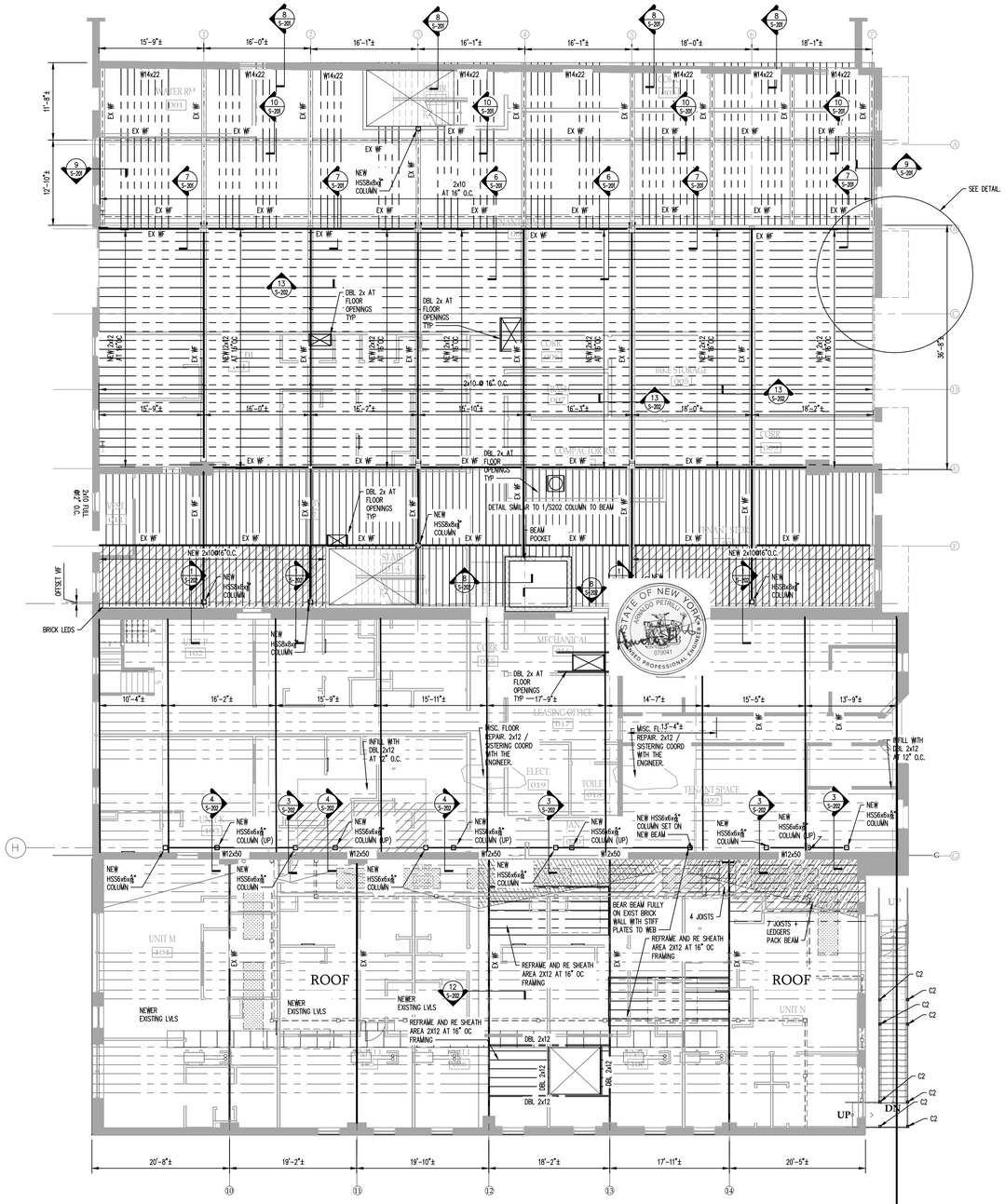
FAX 716.691.4773

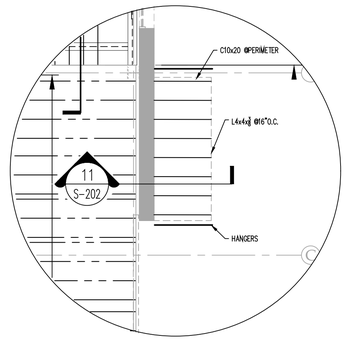
SA JOB #: 24037.01
DATE: 3-17-2025

DRAWING #: S101

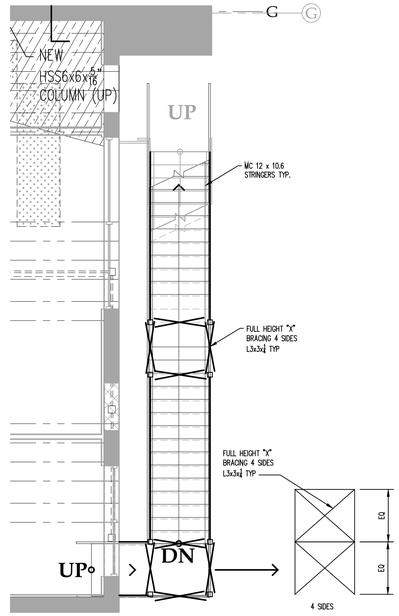


1 SECOND FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

1) NEW SHEATHING ⅞" APA RATED T+G. NOTED.



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



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

PETRILLI STRUCTURAL & CONSULTING ENGINEERING P.C.
140 KINNEY AVE.
BUFFALO, NY 14217
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BUFFALO, NY 14204

ISSUE:
3-17-2025: 50% REVIEW SET

SA PROJECT TEAM:
PROJ. ARCH. S. Hunt — PRINCIPAL P. Silvestri
INTERIORS A. Nagle — JOB CAPT. — DRAFTER

SEAL:

TITLE:

SECOND FLOOR FRAMING/ LOW ROOF

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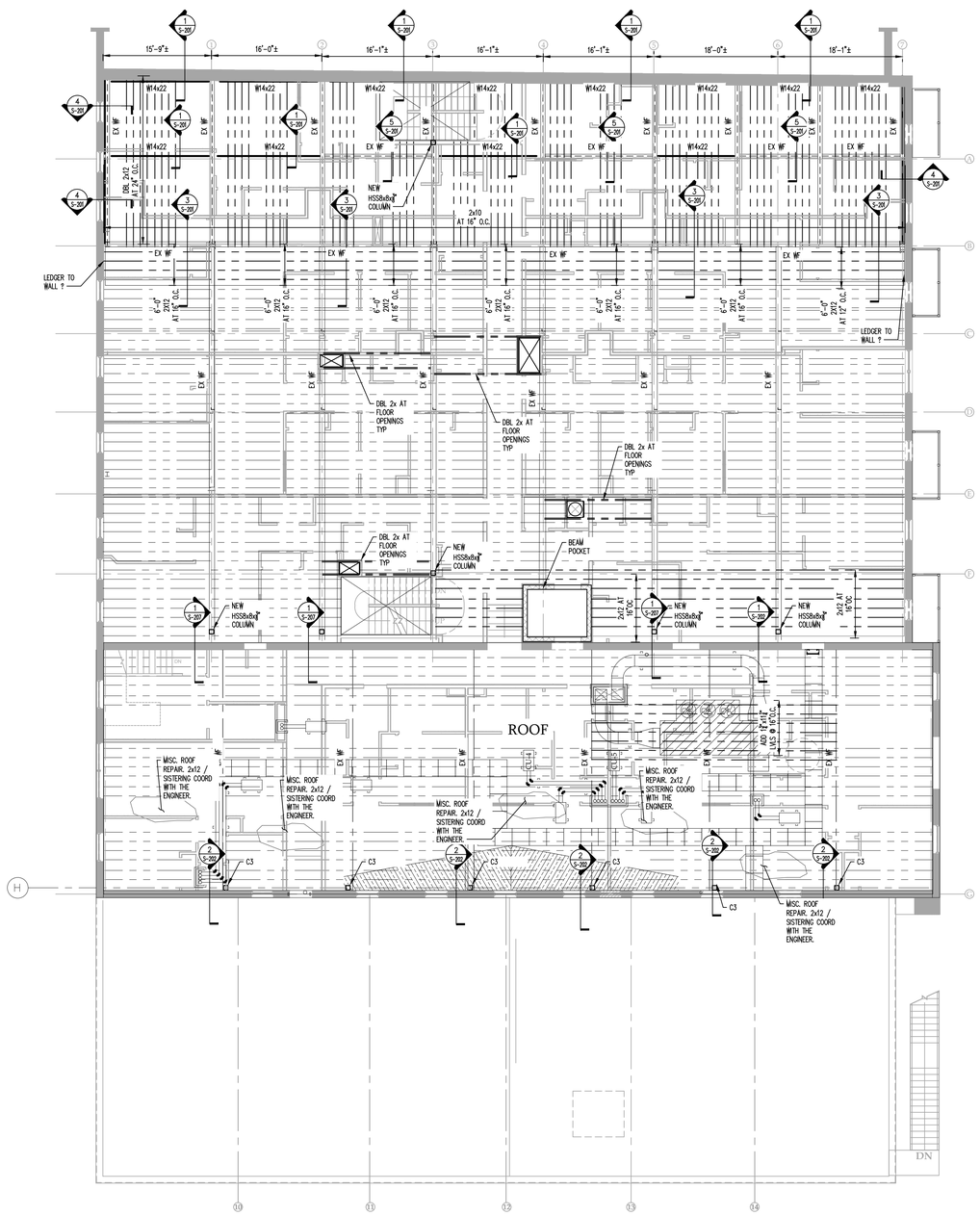
SA JOB #: 24037.01
DATE: 3-17-2025

DRAWING #: S102



1 THIRD FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

1) NEW SHEATHING ½" APA RATED T+G. NOTED.

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SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

STATE OF NEW YORK · HAROLD PETRILLI · 070041 · LICENSED PROFESSIONAL ENGINEER

TITLE:

THIRD FLOOR FRAMING/ LOW ROOF

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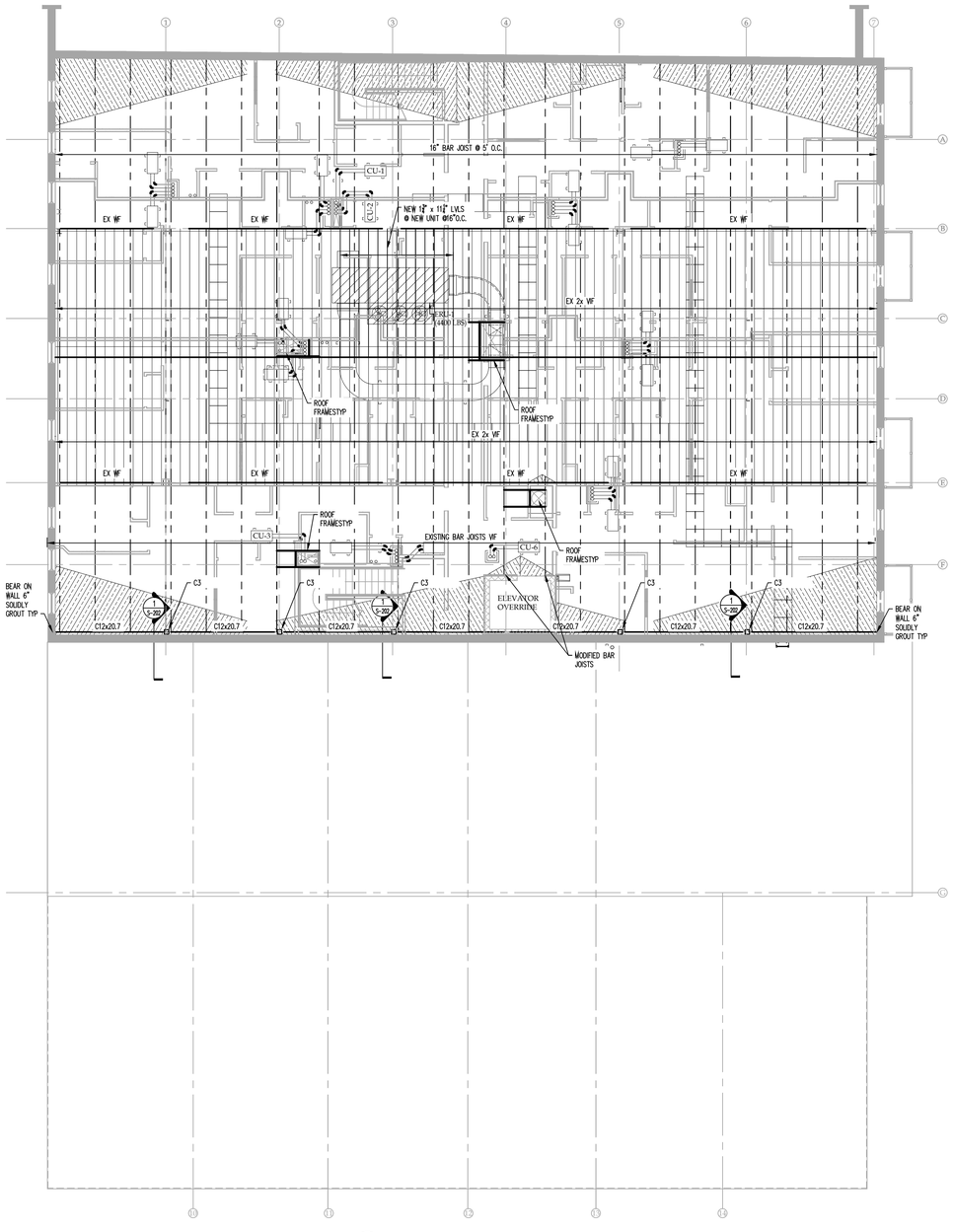
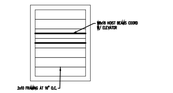
SA JOB #: 24037.01
DATE: 3-17-2025

DRAWING #: S-103



1 ROOF FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

1) NEW SHEATHING 3" APA RATED T+G. NOTED.



2 ELEVATOR PENTHOUSE FRAMING
SCALE: 1/8" = 1'-0"

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ROOF FRAMING

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SA JOB #: 24037.01
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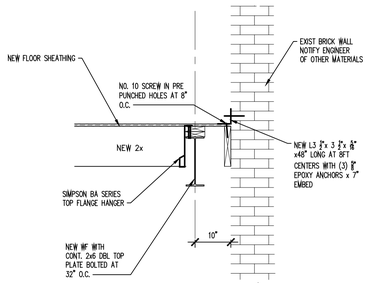
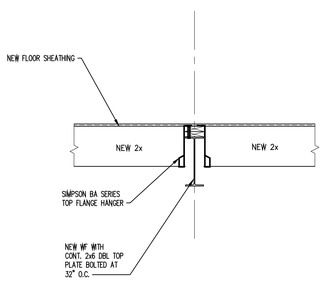
DRAWING #: S-104



1 FRAMING SECTION @3RD FLOOR
SCALE: 3/4" = 1'-0"



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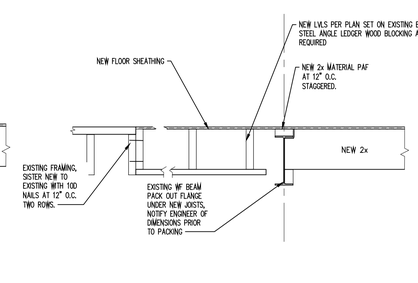

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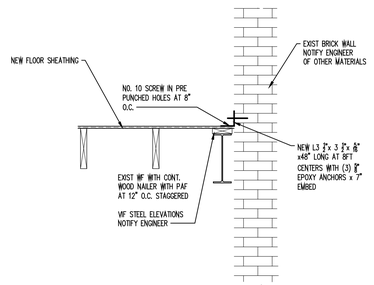

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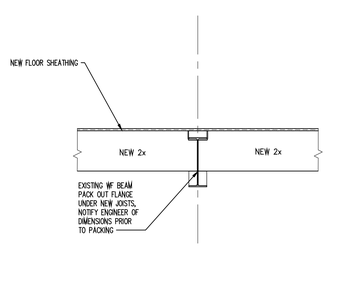

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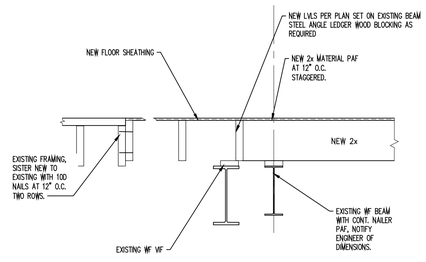

6 FRAMING SECTION @2ND FLOOR
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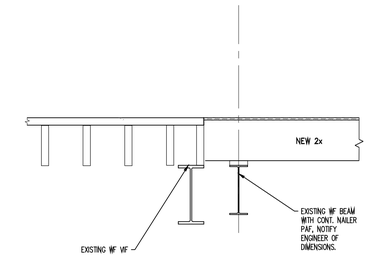

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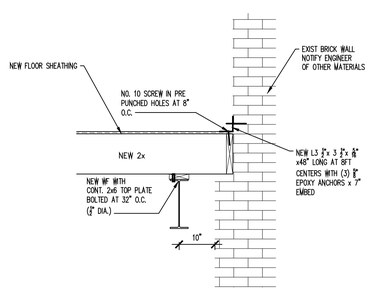

8 FRAMING SECTION @2ND FLOOR
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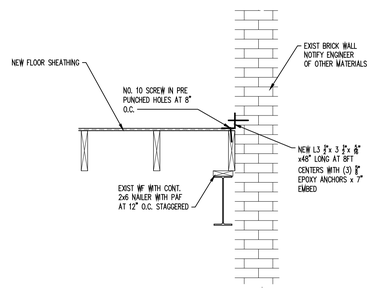

9 FRAMING SECTION
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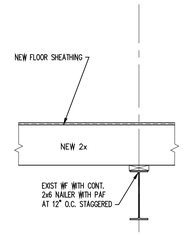


10 FRAMING SECTION
SCALE: 3/4" = 1'-0"

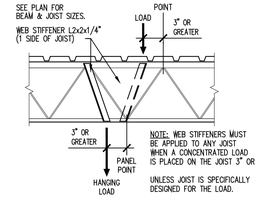
11 TYP. WALL CONSTR. JOINT
SCALE: NONE

12 TYP. CORNERS AND ENDS OF CONC. WALLS
SCALE: NONE

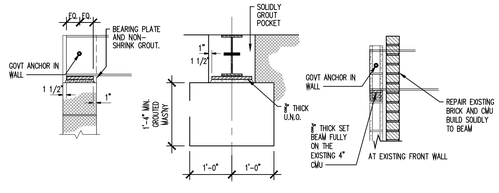
13 TYP. SLAB-ON-GRADE CONSTR.
SCALE: NONE

14 TYP. SLAB-ON-GRADE JOINTS
SCALE: NONE

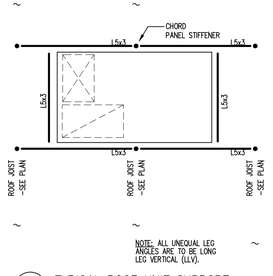
15 TYP. STEEL COLUMN BASE
SCALE: NONE



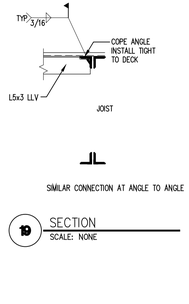
16 WEB STIFFENER FOR "K" AND "LH" JOISTS
SCALE: NONE



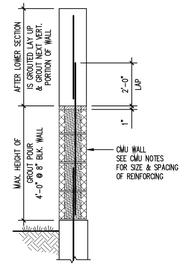
17 TYPICAL STEEL BEAM BEARING ON MASONRY WALL
SCALE: NONE



18 TYPICAL ROOF UNIT SUPPORT
SCALE: NONE

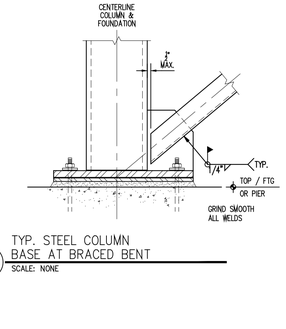


19 SECTION
SCALE: NONE



20 MASONRY -GROUTING SEQUENCE
SCALE: N.T.S.

11 TYP. STEEL COLUMN BASE
SCALE: NONE



17 TYP. STEEL COLUMN BASE AT BRACED BENT
SCALE: NONE

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
3-17-2025: 50% REVIEW SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:
DETAILS

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AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01
DATE: 3-17-2025

DRAWING #: S-201

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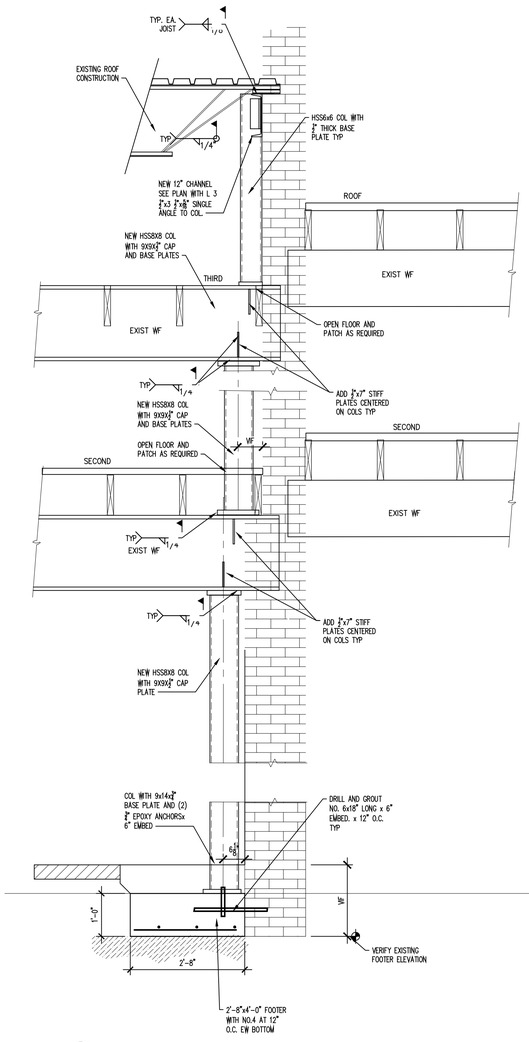
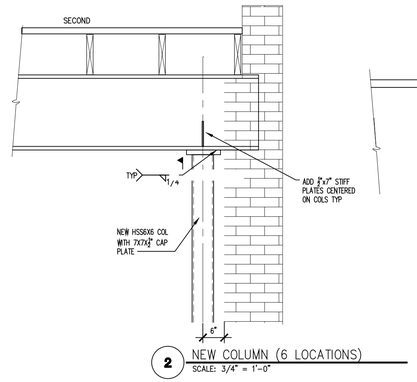
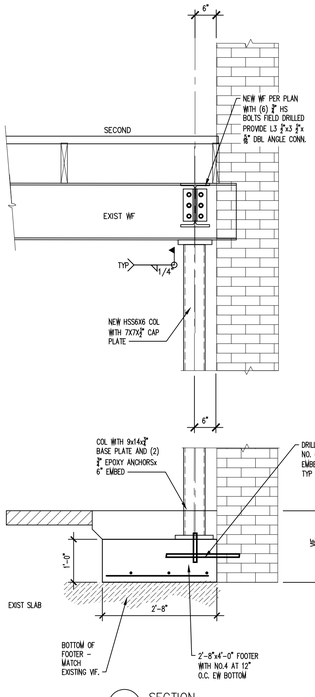
KENMORE, N.Y. 14217
Tel: 716.854.2908 Fax:716.854.1984



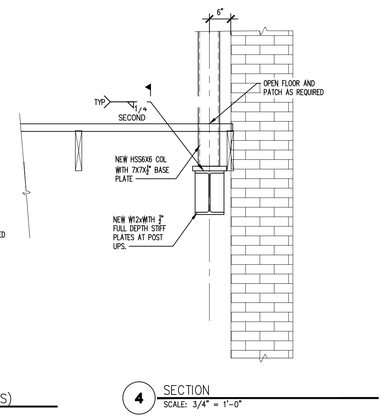
1 NEW COLUMN
SCALE: 3/4" = 1'-0"



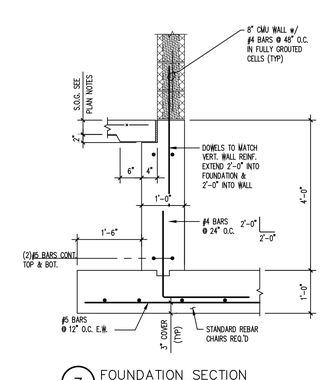
2 NEW COLUMN (6 LOCATIONS)
SCALE: 3/4" = 1'-0"



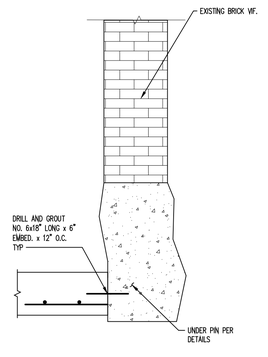
3 SECTION
SCALE: 3/4" = 1'-0"

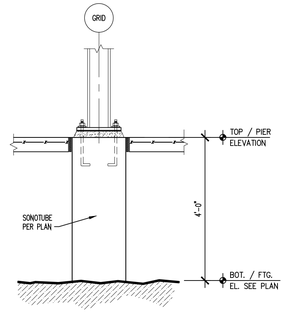


4 SECTION
SCALE: 3/4" = 1'-0"

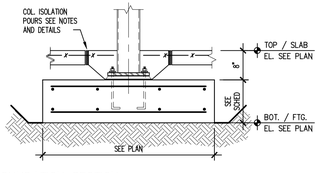


7 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

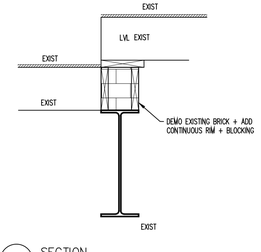




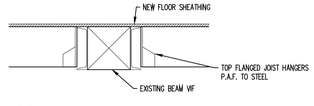
9 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



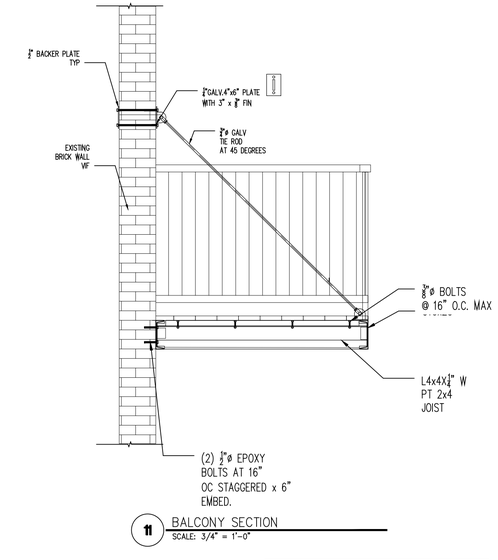
10 FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



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



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



11 BALCONY SECTION
SCALE: 3/4" = 1'-0"

PETRILLI STRUCTURAL & CONSULTING ENGINEERING P.C.
145 KENSETT AVE
KENMORE, N.Y. 14217
Tel. 716.874.3508 Fax 716.874.1984

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273 HICKORY STREET BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

DETAILS

SILVESTRI ARCHITECTS · PC
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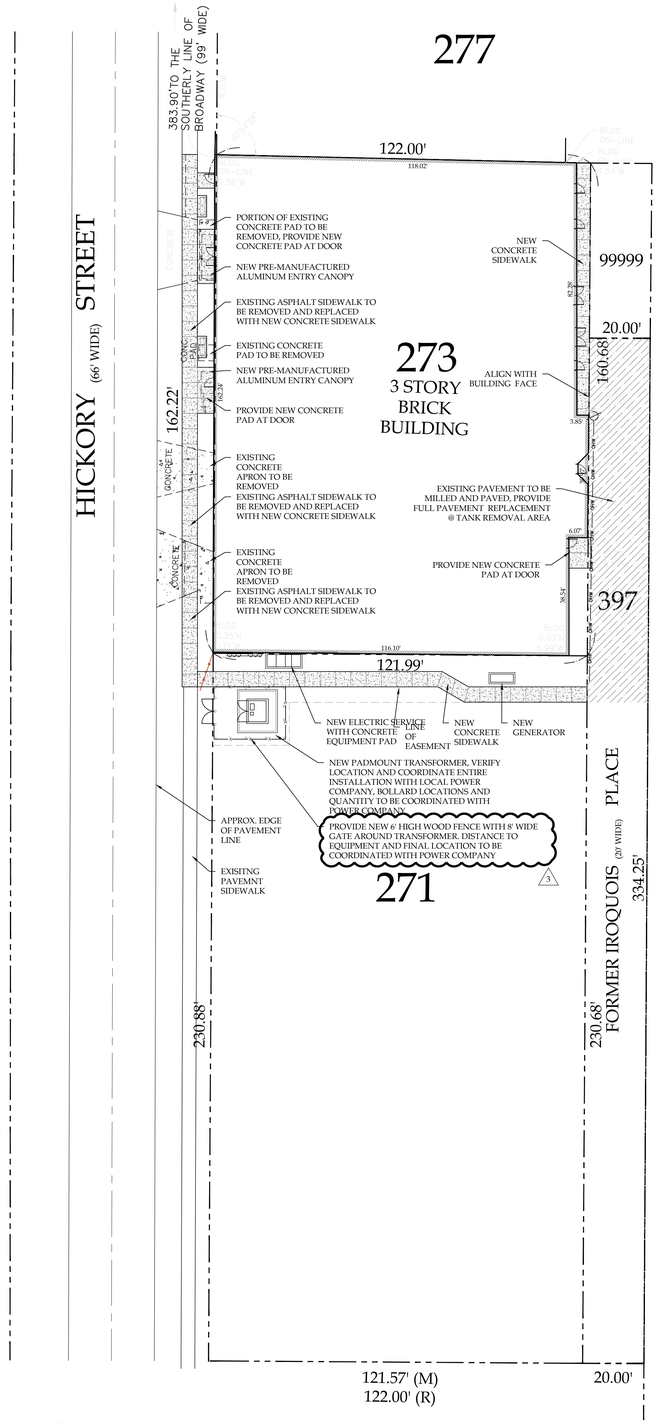
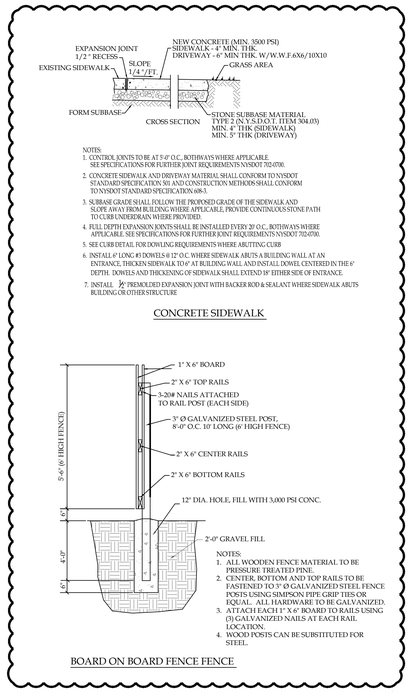
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: S-202

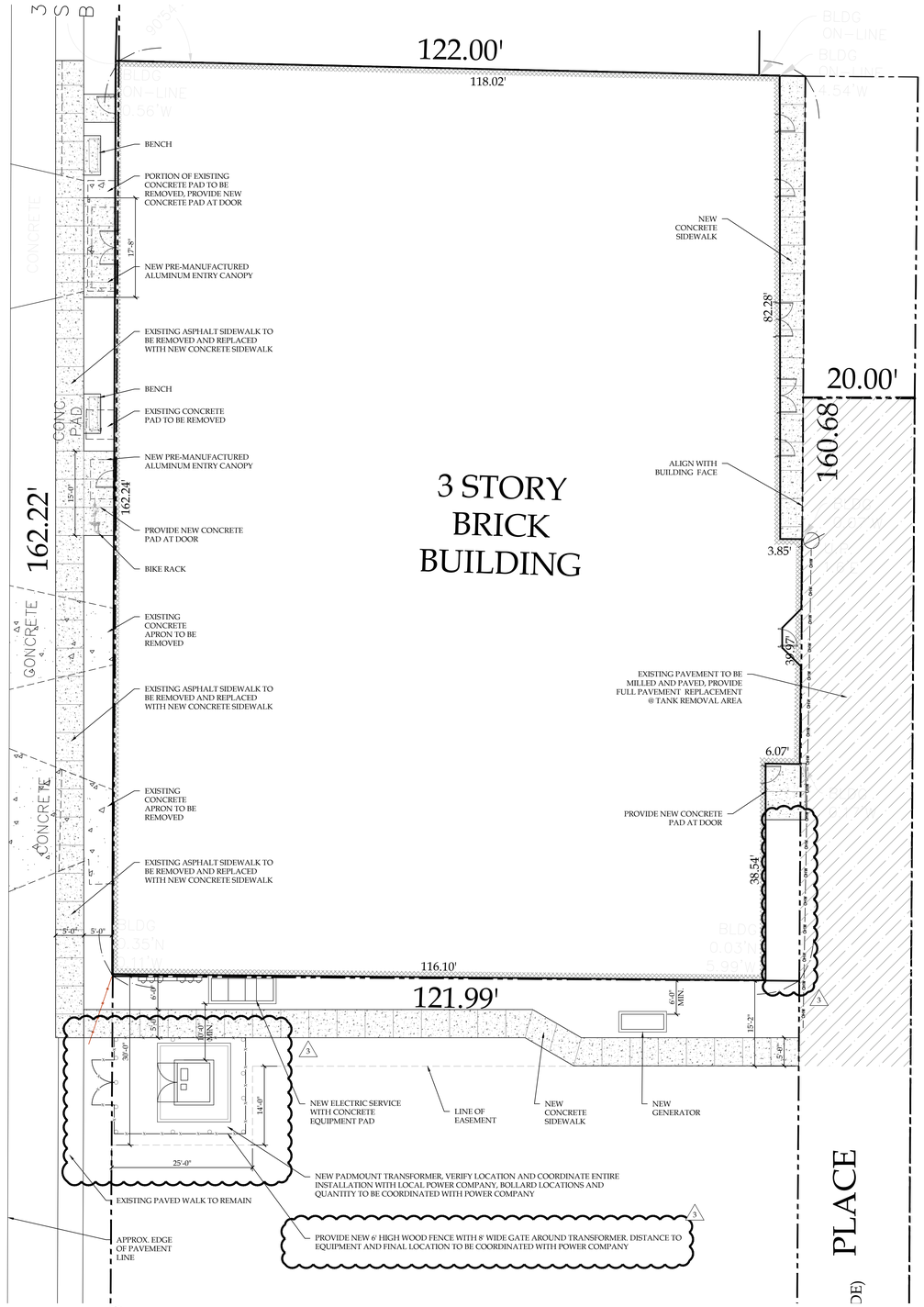


A1 ARCHITECTURAL SITE LAYOUT PLAN
SCALE: 1:20



CONCRETE SIDEWALK

BOARD ON BOARD FENCE FENCE



A4 ENLARGED SITE LAYOUT PLAN
SCALE: 1:10

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

SITE LAYOUT PLAN

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ARCHITECTS PC
1321 MILLERSPORT HWY
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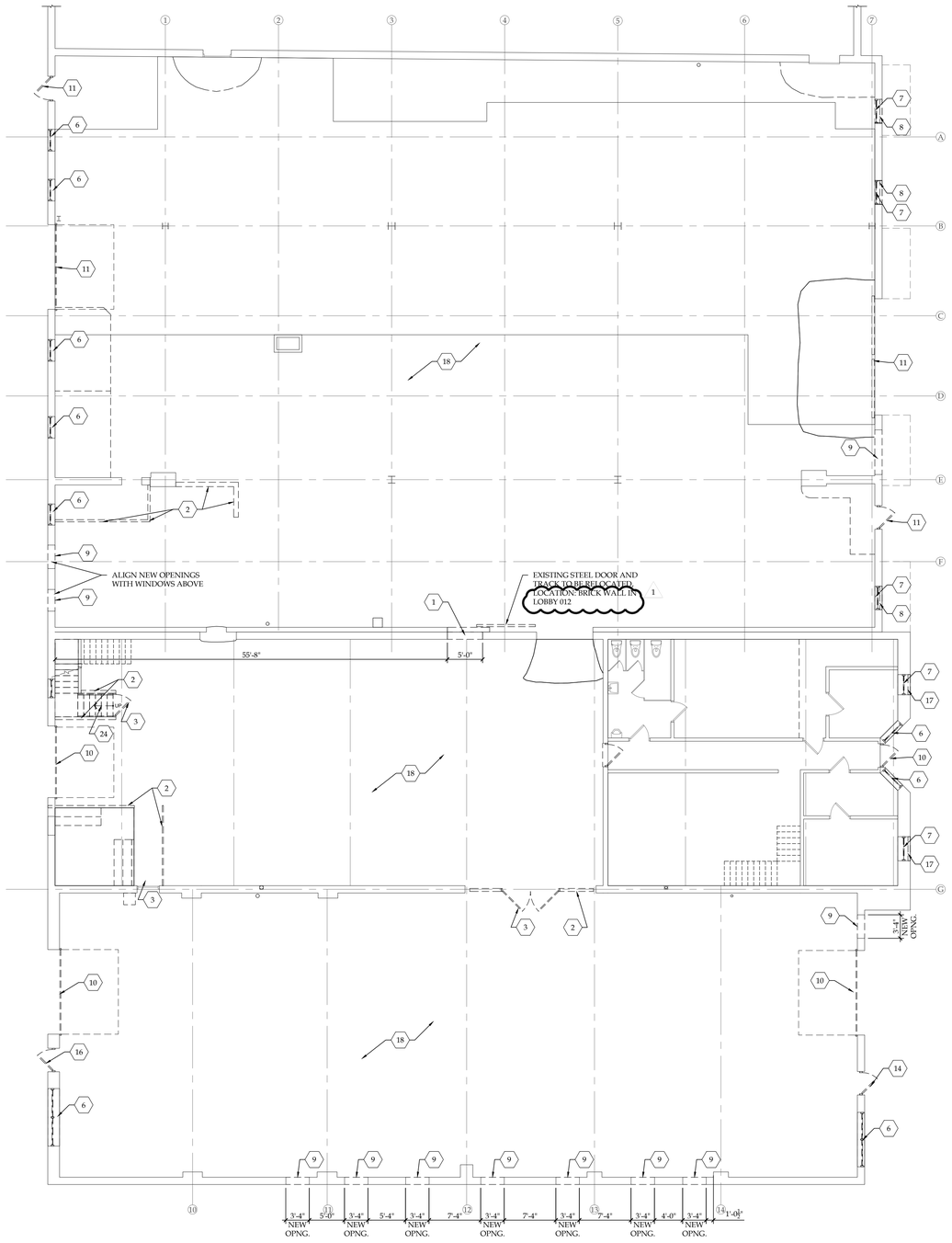
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: AS-101



A1 FIRST FLOOR DEMOLITION PLAN
1/8"=1'-0"

GENERAL DEMOLITION NOTES:

- REMOVE ALL EXISTING CONSTRUCTION, FINISHES, AND FIXTURES NECESSARY FOR THE COMPLETION OF THE WORK AS DEPICTED ON THE DRAWINGS. INCLUDING BUT NOT LIMITED TO, ITEMS SHOWN ON THE PLANS WITH DASHED LINES. NECESSARY DISCONNECTS AND ALTERATIONS TO EXISTING MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS SHALL BE INCLUDED, REFER TO MEP DRAWING FOR SCOPE. PATCH AS REQUIRED ALL CONSTRUCTIONS TO REMAIN IN ACCORDANCE WITH THE CONTRACT DRAWINGS. VERIFY WITH OWNER THE DISPOSITION AND REMOVAL OF ANY COMPONENTS OF SALVAGEABLE VALUE.
- IN GENERAL, ITEMS TO BE REMOVED ARE SHOWN DASHED. THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL ITEMS INDICATED, IMPLIED OR OTHERWISE NECESSARY TO ALLOW FOR NEW CONSTRUCTION. CONTRACTOR TO VERIFY IN FIELD ANY ADDITIONAL DEMOLITION REQUIRED TO PREPARE AREA FOR NEW CONSTRUCTION PER PLANS.
- COORDINATE ALL NEW OPENINGS WITH ARCHITECTURAL DRAWINGS.
- CONTRACTOR TO PROTECT ALL EXISTING FINISHES SCHEDULED TO REMAIN DURING CONSTRUCTION AND REPLACE DAMAGED FINISHES AS NECESSARY. ALL REPAIR WORK SHALL MATCH EXISTING ADJACENT MATERIALS AND METHODS.
- THE CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING DEMOLITION OR CONSTRUCTION AND IS TO REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LEGAL DISPOSAL OF ALL DEMOLISHED ITEMS FROM THE SITE. ALL DEMOLISHED ITEMS TO BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.
- ALL EXISTING SURFACES LEFT EXPOSED AFTER DEMOLITION SHALL BE PROTECTED AND SAFEGUARDED FROM EXPOSURE FROM WEATHER AND OR DAMAGE FROM CONSTRUCTION DURING CONSTRUCTION.
- CONTRACTOR TO REMOVE EXISTING LIGHTING, ELECTRIC, TELEPHONE, & DATA CABLING & DEVICES, AS WELL AS ANY OTHER FIXTURES AS REQUIRED TO ACCOMMODATE NEW WORK.
- IF ANY WASTE MATERIALS ENCOUNTERED DURING THE DEMOLITION OR CONSTRUCTION PHASE ARE FOUND TO CONTAIN LEAD, ASBESTOS, POLYCHLORINATED BIPHENYL (PCBS) (SUCH AS FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES, THEY SHALL BE HANDLED AND REMOVED IN ACCORDANCE WITH FEDERAL AND STATE LAW'S AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
- ALL EXISTING WINDOWS TO BE REMOVED TO ORIGINAL MASONRY OPENING. PREP OPENING FOR NEW WINDOW INSTALLATION.
- CONTRACTOR SHALL REMOVE ALL EXISTING FIRE PROTECTION PIPING AND EQUIPMENT INCLUDING STANDPIPES, HOSE VALVES, SPRINKLERS AND ASSOCIATED PIPING FROM THE BUILDING IN THEIR ENTIRETY. NO EXISTING FIRE PROTECTION PIPING OR APPURTENANCES SHALL REMAIN FOR REUSE. COORDINATE PATCHING OF ALL EXISTING STRUCTURE WITH ARCHITECT.

DEMOLITION PLAN KEY NOTES: (#)

1. REMOVE PORTION OF EXISTING WALL TO THE EXTENT SHOWN, PROVIDE NEW STEEL LINTEL AND BRICK JAMBS PER STRUCTURAL DRAWINGS.
2. REMOVED EXISTING WALL TO THE EXTENT SHOWN.
3. REMOVE EXIST. DOOR, FRAME, & ASSOCIATED HARDWARE IN IT'S ENTIRETY.
4. EXISTING ROOFING AND INSULATION TO BE REMOVED DOWN TO DECK. PREP FOR NEW INSULATION AND ROOFING MEMBRANE INSTALLATION. REMOVE ALL EXISTING MEP PENETRATIONS. EXISTING DECK TO BE REPAIRED PER STRUCTURAL DRAWINGS.
5. EXISTING METAL ROOFING AND WOOD 2X FRAMING TO BE REMOVED. EXISTING STEEL TRUSSES TO REMAIN.PREP FOR NEW METAL DECK, INSULATION AND ROOFING MEMBRANE INSTALLATION. REMOVE ALL EXISTING MEP PENETRATIONS.
6. EXISTING WINDOWS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION.
7. EXISTING WINDOWS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION. WINDOW SILL TO BE LOWERED TO ACCOMMODATE NEW DOOR.
8. REMOVE BRICK INFILL AT EXISTING WINDOW OPENING. EXISTING ARCH AND SILL TO REMAIN.
9. REMOVE PORTION OF EXISTING MASONRY WALL AS REQUIRED FOR NEW OPENING, PROVIDE NEW LINTEL OR ARCH & JAMBS AS REQ'D., BRACE & PROTECT EXISTING CONSTRUCTION TO REMAIN, INFILL & PATCH ALL DISTURBED AREAS OF WALL TO MATCH EXISTING, ADJACENT SURFACES, TYP. (SEE STRUCTURAL DWGS., FLOOR PLANS, EXTERIOR ELEVATIONS, SECTIONS & DETAILS).
10. EXISTING DOORS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION.
11. EXISTING DOORS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW DOOR INSTALLATION.
12. NEW OPENING IN FLOOR FOR STAIR/ELEVATOR. SEE STRUCTURAL DRAWINGS FOR NEW WOOD AND STEEL FRAMING REQUIREMENTS.
13. NEW SHAFT LOCATION. SEE STRUCTURAL FOR FRAMING REQUIREMENTS.
14. EXISTING DOOR/WINDOW TO BE REMOVED. OPENING TO BE INFILLED WITH NEW BRICK. MATCH EXISTING ADJACENT CONSTRUCTION.
15. EXISTING ELEVATED FRAMING AND FLOORING TO BE REMOVED BETWEEN GIRD B @ E. COORDINATE POSSIBILITY OF ANY SALVAGE WITH STRUCTURAL ENGINEER. CURRENT PLANS CALL FOR ALL NEW FRAMING.
16. EXISTING DOOR TO BE REMOVED IN ITS ENTIRETY. DOOR TO BE REPLACED BY NEW WINDOW. THE AREA BELOW THE WINDOW IS TO BE INFILLED WITH BRICK, PROVIDE NEW WINDOW SILL.
17. REMOVE BRICK INFILL AT EXISTING WINDOW OPENING. EXISTING SILL TO REMAIN, PROVIDE NEW STEEL LINTEL.
18. EXISTING CONCRETE SLAB ON GRADE TO BE REMOVED IN ITS ENTIRETY.
19. EXISTING SKYLIGHT TO BE REMOVED, INFILL OPENING PER STRUCTURAL DRAWINGS.
20. EXISTING SKYLIGHT TO BE REMOVED AND REPLACED WITH NEW SKYLIGHT, REPAIR OPENING PER STRUCTURAL DRAWINGS.
21. EXISTING ROOF DRAIN AND LEADERS TO BE REMOVED IN THEIR ENTIRETY, REFER TO PLUMBING DRAWINGS FOR NEW ROOF DRAIN AND LEADER LOCATIONS.
22. EXISTING SCUPPER TO BE ABANDONED. REMOVE LEADERS AND CAP BELOW GRADE. SCUPPER OPENING TO BE REPAIRED AND LEFT IN PLACE.
23. PORTION OF EXISTING PARAPET TO BE REMOVED TO ACCOMMODATE NEW EGRESS STAIR. COORDINATE HEIGHT WITH FF OF PATIO.
24. EXISTING STAIR TO BE REMOVED AND REPLACED WITH NEW STAIR.
25. EXISTING CHIMNEY CAP TO BE REMOVED AND REPLACED.

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273 HICKORY STREET BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

FIRST FLOOR DEMOLITION PLAN

SILVESTRI ARCHITECTS · PC
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AMHERST, NY 14221
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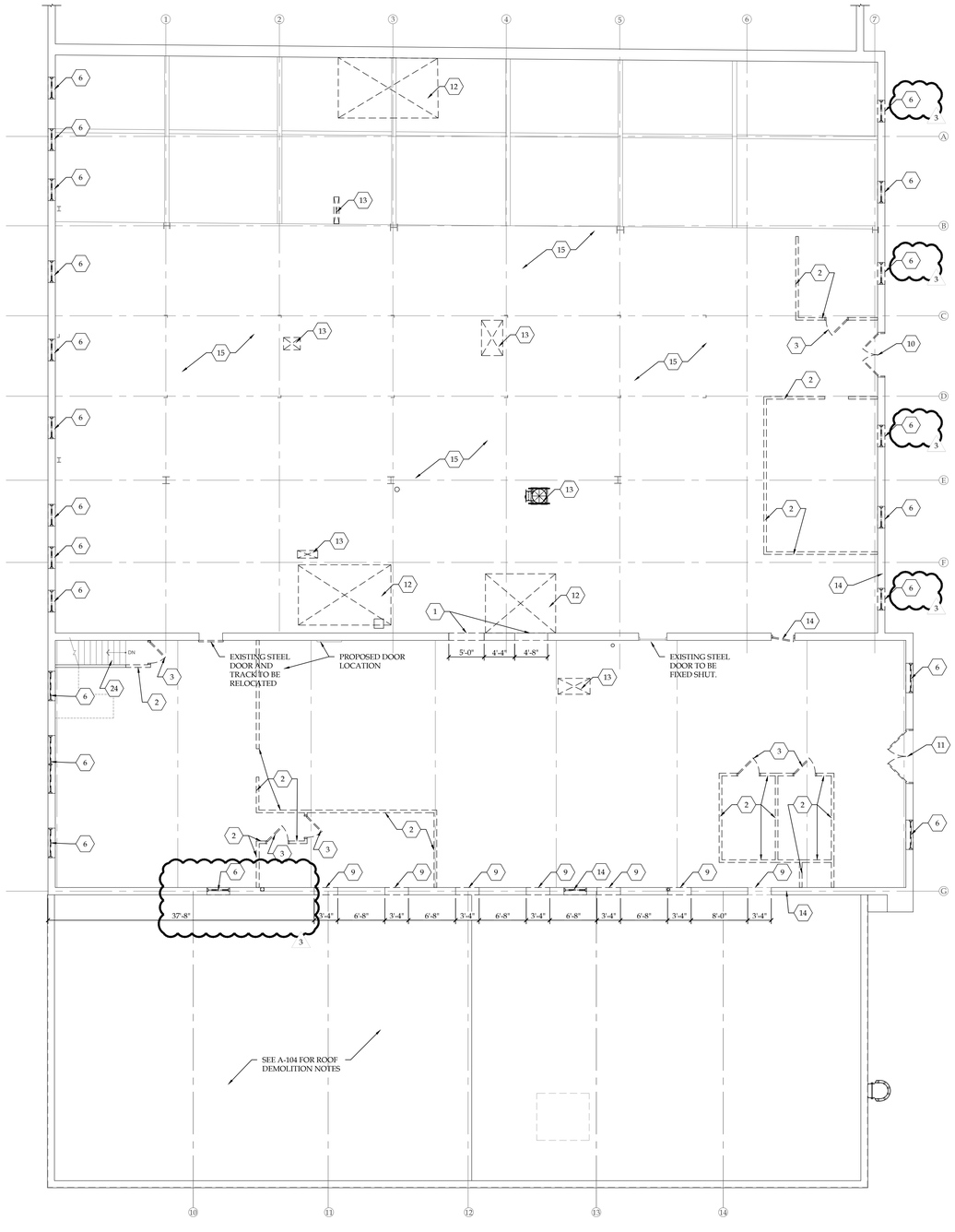
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: AD-101



A1 SECOND FLOOR DEMOLITION PLAN
1/8"=1'-0"

GENERAL DEMOLITION NOTES:

- REMOVE ALL EXISTING CONSTRUCTION, FINISHES, AND FIXTURES NECESSARY FOR THE COMPLETION OF THE WORK AS DEPICTED ON THE DRAWINGS, INCLUDING BUT NOT LIMITED TO, ITEMS SHOWN ON THE PLANS WITH DASHED LINES. NECESSARY DISCONNECTS AND ALTERATIONS TO EXISTING MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS SHALL BE INCLUDED, REFER TO MEP DRAWING FOR SCOPE. PATCH AS REQUIRED ALL CONSTRUCTIONS TO REMAIN IN ACCORDANCE WITH THE CONTRACT DRAWINGS. VERIFY WITH OWNER, THE DISPOSITION AND REMOVAL OF ANY COMPONENTS OF SALVAGEABLE VALUE.
- IN GENERAL, ITEMS TO BE REMOVED ARE SHOWN DASHED. THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL ITEMS INDICATED, IMPLIED OR OTHERWISE NECESSARY TO ALLOW FOR NEW CONSTRUCTION. CONTRACTOR TO VERIFY IN FIELD ANY ADDITIONAL DEMOLITION REQUIRED TO PREPARE AREA FOR NEW CONSTRUCTION PER PLANS.
- COORDINATE ALL NEW OPENINGS WITH ARCHITECTURAL DRAWINGS.
- CONTRACTOR TO PROTECT ALL EXISTING FINISHES SCHEDULED TO REMAIN DURING CONSTRUCTION AND REPLACE DAMAGED FINISHES AS NECESSARY. ALL REPAIR WORK SHALL MATCH EXISTING ADJACENT MATERIALS AND METHODS.
- THE CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING DEMOLITION OR CONSTRUCTION AND IS TO REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LEGAL DISPOSAL OF ALL DEMOLISHED ITEMS FROM THE SITE. ALL DEMOLISHED ITEMS TO BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.
- ALL EXISTING SURFACES LEFT EXPOSED AFTER DEMOLITION SHALL BE PROTECTED AND SAFEGUARDED FROM EXPOSURE FROM WEATHER AND OR DAMAGE FROM CONSTRUCTION DURING CONSTRUCTION.
- CONTRACTOR TO REMOVE EXISTING LIGHTING, ELECTRIC, TELEPHONE, & DATA CABLING & DEVICES, AS WELL AS ANY OTHER FIXTURES AS REQUIRED TO ACCOMMODATE NEW WORK.
- IF ANY WASTE MATERIALS ENCOUNTERED DURING THE DEMOLITION OR CONSTRUCTION PHASE ARE FOUND TO CONTAIN LEAD, ASBESTOS, POLYCHLORINATED BIPHENYL (PCB'S) (SUCH AS FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES, THEY SHALL BE HANDLED AND REMOVED IN ACCORDANCE WITH FEDERAL AND STATE LAW'S AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
- ALL EXISTING WINDOWS TO BE REMOVED TO ORIGINAL MASONRY OPENING. PREP OPENING FOR NEW WINDOW INSTALLATION.
- CONTRACTOR SHALL REMOVE ALL EXISTING FIRE PROTECTION PIPING AND EQUIPMENT INCLUDING STANDPIPES, HOSE VALVES, SPRINKLERS AND ASSOCIATED PIPING FROM THE BUILDING IN THEIR ENTIRETY. NO EXISTING FIRE PROTECTION PIPING OR APPURTENANCES SHALL REMAIN FOR REUSE. COORDINATE PATCHING OF ALL EXISTING STRUCTURE WITH ARCHITECT.

DEMOLITION PLAN KEY NOTES: (#)

1. REMOVE PORTION OF EXISTING WALL TO THE EXTENT SHOWN, PROVIDE NEW STEEL LINTEL AND BRICK JAMBS PER STRUCTURAL DRAWINGS.
2. REMOVED EXISTING WALL TO THE EXTENT SHOWN.
3. REMOVE EXIST. DOOR, FRAME, & ASSOCIATED HARDWARE IN IT'S ENTIRETY.
4. EXISTING ROOFING AND INSULATION TO BE REMOVED DOWN TO DECK. PREP FOR NEW INSULATION AND ROOFING MEMBRANE INSTALLATION. REMOVE ALL EXISTING MEP PENETRATIONS. EXISTING DECK TO BE REPAIRED PER STRUCTURAL DRAWINGS.
5. EXISTING METAL ROOFING AND WOOD 2X FRAMING TO BE REMOVED. EXISTING STEEL TRUSSES TO REMAIN.PREP FOR NEW METAL DECK, INSULATION AND ROOFING MEMBRANE INSTALLATION. REMOVE ALL EXISTING MEP PENETRATIONS.
6. EXISTING WINDOWS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION.
7. EXISTING WINDOWS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION. WINDOW SILL TO BE LOWERED TO ACCOMMODATE NEW DOOR.
8. REMOVE BRICK INFILL AT EXISTING WINDOW OPENING. EXISTING ARCH AND SILL TO REMAIN.
9. REMOVE PORTION OF EXISTING MASONRY WALL AS REQUIRED FOR NEW OPENING, PROVIDE NEW LINTEL OR ARCH & JAMBS AS REQ'D., BRACE & PROTECT EXISTING CONSTRUCTION TO REMAIN, INFILL & PATCH ALL DISTURBED AREAS OF WALL TO MATCH EXISTING, ADJACENT SURFACES, TYP. (SEE STRUCTURAL DWGS., FLOOR PLANS, EXTERIOR ELEVATIONS, SECTIONS & DETAILS).
10. EXISTING DOORS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION.
11. EXISTING DOORS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW DOOR INSTALLATION.
12. NEW OPENING IN FLOOR FOR STAIR/ELEVATOR. SEE STRUCTURAL DRAWINGS FOR NEW WOOD AND STEEL FRAMING REQUIREMENTS.
13. NEW SHAFT LOCATION. SEE STRUCTURAL FOR FRAMING REQUIREMENTS.
14. EXISTING DOOR/WINDOW TO BE REMOVED. OPENING TO BE INFILLED WITH NEW BRICK. MATCH EXISTING ADJACENT CONSTRUCTION.
15. EXISTING ELEVATED FRAMING AND FLOORING TO BE REMOVED BETWEEN GIRD B-H E. COORDINATE POSSIBILITY OF ANY SALVAGE WITH STRUCTURAL ENGINEER. CURRENT PLANS CALL FOR ALL NEW FRAMING.
16. EXISTING DOOR TO BE REMOVED IN ITS ENTIRETY. DOOR TO BE REPLACED BY NEW WINDOW. THE AREA BELOW THE WINDOW IS TO BE INFILLED WITH BRICK, PROVIDE NEW WINDOW SILL.
17. REMOVE BRICK INFILL AT EXISTING WINDOW OPENING. EXISTING SILL TO REMAIN, PROVIDE NEW STEEL LINTEL.
18. EXISTING CONCRETE SLAB ON GRADE TO BE REMOVED IN ITS ENTIRETY.
19. EXISTING SKYLIGHT TO BE REMOVED, INFILL OPENING PER STRUCTURAL DRAWINGS.
20. EXISTING SKYLIGHT TO BE REMOVED AND REPLACED WITH NEW SKYLIGHT, REPAIR OPENING PER STRUCTURAL DRAWINGS.
21. EXISTING ROOF DRAIN AND LEADERS TO BE REMOVED IN THEIR ENTIRETY, REFER TO PLUMBING DRAWINGS FOR NEW ROOF DRAIN AND LEADER LOCATIONS.
22. EXISTING SCUPPER TO BE ABANDONED. REMOVE LEADERS AND CAP BELOW GRADE. SCUPPER OPENING TO BE REPAIRED AND LEFT IN PLACE.
23. PORTION OF EXISTING PARAPET TO BE REMOVED TO ACCOMMODATE NEW EGRESS STAIR. COORDINATE HEIGHT WITH FF OF PATIO.
24. EXISTING STAIR TO BE REMOVED AND REPLACED WITH NEW STAIR.
25. EXISTING CHIMNEY CAP TO BE REMOVED AND REPLACED.

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 (3)

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

SECOND FLOOR DEMOLITION PLAN

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY
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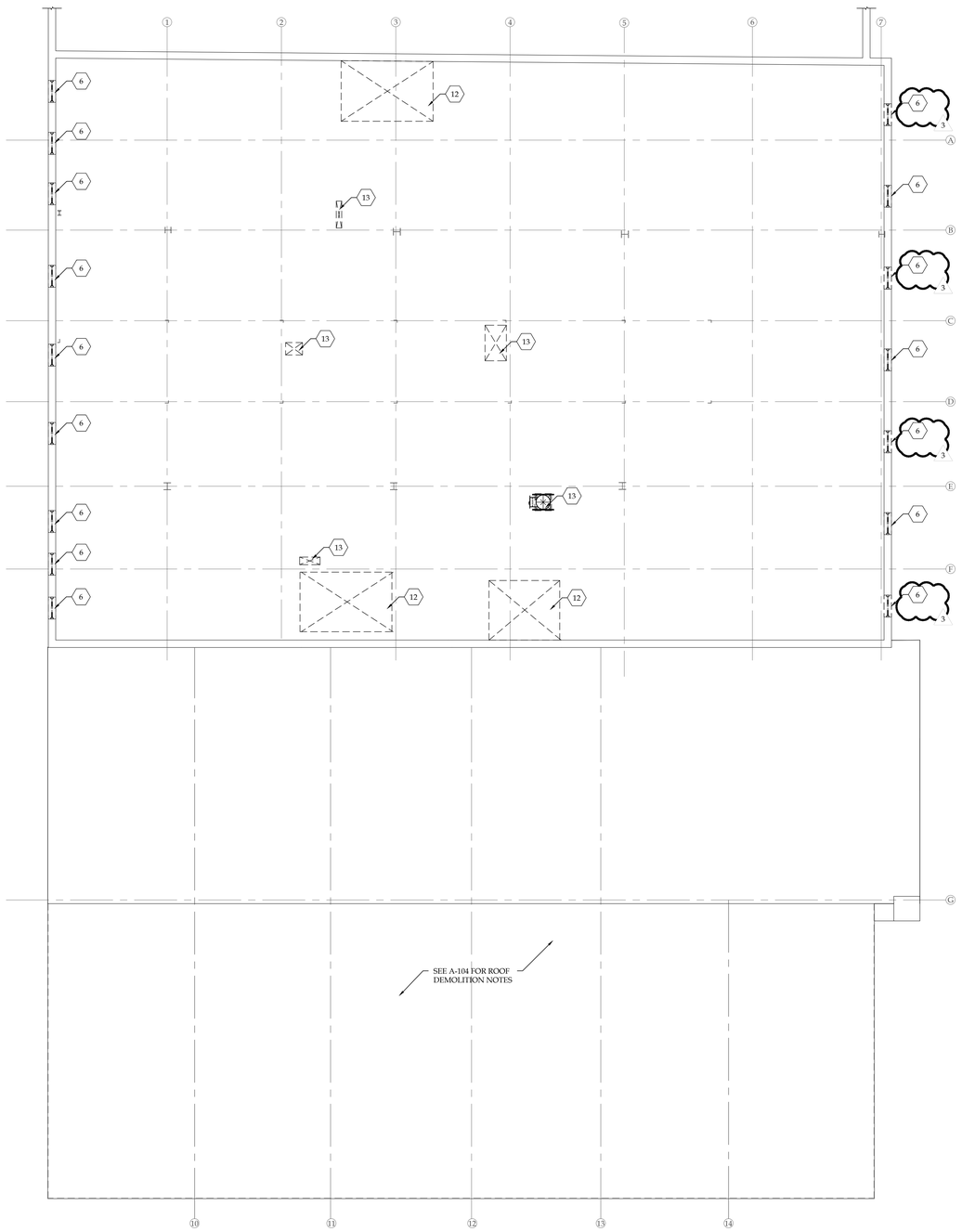
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: AD-102



A1 THIRD FLOOR DEMOLITION PLAN
1/8"=1'-0"

GENERAL DEMOLITION NOTES:

- REMOVE ALL EXISTING CONSTRUCTION, FINISHES, AND FIXTURES NECESSARY FOR THE COMPLETION OF THE WORK AS DEPICTED ON THE DRAWINGS. INCLUDING BUT NOT LIMITED TO, ITEMS SHOWN ON THE PLANS WITH DASHED LINES. NECESSARY DISCONNECTS AND ALTERATIONS TO EXISTING MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS SHALL BE INCLUDED, REFER TO MEP DRAWING FOR SCOPE. PATCH AS REQUIRED ALL CONSTRUCTIONS TO REMAIN IN ACCORDANCE WITH THE CONTRACT DRAWINGS. VERIFY WITH OWNER, THE DISPOSITION AND REMOVAL OF ANY COMPONENTS OF SALVAGEABLE VALUE.
- IN GENERAL, ITEMS TO BE REMOVED ARE SHOWN DASHED. THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL ITEMS INDICATED, IMPLIED OR OTHERWISE NECESSARY TO ALLOW FOR NEW CONSTRUCTION. CONTRACTOR TO VERIFY IN FIELD ANY ADDITIONAL DEMOLITION REQUIRED TO PREPARE AREA FOR NEW CONSTRUCTION PER PLANS.
- COORDINATE ALL NEW OPENINGS WITH ARCHITECTURAL DRAWINGS.
- CONTRACTOR TO PROTECT ALL EXISTING FINISHES SCHEDULED TO REMAIN DURING CONSTRUCTION AND REPLACE DAMAGED FINISHES AS NECESSARY. ALL REPAIR WORK SHALL MATCH EXISTING ADJACENT MATERIALS AND METHODS.
- THE CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING DEMOLITION OR CONSTRUCTION AND IS TO REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING.
- THE CONTRACTOR IS RESPONSIBLE FOR THE LEGAL DISPOSAL OF ALL DEMOLISHED ITEMS FROM THE SITE. ALL DEMOLISHED ITEMS TO BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.
- ALL EXISTING SURFACES LEFT EXPOSED AFTER DEMOLITION SHALL BE PROTECTED AND SAFEGUARDED FROM EXPOSURE FROM WEATHER AND OR DAMAGE FROM CONSTRUCTION DURING CONSTRUCTION.
- CONTRACTOR TO REMOVE EXISTING LIGHTING, ELECTRIC, TELEPHONE, & DATA CABLING & DEVICES, AS WELL AS ANY OTHER FIXTURES AS REQUIRED TO ACCOMMODATE NEW WORK.
- IF ANY WASTE MATERIALS ENCOUNTERED DURING THE DEMOLITION OR CONSTRUCTION PHASE ARE FOUND TO CONTAIN LEAD, ASBESTOS, POLYCHLORINATED BIPHENYL (PCB'S) (SUCH AS FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES, THEY SHALL BE HANDLED AND REMOVED IN ACCORDANCE WITH FEDERAL AND STATE LAW'S AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
- ALL EXISTING WINDOWS TO BE REMOVED TO ORIGINAL MASONRY OPENING. PREP OPENING FOR NEW WINDOW INSTALLATION.
- CONTRACTOR SHALL REMOVE ALL EXISTING FIRE PROTECTION PIPING AND EQUIPMENT INCLUDING STANDPIPES, HOSE VALVES, SPRINKLERS AND ASSOCIATED PIPING FROM THE BUILDING IN THEIR ENTIRETY. NO EXISTING FIRE PROTECTION PIPING OR APPURTENANCES SHALL REMAIN FOR REUSE. COORDINATE PATCHING OF ALL EXISTING STRUCTURE WITH ARCHITECT.

DEMOLITION PLAN KEY NOTES: (#)

1. REMOVE PORTION OF EXISTING WALL TO THE EXTENT SHOWN, PROVIDE NEW STEEL LINTEL AND BRICK JAMBS PER STRUCTURAL DRAWINGS.
2. REMOVED EXISTING WALL TO THE EXTENT SHOWN.
3. REMOVE EXIST. DOOR, FRAME, & ASSOCIATED HARDWARE IN IT'S ENTIRETY.
4. EXISTING ROOFING AND INSULATION TO BE REMOVED DOWN TO DECK. PREP FOR NEW INSULATION AND ROOFING MEMBRANE INSTALLATION. REMOVE ALL EXISTING MEP PENETRATIONS. EXISTING DECK TO BE REPAIRED PER STRUCTURAL DRAWINGS.
5. EXISTING METAL ROOFING AND WOOD 2X FRAMING TO BE REMOVED. EXISTING STEEL TRUSSES TO REMAIN.PREP FOR NEW METAL DECK, INSULATION AND ROOFING MEMBRANE INSTALLATION. REMOVE ALL EXISTING MEP PENETRATIONS.
6. EXISTING WINDOWS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION.
7. EXISTING WINDOWS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION. WINDOW SILL TO BE LOWERED TO ACCOMMODATE NEW DOOR.
8. REMOVE BRICK INFILL AT EXISTING WINDOW OPENING. EXISTING ARCH AND SILL TO REMAIN.
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20. EXISTING SKYLIGHT TO BE REMOVED AND REPLACED WITH NEW SKYLIGHT, REPAIR OPENING PER STRUCTURAL DRAWINGS.
21. EXISTING ROOF DRAIN AND LEADERS TO BE REMOVED IN THEIR ENTIRETY, REFER TO PLUMBING DRAWINGS FOR NEW ROOF DRAIN AND LEADER LOCATIONS.
22. EXISTING SCUPPER TO BE ABANDONED. REMOVE LEADERS AND CAP BELOW GRADE. SCUPPER OPENING TO BE REPAIRED AND LEFT IN PLACE.
23. PORTION OF EXISTING PARAPET TO BE REMOVED TO ACCOMMODATE NEW EGRESS STAIR. COORDINATE HEIGHT WITH FF OF PATIO.
24. EXISTING STAIR TO BE REMOVED AND REPLACED WITH NEW STAIR.
25. EXISTING CHIMNEY CAP TO BE REMOVED AND REPLACED.

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273 HICKORY STREET BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 (3)

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

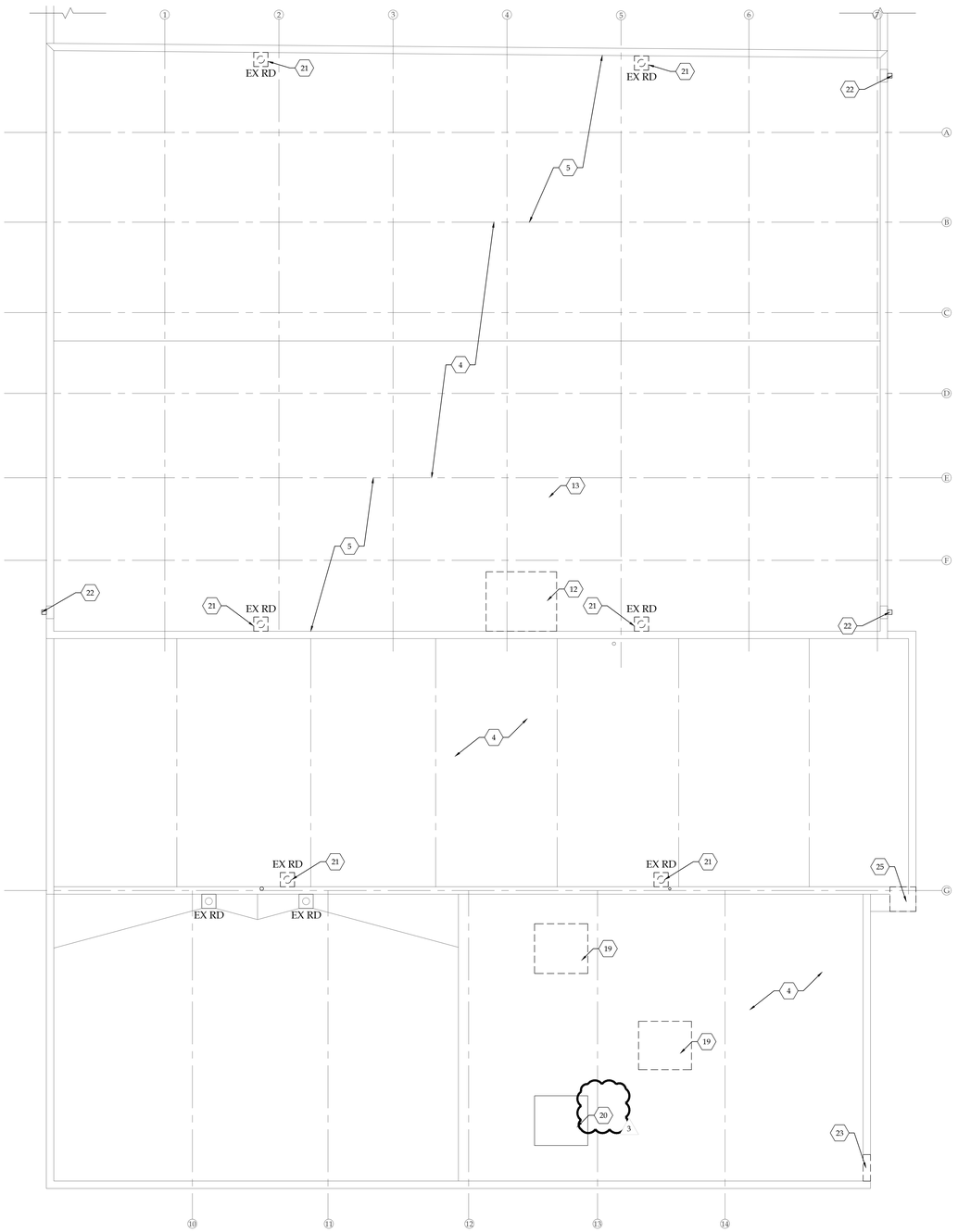
TITLE:

THIRD FLOOR DEMOLITION PLAN

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: AD-103



A1 ROOF DEMOLITION PLAN
1/8"=1'-0"

GENERAL DEMOLITION NOTES:

- REMOVE ALL EXISTING CONSTRUCTION, FINISHES, AND FIXTURES NECESSARY FOR THE COMPLETION OF THE WORK AS DEPICTED ON THE DRAWINGS. INCLUDING BUT NOT LIMITED TO, ITEMS SHOWN ON THE PLANS WITH DASHED LINES. NECESSARY DISCONNECTS AND ALTERATIONS TO EXISTING MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS SHALL BE INCLUDED, REFER TO MEP DRAWING FOR SCOPE. PATCH AS REQUIRED ALL CONSTRUCTIONS TO REMAIN IN ACCORDANCE WITH THE CONTRACT DRAWINGS. VERIFY WITH OWNER, THE DISPOSITION AND REMOVAL OF ANY COMPONENTS OF SALVAGEABLE VALUE.
- IN GENERAL, ITEMS TO BE REMOVED ARE SHOWN DASHED. THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL ITEMS INDICATED, IMPLIED OR OTHERWISE NECESSARY TO ALLOW FOR NEW CONSTRUCTION. CONTRACTOR TO VERIFY IN FIELD ANY ADDITIONAL DEMOLITION REQUIRED TO PREPARE AREA FOR NEW CONSTRUCTION PER PLANS.
- COORDINATE ALL NEW OPENINGS WITH ARCHITECTURAL DRAWINGS.
- CONTRACTOR TO PROTECT ALL EXISTING FINISHES SCHEDULED TO REMAIN DURING CONSTRUCTION AND REPLACE DAMAGED FINISHES AS NECESSARY. ALL REPAIR WORK SHALL MATCH EXISTING ADJACENT MATERIALS AND METHODS.
- THE CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING DEMOLITION OR CONSTRUCTION AND IS TO REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING.
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- ALL EXISTING SURFACES LEFT EXPOSED AFTER DEMOLITION SHALL BE PROTECTED AND SAFEGUARDED FROM EXPOSURE FROM WEATHER AND OR DAMAGE FROM CONSTRUCTION DURING CONSTRUCTION.
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- IF ANY WASTE MATERIALS ENCOUNTERED DURING THE DEMOLITION OR CONSTRUCTION PHASE ARE FOUND TO CONTAIN LEAD, ASBESTOS, POLYCHLORINATED BIPHENYL (PCB'S) (SUCH AS FLUORESCENT LAMP BALLASTS), OR OTHER HARMFUL SUBSTANCES, THEY SHALL BE HANDLED AND REMOVED IN ACCORDANCE WITH FEDERAL AND STATE LAW'S AND REQUIREMENTS CONCERNING HAZARDOUS WASTE.
- ALL EXISTING WINDOWS TO BE REMOVED TO ORIGINAL MASONRY OPENING. PREP OPENING FOR NEW WINDOW INSTALLATION.
- CONTRACTOR SHALL REMOVE ALL EXISTING FIRE PROTECTION PIPING AND EQUIPMENT INCLUDING STANDPIPES, HOSE VALVES, SPRINKLERS AND ASSOCIATED PIPING FROM THE BUILDING IN THEIR ENTIRETY. NO EXISTING FIRE PROTECTION PIPING OR APPURTENANCES SHALL REMAIN FOR REUSE. COORDINATE PATCHING OF ALL EXISTING STRUCTURE WITH ARCHITECT.

DEMOLITION PLAN KEY NOTES: (#)

1. REMOVE PORTION OF EXISTING WALL TO THE EXTENT SHOWN, PROVIDE NEW STEEL LINTEL AND BRICK JAMBS PER STRUCTURAL DRAWINGS.
2. REMOVED EXISTING WALL TO THE EXTENT SHOWN.
3. REMOVE EXIST. DOOR, FRAME, & ASSOCIATED HARDWARE IN IT'S ENTIRETY.
4. EXISTING ROOFING AND INSULATION TO BE REMOVED DOWN TO DECK. PREP FOR NEW INSULATION AND ROOFING MEMBRANE INSTALLATION. REMOVE ALL EXISTING MEP PENETRATIONS. EXISTING DECK TO BE REPAIRED PER STRUCTURAL DRAWINGS.
5. EXISTING METAL ROOFING AND WOOD 2X FRAMING TO BE REMOVED. EXISTING STEEL TRUSSES TO REMAIN.PREP FOR NEW METAL DECK, INSULATION AND ROOFING MEMBRANE INSTALLATION. REMOVE ALL EXISTING MEP PENETRATIONS.
6. EXISTING WINDOWS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION.
7. EXISTING WINDOWS/BOARDING TO BE REMOVED. DEMOLISH OPENING DOWN TO MASONRY OPENING AND PREP FOR NEW WINDOW INSTALLATION. WINDOW SILL TO BE LOWERED TO ACCOMMODATE NEW DOOR.
8. REMOVE BRICK INFILL AT EXISTING WINDOW OPENING. EXISTING ARCH AND SILL TO REMAIN.
9. REMOVE PORTION OF EXISTING MASONRY WALL AS REQUIRED FOR NEW OPENING, PROVIDE NEW LINTEL OR ARCH & JAMBS AS REQ'D., BRACE & PROTECT EXISTING CONSTRUCTION TO REMAIN, INFILL & PATCH ALL DISTURBED AREAS OF WALL TO MATCH EXISTING, ADJACENT SURFACES, TYP. (SEE STRUCTURAL DWGS., FLOOR PLANS, EXTERIOR ELEVATIONS, SECTIONS & DETAILS).
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17. REMOVE BRICK INFILL AT EXISTING WINDOW OPENING. EXISTING SILL TO REMAIN, PROVIDE NEW STEEL LINTEL.
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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 (3)

SA PROJECT TEAM:
PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

REGISTERED ARCHITECT PHILIP J. SILVESTRI 015918 STATE OF NEW YORK

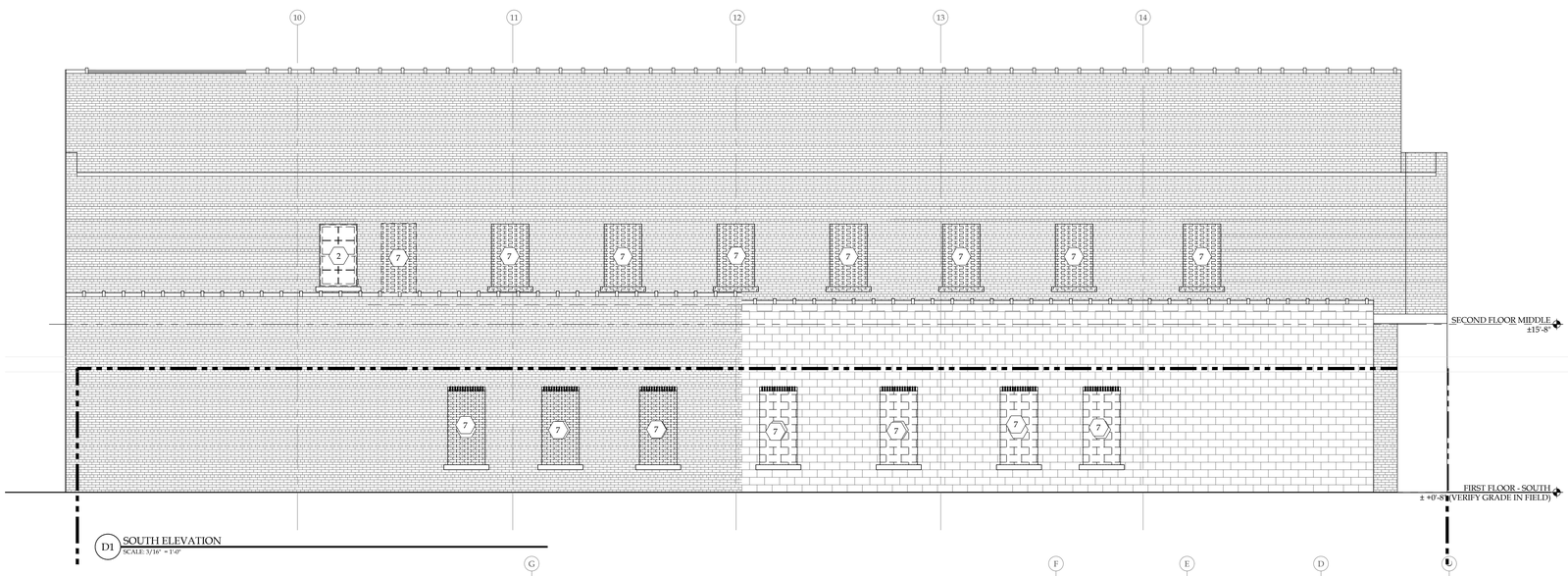
TITLE:

ROOF DEMOLITION PLAN

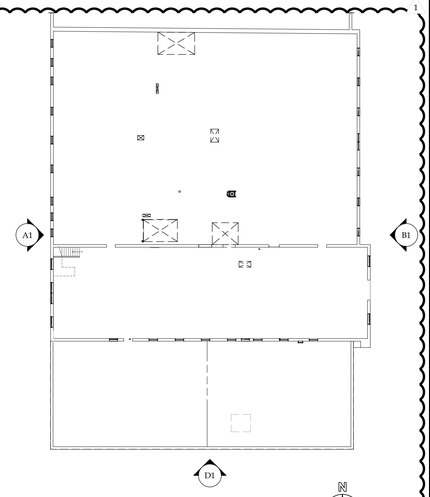
SILVESTRI ARCHITECTS, PC
1321 MILLERSPORT HWY AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

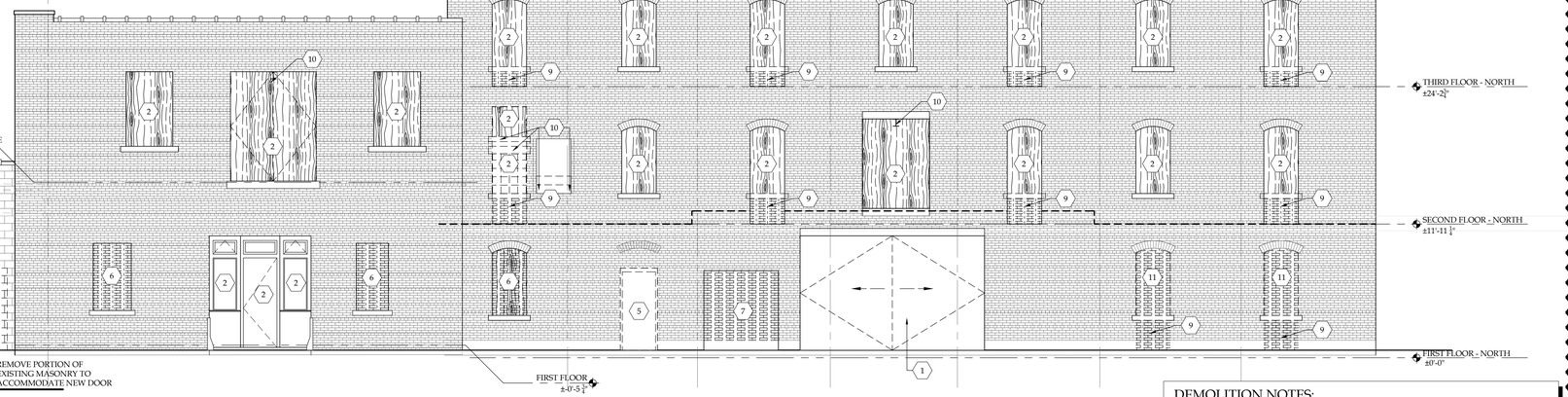
DRAWING #: AD-104



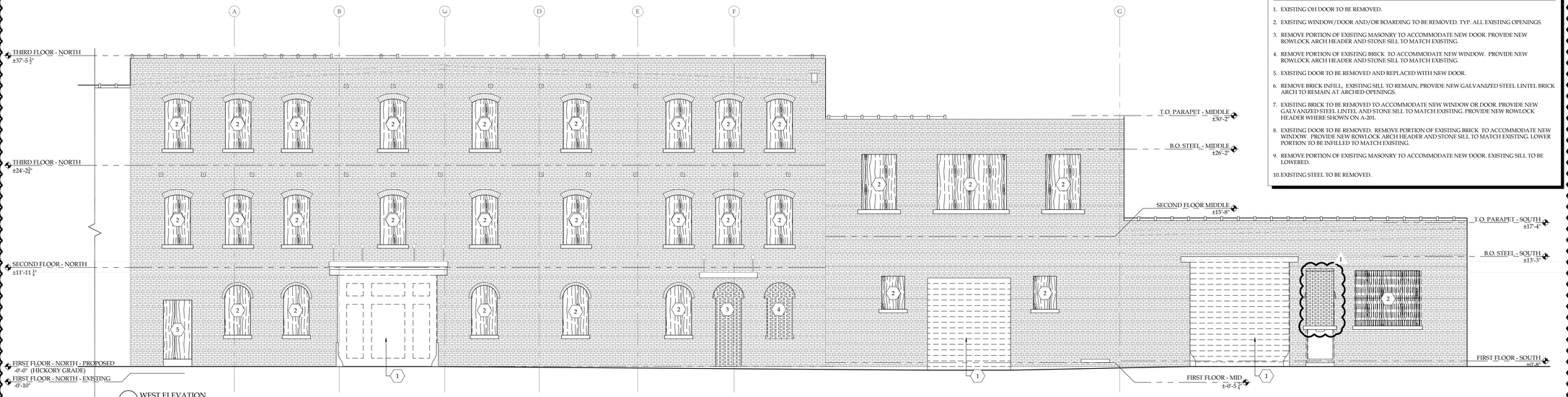
D1 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



KEY PLAN
SCALE: NOT TO SCALE



B1 EAST ELEVATION
SCALE: 3/16" = 1'-0"



A1 WEST ELEVATION
SCALE: 3/16" = 1'-0"

DEMOLITION NOTES:

1. EXISTING OH DOOR TO BE REMOVED.
2. EXISTING WINDOW/DOOR AND/OR BOARDING TO BE REMOVED. TYP. ALL EXISTING OPENINGS.
3. REMOVE PORTION OF EXISTING MASONRY TO ACCOMMODATE NEW DOOR. PROVIDE NEW ROWLOCK ARCH HEADER AND STONE SILL TO MATCH EXISTING.
4. REMOVE PORTION OF EXISTING BRICK TO ACCOMMODATE NEW WINDOW. PROVIDE NEW ROWLOCK ARCH HEADER AND STONE SILL TO MATCH EXISTING.
5. EXISTING DOOR TO BE REMOVED AND REPLACED WITH NEW DOOR.
6. REMOVE BRICK INFILL. EXISTING SILL TO REMAIN, PROVIDE NEW GALVANIZED STEEL LINTEL BRICK ARCH TO REMAIN AT ARCHED OPENINGS.
7. EXISTING BRICK TO BE REMOVED TO ACCOMMODATE NEW WINDOW OR DOOR. PROVIDE NEW GALVANIZED STEEL LINTEL AND STONE SILL TO MATCH EXISTING. PROVIDE NEW ROWLOCK HEADER WHERE SHOWN ON A-201.
8. EXISTING DOOR TO BE REMOVED. REMOVE PORTION OF EXISTING BRICK TO ACCOMMODATE NEW WINDOW. PROVIDE NEW ROWLOCK ARCH HEADER AND STONE SILL TO MATCH EXISTING. LOWER PORTION TO BE INFILLED TO MATCH EXISTING.
9. REMOVE PORTION OF EXISTING MASONRY TO ACCOMMODATE NEW DOOR. EXISTING SILL TO BE LOWERED.
10. EXISTING STEEL TO BE REMOVED.

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

DEMOLITION EXTERIOR ELEVATIONS

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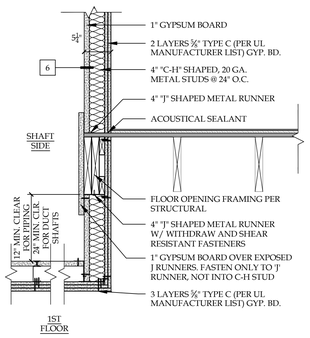
SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: AD-201



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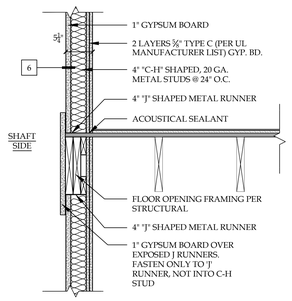

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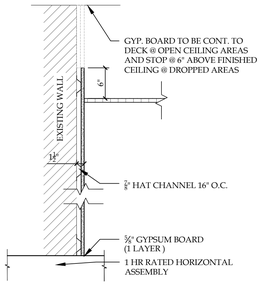
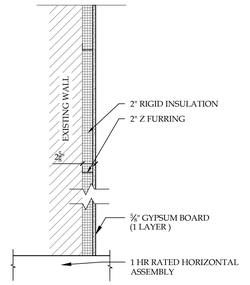
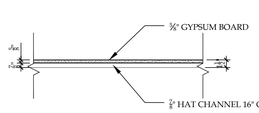
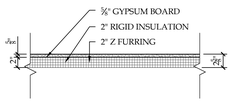


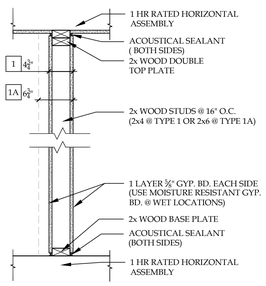


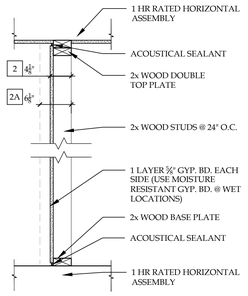


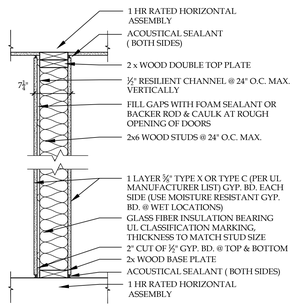
7 MASONRY WALL FURRING

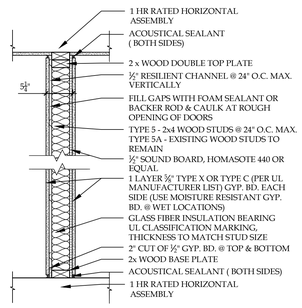


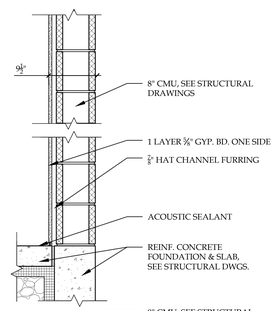
8 MASONRY WALL FURRING

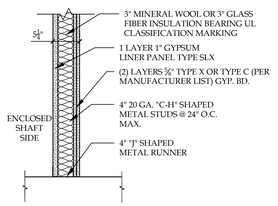


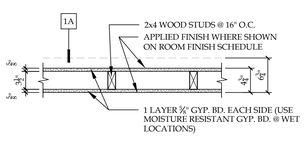


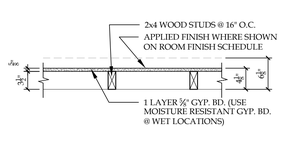


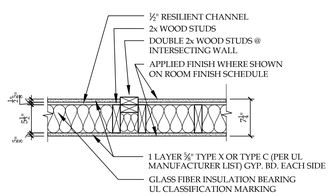


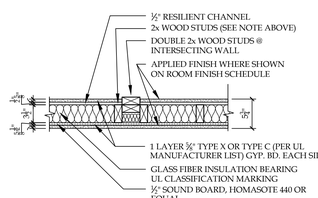


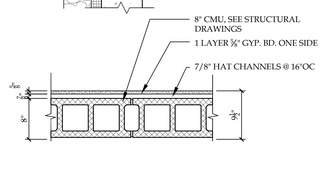


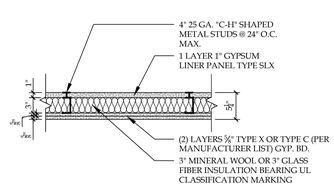












1 TYPICAL INTERIOR PARTITION - 2x4 STUD

1A TYPICAL INTERIOR PARTITION - 2x6 STUD

2 CHASE PARTITION - 2x4 STUD

2A CHASE PARTITION - 2x6 STUD

3 CORRIDOR PARTITION - 2x6 STUD
1 HR RATED - UL# U305
STC: 50 - Test Number: NRCC TL-93-118, IRC-IR-761, 3/98

4 DEMISING PARTITION - 2x4 STUD
1 HR RATED - UL# U340
STC: 54 - ESTIMATED

5 ELEVATOR SHAFT 2 HR WALL - W/ FURRING
UL# U905
STC: 48 (CMU) + 1.6 (FURRING) = 49.6 - Test Number: TMS 0302

5A ELEVATOR SHAFT 2 HR WALL - NO FURRING
UL# U905
STC: 48 (CMU) - Test Number: TMS 0302

6 2 HOUR RATED SHAFT WALL
UL#: U415 - SYSTEM B

6A 1 HOUR RATED SHAFT WALL
UL#: U415 - SYSTEM A - (1) LAYER OF ⅝" GYPSUM BOARD @ OUTSIDE FACE, INSTEAD OF (2)

A1 PARTITION TYPES
SCALE: 1" = 1'-0"

GENERAL NOTES

- CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE NEW YORK STATE BUILDING CODES, OSHA STANDARDS AND FIRE SAFETY CODE / RELEVANT SECTIONS OF THE N.F.P.A. & ANY LOCAL CODES BEING MORE RESTRICTIVE THAN THE MINIMUMS LISTED.
- CONSTRUCTION MEANS, METHODS, TECHNIQUES AND CRAFTSMANSHIP ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. G.C. SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD. CONTACT ARCHITECT IF MAJOR DISCREPANCIES OCCUR BETWEEN DRAWINGS AND EXISTING CONDITIONS.
- THE CONTRACTOR IS REQUIRED TO INSPECT THE PROJECT SITE IN ORDER TO DETERMINE THE EXTENT OF THE REQUIRED WORK. THIS INSPECTION SHALL BE COMPLETED PRIOR TO THE SUBMISSION OF ANY PROPOSAL TO COMPLETE THIS PROJECT. INSPECTION TIMES SHALL BE COORDINATED WITH THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL INFORMATION ON THE DRAWINGS.
- THE DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS FOR THIS PROJECT WILL BE COMPLETED TO THE SCOPE OF THE PROJECT IN COMPLIANCE WITH THE OWNER AND DESIGN TEAM. ANY CHANGES TO THESE DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS WILL ONLY BE DONE BY A CHANGE ORDER THAT IS APPROVED BY THE OWNER'S REPRESENTATIVE.
- CONSIDERATION WILL NOT BE GRANTED FOR ANY ALLEGED MISUNDERSTANDINGS AS TO THE AMOUNT AND / OR SCOPE OF WORK TO BE PERFORMED. TENDER OF PROPOSAL SHALL CONVEY FULL AGREEMENT TO THE ITEMS, AND CONDITIONS INDICATED IN THE CONSTRUCTION DOCUMENTS. SHOULD THE CONTRACTOR FIND DISCREPANCIES OR OMISSIONS IN THE CONSTRUCTION DOCUMENTS OR BE IN DOUBT AS TO THE INTENT THEREOF, THE CONTRACTOR SHALL IMMEDIATELY OBTAIN CLARIFICATION FROM THE ARCHITECT PRIOR TO SUBMITTING A PROPOSAL FOR THE WORK.
- ALL OWNER SUPPLIED ITEMS WILL BE COORDINATED WITHIN THE GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULES PRIOR TO COMMENCEMENT OF ANY WORK.
- THE CONTRACTOR SHALL COORDINATE HIS WORK AND SCHEDULE WITH THE OWNER FOR ALL BUILDING AND CONSTRUCTION SIGNAGE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF HIS WORK AND SCHEDULE WITH WORK BEING PERFORMED BY OTHERS AND THE USER/OWNER OF THE BUILDING.
- ALL DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALE. DO NOT SCALE DRAWINGS. ALL DIMENSIONS ARE TO FACE OF CONCRETE OR MASONRY, FACE OF EXTERIOR SHEATHING, CENTERLINE OF COLUMNS AND BEAMS, AND FINISH TO FINISH, UNLESS OTHERWISE NOTED.
- THE STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WORK. ANY DISCREPANCIES BETWEEN THE ARCHITECT'S AND ENGINEER'S DRAWINGS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION FOR CLARIFICATION PRIOR TO PROCEEDING WITH SAID WORK.
- DETAILS MARKED "TYPICAL" SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY INDICATED OTHERWISE.
- ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING SOME, OR THEIR EXACT MEANING, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.
- CONTRACTOR SHALL VERIFY AND ESTABLISH THE LOCATIONS AND ELEVATIONS OF ALL UTILITIES WITHIN THE WORK AREA, AND SHALL COORDINATE WITH THE OWNER AND THE UTILITY COMPANIES PRIOR TO THE START OF THE PROJECT.
- THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO ADEQUATELY PROTECT PERSONAL AND ADJACENT PROPERTY AND TO INSURE SAFETY OF THE STRUCTURE THROUGHOUT THE CONSTRUCTION PERIOD.
- ALL CEILING HEIGHTS AS SHOWN ON DETAILS OR PLANS OR NOTES ARE FROM TOP OF CONCRETE DECK TO FINISH CEILING. USE OF THE TERM ABOVE FINISH FLOOR (A.F.F.) MEANS MEASURED FROM THE TOP OF CONCRETE DECK. CONTRACTOR SHALL ALLOW FOR AND COORDINATE WORK WITH FLOOR FINISH MATERIAL AND INSTALLATION METHOD.
- PROVIDE INDEPENDENT SUSPENSION FOR ALL LIGHT FIXTURES. SUSPENSION FOR CEILING AND LIGHT FIXTURES SHALL BE INDEPENDENT OF SUSPENSION FOR DUCT WORK.
- ALL EQUIPMENT AND MATERIALS INSTALLED IN THIS JOB SHALL BE NEW AND FREE OF ANY DEFECTS UNLESS OTHERWISE NOTED.
- CONTRACTORS SHALL RECORD ALL DEVIATIONS FROM THE DESIGN DOCUMENTS IN THE DRAWINGS, AND PROVIDE A COPY TO THE ARCHITECT UPON THE COMPLETION OF WORK.
- PROVIDE APPROVED SEPARATION BY MEANS OF COATINGS, GASKETS, OR OTHER EFFECTIVE MEANS TO PREVENT GALVANIC CORROSION BETWEEN ALL DISSIMILAR METALS.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY THE CONSTRUCTION OPERATIONS OF THIS PROJECT TO ADJACENT PROPERTY, UTILITIES, PAVEMENT, LANDSCAPING, STRUCTURES OR IMPROVEMENTS OF ANY KIND. THE GENERAL CONTRACTOR SHALL REPAIR ALL SUCH DAMAGE D ITEMS TO THE CONDITION THEY WERE IN PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES OR BETTER.
- WHERE IT IS NECESSARY TO INSURE STABILITY, CONTRACTOR IS TO PROVIDE ADDITIONAL ANCHORING AND/OR BLOCKING IN STUD PARTITIONS OR BRACE PARTITIONS ABOVE CEILINGS.

GENERAL WALL NOTES

- SEE SPECIFICATIONS FOR APPLICATIONS OF GYPSUM PRODUCTS, UNLESS NOTED ON DRAWINGS. REFER TO SPECIFICATIONS FOR SPECIAL APPLICATIONS, THICKNESS, AND TYPES. (I.E. MOLD & MOISTURE RESISTANCE, TILE BACKER BOARDS, ETC.)
- REFER TO THE LATEST EDITION OF UNDERWRITERS LABORATORIES, INC. FIRE RESISTANCE DIRECTORY FOR ADDITIONAL REQUIREMENTS ON UL RATED ASSEMBLIES AS NOTED IN THE WALL SCHEDULE.
- USE ONLY PARTITIONS IDENTIFIED ON THE PLANS.
- STC = SOUND TRANSMISSION CLASS - REFER TO THE WALL SCHEDULE IN PLAN FOR WALLS THAT ARE SOUND RATED.
- PROVIDE A MINIMUM RATING OF STC 50 AT DEMISING AND CORRIDOR PARTITIONS
- ALL SEALANTS IN RATED WALL LOCATIONS REFERENCED IN THE WALL TYPE DETAILS SHALL BE SELECTED AND INSTALLED IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE UNDERWRITERS LABORATORIES, INC FIRE RESISTANCE DIRECTORY. IN ADDITION TO FIRE RESISTANCE, WALL LOCATIONS CALLED OUT WITH REQUIRED ACOUSTICAL VALUE, AS NOTED IN WALL SCHEDULE, SHALL HAVE SEALANTS THAT MAINTAIN THE MINIMUM SOUNDS VALUE OF THE WALL PARTITION.

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

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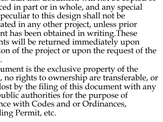

TITLE:

GENERAL NOTES & PARTITION TYPES

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SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-001

ICC ANSI A117.1-2009

THIS SHEET CONTAINS EXCERPTS FROM ICC A117.1-2009.
REFER TO FULL DOCUMENT FOR MORE INFORMATION.

302 FLOOR SURFACES

302.1 General. Floor surfaces shall be stable, firm, and slip resistant, and shall comply with Section 302. Changes in level in floor surfaces shall comply with Section 303.

302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. The pile shall be 1/2 inch maximum in height. Exposed edges of carpet shall be fastened to the floor and shall have trim along the entire length of the exposed edge. Carpet edge trim shall comply with Section 303.

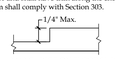


FIG. 303.2 CARPET ON FLOOR SURFACES

302.3 Openings. Openings in floor surfaces shall be of a size that does not permit the passage of a ½ inch diameter sphere, except as allowed in Sections 407.4.3, 408.4.3, 409.4.3, 410.4, and 805.10. Elongated openings shall be placed so that the long dimension is perpendicular to the predominant direction of travel.

303 CHANGES IN LEVEL

303.1 General. Changes in level in floor surfaces shall comply with Section 303.

303.2 Vertical. Changes in level of 1/4 inch maximum in height shall be permitted to be vertical.

303.3 Beveled. Changes in level greater than 1/4 inch in height and not more than 1/2 inch maximum in height shall be beveled with a slope not steeper than 1:2.

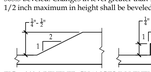


FIG. 303.3 BEVELED CHANGES IN LEVEL

303.4 Ramps. Changes in level greater than 1/2 inch in height shall be ramped and shall comply with Section 405 or 406.

304 TURNING SPACE

304.1 General. A turning space shall comply with Section 304.

304.2 Floor Surface. Floor surfaces of a turning space shall comply with Section 302. Changes in level are not permitted within the turning space.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

304.3 Size. Turning spaces shall comply with Section 304.3.1 or 304.3.2.

304.3.1 Circular Space. The turning space shall be a circular space with a 60-inch minimum diameter. The turning space shall be permitted to include knee and toe clearance complying with Section 306.

304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60-inch minimum square, with arms and base 36 inches minimum in width. Each arm of the T shall be clear of obstructions 12 inches minimum in each direction, and the base shall be clear of obstructions 24 inches minimum. The turning space shall be permitted to include knee and toe clearance complying with Section 306 only at the end of either the base or one arm.

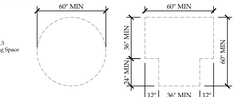


FIG. 304.3 Size Of Turning Space

(a) Circular (b) T-shaped

304.4 Door Swing. Unless otherwise specified, doors shall be permitted to swing into turning spaces.

305 CLEAR FLOOR SPACE

305.1 General. A clear floor space shall comply with Section 305.

305.2 Floor Surfaces. Floor surfaces of a clear floor space shall comply with Section 302. Changes in level are not permitted within the clear floor space.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

305.3 Size. The clear floor space shall be 48 inches minimum in length and 30 inches minimum in width.

FIG. 305.3 Size Of Clear Floor Space

305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor space shall be permitted to include knee and toe clearance complying with Section 306.

305.5 Position. Unless otherwise specified, the clear floor space shall be positioned for either forward or parallel approach to an element.

FIG. 305.5 Position Of Clear Floor Space

(a) Forward (b) Parallel

305.6 Approach. One full, unobstructed side of the clear floor space shall adjoin or overlap an accessible route or adjoin another clear floor space.

305.7 Alcoves. If a clear floor space is in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearances complying with Sections 305.7.1 and 305.7.2 shall be provided, as applicable.

305.7.1 Parallel Approach. Where the clear floor space is positioned for a parallel approach, the alcove shall be 60 inches minimum in width where the depth exceeds 15 inches.

305.7.2 Forward Approach. Where the clear floor space is positioned for a forward approach, the alcove shall be 36 inches minimum in width where the depth exceeds 24 inches.

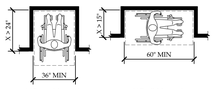


FIG. 305.7 Maneuvering Clearance In An Alcove

(a) Forward Approach (b) Parallel Approach

306 KNEE AND TOE CLEARANCE

306.1 General. Where space beneath an element is included as part of clear floor space at an element, clearance at an element, or a turning space, the space shall comply with Section 306. Additional space shall not be prohibited beneath an element, but shall not be considered as part of the clear floor space or turning space.

306.2 Toe Clearance.

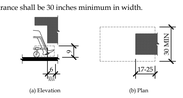
306.2.1 General. Space beneath an element between the floor and 9 inches above the floor shall be considered toe clearance and shall comply with Section 306.2.

306.2.2 Maximum Depth. Toe clearance shall be permitted to extend 25 inches maximum under an element.

306.2.3 Minimum Depth. Where toe clearance is required at an element as part of a clear floor space complying with Section 305, the toe clearance shall extend 17 inches minimum beneath the element.

306.2.4 Additional Clearance. Space extending greater than 6 inches beyond the available knee clearance at 9 inches above the floor shall not be considered toe clearance.

306.2.5 Width. Toe clearance shall be 30 inches minimum in width.



(a) Elevation (b) Plan

306.3 Knee Clearance.

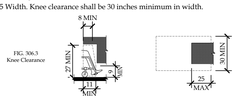
306.3.1 General. Space beneath an element between 9 inches and 27 inches above the floor shall be considered knee clearance and shall comply with Section 306.3.

306.3.2 Maximum Depth. Knee clearance shall be permitted to extend 25 inches maximum under an element at 9 inches above the floor.

306.3.3 Minimum Depth. Where knee clearance is required beneath an element as part of a clear floor space complying with Section 305, the knee clearance shall be 11 inches minimum in depth at 9 inches above the floor, and 8 inches minimum in depth at 27 inches above the floor.

306.3.4 Clearance Reduction. Between 9 inches and 27 inches above the floor, the knee clearance shall be permitted to be reduced at a rate of 1 inch in depth for each 6 inches in height.

306.3.5 Width. Knee clearance shall be 30 inches minimum in width.



(a) Elevation (b) Plan

307 PROTRUDING OBJECTS

307.1 General. Protruding objects on circulation paths shall comply with Section 307.

307.2 Protrusion Limits. Objects with leading edges more than 27 inches and not more than 80 inches above the floor shall protrude 4 inches maximum horizontally into the circulation path.

EXCEPTION: Handrails shall be permitted to protrude 4 ½ inches maximum.

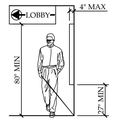


FIG. 307.2 LIMITS OF PROTRUDING OBJECTS

307.3 Post-Mounted Objects. Objects on posts or pylons shall be permitted to overhang 4 inches maximum where more than 27 inches and not more than 80 inches above the floor. Objects on multiple posts or pylons where the clear distance between the posts or pylons is greater than 12 inches shall have the lowest edge of such object either 27 inches maximum or 80 inches minimum above the floor.

EXCEPTION: Sloping portions of handrails between the top and bottom riser of stairs and above the ramp run shall not be required to comply with Section 307.3.

307.4 Vertical Clearance. Vertical clearance shall be 80 inches minimum. Rails or other barriers shall be provided where the vertical clearance is less than 80 inches. The leading edge of such rails or barrier shall be located 27 inches maximum above the floor.

EXCEPTION: Door closers and door stops shall be permitted to be 78 inches minimum above the floor.

307.5 Required Clear Width. Protruding objects shall not reduce the clear width required for accessible routes.

308 REACH RANGES

308.1 General. Reach ranges shall comply with Section 308.

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches maximum and the low forward reach shall be 15 inches minimum above the floor.

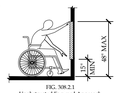
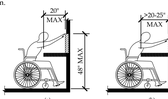


FIG. 308.2.1 Unobstructed Forward Approach

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor space complying with Section 305 shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches maximum above the floor where the reach depth is 20 inches maximum. Where the reach depth exceeds 20 inches, the high forward reach shall be 44 inches maximum above the floor, and the reach depth shall be 25 inches maximum.



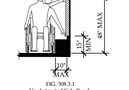
(a) (b)

FIG. 308.2.2 Obstructed High Forward Reach

308.3 Side Reach.

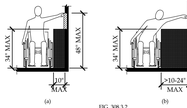
308.3.1 Unobstructed. Where a clear floor space complying with Section 305 allows a parallel approach to an element and the edge of the clear floor space is 10 inches maximum from the element, the high side reach shall be 48 inches maximum and the low side reach shall be 15 inches minimum above the floor.

EXCEPTION: Existing elements that are not altered shall be permitted at 54 inches maximum above the floor.



308.3.2 Obstructed High Reach. Where a clear floor space complying with Section 305 allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches maximum above the floor and the depth of the obstruction shall be 24 inches maximum. The high side reach shall be 48 inches maximum above the floor for a reach depth of 10 inches maximum. Where the reach depth exceeds 10 inches, the high side reach shall be 46 inches maximum above the floor for a reach depth of 24 inches maximum.

EXCEPTION: At washing machines and clothes dryers, the height of the obstruction shall be permitted to be 36 inches maximum above the floor.



(a) (b)

FIG. 308.3.2 Obstructed High Side Reach

309 OPERABLE PARTS

309.1 General. Operable parts required to be accessible shall comply with Section 309.

309.2 Clear Floor Space. A clear floor space complying with Section 305 shall be provided.

309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in Section 308.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5.0 pounds (22.2 N) maximum.

401 General

401.1 Scope. Accessible routes required by the scoping provisions adopted by the administrative authority shall comply with the applicable provisions of Chapter 4.

402 ACCESSIBLE ROUTES

402.1 General. Accessible routes shall comply with Section 402.

402.2 Components. Accessible routes shall consist of one or more of the following components: Walking surfaces with a slope not steeper than 1:20, doors and doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable portions of this standard.

402.3 Revolving Doors, Revolving Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

403 WALKING SURFACES

403.1 General. Walking surfaces that are a part of an accessible route shall comply with Section 403.

403.2 Floor Surface. Floor surfaces shall comply with Section 302.

403.3 Slope. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of a walking surface shall not be steeper than 1:48.

403.4 Changes in Level. Changes in level shall comply with Section 303.

403.5 Clear Width. The clear width of an accessible route shall be 36 inches minimum.

EXCEPTION: The clear width shall be permitted to be reduced to 32 inches minimum for a length of 24 inches maximum provided the reduced width segments are separated by segments that are 48 inches minimum in length and 36 inches minimum in width.

403.5.1 Clear Width at 180 Degree Turn. Where an accessible route makes a 180 degree turn around an object that is less than 48 inches in width, clear widths shall be 42 inches minimum approaching the turn, 48 inches minimum during the turn, and 42 inches minimum leaving the turn.

EXCEPTION: Section 403.5.1 shall not apply where the clear width during the turn is 60 inches minimum.

403.5.2 Passing Space. An accessible route with a clear width less than 60 inches shall provide passing spaces at intervals of 200 feet maximum. Passing spaces shall be either a 60-inch minimum by 60-inch minimum space, or an intersection of two walking surfaces that provide a T-shaped turning space complying with Section 304.3.2, provided the base and arms of the T-shaped space extend 48 inches minimum beyond the intersection.

403.6 Handrails. Where handrails are required at the side of a corridor they shall comply with Sections 505.4 through 505.9.

404 DOORS AND DOORWAYS

404.1 General. Doors and doorways that are part of an accessible route shall comply with Section 404.

404.2 Manual Doors. Manual doors and doorways, and manual gates, including ticket gates, shall comply with Section 404.2.

EXCEPTION: Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with Sections 404.2.6, 404.2.7, and 404.2.8.

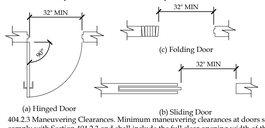
404.2.1 Double-Leaf Doors and Gates. At least one of the active leaves of doorways with two leaves shall comply with Sections 404.2.2 and 404.2.3.

404.2.2 Clear Width. Doorways shall have a clear opening width of 32 inches minimum. Clear opening width of doorways with swinging doors shall be measured between the face of door and stop, with the door open 90 degrees. Openings more than 24 inches in depth at doors and doorways without doors shall provide a clear opening width of 36 inches minimum. There shall be no projections into the clear opening width lower than 34 inches above the floor. Projections into the clear opening width between 34 inches and 80 inches above the floor shall not exceed 4 inches.

EXCEPTIONS:

1. Door closers and door stops shall be permitted to be 78 inches minimum above the floor.

2. In alterations, a projection of $\frac{5}{8}$ inch maximum into the required clear opening width shall be permitted for the latch side stop.



(a) Hinged Door (b) Sliding Door (c) Folding Door

404.2.3 Maneuvering Clearances. Minimum maneuvering clearances at doors shall comply with Section 404.2.3 and shall include the full clear opening width of the doorway. Required door maneuvering clearances shall not include knee and toe clearance.

404.2.3.1 Floor Surface. Floor surface within the maneuvering clearances shall have a slope not steeper than 1:48 and shall comply with Section 302.

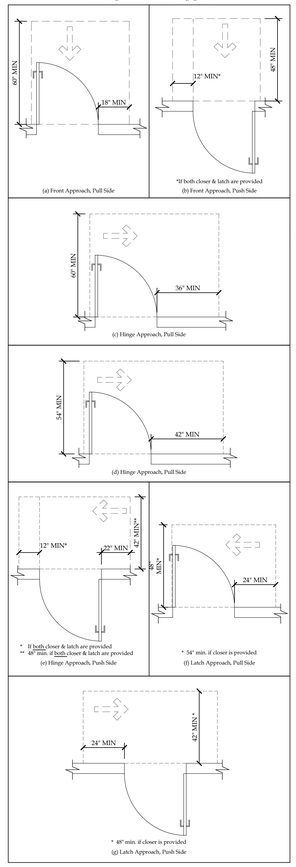
404.2.3.2 Swinging Doors. Swinging doors shall have maneuvering clearances complying with Table 404.2.3.2.

TABLE 404.2.3.2-MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS

Approach Direction	Door Side	Maneuvering Clearances at Manual Swing Doors	
		Perpendicular to Doorway	Parallel to Doorway (beyond latch unless noted)
From front	Pull	60 inches	18 inches
From front	Push	48 inches	0 inches[1]
From hinge side	Pull	60 inches	36 inches
From hinge side	Pull	54 inches	42 inches
From hinge side	Push	42 inches[2]	22 inches[2][3]
From latch side	Pull	48 inches[4]	24 inches
From latch side	Push	42 inches[2]	24 inches

1 Add 6 inches (150 mm) if closer and latch provided.
2 Add 6 inches (150 mm) if closer provided.
3 Add 12 inches (305 mm) beyond latch if closer and latch provided.
4 Beyond hinge side.

FIG. 404.2.3.2
Maneuvering Clearance At Manual Swinging Doors

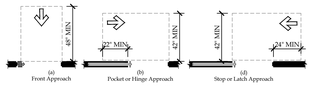


404.2.3.3 Sliding and Folding Doors. Sliding doors and folding doors shall have maneuvering clearances complying with Table 404.2.3.3.

TABLE 404.2.3.3-MANEUVERING CLEARANCES AT SLIDING AND FOLDING DOORS

Approach Direction	Minimum Maneuvering Clearances	
	Perpendicular to Doorway	Parallel to Doorway (beyond latch unless noted)
From front	48 inches	0 inches
From non-latch side	42 inches	22 inches[1]
From latch side	42 inches	24 inches

1 Beyond pocket or hinge side.



(a) Front Approach (b) Pocket or Hinge Approach (c) Stop or Latch Approach (d)

FIG. 404.2.3.3
Maneuvering Clearance At Sliding and Folding Doors

404.2.3.4 Doorways without Doors. Doorways without doors that are less than 36 inches in width shall have maneuvering clearances complying with Table 404.2.3.4

TABLE 404.2.3.4-MANEUVERING CLEARANCES FOR DOORWAYS WITHOUT DOORS

Approach Direction	Minimum Maneuvering Clearances Perpendicular to Doorway
From front	48 inches
From side	42 inches

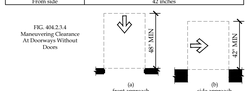


FIG. 404.2.3.4
Maneuvering Clearance At Doorways Without Doors

(a) front approach (b) side approach

404.2.3.5 Recessed Doors. Where any obstruction within 18 inches of the latch side of a doorway projects more than 8 inches beyond the face of the door, measured perpendicular to the face of the door, maneuvering clearances for a forward approach shall be provided .

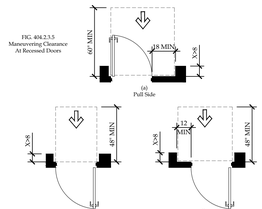


FIG. 404.2.3.5
Maneuvering Clearance At Recessed Doors

(a) Pull Side (b) Push Side (c) Push Side, Door Provided With Both Closer and Latch

EXCEPTIONS:

1. Edge protection shall not be required on ramps not required to have handrails and that have flared sides complying with Section 406.3.

2. Edge protection shall not be required on the sides of ramp landings serving an adjoining ramp run or stairway.

3. Edge protection shall not be required on the sides of ramp landings having a vertical dropoff of 1/2 inch maximum within 10 inches (255 mm) horizontally of the minimum landing area specified in Section 405.7.

4. Edge protection shall not be required on the sides of ramped aisles where the ramps provide access to the adjacent seats and aisle access ways.

405.9.1 Extended Floor Surface. The floor surface of the ramp run or ramp landing shall extend 12 inches minimum beyond the inside face of a railing complying with Section 505.

405.9.2 Curb or Barrier. A curb complying with Section 405.9.2.1 or a barrier complying with Section 405.9.2.2 shall be provided.

405.9.2.1 Curb. A curb shall be a minimum of 4 inches in height.

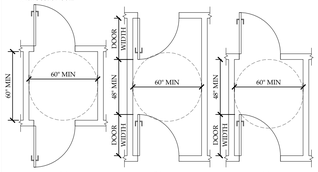
405.9.2.2 Barrier. Barriers shall be constructed so that the barrier prevents the passage of a 4-inch diameter sphere where any portion of the sphere is within 4 inches of the floor.

405.10 Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.

404.2.4 Thresholds. If provided, thresholds at doorways shall be 1/2 inch maximum in height. Raised thresholds and changes in level at doorways shall comply with Sections 302 and 303.

EXCEPTION: An existing or altered threshold shall be permitted to be 3/4 inch maximum in height provided that the threshold has a beveled edge on each side with a maximum slope of 1:2 for the height exceeding 1/4 inch.

404.2.5 Two Doors in Series. Distance between two hinged or pivoted doors in series shall be 48 inches (1220 mm) minimum plus the width of any door swinging into the space. The space between the doors shall provide a turning space complying with Section 304.



(a) (b) (c)

404.2.6 Door Hardware. Handles, pulls, latches, locks, and other operable parts on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, pinching, or twisting of the wrist to operate. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the floor. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

EXCEPTION: Locks used only for security purposes and not used for normal operation shall not be required to comply with Section 404.2.6.

404.2.7 Closing Speed.

404.2.7.1 Door Closers. Door closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to an open position of 12 degrees shall be 5 seconds minimum.

404.2.7.2 Spring Hinges. Door spring hinges shall be adjusted so that from an open position of 70 degrees, the door shall move to the closed position in 1.5 seconds minimum.

404.2.8 Door-Opening Force. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. The force for pushing or pulling open doors other than fire doors shall be as follows: 1. Interior hinged door: 5.0 pounds maximum 2. Sliding or folding door: 5.0 pounds maximum These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position.

404.2.9 Door Surface. Door surfaces within 10 inches of the floor, measured vertically, shall be a smooth surface on the push side extending the full width of the door. Parts creating horizontal or vertical joints in such surface shall be within 1/16 inch of the same plane as the other. Cavities created by added kick plates shall be capped.

EXCEPTIONS: 1. Sliding doors shall not be required to comply with Section 404.2.9. 2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at no less than 60 degrees from the horizontal shall not be required to comply with the 10-inch bottom rail height requirement. 3. Doors that do not extend to within 10 inches of the floor shall not be required to comply with Section 404.2.9.

404.2.10 Vision Lites. Doors and sidelites adjacent to doors containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one panel on either the door or an adjacent sidelite 43 inches maximum above the floor.

EXCEPTION: Vision lites with the lowest part more than 66 inches (1675 mm) above the floor shall not be required to comply with Section 404.2.10.

404.3 Automatic Doors. Automatic doors and automatic gates shall comply with Section 404.3. Full powered automatic doors shall comply with ANSI/BHMA A 156.10 listed in Section 105.2.4. Power-assist and low-energy doors shall comply with ANSI/BHMA A 156.19 listed in Section 105.2.3.

EXCEPTION: Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with Sections 404.3.2, 404.3.4, and 404.3.5.

404.3.1 Clear Width. Doorways shall have a clear opening width of 32 inches in power-on and power-off mode. The minimum clear opening width for automatic door systems shall be based on the clear opening width provided with all leafs in the open position.

404.3.2 Maneuvering Clearances. Maneuvering clearances at power-assisted doors shall comply with Section 404.2.3. 404.3.3 Thresholds. Thresholds and changes in level at doorways shall comply with Section 404.2.4. 404.3.4 Two Doors in Series. Doors in series shall comply with Section 404.2.5. 404.3.5 Control Switches. Manually operated control switches shall comply with Section 309. The clear floor space adjacent to the control switch shall be located beyond the arc of the door swing.

405 RAMPS

405.1 General. Ramps along accessible routes shall comply with Section 405.

EXCEPTION: In assembly areas, aisle ramps adjacent to seating and not serving elements required to be on an accessible route shall not be required to comply with Section 405.

405.2 Slope. Ramp runs shall have a running slope greater than 1:20 and not steeper than 1:12.

EXCEPTION: In existing buildings or facilities, ramps shall be permitted to have slopes steeper than 1:12 complying with Table 405.2 where such slopes are necessary due to space limitations.

TABLE 405.2-ALLOWABLE RAMP DIMENSIONS FOR CONSTRUCTION IN EXISTING SITES, BUILDINGS AND FACILITIES

Slope	Maximum Rise
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches

405.3 Cross Slope. Cross slope of ramp runs shall not be steeper than 1:48.

405.4 Floor Surfaces. Floor surfaces of ramp runs shall comply with Section 302.

405.5 Clear Width. The clear width of a ramp run shall be 36 inches minimum. Handrails and handrail supports that are provided on the ramp run shall not project into the required clear width of the ramp run.

405.6 Rise. The rise for any ramp run shall be 30 inches maximum.

405.7 Landings. Ramps shall have landings at the bottom and top of each ramp run. Landings shall comply with Section 405.7.

405.7.1 Slope. Landings shall have a slope not steeper than 1:48 and shall comply with Section 302.

405.7.2 Width. Clear width of landings shall be at least as wide as the widest ramp run leading to the landing.

405.7.3 Length. Landings shall have a clear length of 60 inches minimum.

405.7.4 Change in Direction. Ramps that change direction at ramp landings shall be sized to provide a turning space complying with Section 304.3.

405.7.5 Doorways. Where doorways are adjacent to a ramp landing, maneuvering clearances required by Sections 404.2.3 and 404.3.2 shall be permitted to overlap the landing area. Where a door that is subject to locking is located adjacent to a ramp landing, the landing shall be sized to provide a turning space complying with Section 304.3.

405.8 Handrails. Ramp runs with a rise greater than 6 inches (150 mm) shall have handrails complying with Section 505.

405.9 Edge Protection. Edge protection complying with Section 405.9.1 or 405.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.

406 CURB RAMPS

406.1 General. Curb ramps shall comply with Section 406.

406.2 Ramp Slope. The slope of the ramp shall comply with Section 405.2.

406.3 Sides of Curb Ramps. Where provided, flared sides of curb ramps shall have a maximum slope of 1:10.

406.4 Landings. Landings shall be provided at the tops of curb ramps. The landing clear length shall be 36 inches minimum. The landing clear width shall be at least as wide as the curb ramp, not including flared sides, leading to the landing.

406.5 Ramp Runs. Ramp runs shall have a running slope not steeper than the adjoining gutter or street and not steeper than 1:12. Ramp runs with a rise greater than 6 inches shall comply with Section 405.5 and shall have handrails complying with Section 505.

406.6 Detectable Warnings. Curb ramps shall have detectable warnings complying with Section 705.1.

406.7 Transitions. Transitions from ramps to walks, gutters, or streets shall be flush and free of abrupt changes. Maximum slopes of adjoining surfaces and gutters shall not exceed the maximum allowable slope of the ramp.

406.8 Location. Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles.

406.9 Diagonal Curb Ramps. Diagonal curb ramps with returned curbs or other edging shall have a clear width of 48 inches minimum, measured at the point where the ramp intersects the returned curb or edging.

406.10 Islands. Any raised island in parking lots subject to vehicular traffic shall be provided with curb ramps. Islands shall be provided with a level area at least 48 inches long by 36 inches wide at the same level as the adjacent curb ramp.

407 ELEVATORS

407.1 General. Elevators shall comply with Section 407.

407.2 Clear Floor Space. Elevators shall have a clear floor space complying with Section 305, positioned for a forward approach to the centerline of the elevator door. Such clear floor space shall be centered on the centerline of the elevator door.

407.3 Floor Surfaces. Floor surfaces shall comply with Section 302.

407.4 Car Doors. Doors shall comply with Section 404.

407.4.1 Door Timing. The minimum time for doors to remain fully open shall be 5 seconds.

407.4.2 Door Reopening Device. Doors shall be provided with a door reopening device that will hold doors open for 20 seconds minimum if activated by a person or object approaching within the door opening.

407.4.3 Door Protection. Doors shall be provided with a door protection device that detects obstructions within the door opening and prevents the doors from closing when activated.

407.4.4 Door Delay. Doors shall be provided with a door delay device that prevents doors from closing when a person or object is detected within the door opening.

407.4.5 Door Force. The force for pushing or pulling doors open shall be 5.0 pounds (22.2 N) maximum.

407.4.6 Door Position Indicator. Elevators with doors that do not open and close automatically shall be provided with a door position indicator.

407.4.7 Door Position Indicator Signal. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal.

407.4.8 Door Position Indicator Signal Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that remains activated for 5 seconds minimum.

407.4.9 Door Position Indicator Signal Tone. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is a tone.

407.4.10 Door Position Indicator Signal Volume. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is adjustable between 10 dBA and 30 dBA.

407.4.11 Door Position Indicator Signal Frequency. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 1500 Hz maximum.

407.4.12 Door Position Indicator Signal Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 0.1 second minimum.

407.4.13 Door Position Indicator Signal Repetition. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats.

407.4.14 Door Position Indicator Signal Repetition Rate. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats at a rate of 1.5 Hz maximum.

407.4.15 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats for 5 seconds minimum.

407.4.16 Door Position Indicator Signal Repetition Volume. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is adjustable between 10 dBA and 30 dBA.

407.4.17 Door Position Indicator Signal Repetition Frequency. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 1500 Hz maximum.

407.4.18 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 0.1 second minimum.

407.4.19 Door Position Indicator Signal Repetition. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats.

407.4.20 Door Position Indicator Signal Repetition Rate. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats at a rate of 1.5 Hz maximum.

407.4.21 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats for 5 seconds minimum.

407.4.22 Door Position Indicator Signal Repetition Volume. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is adjustable between 10 dBA and 30 dBA.

407.4.23 Door Position Indicator Signal Repetition Frequency. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 1500 Hz maximum.

407.4.24 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 0.1 second minimum.

407.4.25 Door Position Indicator Signal Repetition. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats.

407.4.26 Door Position Indicator Signal Repetition Rate. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats at a rate of 1.5 Hz maximum.

407.4.27 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats for 5 seconds minimum.

407.4.28 Door Position Indicator Signal Repetition Volume. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is adjustable between 10 dBA and 30 dBA.

407.4.29 Door Position Indicator Signal Repetition Frequency. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 1500 Hz maximum.

407.4.30 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 0.1 second minimum.

407.4.31 Door Position Indicator Signal Repetition. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats.

407.4.32 Door Position Indicator Signal Repetition Rate. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats at a rate of 1.5 Hz maximum.

407.4.33 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats for 5 seconds minimum.

407.4.34 Door Position Indicator Signal Repetition Volume. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is adjustable between 10 dBA and 30 dBA.

407.4.35 Door Position Indicator Signal Repetition Frequency. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 1500 Hz maximum.

407.4.36 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 0.1 second minimum.

407.4.37 Door Position Indicator Signal Repetition. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats.

407.4.38 Door Position Indicator Signal Repetition Rate. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats at a rate of 1.5 Hz maximum.

407.4.39 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats for 5 seconds minimum.

407.4.40 Door Position Indicator Signal Repetition Volume. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is adjustable between 10 dBA and 30 dBA.

407.4.41 Door Position Indicator Signal Repetition Frequency. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 1500 Hz maximum.

407.4.42 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 0.1 second minimum.

407.4.43 Door Position Indicator Signal Repetition. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats.

407.4.44 Door Position Indicator Signal Repetition Rate. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats at a rate of 1.5 Hz maximum.

407.4.45 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats for 5 seconds minimum.

407.4.46 Door Position Indicator Signal Repetition Volume. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is adjustable between 10 dBA and 30 dBA.

407.4.47 Door Position Indicator Signal Repetition Frequency. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 1500 Hz maximum.

407.4.48 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that is 0.1 second minimum.

407.4.49 Door Position Indicator Signal Repetition. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats.

407.4.50 Door Position Indicator Signal Repetition Rate. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats at a rate of 1.5 Hz maximum.

407.4.51 Door Position Indicator Signal Repetition Duration. Elevators with doors that do not open and close automatically shall be provided with a door position indicator signal that repeats for 5 seconds minimum.

407.4.52 Door Position Indicator Signal Repetition Volume. Elevators with doors that do not open

604.9.6 Grab Bars. Grab bars shall comply with Section 609. Side wall grab bars complying with Section 604.5.1 located on the wall closest to the water closet, and a rear wall grab bar complying with Section 604.5.2, shall be provided.

604.10 Ambulatory Accessible Compartments.

604.10.1 General. Ambulatory accessible compartments shall comply with Section 604.10.

604.10.2 Size. The minimum area of an ambulatory accessible compartment shall be 60 inches minimum in depth and 36 inches in width.

604.10.3 Doors. Toilet compartment doors, including door hardware, shall comply with Section 404, except if the approach is to the latch side of the compartment door the clearance between the door side of the compartment and any obstruction shall be 42 inches minimum. The door shall be self-closing. A door pull complying with Section 404.2.6 shall be placed on both sides of the door near the latch. Compartment doors shall not swing into the required minimum area of the compartment.

604.10.4 Grab Bars. Grab bars shall comply with Section 609. Side wall grab bars complying with Section 604.5.1 shall be provided on both sides of the compartment.

604.11 Water Closets and Toilet Compartments for Children's Use.

604.11.1 General. Accessible water closets and toilet compartments primarily for children's use shall comply with Section 604.11.

604.11.2 Location. The water closet primarily for children's use shall be located with a wall or partition to the rear and to one side. The centerline of the water closet shall be 12 inches (305 mm) minimum and 18 inches (455 mm) maximum from the side wall or partition. Water closets located in ambulatory accessible toilet compartments specified in Section 604.10 shall be located as specified in Section 604.2.

604.11.3 Clearance. A clearance around the water closet primarily for children's use complying with Section 604.3 shall be provided.

604.11.4 Height. The height of water closet seats primarily for children's use shall be 11 inches minimum and 17 inches maximum above the floor, measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

604.11.5 Grab Bars. Grab bars for water closets primarily for children's use shall comply with Section 604.5.

604.11.6 Flush Controls. Flush controls primarily for children's use shall be hand operated or automatic. Hand operated flush controls shall comply with Sections 309.2 and 309.4 and shall be installed 36 inches maximum above the floor. Flush controls shall be located on the open side of the water closet.

EXCEPTION: In ambulatory accessible compartments complying with Section 604.10, flush controls shall be permitted to be located on either side of the water closet.

604.11.7 Dispensers. Toilet paper dispensers primarily for children's use shall comply with Section The outlet of dispensers shall be located within an area 24 inches minimum and 42 inches maximum from the rear wall. The outlet of the dispenser shall be 14 inches minimum and 19 inches maximum above the floor. There shall be a clearance of 1½ inches minimum below the grab bar. Dispensers shall not be of a type that control delivery or do not allow continuous paper flow.

604.11.8 Toilet Compartments. Toilet compartments primarily for children's use shall comply with Sections 604.9 and 604.10, as applicable.

605 Urinals

605.1 General. Accessible urinals shall comply with Section 605.

605.2 Height and Depth. Urinals shall be of the stall type or shall be of the wall hung type with the rim at 17 inches maximum above the floor. Wall hung urinals shall be 13 ½ inches minimum in depth measured from the outer face of the urinal rim to the wall.

605.3 Clear Floor Space. A clear floor space complying with Section 305, positioned for forward approach, shall be provided.

605.4 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with Section 309.

606 Lavatories and Sinks

606.1 General. Accessible lavatories and sinks shall comply with Section 606.

606.2 Clear Floor Space. A clear floor space complying with Section 305.3, positioned for forward approach, shall be provided. Knee and toe clearance complying with Section 306 shall be provided. The dip of the overflow shall not be considered in determining knee and toe clearances.

EXCEPTIONS:

1. A parallel approach complying with Section 305 and centered on the sink, shall be permitted to a kitchen sink in a space where a cook top or conventional range is not provided.
2. The requirement for knee and toe clearance shall not apply to a lavatory in a toilet or bathing facility for a single occupant, accessed only through a private office and not for common use or public use.
3. A knee clearance of 24 inches minimum above the floor shall be permitted at lavatories and sinks used primarily by children ages 6 through 12 where the rim or counter surface is 31 inches maximum above the floor.
4. A parallel approach complying with Section 305 and centered on the sink, shall be permitted at lavatories and sinks used primarily by children ages 5 and younger.
5. The requirement for knee and toe clearance shall not apply to more than one bowl of a multibowl sink.
6. A parallel approach complying with Section 305 and centered on the sink, shall be permitted at wet bars.

606.3 Height. The front of lavatories and sinks shall be 34 inches maximum above the floor, measured to the higher of the rim or counter surface.

EXCEPTION: A lavatory in a toilet or bathing facility for a single occupant, accessed only through a private office and not for common use or public use, shall not be required to comply with Section 606.3.

FIG. 606.3 HEIGHT OF LAVATORIES AND SINKS

606.4 Faucets. Faucets shall comply with Section 309. Hand-operated metering faucets shall remain open for 10 seconds minimum.

606.5 Lavatories with Enhanced Reach Range. Where enhanced reach range is required at lavatories, faucets and soap dispenser controls shall have a reach depth of 11 inches maximum or, if automatic, shall be activated within a reach depth of 11 inches maximum. Water and soap flow shall be provided with a reach depth of 11 inches maximum.

606.6 Exposed Pipes and Surfaces. Water supply and drainpipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.

607 Bathtubs

607.1 General. Accessible bathtubs shall comply with Section 607.

607.2 Clearance. A clearance in front of bathtubs extending the length of the bathtub and 30 inches minimum in depth shall be provided. Where a permanent seat is provided at the head end of the bathtub, the clearance shall extend 12 inches minimum beyond the wall at the head end of the bathtub.

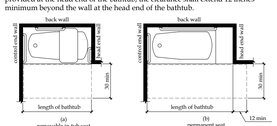


FIG. 607.2 Clearance For Bathtubs

607.3 Seat. A permanent seat at the head end of the bathtub or a removable in-tub seat shall be provided. Seats shall comply with Section 610.

607.4 Grab Bars. Grab bars shall comply with Section 609 and shall be provided in accordance with Section 607.4.1 or 607.4.2.

EXCEPTION: Grab bars shall not be required to be installed in a bathing facility for a single occupant accessed only through a private office and not for common use or public use, provided reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with Section 607.4.

607.4.1 Bathtubs with Permanent Seats. For bathtubs with permanent seats, grab bars complying with Section 607.4.1 shall be provided.

607.4.1.1 Back Wall. Two horizontal grab bars shall be provided on the back wall, one complying with Section 609.4 and the other located 8 inches minimum and 10 inches maximum above the rim of the bathtub. Each grab bar shall be located 15 inches maximum from the head end wall and extend to 12 inches maximum from the control end wall.

607.4.1.2 Control End Wall. Control end wall grab bars shall comply with Section 607.4.1.2.

EXCEPTION: An L-shaped continuous grab bar of equivalent dimensions and positioning shall be permitted to serve the function of separate vertical and horizontal grab bars.

607.4.1.2.1 Horizontal Grab Bar. A horizontal grab bar 24 inches minimum in length shall be provided on the control end wall beginning near the front edge of the bathtub and extending toward the inside corner of the bathtub.

607.4.1.2.2 Vertical Grab Bar. A vertical grab bar 18 inches minimum in length shall be provided on the control end wall 3 inches minimum and 6 inches maximum above the horizontal grab bar, and 4 inches maximum inward from the front edge of the bathtub.

607.4.2 Bathtubs without Permanent Seats. For bathtubs without permanent seats, grab bars complying with Section 607.4.2 shall be provided.

607.4.2.1 Back Wall. Two horizontal grab bars shall be provided on the back wall, one complying with Section 609.4 and the other located 8 inches minimum and 10 inches maximum above the rim of the bathtub. Each grab bar shall be 24 inches minimum in length, located 24 inches maximum from the head end wall and extend to 12 inches maximum from the control end wall.

607.4.2.2 Control End Wall. Control end wall grab bars shall comply with Section 607.4.1.2.

607.4.2.3 Head End Wall. A horizontal grab bar 12 inches minimum in length shall be provided on the head end wall at the front edge of the bathtub.

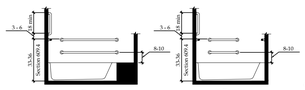


FIG. 607.4.1 Grab Bars For Bathtubs With Permanent Seats

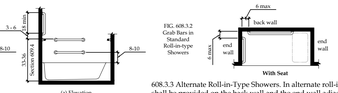


FIG. 607.4.2 Grab Bars For Bathtubs Without Permanent Seats

607.5 Controls. Controls, other than drain stoppers, shall be provided on an end wall, located between the bathtub rim and grab bar, and between the open side of the bathtub and the centerline of the width of the bathtub. Controls shall comply with Section 309.4.

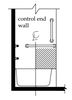


FIG. 607.5 Location Of Bathtub Controls

607.6 Hand Shower. A hand shower with a hose 59 inches minimum in length, that can be used as both a fixed shower head and as a hand shower, shall be provided. The hand shower shall have a control with a nonpositive shut-off feature. Where provided, an adjustable-height hand shower mounted on a vertical bar shall be installed so as to not obstruct the use of grab bars.

607.7 Bathtub Enclosures. Enclosures for bathtubs shall not obstruct controls, faucets, shower and spray units or obstruct transfer from wheelchairs onto bathtub seats or into bathtubs. Enclosures on bathtubs shall not have tracks installed on the rim of the bathtub.

607.8 Water Temperature. Bathtubs shall deliver water that is 120°F maximum.

608 Shower Compartments

608.1 General. Accessible shower compartments shall comply with Section 608. 1

608.2 Size, clearance and seat. Shower compartments shall have sizes, clearances and seats complying with Section 608.2.

608.2.1 Transfer-type Shower Compartments. Transfer-type shower compartments shall comply with Section 608.2.1.

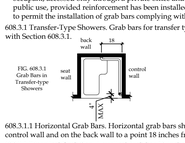


FIG. 608.2.1 Transfer-type Shower Compartment Size and Clearance

Note: inside finished dimensions measured at the center points of opposing sides

608.2.1.1 Size. Transfer-type shower compartments shall have a clear inside dimension of 36 inches in width and 36 inches in depth, measured at the center point of opposing sides. An entry 36 inches minimum in width shall be provided.

608.2.1.2 Clearance. A clearance of 48 inches minimum in length measured perpendicular from the control wall, and 36 inches minimum in depth shall be provided adjacent to the open face of the compartment.

608.2.1.3 Seat. A folding or non-folding seat complying with Section 610 shall be provided on the wall opposite the control wall.

Exception: A seat is not required to be installed in a shower for a single occupant, accessed only through a private office and not for common use or public use, provided reinforcement has been installed in walls and located so as to permit the installation of a shower seat.

608.2.2 Standard Roll-in-type Shower Compartments. Standard roll-in-type shower compartments shall comply with Section 608.2.2.

FIG. 608.2.2 Standard Roll-in-type Shower Compartment Size and Clearance

Note: inside finished dimensions measured at the center points of opposing sides

608.2.2.1 Size. Standard roll-in-type shower compartments shall have a clear inside dimension of 60 inches minimum in width and 30 inches minimum in depth, measured at the center point of opposing sides. An entry 60 inches minimum in width shall be provided.

608.2.2.2 Clearance. A clearance of 60 inches minimum in length adjacent to the 60-inch width of the open face of the shower compartment, and 30 inches minimum in depth, shall be provided.

EXCEPTION: A lavatory complying with Section 606 shall be permitted at the end of the clearance opposite the seat.

608.2.2.3 Seat. A folding seat complying with Section 610 shall be provided on an end wall.

EXCEPTIONS:

1. A seat is not required to be installed in a shower for a single occupant accessed only through a private office and not for common use or public use, provided reinforcement has been installed in walls and located so as to permit the installation of a shower seat.
2. A fixed seat shall be permitted where the seat does not overlap the minimum clear inside dimension required by Section 608.2.2.1.

608.2.3 Alternate Roll-in-type Shower Compartments. Alternate roll-in-type shower compartments shall comply with Section 608.2.3.

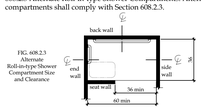


FIG. 608.2.3 Alternate Roll-in-type Shower Compartment Size and Clearance

Note: inside finished dimensions measured at the center points of opposing sides

608.2.3.1 Size. Alternate roll-in shower compartments shall have a clear inside dimension of 60 inches minimum in width, and 36 inches in depth, measured at the center point of opposing sides. An entry 36 inches minimum in width shall be provided at one end of the 60-inch width of the compartment. A seat wall, 24 inches minimum and 36 inches maximum in length, shall be provided on the entry side of the compartment.

608.2.3.2 Seat. A folding seat complying with Section 610 shall be provided on the seat wall opposite the back wall.

EXCEPTION: A seat is not required to be installed in a shower for a single occupant, accessed only through a private office and not for common use or public use, provided reinforcement has been installed in walls and located so as to permit the installation of a shower seat.

608.3 Grab Bars. Grab bars shall comply with Section 609 and shall be provided in accordance with Section 608.3. Where multiple grab bars are used, required horizontal grab bars shall be installed at the same height above the floor.

EXCEPTION: Grab bars are not required to be installed in a shower for a single occupant, accessed only through a private office and not for common use or public use, provided reinforcement has been installed in walls and located so as to permit the installation of grab bars complying with Section 608.3.

608.3.1 Transfer-Type Showers. Grab bars for transfer type showers shall comply with Section 608.3.1.

FIG. 608.3.1 Grab Bars in Transfer-type Showers

608.3.1.1 Horizontal Grab Bars. Horizontal grab bars shall be provided across the control wall and on the back wall to a point 18 inches from the control wall.

608.3.1.2 Vertical Grab Bar. A vertical grab bar 18 inches minimum in length shall be provided on the control end wall 3 inches minimum and 6 inches maximum above the horizontal grab bar, and 4 inches maximum inward from the front edge of the shower.

608.3.2 Standard Roll-in-Type Showers. In standard roll-in-type showers, a grab bar shall be provided on the back wall beginning at the edge of the seat. The grab bars shall not be provided above the seat. The back wall grab bar shall extend the length of the wall but shall not be required to exceed 48 inches in length. Where a side wall is provided opposite the seat within 72 inches of the seat wall, a grab bar shall be provided on the side wall opposite the seat. The side wall grab bar shall extend the length of the wall but shall not be required to exceed 30 inches in length. Grab bars shall be 6 inches maximum from the adjacent wall.

FIG. 608.3.2 Grab Bars in Standard Roll-in-type Showers

608.3.3 Alternate Roll-in-Type Showers. In alternate roll-in type showers, grab bars shall be provided on the back wall and the end wall adjacent to the seat. Grab bars shall not be provided above the seat. Grab bars shall be 6 inches maximum from the adjacent wall.

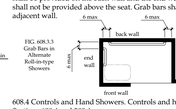


FIG. 608.3.3 Grab Bars in Alternate Roll-in-type Showers

608.4 Controls and Hand Showers. Controls and hand showers shall comply with Sections 608.4 and 309.4.

608.4.1 Transfer-Type Showers. In transfer-type showers, the controls and hand shower shall be located:

1. On the control wall opposite the seat.
2. At a height of 38 inches minimum and 48 inches maximum above the shower floor, and
3. 15 inches maximum, from the centerline of the control wall toward the shower opening.

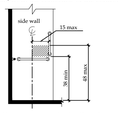


FIG. 608.4.1 Transfer-type Shower Controls and Handshower Location

608.4.2 Standard Roll-in Showers. In standard roll-in showers, the controls and hand shower shall be located on the back wall above the grab bar, 48 inches (1220 mm) maximum above the shower floor and 16 inches minimum and 27 inches maximum from the end wall behind the seat.

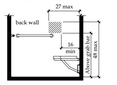


FIG. 608.4.2 Standard Roll-in-type Shower Control and Handshower Location

608.4.3 Alternate Roll-in Showers. In alternate roll-in showers, the controls and hand shower shall be located 38 inches minimum and 48 inches maximum above the shower floor. In alternate roll-in showers with controls and hand shower located on the end wall adjacent to the seat, the controls and hand shower shall be 27 inches maximum from the seat wall. In alternate roll-in showers with the controls and hand shower located on the back wall opposite the seat, the controls and hand shower shall be located within 15 inches, left or right, of the centerline of the seat.

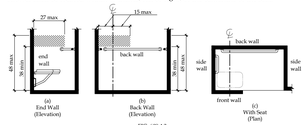


FIG. 608.4.3 Alternate Roll-in-type Shower Control and Handshower Location

608.5 Hand Showers. A hand shower with a hose 59 inches minimum in length, that can be used both as a fixed shower head and as a hand shower shall be provided. The hand shower shall have a control with a nonpositive shut-off feature. Where provided, an adjustable-height hand shower mounted on a vertical bar shall be installed so as to not obstruct the use of grab bars.

EXCEPTION: In other than Accessible units and Type A units, a fixed shower head located 48 inches maximum above the shower floor shall be permitted in lieu of a hand shower.

608.6 Thresholds. Thresholds in roll-in-type shower compartments shall be 1/2 inch maximum in height in accordance with Section 303. In transfer-type shower compartments, thresholds ½ inch maximum in height shall be beveled, rounded, or vertical.

EXCEPTION: In existing facilities, in transfer-type shower compartments where provision of a threshold 1/2 inch in height would disturb the structural reinforcement of the floor slab, a threshold 2 inches maximum in height shall be permitted.

608.7 Shower Enclosures. Shower compartment enclosures for shower compartments shall not obstruct controls or obstruct transfer from wheelchairs onto shower seats. 608.8 Water Temperature. Showers shall deliver water that is 120°F (49°C) maximum.

609 Grab Bars

609.1 General. Grab bars in accessible toilet or bathing facilities shall comply with Section 609.

609.2 Cross Section. Grab bars shall have a cross section complying with Section 609.2.1 or 609.2.2.

609.2.1 Circular Cross Section. Grab bars with a circular cross section shall have an outside diameter of 1¼ inch minimum and 2 inches maximum.

609.2.2 Noncircular Cross Section. Grab bars with a noncircular cross section shall have a cross section dimension of 2 inches maximum, and a perimeter dimension of 4 inches minimum and 4.8 inches maximum.

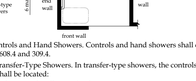


FIG. 609.2 SIZE OF GRAB BARS

609.3 Spacing. The space between the wall and the grab bar shall be 1½ inches. The space between the grab bar and projecting objects below and at the ends of the grab bar shall be 1½ inches minimum. The space between the grab bar and projecting objects above the grab bar shall be 12 inches minimum.

EXCEPTIONS:

1. The space between the grab bars and shower controls, shower fittings, and other grab bars above the grab bar shall be permitted to be 1½ inches minimum.
2. Recessed dispensers projecting from the wall ¼ inch maximum measured from the face of the dispenser and complying with Section 604.7 shall be permitted within the 12-inch space above the and 1½ inch spaces below and at the ends of the grab bar.

FIG. 609.3 SPACING OF GRAB BARS

609.4 Position of Grab Bars.

609.4.1 General. Grab bars shall be installed in a horizontal position, 33 inches minimum and 36 inches maximum above the floor measured to the top of the gripping surface or shall be installed as required by Items 1 through 3.

1. The lower grab bar on the back wall of a bathtub shall comply with Section 607.4.1.1 or 607.4.2.1.
2. Vertical grab bars shall comply with Sections 604.5.1, 607.4.1.2.2, 607.4.2.2, and 608.3.1.2.
3. Grab bars at water closets primarily for children's use shall comply with Section 609.4.2.

609.4.2 Position of Children's Grab Bars. At water closets primarily for children's use complying with Section 604.11, grab bars shall be installed in a horizontal position 18 inches minimum and 27 inches maximum above the floor measured to the top of the gripping surface. A vertical grab bar shall be mounted with the bottom of the bar located between 21 inches minimum and 30 inches maximum above the floor and with the centerline of the bar located between 34 inches minimum and 36 inches maximum from the rear wall.

609.5 Surface Hazards. Grab bars, and any wall or other surfaces adjacent to grab bars, shall be free of sharp or abrasive elements. Edges shall be rounded.

609.6 Fittings. Grab bars shall not rotate within their fittings.

609.7 Installation and Configuration. Grab bars shall be installed in any manner that provides a gripping surface at the locations specified in this standard and does not obstruct the clear floor space. Horizontal and vertical grab bars shall be permitted to be separate bars, a single piece bar, or combination thereof.

609.8 Structural Strength. Allowable stresses shall not be exceeded for materials used where a vertical or horizontal force of 250 pounds is applied at any point on the grab bar, fastener mounting device, or supporting structure.

610 Seats

610.1 General. Seats in accessible bathtubs and shower compartments shall comply with Section 610.

610.2 Bathtub Seats. The height of bathtub seats shall be 17 inches minimum and 19 inches maximum above the bathroom floor, measured to the top of the seat. Removable in-tub seats shall be 15 inches minimum and 16 inches maximum in depth. Removable in-tub seats shall be capable of secure placement. Permanent seats shall be 15 inches minimum in depth and shall extend from the back wall to or beyond the outer edge of the bathtub. Permanent seats shall be positioned at the head end of the bathtub.

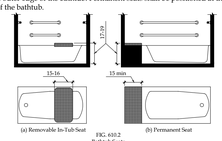
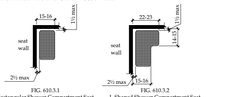


FIG. 610.2 Bathtub Seats

610.3 Shower Compartment Seats. The height of shower compartment seats shall be 17 inches minimum and 19 maximum above the bathroom floor, measured to the top of the seat. In transfer-type and alternate roll-in-type showers, the seat shall extend along the seat wall to a point within 3 inches of the compartment entry. In standard roll-in-type showers, the seat shall extend from the control wall to a point within 3 inches of the compartment entry. Seats shall comply with Section 610.3.1 or 610.3.2.

610.3.1 Rectangular Seats. The rear edge of a rectangular seat shall be 2 ½ inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The side edge of the seat shall be 1 ½ inches maximum from the back wall of a transfer-type shower and 1 ½ inches maximum from the control wall of a roll-in-type shower.

610.3.2 L-Shaped Seats. The rear edge of an L-shaped seat shall be 2 ½ inches maximum and the front edge 15 inches minimum and 16 inches maximum from the seat wall. The rear edge of the "L" portion of the seat shall be 1 ½ inches maximum from the wall and the front edge shall be 14 inches minimum and 15 inches maximum from the wall. The end of the "L" shall be 22 inches minimum and 23 inches maximum from the main seat wall.



610.4 Structural Strength. Allowable stresses shall not be exceeded for materials used where a vertical or horizontal force of 250 pounds is applied at any point on the seat, fastener mounting device, or supporting structure.

701 General

701.1 Scope. Communications elements and features required to be accessible by the scoping provisions adopted by the administrative authority shall comply with the applicable provisions of Chapter 7.

702 Alarms

702.1 General. Accessible audible and visible alarms and notification appliances shall be installed in accordance with NFPA 72 listed in Section 105.2.2, be powered by a commercial light and power source, be permanently connected to the wiring of the premises electric system, and be permanently installed.

703 Signs

703.1 General. Accessible signs shall comply with Section 703. Tactile signs shall contain both raised characters and braille. Where signs with both visual and raised characters are required, either one sign with both visual and raised characters, or two separate signs, one with visual, and one with raised characters, shall be provided.

703.1.1 Designations. Interior and exterior signs identifying permanent rooms and spaces shall comply with Sections 703.1, 703.2, and 703.3.

EXCEPTION: Exterior signs that are not located at the door to the space they serve shall not be required to comply with Section 703.3.

703.1.2 Directional and Informational Signs. Signs that provide direction to or information about interior spaces and facilities of the site shall comply with Section 703.2.

703.1.3 Pictograms. Where pictograms are provided as designations of permanent interior rooms and spaces, the pictograms shall comply with Section 703.5 and shall have text descriptors located directly below the pictogram field and complying with Sections 703.2 and 703.3.

EXCEPTION: Pictograms that provide information about a room or space, such as "No Smoking", occupant logos, and the International Symbol of Accessibility, are not required to have text descriptors.

703.2 Visual Characters.

703.2.1 General. Visual characters shall comply with the following:

1. Visual characters that also serve as raised characters shall comply with Section 703.3, or
2. Visual characters on VMS signage shall comply with Section 703.7, or
3. Visual characters not covered in items 1 and 2 shall comply with Section 703.2.

EXCEPTION: The visual and raised requirements of item 1 shall be permitted to be provided by two separate signs that provide corresponding information provided one sign complies with Section 703.2 and the second sign complies with Section 703.3.

703.2.2 Case. Characters shall be uppercase, lowercase, or a combination of both.

703.2.3 Style. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.2.4 Character Height. The uppercase letter "I" shall be used to determine the allowable height of all characters of a font. The uppercase letter "I" of the font shall have a minimum height complying with Table 703.2.4. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign.

EXCEPTION: In assembly seating where the maximum viewing distance is 100 feet or greater, the height of the uppercase "I" of fonts shall be permitted to be 1 inch for every 30 feet of viewing distance, provided the character height is 8 inches minimum. Viewing distance shall be measured as the horizontal distance between the character and where someone is expected to view the sign.

TABLE 703.2.4 - VISUAL CHARACTER HEIGHT

Height above Floor to Baseline of Character	Horizontal Viewing Distance	Minimum Character Height
40 inches to less than or equal to 70 inches	Less than 6 feet	⅝ inch
	6 feet and greater	⅝ inch, plus ⅛ inch per foot of viewing distance above 6 feet
Greater than 70 inches to less than or equal to 120 inches	Less than 15 feet	2 inches
	15 feet and greater	2 inches, plus ⅛ inch per foot of viewing distance above 15 feet
Greater than 120 inches	Less than 21 feet	3 inches
	21 feet and greater	3 inches, plus ⅛ inch per foot of viewing distance above 21 feet

703.2.5 Character Width. The uppercase letter "O" shall be used to determine the allowable width of all characters of a font. The width of the uppercase letter "O" of the font shall be 55 percent minimum and 110 percent maximum of the height of the uppercase "I" of the font.

703.2.6 Stroke Width. The uppercase letter "I" shall be used to determine the allowable stroke width of all characters of a font. The stroke width shall be 10 percent minimum and 30 percent maximum of the height of the uppercase "I" of the font.

703.2.7 Character Spacing. Spacing shall be measured between the two closest points of adjacent characters within a message, excluding word spaces. Spacing between individual characters shall be 10 percent minimum and 35 percent maximum of the character height.

703.2.8 Line Spacing. Spacing between the baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of the character height.

EXCEPTION: In assembly seating where the maximum viewing distance is 100 feet or greater, the spacing between the baselines of separate lines of characters within a message shall be permitted to be 120 percent minimum and 170 percent maximum of the character height.

703.2.9 Height Above Floor. Visual characters shall be 40 inches minimum above the floor of the viewing position, measured to the baseline of the character. Heights shall comply with Table 703.2.4, based on the size of the characters on the sign.

EXCEPTION: Visual characters indicating elevator car controls shall not be required to comply with Section 703.2.9.

703.2.10 Finish and Contrast. Characters and their background shall have a non-glare finish. Characters shall contrast with their background, with either light characters on a dark background, or dark characters on a light background.

703.3 Raised Characters.

703.3.1 General. Raised characters shall comply with Section 703.3, and shall be duplicated in braille complying with Section 703.4.

703.3.2 Depth. Raised characters shall be raised 1/32 inch minimum above their background.

703.3.3 Case. Characters shall be uppercase.

703.3.4 Style. Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

703.3.5 Character Height. The uppercase letter "I" shall be used to determine the allowable height of all characters of a font. The height of the uppercase letter "I" of the font, measured vertically from the baseline of the character, shall be 5/8 inch minimum, and 2 inches maximum.

EXCEPTION: Where separate raised and visual characters with the same information are provided, the height of the raised uppercase letter "I" shall be permitted to be 1/2 inch minimum.

703.3.6 Character Width. The uppercase letter "O" shall be used to determine the allowable width of all characters of a font. The width of the uppercase letter "O" of the font shall be 55 percent minimum and 110 percent maximum of the height of the uppercase "I" of the font.

703.3.7 Stroke Width. Raised character stroke width shall comply with Section 703.3.7. The uppercase letter "I" of the font shall be used to determine the allowable stroke width of all characters of a font.

703.3.7.1 Maximum. The stroke width shall be 15 percent maximum of the height of the uppercase letter "I" measured at the top surface of the character, and 30 percent maximum of the height of the uppercase letter "I" measured at the base of the character.

703.3.7.2 Minimum. When characters are both visual and raised, the stroke width shall be 10 percent minimum of the height of the uppercase letter "I".

703.3.8 Character Spacing. Character spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Spacing between individual raised characters shall be 1/8 inch minimum measured at the top surface of the characters, 1/16 inch minimum measured at the base of the characters, and four times the raised character stroke width maximum. Characters shall be separated from raised borders and decorative elements 3/8 inch minimum.

703.3.9 Line Spacing. Spacing between the baselines of separate lines of raised characters within a message shall be 135 percent minimum and 170 percent maximum of the raised character height.

703.3.10 Height above Floor. Raised characters shall be 48 inches minimum above the floor, measured to the baseline of the lowest raised character and 60 inches maximum above the floor, measured to the baseline of the highest raised character.

EXCEPTION: Raised characters for elevator car controls shall not be required to comply with Section 703.3.10.

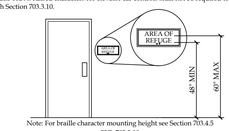


FIG. 703.3.10 HEIGHT OF RAISED CHARACTERS ABOVE FLOOR

703.3.11 location. Where a sign containing raised characters and braille is provided at a door, the sign shall be alongside the door at the latch side. Where a sign containing raised characters and braille is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a sign containing raised characters and braille is provided at double doors with two active leaves, the sign shall be to the right of the right-hand door. Where there is no wall space on the latch side of a single door, or to the right side of double doors, signs shall be on the nearest adjacent wall. Signs containing raised characters and braille shall be located so that a clear floor area 18 inches minimum by 18 inches minimum, centered on the raised characters is provided beyond the arc of any door swing between the closed position and 45 degree open position.

EXCEPTION: Signs containing raised characters and braille shall be permitted on the push side of doors with closers and without hold-open devices.

FIG. 703.3.11 LOCATION OF SIGNS AT DOORS

703.3.12 Finish and Contrast. Characters and their background shall have a non-glare finish. Characters shall contrast with their background with either light characters on a dark background, or dark characters on a light background.

EXCEPTION: Where separate raised characters and visual characters with the same information are provided, raised characters are not required to have non-glare finish or to contrast with their background.

703.4 Braille

703.4.1 General. Braille shall be contracted (Grade 2) braille and shall comply with Section 703.4.

703.4.2 Upperccase Letters. The indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, or acronyms.

703.4.3 Dimensions. Braille dots shall have a domed or rounded shape and shall comply with Table 703.4.3.

TABLE 703.4.3 BRAILLE MEASUREMENT

Measurement Range	Minimum in inches Maximum in inches
Dot base diameter	0.059 to 0.063
Distance between two dots in the same cell	0.090 to 0.100
Distance between corresponding dots in adjacent cells [1]	0.241 to 0.300
Dot height	0.025 to 0.037
Distance between corresponding dots from one cell directly below [1]	0.395 to 0.400

[1] Measured center to center

703.4.4 Position. Braille shall be below the corresponding text. If text is multilined, braille shall be placed below entire text. Braille shall be separated 3/8 inch minimum from any other raised characters and 3/8 inch minimum from raised borders and decorative elements. Braille provided on elevator car controls shall be separated 3/16 inch minimum either directly below or adjacent to the corresponding raised characters or symbols.

703.4.5 Mounting Height. Braille shall be 48 inches minimum and 60 inches maximum above the floor, measured to the baseline of the braille cells.

EXCEPTION: Elevator car controls shall not be required to comply with Section 703.4.5.

703.5 Pictograms.

703.5.1 General. Pictograms shall comply with Section 703.5.

703.5.2 Pictogram Field. Pictograms shall have a field 6 inches minimum in height. Characters or braille shall not be located in the pictogram field.

FIG. 703.5 PICTOGRAM FIELD

703.5.3 Finish and Contrast. Pictograms and their fields shall have a nonglare finish. Pictograms shall contrast with their fields, with either a light pictogram on a dark field or a dark pictogram on a light field.

703.6 Symbols of Accessibility.

703.6.1 General. Symbols of accessibility shall comply with Section 703.6.

703.6.2 Finish and Contrast. Symbols of accessibility and their backgrounds shall have a non-glare finish. Symbols of accessibility shall contrast with their backgrounds, with either a light symbol on a dark background or a dark symbol on a light background.

703.6.3 Symbols.

703.6 Symbols of Accessibility.

703.6.3.1 International Symbol of Accessibility. The International Symbol of Accessibility shall comply with Figure 703.6.3.1.

703.6.3.2 International Symbol of TTY. The International Symbol of TTY shall comply with Figure 703.6.3.2.

703.6.3.3 Assistive Listening Systems. Assistive listening systems shall be identified by the International Symbol of Acces for Hearing Loss complying with Figure 703.6.3.3.

703.6.3.4 Volume-Controlled Telephones. Telephones with volume controls shall be identified by a pictogram of a telephone handset with radiating sound waves on a square field complying with Figure 703.6.3.4.

