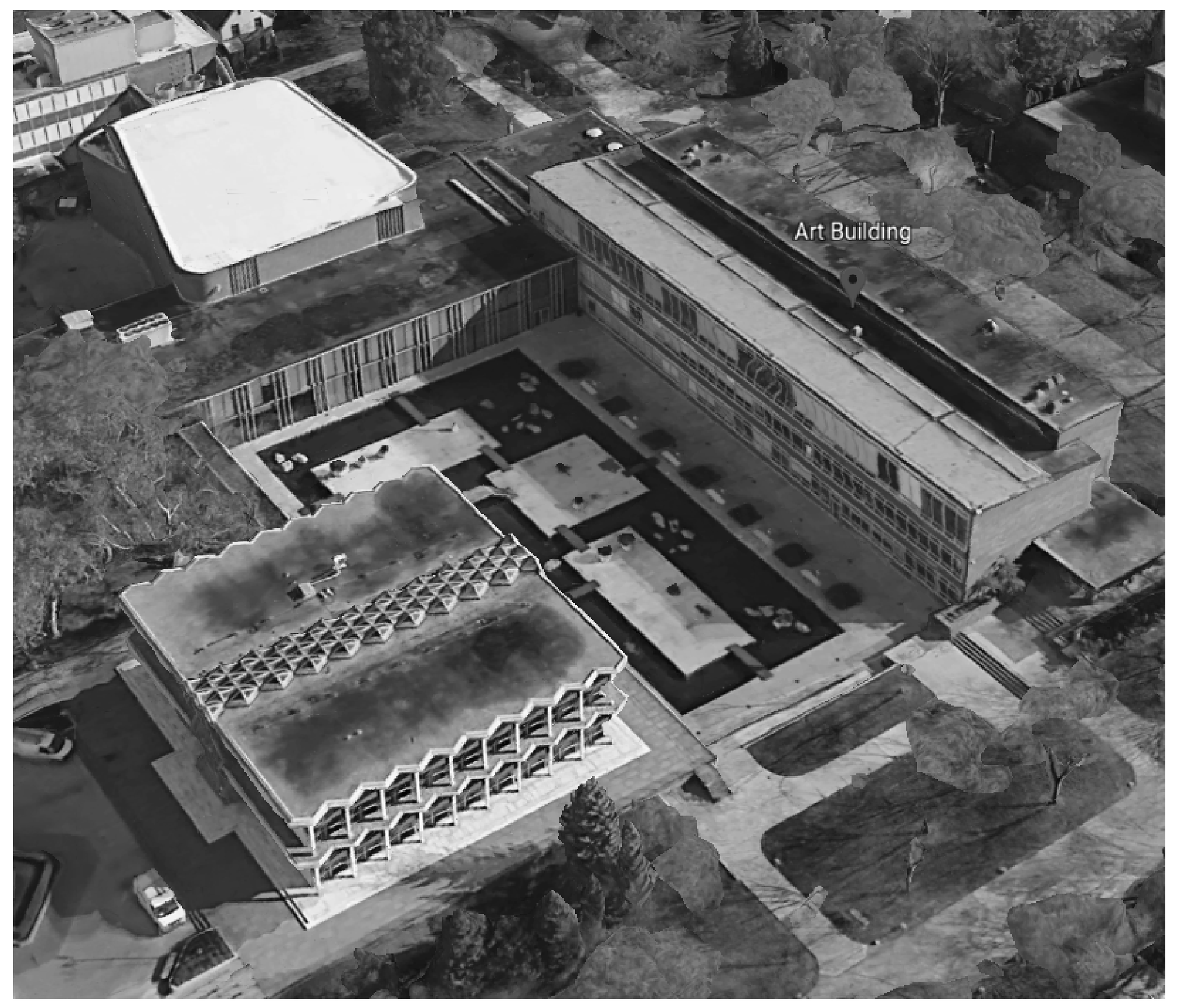
Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

STANTEC PROJECT NUMBER: 214100597

WSU PROJECT NUMBER: 040-348980



VIEW OF EXISTING BUILDING

LOCATION MAP

PROJECT TEAM:

CLIENT:
WAYNE STATE UNIVERSITY

5400 GULLEN MALL
DETROIT, MI 48202

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BERKLEY, MI 48072 - 1500

CONTACT: BERNIE GRANT
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ELECTRICAL ENGINEER:
STANTEC ARCHITECTURE INC.

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CONTACT: JASON DECHECK
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ELEVATOR PROJECT DRAWING LIST

NO.	DRAWING NAME	BID SET
GENERAL		
Ge001	PROJECT COVER SHEET	●
Ge021	LEGENDS, SYMBOLS, ABBREVIATIONS	●
Ge022	TYPICAL MOUNTING HEIGHTS	●
Ge100	CODE INFORMATION	●
STRUCTURAL		
Se.001	GENERAL STRUCTURAL NOTES	●
Se.002	GENERAL STRUCTURAL NOTES	●
Se.003	SPECIAL INSPECTION SCHEDULES	●
Se.111	ENLARGED PLANS	●
Se.112	ENLARGED PLANS	●
Se.300	TYPICAL DETAILS	●
Se.700	SECTIONS	●
Se.701	SECTIONS	
ARCHITECTURE		
ADe111	ENLARGED DEMO PLANS	●
Ae101	COMPOSITE PLANS	●
Ae111	ENLARGED PLANS	●
Ae311	ENLARGED EXTERIOR ELEVATIONS	●
Ae421	PARTITION / DOOR SCHEDULE AND DETAILS	●
Ae601	SECTION DETAILS	●
MECHANICAL		
MDe111	ENLARGED MECHANICAL DEMOLITION PLANS	●
Me100	MECHANICAL LEGEND, SYMBOLS, AND ABBREVIATIONS	●
Me111	ENLARGED MECHANICAL PLANS	●
Me601	MECHANICAL DETAILS & SCHEDULES	●
Me701	TEMPERATURE CONTROLS LEGEND	●
ELECTRICAL		
Ee001	ELECTRICAL COVERSHEET	●
Ee002	ELECTRICAL SCHEDULES	●
Ee003	ELECTRICAL DETAILS	●
Ee100	ELECTRICAL DEMOLITION PLAN	●
Ee101	ELECTRICAL DEMOLITION PLAN	●
Ee200	ELECTRICAL NEW WORK PLAN	●
Ee201	ELECTRICAL NEW WORK PLAN	●
Ee600	ELECTRICAL SINGLE LINE	●

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Permit/Seal

Wayne State University

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Detroit, MI 48202

Project No.:214100597

File Name: N/A

Author	Designer	Checker	11/28/18
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
PROJECT COVER SHEET

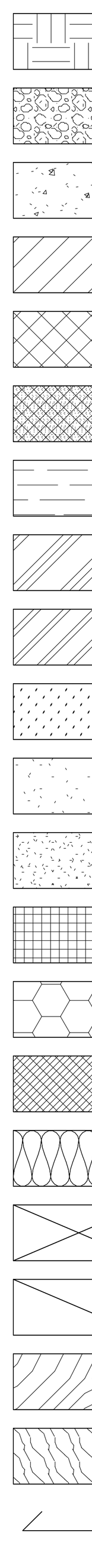
Scale:
Revision:
Drawing No. Ge001

#	NUMBER, POUNDS
%	PERCENT
&	AND
'	FOOT, FEET
"	INCH
@	AT
Ø	DIAMETER
℄	CENTER LINE
A	
AB	AIR BARRIER
ACC	ACCESSIBLE
ACT	ACOUSTICAL CEILING TILE
AD	ACCESS DOOR
ADD	ADDENDUM
ADJ	ADJUSTABLE, ADJACENT
AFF	ABOVE FINISH FLOOR
AGG	AGGREGATE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR
ANOD	ANODIZED
AP	ACCESS PANEL
APC	ACOUSTICAL PANEL CEILING
APPROX	APPROXIMATELY, APPROXIMATE
ARCH	ARCHITECT, ARCHITECTURAL
ASC	ABOVE SUSPENDED CEILING
ASPH	ASPHALT
ASSY	ASSEMBLY
ATTEN	ATTENUATION
AUTH	AUTHORIZED
AUTO	AUTOMATIC
AUX	AUXILARY
AVG	AVERAGE
AWI	ARCHITECTURAL WOODWORK INSTITUTE
AWP	ACOUSTICAL WALL PANEL
AX	AXIS
B	
BC	BACK OF CURB
BET	BETWEEN
BFF	BELOW FINISH FLOOR
BHD	BULKHEAD
BIT	BITUMINOUS
BLDG	BUILDING
BLT	BORROWED LITE
BO	BOTTOM OF
BOT	BOTTOM
BRD	BOARD
BRK	BRICK
BRZ	BRONZE
BS	BOTH SIDES
BUR	BUILT-UP ROOF
BW	BOTH WAYS
C	
C/C	CENTER TO CENTER
CAB	CABINET
CBB	CEMENTITIOUS BACKER BOARD
CD	CONTRACT DOCUMENTS
CEM	CEMENT
CFMF	COLD-FORMED METAL FRAMING
CG	CORNER GUARD
CH	COAT HOOK
CHBRD	CHALKBOARD
CHR	CHAIR RAIL
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUE, CONTINUOUS
COORD	COORDINATE
CPT	CARPET
CS	CAST STONE
CT	CERAMIC TILE
CTB	CERAMIC TILE BASE
CW	CURTAIN WALL
D	
D	DEPTH, DEEP
DBL	DOUBLE
DEF	DEFORMED
DEMO	DEMOLISH
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGRAM, DIAGONAL
DIM	DIMENSION
DISP	DISPENSER
DIST	DISTANCE
DIV	DIVISION, DIVIDE
DL	DEAD LOAD
DMPF	DAMPPROOFING
DN	DOWN
DO	DOOR OPENING
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DW	DRAWER
DWG	DRAWING(S)
E	
E	EAST
EA	EACH
EC	EXPOSED CONSTRUCTION
EIFS	EXTERIOR INSULATION & FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELECT	ELECTRIC
ELEV	ELEVATOR
EMER	EMERGENCY
ENC	ENCLOSURE
EQ	EQUAL
EQ SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ETC	ET CETERA
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR

F	
FA	FLUID APPLIED
FAB	FABRICATE
FAB	FABRIC
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET - RECESSED
FECR	FIRE EXTINGUISHER CABINET - SEMI RECESSED
FECS	FIRE EXTINGUISHER CABINET - SURFACE MTD
FF EL	FINISH FLOOR ELEVATION
FF&E	FURNITURE, FIXTURE & EQUIPMENT
FHC	FIRE HOSE CABINET
FIG	FIGURE
FIN	FINISH
FIN GR	FINISH GRADE
FIXT	FIXTURE
FLASH	FLASHING
FLR	FLOOR
FO	FACE OF FINISH OPENING
FRP	FIBER REINFORCED PLASTIC
FRTW	FIRE-RETARDANT TREATED WOOD
FRZ	FREEZER
FT	FEET
FURG	FURRING
FVC	FIRE VALVE CABINET
FWC	FABRIC WALL COVERING
FWP	FABRIC PANEL
G	
GA	GAUGE
GALV	GALVANIZED
GEN	GENERAL
GL	GLASS
GLZ	GLAZING, GLAZED
GMB	GLASS MARKERBOARD
GRD	GRADE
GSU	GLAZED STRUCTURAL UNIT
GYP	GYPSUM BOARD
H	
H	HIGH, HEIGHT
HB	HOSE BIBB
HC	HOLLOW CORE
HDR	HEADER
HGT	HEIGHT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR, HOURS
HRDW	HARDWARE
HVAC	HEATING, VENTING & COOLING
HWD	HARD WOOD
HWP	HARDWOOD WALL PANEL
I	
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIMENSION, INSIDE DIAMETER
IMP	INSULATED METAL PANEL
IN	INCH, INCHES
INCL	INCLUDED
INFO	INFORMATION
INSUL	INSULATION, INSULATING, INSULATED
INT	INTERIOR
J	
JNT	JOINT
K	
KD	KNOCK-DOWN
KOP	KNOCK OUT PANEL
L	
LAM	LAMINATE
LAV	LAVATORY
LBS	POUNDS
LF	LINEAR FOOT
LH	LEFT HAND
LIN	LINOLEUM
LKR	LOCKER
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LPL	LOW PRESSURE LAMINATE
LT	LIGHT
LTWT	LIGHTWEIGHT
LVR	LOUVER
LVT	LUXURY VINYL TILE
M	
MAINT	MAINTENANCE
MAM	METAL ACCESSORY MOLDING
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MARKERBOARD
MBH	MOP/BROOM HOLDER
MDF	MEDIUM DENSITY FIBERBOARD
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MFR REC	MANUFACTURER'S RECOMMENDATIONS
MGR	MANAGER
MID	MIDDLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MM	MILLIMETER
MO	MASONRY OPENING, MOTOR OPERATED
MOD	MODIFY
MOD BIT	MODIFIED BITUMEN
MP	METAL PANEL
MPH	MILES PER HOUR
MSB	MOP SERVICE BASIN
MTD	MOUNTED, MOUNTING
MTL	METAL
MTLR	METAL ROOFING
MULL	MULLION
MWK	MILLWORK
N	
N	NORTH
NA	NON APPLICABLE
NEG	NEGATIVE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER(S)
NOM	NOMINAL
NRCA	NATIONAL ROOFING CONTRACTORS ASSOCIATION
NTS	NOT TO SCALE

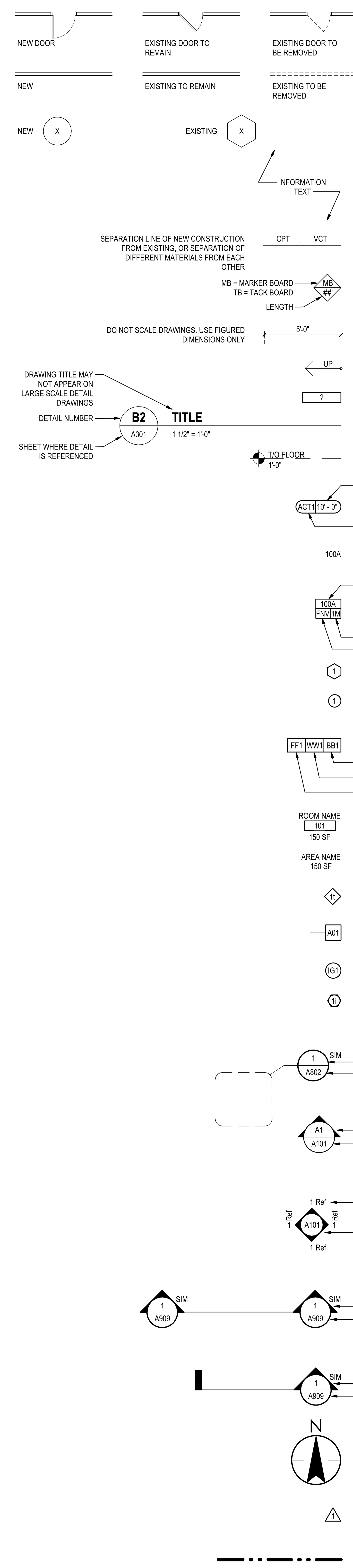
O	
OC	ON CENTER
OD	OUTSIDE DIAMETER/DIMENSION
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFD	OVERFLOW DRAIN
OH	OVERHEAD
OPG	OPENING
OPH	OPPOSITE HAND
OPP	OPPOSITE
OPR	OPERABLE
P	
PAR	PARALLEL
PBRD	PARTICLEBOARD
PCP	PORTLAND CEMENT PLASTER
PCT	PORCELAIN CERAMIC TILE
PCTB	PORCELAIN CERAMIC TILE BASE
PERP	PERPENDICULAR
PL	PLASTIC LAMINATE
PLAS	PLASTIC
PLUMB	PLUMBING
PLYWD	PLYWOOD
PNL	PANEL
PNT	PAINT, PAINTED
PORC	PORCELAIN
POS	POSITIVE
PR	PAIR
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PRT	PRESERVATIVE TREATED, PRESSURE TREATED
PRTN	PARTITION
PTD	PAPER TOWEL DISPENSER
PVC	POLYVINYL CHLORIDE
Q	
QA	QUALITY ASSURANCE
QT	QUARRY TILE
QTR	QUARTER
QTY	QUANTITY
QZ	QUARTZ
R	
R	RADIUS, RISER
RB	RESILIENT BASE, RUBBER BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE:	REFER TO:
REBAR	REINFORCING BAR
REF	REFRIGERATION, REFRIGERATOR
REINF	REINFORCED, REINFORCEMENT
REQD	REQUIRED
RES	RESILIENT SHEET FLOORING
REV	REVISION(S)
RF	RUBBER FLOORING
RH	RIGHT HAND, ROOF HATCH
RO	ROUGH OPENING
RTU	ROOF TOP UNIT
RV	ROOF VENT
S	
S	SOUTH
SALV	SALVAGE
SB	SPLASH BLOCK
SC	SEALED CONCRETE
SCHED	SCHEDULE
SCWD	SOLID CORE WOOD DOOR
SDT	STATIC DISSIPATIVE TILE
SECT	SECTION
SEP	SEPARATE, SEPARATION
SF	SQUARE FEET, STOREFRONT
SGD	SLIDING GLASS DOOR
SGL	SINGLE
SHT	SHEET
SIM	SIMILAR
SK	SINK
SND	SANITARY NAPKIN DISPENSER
SNDU	SANITARY NAPKIN DISPOSAL UNIT
SPF	SPRAYED-FOAM
SQ	SQUARE
SS	STAINLESS STEEL
SSK	SERVICE SINK
SSM	SOLID SURFACE MATERIAL
ST	STONE
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STRUC	STRUCTURE, STRUCTURAL
SUSP	SUSPENDED
SV	SHEET VINYL
SYM	SYMMETRICAL
T	
T&B	TOP AND BOTTOM
T&G	TONGUE & GROOVE
TB	TACKBOARD
TECH	TECHNICAL, TECHNOLOGY
TER	TERRAZZO
THK	THICK
THRU	THROUGH
TO	TOP OF
TPD	TOILET PAPER DISPENSER
TYP	TYPICAL
U	
UL	UNDERWRITER'S LABORATORY
UNEXC	UNEXCAVATED
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
UR	URINAL
UTIL	UTILITY
V	
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VF	VINYL FILM
VIF	VERIFY IN FIELD
VOL	VOLUME
VR	VAPOR RETARDER
VWC	VINYL WALL COVERING
W	
W	WIDTH, WEST
W/	WITH
W/O	WITHOUT
WCP	WOOD CEILING PANEL
WD	WOOD
WL	WIND LOAD
WP	WORKING POINT
WPF	WEATHERPROOF, WATERPROOF
WS	WEATHER-STRIP
WSF	WINDOW SHADE FABRIC
WT	WEIGHT
WWF	WELDED-WIRE FABRIC

MATERIAL



- EARTH
- POROUS FILL (STONE, GRAVEL, ETC)
- CONCRETE
- BRICK
- CONCRETE MASONRY UNIT (CMU)
- CONCRETE MASONRY UNIT (CMU): BURNISHED BLOCK
- CUT STONE
- ALUMINUM
- STEEL
- GROUT
- PLASTER, SAND, CEMENT
- GYPSUM BOARD
- RIGID INSULATION
- SPRAY FOAM INSULATION
- FIRE SAFING
- BATT INSULATION
- ROUGH WOOD (CONTINUOUS)
- ROUGH WOOD (NON-CONTINUOUS)
- FINISH WOOD
- PLYWOOD
- CARPET DIRECTION

DRAWING & REFERENCE SYMBOLS



- DOOR SWING INDICATOR
- WALL INDICATION (RE: WALL TYPES FOR WALL CONSTRUCTION)
- COLUMN LINES
- TEXT LEADER
- SEPARATION SYMBOL
- VISUAL DISPLAY / SURFACE INDICATION
- DIMENSION LINE
- STAIR RUN SYMBOL
- KEYNOTES
- DRAWING / DETAIL TITLE
- ELEVATION DATUM SYMBOL
- CEILING HEIGHT
- CEILING TYPE
- DOOR OPENING NUMBER
- DOOR OPENING NUMBER
- FRAME TYPE
- DOOR TYPE
- DEMOLITION SHEET NOTE
- GENERAL SHEET NOTE
- ROOM FINISH DATA TAG
  - BASE FINISH
  - WALL FINISH
  - FLOOR FINISH
- ROOM TAG
- AREA TAG
- WINDOW TAG
- PARTITION TYPE TAG
- GLAZING TYPE
- CASEWORK TAG

DETAIL CALLOUTS
- DETAIL NUMBER
- SHEET ON WHICH DETAIL IS SHOWN

EXTERIOR ELEVATIONS
- ELEVATION NUMBER
- SHEET ON WHICH ELEVATION IS SHOWN

INTERIOR ELEVATIONS
- ELEVATION NUMBER
- SHEET ON WHICH ELEVATION IS SHOWN

BUILDING SECTIONS
- SECTION NUMBER
- SHEET ON WHICH SECTION IS SHOWN

WALL SECTIONS
- SECTION NUMBER
- SHEET ON WHICH SECTION IS SHOWN

- NORTH ARROW
- DRAWING REVISION
- MATCH LINE

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Permit/Seal

STATE OF MICHIGAN
MICHAEL G. DECOSTER
ARCHITECT
No. 1301047865
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WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.: 214100597
File Name: N/A

Dwn. | Dsgn. | Chkd. | YYYY.MM.DD

Title
LEGENDS, SYMBOLS, ABBREVIATIONS

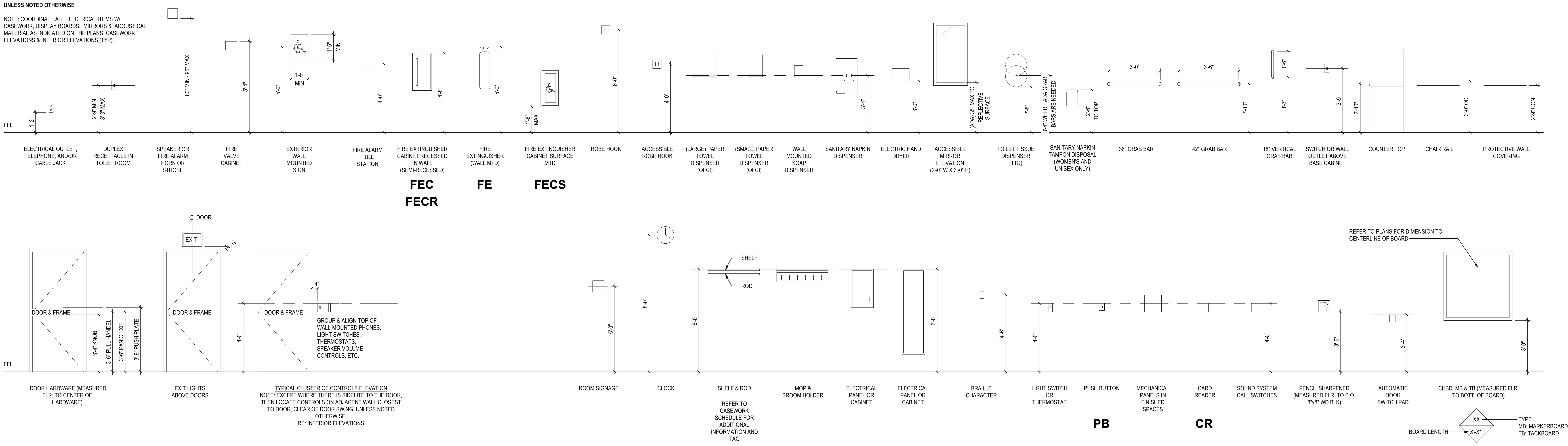
Scale: As indicated
Revision: 1
Drawing No. **Ge021**

ORIGINAL SHEET - ARCH E1

TYPICAL MOUNTING HEIGHTS

UNLESS NOTED OTHERWISE

NOTE: COORDINATE ALL ELECTRICAL ITEMS W/ CASEWORK, DISPLAY BOARDS, MIRRORS & ACOUSTICAL MATERIAL AS INDICATED ON THE PLANS, CASEWORK ELEVATIONS & INTERIOR ELEVATIONS (TYP).



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WAYNE STATE UNIVERSITY

Wayne State University

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File Name: N/A

Author	Designer	Checker	10/03/17
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title

TYPICAL MOUNTING HEIGHTS

Scale: 3/8" = 1'-0"

Revision:

Drawing No. **Ge022**

ORIGINAL SHEET - ARCH E1

BUILDING ELEMENTS

	MICHIGAN REHAB CODE (MRC)		NFPA 5000 - BLDG CONSTRUCTION & SAFETY CODE	
	ITEM	SECTION	ITEM	SECTION
PRIMARY OCCUPANCY CLASSIFICATION	GROUP B - BUSINESS	MBC 302	BUSINESS	NFPA 6.1.11 (CHAPTER 28)
ACCESSORY OCCUPANCIES				
BUILDING CONSTRUCTION CLASSIFICATION	TYPE IIB	MBC 602.2	TYPE II (000)	NFPA TBL 7.2.1.1
AUTOMATIC FIRE PROTECTION	NOT PROVIDED			
STANDPIPE SYSTEM	NO	-	NO	-
ALLOWABLE BUILDING HEIGHT	N/A		N/A	
ACTUAL BUILDING HEIGHT	3 STORIES / TOP OF PARAPET = 54'-0" (NO CHANGE TO EXISTING)			
AREA MODIFICATION	NO CHANGE TO EXISTING AREA			

FIRE RESISTANCE RATINGS OF STRUCTURE ELEMENTS

	MICHIGAN BUILDING CODE - TYPE IIB		NFPA - TYPE II (000)	
	CODE DATA	SECTION	CODE DATA	SECTION
1. PRIMARY STRUCTURAL FRAME INCLUDING COLUMN, BEAMS, GIRDERS, TRUSSES - SUPPORTING 1 FLOOR ONLY - SUPPORTING A ROOF ONLY	0 HOUR	MBC TABLE 601	0 HOUR 0 HOUR 0 HOUR	NFPA 100 TABLE A.8.2.1.2 NFPA 220 TABLE 4.1.1
2. EXTERIOR BEARING WALLS - SUPPORTING 1 FLOOR ONLY - SUPPORTING A ROOF ONLY	0 HOUR	MBC TABLE 601	0 HOUR 0 HOUR 0 HOUR	NFPA 100 TABLE A.8.2.1.2 NFPA 220 TABLE 4.1.1
3. EXTERIOR NON-BEARING WALLS & PARTITIONS - Distance (**D**) LESS THAN 5 FT - 5 FT LESS THAN / EQUAL **D** LESS THAN 10 FT - 10 FT LESS THAN / EQUAL **D** LESS THAN 30 FT - **D** GREATER THAN / EQUAL 30 FT	 1 HOUR 1 HOUR 0 HOUR 0 HOUR	MBC TABLE 602	0 HOUR	NFPA 100 TABLE A.8.2.1.2 NFPA 220 TABLE 4.1.1 NFPA 5000 TABLE 7.3.2.1
4. INTERIOR BEARING WALLS - SUPPORTING 1 FLOOR ONLY - SUPPORTING A ROOF ONLY	0 HOUR	MBC TABLE 601	0 HOUR 0 HOUR 0 HOUR	NFPA 100 TABLE A.8.2.1.2 NFPA 220 TABLE 4.1.1
5. INTERIOR NON-BEARING WALLS & PARTITIONS	0 HOURS	MBC TABLE 601	-	-
6. FLOOR CONSTRUCTION & ASSOCIATED SECONDARY MEMBERS	0 HOURS	MBC TABLE 601	0 HOUR	NFPA 100 TABLE A.8.2.1.2 NFPA 220 TABLE 4.1.1
7. ROOF CONSTRUCTION & ASSOCIATED SECONDARY MEMBERS - LESS THAN 20 FT - 20 FT OR MORE	 0 HOURS 0 HOUR	MBC TABLE 601	0 HOUR	NFPA 100 TABLE A.8.2.1.2 NFPA 220 TABLE 4.1.1
8. FIRE SEPARATION ASSEMBLIES - MIXED USE SEPARATION - STORAGE (OVER 100 SQ FT)	NA SMOKE RESISTANT (W/ SPRINKLER SYSTEM)	MBC 508.2.4	NA SMOKE RESISTANT (W/ SPRINKLER SYSTEM)	NFPA 101 14.3.2
9. FIRE PARTITIONS - EXIT ACCESS CORRIDORS	0 HOUR (W/ SPRINKLER SYSTEM)	MBC TABLE 1018.1	1 HOUR 0 HOUR	NFPA 220 TABLE 3-1 NFPA 101 14.3.6
EXTERIOR WALL - VERTICAL & LATERAL FLAME PROPAGATION				
COMBUSTIBLE WATER-RESISTIVE BARRIER TEST IN ACCORDANCE TO NFPA 285 - LESS THAN 40 FT IN HEIGHT - GREATER THAN 40 FT IN HEIGHT	 NOT REQUIRED NOT REQUIRED	MBC 1403.4 MBC 1403.5 MBC 1403.5 Exc 1, TBL 1405.2		

FIRE RATED ASSEMBLIES

MASONRY WALLS:
RATED CONCRETE MASONRY WALLS FOR ALL LOCATIONS & LOADING CONDITIONS - CERTIFIED MATERIAL COMPOSITION & EQUIVALENT THICKNESS FOR 2-HOUR FIRE RATING.

DESIGN CRITERIA

APPLICABLE CODES AND STANDARDS FOR DESIGN AND CONSTRUCTION - FIRE PROTECTION PORTIONS

STD. NO.	ED. DATE, ABBREV.	TITLE	COMMENTS
R408.30551	2015 ed. MRC	MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS AS ADOPTED BY THE STATE OF MICHIGAN, BUREAU OF CONSTRUCTION; INCORPORATES THE 2012 INTERNATIONAL EXISTING BUILDING CODE; EFFECTIVE 04/20/2017	ALTERNATE BUILDING CODE FOR WORK ON EXISTING BUILDINGS
R29.1931	2016 ed. SCU	ADMINISTRATIVE RULES FOR NEW AND EXISTING SCHOOL, COLLEGE AND UNIVERSITY FIRE SAFETY (SCU) AS ADOPTED BY THE MICHIGAN FIRE SAFETY BOARD	GENERAL FIRE SAFETY
NFPA 101	2012 ed. LSC	NFPA 101 LIFE SAFETY CODE BY THE NATIONAL FIRE PROTECTION ASSOCIATION AS ADOPTED AND AMENDED BY THE MICHIGAN STATE FIRE SAFETY BOARD FOR THE SCU	GENERAL FIRE SAFETY
NFPA 220	2012 ed. STBC	STANDARD ON TYPES OF BUILDING CONSTRUCTION	
NFPA 5000	2012 ed. BCSC	NFPA 5000 BUILDING CONSTRUCTION AND SAFETY CODE BY THE NATIONAL FIRE PROTECTION ASSOCIATION AS ADOPTED AND AMENDED BY THE MICHIGAN STATE FIRE SAFETY BOARD FOR THE SCU	
R408.30901a	2015 ed. MMC	MICHIGAN MECHANICAL CODE AS ADOPTED AND AMMENDED BY THE STATE OF MICHIGAN, BUREAU OF CONSTRUCTION CODES; EFFECTIVE 04/12/2017	
MUEC PART 10a	2013 ed.	MICHIGAN UNIFORM ENERGY CODE (ASHRAE 90.1 - 2013 ADOPTED BY REFERNECE) AS ADOPTED AND AMMENDED BY THE STATE OF MICHIGAN, BUREAU OF CONSTRUCTION CODES; EFFECTIVE 09/20/2017	
ASHRAE 90.1	2013 ed.	ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL, ASHRAE STANDARD 90.1, AS REFERENCED BY THE 2015 MICHIGAN MECHANICAL CODE; EFFECTIVE 04/12/2017	
R408.30701	2018 MPC	MICHIGAN PLUMBING CODE AS ADOPTED AND AMENDED BY THE STATE OF MICHIGAN, BUREAU OF CONSTRUCTION CODES; EFFECTIVE 09/15/2021	
R408.30901	2014 ed. MEC	MICHIGAN ELECTRICAL CODE PART 8 ELECTRICAL CODE RULES AND ADOPTED NATIONAL ELECTRIC CODE, AS ADOPTED AND AMENDED BY THE STATE OF MICHIGAN, BUREAU OF CONSTRUCTION CODES; EFFECTIVE 06/18/2015	
R408.30801	2014 ed. NEC	NATIONAL ELECTRICAL CODE BY THE NATIONAL FIRE PREVENTION ASSOCIATION (NFPA 70), AS ADOPTED AND AMENDED BY THE STATE OF MICHIGAN, BUREAU OF CONSTRUCTION CODES; EFFECTIVE 06/18/2015	
	2012 ed. IFC	INTERNATIONAL FIRE CODE WITH APPENDICES; EFFECTIVE 05/11/2016	MINIMUM FIRE REGULATIONS FOR FIRE PREVENTION
R408.7001 ASME A17.1	2010 ESC	SAFETY CODE FOR ELEVATORS AND ESCALATORS ASME A17.1, BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS, AS ADOPTED AND AMENDED BY THE STATE OF MICHIGAN, BUREAU OF CONSTRUCTION CODES, REFERNECE THE DETROIT ELEVATOR CODE	ELEVATOR SAFETY CODES
ICC / ANSI A117.1	2009 ed. HAC	ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES BY THE INTERNATIONAL CODE COUNCIL AS REFERENCED BY THE 2015 MICHIGAN BUILDING CODE; EFFECTIVE 04/20/2017	HANDICAP DETAILS
28 CFR PART 36	1990 ADA 2010 - APPENDIX B	AMERICANS WITH DISABILITIES ACT, TITLE III - PUBLIC ACCOMODATIONS AND GUIDELINES, BY THE U.S. DEPARTMENT OF JUSTICE	HANDICAP ACCESSIBILITY LAW & GUIDELINES
ASHRAE 62.1	2010 ed.	VENTILATION FOR ACCEPTABLE INDOOR AIR QUAILITY, ASHRAE STANDARD 62.1, AS REFERENCED BY THE 2015 MICHIGAN MECHANICAL CODE; EFFECTIVE 04/12/2017	
SMACNA	3RD ed.	SMACNA, HVAC DUCT CONSTRUCTION STANDARDS	
VOL. 1 TO VOL. 12	 2013 ed. 2016 ed. 2016 ed. 2016 ed. 2015 ed. 2015 ed. 2013 ed. 2015 ed. 2016 ed. 2015 ed. 2015 ed.	NATIONAL FIRE CODES AS APPLICABLE BY THE NATIONAL FIRE PROTECTION ASSOCIATION AS REFERENCED BY MBC INCLUDING BUT NOT LIMITED TO: - NFPA 10: PORTABLE FIRE EXTINGUISHERS - NFPA 13: INSTALLATION OF SPRINKLER SYSTEMS - NFPA 14: STANDPIPES, PRIVATE HYDRANTS AND HOSE SYSTEMS - NFPA 20: INSTALLATION OF STATIONARY FIRE PUMPS - NFPA 30: FLAMMABLE & COMBUSTIBLE LIQUIDS CODE - NFPA 45: STANDARD ON FIRE PROTECTION FOR LABORATORIES USING CHEMICALS - NFPA 55: COMPRESSED GASSES AND GRYOGENIC FLUIDS CODE - NFPA 70E: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE - NFPA 72: NATIONAL FIRE ALARM CODE - NFPA 90A: STANDARD FOR THE INSTALLATION OF AIR-CONDITIONING AND VENTILATION SYSTEMS - NFPA 91: STANDARD FOR EXHAUST SYSTEMS FOR AIR CONVEYING OF VAPORS, GASES, MISTS, AND NONCOMBUSTIBLE PARTICULATE SOLIDS	VARIOUS F.P. SUBJECTS

SUMMARY:

PROJECT WILL COMPLY WITH A LEVEL 2 ALTERATION UNDER THE MICHIGAN REHABILITATION CODE AND CHAPTER 39 IN NFPA 101 FOR EXISTING BUILDING OCCUPANCY.

Stantec

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Consultant

No.	Revision	By	Appd	YYYY.MM.DD
1				
2				
3				
4				
5				
6				

No.	Issued	By	Appd	YYYY.MM.DD
1	60% SET			2022.12.06
2				
3				
4				
5				
6				

Permit/Seal

STATE OF MICHIGAN
MICHAEL G. DECOSTER
ARCHITECT
No. 1301047865
LICENSED ARCHITECT

WAYNE STATE UNIVERSITY

Wayne State University
Art Building Elevator Replacement
5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	07/24/19
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
CODE INFORMATION

Scale: 1/4" = 1'-0"
Revision:
Drawing No. **Ge100**

DESIGN CRITERIA

STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH: IBC 2015
ASCE 7-10
ASCE 41-13
ACI 318-14
ACI 530-13
AISC 360-10
AISC 341-10
AISI S100
AWS D1.1, D1.3 AND D1.8
NDS-15 AND SDPWS-15

1. RISK CATEGORY III
2. SUPERIMPOSED LOADS ARE LISTED ON PLANS.

LIVE LOADS:

TYPICAL ROOF	20 PSF (REDUCIBLE)
TYPICAL FLOOR	100 PSF (UNREDUCIBLE)
MECHANICAL	125 PSF (UNREDUCIBLE)
CORRIDORS, STAIRS & PUBLIC AREAS	100 PSF (UNREDUCIBLE)
PARTITION LOAD	15 PSF (UNREDUCIBLE)
ELEVATOR MACHINE FLOOR	125 PSF (UNREDUCIBLE)
HANDRAILS	MAXIMUM OF SIMULTANEOUS VERTICAL AND HORIZONTAL THRUST OF 50 PLF APPLIED AT THE TOP OF THE RAILING OR 200 LBS IN ANY DIRECTION

3. SNOW:

GROUND SNOW	20 PSF
SNOW EXPOSURE FACTOR	1.1
THERMAL FACTOR	1.0
IMPORTANCE FACTOR	1.1
FLAT-ROOF SNOW	22 PSF
DESIGN SNOW	30 PSF
RAIN-ON-SNOW SURCHARGE	5 PSF

4. SEISMIC:

SEISMIC DESIGN CATEGORY	B
IMPORTANCE FACTOR	1.25
SOIL CLASS	D
Ss	0.096 g
S1	0.047 g
Sds	0.102 g
Sd1	0.075 g
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

5. WIND:

BASIC WIND SPEED	V ULT = 120 MPH		
EXPOSURE CLASS	C		
INTERNAL PRESSURE COEFFICIENT, GCpi	±0.18		
ROOF COMPONENTS:	ZONE 1	ZONE 2	ZONE 3
SUPPORT BEAMS (A > 100 SF)	-37 PSF	-44 PSF	-44 PSF
ROOF SHEATHING (A = 50 SF)	-41 PSF	-54 PSF	-65 PSF
DECK FASTENERS (A ≤ 10 SF)	-41 PSF	-68 PSF	-101 PSF
WALL COMPONENTS:	ZONE 4	ZONE 5	
A = 200 SF	-37 PSF	-39 PSF	
A = 50 SF	-37 PSF	-42 PSF	
A ≤ 20 SF	-40 PSF	-50 PSF	

C & C NOTES:

a. THE PRESSURES LISTED ARE IN ACCORDANCE IBC AND ASCE 7, AND THE DESIGN FORCES USED BY THE SUBCONTRACTOR FOR A SPECIFIC APPLICATION ARE THE RESPONSIBILITY OF THE SUBCONTRACTOR.
b. WIND PRESSURES ARE ULTIMATE DESIGN LEVEL.
c. SEE ASCE 7 FOR ZONE DEFINITIONS AND EXTENT OF ZONES.
d. SUBMIT DESIGN CALCULATIONS PREPARED BY A QUALIFIED PROFESSIONAL STRUCTURAL ENGINEER, REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED, FOR ANY DESIRED MODIFICATION TO THE STATED PRESSURES.

GENERAL

1. DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONNEL AND PROPERTY ON AND AROUND THE JOBSITE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, GUYS, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES.
2. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT.
3. STRUCTURAL SUBSTITUTIONS MAY BE ALLOWED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. SUPPLIER SHALL PROVIDE SEALED DESIGN CALCULATIONS OR SUITABLE PRODUCT LITERATURE FOR THE COMPONENTS.
4. ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO CONSTRUCTION, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.
5. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF NEW WORK.
6. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL SO CONSTRUCT THE WORK SO IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL AND ELECTRICAL DESIGN.
7. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
8. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE-SCALE OVER SMALL-SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSION WITH ARCHITECT.
9. TYPICAL DETAILS SHALL APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
10. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKMEN DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT OR STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE.
11. SEE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR DETAILS, CONDITIONS, PITS, TRENCHES, PADS, DEPRESSIONS, ROOF/FLOOR OPENINGS, STAIRS, SLEEVES, ITEMS TO BE EMBEDDED OR ATTACHED TO STRUCTURAL ELEMENTS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS.
12. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPE, INSERTS AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
13. NO HOLES, NOTCHES, BLOCK-OUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
14. PENETRATIONS SHALL BE CAST-IN-PLACE AND SHALL NOT BE PERMITTED EXCEPT AS SHOWN IN THE STRUCTURAL DRAWINGS.
15. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, EACH PARTY SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH CONDITIONS IN FIELD, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPE OF EQUIPMENT, ETC. THE PROPOSAL SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK.
16. THE STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWINGS AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATIONS AND THE STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
17. THE STRUCTURAL DRAWINGS FORM AN INTEGRAL PART OF CONTRACT DOCUMENTS, WHICH INCLUDE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL/SITE DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL COORDINATE THE STRUCTURAL DRAWINGS WITH THE REQUIREMENTS SHOWN IN THE OTHER COMPONENTS OF THE CONTRACT DOCUMENTS.
18. TYPICAL DETAILS AND OTHER SECTIONS/DETAILS APPLY TO CONDITIONS THAT ARE SIMILAR TO THE CONDITIONS DESCRIBED IN THE SECTIONS/DETAILS, EVEN IF THEY ARE NOT SPECIFICALLY REFERENCED ON THE PLANS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS, SEQUENCES AND PROCEDURES OF CONSTRUCTION.
20. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER IT IS FULLY COMPLETED PER REQUIREMENTS OF CONTRACT DOCUMENTS. CONTRACTOR SHALL DETERMINE ERECTION PROCEDURES AND SEQUENCE, AND ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE-DOWNS IF NECESSARY. CONTRACTOR SHALL RETAIN OWNERSHIP OF SUCH MATERIAL AFTER COMPLETION OF THE PROJECT.
21. CONSTRUCTION SHALL COMPLY FULLY WITH THE APPLICABLE PROVISIONS OF OSHA AND THE LOCAL GOVERNING CODES, CURRENT EDITION, AND ALL REQUIREMENTS SPECIFIED IN THE CODES SHALL BE ADHERED TO AS IF THEY WERE CALLED FOR OR SHOWN ON THE DRAWINGS. THIS SHALL NOT BE CONSTRUED TO MEAN THAT REQUIREMENTS SET FORTH ON THE DRAWING MAY BE MODIFIED BECAUSE THEY ARE MORE STRINGENT THAN THE CODE REQUIREMENTS OR BECAUSE THEY ARE NOT SPECIFICALLY REQUIRED BY CODE.
21. WORK CONSTRUCTED PER THESE DRAWINGS SHALL BE INSPECTED BY AN INDEPENDENT TESTING AGENCY RETAINED TO ENSURE COMPLIANCE WITH THE REQUIREMENTS SHOWN ON THE DRAWINGS. SPECIAL INSPECTIONS REQUIRED BY THE GOVERNING BUILDING CODE, LOCAL BUILDING DEPARTMENT AND THE CONTRACT DOCUMENTS SHALL BE PERFORMED BY A QUALIFIED SPECIAL INSPECTOR. PROJECT SITE VISITS BY THE ENGINEER DO NOT CONSTITUTE OR REPLACE INSPECTION.

DELEGATED DESIGN

1. DELEGATED DESIGNS PER SECTION 107.3.4.1 SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND THE DESIGN PROFESSIONALS AND REVIEWED PRIOR TO INSTALLATION.
2. DELEGATED DESIGNS ARE:
   a. EXCAVATION, SHORING, AND UNDERPINNING
   b. STRUCTURAL STEEL CONNECTIONS
   c. EXTERIOR WALL SYSTEMS
   d. CURTAIN WALL AND STOREFRONT SYSTEMS
   e. COLD FORMED STEEL FRAMING
   f. ROOFTOP EQUIPMENT ANCHORAGE AND CURBS
   g. SKYLIGHTS
   h. STAIRS, ACCESS LADDERS, HANDRAILS, GUARDRAILS, AND GRATING
3. ALL DELEGATED DESIGNS SHALL BEAR THE STAMP AND SIGNATURE OF THE QUALIFIED PROFESSIONAL ENGINEER, REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED, RESPONSIBLE FOR THE PREPARATION OF THESE DOCUMENTS.

EXISTING CONDITIONS / DEMOLITION

1. EXISTING CONDITIONS:
   a. EXISTING STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM EXISTING DRAWINGS DATED JUNE 1, 1954 BY SUREN PILAFIAN - ARCHITECT.
   b. STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM EXISTING DRAWINGS:
      DATED JUNE 1, 1954 BY SUREN PILAFIAN – ARCHITECT.
   c. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. CONTRACTOR TO VERIFY EXISTING INFORMATION, DIMENSIONS AND SIZES AS REQUIRED TO COMPLETE THEIR WORK. WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE ARCHITECT OR STRUCTURAL ENGINEER SO PROPER CLARIFICATION MAY BE MADE. MODIFICATION OF CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT OR STRUCTURAL ENGINEER.
2. EXISTING BUILDING MATERIAL PROPERTIES:
   a. REFER TO EXIST. DRAWINGS
3. ALL DEMOLITION SHALL BE CARRIED OUT IN SUCH A WAY SO AS TO NOT DAMAGE EXISTING ELEMENTS WHICH ARE TO REMAIN.
4. ALL ELEMENTS WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST. EXISTING ELEMENTS ARE TO BE PROTECTED TO THE FULLEST EXTENT POSSIBLE TO REDUCE SUCH DAMAGE TO A MINIMUM.
5. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
6. EXISTING BUILDING DIMENSIONS AND CONDITIONS SHOWN ARE BASED UPON ORIGINAL DRAWINGS OR PARTIAL SURVEY AND HAVE NOT BEEN COMPLETELY FIELD VERIFIED. THE OWNER AND ARCHITECT/STRUCTURAL ENGINEER TAKE NO RESPONSIBILITY FOR THE ACCURACY OF EXISTING DIMENSIONS SHOWN. CONTRACTOR SHALL FIELD MEASURE EXISTING DIMENSIONS PRIOR TO SHOP DRAWING PREPARATION AND FABRICATION.
7. CONTRACTOR SHALL VERIFY CONDITIONS COVERING OR AFFECTING THE STRUCTURAL WORK; OBTAIN AND VERIFY ALL DIMENSIONS AND ELEVATIONS TO ENSURE THE PROPER STRENGTH, FIT AND LOCATION OF THE STRUCTURAL WORK; REPORT TO THE ARCHITECT/STRUCTURAL ENGINEER ANY AND ALL CONDITIONS/DISCREPANCIES WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE NEW WORK IN COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE FULLY RESOLVED PRIOR TO COMMENCING WORK.
8. EXISTING CONSTRUCTION NOT UNDERGOING ALTERATION IS TO REMAIN UNDISTURBED. WHERE SUCH CONSTRUCTION IS DISTURBED AS A RESULT OF THE OPERATIONS OF THIS CONTRACT, CONTRACTOR SHALL REPAIR OR REPLACE AS REQUIRED AND TO THE SATISFACTION OF THE ARCHITECT/STRUCTURAL ENGINEER AND OWNER'S REPRESENTATIVE.
9. CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION AND ELEVATION OF EXISTING UTILITIES, SEWERS, DRAINS, ETC. IN DEMOLITION AREAS BEFORE PROCEEDING WITH THE WORK. ALL DISCREPANCIES SHALL BE DOCUMENTED AND REPORTED TO THE ARCHITECT/STRUCTURAL ENGINEER AND OWNER'S REPRESENTATIVE FOR RESOLUTION.
10. SHOULD UNCHARTED PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONTRACTOR SHALL CONSULT THE ARCHITECT/STRUCTURAL ENGINEER AND OWNER'S REPRESENTATIVE FOR RESOLUTION.
11. CONTRACTOR SHALL PROVIDE FIRE WATCH DURING FIELD CUTTING AND WELDING OPERATIONS, MEETING THE OWNER'S REQUIREMENTS.
12. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION OF EXISTING EQUIPMENT DURING EXECUTION OF WORK, SATISFYING THE OWNER'S REQUIREMENTS.
13. CONTRACTOR SHALL PROVIDE TEMPORARY PROTECTION TO PREVENT DAMAGE FROM THE WEATHER AND VANDALISM.
14. CONTRACTOR SHALL COORDINATE WORK WITH THE OWNER'S PERSONNEL TO AVOID ANY INTERFERENCE IN THEIR OPERATIONS.
15. REFER TO SHORING AND BRACING NOTES FOR ADDITIONAL REQUIREMENTS.

EXISTING CONCRETE REPAIR

1. IN DEFECTIVE AREAS, IF DEPTH OF DEFECTIVE CONCRETE DOES NOT EXTEND PAST CENTERLINE OF ANY EXPOSED REINFORCEMENT, REPAIR AND PATCH THE AREAS AS SPECIFIED IN SPECIFICATIONS, SECTION 03300.
2. IN DEFECTIVE AREAS, IF DEPTH OF DEFECTIVE CONCRETE EXTENDS PAST CENTERLINE OF ANY EXPOSED REINFORCEMENT, REPAIR AND PATCH THE AREAS AS INDICATED ON TYPICAL DETAILS.

EXISTING STEEL CLEANING

1. FOLLOW SPECIFICATIONS, SECTION 05120, FOR EXISTING STEEL SURFACE CLEANING AND PROTECTIVE COATINGS, EXCEPT SP6-COMMERCIAL BLAST CLEANING SHALL BE USED FOR ANY ARCHITECTURALLY EXPOSED STRUCTURAL STEEL.

EXISTING STRUCTURE WELDING PROCEDURE

1. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AWS D1.1, STRUCTURAL WELDING CODE. ONLY WELDERS QUALIFIED TO THE AWS CODE SHALL BE ALLOWED TO WELD ON THE STRUCTURE. ONLY A LOW-HYDROGEN WELDING PROCESS SHALL BE ALLOWED FOR WELDING ON THESE STRUCTURES. THE SHIELDED METAL ARC WELDING (I.E. SMAW OR STICK WELDING) PROCESS WITH E7018 WELDING ELECTRODES IS THE PREFERRED METHOD OF WELDING ON THESE STRUCTURAL STEEL ELEMENTS. THE FOLLOWING PRECAUTIONS MUST BE OBSERVED DURING ANY WELDING OF STEEL AT THIS SITE:
   A. ONLY A LOW-HYDROGEN WELDING PROCESS SHALL BE USED. SMAW PROCESS IS PREFERRED, WITH THE USE OF E7018 LOW-HYDROGEN ELECTRODES, SUCH AS ATOM ARC 7018, WHICH COMES IN HERMETICALLY SEALED CONTAINERS. THESE WELDING ELECTRODES MUST BE PROTECTED FROM MOISTURE PICK-UP AND THE USE OF ELECTRODE OVENS IS HIGHLY RECOMMENDED.
   B. IF THE VERTICAL UPHILL OR OVERHEAD WELDING POSITIONS ARE REQUIRED, A 1/8" DIAMETER WELDING ELECTRODE SHALL BE USED, WITH THE SMALLEST POSSIBLE WEAVE.
2. WELDING PROCEDURE SPECIFICATION E7018:
   A. BASE METAL: STRUCTURAL STEEL
   B. FILLER METAL: AWS SPECIFICATION – A5.1
   C. AWS CLASSIFICATION: E7018
   D. MANUFACTURER: ESAB OR ATOM ARC
   E. ELECTRICAL CHARACTERISTICS: DIRECT CURRENT, ELECTRODE POSITIVE (I.E. REVERSE POLATITY)
   F. BACKING MATERIAL: NONE REQUIRED
   G. SHIELDING GAS: NONE REQUIRED
   H. BACKUP GAS: NONE REQUIRED
3. PREHEAT: NO PREHEAT IS REQUIRED FOR BASE METAL THICKNESS UP TO AND INCLUDING 1", EXCEPT FOR THE FOLLOWING:
   A. AS AN AID IN REMOVING MOISTURE
   B. IF BASE METAL THICKNESS EXCEEDS 1", A 150 DEGREE (F) PREHEAT WITHIN INCHES OF THE WELD LOCATION SHALL BE EMPLOYED.
4. WELDING POSITIONS: VERTICAL, HORIZONTAL, OVERHEAD, AND DOWN FLAT.
5. TECHNIQUE: STRINGER BEAD TECHNIQUES SHALL BE PREFERRED FOR VERTICAL UP AND OVERHEAD POSITIONS, THE SMALLEST POSSIBLE WEAVE SHALL BE USED.
6. GENERAL WELDING TECHNIQUE:

OPERATION BEAD WELD ELECTRODE CURRENT VOLTAGE

DESRIPTION LAYERS PROC. SIZE TYPE (AMPS) (VOLTS)

STRINGER AS REQ.D SMA 3/32" E7018 90-100 19-21

BEADS 1/8" 130-160 20-22

5/32" 150-190 21-23

3/16" 220-260 22-24

* FOR VERTICAL UP AND OVERHEAD POSITIONS, THE SMALLEST POSSIBLE WEAVE SHALL BE USED.

7. GENERAL WELDING PROCEDURE SPECIFICATION FOR LOW-HYDROGEN SMAW PROCESS:

A. PREPARATION OF BASE METAL: THE EDGES OR SURFACES OF THE WORK TO BE WELDED SHALL BE PREPARED BY FLAME CUTTING, PLASMA ARC CUTTING, ARC GOUGING, MACHINING, SHEARING, GRINDING, OR CHIPPING AND SHALL BE CLEANED OF ALL OIL AND GREASE AND EXCESSIVE AMOUNTS OF SCALE OR RUST PRIOR TO WELDING. MOISTURE SHALL BE REMOVED FROM THE WELD AREA BEFORE WELDING.
B. APPEARANCE OF WELDING LAYERS: THE WELDING CURRENT AND MANNER OF DEPOSITING THE WELD METAL SHALL BE SUCH THAT THERE WILL BE PRACTICALLY NO UNDERCUTTING (LESS THAN 1/64") ON THE FINISHED WORK.
C. CLEANING OF WELDS: PNEUMATIC OR OTHER MECHANICAL TOOLS MAY BE USED AS AN AID TO CLEAN SLAB OR FLUX FROM THE WELD. SUCH MECHANICAL CLEANING IS NOT CONSIDERED PEENING. ALL SLAG AND FLUX REMAINING ON ANY WELD BEAD SHALL BE REMOVED BEFORE LAYING DOWN THE NEXT SUCCESSIVE WELD BEAD. ALL COMPLETED WELDS SHALL HAVE THE WELD SPATTER REMOVED AND WELDS NOT GROUND SHALL BE WIREBRUSHED.
D. DEFECTS: ALL DEFECTS THAT APPEAR ON THE SURFACE OF ANY WELD BEAD SHALL BE REMOVED BY CHIPPING, GRINDING, OR ARCH GOUGING, REPAIRED AND THEN GIVEN AN EXAMINATION. SHOULD THE DEFECT APPEAR BEFORE DEPOSITING A SUCCESSIVE WELD BEAD OR BEFORE IT IS COVERED BY SUBSEQUENT WELDING, IT SHALL BE REMOVED AS INDICATED ABOVE, REPAIRED AND RE-EXAMINED BEFORE ANY SUBSEQUENT WELDING IS DONE. WELDING SHALL BE INSPECTED PER THE REQUIREMENTS OF THE AWS D1.1, STANDARD WELDING CODE, AS WELL AS THE ACCEPTABLE CRITERIA PRESENTED IN THAT CODE (AT A MINIMUM).
E. WELDING ELECTRODES: E7018 WELDING ELECTRODES CAN NORMALLY BE USED DIRECTLY OUT OF NEWLY OPENED, UNDAMAGED HERMETICALLY SEALED CANS. THE USE OF ATOM ARC 7018 IS STRONGLY ENCOURAGED. STORE THE ELECTRODES IN A DRY PLACE, PREFERABLY ON CRIBBING AND A FEW INCHES AWAY FROM ANY WALLS TO ALLOW FREE CIRCULATION OF AIR UNDER AND AROUND THE STACK OF ELECTRODES. DO NOT OPEN MORE CANS THAN NEEDED FOR A TYPICAL 10-HOUR SHIFT. ELECTRODES SHOULD BE STORED IN A HEATED OVEN OR BOX AT 200-300 DEGREES (F) FOR A PERIOD OF 8 HOURS BEFORE USE. DISCARD ANY ELECTRODES THAT HAVE BECOME WET BY CONTACT WITH WATER IN LIQUID FORM OR WHICH HAVE BEEN EXPOSED TO CONDITIONS OF HIGH HUMIDITY FOR A LONG PERIOD OF TIME. BAKE ANY ELECTRODES FROM CANS THAT HAVE BEEN DAMAGED OR BROKEN OPEN DURING SHIPMENT AT 300-350 DEGREES (F) FOR A PERIOD OF 12 HOURS BEFORE USE.
F. WELDING PROCEDURE AND PERFORMANCE QUALIFICATIONS: WELDING PROCEDURE AND PERFORMANCE QUALIFICATIONS SHALL BE IN ACCORDANCE WITH THE AWS D1.1, STRUCTURAL WELDING CODE. PERFORMANCE QUALIFICATIONS SHALL BE AVAILABLE AT THE JOB SITE FOR REVIEW.
G. WEATHER CONDITIONS: WELDING SHALL NOT BE PERFORMED WHEN THE SURFACES TO BE WELDED ARE WET FROM RAIN, SNOW, OR ICE IN THE WELDING AREA, NOR IN PERIODS OF HIGH WIND, UNLESS THE WELDER AND THE WORK ARE PROPERLY PROTECTED. NO WELDING SHALL BE PERFORMED WHEN THE AMBIENT TEMPERATURE IS BELOW 0 DEGREES (F).

EARTHWORK

1. FOUNDATION DESIGNIS BASED ON THE EXIST. DRAWINGS DATED JUNE 1, 1954 BY SUREN PILAFIAN - ARCHITECT.
2. SOIL PROPERTIES PER THE GEOTECHNICAL REPORT:

ALLOWABLE NET SOIL BEARING PRESSURE:

FOOTINGS	3000 PSF
FROST DEPTH	3.5 FT

3. ALL EXCAVATIONS SHALL BE PROPERLY AND SAFELY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING/BASEMENT WALLS BEFORE CONCRETE HAS ATTAINED SPECIFIED COMPRESSIVE STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL WALLS BELOW GRADE FROM LATERAL LOADS UNTIL SUPPORTING FLOORS ARE COMPLETELY IN PLACE AND HAVE ATTAINED 7-DAY STRENGTH MINIMUM. BACKFILLING IS NOT PERMITTED FOR FOUNDATION WALLS UNTIL SUPPORTED SLAB TOP AND BOTTOM IS IN PLACE OR THE WALL IS ADEQUATELY BRACED TO RESIST LATERAL LOADS. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS, AND INSTALLATION OR SHORING AND/OR SHEETING.
4. CONTRACTOR SHALL PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER OR SEEPAGE. FREE GROUND WATER WAS NOT ENCOUNTERED IN THE BORINGS. DETAILS OF GROUND WATER INFORMATION CAN BE OBTAINED FROM THE ABOVE-MENTIONED GEOTECHNICAL REPORT. IF GROUND WATER SHOULD OCCUR DURING EXCAVATION, SPECIAL PROCEDURES SHALL BE IMPLEMENTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
5. WHERE THERE IS NOT SUFFICIENT SPACE FOR SLOPED EMBANKMENTS, SHORING WILL BE REQUIRED. SEE THE GEOTECHNICAL REPORT FOR INFORMATION REGARDING THE DESIGN AND INSTALLATION OF THE SHORING. SHORING THAT IS NOT PART OF THE PERMANENT BUILDING SUPPORT IS THE CONTRACTOR'S RESPONSIBILITY AND OUTSIDE THIS PERMIT.
6. CARE SHALL BE EXERCISED WHEN EXCAVATING OR GRADING ADJACENT TO EXISTING STRUCTURES OR IMPROVEMENTS TO NOT DAMAGE OR UNDERMINE FOUNDATIONS, WALLS, SLABS, UTILITIES, ETC.
7. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILL MATERIAL OR BURIED STRUCTURES SUCH AS CESSPOOLS, CISTERNS AND FOUNDATIONS. IF ANY SUCH MATERIAL OR STRUCTURES ARE FOUND, ARCHITECT/ENGINEER SHALL BE NOTIFIED IMMEDIATELY. ALL ABANDONED FOUNDATIONS, UTILITIES AND OTHER STRUCTURES THAT INTERFERE WITH NEW CONSTRUCTION SHALL BE REMOVED.
8. ALL FOOTINGS AND SLABS ON GRADE SHALL BE PLACED ONTO FIRM UNDISTURBED SOIL OR CONTROLLED COMPACTED FILL, REMOVING ANY EXISTING FILL, ORGANIC MATERIAL, OR UNSUITABLE SOILS, AS RECOMMENDED BY THE GEOTECHNICAL REPORT. EXPOSED NATURAL SOIL SHALL BE PROOF ROLLED BELOW SLABS ON GRADE.
9. THE SLAB ON GRADE SELECTED BY THE OWNER AT THE GROUND FLOOR LEVEL OF THIS BUILDING HAS SOME RISK OF MOVEMENT. THE SLAB OPTION CHOSEN AS PROVIDING SUITABLE PERFORMANCE AT A REASONABLE COST REQUIRES ____ FEET OF OVER-EXCAVATED FILL TO BE PLACED. SEE THE PROJECT GEOTECHNICAL REPORT FOR SPECIFIC REQUIREMENTS.
10. THE PREPARATION OF THE SUBGRADE FOR THE SLAB ON GRADE SHALL BE IN STRICT ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT REFERENCED ABOVE. THE CONTRACTOR SHALL DIRECT QUESTIONS REGARDING THE SUBGRADE PREPARATION REQUIREMENTS TO THE GEOTECHNICAL ENGINEER.
11. FOUNDATION ELEVATIONS SHOWN DESIGNATE A MINIMUM DEPTH WHERE AN ADEQUATE SOIL BEARING PRESSURE IS EXPECTED. FOOTINGS, PIERS AND/OR WALLS SHALL BE LOWERED OR EXTENDED AS REQUIRED TO REACH SOIL MEETING THE DESIGN BEARING PRESSURE.
12. ALL REQUIRED BACKFILL AND UTILITY TRENCH BACKFILL WITHIN THE BUILDING AREA SHALL BE MECHANICALLY COMPACTED IN 12" LAYERS TO 95% MAXIMUM DRY DENSITY PER ASTM D1557 AND TO THE APPROVAL OF THE INSPECTION AGENCY.
13. THE MOISTURE CONTENT OF ONSITE CLAYEY SOILS AT THE TIME OF COMPACTION SHALL BE BETWEEN 2-3% ABOVE OPTIMUM MOISTURE CONTENT.
14. ANY REQUIRED IMPORT FILL SOIL SHALL HAVE A LOW POTENTIAL FOR EXPANSION AND SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO IMPORTING.

REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE AMERICAN CONCRETE INSTITUTE "ACI DETAILING MANUAL" (SP-066) EXCEPT AS OTHERWISE SHOWN, NOTED OR SPECIFIED.
2. CONCRETE REINFORCING STEEL SHALL BE HIGH STRENGTH NEW BILLET STEEL CONFORMING TO THE FOLLOWING STANDARDS:

DEFORMED BARS	ASTM A615, GR 60	Fy = 60 KSI
DEFORMED BARS IN SFRS	ASTM A706, GR 60	Fy = 60 KSI
WELDED WIRE REINFORCING	ASTM A1064	Fy = 65 KSI
DEFORMED EPOXY-COATED BARS	ASTM A775	Fy = 60 KSI
DEFORMED GALVANIZED-COATED BARS	ASTM A767	Fy = 60 KSI
STEEL WIRE	ASTM A1064	Fy = 60 KSI
DEFORMED BAR ANCHORS	ASTM A1064	Fy = 70 KSI
WELDABLE BARS, DEFORMED	ASTM A706, GR 60	Fy = 60 KSI

3. MINIMUM CONCRETE COVER SHALL BE PROVIDED AS FOLLOWS TO THE OUTERMOST REINFORCING BARS:

CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND	3"
EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
#6 BARS OR LARGER	2"
#5 BARS OR SMALLER	1 1/2"
NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND	
SLABS, JOIST AND WALLS WITH #14 AND #18 BARS	1 1/2"
SLABS, JOISTS AND WALLS WITH #11 BARS OR SMALLER	3/4"
BEAMS, COLUMNS, PEDESTALS AND TENSION TIES	1 1/2"
BOUNDARY ELEMENTS	1 1/2"

4. ALL REINFORCING IN CONCRETE USED FOR THE CONTAINMENT OF WATER SHALL BE HOT-DIP GALVANIZED OR EPOXY-COATED.
5. WELDING OF REINFORCING BARS TO BE IN ACCORDANCE WITH AWS D1.4.
6. DEFORMED BAR ANCHORS (DBA) SHALL BE AUTOMATICALLY END WELDED WITH SUITABLE WELDING EQUIPMENT IN THE SHOP OR IN THE FIELD. WELDING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER.
7. SUPPORTS FOR REINFORCEMENT SHALL HAVE CLASS 2 PROTECTION AS DEFINED IN THE CRSI MANUAL OF STANDARD PRACTICE, UNLESS OTHERWISE NOTED.
8. SUPPORTS FOR COATED REINFORCEMENT SHALL HAVE CLASS 1 PROTECTION AS DEFINED IN THE CRSI MANUAL OF STANDARD PRACTICE, UNLESS OTHERWISE NOTED.
9. ALL WELDED WIRE REINFORCING (WWR) SHALL BE LAPPED 2 PANELS AT EDGES AND ENDS.
10. CONTINUOUS HORIZONTAL REINFORCING SHALL BE LAPPED AT MIDSPAN FOR TOP BARS AND DIRECTLY OVER SUPPORTS FOR BOTTOM BARS. AT DISCONTINUOUS ENDS, THE TOP STEEL SHALL BE BENT DOWN 12 BAR DIAMETERS OR 12" MINIMUM, WHICHEVER IS GREATER.
11. FOR MAT FOUNDATIONS, REINFORCING FOR TOP BARS SHALL BE LAPPED UNDER STRUCTURAL COLUMNS AND WALLS ABOVE AND AT MIDSPAN FOR BOTTOM BARS. AT DISCONTINUOUS ENDS, THE TOP STEEL SHALL BE BENT DOWN 12 BAR DIAMETERS OR 12" MINIMUM, WHICHEVER IS GREATER.
12. WHERE REINFORCEMENT LENGTH IS SPECIFIED, NO SPLICES ARE PERMITTED WITHIN THE SPECIFIED LENGTH WITHOUT APPROVAL BY THE STRUCTURAL ENGINEER.
13. DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING OR NUMBER AS THE VERTICAL REINFORCING, RESPECTIVELY, UNLESS OTHERWISE NOTED. PROVIDE FOUNDATION DOWELS TO MATCH SIZE AND SPACING OF WALL OR COLUMN REINFORCEMENT. EXTEND DOWELS A LAP SPLICE LENGTH INTO WALL OR COLUMN AND TERMINATE WITH STANDARD HOOK AT BOTTOM OF FOOTING, UNLESS OTHERWISE NOTED.
14. REINFORCING IN WALL FOOTINGS AND GRADE BEAMS BETWEEN COLUMNS SHALL BE DEVELOPED (Ld) INTO COLUMN FOOTINGS.
15. CUTTING OF REINFORCING WHICH CONFLICTS WITH EMBEDDED OBJECTS OR SLEEVES IS NOT ACCEPTABLE.
16. REINFORCING BARS SHALL BE BENT COLD, AND NO METHOD OF FABRICATION SHALL BE USED WHICH WOULD BE INJURIOUS TO THE MATERIAL. HEATING OF BARS FOR BENDING IS NOT PERMITTED.
17. FIELD WELDING OR BENDING OF REINFORCING IS NOT PERMITTED EXCEPT AS INDICATED ON THE DRAWINGS OR AS APPROVED BY THE STRUCTURAL ENGINEER.
18. USE TEMPLATES TO SET ALL EMBEDDED ANCHOR BOLTS, LEVELING PLATES, AND DOWEL BARS AS REQUIRED OR INDICATED ON THE DRAWINGS.
19. SUBMIT SHOP DRAWINGS FOR FABRICATION AND PLACEMENT OF REINFORCING STEEL. INCLUDE SCHEDULES AND DIAGRAMS OF BENT BARS AND SHOW ARRANGEMENT OF REINFORCEMENT, INCLUDING CONCRETE COVER. STRUCTURAL ENGINEER'S REVIEW WILL BE FOR COMPLIANCE WITH DESIGN REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS AND QUANTITIES.
20. ALL CONCRETE NOT OTHERWISE SPECIFIED SHALL BE REINFORCED TO THE MINIMUM REQUIREMENT OF ACI 318.
21. REINFORCE ALL ARCHITECTURAL CONCRETE TOPPING SLABS WITH 6x6-W1.4xW1.4 WWR UNLESS OTHERWISE NOTED.

CAST-IN-PLACE CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE CORRESPONDING EDITION OF THE AMERICAN CONCRETE INSTITUTE PUBLICATIONS: ACI 117, ACI 301, ACI 305.1, ACI 306.1, ACI 308.1, ACI 318 AND SP-066, UNLESS OTHERWISE NOTED.
2. CONCRETE MATERIALS SHALL CONFORM TO:

CEMENT	ASTM C150, TYPE I OR II
FLY ASH	ASTM C618, TYPE C OR F
FINE AND COARSE AGGREGATE	ASTM C33
LIGHTWEIGHT AGGREGATE	ASTM C330
WATER	POTABLE
AIR-ENTRAINING ADMIXTURE	ASTM C260
WATER REDUCING ADMIXTURE	ASTM C494

CONCRETE STRENGTHS SHALL CONFORM TO:

INTENDED USE	STRENGTH(PSI)	EXPOSURE CLASS
COLUMNS	5000	N/A
BEAMS, ELEVATED SLABS AND JOISTS	4000	N/A
DRILLED PIERS AND AUGERED PILES	3000	N/A
FOOTINGS	4000	N/A
FOUNDATIONS	4000	N/A
SHAFT WALLS	7000	N/A
SLAB ON GRADE	4000	N/A
UNLESS OTHERWISE NOTED	4000	N/A

NORMAL-WEIGHT 28-DAY STRENGTH UNLESS OTHERWISE NOTED.

3.THE MODULUS OF ELASTICITY OF ALL CONCRETE SHALL EXCEED 57,000 SQRT(f'c) FOR NORMAL-WEIGHT CONCRETE OR wc1.5 33 SQRT(f'c).

4. DRYPACK OR GROUT SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 7000 PSI.
5. SLAB-ON-GRADE CONSTRUCTION: LOCATE SAW-CUT CONTROL JOINTS ALONG COLUMN LINES WITH INTERMEDIATE JOINTS SPACED PER THE TABLE BELOW, UNLESS OTHERWISE NOTED. SLAB PANELS SHALL HAVE A MAXIMUM LENGTH TO WIDTH RATIO OF 1.5:1. PROVIDE ADDITIONAL CONTROL JOINTS AT ALL RE-ENTRANT CORNERS. SEE PLAN FOR SPECIAL CASES.

