ASSOCIATED PLASTIC SURGEONS

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

BUILDING SHELL PERMIT SUBMITTAL: JANUARY 28, 2025

SEAL:

01/28/2025

ARCHITECT
DEV INC
8807 MONROVIA STREET
LENEXA, KANSAS 66215
PH: 913-322-8882

STRUCTURAL ENGINEER
STAND STRUCTURAL ENGINEERING INC
8234 ROBINSON STREET
OVERLAND PARK, KANSAS 66204
PH: 913-214-2169

MEP ENGINEER
ARCHITECTURAL ENGINEERING CONSORTIUM, INC
10511 AUGUSTA DRIVE
KANSAS CITY, KANSAS 66109
PH: 816-916-4675

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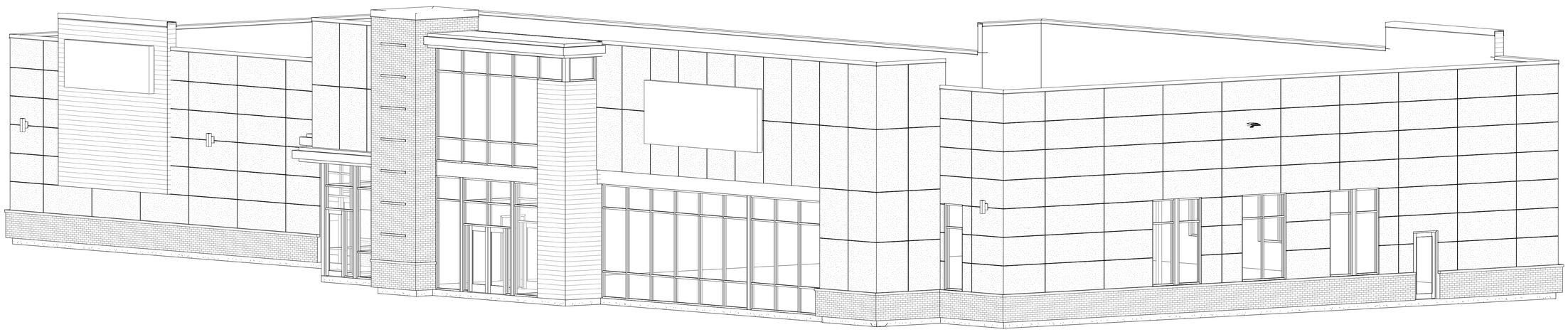
12		
Grand total: 49		



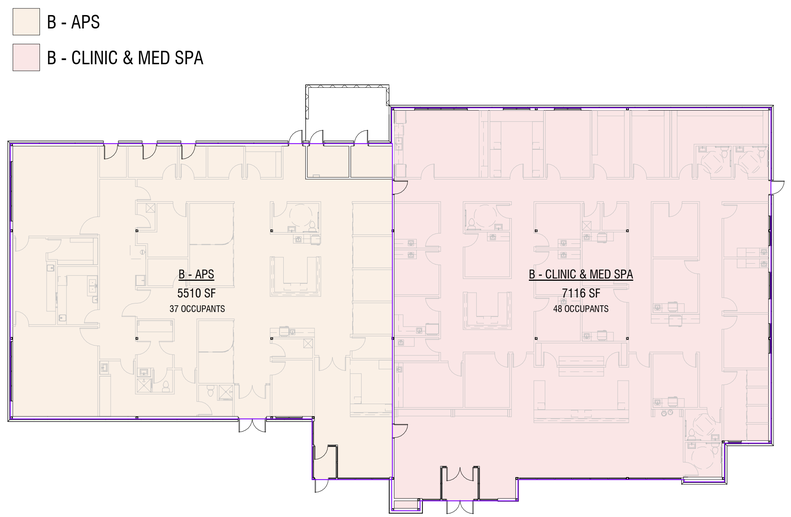
CODE INFORMATION

OCCUPANCY USE GROUP: B
TYPE OF CONSTRUCTION: V-B

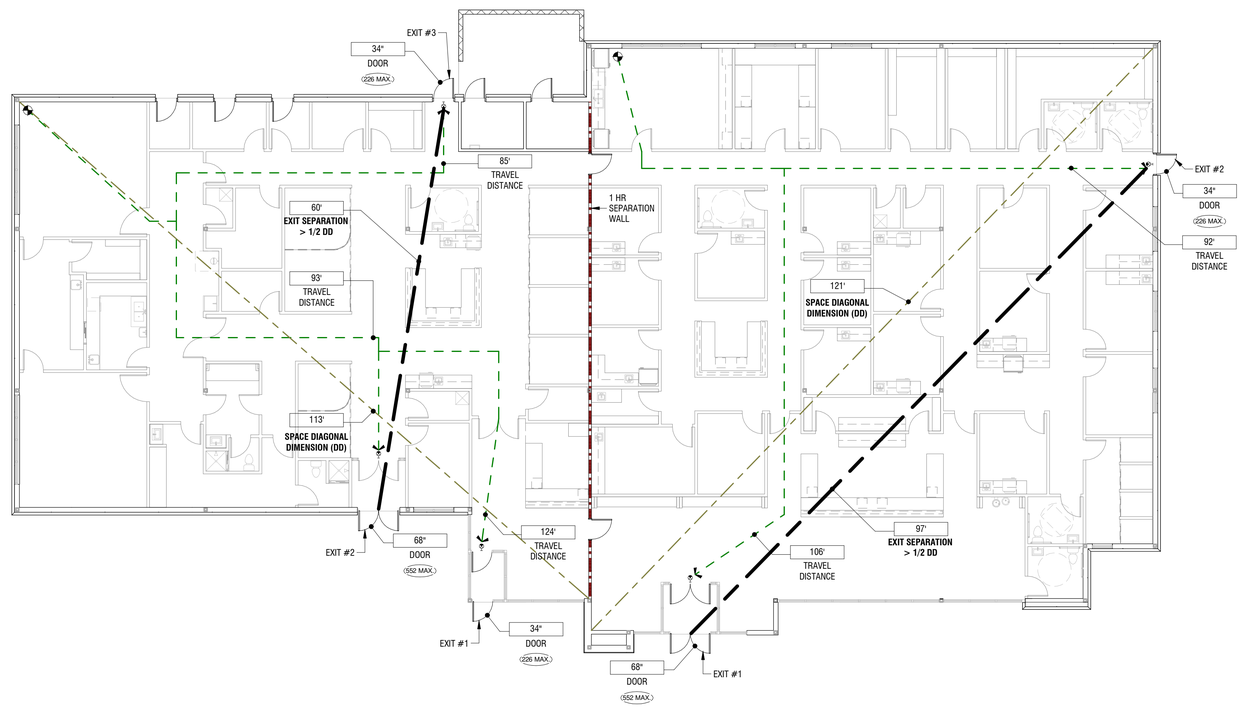
	REQUIRED/ALLOWED		PROVIDED
SQUARE FOOTAGE			
PER STORY (IBC 506.2)	36,000 SQ.FT.		12,626 SQ.FT.
TOTAL BUILDING AREA	N/A		12,626 SQ.FT.
NUMBER OF STORY (IBC 504.4)	3 STORIES		1 STORY
BUILDING HEIGHT (IBC 504.3)	60 FT.		29 FT.
BUILDING ELEMENT FIRE RESISTANCE RATING			
PRIMARY STRUCTURAL FRAME	0 HR		0 HR
BEARING WALL - EXTERIOR	0 HR		0 HR
BEARING WALL - INTERIOR	0 HR		0 HR
NONBEARING WALL AND PARTITIONS - EXTERIOR (IBC 602)	0 HR (10<X<30; X >30)		0 HR
NONBEARING WALL AND PARTITIONS - INTERIOR	0		0
FLOOR CONSTRUCTION	0 HR		0 HR
ROOF CONSTRUCTION	0 HR		0 HR
FIRE PROTECTION AND RESISTANCE REQUIREMENTS			
FIRE BARRIERS - STAIR ENCLOSURES	N/A		N/A
FIRE PARTITIONS - DEMISING WALL	1HR		1HR
FIRE PARTITIONS - HOR. ASSEMBLIES	N/A		N/A
FIRE PARTITIONS - CORRIDOR WALLS	N/A		N/A
FIRE PROTECTION SYSTEM	NFPA 13		NFPA 13
FIRE ALARM AND DETECTION (IBC 907)	FIRE & SMOKE ALARM		FIRE & SMOKE ALARM
EGRESS			
OCCUPANT LOAD	TYPE	SF/LOAD FACTOR	OCCUPANCY LOAD
	ASC (BUSINESS)	5,510/150	37
	CLINIC & MED SPA (BUSINESS)	7,116/150	48
	TOTAL		85
EGRESS WIDTH - STAIRS (IBC 1005.3)	N/A		N/A
EGRESS WIDTH - OTHER (IBC 1005.3)	85 x 0.15" = 12.75" MIN.		238"
NUMBER OF EXITS - ASC	1		3
NUMBER OF EXITS - CLINIC & MED SPA	1		2
MAX. TRAVEL DISTANCE TO EXIT	250' MAX. (PER IBC 1016.2)		124'
ROOF COVER CLASSIFICATION	B		B

APPLICABLE BUILDING CODES

- 2018 INTERNATIONAL BUILDING CODE
- 2018 INTERNATIONAL PLUMBING CODE
- 2018 INTERNATIONAL MECHANICAL CODE
- 2018 INTERNATIONAL FUEL GAS CODE
- 2018 INTERNATIONAL FIRE CODE
- 2017 NATIONAL ELECTRICAL CODE
- ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES



1 OCCUPANT LOAD PLAN
1/16" = 1'-0"



2 LIFE SAFETY PLAN
3/32" = 1'-0"

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STATE OF MISSOURI
C. KEVIN CAMPBELL
NUMBER A-2010097490
ARCHITECT

01/28/2025

PROJECT NO. 231206

DRAWING ISSUANCE: JAN 28, 2025

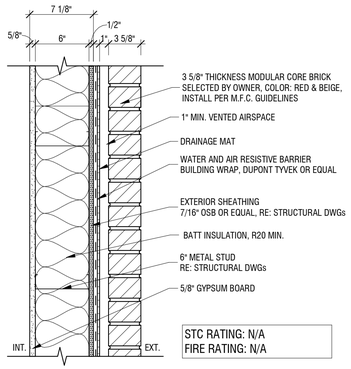
NO.	REVISION	DATE

SHEET NUMBER

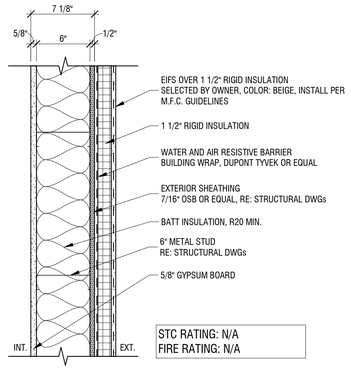
A0.0

PROJECT INFORMATION

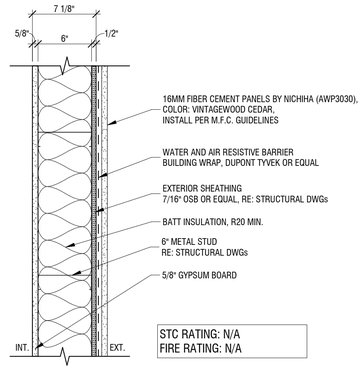
WALL TYPES:



1 WALL TYPE '1A' -EXTERIOR WALL-BRICK
1 1/2" = 1'-0"



2 WALL TYPE '1B' -EXTERIOR WALL-EIFS
1 1/2" = 1'-0"



3 WALL TYPE '1C' -EXTERIOR WALL-FIBER CEMENT PANEL
1 1/2" = 1'-0"

4 WALL TYPE '2' -TYP. PARTITION WALL
1 1/2" = 1'-0"

5 WALL TYPE '3' -6" STUD WALL-1 SIDE FINISH
1 1/2" = 1'-0"

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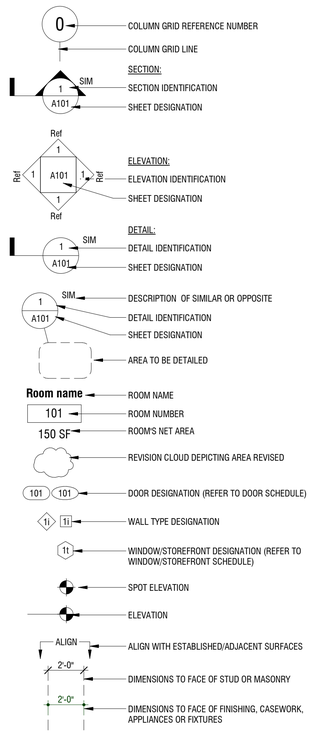
WALL TYPES

ABBREVIATIONS

A	
&	AND
ACCESS	ACCESSORY
ACOUS	ACOUSTIC(AL)
AFF	ABOVE FINISHED FLOOR
AL/ALUM	ALUMINUM
ALT	ALTERNATE
ANNUNC	ANNUNCIATOR
ANOD	ANODIZED
APPL	APPLIANCE
ARCH	ARCHITECT(URAL)
AUTO	AUTOMATIC
AVG	AVERAGE
B	
BD	BOARD
BLDG	BUILDING
BLKG	BLOCKING
BOLLD	BOLLARD
BRDLM	BROADLOOM
BTHRM	BATHROOM
BU	BUILT UP
BSP	BACKSPLASH
C	
CEM	CEMENT(ITIOUS)
CER	CERAMIC
CIP	CAST-IN-PLACE
CLG	CEILING
CLO	CLOSET
CMU	CONCRETE MASONRY UNIT
COATG	COATING
COILG	COILING
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS(ATION)
CONTR	CONTRACT(OR)
COV	COVER
CP	CARPET
CPT	CARPET TILE
CTT	COUNTER TOP
D	
DBL	DOUBLE
DEPT	DEPARTMENT
DES	DESIGN(ED)
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIFF	DIFFUSER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
DN	DOWN
DR	DOOR
DSCON	DISCONNECT
DWG	DRAWER
E	
ELAST	ELASTOMERIC
ELEC	ELECTRICAL
EMBED	EMBEDD(ED)(ING)
ENGR	ENGINEER(ED)
ENTR	ENTRANCE
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP JT	EXPANSION JOINT
EXPS	EXPOSED(D)
EXT	EXTERIOR
F	
FAB	FABRICATION
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FE&C	FIRE EXTINGUISHER AND CABINET
FHC	FIRE HOSE AND CABINET
FIN	FINISH
FLDG	FOLDING
FLR	FLOOR(ING)
FPLC	FIREPLACE
FR	FIRE RAT(ING)(ED)
FRMG	FRAMING
FURN	FURNITURE
FWC	FABRIC WALL COVERING
FXD	FIXED
FXTR	FIXTURE
G	
GA	GAUGE
GFRC	GLASS FIBER REINFORCED CONCRETE
GFRG	GLASS FIBER REINFORCED GYPSUM
GFRP	GLASS FIBER REINFORCED PLASTER
GL	GLASS
GR	GRAD(E)(ING)
GYP	GYPSUM
H	
HD	HEAD
HDWD	HARDWOOD
HDWE	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HIGH POINT
HVAC	HEATING, VENTILATIING, AND AIR CONDITIONING
I	
INFILTR	INFILTRATION
INFO	INFORMATION
INSTRUM	INSTRUMENT(ATION)
INSUL	INSULATION
INT	INTERIOR
INTLK	INTERLOCK(ING)
J	
JAN	JANITOR
K	
KIT	KITCHEN
L	
LAV	LAVATORY
LP	LOW POINT
LT	LIGHT
LVLG	LEVELING
LVT	LUXURY VINYL TILE
M	
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MTL	METAL
MEZZ	MEZZANINE
MFD	MANUFACTURED
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MLWK	MILLWORK
MOIST	MOISTURE
MOT	MOTOR(IZED)
MTD	MOUNTED
N	
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
O	
OH	OPPOSITE HAND
OPNG	OPENING(S)
OPP	OPPOSITE
OPR	OPERABLE
ORD	OVERFLOW ROOF DRAIN
ORNA	ORNAMENTAL
OVFL	OVERFLOW
OH	OVERHEAD
P	
P-LAM	PLASTIC LAMINATE
PBD	PARITICLE BOARD
PEDR	PEDESTRIAN
PLAS	PLASTER
PLSTC	PLASTIC
PLYWD	PLYWOOD
PNL	PANEL
POLYST	POLYSTRENE
PORT	PORTABLE
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PRTECN	PROTECTION
PTN	PARTITION
PT	PAINT
R	
RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
RDR	READER
RECES	RECESSED
RECPT	RECEPTACLE
REF	REFER(ENCE)
REFL	REFLECTED
REFR	REFRIGERATOR
REINF	REINFORCED(D)(ING)(MENT)
REQD	REQUIRED
RESIL	RESILIENT
RESIS	RESIST(ANT)(IVE)
RFG	ROOFING
RM	ROOM
RO	ROUGH OPENING
S	
SCR	SCRIBE
SECUR	SECURITY
SF/SQ.FT.	SQUARE FEET
SG	SINGLE
SHORG	SHORING
SHWR	SHOWER
SIM	SIMILAR
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRFR	STOREFRONT
STRUCT	STRUCTURAL
SURF	SURFACE
SUSP	SUSPENDED
SYS	SYSTEM(S)
T	
T&G	TOUNGE AND GROOVE
THK	THICK
TLT	TOILET
TRAF	TRAFFIC
TRANS	TRANSPARENT
TRTD	TREATED
TYP	TYPICAL
TL	CERAMIC/PORCELAIN TILE
TLB	TILE BASE
U	
UNDRLAY	UNDERLAYMENT
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
V	
VEH	VECHICLE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WDB	WOOD BASE
WDW	WINDOW
WT	WEIGHT

DRAWING INDICATION



SECTION INDICATIONS

SYMBOL	DESCRIPTION
	ACOUSTICAL CEILING TILE
	ALUMINUM
	BRICK
	CARPET
	CONCRETE
	CONCRETE MASONRY UNIT
	EARTH
	FABRIC WRAPPED PANEL
	GLASS
	GRAVEL
	GYPSUM CEILING (PAINTED)
	INSULATION (LOOSE OR BATT)
	INSULATION (RIGID)
	METAL
	PLASTIC
	PLYWOOD
	SAND OR GROUT
	STONE
	WOOD (FINISHED)
	WOOD (CONTINUOUS MEMBER)
	WOOD (INTERRUPTED MEMBER)

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STATE OF MISSOURI
C. KEVIN CAMPBELL
NUMBER A-2010067490
ARCHITECT

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PROJECT NO. 231206

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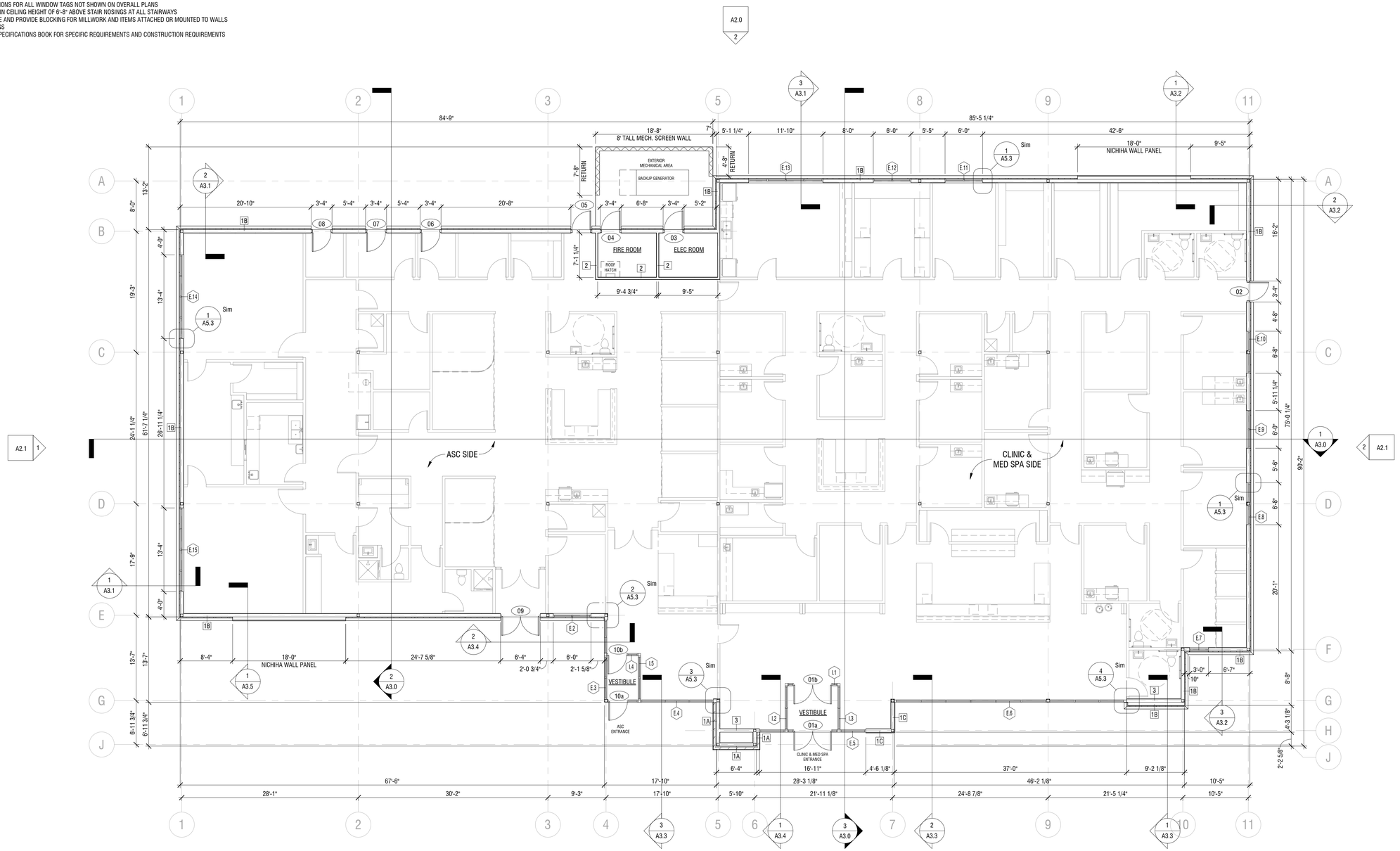
SHEET NUMBER