FIG. 703.6.3.1 INTERNATIONAL SYMBOL OF ACCESSIBILITY

FIG. 703.6.3.3 INTERNATIONAL SYMBOL OF ACCESS FOR HEARING LOSS

FIG. 703.6.3.2 INTERNATIONAL TTY SYMBOL

FIG. 703.6.3.4 VOLUME-CONTROLLED TELEPHONE

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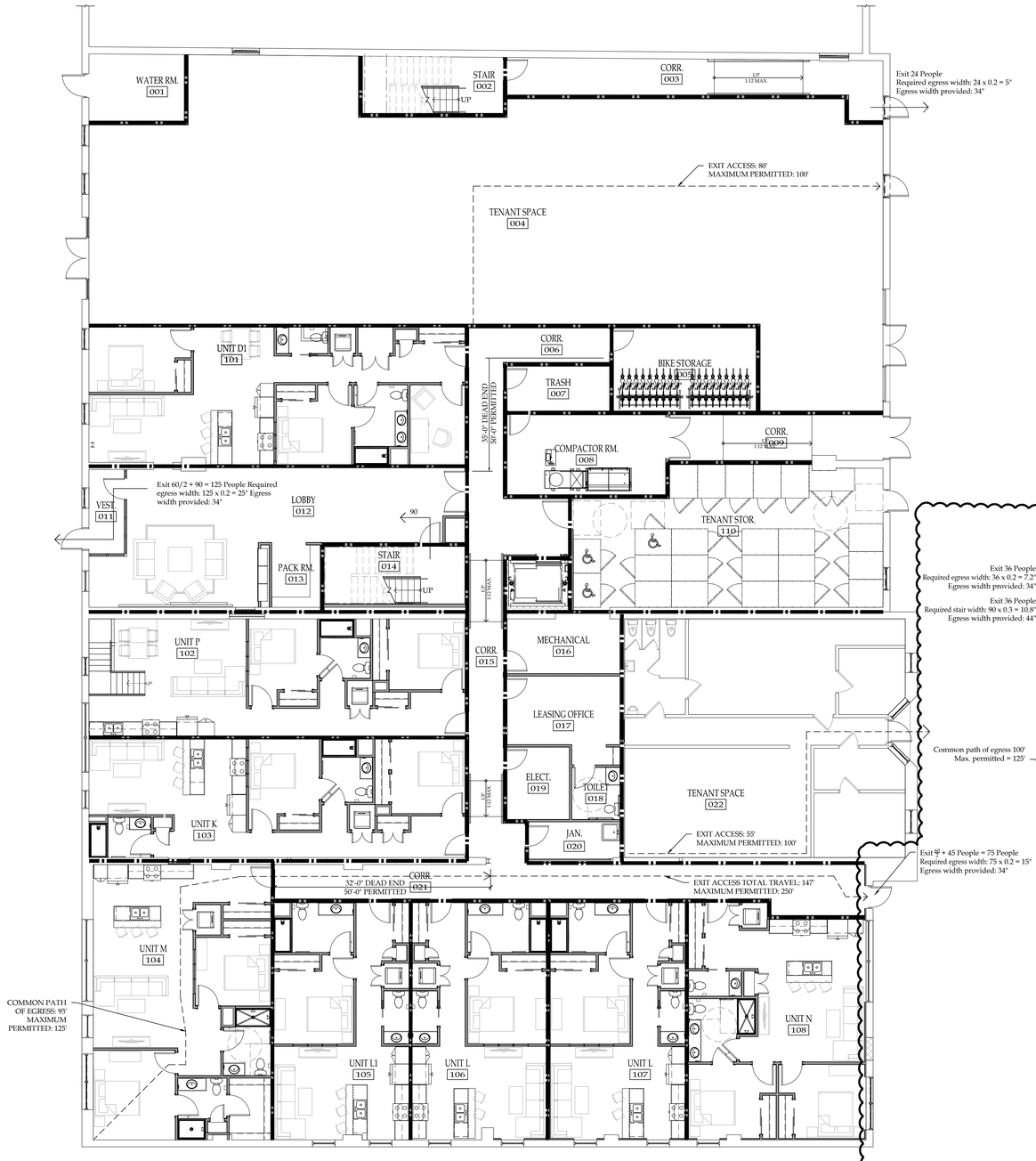
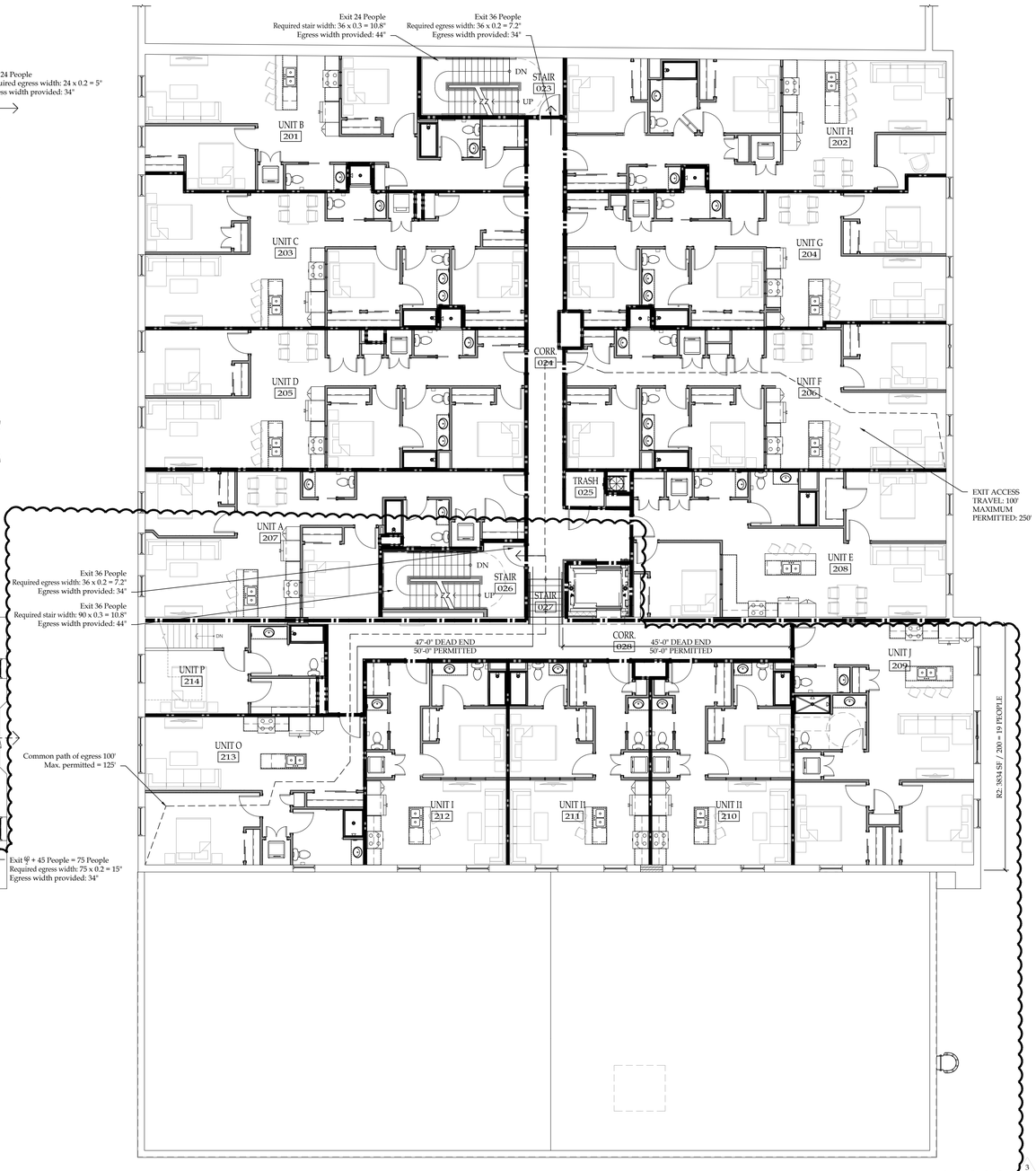
PROJECT DATA:

OCCUPANCY TYPE:	R2	FIRE RATED ASSEMBLIES:	STAIR - 1HR
CLASSIFICATION OF WORK:	ALTERATION - LEVEL 3, CHANGE OF OCCUPANCY, HISTORIC BUILDING		ELEVATOR SHAFT - 1 HR CORRIDOR WALLS - 1 HR
CONSTRUCTION TYPE:	EXISTING TO REMAIN - EXISTING TO REMAIN - IIIB PRESUMED		TRASH CHUTE - 1 HR GAS PIPING SHAFTS - 2 HR
SPRINKLER SYSTEM:	NFPA 13		DUCT SHAFTS - 1 HR
NUMBER OF STORIES:	3	1 HR RATED WALL:	
TABULAR PERMITTED AREA:	48,000 SF R2, 57,000 B	2 HR RATED WALL:	
FLOOR AREA:	FIRST FLOOR: 18,386 SF SECOND FLOOR: 13,778 SF THIRD FLOOR: 9,453 SF		
OCCUPANT LOAD:	OCCUPANT LOAD 1ST FLOOR: R2: 12006 / 200 = 60 PROPLE (BY USAGE 13 BEDS X2 = 26 PEOPLE) B (002): 1540 /150 = 11 PEOPLE B (004): 4840 /150 = 33 PEOPLE TOTAL: 70 OCCUPANT LOAD 2ND FLOOR: R2: 13778 / 200 = 69 PEOPLE (BY USAGE 26 BEDS X2 = 52 PEOPLE) OCCUPANT LOAD 3RD FLOOR: R2: 9453 / 200 = 48 PEOPLE (BY USAGE 20 BEDS X2 = 40 PEOPLE)		



A1 FIRST FLOOR CODE COMPLIANCE PLAN
1/8"=1'-0"



A4 SECOND FLOOR CODE COMPLIANCE PLAN
1/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

FIRST AND SECOND FLOOR CODE COMPLIANCE PLAN

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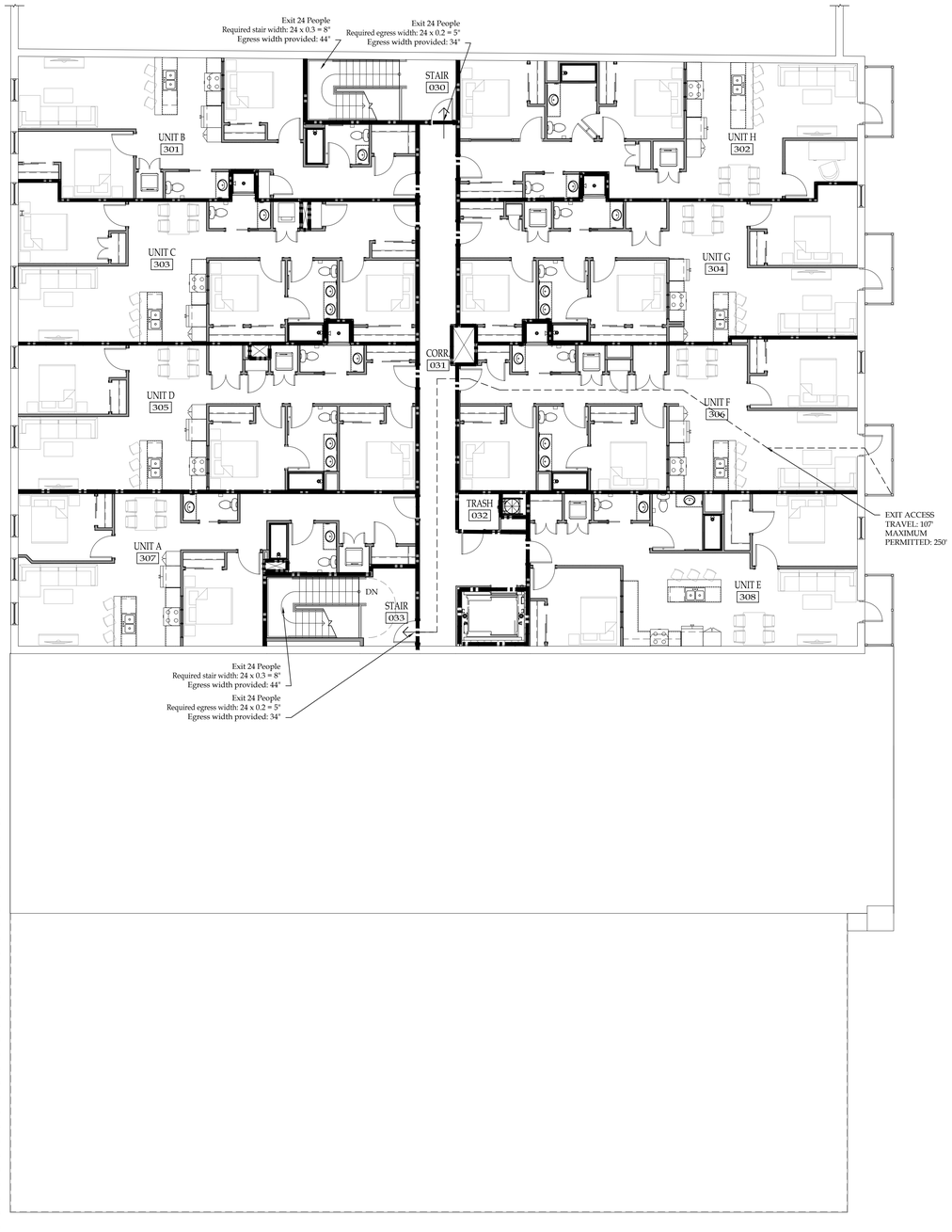
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-004

PROJECT DATA:

OCCUPANCY TYPE:	R2
CLASSIFICATION OF WORK:	ALTERATION - LEVEL 3, CHANGE OF OCCUPANCY, HISTORIC BUILDING
CONSTRUCTION TYPE:	EXISTING TO REMAIN - EXISTING TO REMAIN - IIIB PRESUMED
SPRINKLER SYSTEM:	NFPA 13
NUMBER OF STORIES:	3
TABULAR PERMITTED AREA:	48,000 SF R2, 57,000 B
FLOOR AREA:	FIRST FLOOR: 18,386 SF SECOND FLOOR: 13,778 SF THIRD FLOOR: 9,453 SF
OCCUPANT LOAD:	OCCUPANT LOAD 1ST FLOOR: R2: 12006 / 200 = 60 PROPLE (BY USAGE 13 BEDS X2 = 26 PEOPLE) B (002): 1540 /150 = 11 PEOPLE B (004): 4840 /150 = 33 PEOPLE TOTAL: 70 OCCUPANT LOAD 2ND FLOOR: R2: 13778 / 200 = 69 PEOPLE (BY USAGE 26 BEDS X2 = 52 PEOPLE) A (PATIO): 1646 / 15 = 110 PEOPLE TOTAL: 162 OCCUPANT LOAD 3RD FLOOR: R2: 9453 / 200 = 48 PEOPLE (BY USAGE 20 BEDS X2 = 40 PEOPLE)

FIRE RATED ASSEMBLIES:	STAIR - 1 HR ELEVATOR SHAFT - 1 HR CORRIDOR WALLS - 1 HR TRASH CHUTE - 1 HR GAS PIPING SHAFTS - 2 HR DUCT SHAFTS - 1 HR
1 HR RATED WALL:	
2 HR RATED WALL:	



A4 THIRD FLOOR CODE COMPLIANCE PLAN
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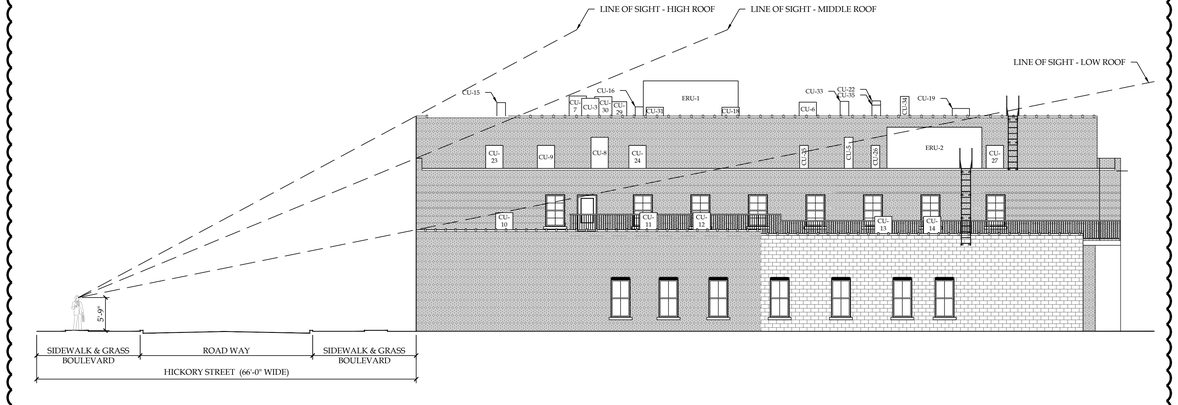

A1 LINE OF SIGHT STUDY
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ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

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TITLE:

THIRD FLOOR CODE COMPLIANCE PLAN & LINE OF SIGHT STUDY 1

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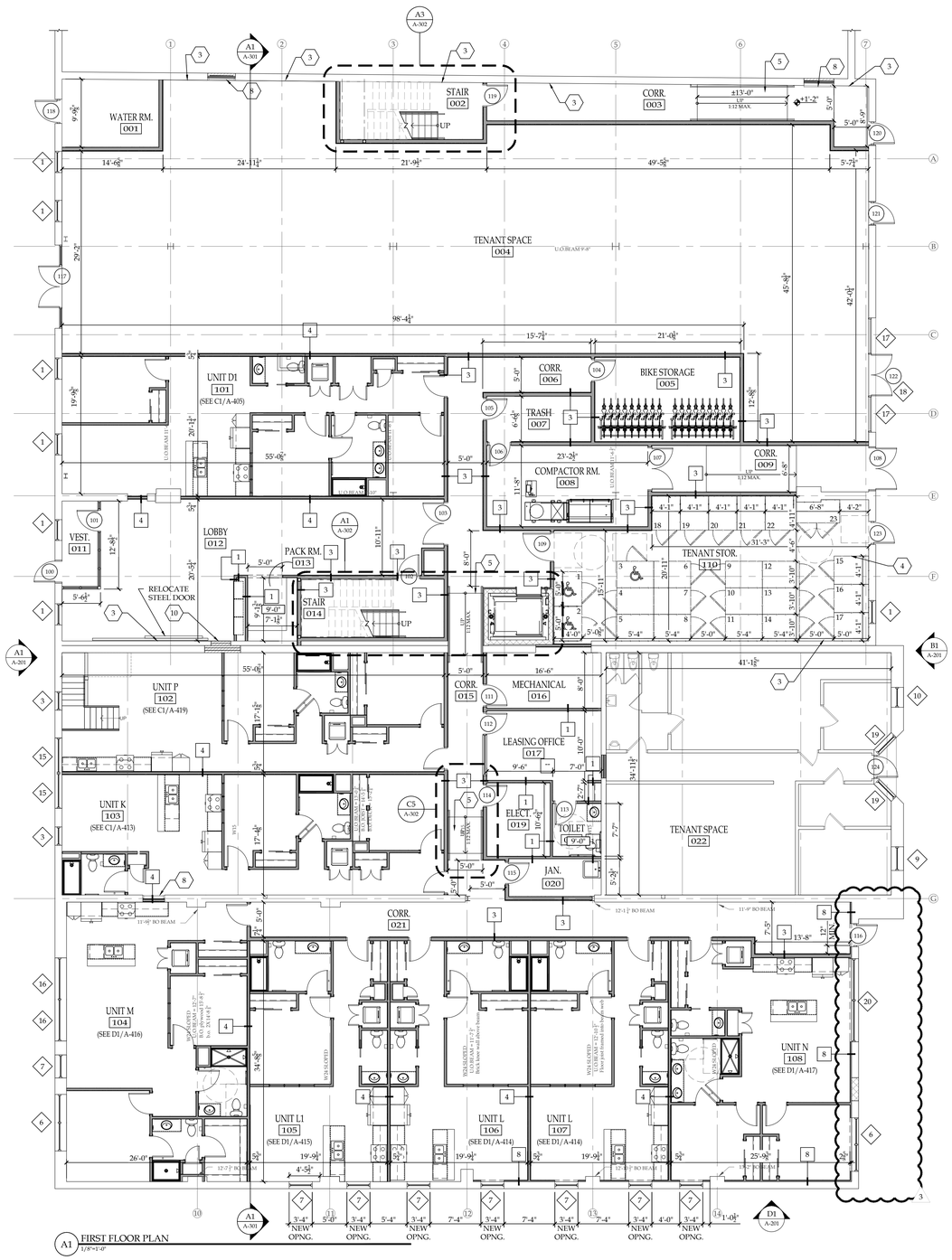
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-005



FLOOR PLAN GENERAL NOTES:

- DETERIORATED MORTAR JOINTS ARE TO BE SELECTIVELY RAKED OUT AND REPOINTED WITH NEW MORTAR TO MATCH EXISTING IN COMPOSITION, COLOR, TEXTURE, AND TOOLING IN ACCORDANCE WITH PRESERVATION BRIEF #2. SHOULD ANY BRICKS BE CRACKED, BROKEN, OR SPALLED, THEY WILL BE REPLACED TO MATCH THE ADJACENT BRICKS AS CLOSELY AS POSSIBLE IN ALL QUALITIES INCLUDING DIMENSIONS, COLOR, STRENGTH, AND REFLECTIVITY. ALLOW FOR 20% REPOINTING AND 10% BRICK REPLACMENT UNLESS INTICATED OTHERWISE. SALVAGED BRICKS WILL BE USED TO THE GREATEST EXTENT POSSIBLE.
- WASH ALL MASONRY TO BE LEFT EXPOSED 100%

FLOOR PLAN KEYED NOTES:

1. NOT USED.
2. NOT USED. 3
3. REBUILD STEPPED OUTER WYTHE TO UNDERSIDE OF SECOND FLOOR AND ALLOW FOR SOME REBUILD OF INNER WYTHES. SIGNIFICANT DETERIORATION PRESENT AT TOP OF LEDGE WITH LARGE SECTIONS MISSING. REPLACE ALL CRACKED OR SPALLED BRICK.
4. METAL WIRE MESH STORAGE LOCKERS WITH 7'-0" TALL PAD-LOCKABLE DOORS, TYP. PROVIDE WIRE MESH CEILING @ 9'-0" AFF. AND ID PLATE @ EACH DOOR.
5. NEW POURED CONCRETE RAMP. 1:12 MAXIMUM SLOPE. CONTRACTOR TO NOTIFY ARCHITECT IF RAMP ELEVATIONS NEED TO BE ADJUSTED WITH FINAL FINISHED FLOOR AND GRADE HEIGHTS. A WALL MOUNTED 1 ½" DIAMETER HANDRAIL TO BE PROVIDED EACH SIDE OF RAMP @ 36" AFF. PROVIDE HANDRAIL EXTENSIONS HORIZONTALLY 12" MINIMUM BEYOND THE TOP AND BOTTOM OF RAMP RUNS. EXTENSIONS SHALL RETURN TO THE WALL. SEE D3/A-304 FOR RAIL.
6. NOT USED. 3
7. EXISTING SLIDING STEEL DOOR TO BE RELOCATED TO CORRIDOR AND PAINTED.
8. EXISTING DOOR TO BE FIXED SHUT AND PAINTED.
9. REBUILD OUTER WYTHE 100% IN SELECT AREA AND ALLOW FOR SOME REBUILD OF INNER WYTHES. REPLACE ALL CRACKED BRICK.
10. EXISTING OPENING TO BE INFILLED WITH BRICK. EXISTING DOOR FRAME TO BE REMOVED. MATCH ADJACENT CONSTRUCTION.
11. NOT USED. 3
12. SHAFT ENCLOSURE. PARTITION WALLS TO BE TYPE 6. SEE DETAIL D1/D2 A-001 FOR TYPICAL TERMINATION AND INTERMEDIATE FLOOR DETAILS.

UNIT SQUARE FOOTAGES

UNIT TYPE	# BED, BATH	UNIT SQUARE FOOTAGE
UNIT A	2 BED, 1.5 BATH	959 SF
UNIT B	2 BED, 1.5 BATH	924 SF
UNIT C	3 BED, 2 BATH	1,115 SF
UNIT D	3 BED, 2 BATH	1,144 SF
UNIT D1	2 BED, 1 DEN, 1.5 BATH	1,140 SF
UNIT E	2 BED, 1.5 BATH	976 SF
UNIT F	3 BED, 2 BATH	1,157 SF
UNIT G	3 BED, 2 BATH	1,094 SF
UNIT H	2 BED, 1 DEN, 1.5 BATH	1,034 SF
UNIT I	1 BED, 1.5 BATH	614 SF
UNIT J	2 BED, 1.5 BATH	918 SF
UNIT K	2 BED, 2 BATH	1,002 SF
UNIT L	1 BED, 1.5 BATH	705 SF
UNIT M	2 BED, 2 BATH	1,072 SF
UNIT N	2 BED, 1.5 BATH	872 SF
UNIT O	1 BED, 1 BATH	695 SF
UNIT P	3 BED, 2 BATH	1,302 SF

SUMMARY OF UNITS

ROOM TYPE	LEVEL			TOTAL
	1st	2nd	3rd	
1 BED, 1 BATH	0	1	0	**1**
1 BED, 1.5 BATH	3	3	0	**6**
2 BED, 1.5 BATH	1	4	3	**8**
2 BED, 2 BATH	2	0	0	**2**
2 BED, 1 DEN, 1.5 BATH	1	1	1	**3**
3 BED, 2 BATH	1	4	4	**9**
TOTAL	**8**	**13**	**8**	**29**

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6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

FIRST FLOOR PLAN

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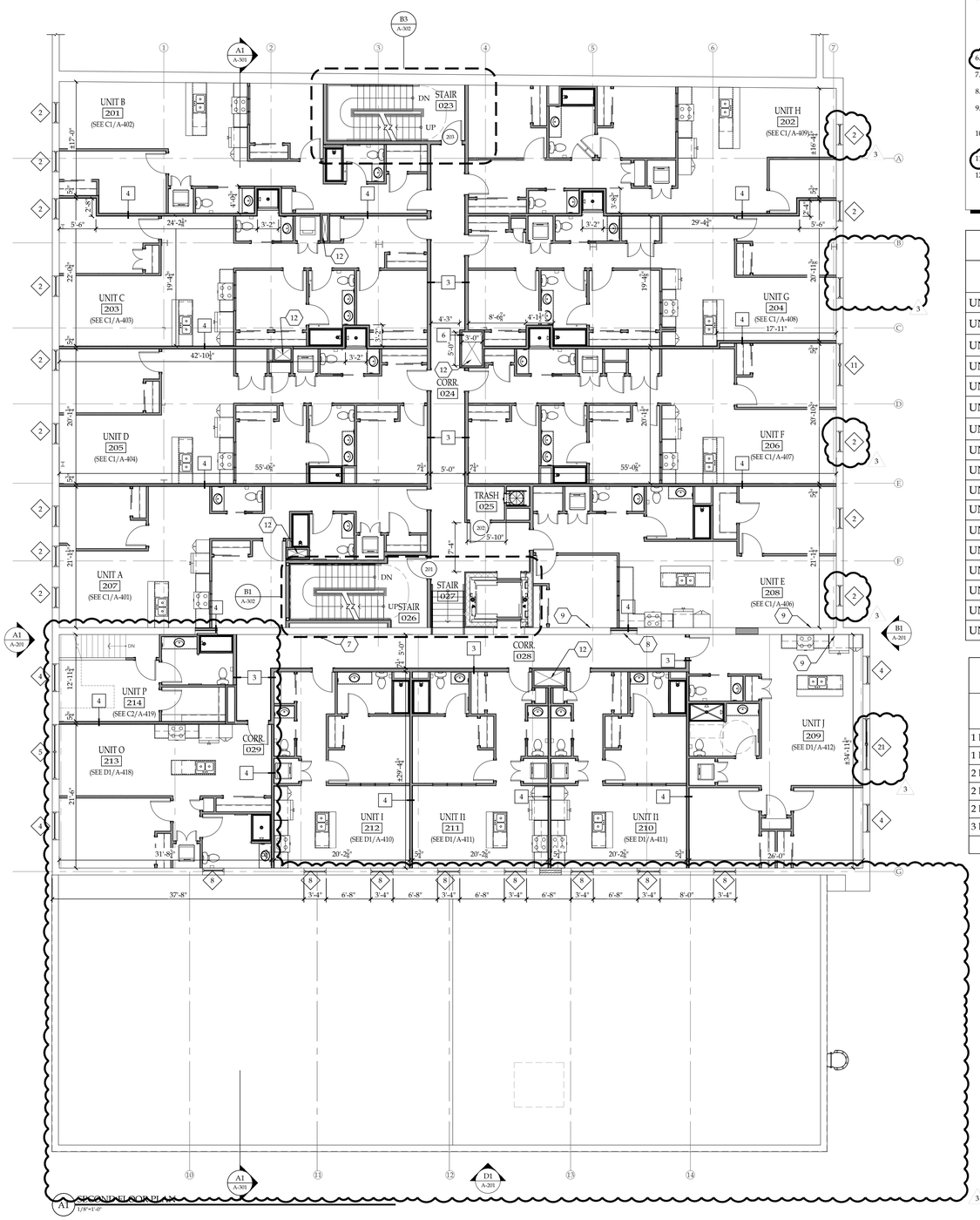
SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: A-101



A1 SECOND FLOOR PLAN
1/8"=1'-0"

FLOOR PLAN GENERAL NOTES:

- DETERIORATED MORTAR JOINTS ARE TO BE SELECTIVELY RAKED OUT AND REPOINTED WITH NEW MORTAR TO MATCH EXISTING IN COMPOSITION, COLOR, TEXTURE, AND TOOLING IN ACCORDANCE WITH PRESERVATION BRIEF #2. SHOULD ANY BRICKS BE CRACKED, BROKEN, OR SPALLED, THEY WILL BE REPLACED TO MATCH THE ADJACENT BRICKS AS CLOSELY AS POSSIBLE IN ALL QUALITIES INCLUDING DIMENSIONS, COLOR, STRENGTH, AND REFLECTIVITY. ALLOW FOR 20% REPOINTING AND 10% BRICK REPLACEMENT UNLESS INTICATED OTHERWISE. SALVAGED BRICKS WILL BE USED TO THE GREATEST EXTENT POSSIBLE.
- WASH ALL MASONRY TO BE LEFT EXPOSED 100%

FLOOR PLAN KEYED NOTES:

1. NOT USED.
2. NOT USED. 3
3. REBUILD STEPPED OUTER WYTHE TO UNDERSIDE OF SECOND FLOOR AND ALLOW FOR SOME REBUILD OF INNER WYTHES. SIGNIFICANT DETERIORATION PRESENT AT TOP OF LEDGE WITH LARGE SECTIONS MISSING. REPLACE ALL CRACKED OR SPALLED BRICK.
4. METAL WIRE MESH STORAGE LOCKERS WITH 7'-0" TALL PAD-LOCKABLE DOORS, TYP. PROVIDE WIRE MESH CEILING @ 9'-0" AFF. AND ID PLATE @ EACH DOOR.
5. NEW POURED CONCRETE RAMP. 1:12 MAXIMUM SLOPE. CONTRACTOR TO NOTIFY ARCHITECT IF RAMP ELEVATIONS NEED TO BE ADJUSTED WITH FINAL FINISHED FLOOR AND GRADE HEIGHTS. A WALL MOUNTED 1 ½" DIAMETER HANDRAIL TO BE PROVIDED EACH SIDE OF RAMP @ 36" AFF. PROVIDE HANDRAIL EXTENSIONS HORIZONTALLY 12" MINIMUM BEYOND THE TOP AND BOTTOM OF RAMP RUNS. EXTENSIONS SHALL RETURN TO THE WALL. SEE D3/A-304 FOR RAIL.
6. NOT USED. 3
7. EXISTING SLIDING STEEL DOOR TO BE RELOCATED TO CORRIDOR AND PAINTED.
8. EXISTING DOOR TO BE FIXED SHUT AND PAINTED.
9. REBUILD OUTER WYTHE 100% IN SELECT AREA AND ALLOW FOR SOME REBUILD OF INNER WYTHES. REPLACE ALL CRACKED BRICK.
10. EXISTING OPENING TO BE INFILLED WITH BRICK. EXISTING DOOR FRAME TO BE REMOVED. MATCH ADJACENT CONSTRUCTION.
11. NOT USED. 3
12. SHAFT ENCLOSURE. PARTITION WALLS TO BE TYPE 6. SEE DETAIL D1/D2 A-001 FOR TYPICAL TERMINATION AND INTERMEDIATE FLOOR DETAILS.

UNIT SQUARE FOOTAGES

UNIT TYPE	# BED, BATH	UNIT SQUARE FOOTAGE
UNIT A	2 BED, 1.5 BATH	959 SF
UNIT B	2 BED, 1.5 BATH	924 SF
UNIT C	3 BED, 2 BATH	1,115 SF
UNIT D	3 BED, 2 BATH	1,144 SF
UNIT D1	2 BED, 1 DEN, 1.5 BATH	1,140 SF
UNIT E	2 BED, 1.5 BATH	976 SF
UNIT F	3 BED, 2 BATH	1,157 SF
UNIT G	3 BED, 2 BATH	1,094 SF
UNIT H	2 BED, 1 DEN, 1.5 BATH	1,034 SF
UNIT I	1 BED, 1.5 BATH	614 SF
UNIT J	2 BED, 1.5 BATH	918 SF
UNIT K	2 BED, 2 BATH	1,002 SF
UNIT L	1 BED, 1.5 BATH	705 SF
UNIT M	2 BED, 2 BATH	1,072 SF
UNIT N	2 BED, 1.5 BATH	872 SF
UNIT O	1 BED, 1 BATH	695 SF
UNIT P	3 BED, 2 BATH	1,302 SF 3

SUMMARY OF UNITS

ROOM TYPE	LEVEL			TOTAL
	1st	2nd	3rd	
1 BED, 1 BATH	0	1	0	**1**
1 BED, 1.5 BATH	3	3	0	**6**
2 BED, 1.5 BATH	1	4	3	**8**
2 BED, 2 BATH	2	0	0	**2**
2 BED, 1 DEN, 1.5 BATH	1	1	1	**3**
3 BED, 2 BATH	1	4	4	**9**
TOTAL	**8**	**13**	**8**	**29**

NOTICE

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273 HICKORY STREET BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

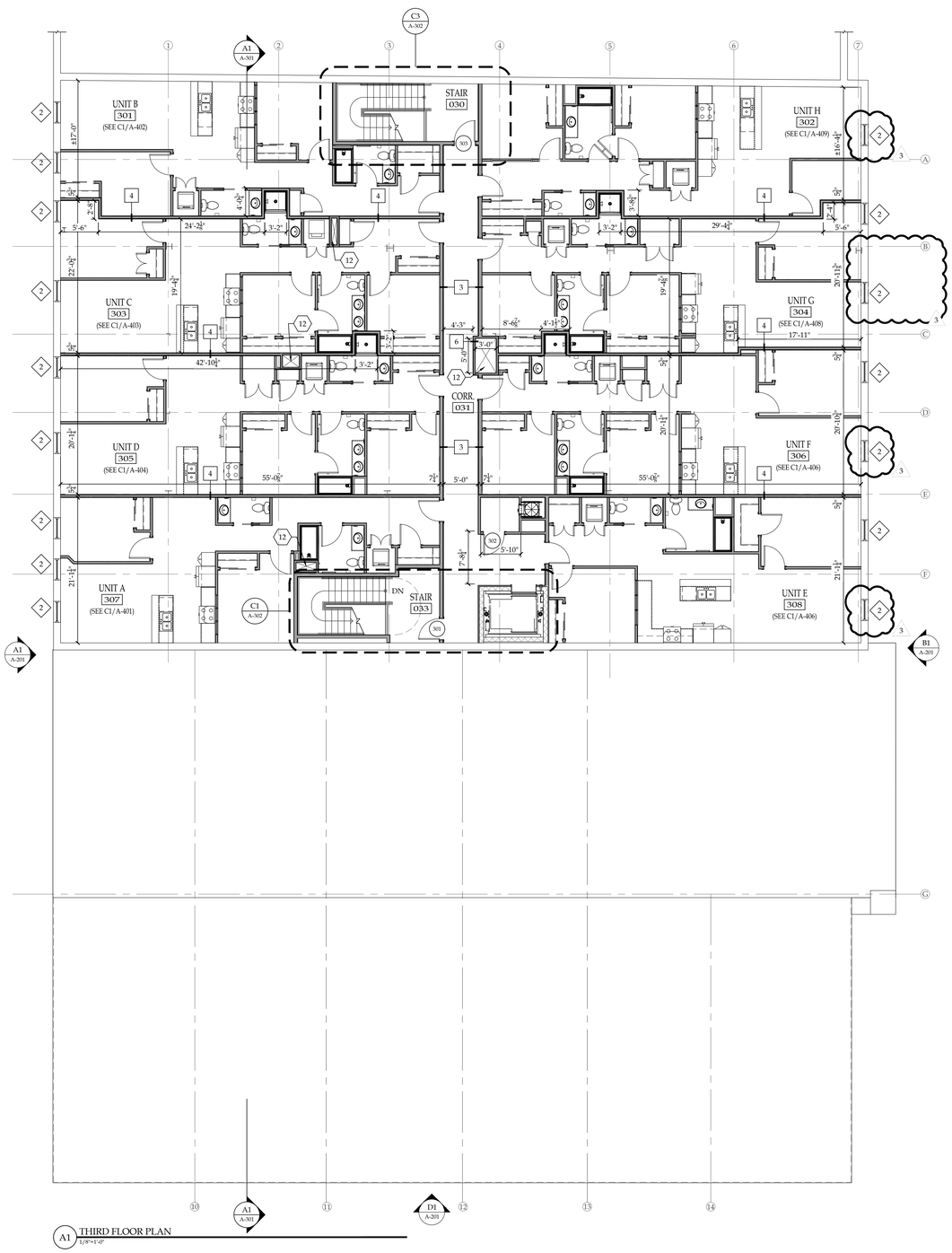
SEAL:

TITLE:

SECOND FLOOR PLAN

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: A-102



A1 THIRD FLOOR PLAN
1/8"=1'-0"

FLOOR PLAN GENERAL NOTES:

- DETERIORATED MORTAR JOINTS ARE TO BE SELECTIVELY RAKED OUT AND REPOINTED WITH NEW MORTAR TO MATCH EXISTING IN COMPOSITION, COLOR, TEXTURE, AND TOOLING IN ACCORDANCE WITH PRESERVATION BRIEF #2. SHOULD ANY BRICKS BE CRACKED, BROKEN, OR SPALLED, THEY WILL BE REPLACED TO MATCH THE ADJACENT BRICKS AS CLOSELY AS POSSIBLE IN ALL QUALITIES INCLUDING DIMENSIONS, COLOR, STRENGTH, AND REFLECTIVITY. ALLOW FOR 20% REPOINTING AND 10% BRICK REPLACMENT UNLESS INTICATED OTHERWISE. SALVAGED BRICKS WILL BE USED TO THE GREATEST EXTENT POSSIBLE.
- WASH ALL MASONRY TO BE LEFT EXPOSED 100%

FLOOR PLAN KEYED NOTES:

1. NOT USED.
2. NOT USED. 3
3. REBUILD STEPPED OUTER WYTHE TO UNDERSIDE OF SECOND FLOOR AND ALLOW FOR SOME REBUILD OF INNER WYTHES. SIGNIFICANT DETERIORATION PRESENT AT TOP OF LEDGE WITH LARGE SECTIONS MISSING. REPLACE ALL CRACKED OR SPALLED BRICK.
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12. SHAFT ENCLOSURE. PARTITION WALLS TO BE TYPE 6. SEE DETAIL D1/D2 A-001 FOR TYPICAL TERMINATION AND INTERMEDIATE FLOOR DETAILS.

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SUMMARY OF UNITS

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TOTAL	**8**	**13**	**8**	**29**

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

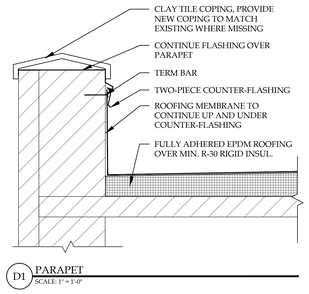
TITLE:
THIRD
FLOOR PLAN

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: A-103

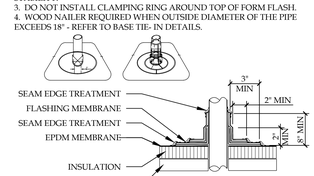
ROOF PLAN GENERAL NOTES:

- CONTRACTOR TO INSTALL NEW ROOF PER MANUFACTURER INSTALLATION RECOMMENDATION.
- RUN NEW MEMBRANE ROOFING UP PARAPET WALL. TERMINATE AT COUNTERFLASHING.
- WHERE THERE IS MISSING CLAY TILE COPING, PROVIDE NEW TO MATCH EXISTING.
- PROVIDE NEW ROOF DRAINS AND OVERFLOW ROOF DRAINS. REFER TO PLUMBING PLUMBING DRAWINGS AND SPECS FOR ADDITIONAL INFORMATION.
- REFER TO MEP DRAWINGS AND SPECS FOR NEW ROOF TOP EQUIPMENT, VENTS, EXHAUSTS, ETC

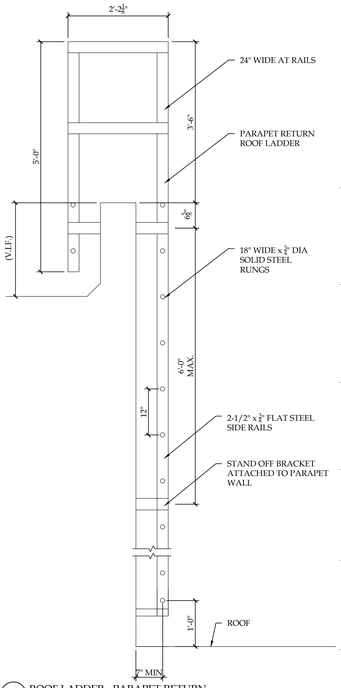


D1 PARAPET
SCALE: 1" = 1'-0"

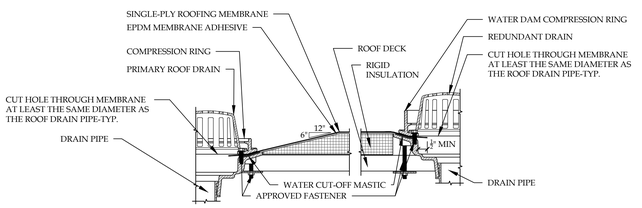
NOTES:
1. REMOVE ALL EXISTING FLASHING, LEAD, ETC. PIPE SURFACE MUST BE FREE OF ALL RUST, GREASE, ETC.
2. PIPE MUST BE ANCHORED TO BOTTOM SIDE OF DECK TO ASSURE STABILITY.
3. DO NOT INSTALL CLAMPING RING AROUND TOP OF FORM FLASH.
4. WOOD NAILER REQUIRED WHEN OUTSIDE DIAMETER OF THE PIPE EXCEEDS 18" - REFER TO BASE TIE- IN DETAILS.



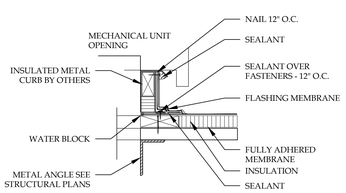
C1 TYPICAL MECHANICAL VENT DETAIL
SCALE: 1-1/2" = 1'-0"



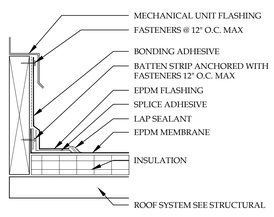
C2 ROOF LADDER - PARAPET RETURN
SCALE: 3/4" = 1'-0"



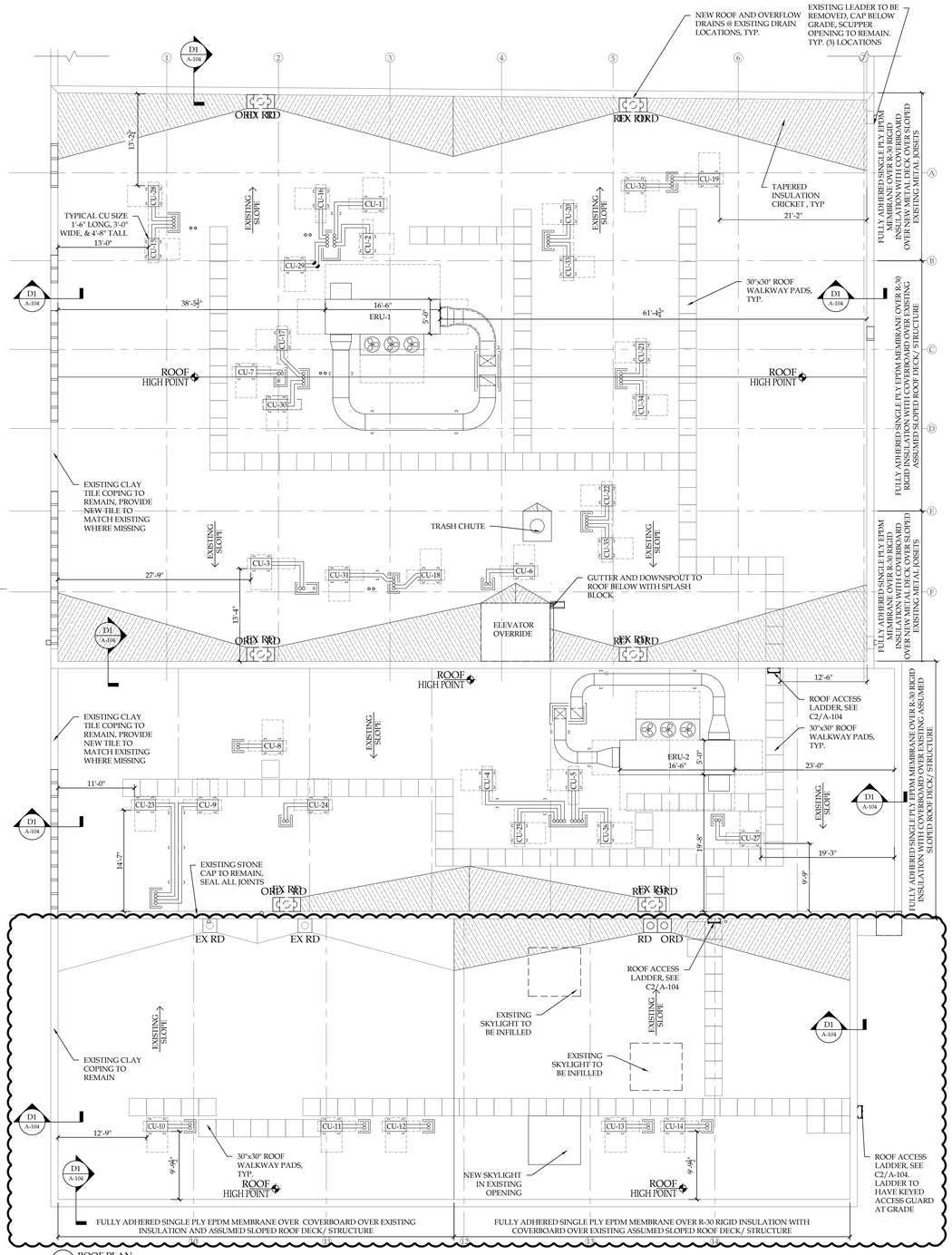
B1 ROOF DRAIN DETAIL - TYP.
SCALE: 1-1/2" = 1'-0"



A1 TYPICAL FLASHING DETAIL
SCALE: 1-1/2" = 1'-0"



A2 TYPICAL MECHANICAL CURB DETAIL
SCALE: 1-1/2" = 1'-0"



A1 ROOF PLAN
1/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

ROOF PLAN

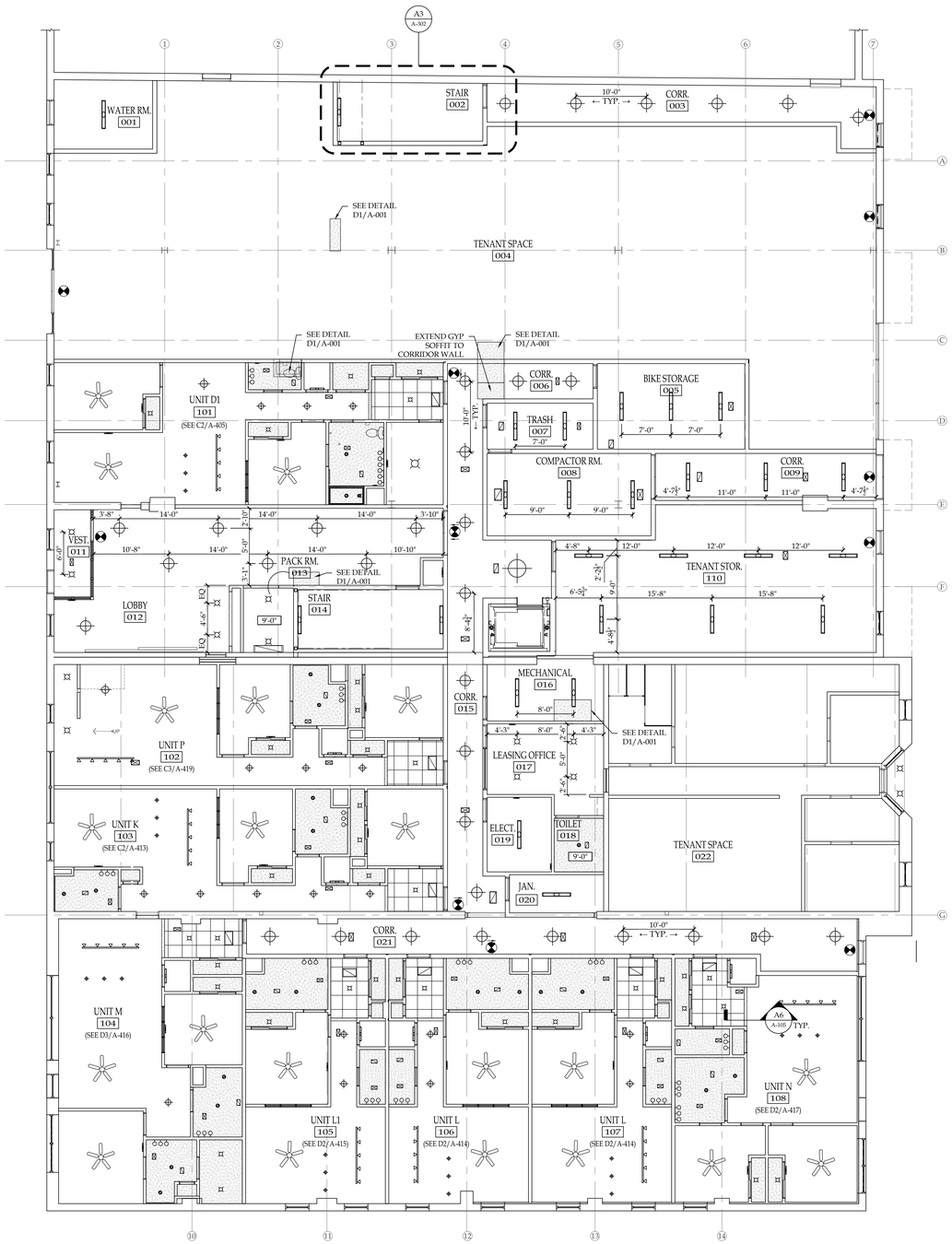
SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

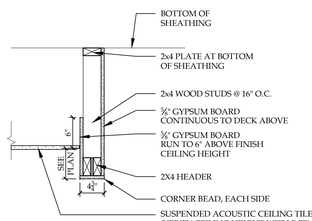
DRAWING #: A-104

REFLECTED CEILING LEGEND:

- WOOD FRAMED OR SUSPENDED GYPSUM CEILING/ SOFFIT
- DECORATIVE PENDANT LIGHT, SEE ELEC.
- ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
- 6" ROUND FLUSH MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
- CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
- BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
- DIFFUSERS, SEE MECH.
- LINEAR LED STRIP LIGHT, SEE ELEC.
- SUSPENDED TRACK LIGHT, SEE ELEC.
- WALL SCONCE, SEE ELEC.



A1 FIRST FLOOR REFLECTED CEILING PLAN
1/8"=1'-0"



A6 TYPICAL UNIT SOFFIT DETAIL
1/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

REGISTERED ARCHITECT PHILIP J. SILVESTRI 015519 STATE OF NEW YORK

TITLE:

FIRST FLOOR REFLECTED CEILING PLAN

SILVESTRI ARCHITECTS, PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

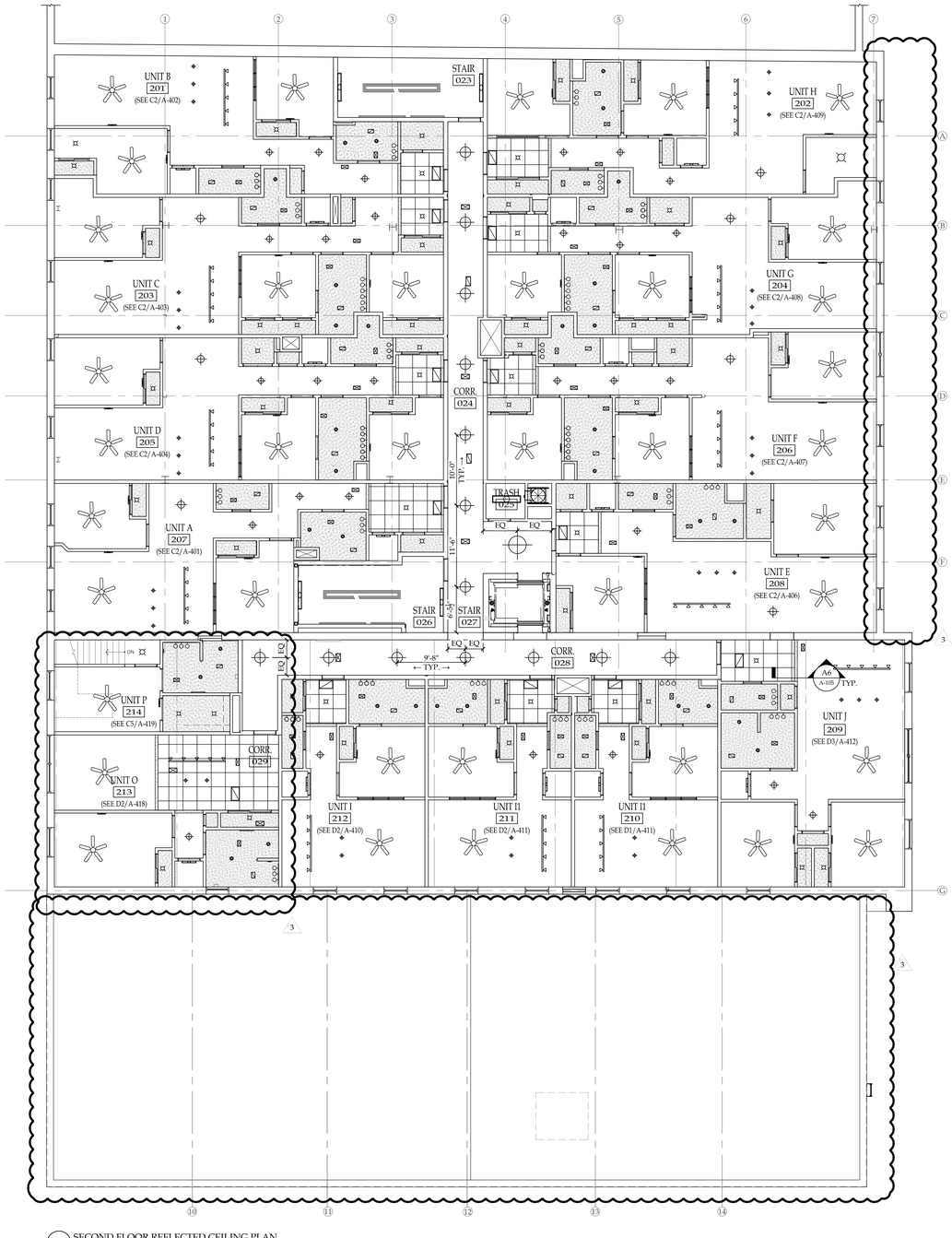
SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: A-105

REFLECTED CEILING LEGEND:

- WOOD FRAMED OR SUSPENDED GYPSUM CEILING/ SOFFIT
- DECORATIVE PENDANT LIGHT, SEE ELEC.
- ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
- 6" ROUND FLUSH MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
- CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
- BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
- DIFFUSERS, SEE MECH.
- LINEAR LED STRIP LIGHT, SEE ELEC.
- SUSPENDED TRACK LIGHT, SEE ELEC.
- WALL SCONCE, SEE ELEC.



A1 SECOND FLOOR REFLECTED CEILING PLAN
1/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

SECOND FLOOR REFLECTED CEILING PLAN

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ARCHITECTS · PC
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AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: A-106

REFLECTED CEILING LEGEND:

- WOOD FRAMED OR SUSPENDED GYPSUM CEILING/ SOFFIT
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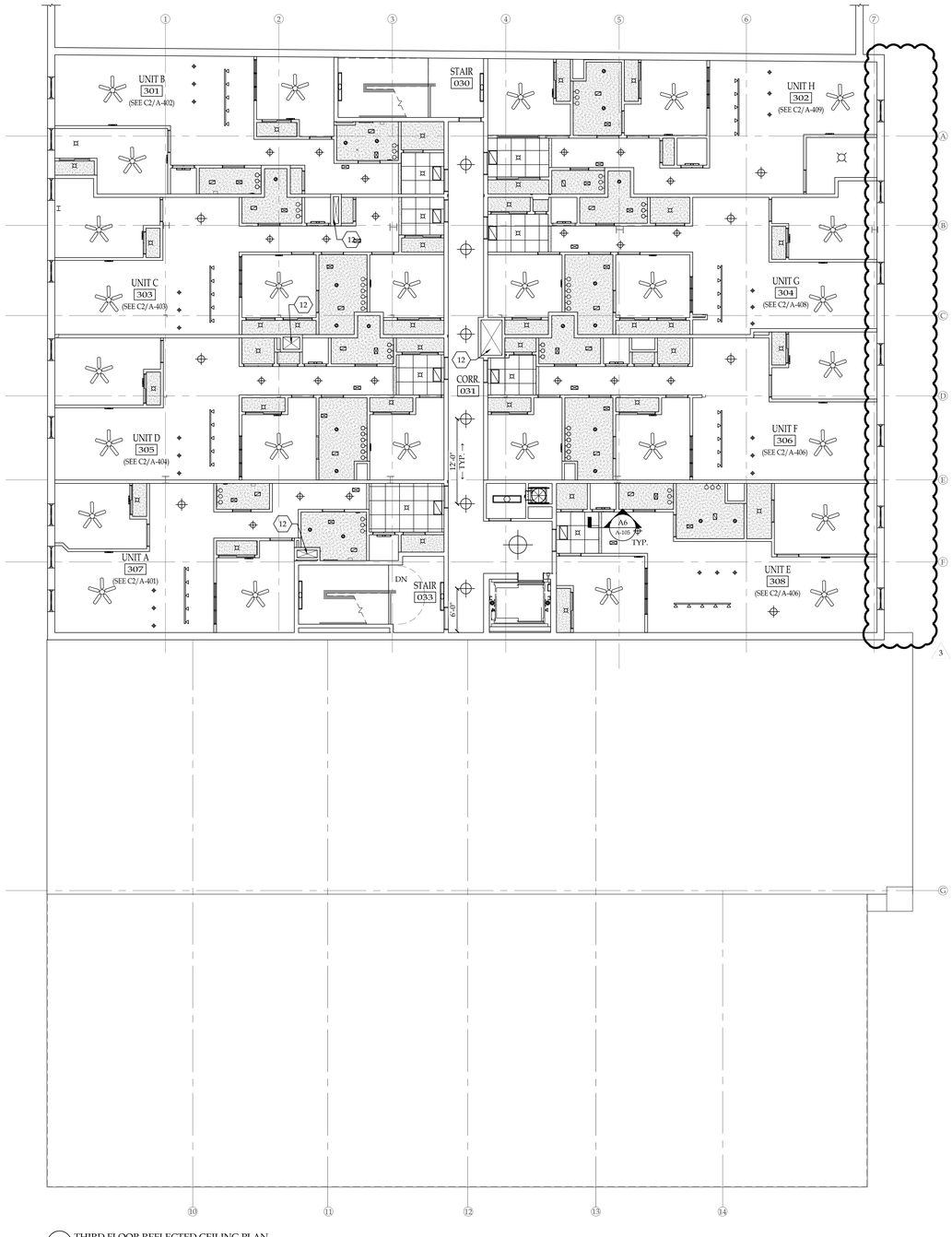

A1 THIRD FLOOR REFLECTED CEILING PLAN
1/8"=1'-0"

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BUFFALO, NY 14204

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SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

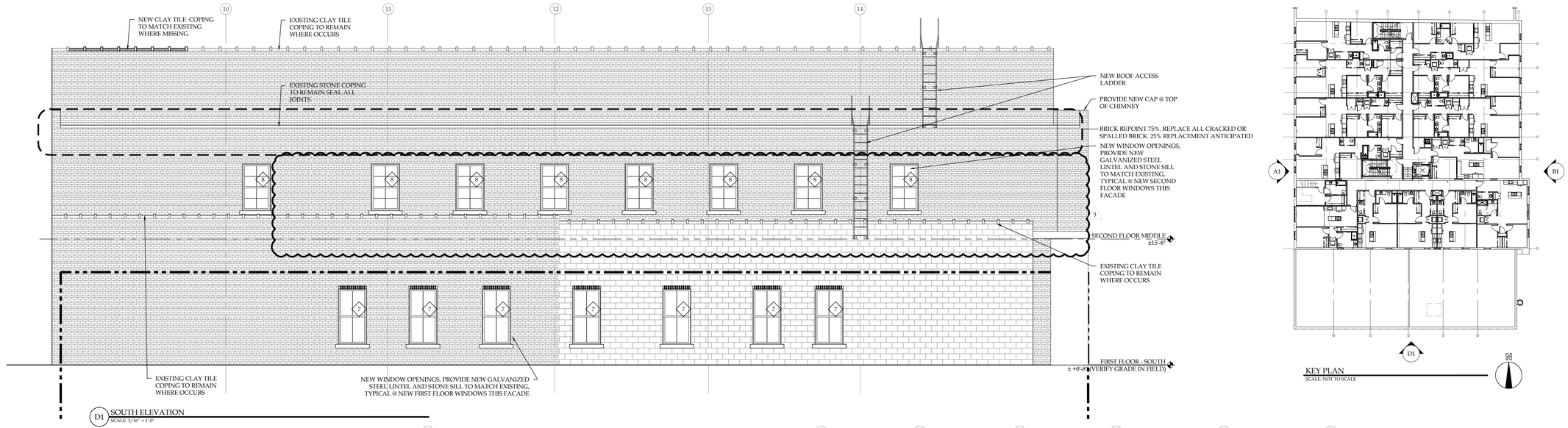
THIRD FLOOR REFLECTED CEILING PLAN

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01

DATE: 5-23-2025

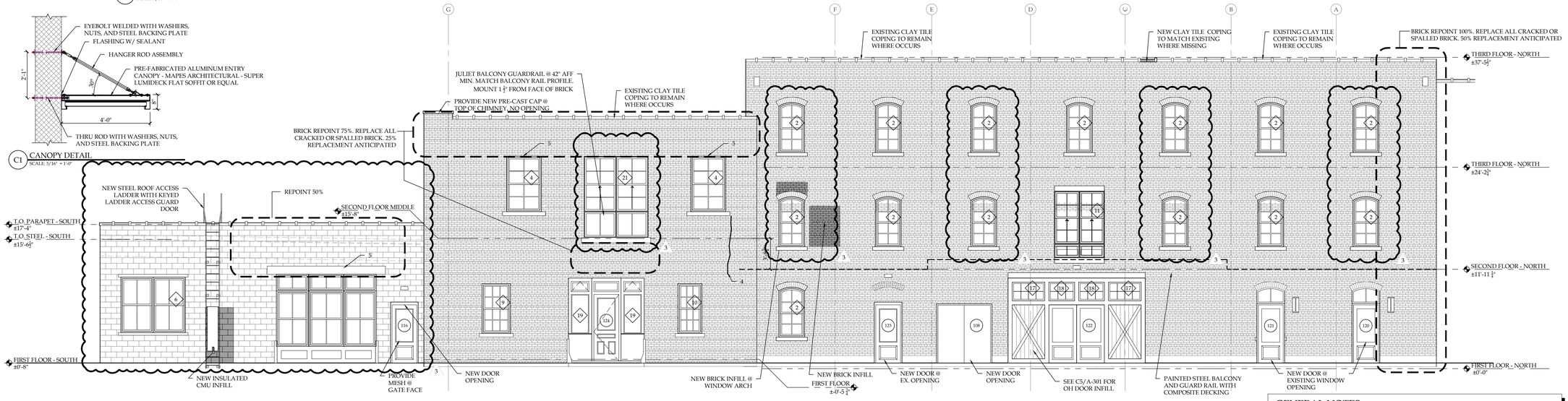
DRAWING #: A-107



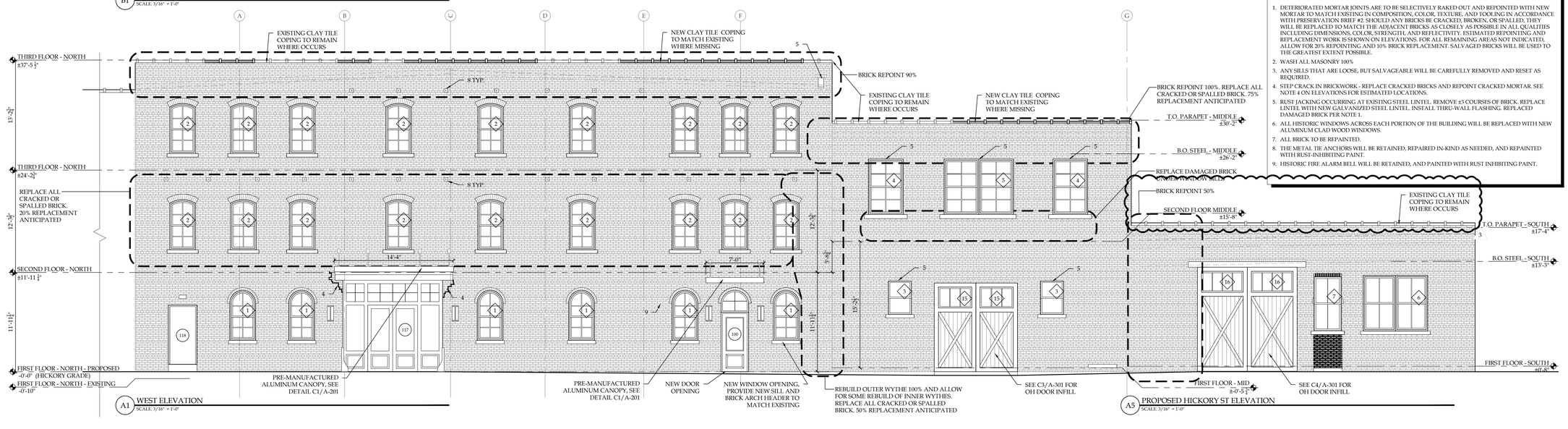
D1 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"

KEY PLAN
SCALE: NOT TO SCALE

C1 CANOPY DETAIL
SCALE: 3/16" = 1'-0"



B1 EAST ELEVATION
SCALE: 3/16" = 1'-0"



A1 WEST ELEVATION
SCALE: 3/16" = 1'-0"

A5 PROPOSED HICKORY ST ELEVATION
SCALE: 3/16" = 1'-0"

GENERAL NOTES:

1. DETERIORATED MORTAR JOINTS ARE TO BE SELECTIVELY RAKED OUT AND REPOINTED WITH NEW MORTAR TO MATCH EXISTING IN COMPOSITION, COLOR, TEXTURE, AND TOOLING IN ACCORDANCE WITH PRESERVATION BRIEF #2. SHOULD ANY BRICKS BE CRACKED, BROKEN, OR SPALLED, THEY WILL BE REPLACED TO MATCH THE ADJACENT BRICKS AS CLOSELY AS POSSIBLE IN ALL QUALITIES INCLUDING DIMENSIONS, COLOR, STRENGTH, AND REFLECTIVITY. ESTIMATED REPOINTING AND REPLACEMENT WORK IS SHOWN ON ELEVATIONS. FOR ALL REMAINING AREAS NOT INDICATED, ALLOW FOR 20% REPOINTING AND 10% BRICK REPLACEMENT. SALVAGED BRICKS WILL BE USED TO THE GREATEST EXTENT POSSIBLE.
2. WASH ALL MASONRY 100%
3. ANY SILLS THAT ARE LOOSE, BUT SALVAGEABLE WILL BE CAREFULLY REMOVED AND RESET AS REQUIRED.
4. STEP CRACK IN BRICKWORK - REPLACE CRACKED BRICKS AND REPOINT CRACKED MORTAR. SEE NOTE 4 ON ELEVATIONS FOR ESTIMATED LOCATIONS.
5. RUST JACKING OCCURRING AT EXISTING STEEL LINTEL. REMOVE ±3 COURSES OF BRICK. REPLACE LINTEL WITH NEW GALVANIZED STEEL LINTEL. INSTALL THRU-WALL FLASHING. REPLACED DAMAGED BRICK PER NOTE 1.
6. ALL HISTORIC WINDOWS ACROSS EACH PORTION OF THE BUILDING WILL BE REPLACED WITH NEW ALUMINUM CLAD WOOD WINDOWS.
7. ALL BRICK TO BE REPAINTED.
8. THE METAL TIE ANCHORS WILL BE RETAINED, REPAIRED IN-KIND AS NEEDED, AND REPAINTED WITH RUST-INHIBITING PAINT.
9. HISTORIC FIRE ALARM BELL WILL BE RETAINED, AND PAINTED WITH RUST INHIBITING PAINT.

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

EXTERIOR ELEVATIONS

SILVESTRI ARCHITECTS · PC
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AMHERST, NY 14221 FAX 716.691.4773

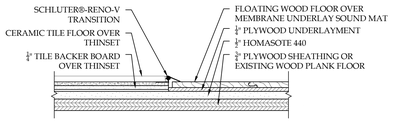
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-201

D1 NOT USED

C1 NOT USED

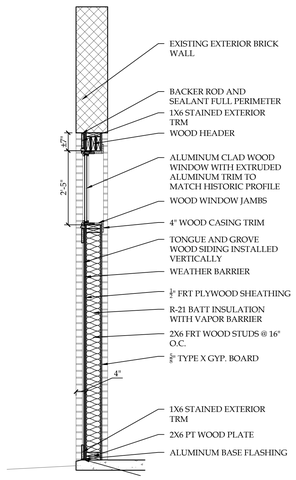
E2 NOT USED



D2 FLOOR DETAIL @ WOOD FLOOR/TILE TRANSITION
SCALE: 3" = 1'-0"

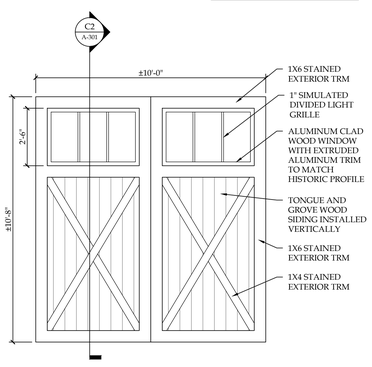
D3 NOT USED

D4 NOT USED

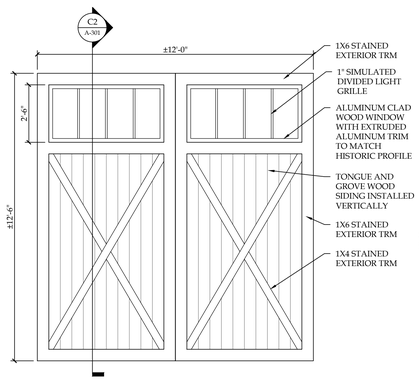


C2 SECTION @ OH DOOR INFILL
SCALE: 1/2" = 1'-0"

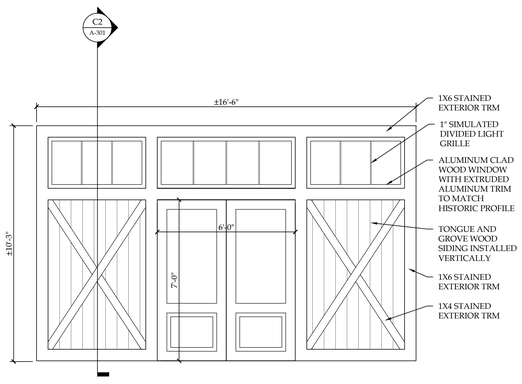
ALL WOOD CLADDING TO BE FRT



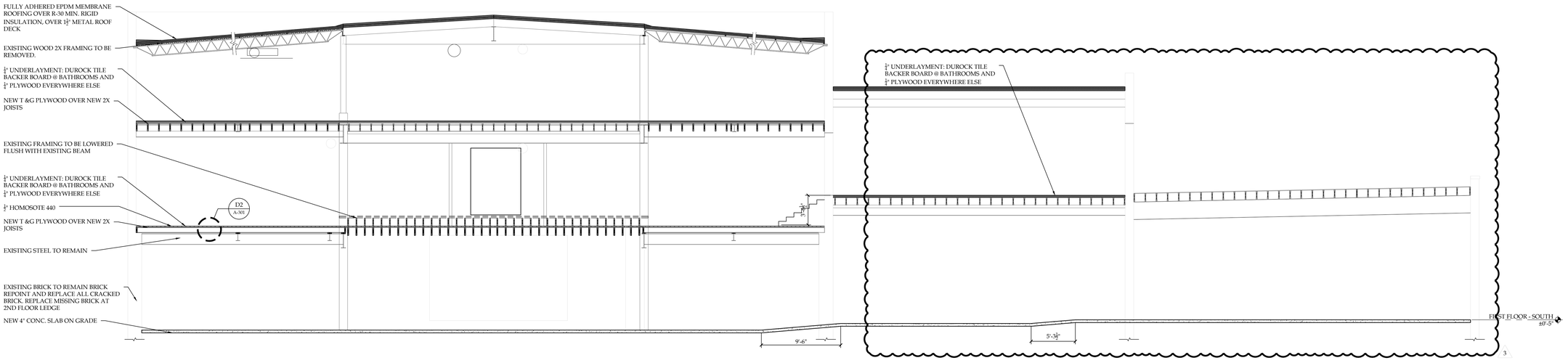
C3 ELEVATION @ OH DOOR INFILL
SCALE: 3/8" = 1'-0"



C4 ELEVATION @ OH DOOR INFILL
SCALE: 3/8" = 1'-0"



C5 ELEVATION @ OH DOOR INFILL
SCALE: 3/8" = 1'-0"



A1 BUILDING SECTION
SCALE: 3/16" = 1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
5-28-2026: REV. 2 - BALCONY UPDATE 2
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
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INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

SECTIONS

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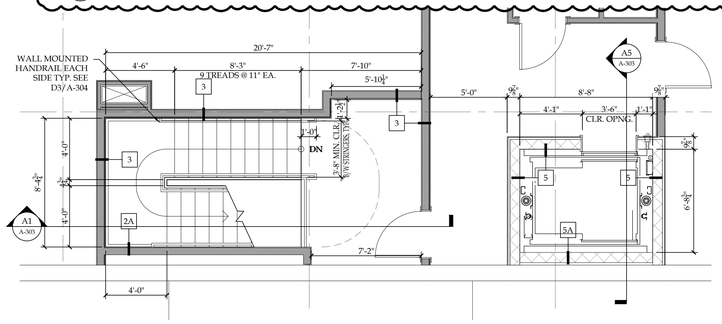
SA JOB #: 24037.01

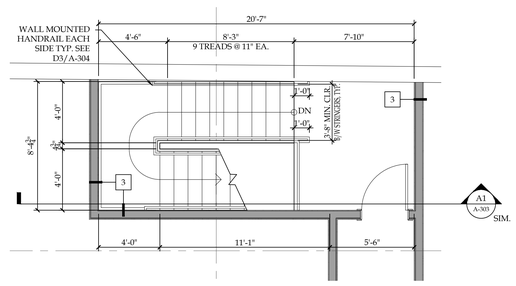
DATE: 5-23-2025

DRAWING #: A-301

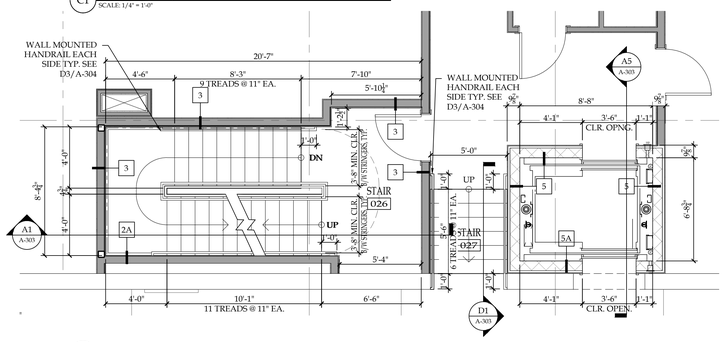
D1 NOT USED



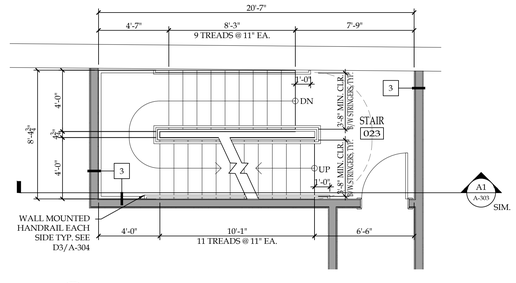
C1 STAIR (SOUTH) & ELEVATOR - 3RD FLOOR ENLARGED PLAN
SCALE: 1/4" = 1'-0"



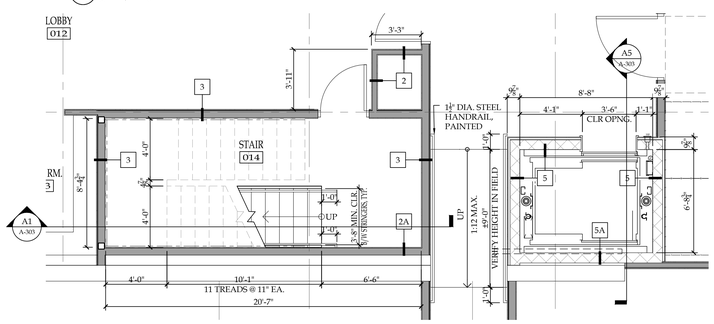
C3 STAIR 2 - 3RD FLOOR ENLARGED PLAN
SCALE: 1/4" = 1'-0"



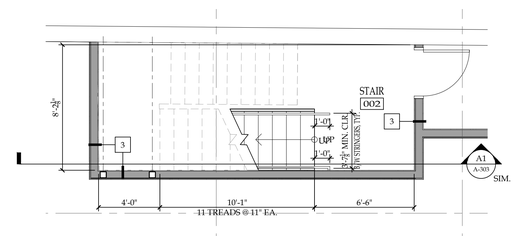
B1 STAIR (SOUTH) & ELEVATOR - 2ND FLOOR ENLARGED PLAN
SCALE: 1/4" = 1'-0"



B3 STAIR 2 - 2ND FLOOR ENLARGED PLAN
SCALE: 1/4" = 1'-0"

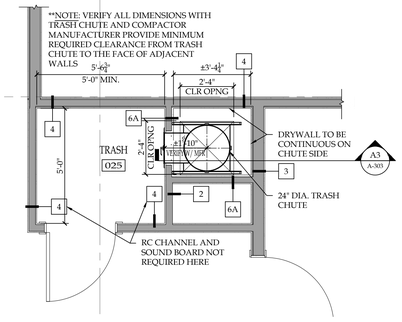


A1 STAIR (SOUTH) & ELEVATOR - 1ST FLOOR ENLARGED PLAN
SCALE: 1/4" = 1'-0"

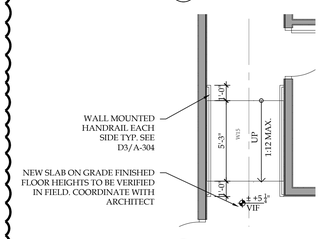


A3 STAIR 2 - 1ST FLOOR ENLARGED PLAN
SCALE: 1/4" = 1'-0"

C4 NOT USED



D5 TRASH CHUTE - 2ND & 3RD FLOOR ENLARGED PLAN
SCALE: 3/8" = 1'-0"



C5 RAMP - 1ST FLOOR ENLARGED PLAN
SCALE: 1/4" = 1'-0"

A4 NOT USED

A5 NOT USED

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

ENLARGED STAIR & ELEVATOR PLANS & STAIR SECTIONS

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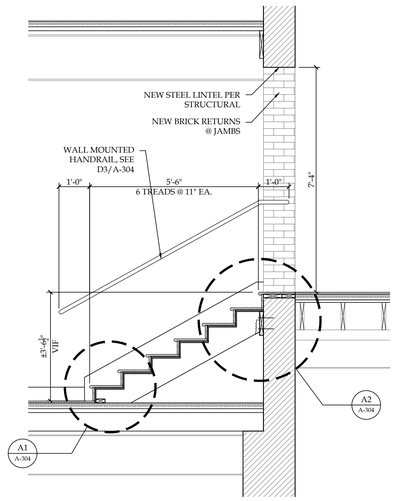
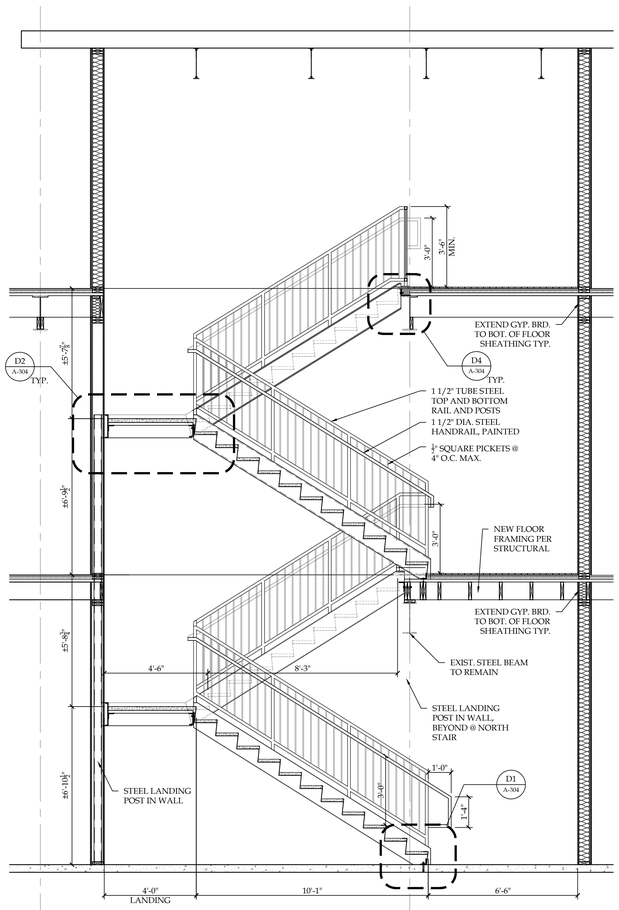
AMHERST, NY 14221 FAX. 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

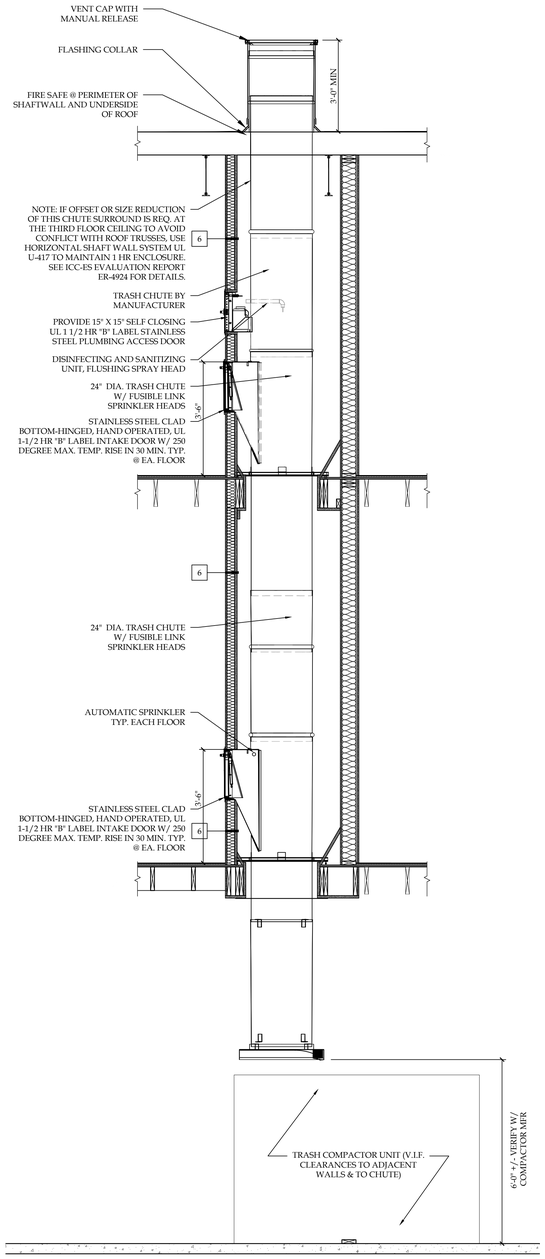
DRAWING #: A-302



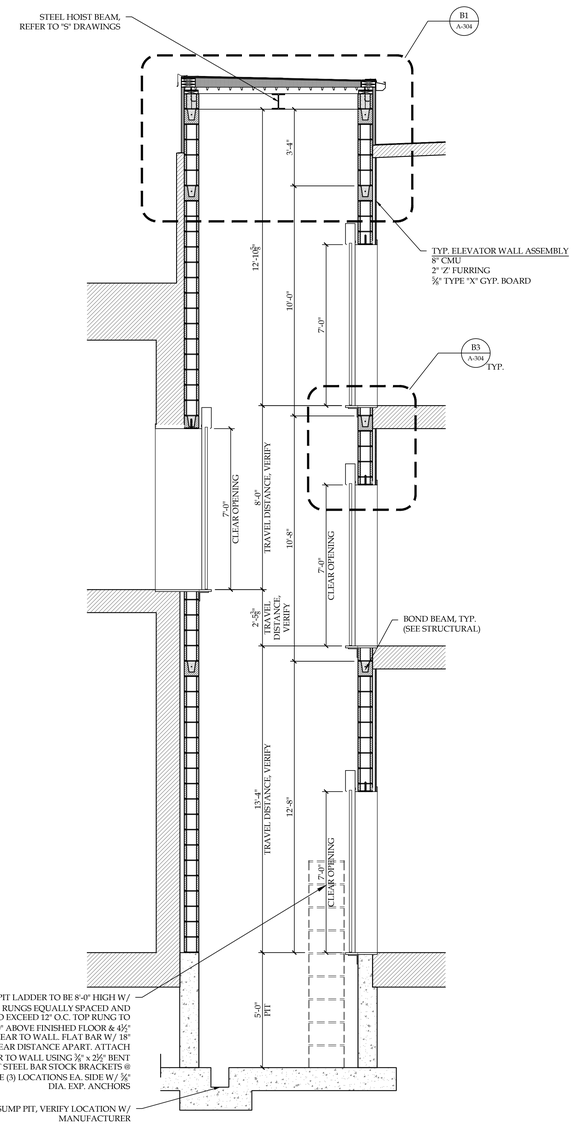
D1 STAIR SECTION
SCALE: 1/2" = 1'-0"



A1 STAIR (SOUTH) SECTION
SCALE: 3/8" = 1'-0"



A3 ELEVATOR SECTION
SCALE: 3/8" = 1'-0"



A5 ELEVATOR SECTION
SCALE: 3/8" = 1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM:
PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

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TITLE:

STAIR & ELEVATOR SECTIONS

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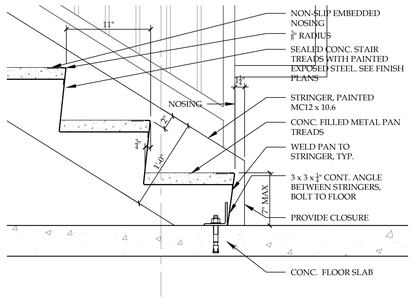
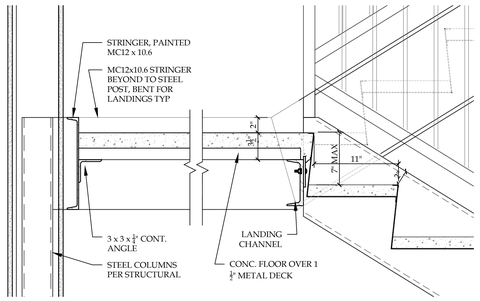
SA JOB #: 24037.01
DATE: 5-23-2025

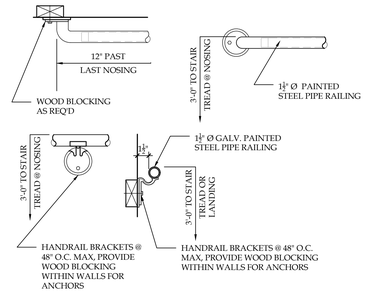
DRAWING #: A-303



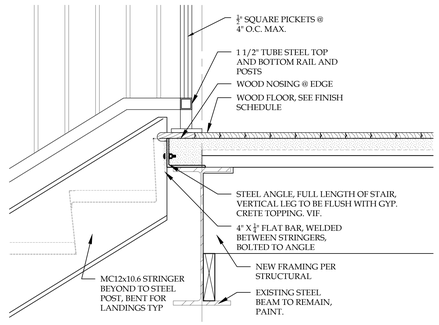
D1 INTERIOR METAL STAIR DETAIL - GROUND LEVEL
SCALE: 1-1/2" = 1'-0"



D2 INTERIOR METAL STAIR DETAIL - LANDING
SCALE: 1-1/2" = 1'-0"



D3 INTERIOR METAL HANDRAIL DETAIL
SCALE: 1-1/2" = 1'-0"



D4 INTERIOR METAL STAIR DETAIL - TOP LANDING
SCALE: 1-1/2" = 1'-0"

C1 NOT USED

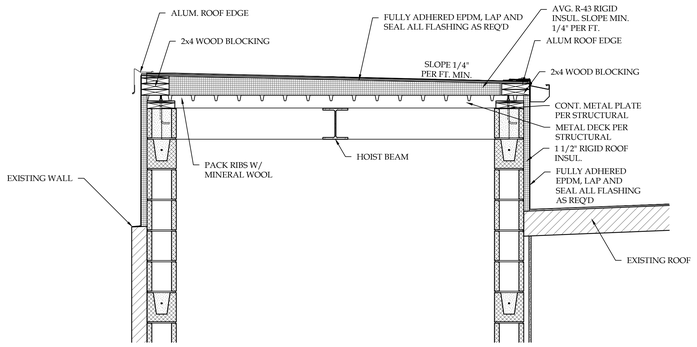
C2 NOT USED

C3 NOT USED

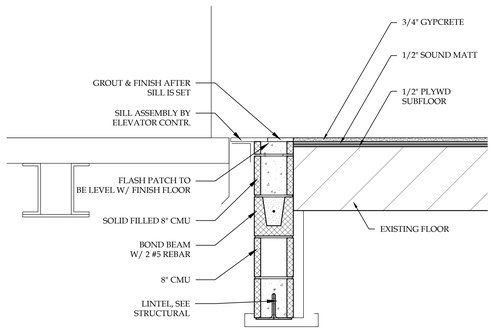
C4 NOT USED

C5 NOT USED

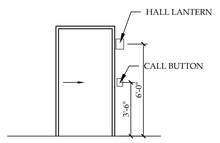
3



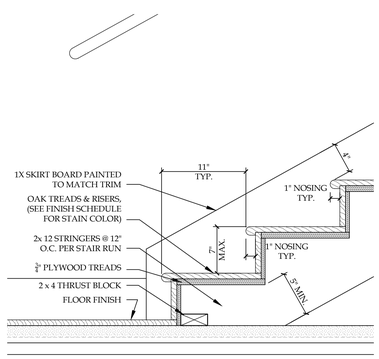
B1 ELEVATOR ROOF DETAIL
SCALE: 3/4" = 1'-0"



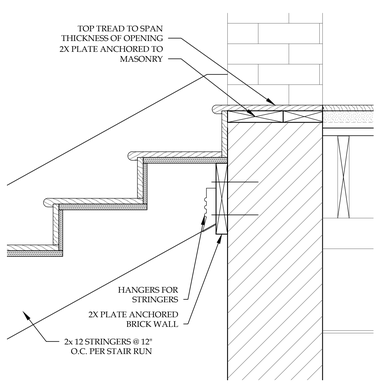
B3 TYP. ELEVATOR HEAD/SILL DETAIL (SEE STRUC.)
SCALE: 1" = 1'-0"



B5 ELEVATOR DOOR ELEVATION
SCALE: 1/4" = 1'-0"



A1 WOOD STAIR DETAIL - BOTTOM LANDING
SCALE: 1-1/2" = 1'-0"



A2 WOOD STAIR DETAIL - TOP LANDING
SCALE: 1-1/2" = 1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

STAIR & ELEVATOR DETAILS

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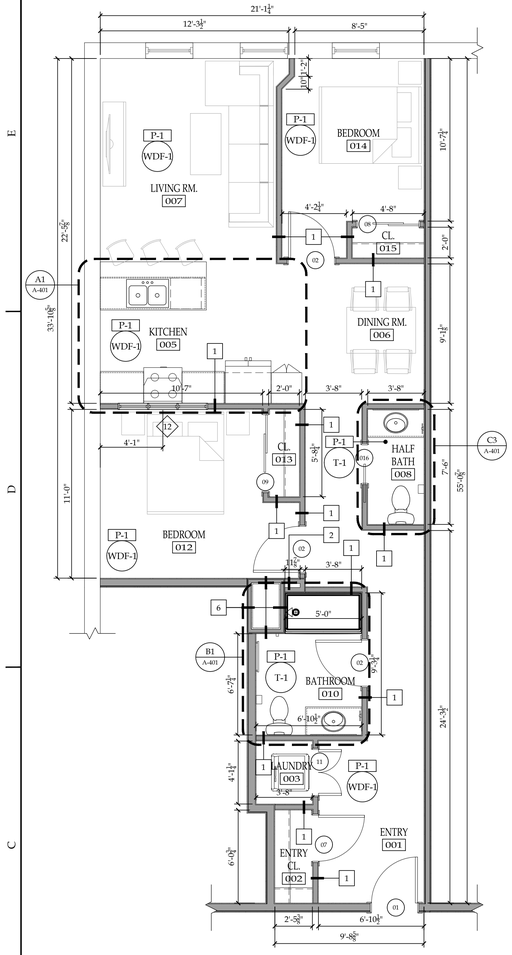
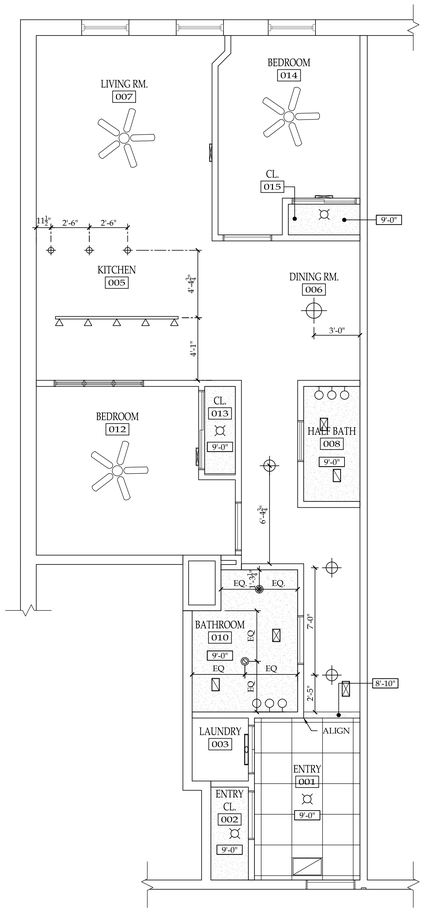
SA JOB #: 24037.01
DATE: 5-23-2025

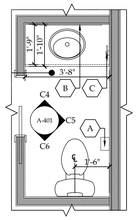
DRAWING #: A-304



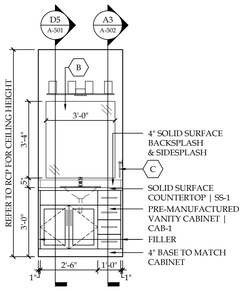
C1 UNIT TYPE "A" (2 BED, 1.5 BATH) | FLOOR PLAN (959 SF)
1/4"=1'-0"



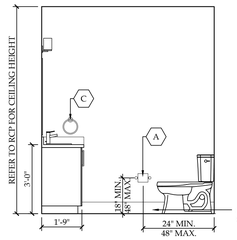
C2 UNIT TYPE "A" (2 BED, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"



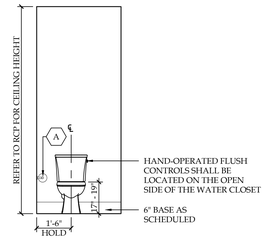
C3 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



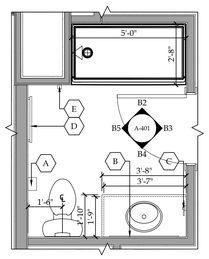
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



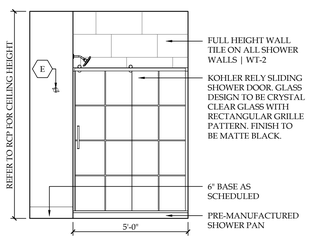
C5 HALF BATH 008 | ELEVATION
3/8"=1'-0"



C6 HALF BATH 008 | ELEVATION
3/8"=1'-0"



B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



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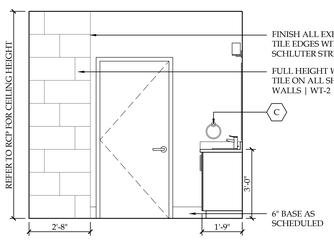
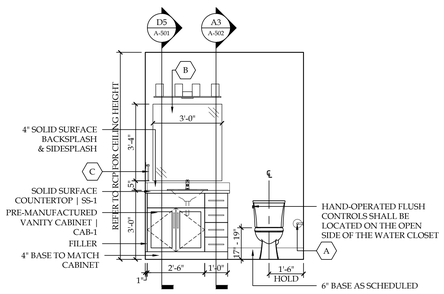
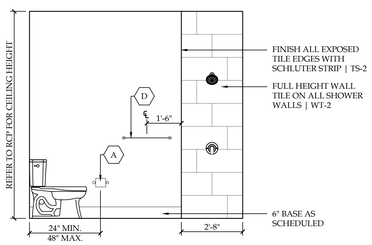
3/8"=1'-0"



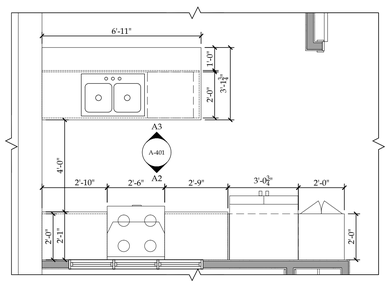
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



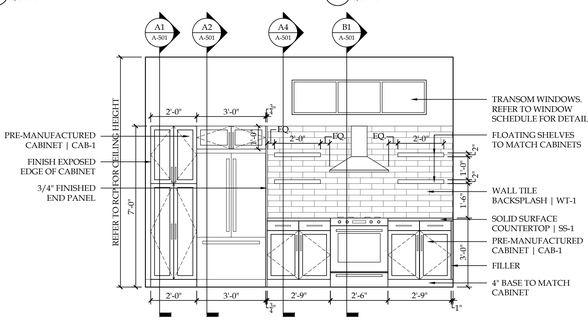
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



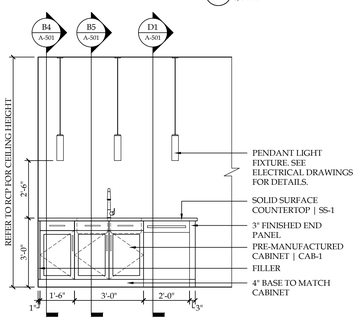
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.

NOTICE

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

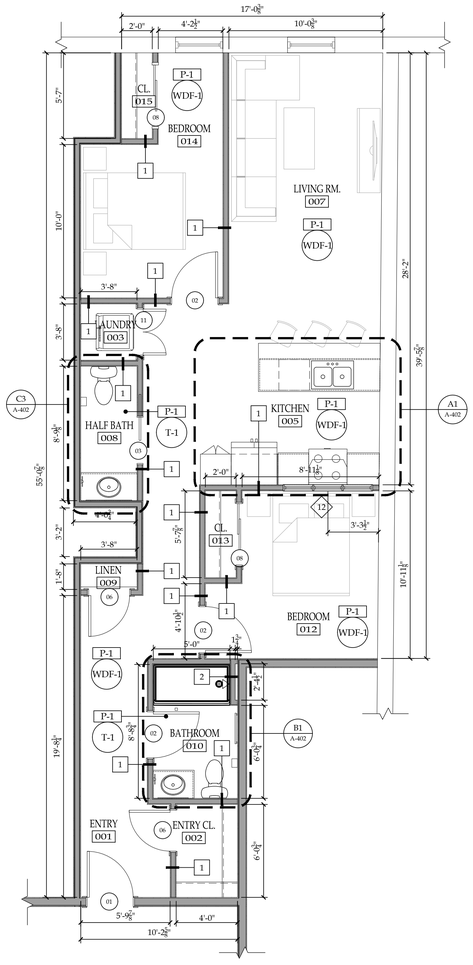
TITLE:

UNIT TYPE "A"
(2 BED, 1.5 BATH)
ENLARGED PLANS
& ELEVATIONS

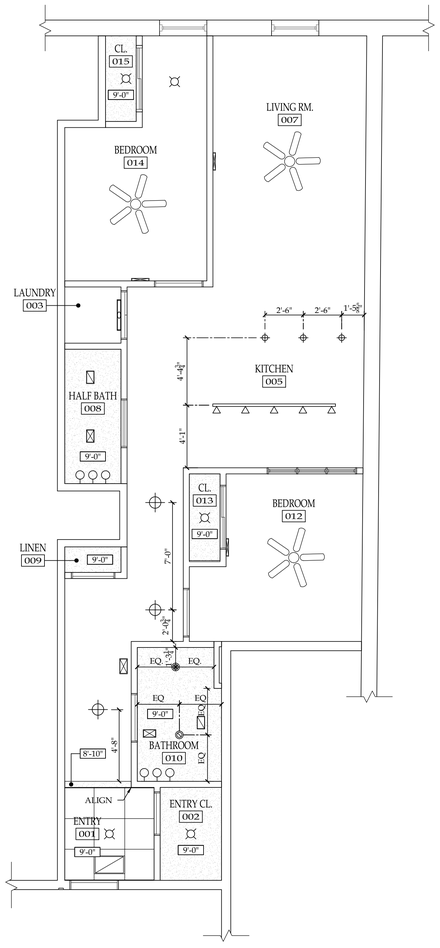
SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

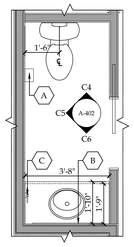
DRAWING #: A-401



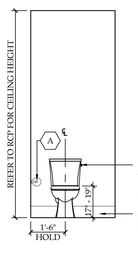
C1 UNIT TYPE "B" (2 BED, 1.5 BATH) | FLOOR PLAN (924 SF)
1/4"=1'-0"



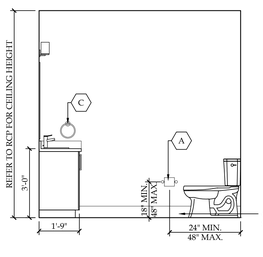
C2 UNIT TYPE "B" (2 BED, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"



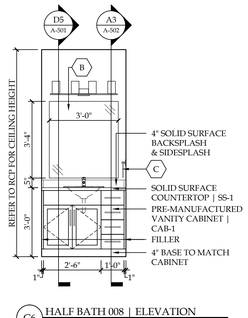
C3 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



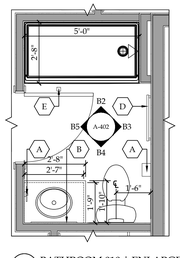
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



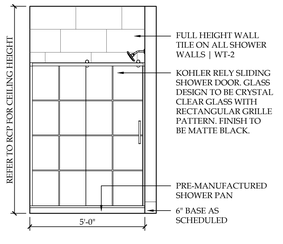
C5 HALF BATH 008 | ELEVATION
3/8"=1'-0"



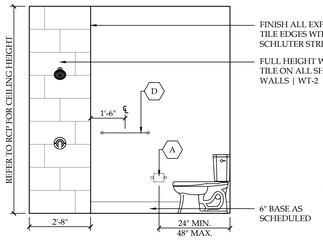
C6 HALF BATH 008 | ELEVATION
3/8"=1'-0"



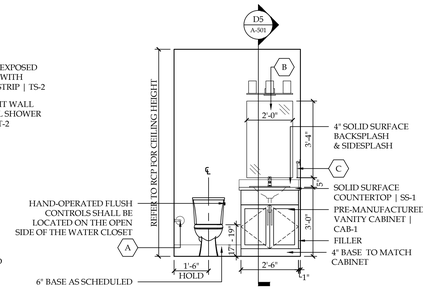
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



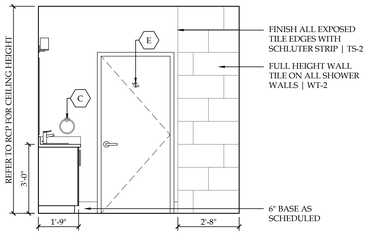
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



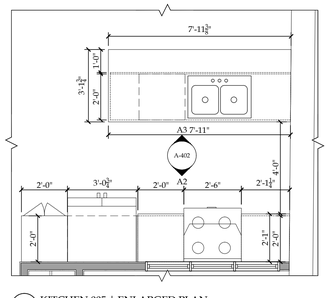
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



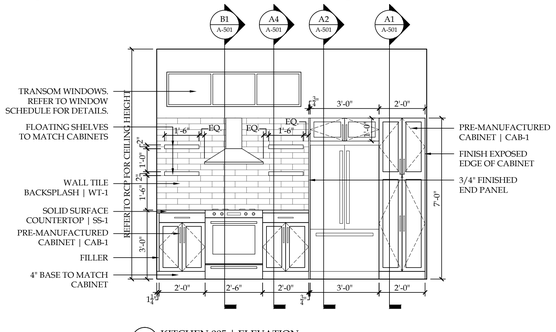
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



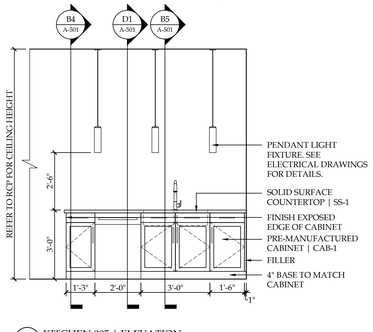
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

UNIT TYPE "B"
(2 BED, 1.5 BATH)
ENLARGED PLANS
& ELEVATIONS

SILVESTRI
ARCHITECTS PC
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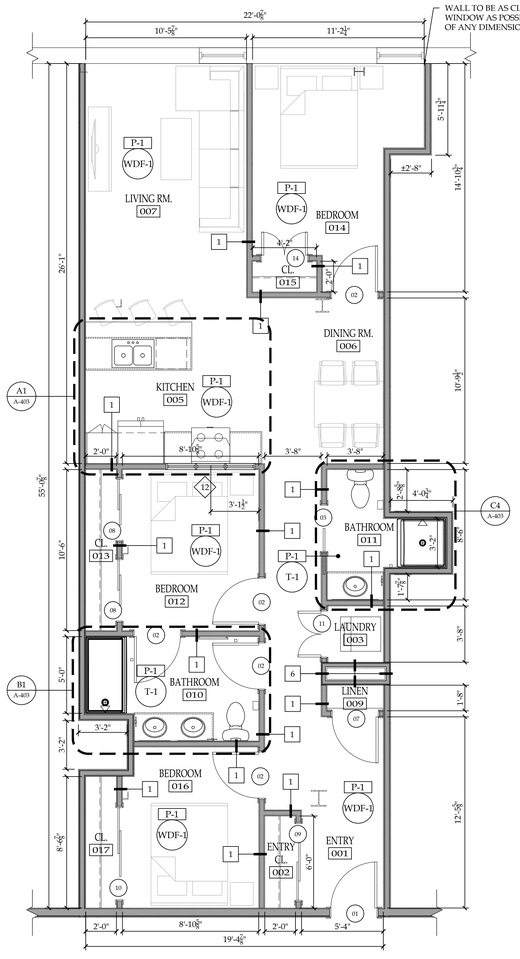
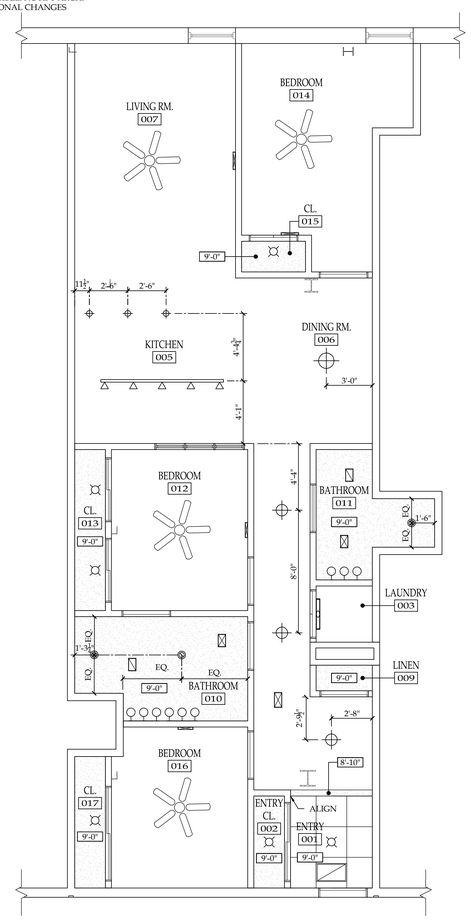
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-402



C1 UNIT TYPE "C" (3 BED, 2 BATH) | FLOOR PLAN (1,115 SF)
1/4"=1'-0"



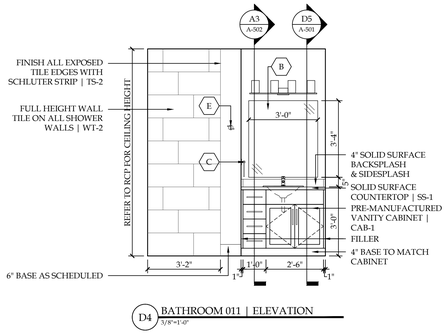
C2 UNIT TYPE "C" (3 BED, 2 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

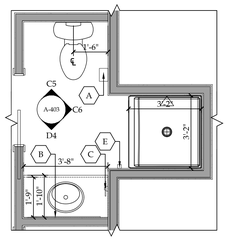
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

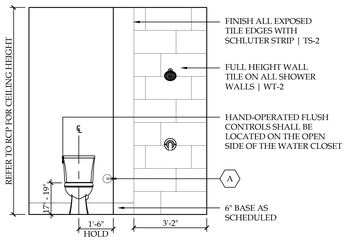
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



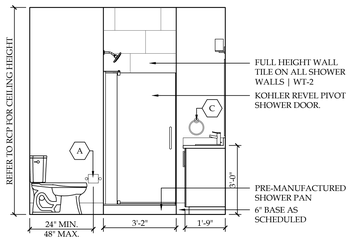
D4 BATHROOM 011 | ELEVATION
3/8"=1'-0"



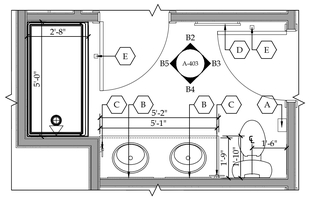
C4 BATHROOM 011 | ENLARGED PLAN
3/8"=1'-0"



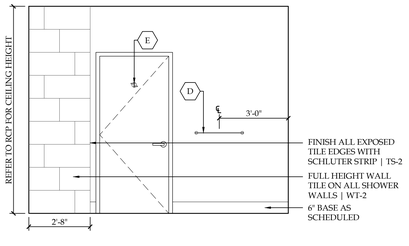
C5 BATHROOM 011 | ELEVATION
3/8"=1'-0"



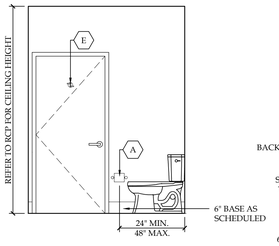
C6 BATHROOM 011 | ELEVATION
3/8"=1'-0"



B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



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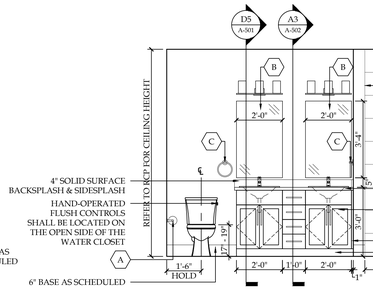
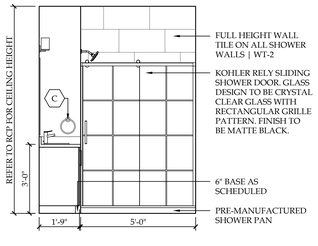
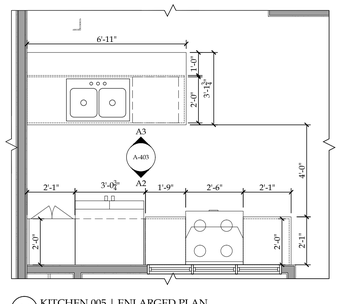
3/8"=1'-0"



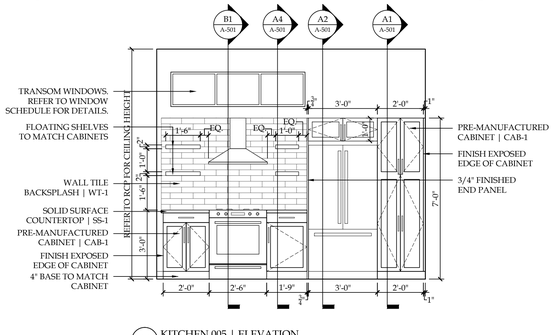
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



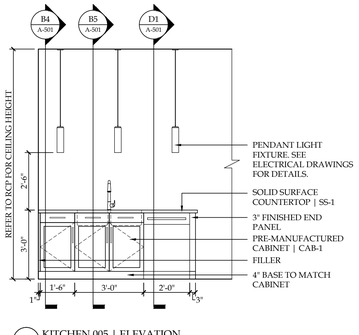
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

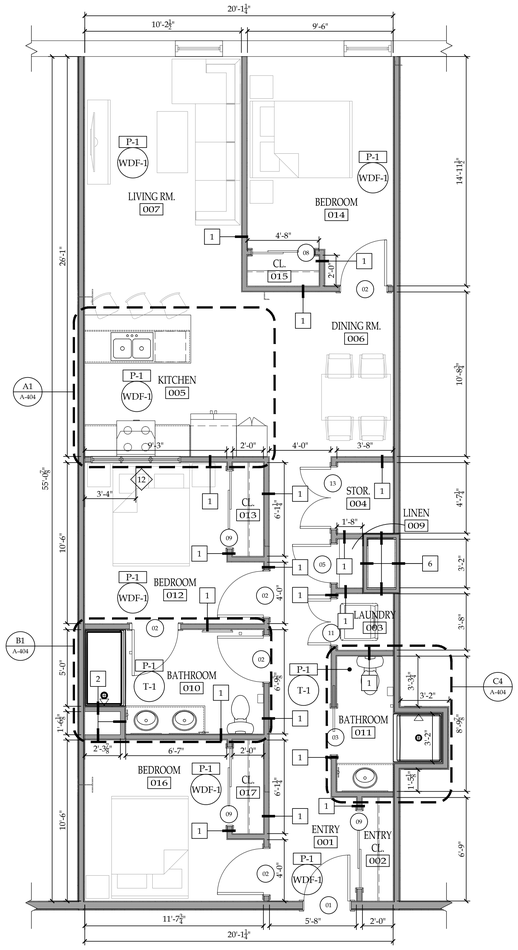
TITLE:

UNIT TYPE "C" (3 BED, 2 BATH) ENLARGED PLANS & ELEVATIONS

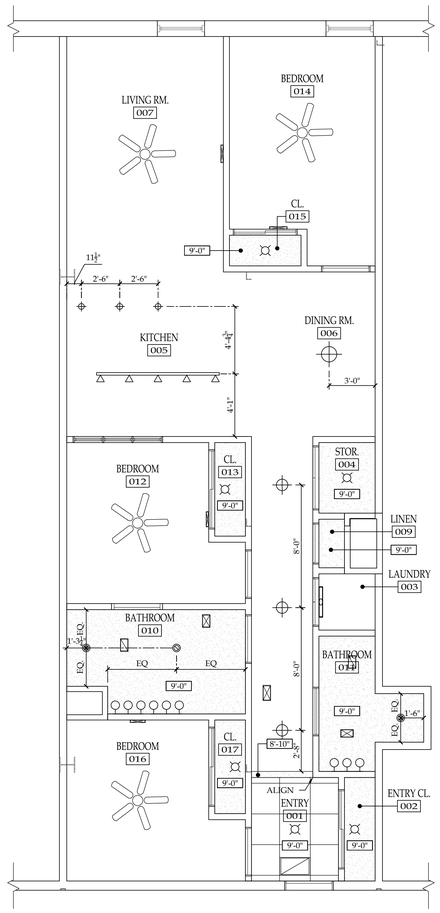
SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-403



C1 UNIT TYPE "D" (3 BED, 2 BATH) | FLOOR PLAN (1,144 SF)
1/4"=1'-0"



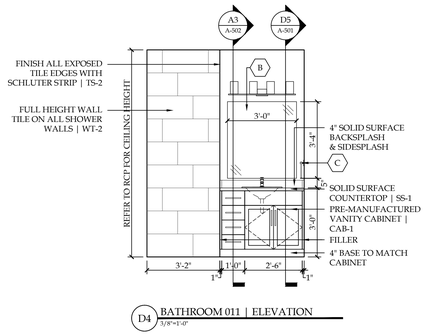
C2 UNIT TYPE "D" (3 BED, 2 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

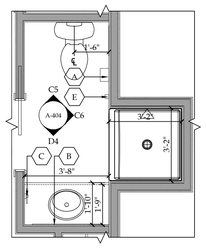
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

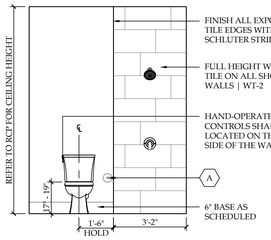
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



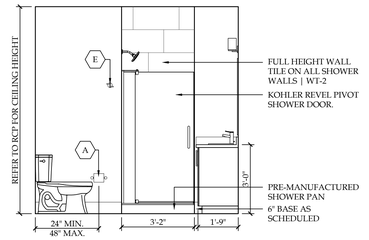
D4 BATHROOM 011 | ELEVATION
3/8"=1'-0"



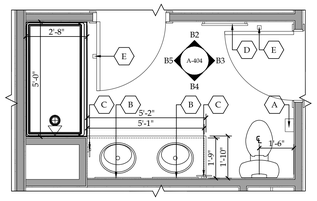
C4 BATHROOM 011 | ENLARGED PLAN
3/8"=1'-0"



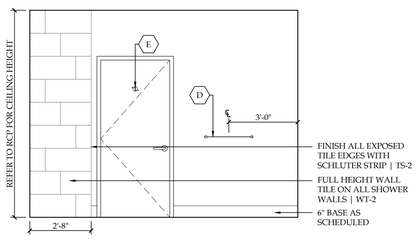
C5 BATHROOM 011 | ELEVATION
3/8"=1'-0"



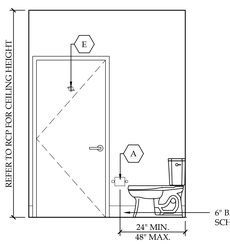
C6 BATHROOM 011 | ELEVATION
3/8"=1'-0"



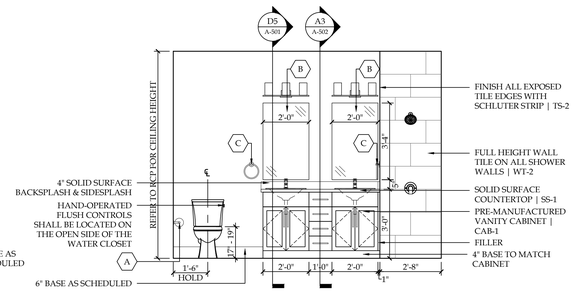
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



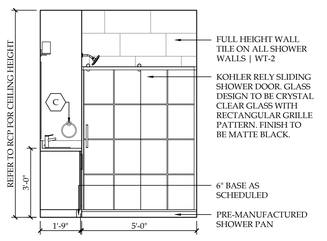
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



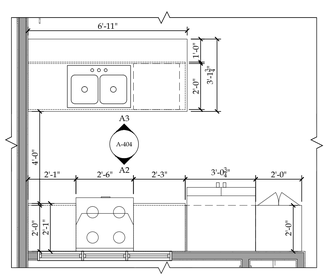
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



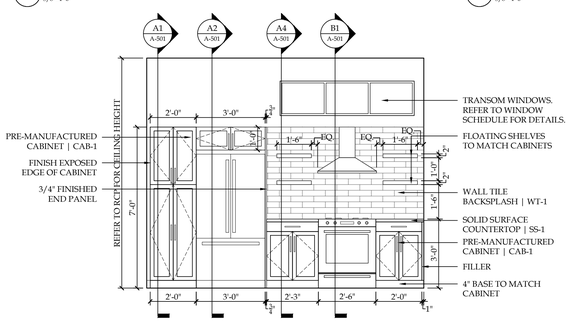
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



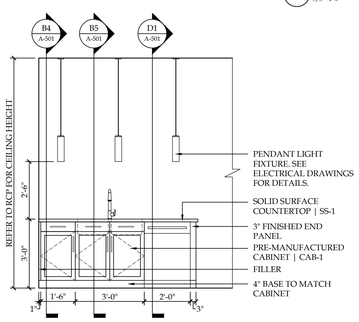
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

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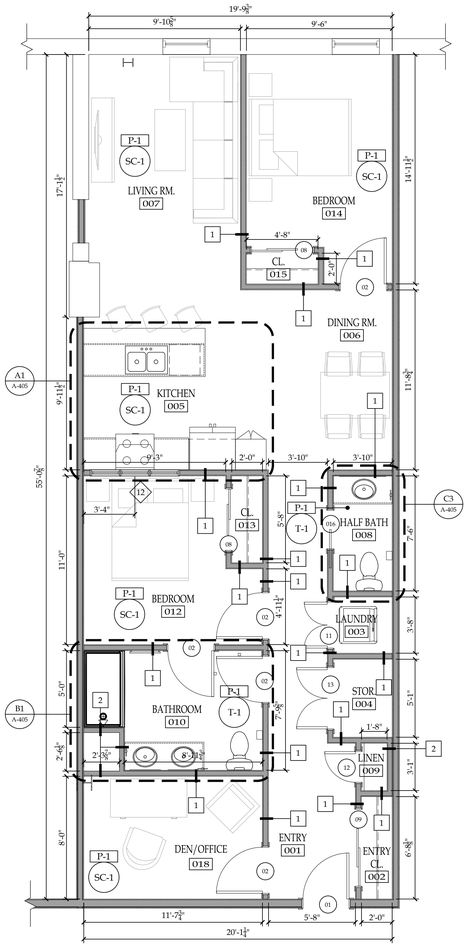
UNIT TYPE "D" (3 BED, 2 BATH) ENLARGED PLANS & ELEVATIONS

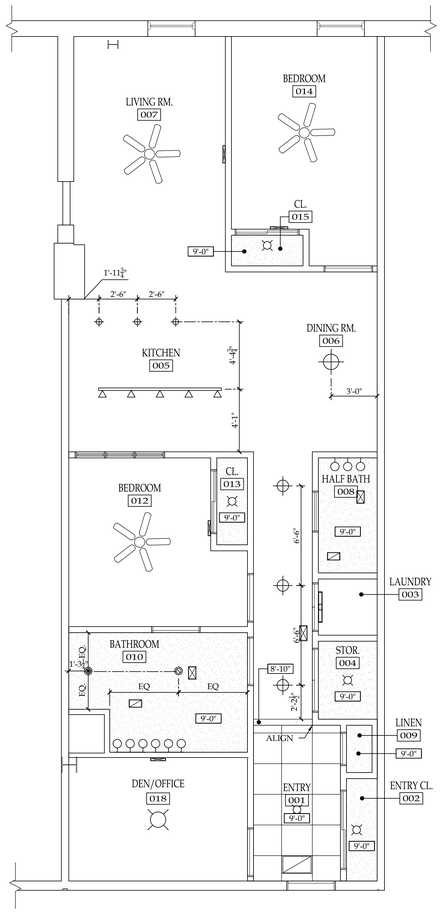
SILVESTRI ARCHITECTS PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

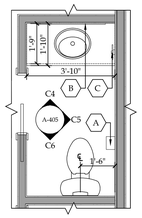
DRAWING #: A-404



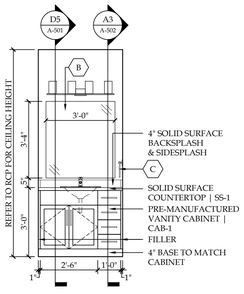
C1 UNIT TYPE "D1" (2 BED, 1 DEN, 1.5 BATH) | FLOOR PLAN (1,140 SF)
1/4"=1'-0"



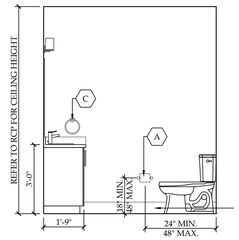
C2 UNIT TYPE "D1" (2 BED, 1 DEN, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"



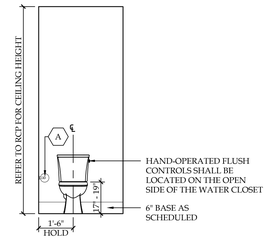
C3 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



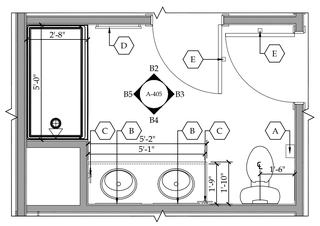
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



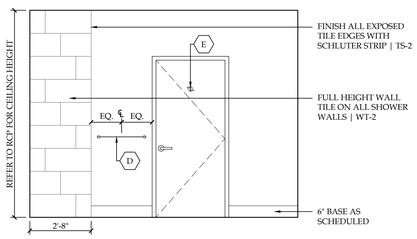
C5 HALF BATH 008 | ELEVATION
3/8"=1'-0"



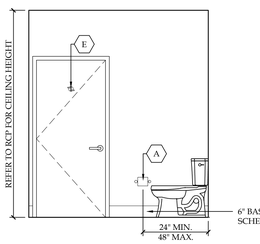
C6 HALF BATH 008 | ELEVATION
3/8"=1'-0"



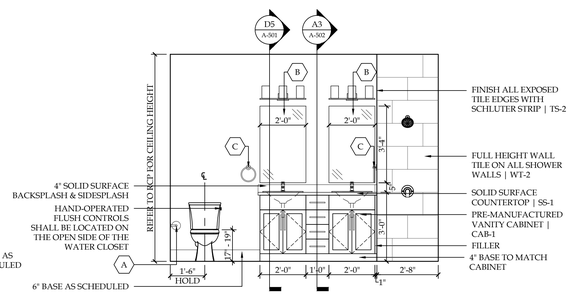
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



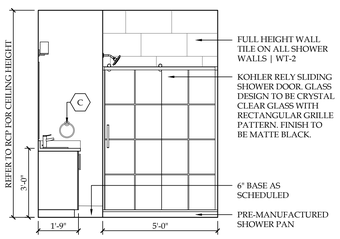
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



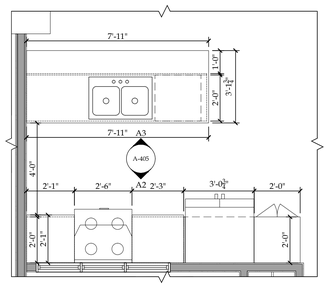
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



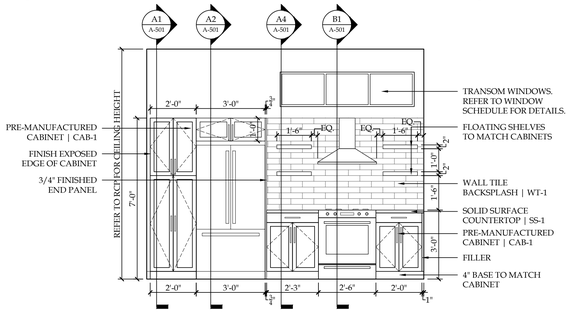
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



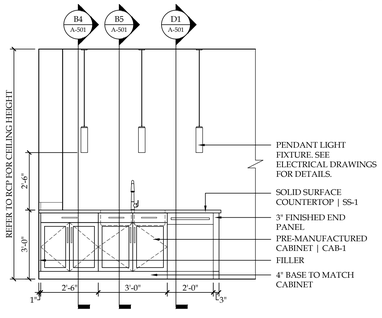
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
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	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
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UNIT ACCESSORY SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.

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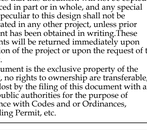

TITLE:

UNIT TYPE "D1"
(2 BED, 1 DEN, 1.5 BATH)
ENLARGED PLANS & ELEVATIONS

SILVESTRI ARCHITECTS PC
1321 MILLERSPORT HWY
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SA JOB #: 24037.01
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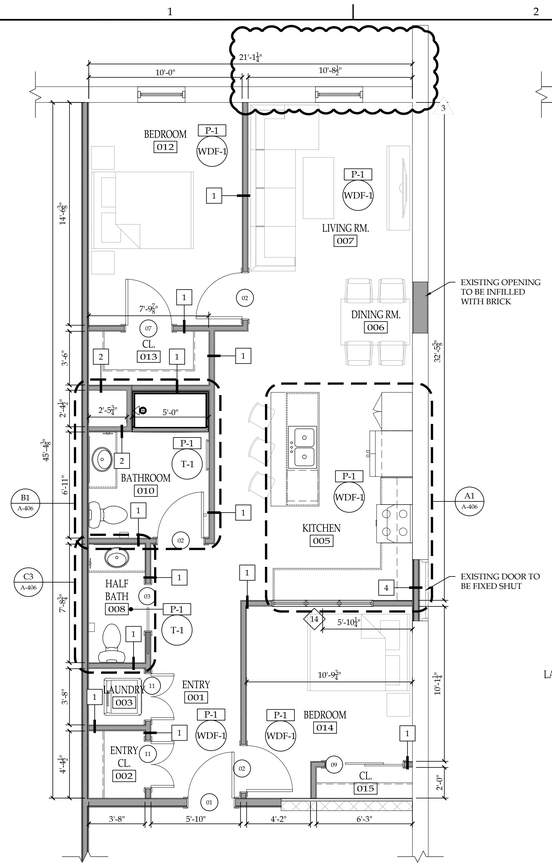
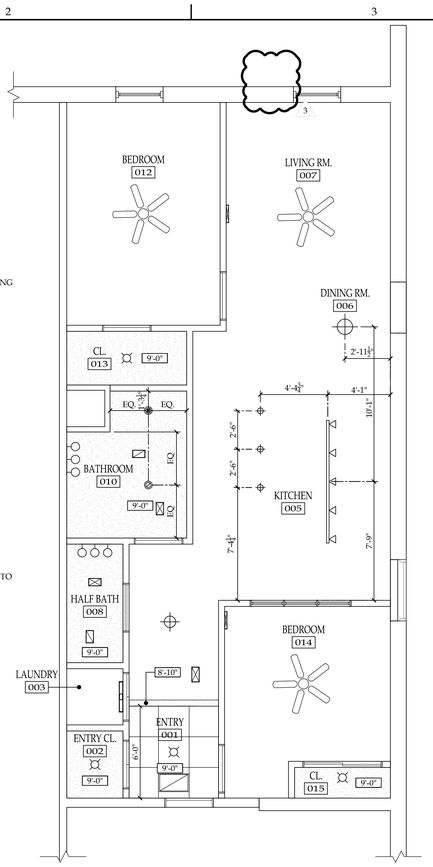
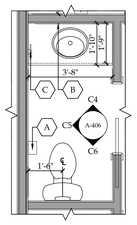


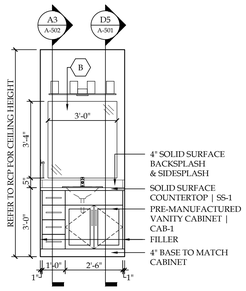
C1 UNIT TYPE "E" (2 BED, 1.5 BATH) | FLOOR PLAN (976 SF)
1/4"=1'-0"



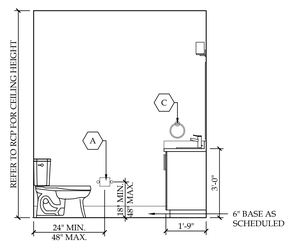
C2 UNIT TYPE "E" (2 BED, 1.5 BATH) | REFLECTED CEILING PLANS
1/4"=1'-0"



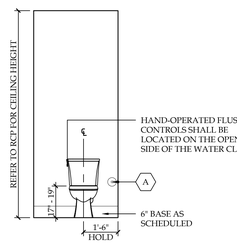
C3 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



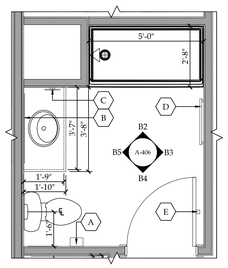
C4 HALF BATH 008 | ELEVATION
1/8"=1'-0"



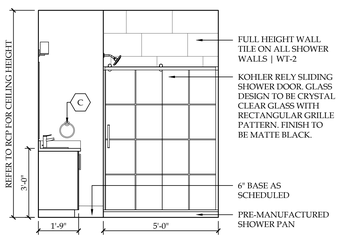
C5 HALF BATH 008 | ELEVATION
3/8"=1'-0"



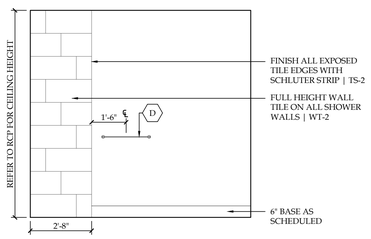
C6 HALF BATH 008 | ELEVATION
3/8"=1'-0"



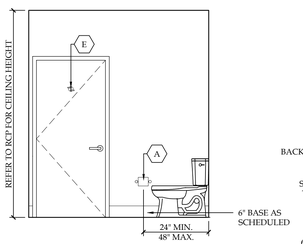
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



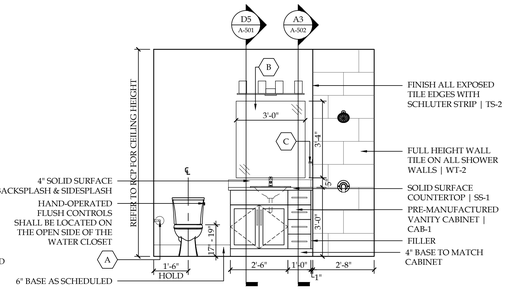
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



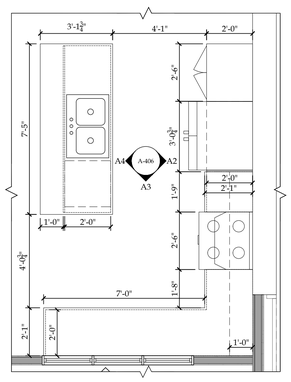
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



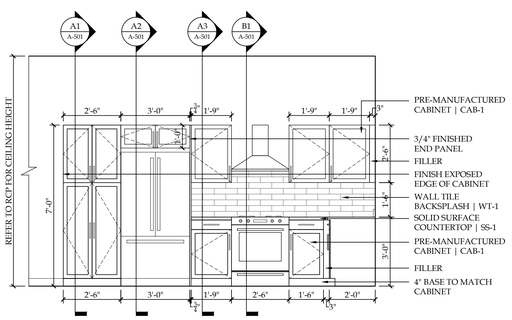
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



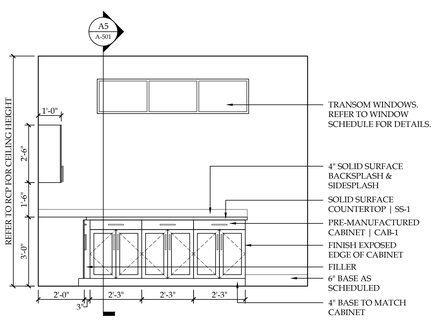
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



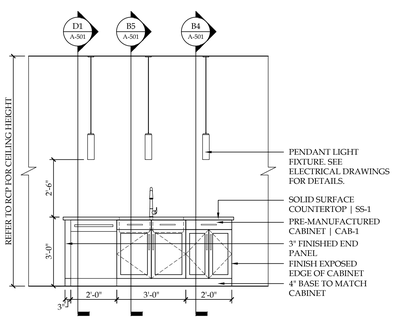
A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A4 KITCHEN 005 | ELEVATION
3/8"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

UNIT TYPE "E" (2 BED, 1.5 BATH) ENLARGED PLANS & ELEVATIONS

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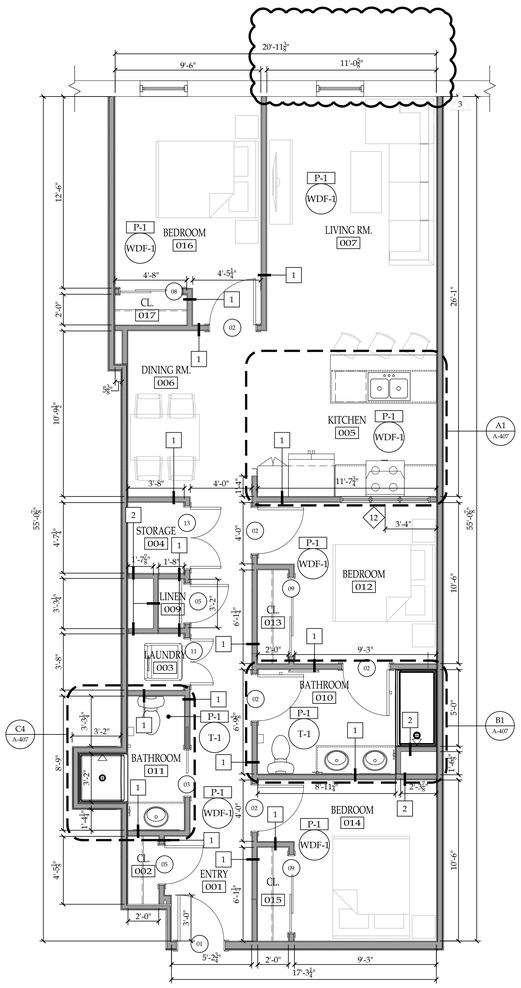
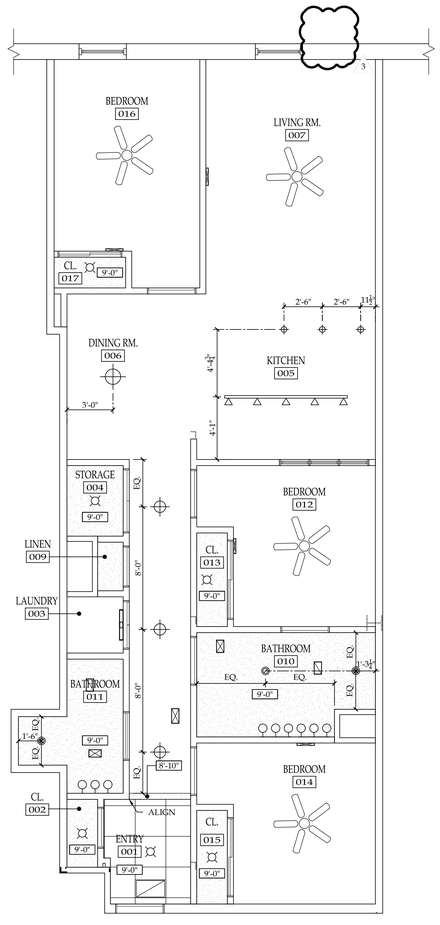
ARCHITECTS • PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX. 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

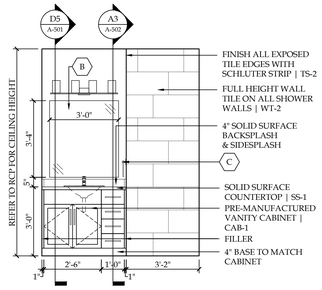
DRAWING #: A-406



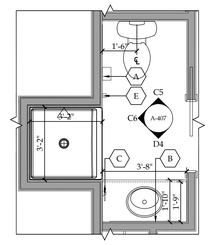
C1 UNIT TYPE "F" (3 BED, 2 BATH) | FLOOR PLAN (1,142 SF)
1/4"=1'-0"



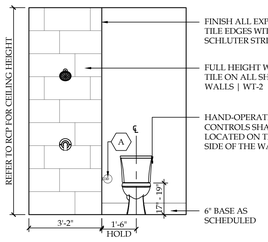
C2 UNIT TYPE "F" (3 BED, 2 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"



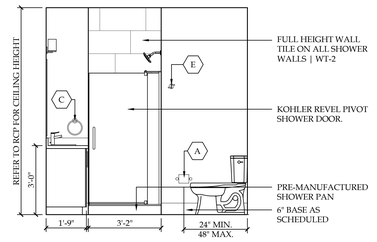
D4 BATHROOM 011 | ELEVATION
3/8"=1'-0"



C4 BATHROOM 011 | ENLARGED PLAN
3/8"=1'-0"



C5 BATHROOM 011 | ELEVATION
3/8"=1'-0"

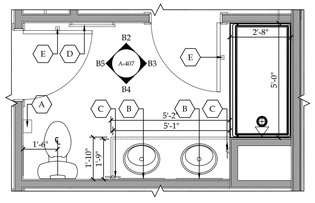


C6 BATHROOM 011 | ELEVATION
3/8"=1'-0"

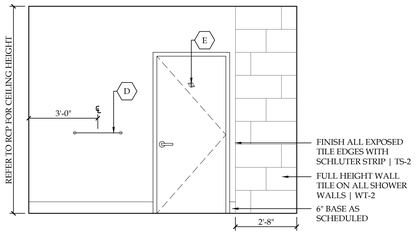
REFLECTED CEILING LEGEND	
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

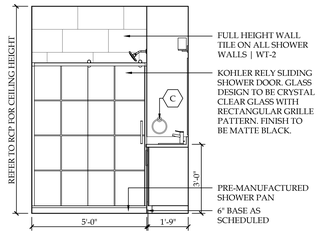
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT REQUIREMENTS	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



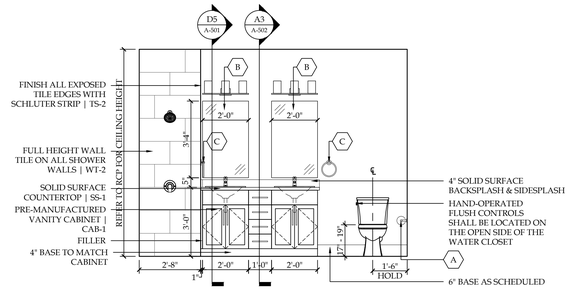
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



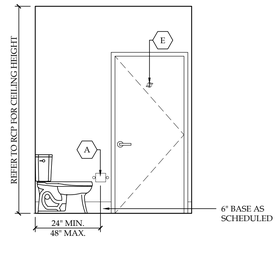
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



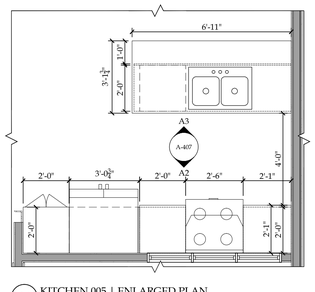
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



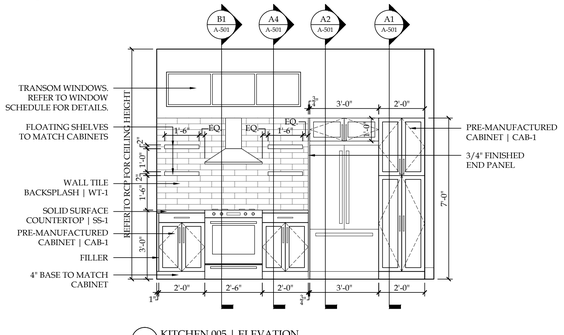
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



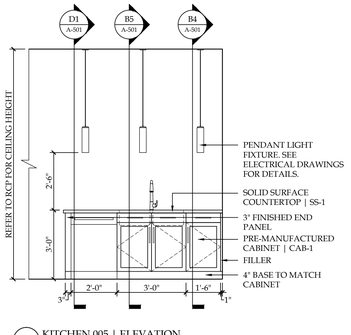
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

UNIT TYPE "F"
(3 BED, 2 BATH)
ENLARGED PLANS
& ELEVATIONS

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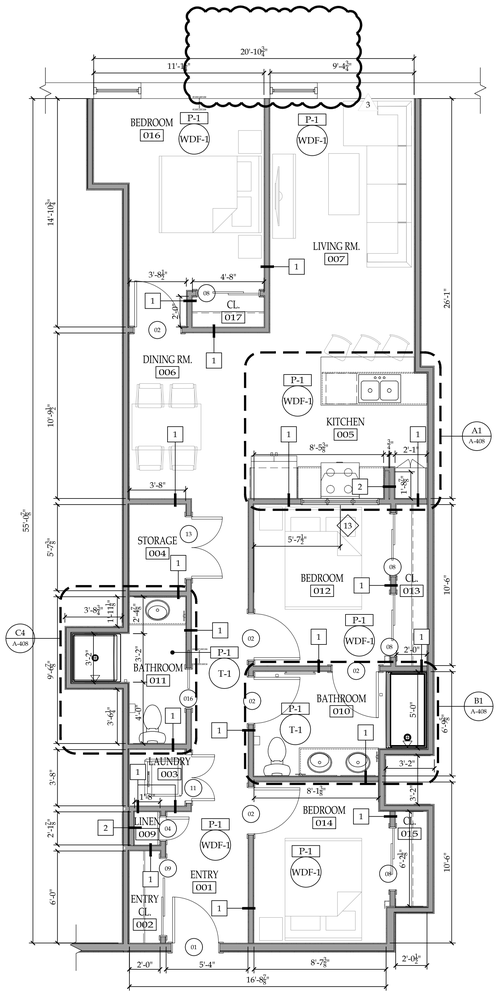
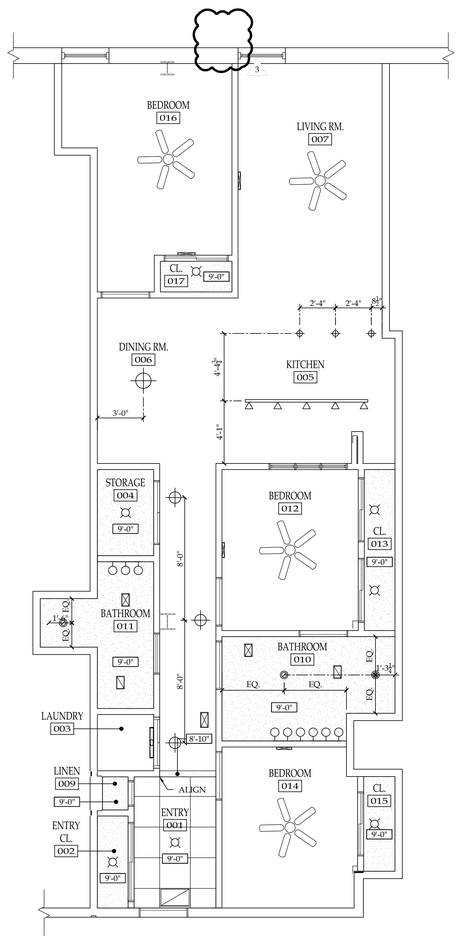
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-407



C1 UNIT TYPE "G" (3 BED, 2 BATH) | FLOOR PLAN (1,157 SF)
1/4"=1'-0"



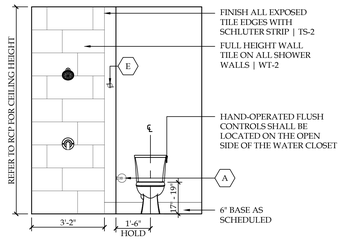
C2 UNIT TYPE "G" (3 BED, 2 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

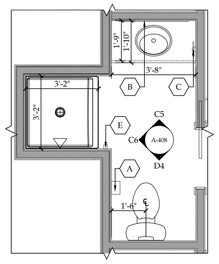
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

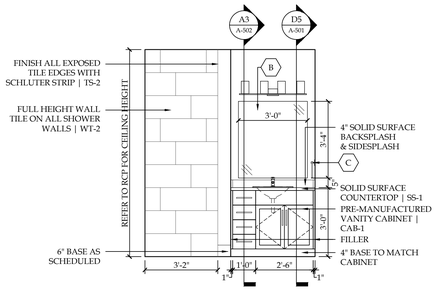
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



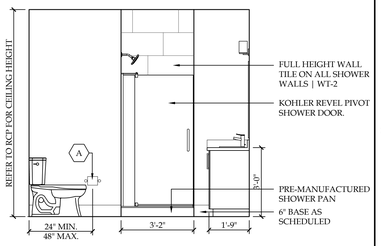
D4 BATHROOM 011 | ELEVATION
3/8"=1'-0"



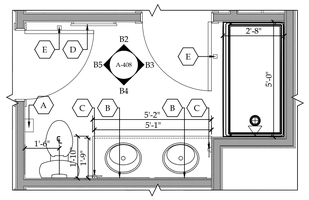
C4 BATHROOM 011 | ENLARGED PLAN
3/8"=1'-0"



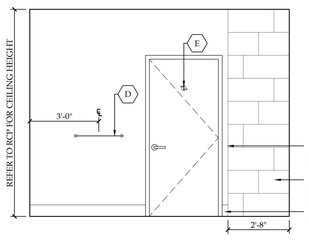
C5 BATHROOM 011 | ELEVATION
3/8"=1'-0"



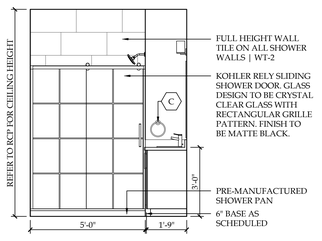
C6 BATHROOM 011 | ELEVATION
3/8"=1'-0"



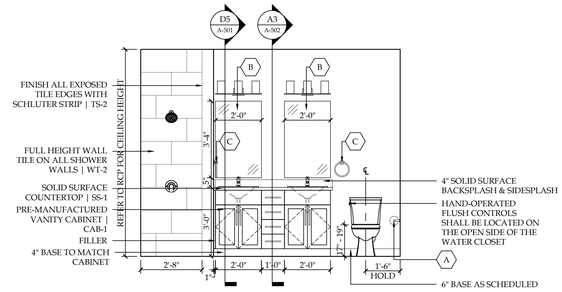
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



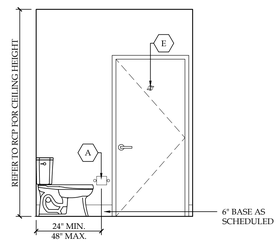
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



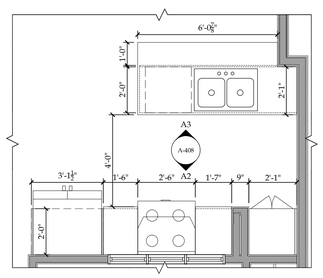
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



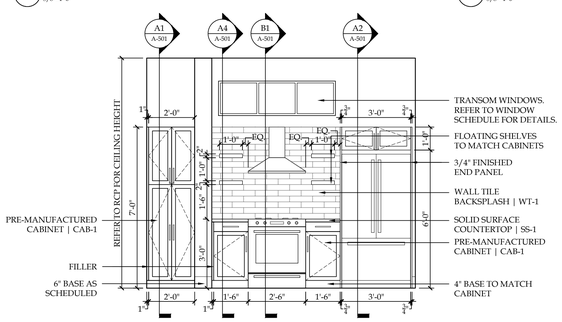
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



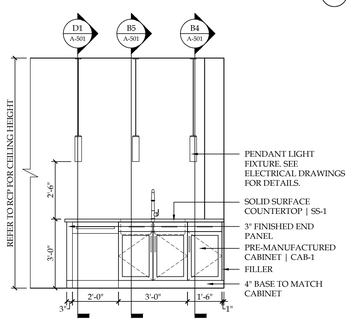
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

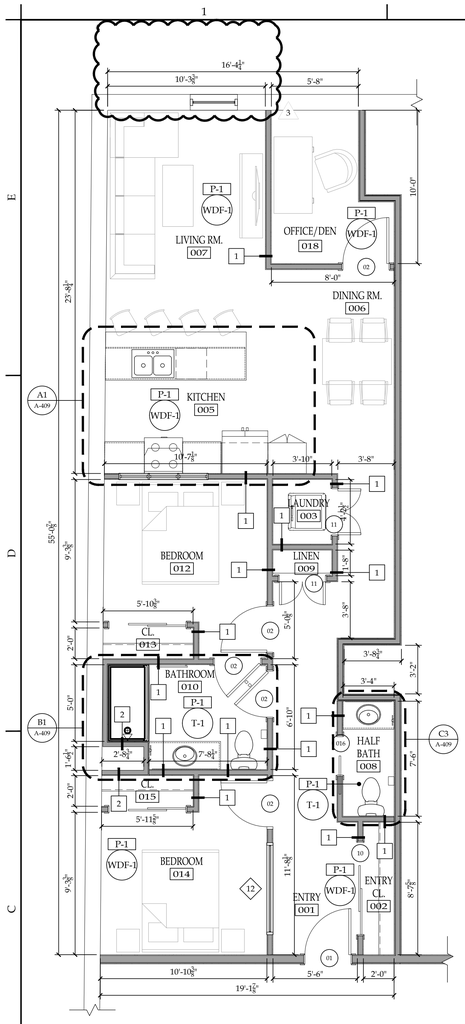
TITLE:

UNIT TYPE "G"
(3 BED, 2 BATH)
ENLARGED PLANS
& ELEVATIONS

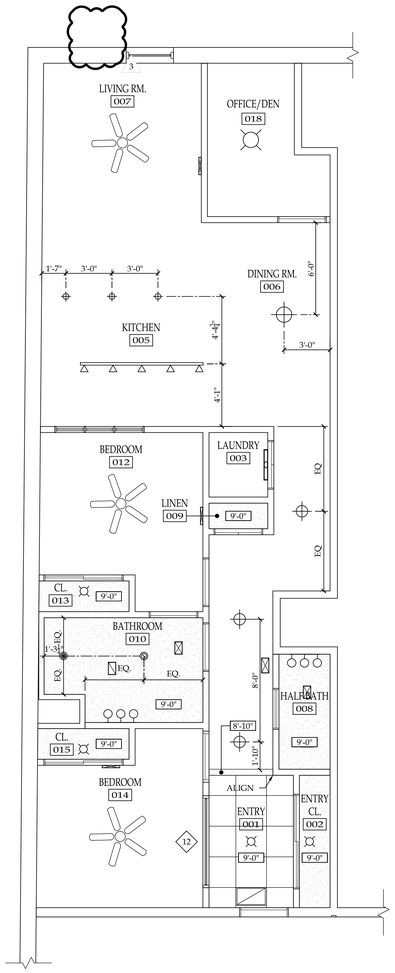
SILVESTRI
ARCHITECTS PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

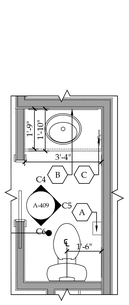
DRAWING #: A-408



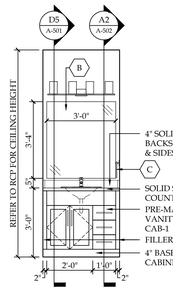
C1 UNIT TYPE "H" (2 BED, 1 DEN, 1.5 BATH) | FLOOR PLAN (1,036 SF)
1/4"=1'-0"



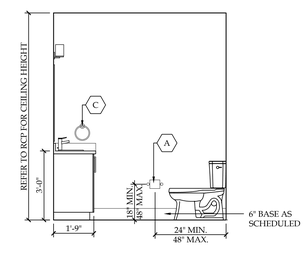
C2 UNIT TYPE "H" (2 BED, 1 DEN, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"



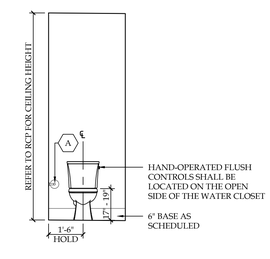
C3 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



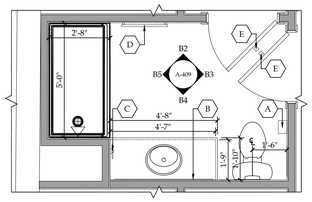
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



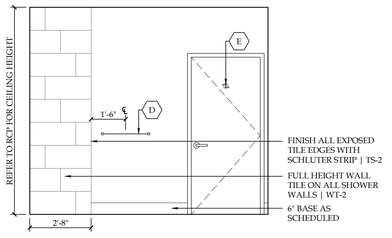
C5 HALF BATH 008 | ELEVATION
3/8"=1'-0"



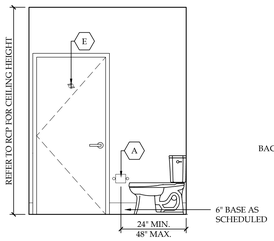
C6 HALF BATH 008 | ELEVATION
3/8"=1'-0"



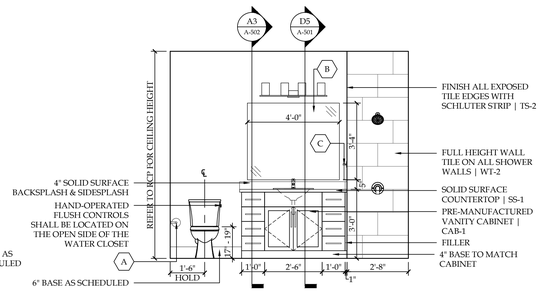
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



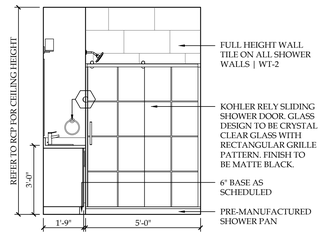
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



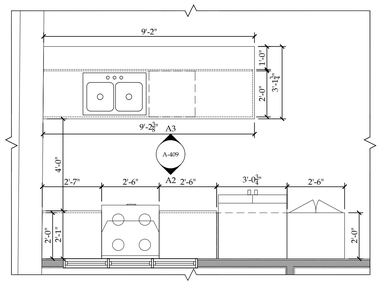
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



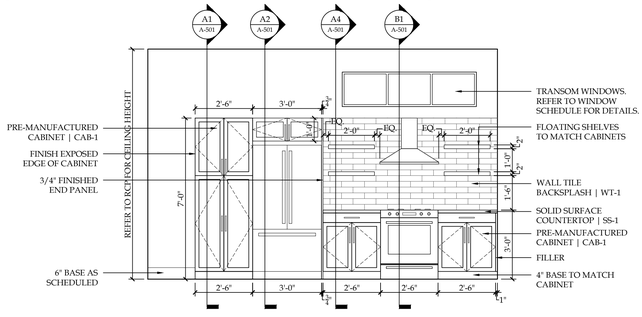
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



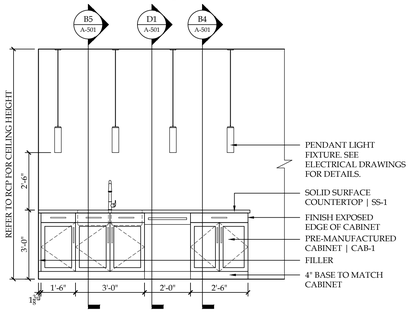
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:
REGISTERED ARCHITECT PETER J. SILVESTRI 015535 STATE OF NEW YORK

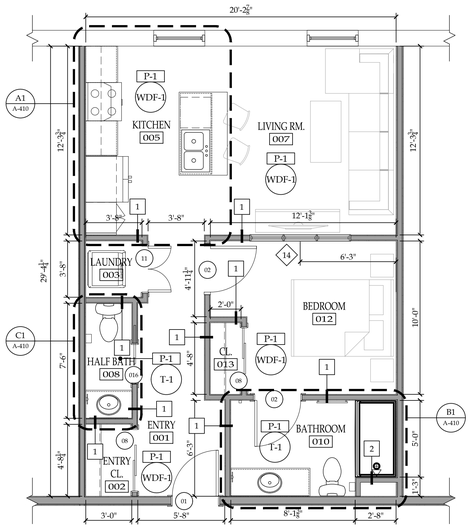
TITLE:

UNIT TYPE "H"
(2 BED, 1 DEN, 1.5 BATH)
ENLARGED PLANS & ELEVATIONS

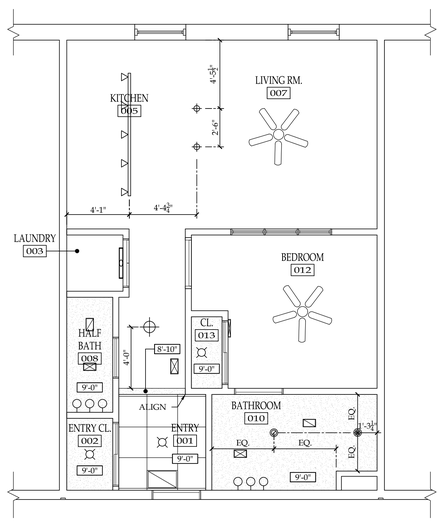
SILVESTRI
ARCHITECTS • PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-409



D1 UNIT TYPE "I" (1 BED, 1.5 BATH) | FLOOR PLAN (614 SF)
1/4"=1'-0"



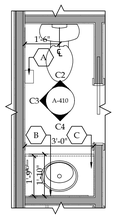
D2 UNIT TYPE "I" (1 BED, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

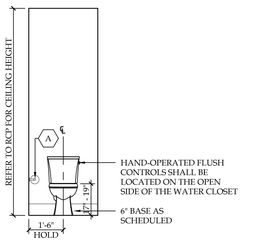
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

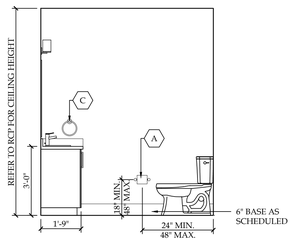
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



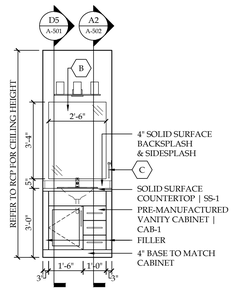
C1 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



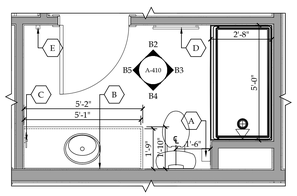
C2 HALF BATH 008 | ELEVATION
3/8"=1'-0"



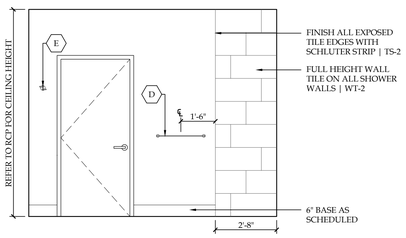
C3 HALF BATH 008 | ELEVATION
3/8"=1'-0"



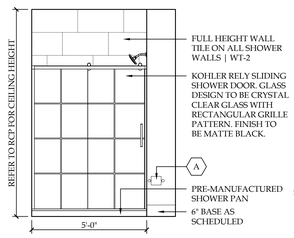
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



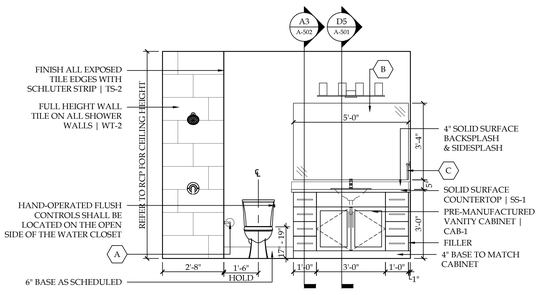
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



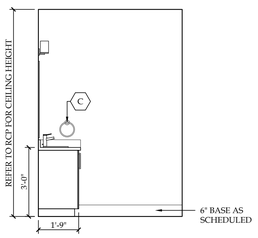
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



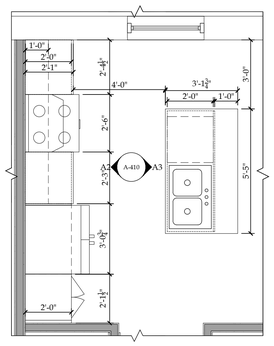
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



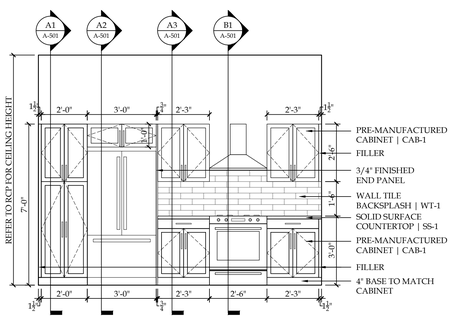
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



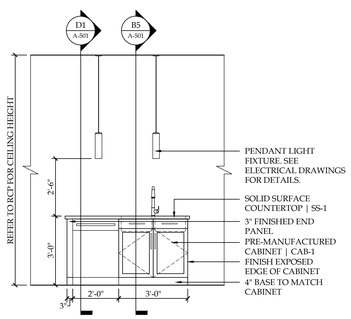
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

NOTICE
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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

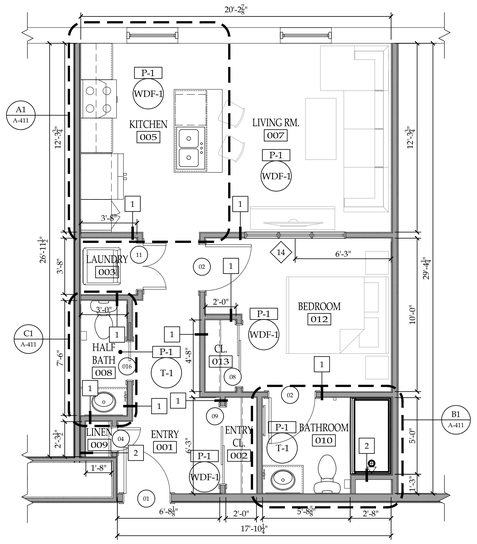
TITLE:

UNIT TYPE "I"
(1 BED, 1.5 BATH)
ENLARGED PLANS
& ELEVATIONS

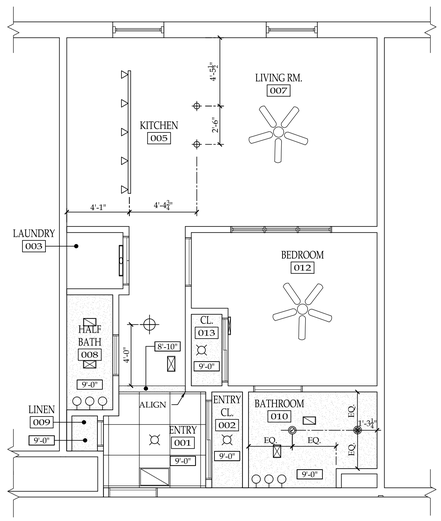
SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-410



D1 UNIT TYPE "I1" (1 BED, 1.5 BATH) | FLOOR PLAN (608 SF)
1/4"=1'-0"



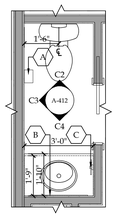
D2 UNIT TYPE "I1" (1 BED, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

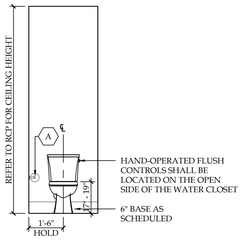
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

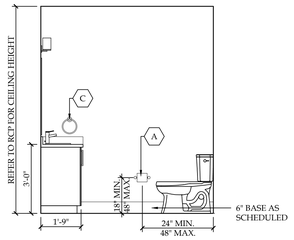
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



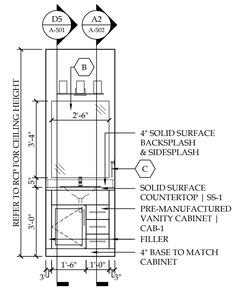
C1 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



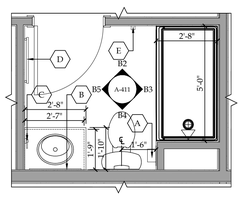
C2 HALF BATH 008 | ELEVATION
3/8"=1'-0"



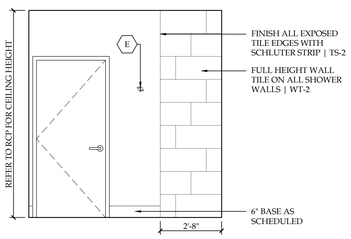
C3 HALF BATH 008 | ELEVATION
3/8"=1'-0"



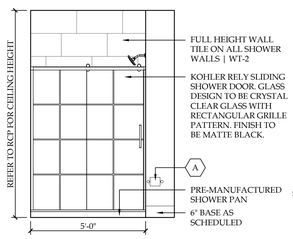
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



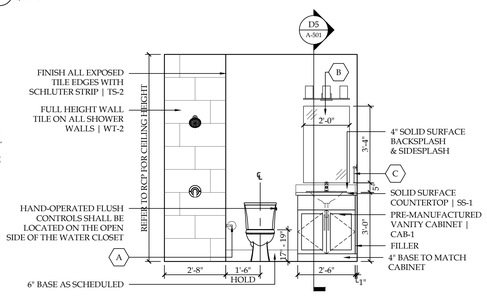
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



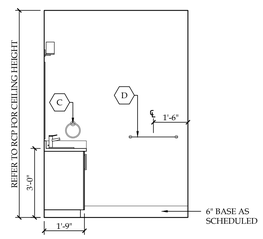
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



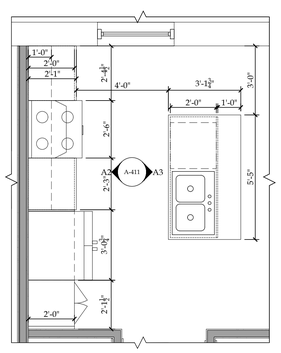
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



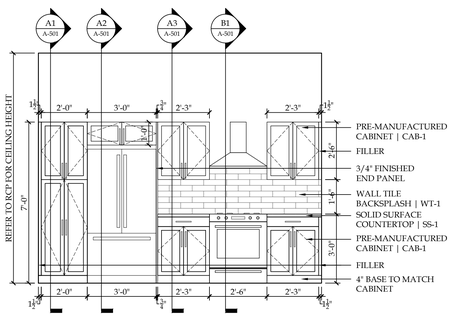
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



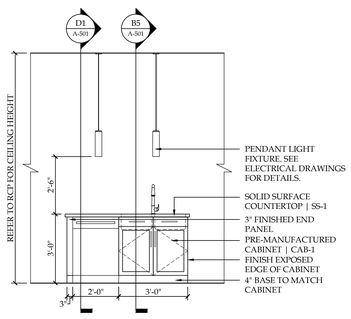
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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INTERIORS A. Nagle DRAFTER

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TITLE:

UNIT TYPE "I1" (1 BED, 1.5 BATH) ENLARGED PLANS & ELEVATIONS

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
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SA JOB #: 24037.01
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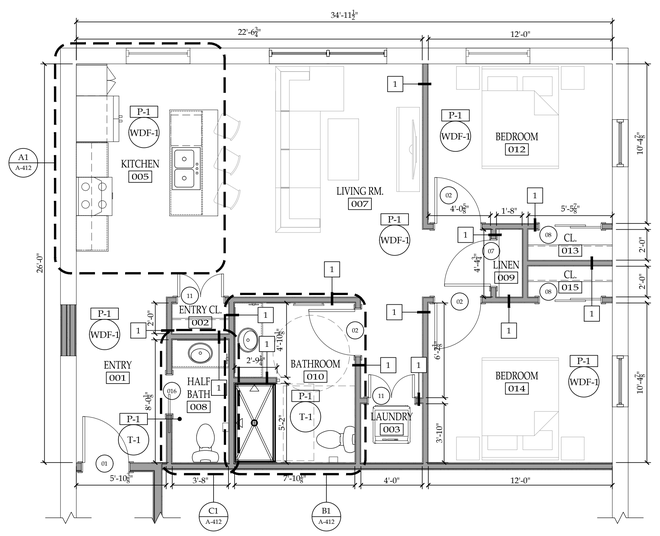
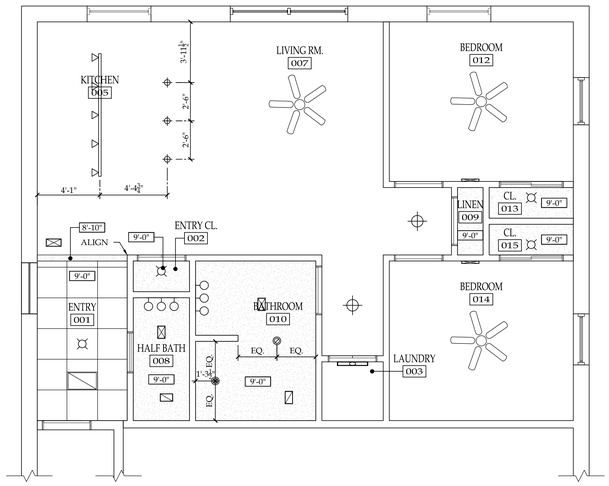


D1 UNIT TYPE "J" (2 BED, 1.5 BATH) | FLOOR PLAN (918 SF)
1/4"=1'-0"



D3 UNIT TYPE "J" (2 BED, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
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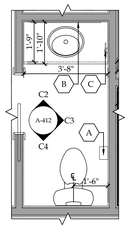
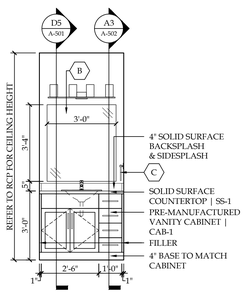
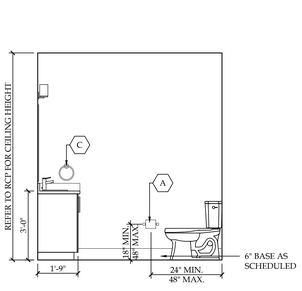
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



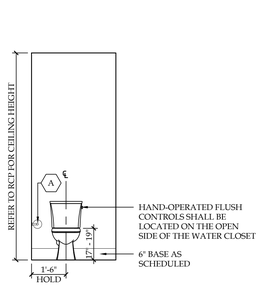
C1 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



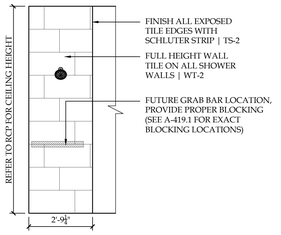
C2 HALF BATH 008 | ELEVATION
3/8"=1'-0"



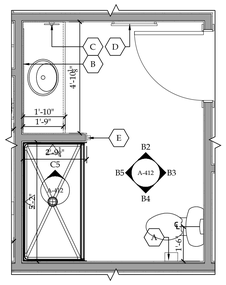
C3 HALF BATH 008 | ELEVATION
3/8"=1'-0"



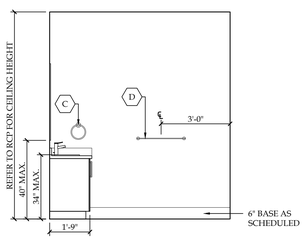
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



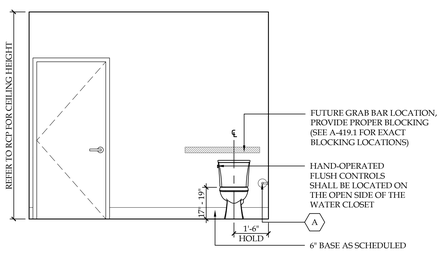
C5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



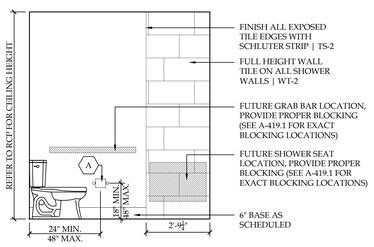
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



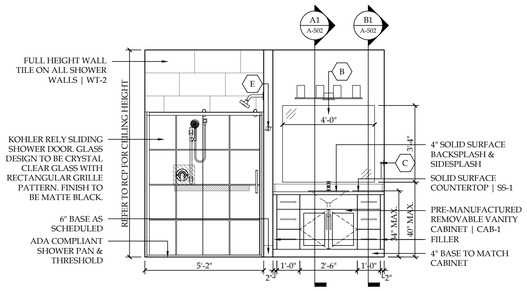
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



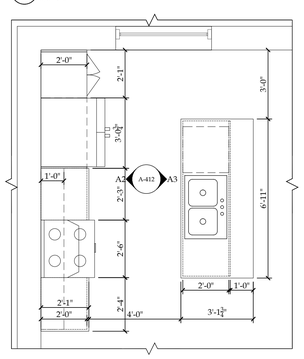
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



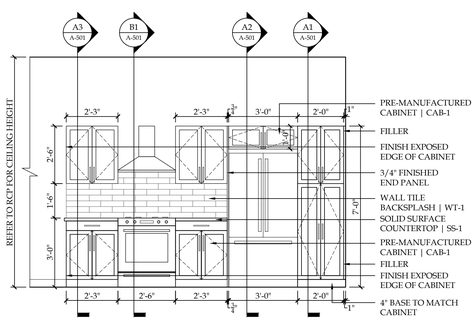
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



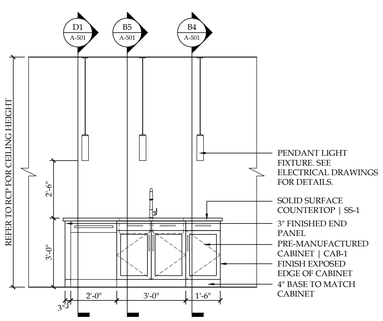
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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UNIT TYPE "J"
(2 BED, 1.5 BATH)
ENLARGED PLANS
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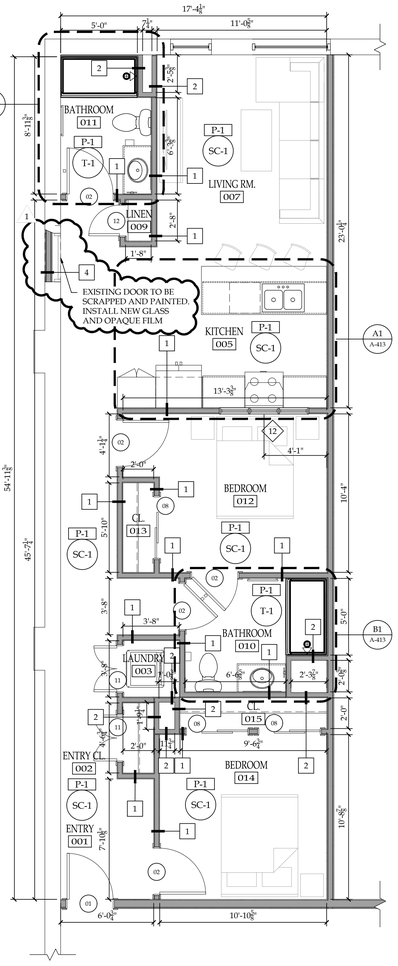
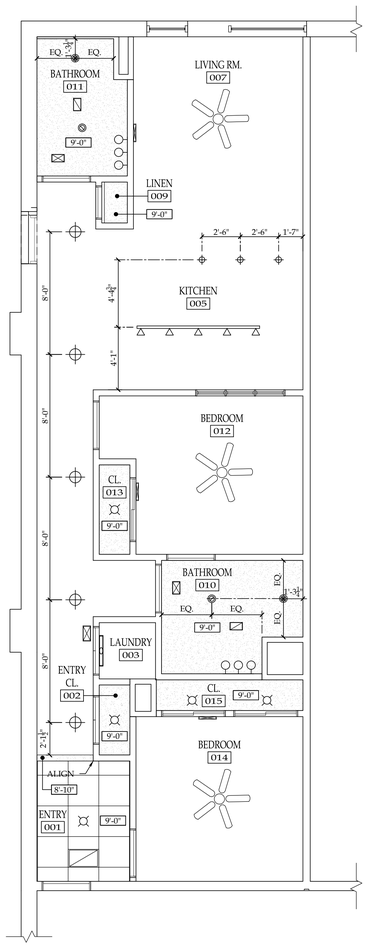
SA JOB #: 24037.01
DATE: 5-23-2025