THICKNESS (IN)	MAXIMUM JOINT SPACING EACH WAY (FT)
4	12
5	13
6	15
8	18
10	20
12	22

6. CROSS REFERENCE ARCHITECTURAL AND STRUCTURAL DRAWINGS TO ENSURE PROPER DIMENSIONS AND PLACEMENT OF ALL ANCHOR BOLTS, INSERTS, NOTCHES, AND EDGES OF WALLS/FOUNDATIONS PRIOR TO PLACING CONCRETE.
7. UNLESS OTHERWISE NOTED, ALL FOOTINGS SHALL BE CENTERED UNDER WALLS, PIERS OR COLUMNS.
8. CONSTRUCTION JOINTS SHALL BE THOROUGHLY ROUGHENED TO 1/4" AMPLITUDE BY SAND BLASTING OR MECHANICAL MEANS. CLEAN BEFORE POUR. LOCATION TO BE APPROVED BY THE STRUCTURAL ENGINEER. SUBMIT LOCATION PLAN OF ALL PROPOSED JOINTS NOT INDICATED ON DRAWINGS FOR APPROVAL PRIOR TO BEGINNING WORK.
9. PRIOR TO PLACING CONCRETE, THE CONTRACTOR SHALL ENSURE ALL REINFORCING AND EMBEDMENTS, INCLUDING COLUMN ANCHOR BOLTS, ARE PROPERLY LOCATED AND SECURELY TIED IN PLACE.
10. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL PENETRATIONS THROUGH CONCRETE BEFORE PLACING. SECURE SLEEVES TO PREVENT MOVEMENT DURING PLACING OPERATIONS. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS.
11. CONFIRM WITH ARCHITECT THAT MATERIALS TO BE EMBEDDED ARE SUITABLE FOR EMBEDMENT IN CONCRETE.
12. CONDUIT, PIPES, AND SLEEVES EMBEDDED IN CONCRETE SHALL CONFORM TO REQUIREMENTS OF ACI 318, SECTIONS 20.7 AND 26.8.
13. DO NOT PLACE VERTICAL CONDUIT IN CONCRETE COLUMNS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
14. NO ALUMINUM SHALL BE ALLOWED IN THE CONCRETE WORK UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION.
15. WATERSTOPS SHALL BE A FLEXIBLE BENTONITE PVC PRODUCT. ACCEPTABLE PRODUCTS INCLUDE: CETCO WATERSTOP-RX AND GREENSTREAK SWELLSTOP WESTIC BARRIER TECHNOLOGIES TPE-R WATERSTOP AND GREENSTREAK PVC WATERSTOP.
16. PROJECTING CORNERS OF BEAMS, WALLS, COLUMNS, ETC., SHALL BE FORMED WITH A 3/4 INCH CHAMFER, UNLESS OTHERWISE NOTED ON ARCHITECTURAL DRAWINGS.
17. SLOPE SLABS TO DRAINS OR FOR POSITIVE DRAINAGE IF NO DRAINS ARE PRESENT AND PROVIDE DEPRESSIONS WHERE SHOWN ON THE STRUCTURAL AND/OR ARCHITECTURAL DRAWINGS WITHOUT REDUCING THE THICKNESS OF SLAB INDICATED. FOR SLAB-ON-GRADE DEPRESSIONS GREATER THAN 1 INCH, SEE DETAILS FOR ADDITIONAL REINFORCING.
18. INTERNALLY VIBRATE ALL CAST-IN-PLACE CONCRETE EXCEPT SLABS-ON-GRADE WHICH NEED ONLY BE VIBRATED AROUND UNDER FLOOR DUCTS AND OTHER EMBEDDED ITEMS. VIBRATE TOPS OF COLUMNS.
19. PROVIDE VERTICAL CONTROL JOINTS IN EXPOSED CONCRETE WALLS AT A MINIMUM UNIFORM SPACING NOT TO EXCEED 25 FEET PER ACI 224.3. COORDINATE JOINT LOCATIONS WITH ARCHITECTURAL DRAWINGS.
20. CONCRETE SHALL NOT BE PERMITTED TO DROP MORE THAN 5 FEET.
21. IF CONCRETE IS PLACED BY PUMPING, SUPPORT SHALL BE PROVIDED FOR THE HOSE. THE HOSE SHALL NOT BE ALLOWED TO RIDE ON THE REINFORCING AND OTHER EMBEDDED ITEMS.
22. CONCRETE SLABS SHALL BE CURED BY KEEPING CONTINUOUSLY WET FOR 7 DAYS. FORMS FOR CONCRETE WALLS SHALL BE LEFT IN PLACE FOR 7 DAYS OR MAY BE STRIPPED AFTER 3 DAYS AND COATED WITH AN APPROVED CURING COMPOUND.
23. NO LOADS SHALL BE PLACED ON STRUCTURAL CONCRETE SLABS WITHIN 7 DAYS AFTER CONCRETE IS PLACED. AFTER CONCRETE IS PLACED, IN NO CASE SHALL THE SUPERIMPOSED CONSTRUCTION LOADS BE GREATER THAN SPECIFIED DESIGN LIVE LOADS, UNLESS THE WORK IS SHORED.
24. NOTIFY THE ARCHITECT/STRUCTURAL ENGINEER 48 HOURS MINIMUM PRIOR TO ALL POURS.
25. CONTRACTOR SHALL SURVEY ALL CONCRETE WORK WITHIN 48 HOURS OF PLACING CONCRETE TO ENSURE PLACEMENT IS IN ACCORDANCE WITH PROJECT REQUIREMENTS.
26. THE DESIGN AND ENGINEERING OF FORMWORK, SHORING AND RESHORING, AS WELL AS THEIR CONSTRUCTION, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FORMS SHALL BE DESIGNED TO HAVE SUFFICIENT STRENGTH TO SAFELY WITHSTAND THE LOADS RESULTING FROM PLACEMENT AND VIBRATION OF THE CONCRETE AND SHALL ALSO BE DESIGNED FOR SUFFICIENT RIGIDITY TO MAINTAIN SPECIFIED TOLERANCES. CONTRACTOR SHALL SUBMIT DETAILED FORMWORK SHOP DRAWINGS TO THE ARCHITECT TO BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN CONCEPT ONLY.
27. SHORING OF ELEVATED CONCRETE TO REMAIN IN PLACE FOR A MINIMUM OF 3 DAYS FOR POST-TENSIONED SLABS AFTER STRESSING TENDONS AND 21 DAYS FOR MILD REINFORCED SLABS. SHORING OF THE STRUCTURAL BAY CONTAINING CONSTRUCTION JOINTS AND/OR POUR STRIPS TO REMAIN IN PLACE UNTIL SLAB CONSTRUCTION IS COMPLETE.
28. SHORING OF ELEVATED CONCRETE TO REMAIN UNTIL CONCRETE TESTS, CURED UNDER JOB-SITE CONDITIONS HAVE BEEN TESTED AND INDICATE 80% OF THE DESIGN MODULUS OF ELASTICITY. GENERAL CONTRACTOR TO PROVIDE THE STRUCTURAL ENGINEER WITH MODULUS OF ELASTICITY TEST RESULTS. SHORING OF THE STRUCTURAL BAY CONTAINING CONSTRUCTION JOINTS AND/OR POUR STRIPS TO REMAIN IN PLACE UNTIL SLAB CONSTRUCTION IS COMPLETE.
29. CONCRETE FILL THICKNESS SHOWN ON FRAMING PLANS AND DETAIL SHEETS IS MINIMUM THICKNESS. NO ALLOWANCES HAVE BEEN SHOWN FOR ADDITIONAL CONCRETE FILL REQUIRED TO COMPENSATE FOR BEAM OR DECK DEFLECTIONS AND TO MAINTAIN SURFACE TOLERANCES SPECIFIED.
30. PROVIDE LIGHTWEIGHT SELF-LEVELING MATERIAL AT ELEVATED CONCRETE SLABS AND SLABS ON STEEL DECK AS REQUIRED TO MEET FLOOR FLATNESS AND LEVELNESS REQUIREMENTS. SUBMIT PROPOSED LOCATIONS AND LEVELING MATERIAL DATA FOR APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT.
31. CORING OF CONCRETE IS NOT PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
32. NO CONCRETE SHALL BE PLACED ONTO OR AGAINST SUBGRADES CONTAINING FREE WATER, FROST, ICE OR SNOW.
33. DURING WINTER CONSTRUCTION, ALL FOOTINGS SHALL BE PROTECTED FROM FROST PENETRATION UNTIL THE BUILDING IS ENCLOSED AND TEMPORARY HEAT IS PROVIDED.
34. GENERAL CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR SIZE, LOCATION AND HEIGHT OF MECHANICAL EQUIPMENT PADS ON CONCRETE SLAB ON STEEL DECK AND SLAB-ON-GRADE.
35. THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE TESTING AGENCY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S. SUBMIT TEST DATA ON EACH PROPOSED MIX FOR REVIEW IN ACCORDANCE WITH THE APPLICABLE CODE. MIX DESIGNS SUBMITTED WITHOUT THE REQUIRED TEST DATA WILL BE RETURNED WITHOUT REVIEW.
36. PROVIDE SLAB COORDINATION DRAWING SUBMITTAL INDICATING COORDINATED LOCATIONS OF: MEP PENETRATIONS, SLEEVES, OPENINGS, IN-SLAB CONDUIT/DUCT (IF ALLOWED), EMBEDS, CAST-IN ANCHORS, AND OTHER ITEMS EMBEDDED OR PENETRATING STRUCTURAL ELEVATED SLABS.

MASONRY

1. CMU CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ACI 530/530.1 TMS 402/602 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES".
2. MINIMUM 28-DAY COMPRESSIVE STRENGTHS FOR CMU CONSTRUCTION SHALL BE:

DESIGN ASSEMBLY STRENGTH, f'm	2000 PSI
INDIVIDUAL CONCRETE MASONRY UNITS	2800 PSI
GROUT	2000 PSI

3. CMU MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:

CONCRETE MASONRY UNITS	ASTM C90, NORMAL WEIGHT
MORTAR	ASTM C270, TYPE S ASTM C270, TYPE N
GROUT	ASTM C476
JOINT REINFORCING	ASTM A82

4. WIRE REINFORCING PER ASTM A82 FOR SINGLE-WYTHE CMU WALLS, CMU CAVITY WALLS, AND MULTI-WYTHE COMPOSITE CMU WALLS SHALL BE HOT-DIP GALVANIZED PER ASTM A153, CORROSION RESISTANT HORIZONTAL JOINT REINFORCING WITH THE FOLLOWING GAUGE AND VERTICAL SPACING:

RUNNING BOND	9 GA @ 16" OC (ALL WIDTHS)
BELOW GRADE WALLS	9 GA @ 8" OC

5. ALL LOAD BEARING CMU WALLS TO HAVE FULL MORTAR BED, HEAD, AND COLLAR JOINTS.
6. GROUT SOLID ALL JAMBS FULL HEIGHT IN LOAD BEARING CMU WALLS TO UNDERSIDE OF LINTEL PLUS ONE CELL BEYOND BEARING LENGTH.
7. PROVIDE MINIMUM 1 INCH GROUT BETWEEN MAIN REINFORCING AND/OR BOLTS AND CMU UNIT FACE. VERTICAL REINFORCEMENT SHALL BE CENTERED IN WALL, UNLESS OTHERWISE NOTED. VERTICAL REINFORCING BARS SHALL SECURELY BE HELD IN POSITION BY WIRE TIES OR OTHER APPROVED MEANS TO ENSURE DESIGN LOCATION AND LAP. PLACE BARS AND LAP PRIOR TO GROUTING.
8. HORIZONTAL BOND BEAM AND VERTICAL REINFORCING SHALL BE CONTINUOUS UNLESS OTHERWISE NOTED.
9. CELLS SHALL BE IN VERTICAL ALIGNMENT. DOWELS IN FOOTINGS SHALL BE SET TO ALIGN WITH VERTICAL REINFORCING STEEL.
10. ALL CELLS CONTAINING REINFORCING SHALL BE FILLED SOLID WITH GROUT.
11. GROUT CELLS SOLID IN ALL WALLS, UNLESS OTHERWISE NOTED. GROUT IN 4'-0" MAXIMUM LIFTS.
12. LIFTS OF GROUT SHALL BE KEYED 1 1/2 INCHES INTO THE PREVIOUS COURSE BELOW.
13. HORIZONTAL BAR REINFORCEMENT SHALL BE FULLY EMBEDDED IN GROUT IN AN UNINTERRUPTED POUR.
14. EXCEPT FOR WALL PILASTERS, VERTICAL REINFORCEMENT SHALL BE FIELD CUT FOR 4'-0" LIFTS AND LAP SPLICED PER LAP LENGTH SCHEDULE.
15. COORDINATE ANY UNIDENTIFIED PIPE OR DUCT PASSING THROUGH STRUCTURAL CMU WALLS WITH TYPICAL DETAILS, UNLESS OTHERWISE NOTED.
16. SEE ARCHITECTURAL DRAWINGS FOR SURFACE AND HEIGHT OF UNITS, LAYING PATTERN, AND JOINT TYPE. ALL BLOCK SHALL BE LAID IN RUNNING BOND, UNLESS OTHERWISE NOTED.
17. ALL MULTIPLE WYTHE CMU WALLS SHALL BE GROUTED SOLID BETWEEN EACH WYTHE.
18. PROVIDE HORIZONTAL TIES WHERE CMU ABUTS CONCRETE.

LINTELS

1. PROVIDE LINTELS OVER ALL OPENINGS AND RECESSES IN MASONRY CONSTRUCTION. LINTELS ARE NOT REQUIRED OVER OPENINGS 12" WIDE OR LESS THAT IS AT LEAST 1 COURSE BELOW THE BOND BEAM AT THE TOP OF WALL.
2. PENETRATIONS NOT IDENTIFIED ON THE DOCUMENTS ARE TO BE TREATED IN A MANNER SIMILAR TO THE IDENTIFIED LOCATIONS.
3. LINTELS IN NON-BEARING WALLS SHALL BE SIZED PER THE FOLLOWING:

SPAN, L	STEEL OPTION (FOR EA 4" OF MASONRY) *
0' < L ≤ 4'-0"	L3 1/2x3 1/2x1/4
4'-0" < L ≤ 6'-0"	L4x3 1/2x5/16 (LLV)
6'-0" < L ≤ 8'-0"	L5x3 1/2x5/16 (LLV)
8'-0" < L ≤ 10'-0"	L6x3 1/2x3/8 (LLV)

SPAN, L	CMU OPTIONS			
	6" BLOCK	8" BLOCK	10" BLOCK	12" BLOCK
0' < L ≤ 4'-0"	8" DEEP W/ (1) # 4 BOTT	8" DEEP W/ (1) # 4 BOTT	8" DEEP W/ (1) #5 BOTT	8" DEEP W/ (1) # 5 BOTT
4'-0" < L ≤ 6'-0"	8" DEEP W/ (1) # 4 BOTT	8" DEEP W/ (1) # 4 BOTT	8" DEEP W/ (1) #5 BOTT	8" DEEP W/ (1) # 5 BOTT
6'-0" < L ≤ 8'-0"	16" DEEP W/ (1) #4 BOTT	16" DEEP W/ (1) #4 BOTT	16" DEEP W/ (1) #5 BOTT	16" DEEP W/ (1) #5 BOTT
8'-0" < L ≤ 10'-0"	16" DEEP W/ (1) #5 BOTT	16" DEEP W/ (2) #5 BOTT	16" DEEP W/ (2) #5 BOTT	16" DEEP W/ (2) #5 BOTT

*ALL ANGLES THAT ARE BACK-TO-BACK SHALL BE WELDED TOP AND BOTTOM 3" @ 12" OC MINIMUM.

4. ALL LINTELS SHALL HAVE A MINIMUM OF 8" END BEARING AND DO NOT REQUIRE BEARING PLATES, UNLESS OTHERWISE NOTED.
5. TEMPORARY SHORING OF MASONRY LINTELS MUST BE PROVIDED UNTIL MASONRY HAS REACHED 75% OF DESIGN STRENGTH.
6. ALL STEEL LINTELS IN EXTERIOR WALL CONSTRUCTION SHALL BE HOT-DIP GALVANIZED, UNLESS OTHERWISE NOTED.

SUBMITTALS

1. SUBMITTALS ARE:
   a. CONCRETE MIX DESIGNS
   b. MATERIAL PRODUCT DATA FOR STRUCTURAL MATERIALS
   c. CONCRETE AND MASONRY REINFORCING
   d. STEEL FABRICATION AND MISCELLANEOUS METALS
   e. STEEL DECK
   f. COLD FORMED STEEL FRAMING
2. SUBMITTALS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND REVIEW BY THE ARCHITECT SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE ARCHITECT/STRUCTURAL ENGINEER.
3. SUBMITTALS SHALL BE REVIEWED BY THE ARCHITECT/STRUCTURAL ENGINEER FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. NOTATIONS MADE BY THE ARCHITECT/STRUCTURAL ENGINEER ON THE SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS.
4. FOR ADDITIONAL INFORMATION ON REQUIRED SUBMITTALS, SEE INDIVIDUAL MATERIAL SECTIONS.

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Revision

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1	100% DESIGN DEVELOPMENT			2022.09.29

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Permit/Seal

STATE OF MICHIGAN
ATHANACIOS N. NASR
ENGINEER
No. 30603
LICENSED PROFESSIONAL ENGINEER

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	09/28/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GENERAL STRUCTURAL NOTES

Scale:
Revision: 1
Drawing No. Se.001

STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "DETAILING FOR STEEL CONSTRUCTION" AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM STANDARDS AS NOTED BELOW:

WIDE FLANGE SHAPES	ASTM A992	Fy = 50 KSI
OTHER ROLLED SHAPES	ASTM A36	Fy = 36 KSI
PIPE SECTIONS	ASTM A53, GR B	Fy = 35 KSI
HSS SECTIONS, ROUND	ASTM A500, GR C	Fy = 46 KSI
HSS SECTION, SQ/RECT	ASTM A500, GR C	Fy = 50 KSI
HP SHAPES	ASTM A572	Fy = 50 KSI
BASE AND CONNECTION PLATES	ASTM A36	Fy = 36 KSI
ANCHOR RODS	ASTM F1554, GR 36	Fy = 36 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A325	Fv = 120 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A490	Fv = 150 KSI
HIGH STRENGTH TWIST-OFF BOLTS	ASTM F3125, GR F1852	Fv = 120 KSI
HIGH STRENGTH TWIST-OFF BOLTS	ASTM F3125, GR F2280	Fv = 150 KSI
HEAVY HEX NUTS	ASTM A563	
WASHERS	ASTM F436	
HEADED STUD ANCHORS	ASTM A108, TYPE B	
ELECTRODES FOR ARC WELDING	AWS 5.1, E70XX	

3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". SEE DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.
4. ALL BOLTED CONNECTIONS SHALL BE GRADE A325N BEARING TYPE BOLTS, UNLESS OTHERWISE NOTED. ALL BOLTS SHALL BE INSTALLED TO A MINIMUM "SNUG TIGHT" CONDITION, UNLESS OTHERWISE NOTED.
5. FULLY TENSIONED HIGH STRENGTH BOLTS AND SLIP CRITICAL HIGH STRENGTH BOLTS SHALL USE TENSION-CONTROL "TWIST-OFF" BOLTS OR BE INSTALLED USING THE TURN OF THE NUT METHOD.
6. EXCEPT WHERE DETAILED OTHERWISE, FABRICATOR SHALL SELECT LRFD BOLTED (OR WELDED EQUIVALENT) SIMPLE SHEAR CONNECTIONS PER AISC 360 PART 10 TO SUPPORT LOADS INDICATED ON THE STRUCTURAL DRAWINGS. WHEN LOADS ARE NOT SHOWN, CONNECTION SHALL SUPPORT 60% OF THE TOTAL UNIFORM LOAD CAPACITY FOR EACH GIVEN BEAM SIZE AND SPAN AS LISTED IN AISC 360 TABLE 3-6. FOR COMPOSITE MEMBERS, CONNECTION SHALL SUPPORT 80% OF THE TOTAL UNIFORM LOAD CAPACITY FOR EACH BEAM SIZE AND SPAN.
7. BEAM REACTIONS GIVEN ON THE CONTRACT DOCUMENTS SHALL SUPERSEDE THE PREVIOUS NOTE. IN NO CASE SHALL THE CONNECTIONS BE DESIGNED FOR AN UNFACTORED END REACTION LESS THAN 12 KIPS.
8. WELD LENGTHS INDICATED ON THE DRAWINGS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE WELD LENGTH IS NOT SPECIFIED, PROVIDE WELD ALONG ENTIRE INTERSECTION OF THE JOINED PARTS. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM WELD SIZE AS SPECIFIED IN AISC 360, TABLE J2.4.
9. ALL WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE AND CERTIFICATION IN THE TYPES OF WELDING CALLED FOR. WELDERS SHALL HAVE BEEN RECENTLY QUALIFIED AS PRESCRIBED IN "QUALIFICATION PROCEDURES" OF THE AMERICAN WELDING SOCIETY (AWS).
10. HEADED STUD ANCHORS (HSA): SHALL BE INSTALLED IN ACCORDANCE WITH AWS D1.1 AND SHALL BE AUTOMATICALLY END WELDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE HSA AND THE STEEL SHAPE. THERE SHOULD BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE HSA AND THE STEEL SHAPE. THE HSA SHALL DECREASE IN LENGTH DURING WELDING APPROXIMATELY 1/8" FOR 5/8"ø AND SMALLER AND 3/16" FOR LARGER THAN 5/8"ø.
11. BEAMS SHALL BE CAMBERED UPWARD WHERE SHOWN ON THE DRAWINGS. WHERE NO UPWARD CAMBER IS INDICATED, ANY MILL CAMBER SHALL BE DETAILED UPWARD IN THE BEAMS.
12. SPLICING OF STEEL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE AND CONNECTION TO BE MADE.
14. ALL STEEL EXPOSED TO WEATHER OR AS NOTED ON PLAN SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 G90. ABRADED AREAS TO BE TOUCHED UP WITH COLD GALVANIZING COMPOUND IN ACCORDANCE WITH ASTM A780.
15. ALL GALVANIZED HOLLOW SECTIONS SHALL HAVE WELDED CAP PLATES TO SEAL EXPOSED ENDS.
16. CUTS, HOLES, OPENINGS, ETC., REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OF HOLES AND CUTS IN THE FIELD SHALL NOT BE ALLOWED, EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.
17. FURNISH AND INSTALL MISCELLANEOUS STEEL (CURBS, HANGERS, EXPANSION JOINT ANGLES, STRUTS, ETC.) AS CALLED FOR OR AS NECESSARY PER ARCHITECTURAL AND MECHANICAL/ELECTRICAL DRAWINGS.
18. GROUT FOR BASE AND BEARING PLATES SHALL BE A NON-SHRINK, NON-METALLIC PRODUCT. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 7000 PSI. INSTALL GROUT PRIOR TO APPLYING SIGNIFICANT LOADING TO MEMBER.
19. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR ARCHITECT/STRUCTURAL ENGINEER'S REVIEW BEFORE FABRICATION.
20. WHERE FIELD WELDING TO EXISTING STRUCTURAL STEEL IS INDICATED, CONTRACTOR SHALL THOROUGHLY CLEAN ALL SURFACES TO RECEIVE WELD, REMOVING RUST, PAINT, DIRT AND OTHER FOREIGN MATTER IN AREA OF WORK. PROVIDE FIRE WATCH PROTECTION ACCEPTABLE TO THE OWNER.
21. CLEAN STEEL PER SSPC-SP3 AND SHALL RECEIVE ONE SHOP COAT OF PAINT. OMIT PAINT AT HOLES FOR SLIP CRITICAL TYPE CONNECTIONS, AT STRUCTURAL STEEL TO BE FIREPROOFED, ENCASED OR IN CONTACT WITH CONCRETE, AND ON TOP FLANGE OF BEAMS RECEIVING SHEAR CONNECTORS.
22. STEEL ABOVE THE ROOF AND OUTSIDE THE BUILDING ENVELOPE (EXPOSED TO WEATHER) SHALL BE CLEANED PER SSPC-SP6 AND HOT DIP GALVANIZED. (FINISH PAINT SHALL BE EPOXY SECOND COAT AND ACRYLIC FINISH COAT BY SAME PAINT MANUFACTURER AS PRIME PAINT PER APPROVED PAINT SYSTEM.)
23. THE LENGTH, DIMENSION AND CONNECTION DETAIL FROM NEW STRUCTURAL MEMBER TO EXISTING STRUCTURES SHALL BE FIELD VERIFIED BEFORE FABRICATION. FIELD MODIFICATIONS TO THE FABRICATED MEMBER OR CONNECTION ARE NOT ALLOWED WITHOUT PRIOR APPROVAL BY THE STRUCTURAL ENGINEER. CONTRACTOR SHALL SUBMIT SKETCHES OR SHOP DRAWINGS DETAILING PROPOSED MODIFICATIONS FOR APPROVAL.

STEEL DECK

1. MATERIAL, DETAILING, DESIGN, MANUFACTURE, AND ERECTION OF STEEL DECKS SHALL BE IN ACCORDANCE WITH THE STEEL DECK INSTITUTE (SDI) SPECIFICATION.
2. DECK SIZE AND GAUGE INDICATED ON THE DRAWINGS ARE BASED ON THE FOLLOWING:
   A. CURRENT VERSION OF VULCRAFT CATALOG FOR GRAVITY DESIGN LOADS AND UNSHORED CONSTRUCTION SPANS
   B. STEEL DECK INSTITUTE (SDI) DIAPHRAGM DESIGN MANUAL 4TH EDITION FOR DIAPHRAGM LOADS
3. STEEL DECK GALVANIZING SHALL CONFORM TO ASTM A924 WITH A MINIMUM COATING OF G90.
4. PAINTED STEEL ROOF DECK SHALL CONFORM TO ASTM A1008, GRADE C.
5. ALL FLOOR AND ROOF DECK SHALL BE VENTED.
6. PROVIDE MINIMUM DECK BEARING AND LAP LENGTHS PER MANUFACTURER'S RECOMMENDATIONS.
7. USE SUMP PANS AT ALL ROOF DRAINS. MINIMUM THICKNESS FOR SUMP PANS SHALL BE 14 GAUGE.
8. DECK MANUFACTURER SHALL FURNISH ALL RIDGE AND VALLEY PLATES, SUMP PANS, DRAIN PLATES, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION. DECK MANUFACTURER SHALL PROVIDE ALL CLOSURE PLATES AND POUR STOPS NOT PROVIDED BY THE STEEL FABRICATOR.
9. CUTTING AND FRAMING OF OPENINGS FOR OTHER TRADES SHALL BE THE RESPONSIBILITY OF THE TRADES INVOLVED. HOLES THAT ARE LOCATED AND DIMENSIONED ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE DECK ERECTOR.
10. CONDUITS SHOULD NOT BE PLACED IN CONCRETE SLAB ON STEEL DECK WITHOUT COORDINATION WITH THE STRUCTURAL ENGINEER, UNLESS OTHERWISE NOTED.
11. COORDINATE ALL PENETRATIONS, EMBEDS, AND RECESSES IN COMPOSITE FLOOR SYSTEMS WITH THE STRUCTURAL ENGINEER, UNLESS OTHERWISE NOTED.
12. DO NOT EXCEED 25 LBS PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO STEEL ROOF DECK. THIS 25 LBS LOAD AND 2'-0" SPACING INCLUDES ADJACENT MECHANICAL, ELECTRICAL, AND ARCHITECTURAL ITEMS HANGING FROM THE DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, SUPPLEMENTAL FRAMING SUPPORTED OFF STEEL FRAMING WILL NEED TO BE ADDED. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATION AND WEIGHT OF ALL THE ELEMENTS BEING HUNG WITH STRUCTURAL ENGINEER, UNLESS OTHERWISE NOTED.
13. CORRUGATED FORM DECK GAUGES SHOWN ON THE DRAWINGS ARE INTENDED TO SUPPORT THE WEIGHT OF THE WET CONCRETE PLUS A CONSTRUCTION LIVE LOAD OF 20 PSF WITHOUT INTERMEDIATE SHORING BASED ON A THREE-SPAN CONTINUOUS CONDITION. DECK MANUFACTURER SHALL EVALUATE OTHER SPAN CONDITIONS FOR DEFLECTION WHICH SHALL NOT EXCEED SPAN OVER 180 NOR 1/8 INCH UNDER UNIFORMLY DISTRIBUTED CONCRETE DEAD LOAD. PROVIDE SHORING OR ALTERNATE MEANS OF CONTROLLING DEFLECTION AND MEETING ALLOWABLE STRESSES.
14. STEEL FORM OR COMPOSITE DECKING HAS BEEN DESIGNED FOR THE UNSHORED CLEAR SPAN. CONCRETE FILL THICKNESS SHOWN ON FRAMING PLANS AND DETAIL SHEETS IS A MINIMUM THICKNESS. NO ALLOWANCES HAVE BEEN SHOWN FOR ADDITIONAL CONCRETE FILL REQUIRED TO COMPENSATE FOR BEAM OR DECK DEFLECTIONS AND TO MAINTAIN SURFACE TOLERANCES SPECIFIED.

15. SUBMIT SHOP DRAWINGS SHOWING ERECTION PROCEDURES, WELDING PROCEDURES, VERTICAL LOAD AND DIAPHRAGM SHEAR CAPACITY FURNISHED, DECK SHORING REQUIREMENTS, UNDERWRITER'S LABORATORIES (UL) FIRE RATING NUMBER AND COMPOSITE BEAM AND GIRDER STUD PROFILES TO THE ARCHITECT/STRUCTURAL ENGINEER FOR REVIEW. FABRICATION SHALL NOT BEGIN WITHOUT APPROVED SHOP DRAWINGS.

POST-INSTALLED ANCHORS

1. ANCHORS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATIVE ANCHORS MAY BE SUPPLIED PROVIDED THE QUANTITY AND CONFIGURATION MATCH THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. BELOW SUMMARIZES EACH ANCHOR TYPE USED ON THE PROJECT.
2. MECHANICAL ANCHORS:
   a. EXPANSION ANCHORS

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
GROUTED MASONRY	HILTI KB3 (ESR-1385)	DEWALT POWER STUD+ SD1 (ESR-2966) SIMPSON WEDGE-ALL (ESR-1396)
UNCRACKED CONCRETE	HILTI KB3 (ESR-2302)	DEWALT POWER STUD+ SD2 (ESR-2502) RED HEAD TRUBOLT+ (ESR-2427) SIMPSON STRONG BOLT 2 (ESR-3037)
CRACKED CONCRETE	HILTI KBTZ (ESR-1917)	DEWALT POWER STUD+ SD2 (ESR-2502) RED HEAD TRUBOLT+ (ESR-2427) SIMPSON STRONG BOLT 2 (ESR-3037)

   b. THREADED SCREW ANCHORS

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
GROUTED MASONRY	HILTI KWIK HUS-EZ (ESR-3056)	DEWALT WEDGE-BOLT+ (ESR-1678) SIMPSON TITEN HD (ESR-1056)
UNCRACKED CONCRETE	HILTI KWIK HUS-EZ (ESR-3027)	DEWALT POWER SCREW-BOLT+ (ESR-3889) SIMPSON TITEN HD (ESR-2713)
CRACKED CONCRETE	HILTI KWIK HUS-EZ (ESR-3027)	DEWALT POWER SCREW-BOLT+ (ESR-3889) SIMPSON TITEN HD (ESR-2713)

3. ADHESIVE ANCHORS: SHALL CONSIST OF DEFORMED REINFORCING BARS OR ASTM A193 GRADE B7 RODS, HEAVY DUTY NUTS AND WASHERS AND A TWO COMPONENT STRUCTURAL ADHESIVE. WHERE ANCHORING INTO HOLLOW MASONRY, A SCREEN TUBE SHALL BE PROVIDED.

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
HOLLOW MASONRY	HILTI HIT-HY 270 (ESR-4143)	DEWALT AC 100+ GOLD (ESR-3200) SIMPSON SET-XP (ESR-0265)
GROUTED MASONRY	HILTI HIT-HY 270 (ESR-4143)	DEWALT AC 100+ GOLD (ESR-3200) RED HEAD A7 ACRYLIC (ESR-3951) SIMPSON SET-XP (ESR-0265)
CONCRETE	HILTI HIT-HY 200 (ESR-3187)	DEWALT AC 200+ (ESR-4027) SIMPSON SET-3G (ESR-4057)

4. CRACKED CONCRETE REPRESENTS ALL CONCRETE FOR PROJECTS LOCATED IN SEISMIC DESIGN CATEGORY C OR HIGHER, TENSILE ZONES SUCH AS BOTTOMS OF BEAMS AND SLABS, OR WHERE NOTED ON THE DRAWINGS.

MECHANICAL ANCHORS

1. EXPANSION ANCHOR SYSTEMS:
   a. CONCRETE: USE ONLY EXPANSION ANCHOR SYSTEMS THAT HAVE BEEN ISSUED AN ICC-EVALUATION SERVICES REPORT (ESR) IN ACCORDANCE WITH THE PROVISIONS OF ICC-ES AC193. ANCHOR SYSTEMS SHOULD BE APPROVED FOR USE IN CRACKED CONCRETE AND SEISMIC DESIGN CATEGORIES A-F PER SECTION 2.0 OF THE ICC ESR. ANCHOR SYSTEMS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE ICC ESR FOR THE SPECIFIC ANCHOR AND AS REQUIRED BY THE MANUFACTURER. ALL EXPANSION ANCHORS SHALL BE HILTI KBTZ (ICC ESR-1917), SIMPSON STRONG BOLT 2 (ICC ESR-3037) OR EQUIVALENT, UNLESS SPECIFIED IN THE DETAILS. ANY SUBSTITUTION MUST BE APPROVED BY THE STRUCTURAL ENGINEER AND OSHPD FOR THE TYPE, INSTALLATION, APPLICATION AND MATERIALS.
   b. MASONRY: USE ONLY EXPANSION ANCHOR SYSTEMS THAT HAVE BEEN ISSUED AN ICC ESR IN ACCORDANCE WITH THE PROVISIONS OF ICC-ES AC01. ANCHOR SYSTEMS SHOULD BE APPROVED FOR SEISMIC USE DETAILED IN THE CONDITIONS OF USE LISTED IN THE ICC ESR. ANCHOR SYSTEMS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE ICC ESR FOR THE SPECIFIC ANCHOR, AND AS REQUIRED BY THE MANUFACTURER.
2. UNDERCUT ANCHOR SYSTEMS:
   a. CONCRETE: USE ONLY UNDERCUT ANCHOR SYSTEMS THAT HAVE BEEN ISSUED AN ICC ESR IN ACCORDANCE WITH THE PROVISIONS OF ICC-ES AC193. ANCHOR SYSTEMS SHOULD BE APPROVED FOR USE IN CRACKED CONCRETE AND SEISMIC DESIGN CATEGORIES A-F PER SECTION 2.0 OF THE ICC ESR. ANCHOR SYSTEMS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE ICC ESR FOR THE SPECIFIC ANCHOR AND AS REQUIRED BY THE MANUFACTURER.
3. WHERE THE MANUFACTURER'S INSTALLATION INSTRUCTIONS OR APPLICABLE ICC ESR CALL FOR THE APPLICATION OF AN INSTALLATION TORQUE, THE SPECIFIED TORQUE SHALL BE APPLIED WITH A CALIBRATED TORQUE WRENCH. THE SPECIFIED INSTALLATION TORQUE SHALL NOT BE EXCEEDED.
4. ANCHORS ARE TYPICALLY AVAILABLE IN ELECTRO-GALVANIZED CARBON STEEL, HOT-DIP GALVANIZED CARBON STEEL AND STAINLESS STEEL. USE OF ELECTRO-GALVANIZED CARBON STEEL ANCHORS IS TYPICALLY LIMITED TO DRY, INTERIOR LOCATIONS, UNLESS OTHERWISE NOTED. STAINLESS STEEL OR HOT-DIP GALVANIZED ANCHORS ARE GENERALLY SUITABLE FOR APPLICATIONS EXPOSED TO EXTERIOR WEATHER CONDITIONS. FINAL AUTHORITY ON THE TYPE OF ANCHOR COATING UTILIZED RESTS WITH THE STRUCTURAL ENGINEER AND MUST BE APPROVED AS SUCH.

EPOXY ANCHORS

1. INTENDED FOR USE WITH REINFORCING BARS AND THREADED RODS.
2. ALL EPOXY ON THE JOB, UNLESS OTHERWISE NOTED, SHALL BE 'SET-3G' /HILTI HY200 AS MANUFACTURED BY SIMPSON STRONG-TIE/ HILTI (ICC ESR-4057) OR APPROVED EQUIVALENT.
3. WORKERS SHALL BE CERTIFIED FOR ANCHOR INSTALLATION EQUIPMENT AND PROCEDURES USING THEIR EPOXY.
4. CONTINUOUS INSPECTION IS REQUIRED FOR INSTALLATION OF REBAR OR THREADED RODS.
5. FOR REQUIRED HOLES, THE DIAMETERS SHALL BE PER MANUFACTURER'S REQUIREMENTS. MINIMUM HOLE LENGTH SHALL BE PER STRUCTURAL DRAWINGS, OR PER THE ICC MINIMUM (FOR MAXIMUM TENSION) IF NOT SHOWN.
6. FOR HORIZONTAL HOLES COMPLETELY THROUGH WALLS OR BEAMS AND FOR TIES AROUND COLUMNS, PROVIDE A DAM AT ONE END, FLOOD WITH EPOXY AND DAM THE OTHER SIDE. VIBRATE TIES TO ENSURE FULL COVERAGE. REMOVE DAMS ONCE FLUID EPOXY HAS SET. FILL ANY VOIDS WITH ADDITIONAL EPOXY.
7. ALL EPOXY ANCHORS WILL BE TESTED AS FOLLOWS:
   a. 25% OF FIRST 40 ANCHORS INSTALLED AND 10% OF ALL ANCHORS THEREAFTER.
   b. IF ANY FAILURES OCCUR, THE PREVIOUS 10 ANCHORS INSTALLED SHALL BE TESTED AS WELL AS THE NEXT 5 ANCHORS INSTALLED. NEW INSTALLED ANCHORS WILL CONTINUE TO BE TESTED UNTIL 5 SUCCESSIVE ANCHORS PASS, AT WHICH TIME NORMAL TESTING OF THE REMAINING ANCHORS SHALL RESUME.
   c. TEST VALUES:

ANCHOR TYPE	TEST TYPE	TEST LOAD (LBS)	BASE MATERIAL
5/8"ø THREADED ROD*	TENSION	6,000	CONCRETE
3/4"ø THREADED ROD*	TENSION	8,500	CONCRETE
7/8"ø THREADED ROD*	TENSION	11,500	CONCRETE
1"ø THREADED ROD*	TENSION	15,000	CONCRETE
#4 REBAR**	TENSION	4,800	CONCRETE
#5 REBAR**	TENSION	7,500	CONCRETE
#6 REBAR**	TENSION	10,500	CONCRETE

   * A307 ** GRADE 60

   d. ANCHORS SHALL BE ALLOWED TO CURE 48 HOURS PRIOR TO TESTING.
   e. TENSION TEST SHALL BE IN ACCORDANCE WITH ASTM E488.
   f. A MINIMUM OF TWO DOWELS PER WALL PER FLOOR SHALL BE TESTED.
   g. IF ANCHOR EDGE DISTANCE IS LESS THAN 6 ANCHOR DIAMETERS, USE 1/2 THE TEST VALUE SHOWN, UNLESS OTHERWISE NOTED.
8. WHEN INSTALLING DRILLED-IN EPOXY BARS OR ANCHORS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS.

5. EXPANSION ANCHORS FOR NON-VIBRATION ISOLATED MECHANICAL EQUIPMENT RATED OVER 10hp ARE NOT PERMITTED BY ASCE 7, SECTION 13.6.5.5. ANCHORS INSTALLED IN OVERHEAD CONDITIONS FOR NON-VIBRATION ISOLATED EQUIPMENT WITH RECIPROCATING OR ROTATING MECHANISMS SHALL BE UNDERCUT ANCHORS.
6. THE INSPECTION AGENCY SHALL BE ON THE JOBSITE CONTINUOUSLY DURING ANCHOR INSTALLATIONS, UNLESS OTHERWISE NOTED IN THE ICC ESR, TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE COMPRESSIVE STRENGTH, HOLE DIMENSIONS, ANCHOR SPACINGS, EDGE DISTANCES, SLAB THICKNESS, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE.
7. THE TENSION TESTING OF THE EXPANSION ANCHORS SHALL BE DONE IN THE PRESENCE OF THE INSPECTION AGENCY AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY. IF ANY ANCHORS FAIL THE TENSION TESTING REQUIREMENTS, THE ADDITIONAL TESTING REQUIREMENTS SHALL BE ACCEPTABLE TO THE ENFORCEMENT AGENCY.
8. TEST QUANTITY OF ANCHORS AS NOTED BELOW:

APPLICATION	QUANTITY OF BOLTS
STRUCTURAL	100%
NON-STRUCTURAL	50%
SILL PLATE BOLTING	10%

9. ANCHORS TO BE TESTED SHALL BE SELECTED AT RANDOM BY THE INSPECTION AGENCY.
10. UNDERCUT ANCHORS THAT ALLOW VISUAL CONFIRMATION OF FULL SET NEED NOT BE TESTED, UNLESS OTHERWISE NOTED BY ENFORCEMENT AGENCY OR STRUCTURAL ENGINEER.
11. ALL ANCHORS SHALL BE TESTED AS FOLLOWS, IN NORMAL OR LIGHTWEIGHT CONCRETE:

ANCHOR DIAMETER (IN)	WEDGE		SLEEVE		SHELL	
	LOADS (LBS)	TORQUE (FT-LBS)	LOAD (LBS)	TORQUE (FT-LBS)	LOAD (LBS)	TORQUE (FT-LBS)
3/8	1100	25	700	10	1800	N/A
1/2	2000	50	900	20	2700	N/A
5/8	2300	80	1100	45	3700	N/A
3/4	3700	150	1400	90	5400	N/A

   a. ANCHOR DIAMETER REFERS TO THE THREAD SIZE FOR WEDGE AND SHELL CATEGORIES AND TO THE ANCHOR OUTSIDE DIAMETER FOR THE SLEEVE CATEGORY.
   b. APPLY PROOF TEST LOADS TO WEDGE AND SLEEVE ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT, REMOVE THE NUT AND INSTALL A THREADED COUPLER NUT TO THE SAME TIGHTNESS OF THE ORIGINAL NUT USING A TORQUE WRENCH AND APPLY LOAD.
   c. FOR SLEEVE/SHELL INTERNALLY THREADED CATEGORIES, VERIFY THE ANCHOR IS NOT PREVENTED FROM WITHDRAWING BY A BASEPLATE OR OTHER FIXTURE. IF RESTRAINT IS FOUND, LOOSEN AND SHIM OR REMOVE FIXTURE(S) PRIOR TO TESTING.
   d. REACTION LOADS FROM TEST FIXTURE MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURE(S).
   e. SHELL TYPE ANCHORS SHOULD BE TESTED AS FOLLOWS: VISUALLY INSPECT 25% FOR FULL EXPANSION AS EVIDENCED BY THE LOCATION OF THE EXPANSION PLUG IN THE ANCHOR BODY. PLUG LOCATION OF A FULLY EXPANDED ANCHOR SHOULD BE AS RECOMMENDED BY THE MANUFACTURER, OR IN THE ABSENCE OF SUCH RECOMMENDATION, AS DETERMINED ON THE JOBSITE FOLLOWING THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND PROOF LOAD 5% AS INDICATED IN THE TABLE ABOVE, BUT NOT LESS THAN THREE ANCHORS PER DAY FOR EACH DIFFERENT PERSON OR CREW INSTALLING ANCHORS, OR TEST 50% OF THE ANCHORS PER ITEM i.
   f. TEST EQUIPMENT SHALL BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.
   g. TORQUE TESTS FOR SHELL TYPE ANCHORS ARE OMITTED DUE TO LACK OF DATA. TORQUE TESTING CAN OCCUR ON AN INDIVIDUAL BASIS WHEN TEST PROCEDURES ARE SUBMITTED AND APPROVED BY THE ENFORCEMENT AGENCY. TABULATED VALUES MAY BE FORTHCOMING ONCE THE ENFORCEMENT AGENCY HAS MORE DATA TO EVALUATE THE FEASIBILITY OF STANDARD TORQUE VALUES.
   h. TESTING SHOULD OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF THE SUBJECT ANCHORS.
   i. FOR WEDGE AND SLEEVE TYPE ANCHORS, TEST 50% OF THE ANCHORS. ALTERNATE ANCHORS IN ANY GROUP ARRANGEMENT. IF ANY FAILURES OCCUR, THE IMMEDIATE ADJACENT ANCHOR MUST THEN BE TESTED.
12. THE TEST LOAD MAY BE APPLIED BY ANY METHOD THAT WILL EFFECTIVELY TRANSMIT A MEASURABLE TENSION LOAD TO THE ANCHOR. ACCEPTABLE METHODS INCLUDE:
   a. USE OF A HYDRAULIC JACK, WHEREBY EITHER UNCONFINED OR CONFINED TESTING SHALL BE ACCEPTABLE
   b. USE OF CALIBRATED SPRING-LOADED DEVICES
   c. USE OF A CALIBRATED TORQUE WRENCH FOR TORQUE-CONTROLLED EXPANSION ANCHORS
13. THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
   a. HYDRAULIC RAM METHOD: THE ANCHOR SHALL HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD. FOR EXPANSION ANCHORS, A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE.
   b. TORQUE WRENCH METHOD: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN ONE-HALF (1/2) TURN OF THE NUT.
14. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE, INSTALLED BY THE SAME TRADE, NOT PREVIOUSLY TESTED UNTIL TWENTY (20) CONSECUTIVE ANCHORS PASS, THEN RESUME THE INITIAL TEST FREQUENCY.
15. WHEN INSTALLING DRILLED-IN ANCHORS IN EXISTING NON-PRESTRESSED REINFORCED CONCRETE, USE CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS. WHEN INSTALLING THEM INTO EXISTING PRESTRESSED CONCRETE, PRE- OR POST-TENSIONED, LOCATE THE PRESTRESSED TENDONS BY USING A NONDESTRUCTIVE METHOD PRIOR TO INSTALLATION. EXERCISE EXTREME CARE AND CAUTION TO AVOID CUTTING OR DAMAGING THE TENDONS DURING INSTALLATION. MAINTAIN A MINIMUM CLEARANCE OF 1" BETWEEN THE REINFORCEMENT AND THE DRILLED-IN ANCHOR.
16. IF REBAR IS ENCOUNTERED DURING THE DRILLING, THE CONTRACTOR SHALL IMMEDIATELY TERMINATE DRILLING AND CONTACT THE STRUCTURAL ENGINEER.
17. LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS OR OTHER STEEL ASSEMBLIES ATTACHED WITH MECHANICAL ANCHORS.
18. IF THE CONCRETE CRACKS DURING THE INSTALLATION OF THE ANCHOR, THE ANCHOR SHALL BE REMOVED OR ABANDONED.
19. UNLESS OTHERWISE NOTED, PROVIDE MINIMUM EMBEDMENT OF ANCHORS AS FOLLOWS:

ANCHOR DIAMETER (IN)	WEDGE ANCHOR EMBED (IN)	HEAVY DUTY SLEEVE ANCHOR EMBED (IN)*	UNDERCUT ANCHOR EMBED (IN)**
3/8 (10mm)	2	2 3/4	4
1/2 (12mm)	2	3 1/4	5
5/8 (16mm)	3 1/8	4	7 1/2
3/4 (20mm)	3 3/4	5	9 7/8

   * EMBEDMENT BASED ON ICC ESR-1545

   ** EMBEDMENT BASED ON ICC ESR-1546

20. REQUIRED TEST LOADS SHALL BE DETERMINED AS THE LESSER OF TWICE THE MAXIMUM ALLOWABLE TENSION LOAD PROVIDED IN THE ICC ESR FOR THE SPECIFIC ANCHOR OR 80% OF THE NOMINAL YIELD STRENGTH OF THE ANCHOR ELEMENT.

ELEVATORS

1. THE ELEVATORS, ASSOCIATED EQUIPMENT, GUIDE RAILS, AND BRACKETS ARE A DEFERRED APPROVAL ITEM.
2. INSTALLATION OF ELEVATORS, ASSOCIATED EQUIPMENT, GUIDE RAILS, AND BRACKETS SHALL NOT BE STARTED UNTIL DETAILED PLANS AND ENGINEERING CALCULATIONS HAVE BEEN APPROVED BY THE ARCHITECT/STRUCTURAL ENGINEER

SHORING AND BRACING

1. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING OF EXISTING CONSTRUCTION, NEW CONSTRUCTION, AND UNDERGROUND UTILITIES AS FOLLOWS:
   a. WHERE SHOWN OR NOTED ON THE DRAWINGS.
   b. WHERE EXISTING CONSTRUCTION IS TO BE ALTERED OR DISTURBED UNTIL PERMANENT SUPPORT IS IN PLACE.
   c. WHERE EXISTING CONSTRUCTION IS NOT UNDERGOING ALTERATION AND IS TO REMAIN UNDISTURBED BUT IS DISTURBED AS A RESULT OF THE WORK OF THIS CONTRACT.
   d. AS REQUIRED FOR SAFE ERECTION, INSTALLATION OF NEW CONSTRUCTION, EQUIPMENT, ETC.
   e. WHEN NEEDED FOR CONTRACTOR'S "MEANS AND METHODS" OF CONSTRUCTION AND OTHER SAFETY RELATED ISSUES.
2. SHORING AND BRACING SHOWN ON THE DRAWINGS IS CONCEPTUAL. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS, SHORING AND BRACING CALCULATIONS, METHODS OF INSTALLATION, TRANSFER OF LOADS THROUGH TO FINAL LOAD SUPPORT, AND WORK SEQUENCE PHASING WITH NEW CONSTRUCTION.
3. SHORING AND BRACING SHALL BE PERFORMED BY A CONTRACTOR WITH MINIMUM 5 YEARS DEMONSTRATED EXPERIENCE IN SIMILAR SIZE AND SCOPE OF SHORING AND BRACING PROJECTS.
4. SHORING AND BRACING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT WITH MINIMUM 5 YEARS DEMONSTRATED EXPERIENCE IN SIMILAR SIZE AND SCOPE OF SHORING AND BRACING PROJECTS. DESIGN LOADS AND METHODS SHALL CONFORM TO APPLICABLE CODES. SOIL AND MATERIAL STRENGTHS SHALL BE VERIFIED BY TESTS, UNLESS CONSERVATIVE ESTIMATES THAT DO NOT AFFECT DEFLECTIONS AND DEFORMATIONS ARE APPROVED BY THE ARCHITECT/STRUCTURAL ENGINEER.
5. CONTRACTOR SHALL SUBMIT DRAWINGS AND CALCULATIONS SEALED AND SIGNED BY THE CONTRACTOR'S PROFESSIONAL ENGINEER SHOWING COMPLETE DESIGN INCLUDING TEMPORARY CONDITIONS, FINAL CONDITIONS AND SEQUENCE OF WORK.
6. BEFORE STARTING WORK, CONTRACTOR SHALL PERFORM CONDITION SURVEY OF THE EXISTING BUILDING STRUCTURE, EXTERIOR FAÇADE AND INTERIOR FINISHES, INCLUDING PHOTOGRAPHIC DOCUMENTATION AND SUBMIT SURVEY TO THE OWNER FOR RECORD.
7. DURING THE SHORING AND BRACING OPERATIONS, CONTRACTOR SHALL:
   a. KEEP THE EXISTING AND NEW CONSTRUCTION IN A SAFE CONDITION.
   b. MONITOR EXISTING AND NEW CONSTRUCTION TO DETECT ANY SIGNS OF DISTRESS OR DEFORMATION.
   c. TAKE IMMEDIATE STEPS TO PREVENT DISTRESS, DEFORMATION OR DAMAGE.
8. CONTRACTOR SHALL CONTINUOUSLY MONITOR THE SHORING AND BRACING SYSTEM. CONTRACTOR SHALL REVIEW AND ASCERTAIN THAT ALL FIELD CONNECTIONS ARE COMPLETED ACCORDING TO THE CONTRACTOR'S DESIGN AND ISSUE APPROVAL FOR INSPECTION OF THE WORK BY THE TESTING AGENCY.
9. AFTER COMPLETION OF SHORING AND BRACING AND COMPLETION OF WORK REQUIRING SHORING AND BRACING, CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE EXISTING AND NEW CONSTRUCTION, WITHOUT ANY COST TO THE OWNER, AND TO THE SATISFACTION OF THE OWNER AND ARCHITECT/STRUCTURAL ENGINEER.

SELECT STRUCTURAL DEMOLITION

1. NOTIFY ARCHITECT/STRUCTURAL ENGINEER OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS BEFORE PROCEEDING WITH SELECTIVE DEMOLITION.
2. COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING SELECTIVE DEMOLITION. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION. COMPLY WITH ANSI/ASSE A10.6 AND NFPA241.
3. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED BEFORE STARTING SELECTIVE DEMOLITION OPERATIONS.
4. SURVEY EXISTING CONDITIONS AND CORRELATE WITH REQUIREMENTS INDICATED TO DETERMINE EXTENT OF SELECTIVE DEMOLITION REQUIRED.
5. WHEN UNANTICIPATED MECHANICAL, ELECTRICAL, OR STRUCTURAL ELEMENTS THAT CONFLICT WITH INTENDED FUNCTION OR DESIGN ARE ENCOUNTERED, INVESTIGATE, AND MEASURE THE NATURE AND EXTENT OF CONFLICT. PROMPTLY SUBMIT A WRITTEN REPORT TO ARCHITECT/STRUCTURAL ENGINEER.
6. EXISTING SERVICES/SYSTEMS TO REMAIN: MAINTAIN SERVICES/SYSTEMS INDICATED TO REMAIN AND PROTECT THEM AGAINST DAMAGE.
7. TEMPORARY FACILITIES: PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN.
8. TEMPORARY SHORING: PROVIDE AND MAINTAIN SHORING, BRACING, AND STRUCTURAL SUPPORTS AS REQUIRED TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF CONSTRUCTION AND FINISHES TO REMAIN, AND TO PREVENT UNEXPECTED OR UNCONTROLLED MOVEMENT OR COLLAPSE OF CONSTRUCTION BEING DEMOLISHED.
9. GENERAL: DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. USE METHODS REQUIRED TO COMPLETE THE WORK WITHIN LIMITATIONS OF GOVERNING REGULATIONS AND AS FOLLOWS:
   A. NEATLY CUT OPENINGS AND HOLES PLUMB, SQUARE, AND TRUE TO DIMENSIONS REQUIRED.

   USE CUTTING METHODS LEAST LIKELY TO DAMAGE CONSTRUCTION TO REMAIN OR

   ADJOINING CONSTRUCTION. USE HAND TOOLS OR SMALL POWER TOOLS DESIGNED FOR SAWING OR GRINDING, NOT HAMMERING, AND CHOPPING, TO MINIMIZE DISTURBANCE OF ADJACENT SURFACES. TEMPORARILY COVER OPENINGS TO REMAIN.

   B. CUT OR DRILL FROM THE EXPOSED OR FINISHED SIDE INTO CONCEALED SURFACES TO AVOID MARRING EXISTING FINISHED SURFACES.

   C. DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. AT CONCEALED SPACES, SUCH AS DUCT AND PIPE INTERIORS, VERIFY CONDITION AND CONTENTS OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN FIRE WATCH AND PORTABLE FIRE-SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS.

   D. LOCATE SELECTIVE DEMOLITION EQUIPMENT AND REMOVE DEBRIS AND MATERIALS SO AS NOT TO IMPOSE EXCESSIVE LOADS ON SUPPORTING WALLS, FLOORS, OR FRAMING.

   E. DISPOSE OF DEMOLISHED ITEMS AND MATERIALS PROMPTLY.
10. EXISTING ITEMS TO REMAIN: PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING SELECTIVE DEMOLITION. WHEN PERMITTED BY ARCHITECT/STRUCTURAL ENGINEER, ITEMS MAY BE REMOVED TO A SUITABLE, PROTECTED STORAGE LOCATION DURING SELECTIVE DEMOLITION AND CLEANED AND REINSTALLED IN THEIR ORIGINAL LOCATIONS AFTER SELECTIVE DEMOLITION OPERATIONS ARE COMPLETE.
11. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE SELECTIVE DEMOLITION OPERATIONS BEGAN.

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Permit/Seal

STATE OF MICHIGAN ATHANACIOS N. NASR ENGINEER No. 30603 LICENSED PROFESSIONAL ENGINEER

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	09/28/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
GENERAL STRUCTURAL NOTES

Scale:
Revision: 1
Drawing No. Se.002

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ORIGINAL SHEET - ARCH E1

TESTING, INSPECTIONS, AND OBSERVATIONS

1. THE STRUCTURAL ENGINEER DOES NOT PROVIDE INSPECTIONS OF CONSTRUCTION. STRUCTURAL ENGINEER MAY MAKE PERIODIC OBSERVATIONS OF THE CONSTRUCTION. SUCH OBSERVATIONS SHALL NOT REPLACE REQUIRED INSPECTIONS BY THE GOVERNING AUTHORITIES OR SERVE AS "SPECIAL INSPECTIONS" AS MAY BE REQUIRED BY CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.
2. SEE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR TESTING AND INSPECTION REQUIREMENTS OF NON-STRUCTURAL COMPONENTS.
3. DUTIES OF THE INSPECTION AGENCY PER IBC CHAPTER 17:
   a. SUBMIT A PROPOSED TESTING AND INSPECTION PROGRAM TO THE OWNER, THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF WORK.
   b. PERFORM ALL TESTING AND INSPECTION REQUIRED PER APPROVED TESTING AND INSPECTION PROGRAM.
   c. FURNISH INSPECTION REPORT TO THE BUILDING OFFICIAL, THE OWNER, THE ARCHITECT, STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR. THE REPORTS SHALL BE COMPLETED AND FURNISHED WITHIN 48 HOURS OF INSPECTED WORK.
   d. SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTION AGENCY'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
4. SPECIAL INSPECTIONS AND TESTS ARE REQUIRED FOR MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN CHAPTER 17 OF THE IBC OR IN STANDARDS REFERENCED BY THE IBC. THESE ITEMS INCLUDE:
   a. POST-INSTALLED ANCHORS - INSPECTION
5. THE FOLLOWING WORK SHALL BE INSPECTED BY THE SPECIAL INSPECTOR UNLESS SPECIFICALLY WAIVED BY THE BUILDING OFFICIAL.

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
CONCRETE CONSTRUCTION				
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT		X	ACI 318: CH 20, 25.2, 25.3, 26.2.1-26.6.3	1908.4
2. MATERIAL IDENTIFICATION OF REINFORCING (TYPE/GRADE)		X	AISC 341: TABLE J9.1	
3. REINFORCING STEEL HAS NOT BEEN REBENT IN THE FIELD		X	AISC 341: TABLE J9.1	
4. REINFORCING STEEL HAS BEEN TIED AND SUPPORTED AS REQUIRED		X	AISC 341: TABLE J9.1	
5. REINFORCING STEEL CLEARANCES HAVE BEEN PROVIDED		X	AISC 341: TABLE J9.1	
6. COMPOSITE STEEL MEMBERS HAVE REQUIRED SIZE		X	AISC 341: TABLE J9.1	
7. REINFORCING BAR WELDING:				
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706		X	AWS D1.4	
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND		X	ACI 318: 26.6.4	
c. INSPECTS ALL OTHER WELDS	X			
8. INSPECT ANCHORS CAST IN CONCRETE		X	ACI 318: 17.8.2	
9. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:				
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X		ACI 318: 17.8.2.4	
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a		X	ACI 318: 17.8.2	
10. VERIFY USE OF REQUIRED DESIGN MIX		X	ACI 318: CH 19, 26.4.2, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
11. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X		ASTM C172, ASTM C31, ACI 318: 26.5, 26.12	1907.10
12. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X		ACI 318: 26.5	1908.6, 1908.7, 1908.8
13. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X	ACI 318: 26.5.3-26.5.5	1908.9
14. INSPECT PRESTRESSED CONCRETE FOR:				
a. APPLICATION OF PRESTRESSING FORCES; AND	X		ACI 318: 26.11.2	
b. GROUTING OF BONDED PRESTRESSING TENDONS	X			
15. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS	X		ACI 318: 26.9	
16. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS		X	ACI 318: 26.11.2	
17. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X	ACI 318: 26.11.2(b)	

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	TMS 402	TMS 602
MASONRY CONSTRUCTION - LEVEL 2				
1. PRIOR TO CONSTRUCTION:				
a. VERIFICATION OF COMPLIANCE OF SUBMITTALS		X		ART. 1.5
b. VERIFICATION OF f'm		X		ART. 1.4 B
2. AS CONSTRUCTION BEGINS, VERIFY THE FOLLOWING ARE IN COMPLIANCE:				
a. PROPORTIONS OF SITE-PREPARED MORTAR		X		ART. 2.1, 2.6 A & 2.6 C
b. GRADE AND SIZE OF PRESTRESSING TENDONS AND ANCHORAGES		X		ART. 2.4 B & 2.4 H
c. GRADE, TYPE AND SIZE OF REINFORCEMENT, CONNECTORS, ANCHOR BOLTS, AND ANCHORAGES		X		ART. 3.4 & 3.6 A
d. SAMPLE PANEL CONSTRUCTION		X		ART. 1.6 D
3. PRIOR TO GROUTING, VERIFY THE FOLLOWING ARE IN COMPLIANCE:				
a. GROUT SPACE		X		ART. 3.2 D & 3.2 F
b. PLACEMENT OF ANCHORAGES		X	SEC. 10.8 & 10.9	ART. 2.4 & 3.6
c. PLACEMENT OF REINFORCEMENT, CONNECTORS, AND ANCHOR BOLTS		X	SEC. 6.1, 6.3.1, 6.3.6 & 6.3.7	ART. 3.2 E & 3.4
d. PROPORTIONS OF SITE-PREPARED GROUT		X		ART. 2.6 B & 2.4 G.1.b
4. DURING CONSTRUCTION:				
a. VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) WHEN SELF-CONSOLIDATING GROUT IS DELIVERED TO THE PROJECT SITE		X		ART. 1.5 & 1.6.3
b. MATERIALS AND PROCEDURES WITH THE APPROVED SUBMITTALS		X		ART. 1.5
c. PLACEMENT OF MASONRY UNITS AND MORTAR JOINT CONSTRUCTION		X		ART. 3.3 B
d. SIZE AND LOCATION OF STRUCTURAL MEMBERS		X		ART. 3.3 F
e. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION		X	SEC. 1.2.1(e), 6.2.1 & 6.3.1	
f. WELDING OF REINFORCEMENT	X		SEC. 6.1.6.1.2	
g. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F) OR HOT WEATHER (TEMPERATURE ABOVE 90° F)		X		ART. 1.8 C & 1.8 D
5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		X		ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3 & 1.4 B.4

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - FABRICATION			
1. FABRICATION FACILITY			X
2. CONNECTION ERECTION AND ASSEMBLY	X	X	
3. PRETENSIONED AND SLIP-CRITICAL BOLTS/JOINTS USING TURN-OF-NUT METHOD WITHOUT MATCHMAKING OF CALIBRATED WRENCH METHODS OF INSTALLATION	X	X	
4. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
5. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X
6. SHEAR STUD PLACEMENT	X	X	

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - ERECTION			
1. STRUCTURAL STEEL ERECTION	X	X	
2. CONNECTION ERECTION AND ASSEMBLY	X	X	
3. PRETENSIONED AND SLIP-CRITICAL BOLTS/JOINTS USING TURN-OF-NUT METHOD WITHOUT MATCHMAKING OF CALIBRATED WRENCH METHODS OF INSTALLATION	X	X	
4. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
5. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X
6. SHEAR STUD PLACEMENT	X	X	
7. BEAM CAMBER (IN-PLACE)	X		

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL PRIOR TO BOLTING - MINIMUM INSPECTION				
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	TABLE C-N5.6-1	2.1, 9.1
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O	TABLE C-N5.6-1	6.5.1
3. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE)	O	O	TABLE C-N5.6-1	2.3.2, 2.7.2, 9.1
4. CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O	TABLE C-N5.6-1	4, 8
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O	TABLE C-N5.6-1	TABLE 6.1(2)
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P[1]	O[1]	TABLE C-N5.6-1	3, 9.1, 9.3
7. PROTECTION STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O	TABLE C-N5.6-1	2.2, 8, 9.1

1 DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORTS NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER BOLTING - MINIMUM INSPECTION				
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	TABLE C-N5.6-3	N/A

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL PRIOR TO WELDING - MINIMUM INSPECTION				
1. WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	P	P	TABLE C-N5.4-1	6.3
2. MANUFACTURER CERTIFICATES FOR WELDING CONSUMABLES AVAILABLE	P	P	TABLE C-N5.4-1	6.2
3. MATERIAL IDENTIFICATION	O	O	TABLE C-N5.4-1	6.2
4. WELDER IDENTIFICATION	O	O	TABLE C-N5.4-1	6.4 (WELDER QUALIFICATION)
5. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)	O	O	TABLE C-N5.4-1	
a. JOINT PREPARATION	O	O	TABLE C-N5.4-1	6.5.2
b. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)	O	O	TABLE C-N5.4-1	5.22
c. CLEANLINESS (CONDITION OF STEEL SURFACE)	O	O	TABLE C-N5.4-1	5.14
d. TACKING (TACK WELD QUALITY AND LOCATION)	O	O	TABLE C-N5.4-1	5.17
e. BACKING TYPE AND FIT (IF APPLICABLE)	O	O	TABLE C-N5.4-1	5.9, 5.21.1.1
6. FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y- & K--JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
a. JOINT PREPARATION	P/O[1]	O	TABLE C-N5.4-1	9.11.2
b. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
c. CLEANLINESS (CONDITION OF STEEL SURFACE)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
d. TACKING (TACK WELD QUALITY AND LOCATION)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
7. CONFIGURATION AND FINISH OF ACCESS HOLES	O		TABLE C-N5.4-1	6.5.2, 5.16 (& SEE AISC 360 SECT. J1.6)
8. FIT-UP OF FILLET WELDS	P/O[1]	O	TABLE C-N5.4-1	
a. DIMENSIONS (ALIGNMENT, GAPS AT ROOT)	P/O[1]	O	TABLE C-N5.4-1	5.21.1
b. CLEANLINESS (CONDITION OF STEEL SURFACES)	P/O[1]	O	TABLE C-N5.4-1	5.14
c. TACKING (TACK WELD QUALITY AND LOCATION)	P/O[1]	O	TABLE C-N5.4-1	5.17
9. CHECK WELDING EQUIPMENT	O	O	TABLE C-N5.4-1	6.2, 5.10

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL DURING WELDING - MINIMUM INSPECTION				
1. USE OF QUALIFIED WELDERS	O	O	TABLE C-N5.4-2	6.4
2. CONTROL AND HANDLING OF WELDING CONSUMABLES	O	O	TABLE C-N5.4-2	6.2
a. PACKAGING	O	O	TABLE C-N5.4-2	5.3.1
b. EXPOSURE CONTROL	O	O	TABLE C-N5.4-2	5.3.2 (FOR SMAW), 5.3.3 (FOR SAW)
3. ENVIRONMENT CONDITIONS	O	O	TABLE C-N5.4-2	
a. WIND SPEED WITHIN LIMITS	O	O	TABLE C-N5.4-2	5.11.1
b. PRECIPITATION AND TEMPERATURE	O	O	TABLE C-N5.4-2	5.11.2
4. WPS FOLLOWED	O	O	TABLE C-N5.4-2	6.3.3, 6.5.2, 5.5, 5.20
a. SETTINGS ON WELDING EQUIPMENT	O	O	TABLE C-N5.4-2	
b. TRAVEL SPEED	O	O	TABLE C-N5.4-2	
c. SELECTED WELDING MATERIALS	O	O	TABLE C-N5.4-2	
d. SHIELDING GAS TYPE/FLOW RATE	O	O	TABLE C-N5.4-2	
e. PREHEAT APPLIED	O	O	TABLE C-N5.4-2	5.6, 5.7
f. INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)	O	O	TABLE C-N5.4-2	
g. PROPER POSITION (F, V, H, OH)	O	O	TABLE C-N5.4-2	
h. INTERMIX OF FILLER METALS AVOIDED UNLESS APPROVED	O	O	TABLE C-N5.4-2	
5. WELDING TECHNIQUES	O	O	TABLE C-N5.4-2	6.5.2, 6.5.3, 5.23
a. INTERPASS AND FINAL CLEANING	O	O	TABLE C-N5.4-2	5.29.1
b. EACH PASS WITHIN PROFILE LIMITATIONS	O	O	TABLE C-N5.4-2	
c. EACH PASS MEETS QUALITY REQUIREMENTS	O	O	TABLE C-N5.4-2	

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER WELDING - MINIMUM INSPECTION				
1. WELDS CLEANED	O	O	TABLE C-N5.4-3	5.29.1
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P	TABLE C-N5.4-3	6.5.1
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA	P[2]	P[2]	TABLE C-N5.4-3	6.5.3
a. CRACK PROHIBITION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(1)
b. WELD/BASE-METAL FUSION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(2)
c. CRATER CROSS-SECTION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(3)
d. WELD PROFILES	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(4), 5.24
e. WELD SIZE	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(6)
f. UNDERCUT	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(7)
g. POROSITY	P[2]	P[2]		TABLE 6.1(8)
4. ARC STRIKES	P	P	TABLE C-N5.4-3	5.28
5. K-AREA[3]	P[2]	P[2]	TABLE C-N5.4-3	N/A
6. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES	P	P	TABLE C-N5.4-3	5.16, 6.5.2 (& SEE AISC 360 SECT. J1.6)
7. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	5.9, 5.30
8. REPAIR ACTIVITIES	P	P[2]	TABLE C-N5.4-3	6.5.3, 5.25
9. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	TABLE C-N5.4-3	6.5.4, 6.5.5
10. PLACEMENT OF REINFORCING OR CONTOURING FILLET WELDS (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	6.5.4, 6.5.5

1 FOLLOWING PERFORMANCE OF THIS INSPECTION TASK FOR TEN WELDS TO BE MADE BY A GIVEN WELDER, WITH THE WELDER DEMONSTRATING UNDERSTANDING OF REQUIREMENTS AND POSSESSION OF THE SKILLS TO VERIFY THESE ITEMS, THE PERFORM DESIGNATION OF THIS TASK SHALL BE REDUCED TO OBSERVE, AND THE WELDER SHALL PERFORM THIS TASK. SHOULD THE INSPECTOR DETERMINE THE WELDER HAS DISCONTINUED PERFORMANCE OF THIS TASK, THE TASK SHALL BE RETURNED TO PERFORM UNTIL SUCH TIME AS THE INSPECTOR HAS RE-ESTABLISHED ADEQUATE ASSURANCE THE WELDER WILL PERFORM THE INSPECTION TASKS LISTED.

2 DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORT NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

3 WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3" OF THE WELD. THE VISUAL INSPECTION SHALL BE PERFORMED NO SOONER THAN 48 HOURS FOLLOWING COMPLETION OF THE WELDING.