A0.2

ABBREVIATIONS & INDICATIONS

GENERAL NOTES

1. ALL PLAN DIMENSIONS GIVEN ARE TO FACE OF STUD OR MASONRY, U.N.O.
2. SEE ENLARGED A4 SHEETS FOR ALL WALL TAGS NOT SHOWN ON OVERALL PLANS. REFER TO CALLOUT FOR SPECIFIC PLAN ENLARGEMENT
3. SEE ELEVATIONS FOR ALL WINDOW TAGS NOT SHOWN ON OVERALL PLANS
4. MAINTAIN MIN CEILING HEIGHT OF 6'-8" ABOVE STAIR NOSINGS AT ALL STAIRWAYS
5. COORDINATE AND PROVIDE BLOCKING FOR MILLWORK AND ITEMS ATTACHED OR MOUNTED TO WALLS AND CEILINGS
6. REFER TO SPECIFICATIONS BOOK FOR SPECIFIC REQUIREMENTS AND CONSTRUCTION REQUIREMENTS



WALL TYPES

COLD-FORMED STEEL FRAMING

- 1A — EXTERIOR WALL - 6" METAL STUD - BRICK SEE DETAIL 1/A0.1
- 1B — EXTERIOR WALL - 6" METAL STUD - EIFS SEE DETAIL 2/A0.1
- 1C — EXTERIOR WALL - 6" METAL STUD - FIBER CEMENT PANEL SEE DETAIL 3/A0.1
- 2 — INTERIOR WALL - 3 5/8" METAL STUD - TYPICAL SEE DETAIL 4/A0.1
- 3 — INTERIOR WALL - 6" METAL STUD - 1 SIDE FINISH SEE DETAIL 5/A0.1

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

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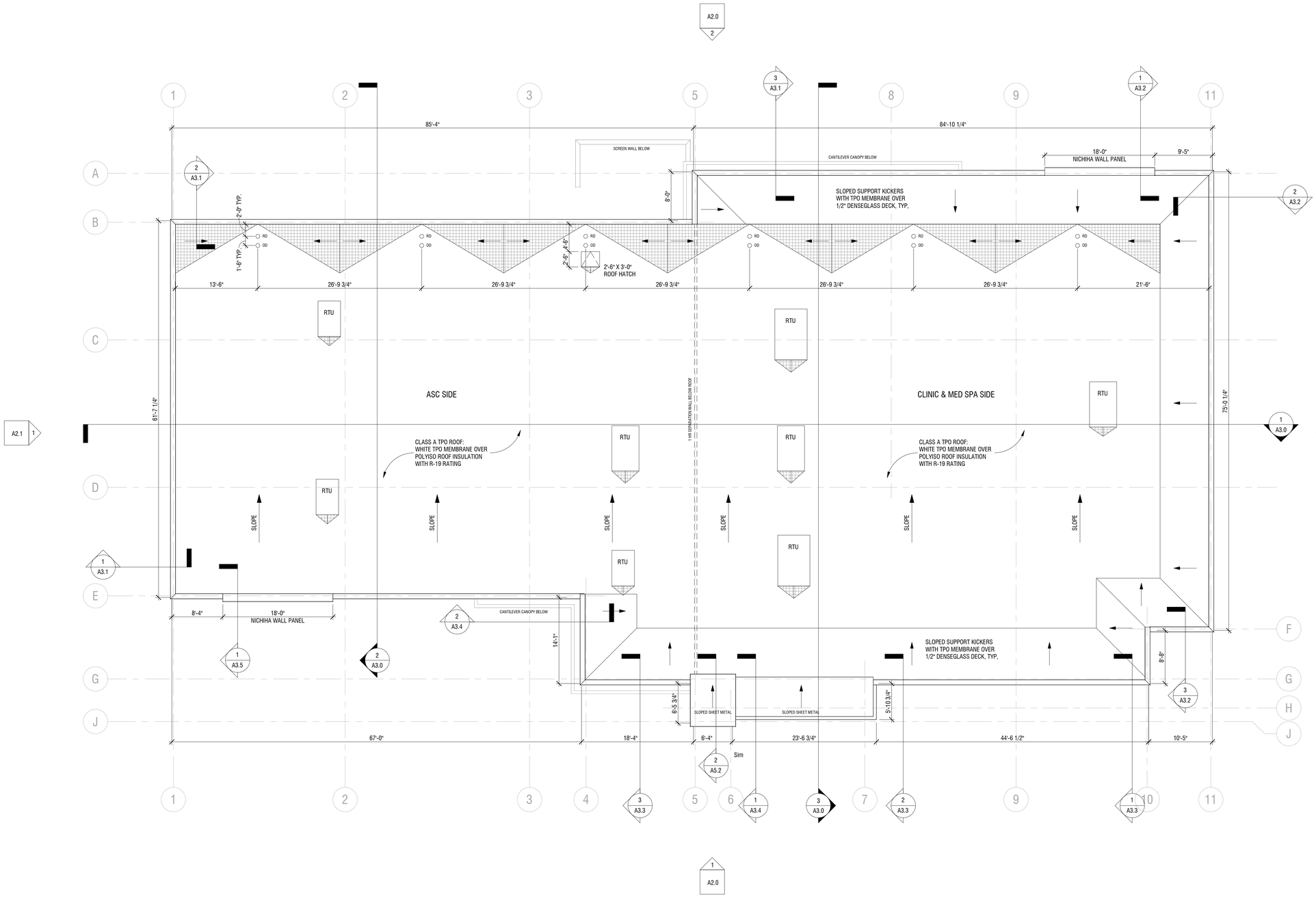
SHEET NUMBER

A1.0

FLOOR PLAN

GENERAL NOTES

1. ALL MECHANICAL EQUIPMENT WILL BE CONCEALED FROM VIEW (FROM THE STREET) BEHIND A PARAPET WALL ON ROOF OF BUILDING



2 ROOF PLAN

1/8" = 1'-0"

N

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A1.1

ROOF PLAN

GENERAL NOTES

1. ALL MECHANICAL EQUIPMENT WILL BE CONCEALED FROM VIEW (FROM THE STREET) BEHIND A PARAPET WALL ON ROOF OF BUILDING
2. ALL COMMERICAL SIGNAGE WILL BE APPROVED BY SEPARATE APPLICATION AND REPLACE SIGNS SHOWN WILL GENERAL LOCATION WHERE SIGNS WILL BE LOCATED

BRICK
RED BRICK

BRICK
BEIGE BRICK

FIBER CEMENT PANEL
VINTAGEWOOD CEDAR

EIFS SYSTEM
BEIGE

EXTERIOR SCHEDULE

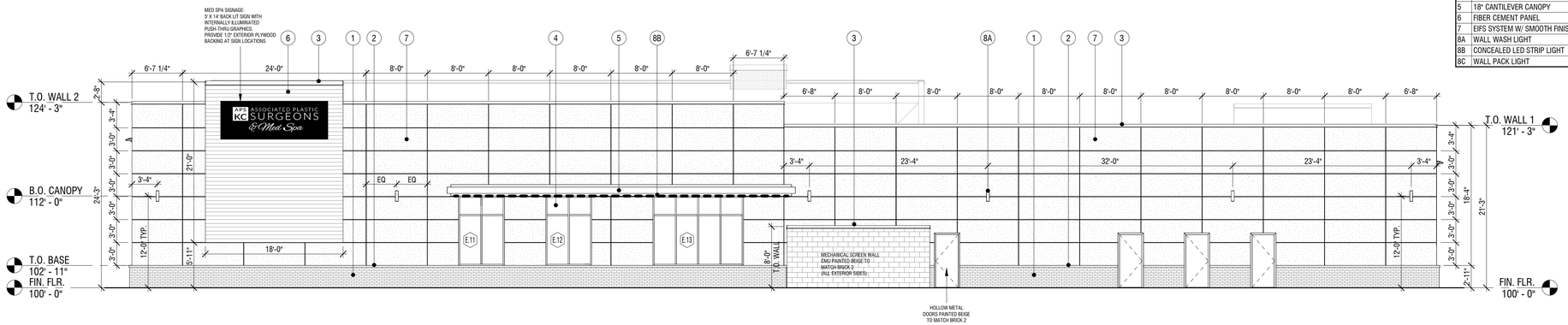
NO.	MATERIAL/ITEMS	DESCRIPTION/MANUFACTURER	COLOR/FINISH
1	BRICK	TO BE SELECTED BY OWNER	COLOR: RED BRICK (RUNNING BOND)
2	BRICK	TO BE SELECTED BY OWNER	COLOR: BEIGE BRICK (ROWLOCK BASE CAP & ACCENT BRICK)
3	PREFINISHED METAL	COPING/CAP FLASHING	COLOR: BLACK
4	ALUMINUM STOREFRONT	W/ 1" INSULATED GLASS	COLOR (FRAME): BLACK
5	PREFINISHED METAL	18" DEEP CANTILEVER CANOPY	COLOR: BLACK
6	FIBER CEMENT PANEL	NICHIHA FIBER CEMENT	COLOR: VINTAGE WOOD CEDAR
7	EIFS SYSTEM	TO BE SELECTED BY OWNER	COLOR: BEIGE WITH SMOOTH FINISH & SCORING PATTERN
8	BUILDING LIGHTING	RE: EXTERIOR LIGHTING SCHEDULE	