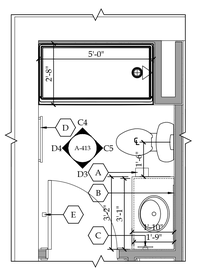
DRAWING #: A-412



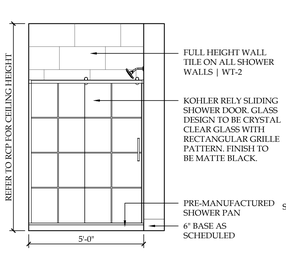
C1 UNIT TYPE "K" (2 BED, 2 BATH) | FLOOR PLAN (1,002 SF)
1/4"=1'-0"



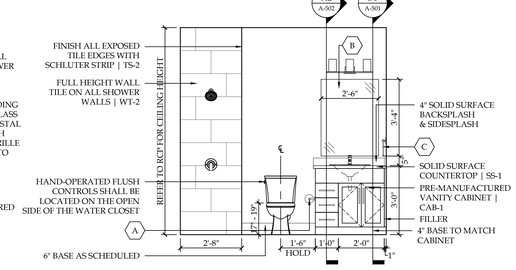
C2 UNIT TYPE "K" (2 BED, 2 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"



C3 BATHROOM 011 | ENLARGED PLAN
3/8"=1'-0"



C4 BATHROOM 011 | ELEVATION
3/8"=1'-0"

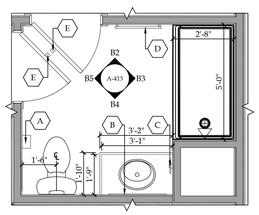


C5 BATHROOM 011 | ELEVATION
3/8"=1'-0"

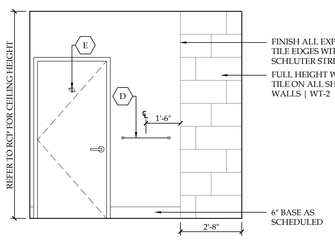
REFLECTED CEILING LEGEND	
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

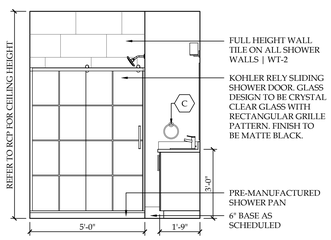
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



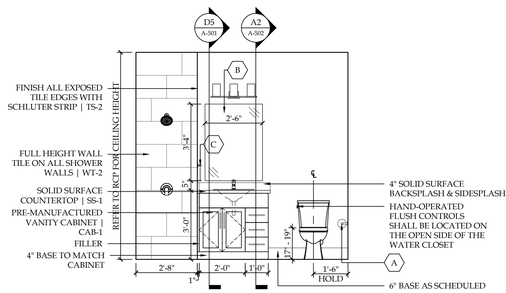
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



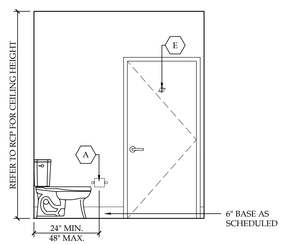
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



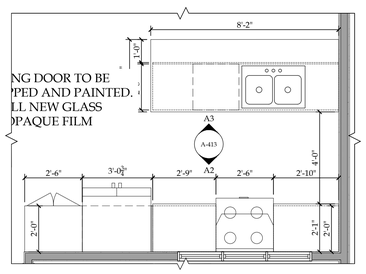
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



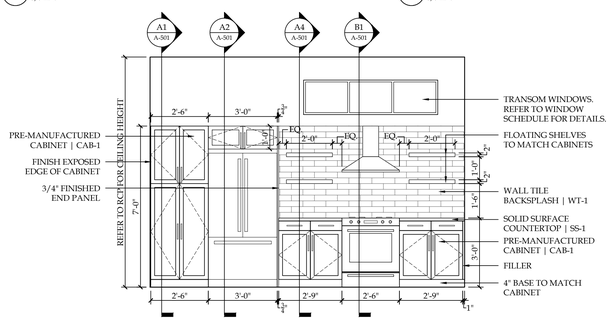
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



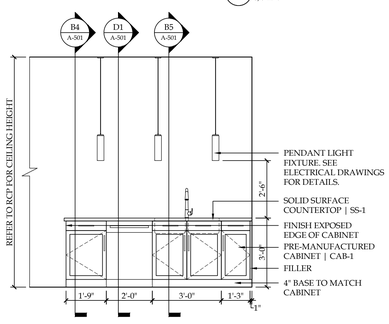
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

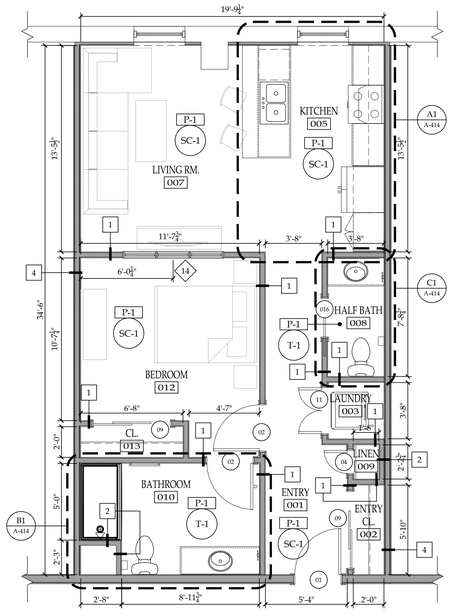
UNIT TYPE "K" (2 BED, 2 BATH) ENLARGED PLANS & ELEVATIONS

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

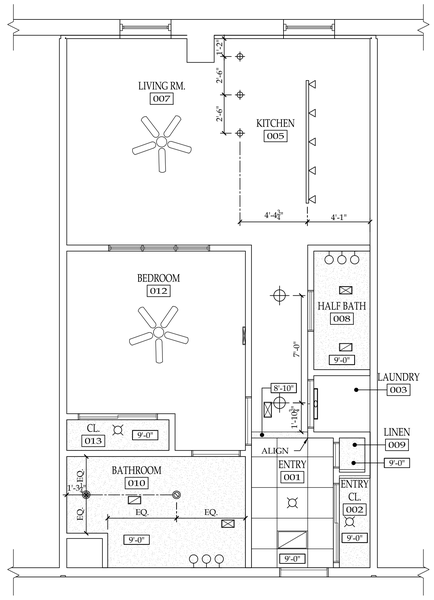
SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: A-413



D1 UNIT TYPE "L" (1 BED, 1.5 BATH) | FLOOR PLAN (705 SF)
1/4"=1'-0"



D2 UNIT TYPE "L" (1 BED, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
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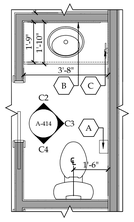
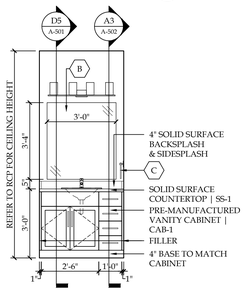
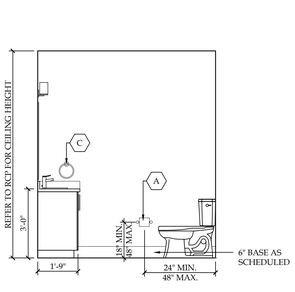


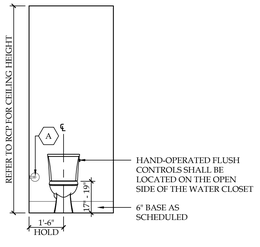
C1 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



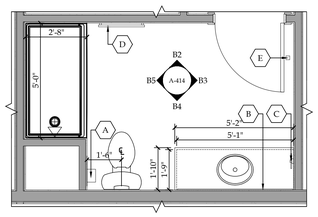
C2 HALF BATH 008 | ELEVATION
3/8"=1'-0"



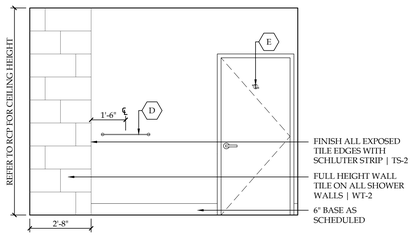
C3 HALF BATH 008 | ELEVATION
3/8"=1'-0"



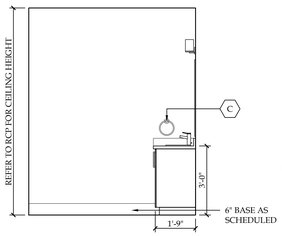
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



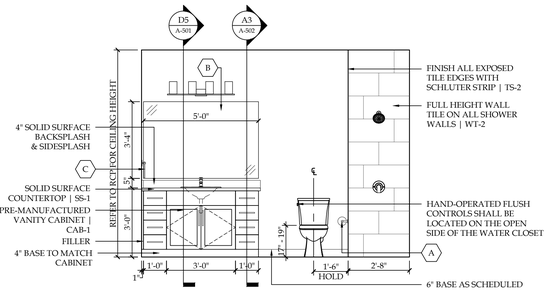
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



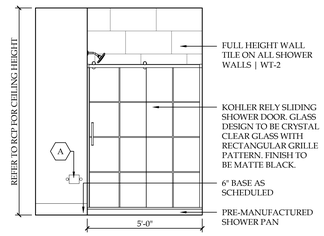
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



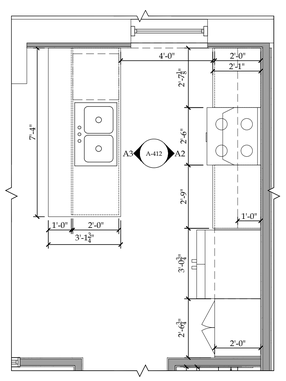
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



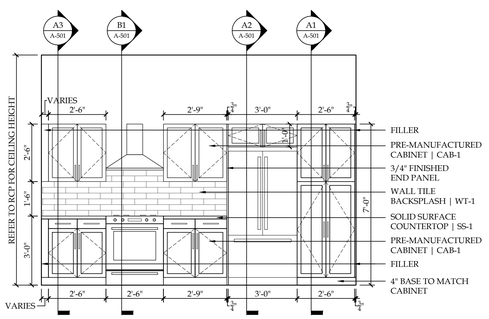
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



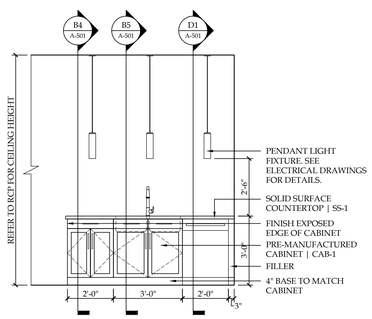
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

UNIT TYPE "L" (1 BED, 1.5 BATH) ENLARGED PLANS & ELEVATIONS

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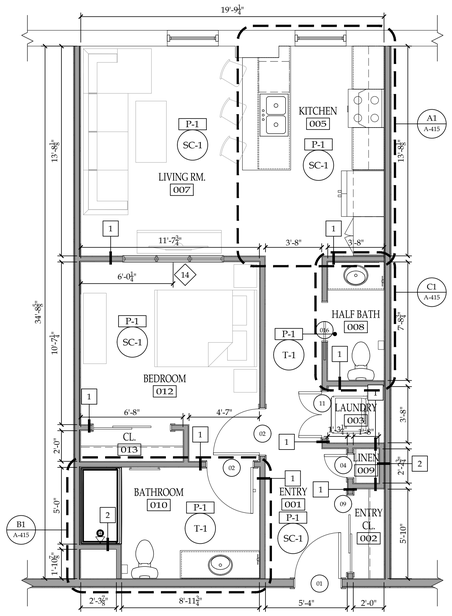
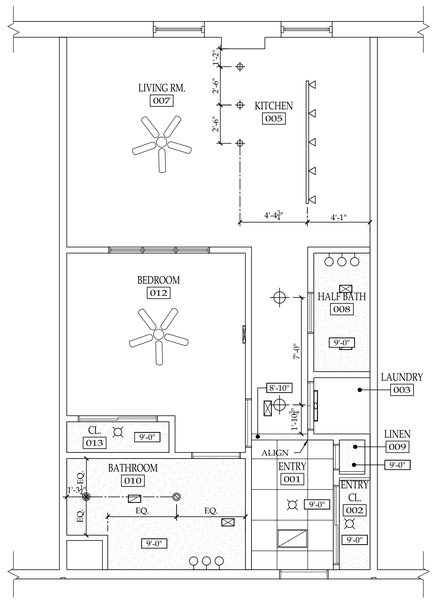
SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: A-414



D1 UNIT TYPE "L" (1 BED, 1.5 BATH) | FLOOR PLAN (709 SF)
1/4"=1'-0"



D2 UNIT TYPE "L" (1 BED, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
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UNIT ACCESSORY SCHEDULE

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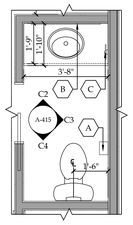
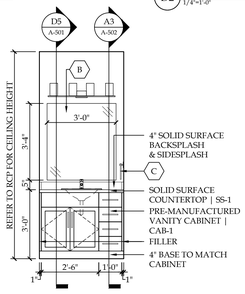
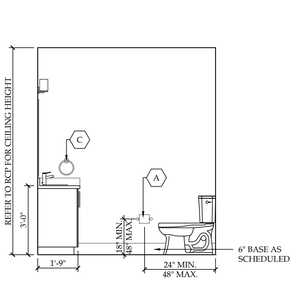
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



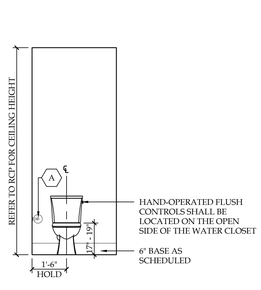
C1 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



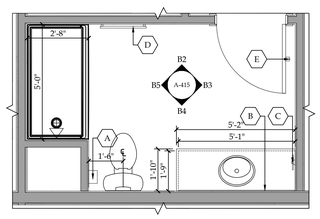
C2 HALF BATH 008 | ELEVATION
3/8"=1'-0"



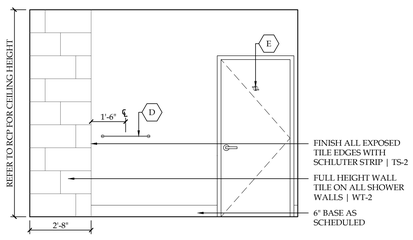
C3 HALF BATH 008 | ELEVATION
3/8"=1'-0"



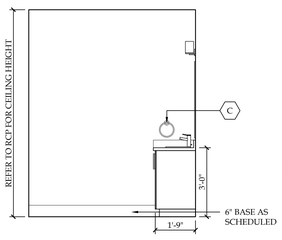
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



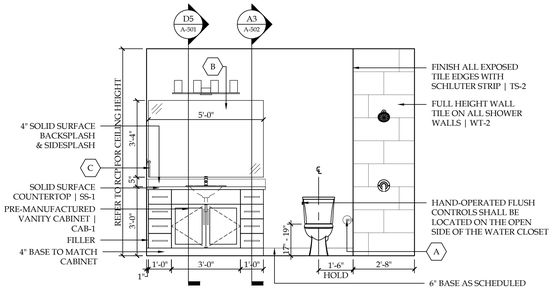
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



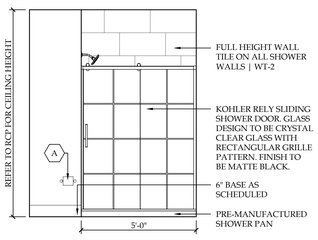
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



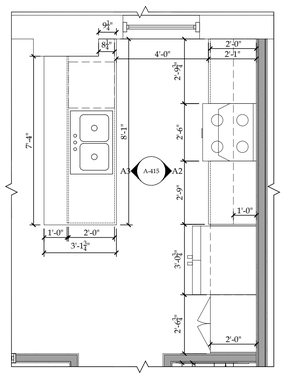
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



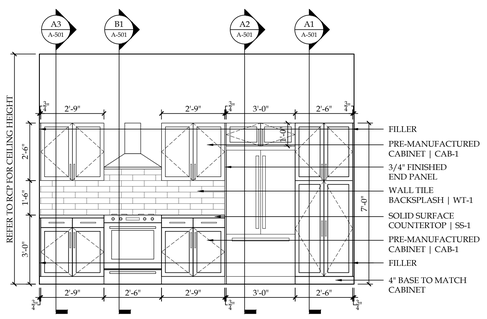
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



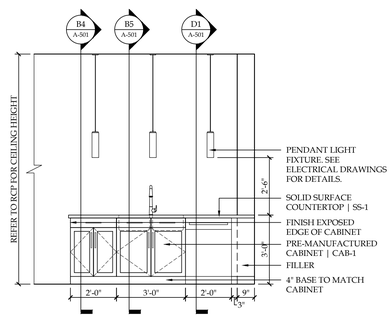
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

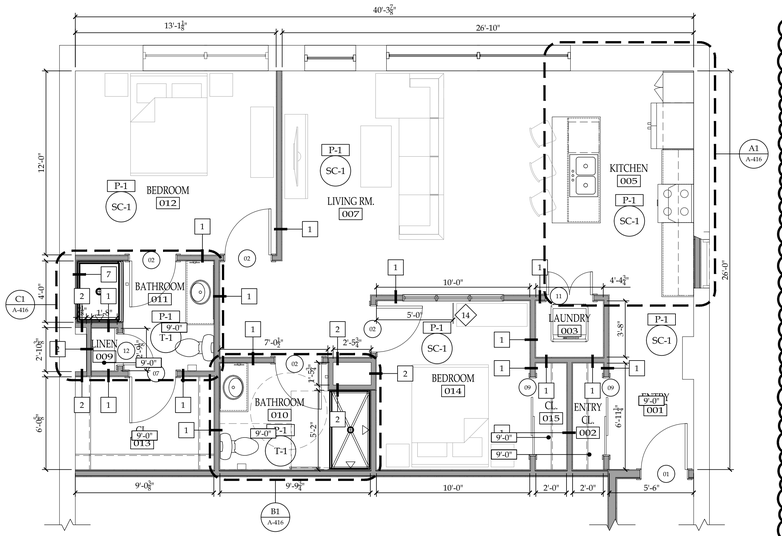
SEAL:

TITLE:

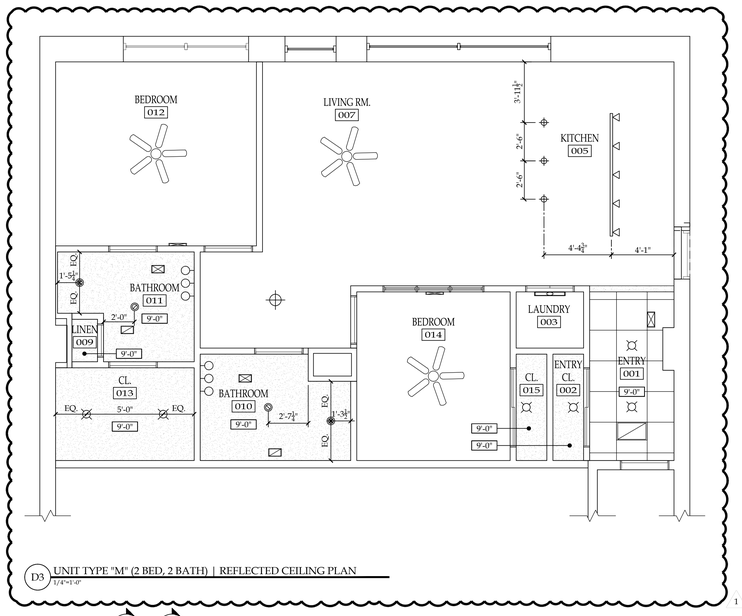
UNIT TYPE "L1" (1 BED, 1.5 BATH) ENLARGED PLANS & ELEVATIONS

SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: A-415



D1 UNIT TYPE "M" (2 BED, 2 BATH) | FLOOR PLAN (1,072 SF)
1/4"=1'-0"



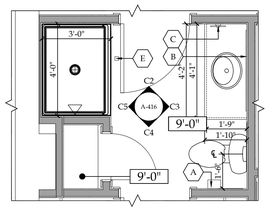
D3 UNIT TYPE "M" (2 BED, 2 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND

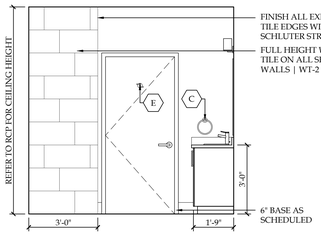
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

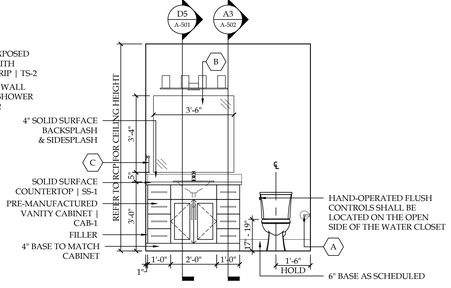
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



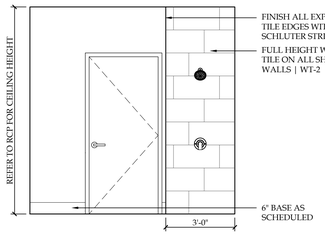
C1 BATHROOM 011 | ENLARGED PLAN
3/8"=1'-0"



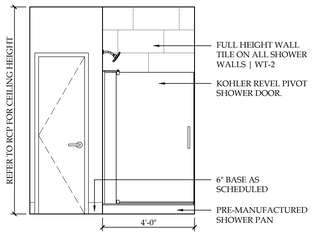
C2 BATHROOM 011 | ELEVATION
3/8"=1'-0"



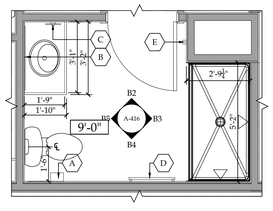
C3 BATHROOM 011 | ELEVATION
3/8"=1'-0"



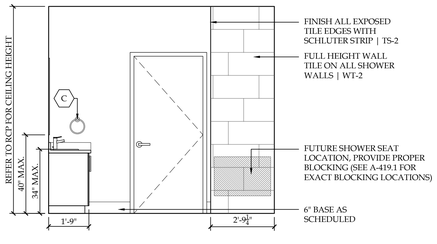
C4 BATHROOM 011 | ELEVATION
3/8"=1'-0"



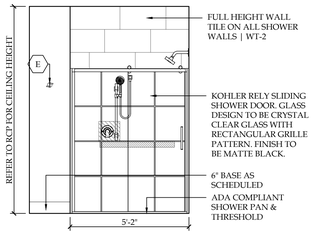
C5 BATHROOM 011 | ELEVATION
3/8"=1'-0"



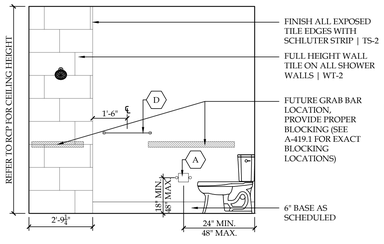
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



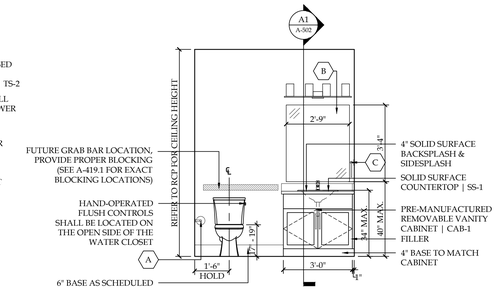
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



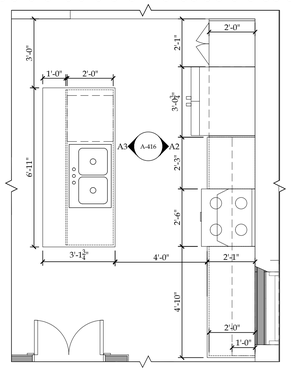
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



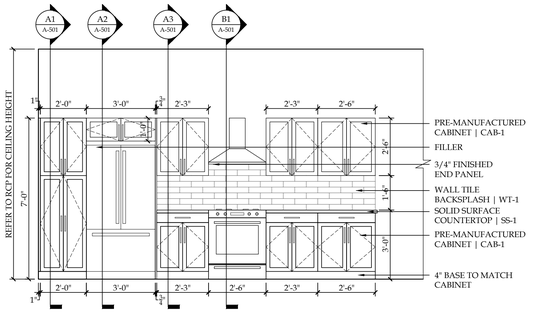
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



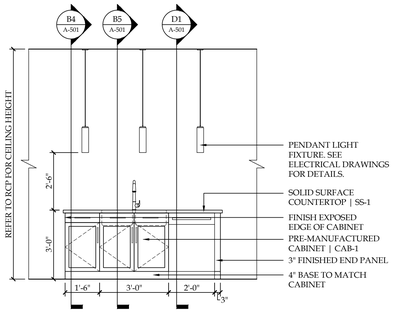
B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

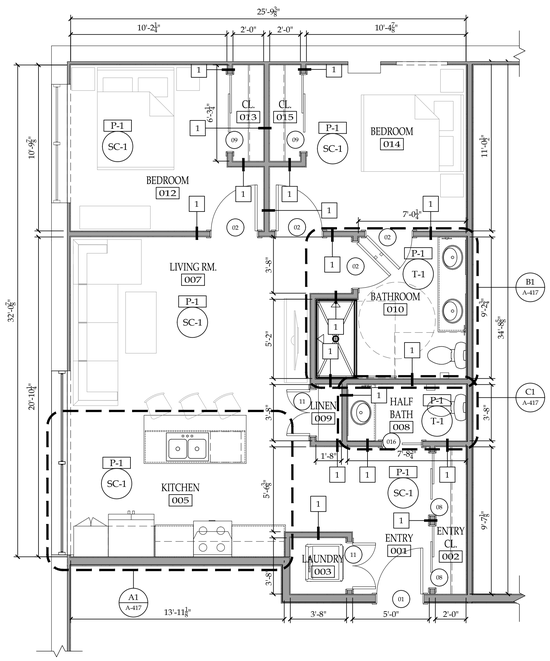
TITLE:

UNIT TYPE "M" (2 BED, 2 BATH) ENLARGED PLANS & ELEVATIONS

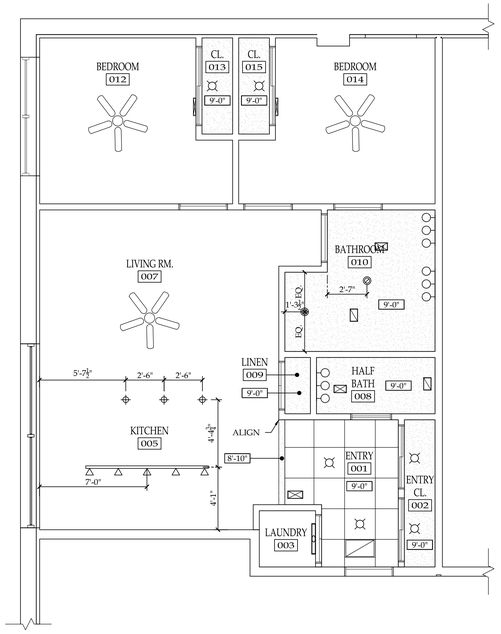
SILVESTRI ARCHITECTS, PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

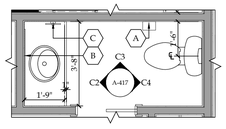
DRAWING #: A-416



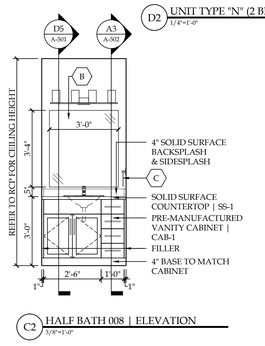
D1 UNIT TYPE "N" (2 BED, 1.5 BATH) | FLOOR PLAN (872 SF)
1/4"=1'-0"



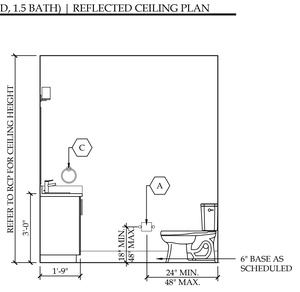
D2 UNIT TYPE "N" (2 BED, 1.5 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"



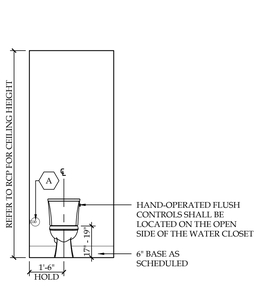
C1 HALF BATH 008 | ENLARGED PLAN
3/8"=1'-0"



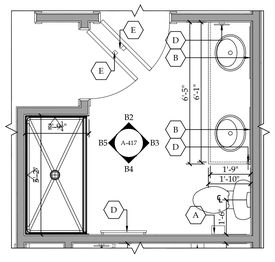
C2 HALF BATH 008 | ELEVATION
3/8"=1'-0"



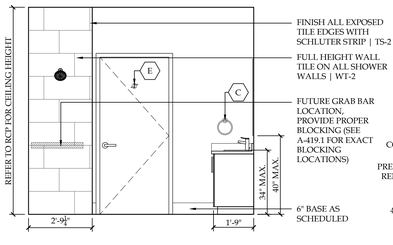
C3 HALF BATH 008 | ELEVATION
3/8"=1'-0"



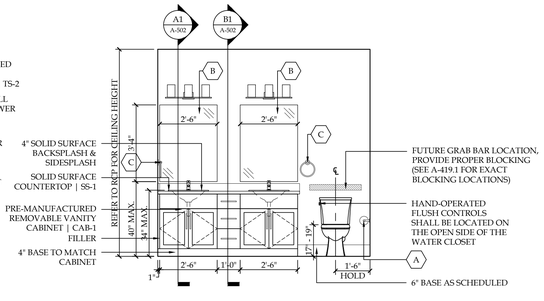
C4 HALF BATH 008 | ELEVATION
3/8"=1'-0"



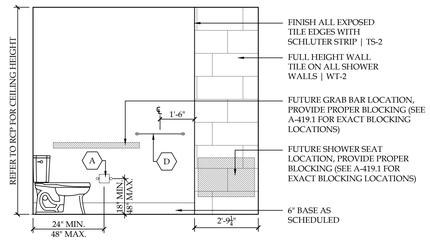
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



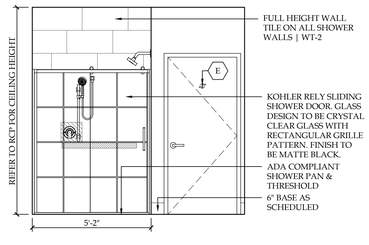
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



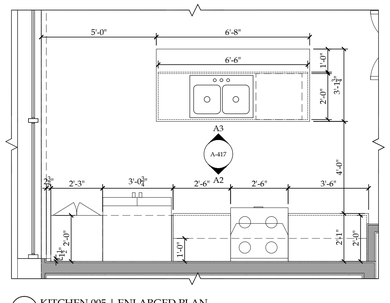
B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



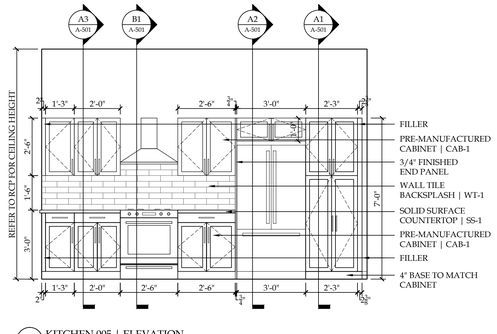
B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



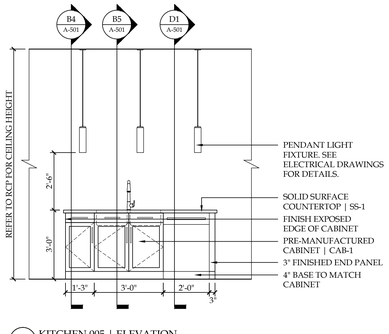
B5 BATHROOM 010 | ELEVATION
1/8"=1'-0"



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

REFLECTED CEILING LEGEND

SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

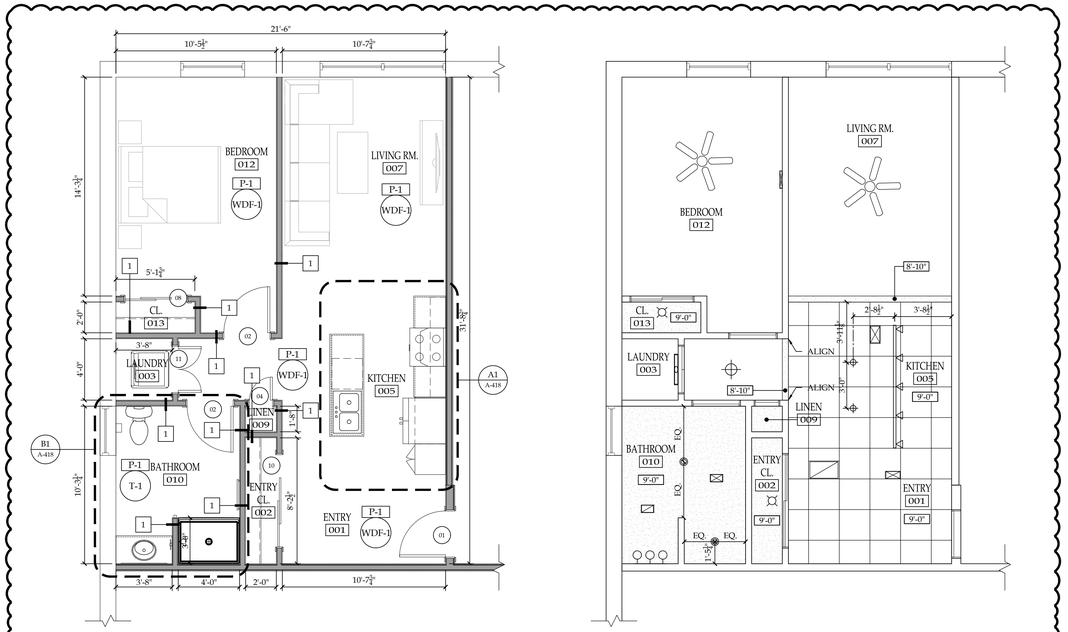
TITLE:

UNIT TYPE "N"
(2 BED, 1.5 BATH)
ENLARGED PLANS
& ELEVATIONS

SILVESTRI
ARCHITECTS • PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-417



D1 UNIT TYPE "O" (1 BED, 1 BATH) | FLOOR PLAN (695 SF)
1/4"=1'-0"

D2 UNIT TYPE "O" (1 BED, 1 BATH) | REFLECTED CEILING PLAN
1/4"=1'-0"

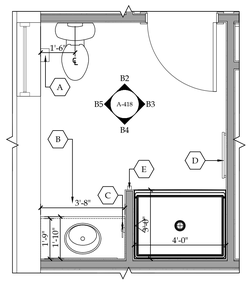
3

REFLECTED CEILING LEGEND

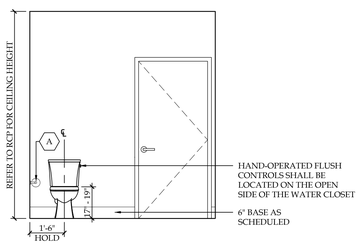
SYMBOL	DESCRIPTION
	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
	DIFFUSERS, SEE MECH.

UNIT ACCESSORY SCHEDULE

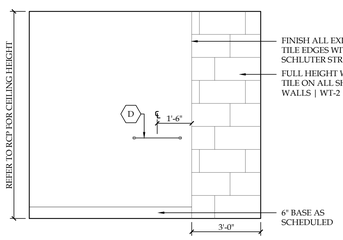
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



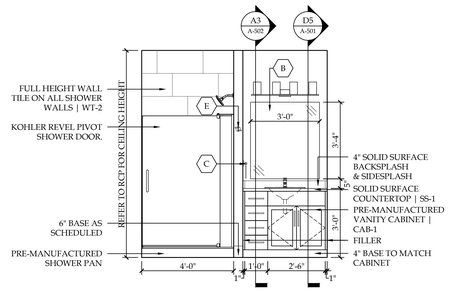
B1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



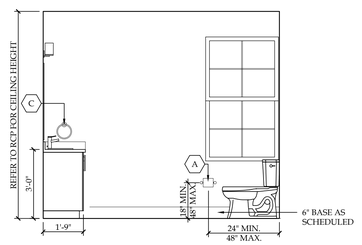
B2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



B3 BATHROOM 010 | ELEVATION
3/8"=1'-0"

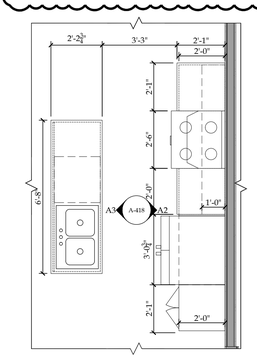


B4 BATHROOM 010 | ELEVATION
3/8"=1'-0"

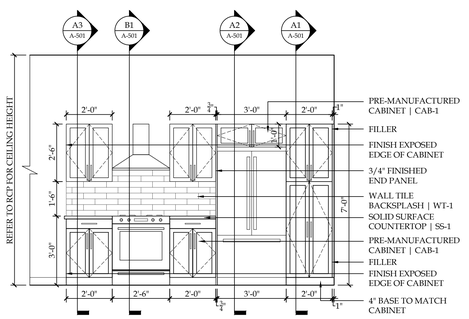


B5 BATHROOM 010 | ELEVATION
3/8"=1'-0"

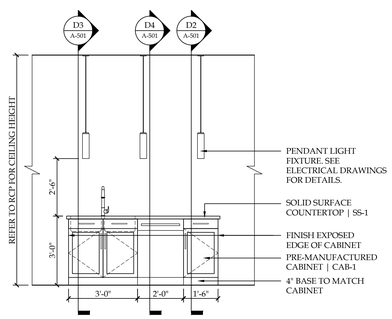
3



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"



A3 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

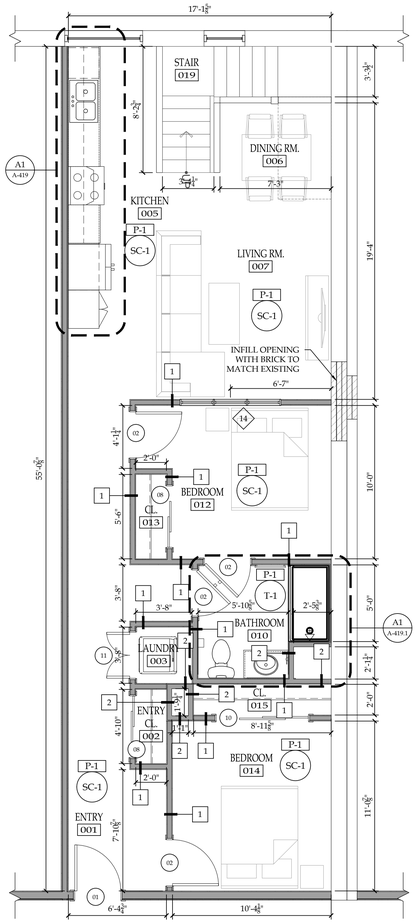
TITLE:

UNIT TYPE "O" (1 BED, 1 BATH) ENLARGED PLANS & ELEVATIONS

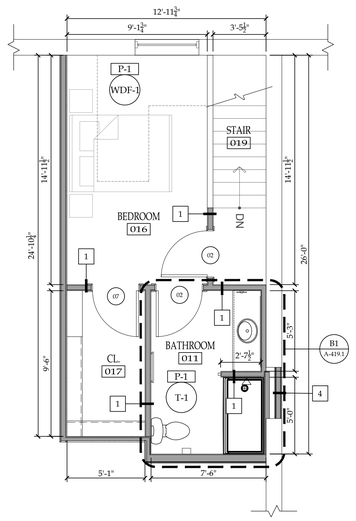
SILVESTRI
ARCHITECTS • PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX. 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

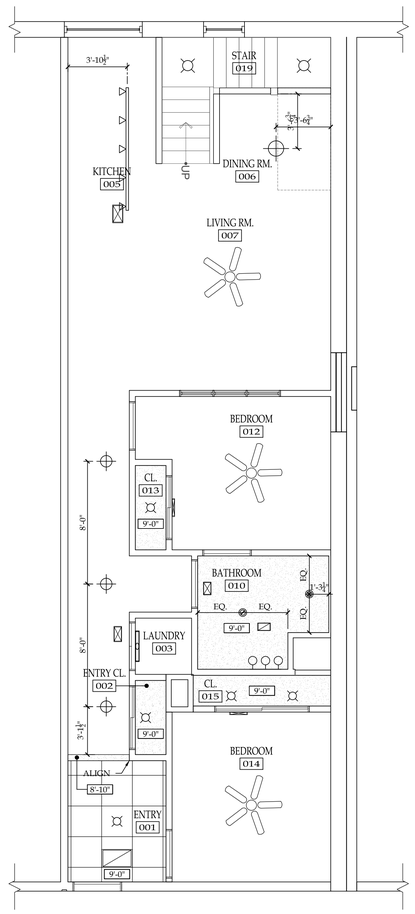
DRAWING #: A-418



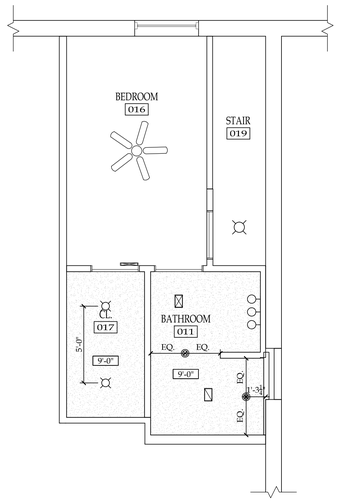
C1 UNIT TYPE "P" (3 BED, 2 BATH) | FIRST FLOOR PLAN (1,290 SF)
1/4"=1'-0"



C2 UNIT TYPE "P" (3 BED, 2 BATH) | SECOND FLOOR PLAN (1,309 SF)
1/4"=1'-0"

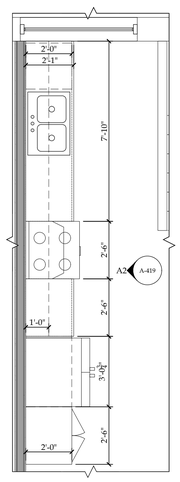


A3 UNIT TYPE "P" (3 BED, 2 BATH) | FIRST FLOOR REFLECTED CEILING PLAN
1/4"=1'-0"

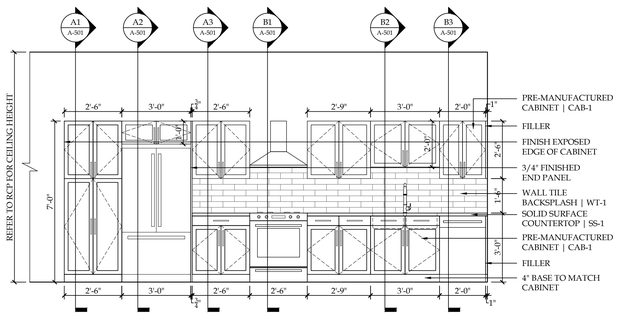


A5 UNIT TYPE "P" (3 BED, 2 BATH) | SECOND FLOOR REFLECTED CEILING PLAN
1/4"=1'-0"

REFLECTED CEILING LEGEND	
SYMBOL	DESCRIPTION
⌖	DECORATIVE MINI PENDANT LIGHT, SEE ELEC. BOTTOM OF FIXTURE 6'-0" AFF
◯	ROUND SURFACE MOUNTED LED CEILING FIXTURE, SEE ELEC.
⊘	6" ROUND SURFACE MOUNTED LED CEILING FIXTURE LISTED FOR WET LOCATIONS, SEE ELEC.
✳	CEILING FAN W/ INTEGRAL LIGHT, SEE ELEC.
○○○	BATHROOM VANITY SCONCE, SEE ELEC. CENTER OF FIXTURE 7'-0" AFF
▭ ▭	DIFFUSERS, SEE MECH.



A1 KITCHEN 005 | ENLARGED PLAN
3/8"=1'-0"



A2 KITCHEN 005 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

UNIT TYPE "P" (3 BED, 2 BATH) ENLARGED PLANS & ELEVATIONS

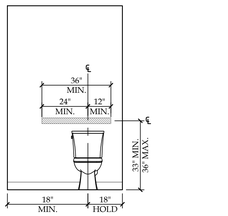
SILVESTRI ARCHITECTS, PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

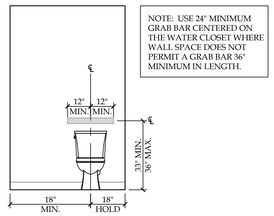
DRAWING #: A-419

UNIT ACCESSORY SCHEDULE

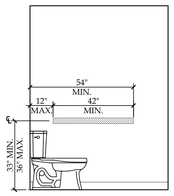
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	TOILET TISSUE HOLDER	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOILET TISSUE HOLDER TO BE MOUNTED 19" A.F.F. IN ALL UNITS.
B	1/4" FRAMELESS PLATE GLASS MIRROR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	SIZE: REFER TO ELEVATIONS USE J-MOLD AT BOTTOM OF MIRROR. SEE DRAWING FOR LOCATION.
C	8" TOWEL RING	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL RING TO BE MOUNTED 54" A.F.F. IN ALL UNITS.
D	24" TOWEL BAR	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. TOWEL BAR TO BE MOUNTED 42" A.F.F. IN ALL UNITS.
E	ROBE HOOK	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION. ROBE HOOK TO BE MOUNTED 66" A.F.F. IN ALL UNITS.
F	SHOWER ROD	TBD	TBD	PER MANUFACTURERS REQUIREMENTS	FINISH: TBD SEE DRAWING FOR LOCATION.



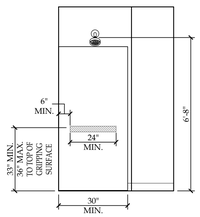
E1 BLOCKING LOCATION (TYP.) | ELEVATION
3/8"=1'-0"



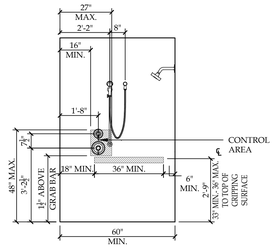
E2 BLOCKING LOCATION (TYP.) | ELEVATION
3/8"=1'-0"



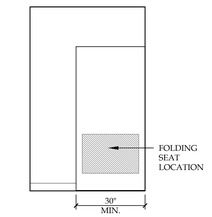
E3 BLOCKING LOCATION (TYP.) | ELEVATION
3/8"=1'-0"



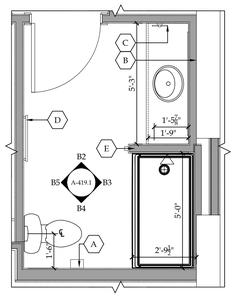
D1 BLOCKING LOCATION (TYP.) | ELEVATION
3/8"=1'-0"



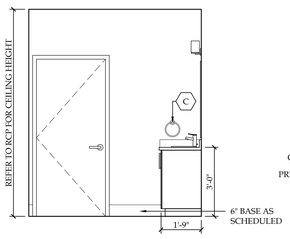
D2 BLOCKING LOCATION (TYP.) | ELEVATION
3/8"=1'-0"



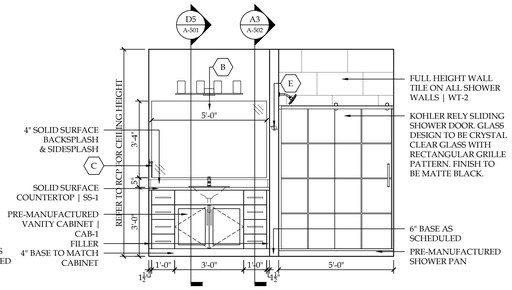
D3 BLOCKING LOCATION (TYP.) | ELEVATION
3/8"=1'-0"



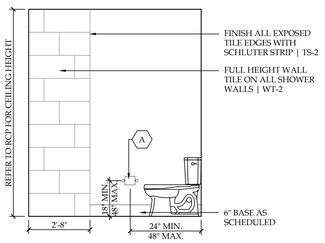
B1 BATHROOM 011 | ENLARGED PLAN
3/8"=1'-0"



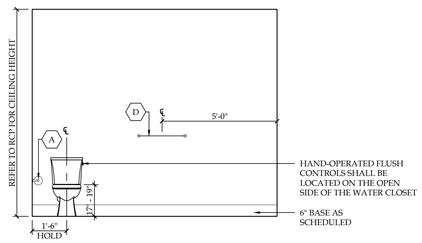
B2 BATHROOM 011 | ELEVATION
3/8"=1'-0"



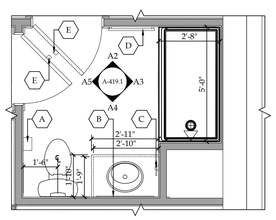
B3 BATHROOM 011 | ELEVATION
3/8"=1'-0"



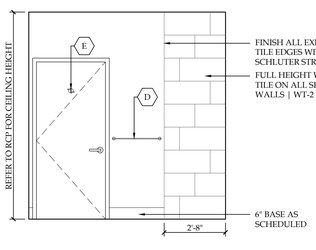
B4 BATHROOM 011 | ELEVATION
3/8"=1'-0"



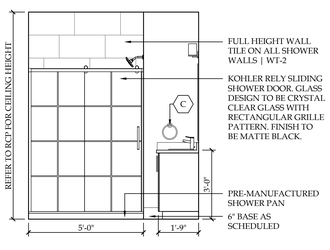
B5 BATHROOM 011 | ELEVATION
3/8"=1'-0"



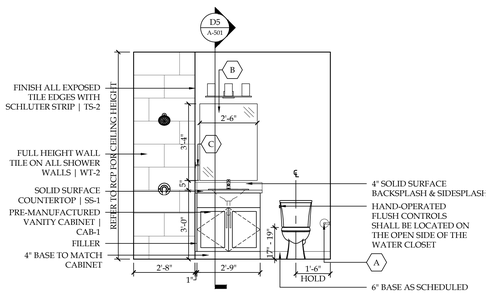
A1 BATHROOM 010 | ENLARGED PLAN
3/8"=1'-0"



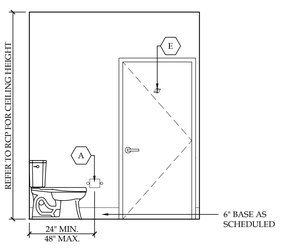
A2 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A3 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A4 BATHROOM 010 | ELEVATION
3/8"=1'-0"



A5 BATHROOM 010 | ELEVATION
3/8"=1'-0"

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

UNIT TYPE "P"
(3 BED, 2 BATH)
ENLARGED PLANS

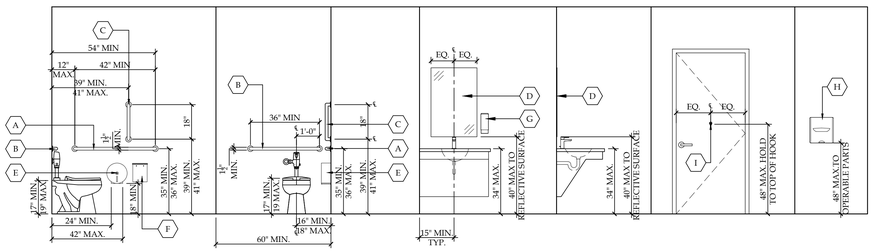
SILVESTRI
ARCHITECTS • PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX. 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

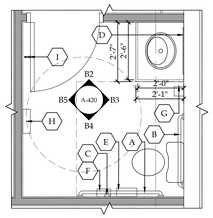
DRAWING #: A-419.1

ACCESSORIES SCHEDULE

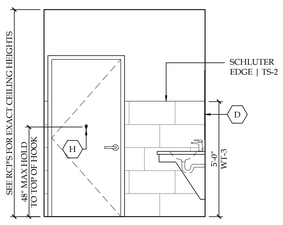
MARK	ITEM	MODEL #	SUPPLIER	BACKUP SUPPORT	LOCATION/NOTES
A	42" MIN HORIZONTAL GRAB BAR	3001-42	AMERICAN SPECIALTIES, INC.	PROVIDE BLOCKING FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
B	36" MIN HORIZONTAL GRAB BAR	3001-36	AMERICAN SPECIALTIES, INC.	PROVIDE BLOCKING FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
C	18" MIN VERTICAL GRAB BAR	3001-18	AMERICAN SPECIALTIES, INC.	PROVIDE BLOCKING FOR ALL GRAB BAR LOCATIONS	SEE DRAWING FOR LOCATIONS
D	FRAMELESS POLISHED PLATE GLASS MIRROR - ¼" THICK	8287	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	DIMENSIONS: REFER TO ELEVATIONS SEE DRAWING FOR LOCATIONS. MIRRORS TO BE MOUNTED ON STAINLESS STEEL STAND OFFS.
E	TOILET TISSUE DISPENSER	0042	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
F	SURFACE MOUNTED SANITARY WASTE RECEPTACLE	20852	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS
G	SURFACE MOUNTED AUTOMATIC HAND SOAP DISPENSER	0560	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS OPERABLE POINT LOCATED NO HIGHER THAN 48" AFF
H	AUTOMATIC HAND DRYER	XLERATOR	EXCEL DRYER	PER MANUFACTURERS REQUIREMENTS	SEE DRAWING FOR LOCATIONS FINISH: BRUSHED STAINLESS STEEL
I	SURFACE MOUNTED COAT HOOK AND BUMPER	0714	AMERICAN SPECIALTIES, INC.	PER MANUFACTURERS REQUIREMENTS	BACK OF RESTROOM DOORS



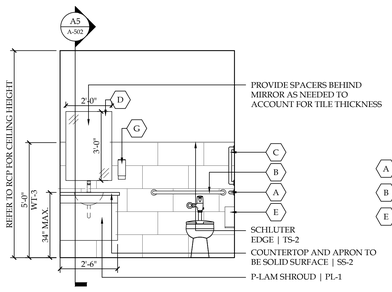
C1 ELEVATION | GENERAL ACCESSIBLE INSTALLATION CRITERIA
3/8"=1'-0"



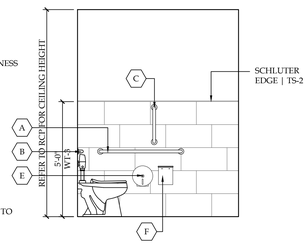
B1 ENLARGED PLAN | TOILET 018
3/8"=1'-0"



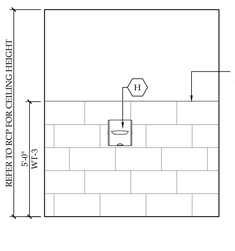
B2 ELEVATION | TOILET 018
3/8"=1'-0"



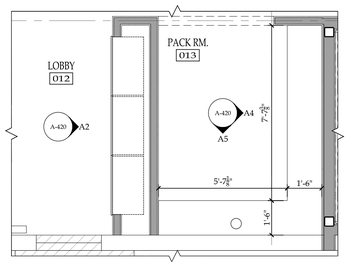
B3 ELEVATION | TOILET 018
3/8"=1'-0"



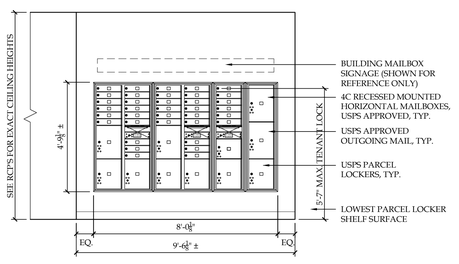
B4 ELEVATION | TOILET 018
3/8"=1'-0"



B5 ELEVATION | TOILET 018
3/8"=1'-0"



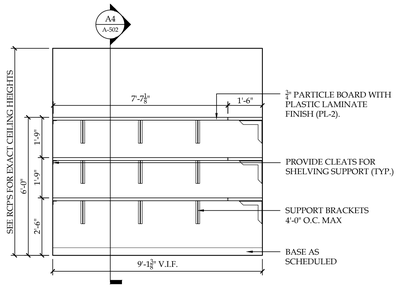
A1 ENLARGED PLAN | LOBBY 012 & PACKAGE ROOM 013
3/8"=1'-0"



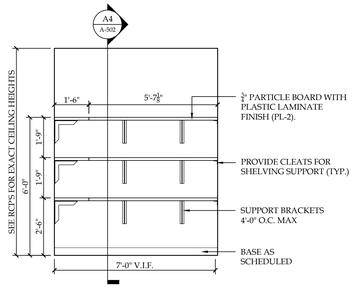
A2 ELEVATION | LOBBY 012
3/8"=1'-0"

INSTALLATION REQUIREMENTS PER USPS STD-4C

1. AT LEAST ONE CUSTOMER MAILBOX COMPARTMENT SHALL BE POSITIONED LESS THAN 48" ABOVE FINISHED FLOOR (AFF).
2. NO PARCEL LOCKER COMPARTMENT (INTERIOR BOTTOM SHELF) SHALL BE POSITIONED LESS THAN 15" AFF.
3. NO CUSTOMER MAILBOX LOCK SHALL BE LOCATED MORE THAN 67" AFF.
4. NO CUSTOMER MAILBOX COMPARTMENT (INTERIOR BOTTOM SHELF) SHALL BE POSITIONED LESS THAN 28" AFF.
5. THE USPS ARROW LOCK IN THE CARRIER ACCESS DOOR SHALL BE LOCATED BETWEEN 36" AND 48" AFF.



A4 ELEVATION | PACKAGE ROOM 013
3/8"=1'-0"



A5 ELEVATION | PACKAGE ROOM 013
3/8"=1'-0"

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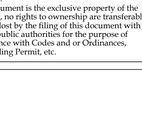
273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:



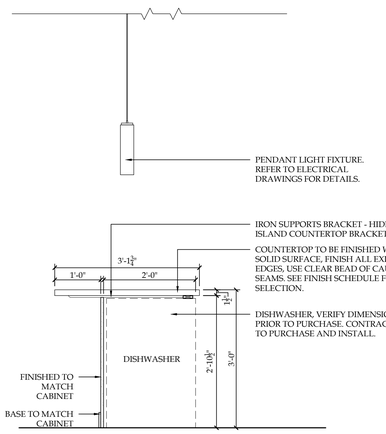
TITLE:

COMMON AREA ENLARGED PLANS & ELEVATIONS

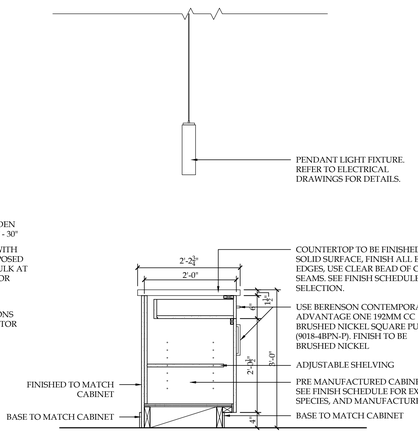
SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

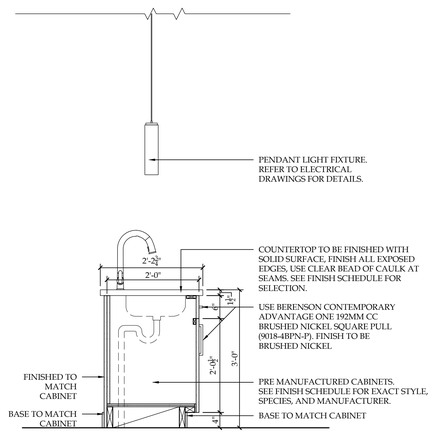
DRAWING #: A-420



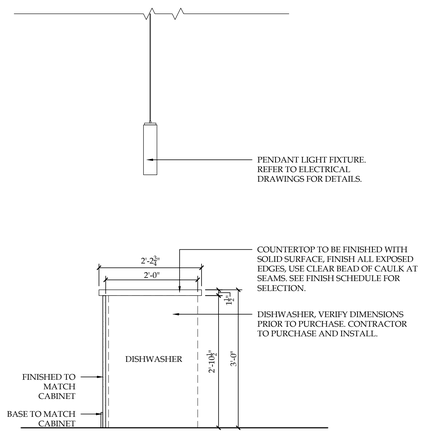
D1 SECTION | DISHWASHER @ UNIT ISLANDS
SCALE: 3/4" = 1'-0"



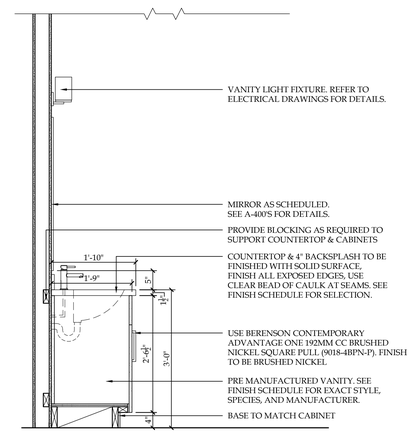
D2 SECTION | BASE CABINET @ UNIT 'O' ISLAND
SCALE: 3/4" = 1'-0"



D3 SECTION | SINK @ UNIT 'O' ISLAND
SCALE: 3/4" = 1'-0"



D4 SECTION | DISHWASHER @ UNIT 'O' ISLAND
SCALE: 3/4" = 1'-0"



D5 SECTION | VANITY CABINET @ UNITS
SCALE: 3/4" = 1'-0"

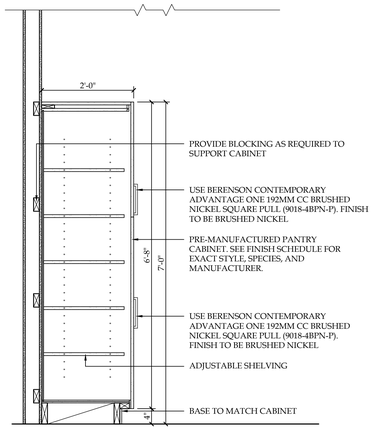
B1 SECTION | STOVE & HOOD @ UNITS
SCALE: 3/4" = 1'-0"

B2 SECTION | SINK & UPPER CABINET @ UNITS
SCALE: 3/4" = 1'-0"

B3 SECTION | DISHWASHER & UPPER CABINET @ UNITS
SCALE: 3/4" = 1'-0"

B4 SECTION | BASE CABINET @ UNIT ISLANDS
SCALE: 3/4" = 1'-0"

B5 SECTION | SINK @ UNIT ISLANDS
SCALE: 3/4" = 1'-0"



A1 SECTION | PANTRY CABINETS @ UNITS
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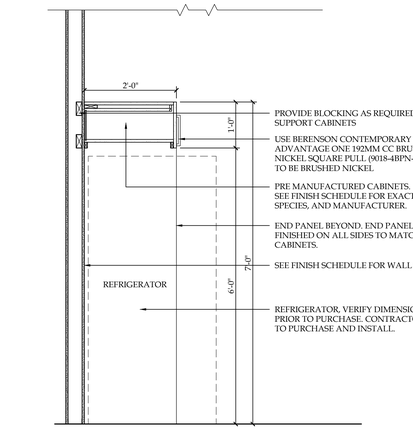

A2 SECTION | REFRIGERATOR & UPPER CABINET @ UNITS
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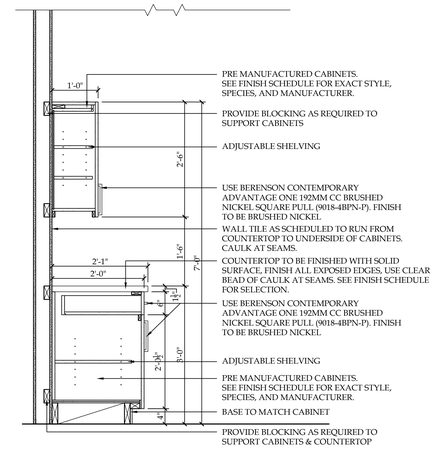
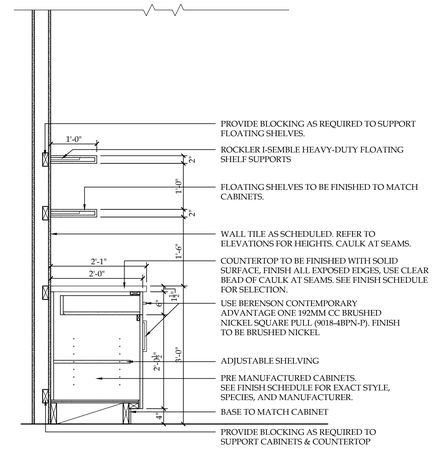
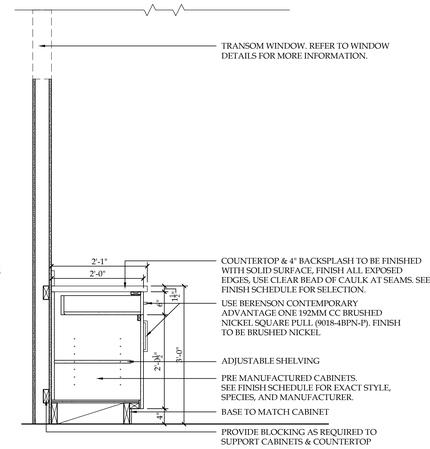


A3 SECTION | BASE & UPPER CABINETS @ UNITS
SCALE: 3/4" = 1'-0"



A4 SECTION | BASE CABINET & FLOATING SHELVES @ UNITS
SCALE: 3/4" = 1'-0"



A5 SECTION | BASE CABINET @ UNITS
SCALE: 3/4" = 1'-0"

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ISSUE:
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SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

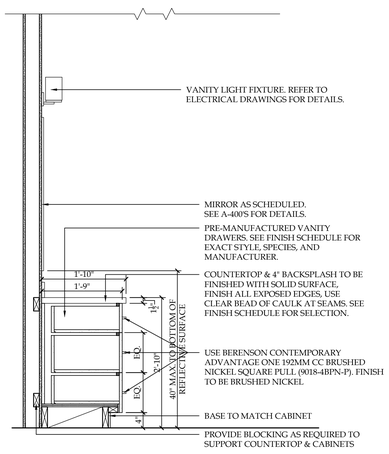
SILVESTRI
ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

TITLE:

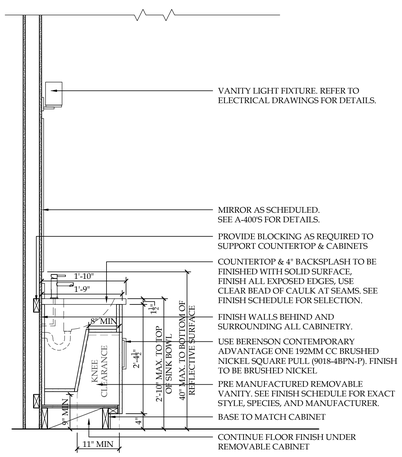
MILLWORK DETAILS

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-501



B1 SECTION | VANITY DRAWERS @ ADAPTABLE UNITS
SCALE: 3/4" = 1'-0"



A1 SECTION | REMOVABLE VANITY CABINET @ ADAPTABLE UNITS
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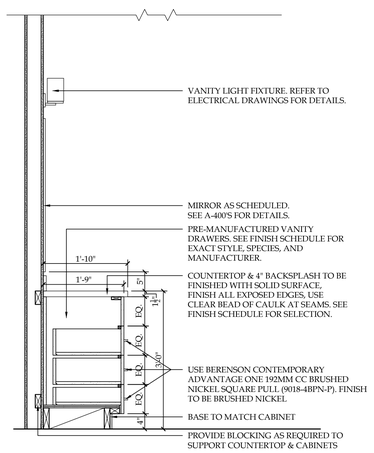

A2 SECTION | VANITY DRAWERS @ UNITS
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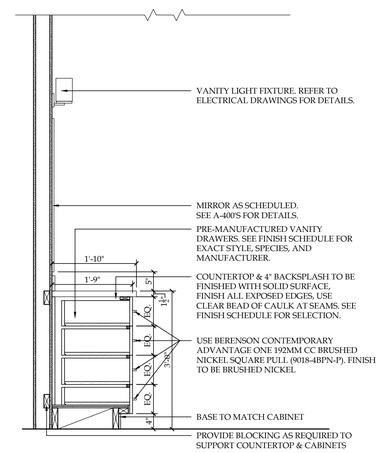

A3 SECTION | VANITY DRAWERS @ UNITS
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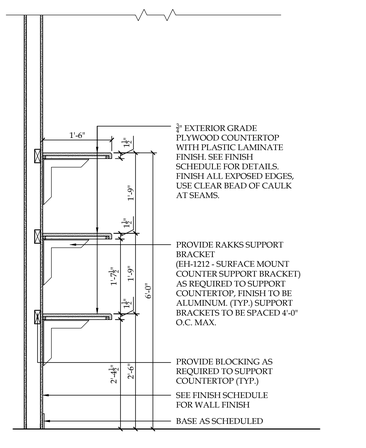

A4 SECTION | SHELVING @ PACKAGE ROOM 013
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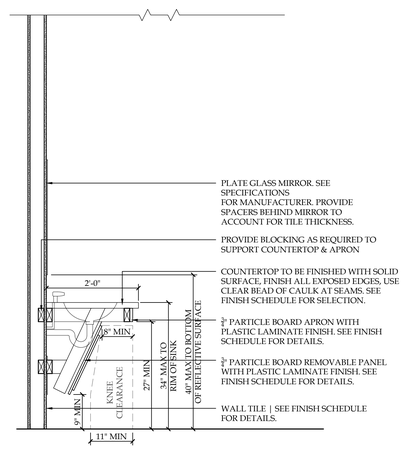

A5 SECTION | SINK @ TOILET 018
SCALE: 3/4" = 1'-0"

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ARCHITECTS · PC
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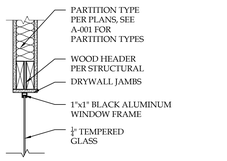
AMHERST, NY 14221
PH. 716.691.0900
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-502



E1 TYP. WINDOW DETAIL @ UNIT INTERIOR
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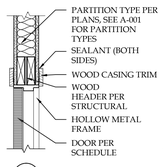
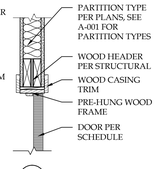


H1



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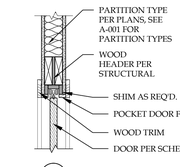
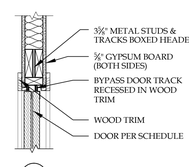
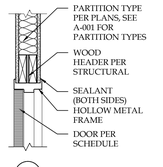


H3 POCKET

PROVIDE ACOUSTIC BATT PER PARTITION TYPES, TYP.



H4 BYPASS



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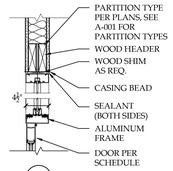

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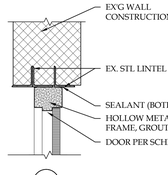
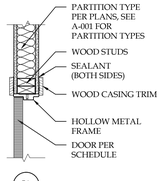
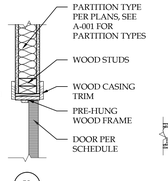


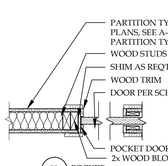
H7



J1



J2



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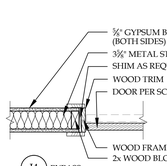
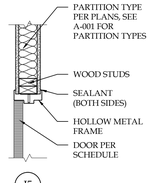
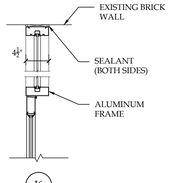


J4 BYPASS



J5



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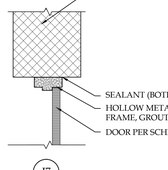

J7

D1 HEAD & JAMB DETAILS
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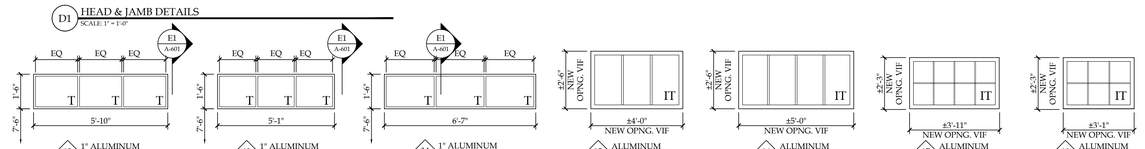
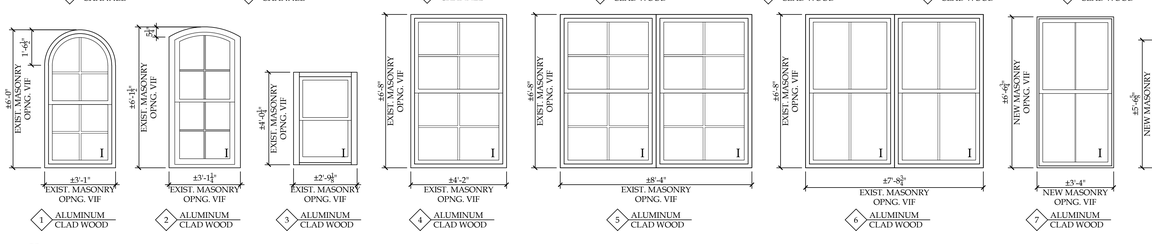


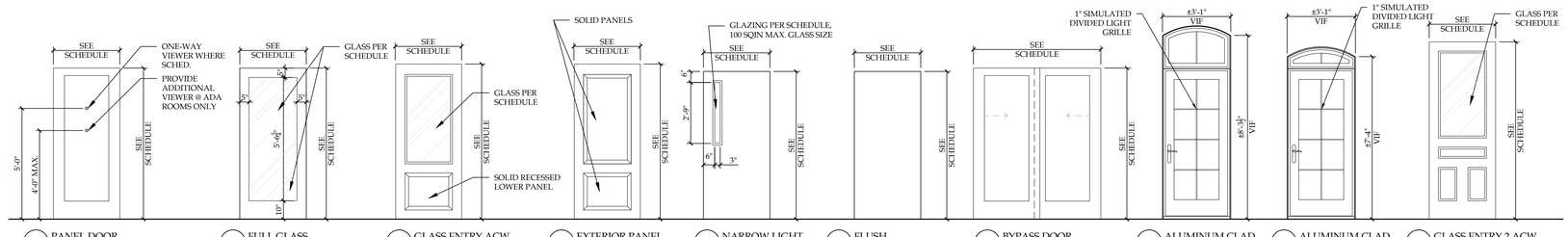
12 1" ALUMINUM CHANNEL
13 1" ALUMINUM CHANNEL
14 1" ALUMINUM CHANNEL

15 ALUMINUM CLAD WOOD
16 ALUMINUM CLAD WOOD
17 ALUMINUM CLAD WOOD
18 ALUMINUM CLAD WOOD



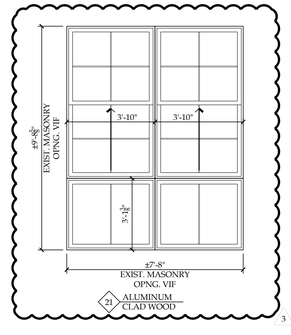
1 ALUMINUM CLAD WOOD
2 ALUMINUM CLAD WOOD
3 ALUMINUM CLAD WOOD
4 ALUMINUM CLAD WOOD
5 ALUMINUM CLAD WOOD
6 ALUMINUM CLAD WOOD
7 ALUMINUM CLAD WOOD
8 ALUMINUM CLAD WOOD
9 ALUMINUM CLAD WOOD
10 ALUMINUM CLAD WOOD
11 ALUMINUM CLAD WOOD
19 ALUMINUM CLAD WOOD
20 ALUMINUM CLAD WOOD

A1 WINDOW TYPES
SCALE: 3/8"=1'-0"

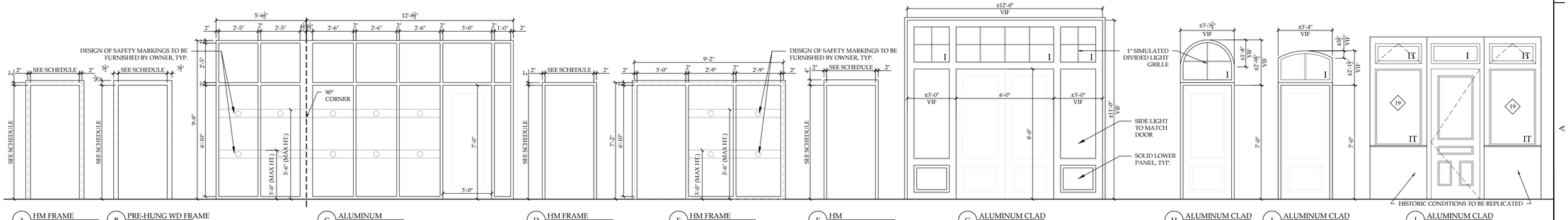


P PANEL DOOR
FG FULL GLASS DOOR
GE GLASS ENTRY ACW COMMERCIAL ENTRY DOOR
P2 EXTERIOR PANEL ENTRY DOOR
NL NARROW LITE DOOR
F FLUSH DOOR
BP BYPASS DOOR
PD1 ALUMINUM CLAD 2ND FLOOR PATIO DOOR
PD2 ALUMINUM CLAD 3RD FLOOR PATIO DOOR
GE2 GLASS ENTRY 2 ACW COMMERCIAL ENTRY DOOR

C1 DOOR TYPES
SCALE: 3/8" = 1'-0"



21 ALUMINUM CLAD WOOD



A HM FRAME WITH APPLIED WOOD TRIM
B PRE-HUNG WD FRAME WITH APPLIED WOOD TRIM
C ALUMINUM FRAME
D HM FRAME
E HM FRAME WITH APPLIED WOOD TRIM
F HM FRAME
G ALUMINUM CLAD WOOD FRAME
H ALUMINUM CLAD WOOD FRAME
I ALUMINUM CLAD WOOD FRAME
J ALUMINUM CLAD WOOD FRAME

B1 FRAME TYPES
SCALE: 3/8" = 1'-0"

HARDWARE SCHEDULE:

HARDWARE SCHEDULE

* PROVIDE SOLID WOOD BLOCKING AT ALL WALL STOPS.
* ALL HARDWARE TO BE ADA COMPLIANT
* ALL HARDWARE TO BE PROVIDED AS SPECIFIED OR PROVIDE APPROVED EQUAL
* ALL HARWARE TO HAVE ARCHITECTURAL LEVERS

Hardware Set 1 (Apartment Entries) (Grade 2 | 1" Throw Deadbolt)
5 Spring Hinges
1 Interconnected Lockset with interchangeable core, FDQ CL x 116 x ORL x US 26D or equal
1 Base Stop (provide overhead stop where entry door swings into closet door
1 Door View/Knock
1 Smoke Seal
1 Saddle Threshold
1 Automatic Door Bottom Seal

Hardware Set 2 (Apartment Bathrooms & Bedrooms) (Grade 3)
3 Hinges by Door Supplier
1 Privacy Set FDQ SD x 176 x ORL x USNS or equal
1 Base Stop (hinge stop only where door swings into another door)

Hardware Set 3 (Closets) (Grade 2)
3 Hinges by Door Supplier
1 Passage Set FDQ SD x 126 x ORL x USND
1 Base Stop (hinge stop only where door swings into another door)

Hardware Set 4 (Pair Closet) (Grade 2)
6 Hinges
2 Single Dummy Trim FDQ SD x 211 x ORL x USND
2 Base Stops
2 Ball Catch

Hardware Set 5 (Pair Bypass)
1 Complete bi-pass hardware kit , including but not limited to track, stops, guides, etc.
2 Rectangular flush pull handles

Hardware Set 6 (Pocket Door)
1 Complete heavy duty pocket door kit with soft close, including but not limited to track, stops, guides, etc.
1 Dual sided lockable pocket door pull

Hardware Set 7 (Stair Doors)
3 Butt Hinge
1 Exit Device with passage lever
1 Closer
1 Wall Stop
1 Smoke Seal
1 Kick Plate 10" high

Hardware Set 8 (Jan. / Elect. /Mech. /Storage) (Grade 2)
3 Hinges
1 Closer
1 Storeroom Lockset
1 Smoke Seal
1 Wall Stop

Hardware Set 9 (Mech Exterior)
3 Butt Hinges
1 Entry lockset with dead bolt
1 Door Closer
1 Sweep
1 Full Perimeter Weather Strip
1 Saddle Threshold

Hardware Set 10 (Mech / Storage Double Exterior)
6 Butt Hinges
1 Vertical Rod Exit Device EL8 with Lever Trim and interchangeable core
1 Vertical Rod Exit Device no exterior trim
2 Door Closers
2 Sweeps
2 34" High Armor Plate
1 Full Perimeter Weather Strip
1 Saddle Threshold
1 Astragal
1 Fob Reader System

Hardware Set 11 (Trash and Tenant Storage)
3 Hinges
1 Closer
1 Passage Set
1 Wall Stop
1 Smoke Seal
1 Kick Plate

Hardware Set 12 (Toilet)
3 Hinges
1 Privacy Set
1 Wall Stop

Hardware Set 13 (Office and bike storage)
3 Spring Hinges
1 Entry Lockset
1 Base Stop
1 Smoke Seal

Hardware Set 14 (Lobby)
6 Butt Hinge
2 Exit Devices with CVR and passage lever trim
2 Door Closers
2 Magnetic Hold Opens

Hardware Set 15 (Entry)
3 Hinges by door manufacturer
1 Rim Exit Device with passage lever trim
1 Sweep
1 Weatherstrip By Door Mfg.
1 Saddle Threshold

Hardware Set 16 (Vestibule)
3 Continuous Hinge
1 Exit Device with Lever Trim and interchangeable core
1 Power Transfer
1 Door Contact
1 Sweep
1 Weatherstrip By Door Mfg.
1 Electric Strike
1 Fob Reader System

Hardware Set 17 (Entry - single door exterior)
3 Hinges by door manufacturer
1 Rim Exit Device with lockset lever trim
1 Sweep
1 Weatherstrip
1 Door Closer
1 Saddle Threshold

1 Electric Strike
1 Key Fob Reader

Hardware Set 18 (Tenant Entry Double Exterior)
6 Hinges by door manufacturer
2 Push/Pull Bar Set
2 Closers
1 T&B Flush Bolts
1 Keyed lock
2 Sweeps
1 Full Perimeter Weather Strip
1 Saddle Threshold
Meeting stile weatherstrip
Provide sign that indicates that the door must remain unlocked when the space is occupied.

Hardware Set 19 (Entry - single door exterior)
3 Hinges by door manufacturer
1 Rim Exit Device with lockset lever trim
1 Sweep
1 Weatherstrip
1 Door Closer
1 Saddle Threshold

Hardware Set 20 (Mech / Storage Double)
6 Butt Hinges
2 Vertical Rod Exit Device with Passage Lever Trim
2 Door Closers
2 Sweeps
2 34" High Armor Plate

3

DOOR AND FRAME SCHEDULE

	MARK	LOCATION	TYPE	DOOR SIZE WD	DOOR SIZE HGT	DOOR SIZE THK	DOOR MATL	DOOR GLASS	FRAME TYPE	FRAME MATL	FRAME DETAIL HEAD	FRAME DETAIL JAMB	FIRE RATING LABEL	HARD WARE SET NO	NOTES
FIRST FLOOR	100	VESTIBULE (EXT)	GE	3'-0"	7'-0"	1 ¾"	ACW	IT	H/PH	ACW				15	
	101	VESTIBULE (INT)	FG	3'-0"	7'-0"	1 ¾"	ALUM	T	C	ALUM	H6	J6		16	Card Reader
	102	STAIR 1 (INT)	NL	3'-0"	7'-0"	1 ¾"	HM	FR	A	HM	H1	J1	60 MIN.	7	
	103	LOBBY	P	(2)3'-0"	7'-0"	1 ¾"	HM	-	A	HM	H1	J1	60 MIN.	14	
	104	BIKE ROOM	P	3'-0"	7'-0"	1 ¾"	HM		A	HM	-	-	20 MIN.	13	
	105	TRASH	P	3'-0"	7'-0"	1 ¾"	HM		A	HM	H1	J1	45 MIN.	11	
	106	COMPACTOR RM	F	3'-0"	7'-0"	1 ¾"	HM		D	HM	H5	J5	45 MIN.	11	
	107	COMPACTOR RM	F	(2)3'-0"	7'-0"	1 ¾"	HM		D	HM	H5	J5	45 MIN.	20	
	108	CORRIDOR 009 (EXT)	F	(2)3'-0"	7'-0"	1 ¾"	IHM		D	HM	H7	J7		10	Card Reader
	109	TENANT STORAGE	P	3'-8"	7'-0"	1 ¾"	HM		A	HM	H1	J1	20 MIN.	11	
	110	NOT USED													
	111	MECH.	P	3'-0"	7'-0"	1 ¾"	HM		A	HM	H1	J1	20 MIN.	8	
	112	LEASING OFFICE	P	3'-0"	7'-0"	1 ¾"	HM		E	HM	H1	J1	20 MIN. DOOR 45 MIN. SIDELIGHT	13	
	113	TOILET	P	3'-0"	7'-0"	1 ¾"	HM		A	HM	H1	J1	20 MIN.	12	
	114	ELEC.	P	3'-0"	7'-0"	1 ¾"	HM		A	HM	H1	J1	20 MIN.	8	
	115	JANITOR	P	3'-0"	7'-0"	1 ¾"	HM		A	HM	H1	J1	20 MIN.	8	
	116	CORR 021 (EXT)	GE	3'-0"	7'-0"	1 ¾"	ACW	IT	PH	ACW				17	Card Reader
	117	TENANT SPACE 004	GE	(2)3'-0"	8'-0"	1 ¾"	ACW	IT	PH	ACW				18	
	118	SPRINK./WATER RM.	F	3'-0"	6'-0"	1 ¾"	IHM		D	HM	H7	J7		9	
	119	STAIR 02 (INT)	NL	3'-0"	7'-0"	1 ¾"	HM	FR	A	HM	H1	J1	60 MIN.	7	
	120	CORR 003(EXT)	GE	3'-0"	7'-0"	1 ¾"	ACW	IT	I/PH	ACW				17	Card Reader
	121	TENANT SPACE 004 (EXT)	GE	3'-0"	7'-0"	1 ¾"	ACW	IT	I/PH	ACW				19	
	122	TENANT SPACE 004	GE	(2)3'-0"	7'-0"	1 ¾"	ACW	IT	PH	ACW				18	
	123	TENANT STORAGE	P2	3'-0"	7'-0"	1 ¾"	ACW		PH	ACW				19	
	124	TENANT SPACE 002	GE2	3'-0"	8'-0"	1 ¾"	ACW		PH	ACW				19	
SECOND FLOOR	201	STAIR 1	NL	3'-0"	7'-0"	1 ¾"	HM	FR	A	HM	H1	J1	60 MIN.	7	
	202	TRASH	P	3'-0"	7'-0"	1 ¾"	HM	FR	A	HM	H1	J1	45 MIN.	11	
	203	STAIR 1	NL	3'-0"	7'-0"	1 ¾"	HM	FR	A	HM	H1	J1	60 MIN.	7	
THIRD FLOOR	204	NOT USED													
	301	STAIR 1	NL	3'-0"	7'-0"	1 ¾"	HM	FR	A	HM	H1	J1	60 MIN.	7	
	302	TRASH	P	3'-0"	7'-0"	1 ¾"	HM		A	HM	H1	J1	45 MIN.	11	
	303	STAIR 1	NL	3'-0"	7'-0"	1 ¾"	HM	FR	A	HM	H1	J1	60 MIN.	7	
UNIT DOORS	01	FRONT ENTRY	P	3'-0"	7'-0"	1 ¾"	SCWD	-	A	HM	H1	J1	20 MIN.	1	
	02	BED/BATH/OFFICE	P	3'-0"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	2	PROVIDE-F UNDERCUT
	03	BATHROOM POCKET	P	3'-0"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H3	J3	-	6	PROVIDE-F UNDERCUT
	04	CLOSET/LINEN	P	1'-6"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	3	
	05	CLOSET/LINEN	P	2'-6"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	3	
	06	CLOSET	P	2'-8"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	3	
	07	CLOSET/LINEN	P	3'-0"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	3	
	08	CLOSET	BP	(2) 2'-0"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H4	J4	-	5	
	09	CLOSET	BP	(2) 2'-6"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H4	J4	-	5	
	10	CLOSET	BP	(2) 3'-0"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H4	J4	-	5	
	11	LAUNDRY	P	(2) 1'-6"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	4	
	12	LINEN	P	2'-0"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	3	
	13	STORAGE	P	(2) 2'-0"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	4	
	14	CLOSET	P	(2) 3'-0"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H2	J2	-	4	
	15	NOT USED													
	16	BATHROOM POCKET	P	2'-6"	6'-8"	1 ¾"	SCWD	-	B/PH	WD	H3	J3	-	6	PROVIDE-F UNDERCUT

3

DOOR SCHEDULE LEGEND:

SCWD = SOLID CORE WOOD DOOR
HM = HOLLOW METAL
IHM = INSULATED HOLLOW METAL
WD = WOOD
ALUM = ALUMINUM
ACW = ALUMINUM CLAD WOOD
PH = PRE-HUNG

GLAZING LEGEND:

T = 1/4" TEMPERED GLASS
I = 1" INSULATED GLASS
IT= 1" INSULATED TEMPERED GLASS
FR = FIRE RATED GLASS CERAMIC
SG = STAINED GLASS
ST = SPANDREL INSULATED TEMPERED GLASS

KEYING:

TO BE COORDINATED WITH OWNER

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
2-10-2026: REV. 1 - HISTORIC COORD. 1
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

DOOR SCHEDULE, TYPES, DETAILS & WINDOW TYPES

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SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: A-601

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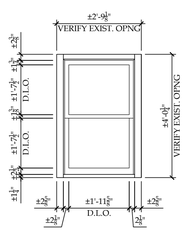
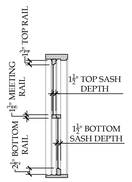


EXISTING WINDOW ELEVATION
1/1 DIVIDED LITES

REPLACEMENT



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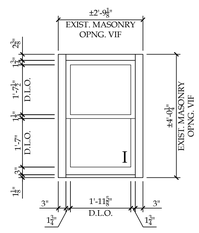
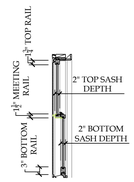
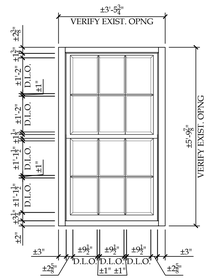


PROPOSED WINDOW ELEVATION
1/1 DIVIDED LITES



PROPOSED WINDOW SECTION
1/1 DIVIDED LITES

EXISTING



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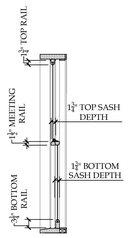
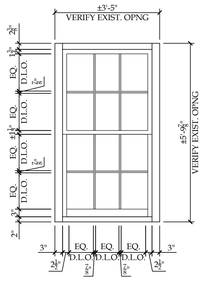
6/6 DIVIDED LITES

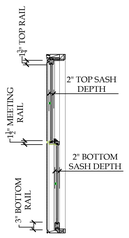


EXISTING WINDOW SECTION
6/6 DIVIDED LITES

REPLACEMENT



PROPOSED WINDOW ELEVATION
6/6 DIVIDED LITES



PROPOSED WINDOW SECTION
6/6 DIVIDED LITES

D1 WINDOW REPLACEMENT COMPARISON
SCALE: 1/2"=1'-0"

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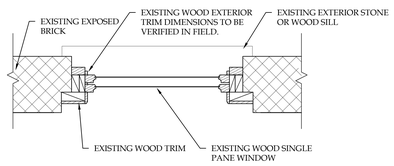
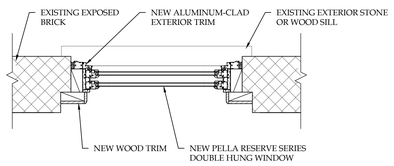


EXISTING WINDOW PLAN SECTION
DETAIL FOR MAIN WINDOW TYPES

REPLACEMENT



PROPOSED WINDOW PLAN SECTION
DETAIL FOR MAIN WINDOW TYPES

B1 WINDOW COMPARISON PLAN SECTION DETAIL
SCALE: 1"=1'-0"

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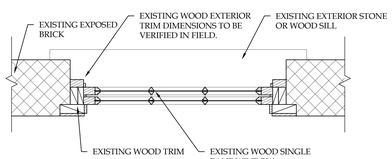
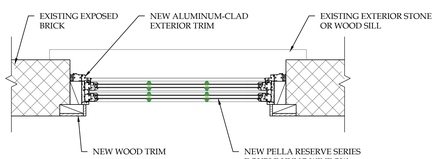


EXISTING WINDOW PLAN SECTION
DETAIL FOR MAIN WINDOW TYPES
WITH MUNTINS

REPLACEMENT



PROPOSED WINDOW PLAN SECTION
DETAIL FOR MAIN WINDOW TYPES
WITH MUNTINS

A1 WINDOW COMPARISON PLAN SECTION DETAIL
SCALE: 1"=1'-0"

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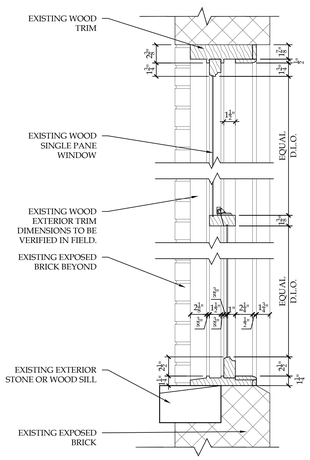
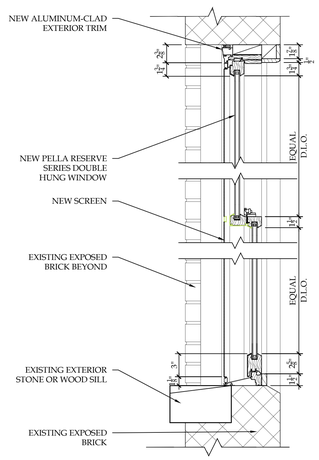


EXISTING WINDOW SECTION
DETAIL FOR MAIN WINDOW TYPES

REPLACEMENT



PROPOSED WINDOW SECTION
DETAIL FOR MAIN WINDOW TYPES

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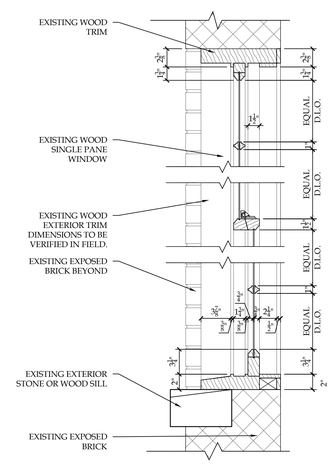
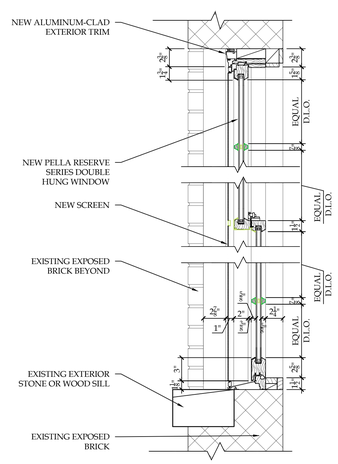


EXISTING WINDOW SECTION
DETAIL FOR MAIN WINDOW TYPES
WITH MUNTINS

REPLACEMENT



PROPOSED WINDOW SECTION
DETAIL FOR MAIN WINDOW TYPES
WITH MUNTINS

A4 WINDOW COMPARISON SECTION DETAILS
SCALE: 1"=1'-0"

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BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
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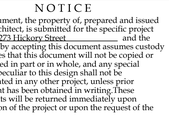
INTERIORS A. Nagle DRAFTER

SEAL:



TITLE:

WINDOW DIAGRAMS

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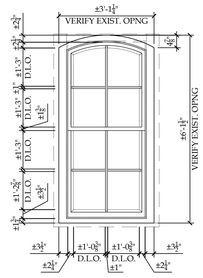
SA JOB #: 24037.01
DATE: 5-23-2025

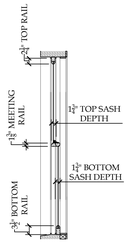
DRAWING #: A-601.1

EXISTING

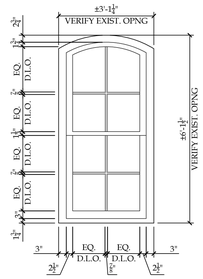


EXISTING ARCH WINDOW ELEVATION 4/4 DIVIDED LITES

REPLACEMENT



EXISTING ARCH WINDOW SECTION 4/4 DIVIDED LITES



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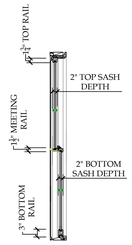

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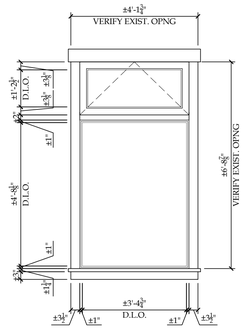
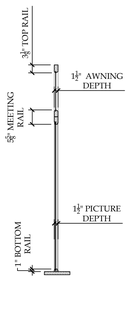
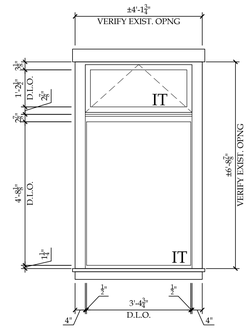


EXISTING AWNING OVER FIXED WINDOW ELEVATION



EXISTING AWNING OVER FIXED WINDOW SECTION

REPLACEMENT



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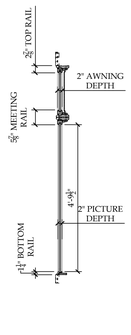

PROPOSED AWNING OVER FIXED WINDOW SECTION

D1 WINDOW REPLACEMENT COMPARISON
SCALE: 1/2"=1'-0"

EXISTING

EXISTING WINDOW PLAN SECTION DETAIL FOR MAIN ARCH WINDOW TYPES

REPLACEMENT

PROPOSED WINDOW PLAN SECTION DETAIL FOR MAIN ARCH WINDOW TYPES

B1 WINDOW COMPARISON PLAN SECTION DETAIL
SCALE: 1"=1'-0"

EXISTING

EXISTING WINDOW PLAN SECTION DETAIL FOR MAIN ARCH WINDOW TYPES

REPLACEMENT

PROPOSED WINDOW PLAN SECTION DETAIL FOR MAIN ARCH WINDOW TYPES

A1 WINDOW COMPARISON PLAN SECTION DETAIL
SCALE: 1"=1'-0"

EXISTING

EXISTING WINDOW SECTION DETAIL FOR MAIN ARCH WINDOW TYPES

REPLACEMENT

PROPOSED WINDOW SECTION DETAIL FOR MAIN ARCH WINDOW TYPES

EXISTING WINDOW SECTION DETAIL FOR AWNING OVER FIXED WINDOW TYPE

PROPOSED WINDOW SECTION DETAIL FOR AWNING OVER FIXED WINDOW TYPE

A4 WINDOW COMPARISON SECTION DETAILS
SCALE: 1"=1'-0"

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5-23-2025: BID/PERMIT SET

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TITLE:

WINDOW DIAGRAMS

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AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-601.2

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS	CEILING		MILLWORK/ SHROUD	COUNTER TOP	REMARKS
					MATERIAL	HEIGHTS			
FIRST FLOOR									
001	WATER ROOM	SC-1	RB-2	GYP-P-4	EXP. (P-7)	MAX.			
002	STAIR	SC-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
003	CORRIDOR	SC-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
004	TENANT SPACE	SC-1	--	GYP-P-4	EXP. (P-7)	MAX.			
005	BIKE STORAGE	SC-1	RB-2	GYP-P-4	EXP. (P-7)	MAX.			
006	CORRIDOR	SC-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
007	TRASH	SC-1	RB-2	GYP-P-4	EXP. (P-7)	MAX.			
008	COMPACTOR ROOM	SC-1	RB-2	GYP-P-4	EXP. (P-7)	MAX.			
009	CORRIDOR	SC-1	RB-2	GYP-P-4	EXP. (P-7)	MAX.			
010	TENANT STORAGE	SC-1	RB-2	GYP-P-4	EXP. (P-7)	MAX.			
011	VESTIBULE	SC-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
012	LOBBY	SC-1	RB-1	GYP-P-4/ GYP-P-5	EXP. (P-7)	MAX.			1
013	PACKAGE ROOM	SC-1	RB-1	GYP-P-4	SCT-1	9'-0"	PL-2		
014	STAIR	SC-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
015	CORRIDOR	SC-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
016	MECHANICAL	SC-1	RB-2	GYP-P-4	EXP. (P-7)	MAX.			
017	LEASING OFFICE	SC-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
018	TOILET	T-2	--	WT-3/GYP-P-4	GYP	9'-0"	PL-1	SS-2	2
019	ELECTRICAL	SC-1	RB-2	GYP-P-4	EXP. (P-7)	MAX.			
020	JANITOR	SC-1	RB-2	FRP-1/GYP-P-4	EXP. (P-7)	MAX.			3
021	CORRIDOR	SC-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
022	TENANT SPACE	SC-1	--	GYP-P-4	EXP. (P-7)	MAX.			
101	UNIT D1	SEE TYPICAL UNIT FINISHES FOR DETAILS							
102	UNIT P	SEE TYPICAL UNIT FINISHES FOR DETAILS							
103	UNIT K	SEE TYPICAL UNIT FINISHES FOR DETAILS							
104	UNIT M	SEE TYPICAL UNIT FINISHES FOR DETAILS							
105	UNIT L1	SEE TYPICAL UNIT FINISHES FOR DETAILS							
106	UNIT L	SEE TYPICAL UNIT FINISHES FOR DETAILS							
107	UNIT L	SEE TYPICAL UNIT FINISHES FOR DETAILS							
108	UNIT N	SEE TYPICAL UNIT FINISHES FOR DETAILS							
SECOND FLOOR									
023	STAIR	WDF-2	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
024	CORRIDOR	WDF-2	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
025	TRASH	T-2	TB-2	GYP-P-4	EXP. (P-7)	MAX.			
026	STAIR	WDF-2	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
027	STAIR	WS-1	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
028	CORRIDOR	WDF-2	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
029	NOT USED								
201	UNIT B	SEE TYPICAL UNIT FINISHES FOR DETAILS							
202	UNIT H	SEE TYPICAL UNIT FINISHES FOR DETAILS							
203	UNIT C	SEE TYPICAL UNIT FINISHES FOR DETAILS							
204	UNIT G	SEE TYPICAL UNIT FINISHES FOR DETAILS							
205	UNIT D	SEE TYPICAL UNIT FINISHES FOR DETAILS							
206	UNIT F	SEE TYPICAL UNIT FINISHES FOR DETAILS							
207	UNIT A	SEE TYPICAL UNIT FINISHES FOR DETAILS							
208	UNIT E	SEE TYPICAL UNIT FINISHES FOR DETAILS							
209	UNIT J	SEE TYPICAL UNIT FINISHES FOR DETAILS							
210	UNIT I1	SEE TYPICAL UNIT FINISHES FOR DETAILS							
211	UNIT I1	SEE TYPICAL UNIT FINISHES FOR DETAILS							
212	UNIT I	SEE TYPICAL UNIT FINISHES FOR DETAILS							
213	UNIT O	SEE TYPICAL UNIT FINISHES FOR DETAILS							
214	UNIT P	SEE TYPICAL UNIT FINISHES FOR DETAILS							
THIRD FLOOR									
030	STAIR	WDF-2	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
031	CORRIDOR	WDF-2	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
032	TRASH	T-2	TB-2	GYP-P-4	EXP. (P-7)	MAX.			
033	STAIR	WDF-2	RB-1	GYP-P-4	EXP. (P-7)	MAX.			
301	UNIT B	SEE TYPICAL UNIT FINISHES FOR DETAILS							
302	UNIT I1	SEE TYPICAL UNIT FINISHES FOR DETAILS							
303	UNIT C	SEE TYPICAL UNIT FINISHES FOR DETAILS							
304	UNIT G	SEE TYPICAL UNIT FINISHES FOR DETAILS							
305	UNIT D	SEE TYPICAL UNIT FINISHES FOR DETAILS							
306	UNIT F	SEE TYPICAL UNIT FINISHES FOR DETAILS							
307	UNIT A	SEE TYPICAL UNIT FINISHES FOR DETAILS							
308	UNIT E	SEE TYPICAL UNIT FINISHES FOR DETAILS							

TYPICAL UNIT FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR	BASE	WALLS	CEILING		MILLWORK/ SHROUD	COUNTER TOP	REMARKS
					MATERIAL	HEIGHTS			
001	ENTRY	SC-1/WDF-1	MDF-1	GYP-P-1	SCT-1	9'-0"			6, 7
002	ENTRY CLOSET	SC-1/WDF-1	MDF-1	GYP-P-1	GYP	9'-0"			6, 7
003	LAUNDRY	T-1	TB-1	GYP-P-1	EXP. (P-3)	MAX.			6
004	STORAGE	SC-1/WDF-1	MDF-1	GYP-P-1	GYP	9'-0"			6, 7
005	KITCHEN	SC-1/WDF-1	MDF-1	GYP-P-1/WT-1	EXP. (P-3)	MAX.	CAB-1	SS-1	4, 6, 7, 8
006	DINING ROOM	SC-1/WDF-1	MDF-1	GYP-P-1	EXP. (P-3)	MAX.			6, 7
007	LIVING ROOM	SC-1/WDF-1	MDF-1	GYP-P-1	EXP. (P-3)	MAX.			6, 7
008	HALF BATH	T-1	TB-1	GYP-P-1	GYP	9'-0"	CAB-1	SS-1	6, 8
009	LINEN	VARIES	VARIES	GYP-P-1	GYP	9'-0"			5, 6, 7
010	BATHROOM	T-1	TB-1	GYP-P-1/WT-2	GYP	9'-0"	CAB-1	SS-1	4, 6, 8
011	BATHROOM	T-1	TB-1	GYP-P-1/WT-2	GYP	9'-0"	CAB-1	SS-1	4, 6, 8
012	BEDROOM	SC-1/WDF-1	MDF-1	GYP-P-1	EXP. (P-3)	MAX.			6, 7
013	CLOSET	SC-1/WDF-1	MDF-1	GYP-P-1	GYP	9'-0"			6, 7
014	BEDROOM	SC-1/WDF-1	MDF-1	GYP-P-1	EXP. (P-3)	MAX.			6, 7
015	CLOSET	SC-1/WDF-1	MDF-1	GYP-P-1	GYP	9'-0"			6, 7
016	BEDROOM	SC-1/WDF-1	MDF-1	GYP-P-1	EXP. (P-3)	MAX.			6, 7
017	CLOSET	SC-1/WDF-1	MDF-1	GYP-P-1	GYP	9'-0"			6, 7
018	DEN/OFFICE	SC-1/WDF-1	MDF-1	GYP-P-1	EXP. (P-3)	MAX.			6, 7
019	STAIR	WS-1	MDF-1	GYP-P-1	EXP. (P-3)	MAX.			6

GENERAL NOTES

G1. NO CHANGES OR SUBSTITUTIONS SHALL BE MADE TO THE FOLLOWING FINISHES UNLESS DIRECTED BY THE OWNER OR THE ARCHITECT.

G2. MANY FINISH MATERIALS REQUIRE A SUBSTANTIAL LEAD TIME. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ORDER ALL MATERIALS AT THE APPROPRIATE TIME. ANY FEES INCURRED AS A RESULT OF FINISHES NOT BEING ORDERED ON TIME WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

G3. ANY AND ALL FINISH SELECTIONS/COLORS MUST BE SUBMITTED TO THE ARCHITECT FOR APPROVAL ACCOUNTING FOR PROPER LEAD TIME. ANY FINISH THAT IS INSTALLED WITHOUT ARCHITECTS APPROVAL MAY BE REQUIRED TO BE REMOVED AND REPLACED BY THE GENERAL CONTRACTOR.

G4. ANY DISCREPANCIES BETWEEN ARCHITECTURAL ELEVATION(S), PLAN(S), SCHEDULE(S) AND NOTES MUST BE BROUGHT TO ARCHITECTS ATTENTION. ARCHITECTS MUST BE CONTACTED AND GIVE APPROVAL TO MOVE FORWARD WITH SPECIFIC DIRECTION PRIOR TO ANTICIPATED ACTION.

G5. IF COLOR OR FINISH IS NOT SPECIFIED CONTACT THE ARCHITECT FOR CLARIFICATION.

G6. ALL PAINTING, INCLUDING MEP ITEMS THAT REQUIRE PAINTING, IS UNDER THE PAINTER'S SCOPE OF WORK.

G7. ALL INTERIOR PRODUCTS TO MEET/EXCEED FLAME SPREAD RATING PER CODE.

WINDOWS:

G1. ROLLER SHADES TO BE PROVIDED ON ALL UNIT WINDOWS AS SCHEDULED.

G2. ROLLER SHADES TO BE PROVIDED ON ALL COMMON AREA WINDOWS AS SCHEDULED.

DOORS:

G1. ALL DOORS AND TRIM TO HAVE SPRAYED FINISH. ROLLED OR BRUSHED FINISH ON DOORS AND TRIM IS NOT ACCEPTABLE.

CEILINGS:

G1. ALL GYPSUM BOARD CEILINGS AND GYPSUM BOARD SOFFITS SHALL BE FINISHED TO LEVEL 4 DRYWALL FINISH AND ARE TO BE PAINTED IN A FLAT FINISH. ALL GYPSUM BOARD CEILINGS TO BE PAINTED CEILING WHITE UNLESS OTHERWISE NOTED ON THE FINISH SCHEDULE.

G2. ALL EXPOSED MECHANICAL DUCT COVERS SHALL BE PAINTED TO MATCH THE SURROUNDING WALL/CEILING COLOR. PRIME AS NECESSARY.

G3. ALL EXPOSED PLUMBING FIXTURES/ MECHANICAL DUCT/SUPPLY/RETURN SYSTEMS TO BE PAINTED AND/OR PURCHASED IN A COLOR TO MATCH THE SURROUNDING WALL/CEILING COLOR.

G4. ANY CEILING HVAC SUPPLY/DIFFUSERS TO BE PAINTED TO MATCH SURROUNDING CEILING FINISH. ANY QUESTION OR CONCERN TO BE BROUGHT TO ARCHITECTS ATTENTION FOR FINAL DECISION PRIOR TO ORDER/INSTALL BY CONTRACTOR OR OTHERS.

WALLS:

G1. ALL EXPOSED GWB WALLS SHALL BE FINISHED TO LEVEL 4 DRYWALL FINISH AND INCLUDE (1) COAT WALL PRIMER FOLLOWED BY (2) COATS WALL PAINT ON ALL INTERIOR WALL SURFACE UNLESS OTHERWISE NOTED IN SPECIFICATIONS. WALLS NOT EXPOSED SHALL BE FINISHED TO LEVEL 1. SEE SPECIFICATION FOR DETAILS.

G2. ALL SURFACE MOUNTED CONDUITS SHALL BE PAINTED TO MATCH WALL PAINT.

G3. WHERE DARK PAINT COLORS ARE APPLIED, USE DEEP GRAY BASE PRIMER TO PREVENT BURNISHING.

G4. PROVIDE SCHLUTER STRIP AS SCHEDULED AT EXPOSED UNFINISHED TILE EDGES. NECESSARY SIZES TO BE DETERMINED BY CONTRACTOR AND V.I.F. BASED ON MATERIAL THICKNESS.

G5. ALL ELECTRICAL PANEL COVERS AND/OR MECHANICAL EQUIPMENT AND/OR DUCTING TO BE PAINTED TO MATCH ADJOINING WALL.

FLOORS:

G1. CONDUCT MOISTURE TESTS ON ALL CONCRETE SLABS WHERE FINISH MATERIALS ARE SCHEDULED. RECORD PASSING MOISTURE LEVELS PRIOR TO START OF INSTALLATION. REFERENCE MANUFACTURER'S INSTALLATION SPECIFICATIONS FOR EACH FLOOR FINISH TYPE TO VERIFY REQUIREMENTS.

G2. ALL FLOOR FINISHES TO EXTEND BELOW ALL MILLWORK.

G3. CONTRACTOR TO PROVIDE TRANSITION STRIP AS SCHEDULED AT ALL FLOORING MATERIAL CHANGES NEEDING THRESHOLDS. NECESSARY SIZES TO BE DETERMINED BY CONTRACTOR AND V.I.F. BASED ON MATERIAL THICKNESS.

MILLWORK:

G1. PROVIDE CLEAR BEAD OF SILICONE OR CLEAR CAULK TO SEAL BETWEEN MILLWORK PIECES (IE:COUNTERTOP AND BACKSPLASH) AND MILLWORK AND WALL (TYPICAL).

G2. MILLWORK FINISHES ON SHOP DRAWINGS MUST BE APPROVED BY ARCHITECT PRIOR TO PRODUCTION.

G3. USE BERENSON HARDWARE METRO- 224MM CC IN BRUSHED NICKEL FINISH (9828-1BPN-P) FOR ALL MILLWORK.

G4. ALL KITCHEN AND BATHROOM CABINETS TO HAVE SOFT CLOSE DOORS AND DRAWERS.

G5. FULL FINISHED PANELS TO MATCH CABINETS REQUIRED ON SIDES OF REFRIGERATOR.

G6. PROVIDE TRIM UNDER ALL KITCHEN ISLAND COUNTERS/OVERHANGS.

OUTLETS:

G1. ALL PLATE COLORS AND RECEPTACLES TO BE WHITE.

CLOSETS:

G1. ALL CLOSETS TO RECEIVE WHITE WIRE SHELVING.

DRYWALL FINISH LEVELS

LEVEL 0: NO TAPING, FINISHING, OR ACCESSORIES REQUIRED

LEVEL 1: ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE SET IN JOINT COMPOUND. SURFACE SHALL BE FREE OF EXCESS JOINT COMPOUND. TOOL MARKS AND RIDGES ARE ACCEPTABLE.

LEVEL 2: ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE EMBEDDED IN JOINT COMPOUND AND WIPED WITH A JOINT KNIFE LEAVING A THIN COATING OF JOINT COMPOUND OVER ALL JOINTS ANFINTERIOR ANGLES. FASTENER HEADS AND ACCESSORIES SHALL BE COVERED WITH A COAT OF JOINT COMPOUND. SURFACE SHALL BE FREE OF EXCESS JOINT COMPOUND. TOOL MARKS AND RIDGES ARE ACCEPTABLE. JOINT COMPOUND APPLIED OVER THE BODY OF THE TAPE AT THE TIME OF TAPE EMBEDMENT SHALL BE CONSIDERED A SEPARATE COAT OF JOINT COMPOUND AND SHALL SATISFY THE CONDITION OF THIS LEVEL.

LEVEL 3: ALL JOINTS AND INFERIOR ANGLES SHALL HAVE TAPE EMBEDDED IN JOINT COMPOUND AND SHALL BE IMMEDIATELY WIPED WITH A JOINT KNIFE LEAVING A THIN COATING OF JOINT COMPOUND OVER ALL JOINTS AND INTERIOR ANGLES. ONE ADDITIONAL COAT OF JOINT COMPOUND SHALL BE APPLIED OVER ALL JOINTS AND INTERIOR ANGLES. FASTENER HEADS AND ACCESSORIES SHALL BE COVERED WITH TWO SEPARATE COATS OF JOINT COMPOUND. ALL JOINT COMPOUND SHALL BE SMOOTH AND FREE OF TOOL MARKS AND RIDGES. NOTE: IT IS RECOMMENDED THAT THE PREPARED SURFACE BE COATED WITH A DRYWALL PRIMER PRIOR TO THE APPLICATION OF FINAL FINISHES. SEE PAINTING/WALLCOVERING SPECIFICATION IN THIS REGARD.

LEVEL 4: ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE EMBEDDED IN JOINT COMPOUND AND SHALL BE IMMEDIATELY WIPED WITH A JOINT KNIFE LEAVING A THIN COATING OF JOINT COMPOUND OVER ALL JOINTS AND INTERIOR ANGLES. TWO SEPARATE COATS OF JOINT COMPOUND SHALL BE APPLIED OVER ALL FLAT JOINTS AND ONE SEPARATE COAT OF JOINT COMPOUND SHALL BE APPLIED OVER INTERIOR ANGLES. FASTENER HEADS AND ACCESSORIES SHALL BE COVERED WITH THREE SEPARATE COATS OF JOINT COMPOUND. ALL JOINT COMPOUND SHALL BE SMOOTH AND FREE OF TOOL MARKS AND RIDGES. NOTE: IT IS RECOMMENDED THAT THE PREPARED SURFACE BE COATED WITH A DRYWALL PRIMER PRIOR TO THE APPLICATION OF FINAL FINISHES. SEE PAINTING/WALLCOVERING SPECIFICATION IN THIS REGARD.

LEVEL 5: ALL JOINTS AND INTERIOR ANGLES SHALL HAVE TAPE EMBEDDED IN JOINT COMPOUND AND SHALL BE IMMEDIATELY WIPED WITH A JOINT KNIFE LEAVING A THIN COATING OF JOINT COMPOUND OVER ALL JOINTS AND INTERIOR ANGLES. TWO SEPARATE COATS OF JOINT COMPOUND SHALL BE APPLIED OVER ALL FLAT JOINTS AND ONE SEPARATE COAT OF JOINT COMPOUND SHALL BE APPLIED OVER INTERIOR ANGLES. FASTENER HEADS AND ACCESSORIES SHALL BE COVERED WITH THREE SEPARATE COATS OF JOINT COMPOUND. A THIN SKIM COAT OF JOINT COMPOUND TROWEL APPLIED, OR A MATERIAL MANUFACTURED ESPECIALLY FOR THIS PURPOSE AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, APPLIED TO THE ENTIRE SURFACE. THE SURFACE SHALL BE SMOOTH AND FREE OF TOOL MARKS AND RIDGES. NOTE: IT IS RECOMMENDED THAT THE PREPARED SURFACE BE COATED WITH A DRYWALL PRIMER PRIOR TO THE APPLICATION OF FINISH PAINT. SEE PAINTING SPECIFICATION IN THIS REGARD.

REMARKS

1. REFER TO FINISH FLOOR PLANS FOR ACCENT WALL LOCATIONS.
2. WALL TILE IN RESTROOMS WILL ACT AS WALL BASE. REFER TO A-400'S FOR EXACT TILE LAYOUT AND HEIGHT.
3. FRP-1 TO BE INSTALLED UP TO 48" A.F.F. WITH P-4 ABOVE TO CEILING. PURCHASE AND INSTALL ALL TRIM PIECES AS NECESSARY.
4. REFER TO ENLARGED UNIT PLANS & ELEVATIONS (A-400'S) FOR ALL TILE LAYOUTS AND LOCATIONS.
5. LINEN CLOSETS TO RECEIVE SAME FLOORING & BASE AS THE ROOM IT IS DIRECTLY ADJACENT TO.
6. REFER TO UNIT BREAKDOWN CHARTS ON SHEET A-603 FOR WHICH SCHEME IS SCHEDULED FOR EACH UNIT.
7. UNITS TO RECEIVE STAINED CONCRETE FLOORS ON FIRST FLOOR ***ONLY***. UNITS TO RECEIVE HARDWOOD FLOORING ON SECOND AND THIRD FLOOR ***ONLY***.
8. ALL CABINET LOCATIONS TO RECEIVE 4" BASE TO MATCH STAIN/COLOR OF THE CABINET.

ROOM FINISH LEGEND

FLOORS

SC = STAINED CONCRETE

T = TILE

WDF = WOOD FLOORING

BASE

MDF = MEDIUM DENSITY FIBERBOARD

TB = TILE BASE

WALLS

FRP = FIBERGLASS REINFORCED PLASTIC

GWB = GYPSUM WALL BOARD

P = PAINT

WT = WALL TILE

CEILING

GYP = GYPSUM BOARD

SCT = SUSPENDED CEILING TILE

MATERIALS

GYP = GYPSUM BOARD

MISCELLANEOUS

CAB = CABINET

CP = CABINET PULLS

EGG = EGGSHELL

EXIST = EXISTING

EXP = EXPOSED

MEP = MECHANICAL, ELECTRICAL, PLUMBING

MISC = MISCELLANEOUS

PL= PLASTIC LAMINATE

SG = SEMI GLOSS

SS = SOLID SURFACE

TS = TRANSITION STRIP

NOTICE

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET
6-11-2026: REV. 3 3

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

FINISH SCHEDULE

SILVESTRI
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1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: A-602

UNIT FINISH SELECTIONS SCHEME ONE

STAINED CONCRETE (SC-X):
(SC-1)
MANUFACTURER: HC CONCRETE
DISTRIBUTOR: SHERWIN WILLIAMS
PRODUCT: TO BE DETERMINED
COLOR: TO BE DETERMINED
NOTE: CONCRETE TO BE POLISHED
LOCATION: UNITS ON FLOOR 1 ***ONLY***

WOOD FLOORING (WDF-X):
(WDF-1)
MANUFACTURER: BJELIN
DISTRIBUTOR: SPARTAN SURFACES
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: BALTIC OAK
STAIN: TERRA BROWN
SIZE: 6" X 46"
UNDERLAYMENT: ECOSILENCE 2
LOCATION: UNITS ON FLOORS 2-3 ***ONLY***

TILE (T-X):
(T-1) BATHROOM FLOOR
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: TIVOLI
COLOR: PEWTER
SIZE: 15" X 30"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

MEDIUM DENSITY FIBERBOARD (MDF-X):
(MDF-1)
PROFILE: EASED EDGE
HEIGHT: 6"
FINISH: P-2

TILE BASE (TB-X):
(TB-1)
STYLE: TO MATCH T-1/ ONLY TO BE USED WITH T-1
SIZE: 6"
NOTE: SCHLUTER EDGE TO BE PROVIDED

PAINT (P-X):
(P-1) TYPICAL
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: MINDFUL GRAY SW 7016
FINISH: EGGSHELL

(P-2) DOORS & TRIM
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: INCREDIBLE WHITE SW 7028
FINISH: SEMI-GLOSS
NOTE: REFER TO DETAIL C4/ A-603 FOR DOOR/TRIM PAINT LOCATIONS FOR ALL UNIT ENTRY DOORS.

(P-3) CEILINGS
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: IRON ORE SW 7069
FINISH: FLAT

WALL TILE (WT-X):
(WT-1) KITCHEN BACKSPLASH
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: BOLOGNA
COLOR: BIANCO
FINISH: GLOSS
SIZE: 3" X 12"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

(WT-2) SHOWER WALLS
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: MILAN
COLOR: SNOW
SIZE: 12" X 24"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

CABINETS (CAB-X):
(CAB-1)
MANUFACTURER: WOLF CLASSIC
SPECIES: MAPLE
STAIN: GREY
DOOR STYLE: DARTMOUTH
OVERLAY: FULL
LOCATION: KITCHEN & BATHROOM
HARDWARE: CP-1

CABINET PULLS (CP-X):
(CP-1)
MANUFACTURER: BERENSON HARDWARE
STYLE: METRO 224MM CC
FINISH: BRUSHED NICKEL
MODEL #: 9828-1BPN-P
SIZE: 9⅞" (TYPICAL). SEE A-500'S FOR EXACT SIZES.

SOLID SURFACE (SS-X):
(SS-1) TYPICAL
MANUFACTURER: WILSONART
COLLECTION: QUARTZ SELECT
COLOR: TERLINGUA Q6024
PROFILE: EASED EDGE
THICKNESS: 1-1/2"

SUSPENDED CEILING TILE (ACT-X):
(SCT-1)
MANUFACTURER: ARMSTRONG CEILINGS
STYLE: 24" X 24" SINGLE RAISED PANEL
EDGE PROFILE: TEGULAR
SIZE: 24" X 24"
THICKNESS: ¾"
COLOR: WHITE
SUSPENSION SYS.: PRELUDE 15/16" GRID SYSTEM

TRANSITION STRIP (TS-X):
(TS-1) GENERAL FLOORING FOR SLOPED TRANSITIONS
MANUFACTURER: SCHLUTER SYSTEMS
STYLE & SIZE: RENO-V SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS
FINISH: CLEAR SATIN ANODIZED ALUMINUM
LOCATION(S): ALL FLOORING MATERIAL CHANGES AS NECESSARY
NOTE(S): SEE GENERAL NOTES

(TS-2) TILE CAP
MANUFACTURER: SCHLUTER SYSTEMS
STYLE & SIZE: JOLLY SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS
FINISH: CLEAR SATIN ANODIZED ALUMINUM
LOCATION(S): ALL WALL MATERIAL CHANGES AS NECESSARY
NOTE(S): SEE GENERAL NOTES

MISCELLANEOUS (MISC-X):
(MISC-1) ROLLER SHADES
MANUFACTURER: HUNTER DOUGLAS ARCHITECTURAL
STYLE: RB BASIC MANUAL ROLLER SHADES
FABRIC: E SCREEN 7505
COLOR: CHARCOAL/CHARCOAL
OPENNESS: 5%
FASCIA HEIGHT: 4"
FASCIA COLOR: BLACK

WOOD STAIN (WS-X):
(WS-1)
STAIN: TO MATCH SAMPLE PROVIDED BY ARCHITECT

UNIT FINISH SELECTIONS SCHEME TWO

STAINED CONCRETE (SC-X):
(SC-1)
MANUFACTURER: HC CONCRETE
DISTRIBUTOR: SHERWIN WILLIAMS
PRODUCT: TO BE DETERMINED
COLOR: TO BE DETERMINED
NOTE: CONCRETE TO BE POLISHED
LOCATION: UNITS ON FLOOR 1 ***ONLY***

WOOD FLOORING (WDF-X):
(WDF-1)
MANUFACTURER: BJELIN
DISTRIBUTOR: SPARTAN SURFACES
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: BALTIC OAK
STAIN: TERRA BROWN
SIZE: 6" X 46"
UNDERLAYMENT: ECOSILENCE 2
LOCATION: UNITS ON FLOORS 2-3 ***ONLY***

TILE (T-X):
(T-1) BATHROOM FLOOR
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: TIVOLI
COLOR: PEWTER
SIZE: 15" X 30"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

MEDIUM DENSITY FIBERBOARD (MDF-X):
(MDF-1)
PROFILE: EASED EDGE
HEIGHT: 6"
FINISH: P-2

TILE BASE (TB-X):
(TB-1)
STYLE: TO MATCH T-1/ ONLY TO BE USED WITH T-1
SIZE: 6"
NOTE: SCHLUTER EDGE TO BE PROVIDED

PAINT (P-X):
(P-1) TYPICAL
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: WORLDLY GRAY SW 7043
FINISH: EGGSHELL

(P-2) DOORS & TRIM
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: INCREDIBLE WHITE SW 7028
FINISH: SEMI-GLOSS
NOTE: REFER TO DETAIL C4/ A-603 FOR DOOR/TRIM PAINT LOCATIONS FOR ALL UNIT ENTRY DOORS.

(P-3) CEILINGS
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: IRON ORE SW 7069
FINISH: FLAT

WALL TILE (WT-X):
(WT-1) KITCHEN BACKSPLASH
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: BOLOGNA
COLOR: ROSEWOOD
FINISH: GLOSS
SIZE: 3" X 12"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

(WT-2) SHOWER WALLS
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: MILAN
COLOR: SNOW
SIZE: 12" X 24"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

CABINETS (CAB-X):
(CAB-1)
MANUFACTURER: WOLF CLASSIC
SPECIES: MAPLE
COLOR: OPAL
DOOR STYLE: BERWYN
OVERLAY: FULL
LOCATION: KITCHEN & BATHROOM
HARDWARE: CP-1

CABINET PULLS (CP-X):
(CP-1)
MANUFACTURER: BERENSON HARDWARE
STYLE: METRO 224MM CC
FINISH: BRUSHED NICKEL
MODEL #: 9828-1BPN-P
SIZE: 9⅞" (TYPICAL). SEE A-500'S FOR EXACT SIZES.

SOLID SURFACE (SS-X):
(SS-1) TYPICAL
MANUFACTURER: WILSONART
COLLECTION: QUARTZ SELECT
COLOR: TERLINGUA Q6024
PROFILE: EASED EDGE
THICKNESS: 1-1/2"

SUSPENDED CEILING TILE (ACT-X):
(SCT-1)
MANUFACTURER: ARMSTRONG CEILINGS
STYLE: 24" X 24" SINGLE RAISED PANEL
EDGE PROFILE: TEGULAR
SIZE: 24" X 24"
THICKNESS: ¾"
COLOR: WHITE
SUSPENSION SYS.: PRELUDE 15/16" GRID SYSTEM

TRANSITION STRIP (TS-X):
(TS-1) GENERAL FLOORING FOR SLOPED TRANSITIONS
MANUFACTURER: SCHLUTER SYSTEMS
STYLE & SIZE: RENO-V SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS
FINISH: CLEAR SATIN ANODIZED ALUMINUM
LOCATION(S): ALL FLOORING MATERIAL CHANGES AS NECESSARY
NOTE(S): SEE GENERAL NOTES

(TS-2) TILE CAP
MANUFACTURER: SCHLUTER SYSTEMS
STYLE & SIZE: JOLLY SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS
FINISH: CLEAR SATIN ANODIZED ALUMINUM
LOCATION(S): ALL WALL MATERIAL CHANGES AS NECESSARY
NOTE(S): SEE GENERAL NOTES

MISCELLANEOUS (MISC-X):
(MISC-1) ROLLER SHADES
MANUFACTURER: HUNTER DOUGLAS ARCHITECTURAL
STYLE: RB BASIC MANUAL ROLLER SHADES
FABRIC: E SCREEN 7505
COLOR: CHARCOAL/CHARCOAL
OPENNESS: 5%
FASCIA HEIGHT: 4"
FASCIA COLOR: BLACK

UNIT FINISH SELECTIONS SCHEME THREE

STAINED CONCRETE (SC-X):
(SC-1)
MANUFACTURER: HC CONCRETE
DISTRIBUTOR: SHERWIN WILLIAMS
PRODUCT: TO BE DETERMINED
COLOR: TO BE DETERMINED
NOTE: CONCRETE TO BE POLISHED
LOCATION: UNITS ON FLOOR 1 ***ONLY***

WOOD FLOORING (WDF-X):
(WDF-1)
MANUFACTURER: BJELIN
DISTRIBUTOR: SPARTAN SURFACES
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: BALTIC OAK
STAIN: MISTY WHITE
SIZE: 6" X 46"
UNDERLAYMENT: ECOSILENCE 2
LOCATION: UNITS ON FLOORS 2-3 ***ONLY***

TILE (T-X):
(T-1) BATHROOM FLOOR
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: TIVOLI
COLOR: PEWTER
SIZE: 15" X 30"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

MEDIUM DENSITY FIBERBOARD (MDF-X):
(MDF-1)
PROFILE: EASED EDGE
HEIGHT: 6"
FINISH: P-2

TILE BASE (TB-X):
(TB-1)
STYLE: TO MATCH T-1/ ONLY TO BE USED WITH T-1
SIZE: 6"
NOTE: SCHLUTER EDGE TO BE PROVIDED

PAINT (P-X):
(P-1) TYPICAL
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: WORLDLY GRAY SW 7043
FINISH: EGGSHELL

(P-2) DOORS & TRIM
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: INCREDIBLE WHITE SW 7028
FINISH: SEMI-GLOSS
NOTE: REFER TO DETAIL C4/ A-603 FOR DOOR/TRIM PAINT LOCATIONS FOR ALL UNIT ENTRY DOORS.

(P-3) CEILINGS
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: IRON ORE SW 7069
FINISH: FLAT

WALL TILE (WT-X):
(WT-1) KITCHEN BACKSPLASH
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: BOLOGNA
COLOR: MOSS
FINISH: GLOSS
SIZE: 3" X 12"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

(WT-2) SHOWER WALLS
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: MILAN
COLOR: SNOW
SIZE: 12" X 24"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

CABINETS (CAB-X):
(CAB-1)
MANUFACTURER: WOLF CLASSIC
SPECIES: MAPLE
STAIN: BROWNSTONE
DOOR STYLE: DARTMOUTH
OVERLAY: FULL
LOCATION: KITCHEN & BATHROOM
HARDWARE: CP-1

CABINET PULLS (CP-X):
(CP-1)
MANUFACTURER: BERENSON HARDWARE
STYLE: METRO 224MM CC
FINISH: BRUSHED NICKEL
MODEL #: 9828-1BPN-P
SIZE: 9⅞" (TYPICAL). SEE A-500'S FOR EXACT SIZES.

SOLID SURFACE (SS-X):
(SS-1) TYPICAL
MANUFACTURER: WILSONART
COLLECTION: QUARTZ SELECT
COLOR: FROZEN Q6023
PROFILE: EASED EDGE
THICKNESS: 1-1/2"

SUSPENDED CEILING TILE (ACT-X):
(SCT-1)
MANUFACTURER: ARMSTRONG CEILINGS
STYLE: 24" X 24" SINGLE RAISED PANEL
EDGE PROFILE: TEGULAR
SIZE: 24" X 24"
THICKNESS: ¾"
COLOR: WHITE
SUSPENSION SYS.: PRELUDE 15/16" GRID SYSTEM

TRANSITION STRIP (TS-X):
(TS-1) GENERAL FLOORING FOR SLOPED TRANSITIONS
MANUFACTURER: SCHLUTER SYSTEMS
STYLE & SIZE: RENO-V SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS
FINISH: CLEAR SATIN ANODIZED ALUMINUM
LOCATION(S): ALL FLOORING MATERIAL CHANGES AS NECESSARY
NOTE(S): SEE GENERAL NOTES

(TS-2) TILE CAP
MANUFACTURER: SCHLUTER SYSTEMS
STYLE & SIZE: JOLLY SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS
FINISH: CLEAR SATIN ANODIZED ALUMINUM
LOCATION(S): ALL WALL MATERIAL CHANGES AS NECESSARY
NOTE(S): SEE GENERAL NOTES

MISCELLANEOUS (MISC-X):
(MISC-1) ROLLER SHADES
MANUFACTURER: HUNTER DOUGLAS ARCHITECTURAL
STYLE: RB BASIC MANUAL ROLLER SHADES
FABRIC: E SCREEN 7505
COLOR: CHARCOAL/CHARCOAL
OPENNESS: 5%
FASCIA HEIGHT: 4"
FASCIA COLOR: BLACK

COMMON AREA FINISH SELECTIONS

STAINED CONCRETE (SC-X):
(SC-1)
MANUFACTURER: HC CONCRETE
DISTRIBUTOR: SHERWIN WILLIAMS
PRODUCT: TO BE DETERMINED
COLOR: TO BE DETERMINED
NOTE: CONCRETE TO BE POLISHED
LOCATION: FLOOR 1 ***ONLY***

WOOD FLOORING (WDF-X):
(WDF-2)
MANUFACTURER: BJELIN
DISTRIBUTOR: SPARTAN SURFACES
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: BALTIC OAK
STAIN: TO BE DETERMINED
SIZE: 6" X 46"
LOCATION: FLOORS 2-3 ***ONLY***

TILE (T-X):
(T-2)
MANUFACTURER: UMORE
CONTACT: TIM WESTER (585) 622-0753
TWESTER@SPARTANSURFACES.COM
COLLECTION: TO BE DETERMINED
COLOR: TO BE DETERMINED
SIZE: 12" X 24"
INSTALL: BRICK LAY ½ OFFSET
GROUT: BOSTIK
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

RUBBER BASE (RB-X):
(RB-1)
MANUFACTURER: TARKETT/JOHNSONITE
COLLECTION: MILLWORK WALL BASE SYSTEM
PROFILE: EXHIBIT MW-XX-FS6
HEIGHT: 6"
COLOR: TO BE DETERMINED

(RB-2)
MANUFACTURER: TARKETT/JOHNESONITE
COLLECTION: BASEWORK
HEIGHT: 4"
COLOR: TO BE DETERMINED

TILE BASE (TB-X):
(TB-2)
STYLE: TO MATCH T-2/ ONLY TO BE USED WITH T-2
SIZE: 6"
NOTE: SCHLUTER EDGE TO BE PROVIDED

PAINT (P-X):
(P-4) TYPICAL
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: TO BE DETERMINED
FINISH: EGGSHELL

(P-5) ACCENT
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: TO BE DETERMINED
FINISH: EGGSHELL

(P-6) DOORS & TRIM
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: IRON ORE SW 7069
FINISH: SEMI-GLOSS
NOTE: REFER TO DETAIL B3/ A-604 FOR DOOR/TRIM PAINT LOCATIONS FOR ALL UNIT ENTRY DOORS.

(P-7) CEILINGS
MANUFACTURER: SHERWIN WILLIAMS
TYPE: PROMAR 200
COLOR: IRON ORE SW 7069
FINISH: FLAT

WALL TILE (WT-X):
(WT-3) BATHROOM WALLS
MANUFACTURER: TO BE DETERMINED
COLLECTION: TO BE DETERMINED
COLOR: TO BE DETERMINED
SIZE: TO BE DETERMINED
INSTALL: TO BE DETERMINED
GROUT: TO BE DETERMINED
GROUT COLOR: TO BE DETERMINED
JOINT THICKNESS: ⅛"

FIBER REINFORCED PLASTIC (FRP-X):
(FRP-1)
MANUFACTURER: CRANE COMPOSITES
STYLE: GLASBORD WITH SURFASEAL FINISH
TEXTURE: PEBBLED EMBOSSED
COLOR: TO BE DETERMINED
RATING: CLASS A FIRE RATED

SOLID SURFACE (SS-X):
(SS-2) BATHROOM COUNTER
MANUFACTURER: WILSONART
COLLECTION: QUARTZ SELECT
COLOR: TO BE DETERMINED
PROFILE: EASED EDGE
THICKNESS: 1-1/2"

PLASTIC LAMINATE (PL-X):
(PL-1) BATHROOM SHROUD
MANUFACTURER: WILSONART
COLOR: TO BE DETERMINED

(PL-2) PACKAGE ROOM SHELVING
MANUFACTURER: WILSONART
COLOR: TO BE DETERMINED

SUSPENDED CEILING TILE (ACT-X):
(SCT-1)
MANUFACTURER: ARMSTRONG CEILINGS
STYLE: 24" X 24" SINGLE RAISED PANEL
EDGE PROFILE: TEGULAR
SIZE: 24" X 24"
THICKNESS: ¾"
COLOR: WHITE
SUSPENSION SYS.: PRELUDE 15/16" GRID SYSTEM

TRANSITION STRIP (TS-X):
(TS-1) GENERAL FLOORING FOR SLOPED TRANSITIONS
MANUFACTURER: SCHLUTER SYSTEMS
STYLE & SIZE: RENO-V SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS
FINISH: CLEAR SATIN ANODIZED ALUMINUM
LOCATION(S): ALL FLOORING MATERIAL CHANGES AS NECESSARY
NOTE(S): SEE GENERAL NOTES

(TS-2) WALL TILE CAP
MANUFACTURER: SCHLUTER SYSTEMS
STYLE & SIZE: JOLLY SIZE TO BE V.I.F. IN ACCORDANCE WITH MATERIAL(S) THICKNESS
FINISH: CLEAR SATIN ANODIZED ALUMINUM
LOCATION(S): ALL WALL MATERIAL CHANGES AS NECESSARY
NOTE(S): SEE GENERAL NOTES

WOOD STAIN (WS-X):
(WS-1)
STAIN: TO MATCH SAMPLE PROVIDED BY ARCHITECT
LOCATION: STAIR 027 TREADS & RISERS

MISCELLANEOUS (MISC-X):
(MISC-1) ROLLER SHADES
MANUFACTURER: HUNTER DOUGLAS ARCHITECTURAL
STYLE: RB BASIC MANUAL ROLLER SHADES
FABRIC: E SCREEN 7505
COLOR: CHARCOAL/CHARCOAL
OPENNESS: 5%
FASCIA HEIGHT: 4"
FASCIA COLOR: BLACK

ROOM FINISH LEGEND

FLOORS

SC = STAINED CONCRETE

T = TILE

WDF = WOOD FLOORING

BASE

MDF = MEDIUM DENSITY FIBERBOARD

TB = TILE BASE

WALLS

FRP = FIBERGLASS REINFORCED PLASTIC

GWB = GYPSUM WALL BOARD

P = PAINT

WT = WALL TILE

CEILING

GYP = GYPSUM BOARD

SCT = SUSPENDED CEILING TILE

MATERIALS

GYP = GYPSUM BOARD

MISCELLANEOUS

CAB = CABINET

CP = CABINET PULLS

EGG = EGGSHELL

EXIST = EXISTING

EXP = EXPOSED

MEP = MECHANICAL, ELECTRICAL, PLUMBING

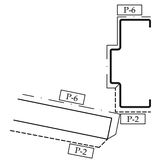
MISC = MISCELLANEOUS

PL= PLASTIC LAMINATE

SG = SEMI GLOSS

SS = SOLID SURFACE

TS = TRANSITION STRIP



C4 DOOR PAINT LOCATIONS
UNIT ENTRY DOORS

SCHEME ONE UNIT BREAKDOWN

FIRST FLOOR	SECOND FLOOR	THIRD FLOOR
102 - UNIT P (3 BED, 2 BATH)	202 - UNIT H (2 BED, 1 DEN, 1.5 BATH)	301 - UNIT B (2 BED, 1.5 BATH)
106 - UNIT L (1 BED, 1.5 BATH)	203 - UNIT C (3 BED, 2 BATH)	304 - UNIT G (3 BED, 2 BATH)
108 - UNIT N (2 BED, 1.5 BATH)	210 - UNIT I1 (1 BED, 1.5 BATH)	307 - UNIT A (2 BED, 1.5 BATH)
	213 - UNIT O (1 BED, 1 BATH)	

SCHEME TWO UNIT BREAKDOWN

FIRST FLOOR	SECOND FLOOR	THIRD FLOOR
101 - UNIT D1 (2 BED, 1 DEN, 1.5 BATH)	205 - UNIT D (3 BED, 2 BATH)	303 - UNIT C (3 BED, 2 BATH)
104 - UNIT M (2 BED, 2 BATH)	206 - UNIT F (3 BED, 2 BATH)	308 - UNIT E (2 BED, 1.5 BATH)
107 - UNIT L (1 BED, 1.5 BATH)	209 - UNIT J (2 BED, 1.5 BATH)	
	212 - UNIT I (1 BED, 1.5 BATH)	

SCHEME THREE UNIT BREAKDOWN

FIRST FLOOR	SECOND FLOOR	THIRD FLOOR
103 - UNIT K (2 BED, 2 BATH)	201 - UNIT B (2 BED, 1.5 BATH)	302 - UNIT H (2 BED, 1 DEN, 1.5 BATH)
105 - UNIT L1 (1 BED, 1.5 BATH)	204 - UNIT G (3 BED, 2 BATH)	305 - UNIT D (3 BED, 2 BATH)
	207 - UNIT A (2 BED, 1.5 BATH)	306 - UNIT F (3 BED, 2 BATH)
	208 - UNIT E (2 BED, 1.5 BATH)	
	211 - UNIT I1 (1 BED, 1.5 BATH)	

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273 HICKORY STREET BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

TITLE:

FINISH SCHEDULE

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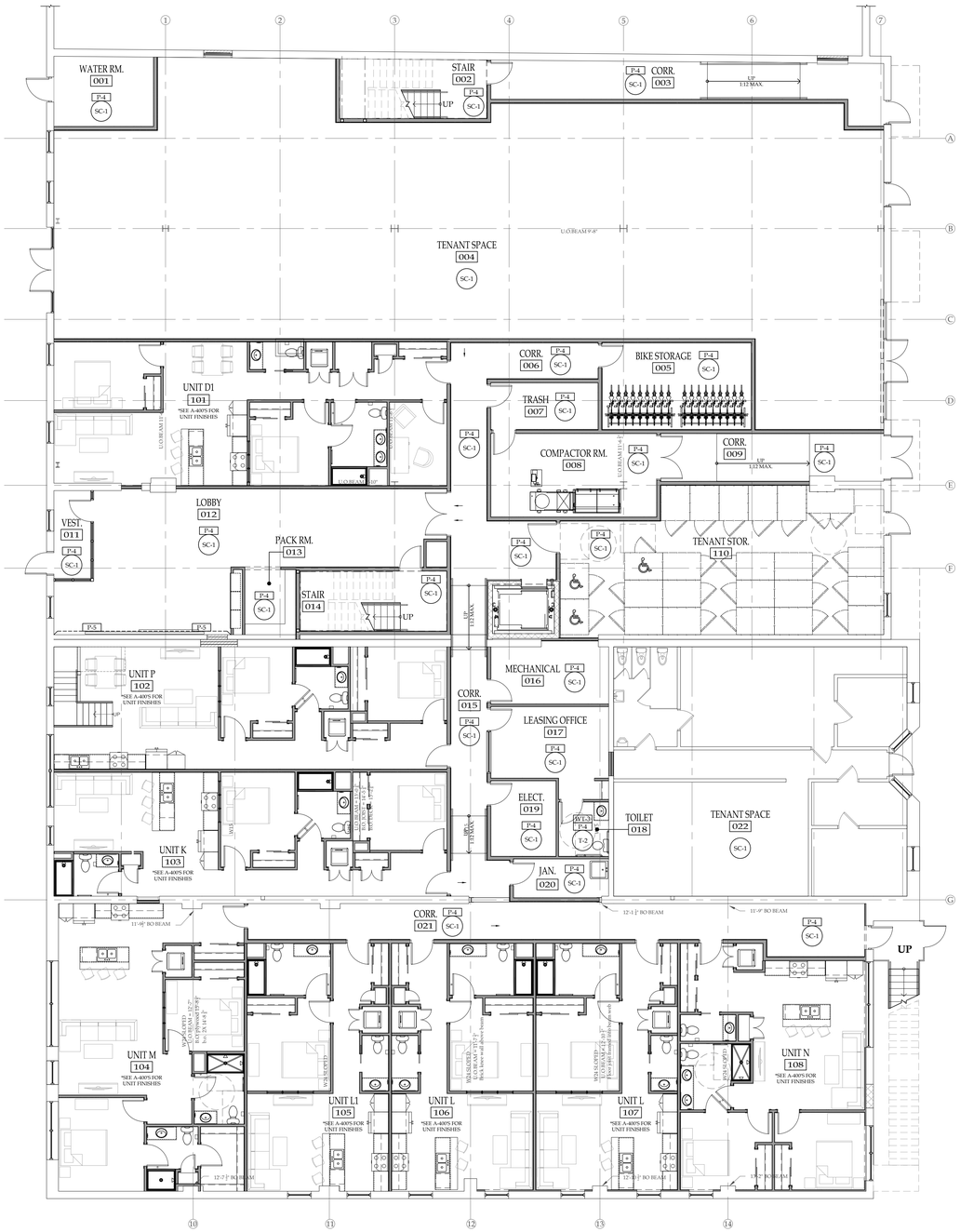
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: A-603



A1 FIRST FLOOR FINISH PLAN
1/8"=1'-0"

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FIRST FLOOR
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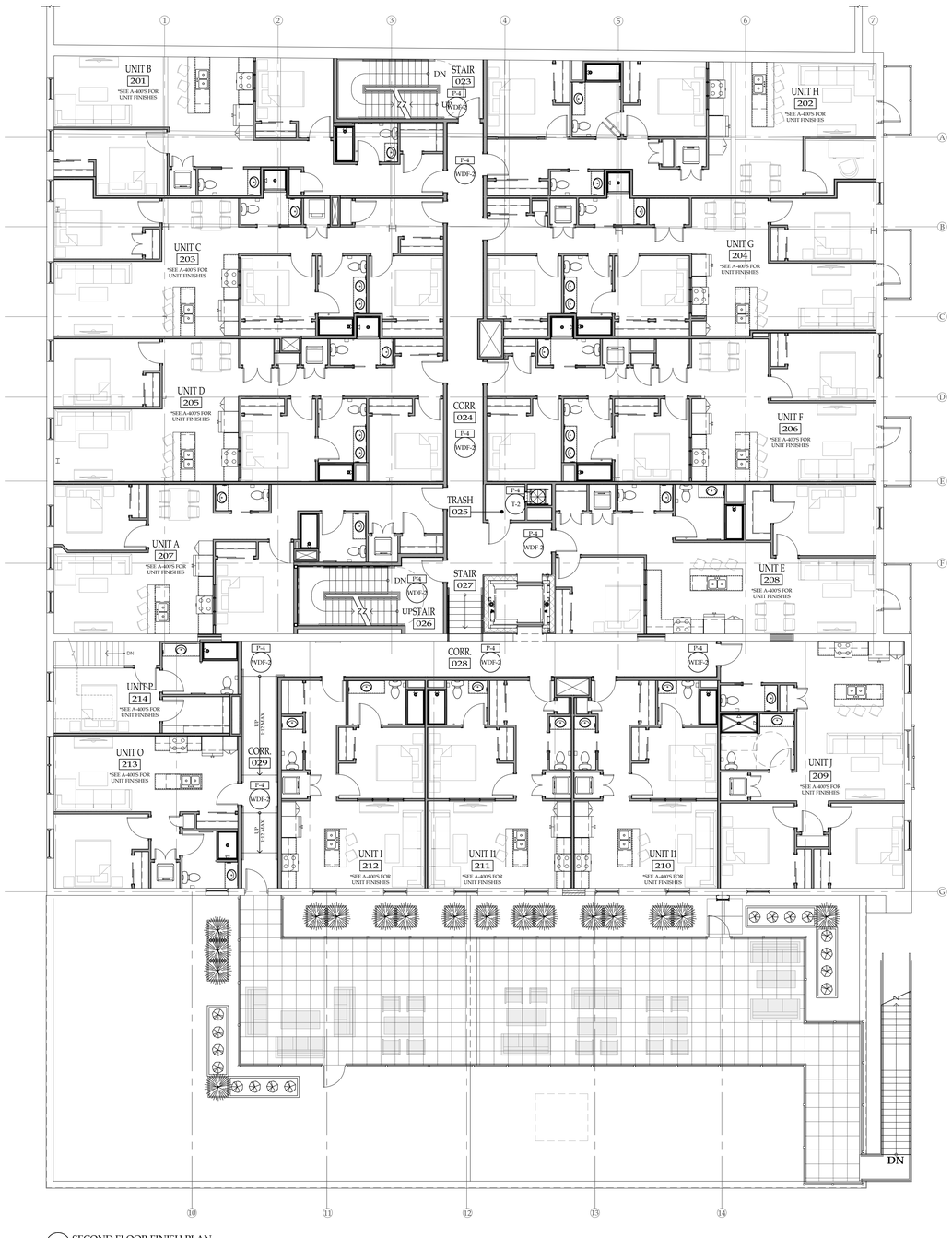

A1 SECOND FLOOR FINISH PLAN
1/8"=1'-0"

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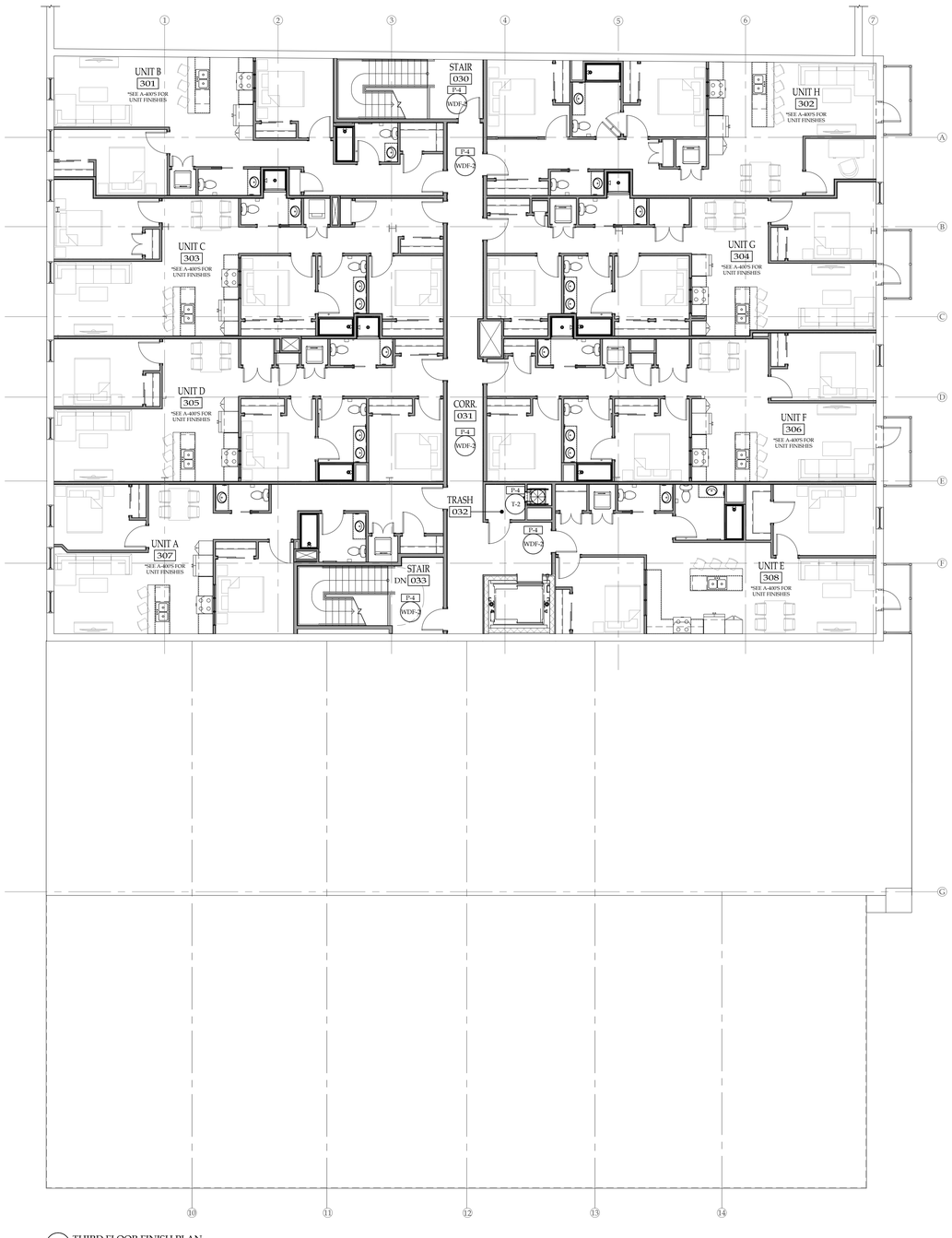

A1 THIRD FLOOR FINISH PLAN
1/8"=1'-0"

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HVAC GENERAL NOTES

ARCHITECTURAL

1. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
2. LIGHT FIXTURE LOCATIONS TAKE PRECEDENCE OVER DIFFUSER AND GRILLE LOCATIONS. LOCATE DIFFUSERS AND GRILLES TO ACCOMMODATE LIGHTING LAYOUT.
3. REFER TO ARCHITECTURAL FLOOR PLANS FOR LOCATION AND RATING OF ALL FIRE RATED WALLS AND CEILINGS.

GENERAL

1. THE HVAC CONTRACTOR SHALL VISIT THE JOB SITE AND BE FAMILIAR WITH ALL PROJECT CONDITIONS PRIOR TO PURCHASING AND FABRICATING DUCTWORK, EQUIPMENT, ETC. NO ALLOWANCES WILL BE MADE FOR CONTRACTOR'S UNFAMILIARITY WITH PROJECT CONDITIONS.
2. PIPING AND DUCTWORK ROUTING SHOWN IS SCHEMATIC. HVAC CONTRACTOR SHALL PROVIDE ANY ADDITIONAL OFFSETS AND FITTINGS, INCLUDING DIVIDED DUCTS, REQUIRED FOR PROPER INSTALLATION AND TO MAINTAIN CLEARANCES AS ENCOUNTERED IN THE FIELD.
3. FURNISH ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETE INSTALLATION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH ALL APPLICABLE CODES, ASHRAE, SMACNA, NFPA, EPA, ETC.
4. PRIOR TO INSTALLATION OF ASSOCIATED WORK; INSTALLER SHALL MEET AT PROJECT SITE WITH GENERAL CONTRACTOR, INSTALLER OF EACH COMPONENT OF ASSOCIATED WORK, INSPECTION AND TESTING AGENCY REPRESENTATIVES (IF ANY), INSTALLERS OF OTHER WORK REQUIRING COORDINATION WITH WORK OF THIS SECTION AND ARCHITECT / OWNER FOR PURPOSE OF COORDINATING LOCATIONS OF PROPOSED SYSTEMS, REVIEWING MATERIAL SELECTIONS, AND PROCEDURES TO BE FOLLOWED IN PERFORMING THE WORK IN COMPLIANCE WITH REQUIREMENTS SPECIFIED.
5. COORDINATE INSTALLATION AND LOCATIONS OF DUCTWORK AND PIPING WITH BUILDING STRUCTURE, PLUMBING PIPING, ELECTRICAL CONDUIT, LIGHTING, ETC. PRIOR TO PURCHASING OR INSTALLING EQUIPMENT AND MATERIALS.
6. ALL PIPING, DUCTS, VENTS, ETC. EXTENDING THROUGH WALLS AND ROOFS SHALL BE FLASHED AND COUNTERFLASHED IN A WATERPROOF MANNER.
7. MAINTAIN MINIMUM OF TEN (10) FEET BETWEEN OUTDOOR AIR INTAKES AND EXHAUST FAN DISCHARGE, PLUMBING VENTS, ETC.
8. MAINTAIN A MINIMUM OF TEN (10) FEET BETWEEN EDGE OF HVAC EQUIPMENT / ROOF CURBS AND EDGE OF ROOF / PARAPET.
9. REFER TO PLUMBING DRAWINGS FOR LOCATION AND ROUTING OF ALL CONDENSATE DRAIN LINE CONNECTION POINTS, GAS PIPING AND WATER HEATER COMBUSTION / EXHAUST AIR DUCTWORK.
10. DIVISION 23 SHALL BE LICENSED TO PERFORM MECHANICAL WORK IN THE MUNICIPALITY IN WHICH THE PROJECT IS LOCATED.
11. DIVISION 23 SHALL GUARANTEE ALL WORK PERFORMED AND MATERIALS FURNISHED UNDER THIS CONTRACT AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE OF THE WORK. ANY DEFECTS SHALL BE RECTIFIED BY DIVISION 23 WITHOUT ANY ADDITIONAL COST TO THE OWNER.
12. WORK SHALL COMPLY WITH THE LATEST REVISIONS OF NEW YORK STATE BUILDING CODE, NEW YORK STATE MECHANICAL CODE, NEW YORK STATE UNIFORM FIRE PROTECTION AND CONSTRUCTION CODE, NEW YORK STATE ENERGY CONSERVATION CODE, AND ANY STATE AND LOCAL CODES OR REGULATIONS THAT APPLY.
    A. IN CASE OF CONFLICTS BETWEEN DRAWINGS, SPECIFICATIONS, AND INTERPRETATION OF CODES BY LOCAL AUTHORITY, LATTER SHALL GOVERN.

EQUIPMENT

1. ALL HVAC EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS AS SHOWN. UTILIZE FACTORY FILTERS DURING CONSTRUCTION AND REPLACE WITH NEW FILTERS JUST PRIOR TO TESTING AND BALANCING. PROVIDE ONE (1) SET OF EXTRA FILTERS FOR EACH UNIT INSTALLED.
    A. ENERGY RECOVERY UNITS: PROVIDE MERV–13 (MINIMUM) FILTERS.
    B. AIR HANDLING UNITS: PROVIDE MERV–8 (MINIMUM) FILTERS.
    C. FAN COIL UNITS (DUCTED): PROVIDE 1" THICK CLEANABLE FILTERS.
    D. FAN COIL UNITS (DUCTLESS): PROVIDE 1" THICK CLEANABLE FILTERS.
2. ALL EQUIPMENT SHALL HAVE A ONE (1) YEAR WARRANTY; COMPRESSORS SHALL HAVE AN ADDITIONAL FIVE (5) YEAR EXTENDED WARRANTY. ENERGY RECOVERY UNITS HEAT EXCHANGERS SHALL HAVE AN ADDITIONAL TEN (10) YEAR EXTENDED WARRANTY; PROVIDE WRITTEN GUARANTEE.
3. GENERAL CONTRACTOR SHALL STORE ALL HVAC EQUIPMENT (FAN COIL UNITS, DUCTWORK, ETC.) THAT ARRIVES AT THE PROJECT SITE. STORE ALL EQUIPMENT IN A DRY PLACE, PROTECTING ALL EQUIPMENT FROM THE WEATHER, CONSTRUCTION TRAFFIC AND THEFT.
4. ROOF CURBS SHALL HAVE A BASE THAT FITS SLOPE OF ROOF AS REQUIRED. TOP OF ROOF CURB SHALL BE LEVEL.
5. FLEXIBLE CONNECTORS SHALL BE INSTALLED ON SUPPLY, RETURN, AND EXHAUST AIR DUCTS AT ALL EQUIPMENT CONNECTIONS.
6. THE BIDDER MUST SUBMIT IN WRITING TO THE ARCHITECT / OWNER, WHO WILL FORWARD TO THE ENGINEER, ANY REQUEST FOR A PROPOSED DEVIATION, MODIFICATION, OR SUBSTITUTION TO THESE DRAWINGS AND SPECIFICATIONS FOR EVALUATION NO LATER THAN TEN (10) DAYS PRIOR TO THE BID DATE, AND SHALL BE ACCOMPANIED BY TECHNICAL DATA, DRAWINGS, AND COMPLETE DATA SUBSTANTIATING COMPLIANCE OF PROPOSED SUBSTITUTION WITH THESE DRAWINGS AND SPECIFICATIONS.
    A. REQUESTS FOR SUBSTITUTION SHALL BE MADE ONLY BY THE BIDDER; REQUESTS FOR SUBSTITUTION FROM SALES REPRESENTATIVES, VENDORS, OR SUPPLIERS ARE NOT ACCEPTABLE.

PAINTING OF MECHANICAL WORK

1. SCOPE: THE SCOPE OF PAINTING TO BE APPLIED AS PART OF WORK UNDER DIVISION 23 SHALL CONSIST OF THE FOLLOWING:
    A. PAINT EXPOSED MECHANICAL WORK THROUGHOUT ENTIRE PROJECT INCLUDING UNINSULATED AND INSULATED PIPING, DUCTWORK, AND TERMINAL HVAC EQUIPMENT.
    B. PAINT ALL PIPE HANGERS, SUPPORTING STEEL, AND EQUIPMENT HAVING NO PRIME OR ONLY A PRIME COAT FINISH.
2. GENERAL PAINTING PRODUCT REQUIREMENTS.
    A. STEEL SURFACES.
        1. FIRST COAT: RUST–OLEUM #769 RED PRIMER.
        2. SECOND COAT: RUST–OLEUM #960 ZINC–CHROMATE RUST INHIBITIVE PRIMER.
        3. THIRD COAT: RUST–OLEUM INDUSTRIAL ENAMEL, FINISH COLOR AS SELECTED BY ARCHITECT UNLESS OTHERWISE INDICATED.
    B. PIPE AND EQUIPMENT INSULATION.
        1. FIRST COAT: RUST–OLEUM #5895 PRIMER–SEALER.
        2. SECOND AND THIRD COATS: RUST–OLEUM #5200 ACRYLIC SERIES, FINISH COLOR AS SELECTED BY ARCHITECT UNLESS OTHERWISE INDICATED.
    C. PAINT INTERIORS OF METAL DUCTS THAT DO NOT HAVE DUCT LINER, FOR 24–INCHES UPSTREAM OF REGISTERS AND GRILLES.
        1. APPLY ONE COAT OF FLAT BLACK, LATEX FINISH COAT OVER A COMPATIBLE GALVANIZED–STEEL PRIMER.

PIPING

1. ALL PIPING LINES, INCLUDING CONDENSATE DRAINS, SHALL BE FULLY INSULATED WITH MINIMUM 1" THICK, 0.75 LB DENSITY, INSULATION WITH VAPOR BARRIER, FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE–DEVELOPED RATING OF 50 OR LESS.
    A. ALL PIPING EXPOSED ON THE ROOF SHALL BE PROVIDED WITH A HIGH IMPACT, UV–RESISTANT PVC JACKET, MINIMUM 30 MIL (AS MANUFACTURED BY JOHNS MANVILLE).
2. CONDENSATE DRAIN PIPING FROM AIR CONDITIONING EQUIPMENT SHALL BE PITCHED A MINIMUM OF 1/4" PER FOOT, IN THE DIRECTION OF FLOW.
3. CONDENSATE DRAIN PIPES SHALL HAVE CLEANOUTS AT EVERY CHANGE IN DIRECTION, DISTANCES GREATER THAN 3 FEET, AND AT THE BEGINNING OF LONG STRAIGHT RUNS.
4. HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR THE SIZING OF REFRIGERANT LINES (LONG LINE APPLICATION) GREATER THAN 50'–0". HVAC EQUIPMENT SUPPLIER SHALL VERIFY REFRIGERANT PIPE LINE SIZES AND CONFIGURATIONS BASED ON CONTRACTOR'S PROPOSED PIPE ROUTING.

CONTROLS

1. ALL CONTROL WIRING AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) AND NFPA 70.
2. COMMERCIAL SPACE: ALL CONTROL WIRING AND POWER CONDUCTOR INSULATION SHALL BE PLENUM RATED.
3. APARTMENTS: ALL CONTROL WIRING AND POWER CONDUCTOR INSULATION SHALL BE MINIMUM 18–GAUGE LOW VOLTAGE WIRING.
4. ALL EXPOSED CONTROL WIRING SHALL BE INSTALLED IN 3/4" EMT CONDUIT.
5. PROVIDE ALL RELAYS, CONTACTORS, ETC. REQUIRED TO ACHIEVE INTERLOCK OPERATION OF EQUIPMENT.

DUCTWORK

1. RUN ALL DUCTWORK AND PIPING AS TIGHT TO BOTTOM OF JOISTS / BEAMS AS POSSIBLE, WITHIN JOIST / BEAM SPACE AND THRU OPEN JOIST WEBBING.
    A. COORDINATE EXACT LOCATIONS (HEIGHT, ROUTING, ETC.) OF EXPOSED DUCTWORK IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO FABRICATING AND INSTALLING DUCTWORK.
2. DUCTWORK SHALL NOT BE SUPPORTED FROM BRIDGING, CONDUIT, PIPING, ETC. OF ANY KIND. DO NOT USE FASTENERS THAT PENETRATE ROOF DECKS.
3. ASPECT RATIO SHALL NOT EXCEED 3:1.
4. ALL DUCTWORK INSTALLATIONS AND INSULATION SHALL RUN CONTINUOUSLY THROUGH FLOORS AND PARTITIONS.
5. LOCATE ALL DUCT BALANCING DAMPERS, CONTROL DAMPERS, FIRE DAMPERS, BOOSTER FANS AND CEILING RADIATION DAMPERS (IF REQUIRED) ABOVE ACCESSIBLE CEILINGS OR PROVIDE CEILING AND / OR WALL ACCESS DOORS.
6. PROVIDE VOLUME CONTROL DAMPERS WITH QUADRANT AND LOCK AND STANDOFF COLLAR AT ALL BRANCH DUCTS TO DIFFUSERS. INSTALL AT A MINIMUM OF TWO DUCT WIDTHS FROM BRANCH TAKEOFF.
7. DUCTWORK SIZES INDICATED ON DRAWINGS ARE INSIDE, FREE AND CLEAR DIMENSIONS. INCREASE DUCT OUTSIDE DIMENSION SIZE BY TWO (2) TIMES THE THICKNESS OF THE INSULATION.
8. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS.
9. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL IN AREAS WITH FINISHED CEILINGS.
    A. ALL CONCEALED DUCTWORK AND FITTINGS SHALL BE CONSTRUCTED OF MINIMUM 26–GAUGE STEEL (GALVANIZED) AND 24–GAUGE (ALUMINUM).
    B. ALL EXPOSED DUCTWORK AND FITTINGS SHALL BE CONSTRUCTED OF MINIMUM 26–GAUGE STEEL (GALVANIZED – APARTMENT UNITS), 24–GAUGE STEEL (GALVANIZED – COMMON SPACES) AND 24–GAUGE (ALUMINUM).
        1). ALL DUCTWORK AND FITTINGS SHALL BE FREE FROM VISUAL IMPERFECTIONS (PITTING, SEAM MARKS, ROLLER MARKS, ETC.) WHICH WOULD IMPAIR PAINTING.
            a. ALL EXPOSED SUPPLY AIR AND ENERGY RECOVERY SUPPLY AIR DUCTWORK AND FITTINGS SHALL BE SINGLE–WALL, INTERNALLY INSULATED, "SPIRAL" AS MANUFACTURED BY JOHNS MANVILLE OR OWENS CORNING (SUITABLE FOR PAINTING, COLOR AS SELECTED BY ARCHITECT) OR INTERNALLY–LINED RECTANGULAR (SUITABLE FOR PAINTING, COLOR AS SELECTED BY ARCHITECT).
            b. ALL EXPOSED RETURN AIR DUCTWORK AND FITTINGS SHALL BE INTERNALLY–LINED RECTANGULAR (SUITABLE FOR PAINTING, COLOR AS SELECTED BY ARCHITECT).
            c. ALL EXPOSED EXHAUST AIR AND ENERGY RECOVERY EXHAUST AIR DUCTWORK AND FITTINGS SHALL BE RECTANGULAR (SUITABLE FOR PAINTING, COLOR AS SELECTED BY ARCHITECT).
        2). IF APPROVED BY THE OWNER, INSULATION CAN BE REMOVED FROM DUCTWORK LOCATED WITHIN THE BUILDING THERMAL ENVELOPE (I.E. ENCLOSED CEILINGS) TO ALLOW FOR MAXIMUM CEILING HEIGHT PROVIDED THAT ALL JOINTS AND SEAMS ARE SEALED AIRTIGHT BY MEANS OF TAPES, MASTICS, AND / OR GASKETING.
    C. APARTMENT UNITS: DRYER EXHAUST DUCTWORK AND FITTINGS SHALL BE CONSTRUCTED OF MINIMUM 26–GAUGE GALVANIZED STEEL OR MINIMUM 24–GAUGE ALUMINUM WITH SMOOTH INTERIOR FINISH (SEAL ALL JOINTS WITH FOIL–BACKED PRESSURE SENSITIVE DUCT TAPE MEETING THE REQUIREMENTS OF U.L. 181, NO SCREWS ARE ALLOWED).
10. WHERE RECTANGULAR DUCTWORK IS INDICATED, AND AT INSTALLERS OPTION, SPIRAL AND ROUND DUCTWORK MAY BE SUBSTITUTED FOR RECTANGULAR DUCTWORK PROVIDED THEY ARE EQUIVALENT TO THE RECTANGULAR DIMENSIONS INDICATED ON THE DRAWINGS (i.e.: 8x4 = 8"ø, 10x6 = 10"ø).
11. DUCTWORK INSULATION (LOCATED WITHIN THE BUILDING).
    A. ALL CONCEALED SUPPLY AIR AND ENERGY RECOVERY SUPPLY AIR DUCTWORK AND FITTINGS SHALL BE EXTERNALLY INSULATED WITH MINIMUM 2" THICK, 1.00 LB DENSITY, FOIL–BACK INSULATION WITH VAPOR BARRIER AND A MINIMUM INSTALLED R–VALUE OF R–6, FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE–DEVELOPED RATING OF 50 OR LESS.
    B. ALL CONCEALED RETURN AIR DUCTWORK AND FITTINGS SHALL BE EXTERNALLY INSULATED WITH MINIMUM 2" THICK, 1.00 LB DENSITY, FOIL–BACK INSULATION WITH VAPOR BARRIER AND A MINIMUM INSTALLED R–VALUE OF R–6, FLAME SPREAD RATING OF 25 OR LESS, AND SMOKE–DEVELOPED RATING OF 50 OR LESS. PROVIDE AN ALUMINUM OR STAINLESS STEEL JACKET OVER EXTERNAL INSULATION AND SEAL ALL SEAMS AIR AND WATERTIGHT TO PREVENT THE ENTRANCE OF MOISTURE, ETC.
    C. IF APPROVED BY THE OWNER, INSULATION CAN BE REMOVED FROM THE DUCTWORK IF LOCATED WITHIN THE BUILDING THERMAL ENVELOPE (I.E. ENCLOSED CEILINGS) AND NOT WITHIN A PLENUM CEILING SPACE, PROVIDED THAT ALL JOINTS AND SEAMS ARE SEALED AIRTIGHT BY MEANS OF TAPES, MASTICS, AND / OR GASKETING.
12. DUCTWORK INSULATION (LOCATED OUTSIDE THE BUILDING).
    A. ALL EXPOSED ENERGY RECOVERY SUPPLY AIR DUCTWORK AND FITTINGS LOCATED ON THE ROOF SHALL BE INTERNALLY LINED (MINIMUM 2" THICK) AND EXTERNALLY INSULATED WITH MINIMUM 4" THICK, 0.75 LB DENSITY, FOIL–BACK INSULATION WITH VAPOR BARRIER AND A MINIMUM INSTALLED R–VALUE OF R–12, FLAME SPREAD RATING OF 75 OR LESS, AND SMOKE–DEVELOPED RATING OF 150 OR LESS. PROVIDE AN ALUMINUM OR STAINLESS STEEL JACKET OVER EXTERNAL INSULATION AND SEAL ALL SEAMS AIR AND WATERTIGHT TO PREVENT THE ENTRANCE OF MOISTURE, ETC.
    B. ALL EXPOSED ENERGY RECOVERY EXHAUST AIR DUCTWORK AND FITTINGS LOCATED ON THE ROOF SHALL BE EXTERNALLY INSULATED WITH MINIMUM 4" THICK, 0.75 LB DENSITY, FOIL–BACK INSULATION WITH VAPOR BARRIER AND A MINIMUM INSTALLED R–VALUE OF R–12, FLAME SPREAD RATING OF 75 OR LESS, AND SMOKE–DEVELOPED RATING OF 150 OR LESS. PROVIDE AN ALUMINUM OR STAINLESS STEEL JACKET OVER EXTERNAL INSULATION AND SEAL ALL SEAMS AIR AND WATERTIGHT TO PREVENT THE ENTRANCE OF MOISTURE, ETC..
    C. OWNERS OPTION: PROVIDE PRE–INSULATED RIGID THERMOSET PHENOLIC DUCTWORK PANELS AS MANUFACTURED BY QDUCT (AQC INDUSTRIES). PANELS SHALL HAVE A MINIMUM INSTALLED R–VALUE OF R–12 AND SHALL CONFORM TO THE REQUIREMENTS OF UL 181. EXTERIOR CLADDING SHALL BE CONSTRUCTED OF ALUMINUM (MINIMUM OF 19.7 MILS THICK) WITH FACTORY INSTALLED DUCTWORK SUPPORT MOUNTING RAILS. PROVIDE ALUMINUM SLOPED ROOF INSULATION PANEL WITH MINIMUM R–VALUE OF R–8.6.
13. ALL DUCT LINERS SHALL BE MINIMUM 1–1/2" THICK, COATED TO PREVENT ELEMENTS FROM ENTERING THE AIRSTREAM (COATING SHALL MEET ASHRAE 62 – LATEST EDITION), AND ENVIRONMENTALLY FRIENDLY WITH A MINIMUM INSTALLED R–VALUE OF R–6. LINER SHALL BE BLACK IN COLOR SO IT IS NOT NOTICEABLE FROM THE INSIDE OF REGISTERS AND GRILLES.
14. ALL SQUARE ELBOWS SHALL HAVE AIRFOIL TYPE TURNING VANES.
15. MAXIMUM FLEXIBLE DUCT LENGTH SHALL BE 5'–0". ALL FLEXIBLE DUCT SHALL CONFORM TO THE REQUIREMENTS OF U.L. 181 FOR CLASS 1 FLEXIBLE AIR DUCTS, WITH A MINIMUM R–VALUE OF R–6. SUPPORT FLEXIBLE DUCT TO ELIMINATE KINKING AND SAGGING. (FLEXIBLE DUCT IS NOT PERMITTED IN EXPOSED AREAS, APARTMENT UNITS, RETURN / EXHAUST AIR DUCTWORK, AND RETURN / EXHAUST AIR GRILLE CONNECTIONS).