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
STRUCTURAL DECKING				
1. DECK PLACEMENT AND ATTACHMENT	X	X		

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
COLD-FORMED STEEL FRAMING				
1. EXTERIOR WALLS AND CONNECTIONS	X	X		
2. COLD-FORMED STEEL TRUSS SPANNING 60 FEET OR GREATER:				
a. TEMPORARY AND PERMANENT INSTALLATION RESTRAINT/BRACING		X		1705.2.4

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
SOILS				
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY		X		
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL		X		
3. PERFORM CLASSIFICATIONS AND TESTING OF COMPACTED FILL MATERIAL		X		
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	X			
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY		X		

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By | Appd | YYYY.MM.DD 2022.09.29

Revision

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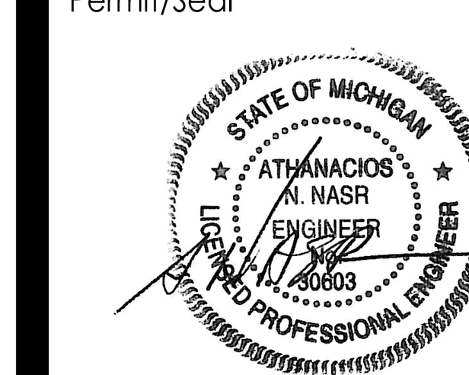


Wayne State University

Art Building Elevator Replacement

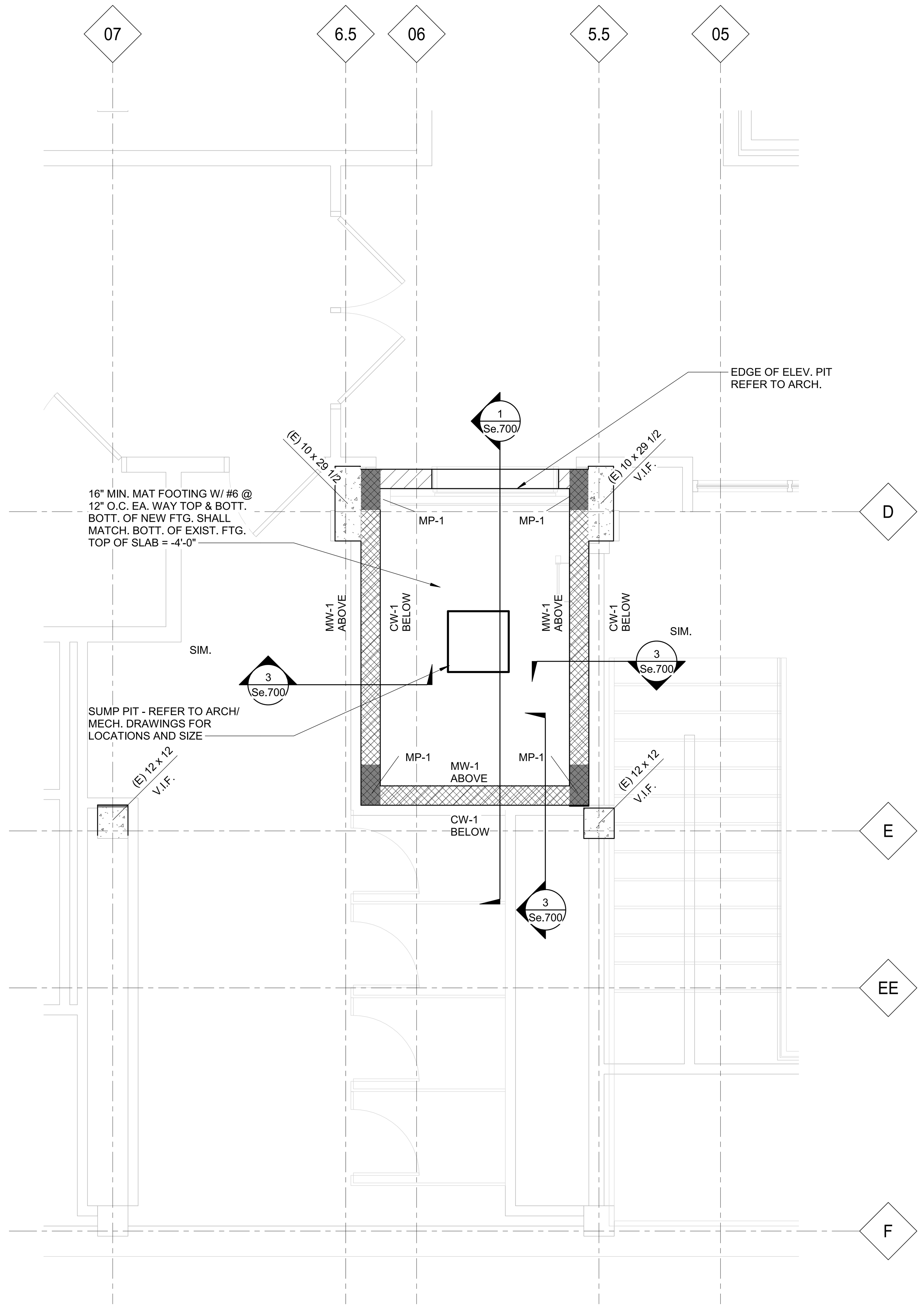
5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	09/28/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

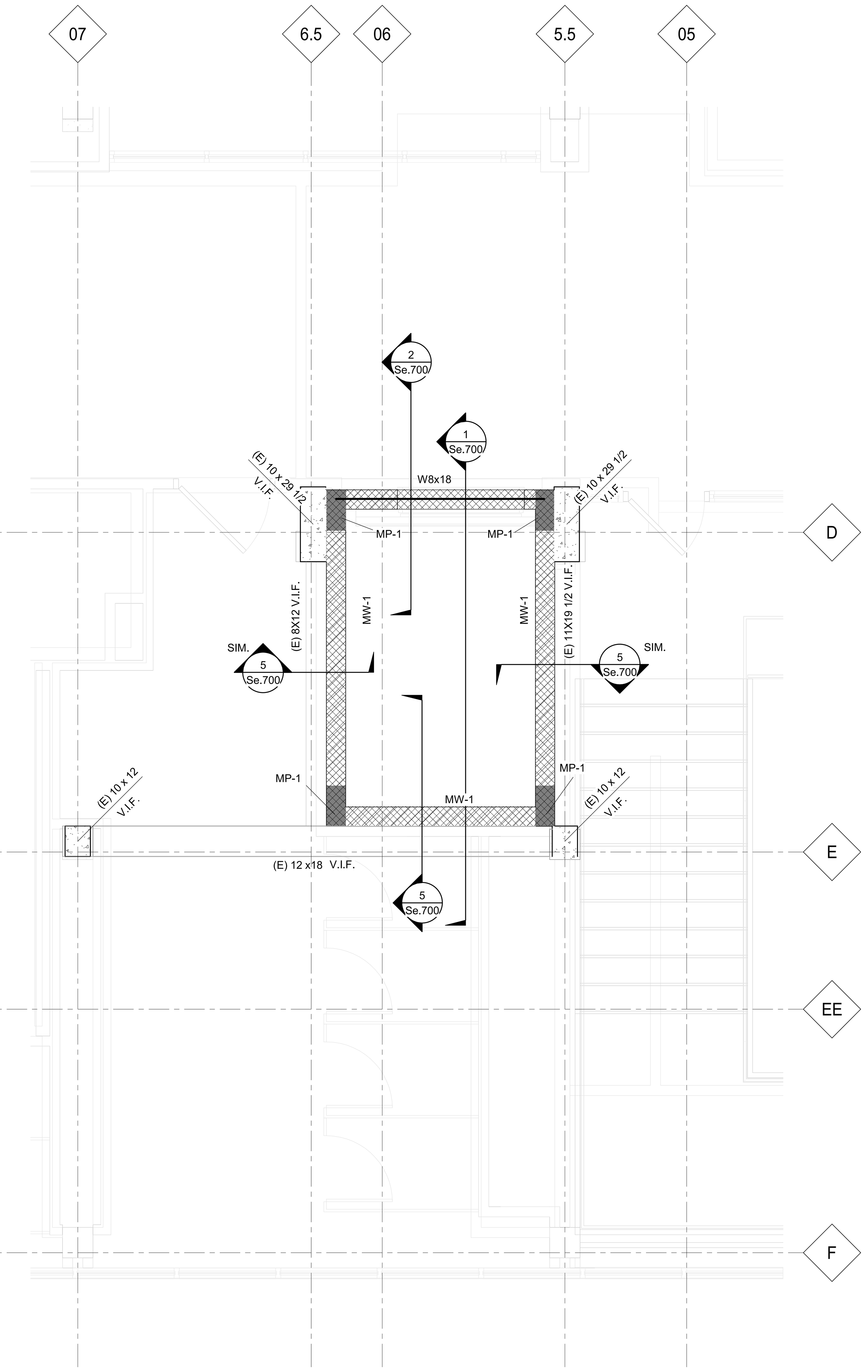
Title
SPECIAL INSPECTION SCHEDULES

Scale:
Revision: 1
Drawing No. Se.003



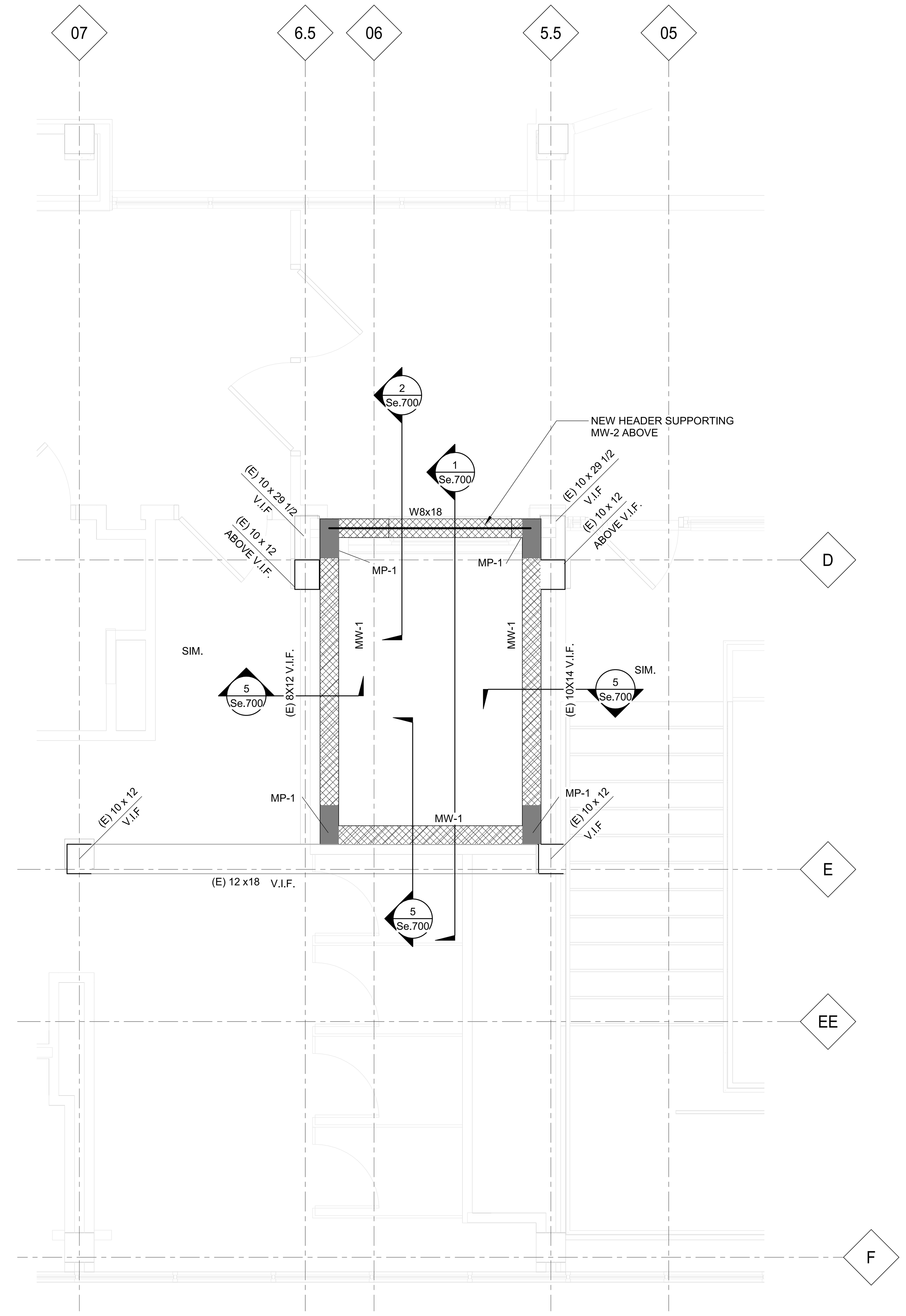
1 00 FOUNDATION & LOWER LEVEL

3/8" = 1'-0"



2 01 FIRST FLOOR

3/8" = 1'-0"



3 02 SECOND FLOOR

3/8" = 1'-0"

FOUNDATION NOTES:

1. TOP OF FOOTING ELEVATION = -4'-0" UNLESS NOTED THUS [VERIFY W/ ARCH./MEP DRAWINGS]
2. FOOTING ARE DESIGNED TO BEAR ON UNDISTURBED NATURAL SOILS WITH A MINIMUM NET ALLOWABLE BEARING CAPACITY OF 3000 PSF (V.I.F.)
3. CONTRACTOR SHALL COORDINATE ALL MASONRY DOWEL SIZES AND SPACING TO BE CAST INTO CONCRETE WITH MASONRY REINFORCING SHOP DRAWINGS.
4. REFER TO CIVIL/SITE DRAWINGS FOR PROPOSED GRADE ELEVATIONS AROUND THE PERIMETER OF THE BUILDING.
5. REFER TO MEP DRAWINGS FOR ALL PIPE AND CONDUIT SIZES AND LOCATIONS PASSING THROUGH AND/OR UNDER FOUNDATIONS.
6. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS (TYP.)
7. DESIGNATIONS:

   BP-1 7X7X3/8" BEARING PLATE W/ (2) 3/4"X6" HEADED STUDS (TYP. U.N.O.)

   BP-2 12X7X1/2" BEARING PLATE W/ (2) 3/4"X6" HEADED STUDS (TYP. U.N.O.)

   CW-1 CONCRETE WALL REINFORCED WITH #5 @ 12" O.C. EACH WAY

   MW-1 8" CMU WALL REINFORCED WITH #5 @ 24" O.C. W/ 9GA HORIZONTAL @ 16" O.C. PROVIDE BOND BEAM W/ (2) #5 HORIZONTAL BARS AT TOP OF WALL AND BEAM BEARING ELEVATION. PROVIDE (3) #5 VERTICAL BARS, ONE PER CELL, AT CORNERS AND (2) #5 VERTICAL BARS, ONE PER CELL, AT OPENINGS IN WALLS, ENDS OF WALLS, AND BELOW BEAM POCKETS.

   MW-2 8" CMU WALL REINFORCED WITH #5 @ 16" O.C. W/ 9GA HORIZONTAL @ 16" O.C. STACKED BOND. PROVIDE BOND BEAM W/ (2) #5 HORIZONTAL BARS AT TOP OF WALL AND BEAM BEARING ELEVATION. PROVIDE (3) #5 VERTICAL BARS, ONE PER CELL, AT CORNERS AND (2) #5 VERTICAL BARS, ONE PER CELL, AT OPENINGS IN WALLS, ENDS OF WALLS, AND BELOW BEAM POCKETS.

   MP-1 16"X8" MASONRY PIER REINF. W/ (4) #5 FULL HEIGHT VERT. & #3 TIES @ 16" O.C.

   MP-2 16"X8" MASONRY PIER REINF. W/ (2) #5 FULL HEIGHT VERT.

8. REFERENCE DRAWINGS:

Se.001	GENERAL STRUCTURAL NOTES
Se.002	GENERAL STRUCTURAL NOTES
Se.003	SPECIAL INSPECTION SCHEDULES
Se.300	TYPICAL DETAILS
Se.700	SECTIONS AND DETAILS
Se.701	SECTIONS AND DETAILS

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Revision

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Permit/Seal

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597

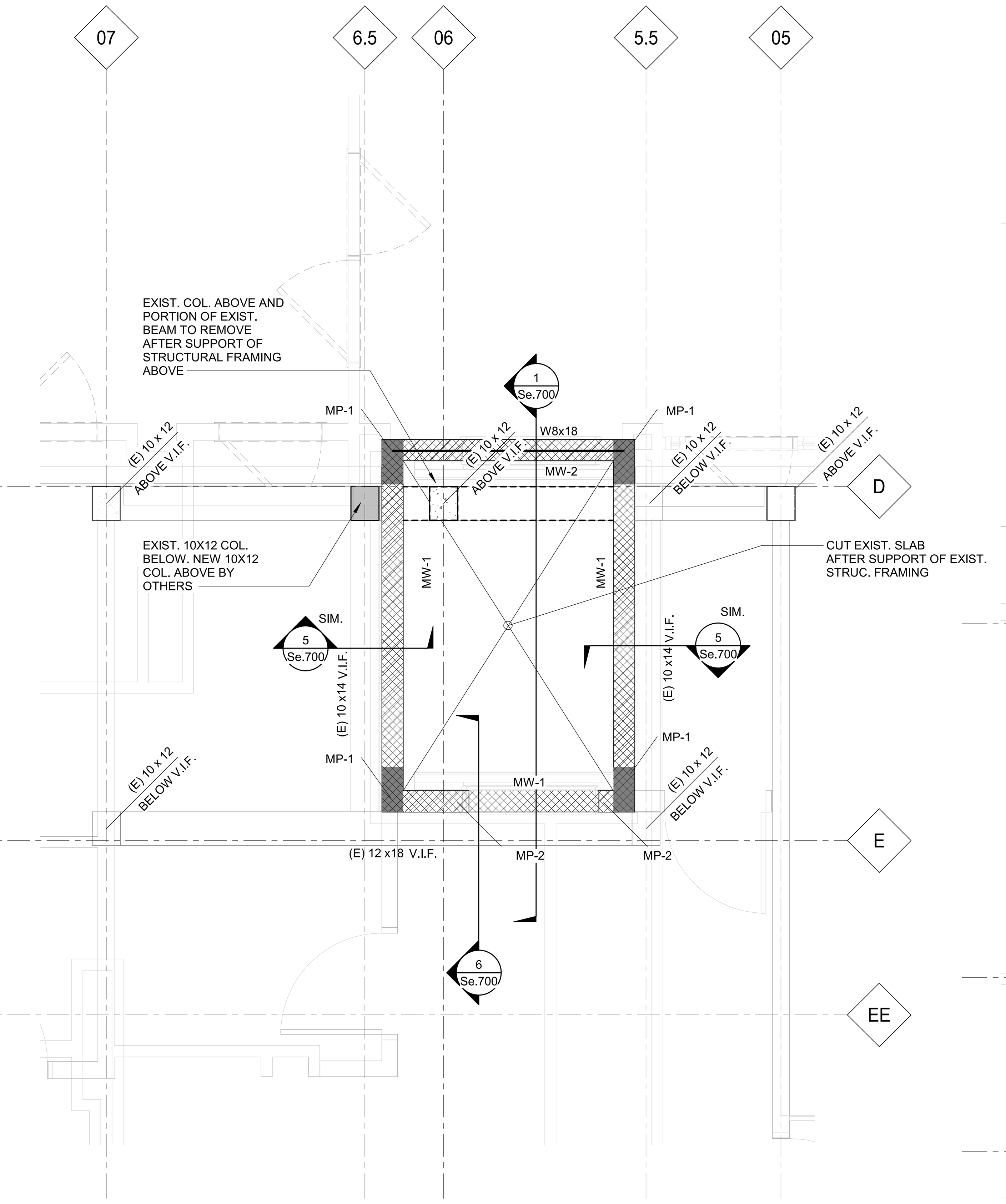
Title

ENLARGED PLANS

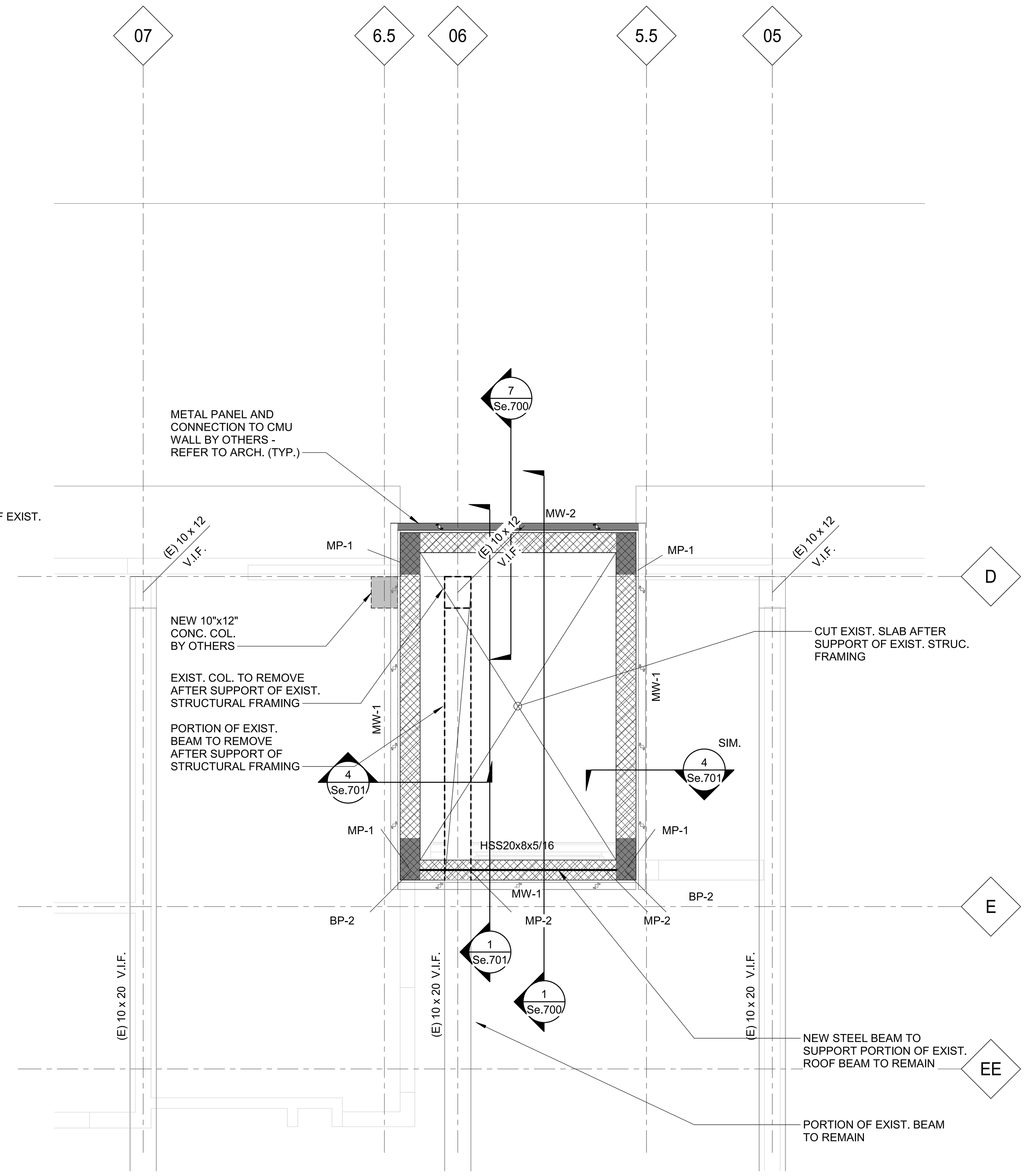
Scale: As indicated

Revision:

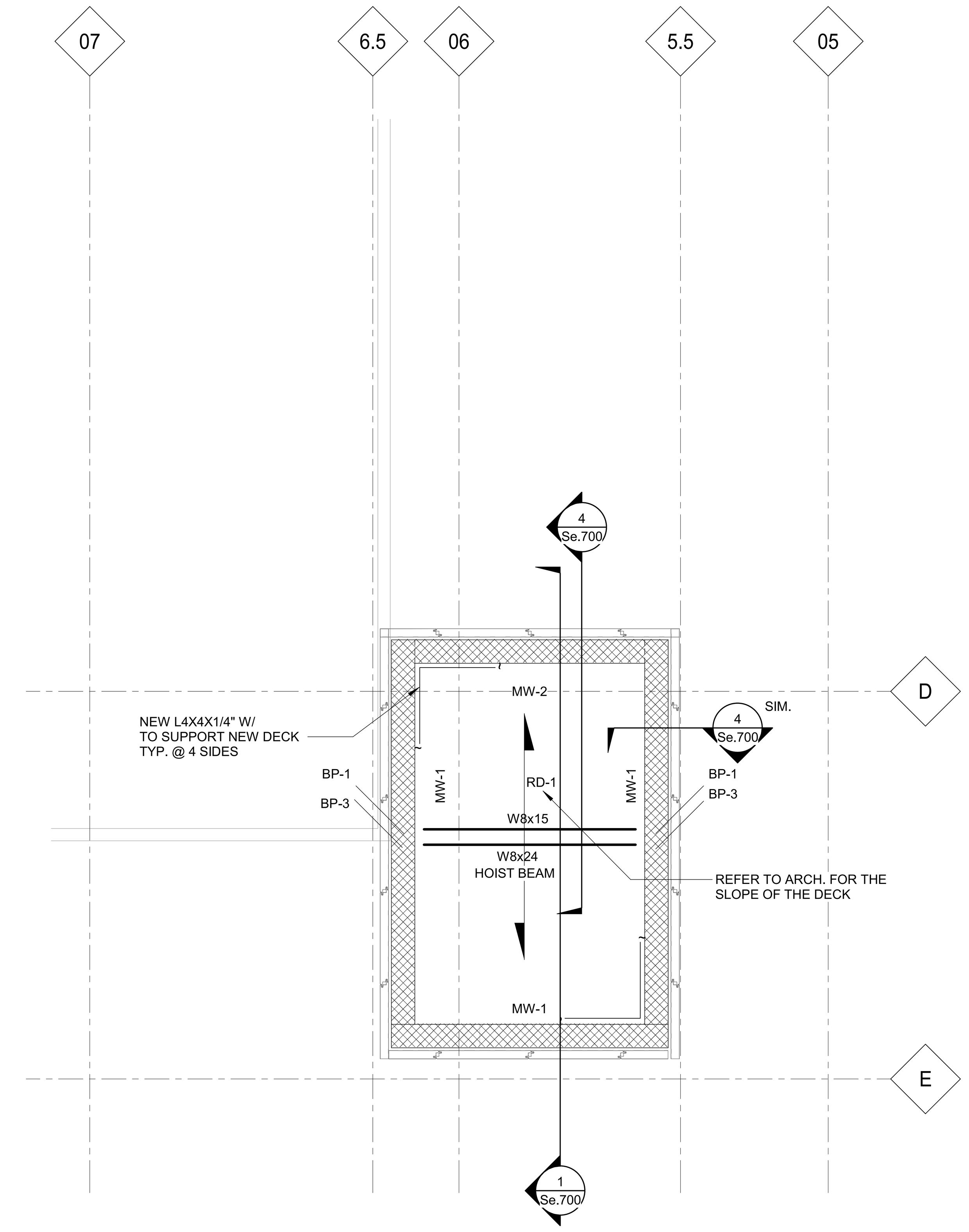
Drawing No. Se.111



1 **03 THIRD FLOOR**
3/8" = 1'-0"



2 **04 FLAT ROOF**
3/8" = 1'-0"



3 **05 ROOF PLAN**
3/8" = 1'-0"

TYPICAL FRAMING NOTES:

1. TOP OF STEEL REFERENCE ELEVATION (DECK BEARING ELEVATION) = REFER TO ARCH.
2. DESIGNATIONS:
   - RD-1: 1 1/2"-20 GAGE MIN. TYPE "B" WIDE RIB GALVANIZED STEEL ROOF DECK (MIN. 2 SPAN CONT.) REFER TO TYPICAL DETAILS FOR ATTACHMENT DETAILS. REFER TO ARCH. DRWAINGS FOR SLOPE. MINIMUM DECK SECTION PROPERTIES FOR DECK BASED ON Fy = 33 KSI: DESIGN THICKNESS = 0.0358" (UNCOATED) I (POSITIVE) = 0.201 IN 4/FT. I (NEGATIVE) = 0.222 IN 4/FT. S (POSITIVE) = 0.234 IN 3/FT. S (NEGATIVE) = 0.247 IN 3/FT.
   - BP-1 7X7X3/8" BEARING PLATE W/ (2) 3/4"X6" HEADED STUDS (TYP. U.N.O.)
   - BP-2 12X7X1/2" BEARING PLATE W/ (4) 3/4"X6" HEADED STUDS (TYP. U.N.O.)
   - BP-3 8X7X1/2" BEARING PLATE W/ (2) 3/4"X6" HEADED STUDS (TYP. U.N.O.)
   - MP-1 16"X8" MASONRY PIER REINF. W/ (4) #5 FULL HEIGHT VERT. & #3 TIES @ 16" O.C.
   - MP-2 16"X8" MASONRY PIER REINF. W/ (2) #5 FULL HEIGHT VERT.
   - L-x LINTEL, REFER TO SCHEDULE
   - MW-1 8" CMU WALL REINFORCED WITH #5 @ 24" O.C. W/ 9GA HORIZONTAL @ 16" O.C. PROVIDE BOND BEAM W/ (2) #5 HORIZONTAL BARS AT TOP OF WALL AND BEAM BEARING ELEVATION. PROVIDE (3) #5 VERTICAL BARS, ONE PER CELL, AT CORNERS AND (2) #5 VERTICAL BARS, ONE PER CELL, AT OPENINGS IN WALLS, ENDS OF WALLS, AND BELOW BEAM POCKETS.
   - MW-2 8" CMU WALL REINFORCED WITH #5 @ 16" O.C. W/ 9GA HORIZONTAL @ 16" O.C. STACKED BOND. PROVIDE BOND BEAM W/ (2) #5 HORIZONTAL BARS AT TOP OF WALL AND BEAM BEARING ELEVATION. PROVIDE (3) #5 VERTICAL BARS, ONE PER CELL, AT CORNERS AND (2) #5 VERTICAL BARS, ONE PER CELL, AT OPENINGS IN WALLS, ENDS OF WALLS, AND BELOW BEAM POCKETS.
3. COORDINATE SIZES AND LOCATION OF ALL ROOF OPENINGS WITH ARCHITECTURAL AND MEP DRAWINGS. VERIFY SIZES, WEIGHTS, AND LOCATIONS OF ROOF TOP MECHANICAL EQUIPMENT WITH ARCHITECTURAL AND MEP DRAWINGS. REPORT ANY DISCREPANCIES WITH RESPECT TO SIZE AND WEIGHTS SHOWN ON THESE DRAWINGS TO THE ARCHITECT AND ENGINEER.
4. FRAMING FOR ALL ROOF DRAINS AND OVERFLOW DRAINS SHALL BE L5x3 1/2x5/16 LLV TYPICAL, ALL SIDES OF SUPPORTED EDGE, UNLESS NOTED OTHERWISE.
5. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS (TYP.)
6. REFERENCE DRAWINGS:

Se.001	GENERAL STRUCTURAL NOTES
Se.002	GENERAL STRUCTURAL NOTES
Se.003	SPECIAL INSPECTION SCHEDULES
Se.300	TYPICAL DETAILS
Se.700	SECTIONS AND DETAILS
Se.701	SECTIONS AND DETAILS

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Consultant

Revision
Issued
Permit/Seal

WAYNE STATE UNIVERSITY

Wayne State University
Art Building Elevator Replacement
5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A
Author Designer Checker 09/26/22
Dwn. Dsgn. Chkd. YYYY.MM.DD

Title
ENLARGED PLANS

Scale: As indicated
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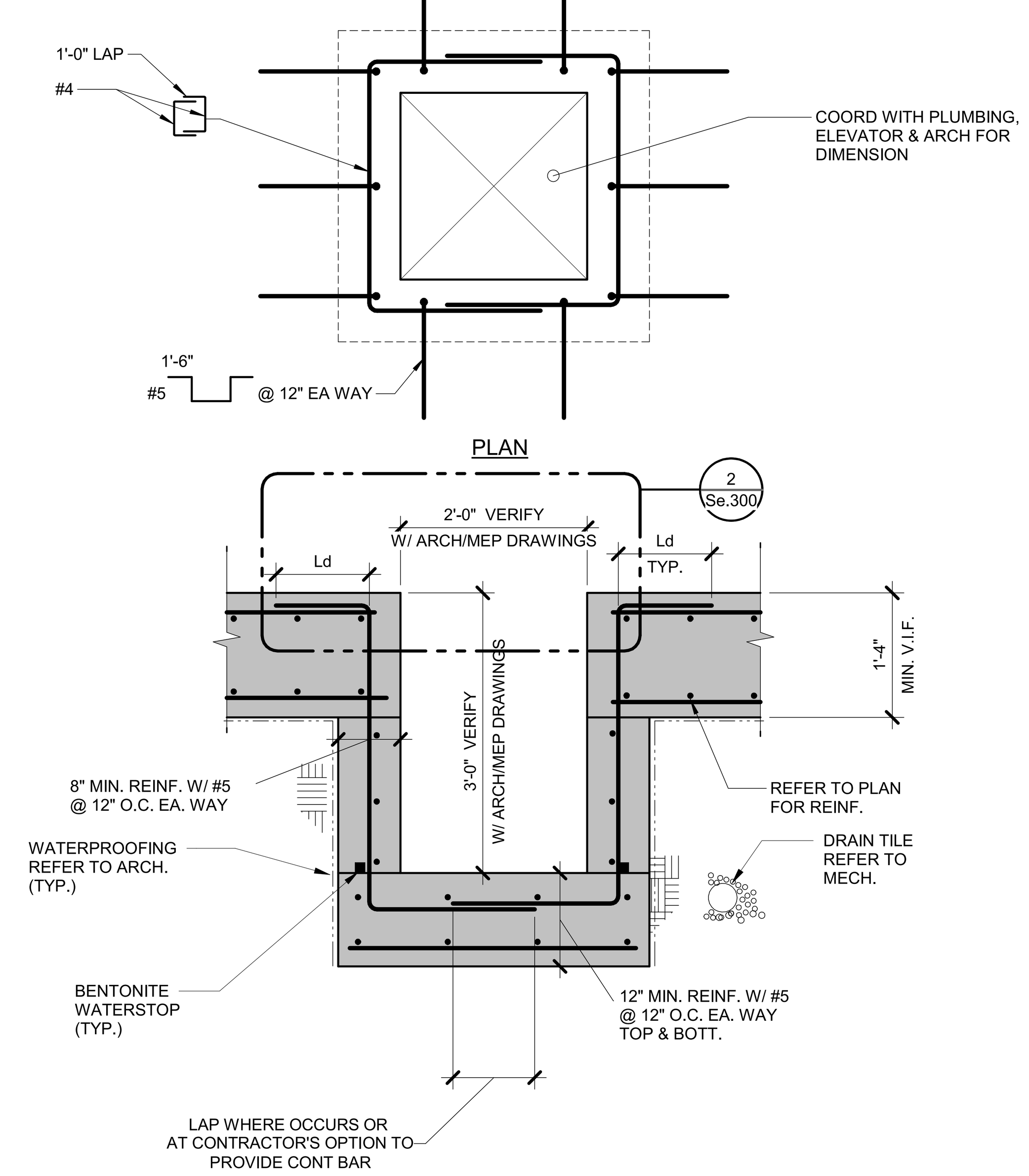
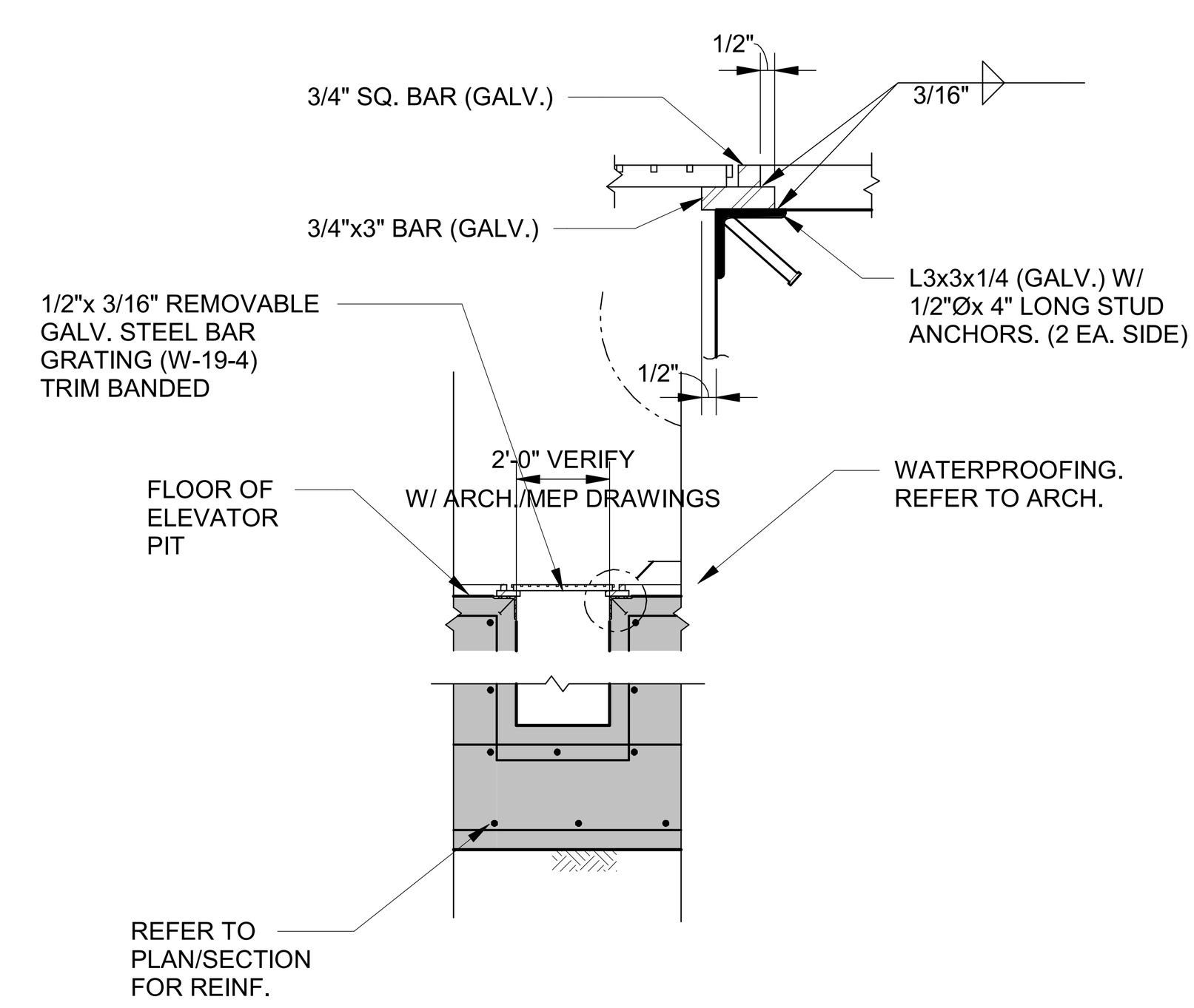
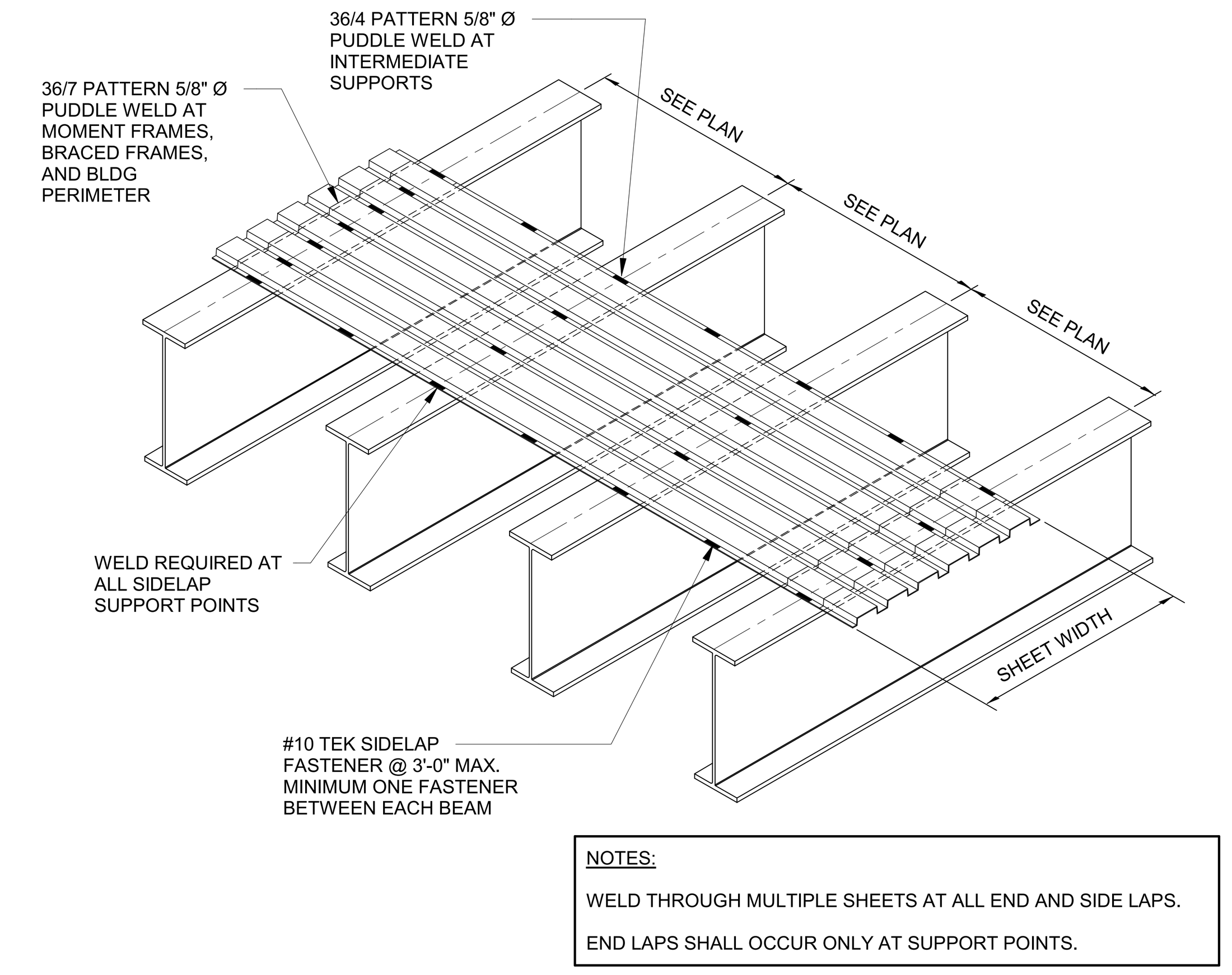
Drawing No. **Se.112**



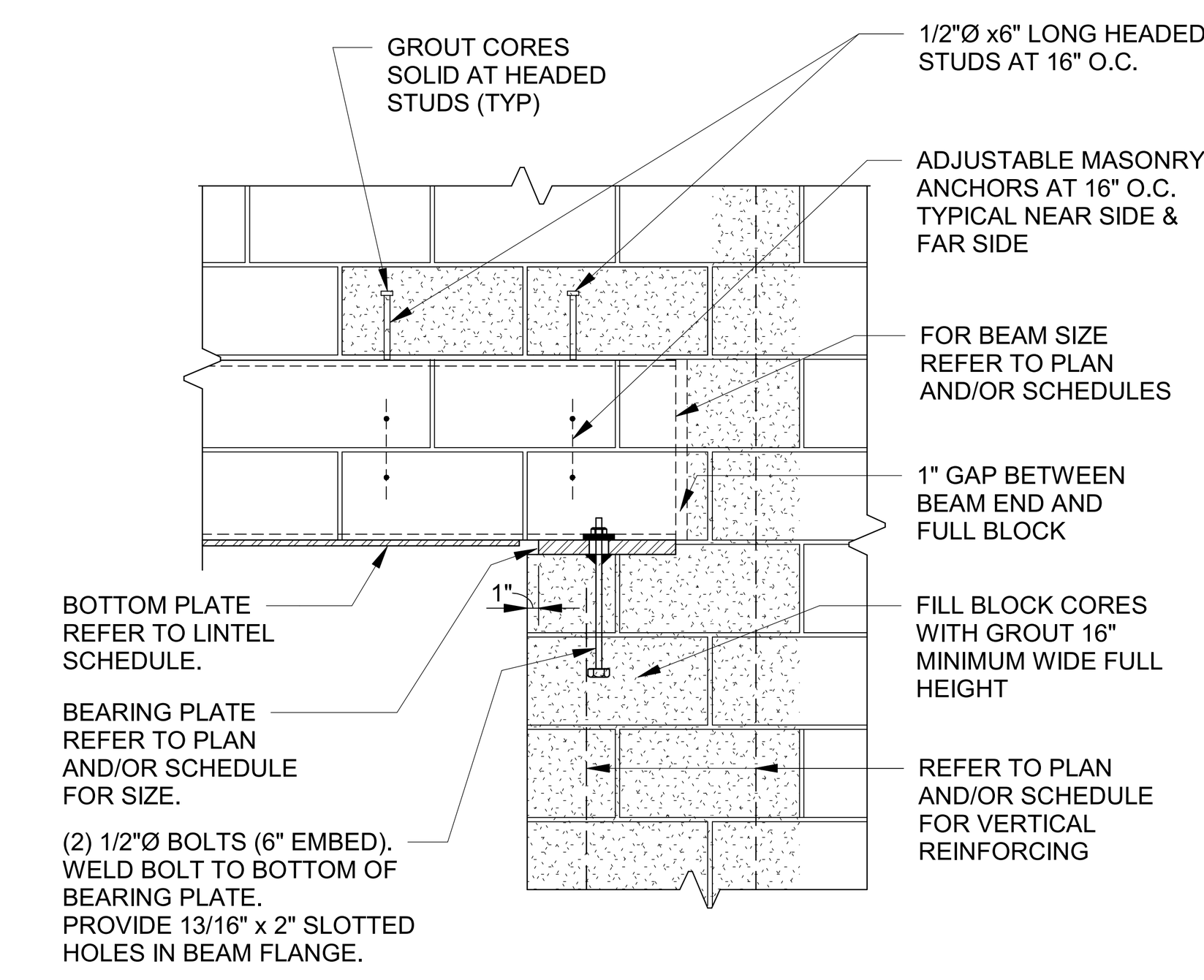
1 SUMP PIT DETAIL
3/4" = 1'-0"



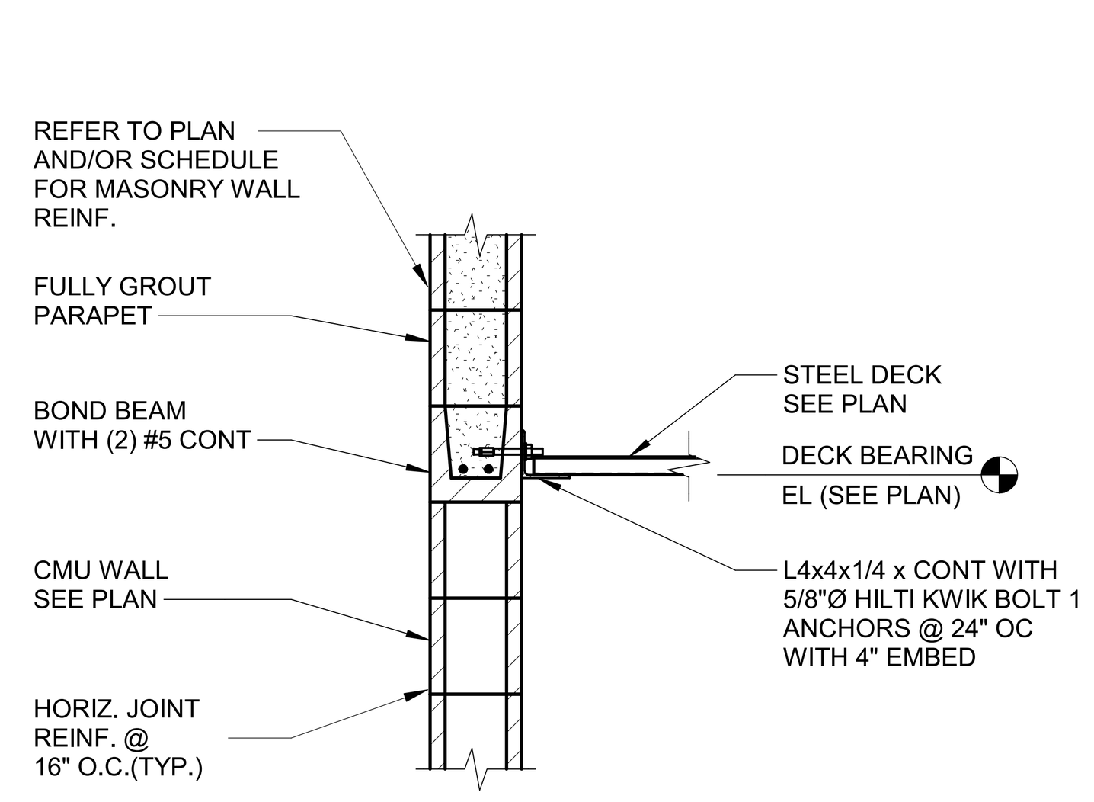
2 ELEVATOR PIT SUMP SECTION
1/2" = 1'-0"



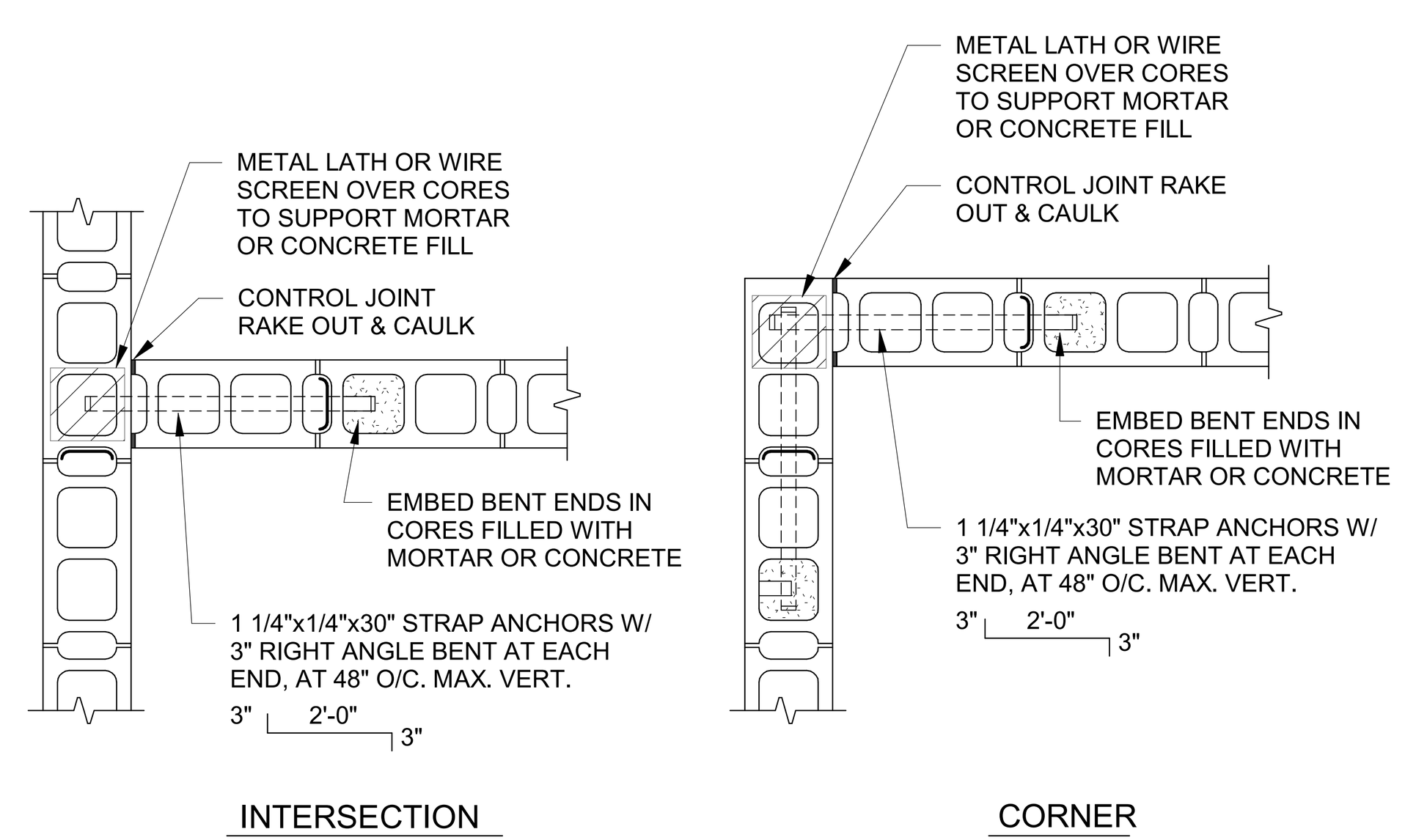
3 TYPICAL ROOF DECK FASTENER PATTERNS
1/2" = 1'-0"



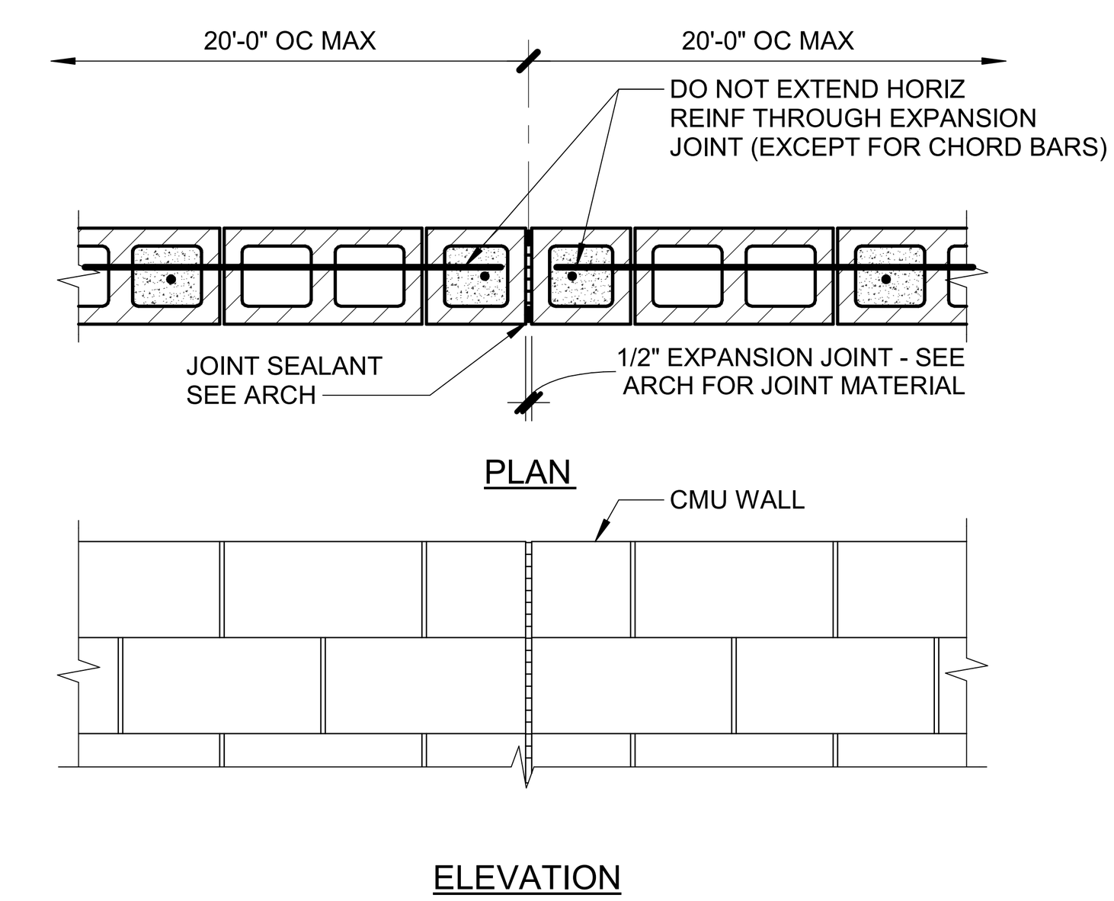
4 TYP - LINTEL BEARING DETAIL
3/4" = 1'-0"



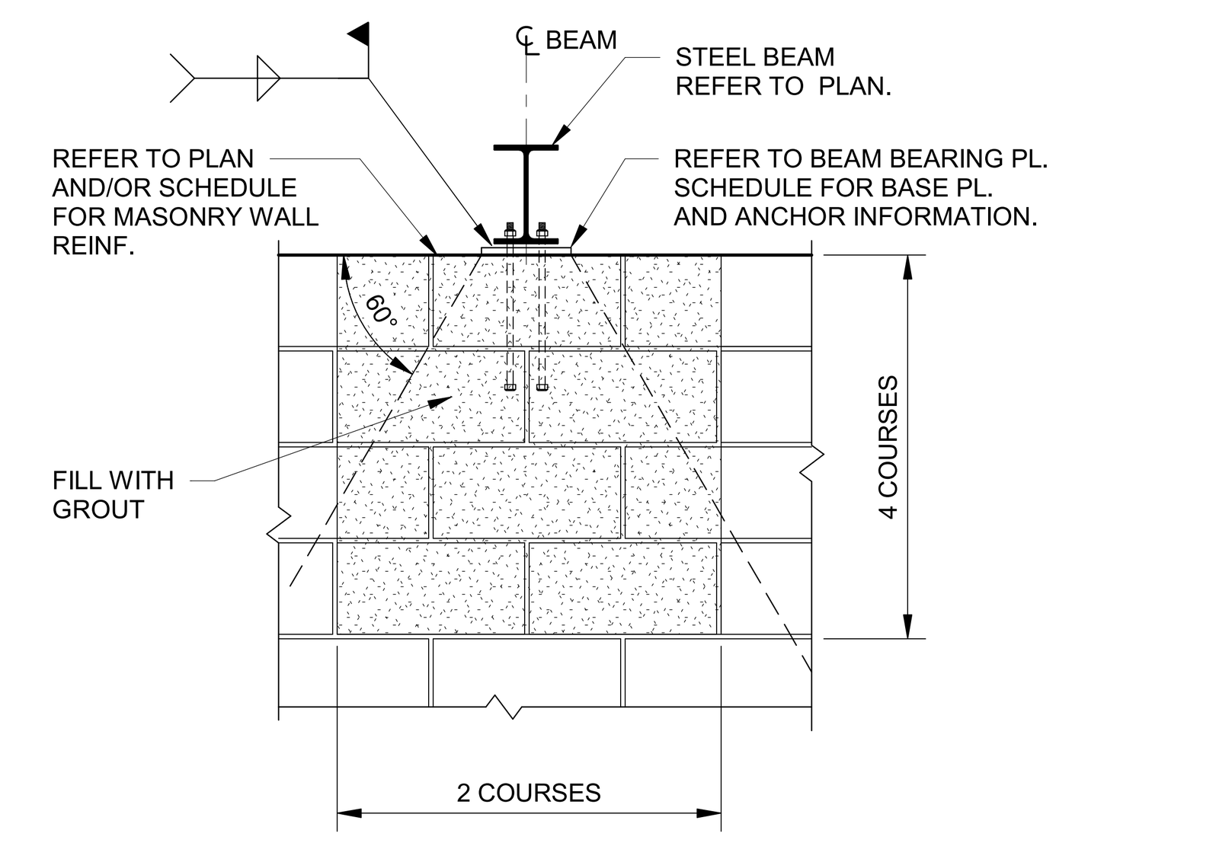
5 ROOF DECK BEARING AT CMU WALL
3/4" = 1'-0"



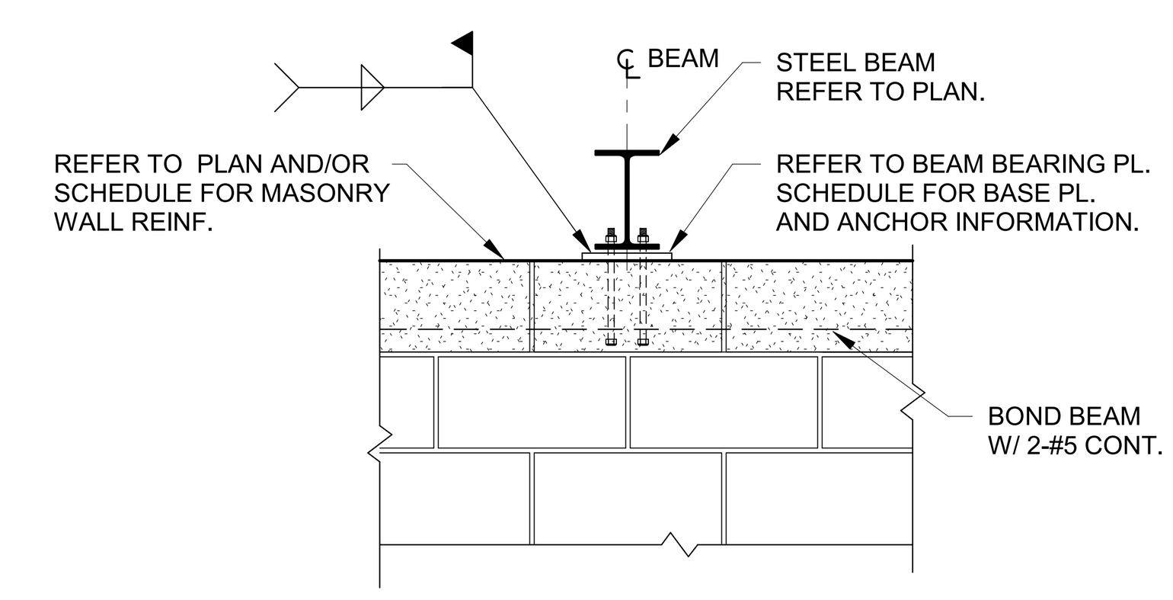
6 TYPICAL PLANS @ MASONRY WALL INTERSECTION & CORNER
3/4" = 1'-0"



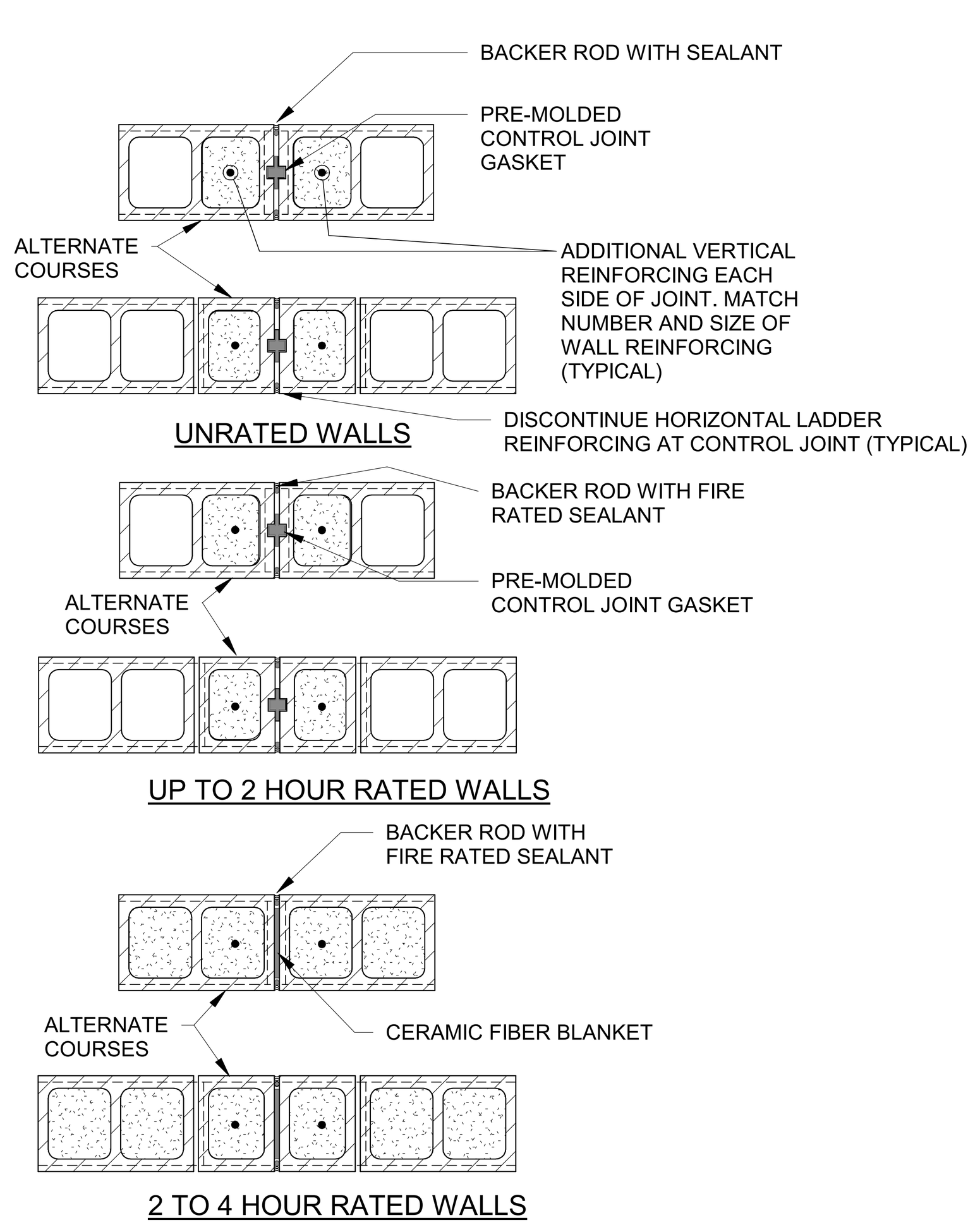
7 CMU EXPANSION JOINT DETAIL
3/4" = 1'-0"



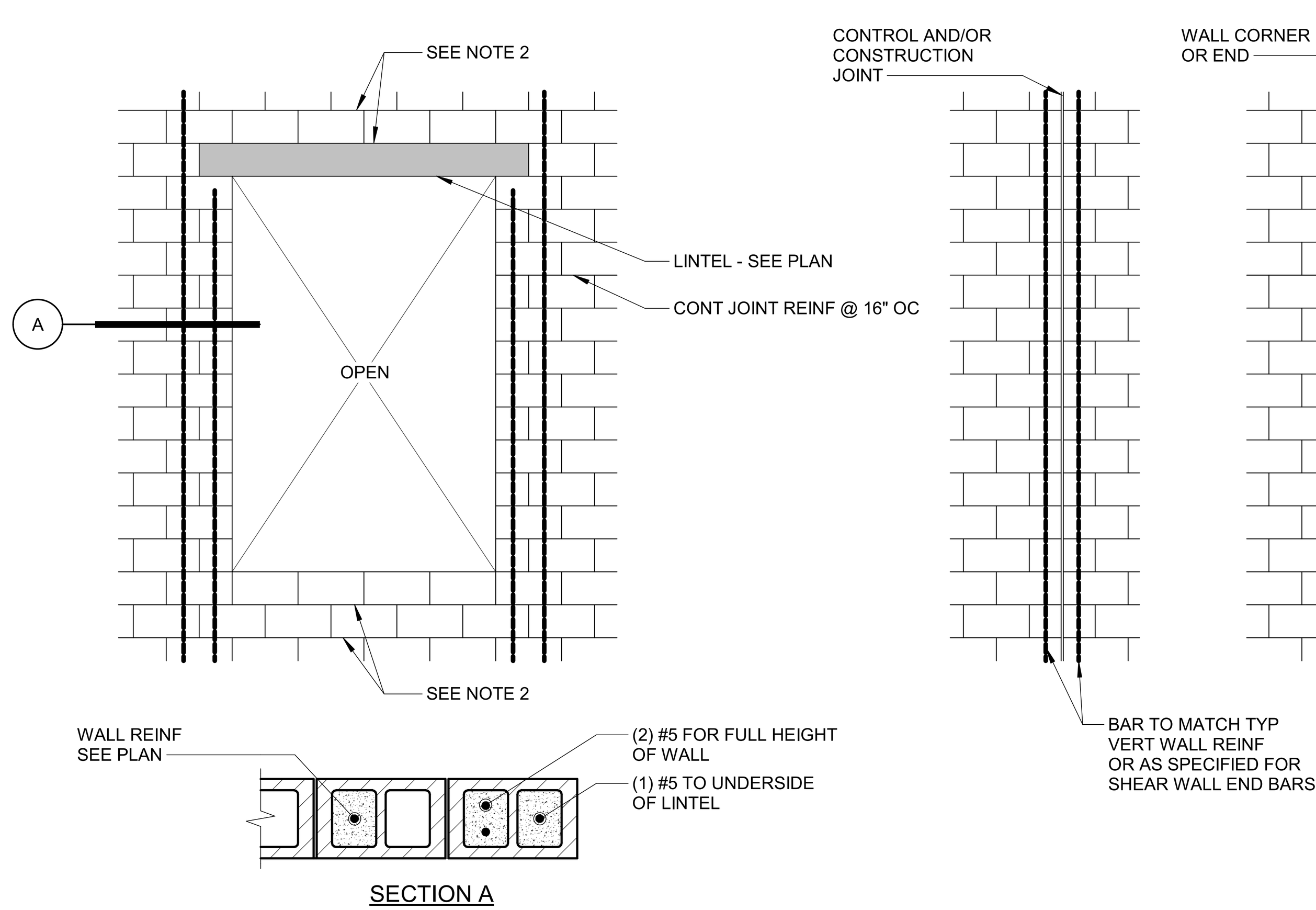
8 GROUTING OF MASONRY @ STEEL BEAM BEARING
3/4" = 1'-0"



11 STEEL BEAM BEARING ON MASONRY BOND BEAM
3/4" = 1'-0"



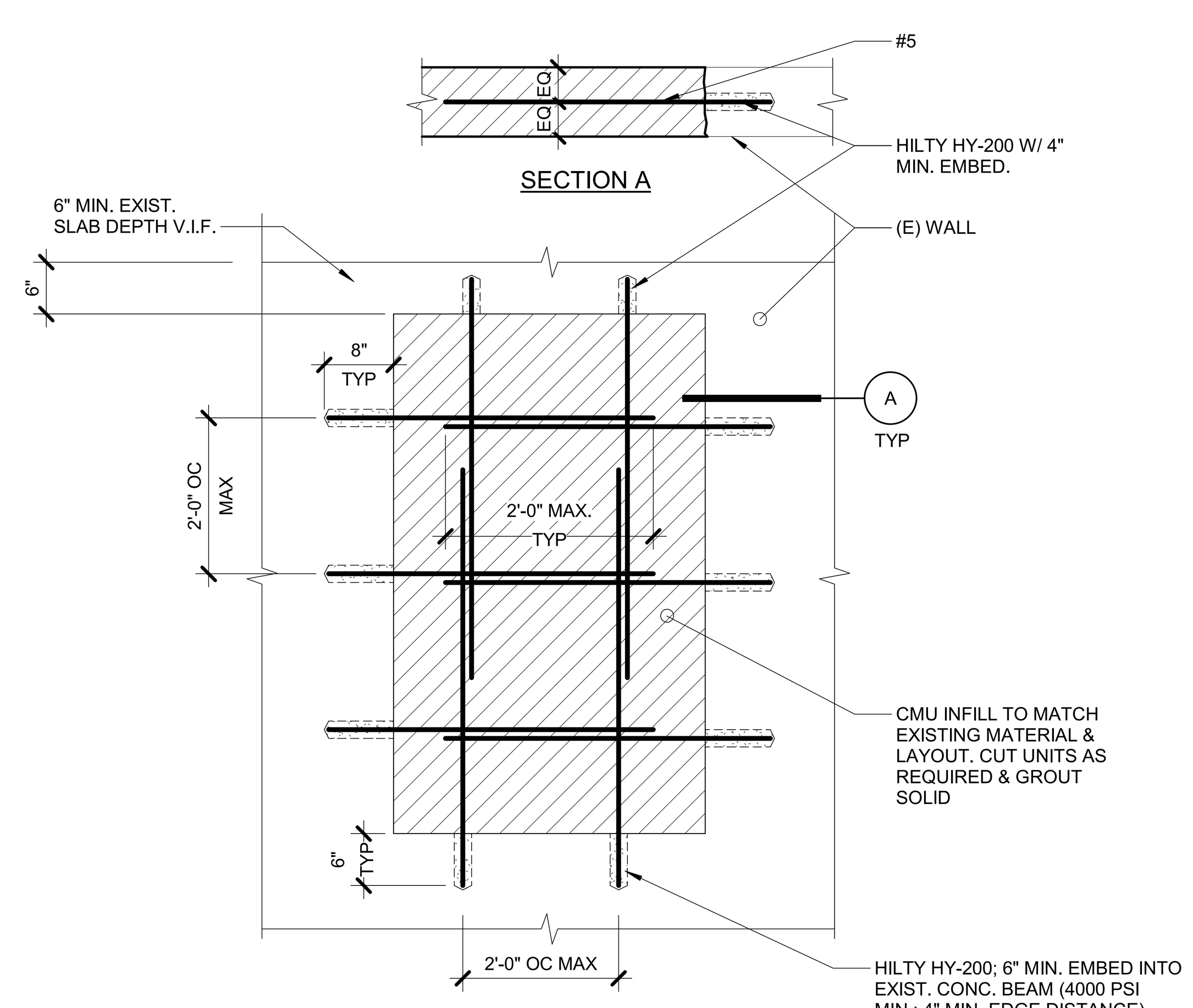
9 TYP - MASONRY WALL CONTROL JOINT DETAIL
3/4" = 1'-0"



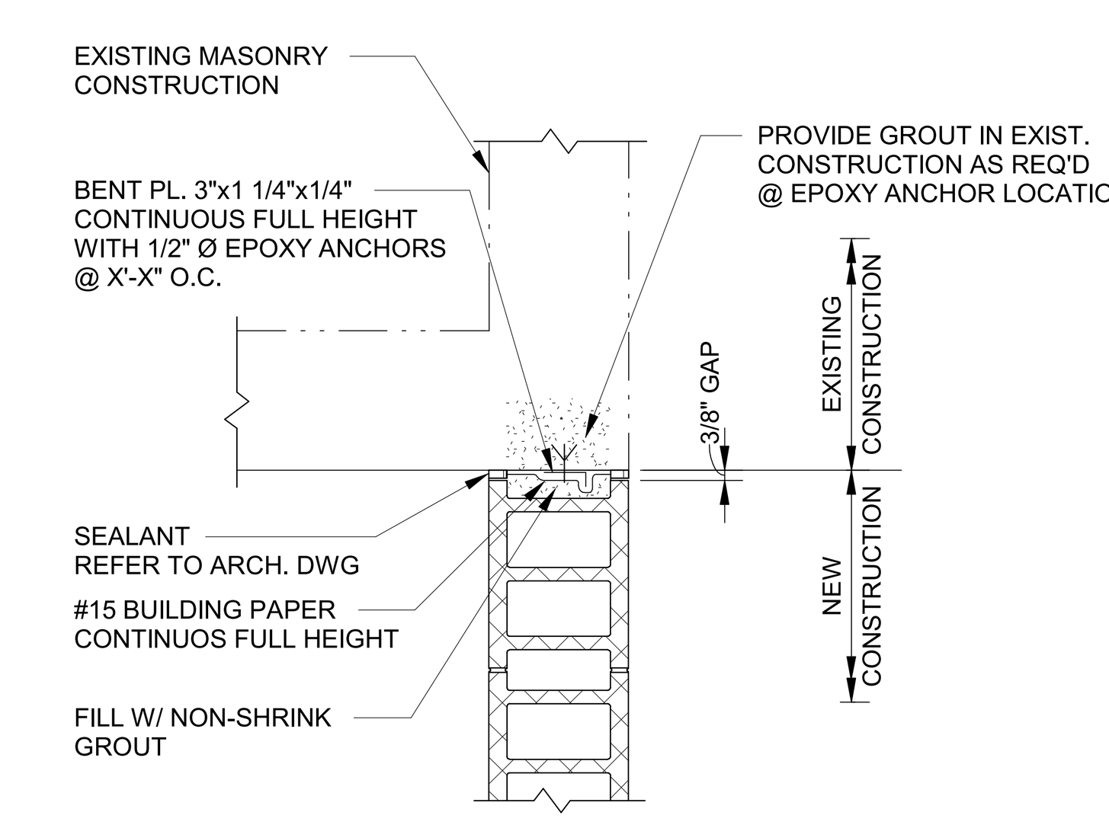
NOTES:

1. SEE ARCH ELEVATIONS FOR CONTROL JOINT LOCATIONS.
2. TWO COURSES OF JOINT REINF ARE REQUIRED ABOVE THE LINTEL AND BELOW THE SILL AND SHALL EXTEND A MIN OF 24 INCHES PAST THE OPENING.