EXTERIOR LIGHTING SCHEDULE

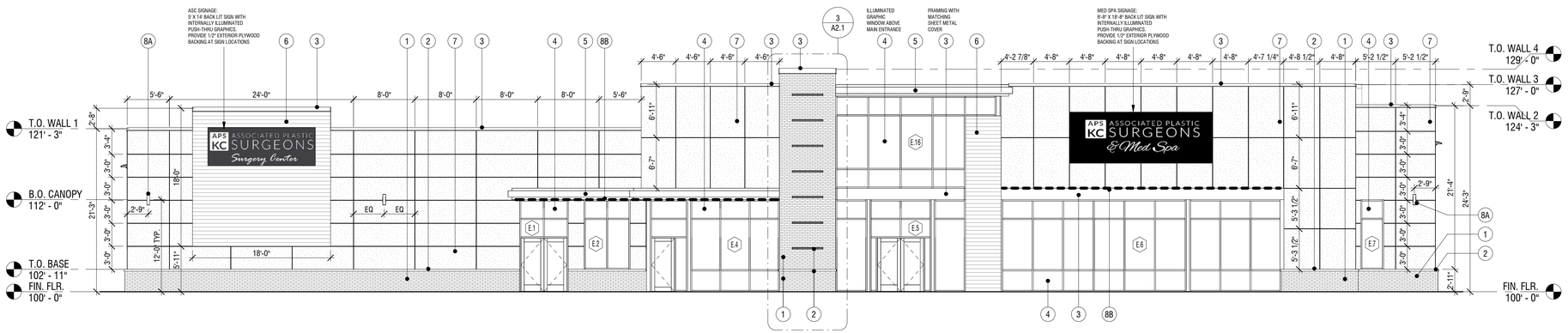
NO.	TYPE	DESCRIPTION/MANUFACTURER	REMARKS
8A	UP/DOWN	LED, BLACK FINISH SYRIOS PRO SQP402 BY LUMINIS OR EQUAL	WALL WASH AT WEST & EAST ELEVATIONS WITH HIGH VISIBILITY
8B	LINEAR	CONTINUOUS BUILT-IN, CONCEALED LED STRIP	HORIZONTAL HIGHLIGHT AT WEST & EAST ELEVATIONS WITH HIGH VISIBILITY
8C	WALL PACK	LED, BLACK FINISH D-SERIES SIZE 1 LED WALL LUMINAIRE DSXW1LED BY LITHONIA OR EQUAL	GENERAL ILLUMINATION AT NORTH & SOUTH ELEVATIONS

ELEVATION KEYNOTES

NO.	NOTES
1	RED BRICK (RUNNING BOND)
2	BEIGE BRICK (ROWLOCK CAP & ACCENT BRICK)
3	PREFINISHED METAL COPING/CAP
4	ALUMINUM STOREFRONT
5	18" CANTILEVER CANOPY
6	FIBER CEMENT PANEL
7	EIFS SYSTEM W/ SMOOTH FINISH & SCORING PATTERN
8A	WALL WASH LIGHT
8B	CONCEALED LED STRIP LIGHT
8C	WALL PACK LIGHT



2 EAST ELEVATION
1/8" = 1'-0"



1 WEST ELEVATION
1/8" = 1'-0"

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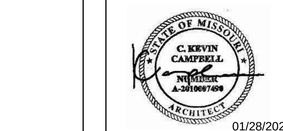

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NO.	REVISION	DATE

SHEET NUMBER
A2.0
BUILDING ELEVATIONS

GENERAL NOTES

1. ALL MECHANICAL EQUIPMENT WILL BE CONCEALED FROM VIEW (FROM THE STREET) BEHIND A PARAPET WALL ON ROOF OF BUILDING
2. ALL COMMERICAL SIGNAGE WILL BE APPROVED BY SEPARATE APPLICATION AND REPLACE SIGNS SHOWN WILL GENERAL LOCATION WHERE SIGNS WILL BE LOCATED

BRICK
RED BRICK

BRICK
BEIGE BRICK

FIBER CEMENT PANEL
VINTAGEWOOD CEDAR

EIFS SYSTEM
BEIGE

EXTERIOR SCHEDULE

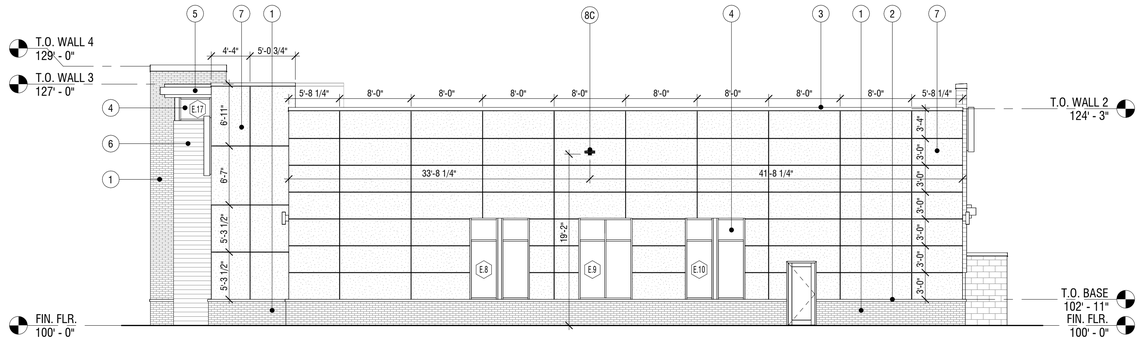
NO.	MATERIAL/ITEMS	DESCRIPTION/MANUFACTURER	COLOR/FINISH
1	BRICK	TO BE SELECTED BY OWNER	COLOR: RED BRICK (RUNNING BOND)
2	BRICK	TO BE SELECTED BY OWNER	COLOR: BEIGE BRICK (ROWLOCK BASE CAP & ACCENT BRICK)
3	PREFINISHED METAL	COPING/CAP FLASHING	COLOR: BLACK
4	ALUMINUM STOREFRONT	W/ 1" INSULATED GLASS	COLOR (FRAME): BLACK
5	PREFINISHED METAL	18" DEEP CANTILEVER CANOPY	COLOR: BLACK
6	FIBER CEMENT PANEL	NICHIHA FIBER CEMENT	COLOR: VINTAGE WOOD CEDAR
7	EIFS SYSTEM	TO BE SELECTED BY OWNER	COLOR: BEIGE WITH SMOOTH FINISH & SCORING PATTERN
8	BUILDING LIGHTING	RE: EXTERIOR LIGHTING SCHEDULE	

EXTERIOR LIGHTING SCHEDULE

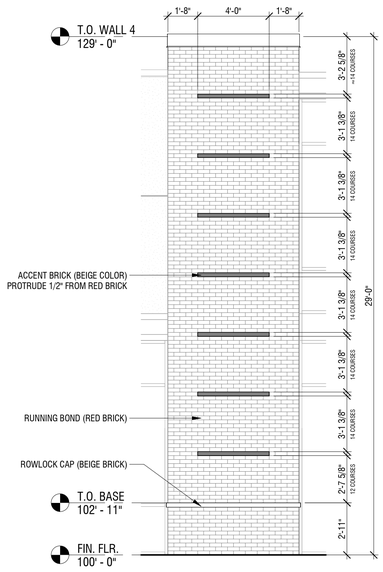
NO.	TYPE	DESCRIPTION/MANUFACTURER	REMARKS
8A	UP/DOWN	LED, BLACK FINISH SYRIOS PRO SQP402 BY LUMINIS OR EQUAL	WALL WASH AT WEST & EAST ELEVATIONS WITH HIGH VISIBILITY
8B	LINEAR	CONTINUOUS BUILT-IN, CONCEALED LED STRIP	HORIZONTAL HIGHLIGHT AT WEST & EAST ELEVATIONS WITH HIGH VISIBILITY
8C	WALL PACK	LED, BLACK FINISH D-SERIES SIZE 1 LED WALL LUMINAIRE DSXW1LED BY LITHONIA OR EQUAL	GENERAL ILLUMINATION AT NORTH & SOUTH ELEVATIONS

ELEVATION KEYNOTES

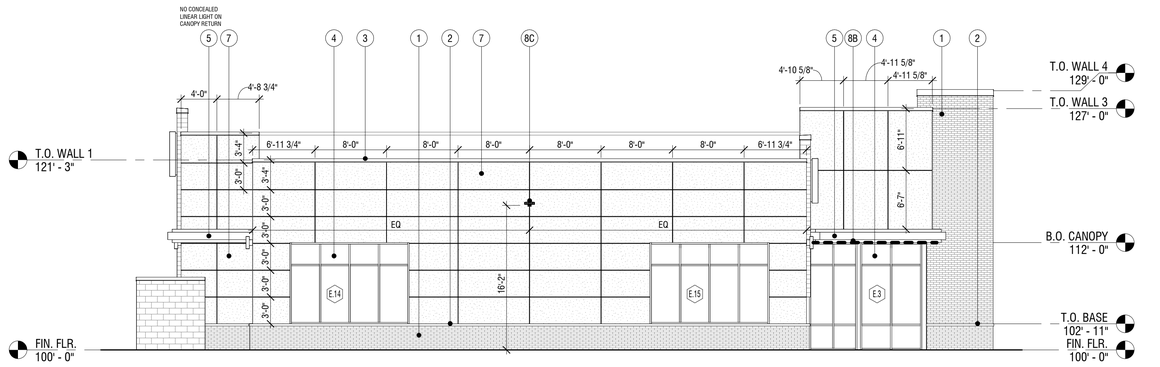
NO.	NOTES
1	RED BRICK (RUNNING BOND)
2	BEIGE BRICK (ROWLOCK CAP & ACCENT BRICK)
3	PREFINISHED METAL COPING/CAP
4	ALUMINUM STOREFRONT
5	18" CANTILEVER CANOPY
6	FIBER CEMENT PANEL
7	EIFS SYSTEM W/ SMOOTH FINISH & SCORING PATTERN
8A	WALL WASH LIGHT
8B	CONCEALED LED STRIP LIGHT
8C	WALL PACK LIGHT



2 SOUTH ELEVATION
1/8" = 1'-0"



3 ENLARGED ELEVATION - BRICK PIER
1/4" = 1'-0"



1 NORTH ELEVATION
1/8" = 1'-0"

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ASSOCIATED PLASTIC SURGEONS

A NEW BUILDING FOR:

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
C. KEVIN CAMPBELL
NUMBER A-2010697490
ARCHITECT