BALANCING

1. AN INDEPENDENT TESTING AND BALANCING CONTRACTOR, WHO IS CERTIFIED BY EITHER THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB); WHO IS NOT THE INSTALLER OF THE SYSTEM BEING TESTED, WHO IS NOT AFFILIATED WITH THE INSTALLER OF THE PROJECT, AND IS OTHERWISE INDEPENDENT OF THE PROJECT, SHALL BALANCE THE SYSTEM TO WITHIN 5% OF AIR QUANTITIES INDICATED ON PLANS AND PROVIDE THE OWNER AND ENGINEER WITH A COMPLETE, SIGNED AND SEALED BALANCE REPORT.

DUCTWORK PRESSURE (TIGHTNESS) TESTING

1. ALL DUCTWORK AND PLENUM SYSTEMS SHALL BE SEALED AND PRESSURE TESTED USING INSTRUMENTS AND PROCEDURES SPECIFIED IN ANSI / ASHRAE 152 AND ASTM E1554 TEST METHOD "A", AND NEW YORK STATE ENERGY CONSERVATION CODE SECTION 403.
    A. EXCEPTION: DUCT TIGHTNESS TEST IS NOT REQUIRED IF THE AIR HANDLER AND ALL DUCTS ARE LOCATED WITHIN THE CONDITIONED SPACE.

COMMISSIONING

1. COMMISSIONING (INCLUDING COMMISSIONING PLAN AND REPORT) OF HVAC SYSTEMS (ENERGY RECOVERY UNITS, FAN COIL UNITS, CONTROLS, ETC.) SHALL BE PROVIDED AND PERFORMED IN ACCORDANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE SECTIONS C408.2 AND C408.2.1 BY AN APPROVED THIRD PARTY TESTING AGENCY SELECTED BY THE OWNER, WHERE THE FOLLOWING APPLIES:
    A. TOTAL HVAC SYSTEM EQUIPMENT CAPACITIES ARE GREATER THAN OR EQUAL TO 480,000 BTUH COOLING CAPACITY.
    B. INDIVIDUAL HVAC SYSTEMS SERVING APARTMENT UNITS ARE NOT REQUIRED TO BE COMMISSIONED.

HVAC ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY
AHU	AIR HANDLING UNIT
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNITS
CFM	CUBIC FEET PER MINUTE
COP	COEFFICIENT OF PERFORMANCE
CU	CONDENSING UNIT
DB	DRY BULB
EAT	ENTERING AIR TEMPERATURE
ECH	ELECTRIC CEILING HEATER
ECM	ELECTRONICALLY COMMUTATED MOTOR
EER	ENERGY EFFICIENCY RATIO
ERU	ENERGY RECOVERY UNIT
EWH	ELECTRIC WALL HEATER
F	FAHRENHEIT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
HP	HORSEPOWER
HSPF	HEATING SEASONAL PERFORMANCE FACTOR
HVAC	HEATING, VENTILATING, AIR CONDITIONING
IN	INCHES
INT	INTERNAL
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
MBH	1,000 BRITISH THERMAL UNITS
MCA	MINIMUM CIRCUIT AMPACITY
MOCP	MAXIMUM OVERCURRENT PROTECTION
OED	OPEN END DUCT
RL	REFRIGERANT LIQUID
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SP	STATIC PRESSURE
W/	WITH
WB	WET BULB

HVAC DUCTWORK SYMBOLS

SYMBOL	DESCRIPTION
	SUPPLY DUCT RISER
	RETURN DUCT RISER
	EXHAUST DUCT RISER
	DUCT RISE OR DROP
	AIRFOIL TURNING VANES
	FLEXIBLE DUCT
	INTERNALLY LINED DUCTWORK
	MANUAL VOLUME DAMPERS
ø	ROUND
200–1 8"ø	SUPPLY AIR DEVICE – FIRST NO. CFM, SECOND NO. TYPE THIRD NO. NECK SIZE (REFER TO SCHEDULE FOR DEVICE SIZE)
200–8 8"ø	RETURN / EXHAUST AIR DEVICE – FIRST NO. CFM, SECOND NO. TYPE THIRD NO. NECK SIZE (IF REQUIRED) (REFER TO SCHEDULE FOR DEVICE SIZE)

HVAC CONTROL SYMBOLS

SYMBOL	DESCRIPTION
T	MANUAL, PROGRAMMABLE, 7–DAY, 24–HOUR DIGITAL THERMOSTAT WITH ADJUSTABLE HUMIDISTAT AND SETBACKS, BACKLIT DISPLAY AND BATTERY BACKUP, 24V AC
— - — - —	CONTROL WIRING (PLENUM RATED)

HVAC DRAWING LIST

M–1	HVAC SCHEDULES, LEGENDS AND ABBREVIATIONS
M–2	HVAC SCHEDULES
M–3	HVAC SCHEDULES
M–4	HVAC SCHEDULES
M–5	HVAC SCHEDULES AND OUTSIDE AIR CALCULATIONS
M–6	HVAC SPECIFICATIONS
M–7	HVAC SPECIFICATIONS
M–8	HVAC SEQUENCE OF OPERATIONS
M–9	FIRST FLOOR PLAN – HVAC DUCTWORK AND PIPING
M–10	SECOND FLOOR PLAN – HVAC DUCTWORK AND PIPING
M–11	THIRD FLOOR PLAN – HVAC DUCTWORK AND PIPING
M–12	ROOF PLAN – HVAC DUCTWORK AND PIPING
M–13	HVAC DETAILS
M–14	HVAC DETAILS

AIR DISTRIBUTION DEVICE SCHEDULE

SYMBOL	STYLE & DEVICE SIZE	MOUNTING	DESCRIPTION	MANUFACTURER	MODEL NO.	MAXIMUM NC	THROW (MINIMUM FEET)
SUPPLY							
TYPE 1	SUPPLY 10"W x 6"H 8x4 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 3/4" BLADES, OPPOSED BLADE VOLUME DAMPERS, 22° DOUBLE DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	300 RL	---	13'–0"
TYPE 2	SUPPLY 12"W x 6"H 10x4 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 3/4" BLADES, OPPOSED BLADE VOLUME DAMPERS, 22° DOUBLE DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	300 RL	---	16'–0"
TYPE 3	SUPPLY 14"W x 8"H 12x6 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 3/4" BLADES, OPPOSED BLADE VOLUME DAMPERS, 22° DOUBLE DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	300 RL	13	23'–0"
TYPE 4	SUPPLY 18"W x 10"H 16x8 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 3/4" BLADES, OPPOSED BLADE VOLUME DAMPERS, 22° DOUBLE DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	300 RL	17	37'–0"
TYPE 5	SUPPLY 10"W x 6"H 8x4 NECK	SURFACE	STEEL CONSTRUCTION, 2–WAY DEFLECTION, 1/2" SPACED FINS SET AT 40–DEGREES, MULTI–SHUTTER VALVE, INTERLOCKING VALVE LOUVERS FOR POSITIVE SHUT–OFF, COLOR AS SELECTED BY ARCHITECT	HART & COOLEY	682	---	13'–0"
TYPE 6	SUPPLY 12"W x 6"H 10x4 NECK	SURFACE	STEEL CONSTRUCTION, 2–WAY DEFLECTION, 1/2" SPACED FINS SET AT 40–DEGREES, MULTI–SHUTTER VALVE, INTERLOCKING VALVE LOUVERS FOR POSITIVE SHUT–OFF, COLOR AS SELECTED BY ARCHITECT	HART & COOLEY	682	---	16'–0"
TYPE 7	SUPPLY 14"W x 8"H 12x6 NECK	SURFACE	STEEL CONSTRUCTION, 2–WAY DEFLECTION, 1/2" SPACED FINS SET AT 40–DEGREES, MULTI–SHUTTER VALVE, INTERLOCKING VALVE LOUVERS FOR POSITIVE SHUT–OFF, COLOR AS SELECTED BY ARCHITECT	HART & COOLEY	682	19	23'–0"
RETURN							
TYPE 8	RETURN 24"W x 14"H 22x12 NECK	LAY–IN	LOUVERED FACE, STEEL CONSTRUCTION, 1/2" BLADES, 35° FIXED DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	355 RL	24	---
TYPE 9	RETURN 50"W x 12"H 48x10 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 1/2" BLADES, 35° FIXED DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	355 RL	---	---
EXHAUST							
TYPE 10	EXHAUST 10"W x 6"H 8x4 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 1/2" BLADES, OPPOSED BLADE VOLUME DAMPERS, 35° FIXED DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	355 RL	---	---
TYPE 11	EXHAUST 16"W x 6"H 14x6 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 1/2" BLADES, OPPOSED BLADE VOLUME DAMPERS, 35° FIXED DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	355 RL	12	---
TYPE 12	EXHAUST 20"W x 12"H 18x10 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 1/2" BLADES, OPPOSED BLADE VOLUME DAMPERS, 35° FIXED DEFLECTION, COLOR AS SELECTED BY ARCHITECT	TITUS	355 RL	17	---
TYPE 13	EXHAUST 10"W x 6"H 8x4 NECK	SURFACE	LOUVERED FACE, STEEL CONSTRUCTION, 1/2" FINS SET AT 40–DEGREES, COLOR AS SELECTED BY ARCHITECT	HART & COOLEY	672	---	---

AIR DISTRIBUTION DEVICE NOTES:

1. ALL DEVICES SHALL BE FROM A SINGLE MANUFACTURER.
2. ALL DEVICES SHALL HAVE MATCHING MATTE, WHITE FINISH (UNLESS OTHERWISE NOTED IN DESCRIPTION ABOVE).
3. MAXIMUM NOISE CRITERIA OF 24, NO EXCEPTIONS.
4. COORDINATE EXACT MOUNTING HEIGHTS AND FRAMING OF OPENINGS OF SURFACE MOUNTED DIFFUSERS / GRILLES WITH ARCHITECT AND FRAMING PLANS IN THE FIELD PRIOR TO ORDERING AND INSTALLING DIFFUSERS / GRILLES.
5. ACCESSORIES:
    A. OPERATING KEYS: TOOLS DESIGNED TO FIT THROUGH DIFFUSER FACE AND OPERATE VOLUME CONTROL DEVICE AND / OR PATTERN ADJUSTMENT
6. ACCEPTABLE MANUFACTURER'S – TITUS, PRICE, HART & COOLEY.

NOTES:

1. SUBMITTALS SHALL INCLUDE DIFFUSER AND GRILLE SCHEDULE INDICATING ROOM LOCATION. NOISE CRITERIA (NC), THROW AND PERFORMANCE DATA FOR EACH TYPE OF DIFFUSER AND GRILLES INDICATED.
2. THROW AND NOISE CRITERIA FOR APPARTMENT UNIT SUPPLY DIFFUSERS ARE BASED ON TITUS MODEL 300 RL.
3. NOISE CRITERIA FOR APPARTMENT UNIT RETURN GRILLES ARE BASED ON TITUS MODEL 355 RL.

ELECTRIC CEILING HEATER SCHEDULE

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	SERIES	TYPE	MBH	KW	AMPS	VOLTS / PH	WEIGHT (LBS)
ECH–1	WATER ROOM 001	MARKEL	HF3384D–RP	3380 SERIES (COMMERCIAL CEILING HEATER)	SURFACE MOUNTING	5.1	1.5	7.2	208/1/60	25
ECH–2	CORRIDOR 003	MARKEL	HF3384D–RP	3380 SERIES (COMMERCIAL CEILING HEATER)	SURFACE MOUNTING	5.1	1.5	7.2	208/1/60	25
ECH–3	CORRIDOR 003	MARKEL	HF3384D–RP	3380 SERIES (COMMERCIAL CEILING HEATER)	SURFACE MOUNTING	5.1	1.5	7.2	208/1/60	25
ECH–4	CORRIDOR 003	MARKEL	HF3384D–RP	3380 SERIES (COMMERCIAL CEILING HEATER)	SURFACE MOUNTING	5.1	1.5	7.2	208/1/60	25
ECH–5	CORRIDOR 009	MARKEL	HF3385D–RP	3380 SERIES (COMMERCIAL CEILING HEATER)	SURFACE MOUNTING	7.7	2.3	10.8	208/1/60	25
ECH–6	TENANT STORAGE 110	MARKEL	HF3386D–RP	3380 SERIES (COMMERCIAL CEILING HEATER)	SURFACE MOUNTING	10.2	3.0	14.4	208/1/60	25
ECH–7	TENANT STORAGE 110	MARKEL	HF3386D–RP	3380 SERIES (COMMERCIAL CEILING HEATER)	SURFACE MOUNTING	10.

FAN COIL UNIT SCHEDULE (APARTMENTS)

MARK	AREA SERVED	TONS	SUPPLY AIR CFM	RETURN AIR CFM	OUTSIDE AIR CFM	STATIC PRESS. IN. WG EXT.	MANUFACTURER	MODEL NO.	DX COOLING					DX HEATING							SUPPLY FAN				MCA	CONDENSING UNIT SEER	CONDENSING UNIT SEER2	CONDENSING UNIT EER	CONDENSING UNIT EER2	CONDENSING UNIT HSPF	CONDENSING UNIT HSPF2	CONDENSING UNIT COP	OPERATING WEIGHT (LBS.)
									RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	EAT °F (OUTSIDE DB)	EAT °F (OUTSIDE WB)	MIN. ROWS	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH (17 DEGREES)	MAXIMUM MBH (17 DEGREES)	RATED MBH (5 DEGREES)	MAXIMUM MBH (5 DEGREES)	EAT °F	LAT °F	RPM	BHP	HP	VOLTS / PH									
FCU-5	UNIT D1 101	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-6	UNIT P 102	3.0	950	950	---	0.40	CARRIER	45MBDAQ-36 (EXPOSED DUCTED)	36.0	5.7 – 36.4	95	70	4	38.0	9.5 – 44.0	28.0	38.0	38.0	38.0	72	95	790	---	1/2	208/1/60	3.0	---	17.3	---	11.7	---	9.5	3.39	100
FCU-7	UNIT K 103	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-8	UNIT M 104	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-9	UNIT L 105	1.5	450	450	---	0.30	CARRIER	45MBDAQ-18 (EXPOSED DUCTED)	17.5	4.0 – 20.6	95	70	3	19.5	5.4 – 23.0	15.0	20.0	18.0	18.0	72	95	820	---	1/4	208/1/60	3.0	---	18.5	---	12.1	---	11.1	3.60	75
FCU-10	UNIT L 106	1.5	450	450	---	0.30	CARRIER	45MBDAQ-18 (EXPOSED DUCTED)	17.5	4.0 – 20.6	95	70	3	19.5	5.4 – 23.0	15.0	20.0	18.0	18.0	72	95	820	---	1/4	208/1/60	3.0	---	18.5	---	12.1	---	11.1	3.60	75
FCU-11	UNIT L 107	1.5	450	450	---	0.30	CARRIER	45MBDAQ-18 (EXPOSED DUCTED)	17.5	4.0 – 20.6	95	70	3	19.5	5.4 – 23.0	15.0	20.0	18.0	18.0	72	95	820	---	1/4	208/1/60	3.0	---	18.5	---	12.1	---	11.1	3.60	75
FCU-12	UNIT N 108	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-13	UNIT B 201	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-14	UNIT C 203	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-15	UNIT D 205	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-16	UNIT A 207	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-17	UNIT H 202	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-18	UNIT G 204	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-19	UNIT F 206	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-20	UNIT E 208	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-21	UNIT O 213	1.5	450	450	---	0.30	CARRIER	45MBDAQ-18 (EXPOSED DUCTED)	17.5	4.0 – 20.6	95	70	3	19.5	5.4 – 23.0	15.0	20.0	18.0	18.0	72	95	820	---	1/4	208/1/60	3.0	---	18.5	---	12.1	---	11.1	3.60	75
FCU-22	UNIT I 212	1.5	450	450	---	0.30	CARRIER	45MBDAQ-18 (EXPOSED DUCTED)	17.5	4.0 – 20.6	95	70	3	19.5	5.4 – 23.0	15.0	20.0	18.0	18.0	72	95	820	---	1/4	208/1/60	3.0	---	18.5	---	12.1	---	11.1	3.60	75
FCU-23	UNIT I 211	1.5	450	450	---	0.30	CARRIER	45MBDAQ-18 (EXPOSED DUCTED)	17.5	4.0 – 20.6	95	70	3	19.5	5.4 – 23.0	15.0	20.0	18.0	18.0	72	95	820	---	1/4	208/1/60	3.0	---	18.5	---	12.1	---	11.1	3.60	75
FCU-24	UNIT I 210	1.5	450	450	---	0.30	CARRIER	45MBDAQ-18 (EXPOSED DUCTED)	17.5	4.0 – 20.6	95	70	3	19.5	5.4 – 23.0	15.0	20.0	18.0	18.0	72	95	820	---	1/4	208/1/60	3.0	---	18.5	---	12.1	---	11.1	3.60	75
FCU-25	UNIT J 209	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-26	UNIT B 301	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-27	UNIT C 303	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-28	UNIT D 305	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-29	UNIT A 307	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-30	UNIT H 302	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-31	UNIT G 304	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-32	UNIT F 306	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100
FCU-33	UNIT E 303	2.0	700	700	---	0.40	CARRIER	45MBDAQ-24 (EXPOSED DUCTED)	24.0	5.0 – 28.0	95	70	3	26.0	7.3 – 31.4	21.6	23.5	24.0	24.0	72	95	920	---	1/4	208/1/60	3.0	---	19.2	---	12.0	---	11.7	3.81	100

FAN COIL UNIT NOTES:

1. HEAT PUMP UNIT.
2. UNIT SHALL HAVE:
   - A. R-454B REFRIGERANT.
   - B. MINIMUM 20-GAUGE, FACTORY FINISHED, BONDERIZED STEEL CABINET.
   - C. 3-SPEED CENTRIFUGAL MOTOR.
   - D. FAN MOTOR THERMAL OVERLOAD PROTECTOR.
   - E. CONTROL CIRCUIT BOARD.
   - F. MICROPROCESSOR CONTROLS.
   - G. SELF-DIAGNOSTICS.
   - H. AUTO-RESTART FUNCTION.
   - I. CONDENSATE DRAIN PAN WITH CONDENSATE PUMP.
   - J. INTERNAL TRANSFORMER FOR WALL MOUNTED 24V THERMOSTAT CONTROL.
   - K. FREEZESTAT.
   - L. FILTER TRACK WITH CLEANABLE FILTERS.
   - M. ALL NECESSARY WALL AND / OR CEILING BRACKETS AS REQUIRED FOR A COMPLETE INSTALLATION.
3. ACCESSORIES:
   - A. LOW AMBIENT CONTROLS (COOLING OPERATION DOWN TO 5-DEGREES F AND HEATING OPERATION DOWN TO MINUS 13-DEGREES F, MINIMUM)
   - B. AUXILIARY DRAIN PAN OR SECONDARY CONDENSATE DRAIN CONNECTION FOR OVERFLOW PROTECTION.
     1). WATER LEVEL DETECTION DEVICE CONFORMING TO UL 508 SHALL BE PROVIDED THAT WILL SHUT OFF THE EQUIPMENT SERVED IN THE EVENT THAT THE PRIMARY DRAIN IS BLOCKED.
   - C. BOTTOM AND SIDE ACCESS FOR SERVICING.
   - D. SERVICE VALVES WITH SCHRADER PORTS.
   - E. FACTORY INSTALLED REFRIGERANT DETECTION SYSTEM (CONSISTING OF LEAK SENSOR WITH INTEGRATED CONTROL BOARD AND HARNESS, MINIMUM).
   - F. FACTORY SUPPLIED, FIELD INSTALLED CONDENSATE PUMP.
   - G. FACTORY WIRED CONTROLS FOR REMOTE WALL MOUNTED THERMOSTAT.
   - H. WALL MOUNTED THERMOSTAT (7-DAY, 24-HOUR DIGITAL PROGRAMMABLE THERMOSTAT WITH MANUAL CHANGEOVER, SINGLE STAGE HEATING / COOLING, ADJUSTABLE HUMIDISTAT AND SETBACKS, BACKLIT DISPLAY, BATTERY BACKUP, 24V AC).
   - I. VIBRATION ISOLATION HANGERS.
4. ACCEPTABLE MANUFACTURER'S – CARRIER, LG, SAMSUNG.

NOTES:

1. FAN COIL UNITS ARE POWERED BY IT'S ASSOCIATED CONDENSING UNIT POWER.
2. VERIFY EXACT FAN SPEED SETTINGS WITH OWNER (SELECTIONS ARE BASED ON MEDIUM FAN SPEED).
3. SUBMITTALS SHALL INCLUDE HEATING / COOLING RATED MBH CAPACITY, AND HEATING / COOLING MINIMUM-MAXIMUM MBH RANGE FOR EACH TYPE OF FAN COIL UNIT INDICATED.

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SEAL:
Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677
STATE OF NEW YORK · JAMES D. RUMPF · 084719 · LICENSED PROFESSIONAL ENGINEER
5-23-25

TITLE:
HVAC SCHEDULES

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SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: M-2

CONDENSING UNIT SCHEDULE (APARTMENTS)

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	OPERATING RANGE (° F)		DX COOLING		DX HEATING						REFRIGERANT CONNECTIONS		MOTOR			MCA	MOCP	SEER	SEER2	EER	EER2	OPERATING WEIGHT (LBS.)
				COOLING (OUTDOOR DB MINIMUM)	HEATING (OUTDOOR DB MINIMUM)	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH (17 DEGREES)	MAXIMUM MBH (17 DEGREES)	RATED MBH (5 DEGREES)	MAXIMUM MBH (5 DEGREES)	SUCTION	LIQUID	RPM	HP	VOLTS / PH							
CU-7	FCU-5	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-8	FCU-6	CARRIER	37MBHAQ-36	-22	-22	36.0	5.7 - 36.4	38.0	9.5 - 44.0	28.0	38.0	38.0	38.0	3/4"	3/8"	750	1/4	208/1/60	38.0	40	---	17.3	---	11.7	200
CU-9	FCU-7	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-10	FCU-8	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-11	FCU-9	CARRIER	37MAHAQ-18	-22	-22	17.5	4.0 - 20.6	19.5	5.4 - 23.0	15.0	20.0	18.0	18.0	1/2"	1/4"	780	1/10	208/1/60	19.0	20	---	18.5	---	12.1	125
CU-12	FCU-10	CARRIER	37MAHAQ-18	-22	-22	17.5	4.0 - 20.6	19.5	5.4 - 23.0	15.0	20.0	18.0	18.0	1/2"	1/4"	780	1/10	208/1/60	19.0	20	---	18.5	---	12.1	125
CU-13	FCU-11	CARRIER	37MAHAQ-18	-22	-22	17.5	4.0 - 20.6	19.5	5.4 - 23.0	15.0	20.0	18.0	18.0	1/2"	1/4"	780	1/10	208/1/60	19.0	20	---	18.5	---	12.1	125
CU-14	FCU-12	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-15	FCU-13	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-16	FCU-14	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-17	FCU-15	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-18	FCU-16	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-19	FCU-17	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-20	FCU-18	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-21	FCU-19	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-22	FCU-20	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-23	FCU-21	CARRIER	37MAHAQ-18	-22	-22	17.5	4.0 - 20.6	19.5	5.4 - 23.0	15.0	20.0	18.0	18.0	1/2"	1/4"	780	1/10	208/1/60	19.0	20	---	18.5	---	12.1	125
CU-24	FCU-22	CARRIER	37MAHAQ-18	-22	-22	17.5	4.0 - 20.6	19.5	5.4 - 23.0	15.0	20.0	18.0	18.0	1/2"	1/4"	780	1/10	208/1/60	19.0	20	---	18.5	---	12.1	125
CU-25	FCU-23	CARRIER	37MAHAQ-18	-22	-22	17.5	4.0 - 20.6	19.5	5.4 - 23.0	15.0	20.0	18.0	18.0	1/2"	1/4"	780	1/10	208/1/60	19.0	20	---	18.5	---	12.1	125
CU-26	FCU-24	CARRIER	37MAHAQ-18	-22	-22	17.5	4.0 - 20.6	19.5	5.4 - 23.0	15.0	20.0	18.0	18.0	1/2"	1/4"	780	1/10	208/1/60	19.0	20	---	18.5	---	12.1	125
CU-27	FCU-25	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-28	FCU-26	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-29	FCU-27	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-30	FCU-28	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-31	FCU-29	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-32	FCU-30	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-33	FCU-31	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-34	FCU-32	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150
CU-35	FCU-33	CARRIER	37MAHAQ-24	-22	-22	24.0	5.0 - 28.0	26.0	7.3 - 31.4	21.6	23.5	24.0	24.0	5/8"	3/8"	950	1/6	208/1/60	24.9	25	---	19.2	---	12.0	150

CONDENSING UNIT NOTES:

1. UNIT CABINET SHALL BE CONSTRUCTED OF HEAVY-GAUGE, CORROSION RESISTANT STEEL, WITH FACTORY POWDER COAT PAINT.
2. UNIT CABINET SHALL BE EQUIPPED WITH COATED STEEL SAFETY WIRE GUARDS TO PROTECT CONDENSER FAN OPENING.
3. UNIT ENCLOSURE SHALL CONTAIN FACTORY WIRING, PIPING, CONTROLS, COMPRESSOR, REFRIGERANT CHARGE, AND SPECIAL FEATURES.
4. CONDENSER COIL SHALL BE CONSTRUCTED OF ALUMINUM FINS MECHANICALLY BONDED TO COPPER TUBES.
5. CONDENSER FAN SHALL BE DIRECT DRIVE DIRECT DRIVE, PROPELLER TYPE, MULTIPLE SPEED OPERATION.
6. COMPRESSORS SHALL BE VARIABLE SPEED (INVERTER) TYPE.
7. MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.
8. UNIT SHALL HAVE:
   - A. R-454B REFRIGERANT.
   - B. LINE SET.
   - C. FILTER DRIER.
   - D. THERMOSTATIC EXPANSION VALVES.
   - E. LOW PRESSURE SWITCH.
   - F. HIGH PRESSURE SWITCH.
9. ACCESSORIES:
   - A. LOW AMBIENT CONTROLS, HEATING AND COOLING (OPERATION DOWN TO MINUS 13-DEGREES F, MINIMUM)
   - B. WINTER START CONTROL.
   - C. FACTORY INSTALLED CRANKCASE HEATER.
   - D. FACTORY INSTALLED BASEPAN HEATER.
   - E. FACTORY INSTALLED REFRIGERANT DETECTION SYSTEM.
   - F. PE MOUNTING BASE (MINIMUM 1'-6" HIGH, INSULATED ALUMINUM ROOF CURB WITH UV-RESISTANT ABS PLASTIC PORTAL CAP).
   - G. ALUMINUM EQUIPMENT RAIL (MINIMUM 2'-0" HIGH) OR ALUMINUM CONDENSING UNIT STAND (MINIMUM 2'-0" HIGH).
   - H. FIELD INSTALLED WIND BAFFLE TO PROTECT THE UNIT FROM SNOW ACCUMULATION AND / OR BLOCKED AIR INTAKE, AS REQUIRED BY THE UNIT MANUFACTURER (COORDINATE EXACT UNIT LOCATIONS AND REQUIREMENTS WITH UNIT MANUFACTURER PRIOR TO INSTALLING WIND BAFFLE).
10. ACCEPTABLE MANUFACTURER'S - CARRIER, LG, SAMSUNG.

NOTES:

1. UNITS SHALL BE INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE.
2. SUBMITTALS SHALL INCLUDE HEATING / COOLING RATED MBH CAPACITY, AND HEATING / COOLING MINIMUM-MAXIMUM MBH RANGE FOR EACH TYPE OF CONDENSING UNIT INDICATED.

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SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: M-3

ENERGY RECOVERY UNIT SCHEDULE

MARK	AREA SERVED	SUPPLY AIR CFM	EXHAUST AIR CFM	SUPPLY STATIC PRESS. IN. WG EXT.	EXHAUST STATIC PRESS. IN. WG EXT.	MANUFACTURER	MODEL NO.	DX COOLING COIL							GAS HEATING									RE-HEAT COIL				SUPPLY AIR FAN				EXHAUST AIR FAN				FILTERS	EER	MCA / MOCP	OPERATING WEIGHT (LBS.)
								MBH	AIR TEMP. IN		COIL LAT		UNIT LAT		MIN. ROWS	MBH INPUT	MBH OUTPUT	AFUE %	OUTSIDE AIR TEMP		RETURN AIR TEMP		EAT °F	LAT °F	BURNER	MBH	AIR TEMP. OUT		RH %	RPM	MOTOR			RPM	MOTOR						
									DB °F	WB °F	DB °F	WB °F	DB °F	WB °F					DB °F	WB °F	DB °F	WB °F					DB °F	WB °F			BHP	HP	VOLTS / PH		BHP	HP	VOLTS / PH			
ERU-1	FIRST FLOOR CORRIDORS, SECOND FLOOR CORRIDORS, THIRD FLOOR CORRIDORS, FIRST FLOOR LOBBY, FIRST FLOOR TENANT SPACE, FIRST FLOOR STORAGE ROOMS, FIRST THRU THIRD FLOOR TRASH ROOMS, FIRST THRU THIRD FLOOR APARTMENTS	4,250	4,250	1.00	1.00	AAON	RN-016-C	186.4 315.4 (TOTAL W/ HEAT WHEEL)	81	67	52	52	54	52	4	270.0	218.7	80%	0	-1	75	62	48	95	MODULATING (MINIMUM 9.0.1 TURNDOWN)	104.9	75	61	44%	1242	3.44	5	208/3/60	1349	3.38	5	208/3/60	2", 30% MERV 8 AND 4" MERV 13	15.2	106.0 / 125	4,400
ERU-2	FIRST FLOOR CORRIDORS, SECOND FLOOR CORRIDORS, FIRST FLOOR LEASE OFFICE, FIRST FLOOR TENANT SPACES. FIRST FLOOR UTILITY ROOMS, FIRST THRU SECOND FLOOR APARTMENTS	2,875	2,875	1.25	1.25	AAON	RN-011-C	114.7 211.9 (TOTAL W/ HEAT WHEEL)	80	65	52	51	54	52	3	270.0	218.7	80%	0	-1	75	62	55	125	MODULATING (MINIMUM 9.0.1 TURNDOWN)	69.4	75	60	43%	1070	1.96	3	208/3/60	1232	1.17	3	208/3/60	2", 30% MERV 8 AND 4" MERV 13	18.9	64.0 / 80	8,500

ENERGY RECOVERY UNIT NOTES:

1. INDIRECT-FIRED, HORIZONTAL, POWER-VENTED, GAS ENERGY RECOVERY AIR UNIT, UL LISTED OR AGA (CSA) APPROVED.
2. UNIT SHALL BE DOUBLE-WALL CONSTRUCTION WITH G90 GALVANIZED STEEL ON BOTH SIDES WITH A THERMAL BREAK AND 2" THICK (1-1/2 LB.) DENSITY FOAM INSULATION (MINIMUM THERMAL RESISTANCE R-VALUE OF R-13).
3. FAN WHEEL SHALL BE INSTALLED ON A SINGLE, HEAVY-DUTY SHAFT MOUNTED IN SELF-ALIGNING BALL BEARINGS, ISOLATED FOR SOUND AND VIBRATION CONTROL.
4. UNIT SHALL BE FACTORY WIRED AND EQUIPPED WITH MOTOR STARTER OVERLOAD, RELAYS, TRANSFORMERS, SWITCHES, FUSE HOLDERS AND ALL SEQUENCING CONTROLS TO OPERATE IN CONJUNCTION WITH UNIT MOUNTED CONTROL PANEL.
5. COMPRESSORS SHALL BE HIGH EFFICIENCY, VARIABLE CAPACITY DESIGN.
6. UNIT SHALL HAVE:
   A. R-454B REFRIGERANT.
   B. ALL SECTIONS SHALL HAVE HINGED ACCESS DOORS.
   C. MINIMUM ONE (1) VARIABLE CAPACITY COMPRESSOR (CIRCUIT #1) WITH 2-STEP COMPRESSOR (CIRCUIT #2), 0-5V DC SIGNAL.
   D. DIRECT DRIVE, BACKWARD CURVED PLENUM SUPPLY FAN AND EXHAUST FAN.
   E. AIRFOIL FANS, ALUMINUM CONSTRUCTION.
   F. PREMIUM EFFICIENT MOTORS.
   G. FACTORY INSTALLED AND WIRED VARIABLE FREQUENCY DRIVES (SUPPLY AND EXHAUST FANS) WITH SHAFT GROUNDING.
   H. MODULATING GAS VALVE WITH 0-10V RESET.
   I. HOT GAS REHEAT COIL WITH A MODULATING REHEAT CONTROL VALVE AND AN ELECTRONIC CONTROLLER WITH 0-10V DC SIGNAL.
   J. STAINLESS STEEL HEAT EXCHANGER.
   K. DOUBLE-SLOPE DRAIN PAN WITH P-TRAP ASSEMBLY.
   L. METAL MESH OUTSIDE AIR PRE-FILTER.
   M. 2" - 30% PLEATED MERV-8 FILTERS AND 4" PLEATED MERV 13 FILTERS.
   N. FACTORY MOUNTED AND TESTED ENERGY RECOVERY WHEEL MOUNTED IN A A RIGID FRAME CONTAINING THE WHEEL DRIVE MOTOR, DRIVE MOTOR, DRIVE BELT, WHEEL SEALS.
   O. SINGLE-POINT POWER CONNECTION.
7. ACCESSORIES:
   A. 2'-0" HIGH, SOLID BOTTOM THERMAL / ACOUSTICAL ROOF CURB.
   B. 2-POSITION, MOTORIZED, LOW-LEAKAGE, OPPOSED BLADE OUTSIDE AIR AND EXHAUST AIR DAMPERS WITH MODULATING DDC ACTUATORS (0-10V DC).
   C. RUBBER AND SHEAR BASE RAIL ISOLATORS.
   D. ENERGY RECOVERY WHEEL WITH FROST PROTECTION.
   E. DISCHARGE AIR SENSOR (MOUNTED IN SUPPLY AIR IN ACCESSIBLE INDOOR LOCATION), LEAVING AIR TEMPERATURE SET AT 75° F (ADJUSTABLE) FOR HEATING AND 72° F (ADJUSTABLE) FOR COOLING.
   F. FACTORY INSTALLED SENSORS (BUILDING STATIC PRESSURE, FLOW SENSOR, DIRTY FILTER SENSOR, OUTSIDE AIR HUMIDITY SENSOR).
   G. FACTORY INSTALLED REFRIGERANT DETECTION SYSTEM.
   H. ECM CONDENSER FAN - HEAD PRESSURE CONTROL AND SIGHT GLASS.
   I. STAINLESS STEEL, DOUBLE-SLOPE DRAIN PAN WITH P-TRAP ASSEMBLY.
   J. FACTORY INSTALLED AND WIRED NON-FUSED DISCONNECT SWITCH.
   K. FACTORY INSTALLED AND WIRED, SINGLE POINT POWER WIRING, 120 VOLT GFI DUPLEX RECEPTACLE.
   L. BASE INSULATION (ENTIRE UNIT).
   M. REMOTE MOUNTED TOUCH SCREEN CONTROLLER (MOUNT REMOTE PANEL IN MECHANICAL 016 - COORDINATE EXACT LOCATIONS WITH OWNER PRIOR TO INSTALLING).
   N. FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICE.
8. UNITS FANS SHALL RUN CONTINUOUSLY.
9. INSTALLATION:
   A. UNITS SHALL BE ON MANUFACTURER PROVIDED, FULL PERIMETER, INSULATED ROOF CURB SUITABLE FOR THE ROOF DECK, INSULATION AND MEMBRANE (REFER TO ARCHITECTURAL DRAWINGS FOR ROOF CONSTRUCTION).
      1). ROOF CURBS SHALL BE CONSTRUCTED OF 0.080-INCH ALUMINUM OR 16-GAUGE (MINIMUM) HOT DIPPED GALVANIZED STEEL.
      2). ROOF CURBS SHALL HAVE A BASE THAT FITS SLOPE OF ROOF AS REQUIRED. TOP OF ROOF CURB SHALL BE LEVEL.
   B. ALL ELECTRICAL SERVICES TO THE UNIT SHALL ENTER WITHIN THE ROOF CURB. NO SEPARATE ROOF PENETRATIONS ARE ALLOWED.
   C. ALL GAS SERVICES TO THE UNIT SHALL BE PIPED TO THE SIDE OF THE UNIT.
10. ACCEPTABLE MANUFACTURER'S - AAON, DESERTAIRE, GREENHECK.

NOTES:

1. UNITS SHALL BE INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE.
2. ERU-1 HAS BEEN DESIGNED WITH A 75-DEGREES F (ADJUSTABLE) LEAVING AIR TEMPERATURE (NEUTRAL AIR) WITH THE GAS HEATING MBH SIZED AT A HIGHER CAPACITY (95-DEGREES F MINIMUM LEAVING AIR TEMPERATURE) THAN WHAT IS REQUIRED TO ENSURE THE HEATING CAPACITY IS PROVIDED IF THE TEMPERATURE SETPOINTS ARE ADJUSTED TO A HIGHER TEMPERATURE OR TO PROVIDE 64 DEGREES F (MINIMUM) IF THERE IS A WHEEL FAILURE.
3. ERU-2 HAS BEEN DESIGNED WITH A 75-DEGREES F (ADJUSTABLE) LEAVING AIR TEMPERATURE (NEUTRAL AIR) WITH THE GAS HEATING MBH SIZED AT A HIGHER CAPACITY (125-DEGREES F MINIMUM LEAVING AIR TEMPERATURE) THAN WHAT IS REQUIRED TO ENSURE THE HEATING CAPACITY IS PROVIDED IF THE TEMPERATURE SETPOINTS ARE ADJUSTED TO A HIGHER TEMPERATURE OR TO PROVIDE 64 DEGREES F (MINIMUM) IF THERE IS A WHEEL FAILURE.

AIR HANDLING UNIT SCHEDULE (TENANT SPACES)

MARK	AREA SERVED	TONS	SUPPLY AIR CFM	RETURN AIR CFM	OUTSIDE AIR CFM	STATIC PRESS. IN. WG EXT.	MANUFACTURER	MODEL NO.	DX COOLING				DX HEATING								SUPPLY FAN				DX COOLING COIL	CONDENSING UNIT	CONDENSING UNIT	CONDENSING UNIT	CONDENSING UNIT	CONDENSING UNIT	CONDENSING UNIT	CONDENSING UNIT	OPERATING WEIGHT (LBS.)
									RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	EAT °F (OUTSIDE DB)	EAT °F (OUTSIDE WB)	MIN. ROWS	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH (17 DEGREES)	MAXIMUM MBH (17 DEGREES)	RATED MBH (5 DEGREES)	MAXIMUM MBH (5 DEGREES)	EAT °F	LAT °F	RPM	BHP	HP	VOLTS / PH	MCA	UNIT SEER	UNIT SEER2	UNIT EER	UNIT EER2	UNIT HSPF	UNIT HSPF2	UNIT COP	
AHU-1	TENANT SPACE 004	5.0	1,575	1,375	200	0.50	CARRIER	45MBAAQ-60	54.0	13.7 - 58.0	95	70	5	59.0	10.0 - 66.1	41.0	54.0	53.0	53.0	63	95	820	---	1	208/1/60	11.0	---	15.4	---	10.0	---	9.2	3.36	175
AHU-2	TENANT SPACE 004	5.0	1,575	1,375	200	0.50	CARRIER	45MBAAQ-60	54.0	13.7 - 58.0	95	70	5	59.0	10.0 - 66.1	41.0	54.0	53.0	53.0	63	95	820	---	1	208/1/60	11.0	---	15.4	---	10.0	---	9.2	3.36	175

AIR HANDLING UNIT NOTES:

1. HEAT PUMP UNIT.
2. UNIT SHALL HAVE:
   A. R-454B REFRIGERANT.
   B. MINIMUM 20-GAUGE, FACTORY FINISHED, BONDERIZED STEEL CABINET.
   C. 4-SPEED CENTRIFUGAL MOTOR.
   D. FAN MOTOR THERMAL OVERLOAD PROTECTOR.
   E. CONTROL CIRCUIT BOARD.
   F. MICROPROCESSOR CONTROLS.
   G. SELF-DIAGNOSTICS.
   H. AUTO-RESTART FUNCTION.
   I. DEHUMIDIFICATION CONTROL.
   J. CONDENSATE DRAIN PAN.
   K. FREEZESTAT.
   L. FILTER TRACK WITH CLEANABLE FILTERS.
   M. INTERNAL TRANSFORMER FOR WALL MOUNTED 24V THERMOSTAT CONTROL.
   N. ALL NECESSARY WALL AND / OR CEILING BRACKETS AS REQUIRED FOR A COMPLETE INSTALLATION.
3. ACCESSORIES:
   A. LOW AMBIENT CONTROLS, HEATING AND COOLING (OPERATION DOWN TO MINUS 13-DEGREES F, MINIMUM)
   B. AUXILIARY DRAIN PAN OR SECONDARY CONDENSATE DRAIN CONNECTION FOR OVERFLOW PROTECTION.
      1). WATER LEVEL DETECTION DEVICE CONFORMING TO UL 508 SHALL BE PROVIDED THAT WILL SHUT OFF THE EQUIPMENT SERVED IN THE EVENT THAT THE PRIMARY DRAIN IS BLOCKED.
   C. SERVICE VALVES WITH SCHRADER PORTS.
   D. MEDIA FILTER CABINET WITH 1-INCH THICK, MERV 8 (MINIMUM) FILTERS.
   E. FACTORY INSTALLED REFRIGERANT DETECTION SYSTEM (CONSISTING OF LEAK SENSOR WITH INTEGRATED CONTROL BOARD AND HARNESS, MINIMUM).
   F. BOTTOM AND SIDE ACCESS FOR SERVICING.
   G. FACTORY SUPPLIED, FIELD INSTALLED CONDENSATE PUMP.
   H. VIBRATION ISOLATION HANGERS.
   I. FACTORY WIRED CONTROLS FOR REMOTE WALL MOUNTED THERMOSTAT.
   J. WALL MOUNTED THERMOSTAT (7-DAY, 24-HOUR DIGITAL PROGRAMMABLE THERMOSTAT WITH MANUAL CHANGEOVER, 2 STAGE HEATING / SINGLE STAGE COOLING, ADJUSTABLE HUMIDISTAT AND SETBACKS, BACKLIT DISPLAY, BATTERY BACKUP, 24V AC).
4. UNITS SUPPLY FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED MODE.
5. ACCEPTABLE MANUFACTURER'S - CARRIER, LG, SAMSUNG.

NOTES:

1. AIR HANDLING UNITS ARE POWERED BY IT'S ASSOCIATED CONDENSING UNIT POWER.
2. VERIFY EXACT FAN SPEED SETTINGS WITH OWNER (SELECTIONS ARE BASED ON MEDIUM FAN SPEED).
3. SUBMITTALS SHALL INCLUDE HEATING / COOLING RATED MBH CAPACITY, AND HEATING / COOLING MINIMUM-MAXIMUM MBH RANGE FOR EACH TYPE OF AIR HANDLING UNIT INDICATED.

CONDENSING UNIT SCHEDULE (AIR HANDLING UNIT)

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	OPERATING RANGE (° F)		DX COOLING		DX HEATING						REFRIGERANT CONNECTIONS		MOTOR			MCA	MOCP	SEER	SEER2	EER	EER2	OPERATING WEIGHT (LBS.)
				COOLING (OUTDOOR DB MINIMUM)	HEATING (OUTDOOR DB MINIMUM)	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH (17 DEGREES)	MAXIMUM MBH (17 DEGREES)	RATED MBH (5 DEGREES)	MAXIMUM MBH (5 DEGREES)	SUCTION	LIQUID	RPM	HP	VOLTS / PH							
CU-1	AHU-1	CARRIER	37MBHAQ-58	-22	-22	54.0	13.7 - 58.0	59.0	10.0 - 66.1	41.0	54.0	53.0	53.0	3/4"	3/8"	900	1/10	208/1/60	42.0	45	---	15.4	---	10.0	250
CU-2	AHU-2	CARRIER	37MBHAQ-58	-22	-22	54.0	13.7 - 58.0	59.0	10.0 - 66.1	41.0	54.0	53.0	53.0	3/4"	3/8"	900	1/10	208/1/60	42.0	45	---	15.4	---	10.0	250

CONDENSING UNIT NOTES:

1. UNIT CABINET SHALL BE CONSTRUCTED OF HEAVY-GAUGE, CORROSION RESISTANT STEEL, WITH FACTORY POWDER COAT PAINT.
2. UNIT CABINET SHALL BE EQUIPPED WITH COATED STEEL SAFETY WIRE GUARDS TO PROTECT CONDENSER FAN OPENING.
3. UNIT ENCLOSURE SHALL CONTAIN FACTORY WIRING, PIPING, CONTROLS, COMPRESSOR, REFRIGERANT CHARGE, AND SPECIAL FEATURES.
4. CONDENSER COIL SHALL BE CONSTRUCTED OF ALUMINUM FINS MECHANICALLY BONDED TO COPPER TUBES.
5. CONDENSER FAN SHALL BE DIRECT DRIVE DIRECT DRIVE, PROPELLER TYPE, MULTIPLE SPEED OPERATION.
6. COMPRESSORS SHALL BE VARIABLE SPEED (INVERTER) TYPE.
7. MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.
8. UNIT SHALL HAVE:
   A. R-454B REFRIGERANT.
   B. LINE SET.
   C. FILTER DRIER.
   D. THERMOSTATIC EXPANSION VALVES.
   E. LOW PRESSURE SWITCH.
   F. HIGH PRESSURE SWITCH.
9. ACCESSORIES:
   A. LOW AMBIENT CONTROLS, HEATING AND COOLING (OPERATION DOWN TO MINUS 13-DEGREES F, MINIMUM)
   B. WINTER START CONTROL.
   C. FACTORY INSTALLED CRANKCASE HEATER.
   D. FACTORY INSTALLED BASEPAN HEATER.
   E. FACTORY INSTALLED REFRIGERANT DETECTION SYSTEM.
   F. PE MOUNTING BASE (MINIMUM 1'-6" HIGH, INSULATED ALUMINUM ROOF CURB WITH UV-RESISTANT ABS PLASTIC PORTAL CAP).
   G. ALUMINUM EQUIPMENT RAIL (MINIMUM 2'-0" HIGH) OR ALUMINUM CONDENSING UNIT STAND (MINIMUM 2'-0" HIGH).
   H. FIELD INSTALLED WIND BAFFLE TO PROTECT THE UNIT FROM SNOW ACCUMULATION AND / OR BLOCKED AIR INTAKE, AS REQUIRED BY THE UNIT MANUFACTURER (COORDINATE EXACT UNIT LOCATIONS AND REQUIREMENTS WITH UNIT MANUFACTURER PRIOR TO INSTALLING WIND BAFFLE).
10. ACCEPTABLE MANUFACTURER'S - CARRIER, LG, SAMSUNG.

NOTES:

1. UNITS SHALL BE INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE.
2. SUBMITTALS SHALL INCLUDE HEATING / COOLING RATED MBH CAPACITY, AND HEATING / COOLING MINIMUM-MAXIMUM MBH RANGE FOR EACH TYPE OF CONDENSING UNIT INDICATED.

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FAN COIL UNIT SCHEDULE (COMMERCIAL / PUBLIC SPACES AND ELEVATOR)

MARK	AREA SERVED	TONS	SUPPLY AIR CFM	RETURN AIR CFM	OUTSIDE AIR CFM	STATIC PRESS. IN. WG EXT.	MANUFACTURER	MODEL NO.	DX COOLING					DX HEATING						SUPPLY FAN				MCA	CONDENSING UNIT SEER	CONDENSING UNIT SEER2	CONDENSING UNIT EER	CONDENSING UNIT EER2	CONDENSING UNIT HSPF	CONDENSING UNIT HSPF2	CONDENSING UNIT COP	OPERATING WEIGHT (LBS.)
									RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	EAT °F (OUTSIDE DB)	EAT °F (OUTSIDE WB)	MIN. ROWS	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH (17 DEGREES)	MAXIMUM MBH (17 DEGREES)	RATED MBH (5 DEGREES)	MAXIMUM MBH (5 DEGREES)	EAT °F	LAT °F	RPM	BHP	HP	VOLTS / PH								
FCU-1	VESTIBULE 011, LOBBY 012, PACK ROOM 013	3.0	950	950	---	0.50	CARRIER	45MBDAQ-36 (CONCEALED DUCTED)	36.0	5.7 – 36.4	95	70	4	38.0	9.5 – 44.0	28.0	38.0	38.0	38.0	72	95	790	---	1/2	208/1/60	3.0	---	17.3	---	11.7	---	9.5	3.39	125
FCU-2	LEASING OFFICE 017	1.0	250	250	---	---	CARRIER	45MAHAQ-12 (HIGH WALL)	12.0	3.8 – 14.6	95	70	2	12.0	3.8 – 16.0	9.8	12.8	11.5	11.5	72	95	1100	---	1/20	208/1/60	3.0	---	25.5	---	13.5	---	10.5	3.76	50
FCU-3	TENANT SPACES 022	3.0	950	950	---	0.50	CARRIER	45MBDAQ-36 (CONCEALED DUCTED)	36.0	5.7 – 36.4	95	70	4	38.0	9.5 – 44.0	28.0	38.0	38.0	38.0	72	95	790	---	1/2	208/1/60	3.0	---	17.3	---	11.7	---	9.5	3.39	125
FCU-4	ELEVATOR SHAFT	2.0	400	400	---	---	CARRIER	45MAHAQ-24 (HIGH WALL)	24.0	12.6 – 27.9	95	70	3	29.0	11.8 – 29.7	21.0	25.0	24.2	24.2	72	95	1000	---	1/15	208/1/60	3.0	---	21.2	---	13.0	---	13.5	3.42	50

FAN COIL UNIT NOTES:

1. HEAT PUMP UNIT.
2. UNIT SHALL HAVE:
   - A. R-454B REFRIGERANT.
   - B. MINIMUM 20-GAUGE, FACTORY FINISHED, BONDERIZED STEEL CABINET.
   - C. FCU-1 AND FCU-3; 3-SPEED CENTRIFUGAL MOTOR.
   - D. FCU-2 AND FCU-4; 4-SPEED CENTRIFUGAL MOTOR.
   - E. FAN MOTOR THERMAL OVERLOAD PROTECTOR.
   - F. CONTROL CIRCUIT BOARD.
   - G. MICROPROCESSOR CONTROLS.
   - H. SELF-DIAGNOSTICS.
   - I. AUTO-RESTART FUNCTION.
   - J. CONDENSATE DRAIN PAN WITH CONDENSATE PUMP.
   - K. INTERNAL TRANSFORMER FOR WALL MOUNTED 24V THERMOSTAT CONTROL.
   - L. FREEZESTAT.
   - M. FILTER TRACK WITH CLEANABLE FILTERS.
   - O. ALL NECESSARY WALL AND / OR CEILING BRACKETS AS REQUIRED FOR A COMPLETE INSTALLATION.
3. ACCESSORIES:
   - A. LOW AMBIENT CONTROLS, HEATING AND COOLING (OPERATION DOWN TO MINUS 13-DEGREES F, MINIMUM)
   - B. AUXILIARY DRAIN PAN OR SECONDARY CONDENSATE DRAIN CONNECTION FOR OVERFLOW PROTECTION.
     1). WATER LEVEL DETECTION DEVICE CONFORMING TO UL 508 SHALL BE PROVIDED THAT WILL SHUT OFF THE EQUIPMENT SERVED IN THE EVENT THAT THE PRIMARY DRAIN IS BLOCKED.
   - C. FCU-1 AND FCU-3; BOTTOM AND SIDE ACCESS FOR SERVICING.
   - D. SERVICE VALVES WITH SCHRADER PORTS.
   - E. FACTORY INSTALLED REFRIGERANT DETECTION SYSTEM (CONSISTING OF LEAK SENSOR WITH INTEGRATED CONTROL BOARD AND HARNESS, MINIMUM).
   - F. FACTORY SUPPLIED, FIELD INSTALLED CONDENSATE PUMP.
   - G. FACTORY WIRED CONTROLS FOR REMOTE WALL MOUNTED THERMOSTAT.
   - H. WALL MOUNTED THERMOSTAT (7-DAY, 24-HOUR DIGITAL PROGRAMMABLE THERMOSTAT WITH MANUAL CHANGEOVER, SINGLE STAGE HEATING / COOLING, ADJUSTABLE HUMIDISTAT AND SETBACKS, BACKLIT DISPLAY, BATTERY BACKUP, 24V AC).
   - I. FCU-1 THRU FCU-3; VIBRATION ISOLATION HANGERS.
4. ACCEPTABLE MANUFACTURER'S – CARRIER, LG, SAMSUNG.

NOTES:

1. FAN COIL UNITS ARE POWERED BY IT'S ASSOCIATED CONDENSING UNIT POWER.
2. VERIFY EXACT FAN SPEED SETTINGS WITH OWNER (SELECTIONS ARE BASED ON MEDIUM FAN SPEED).
3. ELEVATOR SHAFT – VERIFY THE EXACT COOLING AND HEATING LOAD REQUIREMENTS WITH THE ELEVATOR CONTRACTOR AND ARCHITECT (BASED ON THE ACTUAL EQUIPMENT BEING SUPPLIED AND INSTALLED WITHIN THE SPACES) PRIOR TO SUBMITTAL REVIEW PROCESS AND PURCHASING / INSTALLING THE FAN COIL UNITS.
4. SUBMITTALS SHALL INCLUDE HEATING / COOLING RATED MBH CAPACITY, AND HEATING / COOLING MINIMUM-MAXIMUM MBH RANGE FOR EACH TYPE OF FAN COIL UNIT INDICATED.

CONDENSING UNIT SCHEDULE (COMMERCIAL / PUBLIC SPACES AND ELEVATOR)

MARK	AREA SERVED	MANUFACTURER	MODEL NO.	OPERATING RANGE (° F)		DX COOLING		DX HEATING						REFRIGERANT CONNECTIONS		MOTOR			MCA	MOCP	SEER	SEER2	EER	EER2	OPERATING WEIGHT (LBS.)
				COOLING (OUTDOOR DB MINIMUM)	HEATING (OUTDOOR DB MINIMUM)	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH	MBH RANGE (MINIMUM TO MAXIMUM)	RATED MBH (17 DEGREES)	MAXIMUM MBH (17 DEGREES)	RATED MBH (5 DEGREES)	MAXIMUM MBH (5 DEGREES)	SUCTION	LIQUID	RPM	HP	VOLTS / PH							
CU-3	FCU-1	CARRIER	37MBHAQ-36	-22	-22	36.0	5.7 – 36.4	38.0	9.5 – 44.0	28.0	38.0	38.0	38.0	3/4"	3/8"	750	1/4	208/1/60	38.0	40	---	17.3	---	9.5	150
CU-4	FCU-2	CARRIER	37MAHAQ-12	-22	-22	12.0	3.8 – 14.6	12.0	3.8 – 16.0	9.8	12.8	11.5	11.5	3/8"	1/4"	780	1/30	208/1/60	15.0	15	---	25.5	---	13.5	100
CU-5	FCU-3	CARRIER	37MBHAQ-36	-22	-22	36.0	5.7 – 36.4	38.0	9.5 – 44.0	28.0	38.0	38.0	38.0	3/4"	3/8"	750	1/4	208/1/60	38.0	40	---	17.3	---	9.5	150
CU-6	FCU-4	CARRIER	37MAHAQ-24	-22	-22	24.0	12.6 – 27.9	29.0	11.8 – 29.7	21.0	25.0	24.2	24.2	5/8"	3/8"	950	1/8	208/1/60	24.9	25	---	21.2	---	13.0	150

CONDENSING UNIT NOTES:

1. UNIT CABINET SHALL BE CONSTRUCTED OF HEAVY-GAUGE, CORROSION RESISTANT STEEL, WITH FACTORY POWDER COAT PAINT.
2. UNIT CABINET SHALL BE EQUIPPED WITH COATED STEEL SAFETY WIRE GUARDS TO PROTECT CONDENSER FAN OPENING.
3. UNIT ENCLOSURE SHALL CONTAIN FACTORY WIRING, PIPING, CONTROLS, COMPRESSOR, REFRIGERANT CHARGE, AND SPECIAL FEATURES.
4. CONDENSER COIL SHALL BE CONSTRUCTED OF ALUMINUM FINS MECHANICALLY BONDED TO COPPER TUBES.
5. CONDENSER FAN SHALL BE DIRECT DRIVE DIRECT DRIVE, PROPELLER TYPE, MULTIPLE SPEED OPERATION.
6. COMPRESSORS SHALL BE VARIABLE SPEED (INVERTER) TYPE.
7. MOTORS SHALL HAVE BUILT-IN THERMAL OVERLOAD PROTECTION.
8. UNIT SHALL HAVE:
   - A. R-454B REFRIGERANT.
   - B. LINE SET.
   - C. FILTER DRIER.
   - D. THERMOSTATIC EXPANSION VALVES.
   - E. LOW PRESSURE SWITCH.
   - F. HIGH PRESSURE SWITCH.
9. ACCESSORIES:
   - A. LOW AMBIENT CONTROLS, HEATING AND COOLING (OPERATION DOWN TO MINUS 13-DEGREES F, MINIMUM)
   - B. WINTER START CONTROL.
   - C. FACTORY INSTALLED CRANKCASE HEATER.
   - D. FACTORY INSTALLED BASEPAN HEATER.
   - E. FACTORY INSTALLED REFRIGERANT DETECTION SYSTEM.
   - F. PE MOUNTING BASE (MINIMUM 1'-6" HIGH, INSULATED ALUMINUM ROOF CURB WITH UV-RESISTANT ABS PLASTIC PORTAL CAP).
   - G. ALUMINUM EQUIPMENT RAIL (MINIMUM 2'-0" HIGH) OR ALUMINUM CONDENSING UNIT STAND (MINIMUM 2'-0" HIGH).
   - H. FIELD INSTALLED WIND BAFFLE TO PROTECT THE UNIT FROM SNOW ACCUMULATION AND / OR BLOCKED AIR INTAKE, AS REQUIRED BY THE UNIT MANUFACTURER (COORDINATE EXACT UNIT LOCATIONS AND REQUIREMENTS WITH UNIT MANUFACTURER PRIOR TO INSTALLING WIND BAFFLE).
10. ACCEPTABLE MANUFACTURER'S – CARRIER, LG, SAMSUNG.

NOTES:

1. UNITS SHALL BE INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH THE NEW YORK STATE BUILDING CODE.
2. SUBMITTALS SHALL INCLUDE HEATING / COOLING RATED MBH CAPACITY, AND HEATING / COOLING MINIMUM-MAXIMUM MBH RANGE FOR EACH TYPE OF CONDENSING UNIT INDICATED.

DRYER BOOSTER FAN SCHEDULE

MARK	AREA SERVED	CFM	STATIC PRESS. IN. WG EXT.	MANUFACTURER	MODEL NO.	FAN				MOTOR		OPERATING WEIGHT (LBS.)
						FAN TYPE	DRIVE TYPE	RPM	SONES	WATTS	VOLTS / PH	
BF-1	APARTMENT LAUNDRY	150	---	FANTECH	DEDPV-705	CENTRIFUGAL	---	2600	---	78	120/1/60	25

DRYER BOOSTER FAN NOTES:

1. UL LISTED TO THE DEDPV SUPPLEMENT TO UL705.
2. MINIMUM 18-GAUGE CORROSION RESISTANT GALVANIZED STEEL PARTICULATE HANDLING IMPELLER.
3. BACKWARD INCLINED FAN WHEEL.
4. MOTORS WITH BUILT-IN THERMAL OVERLOAD PROTECTION.
5. PSC, PERMANENTLY LUBRICATED MOTOR MOUNTED OUT OF THE AIRSTREAM.
6. INLET AND OUTLET DUCT FLANGES.
7. FACTORY INSTALLED AND WIRED POWER CORD (MINIMUM 6'-0" LONG) FOR CONNECTION TO A STANDARD ELECTRICAL OUTLET.
   - A. AUTOMATICALLY ACTIVATED BY PRESSURE SENSING CONTROL.
8. CONTROLS – PRESSURE SENSING WITH SELF-CLEANING TUBE DESIGN.
   - A. AUTOMATICALLY ACTIVATES FAN BASED ON OPERATION OF DRYER.
9. WALL MOUNTED INDICATOR PANEL WITH LED DISPLAY AND MINIMUM 50-FOOT CABLE.
10. TEMPERATURE LIMIT DEVICE (SHUTS DOWN THE FAN IN CASE OF A DRYER FIRE).
11. MOUNT DRYER BOOSTER FANS IN VERTICAL PORTION (EXPOSED) OF THE DRYER EXHAUST DUCTWORK LOCATED WITHIN THE LAUNDRY ROOM. IF MOUNTED CONCEALED ABOVE CEILING, PROVIDE CEILING ACCESS DOORS.
12. PROVIDE ALL NECESSARY WALL AND / OR CEILING BRACKETS AS REQUIRED FOR A COMPLETE INSTALLATION.
13. ACCEPTABLE MANUFACTURER'S – FANTECH, TJERNLUND.

NOTES:

1. MAXIMUM ALLOWABLE DUCTWORK LENGTH SHALL NOT EXCEED 125'-0" (INCLUDING A MINIMUM OF 5'-0" FOR EACH ELBOW INSTALLED), FROM THE DRYER INLET CONNECTION TO THE DRYER DISCHARGE LOCATION.

HVAC OUTSIDE AIR CALCULATIONS

ERU-1

OCCUPANCY OR USE	ROOM NAME	NUMBER OF ROOMS	ROOM SQUARE FOOTAGE	OCCUPANT LOAD (PEOPLE / SQFT)	OUTSIDE AIR VENTILATION (CFM / SQFT)	CEILING HEIGHT (FEET)	MINIMUM AIR CHANGES PER HOUR	MINIMUM OUTSIDE AIR REQUIRED
CORRIDORS	FIRST FLOOR CORRIDORS 006, 015	---	365	---	---	9	6	(365 x 9) x 6 / 60 / 329 CFM
CORRIDORS	FIRST FLOOR COMPACT CORRIDOR 009	---	208	---	---	9	6	(208 x 9) x 6 / 60 / 187 CFM
LOBBIES	FIRST FLOOR LOBBY 012	---	742	10 / 1000 10 x (742 / 1000) 7 PEOPLE	0.06 CFM / SQFT	---	---	7.5 CFM / PERSON (7 x 7.5) + (0.06 x 742) 98 CFM
UTILITIES	FIRST FLOOR BIKE STORAGE 005	---	273	---	0.06 CFM / SQFT	---	---	(0.06 x 273) 16 CFM
UTILITIES	FIRST FLOOR TENANT STORAGE 110	---	871	---	0.06 CFM / SQFT	---	---	(0.06 x 871) 52 CFM
PUBLIC SPACES	FIRST FLOOR COMPACTOR 008	---	271	---	---	9	10	(271 x 9) x 10 / 60 / 407 CFM
PUBLIC SPACES	FIRST FLOOR TRASH ROOM 007	---	98	---	---	9	10	(98 x 9) x 10 / 60 / 147 CFM
OFFICE SPACES	FIRST FLOOR TENANT SPACE 004	---	4150	5 / 1000 5 x (4150 / 1000) 21 PEOPLE	0.06 CFM / SQFT	---	---	5 CFM / PERSON (21 x 5) + (0.06 x 4150) 354 CFM
CORRIDORS	SECOND FLOOR CORRIDOR 024	---	452	---	---	9	6	(452 x 9) x 6 / 60 / 407 CFM
PUBLIC SPACES	SECOND FLOOR TRASH ROOM 025	---	20	---	---	9	10	(20 x 9) x 10 / 60 / 30 CFM
CORRIDORS	THIRD FLOOR CORRIDOR 031	---	452	---	---	9	6	(452 x 9) x 6 / 60 / 407 CFM
PUBLIC SPACES	THIRD FLOOR TRASH ROOM 032	---	20	---	---	9	10	(20 x 9) x 10 / 60 / 30 CFM
PRIVATE DWELLINGS	FIRST FLOOR THRU THIRD FLOOR APARTMENTS	17	---	2 EXHAUST SPACES	50 CFM / EXHAUST SPACE	---	---	(50 x 2) x 17 / 1700 CFM
							TOTAL MINIMUM OUTSIDE AIR REQUIRED	4174 CFM

ERU-1 TOTAL OUTSIDE AIR PROVIDED = 4,250 CFM

OUTSIDE AIR NOTES:

1. MINIMUM OUTSIDE AIR VENTILATION RATES ARE BASED ON NEW YORK STATE MECHANICAL CODE, TABLE 403.3.1.1.

HVAC OUTSIDE AIR CALCULATIONS

ERU-2

OCCUPANCY OR USE	ROOM NAME	NUMBER OF ROOMS	ROOM SQUARE FOOTAGE	OCCUPANT LOAD (PEOPLE / SQFT)	OUTSIDE AIR VENTILATION (CFM / SQFT)	CEILING HEIGHT (FEET)	MINIMUM AIR CHANGES PER HOUR	MINIMUM OUTSIDE AIR REQUIRED
CORRIDORS	FIRST FLOOR CORRIDORS 015, 021	---	533	---	---	9	6	(533 x 9) x 6 / 60 / 480 CFM
UTILITIES	FIRST FLOOR MECHANICAL 016	---	132	---	---	9	4	(132 x 9) x 4 / 60 / 79 CFM
UTILITIES	FIRST FLOOR ELECTRICAL 019	---	96	---	---	9	4	(96 x 10) x 4 / 60 / 58 CFM
UTILITIES	FIRST FLOOR JANITOR 020	---	75	---	---	9	10	(75 x 9) x 10 / 60 / 113 CFM
OFFICE SPACES	FIRST FLOOR LEASE OFFICE 017	---	186	5 / 1000 5 x (186 / 1000) 1 PEOPLE	0.06 CFM / SQFT	---	---	5 CFM / PERSON (1 x 5) + (0.06 x 186) 16 CFM
OFFICE SPACES	FIRST FLOOR TENANT #1 022	---	341	5 / 1000 5 x (341 / 1000) 2 PEOPLE	0.06 CFM / SQFT	---	---	5 CFM / PERSON (2 x 5) + (0.06 x 341) 30 CFM
OFFICE SPACES	FIRST FLOOR TENANT #2 022	---	91	5 / 1000 5 x (91 / 1000) 1 PEOPLE	0.06 CFM / SQFT	---	---	5 CFM / PERSON (1 x 5) + (0.06 x 91) 10 CFM
OFFICE SPACES	FIRST FLOOR TENANT #3 022	---	437	5 / 1000 5 x (437 / 1000) 2 PEOPLE	0.06 CFM / SQFT	---	---	5 CFM / PERSON (2 x 5) + (0.06 x 437) 36 CFM
OFFICE SPACES	FIRST FLOOR TENANT #4 022	---	78	5 / 1000 5 x (78 / 1000) 1 PEOPLE	0.06 CFM / SQFT	---	---	5 CFM / PERSON (1 x 5) + (0.06 x 78) 10 CFM
OFFICE SPACES	FIRST FLOOR TENANT #5 022	---	126	5 / 1000 5 x (126 / 1000) 1 PEOPLE	0.06 CFM / SQFT	---	---	5 CFM / PERSON (1 x 5) + (0.06 x 126) 13 CFM
CORRIDORS	FIRST FLOOR TENANT CORRIDOR 022	---	155	---	---	9	6	(155 x 9) x 6 / 60 / 140 CFM
PUBLIC SPACES	FIRST FLOOR TENANT TOILET 022	--	125	---	---	9	10	(125 x 9) x 10 / 60 / 188 CFM
CORRIDORS	SECOND FLOOR CORRIDORS 028, 029	---	486	---	---	9	6	(486 x 9) x 6 / 60 / 437 CFM
PRIVATE DWELLINGS	FIRST FLOOR THRU SECOND FLOOR APARTMENTS	12	---	2 EXHAUST SPACES	50 CFM / EXHAUST SPACE	---	---	(50 x 2) x 12 / 1200 CFM
							TOTAL MINIMUM OUTSIDE AIR REQUIRED	2810 CFM

ERU-2 TOTAL OUTSIDE AIR PROVIDED = 2,875 CFM

OUTSIDE AIR NOTES:

1. MINIMUM OUTSIDE AIR VENTILATION RATES ARE BASED ON NEW YORK STATE MECHANICAL CODE, TABLE 403.3.1.1.

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Firm Certificate Number: 0019677

STATE OF NEW YORK – STATE OF REGISTRATION – 084719 – REGISTERED PROFESSIONAL ENGINEER

5-23-25

TITLE:
HVAC SCHEDULES AND OUTSIDE AIR CALCULATIONS

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DRAWING #: M-5

HVAC SPECIFICATIONS

PART 1 – GENERAL

1.1 QUALITY ASSURANCE

A. MATERIALS AND EQUIPMENT SHALL BE PROVIDED BY ONE OF THE MANUFACTURERS LISTED IN PART 2 – PRODUCTS.

1. DIVISION 23 BIDS SHALL BE BASED ON THE MATERIAL MENTIONED OR SPECIFIED, AND ANY PROPOSALS FOR A SUBSTITUTION SHALL BE MADE IN WRITING TO THE ARCHITECT / ENGINEER ALLOWING ADEQUATE TIME FOR APPROPRIATE ACTION.

a. REFER TO DIVISION 1 REQUIREMENTS FOR SUBSTITUTION PROCEDURES.

2. MATERIALS AND EQUIPMENT FROM OTHER MANUFACTURERS MAY BE ACCEPTED IF PROVEN EQUAL TO THOSE SPECIFIED.

a. EQUIPMENT SELECTION OF HIGHER ELECTRICAL CHARACTERISTICS, PHYSICAL DIMENSIONS, CAPACITIES, AND RATINGS MAY BE FURNISHED PROVIDED SUCH PROPOSED EQUIPMENT IS APPROVED IN WRITING AND CONNECTING MECHANICAL AND ELECTRICAL SERVICES, CIRCUIT BREAKERS, CONDUIT, MOTOR, BASES, AND EQUIPMENT SPACES ARE INCREASED.

1). DIVISION 23 ALSO IS LIABLE FOR ALL COSTS AND CHANGES IN THE WORK REQUIRED BY SUBSTITUTE EQUIPMENT.

a). NO ADDITIONAL COSTS WILL BE APPROVED FOR THESE INCREASES, IF LARGER EQUIPMENT IS APPROVED.

2). IF MINIMUM ENERGY RATINGS OR EFFICIENCIES OF EQUIPMENT ARE SPECIFIED, EQUIPMENT MUST MEET DESIGN AND COMMISSIONING REQUIREMENTS.

3. DIVISION 23 IS LIABLE FOR AND SHALL PAY FOR, ALL ARCHITECTURAL AND ENGINEERING REVIEWS AND REDESIGN COSTS FOR SUBSTITUTE MATERIALS AND EQUIPMENT.
4. THE BIDDER MUST SUBMIT IN WRITING TO THE ARCHITECT / OWNER, WHO WILL FORWARD TO THE ENGINEER, ANY REQUEST FOR A PROPOSED DEVIATION, MODIFICATION, OR SUBSTITUTION TO THESE DRAWINGS AND SPECIFICATIONS FOR EVALUATION NO LATER THAN TEN (10) DAYS PRIOR TO THE BID DATE. PHONE CALLS, EMAILS, ETC. MADE THE DAY BEFORE AND / OR THE DAY THE BIDS ARE DUE ARE NOT ACCEPTABLE.

a. A REQUEST FOR ANY SUBSTITUTION SHALL BE ACCOMPANIED BY TECHNICAL DATA, DRAWINGS, PRODUCT SAMPLES, AND COMPLETE DATA SUBSTANTIATING COMPLIANCE OF PROPOSED SUBSTITUTION WITH THESE SPECIFICATIONS AND DRAWINGS.

1). REQUESTS FOR SUBSTITUTION SHALL BE MADE ONLY BY THE BIDDER; REQUESTS FOR SUBSTITUTION FROM SALES REPRESENTATIVES, VENDORS, OR SUPPLIERS ARE NOT ACCEPTABLE.

b. NO MATERIALS SHALL BE DEEMED ACCEPTABLE IF NOT IN STRICT AND FULL COMPLIANCE WITH THESE DRAWINGS AND SPECIFICATIONS.

c. ALL BIDDERS MUST BID SOLELY ON THE SPECIFIED MATERIALS UNLESS ACCEPTANCE BY THE ENGINEER OF A DEVIATION, OMISSION, MODIFICATION, OR SUBSTITUTION IS GRANTED IN WRITING THROUGH THE ARCHITECT / OWNER TO ALL BIDDERS PRIOR TO THE BID DATE.

1). FAILURE TO SUBMIT PROPOSED SUBSTITUTED EQUIPMENT / MATERIALS PRIOR TO THE BID EVALUATION DATE, AND IS INCLUDED IN THE BIDDERS' PRICE / SUBMITTAL REVIEW DRAWINGS (AFTER THE PROJECT IS AWARDED); WILL RESULT IN A "REJECTED" SUBMITTAL PACKAGE.

B. THE LENGTH OF TIME THE MANUFACTURER HAS BEEN IN BUSINESS, THE LOCATION AND CAPABILITY OF COMPLETE REPAIR FACILITIES, AVAILABILITY OF REPAIR PARTS AND ANNUAL MAINTENANCE CONTRACTS ALL WILL BE CONSIDERED IN DETERMINING EQUALITY.

1.2 LAWS, PERMITS, INSPECTIONS

A. WORK SHALL COMPLY WITH THE LATEST REVISIONS OF NEW YORK STATE BUILDING CODE, NEW YORK STATE MECHANICAL CODE, NEW YORK STATE UNIFORM FIRE PROTECTION AND CONSTRUCTION CODE, NEW YORK STATE ENERGY CONSERVATION CODE, AND ANY STATE AND LOCAL CODES OR REGULATIONS THAT APPLY.

B. COMPLY WITH NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) CODES AS APPLICABLE.

C. COMPLY TO REQUIREMENTS OF DRAWINGS AND SPECIFICATIONS THAT ARE IN EXCESS OF GOVERNING CODES.

D. DO NOT INSTALL WORK AS SPECIFIED OR SHOWN IF IN CONFLICT WITH GOVERNING CODES.

1. NOTIFY ENGINEER IN WRITING AND REQUEST DIRECTION.

E. PAY ALL INSPECTION AND PERMIT FEES.

F. PROVIDE CERTIFICATE OF INSPECTION FROM ALL GOVERNING AUTHORITIES.

1.3 INSTALLERS QUALIFICATIONS

A. SKILLED MECHANICS WHO HAVE SUCCESSFULLY COMPLETED AN APPRENTICESHIP PROGRAM OR ANOTHER CRAFT TRAINING PROGRAM CERTIFIED BY THE U.S. DEPARTMENT OF LABOR, BUREAU OF APPRENTICESHIP AND TRAINING.

B. THE MECHANICAL CONTRACTOR SHALL BE LICENSED TO PERFORM MECHANICAL WORK IN THE MUNICIPALITY IN WHICH THE PROJECT IS LOCATED.

1.4 OMISSIONS.

A. OMISSIONS, DISCREPANCIES OR POINTS OF QUESTION FOUND BY A BIDDER IN THE PLANS OR SPECIFICATIONS SHALL BE REFERRED TO THE ARCHITECT, WHO WILL FORWARD TO THE ENGINEER TO MAKE ANY CLARIFICATIONS IN WRITING.

1.5 REQUEST FOR INFORMATION (RFI).

A. PRIOR TO, AND DURING THE CONSTRUCTION OF THE PROJECT, QUESTIONS FROM THE HVAC CONTRACTOR REGARDING OMISSIONS, DISCREPANCIES, COORDINATION ITEMS, AND ANY OTHER CONDITIONS THAT RESULT IN CHANGES TO THE HVAC LAYOUT SHALL BE REFERRED TO THE ARCHITECT, WHO WILL MAKE ANY CLARIFICATIONS IN WRITING.

1. THE HVAC CONTRACTOR SHALL PROVIDE A DETAILED DESCRIPTION OF THE INFORMATION BEING REQUESTED ALONG WITH A DRAWING SHOWING THE AREA AND ITEMS WHERE THE CONFLICTS OCCUR AS WELL AS A PROPOSED SOLUTION TO RESOLVE THE CONFLICTS.
2. FAILURE TO PROVIDE A DETAILED DESCRIPTION AND PROPOSED SOLUTION TO THE INFORMATION BEING REQUESTED WILL RESULT IN THE ARCHITECT / ENGINEER RETURNING THE REQUEST AND REQUIRING THAT THIS BE PROVIDED BEFORE REVIEWING, ACCEPTING OR MODIFYING THE PROPOSED REQUEST.

B. THE ENGINEER SHALL HAVE 5 (FIVE) WORKING BUSINESS DAYS (NOT INCLUDING HOLIDAYS AND VACATIONS) FROM THE DATE THAT THE ENGINEER HAS RECEIVED THEM TO REVIEW AND ISSUE A RESPONSE THE CONTRACTOR.

1.6 SHOP DRAWINGS

A. DIVISION 23 SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY VIA EMAIL IN PDF FORMAT TO THE ARCHITECT WHO WILL THEN FORWARD THEM TO THE ENGINEER.

1. DIVISION 23 SHALL CHECK, SIGN, STAMP AND DATE ALL SUBMITTALS BEFORE SENDING THEM TO THE ENGINEER FOR REVIEW.
2. THE ENGINEER SHALL HAVE 10–WORKING BUSINESS DAYS (NOT INCLUDING HOLIDAYS AND VACATIONS) AFTER THE DATE THAT THE ENGINEER HAS RECEIVED THEM TO REVIEW, SIGN AND STAMP THE SUBMITTALS BEFORE RETURNING THEM TO THE ARCHITECT.
3. EACH PIECE OF EQUIPMENT SHALL BE SUBMITTED IN A SEPARATE PDF FILE, COMBINING THE EQUIPMENT INTO ONE (1) PDF FILE WILL NOT BE ACCEPTED.

B. PREPARE COORDINATION DRAWINGS ACCORDING TO 1/4–INCH EQUALS 1'–0" SCALE OR LARGER.

1. DETAIL MAJOR ELEMENTS, COMPONENTS AND SYSTEMS OF MECHANICAL EQUIPMENT AND MATERIALS IN RELATIONSHIP WITH OTHER SYSTEMS, INSTALLATIONS, AND BUILDING COMPONENTS.
2. INCLUDE THE FOLLOWING:

a. PROPOSED LOCATIONS AND SIZES OF PIPING, DUCTWORK, EQUIPMENT, PIPING SPECIALTIES, DUCTWORK ACCESSORIES AND MATERIALS.
b. CLEARANCES FOR SERVICING AND MAINTAINING EQUIPMENT, INCLUDING SPACE FOR EQUIPMENT DISASSEMBLY REQUIRED FOR PERIODIC MAINTENANCE.
c. EQUIPMENT SERVICE CONNECTIONS AND SUPPORT DETAILS.
d. FIRE–RATED WALL, FLOOR AND CEILING PENETRATIONS.
e. FLOOR PLANS, ELEVATIONS AND DETAILS TO INDICATE PENETRATIONS IN FLOORS, WALLS AND CEILINGS AND THEIR RELATIONSHIP TO OTHER PENETRATIONS AND INSTALLATIONS.
f. REFLECTED CEILING PLANS TO COORDINATE AND INTEGRATE INSTALLATIONS, AIR OUTLETS AND INLETS, LIGHT FIXTURES, AND OTHER CEILING MOUNTED ITEMS.

1.7 RECORD (AS–BUILT) DRAWINGS

A. DURING THE PROGRESS OF CONSTRUCTION, THE RECORD DRAWINGS SHALL BE CORRECTED BY DIVISION 23 TO INDICATE ACTUAL INSTALLATIONS.

B. UPON COMPLETION OF THE PROJECT, 3–SETS OF FINAL RECORD DRAWINGS SHALL PRODUCED, WITH 1–SET EACH BEING DELIVERED TO THE OWNER, ARCHITECT AND ENGINEER.

1.8 PROTECTION

A. DELIVER PIPES AND TUBES WITH FACTORY APPLIED END–CAPS.

1. MAINTAIN END–CAPS THROUGH SHIPPING, STORAGE AND HANDLING TO PREVENT PIPE–END DAMAGE AND PREVENT ENTRANCE OF DIRT, DEBRIS AND MOISTURE.

B. CLOSE AND WATERPROOF BETWEEN OPENINGS AND VOIDS IN WALLS AND FLOORS TO PREVENT ENTRANCE OF WATER OR MOISTURE.

C. PROTECT STORED PIPES AND TUBES FROM MOISTURE AND DIRT.

1. ELEVATE ABOVE GRADE.

D. SEAL ALL DUCTWORK AND PIPING, INCLUDING OPEN–ENDED DUCTWORK, AT THE END OF EACH DAY TO PREVENT DUST, DEBRIS, ETC. FROM ENTERING THE DUCTWORK AND PIPING.

1.9 OPERATION DURING CONSTRUCTION

A. DIVISION 23 IS RESPONSIBLE FOR THE INSTALLATION AND OPERATION, SERVICE AND MAINTENANCE OF ALL NEW EQUIPMENT DURING CONSTRUCTION AND PRIOR TO ACCEPTANCE BY THE OWNER OF THE COMPLETED PROJECT. WARRANTY PERIODS SHALL NOT COMMENCE UNTIL FINAL ACCEPTANCE BY THE OWNER.

1.10 PROJECT COMPLETION.

A. AT THE COMPLETION OF THE PROJECT, DIVISION 23 SHALL PROVIDE, TO THE OWNER, THREE (3) HARD BOUND VOLUMES OF MANUALS CONTAINING OPERATING SERVICE AND LUBRICATION INSTRUCTIONS, AND PARTS LISTS FOR ALL MAJOR EQUIPMENT AND MANUFACTURERS GUARANTIES OR WARRANTIES.

1.11 HVAC SCOPE OF WORK.

A. THE WORK INCLUDED UNDER THIS CONTRACT CONSISTS OF THE PROVIDING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, SERVICES, ETC., NECESSARY TO COMPLETE THE INSTALLATION THE HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS, AND OTHER ITEMS HEREIN LISTED, AND AS DESCRIBED IN THESE SPECIFICATIONS, AS ILLUSTRATED IN THE ACCOMPANYING DRAWINGS, OR AS DIRECTED BY THE OWNERS AUTHORIZED REPRESENTATIVE. HVAC WORK IS COMPRISED OF, BUT NOT LIMITED TO THE FOLLOWING PRINCIPAL ITEMS:

1. SUPPLY AND RETURN SYSTEMS INCLUDING DUCTS, GRILLES AND OUTLETS.
2. PIPING SYSTEMS INCLUDING VALVES AND PIPING SPECIALTIES,
3. EXHAUST SYSTEMS INCLUDING FANS, DUCTS, ETC.
4. INSULATION FOR PIPING, DUCTS, ETC.
5. MISCELLANEOUS EQUIPMENT REQUIRED FOR SYSTEMS.
6. TEMPERATURE CONTROLS.

1.12 GUARANTEES.

A. DIVISION 23 SHALL GUARANTEE ALL WORK PERFORMED AND MATERIALS FURNISHED UNDER THIS CONTRACT AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE OF THE WORK. ANY DEFECTS SHALL BE RECTIFIED BY DIVISION 23 WITHOUT ANY ADDITIONAL COST TO THE OWNER.

1.13 PUNCH LIST.

A. DIVISION 23 SHALL SCHEDULE, THROUGH THE ARCHITECT WITH A MINIMUM OF 7–DAYS NOTICE, THE ENGINEER TO PERFORM THE FOLLOWING:

1. PRE–PUNCH LIST: VERIFICATION OF MECHANICAL ITEMS SUCH AS, BUT NOT LIMITED TO, DUCTWORK SIZES, LOCATIONS, METHODS OF ASSEMBLY / INSTALLATION, BEFORE ITEMS ARE ENCLOSED BY CEILINGS, WALLS, ETC.

a. DIVISION 23 SHALL DELIVER TO BOTH THE ARCHITECT AND ENGINEER, A LETTER STATING THAT ALL ITEMS IN THE PRE–PUNCH LIST HAVE BEEN CORRECTED OR ADJUSTED ACCORDING TO THE GENERAL CONDITIONS OF THE CONTRACT BEFORE ANY CEILINGS, WALLS, ETC. CAN BE INSTALLED TO ENCLOSE MECHANICAL ITEMS.

2. FINAL PUNCH LIST: VERIFICATION OF MECHANICAL ITEMS SUCH AS, BUT NOT LIMITED TO, UNIT OPERATION, SENSOR LOCATIONS, COLORS SELECTED BY ARCHITECT.

a. BEFORE PROCEEDING WITH THE FINAL PUNCH LIST, DIVISION 23 SHALL PROVIDE THE ENGINEER WITH A COMPLETE SIGNED AND SEALED BALANCE REPORT.

1). THE ENGINEER SHALL NOT PERFORM A FINAL PUNCH LIST UNTIL A COMPLETED BALANCE REPORT IS RECEIVED.

b. DIVISION 23 SHALL, AT THE REQUEST OF THE ENGINEER, PROVIDE A LADDER AND ONE EMPLOYEE TO REMOVE AND REPLACE CEILING TILES, OPEN ACCESS DOORS, ETC. FOR INSPECTION OF MECHANICAL ITEMS.

1). THE EMPLOYEE SHALL BE MADE IMMEDIATELY AVAILABLE TO REMOVE ITEMS THAT ARE REQUESTED BY THE ENGINEER.
2). ANY CEILING TILE THAT IS DAMAGED SHALL BE REPLACED WITH NEW (TO MATCH EXISTING) AT DIVISION 23's EXPENSE.

c. DIVISION 23 SHALL DELIVER TO BOTH THE ARCHITECT AND ENGINEER, A LETTER STATING THAT ALL ITEMS IN THE FINAL PUNCH LIST HAVE BEEN CORRECTED OR ADJUSTED ACCORDING TO THE GENERAL CONDITIONS OF THE CONTRACT.

PART 2 – PRODUCTS

2.1 FIRESTOPPING

A. PROVIDE UL LISTED AND TESTED FIRESTOPPING MATERIAL, SILICONE ELASTOMER SPECIFICALLY FORMULATED FOR USE IN HORIZONTAL AND VERTICAL APPLICATIONS.

1. THE MATERIAL SHALL POSSESS INTUMESCENT CHARACTERISTICS, AND UPON EXPOSURE TO HEAT ABOVE 250° F, SHALL EXPAND TO NOT LESS THAN FIVE TIMES ITS ORIGINAL VOLUME TO FORM A FIREPROOF ENVELOPE UL RATED FOR 2 AND 3–HOURS PROTECTION, WHEN APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

B. UNUSED SLOTS AND OTHER PENETRATIONS IN WALLS OR OTHER GENERAL CONSTRUCTION SHALL BE CLOSED AND SEALED WITH AN APPROVED FIRESTOPPING MATERIAL.

1. DUCT OPENINGS IN WALLS SHALL BE CLOSED WITH 16–GAUGE GALVANIZED STEEL SHEET SECURELY ATTACHED AT THE MIDPOINT OF THE WALL THICKNESS AND FIRESTOPPED ON BOTH SIDES OF THE STEEL SHEET WITH NOT LESS THAN 1/8–INCH THICK LAYER OF NON–SAGGING COMPOUND TO FORM A FIREPROOF ENVELOPE UL RATED FOR 2 AND 3–HOURS PROTECTION, WHEN APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. SINGLE OR MULTIPLE PIPES PASSING THROUGH WALLS SHALL HAVE THE ANNULAR SPACE BETWEEN PIPES AND STRUCTURE FILLED WITH SILICONE ELASTOMER TO PROVIDE A MINIMUM 2–HOUR RATED FIRESTOP FOR WALLS.

C. PIPES AND DUCTS: THE ANNULUS BETWEEN PIPING AND DUCTWORK AND WALLS IN FINISHED SPACES SHALL BE FILLED, SEALED, AND PAINTED TO MATCH ADJACENT SURFACES.

1. WHERE DUCTWORK PASSES THROUGH A FIRE–RATED WALL ASSEMBLY, AND THERE ARE NO FIRE DAMPERS SHOWN ON THE PLANS (DUCTWORK SIZE IS LESS THAN 100 SQUARE INCHES), PROVIDE THE FOLLOWING, MINIMUM:

a. A MINIMUM OF 12–INCH LONG BY 0.060–INCH THICK STEEL SLEEVE SHALL BE CENTERED IN EACH DUCT OPENING.
b. THE SLEEVE SHALL BE SECURED TO BOTH SIDES OF THE WALL / CEILING AND ALL FOUR SIDES OF THE SLEEVE WITH A MINIMUM OF 1–1/2" x 1–1/2" x 0.060" STEEL ANGLES.
c. THE RETAINING ANGLES SHALL BE SECURED TO THE SLEEVES AND THE WALL / CEILING WITH NO. 10 (M5) SCREWS.
d. THE ANNULAR SPACE BETWEEN THE STEEL SLEEVE AND WALL / CEILING SHALL BE FILLED WITH SILICONE ELASTOMER TO PROVIDE A MINIMUM 2–HOUR RATED FIRESTOP.

2.2 MECHANICAL IDENTIFICATION

A. DUCT IDENTIFICATION DEVICES.

1. PLASTIC DUCT MARKERS: MANUFACTURERS STANDARD LAMINATED PLASTIC, COLOR CODED, CONTACT–TYPE, PERMANENT ADHESIVE.

a. LETTER SIZE: MINIMUM 1/4" FOR NAME OF UNITS IF VIEWING DISTANCE IS LESS THAN 2'–0", 1/2" FOR VIEWING DISTANCES UP TO 6'–0", AND PROPORTIONALLY LARGER LETTERING FOR GREATER VIEWING DISTANCES.
b. CONFORM TO THE FOLLOWING COLOR CODE:

1). GREEN: RETURN AIR.
2). YELLOW: SUPPLY AIR.
3). YELLOW / GREEN: ENERGY RECOVERY SUPPLY AIR.
4). BLUE: EXHAUST AIR, ENERGY RECOVERY EXHAUST AIR.
5). BLUE / WHITE: DRYER EXHAUST AIR.
6). NOMENCLATURE: INCLUDE THE FOLLOWING, AS A MINIMUM:

a). DIRECTION OF AIRFLOW.
b). DUCT SERVICE (SUPPLY, RETURN, EXHAUST, ETC.).

2. LOCATE DUCT MARKERS NEAT POINTS WHERE DUCTS ENTER INTO CONCEALED SPACES AND AT MAXIMUM INTERVALS OF 25'–0" IN EACH SPACE WHERE DUCTS ARE EXPOSED OR CONCEALED BY REMOVABLE CEILING SYSTEMS.

a. LOCATE DRYER EXHAUST AIR LABEL WITHIN 6'–0" OF THE EXHAUST DUCT CONNECTION.

B. PIPING IDENTIFICATION DEVICES.

1. MANUFACTURED PIPE MARKERS: PRE–PRINTED, COLOR CODED WITH LETTERING INDICATING SERVICE, AND SHOWING DIRECTION OF FLOW.

a. COLORS: COMPLY WITH ASME A–13.1 UNLESS OTHERWISE INDICATED.
b. PIPES WITH OD, INCLUDING INSULATION, LESS THAN 6": FULL–BAND PIPE MARKERS EXTENDING 360–DEGREES AROUND PIPE AT EACH LOCATION.
c. ARROWS: INTEGRAL WITH PIPING SYSTEM SERVICE LETTERING TO ACCOMMODATE BOTH DIRECTIONS, OR AS SEPARATE UNIT ON EACH PIPE MARKER TO INDICATE DIRECTION OF FLOW.

2. LOCATE PIPE MARKERS AS FOLLOWS:

a. NEAR PENETRATIONS THROUGH WALLS; ONE PER SIDE OF PENETRATION.
b. SPACED AT MAXIMUM INTERVALS OF 25'–0" ALONG EACH RUN.

C. EQUIPMENT IDENTIFICATION DEVICES.

1. EQUIPMENT NAMEPLATES: METAL NAMEPLATE WITH OPERATIONAL DATA ENGRAVED OR STAMPED, PERMANENTLY ATTACHED TO EQUIPMENT.

a. DATA: MANUFACTURER, PRODUCT NAME, MODEL NUMBER, SERIAL NUMBER, CAPACITY, OPERATING AND POWER CHARACTERISTICS, LABELS OF TESTED COMPLIANCES, AND SIMILAR ESSENTIAL DATA.

1). ENGRAVING: MANUFACTURER'S STANDARD LETTER STYLE, OF SIZES AND WITH TERMS TO MATCH EQUIPMENT IDENTIFICATION.
2). THICKNESS: 1/16 INCH FOR UNITS UP TO 20 SQUARE INCHES OR 8–INCHES IN LENGTH, AND 1/8 INCH FOR LARGER UNITS.

b. LOCATION: AN ACCESSIBLE AND VISIBLE LOCATION.
c. FASTENERS: AS REQUIRED TO MOUNT ON EQUIPMENT.

2. DUCT ACCESS DOOR MARKERS: 1/16–INCH THICK, ENGRAVED LAMINATED PLASTIC, WITH ABBREVIATED TERMS AND NUMBERS CORRESPONDING TO IDENTIFICATION.

a. PROVIDE 1/8–INCH CENTER HOLE FOR ATTACHMENT.
b. FASTENERS: SELF–TAPPING, STAINLESS–STEEL SCREWS OR CONTACT–TYPE, PERMANENT ADHESIVE.

2.3 PIPING MATERIALS

A. REFRIGERANT PIPING.: ALL SIZES, TYPE L ANNEALED–TEMPER COPPER, ASTM B–280, TYPE ACR.

1. FITTINGS: WROUGHT COPPER COMPLYING WITH ASME B16.22.

B. CONDENSATE PIPING: TYPE L DRAWN–TEMPER COPPER, ASTM B–88. WITH CRIMPED SOLDERED JOINTS.

1. FITTINGS: WROUGHT COPPER COMPLYING WITH ASME B16.22.

2.4 PIPING INSULATION

A. FIRE–TEST RESPONSE CHARACTERISTICS: FLAME–SPREAD RATING OF 25 OR LESS, AND SMOKE–DEVELOPED RATING OF 50 OR LESS; COMPLYING WITH ASTM E–84.

B. INSULATION MATERIALS.

1. MINERAL–FIBER INSULATION: PREFORMED PIPE INSULATION WITH GLASS FIBERS BONDED WITH A THERMOSETTING RESIN; WITH FACTORY–APPLIED, ALL PURPOSE, VAPOR–RETARDER PVC JACKET.
2. FLEXIBLE ELASTOMERIC THERMAL INSULATION: CLOSED–CELL, SPONGE OR EXPANDED RUBBER MATERIALS WITH FACTORY–APPLIED ULTRAVIOLET–PROTECTIVE COATING.
3. CLOSED–CELL PHENOLIC FOAM INSULATION: PREFORMED PIPE INSULATION OF RIGID, EXPANDED, CLOSED CELL STRUCTURE, WITH VAPOR BARRIER AND ALL SERVICE JACKET; COMPLYING WITH ASTM C–1126, TYPE III, GRADE 1.

C. ALL PIPING EXPOSED ON THE EXTERIOR OF THE BUILDING AND ROOF SHALL BE PROVIDED WITH A HIGH IMPACT, UV–RESISTANT PVC JACKET, MINIMUM 30 MIL (AS MANUFACTURED BY JOHNS MANVILLE).

D. SCHEDULE OF PIPING INSULATION THICKNESSES.

MINIMUM PIPE INSULATION

SYSTEM TYPE	TEMPERATURE RANGE (° F)	PIPE DIAMETER	INSULATION THICKNESS
REFRIGERANT SUCTION, REFRIGERANT LIQUID	35–55	≤ 1–1/2"	1"
CONDENSATE	ALL	≤ 1" TO ≤8"	1"

2.5 PIPING ROOF SUPPORT SPACING.

A. HORIZONTAL PIPING.

DRAWN–TEMPER COPPER PIPE SIZE AND SPACING (REFRIGERANT PIPING)

PIPE SIZE	MAXIMUM SPACING
1/2" – 5/8"	5'–0"
3/4" – 1"	6'–0"

B. SUPPORT HORIZONTAL PIPING WITHIN 2'–0" (MAXIMUM) OF EACH ELBOW.

2.6 DUCTWORK ROOF SUPPORT SPACING.

A. SUPPORT HORIZONTAL DUCTWORK WITH A MINIMUM OF 6'–0" OF SPA.CING BETWEEN EACH SUPPORT.

B. SUPPORT HORIZONTAL DUCTWORK WITHIN 2'–0" (MAXIMUM) OF EACH ELBOW.

2.7 SHEET METAL MATERIALS

A. COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS–METAL AND FLEXIBLE" FOR ACCEPTABLE MATERIALS, MATERIAL THICKNESSES, AND DUCT CONSTRUCTION METHODS, UNLESS OTHERWISE INDICATED.

1. SHEET METAL MATERIALS SHALL BE FREE FROM VISUAL IMPERFECTIONS INCLUDING PITTING, SEAM MARKS, ROLLER MARKS, OIL CANNING, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.

B. GALVANIZED SHEET STEEL.

1. LOCK–FORMING QUALITY; COMPLYING WITH ASTM A653/A653M AND HAVING G90 ZINC COATING DESIGNATION; DUCTS SHALL HAVE MILL–PHOSPHATIZED FINISH FOR SURFACES EXPOSED TO VIEW.

C. ALUMINUM SHEETS.

1. ASTM B 209, ALLOY 3003, TEMPER H14; WITH MILL FINISH FOR CONCEALED DUCTS AND STANDARD, 1–SIDE BRIGHT FINISH FOR EXPOSED DUCTS.

2.8 SHEET METAL SEALANT MATERIALS

A. MASTIC: NON–HARDENING, NON–MIGRATING MASTIC ELASTIC SEALANT SPECIFICALLY FOR SEALING JOINTS AND SEAMS IN DUCTWORK COMPLYING WITH UL 181 REQUIREMENTS FOR CLASS 1 DUCTS.

B. WATER–BASED JOINT AND SEAM SEALANT: FLEXIBLE, ADHESIVE SEALANT, RESISTANT TO UV LIGHT WHEN CURED, UL 723 LISTED, AND COMPLYING WITH NFPA REQUIREMENTS FOR CLASS 1 DUCTS.

C. SOLVENT–BASED JOINT AND SEAM SEALANT: ONE–PART, NONSAG, SOLVENT–RELEASE–CURING, POLYMERIZED BUTYL SEALANT FORMULATED WITH A MINIMUM OF 75 PERCENT SOLIDS.

2.9 DUCTWORK INSULATION

A. FIRE–TEST RESPONSE CHARACTERISTICS.

1. INDOOR APPLICATIONS: FLAME–SPREAD RATING OF 25 OR LESS, AND SMOKE–DEVELOPED RATING OF 50 OR LESS; COMPLYING WITH ASTM E–84.
2. OUTDOOR APPLICATIONS: FLAME–SPREAD RATING OF 75 OR LESS, AND SMOKE–DEVELOPED RATING OF 150 OR LESS; COMPLYING WITH ASTM E–84.

B. INSULATION MATERIALS.

1. MINERAL–FIBER BLANKET THERMAL INSULATION: GLASS FIBERS BONDED WITH A THERMOSETTING RESIN, WITHOUT FACING AND WITH ALL SERVICE JACKET MANUFACTURED FROM KRAFT PAPER, REINFORCING SCRIM, ALUMINUM FOIL, AND VINYL FILM.

2.10 DUCTWORK ACCESSORIES

A. VOLUME DAMPERS.

1. LOW LEAKAGE VOLUME DAMPERS: MULTIPLE OR SINGLE–BLADE, OPPOSED BLADE DESIGN, LOW LEAKAGE RATING, LINKAGE OUTSIDE OF AIRSTREAM, AND SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.

a. STEEL FRAMES: HAT–SHAPED, GALVANIZED SHEET STEEL CHANNELS, MINIMUM OF 0.064" THICK, WITH MITERED AND WELDED CORNERS; FRAMES WITH FLANGES FOR ATTACHING TO WALLS, FLANGELESS FRAMES FOR INSTALLATION IN DUCTS.
b. ROLL–FORMED STEEL BLADES: 0.064" THICK, GALVANIZED SHEET STEEL.
c. BLADE AXLES: 1/2" GALVANIZED STEEL.
d. BEARINGS: TWO–PIECE MOLDED SYNTHETIC THRUST OR BALL.
e. BLADE SEALS: FELT OR NEOPRENE.
f. JAMB SEALS: CAMBERED STAINLESS STEEL.
g. TIE BARS AND BRACKETS: GALVANIZED STEEL.
h. FINISH: MILL.

2. JACKSHAFT: 1" DIAMETER, GALVANIZED STEEL PIPE ROTATING WITHIN PIPE–BEARING ASSEMBLY MOUNTED ON SUPPORTS AT EACH MULLION AND AT EACH END OF MULTIPLE DAMPER ASSEMBLIES.
3. DAMPER HARDWARE: ZINC–PLATED, DIE–CAST CORE WITH DIAL AND HANDLE MADE OF 3/32" THICK ZINC–PLATED STEEL, AND A 3/4" HEXAGON LOCKING NUT.

a. INCLUDE CENTER HOLE TO SUIT DAMPER OPERATING–ROD SIZE.
b. INCLUDE ELEVATED PLATFORM FOR INSULATED DUCT MOUNTING.

4. DUCT ACCESSORY HARDWARE.

a. QUADRANT LOCKS: PROVIDE FOR EACH VOLUME DAMPER, QUADRANT LOCK DEVICE ON ONE END OF SHAFT; AND END BEARING PLATE ON OTHER END FOR DAMPER LENGTHS OVER 12".

1). PROVIDE EXTENDED QUADRANT LOCKS FOR EXTERNALLY INSULATED DUCTWORK.
2). MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE QUADRANT LOCKS OF ONE OF THE FOLLOWING:

a). VENT FABRICS, INC.
b). YOUNG REGULATOR COMPANY.

5. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE VOLUME DAMPERS OF ONE OF THE FOLLOWING:

a. AIR BALANCE, INC.
b. GREENHECK.
c. McGILL AIRFLOW CORPORATION.
d. RUSKIN COMPANY.

B. DUCT–MOUNTING ACCESS DOORS.

1. DESCRIPTION: FABRICATE DOORS AIRTIGHT AND SUITABLE FOR DUCT PRESSURE CLASS.

a. PROVIDE ACCESS DOORS IN DUCTS FOR READY ACCESS TO OPERATING PARTS INCLUDING FIRE DAMPERS, ETC.

2. ACCESS DOORS IN DUCTS – PROVIDE AND SIZE DOOR AS FOLLOWS:

a. INSTALL THE FOLLOWING MINIMUM SIZES FOR DUCT–MOUNTING, RECTANGULAR ACCESS DOORS:

1). HEAD AND HAND ACCESS: 18 BY 12 INCHES.

b. INSTALL THE FOLLOWING MINIMUM SIZES FOR DUCT–MOUNTING, ROUND ACCESS DOORS:

1). HEAD AND HAND ACCESS: 12 INCHES IN DIAMETER.

c. WHEN FIELD CONDITIONS REQUIRE AN ACCESS OPENING SMALLER THAN 18–INCH BY 12–INCH OR 12–INCHES IN DIAMETER, PROVIDE A 24–INCH LONG REMOVABLE SECTION OF CASING OR DUCT, SECURED WITH QUICK ACTING LOCKING DEVICES, 6 INCHES ON CENTERS, TO PERMIT READY ACCESS WITHOUT DISMANTLING OTHER EQUIPMENT.
d. LABEL FIRE DAMPERS ACCESS DOORS IN ACCORDANCE WITH NFPA AND DRAWINGS.

3. RECTANGULAR DOORS: MINIMUM 22–GAUGE, DOUBLE–WALL, DUCT MOUNTING, FABRICATED OF GALVANIZED SHEET METAL (OR MATERIAL MATCHING ADJOINING DUCTWORK).

1). INCLUDE CONTINUOUS PIANO HINGE AND CAM LATCHES.
2). FRAME: MINIMUM 22–GAUGE GALVANIZED SHEET STEEL, WITH BEND–OVER TABS AND FOAM GASKETS.
3). LOCKS: MINIMUM 16–GAUGE GALVANIZED STEEL CAM AND 20–GAUGE GALVANIZED STEEL LATCH.
4). ARRANGE DOORS SO THAT SYSTEM AIR PRESSURE WILL ASSIST CLOSURE AND PREVENT OPENING WHEN THE SYSTEM IS IN OPERATION.
5). MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE RECTANGULAR ACCESS DOORS OF ONE OF THE FOLLOWING:

a). DUCTMATE INDUSTRIES, INC.
b). McGILL AIRFLOW CORPORATION.
c). RUSKIN COMPANY.

4. ROUND DOORS: MINIMUM 22–GAUGE, DOUBLE WALL, DUCT MOUNTING; FABRICATED OF GALVANIZED SHEET METAL (OR MATERIAL MATCHING ADJOINING DUCTWORK).

1). INCLUDE CAM LATCHES.
2). FRAME: MINIMUM 22–GAUGE GALVANIZED SHEET STEEL, WITH SPIN–IN NOTCHED FRAME.
3). ARRANGE DOORS SO THAT SYSTEM AIR PRESSURE WILL ASSIST CLOSURE AND PREVENT OPENING WHEN THE SYSTEM IS IN OPERATION.
4). MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ROUND ACCESS DOORS BY ONE OF THE FOLLOWING:

a). DUCTMATE INDUSTRIES, INC.
b). FLEXMASTER U.S.A., INC.

5. SEAL AROUND FRAME ATTACHMENT TO DUCT AND DOOR TO FRAME WITH NEOPRENE OR FOAM RUBBER GASKET.
6. INSULATION: 1

HVAC SPECIFICATIONS (cont'd)

2.11 DIFFUSERS, REGISTERS AND GRILLES

A. CEILING COMPATIBILITY: PROVIDE DIFFUSERS AND GRILLES WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT CEILING SYSTEMS, AND THAT ARE SPECIFICALLY MANUFACTURED TO FIT INTO CEILING MODULE AND WITH ACCURATE FIT AND ADEQUATE SUPPORT.

B. WALL COMPATIBILITY: PROVIDE REGISTERS AND GRILLES WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT WALL SYSTEMS, AND THAT ARE SPECIFICALLY MANUFACTURED TO FIT INTO WALL CONSTRUCTION WITH ACCURATE FIT AND ADEQUATE SUPPORT.

C. PERFORMANCE: PROVIDE CEILING AND WALL DIFFUSERS / GRILLES THAT HAVE, AS MINIMUM, TEMPERATURE AND VELOCITY TRAVERSES, THROW AND DROP, AND NOISE CRITERIA RATINGS FOR EACH SIZE DEVICE AS LISTED IN MANUFACTURERS CURRENT DATA.

1. MAXIMUM NOISE CRITERIA OF 24, NO EXCEPTIONS.

D. SURFACE MOUNTED SUPPLY AND EXHAUST REGISTERS AND GRILLES.

1. ADJUSTABLE BAR GRILLE – SUPPLY.

a. MATERIAL: STEEL, FITTED WITH FELT OR NEOPRENE GASKET AND ADJUSTABLE BLADES.
b. FINISH: BAKED ENAMEL, COLOR AS SELECTED BY ARCHITECT.
c. FACE BLADE ARRANGEMENT: SPACED 3/4" APART, INDIVIDUALLY ADJUSTABLE HORIZONTAL BLADES.
d. GRILLE PATTERN: LOUVERED FACE, DOUBLE-DEFLECTION, TWO SETS OF BLADES IN FACE. 22° DEFLECTION.
e. REAR BLADE ARRANGEMENT: SET AT 90-DEGREES TO FACE AND SPACED 3/4" APART.
f. FRAME: MINIMUM 20-GAUGE, 1-1/4" WIDE.
g. MOUNTING: SURFACE WITH COUNTERSUNK PHILLIPS SCREWS.
h. DAMPERS: ADJUSTABLE, OPPOSED-BLADE, FORMED STEEL, CADMIUM PLATED, GANG KEY OPERATED, AND ARRANGED SO THAT THE OPERATING MECHANISM DOES NOT PROJECT THROUGH ANY PART OF THE GRILLE FACE.

2. ADJUSTABLE BAR GRILLE – SUPPLY (APARTMENTS).

a. MATERIAL: STEEL, FITTED WITH FELT OR NEOPRENE GASKET AND ADJUSTABLE BLADES.
b. FINISH: BAKED ENAMEL, COLOR AS SELECTED BY ARCHITECT.
c. FACE BLADE ARRANGEMENT: SPACED 1/2" APART, INDIVIDUALLY ADJUSTABLE HORIZONTAL BLADES.
d. GRILLE PATTERN: LOUVERED FACE, 2-WAY DEFLECTION, TWO SETS OF BLADES IN FACE. 40° DEFLECTION.
e. REAR BLADE ARRANGEMENT: SET AT 90-DEGREES TO FACE AND SPACED 1/2" APART.
f. FRAME: MINIMUM 20-GAUGE, 1-1/4" WIDE.
g. MOUNTING: SURFACE WITH COUNTERSUNK PHILLIPS SCREWS.
h. DAMPERS: FACTORY INSTALLED MULTI-LOUVER DAMPER FOR POSITIVE SHUT-OFF.

3. FIXED FACED REGISTER – RETURN AND EXHAUST.

a. MATERIAL: STEEL, FITTED WITH FELT OR NEOPRENE GASKET AND ADJUSTABLE BLADES.
b. FINISH: BAKED ENAMEL, COLOR AS SELECTED BY ARCHITECT.
c. FACE BLADE ARRANGEMENT: SPACED 1/2" APART, BLADES PARALLEL TO HORIZONTAL DIMENSION, 35-DEGREE DEFLECTION.
d. FRAME: MINIMUM 20-GAUGE, 1-1/4" WIDE.
e. MOUNTING: SURFACE WITH COUNTERSUNK PHILLIPS SCREWS.
f. DAMPERS: ADJUSTABLE, OPPOSED-BLADE, FORMED STEEL, CADMIUM PLATED, GANG KEY OPERATED, AND ARRANGED SO THAT THE OPERATING MECHANISM DOES NOT PROJECT THROUGH ANY PART OF THE GRILLE FACE.

4. FIXED FACED REGISTER – RETURN (APARTMENTS).

a. MATERIAL: STEEL, FITTED WITH FELT OR NEOPRENE GASKET AND ADJUSTABLE BLADES.
b. FINISH: BAKED ENAMEL, COLOR AS SELECTED BY ARCHITECT.
c. FACE BLADE ARRANGEMENT: SPACED 1/2" APART, BLADES PARALLEL TO HORIZONTAL DIMENSION, 35-DEGREE DEFLECTION.
d. FRAME: MINIMUM 20-GAUGE, 1-1/4" WIDE.
e. MOUNTING: SURFACE WITH COUNTERSUNK PHILLIPS SCREWS.

5. FIXED FACED REGISTER – EXHAUST (APARTMENTS).

a. MATERIAL: STEEL, FITTED WITH FELT OR NEOPRENE GASKET AND ADJUSTABLE BLADES.
b. FINISH: BAKED ENAMEL, COLOR AS SELECTED BY ARCHITECT.
c. FACE BLADE ARRANGEMENT: SPACED 1/2" APART, BLADES PARALLEL TO HORIZONTAL DIMENSION, 40-DEGREE DEFLECTION.
d. FRAME: MINIMUM 20-GAUGE, 1-1/4" WIDE.
e. MOUNTING: SURFACE WITH COUNTERSUNK PHILLIPS SCREWS.

E. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE DIFFUSERS, REGISTERS AND GRILLES OF ONE OF THE FOLLOWING:

1. PRICE INDUSTRIES.
2. TITUS.
3. HART & COOLEY.

2.12 AIR DUCTWORK AND COIL CLEANING

A. SCOPE OF WORK.

1. EXTENT OF WORK INCLUDES THE FOLLOWING.

a. SUPPLY, RETURN AND EXHAUST AIR DUCTWORK SYSTEMS.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF VISIBLE SURFACE CONTAMINANTS AND DEPOSITS FROM WITHIN THE HVAC SYSTEM IN STRICT ACCORDANCE WITH THESE SPECIFICATIONS.
3. THE HVAC SYSTEM INCLUDES ANY INTERIOR SURFACE OF THE FACILITY'S AIR DISTRIBUTION SYSTEM FOR CONDITIONED SPACES AND / OR OCCUPIED ZONES.

a. THIS INCLUDES THE ENTIRE HEATING, AIR CONDITIONING AND VENTILATION SYSTEMS FROM THE POINTS WHERE THE AIR ENTERS THE SYSTEM TO THE POINTS WHERE THE AIR IS DISCHARGED FROM THE SYSTEM.

B. CLEANING REQUIREMENTS.

1. ENGAGE A QUALIFIED AIR SYSTEM CLEANING SPECIALIST (ASCS) TO CLEAN THE SYSTEMS.
2. COMPONENT CLEANING: CLEANING METHODS SHALL BE EMPLOYED SUCH THAT ALL HVAC SYSTEM COMPONENTS MUST BE VISIBLY CLEAN AS DEFINED IN APPLICABLE STANDARDS; SEE NATIONAL AIR DUCT CLEANERS ASSOCIATION (NADCA) STANDARDS.
3. AIR VOLUME CONTROL DEVICES: DAMPERS AND ANY AIR DIRECTIONAL MECHANICAL DEVICES INSIDE THE HVAC SYSTEM MUST HAVE THEIR POSITION MARKED PRIOR TO CLEANING AND, UPON COMPLETION, MUST BE RESTORED TO THEIR MARKED POSITION.
4. SERVICE OPENINGS: THE CONTRACTOR SHALL UTILIZE SERVICE OPENINGS, AS REQUIRED FOR PROPER CLEANING, AT VARIOUS POINTS OF THE HVAC SYSTEM FOR PHYSICAL AND MECHANICAL ENTRY AND INSPECTION.

a. OTHER OPENINGS SHALL BE CREATED WHERE NEEDED AND THEY MUST BE CREATED SO THEY CAN BE SEALED IN ACCORDANCE WITH INDUSTRY CODES AND STANDARDS.
b. CLOSURES MUST NOT SIGNIFICANTLY HINDER, RESTRICT, OR ALTER THE AIRFLOW WITHIN THE SYSTEM AND MUST BE PROPERLY INSULATED TO PREVENT HEAT LOSS / GAIN OR CONDENSATION ON SURFACES WITHIN THE SYSTEM.

5. CUTTING SERVICE OPENINGS INTO FLEXIBLE DUCTS AND FLEXIBLE CONNECTORS IS NOT PERMITTED.
6. CEILING SECTIONS (TILE): THE CONTRACTOR MAY REMOVE AND REINSTALL CEILING SECTIONS TO GAIN ACCESS TO HVAC SYSTEMS DURING THE CLEANING PROCESS; ANY CEILING TILE THAT IS DAMAGED SHALL BE REPLACED WITH NEW (TO MATCH EXISTING) AT THE CONTRACTOR'S EXPENSE.
7. CLEAN THE FOLLOWING METAL DUCT SYSTEM COMPONENTS BY REMOVING VISIBLE SURFACE CONTAMINANTS AND DEPOSITS.

a. AIR DISTRIBUTION DEVICES (REGISTERS, GRILLES AND DIFFUSERS.
b. SUPPLY, RETURN AND EXHAUST AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES.

C. MECHANICAL CLEANING METHODOLOGY.

1. THE HVAC SYSTEM SHALL BE CLEANED USING SOURCE REMOVAL MECHANICAL CLEANING METHODS DESIGNED TO EXTRACT CONTAMINANTS FROM WITHIN THE HVAC SYSTEM AND SAFELY REMOVE CONTAMINANTS FROM THE FACILITY.

a. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SELECT SOURCE REMOVAL METHODS WHICH WILL RENDER THE HVAC SYSTEM VISIBLY CLEAN AND CAPABLE OF PASSING CLEANING VERIFICATION METHODS (SEE APPLICABLE NADCA STANDARDS).

1). NO CLEANING METHOD, OR COMBINATION OF METHODS, SHALL BE USED WHICH COULD POTENTIALLY DAMAGE COMPONENTS OF THE HVAC SYSTEM OR NEGATIVELY ALTER THE INTEGRITY OF THE SYSTEM.

b. ALL METHODS USED SHALL INCORPORATE THE USE OF VACUUM COLLECTION DEVICES THAT ARE OPERATED CONTINUOUSLY DURING CLEANING.
c. ALL VACUUM DEVICES EXHAUSTING AIR INSIDE THE BUILDING SHALL BE EQUIPPED WITH HEPA FILTERS (MINIMUM 99.97 PERCENT COLLECTION EFFICIENCY FOR 0.3-MICRON SIZE OR GREATER PARTICLES), INCLUDING HAND-HELD VACUUMS AND WET VACUUMS.
d. ALL VACUUM DEVICES EXHAUSTING AIR OUTSIDE THE FACILITY SHALL BE EQUIPPED WITH PARTICULATE COLLECTION INCLUDING ADEQUATE FILTRATION TO CONTAIN DEBRIS REMOVED FROM THE HVAC SYSTEM AND SHALL BE LOCATED DOWN WIND AND AWAY FROM AIR INTAKES AND OTHER POINTS OF ENTRY INTO BUILDING.

1). RELEASE OF DEBRIS OUTDOORS MUST NOT VIOLATE ANY OUTDOOR ENVIRONMENTAL STANDARDS, CODES OR REGULATIONS.

e. ALL METHODS REQUIRE MECHANICAL AGITATION DEVICES TO DISLODGE DEBRIS ADHERED TO INTERIOR HVAC SYSTEM SURFACES, SUCH THAT DEBRIS MAY BE SAFELY CONVEYED TO VACUUM COLLECTION DEVICES.

1). ACCEPTABLE METHODS WILL INCLUDE THOSE WHICH WILL NOT POTENTIALLY DAMAGE THE INTEGRITY OF THE DUCTWORK, NOR DAMAGE POROUS SURFACE MATERIALS SUCH AS LINERS INSIDE THE DUCTWORK OR SYSTEM COMPONENTS.

2. METHODS OF CLEANING FIBROUS GLASS INSULATED COMPONENTS.

a. FIBROUS GLASS THERMAL OR ACOUSTICAL INSULATION ELEMENTS PRESENT IN ANY EQUIPMENT OR DUCTWORK SHALL BE THOROUGHLY CLEANED WITH HEPA VACUUMING EQUIPMENT, WHILE THE HVAC SYSTEM IS UNDER CONSTANT NEGATIVE PRESSURE, AND NOT PERMITTED TO GET WET IN ACCORDANCE WITH APPLICABLE NADCA AND NAIMA STANDARDS AND RECOMMENDATIONS.
b. CLEANING METHODS USED SHALL NOT CAUSE DAMAGE TO FIBROUS GLASS COMPONENTS AND WILL RENDER THE SYSTEM CAPABLE OF PASSING CLEANING VERIFICATION TESTS (SEE NADCA STANDARDS).

1). IN THE EVENT FIBER GLASS MATERIALS MUST BE REPLACED, ALL MATERIALS SHALL CONFORM TO APPLICABLE INDUSTRY CODES AND STANDARDS, INCLUDING THOSE OF UL AND SMACNA.

3. CLEANING OF COILS.

a. ANY CLEANING METHOD MAY BE USED WHICH WILL RENDER THE COIL VISIBLY CLEAN AND CAPABLE OF PASSING COIL CLEANING VERIFICATION (SEE APPLICABLE NADCA STANDARDS).
b. COIL DRAIN PANS SHALL BE SUBJECT TO NON-POROUS SURFACES CLEANING VERIFICATION (THE DRAIN FOR THE CONDENSATE DRAIN PAN SHALL BE OPERATIONAL).
c. CLEANING METHODS SHALL NOT CAUSE ANY APPRECIABLE DAMAGE TO, DISPLACEMENT OF, INHIBIT HEAT TRANSFER, OR EROSION OF THE COIL SURFACE OR FINS, AND SHALL CONFORM TO COIL MANUFACTURER RECOMMENDATIONS.
d. COILS SHALL BE THOROUGHLY RINSED WITH CLEAN WATER TO REMOVE ANY LATENT RESIDUES AND CLEANING MATERIALS; COMB AND STRAIGHTEN FINS.
e. PROVIDE OPERATIVE DRAINAGE SYSTEM FOR WASHDOWN PROCEDURES.

D. CLEANLINESS VERIFICATION.

1. VERIFICATION OF HVAC SYSTEM CLEANLINESS WILL BE DETERMINED AFTER MECHANICAL CLEANING AND BEFORE THE APPLICATION OF ANY TREATMENT OR INTRODUCTION OF ANY TREATMENT-RELATED SUBSTANCE TO THE HVAC SYSTEM, INCLUDING BIOCIDAL AGENTS AND COATINGS.
2. VISUAL INSPECTION: THE HVAC SYSTEM SHALL BE INSPECTED VISUALLY TO ENSURE THAT NO VISIBLE CONTAMINANTS ARE PRESENT.

a. IF NO CONTAMINANTS ARE EVIDENT THROUGH VISUAL INSPECTION, THE HVAC SYSTEM SHALL BE CONSIDERED CLEAN; HOWEVER, THE OWNER RESERVES THE RIGHT TO FURTHER VERIFY SYSTEM CLEANLINESS THROUGH GRAVIMETRIC OR WIPE TESTING ANALYSIS TESTING AS SPECIFIED HEREIN.
b. IF VISIBLE CONTAMINANTS ARE EVIDENT THROUGH VISUAL INSPECTION, THOSE PORTIONS OF THE SYSTEM WHERE CONTAMINANTS ARE VISIBLE SHALL BE RE-CLEANED AND SUBJECTED TO RE-INSPECTION FOR CLEANLINESS.

3. GRAVIMETRIC ANALYSIS: AT THE DISCRETION AND EXPENSE OF THE OWNER, SECTIONS OF THE HVAC SYSTEM MAY BE TESTED FOR CLEANLINESS USING THE NADCA VACUUM TEST (GRAVIMETRIC ANALYSIS) AS SPECIFIED IN APPLICABLE NADCA STANDARDS (LEVELS OF DEBRIS COLLECTED SHALL BE EQUAL TO OR LESS THAN ACCEPTABLE LEVELS DEFINED IN APPLICABLE NADCA STANDARDS).

a. GRAVIMETRIC ANALYSIS SHALL BE PERFORMED BY A QUALIFIED THIRD-PARTY EXPERIENCED IN TESTING OF THIS NATURE.

1). IF GRAVIMETRIC ANALYSIS DETERMINES THAT LEVELS OF DEBRIS EXCEED THOSE SPECIFIED IN APPLICABLE NADCA STANDARDS, THE SYSTEM SHALL NOT BE CONSIDERED CLEAN AND THOSE SECTIONS OF THE SYSTEM WHICH FAILED CLEANLINESS VERIFICATION SHALL BE RE-CLEANED AT THE EXPENSE OF THE ORIGINAL HVAC SYSTEM CLEANING CONTRACTOR.

PART 3 – TESTING, ADJUSTING AND BALANCING

3.1 TESTING, ADJUSTING AND BALANCING

A. GENERAL: MULTIPLE MOBILIZATIONS ARE REQUIRED PER EACH COMPLETED WORK AREA / PHASE (i.e. PRIOR TO OWNER'S OCCUPANCY SPACE).

1. HVAC PRIME CONTRACTOR SHALL REVIEW THE PHASING PLANS AND INCLUDE IN BASE BID, SEPARATE BALANCE REPORTS FOR EACH COMPLETED AREA OF WORK.

B. TAB FIRM QUALIFICATIONS: ENGAGE A TAB FIRM CERTIFIED BY EITHER ASSOCIATED AIR BALANCE COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).

1. A SPECIALIST WITH AT LEAST 5-YEARS OF EXPERIENCE IN THOSE TESTING, ADJUSTING AND BALANCING REQUIREMENTS SIMILAR TO THOSE REQUIRED FOR THIS PROJECT.

a. SUBMIT BIOGRAPHICAL DATA ON TAB SUPERVISOR WHO IS DIRECTLY SUPERVISING TESTING, ADJUSTING AND BALANCING WORK.
b. SUBMIT THE INDIVIDUAL QUALIFICATIONS OF ALL PERSONS RESPONSIBLE FOR SUPERVISING AND PERFORMING THE ACTUAL WORK.

C. TAB FORM REPORTS: USE STANDARD FORMS FROM AABC'S "NATIONAL STANDARDS FOR TESTING AND BALANCING HEATING, VENTILATING,, AND AIR CONDITIONING SYSTEMS" OR NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS".

D. INSTRUMENTATION TYPE, QUANTITY AND ACCURACY: AS DESCRIBED IN AABC'S "NATIONAL STANDARDS FOR TESTING AND BALANCING HEATING, VENTILATING,, AND AIR CONDITIONING SYSTEMS" OR NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS", SECTION II, "REQUIRED INSTRUMENTATION FOR NEBB CERTIFICATION".

1. CALIBRATE INSTRUMENTS AT LEAST EVERY 6-MONTHS OR MORE FREQUENTLY IF REQUIRED BY INSTRUMENT MANUFACTURER.

a. PROVIDE UPDATED RECORD OF INSTRUMENT CALIBRATION THAT INDICATES DATE OF CALIBRATION AND THE NAME OF THE PARTY PERFORMING INSTRUMENT CALIBRATION.

E. PROJECT CONDITIONS.

1. GENERAL: DO NOT PROCEED WITH TESTING, ADJUSTING AND BALANCING WORK UNTIL THE FOLLOWING CONDITIONS HAVE BEEN MET.

a. WORK HAS BEEN COMPLETED AND IS OPERABLE.
b. WORK SCHEDULED FOR TESTING, ADJUSTING AND BALANCING IS CLEAN AND FREE FROM DEBRIS, DIRT AND DISCARDED BUILDING MATERIALS.
c. ALL ARCHITECTURAL OPENINGS (DOORS, WINDOWS, AND OTHER OPENINGS) WHICH MAY AFFECT THE OPERATION OF THE SYSTEM TO BE TESTED, ADJUSTED AND BALANCED SHALL BE AT THEIR NORMAL STATES.
d. ALL RELATED MECHANICAL SYSTEMS, WHICH MAY AFFECT THE OPERATION OF THE SYSTEM TO BE TESTED, ADJUSTED AND BALANCED SHALL BE AT THEIR NORMAL OPERATING CONDITIONS; COORDINATE WITH CONTROLS CONTRACTOR.
e. UNIT FILTERS ARE NOT "LOADED"; MECHANICAL CONTRACTOR SHALL REPLACE, IF REQUIRED, PRIOR TO BALANCING.

F. GENERAL PROCEDURES FOR TESTING AND BALANCING.

1. PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM ACCORDING TO THE PROCEDURES CONTAINED IN AABC'S "NATIONAL STANDARDS FOR TESTING AND BALANCING HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS" OR NEBB'S "PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS".
2. TEST, ADJUST AND BALANCE SYSTEMS DURING NEAR-PEAK SUMMER SEASON FOR AIR CONDITIONING SYSTEMS AND DURING NEAR-PEAK WINTER SEASON FOR HEATING SYSTEMS, INCLUDING AT LEAST A PERIOD OF OPERATION AT OUTSIDE CONDITIONS WITHIN 5 DEGREE F (3 DEGREE C) WET BULB TEMPERATURE OF MAXIMUM SUMMER DESIGN CONDITION, AND WITHIN 10 DEGREE F (6 DEGREE C) DRY BULB TEMPERATURE OF MINIMUM WINTER DESIGN CONDITION. WHEN SEASONAL OPERATION DOES NOT PERMIT MEASURING FINAL TEMPERATURES, THEN TAKE FINAL TEMPERATURE READINGS WHEN SEASONAL OPERATION DOES PERMIT.

a. TEST DURATION: OPERATING TESTS OF EQUIPMENT SHALL BE OF NOT LESS THAN FOUR (4) HOURS DURATION AFTER STABILIZED OPERATING CONDITIONS HAVE BEEN ESTABLISHED.

3. MARK EQUIPMENT AND BALANCING DEVICE SETTINGS WITH PAINT OR OTHER SUITABLE, PERMANENT IDENTIFICATION MATERIAL, INCLUDING DAMPER-CONTROL POSITIONS, FAN-SPEED CONTROL LEVERS, AND SIMILAR CONTROL DEVICES, TO SHOW FINAL SETTINGS.

G. PROCEDURES FOR SOUND-LEVEL MEASUREMENTS.

1. PERFORM SOUND-PRESSURE-LEVEL MEASUREMENTS WITH AN OCTAVE-BAND ANALYZER COMPLYING WITH ANSI S-1.4 FOR TYPE 1 SOUND-LEVEL METERS AND ANSI S-1.11 FOR OCTAVE-BAND FILTERS.
2. PERFORM SOUND-LEVEL TESTING AFTER AIR AND WATER BALANCING AND EQUIPMENT TESTING ARE COMPLETE.

a. PERFORM THE MEASUREMENTS WHEN THE SPACE IS NOT OCCUPIED AND WHEN THE OCCUPANT NOISE LEVEL FROM OTHER SPACES IN THE BUILDING AND OUTSIDE ARE AT A MINIMUM.

3. TAKE SOUND MEASUREMENTS AT A HEIGHT APPROXIMATELY 4'-0" ABOVE THE FLOOR AND AT LEAST 3'-0" FROM WALL, COLUMN, AND OTHER LARGE SURFACES CAPABLE OF ALTERING THE MEASUREMENTS.

a. MAXIMUM NOISE CRITERIA FOR ALL SPACES SHALL NOT EXCEED NC 25.

4. PERFORM SOUND TESTINGS AT LOCATIONS ON PROJECT FOR EACH OF THE FOLLOWING SPACE TYPES:

a. LOBBY.
b. OFFICES.

H. PROCEDURES FOR INDOOR-AIR QUALITY MEASUREMENTS.

1. AFTER AIR BALANCE IS COMPLETE AND WITH HVAC SYSTEMS OPERATING AT INDICATED CONDITIONS, PERFORM INDOOR-AIR QUALITY TESTING.
2. OBSERVE AND RECORD THE FOLLOWING CONDITIONS FOR EACH HVAC SYSTEM.

a. THE DISTANCE BETWEEN THE OUTSIDE AIR INTAKE AND THE CLOSEST EXHAUST FAN DISCHARGE OR VENT TERMINATIONS.
b. SPECIFIED FILTERS ARE INSTALLED.
c. COOLING COIL DRAIN PANS HAVE A POSITIVE SLOPE TO DRAIN.
d. COOLING COIL CONDENSATE DRAIN TRAP MAINTAINS AN AIR SEAL.
e. EVIDENCE OF WATER DAMAGE.
f. INSULATION IS IN CONTACT WITH SUPPLY, RETURN AND OUTSIDE AIR IS DRY AND CLEAN.

3. MEASURE AND RECORD INDOOR CONDITIONS SERVED BY EACH HVAC SYSTEM.

a. MAKE MEASUREMENTS AT MULTIPLE LOCATIONS SERVED BY THE SYSTEM IF REQUIRED TO SATISFY THE FOLLOWING:

1). ONE LOCATION PER FLOOR.

4. MEASURE AND RECORD THE FOLLOWING INDOOR CONDITIONS FOR EACH LOCATIONS TWO TIMES AT TWO-HOUR INTERVALS, AND IN ACCORDANCE WITH ASHRAE 113.

a. TEMPERATURE.
b. RELATIVE HUMIDITY,
c. AIR VELOCITY.
d. CONCENTRATION OF CATBON DIOXIDE (PPM).
e. CONCENTRATION OF CARBON MONOXIDE (PPM).

I. TOLERANCES.

1. SUPPLY AND EXHAUST FANS: 0% TO PLUS 5%.
2. AIR OUTLETS AND INLETS: 0% TO PLUS 5%.

J. FINAL REPORT.

1. GENERAL: PROVIDE TYPEWRITTEN OR COMPUTER PRINTOUT IN LETTER-QUALITY FONT, ON STANDARD BOND PAPER, IN THREE-RING BINDER, TABULATED AND DIVIDED INTO SECTIONS BY TESTED AND BALANCED SYSTEM.

a. INCLUDE A CERTIFICATION SHEET IN FRONT OF BINDER, SEALED AND SIGNED BY THE TESTING AND BALANCING ENGINEER.
b. INCLUDE A LIST OF INSTRUMENTS USED FOR PROCEDURES, ALONG WITH PROOF OF CALIBRATION.

2. GENERAL REPORT DATA: IN ADDITION TO FORM TITLES AND ENTRIES, INCLUDE THE FOLLOWING DATA IN THE FINAL REPORT, AS APPLICABLE.

a. TITLE PAGE.
b. NAME AND ADDRESS OF TAB FIRM.
c. PROJECT NAME AND LOCATION.
d. ARCHITECTS NAME AND ADDRESS.
e. ENGINEERS NAME AND ADDRESS.
f. MECHANICAL CONTRACTORS NAME AND ADDRESS.
g. REPORT DATE.
h. TABLE OF CONTENTS WITH THE TOTAL NUMBER OF PAGES (NUMBER EACH PAGE IN REPORT) DEFINED FOR EACH SECTION OF THE REPORT.
i. SUMMARY OF CONTENTS INCLUDING THE FOLLOWING:

1). INDICATED VERSUS FINAL PERFORMANCE.
2). NOTABLE CHARACTERISTICS OF SYSTEMS.
3). DESCRIPTION OF SYSTEM OPERATION SEQUENCE IF IT VARIES FROM THE CONTRACT DOCUMENTS.

K. INSPECTIONS.

1. INITIAL INSPECTION.

a. AFTER TESTING AND BALANCING ARE COMPLETE, OPERATE EACH SYSTEM AND RANDOMLY CHECK MEASUREMENTS TO VERIFY THAT THE SYSTEM IS OPERATING ACCORDING TO THE FINAL TEST AND BALANCE READINGS DOCUMENTED IN THE FINAL REPORT.

1). RANDOMLY CHECK THE FOLLOWING FOR EACH SYSTEM:

a). MEASURE AIRFLOW OF AT LEAST 10% OF AIR OUTLETS.
b). MEASURE ROOM TEMPERATURE AT EACH THERMOSTAT.
c). MEASURE SPACE PRESSURE OF AT LEAST 10% OF LOCATIONS.
d). BALANCING DEVICES ARE MARKED WITH FINAL BALANCE POSITION.

2. FINAL INSPECTION.

a. AFTER INITIAL INSPECTION IS COMPLETE AND EVIDENCE BY RANDOM CHECKS VERIFIES THAT TESTING AND BALANCING ARE COMPLETE AND ACCURATELY DOCUMENTED IN THE FINAL REPORT, REQUEST THAT A FINAL INSPECTION BE MADE BY THE ARCHITECT AND OWNER.

1). TAB FIRM TEST AND BALANCE ENGINEER SHALL CONDUCT THE INSPECTION IN THE PRESENCE OF THE ARCHITECT AND OWNER.

b. ARCHITECT AND OWNER SHALL RANDOMLY SELECT MEASUREMENTS DOCUMENTED IN THE FINAL REPORT TO BE RECHECKED.

1). THE RECHECKING SHALL BE LIMITED TO EITHER 10% OF THE TOTAL MEASUREMENTS RECORDED, OR THE EXTENT OF THE MEASUREMENTS THAT CAN BE ACCOMPLISHED IN A NORMAL 8-HOUR BUSINESS DAY.

c. IF THE RECHECKS YIELD MEASUREMENTS THAT DIFFER FROM THE MEASUREMENTS DOCUMENTED IN THE FINAL REPORT BY MORE THAN THE TOLERANCES ALLOWED, THE MEASUREMENTS SHALL BE NOTED AS "FAILED".

1). IF THE NUMBER OF "FAILED" MEASUREMENTS IS GREATER THAN 10% OF THE TOTAL MEASUREMENTS CHECKED DURING THE FINAL INSPECTION, OR A SOUND LEVEL OF 2 db OR MORE GREATER THAN THAT RECORDED IN THE REPORT LISTINGS, THE TESTING AND BALANCING SHALL BE CONSIDERED INCOMPLETE AND SHALL BE REJECTED.

a). IN THE EVENT THE REPORT IS REJECTED, ALL SYSTEMS SHALL BE READJUSTED AND TESTED, NEW DATA RECORDED, NEW CERTIFIED REPORTS SUBMITTED, AND NEW INSPECTIONS TEST MADE, ALL AT NO ADDITIONAL COST.

d. TAB FIRM SHALL RECHECK ALL MEASUREMENTS AND MAKE READJUSTMENTS.

1). REVISE THE FINAL REPORT AND BALANCE DEVICE SETTINGS TO INCLUDE ALL CHANGES AND RESUBMIT THE FINAL REPORT.

e. REQUEST A SECOND FINAL INSPECTION.

1). IF THE SECOND FINAL INSPECTION ALSO FAILS, THE OWNER SHALL CONTRACT THE SERVICES OF ANOTHER QUALIFIED TAB FIRM TO COMPLETE THE TESTING AND BALANCING IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND DEDUCT THE COST OF THE SERVICES FROM THE FINAL PAYMENT OF THE ORIGINAL TAB FIRM.

3.2 EQUIPMENT REPORT TEST DATA.

A. TEST DATA REQUIREMENTS: PROVIDE THE FOLLOWING, AS A MINIMUM, INDICATED AND ACTUAL VALUES PER EACH PIECE OF SYSTEM TESTED.

1. AIR HANDLING UNITS,

a. TOTAL AIRFLOW RATE IN CFM.
b. TOTAL SYSTEM STATIC PRESSURE IN INCHES WG.
c. FAN RPM.
d. RETURN AIRFLOW IN CFM.
e. ENTERING AND LEAVING AIR TEMPERATURE IN DEGREES F.
f. MOTOR VOLTAGE AT EACH CONNECTION.
g. MOTOR AMPERAGE FOR EACH PHASE.

2. ENERGY RECOVERY UNITS.

a. TOTAL SUPPLY, OUTSIDE AND EXHAUST AIRFLOW RATE IN CFM.
b. TOTAL SUPPLY FAN AND EXHAUST FAN STATIC PRESSURE IN INCHES WG.
c. SUPPLY AND EXHAUST FAN RPM.
d. PRESSURE DROP ON EACH SIDE OF RECOVERY WHEEL IN INCHES WG.
e. DISCHARGE STATIC PRESSURE IN INCHES WG.
f. FILTER STATIC PRESSURE DIFFERENTIAL IN INCHES WG.
g. COOLING COIL STATIC-PRESSURE DIFFERENTIAL IN INCHES WG.
h. HEATING COIL STATIC-PRESSURE DIFFERENTIAL IN INCHES WG.
i. OUTSIDE AIRFLOW RATE IN CFM.
j. OUTSIDE-AIR DAMPER POSITION.
k. EXHAUST ENTERING AND LEAVING AIR TEMPERATURE IN DEGREES F.
l. OUTSIDE AIR ENTERING AND LEAVING AIR TEMPERATURE IN DEGREES F.
m. SUPPLY AIR LEAVING AIR TEMPERATURE IN DEGREES F.
n. MOTOR VOLTAGE AT EACH CONNECTION.
o. MOTOR AMPERAGE FOR EACH PHASE.

3. FAN COIL UNITS.

a. TOTAL AIRFLOW RATE IN CFM.
b. TOTAL SYSTEM STATIC PRESSURE IN INCHES WG.
c. FAN RPM.
d. RETURN AIRFLOW IN CFM.
e. ENTERING AND LEAVING AIR TEMPERATURE IN DEGREES F.
f. MOTOR VOLTAGE AT EACH CONNECTION.
g. MOTOR AMPERAGE FOR EACH PHASE.

4. AIR TERMINAL DEVICES.

a. AIR VELOCITY IN FPM.
b. PRELIMINARY AIRFLOW RATE AS NEEDED IN CFM.
c. PRELIMINARY VELOCITY AS NEEDED IN FPM.
d. FINAL AIRFLOW RATE IN CFM.
e. FINAL VELOCITY IN FPM.
f. NOISE CRITERIA (NC).
g. SPACE TEMPERATURE IN DEGREES F.

5. RECTANGULAR AND ROUND DUCTWORK.

a. SYSTEM AND FURNACE UNIT NUMBER.
b. DUCT STATIC PRESSURE IN INCHES WG.
c. DUCT SIZE IN INCHES.
d. ACTUAL AIRFLOW RATE IN CFM.
e. ACTUAL VELOCITY IN FPM.

3.3 DUCTWORK PRESSURE (TIGHTNESS) TESTING

1. ALL DUCTWORK AND PLENUM SYSTEMS SHALL BE SEALED AND PRESSURE TESTED USING INSTRUMENTS AND PROCEDURES SPECIFIED IN ANSI / ASHRAE 152 AND ASTM E1554 TEST METHOD "A", AND NEW YORK STATE ENERGY CONSERVATION CODE SECTION 403.

A. EXCEPTION: DUCT TIGHTNESS TEST IS NOT REQUIRED IF THE AIR HANDLER AND ALL DUCTS ARE LOCATED WITHIN THE CONDITIONED SPACE.

3.4 COMMISSIONING

1. COMMISSIONING (INCLUDING COMMISSIONING PLAN AND REPORT) OF HVAC SYSTEMS (ENERGY RECOVERY UNITS, FAN COIL UNITS, CONTROLS, ETC.) SHALL BE PROVIDED AND PERFORMED IN ACCORDANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE SECTIONS C408.2 AND C408.2.1 BY AN APPROVED THIRD PARTY TESTING AGENCY SELECTED BY THE OWNER, WHERE THE FOLLOWING APPLIES:

A. TOTAL HVAC SYSTEM EQUIPMENT CAPACITIES ARE GREATER THAN OR EQUAL TO 480,000 BTUH COOLING CAPACITY.

B. INDIVIDUAL HVAC SYSTEMS SERVING APARTMENT UNITS ARE NOT REQUIRED TO BE COMMISSIONED.

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HVAC SEQUENCE OF OPERATIONS

PART 1 – GENERAL

1.1 SEQUENCE OF OPERATION – HVAC DUCTWORK.

A. AIR HANDLING UNITS (AHU–1 AND AHU–2).

1. GENERAL.

a. CONFIGURATION: CONSTANT–VOLUME MIXED–AIR SINGLE PATH.
b. ASSOCIATED CONDENSING UNITS: CU–1 (AHU–1), CU–2 (AHU–2).

2. SYSTEM RUN.

a. OCCUPIED MODE.

1). SUPPLY FAN: SUPPLY FAN SHALL RUN CONTINUOUSLY.
2). DX HEAT: MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT SETPOINT AS RESET FROM SPACE TEMPERATURE (72˚ F, ADJUSTABLE)

a). BELOW 50˚ F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5–MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE SYSTEM SHALL BE DISABLED.

1)). THE OUTSIDE AIR DAMPER SHALL CLOSE, THE SUPPLY FAN SHALL STOP.

b). ABOVE 115˚ F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5–MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE SYSTEM SHALL BE DISABLED.

1)). IF THE DISCHARGE AIR TEMPERATURE DOES NOT DROP BELOW 115˚ F, THE UNIT SHALL SHUT DOWN.

3). DX COOLING: MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT SETPOINT AS RESET FROM SPACE TEMPERATURE (75˚ F, ADJUSTABLE)
4). DAMPERS: OUTSIDE AIR DAMPER ARE FULLY OPENED.

b. UNOCCUPIED HEATING MODE.

1). SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE AT THE UNOCCUPIED HEATING SETPOINT (55˚ F, ADJUSTABLE).
2). DX HEAT: MODULATE AS FOLLOWS WHEN THE SUPPLY FAN IS ON:

a). BELOW 55˚ F (ADJUSTABLE) SPACE TEMPERATURE, MODULATE THE DX HEATING SYSTEM TO MAINTAIN SUPPLY AIR TEMPERATURE AT 95˚ F (ADJUSTABLE).
b). ABOVE 55˚ F (ADJUSTABLE) SPACE TEMPERATURE, MODULATE THE DX HEATING SYSTEM TO MAINTAIN SUPPLY AIR TEMPERATURE AT 95˚ F (ADJUSTABLE).

3). DAMPERS: OUTSIDE AIR DAMPERS ARE FULLY CLOSED.
4). DX COOLING: OFF.

c. UNOCCUPIED COOLING MODE.

1). SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE AT THE UNOCCUPIED COOLING SETPOINT (85˚ F, ADJUSTABLE).
2). DAMPERS: OUTSIDE AIR DAMPERS ARE FULLY CLOSED.
3). DX HEAT: OFF.
4). DX COOLING: MODULATE THE DX COOLING SYSTEM ENABLE SETPOINT TO MAINTAIN SUPPLY AIR TEMPERATURE AT 55˚ F (ADJUSTABLE).

3. SYSTEM OFF.

a. THE SUPPLY FAN SHALL BE OFF.
b. THE DX HEATING SHALL BE OFF.
c. THE DX COOLING SHALL BE OFF.
d. DAMPERS: OUTSIDE AIR DAMPERS ARE FULLY CLOSED.

4. SAFETIES AND ALARMS.

a. DISPLAY OFF–NORMAL ALARM WHENEVER SUPPLY FAN STATUS DOES NOT EQUAL COMMAND.
b. LOW LIMIT: SHALL STOP THE SUPPLY FAN AND DISPLAY AN ALARM SHOULD THE COIL DISCHARGE AIR TEMPERATURE FALL BELOW 38˚ F (ADJUSTABLE).

1). HEATING COIL SHALL OPEN FULLY, AND DAMPERS AND DX COOLING BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

c. HIGH LIMIT: SHALL STOP THE SUPPLY FAN AND DISPLAY AN ALARM SHOULD THE DISCHARGE AIR TEMPERATURE RISE ABOVE 125˚ F (ADJUSTABLE).

1). DAMPERS SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

d. FILTER CONDITION: MONITOR DIFFERENTIAL PRESSURE ACROSS FILTER AND DISPLAY AN ALARM WHEN DIFFERENTIAL PRESSURE SETPOINT IS EXCEEDED.

5. FAILURE MODES.

a. FAN FAILURE: IF THE SUPPLY FAN FAILS TO OPERATE, THE SUPPLY FAN SHALL SHUT DOWN AND ALARM SHALL BE DISPLAYED.

1). DAMPERS SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

b. SENSOR FAILURE: UPON THE FAILURE OF AN ANALOG SENSOR, ASSOCIATED DAMPERS SHALL REMAIN AT THEIR LAST POSITION AND ALARM SHALL BE DISPLAYED.
c. POWER FAILURE.

1). FANS: UPON RESTORATION OF POWER, THE SUPPLY FAN SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.
2). DAMPERS: DAMPERS SHALL BE PROVIDED WITH SPRING RETURN ACTUATORS TO FAIL TO THEIR "SYSTEM OFF" POSITIONS.

B. FAN COIL UNITS (FCU–1 THRU FCU–3).

1. GENERAL.

a. CONFIGURATION: CONSTANT–VOLUME MIXED–AIR SINGLE PATH.
b. ASSOCIATED CONDENSING UNITS: CU–3 (FCU–1), CU–4 (FCU–2), CU–5 (FCU–3).

2. SYSTEM RUN.

a. OCCUPIED MODE.

1). SUPPLY FAN: SUPPLY FAN SHALL RUN CONTINUOUSLY.
2). DX HEAT: MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT SETPOINT AS RESET FROM SPACE TEMPERATURE (72˚ F, ADJUSTABLE)

a). BELOW 50˚ F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5–MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE SYSTEM SHALL BE DISABLED.

1)). THE OUTSIDE AIR DAMPER SHALL CLOSE, THE SUPPLY FAN SHALL STOP.

b). ABOVE 115˚ F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5–MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE SYSTEM SHALL BE DISABLED.

1)). IF THE DISCHARGE AIR TEMPERATURE DOES NOT DROP BELOW 115˚ F, THE UNIT SHALL SHUT DOWN.

3). DX COOLING: MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT SETPOINT AS RESET FROM SPACE TEMPERATURE (75˚ F, ADJUSTABLE)
4). DAMPERS: OUTSIDE AIR DAMPER ARE FULLY OPENED.

b. UNOCCUPIED HEATING MODE.

1). SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE AT THE UNOCCUPIED HEATING SETPOINT (55˚ F, ADJUSTABLE).
2). DX HEAT: MODULATE AS FOLLOWS WHEN THE SUPPLY FAN IS ON:

a). BELOW 55˚ F (ADJUSTABLE) SPACE TEMPERATURE, MODULATE THE DX HEATING SYSTEM TO MAINTAIN SUPPLY AIR TEMPERATURE AT 95˚ F (ADJUSTABLE).
b). ABOVE 55˚ F (ADJUSTABLE) SPACE TEMPERATURE, MODULATE THE DX HEATING SYSTEM TO MAINTAIN SUPPLY AIR TEMPERATURE AT 95˚ F (ADJUSTABLE).

3). DAMPERS: OUTSIDE AIR DAMPERS ARE FULLY CLOSED.
4). DX COOLING: OFF.

c. UNOCCUPIED COOLING MODE.

1). SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN SPACE TEMPERATURE AT THE UNOCCUPIED COOLING SETPOINT (85˚ F, ADJUSTABLE).
2). DAMPERS: OUTSIDE AIR DAMPERS ARE FULLY CLOSED.
3). DX HEAT: OFF.
4). DX COOLING: MODULATE THE DX COOLING SYSTEM ENABLE SETPOINT TO MAINTAIN SUPPLY AIR TEMPERATURE AT 55˚ F (ADJUSTABLE).

3. SYSTEM OFF.

a. THE SUPPLY FAN SHALL BE OFF.
b. THE DX HEATING SHALL BE OFF.
c. THE DX COOLING SHALL BE OFF.
d. DAMPERS: OUTSIDE AIR DAMPERS ARE FULLY CLOSED.

4. SAFETIES AND ALARMS.

a. DISPLAY OFF–NORMAL ALARM WHENEVER SUPPLY FAN STATUS DOES NOT EQUAL COMMAND.
b. LOW LIMIT: SHALL STOP THE SUPPLY FAN AND DISPLAY AN ALARM SHOULD THE COIL DISCHARGE AIR TEMPERATURE FALL BELOW 38˚ F (ADJUSTABLE).

1). HEATING COIL SHALL OPEN FULLY, AND DAMPERS AND DX COOLING BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

c. HIGH LIMIT: SHALL STOP THE SUPPLY FAN AND DISPLAY AN ALARM SHOULD THE DISCHARGE AIR TEMPERATURE RISE ABOVE 125˚ F (ADJUSTABLE).

1). DAMPERS SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

d. FILTER CONDITION: MONITOR DIFFERENTIAL PRESSURE ACROSS FILTER AND DISPLAY AN ALARM WHEN DIFFERENTIAL PRESSURE SETPOINT IS EXCEEDED.

5. FAILURE MODES.

a. FAN FAILURE: IF THE SUPPLY FAN FAILS TO OPERATE, THE SUPPLY FAN SHALL SHUT DOWN AND ALARM SHALL BE DISPLAYED.

1). DAMPERS SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

b. SENSOR FAILURE: UPON THE FAILURE OF AN ANALOG SENSOR, ASSOCIATED DAMPERS SHALL REMAIN AT THEIR LAST POSITION AND ALARM SHALL BE DISPLAYED.
c. POWER FAILURE.

1). FANS: UPON RESTORATION OF POWER, THE SUPPLY FAN SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.
2). DAMPERS: DAMPERS SHALL BE PROVIDED WITH SPRING RETURN ACTUATORS TO FAIL TO THEIR "SYSTEM OFF" POSITIONS.

C. ENERGY RECOVERY UNITS (ERU–1 AND ERU–2).

1. GENERAL.

a. CONFIGURATION: VARIABLE–VOLUME MIXED–AIR SINGLE PATH.

2. SYSTEM RUN.

a. SUPPLY FAN AND EXHAUST FAN SHALL RUN CONTINUOUSLY.
b. OCCUPIED MODE.

1). VARIABLE FREQUENCY DRIVE FAN.

a). THE SUPPLY FAN VARIABLE FREQUENCY DRIVE (VFD) SHALL VARY THE SUPPLY AIR QUANTITY BASED UPON MAINTAINING A MINIMUM POSITIVE STATIC PRESSURE OF 1" WC (ADJUSTABLE) AT DISCHARGE AIR STATIC PRESSURE SENSOR.

2). GAS HEATING: WHEN THE SUPPLY AIR TEMPERATURE IS BELOW 65˚ F (ADJUSTABLE), THE GAS FIRED HEATING SHALL BE STAGED TO MAINTAIN A 80˚ F (ADJUSTABLE) DISCHARGE AIR SETPOINT.

a). BELOW 50˚ F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5–MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE SYSTEM SHALL BE DISABLED.

1). THE OUTSIDE AIR DAMPER SHALL CLOSE, THE SUPPLY FAN SHALL STOP AND THE GAS VALVE SHALL BE DISABLED.

b). ABOVE 115˚ F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE (FOR A PERIOD OF 5–MINUTES) AS SENSED BY THE DISCHARGE AIR TEMPERATURE SENSOR, THE GAS VALVE SHALL CLOSE.

1). IF THE DISCHARGE AIR TEMPERATURE DOES NOT DROP BELOW 115˚ F, THE UNIT SHALL SHUT DOWN.
2). THE OUTSIDE AIR DAMPER SHALL CLOSE AND THE SUPPLY FAN SHALL STOP.

3). HEAT WHEEL.

a). HEAT WHEEL SHALL BE ENERGIZED WITH THE SUPPLY FAN IS ON.
b). SUMMER MODE: THE SUMMER MODE SHALL BE ACTIVATED WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE THE EXHAUST AIR TEMPERATURE.
c). WINTER MODE: THE WINTER MODE SHALL BE ACTIVATED WHEN THE OUTSIDE AIR TEMPERATURE IS BELOW THE HEAT EXCHANGER SUPPLY SETPOINT.
d). DEFROST MODE: THE FROST MODE SHALL BE ACTIVATED WHEN THE EXHAUST AIR DROPS BELOW THE EXHAUST AIR DEFROST SETPOINT.

1)). THIS MODE SHALL OVER–RIDE THE WINTER MODE.

4). DX COOLING: WHEN THE SUPPLY AIR TEMPERATURE IS ABOVE 60˚ F (ADJUSTABLE), THE DX COOLING SHALL BE STAGED TO MAINTAIN A 55˚ F (ADJUSTABLE) DISCHARGE AIR SETPOINT.
5). THE OUTSIDE AIR DAMPER SHALL BE OPENED.
6). THE EXHAUST AIR DAMPER SHALL BE OPENED.

c. UNOCCUPIED HEATING MODE.

1). WHEN THE SUPPLY AIR TEMPERATURE IS BELOW 50˚ F (ADJUSTABLE), THE GAS FIRED HEATING SHALL BE STAGED TO MAINTAIN A 70˚ F (ADJUSTABLE) DISCHARGE AIR SETPOINT.
2). GAS VALVE: MODULATE AS FOLLOWS WHEN THE SUPPLY FAN IS ON:

a). BELOW 55˚ F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE, FULLY OPEN GAS VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE AT 70˚ F (ADJUSTABLE).
b). ABOVE 55˚ F (ADJUSTABLE) DISCHARGE AIR TEMPERATURE, MODULATE THE GAS VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE AT 70˚ F (ADJUSTABLE).

3). DX COOLING: OFF.
4). THE OUTSIDE AIR DAMPER SHALL BE CLOSED.
5). THE EXHAUST AIR DAMPER SHALL BE CLOSED.

d. UNOCCUPIED COOLING MODE.

1). SUPPLY FAN: SUPPLY FAN SHALL CYCLE TO MAINTAIN DISCHARGE AIR TEMPERATURE AT THE UNOCCUPIED COOLING SETPOINT (85˚ F, ADJUSTABLE).
2). GAS VALVE: CLOSED.
3). DX COOLING: CYCLE WHEN OUTSIDE AIR TEMPERATURE IS ABOVE THE DX COOLING SYSTEM ENABLE SETPOINT TO MAINTAIN DISCHARGE AIR TEMPERATURE AT 55˚ F (ADJUSTABLE).
4). THE OUTSIDE AIR DAMPER SHALL BE CLOSED.
5). THE EXHAUST AIR DAMPER SHALL BE CLOSED.

3. SYSTEM OFF.

a. THE SUPPLY FAN SHALL BE OFF.
b. THE OUTSIDE AIR DAMPERS SHALL BE CLOSED.
c. THE EXHAUST AIR DAMPER SHALL BE OPEN.
d. THE GAS VALVE SHALL MODULATE TO MAINTAIN THE MIXED AIR PLENUM TEMPERATURE AT 50˚ F (ADJUSTABLE).
e. THE DX COOLING SHALL BE OFF.

4. SAFETIES AND ALARMS.

a. DISPLAY OFF–NORMAL ALARM WHENEVER SUPPLY FAN STATUS DOES NOT EQUAL COMMAND.
b. LOW LIMIT: AUTOMATIC RESET LOW LIMIT THERMOSTAT SHALL STOP THE SUPPLY FAN AND AND EXHAUST FANS AND DISPLAY AN ALARM SHOULD THE COIL DISCHARGE AIR TEMPERATURE FALL BELOW 38˚ F (ADJUSTABLE).

1). HEATING COIL VALVE SHALL OPEN FULLY, AND DAMPERS AND DX COOLING CONTROL VALVE SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

c. HIGH LIMIT: HIGH LIMIT THERMOSTAT LOCATED IN THE EXHAUST AIR SHALL STOP THE SUPPLY FAN AND EXHAUST FAN AND DISPLAY AN ALARM SHOULD THE RETURN AIR TEMPERATURE RISE ABOVE 125˚ F (ADJUSTABLE).

1). DAMPERS AND CONTROL VALVES SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

d. SMOKE CONTROL.

1). DUCT SMOKE DETECTOR(S) SHALL STOP THE SUPPLY FAN AND EXHAUST FAN AND DISPLAY AN ALARM WHEN PRODUCTS OF COMBUSTION ARE DETECTED IN THE AIR STREAM.

a). DAMPERS AND CONTROL VALVE SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

2). THE SUPPLY FAN AND EXHAUST FAN SHALL BE INTERLOCKED TO SHUT DOWN UPON A COMMAND FROM THE BUILDING FIRE ALARM SYSTEM.
3). UPON A RETURN TO NORMAL, THE SUPPLY FAN AND EXHAUST FAN SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.

e. FILTER CONDITION: MONITOR DIFFERENTIAL PRESSURE ACROSS FILTER AND DISPLAY AN

5. FAILURE MODES.

a. FAN FAILURE: IF THE SUPPLY FAN AND EXHAUST FAN FAILS TO OPERATE, THE SUPPLY AND EXHAUST FANS SHALL SHUT DOWN AND ALARM SHALL BE DISPLAYED.

1). DAMPERS AND CONTROL VALVE SHALL BE INDEXED TO THEIR "SYSTEM OFF" CONDITIONS.

b. SENSOR FAILURE: UPON THE FAILURE OF AN ANALOG SENSOR, ASSOCIATED DAMPERS AND CONTROL VALVES SHALL REMAIN AT THEIR LAST POSITION AND ALARM SHALL BE DISPLAYED.
c. POWER FAILURE.

1). FANS: UPON RESTORATION OF POWER, THE SUPPLY FAN AND EXHAUST FAN SHALL START AFTER AN ADJUSTABLE DELAY TO PROVIDE A STAGGERED START OF ALL BUILDING LOADS.
2). DAMPERS: DAMPERS SHALL BE PROVIDED WITH SPRING RETURN ACTUATORS TO FAIL TO THEIR "SYSTEM OFF" POSITIONS.
3). VALVES: GAS VALVE SHALL BE PROVIDED WITH SPRING RETURN ACTUATOR TO FAIL OPEN TO THE COIL.

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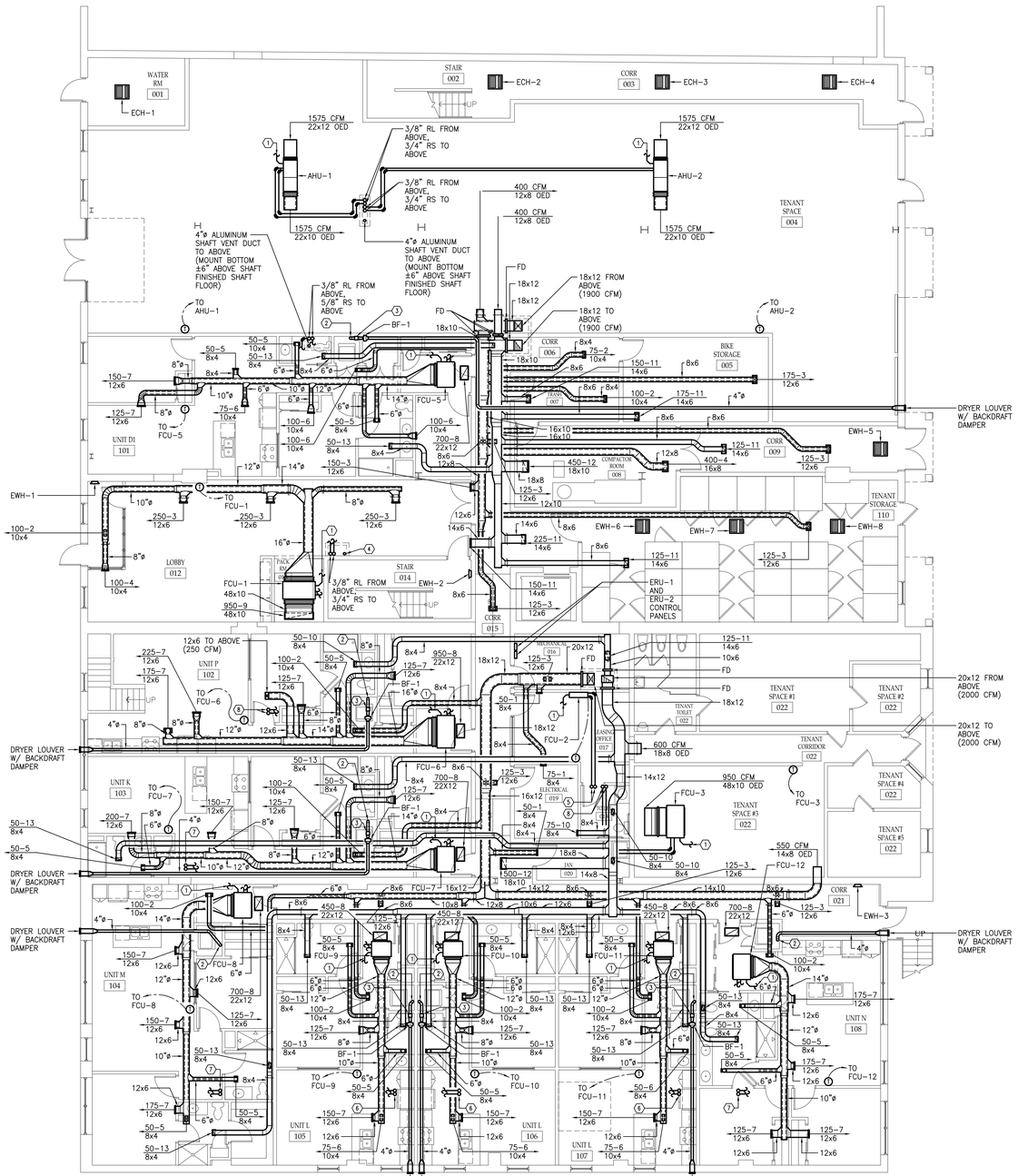

1 M-9 FIRST FLOOR PLAN - HVAC DUCTWORK AND PIPING

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

2 M-9 HVAC NOTES:

1. 3/4" CONDENSATE DRAIN LINE TO NEAREST SANITARY CONNECTION POINT. REFER TO PLUMBING DRAWINGS FOR DRAIN CONNECTION LOCATION.
2. CONNECT 4"ø DUCTWORK TO DRYER EXHAUST COLLAR.
3. SECONDARY LINT TRAP (FANTECH MODEL DBLT4W). COORDINATE THE EXACT LOCATION AND MOUNTING HEIGHT IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION.
4. 4"ø ALUMINUM SHAFT VENT DUCT TO ABOVE (MOUNT BOTTOM ±6" ABOVE SHAFT FINISHED SHAFT FLOOR).
5. 1/4" REFRIGERANT LIQUID (RL) FROM ABOVE, 3/8" REFRIGERANT SUCTION (RS) TO ABOVE.
6. 1/4" REFRIGERANT LIQUID (RL) FROM ABOVE, 1/2" REFRIGERANT SUCTION (RS) TO ABOVE.
7. 3/8" REFRIGERANT LIQUID (RL) FROM ABOVE, 5/8" REFRIGERANT SUCTION (RS) TO ABOVE.
8. 3/8" REFRIGERANT LIQUID (RL) FROM ABOVE, 3/4" REFRIGERANT SUCTION (RS) TO ABOVE.

3 M-9 HVAC GENERAL NOTES:

1. PROVIDE VOLUME DAMPERS AT ALL BRANCH DUCTWORK TAPS. (DAMPERS CAN BE REMOVED FROM APARTMENT UNITS DUCTWORK).
2. COORDINATE EXACT LOCATIONS (HEIGHT, ROUTING, ETC.) OF EXPOSED DUCTWORK IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO FABRICATING AND INSTALLING DUCTWORK.
3. WHERE DUCTWORK IS LOCATED WITHIN THE BEAM / JOIST SPACE AND PENETRATES A FIRE-RATED CEILING, PROVIDE CEILING RADITION DAMPERS (LISTED AND LABELED ACCORDING TO UL 555C) AT BEAM / JOISTS CEILING PENETRATIONS.
4. PROVIDE DUCT ACCESS DOOR AT ALL FIRE DAMPER LOCATIONS AND CEILING RADIATION DAMPER LOCATIONS. ACCESS DOOR SHALL BE LABELED "FIRE DAMPER ACCESS DOOR" AND "CEILING RADIATION DAMPER ACCESS DOOR". ACCESS DOOR SHALL BE SQUARE, WHEREVER POSSIBLE, AND 2 INCHES SMALLER THAN DUCT SIZE (i.e.: DUCT SIZE = 20", DOOR SIZE = 18").
5. COORDINATE LOCATION AND SPACING OF INTERIOR WALL FRAMING WITH THE ARCHITECT FOR SUPPLY AIR AND EXHAUST AIR DUCTWORK PENETRATIONS PRIOR TO FRAMING THE WALLS, ADJUSTING THE SPACING TO ALLOW FOR A MINIMUM OF 1" CLEAR (ALL SIDES) AROUND DUCTWORK PENETRATION.
6. COORDINATE LOCATION AND SPACING OF EXTERIOR WALL FRAMING FOR DUCTWORK AND DRYER VENT LOUVER PENETRATIONS PRIOR TO INSTALLING DUCTWORK AND LOUVERS. DIVISION 6 SHALL PROVIDE ANY ADDITIONAL SUPPORTS REQUIRED TO SUPPORT DIVISION 23 EQUIPMENT, ALLOWING FOR A MINIMUM OF 2" CLEAR (ALL SIDES) AROUND OPENING.
7. ALL DRYER EXHAUST DUCTWORK, SUPPORTS, ETC. SHALL BE OF ALUMINUM CONSTRUCTION (MINIMUM 24-GAUGE) OR GALVANIZED STEEL (MINIMUM 26-GAUGE) WITH A SMOOTH INTERIOR FINISH.
   A. SEAL ALL JOINTS WITH FOIL-BACKED PRESSURE SENSITIVE DUCT TAPE MEETING THE REQUIREMENTS OF U.L. 181, NO SCREWS ARE ALLOWED.
   B. PROVIDE CLEANOUTS IN VERTICAL RISERS.
   C. PROVIDE WALL MOUNTED, RECESSED, DRYER VENT BOX WITH TRIM RING FOR DRYER VENT CONNECTION WHERE POSSIBLE (DRYERBOX, DRYER SOLUTIONS OR APPROVED EQUAL).
8. COORDINATE EXACT DRYER EXHAUST DUCTWORK CONNECTION SIZES AND DRYER VENT LOUVER CONNECTION SIZES WITH THE ARCHITECT PRIOR TO FABRICATING AND INSTALLING DUCTWORK.
9. COORDINATE ALL EXTERIOR DRYER VENT LOUVER LOCATIONS WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLING VENTS; CONSULT ARCHITECT WHERE DISCREPANCIES OCCUR.
   A. DRYER LOUVERS ARE PROVIDED BY THE ARCHITECT AND INSTALLED BY DIVISION 23.
10. DRYER BOOSTER FANS CAN BE ELIMINATED FROM THE RESIDENCE APARTMENTS BASED ON THE MECHANICAL CONTRACTOR'S ACTUAL DUCTWORK ROUTING, PROVIDED THE TOTAL LENGTH OF THE DUCTWORK FROM THE DRYER CONNECTION TO THE DRYER OUTLET DOES NOT EXCEED THE 35'-0" (INCLUDING A MINIMUM OF 5'-0" FOR EACH ELBOW INSTALLED) ALLOWED BY CODE.
11. RETURN GRILLES FOR APARTMENT UNITS DO NOT HAVE DUCTWORK CONNECTIONS TO THE FAN COIL UNIT. THESE ARE LAY-IN STYLE FOR EASY REMOVAL TO ACCESS THE FAN COIL UNIT AS NECESSARY.
12. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF THERMOSTATS IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH WALL MOUNTED ARCHITECTURAL ITEMS.