10 TYPICAL CMU WALL OPENING DETAIL
3/4" = 1'-0"



12 CMU INFILL ELEVATION
3/4" = 1'-0"



13 MASONRY CONTROL JOINT CONN. TO EXIST. MASONRY CONSTRUCTION
3/4" = 1'-0"

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ENGINEER
PROFESSIONAL ENGINEER

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

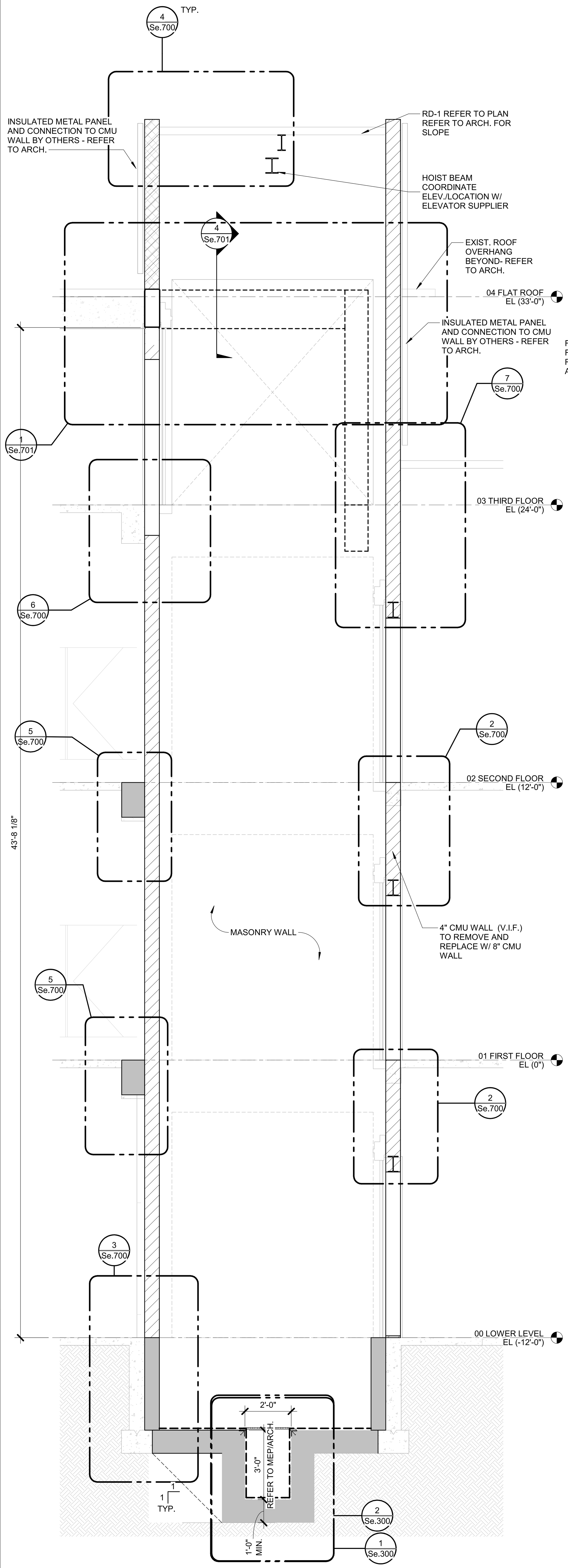
5400 Cullen Mall
Detroit, MI 48202

Project No.: 214100597
File Name: N/A

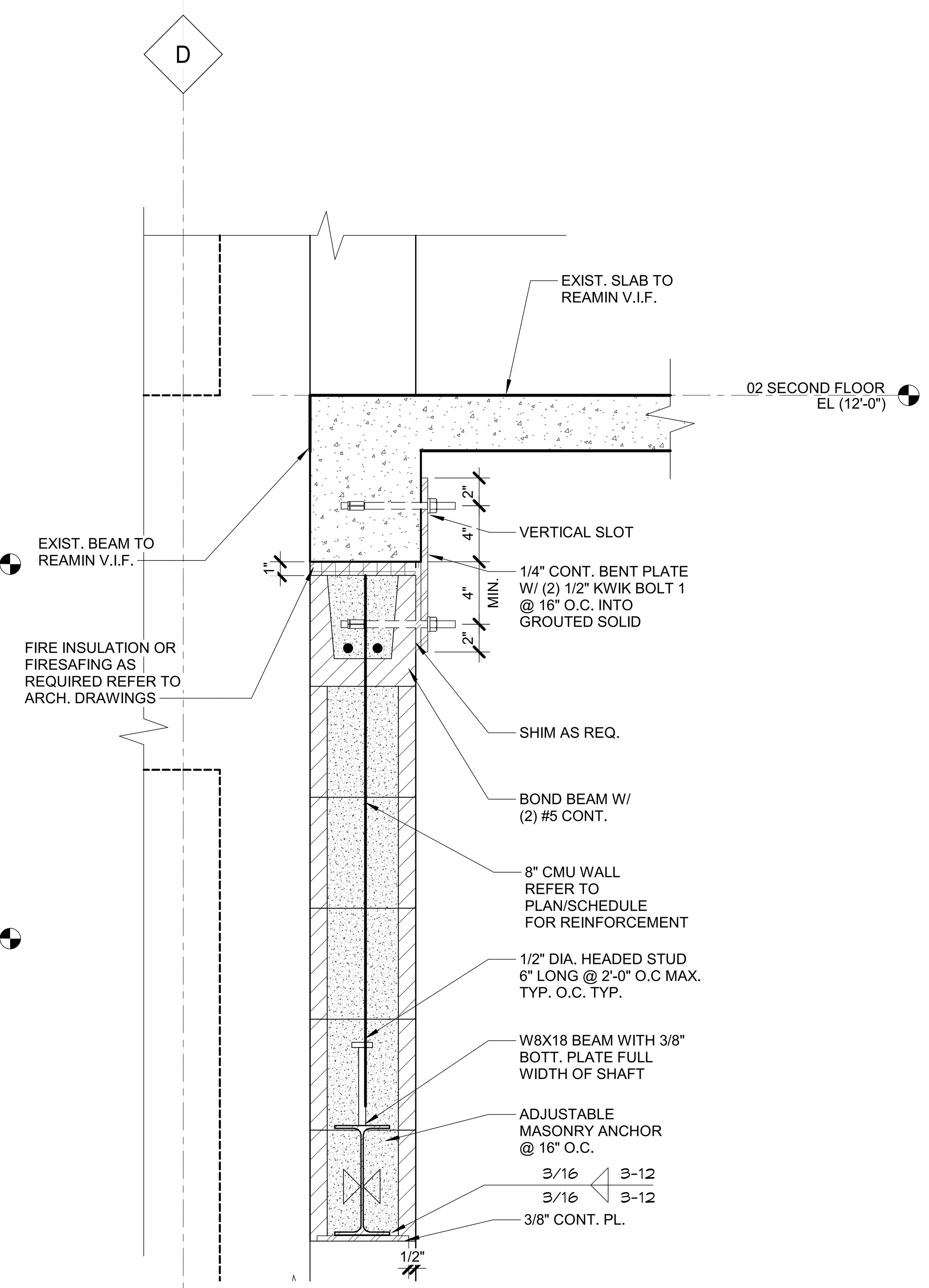
Author	Designer	Checker	11/16/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
TYPICAL DETAILS

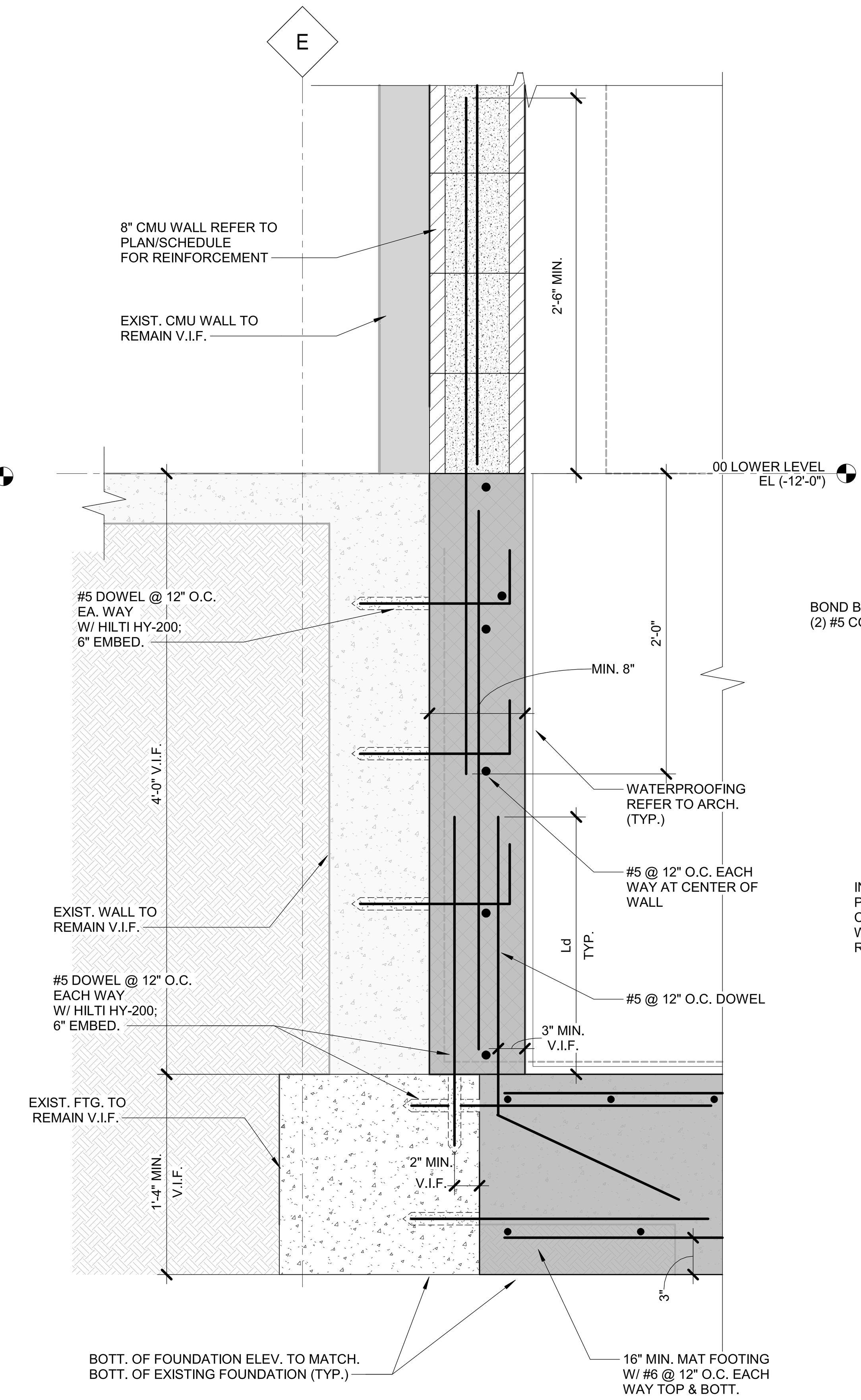
Scale: As indicated
Revision:
Drawing No.
Se.300



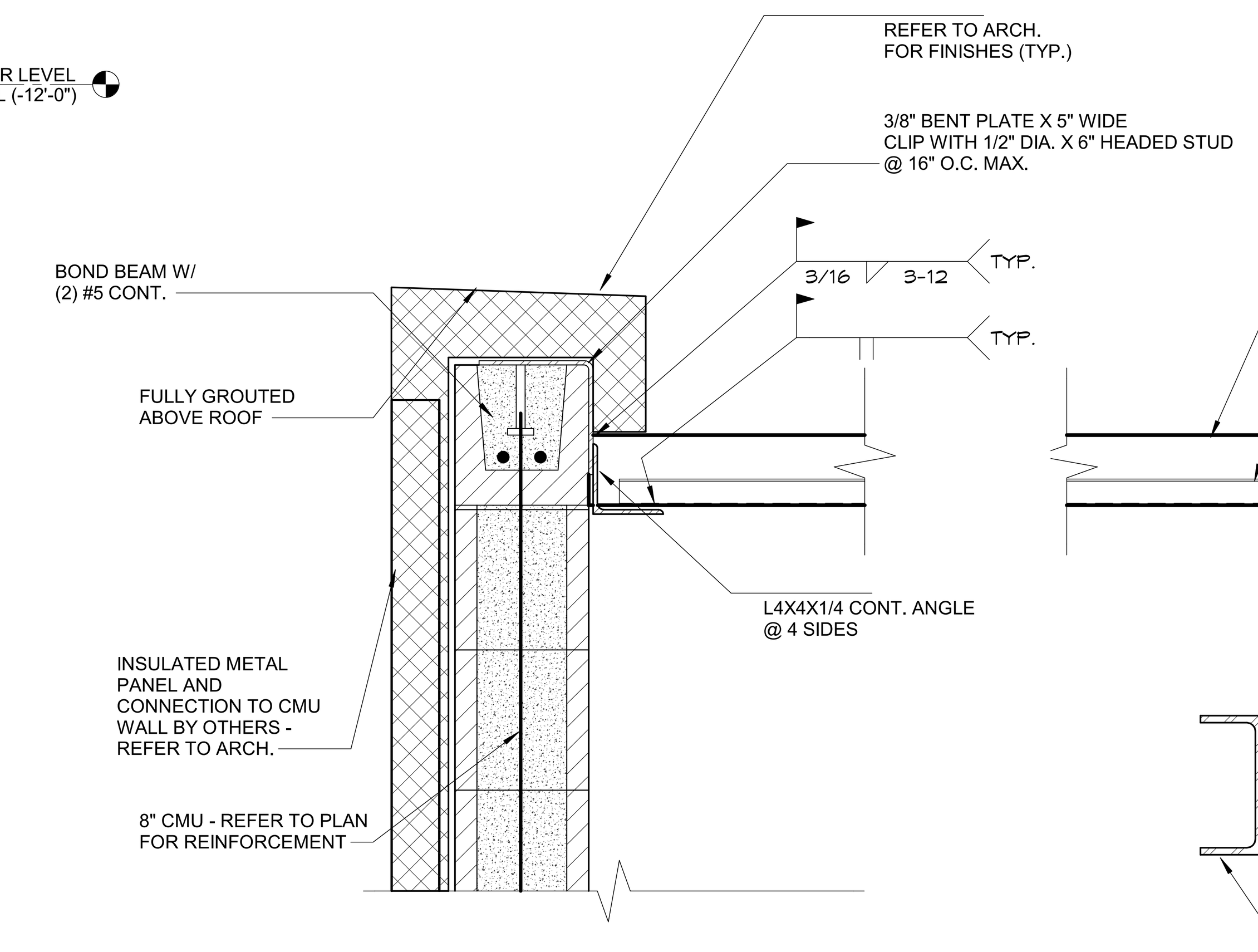
1 ELEVATOR SHAFT
3/8" = 1'-0"



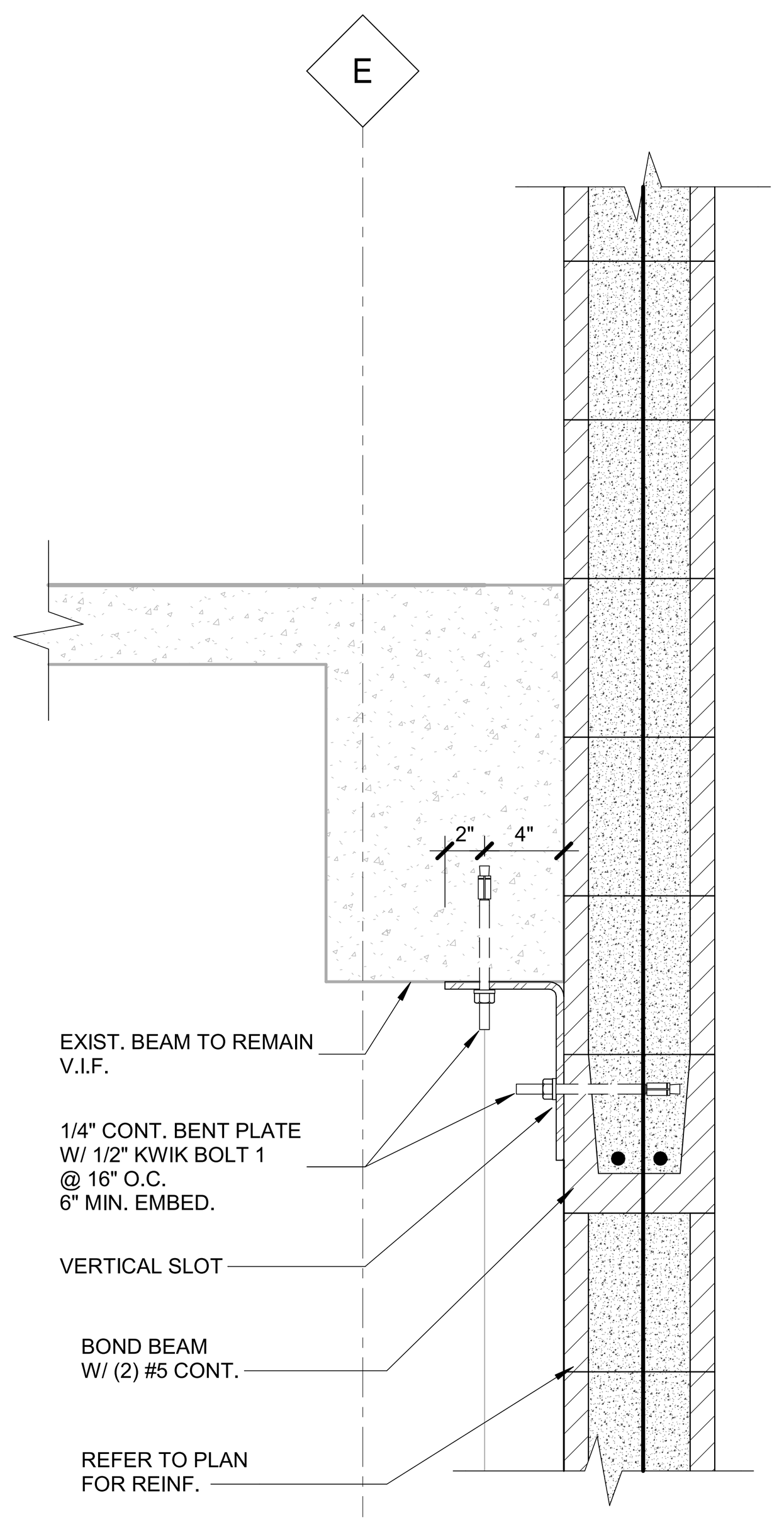
2 SECTION
1 1/2" = 1'-0"



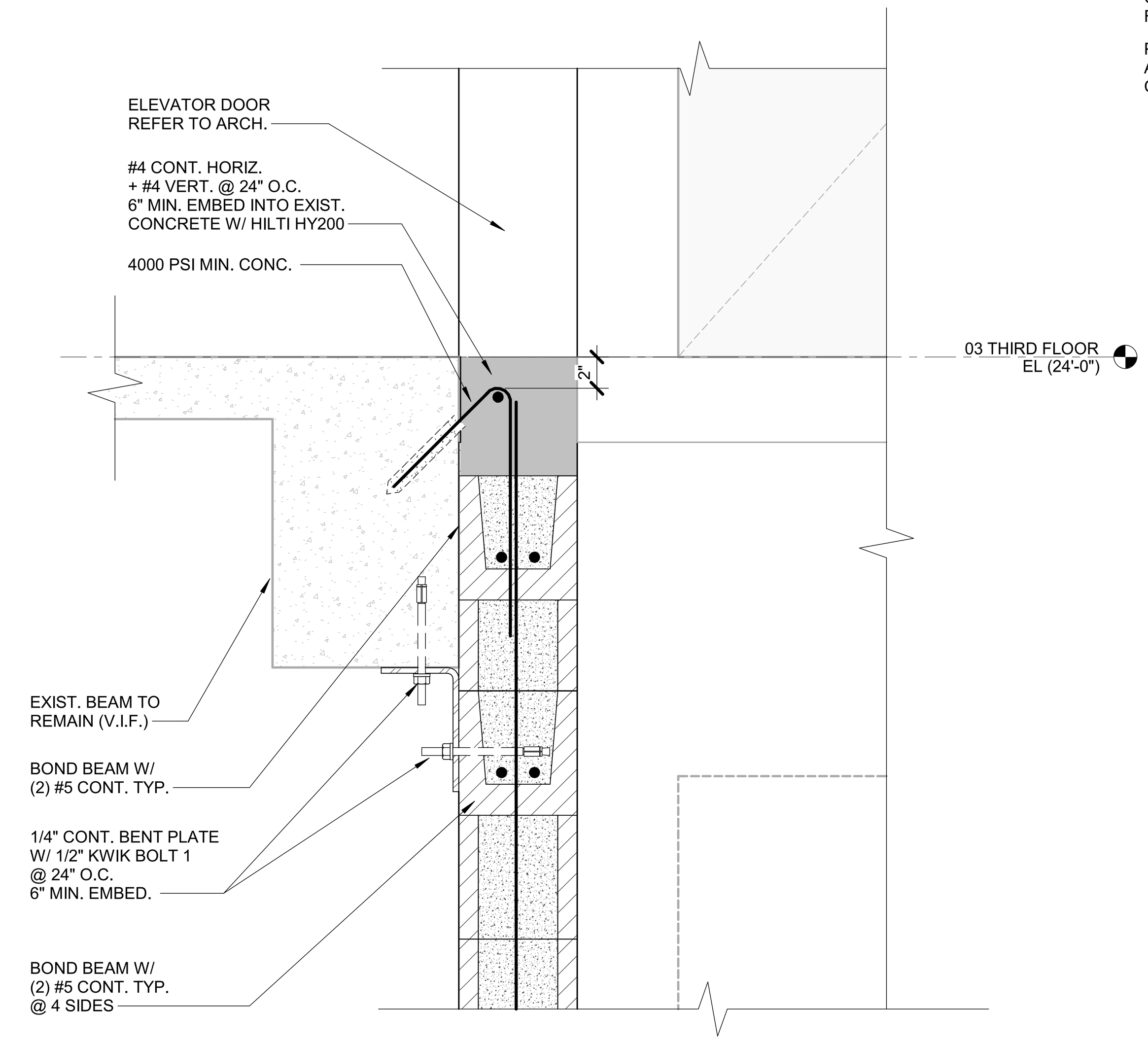
3 SECTION
1 1/2" = 1'-0"



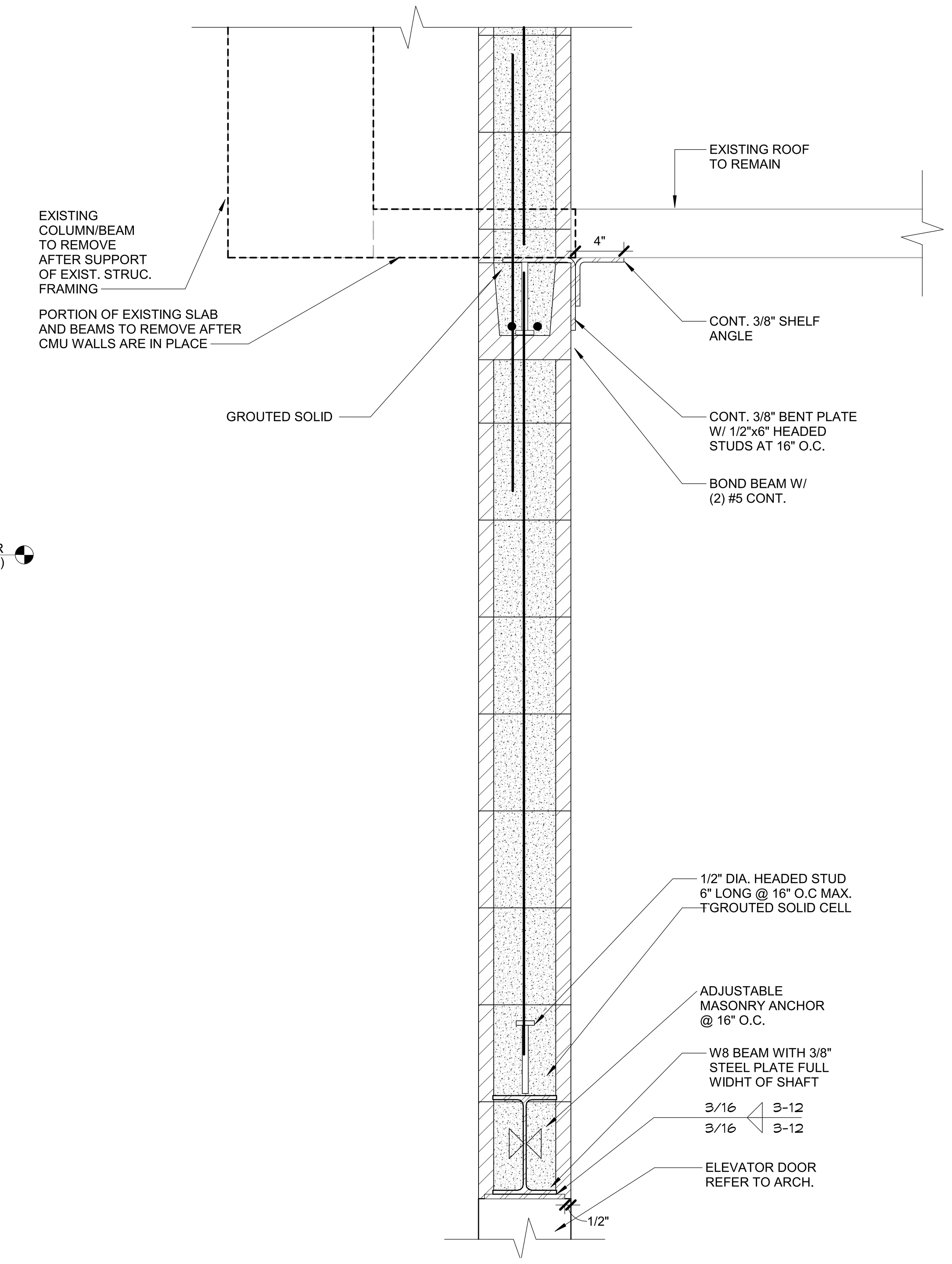
4 SECTION
1 1/2" = 1'-0"



5 SECTION
1 1/2" = 1'-0"



6 SECTION
1 1/2" = 1'-0"



7 SECTION
1 1/2" = 1'-0"

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Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title

SECTIONS

Scale: As indicated

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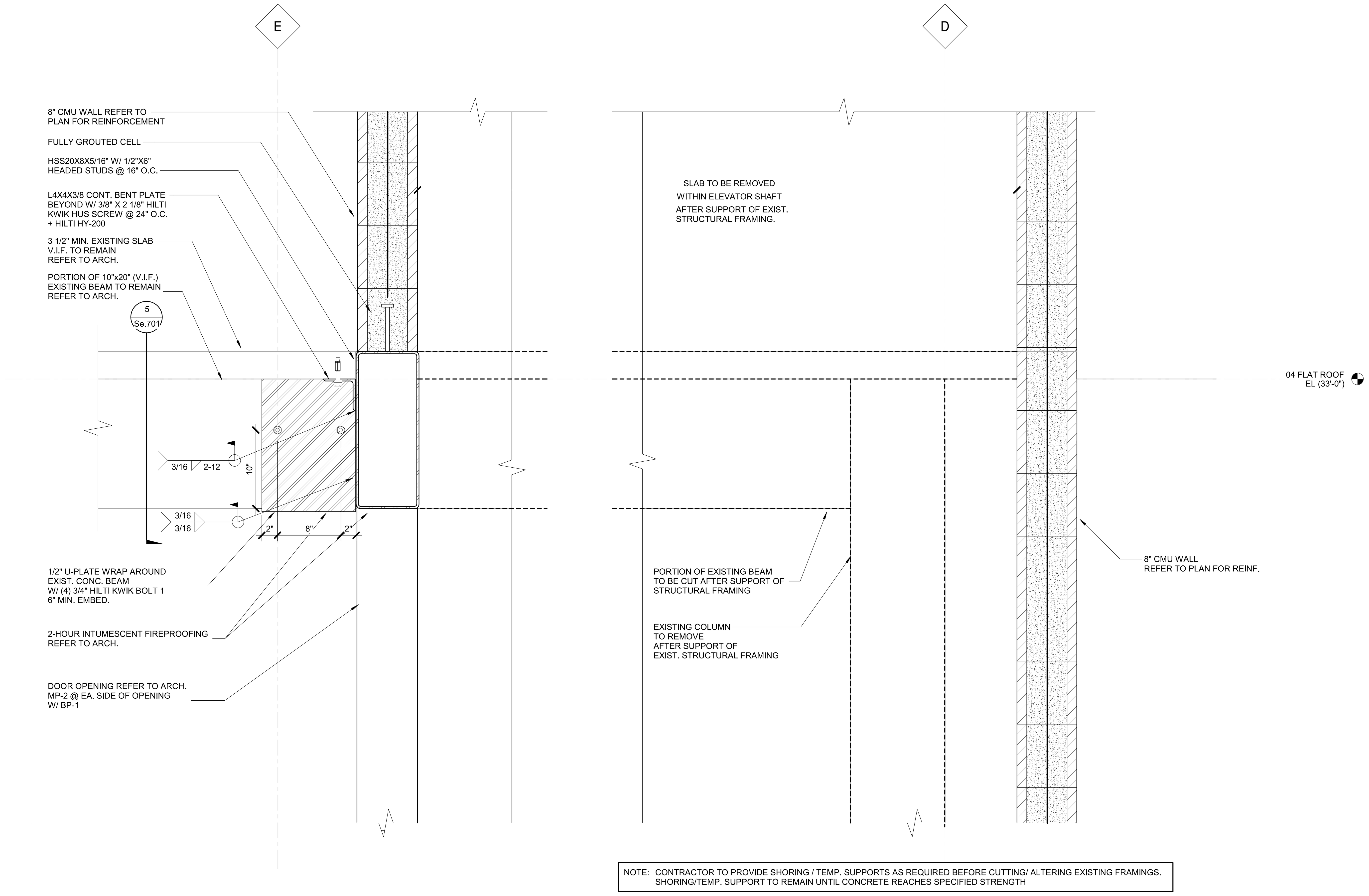
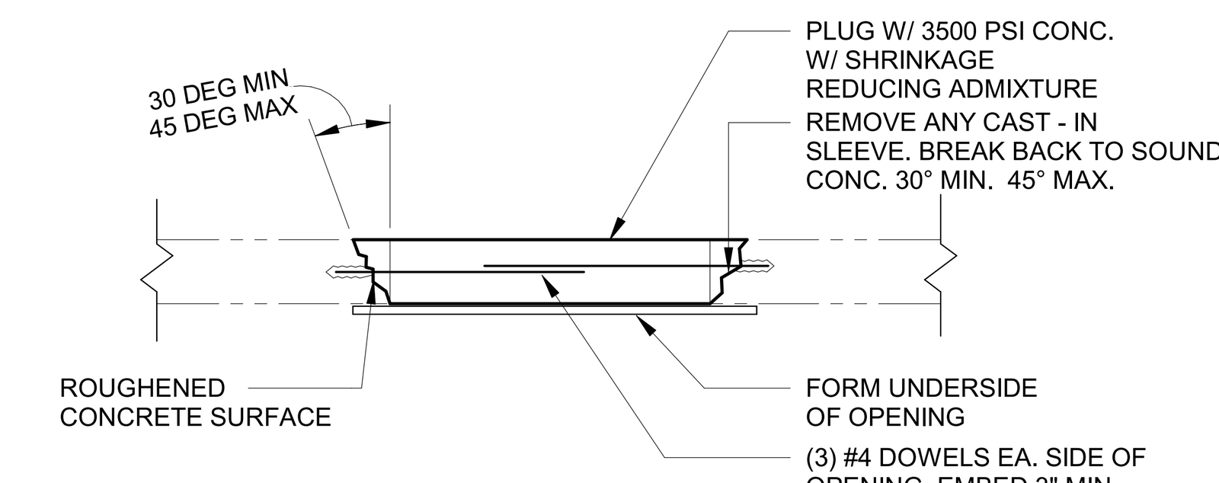
Drawing No. **Se.700**

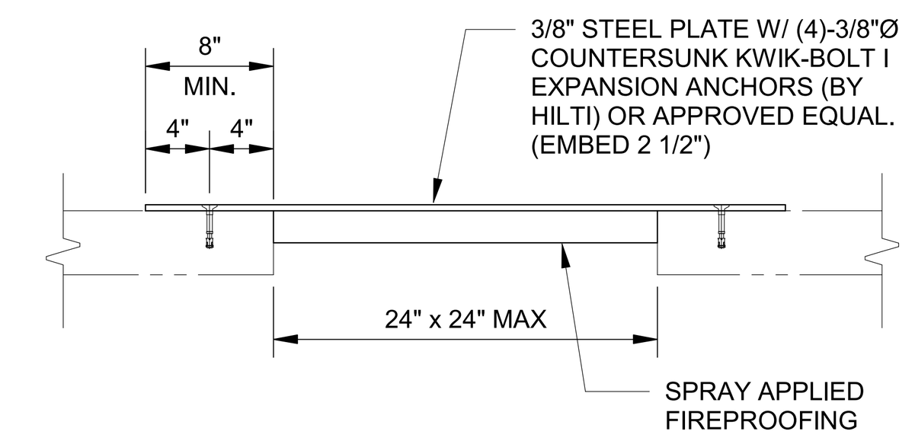


NOTE: CONTRACTOR TO PROVIDE SHORING / TEMP. SUPPORTS AS REQUIRED BEFORE CUTTING/ ALTERING EXISTING FRAMINGS. SHORING/TEMP. SUPPORT TO REMAIN UNTIL CONCRETE REACHES SPECIFIED STRENGTH

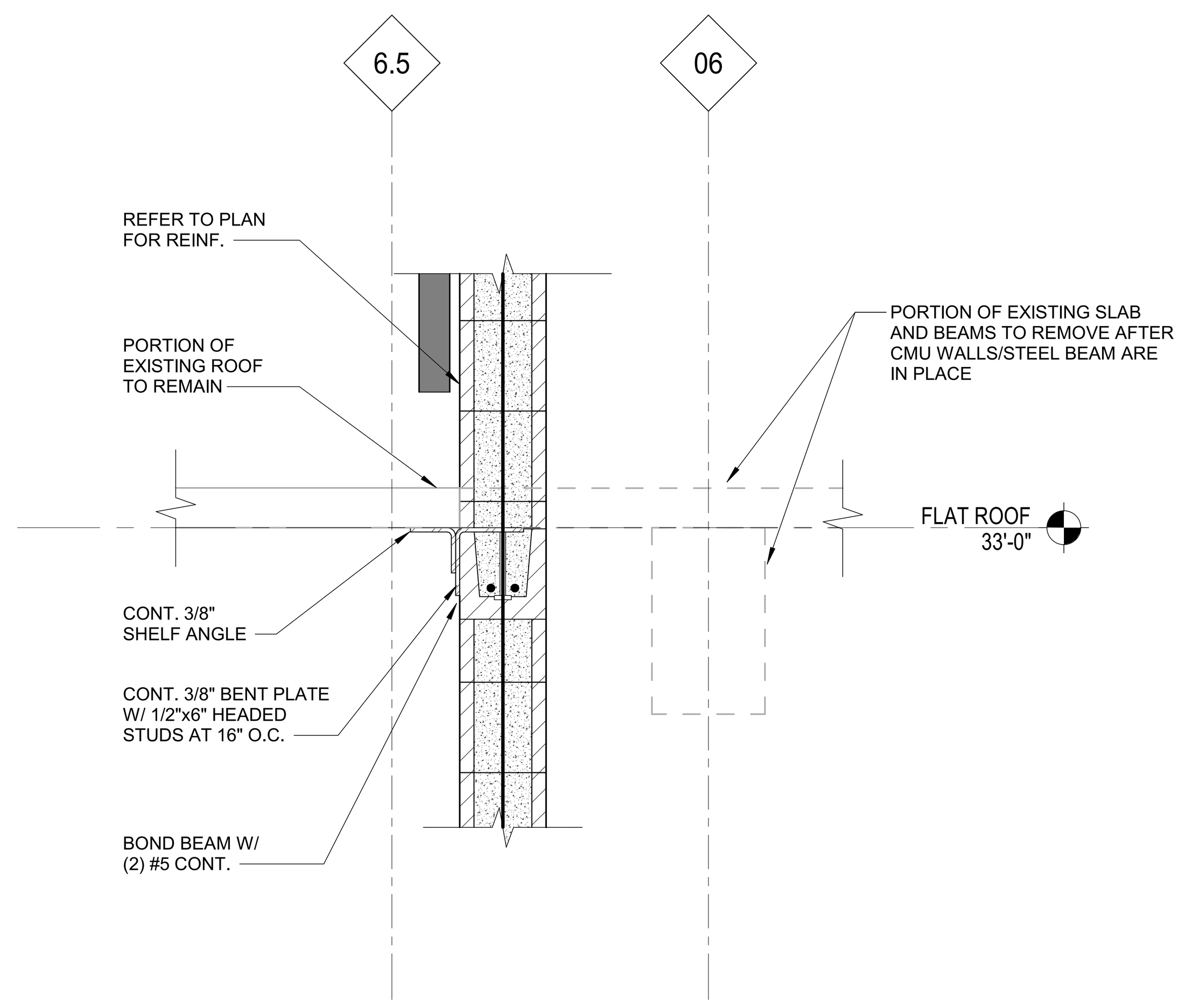
1 SECTION
1 1/2" = 1'-0"



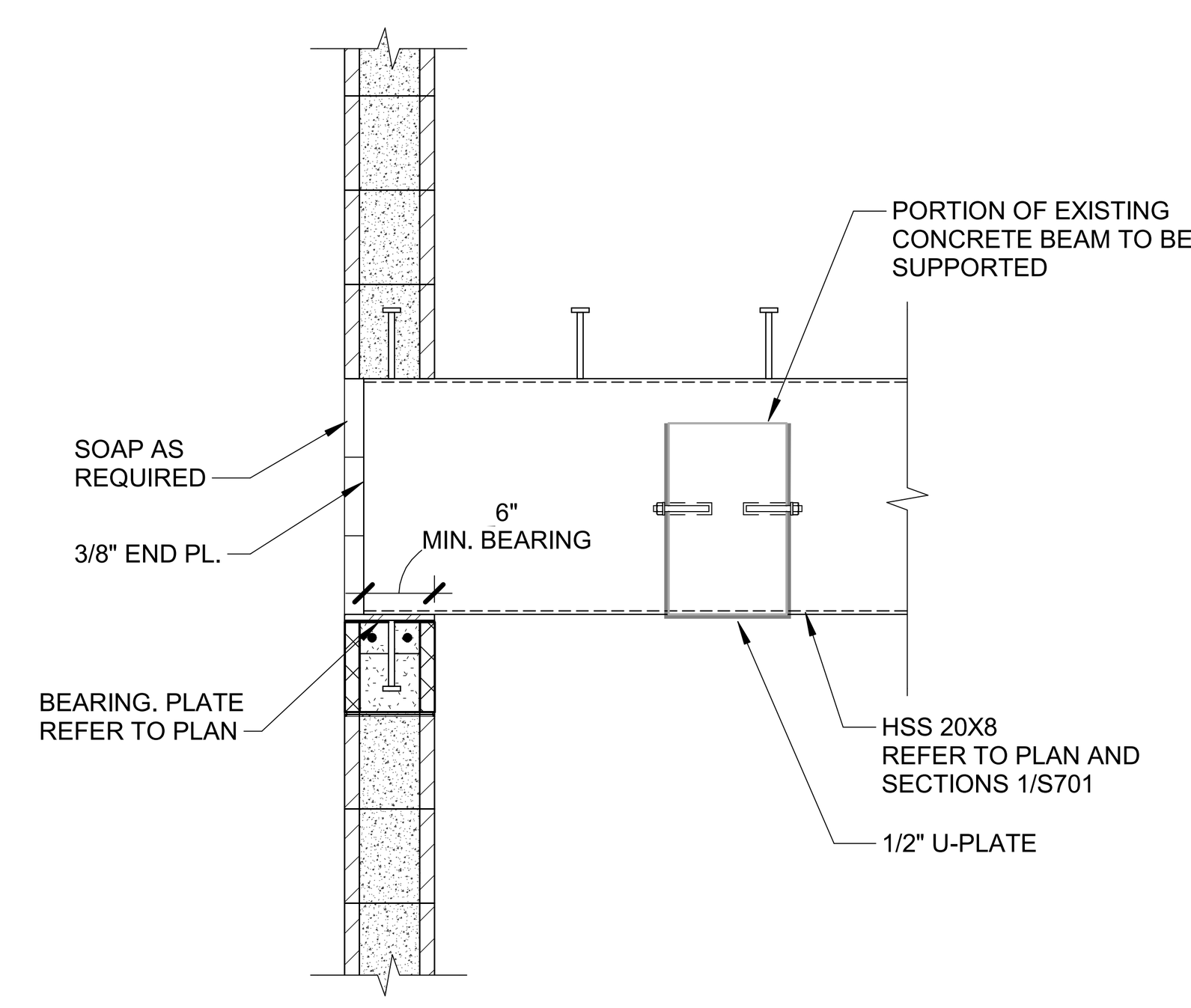
2 CONCRETE ROOF OPENING INFILL - 18"x18" MAX.
1" = 1'-0"



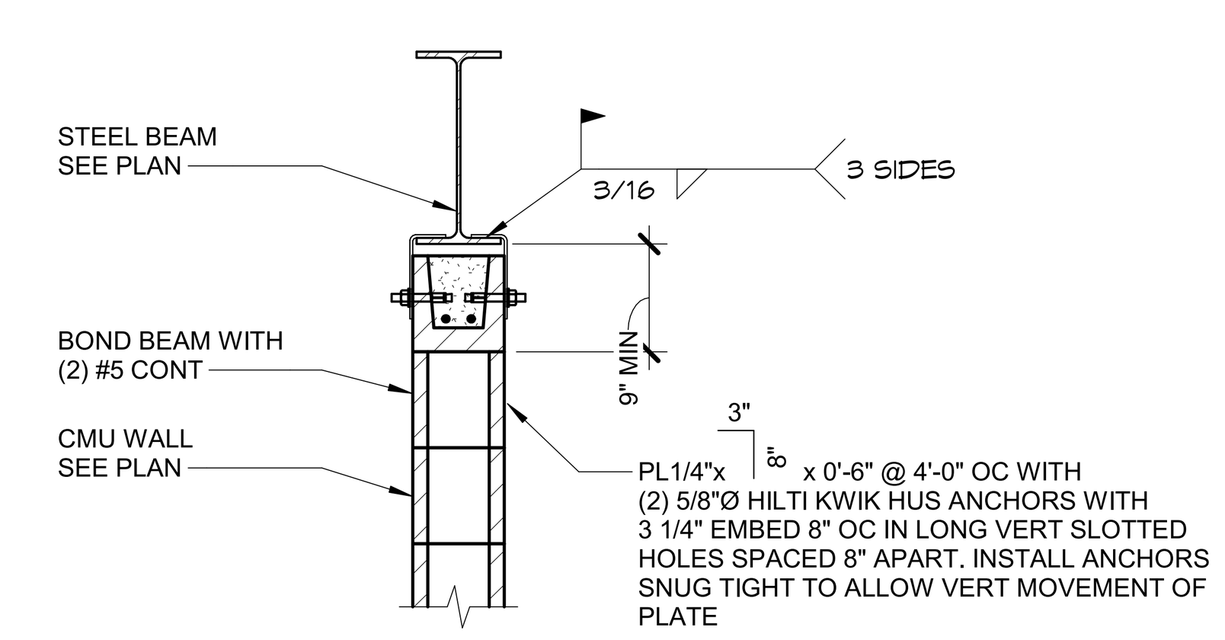
3 CONCRETE ROOF OPENING INFILL - 24"x24" MAX.
1" = 1'-0"



4 SECTION
1" = 1'-0"



5 SECTION
3/4" = 1'-0"



7 TYPICAL CMU WALL BRACING TO STEEL
3/4" = 1'-0"

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Revision
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Permit/Seal

STATE OF MICHIGAN ATHANACIOS N. NASR ENGINEER LICENSED PROFESSIONAL ENGINEER

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	10/16/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
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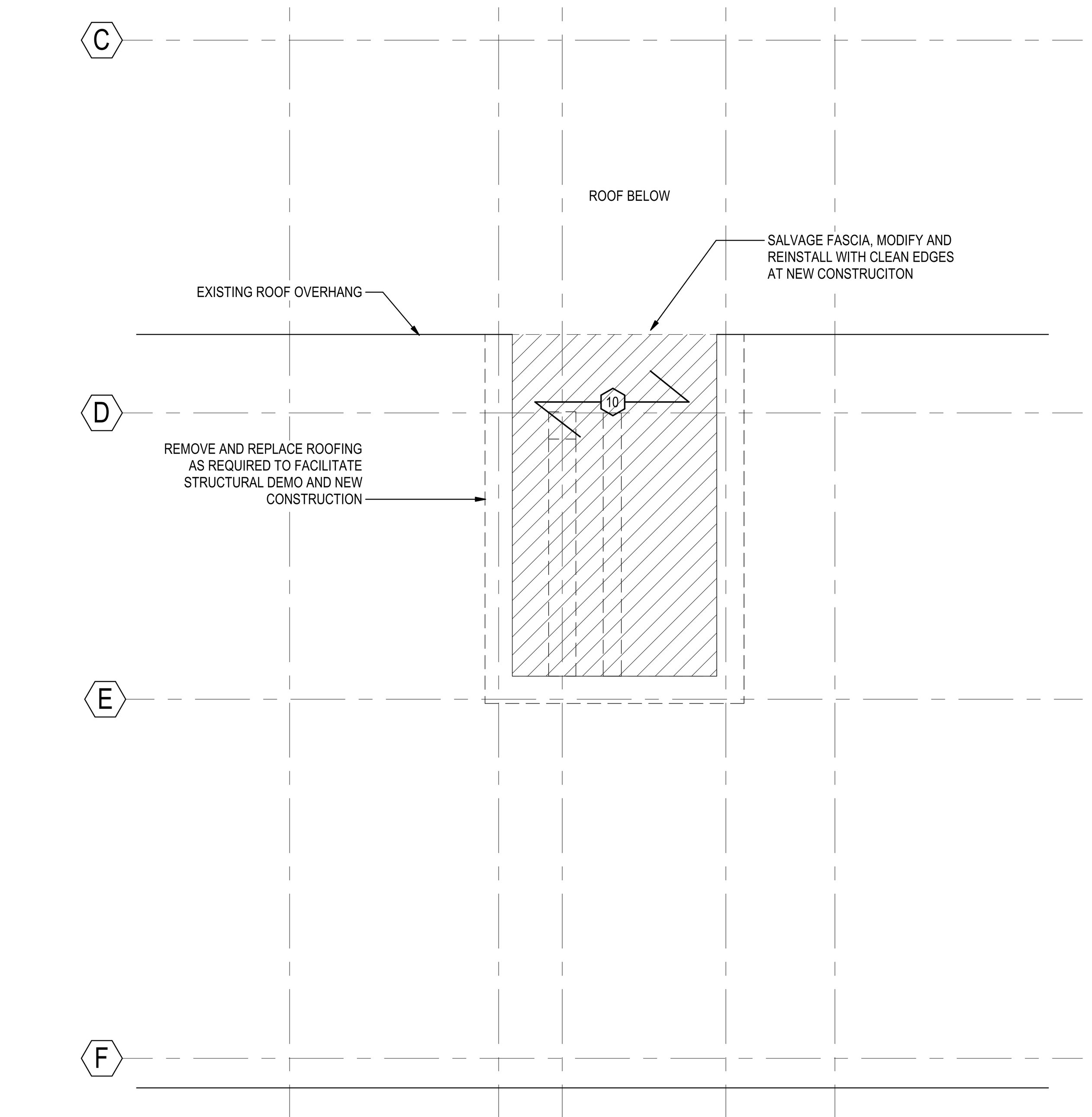
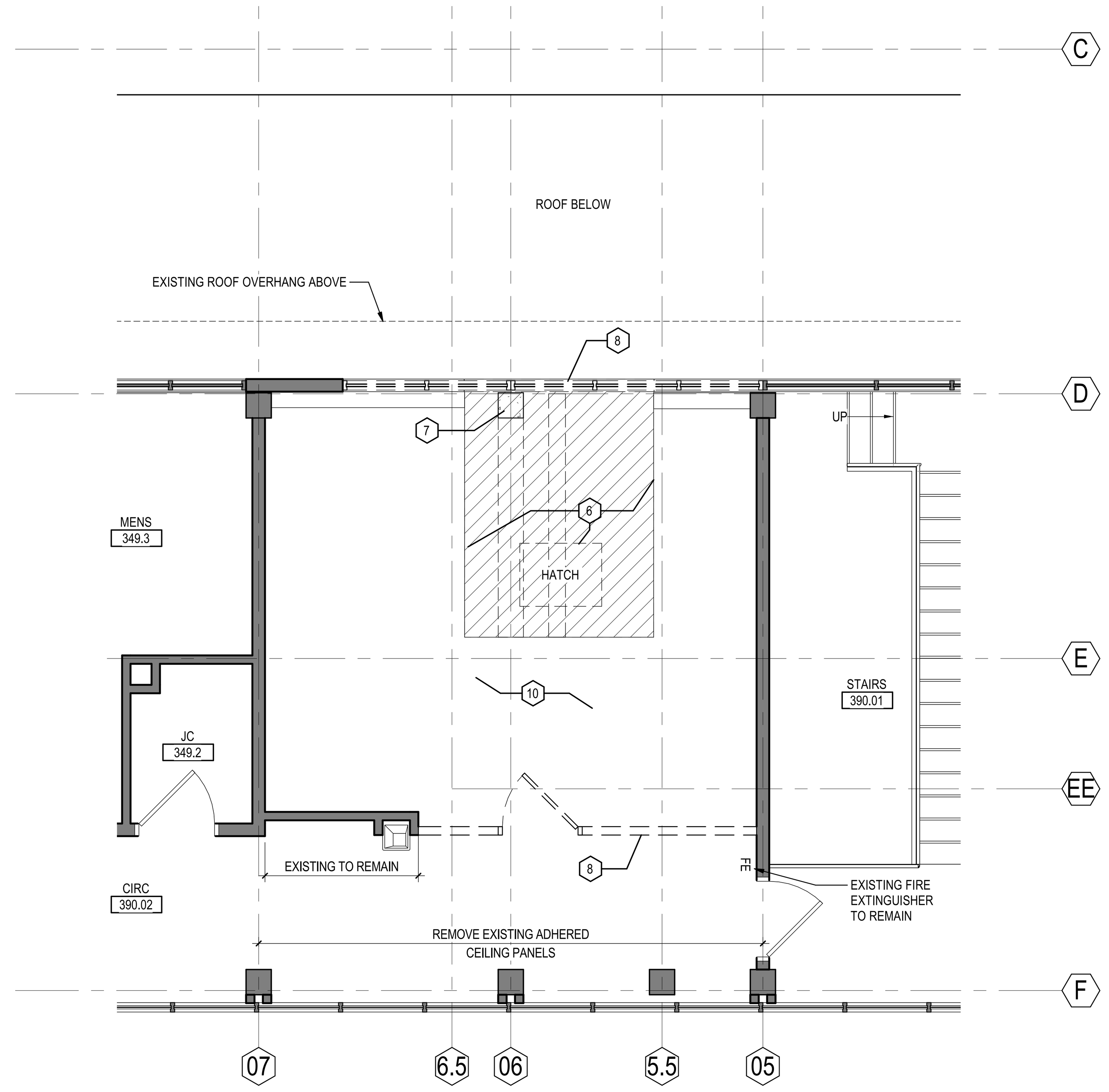
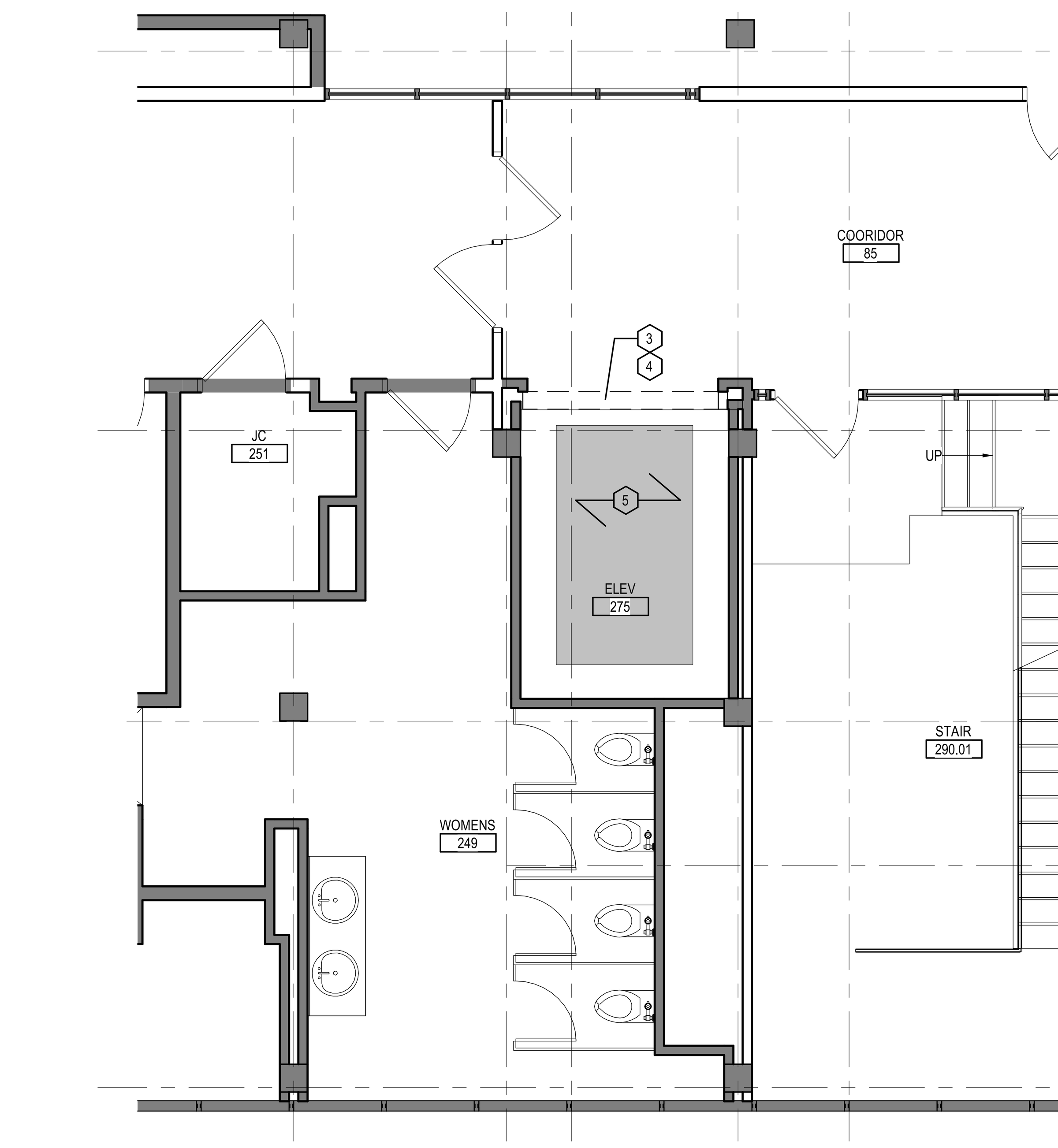


6 **ROOF PLAN - ELEV DEMO**
ADe111 1/4" = 1'-0"



5 **3RD FLOOR - ELEV DEMO**
ADe111 1/4" = 1'-0"



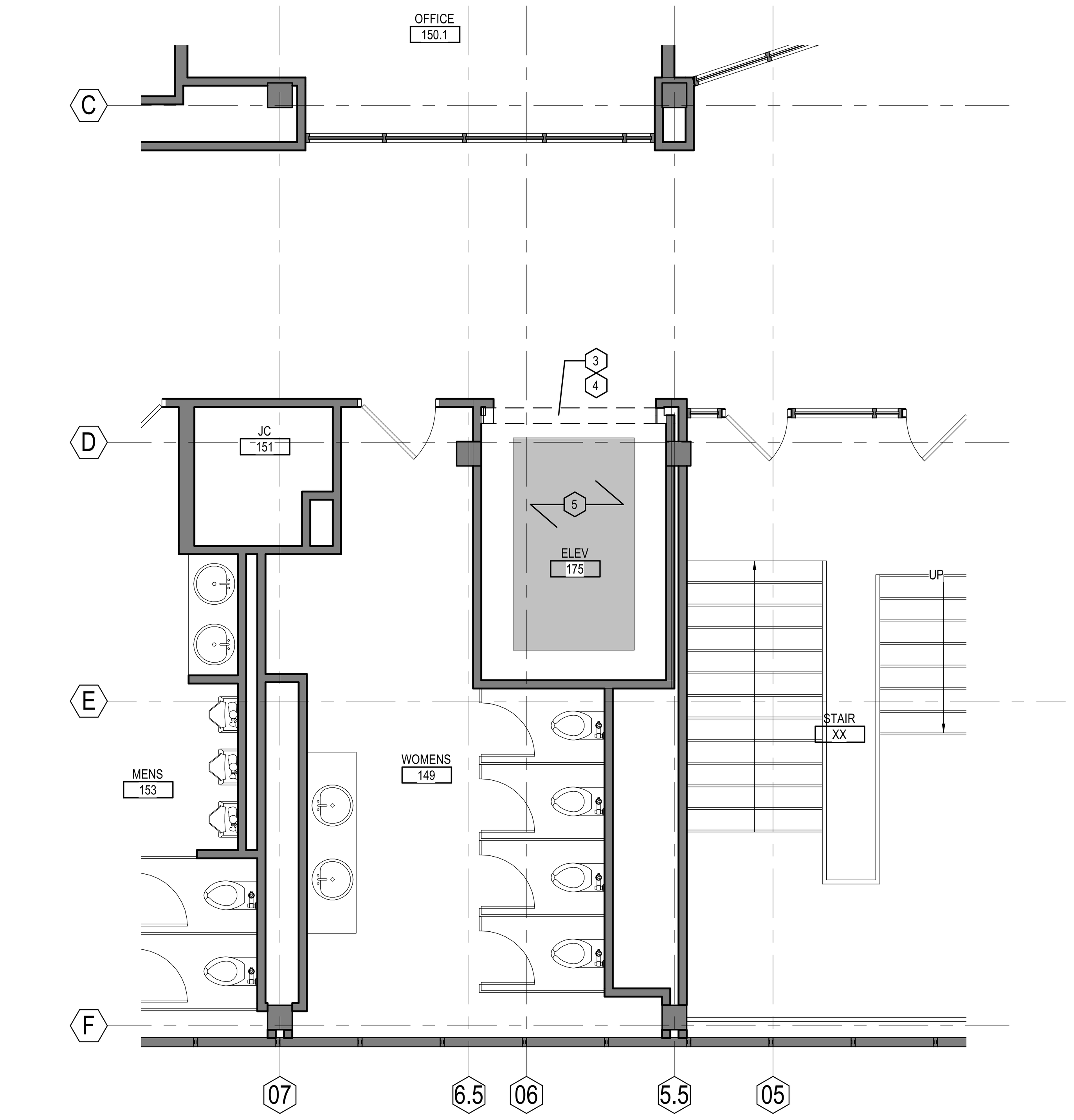
4 **2ND FLOOR - ELEV DEMO**
ADe111 1/4" = 1'-0"

DEMOLITION NOTES

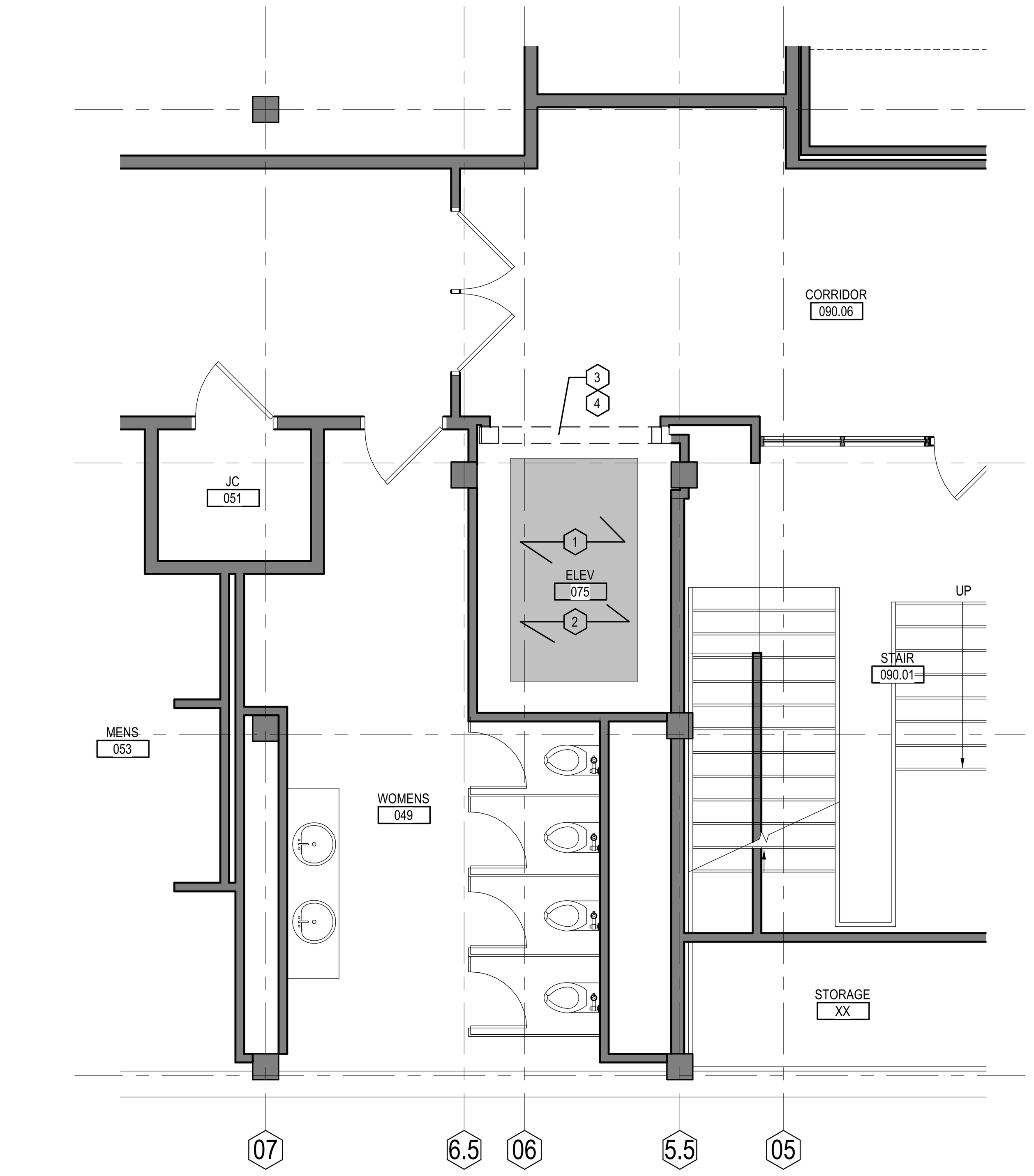
1. REMOVE EXISTING SLAB @ ELEVATOR PIT AND EXCAVATE DOWN TO ALLOW FOR NEW SLAB 48" DOWN FROM LOWER FLOOR LEVEL. REFER TO STRUCTURAL.
2. REMOVE EXISTING ELEVATOR PLUNGER AND CYLINDER AND ASSOCIATED EXISTING ELEVATOR EQUIPMENT IN BASEMENT ELEVATOR CLOSET.
3. REMOVE LINTEL AND EXISTING 4" CMU WALL TO ALLOW FOR NEW 8" BLOCK WALL AND 7'-0" ELEVATOR DOOR OPENING.
4. WHERE EXISTING STRUCTURAL SUPPORT IS REMOVED PROVIDE SHORING AS REQUIRED TO SUPPORT FLOORS AND ROOFS.
5. ELEVATOR CAB AND DOOR REMOVAL BY ELEVATOR CONTRACTOR.
6. SAWCUT EXISTING 3RD FLOOR SLAB AS REQUIRED AND REMOVE FLOOR HATCH TO EXTEND NEW ELEVATOR SHAFT, REFER TO STRUCTURAL.
7. REMOVE EXISTING CONCRETE COLUMN AND BEAM ABOVE AND EXISTING HOIST BEAM, REFER TO STRUCTURAL.
8. REMOVE WALL AND EXISTING DOOR FROM FLOOR SLAB TO STRUCTURE ABOVE. REMOVE EXISTING FIRE EXTINGUISHER CABINET AND RETURN TO OWNER. RELOCATE FIRE ALARM PER ELECTRICAL SHEETS.
9. REMOVE EXISTING STOREFRONT FRAMING WITH WINDOWS.
10. SAWCUT EXISTING CONCRETE ROOF SLAB AND OVERHANG AS REQUIRED TO EXTEND NEW ELEVATOR SHAFT. REMOVE BEAM AND COLUMN BELOW, REFER TO STRUCTURAL. REFER TO FLOOR PLAN FOR DIMENSIONS OF NEW OPENING.

GENERAL DEMOLITION PLAN NOTES

1. ALL DEMOLITION WORK TO BE PERFORMED IN COMPLIANCE W/ ALL APPLICABLE CODES, LAWS & REGULATIONS INCLUDING OWNER REQUIREMENTS & THOSE ASSOCIATED W/ LEED CERTIFICATION.
2. PRIOR TO COMMENCEMENT OF DEMOLITION WORK, INSPECT ALL AREAS IN WHICH WORK IS TO BE PERFORMED. THE EXISTING BUILDING INFORMATION SHOWN WAS COMPILED FROM DRAWINGS FURNISHED BY THE OWNER. THESE DRAWINGS WERE NOT 'AS-BUILT' DRAWINGS & ACTUAL CONDITIONS / DIMENSIONS MAY VARY FROM WHAT INDICATED. VERIFY ALL CONDITIONS / DIMENSIONS PRIOR TO DEMOLITION.
3. PROTECT ADJACENT AREAS FROM DUST, EXCESSIVE NOISE OR DISRUPTION OF OPERATION. ANY WORK WHICH INTERFERES W/ THE OWNER'S OPERATION OF THE SURROUNDING AREAS & ANY INTERUPTION OF SERVICES INCLUDING THE SHUTDOWN OF UTILITIES SHALL BE PERFORMED AT A TIME APPROVED BY THE OWNER'S REPRESENTATIVE.
4. PROTECT EXISTING STRUCTURES, FINISHES, UTILITIES & OTHER ITEMS SCHEDULED TO REMAIN. PRIOR TO DEMOLITION, DOCUMENT SURROUNDING PROPERTIES WHICH COULD BE MISCONSTRUED AS DAMAGE RESULTING FROM DEMOLITION WORK & FILE W/ OWNER'S REPRESENTATIVE. AREAS THAT ARE DAMAGED BY SELECTIVE DEMOLITION SHALL BE PATCHED, REPAIRED & FINISHED OR REPLACED TO MATCH EXISTING ADJACENT SURFACES AT NO EXPENSE TO THE OWNER.
5. ALL DEMOLITION WORK REQUIRED IS NOT LIMITED TO THAT INDICATED WITHIN THE CONTRACT DOCUMENTS. ALTER EXISTING CONSTRUCTION THAT INTERFERES W/ NEW WORK TO THE EXTENT OF THE INTERFERENCE. THE INTENT IS TO REMOVE ALL MECHANICAL, PLUMBING, ELECTRICAL & ARCHITECTURAL ITEMS AS REQUIRED TO FACILITATE NEW CONSTRUCTION. CUT & LATER PATCH ALL HOLES & OPENINGS IN EXISTING CONSTRUCTION NECESSARY FOR CONNECTION OF NEW WORK & FOR THE PASSAGE OR CONNECTION OF ANY MECHANICAL, PLUMBING & ELECTRICAL UTILITIES & SERVICES.
6. NOTIFY THE ARCHITECT IMMEDIATELY IF A HIDDEN FIELD CONDITION IS UNCOVERED OR DISCREPENCIES IN THE CONTRACT DOCUMENTS ARE FOUND THAT AT CONFLICTS WITH THE INTENDED FINAL PRODUCT & REQUIRES MODIFICATIONS TO THE LAYOUT.
7. OWNER ASSUMES NO RESPONSIBILITY FOR ACTUAL CONDITION OF ITEMS OR STRUCTURES TO BE DEMOLISHED. PROVIDE INTERIOR &/OR EXTERIOR SHORING, BRACING OR SUPPORT AS REQUIRED TO PREVENT MOVEMENT, SETTLEMENT, DAMAGE OR COLLAPSE OF STRUCTURE WITHIN DEMOLITION CONTRACT LIMITS.
8. PROVIDE TEMPORARY BARRICADES & OTHER FORMS OF PROTECTION AS REQUIRED TO PROTECT OWNER'S PERSONNEL & GENERAL PUBLIC FROM INJURY DUE TO DEMOLITION WORK. AT ALL TIMES, PROVIDE PROPER MEANS OF EGRESS AS REQUIRED FOR OCCUPIED AREAS PER CODE.
9. IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS, THE CONTRACTOR IS TO STOP WORK IMMEDIATELY & INFORM THE OWNER'S REPRESENTATIVE & ARCHITECT FOR FUTURE DIRECTION.
10. PRIOR TO DEMOLITION VERIFY WHICH ITEMS ARE TO BE SALVAGED; PROVIDE A DETAILED INVENTORY LIST OF THOSE ITEMS & THEIR STORED LOCATION TO THE OWNER. REMOVE FROM SITE & DISPOSE ALL NON-SALVAGABLE ITEMS. ALL DEBRIS CAUSED BY DEMOLITION & CONSTRUCTION SHALL BE CLEARED & REMOVED FROM SITE. DEBRIS STORAGE SHALL NOT INFRINGE ON CLEAR PATH OF EGRESS.
11. ALL ABANDON MECHANICAL, PLUMBING & ELECTRICAL PIPING IS TO BE REMOVED TO A POINT BELOW EXISTING CONCRETE FLOOR SLAB, BEHIND WALLS & AS CLOSE TO THE CEILING DECK AS POSSIBLE & MADE SAFE BY CAPPIMG, UNLESS OTHERWISE NOTED. REFER MECHANICAL, PLUMBING & ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION REQUIRED UNDER THIS CONTRACT.