01/28/2025

PROJECT NO. 231206

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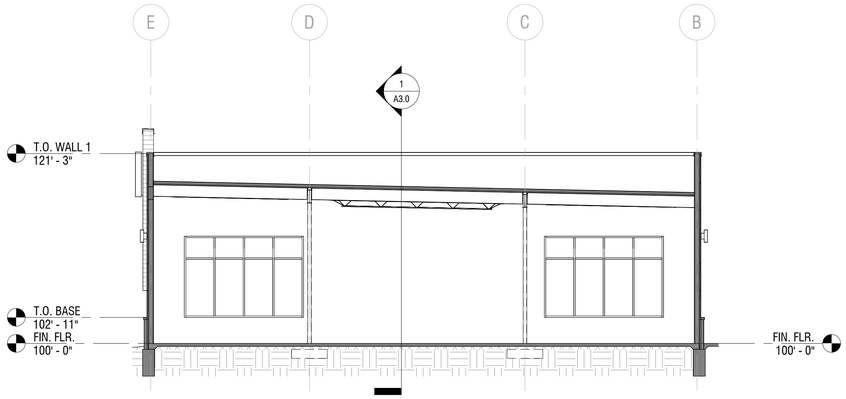
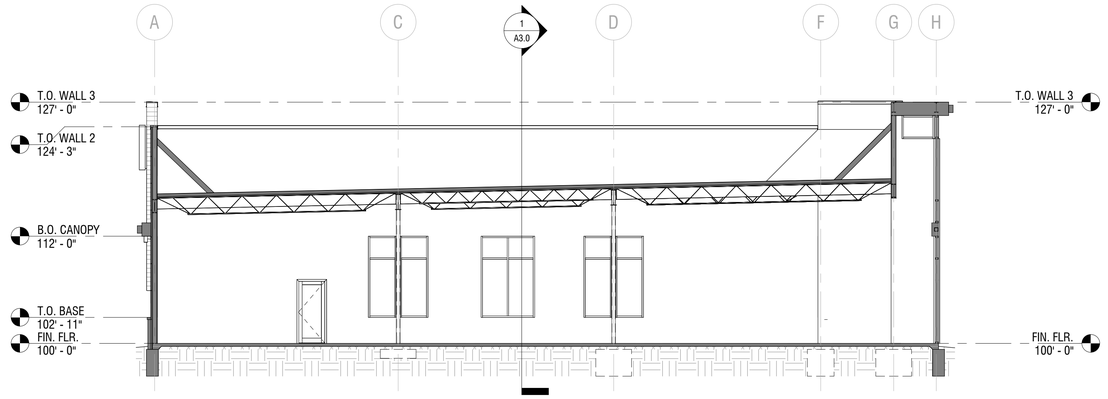
NO.	REVISION	DATE

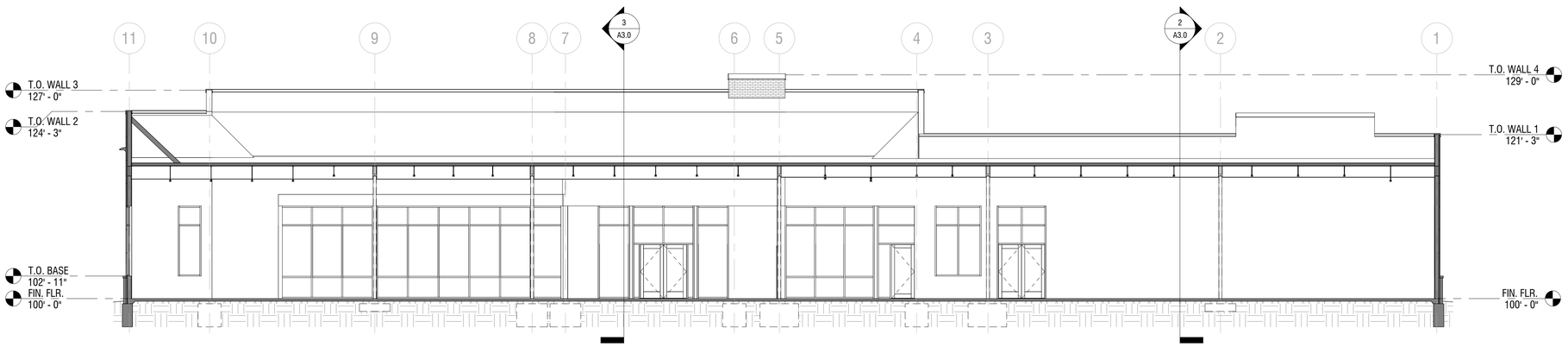
SHEET NUMBER
A2.1
BUILDING ELEVATIONS



2 E-W BUILDING SECTION 1
1/8" = 1'-0"



3 E-W BUILDING SECTION 2
1/8" = 1'-0"



1 N-S BUILDING SECTION
1/8" = 1'-0"

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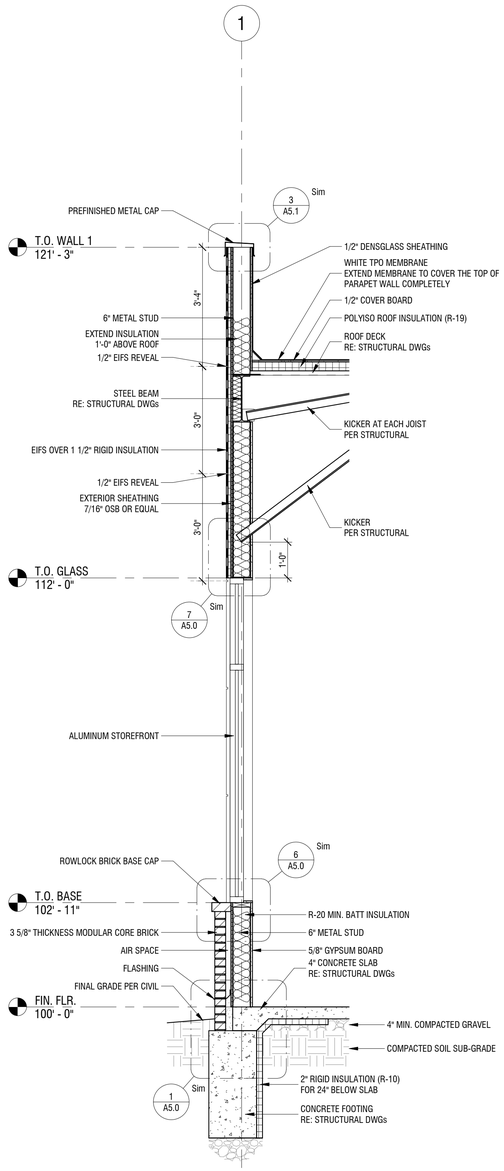
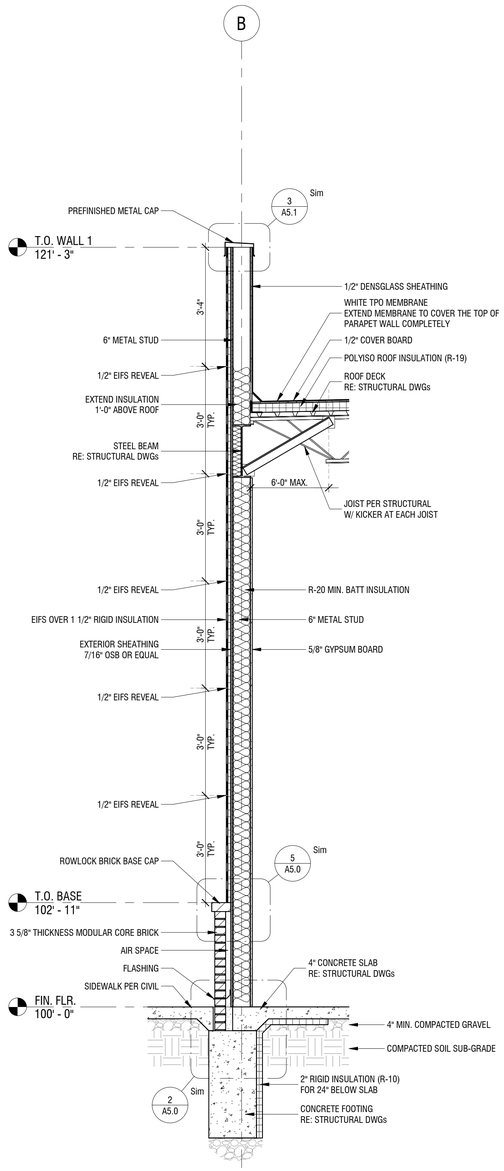
SHEET NUMBER