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SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BOWMAN · 084713 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

FIRST FLOOR PLAN - HVAC DUCTWORK AND PIPING

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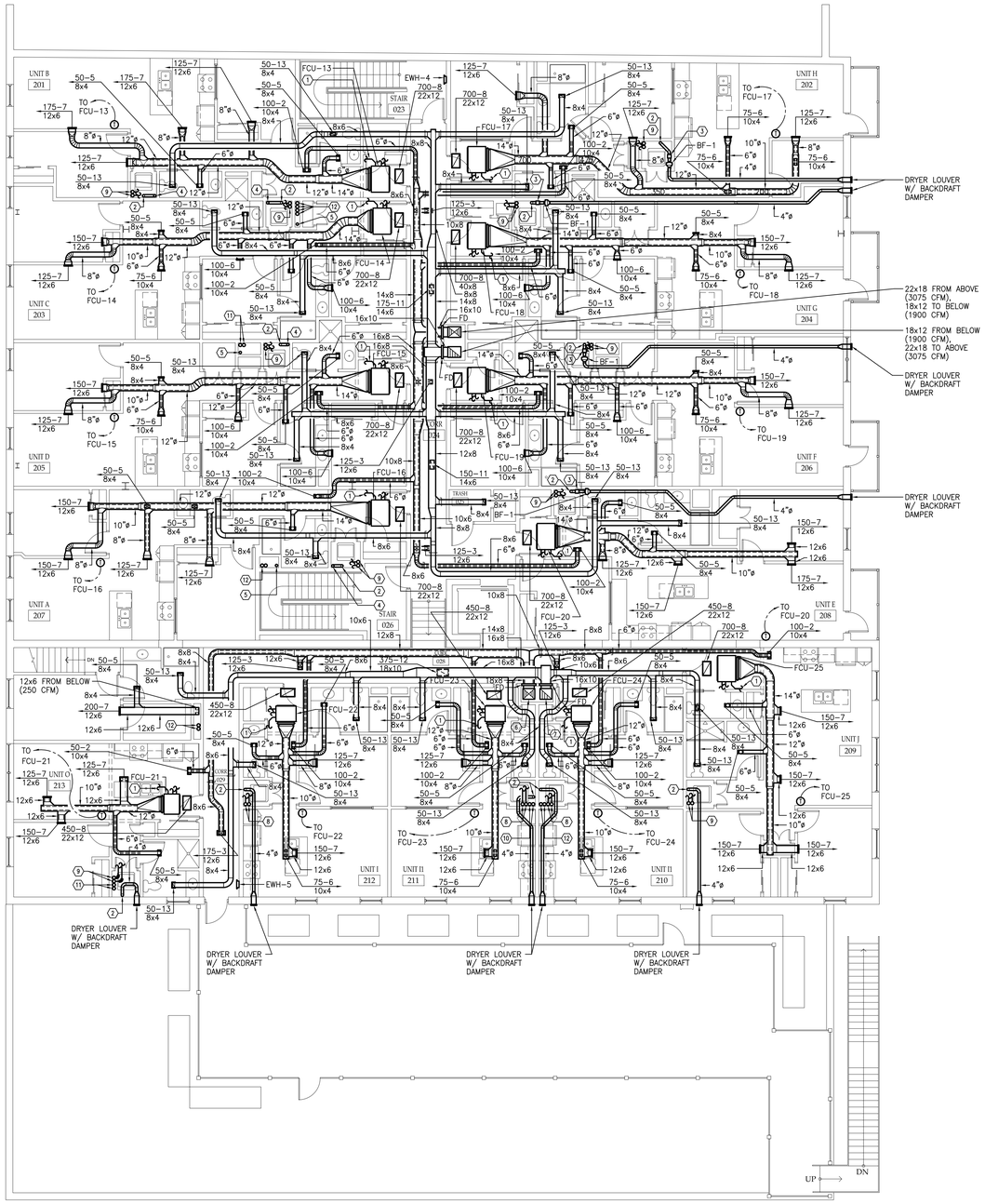
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: M-9



1 M-10 **SECOND FLOOR PLAN - HVAC DUCTWORK AND PIPING**
SCALE: 1/8" = 1'-0"

2 M-10 HVAC NOTES:

1. 3/4" CONDENSATE DRAIN LINE TO NEAREST SANITARY CONNECTION POINT. REFER TO PLUMBING DRAWINGS FOR DRAIN CONNECTION LOCATION.
2. CONNECT 4"ø DUCTWORK TO DRYER EXHAUST COLLAR.
3. SECONDARY LINT TRAP (FANTECH MODEL DBLT4W). COORDINATE THE EXACT LOCATION AND MOUNTING HEIGHT IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION.
4. 4"ø ALUMINUM DRYER EXHAUST DUCTWORK TO ABOVE.
5. 4"ø ALUMINUM SHAFT VENT DUCT FROM BELOW AND TO ABOVE.
6. 20x18 ENERGY RECOVERY SUPPLY AIR DUCTWORK FROM ABOVE (2875 CFM) AND 20x12 TO BELOW (2000 CFM).
7. 20x12 ENERGY RECOVERY EXHAUST AIR DUCTWORK FROM BELOW (2000 CFM) AND 20x18 TO ABOVE (2875 CFM).
8. 1/4" REFRIGERANT LIQUID (RL) FROM ABOVE, 1/2" REFRIGERANT SUCTION (RS) TO ABOVE.
9. 3/8" REFRIGERANT LIQUID (RL) FROM ABOVE, 5/8" REFRIGERANT SUCTION (RS) TO ABOVE.
10. 1/4" REFRIGERANT LIQUID (RL) FROM ABOVE AND TO BELOW, 3/8" REFRIGERANT SUCTION (RS) FROM ABOVE AND TO ABOVE.
11. 3/8" REFRIGERANT LIQUID (RL) FROM ABOVE AND TO BELOW, 5/8" REFRIGERANT SUCTION (RS) FROM ABOVE AND TO ABOVE.
12. 3/8" REFRIGERANT LIQUID (RL) FROM ABOVE AND TO BELOW, 3/4" REFRIGERANT SUCTION (RS) FROM BELOW AND TO ABOVE.

3 M-10 HVAC GENERAL NOTES:

1. PROVIDE VOLUME DAMPERS AT ALL BRANCH DUCTWORK TAPS. (DAMPERS CAN BE REMOVED FROM APARTMENT UNITS DUCTWORK).
2. COORDINATE EXACT LOCATIONS (HEIGHT, ROUTING, ETC.) OF EXPOSED DUCTWORK IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO FABRICATING AND INSTALLING DUCTWORK.
3. WHERE DUCTWORK IS LOCATED WITHIN THE BEAM / JOIST SPACE AND PENETRATES A FIRE-RATED CEILING, PROVIDE CEILING RADITION DAMPERS (LISTED AND LABELED ACCORDING TO UL 555C) AT BEAM / JOISTS CEILING PENETRATIONS.
4. PROVIDE DUCT ACCESS DOOR AT ALL FIRE DAMPER LOCATIONS AND CEILING RADIATION DAMPER LOCATIONS. ACCESS DOOR SHALL BE LABELED "FIRE DAMPER ACCESS DOOR" AND "CEILING RADIATION DAMPER ACCESS DOOR". ACCESS DOOR SHALL BE SQUARE, WHEREVER POSSIBLE, AND 2 INCHES SMALLER THAN DUCT SIZE (i.e.: DUCT SIZE = 20", DOOR SIZE = 18").
5. COORDINATE LOCATION AND SPACING OF INTERIOR WALL FRAMING WITH THE ARCHITECT FOR SUPPLY AIR AND EXHAUST AIR DUCTWORK PENETRATIONS PRIOR TO FRAMING THE WALLS, ADJUSTING THE SPACING TO ALLOW FOR A MINIMUM OF 1" CLEAR (ALL SIDES) AROUND DUCTWORK PENETRATION.
6. COORDINATE LOCATION AND SPACING OF EXTERIOR WALL FRAMING FOR DUCTWORK AND DRYER VENT LOUVER PENETRATIONS PRIOR TO INSTALLING DUCTWORK AND LOUVERS. DIVISION 6 SHALL PROVIDE ANY ADDITIONAL SUPPORTS REQUIRED TO SUPPORT DIVISION 23 EQUIPMENT, ALLOWING FOR A MINIMUM OF 2" CLEAR (ALL SIDES) AROUND OPENING.
7. ALL DRYER EXHAUST DUCTWORK, SUPPORTS, ETC. SHALL BE OF ALUMINUM CONSTRUCTION (MINIMUM 24-GAUGE) OR GALAVANIZED STEEL (MINIMUM 26-GAUGE) WITH A SMOOTH INTERIOR FINISH.
   A. SEAL ALL JOINTS WITH FOIL-BACKED PRESSURE SENSITIVE DUCT TAPE MEETING THE REQUIREMENTS OF U.L. 181, NO SCREWS ARE ALLOWED.
   B. PROVIDE CLEANOUTS IN VERTICAL RISERS.
   C. PROVIDE WALL MOUNTED, RECESSED, DRYER VENT BOX WITH TRIM RING FOR DRYER VENT CONNECTION WHERE POSSIBLE (DRYERBOX, DRYER SOLUTIONS OR APPROVED EQUAL).
8. COORDINATE EXACT DRYER EXHAUST DUCTWORK CONNECTION SIZES AND DRYER VENT LOUVER CONNECTION SIZES WITH THE ARCHITECT PRIOR TO FABRICATING AND INSTALLING DUCTWORK.
9. COORDINATE ALL EXTERIOR DRYER VENT LOCATIONS WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLING VENTS; CONSULT ARCHITECT WHERE DISCREPANCIES OCCUR.
   A. DRYER LOUVER PROVIDED BY THE ARCHITECT AND INSTALLED BY DIVISION 23.
10. DRYER BOOSTER FANS CAN BE ELIMINATED FROM THE RESIDENCE APARTMENTS BASED ON THE MECHANICAL CONTRACTOR'S ACTUAL DUCTWORK ROUTING, PROVIDED THE TOTAL LENGTH OF THE DUCTWORK FROM THE DRYER CONNECTION TO THE DRYER OUTLET DOES NOT EXCEED THE 35'-0" (INCLUDING A MINIMUM OF 5'-0" FOR EACH ELBOW INSTALLED) ALLOWED BY CODE.
11. RETURN GRILLES FOR APARTMENT UNITS DO NOT HAVE DUCTWORK CONNECTIONS TO THE FAN COIL UNIT. THESE ARE LAY-IN STYLE FOR EASY REMOVAL TO ACCESS THE FAN COIL UNIT AS NECESSARY.
12. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF THERMOSTATS IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH WALL MOUNTED ARCHITECTURAL ITEMS.

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STATE OF NEW YORK · JAMES D. BOWKER · 084713 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

SECOND FLOOR PLAN - HVAC DUCTWORK AND PIPING

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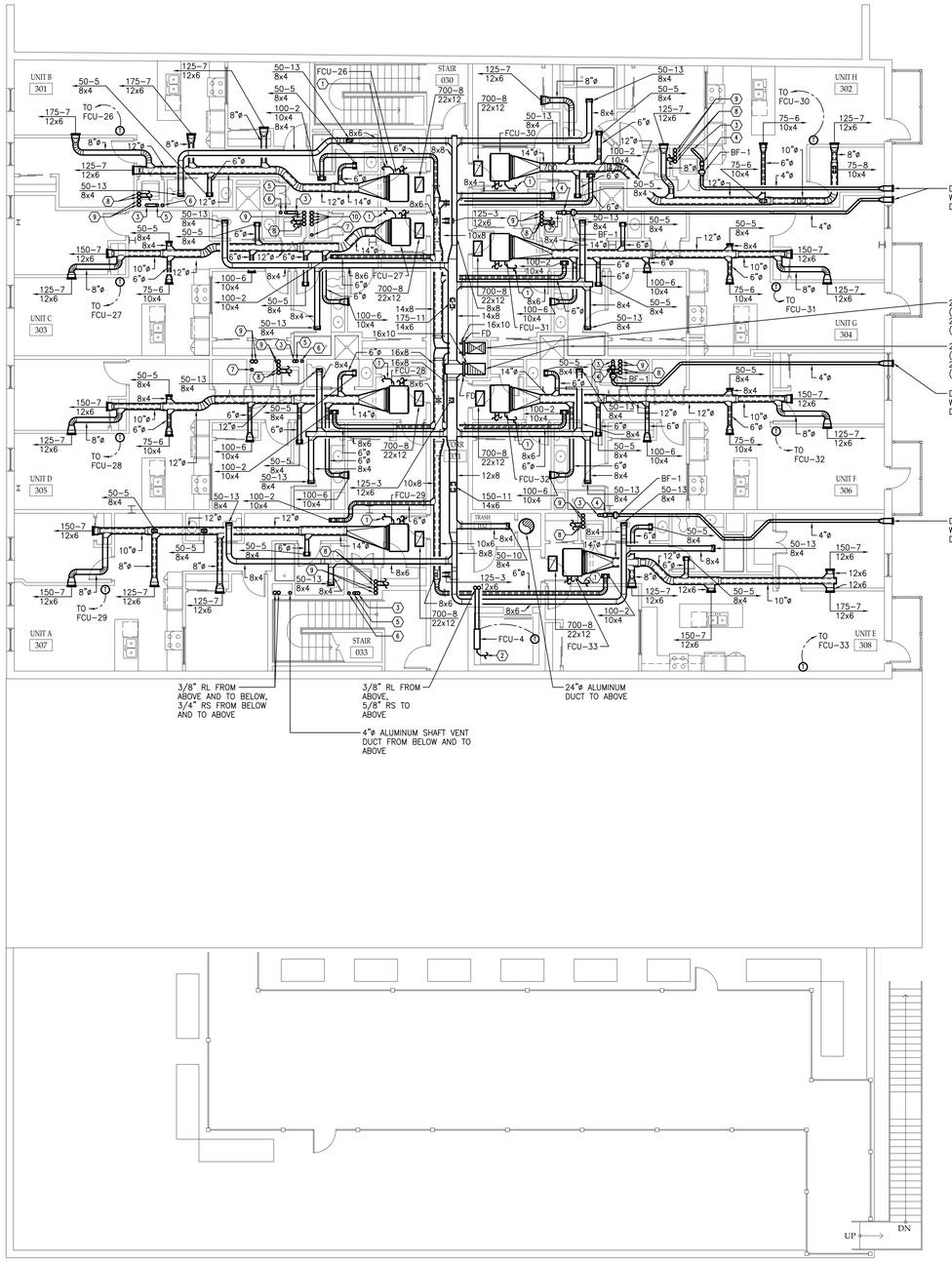

1 M-11 **THIRD FLOOR PLAN - HVAC DUCTWORK AND PIPING**
SCALE: 1/8" = 1'-0"

2 M-11 HVAC NOTES:

1. 3/4" CONDENSATE DRAIN LINE TO NEAREST SANITARY CONNECTION POINT. REFER TO PLUMBING DRAWINGS FOR DRAIN CONNECTION LOCATION.
2. 3/4" CONDENSATE DRAIN LINE TO NEAREST SANITARY CONNECTION POINT. COORDINATE EXACT LOCATION AND ROUTING WITH THE PLUMBING CONTRACTOR AND ELEVATOR CONTRACTOR PRIOR TO INSTALLATION.
3. CONNECT 4"ø DUCTWORK TO DRYER EXHAUST COLLAR.
4. SECONDARY LINT TRAP (FANTECH MODEL DBLT4W). COORDINATE THE EXACT LOCATION AND MOUNTING HEIGHT IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION.
5. 4"ø ALUMINUM DRYER EXHAUST DUCTWORK TO ABOVE.
6. 4"ø ALUMINUM DRYER EXHAUST DUCTWORK FROM BELOW AND TO ABOVE.
7. 4"ø ALUMINUM SHAFT VENT DUCT FROM BELOW AND TO ABOVE.
8. 3/8" REFRIGERANT LIQUID (RL) FROM ABOVE, 5/8" REFRIGERANT SUCTION (RS) TO ABOVE.
9. 3/8" REFRIGERANT LIQUID (RL) FROM ABOVE AND TO BELOW, 5/8" REFRIGERANT SUCTION (RS) FROM BELOW AND TO ABOVE.
10. 3/8" REFRIGERANT LIQUID (RL) FROM ABOVE AND TO BELOW, 3/4" REFRIGERANT SUCTION (RS) FROM BELOW AND TO ABOVE.

3 M-11 HVAC GENERAL NOTES:

1. PROVIDE VOLUME DAMPERS AT ALL BRANCH DUCTWORK TAPS. (DAMPERS CAN BE REMOVED FROM APARTMENT UNITS DUCTWORK).
2. COORDINATE EXACT LOCATIONS (HEIGHT, ROUTING, ETC.) OF EXPOSED DUCTWORK IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO FABRICATING AND INSTALLING DUCTWORK.
3. WHERE DUCTWORK IS LOCATED WITHIN THE BEAM / JOIST SPACE AND PENETRATES A FIRE-RATED CEILING, PROVIDE CEILING RADITION DAMPERS (LISTED AND LABELED ACCORDING TO UL 555C) AT BEAM / JOISTS CEILING PENETRATIONS.
4. PROVIDE DUCT ACCESS DOOR AT ALL FIRE DAMPER LOCATIONS AND CEILING RADIATION DAMPER LOCATIONS. ACCESS DOOR SHALL BE LABELED "FIRE DAMPER ACCESS DOOR" AND "CEILING RADIATION DAMPER ACCESS DOOR". ACCESS DOOR SHALL BE SQUARE, WHEREVER POSSIBLE, AND 2 INCHES SMALLER THAN DUCT SIZE (i.e.: DUCT SIZE = 20", DOOR SIZE = 18").
5. COORDINATE LOCATION AND SPACING OF INTERIOR WALL FRAMING WITH THE ARCHITECT FOR SUPPLY AIR AND EXHAUST AIR DUCTWORK PENETRATIONS PRIOR TO FRAMING THE WALLS, ADJUSTING THE SPACING TO ALLOW FOR A MINIMUM OF 1" CLEAR (ALL SIDES) AROUND DUCTWORK PENETRATION.
6. COORDINATE LOCATION AND SPACING OF EXTERIOR WALL FRAMING FOR DUCTWORK AND DRYER VENT LOUVER PENETRATIONS PRIOR TO INSTALLING DUCTWORK AND LOUVERS. DIVISION 6 SHALL PROVIDE ANY ADDITIONAL SUPPORTS REQUIRED TO SUPPORT DIVISION 23 EQUIPMENT, ALLOWING FOR A MINIMUM OF 2" CLEAR (ALL SIDES) AROUND OPENING.
7. ALL DRYER EXHAUST DUCTWORK, SUPPORTS, ETC. SHALL BE OF ALUMINUM CONSTRUCTION (MINIMUM 24-GAUGE) OR GALAVANIZED STEEL (MINIMUM 26-GAUGE) WITH A SMOOTH INTERIOR FINISH.
   A. SEAL ALL JOINTS WITH FOIL-BACKED PRESSURE SENSITIVE DUCT TAPE MEETING THE REQUIREMENTS OF U.L. 181, NO SCREWS ARE ALLOWED.
   B. PROVIDE CLEANOUTS IN VERTICAL RISERS.
   C. PROVIDE WALL MOUNTED, RECESSED, DRYER VENT BOX WITH TRIM RING FOR DRYER VENT CONNECTION WHERE POSSIBLE (DRYERBOX, DRYER SOLUTIONS OR APPROVED EQUAL).
8. COORDINATE EXACT DRYER EXHAUST DUCTWORK CONNECTION SIZES AND DRYER VENT LOUVER CONNECTION SIZES WITH THE ARCHITECT PRIOR TO FABRICATING AND INSTALLING DUCTWORK.
9. COORDINATE ALL EXTERIOR DRYER VENT LOCATIONS WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLING VENTS; CONSULT ARCHITECT WHERE DISCREPANCIES OCCUR.
   A. DRYER LOUVER PROVIDED BY THE ARCHITECT AND INSTALLED BY DIVISION 23.
10. DRYER BOOSTER FANS CAN BE ELIMINATED FROM THE RESIDENCE APARTMENTS BASED ON THE MECHANICAL CONTRACTOR'S ACTUAL DUCTWORK ROUTING, PROVIDED THE TOTAL LENGTH OF THE DUCTWORK FROM THE DRYER CONNECTION TO THE DRYER OUTLET DOES NOT EXCEED THE 35'-0" (INCLUDING A MINIMUM OF 5'-0" FOR EACH ELBOW INSTALLED) ALLOWED BY CODE.
11. RETURN GRILLES FOR APARTMENT UNITS DO NOT HAVE DUCTWORK CONNECTIONS TO THE FAN COIL UNIT. THESE ARE LAY-IN STYLE FOR EASY REMOVAL TO ACCESS THE FAN COIL UNIT AS NECESSARY.
12. COORDINATE EXACT LOCATION OF ELEVATOR SHAFT FAN COIL UNIT AND THERMOSTATS IN THE FIELD WITH THE ARCHITECT AND ELEVATOR CONTRACTOR PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH WALL ELEVATOR EQUIPMENT ITEMS.
13. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF THERMOSTATS IN THE FIELD WITH THE ARCHITECT AND OWNER PRIOR TO INSTALLATION TO AVOID CONFLICTS WITH WALL MOUNTED ARCHITECTURAL ITEMS.

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TITLE:
THIRD FLOOR PLAN - HVAC DUCTWORK AND PIPING

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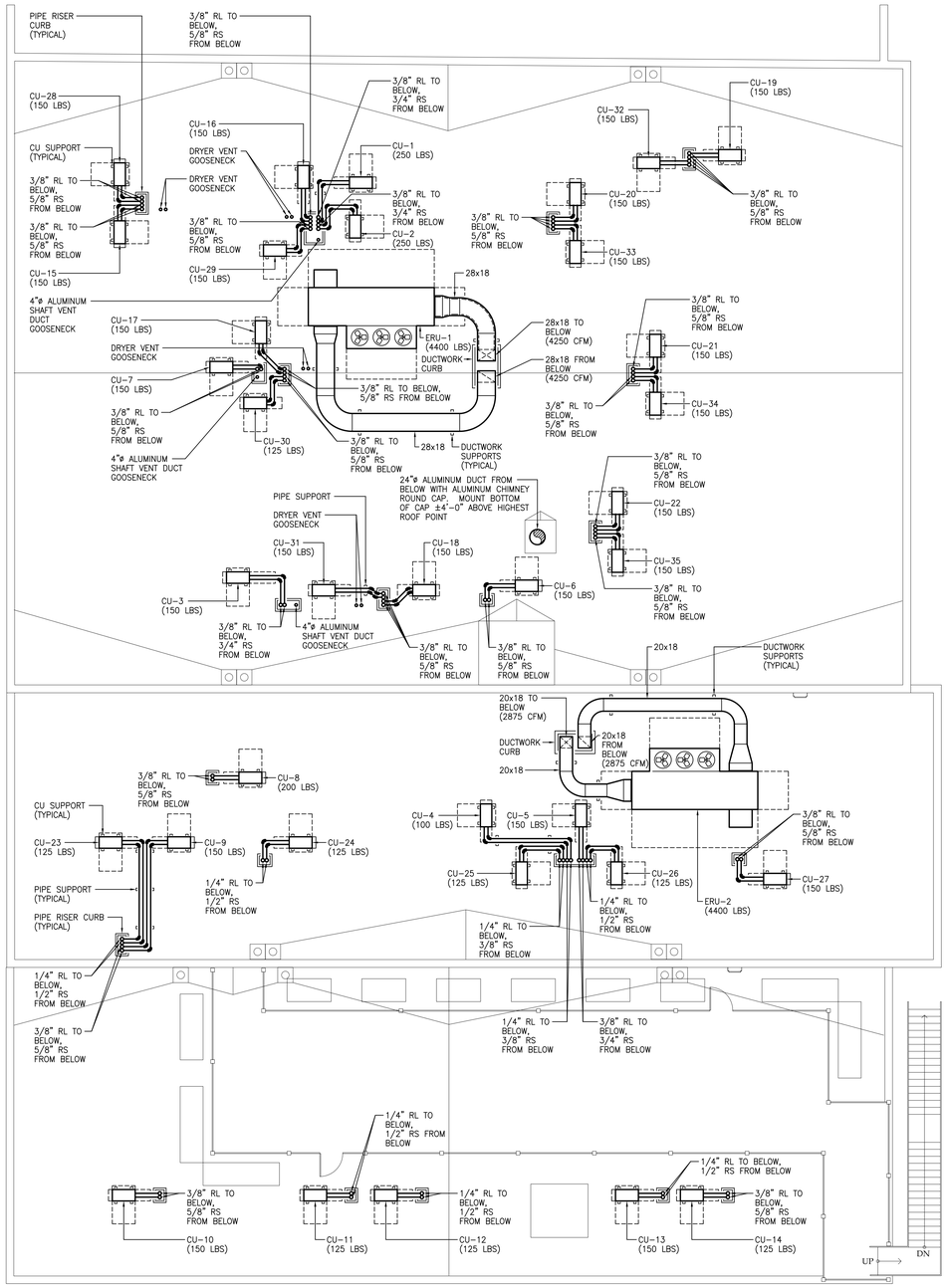

1 M-12 ROOF PLAN - HVAC DUCTWORK AND PIPING

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

2 M-12 HVAC GENERAL NOTES:

1. DIVISION 7 AND DIVISION 23 TO COORDINATE ALL ROOF OPENINGS, ROOF PENETRATIONS, AND EQUIPMENT INSTALLATIONS.
2. DIVISION 7 TO CUT ALL ROOF OPENINGS.
3. DIVISION 23 TO PROVIDE AND INSTALL ALL EQUIPMENT PADS AND CURBS.
4. DIVISION 7 TO PROVIDE ROOF FLASHING AND SEALING OF ALL ROOF OPENINGS.
5. COORDINATE LOCATION AND SPACING OF ROOF BEAMS / JOISTS WITH DIVISION 6 FOR DUCTWORK AND PIPING PENETRATIONS PRIOR TO INSTALLING DUCTWORK AND PIPING. DIVISION 6 SHALL PROVIDE ANY ADDITIONAL SUPPORTS REQUIRED TO SUPPORT DIVISION 23 EQUIPMENT, ALLOWING FOR A MINIMUM OF 2" CLEAR CLEAR (ALL SIDES) AROUND OPENINGS.
6. HVAC EQUIPMENT LOCATIONS SHOWN FOR PROPOSED LOCATIONS ONLY. ALL HVAC EQUIPMENT SHALL BE INSTALLED TO AVOID ALL ROOF CRICKET SLOPES AND PITCHES.
7. ALL DRYER EXHAUST DUCTWORK SHALL BE OF ALUMINUM CONSTRUCTION.
8. ALL EXPOSED ENERGY RECOVERY SUPPLY AIR DUCTWORK AND FITTINGS LOCATED ON THE ROOF SHALL BE INTERNALLY LINED (MINIMUM 2" THICK) AND EXTERNALLY INSULATED WITH MINIMUM 4" THICK, 1.00 LB DENSITY, FOIL-BACK INSULATION WITH VAPOR BARRIER AND A MINIMUM INSTALLED R-VALUE OF R-12, FLAME SPREAD RATING OF 75 OR LESS, AND SMOKE-DEVELOPED RATING OF 150 OR LESS. PROVIDE AN ALUMINUM OR STAINLESS STEEL JACKET OVER EXTERNAL INSULATION AND SEAL ALL SEAMS AND ROOF DUCTWORK PENETRATIONS AIR AND WATERTIGHT TO PREVENT THE ENTRANCE OF MOISTURE, ETC.
   A. OWNERS OPTION: PROVIDE PRE-INSULATED RIGID THERMOSET PHENOLIC DUCTWORK PANELS AS MANUFACTURED BY QDUCT (AQC INDUSTRIES) OR APPROVED EQUAL). PANELS SHALL HAVE A MINIMUM R-VALUE OF R-12 AND SHALL CONFORM TO THE REQUIREMENTS OF UL 181. EXTERIOR CLADDING SHALL BE CONSTRUCTED OF ALUMINUM (MINIMUM OF 19.7 MILS THICK) WITH FACTORY INSTALLED DUCTWORK SUPPORT MOUNTING RAILS. PROVIDE ALUMINUM SLOPED ROOF INSULATION PANEL WITH MINIMUM R-VALUE OF R-8.6.
9. ALL EXPOSED ENERGY RECOVERY EXHAUST AIR DUCTWORK AND FITTINGS LOCATED ON THE ROOF SHALL BE EXTERNALLY INSULATED WITH MINIMUM 4" THICK, 1.00 LB DENSITY, FOIL-BACK INSULATION WITH VAPOR BARRIER AND A MINIMUM INSTALLED R-VALUE OF R-12, FLAME SPREAD RATING OF 75 OR LESS, AND SMOKE-DEVELOPED RATING OF 150 OR LESS. PROVIDE AN ALUMINUM OR STAINLESS STEEL JACKET OVER EXTERNAL INSULATION AND SEAL ALL SEAMS AND ROOF DUCTWORK PENETRATIONS AIR AND WATERTIGHT TO PREVENT THE ENTRANCE OF MOISTURE, ETC.
   A. OWNERS OPTION: PROVIDE PRE-INSULATED RIGID THERMOSET PHENOLIC DUCTWORK PANELS AS MANUFACTURED BY QDUCT (AQC INDUSTRIES) OR APPROVED EQUAL). PANELS SHALL HAVE A MINIMUM R-VALUE OF R-12 AND SHALL CONFORM TO THE REQUIREMENTS OF UL 181. EXTERIOR CLADDING SHALL BE CONSTRUCTED OF ALUMINUM (MINIMUM OF 19.7 MILS THICK) WITH FACTORY INSTALLED DUCTWORK SUPPORT MOUNTING RAILS. PROVIDE ALUMINUM SLOPED ROOF INSULATION PANEL WITH MINIMUM R-VALUE OF R-8.6.
10. ALL EXPOSED ENERGY RECOVERY SUPPLY AIR DUCTWORK, ENERGY RECOVERY EXHAUST AIR DUCTWORK, AND REFRIGERANT PIPING SHALL BE INSTALLED ON MINIMUM 2'-0" HIGH ALUMINUM EQUIPMENT RAIL.

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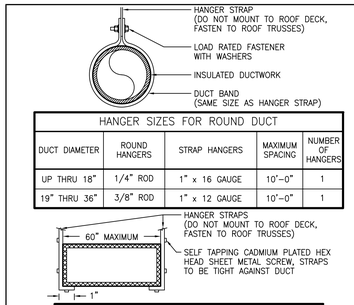
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: M-12



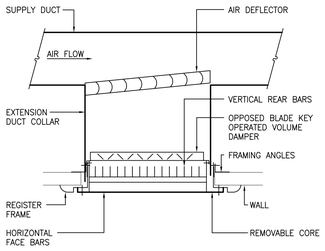
HANGER SIZES FOR ROUND DUCT

DUCT DIAMETER	ROUND HANGERS	STRAP HANGERS	MAXIMUM SPACING	NUMBER OF HANGERS
UP THRU 18"	1/4" ROD	1" x 16 GAUGE	10'-0"	1
19" THRU 36"	3/8" ROD	1" x 12 GAUGE	10'-0"	1

HANGER SIZES FOR RECTANGULAR DUCT

LONGEST DIMENSION OF DUCT	ROUND HANGERS	STRAP HANGERS	MAXIMUM SPACING
UP THRU 18"	1/4" ROD	1" x 16 GAUGE	10'-0"
19" THRU 42"	1/4" ROD	1" x 16 GAUGE	10'-0"
43" THRU 60"	3/8" ROD	1" x 16 GAUGE	10'-0"

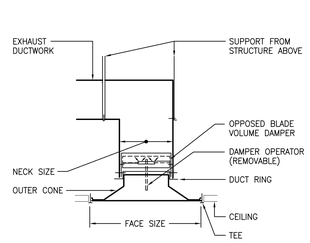
DUCT HANGER DETAIL



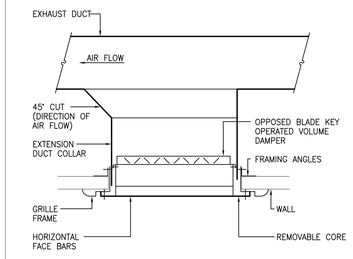
INSTALLATION NOTES:

1. FASTEN EXTENSION DUCT COLLAR TO DUCTWORK WITH SHEET METAL SCREWS. AFTER WALL IS INSTALLED, SECURE FRAME TO WALL FRAMING ANGLES AND TO EXTENSION DUCT COLLAR.
2. INSTALL REMOVABLE CORE DAMPER ASSEMBLY.
3. DETAIL SHOWN DOES NOT DEPICT ALL REGISTER DUCTWORK ARRANGEMENTS.

SUPPLY SIDEWALL REGISTER DETAIL



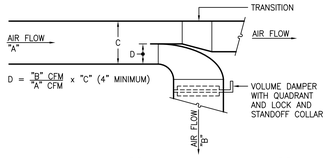
EXHAUST GRILLE CONNECTION DETAIL



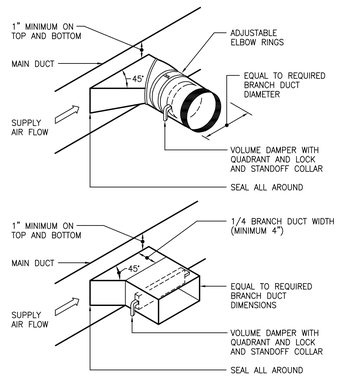
INSTALLATION NOTES:

1. FASTEN EXTENSION DUCT COLLAR TO DUCTWORK WITH SHEET METAL SCREWS. AFTER WALL IS INSTALLED, SECURE FRAME TO WALL FRAMING ANGLES AND TO EXTENSION DUCT COLLAR.
2. INSTALL REMOVABLE CORE DAMPER ASSEMBLY.
3. DETAIL SHOWN DOES NOT DEPICT ALL GRILLE DUCTWORK ARRANGEMENTS.

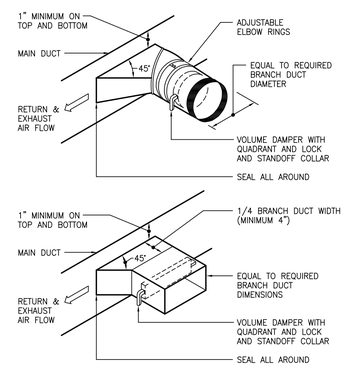
EXHAUST SIDEWALL GRILLE DETAIL



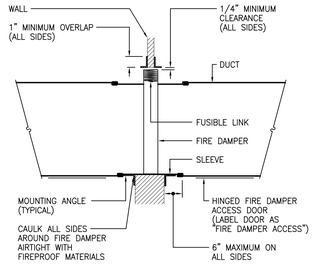
UTILIZE FOR CFM OF "B" EQUAL OR MORE THAN 25% OF "A"



SUPPLY BRANCH TAKE-OFF FITTING DETAIL



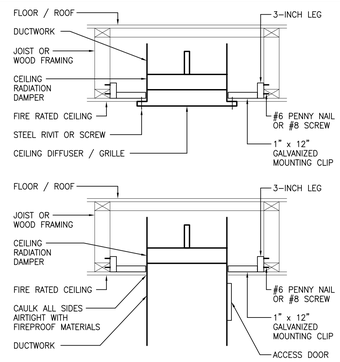
RETURN / EXHAUST BRANCH TAKE-OFF FITTING DETAIL



NOTES:

1. OPENINGS IN WALL SHALL BE 1/8" PER FOOT LARGER THAN DAMPER DIMENSIONS (3/16" LARGER PER FOOT FOR STAINLESS STEEL). MINIMUM CLEARANCE OF 1/4" REQUIRED FOR ALL INSTALLATIONS.
2. SLEEVE GAUGE SHALL BE AT LEAST EQUAL TO THE GAUGE OF THE DUCT AS DEFINED BY THE APPROPRIATE SMACNA DUCT CONSTRUCTION STANDARDS AND NFPA 90A, WHEN ONE OR MORE OF THE FOLLOWING DUCT SLEEVE CONNECTIONS ARE USED:
   A. PLAIN "S" SLIP.
   B. HEMMED "S" SLIP.
   C. STANDING "S" SLIP.
   D. REINFORCED STANDING "S" SLIP.
   E. INSIDE SLIP JOINT.
   F. DOUBLE "S" SLIP.
3. IF ANY OTHER DUCT SLEEVE CONNECTIONS ARE USED, THE SLEEVE SHALL BE MINIMUM 16-GAUGE FOR DAMPERS UP TO 36"W x 24"H AND 14-GAUGE IF WIDTH EXCEEDS 36" OR HEIGHT EXCEEDS 24".
4. MOUNTING ANGLE SHALL BE MINIMUM OF 2"x1"x14-GAUGE AND BOLTED, TACK WELDED OR SCREWED TO SLEEVE AT MAXIMUM SPACING OF 12" AND WITH MINIMUM OF TWO CONNECTIONS IN EACH SIDE, TOP AND BOTTOM. MOUNTING ANGLES SHALL OVERLAP WALL A MINIMUM OF 1" ON ALL FOUR SIDES.
5. DAMPER SHALL BE BOLTED, TACK WELDED OR SCREWED TO SLEEVE ON SAME SPACING AS ANGLES. SLEEVES SHALL NOT EXTEND MORE THAN 6" OUTSIDE OF WALL.

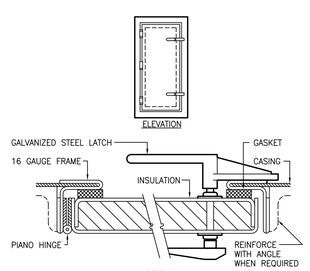
FIRE DAMPER (OUTSIDE DUCT) DETAIL



NOTES:

1. DETAIL SHOWN DOES NOT DEPICT ALL CEILING RADIATION DAMPER ARRANGEMENTS.

CEILING RADIATION DAMPER DETAIL

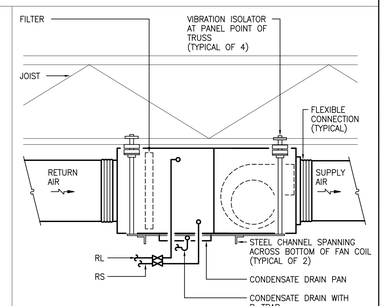


SECTION

NOTES:

1. ALL DOORS TO OPEN AGAINST PRESSURE.
2. LABEL DOOR "FIRE DAMPER ACCESS".

DUCT ACCESS DOOR DETAIL

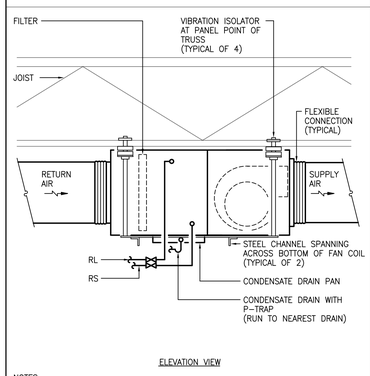


ELEVATION VIEW

NOTES:

1. DETAIL SHOWN DOES NOT DEPICT ALL AIR HANDLING DUCTWORK ARRANGEMENTS.

CEILING SUSPENDED AIR HANDLING UNIT DETAIL

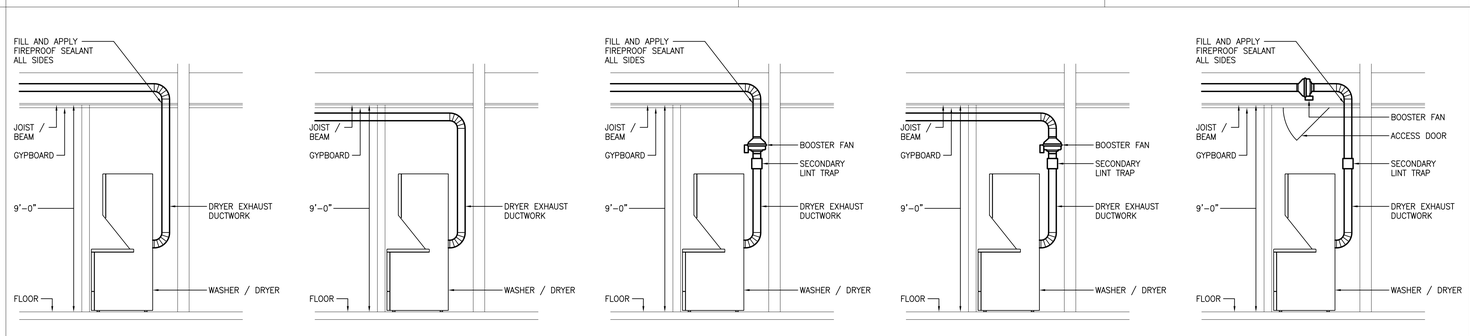


ELEVATION VIEW

NOTES:

1. DETAIL SHOWN DOES NOT DEPICT ALL FAN COIL DUCTWORK ARRANGEMENTS.

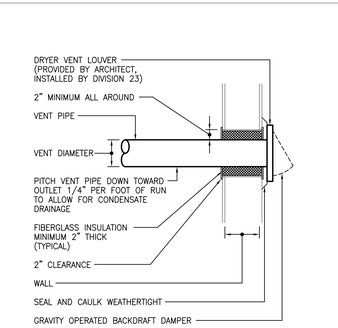
CEILING SUSPENDED FAN COIL UNIT DETAIL



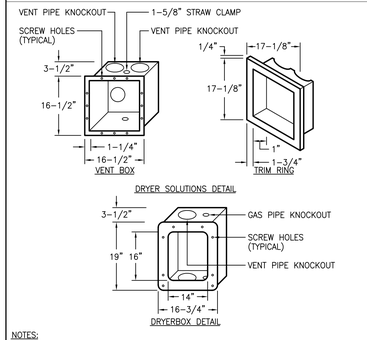
NOTES:

1. DETAIL SHOWN DOES NOT DEPICT ALL DRYER EXHAUST DUCTWORK AND BOOSTER FAN ARRANGEMENTS.

DRYER DUCTWORK AND BOOSTER FAN DETAIL



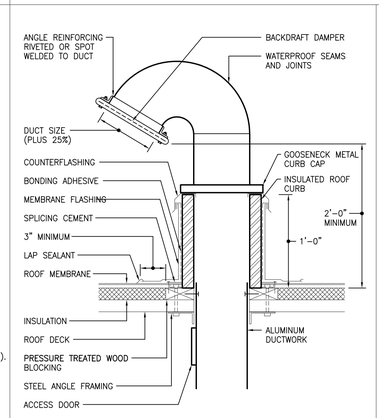
DRYER VENT THRU WALL DETAIL



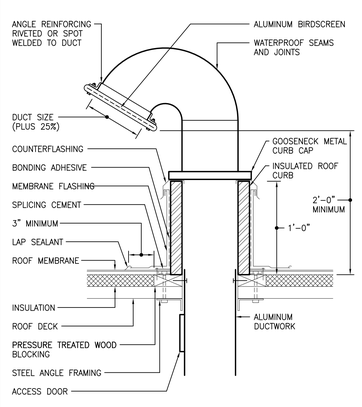
NOTES:

1. MAINTAIN A MINIMUM OF 1-3/4" CLEARANCE TO EDGE OF SIDE BASEBOARD (TRIM).
2. MAINTAIN A MINIMUM OF 2-1/4" TO 2-5/8" CLEARANCE TO BOTTOM OF UNFINISHED FLOOR.
3. WHEN INSTALLED IN A FIRE-RATED WALL, ENTIRE WALL CAVITY SHALL BE INSULATED WITH MINIMUM R-19 INSULATION.

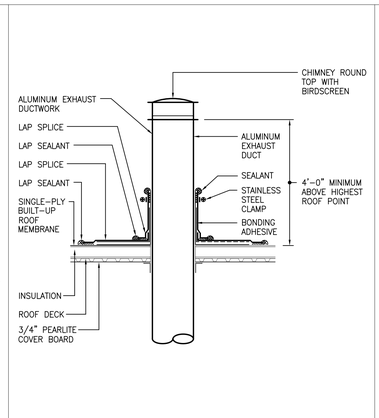
DRYER VENT BOX DETAIL



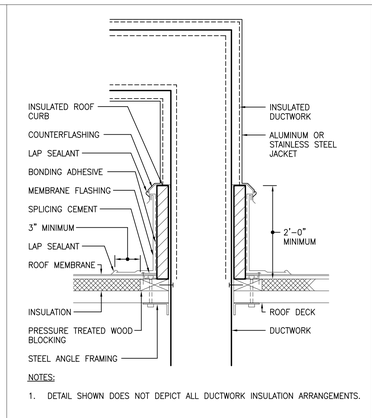
DRYER VENT GOOSENECK DETAIL



SHAFT VENT DUCT GOOSENECK DETAIL



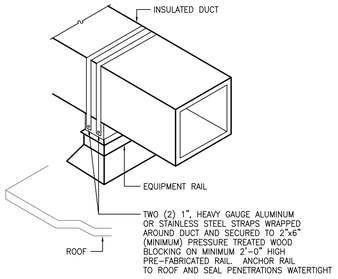
TRASH CHUTE EXHAUST STACK DETAIL



NOTES:

1. DETAIL SHOWN DOES NOT DEPICT ALL DUCTWORK INSULATION ARRANGEMENTS.

DUCT THRU FLAT ROOF DETAIL



ROOF MOUNTED DUCTWORK SUPPORT DETAIL

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BOWMAN · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

HVAC DETAILS

SILVESTRI ARCHITECTS · PC
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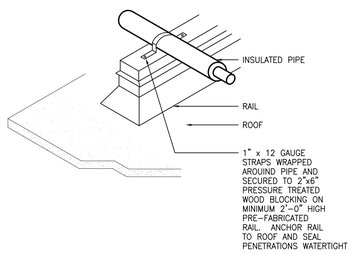
AMHERST, NY 14221 FAX 716.691.4773

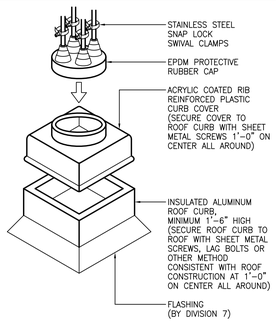
SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: M-13



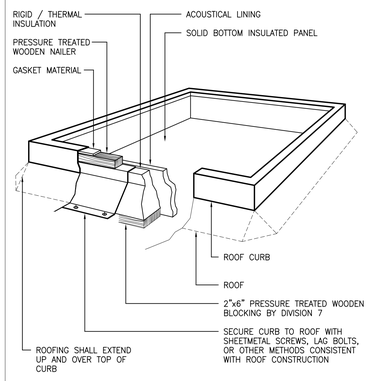
ROOF MOUNTED PIPE SUPPORT DETAIL



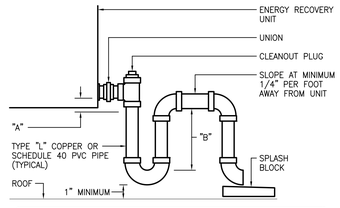
NOTES:

1. DETAIL SHOWN DOES NOT DEPICT ALL PE MOUNTING BASE ARRANGEMENTS.
2. DIVISION 7 SHALL PROVIDE PRESSURE TREATED WOOD BLOCKING AS REQUIRED TO SUPPORT ROOF CURB.

PE MOUNTING BASE (PIPE PORTAL) DETAIL



THERMAL ACOUSTICAL ROOF CURB DETAIL

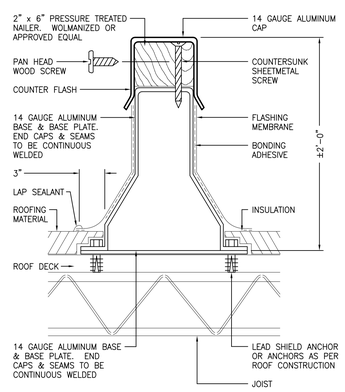


COIL CONFIGURATION	DIMENSION "A"	DIMENSION "B"
BLOW-THRU	1"	FAN DISCHARGE STATIC PRESSURE PLUS 1"
DRAW-THRU	FAN SUCTION STATIC PRESSURE PLUS 1"	2-1/2"

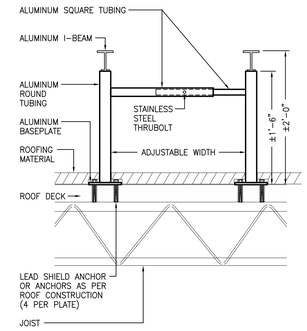
NOTES:

1. MINIMUM "A" OR "B" DIMENSION SHALL NOT BE LESS THAN 1".
2. COPPER CONDENSATE DRAIN LINES SHALL BE INSULATED WITH MINIMUM 1-1/2" THICK ARMAFLEX II SLIP-ON TYPE INSULATION.
3. DISCHARGE CONDENSATE PIPING A MINIMUM OF 3'-0" AWAY FROM UNIT TO RSPLASH BLOCK ON ROOF (UNLESS PROHIBITED BY LOCAL CODE).

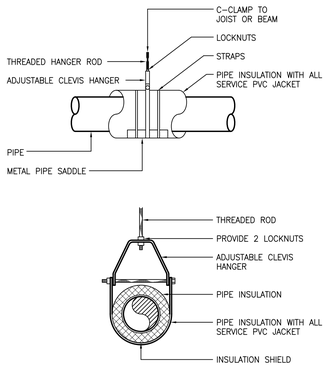
ENERGY RECOVERY UNIT CONDENSATE TRAP DETAIL



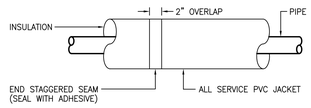
ROOF MOUNTED EQUIPMENT RAIL DETAIL



ROOF MOUNTED CONDENSING UNIT STAND DETAIL



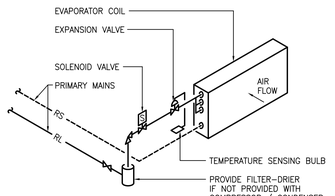
SINGLE PIPE HANGER DETAIL



NOTE:

1. ALL PIPING EXPOSED IN OCCUPIED AREAS SHALL BE JACKETED WITH MATERIALS SUITABLE FOR PAINTING.

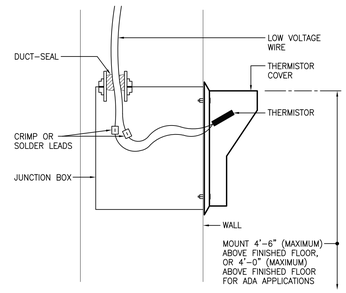
PIPING INSULATION JACKET DETAIL



NOTES:

1. PITCH ALL GAS LINES IN DIRECTION OF FLOW, 1/16 INCH/FOOT (MINIMUM).
2. PROVIDE DOUBLE RISER WHERE NECESSARY TO MAINTAIN REQUIRED VELOCITIES FOR OIL FLOW.
3. PROVIDE A TRAP FOR EVERY 25 FEET OF VERTICAL RISE IN GAS LINES.
4. HVAC EQUIPMENT SUPPLIER SHALL SIZE REFRIGERANT LINES TO MEET SYSTEM REQUIREMENTS.

DX COOLING COIL PIPING DETAIL



THERMOSTAT MOUNTING DETAIL

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TITLE:
HVAC DETAILS

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SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: M-14

PUMP SCHEDULE

Unit No.		P-1 & P-2
System		DOMESTIC WATER SERVICE
Service		WATER PRESSURE BOOSTING
Location		WATER RM. 001
Pump	**GPM**	147.0
	Head ft	69.35
	Style	IN-LINE
Connections	**Inlet**	4"
	Outlet	4"
Motor	**HP (each)**	5.0
	Electric	208 V / 3PH / 60 HZ
Make		GRUNDFOS
Model		15-2
Series		CRE

NOTES:

1. PROVIDE COMPLETELY FABRICATED VARIABLE SPEED BOOSTER SYSTEM ON 35.4" H X 45.8" W X 35.8" LONG SKID INCLUDING PUMPS, MANIFOLD, VALVES, ALL INTERCONNECTING PIPING, AND CONTROL PANEL. PUMP PACKAGE MODEL #HYDRO MULTI-E 2CRE 15-2 3x208V
2. A NON-ASME RATED 40 GALLON THERMAL EXPANSION TANK. – THRUSH T-60V – SHALL BE SUPPLIED.
3. PUMP SHUTOFF PRESSURE SHALL BE 70 PSIG.
4. PUMP SEQUENCE SHALL BE INTERMITTENT LEAD PUMP OPERATION WITH 0 TO 73.5 GPM AND 73.6 TO 147 GPM AND CONTROLLED BY SUCTION AND DISCHARGE SENSORS. ALL BOOSTER PUMPS SHALL HAVE A CUTOFF SWITCH SET AT A SUCTION PRESSURE OF 10 PSI.
5. PUMPS SHALL HAVE VARIABLE FREQUENCY DRIVES PWM (PULSE WIDTH MODULATION) WITH IGBT (INSULATED GATE BIPOLAR TRANSISTOR) OR APPROVED EQUAL WITH TOTALLY ENCLOSED FAN COOLED ENCLOSURE WITH NEMA C-FACE, CLASS F INSULATION WITH A CLASS B TEMPERATURE RISE.
6. CONTROL INTERFACE SHALL BE GRAPHICAL CONTROL PAD INTERFACE INSTALLED ON BOTH PUMPS ON SYSTEM. CONTROL INTERFACE SHALL PROVIDE EASY VIEWING OF SYSTEM STATUS PARAMETERS AND CONTROL OF FIELD PROGRAMMING PARAMETERS. INTERFACE TO DISPLAY: CURRENT VALUE OF THE CONTROL PARAMETER, MOST RECENT EXISTING ALARM, SYSTEM STATUS WITH CURRENT OPERATING MODE, & STATUS OF EACH PUMP WITH CURRENT OPERATING MODE AND ROTATIONAL SPEED AS A PERCENTAGE.

   DISCONNECT PANEL LOCATED ON RIGHT SIDE OF SYSTEM AND THE PIPE CONNECTIONS ON THE LEFT SIDE OF SYSTEM WHEN FACING SUCTION MANIFOLD.

PLUMBING FIXTURE SCHEDULE

ITEM		FIXTURE	MATERIAL	TYPE	OPERATOR/FITTING	CARRIER	H.W.	C.W.	WASTE	VENT	REMARKS/ACCESSORIES
WC-1	DESCRIPTION	ADA FLOOR MOUNTED WATER CLOSET	VITREOUS CHINA	HIGHLINE ELONGATED TANK TYPE	PRESSURE ASSISTED	--	--	--	3"	2"	ELONGATED OPEN FRONT SEAT WITHOUT COVER – KOHLER STRONGHOLD #K-4731-SC-0
	MANUFACTURER	KOHLER	--	#K-3999-0	--	--	--	--	--	--	PROVIDE KOHLER #K-7637-CP SUPPLY WITH STOP. 1.28 GALLONS PER FLUSH.
WC-2	DESCRIPTION	ADA FLOOR MOUNTED WATER CLOSET	VITREOUS CHINA	HIGHLINE ELONGATED TANK TYPE	PRESSURE ASSISTED	--	--	½"	3"	2"	ELONGATED CLOSED FRONT SEAT WITH COVER – KOHLER CACHET #K-7671-0
	MANUFACTURER	KOHLER	--	#K-3999-0	--	--	--	--	--	--	PROVIDE KOHLER #K-7637-CP SUPPLY WITH STOP. 1.28 GALLONS PER FLUSH.
LAV-1	DESCRIPTION	ADA DROP-IN LAVATORY	VITREOUS CHINA	FARMINGTON	BATTERY OPERATED FAUCET	--	½"	½"	1½"	1½"	PROVIDE ALL ACCESSORIES FOR A 100% COMPLETE INSTALLATION. –BDT OPTION LISTED UNDER OPERATOR/FITTING IS THE POINT OF USE MIXING VALVE. FAUCET – 0.5 GPM. SEE NOTE #4.
	MANUFACTURER	KOHLER	--	#K-2905-4-0	SLOAN #EBF-650-BAT-BDT-CP-0.5GPM-MLM-FCT	--	--	--	--	--	
LAV-2	DESCRIPTION	ADA DROP-IN LAVATORY	VITREOUS CHINA	FARMINGTON	MANUAL TWO HANDLED FAUCET	--	½"	½"	1½"	1½"	PROVIDE ALL ACCESSORIES FOR A 100% COMPLETE INSTALLATION – INCLUDING A POINT OF USE MIXING VALVE. FAUCET – 1.0 GPM. SEE NOTE #4.
	MANUFACTURER	KOHLER	--	#K-2905-4-0	SYMMONS #SLC9612PP	--	--	--	--	--	
KS-1	DESCRIPTION	TOP MOUNTED SINK	18 GAUGE STAINLESS STEEL	DOUBLE BASIN SINK	SINGLE HANDLE PULL-DOWN FAUCET SYMMONS	--	½"	½"	2"	2"	PROVIDE POINT OF USE MIXING VALVE, AND ALL OTHER ACCESSORIES FOR A 100% COMPLETE INSTALLATION. FAUCET – 1.5 GPM. SEE NOTES #4 & #6.
	MANUFACTURER	ELKAY	--	#DLR332210	#SK6710PD	--	--	--	--	--	
SHWR-1	DESCRIPTION	SHOWER	ACRYLIC	60" X 32" SHOWER PAN	WALL MOUNT SHOWER HEAD – 2.0 GPM	--	½"	½"	2"	1½"	PROVIDE SYMMONS: #S-9601-PLR-B-X, SHOWER SYSTEM WITH INTEGRAL VOLUME CONTROL & TEMPTROL PRESSURE BALANCING SHOWER VALVE. PROVIDE AQUATIC COMPRESSED FIT BRASS DRAIN. SEE NOTE #1.
	MANUFACTURER	AQUATIC	--	"ICON" #SB6032R (R), #SB6032L (L)	SEE ACCESSORIES	--	--	--	--	--	
SHWR-2	DESCRIPTION	SHOWER	ACRYLIC	48" X 36" SHOWER PAN	WALL MOUNT SHOWER HEAD – 2.0 GPM	--	½"	½"	2"	1½"	PROVIDE SYMMONS: #S-9601-PLR-B-X, SHOWER SYSTEM WITH INTEGRAL VOLUME CONTROL & TEMPTROL PRESSURE BALANCING SHOWER VALVE. PROVIDE AQUATIC COMPRESSED FIT BRASS DRAIN. SEE NOTE #1.
	MANUFACTURER	AQUATIC	--	"ICON" #SB4836 CENTER DRAIN	SEE ACCESSORIES	--	--	--	--	--	
SHWR-3	DESCRIPTION	SHOWER	ACRYLIC	38" X 38" SHOWER PAN	WALL MOUNT SHOWER HEAD – 2.0 GPM	--	½"	½"	2"	1½"	PROVIDE SYMMONS: #S-9601-PLR-B-X, SHOWER SYSTEM WITH INTEGRAL VOLUME CONTROL & TEMPTROL PRESSURE BALANCING SHOWER VALVE. PROVIDE AQUATIC COMPRESSED FIT BRASS DRAIN. SEE NOTE #1.
	MANUFACTURER	AQUATIC	--	"ICON" #F3838PAN CENTER DRAIN	SEE ACCESSORIES	--	--	--	--	--	
SHWR-4	DESCRIPTION	ADA SHOWER	ACRYLIC	60" X 32" SHOWER PAN	WALL MOUNT SHOWER HEAD & HAND SHOWER – 2.0 GPM EACH. SEE ACCESSORIES FOR MODEL NUMBERS.	--	½"	½"	2"	1½"	PROVIDE SYMMONS: #9605-PLR-B-X, SHOWER/HAND SHOWER SYSTEM WITH INTEGRAL VOLUME CONTROL & TEMPTROL PRESSURE BALANCING SHOWER VALVE. PROVIDE AQUATIC COMPRESSED FIT BRASS DRAIN AND VINYL FLEXIBLE DAM. SEE NOTE #1.
	MANUFACTURER	AQUATIC	--	#F6032APAN CENTER DRAIN		--	--	--	--	--	
WB-1	DESCRIPTION	WASHING MACHINE OUTLET BOX	PVC	DRAIN WITH DOMESTIC VALVES	SINGLE LEVER	--	½"	½"	2"	--	BOX SHALL HAVE WATER HAMMER ARRESTORS & 2" DRAIN FITTING. FLEXIBLE VALVE/DRAIN ARRANGEMENT CAPABILITIES TO FIT IN FIELD REQUIREMENTS. SEE NOTE #6.
	MANUFACTURER	OATEY	--	#38218	½" ASTM F1960 PEX CONNECTION VALVES	--	--	--	--	--	
MR-1	DESCRIPTION	MOP RECEPTOR	TERRAZZO	DROP FRONT	MANUAL FAUCET – CHROME FINISH	--	½"	½"	3"	2"	PROVIDE HOSE 36" LONG WITH WALL HANGER (–KH36), MOP HANGER WITH 3 GRIPS ON STAINLESS STEEL BRACKET (–KMH), & 24" WALL GUARDS (–KWG). SEE NOTES #3 & #4.
	MANUFACTURER	ACORN	--	#TDF-24	OPTION –KFC	--	--	--	--	--	
HYD-1	DESCRIPTION	NON-FREEZE WALL HYDRANT	CAST BRASS	WALL MOUNT HYDRANT WITH BOX	--	--	--	--	¾"	--	UNIT SHALL HAVE CAST BRASS HINGED LATCHING COVER WITH SATIN NICKEL FINISH, INTEGRAL VACUUM BREAKER-BACKFLOW PREVENTER, AND CONTROL KEY. SEE NOTE #5.
	MANUFACTURER	PRIER	--	C-634N (HYDRANT) C-634BX1 (BOX)	--	--	--	--	--	--	
FD-1	DESCRIPTION	FLOOR DRAIN	CAST IRON	SQUARE ADJUSTABLE STRAINER	--	--	--	--	4"	2"	DRAINS SHALL HAVE OPTIONS LISTED: (–1–6–7–7MG4–HP) & 8" STRAINER. SEE NOTE #2
	MANUFACTURER	MIFAB	--	#F1100-C-S	--	--	--	--	--	--	
FD-2	DESCRIPTION	FLOOR DRAIN	CAST IRON	SQUARE ADJUSTABLE STRAINER	--	--	--	--	6"	3"	DRAINS SHALL HAVE OPTIONS LISTED: (–1–6–7–7MG6–HP) & 10" STRAINER. SEE NOTE #2
	MANUFACTURER	MIFAB	--	#F1100-C-S	--	--	--	--	--	--	
FD-3	DESCRIPTION	HEAVY DUTY ROADWAY DRAIN	CAST IRON	TRAFFIC RATED DRAIN	--	--	--	--	4"	2"	DRAINS SHALL HAVE OPTIONS LISTED: (–3–6–7–20–HP–MG4).
	MANUFACTURER	MIFAB	--	#F1490	--	--	--	--	--	--	
RD-1	DESCRIPTION	ROOF DRAIN		ADJUSTABLE EXTENSION	--	--	--	--	6"	--	DRAINS SHALL HAVE OPTIONS: –E–U
	MANUFACTURER	MIFAB		#R1200-RG	--	--	--	--	--	--	--
RD/ORD	DESCRIPTION	ROOF DRAIN/OVERFLOW	CAST IRON	DUAL OUTLET	--	--	--	--	6"	--	DRAINS SHALL HAVE OPTIONS LISTED: (–E–U).
	MANUFACTURER	MIFAB	--	#R1270-RG	--	--	--	--	--	--	--

NOTES: MANUFACTURERS AND MODELS INDICATED ARE BASIS OF DESIGN, CONTRACTOR MAY SUBMIT EQUAL FOR APPROVAL.

1. ALL SHOWER MODEL ORIENTATIONS SHALL BE VERIFIED BEFORE UNITS ARE ORDERED – BASED ON SHOWER HEAD LOCATION. NO SHOWER HEADS ARE TO BE INSTALLED IN EXTERIOR WALLS OR FIRE RATED WALLS. IF THE FIRE RATED WALLS CANNOT BE AVOIDED, PIPING FOR SHOWER HEAD AND CONTROLS SHALL BE FIRESTOPPED TO MAINTAIN THE INTEGRITY OF THE WALL'S FIRE RATING. PC TO COORDINATE WITH GC FOR SHWR-4 CONTROLS AND HEAD LOCATIONS. GC TO INSTALL BLOCKING FOR FUTURE GRAB BARS AND SEAT. SEE DETAILS #8 & 9 ON DRAWING P-3.
2. ALL FLOOR DRAINS SHALL HAVE TRAP PRIMERS (–7 OPTION) UNLESS OTHERWISE NOTED. AUTOMATIC TRAP PRIMER ON COLD WATER SUPPLY AT NEAREST FIXTURE AND RUN TO TRAP SEAL BEING PROTECTED. PROVIDE ACCESS PANEL WHEN PRIMERS ARE INSTALLED IN WALLS. WHERE NO FIXTURE IS AVAILABLE, SEE DETAILS #19, #20, AND #21 ON DRAWING P-2.
3. WALL GUARDS ARE TO BE INSTALLED ON ANY WALLS ADJACENT TO THE MOP RECEPTOR AND SHALL BE ORDERED AS MANY AS REQUIRED PER MOP RECEPTOR. CONTRACTOR TO VERIFY THE REQUIRED NUMBER OF WALL GUARDS PER MOP RECEPTOR BEFORE ORDERING.
4. PROVIDE CALEFFI SINKMIXER MODEL #521201A THERMOSTATIC MIXING VALVE AT SINKS AND LAVATORIES WITHOUT SPECIFIC VALVE NOTED. FOR SINKS AND LAVATORIES THAT HAVE MIXING VALVES INCLUDED WITH THE OPTIONS LISTED – THE SINKMIXER MAY BE SUBSTITUTED FOR THOSE VALVES. PROVIDE CALEFFI 5213 SERIES THERMOSTATIC MIXING VALVE AT MOP RECEPTORS. ENDS OF VALVES TO BE SWEAT OR F1960 PEX CONNECTION. TEMPERATURE AT FAUCETS TO BE 110°F.
5. ALL WALLS CONTAINING WALL HYDRANT (HYD–1) SHALL HAVE WALL THICKNESS MEASURED BEFORE UNITS ARE ORDERED. UNITS FINAL LOCATION SHALL BE COORDINATED WITH GRADE LEVEL AS BASEMENT IS NOT FULLY BURIED IN THE FOUR STORY SECTION OF THE BUILDING. SEE ARCHITECTURAL SECTIONS AND ELEVATIONS.
6. FIXTURES LABELED DW (DISHWASHER), W/D (WASHING MACHINE/DRYER), AND IM (ICE MAKER) SHALL BE SELECTED BY ARCHITECT/OWNER. PLUMBING CONTRACTOR IS TO ONLY CONNECT HOT WATER AND SANITARY TO THE DISHWASHER – SEE DETAIL #8 ON DRAWING P-2. PLUMBING CONTRACTOR IS TO ONLY CONNECT COLD WATER TO THE ICEMAKER (COORDINATE FINAL CONNECTION SIZE AND LOCATION IN FIELD). PLUMBING CONTRACTOR IS TO ONLY CONNECT HOT, COLD, AND WASTE LINES TO THE WASHER AND PROVIDE AND FULLY INSTALL WASHER BOX (WB–1) AND ASSOCIATED PIPING. SEE DETAIL #6 ON DRAWING P-2. COORDINATE BOX LOCATION WITH HVAC PIPING FOR FAN COIL UNITS.

ELECTRIC DOMESTIC WATER HEATER SCHEDULE

Designation	Capacity (gallons)	Recovery (gal's./hr. @ 100°F rise)	First Hour Rating (Gallons)	Fuel Data		Physical Data		Controls	Remarks
				Efficiency or UEF	Type	Input (kW)	Diameter	Height		
WH-1	10	12	20	PREMIUM	Electric	3.0 kW	18"	18¼"	Built-in Adjustable Thermostat	1, 4, 5, 6, & 9
WH-2	40	19	51	0.92	Electric	4.5 kW	23"	32"	Built-in Adjustable Thermostat	2, 4, 5, 7, & 9
WH-3	40	25	57	0.92	Electric	6.0 kW	23"	32"	Built-in Adjustable Thermostat	3, 4, 5, 8, & 9

NOTES:

1. WATER HEATER SELECTION BASED ON: AO SMITH – MODEL #DEL-10S-3.0, 208V 1ϕ – SINGLE 3.0 kW ELEMENT.
2. WATER HEATER SELECTION BASED ON: AO SMITH – MODEL #DEL-40D-4.5, 208V 1ø – DUAL 4.5 kW ELEMENTS, NON-SIMULTANEOUS OPERATION.
3. WATER HEATER SELECTION BASED ON: AO SMITH – MODEL #DEL-40D-6.0, 208V 1ø – DUAL 6.0 kW ELEMENTS, NON-SIMULTANEOUS OPERATION.
4. PIPE RELIEF VALVE OUTLET TO MOP RECEPTOR, LAVATORY, OR WASHER BOX (WB–1) USING FULL SIZE TYPE 'L' COPPER PIPING.
5. PROVIDE AMTROL ST-5C-DD EXPANSION TANK WITH ANTIMICROBIAL LINER TO MATCH WATER HEATER.
6. SEE DETAILS #1 AND #4 ON DRAWING P-3. PROVIDE HOLDRITE WATER HEATER STAND #40-SWHP-W. WATER HEATER IS SHOWN AWAY FROM MR-1 FOR CLARITY'S SAKE ON FLOOR PLANS.
7. SEE DETAILS #2 AND #4 ON DRAWING P-3. PROVIDE HOLDRITE WATER HEATER STAND #50-SWHP-W (UNITS A & B REQUIRE EXTRA MOUNTING DUE TO COORDINATION WITH DRYER VENT). ACCESS DOOR AT UNIT IS REQUIRED AS UNIT IS LOCATED IN SMALL CLOSET WHICH ONLY CONTAINS THE WASHER/DRYER & WATER HEATER. ACCESS DOOR SHALL BE 30" X 36" AND LOCATED ON THE WALL ABOVE THE CLOSET DOORS AND COORDINATED WITH HVAC CONTRACTOR'S PIPING & DUCTWORK (UNLESS OTHERWISE NOTED).
8. SEE DETAILS #3 AND #4 ON DRAWING P-3. PROVIDE HOLDRITE WATER HEATER STAND #50-SWHP-W (UNITS A & B REQUIRE EXTRA MOUNTING DUE TO COORDINATION WITH DRYER VENTS). ACCESS DOOR AT UNIT IS REQUIRED AS UNIT IS LOCATED IN SMALL CLOSET WHICH ONLY CONTAINS THE WASHER/DRYER & WATER HEATER. ACCESS DOOR SHALL BE 30" X 36" AND LOCATED ON THE WALL ABOVE THE CLOSET DOORS AND COORDINATED WITH HVAC CONTRACTOR'S PIPING & DUCTWORK (UNLESS OTHERWISE NOTED).
9. PROVIDE ALL RELATED PUMPING/PIPING ETC FOR A 100% COMPLETE INSTALLATION. COORDINATE ALL EQUIPMENT LAYOUTS WITH GC – SPACE IS LIMITED.

SUMP PUMP SCHEDULE

Designation	Location/Description	GPM	Head	Motor HP	Volts/PH	RPM	Connection – Discharge	Notes	Manufacturer	Model
ESP-1	ELEVATOR SUMP PIT / SUBMERSIBLE	52	20	½	115/1/60	3,450	1½"	1	ZOELLER	940-0013

NOTES:

1. PROVIDE CHECK VALVE. PACKAGE COMES WITH 6 FOOT JACKETED COIL FOR OIL RESISTANCE, OIL SMART SWITCH AND ALARM, 5 AMP AUXILIARY DRY CONTACT FOR CONNECTION TO A REMOTE ALARM LOCATION, NEMA 4X ENCLOSURE, AND IS UL LISTED. SEE DETAIL #9 ON DRAWING P-2. OTHER ACCEPTABLE MANUFACTURER: LIBERTY.

BACKFLOW PREVENTER SCHEDULE

MARK	MANUFACTURER	SIZE	MAX. PRESSURE DROP	SERVING	REMARKS
BFP-1	WATTS	3"	9 PSI	DOMESTIC WATER SERVICE	MODEL 957OSY. SEE DETAIL #1 ON DRAWING P-2.
BFP-2	WATTS	6"	12 PSI	FIRE PROTECTION SERVICE	DCDA TO BE INSTALLED BY FIRE PROTECTION CONTRACTOR. SEE FIRE PROTECTION DRAWINGS AND DETAIL #1 ON DRAWING P-2 FOR RPZ ROOM LAYOUT INSTRUCTIONS.

EQUIPMENT CONNECTION SCHEDULE

THE ITEM NAME CORRESPONDS TO THE ITEMS SHOWN ON THE PLANS. ALL EQUIPMENT BY OTHERS UNLESS OTHERWISE NOTED.

ITEM	QTY.	DESCRIPTION	GAS	H.W.	C.W.	WASTE	VENT	REMARKS/ACCESSORIES
TC	1	TRASH CHUTE	--	--	¾"	--	--	COORDINATE FINAL CONNECTION LOCATIONS WITH CHUTE INSTALLERS.

NOTES:

GENERAL PLUMBING NOTES

1. GENERAL NOTES ARE APPLICABLE TO ALL PLUMBING WORKING DRAWINGS.
2. THE WORK SHALL BE EXECUTED IN STRICT CONFORMITY WITH BASE BUILDING SPECIFICATION AND WITH THE LATEST EDITION OF THE PREVAILING LOCAL PLUMBING AND BUILDING CODES AND ALL LOCAL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE THE MORE STRINGENT STANDARD SHALL APPLY.
3. ALL PLUMBING WORK SHALL BE COORDINATED WITH ALL OTHER TRADES BEFORE PROCEEDING WITH INSTALLATION.
4. NO CHANGES ARE TO BE MADE IN PLUMBING LAYOUT WITHOUT WRITTEN PERMISSION BY THE ENGINEER OF RECORD.
5. NO PIPING SHALL RUN EXPOSED IN FINISHED AREAS.
6. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR PAYING RELATED FEES.
7. ROUGH-IN DIMENSIONS OF TOILET FIXTURES MUST BE COORDINATED WITH GENERAL CONTRACTOR AND FIELD SUPERVISOR.
8. INSTALL BALL VALVES ON ALL BRANCH SUPPLY LINES.
9. PROVIDE ACCESS PANELS ON ALL INACCESSIBLE VALVES AND CLEANOUTS. ACCESS PANELS SHALL BE PROVIDED BY PLUMBING CONTRACTOR AND CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR LOCATION. MOUNT SHUT–OFF VALVES NO HIGHER THAN 12'–8" AFF.
10. ALL WORK SHALL BE PROPERLY TESTED, BALANCED AND CLEANED. PROVIDE A ONE YEAR WARRANTY FROM DATE OF FINAL INSPECTION ON ALL PARTS AND LABOR.
11. FOLLOW PDI STANDARDS FOR WATER HAMMER ARRESTORS.
12. ALL FIXTURES TO BE SUPPLIED & INSTALLED BY PLUMBING CONTRACTOR UNLESS OTHERWISE NOTED. FIXTURES ON THE SCHEDULE ARE BASIS OF DESIGN, CONTRACTOR MAY SUBMIT EQUAL FOR APPROVAL. PROVIDE DEARBORN #ADA100 OR #ADA101 INSULATING KITS ON TRAPS AND HOT AND COLD WATER SUPPLIES TO ALL HANDICAPPED LAVATORIES. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF HANDICAPPED FIXTURES.
13. ALL NOTED FIXTURES SHALL BE ACCESSIBLE TO INDIVIDUALS WITH DISABILITIES IN ACCORDANCE WITH THE "AMERICANS WITH DISABILITIES ACT OF 1990". FIXTURES AND THEIR INSTALLATION SHALL ALSO COMPLY WITH AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) PUBLICATION A117.1 – "PROVIDING ACCESSIBILITY AND USABILITY FOR PHYSICALLY HANDICAPPED PEOPLE" AND/OR GOVERNING CODE. ALL PLUMBING FIXTURES, EQUIPMENT, TRIM, AND FITTINGS SHALL COMPLY WITH LOCAL, STATE, AND FEDERAL REGULATIONS AND CODES.
14. WATER AND ENERGY CONSERVATION CODES. THE SCHEDULED AND/OR SPECIFIED PLUMBING FIXTURES AND EQUIPMENT REPRESENT THE MINIMUM CRITERIA AND SHALL BE THE BASIS FOR THE CONTRACTOR'S BASE BID. IF THE SCHEDULED OR SPECIFIED FIXTURES OR EQUIPMENT DO NOT COMPLY WITH GOVERNING CODES OR REGULATIONS IN ALL RESPECTS, THE CONTRACTOR SHALL PROVIDE AN ALTERNATE BID FOR COMPLYING FIXTURES, EQUIPMENT, TRIM, OR FITTINGS. THE ABSENCE OF AN ALTERNATE BID SHALL BE CONSTRUED TO MEAN THAT THE CONTRACTOR'S BID INCLUDES ALL COSTS NECESSARY TO MEET ALL REGULATIONS AND CODES.
15. PLUMBING FIXTURES SHALL BE WATER CONSERVING TYPE AS FOLLOWS PER NYS PLUMBING CODE (PROVIDE REQUIRED AERATORS ON ALL FAUCETS TO ENSURE FLOW RATES ARE MET):
    WATER CLOSET (TOILET) – MAX. 1.28 GPF
    PUBLIC LAVATORY FAUCET – MAX. 0.5 GPM; PRIVATE LAVATORY – MAX. 1.0 GPM
    PRIVATE SINK FAUCET – MAX. 1.5 GPM
16. GENERAL CONTRACTOR SHALL COORDINATE WATER METER LOCATION AND INSTALLATION WITH LOCAL AUTHORITIES AND SITE DRAWINGS IF NOT EXISTING.
17. PROVIDE BUILDING WATER AND GAS SERVICE LINES 5'–0" FROM BUILDING LINE, OR INSIDE BUILDING FROM OUTLET SIDE OF METER AS SHOWN ON SITE PLAN. COORDINATE EXACT LOCATION WITH SITE DRAWINGS AND AT JOB SITE. PROVIDE BACKFLOW PREVENTER AS REQUIRED BY LOCAL AUTHORITIES FOR WATER SERVICE.
18. SANITARY SEWER PIPING SHOWN IS BASED ON 0.125"/FT FOR 3"–6" & 0.25"/FT FOR 2½" OR LESS FOR ALL PIPING. COORDINATE BUILDING SEWER LOCATION AND INVERT ELEVATION WITH SITE DRAWINGS.
19. TRAP SEAL PRIMERS ARE TO BE PROVIDED AT ALL FLOOR DRAIN LOCATIONS.
20. FIRESTOP ALL FLOOR TO FLOOR PENETRATIONS AS REQUIRED.
21. CONCEAL PIPING AS MUCH AS POSSIBLE. PIPING IS RUN ON PLANS IN PLACES WHERE CEILINGS EXIST. ONLY WHEN IT CANNOT BE AVOIDED SHALL THE PLUMBER RUN PIPING WHERE NO CEILING EXISTS. SHOULD ANY PIPING BE EXPOSED PAINT PER SPECIFICATIONS.
22. COMMISSIONING (INCLUDING COMMISSIONING PLAN AND REPORT) OF PLUMBING SYSTEMS (HOT WATER TANKS, BOILERS, CONTROLS, RECIRCULATION PUMPS, ETC.) SHALL BE PROVIDED AND PERFORMED IN ACCORDANCE WITH THE NEW YORK STATE ENERGY CONSERVATION CODE SECTIONS C408.2 AND C408.2.1 BY AN APPROVED THIRD PARTY TESTING AGENCY SELECTED BY THE OWNER, WHERE THE FOLLOWING APPLIES:
    22.1. TOTAL HVAC SYSTEM AND SERVICE WATER HEATING EQUIPMENT CAPACITIES ARE GREATER THAN OR EQUAL TO 600,000 BTUH COMBINED SERVICE WATER HEATING AND SPACE HEATING CAPACITY.

BUILDING SANITARY SEWER LOADS

BUILDING LOAD	688.0 DFU's
TOTALS	688.0 DFU's
FUTURE LOADS	x 1.1
	757 DFU's
BUILDING TOTAL	+/– 10 DFU's
	(8" SANITARY SEWER LINE @ 1/8" SLOPE)

DFU DRAINAGE FIXTURE UNITS

BUILDING DOMESTIC WATER LOADS

BUILDING LOAD	479.65 WSFU
TOTALS	479.65 WSFU
FUTURE LOADS	x 1.1
	527.62 WSFU
BUILDING TOTAL	+/– 5 WSFU
	(146.8 GPM = 3" WATER LINE. MINIMUM PRESSURE AT 3RD FLOOR TO BE 50 PSI)

WSFU WATER SUPPLY FIXTURE UNITS

BUILDING GAS LOAD

GAS NOTES:

GAS METER – PLUMBING CONTRACTOR TO COORDINATE GAS METER INSTALLATION WITH UTILITY COMPANY. SEE DETAIL #2 ON DRAWING P–2.

PROVIDE GAS SHUT–OFF VALVE AND UNION UPSTREAM AND DOWNSTREAM OF GAS METER.

GAS LINE SIZED BASED ON 350'–0" OF LENGTH AT A 0.5 PRESSURE LOSS (INCHES OF WATER). GAS PROVIDED AT 11" W.C. DOWNSTREAM OF GAS REGULATOR.

REFER TO GAS CONNECTION DETAILS ON DRAWINGS AND DETAIL #3 ON DRAWING P–2.

MAKE FINAL GAS CONNECTION TO EQUIPMENT PER NFPA–54 AND NEW YORK STATE GAS CODE.

GAS LOAD:
917,000 BTU/hr

NOTE: BEFORE STARTING INSTALLATION OF GAS PIPING FIELD VERIFY ALL GAS EQUIPMENT AND CAPACITIES. MODIFY PIPING AS REQUIRED.

LEGEND

—— XS —— XS ——	EXISTING SANITARY SEWER (XSS)
—— SS U —— SS U ——	UNDERGROUND SANITARY SEWER (SS U)
—— SS U/F —— SS U/F ——	UNDER FLOOR SANITARY SEWER (SS U/F)
—— SS ——	SANITARY SEWER IN CEILING/RISER (SS)
—— PD —— PD —— PD ——	PUMPED SANITARY DISCHARGE (PD)
—— PD U —— PD U ——	PUMPED UNDERGROUND SANITARY DISCHARGE (PD U)
—— ST —— ST —— ST ——	STORM WATER PIPING (ST)
—— XST —— XST ——	EXISTING STORM WATER PIPING (XST)
—— OST —— OST —— OST ——	OVERFLOW STORM WATER PIPING (OST)
—— U —— U ——	UNDERGROUND PIPING (U)
—— C —— C ——	DOMESTIC COLD WATER (CW)
—— C U ——	UNDERGROUND DOMESTIC COLD WATER (CW U)
—— HWR —— HWR ——	HOT WATER RECIRCULATING – STANDARD TEMPERATURE (HWR)
—— H —— H ——	HOT WATER – STANDARD TEMPERATURE (120°F HW)
—— H —— H —— H ——	HOT WATER – ELEVATED TEMPERATURE (140°F HW)
—— FP —— FP —— FP ——	FIRE PROTECTION PIPING
—— FP U —— FP U ——	UNDERGROUND FIRE PROTECTION PIPING
—— OV —— OV —— OV ——	EXISTING SANITARY VENT (V)
—— V —— V ——	SANITARY VENT (V)
—— UF —— UF —— UF ——	UNDER FLOOR SANITARY VENT (V U/F)
—— GAS —— GAS —— GAS ——	GAS PIPING (7" W.C.)
—— 11" W.C. GAS ——	GAS PIPING (11" W.C.)
	UNION
	PLUG COCK
	ELBOW – TURNED DOWN
	ELBOW – TURNED UP
	TEE – TURNED DOWN
	TEE – TURNED UP
	GATE VALVE
	CONCENTRIC REDUCER
	CONCENTRIC INCREASER
	BALL VALVE
	MIXING VALVE
	CHECK VALVE
	SHUT–OFF VALVE IN VERTICAL LINE
	GAS PRESSURE REGULATOR
	TEMP. & PRESS. RELIEF VALVE
RD	ROOF DRAIN
FD	FLOOR DRAIN
	PUMP
FCO	FLOOR CLEANOUT
HB	HOSE BIBB
WH	WALL HYDRANT – ALSO SHOWN AS HYD
WCO	WALL CLEANOUT
CO	CLEANOUT
WHA	WATER HAMMER ARRESTOR (WHA)
CAP	CAP/PLUG
	POINT OF CONNECTION – NEW TO EXISTING
	CALIBRATED BALANCING VALVE
	DIRECTION OF FLOW

FD	FLOOR DRAIN	HW	HOT WATER
ORD	OVERFLOW ROOF DRAIN	CW	COLD WATER/CITY WATER
TYP.	TYPICAL	GC	GENERAL CONTRACTOR
DN	DOWN	FCO	FLOOR CLEANOUT
VTR	VENT THRU ROOF	CONT.	CONTINUATION
U/F	UNDER FLOOR	W.C.	WATER COLUMN
SS	SANITARY SEWER	CD	CONDENSATE DRAIN
V	PLUMBING VENT	VBF	VENT BELOW FLOOR
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING	ETR	EXISTING TO REMAIN
		RTU	ROOFTOP UNIT
DCVA	DOUBLE CHECK VALVE ASSEMBLY	VFB	VENT UP FROM BELOW
		N/A	NOT APPLICABLE
CI	CAST IRON	PC	PLUMBING CONTRACTOR
MC	MECHANICAL CONTRACTOR	AAV	AIR ADMITTANCE VALVE
FLR./FLRS.	FLOOR/FLOORS	DRWG./DRWGS.	DRAWING/DRAWINGS
EC	ELECTRICAL CONTRACTOR	WC(S)	WATER CLOSET(S)
LAV(S)	LAVATORY(IES)	&	AND
F/#	FOR (# OF ITEMS)	MR	MOP RECEPTOR
TUB	BATHTUB/SHOWER	EX	EXISTING
HYD	HYDRANT	KS	KITCHEN SINK
WH	WATER HEATER	DW	DISHWAHSER
CU	CONDENSING UNIT	IM	ICE MAKER
FCU	FAN COIL UNIT	WB	WASHER BOX
SHWR(S)	SHOWER(S)	ECO	ENERGY CUT OFF

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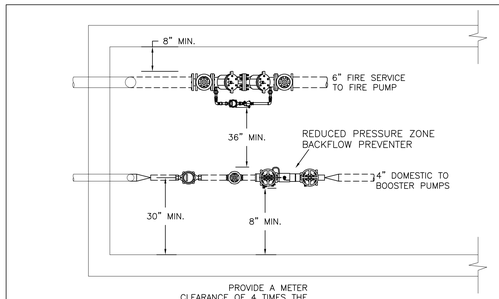
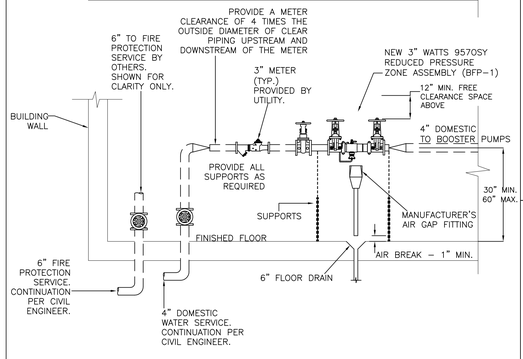
SU





ALL PLUMBING BEFORE THE METER, RPZ AND DCDA IS REQUIRED TO BE COPPER, BRASS OR DUCTILE IRON PIPE (DIP)

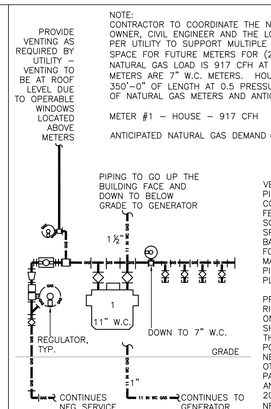
WATER METER SET AND RPZ TYPE BACKFLOW PREVENTER DETAIL

1 P-2 SCALE: NONE

NOTE:
CONTRACTOR TO COORDINATE THE NATURAL GAS INSTALLATION FULLY WITH OWNER, CIVIL ENGINEER AND THE LOCAL UTILITY PROVIDER. GAS HEADER SIZED PER UTILITY TO SUPPORT MULTIPLE GAS LOADS. PROVIDE TEES AND METER SPACE FOR FUTURE METERS FOR (2) COMMERCIAL TENANT SPACES. ANTICIPATED NATURAL GAS LOAD IS 917 CFH AT 11" W.C. FOR HOUSE METER – FUTURE METERS ARE 7" W.C. METERS. HOUSE METER GAS LINE SIZE BASED ON 350'–0" OF LENGTH AT 0.5 PRESSURE LOSS (INCHES OF WATER). SCHEDULE OF NATURAL GAS METERS AND ANTICIPATED NATURAL GAS LOADS.

METER #1 – HOUSE – 917 CFH

ANTICIPATED NATURAL GAS DEMAND = 917 CFH

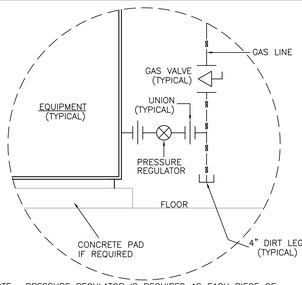


VERIFY REQUIREMENTS FOR METERING AND PIPING WITH GAS COMPANY. PLUMBING CONTRACTOR SHALL PAY ALL GAS COMPANY FEES FOR INSTALLATION. USE WELDED OR SCREWED PIPE AND FITTINGS PER PLUMBING SPECS. GAS COMPANY SHALL EXCAVATE, BACKFILL, AND REPAIR ANY PAVING OR SOD FOR GAS SERVICE LINE INSTALLATION FROM MAIN TO BUILDING. PAINT EXPOSED METAL GAS PIPE, FITTINGS. REFER TO ARCHITECTURAL PLANS FOR ARCHITECTURAL PAINT COLOR.

PROVIDE AND COORDINATE ALL HOUSE METER RISERS AND PIPING AS REQUIRED IN FIELD. ONLY THE HOUSE METER PIPING WILL BE SHOWN. COORDINATE PIPING TO INTERIOR OF THE BUILDING WITH ALL TRADES AND ALL POSSIBLE TENANTS. ALL GAS PIPING WILL NEED TO RUN THROUGH UNITS TO REACH OTHER TENANT SPACES – PIPING SHALL BE PAINTED SAFETY YELLOW BY PC. ALL PIPING AND EQUIPMENT SHALL BE INSTALLED PER 2020 NEW YORK STATE FUEL GAS CODE AND NFPA 54. SEE DETAIL #3 ON DRAWING P–2 FOR EQUIPMENT CONNECTION DETAILS.

EXTERIOR GAS METER ELEVATION

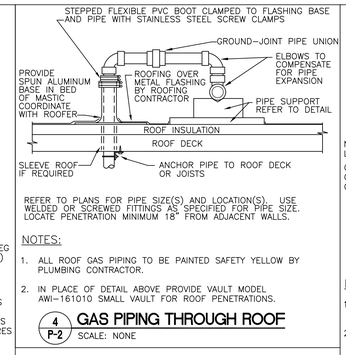
2 P-2 SCALE: NONE



NOTE: PRESSURE REGULATOR IS REQUIRED AS EACH PIECE OF GAS–FIRED EQUIPMENT (NOTE: GENERATOR REQUIRES 11" W.C.) AS GAS PRESSURE IS 11 INCHES OF W.C. COORDINATE PRESSURE REGULATOR LOCATION WITH MECHANICAL & ELECTRICAL CONTRACTORS IN FIELD – CONFIRMING PRESSURE RANGE THAT EQUIPMENT REQUIRES TO OPERATE BEFORE ORDERING REGULATORS.

PRESSURE REGULATOR NATURAL GAS CONNECTION

3 P-2 SCALE: NONE



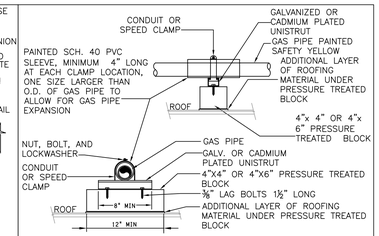
REFER TO PLANS FOR PIPE SIZE(S) AND LOCATION(S). USE WELDED OR SCREWED FITTINGS AS SPECIFIED FOR PIPE SIZE. LOCATE PENETRATION MINIMUM 18" FROM ADJACENT WALLS.

NOTES:

1. ALL ROOF GAS PIPING TO BE PAINTED SAFETY YELLOW BY PLUMBING CONTRACTOR.
2. IN PLACE OF DETAIL ABOVE PROVIDE VAULT MODEL AWI–161010 SMALL VAULT FOR ROOF PENETRATIONS.

GAS PIPING THROUGH ROOF

4 P-2 SCALE: NONE



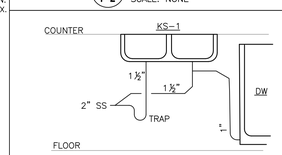
NOTE: PROVIDE SUPPORTS AT A MAXIMUM 8'–0" ON CENTER AND AT EACH CHANGE OF DIRECTION AT A MAXIMUM OF 2'–0" ON EACH SIDE

NOTES:

1. ALL ROOF GAS PIPING TO BE PAINTED SAFETY YELLOW BY PLUMBING CONTRACTOR.
2. IN PLACE OF DETAILS ABOVE PROVIDE MIFAB C–PORT SUPPORTS.

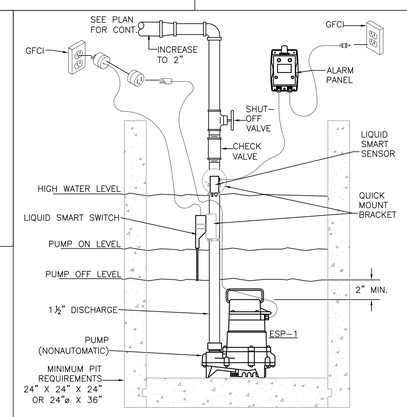
GAS PIPING SUPPORT DETAIL

5 P-2 SCALE: NONE



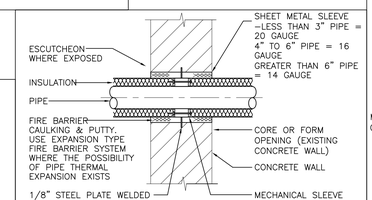
DISHWASHER TO KITCHEN SINK CONNECTION DETAIL

8 P-2 SCALE: NONE



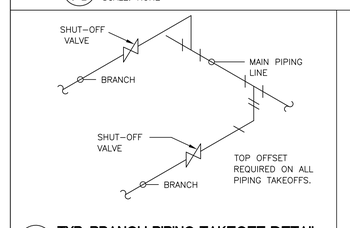
ELEVATOR SUMP PUMP DETAIL

9 P-2 SCALE: NONE



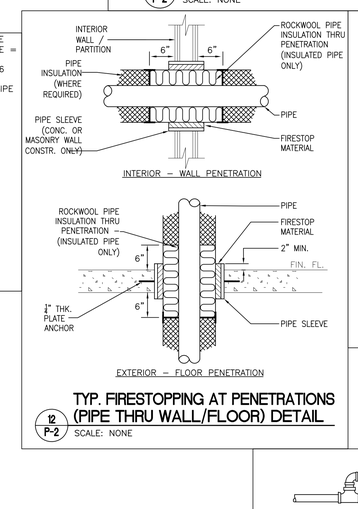
PIPE THRU EXTERIOR WALL PENETRATION DETAIL

10 P-2 SCALE: NONE



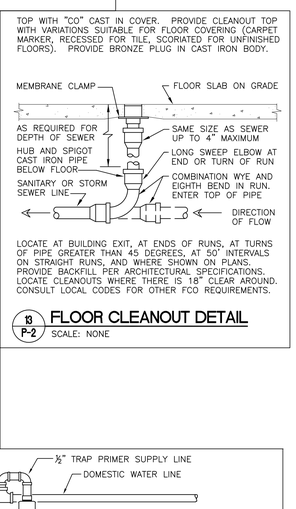
TYP. BRANCH PIPING TAKEOFF DETAIL

11 P-2 SCALE: NONE



TYP. FIRESTOPPING AT PENETRATIONS (PIPE THRU WALL/FLOOR) DETAIL

12 P-2 SCALE: NONE

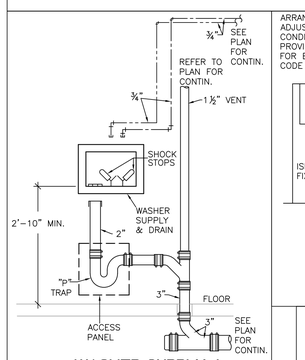


TOP WITH "CO" CAST IN COVER. PROVIDE CLEANOUT TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKER, RECESSED FOR TILE, SCORIATED FOR UNFINISHED FLOORS). PROVIDE BRONZE PLUG IN CAST IRON BODY.

LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45 DEGREES, AT 50' INTERVALS ON STRAIGHT RUNS, AND WHERE SHOWN ON PLANS. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS. LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND. CONSULT LOCAL CODES FOR OTHER FCO REQUIREMENTS.

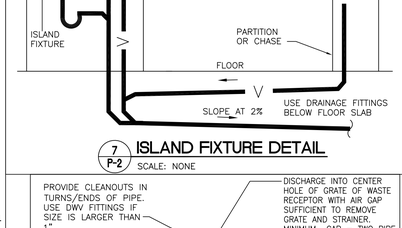
FLOOR CLEANOUT DETAIL

13 P-2 SCALE: NONE



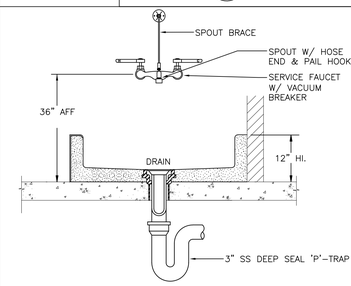
WASHER SUPPLY + DRAIN PIPING DIAGRAM

6 P-2 SCALE: NONE



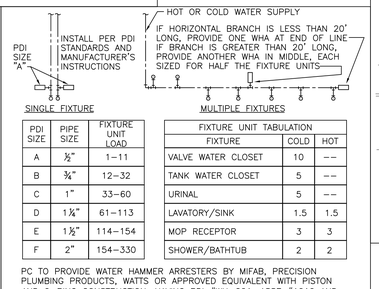
ISLAND FIXTURE DETAIL

7 P-2 SCALE: NONE



MOP RECEPTOR DETAIL

16 P-2 SCALE: NONE



SINGLE FIXTURE

PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	½"	1–11
B	¾"	12–32
C	1"	33–60
D	1¼"	61–113
E	1½"	114–154
F	2"	154–330

MULTIPLE FIXTURES

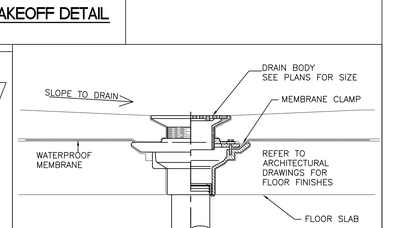
FIXTURE UNIT TABULATION

FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	––
TANK WATER CLOSET	5	––
URINAL	5	––
LAVATORY/SINK	1.5	1.5
MOP RECEPTOR	3	3
SHOWER/BATHTUB	2	2

PC TO PROVIDE WATER HAMMER ARRESTERS BY MIFAB, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O–RING CONSTRUCTION, HAVING PDI #WH–201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

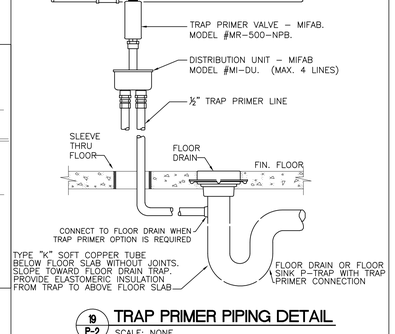
WATER HAMMER REQUIREMENTS

17 P-2 SCALE: NONE



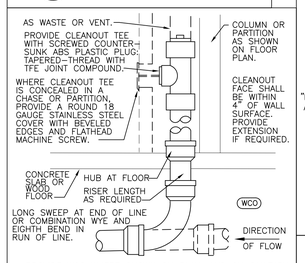
FLOOR DRAIN DETAIL

18 P-2 SCALE: NONE



TRAP PRIMER PIPING DETAIL

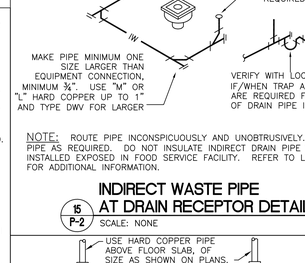
19 P-2 SCALE: NONE



PROVIDE WCO WHERE SHOWN ON PLAN, AND ON SANITARY WASTE BRANCHES NOT SERVED WITH A FLOOR CLEANOUT: LOCATE ABOVE FIXTURE FLOOD RIM WITHIN 4" OF FLOOR. CONSULT LOCAL CODES FOR OTHER WCO REQUIREMENTS.

WALL CLEANOUT DETAIL

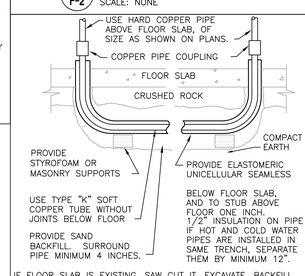
14 P-2 SCALE: NONE



NOTE: ROUTE PIPE INCONSPICUOUSLY AND UNOBTRUSIVELY. HANG PIPE AS REQUIRED. DO NOT INSULATE INDIRECT DRAIN PIPE WHEN INSTALLED EXPOSED IN FOOD SERVICE FACILITY. REFER TO LOCAL CODES FOR ADDITIONAL INFORMATION.

INDIRECT WASTE PIPE AT DRAIN RECEPTOR DETAIL

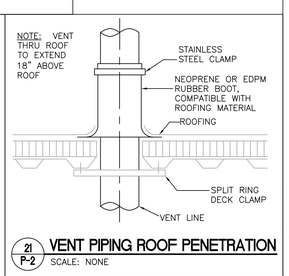
15 P-2 SCALE: NONE



IF FLOOR SLAB IS EXISTING, SAW CUT IT, EXCAVATE, BACKFILL, REPAIR VAPOR BARRIER, AND PATCH SLAB. PIPE SHALL HAVE LONG RADIUS TURNS WITHOUT KINKS. THERE SHALL BE NO CONTACT OF COPPER TUBE WITH OTHER PIPE, CONDUIT, OR REINFORCING STEEL.

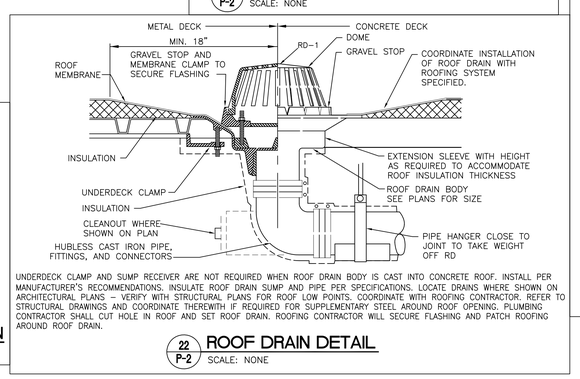
WATER PIPING UNDER THE SLAB

20 P-2 SCALE: NONE



VENT PIPING ROOF PENETRATION

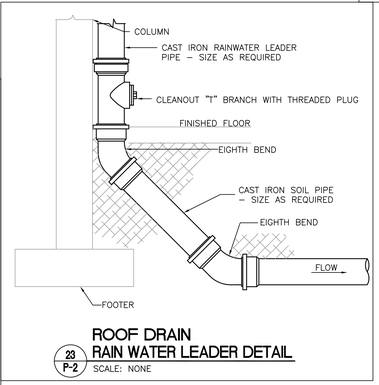
21 P-2 SCALE: NONE



UNDERDECK CLAMP AND SUMP RECEIVER ARE NOT REQUIRED WHEN ROOF DRAIN BODY IS CAST INTO CONCRETE ROOF. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. INSULATE ROOF DRAIN SUMP AND PIPE PER SPECIFICATIONS. LOCATE DRAINS WHERE SHOWN ON ARCHITECTURAL PLANS – VERIFY WITH STRUCTURAL PLANS FOR ROOF LOW POINTS. COORDINATE WITH ROOFING CONTRACTOR. REFER TO STRUCTURAL DRAWINGS AND COORDINATE THEREWITH IF REQUIRED FOR SUPPLEMENTARY STEEL AROUND ROOF OPENING. PLUMBING CONTRACTOR SHALL CUT HOLE IN ROOF AND SET ROOF DRAIN. ROOFING CONTRACTOR WILL SECURE FLASHING AND PATCH ROOFING AROUND ROOF DRAIN.

ROOF DRAIN DETAIL

22 P-2 SCALE: NONE



ROOF DRAIN RAIN WATER LEADER DETAIL

23 P-2 SCALE: NONE

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ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677
5-23-25

TITLE:
PLUMBING DETAILS

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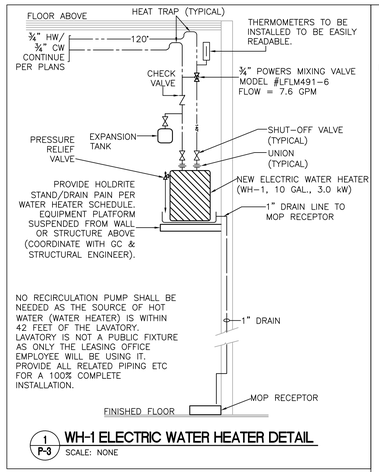
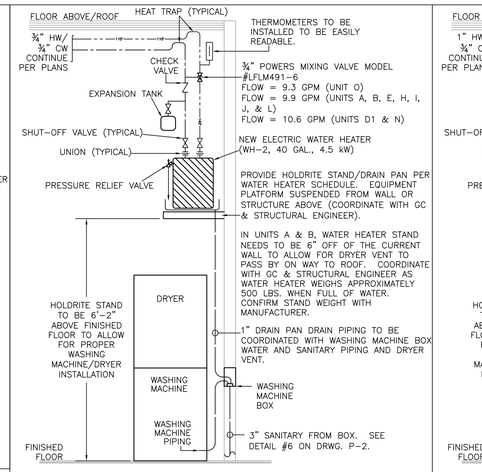
SA JOB #: 24037.01
DATE: 5-23-2025

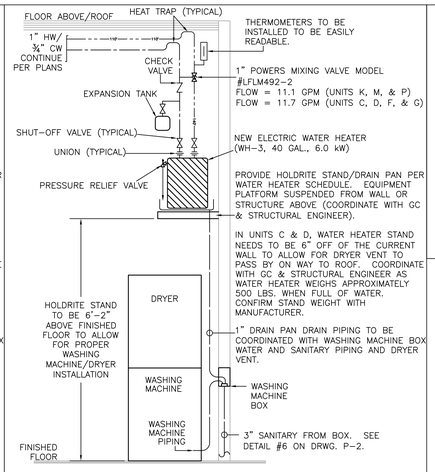
DRAWING #: P-2



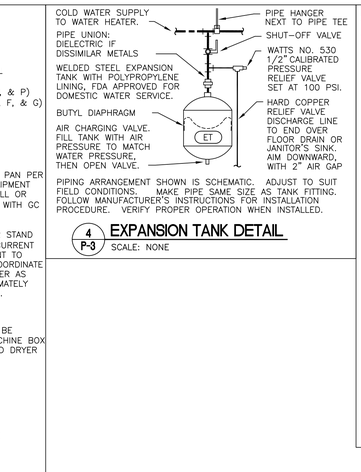
1 P-3 **WH-1 ELECTRIC WATER HEATER DETAIL**
SCALE: NONE



2 P-3 **WH-2 ELECTRIC WATER HEATER DETAIL**
SCALE: NONE

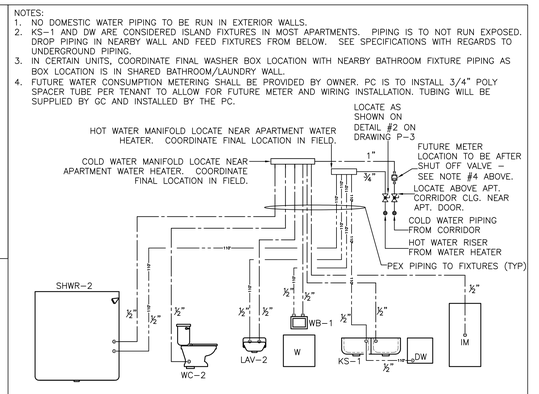


3 P-3 **WH-3 ELECTRIC WATER HEATER DETAIL**
SCALE: NONE



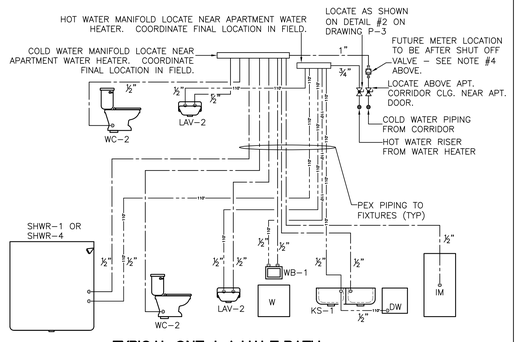
4 P-3 **EXPANSION TANK DETAIL**
SCALE: NONE

NOTES:
1. NO DOMESTIC WATER PIPING TO BE RUN IN EXTERIOR WALLS.
2. KS-1 AND DW ARE CONSIDERED ISLAND FIXTURES IN MOST APARTMENTS. PIPING IS TO NOT RUN EXPOSED. DROP PIPING IN NEARBY WALL AND FEED FIXTURES FROM BELOW. SEE SPECIFICATIONS WITH REGARDS TO UNDERGROUND PIPING.
3. IN CERTAIN UNITS, COORDINATE FINAL WASHER BOX LOCATION WITH NEARBY BATHROOM FIXTURE PIPING AS BOX LOCATION IS IN SHARED BATHROOM/LAUNDRY WALL.
4. FUTURE WATER CONSUMPTION METERING SHALL BE PROVIDED BY OWNER. PC IS TO INSTALL 3/4" POLY SPACER TUBE PER TENANT TO ALLOW FOR FUTURE METER AND WIRING INSTALLATION. TUBING WILL BE SUPPLIED BY GC AND INSTALLED BY THE PC.



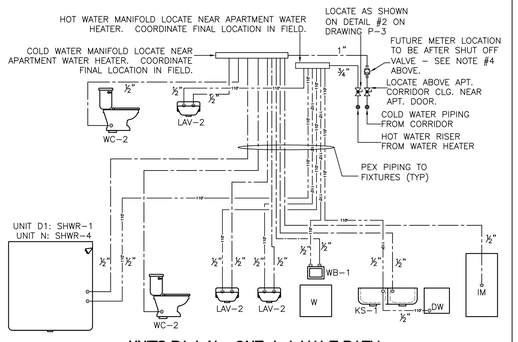
5 P-3 **TYPICAL ONE BATH APARTMENT DOMESTIC WATER DIAGRAM**
SCALE: NONE

NOTES:
1. NO DOMESTIC WATER PIPING TO BE RUN IN EXTERIOR WALLS.
2. KS-1 AND DW ARE CONSIDERED ISLAND FIXTURES IN MOST APARTMENTS. PIPING IS TO NOT RUN EXPOSED. DROP PIPING IN NEARBY WALL AND FEED FIXTURES FROM BELOW. SEE SPECIFICATIONS WITH REGARDS TO UNDERGROUND PIPING.
3. IN CERTAIN UNITS, COORDINATE FINAL WASHER BOX LOCATION WITH NEARBY BATHROOM FIXTURE PIPING AS BOX LOCATION IS IN SHARED BATHROOM/LAUNDRY WALL.
4. FUTURE WATER CONSUMPTION METERING SHALL BE PROVIDED BY OWNER. PC IS TO INSTALL 3/4" POLY SPACER TUBE PER TENANT TO ALLOW FOR FUTURE METER AND WIRING INSTALLATION. TUBING WILL BE SUPPLIED BY GC AND INSTALLED BY THE PC.



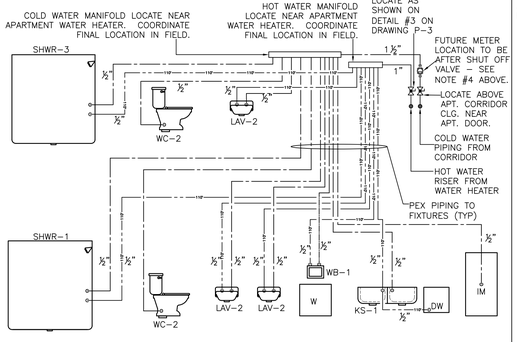
6A P-3 **TYPICAL ONE + A HALF BATH APARTMENT DOMESTIC WATER DIAGRAM**
SCALE: NONE

NOTES:
1. NO DOMESTIC WATER PIPING TO BE RUN IN EXTERIOR WALLS.
2. KS-1 AND DW ARE CONSIDERED ISLAND FIXTURES IN MOST APARTMENTS. PIPING IS TO NOT RUN EXPOSED. DROP PIPING IN NEARBY WALL AND FEED FIXTURES FROM BELOW. SEE SPECIFICATIONS WITH REGARDS TO UNDERGROUND PIPING.
3. IN CERTAIN UNITS, COORDINATE FINAL WASHER BOX LOCATION WITH NEARBY BATHROOM FIXTURE PIPING AS BOX LOCATION IS IN SHARED BATHROOM/LAUNDRY WALL.
4. FUTURE WATER CONSUMPTION METERING SHALL BE PROVIDED BY OWNER. PC IS TO INSTALL 3/4" POLY SPACER TUBE PER TENANT TO ALLOW FOR FUTURE METER AND WIRING INSTALLATION. TUBING WILL BE SUPPLIED BY GC AND INSTALLED BY THE PC.



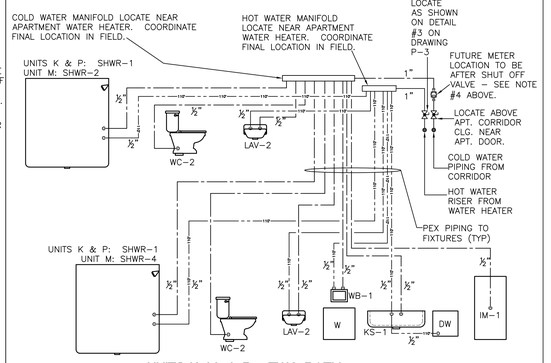
6B P-3 **UNITS D1 + N - ONE + A HALF BATH APARTMENT DOMESTIC WATER DIAGRAM**
SCALE: NONE

NOTES:
1. NO DOMESTIC WATER PIPING TO BE RUN IN EXTERIOR WALLS.
2. KS-1 AND DW ARE CONSIDERED ISLAND FIXTURES IN MOST APARTMENTS. PIPING IS TO NOT RUN EXPOSED. DROP PIPING IN NEARBY WALL AND FEED FIXTURES FROM BELOW. SEE SPECIFICATIONS WITH REGARDS TO UNDERGROUND PIPING.
3. IN CERTAIN UNITS, COORDINATE FINAL WASHER BOX LOCATION WITH NEARBY BATHROOM FIXTURE PIPING AS BOX LOCATION IS IN SHARED BATHROOM/LAUNDRY WALL.
4. FUTURE WATER CONSUMPTION METERING SHALL BE PROVIDED BY OWNER. PC IS TO INSTALL 3/4" POLY SPACER TUBE PER TENANT TO ALLOW FOR FUTURE METER AND WIRING INSTALLATION. TUBING WILL BE SUPPLIED BY GC AND INSTALLED BY THE PC.

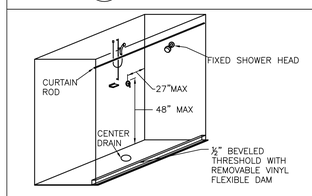


7A P-3 **TYPICAL TWO BATH APARTMENT DOMESTIC WATER DIAGRAM**
SCALE: NONE

NOTES:
1. NO DOMESTIC WATER PIPING TO BE RUN IN EXTERIOR WALLS.
2. KS-1 AND DW ARE CONSIDERED ISLAND FIXTURES IN MOST APARTMENTS. PIPING IS TO NOT RUN EXPOSED. DROP PIPING IN NEARBY WALL AND FEED FIXTURES FROM BELOW. SEE SPECIFICATIONS WITH REGARDS TO UNDERGROUND PIPING.
3. FUTURE WATER CONSUMPTION METERING SHALL BE PROVIDED BY OWNER. PC IS TO INSTALL 3/4" POLY SPACER TUBE PER TENANT TO ALLOW FOR FUTURE METER AND WIRING INSTALLATION. TUBING WILL BE SUPPLIED BY GC AND INSTALLED BY THE PC.
4. UNIT P IS THE ONLY 2 STORY UNIT IN THE BUILDING. BATHROOM ON THE SECOND FLOOR IS TO BE FED FROM THE FIRST FLOOR APARTMENT WATER MAINS.

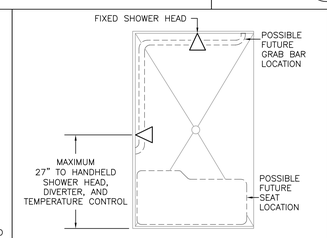


7B P-3 **UNITS K, M, + P - TWO BATH APARTMENT DOMESTIC WATER DIAGRAM**
SCALE: NONE



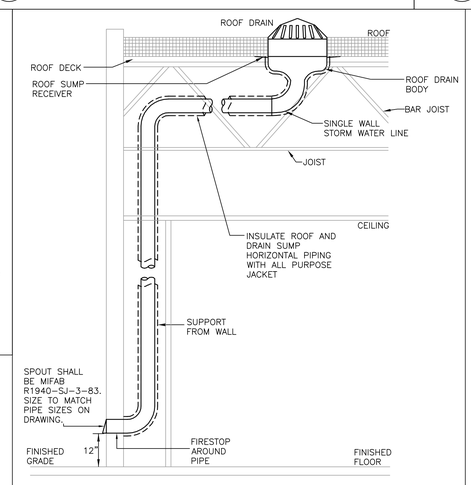
NOTE:
1. DETAIL ONLY APPLIES TO SHWR-4 AS SHWR-4 IS THE ADAPTABLE SHOWER IN UNITS J, M, & N. SHOWER HEADS AND CONTROLS SHALL BE LOCATED AS NOTED ABOVE. GC TO PROVIDE BLOCKING IN TILED WALLS FOR POSSIBLE FUTURE GRAB BARS AND SEAT.

8 P-3 **ADAPTABLE SHOWER DETAIL**
SCALE: NONE



NOTE:
SHOWER CONTROLS MUST BE WITHIN 27" OF THE CORNER NEXT TO THE FUTURE FOLDABLE SEAT LOCATION AND MUST BE MOUNTED 42" ABOVE THE SHOWER FLOOR PER ANSI A117.1.

9 P-3 **ADAPTABLE SHOWER CONTROLS DETAIL**
SCALE: NONE



10 P-3 **OVERFLOW ROOF DRAIN DETAIL**
SCALE: NONE

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INTERIORS A. Nagle DRAFTER

SEAL:
Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677
STATE OF NEW YORK · JAMES D. BOWERS · 084713 · LICENSED PROFESSIONAL ENGINEER
5-23-25

TITLE:
PLUMBING DETAILS CONTINUED & DOMESTIC WATER DIAGRAMS

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1321 MILLERSPORT HWY
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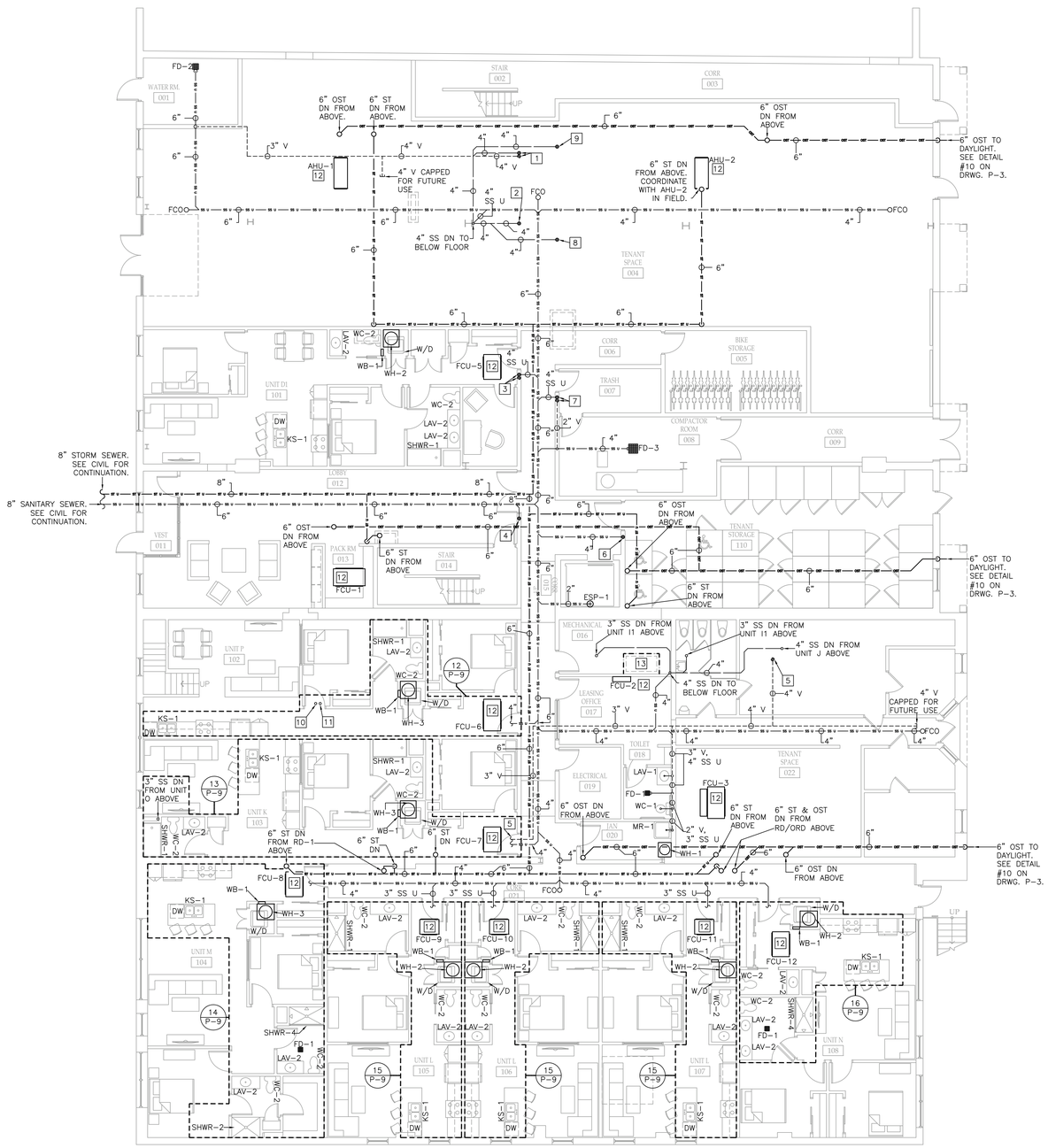
SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: P-3



1 P-4 SANITARY SEWER FIRST FLOOR PLAN

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

GENERAL NOTES:

1. PRIOR TO BIDDING – CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS. BUILDING IS BEING PROVIDED NEW DOMESTIC WATER, FIRE PROTECTION, NATURAL GAS, AND SANITARY SEWER SERVICES. CONTRACTOR TO WORK WITH ALL TRADES PRIOR TO INSTALLATION OF NEW WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES.
2. PLUMBING CONTRACTOR RESPONSIBLE FOR PROPER DISPOSAL OF ALL CONCRETE, PIPING MATERIALS, ETC. OFF-SITE COMPLIANCE WITH ALL LOCAL AND STATE CODES.
3. PLUMBING CONTRACTOR RESPONSIBLE FOR PATCHING/REPAIR OF CONCRETE FLOOR AND WALL SURFACES TO MATCH ARCHITECTURAL FINISHES.
4. ALL NEW UNDERSLAB SANITARY SEWER PIPING WILL BE SLOPED DOWN AT ⅛" PER FOOT TO EXISTING SANITARY SEWER.
5. ALL NEW PIPING THAT IS TO BE RUN AND ACCESS DOORS SHALL BE COORDINATED WITH ALL OTHER EXISTING WORK/CONDITIONS AND NEW WORK/CONDITIONS. ALL PIPING IS TO BE CONCEALED ABOVE CEILINGS OR BELOW FLOORS.
6. NOT ALL PIPE SIZES SHOWN. SEE FIXTURE SCHEDULE FOR MAIN CONNECTIONS SIZES.
7. NOT ALL SHUTOFF VALVES ARE SHOWN. SHUTOFF VALVES FOR ALL FIXTURES DOMESTIC WATER CONNECTIONS SHALL BE LOCATED WHERE THEY ARE ACCESSIBLE. PROVIDE ACCESS DOOR AS REQUIRED PER FIXTURE IF VALVES WILL NOT BE ACCESSIBLE. SEE FIXTURE SCHEDULE FOR PIPE SIZES.
8. FINAL RISER LOCATIONS SHALL BE COORDINATED BETWEEN FLOORS AS NECESSARY TO ACCOMODATE VARYING WALL LOCATIONS & STRUCTURE BETWEEN FLOORS. COORDINATE WITH MECHANICAL, ELECTRICAL, AND FIRE PROTECTION CONTRACTORS BEFORE BEGINNING WORK.
9. ALL VENTED FIXTURES ARE TO HAVE THE VENT PIPING CONNECT TO THE SANITARY PIPING ABOVE THE FLOOD RIM. VENT PIPING COMING FROM BELOW THE FLOOR (I.E. TOILET VENTS, FLOOR DRAINS, AND FLOOR SINKS) SHALL COME OFF THE TOP OF THE SANITARY PIPE. FIXTURES THAT ARE VENTED BEFORE SANITARY HEADS BELOW THE FLOOR (I.E. LAVATORIES AND HAND SINKS) SHALL HAVE THE VENT GO UP AND THE SANITARY GO DOWN AT LOCATION INDICATED. AIR ADMITTANCE VALVES MAY BE SUBSTITUTED FOR VENTING IN NOTED AREAS.
10. BREAKS ARE SHOWN IN THE PIPING (BOTH UNDERFLOOR AND ABOVE CEILING) FOR CLARITY ONLY. ALL SYSTEMS SHALL BE INSTALLED IN THEIR ENTIRETY FOR A FULL WORKING SYSTEM.

SANITARY SEWER DRAWING NOTES [#]:

(THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY SANITARY SEWER DRAWING.)

1. AT 1ST & 2ND FLRS. – 4" SS & V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. WATER ROOM 001 & TENANT SPACE 004 VENT & 2ND & 3RD FLR. UNIT B'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
2. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT C'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
3. AT 1ST FLR. – 4" SS & 3" V RISERS. AT 2ND FLR. – 4" SS & V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. UNIT D1 & 2ND & 3RD FLR. UNIT D'S. UNIT D1 IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (3) LAVS, KS, DW, & WB. UNIT D'S ARE TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
4. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT A'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
5. AT 1ST & 2ND FLRS. – 4" V RISER. RISER SERVES 1ST FLR. TOILET 018, JAN 020, TENANT SPACE 022, & UNIT K VENTS, & 2ND FLR. UNIT I, UNIT I1'S, & UNIT J VENTS. UNIT K IS TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (2) LAVS, KS, DW, & WB. UNITS I & I1 ARE TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. UNIT J IS TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FLOOR PLANS FOR SANITARY SEWER PIPING, FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
6. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT E'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
7. AT 1ST FLR. – 4" SS & 2" V RISERS. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. COMPACTOR ROOM 008 VENT, & 2ND & 3RD FLR. UNIT F'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
8. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT G'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
9. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT H'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
10. 4" SS DN FROM CHASE ABOVE. SANITARY PIPING SERVES UNIT I (RM. 212) AND UNIT P'S SECOND FLOOR. COORDINATE PIPING FROM FIXTURES WITH HVAC DUCTS AND PIPING IN CHASE. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-9 FOR RISER DIAGRAM, & GENERAL NOTES.
11. 3" VENT UP TO CHASE ABOVE AND PIPING ABOVE. VENT PIPING SERVES UNIT P AND UNIT O. COORDINATE PIPING FROM FIXTURES WITH HVAC DUCTS AND PIPING IN CHASE. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-9 FOR RISER DIAGRAM, & GENERAL NOTES.
12. CONDENSATE FROM FCU'S & AHU'S TO BE CONNECTED TO SANITARY RISERS, FLOOR DRAINS, LAVATORY DRAINS, OR MOP RECEPTORS VIA INDIRECT CONNECTION. SEE DETAIL #15 ON DRWG. P-2. COORDINATE INSTALLATION WITH HVAC CONTRACTOR.
13. AREA OF LARGE HVAC DUCT DROP. COORDINATE SANITARY PIPING IN THE CEILING WITH DUCTS TO SANITARY DROP NOTED.

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ISSUE:
5-23-2025: BID/PERMIT SET

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PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BOWERS · 084713 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

PLUMBING SANITARY SEWER FIRST FLOOR PLAN

SILVESTRI ARCHITECTS · PC
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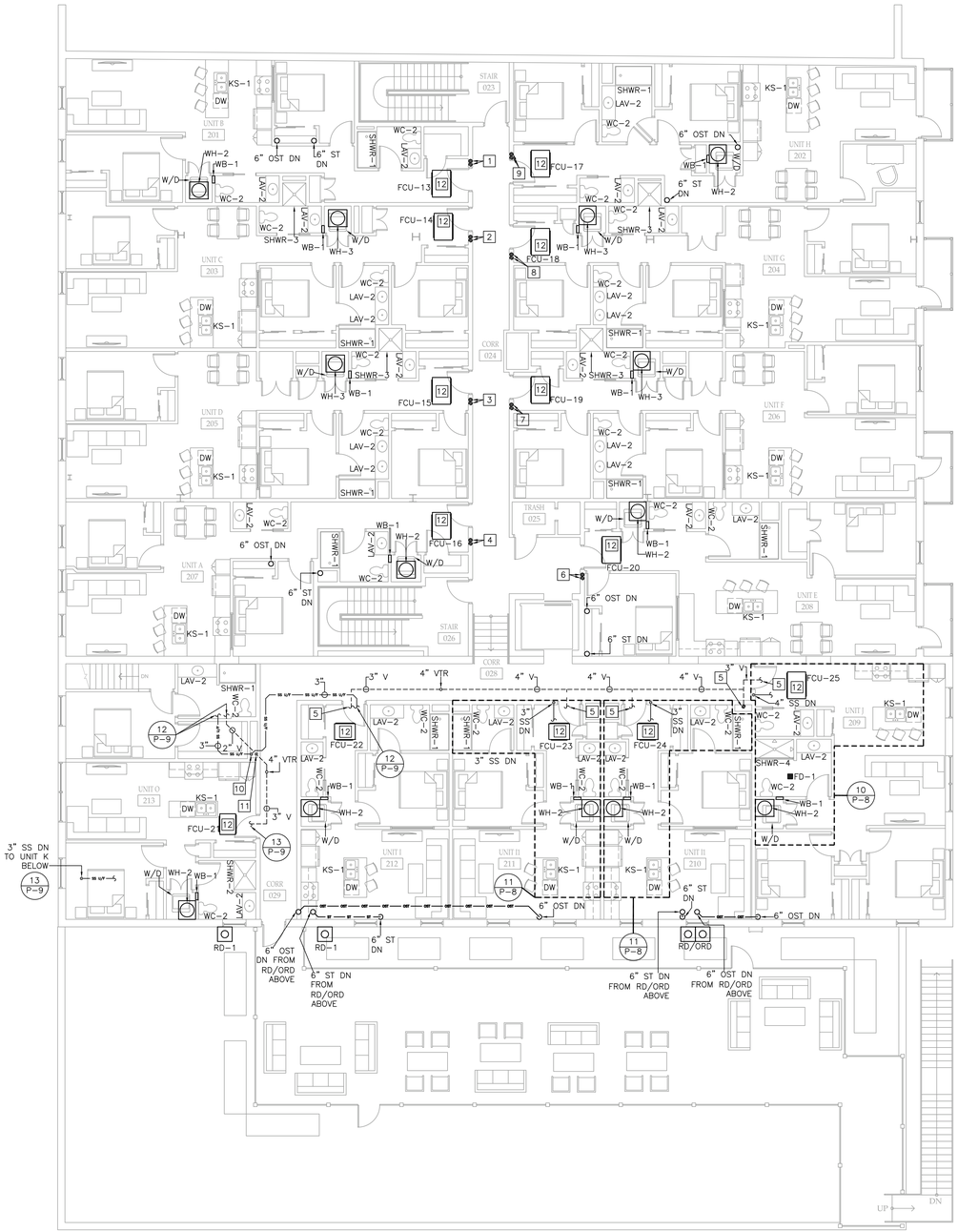
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: P-4



1 P-5 SANITARY SEWER SECOND FLOOR PLAN

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

GENERAL NOTES:

1. PRIOR TO BIDDING – CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS. BUILDING IS BEING PROVIDED NEW DOMESTIC WATER, FIRE PROTECTION, NATURAL GAS, AND SANITARY SEWER SERVICES. CONTRACTOR TO WORK WITH ALL TRADES PRIOR TO INSTALLATION OF NEW WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES.
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6. NOT ALL PIPE SIZES SHOWN. SEE FIXTURE SCHEDULE FOR MAIN CONNECTIONS SIZES.
7. NOT ALL SHUTOFF VALVES ARE SHOWN. SHUTOFF VALVES FOR ALL FIXTURES DOMESTIC WATER CONNECTIONS SHALL BE LOCATED WHERE THEY ARE ACCESSIBLE. PROVIDE ACCESS DOOR AS REQUIRED PER FIXTURE IF VALVES WILL NOT BE ACCESSIBLE. SEE FIXTURE SCHEDULE FOR PIPE SIZES.
8. FINAL RISER LOCATIONS SHALL BE COORDINATED BETWEEN FLOORS AS NECESSARY TO ACCOMODATE VARYING WALL LOCATIONS & STRUCTURE BETWEEN FLOORS. COORDINATE WITH MECHANICAL, ELECTRICAL, AND FIRE PROTECTION CONTRACTORS BEFORE BEGINNING WORK.
9. ALL VENTED FIXTURES ARE TO HAVE THE VENT PIPING CONNECT TO THE SANITARY PIPING ABOVE THE FLOOD RIM. VENT PIPING COMING FROM BELOW THE FLOOR (I.E. TOILET VENTS, FLOOR DRAINS, AND FLOOR SINKS) SHALL COME OFF THE TOP OF THE SANITARY PIPE. FIXTURES THAT ARE VENTED BEFORE SANITARY HEADS BELOW THE FLOOR (I.E. LAVATORIES AND HAND SINKS) SHALL HAVE THE VENT GO UP AND THE SANITARY GO DOWN AT LOCATION INDICATED. AIR ADMITTANCE VALVES MAY BE SUBSTITUTED FOR VENTING IN NOTED AREAS.
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SANITARY SEWER DRAWING NOTES [#]:

(THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY SANITARY SEWER DRAWING.)

1. AT 1ST & 2ND FLRS. – 4" SS & V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. WATER ROOM 001 & TENANT SPACE 004 VENT & 2ND & 3RD FLR. UNIT B'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
2. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT C'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
3. AT 1ST FLR. – 4" SS & 3" V RISERS. AT 2ND FLR. – 4" SS & V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. UNIT D1 & 2ND & 3RD FLR. UNIT D'S. UNIT D1 IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (3) LAVS, KS, DW, & WB. UNIT D'S ARE TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
4. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT A'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
5. AT 1ST & 2ND FLRS. – 4" V RISER. RISER SERVES 1ST FLR. TOILET 018, JAN 020, TENANT SPACE 022, & UNIT K VENTS, & 2ND FLR. UNIT I, UNIT I1'S, & UNIT J VENTS. UNIT K IS TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (2) LAVS, KS, DW, & WB. UNITS I & I1 ARE TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. UNIT J IS TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FLOOR PLANS FOR SANITARY SEWER PIPING, FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
6. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT E'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
7. AT 1ST FLR. – 4" SS & 2" V RISERS. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. COMPACTOR ROOM 008 VENT, & 2ND & 3RD FLR. UNIT F'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
8. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT G'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
9. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT H'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
10. 4" SS DN FROM CHASE ABOVE. SANITARY PIPING SERVES UNIT I (RM. 212) AND UNIT P'S SECOND FLOOR. COORDINATE PIPING FROM FIXTURES WITH HVAC DUCTS AND PIPING IN CHASE. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-9 FOR RISER DIAGRAM, & GENERAL NOTES.
11. 3" VENT UP TO CHASE ABOVE AND PIPING ABOVE. VENT PIPING SERVES UNIT P AND UNIT O. COORDINATE PIPING FROM FIXTURES WITH HVAC DUCTS AND PIPING IN CHASE. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-9 FOR RISER DIAGRAM, & GENERAL NOTES.
12. CONDENSATE FROM FCU'S & AHU'S TO BE CONNECTED TO SANITARY RISERS, FLOOR DRAINS, LAVATORY DRAINS, OR MOP RECEPTORS VIA INDIRECT CONNECTION. SEE DETAIL #15 ON DRWG. P-2. COORDINATE INSTALLATION WITH HVAC CONTRACTOR.
13. AREA OF LARGE HVAC DUCT DROP. COORDINATE SANITARY PIPING IN THE CEILING WITH DUCTS TO SANITARY DROP NOTED.

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Registration Expiration Date: 06-30-27
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5-23-25

TITLE:
PLUMBING SANITARY SEWER SECOND FLOOR PLAN

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SA JOB #: 24037.01
DATE: 5-23-2025
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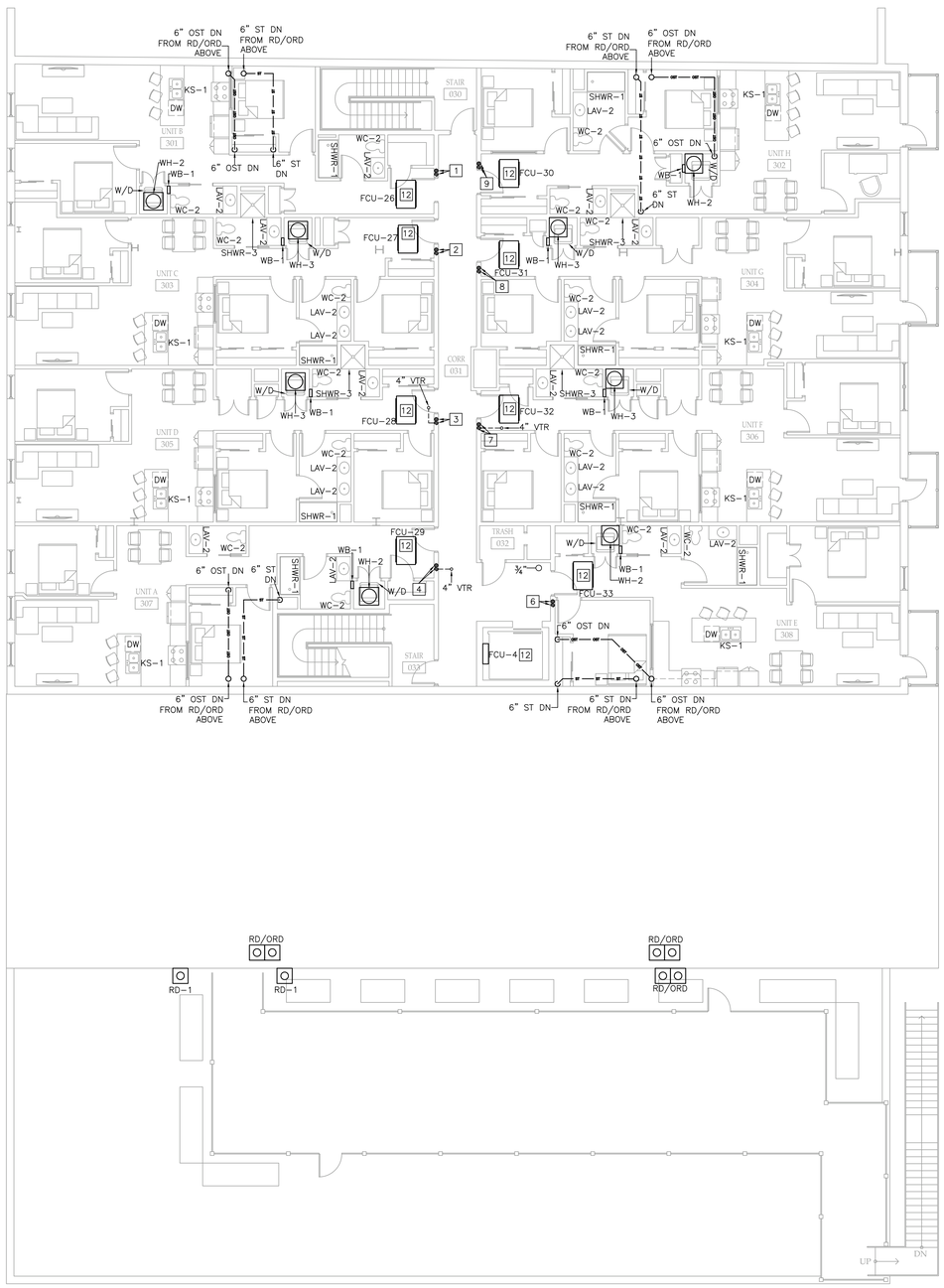

1 P-6 SANITARY SEWER THIRD FLOOR PLAN

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

GENERAL NOTES:

1. PRIOR TO BIDDING – CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS. BUILDING IS BEING PROVIDED NEW DOMESTIC WATER, FIRE PROTECTION, NATURAL GAS, AND SANITARY SEWER SERVICES. CONTRACTOR TO WORK WITH ALL TRADES PRIOR TO INSTALLATION OF NEW WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES.
2. PLUMBING CONTRACTOR RESPONSIBLE FOR PROPER DISPOSAL OF ALL CONCRETE, PIPING MATERIALS, ETC. OFF-SITE COMPLIANCE WITH ALL LOCAL AND STATE CODES.
3. PLUMBING CONTRACTOR RESPONSIBLE FOR PATCHING/REPAIR OF CONCRETE FLOOR AND WALL SURFACES TO MATCH ARCHITECTURAL FINISHES.
4. ALL NEW UNDERSLAB SANITARY SEWER PIPING WILL BE SLOPED DOWN AT ⅛" PER FOOT TO EXISTING SANITARY SEWER.
5. ALL NEW PIPING THAT IS TO BE RUN AND ACCESS DOORS SHALL BE COORDINATED WITH ALL OTHER EXISTING WORK/CONDITIONS AND NEW WORK/CONDITIONS. ALL PIPING IS TO BE CONCEALED ABOVE CEILINGS OR BELOW FLOORS.
6. NOT ALL PIPE SIZES SHOWN. SEE FIXTURE SCHEDULE FOR MAIN CONNECTIONS SIZES.
7. NOT ALL SHUTOFF VALVES ARE SHOWN. SHUTOFF VALVES FOR ALL FIXTURES DOMESTIC WATER CONNECTIONS SHALL BE LOCATED WHERE THEY ARE ACCESSIBLE. PROVIDE ACCESS DOOR AS REQUIRED PER FIXTURE IF VALVES WILL NOT BE ACCESSIBLE. SEE FIXTURE SCHEDULE FOR PIPE SIZES.
8. FINAL RISER LOCATIONS SHALL BE COORDINATED BETWEEN FLOORS AS NECESSARY TO ACCOMMODATE VARYING WALL LOCATIONS & STRUCTURE BETWEEN FLOORS. COORDINATE WITH MECHANICAL, ELECTRICAL, AND FIRE PROTECTION CONTRACTORS BEFORE BEGINNING WORK.
9. ALL VENTED FIXTURES ARE TO HAVE THE VENT PIPING CONNECT TO THE SANITARY PIPING ABOVE THE FLOOD RIM. VENT PIPING COMING FROM BELOW THE FLOOR (I.E. TOILET VENTS, FLOOR DRAINS, AND FLOOR SINKS) SHALL COME OFF THE TOP OF THE SANITARY PIPE. FIXTURES THAT ARE VENTED BEFORE SANITARY HEADS BELOW THE FLOOR (I.E. LAVATORIES AND HAND SINKS) SHALL HAVE THE VENT GO UP AND THE SANITARY GO DOWN AT LOCATION INDICATED. AIR ADMITTANCE VALVES MAY BE SUBSTITUTED FOR VENTING IN NOTED AREAS.
10. BREAKS ARE SHOWN IN THE PIPING (BOTH UNDERFLOOR AND ABOVE CEILING) FOR CLARITY ONLY. ALL SYSTEMS SHALL BE INSTALLED IN THEIR ENTIRETY FOR A FULL WORKING SYSTEM.

SANITARY SEWER DRAWING NOTES [#]:

(THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY SANITARY SEWER DRAWING.)

1. AT 1ST & 2ND FLRS. – 4" SS & V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. WATER ROOM 001 & TENANT SPACE 004 VENT & 2ND & 3RD FLR. UNIT B'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
2. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT C'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
3. AT 1ST FLR. – 4" SS & 3" V RISERS. AT 2ND FLR. – 4" SS & V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. UNIT D1 & 2ND & 3RD FLR. UNIT D'S. UNIT D1 IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (3) LAVS, KS, DW, & WB. UNIT D'S ARE TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
4. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT A'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
5. AT 1ST & 2ND FLRS. – 4" V RISER. RISER SERVES 1ST FLR. TOILET 018, JAN 020, TENANT SPACE 022, & UNIT K VENTS, & 2ND FLR. UNIT I, UNIT I1'S, & UNIT J VENTS. UNIT K IS TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (2) LAVS, KS, DW, & WB. UNITS I & I1 ARE TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. UNIT J IS TO BE SERVED BY 3" V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FLOOR PLANS FOR SANITARY SEWER PIPING, FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-7 FOR RISER DIAGRAM, & GENERAL NOTES.
6. AT 1ST FLR. – 4" SS RISER. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 2ND & 3RD FLR. UNIT E'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
7. AT 1ST FLR. – 4" SS & 2" V RISERS. AT 2ND FLR. – 4" SS & 3" V RISERS. AT 3RD FLR. – 3" SS & 4" V RISERS. RISERS SERVE 1ST FLR. COMPACTOR ROOM 008 VENT, & 2ND & 3RD FLR. UNIT F'S. EACH UNIT IS TO BE SERVED BY 3" SS & V BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-8 FOR RISER DIAGRAM, & GENERAL NOTES.
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10. 4" SS DN FROM CHASE ABOVE. SANITARY PIPING SERVES UNIT I (RM. 212) AND UNIT P'S SECOND FLOOR. COORDINATE PIPING FROM FIXTURES WITH HVAC DUCTS AND PIPING IN CHASE. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-9 FOR RISER DIAGRAM, & GENERAL NOTES.
11. 3" VENT UP TO CHASE ABOVE AND PIPING ABOVE. VENT PIPING SERVES UNIT P AND UNIT O. COORDINATE PIPING FROM FIXTURES WITH HVAC DUCTS AND PIPING IN CHASE. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DRWG. P-9 FOR RISER DIAGRAM, & GENERAL NOTES.
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PROJ. ARCH. S. Hunt JOB CAPT.
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SEAL:

Registration Expiration Date: 06-30-27

Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. ROWLEY · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

PLUMBING SANITARY SEWER THIRD FLOOR PLAN

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DATE: 5-23-2025

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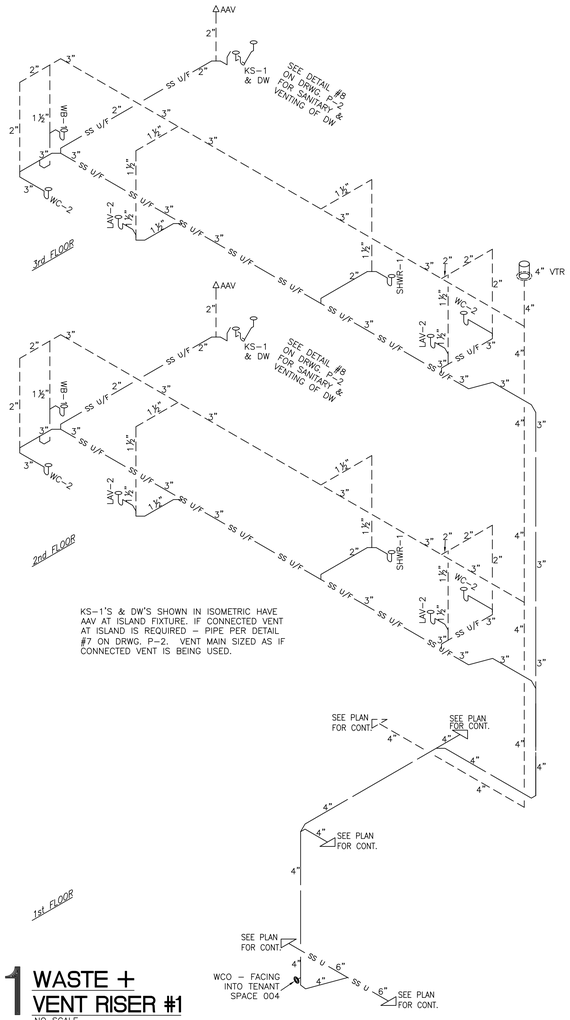
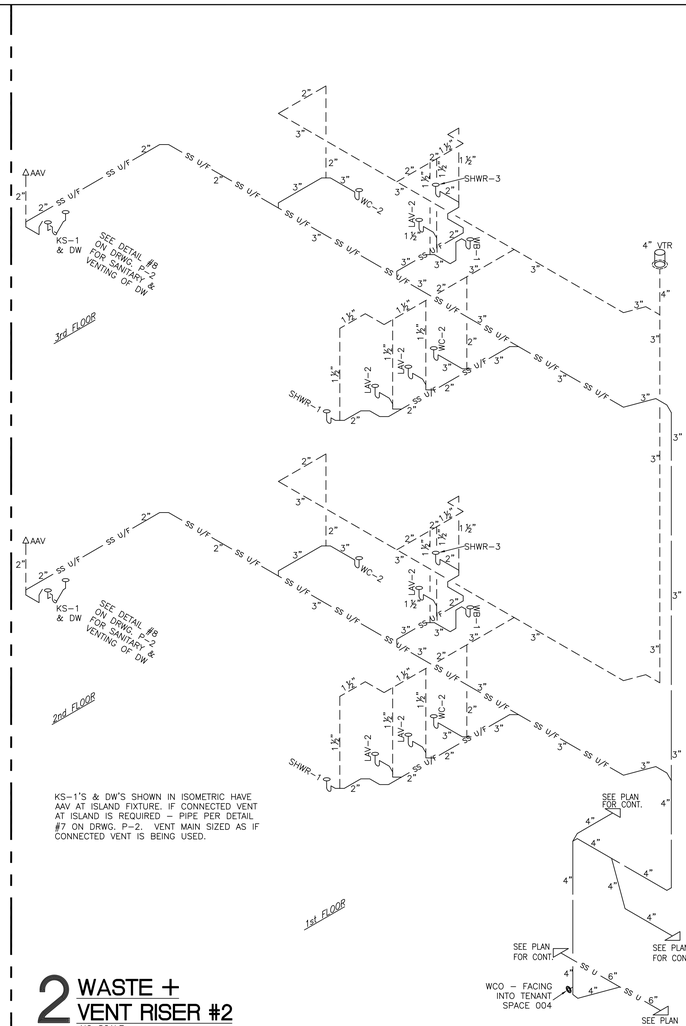


KS-1'S & DW'S SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED - PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.

1 WASTE + VENT RISER #1
NO SCALE



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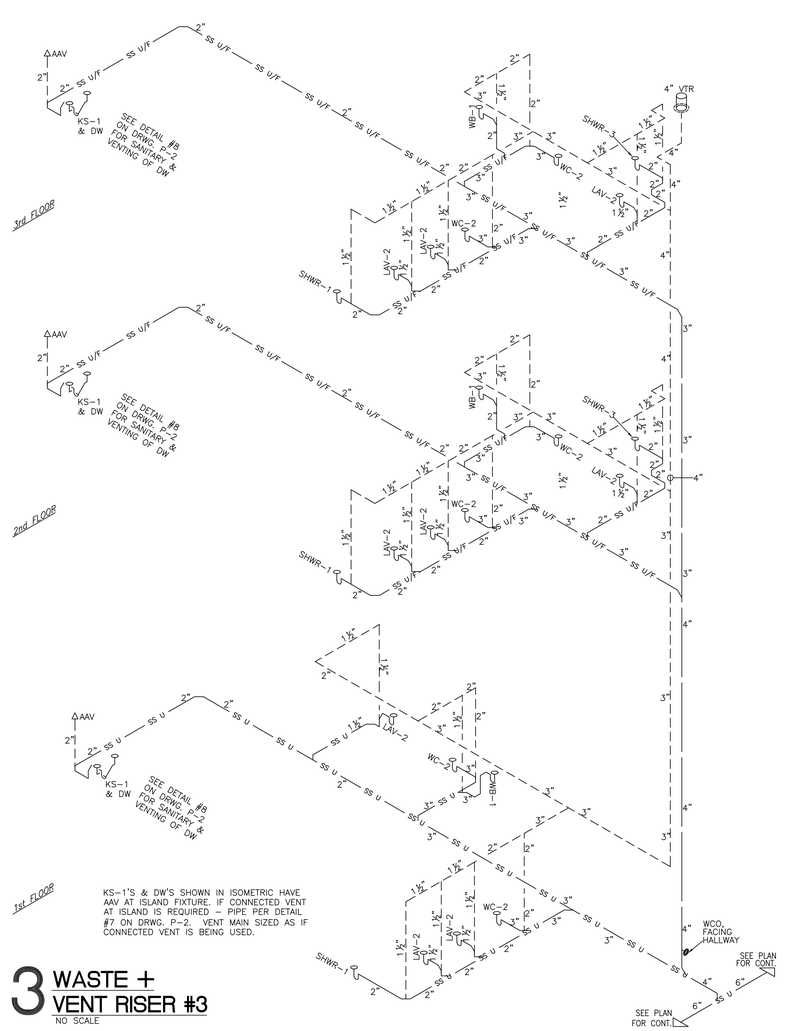
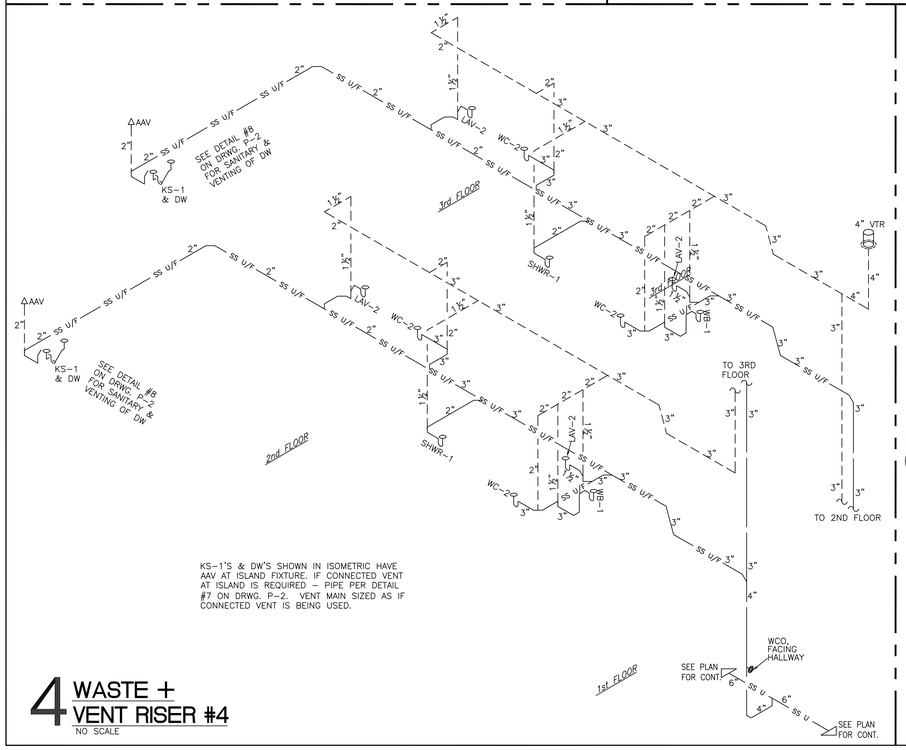
2 WASTE + VENT RISER #2
NO SCALE



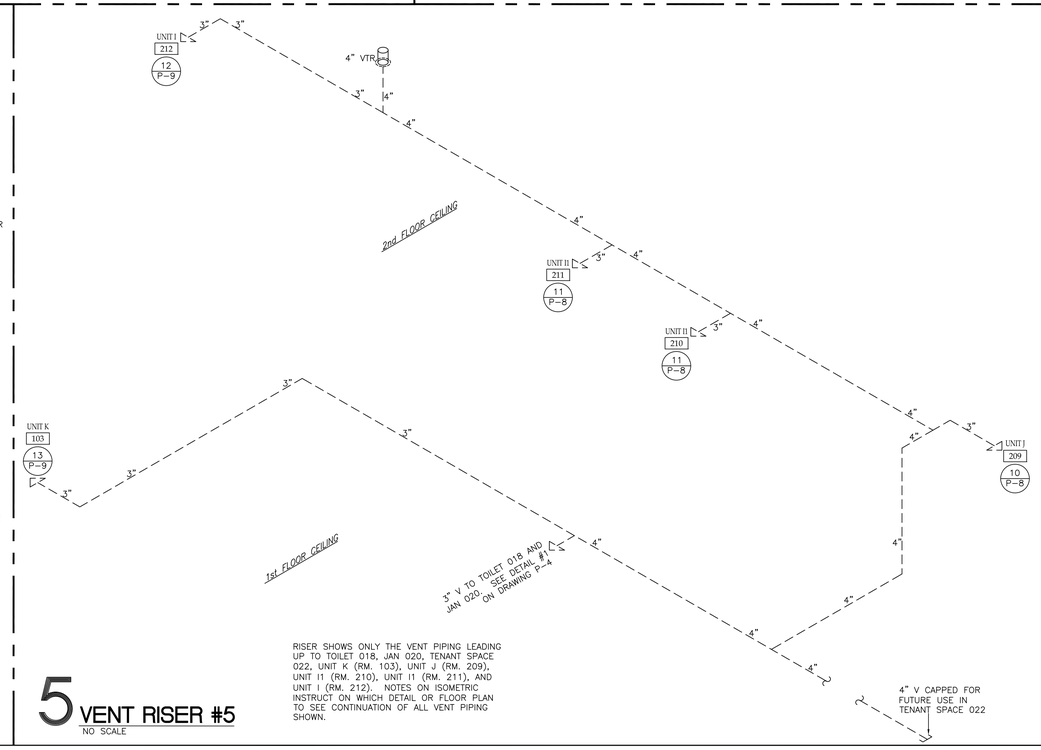
KS-1'S & DW'S SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED - PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.

3 WASTE + VENT RISER #3
NO SCALE



KS-1'S & DW'S SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED - PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.

4 WASTE + VENT RISER #4
NO SCALE



RISER SHOWS ONLY THE VENT PIPING LEADING UP TO TOILET 018, JAN 020, TENANT SPACE 022, UNIT K (RM. 103), UNIT J (RM. 209), UNIT I1 (RM. 210), UNIT I1 (RM. 211), AND UNIT I (RM. 212). NOTES ON ISOMETRIC INSTRUCT ON WHICH DETAIL OR FLOOR PLAN TO SEE CONTINUATION OF ALL VENT PIPING SHOWN.

5 VENT RISER #5
NO SCALE

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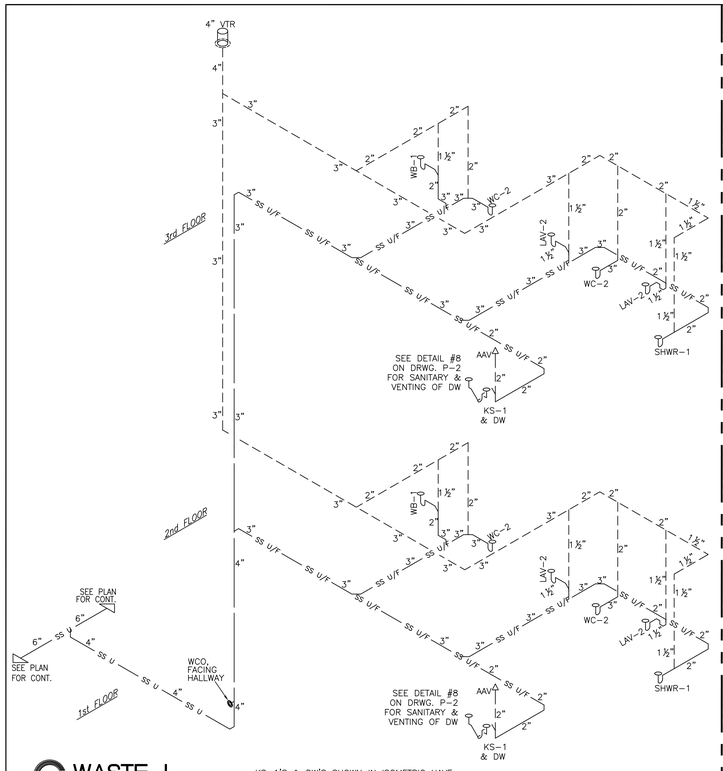
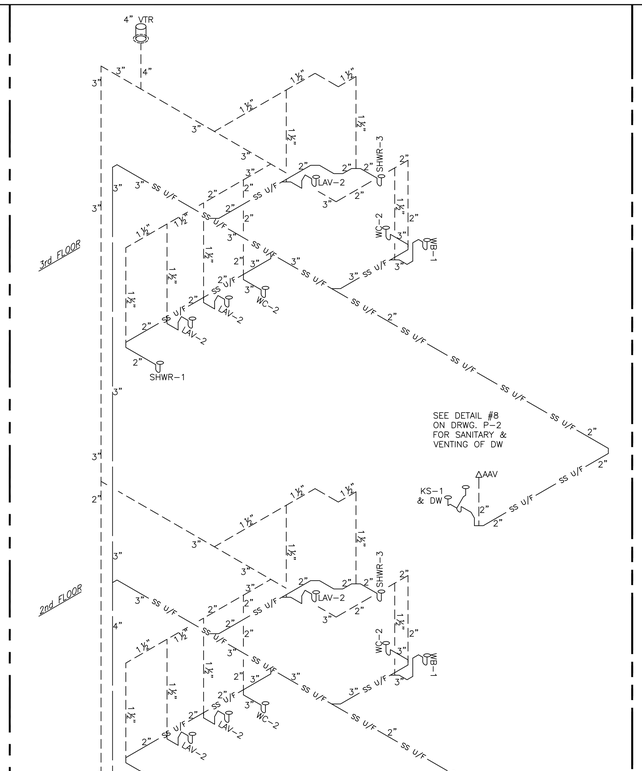


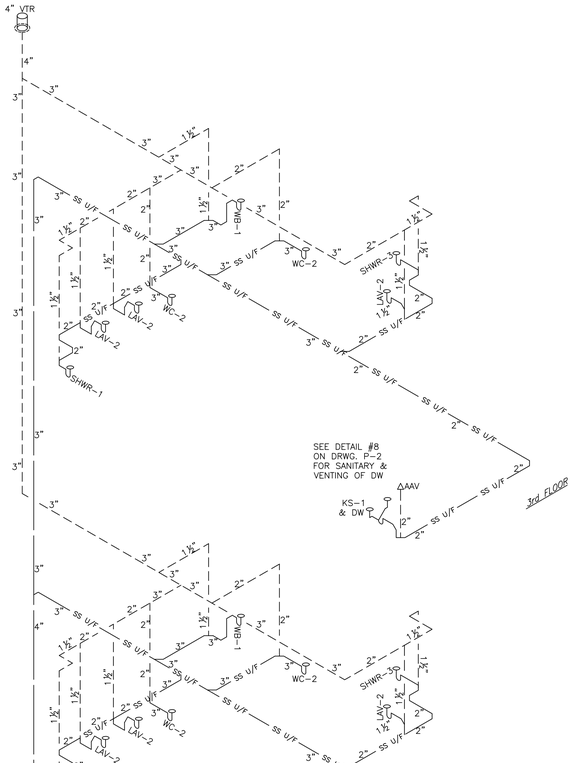
6 WASTE + VENT RISER #6
NO SCALE

KS-1'S & DW'S SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED – PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.



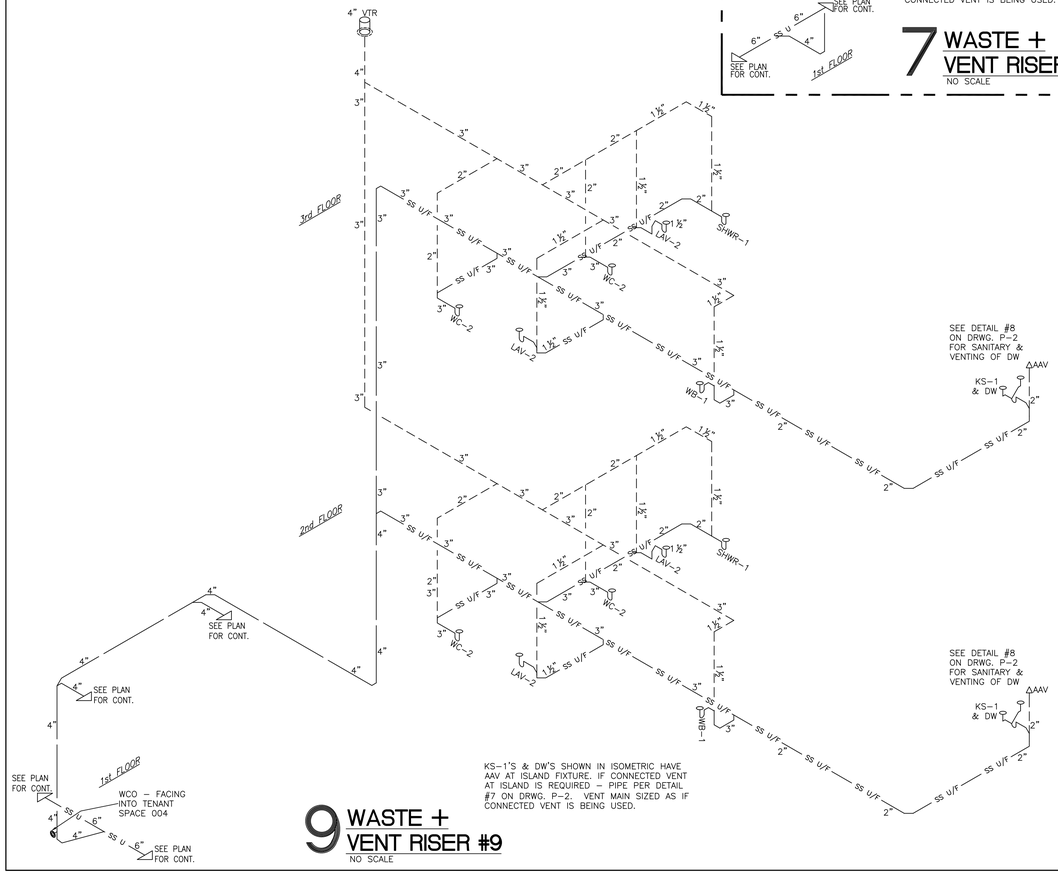
7 WASTE + VENT RISER #7
NO SCALE

KS-1'S & DW'S SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED – PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.



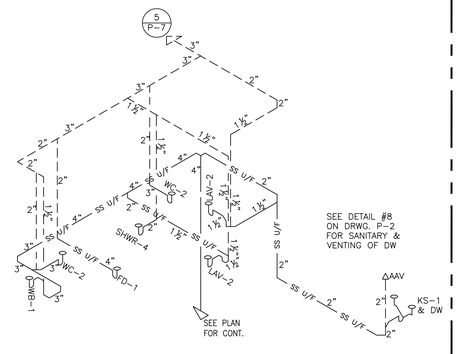
8 WASTE + VENT RISER #8
NO SCALE

KS-1'S & DW'S SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED – PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.



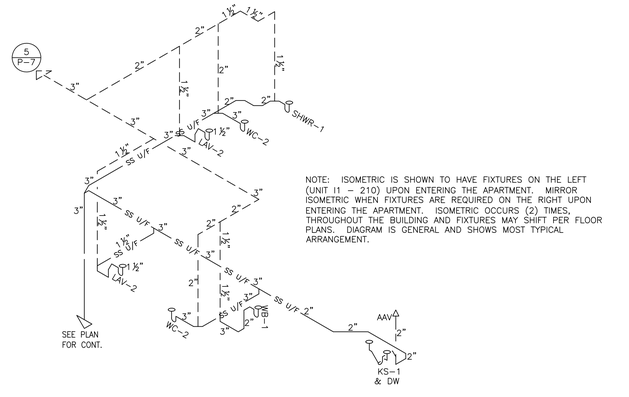
9 WASTE + VENT RISER #9
NO SCALE

KS-1'S & DW'S SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED – PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.



10 SECOND FLOOR UNIT J (209)
NO SCALE

KS-1 & DW SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED – PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.



NOTE: ISOMETRIC IS SHOWN TO HAVE FIXTURES ON THE LEFT (UNIT 11 – 210) UPON ENTERING THE APARTMENT. MIRROR ISOMETRIC WHEN FIXTURES ARE REQUIRED ON THE RIGHT UPON ENTERING THE APARTMENT. ISOMETRIC OCCURS (2) TIMES, THROUGHOUT THE BUILDING AND FIXTURES MAY SHIFT PER FLOOR PLANS. DIAGRAM IS GENERAL AND SHOWS MOST TYPICAL ARRANGEMENT.

KS-1 & DW SHOWN IN ISOMETRIC HAVE AAV AT ISLAND FIXTURE. IF CONNECTED VENT AT ISLAND IS REQUIRED – PIPE PER DETAIL #7 ON DRWG. P-2. VENT MAIN SIZED AS IF CONNECTED VENT IS BEING USED.