3 **1ST FLOOR - ELEV DEMO**
ADe111 1/4" = 1'-0"



2 **LOWER LEVEL - ELEV DEMO**
ADe111 1/4" = 1'-0"

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Permit/Seal

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	08/19/22
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Title
ENLARGED DEMO PLANS

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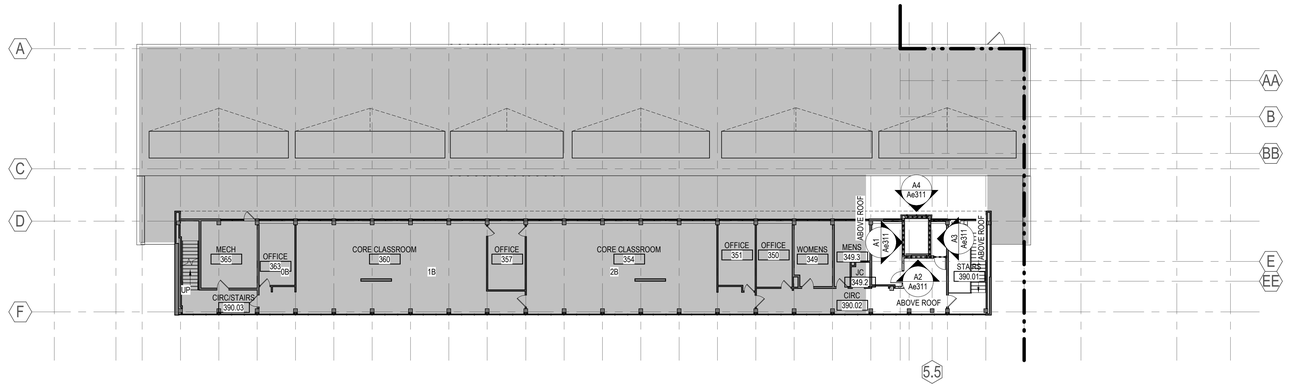
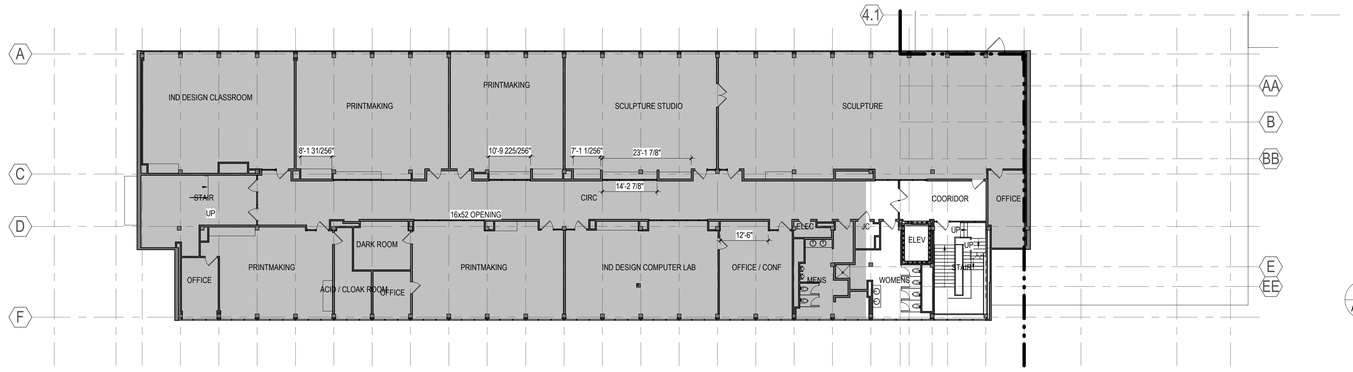
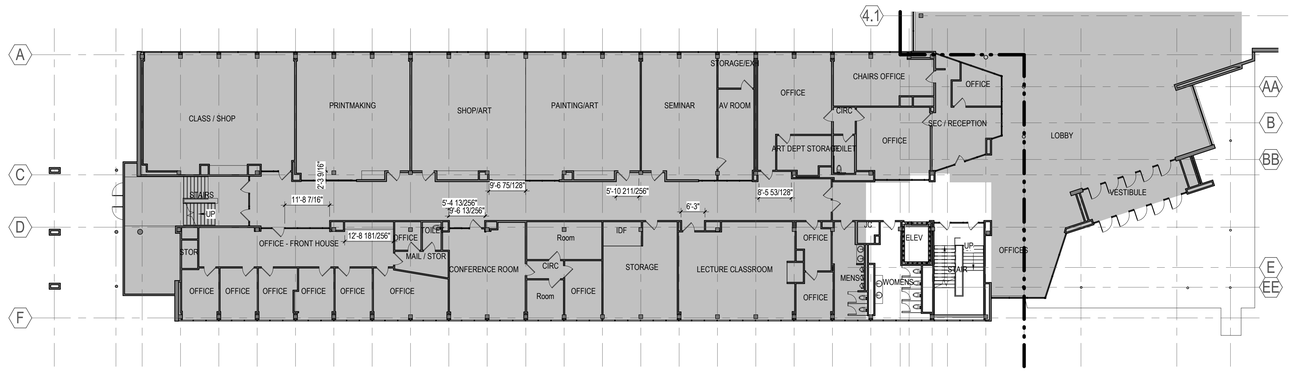


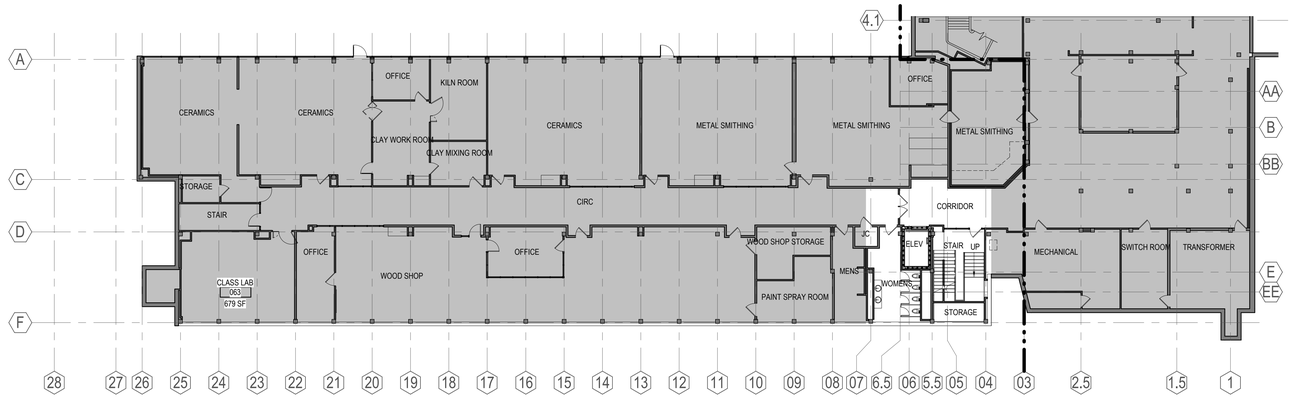
4 FPe-3RD LEVEL COMPOSITE
Ae101 — 1/16" = 1'-0"



3 FPe-2ND LEVEL COMPOSITE
Ae101 — 1/16" = 1'-0"



2 FPe-1ST LEVEL COMPOSITE
Ae101 — 1/16" = 1'-0"



1 FPe-LOWER LEVEL COMPOSITE
Ae101 — 1/16" = 1'-0"

LEGEND

TWO HOUR RATED WALL

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STATE OF MICHIGAN
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Wayne State University
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Project No.:214100597
File Name: N/A

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COMPOSITE PLANS

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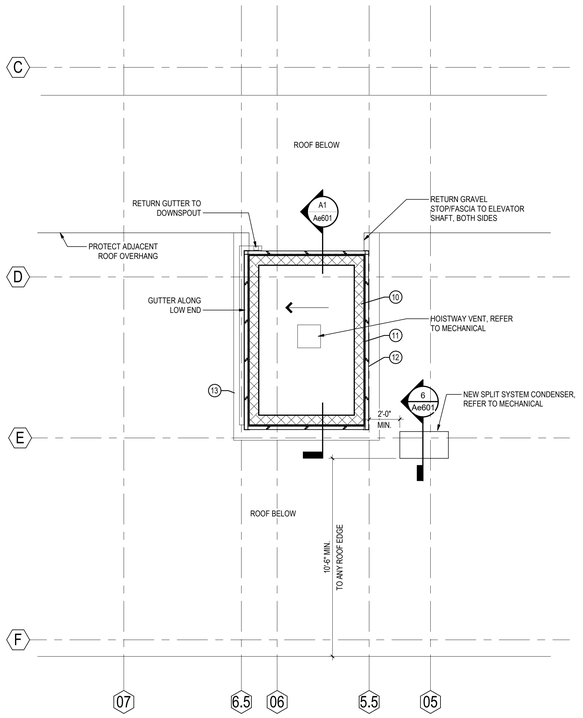
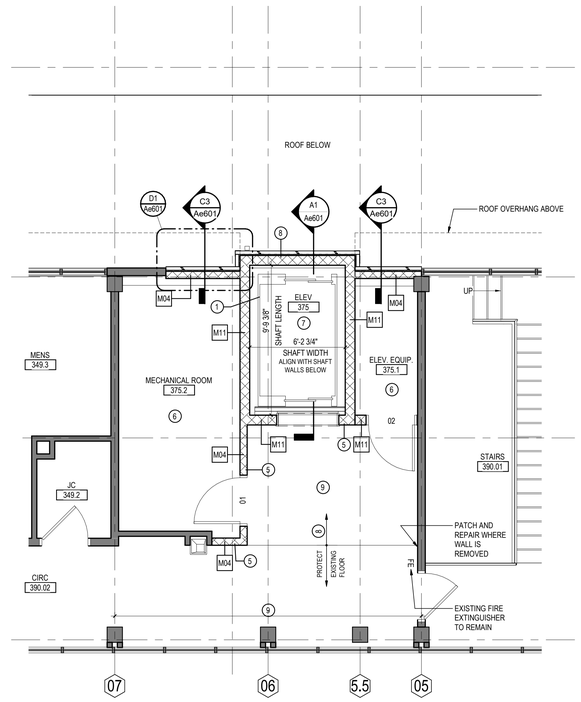
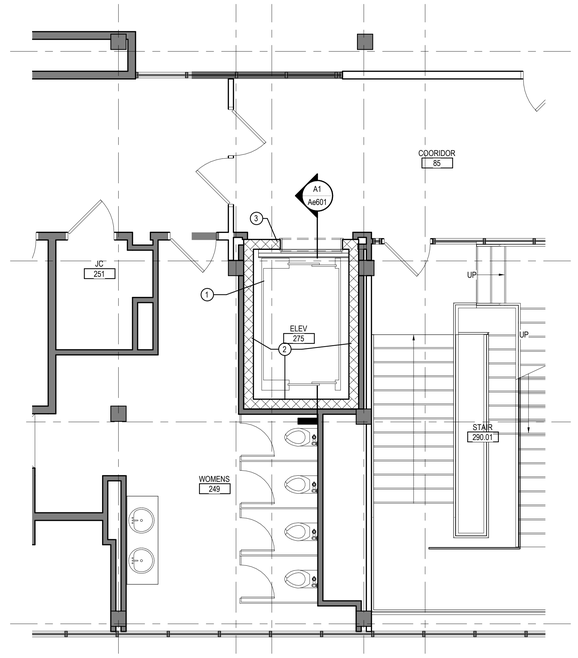


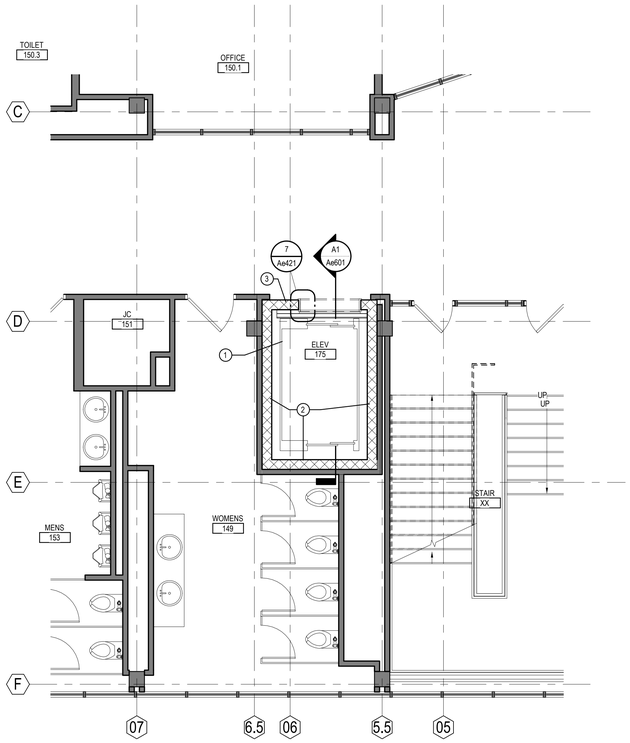
5 ROOF PLAN - ELEV SCOPE
Ae111 1/4" = 1'-0"



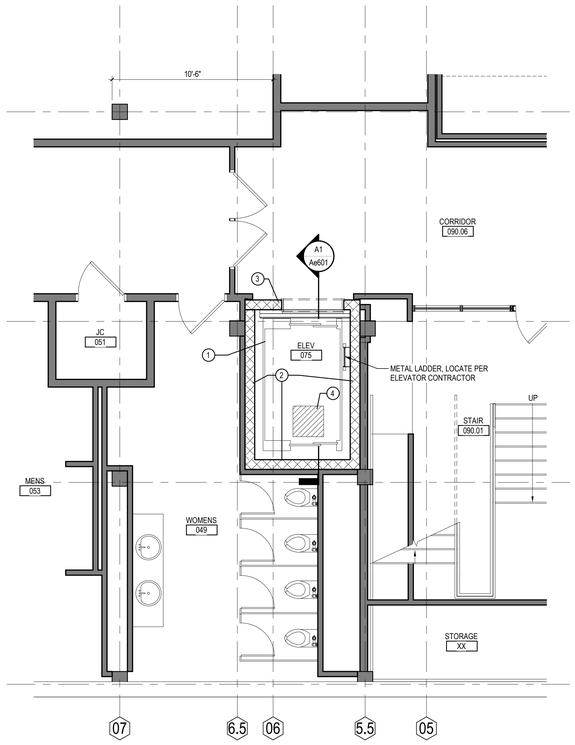
4 3RD FLOOR - ELEV SCOPE
Ae111 1/4" = 1'-0"



3 2ND FLOOR - ELEV SCOPE
Ae111 1/4" = 1'-0"



1 1ST FLOOR - ELEV SCOPE
Ae111 1/4" = 1'-0"



2 LOWER LEVEL - ELEV SCOPE
Ae111 1/4" = 1'-0"

GENERAL FLOOR PLAN NOTES

1. ALL DIMENSIONS ARE FROM COLUMN REFERENCE LINE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
2. REFER TO DRAWING Ae101 FOR LOCATIONS & EXTENT OF RATED ASSEMBLIES.
3. NOTE: AN AIR CONDITIONING PROJECT WILL BE ONGOING ON AT THE SAME TIME AND DRAWINGS ARE AVAILABLE FOR REFERENCE.

CONSTRUCTION NOTES

1. NEW DOUBLE SIDED ELEVATOR, CUSTOM CAB
2. CONSTRUCT 8" CMU FULLY GROUTED SHAFT WALL INTERIOR OF THE EXISTING SHAFT
3. NEW 8" CMU IN LINE WITH PREVIOUS 4" WALL, PAINT TO MATCH ADJACENT FINISH
4. NEW SUMP PUMP, REFER TO MECHANICAL
5. WALL FINISH:
   FINISH: PAINT TO MATCH ADJACENT FINISH
   BASE: BLACK VINYL TO MATCH EXISTING
6. FLOOR FINISH:
   SEALED CONCRETE
7. ELEVATOR FLOOR FINISH:
   RUBBER TILE
   MANUF: NORA
   PRODUCT: NORAMENT 825 ROUND
   COLOR: 0716 SLATE GREY
   ADHESIVE: NORE DRYFIX 750
8. 3RD FLOOR ELEVATOR LOBBY FLOOR FINISH:
   RUBBER TILE
   MANUF: NORA
   PRODUCT: NORAMENT HAMMERED
   COLOR: 0749 STONE GREY
   ADHESIVE: NORE DRYFIX 750
9. PATCH AND PAINT UNDERSIDE OF CONCRETE ROOF SLAB
10. 8" CMU SHAFT EXTENSION
11. APPLY AIR/VAPOR BARRIER AROUND SHAFT WALL SURROUND
12. INSULATED METAL PANEL CLADDING
13. PATCH IN ROOF BELOW TO MATCH EXISTING

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Art Building Elevator Replacement
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Project No.:214100597
File Name: N/A

Author	Designer	Checker	10/03/17
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ENLARGED PLANS

Scale: As indicated
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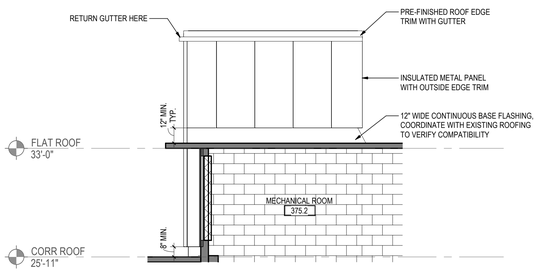
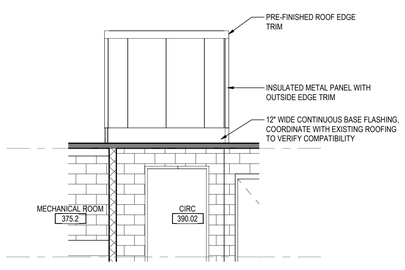
EXTERIOR ENVELOPE NOTES

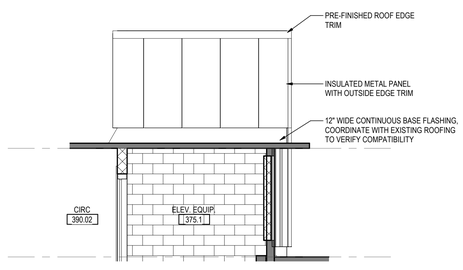
1. MAINTAIN AIR / VAPOR BARRIER CONTINUITY THROUGHOUT EXTERIOR ENVELOPE. SEAL ALL AIR BARRIER / VAPOR RETARDER SEAMS, JOINTS, PENETRATIONS & TERMINATIONS TO OTHER SUBSTRATES & / OR OTHER AIR / BARRIER / VAPOR RETARDER SYSTEM.
2. EXTERIOR STEEL (I. E. RELIEF ANGLES, PLATES, LINTELS, ETC), ARE TO BE GALVANIZED, UNLESS NOTED OTHERWISE.



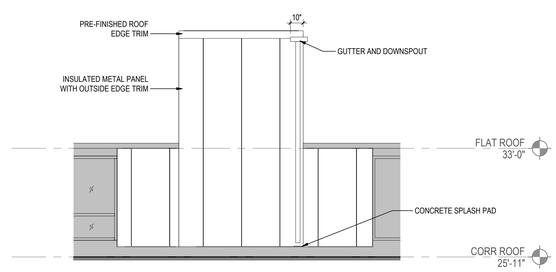
A1 Ae311 **WEST ELEVATION**
1/4" = 1'-0"



A2 Ae311 **SOUTH ELEVATION**
1/4" = 1'-0"



A3 Ae311 **EAST ELEVATION**
1/4" = 1'-0"



A4 Ae311 **NORTH ELEVATION**
1/4" = 1'-0"

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WAYNE STATE UNIVERSITY

Wayne State University
Art Building Elevator Replacement
5400 Gullen Mall
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File Name: N/A

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Title
ENLARGED EXTERIOR ELEVATIONS

Scale: As indicated
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INTERIOR PARTITION SCHEDULE - GROUPS M - P (CMU FRAMING)										
	CONSTRUCTION DATA			RATED PARTITIONS		ACOUSTICAL PERFORMANCE				
TYPE	OVERALL PARTITION DEPTH	GWB THICKNESS	MASONRY / FRAMING SIZE	FIRE RATING (HRS)	FIRE TEST	SOUND INSULATION	STC RATING	STC TEST	NOTES
Group M - CMU									
M04	5 5/8"	0"	6" NOM.	0		-	0		
M11	7 5/8"	0"	8" NOM.	2	UL U905	-	45	KAL-359-3-66	FIRE STOP

GENERAL PARTITION NOTES:

1. DIMENSIONS ARE FROM COLUMN / REFERENCE LINE TO FACE OF PARTITOIN OR CMU, UNLESS NOTED OTHERWISE
2. COORDINATE CMU PARTITIONS WITH REGARDS TO MECHANICAL AND ELECTRICAL FOR CONCEALED MECHANICAL, ELECTRICAL AND PLUMBING OPENINGS
3. REFER TO Ae101 FOR LOCATIONs & EXTENT OF RATED ASSEMBLIES. IF PARTITION DESIGNATION DESCREPENCY OCCURS BETWEEN THE CODE DRAWING & THE FLOOR PLANS; PROVIDE THE PARTITION TYPE INDICATED W/ THE MOST SEVERE REQUIREMENTS.
4. PROVIDE CONTINUOUS FIRE RATED SEALANT (BOTH SIDES) AT ALL RATED GYPSUM WALL BOARD HEAD, SILL & JAMB TERMINATION JOINTS & AT ALL CMU HEAD TERMINATION JOINTS. FILL HEAD DEFLECTION VOID & DECK FLUTES W/ FIRE SAFING.
5. REFER TO EXTERIOR ELEVATIONS AND WALL SECTIONS FOR INFORMATION ON EXTERIOR WALL SYSTEMS.
6. REFER TO FLOOR PLANS (A100 SERIES) FOR PARTITION TYPE DESIGNATIONS.
7. EXPOSED INTERIOR CMU PARTITIONS TO HAVE BULLNOSE CORNERS.
8. PAINT ALL NEW CMU WALLS TO MATCH ADJACENT FINISH.

DOOR SCHEDULE

NO.	DOOR										FRAME						COMMENTS
	CLEAR DIM.			PANEL WIDTHS										DETAILS			
	WIDTH	HEIGHT	NO. OF PANELS	PANEL 1 WIDTH	PANEL 2 WIDTH	THICKNESS	TYPE	MATERIAL	FINISH	HDWR SET	TYPE	MATERIAL	FINISH	HEAD	JAMB	FIRE RATING	
THIRD FLOOR																	
01	3'-0"	7'-0"	1	3'-0"	0' - 0"	1 3/4"	F	HM	PAINT	SEE SPEC	1	HM	PAINT	2/Ae421	3/Ae421	-	
02	3'-0"	7'-0"	1	3'-0"	0' - 0"	1 3/4"	F	HM	PAINT	SEE SPEC	1	HM	PAINT	2/Ae421	3/Ae421	90	

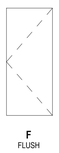
GENERAL DOOR NOTES

1. ALL FRAMES LOCATED IN SOUND ATTENUATED WALL TYPES TO HAVE SOUND ATTENUATION INSULATION
2. ALL HM FRAMES IN MASONRY WALLS TO BE GROUTED SOLID
3. EACH DOOR TO RECEIVE A ROOM IDENTIFICATION SIGN
4. INTERIOR DOORS AND FRAMES TO BE PAINTED SHERWIN WILLIAMS WHITE

DOOR SCHEDULE LEGEND

AL	ALUMINUM
GL	GLASS
HM	HOLLOW METAL
PREFIN	PRE-PRE-FINISHED
STN	PRE-PRE-FINISHED WOOD
WD	WOOD

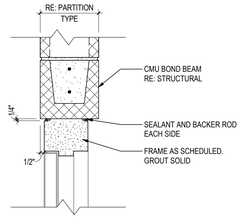
DOOR PANEL TYPE
NOTE: REFER TO DOOR SCHEDULES FOR DOOR HEIGHTS AND WIDTHS



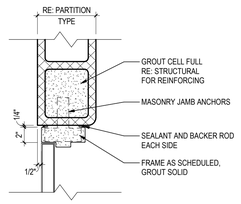
F
FLUSH

FRAME TYPE

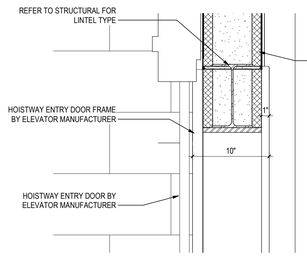
1



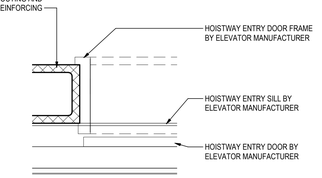
2 Ae421 **TYP HEAD @ CMU WALL**
1 1/2" = 1'-0"



3 Ae421 **TYP JAMB @ CMU WALL**
1 1/2" = 1'-0"



6 Ae421 **TYP. ELEVATOR HEAD**
1 1/2" = 1'-0"



7 Ae421 **TYP. ELEVATOR DOOR JAMB**
1 1/2" = 1'-0"

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No.	Revision	By	Appd	YYYY.MM.DD
1				2022.12.29
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Permit/Seal

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WAYNE STATE UNIVERSITY

Wayne State University
Art Building Elevator Replacement
5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

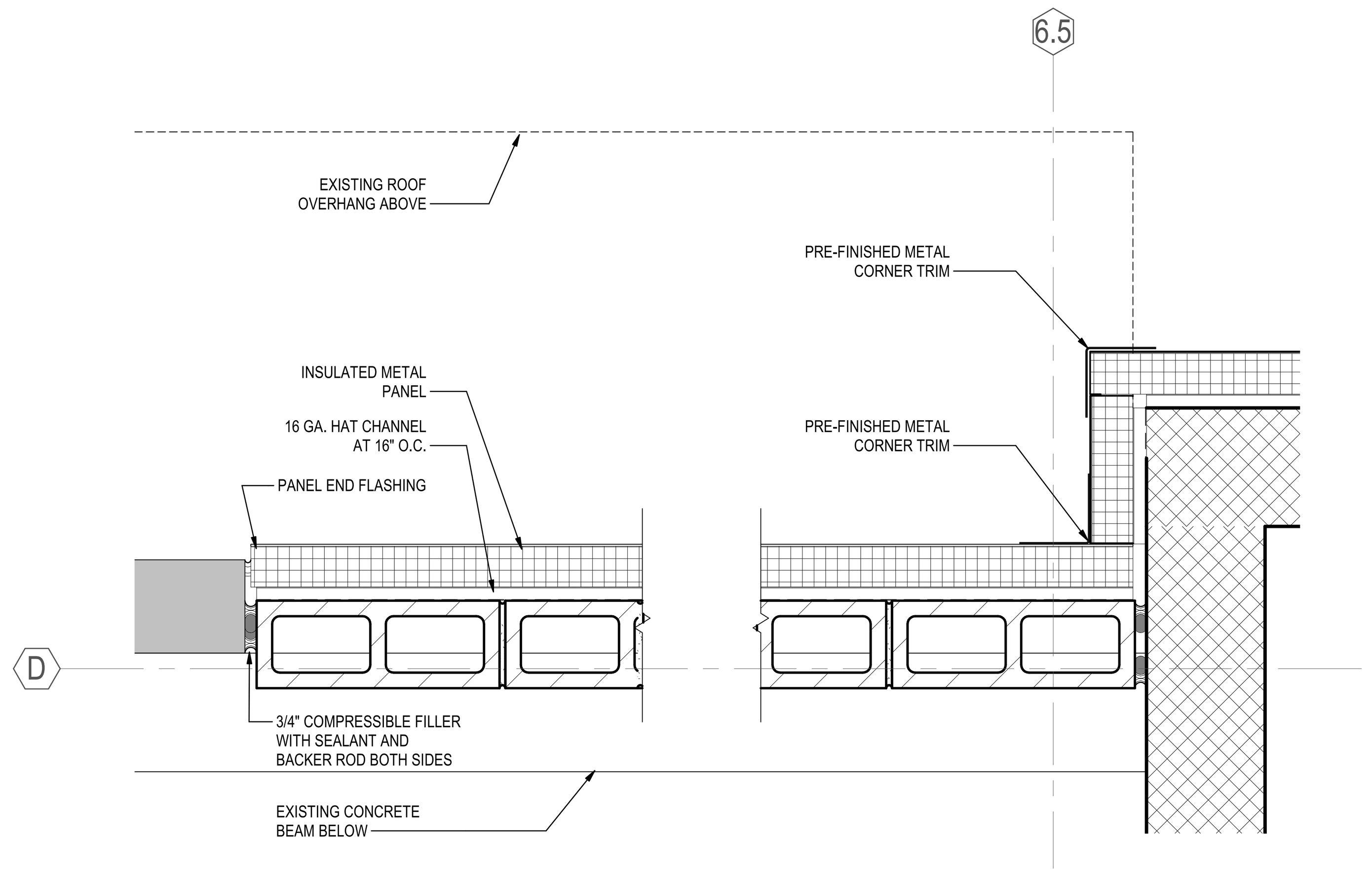
Author	Designer	Checker	01/26/17
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
PARTITION / DOOR SCHEDULE AND DETAILS

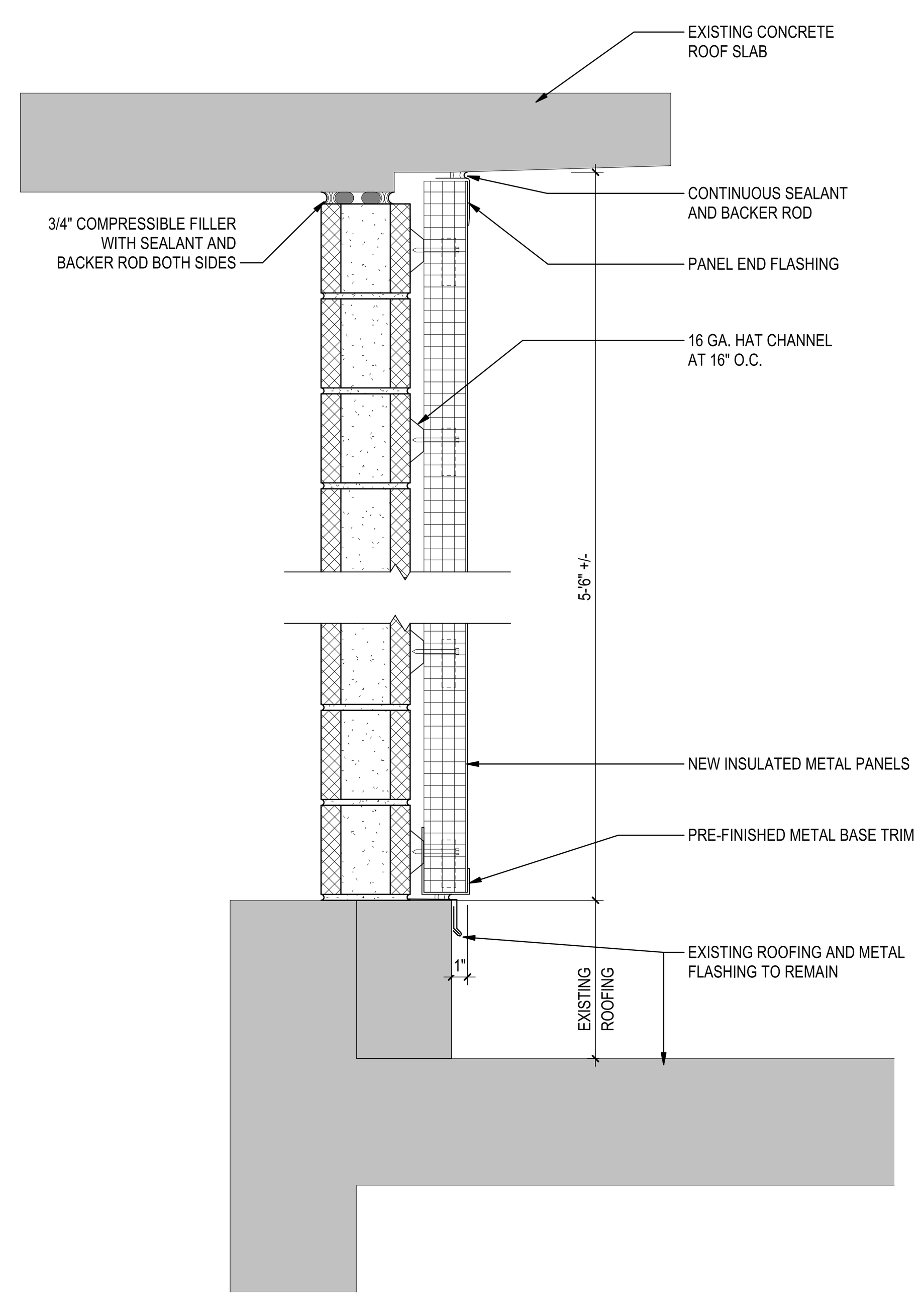
Scale: As indicated
Revision:
Drawing No. **Ae421**

ORIGINAL SHEET - ARCH E1

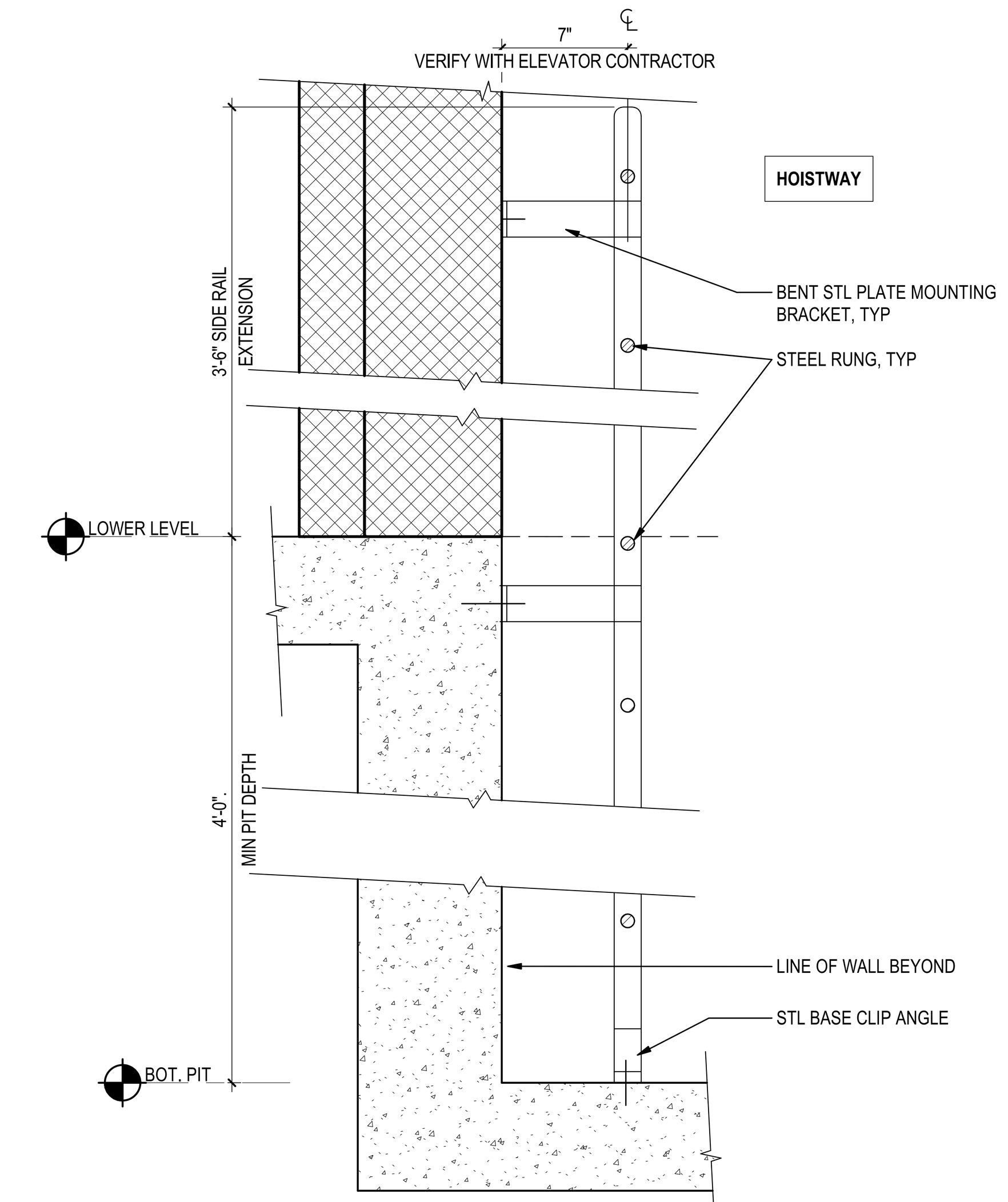
1 2 3 4 5 6



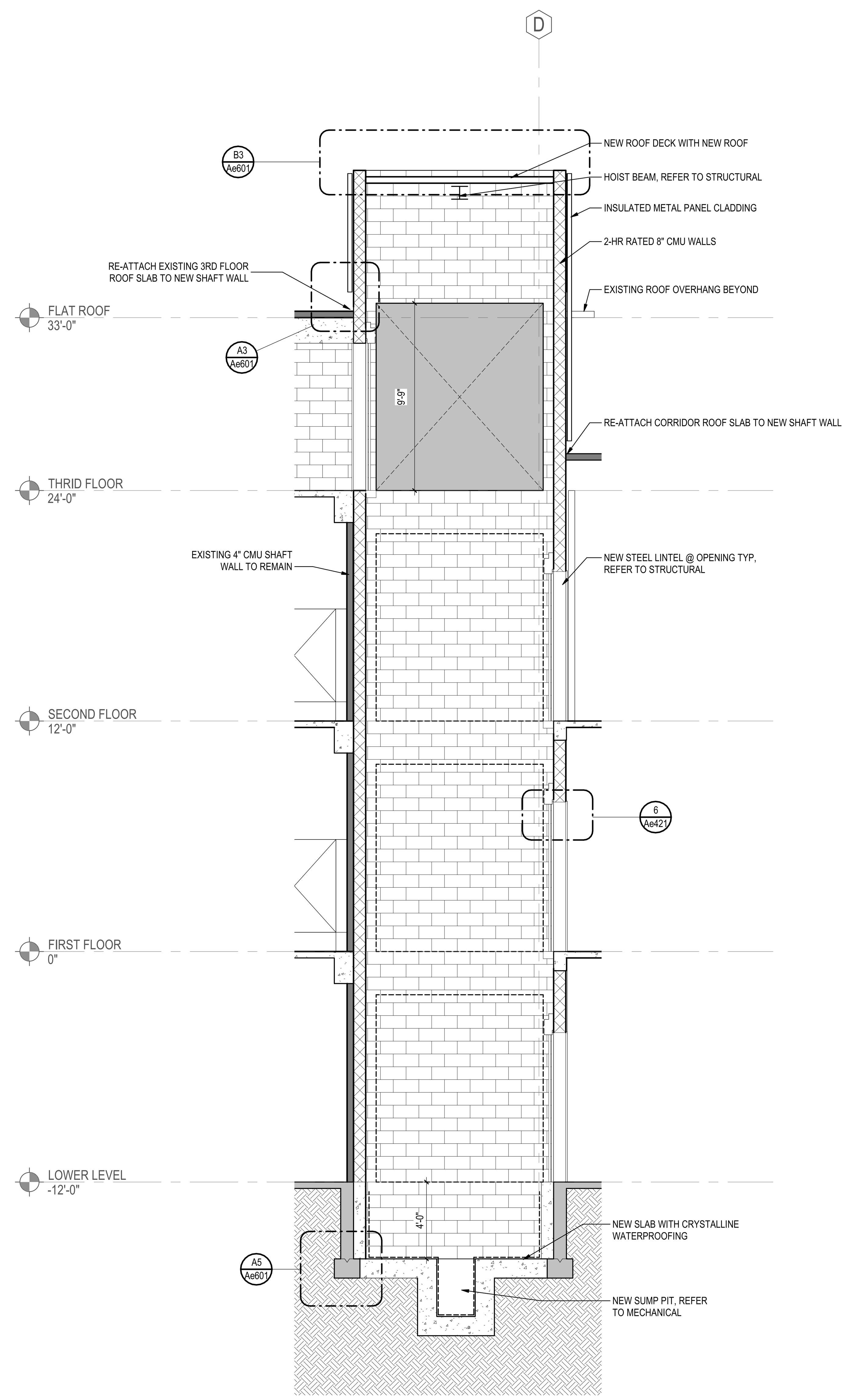
D1 Ae601 **NEW BLOCK WALL PLAN DETAIL**
1 1/2" = 1'-0"



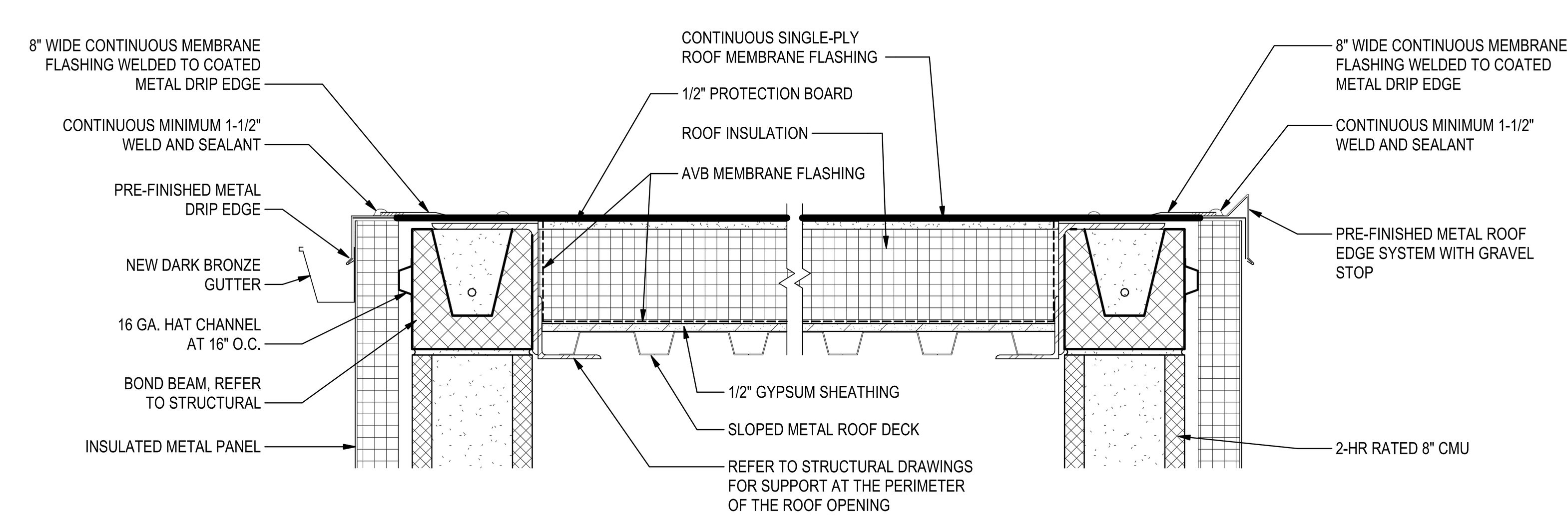
C3 Ae601 **EXTERIOR WALL SECTION**
1 1/2" = 1'-0"



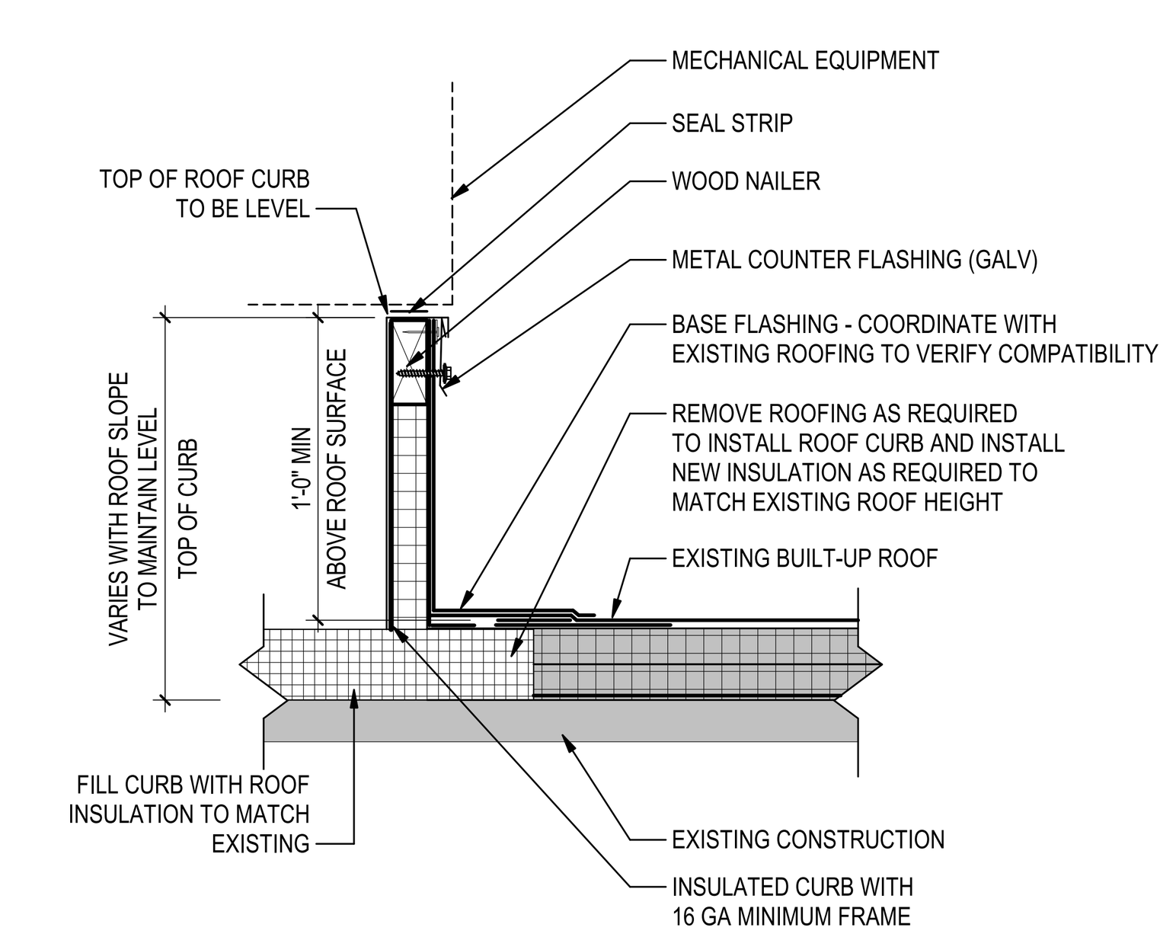
C5 Ae601 **ELEVATOR PIT LADDER DETAIL**
1 1/2" = 1'-0"



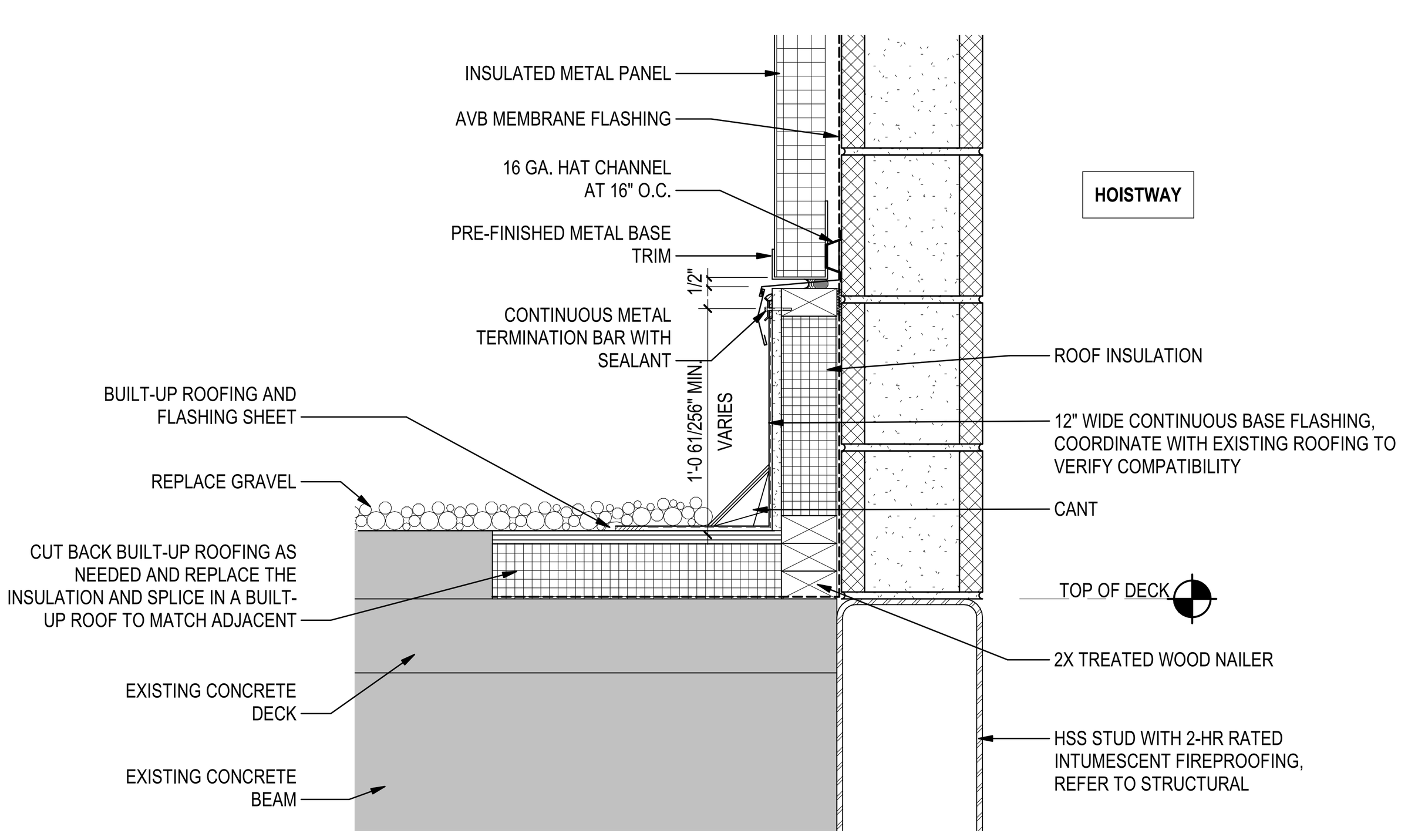
A1 Ae601 **ELEVATOR SHAFT SECTION**
1/4" = 1'-0"



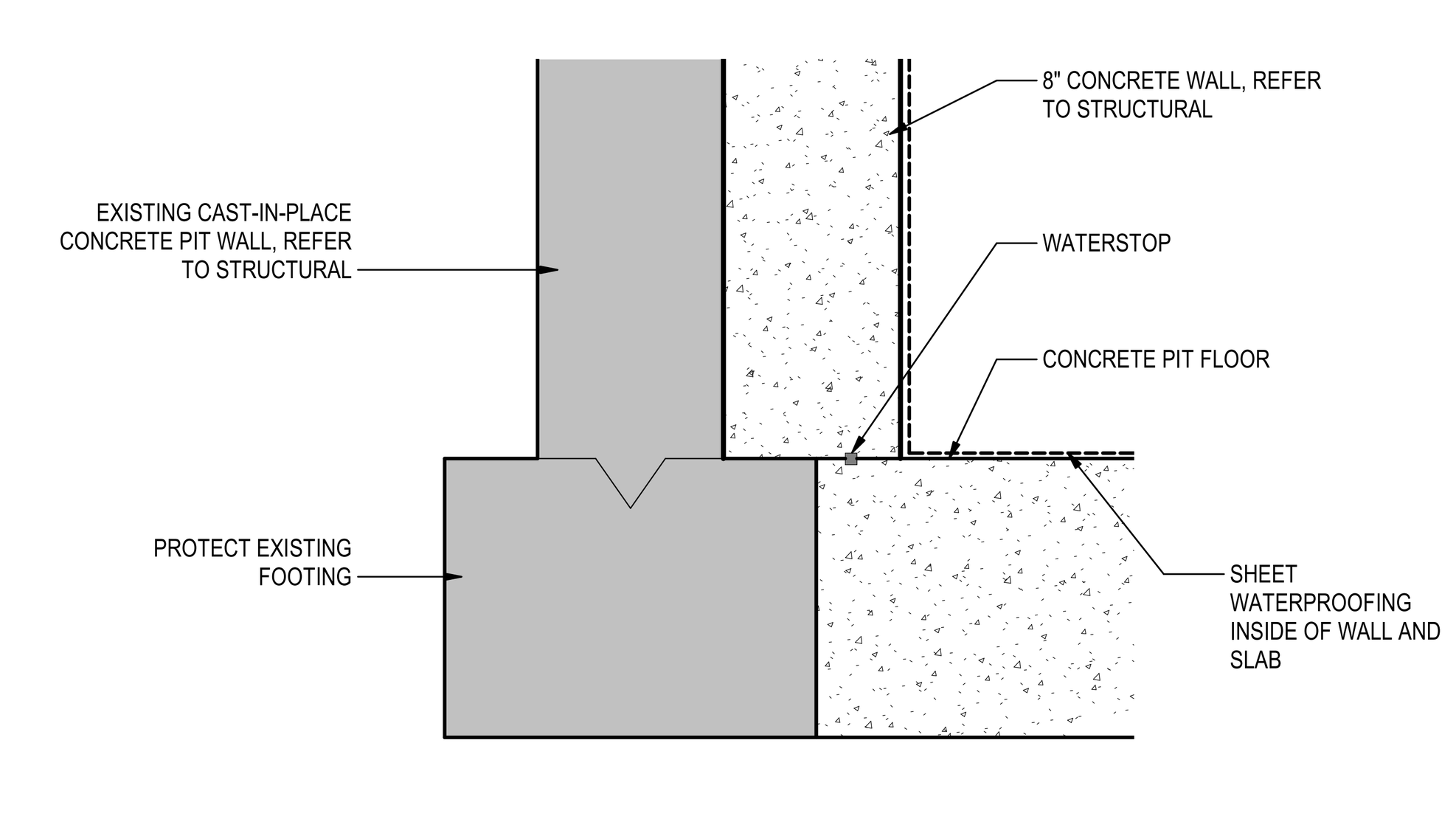
B3 Ae601 **ELEVATOR ROOF EDGE DETAIL**
1 1/2" = 1'-0"



6 Ae601 **ROOF CURB**
1 1/2" = 1'-0"



A3 Ae601 **ELEVATOR WALL TO ROOF DETAIL**
1 1/2" = 1'-0"



A5 Ae601 **ELEVATOR FOUNDATION DETAIL**
1 1/2" = 1'-0"

E D C B A

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Issued | By | Appd. | YYYY.MM.DD

Permit/Seal

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WAYNE STATE UNIVERSITY

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Art Building Elevator Replacement
5400 Gullen Mall
Detroit, MI 48202

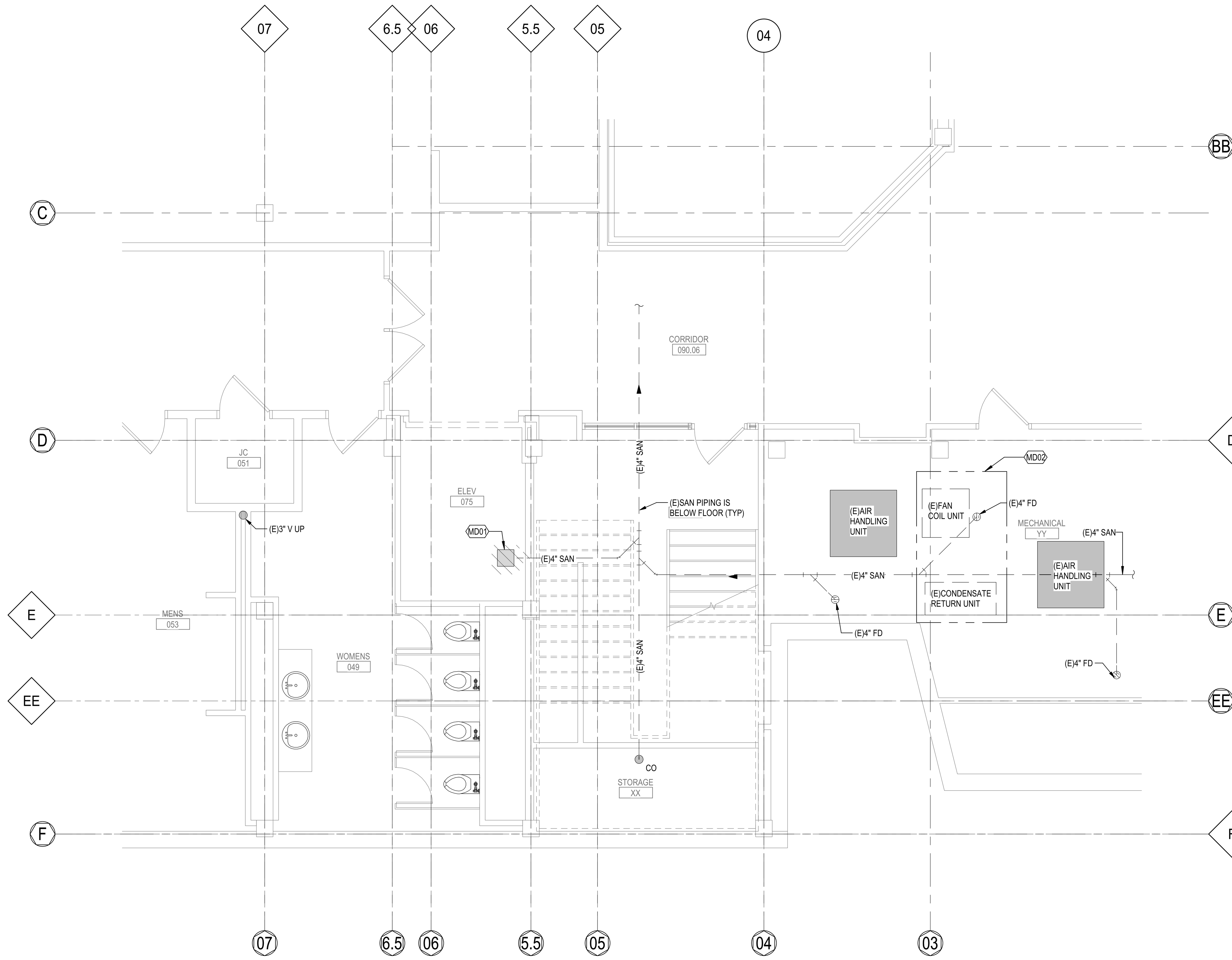
Project No.: 214100597
File Name: N/A

Author	Designer	Checker	08/19/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
SECTION DETAILS

Scale: As indicated
Revision:
Drawing No.
Ae601

ORIGINAL SHEET - ARCH E1



A3
MDe111

PARTIAL LOWER LEVEL MECHANICAL DEMOLITION PLAN

1/4" = 1'-0"

MECH DEMOLITION GENERAL NOTES

1 ANY INTERRUPTIONS OF EXISTING SERVICES OR EQUIPMENT SHALL BE PERFORMED AT A TIME APPROVED IN ADVANCE BY THE OWNER'S REPRESENTATIVE SO AS NOT TO INTERFERE WITH THE BUILDING OPERATION.

2 THESE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK. THE EXTENT OF DEMOLITION SHALL BE AS REQUIRED BY THE NEW WORK AND REMOVAL OF MATERIALS/COMPONENTS NOT REQUIRED FOR THE NEW AND RENOVATED SYSTEMS.

3 ALL MECHANICAL SYSTEMS TO BE REMOVED SHALL BE REMOVED COMPLETE WITH ALL RELATED ITEMS INCLUDING HANGERS, SUPPORTS, CONTROLS, ETC. CAP ALL OPEN PIPES AND DUCTS. PATCH AND SEAL ALL OPENINGS AS A RESULT OF DEMOLITION IN RATED WALLS TO MAINTAIN EXISTING WALL'S FIRE OR SMOKE RATING AND TO MATCH EXISTING ADJACENT SURFACES.

4 ALL ITEMS AND EQUIPMENT REMOVED SHALL REMAIN PROPERTY OF THE OWNER UNLESS POSSESSION RIGHTS ARE WAIVED. CONTRACTOR SHALL MEET WITH OWNER PRIOR TO START OF DEMOLITION TO DETERMINE WHICH ITEMS ARE TO BE SALVAGED. CONTRACTOR SHALL REMOVE REMAINING ITEMS FROM SITE.

5 FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SERVICES AND EQUIPMENT PRIOR TO DEMOLITION. IF FIELD CONDITIONS DO NOT REFLECT WHAT IS SHOWN IN THE THESE DOCUMENTS, CONTACT ARCHITECT/ENGINEER PRIOR TO START OF DEMOLITION.

X MECH DEMOLITION KEYNOTES

MD02 CONDENSATE RECEIVER AND FAN COIL UNIT SHALL BE REMOVED BY A SEPARATE PROJECT.

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WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

Project No.:214100597

File Name: N/A

Author	Designer	Checker	2022.07.31
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title

ENLARGED MECHANICAL DEMOLITION PLANS

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

Revision:

Drawing No. MDe111

PIPING COMPONENTS

SYMBOL

- ISOLATION VALVE (GENERIC)
- GATE VALVE
- GLOBE VALVE
- BUTTERFLY VALVE NPS 6 AND LESS
- BUTTERFLY VALVE NPS 8 AND MORE
- BALL VALVE
- PLUG VALVE
- NEEDLE VALVE
- CHECK VALVE (GENERIC)
- BALANCING VALVE
- FLOW LIMITING VALVE
- PRESSURE REDUCING VALVE
- 2-WAY CONTROL VALVE (GENERIC)
- 3-WAY CONTROL VALVE (GENERIC)
- SOLENOID 2-WAY CONTROL VALVE
- SOLENOID 3-WAY CONTROL VALVE
- FLOAT OPERATED VALVE ACTUATOR
- SAFETY OR RELIEF VALVE
- ANGLE VALVE
- BOILER STOP AND CHECK VALVE
- BFP — BACKFLOW PREVENTER (GENERIC)
- MULTI-PURPOSE VALVE (SHUTOFF, BALANCING AND CHECK)
- PUMP (GENERIC)
- Y STRAINER (GENERIC)
- STEAM TRAP (GENERIC)
- AUTOMATIC AIR VENT
- MANUAL AIR VENT
- VACUUM BREAKER
- SHOCK ABSORBER
- TEMPERATURE GAUGE
- PRESSURE GAUGE
- TEMPERATURE AND PRESSURE TAP
- SIGHT FLOW GLASS
- FLEXIBLE CONNECTOR
- EXPANSION JOINT
- GUIDE
- ANCHOR
- FLOW ARROW
- 1% — PIPING SLOPE
- PIPE CAP
- PIPE BREAK
- PIPE CROSS
- PIPING ELBOW UP
- PIPING ELBOW DOWN
- PIPING TEE UP
- PIPING TEE DOWN
- UNION CONNECTION
- FLANGED CONNECTION
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- CO — STANDARD CLEAN-OUT IN LINE END OF RUN
- CO — STANDARD CLEAN-OUT THROUGH FLOOR END OF RUN
- CO — STANDARD CLEAN-OUT THROUGH FLOOR IN LINE

PIPING SYSTEMS (HVAC)

2 1/2"	PIPE SIZE
BBD	BOILER BLOWDOWN
BFW	BOILER FEED WATER
BR	BRINE RETURN
BS	BRINE SUPPLY
CHWR	CHILLED WATER RETURN
CHWR(G)	CHILLED WATER RETURN - GLYCOL
CHWR(P)	CHILLED WATER RETURN - PROCESS
CHWS	CHILLED WATER SUPPLY
CHWS(G)	CHILLED WATER SUPPLY - GLYCOL
CHWS(P)	CHILLED WATER SUPPLY - PROCESS
CWR	CONDENSER WATER RETURN
CWR(CT)	CONDENSER WATER RETURN (COOLING TOWER)
CWS	CONDENSER WATER SUPPLY
CWS(CT)	CONDENSER WATER SUPPLY (COOLING TOWER)
DTR	DUAL TEMPERATURE RETURN (HOT OR CHILLED)
DTS	DUAL TEMPERATURE SUPPLY (HOT OR CHILLED)
FOF	FUEL OIL FILL
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
HPWR	HEAT PUMP WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HRR	HEAT RECOVERY LOOP RETURN
HRS	HEAT RECOVERY LOOP SUPPLY
HWR	HEATING WATER RETURN
HWR(G)	HEATING WATER RETURN - GLYCOL
HWS	HEATING WATER SUPPLY
HWS(G)	HEATING WATER SUPPLY - GLYCOL
G	NATURAL GAS
GV	NATURAL GAS VENT
PG	PROPANE GAS
REF(HG)	REFRIGERANT HOT GAS
REF(L)	REFRIGERANT LIQUID
REF(S)	REFRIGERANT SUCTION
REF(V)	REFRIGERANT VENT
RV	RELIEF VENT
S(##)	STEAM (NOMINAL PRESSURE)
CS(##)	STEAM - CLEAN (NOMINAL PRESSURE)
C(##)	STEAM CONDENSATE (NOMINAL PRESSURE)
PC(##)	STEAM PUMPED CONDENSATE (NOMINAL PRESSURE)
SV	STEAM VENT
	PIPE INSULATION

VENTILATION (HVAC)

- AIR FLOW ARROW
- 18"x12" — RECTANGULAR DUCT AND SIZE*
- 18"ø — ROUND DUCT AND SIZE*
- 18"x12"ø — FLAT OVAL DUCT AND SIZE*
- 18"x12" — EXTERIOR DUCT TREATMENT*
- 18"x12" — RECTANGULAR DUCT WITH ACOUSTIC LINING*
- 30"x12" — DUCT SECTION, SUPPLY AIR. SIZE* IS HORIZONTAL DIM. x VERTICAL DIM. APPLIES TO RECT., ROUND AND OVAL
- DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL
- DUCT SECTION, RETURN AIR. APPLIES TO RECT., ROUND AND OVAL
- DUCT SECTION, EXHAUST AIR. APPLIES TO RECT., ROUND AND OVAL
- FLEXIBLE DUCT
- ELBOW TURN, SUPPLY DOWN. APPLIES TO RECT., ROUND AND OVAL
- ELBOW TURN, OUTSIDE AIR DOWN. APPLIES TO RECT., ROUND AND OVAL
- ELBOW TURN, RETURN DOWN. APPLIES TO RECT., ROUND AND OVAL
- ELBOW TURN, EXHAUST DOWN. APPLIES TO RECT., ROUND AND OVAL
- UP — CHANGE IN DUCT ELEVATION RISING IN DIRECTION INDICATED
- DN — CHANGE IN DUCT ELEVATION DROPPING IN DIRECTION INDICATED
- END CAP
- ELBOW, RECTANGULAR, SMOOTH RADIUS WITH SPLITTER VANES (0.25 R/W DEFAULT)
- ELBOW, RECTANGULAR, SMOOTH RADIUS WITHOUT VANES (1.5 R/W DEFAULT)
- ELBOW, ROUND, SMOOTH RADIUS (1.5 R/W DEFAULT)
- MITERED ELBOW, RECTANGULAR, WITH TURNING VANES
- RECTANGULAR TO ROUND TRANSITION
- AD — DUCT ACCESS DOOR (TOP, SIDE, BOTTOM)
- FC — FLEXIBLE CONNECTION

* NOTE: ALL DUCT SIZES ARE INTERIOR, FREE DIMENSIONS (ALWAYS WIDTH X HEIGHT IN FLOOR PLAN AND SECTION)

VENTILATION (HVAC)

- B — BACKDRAFT DAMPER
- BDD — MANUAL DAMPER
- M — MOTORIZED DAMPER
- F — FIRE DAMPER
- S — SMOKE DAMPER
- SF — SMOKE AND FIRE DAMPER
- DUCT SILENCER
- X — CONTROL DEVICE (REFER TO CONTROLS LEGEND)
- AIR FLOW MEASURING STATION (REFER TO CONTROLS LEGEND)
- QUANTITY / TYPE / SIZE (IN.) / VOLUME (CFM) — AIR OUTLET OR INLET TAG (REFER TO SCHEDULE)
- RECTANGULAR DIFFUSER, SUPPLY. OPTIONAL ARROWS SHOW THE FLOW DIRECTION.
- RECTANGULAR REGISTER OR GRILLE, RETURN
- RECTANGULAR REGISTER OR GRILLE, EXHAUST
- ROUND DIFFUSER, SUPPLY
- LINEAR DIFFUSER
- SIDEWALL REGISTER OR GRILLE, SUPPLY
- SIDEWALL GRILLE, RETURN OR EXHAUST
- UC — UNDERCUT DOOR
- DOOR GRILLE OR LOUVER
- TRANSFER GRILLE OR LOUVER
- COIL (REFER TO CONTROLS LEGEND)
- ID-# — EQUIPMENT TAG
- QUANTITY / TYPE / LENGTH (FT) / CAPACITY (MBH) — RADIATION HEATING TAG (REFER TO SCHEDULE)

GENERAL SYMBOLS

- DEMOLITION
- EXISTING
- NEW WORK
- POINT OF CONNECTION OF NEW TO EXISTING SYSTEM
- POINT OF DISCONNECTION OF DEMOLITION FROM EXISTING
- CAP OFF EXISTING
- DETAIL CALLOUTS — DETAIL NUMBER; SHEET ON WHICH DETAIL IS SHOWN
- WALL SECTIONS — SECTION NUMBER; SHEET ON WHICH SECTION IS SHOWN
- FLOOR 0'-0" — FLOOR OR ROOF LEVEL NAME; VERTICAL ELEVATION
- N — NORTH ARROW
- DRAWING REVISION
- MATCH LINE
- GRAPHIC SCALES - ENGINEERING
- 0000 — ROOM TAG
- M01 — KEY NOTE TAG
- SLOPE — SLOPE ARROW
- CIRCULAR BREAK SYMBOL
- CIRCLE BREAK SYMBOL
- CENTER LINE
- GRID BUBBLE AND LINE

EQUIPMENT IDENTIFICATION

AB-#	AIR BLENDER
AC-#	AIR COMPRESSOR
ACU-#	AIR CONDITIONING UNIT
ADS-#	AIR AND DIRT SEPARATOR
AF-#	AIR FILTER
AHU-#	AIR HANDLING UNIT
AS-#	AIR SEPARATOR
ATU-#	AIR TERMINAL UNIT
B-#	BOILER
BCU-#	BLOWER COIL UNIT
CB-#	CHILLED BEAM
CC-#	COOLING COIL
CH-#	CHILLER
CONV-#	CONVECTOR
CRU-#	CONDENSATE RETURN UNIT
CT-#	COOLING TOWER
CUH-#	CABINET UNIT HEATER
CU-#	CONDENSING UNIT
DAC-#	DOOR AIR CURTAIN
DC-#	DUST COLLECTOR
DCT-#	DECONTAMINATION TANK
DF-#	DRINKING FOUNTAIN
DS-#	DUCT SILENCER
DU-#	DEHUMIDIFICATION UNIT
DWH-#	DOMESTIC WATER HEATER
E-#	EXHAUST GRILLE / REGISTER / DIFFUSER
EL-#	EXPANSION LOOP
ERC-#	ENERGY RECOVERY COIL
ERU-#	ENERGY RECOVERY UNIT
EWC-#	ELECTRIC WATER COOLER
F-#	FAN
F(C)-#	FAN (CEILING)
F(E)-#	FAN (EXHAUST)
F(LE)-#	FAN (LABORATORY EXHAUST)
F(R)-#	FAN (RETURN)
F(S)-#	FAN (SUPPLY)
F(T)-#	FAN (TRANSFER)
FCU-#	FAN COIL UNIT
FD-#	FLOOR DRAIN
FFU-#	FAN FILTER UNIT
FP-#	FIRE PROTECTION PUMP
FPP-#	FIRE PROTECTION JOCKEY PUMP
FPTU-#	FAN POWERED TERMINAL UNIT
FTR-#	FINNED TUBE RADIATOR
FUR-#	FURNACE

EQUIPMENT IDENTIFICATION

GFS-#	GLYCOL FEED SYSTEM
GSG-#	GAS-FIRED STEAM GENERATOR
H-#	HUMIDIFIER
HC-#	HEATING COIL
HP-#	HEAT PUMP
HRU-#	HEAT RECOVERY UNIT
H(C)-#	HOOD (CANOPY)
H(HC)-#	HOOD (HEAT AND CONDENSATE)
H(I)-#	HOOD (INTAKE)
H(K)-#	HOOD (KITCHEN)
H(RH)-#	HOOD (RANGE)
H(R)-#	HOOD (RELIEF)
HX-#	HEAT ELAB AIR TERMINAL UNITXCHANGER
LATU-#	LAB AIR TERMINAL UNIT
LAV-#	LAVATORY
MAC-#	MEDICAL AIR COMPRESSOR
MAU-#	MAKEUP AIR UNIT
MV-#	MIXING VALVE
MVP-#	MEDICAL VACUUM PUMP
P-#	PUMP
PDU-#	POOL DEHUMIDIFICATION UNIT
PRV-#	PRESSURE REDUCING VALVE
PTAC-#	PACKAGED TERMIANL AIR CONDITIONER
RD-#	ROOF DRAIN
R-#	RETURN AIR GRILLE/ REGISTER / DIFFUSER
RP-#	RADIANT PANEL
RTU-#	ROOFTOP UNIT
S-#	SUPPLY GRILLE / REGISTER / DIFFUSER
SH-#	SHOWER
SK-#	SINK
SPC-#	SOLAR PANEL COLLECTOR
SSF-#	SIDE STEAM FILTER
T-#	TRANSFER AIR GRILLE
T(B)-#	TANK (BUFFER TANK)
T(E)-#	TANK (EXPANSION TANK)
T(H)-#	TANK (HYDRO PNEUMATIC TANK)
T(S)-#	TANK (STORAGE TANK)
UH-#	UNIT HEATER
UR-#	URINAL
USG-#	UNFIRED STEAM GENERATOR
UV-#	UNIT VENTILATOR
VA-#	VALVE
WC-#	WATER CLOSET
WS-#	WATER SOFTENER
ZN-#	ZONE

ABBREVIATIONS

AAV	AUTOMATIC AIR VENT
A/C	AIR CONDITIONING
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AP	ACCESS PANEL / DOOR
APD	AIR PRESSURE DROP
AVG	AVERAGE
BAS	BUILDING AUTOMATION SYSTEM
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BT	BATH TUB
BTU	BRITTISH THERMAL UNIT
BTUH	BRITTISH THERMAL UNIT PER HOUR
C	CELCIUS
CAV	CONSTANT AIR VOLUME
CFM	CUBIC FEET PER MINUTE
C/W	COMPLETE WITH
CV	CONTROL VALVE
dB	DECIBEL(S)
DB	DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE
DIA / Ø	DIAMETER
DIFF	DIFFERENTIAL
DIV	DIVISION
DN	DOWN
DWG	DRAWING
EAT	ENTERING AIR TEMPERATURE
EA	EXHAUST AIR
EA (D)	EXHAUST AIR (DISHWASH)
EA (G)	EXHAUST AIR (GENERAL)
EA (K)	EAXHAUST AIR (KITCHEN)
EA (LAB)	EXHAUST AIR (LAB)
EA (LD)	EXHAUST AIR (LAUNDRY/DRYER)
EAV	EXHAUST AIR VALVE
EA (W)	EXHAUST AIR (WASHROOM)
ED	EXISTING TO BE DEMOLOISHED
EER	ENERGY EFFICIENCY RATIO
EG	ETHELYENE GLYCOL
ER	EXISTING RELOCATED (IN NEW CONSTRUCTION)
ERL	EXISTING TO BE RELOCATED (IN DEMOLITION)
ESP	EXTERNAL STATIC PRESSURE
EEW	EYE WASH STATION
EWT	ENTERING WATER TEMPERATURE
EXIST / (E)	EXISTING
F	FAHRENHEIT
FLA	FULL LOAD AMPERAGE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FOOT / FEET
GA	GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HEPA	HIGH EFFICIENCY PARTICULATE AIR (FILTER)
HP	HORSEPOWER
HR	HOUR
HVAC	HEATING / VENTILATION / AIR CONDITIONING

ABBREVIATIONS

HZ	HERTZ
IE	INVERT ELEVATION
IN	INCHES
IN WG	INCHES WATER GAUGE
IPLV	INTEGRATED PART LOAD VALUE
kW	KILOWATT
kWh	KILOWATT HOUR
LAT	LEAVING AIR TEMPEATURE
LBS	POUNDS
LF	LINEAR FEET
LWT	LEAVING WATER TEMPERATURE
M	METER
MAX	MAXIMUM
MBH	THOUSAND OF BTUH
MCA	MAXIMUM CIRCUIT AMPS
MFR	MANUFACTURER
MIN	MINIMUM
MOP	MAXIMUM OVERCURRENT PROTECTION
MSK	MOP SINK
N/A	NOT APPLICABLE
NC	NOISE CRITERIA
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPS	NOMINAL PIPE SIZE
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
OFOI	OWNER FURNISHED / OWNER INSTALLED
PG	PROPYLENE GLYCOL
POE	POINT OF ENTRANCE
POS	POINT OF SERVICE
PPM	PARTS PER MILLION
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH, ABSOLUTE
PSIG	POUNDS PER SQUARE INCH, GAGE
PTS	PNEUMATIC TUBE STATION
PVC	POLYVINYL CHOLORIDE
RA	RETURN AIR
RELA	RELIEF AIR
REQD	REQUIRED
RH	RELATIVE HUMIDITY
RPM	ROTATIONS PER MINUTE
SA	SUPPLY AIR
SP	STATIC PRESSURE
SP	STAIR PRESSURIZATION AIR
SRV	SAFETY RELIEF VALVE
TA	TRANSFER AIR
TEMP	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TYP	TYPICAL
UC	UNDER CUT (DOOR)
UG	UNDERGROUND
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VTR	VENT - THRU ROOF
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WG	WATER GAUGE

MECHANICAL SHEET LIST

NO.	DRAWING NAME	
Me100	MECHANICAL LEGEND, SYMBOLS, AND ABBREVIATIONS	•
MDe111	ENLARGED MECHANICAL DEMOLITION PLANS	•
Me111	ENLARGED MECHANICAL PLANS	•
Me601	MECHANICAL DETAILS & SCHEDULES	•
Me701	TEMPERATURE CONTROLS LEGEND	•

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STATE OF MICHIGAN — CASIMIR JOSEPH — No. 6201053118 — LICENSED PROFESSIONAL ENGINEER

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

Project No.: 214100597

File Name: N/A

Author	Designer	Checker	2022.07.31
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title

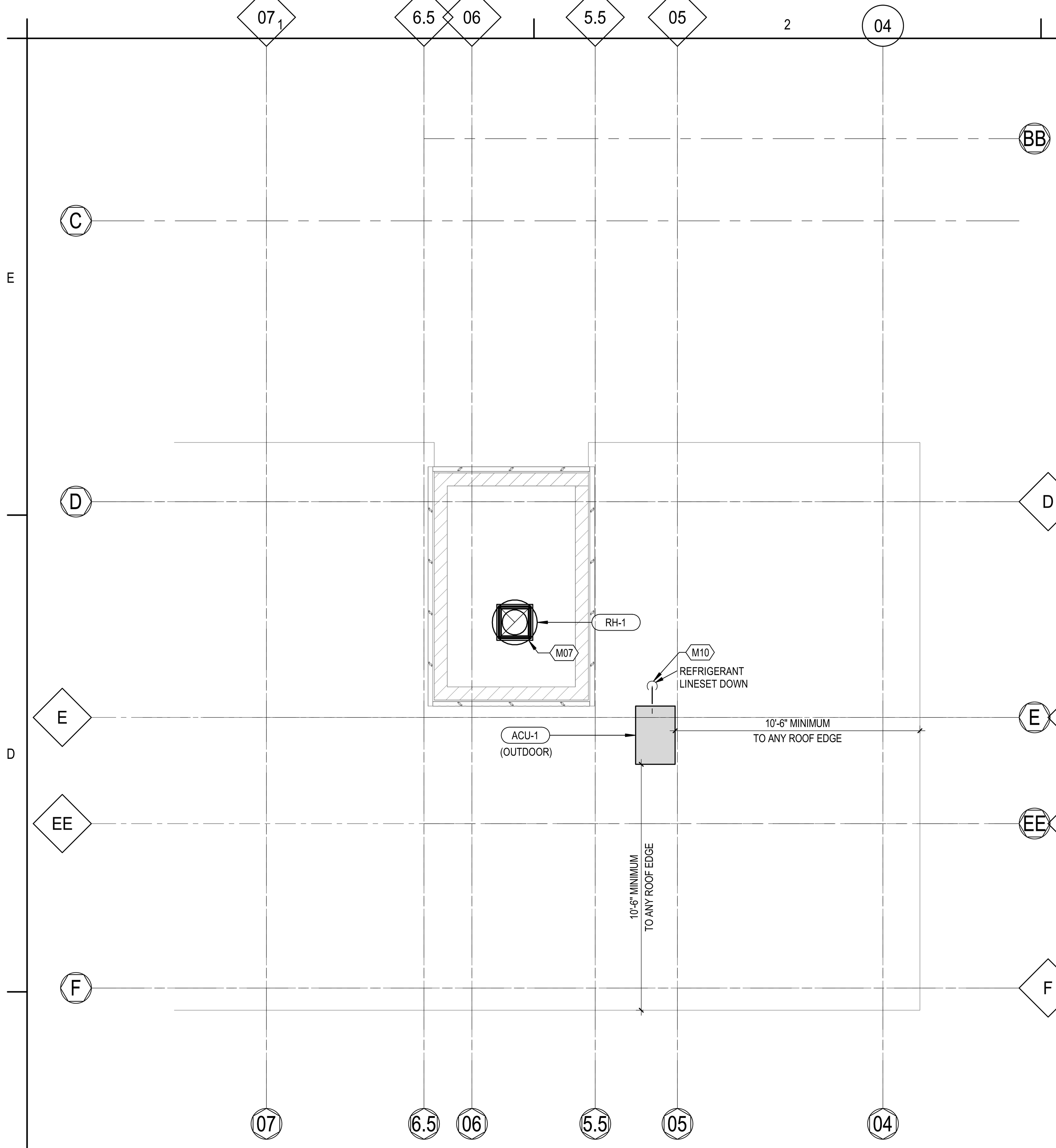
MECHANICAL LEGEND, SYMBOLS, AND ABBREVIATIONS

Scale: As indicated

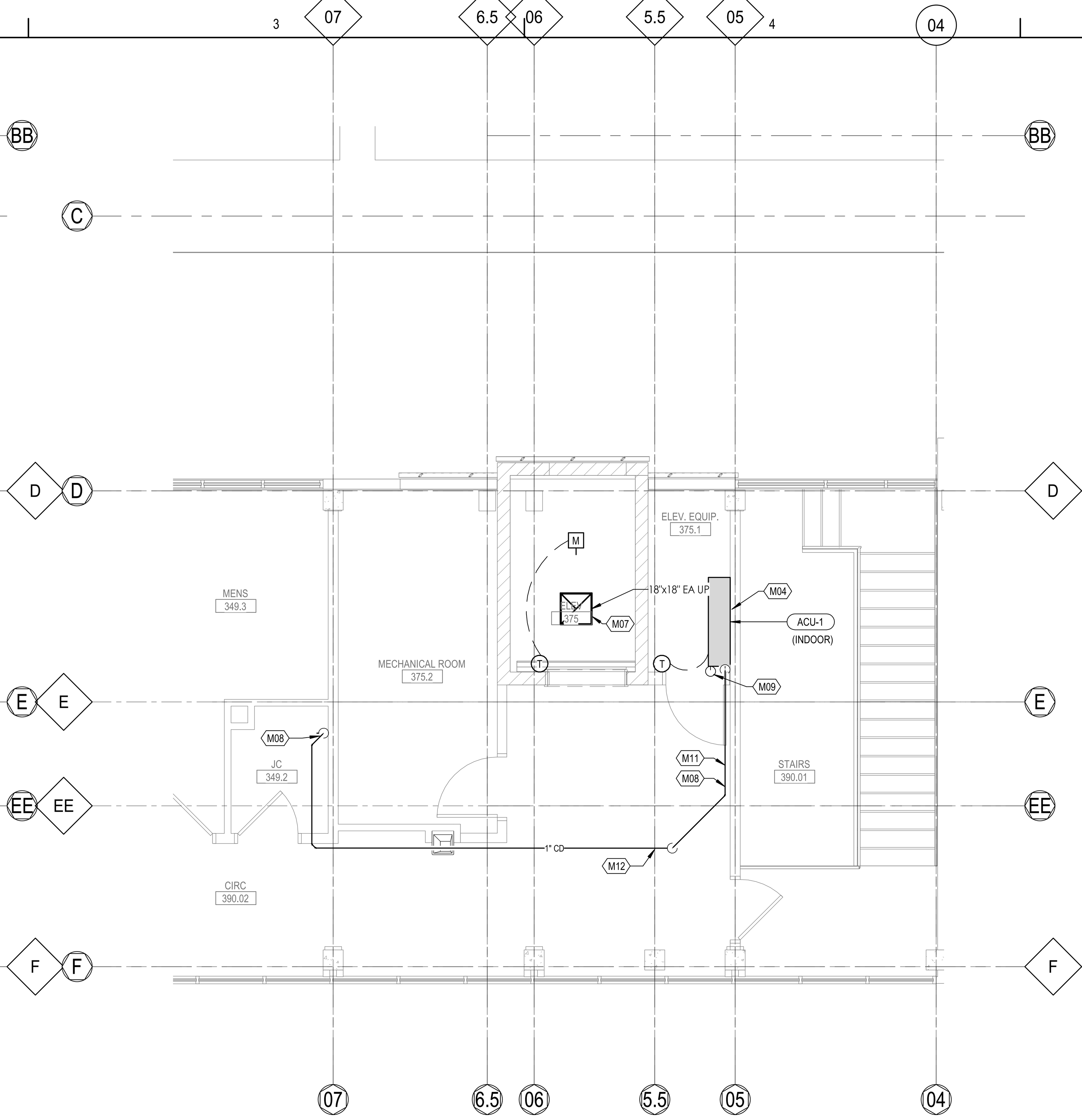
Revision:

Drawing No. **Me100**

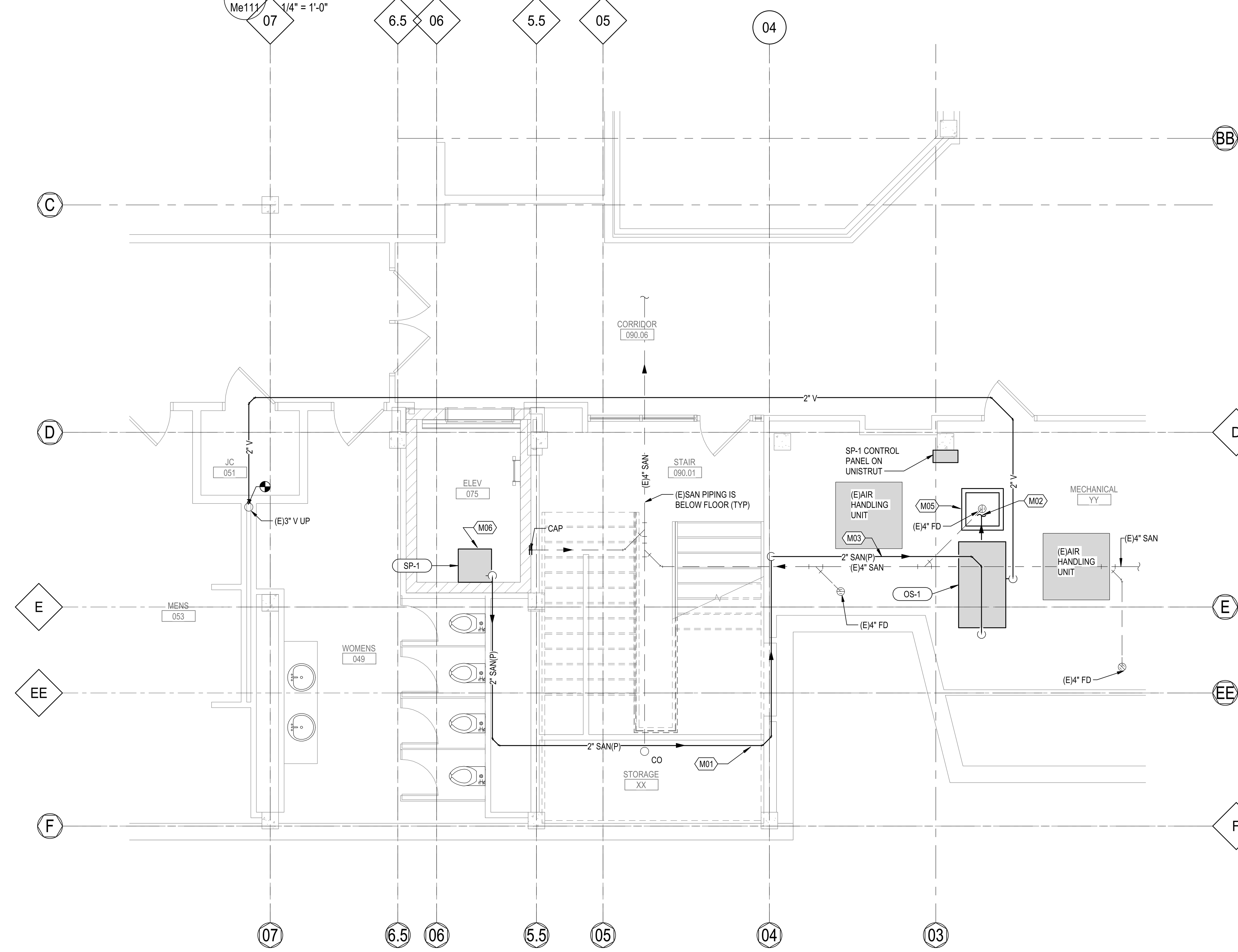
ORIGINAL SHEET - ARCH E1



C1 Me111 PARTIAL ROOF LEVEL MECHANICAL PLAN
1/4" = 1'-0"



C3 Me111 PARTIAL THIRD LEVEL MECHANICAL PLAN
1/4" = 1'-0"



A3 Me111 PARTIAL LOWER LEVEL MECHANICAL PLAN
1/4" = 1'-0"

MECHANICAL GENERAL NOTES

1. THESE DRAWINGS INDICATE THE GENERAL EXTENT OF WORK BUT ARE NOT FABRICATION DRAWINGS. COORDINATE PIPING SYSTEMS WITH WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATION. PROVIDE ALL FITTINGS, OFFSETS, AND TRANSITIONS AS REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
2. PROVIDE ACCESS AROUND ALL NEW EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
3. ALL HVAC PIPING SHALL BE INSULATED AND LABELED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS.
4. ALL CORING THROUGH FLOORS SHALL BE BY THE MECHANICAL CONTRACTOR.
5. COORDINATE ALL THERMOSTAT LOCATIONS WITH FURNITURE AND ARCHITECT. LOCATE AS CLOSE AS POSSIBLE TO DOOR WHERE INDICATED BY DOOR.
6. LOCATE ALL HVAC SHUT-OFF VALVES AND UNITS IN AN ACCESSIBLE LOCATION ABOVE AN ACCESS PANEL AND NO MORE THAN 24" ABOVE THE CEILING.
7. SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS AIR AND WATER TIGHT. REFER TO DETAILS AND SPECIFICATIONS.
8. CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCES (PER THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE) ABOVE AND AROUND ANY NEW ELECTRICAL PANELS, EQUIPMENT, AND TRANSFORMERS WHEN ROUTING OVERHEAD DUCTWORK AND PIPING.
9. COORDINATE ALL PIPE AND DUCT ROUTING WITH SITE CONDITIONS, EQUIPMENT MANUFACTURER'S RECOMMENDATIONS AND ALL OTHER TRADES TO AVOID INTERFERENCES.
10. REFER TO MECHANICAL DIAGRAMS, DETAILS, AND SPECIFICATIONS FOR VALVES, FITTINGS, AND OTHER ACCESSORIES.