A3.0

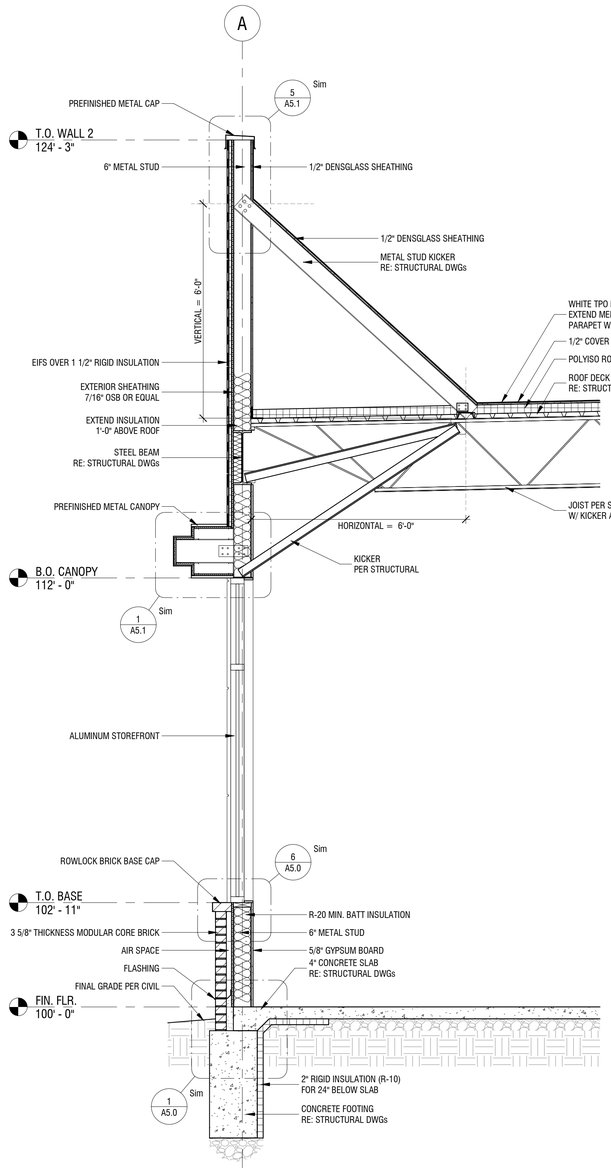
BUILDING SECTIONS



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



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



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

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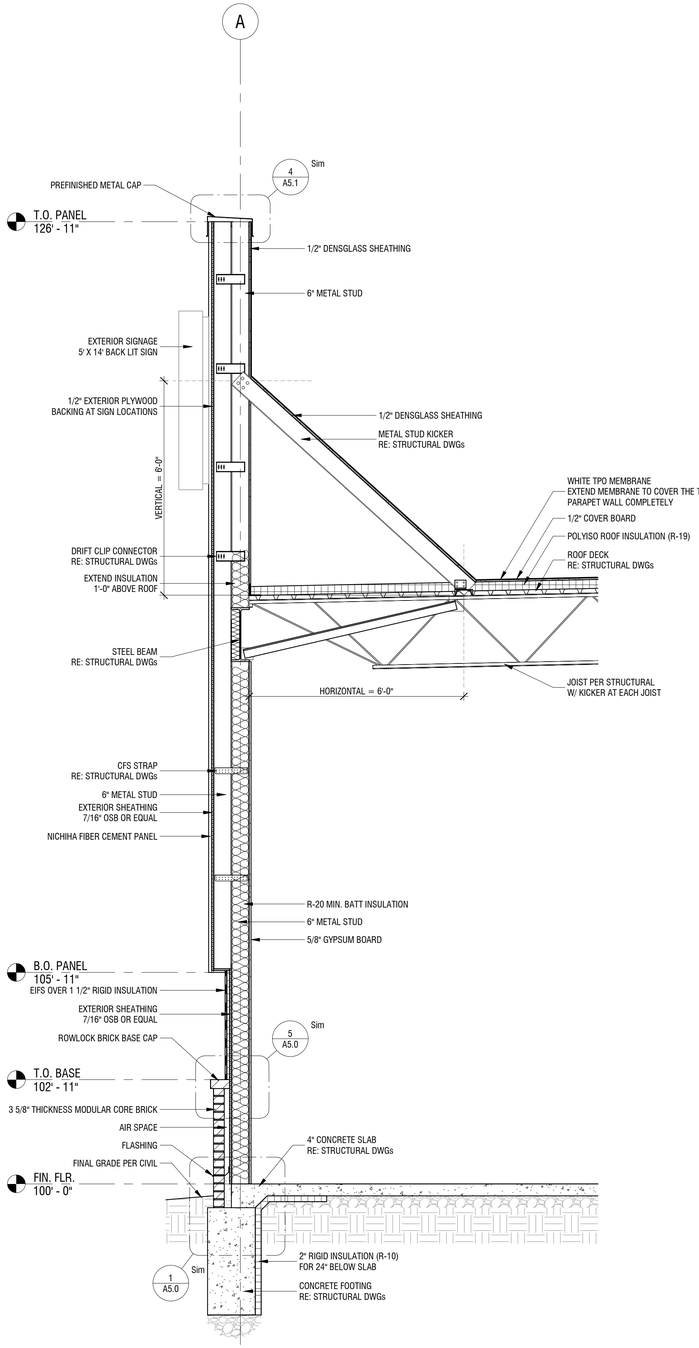
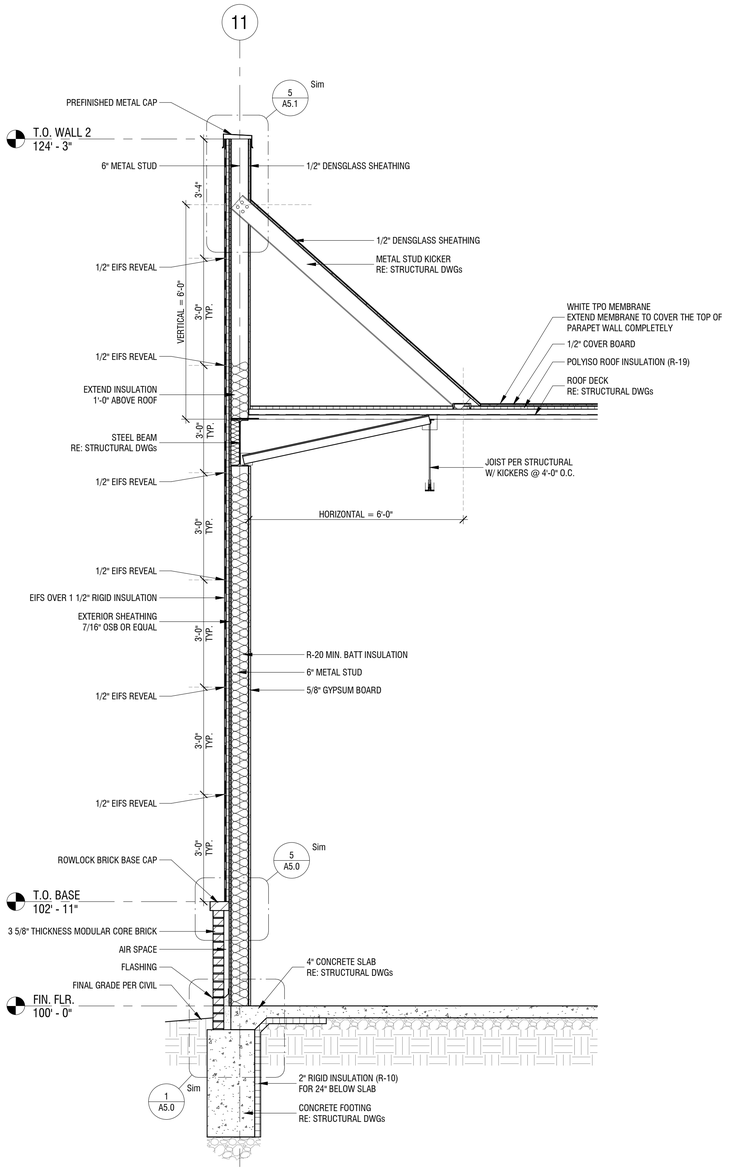
A3.1