SEE DETAIL #8 ON DRWG. P-2 FOR SANITARY & VENTING OF DW

11 SECOND FLOOR UNITS 11 (210 + 211)
NO SCALE

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273 HICKORY STREET
BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BOWMAN · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:
PLUMBING SANITARY SEWER ISOMETRICS CONTINUED

SILVESTRI
ARCHITECTS · PC
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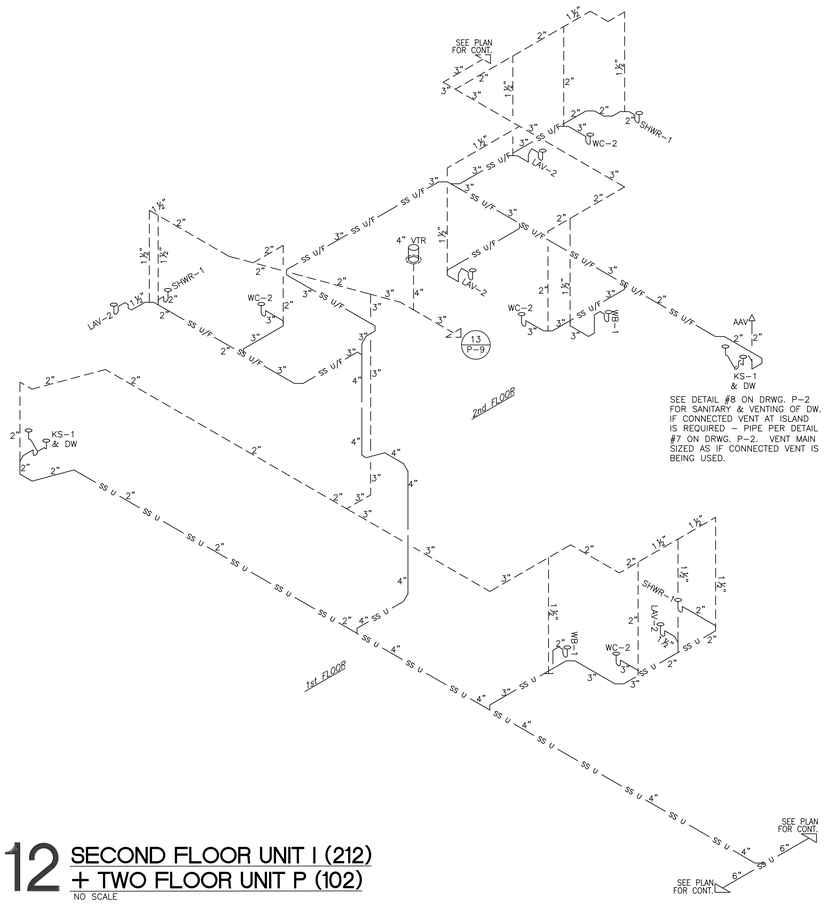
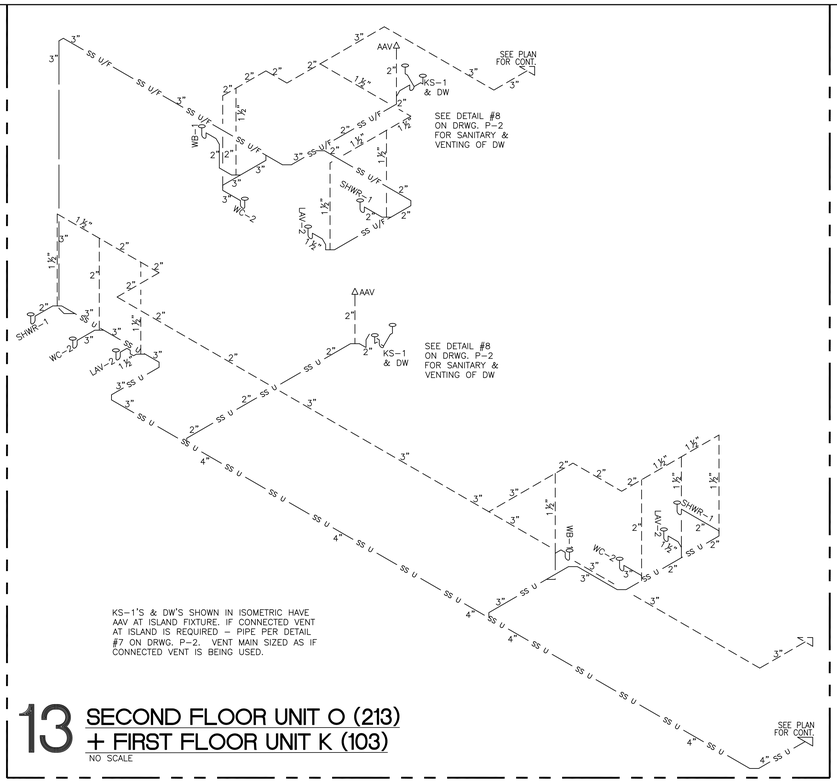
AMHERST, NY 14221 FAX. 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

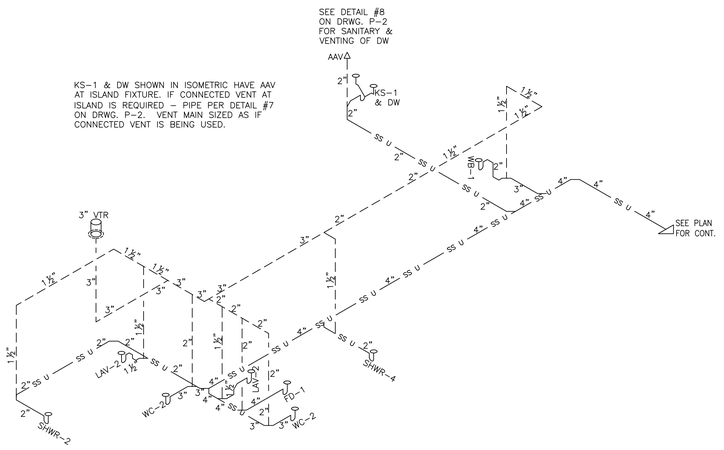
DRAWING #: P-8



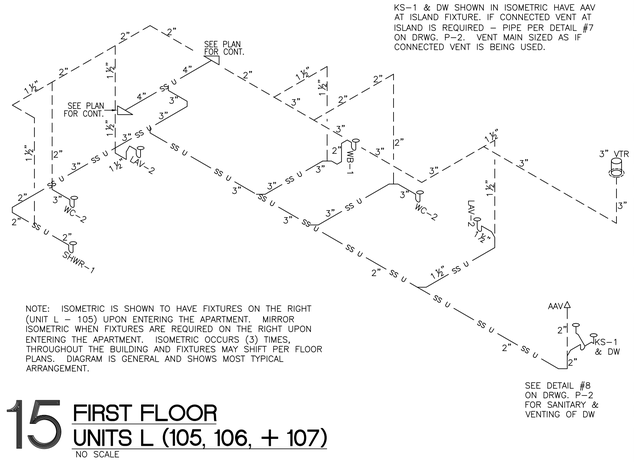
12 SECOND FLOOR UNIT I (212) + TWO FLOOR UNIT P (102)
NO SCALE



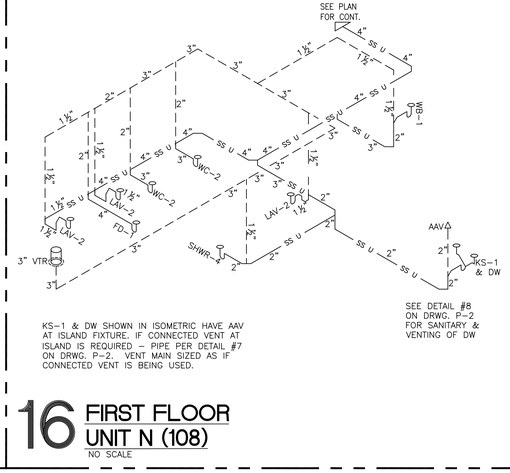
13 SECOND FLOOR UNIT O (213) + FIRST FLOOR UNIT K (103)
NO SCALE



14 FIRST FLOOR UNIT M (104)
NO SCALE



15 FIRST FLOOR UNITS L (105, 106, + 107)
NO SCALE



16 FIRST FLOOR UNIT N (108)
NO SCALE

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INTERIORS A. Nagle DRAFTER

SEAL:
Registration Expiration Date: 06-30-27
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5-23-25

TITLE:
PLUMBING SANITARY SEWER ISOMETRICS CONTINUED

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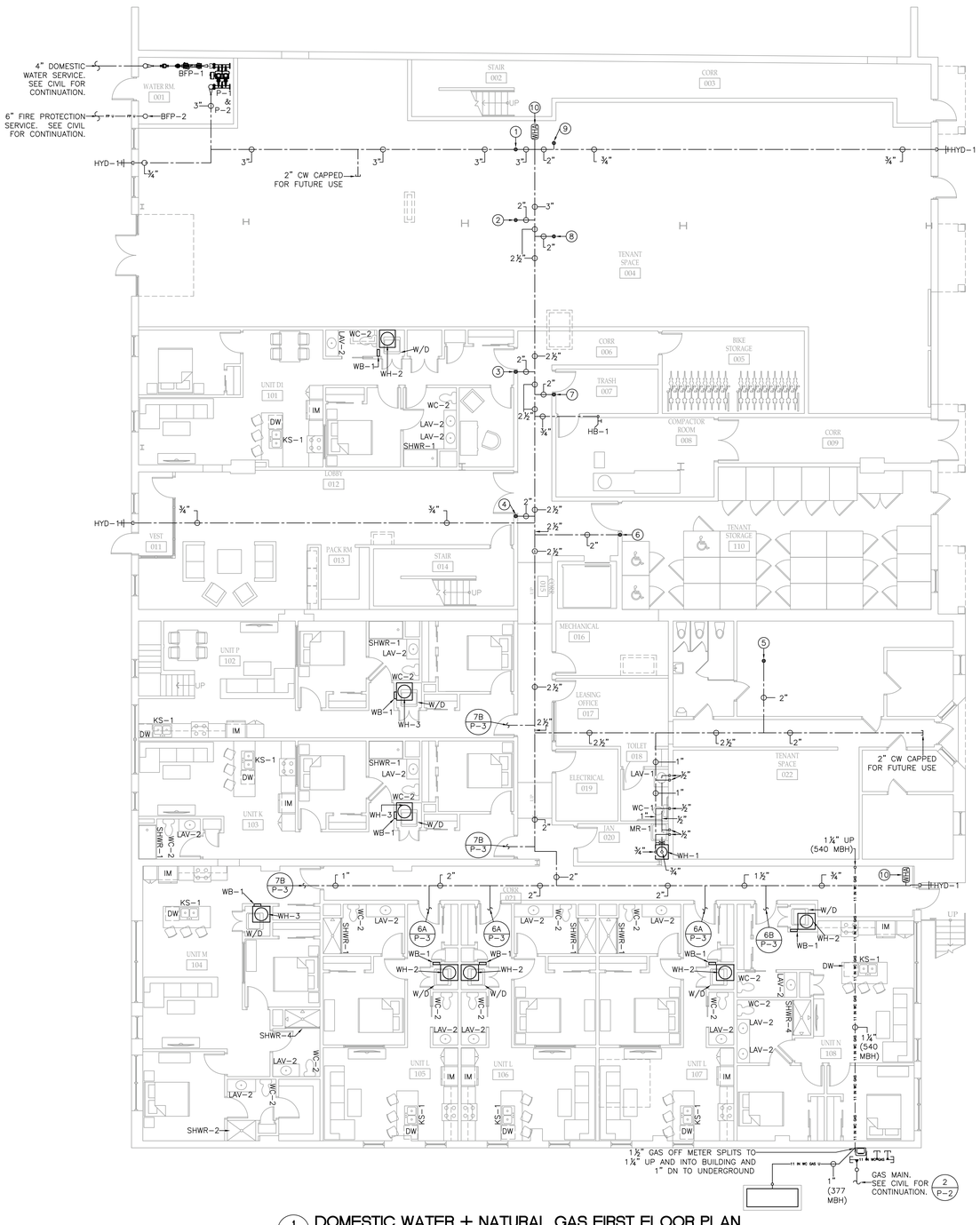
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: P-9



1/P-10 DOMESTIC WATER + NATURAL GAS FIRST FLOOR PLAN

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

GENERAL NOTES:

1. PRIOR TO BIDDING – CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS. BUILDING IS BEING PROVIDED NEW DOMESTIC WATER, FIRE PROTECTION, NATURAL GAS, AND SANITARY SEWER SERVICES. CONTRACTOR TO WORK WITH ALL TRADES PRIOR TO INSTALLATION OF NEW WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES.
2. PLUMBING CONTRACTOR RESPONSIBLE FOR PROPER DISPOSAL OF ALL CONCRETE, PIPING MATERIALS, ETC. OFF-SITE COMPLIANCE WITH ALL LOCAL AND STATE CODES.
3. PLUMBING CONTRACTOR RESPONSIBLE FOR PATCHING/REPAIR OF CONCRETE FLOOR AND WALL SURFACES TO MATCH ARCHITECTURAL FINISHES.
4. ALL NEW UNDERSLAB SANITARY SEWER PIPING WILL BE SLOPED DOWN AT ⅛" PER FOOT TO EXISTING SANITARY SEWER.
5. ALL NEW PIPING THAT IS TO BE RUN AND ACCESS DOORS SHALL BE COORDINATED WITH ALL OTHER EXISTING WORK/CONDITIONS AND NEW WORK/CONDITIONS. ALL PIPING IS TO BE CONCEALED ABOVE CEILINGS OR BELOW FLOORS.
6. NOT ALL PIPE SIZES SHOWN. SEE FIXTURE SCHEDULE FOR MAIN CONNECTIONS SIZES.
7. NOT ALL SHUTOFF VALVES ARE SHOWN. SHUTOFF VALVES FOR ALL FIXTURES DOMESTIC WATER CONNECTIONS SHALL BE LOCATED WHERE THEY ARE ACCESSIBLE. PROVIDE ACCESS DOOR AS REQUIRED PER FIXTURE IF VALVES WILL NOT BE ACCESSIBLE. SEE FIXTURE SCHEDULE FOR PIPE SIZES.
8. FINAL RISER LOCATIONS SHALL BE COORDINATED BETWEEN FLOORS AS NECESSARY TO ACCOMODATE VARYING WALL LOCATIONS & STRUCTURE BETWEEN FLOORS. COORDINATE WITH MECHANICAL, ELECTRICAL, AND FIRE PROTECTION CONTRACTORS BEFORE BEGINNING WORK.
9. ALL VENTED FIXTURES ARE TO HAVE THE VENT PIPING CONNECT TO THE SANITARY PIPING ABOVE THE FLOOD RIM. VENT PIPING COMING FROM BELOW THE FLOOR (I.E. TOILET VENTS, FLOOR DRAINS, AND FLOOR SINKS) SHALL COME OFF THE TOP OF THE SANITARY PIPE. FIXTURES THAT ARE VENTED BEFORE SANITARY HEADS BELOW THE FLOOR (I.E. LAVATORIES AND HAND SINKS) SHALL HAVE THE VENT GO UP AND THE SANITARY GO DOWN AT LOCATION INDICATED. AIR ADMITTANCE VALVES MAY BE SUBSTITUTED FOR VENTING IN NOTED AREAS.
10. BREAKS ARE SHOWN IN THE PIPING (BOTH UNDERFLOOR AND ABOVE CEILING) FOR CLARITY ONLY. ALL SYSTEMS SHALL BE INSTALLED IN THEIR ENTIRETY FOR A FULL WORKING SYSTEM.

DOMESTIC WATER/NATURAL GAS DRAWING NOTES (#):

(THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY DOMESTIC WATER/NATURAL GAS DRAWING.)

1. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT B'S. EACH UNIT IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #6A ON DRAWING P-3, & GENERAL NOTES.
2. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT C'S. EACH UNIT IS TO BE SERVED BY 1½" BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #7A ON DRAWING P-3, & GENERAL NOTES.
3. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 1ST FLR. UNIT D1 & 2ND & 3RD FLR. UNIT D'S. UNIT D1 IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (3) LAVS, KS, DW, IM, & WB. UNIT D'S ARE TO BE SERVED BY 1½" BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAILS #6B & 7A ON DRAWING P-3, & GENERAL NOTES.
4. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT A'S. EACH UNIT IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #6A ON DRAWING P-3, & GENERAL NOTES.
5. AT 1ST & 2ND FLRS. – 2" CW RISER. RISER SERVES 2ND FLR. HYD-1, UNIT I, UNITS I1, UNIT J, & UNIT O. UNITS I & I1 ARE TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. UNIT J IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. UNIT O IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, WC, LAV, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAILS #5 & 6A ON DRAWING P-3, & GENERAL NOTES.
6. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 2ND FLR. UNIT E & 3RD FLR. UNIT E AND TRASH CHUTE (TC). EACH UNIT IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. THE ¾" CW BRANCH PIPING ON THE 3RD FLR. TO TC IS TO BE SERVED OFF OF THE RISERS. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #6A ON DRAWING P-3, & GENERAL NOTES.
7. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT F'S. EACH UNIT IS TO BE SERVED BY 1½" BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #7A ON DRAWING P-3, & GENERAL NOTES.
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10. PROVIDE DOMESTIC WATER SHOCK STOPS (WATER HAMMER ARRESTORS) AT THE TOP OF ALL RISERS AND ENDS OF MAINS AS ILLUSTRATED.
11. SEE MECHANICAL DRAWINGS FOR DETAILS ON ENERGY RECOVERY UNITS.

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Firm Certificate Number: 0019677
STATE OF NEW YORK · JAMES D. BRUNO · 084713 · LICENSED PROFESSIONAL ENGINEER
5-23-25

TITLE:
PLUMBING DOMESTIC WATER & NATURAL GAS FIRST FLOOR PLAN

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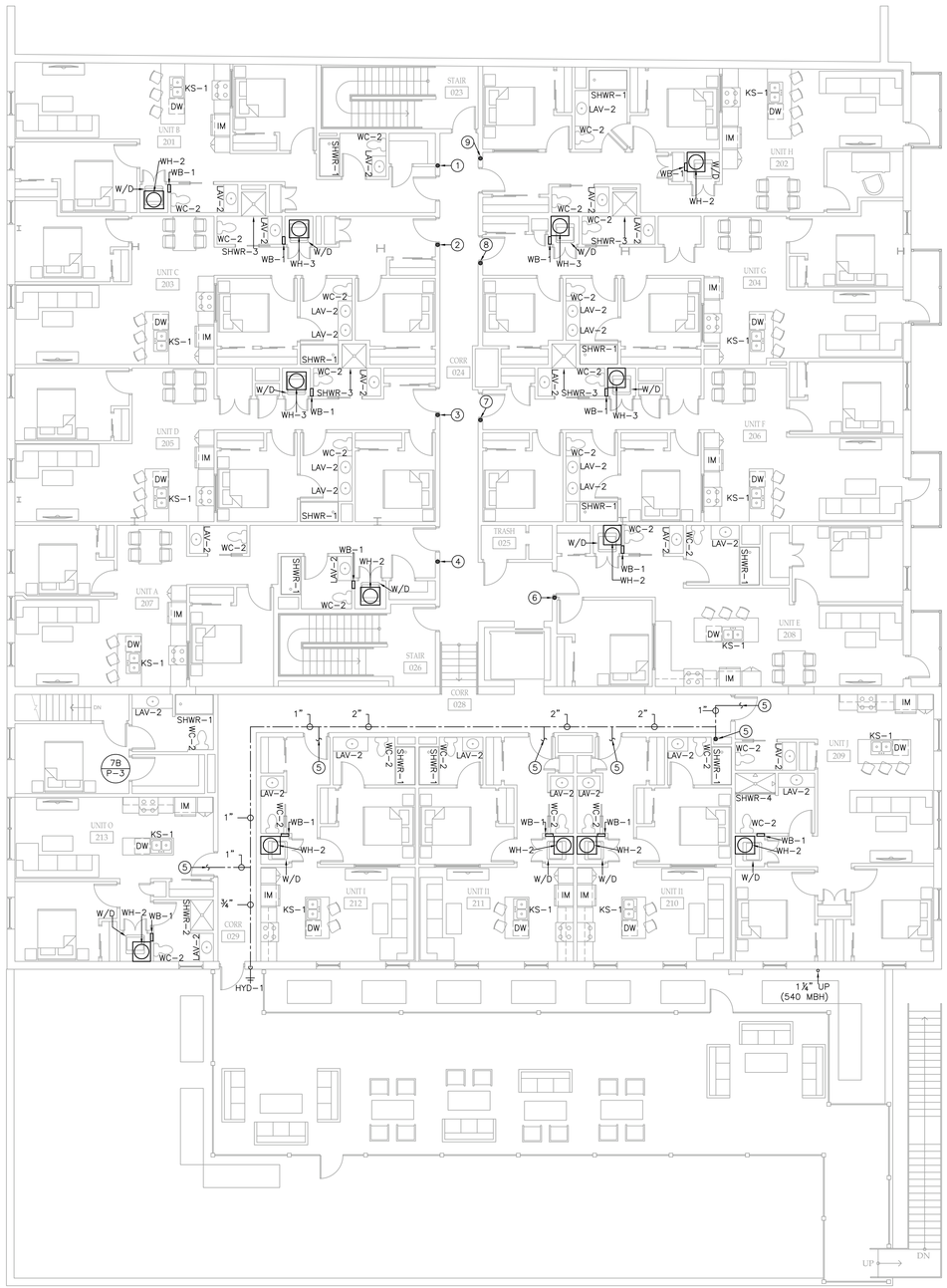
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: P-10



1 P-11 DOMESTIC WATER + NATURAL GAS SECOND FLOOR PLAN

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

GENERAL NOTES:

1. PRIOR TO BIDDING – CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS. BUILDING IS BEING PROVIDED NEW DOMESTIC WATER, FIRE PROTECTION, NATURAL GAS, AND SANITARY SEWER SERVICES. CONTRACTOR TO WORK WITH ALL TRADES PRIOR TO INSTALLATION OF NEW WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES.
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6. NOT ALL PIPE SIZES SHOWN. SEE FIXTURE SCHEDULE FOR MAIN CONNECTIONS SIZES.
7. NOT ALL SHUTOFF VALVES ARE SHOWN. SHUTOFF VALVES FOR ALL FIXTURES DOMESTIC WATER CONNECTIONS SHALL BE LOCATED WHERE THEY ARE ACCESSIBLE. PROVIDE ACCESS DOOR AS REQUIRED PER FIXTURE IF VALVES WILL NOT BE ACCESSIBLE. SEE FIXTURE SCHEDULE FOR PIPE SIZES.
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DOMESTIC WATER/NATURAL GAS DRAWING NOTES Ⓟ:

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9. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT H'S. EACH UNIT IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #6A ON DRAWING P-3, & GENERAL NOTES.
10. PROVIDE DOMESTIC WATER SHOCK STOPS (WATER HAMMER ARRESTORS) AT THE TOP OF ALL RISERS AND ENDS OF MAINS AS ILLUSTRATED.
11. SEE MECHANICAL DRAWINGS FOR DETAILS ON ENERGY RECOVERY UNITS.

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273 HICKORY STREET BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT. _____
INTERIORS A. Nagle DRAFTER _____

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. RUPPERT · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

PLUMBING DOMESTIC WATER & NATURAL GAS SECOND FLOOR PLAN

SILVESTRI
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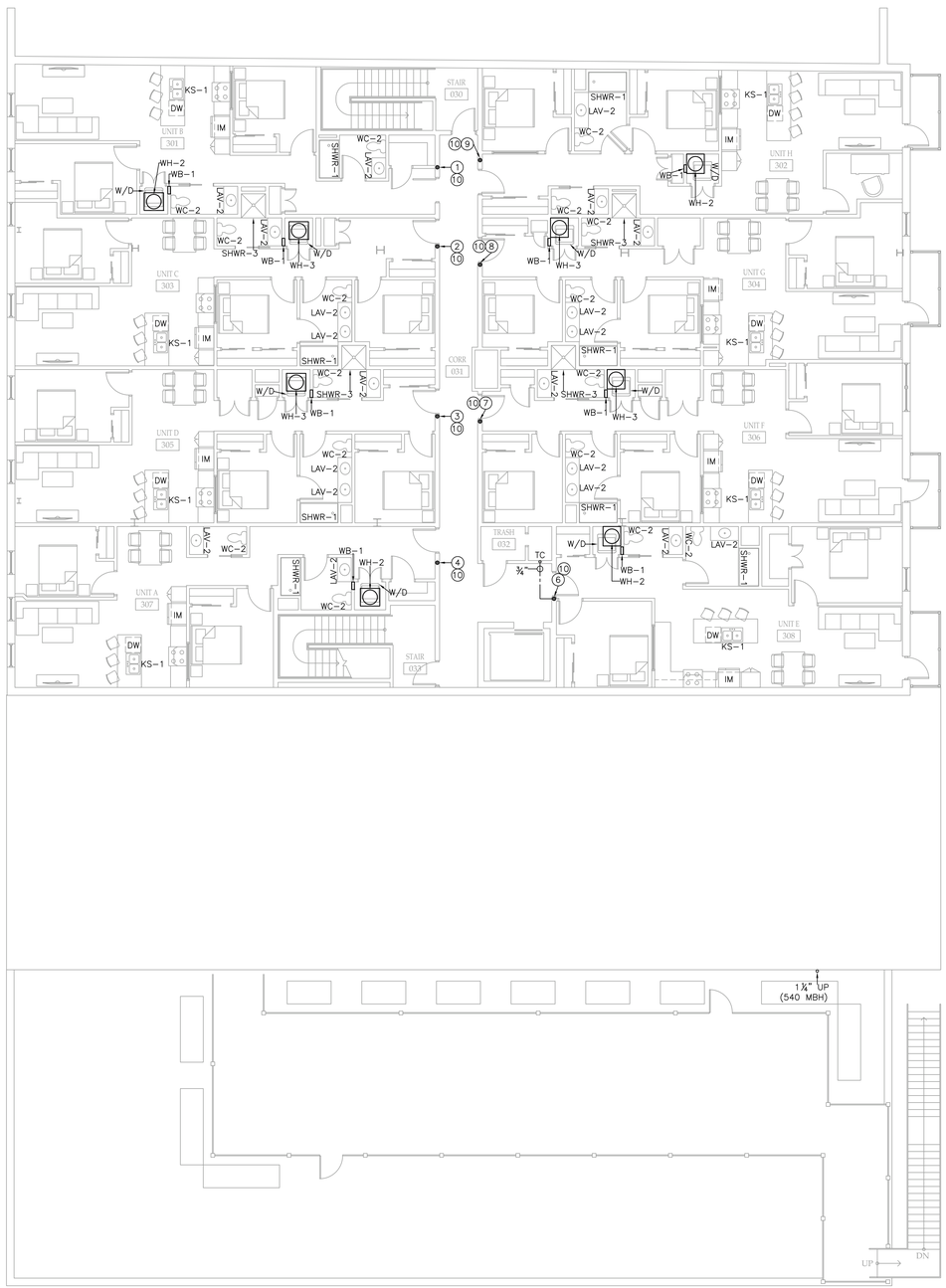
SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: P-11



1 P-12 **DOMESTIC WATER + NATURAL GAS THIRD FLOOR PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. PRIOR TO BIDDING – CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS. BUILDING IS BEING PROVIDED NEW DOMESTIC WATER, FIRE PROTECTION, NATURAL GAS, AND SANITARY SEWER SERVICES. CONTRACTOR TO WORK WITH ALL TRADES PRIOR TO INSTALLATION OF NEW WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES.
2. PLUMBING CONTRACTOR RESPONSIBLE FOR PROPER DISPOSAL OF ALL CONCRETE, PIPING MATERIALS, ETC. OFF-SITE COMPLIANCE WITH ALL LOCAL AND STATE CODES.
3. PLUMBING CONTRACTOR RESPONSIBLE FOR PATCHING/REPAIR OF CONCRETE FLOOR AND WALL SURFACES TO MATCH ARCHITECTURAL FINISHES.
4. ALL NEW UNDERSLAB SANITARY SEWER PIPING WILL BE SLOPED DOWN AT ⅛" PER FOOT TO EXISTING SANITARY SEWER.
5. ALL NEW PIPING THAT IS TO BE RUN AND ACCESS DOORS SHALL BE COORDINATED WITH ALL OTHER EXISTING WORK/CONDITIONS AND NEW WORK/CONDITIONS. ALL PIPING IS TO BE CONCEALED ABOVE CEILINGS OR BELOW FLOORS.
6. NOT ALL PIPE SIZES SHOWN. SEE FIXTURE SCHEDULE FOR MAIN CONNECTIONS SIZES.
7. NOT ALL SHUTOFF VALVES ARE SHOWN. SHUTOFF VALVES FOR ALL FIXTURES DOMESTIC WATER CONNECTIONS SHALL BE LOCATED WHERE THEY ARE ACCESSIBLE. PROVIDE ACCESS DOOR AS REQUIRED PER FIXTURE IF VALVES WILL NOT BE ACCESSIBLE. SEE FIXTURE SCHEDULE FOR PIPE SIZES.
8. FINAL RISER LOCATIONS SHALL BE COORDINATED BETWEEN FLOORS AS NECESSARY TO ACCOMMODATE VARYING WALL LOCATIONS & STRUCTURE BETWEEN FLOORS. COORDINATE WITH MECHANICAL, ELECTRICAL, AND FIRE PROTECTION CONTRACTORS BEFORE BEGINNING WORK.
9. ALL VENTED FIXTURES ARE TO HAVE THE VENT PIPING CONNECT TO THE SANITARY PIPING ABOVE THE FLOOD RIM. VENT PIPING COMING FROM BELOW THE FLOOR (I.E. TOILET VENTS, FLOOR DRAINS, AND FLOOR SINKS) SHALL COME OFF THE TOP OF THE SANITARY PIPE. FIXTURES THAT ARE VENTED BEFORE SANITARY HEADS BELOW THE FLOOR (I.E. LAVATORIES AND HAND SINKS) SHALL HAVE THE VENT GO UP AND THE SANITARY GO DOWN AT LOCATION INDICATED. AIR ADMITTANCE VALVES MAY BE SUBSTITUTED FOR VENTING IN NOTED AREAS.
10. BREAKS ARE SHOWN IN THE PIPING (BOTH UNDERFLOOR AND ABOVE CEILING) FOR CLARITY ONLY. ALL SYSTEMS SHALL BE INSTALLED IN THEIR ENTIRETY FOR A FULL WORKING SYSTEM.

DOMESTIC WATER/NATURAL GAS DRAWING NOTES (P) :

(THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY DOMESTIC WATER/NATURAL GAS DRAWING.)

1. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT B'S. EACH UNIT IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #6A ON DRAWING P-3, & GENERAL NOTES.
2. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT C'S. EACH UNIT IS TO BE SERVED BY 1½" BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #7A ON DRAWING P-3, & GENERAL NOTES.
3. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 1ST FLR. UNIT D1 & 2ND & 3RD FLR. UNIT D'S. UNIT D1 IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (3) LAVS, KS, DW, IM, & WB. UNIT D'S ARE TO BE SERVED BY 1½" BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAILS #6B & 7A ON DRAWING P-3, & GENERAL NOTES.
4. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT A'S. EACH UNIT IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #6A ON DRAWING P-3, & GENERAL NOTES.
5. AT 1ST & 2ND FLRS. – 2" CW RISER. RISER SERVES 2ND FLR. HYD-1, UNIT I, UNITS I1, UNIT J, & UNIT O. UNITS I & I1 ARE TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. UNIT J IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. UNIT O IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, WC, LAV, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAILS #5 & 6A ON DRAWING P-3, & GENERAL NOTES.
6. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 2ND FLR. UNIT E & 3RD FLR. UNIT E AND TRASH CHUTE (TC). EACH UNIT IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. THE ¾" CW BRANCH PIPING ON THE 3RD FLR. TO TC IS TO BE SERVED OFF OF THE RISERS. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #6A ON DRAWING P-3, & GENERAL NOTES.
7. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT F'S. EACH UNIT IS TO BE SERVED BY 1½" BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #7A ON DRAWING P-3, & GENERAL NOTES.
8. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1½" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT G'S. EACH UNIT IS TO BE SERVED BY 1½" BRANCH PIPING & CONTAIN (2) SHWRS, (2) WCS, (3) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #7A ON DRAWING P-3, & GENERAL NOTES.
9. AT 1ST & 2ND FLRS. – 2" CW RISER. AT 3RD FLR. – 1" CW RISER. RISER SERVES 2ND & 3RD FLR. UNIT H'S. EACH UNIT IS TO BE SERVED BY 1" BRANCH PIPING & CONTAIN A SHWR, (2) WCS, (2) LAVS, KS, DW, IM, & WB. SEE FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZES, DETAIL #6A ON DRAWING P-3, & GENERAL NOTES.
10. PROVIDE DOMESTIC WATER SHOCK STOPS (WATER HAMMER ARRESTORS) AT THE TOP OF ALL RISERS AND ENDS OF MAINS AS ILLUSTRATED.
11. SEE MECHANICAL DRAWINGS FOR DETAILS ON ENERGY RECOVERY UNITS.

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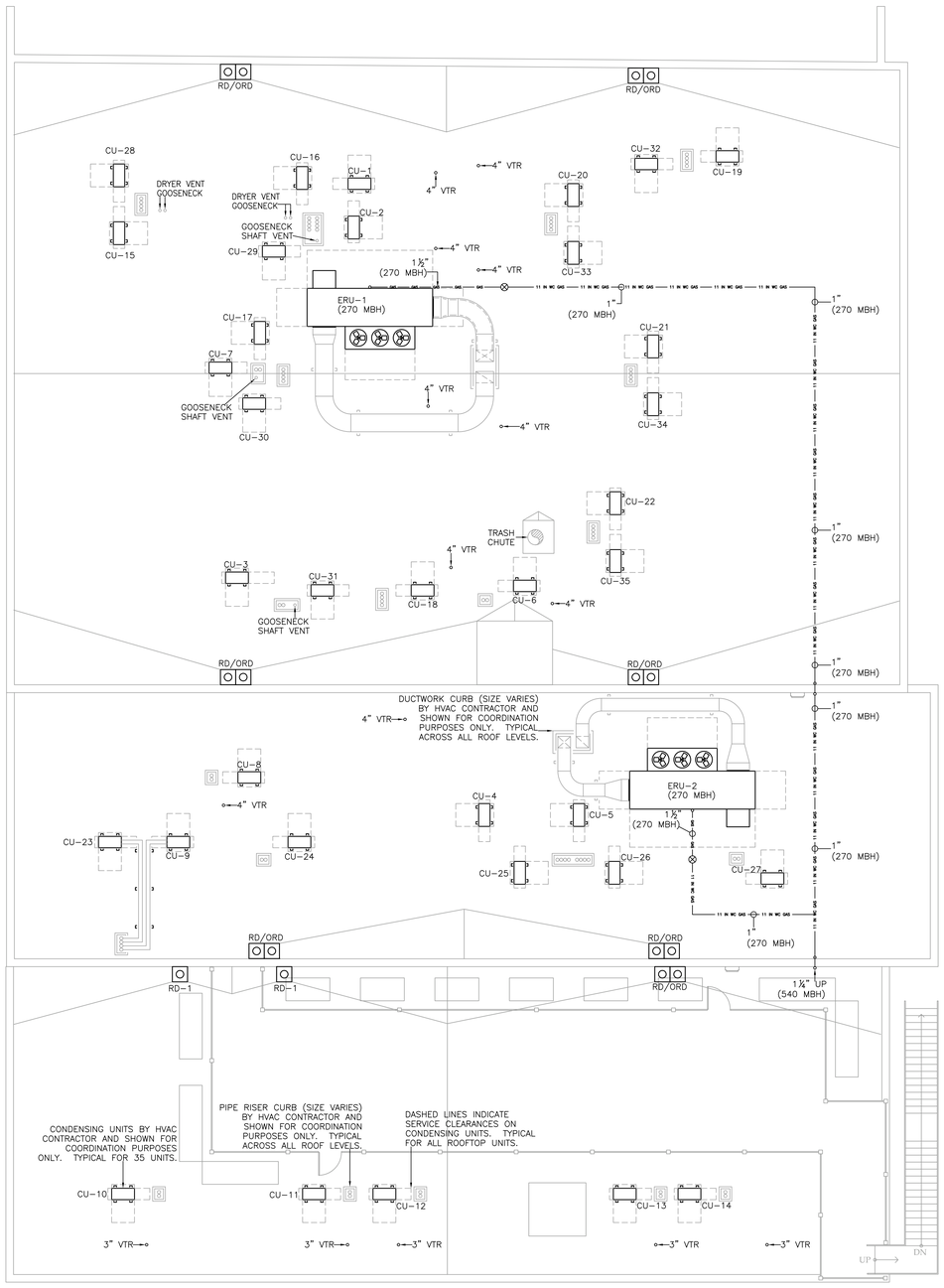
FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: P-12



1 P-13 **PLUMBING ROOF PLAN**

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

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STATE OF NEW YORK · JAMES D. SILVESTRI · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:
PLUMBING ROOF PLAN

SILVESTRI
ARCHITECTS · PC
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AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: P-13

PLUMBING SYSTEMS SPECIFICATIONS

PART 1 GENERAL

1.01 SUMMARY:

A. The Contractor shall provide the building plumbing systems as shown on the drawings, as specified in this Section, and as needed for a complete installation including, but not necessarily limited to:

1. Applications and fees for all plumbing permits, services, and interim and final inspections.
2. Temporary water provisions as required for construction purposes.
3. Excavation and backfill for plumbing systems work.
4. Concrete pads and pits as may be required for plumbing systems work.
5. Domestic hot and cold water piping systems, including backflow preventer.
6. Drain, waste, and vent systems.
7. Gas piping system.
8. Storm piping system.
9. Plumbing fixtures and trim.
10. Cathodic and dielectric protection.
11. Accessory plumbing devices including but not necessarily limited to hangers, supports, inserts, valves, and Pipe Labeling.
12. Access panels and boxes for Contractor–provided valves.
13. Piping insulation.
14. Cutting and patching.
15. Final gas connections to HVAC equipment.
16. Painting of exposed piping.
17. Sterilization of the potable water system.
18. Seismic Restraints (as may be required by the local jurisdiction).
19. Testing, adjusting and balancing.

B. The Contractor shall include the cost of applications and fees for all plumbing permits, services, and interim and final inspections in the Base Bid.

1.02 SUBMITTALS:

The Contractor shall submit Product Data of the following: Domestic Water Piping, Sanitary/Storm Piping, Gas Piping, Valves, Brazing and Welding Certificates, Pipe Hangers/Supports, Piping Insulation, and Plumbing Fixtures for review by the Architect/Engineer. Any Request for Product Substitution must be submitted one week prior to bid submission.

1.03 QUALITY ASSURANCE:

Codes and Regulations:

All materials, apparatus, and equipment and the installation thereof shall comply with all state and county ordinances and all other governmental and/or private authorities having jurisdiction, and shall comply with all county and state laws, rules, and regulations, as well as rules and regulations of the National Board of Fire Underwriters, and the Plumbing Code having jurisdiction.
In the event of conflict between or among specified requirements and pertinent regulations, the more stringent requirement will govern and shall be provided at no additional cost to the owner.

Drawings and Coordination:

Construction drawings shall be considered as a part of the work, insofar as the drawings furnish the Contractor with information relating to design and construction of the building. Because of the scale of the mechanical drawings, it is not possible to indicate all offsets, fittings, and accessories which may be required to meet such conditions.
The plumbing drawings show the general arrangements of all piping, ductwork, equipment, etc., and shall NOT BE SCALED. This work shall be coordinated with ALL trades. Critical locations are dimensioned on the drawings; if a conflict arises, the Contractor shall notify the owner and the Architect/ Engineer immediately for clarification.

The Contractor shall verify the dimensions governing the plumbing systems work in the building. No extra compensation shall be claimed or allowed on account of differences between actual dimensions and those indicated on the drawings. The Contractor shall examine adjoining work, on which mechanical work is dependent for proper operation, and shall report any work which must be corrected. No waiver of responsibility for defective work shall be claimed or allowed due to any failure to report unfavorable conditions affecting the plumbing systems work.

1.04 WARRANTY/ CLOSEOUT DOCUMENTS:

Manufacturer's Warranty: The Contractor shall provide the manufacturer's standard product warranty.

Installer's Warranty: The Contractor shall include a copy of the Subcontractor's Warranty for all work provided under the contract for construction for a term of 1 year after the Date of Substantial Completion.

Warranties shall be included in the Building Maintenance Manuals submitted to the owner after the Date of Final Completion.

Sterilization Certificate of Performance: Upon completion of the water line sterilization, the Contractor shall deliver a copy of an acceptable sterilization "Certificate of Performance" to the owner. This Sterilization Certificate of Performance shall additionally be included in the Building Maintenance Manuals submitted to the Construction Project Manager after the Date of Final Completion, as further described in this section.

Project Record Drawings: The Contractor shall record all changes as the work progresses on a set of project record drawings kept at the job site, and shall provide record drawings to the Construction Project Manager after the Date of Substantial Completion.

PART 2 PRODUCTS

2.01 GENERAL:

The word piping shall mean pipe, fittings, nipples, valves, etc. completely assembled.

2.02 DOMESTIC WATER SYSTEM:

Water Lines:

Copper: Type "L" hard drawn, per ASTM B88–7, for all water pipe above concrete or ground.
Copper: Type "K" hard drawn, per ASTM B88–7, for water pipe set in or under concrete or in the ground. Wrap lines below concrete floors with 5 mils polyethylene tape with joints overlapped 25% minimum, and insulate with Armaflex insulation. No fittings shall be under the slab.

Fittings: Wrought copper, per ANSI B16.18 and B16.22.

Identification: Color identify pipe with size of pipe manufacturer's trademark, and conform to the following schedule:

Type "K" Copper – Green
Type "L" Copper – Blue

PEX Water Lines:

Uponor PEX–a Tubing: Tubing to be per ASTM F876 and ASTM F877, Uponor AQUAPEX, for all water pipe above or below concrete or ground, all sizes up to and including 3". Fittings: Fitting assembly is manufactured from material listed in paragraph 5.1 of ASTM F1960. All fitting material is to comply with ASTM F1960. Type: PEX–a cold expansion fitting. Assembly consists of the appropriate ProPEX insert with a corresponding ProPEX Ring. PEX Manifold: Material: Type L copper body with UNS 3600 series brass ProPEX outlet connections or Engineered Plastic (EP) body with ProPEX outlet connections. Manifold Type: Uponor ProPEX 1" Copper Manifold or Uponor engineered plastic (EP) Manifold. All manifolds manufactured with the appropriate–sized ProPEX fittings on the manifold supply inlets.

Specification for CPVC Hot and Cold Water Commercial Systems (with piping components ½" – 6"):

All pipe and fittings to be manufactured from CPVC compound with a cell class of 24448 for pipe and 23447 for fittings as per ASTM D–1784 and conform with National Sanitation Foundation (NSF) standards 14 and 61.

½" through 2" sizes: FlowGuard Gold® CPVC Copper Tube Size mfg. to standard dimension ratio (SDR) 11 and shall conform to ASTM D–2846. Transition fittings to have brass male or female connections with integral CPVC socket connections as mfg. by Charlotte Pipe and Foundry Co.

3" through 6" sizes: Corzan® CPVC Schedule 80 iron pipe size (IPS). Pipe shall conform to ASTM F–441. Socket type fittings shall conform to ASTM F–439. Transition to metal piping to be made using 150# flanged connections.

All pipe and fittings to be produced by a single manufacturer and to be installed in accordance with manufacturer's recommendations and local code requirements. FlowGuard Gold to be joined using approved one–step solvent cement conforming to ASTM F–493. Corzan to be installed using approved solvent cement conforming to ASTM F–493 and primer conforming to ASTM F–656. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co. and are intended for hot and cold domestic water distribution systems.

2.03 SANITARY/STORM DRAINAGE SYSTEM:

Waste, Vent, & Storm Lines: Sanitary & Storm piping to be either cast iron or copper. Where allowable by local and national codes, plastic DWV piping may be used under slab and where concealed by walls. Copper or cast piping shall be utilized for sanitary, vent, & gravity storm piping above ceiling spaces and where otherwise exposed and within plenum areas. No condensate or storm water filled piping shall run in unheated spaces such as attics or porte cocheres without heat trace protection – coordinate with electrical contractor.

Cast Iron – Aboveground: Provide cast iron no–hub soil and vent pipe, coated inside and out, conforming to CISPI 301–69T Specifications, for all soil and waste lines above ground and for all vent lines with inside diameter 2 inches and larger. Standard weight soil and waste fittings will be accepted throughout. Pipe shall conform to CISPI Standard 301. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co.

Cast Iron – Under Building: Service weight cast iron pipe with bell and spigot joints and fittings. Underground pipe may be installed with "Tyseal" gaskets as specified hereinafter. Pipe and fittings to be manufactured by Charlotte Pipe and Foundry Co.

2.04 GAS PIPING SYSTEM:

Provide Schedule 40 black steel pipe conforming to ASTM A120 and A53 with extra–heavy malleable iron banded thread fittings. Unions shall be ground iron to bronze seat. Plug valves shall be Rockwell–Nordstrom No. 142. Factory spiral wrapped in two directions, using Scotch wrap 10 mil tape with 1" overlap for all underground piping.

Provide drip legs on all mains and risers and at equipment connections. Provide gas cocks at all equipment connections.

Fittings: Provide extra–heavy black malleable iron banded screwed or weld pattern as applicable per ASA B16.3.

Rooftop horizontal gas piping support pedestals shall be pre–manufactured roof piping supports. Wood blocking with pipe clamps is NOT an acceptable means of supporting horizontal piping located on the roof.

2.04A COMPRESSED AIR PIPING SYSTEM:

Follow all guidelines from New York State Codes, Compressed Gas Association, NFPA, American Society of Plumbing Engineers, and ANSI B31.1.

Provide ASTM B88 Copper Tubing and Fittings as follows: For pressures up to 200 psi – Type "L" hard; For pressures up to 300 psi – Type "K" hard. Joints on pressures over 100 psi shall be brazed and for pressures under 100 psi soldered. Fittings: Long Ell's should be used for turns and 45° directional (to flow) connection for two conjoining air lines. Provide Ball Valves for shutoff purposes that are designed for compressed air service. Acceptable Manufacturers: Nibco–Scott, Apollo, and Parker.

2.05 ROOF PENETRATIONS:

Each trade shall provide their own roof penetrations and the Contractor shall coordinate the installation of same with other related trades, such that in no way shall the roof warranty be altered, modified, or voided. The roof flashing system shall be as specified in Section 07510– Single–Ply Membrane Roofing System and Section 07720– Roof Accessories.

2.06 ACCESS DOORS:

The Plumbing Subcontractor shall furnish access doors for the Contractor's installation in finished work for concealed valves, cleanouts, and to concealed parts of the plumbing system that require accessibility for proper operation, maintenance, and repair. Doors are not required for suspended acoustical ceilings with lift–out panels.

Access doors shall be of the proper size for respective concealed items, with minimum size exclusive of other requirements, 18" x 18". Access door shall be flush type, with No. 13 U.S. Standard Gauge Steel door and trim, concealed hinges and screwdriver operated, stainless steel cam lock. Access door shall be shop painted with one coat of zinc chromate primer.

2.07 VALVES:

Valves for water piping shall be 125 lb. SWP, all bronze gate valves. Drips shall be all bronze ½" globe SWP hose end. Check valves shall be horizontal swing check 125 lb. SWP type. Where used in connection with chrome plated pipe, valves shall be the same finish as the pipe. Install valves on all hot and cold water branch lines to each group of fixtures or individual fixtures. All products listed meet the low–lead requirements of NSF–372 and meet the requirements of ANSI/NSF61.

Gate Valves: Red White #206AB, 125# brass body, non–rising stem, for all lines up to 4".

Check Valves: Red White #236AB 125# brass body, Y–pattern, PTFE seat for all sizes up to 2" in diameter. Nibco #F–910–LF, 125# iron body, bronze trimmed, flanged horizontal check valve for all valves larger than 2" in diameter.

Balancing Valves: Caleffi QuickSetter+ 132 Series – Balancing valve with flow meter made from dezincification resistant low–lead brass. Direct reading of flow rate with no sight gauge clouding or scaling. Rotatable stainless steel flow rate adjuster with inlet flow check valve. Graduated scale flow meter with magnetic movement flow rate indicator.

Mixing Valves – Temperature at faucets to be 110°F, unless otherwise noted. Ends of valves to be sweat or F1960 PEX connection: Caleffi 5213 series (showers & mop receptors) – Three–way thermostatic mixing valve designed with a low–lead brass body and regulating spindle, PPO shutter, seats and slide guides with integral inlet port check valves, stainless steel springs and seals in peroxide–cured EPDM.

Caleffi SinkMixer model #521201A (lavatories & sinks) – Four port thermostatic mixing valve designed with a forged low–lead brass body, AISI 302 stainless steel spring, AISI 304 stainless steel hot inlet strainers, seals in peroxide–cured EPDM, and polysulphone shutter. Provided with inlet port check valves and strainers.

Plug Valves: Rockwell–Nordstrom #142 for lines two inches and smaller and #143 for 2–1/2 inches and larger, lubricated plug valve with #555 lubricant for natural gas service.

Globe Valves: Red White #211AB, brass body, 200# WOG, swivel style disc.

Ball Valves: Red White #5049AB Brass Body, 600# WOG, 150# WSP, PTFE seat, blow–out proof stem.

Gas Valves: 1½" and smaller: Provide Rockwell–Nordstrom #143 with #555 lubricant for natural gas service. 2½" and larger: Provide Rockwell–Nordstrom #143 with #555 lubricant for natural gas service.

Valve Manufacturers: Provide as manufactured by Crane, Jenkens, Walworth, Kennedy, Stockham, Red–White, Caleffi, or Nibco–Scott. No other product/manufacturers are permitted.

Provide valve boxes for all valves. Boxes shall be Mueller #H–10360, Size 564 S, screw type, and shall have 5¼" shaft with "WATER" cast in lid.

Trap Primers: Where shown on the drawings or required by plumbing code (see Drawings for product specifications). Automatic trap primer on cold water supply at nearest fixture and run drain to trap seal being protected. Provide access panel when primers are installed in walls.

Air Cushions and Shock Absorbers: Each hot and cold water connection to a fixture or faucet shall be equipped with full size vertical air cushion not less than 12" long. In addition to air cushions, provide 1 inch pipe size, shock absorber at each hot and cold connection and battery of fixtures. Shock absorbers shall be MIFAB #CL–A–NPB.

Hose Bibs: Provide as scheduled and detailed on the Drawings.

Vacuum Breakers: Furnish and install on all faucets, hydrants and all other water discharge points with threaded hose connector, where shown on drawings and where required by Code. Hose thread vacuum breaker shall be Watts Model #8–A or approved equal. Vacuum breakers for general piping application shall be Watts Regulator Company, No. 288A or approved equal, with bronze body and internal trim and brass external trim. Vacuum breakers shall have angle type bodies with female inlet connection at bottom and female outlet connections at side. Furnish and install where contamination of potable water is possible and where required by local authorities.

2.08 PIPE HANGERS AND SUPPORTS:

Rooftop Piping Support Pedestals: Horizontal piping mounted on roof shall be supported with pre–manufactured pedestals and Accessory Pipe Straps as specified in Section 07720– Roof Accessories. Wood blocking with pipe clamps is NOT an acceptable means of supporting horizontal piping located on the roof, and the installation of same will be rejected by the Architect/ Engineer.

Adequately support piping against sagging, pocketing, swaying, and displacement. Properly space and apply hangers to achieve the result, and not farther apart than the following:

Steel Pipe: 1¼" and smaller, 8 foot on center; 1½" and larger, 10 foot on center; Copper Tubing: 1¼" and smaller, 6 foot on center; 1½" and larger, 10 foot on center; Plastic Pipe (Where Allowed): 1½" and smaller, 3 foot on center; 2" and larger, 4 foot on center

Install Trisolator #500 isolators around all uninsulated copper lines where hanger occurs. Install dielectric fitting between all ferrous and non–ferrous piping with a 12" section of red brass pipe in between.

Size all hangers on insulated lines to fit around outside diameter of insulation specified with allowance for sheet metal shield. Pipe shield shall be 169A, 1/3 circumference of insulation of a length of not less than 3 x diameter of the insulation (maximum 24").

Manufacturer: Grinnell Company catalog numbers are indicated to simplify the description, however, hangers and supports shall be Grinnell, Grabler, Fee & Mason, Elcen or approved equal.

Overhead Supported: Each horizontal pipe shall be supported on adjustable wrought iron clevis hangers equal to Grinnell, Figure 260, except that groups of pipes shall be supported on trapeze hangers made up of steel rods and steel channels or angles. Pipe shall be "U" bolted to trapeze and trapeze spaced for the smallest pipe in the group.

2.09 PLUMBING SYSTEM INSULATION:

All insulation shall be applied in a neat and workmanlike manner. Remove and replace all insulation not applied in strict accordance with manufacturer's specifications or not presenting a neat appearance. Insulation shall be continuous through wall and ceiling openings and sleeves.

Work Included: Pipe covering for domestic hot water (including recirculation), cold water, and roof drain piping.

Materials and Installation: No pipe insulation shall be applied until piping has been pressure tested and approved. All insulation shall be applied strictly in accordance with the manufacturer's recommendations. Materials as manufactured by Johns Manville, Fiberglass, Phillip Carey, or Armstrong will be acceptable if equal to those specified. All insulation on indoor work shall have composite fire and smoke hazard ratings as tested by procedure NFPA 255 not exceeding: Flame Spread 25, Fuel Contributed 50, Smoke Developed 50. Accessories, such as adhesives, mastics, cements, tapes, and cloth for fitting, shall have the same component ratings as listed above. Insulation shall have an average thermal conductivity not to exceed 0.25 BTU/inch of thickness per square foot per 1°F. at a mean temperature of 75 °F.

Domestic Hot Water, Tempered Water, Cold Water, and Roof Drain Piping Piping: All piping shall be insulated with fiberglass pipe insulated with foil–kraft laminate vapor barrier fastened with pressure sensitive tape and stapled 12" on center – see schedule below for thicknesses. All piping, fittings, valves, flanges, etc. shall be covered with PVC jackets/fitting covers (20 mils thick minimum), taped and tacked fastened.

PIPING INSULATION SCHEDULE – Follow New York State Energy Code Table C403.11.3 for insulation thickness (ceiling space is at a premium and insulation must be minimum values):

Domestic Cold Water: 1¼" and Smaller: ½" thick; 1½" and Larger: 1" thick.
Domestic Hot, Recirculated, and Tempered Hot Water: 1¼" and Smaller: 1" thick; 1½" and Larger: 1½" thick.
Stormwater and Overflow: All Pipe Sizes: 1" thick – unless otherwise noted.

No insulation shall be installed on any piping before the building is adequately closed in. Where necessary to install any insulation before it is protected by building enclosures, and if acceptable by the local jurisdiction, the covering must be effectively protected with roofing felt, wired on the covering to make an absolute waterproof protection for the pipe covering.

Pipe Insulation at Handicap Accessible Lavatories: Provide Dearborn #ADA100 or #ADA101 insulating kits on traps and hot and cold water supplies at each handicap accessible toilet room lavatory.

2.10 PAINTING & PIPE LABELS:

Comply with Architectural requirements for painting interior piping. Paint exposed, interior metal piping, valves, service regulators, service meters and meter bars, and piping specialties, except components, with factory–applied paint or protective coating.

W.B. Light Industrial Coating: MPI INT 5.1B – G5. Prime Coat: Rust Inhibitive Primer (MPI #107). Intermediate Coat: W.B. Light Industrial Coating (MPI #153). Topcoat: W.B. Light Industrial Coating (MPI #153). Color: Selected by Architect or as noted on plans.

All piping and valves shall be labeled in accordance with New York State Code and ANSI/ASME A13.1.

Damage and Touchup: Repair marred and damaged factory–applied finishes with materials and by procedures to match original factory finish.

2.11 TRAPS:

All fixtures and floor drains are to be separately trapped as near to the fixture or floor drain as possible. Traps shall be self–cleaning, water–sealed, and shall have a scouring action. Traps shall be set true with respect to water seal and shall be protected from freezing. All underground traps, except "P" traps into which floor drains with removable strainers discharge, shall be provided with accessible cleanouts. Traps which are not part of plumbing fixtures shall be of the same material and size as pipes or branches into which they discharge.

2.12 VENTS:

Collect vents together as shown on the drawings to minimize number of vents terminating through roof. Verify location of roof equipment indicated. Offset vents through roof to maintain a minimum distance of 10 feet away from outside air intakes.

2.13 CLEANOUTS:

Where indicated on the drawings and as required by local plumbing code. Make all cleanouts accessible by one of the following means:

- Within 6 inches from ceiling access panel; Extending to floor or grade above; Locate in wall with removable plate.

Size: Same as pipe on which installed.

Installation: Covers set flush with finished wall, floor or grade, to be securely anchored by means of integral lugs or bolts. Where surfacing materials such as resilient floor covering is used, install the clean out with top so that finished surface is smooth and flush.

Manufacturers: Cleanout products shall be as manufactured by MIFAB or as detailed in the fixture schedule.

Floor Cleanouts and Access Covers: Duco coated cast iron body and frame with "Leckeromated" plug and heavy duty adjustable scoriated secured polished bronze top.

Cleanout to Grade with Countersunk Plug: Duco–coated cast iron body with bronze taper thread countersunk plug. Installed in 24" x 24" concrete pad, tapered for drainage.

Wall Cleanouts: Stainless steel chrome plated bronze deep cover with center screw.

2.14 FLOOR DRAINS:

Floor drains shall be properly anchored to building construction with clamping device or with lugs embedded in concrete slabs. Floor drains shall be as scheduled and detailed on the drawings. All floor drains shall have automatic trap primers installed as required. Acceptable Manufacturers include: Jay R Smith, MIFAB, Watts, and Zurn.

2.15 FIXTURE SUPPORTS:

Steel plated supports for all wall hung fixture shall be supported with 3/8" x 6" steel plates recessed and lag screwed to wood studs or welded to steel studs and tapped for fixture bolts. Install the length and number of plates as required to satisfactorily support the fixtures.

2.16 PLUMBING FIXTURES:

General: Furnish and install plumbing fixtures complete with trim and caulk. See drawings for Plumbing Fixture Schedule.
All fixtures shall be Class "A". Vitreous fixtures shall be best quality. Warped, imperfect fixtures are NOT acceptable. Brass products shall contain at least 75% copper. All exposed metal below and above each fixture throughout shall be chrome plated on brass, with cast brass escutcheons. Where fixtures are noted on drawings as furnished by others, they shall be set by this contractor and this contractor shall furnish, install and connect service to such fixtures. All fixtures supported from walls shall be provided with carriers by MIFAB. Furnish, set and connect all plumbing fixtures including all necessary supports, and chrome plated exposed work and fittings. Provide loose–key type fixtures stops for all fixtures unless noted otherwise. The plumbing subcontractor shall purchase plumbing fixtures, flush valves, toilet seats and carriers as specified on the drawings.

The plumbing subcontractor shall purchase faucets, tailpiece, P–trap, lavatory insulation supply kit, valves, sink accessories, trap primer, water hammer arrester, floor drains and wall clean out as specified on the drawings.

Traps exposed above the floor shall be chrome plated adjustable brass, with chrome plated approved cleanout plugs, cast set screw wall escutcheon and casing. All trim shall be of polished chrome–plated brass and of one acceptable manufacturer unless specifically noted otherwise. Provide fixture stops or valve ahead of all equipment or fixtures. Refer to Plumbing Fixture Schedule on Drawings.

Domestic Water Heaters: Provide water heater of size, capacity and make as scheduled on the drawings. Heaters shall be fully warranted for minimum of 5 full years after final acceptance of the building. Furnish heaters with the following accessories:
1. ASME combination temperature and pressure relief valve rated in excess of heater input. Run full size drain to location shown on plans.
2. Automatic thermostat actuated controls with 100 percent shutoff.
3. Dual high–limit controls.
4. Tank drain.

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5-23-25

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DRAWING #: P-14

ELECTRICAL SYMBOLS LEGEND

NOT ALL SYMBOLS MAY BE REPRESENTED ON DRAWINGS

POWER SYMBOLS

- SIGNIFIES TWO(2) CONDUCTORS 2#12 + 1#12 GRND. IN ¾" CONDUIT.
- SIGNIFIES THREE(3) CONDUCTORS 3#12 + 1#12 GRND. IN ¾" CONDUIT.
- SIGNIFIES FOUR(4) CONDUCTORS 4#12 + 1#12 GRND. IN ¾" CONDUIT.
- SIGNIFIES FIVE(5) CONDUCTORS 5#12 + 1#12 GRND. IN ¾" CONDUIT.
- #10 SIGNIFIES TWO(2) CONDUCTORS 2#10 + 1#10 GRND. IN ¾" CONDUIT.
- #10 SIGNIFIES THREE(3) CONDUCTORS 3#10 + 1#10 GRND. IN ¾" CONDUIT.
- #8 SIGNIFIES TWO(2) CONDUCTORS 2#8 + 1#10 GRND. IN ¾" CONDUIT.
- #8 SIGNIFIES THREE(3) CONDUCTORS 3#8 + 1#10 GRND. IN ¾" CONDUIT.
- #6 SIGNIFIES TWO(2) CONDUCTORS 2#6 + 1#8 GRND. IN 1" CONDUIT.
- #6 SIGNIFIES THREE(3) CONDUCTORS 3#6 + 1#8 GRND. IN 1" CONDUIT.
- HOMERUN TO PANELBOARD
- LOW VOLTAGE CONTROL WIRING
- SIGNIFIES INTENDED SWITCHING SCHEME
- JB — JUNCTION BOX (SIZE AS REQUIRED)
- CONDUIT/WIRE BREAK
- CONDUIT STUB OUT
- CONDUIT STUB-DOWN
- CONDUIT STUB-UP
- 208Y/120V RECESSED OR SURFACE MOUNTED PANELBOARD
- 480Y/277V RECESSED OR SURFACE MOUNTED PANELBOARD
- 1ø POWER TERMINAL CONNECTION TO EQUIPMENT ITEM SUPPLIED BY OTHERS.
- 3ø POWER TERMINAL CONNECTION TO EQUIPMENT ITEM SUPPLIED BY OTHERS.
- HP — ELECTRIC MOTOR — PROVIDED & INSTALLED BY OTHERS, WIRE BY E.C. XX = HORSE POWER RATING
- RECEPTACLE (SIMPLEX)
- RECEPTACLE (DUPLEX)
- RECEPTACLE (QUAD)
- GFI — FLUSH MOUNT, TAMPER RESISTANT, POP-UP COUNTER TOP RECEPTACLE (DUPLEX).
- USB — RECEPTACLE (DUPLEX WITH 2 USB CHARGING PORTS) DECORATOR STYLE
- RECEPTACLE (DUPLEX) W/ GROUND FAULT PROTECTION
- NL — RECEPTACLE (DUPLEX) W/ GROUND FAULT PROTECTON AND INTEGRAL NIGHT LIGHT.
- RECEPTACLE (QUAD) W/ GROUND FAULT PROTECTION
- WP — RECEPTACLE (DUPLEX) W/ GROUND FAULT PROTECTION & A WEATHERPROOF COVER
- ES — 120V ELECTRONIC DOOR STRIKE. SUPPLIED & INSTALLED BY OTHERS, WIRED BY E.C.
- "SPECIAL" RECEPTACLE — VERIFY NEMA TYPE AND INSTALLATION LOCATION IN FIELD.
- FB# — RECESSED FLOOR BOX — TO BE INSTALLED FLUSH WITHIN FINISHED FLOOR
- MS — MANUAL MOTOR STARTER
- MAGNETIC MOTOR STARTER
- # — COMBINATION MOTOR STARTER/FUSED DISCONNECT SWITCH
- # — NON-FUSED DISCONNECT SWITCH
- F# — FUSED DISCONNECT SWITCH
- B — BOILER EMERGENCY SHUTDOWN SWITCH
- SS — REMOTE E-STOP (FOR GENERATOR SHUT-DOWN)
- HC — HANDICAP PUSH-BUTTON

LIGHTING CONTROL SYMBOLS

- $ — TOGGLE SWITCH (SINGLE-POLE)
- $I,II,III,IV — TOGGLE SWITCHES (SINGLE-POLE, GANGED)
- $3 — TOGGLE SWITCH (SINGLE-POLE, 3-WAY)
- $3,II,III,IV — TOGGLE SWITCH (SINGLE-POLE, 3-WAY, GANGED)
- $4 — TOGGLE SWITCH (SINGLE-POLE, 4-WAY)
- $K — KEYED SWITCH (SINGLE-POLE)
- $T — DIGITAL PROGRAMMABLE TIMER (SINGLE-POLE, 3-WAY)
- $PL — PILOT LIGHT SWITCH (SINGLE-POLE)
- $FC — 3-SPEED FAN CONTROLLER WITH INTEGRAL SWITCH FOR ON/OFF LIGHTING CONTROL (SINGLE-POLE, 3-WAY).
- $M — MOMENTARY CONTACT SWITCH (SINGLE-POLE)
- $D — DIMMER (SINGLE-POLE, 3-WAY). PHASE DIMMER COMPATIBLE WITH LED LAMPING.
- $OS — DUAL TECHNOLOGY WALL SWITCH MOTION SENSOR ACUITY SENSOR SWITCH CONTROLS #WSX-PDT-SA (OR EQUAL).
- $OSD — DUAL TECHNOLOGY WALL SWITCH DIMMING MOTION SENSOR. ACTIVATE ADAPTIVE DAYLIGHT HARVESTING (ADH) SETTING FOR AUTOMATIC DAYLIGHT HARVESTING CONTROLS WHEN LOCATED IN ROOMS WITH EXTERIOR WINDOWS. ACUITY SENSOR SWITCH CONTROLS #WSX-PDT-EZ-D-SA-WH (OR EQUAL)
- $LV — NETWORK LOW VOLTAGE ON/OFF CONTROLLER WITH CAT. 5e PORTS. ACUITY nLIGHT CONTROLS #PODM SERIES (OR EQUAL). SELECT CONTROLLER TO MEET PROJECT DESIGN REQUIREMENTS.
- $LVD — NETWORK LOW VOLTAGE ON/OFF/DIMMING CONTROLLER WITH CAT. 5e PORTS. ACUITY nLIGHT CONTROLS #POWX SERIES (OR EQUAL). SELECT CONTROLLER TO MEET PROJECT DESIGN REQUIREMENTS.
- OS — NETWORK LOW-VOLTAGE, DUAL TECHNOLOGY, SMALL MOTION CEILING SENSOR WITH CAT. 5e PORTS. ACUITY nLIGHT CONTROLS #nCM-PDT-9-RJB (OR EQUAL).
- OS2 — NETWORK LOW-VOLTAGE, DUAL TECHNOLOGY, LARGE MOTION CEILING SENSOR WITH CAT. 5e PORTS. ACUITY nLIGHT CONTROLS #nCM-PDT-10-RJB (OR EQUAL).
- OS3 — NETWORK LOW VOLTAGE, DUAL TECHNOLOGY SMALL (40'), LARGE (70') MOTION CORNER MOUNT SENSOR. MOUNT ±8'-6" A.F.F. ACUITY SENSOR SWITCH CONTROLS #nWV-16-PDT-16-WH \ (OR EQUAL)
- HOS4 — NETWORK LOW VOLTAGE, PASSIVE INFRARED, LARGE (70' MIN.) MOTION HALL WAY WALL MOUNT SENSOR. MOUNT ±8'-0" A.F.F. ACUITY SENSOR SWITCH CONTROLS #nHW13 (OR EQUAL)
- DL — NETWORK LOW-VOLTAGE DAYLIGHT HARVESTING PHOTOCELL SENSOR WITH CAT. 5e PORTS AND NO MOTION CONTROL. ACUITY nLIGHT CONTROLS #nCM-ADCX-RJB (OR EQUAL).
- PC — EXTERIOR REMOTE PHOTOCELL TORK MODEL #2101 OR EQUAL.
- LC# — LIGHTING CONTACTOR — INSTALL WITHIN A NEMA 1 ENCLOSURE
- TC# — DIGITAL TIME CLOCK
- ER — UL924 EMERGENCY BYPASS / SHUNT-TRIP RELAY AS MANUFACTURED BY HUBBLE, WATT-STOPPER, FUNCTIONAL DEVICES, PHILIPS BODINE OR EQUAL.

COMMUNICATION SYMBOLS

- BAP — BUILDING ACCESS PANEL (BAP) — BUILDING ACCESS CONTROL SYSTEM TO BE SUPPLIED BY OTHERS, INSTALLED AND WIRED BY E.C. PER MANUFACTURE INSTRUCTIONS. E.C. MUST CONFIRM ALL SYSTEM REQUIREMENTS WITH G.C. AND BUILDING OWNER.
- T — TELEPHONE OUTLET — SUPPLY 2-GANG ELECTRICAL BOX WITH SINGLE-GANG DEVICE RING AND INSTALL 1¼" A.F.F., UNLESS OTHERWISE NOTED. SUPPLY ¾" EMT CONDUIT AND ROUTE WITHIN WALL FROM ELECTRICAL BOX TO ACCESSIBLE CEILING SPACE. SUPPLY CONDUIT WITH PLASTIC BUSHINGS AND A PULLSTRING. TELEPHONE OUTLET, COVERPLATE, AND ASSOCIATED WIRING SHALL BE SUPPLIED AND INSTALLED BY OTHERS.
- TV — TELEPHONE/DATA OUTLET — SUPPLY 2-GANG ELECTRICAL BOX WITH SINGLE-GANG DEVICE RING AND INSTALL 18" A.F.F., UNLESS OTHERWISE NOTED. SUPPLY ¾" EMT CONDUIT AND ROUTE WITHIN WALL FROM ELECTRICAL BOX TO ACCESSIBLE CEILING SPACE. SUPPLY CONDUIT WITH PLASTIC BUSHINGS AND A PULLSTRING. TELEPHONE/DATA OUTLET, COVERPLATE, AND ASSOCIATED WIRING SHALL BE SUPPLIED AND INSTALLED BY OTHERS.
- TVH — TELEVISION OUTLET — SUPPLY 2-GANG ELECTRICAL BOX WITH SINGLE-GANG DEVICE RING AND INSTALL 18" A.F.F., UNLESS OTHERWISE NOTED. SUPPLY ¾" EMT CONDUIT AND ROUTE WITHIN WALL FROM ELECTRICAL BOX TO ACCESSIBLE CEILING SPACE. SUPPLY CONDUIT WITH PLASTIC BUSHINGS AND A PULLSTRING. CABLE TELEVISION OUTLET, COVERPLATE, AND ASSOCIATED WIRING SHALL BE SUPPLIED AND INSTALLED BY OTHERS.
- CR — CARD / KEYFOB READER — SUPPLY 1-GANG ELECTRICAL BOX AND INSTALL 44" A.F.F. SUPPLY ¾" EMT CONDUIT AND ROUTE WITHIN WALL FROM ELECTRICAL BOX TO ACCESSIBLE CEILING SPACE. SUPPLY CONDUIT WITH PLASTIC BUSHINGS AND A PULLSTRING. CARD READER AND ASSOCIATED WIRING SHALL BE SUPPLIED AND INSTALLED BY OTHERS.
- IC — INTERCOM STATION — SUPPLY 1-GANG ELECTRICAL BOX AND INSTALL 44" A.F.F. SUPPLY ¾" EMT CONDUIT AND ROUTE WITHIN WALL FROM ELECTRICAL BOX TO ACCESSIBLE CEILING SPACE. SUPPLY CONDUIT WITH PLASTIC BUSHINGS AND A PULLSTRING. INTERCOM STATION AND ASSOCIATED WIRING SHALL BE SUPPLIED AND INSTALLED BY OTHERS.

FIRE ALARM SYMBOLS

- FACP — FIRE ALARM CONTROL PANEL
- AP — FIRE ALARM REMOTE ANNUNCIATOR PANEL
- PS — FIRE ALARM PULLSTATION — INSTALL 48" A.F.F. TO CENTER OF BOX
- CM — CARBON MONOXIDE DETECTOR WITH AUDIBLE BASE. WIRE INTO SUPERVISORY CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL ❶ FINISHED CEILING.
- S — PHOTOELECTRIC SMOKE DETECTOR WITH STANDARD BASE. WIRE INTO INITIATING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL ❶ FINISHED CEILING.
- CS — COMBINATION CARBON MONOXIDE / PHOTOELECTRIC SMOKE DETECTOR WITH AN AUDIBLE BASE. WIRE INTO INITIATING / SUPERVISORY / SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL ❶ FINISHED CEILING.
- H — HEAT DETECTOR — FIXED TEMPERATURE OF 135°, WIRED INTO INITIATING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL ❶ FINISHED CEILING.
- CH — COMBINATION CARBON MONOXIDE / HEAT DETECTOR, FIXED TEMPERATURE OF 135° WITH AN AUDIBLE BASE. WIRE INTO INITIATING / SUPERVISORY / SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL ❶ FINISHED CEILING.
- DS — DUCT SMOKE DETECTOR — WIRED INTO INITIATING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL WITHIN HVAC DUCTWORK.
- E SR — EMERGENCY SHUTDOWN RELAY — FOR ELEVATOR RECALL.
- A — AUDIO DEVICE (WALL) — WIRED INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX
- LF A — AUDIO DEVICE WITH A 520Hz LOW FREQUENCY SOUNDER (WALL) — WIRE INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX
- V — VISUAL DEVICE (WALL) — WIRE INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX
- A/V — COMBINATION AUDIO/VISUAL DEVICE (WALL) — WIRE INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX
- LF 177cd A/V — COMBINATION AUDIO/VISUAL DEVICE WITH 177cd RATED STROBE AND A 520Hz LOW FREQUENCY SOUNDER (WALL) — WIRE INTO SIGNALING CIRCUITS OF BUILDING FIRE ALARM SYSTEM. INSTALL 80" A.F.F. TO BOTTOM OF BOX
- MDH — WALL MOUNT MAGNETIC DOOR HOLDER — TO BE INSTALLED WITHIN WALL & WIRED INTO BUILDING FIRE ALARM SYSTEM AS REQUIRED.
- FL — FLOW SWITCH — PROVIDED & INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR.
- TA — TAMPER SWITCH — PROVIDED & INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FIRE ALARM SYSTEM BY ELECTRICAL CONTRACTOR.
- MM — MONITORING MODULE
- CM — CONTROL MODULE
- RT — REMOTE TEST STATION
- BS — TWO-WAY COMMUNICATION BASE STATION
- CB — TWO-WAY COMMUNICATION CALL BOX

120V FIRE ALARM DEVICE SYMBOLS

- SS — 120V DUAL IONIZATION SMOKE DETECTOR WITH AUDIBLE ALARM AND A SEALED 10 YEAR LITHIUM BATTERY THAT IS CAPABLE OF TANDEM WIRING UP TO 18 SMOKE, CO & HEAT ALARMS. INSTALL AT FINISHED CEILING. BRK MODEL #9120LEB (OR EQUAL)
- SC — 120V ELECTROCHEMICAL, DUAL IONIZATION COMBINATION CO SMOKE DETECTOR WITH AUDIBLE CO / SMOKE ALARMS AND A SEALED 10 YEAR LITHIUM BATTERY THAT IS CAPABLE OF TANDEM WIRING UP TO 18 SMOKE, CO & HEAT ALARMS. INSTALL ❶ FINISHED CEILING. BRK MODEL #SC9120LBL (OR EQUAL)
- RM — 120V ALARM RELAY MODULE FOR INTERCONNECTION TO BUILDING FIRE ALARM SYSTEM VIA AN ADDRESSABLE INPUT MODULE. BRK MODEL #RM4 (OR EQUAL)

ELECTRICAL SYMBOLS LEGEND GENERAL NOTES:

LIGHTING CONTROLS:

a. PROVIDE NECESSARY POWER PACK RELAYS TO POWER AND INTERCONNECT LIGHTING CONTROLS, OCCUPANCY SENSORS, DAYLIGHT HARVESTING SENSORS ETC. TO MEET LIGHTING DESIGN REQUIREMENTS.

b. PROVIDE NECESSARY CATEGORY 5e AND/OR LOW-VOLTAGE CONTROL WIRING TO SUPPORT LIGHTING AND DIMMING CONTROL REQUIREMENTS PER LIGHTING DESIGNS.

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	LAMP (QTY/TYPE/ COLOR)	VOLT	VA	MOUNTING	MANUFACTURER/ MODEL #
EM	4' LINEAR LED FIXTURE WITH A WHITE HOUSING, FROSTED LENS DIFFUSER, 0-10V DIMMING DRIVER WITH AN INTEGRAL "OCCUPANCY SENSOR PROGRAMMED TO DIM FIXTURE TO 10% WHEN UNOCCUPIED. ORDER WITH INTEGRAL EMERGENCY BATTERY PACK.	LED/3500°K/ 4800LM (NOMINAL) 5137LM (DELIVERED)	120V	40W	WALL +8'-4" A.F.F.	LITHONIA LIGHTING: BLWP4-48L-ADSM-120-EZ1-LP835-MSD7ADCX-DIM10-E10WLCP
B1	2' LINEAR LED SWITCHABLE LUMEN AND COLOR TEMPERATURE STRIP LIGHT WITH A STEEL HOUSING, ACRYLIC LENS AND 0-10V DIMMING DRIVER. PROVIDE CHAIN HANGER FOR AREAS WITH EXPOSED CEILINGS. REFERENCE ARCHITECTURAL CEILING PLANS FOR CEILING TYPES.	LED/3500°K/ 2500LM (NOMINAL) 2600LM (DELIVERED)	120-277V	20W (20W MAX)	SURFACE MOUNT (GYP. / ACT CEILINGS) SUSPEND ±8'-0" A.F.F. (EXPOSED CEILINGS)	LITHONIA LIGHTING: CSS-L24-AL015-MVOLT-SWH3-80CRI-(HC36M12)
C1	4' LINEAR LED SWITCHABLE LUMEN AND COLOR TEMPERATURE STRIP LIGHT WITH A STEEL HOUSING, ACRYLIC LENS AND 0-10V DIMMING DRIVER. PROVIDE CHAIN HANGER FOR AREAS WITH EXPOSED CEILINGS. REFERENCE ARCHITECTURAL CEILING PLANS FOR CEILING TYPES.	LED/3500°K/ 4000LM (NOMINAL) 4732LM (DELIVERED)	120-277V	36W (44W MAX)	SURFACE MOUNT (GYP. / ACT CEILINGS) SUSPEND ±8'-0" A.F.F. (EXPOSED CEILINGS)	LITHONIA LIGHTING: CSS-L48-AL03-MVOLT-SWH3-80CRI-(HC36M12)
C2	4' LINEAR LED SWITCHABLE LUMEN AND COLOR TEMPERATURE STRIP LIGHT WITH A STEEL HOUSING, ACRYLIC LENS AND 0-10V DIMMING DRIVER. PROVIDE CHAIN HANGER FOR AREAS WITH EXPOSED CEILINGS. REFERENCE ARCHITECTURAL CEILING PLANS FOR CEILING TYPES.	LED/3500°K/ 5000LM (NOMINAL) 5437LM (DELIVERED)	120-277V	44W (44W MAX)	SURFACE MOUNT (GYP. / ACT CEILINGS) SUSPEND ±8'-0" A.F.F. (EXPOSED CEILINGS)	LITHONIA LIGHTING: CSS-L48-AL03-MVOLT-SWH3-80CRI-(HC36M12)
D1	6" APERTURE LED DOWNLIGHT WITH A SEMI-SPECULAR DIFFUSER, CLEAR TRIM, WHITE FLANGE, AND 0-10V DIMMING DRIVER. LISTED FOR WET LOCATIONS.	LED/3500°K/ 1500LM (NOMINAL) 1514LM (DELIVERED)	120-277V	17.5W	RECESSED	LITHONIA LIGHTING: LDN6-35/15-L06AR-LSS-TRW-MVOLT-GZ10
F1	4' LIGHT LED DIRECT PENDANT FIXTURE WITH A .5" DROP SATIN DIFFUSE LENS, AND A 0-10V DIMMING DRIVER DOWN TO 1%. INCLUDE 5' CABLE KIT FOR PENDANT INSTALLATION.	LED/3500°K/ 1000 LM/FT (DELIVERED)	120-277V	32W (TOTAL)	SUSPEND 8'-6" A.F.F.	STARTEK LIGHTING: SLIMD-4'-1000-DL05-35K-80-PB-AC805-U-1C-DT1
G1	16"ø LED PENDANT FIXTURE WITH A SHALLOW (5.5") ALUMINUM HOUSING, WHITE ACRYLIC DIFFUSER, AND 0-10V DIMMING DRIVER. ADJUSTABLE BETWEEN 18"-122".	LED/3500°K/ 1900LM (NOMINAL) 1865LM (DELIVERED)	120-277V	18W	SUSPEND 8'-6" (MIN.) A.F.F.	BROWNLEE LIGHTING: BARREL PENDANT 2670-16-BL-R18-BL-BLC-35K
G2	16"ø LED PENDANT FIXTURE WITH A SHALLOW (5.5") ALUMINUM HOUSING, WHITE ACRYLIC DIFFUSER, AND 0-10V DIMMING DRIVER. ADJUSTABLE BETWEEN 18"-122".	LED/3500°K/ 2100LM (NOMINAL) 2200LM (DELIVERED)	120-277V	23W	SUSPEND 8'-6" (MIN.) A.F.F.	BROWNLEE LIGHTING: BARREL PENDANT 2670-16-BL-R22-BL-BLC-35K
H1	30"ø LED FIXTURE WITH A DRUM STYLE ALUMINUM HOUSING, FLAT WHITE ACRYLIC DIFFUSER, AND 0-10V DIMMING DRIVER.	LED/3500°K/ 5000LM (NOMINAL) 4996LM (DELIVERED)	120-277V	49W	SURFACE ❶ CEILING	BROWNLEE LIGHTING: METRO SURFACE 2081-30-BL-S49 FL2-35K
H2	19"ø LED PENDANT FIXTURE WITH A DRUM STYLE ALUMINUM HOUSING, FLAT WHITE ACRYLIC DIFFUSER, AND 0-10V DIMMING DRIVER. ORDER WITH CORD/CABLE EXTENSION IF REQUIRED — TO BE CONFIRM BY E.C. IN FIELD.	LED/3500°K/ 4000LM (NOMINAL) 3825LM (DELIVERED)	120-277V	49W	SUSPEND 8'-6" (MIN.) A.F.F.	BROWNLEE LIGHTING: METRO PENDANT 2681-19-BL-R49 FL2-CC1-BLC-35K (CE1 IF REQUIRED)
J1	4'-LIGHT DIRECT LENS LED FIXTURE, EACH 46" IN LENGTH WITH A 12" ROUND MULTI-PORT CANOPY. ADJUSTABLE UP TO 12".	LED/3500°K/ 272LM/FT (DELIVERED)	120V	4.4W/FT 67W (TOTAL)	SUSPEND 8'-0" (MIN.) A.F.F.	PURE EDGE LIGHTING: PIX STICKS CIRRUS PX4P-D1-5W-46-35K-BK
J2	5'-LIGHT DIRECT LENS LED FIXTURE, EACH 72" IN LENGTH WITH A 12" ROUND MULTI-PORT CANOPY. ADJUSTABLE UP TO 12'	LED/3500°K/ 272LM/FT (DELIVERED)	120V	4.4W/FT 132W (TOTAL)	SUSPEND 8'-0" (MIN.) A.F.F.	PURE EDGE LIGHTING: PIX STICKS CIRRUS PX5P-D1-5W-72-35K-BK
R1	SINGLE CIRCUIT 8' TRACK WITH SIX(6) TRACK HEADS FOR SURFACE OR SUSPENDED INSTALLATION. INCLUDE NECESSARY CANOPY POWER FEED KIT, AIR CRAFT CABLING, ACCESSORIES ETC. FOR A 100% COMPLETE INSTALLATION.	LED/3000°K/ 850LM/EA (DELIVERED)	120V	11W EA (66W TOTAL)	SUSPEND CONFIRM HEIGHT WITH G.C.	WAC LIGHTING: TRACK: J1BWH CANOPY KIT: J2-SKF96 CABLE: SKC96 TRACK HEAD: J-8010-30-WT
R2	DECORATIVE SINGLE PENDANT LED FIXTURE WITH BLACK FINISH AND ACRYLIC FROSTED DIFFUSER.	LED/3000°K/ 900LM (NOMINAL) 880LM (DELIVERED)	120V	12W	SUSPEND CONFIRM HEIGHT WITH G.C.	WAC LIGHTING: PD-250905-CS-BK
R3	DECORATIVE PENDANT LED FIXTURE WITH A BLACK BASKET STYLE "FRAME" HOUSING THAT DIRECTS LIGHT BOTH OUT AND DOWN. INCLUDES THREE 12" AND ONE 6" DOWNRODS.	LED/3000°K/ 1300LM (NOMINAL) 501M (DELIVERED)	120V	15W	SUSPEND CONFIRM HEIGHT WITH G.C.	WAC LIGHTING: PD-174211-30-BK
R4	52ø 3-BLADE CEILING FAN WITH A 3-SPEED REVERSIBLE MOTOR AND INTEGRAL LED LIGHT. INCLUDE 12" DOWNROD.	LED/3000°K/ 1600LM (NOMINAL) 708LM (DELIVERED)	120V	100W	PENDANT	WAC LIGHTING: F-072L-MB-MB DR12-MB
R5	DECORATIVE SINGLE PENDANT LED FIXTURE WITH BLACK HOUSING AND ADJUSTABLE CABLE.	LED/3000°K/ 900LM (NOMINAL) 880LM (DELIVERED)	120V	12W	SUSPEND CONFIRM HEIGHT WITH G.C.	WAC LIGHTING: PD-251005-CS-BK
R6	6"ø SURFACE MOUNT "RECESSED" LIGHT FIXTURE WITH AN ALUMINUM HOUSING AND WHITE ACRYLIC DIFFUSER PROVIDING UNIFORM LIGHTING.	LED/3000°K/ 1000LM (NOMINAL) 1100LM (DELIVERED)	120V	15W	SURFACE ❶ CEILING	WAC LIGHTING: SD5-6-15L-120V-30K
R7	6" ROUND TRIM, 4" ROUND LENS LED DISC FIXTURE WITH A WHITE POLYCARBONATE LENS, AND WHITE HOUSING. LISTED FOR WET LOCATIONS INCLUDING SHOWER APPLICATIONS.	LED/3000°K/ 750LM (NOMINAL) 750LM (DELIVERED)	120V	11W	SURFACE ❶ CEILING	JUNO LIGHTING: JSBT-4IN-30K-90CRI-WL-MW
R8.1	VANITY 3-LIGHT FIXTURE WITH A BLACK HOUSING AND CLEAR GLASS SHADES. FURNISH WITH CLEAR LED LAMPS COMPATIBLE WITH FIXTURE.	3-LED MEDIUM BASE 50W EQUIVALENT /3000°K/~900LM	120V	30W (TOTAL)	WALL-CONFIRM HEIGHT W/ ARCH. INTERIOR ELEVATIONS	VISUAL CONFIRT & CO. LIGHTING: 41172-112
R8.2	VANITY 4-LIGHT FIXTURE WITH A BLACK HOUSING AND CLEAR GLASS SHADES. FURNISH WITH CLEAR LED LAMPS COMPATIBLE WITH FIXTURE.	4-LED MEDIUM BASE 50W EQUIVALENT /3000°K/~900LM	120V	40W (TOTAL)	WALL-CONFIRM HEIGHT W/ ARCH. INTERIOR ELEVATIONS	VISUAL CONFIRT & CO. LIGHTING: 41173-112
R9	2' LINEAR LED STRIP LIGHT WITH A WHITE FINISH AND WHITE ACRYLIC LENS.	LED/3500°K/ 2000LM (NOMINAL) 2144LM (DELIVERED)	120V	15W	SURFACE ON WALL +6" ABOVE DOOR FRAME	LITHONIA LIGHTING: CSS-L24-2000LM-MVOLT-35K-80CRI
R10	11" ROUND 1" THICK LED FIXTURE WITH A BLACK FINISH AND WHITE LENS	LED/3000°K/ 1500LM (NOMINAL) 1520LM (DELIVERED)	120V	20W	SURFACE ❶ CEILING	WAC LIGHTING: FM-11RN-930-BK
R11	5" SQUARE EXTERIOR LED UP/DOWN LIGHT WITH AN ALUMINUM HOUSING. WET LOCATION LISTED.	LED/3000°K/ 1200LM (NOMINAL) 1180LM (DELIVERED)	120V	12W	SURFACE ON WALL 5'-6" A.F.F.	LIGHTWAY LIGHTING: BUSW-5-LED-F2B-2-81-42
S1	⅜ø" ROUND LOW-VOLTAGE LED "SNAP PUCK" LIGHT FOR RECESSED INSTALLATION WITHIN ROUND HAND RAILING. INCLUDE REQUIRED REMOTE DRIVER QUANTITY TO SUPPORT OVERALL INSTALLATION. ONE DRIVER CAN SUPPORT UP TO 15 PUCKS. ORDER AND INSTALL ENTIRE SYSTEM PER MANUFACTURE SPECIFICATIONS.	LED/3000°K/ 200LM (NOMINAL) 170LM (DELIVERED)	3Vdc	1.5W	RECESS WITHIN HANDRAILING USING MANUFACTURE INSTALLATION KIT	ALPHABET LIGHTING: THETA HANDRAIL 750S-30K-ST PC-AG-CF
V	2' LINEAR LED WET LOCATION FIXTURE ENCLOSED AND GASKETED WITH A WHITE FIBERGLASS HOUSING AND POLYCARBONTE DIFFUSER. ORDER REQUIRED ACCESSORIES FOR CONCRETTE WALL MOUNT INSTALLATION IN ELEVATOR SHAFT.	LED/3000°K/ 4000LM (NOMINAL) 4855LM (DELIVERED)	120-277V	40W	WALL FIELD VERIFY LOCATION	LITHONIA LIGHTING: DMW2-L24-4000LM-PCL-WD-MVOLT-GZ10-40K-80CIR
W1	EXTERIOR LED WALL PACK WITH AN ALUMINUM HOUSING. NIGHTTIME FRIENDLY WITH A 0/0/0 BUG RATING.	LED/3000°K/ 1500LM (NOMINAL) 1376LM (DELIVERED)	120-277V	11W	SURFACE ON WALL. SEE LIGHTING PLANS FOR HEIGHTS	LITHONIA LIGHTING: ARC1-LED-P1-30K-MVOLT-DBLXD
W2	EXTERIOR 22" TALL LED WALL SCONCE WITH A STEEL HOUSING AND WHITE ACRYLIC LENS	LED/3000°K/ 2000LM (NOMINAL) 2000LM (DELIVERED)	120-277V	15W	SURFACE ON WALL. SEE LIGHTING PLANS FOR HEIGHTS	LITHONIA LIGHTING: ARC1-LED-P1-30K-MVOLT-DBLXD
X1	EXIT SIGN, UNIVERSAL MOUNT WITH CANOPY, WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, 8" STENCILED RED LETTERS WITH LED LAMPS & AN INTEGRAL BATTERY PACK.	LED — FURNISHED WITH FIXTURE	120/277V	.71W	CEILING/WALL (+7'-6"A.F.F.) TBD BY E.C.	LITHONIA LIGHTING: "QUANTUM" LQM-S-W-3-R-120/277-ELN
X2	COMBINATION LED EXIT SIGN / EMERGENCY LIGHTING UNIT, UNIVERSAL MOUNT WITH CANOPY, WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, 8" STENCILED RED LETTERS WITH, TWIN ADJUSTABLE HEADS FOR EMERGENCY LIGHTING & AN INTEGRAL BATTERY PACK.	LED (EXIT), TWO 1.5W/LEDs FURNISHED WITH FIXTURE	120/277V	4.3W	CEILING/WALL (+7'-6"A.F.F.) TBD BY E.C.	LITHONIA LIGHTING: "QUANTUM" LHQM-LED-R
EL1	EMERGENCY LED LIGHTING UNIT WITH A WHITE IMPACT & SCRATCH RESISTANT THERMOPLASTIC HOUSING, TWIN ADJUSTABLE HEADS & AN INTEGRAL BATTERY PACK.	TWO 2.4W/220 LUMEN LEDs FURNISHED WITH FIXTURES	120/277V	1.09W	WALL +7'-6" A.F.F.	LITHONIA LIGHTING: "QUANTUM" ELM2L

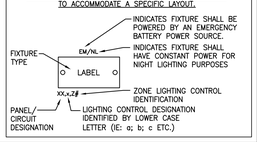
LIGHTING FIXTURE SCHEDULE GENERAL NOTES:

a. ALTERNATE FIXTURE SELECTIONS MUST HAVE EQUIVALENT DELIVERED LUMEN OUTPUT WITH A MAXIMUM WATTAGE THAT DOES NOT EXCEED THE SPECIFIED WATTAGE, NO EXCEPTIONS.
b. SWITCHABLE LUMEN FIXTURE ARE NOT PERMITTED UNLESS OTHERWISE SPECIFIED.
c. FIXTURES WITH SWITCHABLE LUMEN AND COLOR TEMPERATURES ARE TO BE SET PER INFORMATION PROVIDED IN "LAMP" COLUMN.
d. FIXTURES MUST BE ENERGY STAR OR DLC LISTED AS SPECIFIED.

EXIT SIGN SYMBOL LEGEND

END MOUNT	SINGLE FACE	DOUBLE FACE	SINGLE FACE DIRECTIONAL	DOUBLE FACE DIRECTIONAL
X#	X#	X#	X#	X#

EXAMPLE OF THE TYPICAL LABELS FOR ALL LIGHTING FIXTURES. LABELS MAY BE REPOSITIONED ON DRAWINGS TO ACCOMMODATE A SPECIFIC LAYOUT.



GENERAL SYMBOLS & ABBREVIATION

NOT ALL ABBREVIATIONS MAY BE REPRESENTED ON DRAWINGS

- SIGNIFIES EXISTING ELECTRICAL EQUIPMENT/ DEVICES TO REMAIN
- SIGNIFIES EXISTING ELECTRICAL EQUIPMENT/ DEVICES TO BE REMOVED
- KEYNOTE
- REVISION TAG

Ø	PHASE
A	AMPERES
AC	ALTERNATING CURRENT
A/C	AIR CONDITIONING
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AF	AMPERE FRAME
AFC	AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
C.C.	CIVIL CONTRACTOR
CCTV	CLOSED CIRCUIT TELEVISION
CD	CANDELA
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CM	CEILING MOUNT
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DIA	DIAMETER
E.C.	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF
EX	EXISTING
EXR	EXISTING TO BE RELOCATED
EWC	ELECTRIC WATER COOLER
F	FUSE
FAA	FI

273 HICKORY STREET APARTMENTS - Electrical Load Analysis

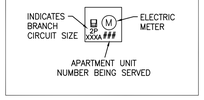
Service Voltage (L-L):	208	Phase	3	
Service Voltage (L-N):	120	Wire	4	
Occupancy:	Residential Apartment Complex			
Load Description	Quantity	Connected Load (Watts)	Diversity %	Design Load (Watts)
Apartment/Hotel Rms	29	1,017,610	*	335,811
Lighting		3,390	100.00%	3,390
Receptacles		14,180	****	12,090
Elevator	1	16,630	***	14,136
Electric ERV HVAC Equipment		41,520	85.00%	35,292
Electric Only Heat		25,980	0.00%	0
Cooling		59,040	80.00%	47,232
Kitchen (Other than Dwelling)		0	**	0
SEWER PUMPS		0	100.00%	0
Trash Compactors	1	6,010	35.00%	2,104
Water Booster Pump	1	12,020	60.00%	7,212
Parking Lighting		0	100.00%	0
Parking HVAC		0	65.00%	0
Parking Power (Receptrs., EV's, Etc.)		0	65.00%	0
Future Commerical Tenant(s)		82,200	100.00%	82,200
Fire Pump		0	100.00%	0
Load (Watts)		1,278,580		539,466
Load (Amps)		3,549		1,497

* N.E.C. 220.84
** N.E.C. 220.56
***N.E.C. 430.22E
****N.E.C. 220.44

COMMERCIAL TENANT METER SCHEDULE

SYMBOL	DESCRIPTION
1	BUILDING "HOUSE" ELECTRIC METER
2	SPARE METER WITH BLANK COVER TO SERVE FUTURE COMMERCIAL TENANT WITH A 200A ELECTRIC SERVICE
3	SPARE METER WITH BLANK COVER TO SERVE FUTURE COMMERCIAL TENANT WITH A 400A ELECTRIC SERVICE

APARTMENT METER LEGEND



FEEDER SCHEDULE

SYMBOL	DESCRIPTION
A	FOUR(4) CONDUIT RUNS EACH CONTAINING THE FOLLOWING: 4–#500 MCM THWN AL. } 4" PVC SCH.40
B1	ONE(1) 2½" CONDUIT RUN WITH PULL STRING TO SUPPORT FUTURE TENANT ELECTRIC SERVICE. UTILIZE GRC (EXTERIOR USE ABOVE GRADE), PVC SCH.40 (BELOW GRADE USE), EMT (INTERIOR USE ABOVE GRADE).
B2	ONE(1) 4" CONDUIT RUN WITH PULL STRING TO SUPPORT FUTURE TENANT ELECTRIC SERVICE. UTILIZE GRC (EXTERIOR USE ABOVE GRADE), PVC SCH.40 (BELOW GRADE USE), EMT (INTERIOR USE ABOVE GRADE).
C	TWO(2) CONDUIT RUNS EACH CONTAINING THE FOLLOWING: 4–#500 MCM THHN AL. } 4" GRC (EXTERIOR USE ABOVE GRADE) 1–#2/0 MCM THHN AL. } 4" EMT (INTERIOR USE ABOVE GRADE) 4" PVC SCH.40 (BELOW GRADE USE)
D	4–#300 THHN AL. } 2½" EMT C. 1–#2 GRND. AL.
E	4–#1 THHN AL. } 1½" EMT C. 1–#6 GRND. AL.
F1	3–#1 THHN CU. } 1½" EMT C. 1–#6 GRND. CU.
F2	3–#4 THHN CU. } 1½" EMT C. 1–#8 GRND. CU.
G	3–#4 THHN CU. } 1¼" EMT C. 1–#8 GRND. CU.
H	2–#10 THHN CU. } ¾" EMT 1–#10 GRND. CU.
I	2–#12 THHN CU. } ½" EMT 1–#12 GRND. CU.
J	4–#1 THHN AL. } 2" GRC (EXTERIOR USE ABOVE GRADE) 1–#6 GRND. AL. } 1 ½" EMT (INTERIOR USE ABOVE GRADE) 2" PVC SCH.40 (BELOW GRADE USE)
K	1½" EMT (INTERIOR USE ABOVE GRADE); 1½" PVC SCH.0 (EXTERIOR/BELOW GRADE USE) FOR CONTROL WIRING. SUPPLY AND INSTALL WIRING PER MANUFACTURE SPECIFICATIONS.
L	6–#10 THHN CU. } 1" EMT C. (INTERIOR USE ABOVE GRADE) 3–#10 GRND. CU. } 1" PVC SCH.40 (EXTERIOR/BELOW GRADE USE)

ONE–LINE DIAGRAM KEYNOTES: (#)

1. SERVICE ENTRANCE RATED 208Y/120V, 3ø, 4–WIRE, 1200A, NEMA 3R MAIN CIRCUIT BREAKER SECTION (36"W x 48"D x 91.5"H) WITH 1200A CROSS BUSS, 65kAIC SHORT CIRCUIT RATING, AND A CURRENT LIMITING ADJUSTABLE TRIP CIRCUIT BREAKER. C.B. TO HAVE LOCKING PROVISIONS PER POWER COMPANY REQUIREMENTS. INCLUDE LUG KIT THAT CAN ACCEPT SPECIFIED INCOMING CABLES.
2. SERVICE ENTRANCE RATED NEMA 3R LARGE TENANT METER SECTION (30"W x 48"D x 91.5"H) WITH A 1200A CROSS BUS, 65kAIC SHORT CIRCUIT RATING, COLD SEQUENCING UTILITY CT COMPARTMENT, ONE(1) RINGLESS STYLE METER SOCKET, AND A CURRENT LIMITING ADJUSTABLE TRIP CIRCUIT BREAKER. C.B. TO HAVE LOCKING PROVISIONS PER POWER COMPANY REQUIREMENTS.
3. SERVICE ENTRANCE RATED NEMA 3R SMALL TENANT METER SECTION (24"W x 36"D x 91.5"H) WITH A 1200A CROSS BUS, 65kAIC SHORT CIRCUIT RATING, AND THREE(3) RINGLESS STYLE METER SOCKETS EACH RATED FOR 200 AMPERES. INCLUDE PROVISIONS FOR CIRCUIT BREAKERS TO BE SUPPLIED AND INSTALLED AT A FUTURE DATE TO MEET COMMERCIAL TENANT NEEDS.
4. SERVICE ENTRANCE RATED NEMA 3R LARGE TENANT METER SECTION (30"W x 48"D x 91.5"H) WITH A 1200A CROSS BUS, 65kAIC SHORT CIRCUIT RATING, COLD SEQUENCING UTILITY CT COMPARTMENT, ONE(1) RINGLESS STYLE METER SOCKET, AND A CURRENT LIMITING ADJUSTABLE TRIP CIRCUIT BREAKER. C.B. TO HAVE LOCKING PROVISIONS PER POWER COMPANY REQUIREMENTS.

5A. ROUTE TWO(2) CONDUITS TO FUTURE "LARGE" COMMERCIAL TENANT 004 AND TWO(2) CONDUITS TO FUTURE "SMALL" COMMERCIAL TENANT 002. INTENDED TO PROVIDE OPTIONS TO SUPPORT MULTIPLE 200A OR LESS ELECTRICAL SERVICES FOR FUTURE COMMERCIAL TENANTS AS NEEDED.

5B. ROUTE CONDUITS TO FUTURE "LARGE" COMMERCIAL TENANT 004. INTENDED TO PROVIDE OPTION TO SUPPORT 400A ELECTRIC SERVICE FOR FUTURE COMMERCIAL TENANT AS NEEDED.

6. SERVICE ENTRANCE RATED 208Y/120V, 3ø, 4–WIRE, 1200A, NEMA 3R MAIN CIRCUIT BREAKER SECTION WITH 1200A CROSS BUS AND 65kA SHORT CIRCUIT RATING. FOR RESIDENTIAL APARTMENT ELECTRIC SERVICE METERING.
7. FIVE–SOCKET RINGLESS NEMA 3R METER SECTION 3ø IN – 1ø OUT, 125A. INCLUDE FIVE(5) 2–POLE CIRCUIT BREAKERS WITH DESIGNATED AMPERE RATINGS.
8. APARTMENT UNIT FEEDERS TO BE SIZED AS FOLLOWS:
   a.) 125A C.B. FEEDS – UTILIZE 3–WIRE (+ GRND) ALUMINUM MC CABLE TO FEED INDIVIDUAL APARTMENT UNIT LOAD CENTERS (LC#). SIZE FEEDERS AS FOLLOWS:
   1. #2/0 AL. MC CABLE FOR RUNS UP TO 175' IN LENGTH.
   2. #3/0 AL. MC CABLE FOR RUNS BEYOND 176' IN LENGTH.

* CABLE ROUTING AND FEEDER LENGTHS TO BE FIELD VERIFIED BY E.C. EACH FEEDER SHALL HAVE A CONTINUOUS RUN FROM METER TO DESIGNATED LOAD CENTER. A 60' MINIMAL LENGTH IS REQUIRED FROM THE METERBANK TO ANY GIVEN LOAD CENTER. REFERENCE TYPICAL APARTMENT UNIT PLANS FOR LOAD CENTER (LC#) LOCATIONS. CONCEAL CABLING WITHIN CEILING / FLOOR ASSEMBLIES AND FINISH WALLS WHEREVER POSSIBLE. EXPOSED MC CABLING IS PERMITTED WHERE REQUIRED. COORDINATE INSTALLATION INTENT WITH G.C. PRIOR TO ELECTRICAL FIELD WORK. ENSURE INSTALLATION MEETS ALL NEC REQUIREMENTS.

9. I–LINE MAIN DISTRIBUTION PANEL (MDP) – 120/208V, 3ø, 4–WIRE, 800A WITH MAIN LUGS AND 65kA SHORT CIRCUIT RATING.
10. EXTERNALLY MOUNTED SURGE PROTECTOR DEVICE (SPD) FOR 208Y/120V POWER PANEL FURNISH SQUARE D MODEL #SSP2QEMA12 OR EQUAL. C.B. SIZE FEEDING SPD TO BE CONFIRMED WITH MANUFACTURE SPECIFICATIONS PRIOR TO INSTALLATION. MOUNT SPD ADJACENT TO PANEL WITH THE SHORTEST WIRING LENGTH POSSIBLE. FOLLOW MANUFACTURE INSTRUCTIONS FOR COMPLETE INSTALLATION REQUIREMENTS.
11. 20A, 1P, 15A, 120V FUSED DISCONNECT SWITCH WITH A LOCATABLE NEMA 1 ENCLOSURE.
12. WIRE PER CITY OF BUFFALO STANDARDS FOR FIRE ALARM CONTROL PANEL INSTALLATION. INSTALL SURGE PROTECTION DEVICE WITH VISIBLE NOTIFICATION TO PROTECT FIRE ALARM CONTROL PANEL (FACP). FURNISH DITEK SURGE PROTECTION DTK–120SRD (OR EQUAL).
13. ENERGY RECOVER UNIT TO BE EQUIPPED WITH A NON–FUSED DISCONNECT SWITCH AND GFCI RECEPTACLE FROM FACTORY UNLESS OTHERWISE DIRECTED BY G.C. OR M.C.
14. SHUNT–TRIP C.B. EQUIPPED WITH AN AUXILIARY CONTACT CAPABLE OF BEING LOCKED IN THE OPEN POSITION. CONTACT TO BE WIRED INTO ELEVATOR CONTROLLER SO THAT BOTH NORMAL AND EMERGENCY POWER SYSTEMS ARE SHUT–DOWN IN THE EVENT THAT THE ASSOCIATED ELEVATOR SHAFT HEAT DETECTOR(S) ARE ACTIVATED. COORDINATE WIRE TERMINATION REQUIREMENTS TO ELEVATOR CONTROL SYSTEM WITH ELEVATOR CONTRACTOR AND SHOP DRAWINGS.
15. FUSED DISCONNECT SWITCH WITH AUXILIARY CONTACT – 240V, 100A WITH A NEMA 1 ENCLSOURE. SUPPLY FUSES PER ELEVATOR SHOP DRAWINGS. CONFIRM WITH ELEVATOR SHOP DRAWINGS EXACT DISCONNECT SWITCH REQUIREMENTS AND PROVIDE AS NEEDED TO MEET ALL ELEVATOR FEEDER AND ELEVATOR CODE REQUIREMENTS. INCLUDE SECONDARY NON–FUSED DISCONNECT SWITCH AS REQUIRED.
16. OPEN TRANSACTION AUTOMATIC TRANSFER SWITCH – 208V, 3–POLE, 4–WIRE, 100A WITH A NEMA 1 ENCLOSURE.
17. GENERATOR DOCKING STATION – 600V, 100A–400A RATED, 3–POLE MANUAL TRANSFER SWITCH WITH PHASE ROTATION MONITOR, CAMLOCKS AND A NEMA 3R ENCLOSURE. LOCATE AT EXTERIOR OF BUILDING IN ACCESSIBLE LOCATION TO ALLOW CONNECTION TO PORTABLE GENERATOR. SUPPLY BATTERY CHARGER RECEPTACLE WITH A DEDICATED 20A BRANCH CIRCUIT AND BLOCK HEATER RECEPTACLE WITH A DEDICATED 30A BRANCH CIRCUIT. INSTALL AND WIRE GENERATOR DOCKING STATION TO MEET ALL NEC ARTICLE 700 REQUIREMENTS.

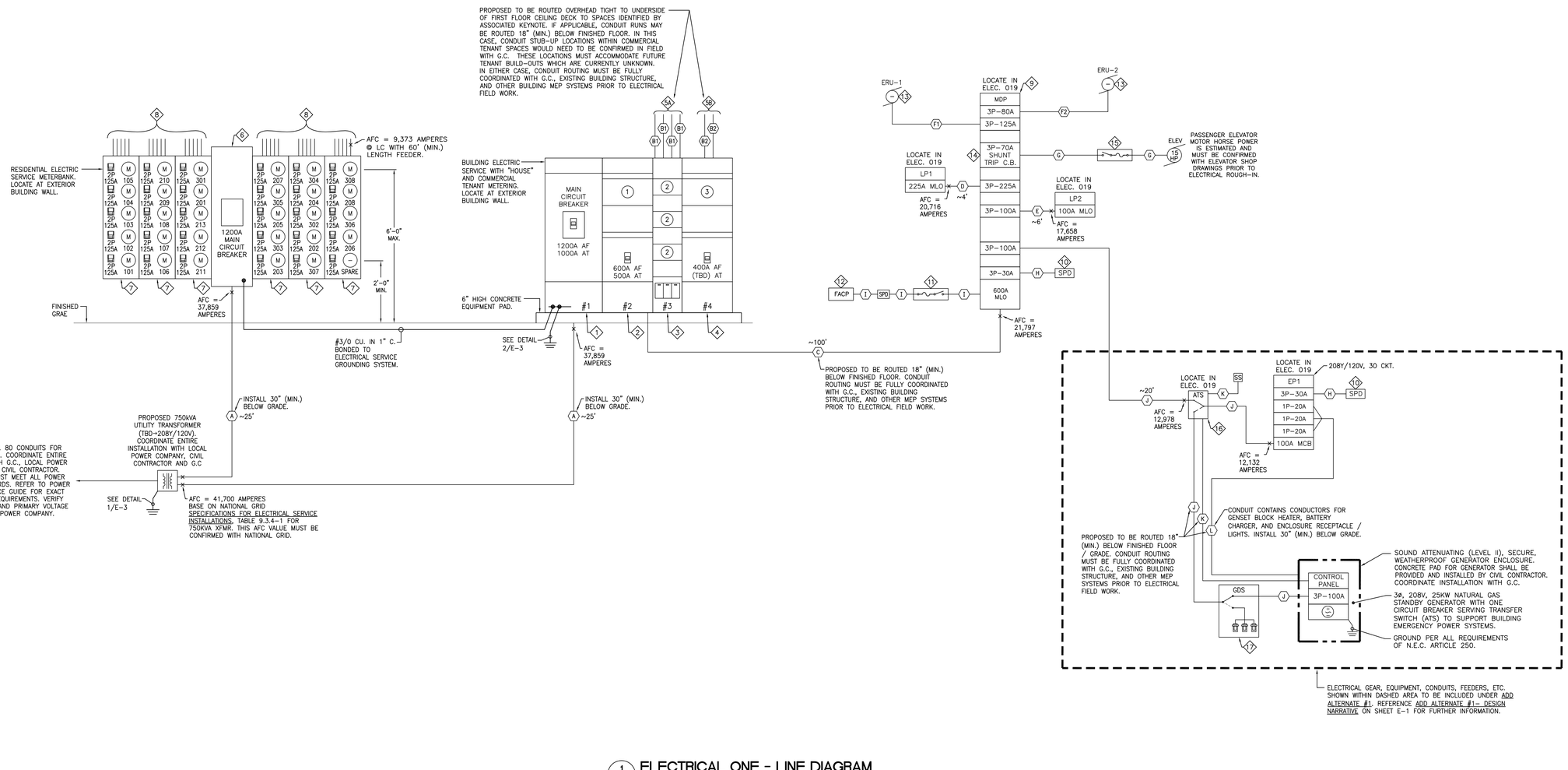
GENERAL NOTES:

a. ELECTRICAL SERVICE GEAR, METERING AND POWER PANELS REPRESENTED IN ONE–LINE ARE BASED ON SQUARE D EQUIPMENT. ALTERNATE MANUFACTURES MEETING ALL DESIGN REQUIREMENTS AND PHYSICAL DIMENSIONS ARE ACCEPTABLE.

b. ELECTRIC UTILITY METERING IDENTIFIED IN ONE–LINE DIAGRAM IS INTENDED TO MEET ALL POWER COMPANY INSTALLATION STANDARDS. FINAL EQUIPMENT SELECTIONS, LOCATIONS AND INTENDED INSTALLATIONS MUST BE APPROVED BY THE POWER COMPANY PRIOR TO ORDERING AND INSTALLING EQUIPMENT.

c. PROVIDE ARC FLASH ANALYSIS WITH WARNING LABELS AFFIXED TO PANELBOARDS AS REQUIRED BY NFPA 70E.

d. AVAILABLE FAULT CURRENTS IDENTIFIED IN ONE–LINE DIAGRAM ARE FOR REFERENCE ONLY AND MUST BE VERIFIED BY PERFORMING SHORT CIRCUIT AND COORDINATION STUDIES BASED ON AVAILABLE FAULT CURRENT AT UTILITY TRANSFORMER AS DEFINED BY LOCAL POWER COMPANY. FEEDER LENGTHS NOTED NEXT TO EACH FEEDER SYMBOL ARE GIVEN FOR REFERENCE AND MUST BE CONFIRMED BY E.C. PRIOR TO PERFORMING STUDIES. STUDIES MUST BE COMPLETED PRIOR TO ORDERING ALL ELECTRIC GEAR TO ENSURE SPECIFIED FAULT CURRENT RATINGS OF EACH EQUIPMENT ITEM MEETS OR EXCEEDS AVAILABLE FAULT CURRENT AT EACH LOCATION.



1 / E-2 ELECTRICAL ONE – LINE DIAGRAM
SCALE: N.T.S.

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INTERIORS A. Nagle DRAFTER

SEAL:
Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677
STATE OF NEW YORK · JAMES D. ROWAN · 084719 · LICENSED PROFESSIONAL ENGINEER
5-23-25

TITLE:
ELECTRICAL ONE-LINE DIAGRAM

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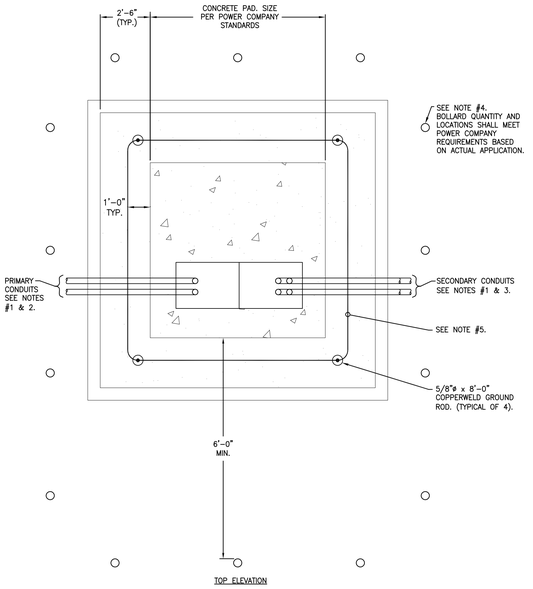
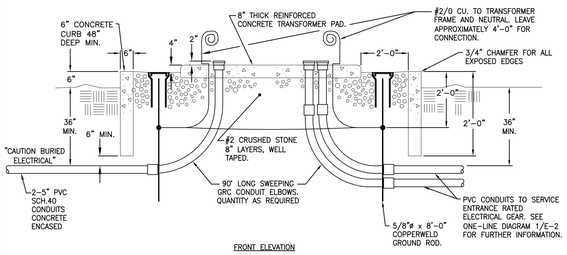
SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: E-2



TOP ELEVATION



FRONT ELEVATION

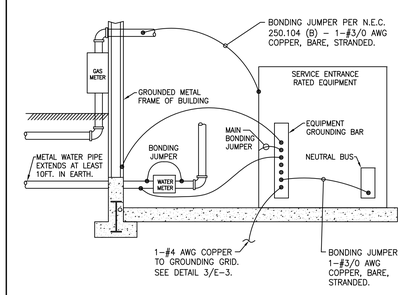
NOTES:

1. DIRECTION OF CONDUITS TO BE PER ACTUAL APPLICATION.
2. PRIMARY CONDUITS SHALL BE TWO(2) 5"ø CONCRETE ENCASED. ONE(1) CONDUIT SHALL BE UTILIZED FOR POWER CONDUCTORS AND THE REMAINING CONDUIT SHALL SERVE AS A SPARE. PROVIDE CAUTION TAPE LABELED "CAUTION BURIED ELECTRICAL" AND LAY ON TOP OF STONE ALONG LENGTH OF PRIMARY RUN.
3. SECONDARY CONDUITS – SEE ELECTRICAL ONE-LINE DIAGRAM 1/E-2 FOR FURTHER INFORMATION.
4. BOLLARDS SHALL BE 6" I.D. SCHEDULE 40 BLACK OR GALVANIZED PIPE, 9 FT. IN LENGTH, CONCRETE FILLED & CAPPED WITH "HIGH" VISIBILITY YELLOW FINISH. SET TOP OF BOLLARD 5'-0" ABOVE GRADE.
5. BACKFILL SHALL BE WELL TAMPED.
6. INTERCONNECT GROUND RODS WITH #2/0 BARE CU. UTILIZE BURNDY HYDRAULIC CRIMP FITTINGS FOR ALL CABLE CONNECTIONS.

GENERAL NOTES:

a. DETAIL SHOWN FOR REFERENCE ONLY. CONCRETE PAD, CONCRETE CURB, BOLLARD PLACEMENT, DIMENSIONS ETC. SHALL BE BASED ON POWER COMPANY STANDARDS AND DETAILS. ELECTRICAL CONTRACTOR MUST COORDINATE ALL TRANSFORMER REQUIREMENTS, PER ACTUAL APPLICATION, WITH LOCAL POWER COMPANY PRIOR TO COMMENCING REQUIRED SITE WORK.

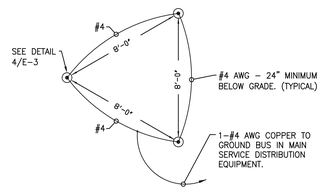
1 E-3 PADMOUNT TRANSFORMER
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. GROUNDING ELECTRODE SYSTEM TO BE INSTALLED PER ALL REQUIREMENTS OF N.E.C. ARTICLE 250.52.
b. CABLE FOR GROUNDING ELECTRODE SYSTEM TO BE #3/0 AWG COPPER (MIN.) UNLESS OTHERWISE ALLOWED BY THE NEC.

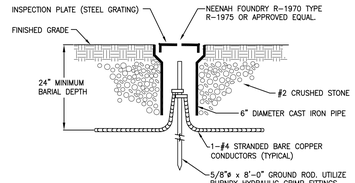
2 E-3 TYPICAL GROUNDING SYSTEM
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. ALL CONNECTIONS SHALL BE UL APPROVED BURNDY HYDRAULIC CRIMP TYPE.
b. GROUND CABLES CONNECT TO SWITCHBOARD GROUND BUS.
c. GROUND CABLE TO BE #4 AWG COPPER, BARE, STRANDED.
d. ALL TO CONFORM TO N.E.C. ARTICLE 250.
e. ELECTRICAL CONTRACTOR SHALL VERIFY GROUNDING GRID LOCATION IN FIELD. COORDINATE LOCATION WITH CIVIL CONTRACTOR.

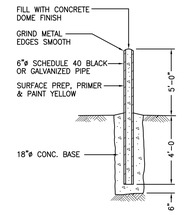
3 E-3 GROUNDING GRID
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

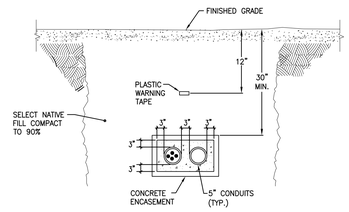
a. INSPECTION PLATE IS SUGGESTED, BUT NOT REQUIRED.

4 E-3 GROUND ROD INSTALLATION
SCALE: N.T.S. Electrical Detail



SECTION IN EARTH OR AGGREGATE

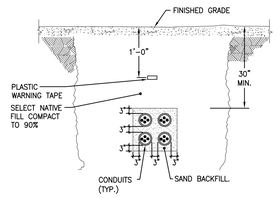
5 E-3 BOLLARD FOUNDATION
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. DUCT BANK, TRENCHING AND BACKFILL BY E.C IN COORDINATION WITH CIVIL CONTRACTOR. ENSURE TRENCH AND BACKFILL MEETS ALL POWER COMPANY STANDARDS.

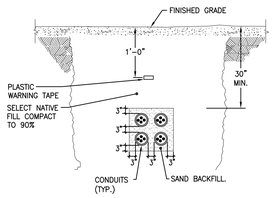
6 E-3 TYPICAL DUCTBANK PRIMARY ELECTRIC SERVICE
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. DUCT BANK, TRENCHING AND BACKFILL BY E.C IN COORDINATION WITH CIVIL CONTRACTOR AND POWER COMPANY.

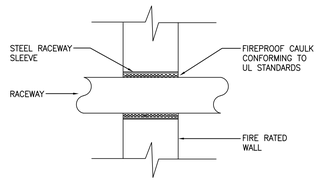
7 E-3 TYPICAL DUCTBANK HOUSE AND COMMERCIAL TENANT SECONDARY ELECTRIC SERVICE
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. DUCT BANK, TRENCHING AND BACKFILL BY E.C IN COORDINATION WITH CIVIL CONTRACTOR AND POWER COMPANY.

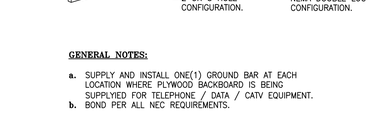
8 E-3 TYPICAL DUCTBANK RESIDENTAL METERBANK SECONDARY ELECTRIC SERVICE
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. ELECTRICAL CONTRACTOR SHALL PROVIDE NECESSARY PENETRATIONS FOR CONDUIT SLEEVES AND FIRESTOP AS INDICATED ABOVE. THIS DETAIL IS TYPICAL TO ALL FLOOR TO FLOOR AND FIREWALL PENETRATIONS.

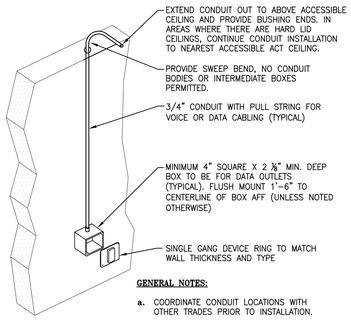
9 E-3 RACEWAY PENETRATION THRU FIRE RATED WALL/CEILING
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. SUPPLY AND INSTALL ONE(1) GROUND BAR AT EACH LOCATION WHERE PLYWOOD BACKBOARD IS BEING SUPPLYIED FOR TELEPHONE / DATA / CATV EQUIPMENT.
b. BOND PER ALL NEC REQUIREMENTS.

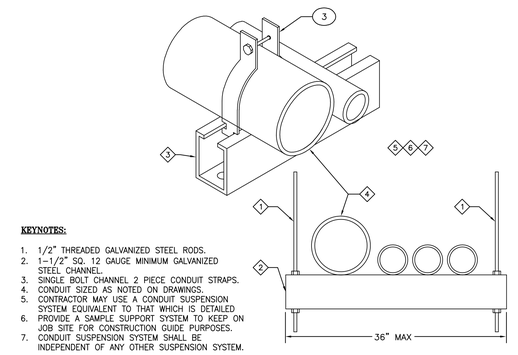
10 E-3 TYPICAL COPPER GROUND BAR
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. COORDINATE CONDUIT LOCATIONS WITH OTHER TRADES PRIOR TO INSTALLATION.

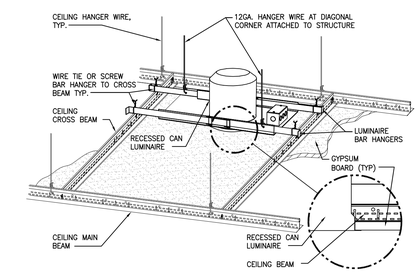
11 E-3 COMMUNCATIONS (DATA/TELEPHONE) BOX AND CONDUIT INSTALLATION DETAIL
SCALE: N.T.S. Electrical Detail



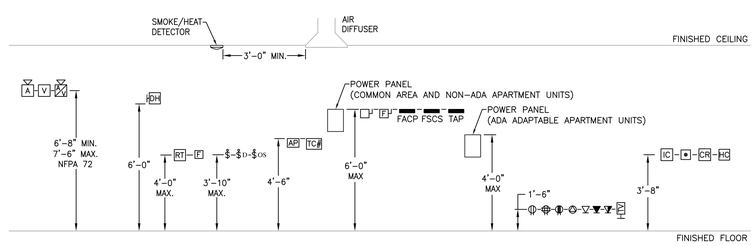
KEYNOTES:

1. 1/2" THREADED GALVANIZED STEEL RODS.
2. 1–1/2" SQ. 12 GAUGE MINIMUM GALVANIZED STEEL CHANNEL.
3. SINGLE BOLT CHANNEL 2 PIECE CONDUIT STRAPS.
4. CONDUIT SIZED AS NOTED ON DRAWINGS.
5. CONTRACTOR MAY USE A CONDUIT SUSPENSION SYSTEM EQUIVALENT TO THAT WHICH IS DETAILED
6. PROVIDE A SAMPLE SUPPORT SYSTEM TO KEEP ON JOB SITE FOR CONSTRUCTION GUIDE PURPOSES.
7. CONDUIT SUSPENSION SYSTEM SHALL BE INDEPENDENT OF ANY OTHER SUSPENSION SYSTEM.

12 E-3 CONDUIT/TRAPEZE MOUNTING DETAIL
SCALE: N.T.S. Electrical Detail



13 E-3 DOWNLIGHT MOUNTING -GYP. CEILING
SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. ALL DEVICES SHOWN MAY NOT BE USED IN DRAWINGS.
b. ELECTRICAL DEVICE DIMENSIONS ARE TO CENTER OF BOX.
c. ELECTRICAL POWER, FIRE ALARM, MISC. SYSTEM PANEL DIMENSIONS ARE TO TOP OF ENCLOSURE OR HIGHEST MECHANICAL SWITCH WITHIN PANEL.
d. FIRE ALARM DEVICES DIMENSION ARE ARE TO BOTTOM OF STROBE LENS, WHEN APPLICABLE, AND WITHIN NFPA 72 REQUIREMENTS.
e. ALL DIMENSIONS SHOWN ARE ACCURATE UNLESS NOTED OTHERWISE ON DRAWINGS.

14 E-3 MOUNTING HEIGHT DETAIL
SCALE: N.T.S. Electrical Detail

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INTERIORS A. Nagle DRAFTER

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Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677
5-23-25

TITLE:
ELECTRICAL DETAILS

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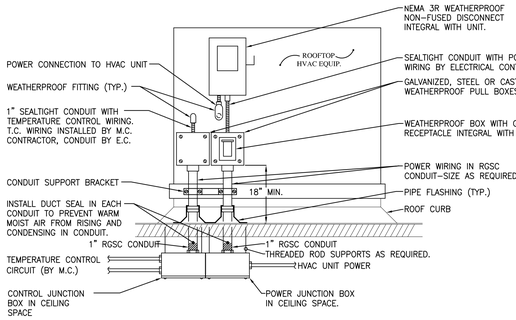
SA JOB #: 24037.01
DATE: 5-23-2025
DRAWING #: E-3

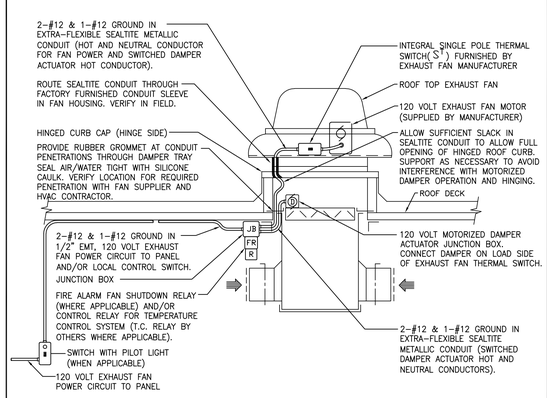


GENERAL NOTES:

a. WIRING TO THE ROOFTOP HVAC EQUIPMENT SHALL EXTEND THROUGH THE ROOF IN CONDUITS LOCATED OUTSIDE OF THE EQUIPMENT ROOF CURB AS SHOWN, UNLESS OTHERWISE SPECIFICALLY ALLOWED BY THE UNIT MANUFACTURER.
b. WIRE RUN INSIDE HVAC EQUIPMENT SHALL BE ACCOMPLISHED IN A MANNER ACCEPTABLE WITH THE UNIT MANUFACTURER AND SHALL MEET ALL REQUIREMENTS OF THE NATIONAL ELECTRIC CODE.
c. COORDINATE CONTROL WIRING RACEWAY INSTALLATION WITH THE MECHANICAL CONTRACTOR.
d. REFER TO MECHANICAL DRAWINGS FOR EQUIPMENT SUPPLIED (IE. DISCONNECT SWITCHES, STARTERS ETC.) UNDER THE MECHANICAL CONTRACT AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

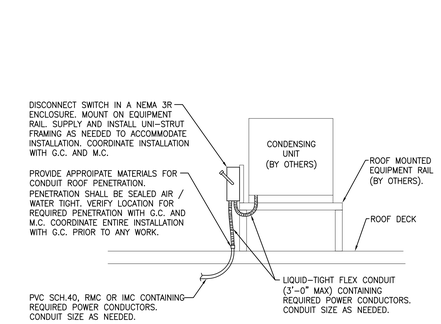
1 E-4 TYPICAL ROOFTOP HVAC UNIT

SCALE: N.T.S. Electrical Detail



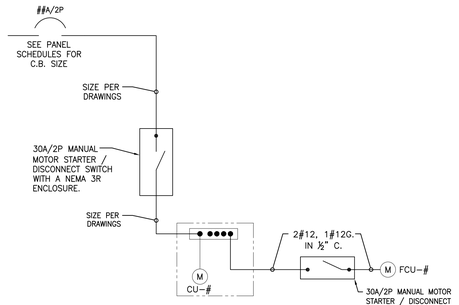
2 E-4 TYPICAL 120V ROOFTOP EXHAUST FAN

SCALE: N.T.S. Electrical Detail



3 E-4 TYPCIAL ROOF MOUNT CONDENSING UNIT

SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. COORDINATE EXACT POWER REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ELECTRICAL ROUGH-IN.

4 E-4 HVAC SPLIT SYSTEM WIRING DIAGRAM ONE FAN COIL UNIT

SCALE: N.T.S. Electrical Detail

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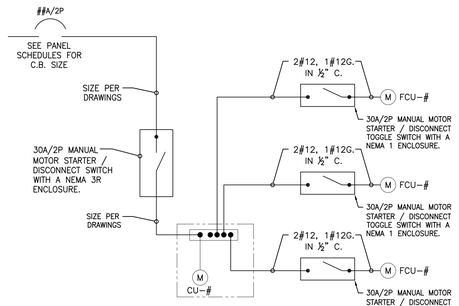
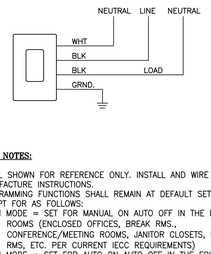


GENERAL NOTES:

a. COORDINATE EXACT POWER REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ELECTRICAL ROUGH-IN.

5 E-4 HVAC SPLIT SYSTEM WIRING DIAGRAM TWO OR MORE FAN COIL UNITS

SCALE: N.T.S. Electrical Detail

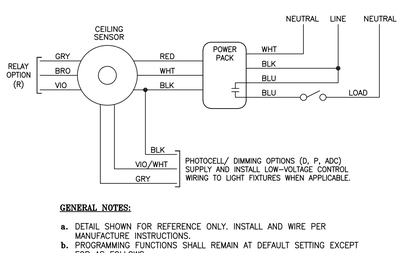


GENERAL NOTES:

a. DETAIL SHOWN FOR REFERENCE ONLY. INSTALL AND WIRE PER MANUFACTURE INSTRUCTIONS.
b. PROGRAMMING FUNCTIONS SHALL REMAIN AT DEFAULT SETTING EXCEPT FOR AS FOLLOWS:
- -ON MODE = SET FOR MANUAL ON AUTO OFF IN THE FOLLOWING ROOMS (ENCLOSED OFFICES, BREAK RMS., CONFERENCE/MEETING ROOMS, JANITOR CLOSETS, STORAGE RMS, ETC. PER CURRENT IECC REQUIREMENTS)
- -ON MODE = SET FOR AUTO ON AUTO OFF IN THE FOLLOWING ROOM / AREAS (PUBLIC SPACES IE: PUBLIC CORRIDORS, STAIRWAYS, RESTROOMS, PRIMARY BUILDING ENTRANCES, LOBBIES, MECHANICAL ROOMS ETC. PER CURRENT IECC REQUIREMENTS)
- -OCCUPANCY SENSOR SET FOR 20 MINUTE TIME DELAY

6 E-4 TYPICAL 1-POLE WALL SWITCH / OCCUPANY SENSOR

SCALE: N.T.S. Electrical Detail

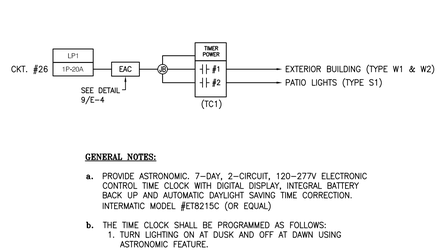


GENERAL NOTES:

a. DETAIL SHOWN FOR REFERENCE ONLY. INSTALL AND WIRE PER MANUFACTURE INSTRUCTIONS.
b. PROGRAMMING FUNCTIONS SHALL REMAIN AT DEFAULT SETTING EXCEPT FOR AS FOLLOWS:
- SET FOR AUTO ON WITH 20 MINUTE TIME DELAY
- PHOTOCELL MODE = DIM TO OFF
- DIMMING RANGE = 10V HIGH - 0V LOW

7 E-4 TYPICAL LOW-VOLTAGE CEILING MOUNT OCCUPANY SENSOR

SCALE: N.T.S. Electrical Detail

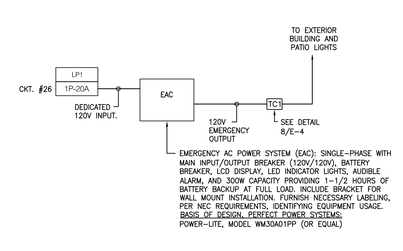


GENERAL NOTES:

a. PROVIDE ASTRONOMIC. 7-DAY, 2-CIRCUIT, 120-277V ELECTRONIC CONTROL TIME CLOCK WITH DIGITAL DISPLAY, INTEGRAL BATTERY BACK UP AND AUTOMATIC DAYLIGHT SAVING TIME CORRECTION. INTERMATIC MODEL #ET8215C (OR EQUAL)
b. THE TIME CLOCK SHALL BE PROGRAMMED AS FOLLOWS:
1. TURN LIGHTING ON AT DUSK AND OFF AT DAWN USING ASTRONOMIC FEATURE.
c. DAYLIGHT SAVINGS TIME FEATURE SHALL BE TURNED ON.
d. FULLY TRAIN OWNER ON TIME CLOCK OPERATION AND CONTROL BY END OF CONSTRUCTION.

8 E-4 DIGITAL TIME CLOCK WIRING DIAGRAM (TC1)

SCALE: N.T.S. Electrical Detail



GENERAL NOTES:

a. INSTALL EMERGENCY LIGHTING INVERTER (EAC) AND WIRE PER MANUFACTURE INSTRUCTIONS.

9 E-4 EMERGENCY AC POWER SYSTEM (EAC)

SCALE: N.T.S. Electrical Detail

MDP (SURFACE MOUNT) — 208Y/120V, 600 Amp Mains — Three Phase Four Wire, Fully Rated (@66 kAIC) — MAIL LUGS ONLY, MAIN BREAKER — LOCATION: ELEC. 019

ckt#	DESCRIPTION	BREAKER	L1	L2	L3	BREAKER	DESCRIPTION	ckt#
1			148.72	100.00				2
3	PANEL 'LP1'	225A-3P		150.25	100.00			4
5					140.26	100.00	125A-3P ENERGY RECOVERY UNIT (ERU-1)	6
7			110.75	64.00				8
9	PANEL 'LP2'	100A-3P		94.40	64.00		80A-3P ENERGY RECOVERY UNIT (ERU-2)	10
11					72.00	64.00		12
13	Domestic Water Booster Pump Controller (P-1, P-2)	50A-3P	33.40	46.20				14
15				33.40	46.20		70A-3P Elevator Motor (Shunt-Trip C.B.)	16
17					33.40	46.20		18
19			16.70	0.00				20
21	Trash Compactor (Ship Motor)	30A-3P		16.70	0.00		100A-3P SPARE	22
23					16.70	0.00		24
25			0.00	0.00				26
27	SPACE	-		0.00	0.00		- SPACE	28
29					0.00	0.00		30
	TOTAL CONNECTED AMPS/LEG		519.77	504.95	472.56		TOTAL CONNECTED kW	179.67
	* Denotes GFCI C.B.; ** DENOTES AFCI C.B.; ***Denote AFCI + GFCI C.B.						TOTAL CONNECTED AMPERES	499.09

LP1 (SURFACE MOUNT) — 208Y/120V, 225 Amp Mains — Three Phase Four Wire, Fully Rated (@42 kAIC) SCCR: — MAIL LUGS ONLY, MAIN BREAKER — LOCATION: ELEC. 019

ckt#	DESCRIPTION	BREAKER	L1	L2	L3	BREAKER	DESCRIPTION	ckt#
1	Electric Ceiling Heater (ECH-1)	15A-2P	6.25	4.70				2
3					6.25	4.70	15A-2P Electric Wall Heater (EWH-1)	4
5	Electric Ceiling Heater (ECH-2)	15A-2P	6.25	9.37				6
7					6.25	9.37	15A-2P Electric Wall Heater (EWH-2)	8
9	Electric Ceiling Heater (ECH-3)	15A-2P			6.25	6.25		10
11			6.25	0.00			15A-1P Electricl Wall Heater (EWH-3)	12
13	Electric Ceiling Heater (ECH-4)	15A-2P	6.25	0.00			15A-2P Electric Wall Heater (EWH-4)	14
15					6.25	6.25		16
17	Electric Ceiling Heater (ECH-5)	15A-2P			9.60	4.49	15A-1P Electricl Wall Heater (EWH-5)	18
19			9.60	8.00			15A-1P Staircase Lights	20
21	Electric Ceiling Heater (ECH-6)	20A-2P			12.50	7.80	20A-1P 1st Fl. Corr, Lounge, Lobby Lights	22
23			12.50	1.60			20A-1P 2nd & 3rd Fl Common Area Lights	24
25	Electric Ceiling Heater (ECH-7)	20A-2P			12.50	0.00	20A-1P Exterior Building & Patio Lights	26
27			12.50	2.20			20A-1P SPARE	28
29	Electric Ceiling Heater (ECH-8)	20A-2P			12.50	0.00	20A-1P SPARE	30
31							20A-1P Tenant Space 004 - Temporary Lighting	32
33	SPARE	20A-1P		0.00	12.00		20A-1P Tenant Space 002 - Temporary Lighting	34
35	SPARE	20A-1P				0.00	36.50 50A-2P Condensing Unit (CU-1)	36
37	SPARE	20A-1P	0.00	36.50			Tenant Space 004 - Temporary Power	38
39	SPARE	20A-1P			0.00	36.50	50A-2P Condensing Unit (CU-2)	40
41	SPARE	20A-1P					0.00 36.50 Tenant Space 004 - Temporary Power	42
43	SPARE	20A-1P	0.00	33.00			50A-2P Condensing Unit (CU-5)	44
45	SPARE	20A-1P			0.00	33.00	Tenant Space 022 - Temporary Power	46
47	SPACE	-					0.00 0.00 - SPACE	48
49	SPACE	-	0.00	0.00			- SPACE	50
51	SPACE	-			0.00	0.00	- SPACE	52
53	SPACE	-					0.00 0.00 - SPACE	54
	TOTAL CONNECTED AMPS/LEG		148.72	150.25	140.26		TOTAL CONNECTED kW	52.71
	* Denotes GFCI C.B.; ** DENOTES AFCI C.B.; ***Denote AFCI + GFCI C.B.						TOTAL CONNECTED AMPERES	146.41

LP2 (SURFACE MOUNT) — 208Y/120V, 100 Amp Mains — Three Phase Four Wire, Fully Rated (@22 kAIC) 42CKt. — MAIL LUGS ONLY, MAIN BREAKER — LOCATION: ELEC. 019

ckt#	DESCRIPTION	BREAKER	L1	L2	L3	BREAKER	DESCRIPTION	ckt#
1	Electric Water Heater (WH-1)	20A-2P	12.50	0.00				2
3							20A-1P 1st Fl. Water Rm., Corr - Recepts.	4
5	Electronic Strikes / Access Control System	20A-1P		12.50	0.00		20A-1P 1st Fl. Lobby - Recepts.	6
7	Elevator 2-way Communication System	20A-1P	1.75	12.00		2.50	0.00 20A-1P 1st Fl. Package / Mail - Receptss.	8
9	Elevator Shaft Lights	20A-1P			1.40	7.50	20A-1P 1st Fl. Main Corr. Exterior Receptss.	10
11	Elevator Shaft Receipts	20A-1P				3.00	7.50 20A-1P 1st Fl. Bike Storage, Trash Rms. - Receptss.	12
13	Elevator Pit Sump Pump Receipt	*20A-1P	12.50	7.50			20A-1P 1st Fl. Storage, Rear Corr, Exterior - Receptss.	14
15	Elevator Cab Lights / Controls	20A-1P			5.50	7.50	20A-1P 1st Fl. Mech, Elec, Jan - Receptss.	16
17	SPARE	20A-1P				0.00	6.00 20A-1P 1st Fl. Office, Tlt - Receptss.	18
19	SPARE	20A-1P	0.00	6.00			20A-1P 1st Fl. Mech. Communication Equip. - Receptss.	20
21	SPARE	20A-1P			0.00	9.00	20A-1P 1st Fl. Mech. Communication Equip. - Receptss.	22
23	SPARE	20A-1P				0.00	9.00 20A-1P 2nd Fl. Corr, Trash Rm. - Receptss.	24
25	SPARE	20A-1P	0.00	4.50			20A-1P 2nd Fl. Exterior Patio / Roof - Receptss.	26
27	SPARE	20A-1P			0.00	6.00	20A-1P 3rd Fl. Corr, Trash Rm. - Receptss.	28
29	SPARE	20A-1P				0.00	9.00 20A-1P Mid Level Roof - Receptss.	30
31	Condensing Unit (CU-3)	50A-2P	32.00	0.00			20A-1P Upper Level Roof - Receptss.	32
33				32.00	0.00		20A-1P SPARE	34
35	Condensing Unit (CU-4)	30A-2P				22.00	0.00 20A-1P SPARE	36
37			22.00	0.00			20A-1P SPARE	38
39	Condensing Unit (CU-4)	20A-2P			13.00	0.00	20A-1P SPARE	40
41						13.00	0.00 20A-1P SPARE	42
	TOTAL CONNECTED AMPS/LEG		110.75	94.40	72.00		TOTAL CONNECTED kW	33.26
	* Denotes GFCI C.B.; ** DENOTES AFCI C.B.; ***Denote AFCI + GFCI C.B.						TOTAL CONNECTED AMPERES	92.38

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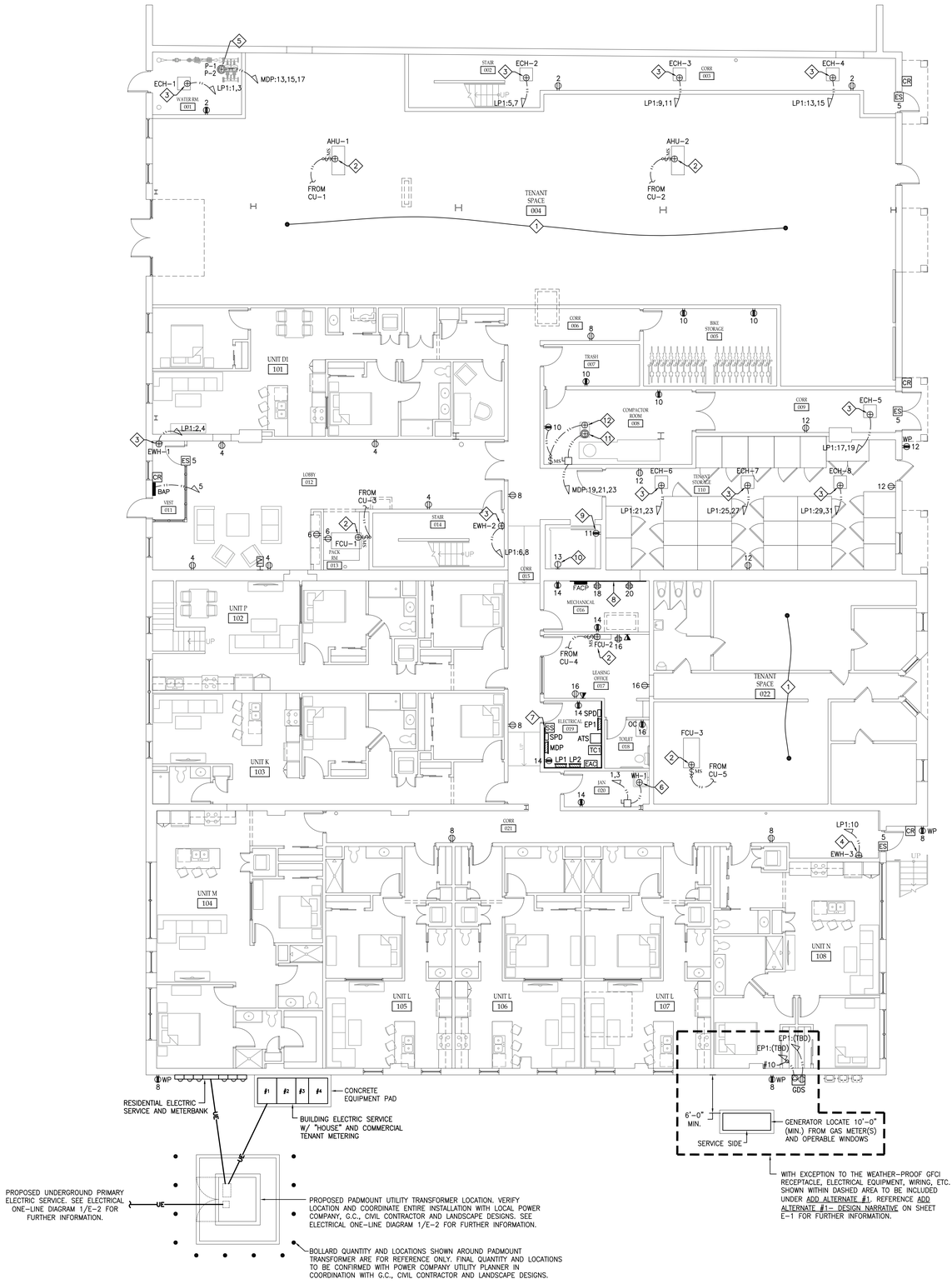
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: E-4

TITLE:
ELECTRICAL DETAILS AND PANEL BOARD SCHEDULES



1 E-5 **FIRST FLOOR PLAN POWER AND SYSTEMS**

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

GENERAL DRAWING NOTES:

a. SEE SHEETS E-15 THRU E-19 FOR APARTMENT UNIT POWER LAYOUTS.

b. POWER CIRCUIT WIRING SHALL BE PROVIDED TO ELECTRICAL DEVICES AND EQUIPMENT SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.

c. CIRCUIT EQUIPMENT AND ELECTRICAL DEVICES TO PANEL 'LP2' UNLESS OTHERWISE DESIGNATED. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS AND ALTERNATE PANEL DESIGNATIONS WHEN APPLICABLE.

d. RECEPTACLES WITH "OC" DESIGNATIONS SHALL BE INSTALLED 42" (MAX) A.F.F.. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN.

DRAWING KEYNOTES: (X)

1. FUTURE TENANT SPACE – PROVIDE TEMPORARY POWER TO HVAC UNITS SHOWN. CIRCUIT FROM HOUSE POWER PANEL FOR TEMPORARY POWER SOURCE. FULL POWER DESIGNS, CIRCUITED FROM TENANT PANEL, TO BE SUPPLIED AND INSTALLED AND A FUTURE DATE UNDER TENANT FIT-OUT DESIGNS.

2. AIR HANDLING / FAN COIL UNIT TO BE POWERED BY THE ASSOCIATED CONDENSING UNIT. SUPPLY A NEMA 1, 2-POLE, 30A RATED MANUAL MOTOR CONTROLLER AND MOUNT ON UNIT HOUSING IN AN ACCESSIBLE LOCATION. COORDINATE OVERALL INSTALLATION WITH M.C.

3. FEED ELECTRIC CEILING / WALL HEATER WITH A 1ø, 208V POWER CONNECTION. HEATER SHALL BE EQUIPPED WITH AN INTEGRAL NON-FUSED DISCONNECT SWITCH. COORDINATE INSTALLATION WITH M.C.

4. FEED ELECTRIC CEILING / WALL HEATER WITH A 1ø, 120V POWER CONNECTION. HEATER SHALL BE EQUIPPED WITH AN INTEGRAL NON-FUSED DISCONNECT SWITCH. COORDINATE INSTALLATION WITH M.C.

5. FEED DOMESTIC BOOSTER PUMP CONTROLLER WITH A 3ø, 208V POWER CONNECTION. UTILIZE 3-#8 THHN CU., 1-#8 GRND. CU IN 1"C. FOR BRANCH WIRING REQUIREMENTS TO CONTROLLER. CONTROLLER SHALL HAVE INTEGRAL DISCONNECT SWITCHES AND VFD DRIVERS TO SERVE BOOSTER PUMPS (2-5HP; P-1/2). WIRING BETWEEN CONTROLLER AND BOOSTER PUMPS SHALL BE SUPPLIED AND INSTALLED BY OTHERS UNLESS OTHERWISE DIRECTED BY P.C. SUPPLY ALL NECESSARY HARDWARE, MATERIALS ETC. TO OBTAIN A 100% COMPLETE ELECTRICAL INSTALLATION. COORDINATE ENTIRE INSTALLATION WITH G.C. & P.C.

6. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 30A RATED, NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION. COORDINATE ENTIRE INSTALLATION WITH G.C. AND P.C.

7. FURNISH REQUIRED SHEETS OF ¾" FIRE RATED PLYWOOD TO LINE THREE WALLS OF ELECTRIC ROOM FOR INSTALLATION OF MISC. EQUIPMENT.

8. FURNISH THREE SHEETS OF ¾" FIRE RATED PLYWOOD AND INSTALL VERTICALLY LINING WALL. PLYWOOD TO BE USED AS A D-MARK POINT FOR BUILDING COMMUNICATION SYSTEMS (IE: TELEPHONE, NETWORK, CABLE TELEVISION, SECURITY, DOOR ACCESS ETC.). ASSOCIATED EQUIPMENT FOR THESE SYSTEMS TO BE SUPPLIED AND INSTALLED BY OTHERS IN COORDINATION WITH G.C. AND E.C. MOUNT QUAD RECEPTACLE(S) SHOWN ON PLYWOOD BACKBOARD +40" A.F.F. TO SERVE EQUIPMENT. INCOMING SERVICE WIRING REQUIRED TO SUPPORT THESE SYSTEMS SHALL BE ROUTED TO THIS ROOM FROM UTILITY PROVIDER D-MARK. PROVIDE TWO 4" CONDUITS TO SUPPORT INCOMING SERVICE WIRING. CONDUIT ROUTING FROM UTILITY D-MARK TO THIS ROOM MUST BE FULLY COORDINATED WITH G.C. AND SERVICE PROVIDERS PRIOR TO ANY SITE WORK.

9. INSTALL GFCI RECEPTACLE IN ELEVATOR PIT PER ALL CODE REQUIREMENTS. FIELD VERIFY LOCATION WITH G.C. AND ELEVATOR SHOP DRAWINGS PRIOR TO ELECTRICAL ROUGH-IN.

10. INSTALL SINGLE RECEPTACLE TO POWER SUMP PUMP CONTROLLER. LOCATE RECEPTACLE WITHIN 4' OF CONTROLLER. VERIFY SUMP PUMP CONTROLLER LOCATION WITH P.C. PRIOR TO ELECTRICAL ROUGH-IN. INSTALL RECEPTACLE PER ALL N.E.C. REQUIREMENTS.

11. FEED TRASH COMPACTOR WITH A 3ø, 208V POWER CONNECTION. SUPPLY A NEMA 4X, 3-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO COMPACTOR CONTROLLER. COORDINATE ENTIRE INSTALLATION WITH G.C.

12. FEED TRASH COMPACTOR CONTROLLER AND TRASH CHUTE MASTER SWITCH WITH A 1ø, 120V POWER CONNECTION. SUPPLY A NEMA 4X, 1-POLE, NON-FUSED, 30A RATED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO MASTER TRASH CHUTE SWITCH FOR DISCONNECTING MEANS. INTERCONNECT TRASH CHUTE DOOR ON EACH FLOOR LEVEL WITH A 1" EMT C. BACK TO MASTER SWITCH FOR INSTALLATION OF CONTROL WIRING WHICH SHALL BE SUPPLIED AND INSTALLED BY E.C. REFERENCE TRASH CHUTE SHOP DRAWINGS FOR ALL SYSTEM ELECTRICAL AND WIRING REQUIREMENTS. INCLUDE ALL NECESSARY HARDWARE, MATERIAL AND LABOR REQUIRED FOR A COMPLETE ELECTRICAL INSTALLATION. COORDINATE ENTIRE INSTALLATION WITH G.C.

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FIRST FLOOR PLAN POWER AND SYSTEMS

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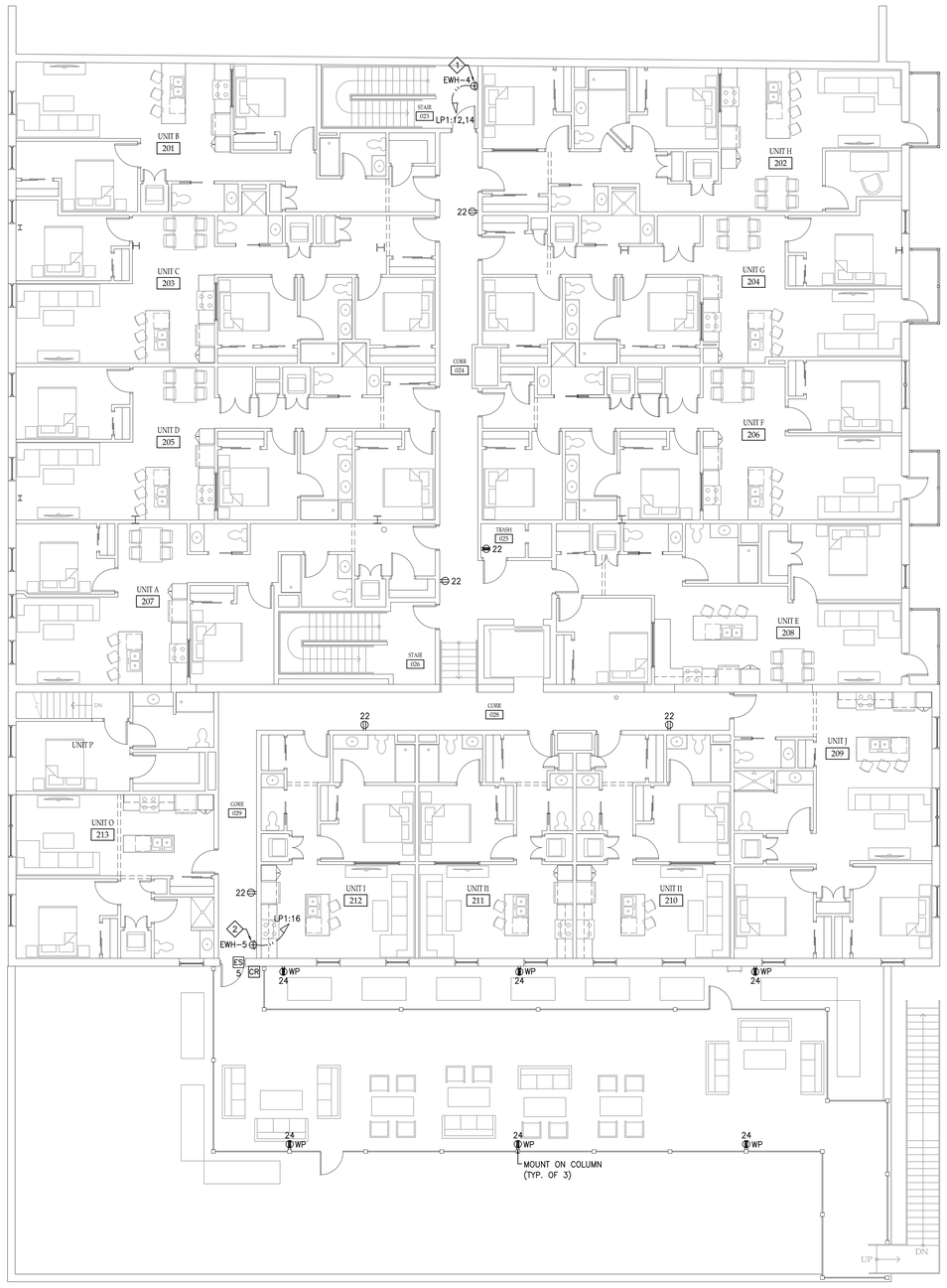
DRAWING #: E-5



SECOND FLOOR PLAN POWER AND SYSTEMS

1 / E-6

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

GENERAL DRAWING NOTES:

a. SEE SHEETS E-15 THRU E-19 FOR APARTMENT UNIT POWER LAYOUTS.

b. POWER CIRCUIT WIRING SHALL BE PROVIDED TO ELECTRICAL DEVICES AND EQUIPMENT SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.

c. CIRCUIT EQUIPMENT AND ELECTRICAL DEVICES TO PANEL 'LP2' UNLESS OTHERWISE DESIGNATED. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS AND ALTERNATE PANEL DESIGNATIONS WHEN APPLICABLE.

d. RECEPTACLES WITH "OC" DESIGNATIONS SHALL BE INSTALLED 42" (MAX) A.F.F.. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN.

DRAWING KEYNOTES: (X)

1. FEED ELECTRIC WALL HEATER WITH A 1ø, 208V POWER CONNECTION. HEATER SHALL BE EQUIPPED WITH AN INTEGRAL NON-FUSED DISCONNECT SWITCH. COORDINATE INSTALLATION WITH M.C.

2. FEED ELECTRIC WALL HEATER WITH A 1ø, 120V POWER CONNECTION. HEATER SHALL BE EQUIPPED WITH AN INTEGRAL NON-FUSED DISCONNECT SWITCH. COORDINATE INSTALLATION WITH M.C.

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Registration Expiration Date: 06-30-27

Firm Certificate Number: 0019677

5-23-25

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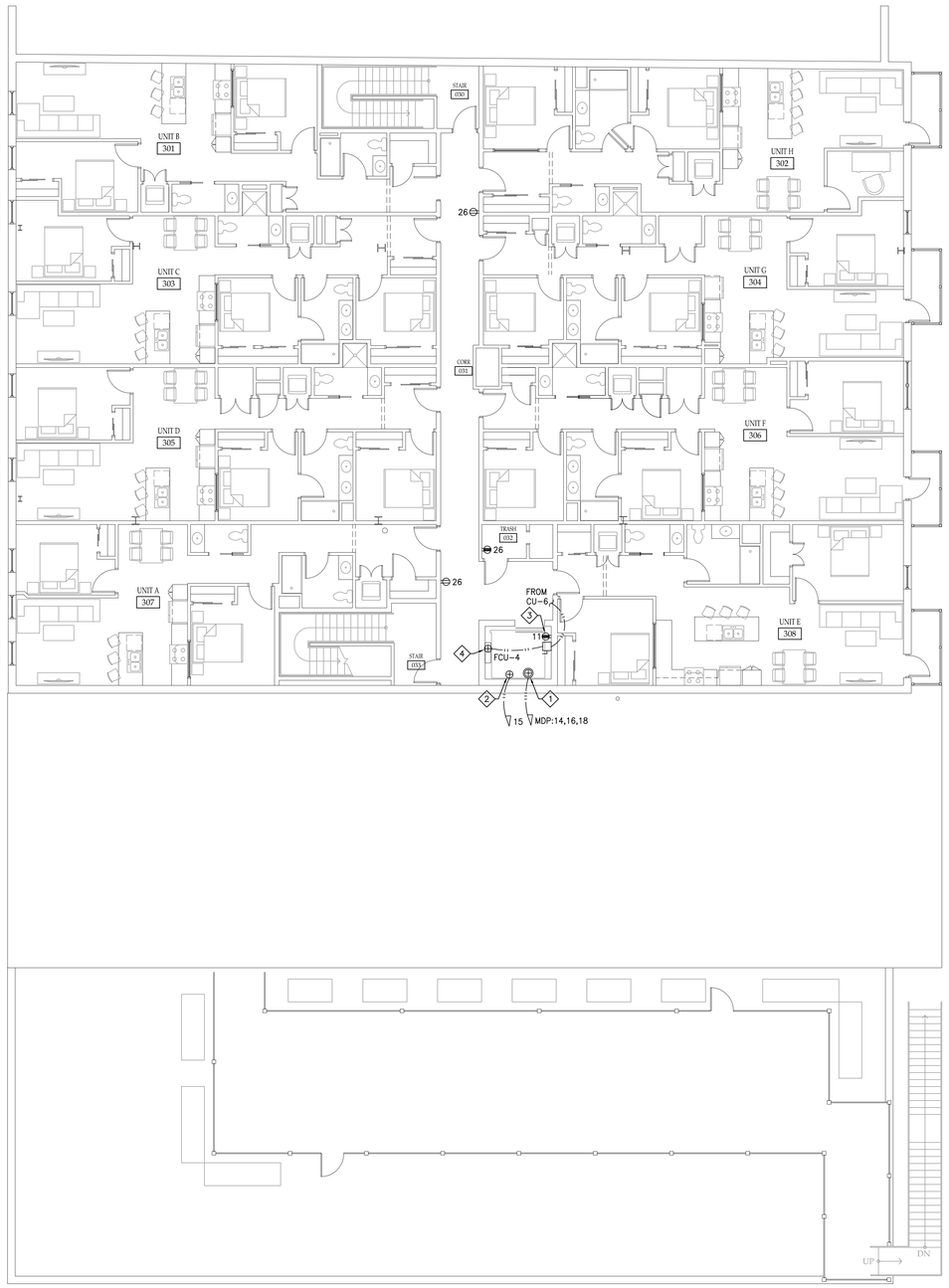
DATE: 5-23-2025

DRAWING #: E-6



THIRD FLOOR PLAN
POWER AND SYSTEMS
1 / E-7
SCALE: 1/8" = 1'-0"

GENERAL DRAWING NOTES:

a. SEE SHEETS E-15 THRU E-19 FOR APARTMENT UNIT POWER LAYOUTS.

b. POWER CIRCUIT WIRING SHALL BE PROVIDED TO ELECTRICAL DEVICES AND EQUIPMENT SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.

c. CIRCUIT EQUIPMENT AND ELECTRICAL DEVICES TO PANEL 'LP2' UNLESS OTHERWISE DESIGNATED. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS AND ALTERNATE PANEL DESIGNATIONS WHEN APPLICABLE.

d. RECEPTACLES WITH "OC" DESIGNATIONS SHALL BE INSTALLED 42" (MAX) A.F.F.. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN.

DRAWING KEYNOTES: (X)

1. SEE ELECTRICAL ONE-LINE DIAGRAM 1/E-2 FOR ELEVATOR MOTOR POWER REQUIREMENTS.

2. FEED ELEVATOR CAB LIGHTS AND CONTROLS WITH A 1ϕ, 120V POWER CONNECTION. WIRE BRANCH CIRCUIT THROUGH A SINGLE-POLE, FUSED DISCONNECT SWITCH IN A NEMA 1 ENCLOSURE WITH LOCKING PROVISIONS. VERIFY POWER TERMINATION REQUIREMENTS TO ELEVATOR CONTROLS & CAB LIGHTS WITH ELEVATOR CONTRACTOR. COORDINATE LOCATIONS OF ALL ELEVATOR EQUIPMENT WITH ELEVATOR SHOP DRAWINGS AND ELEVATOR CONTRACTOR PRIOR TO ELECTRICAL ROUGH-IN. ALSO SUPPLY ELEVATOR CAB WITH A DEDICATED TELEPHONE LINE AND NETWORK CABLING FOR EMERGENCY COMMUNICATIONS. COORDINATE THESE REQUIREMENTS WITH ELEVATOR CONTRACTOR AND G.C.

3. INSTALL GFCI RECEPTACLE AT TOP OF ELEVATOR SHAFT PER ALL CODE REQUIREMENTS. FIELD VERIFY LOCATION WITH G.C. AND ELEVATOR SHOP DRAWINGS PRIOR TO ELECTRICAL ROUGH-IN.

4. FAN COIL UNIT TO BE POWERED BY THE ASSOCIATED CONDENSING UNIT. SUPPLY A NEMA 1, 2-POLE, 30A RATED, NON-FUSED, LOCKABLE DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO ELEVATOR SHAFT ENTRANCE FOR DISCONNECTING MEANS. COORDINATE OVERALL INSTALLATION WITH G.C. M.C. AND ELEVATOR CONTRACTOR.

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ISSUE:
5-23-2025: BID/PERMIT SET

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PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677
5-23-25

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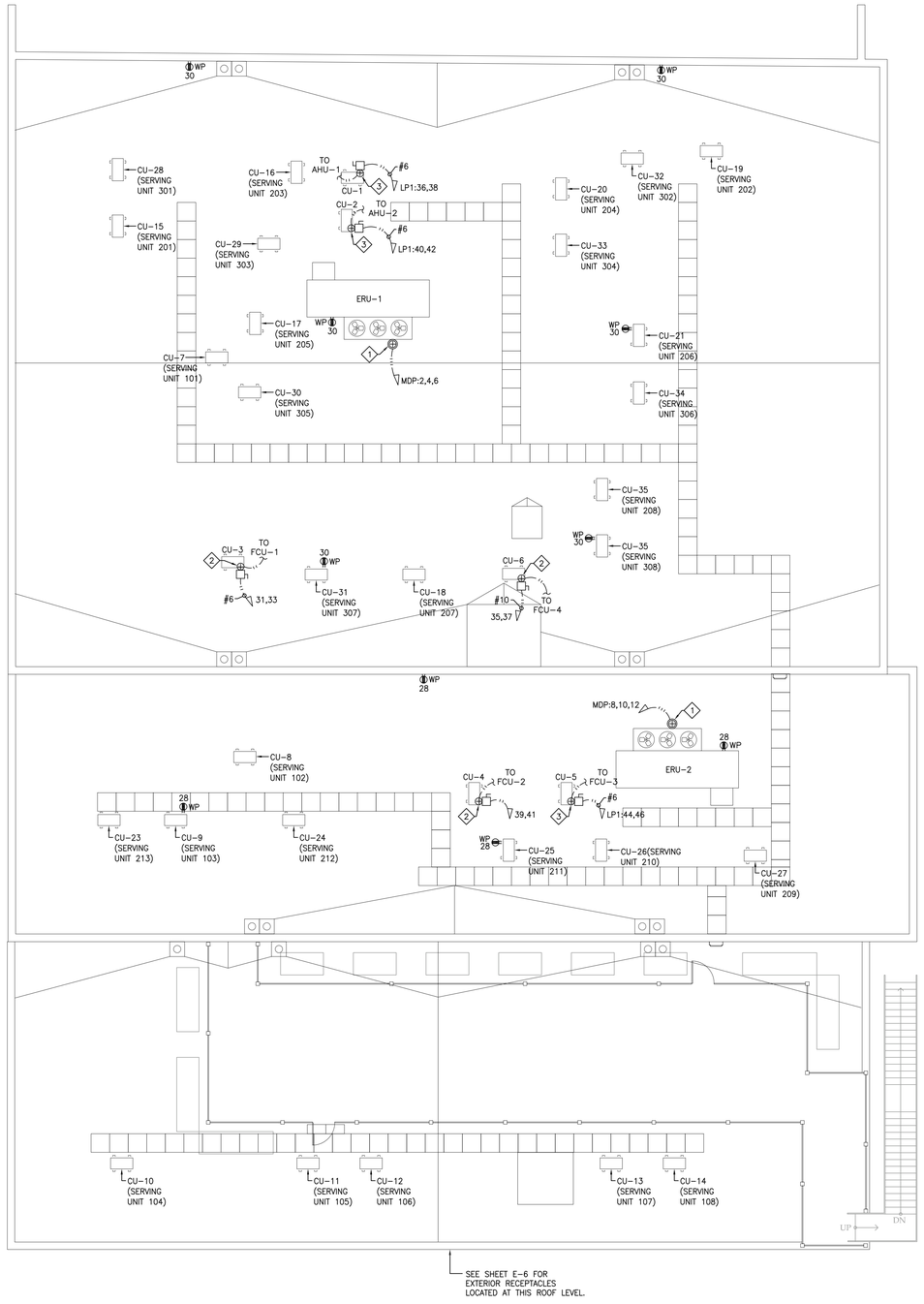
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: E-7



ROOF PLAN POWER AND SYSTEMS

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

GENERAL DRAWING NOTES:

a. POWER CIRCUIT WIRING SHALL BE PROVIDED TO ELECTRICAL DEVICES AND EQUIPMENT SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.

b. CIRCUIT EQUIPMENT AND ELECTRICAL DEVICES TO PANEL 'LP2' UNLESS OTHERWISE DESIGNATED. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS AND ALTERNATE PANEL DESIGNATIONS WHEN APPLICABLE.

c. CONDENSING UNITS CU-7 THRU CU-35 TO BE POWERED FROM APARTMENT UNIT LOAD CENTER THAT THEY ARE SERVING. SEE SHEETS E-15 THRU E-19 FOR CONDENSING UNIT POWER REQUIREMENTS. LOCATIONS SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY. FIELD VERIFY UNIT LOCATIONS FOR EACH APARTMENT UNIT WITH G.C. AND M.C. PRIOR TO ELECTRICAL ROUGH-IN.

DRAWING KEYNOTES: (X)

1. SEE ELECTRICAL ONE-LINE DIAGRAM 1/E-2 FOR ENERGY RECOVERY UNIT POWER REQUIREMENTS. UNIT SHALL BE EQUIPPED WITH AN INTEGRAL PRE-WIRED GFCI RECEPTACLE. SERVE RECEPTACLE FROM DESIGNATED POWER CIRCUIT IDENTIFIED ON DRAWING. COORDINATE OVERALL INSTALLATION WITH G.C. AND M.C.

2. FEED CONDENSING UNIT WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA-3R, 2-POLE, NON-FUSED, 60A RATED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON UNI-STRUT FRAMING ADJACENT TO CONDENSING UNIT 36" (MIN.) ABOVE FINISHED ROOF. UNI-STRUT FRAMING MAY BE AN EXTENSION TO CONDENSING UNIT EQUIPMENT RAIL. CONDENSING UNIT SHALL SUPPLY POWER TO THE ASSOCIATED FAN COIL UNIT PER MANUFACTURE INSTRUCTIONS. SUPPLY ALL REQUIRED WIRING, HARDWARE, MATERIALS, ETC. TO OBTAIN A 100% COMPLETE INSTALLATION. COORDINATE INSTALLATION WITH M.C.

3. FEED CONDENSING UNIT WITH A 1ø, 208V TEMPORARY POWER CONNECTION. SUPPLY A NEMA-3R, 2-POLE, NON-FUSED, 60A RATED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON UNI-STRUT FRAMING ADJACENT TO CONDENSING UNIT 36" (MIN.) ABOVE FINISHED ROOF. UNI-STRUT FRAMING MAY BE AN EXTENSION TO CONDENSING UNIT EQUIPMENT RAIL. CONDENSING UNIT SHALL SUPPLY POWER TO THE ASSOCIATED FAN COIL UNIT PER MANUFACTURE INSTRUCTIONS. SUPPLY ALL REQUIRED WIRING, HARDWARE, MATERIALS, ETC. TO OBTAIN A 100% COMPLETE INSTALLATION. COORDINATE INSTALLATION WITH M.C. INCLUDE PROVISIONS TO RE-FEED CONDENSING UNIT FROM COMMERCIAL TENANT POWER PANEL TO BE SUPPLIED AND INSTALLED AT A FUTURE DATE UNDER TENANT FIT-OUT DESIGN PACKAGE.