(X) MECHANICAL KEYNOTES

- M01 ROUTE 2" PUMPED SAN FROM SUMP PUMP LOCATED IN ELEVATOR PIT WITHIN EXISTING CHASE SPACES BELOW STAIR LANDING TO MECHANICAL ROOM.
- M02 INDIRECT WASTE 4" SAN FROM OIL SEPARATOR TO FLOOR DRAIN.
- M03 ROUTE 2" PUMPED SAN UP OVER OUTSIDE AIR INTAKE DUCTWORK AT AHU AND DROP DOWN AND CONNECT TO OIL SEPARATOR.
- M04 MOUNT WALL HUNG SPLIT SYSTEM AS HIGH AS FEASIBLE BELOW STRUCTURE. COORDINATE WALL MOUNTED SPLIT SYSTEM AND ASSOCIATED REFRIGERANT LINESET AND CONDENSATE PIPING LOCATIONS WITH ELEVATOR EQUIPMENT MANUFACTURER REPRESENTATIVE PRIOR TO INSTALLATION. PROVIDE DRAIN PAN BELOW ANY PIPING LOCATED ABOVE ELECTRICAL EQUIPMENT.
- M05 PROVIDE CONTAINMENT CURB AROUND EXISTING FLOOR DRAIN. CURB TO BE 24"X24"X8"
- M06 COORDINATE SUMP PUMP AND ASSOCIATED SAN PIPING LOCATIONS WITH ELEVATOR EQUIPMENT MANUFACTURER REPRESENTATIVE PRIOR TO INSTALLATION.
- M07 COORDINATE RELIEF HOOD AND ASSOCIATED DUCTWORK LOCATIONS WITH ELEVATOR EQUIPMENT MANUFACTURER REPRESENTATIVE PRIOR TO INSTALLATION.
- M08 INDIRECT WASTE 1" CONDENSATE TO SERVICE SINK. DRAIN PIPING TO BE INSULATED RIGID COPPER PIPING.
- M09 REFRIGERANT PIPING AND COMMUNICATION CONDUIT AND WIRING TO OUTDOOR UNIT.
- M10 ROUTE NEW REFRIGERANT PIPING TO OUTDOOR UNIT THROUGH EXISTING CONCRETE ROOF. PROVIDE PIPE PORTAL AND INDIVIDUAL PORTAL PENETRATIONS FOR PIPE AND CONDUIT.
- M11 ROUTE PIPING AS HIGH AS POSSIBLE BETWEEN STRUCTURE
- M12 ROUTE PIPING TIGHT TO UNDERSIDE OF STRUCTURE WHILE MAINTAINING 1/8" PER FOOT SLOPE.

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Art Building Elevator Replacement

Project No.:214100597

File Name: N/A

Author	Designer	Checker	2022.12.02
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

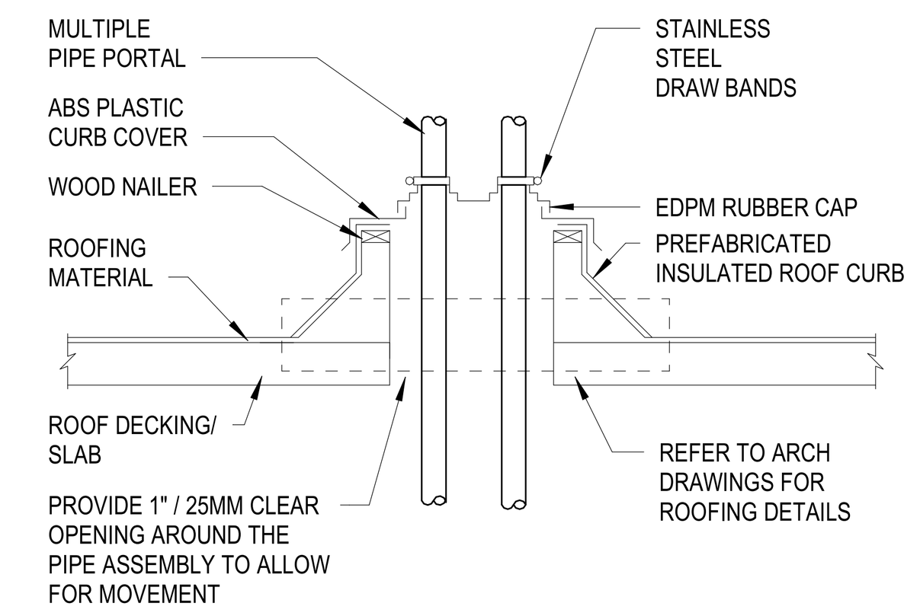
Title

ENLARGED MECHANICAL PLANS

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

Revision:

Drawing No. **Me111**



NOTES:

1. COORDINATE SCOPE OF WORK WITH ROOFING CONTRACTOR / OWNER TO NOT VOID ANY WARRANTEES
2. THE CURB INSULATION SHALL BE EQUAL TO THE ROOF INSULATION RATING
3. FOR INSULATED PIPING, EXTEND THE EXTERIOR INSULATION THROUGH THE CURB AND TRANSITION TO THE INTERIOR INSULATION 6" / 150 MM BELOW THE ROOF DECK / SLAB.
4. REFER TO THE CONTRACT DOCUMENTS FOR PIPING MATERIAL AND INSULATION REQUIREMENTS.

D1 Me601 MULTIPLE PIPE ROOF CURB ASSEMBLY DETAIL
NO SCALE

PLUMBING PIPING SYSTEM APPLICATION SCHEDULE

SYSTEM	ABBREVIATION	AREA OR SYSTEM SERVED	PIPE LOCATION	PIPE SIZE (DN)	PIPING MATERIAL										JOINING METHOD						CONSTRUCTION					INSULATION				FACTORY JACKET			FIELD JACKET				
					COPPER DWV TUBE	COPPER TYPE K	COPPER TYPE L - ASTM B 88	SCH 40 STEEL	SCH 80 PVC	STAINLESS STEEL	CAST IRON, HUBLESS	DUCTILE IRON	PVC, SOLID WALL	POLYPROPYLENE	MECHANICAL	SOLDERED	GROOVED	FUSION	PRESSURE FITTINGS	SOLVENT CEMENT	OPERATING TEMPERATURE (°F)	MINIMUM WORKING PRESSURE...	TEST PRESSURE (kPa)	TEST DURATION (HRS)	ACCEPTANCE LEVEL	MINERAL FIBER PREFORMED	FLEXIBLE ELASTOMERIC	THICKNESS (IN)	DENSITY (PCF)	ASJ	ASJ-SS	FSK	PVC ALL	PVC FITTINGS	PVC TO 10 FEET	ALUMINUM	STAINLESS STEEL
INDIRECT WASTE	IW	EQUIPMENT WASTE	ABOVEGROUND	ALL SIZES	X											X					40 - 140	100	150	12	ZERO LOSS/LEAKS												
SANITARY & VENT	SAN / V	OIL SEPARATOR	ABOVEGROUND	ALL SIZES							X				X						30 - 140	0.5	NOTE 1	12	ZERO LOSS/LEAKS												
SANITARY & VENT	SAN / V	OIL SEPARATOR	UNDERGROUND	ALL SIZES							X				X						30 - 140	0.5	NOTE 1	12	ZERO LOSS/LEAKS												
SANITARY FORCE MAIN	PUMPED SAN	ELEVATOR PIT	ABOVEGROUND	ALL SIZES			X									X					40 - 100	50	150	12	ZERO LOSS/LEAKS												

NOTES:
1. CLOSE OPENING IN PIPING SYSTEM AND FILL TO POINT OF OVERFLOW BUT NOT LESS THAN 10 FOOT HEAD OF WATER.

DUCT SYSTEM APPLICATION SCHEDULE

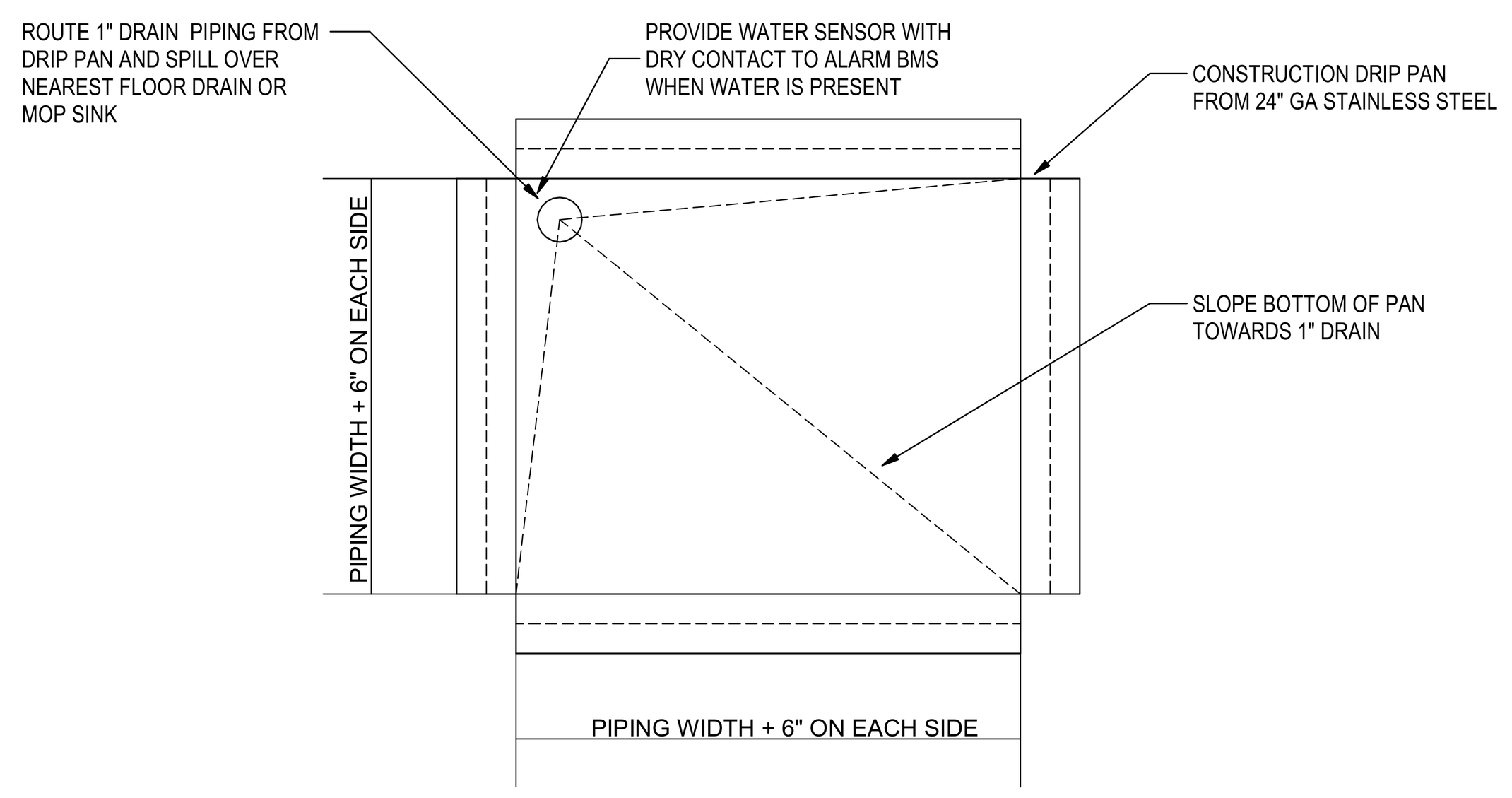
SYSTEM	APPLICATION	LOCATION	DESIGN CRITERIA		CONSTRUCTION			PRODUCT			MATERIAL							LINER					INSULATION							FACTORY JACKET				FIELD JACKET					NOTES
			MAX VELOCITY (FPM)	MAX FRICTION (IN-WG/100')	DESIGN SYSTEM PRESSURE (IN-WG)	SEAL CLASS	MAX LEAKAGE RATE	SINGLE WALL	DOUBLE WALL SOLID LINER	DOUBLE WALL PERF LINER	G90 GALV SHEET STEEL	G90 PVC COATED GALV SHEET STEEL	16 GA CARBON STEEL	ALUMINUM	304 STAINLESS STEEL	316 STAINLESS STEEL	FABRIC	FIBERGLASS	FLEXIBLE ELASTOMERIC	NATURAL FIBER	THICKNESS (IN)	DENSITY (LB/FT³)	FIBERGLASS BLANKET	FIBERGLASS BOARD	FLEXIBLE ELASTOMERIC	FIRE RATED WRAP	FIRE RATED BOARD	THICKNESS (IN)	DENSITY (LB/FT³)	ASJ	ASJ-SS	FSK	VINYL	FABRIC	PVC	ALUMINUM	STAINLESS STEEL	SELF ADHESIVE	
GENERAL EXHAUST	ALL	SHAFTS	1,200	0.10	6	A	6	X			X												X					1.5	1.5			X							
		MECHANICAL ROOM	1,200	0.10	6	A	6	X			X													X				1	2.25			X							

NOTES:

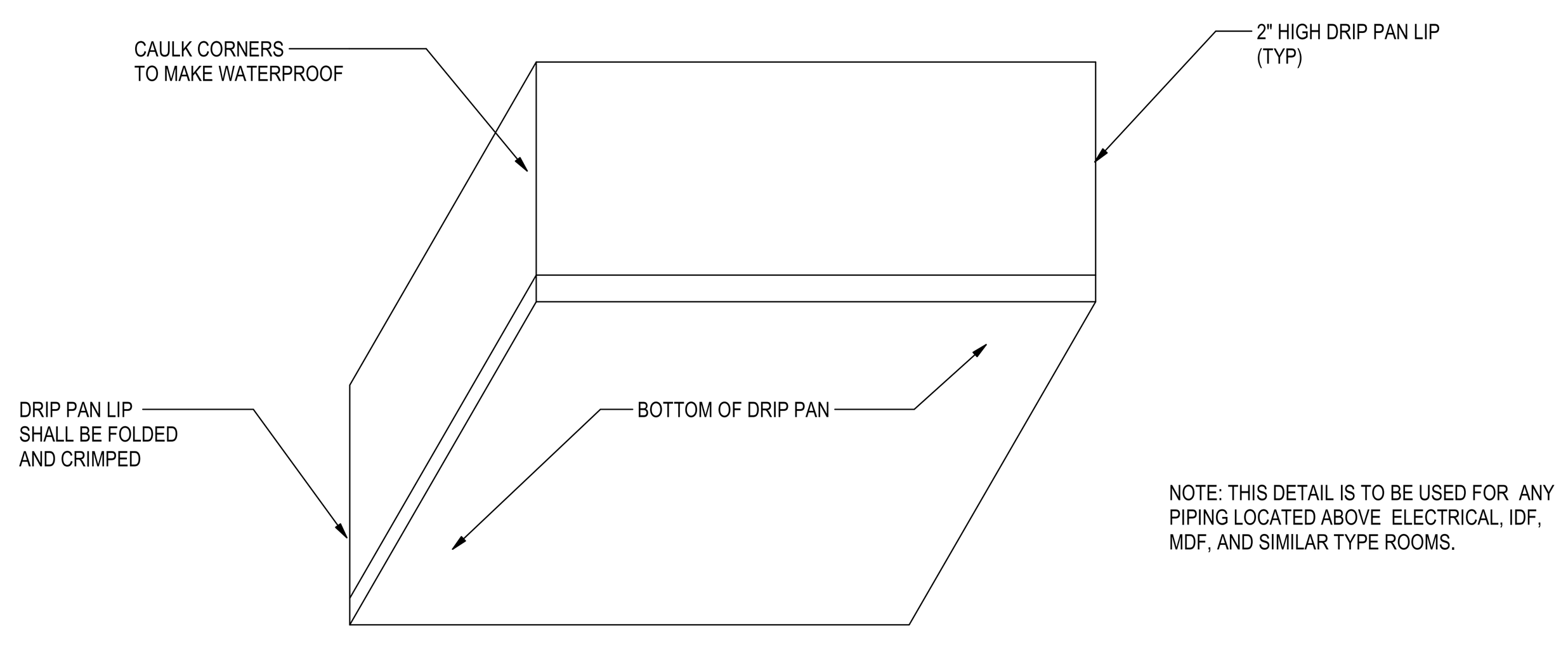
SUMP PUMP SCHEDULE

UNIT IDENTIFICATION				PUMP					BASIN					CONTROL				ELECTRICAL		MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	LOCATION	SYSTEM SERVED	TYPE	FLOW (GPM)	HEAD (FT)	HP	SPEED (RPM)	CONSTRUCTION	LENGTH (IN)	WIDTH (IN)	DEPTH (IN)	COVER	PUMP OFF FLOAT ELEV (FT)	PUMP ON FLOAT ELEV (FT)	HIGH WATER FLOAT ELEV (FT)	CONTROL	VOLTS	PHASE			
SP	1	ELEV PIT	SANITARY	SIMPLEX	50	32	3/4	3500	POURED CONCRETE	24	24	36	OPEN GRATE	6	28	34	AUTO	208	3	BELL & GOSSETT	2EC0738	1

NOTES:
1. PROVIDE WITH OIL SENSOR AND REMOTE MOUNTED SUMP PUMP CONTROL PANEL. PROVIDE ALL INTERCONNECTING POWER, CONTROL, AND COMMUNICATION WIRING FOR A COMPLETE AND OPERATIONAL SYSTEM.



PLAN



NOTE: THIS DETAIL IS TO BE USED FOR ANY PIPING LOCATED ABOVE ELECTRICAL, IDF, MDF, AND SIMILAR TYPE ROOMS.

SECTION

C1 Me601 ELECTRICAL EQUIPMENT OVER HEAD DRIP PAN DETAIL
NO SCALE

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

UNIT IDENTIFICATION			PERFORMANCE			INDOOR UNIT									OUTDOOR UNIT					SYSTEM ELECTRICAL				MANUFACTURER	NOTES
MARK	NUMBER	ROOM(S) SERVED	EER	REFRIG TYPE	REFRIG CHARGE (LBS)	TOTAL CAPACITY (BTU/H)	AIRFLOW (CFM)	EDB (F)	EWB (F)	FILTER RATING (MERV)	MOUNTING	CONDENSATE PUMP REQUIRED	OPERATING WEIGHT (LBS.)	MODEL NUMBER	NO. OF COMP	AMBIENT DESIGN TEMP (F)	MINIMUM AMBIENT TEMP (F)	OPERATING WEIGHT (LBS.)	MODEL NUMBER	VOLTS	PHASE	MCA	MOP		
ACU	1	ELEV. EQUIP 375.1	10.3	R-410A	8	28,000	705	80.0	67.0	4	WALL	YES	52	DCP30NWB21S	1	95.0	-10.0	165	DCP30CSB21S	208	1	20.0	30	YORK	1,2,3,4,5

NOTES:
1. PROVIDE ALL INTERCONNECTING WIRING BETWEEN THE INDOOR AND OUTDOOR UNITS.
2. PROVIDE PIPE PORTAL AT ALL ROOF PENETRATIONS. PROVIDE WITH LOW AMBIENT KIT.
3. OUTDOOR UNIT TO BE MOUNTED ON 2' HIGH MINIMUM ROOF CURB RAILS.
4. SPEED BASED ON HIGH SPEED.
5. PROVIDE WITH INTEGRAL HIGH WATER CUT OFF.

RELIEF HOOD SCHEDULE

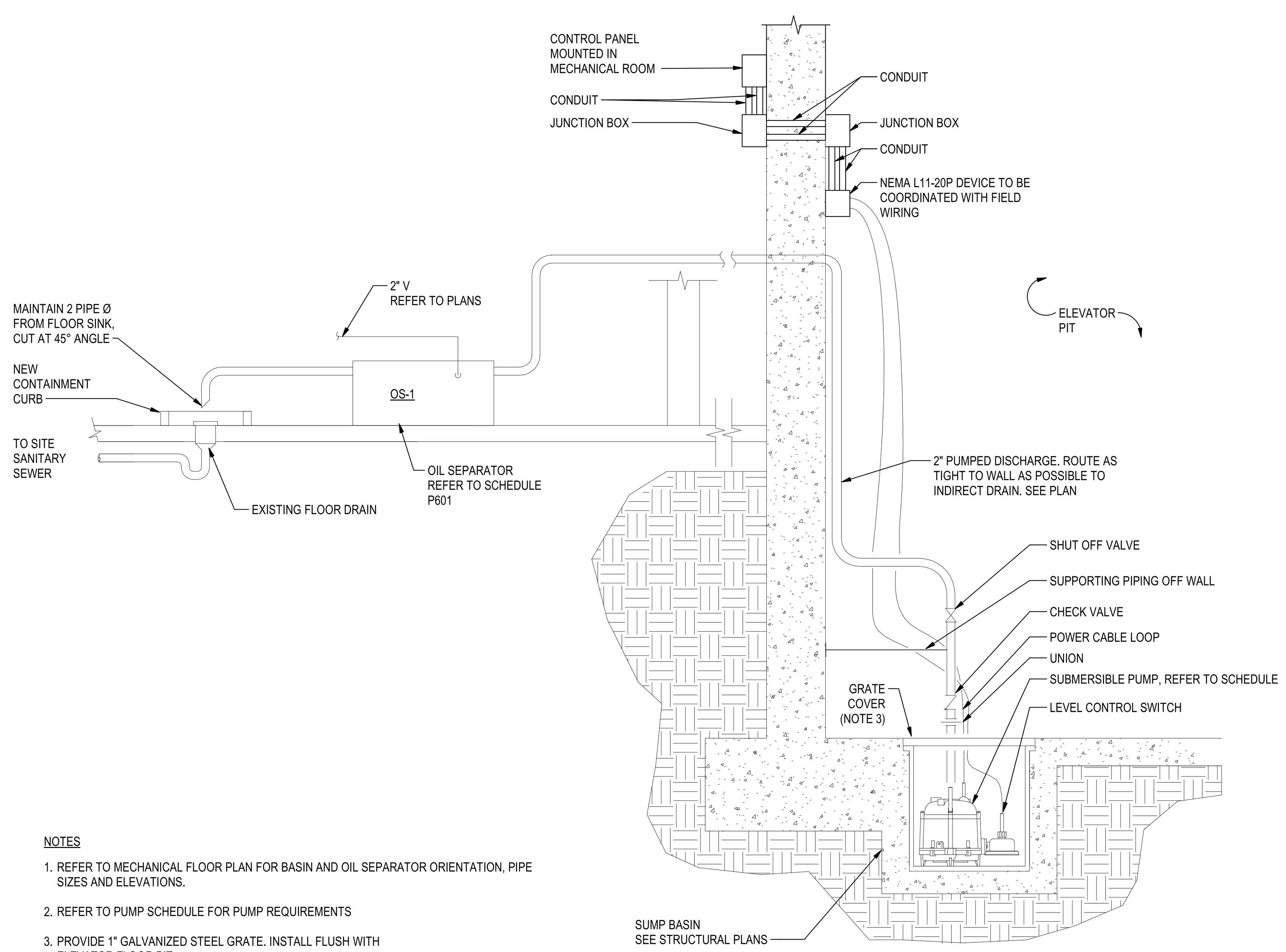
UNIT IDENTIFICATION			AIRFLOW (CFM)	STATIC PRESSURE (IN-WG)	ROOF CURB HEIGHT (IN)	THROAT			HOOD					MANUFACTURER	MODEL NUMBER	NOTES
MARK	NUMBER	UNIT/ AREA SERVED				WIDTH (IN)	LENGTH (IN)	THROAT VELOCITY (FPM)	MATERIAL	WIDTH (IN)	LENGTH (IN)	HEIGHT (IN)	OPERATING WEIGHT (LBS.)			
RH	1	ELEVATOR HOISTWAY	600	0.015	24	18	18	300	GALVANIZED	32	39	28	60	GREENHECK	FGR-18X18	

NOTES:

OIL SEPARATOR SCHEDULE

MARK	NUMBER	SYSTEM SERVED	VOLUME (GAL)	FLOW RATE (GPM)	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	MANUFACTURER	MODEL NUMBER	NOTES
OS	1	ELEVATOR	30	50	62	34	48	HIGHLAND TANK	HT-ESP-INT-50	1

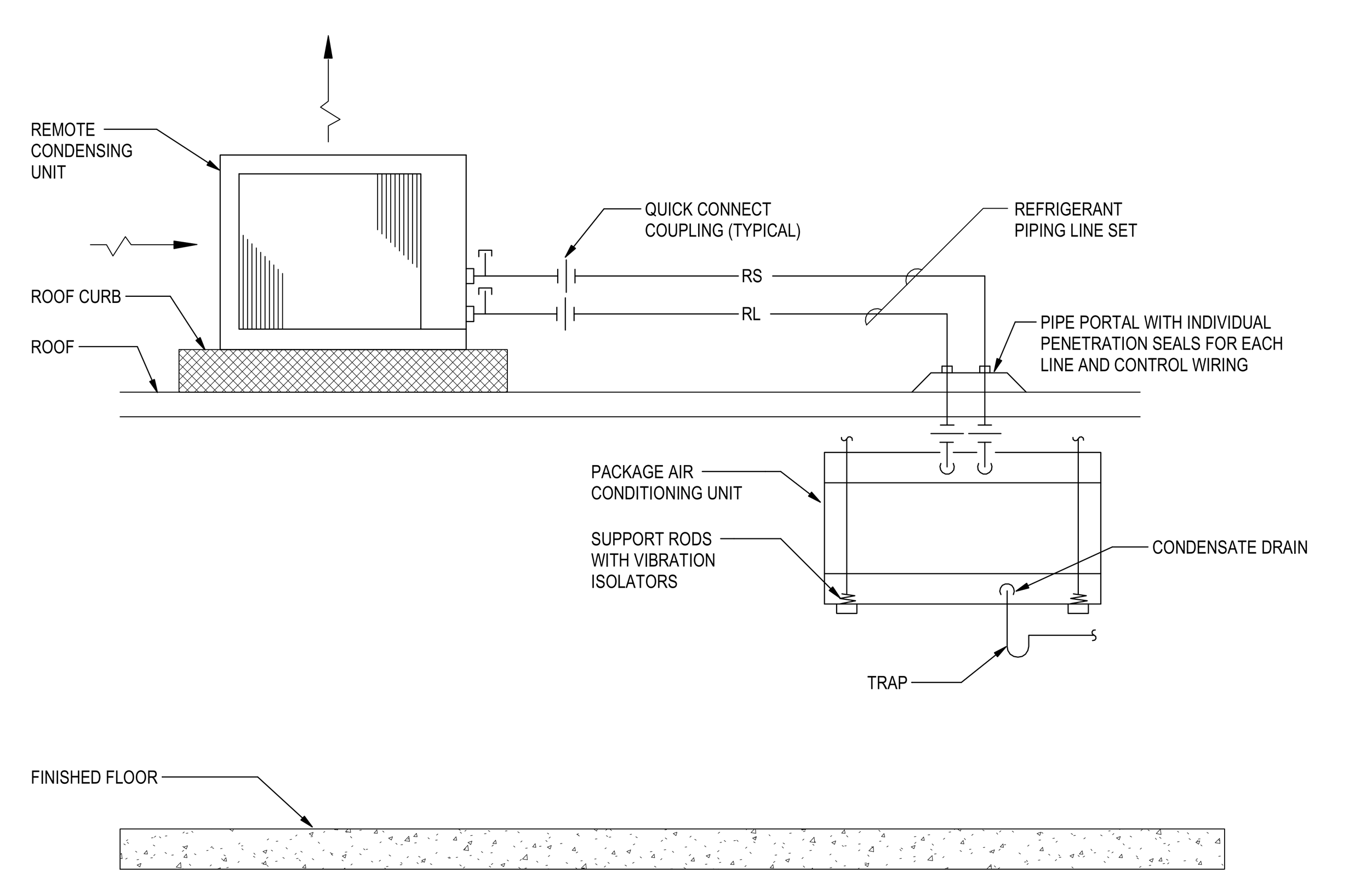
NOTES:
1. PROVIDE WITH CONTROL PANEL AND 2 FLOAT LEVEL SENSOR AND INTEGRAL FILTER MEDIA.



NOTES

1. REFER TO MECHANICAL FLOOR PLAN FOR BASIN AND OIL SEPARATOR ORIENTATION, PIPE SIZES AND ELEVATIONS.
2. REFER TO PUMP SCHEDULE FOR PUMP REQUIREMENTS
3. PROVIDE 1" GALVANIZED STEEL GRATE. INSTALL FLUSH WITH ELEVATOR FLOOR PIT.

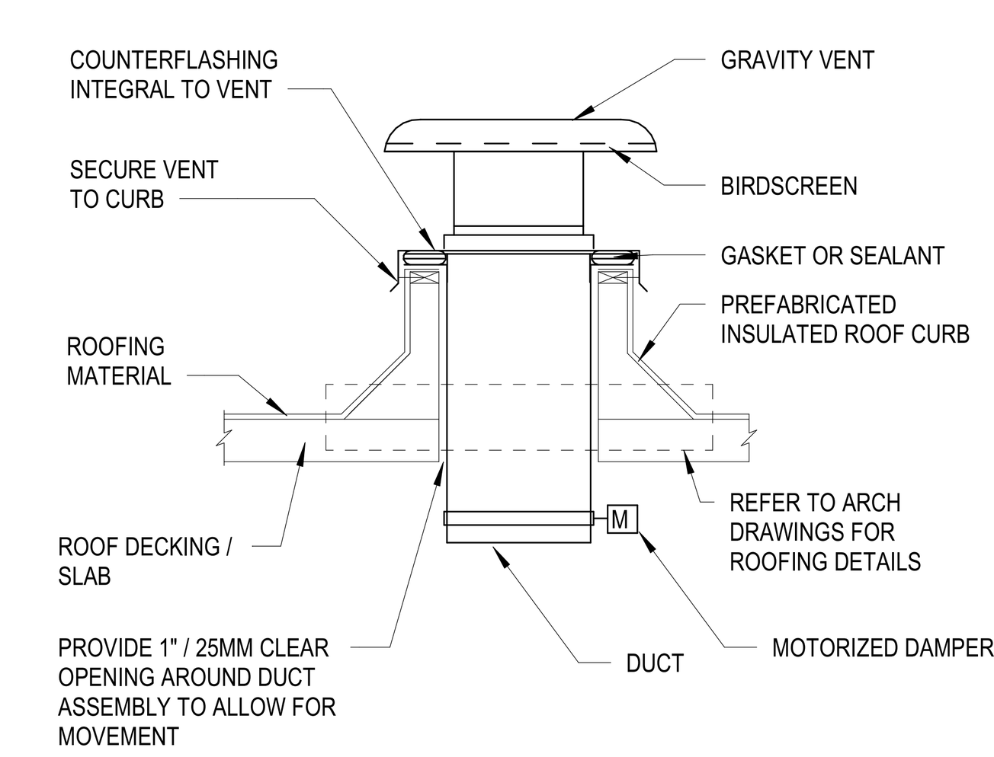
A1 Me601 ELEVATOR SUBMERSIBLE SIMPLEX SUMP PUMP WITH OIL SEPARATOR DETAIL
NO SCALE



NOTE:
1. INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

SPLIT SYSTEM HORIZONTAL EVAPORATOR AND REMOTE CONDENSING UNIT
SCALE: NONE

A3 Me601 SPLIT SYSTEM HORIZONTAL EVAPORATE AND REMOT CONDENSATE UNIT
NO SCALE



NOTES:

1. COORDINATE SCOPE OF WORK WITH ROOFING CONTRACTOR / OWNER TO NOT VOID ANY WARRANTEES
2. REFER TO THE CONTRACT DOCUMENTS FOR DUCT MATERIAL AND INSULATION REQUIREMENTS.
3. THE CURB INSULATION SHALL BE EQUAL TO THE ROOF INSULATION RATING
4. COORDINATE THE LOCATION AND SIZE OF THE EQUIPMENT RAIL BASED ON THE EQUIPMENT.
5. THE PURPOSE OF THE EQUIPMENT CURB IS TO SUPPORT THE WEIGHT OF THE EQUIPMENT. IT SHALL BE RATED FOR THE OPERATING WEIGHT OF THE EQUIPMENT. FOLLOW VIBRATION / SEISMIC REQUIREMENTS PER THE CONTRACT DOCUMENTS.
6. THE TOP OF THE CURB IS TO BE MOUNTED A MINIMUM OF 18 INCHES / 46 CM ABOVE THE TOP OF THE ROOF UNLESS NOTED OTHERWISE.
7. THE IMAGE OF THE GRAVITY DAMPER IS GENERIC, PROVIDE THE TYPE PER THE CONTRACT DOCUMENTS
8. COORDINATE THE LOCATION OF THE MOTORIZED DAMPER PER THE CONTRACT DOCUMENT.

A5 Me601 ROOF MOUNTED GRAVITY RELIEF/ INTAKE HOOD DETAIL
NO SCALE

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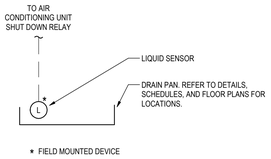
Project No.:214100597
File Name: N/A

Author	Designer	Checker	2022.07.31
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
MECHANICAL DETAILS & SCHEDULES

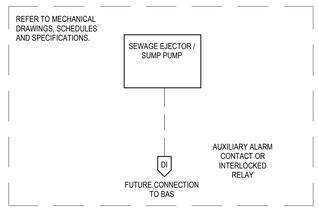
Scale: As indicated
Revision:
Drawing No. Me601

ORIGINAL SHEET - ARCH E1



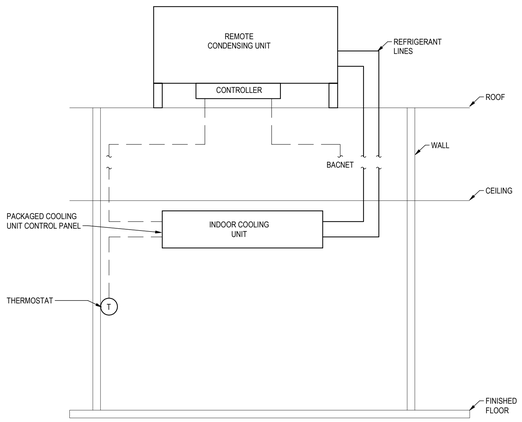
SEQUENCE OF OPERATION
GENERAL
1. LIQUID SENSOR WIRED TO AIR CONDITIONING UNIT AND WILL SHUT DOWN UNIT UPON DETECTION OF WATER WITHIN DRAIN PAN..

D1 DRAIN PAN MONITORING CONTROL DIAGRAM
Me701 NOT TO SCALE



SEQUENCE OF OPERATION
GENERAL
1. IN FUTURE, DDC MONITORS THE SEWAGE PUMP CONTROL PANEL AND ALARMS IF THE PANEL INDICATES A FAILURE.
2. PUMP OPERATION IS CONTROLLED BY THE PACKAGED CONTROL SYSTEM TO MAINTAIN FLUID LEVEL THROUGH FIELD INSTALLED FLOAT SWITCHES AND PUMP ROTATION. REFER TO MECHANICAL DETAILS FOR QUANTITY AND ELEVATIONS OF FLOATS.

C1 TYPICAL SEWAGE EJECTOR / SUMP PUMP MONITORING
Me701 NOT TO SCALE



SEE SCHEDULES FOR QUANTITIES AND PLANS FOR LOCATIONS

NOTE
TO CONTRACTOR SHALL PROVIDE ALL DEVICES AND CIRCUITS FOR SOURCE OF POWER AND COMMUNICATION WIRING TO EACH ATU CONTROLLER.

SEQUENCE OF OPERATIONS
GENERAL
1. ALL SETPOINTS, DEADBANDS, AND TIME DELAYS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS (CREATE REQUIRED VIRTUAL POINTS).
2. APPROPRIATE DEADBANDS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS.
3. ALL HAND-OFF-AUTO (HOA) SWITCHES NORMALLY REMAIN IN THE AUTO POSITION AND THE HAND AND OFF POSITIONS ARE USED FOR MAINTENANCE SITUATIONS. ALL SETPOINTS, DEADBANDS, AND TIME DELAY INTERVALS DESCRIBED IN SEQUENCE SHALL BE ADJUSTABLE BY SYSTEM OPERATORS. APPROPRIATE DEADBANDS AND TIME DELAYS SHALL BE USED TO PREVENT SHORT CYCLING SITUATIONS.
4. PROVIDE AND INSTALL ALL NECESSARY COMPONENTS AND ACCESSORIES FOR A COMPLETE AND OPERATIONAL SYSTEM INCLUDING, BUT NOT LIMITED TO SENSORS, RELAYS, COMMUNICATION WIRING AND CONDUIT, AND ALL NECESSARY ELECTRICAL DEVICES, WIRING, AND CONDUIT.

SCHEDULING:
1. THE UNIT RUNS CONTINUOUSLY DURING OCCUPIED COOLING MODE TO MAINTAIN SPACE TEMPERATURE SETPOINT.

COOLING MODE:
1. THE UNIT'S PACKAGE CONTROLLER ENERGIZES THE INDOOR UNIT'S SUPPLY FAN.
2. THE UNIT'S PACKAGE CONTROLLER STAGES THE OUTDOOR UNIT'S COMPRESSORS TO MAINTAIN SPACE TEMPERATURE SET POINT.
3. SPACE TEMPERATURE SET POINT SHALL BE: 75°F (ADJ). IF SPACE TEMPERATURE CONTINUES TO INCREASE BEYOND 85°F (ADJ), AN ALARM WILL BE ISSUED.
4. UNIT SHALL HAVE INTERGRAL FLOAT SWITCH OR WATER DETECTION SENSOR TO SHUT DOWN UNIT ON CONDENSATE HIGH WATER LEVEL.

A1 TYPICAL SPLIT SYSTEM AIR CONDITIONING UNIT CONTROL DIAGRAM
Me701 NOT TO SCALE

TEMPERATURE CONTROLS GENERAL NOTES

1 PROVIDE ALL POWER, INTERCONNECTING WIRING, TRANSFORMERS, AUTOMATIC VOLTAGE REGULATION, UNINTERUPTABLE POWER SYSTEMS, ENCLOSURES, RACEWAYS, CONDUITS, HANGERS, AND SUPPORTS FOR A COMLETE AND OPERATIONAL SYSTEM.

2 ROUTE POWER FROM ELECTRICAL PANELS. COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALLOWABLE PANEL LOADING REQUIREMENTS AND CIRCUIT NUMBERS. SPARE CIRCUITS MAY BE USED WHEN AVAILABLE. IN PANELBOARDS THAT DO NOT HAVE SPARE CIRCUIT BREAKERS, PROVIDE NEW BREAKERS TO MATCH EXISTING BREAKERS IN OPEN SPACES. LOW VOLTAGE WIRING WILL BE ROUTED SEPARATELY FROM 120 V WIRING.

3 PROVIDE ALL WIRING IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE, MANUFACTURER REQUIRMENTS, AND PROJECT SPECIFICATION REQUIREMENTS.

4 PROVIDE INDIVIDUAL GRAPHICS FOR EACH SYSTEM/DEVICE IDENTIFIED IN THE CONTRACT DOCUMENTS. REFER TO ALL CONTROL DRAWINGS.

5 PROVIDE ALL SET POINTS AND DEAD BANDS TO BE ADJUSTABLE THROUGH A GRAPHICAL USER INTERFACE.

6 PROVIDE ALL NECESSARY VIRTUAL POINTS, CONTROLLERS, RELAYS, CONTACTORS, INTERFACE MODUALS, COMMUNICATION CARDS, AND OTHER DEVICES TO MEET THE SPECIFIED SEQUENCE OF OPERATION FOR EACH DEVICE. EQUIPMENT MANUFACTURERS PROVIDES NECESSARY COMMUNICATION DEVICES. TEMPERATURE CONTROL CONTRACTOR COORDINATES REQUIREMENTS, INSTALLS, AND PROGRAM DEVICES.

7 COORDINATE EXACT LOCATIONS OF ALL FIELD MOUNTED COMPONENTS.

8 MOUNT ALL RELAYS, TRANSFORMERS, TRANSDUCERS, AND OTHER DEVICES ASSOCIATED WITH THE CONTROL SYSTEM WITHIN STANDARD ENCLOSURES OR AUXILARY PANELS. PROVIDE ENCLOSURES FOR ENVIRONMENT OR AS SPECIFIED.

9 COORDINATE DAMPER, VALVE, AND CONTROL DEVICE LOCATIONS AND SIZES WITH MECHANICAL TRADES. UNLESS OTHERWISE NOTED, CONTROL DEVICES ARE PROVIDED BY CONTROLS CONTRACTOR, INSTALLED BY MECHANCIAL CONTRACTOR, POWERD BY THE ELECTRICAL CONTRACTOR, AND COMMUNICATED BY CONTROLS CONTRACTOR.

10 CONTROL SYSTEM INCLUDES ALL COMPONENTS IDENTIFIED OR DESCRIBED IN CONTRACT DOCUMENTS. PROVIDE ALL NECESSARY INTEGRATION AND LICENSING TO VIEW NEW COMPONENTS FROM THE EXISTING CAMPUS GRAPHIC USER INTERFACE. COORDINATE ACCESS TO FACILITIES NETWORK WITH CAMPUS IT PERSONEL.

11 PROVIDE ALL INTERCONNECTING WIRING, REMOTE SENSORS, AND OTHER COMPONENTS FOR A COMPLETE AND OPERATIONAL SYSTEM FOR ALL SYSTEMS AND EQUIPMENT FURNISHED WITH PACKAGED CONTROLS.

12 REFER TO CONTRACT DOCUMENTS FOR ALL FIRE ALARM COMPONENTS AND INSTALLATION REQUIREMENTS. UNLESS OTHERWISE NOTED, REFER TO ELECTRICAL SPECIFICATIONS FOR FIRE ALARM COMPONENT PRODUCT DATA AND INSTALLATION REQUIREMENTS, MECHANICAL FLOOR PLANS AND TEMPERATURE CONTROL DIAGRAMS OR SEQUENCES OF OPERATION FOR LIFE SAFETY DAMPER LOCATIONS AND DUCT DETECTOR REQUIREMENTS, AND BUILDING AUTOMATION FIRE ALARM MONITORING REQUIREMENTS.

13 UNLESS OTHERWISE NOTED, ALL SPACE TEMPERATURE SENSORS AND OTHER TEMPERATURE CONTROL SENSORS AND DEVICES LOCATED WITHIN WALLS ARE TO BE ROUGHED IN WITH CONDUIT AND BACK BOXES BY THE TEMPERATURE CONTROLS CONTRACTOR. TEMPERATURE CONTROLS CONTRACTOR TO PROVIDE ALL NECESSARY 120V POWER FOR CONTROL DEVICES. REFER TO APPLICATION SCHEDULES. CONTROL CONTRACTOR TO PROVIDE ALL LOW VOLTAGE POWER, COMMUNICATION WIRING, AND CONDUIT.

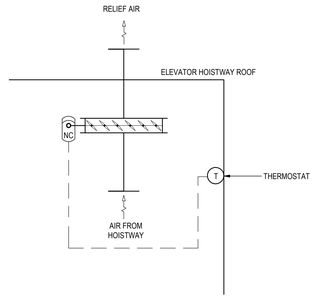
14 THE BUILDING SUPERVISORY PANEL TO BE PROVIDED WITH UNITERRUPTIBLE POWER SUPPLY OF FULL RATED LOAD OF CONTROL PANEL FOR 10 MINUTES OF LOADING. ALL CONTROL PANELS TO CONNECTED TO STANDBY POWER WHEN A GENERATOR AND STANDBY PANEL ARE AVAILABLE.

15 ANY UPGRADES REQUIRED OF THE CAMPUS BMS, SERVER, HARDWARE, TRAINING, SOFTWARE WILL BE PROVIDED BY THE CONTROLS CONTRACTOR.

16 NO GLOBAL CAMPUS SHARING OF DDC FOR CONTROL WILL BE PERMITED, SUCH AS OUTSIDE AIR TEMPERATURE AND HUMIDITY.

17 ALL CRITICAL ALARMS MUST BE ON BINARY INPUT. NO VIRTUAL POINTS ALLOWED.

18 PROVIDE AS-BUILT DOCUMENTS OF FINAL SEQUENCE OF OPERATIONS AFTER COMPLETION OF COMMISSIONING PROCESS.



SEQUENCE OF OPERATION
GENERAL
1. THE ROOM THERMOSTAT MONITORS THE HOISTWAY TEMPERATURE AND CONTROLS AS INDICATED BELOW:
   A. THE MOTORIZED DAMPER WILL OPEN WHENEVER THE SPACE TEMPERATURE EXCEEDS 95 DEGREES (ADJUSTABLE).
   B. UPON TEMPERATURE DROPPING BELOW 90 DEGREES (ADJUSTABLE), THE MOTORIZED DAMPER WILL CLOSE.

A3 ELEVATOR HOISTWAY CONTROL DIAGRAM
Me701 NOT TO SCALE

CONTROLS

PG	AIR PRESSURE GAGE
S	AIR SAMPLING POINT
CO2	CARBON DIOXIDE SENSOR
CO	CARBON MONXIDE SENSOR
CG	CUMBUSTABLE GAS SENSOR
CT	CURRENT TRANSMITTER
CT	CURRENT TRANSMITTER WITH LEAD
D	DEWPOINT SENSOR
DPS	DIFFERENTIAL PRESSURE SENSOR
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
FM	FLOW METER
FS	FLOW SWITCH
FT	FLOW TRANSMITTER
FZ	FREEZE STAT
HOA	HAND SWITCH
H	HUMIDITY SENSOR
LC	LEVEL CONTROL
LS	LIMIT SWITCH
LPI	LOOP POWERED INDICATOR
MS	MOISTURE SENSOR
NOX	NITROGEN OXIDE SENSOR
O	OCCUPANCY SENSOR
O2	OXYGEN SENSOR
PI	POSITION INDICATOR
PS	PRESSURE SENSOR
R	REFRIGERANT SENSOR
RH	RELATIVE HUMIDITY SENSOR
R	RELAY
SP	STATIC PRESSURE SENSOR
T	THERMOSTAT
TVO	TOTAL VOLATILE ORGANIC COMPOUND SENSOR
VIB	VIBRATION SENSOR
AFS	AIR FLOW SWITCH
I / P	CURRENT TO PRESSURE
E / P	ELECTRIC TO PNEUMATIC
SCR	SILICON CONTROLLED RECITIFIER
TCP	TEMPERATURE CONTROL PANEL
TEC	TERMINAL EQUIPMENT CONTROLLER
	SENSOR WELL
	ALARM HORN
	ALARM BEACON
AI	ANALOG INPUT
AO	ANALOG OUTPUT
DI	DIGITAL INPUT
DI	DIGITAL OUTPUT
EC	ELECTRICALLY COMMUTED MOTOR
STR	STARTER
HOA	HAND OFF AUTO
VFD	VARIABLE FREQUENCY DRIVE
	NON MOTORIZED VALVE
M	TWO WAY MOTORIZED VALVE
M	THREE WAY MOTORIZED VALVE

CONTROLS

S	TWO WAY SOLENOID VALVE
NC O NO	THREE WAY SOLENOID VALVE
NC	TWO WAY PNEUMATIC VALVE
NC O NO	THREE WAY PNEUMATIC VALVE
	PUMP
	MOTOR
S	DUCT SMOKE DETECTOR
H	HEAT DETECTOR
	LABORATORY AIR VALVE
H C	UNITARY HEATING COIL
C C	UNITARY COOLING COIL
H R	UNITARY HEAT RECOVERY COIL
	FILTER
	AIR BLENDER
	ENERGY WHEEL
	PLATE ENERGY RECOVERY COIL
	AIR FLOW MEASURING STATION
	AIR FLOW PROBE
	BACKDRAFT DAMPER
	MOTORIZED DAMPER - PARALLEL BLADE
	MOTORIZED DAMPER - OPPOSED BLADE
NC	DAMPER ACTUATOR - ELECTRIC
NC	DAMPER ACTUATOR - PNEUMATIC
	CENTRIFUGAL FAN
	PROP FAN
	PLENUM FAN
	HUMIDIFIER
	ETHERNET CONNECTION
	PILOT LIGHT
	ELECTRICAL CONNECTION
	CONTACTOR
	CONTACT
DDC_XXX	DDC PANEL
	COMPUTER

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Consultant

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STATE OF MICHIGAN CASIMIR JOSEPH No. 6201053118 PROFESSIONAL ENGINEER

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

Project No.:214100597

File Name: N/A

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Title
TEMPERATURE CONTROLS LEGEND

Scale: NOT TO SCALE

Revision:

Drawing No. **Me701**

ABBREVIATIONS

1/C	SINGLE CONDUCTOR
A	AMPS
A/C	AIR CONDITIONING UNIT
AC	ALTERNATING CURRENT
ACH	ABOVE COUNTER HEIGHT
ACT	ABOVE CEILING TILE
ADA	AMERICANS WITH DISABILITIES ACT
ADJ	ADJUSTABLE
AF	AMP FRAME
AFC	ABOVE FINISHED CEILING
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ALD	ASSISTED LISTENING DEVICE
ALT	ALTERNATE
ARCH	ARCHITECTURAL
AS	AMP SWITCH
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AV	AUDIO VISUAL
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
BC	BONDING CONDUCTOR
BCU	BARE COPPER
BFC	BELOW FINISHED CEILING
BFG	BELOW FINISHED GRADE
BKR	BREAKER
BLDG	BUILDING
BOF	BOTTOM OF FIXTURE
BOH	BACK OF HOUSE
BTM	BOTTOM
C	CONDUIT
C/W	COMPLETE WITH
CAP	CAPACITY
CATV	CABLE ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CEC	CANADIAN ELECTRIC CODE
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED
CIRC	CIRCULATING
CKT	CIRCUIT
CL	CENTERLINE
CLG	CEILING
CM	CEILING MOUNTED
CMU	CONCRETE MASONRY UNIT
CO	CONDUIT ONLY
COMM	COMMUNICATIONS
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CPT	CONTROL POWER TRANSFORMER
CPU	CENTRAL PROCESSING UNIT
CR	CRITICAL BRANCH
CT	CURRENT TRANSFORMERS
CTR	CENTER
CU	COPPER
CUH	CABINET UNIT HEATER
D	DEDICATED
DC	DIRECT CURRENT
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DISC	DISCONNECT
DIV	DIVISION
DL	DAMP LOCATION
DN	DOWN
DP	DISTRIBUTION PANEL
DPDT	DOUBLE POLE, DOUBLE THROW
DPR	DAMPER
DPST	DOUBLE POLE, SINGLE THROW
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV	ELEVATOR
EM	EMERGENCY
EM GEN	EMERGENCY GENERATOR
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EP	ELECTRIC-PNEUMATIC
EPO	EMERGENCY POWER OFF
EQ	EQUIPMENT BRANCH
EQUIP	EQUIPMENT
ERL	EXISTIG TO BE RELOCATED
ETD	EMERGENCY TRANSFER DEVICE
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST, EX, E	EXISTING
EXP	EXPLOSION PROOF
EXTER	EXTERIOR
F&I	FURNISHED AND INSTALLED
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FAAMP	FIRE ALARM AMPLIFIER
FACP	FIRE ALARM CONTROL PANEL
FAPS	FIRE ALARM POWER SUPPLY
FB	FLOOR BOX
FCU	FAN COIL UNIT
FLR	FLOOR
FLUOR	FLUORESCENT
FO	FIBER (FIBRE) OPTIC
FP	FIRE PROTECTION
FS	FUSIBLE SWITCH
FSCS	FIRE FIGHTER SMOKE CONTROL STATION
FU	FUSE
FVNR	FULL VOLTAGE NON REVERSING
FVR	FULL VOLTAGE REVERSING
G, GND	GROUND
G/Y	GREEN YELLOW
GA	GAUGE
GAL	GALLONS
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFI, GFCI	GROUND FAULT (CIRCUIT) INTERRUPTER
H	HOT CONDUCTOR
HC	HORIZONTAL CROSS CONNECT
HD	HAND DRYER
HFF	HANDS FREE FIXTURE
HGT	HEIGHT
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HK	HOUSE KEEPING PAD
HM	HORIZONTALLY MOUNTED
HOA	HAND-OFF-AUTO
HOR	HORIZONTAL
HP	HORSEPOWER
HTG	HEATING
HV	HIGH VOLTAGE
HVCB	HIGH VOLTAGE CIRCUIT BREAKER
HW	HOT WATER
HZ	HERTZ
IC	INTERMEDIATE CROSS CONNECT
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
INST	INSTANTANEOUS
IP	INTERNET PROTOCOL
JB	JUNCTION BOX
K	KIRK KEY INTERLOCK
KAIC	KILO-AMPS INTERRUPTING CAPACITY

ABBREVIATIONS

KV	KILOVOLT
KVA	KILOVOLT-AMPERES
KW	KILOWATT
LED	LIGHT EMITTING DIODE
LR	LEGALLY REQUIRED
LS	LIFE SAFETY BRANCH
LSIG	LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND FAULT
LTG	LIGHTING
LV	LOW VOLTAGE
MAU	MAKE UP AIR UNIT
MAX	MAXIMUM
MC	METAL CLAD CABLE
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MCP	MOTOR CIRCUIT PROTECTOR
MCT	MAIN CROSS CONNECT
MDF	MAIN DISTRIBUTION FRAME
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MET	MAIN EARTHING TERMINAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUG ONLY
MM	MULTIMODE FIBER (FIBRE) OPTIC STRAND
MSB	MAIN SWITCHBOARD
MTD	MOUNTED
MTG	MOUNTING
MTS	MAIN TERMINAL SPACE
MV	MEDIUM VOLTAGE
MVCB	MEDIUM VOLTAGE CIRCUIT BREAKER
MW	MICROWAVE OVEN
N	NEUTRAL
NAC	NOTIFICATION APPLIANCE CIRCUIT
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
OH	OVERHEAD
OL	OVERLOAD
OS	OCCUPANCY SENSOR, OPTIONAL STANDBY
OSP	OUTSIDE PLANT
P	POLE
PA	PUBLIC ADDRESS
PB	PULL BOX
PD	PUNCHDOWN
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
POE	POINT OF ENTRANCE
POS	POINT OF SERVICE
PR	PAIR
PT	POTENTIAL TRANSFORMERS
PTS	PNEUMATIC TUBE STATION
PTZ	PAN/TILT/ZOOM
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
PWR	POWER
R	RELOCATED
RA	RETURN AIR
REC	RECESSED
RECP	RECEPTACLE
REQD	REQUIRED
REX	REQUEST TO EXIT
RM	ROOM
RNC	RIGID NON-METALLIC CONDUIT
RO	RACEWAY ONLY
RSC, RGS	RIGID STEEL CONDUIT
SCCR	SHORT CIRCUIT CURRENT RATING
SEC	SECURITY
SECT	SECTION
SIM	SIMILAR
SM	SINGLE MODE FIBER OPTIC STRAND
SMR	SURFACE MOUNTED RACEWAY
SPD	SURGE PROTECTED DEVICE
SPDT	SINGLE POLE DOUBLE THROW
SPECS	SPECIFICATIONS
SPST	SINGLE POLE SINGLE THROW
SS	STAINLESS STEEL
ST	SHUNT TRIP
STD	STANDARD
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYS	SYSTEM
TBB	TELECOMMUNICATIONS BACKBONE
TBR	TO BE REMOVED
TC	TEMPERATURE CONTROL OR TERMINAL CABINET
TE	TELECOMMUNICATIONS ENCLOSURE
TELE	TELEPHONE
TELECOM	TELECOMMUNICATIONS
TEMP	TEMPERATURE
TERM	TERMINAL
TGB	TELECOMMUNICATIONS GROUND BAR
TMGB	TELECOMMUNICATIONS MAIN GROUND BAR
TOF	TOP OF FIXTURE
TP	TAMPER RESISTANT
TR	TELECOMMUNICATIONS ROOM
TSP	TWISTED SHIELDED PAIR
TSTAT	THERMOSTAT
TTB	TELECOM TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
UTP	UNSHIELDED TWISTED PAIR
UV	UNIT VENTILATOR
V	VOLTS
VA	VOLT-AMPS
VAV	VARIABLE AIR VOLUME
VC	VOLUME CONTROL
VDT	VISUAL DISPLAY TERMINAL
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VOL	VOLUME
VT	VAPOR TIGHT
W	WIRE, WATT
WAP	WIRELESS ACCESS POINT
WG	WIREGUARD
WL	WET LOCATION
WP	WEATHERPROOF
WT	WATERTIGHT
XFMR	TRANSFORMER
Ø	PHASE

TELECOM OUTLETS

- OUTLET
- OUTLET, CEILING MOUNTED
- OUTLET, MOUNTED IN MULTI-SERVICE CEILING BOX
- OUTLET, MOUNTED IN MULTI-SERVICE FLOOR BOX
- OUTLET, MOUNTED IN MULTI-SERVICE FURNITURE BOX
- OUTLET, MOUNTED IN MULTI-SERVICE POKE THRU
- OUTLET, MOUNTED IN MULTI-SERVICE POWER POLE
- OUTLET, MOUNTED IN MULTI-SERVICE WALL BOX
- FURNITURE SYSTEMS OUTLET
- MOUNTED ABOVE COUNTER BACKSPLASH

TELECOM OUTLET TYPES

- # INDICATES QUANTITY OF DATA JACKS, PULLSTRING ALWAYS PROVIDED. WHERE NO QUANTITY IS NOTED, 2 DATA JACKS AND PULLSTRING.
- B — BLANK FACEPLATE, ROUGH-IN ONLY
- D — DIRECT CONNECTION TO PANEL
- M — PATIENT MONITORING
- P — PAY TELEPHONE
- R — RACEWAY MOUNTED
- W — WALL MOUNTED TELEPHONE HANDSET OUTLET
- WAP — WIRELESS ACCESS POINT CONNECTION

ELECTRONIC SECURITY

- CCTV CAMERA
- CCTV CAMERA, CEILING MOUNTED
- CCTV CAMERA, PENDANT MOUNTED
- CCTV CAMERA, POLE MOUNTED
- CCTV CAMERA, 360° FIELD OF VIEW
- CCTV CAMERA, FIXED AIM, WEDGE INDICATES AIMING
- CCTV CAMERA, PAN/TILT/ZOOM, WEDGE INDICATES DEFAULT AIMING
- DOOR HARDWARE MARK
- GLASS BREAKAGE SENSOR
- GLASS BREAKAGE SENSOR, CEILING MOUNTED
- WIRELESS RECEIVER
- LOCAL ALARM
- ACP — ACCESS CONTROL PANEL
- BR — BIOMETRIC READER
- CC — CCTV MONITOR
- CK — CARD READER/KEYPAD COMBINATION
- CR — CARD READER
- DURESS ALARM BUTTON
- DA — VOICE DURESS ALARM
- VOICE DURESS ALARM WITH STROBE
- VOICE DURESS ALARM WITH STROBE, PEDESTAL MOUNTED
- DS — DOOR CONTACT SWITCH
- EL — ELECTRIC LOCK
- ES — ELECTRIC STRIKE
- EX — ELECTRIC LATCH RETRACTION
- IAD — INTRUSION ARM/DISARM
- IDP — INTRUSION DETECTION PANEL
- IM — PRIMARY INTERCOM STATION, AUDIO ONLY
- PRIMARY INTERCOM STATION, AUDIO/VIDEO
- PRIMARY INTERCOM STATION, AUDIO ONLY, DOOR RELEASE
- PRIMARY INTERCOM STATION, AUDIO/VIDEO, DOOR RELEASE
- IS — SECONDARY INTERCOM STATION, AUDIO ONLY
- SECONDARY INTERCOM STATION, AUDIO/VIDEO
- SECONDARY INTERCOM STATION, AUDIO ONLY, DOOR RELEASE
- SECONDARY INTERCOM STATION, AUDIO/VIDEO, DOOR RELEASE
- KP — KEYPAD
- MOTION DETECTOR
- MOTION DETECTOR, CEILING MOUNTED
- PSP — POWER SUPPLY PANEL
- RE — REQUEST TO EXIT DETECTOR

FIRE ALARM

- FIRE SERVICE PHONE STATION OUTLET
- FLAME DETECTOR
- CO — GAS DETECTOR, CARBON MONOXIDE
- HORN AND STROBE LIGHT, CEILING MOUNTED
- HORN AND STROBE LIGHT, WALL MOUNTED
- REMOTE INDICATOR, CEILING MOUNTED
- REMOTE INDICATOR, WALL MOUNTED
- SPEAKER AND STROBE LIGHT, CEILING MOUNTED
- SPEAKER AND STROBE LIGHT, WALL MOUNTED
- STROBE LIGHT, CEILING MOUNTED
- STROBE LIGHT, WALL MOUNTED
- AIM — ADDRESSABLE INPUT MODULE
- ARCM — AREA OF REFUGE COMMUNICATION MASTER UNIT
- ARCR — AREA OF REFUGE COMMUNICATION REMOTE UNIT
- AOM — ADDRESSABLE OUTPUT MODULE
- D — ELECTRICALLY OPERATED SMOKE OR FIRE/SMOKE DAMPER CONNECTION
- DCL — DOOR CLOSER
- DH — DOOR HOLDER
- CHIME, WALL MOUNTED
- HORN, CEILING MOUNTED
- HORN, WALL MOUNTED
- P — PULL STATION
- FAA — FIRE ALARM ANNUNCIATOR
- FACP — FIRE ALARM CONTROL PANEL
- FAT — FIRE ALARM TRANSMITTER
- FATC — FIRE ALARM TERMINAL CABINET
- GAP — GRAPHIC ANNUNCIATOR PANEL
- H — HEAT DETECTOR
- NAC — FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT PANEL
- PS — PRESSURE DETECTOR/SWITCH
- R — INTERFACE RELAY
- S — SMOKE DETECTOR, CEILING MOUNTED
- SMOKE DETECTOR, WALL MOUNTED
- SD — SMOKE DETECTOR, SINGLE STATION
- S/H — SMOKE/HEAT DETECTOR
- SMOKE/HEAT/CARBON MONOXIDE DETECTOR
- SPEAKER, CEILING MOUNTED
- SPEAKER, WALL MOUNTED
- VS — VALVE SUPERVISORY TAMPER SWITCH
- FS — FLOW DETECTOR/SWITCH

HEAT/SMOKE DETECTOR TYPES

- C#/F# — FIXED TEMPERATURE, # INDICATES °C OR °F
- R — RATE OF RISE
- RC#/F# — COMBINED RATE OF RISE/FIXED TEMPERATURE
- AS — AIR SAMPLING
- BR — BEAM DETECTOR RECEIVER
- BT — BEAM DETECTOR TRANSMITTER
- E — ELEVATOR RECALL
- I — IONIZATION
- ID — IN DUCT
- P — PHOTOELECTRIC

LIGHTING CONTROLS

- $ — SINGLE POLE SWITCH
- INDICATES WIRELESS CONTROL
- a — LOWER-CASE LETTER(S) NEAR SWITCH DENOTE SWITCH LEG(S)
- 2 — DOUBLE POLE SWITCH
- 3 — THREE-WAY SWITCH
- 4 — FOUR-WAY SWITCH
- D — DIMMER SWITCH
- K — KEY OPERATED SWITCH
- LV — MOMENTARY CONTACT LOW VOLTAGE SWITCH
- O — OCCUPANCY SENSOR SWITCH
- OD — OCCUPANCY SENSOR/DIMMER SWITCH
- P — SWITCH WITH PILOT LIGHT
- PC — PHOTOCELL SWITCH
- S — SELECTOR SWITCH
- T — TIMER SWITCH
- CS# — LOW VOLTAGE CONTROL STATION, # INDICATES STATION IDENTIFICATION
- DSC — DIMMING SYSTEM CONTROL PANEL
- ELCU — EMERGENCY LIGHTING CONTROL UNIT
- LCP — LIGHTING CONTROL PANEL
- OS — OCCUPANCY SENSOR SWITCH, CEILING MOUNTED
- OCCUPANCY SENSOR SWITCH, CEILING MOUNTED, EXTENDED RANGE
- OS — OCCUPANCY SENSOR SWITCH, WALL/CORNER MOUNTD
- PS — PHOTO SENSOR CONTROL
- PHOTO SENSOR CONTROL, CEILING MOUNTED
- R — RELAY
- T — LOW VOLTAGE TRANSFORMER