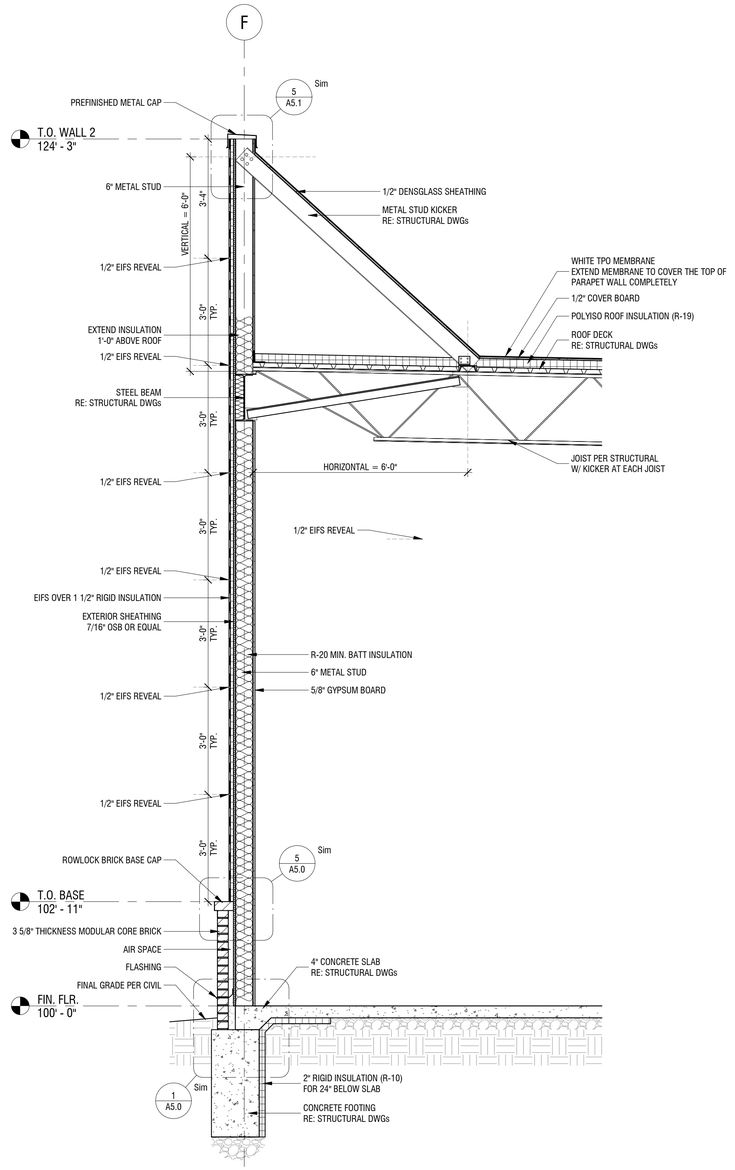
WALL SECTIONS



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



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



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

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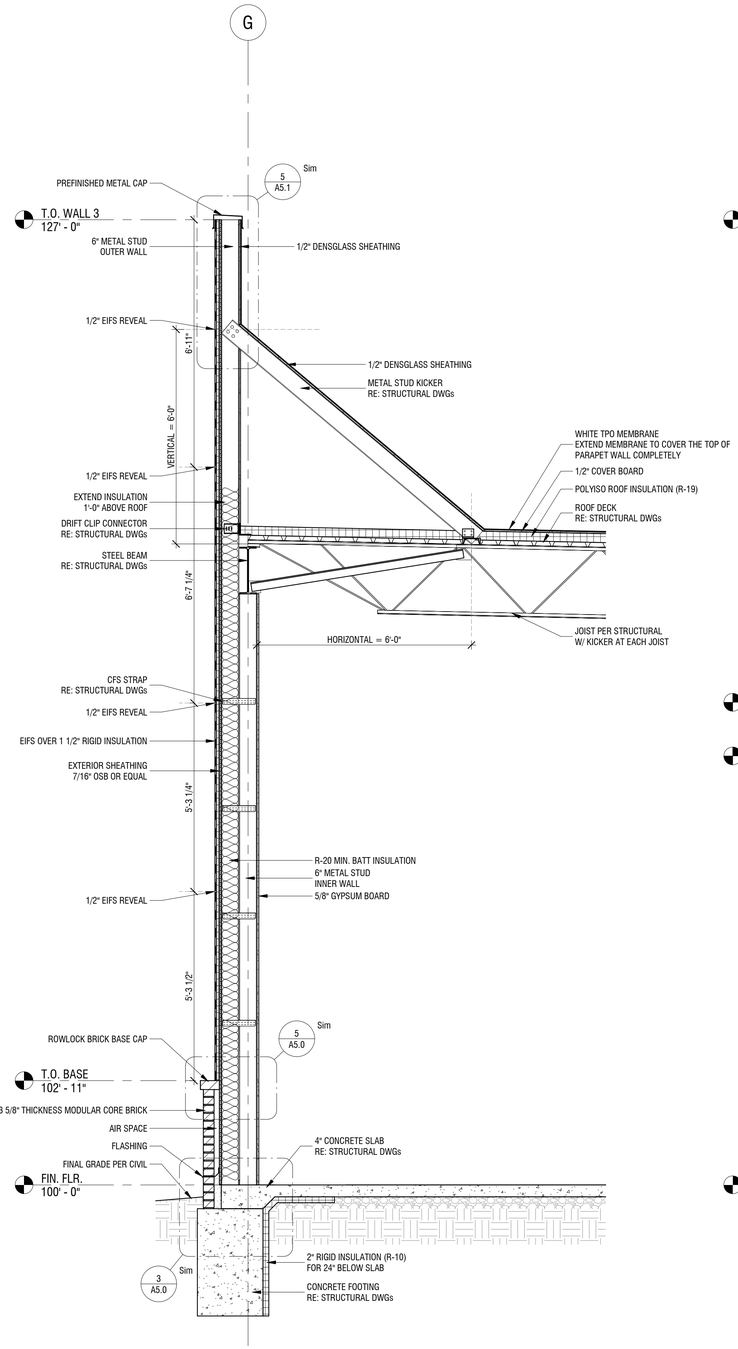
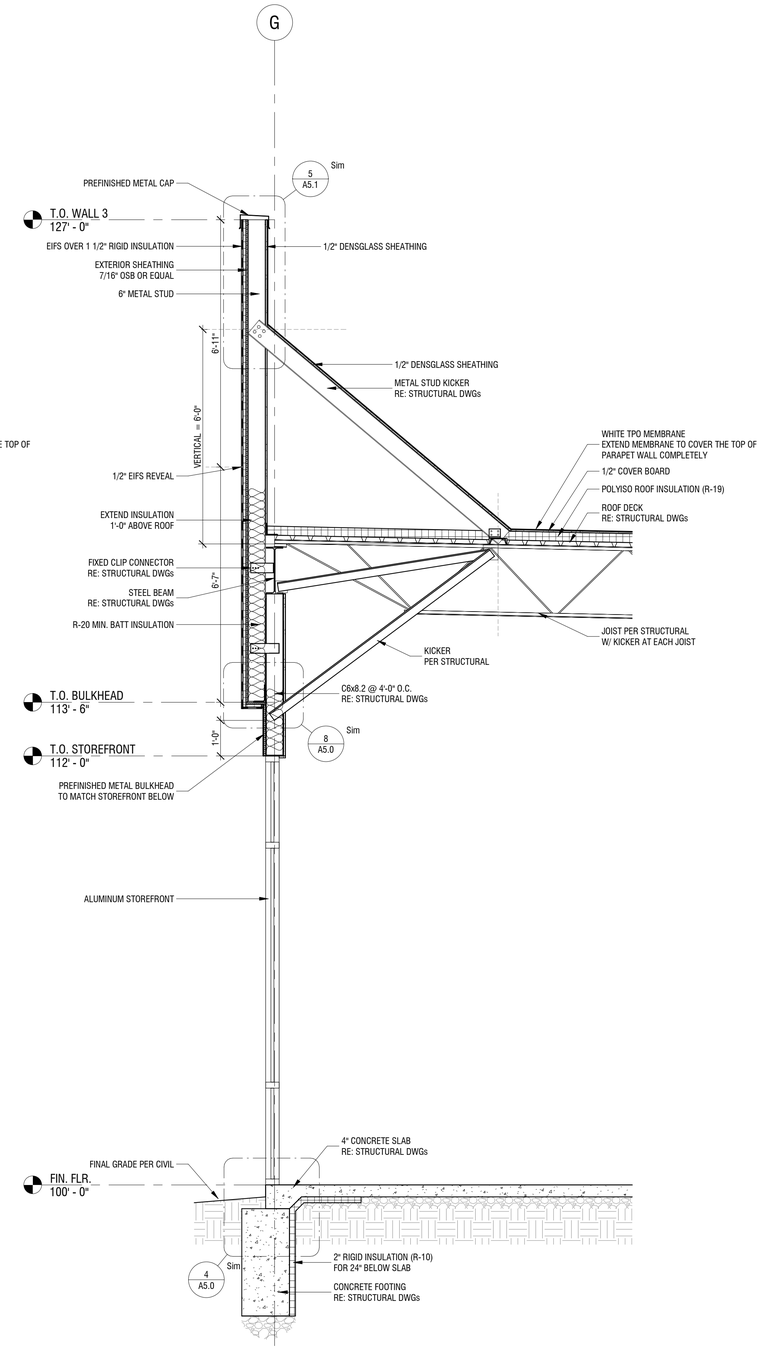
A3.2