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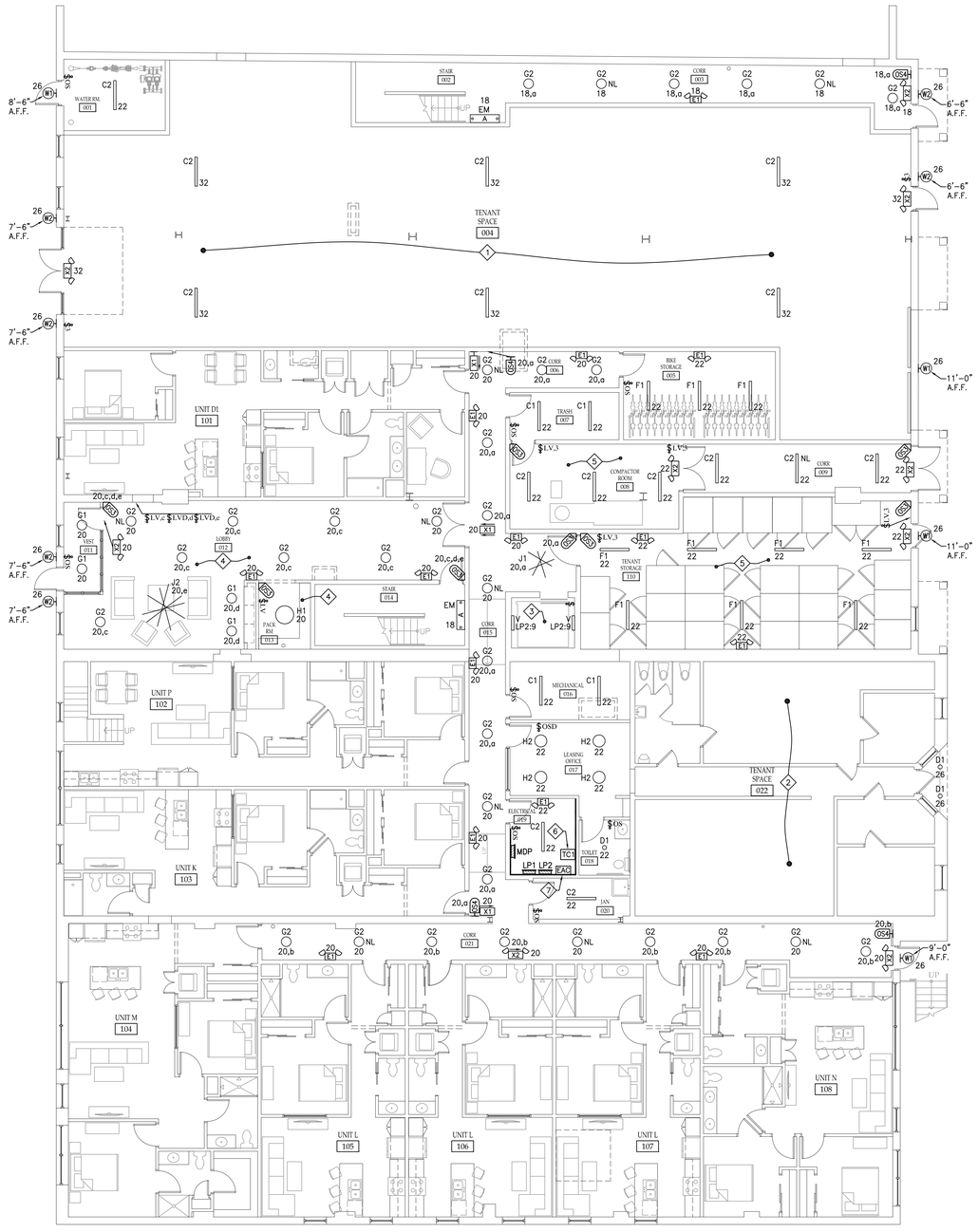

FIRST FLOOR PLAN LIGHTING

1 / E-9 SCALE: 1/8" = 1'-0"

GENERAL DRAWING NOTES:

a. SEE SHEETS E-15 THRU E-19 FOR APARTMENT UNIT LIGHTING LAYOUTS.

b. POWER CIRCUIT WIRING SHALL BE PROVIDED TO LIGHTING SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.

c. CIRCUIT LIGHTING TO PANEL 'LP1' UNLESS OTHERWISE DESIGNATED. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS AND ALTERNATE PANEL DESIGNATIONS WHEN APPLICABLE.

d. CORRIDOR AND STAIRCASE LIGHTING TO BE SWITCH FROM POWER PANEL WITH LOCAL OCCUPANCY CONTROL (AUTO ON/OFF) WITH 20 MIN. TIME DELAY.

e. EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO BE FEED WITH A CONSTANT POWER CONNECTION WIRED FROM LOCAL AREA LIGHTING CIRCUIT AHEAD OF ALL LIGHTING CONTROLS.

f. LIGHT SWITCHES, CONTROLS, SENSORS ETC. SHALL BE WIRED TO CONTROL LIGHT FIXTURES LOCATED WITHIN ASSOCIATED ROOM. IN CASES WHERE CONTROL SCHEME IS NOT OBVIOUS, LOWERCASE LETTERS (IE: "a", "b", "c" ETC.) WILL BE SHOWN TO IDENTIFY CONTROL SCHEME.

DRAWING KEYNOTES: (X)

1. FUTURE TENANT SPACE – PROVIDE TEMPORARY LIGHTING WITH CONTROLS AS SHOWN. CIRCUIT FROM HOUSE POWER PANEL FOR TEMPORARY POWER SOURCE. FULL LIGHTING DESIGNS, CIRCUITED FROM TENANT PANEL, TO BE SUPPLIED AND INSTALLED AND A FUTURE DATE UNDER TENANT FIT-OUT DESIGNS.

2. FUTURE TENANT SPACE – RE-WIRE EXISTING LIGHTING FROM HOUSE POWER PANEL UTILIZING CIRCUIT #34 TO SERVE AS A TEMPORARY POWER SOURCE. FULL LIGHTING DESIGNS, CIRCUITED FROM TENANT PANEL, TO BE SUPPLIED AND INSTALLED AND A FUTURE DATE UNDER TENANT FIT-OUT DESIGNS. FIELD VERIFY EXISTING SITE CONDITIONS.

3. INSTALL LIGHT FIXTURES IN ELEVATOR PIT PER ALL CODE REQUIREMENTS. LOCATE TOGGLE SWITCH ADJACENT TO ELEVATOR PIT ACCESS POINT. FIELD VERIFY ALL DEVICE LOCATIONS WITH G.C. AND ELEVATOR SHOP DRAWINGS PRIOR TO ELECTRICAL ROUGH-IN.

4. FURNISH NECESSARY POWER PACKS, CONTROL RELAYS, CAT. 5e CABLING, LOW-VOLTAGE CONTROL WIRING, INSTALLATION, PROGRAMMING ETC., TO ACCOMPLISH THE FOLLOWING SEQUENCE OF OPERATION FOR ROOM LIGHTING CONTROL:
- a. PROGRAM WALL CONTROLLER FOR MANUAL ON/OFF CONTROL.
- b. PROGRAM MOTION SENSOR FOR OCCUPANCY CONTROL (AUTO ON/OFF) WITH 20 MIN. TIME DELAY.

5. FURNISH NECESSARY POWER PACKS, CONTROL RELAYS, CAT. 5e CABLING, LOW-VOLTAGE CONTROL WIRING, INSTALLATION, PROGRAMMING ETC., TO ACCOMPLISH THE FOLLOWING SEQUENCE OF OPERATION FOR ROOM LIGHTING CONTROL:
- a. PROGRAM WALL CONTROLLER FOR MANUAL ON/OFF AND 3-WAY CONTROL.
- b. PROGRAM MOTION SENSOR FOR OCCUPANCY CONTROL (AUTO ON/OFF) WITH 20 MIN. TIME DELAY.

6. DIGITAL TIME CLOCK (TC1) – FURNISH, INSTALL, AND WIRE TO PROVIDE AUTOMATIC CONTROL FOR EXTERIOR LIGHTING. SEE DETAIL 8/E-4 FOR FURTHER INFORMATION.

7. EMERGENCY AC POWER INVERTER (EAC) – FURNISH, INSTALL, AND WIRE TO SUPPLY NORMAL AND EMERGENCY POWER TO EXTERIOR BUILDING LIGHTING. SEE DETAIL 9/E-4 FOR FURTHER INFORMATION.

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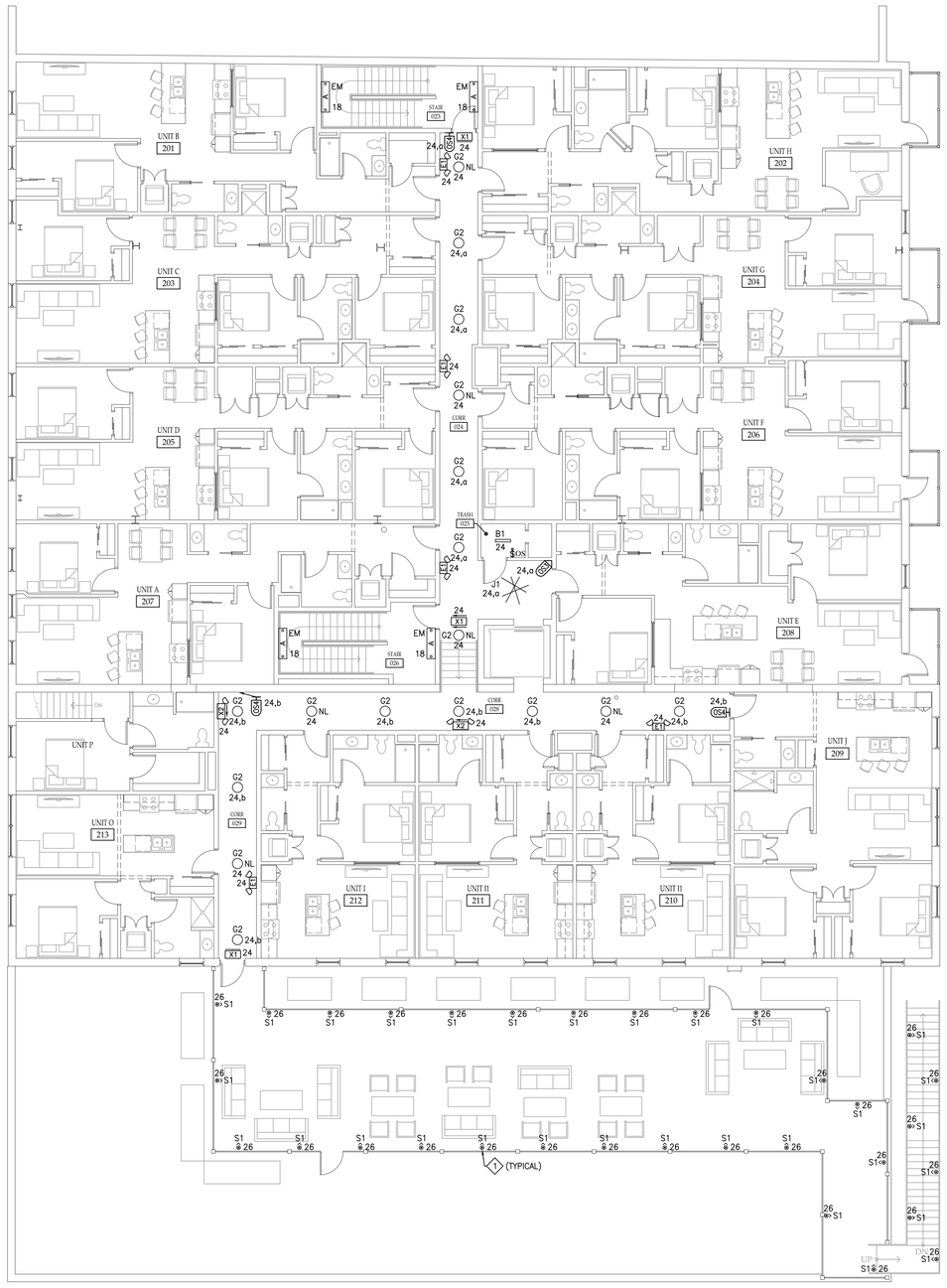

SECOND FLOOR PLAN LIGHTING

1 / E-10 SCALE: 1/8" = 1'-0"

GENERAL DRAWING NOTES:

a. SEE SHEETS E-15 THRU E-19 FOR APARTMENT UNIT LIGHTING LAYOUTS.

b. POWER CIRCUIT WIRING SHALL BE PROVIDED TO LIGHTING SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.

c. CIRCUIT LIGHTING TO PANEL 'LP1' UNLESS OTHERWISE DESIGNATED. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS AND ALTERNATE PANEL DESIGNATIONS WHEN APPLICABLE.

d. CORRIDOR AND STAIRCASE LIGHTING TO BE SWITCH FROM POWER PANEL WITH LOCAL OCCUPANCY CONTROL (AUTO ON/OFF) WITH 20 MIN. TIME DELAY.

e. EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO BE FEED WITH A CONSTANT POWER CONNECTION WIRED FROM LOCAL AREA LIGHTING CIRCUIT AHEAD OF ALL LIGHTING CONTROLS.

f. LIGHT SWITCHES, CONTROLS, SENSORS ETC. SHALL BE WIRED TO CONTROL LIGHT FIXTURES LOCATED WITHIN ASSOCIATED ROOM. IN CASES WHERE CONTROL SCHEME IS NOT OBVIOUS, LOWERCASE LETTERS (IE: "a", "b", "c" ETC.) WILL BE SHOWN TO IDENTIFY CONTROL SCHEME.

DRAWING KEYNOTES: ◇X

1. MOUNT HANDRAIL LIGHT WITHIN ROUND HAND RAILING PER MANUFACTURER INSTRUCTIONS. LIGHTS SHOULD BE POSITIONED 30° FROM VERTICAL AXIS DIRECTED TOWARD PATIO AND STAIR AREAS. ON AVERAGE, SPACE LIGHTS ON 8' CENTERS AROUND PATIO AREA AND 6' CENTERS ALONG STAIR RISER FOLLOWING LAYOUT SHOWN. LOCATE REMOTE DRIVERS (3 MIN.) IN ELEC. 019. LIGHT CIRCUIT SHALL EMANATE FROM EMERGENCY AC POWER SYSTEM (EAC), LOCATED IN ELEC. 019., WIRED THROUGH DIGITAL TIMER FOR AUTOMATIC CONTROL. REFERENCE DETAILS 8/E-4 AND 9/E-4 FOR FURTHER INFORMATION.

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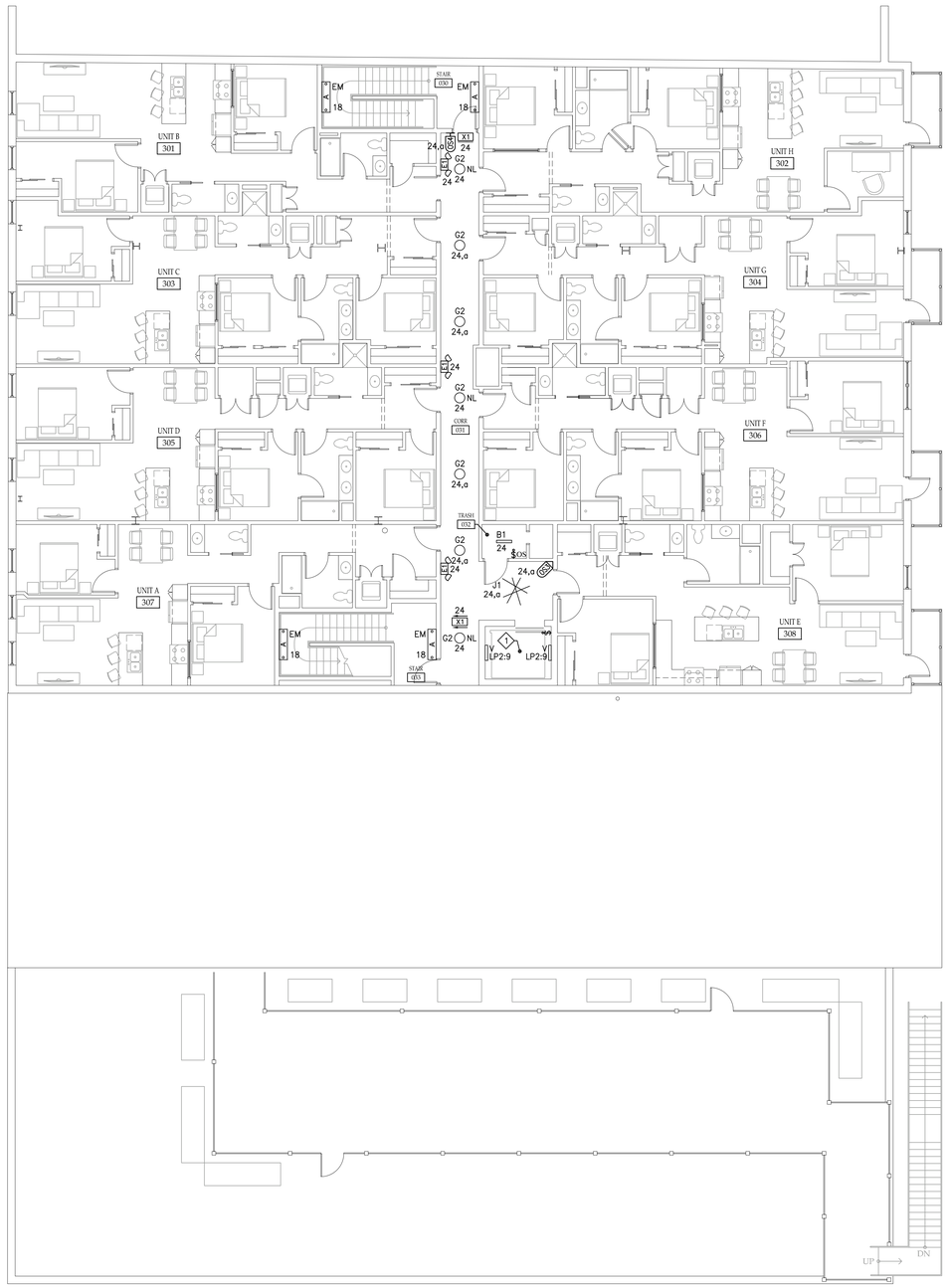

THIRD FLOOR PLAN LIGHTING

1 / E-11 SCALE: 1/8" = 1'-0"

GENERAL DRAWING NOTES:

a. SEE SHEETS E-15 THRU E-19 FOR APARTMENT UNIT LIGHTING LAYOUTS.

b. POWER CIRCUIT WIRING SHALL BE PROVIDED TO LIGHTING SHOWN, UNLESS OTHERWISE INDICATED. MINIMUM WIRING SIZE SHALL BE #12 AWG., UNLESS OTHERWISE INDICATED OR REQUIRED AS A RESULT OF HOMERUN LENGTH AS DETERMINED BY THE E.C. DERATING AND CONDUIT FILL SHALL BE AS REQUIRED BY THE NEC.

c. CIRCUIT LIGHTING TO PANEL 'LP1' UNLESS OTHERWISE DESIGNATED. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS AND ALTERNATE PANEL DESIGNATIONS WHEN APPLICABLE.

d. CORRIDOR AND STAIRCASE LIGHTING TO BE SWITCH FROM POWER PANEL WITH LOCAL OCCUPANCY CONTROL (AUTO ON/OFF) WITH 20 MIN. TIME DELAY.

e. EXIT SIGNS AND EMERGENCY LIGHTING UNITS TO BE FEED WITH A CONSTANT POWER CONNECTION WIRED FROM LOCAL AREA LIGHTING CIRCUIT AHEAD OF ALL LIGHTING CONTROLS.

f. LIGHT SWITCHES, CONTROLS, SENSORS ETC. SHALL BE WIRED TO CONTROL LIGHT FIXTURES LOCATED WITHIN ASSOCIATED ROOM. IN CASES WHERE CONTROL SCHEME IS NOT OBVIOUS, LOWERCASE LETTERS (IE: "a", "b", "c" ETC.) WILL BE SHOWN TO IDENTIFY CONTROL SCHEME.

DRAWING KEYNOTES: ◇1

1. INSTALL LIGHT FIXTURES AT TOP OF ELEVATOR SHAFT PER ALL CODE REQUIREMENTS. LOCATE TOGGLE SWITCH ADJACENT TO ELEVATOR ACCESS POINT. FIELD VERIFY ALL DEVICE LOCATIONS WITH G.C. AND ELEVATOR SHOP DRAWINGS PRIOR TO ELECTRICAL ROUGH-IN.

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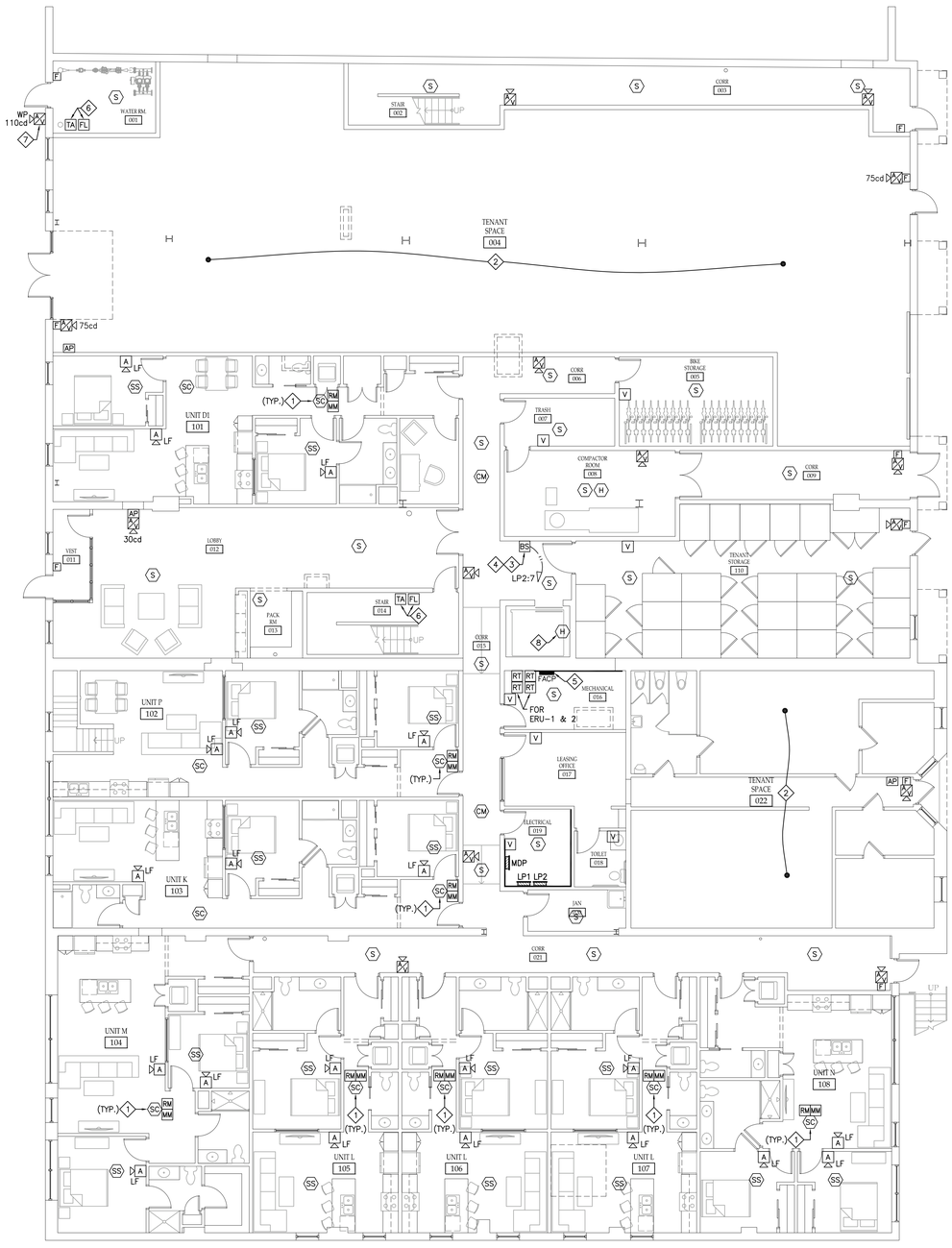

FIRST FLOOR PLAN FIRE ALARM AND TWO-WAY COMMUNICATION SYSTEM

1 / E-12 SCALE: 1/8" = 1'-0"

GENERAL DRAWING NOTES:

a. ENSURE ALL SMOKE AND HEAT DETECTORS ARE PLACED A MINIMAL DISTANCE OF 3'-0" FROM HVAC SUPPLY / RETURN AIR GRILLS. IN OPEN CEILING APPLICATIONS, ENSURE SMOKE AND HEAT DETECTORS ARE LOCATED SUCH THAT THEY ARE NOT BLOCK BY MECHANICAL EQUIPMENT, DUCTWORK AND PIPING SYSTEMS. LOCATIONS SHOWN ON PLANS ARE SUGGESTED AND MUST BE FIELD VERIFIED BY E.C IN COORDINATION WITH G.C., M.C., AND P.C.

b. REQUIRED NAC EXTENDER PANEL QUANTITY TO BE DETERMINED BY FIRE ALARM MANUFACTURE SELECTED FOR THE PROJECT. E.C. IS RESPONSIBLE FOR NAC PANEL INSTALLATION. LOCATION IN FIRST FLOOR MECHANICAL ROOM UNLESS OTHERWISE DETERMINED. SUPPLY 120V POWER CONNECTION TO EACH NAC EXTENDER PANEL EMANATING FROM A "SPARE", SINGLE-POLE, 20A C.B. IN NEAREST "HOUSE" POWER PANEL.

c. FIRE ALARM VISUAL (STROBE) DEVICES SHALL BE SET AT 15cd UNLESS OTHERWISE INDICATED.

DRAWING KEYNOTES: (X)

1. TYPE 'SC' AND 'SS' FIRE ALARM DEVICES REQUIRE 120V POWER CONNECTION WIRED FROM APARTMENT LIGHTING CIRCUIT. TANDEM WIRE FIRE ALARM DEVICES, WITHIN APARTMENT, SO THAT ACTIVATION OF ANY ONE DEVICE ACTIVATES ALL REMAINING DEVICES IN THAT APARTMENT. INCLUDE A 120V RELAY AND WIRE INTO BUILDING FIRE ALARM SYSTEM, VIA ADDRESSABLE INPUT MODULE, FOR MONITORING OF APARTMENT SMOKE AND CARBON MONOXIDE DETECTORS BY BUILDING FIRE ALARM SYSTEM. SEE SHEETS E-15 THRU E-19 FOR APART LIGHTING CIRCUIT DESIGNATION.

2. FUTURE COMMERCIAL TENANT SPACE – PROVIDE FIRE ALARM DEVICES AS SHOWN. ADDITIONAL FIRE ALARM DEVICES TO BE SUPPLIED AND INSTALLED AND A FUTURE DATE UNDER TENANT FIT-OUT DESIGNS.

3. FURNISH ELEVATOR TWO-WAY COMMUNICATION SYSTEM CONSISTING OF A BASE STATION, LOCATED IN FIRST FLOOR ELEVATOR LOBBY, AND CALL BOXES, LOCATED IN ELEVATOR LOBBY ON 2ND AND 3RD FLOORS. INCLUDE ALL REQUIRED SIGNAGE. PROVIDE ALL NECESSARY HARDWARE, MATERIALS, DEVICES ETC. TO OBTAIN A 100% COMPLETE INSTALLATION IN COORDINATION WITH G.C.

4. FEED ELEVATOR LANDING TWO-WAY COMMUNICATION SYSTEM BASE STATION WITH A 1Φ, 120V POWER CONNECTION WIRED FROM A DEDICATED CIRCUIT IN THE DESIGNATED "HOUSE" POWER PANEL. SUPPLY BASE STATION WITH DEDICATED "OUTSIDE" TELEPHONE CONNECTIONS FOR SYSTEM TWO-WAY OFF SITE PERSON TO PERSON VOICE COMMUNICATION.

5. FEED FIRE ALARM CONTROL PANEL (FACP) WITH A 120V POWER CONNECTION PER CITY OF BUFFALO REQUIREMENTS. SEE ONE-LINE DIAGRAM 1/E-2 FOR FURTHER INFORMATION. SUPPLY FACP WITH TWO(2) DEDICATED "OUTSIDE" TELEPHONE CONNECTIONS FOR SYSTEM MONITORING. COORDINATE TELEPHONE CONNECTION REQUIREMENTS WITH LOCAL FIRE MARSHAL AND UTILITY PROVIDER PRIOR TO ANY WORK. CELLULAR COMMUNICATION IS ACCEPTABLE PENDING AHJ APPROVAL.

6. FLOW AND TAMPER SWITCHES TO BE SUPPLIED AND INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FACP BY E.C. FINAL QUANTITY AND LOCATIONS MUST BE CONFIRMED WITH PROJECT DESIGN BUILD SPRINKLER CONTRACTOR PRIOR TO SUBMITTAL PHASE. LOCATIONS SHOWN ON DRAWING ARE FOR REFERENCE ONLY. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION.

7. WEATHER-PROOF AUDIO/VISUAL DEVICE TO BE INSTALLED ON EXTERIOR OF BUILDING TO INDICATE WATER FLOW FROM SPRINKLER RISER UPON SYSTEM ACTIVATION. FIELD VERIFY LOCATION WITH G.C. AND LOCAL FIRE MARSHAL PRIOR TO ANY WORK.

8. HEAT DETECTOR TO BE INSTALLED AT BOTTOM OF ELEVATOR SHAFT WITHIN 2' OF SPRINKLER HEAD. WIRE HEAT DETECTOR INTO BUILDING FIRE ALARM SYSTEM WITH AUXILIARY CONTACTS WIRED INTO 3-POLE SHUNT TRIP C.B., POWERING ELEVATOR MOTOR, AND SOLENOID VALVE FOR SPRINKLER HEAD. ACTIVATION OF HEAT DETECTOR AND / OR SPRINKLER HEAD SHALL TRIGGER ELEVATOR MOTOR SHUNT-TRIP C.B. TO DISCONNECT POWER TO ELEVATOR EQUIPMENT PRIOR TO DISCHARGE OF WATER FROM SPRINKLER SYSTEM. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION. SPRINKLER HEADS AND SOLENOID VALVE(S) SHALL BE PROVIDED AND INSTALLED BY SPRINKLER CONTRACTOR. FIELD VERIFY LOCATIONS.

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273 HICKORY STREET BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. RYAN · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

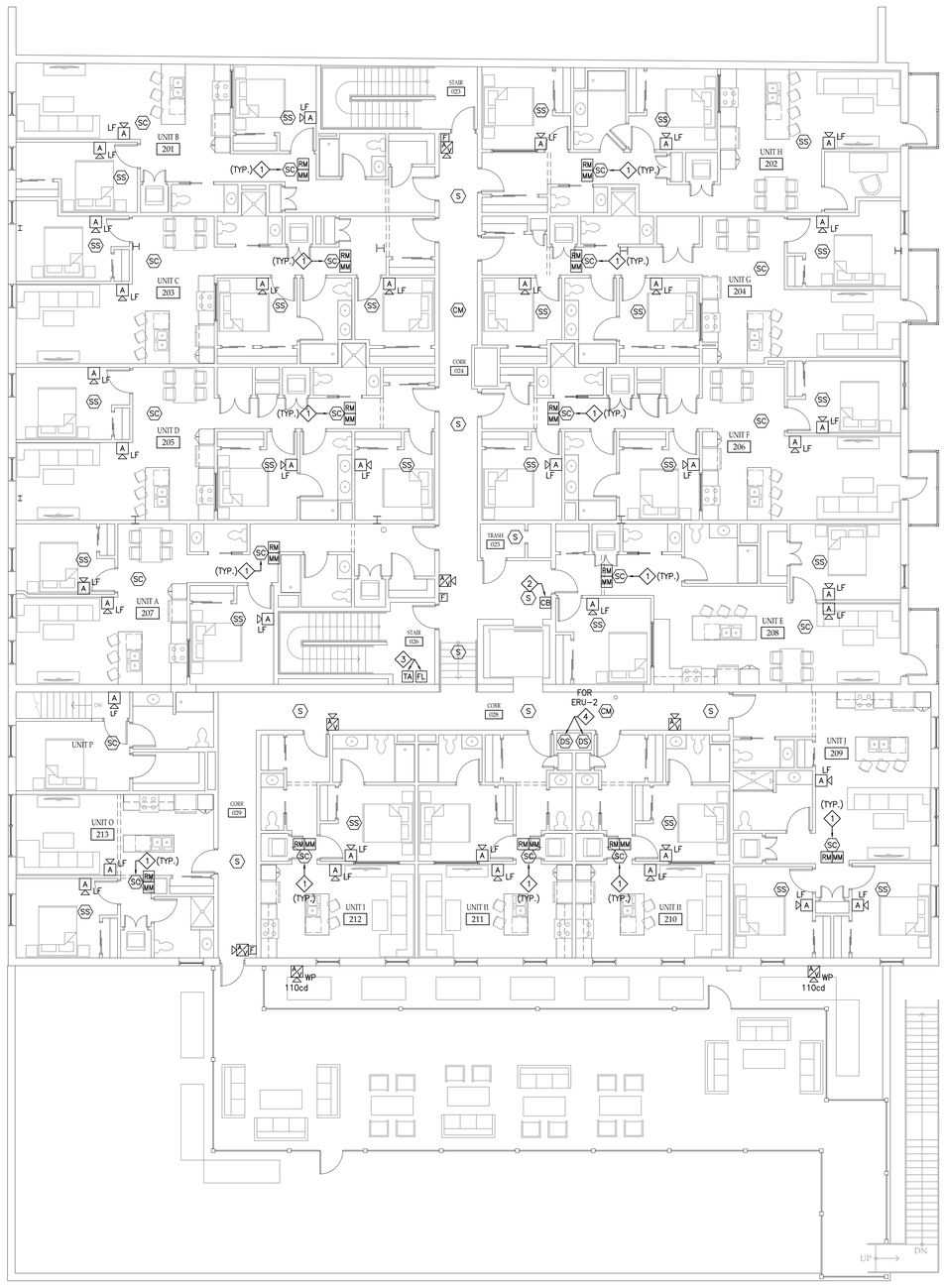
FIRST FLOOR PLAN FIRE ALARM AND TWO-WAY COMMUNICATION SYSTEM

SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: E-12



SECOND FLOOR PLAN
FIRE ALARM AND
TWO-WAY COMMUNICATION SYSTEM

1 / E-13

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

GENERAL DRAWING NOTES:

a. ENSURE ALL SMOKE AND HEAT DETECTORS ARE PLACED A MINIMAL DISTANCE OF 3'-0" FROM HVAC SUPPLY / RETURN AIR GRILLS. IN OPEN CEILING APPLICATIONS, ENSURE SMOKE AND HEAT DETECTORS ARE LOCATED SUCH THAT THEY ARE NOT BLOCK BY MECHANICAL EQUIPMENT, DUCTWORK AND PIPING SYSTEMS. LOCATIONS SHOWN ON PLANS ARE SUGGESTED AND MUST BE FIELD VERIFIED BY E.C IN COORDINATION WITH G.C., M.C., AND P.C.

b. REQUIRED NAC EXTENDER PANEL QUANTITY TO BE DETERMINED BY FIRE ALARM MANUFACTURE SELECTED FOR THE PROJECT. E.C. IS RESPONSIBLE FOR NAC PANEL INSTALLATION. LOCATION IN FIRST FLOOR MECHANICAL ROOM UNLESS OTHERWISE DETERMINED. SUPPLY 120V POWER CONNECTION TO EACH NAC EXTENDER PANEL EMANATING FROM A "SPARE", SINGLE-POLE, 20A C.B. IN NEAREST "HOUSE" POWER PANEL.

c. FIRE ALARM VISUAL (STROBE) DEVICES SHALL BE SET AT 15cd UNLESS OTHERWISE INDICATED.

DRAWING KEYNOTES: (X)

1. TYPE 'SC' AND 'SS' FIRE ALARM DEVICES REQUIRE 120V POWER CONNECTION WIRED FROM APARTMENT LIGHTING CIRCUIT. TANDEM WIRE FIRE ALARM DEVICES, WITHIN APARTMENT, SO THAT ACTIVATION OF ANY ONE DEVICE ACTIVATES ALL REMAINING DEVICES IN THAT APARTMENT. INCLUDE A 120V RELAY AND WIRE INTO BUILDING FIRE ALARM SYSTEM, VIA ADDRESSABLE INPUT MODULE, FOR MONITORING OF APARTMENT SMOKE AND CARBON MONOXIDE DETECTORS BY BUILDING FIRE ALARM SYSTEM. SEE SHEETS E-15 THRU E-19 FOR APART LIGHTING CIRCUIT DESIGNATION.

2. FURNISH ELEVATOR TWO-WAY COMMUNICATION SYSTEM CONSISTING OF A BASE STATION, LOCATED IN FIRST FLOOR ELEVATOR LOBBY, AND CALL BOXES, LOCATED IN ELEVATOR LOBBY ON 2ND AND 3RD FLOORS. INCLUDE ALL REQUIRED SIGNAGE. PROVIDE ALL NECESSARY HARDWARE, MATERIALS, DEVICES ETC. TO OBTAIN A 100% COMPLETE INSTALLATION IN COORDINATION WITH G.C.

3. FLOW AND TAMPER SWITCHES TO BE SUPPLIED AND INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FACP BY E.C. FINAL QUANTITY AND LOCATIONS MUST BE CONFIRMED WITH PROJECT DESIGN BUILD SPRINKLER CONTRACTOR PRIOR TO SUBMITTAL PHASE. LOCATIONS SHOWN ON DRAWING ARE FOR REFERENCE ONLY. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION.

4. INSTALL DUCT SMOKE DETECTOR, WITH SAMPLING TUBE, IN SUPPLY AND RETURN AIR DUCTS OF HVAC UNIT. COORDINATE EXACT LOCATION WITH M.C. SUPPLY REMOTE TEST STATIONS AND LOCATE IN FIRST FLOOR MECHANICAL RM., LABEL ACCORDINGLY. WIRE HVAC UNIT CONTROLLER FOR AUTOMATIC UNIT SHUT-DOWN UPON FIRE ALARM SYSTEM ACTIVATION. COORDINATE INSTALLATION WITH M.C. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION.

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5-23-25

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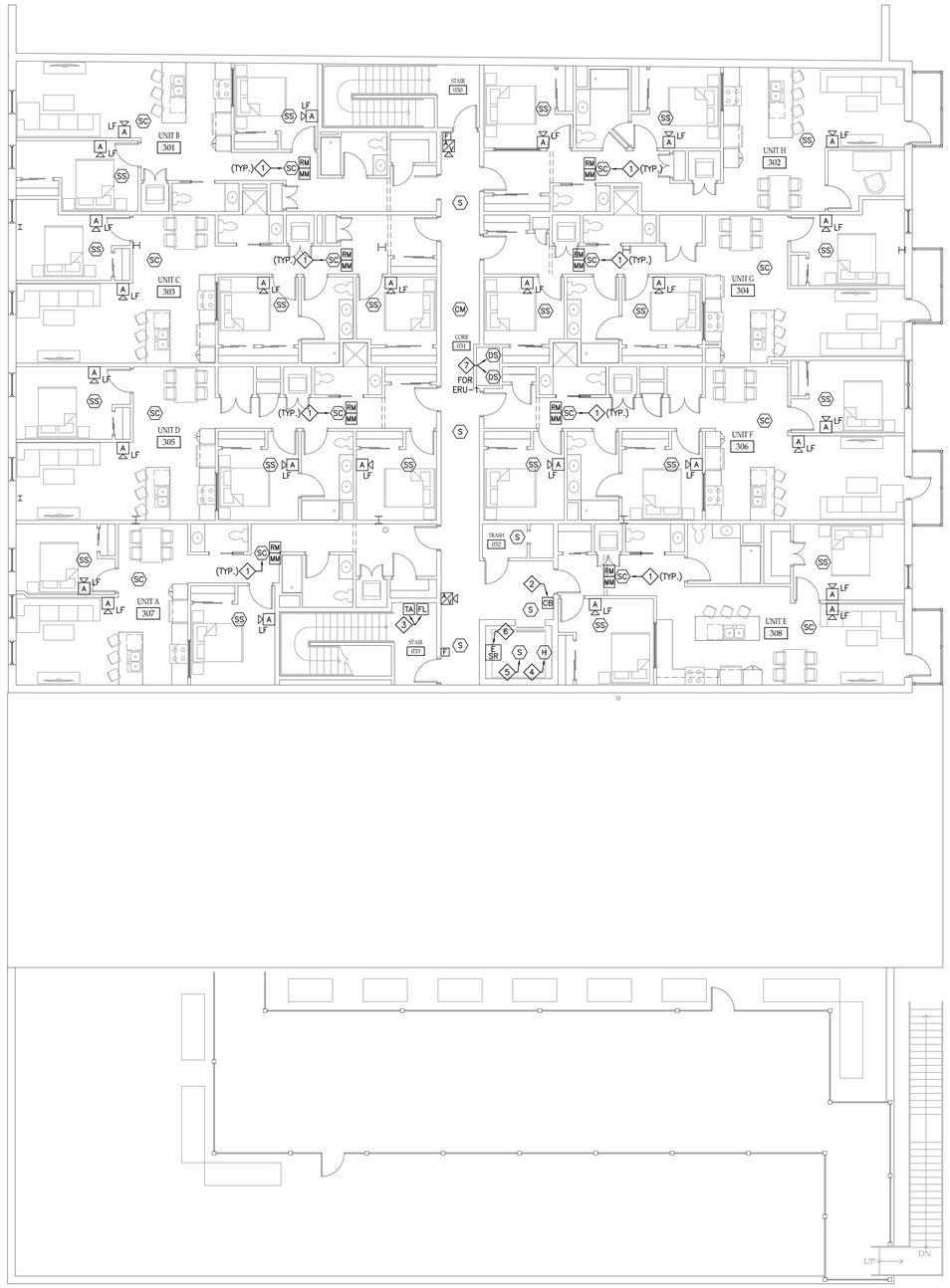

THIRD FLOOR PLAN
FIRE ALARM AND
TWO-WAY COMMUNICATION SYSTEM

1
E-14

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

GENERAL DRAWING NOTES:

a. ENSURE ALL SMOKE AND HEAT DETECTORS ARE PLACED A MINIMAL DISTANCE OF 3'-0" FROM HVAC SUPPLY / RETURN AIR GRILLS. IN OPEN CEILING APPLICATIONS, ENSURE SMOKE AND HEAT DETECTORS ARE LOCATED SUCH THAT THEY ARE NOT BLOCK BY MECHANICAL EQUIPMENT, DUCTWORK AND PIPING SYSTEMS. LOCATIONS SHOWN ON PLANS ARE SUGGESTED AND MUST BE FIELD VERIFIED BY E.C IN COORDINATION WITH G.C., M.C., AND P.C.

b. REQUIRED NAC EXTENDER PANEL QUANTITY TO BE DETERMINED BY FIRE ALARM MANUFACTURE SELECTED FOR THE PROJECT. E.C. IS RESPONSIBLE FOR NAC PANEL INSTALLATION. LOCATION IN FIRST FLOOR MECHANICAL ROOM UNLESS OTHERWISE DETERMINED. SUPPLY 120V POWER CONNECTION TO EACH NAC EXTENDER PANEL EMANATING FROM A "SPARE", SINGLE-POLE, 20A C.B. IN NEAREST "HOUSE" POWER PANEL.

c. FIRE ALARM VISUAL (STROBE) DEVICES SHALL BE SET AT 15cd UNLESS OTHERWISE INDICATED.

DRAWING KEYNOTES: (X)

1. TYPE 'SC' AND 'SS' FIRE ALARM DEVICES REQUIRE 120V POWER CONNECTION WIRED FROM APARTMENT LIGHTING CIRCUIT. TANDEM WIRE FIRE ALARM DEVICES, WITHIN APARTMENT, SO THAT ACTIVATION OF ANY ONE DEVICE ACTIVATES ALL REMAINING DEVICES IN THAT APARTMENT. INCLUDE A 120V RELAY AND WIRE INTO BUILDING FIRE ALARM SYSTEM, VIA ADDRESSABLE INPUT MODULE, FOR MONITORING OF APARTMENT SMOKE AND CARBON MONOXIDE DETECTORS BY BUILDING FIRE ALARM SYSTEM. SEE SHEETS E-15 THRU E-19 FOR APART LIGHTING CIRCUIT DESIGNATION.

2. PROVIDE ELEVATOR TWO-WAY COMMUNICATION SYSTEM CONSISTING OF A BASE STATION, LOCATED IN FIRST FLOOR ELEVATOR LOBBY, AND CALL BOXES, LOCATED IN ELEVATOR LOBBY ON 2ND AND 3RD FLOORS. INCLUDE ALL REQUIRED SIGNAGE. PROVIDE ALL NECESSARY HARDWARE, MATERIALS, DEVICES ETC. TO OBTAIN A 100% COMPLETE INSTALLATION IN COORDINATION WITH G.C.

3. FLOW AND TAMPER SWITCHES SHALL BE SUPPLIED AND INSTALLED BY SPRINKLER CONTRACTOR, WIRED INTO BUILDING FACP BY E.C. FINAL QUANTITY AND LOCATIONS MUST BE CONFIRMED WITH PROJECT DESIGN BUILD SPRINKLER CONTRACTOR PRIOR TO SUBMITTAL PHASE. LOCATIONS SHOWN ON DRAWING ARE FOR REFERENCE ONLY. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION.

4. HEAT DETECTOR TO BE INSTALLED AT TOP OF ELEVATOR SHAFT WITHIN 2' OF SPRINKLER HEAD. WIRE HEAT DETECTOR INTO BUILDING FIRE ALARM SYSTEM WITH AUXILIARY CONTACTS WIRED INTO 3-POLE SHUNT TRIP C.B., POWERING ELEVATOR MOTOR, AND SOLENOID VALVE FOR SPRINKLER HEAD. ACTIVATION OF HEAT DETECTOR AND / OR SPRINKLER HEAD SHALL TRIGGER ELEVATOR MOTOR SHUNT-TRIP C.B. TO DISCONNECT POWER TO ELEVATOR EQUIPMENT PRIOR TO DISCHARGE OF WATER FROM SPRINKLER SYSTEM. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION. SPRINKLER HEADS AND SOLENOID VALVE(S) SHALL BE PROVIDED AND INSTALLED BY SPRINKLER CONTRACTOR. FIELD VERIFY LOCATIONS.

5. SMOKE DETECTOR TO BE INSTALLED AT TOP OF ELEVATOR SHAFT. WIRE SMOKE DETECTOR INTO INITIATING CIRCUITS OF BUILDING FIRE ALARM SYSTEM WITH AUXILIARY CONTACTS WIRED INTO ELEVATOR RECALL SYSTEM. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION.

6. SUPPLY ALL REQUIRED PERHIPERALS, MATERIALS AND PROGRAMMING OF FACP FOR ELEVATOR RECALL WHEN FIRE ALARM SYSTEM IS IN ALARM MODE.

7. INSTALL DUCT SMOKE DETECTOR, WITH SAMPLING TUBE, IN SUPPLY AND RETURN AIR DUCTS OF HVAC UNIT. COORDINATE EXACT LOCATION WITH M.C. SUPPLY REMOTE TEST STATIONS AND LOCATE IN FIRST FLOOR MECHANICAL RM., LABEL ACCORDINGLY. WIRE HVAC UNIT CONTROLLER FOR AUTOMATIC UNIT SHUT-DOWN UPON FIRE ALARM SYSTEM ACTIVATION. COORDINATE INSTALLATION WITH M.C. SUPPLY ALL REQUIRED DEVICES, MATERIALS AND PROGRAMMING OF FACP TO OBTAIN A 100% COMPLETE INSTALLATION.

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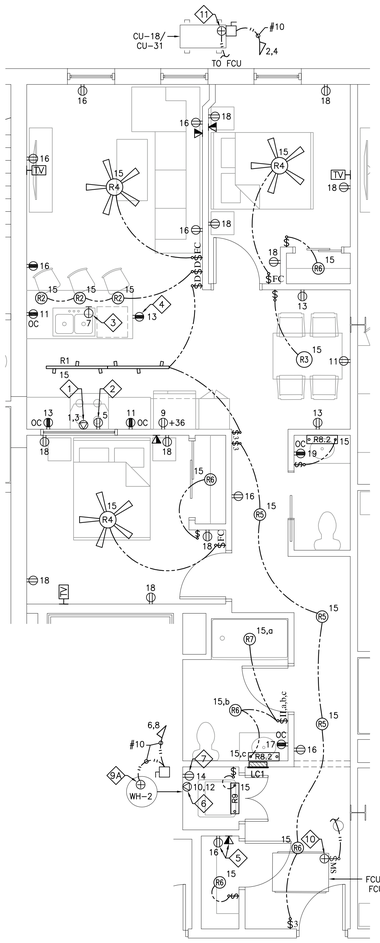
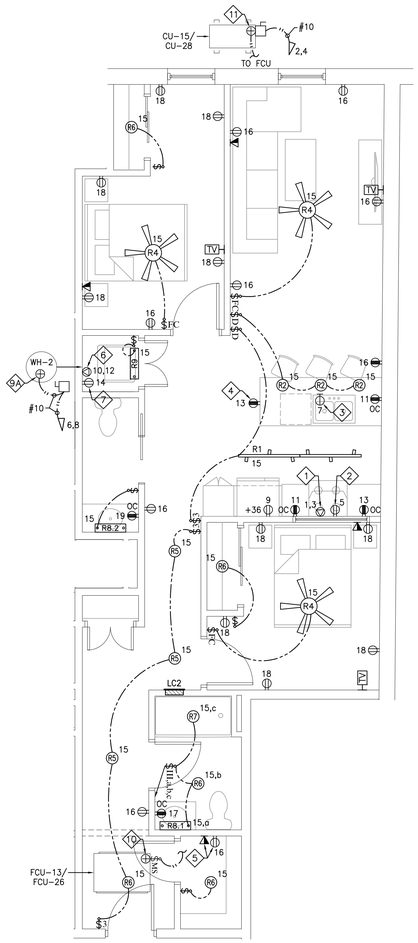


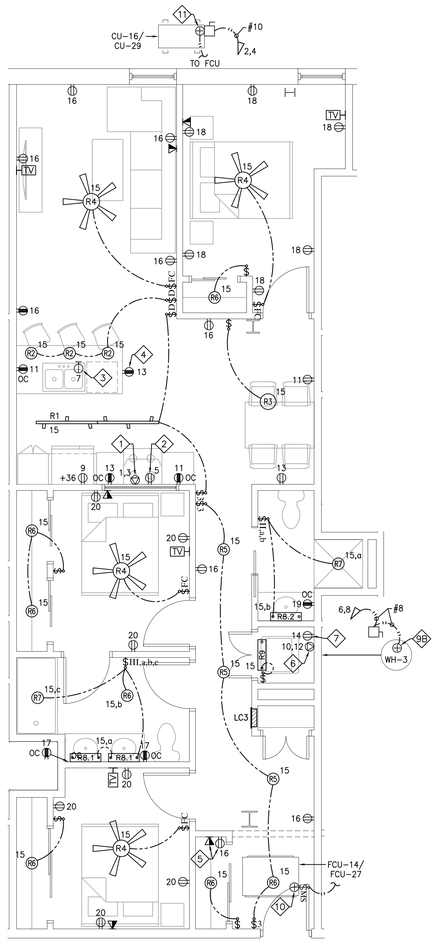
1 E-15 APARTMENT UNIT 'A' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



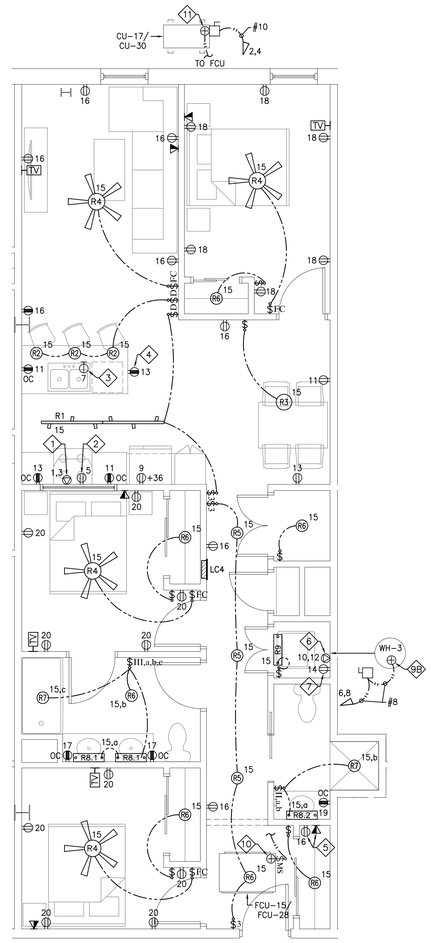
2 E-15 APARTMENT UNIT 'B' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



3 E-15 APARTMENT UNIT 'C' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



4 E-15 APARTMENT UNIT 'D' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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

LC1 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.			MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'A' (2-BED, 1.5 BATH)							
DESCRIPTION	BREAKER	L1		L2	BREAKER	DESCRIPTION	
ckt#							ckt#
1	50A-2P	32.50	19.50		30A-2P	Condensing Unit (CU-18 / 31)	2
3				32.50	19.50		4
5	**20A-1P	14.20	18.75		30A-2P	Electric Hot Water Heater (WH-2)	6
7	**20A-1P			12.00	18.75		8
9	*15A-1P	5.50	20.80		30A-2P	Electric Dryer/Washer Machine Recept.	10
11	*20A-1P			12.50	20.80		12
13	*20A-1P	12.50	10.50		**20A-1P	Washer Machine Recept.	14
15	*15A-1P			5.50	12.00	*20A-1P Hall / Living Rm. Receptacles	16
17	*20A-1P	3.00	15.00		*20A-1P	Bedroom Receptacles.	18
19	*20A-1P			3.00	0.00	- SPACE	20
21	SPACE	-	0.00	0.00	-	Provision for SPD	22
23	SPACE			0.00	0.00	-	24
TOTAL CONNECTED AMPS/LEG		152.25		136.56	TOTAL CONNECTED kW		34.66
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES		144.40

LC2 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.			MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'B' (2-BED, 1.5 BATH)							
DESCRIPTION	BREAKER	L1		L2	BREAKER	DESCRIPTION	
ckt#							ckt#
1	50A-2P	32.50	19.50		30A-2P	Condensing Unit (CU-15 / 28)	2
3				32.50	19.50		4
5	**20A-1P	14.20	18.75		30A-2P	Electric Hot Water Heater (WH-2)	6
7	**20A-1P			12.00	18.75		8
9	*15A-1P	5.50	20.80		30A-2P	Electric Dryer/Washer Machine Recept.	10
11	*20A-1P			12.50	20.80		12
13	*20A-1P	12.50	10.50		**20A-1P	Washer Machine Recept.	14
15	*15A-1P			5.40	13.50	*20A-1P Hall / Living Rm. Receptacles	16
17	*20A-1P	3.00	12.00		*20A-1P	Bedroom Receptacles.	18
19	*20A-1P			3.00	0.00	- SPACE	20
21	SPACE	-	0.00	0.00	-	Provision for SPD	22
23	SPACE			0.00	0.00	-	24
TOTAL CONNECTED AMPS/LEG		149.25		137.95	TOTAL CONNECTED kW		34.46
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES		143.60

LC3 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.			MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'C' (3-BED, 2 BATH)							
DESCRIPTION	BREAKER	L1		L2	BREAKER	DESCRIPTION	
ckt#							ckt#
1	50A-2P	32.50	19.50		30A-2P	Condensing Unit (CU-16 / 29)	2
3				32.50	19.50		4
5	**20A-1P	14.20	25.00		40A-2P	Electric Hot Water Heater (WH-3)	6
7	**20A-1P			12.00	25.00		8
9	*15A-1P	5.50	20.80		30A-2P	Electric Dryer/Washer Machine Recept.	10
11	*20A-1P			12.50	20.80		12
13	*20A-1P	12.50	10.50		**20A-1P	Washer Machine Recept.	14
15	*15A-1P			7.00	13.50	*20A-1P Hall / Living Rm. Receptacles	16
17	*20A-1P	6.00	9.00		*20A-1P	Bedroom Receptacles.	18
19	*20A-1P			3.00	10.50	*20A-1P Bedroom Receptacles.	20
21	SPACE	-	0.00	0.00	-	Provision for SPD	22
23	SPACE			0.00	0.00	-	24
TOTAL CONNECTED AMPS/LEG		155.50		156.30	TOTAL CONNECTED kW		37.42
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES		155.90

LC4 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.			MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'D' (3-BED, 2 BATH)							
DESCRIPTION	BREAKER	L1		L2	BREAKER	DESCRIPTION	
ckt#							ckt#
1	50A-2P	32.50	19.50		30A-2P	Condensing Unit (CU-17 / 30)	2
3				32.50	19.50		4
5	**20A-1P	14.20	25.00		40A-2P	Electric Hot Water Heater (WH-3)	6
7	**20A-1P			12.00	25.00		8
9	*15A-1P	5.50	20.80		30A-2P	Electric Dryer/Washer Machine Recept.	10
11	*20A-1P			12.50	20.80		12
13	*20A-1P	12.50	10.50		**20A-1P	Washer Machine Recept.	14
15	*15A-1P			7.00	13.50	*20A-1P Hall / Living Rm. Receptacles	16
17	*20A-1P	6.00	9.00		*20A-1P	Bedroom Receptacles.	18
19	*20A-1P			3.00	15.00	*20A-1P Bedroom Receptacles.	20
21	SPACE	-	0.00	0.00	-	Provision for SPD	22
23	SPACE			0.00	0.00	-	24
TOTAL CONNECTED AMPS/LEG		155.50		160.80	TOTAL CONNECTED kW		37.96
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES		158.15

GENERAL NOTES:

a. UTILIZE MC CABLE (CONCEALED INSTALLATION) OR EMT CONDUIT (EXPOSED INSTALLATION) FOR ALL APARTMENT BRANCH CIRCUIT WIRING.

b. DEVICES FED FROM 1-POLE, 15A CIRCUIT BREAKERS MAY BE WIRED WITH 14AWG CU. CONDUCTORS. DEVICES FED FROM 1-POLE, 20A CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS. EQUIPMENT FED FROM 2-POLE CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS (MINIMAL) UNLESS OTHERWISE DESIGNATED. SEE PANEL SCHEDULES FOR CIRCUIT BREAKER DESIGNATIONS.

c. APARTMENT UNIT ELECTRICAL DEVICES, LIGHTING, HVAC AND PLUMBING EQUIPMENT SHALL BE WIRED BACK TO THE ASSOCIATED APARTMENT UNIT LOAD CENTER. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS.

d. 15 AMPERE (NEMA 5-15R) RECEPTACLES MAY BE UTILIZED WITHIN APARTMENTS FOR SINGLE, DUPLEX, AND GFI RECEPTACLE OUTLETS UNLESS OTHERWISE NOTED.

e. PROVIDE AFCI (ARC FAULT CURRENT INTERRUPTER) AND DUAL FUNCTION AFCI + GFCI (ARC FAULT CURRENT INTERRUPTER + GROUND FAULT CIRCUIT INTERRUPTER) CIRCUIT BREAKERS PER 2017 N.E.C. REQUIREMENTS. SEE PANEL SCHEDULES FOR AFCI AND DUAL FUNCTION C.B. DESIGNATIONS.

f. SUPPLY TAMPER-RESISTANT RECEPTACLES FOR ALL OUTLETS.

g. RECEPTACLES WITH "OC" DESIGNATIONS TO BE INSTALLED 42" (MAX) A.F.F. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN.

h. ELECTRICAL BOXES SHALL NOT BE INSTALLED BACK-TO-BACK. ENSURE ELECTRICAL BOX LOCATIONS ARE OFFSET A MINIMAL OF 4" CLEAR TO AVOID CONFLICTS. WHEN ELECTRICAL BOXES ARE INSTALLED OPPOSITE EACH OTHER WITHIN THE SAME WALL CAVITY OF A FIRE RATED WALL, THE E.C. SHALL INSTALL THERMOFIBER PADDING AROUND BOXES TO MAINTAIN FIRE RATINGS. VERIFY FIRE RATED WALL LOCATIONS WITH ARCHITECTURAL PLANS.

i. PROVIDE "CEILING FAN RATED" ELECTRICAL BOXES FOR EACH PADDLE FAN INSTALLATION.

j. ELECTRICAL DEVICES AND APARTMENT LOAD CENTERS ARE TO BE INSTALLED AT HEIGHTS PER ADA REQUIREMENTS FOR THE FOLLOWING UNIT TYPES: J, M, N

DRAWING KEYNOTES: (E)

1. NEMA 14-50R FOR ELECTRIC RANGE. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. AND MANUFACTURE INSTRUCTIONS PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #6AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.

2. RECEPTACLE FOR MICROWAVE / RANGE HOOD. INSTALL IN CABINET ABOVE MICROWAVE IN AN ACCESSIBLE LOCATION. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

3. DEDICATED SINGLE RECEPTACLE FOR DISHWASHER. INSTALL IN CABINET BELOW SINK IN AN ACCESSIBLE LOCATION WITHIN 48" OF DISHWASHER. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

4. INSTALL RECEPTACLE FLUSH TO BASE CABINET NO MORE THAN 12" BELOW FINISHED COUNTERTOP. COORDINATE LOCATION AND INSTALLATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. ENSURE INSTALLATION MEETS ALL NEC REQUIREMENTS.

5. SUPPLY PLYWOOD BACKBOARD (2'x2' OR AS REQUIRED) AND INSTALL HIGH ON WALL, JUST BELOW CEILING, FOR INSTALLATION OF TELEPHONE / TELEVESION / INTERNET MODE, ROUTER, AND / OR DISTRIBUTION BLOCKS TO SERVE COMMUNICATIONS OUTLETS WITHIN APARTMENT. EQUIPMENT AND ASSOCIATED WIRING IS TO BE SUPPLIED AND INSTALLED BY OTHERS. MOUNT DEVICES SHOWN ON PLYWOOD BACKBAORD TO SUPPORT EQUIPMENT. SUPPLY AND INSTALL ¾" EMT CONDUIT FROM THIS LOCATION TO EACH TELEPHONE/DATA AND TV ELECTRICAL BOX LOCATED WITHIN APARTMENT UNIT. SUPPLY CONDUITS WITH A PULLSTRINGS FOR COMMUNICATION CABLE INSTALLATION BY OTHERS. VERIFY INSTALLATION CONCEPT WITH G.C. AND LOCAL UTILITY PROVIDERS PRIOR TO ELECTRICAL ROUGH-IN.

6. NEMA 14-30R FOR ELECTRIC DRYER INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #10AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.

7. RECEPTACLE FOR WASHER MACHINE INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

8. NOT USED.

9A. FEED HOT WATER HEATER WITH A 1Ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.

9B. FEED HOT WATER HEATER WITH A 1Ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 60A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.

10. FAN COIL UNIT TO BE POWERED BY THE ASSOCIATED APARTMENT CONDENSING UNIT. SUPPLY A NEMA 1, 2-POLE, 30A RATED, NON-FUSED MANUAL MOTOR STARTER AND MOUNT WITHIN UNIT MECHANICAL COMPARTMENT. COORDINATE INSTALLATION WITH M.C.

11. FEED CONDENSING UNIT WITH A 1Ø, 208V POWER CONNECTION. SUPPLY A NEMA-3R, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON UNI-STRUT FRAMING ADJACENT TO CONDENSING UNIT 36" (MIN.) ABOVE FINISHED ROOF. UNI-STRUT FRAMING MAY BE AN EXTENSION TO CONDENSING UNIT EQUIPMENT RAIL. CONDENSING UNIT SHALL SUPPLY POWER TO THE ASSOCIATED APARTMENT FAN COIL UNIT PER MANUFACTURE INSTRUCTIONS. SUPPLY REQUIRED WIRING, HARDWARE, MATERIALS, ETC. TO OBTAIN A 100% COMPLETE INSTALLATION.
NOTE: CONDENSING UNIT IS SHOWN ON THIS PLAN TO IDENTIFY POWER REQUIREMENTS. REFERENCE SHEET E-8 FOR INTENDED LOCATIONS FOR EACH RESPECTIVE APARTMENT UNIT.

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273 HICKORY STREET BUFFALO, NY 14204

ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BOWMAN · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

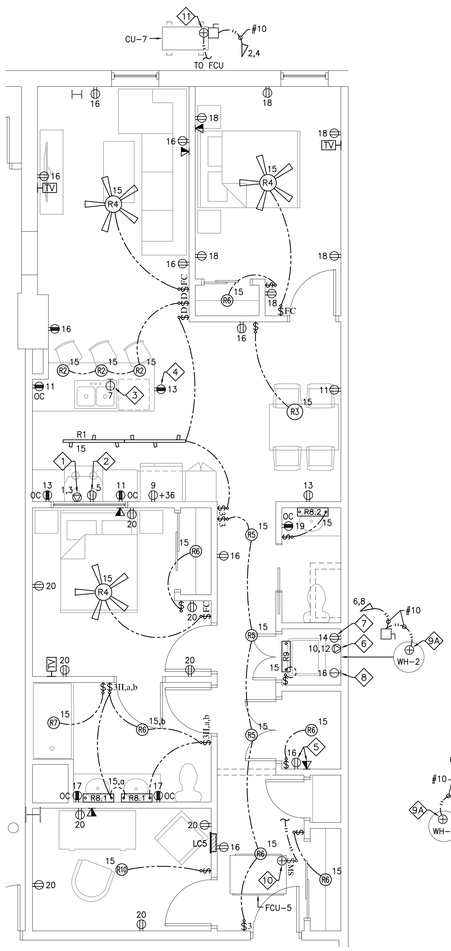
APARTMENT UNIT 'A', 'B', 'C', 'D' ENLARGED PLANS POWER, SYSTEMS, AND LIGHTING

SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01

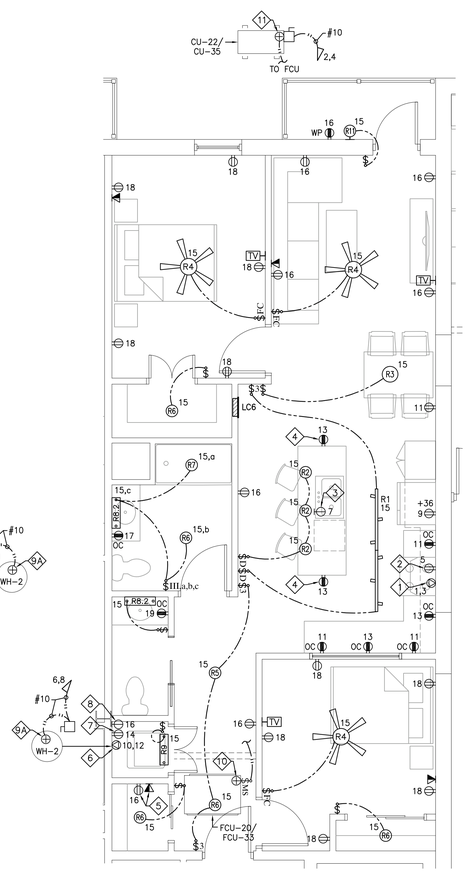
DATE: 5-23-2025

DRAWING #: E-15



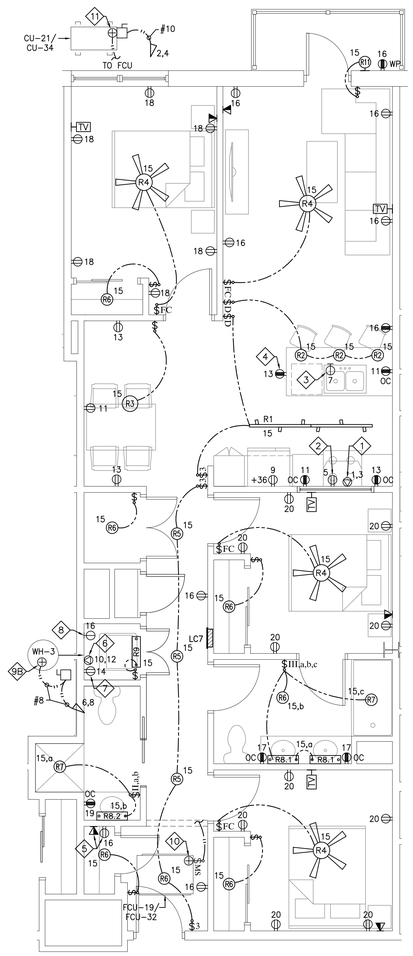
1 E-16 APARTMENT UNIT 'D1' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



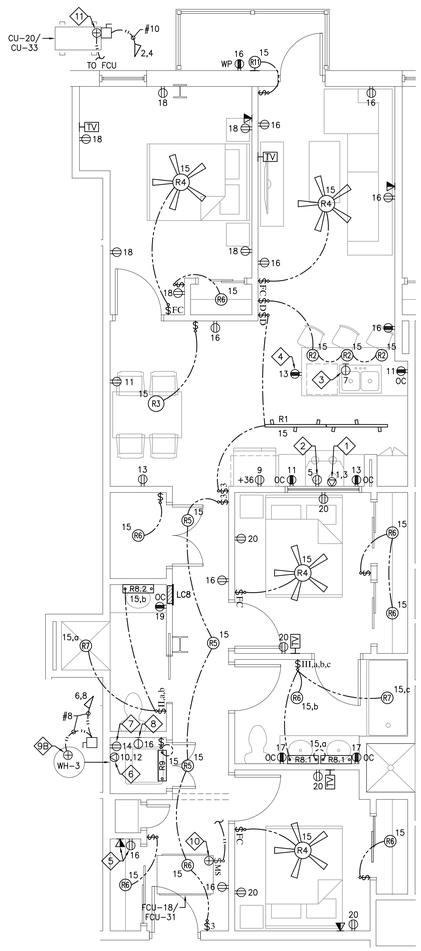
2 E-16 APARTMENT UNIT 'E' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



3 E-16 APARTMENT UNIT 'F' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



4 E-16 APARTMENT UNIT 'G' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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

LC5 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.	MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER

LOCATION: APARTMENT UNIT 'D1' (2-BED, 1.5 BATH)

ckt#	DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	ckt#
1	Electric Range Recept.	50A-2P	32.50	19.50	30A-2P	Condensing Unit (CU-7)	2
3				32.50	19.50		4
5	Microwave / Range Hood Recept.	**20A-1P	14.20	18.75	30A-2P	Electric Hot Water Heater (WH-2)	6
7	Dishwasher Recept.	**20A-1P		12.00	18.75		8
9	Fridge Recept.	*15A-1P	5.50	20.80	30A-2P	Electric Dryer/Washer Machine Recept.	10
11	Kitchen/Dining Appliance Recepts.	*20A-1P		12.50	20.80		12
13	Kitchen/Dining Appliance Recepts.	*20A-1P	12.50	10.50	**20A-1P	Washer Machine Recept.	14
15	Lights & Fire Alarm Devices	*15A-1P		6.20	15.00	*20A-1P Hall / Living Rm. Recepts.	16
17	Bathroom Recept.	*20A-1P	6.00	9.00	*20A-1P	Bedroom Recepts.	18
19	Bathroom Recept.	*20A-1P		3.00	13.50	*20A-1P Bedroom & Hall Recepts.	20
21	SPACE	-	0.00	0.00	-	Provision for SPD	22
23	SPACE	-		0.00	0.00	-	24
	TOTAL CONNECTED AMPS/LEG		149.25		153.75	TOTAL CONNECTED kW	36.36
	* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	151.50

LC6 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.	MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER

LOCATION: APARTMENT UNIT 'E' (2-BED, 1.5 BATH)

ckt#	DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	ckt#
1	Electric Range Recept.	50A-2P	32.50	19.50	30A-2P	Condensing Unit (CU-22 / 35)	2
3				32.50	19.50		4
5	Microwave / Range Hood Recept.	**20A-1P	14.20	18.75	30A-2P	Electric Hot Water Heater (WH-2)	6
7	Dishwasher Recept.	**20A-1P		12.00	18.75		8
9	Fridge Recept.	*15A-1P	5.50	20.80	30A-2P	Electric Dryer/Washer Machine Recept.	10
11	Kitchen/Dining Appliance Recepts.	*20A-1P		12.50	20.80		12
13	Kitchen/Dining Appliance Recepts.	*20A-1P	12.50	10.50	**20A-1P	Washer Machine Recept.	14
15	Lights & Fire Alarm Devices	*15A-1P		5.40	12.00	*20A-1P Hall / Living Rm. / Porch Recepts.	16
17	Bathroom Recept.	*20A-1P	3.00	15.00	*20A-1P	Bedroom Recepts.	18
19	Bathroom Recept.	*20A-1P		3.00	0.00	- SPACE	20
21	SPACE	-	0.00	0.00	-	Provision for SPD	22
23	SPACE	-		0.00	0.00	-	24
	TOTAL CONNECTED AMPS/LEG		152.25		136.45	TOTAL CONNECTED kW	34.64
	* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	144.35

LC7 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.	MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER

LOCATION: APARTMENT UNIT 'F' (3-BED, 2 BATH)

ckt#	DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	ckt#
1	Electric Range Recept.	50A-2P	32.50	19.50	30A-2P	Condensing Unit (CU-21 / 34)	2
3				32.50	19.50		4
5	Microwave / Range Hood Recept.	**20A-1P	14.20	25.00	40A-2P	Electric Hot Water Heater (WH-3)	6
7	Dishwasher Recept.	**20A-1P		12.00	25.00		8
9	Fridge Recept.	*15A-1P	5.50	20.80	30A-2P	Electric Dryer/Washer Machine Recept.	10
11	Kitchen/Dining Appliance Recepts.	*20A-1P		12.50	20.80		12
13	Kitchen/Dining Appliance Recepts.	*20A-1P	12.50	10.50	**20A-1P	Washer Machine Recept.	14
15	Lights & Fire Alarm Devices	*15A-1P		7.20	15.00	*20A-1P Hall / Living Rm. / Porch Recepts.	16
17	Bathroom Recept.	*20A-1P	6.00	9.00	*20A-1P	Bedroom Recepts.	18
19	Bathroom Recept.	*20A-1P		3.00	20.00	*20A-1P Bedroom Recepts.	20
21	SPACE	-	0.00	0.00	-	Provision for SPD	22
23	SPACE	-		0.00	0.00	-	24
	TOTAL CONNECTED AMPS/LEG		155.50		167.50	TOTAL CONNECTED kW	38.76
	* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	161.50

LC8 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.	MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER

LOCATION: APARTMENT UNIT 'G' (3-BED, 2 BATH)

ckt#	DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	ckt#
1	Electric Range Recept.	50A-2P	32.50	19.50	30A-2P	Condensing Unit (CU-20 / 33)	2
3				32.50	19.50		4
5	Microwave / Range Hood Recept.	**20A-1P	14.20	25.00	40A-2P	Electric Hot Water Heater (WH-3)	6
7	Dishwasher Recept.	**20A-1P		12.00	25.00		8
9	Fridge Recept.	*15A-1P	5.50	20.80	30A-2P	Electric Dryer/Washer Machine Recept.	10
11	Kitchen/Dining Appliance Recepts.	*20A-1P		12.50	20.80		12
13	Kitchen/Dining Appliance Recepts.	*20A-1P	12.50	10.50	**20A-1P	Washer Machine Recept.	14
15	Lights & Fire Alarm Devices	*15A-1P		7.30	15.00	*20A-1P Hall / Living Rm. / Porch Recepts.	16
17	Bathroom Recept.	*20A-1P	6.00	9.00	*20A-1P	Bedroom Recepts.	18
19	Bathroom Recept.	*20A-1P		3.00	9.00	*20A-1P Bedroom Recepts.	20
21	SPACE	-	0.00	0.00	-	Provision for SPD	22
23	SPACE	-		0.00	0.00	-	24
	TOTAL CONNECTED AMPS/LEG		155.50		156.00	TOTAL CONNECTED kW	37.45
	* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	156.05

GENERAL NOTES:

a. UTILIZE MC CABLE (CONCEALED INSTALLATION) OR EMT CONDUIT (EXPOSED INSTALLATION) FOR ALL APARTMENT BRANCH CIRCUIT WIRING.

b. DEVICES FED FROM 1-POLE, 15A CIRCUIT BREAKERS MAY BE WIRED WITH 14AWG CU. CONDUCTORS. DEVICES FED FROM 1-POLE, 20A CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS. EQUIPMENT FED FROM 2-POLE CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS (MINIMAL) UNLESS OTHERWISE DESIGNATED. SEE PANEL SCHEDULES FOR CIRCUIT BREAKER DESIGNATIONS.

c. APARTMENT UNIT ELECTRICAL DEVICES, LIGHTING, HVAC AND PLUMBING EQUIPMENT SHALL BE WIRED BACK TO THE ASSOCIATED APARTMENT UNIT LOAD CENTER. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS.

d. 15 AMPERE (NEMA 5-15R) RECEPTACLES MAY BE UTILIZED WITHIN APARTMENTS FOR SINGLE, DUPLEX, AND GFI RECEPTACLE OUTLETS UNLESS OTHERWISE NOTED.

e. PROVIDE AFCI (ARC FAULT CURRENT INTERRUPTER) AND DUAL FUNCTION AFCI + GFCI (ARC FAULT CURRENT INTERRUPTER + GROUND FAULT CIRCUIT INTERRUPTER) CIRCUIT BREAKERS PER 2017 N.E.C. REQUIREMENTS. SEE PANEL SCHEDULES FOR AFCI AND DUAL FUNCTION C.B. DESIGNATIONS.

f. SUPPLY TAMPER-RESISTANT RECEPTACLES FOR ALL OUTLETS.

g. RECEPTACLES WITH "OC" DESIGNATIONS TO BE INSTALLED 42" (MAX) A.F.F. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN.

h. ELECTRICAL BOXES SHALL NOT BE INSTALLED BACK-TO-BACK. ENSURE ELECTRICAL BOX LOCATIONS ARE OFFSET A MINIMAL OF 4" CLEAR TO AVOID CONFLICTS. WHEN ELECTRICAL BOXES ARE INSTALLED OPPOSITE EACH OTHER WITHIN THE SAME WALL CAVITY OF A FIRE RATED WALL, THE E.C. SHALL INSTALL THERMOFIBER PADDING AROUND BOXES TO MAINTAIN FIRE RATINGS. VERIFY FIRE RATED WALL LOCATIONS WITH ARCHITECTURAL PLANS.

i. PROVIDE "CEILING FAN RATED" ELECTRICAL BOXES FOR EACH PADDLE FAN INSTALLATION.

j. ELECTRICAL DEVICES AND APARTMENT LOAD CENTERS ARE TO BE INSTALLED AT HEIGHTS PER ADA REQUIREMENTS FOR THE FOLLOWING UNIT TYPES: J, M, N

DRAWING KEYNOTES: (E)

1. NEMA 14-50R FOR ELECTRIC RANGE. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. AND MANUFACTURE INSTRUCTIONS PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #6AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.

2. RECEPTACLE FOR MICROWAVE / RANGE HOOD. INSTALL IN CABINET ABOVE MICROWAVE IN AN ACCESSIBLE LOCATION. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

3. DEDICATED SINGLE RECEPTACLE FOR DISHWASHER. INSTALL IN CABINET BELOW SINK IN AN ACCESSIBLE LOCATION WITHIN 48" OF DISHWASHER. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

4. INSTALL RECEPTACLE FLUSH TO BASE CABINET NO MORE THAN 12" BELOW FINISHED COUNTERTOP. COORDINATE LOCATION AND INSTALLATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. ENSURE INSTALLATION MEETS ALL NEC REQUIREMENTS.

5. SUPPLY PLYWOOD BACKBOARD (2'x2' OR AS REQUIRED) AND INSTALL HIGH ON WALL, JUST BELOW CEILING, FOR INSTALLATION OF TELEPHONE / TELEVESION / INTERNET MODE, ROUTER, AND / OR DISTRIBUTION BLOCKS TO SERVE COMMUNICATIONS OUTLETS WITHIN APARTMENT. EQUIPMENT AND ASSOCIATED WIRING IS TO BE SUPPLIED AND INSTALLED BY OTHERS. MOUNT DEVICES SHOWN ON PLYWOOD BACKBOARD TO SUPPORT EQUIPMENT. SUPPLY AND INSTALL ¾" EMT CONDUIT FROM THIS LOCATION TO EACH TELEPHONE/DATA AND TV ELECTRICAL BOX LOCATED WITHIN APARTMENT UNIT. SUPPLY CONDUITS WITH A PULLSTRINGS FOR COMMUNICATION CABLE INSTALLATION BY OTHERS. VERIFY INSTALLATION CONCEPT WITH G.C. AND LOCAL UTILITY PROVIDERS PRIOR TO ELECTRICAL ROUGH-IN.

6. NEMA 14-30R FOR ELECTRIC DRYER INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #10AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.

7. RECEPTACLE FOR WASHER MACHINE INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

8. SINGLE RECEPTACLE FOR DRYER VENT IN-LINE BOOSTER FAN. INSTALL IN AN ACCESSIBLE LOCATION WITHIN 3' OF BOOSTER FAN. COORDINATE FINAL LOCATION WITH M.C. AND G.C. PRIOR TO ELECTRICAL ROUGH-IN.
NOTE: BOOSTER FAN IS REQUIRED FOR THE FOLLOWING UNIT TYPES ONLY: 'D1', 'E', 'F', 'G'

9A. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.

9B. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 60A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.

10. FAN COIL UNIT TO BE POWERED BY THE ASSOCIATED APARTMENT CONDENSING UNIT. SUPPLY A NEMA 1, 2-POLE, 30A RATED, NON-FUSED MANUAL MOTOR STARTER AND MOUNT WITHIN UNIT MECHANICAL COMPARTMENT. COORDINATE INSTALLATION WITH M.C.

11. FEED CONDENSING UNIT WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA-3R, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON UNI-STRUT FRAMING ADJACENT TO CONDENSING UNIT 36" (MIN.) ABOVE FINISHED ROOF. UNI-STRUT FRAMING MAY BE AN EXTENSION TO CONDENSING UNIT EQUIPMENT RAIL. CONDENSING UNIT SHALL SUPPLY POWER TO THE ASSOCIATED APARTMENT FAN COIL UNIT PER MANUFACTURE INSTRUCTIONS. SUPPLY REQUIRED WIRING, HARDWARE, MATERIALS, ETC. TO OBTAIN A 100% COMPLETE INSTALLATION.
NOTE: CONDENSING UNIT IS SHOWN ON THIS PLAN TO IDENTIFY POWER REQUIREMENTS. REFERENCE SHEET E-8 FOR INTENDED LOCATIONS FOR EACH RESPECTIVE APARTMENT UNIT.

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SA PROJECT TEAM: PRINCIPAL P. Silvestri
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SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BOWEN · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

APARTMENT UNIT 'D1', 'E' ,'F', 'G' ENLARGED PLANS POWER, SYSTEMS, AND LIGHTING

SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
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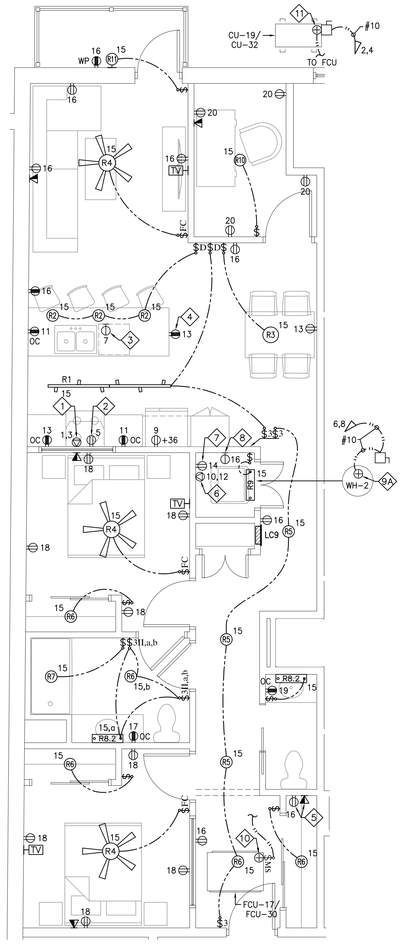
SA JOB #: 24037.01

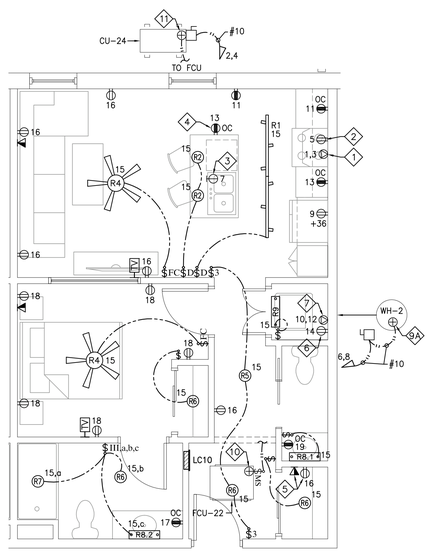
DATE: 5-23-2025

DRAWING #: E-16



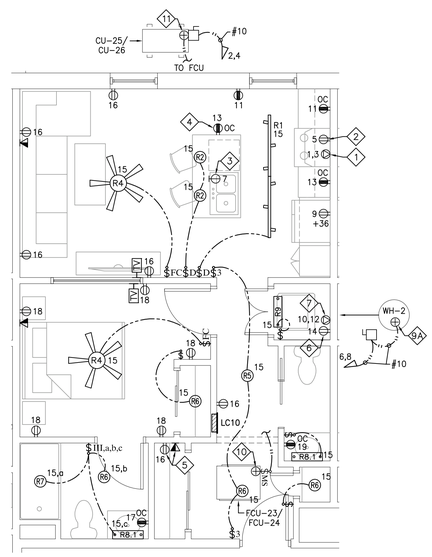
1 E-17 APARTMENT UNIT 'H' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



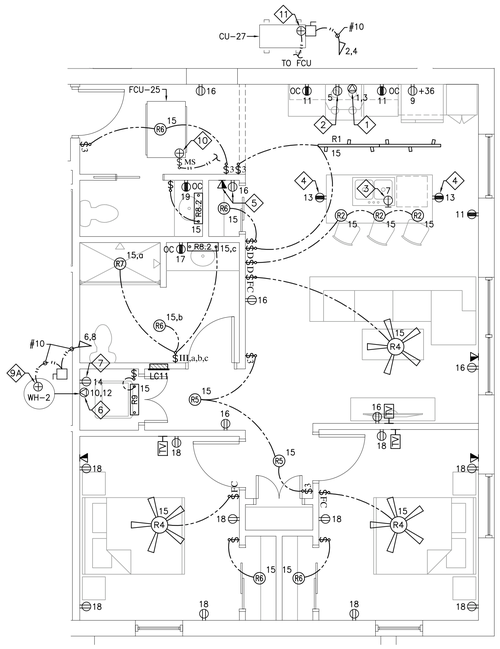
2 E-17 APARTMENT UNIT 'I' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



3 E-17 APARTMENT UNIT 'I1' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



4 E-17 APARTMENT UNIT 'J' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING ADA ADAPTABLE UNIT

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

LC9 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.	MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER	←

LOCATION: APARTMENT UNIT 'H' (2-BED, 1.5 BATH)

	DESCRIPTION	BREAKER	L1		L2		BREAKER	DESCRIPTION	
ckt#									ckt#
1	Electric Range Recept.	50A-2P	32.50	19.50			30A-2P	Condensing Unit (CU-19 / 32)	2
3					32.50	19.50			4
5	Microwave / Range Hood Recept.	**20A-1P	14.20	18.75			30A-2P	Electric Hot Water Heater (WH-2)	6
7	Dishwasher Recept.	**20A-1P			12.00	18.75			8
9	Fridge Recept.	*15A-1P	5.50	20.80			30A-2P	Electric Dryer/Washer Machine Recept.	10
11	Kitchen/Dining Appliance Receipts.	*20A-1P			12.50	20.80			12
13	Kitchen/Dining Appliance Receipts.	*20A-1P	12.50	10.50			**20A-1P	Washer Machine Recept.	14
15	Lights & Fire Alarm Devices	*15A-1P			5.80	13.50	*20A-1P	Hall / Living Rm. / Porch Receipts.	16
17	Bathroom Recept.	*20A-1P	3.00	12.00			*20A-1P	Bedroom Receipts.	18
19	Bathroom Recept.	*20A-1P			6.00		*15A-1P	Spare Room Receipts.	20
21	SPACE	-	0.00	0.00			-	Provision for SPD	22
23	SPACE	-			0.00	0.00	-		24
	TOTAL CONNECTED AMPS/LEG		149.25		141.35			TOTAL CONNECTED kW	34.87
	* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.							TOTAL CONNECTED AMPERES	145.30

LC10 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.	MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER	←

LOCATION: APARTMENT UNIT 'I', 'I1'(1-BED, 1.5 BATH)

	DESCRIPTION	BREAKER	L1		L2		BREAKER	DESCRIPTION	
ckt#									ckt#
1	Electric Range Recept.	50A-2P	32.50	14.90			25A-2P	Condensing Unit (CU-24 / 25 / 26)	2
3					32.50	14.90			4
5	Microwave / Range Hood Recept.	**20A-1P	14.20	18.75			30A-2P	Electric Hot Water Heater (WH-2)	6
7	Dishwasher Recept.	**20A-1P			10.00	18.75			8
9	Fridge Recept.	*15A-1P	5.50	20.80			30A-2P	Electric Dryer/Washer Machine Recept.	10
11	Kitchen Appliance Receipts.	*20A-1P			12.50	20.80			12
13	Kitchen Appliance Receipts.	*20A-1P	12.50	10.50			**20A-1P	Washer Machine Recept.	14
15	Lights & Fire Alarm Devices	*15A-1P			4.00	9.00	*20A-1P	Hall / Living Rm. Receipts.	16
17	Bathroom Recept.	*20A-1P	3.00	7.50			*20A-1P	Bedroom Receipts.	18
19	Bathroom Recept.	*20A-1P			3.00	0.00	-	SPACE	20
21	SPACE	-	0.00	0.00			-	Provision for SPD	22
23	SPACE	-			0.00	0.00	-		24
	TOTAL CONNECTED AMPS/LEG		140.15		125.45			TOTAL CONNECTED kW	31.87
	* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.							TOTAL CONNECTED AMPERES	132.60

LC11 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.	MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER	←

LOCATION: APARTMENT UNIT 'J' (2-BED, 1.5 BATH)

	DESCRIPTION	BREAKER	L1		L2		BREAKER	DESCRIPTION	
ckt#									ckt#
1	Electric Range Recept.	50A-2P	32.50	19.50			30A-2P	Condensing Unit (CU-27)	2
3					32.50	19.50			4
5	Microwave / Range Hood Recept.	**20A-1P	14.20	18.75			30A-2P	Electric Hot Water Heater (WH-2)	6
7	Dishwasher Recept.	**20A-1P			10.00	18.75			8
9	Fridge Recept.	*15A-1P	5.50	20.80			30A-2P	Electric Dryer/Washer Machine Recept.	10
11	Kitchen Appliance Receipts.	*20A-1P			12.50	20.80			12
13	Kitchen Appliance Receipts.	*20A-1P	12.50	10.50			**20A-1P	Washer Machine Recept.	14
15	Lights & Fire Alarm Devices	*15A-1P			5.30	9.00	*20A-1P	Hall / Living Rm. Receipts.	16
17	Bathroom Recept.	*20A-1P	3.00	15.00			*20A-1P	Bedroom Receipts.	18
19	Bathroom Recept.	*20A-1P			3.00	0.00	-	SPACE	20
21	SPACE	-	0.00	0.00			-	Provision for SPD	22
23	SPACE	-			0.00	0.00	-		24
	TOTAL CONNECTED AMPS/LEG		152.25		131.35			TOTAL CONNECTED kW	34.03
	* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.							TOTAL CONNECTED AMPERES	141.80

GENERAL NOTES:

a. UTILIZE MC CABLE (CONCEALED INSTALLATION) OR EMT CONDUIT (EXPOSED INSTALLATION) FOR ALL APARTMENT BRANCH CIRCUIT WIRING.

b. DEVICES FED FROM 1-POLE, 15A CIRCUIT BREAKERS MAY BE WIRED WITH 14AWG CU. CONDUCTORS. DEVICES FED FROM 1-POLE, 20A CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS. EQUIPMENT FED FROM 2-POLE CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS (MINIMAL) UNLESS OTHERWISE DESIGNATED. SEE PANEL SCHEDULES FOR CIRCUIT BREAKER DESIGNATIONS.

c. APARTMENT UNIT ELECTRICAL DEVICES, LIGHTING, HVAC AND PLUMBING EQUIPMENT SHALL BE WIRED BACK TO THE ASSOCIATED APARTMENT UNIT LOAD CENTER. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS.

d. 15 AMPERE (NEMA 5-15R) RECEPTACLES MAY BE UTILIZED WITHIN APARTMENTS FOR SINGLE, DUPLEX, AND GFI RECEPTACLE OUTLETS UNLESS OTHERWISE NOTED.

e. PROVIDE AFCI (ARC FAULT CURRENT INTERRUPTER) AND DUAL FUNCTION AFCI + GFCI (ARC FAULT CURRENT INTERRUPTER + GROUND FAULT CIRCUIT INTERRUPTER) CIRCUIT BREAKERS PER 2017 N.E.C. REQUIREMENTS. SEE PANEL SCHEDULES FOR AFCI AND DUAL FUNCTION C.B. DESIGNATIONS.

f. SUPPLY TAMPER-RESISTANT RECEPTACLES FOR ALL OUTLETS.

g. RECEPTACLES WITH "OC" DESIGNATIONS TO BE INSTALLED 42" (MAX) A.F.F. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN.

h. ELECTRICAL BOXES SHALL NOT BE INSTALLED BACK-TO-BACK. ENSURE ELECTRICAL BOX LOCATIONS ARE OFFSET A MINIMAL OF 4" CLEAR TO AVOID CONFLICTS. WHEN ELECTRICAL BOXES ARE INSTALLED OPPOSITE EACH OTHER WITHIN THE SAME WALL CAVITY OF A FIRE RATED WALL, THE E.C. SHALL INSTALL THERMOFIBER PADDING AROUND BOXES TO MAINTAIN FIRE RATINGS. VERIFY FIRE RATED WALL LOCATIONS WITH ARCHITECTURAL PLANS.

i. PROVIDE "CEILING FAN RATED" ELECTRICAL BOXES FOR EACH PADDLE FAN INSTALLATION.

j. ELECTRICAL DEVICES AND APARTMENT LOAD CENTERS ARE TO BE INSTALLED AT HEIGHTS PER ADA REQUIREMENTS FOR THE FOLLOWING UNIT TYPES: J, M, N

DRAWING KEYNOTES: (#)

1. NEMA 14-50R FOR ELECTRIC RANGE. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. AND MANUFACTURE INSTRUCTIONS PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #6AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.

2. RECEPTACLE FOR MICROWAVE / RANGE HOOD. INSTALL IN CABINET ABOVE MICROWAVE IN AN ACCESSIBLE LOCATION. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

3. DEDICATED SINGLE RECEPTACLE FOR DISHWASHER. INSTALL IN CABINET BELOW SINK IN AN ACCESSIBLE LOCATION WITHIN 48" OF DISHWASHER. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

4. INSTALL RECEPTACLE FLUSH TO BASE CABINET NO MORE THAN 12" BELOW FINISHED COUNTERTOP. COORDINATE LOCATION AND INSTALLATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. ENSURE INSTALLATION MEETS ALL NEC REQUIREMENTS.

5. SUPPLY PLYWOOD BACKBOARD (2'x2' OR AS REQUIRED) AND INSTALL HIGH ON WALL, JUST BELOW CEILING, FOR INSTALLATION OF TELEPHONE / TELEVISION / INTERNET MODE, ROUTER, AND / OR DISTRIBUTION BLOCKS TO SERVE COMMUNICATIONS OUTLETS WITHIN APARTMENT. EQUIPMENT AND ASSOCIATED WIRING IS TO BE SUPPLIED AND INSTALLED BY OTHERS. MOUNT DEVICES SHOWN ON PLYWOOD BACKBAORD TO SUPPORT EQUIPMENT. SUPPLY AND INSTALL ¾" EMT CONDUIT FROM THIS LOCATION TO EACH TELEPHONE/DATA AND TV ELECTRICAL BOX LOCATED WITHIN APARTMENT UNIT. SUPPLY CONDUITS WITH A PULLSTRINGS FOR COMMUNICATION CABLE INSTALLATION BY OTHERS. VERIFY INSTALLATION CONCEPT WITH G.C. AND LOCAL UTILITY PROVIDERS PRIOR TO ELECTRICAL ROUGH-IN.

6. NEMA 14-30R FOR ELECTRIC DRYER INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #10AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.

7. RECEPTACLE FOR WASHER MACHINE INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

8. SINGLE RECEPTACLE FOR DRYER VENT IN-LINE BOOSTER FAN. INSTALL IN AN ACCESSIBLE LOCATION WITHIN 3' OF BOOSTER FAN. COORDINATE FINAL LOCATION WITH M.C. AND G.C. PRIOR TO ELECTRICAL ROUGH-IN.
   NOTE: BOOSTER FAN IS REQUIRED FOR THE FOLLOWING UNIT TYPES ONLY: 'H'

9A. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
   NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.

9B. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 60A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
   NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.

10. FAN COIL UNIT TO BE POWERED BY THE ASSOCIATED APARTMENT CONDENSING UNIT. SUPPLY A NEMA 1, 2-POLE, 30A RATED, NON-FUSED MANUAL MOTOR STARTER AND MOUNT WITHIN UNIT MECHANICAL COMPARTMENT. COORDINATE INSTALLATION WITH M.C.

11. FEED CONDENSING UNIT WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA-3R, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON UNI-STRUT FRAMING ADJACENT TO CONDENSING UNIT 36" (MIN.) ABOVE FINISHED ROOF. UNI-STRUT FRAMING MAY BE AN EXTENSION TO CONDENSING UNIT EQUIPMENT RAIL. CONDENSING UNIT SHALL SUPPLY POWER TO THE ASSOCIATED APARTMENT FAN COIL UNIT PER MANUFACTURE INSTRUCTIONS. SUPPLY REQUIRED WIRING, HARDWARE, MATERIALS, ETC. TO OBTAIN A 100% COMPLETE INSTALLATION.
    NOTE: CONDENSING UNIT IS SHOWN ON THIS PLAN TO IDENTIFY POWER REQUIREMENTS. REFERENCE SHEET E-8 FOR INTENDED LOCATIONS FOR EACH RESPECTIVE APARTMENT UNIT.

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ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BOWMAN · 084713 · PROFESSIONAL ENGINEER

5-23-25

TITLE:

APARTMENT UNIT 'H', 'I', 'I1' 'J' ENLARGED PLANS POWER, SYSTEMS, AND LIGHTING

SILVESTRI ARCHITECTS · PC
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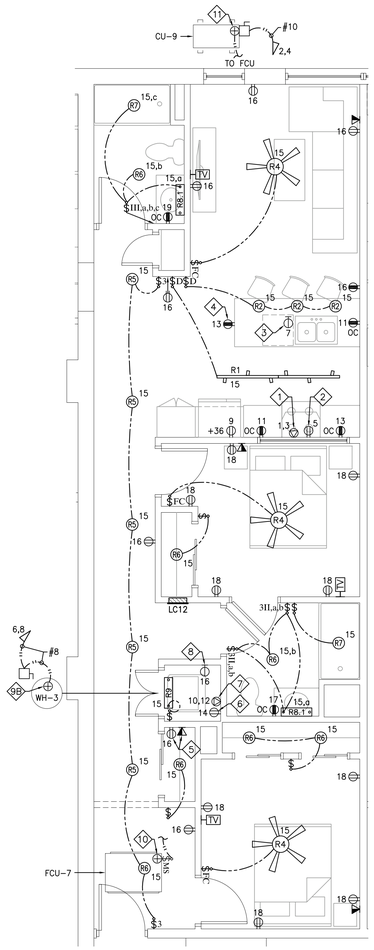
SA JOB #: 24037.01

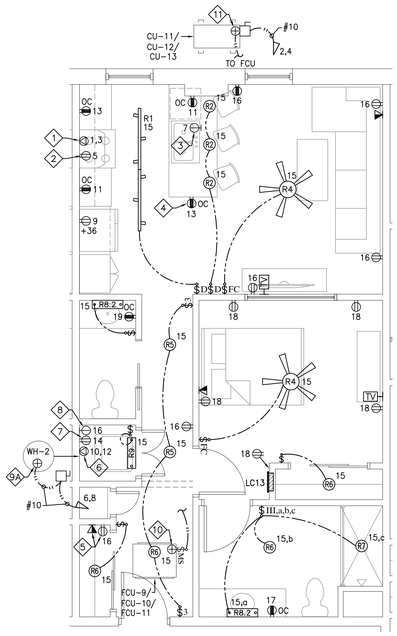
DATE: 5-23-2025

DRAWING #: E-17



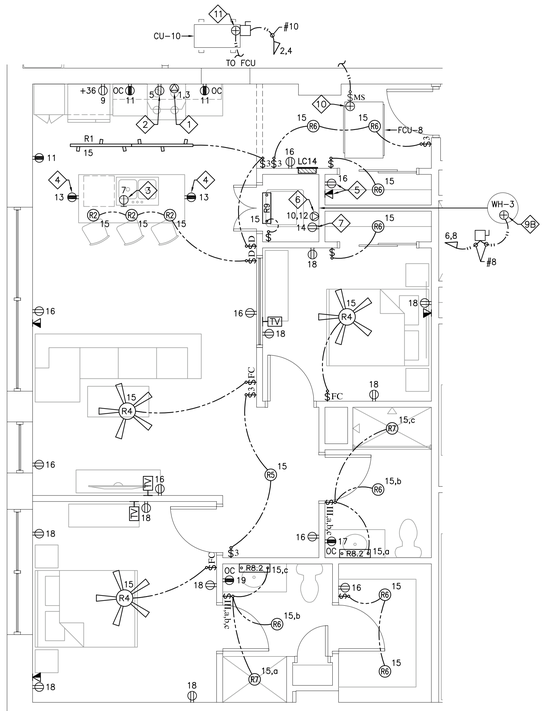
1 E-18 APARTMENT UNIT 'K' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



2 E-18 APARTMENT UNIT 'L' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



3 E-18 APARTMENT UNIT 'M' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING ADA ADAPTABLE UNIT

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

LC12 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.		MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'K' (2-BED, 2 BATH)						
DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	
ckt#						ckt#
1 Electric Range Recept.	50A-2P	32.50	19.50	30A-2P	Condensing Unit (CU-9)	2
3			32.50	19.50		4
5 Microwave / Range Hood Recept.	**20A-1P	14.20	25.00	40A-2P	Electric Hot Water Heater (WH-3)	6
7 Dishwasher Recept.	**20A-1P		10.00	25.00		8
9 Fridge Recept.	*15A-1P	5.50	20.80	30A-2P	Electric Dryer/Washer Machine Recept.	10
11 Kitchen Appliance Receptş.	*20A-1P		12.50	20.80		12
13 Kitchen Appliance Receptş.	*20A-1P	12.50	10.50	**20A-1P	Washer Machine Recept.	14
15 Lights & Fire Alarm Devices	*15A-1P		6.00	12.00	*20A-1P	Hall / Living Rm. Receptş.	16
17 Bathroom Recept.	*20A-1P	3.00	13.50	*20A-1P	Bedroom Receptş.	18
19 Bathroom Recept.	*20A-1P		3.00	0.00	- SPACE	20
21 SPACE	-	0.00	0.00	-	Provision for SPD	22
23 SPACE	-		0.00	0.00	-	24
TOTAL CONNECTED AMPS/LEG		157.00		141.30	TOTAL CONNECTED kW	35.80
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	149.15

LC13 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.		MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'L' (1-BED, 1.5 BATH)						
DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	
ckt#						ckt#
1 Electric Range Recept.	50A-2P	32.50	14.90	25A-2P	Condensing Unit (CU-11 / 12 / 13)	2
3			32.50	14.90		4
5 Microwave / Range Hood Recept.	**20A-1P	14.20	18.75	30A-2P	Electric Hot Water Heater (WH-2)	6
7 Dishwasher Recept.	**20A-1P		10.00	18.75		8
9 Fridge Recept.	*15A-1P	5.50	20.80	30A-2P	Electric Dryer/Washer Machine Recept.	10
11 Kitchen Appliance Receptş.	*20A-1P		12.50	20.80		12
13 Kitchen Appliance Receptş.	*20A-1P	12.50	10.50	**20A-1P	Washer Machine Recept.	14
15 Lights & Fire Alarm Devices	*15A-1P		4.30	10.50	*20A-1P	Hall / Living Rm. Receptş.	16
17 Bathroom Recept.	*20A-1P	3.00	7.50	*20A-1P	Bedroom Receptş.	18
19 Bathroom Recept.	*20A-1P		3.00	0.00	- SPACE	20
21 SPACE	-	0.00	0.00	-	Provision for SPD	22
23 SPACE	-		0.00	0.00	-	24
TOTAL CONNECTED AMPS/LEG		140.15		127.25	TOTAL CONNECTED kW	32.09
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	133.70

LC14 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.		MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'M' (2-BED, 2 BATH)						
DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	
ckt#						ckt#
1 Electric Range Recept.	50A-2P	32.50	19.50	30A-2P	Condensing Unit (CU-10)	2
3			32.50	19.50		4
5 Microwave / Range Hood Recept.	**20A-1P	14.20	25.00	40A-2P	Electric Hot Water Heater (WH-3)	6
7 Dishwasher Recept.	**20A-1P		10.00	25.00		8
9 Fridge Recept.	*15A-1P	5.50	20.80	30A-2P	Electric Dryer/Washer Machine Recept.	10
11 Kitchen Appliance Receptş.	*20A-1P		12.50	20.80		12
13 Kitchen Appliance Receptş.	*20A-1P	12.50	10.50	**20A-1P	Washer Machine Recept.	14
15 Lights & Fire Alarm Devices	*15A-1P		5.50	10.50	*20A-1P	Hall / Living Rm. Receptş.	16
17 Bathroom Recept.	*20A-1P	3.00	13.50	*20A-1P	Bedroom Receptş.	18
19 Bathroom Recept.	*20A-1P		3.00	0.00	- SPACE	20
21 SPACE	-	0.00	0.00	-	Provision for SPD	22
23 SPACE	-		0.00	0.00	-	24
TOTAL CONNECTED AMPS/LEG		157.00		139.30	TOTAL CONNECTED kW	35.56
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	148.15

GENERAL NOTES:

a. UTILIZE MC CABLE (CONCEALED INSTALLATION) OR EMT CONDUIT (EXPOSED INSTALLATION) FOR ALL APARTMENT BRANCH CIRCUIT WIRING.

b. DEVICES FED FROM 1-POLE, 15A CIRCUIT BREAKERS MAY BE WIRED WITH 14AWG CU. CONDUCTORS. DEVICES FED FROM 1-POLE, 20A CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS. EQUIPMENT FED FROM 2-POLE CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS (MINIMAL) UNLESS OTHERWISE DESIGNATED. SEE PANEL SCHEDULES FOR CIRCUIT BREAKER DESIGNATIONS.

c. APARTMENT UNIT ELECTRICAL DEVICES, LIGHTING, HVAC AND PLUMBING EQUIPMENT SHALL BE WIRED BACK TO THE ASSOCIATED APARTMENT UNIT LOAD CENTER. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS.

d. 15 AMPERE (NEMA 5-15R) RECEPTACLES MAY BE UTILIZED WITHIN APARTMENTS FOR SINGLE, DUPLEX, AND GFI RECEPTACLE OUTLETS UNLESS OTHERWISE NOTED.

e. PROVIDE AFCI (ARC FAULT CURRENT INTERRUPTER) AND DUAL FUNCTION AFCI + GFCI (ARC FAULT CURRENT INTERRUPTER + GROUND FAULT CIRCUIT INTERRUPTER) CIRCUIT BREAKERS PER 2017 N.E.C. REQUIREMENTS. SEE PANEL SCHEDULES FOR AFCI AND DUAL FUNCTION C.B. DESIGNATIONS.

f. SUPPLY TAMPER-RESISTANT RECEPTACLES FOR ALL OUTLETS.

g. RECEPTACLES WITH "OC" DESIGNATIONS TO BE INSTALLED 42" (MAX) A.F.F. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN.

h. ELECTRICAL BOXES SHALL NOT BE INSTALLED BACK-TO-BACK. ENSURE ELECTRICAL BOX LOCATIONS ARE OFFSET A MINIMAL OF 4" CLEAR TO AVOID CONFLICTS. WHEN ELECTRICAL BOXES ARE INSTALLED OPPOSITE EACH OTHER WITHIN THE SAME WALL CAVITY OF A FIRE RATED WALL, THE E.C. SHALL INSTALL THERMOFIBER PADDING AROUND BOXES TO MAINTAIN FIRE RATINGS. VERIFY FIRE RATED WALL LOCATIONS WITH ARCHITECTURAL PLANS.

i. PROVIDE "CEILING FAN RATED" ELECTRICAL BOXES FOR EACH PADDLE FAN INSTALLATION.

j. ELECTRICAL DEVICES AND APARTMENT LOAD CENTERS ARE TO BE INSTALLED AT HEIGHTS PER ADA REQUIREMENTS FOR THE FOLLOWING UNIT TYPES: J, M, N

DRAWING KEYNOTES: (6)

1. NEMA 14-50R FOR ELECTRIC RANGE. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. AND MANUFACTURE INSTRUCTIONS PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #6AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.
2. RECEPTACLE FOR MICROWAVE / RANGE HOOD. INSTALL IN CABINET ABOVE MICROWAVE IN AN ACCESSIBLE LOCATION. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.
3. DEDICATED SINGLE RECEPTACLE FOR DISHWASHER. INSTALL IN CABINET BELOW SINK IN AN ACCESSIBLE LOCATION WITHIN 48" OF DISHWASHER. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.
4. INSTALL RECEPTACLE FLUSH TO BASE CABINET NO MORE THAN 12" BELOW FINISHED COUNTERTOP. COORDINATE LOCATION AND INSTALLATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. ENSURE INSTALLATION MEETS ALL NEC REQUIREMENTS.
5. SUPPLY PLYWOOD BACKBOARD (2'x2' OR AS REQUIRED) AND INSTALL HIGH ON WALL, JUST BELOW CEILING, FOR INSTALLATION OF TELEPHONE / TELEVISION / INTERNET MODE, ROUTER, AND / OR DISTRIBUTION BLOCKS TO SERVE COMMUNICATIONS OUTLETS WITHIN APARTMENT. EQUIPMENT AND ASSOCIATED WIRING IS TO BE SUPPLIED AND INSTALLED BY OTHERS. MOUNT DEVICES SHOWN ON PLYWOOD BACKBAORD TO SUPPORT EQUIPMENT. SUPPLY AND INSTALL ¾" EMT CONDUIT FROM THIS LOCATION TO EACH TELEPHONE/DATA AND TV ELECTRICAL BOX LOCATED WITHIN APARTMENT UNIT. SUPPLY CONDUITS WITH A PULLSTRINGS FOR COMMUNICATION CABLE INSTALLATION BY OTHERS. VERIFY INSTALLATION CONCEPT WITH G.C. AND LOCAL UTILITY PROVIDERS PRIOR TO ELECTRICAL ROUGH-IN.
6. NEMA 14-30R FOR ELECTRIC DRYER INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #10AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.
7. RECEPTACLE FOR WASHER MACHINE INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.
8. SINGLE RECEPTACLE FOR DRYER VENT IN-LINE BOOSTER FAN. INSTALL IN AN ACCESSIBLE LOCATION WITHIN 3' OF BOOSTER FAN. COORDINATE FINAL LOCATION WITH M.C. AND G.C. PRIOR TO ELECTRICAL ROUGH-IN.
   NOTE: BOOSTER FAN IS REQUIRED FOR THE FOLLOWING UNIT TYPES ONLY: 'K', 'L'
9A. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
   NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.
9B. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 60A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
   NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.
10. FAN COIL UNIT TO BE POWERED BY THE ASSOCIATED APARTMENT CONDENSING UNIT. SUPPLY A NEMA 1, 2-POLE, 30A RATED, NON-FUSED MANUAL MOTOR STARTER AND MOUNT WITHIN UNIT MECHANICAL COMPARTMENT. COORDINATE INSTALLATION WITH M.C.
11. FEED CONDENSING UNIT WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA-3R, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON UNI-STRUT FRAMING ADJACENT TO CONDENSING UNIT 36" (MIN.) ABOVE FINISHED ROOF. UNI-STRUT FRAMING MAY BE AN EXTENSION TO CONDENSING UNIT EQUIPMENT RAIL. CONDENSING UNIT SHALL SUPPLY POWER TO THE ASSOCIATED APARTMENT FAN COIL UNIT PER MANUFACTURE INSTRUCTIONS. SUPPLY REQUIRED WIRING, HARDWARE, MATERIALS, ETC. TO OBTAIN A 100% COMPLETE INSTALLATION.
    NOTE: CONDENSING UNIT IS SHOWN ON THIS PLAN TO IDENTIFY POWER REQUIREMENTS. REFERENCE SHEET E-8 FOR INTENDED LOCATIONS FOR EACH RESPECTIVE APARTMENT UNIT.

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ISSUE:
5-23-2025: BID/PERMIT SET

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PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BOWEN · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

APARTMENT UNIT 'K', 'L', 'M' ENLARGED PLANS POWER, SYSTEMS, AND LIGHTING

SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
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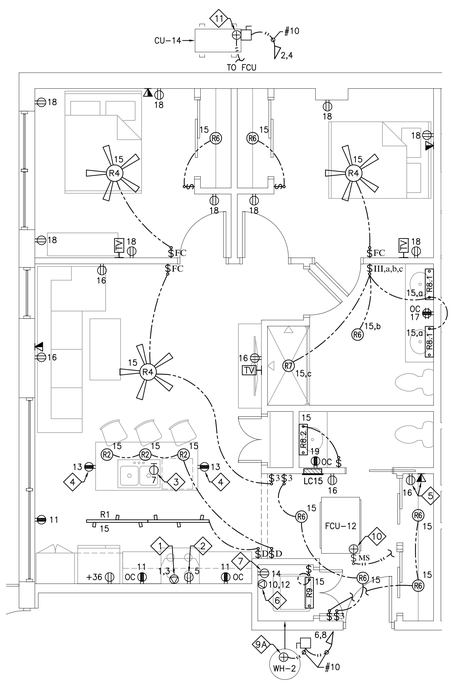
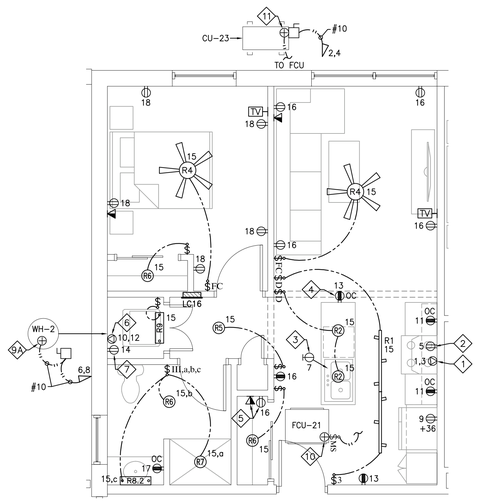
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: E-18



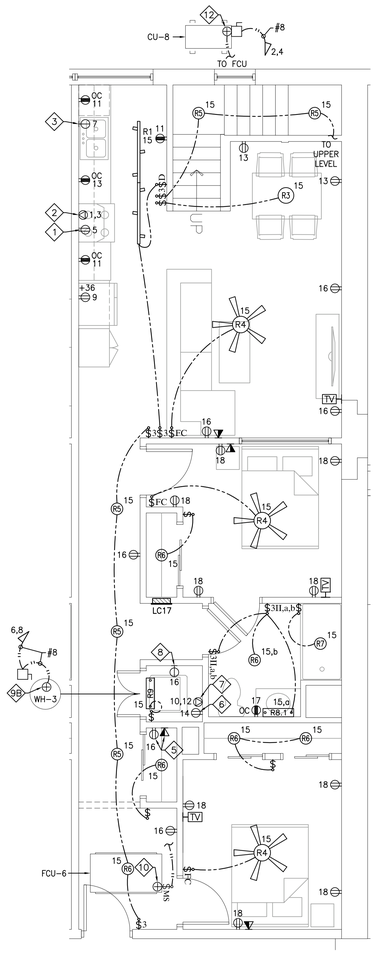
1 E-19 APARTMENT UNIT 'N' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING ADA ADAPTABLE UNIT

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



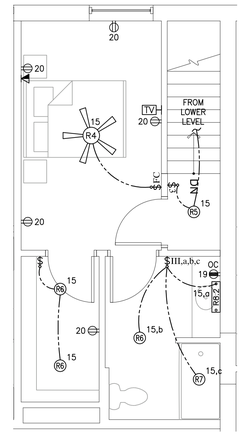
2 E-19 APARTMENT UNIT 'O' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



3 E-19 APARTMENT UNIT 'P' ENLARGED PLAN POWER, SYSTEMS, AND LIGHTING

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



LC15 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.		MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'N' (2-BED, 1.5 BATH)						
DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	ckt#
Electric Range Recept.	50A-2P	32.50 19.50		30A-2P	Condensing Unit (CU-14)	2
			32.50 32.50			4
Microwave / Range Hood Recept.	**20A-1P	14.20 18.75		30A-2P	Electric Hot Water Heater (WH-2)	6
Dishwasher Recept.	**20A-1P		10.00 18.75			8
Fridge Recept.	*15A-1P	5.50 20.80		30A-2P	Electric Dryer/Washer Machine Recept.	10
Kitchen Appliance Receipts.	*20A-1P		12.50 20.80			12
Kitchen Appliance Receipts.	*20A-1P	12.50 10.50		**20A-1P	Washer Machine Recept.	14
Lights & Fire Alarm Devices	*15A-1P		5.70 7.50	*20A-1P	Hall / Living Rm. Receipts.	16
Bathroom Recept.	*20A-1P	6.00 13.50		*20A-1P	Bedroom Receipts.	18
Bathroom Recept.	*20A-1P		3.00 0.00	-	SPACE	20
SPACE	-	0.00 0.00		-	Provision for SPD	22
SPACE	-		0.00 0.00	-		24
TOTAL CONNECTED AMPS/LEG		153.75	130.25		TOTAL CONNECTED kW	34.08
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	142.00

LC16 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.		MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'O' (1-BED, 1 BATH)						
DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	ckt#
Electric Range Recept.	50A-2P	32.50 14.90		25A-2P	Condensing Unit (CU-23)	2
			32.50 14.90			4
Microwave / Range Hood Recept.	**20A-1P	14.20 18.75		30A-2P	Electric Hot Water Heater (WH-2)	6
Dishwasher Recept.	**20A-1P		10.00 18.75			8
Fridge Recept.	*15A-1P	5.50 20.80		30A-2P	Electric Dryer/Washer Machine Recept.	10
Kitchen Appliance Receipts.	*20A-1P		12.50 20.80			12
Kitchen Appliance Receipts.	*20A-1P	12.50 10.50		**20A-1P	Washer Machine Recept.	14
Lights & Fire Alarm Devices	*15A-1P		3.70 9.00	*20A-1P	Hall / Living Rm. Receipts.	16
Bathroom Recept.	*20A-1P	3.00 7.50		*20A-1P	Bedroom Receipts.	18
SPACE	-		0.00 0.00	-	SPACE	20
SPACE	-	0.00 0.00		-	Provision for SPD	22
SPACE	-		0.00 0.00	-		24
TOTAL CONNECTED AMPS/LEG		140.15	122.15		TOTAL CONNECTED kW	31.48
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	131.15

LC17 (FLUSH MOUNT)	120/240 Volt 125 Amp Mains	Single Phase Three Wire Fully Rate (To 10kAIC) 24Ckt.		MAIN LUGS ONLY 125A MAIN CIRCUIT BREAKER		←
LOCATION: APARTMENT UNIT 'P' (3-BED, 2 BATH)						
DESCRIPTION	BREAKER	L1	L2	BREAKER	DESCRIPTION	ckt#
Electric Range Recept.	50A-2P	32.50 29.70		45A-2P	Condensing Unit (CU-8)	2
			32.50 29.70			4
Microwave / Range Hood Recept.	**20A-1P	14.20 25.00		40A-2P	Electric Hot Water Heater (WH-3)	6
Dishwasher Recept.	**20A-1P		10.00 25.00			8
Fridge Recept.	*15A-1P	5.50 20.80		30A-2P	Electric Dryer/Washer Machine Recept.	10
Kitchen Appliance Receipts.	*20A-1P		12.50 20.80			12
Kitchen Appliance Receipts.	*20A-1P	12.50 10.50		**20A-1P	Washer Machine Recept.	14
Lights & Fire Alarm Devices	*15A-1P		7.10 9.00	*20A-1P	Hall / Living Rm. Receipts.	16
Bathroom Recept.	*20A-1P	3.00 13.50		*20A-1P	Bedroom Receipts.	18
Bathroom Recept.	*20A-1P		3.00 7.50	*20A-1P	Bedroom Receipts.	20
SPACE	-	0.00 0.00		-	Provision for SPD	22
SPACE	-		0.00 0.00	-		24
TOTAL CONNECTED AMPS/LEG		167.20	157.10		TOTAL CONNECTED kW	38.92
* Denotes AFCI C.B.; ** Denotes Dual Function AFCI + GFCI C.B.; *** DENOTES GFCI C.B.					TOTAL CONNECTED AMPERES	162.15

GENERAL NOTES:

a. UTILIZE MC CABLE (CONCEALED INSTALLATION) OR EMT CONDUIT (EXPOSED INSTALLATION) FOR ALL APARTMENT BRANCH CIRCUIT WIRING.

b. DEVICES FED FROM 1-POLE, 15A CIRCUIT BREAKERS MAY BE WIRED WITH 14AWG CU. CONDUCTORS. DEVICES FED FROM 1-POLE, 20A CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS. EQUIPMENT FED FROM 2-POLE CIRCUIT BREAKERS MUST BE WIRED WITH 12AWG CU. CONDUCTORS (MINIMAL) UNLESS OTHERWISE DESIGNATED. SEE PANEL SCHEDULES FOR CIRCUIT BREAKER DESIGNATIONS.

c. APARTMENT UNIT ELECTRICAL DEVICES, LIGHTING, HVAC AND PLUMBING EQUIPMENT SHALL BE WIRED BACK TO THE ASSOCIATED APARTMENT UNIT LOAD CENTER. SEE INDIVIDUAL SYMBOLS FOR CIRCUIT DESIGNATIONS.

d. 15 AMPERE (NEMA 5-15R) RECEPTACLES MAY BE UTILIZED WITHIN APARTMENTS FOR SINGLE, DUPLEX, AND GFI RECEPTACLE OUTLETS UNLESS OTHERWISE NOTED.

e. PROVIDE AFCI (ARC FAULT CURRENT INTERRUPTER) AND DUAL FUNCTION AFCI + GFCI (ARC FAULT CURRENT INTERRUPTER + GROUND FAULT CIRCUIT INTERRUPTER) CIRCUIT BREAKERS PER 2017 N.E.C. REQUIREMENTS. SEE PANEL SCHEDULES FOR AFCI AND DUAL FUNCTION C.B. DESIGNATIONS.

f. SUPPLY TAMPER-RESISTANT RECEPTACLES FOR ALL OUTLETS.

g. RECEPTACLES WITH "OC" DESIGNATIONS TO BE INSTALLED 42" (MAX) A.F.F. COORDINATE INSTALLATION HEIGHT WITH G.C. AND ARCHITECTURAL ELEVATIONS PRIOR TO ELECTRICAL ROUGH-IN.

h. ELECTRICAL BOXES SHALL NOT BE INSTALLED BACK-TO-BACK. ENSURE ELECTRICAL BOX LOCATIONS ARE OFFSET A MINIMAL OF 4" CLEAR TO AVOID CONFLICTS. WHEN ELECTRICAL BOXES ARE INSTALLED OPPOSITE EACH OTHER WITHIN THE SAME WALL CAVITY OF A FIRE RATED WALL, THE E.C. SHALL INSTALL THERMOFIBER PADDING AROUND BOXES TO MAINTAIN FIRE RATINGS. VERIFY FIRE RATED WALL LOCATIONS WITH ARCHITECTURAL PLANS.

i. PROVIDE "CEILING FAN RATED" ELECTRICAL BOXES FOR EACH PADDLE FAN INSTALLATION.

j. ELECTRICAL DEVICES AND APARTMENT LOAD CENTERS ARE TO BE INSTALLED AT HEIGHTS PER ADA REQUIREMENTS FOR THE FOLLOWING UNIT TYPES: J, M, N

DRAWING KEYNOTES: #

1. NEMA 14-50R FOR ELECTRIC RANGE. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. AND MANUFACTURE INSTRUCTIONS PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #6AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.

2. RECEPTACLE FOR MICROWAVE / RANGE HOOD. INSTALL IN CABINET ABOVE MICROWAVE IN AN ACCESSIBLE LOCATION. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

3. DEDICATED SINGLE RECEPTACLE FOR DISHWASHER. INSTALL IN CABINET BELOW SINK IN AN ACCESSIBLE LOCATION WITHIN 48" OF DISHWASHER. FIELD VERIFY RECEPTACLE LOCATION IN COORDINATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

4. INSTALL RECEPTACLE FLUSH TO BASE CABINET NO MORE THAN 12" BELOW FINISHED COUNTERTOP. COORDINATE LOCATION AND INSTALLATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. ENSURE INSTALLATION MEETS ALL NEC REQUIREMENTS.

5. SUPPLY PLYWOOD BACKBOARD (2'x2' OR AS REQUIRED) AND INSTALL HIGH ON WALL, JUST BELOW CEILING, FOR INSTALLATION OF TELEPHONE / TELEVISION / INTERNET MODE, ROUTER, AND / OR DISTRIBUTION BLOCKS TO SERVE COMMUNICATIONS OUTLETS WITHIN APARTMENT. EQUIPMENT AND ASSOCIATED WIRING IS TO BE SUPPLIED AND INSTALLED BY OTHERS. MOUNT DEVICES SHOWN ON PLYWOOD BACKBOARD TO SUPPORT EQUIPMENT. SUPPLY AND INSTALL ¾" EMT CONDUIT FROM THIS LOCATION TO EACH TELEPHONE/DATA AND TV ELECTRICAL BOX LOCATED WITHIN APARTMENT UNIT. SUPPLY CONDUITS WITH A PULLSTRINGS FOR COMMUNICATION CABLE INSTALLATION BY OTHERS. VERIFY INSTALLATION CONCEPT WITH G.C. AND LOCAL UTILITY PROVIDERS PRIOR TO ELECTRICAL ROUGH-IN.

6. NEMA 14-30R FOR ELECTRIC DRYER INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN. UTILIZE #10AWG CU. CONDUCTORS FOR BRANCH CIRCUIT WIRING REQUIREMENTS.

7. RECEPTACLE FOR WASHER MACHINE INSTALLED +36" A.F.F. FIELD VERIFY RECEPTACLE LOCATION WITH G.C. PRIOR TO ELECTRICAL ROUGH-IN.

8. SINGLE RECEPTACLE FOR DRYER VENT IN-LINE BOOSTER FAN. INSTALL IN AN ACCESSIBLE LOCATION WITHIN 3' OF BOOSTER FAN. COORDINATE FINAL LOCATION WITH M.C. AND G.C. PRIOR TO ELECTRICAL ROUGH-IN.
NOTE: BOOSTER FAN IS REQUIRED FOR THE FOLLOWING UNIT TYPES ONLY: 'P'

9A. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.

9B. FEED HOT WATER HEATER WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA 1, 2-POLE, 60A RATED NON-FUSED DISCONNECT SWITCH AND MOUNT ON WALL ADJACENT TO WATER HEATER IN AN ACCESSIBLE LOCATION.
NOTE: HOT WATER HEATER TO BE LOCATED ON SHELF ABOVE APARTMENT STACKABLE WASHER AND DRYER. SHOWN OUTSIDE OF APARTMENT UNIT FOR CLARITY ONLY. FIELD VERIFY OVERALL INSTALLATION WITH G.C. AND P.C.

10. FAN COIL UNIT TO BE POWERED BY THE ASSOCIATED APARTMENT CONDENSING UNIT. SUPPLY A NEMA 1, 2-POLE, 30A RATED, NON-FUSED MANUAL MOTOR STARTER AND MOUNT WITHIN UNIT MECHANICAL COMPARTMENT. COORDINATE INSTALLATION WITH M.C.

11. FEED CONDENSING UNIT WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA-3R, 2-POLE, 30A RATED NON-FUSED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON UNI-STRUT FRAMING ADJACENT TO CONDENSING UNIT 36" (MIN.) ABOVE FINISHED ROOF. UNI-STRUT FRAMING MAY BE AN EXTENSION TO CONDENSING UNIT EQUIPMENT RAIL. CONDENSING UNIT SHALL SUPPLY POWER TO THE ASSOCIATED APARTMENT FAN COIL UNIT PER MANUFACTURE INSTRUCTIONS. SUPPLY REQUIRED WIRING, HARDWARE, MATERIALS, ETC. TO OBTAIN A 100% COMPLETE INSTALLATION.
NOTE: CONDENSING UNIT IS SHOWN ON THIS PLAN TO IDENTIFY POWER REQUIREMENTS. REFERENCE SHEET E-8 FOR INTENDED LOCATIONS FOR EACH RESPECTIVE APARTMENT UNIT.

12. FEED CONDENSING UNIT WITH A 1ø, 208V POWER CONNECTION. SUPPLY A NEMA-3R, 2-POLE, 60A RATED NON-FUSED DISCONNECT SWITCH. MOUNT DISCONNECT SWITCH ON UNI-STRUT FRAMING ADJACENT TO CONDENSING UNIT 36" (MIN.) ABOVE FINISHED ROOF. UNI-STRUT FRAMING MAY BE AN EXTENSION TO CONDENSING UNIT EQUIPMENT RAIL. CONDENSING UNIT SHALL SUPPLY POWER TO THE ASSOCIATED APARTMENT FAN COIL UNIT PER MANUFACTURE INSTRUCTIONS. SUPPLY REQUIRED WIRING, HARDWARE, MATERIALS, ETC. TO OBTAIN A 100% COMPLETE INSTALLATION.
NOTE: CONDENSING UNIT IS SHOWN ON THIS PLAN TO IDENTIFY POWER REQUIREMENTS. REFERENCE SHEET E-8 FOR INTENDED LOCATIONS FOR EACH RESPECTIVE APARTMENT UNIT.

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STATE OF NEW YORK · JAMES D. BOWMAN · 084719 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

APARTMENT UNIT 'N', 'O', 'P' ENLARGED PLANS POWER, SYSTEMS, AND LIGHTING

SILVESTRI ARCHITECTS · PC
1321 MILLERSPORT HWY PH. 716.691.0900
AMHERST, NY 14221 FAX 716.691.4773

SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: E-19

GENERAL PROVISIONS

1.1 GENERAL:
- A. REQUIREMENTS SPECIFIED ON COVER SHEET, ALONG WITH ELECTRICAL SPECIFICATIONS AND ALL ITS SECTIONS, COMPRISE THE CONTRACT DOCUMENTS FOR THE ELECTRICAL CONTRACT. DRAWINGS AND ALL THEIR REVISIONS UP TO THE BID SUBMITTAL DATE BECOME A BINDING PART OF THE CONTRACT, ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE, AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR A COMPLETE INSTALLATION OF ALL ELECTRICALLY OPERATED EQUIPMENT LISTED IN THE SPECIFICATIONS OR SHOWN ON THE CONTRACT DRAWINGS.
- B. THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE ALL SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF HIS BID SHALL INDICATE SUCH KNOWLEDGE.
- C. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. DIMENSIONS GIVEN ON THE PLANS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT, AS PURCHASED, FITS IN THE ROOM OR SPACE SHOWN. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.
- D. UNTIL THE TIME OF INSTALLATION, THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF CONDUIT AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE CONTRACT.
- E. THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. MATERIAL AND LABOR NECESSARY TO THE PROJECT SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT OBVIOUSLY NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEM, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST.
- F. ARRANGE ALL EQUIPMENT SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. MAKE DEVIATIONS ONLY WHERE NECESSARY TO AVOID INTERFERENCE. CHECK ALL EQUIPMENT SIZES AGAINST AVAILABLE SPACE PRIOR TO SHIPMENT TO AVOID INTERFERENCE.
- G. EXAMINE THE WORK OF OTHER TRADES INSOFAR AS THEIR WORK COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. IN NO CASE ATTACH TO, OR FINISH AGAINST ANY DEFECTIVE WORK OR INSTALL WORK IN A MANNER WHICH WILL PREVENT PROPER INSTALLATION OF THE WORK OF OTHER TRADES.
- H. ELECTRICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES ALL ELECTRICAL CHARACTERISTICS OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF WORK. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS AND OVERLOAD PROTECTION FOR ALL EQUIPMENT, UNLESS FURNISHED INTEGRAL WITH EQUIPMENT PACKAGE.
- I. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT, PRIOR TO BIDDING THE JOB, WHO WILL MAKE CLARIFICATIONS IN WRITING.

1.2 VISIT TO THE SITE:
- A. THIS CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING HIS WORK. THE SUBMISSION OF HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. NO ADDITIONAL PAYMENT SHALL BE MADE ON CLAIMS THAT ARISE FROM A LACK OF KNOWLEDGE OF THE EXISTING CONDITIONS.

1.3 CODE AND PERMITS:
- A. INSTALLATION SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OF MUNICIPAL, CITY, COUNTY, STATE AND PUBLIC UTILITIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PREMISES.
- B. COMPLY WITH ANY SPECIFICATION REQUIREMENTS THAT ARE IN EXCESS BUT NOT IN CONFLICT WITH CODE REQUIREMENTS.
- C. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, PLAN REVIEWS AND CERTIFICATES OF INSPECTION IN CONNECTION WITH HIS WORK, REQUIRED BY THE FOREGOING AUTHORITIES. BEFORE FINAL PAYMENT OF THE CONTRACT IS ALLOWED, ALL CERTIFICATES SHALL BE DELIVERED TO THE ARCHITECT IN DUPLICATE.
- D. ELECTRICAL MATERIAL AND EQUIPMENT SHALL BE LISTED TO A NATIONALLY RECOGNIZED TESTING LABORATORY, SUCH AS UL, CSA, ETL OR APPROVED EQUIVALENT.

1.4 ELECTRICAL INSPECTION:
- A. ALL ELECTRICAL INSPECTIONS SHALL BE BY THE LOCAL AHJ (AUTHORITY HAVING JURISDICTION).

1.5 RECORD DRAWINGS:
- A. IMMEDIATELY AFTER THE CONTRACT IS SIGNED, THE CONTRACTOR SHALL OBTAIN A COMPLETE SET OF REPRODUCTIONS OF THE CONTRACT DRAWINGS. THESE WILL BE THE BASIC RECORD DRAWINGS, TO BE DELIVERED TO THE ARCHITECT WITH TWO SETS OF PRINTS, UPON COMPLETION OF THE PROJECT, PRIOR TO REQUEST FOR FINAL PAYMENT. DURING THE PROGRESS OF THE JOB, THE RECORD DRAWINGS SHALL BE CORRECTED FROM MONTH-TO-MONTH TO SHOW THE WORK AS ACTUALLY INSTALLED.

1.6 STANDARDS AND SUBSTITUTIONS:
- A. WHEREVER THE WORDS "APPROVED BY", "APPROVED EQUAL", "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THIS SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD".
- B. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARD OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THIS CONTRACTOR SHALL SUBMIT HIS BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THESE SPECIFICATIONS ARE NOT TO BE CONSIDERED PROPRIETARY. THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE ARCHITECT AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. IN ADDITION, SAMPLES OF PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE ARCHITECT AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION EQUIPMENT ACCEPTED AS DETAILED BELOW AND SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE BID PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.
- C. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT AT THE BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE ARCHITECT AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PROPOSED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE TIME CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS DATE.
- D. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL ALLIED TRADES INVOLVED.
- E. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE ARCHITECT AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT HIS COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.
- F. IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BEAR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE PROVIDED, INCLUDING ALL ARCH/ENGINEER FEES ASSOCIATED WITH CHANGE.

1.7 TESTING AND PLACING IN SERVICE:
- A. ANY MATERIAL OR EQUIPMENT FAILING A TEST SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- B. TESTS SHALL INCLUDE THE FOLLOWING:
  1. MEASURE THE LOAD ON EACH PHASE OF THE MAIN SERVICE AND EACH PHASE OF EVERY FEEDER UNDER FULL LOAD CONDITIONS.
  2. MEASURE THE NO-LOAD AND FULL-LOAD VOLTAGES (PHASE TO PHASE, PHASE TO NEUTRAL AND PHASE TO GROUND FOR EACH PHASE OF EACH SERVICE, OF EACH SEPARATELY DERIVED SYSTEM, AND AT EACH PANELBOARD OR TRANSFORMER).
  3. MEASURE THE GROUND RESISTANCE OF THE MAIN SERVICE GROUNDING ELECTRODE AND THE GROUND RESISTANCE OF EACH SEPARATELY DERIVED SYSTEM'S GROUNDING ELECTRODE.
  4. MAKE INSULATION RESISTANCE TESTS ON ALL DRY TYPE TRANSFORMERS AND MOTORS.

1.8 INTERFERENCES:
- A. BEFORE THE INSTALLATION OF ANY ITEM BEGINS, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY ASCERTAIN THAT IT DOES NOT INTERFERE WITH CLEARANCES FOR THE ERECTION OF FINISH BEAMS, COLUMNS, PILASTERS, WALLS OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF ANY WORK IS INSTALLED AND THE ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE CHANGES IN HIS WORK AS DIRECTED BY THE ARCHITECT TO PERMIT THE COMPLETION OF THE ARCHITECTURAL WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
- B. IT SHALL BE THE DUTY OF THIS CONTRACTOR TO REPORT ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF ANY OF THE OTHER CONTRACTORS AS SOON AS THEY ARE DISCOVERED. THE ARCHITECT AND / OR ENGINEER SHALL DETERMINE WHICH EQUIPMENT WILL BE RELOCATED, REGARDLESS OF WHICH WAS INSTALLED FIRST. THEIR DECISION WILL BE FINAL.

1.9 QUALITY ASSURANCE:
- A. ALL PRODUCTS SHALL BE NEW AND OF THE TYPE AND QUALITY SPECIFIED. WHERE MATERIALS, EQUIPMENT, APPARATUS OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OF CATALOG NUMBER, SUCH DESIGNATION SHALL ESTABLISH THE STANDARDS OF THE DESIRED QUALITY AND STYLE. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY OF MATERIALS AND EQUIPMENT INSTALLED.

1.10 EXCAVATION AND BACKFILLING:
- A. THIS CONTRACTOR SHALL HAVE THE ENTIRE SITE MARKED PRIOR TO PERFORMING ANY DIGGING & EXCAVATION NECESSARY TO FACILITATE HIS WORK.
- B. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASSOCIATED COSTS INVOLVED WITH THE REPAIRING OF EXISTING UTILITIES AND SERVICES IN THE EVENT OF DAMAGE OCCURRING AS A RESULT OF HIS WORK.
- C. THIS CONTRACTOR SHALL PROVIDE FOR ALL FILL AND COMPACTION OF EXCAVATED AREAS ASSOCIATED WITH HIS WORK TO THE STANDARDS OF THE CIVIL ENGINEER FOR SPECIFIC AREAS ASSOCIATED WITH THIS PROJECT.

1.11 LABOR:
- A. THIS CONTRACTOR SHALL HAVE COMPETENT SUPERVISION IN RESPONSIBLE CHARGE OF THE WORK, WHO SHALL BE ON THE SITE DURING THE ERECTION OF THE MATERIAL FURNISHED UNDER THESE SPECIFICATIONS AND WHEN THE SYSTEM IS PUT INTO OPERATION. USE ONLY COMPETENT LABOR AND PERFORM IN A FIRST-CLASS MANNER.

1.12 STORAGE AND PROTECTION:
- A. TTHIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOSS OR DAMAGE TO THE BUILDING AND ITS CONTENTS CAUSED BY HIS/HER EMPLOYEES OR EQUIPMENT. ALL SUCH DAMAGE SHALL BE REPAIRED OR THE ITEMS REPLACED, TO THE SATISFACTION OF THE ARCHITECT.

1.13 VERIFICATION OF MEASUREMENTS:
- A. BEFORE ORDERING ANY MATERIAL OR DOING ANY WORK, THIS CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AT THE BUILDING AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF SAME. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED ON ACCOUNT OF THE DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND THE MEASUREMENTS INDICATED ON THE DRAWINGS. ANY DIFFERENCE WHICH MAY BE FOUND, SHALL BE SUBMITTED TO THE ARCHITECT FOR CONSIDERATION, BEFORE PROCEEDING WITH THE WORK.

1.14 MAINTENANCE AND OPERATION MANUALS:
- A. UPON COMPLETION OF THE WORK AND BEFORE REQUEST FOR FINAL PAYMENT, THIS CONTRACTOR SHALL DELIVER TO THE ARCHITECT'S ENGINEER, ONE PDF SET OF FULL AND COMPLETE DIRECTIONS PERTAINING TO THE OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND SYSTEMS INSTALLED UNDER THIS CONTRACT. THESE DIRECTIONS SHALL BE NEATLY TYPEWRITTEN ON 8 1/2" X 11" SHEETS WITH INDEX TABS, AND SHALL BE ACCOMPANIED BY PRINTS OF THE WORK AS INSTALLED, PARTS LIST DIAGRAMS, ETC., NECESSARY FOR THE GUIDANCE OF THE OWNER.

BASIC ELECTRICAL MATERIALS AND METHODS

1.1 ELECTRICAL IDENTIFICATION:
- A. COMPLY WITH NFPA 70 "NATIONAL ELECTRIC CODE"

1.2 NAMEPLATES:
- A. GENERAL: FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.
- B. PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH. FASTEN THE NAMEPLATES WITH SCREWS AND AN ADHESIVE TYPE FASTENER.

1.3 MOUNTING ACCESSORIES:
- A. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.
- B. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANIZED, PAINTED OR OTHERWISE SUITABLY FINISHED. PRODUCTS BY BRINKLEY, STEEL CITY OR RACO WILL BE ACCEPTABLE.
- C. ALL SURFACE-MOUNTED EQUIPMENT ON BLOCK WALLS SHALL BE MOUNTED ON 3/4" PAINTED PLYWOOD BACKBOARD. ALL FLOOR-MOUNTED EQUIPMENT SHALL BE INSTALLED ON A 4" HIGH CONCRETE HOUSEKEEPING PAD UNLESS OTHERWISE NOTED.

1.4 EXECUTION:
- A. THE ELECTRICAL WORK FOR CONSTRUCTION PROPOSED SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, ALL SPECIFIC SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE CURRENT EDITION OF THE NEC.
- B. CHECK THE HVAC AND PLUMBING SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS AND INCLUDE THE SAME IN THE CONTRACT COST.
- C. EQUIPMENT CONNECTIONS, STARTERS, DISCONNECT SWITCHES, CONTROL TRANSFORMERS AND PUSHBUTTON STATIONS FOR THE EQUIPMENT FURNISHED BY THE OWNER OR UNDER A SEPARATE CONTRACT SHALL BE INSTALLED AND CONNECTED UNDER THIS DIVISION, AS INDICATED ON THE CONTRACT DRAWINGS.
- D. ALL CUTTING, PATCHING, EXCAVATING, BACKFILLING AND CONCRETE WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROVIDING THE SLEEVES, CHASES AND OPENINGS NECESSARY FOR THE ELECTRICAL INSTALLATION AND FOR THE REPAIR IN AN ACCEPTABLE MANNER, AS DETERMINED BY THE ARCHITECT. ALL HOLES SHALL BE CORE-DRILLED. PROVIDE FIRE STOP IN ALL OPENINGS CREATED THROUGH FIRE-RATED WALLS, FLOORS OR CEILINGS. PROVIDE WATER TIGHT SEALS FOR ALL OPENINGS CREATED THROUGH FOUNDATION WALLS OR EXTERIOR WALLS.
- E. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.

1.5 OPENINGS AND CHASES:
- A. THIS CONTRACTOR SHALL DETERMINE AND BE RESPONSIBLE FOR PROPER SIZE AND LOCATION OF OPENINGS AND CHASES REQUIRED. INSTALL ALL SLEEVES NECESSARY FOR THE WORK. WHEREVER ANY PIPING PASSES THROUGH ANY WALL, THE OPENING SHALL BE SEALED TIGHT AGAINST THE PIPING BY THIS CONTRACTOR. PIPING THROUGH FOUNDATION WALLS AND ROOFS SHALL BE SEALED WATERTIGHT BY THIS CONTRACTOR.

1.6 MATERIALS AND WORKMANSHIP:
- A. ALL WORK SHALL BE INSTALLED IN A PRACTICAL AND WORKMANLIKE MANNER, BY MECHANICS SKILLED IN THE SEVERAL TRADES NECESSARY.
- B. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND SHALL BE THE BEST OF THEIR SEVERAL KINDS UNLESS SPECIFIED OR INDICATED ON THE DRAWINGS TO THE CONTRARY.
- C. DURING EACH PHASE AND AT THE COMPLETION OF THE CONSTRUCTION, THIS CONTRACTOR SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS CAUSED BY HIS WORK. HE SHALL LEAVE THE AREA OF OPERATION BROOM CLEAN.
- E. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OR ETL LABEL.
- F. THIS CONTRACTOR SHALL GUARANTEE HIS WORKMANSHIP AND MATERIAL (LAMPS EXCEPTED) FOR A PERIOD OF ONE YEAR FROM THE DATE OF BUILDING OPENING AND LEAVE HIS WORK IN PERFECT ORDER AT THE COMPLETION. SHOULD DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD, THE CONTRACTOR SHALL, UPON NOTICE OF THE SAME, REMEDY THE DEFECTS AND HAVE ALL DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY THE REPAIRS CORRECTED AT HIS EXPENSE TO THE CONDITION BEFORE SUCH DAMAGE.

1.7 FIRE STOPPING:
- A. FIRE-STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALLS AND ALL FLOOR ASSEMBLIES SHALL BE LISTED OR CLASSIFIED BY AN APPROVED INDEPENDENT TESTING LABORATORY FOR "THROUGH-PENETRATION FIRE-STOP SYSTEMS." THE SYSTEM SHALL MEET THE REQUIREMENTS OF "FIRE TESTS OF THROUGH-PENETRATION FIRE-STOPS" DESIGNATED ASTM E814.
- B. ACCEPTABLE MANUFACTURERS:
  1. DOW CORNING FIRE-STOP SYSTEM FOAMS AND SEALANTS
  2. NELSON ELECTRIC FIRE-STOP SYSTEM PUTTY, CLK AND WRP
  3. THOMAS & BETTS - S-100 FS500/600
  4. CARBORUNDUM FYRE PUTTY
  5. HILTI FIRESTOP SYSTEMS
- C. INSTALLATION OF FIRE-STOPPING FOR OPENINGS THROUGH FIRE AND SMOKE RATED WALLS AND FLOOR ASSEMBLIES SHALL BE AS FOLLOWS:
  1. PROVIDE FIRE-STOP SYSTEM SEALS AT ALL LOCATIONS WHERE PIPING, TUBING, CONDUIT, ELECTRICAL BUSWAYS/CABLES/WIRES, DUCTWORK AND SIMILAR UTILITIES PASS THROUGH OR PENETRATE FIRE RATED WALL OR FLOOR ASSEMBLY. PROVIDE FIRESTOP SEAL BETWEEN SLEEVE AND WALL FOR DRY WALL CONSTRUCTION.
  2. PROVIDE INTUMESCENT INSERT (SPECIFIED TECHNOLOGIES, INC. SERIES EP POWERSHIELD FIRESTOP INSERT, OR APPROVED EQUIVALENT) IN ALL ELECTRICAL SWITCH, OUTLET AND JUNCTION BOXES INSTALLED IN A FIRE RATED WALL ASSEMBLY.
  3. THE MINIMUM REQUIRED FIRE RESISTANCE RATINGS OF THE WALL OR FLOOR ASSEMBLY SHALL BE MAINTAINED BY THE FIRE-STOP SYSTEM. THE INSTALLATION SHALL PROVIDE AN AIR AND WATERTIGHT SEAL.
  4. THE METHODS USED SHALL INCORPORATE QUALITIES THAT PERMIT THE EASY REMOVAL OR ADDITION OF ELECTRICAL CONDUITS OR CABLES WITHOUT DRILLING OR USE OF SPECIAL TOOLS. THE PRODUCT SHALL ADHERE TO ITSELF TO ALLOW REPAIRS TO BE MADE WITH THE SAME MATERIAL AND PERMIT THE VIBRATION, EXPANSION AND/OR CONTRACTION OF ANY ITEMS PASSING THROUGH THE PENETRATION WITHOUT CRACKING, CRUMBLING AND RESULTING REDUCTION IN FIRE RATING.
  5. PROVIDE RIGID STEEL SLEEVES WHERE NON-ARMORED CABLES PASS THROUGH FIRE RATED WALLS AND BARRIERS.

1.8 SCOPE OF WORK:
- A. THIS CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, STORAGE, UNPACKING AND PLACEMENT; TO INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:
  1. COMPLETE POWER AND LIGHTING DISTRIBUTION SYSTEM INCLUDING ALL PANELS AND FEEDERS.
  2. COMPLETE BRANCH CIRCUIT WIRING SYSTEM.
  3. COMPLETE POWER WIRING FOR ALL AIR CONDITIONING EQUIPMENT, PLUMBING SYSTEM, HEATING EQUIPMENT, VENTILATING AND EXHAUST EQUIPMENT.
  4. WIRING DEVICES.
  5. COMPLETE LIGHTING FIXTURE INSTALLATION INCLUDING ALL REQUIRED LAMPS.
  6. ILLUMINATED EXIT LIGHT SYSTEM.
  7. LIGHTING CONTROLS.
  8. OUTDOOR LIGHTING AND CONTROLS.
  9. FIRE ALARM SYSTEM.
  10. GROUNDING OF THE ELECTRICAL SYSTEM.
  11. TESTING OF ALL CABLES AND CIRCUIT WIRING AFTER INSTALLATION.
  12. TELEPHONE AND COMMUNICATION CONDUIT SYSTEM INCLUDING BOXES SHOWN ON THE DRAWINGS AND REQUIRED BY THE LOCAL TELEPHONE COMPANY AND/OR OWNER.
  13. TELEPHONE AND ELECTRIC SERVICES.
  14. UNDERGROUND WARNING TAPE: PERMANENT, BRIGHT-COLORED, CONTINUOUS-PRINTED, VINYL TAPE NOT LESS THAN 6 INCHES WIDE BY 4 MILS THICK WITH EMBEDDED CONTINUOUS METALLIC STRIP OR CORE AND PRINTED LEGEND THAT INDICATES TYPE OF UNDERGROUND LINE.
  15. IDENTIFY RACEWAYS AND CABLES WITH COLOR BANDING AS FOLLOWS:
     a). FIRE ALARM SYSTEM: RED
  16. TEMPORARY ELECTRICAL POWER AND LIGHTING AS REQUIRED FOR CONSTRUCTION.

1.9 TEMPORARY SERVICE:
- A. THE ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND REMOVE AS REQUIRED ALL TEMPORARY POWER AND TEMPORARY LIGHTING IN ALL AREAS AND INDIVIDUAL ROOMS WHEN NEEDED BY THE INDIVIDUAL TRADES IN THE PERFORMANCE OF THEIR WORK. THIS CONTRACTOR SHALL PROVIDE A MINIMUM OF TWENTY (20) FOOTCANDLES OF ILLUMINATION FOR TEMPORARY LIGHTING. ANY ADDITIONAL LIGHTING REQUIRED BY INDIVIDUAL TRADES SHALL BE PROVIDED BY THE INDIVIDUAL TRADES INCLUDING POWER FOR THE LIGHTING. THE ELECTRICAL WORK FOR CONSTRUCTION PURPOSES SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, SPECIFIC SAFETY REQUIREMENTS, AS WELL AS THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND NATIONAL ELECTRICAL SAFETY CODE. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED APPLICATIONS, PERMITS AND INSPECTIONS PERTAINING TO THIS WORK. THIS COST SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE.
- B. NEW LIGHT FIXTURES SHALL NOT BE USED FOR TEMPORARY LIGHTING.

1.10 ELECTRIC SERVICE:
- A. PRIOR TO SUBMITTING A PROPOSAL FOR THE WORK, THIS CONTRACTOR SHALL CONTACT THE LOCAL POWER UTILITY COMPANY AND DETERMINE THE REQUIREMENTS FOR ELECTRICAL SERVICE TO THE BUILDING. THE CONTRACTOR SHALL INCLUDE ALL CHARGES BY THE UTILITY COMPANY FOR SERVICE IN THEIR BID PROPOSAL.
- B. AFTER THE NOTICE TO PROCEED IS ISSUED, THE ELECTRICAL CONTRACTOR SHALL CONTACT THE LOCAL POWER UTILITY COMPANY REPRESENTATIVE AND COORDINATE INSTALLATION OF THE ELECTRICAL SERVICE.
- C. MAKE PROVISIONS FOR THE PAD-MOUNT TRANSFORMER AS REQUIRED BY THE POWER COMPANY INCLUDING THE TRANSFORMER PAD AND GROUNDING SYSTEM.
- D. PROVIDE TRENCHING AND BACKFILL TO THE UTILITY COMPANY SPECIFICATIONS.
- E. VERIFY THE EXACT ROUTING OF THE SECONDARY ELECTRIC SERVICE, AND ALL SERVICE REQUIREMENTS, WITH THE UTILITY COMPANY.
- F. CONCRETE ENCASE CONDUITS WHERE REQUIRED BY THE UTILITY COMPANY AND WHERE INDICATED ON THE PLANS.
- G. PROVIDE METERING TO UTILITY COMPANY SPECIFICATIONS.
- H. PAY THE COST OF ALL UTILITY COMPANY CHARGES CONNECTED WITH PERMANENT ELECTRIC SERVICE TO THE BUILDING.
- I. FULLY COORDINATE ALL WORK WITH THE G.C., UTILITY COMPANY, EXISTING SITE CONDITIONS AND PERFORM ANY WORK NECESSARY TO ASSURE A COMPLETE WORKING INSTALLATION. THE ENTIRE SERVICE INSTALLATION SHALL BE IN COMPLETE CONFORMANCE WITH THE LOCAL POWER UTILITY COMPANY'S SPECIFICATIONS.

WIRES AND CABLE

1.1 GENERAL AND PRODUCTS:
- A. UNLESS OTHERWISE SPECIFIED, MC CABLE MAY BE UTILIZED FOR BRANCH WIRING WHEN CONCEALED WITHIN WALLS OR ABOVE FINISHED CEILINGS. EXPOSED INSTALLATIONS ARE NOT PERMITTED.
- B. CONDUCTORS SHALL BE ANNEALED COPPER, STRANDED 98% CONDUCTIVITY, 600 V RATED FOR FEEDERS AND BRANCH CIRCUITS, TYPE THHN/THWN INSULATION, MINIMUM #12 AWG SIZE FOR BRANCH CIRCUITS. PROVIDE #10 AWG MINIMUM SIZE FOR BRANCH CIRCUIT RUNS EXCEEDING 100 FEET. ALUMINUM CONDUCTORS SHALL NOT BE USED FOR BRANCH CIRCUITS. ANACONDA, GENERAL CABLE, ROME CABLE OR ACCEPTED EQUAL.
- C. COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS:
  1. 240/120V 1ø SYSTEM PHASE A-BLACK; PHASE B-RED; NEUTRAL-WHITE; GROUND-GREEN
  2. 208/120V 3ø SYSTEM PHASE A-BLACK; PHASE B-RED; PHASE C-BLUE; NEUTRAL-WHITE; GROUND-GREEN
  3. 480/277V 3ø SYSTEM PHASE A-BROWN; PHASE B-ORANGE; PHASE C-YELLOW; NEUTRAL-GREY; GROUND-GREEN
- D. #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE.
- E. COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. COLOR TAPE SHALL BE THE EQUAL OF 3M PRODUCTS SCOTCH #35.
- F. FLEXIBLE CORD SHALL BE HEAVY DUTY TYPE SO WITH AN EQUIPMENT GROUND CONDUCTOR IN ADDITION TO THE CURRENT CARRYING CONDUCTORS.
- G. CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR NEC CLASS I AND #16 FOR NEC CLASS II.
- H. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.
- I. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.
- J. CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS, "SCOTCHLOK" BY 3M OR B-CAP BY BUCHANAN.
- K. CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES AS MANUFACTURED BY BURNDY OR T&B.
- L. INSULATE SPLICING CONNECTORS TO AT LEAST 200% OF THE WIRE INSULATION. USE PRE-STRETCHED TUBING CONNECTOR INSULATORS, 3M PST FOR #2 AND LAR

SAFETY SWITCHES & FUSES

1.1 SWITCHES:

A. SAFETY SWITCHES SHALL BE THE ENCLOSED HEAVY-DUTY TYPE (TYPE HD) WITH QUICK-MAKE, QUICK-BREAK MECHANISM AND EXTERNAL PAD LOCKABLE OPERATING HANDLE.
B. SAFETY SWITCHES SHALL BE RATED FOR 240 OR 600 VOLTS AS APPLICABLE. THEY SHALL BE HORSEPOWER RATED WHEN USED IN MOTOR CIRCUITS.
C. SAFETY SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE, 2, 3, OR 4 POLE AS INDICATED ON THE DRAWINGS.
D. SAFETY SWITCHES SHALL BE SINGLE THROW UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
E. ENCLOSURES SHALL BE NEMA 1 INDOORS AND NEMA 3R OUTDOORS UNLESS OTHERWISE INDICATED ON DRAWINGS.
F. MANUFACTURER SHALL BE SQUARE D, SIEMENS, OR CUTLER-HAMMER. ALL SAFETY SWITCHES SHALL BE BY ONE MANUFACTURER.
G. MOUNT THE SAFETY SWITCHES SECURELY BETWEEN 3' X 6' LEVELS ABOVE THE FLOOR UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
H. SWITCHES ON BLOCK WALLS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD, WHERE LOCATED INDOORS.

1.2 FUSES:

A THE CONTRACTOR SHALL FURNISH A COMPLETE SET OF FUSES FOR ALL SWITCHES, PLUS FUSIBLE EQUIPMENT FURNISHED BY OTHER TRADES. UNLESS INDICATED OTHERWISE ON PLANS, THE FUSES SHALL BE OF THE FOLLOWING TYPES:
1. FUSES 601 TO 6000 AMPS SHALL BE UL CLASS. TRADE TYPE SHALL BE KRP-C AS MANUFACTURED BY THE BUSSMANN COMPANY.
2. FUSES 1/10 TO 600 AMPS SHALL BE UL CLASS RK1. TRADE TYPE SHALL BE LOW PEAK LPS-RK (600V) AND LPN-RK (250V) AS MANUFACTURED BY BUSSMANN COMPANY.
3. ALL OTHER FUSES SHALL BE DUAL-ELEMENT CURRENT-LIMITING TYPE WITH 200,000 AMPERES SYMMETRICAL INTERRUPTING CAPACITY.
4. FUSES SHALL BE MANUFACTURED BY BUSSMANN, GOULD-SHAWMUTT, OR RELIANCE.
5. SPARE FUSES AMOUNTING TO A DUPLICATE SET OF EACH SIZE INSTALLED SHALL BE TURNED OVER TO THE OWNER UPON COMPLETION OF THE PROJECT. PROVIDE AND PLACE IN A SPARE FUSE CABINET SIMILAR TO BUSSMANN # SFC.
6. THIS CONTRACTOR SHALL REPLACE ALL FUSES BLOWN DURING CONSTRUCTION.

13. MOTOR CONTROLLERS:
1. TYPE A (FULL VOLTAGE, NON-MAGNETIC, SINGLE PHASE): TOGGLE SWITCH, STAINLESS STEEL ENCLOSURE, THERMOPLASTIC COVERPLATE; SIEMENS CLASS SMF SERIES, OR ACCEPTED EQUAL.
2. TYPE A1 (FULL VOLTAGE, NON-MAGNETIC SINGLE PHASE): SIMILAR TO TYPE A ABOVE, EXCEPT WITH RED PILOT LIGHT; SIEMENS CLASS SMF SERIES, OR ACCEPTED EQUAL.
3. TYPE B (FULL VOLTAGE MAGNETIC): NEMA 1 ENCLOSURE WITH PILOT LIGHT; SIEMENS CLASS 14 SERIES WITH AUXILIARY CONTACTS, OR ACCEPTED EQUAL.
4. TYPE B1 (FULL VOLTAGE, COMBINATION MAGNETIC): FUSIBLE DISCONNECT SWITCH TYPE, NEMA 1 ENCLOSURE, PILOT LIGHT AND HOA IN COVER; SIEMENS CLASS 17 SERIES WITH AUXILIARY CONTACTS, OR ACCEPTED EQUAL.

PANELBOARDS

1.1 MANUFACTURER:

A. ALL EQUIPMENT IDENTIFIED IN THIS SECTION, AND THROUGHOUT DESIGN DOCUMENTS, IS BASED ON THE MANUFACTURER OF SQUARE-D. ACCEPTABLE ALTERNATE MANUFACTURES INCLUDE CUTLER-HAMMER, SIEMENS OR EQUAL PROVIDED EQUIPMENT MEETS ALL DESIGN CRITERIA AND PHYSICAL CHARACTERISTICS OF THE PROJECT.

1.2 SUBMITTALS:

A. SUBMIT EQUIPMENT DATA SHEETS INCLUDING CIRCUIT BREAKERS AND ALL ASSOCIATED ACCESSORIES. INFORMATION SHALL INCLUDE EQUIPMENT MANUFACTURE, MODEL NUMBERS AND APPLICABLE SHOP DRAWINGS.

1.3 GENERAL AND PRODUCTS:

A. MAIN DISTRIBUTION PANEL SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT AT THE TERMINALS.
B. PANELBOARDS SHALL BE LABELED WITH PHENOLIC NAMEPLATES INSCRIBED AS INDICATED ON THE DRAWINGS. PROVIDE ARC FLASH ANALYSIS WITH WARNING LABELS AFFIXED TO PANELBOARDS AS REQUIRED BY NFPA 70 AND 70E. INCLUDE NECESSARY SHORT CIRCUIT, COORDINATION, AND ARC FLASH STUDIES TO OBTAIN PROPER WARNING LABELS.
C. PANELBOARDS SHALL BE ENCLOSED DEAD FRONT SAFETY TYPE WITH FEATURES AND RATINGS AS SCHEDULED ON THE DRAWINGS.
D. PANELBOARDS SHALL HAVE COPPER OR ALUMINUM (SEE #E BELOW) BUS WITH BOLTED BREAKERS, FULLY RATED NEUTRAL BUS AND FULLY RATED INTERRUPTING CAPACITY; NO SERIES RATED SYSTEM PERMITTED. PROVIDE WITH BLANK END WALLS (NO PRE-PUNCHED BOXES), DOOR-IN-DOOR OR HINGED TRIM, INTERRUPTING RATING AS CALLED FOR, 24 CIRCUIT MINIMUM PANEL SIZE, FLUSH OR SURFACE MOUNTED AS INDICATED.
E. ALL BUS BARS SHALL BE RECTANGULAR SOLID COPPER. ALUMINUM BUS BARS ARE ACCEPTABLE WHEN ALUMINUM FEEDERS ARE SPECIFIED.
F. PANELS KNOWN AS "LOAD CENTERS" ARE UNACCEPTABLE EXCEPT FOR USE IN APARTMENT UNITS.
G. SPACES, AS IDENTIFIED IN PANEL SCHEDULES, FOR FUTURE PROTECTIVE DEVICES SHALL INCLUDE BUS AND SUPPORT.
H. INSTALL CABINETS SO THAT CENTER OF THE TOP BREAKER DOES NOT EXCEED 6'-6" ABOVE THE FINISHED FLOOR. IN ADA APATMENT UNITS, OR APARTMENT UNITS THAT ARE ADA ADAPTABLE FOR FURTHER CONVERSION TO ADA, INSTALL CABINET SO THAT CENTER OF THE TOP BREAKER DOES NOT EXCEED 4'-0" ABOVE THE FINISHED FLOOR TO MEET ADA REQUIREMENTS.
I. MOLDED CASE CIRCUIT BREAKERS SHALL BE AS SCHEDULED ON THE DRAWINGS AND SPECIFIED IN THIS DIVISION.
J. ALL BREAKERS SHALL BE BOLT-ON TYPE. PUSH-ON TYPE ARE ONLY ACCEPTABLE FOR USE IN "LOAD CENTERS".
K. ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS.
L. ELECTRICAL CONTRACTOR SHALL ARRANGE CIRCUITS AS NEAR AS POSSIBLE TO CIRCUIT NUMBERS ON THE DRAWINGS. AT COMPLETION OF JOB, ELECTRICAL CONTRACTOR SHALL TAKE CURRENT READING CHECKS OF RESPECTIVE PHASES. A MINIMUM OF CIRCUIT CONNECTIONS SHALL BE REARRANGED TO BALANCE, AS CLOSELY AS POSSIBLE, THE LOAD IN THE PANEL.
M. GFCI CIRCUIT BREAKERS: SINGLE-POLE AND TWO-POLE CONFIGURATIONS WITH CLASS A GROUND-FAULT PROTECTION (6-MA TRIP).
N. GROUND-FAULT EQUIPMENT PROTECTION (GFEP) CIRCUIT BREAKERS: CLASS B GROUND-FAULT PROTECTION (30-MA TRIP).
O. ARC-FAULT CIRCUIT INTERRUPTER (AFCI) CIRCUIT BREAKERS: COMPLY WITH UL 1699; 120/240-V, SINGLE-POLE CONFIGURATION.
P. PROVIDE (3) SPARE 1" CONDUITS INTO ACCESSIBLE CEILING SPACE WHERE PANELS ARE FLUSH-MOUNTED. PROVIDE REMOVABLE CAP OR PLUG AT CONDUIT AND ABOVE CEILING.
Q. ENTRIES ON DIRECTORY CARDS SHALL BE TYPED, COMPLETE AND ACCURATE.
R. ALL PANELBOARDS SHALL HAVE LOCKABLE COVERS. LOAD CENTERS USED IN APARTMENT UNITS DO NOT REQUIRE LOCKABLE COVERS.

ELEVATOR LANDING - TWO-WAY COMMUNICATION SYSTEM

1.1 GENERAL:

A. THE BASE STATION IS TO BE LOCATED IN THE FIRST FLOOR ELEVATOR LOBBY UNLESS OTHERWISE DIRECTED BY LOCAL AHJ. CALL BOXES ARE TO BE LOCATED IN ELEVATOR LOBBY ON REMAINING FLOOR LEVELS.
B. THE BASE STATION MUST BE CAPABLE OF HANDLING A MINIMUM OF 5 RATH CALL BOXES. VISUAL INDICATORS ON THE BASE STATION ALLOW RESCUE PERSONNEL TO KNOW WHICH CALL BOX NEEDS ASSISTANCE. THE BASE STATION MUST ALLOW RESCUE PERSONNEL TO SPEAK TO ALL CALL BOXES OR INDIVIDUAL CALL BOXES.
C. THE EMERGENCY COMMUNICATION HARDWARE SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (ADA). THE PHONE SHALL HAVE THE ABILITY TO BE PROGRAMMED WITH UP TO 5 EMERGENCY PHONE NUMBERS. UPON ACTIVATION OF THE EMERGENCY PUSH BUTTON, A CALL WILL BE AUTOMATICALLY PLACED TO THE BASE STATION. IF NO ONE ANSWERS AT THE BASE STATION, THE CALL BOX MUST DIAL A SECONDARY LOCATION OUTSIDE THE BUILDING TO ACTIVATE TWO WAY OFF-SITE PERSON TO PERSON VOICE COMMUNICATIONS VIA LANDLINE, CELLULAR OR IP DEVICE.
D. THE BASE STATION MUST ALLOW FOR CALLS OUT ON ANALOG, DIGITAL, CELLULAR, OR IP COMMUNICATION LINES.

1.2 SUBMITTALS:

A. SUBMIT PRODUCT DATA SHEETS INCLUDING MANUFACTURE AND MODEL NUMBERS.
B. SUBMIT WIRING OR SHOP DIAGRAMS DETAILING WIRING SCHEMATICS, CABLING.

1.3 CONSTRUCTION:

A. THE BASE STATION (2500 SERIES) MUST HAVE A STAINLESS STEEL OR POWDER COATED STEEL HOUSING, RED COIL CORD EMERGENCY HANDSET, BE 24VDC OR 120VAC POWERED, AND INCLUDE A RECHARGEABLE BATTERY TO MAINTAIN BACKUP POWER FOR A MINIMUM OF OF 4 HOURS OF TALK TIME.
B. THE BASE STATION MUST INCLUDE CONNECTIONS FOR UP TO TWO(2) MACHINE ROOM PHONES (2300-63OSM)
C. THE CALL BOXES (MODELS 2100) MUST BE IN FULL COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT (ADA). CALL BOXES REQUIRE A HANDS-FREE SPEAKERPHONE WITH AN LED TO INDICATE STATUS OF CALL.
D. THE CALL BOXES MUST ALLOW THE PROGRAMMING IN OF A SPECIFIC VOICE MESSAGE INDICATING THE LOCATION OF THE ELEVATOR. THIS ALLOWS RESCUE PERSONNEL TO KNOW THE LOCATION OF THE ACTIVATED CALL BOX.
E. THE CALL BOXES MUST BE PROGRAMMABLE TO CHECK THE STATUS OF THE INCOMING TELEPHONE LINE EVERY 10 MINUTES UP TO EVERY 23 HOURS. UPON FAILURE TO DETECT AN ACTIVE TELEPHONE LINE THE CALL BOX MUST PROVIDE A RELAY CONTACT TO AN ANNUNCIATOR DEVICE (2100-ALARM) LOCATED AT THE DESIGNATED LANDING (FIRE FLOOR ELEVATOR LOBBY) IN THE VICINITY OF THE "FIRE RECAL SWITCH"
F. THE BASE STATION MUST PROVIDE AN AUDIBLE AND VISUAL INDICATOR THAT AN ELEVATOR PHONE HAS BEEN ACTIVATED.

1.4 MOUNTING:

A. THE BASE STATION IS TO BE SURFACE MOUNTED NO HIGHER THAN 44" A.F.F. CONFORMING TO ALL ADA INSTALLATION REQUIREMENTS.
B. CALL BOXES ARE TO BE FLUSH MOUNTED 44" A.F.F. CONFORMING TO ALL ADA REQUIREMENTS.

1.5 ELECTRICAL:

A. THE BASE STATION IS TO BE POWERED BY A 120VAC WHEN USED WITH SUPPLIED STEP DOWN TRANSFORMER OR DIRECT 24VAC/DC POWER.
B. CALL BOXES ARE TO BE POWERED BY 24VDC POWER SUPPLY PART.
C. WIRING FROM THE BASE STATION TO THE CALL BOXES SHALL BE COMPOSED OF TWO TWISTED, SHIELDED PAIRS IN EITHER 22 OR 24GA WIRE.
D. CALL BOXES MUST HAVE BUILT-IN BATTERY BACKUP AND INCLUDE A RECHARGEABLE BATTERY TO MAINTAIN BACKUP POWER FOR A MINIMUM OF 4 HOURS OF TALK TIME.
E. BASE STATION MUST HAVE A BUILT-IN BATTERY BACKUP AND INCLUDE A RECHARGEABLE BATTERY TO MAINTAIN BACKUP POWER FOR A MINIMUM OF 4 HOURS OF TALK TIME.
F. SYSTEM SHALL BE IN COMPLIANCE WITH ALL STATE AND LOCAL ELECTRICAL CODES.

1.6 COMMUNICATIONS:

A. THE CALL BOXES SHALL HAVE AN ADA COMPLIANT AND VANDAL RESISTANT SPEAKERPHONE.
B. THE BASE STATION MUST ALLOW FOR CALL TO BE PLACED ON ANALOG, DIGITAL, OR IP COMMUNICATION LINES.
C. THE CALL BOXES SHALL BE HANDS-FREE AND BE A PUSH-BUTTON-ONCE TO TALK SYSTEM. ONCE THE BUTTON HAS BEEN PUSHED, THE CALL BOX WILL CALL THE BASE STATION. IF NO ANSWER AT THE BASE STATION, IT WILL AUTOMATICALLY CALL PREPROGRAMMED EMERGENCY NUMBERS. THE CALL BOX MUST BE CAPABLE OF BEING PROGRAMMED WITH UP TO 5 EMERGENCY NUMBERS.
D. CALL BOX SHALL HAVE LOCATION MESSAGE CAPABILITY. CALL BOX MUST HAVE A MINIMUM 18 SECOND RECORDABLE MESSAGE CAPABILITY, PROGRAMMABLE TO PLAY 1 OR CONTINUOUSLY UNTIL INTERRUPTED. CALL BOX SHALL NOTIFY CALLED PARTY OF THE LOCATION OF THE CALL UPON BEING RECEIVED AT THE EMERGENCY DISPATCH CENTER.
E. CALL BOX SHALL BE CAPABLE OF ALLOWING THE CALLED PARTY TO REPLAY THE LOCATION MESSAGE IF NECESSARY TO ENSURE AN UNDERSTANDING OF THE CALLER LOCATION.
F. IF BUILDING LOCATION DOES NOT HAVE A 24/7 ATTENDANT ON DUTY, THE CALL BOX MUST DIAL A LOCATION OUTSIDE OF THE BUILDING TO ACTIVE TWO WAY OFF-SITE PERSON TO PERSON VOICE COMMUNICATIONS.
G. ONCE CALL HAS BEEN MADE (BUTTON PUSHED), THE CALL CAN ONLY BE TERMINATED BY THE CALLED PARTY.
H. CALL BOX MUST HAVE A RED LED THAT WILL LIGHT UP UPON PUSH OF THE BUTTON. THE LIGHT SHALL BE A SOLID COLOR WHEN THE CALL BOX IS ACTIVATED, AND WILL FLASH WHEN CALL HAS BEEN ANSWERED.
I. THE CALL BOX MUST BE CAPABLE OF BEING PROGRAMMED AND REPROGRAMMED ON-SITE AND REMOTELY.
J. STANDARD BASE STATION FEATURES:
1. SURFACE MOUNT
2. OPERATING TEMPERATURE OF BETWEEN -40°F TO +150°F (-40° TO + 65° C)
3. ALL OR INDIVIDUAL ELEVATOR CALL
4. BATTERY BACKUP (4 HOURS)
K. STANDARD CALL BOX FEATURES:
1. FIVE NUMBER PROGRAMMING.
2. OPERATING TEMPERATURE OF BETWEEN -40°F TO +150°F (-40° TO + 65° C)
3. LOCATION MESSAGE
4. TELEPHONE LINE VERIFICATION
5. BATTERY BACKUP (4 HOURS)
6. ON-SITE OR REMOTE PROGRAMMABLE.
7. 120VAC OR 24VAC/DC POWER
8. EEPROM MEMORY TO PROTECT PROGRAMMING.