LUMINAIRES

CIRCUITS: EMERGENCY / NORMAL

- N/A / L01 — LUMINAIRE IDENTIFICATION, SEE LUMINAIRES SCHEDULE
- N/A / a — LOWER-CASE LETTER(S) NEAR LUMINAIRE DENOTE SWITCH LEG(S)
- RECESSED RECTANGULAR LUMINAIRE, DRAWN TO SCALE
- SURFACE MOUNTED RECTANGULAR LUMINAIRE, DRAWN TO SCALE
- RECESSED VOLUMETRIC LUMINAIRE, DRAWN TO SCALE
- STRIP LUMINAIRE, LENGTH TO SCALE
- WALL MOUNTED RECTANGULAR LUMINAIRE, LENGTH TO SCALE (NUMBER OF MOUNTING POINTS WILL VARY WITH THE LUMINAIRE LENGTH AND ARE NOT INDICATED.)
- RECESSED DOWNLIGHT LUMINAIRE
- SURFACE MOUNTED CEILING LUMINAIRE
- PENDANT MOUNTED LUMINAIRE
- LINEAR PENDANT MOUNTED LUMINAIRE, LENGTH TO SCALE (NUMBER OF MOUNTING POINTS WILL VARY WITH THE LUMINAIRE LENGTH AND ARE NOT INDICATED.)
- WALL MOUNTED LUMINAIRE
- WALL MOUNTED VERTICALLY ORIENTED LUMINAIRE
- WALL MOUNTED RECESSED LINEAR LUMINAIRE, LENGTH TO SCALE
- N/A — EXIT SIGN, FILLED SIDES INDICATE ILLUMINATED ANNOTATION, ARROWS INDICATE DIRECTIONAL GRAPHICS
- N/A — WALL MOUNTED EXIT SIGN, FILLED SIDES INDICATE ILLUMINATED ANNOTATION, ARROWS INDICATE DIRECTIONAL GRAPHICS
- N/A — EXIT SIGN WITH EMERGENCY BATTERY PACK
- N/A — WALL MOUNTED EXIT SIGN WITH EMERGENCY BATTERY PACK
- N/A — EMERGENCY BATTERY PACK, NUMBER OF LAMPS NOT INDICATED
- N/A — WALL MOUNTED EMERGENCY BATTERY PACK, NUMBER OF LAMPS NOT INDICATED
- N/A — EMERGENCY WITH REMOTE BATTERY PACK, NUMBER OF LAMPS NOT INDICATED
- N/A — WALL MOUNTED EMERGENCY WITH REMOTE BATTERY PACK, NUMBER OF LAMPS NOT INDICATED
- RECESSED LINEAR WALL WASH LUMINAIRE, LENGTH TO SCALE
- LINEAR PENDANT MOUNTED WALL WASH LUMINAIRE, LENGTH TO SCALE
- RECESSED WALL WASH LUMINAIRE
- SURFACE MOUNTED WALL WASH LUMINAIRE
- PENDANT MOUNTED WALL WASH LUMINAIRE
- RECESSED ACCENT LUMINAIRE
- SURFACE MOUNTED ACCENT LUMINAIRE
- PENDANT MOUNTED ACCENT LUMINAIRE
- MONOPOINT LUMINAIRE
- N/A — TRACK LIGHTING
- N/A — CONTINUOUS SOURCE LUMINAIRE, PATH AS INDICATED
- MULTI-LAMP ACCENT LUMINAIRE, NUMBER OF LAMPS NOT INDICATED
- WALL MOUNTED MULTI-LAMP ACCENT LUMINAIRE, NUMBER OF LAMPS NOT INDICATED
- OVERCOUNTER TASK LUMINAIRE
- UNDERCABINET TASK LUMINAIRE
- FIBER OPTIC REMOTE SOURCE
- STEP LUMINAIRE
- ILLUMINATED SIGN
- WALL MOUNTED ILLUMINATED SIGN
- NIGHT LIGHT
- WALL MOUNTED STROBE LIGHT

SITE/LANDSCAPE/GARAGE LUMINAIRES

CIRCUITS: EMERGENCY / NORMAL

- LIGHTING STANDARD: LUMINAIRE, POLE, AND BASE
- POST TOP LUMINAIRE
- ILLUMINATED BOLLARD
- IN-GROUND LUMINAIRE
- ADJUSTABLE IN-GROUND LUMINAIRE
- PENDANT MOUNTED GARAGE LUMINAIRE
- PENDANT MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSITION OF SHIELD(S)
- SURFACE MOUNTED GARAGE LUMINAIRE
- SURFACE MOUNTED SHIELDED GARAGE LUMINAIRE, LINES INDICATE NUMBER AND POSITION OF SHIELD(S)
- WALL PACK

RECEPTACLES

CIRCUITS: EMERGENCY / NORMAL

- SINGLE RECEPTACLE, 120V
- SINGLE RECEPTACLE, 120V, CEILING MOUNTED
- DUPLEX RECEPTACLE, 120V
- DUPLEX RECEPTACLE, 120V, CEILING MOUNTED
- DOUBLE DUPLEX RECEPTACLE, 120V
- DOUBLE DUPLEX RECEPTACLE, 120V, CEILING MOUNTED
- SPLIT WIRED RECEPTACLE, 120V, TOP CONTROLLED, BOTTOM CONSTANTLY ENERGIZED
- # — RECEPTACLE, NEMA #
- # — RECEPTACLE, NEMA #, CEILING MOUNTED
- # — COMBINATION RECEPTACLE, NEMA # AND 120V
- FURNITURE SYSTEMS RECEPTACLE, 120V
- N/A — INDICATES FULLY CONTROLLED
- N/A — INDICATES 15A
- N/A — INDICATES TWIST LOCK
- N/A — INDICATES MOUNTED ABOVE COUNTER BACKSPLASH
- N/A — MULTI-SERVICE ASSEMBLY (RECEPTACLES AS INDICATED)
- N/A — MULTI-SERVICE CEILING BOX (RECEPTACLES AS INDICATED)
- N/A — MULTI-SERVICE FLOOR BOX (RECEPTACLES AS INDICATED)
- N/A — MULTI-SERVICE FURNITURE BOX (RECEPTACLES AS INDICATED)
- N/A — MULTI-SERVICE POKE THRU (RECEPTACLES AS INDICATED)
- N/A — MULTI-SERVICE POWER POLE (RECEPTACLES AS INDICATED)
- N/A — MULTI-SERVICE WALL BOX (RECEPTACLES AS INDICATED)
- N/A — PLUG STRIP (HORIZONTAL/VERTICAL)
- N/A — CLOCK RECEPTACLE, 120V
- CORD DROP, 120V
- CEILING CORD DROP, 120V

RECEPTACLE TYPES

- A — ARC FAULT CIRCUIT INTERRUPTER
- AT — ARC FAULT CIRCUIT INTERRUPTER AND TAMPER RESISTANT
- D — DEDICATED CIRCUIT
- G — GROUND FAULT CIRCUIT INTERRUPTER
- GT — GROUND FAULT CIRCUIT INTERRUPTER AND TAMPER RESISTANT
- IG — ISOLATED GROUND
- S — SURGE PROTECTOR
- T — TAMPER RESISTANT
- U — INTEGRAL USB PORT(S)
- WP — WEATHER RESISTANT COVER

CONTROLS

- NON-FUSED SAFETY SWITCH
- FUSED SAFETY SWITCH, FUSE RATING INDICATED
- COMBINATION MOTOR STARTER AND FUSED SAFETY SWITCH, FUSE RATING INDICATED
- MOTOR STARTER
- MANUAL MOTOR STARTER
- AUTOMATIC DOOR PUSHPLATE
- DEAD FRONT GFCI
- EMERGENCY SHUTDOWN
- ENCLOSED CIRCUIT BREAKER
- ENCLOSED CONTACTOR
- PUSH BUTTON CONTROL STATION
- M — TOGGLE SWITCH, MOTOR RATED
- TOUCHLESS AUTOMATIC DOOR OPENER
- DDC — DIRECT DIGITAL CONTROL PANEL
- R — RELAY
- THERMOSTAT
- TC — TIME CLOCK
- VFD — VARIABLE FREQUENCY DRIVE

WORK DEFINITION

- NEW WORK
- EXISTING
- REMOVE EXISTING
- REMOVE EXISTING ELECTRICAL EQUIPMENT
- FUTURE
- TEMPORARY, AS NOTED
- KEY NOTE
- ??? — EQUIPMENT IDENTIFICATION

RACEWAYS

- RACEWAY CONCEALED IN CEILING OR WALL. EXPOSED RACEWAY IS ALLOWED ONLY WHERE NOTED.
- RACEWAY BELOW SLAB OR UNDERGROUND
- RACEWAY UP
- RACEWAY DOWN
- RACEWAY CONTINUATION
- RACEWAY STUB-OUT WITH BUSHING
- SURFACE RACEWAY (HORIZONTAL/VERTICAL)
- J — JUNCTION BOX, CEILING OR ABOVE CEILING MOUNTED
- J — JUNCTION BOX, WALL MOUNTED
- J — JUNCTION BOX, IN-GROUND
- PB — PULL BOX

ELECTRICAL EQUIPMENT

- 208V OR 240V POWER PANELBOARD
- 480V OR 600V POWER PANELBOARD
- EQUIPMENT CABINET OR PANEL
- EQUIPMENT CONNECTION, FILL INDICATES EMERGENCY CIRCUIT
- GROUND BAR
- MOTOR CONNECTION, 1Ø
- MOTOR CONNECTION, 3Ø
- BUS DUCT
- ATS — AUTOMATIC TRANSFER SWITCH
- BUS DUCT PLUG
- SPD — SURGE PROTECTIVE DEVICE
- T — TRANSFORMER, NOT TO SCALE
- TRANSFORMER, DRAWN TO SCALE

SITE UTILITIES

- HH — HANDHOLE
- M — SITE METER
- MH — MANHOLE
- PMH — PRIMARY MANHOLE
- SMH — SECONDARY MANHOLE
- TMH — TELECOMMUNICATIONS MANHOLE

SITE UTILITY POLES

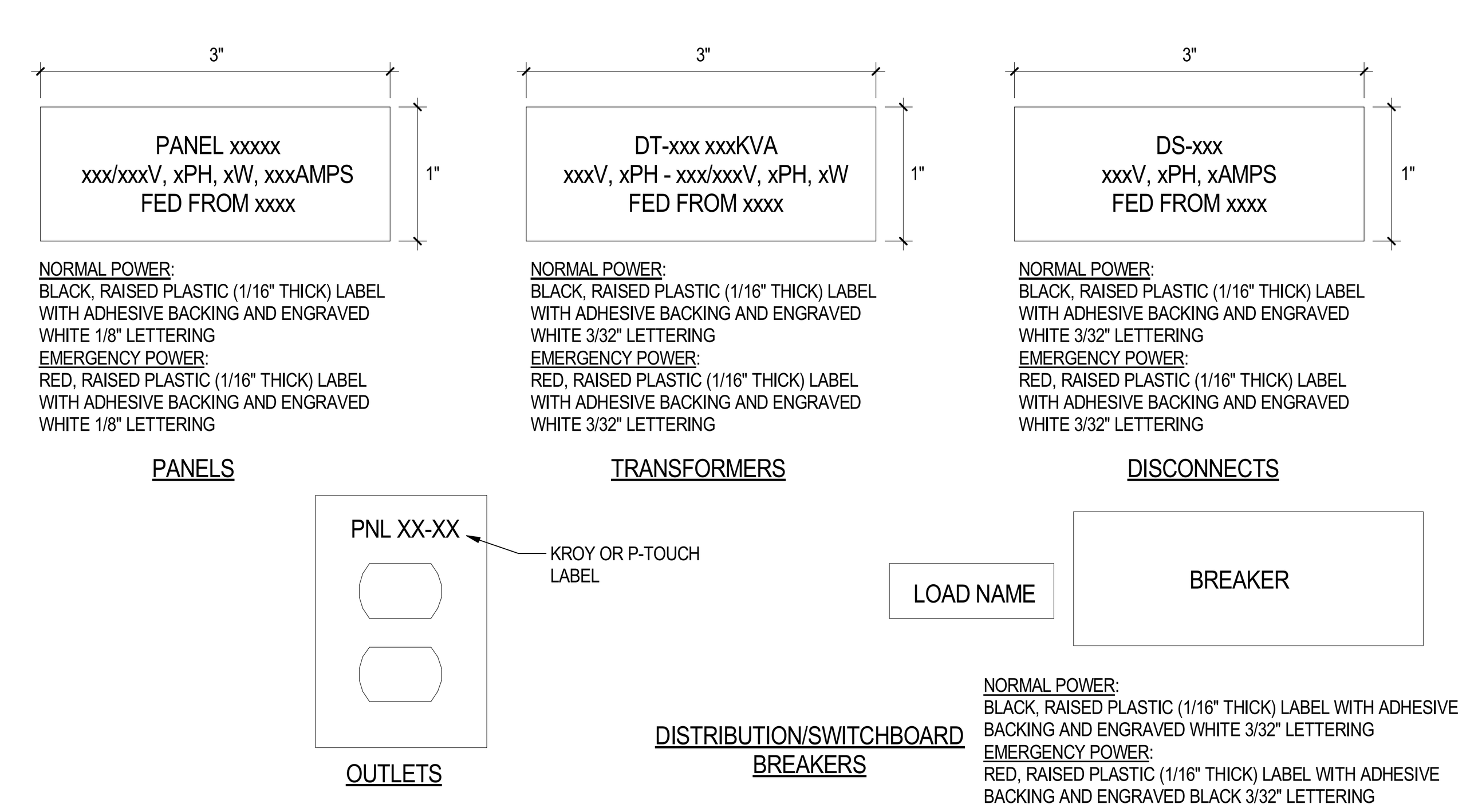
- CATV ONLY
- COMBINED SERVICES
- POWER ONLY
- TELECOM ONLY
- STEPDOWN TRANSFORMER, POLE MOUNTED

LIGHTNING PROTECTION

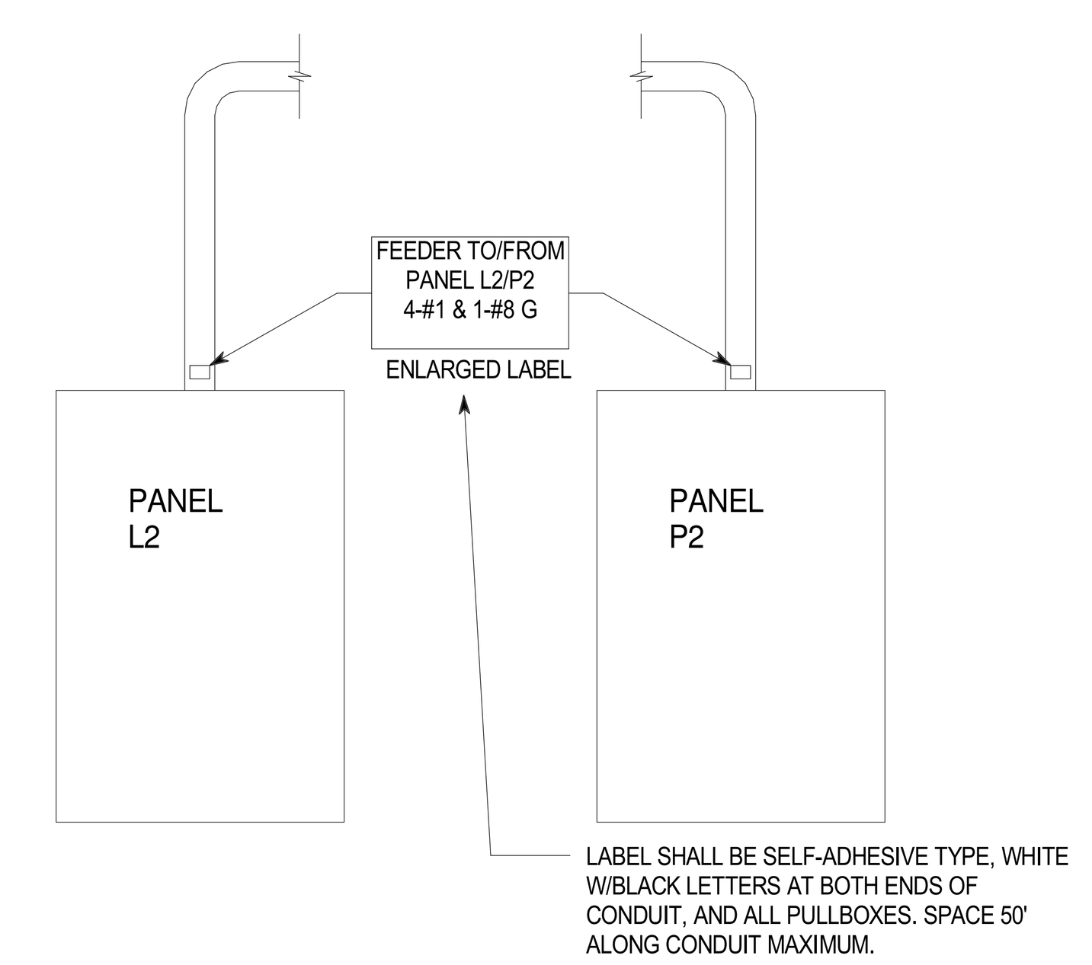
- CONDUCTOR
- GROUND ROD
- AIR TERMINAL
- DOWN CONDUCTOR

ELECTRICAL SHEET LIST

SHEET #	SHEET NAME	CURRENT REVISION	CURRENT REVISION DATE
Ee001	ELECTRICAL COVERSHEET		
Ee002	ELECTRICAL SCHEDULES		
Ee003	ELECTRICAL DETAILS		
Ee100	ELECTRICAL DEMOLITION PLAN		
Ee101	ELECTRICAL DEMOLITION PLAN		
Ee200	ELECTRICAL NEW WORK PLAN		
Ee201	ELECTRICAL NEW WORK PLAN		
Ee600	ELECTRICAL SINGLE LINE		

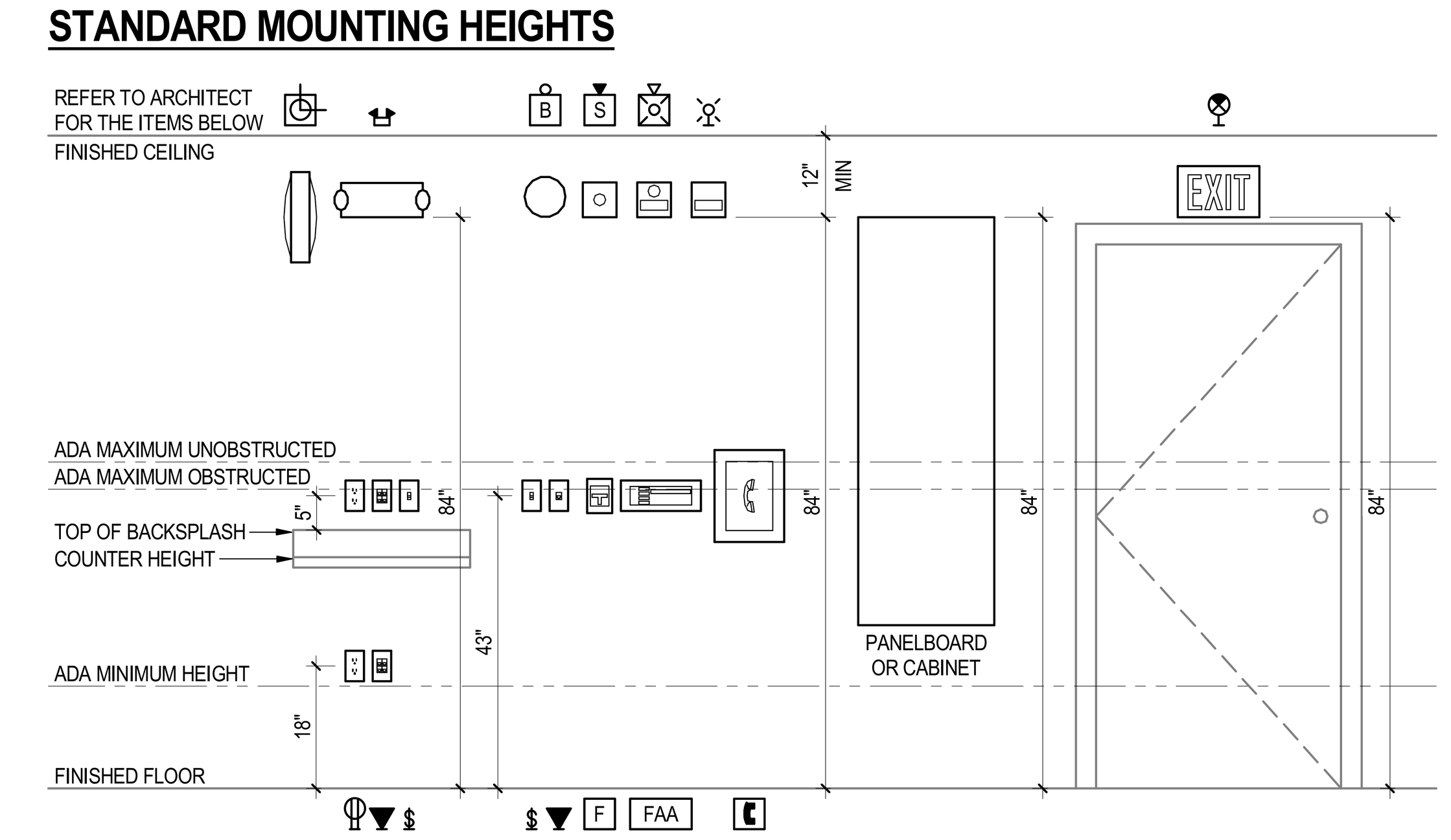


1 Ee001 **EQUIPMENT LABELING DETAIL**
NOT TO SCALE



2 Ee001 **EXAMPLE FEEDER LABELING DETAIL**
NOT TO SCALE

STANDARD MOUNTING HEIGHTS



3 Ee001 **STANDARD MOUNTING HEIGHTS**
NOT TO SCALE

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Consultant

Revision | By | Appd. | YYYY.MM.DD

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Permit/Seal

STATE OF MICHIGAN — JASON DECHECK — ENGINEER — No. 6201069420 — LICENSED PROFESSIONAL ENGINEER
12/09/2022

WAYNE STATE UNIVERSITY

Wayne State University
Art Building Elevator Replacement
5400 Gullen Mall
Detroit, MI 48202

Project No.: 214100597
File Name: N/A

Author	Designer	Checker	08/30/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ELECTRICAL COVERSHEET

Scale: As indicated
Revision:
Drawing No. **Ee001**

ORIGINAL SHEET - ARCH E1

ELECTRICAL GENERAL NOTES

1. THE ELECTRICAL CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM AUTHORITIES HAVING JURISDICTION AND PAY ALL ASSOCIATED FEES.
2. LOCATE JUNCTION AND PULL BOXES AS REQUIRED TO ALLOW ACCESS AFTER EQUIPMENT AND APPURTENANCES ARE INSTALLED. COORDINATE EXACT LOCATIONS WITH THE OTHER TRADES. COORDINATE LOCATIONS AND ELEVATIONS OF ELECTRICAL DEVICES WITH DRAWINGS AND OTHER TRADES PRIOR TO INSTALLATION.
3. PROTECT PERMANENT BUILDING FINISHES FROM DAMAGE DURING CONSTRUCTION PERIOD. PROVIDE PLYWOOD OR SIMILAR MATERIAL UNDER EQUIPMENT OR MATERIALS STORED ON FLOORS, AND IN AREAS WHERE CONSTRUCTION MAY DAMAGE FINISHES. SURFACES OR FINISHES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT THE COST OF THE CONTRACTOR AT FAULT.
4. PROPERLY SUPPORT PER CODE LOW VOLTAGE CABLING NOT IN CONDUIT. IN AREAS SUCH AS CORRIDORS DESIGNATED FOR NEW CEILINGS AND FINISHES, SUPPORT EXISTING ELECTRICAL DEVICES AND EQUIPMENT IN AND ABOVE THE CEILING, INCLUDING CONDUIT AND CABLING. PROVIDE PROPER PERMANENT SUPPORT AS NEEDED TO COMPLY WITH CODE AND TAKE WEIGHT OFF CEILING SUPPORTS. REMOVE AND REINSTALL ELECTRICAL DEVICES AND EQUIPMENT AS NEEDED FOR PAINTING, WALL COVERINGS, CEILINGS, AND FINISH WORK. REFER TO ARCHITECTURAL DRAWINGS. LOW VOLTAGE CABLING LOCATED IN EXPOSED STRUCTURE (CEILING) AREAS SHALL BE INSTALLED IN CONDUIT (OR CABLE TRAY, IF APPLICABLE) AND ROUTED TIGHT TO DECK. INSTALLATIONS NOT IN COMPLIANCE WITH THIS REQUIREMENT SHALL BE REMOVED AND REINSTALLED AT CONTRACTOR'S EXPENSE.
5. WHERE PROJECT PHASING IS INDICATED IN ANY PART OF THE WORKING DOCUMENT PACKAGE, ELECTRICAL CONTRACTOR IS TO PLAN WORK SO AS TO FACILITATE SUCH PHASING.
6. FOR BRANCH CIRCUITS OVER 75' (25 METERS) IN LENGTH (TOTAL ONE WAY) FROM THE PANEL, THE ELECTRICAL CONTRACTOR SHALL CALCULATE THE VOLTAGE DROP AND PROVIDE AN APPROPRIATE CONDUCTOR SIZE TO ACHIEVE NO MORE THAN 3% MAXIMUM ALLOWABLE VOLTAGE DROP.
7. DO NOT SCALE THE DRAWINGS. BECAUSE OF THE SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS OR OTHER SIMILAR ITEMS WHICH MAY BE REQUIRED TO MAKE A COMPLETE OPERATING SYSTEM. CAREFULLY INVESTIGATE CONDITIONS AFFECTING WORK AND INSTALL WORK IN SUCH MANNER THAT INTERFERENCES BETWEEN PIPES, CONDUITS, DUCTS, EQUIPMENT, ARCHITECTURAL AND STRUCTURAL FEATURES SHALL BE AVOIDED.
8. WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL RULES AND REGULATIONS OF THE LOCAL MUNICIPALITY.
9. ALL SYSTEMS SHALL BE INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS.
10. WORK SHALL MEET THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
11. EQUIPMENT SHALL BEAR U.L. LABELS.
12. ALL EQUIPMENT SHALL BE BONDED AND GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
13. THE ELECTRICAL TRADE SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, PAINTING, CONCRETE, ETC. REQUIRED FOR COMPLETING THE WORK.
14. ANY ADDITIONAL COST TO ENSURE THE DELIVERY OF PANELBOARDS, LIGHT FIXTURES, ETC. TO MEET THE CONSTRUCTION SCHEDULE SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
15. LOCATE JUNCTION BOXES TO ALLOW ACCESS AFTER MECHANICAL EQUIPMENT AND DUCTWORK IS INSTALLED. COORDINATE EXACT LOCATIONS WITH THE MECHANICAL TRADES.
16. THE USE OF APPROVED TYPE EXPANSION FITTINGS SHALL BE REQUIRED ON ALL RACEWAYS WHICH CROSS ANY BUILDING EXPANSION JOINT.
17. COORDINATE THE ELEVATION AND LOCATION OF ELECTRICAL DEVICES WITH THE ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.
18. SEE THE ARCHITECTURAL DRAWINGS FOR CONSTRUCTION TYPES OF ALL WALLS, FLOORS, AND CEILINGS.
19. BALANCE PANEL PHASES ONCE USER EQUIPMENT IS INSTALLED AND OPERATIONS.
20. WHERE NO SHORT CIRCUIT INTERRUPT/WITHSTAND RATING IS INDICATED, DEVICES OR EQUIPMENT SHALL BE RATED THE SAME AS THE NEAREST UPSTREAM DEVICE. IF THERE IS A CONFLICT BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, PROVIDE THE HIGHEST RATING SPECIFIED OR SHOWN.
21. THE LOCATIONS OF EXISTING UTILITIES, STRUCTURE AND OTHER CONDITIONS ON THE PLANS IS APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY AND REPORT ANY DISCREPANCIES TO THE DESIGN PROFESSIONAL PRIOR TO BEGINNING ANY WORK.
22. THE VERBIAGE ON THE DRAWINGS INDICATING THE TYPES OF MATERIALS TO BE ENCOUNTERED IS TO AID THE ELECTRICAL CONTRACTOR IN UNDERSTANDING THE VARIOUS CONDITIONS LIKELY TO BE ENCOUNTERED. THE ELECTRICAL CONTRACTOR SHALL COORDINATE INSTALLATION METHODS WITH THESE MATERIALS. IN ALL INSTANCES WHERE THE WALL OR CEILING CONSTRUCTION PERMITS A CONCEALED INSTALLATION, THE DEVICES AND CONDUITS SHALL BE INSTALLED PRIOR TO FINAL FINISHED SURFACE INSTALLATION.
23. CAULK ALL JOINTS BETWEEN METAL FRAMES AND THE ADJOINING FINISHES. THIS APPLIES TO INTERIOR AND EXTERIOR INSTALLATIONS.
24. REMOVE EXISTING FINISHED CEILING THROUGHOUT TO PERIMETER BULKHEAD. PERIMETER BULKHEAD SHALL REMAIN AND BE PROTECTED DURING ALL PHASES OF CONSTRUCTION.
25. AREAS SHALL BE CLEANED AND LEFT IN ORIGINAL CONDITION AT THE END OF EACH SHIFT.
26. PROTECT CABLING TO AVOID PAINTING AND EXPOSURE OF OTHER LIQUIDS TO TECHNOLOGY CABLING (INCLUDING BUT NOT LIMITED TO TELECOMMUNICATIONS DATA/VOICE/VIDEO CABLING INFRASTRUCTURE, AUDIOVISUAL SYSTEMS, LOCAL SOUND SYSTEMS, ACCESS CONTROL AND ELECTRONIC SURVEILLANCE SYSTEMS).
27. INSTALL ALL CONDUIT TIGHT TO UNDERSIDE OF FLOOR SLAB ABOVE. LOCATE JUNCTION BOXES AS REQUIRED TO ALLOW ACCESS AFTER MECHANICAL EQUIPMENT AND DUCTWORK IS INSTALLED. COORDINATE EXACT LOCATIONS WITH THE PROJECT CONTRACTORS.
28. DEVICE LOCATIONS SHOWN ON DRAWINGS INDICATE GENERAL LOCATIONS. VERIFY EXACT LOCATIONS AND MOUTNING CONDITIONS WITH ARCHITECTURAL DETAILS AND PLANS. COORDINATE INSTALLATIONS WITH OTHER TRADES AND EXISTING CONDITIONS.

PROJECT COORDINATION NOTES

1. THE ELECTRICAL CONTRACTOR (OR SUBCONTRACTORS) SHALL REFER TO THE ARCHITECTURAL SET OF DRAWINGS FOR CASEWORK ELEVATIONS, TACKBOARD/WHITEBOARD LOCATIONS, AND ANY OTHER BUILT-IN ARCHITECTURAL ELEMENTS, PRIOR TO ROUGH-IN OF ELECTRICAL DEVICES. FAILURE TO COORDINATE WITH THESE ITEMS WILL NOT BE CONISDERED FOR EXTRA TIME OR MONEY.
2. THE ELECTRICAL CONTRACTOR (OR SUBCONTRACTOR) SHALL COORDINATE WITH THE HVAC, PLUMBING AND FIRE PROTECTION DOCUMENTS. COORDINATE ALL ROUGH-IN LOCATIONS WITH THE RESPECTIVE TRADES PRIOR TO THE INSTALLATION OF FEEDERS, BRANCH CIRCUITS, ETC.
3. REFER TO THE ARCHITECTURAL PLANS FOR DIMENSIONS OF DEVICES, LIGHTS, OUTLETS, ETC. IN FINISHED SPACES.
4. COORDINATE THE INSTALLATION OF DEVICES IN CONCRETE BLOCK WALLS. DEVICES SHALL BE INSTALLED NEAT, PLUMB AND FLAT TO THE FINISHED WALL SURFACE. SAW CUT ALL OPENINGS FOR DEVICES, DO NOT CHISEL OPENINGS.
5. CONTRACTORS SHALL COORDINATE LOCATIONS OF FIXTURES AND ELECTRICAL DEVICES INSTALLED IN OR ON THE CEILING WITH ARCHITECTURAL REFLECTED CEILING PLAN. CEILING MOUNTED ELECTRICAL DEVICES SHALL BE MOUNTED IN THE CENTER OF THE CEILING TILES, UNLESS OTHERWISE NOTED.
6. COORDINATE WITH THE HVAC CONTRACTOR FOR THE EXACT LOCATION OF HVAC EQUIPMENT. MAINTAIN ACCESSIBILITY TO HVAC CONTROLS.
7. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL NEW CONDUIT ROUTING WITH THE PIPING, DUCTWORK, LIGHTING, CABLE TRAYS, AND CEILING GRID ELEVATION PRIOR TO INSTALLATION. CONDUIT SHALL NE INSTALLED TIGHT TO STRUCTURE IN ALL INSTANCES POSSIBLE.
8. COORDINATE ALL ACCESS DOOR LOCATIONS WITH THE GENERAL CONSTRUCTION TRADES. MINIMIZE LOCATIONS OF ACCESS PANELS AS MUCH AS POSSIBLE. DO NOT INSTALL JUNCTION OR PULL BOXES BEHIND FINISHED SURFACES. IF REQUIRED, COORDINATE LOCATION WITH DESIGN PROFESSIONAL BEFORE INSTALLING.

FIRE ALARM GENERAL NOTES

1. SOME LEGEND SYMBOLS MAY NOT BE USED. SEE FLOOR PLANS FOR APPLICABLE DEVICES.
2. THESE NOTES ARE GENERAL IN NATURE AND PERTAIN TO THE ENTIRE PROJECT UNLESS OTHERWISE NOTED ON AN INDIVIDUAL DRAWING.
3. PRIOR TO BIDDING, THE CONTRACTOR SHALL EXAMINE ALL PROJECT DRAWINGS AND SPECIFICATIONS TO DEVELOP A COMPLETE UNDERSTANDING OF THE PROJECT SCOPE. THE CONTRACTOR SHALL ADVISE THE ENGINEER OF ANY DISCREPANCIES WHICH WILL AFFECT THE WORK REQUIRED.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL PERTINENT CODES AND REGULATIONS. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH ALL PERTINENT CODES AND REGULATIONS. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT IN ACCORDANCE WITH APPLICABLE CODES. MANUFACTURER'S WRITTEN INSTRUCTIONS, AND RECOGNIZED INDUSTRY PRACTICES. ALL EQUIPMENT, DEVICES, AND MATERIALS SHALL BE UL LISTED AND FM APPROVED.
5. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING ALL REQUIRED INFORMATION TO THE AUTHORITY HAVING JURISDICTION TO OBTAIN THE NECESSARY PERMITS AND APPROVALS. ALL FEES ASSOCIATED WITH THIS SUBMISSION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS AND BE RESPONSIBLE FOR ALL FEES CHARGED BY THE AUTHORITY HAVING JURISDICTION FOR SUCH INSPECTION.
6. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ELIMINATE CONFLICTS BETWEEN STRUCTURAL ELEMENTS AS WELL AS PIPING, DUCTWORK, SPRINKLER, ARCHITECTURAL, AND OTHER ELECTRICAL WORK. ALL EQUIPMENT SHALL BE COORDINATED WITH OTHER TRADES AND ARCHITECTURAL AND STRUCTURAL FEATURES.
7. FIRE ALARM VENDOR TO PERFORM CALCULATIONS NEEDED TO DETERMINE THE QUANTITY OF NAC BOOSTERS / POWER SUPPLIES REQUIRED. FIRE ALARM CONTRACTOR SHALL SUBMIT CALCULATIONS FOR VOLTAGE DROP, BATTERY CAPACITY AND OTHER REQUIRED CALCULATIONS AS SPECIFIED.
8. PROVIDE SMOKE DETECTION AT ALL FIRE ALARM CONTROL UNITS, NAC BOOSTERS / POWER SUPPLIES, DIALERS, AND TRANSMITTING EQUIPMENT LOCATION.
9. FIRE ALARM SYSTEM SHALL BE INSTALLED PER REQUIREMENTS OF PA BUILDING CODE, FIRE CODE AND APPLICABLE STANDARD INCLUDING NFPA 72.
10. INSTALLATION OF THE SYSTEMS SHALL NOT BE STARTED UNTIL DETAILED DESIGN DOCUMENTS AND SPECIFICATION, INCLUDING STATE FIRE MARSHAL LISTING NUMBERS FOR EACH COMPONENT OF THE SYSTEM HAS BEEN APPROVED BY AHJ.
11. UPON COMPLETION OF THE INSTALLATION OF THE SYSTEMS, A SATISFACTORY TEST OF THE ENTIRE SYSTEM SHALL BE MADE IN THE PRESENCE OF THE AHJ.
12. A STAMPED SET OF APPROVED FIRE ALARM DESIGN DOCUMENTS SHALL BE ON THE JOB SITE AND USED FOR INSTALLATION.
13. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND THE CODE OR RECOGNIZED STANDARDS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER OF THE PROJECT.
14. AHJ, ARCHITECT/ENGINEER AND OWNER SHALL BE NOTIFIED A MINIMUM OF 48 HOURS PRIOR TO THE FINAL INSPECTION AND/OR TESTING.
15. ALL PENETRATIONS THROUGH RATED ASSEMBLIES, REQUIRING OPENING PROTECTION SHALL BE PROVIDED WITH A PENETRATION FIRE STOP SYSTEM AS IDENTIFIED IN IBC, UL OR OTHER LAB TESTING CRITERIA. APPROVED TYPE OF MATERIALS SHALL BE IDENTIFIED WITHIN THE SPECIFICATION WITHIN THE FIRE ALARM SECTION.
16. REFER TO MOUNTING DETAILS ON Ee003.
17. AUDIBLE DEVICES TO BE AT LEAST 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL BUT NOT LESS THAN 75 DBA AT 10 FEET OR MORE THAN 110 DBA AT THE MINIMUM HEARING DISTANCE. SOUND LEVEL SHALL BE MAINTAINED FOR DURATION OF AT LEAST 60 SECONDS. FIRE ALARM MANUFACTURER SHALL VERIFY THE FINAL DESIGN MEETS THIS CRITERIA.
18. THE CONTRACTOR SHALL ADJUST/INSTALL ALL DEVICES TO MAXIMIZE PERFORMANCE AND TO MINIMIZE FALSE ALARMS.
19. STROBES SHALL BE SYNCHRONIZED WHEN FLASHING TO THAT NO TWO OR MORE STROBES IN AN AREA OF VIEW SHALL FLASH AT DIFFERENT TIMES OR RATES.
20. PER NEC STANDARDS, ALL WIRING IS TO BE PULLED THROUGH EACH JUNCTION BOX AND CONNECTED DIRECTLY TO EACH FIRE DEVICE. DO NOT SPLICE THE WIRE. THERE MUST BE AT LEAST 6' OF LEAD WIRE FROM THE BOX TO THE DEVICE. ALL BOXES TO BE SIZED PER NEC.
21. SMOKE DETECTORS SHALL NOT BE ANY CLOSER THAN 1' FROM FIRE SPRINKLERS OR 3' FROM ANY SUPPLY DIFFUSER. IN AREAS OF CONSTRUCTION OR POSSIBLE DAMAGE/CONTAMINATION NEWLY INSTALLED FIRE ALARM DEVICES SHALL BE COVERED UNTIL THAT AREA IS READY TO BE TURNED OVER TO THE OWNER.
22. FIRE ALARM CABLING SHALL BE INSTALLED IN CONDUIT.
23. FIRE ALARM REMOTES AND COMPONENTS SHALL BE SECURED TO MOUNTING SURFACES PER MANUFACTURER'S SPECIFICATIONS. NO SINGLE DEVICE SHALL EXCEED THE WEIGHT OF 20 LBS. WITHOUT SPECIAL MOUNTING DETAILS.
24. THE INSTALLING CONTRACTOR SHALL PROVIDE SYSTEM PROGRAMMING FOR SUPERVISORY MONITORING.
25. SUPERVISORY MONITORING SHALL BE TESTED AND VERIFIED AS SENDING CORRECT SIGNALS IN CONJUNCTION WITH FINAL ACCEPTANCE TEST.
26. IN GENERAL ALL ELECTRICAL CONDUIT WILL BE RUN AT THE ELEVATION JUST BELOW THE BOTTOM OF THE STRUCTURAL BEAMS. THE CONTRACTOR SHALL OFFSET THE ELECTRICAL CONDUIT TO AVOID INTERFERENCE WITH ANY DUCTWORK, SPRINKLER OR MECHANICAL PIPING. THE CONTRACTOR SHALL COORDINATE HIS CONDUIT AND RACEWAY LOCATIONS WITH ALL OTHER TRADES BEFORE INSTALLATION.
27. ALL CONDUITS SHALL BE INSTALLED PARALLEL AND PERPENDICULAR TO STRUCTURE.

WIRING NOTES

1. THE COMPLETE BRANCH WIRING SYSTEM IS NOT SHOWN ON THE DRAWINGS. AN ABBREVIATED FORMAT IS USED TO INDICATE WHICH FIXTURES/DEVICES ARE CONNECTED TO A COMMON CIRCUIT OR SWITCH. THIS IS PROVIDED ONLY AS A GUIDE TO THE CONTRACTOR. ACTUAL WIRING MAY DIFFER DUE TO FIELD CONDITIONS.
2. ALL CIRCUITS SHALL CONTAIN AN INDIVIDUAL NEUTRAL CONDUCTOR AND SAFETY GROUND CONDUCTOR. DO NOT USE THE CONDUIT FOR THE GROUND. CIRCUITS INDICATED AS "ISOLATED GROUND" SHALL HAVE A SECOND INDIVIDUAL GROUND CONDUCTOR INSTALLED (GREEN WITH YELLOW STRIPE). THE CONDUCTOR SHALL BE TERMINATED ON THE ISOLATED GROUND SCREWS OF DEVICES, AND TERMINATE ON THE GROUND BUS OF THE SOURCE PANELBOARD.
3. IF INSTALLING MULTIPLE CURRENT CARRYING CONDUCTORS ARE INSTALLED IN A COMMON CONDUIT OR RACEWAY, THE NEC DERATING RULES SHALL APPLY. UPSIZE CONDUCTORS ACCORDINGLY. THIS APPLIES TO CONDUITS, AS WELL AS SURFACE RACEWAYS.
4. ALL SWITCH LEGS SHALL HAVE A NEUTRAL AND GROUND CONDUCTOR INSTALLED IN ADDITION TO THE SWITCH LEGS.
5. WIRE SIZES ARE BASED ON 75 DEGREE C TEMPERATURE RATING AND 90 DEGREE C EQUIPMENT LUGS AS DETERMINED BY THE NEC TABLE 310.16.
6. REFER TO THE SPECIFICATIONS FOR THE USE OF MC CABLE IN THIS PROJECT. IF MC CABLE IS USED IT SHALL BE SUPPORTED INDEPENDENTLY FROM THE CEILING SUPPORTS. BUNDLE MC CABLE IN NEAT AND ORDERLY BUNDLES. INSTALL ALL HOME RUNS IN CONDUIT TO THE ROOM, AND USE MC CABLE FOR THE WIRING TO THE DEVICES.
7. CONDUIT SHALL BE USED IN ALL SPACES WITH EXPOSED CEILINGS, INCLUDING ELECTRICAL AND MECHANICAL SPACES.
8. THE CONTRACTOR SHALL PROVIDE A COMPLETE AND OPERABLE WIRING SYSTEM. IF THE WIRING REQUIREMENTS ARE UNCLEAR THE CONTRACTOR SHALL REQUEST ASSISTANCE FROM THE DESIGN PROFESSIONAL PRIOR TO THE BID DATE.
9. WIRING AND CONDUCTORS INSTALLED ON THE ROOF, EXPOSED TO EXTREME TEMPERATURES, SHALL BE DERATED PER NEC DERATING RULES FOR AMBIENT TEMPERATURE. AVOID INSTALLING LONG RUNS OF CONDUCTORS EXPOSED ON ROOFS.
10. ALL FEEDERS AND BRANCH CIRCUITS TO MECHANICAL EQUIPMENT AND/OR MOTORS SHALL BE IN CONDUIT. FINAL CONNECTIONS SHALL BE MADE WITH FLEXIBLE CONNECTIONS.
11. ALL FEEDER TO PANELBOARDS TO BE IN CONDUIT.
12. FEEDERS UP TO 100A SHALL BE COPPER, 125A RATED AND LARGER MAY BE ALUMINUM. FEEDER SIZES ARE BASED ON COPPER, UNLESS NOTD SPECIFICALLY AS ALUMINUM.
13. FEEDERS TO VIBRATING EQUIPMENT (MOTORS AND TRANSFORMERS) SHALL BE COPPER.

COLOR CODING OF CONDUCTORS SHALL BE AS FOLLOWS. PROVIDE A LABEL ON THE INSIDE OF ALL PANELBOARDS, INDICATING THE WIRING COLORS USED ON THE PROJECT:

277/480V SYSTEM	120/208V SYSTEM
PHASE A = BROWN	PHASE A = BLACK
PHASE B = ORANGE	PHASE B = RED
PHASE C = YELLOW	PHASE C = BLUE
NEUTRAL = GREY	NEUTRAL = WHITE
GROUND = GREEN	GROUND = GREEN

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MOUNTING	MANUFACTURER	CATALOG No.	LIGHT SOURCE #	LIGHT SOURCE TYPE	LIGHT SOURCE LUMENS	LIGHT SOURCE COLOR	INPUT WATTS	INPUT VOLTS	NOTES	COMMENTS
F1	2' GASKETED LINEAR LED WALL FIXTURE	SURFACE/ WALL	LITHONIA	DMW2 SERIES	1	LED	3000	4000K	27	120	1	
F2	4' LINEAR LED SUSPENDED FIXTURE	SUSPENDED	LIGHT EFFICIENT DESIGN	RP-B-LS SERIES	1	LED	3200	4000K	15	120	1	

GENERAL NOTES

1. IF DISCREPANCY EXISTS BETWEEN FIXTURE CATALOG NUMBER AND FIXTURE DESCRIPTION, FIXTURE DESCRIPTION SHALL TAKE PRECEDENCE.

LUMINAIRE SCHEDULE NOTES

1. FIXTURE FINISH TO BE SELECTED AND VERIFIED BY ARCHITECT.

VOLTAGE DROP SCHEDULE

120V BRANCH CIRCUITS UP TO 16 AMPS (WITH 3% MAX VOLTAGE DROP) IN STEEL CONDUIT

TOTAL WIRE LENGTH (FEET)	WIRE SIZE (AWG) (CU)
1' - 60'	#12
61' - 100'	#10
101' - 150'	#8
151' - 235'	#6
236' - 360'	#4

208V, 1-PHASE BRANCH CIRCUITS UP TO 16 AMPS (WITH 3% MAX VOLTAGE DROP) IN STEEL CONDUIT

TOTAL WIRE LENGTH (FEET)	WIRE SIZE (AWG) (CU)
1' - 105'	#12
106' - 175'	#10
176' - 260'	#8
261' - 410'	#6
411' - 630'	#4

208V, 3-PHASE BRANCH CIRCUITS UP TO 16 AMPS (WITH 3% MAX VOLTAGE DROP) IN STEEL CONDUIT

TOTAL WIRE LENGTH (FEET)	WIRE SIZE (AWG) (CU)
1' - 120'	#12
121' - 200'	#10
201' - 300'	#8
301' - 470'	#6
471' - 720'	#4

277V BRANCH CIRCUITS UP TO 16 AMPS (WITH 3% MAX VOLTAGE DROP) IN STEEL CONDUIT

TOTAL WIRE LENGTH (FEET)	WIRE SIZE (AWG) (CU)
1' - 140'	#1
141' - 230'	#10
231' - 350'	#8
351' - 550'	#6
551' - 830'	#4

480V, 1-PHASE BRANCH CIRCUITS UP TO 16 AMPS (WITH 3% MAX VOLTAGE DROP) IN STEEL CONDUIT

TOTAL WIRE LENGTH (FEET)	WIRE SIZE (AWG) (CU)
1' - 240'	#12
241' - 400'	#10
401' - 600'	#8
601' - 940'	#6
941' - 1440'	#4

480V, 3-PHASE BRANCH CIRCUITS UP TO 16 AMPS (WITH 3% MAX VOLTAGE DROP) IN STEEL CONDUIT

TOTAL WIRE LENGTH (FEET)	WIRE SIZE (AWG) (CU)
1' - 280'	#12
281' - 460'	#10
461' - 700'	#8
701' - 1080'	#6
1081' - 1660'	#4

VOLTAGE DROP SCHEDULE NOTES:

1. TABLE IS FOR GENERAL GUIDANCE TO THE CONTRACTOR ONLY. CONTRACTOR IS RESPONSIBLE FOR LIMITING VOLTAGE DROP TO 3% MAX OF NOMINAL VOLTAGE.
2. FOR ALL OTHER LOADS (AMPACITIES), THE CONTRACTOR SHALL CALCULATE THE WIRE SIZE AS APPROPRIATE TO LIMIT VOLTAGE DROP TO 3% MAX OF NOMINAL VOLTAGE.
3. PER NEC 250.122 (B), CONTRACTOR SHALL INCREASE GROUND CONDUCTOR SIZE PROPORTIONATELY, ACCORDING TO THE CIRCULAR MIL AREA OF THE UNGROUNDED CONDUCTORS.

BRANCH CIRCUIT SCHEDULE - COPPER CONDUCTOR AND CONDUIT

NOMINAL CIRCUIT RATING (OCP RATING)	1-PH,2-W+G		1-PH,3-W+G		3-PH,3-W+G		3-PH,4-W+G	
	CONDUCTORS	CONDUIT	CONDUCTORS	CONDUIT	CONDUCTORS	CONDUIT	CONDUCTORS	CONDUIT
15	(2)#12+(1)#12G	3/4"	(3)#12+(1)#12G	3/4"	(3)#12+(1)#12G	3/4"	(4)#12+(1)#12G	3/4"
20	(2)#12+(1)#12G	3/4"	(3)#12+(1)#12G	3/4"	(3)#12+(1)#12G	3/4"	(4)#12+(1)#12G	3/4"
25	(2)#10+(1)#10G	3/4"	(3)#10+(1)#10G	3/4"	(3)#10+(1)#10G	3/4"	(4)#10+(1)#10G	3/4"
30	(2)#10+(1)#10G	3/4"	(3)#10+(1)#10G	3/4"	(3)#10+(1)#10G	3/4"	(4)#10+(1)#10G	3/4"
35	(2)#8+(1)#10G	3/4"	(3)#8+(1)#10G	3/4"	(3)#8+(1)#10G	3/4"	(4)#8+(1)#10G	3/4"
40	(2)#8+(1)#10G	3/4"	(3)#8+(1)#10G	3/4"	(3)#8+(1)#10G	3/4"	(4)#8+(1)#10G	3/4"
45	(2)#6+(1)#10G	3/4"	(3)#6+(1)#10G	3/4"	(3)#6+(1)#10G	3/4"	(4)#6+(1)#10G	3/4"
50	(2)#6+(1)#10G	3/4"	(3)#6+(1)#10G	3/4"	(3)#6+(1)#10G	3/4"	(4)#6+(1)#10G	3/4"
60	(2)#4+(1)10G	1"	(3)#4+(1)10G	1"	(3)#4+(1)10G	1-1/4"	(4)#4+(1)10G	1-1/4"
70	(2)#4+(1)#8G	1"	(3)#4+(1)#8G	1-1/4"	(3)#4+(1)#8G	1-1/4"	(4)#4+(1)#8G	1-1/4"
80	(2)#3+(1)#8G	1"	(3)#3+(1)#8G	1-1/4"	(3)#3+(1)#8G	1-1/4"	(4)#3+(1)#8G	1-1/4"
90	(2)#2+(1)#8G	1"	(3)#2+(1)#8G	1-1/4"	(3)#2+(1)#8G	1-1/4"	(4)#2+(1)#8G	1-1/2"
100	(2)#1+(1)#8G	1-1/4"	(3)#1+(1)#8G	1-1/4"	(3)#1+(1)#8G	1-1/2"	(4)#1+(1)#8G	1-1/2"

Notes:
1. THIS TABLE IS TO BE USED FOR BRANCH CIRCUIT WIRING, IF SPECIFIC WIRING REQUIRMENTS ARE NOT INDICATED ELSEWHERE ON THE DRAWINGS, OR IN OTHER TABLES/SCHEDULES.
2. THE CIRCUIT BREAKER RATING IN THE PANEL SCHEDULE SHALL BE USED TO IDENTIFY THE PROPER CONDUCTOR AND CONDUIT REQUIRMENTS FROM THE TABLE ABOVE.
3. THE CONDUCTORS IN THIS TABLE ARE BASED ON LENGTHS UP TO 75 FEET FROM THE SOURCE TO THE FIRST DEVICE. LENGTHS OVER 75 FEET SHALL COMPLY WITH THE VOLTAGE DROP NOTES SHOWN.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING IF A GROUNDED CONDUCTOR (NEUTRAL) IS REQUIRED BASED ON EQUIPMENT SUBMITTAL CUT SHEETS, RECEPTACLE CONFIGURATION, ETC.
5. THIS TABLE DOES NOT APPLY TO CIRCUITS REQUIRING OVERSIZED NUETRAL CONDUCTORS OR ISOLATED GROUND CONDUCTORS.

FIRE ALARM SYSTEM OPERATION MATRIX

OUTPUT / INPUT DEVICES

		ANNUNCIATION			NOTIFICATION					REQUIRED CONTROL		
		TROUBLE ALERT (INCLUDING VISUAL SIGNAL AND AUDIBLE ALARM)	SUPERVISORY ALERT (INCLUDING VISUAL SIGNAL AND AUDIBLE ALARM)	FIRE ALARM ALERT OF LOCATION AND TYPE OF INITIATION	ACTIVATE STROBES AND ANNOUNCE LOCATION OF THE ALARM ON SPEAKERS	IMMEDIATELY NOTIFY STAFF AT 24 HOUR MONITORED LOCATIONS	DISPLAY / PRINT CHANGE OF STATUS	TRANSMIT ALL POINT STATUS INFORMATION TO THE BMS	NOTIFY ELEVATOR SYSTEM OF FIRE IN RESPECTIVE LOBBY, HOISTWAY, OR MACHINE ROOM	SEND ELEVATOR TO PRIMARY RECALL FLOOR	SEND ELEVATOR TO ALTERNATE RECALL FLOOR	FIRE ALARM SYSTEM SHALL ACTIVATE ELEVATOR SHAFT PRESSURIZATION FAN
		A	B	C	D	E	F	G	H	I	J	K
2	ALL AREA SMOKE AND THERMAL DETECTORS (NON-UNIT)			X	X	X	X	X				X
10	ELEVATOR LOBBY RECALL SMOKE DETECTOR ACTIVATED - PRIMARY FLOOR			X	X	X	X	X	X		X	X
11	ELEVATOR LOBBY RECALL SMOKE DETECTOR ACTIVATED - ALL BUT PRIMARY FLOOR			X	X	X	X	X	X	X		X
20	TROUBLE ON COMMUNICATIONS LINK	X				X	X					
21	TROUBLE ON SIGNAL LINE CIRCUIT	X				X	X					

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STATE OF MICHIGAN
JASON DECHECK
ENGINEER
No. 6201069420
12/09/2022

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

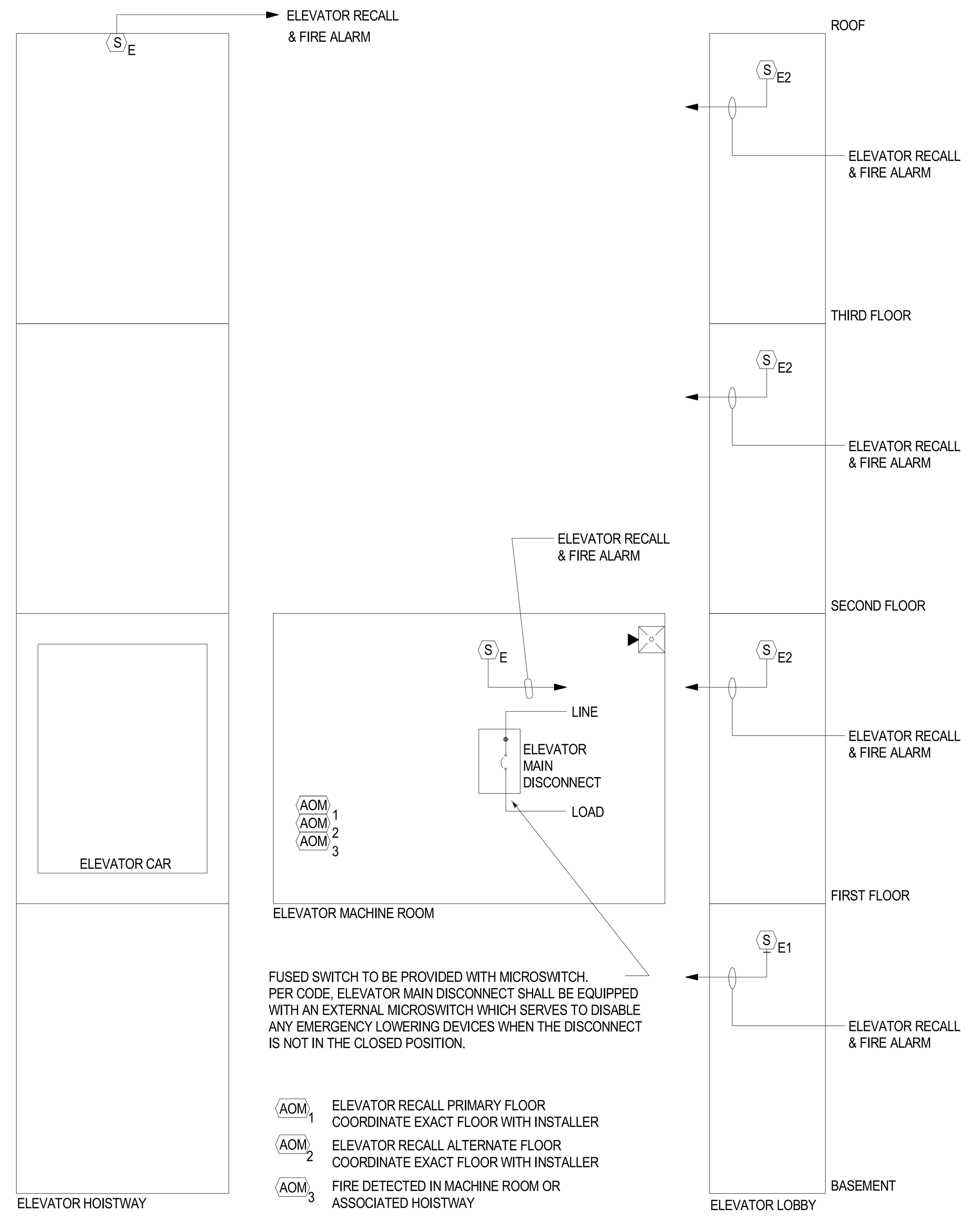
Project No.:214100597

Title
ELECTRICAL SCHEDULES

Scale: 12" = 1'-0"

Revision:

Drawing No.
Ee002

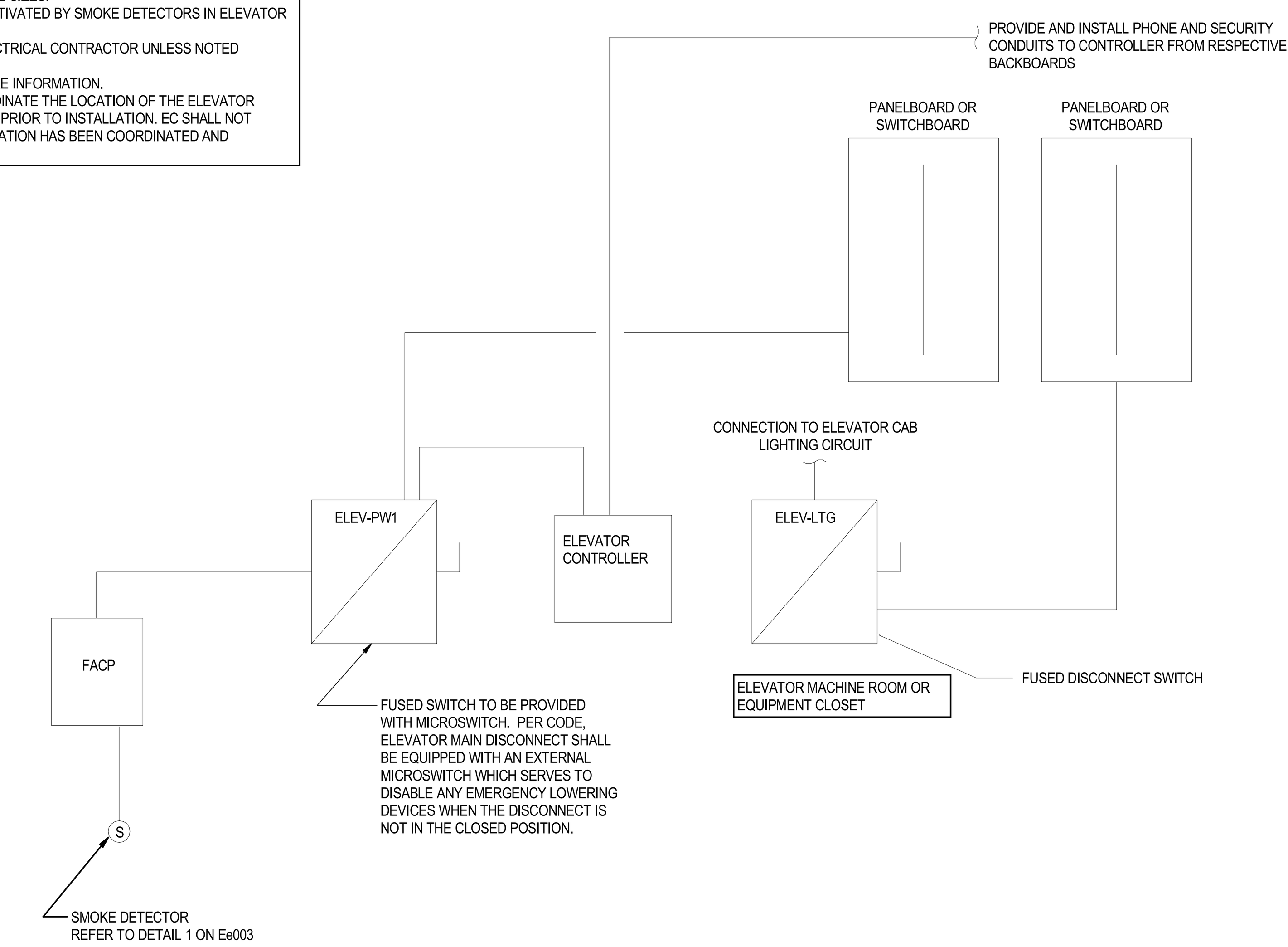


1 Ee003 ELEVATOR FIRE CONTROL AND ALARM DETAIL

NOT TO SCALE

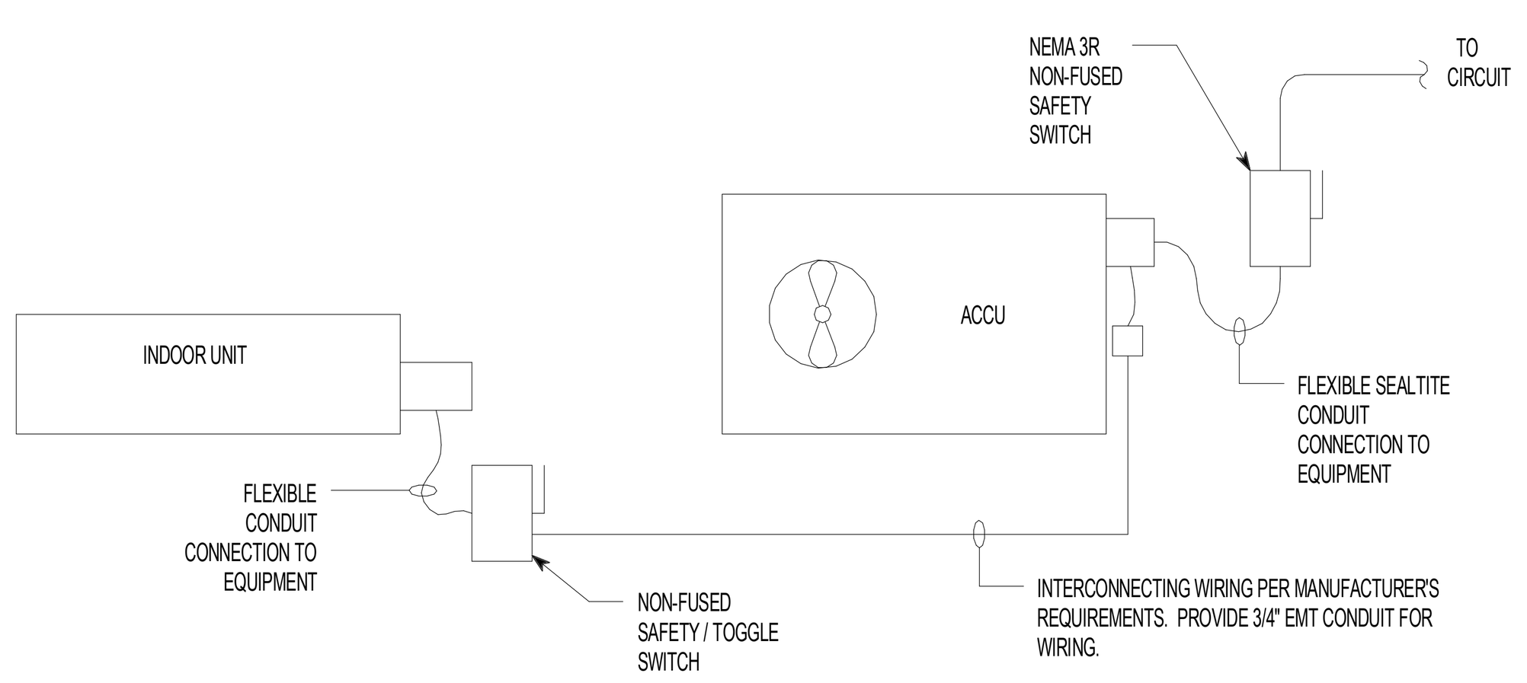
NOTES:

1. ALL CONTACTS SHALL BE ELECTRICALLY OPERATED, MECHANICALLY HELD.
2. SEE ELECTRICAL RISER DIAGRAM AND ELECTRICAL FLOOR PLANS FOR WIRE, DISCONNECT, AND OVERCURRENT DEVICE SIZES.
3. ELEVATOR RECALL SYSTEM SHALL BE ACTIVATED BY SMOKE DETECTORS IN ELEVATOR LOBBIES AND ELEVATOR SHAFTS.
4. ALL WIRING INDICATED SHALL BE BY ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE.
5. REFER TO FIRE ALARM DETAILS FOR MORE INFORMATION.
6. ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF THE ELEVATOR CONTROLLER WITH THE MANUFACTURER PRIOR TO INSTALLATION. EC SHALL NOT ROUGH IN ANY CONDUITS UNTIL THE LOCATION HAS BEEN COORDINATED AND CONFIRMED.



2 Ee003 ELEVATOR WIRING DIAGRAM

NOT TO SCALE



3 Ee003 DUCTLESS SPLIT SYSTEM AIR CONDITION SYSTEM

NOT TO SCALE

HEATING / PLUMBING / FIRE PROTECTION WIRING NOTES

1. ALL REMOTE STARTERS AND VFD'S SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR (M.C.), PLUMBING CONTRACTOR (P.C.), OR FIRE PROTECTION CONTRACTOR (F.P.C.). LINE VOLTAGE WIRING AND CONDUIT TO/FROM SHALL BE BY THE ELECTRICAL CONTRACTOR (E.C.).
2. ALL LINE VOLTAGE (120 VOLT OR GREATER) WIRING FOR POWER TO EQUIPMENT SHALL BE BY THE E.C.
3. ALL LOW VOLTAGE (LESS THAN 120V VOLT) CONTROL WIRING SHALL BE BY THE M.C., P.C., OR F.P.C., FOR THEIR RESPECTIVE EQUIPMENT.
4. THE E.EC. IS RESPONSIBLE FOR POWER WIRING AND CONDUIT FROM THE OVERCURRENT PROTECTION DEVICE TO A LOCAL DISCONNECT (BY E.C. IF REQUIRED) AND THEN TO THE STARTER OF VFD BY THE M.C., P.C., OR F.P.C.
5. THE E.C. SHALL VERIFY WITH THE M.C., P.C., OR F.P.C. THE EXACT EQUIPMENT BEING SUPPLIED PRIOR TO ROUGH-IN AND ORDERING OF ANY OVERCURRENT PROTECTION DEVICES. IF THE EQUIPMENT DIFFERS FROM WHAT IS DESIGNED FOR ON THE CONTRACT DOCUMENTS, THE RESPECTIVE CONTRACTOR IS RESPONSIBLE FOR ALL CHANGES TO THE ELECTRICAL CONTRACT.
6. THE E.C. SHALL VERIFY STUB-UP LOCATIONS WITH THE M.C., P.C., AND F.P.C. FOR ALL EQUIPMENT THAT IS TO BE FED FROM UNDER SLAB CONDUITS.
7. ALL WIRING BETWEEN FACTORY SUPPLIED OPTIONS ON EQUIPMENT SHALL BE BY THE RESPECTIVE CONTRACTOR (M.C., P.C., OR F.P.C.) THE E.C. IS NOT RESPONSIBLE FOR ANY FIELD WIRING.
8. CONTROL WIRING FOR INTERLOCKS BETWEEN VFD'S STARTERS AND DISCONNECT SWITCHES SHALL BE BY THE E.C .
9. REFER TO MECHANICAL EQUIPMENT SCHEDULES STARTING ON DRAWING E005 FOR EQUIPMENT DISCONNECT SWITCH SWITCH SCOPE OF WORK.
10. ALL FIRE ALARM COMPONENTS SHALL BE FURNISHED AND WIRED BY THE FIRE ALARM CONTRACTOR (F.C.)

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Revision | By | Appd | YYYY.MM.DD

Issued | By | Appd | YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
JASON DECHECK
ENGINEER
No. 6201069420
LICENSED PROFESSIONAL ENGINEER
12/09/2022

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597

File Name: N/A

Author	Designer	Checker	12/01/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

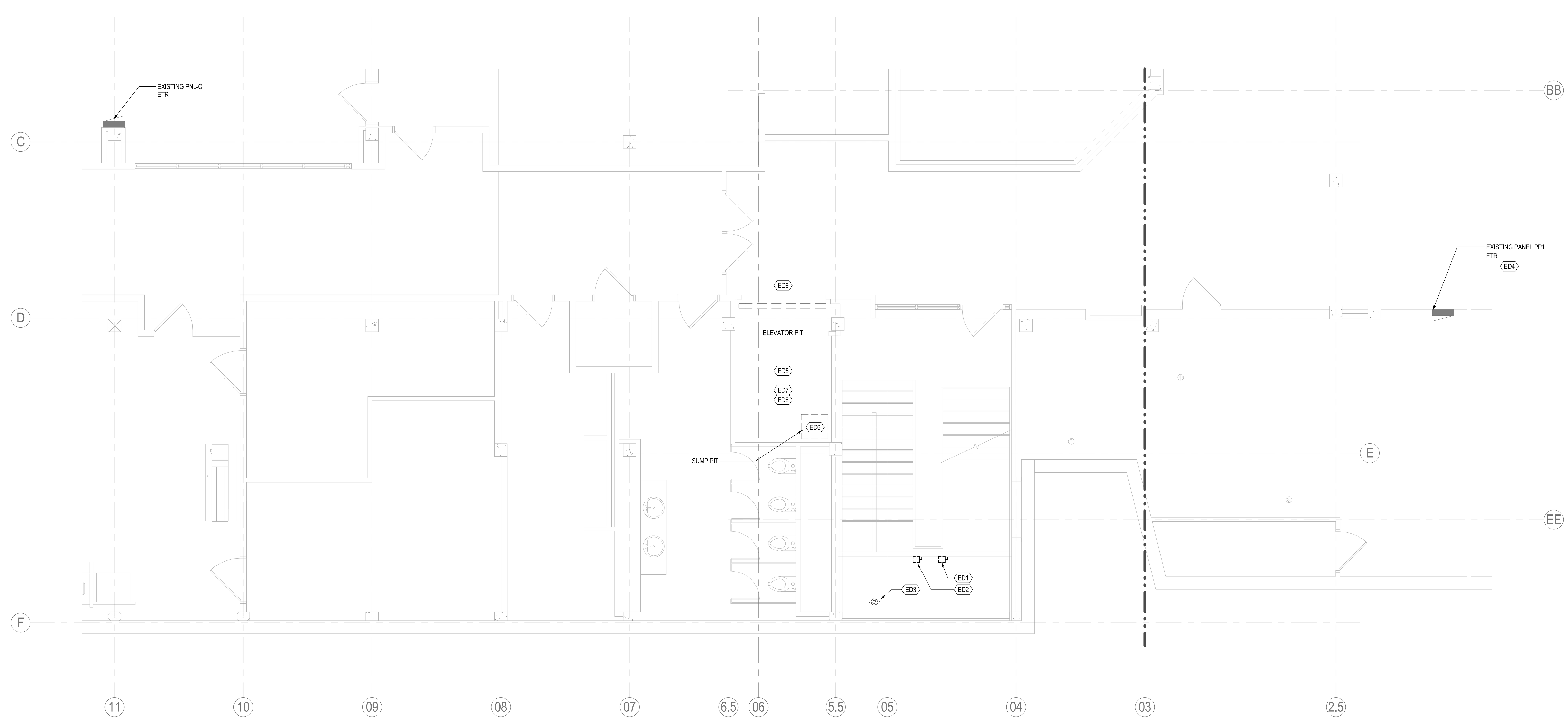
Title

ELECTRICAL DETAILS

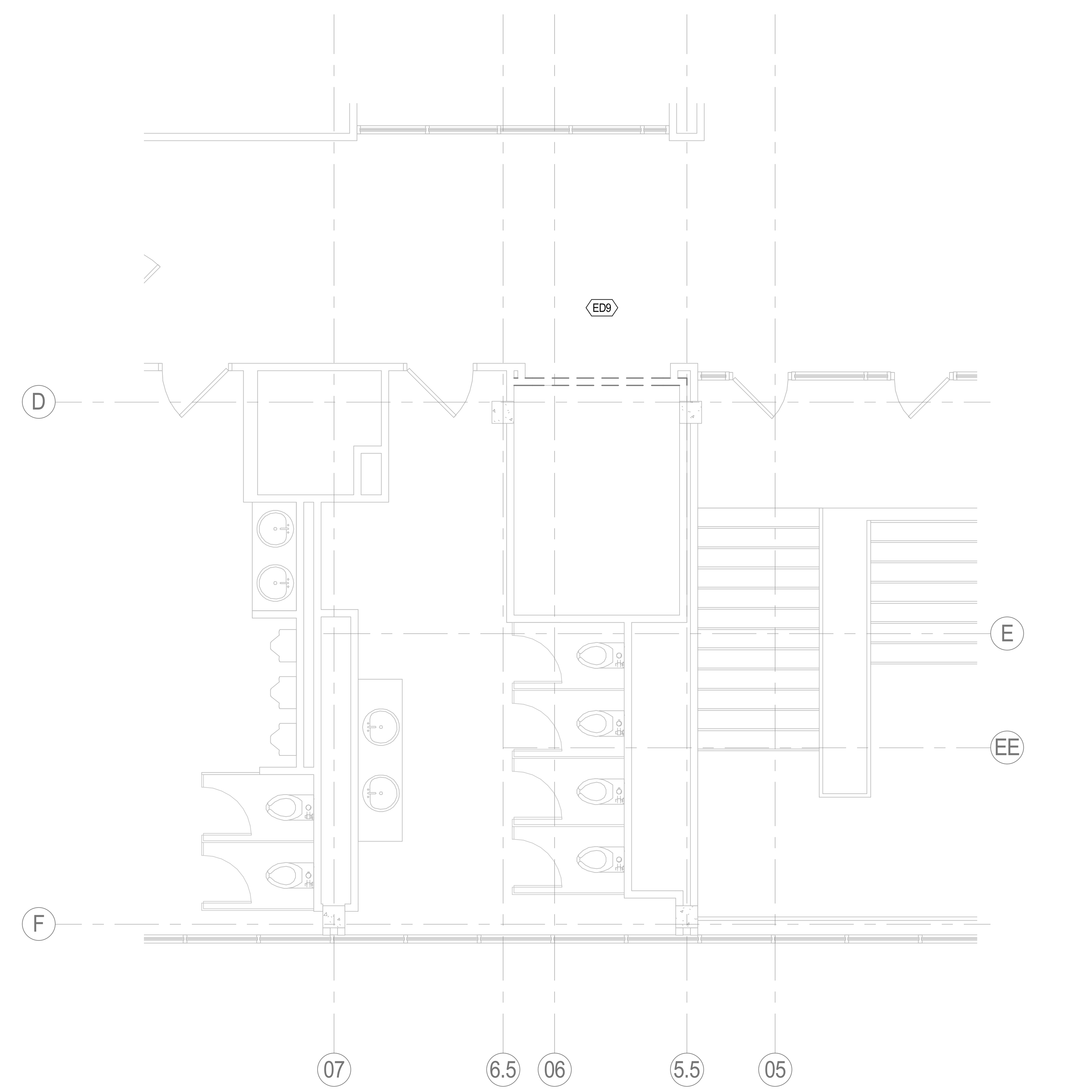
Scale: As indicated

Revision:

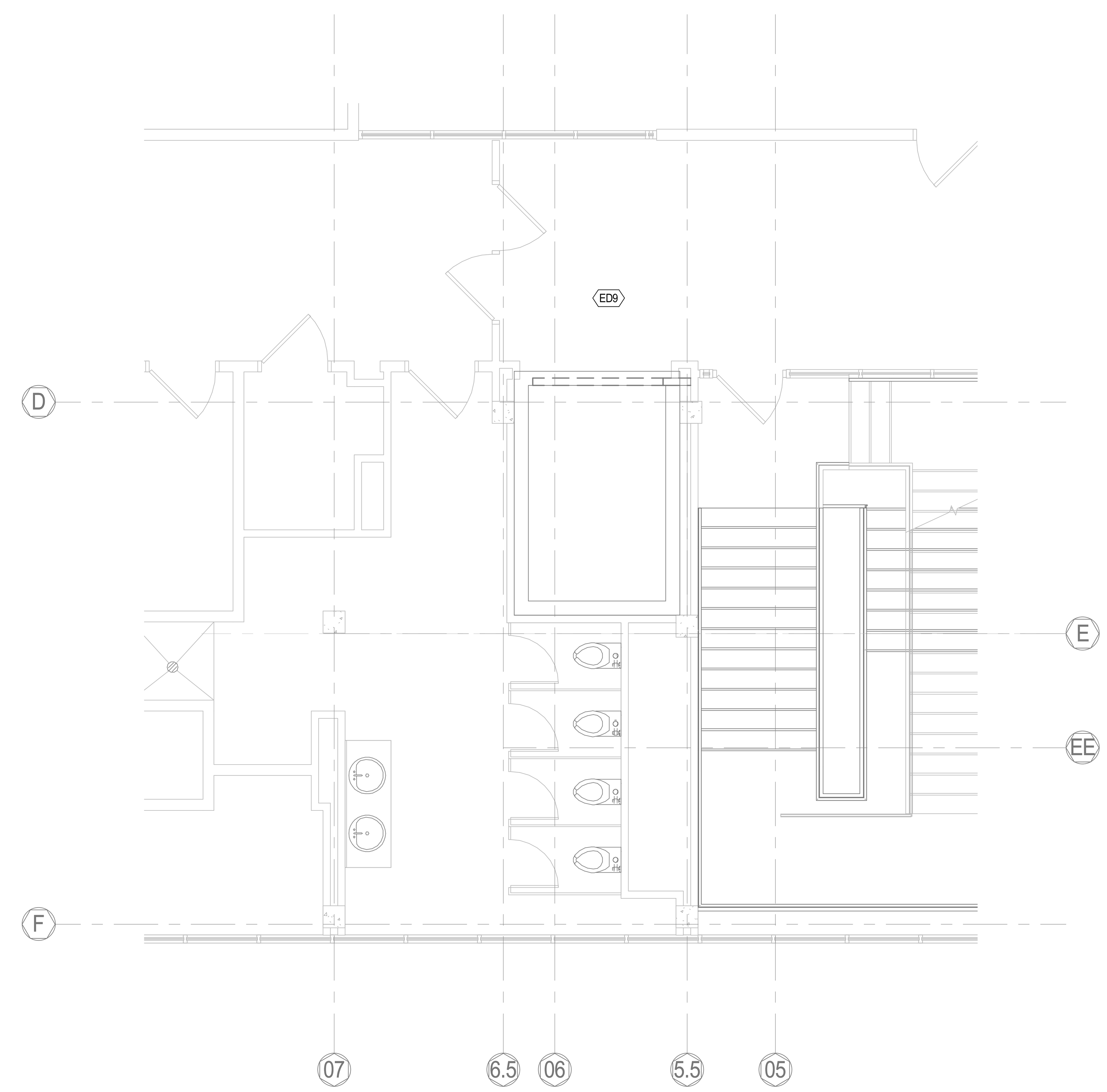
Drawing No. **Ee003**



1 Ee100 **LOWER LEVEL ELECTRICAL DEMO PLAN**
1/4" = 1'-0"



2 Ee100 **FIRST FLOOR ELECTRICAL DEMO PLAN**
1/4" = 1'-0"



3 Ee100 **SCOND FLOOR ELECTRICAL DEMO PLAN**
1/4" = 1'-0"

GENERAL DEMO NOTES

1. ANY EXISTING WIRING SERVING DEVICES TO REMAIN IN SERVICE, AND WHICH IS INTERRUPTED BY WORK PERFORMED UNDER THIS CONTRACT, SHALL BE REROUTED TO MAINTAIN CIRCUIT CONTINUITY. CONTRACTOR SHALL ASSUME THE RISK OF MAINTAINING EXISTING SYSTEMS EXCEPT RELOCATION OF WIRING OF #2 AWG AND ABOVE SHALL BE CONSIDERED AN ADDITIONAL COST IF NOT SHOWN TO BE RELOCATED. IF SUCH WIRING IS FOUND THE CONTRACTOR SHALL NOTIFY THE OWNER OF WIRING LOCATION, REASON IT MUST BE REMOVED, COST OF RELOCATION, AND RECEIVE THE OWNER'S APPROVAL BEFORE PROCEEDING WITH THE WORK. PRIOR TO COMMENCING WITH DEMOLITION, IDENTIFY ALL POWER, LIGHTING, COMMUNICATION AND SIGNAL CIRCUITS PASSING THROUGH THE DEMOLITION AREA OR EXTENDING BEYOND THE DEMOLITION AREA. COORDINATE WITH DEMOLITION WORK OF OTHER TRADES.
2. PERMANENTLY REMOVE ABANDONED ELECTRICAL EQUIPMENT, LIGHTING FIXTURES, JUNCTION BOXES, ELECTRICAL DEVICES AND ASSOCIATED WIRE, RACEWAYS, AND/OR JUNCTION BOXES. THE REMOVAL OR RELOCATION OF EXISTING ELECTRICAL EQUIPMENT PRESENTLY CONCEALED IN EXISTING CONSTRUCTION SHALL BE COORDINATED WITH THE OWNER PRIOR TO REMOVAL OR RELOCATION. RACEWAYS AND CONDUCTORS SHALL BE REMOVED BACK TO THE SOURCE OR NEAREST REMAINING JUNCTION BOX OR DEVICE AS FAR AS PRACTICAL, OR WHERE COMPLETE REMOVAL IS NOT PRACTICAL, RENDERED PREMANENTLY SAFE. UNUSED FLUSH MOUNTED DEVICES, OUTLET AND OTHER BOXES IN FINISHED AREAS SHALL BE REMOVED FROM WALL AND THE REMAINING HOLE PATCHED TO MATCH ADJACENT WALL SURFACES.
3. ANY EXISTING SYSTEM OUTAGES SHALL BE OF MINIMUM DURATION AND AT A TIME ACCEPTABLE TO THE OWNER.
4. ELECTRICAL EQUIPMENT, FIXTURES, AND/OR DEVICES SCHEDULED TO REMAIN OR TO BE RELOCATED THAT ARE DAMAGED DURING DEMOLITION SHALL BE REPLACED WITH SIMILAR TYPE AS APPROVED BY THE OWNER, AT NO ADDITIONAL CHARGE TO THE OWNER.
5. IN THE EVENT THAT DEMOLITION WORK AFFECTS THE STRUCTURAL SUPPORT OF EXISTING ELECTRICAL EQUIPMENT THAT IS TO REMAIN IN SERVICE, IT SHALL BE RE-SUPPORTED IN ACCORDANCE WITH ALL APPLICABLE CODES. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.
6. PROVIDE TEMPORARY WIRING AND BRANCH CIRCUITING AS NECESSARY TO MAINTAIN OPERATION OF EXISTING CIRCUITS AND SYSTEMS EXTENDING BEYOND REMODEL AREA.
7. UNUSED FLUSH MOUNTED DEVICES, OUTLETS AND OTHER BOXES IN FINISHED AREAS SHALL BE REMOVED FROM WALL AND THE REMAINING HOLE PATCHED TO MATCH ADJACENT WALL SURFACES. UNUSED RACEWAYS AND SLEEVES SHALL BE CUT FLUSH AT CEILING, FLOOR OR WALL AND FILLED WITH GROUT OR REQUIRED FIRE SEALANT. PROVIDE SEALANT WHERE SPECIFIED ELSEWHERE IN DOCUMENTS. UNUSED RACEWAYS ABOVE ACCESSIBLE CEILINGS SHALL BE REMOVED.
8. MATERIAL SCHEDULED FOR REMOVAL SHALL BE REMOVED FROM THE SITE DAILY AND PROPERLY DISPOSED OF OFFSITE AS PART OF THIS CONTRACT.
9. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DEMOLITION OF ITEMS NOTED ON THE DRAWINGS. VERIFY THE EXTENT TO DEMOLITION REQUIRED BASED ON THE ENTIRE SET OF DRAWINGS (ARCHITECTURAL, MECHANICAL, PLUMING, ETC).
10. ITEMS SPECIFICALLY NOTED FOR DEMOLITION SHALL BE REMOVED IN THEIR ENTIRETY AND SURFACES IN WHICH THEY WERE INSTALLED RESTORED TO MATCH THE EXISTING CONDITIONS. VERIFY PAINT COLORS WITH THE OWNER, PRIOR TO RESTORATION.
11. WHEN AN AREA IS NOTED AS TO REMOVE ALL ITEMS IN THAT PARTICULAR AREA, THE CONTRACTOR SHALL VERIFY PRIOR TO DEMOLITION, ANY SYSTEMS, CONDUITS, WIRING, ETC. THAT ARE SERVING AREAS OUTSIDE OF THE SCOPE OF DEMOLITION. THESE ITEMS SHALL REMAIN INTACT ONCE DEMOLITION IS COMPLETE. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN CONTINUITY OF BRANCH WIRING, CONTROLS CABLING, ETC. OF EXISTING SYSTEMS THAT MAY EXTEND OUTSIDE OF THE SCOPE OF DMEOLITION WORK OF THE PROJECT.
12. REMOVE ALL CONDUIT, WIRING, BOXES, ETC., FOR ITEMS NOTED TO BE REMOVED, BACK TO THE SOURCE PANELBOARD, CABINET, PULL BOX, ETC., UNLESS SPECIFICALLY NOTED OTHERWISE.
13. PROVIDE UPDATED PANELBOARD SCHEDULES BASED ON CIRCUITS REMOVED DURING DEMOLITION. INDICATE ANY UNUSED CIRCUITS AS SPARES AND PLACE THEIR OPERATING HANDLES IN THE "OFF" POSITION. PROVIDE NEW UPDATED PANEL SCHEDULES, DO NOT CROSS OUT OR CHANGE EXISTING SCHEDULES. NEW SCHEDULES SHALL BE INDICATED WITH THE DATE OF THE PROJECT.
14. PROVIDE UPDATED NAMEPLATES ON MAIN SWITCHGEAR, SWITCHBOARDS, WHEN A BREAKER IS TAKEN OUT OF SERVICE REMOVE THE OLD NAMEPLATE AND REPLACE WITH A NAMEPLATE LABELED SPARE AND PLACE THE OPERATING HANDLE IN THE OFF POSITION.
15. E.C. IS TO PROVIDE A LOAD STUDY FOR 7 CONTINOUS DAYS ON EACH PANEL POWERING THE FLOOR PRIOR TO START OF CONSTRUCTION TO VERIFY LOADS AND AVAILABILITY OF CIRCUITS.

GENERAL DEMO NOTES

ED1	REMOVE POWER TO THE EXISTING ELEVATOR CONTROLLER DISCONNECT SWITCH. REMOVE CONDUCTORS AND CONDUIT BACK TO THE SOURCE PANELBOARD.
ED2	REMOVE POWER TO THE EXISTING ELEVATOR CAB LIGHTING DISCONNECT SWITCH. REMOVE CONDUCTORS AND CONDUIT BACK TO THE SOURCE PANELBOARD.
ED3	REMOVE POWER TO THE ELEVATOR HYDRAULIC PUMP. REMOVE CONDUCTORS AND CONDUIT BACK TO THE SOURCE PANELBOARD.
ED4	EXISTING PANELBOARD THAT SERVES THE ELEVATOR CONTROLLER. EXISTING CIRCUIT SHALL BE RELABELED AS SPARE.
ED5	REMOVE ALL EXISTING FIRE ALARM DEVICES IN THE ELEVATOR PIT. REMOVE ALL CONDUCTORS AND CONDUITS AS NEEDED TO FACILITATE THE INSTALLATION OF THE NEW ELEVATOR EQUIPMENT.
ED6	REMOVE POWER TO THE EXISTING SUMP PUMP EQUIPMENT. REMOVE ALL CONDUCTORS AND CONDUITS BACK TO THE SOURCE PANELBOARD.
ED7	REMOVE POWER TO THE ELEVATOR PIT RECEPTACLE. REMOVE ALL CONDUCTORS AND CONDUIT BACK TO THE SOURCE PANELBOARD.
ED8	REMOVE ALL EXISTING ELEVATOR PIT LIGHTING AND SWITCH. REMOVE ALL CONDUCTORS AND CONDUITS BACK TO THE SOURCE PANELBOARD.
ED9	REMOVE EXISTING SMOKE DETECTOR FOR ELEVATOR RECALL.

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Revision

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STATE OF MICHIGAN
JASON DECHECK
ENGINEER
No. 6201069420
12/09/2022

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	11/27/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ELECTRICAL DEMOLITION PLAN

Scale: As indicated
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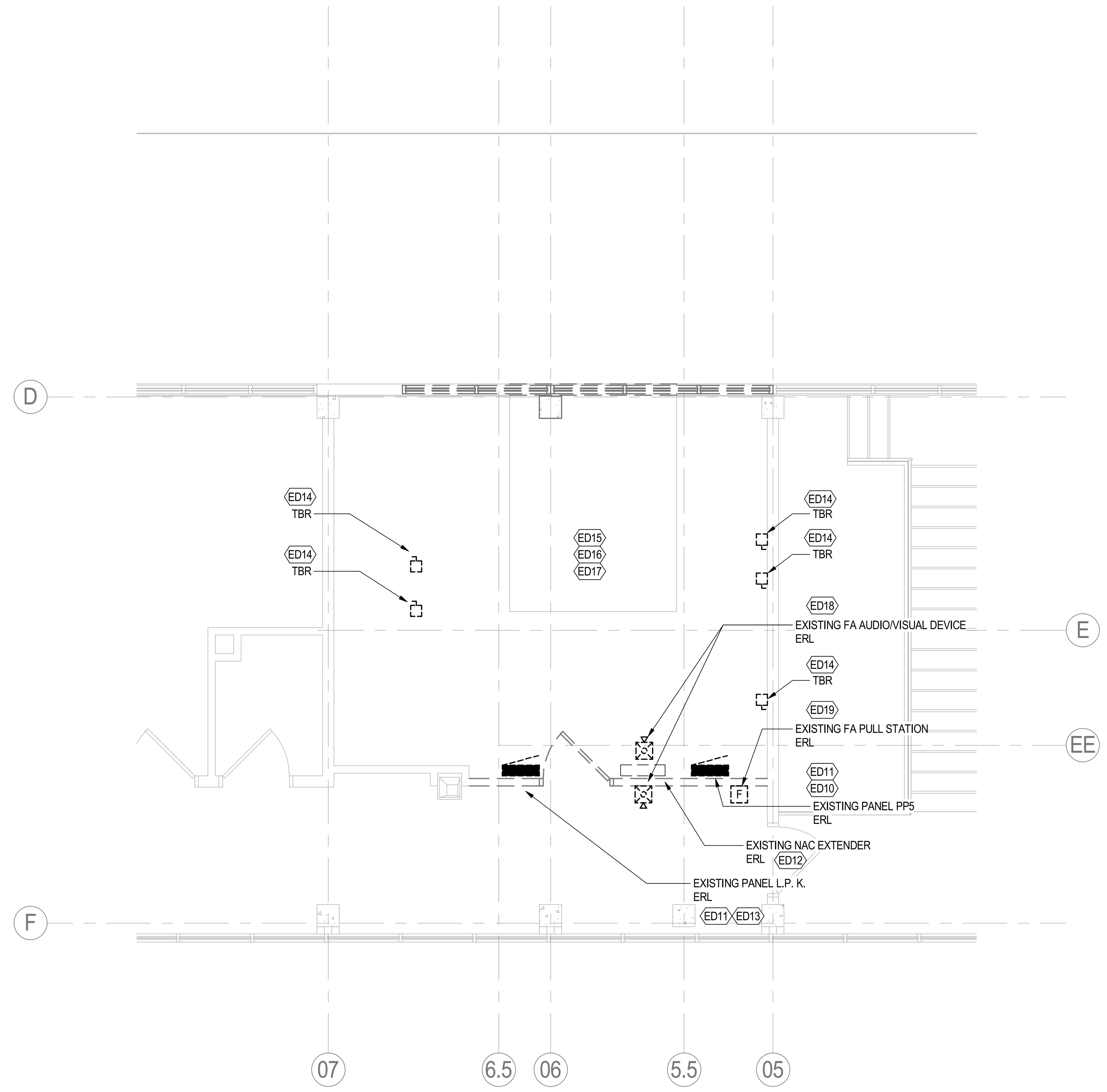
Drawing No. **Ee100**



1 Ee101 **THIRD FLOOR ELECTRICAL DEMO PLAN**

1/4" = 1'-0"

GENERAL DEMO NOTES

1. ANY EXISTING WIRING SERVING DEVICES TO REMAIN IN SERVICE, AND WHICH IS INTERRUPTED BY WORK PERFORMED UNDER THIS CONTRACT, SHALL BE REROUTED TO MAINTAIN CIRCUIT CONTINUITY. CONTRACTOR SHALL ASSUME THE RISK OF MAINTAINING EXISTING SYSTEMS EXCEPT RELOCATION OF WIRING OF #2 AWG AND ABOVE SHALL BE CONSIDERED AN ADDITIONAL COST IF NOT SHOWN TO BE RELOCATED. IF SUCH WIRING IS FOUND THE CONTRACTOR SHALL NOTIFY THE OWNER OF WIRING LOCATION, REASON IT MUST BE REMOVED, COST OF RELOCATION, AND RECEIVE THE OWNER'S APPROVAL BEFORE PROCEEDING WITH THE WORK. PRIOR TO COMMENCING WITH DEMOLITION, IDENTIFY ALL POWER, LIGHTING, COMMUNICATION AND SIGNAL CIRCUITS PASSING THROUGH THE DEMOLITION AREA OR EXTENDING BEYOND THE DEMOLITION AREA. COORDINATE WITH DEMOLITION WORK OF OTHER TRADES.

2. PERMANENTLY REMOVE ABANDONED ELECTRICAL EQUIPMENT, LIGHTING FIXTURES, JUNCTION BOXES, ELECTRICAL DEVICES AND ASSOCIATED WIRE, RACEWAYS, AND/OR JUNCTION BOXES. THE REMOVAL OR RELOCATION OF EXISTING ELECTRICAL EQUIPMENT PRESENTLY CONCEALED IN EXISTING CONSTRUCTION SHALL BE COORDINATED WITH THE OWNER PRIOR TO REMOVAL OR RELOCATION. RACEWAYS AND CONDUCTORS SHALL BE REMOVED BACK TO THE SOURCE OR NEAREST REMAINING JUNCTION BOX OR DEVICE AS FAR AS PRACTICAL, OR WHERE COMPLETE REMOVAL IS NOT PRACTICAL, RENDERED PREMANENTLY SAFE. UNUSED FLUSH MOUNTED DEVICES, OUTLET AND OTHER BOXES IN FINISHED AREAS SHALL BE REMOVED FROM WALL AND THE REMAINING HOLE PATCHED TO MATCH ADJACENT WALL SURFACES.

3. ANY EXISTING SYSTEM OUTAGES SHALL BE OF MINIMUM DURATION AND AT A TIME ACCEPTABLE TO THE OWNER.

4. ELECTRICAL EQUIPMENT, FIXTURES, AND/OR DEVICES SCHEDULED TO REMAIN OR TO BE RELOCATED THAT ARE DAMAGED DURING DEMOLITION SHALL BE REPLACED WITH SIMILAR TYPE AS APPROVED BY THE OWNER, AT NO ADDITIONAL CHARGE TO THE OWNER.

5. IN THE EVENT THAT DEMOLITION WORK AFFECTS THE STRUCTURAL SUPPORT OF EXISTING ELECTRICAL EQUIPMENT THAT IS TO REMAIN IN SERVICE, IT SHALL BE RE-SUPPORTED IN ACCORDANCE WITH ALL APPLICABLE CODES. PROVIDE TEMPORARY SUPPORTS WHERE REQUIRED.

6. PROVIDE TEMPORARY WIRING AND BRANCH CIRCUITING AS NECESSARY TO MAINTAIN OPERATION OF EXISTING CIRCUITS AND SYSTEMS EXTENDING BEYOND REMODEL AREA.

7. UNUSED FLUSH MOUNTED DEVICES, OUTLETS AND OTHER BOXES IN FINISHED AREAS SHALL BE REMOVED FROM WALL AND THE REMAINING HOLE PATCHED TO MATCH ADJACENT WALL SURFACES. UNUSED RACEWAYS AND SLEEVES SHALL BE CUT FLUSH AT CEILING, FLOOR OR WALL AND FILLED WITH GROUT OR REQUIRED FIRE SEALANT. PROVIDE SEALANT WHERE SPECIFIED ELSEWHERE IN DOCUMENTS. UNUSED RACEWAYS ABOVE ACCESSIBLE CEILINGS SHALL BE REMOVED.

8. MATERIAL SCHEDULED FOR REMOVAL SHALL BE REMOVED FROM THE SITE DAILY AND PROPERLY DISPOSED OF OFFSITE AS PART OF THIS CONTRACT.

9. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DEMOLITION OF ITEMS NOTED ON THE DRAWINGS. VERIFY THE EXTENT TO DEMOLITION REQUIRED BASED ON THE ENTIRE SET OF DRAWINGS (ARCHITECTURAL, MECHANICAL, PLUMING, ETC).

10. ITEMS SPECIFICALLY NOTED FOR DEMOLITION SHALL BE REMOVED IN THEIR ENTIRETY AND SURFACES IN WHICH THEY WERE INSTALLED RESTORED TO MATCH THE EXISTING CONDITIONS. VERIFY PAINT COLORS WITH THE OWNER, PRIOR TO RESTORATION.

11. WHEN AN AREA IS NOTED AS TO REMOVE ALL ITEMS IN THAT PARTICULAR AREA, THE CONTRACTOR SHALL VERIFY PRIOR TO DEMOLITION, ANY SYSTEMS, CONDUITS, WIRING, ETC. THAT ARE SERVING AREAS OUTSIDE OF THE SCOPE OF DEMOLITION. THESE ITEMS SHALL REMAIN INTACT ONCE DEMOLITION IS COMPLETE. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN CONTINUITY OF BRANCH WIRING, CONTROLS CABLING, ETC. OF EXISTING SYSTEMS THAT MAY EXTEND OUTSIDE OF THE SCOPE OF DMEOLITION WORK OF THE PROJECT.

12. REMOVE ALL CONDUIT, WIRING, BOXES, ETC., FOR ITEMS NOTED TO BE REMOVED, BACK TO THE SOURCE PANELBOARD, CABINET, PULL BOX, ETC., UNLESS SPECIFICALLY NOTED OTHERWISE.

13. PROVIDE UPDATED PANELBOARD SCHEDULES BASED ON CIRCUITS REMOVED DURING DEMOLITION. INDICATE ANY UNUSED CIRCUITS AS SPARES AND PLACE THEIR OPERATING HANDLES IN THE "OFF" POSITION. PROVIDE NEW UPDATED PANEL SCHEDULES, DO NOT CROSS OUT OR CHANGE EXISTING SCHEDULES. NEW SCHEDULES SHALL BE INDICATED WITH THE DATE OF THE PROJECT.

14. PROVIDE UPDATED NAMEPLATES ON MAIN SWITCHGEAR, SWITCHBOARDS, WHEN A BREAKER IS TAKEN OUT OF SERVICE REMOVE THE OLD NAMEPLATE AND REPLACE WITH A NAMEPLATE LABELED SPARE AND PLACE THE OPERATING HANDLE IN THE OFF POSITION.

15. E.C. IS TO PROVIDE A LOAD STUDY FOR 7 CONTINOUS DAYS ON EACH PANEL POWERING THE FLOOR PRIOR TO START OF CONSTRUCTION TO VERIFY LOADS AND AVAILABILITY OF CIRCUITS.

GENERAL DEMO NOTES

ED10	EXISTING PANELBOARD TO BE REMOVED. REMOVE FEEDER BACK TO THE FLOOR BELOW. PROVIDE A JUNCTION BOX IN AN ACCESSIBLE LOCATION WHERE THE FEEDER CAN BE INTERCEPTED AND EXTENDED TO A NEW LOCATION.
ED11	EXISTING EQUIPMENT THAT IS POWERED FROM THIS PANEL SHALL BE REMOVED DURING THE DEMOLITION. ANY EQUIPMENT THAT REMAINS SHALL HAVE THE CIRCUITS EXTENDED AND REFED FROM THE NEW PANEL LOCATION.
ED12	EXISTING NAC PANEL TO BE REMOVED AND RELOCATED TO THE NEW MECHANICAL ROOM. EXTEND ALL FIRE ALARM WIRING TO THE NEW LOCATION.
ED13	EXISTING PANELBOARD TO BE REMOVED. REMOVE FEEDER BACK TO THE SOURCE.
ED14	POWER TO EXISTING EQUIPMENT SHALL BE REMOVD BACK TO THE SOURCE.
ED15	REMOVE ALL EXISTING LIGHTING AND CONTROLS. REMOVE ALL WIRING AND CONDUIT BACK TO A POINT FOR REUSE WITH THE NEW LAYOUT.
ED16	REMOVE ALL EXISTING RECEPTACLES IN THIS AREA. REMOVE ALL CONDUIT AND WIRING BACK TO THE SOURCE.
ED17	REMOVE ALL FIRE ALARM DEVICES IN THIS AREA. MAINTAIN CONTINUITY OF EXISTING FIRE ALARM CIRCUITS SERVING OTHER AREAS.
ED18	REMOVE EXISTING FIRE ALARM AUDIO/VISUAL DEVICE, CLEAN, AND SET ASIDE FOR RELOCATION.
ED19	REMOVE EXISTING FIRE ALARM PULL STATION, CLEAN, AND SET ASIDE FOR RELOCATION.

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STATE OF MICHIGAN
JASON DECHECK
ENGINEER
No. 6201069420
LICENSED PROFESSIONAL ENGINEER
12/09/2022

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

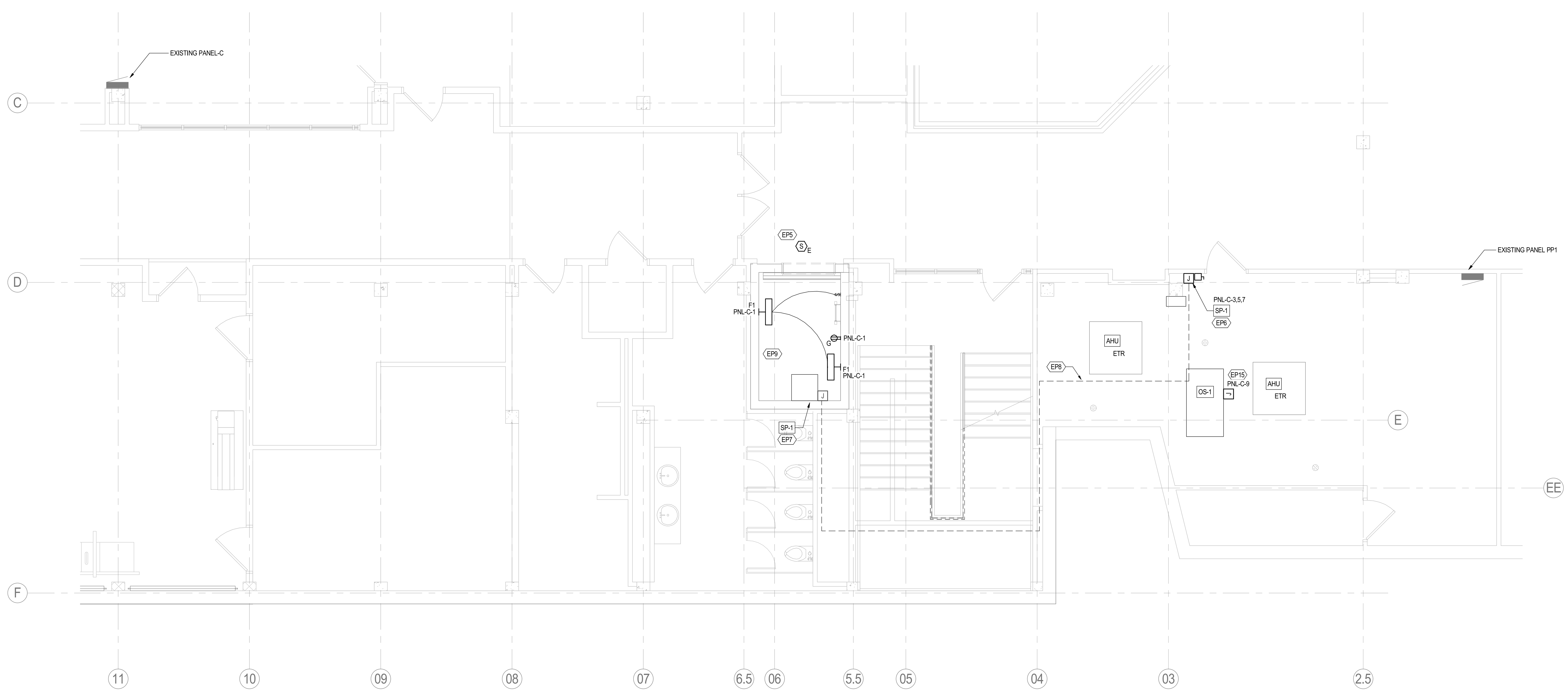
5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	11/27/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

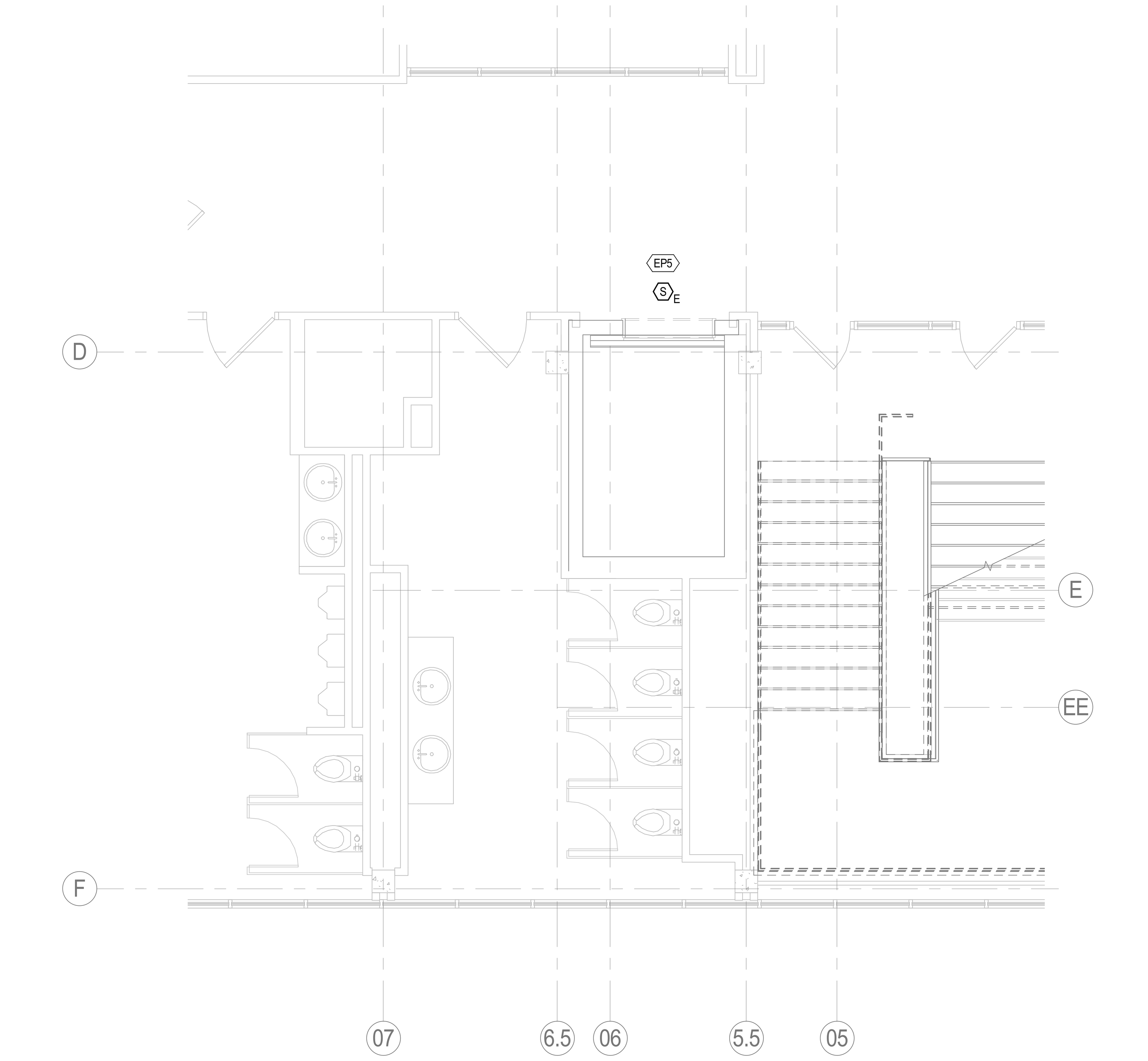
Title
ELECTRICAL DEMOLITION PLAN

Scale: As indicated
Revision:
Drawing No. **Ee101**



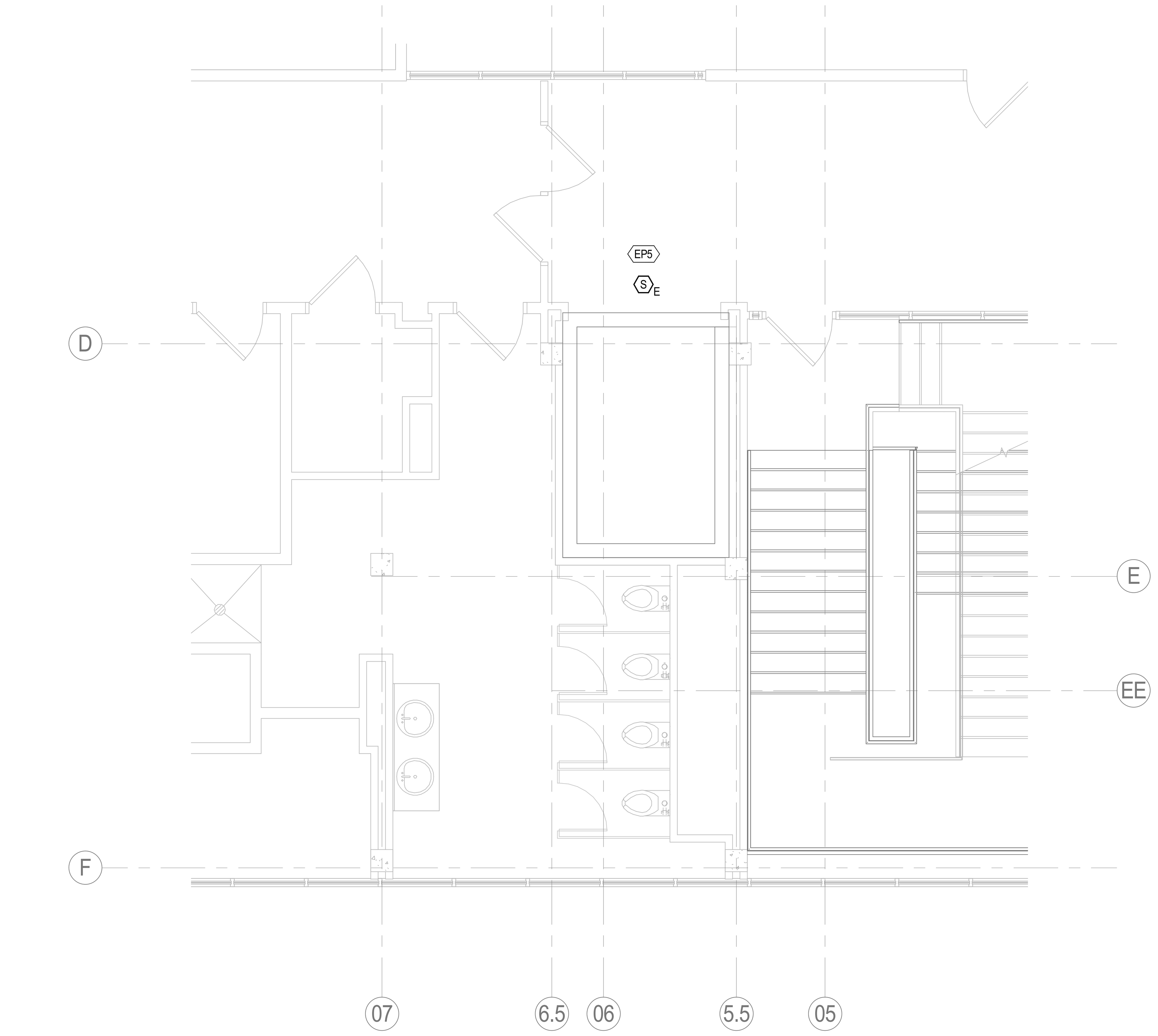
1 Ee200 **LOWER LEVEL ELECTRICAL NEW WORK PLAN**

1/4" = 1'-0"



2 Ee200 **FIRST FLOOR ELECTRICAL NEW WORK PLAN**

1/4" = 1'-0"



3 Ee200 **SECOND FLOOR ELECTRICAL NEW WORK PLAN**

1/4" = 1'-0"

GENERAL POWER NOTES

1. FURNISH AND INSTALL ALL REQUIRED CONDUITS, CABLES, WIRES, FITTINGS, BOXES, AND HARDWARE FOR A COMPLETE AND OPERABLE ELECTRICAL SYSTEM.
2. CONDUITS AND BOXES SHALL BE INSTALLED IN THE LEAST OBTRUSIVE MANNER POSSIBLE. INSTALL ALL CONDUITS PARALLEL AND PERPENDICULAR TO BUILDING LINES AND STRUCTURE. INSTALL PULL AND JUNCTION BOXES, SUCH THAT ACCESS IS MAINTAINED ABOVE CEILINGS.
3. FINAL LOCATION OF ALL EQUIPMENT SHALL BE DETERMINED IN THE FIELD AND SHALL BE INSTALLED AS DIRECTED BY THE ARCHITECT OR OWNERS REPRESENTATIVE.
4. AT THE COMPLETION OF THE INSTALLATION THE CONTRACTOR SHALL FILL IN AND WATERPROOF OR FIREPROOF ALL OPENINGS WITH SUITABLE MATERIALS AS DIRECTED BY THE DESIGN PROFESSIONAL. FINISH TO MATCH ADJACENT AREAS.
5. EXACT LOCATIONS OF WALL MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECTURAL PLANS. DO NOT INSTALL DEVICES WHERE KNOWN ITEMS SUCH AS WHITE BOARDS, TACKBOARDS, OR OTHER SURFACE TREATMENTS WOULD BLOCK DEVICES, UNLESS SPECIFICALLY DIRECTED TO DO SO.
6. GROUP DEVICES AS CLOSE TOGETHER AS PHYSICALLY POSSIBLE WHEN SHOWN ADJACENT TO EACH OTHER ON THE PLANS. INSTALL DEVICES AT THE SAME ELEVATION. IF UNSURE OF MOUNTING ELEVATION, COORDINATE WITH THE DESIGN PROFESSIONAL.
7. WHERE SPECIFICALLY NOTED, INSTALL DEVICES IN VERTICAL ALIGNMENT WITH EACH OTHER, DO NOT STAGGER BOXES.
8. DO NOT INSTALL BOXES ON COMMON WALLS IN THE SAME STUD SPACE ON OPPOSITE SIDES OF THE WALL, INSTALL ON OPPOSITE SIDES OF THE STUD TO AVOID SOUND TRANSMISSION.
9. COORDINATE WITH THE ARCHITECTURAL PLANS FOR LOCATIONS OF WALLS THAT ARE TO REMAIN WILL HAVE THE DRYWALL REMOVED ON ONE SIDE TO FACILITATE DEVICE INSTALLATION.
10. ALL CONDUIT TO BE LEFT EXPOSED IN THE BUILDINGS IS TO BE OF EMT TYPE..

GENERAL POWER NOTES

EP5	TIE NEW SMOKE DETECTOR INTO THE EXISTING FIRE ALARM SYSTEM. PROVIDE ALL PROGRAMMING REQUIRED FOR THE ELEVATOR RECALL.
EP6	PROVIDE POWER TO THE ELEVATOR SUMP PUMP CONTROLLER. PROVIDE A 30A/3P NON FUSED DISCONNECT SWITCH ADJACENT TO THE CONTROLLER. PROVIDE ALL INTERCONNECTING WIRE AND CONDUIT TO FROM THE CONTROLLER TO THE ELEVATOR PIT.
EP7	LOCATION OF THE SUMP PUMP. COORDINATE FINAL LOCATION AND TYPE OF CONNECTION IN THE FIELD. REFER TO DETAIL A1/Me601 FOR ADDITIONAL INFORMATION.
EP8	APPROXIMATE LOCATION OF THE CONDUIT ROUTE FROM THE SUMP PUMP CONTROLLER TO THE SUMP PUMP. VERIFY EXACT ROUTING IN THE FIELD WITH THE EXISTING CONDITIONS. PROVIDE FIRE STOPPING OF ALL PENETRATIONS TO MEET THE FIRE RATING OF THE SHAFT AND ANY OTHER WALLS THE CONDUIT MAY PASS THROUGH. COORDINATE THE PENETRATION LOCATION WITH THE ELEVATOR INSTALLER.
EP9	FIRESTOP ALL PENETRATIONS TO MATCH THE FIRE RATING OF THE ELEVATOR SHAFT.
EP15	PROVIDE POWER TO OIL SEPERATOR CONTROL PANEL. COORDINATE WITH OIL SEPERATOR SYSTEM INSTALLER FOR EXACT ELECTRICAL REQUIREMENTS AND CONNECTIONS PRIOR TO STARTING WORK.

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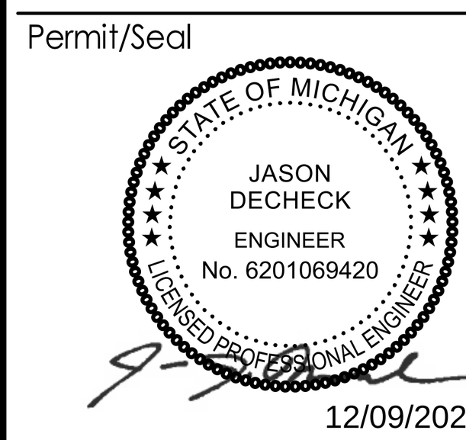


WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597

File Name: N/A

Author	Designer	Checker	11/27/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

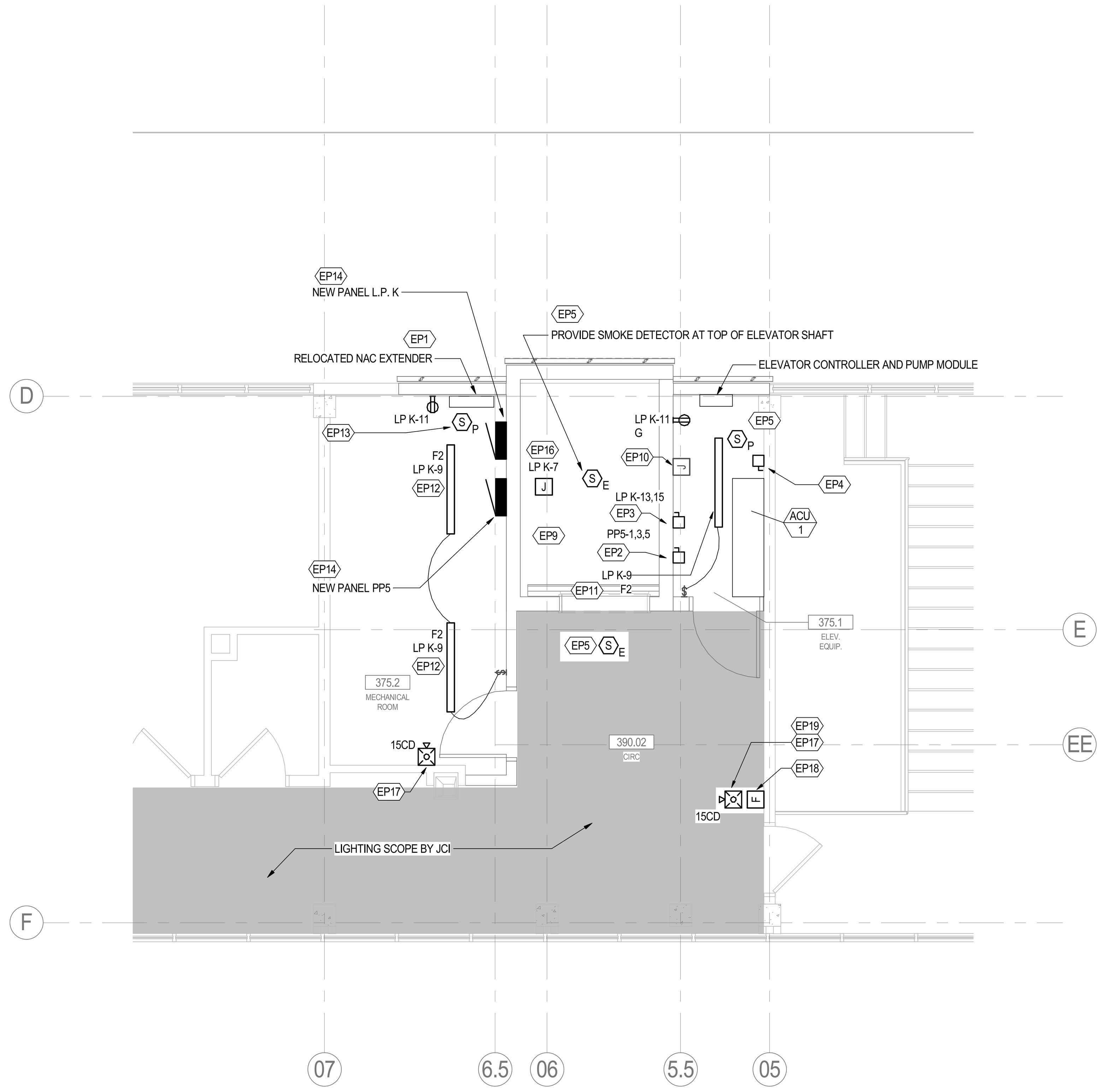
Title

ELECTRICAL NEW WORK PLAN

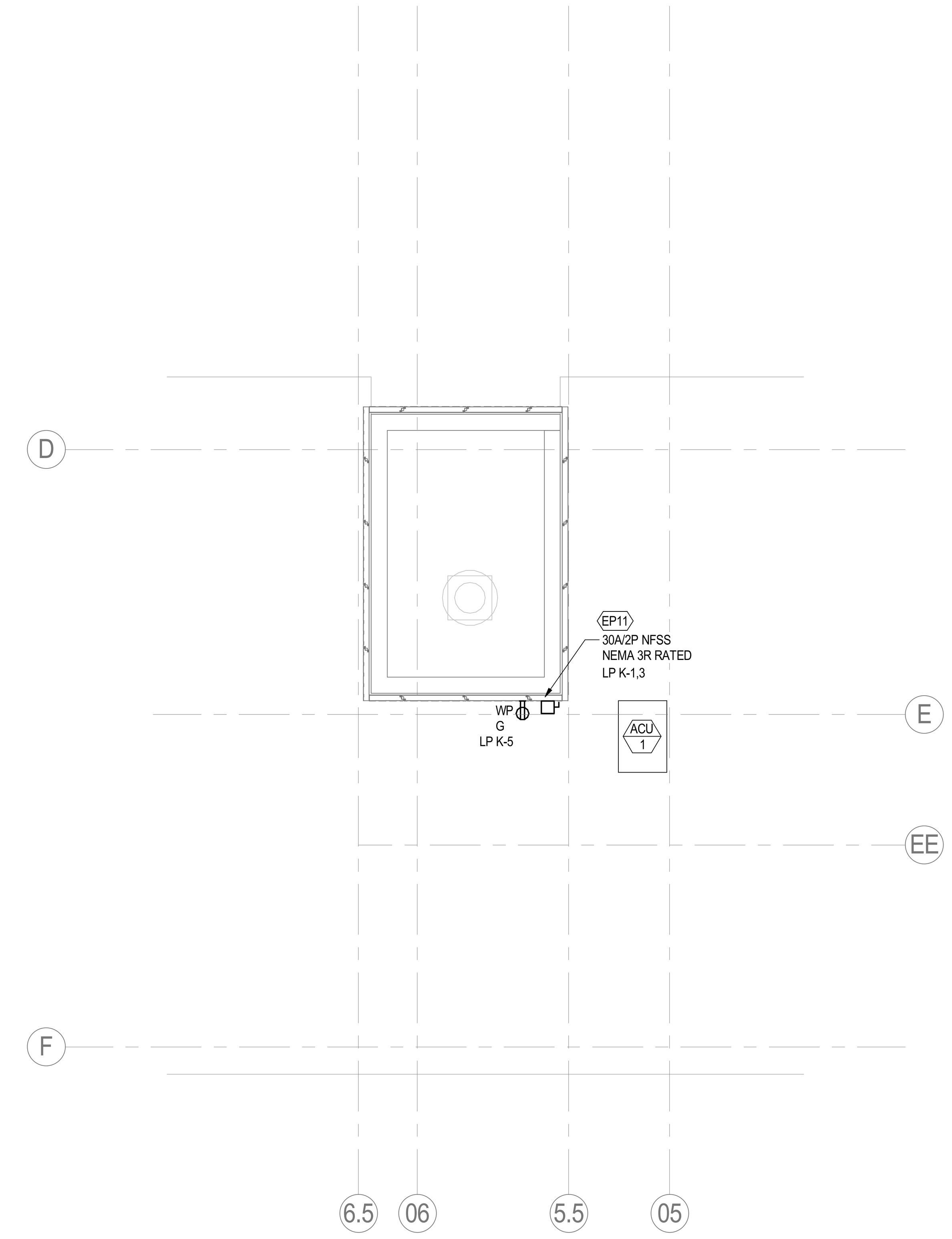
Scale: As indicated

Revision:

Drawing No. **Ee200**



1 Ee201 **THIRD FLOOR ELECTRICAL NEW WORK PLAN**
1/4" = 1'-0"



2 Ee201 **ROOF ELECTRICAL NEW WORK PLAN**
1/4" = 1'-0"

GENERAL POWER NOTES

1. FURNISH AND INSTALL ALL REQUIRED CONDUITS, CABLES, WIRES, FITTINGS, BOXES, AND HARDWARE FOR A COMPLETE AND OPERABLE ELECTRICAL SYSTEM.
2. CONDUITS AND BOXES SHALL BE INSTALLED IN THE LEAST OBTRUSIVE MANNER POSSIBLE. INSTALL ALL CONDUITS PARALLEL AND PERPENDICULAR TO BUILDING LINES AND STRUCTURE. INSTALL PULL AND JUNCTION BOXES, SUCH THAT ACCESS IS MAINTAINED ABOVE CEILINGS.
3. FINAL LOCATION OF ALL EQUIPMENT SHALL BE DETERMINED IN THE FIELD AND SHALL BE INSTALLED AS DIRECTED BY THE ARCHITECT OR OWNERS REPRESENTATIVE.
4. AT THE COMPLETION OF THE INSTALLATION THE CONTRACTOR SHALL FILL IN AND WATERPROOF OR FIREPROOF ALL OPENINGS WITH SUITABLE MATERIALS AS DIRECTED BY THE DESIGN PROFESSIONAL. FINISH TO MATCH ADJACENT AREAS.
5. EXACT LOCATIONS OF WALL MOUNTED DEVICES SHALL BE COORDINATED WITH THE ARCHITECTURAL PLANS. DO NOT INSTALL DEVICES WHERE KNOWN ITEMS SUCH AS WHITE BOARDS, TACKBOARDS, OR OTHER SURFACE TREATMENTS WOULD BLOCK DEVICES, UNLESS SPECIFICALLY DIRECTED TO DO SO.
6. GROUP DEVICES AS CLOSE TOGETHER AS PHYSICALLY POSSIBLE WHEN SHOWN ADJACENT TO EACH OTHER ON THE PLANS. INSTALL DEVICES AT THE SAME ELEVATION. IF UNSURE OF MOUNTING ELEVATION, COORDINATE WITH THE DESIGN PROFESSIONAL.
7. WHERE SPECIFICALLY NOTED, INSTALL DEVICES IN VERTICAL ALIGNMENT WITH EACH OTHER, DO NOT STAGGER BOXES.
8. DO NOT INSTALL BOXES ON COMMON WALLS IN THE SAME STUD SPACE ON OPPOSITE SIDES OF THE WALL, INSTALL ON OPPOSITE SIDES OF THE STUD TO AVOID SOUND TRANSMISSION.
9. COORDINATE WITH THE ARCHITECTURAL PLANS FOR LOCATIONS OF WALLS THAT ARE TO REMAIN WILL HAVE THE DRYWALL REMOVED ON ONE SIDE TO FACILITATE DEVICE INSTALLATION.
10. ALL CONDUIT TO BE LEFT EXPOSED IN THE BUILDINGS IS TO BE OF EMT TYPE..

GENERAL POWER NOTES

EP1	EXTEND POWER TO THE NEW NAC PANEL LOCATION. EXTEND ALL FIRE ALARM WIRING TO THE NEW LOCATION.
EP2	PROVIDE A 100A/3P FUSED SAFETY SWITCH WITH AUXILIARY CONTACTS FOR BATTERY LOWERING SIGNAL TO THE ELEVATOR CONTROLLER. PROVIDE FUSES PER THE ELEVATOR MANUFACTURER'S REQUIREMENTS.
EP3	PROVIDE A 30A/2P FUSED SAFETY SWITCH, FUSED AT 20A FOR ELEVATOR CAB LIGHTS AND FAN.
EP4	PROVIDE A 30A/2P NON FUSED SAFETY SWITCH FOR THE ELEVATOR EQUIPMENT AIR CONDITIONING UNIT. REFER TO SPLIT SYSTEM WIRING DETAIL ON Ee003 FOR MORE INFORMATION.
EP5	TIE NEW SMOKE DETECTOR INTO THE EXISTING FIRE ALARM SYSTEM. PROVIDE ALL PROGRAMMING REQUIRED FOR THE ELEVATOR RECALL.
EP9	FIRESTOP ALL PENETRATIONS TO MATCH THE FIRE RATING OF THE ELEVATOR SHAFT.
EP10	PROVIDE 3/4" CONDUIT AND JUNCTION BOX TO THE TELECOMMUNICATIONS CLOSET FOR TELEPHONE CONNECTION TO THE ELEVATOR. PROVIDE CAT6 CABLE WITH TERMINATIONS AT BOTH ENDS AS APPLICABLE.
EP11	CONDUIT SHALL BE ROUTED THROUGH PIPE PORTAL PROVIDED BY THE MECHANICAL CONTRACTOR. SEE MECHANICAL SHEETS FOR MORE INFORMATION.
EP12	COORDINATE FIXTURE PLACEMENT WITH MECHANICAL DUCTWORK INSTALLER PRIOR TO ROUGH-IN.
EP13	TIE NEW SMOKE DETECTOR INTO THE EXISTING FIRE ALARM SYSTEM.
EP14	EXTEND EXISTING FEEDERS TO PANELS FROM PULLBOX INSTALLED DURING DEMOLITION PHASE TO POWER PANEL.
EP16	PROVIDE POWER TO RELIEF HOOD DAMPER. COORDINATE LOCATION AND CONNECTION TYPE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
EP17	REUSE FIRE ALARM AUDIO/VISUAL DEVICE SET ASIDE DURING DEMOLITION PHASE. TIE FIRE ALARM DEVICE BACK INTO EXISTING FIRE ALARM SYSTEM AND ENSURE A COMPLETE AND WORKING SYSTEM.
EP18	REUSE FIRE ALARM PULL STATION DEVICE SET ASIDE DURING DEMOLITION PHASE. TIE FIRE ALARM PULL STATION DEVICE BACK INTO EXISTING FIRE ALARM SYSTEM.
EP19	MOUNT FIRE ALARM AUDIO/VISUAL DEVICE CENTERED ABOVE PULL STATION. REFER TO DETAIL 3 ON Ee001 FOR MOUNTING HEIGHT INFORMATION.

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STATE OF MICHIGAN
JASON DECHECK
ENGINEER
No. 6201069420
12/09/2022

WAYNE STATE UNIVERSITY

Wayne State University

Art Building Elevator Replacement

5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	12/01/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ELECTRICAL NEW WORK PLAN

Scale: As indicated
Revision:
Drawing No. **Ee201**

ORIGINAL SHEET - ARCH E1

Stantec

Name: **LP K**	Volts: 240V/120V	Mains Type: MLO	Panel Type: NORMAL
Location: MECHANICAL ROOM 375.2	Phases: 3	Mains Rating: 100 A	AIC Rating: 65 KAIC
Supply From:	Wires: 4	Max Rating: 100 A	Mounting: Surface
Serves:		Lugs: Single Lugs	Enclosure: Type 1

Notes:

CKT	Circuit Description	Trip	Poles	CB	A		B		C		CB	Poles	Trip	Circuit Description	CKT
1	ACU-1	30 A	2		2100	0					--	1	20 A	SPARE	2
3	--	--	--	--			2100	0			--	1	20 A	SPARE	4
5	ROOF TOP CONV RECP	20 A	1						180	0	--	1	20 A	SPARE	6
7	RELIEF HOOD DAMPER POWER	20 A	1		100	0					--	1	20 A	SPARE	8
9	MECH AND ELEV RM LIGHTING	20 A	1				72	0			--	1	20 A	SPARE	10
11	MECH AND ELEV RM RECP	20 A	1						360	0	--	1	20 A	SPARE	12
13	ELEVATOR CAB LIGHTING	20 A	1		1000	0					--	1	20 A	SPARE	14
15	SPARE	20 A	1	--			0	0			--	1	20 A	SPARE	16
17	SPARE	20 A	1	--					0	0	--	1	20 A	SPARE	18
19	SPARE	20 A	1	--	0	0					--	1	20 A	SPARE	20
				Total Load:	**3.20 kVA**		**2.17 kVA**		**0.54 kVA**						
				Total Amps:	**27 A**		**18 A**		**5 A**						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	4200 VA	100.00%	4200 VA		
Lighting	1072 VA	125.00%	1340 VA	**Total Conn. Load:**	**5912 VA**
Power	100 VA	100.00%	100 VA	**Total Est. Demand:**	**6180 VA**
Receptacle	540 VA	100.00%	540 VA	**Total Conn.:**	**14 A**
				Total Est. Demand:	**15 A**

CB Legend (blank = circuit breaker):
G = GFCI S = Shunt Trip D = Switching Duty A = AFCI H = HID Rated C = HACR Rated † = Existing Circuit ‡ = Revised Circuit

Notes:

Stantec

Name: **PP5**	Volts: 240V	Mains Type: MLO	Panel Type: MECHANICAL
Location: MECHANICAL ROOM 375.2	Phases: 3	Mains Rating: 200 A	AIC Rating: 65 KAIC
Supply From: MAIN POWER DISTRIBUTION PANEL #1	Wires: 3	Max Rating: 200 A	Mounting: Surface
Serves: ELEVATOR & MECH		Lugs: Single Lugs	Enclosure: Type 1

Notes:

CKT	Circuit Description	Trip	Poles	CB	A		B		C		CB	Poles	Trip	Circuit Description	CKT
1	ELEVATOR	100 A	3		9600	6745						3	70 A	PP4	2
3	--	--	--	--			9600	6745			--	--	--	--	4
5	--	--	--	--					9600	6745	--	--	--	--	6
7	SPARE	20 A	2	--	0	0					--	3	30 A	SPARE	8
9	--	--	--	--			0	0			--	--	--	--	10
11	SPARE	20 A	2	--					0	0	--	--	--	--	12
13	--	--	--	--	0	0					--	3	45 A	SPARE	14
15	SPARE	45 A	3	--			0	0			--	--	--	--	16
17	--	--	--	--					0	0	--	--	--	--	18
19	--	--	--	--	0	--					--	1	--	PROVISION	20
				Total Load:	**16.35 kVA**		**16.35 kVA**		**16.35 kVA**						
				Total Amps:	**118 A**		**118 A**		**118 A**						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Elevator	28800 VA	100.00%	28800 VA		
Motor	20235 VA	110.82%	22425 VA	**Total Conn. Load:**	**49035 VA**
				Total Est. Demand:	**51225 VA**
				Total Conn.:	**118 A**
				Total Est. Demand:	**123 A**

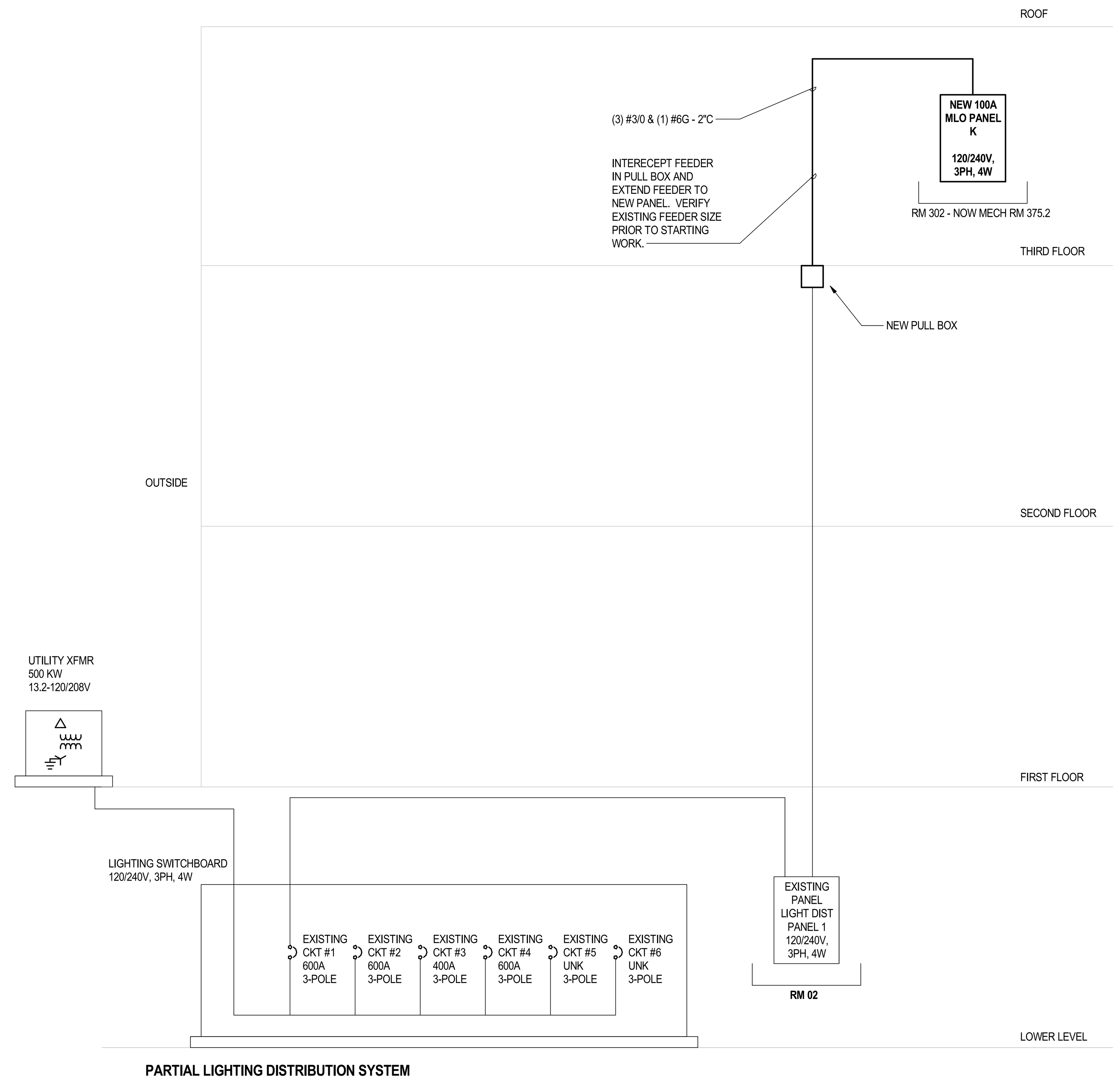
CB Legend (blank = circuit breaker):
G = GFCI S = Shunt Trip D = Switching Duty A = AFCI H = HID Rated C = HACR Rated † = Existing Circuit ‡ = Revised Circuit

Notes:
LOAD FROM PANEL PP4 IS AN APPROXIMATION BASED OFF THE HIGHEST HP RATING OF BREAKERS CURRENTLY IN USE BY THE PANEL. FIELD VERIFY EXISTING EXHAUST FANS SERVED BY PP4 NAMEPLATE DATA TO ENSURE PROPER FEEDER AND BREAKER SIZE. IF DESCREPENCIES ARE FOUND, PLEASE CONTACT THE ELECTRICAL ENGINEER OF RECORD BEFORE PROCEEDING.

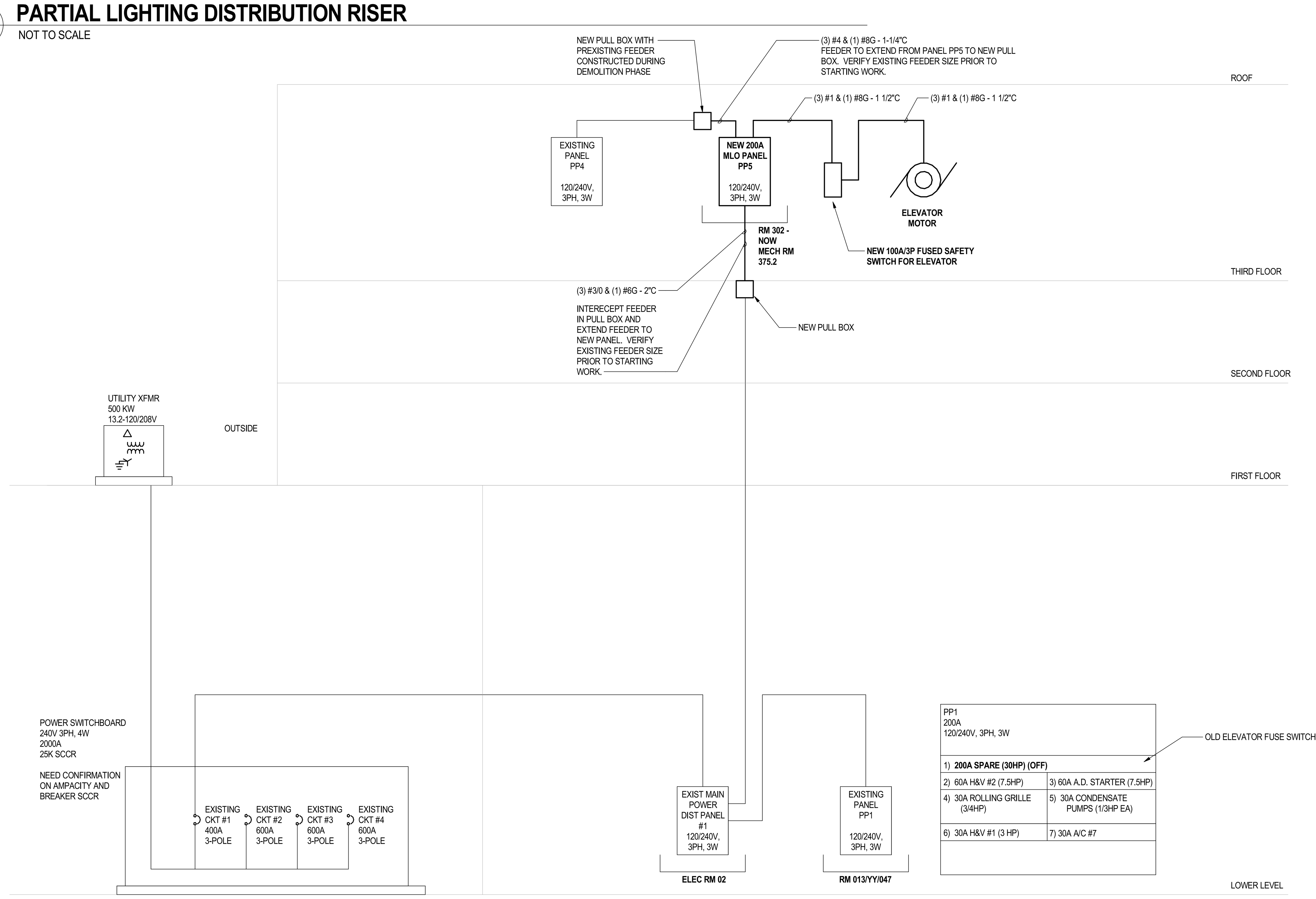
CIRCUIT FEED FROM SCHEDULE

CIRCUIT #	CIRCUIT DESCRIPTION	TRIP	POLES	CB	LOAD (W)	PROPOSED PANEL
1	ELEVATOR PIT RECP AND LIGHTS	20A	1P	-	210	PNL-C
3,5,7	ELEVATOR SUMP PUMP	20A	3P	-	750	PNL-C
9	ELEVATOR OIL SEPERATOR CONTROL POWER	20A	1P	-	500	PNL-C

NOTES:
1) PROVIDE A LOAD STUDY ON PNL-C PRIOR TO ADDING CIRCUITS TO PANEL TO ENSURE AVAILABLE CAPACITY
2) PROVIDE (2) 20A/1P BREAKERS TO PNL-C
3) PROVIDE (1) 20A/3P BREAKER TO PNL-C
4) LOAD FOR OIL SEPERATOR CONTROL POWER IS AN ESTIMATE AND MAY NOT REFLECT ITS TRUE LOAD.



1 Ee600 PARTIAL LIGHTING DISTRIBUTION RISER
NOT TO SCALE



2 Ee600 PARTIAL POWER DISTRIBUTION RISER
NOT TO SCALE

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12/09/2022

WAYNE STATE UNIVERSITY

Wayne State University
Art Building Elevator Replacement
5400 Gullen Mall
Detroit, MI 48202

Project No.:214100597
File Name: N/A

Author	Designer	Checker	12/01/22
Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
ELECTRICAL SINGLE LINE

Scale: 12" = 1'-0"
Revision:
Drawing No. **Ee600**