1.7 GRAPHICS:

A. BASE STATION MUST INCLUDE WORDING IDENTIFYING THE NUMBER OF EACH ELEVATOR CALL BOX, INSTRUCTIONS ON HOW TO OPERATE THE BASE STATION AND LIGHT AN LED WHEN PARTICULAR ELEVATOR CALL BOX HAS BEEN ACTIVATED.
B. EACH ELEVATOR CALL BOX WORDING MUST INCLUDE "EMERGENCY PHONE", THE INTERNATIONAL PHONE SYMBOL, AND RAISED BRAILLE LETTERING.

1.8 MONITORING:

A. OFF-SITE MONITORING OF THE SYSTEM SHALL BE PROVIDED BY AN APPROVED PROVIDER.

1.9 WARRANTY

A. THE BASE STATION AND ELEVATOR CALL BOXES SHALL BE WARRANTED FOR A PERIOD OF THREE YEARS.

1.10 MANUFACTURER

A. THE BASIS OF DESIGN SHALL BE RATH COMMUNICATIONS (WEBSITE: WWW.RATHCOMMUNICATIONS.COM)
1. APPROVED EQUALS MEETING FUNCTIONALITY LISTED ABOVE SHALL BE CONSIDERED.

FIRE ALARM SYSTEM SPECIFICATION

PART 1 - GENERAL

1.1 GENERAL:

A. THE FIRE ALARM SYSTEM SHALL BE A COMPLETE SYSTEM OF ONE OF THE FOLLOWING MANUFACTURERS:
FIRE-LITE
MIRCOM
SILENT KNIGHT
NOTIFIER
EDWARDS
SIMPLEX
OR APPROVED EQUAL

1.2 SUBMITTALS:

A. INCLUDE THE FOLLOWING ITEMS FOR REVIEW BY THE ENGINEER OF RECORD AND LOCAL BUILDING DEPARTMENT.
1. SYSTEM DEVICE DATA SHEETS INCLUDING CONTROL PANEL AND ALL ASSOCIATED ACCESSORIES. INFORMATION SHALL INCLUDE EQUIPMENT MANUFACTURE AND MODEL NUMBERS.
2. BATTERY CALCULATIONS.
3. RISER DIAGRAM IDENTIFYING DEVICES, CONDUCTOR TYPES / SIZES, CANDELA RATINGS AND REQUIRED POWER SUPPLIES TO FACILITATE ENTIRE SYSTEM INSTALLATION.
4. SHOP DRAWINGS INDICATING THE USE OF ALL ROOMS WITH LOCATIONS OF ALARM AND INITIATING DEVICES IN COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS.

NOTE: CAD FILES OF THE FIRE ALARM DESIGN DOCUMENTS WILL BE PROVIDED UPON REQUEST.

1.3 COMPLIANCE

A. SYSTEM AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE STANDARDS AND REQUIREMENTS OF THE NFPA INCLUDING:
1. NFPA 70 - INCLUDING ARTICLE 760
2. NFPA 72 - COMPLETE
3. NFPA 101
4. APPLICABLE REQUIREMENTS OF THE TOWN.
B. ALL EQUIPMENT SHALL BE "UL" LISTED UNDER THE FIRE PROTECTION DIRECTORY AND SUPPLEMENTS.

1.4 PROJECT DESCRIPTION

A. PROVIDE INTELLIGENT MANUAL FIRE ALARM, SMOKE DETECTION AND SUPERVISION OF FIRE SUPPRESSION SYSTEM FOR A 3-STORY APARTMENT COMPLEX WITH COMMERCIAL SPACE.
B. PROVIDE INTELLIGENT INITIATING DEVICES, NOTIFICATION APPLIANCES, ADDRESSABLE MODULES AND OTHER EQUIPMENT REQUIRED FOR A COMPLETE, OPERATIONAL AND CODE-COMPLIANT SYSTEM.
C. PROVIDE AUDIBLE AND VISIBLE NOTIFICATION APPLIANCES IN AREAS INDICATED ON DRAWINGS
D. PROVIDE NAC POWER SUPPLIES AS NEEDED TO ACCOMMODATE NOTIFICATION APPLIANCES
E. PROVIDE COMPATIBLE ADDRESSABLE MODULES FOR SUPERVISION OF FIRE SUPPRESSION SYSTEM EQUIPMENT.
F. PROVIDE DEDICATED NOTIFICATION APPLIANCE CIRCUIT AND WEATHERPROOF BACKBOX FOR EXTERIOR ELECTRIC WATERFLOW ALARM BELL.
G. PERFORM TESTING OF COMPLETED INSTALLATION IN ACCORDANCE WITH NFPA 72 CHAPTER 10
H. PROVIDE SURGE PROTECTION DEVICE WITH VISIBLE NOTIFICATION TO PROTECT FIRE ALARM CONTROL PANEL (FACP) 120V POWER FEED. PROVIDE DITEK SURGE PROTECTION DTK-120SRD (OR EQUAL).

PART 2 - DESIGN PARAMETERS

2.1 INFORMATION AND PARAMETERS

A. SYSTEM DESIGN BASIS IS NFPA 72 'PARTIAL' DETECTION. SMOKE DETECTION IS BASED ON THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE FOR APPLICABLE USE GROUPS.
B. THE BUILDING SHALL BE UNDER ONE NOTIFICATION ZONE.
C. NOTIFICATION APPLIANCES SHALL CONSIST OF AUDIO (HORNS), FIRE ALARM VISUAL (STROBES) AND AUDIBLE BASES FOR CARBON MONOXIDE DETECTORS.
D. CONNECT FIRE SUPPRESSION ALARM, SUPERVISORY AND TROUBLE POINTS TO SIGNALING LINE CIRCUIT USING COMPATIBLE ADDRESSABLE INPUT MODULES. THIS INCLUDES, BUT IS NOT LIMITED TO, SUPERVISION OF WATER SUPPLY CONTROL VALVES IN FIRE PUMP ROOM, SPRINKLER CONTROL VALVES, AND FIRE STANDPIPE CONTROL VALVES.
E. CONNECT EXTERIOR WATERFLOW ALARM AUDIO/VISUAL TO DEDICATED NOTIFICATION APPLIANCE CIRCUIT
F. STANDBY POWER BATTERIES IN FACP AND NAC POWER SUPPLIES SHALL BE SIZED TO PROVIDE 24 HOURS OF STANDBY POWER IN ADDITION TO 15 MINUTES IN FULL LOAD ALARM IN ACCORDANCE WITH NFPA 72.
G. PATHWAY SURVIVABILITY MEANS THE ABILITY OF ANY CONDUCTOR, OPTIC FIBER, RADIO CARRIER, OR OTHER MEANS FOR TRANSMITTING SYSTEM INFORMATION TO REMAIN OPERATIONAL DURING FIRE CONDITIONS.
H. PATHWAY SURVIVABILITY WILL BE ACCOMPLISHED BY USING A COMBINATION OF LISTED CIRCUIT INTEGRITY (CI) CABLE, CLASS "B" CIRCUITS AND ROUTING OF VERTICAL AUDIO, NETWORK AND COMMUNICATION RISERS IN STAIRWELLS WHICH HAVE A TWO HOUR FIRE RESISTANCE RATING.

PART 3 - PRODUCT AND EQUIPMENT

3.1 FIRE ALARM CONTROL UNIT

A. INTELLIGENT/ADDRESSABLE UNIT WITH MANUAL AND AUTOMATIC ALARM CAPABILITIES, LCD DISPLAY CAPABLE OF SUPPORTING SYSTEM NEEDS AS SHOWN AND IDENTIFIED IN CONTRACTOR DOCUMENTS AND ALSO THE ABILITY TO SUPPORT FUTURE COMMERCIAL TENANTS. INCLUDE REMOTE POWER SUPPLIES SIZED FOR THE SIMULTANEOUS OPERATION OF ALL AUDIBLE AND VISIBLE NOTIFICATION APPLIANCES.
B. AUTOMATIC DETECTOR SENSITIVITY TESTING; MAINTENANCE ALERT (TWO LEVELS); SENSITIVITY ADJUST FEATURE; DRIFT COMPENSATION AND SMOOTHING
C. MAIN CABINET SHALL BE FOR SURFACE INSTALLATION WITH APPROPRIATE COVERPLATE RED IN COLOR.
D. SYSTEM SHALL BE FULLY SUPERVISED, SHALL BE FOR 120 VOLT SUPPLY, FOR 24 VOLT DC OPERATION AND SHALL HAVE BATTERY "BACKUP" FOR 24 HOUR OPERATION AFTER 120 VOLT POWER FAILURE.
E. CONTROL PANEL SHALL CONTAIN DIGITAL COMMUNICATOR FOR TOUCH-TONE AND/OR DIAL INTERFACE (PER OWNER).

3.2 DEVICES

A. PULLSTATIONS SHALL BE DUAL ACTION, RED IN COLOR LABELED "FIRE".
B. AUDIO/VISUAL (HORN/STROBE) SHALL BE RED IN COLOR LABELED "FIRE" WITH FIELD SELECTABLE CANDELA RATINGS (15, 30, 75, 95, 110) AS REQUIRED FOR SPACES COVERED. AUDIO/VISUAL WITH 520Hz LOW FREQUENCY SOUNDER AND 177cd STROBE SHALL BE SUPPLIED FOR ADA APARTMENTS.
C. VISUAL (STROBE) DEVICES SHALL BE RED IN COLOR LABELED "FIRE". WITH FIELD SELECTABLE CANDELA RATINGS (15, 30, 75, 95, 110) AS REQUIRED FOR SPACES COVERED.
D. AUDIO (HORN) DEVICES WITH 520Hz LOW FREQUENCY SOUNDER SHALL BE SUPPLIED FOR NON-ADA GUESTROOMS.
E. WEATHER-PROOF AUDIO (HORN) SHALL BE RED IN COLOR LABELED "FIRE"
F. INTELLIGENT INTERFACE MODULE (SINGLE OR DUEL INPUT) TO MONITOR SPRINKLER, FLOW SWITCHES, TAMPER SWITCHES AND OTHER POINTS OF SUPERVISION AS INDICATED ON DRAWINGS.
G. INTELLIGENT OUTPUT MODULE TO CONTROL AUXILIARY FUNCTION SUCH AS RELEASE OF DOORS ON MAGNET HOLDS OPENS, ACTUATION OF SMOKE DAMPERS AND SHUT DOWN OF HVAC FANS.
H. SMOKE DETECTORS SHALL BE PHOTOELECTRIC TYPE WITH STANDARD BASE UNLESS OTHERWISE INDICATED.
I. HEAT DETECTORS SHALL BE 190° FIXED TEMPERATURE WITH STANDARD BASE UNLESS OTHERWISE INDICATED.
J. CO DETECTORS SHALL HAVE AN AN AUDIBLE BASE PROVIDING A TEMPORAL 4 NOTIFICATION TONE.
K. SEE 'FIRE ALARM SYSTEM SCHEDULE' ON SHEET E-1 FOR FURTHER INFORMATION ON SYSTEM DEVICES.

PART 4 - EXECUTION

4.1 INSTALLATION

A. THE CONTRACTOR SHALL FURNISH ALL CONDUIT, WIRING, OUTLET BOXES, JUNCTION BOXES, CABINETS, AND SIMILAR DEVICES NECESSARY FOR THE COMPLETE INSTALLATION. ALL WIRING SHALL BE OF THE TYPE RECOMMENDED BY THE MANUFACTURER.
B. FIRE PROTECTION AND DETECTION SYSTEMS ARE SUBJECT TO PERIOD INSPECTION BY LOCAL MUNICIPALITY. WORK SHALL REMAIN ACCESSIBLE AND EXPOSED UNTIL INSPECTED AND ACCEPTED BY THE CODE ENFORCEMENT OFFICER. FIRE ALARM SYSTEMS, FIRE DETECTION DEVICES OR SYSTEMS, FIRE PROTECTION SYSTEMS, FIRE SUPPRESSION SYSTEMS, INCLUDING ROUGH-IN AND FINAL OPERATIONAL TESTING SHALL BE INSPECTED BY THE CITY OF BUFFALO.
C. ALL CONDUCTORS SHALL BE INSTALLED IN EMT WHERE CONDUCTORS ARE NOT CONCEALED ABOVE CEILINGS OR IN WALLS OR AS OTHERWISE PRESCRIBED BY NEC ARTICLE 760, SUCH AS WHEN PASSING THROUGH A FLOOR. CONDUCTORS LOCATED AT THE ROOF DECK ARE NOT REQUIRED TO BE IN EMT, AND SHALL BE ATTACHED TO THE BUILDING STRUCTURE WITH APPROVED SUPPORTS.
D. ALL LOW VOLTAGE OPERATIONS FOR ALL FIRE ALARM SYSTEM DEVICES SHALL BE PROVIDED FROM THE CONTROL UNIT.
E. FIRE ALARM CABLE SHALL COMPLY WITH NEC ARTICLE 760 FOR NPLFA OR PLFA AS APPLICABLE OR SHALL BE LISTED FIRE ALARM CABLE; SOLID OR STRANDED COPPER IS PERMITTED; AND SHALL COMPLY WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INITIATING DEVICE CIRCUITS, SIGNALING LINE CIRCUITS AND NOTIFICATION APPLIANCE CIRCUITS.
F. ALL SYSTEM WIRING SIZE SHALL BE AS DETERMINED SUITABLE BY THE MANUFACTURER AND IN COMPLIANCE WITH THE CURRENT CARRYING CAPACITIES AS SET FORTH BY THE NATIONAL ELECTRICAL CODE.
G. EACH CIRCUIT SHALL UTILIZE WIRE OF A COLOR DIFFERENT AND DISTINGUISHABLE FROM OTHER CIRCUITS. COLOR CODING SHALL BE APPROVED BY THE OWNER'S DESIGNATED REPRESENTATIVE. COLORS SHALL BE CONTINUOUS THROUGHOUT EACH ENTIRE CIRCUIT. MATCH EXISTING.
H. RACEWAYS SHALL NOT CONTAIN BOTH POWER LIMITED AND NON-POWER LIMITED CONDUCTORS UNLESS SPECIFICALLY PERMITTED BY NEC AND THE MANUFACTURER'S EQUIPMENT LISTINGS.
I. RACEWAY SHALL ENTER PANELS FROM THE SIDES OR BOTTOM; NO RACEWAY SHALL ENTER THE TOP OF A PANEL.
J. EXPOSED RACEWAYS SHALL BE RUN PARALLEL AND PERPENDICULAR TO THE WALLS AND CEILINGS. WHEREVER PRACTICAL, EXPOSED RACEWAYS SHALL BE RUN ON THE CEILING AS CLOSE AS POSSIBLE TO A WALL OR AS HIGH AS POSSIBLE ON A WALL. WHERE EXPOSED RACEWAYS MUST CROSS UNDER A STRUCTURAL BEAM OR RIB, THEY SHALL BE RUN DOWN ON ONE SIDE OF THE BEAM OR RIB, ACROSS ITS BOTTOM, AND UP TO THE CEILING ON THE OTHER SIDE OF THE BEAM OR RIB. NO SPANNING FROM BEAM TO BEAM OR RIB TO RIB WILL BE PERMITTED. THE USE OF A CONDUIT BODY ON ONE SIDE OF A BEAM OR RIB WILL BE PERMITTED PROVIDED IT WILL BE READILY ACCESSIBLE.
K. ALL RACEWAYS, FLEXIBLE RACEWAYS, MOUNTING BOXES, JUNCTION BOXES, AND PANELS SHALL BE SECURELY FASTENED TO ENSURE POSITIVE GROUNDING THROUGHOUT THE ENTIRE SYSTEM.
L. WHERE NEW PENETRATIONS OF FLOOR SLABS OR FIRE WALLS ARE MADE, THEY SHALL BE FIRE-STOPPED IN ACCORDANCE WITH THE BUILDING CODE.
M. END-OF-LINE RESISTORS SHALL BE FURNISHED AS REQUIRED AND SHALL BE MOUNTED AS DIRECTED BY THE MANUFACTURER.
N. END-OF-LINE RESISTORS SHALL COMPLY WITH THE SYSTEM MANUFACTURER'S RECOMMENDATIONS.
O. THE FIELD LOCATION OF THE END-OF-LINE RESISTORS SHALL BE LABELED SO THAT THE DEVICES MAY BE EASILY LOCATED, AND THAT LOCATION SHALL BE NOTED ON THE POINT-TO-POINT DRAWINGS.
P. ALL WIRING WITHIN THE CONTROL PANEL SHALL BE NEATLY SERVED IN THE PANEL GUTTERS, WHERE APPLICABLE, AND SHALL BE SECURED BY MEANS OF THOMAS & BETTS "TY-RAPS" OR BY OTHER APPROVED MEANS.
Q. ALL WIRING SHALL BE TESTED FOR STRAY VOLTAGE, SHORT CIRCUITS, AND GROUND FAULTS PRIOR TO CONNECTION TO THE CONTROL PANEL AND ANY DEVICES.
R. SPLICING OF WIRING CONNECTIONS, USE OF COMMON WIRE NUTS, OR MORE THAN TWO WIRES ON ONE TERMINAL SCREW IS PROHIBITED.
S. SURGE PROTECTION DEVICE FOR FACP 120V CIRCUIT FEED SHALL BE INSTALLED AND WIRED PER MANUFACTURE INSTRUCTIONS MEETING ALL NEC REQUIREMENTS.

4.2 COMMISSIONING

A. THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN THE PRESENCE OF: THE OWNER'S REPRESENTATIVE, CITY REPRESENTATIVE, THE CONTRACTOR AND THE FACTORY AUTHORIZED REPRESENTATIVE OF THE MANUFACTURER. UPON COMPLETION OF A SUCCESSFUL TEST, THE CONTRACTOR SHALL SO CERTIFY, IN WRITING, TO THE JURISDICTION HAVING AUTHORITY, OWNER, ARCHITECT AND THE ENGINEER.
B. THE CONTRACTOR SHALL WARRANTY THE COMPLETED FIRE ALARM SYSTEM EQUIPMENT, WIRING AND INSTALLATION, TO BE FREE FROM INHERENT DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE CERTIFIED TEST.

FIRE ALARM MATRIX

	CONTROL UNIT ANNUNCIATION						NOTIFICATION						REQUIRED FIRE SAFETY CONTROL					
	ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE AUDIBLE ALARM SIGNAL	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE AUDIBLE SUPERVISORY SIGNAL	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE AUDIBLE TROUBLE SIGNAL	ACTUATE APARTMENT 520 HZ HORNS AND STROBE HORN / STROBES IN ADA APARTMENTS	ACTUATE BUILDING HORN / STROBES	DISPLAY/PRINT CHANGE OF STATUS	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STATION	TRANSMIT SUPERVISORY SIGNAL TO SUPERVISING STATION	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STATION	ACTUATE AUDIBLE BASE (TEMPORAL 4 SIGNAL

GENERATOR DOCKING STATION (GDS) WITH MANUAL TRANSFER SWITCH

PART 1 GENERAL

1.1 QUALITY ASSURANCE
A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
B. COMPLY WITH NFPA 70.

1.2 GUARANTEE / WARRANTEE
A. THE EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE LEFT IN PROPER WORKING ORDER.
B. NEW MATERIALS AND EQUIPMENT SHALL BE GUARANTEED AGAINST DEFECTS IN COMPOSITION, DESIGN OR WORKMANSHIP. GUARANTEE CERTIFICATES SHALL BE FURNISHED.

1.3 SUBMITTALS
A. ACTION SUBMITTAL
1. PRODUCT DATA
a. THE SUBMITTAL SHALL INCLUDE SPECIFICATION SHEETS SHOWING ALL STANDARD AND OPTIONAL ACCESSORIES TO BE SUPPLIED; SCHEMATIC WIRING DIAGRAMS, DIMENSION DRAWINGS, AND INTERCONNECTION DIAGRAMS IDENTIFYING BY TERMINAL NUMBER EACH REQUIRED INTERCONNECTION BETWEEN THE DOCKING STATION, THE GENERATOR SET AND THE TRANSFER SWITCH.
2. SHOP DRAWINGS

PART 2 PRODUCTS

2.1 GENERATOR DOCKING STATION
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
1. TRYSTAR: GENERATOR DOCKING STATION
a. TRYSTAR MODEL NO.: TMTS-1
b. TRYSTAR, HTTPS://WWW.TRYSTAR.COM/CONTACT/ AND/OR INFO@TRYSTAR.COM

2.1 GENERAL REQUIREMENTS
A. MANUAL TRANSFER SWITCH:
1. [TMTS] DOCKING STATION SHALL HAVE INTEGRATED ROTARY TRANSFER SWITCH (MTS).
a. MTS SHALL HAVE THREE POSITIONS – UTILITY/PERMANENT LINE – OFF – TEMPORARY LINE
b. MTS SHALL BE LOCATED BEHIND PAD LOCKABLE DOOR TO PREVENT ANY TAMPERING BY UNAUTHORIZED PERSONNEL.
B. DOCKING STATION SHALL INCLUDE 16 SERIES CAMLOK PANEL MOUNTS FOR USE AS CONNECTION TO PORTABLE GENERATOR.
C. ENTIRE PACKAGE MUST BE LISTED TO UL 1008 STANDARDS. UL LISTING OF INDIVIDUAL COMPONENTS IS NOT ACCEPTABLE.
D. ENCLOSURES:
1. NEMA 3R RAIN-TIGHT, 304 GA ALUMINUM ENCLOSURE
a. PAD-LOCKABLE FRONT DOOR SHALL INCLUDE A HINGED ACCESS PLATE AT THE BOTTOM FOR ENTRY OF CABLES FROM PORTABLE GENERATOR OR PORTABLE LOAD BANK. NEMA 3R INTEGRITY SHALL BE MAINTAINED WITH ACCESS PLATE OPEN FOR CABLE ENTRY.
b. FRONT AND SIDE THROUGH A FRONT ACCESS PANEL SHALL BE ACCESSIBLE FOR MAINTENANCE.
c. TOP, SIDE, AND BOTTOM THROUGH A FRONT ACCESS PANEL SHALL BE ACCESSIBLE FOR PERMANENT CABLING.
2. FINISHES:
a. PAINT AFTER FABRICATION. POWDER COATED HAMMERTONE GRAY.
E. PHASE, NEUTRAL, AND GROUND BUSES:
1. MATERIAL: SILVER-PLATED COPPER
2. EQUIPMENT GROUND BUS: BONDED TO BOX.
3. ISOLATED GROUND BUS: INSULATED FROM BOX.
4. GROUND BUS: 50% OF PHASE SIZE.
5. NEUTRAL BUS: NEUTRAL BUS RATED 100 PERCENT OF PHASE BUS.
6. ROUND EDGES ON BUS.
F. TEMPORARY GENERATOR CONNECTORS SHALL BE CAMLOK STYLE MOUNTED ON GLAND PLATE.
1. CAMLOK SHALL BE COLOR CODED ACCORDING TO SYSTEM VOLTAGE
a. A PHASE – BLACK OR BROWN
b. B PHASE – RED OR ORANGE
c. C PHASE – BLUE OR YELLOW
d. N NEUTRAL – WHITE
e. G GROUND – GREEN
G. TEMPORARY CONNECTORS SHALL INCLUDE PROTECTIVE FLIP LIDS TO PREVENT ACCIDENTAL CONTACT.
H. PERMANENT CONNECTORS SHALL BE BROAD RANGE SET-SCREW TYPE, LOCATED BEHIND AN ALUMINUM BARRIER.
I. SHORT CIRCUIT & WITHSTAND RATING
1. SHALL BE MINIMUM 14KAIC UNLESS OTHERWISE INDICATED ON DRAWINGS.
J. VOLTAGE & AMPERAGE:
1. 120/208V, 100A
K. PHASE ROTATION MONITOR DEVICE:
1. PHASE MONITORING RELAY TO BE SIEMENS 3U4512-1AR20 OR EQUAL.
L. ADDITIONAL ACCESSORIES SHALL BE INCLUDED IN SUBMITTAL DRAWINGS AS FOLLOWS:
a: TWO WIRE AUTO START
b: BATTERY CHARGER RECEPTACLE 20A GFCI 125V
c: BLOCK HEATER RECEPTACLE 30A L5-30 125V

PART 3 EXECUTION

1.1 EXAMINATION
A. EXAMINE ELEMENTS AND SURFACES TO RECEIVE GENERATOR DOCKING STATION FOR COMPLIANCE WITH INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.

2.1 INSTALLATION
A. SURFACE MOUNT
1. INSTALL ANCHOR BOLTS TO ELEVATIONS REQUIRED FOR PROPER ATTACHMENT TO GENERATOR DOCKING STATION.

3.1 FIELD QUALITY CONTROL
A. THIRD PARTY TESTS AND INSPECTIONS TO INCLUDE THE FOLLOWING:
1. PERFORM EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL TEST STATED IN NETA ACCEPTANCE TESTING SPECIFICATION. CERTIFY COMPLIANCE WITH TEST PARAMETERS.
B. PREPARE TEST AND INSPECTION REPORTS, INCLUDING A CERTIFIED REPORT THAT IDENTIFIES GENERATOR DOCKING STATION AND THAT DESCRIBES SCANNING RESULTS. INCLUDE NOTATION OF DEFICIENCIES DETECTED, REMEDIAL ACTION TAKEN, AND OBSERVATIONS AFTER REMEDIAL ACTION.

END OF SECTION

AUTOMATIC TRANSFER SWITCH

PART 1 – GENERAL

1.1 SUMMARY
A. SECTION INCLUDES:
1. TRANSFER SWITCH CONTROLLER.
2. STANDARD (OPEN) TRANSITION, CONTACTOR-TYPE, TRANSFER SWITCHES.
3. TRANSFER SWITCH ACCESSORIES.

1.2 DEFINITIONS
A. AUTOMATIC TRANSFER SWITCH (ATS): DEVICE IN WHICH A CONTROLLER MANAGES THE ENTIRE PROCESS, AND INITIATION BEGINS WHEN THE CONTROLLER SENSES A LOSS OF THE PRIMARY SOURCE. THE CONTROLLER MONITORS THE SOURCE VOLTAGE AND SENDS A COMMAND TO THE GENERATORS TO RUN WHEN THE VOLTAGE FALLS BELOW A PRESET LIMIT FOR A PRESCRIBED PERIOD. THE CONTROLLER ALSO MONITORS THE SECONDARY SOURCE VOLTAGE AND FREQUENCY, AND WHEN THESE VALUES ARE WITHIN ACCEPTABLE LIMITS, THE SWITCH TRANSFERS THE LOAD FROM THE PRIMARY TO THE SECONDARY SOURCE. WHEN THE PRIMARY SOURCE IS REESTABLISHED FOR A PRESCRIBED PERIOD TO ENSURE STABILITY, THE SWITCH MAY AUTOMATICALLY TRANSFER THE LOAD BACK TO THE PRIMARY SOURCE. MOST CRITICAL AND LIFE-SAFETY LOADS REQUIRE AUTOMATIC OPERATION AS DEFINED BY THE NEC.
B. CONTACTOR TYPE SWITCHING MECHANISM: CONTACTORS ARE CONSTRUCTED AS AN ELECTRICALLY CONTROLLED, DOUBLE-THROW SWITCH WHERE A SOLENOID MECHANISM OPENS ONE SET OF POWER CONTACTS WHILE CLOSING A SECOND SET.
C. ENCLOSURES: THE FOLLOWING ARE UL 50 DEFINITIONS OF ENCLOSURE TYPES LISTED IN ORDER OF PROTECTION FROM LEAST HAZARDOUS TO MOST SEVERE CONDITIONS.
1. TYPE 1: ENCLOSURES CONSTRUCTED FOR INDOOR USE TO PROVIDE A DEGREE OF PROTECTION TO PERSONNEL AGAINST INCIDENTAL CONTACT WITH THE ENCLOSED EQUIPMENT AND TO PROVIDE A DEGREE OF PROTECTION AGAINST FALLING DIRT.
D. TRANSITION TYPES:
1. STANDARD (OPEN) TRANSITION: BREAK-BEFORE-MAKE TRANSFER. IN OPEN TRANSITION, THE LOAD IS DISCONNECTED FROM ONE NORMAL SOURCE BEFORE BEING CONNECTED TO THE ALTERNATE EMERGENCY SOURCE.
E. WITHSTAND AND CLOSE-ON RATING (WCR): THE FOLLOWING ARE THE TYPES OF TRANSFER SWITCH WCR RATINGS.
1. SPECIFIC BREAKER RATING: TRANSFER SWITCH THAT IS TESTED IN COORDINATION WITH SPECIFIC UPSTREAM CIRCUIT BREAKERS. ONLY BREAKERS LISTED ON THE TRANSFER SWITCH RATING DECAL MAY BE USED.
2. TIME-BASED RATING (WITH BREAKER): TRANSFER SWITCH THAT PASSES THE "ANY BREAKER" TEST CAN WITHSTAND A FAULT OF A GIVEN MAGNITUDE FOR THREE CYCLES. THIS ALLOWS AN ATS TO BE USED WITH ANY UL 489 CIRCUIT BREAKER.
3. SHORT-TIME RATING: THE SHORT-TIME RATINGS REQUIRE LONGER-DURATION APPLICATION OF FAULT CURRENT AND ARE INTENDED FOR SELECTIVE COORDINATION PURPOSES, WHERE AN EXTENDED DELAY IS NEEDED TO ALLOW FOR DOWNSTREAM PROTECTIVE DEVICES TO CLEAR A FAULT CLOSER TO ITS SOURCE.
4. FUSE DISCONNECT: A DEVICE USED FOR LIMITING THE AMOUNT OF FAULT CURRENT THAT PASSES THROUGH A SYSTEM AND PROTECTS DOWNSTREAM POWER SYSTEM COMPONENTS FROM CATASTROPHIC FAILURE. WHEN FAULT CURRENT EXCEEDS THE CURRENT RATING, THE CIRCUIT IS OPENED, AND A NEW FUSE IS REQUIRED TO MAKE THE SYSTEM OPERATIONAL AGAIN. THESE DEVICES ARE TYPICALLY USED WHEN FAULT CURRENT EXCEEDS RATINGS FOR OTHER OPTIONS.

1.3 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
1. INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR TRANSFER SWITCHGEAR.
2. INCLUDE RATED CAPACITIES, OPERATING CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND ACCESSORIES.
B. SHOP DRAWINGS:
1. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS SHOWING MINIMUM CLEARANCES, CONDUCTOR ENTRY PROVISIONS, GUTTER SPACE, AND INSTALLED FEATURES AND DEVICES.
2. INCLUDE MATERIAL LISTS FOR EACH SWITCH SPECIFIED
3. SINGLE-LINE DIAGRAM: SHOW CONNECTIONS BETWEEN TRANSFER SWITCH, POWER SOURCES, AND LOAD; AND SHOW INTERLOCKING PROVISIONS FOR EACH COMBINED TRANSFER SWITCH AND/OR BYPASS/ISOLATION SWITCH.
4. RISER DIAGRAM: SHOW INTERCONNECTION WIRING BETWEEN TRANSFER SWITCHES, ANNUNCIATORS, AND CONTROL PANELS.

1.4 INFORMATIONAL SUBMITTALS
A. QUALIFICATION DATA: FOR MANUFACTURER-AUTHORIZED SERVICE REPRESENTATIVE.
B. FIELD QUALITY-CONTROL REPORTS.

1.5 CLOSEOUT SUBMITTALS
A. OPERATION AND MAINTENANCE DATA: FOR EACH TYPE OF PRODUCT TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS. FEATURES AND OPERATION SEQUENCES, BOTH AUTOMATIC AND MANUAL, AND A LIST OF ALL FACTORY SETTINGS OF RELAYS; PROVIDE RELAY SETTING AND CALIBRATION INSTRUCTIONS, INCLUDING SOFTWARE, WERE APPLICABLE.

1.6 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS:
1. ISO 9001 CERTIFIED FOR DESIGN, DEVELOPMENT, PRODUCTION, AND SERVICE OF COMPLETE PRODUCT LINE.
2. PRODUCED THIS TYPE OF EQUIPMENT FOR A PERIOD OF AT LEAST 10 YEARS.
3. ACTIVELY MAINTAINING A 24-HOUR PARTS AND SERVICE ORGANIZATION REGULARLY ENGAGED IN MAINTENANCE CONTRACT PROGRAMS TO PERFORM PREVENTIVE MAINTENANCE AND SERVICE ON EQUIPMENT LIKE THAT SPECIFIED.
4. FURNISH A SERVICE AGREEMENT THAT INCLUDES SYSTEM OPERATION UNDER SIMULATED OPERATING CONDITIONS; ADJUSTMENT TO THE GENERATOR SET, TRANSFER SWITCH, AND SWITCHGEAR CONTROLS AS REQUIRED, AND CERTIFICATION IN THE OWNER'S MAINTENANCE LOG OF REPAIRS MADE AND FUNCTIONAL TESTS PERFORMED ON ALL SYSTEMS.
5. TRANSFER SWITCH, ENGINE-DRIVEN GENERATOR ASSEMBLY, AND PARALLELING SWITCHGEAR (IF APPLICABLE) MUST BE FURNISHED BY A SINGLE MANUFACTURER, RESPONSIBLE FOR DESIGN, COORDINATION, AND TESTING OF THE COMPLETE SYSTEM.
B. TESTING AGENCY QUALIFICATIONS:
1. MEMBER COMPANY OF NETA.
a. TESTING AGENCY'S FIELD SUPERVISOR: CERTIFIED BY NETA TO SUPERVISE ON-SITE TESTING.

1.7 WARRANTY
A. MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE TRANSFER SWITCH OR TRANSFER SWITCH COMPONENTS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: <5> YEARS FROM DATE OF REGISTERED STARTUP OR COMMISSIONING.
2. TRANSFER SWITCH AND ACCESSORIES TO INCLUDE A STANDARD ONE-YEAR WARRANTY AGAINST DEFECTIVE MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED WARRANTY FROM REGISTERED STARTUP DATE.

PART 2 – PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE KOHLER POWER SYSTEMS; TRANSFER SWITCHES. CONTACT JOE MURRAY AT 585-260-3641
B. SOURCE LIMITATIONS: MANUFACTURER MUST SUPPLY GENERATORS AND TRANSFER SWITCHES FOR SINGLE-SOURCE WARRANTY, PARTS, AND SERVICE THROUGH A FACTORY AUTHORIZED REPRESENTATIVE WITH FACTORY-TRAINED TECHNICIANS.
C. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
D. COMPLY WITH NEMA ICS 1.
E. COMPLY WITH NFPA 99
F. COMPLY WITH NFPA 110.
G. COMPLY WITH UL 1008 UNLESS REQUIREMENTS OF THESE SPECIFICATIONS ARE STRICTER.
H. COMPLY WITH CSA C22.2, NO. 178.
I. COMPLY WITH INTERNATIONAL BUILDING CODE (IBC) SEISMIC CERTIFICATION.
J. COMPLY WITH DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION (HCAI), FORMERLY KNOWN AS OSHPD.
K. SWITCH CHARACTERISTICS: DESIGNED FOR CONTINUOUS-DUTY REPETITIVE TRANSFER OF FULL-RATED CURRENT BETWEEN ACTIVE POWER SOURCES.
1. SWITCH ACTION: DOUBLE THROW; MECHANICALLY HELD IN BOTH DIRECTIONS.
2. CONTACTS: SILVER COMPOSITION OR SILVER ALLOY FOR LOAD-CURRENT SWITCHING. CONTACTOR-STYLE AUTOMATIC TRANSFER-SWITCH UNITS, RATED 800 A AND HIGHER, TO HAVE SEPARATE ARCING CONTACTS.
3. INSPECTION OF ALL CONTACTS POSSIBLE FROM THE FRONT OF THE SWITCH WITHOUT DISASSEMBLY OF OPERATING LINKAGES AND WITHOUT DISCONNECTION OF POWER CONDUCTORS. SWITCHES RATED 800 A AND HIGHER MUST HAVE FRONT REMOVABLE AND REPLACEABLE CONTACTS. ALL STATIONARY AND MOVEABLE CONTACTS REPLACEABLE WITHOUT REMOVING POWER CONDUCTORS OR BUS BARS.
4. MAIN AND NEUTRAL LUGS: MECHANICAL TYPE.
5. LUG MATERIAL: TIN-PLATED ALUMINUM.
6. CONDUCTOR CONNECTORS: SUITABLE FOR USE WITH CONDUCTOR MATERIAL AND SIZES.
7. GROUND LUGS AND BUS-CONFIGURED TERMINATORS: MECHANICAL TYPE.
8. CONNECTORS TO BE MARKED FOR CONDUCTOR SIZE AND TYPE IN ACCORDANCE WITH UL 1008.
L. INDICATED CURRENT RATINGS: APPLY AS DEFINED IN UL 1008 FOR CONTINUOUS LOADING AND TOTAL SYSTEM TRANSFER, INCLUDING TUNGSTEN FILAMENT LAMP LOADS NOT EXCEEDING 30 PERCENT OF SWITCH AMPERE RATING, UNLESS OTHERWISE INDICATED.
M. TESTED FAULT-CURRENT CLOSING AND SHORT-CIRCUIT RATINGS: ADEQUATE FOR DUTY IMPOSED BY PROTECTIVE DEVICES AT INSTALLATION LOCATIONS IN PROJECT UNDER THE FAULT CONDITIONS INDICATED, BASED ON TESTING IN ACCORDANCE WITH UL 1008.
N. REPETITIVE ACCURACY OF SOLID-STATE CONTROLS: ALL SETTINGS TO BE PLUS OR MINUS 0.5 PERCENT OR BETTER OVER AN OPERATING TEMPERATURE RANGE OF MINUS 20 TO PLUS 70 DEG C.
O. RESISTANCE TO DAMAGE BY VOLTAGE TRANSIENTS: COMPONENTS MEET OR EXCEED VOLTAGE-SURGE WITHSTAND CAPABILITY REQUIREMENTS WHEN TESTED IN ACCORDANCE WITH IEEE C62.62. COMPONENTS MEET OR EXCEED VOLTAGE-IMPULSE WITHSTAND TEST OF NEMA ICS 1.
P. ELECTRICAL OPERATION: ACCOMPLISH BY A NONFUSED, MOMENTARILY ENERGIZED SOLENOID OR ELECTRIC-MOTOR-OPERATED MECHANISM. SWITCHES FOR EMERGENCY OR STANDBY PURPOSES TO BE MECHANICALLY AND ELECTRICALLY INTERLOCKED IN BOTH DIRECTIONS TO PREVENT SIMULTANEOUS CONNECTION TO BOTH POWER SOURCES UNLESS CLOSED TRANSITION OR MANUAL TRANSFER.
Q. NEUTRAL: AMPACITY AND SWITCH RATING OF NEUTRAL PATH THROUGH UNITS TO BE THE NOMINAL RATING OF CIRCUIT IN WHICH SWITCH IS INSTALLED.
R. FACTORY WIRING: TRAIN AND BUNDLE FACTORY WIRING AND LABEL, CONSISTENT WITH SHOP DRAWINGS, BY COLOR CODE OR BY NUMBERED OR LETTERED WIRE AND CABLE MARKERS AT TERMINATIONS.
1. DESIGNATED TERMINALS: PRESSURE TYPE, SUITABLE FOR TYPES AND SIZES OF FIELD WIRING INDICATED.
2. POWER-TERMINAL ARRANGEMENT AND FIELD-WIRING SPACE: SUITABLE FOR TOP, SIDE, OR BOTTOM ENTRANCE OF FEEDER CONDUCTORS AS INDICATED.
3. CONTROL WIRING: EQUIPPED WITH LUGS SUITABLE FOR CONNECTION TO TERMINAL STRIPS.

2.2 TRANSFER SWITCH CONTROLLER
A. REQUIRES AUTOMATIC TRANSFER SWITCH CONTROLLER.
B. SUPERVISED TRANSFER SWITCH: PROVIDE A DOOR-MOUNTED, THREE-POSITION, SELECTOR SWITCH WITH AUTO, MANUAL, AND TRANSFER POSITIONS.
1. WITH THE CONTROLLER SET TO AUTOMATIC MODE AND SELECTOR SWITCH IN AUTO POSITION, THE USER TRANSFER SWITCH OPERATES NORMALLY.
2. WITH THE CONTROLLER SET TO AUTOMATIC MODE AND SELECTOR SWITCH IN MANUAL POSITION, THE USER IS REQUIRED TO TOGGLE THE SELECTOR SWITCH TO INITIATE A TRANSFER FROM EMERGENCY TO NORMAL POSITION.
3. WITH THE CONTROLLER SET TO NON-AUTOMATIC MODE AND SELECTOR SWITCH IN MANUAL POSITION, THE USER IS REQUIRED TO TOGGLE THE SELECTOR SWITCH TO THE TRANSFER POSITION TO INITIATE A TRANSFER IN EITHER DIRECTION. IN THIS MODE, THE ATS MUST NOT AUTOMATICALLY TRANSFER TO AN ACCEPTABLE SOURCE IN THE CASE OF SOURCE FAILURE.
C. DISPLAY: INTEGRAL TO CONTROLLER FOR VIEWING ALL AVAILABLE DATA AND SETTING DESIRED OPERATIONAL PARAMETERS. OPERATIONAL PARAMETERS ALSO AVAILABLE FOR VIEWING AND CONTROL THROUGH COMMUNICATIONS INTERFACE PORT OR USB. THE FOLLOWING PARAMETERS ARE ONLY ADJUSTABLE VIA PASSWORD-PROTECTED PROGRAMMING ON THE CONTROLLER:
a. NOMINAL LINE VOLTAGE AND FREQUENCY.
b. SINGLE- OR THREE-PHASE SENSING.
c. OPERATING PARAMETER PROTECTION.
D. CONTROLLER CAPABLE OF SENSING PHASE ROTATION OF BOTH NORMAL AND EMERGENCY SOURCES. SOURCE IS CONSIDERED UNACCEPTABLE IF PHASE ROTATION IS NOT THE PREFERRED ROTATION SELECTED (ABC OR BAC). UNACCEPTABLE PHASE ROTATION INDICATED ON LCD, SERVICE REQUIRED LED AND ANNUNCIATION THROUGH THE COMMUNICATION PROTOCOL AND DRY CONTACTS. PHASE ROTATION SENSING CAPABLE OF BEING DISABLED, IF REQUIRED.
E. CONTROLLER CAPABLE OF DETECTING A SINGLE PHASING CONDITION OF A SOURCE, EVEN THOUGH A VOLTAGE MAY BE REGENERATED BY THE LOAD. THIS CONDITION IS A LOSS OF PHASE AND CONSIDERED A FAILED SOURCE.
F. SOURCE STATUS SCREENS PROVIDED FOR BOTH NORMAL AND EMERGENCY SOURCES TO PROVIDE DIGITAL READOUT OF VOLTAGE ON ALL THREE PHASES (PHASE TO PHASE AND PHASE TO NEUTRAL), FREQUENCY, AND PHASE ROTATION.
G. TEST SWITCH: SIMULATE NORMAL-SOURCE FAILURE.
H. SWITCH-POSITION INDICATING LIGHTS: INDICATE SOURCE TO WHICH LOAD IS CONNECTED.
I. SOURCE-AVAILABLE INDICATING LIGHTS: SUPERVISE SOURCES VIA TRANSFER-SWITCH NORMAL- AND EMERGENCY-SOURCE SENSING CIRCUITS.
1. NORMAL POWER SUPERVISION: GREEN LIGHT WITH NAMEPLATE ENGRAVED "NORMAL SOURCE AVAILABLE."
2. EMERGENCY POWER SUPERVISION: RED LIGHT WITH NAMEPLATE ENGRAVED "EMERGENCY SOURCE AVAILABLE."
J. UNASSIGNED AUXILIARY CONTACTS: TWO NORMALLY OPEN, SINGLE-POLE, DOUBLE-THROW CONTACTS FOR EACH SWITCH POSITION, RATED 2 A AT 30 V(DC)/ 250VAC.
K. TRANSFER OVERRIDE SWITCH: OVERRIDES AUTOMATIC RETRANSFER CONTROL SO THAT TRANSFER SWITCH WILL REMAIN CONNECTED TO EMERGENCY POWER SOURCE REGARDLESS OF CONDITION OF NORMAL SOURCE. PILOT LIGHT INDICATES OVERRIDE STATUS.
L. CONTROLLER OPERATES THROUGH A PERIOD OF LOSS OF CONTROL POWER.
M. UNDERVOLTAGE SENSING FOR EACH PHASE OF NORMAL AND ALTERNATE SOURCE: SENSE LOW PHASE-TO-GROUND VOLTAGE ON EACH PHASE. PICKUP VOLTAGE TO BE ADJUSTABLE FROM 85 TO 100 PERCENT OF NOMINAL, AND DROPOUT VOLTAGE TO BE ADJUSTABLE FROM 75 TO 98 PERCENT OF PICKUP VALUE. FACTORY SET FOR PICKUP AT 90 PERCENT AND DROPOUT AT 90 PERCENT.
N. OVERVOLTAGE SENSING FOR EACH PHASE OF NORMAL AND ALTERNATE SOURCE: SENSE LOW PHASE-TO-GROUND VOLTAGE ON EACH PHASE. PICKUP VOLTAGE TO BE ADJUSTABLE FROM 95 TO 100 PERCENT OF DROPOUT, AND DROPOUT VOLTAGE TO BE ADJUSTABLE FROM 106 TO 135 PERCENT OF NOMINAL VALUE. FACTORY SET FOR PICKUP AT 95 PERCENT AND DROPOUT AT 110 (600V) OR 115 PERCENT.
O. VOLTAGE UNBALANCE SENSING FOR EACH PHASE OF NORMAL AND ALTERNATE SOURCE: SENSE LOW PHASE-TO-GROUND VOLTAGE ON EACH PHASE. PICKUP VOLTAGE TO BE ADJUSTABLE FROM 3 TO 18 PERCENT OF NOMINAL, AND DROPOUT VOLTAGE TO BE ADJUSTABLE FROM 5 TO 20 PERCENT OF NOMINAL VALUE. FACTORY SET FOR PICKUP AT 10 PERCENT AND DROPOUT AT 20 PERCENT.
P. UNDER-FREQUENCY: PREVENT PREMATURE TRANSFER TO GENERATOR. PICKUP FREQUENCY TO BE ADJUSTABLE FROM 80 TO 95 PERCENT OF NOMINAL. FACTORY SET FOR PICKUP AT 90 PERCENT. DROPOUT FREQUENCY TO BE ADJUSTABLE FROM 95 TO 99 PERCENT OF NOMINAL. FACTORY SET FOR PICKUP AT 99 PERCENT OF DROPOUT.
Q. OVER-FREQUENCY: PREVENT PREMATURE TRANSFER TO GENERATOR. PICKUP FREQUENCY TO BE ADJUSTABLE FROM 105 TO 120 PERCENT OF NOMINAL. FACTORY SET FOR PICKUP AT 110 PERCENT. DROPOUT FREQUENCY TO BE ADJUSTABLE FROM 101 TO 115 PERCENT OF NOMINAL. FACTORY SET FOR DROPOUT AT 101 PERCENT.
R. TIME DELAYS:
1. MOMENTARY GENSET START DELAY: ADJUSTABLE TIME DELAY OF ZERO TO 15 SECONDS TO OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES AND DELAY ALL TRANSFER AND ENGINE STARTING SIGNALS. CAPABLE OF EXTENDED TIME DELAY UP TO 60 MINUTES BY PROVIDING AN EXTERNAL 12 OR 24 V(DC) POWER SUPPLY.
2. TRANSFER TO EMERGENCY SOURCE: ADJUSTABLE FROM ZERO TO 60 MINUTES PROVIDED ON TRANSFER TO THE EMERGENCY SOURCE FOR CONTROLLED TIMING OF TRANSFER OF LOADS TO EMERGENCY. FACTORY SETTING IS THREE SECONDS.
3. RETRANSFER TO NORMAL SOURCE: ADJUSTABLE FROM ZERO TO 60 MINUTES TIME DELAY FOR RE-TRANSFER TO NORMAL. TIME DELAY AUTOMATICALLY BYPASSED IF THE EMERGENCY SOURCE FAILS AND THE NORMAL SOURCE IS ACCEPTABLE. FACTORY SETTING IS 15 MINUTES.
4. ENGINE COOL DOWN: ADJUSTABLE FROM ZERO TO 60 MINUTES PROVIDED ON SHUTDOWN OF ENGINE GENERATOR FOR COOL DOWN. FACTORY SETTING IS FIVE SECONDS.
S. TIME DELAY OUTPUTS: TIME DELAY ACTIVATED OUTPUT SIGNALS TO DRIVE EXTERNAL RELAY(S) FOR SELECTIVE LOAD DISCONNECT AND RECONNECT CONTROL. CAPABLE OF CONTROLLING NINE INDIVIDUAL OUTPUT TIME DELAYS TO STEP LOADS ON AFTER A TRANSFER OCCURS. EACH OUTPUT INDIVIDUALLY PROGRAMMED FOR INDEPENDENT TIME DELAY FROM ZERO TO 60 MINUTES. EACH SEQUENCE INDEPENDENTLY PROGRAMMED FOR TRANSFERRING FROM NORMAL TO EMERGENCY AND TRANSFERRING FROM EMERGENCY TO NORMAL.
T. ENGINE STARTING CONTACTS: ONE ISOLATED AND NORMALLY CLOSED, AND ONE ISOLATED AND NORMALLY OPEN; RATED 10 A AT 32 V(DC) MINIMUM.
U. ENGINE SHUTDOWN CONTACTS:
1. INSTANTANEOUS: CONTACT INITIATES SHUTDOWN SEQUENCE AT REMOTE ENGINE-GENERATOR CONTROLS AFTER RETRANSFER OF LOAD TO NORMAL SOURCE WITH NO INTENTIONAL TIME DELAY.
2. TIME DELAY: ADJUSTABLE FROM ZERO TO FIVE MINUTES, AND FACTORY SET FOR FIVE MINUTES. CONTACT INITIATE SHUTDOWN AT REMOTE ENGINE-GENERATOR CONTROLS AFTER RETRANSFER OF LOAD TO NORMAL SOURCE.
V. SIGNAL-BEFORE-TRANSFER CONTACTS: ONE SET OF NORMALLY OPEN/NORMALLY CLOSED DRY CONTACTS THAT OPERATE IN ADVANCE OF RETRANSFER TO NORMAL SOURCE. INTERVAL ADJUSTABLE FROM ONE TO 30 SECONDS.
W. ENGINE-GENERATOR EXERCISER: SOLID-STATE, PROGRAMMABLE-TIME SWITCH STARTS ENGINE GENERATOR AND TRANSFERS LOAD TO IT FROM NORMAL SOURCE FOR A PRESET TIME, THEN RETRANSFERS AND SHUTS DOWN ENGINE AFTER A PRESET COOL-DOWN PERIOD. UP TO 21 DIFFERENT EXERCISE EVENTS CAN BE SET WITH DIFFERENT SETTINGS OF VARIOUS PARAMETERS. MAXIMUM EXERCISE RUN TIME IS 24 HOURS. EXERCISER FEATURES INCLUDE THE FOLLOWING:
1. PUSH-BUTTON PROGRAMMING CONTROL WITH DIGITAL DISPLAY OF SETTINGS.
X. INTEGRAL BATTERY OPERATION OF TIME SWITCH WHEN NORMAL CONTROL POWER IS UNAVAILABLE.
Y. DIGITAL COMMUNICATION INTERFACE: MATCHED TO CAPABILITY OF REMOTE ANNUNCIATOR OR ANNUNCIATOR AND CONTROL PANEL TCP/IP.
Z. ETHERNET BOARD: RJ-45 CONNECTION FOR COMMUNICATION CAPABILITY WITH MODBUS TCP/IP PROTOCOL.
AA. CONTROLLER LOGIC DISCONNECT SWITCH: TWO-POSITION SWITCH, MOUNTED INSIDE THE ENCLOSURE TO DISCONNECT THREE-PHASE VOLTAGE SENSING AND POWER TO CONTROLLER WITHOUT DISCONNECTING THE LOAD FOR USE DURING MAINTENANCE AND SERVICE. THE SWITCH HAS TWO POSITIONS, AUTO AND DISCONNECT. USER MUST MANUALLY DISABLE GENERATOR PRIOR TO PLACING THE CONTROLLER LOGIC DISCONNECT IN OFF POSITION.

2.3 STANDARD (OPEN) TRANSITION, CONTACTOR-TYPE TRANSFER SWITCH
A. STANDARD (OPEN) TRANSITION TRANSFER SWITCHES: A BREAK-BEFORE-MAKE TRANSFER. THE LOAD IS DISCONNECTED FROM ONE NORMAL SOURCE BEFORE BEING CONNECTED TO THE ALTERNATE EMERGENCY SOURCE.
B. TRANSFER CONTROLLED BY IN-PHASE MONITOR AND SENSORS ACTIVELY MONITORING AND CONFIRMING THAT BOTH NORMAL AND EMERGENCY SOURCES ARE PRESENT AND ACCEPTABLE.
C. WITHSTAND RATING TYPE: SHORT-TIME
1. SHORT-TIME WITHSTAND CAPABILITY FOR 8 CYCLES.
D. VOLTAGE AND FREQUENCY RATING: 208 V(AC), 60 HZ.
E. CONFIGURATION TYPE: 3-POLE, 4-WIRE, SOLID NEUTRAL
F. ENCLOSURE TYPE: GENERAL-PURPOSE NEMA 250, TYPE 1 COMPLYING WITH NEMA ICS 6 AND UL 508, UNLESS OTHERWISE INDICATED.
G. AMPERE RATING: 100 A.
H. CABLE CONNECTIONS ACCESSIBLE VIA FRONT ACCESS.
I. LARGE-MOTOR-LOAD POWER TRANSFER:
1. MOTOR DISCONNECT AND TIMING RELAY CONTROLS: DESIGNATED STARTERS IN LOSS OF POWER SCENARIO TO DISCONNECT MOTORS BEFORE TRANSFER AND RECONNECT THEM SELECTIVELY AT AN ADJUSTABLE TIME INTERVAL AFTER TRANSFER. CONTROL CONNECTION TO MOTOR STARTERS TO BE THROUGH WIRING EXTERNAL TO ATS.
2. IN-PHASE MONITOR: FACTORY-WIRED, INTERNAL RELAY CONTROLS TRANSFER SO CONTACTS CLOSE ONLY WHEN THE TWO SOURCES ARE SYNCHRONIZED IN PHASE AND FREQUENCY. RELAY COMPARES PHASE RELATIONSHIP AND FREQUENCY DIFFERENCE BETWEEN NORMAL AND EMERGENCY SOURCES AND INITIATE TRANSFER.

2.4 SOURCE QUALITY CONTROL
A. FOR EACH TEST REQUIRED BY UL 1008, PROVIDE TEST CONFIRMATION FROM MANUFACTURER FOR THE FOLLOWING CONDITIONS:
A. GENERAL – NORMAL OPERATION.
B. OVERVOLTAGE.
C. UNDERVOLTAGE.
D. LOSS OF SUPPLY VOLTAGE.
E. REDUCTION OF SUPPLY VOLTAGE.
F. ALTERNATIVE SUPPLY VOLTAGE OR FREQUENCY

GAS ENGINE DRIVEN GENERATOR SET

PART 1 – GENERAL

1.1 SUMMARY
A. SECTION INCLUDES:
1. GAS–ENGINE GENERATOR ASSEMBLY.
2. GAS ENGINE.
3. GAS FUEL SYSTEM.
4. CONTROL AND MONITORING.
5. GENERATOR OVERCURRENT AND FAULT PROTECTION.
6. ALTERNATOR, EXCITER, AND VOLTAGE REGULATOR.
7. LOAD BANK.
8. OUTDOOR GENERATOR–SET ENCLOSURE.
9. VIBRATION ISOLATION DEVICES.
10. FINISHES.
B. RELATED REQUIREMENTS:
1. SECTION "AUTOMATIC TRANSFER SWITCH" FOR TRANSFER SWITCHES INCLUDING SENSORS AND RELAYS TO INITIATE AUTOMATIC–STARTING AND –STOPPING SIGNALS FOR ENGINE GENERATORS.

1.2 DEFINITIONS
A. ECM: ENGINE CONTROL MODULE.
B. EPS: EMERGENCY POWER SUPPLY.
C. EPSS: EMERGENCY POWER SUPPLY SYSTEM.
D. OPERATIONAL BANDWIDTH: THE TOTAL VARIATION FROM THE LOWEST TO HIGHEST VALUE OF A PARAMETER OVER THE RANGE OF CONDITIONS INDICATED, EXPRESSED AS A PERCENTAGE OF THE NOMINAL VALUE OF THE PARAMETER.

1.3 ACTION SUBMITTALS
A. PRODUCT DATA:
1. INCLUDE RATED CAPACITIES, OPERATING CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND FURNISHED SPECIALTIES AND ACCESSORIES.
2. INCLUDE THERMAL DAMAGE CURVE FOR GENERATOR.
3. INCLUDE TIME–CURRENT CHARACTERISTIC CURVES FOR GENERATOR PROTECTIVE DEVICE.
4. INCLUDE FUEL CONSUMPTION IN CUBIC FEET PER HOUR (CUBIC METERS PER HOUR) AT 0.8 POWER FACTOR AT 0.5, 0.75 AND 1.0 TIMES GENERATOR CAPACITY.
5. INCLUDE GENERATOR EFFICIENCY AT 0.8 POWER FACTOR AT 0.5, 0.75, AND 1.0 TIMES GENERATOR CAPACITY.
6. INCLUDE AIR FLOW REQUIREMENTS FOR COOLING AND COMBUSTION AIR IN CUBIC FEET PER MINUTE AT 0.8 POWER FACTOR, AT 104 DEG F COOLING SYSTEM RATING. PROVIDE RADIATOR AIR FLOW RESTRICTION DATA FOR AMBIENT RATING.
7. INCLUDE GENERATOR CHARACTERISTICS, INCLUDING, BUT NOT LIMITED TO, KILOWATT RATING, EFFICIENCY, REACTANCES, AND SHORT–CIRCUIT CURRENT CAPABILITY.
B. SHOP DRAWINGS:
1. INCLUDE PLANS AND ELEVATIONS FOR ENGINE GENERATOR AND OTHER COMPONENTS SPECIFIED.
2. INCLUDE DETAILS OF EQUIPMENT ASSEMBLIES. INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH FIELD CONNECTION.
3. IDENTIFY FLUID DRAIN PORTS.
4. VIBRATION ISOLATION BASE DETAILS: DETAIL INCLUDING ANCHORAGES AND ATTACHMENTS TO STRUCTURE AND TO SUPPORTED EQUIPMENT. INCLUDE BASE WEIGHTS.
5. INCLUDE DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING. COMPLETE SCHEMATIC, WIRING, AND INTERCONNECTION DIAGRAMS INDICATING TERMINAL MARKINGS FOR EPS EQUIPMENT AND FUNCTIONAL RELATIONSHIP BETWEEN ALL ELECTRICAL COMPONENTS.

1.4 INFORMATIONAL SUBMITTALS
A. QUALIFICATION DATA: FOR MANUFACTURER AND TESTING AGENCY.
B. SOURCE QUALITY–CONTROL REPORTS: INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:
1. CERTIFIED SUMMARY OF PROTOTYPE–UNIT TEST REPORT.
2. CERTIFIED TEST REPORTS: FOR COMPONENTS AND ACCESSORIES THAT ARE EQUIVALENT, BUT NOT IDENTICAL, TO THOSE TESTED ON PROTOTYPE UNIT.
3. REPORT OF FACTORY TEST ON UNITS TO BE SHIPPED FOR THIS PROJECT, DOCUMENTING EVIDENCE OF COMPLIANCE WITH SPECIFIED REQUIREMENTS.
4. REPORT OF SOUND GENERATION.
5. REPORT OF EXHAUST EMISSIONS DOCUMENTING COMPLIANCE WITH APPLICABLE REGULATIONS.
6. CERTIFIED TORSIONAL VIBRATION COMPATIBILITY: COMPLY WITH NFPA 110.

1.5 CLOSEOUT SUBMITTALS
A. OPERATION AND MAINTENANCE DATA: FOR ENGINE GENERATORS TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.
1. INCLUDE LIST OF TOOLS AND REPLACEMENT ITEMS RECOMMENDED TO BE STORED AT PROJECT FOR READY ACCESS. INCLUDE PART AND DRAWING NUMBERS, CURRENT UNIT PRICES, AND SOURCE OF SUPPLY.
B. TRAINING PLAN.

1.6 MAINTENANCE MATERIAL SUBMITTALS
A. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
1. FUSES: ONE FOR EVERY 10 OF EACH TYPE AND RATING, BUT NO FEWER THAN ONE OF EACH.
2. REPLACEABLE INDICATOR LAMPS: TWO FOR EVERY SIX OF EACH TYPE USED, BUT NO FEWER THAN TWO OF EACH.
3. FILTERS: ONE SET EACH OF LUBRICATING OIL, FUEL, AND COMBUSTION–AIR FILTERS.
4. TOOLS: EACH TOOL LISTED BY PART NUMBER IN OPERATIONS AND MAINTENANCE MANUAL.

1.7 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS:
1. ISO 9001 CERTIFIED FOR DESIGN, DEVELOPMENT, PRODUCTION, AND SERVICE COMPLETE PRODUCT LINE.
2. PRODUCED THIS TYPE OF EQUIPMENT FOR A PERIOD OF AT LEAST 10 YEARS.
3. ACTIVELY MAINTAINING A 24–HOUR PARTS AND SERVICE ORGANIZATION REGULARLY ENGAGED IN MAINTENANCE CONTRACT PROGRAMS TO PERFORM PREVENTIVE MAINTENANCE AND SERVICE ON EQUIPMENT SIMILAR TO THAT SPECIFIED.
4. FURNISH A SERVICE AGREEMENT THAT INCLUDES SYSTEM OPERATION UNDER SIMULATED OPERATING CONDITIONS; ADJUSTMENT TO THE GENERATOR SET, TRANSFER SWITCH, AND SWITCHGEAR CONTROLS AS REQUIRED, AND CERTIFICATION IN THE OWNER'S MAINTENANCE LOG OF REPAIRS MADE AND FUNCTIONAL TESTS PERFORMED ON ALL SYSTEMS.
5. ENGINE–DRIVEN GENERATOR ASSEMBLY FURNISHED BY A SINGLE MANUFACTURER, RESPONSIBLE FOR DESIGN, COORDINATION, AND TESTING OF THE COMPLETE SYSTEM.
B. TESTING AGENCY QUALIFICATIONS: ACCREDITED BY NETA.
1. TESTING AGENCY'S FIELD SUPERVISOR: CERTIFIED BY NETA TO SUPERVISE ON–SITE TESTING.

1.8 WARRANTY
A. MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF PACKAGED ENGINE GENERATORS AND ASSOCIATED AUXILIARY COMPONENTS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: 5 YEARS FROM DATE OF REGISTERED STARTUP OR COMMISSIONING.
2. GENERATOR SET TO INCLUDE A STANDARD WARRANTY COVERING FIVE YEARS OR 3000 HOURS STANDBY (UNITED STATES ONLY), OR TWO YEARS OR 87000 HOURS–PRIME' WHICHEVER OCCURS FIRST (HOURS OR YEARS), TO WARRANT AGAINST DEFECTIVE MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED WARRANTY FROM THE DATE OF INITIAL STARTUP.

PART 2 – PRODUCTS

2.1 MANUFACTURERS
A. BASIS–OF–DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE KOHLER POWER SYSTEMS; KG SERIES AS PROVIDED BY KINSLEY POWER SYSTEMS. CONTACT JOE MURRAY AT 585–260–3641
B. SOURCE LIMITATIONS: OBTAIN PACKAGED ENGINE GENERATORS AND AUXILIARY COMPONENTS THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.

2.2 PERFORMANCE REQUIREMENTS
A. B11 COMPLIANCE: COMPLY WITH B11.19.
B. NFPA COMPLIANCE:
1. COMPLY WITH NFPA 37.
2. COMPLY WITH NFPA 70.
3. COMPLY WITH NFPA 99.
4. COMPLY WITH NFPA 110.
C. UL COMPLIANCE: COMPLY WITH UL 2200
D. CSA COMPLIANCE: COMPLY WITH CSA
E. ENGINE EXHAUST EMISSIONS: COMPLY WITH EPA REQUIREMENTS AND APPLICABLE STATE AND LOCAL GOVERNMENT REQUIREMENTS.
F. NOISE EMISSION: COMPLY WITH ACCEPTABLE NOISE LEVEL AT ADJACENT PROPERTY BOUNDARIES.
1. MAXIMUM SOUND PRESSURE EMITTED BY ENGINE GENERATOR WITHIN SOUND ATTENUATING ENCLOSURE OF 68 dB AT A DISTANCE OF 23 FEET WHILE OPERATING AT 100 PERCENT LOAD AND INCLUDING ENGINE, ENGINE EXHAUST, ENGINE COOLING AIR–INTAKE AND DISCHARGE; AND OTHER COMPONENTS OF INSTALLATION.
G. ENVIRONMENTAL CONDITIONS: ENGINE GENERATOR SYSTEM WITHSTANDS THE FOLLOWING ENVIRONMENTAL CONDITIONS WITHOUT MECHANICAL OR ELECTRICAL DAMAGE OR DEGRADATION OF PERFORMANCE CAPABILITY:
1. AMBIENT TEMPERATURE: 5 DEG F TO 77 DEG F.
2. ALTITUDE: SEA LEVEL TO 1000 FT.
H. UNUSUAL SERVICE CONDITION: ENGINE GENERATOR EQUIPMENT AND INSTALLATION ARE REQUIRE TO OPERATE UNDER THE FOLLOWING CONDITIONS.
1. EXTREME SNOW EVENTS WITH HIGH LEVELS OF SNOW ACCUMULATION.

2.3 ENGINE GENERATOR ASSEMBLY DESCRIPTION
A. FACTORY–ASSEMBLED AND TESTED, WATER–COOLED ENGINE, WITH BRUSHLESS GENERATOR AND ACCESSORIES.
B. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND USE.
C. POWER RATING: STANDBY
D. EPSS CLASS: ENGINE GENERATOR SHALL BE CLASSIFIED AS CLASS 48 ACCORDING TO NFPA 110.
E. NAMEPLATE RATING/ FUEL TYPE: 25 KW NG
F. POWER FACTOR: 0.8, LAGGING.
G. FREQUENCY: 60 HZ.
H. VOLTAGE: 208V AC.
I. PHASE: THREE–PHASE, FOUR WIRE, WYE.
J. GOVERNOR: ADJUSTABLE ISOCHRONOUS, WITH SPEED SENSING.
K. MOUNTING FRAME: STRUCTURAL STEEL FRAMEWORK TO MAINTAIN ALIGNMENT OF MOUNTED COMPONENTS WITHOUT DEPENDING ON CONCRETE FOUNDATION. PROVIDE LIFTING ATTACHMENTS SIZED AND SPACED TO PREVENT DEFLECTION OF BASE DURING LIFTING AND MOVING.
L. CAPACITIES AND CHARACTERISTICS:
1. POWER OUTPUT RATINGS: NOMINAL RATINGS AS INDICATED AT 0.8 POWER FACTOR EXCLUDING POWER REQUIRED FOR THE CONTINUED AND REPEATED OPERATION OF THE UNIT AND AUXILIARIES WITH CAPACITY AS REQUIRED TO OPERATE AS A UNIT AS EVIDENCED BY RECORDS OF PROTOTYPE TESTING.
2. NAMEPLATES: FOR EACH MAJOR SYSTEM COMPONENT TO IDENTIFY MANUFACTURER'S NAME AND ADDRESS, AND MODEL AND SERIAL NUMBER OF COMPONENT.
M. ENGINE GENERATOR PERFORMANCE:
1. STEADY–STATE VOLTAGE OPERATIONAL BANDWIDTH: 0.5 PERCENT OF RATED OUTPUT VOLTAGE FROM NO LOAD TO FULL LOAD.
2. TRANSIENT VOLTAGE PERFORMANCE: NOT MORE THAN 20 PERCENT VARIATION FOR 50 PERCENT STEP–LOAD INCREASE OR DECREASE AND MEETS ISO 8528–5, CLASS G2 FOR STANDARD LOADS. VOLTAGE RECOVERS AND REMAINS WITHIN THE STEADY–STATE OPERATING BAND WITHIN SIX SECONDS.
3. STEADY–STATE FREQUENCY OPERATIONAL BANDWIDTH: 0.25 PERCENT OF RATED FREQUENCY FROM NO LOAD TO FULL LOAD.
4. TRANSIENT FREQUENCY PERFORMANCE: LESS THAN 20 PERCENT VARIATION FOR 50 PERCENT STEP–LOAD INCREASE OR DECREASE AND MEETS ISO 8528–5, CLASS G2 FOR STANDARD LOADS. FREQUENCY RECOVERS AND REMAINS WITHIN THE STEADY–STATE OPERATING BAND WITHIN FIVE SECONDS.
5. OUTPUT WAVEFORM: AT NO LOAD, HARMONIC CONTENT MEASURED LINE TO LINE OR LINE TO NEUTRAL WILL NOT EXCEED 5 PERCENT TOTAL AND 3 PERCENT FOR SINGLE HARMONICS. TELEPHONE INFLUENCE FACTOR, DETERMINED IN ACCORDANCE WITH NEMA MG 1, TO NOT EXCEED 50.
6. SUSTAINED SHORT–CIRCUIT CURRENT: FOR A THREE–PHASE, BOLTED SHORT CIRCUIT AT SYSTEM OUTPUT TERMINALS, SYSTEM WILL SUPPLY A MINIMUM OF 250 PERCENT OF RATED FULL–LOAD CURRENT FOR NOT LESS THAN 10 SECONDS AND THEN CLEAR THE FAULT AUTOMATICALLY, WITHOUT DAMAGE TO GENERATOR SYSTEM COMPONENTS.
7. START TIME:
a. COMPLY WITH NFPA 110, TYPE 10 SYSTEM REQUIREMENTS.
N. ENGINE GENERATOR PERFORMANCE FOR SENSITIVE LOADS:
1. OVERSIZING GENERATOR COMPARED WITH THE RATED POWER OUTPUT OF THE ENGINE IS PERMISSIBLE TO MEET SPECIFIED PERFORMANCE.
a. NAMEPLATE DATA FOR OVERSIZED GENERATOR: INCLUDE RATINGS REQUIRED BY THE CONTRACT DOCUMENTS RATHER THAN RATINGS THAT WOULD NORMALLY BE APPLIED TO GENERATOR SIZE INSTALLED.
2. STEADY–STATE VOLTAGE OPERATIONAL BANDWIDTH: 0.5 PERCENT OF RATED OUTPUT VOLTAGE FROM NO LOAD TO FULL LOAD.
3. TRANSIENT VOLTAGE PERFORMANCE: NOT MORE THAN 15 PERCENT VARIATION FOR 50 PERCENT STEP–LOAD INCREASE OR DECREASE AND MEETS ISO 8528–5, CLASS G3 FOR SENSITIVE LOADS. VOLTAGE RECOVERS AND REMAINS WITHIN THE STEADY–STATE OPERATING BAND WITHIN FOUR SECONDS.
4. STEADY–STATE FREQUENCY OPERATIONAL BANDWIDTH: PLUS OR MINUS 0.25 PERCENT OF RATED FREQUENCY FROM NO LOAD TO FULL LOAD.
5. TRANSIENT FREQUENCY PERFORMANCE: LESS THAN 15 PERCENT VARIATION FOR 50 PERCENT STEP–LOAD INCREASE OR DECREASE AND MEETS ISO 8528–5, CLASS G3 FOR SENSITIVE LOADS. FREQUENCY RECOVERS AND REMAINS WITHIN THE STEADY–STATE OPERATING BAND WITHIN THREE SECONDS.
6. OUTPUT WAVEFORM: AT NO LOAD, HARMONIC CONTENT MEASURED LINE TO LINE AND LINE TO NEUTRAL WILL NOT EXCEED 5 PERCENT TOTAL OR 3 PERCENT FOR A SINGLE HARMONIC. TELEPHONE INFLUENCE FACTOR, DETERMINED IN ACCORDANCE WITH NEMA MG 1, TO NOT EXCEED 50.
7. SUSTAINED SHORT–CIRCUIT CURRENT: FOR A THREE–PHASE, BOLTED SHORT CIRCUIT AT SYSTEM OUTPUT TERMINALS, SYSTEM SUPPLIES A MINIMUM OF 300 PERCENT OF RATED FULL–LOAD CURRENT FOR NOT LESS THAN 10 SECONDS AND THEN CLEAR THE FAULT AUTOMATICALLY, WITHOUT DAMAGE TO WINDING INSULATION OR OTHER GENERATOR SYSTEM COMPONENTS.
8. EXCITATION SYSTEM: PERFORMANCE WILL BE UNAFFECTED BY VOLTAGE DISTORTION CAUSED BY NONLINEAR LOAD.
9. START TIME:
a. COMPLY WITH NFPA 110, TYPE 10 SYSTEM REQUIREMENTS.

2.4 GAS ENGINE
A. FUEL: NATURAL GAS VAPOR WITHDRAWAL SYSTEM.
B. RATED ENGINE SPEED: 1800 RPM.
C. MINIMUM STANDBY LOAD FACTOR RATING: 82 PERCENT.
D. LUBRICATION SYSTEM: ENGINE OR SKID–MOUNTED.
1. FILTER AND STRAINER: RATED TO REMOVE 90 PERCENT OF PARTICLES 5 MICROMETERS AND SMALLER WHILE PASSING FULL FLOW.
2. THERMOSTATIC CONTROL VALVE: CONTROL FLOW IN SYSTEM TO MAINTAIN OPTIMUM OIL TEMPERATURE. UNIT WILL BE CAPABLE OF FULL FLOW AND IS DESIGNED TO BE FAIL–SAFE.
3. CLOSED CRANKCASE VENTILATION SYSTEM: PREVENTS CRANKCASE OIL VAPOR FROM DRAINING OR ESCAPING THE ENGINE.
4. CRANKCASE DRAIN: ARRANGED FOR COMPLETE GRAVITY DRAINAGE TO AN EASILY REMOVABLE CONTAINER WITH NO DISASSEMBLY AND WITHOUT USE OF PUMPS, SIPHONS, SPECIAL TOOLS, OR APPLIANCES.
E. JACKET COOLANT HEATER: ELECTRIC–TANK TYPE, FACTORY INSTALLED IN COOLANT JACKET SYSTEM. COMPLY WITH UL 499 AND WITH NFPA 110 REQUIREMENTS FOR LEVEL 1 EQUIPMENT FOR HEATER CAPACITY.
F. INTEGRAL COOLING SYSTEM: CLOSED LOOP, LIQUID COOLED, CHARGE AIR COOLER, WITH RADIATOR FACTORY MOUNTED ON ENGINE GENERATOR MOUNTING FRAME AND INTEGRAL ENGINE–DRIVEN COOLANT PUMP.
1. COOLANT: SOLUTION OF 50 PERCENT ETHYLENE–GLYCOL–BASED ANTIFREEZE AND 50 PERCENT WATER, WITH ANTICORROSION ADDITIVES AS RECOMMENDED BY ENGINE MANUFACTURER.
2. SIZE OF RADIATOR: ADEQUATE TO CONTAIN EXPANSION OF TOTAL SYSTEM COOLANT TO 110 PERCENT OF CAPACITY.
3. EXPANSION TANK: CONSTRUCTED OF WELDED STEEL PLATE AND RATED TO WITHSTAND MAXIMUM CLOSED–LOOP COOLANT SYSTEM PRESSURE FOR ENGINE USED. EQUIP WITH GAUGE GLASS AND PETCOCK.
4. TEMPERATURE CONTROL: SELF–CONTAINED, THERMOSTATIC–CONTROL VALVE MODULATES COOLANT FLOW AUTOMATICALLY TO MAINTAIN OPTIMUM CONSTANT COOLANT TEMPERATURE AS RECOMMENDED BY ENGINE MANUFACTURER.
5. COOLANT HOSE: FLEXIBLE ASSEMBLY WITH INSIDE SURFACE OF NONPOROUS RUBBER AND OUTER COVERING OF AGING–, ULTRAVIOLET–, AND ABRASION–RESISTANT MATERIAL.
a. RATING: 50–PSIG MAXIMUM WORKING PRESSURE WITH COOLANT AT 215 DEG F, AND NONCOLLAPSIBLE UNDER VACUUM.
G. MUFFLER / SILENCER EXHAUST AFTERTREATMENT:
1. CRITICAL TYPE, SIZED AS RECOMMENDED BY ENGINE MANUFACTURER AND SELECTED WITH EXHAUST PIPING SYSTEM TO NOT EXCEED ENGINE MANUFACTURER'S ENGINE BACKPRESSURE REQUIREMENTS.
a. MINIMUM SOUND ATTENUATION OF 25 dB AT 500 HZ.
2. HOSPITAL TYPE, SIZED AS RECOMMENDED BY ENGINE MANUFACTURE AND SELECTED WITH EXHAUST PIPING SYSTEM TO NOT EXCEED ENGINE MANUFACTURE'S ENGINE BACKPRESSURE REQUIREMENTS.
a. MINIMUM SOUND ATTENUATION OF 35 dB AT 500 HZ.
3. EXHAUST AFTERTREATMENT: SELECTIVE CATALYTIC REDUCTION (SCR) TECHNOLOGY.
H. AIR–INTAKE FILTER: STANDARD–DUTY, ENGINE–MOUNTED AIR CLEANER WITH REPLACEABLE DRY–FILTER ELEMENT AND "BLOCKED FILTER" INDICATOR.
I. STARTING SYSTEM: 12V ELECTRIC, WITH NEGATIVE GROUND.
1. COMPONENTS: SIZED SO THEY ARE NOT DAMAGED DURING A FULL ENGINE CRANKING CYCLE, WITH AMBIENT TEMERATURE AT A MZXIUM SPECIFIED IN "PERFORMANCE REQUIREMENTS" ARTICLE.
2. CRANKING CYCLE: AS REQUIRED BY NFPA 110 FOR SYSTEM LEVEL SPECIFIED.
3. BATTERY: LEAD ACID, WITH CAPACITY WITHIN AMBIENT TEMPERATURE RANGE SPECIFIED IN "PERFORMANCE REQUIREMENTS" ARTICLE TO PROVIDE SPECIFIED CRANKING CYCLE AT LEAST TWICE WITHOUT RECHARGING.
2. BATTERY CABLE: SIZE AS RECOMMENDED BY ENGINE MANUFACTURER FOR CABLE LENGTH INDICATED. INCLUDE REQUIRED INTERCONNECTING CONDUCTORS AND CONNECTION ACCESSORIES.
3. BATTERY HEATER: THERMOSTATICALLY CONTROLLED HEATER WILL BE ARRANGED TO MAINTAIN BATTERY ABOVE 50 DEG F REGARDLESS OF EXTERNAL AMBIENT TEMPERATURE WITHIN RANGE SPECIFIED IN "PERFORMANCE REQUIREMENTS" ARTICLE. INCLUDE ACCESSORIES REQUIRED TO SUPPORT AND FASTEN BATTERIES IN PLACE. PROVIDE VENTILATION TO EXHAUST BATTERY GASES.
4. BATTERY STAND: UNIT MOUNTED WITH ACID–RESISTANT FINISH DESIGNED TO HOLD THE QUANTITY OF BATTERY CELLS REQUIRED AND TO MAINTAIN THE ARRANGEMENT OT MINIMIZE LENGTHS OF BATTERY INTERCONNECTIONS.
5. BATTERY–CHARGING ALTERNATOR: FACTORY MOUNTED ON ENGINE WITH SOLID–STATE VOLTAGE REGULATION AND CONTINUOUS RATING PER MANUFACTURER'S STANDARD.
J. BATTERY CHARGER:
1. SOURCE LIMITATIONS: OBTAIN BATTERY CHARGER FROM ENGINE–DRIVEN GENERATOR MANUFACTURER.
2. UL COMPLIANCE: COMPLY WITH UL 1236 FOR CATEGORY BBHH.
3. CE CERTIFIED.
4. NFPA COMPLIANCE: COMPLY WITH NFPA 110.
5. ENVIRONMENTAL CONDITIONS: BATTERY CHARGER TO WITHSTAND THE FOLLOWING ENVIRONMENTAL CONDITIONS WITHOUT MECHANICAL OR ELECTRICAL DAMAGE OR DEGRADATION OF PERFORMANCE CAPABILITY:
a. AMBIENT TEMPERATURE: MINUS 40 TO PLUS 185 DEG F WITH FULL CHARGER OUTPUT AVAILABLE UP TO 122 DEG F.
b. RELATIVE HUMIDITY: 0 TO 95 PERCENT.
c. ALTITUDE: MEETS FULL PERFORMANCE REQUIREMENTS FROM SEA LEVEL TO 5000 FT. CHARGERS INSTALLED AT HIGHER ALTITUDES MAY AUTOMATICALLY DERATE OUTPUT POWER TO PREVENT OVERHEATING OF INTERNAL COMPONENTS BUT REMAIN OPERABLE.
6. CHARGER OPERATION: CURRENT–LIMITED, CONSTANT–VOLTAGE, AUTOMATIC–BOOST–TYPE CHARGER DESIGNED FOR LEAD–ACID BATTERIES, WITH THE FOLLOWING FEATURES:
a. AUTOMATIC THREE–STAGE CHARGE CYCLE FOR UP TO THREE INDEPENDENT BATTERIES SIMULTANEOUSLY PER CHARGER.
b. OUTPUT VOLTAGE REGULATION: CHARGER REGULATES OUTPUT TO WITHIN PLUS OR MINUS 0.5 PERCENT OF MANUFACTURER–PROVIDED VOLTAGE SETTINGS DESPITE VARIATIONS OF INPUT VOLTAGE, INPUT FREQUENCY, AND OUTPUT CURRENT.
c. BATTERY THERMAL COMPENSATION: BATTERY TEMPERATURE COMPENSATION WITH ADJUSTABLE SLOPE, FACTORY SET AT MINUS 0.18 PERCENT PER DEGREE C, AND EQUIPPED FOR SENSING BATTERY TEMPERATURE. INCLUDE BATTERY TEMPERATURE SENSOR MOUNTED ON BATTERY NEGATIVE TERMINAL.
d. AC INPUT: CHARGER OPERATES FROM ANY 45 TO 65 HZ AC SOURCE WITH VOLTAGE RANGING FROM 105 TO 264 V RMS.
7. LCD DIGITAL DISPLAY: AC INPUT VOLTMETER, DC OUTPUT VOLTMETER, AND AMMETER 1 PERCENT ACCURACY.
8. LED LAMP INDICATORS: CURRENT LIMIT, AC ON, AND CHARGER FAIL.
9. CHARGER FAIL ALARM CONTACT: VOLTAGE–FREE (DRY TYPE) FORM "C" OUTPUT.
10. FILTERED OUTPUT FOR TYPE VRLA AGM BATTERIES.
11. CHARGER ENCLOSURE: NEMA 250, TYPE 1 (IP20), WALL MOUNTED AND RATED FOR GENERATOR DUTY WITH CHARGER ENCLOSURE VIBRATION RESISTANCE.

2.5 GAS FUEL SYSTEM
A. NATURAL GAS PIPING: COMPLY WITH REQUIREMENTS IN IDENTIFIED IN PLUMBING DRAWINGS AND SPECIFICATIONS.
B. GAS TRAIN: COMPLY WITH NFPA 37.
C. ENGINE FUEL SYSTEM:
1. CARBURETOR.
2. SECONDARY GAS REGULATORS: ONE FOR EACH FUEL TYPE, WITH ATMOSPHERIC VENTS PIPED TO THE BUILDING EXTERIOR.
3. FUEL–SHUTOFF SOLENOID VALVES: UL–LISTED, NORMALLY CLOSED, SAFETY SHUTOFF VALVES; ONE FOR EACH FUEL SOURCE.
4. FUEL FILTERS: ONE FOR EACH FUEL TYPE.
5. MANUAL FUEL SHUTOFF VALVES: ONE FOR EACH FUEL TYPE.
6. FLEXIBLE FUEL CONNECTORS: MINIMUM ONE FOR EACH FUEL CONNECTION.
7. THE FUEL INLET SHOULD BE INTEGRATED INTO THE SIDE OF THE GENERATOR SKID FROM THE FACTORY FOR EASE OF INSTALLATION.

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Firm Certificate Number: 0019677
5-23-25

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DRAWING #: E-23

2.6 CONTROL AND MONITORING

A. AUTOMATIC STARTING SYSTEM SEQUENCE OF OPERATION: WHEN MODE–SELECTOR SWITCH ON THE CONTROL AND MONITORING PANEL IS IN THE AUTOMATIC POSITION, REMOTE–CONTROL CONTACTS IN ONE OR MORE SEPARATE AUTOMATIC TRANSFER SWITCHES INITIATE STARTING AND STOPPING OF ENGINE GENERATOR. WHEN MODE–SELECTOR SWITCH IS SWITCHED TO THE ON POSITION, ENGINE GENERATOR STARTS. THE OFF POSITION OF THE SAME SWITCH INITIATES GENERATOR–SET SHUTDOWN. WHEN THE ENGINE GENERATOR IS RUNNING, SPECIFIED SYSTEM OR EQUIPMENT FAILURES OR DERANGEMENTS AUTOMATICALLY SHUT DOWN ENGINE GENERATOR AND INITIATE ALARMS.

B. COMPLY WITH UL 508A.

C. CONFIGURATION:

1. OPERATING AND SAFETY INDICATIONS, PROTECTIVE DEVICES, BASIC SYSTEM CONTROLS, AND ENGINE GAUGES WILL BE GROUPED IN A COMMON CONTROL AND MONITORING PANEL MOUNTED ON THE ENGINE GENERATOR. THE MOUNTING METHOD WILL ISOLATE THE CONTROL PANEL FROM GENERATOR–SET VIBRATION. PANEL WILL BE POWERED FROM THE ENGINE GENERATOR BATTERY.

D. CONTROL AND MONITORING PANEL:

1. DIGITAL ENGINE GENERATOR CONTROLLER WITH INTEGRATED ALPHANUMERIC DISPLAY, PROVIDING TWO LINE OF DATA. THE DISPLAY HAS BACK LIGHTING FOR EASE OF OPERATOR USE IN HIGH AND LOW LIGHT CONDITIONS. CAPABLE OF LOCAL AND REMOTE CONTROL, MONITORING AND PROGRAMMING.
2. OPERATING TEMPERATURE: MINUS 40 TO PLUS 158 DEG F.
3. MAXIMUM OPERATING HUMIDITY: 95 PERCENT NONCONDENSING.
4. CORROSION RESISTANT: TESTED IN ACCORDANCE WITH ASTM B117 (SALT SPRAY TEST).
5. CONTROLLER FEATURES:
   a. MODE SELECTOR: ALLOWING SELECTION OF ONE OF THE FOLLOWING MODES:
      1) OFF/RESET: PROHIBITS THE GENERATOR FROM STARTING AND RESETS SHUTDOWNS. IN THIS MODE, THE CONTROLLER DOES NOT RESPOND TO REMOTE START AND STOP COMMANDS.
      2) MANUAL: ALLOWS USER TO LOCALLY START AND STOP TO OPERATE THE GENERATOR. IN THIS MODE, THE CONTROLLER DOES NOT RESPOND TO REMOTE START AND STOP COMMANDS.
      3) AUTO: ALLOWS GENERATOR TO START AND STOP BASED ON REMOTE COMMANDS. IN THIS MODE, THE GENERATOR DOES NOT RESPOND TO MANUAL START AND STOP COMMANDS.
   b. EMERGENCY STOP SWITCH: LATCH–TYPE REMOTE STOP SWITCH, RED IN COLOR WITH MUSHROOM–TYPE HEAD. DEPRESSING THE STOP BUTTON WILL IMMEDIATELY STOP THE GENERATOR SET AND LOCK OUT ANY AUTOMATIC REMOTE STARTING.
   c. AUDIBLE ALARM: HORN SOUNDS FOR SPECIFIC WARNING AND SHUTDOWN CONDITIONS.
   d. ALARM SILENCE/LAMP TEST PUSHBUTTON: SILENCES AUDIBLE ALARM WHEN DEPRESSED. ALL CONTROLLER–INDICATING LIGHTS ARE SIMULTANEOUSLY ILLUMINATED WHILE ACTUATED.
   e. FAULT LIGHT: LED INDICATING ABNORMAL CONDITIONS:
      1) YELLOW: ACTIVE WARNING CONDITION OR MODE SELECTOR SWITCH NOT IN AUTOMATIC.
      2) RED: ACTIVE SHUTDOWN CONDITION.
   f. ENGINE CONTROL FEATURES:
      1) PROGRAMMABLE ENGINE START DELAY.
      2) PROGRAMMABLE ENGINE COOL–DOWN DELAY.
      3) PROGRAMMABLE WARM–UP DELAY BASED ON TIME OR ENGINE TEMPERATURE.
      4) PROGRAMMABLE IDLE SPEED.
      5) PROGRAMMABLE CYCLIC CRANKING WITH ADJUSTABLE ON TIME, OFF TIME, AND NUMBER OF CYCLES.
   g. EVENT LOGGING:
      1) MAINTAIN RECORD OF A MINIMUM OF 1,000 EVENTS WITH DATE AND TIME LOCALLY FOR WARNING AND SHUTDOWN FAULTS.
6. MONITORING INSTRUMENTS: ACCESSIBLE THROUGH THE DIGITAL ENGINE GENERATOR CONTROLLER AND VIEWABLE DURING OPERATION.
   a. ENGINE–COOLANT TEMPERATURE.
   b. BATTERY VOLTAGE.
   c. RUNNING–TIME METER.
   d. ENGINE SPEED.
   e. OIL PRESSURE.
   f. FUEL PRESSURE.
   g. AC OUTPUT VOLTAGE FOR EACH PHASE, 0.25 PERCENT ACCURACY.
   h. AC OUTPUT CURRENT FOR EACH PHASE, 0.25 PERCENT ACCURACY.
   i. AC FREQUENCY METER, 0.25 PERCENT ACCURACY.
   j. KW TOTAL AND PER PHASE, 0.5 PERCENT ACCURACY.
   k. KVARS TOTAL AND PER PHASE, 0.5 PERCENT ACCURACY.
   l. KVA TOTAL AND PER PHASE, 0.5 PERCENT ACCURACY.
   m. KW HOURS.
7. SERVICE DATA: STORED IN THE CONTROLLER AND AVAILABLE FOR DISPLAY.
   a. GENERATOR MODEL NUMBER AND SERIAL NUMBER.
   b. CONTROLLER SERIAL NUMBER AND FIRMWARE VERSION.
8. OPERATIONAL RECORDS: STORED IN CONTROLLER BEGINNING AT SYSTEM STARTUP.
   a. TOTAL RUN–TIME HOURS.
   b. TOTAL LOADED HOURS.
   c. TOTAL KW HOURS.
   d. CONTROLLER RUN–TIME HOURS.
   e. NUMBER OF STARTS.
9. CONTROLS AND PROTECTIVE DEVICES: CONTROLS, SHUTDOWN DEVICES, AND COMMON VISUAL ALARM INDICATION, INCLUDING THE FOLLOWING:
   a. MODE SELECTOR SWITCH NOT IN AUTOMATIC POSITION.
   b. OVERCRANK SHUTDOWN.
   c. LOW LUBRICATING–OIL PRESSURE WARNING.
   d. LOW LUBRICATING–OIL PRESSURE SHUTDOWN.
   e. LOW COOLANT TEMPERATURE WARNING.
   f. HIGH ENGINE TEMPERATURE WARNING.
   g. HIGH ENGINE TEMPERATURE SHUTDOWN.
   h. OVERSPEED SHUTDOWN.
   i. LOW FUEL PRESSURE SHUTDOWN.
   j. COOLANT LOW–LEVEL SHUTDOWN.
   k. COOLANT HIGH–TEMPERATURE WARNING.
   l. COOLANT HIGH–TEMPERATURE SHUTDOWN.
   m. ECM DIGITAL TROUBLE CODES WARNINGS.
   n. ECM DIGITAL TROUBLE CODES SHUTDOWN.
   o. LOSS OF ECM COMMUNICATIONS SHUTDOWN.
   p. ECM MISMATCH SHUTDOWN.
   q. BATTERY HIGH–VOLTAGE WARNING.
   r. BATTERY–CHARGER MALFUNCTION WARNING.
   s. BATTERY LOW–VOLTAGE WARNING.
   t. REMOTE MANUAL STOP SHUTDOWN.
   u. LOCAL MANUAL STOP SHUTDOWN.
   v. ALTERNATOR PROTECTION SHUTDOWN.
   w. OVERCURRENT WARNING.
   x. OVERCURRENT SHUTDOWN.
   y. UNDERFREQUENCY WARNING.
   z. UNDERFREQUENCY SHUTDOWN.
   aa. OVERFREQUENCY WARNING.
   bb. OVERFREQUENCY SHUTDOWN.
   cc. OVERPOWER WARNING.
   dd OVERPOWER SHUTDOWN.
   ee. UNDERVOLTAGE WARNING.
   ff. UNDERVOLTAGE SHUTDOWN.
   gg. OVERVOLTAGE WARNING.
   hh. OVERVOLTAGE SHUTDOWN.
   ii. USER–DEFINED INPUT WARNING.
   jj. USER–DEFINED INPUT SHUTDOWN.
   kk. NO OIL PRESSURE SIGNAL SHUTDOWN.
   ll. NO SPEED SENSOR SIGNAL SHUTDOWN.
   mm.FAIL–TO–START SHUTDOWN.

E. CONNECTION TO DATALINK:

1. PROVIDE CONNECTIONS FOR DATALINK TRANSMISSION OF INDICATIONS TO REMOTE DATA TERMINALS VIA MODBUS RTU, MODBUS TCP.

F. SUPPORTING ITEMS: SENSORS, TRANSDUCERS, TERMINALS, RELAYS, AND OTHER DEVICES LOCATED ON ENGINE OR GENERATOR UNLESS OTHERWISE INDICATED.

G. REMOTE EMERGENCY–STOP SWITCH: WALL MOUNTED UNLESS OTHERWISE INDICATED. PUSH BUTTON MUST BE PERMANENTLY LABELED AND PROTECTED FROM ACCIDENTAL OPERATION.

H. REMOTE ALARM ANNUNCIATOR: COMPLY WITH NFPA 99. AN LED INDICATOR LIGHT LABELED WITH PROPER ALARM CONDITIONS WILL IDENTIFY EACH ALARM EVENT, AND A COMMON AUDIBLE SIGNAL WILL SOUND FOR EACH ALARM CONDITION IN ACCORDANCE WITH NFPA 110. THE SILENCING SWITCH IN FACE OF PANEL WILL SILENCE SIGNAL WITHOUT ALTERING VISUAL INDICATION. CONNECT SO THAT AFTER AN ALARM IS SILENCED, CLEARING OF INITIATING CONDITION WILL REACTIVATE ALARM UNTIL SILENCING SWITCH IS RESET. CONTROLS TO INCLUDE "LAMP TEST" MOMENTARY SWITCH WIRED TO ILLUMINATE ALL LED INDICATOR LIGHTS REGARDLESS OF ALARM STATE WHILE SWITCH IS ON. CABINET AND FACEPLATE ARE FLUSH–MOUNTING TYPE TO SUIT MOUNTING CONDITIONS INDICATED.

I. START SIGNAL WIRING INTEGRITY MONITOR: UL–LISTED MODULAR SYSTEM TO MONITOR CONDITION OF GENERATOR REMOTE START CIRCUIT(S), ANNUNCIATE FAULTS, AND START GENERATOR IN ACCORDANCE WITH NFPA 70, ARTICLE 700.10(D)(4).

1. OUTPUT CONTACTS: TWO FORM "C" CONTACTS, ONE FOR ENGINE START AND ONE FOR START CIRCUIT ALARM.

2.7 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. OVERCURRENT PROTECTIVE DEVICES WILL BE COORDINATED TO OPTIMIZE SELECTIVE TRIPPING WHEN A SHORT CIRCUIT OCCURS.

1. OVERCURRENT PROTECTIVE DEVICES FOR THE ENTIRE EPSS WILL BE COORDINATED TO OPTIMIZE SELECTIVE TRIPPING WHEN A SHORT CIRCUIT OCCURS. COORDINATION OF PROTECTIVE DEVICES WILL CONSIDER BOTH UTILITY AND EPSS AS THE VOLTAGE SOURCE.
2. OVERCURRENT PROTECTIVE DEVICES FOR THE EPSS WILL BE ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL.

B. GENERATOR OVERCURRENT PROTECTIVE DEVICE:

1. MOLDED–CASE CIRCUIT BREAKER, THERMAL–MAGNETIC TYPE; 80 PERCENT RATED; COMPLYING WITH UL 489.
   a. TRIPPING CHARACTERISTIC: DESIGNED SPECIFICALLY FOR GENERATOR PROTECTION.
   b. TRIP RATING: MATCHED TO GENERATOR OUTPUT
   c. MOUNTING: ADJACENT TO OR INTEGRATED WITH CONTROL AND MONITORING PANEL.

C. GENERATOR PROTECTOR: MICROPROCESSOR–BASED UNIT WILL CONTINUOUSLY MONITOR CURRENT LEVEL IN EACH PHASE OF GENERATOR OUTPUT, INTEGRATE GENERATOR HEATING EFFECT OVER TIME, AND PREDICT WHEN THERMAL DAMAGE OF ALTERNATOR WILL OCCUR. WHEN SIGNALED BY GENERATOR PROTECTOR OR OTHER GENERATOR–SET PROTECTIVE DEVICES, A SHUNT–TRIP DEVICE IN THE GENERATOR DISCONNECT SWITCH WILL OPEN THE SWITCH TO DISCONNECT THE GENERATOR FROM LOAD CIRCUITS. PROTECTOR PERFORMS THE FOLLOWING FUNCTIONS:

1. INITIATES A GENERATOR OVERLOAD ALARM WHEN GENERATOR HAS OPERATED AT AN OVERLOAD EQUIVALENT TO 110 PERCENT OF FULL–RATED LOAD FOR 60 SECONDS. INDICATION FOR THIS ALARM IS INTEGRATED WITH OTHER GENERATOR–SET MALFUNCTION ALARMS. CONTACTS WILL BE AVAILABLE FOR LOAD SHED FUNCTIONS.
2. UNDER THREE–PHASE FAULT CONDITIONS, GENERATOR TO SUPPLY 300 PERCENT OF RATED FULL–LOAD CURRENT FOR UP TO 10 SECONDS.
3. TESTED TO AC OUTPUT SHORT–CIRCUIT REQUIREMENTS.
4. ENERGY REDUCTION MAINTENANCE SWITCH/MODE.

D. GENERATOR PROTECTIVE RELAY: MULTIFUNCTIONAL, MICROPROCESSOR–BASED RELAY SYSTEMS COMPLYING WITH IEEE C37.90.

1. STANDARD GENERATOR PROTECTIVE FUNCTIONS FOR SHUTDOWN WITH USER–ADJUSTABLE LIMITS AND TIME DELAYS:
   a. OVERVOLTAGE (ANSI DEVICE 59):
      1) USER–ADJUSTABLE PICKUP: 100 TO 130 PERCENT.
      2) USER–ADJUSTABLE TIME DELAY: ZERO TO 120 SECONDS.
   b. UNDERVOLTAGE (ANSI DEVICE 27):
      1) USER–ADJUSTABLE PICKUP: 70 TO 100 PERCENT.
      2) USER–ADJUSTABLE TIME DELAY: ZERO TO 120 SECONDS.
   c. OVERFREQUENCY (ANSI DEVICE 810):
      1) USER–ADJUSTABLE PICKUP: 100 TO 140 PERCENT.
      2) USER–ADJUSTABLE TIME DELAY: ZERO TO 120 SECONDS.
   d. REVERSE POWER (ANSI DEVICE 32R):
      1) USER–ADJUSTABLE PICKUP: ZERO TO 50 PERCENT.
      2) USER–ADJUSTABLE TIME DELAY: ZERO TO 120 SECONDS.
   e. OVERPOWER (ANSI DEVICE 320):
      1) USER–ADJUSTABLE PICKUP: 90 TO 150 PERCENT.
      2) USER–ADJUSTABLE TIME DELAY: ZERO TO 120 SECONDS.
   f. LOSS OF FIELD (ANSI DEVICE 40 REVERSE VARS):
      1) USER–ADJUSTABLE PICKUP: 10 TO 100 PERCENT.
      2) USER–ADJUSTABLE TIME DELAY: ZERO TO 120 SECONDS.
   g. OVERCURRENT WITH VOLTAGE RANGE:
      1) USER–ADJUSTABLE RANGE: 100 TO 200 PERCENT.
   2) USER–ADJUSTABLE TIME DELAY: ZERO TO 120 SECONDS.

2.8 ALTERNATOR, EXCITER, AND VOLTAGE REGULATOR

A. COMPLY WITH NEMA MG 1.

B. DRIVE: ALTERNATOR SHAFT DIRECTLY CONNECTED TO ENGINE SHAFT. EXCITER ROTATED INTEGRALLY WITH GENERATOR ROTOR.

C. DRIVE: ALTERNATOR SHAFT DIRECTLY CONNECTED TO ENGINE SHAFT. EXCITER ROTATED INTEGRALLY WITH GENERATOR ROTOR

D. ELECTRICAL INSULATION: CLASS H.

E. STATOR–WINDING LEADS: BROUGHT OUT TO TERMINAL BOX TO PERMIT FUTURE RECONNECTION FOR OTHER VOLTAGES IF REQUIRED.

F. CONSTRUCTION PREVENTS MECHANICAL, ELECTRICAL, AND THERMAL DAMAGE DUE TO VIBRATION, OVERSPEED UP TO 125 PERCENT OF RATING, AND HEAT DURING OPERATION.

G. ENCLOSURE: DRIPPROOF.

H. VOLTAGE REGULATOR: MICROPROCESSOR–BASED, HIGH–SPEED DIGITAL VOLTAGE REGULATOR, SEPARATE FROM EXCITER, WITH THREE–PHASE, TRUE RMS SENSING, PROVIDING PERFORMANCE AS SPECIFIED AND AS REQUIRED BY NFPA 110.

1. MAINTAIN STEADY–STATE VOLTAGE WITHIN 0.25 PERCENT FROM NO LOAD TO FULL LOAD.
2. ADJUSTING FEATURE ON CONTROL AND MONITORING PANEL: PROVIDE PLUS OR MINUS 10 PERCENT ADJUSTMENT OF OUTPUT–VOLTAGE OPERATING BAND.

I. ALTERNATOR STRIP HEATER: THERMOSTATICALLY CONTROLLED UNIT ARRANGED TO MAINTAIN STATOR WINDINGS ABOVE DEW POINT.

J. WINDINGS: TWO–THIRDS PITCH STATOR WINDING AND FULLY LINKED AMORTISSEUR WINDING.

K. SUBTRANSIENT REACTANCE: 16 PERCENT, MAXIMUM.

2.9 OUTDOOR GENERATOR–SET ENCLOSURE

A. DESCRIPTION:

1. VANDAL–RESISTANT, SOUND–ATTENUATING, WEATHERPROOF STEEL ENCLOSURE WITH 14–GAUGE THICK WALLS; WIND RESISTANT. MULTIPLE PANELS TO BE LOCKABLE AND PROVIDE ADEQUATE ACCESS TO COMPONENTS REQUIRING MAINTENANCE, MINIMUM TWO DOORS PER SIDE. ACCESS TO CONTROLLER AND MAIN LINE CIRCUIT BREAKER IN ACCORDANCE WITH NFPA 70. PANELS TO BE REMOVABLE BY ONE PERSON WITHOUT TOOLS. INSTRUMENTS AND CONTROLS BE MOUNTED WITHIN ENCLOSURE.

B. SOURCE LIMITATIONS: OBTAIN ENCLOSURE FROM ENGINE–DRIVEN GENERATOR MANUFACTURER.

C. STRUCTURAL DESIGN AND ANCHORAGE: COMPLY WITH ASCE/SEI 7 FOR WIND LOADS UP TO 150 MPH.

D. MINIMAL SNOW LOAD RATING: 70psf

F. ACCESS DOOR AND PANELS RUBBER SEALED TO PREVENT WATER INTRUSION AND MINIMIZE NOISE.

G. INSULATION FLAMMABILITY CLASSIFICATION: UL 94 HF1.

H. MUFFLER LOCATION: COMPLETE EXHAUST SYSTEM LOCATED WITHIN ENCLOSURE.

I. BASIC ELECTRICAL PACKAGE:

1. GFCI–DUPLEX RECEPTACLES: TWO 20 A, 125 V AC.
2. AC LIGHTING: TWO WEATHER–RESISTANT LED LIGHTING MAINTAINED WITH CONTROL SWITCHES AT EACH ACCESS DOOR.

2.10 VIBRATION ISOLATION DEVICES

A. ELASTOMERIC VIBRATION ISOLATORS: OIL AND WATER–RESISTANT ELASTOMER NEOPRENE OR NATURAL RUBBER, MOLDED WITH A NONSLIP PATTERN AND BASEPLATES OF SUFFICIENT STIFFNESS FOR UNIFORM LOADING OVER PAD AREA, AND FACTORY CUT TO SIZES THAT MATCH REQUIREMENTS OF SUPPORTED EQUIPMENT. COMPLIANT WITH ISO 8528.

B. COMPLY WITH REQUIREMENTS IN PLUMBING SPECIFICATIONS FOR VIBRATION ISOLATION AND FLEXIBLE CONNECTOR MATERIALS FOR STEEL PIPING.

C. COMPLY WITH REQUIREMENTS IN MECHANICAL SPECIFICATIONS FOR VIBRATION ISOLATION AND FLEXIBLE CONNECTOR MATERIALS FOR EXHAUST SHROUD AND DUCTWORK.

D. VIBRATION ISOLATION DEVICES WILL NOT BE USED TO ACCOMMODATE MISALIGNMENTS OR TO MAKE BENDS.

2.11 FINISHES

A. INDOOR AND OUTDOOR ENCLOSURES AND COMPONENTS: HEAVY–DUTY, HIGH–DURABILITY, FADE–, SCRATCH– AND CORROSION–RESISTANT FINISH ACHIEVED THROUGH A MULTI–STAGE FINISHING PROCESS FROM THE GENSET MANUFACTURER INCLUDING:

1. PRE–CLEANING: ENCLOSURE COMPONENTS CLEANED WITH A TWO–STAGE ALKALINE CLEANING PROCESS TO REMOVE GREASE, GRIT, AND GRIME FROM PARTS THEN SUBJECTED TO A ZIRCONIUM–BASED CONVERSION COATING PROCESS TO PREPARE THE METAL FOR ELECTROCOAT (E–COAT) ADHESION.
2. PRIMER: ALL ENCLOSURE PARTS TO RECEIVE 100 PERCENT EPOXY PRIMER ELECTROCOAT (E–COAT) WITH HIGH–EDGE PROTECTION.
3. FINISH COATING: POWDER–BAKED PAINT FOR SUPERIOR FINISH, DURABILITY, AND APPEARANCE.
4. MINIMUM ENCLOSURE CORROSION RESISTANCE: 3000 HOURS SALT SPRAY TEST IN ACCORDANCE WITH ASTM B117.
5. POWDER COAT FOR FADING AND ABRASION RESISTANCE.

2.12 SOURCE QUALITY CONTROL

A. PROTOTYPE TESTING: FACTORY TEST ENGINE GENERATOR USING SAME ENGINE MODEL, CONSTRUCTED OF IDENTICAL OR EQUIVALENT COMPONENTS AND EQUIPPED WITH IDENTICAL OR EQUIVALENT ACCESSORIES.

1. TESTS: COMPLY WITH IEEE 115 AND WITH NFPA 110, LEVEL 1 ENERGY CONVERTERS.

B. PROJECT–SPECIFIC EQUIPMENT TESTS: BEFORE SHIPMENT, FACTORY TEST ENGINE GENERATOR AND OTHER SYSTEM COMPONENTS AND ACCESSORIES MANUFACTURED SPECIFICALLY FOR THIS PROJECT. PERFORM TESTS AT RATED LOAD AND POWER FACTOR. INCLUDE THE FOLLOWING TESTS:

1. TEST ALTERNATOR, EXCITER, AND VOLTAGE REGULATOR AS A UNIT.
2. LOAD TEST: 25, 50, 75, AND 100 PERCENT RATED LOAD.
3. SINGLE–STEP LOAD PICKUP.
4. SAFETY SHUTDOWN.
5. OVERCRANK.
6. LOCKED ROTOR.
7. MECHANICAL READINGS: OIL PRESSURE, AMBIENT TEMPERATURE, AND COOLANT TEMPERATURE.
8. TEST COMPONENTS AND ACCESSORIES FURNISHED WITH INSTALLED UNIT THAT ARE NOT IDENTICAL TO THOSE ON TESTED PROTOTYPE TO DEMONSTRATE COMPATIBILITY AND RELIABILITY.
9. MAXIMUM POWER.
10. VOLTAGE REGULATION.
11. TRANSIENT AND STEADY–STATE GOVERNING.
12. PROVIDE 14 DAYS' ADVANCE NOTICE OF TESTS AND OPPORTUNITY FOR OBSERVATION OF TESTS BY OWNER'S REPRESENTATIVE.
13. REPORT FACTORY TEST RESULTS WITHIN 10 DAYS OF COMPLETION OF TEST.

PART 3 – EXECUTION

3.1 EXAMINATION

A. EXAMINE AREAS, EQUIPMENT BASES, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION AND OTHER CONDITIONS AFFECTING PACKAGED ENGINE GENERATOR PERFORMANCE.

B. EXAMINE ROUGHING–IN FOR PIPING SYSTEMS AND ELECTRICAL CONNECTIONS. VERIFY ACTUAL LOCATIONS OF CONNECTIONS BEFORE PACKAGED ENGINE GENERATOR INSTALLATION.

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

3.2 INSTALLATION

A. COMPLY WITH NECA 1 AND NECA 404.

B. COMPLY WITH PACKAGED ENGINE GENERATOR MANUFACTURERS' WRITTEN INSTALLATION AND ALIGNMENT INSTRUCTIONS AND WITH NFPA 110.

C. EQUIPMENT MOUNTING:

1. INSTALL ENGINE GENERATOR ON CAST–IN–PLACE CONCRETE EQUIPMENT BASE. COMPLY WITH REQUIREMENTS FOR EQUIPMENT BASES AND FOUNDATIONS PER "CAST–IN–PLACE CONCRETE" SPECIFICATIONS AS DETERMINED BY CIVIL DRAWING PACKAGE.
2. COORDINATE SIZE AND LOCATION OF CONCRETE BASE FOR ENGINE GENERATOR WITH GENERAL CONTRACTOR AND CIVIL CONTRACTORS. CAST ANCHOR–BOTH INSERTS INTO BASE. CONCRETE, REINFORCEMENT, AND FORMWORK REQUIREMENTS ARE SPECIFIED WITH CONCRETE.
3. INSTALL ENGINE GENERATOR WITH A SKIN–TIGHT ENCLOSURE.

D. INSTALL PACKAGED ENGINE GENERATOR TO PROVIDE ACCESS, WITHOUT REMOVING CONNECTIONS OR ACCESSORIES, FOR PERIODIC MAINTENANCE.

E. DRAIN PIPING: INSTALL CONDENSATE DRAIN PIPING TO MUFFLER DRAIN OUTLET WITH A SHUTOFF VALVE, STAINLESS STEEL FLEXIBLE CONNECTOR, AND SCHEDULE 40, BLACK STEEL PIPE, THE FULL SIZE OF THE DRAIN CONNECTION.

F. GASEOUS FUEL PIPING:

1. NATURAL GAS PIPING, VALVES, AND SPECIALTIES FOR GAS DISTRIBUTION ARE SPECIFIED ON PLUMBING DRAWINGS AND SPECIFICATIONS.

G. ELECTRICAL WIRING: INSTALL ELECTRICAL DEVICES FURNISHED BY EQUIPMENT MANUFACTURERS BUT NOT SPECIFIED TO BE FACTORY MOUNTED.

3.3 CONNECTIONS

A. PIPING INSTALLATION REQUIREMENTS ARE SPECIFIED IN OTHER SECTIONS. DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING AND SPECIALTIES.

B. CONNECT FUEL, COOLING–SYSTEM, AND EXHAUST–SYSTEM PIPING ADJACENT TO PACKAGED ENGINE GENERATOR TO ALLOW SERVICE AND MAINTENANCE.

C. CONNECT COOLING–SYSTEM WATER PIPING TO ENGINE GENERATOR AND WITH FLEXIBLE CONNECTORS.

D. CONNECT ENGINE EXHAUST PIPE TO ENGINE WITH FLEXIBLE CONNECTOR.

E. GASEOUS FUEL CONNECTIONS:

1. CONNECT FUEL PIPING TO ENGINES WITH A GATE VALVE AND UNION AND FLEXIBLE CONNECTOR.
2. INSTALL MANUAL SHUTOFF VALVE IN A REMOTE LOCATION TO ISOLATE GASEOUS FUEL SUPPLY TO THE GENERATOR.
3. VENT GAS PRESSURE REGULATORS OUTSIDE BUILDING A MINIMUM OF 60 INCHES FROM BUILDING OPENINGS.

F. GROUND EQUIPMENT IN ACCORDANCE WITH NFPA 70.

G. CONNECT WIRING IN ACCORDANCE WITH NFPA 70. PROVIDE FLEXIBLE CONDUIT ROUTED TO THE ENGINE GENERATOR FROM A STATIONARY ELEMENT.

H. BALANCE SINGLE–PHASE LOADS TO OBTAIN A MAXIMUM OF 10 PERCENT UNBALANCE BETWEEN ANY TWO PHASES.

3.5 IDENTIFICATION

A. IDENTIFY SYSTEM COMPONENTS IN ACCORDANCE WITH NFPA 70.

B. INSTALL A SIGN INDICATING THE GENERATOR NEUTRAL IS BONDED TO THE MAIN SERVICE NEUTRAL AT THE MAIN SERVICE LOCATION.

3.6 FIELD QUALITY CONTROL

A. TESTING AGENCY:

1. ENGAGE A FACTORY–AUTHORIZED SERVICE REPRESENTATIVE TO TEST AND INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS.

B. TESTS AND INSPECTIONS:

1. PERFORM TESTS RECOMMENDED BY MANUFACTURER AND EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL AND MECHANICAL TEST LISTED IN THE FIRST TWO SUBPARAGRAPHS BELOW AS SPECIFIED IN THE NETA ATS. CERTIFY COMPLIANCE WITH TEST PARAMETERS.
   a. VISUAL AND MECHANICAL INSPECTION:
      1) COMPARE EQUIPMENT NAMEPLATE DATA WITH DRAWINGS AND SPECIFICATIONS.
      2) INSPECT PHYSICAL AND MECHANICAL CONDITION.
      3) INSPECT ANCHORAGE, ALIGNMENT, AND GROUNDING.
      4) VERIFY THE UNIT IS CLEAN.
   b. ELECTRICAL AND MECHANICAL TESTS:
      1) VERIFY PHASE ROTATION, PHASING, AND SYNCHRONIZED OPERATION AS REQUIRED BY THE APPLICATION.
      2) FUNCTIONALLY TEST ENGINE SHUTDOWN FOR LOW OIL PRESSURE, OVERTEMPERATURE, OVERSPEED, AND OTHER PROTECTION FEATURES AS APPLICABLE.
      3) CONDUCT PERFORMANCE TESTING ACCORDING TO NFPA 110.
2. NFPA 110 ACCEPTANCE TESTS: PERFORM TESTS REQUIRED BY NFPA 110 THAT ARE ADDITIONAL TO THOSE SPECIFIED HERE, INCLUDING, BUT NOT LIMITED TO, SINGLE–STEP FULL–LOAD PICKUP TEST, AND TWO–HOUR RESISTIVE LOADBANK TEST.
3. BATTERY TESTS: EQUALIZE CHARGING OF BATTERY CELLS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. RECORD INDIVIDUAL CELL VOLTAGES.
   a. MEASURE CHARGING VOLTAGE AND VOLTAGES BETWEEN AVAILABLE BATTERY TERMINALS FOR FULL–CHARGING AND FLOAT–CHARGING CONDITIONS. CHECK ELECTROLYTE LEVEL AND SPECIFIC GRAVITY UNDER BOTH CONDITIONS.
   b. TEST FOR CONTACT INTEGRITY OF ALL CONNECTORS. PERFORM AN INTEGRITY LOAD TEST AND A CAPACITY LOAD TEST FOR THE BATTERY.
   c. VERIFY ACCEPTANCE OF CHARGE FOR EACH ELEMENT OF THE BATTERY AFTER DISCHARGE.
   d. VERIFY THAT MEASUREMENTS ARE WITHIN MANUFACTURER'S SPECIFICATIONS.
4. BATTERY–CHARGER TESTS: VERIFY SPECIFIED RATES OF CHARGE FOR BOTH EQUALIZING AND FLOAT–CHARGING CONDITIONS.
5. SYSTEM INTEGRITY TESTS: METHODICALLY VERIFY PROPER INSTALLATION, CONNECTION, AND INTEGRITY OF EACH ELEMENT OF ENGINE GENERATOR SYSTEM BEFORE AND DURING SYSTEM OPERATION. CHECK FOR AIR, EXHAUST, AND FLUID LEAKS.
6. VOLTAGE AND FREQUENCY TRANSIENT STABILITY TESTS: USE RECORDING OSCILLOSCOPE TO MEASURE VOLTAGE AND FREQUENCY TRANSIENTS FOR 50 PERCENT STEP–LOAD INCREASES AND DECREASES AND VERIFY THAT PERFORMANCE IS AS SPECIFIED.

C. COORDINATE TESTS WITH TESTS FOR TRANSFER SWITCHES AND RUN THEM CONCURRENTLY.

D. TEST INSTRUMENTS WILL HAVE BEEN CALIBRATED WITHIN THE LAST 12 MONTHS, TRACEABLE TO NIST CALIBRATION SERVICES, AND ADEQUATE FOR MAKING POSITIVE OBSERVATION OF TEST RESULTS. MAKE CALIBRATION RECORDS AVAILABLE FOR EXAMINATION ON REQUEST.

E. LEAK TEST: AFTER INSTALLATION, INSPECT EXHAUST, COOLANT, AND FUEL SYSTEMS AND TEST FOR LEAKS. REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.

F. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION FOR GENERATOR AND ASSOCIATED EQUIPMENT.

G. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.

H. REMOVE AND REPLACE MALFUNCTIONING UNITS AND RETEST AS SPECIFIED ABOVE.

I. RETEST: CORRECT DEFICIENCIES IDENTIFIED BY TESTS AND OBSERVATIONS AND RETEST UNTIL SPECIFIED REQUIREMENTS ARE MET.

J. REPORT RESULTS OF TESTS AND INSPECTIONS IN WRITING. RECORD ADJUSTABLE RELAY SETTINGS AND MEASURED INSULATION RESISTANCES, TIME DELAYS, AND OTHER VALUES AND OBSERVATIONS. ATTACH A LABEL OR TAG TO EACH TESTED COMPONENT INDICATING SATISFACTORY COMPLETION OF TESTS.

K. INFRARED SCANNING: AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE, PERFORM AN INFRARED SCAN OF EACH POWER WIRING TERMINATION AND EACH BUS CONNECTION WHILE RUNNING WITH MAXIMUM LOAD.

1. INSTRUMENT: USE AN INFRARED SCANNING DEVICE DESIGNED TO MEASURE TEMPERATURE OR TO DETECT SIGNIFICANT DEVIATIONS FROM NORMAL VALUES. PROVIDE CALIBRATION RECORD FOR DEVICE.
2. RECORD OF INFRARED SCANNING: PREPARE A CERTIFIED REPORT THAT IDENTIFIES TERMINATIONS AND CONNECTIONS CHECKED AND THAT DESCRIBES SCANNING RESULTS. INCLUDE NOTATION OF DEFICIENCIES DETECTED, REMEDIAL ACTION TAKEN, AND OBSERVATIONS AFTER REMEDIAL ACTION.

3.7 MAINTENANCE SERVICE

A. INITIAL MAINTENANCE SERVICE: BEGINNING AT SUBSTANTIAL COMPLETION, PROVIDE 12 MONTHS' FULL MAINTENANCE BY SKILLED EMPLOYEES OF MANUFACTURER'S DESIGNATED SERVICE ORGANIZATION. INCLUDE QUARTERLY EXERCISING TO CHECK FOR PROPER STARTING, LOAD TRANSFER, AND RUNNING UNDER LOAD. INCLUDE ROUTINE PREVENTIVE MAINTENANCE AS RECOMMENDED BY MANUFACTURER AND ADJUSTING AS REQUIRED FOR PROPER OPERATION. PROVIDE PARTS AND SUPPLIES SAME AS THOSE USED IN THE MANUFACTURE AND INSTALLATION OF ORIGINAL EQUIPMENT.

3.8 DEMONSTRATION

A. ENGAGE A FACTORY–AUTHORIZED SERVICE REPRESENTATIVE TO TRAIN OWNER'S MAINTENANCE PERSONNEL TO ADJUST, OPERATE, AND MAINTAIN PACKAGED ENGINE GENERATORS.

END OF SECTION

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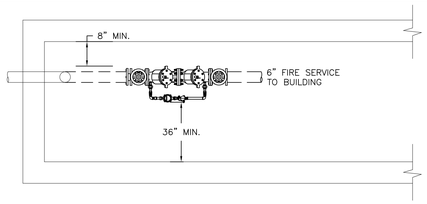
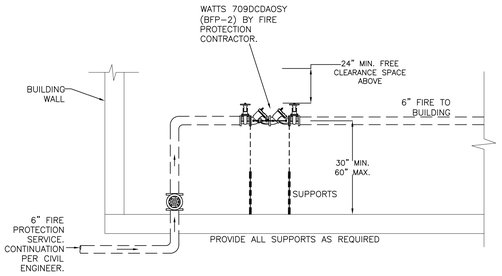
BACKFLOW PREVENTER SCHEDULE

MARK	MANUFACTURER	SIZE	MAX. PRESSURE DROP	SERVING	REMARKS
BFP-2	WATTS	6"	9 PSI	FIRE PROTECTION SERVICE	DCDA TO BE INSTALLED BY FIRE PROTECTION CONTRACTOR. SEE FIRE PROTECTION AND PLUMBING DRAWINGS FOR MECHANICAL ROOM LAYOUT INSTRUCTIONS.

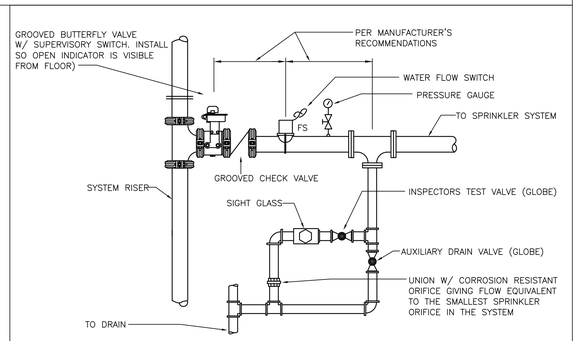


GENERAL NOTES:

1. ALL MATERIAL BEFORE THE BACKFLOW PREVENTER SHALL BE BRASS, COPPER, OR DUCTILE IRON.
2. ADJUST PIPING AS REQUIRED PER FIELD CONDITIONS AND PIPING LAYOUT SHOWN ON DRAWING FP-2.



1 / FP-1 **DCDA TYPE BACKFLOW PREVENTER DETAIL**
SCALE: NONE



2 / FP-1 **FLOOR CONTROL VALVE DETAIL**
SCALE: NONE

SPRINKLER HEADS SHALL BE QUICK RESPONSE TYPE AS REQUIRED BY CODE. CONTRACTOR TO CONSULT WITH SPECIFICATIONS REGARDING EXPOSED SPRINKLER HEAD FINISH BEFORE ORDERING.

SCHEDULE OF SPRINKLER HEADS

SYMBOL	DESCRIPTION
⊠	Reliable Model N252EC Pendent Sprinkler Storage and Non-Storage Sprinkler K25.2 with brass finish, 165°F. ***UL Listed*** and FM approved.
⊡	Pendant Semi-recessed head with white finish and upright sprinkler head. ½" orifice, 155°F. ***UL Listed*** and FM approved. "Rooster Style" – Reliable Sprinkler or equal.
⊠	Pendant fully-recessed anti-corrosion head with finish cover plate. ½" orifice, 155°F – Steam and Sauna rooms head temperature shall be a minimum of 285°F. ***UL Listed*** and FM approved. Reliable Sprinkler F1FR56 series or Viking VK302 with ENT Coating.
⊠	Dry Pendant Semi-recessed head with white finish and upright sprinkler head. ½" orifice, 155°F. ***UL Listed*** and FM approved. "Rooster Style"
○	Upright brass head. ½" orifice, 210°F. ***UL Listed*** and FM approved.
⊘	Anti-corrosion Upright head with corrosion resistant polyester coating. ½" orifice, 200°F. ***UL Listed*** and FM approved. Reliable Sprinkler F1FR56 series or equal.
●	Dry-Upright brass head. ½" orifice, 200°F. ***UL Listed*** and FM approved.
⊡	Full-(concealed) head with white finish, ½" orifice, 165°F. ***UL Listed*** and FM approved.
△	Sidewall type head with white finish, ½" orifice, 155°F. ***UL Listed*** and FM approved. Extended Coverage heads may be used where necessary.
▲	Dry Sidewall type head with white finish and white escutcheon. ½" orifice, 155°F. ***UL Listed*** and FM approved.

LEGEND

TYP.	TYPICAL	ACT	ACOUSTICAL TILE
U/F	UNDER FLOOR	—FP—	UNDERGROUND FIRE PROTECTION PIPING
RPZ	REDUCED PRESSURE ZONE ASSEMBLIES	—P—	FIRE PROTECTION PIPING
MC	MECHANICAL CONTRACTOR		
GC	GENERAL CONTRACTOR		
CONT.	CONTINUATION		
N/A	NOT APPLICABLE		
PC	PLUMBING CONTRACTOR		
RM.	ROOM		
BLDG.	BUILDING		
KEC	KITCHEN EQUIPMENT CONTRACTOR		
HVAC	HEATING, VENTILATING, AIR CONDITIONING		
F/#	FOR/NUMBER OF HEADS		

FIRE PROTECTION SYSTEMS SPECIFICATIONS

1. The contractor shall be responsible for a complete turn key installation using Underwriter Laboratories UL listed products including design, obtaining approvals and coordination with other trades. Install to meet NFPA 13, NFPA 72, NFPA 101, and the local Authority Having Jurisdiction requirements.
2. Sprinkler heads, mains, runouts, tailbacks, sprigs etc. shall be provided as follows:
   2.1. All equipment required for the project (sprinklers, hose valves, check valves, fittings, etc.) shall meet standard pressure requirements. The fire protection contractor shall provide services for this project on a design build basis. Provide all required materials and designs for a 100% complete, functional and code compliant installation. Provide piping drawings, schematics, material specifications etc. with flow calculations to the local jurisdiction having authority for review and approval prior to installation. All prospective bidders shall visit the site prior to bid submission to verify field conditions and scope of work. Coordinate main fire protection service size requirements and all locations of fire protection mains serving the building with the Civil Engineer and Architect prior to bid submission. Provide flow and tamper switches as required and coordinate terminations with the electrical contractor. If main fire protection service is existing, provide new drops to new sprinkler heads. Coordinate exterior AV location with electrical contractor and wiring requirements in advance. Provide Siamese connection at exterior per Fire Marshal.
3. Sprinkler head locations shall be used as a guide for bid. Sprinkler locations show approximate locations with full rcp and field coordination to be provided by the successful contractor. Provide all heads as required per NFPA 13. Proposed fire protection service is 6" – Verify with hydraulic calculations. The contractor shall perform a flow test on site and use results to perform hydraulic calculations as described here. Adjust K Factors as required to accommodate for pressures and flows. In areas noted where no ceilings are installed – all work from other trades are considered obstructions and shall be sprinklered per NFPA 13 Chapter 8. The majority of the structure is combustible wood joists. Provide sprinklers in concealed ceiling spaces per NFPA 13 due to existing structure as mentioned above. Concealed spaces under the volume of 160 cubic feet shall not require sprinklers provided they meet all requirements under NFPA 13, Chapter 8, Section 8.15.1.2. Sprinkler piping is to run through the joists/beams inside the apartments – exception: In apartments on all three floors that are located below roof levels must be sidewall heads as indicated – piping to run in the walls from the floor below (first floor piping shall be run off the corridor and through walls) inside apartment.
4. The suggested sprinkler locations are not intended to limit the contractor from providing another design that may be more economical and still meet the requirements of the local Authority Having Jurisdiction and NFPA.
5. Comply with standards mentioned above, ANSI/ASME, and Architectural requirements for painting interior piping. Paint exposed, interior metal piping, valves, and piping specialties, except components, with factory-applied paint or protective coating. Exposed sprinkler heads shall be ordered according to color requirements below.

   W.B. Light Industrial Coating: MPI INT 5.1B – GS. Prime Coat: Rust Inhibitive Primer. (MPI #107). Intermediate Coat: W.B. Light Industrial Coating (MPI #153). Topcoat: W.B. Light Industrial Coating (MPI #153). Color: To match surroundings as closely as possible.

   Damage and Touchup: Repair marred and damaged factory-applied finishes with materials and by procedures to match original factory finish.
6. Working plans and computerized hydraulic calculations shall be prepared by a minimum Level 3 N.I.C.E.T. Certified Sprinkler Layout Designer. Submit working plans and hydraulic calculations signed and sealed by a Professional Fire Protection Engineer registered in the state in which the project is located, to Authorities that Have Jurisdiction. Design documents are for permit purposes. The design is not intended to limit the contractor from providing another design that may be more economical and still meet the requirements of the Local Authority Having Jurisdiction. All drawings, including As-Builts, shall be submitted electronically in AUTO CAD compatible format.
7. The hydraulic calculations shall include the pressure drop through all pipe, fittings and devices, including the pressure drop through the reduced pressure principle backflow preventer, from the most hydraulic remote point of the sprinkler system to the location of the test hydrant.
8. Submit drawings to local fire dept. and obtain necessary approvals, permits and certificates prior to submission to the engineer for final review.
9. Where required by code or directed by local authorities, contractor shall provide seismic hanging & constraints on all piping in complete accordance with the latest issue of the State Plumbing Building Code, local codes and NFPA.
10. The fire protection contractor shall provide a guarantee covering all design, installation, material and workmanship for one year following date of acceptance by Owner.
11. The hydraulic calculations shall be based on the flow test data listed below (this information shall be provided by the fire protection contractor at submittal of shop drawings and calculations):
    a. Static pressure psi.
    b. Residual pressure psi.
    c. Flow gpm.
    d. Flow/test hydrant locations.
    e. Date of test.
    f. Time of test.
    g. Responsible party conducting test.
    h. Hydrant outlet discharge coefficient.
12. Piping shall be sloped to drain back to sprinkler riser. Auxiliary drainage in accordance with NFPA 13 shall be provided for all trapped sections of pipe.
13. Pipe all drains and inspector's test to outside, or discharge to a drain approved by the owner for sprinkler discharge.
14. Provide automatic sprinkler below obstructions 48 inches and wider. (platforms, ductwork, stairways, unit heater, etc).
15. Refer to the architectural drawings for reflected ceiling plans and coordinate all work with all other contractors prior to installation of the sprinkler system. Up front field coordination between all contractors is required due to limited space constraints.

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ISSUE:
5-23-2025: BID/PERMIT SET

SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · PAMELA D. RICHARDS · 084713 · LICENSED PROFESSIONAL ENGINEER

5-23-25

TITLE:

FIRE PROTECTION LEGENDS, SCHEDULES, DETAILS, & SPECIFIC-ATIONS

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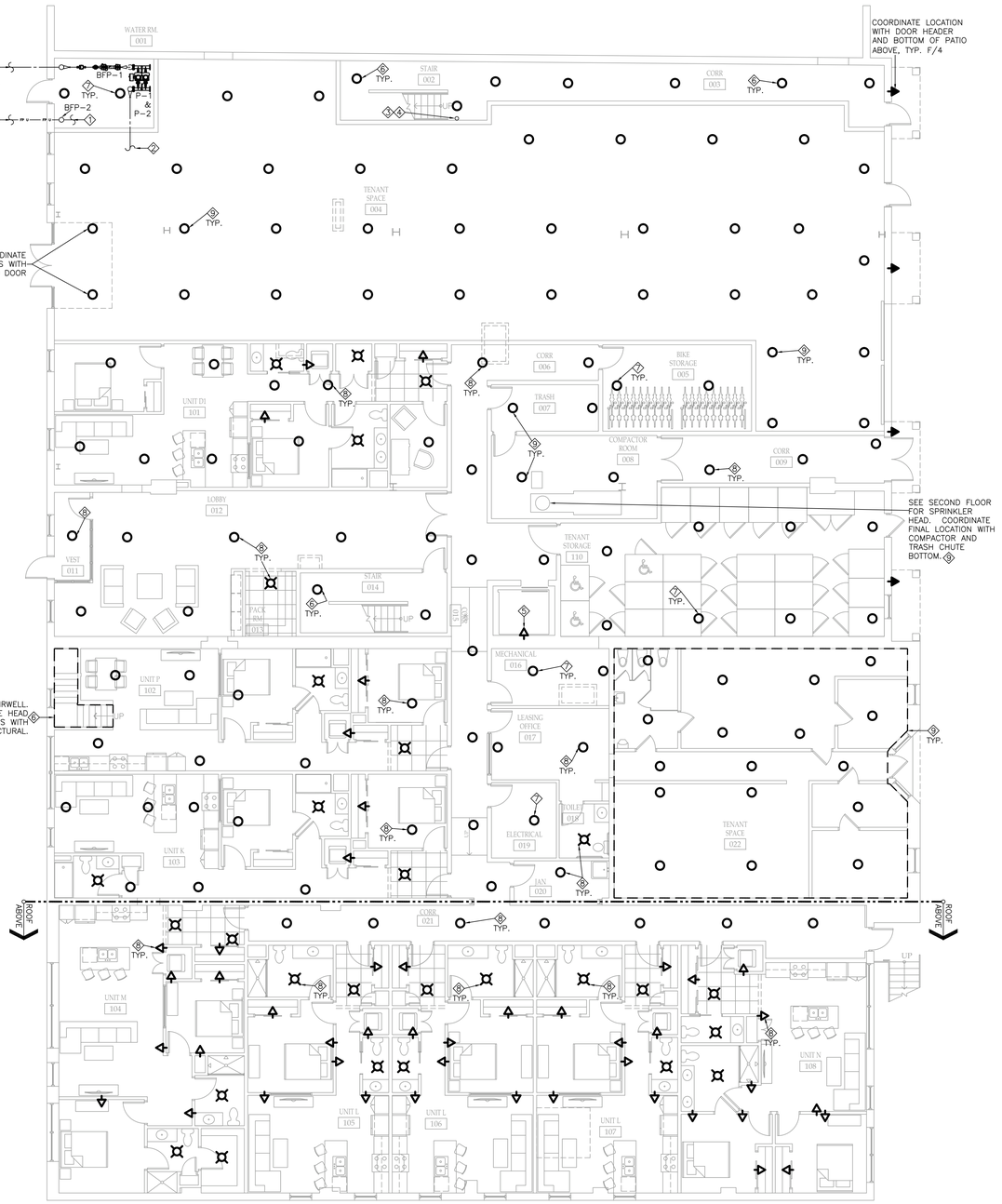
SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: FP-1



1 FP-2 FIRE PROTECTION FIRST FLOOR PLAN

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

GENERAL FIRE PROTECTION DRAWING NOTES:

1. CONTRACTOR TO FOLLOW OCCUPANCY HAZARDS REFERRED TO IN DRAWINGS NOTES. IF NO HAZARD OR NOTE IS GIVEN FOR A SPACE, THE CONTRACTOR IS TO FOLLOW NFPA 13.
2. WHERE UPRIGHT SPRINKLER HEADS ARE SHOWN, SPRINKLER PIPING IS TO RUN EXPOSED TO EACH HEAD.
3. COORDINATE ALL PIPING WITH STRUCTURE AND ALL OTHER WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES. COORDINATE WORK WITH CEILING TYPES SHOWN ON ARCHITECTURAL DRAWINGS. BUILDING CONSTRUCTION REQUIRES SPRINKLERS IN CONCEALED SPACES (SEE SPECIFICATIONS) – HEADS INSIDE SAID SPACES WILL NOT BE SHOWN ON DRAWINGS FOR CLARITY'S SAKE. COORDINATE LOCATIONS OF HEADS WITH APARTMENT CEILING FANS. EXISTING STRUCTURAL BEAMS ARE EXPOSED IN AREAS WITH NO CEILINGS AND MAY ACT AS OBSTRUCTIONS – SEE BELOW.

   THE MAJORITY OF THE BUILDING HAS EXPOSED STRUCTURE (NO CEILINGS). THESE AREAS FALL UNDER NFPA 13 8.6.4.1.2. THE MAJORITY OF THE EXISTING STRUCTURE IS WOOD WITH STEEL BEAMS THAT VARY IN WIDTH AND DEPTH ACROSS THE FLOOR PLANS. CEILING POCKET REQUIREMENTS DO NOT APPLY AS THIS IS A STRUCTURAL CONDITION, NOT AN ARCHITECTURAL CONDITION. SPACING OF SPRINKLERS SHALL BE GOVERNED BY CONSTRUCTION TYPE "COMBUSTIBLE OBSTRUCTED" WITH A SYSTEM TYPE OF "ALL SYSTEMS". SEE ARCHITECTURAL SECTIONS ON ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS FOR BEAM SIZES AND LOCATIONS.
4. CONTRACTOR TO COORDINATE WITH CEILING, MECHANICAL, PLUMBING, AND ELECTRICAL CONTRACTORS IN REGARDS TO RUNNING SPRINKLER PIPING AND HEAD LOCATIONS BEFORE BEGINNING WORK.
5. SIDEWALL SPRINKLER HEADS MUST BE UTILIZED IN APARTMENTS ON ALL FLOORS DUE TO UNHEATED SPACE ABOVE CEILING. PIPING TO SPRINKLER HEADS IS TO BE RUN ABOVE THE CEILING ON THE FLOOR BELOW (OR FROM THE CORRIDOR ON THE FIRST FLOOR) AND THEN UP THRU THE WALLS TO HEAD LOCATIONS INDICATED. COORDINATE LOCATIONS WITH DOORS, INTERIOR WINDOWS, AND CEILING FANS.

FIRE PROTECTION DRAWING NOTES (#):

(THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY FIRE PROTECTION DRAWING.)

1. 6" FIRE SERVICE WITH BFP–2. CONTINUE AS REQUIRED PER SPRINKLER LAYOUTS AND NFPA 13 AS NOTED. SEE DETAIL #1 ON DRAWING FP–1.
2. 4" DOMESTIC WATER SERVICE (DOWN TO 3"). BFP–1, AND BOOSTER PUMPS (P–1 & P–2) BY PLUMBING CONTRACTOR. SHOWN FOR CLARITY ONLY. SEE PLUMBING DRAWINGS FOR ROOM LAYOUT.
3. 6" FIRE PROTECTION RISER UP. PIPING SIZE SHOWN IS TO BE VERIFIED WITH HYDRAULIC CALCULATIONS PER THE SPECIFICATIONS. COORDINATE FINAL LOCATION WITH ARCHITECT TO ENSURE REQUIRED EGRESS PATHS ARE ACHIEVABLE.
4. FLOOR TO BE ZONED WITH FLOOR CONTROL VALVE (WITH TAMPER SWITCH), CHECK VALVE, MAIN DRAIN VALVE, AND FLOW SWITCH. TAMPER AND FLOW SWITCHES TO BE ELECTRICALLY SUPERVISED. COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION. SEE DETAIL #2 ON DRAWING FP–1.
5. PROVIDE SPRINKLER HEADS AT TOP AND BOTTOM OF ELEVATOR SHAFTS PER NFPA 13. SEE GENERAL NOTES.
6. PROVIDE SPRINKLER HEADS PER NFPA 13 IN STAIRWELLS. SEE GENERAL NOTES.
7. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR MECH ROOMS, ELECTRIC ROOMS, BIKE ROOMS, TENANT STORAGE, AND WATER ROOMS. BIKE ROOM & TENANT STORAGE SPRINKLER HEADS SHALL HAVE PROTECTIVE CAGES. THE SPACES ARE ORDINARY HAZARD GROUP 1. SEE GENERAL NOTES.
8. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR APARTMENTS (SEE GENERAL NOTE #5) – PROVIDE A DRY SIDEWALL HEAD AT EXTERIOR PATIOS. ALSO TYPICAL FOR CORRIDORS, TOILET ROOMS, JANITOR'S CLOSETS, LOBBY, AND VESTIBULES. THE SPACES ARE LIGHT HAZARD. SEE GENERAL NOTES.
9. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR ALL COMMERCIAL SPACES, TRASH ROOMS, AND TRASH CHUTE. THE TRASH CHUTE SHALL ALSO BE GOVERNED BY NFPA 82 AND SPRINKLER SHALL BE INSTALLED INSIDE CHUTES – AT THE TOP AND AT THE BOTTOM OF THE CHUTES. THE SPACES ARE ORDINARY HAZARD GROUP 2. SEE GENERAL NOTES.

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SA PROJECT TEAM: PRINCIPAL P. Silvestri
PROJ. ARCH. S. Hunt JOB CAPT.
INTERIORS A. Nagle DRAFTER

SEAL:
Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677
STATE OF NEW YORK · JAMES D. BOWMAN · 084713 · LICENSED PROFESSIONAL ENGINEER
5-23-25

TITLE:
FIRE PROTECTION FIRST FLOOR PLAN

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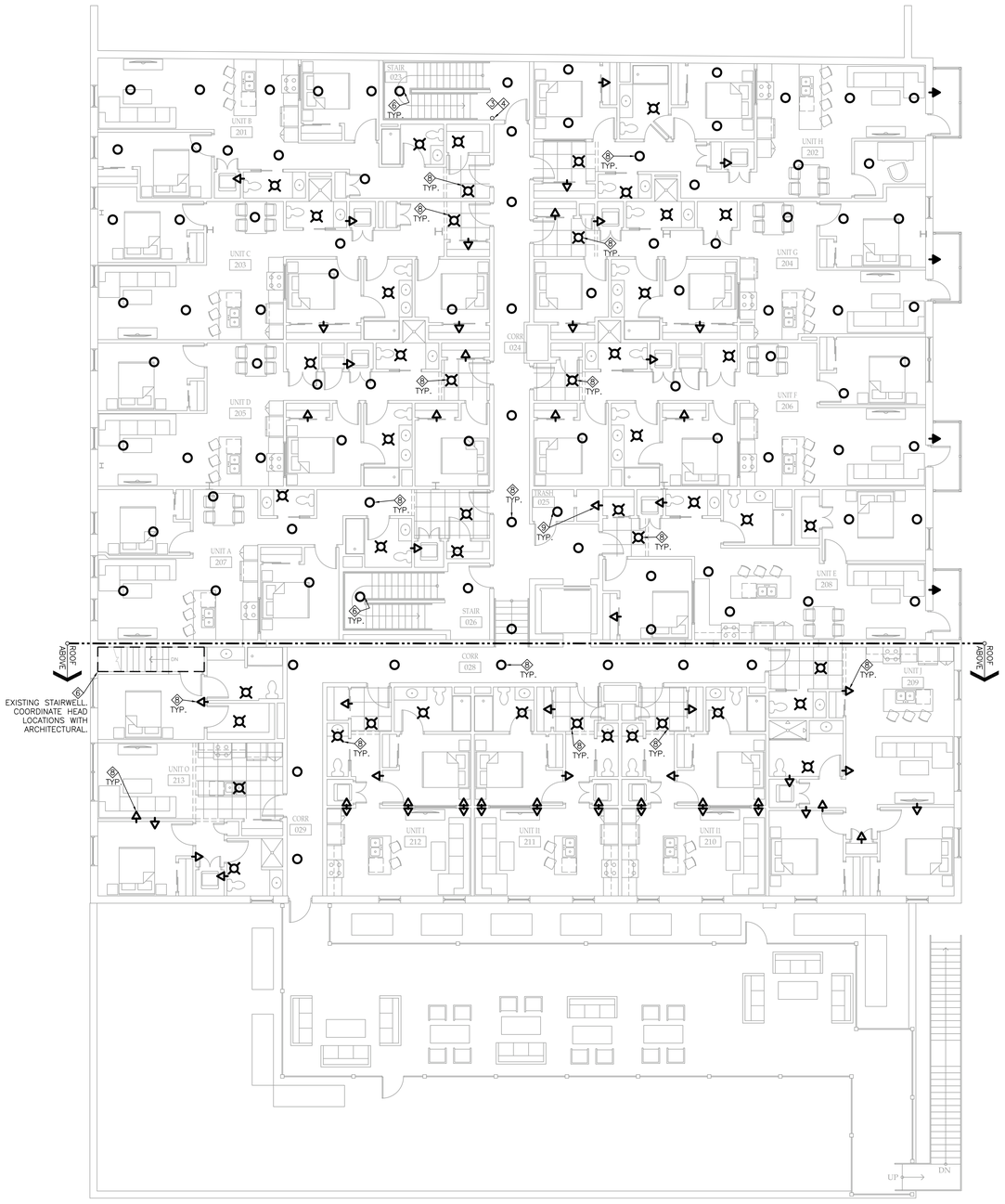
SA JOB #: 24037.01
DATE: 5-23-2025

DRAWING #: FP-2



1 FP-3 FIRE PROTECTION SECOND FLOOR PLAN

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

GENERAL FIRE PROTECTION DRAWING NOTES:

1. CONTRACTOR TO FOLLOW OCCUPANCY HAZARDS REFERRED TO IN DRAWINGS NOTES. IF NO HAZARD OR NOTE IS GIVEN FOR A SPACE, THE CONTRACTOR IS TO FOLLOW NFPA 13.
2. WHERE UPRIGHT SPRINKLER HEADS ARE SHOWN, SPRINKLER PIPING IS TO RUN EXPOSED TO EACH HEAD.
3. COORDINATE ALL PIPING WITH STRUCTURE AND ALL OTHER WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES. COORDINATE WORK WITH CEILING TYPES SHOWN ON ARCHITECTURAL DRAWINGS. BUILDING CONSTRUCTION REQUIRES SPRINKLERS IN CONCEALED SPACES (SEE SPECIFICATIONS) – HEADS INSIDE SAID SPACES WILL NOT BE SHOWN ON DRAWINGS FOR CLARITY'S SAKE. COORDINATE LOCATIONS OF HEADS WITH APARTMENT CEILING FANS. EXISTING STRUCTURAL BEAMS ARE EXPOSED IN AREAS WITH NO CEILINGS AND MAY ACT AS OBSTRUCTIONS – SEE BELOW.

   THE MAJORITY OF THE BUILDING HAS EXPOSED STRUCTURE (NO CEILINGS). THESE AREAS FALL UNDER NFPA 13 8.6.4.1.2. THE MAJORITY OF THE EXISTING STRUCTURE IS WOOD WITH STEEL BEAMS THAT VARY IN WIDTH AND DEPTH ACROSS THE FLOOR PLANS. CEILING POCKET REQUIREMENTS DO NOT APPLY AS THIS IS A STRUCTURAL CONDITION, NOT AN ARCHITECTURAL CONDITION. SPACING OF SPRINKLERS SHALL BE GOVERNED BY CONSTRUCTION TYPE "COMBUSTIBLE OBSTRUCTED" WITH A SYSTEM TYPE OF "ALL SYSTEMS". SEE ARCHITECTURAL SECTIONS ON ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS FOR BEAM SIZES AND LOCATIONS.
4. CONTRACTOR TO COORDINATE WITH CEILING, MECHANICAL, PLUMBING, AND ELECTRICAL CONTRACTORS IN REGARDS TO RUNNING SPRINKLER PIPING AND HEAD LOCATIONS BEFORE BEGINNING WORK.
5. SIDEWALL SPRINKLER HEADS MUST BE UTILIZED IN APARTMENTS ON ALL FLOORS DUE TO UNHEATED SPACE ABOVE CEILING. PIPING TO SPRINKLER HEADS IS TO BE RUN ABOVE THE CEILING ON THE FLOOR BELOW (OR FROM THE CORRIDOR ON THE FIRST FLOOR) AND THEN UP THRU THE WALLS TO HEAD LOCATIONS INDICATED. COORDINATE LOCATIONS WITH DOORS, INTERIOR WINDOWS, AND CEILING FANS.

FIRE PROTECTION DRAWING NOTES (#):

(THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY FIRE PROTECTION DRAWING.)

1. 6" FIRE SERVICE WITH BFP–2. CONTINUE AS REQUIRED PER SPRINKLER LAYOUTS AND NFPA 13 AS NOTED. SEE DETAIL #1 ON DRAWING FP–1.
2. 4" DOMESTIC WATER SERVICE (DOWN TO 3"). BFP–1, AND BOOSTER PUMPS (P–1 & P–2) BY PLUMBING CONTRACTOR. SHOWN FOR CLARITY ONLY. SEE PLUMBING DRAWINGS FOR ROOM LAYOUT.
3. 6" FIRE PROTECTION RISER UP. PIPING SIZE SHOWN IS TO BE VERIFIED WITH HYDRAULIC CALCULATIONS PER THE SPECIFICATIONS. COORDINATE FINAL LOCATION WITH ARCHITECT TO ENSURE REQUIRED EGRESS PATHS ARE ACHIEVABLE.
4. FLOOR TO BE ZONED WITH FLOOR CONTROL VALVE (WITH TAMPER SWITCH), CHECK VALVE, MAIN DRAIN VALVE, AND FLOW SWITCH. TAMPER AND FLOW SWITCHES TO BE ELECTRICALLY SUPERVISED. COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION. SEE DETAIL #2 ON DRAWING FP–1.
5. PROVIDE SPRINKLER HEADS AT TOP AND BOTTOM OF ELEVATOR SHAFTS PER NFPA 13. SEE GENERAL NOTES.
6. PROVIDE SPRINKLER HEADS PER NFPA 13 IN STAIRWELLS. SEE GENERAL NOTES.
7. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR MECH ROOMS, ELECTRIC ROOMS, BIKE ROOMS, TENANT STORAGE, AND WATER ROOMS. BIKE ROOM & TENANT STORAGE SPRINKLER HEADS SHALL HAVE PROTECTIVE CAGES. THE SPACES ARE ORDINARY HAZARD GROUP 1. SEE GENERAL NOTES.
8. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR APARTMENTS (SEE GENERAL NOTE #5) – PROVIDE A DRY SIDEWALL HEAD AT EXTERIOR PATIOS. ALSO TYPICAL FOR CORRIDORS, TOILET ROOMS, JANITOR'S CLOSETS, LOBBY, AND VESTIBULES. THE SPACES ARE LIGHT HAZARD. SEE GENERAL NOTES.
9. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR ALL COMMERCIAL SPACES, TRASH ROOMS, AND TRASH CHUTE. THE TRASH CHUTE SHALL ALSO BE GOVERNED BY NFPA 82 AND SPRINKLER SHALL BE INSTALLED INSIDE CHUTES – AT THE TOP AND AT THE BOTTOM OF THE CHUTES. THE SPACES ARE ORDINARY HAZARD GROUP 2. SEE GENERAL NOTES.

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SEAL:

Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677

STATE OF NEW YORK · JAMES D. BORMAN · 084713 · REG. PROFESSIONAL ENGINEER

5-23-25

TITLE:

FIRE PROTECTION SECOND FLOOR PLAN

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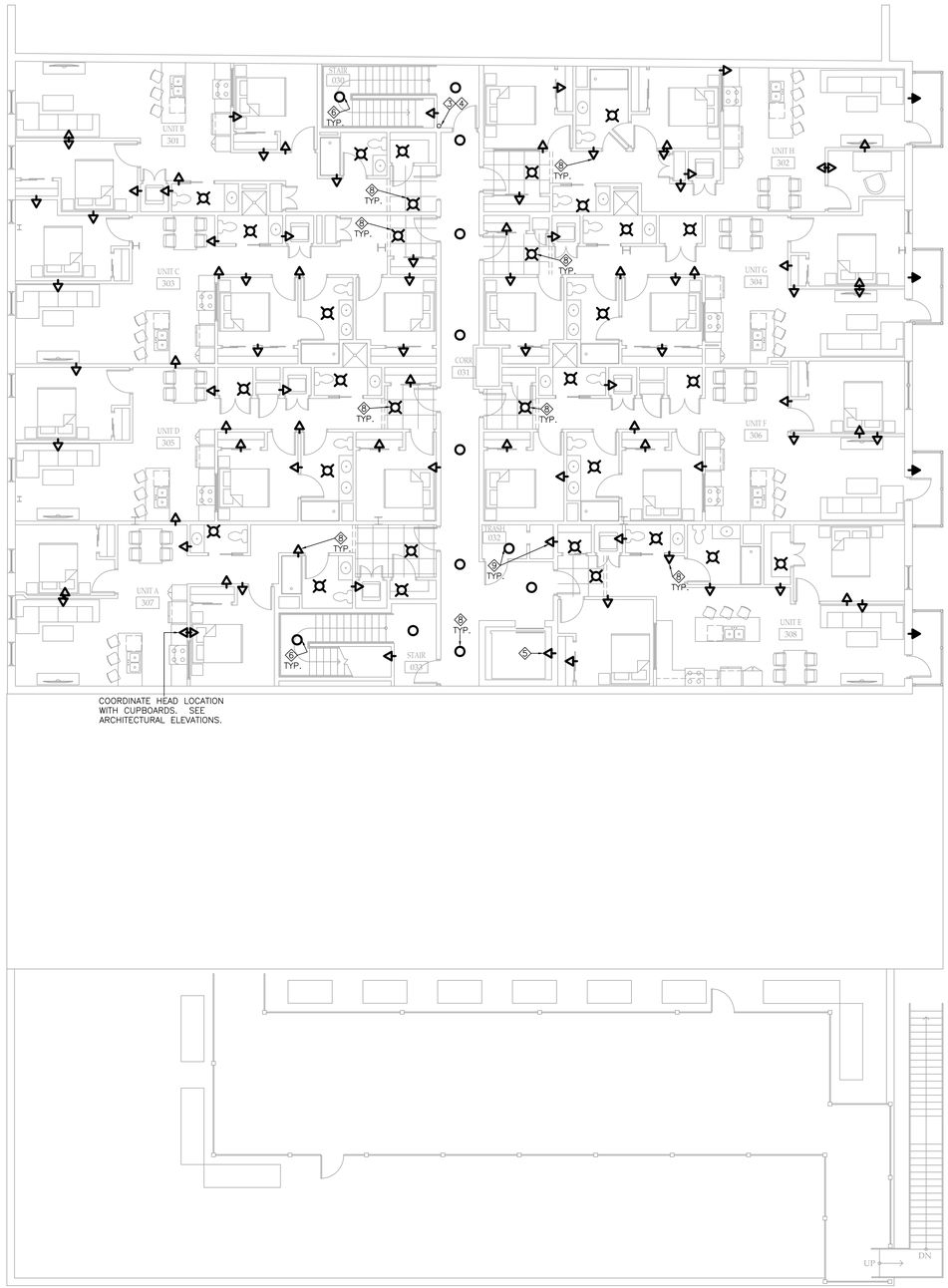
SA JOB #: 24037.01

DATE: 5-23-2025

DRAWING #: FP-3



1 FP-4 FIRE PROTECTION THIRD FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL FIRE PROTECTION DRAWING NOTES:

1. CONTRACTOR TO FOLLOW OCCUPANCY HAZARDS REFERRED TO IN DRAWINGS NOTES. IF NO HAZARD OR NOTE IS GIVEN FOR A SPACE, THE CONTRACTOR IS TO FOLLOW NFPA 13.
2. WHERE UPRIGHT SPRINKLER HEADS ARE SHOWN, SPRINKLER PIPING IS TO RUN EXPOSED TO EACH HEAD.
3. COORDINATE ALL PIPING WITH STRUCTURE AND ALL OTHER WORK. CONTRACTOR SHALL REFERENCE ARCHITECTURAL RCP PLANS TO VERIFY ALL CEILING TYPES. COORDINATE WORK WITH CEILING TYPES SHOWN ON ARCHITECTURAL DRAWINGS. BUILDING CONSTRUCTION REQUIRES SPRINKLERS IN CONCEALED SPACES (SEE SPECIFICATIONS) – HEADS INSIDE SAID SPACES WILL NOT BE SHOWN ON DRAWINGS FOR CLARITY'S SAKE. COORDINATE LOCATIONS OF HEADS WITH APARTMENT CEILING FANS. EXISTING STRUCTURAL BEAMS ARE EXPOSED IN AREAS WITH NO CEILINGS AND MAY ACT AS OBSTRUCTIONS – SEE BELOW.

   THE MAJORITY OF THE BUILDING HAS EXPOSED STRUCTURE (NO CEILINGS). THESE AREAS FALL UNDER NFPA 13 8.6.4.1.2. THE MAJORITY OF THE EXISTING STRUCTURE IS WOOD WITH STEEL BEAMS THAT VARY IN WIDTH AND DEPTH ACROSS THE FLOOR PLANS. CEILING POCKET REQUIREMENTS DO NOT APPLY AS THIS IS A STRUCTURAL CONDITION, NOT AN ARCHITECTURAL CONDITION. SPACING OF SPRINKLERS SHALL BE GOVERNED BY CONSTRUCTION TYPE "COMBUSTIBLE OBSTRUCTED" WITH A SYSTEM TYPE OF "ALL SYSTEMS". SEE ARCHITECTURAL SECTIONS ON ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS FOR BEAM SIZES AND LOCATIONS.
4. CONTRACTOR TO COORDINATE WITH CEILING, MECHANICAL, PLUMBING, AND ELECTRICAL CONTRACTORS IN REGARDS TO RUNNING SPRINKLER PIPING AND HEAD LOCATIONS BEFORE BEGINNING WORK.
5. SIDEWALL SPRINKLER HEADS MUST BE UTILIZED IN APARTMENTS ON ALL FLOORS DUE TO UNHEATED SPACE ABOVE CEILING. PIPING TO SPRINKLER HEADS IS TO BE RUN ABOVE THE CEILING ON THE FLOOR BELOW (OR FROM THE CORRIDOR ON THE FIRST FLOOR) AND THEN UP THRU THE WALLS TO HEAD LOCATIONS INDICATED. COORDINATE LOCATIONS WITH DOORS, INTERIOR WINDOWS, AND CEILING FANS.

FIRE PROTECTION DRAWING NOTES (#):
(THIS IS A MASTER LIST. NOT EVERY NOTE IS USED ON EVERY FIRE PROTECTION DRAWING.)

1. 6" FIRE SERVICE WITH BFP–2. CONTINUE AS REQUIRED PER SPRINKLER LAYOUTS AND NFPA 13 AS NOTED. SEE DETAIL #1 ON DRAWING FP–1.
2. 4" DOMESTIC WATER SERVICE (DOWN TO 3"), BFP–1, AND BOOSTER PUMPS (P–1 & P–2) BY PLUMBING CONTRACTOR. SHOWN FOR CLARITY ONLY. SEE PLUMBING DRAWINGS FOR ROOM LAYOUT.
3. 6" FIRE PROTECTION RISER UP. PIPING SIZE SHOWN IS TO BE VERIFIED WITH HYDRAULIC CALCULATIONS PER THE SPECIFICATIONS. COORDINATE FINAL LOCATION WITH ARCHITECT TO ENSURE REQUIRED EGRESS PATHS ARE ACHIEVABLE.
4. FLOOR TO BE ZONED WITH FLOOR CONTROL VALVE (WITH TAMPER SWITCH), CHECK VALVE, MAIN DRAIN VALVE, AND FLOW SWITCH. TAMPER AND FLOW SWITCHES TO BE ELECTRICALLY SUPERVISED. COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION. SEE DETAIL #2 ON DRAWING FP–1.
5. PROVIDE SPRINKLER HEADS AT TOP AND BOTTOM OF ELEVATOR SHAFTS PER NFPA 13. SEE GENERAL NOTES.
6. PROVIDE SPRINKLER HEADS PER NFPA 13 IN STAIRWELLS. SEE GENERAL NOTES.
7. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR MECH ROOMS, ELECTRIC ROOMS, BIKE ROOMS, TENANT STORAGE, AND WATER ROOMS. BIKE ROOM & TENANT STORAGE SPRINKLER HEADS SHALL HAVE PROTECTIVE CAGES. THE SPACES ARE ORDINARY HAZARD GROUP 1. SEE GENERAL NOTES.
8. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR APARTMENTS (SEE GENERAL NOTE #5) – PROVIDE A DRY SIDEWALL HEAD AT EXTERIOR PATIOS. ALSO TYPICAL FOR CORRIDORS, TOILET ROOMS, JANITOR'S CLOSETS, LOBBY, AND VESTIBULES. THE SPACES ARE LIGHT HAZARD. SEE GENERAL NOTES.
9. PROVIDE WET SPRINKLER SYSTEM INSTALLED AS PER NFPA 13, TYPICAL FOR ALL COMMERCIAL SPACES, TRASH ROOMS, AND TRASH CHUTE. THE TRASH CHUTE SHALL ALSO BE GOVERNED BY NFPA 82 AND SPRINKLER SHALL BE INSTALLED INSIDE CHUTES – AT THE TOP AND AT THE BOTTOM OF THE CHUTES. THE SPACES ARE ORDINARY HAZARD GROUP 2. SEE GENERAL NOTES.

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5-23-2025: BID/PERMIT SET

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Registration Expiration Date: 06-30-27
Firm Certificate Number: 0019677
5-23-25

TITLE:
FIRE PROTECTION THIRD FLOOR PLAN

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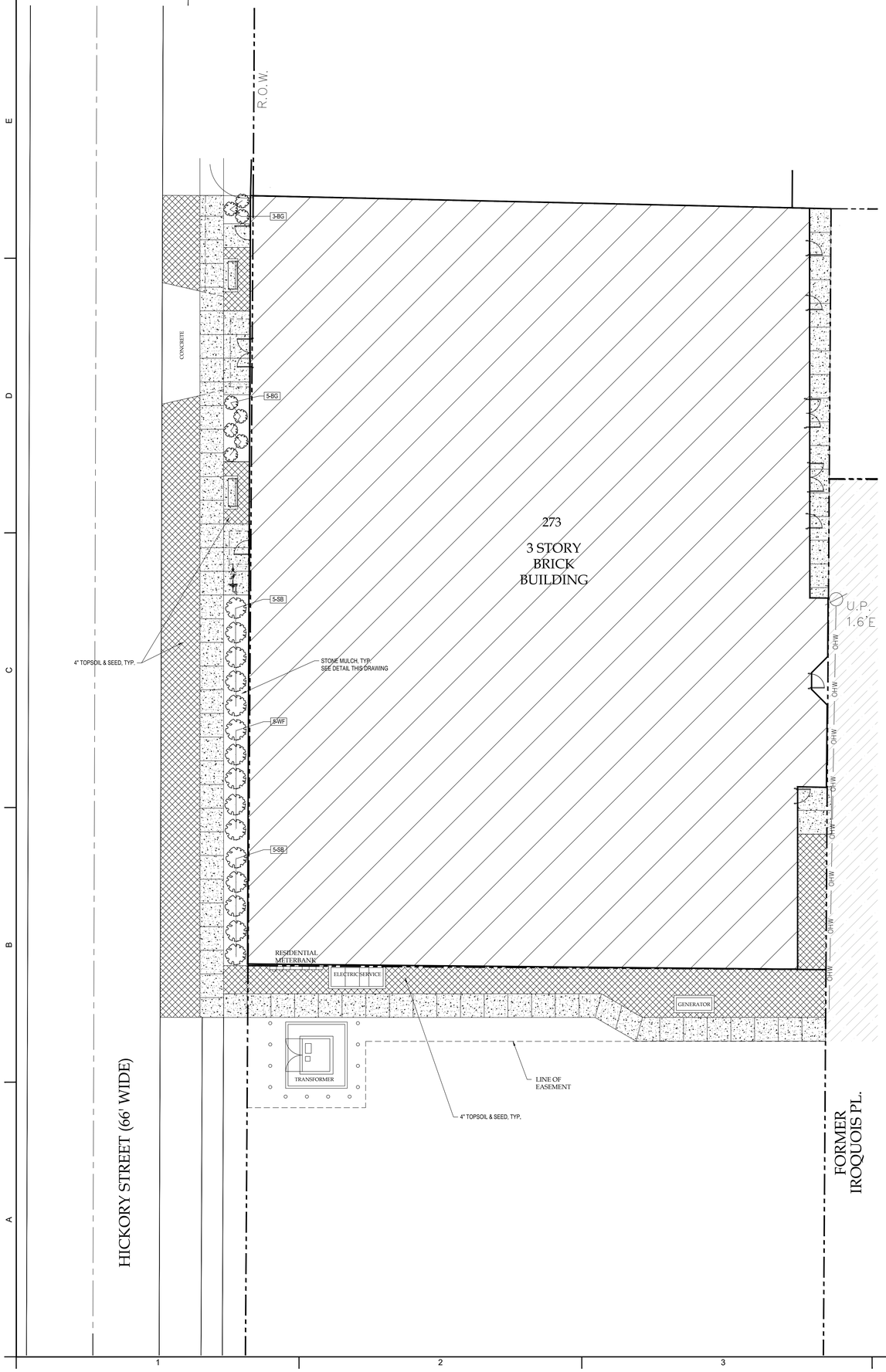
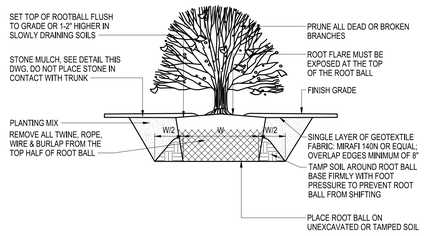
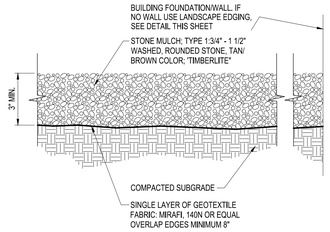
DRAWING #: FP-4





SHRUB PLANTING DETAIL (WITH STONE MULCH)

SCALE: NTS



STONE MULCH DETAIL

SCALE: NTS

LANDSCAPING

PLANTING SPECIFICATION

1. SCOPE OF WORK
   A. THIS WORK SHALL CONSIST OF PERFORMING, CLEARING, AND GRUBBING SOIL PREPARATION, FINISH GRADING, PLANTING AND DRAINAGE INCLUDING ALL LABOR MATERIALS, TOOLS, EQUIPMENT, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THE PROJECT.

2. MATERIALS
   A. PLANTS - ALL PLANTS SHALL BE HEALTHY, OF NORMAL GROWTH, WELL ROOTED, FREE FROM DISEASE AND INSECTS. QUALITY AND PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARDS FOR NURSERY STOCK (ANSI Z60.1) AND BE OF NUMBER ONE GRADE.
   B. VARIETIES AND SIZES OF PLANTS SHALL BE SHOWN ON DRAWING.

3. FERTILIZER
   A. FERTILIZER SHALL BE MILORGANITE (6-2-0) OR APPROVED EQUAL

4. GENERAL WORK PROCEDURES
   A. LANDSCAPE WORK SHALL BE ACCORDING TO THE WORKMANLIKE STANDARDS ESTABLISHED FOR LANDSCAPING CONSTRUCTION AND PLANTING.

5. WEEDING
   A. BEFORE AND DURING PRELIMINARY GRADING AND FINISH GRADING, ALL WEEDS AND GRASSES SHALL BE DUG OUT BY THE ROOTS AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

6. SOIL CONDITIONING
   A. CULTIVATE ALL AREAS TO BE PLANTED TO A DEPTH OF 6". ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

7. PLANTING
   POSITION TREES AND SHRUBS AT THEIR INTENDED LOCATIONS AS PER THE PLANS AND SECURE THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE EXCAVATING PITS, MAKING NECESSARY ADJUSTMENTS AS DIRECTED.
   A. PLANTING PITS SHALL BE DUG WITH LEVEL BOTTOMS, AS SHOWN ON THE PLANTING DETAILS
      - 3 PARTS TOPSOIL
      - 1 PART PEAT MOSS OR COMPOST
      - 1/3 PART MILORGANITE FERTILIZER
   B. PREPARED SOIL SHALL BE TAMPED FIRMLY AT BOTTOM OF PIT, FILL PREPARED SOIL AROUND BALL OF PLANT ½ WAY, AND WATER. COMPLETE BACK-FILLING AND WATER THOROUGHLY.
   C. ALL PLANTS SHALL BE SET SO THAT, WHEN SETTLED, THEY BEAR THE SAME RELATION TO THE REQUIRED GRADE AS THEY BORE TO THE NATURAL GRADE BEFORE BEING TRANSPLANTED.
   D. IMMEDIATELY AFTER PLANTING, STAKE ALL TREES PER DETAILS AND AS DIRECTED BY LANDSCAPE ARCHITECT
   E. PREPARE RAISED EARTH SAUCER AS WIDE AS PLANTING HOLE OF EACH PLANT.
   F. WATER IMMEDIATELY AFTER PLANTING, WATER SHALL BE APPLIED TO EACH TREE AND SHRUB IN SUCH MANNER AS NOT TO DISTURB BACKFILL AND TO THE EXTENT THAT ALL MATERIALS IN THE PLANTING HOLE ARE THOROUGHLY SATURATED.
   G. AFTER SHRUB BEDS AND TREE SAUCERS ARE BACKFILLED AND FINE GRADED, MULCH WITH 3" DEPTH OF DARK, SHREDDED HARDWOOD BARK MULCH.

8. FINISH GRADING
   A. PLUS/MINUS .1 FOOT OF FINISH GRADE
   B. ALL LAWNS AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE. SOIL AREAS ADJACENT TO THE BUILDING SHALL SLOPE AWAY FROM THE BUILDING.
   C. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW FREE FLOW OF SURFACE WATER.

9. GUARANTEE
   A. CONTRACTOR SHALL GUARANTEE ALL PLANTS FOR A PERIOD OF ONE (1) YEAR

10. CLEAN-UP
    A. UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT AND DEBRIS RESULTING FROM HIS WORK. ALL ACCEPTABLE CONDITIONS AS APPROVED BY THE OWNERS AUTHORIZED REPRESENTATIVE.

11. MAINTENANCE
    MAINTENANCE PERIOD TO COMMENCE AFTER FINAL INSPECTION
    A. MAINTENANCE PERIOD FOR THIS CONTRACT SHALL BE 90 CALENDAR DAYS COMMENCING AFTER FINAL INSPECTION OF CONSTRUCTION. MAINTAIN TREES, SHRUBS AND OTHER PLANTS BY PRUNING, CULTIVATING AND WEEDING AS REQUIRED FOR HEALTHY GROWTH, RESTORE PLANTING SAUCERS, TIGHTEN AND REPAIR STAKE AND GUY SUPPORT AND RESET TREES AND SHRUBS TO PROPER GRADES OR VERTICAL POSITION AS REQUIRED. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE. MAINTAIN LAWNS BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, AND OTHER OPERATIONS SUCH AS ROLLING, REGRADING AND REPLANTING AS REQUIRED TO ESTABLISH A SMOOTH, ACCEPTABLE LAWN, FREE OF ERODED OR BARE AREAS.

PLANT SCHEDULE

KEY	BOTANICAL / COMMON NAME	SIZE	CONT.	QTY	UNIT
	SHRUBS				
BG	Buxus x 'Green Velvet' / Green Velvet Boxwood	2 gal.	Cont.	8	ea
SB	Spiraea x bumalda 'Goldflame' / Goldflame Spirea	2 gal.	Cont.	10	ea
WF	Weigela florida 'Alexandra' / Wine & Roses® Weigela	2 gal.	Cont.	5	ea

PLAN NORTH

0 10' 20'

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LANDSCAPING
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