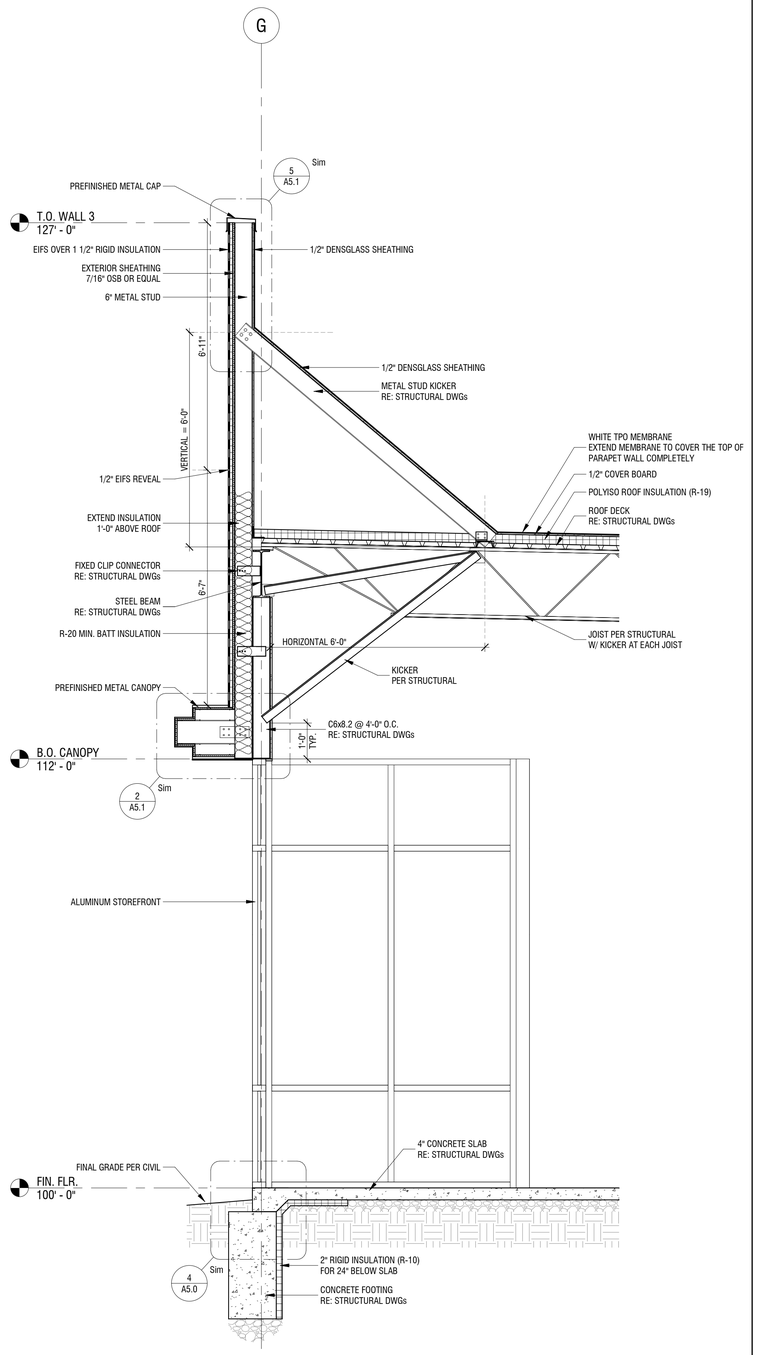
WALL SECTIONS



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



2 WALL SECTION 8
1/2" = 1'-0"



3 WALL SECTION 10
1/2" = 1'-0"

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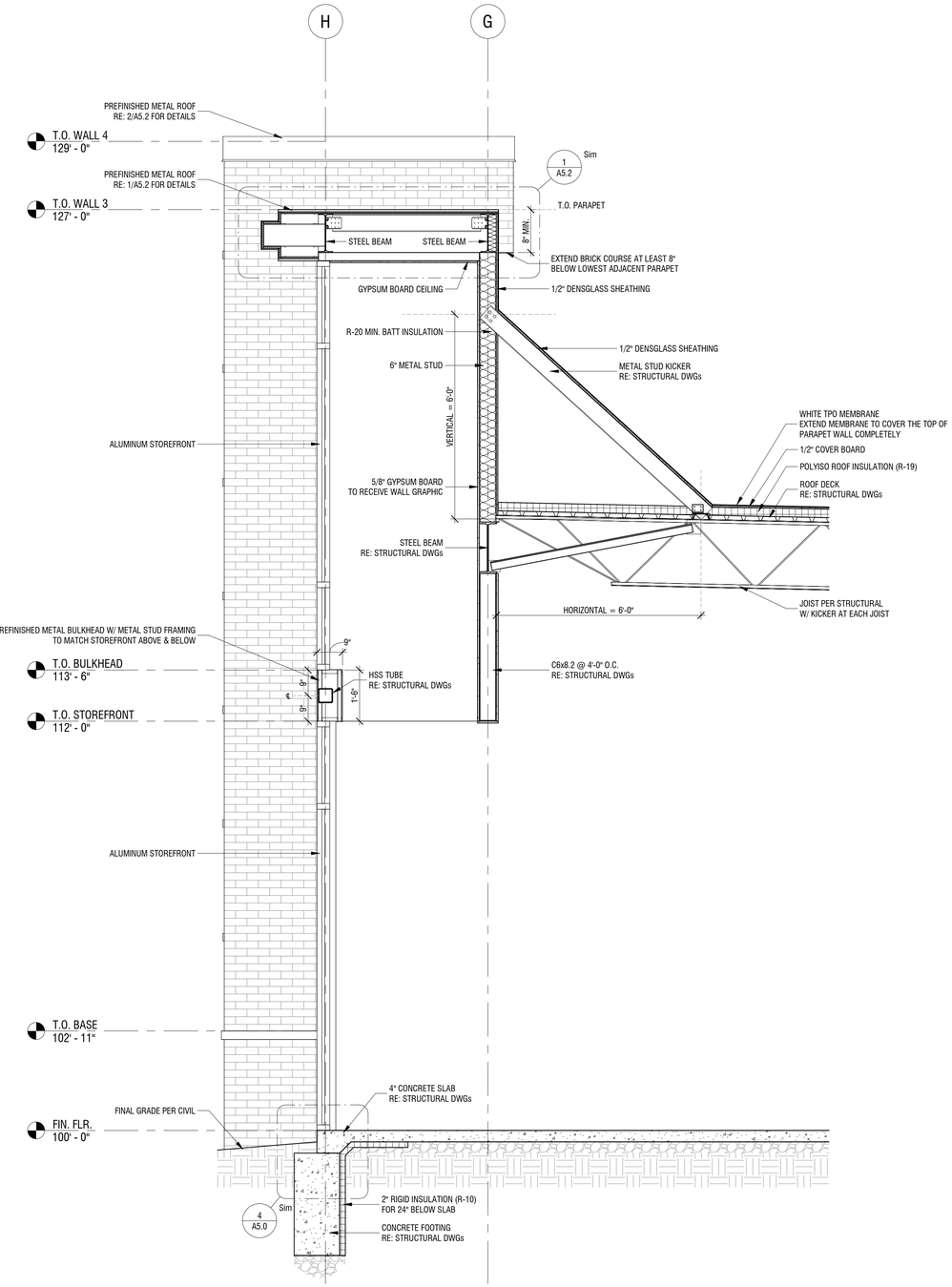
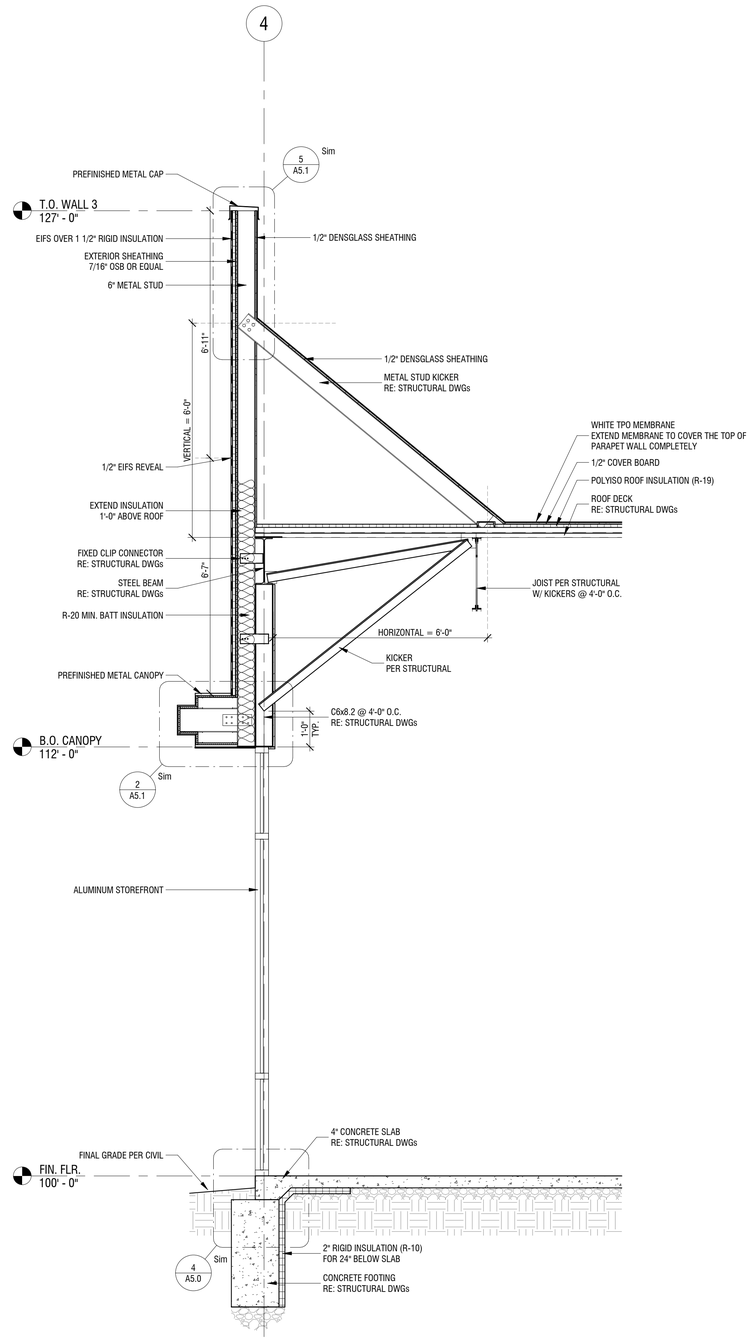
SHEET NUMBER
A3.3
WALL SECTIONS



1 WALL SECTION 9
1/2" = 1'-0"



2 WALL SECTION 11
1/2" = 1'-0"

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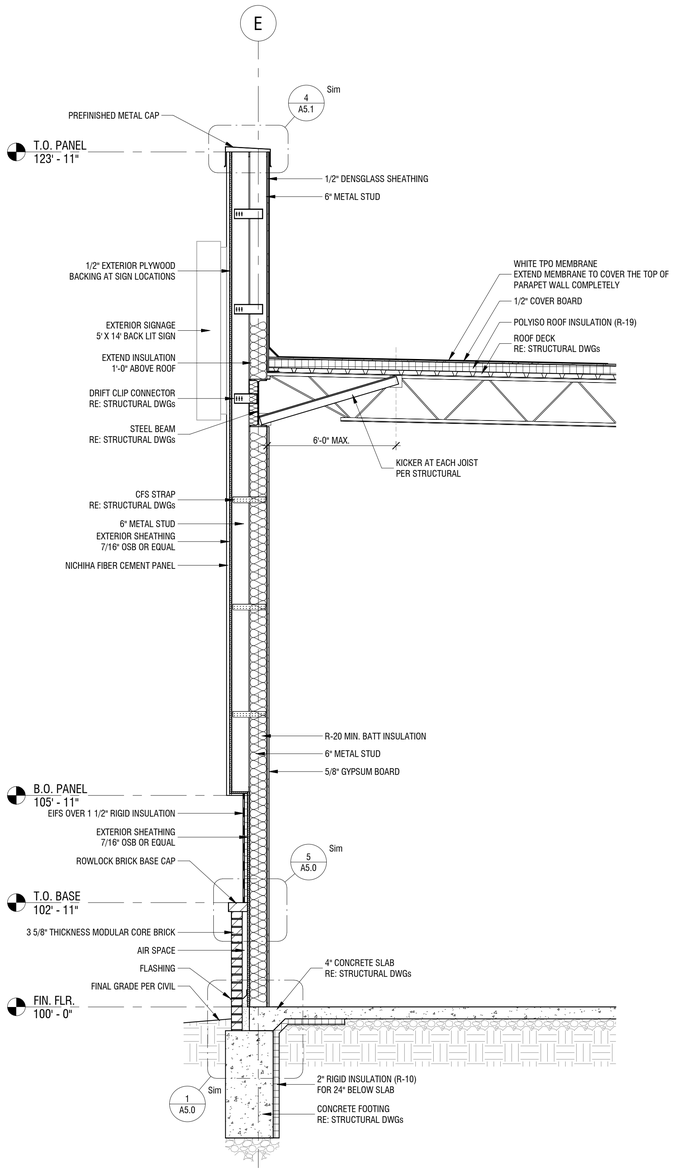
SHEET NUMBER

A3.4

WALL SECTIONS



1 WALL SECTION 12
1/2" = 1'-0"

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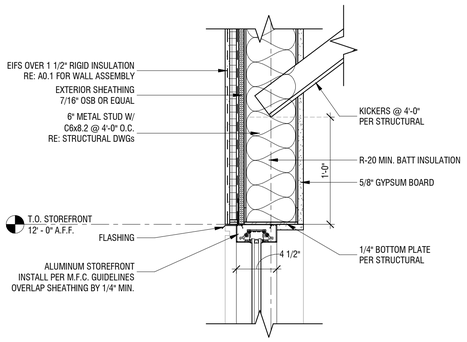
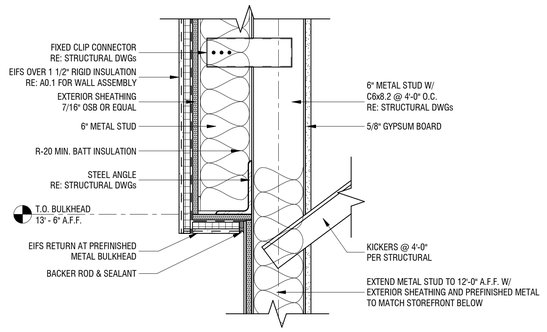
A3.5

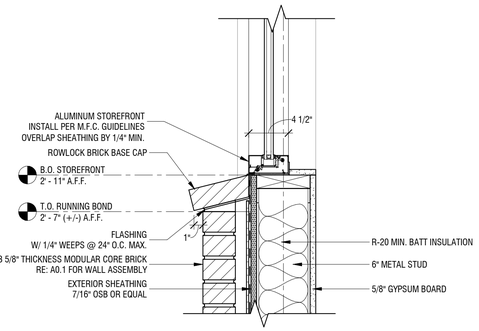
WALL SECTIONS



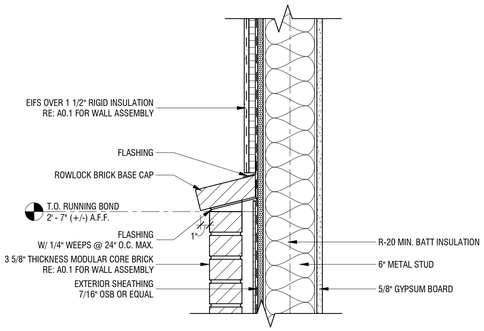
7 SECTION DETAIL - STOREFRONT HDR 1
1 1/2" = 1'-0"



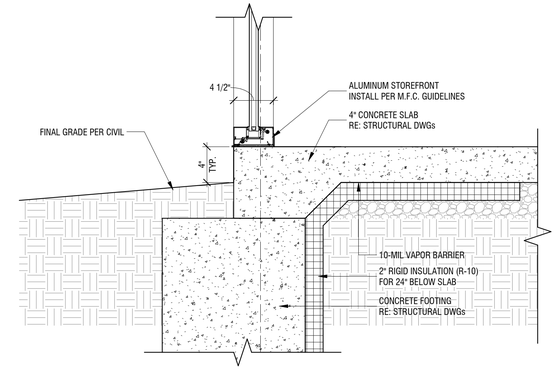
8 SECTION DETAIL - BULKHEAD
1 1/2" = 1'-0"



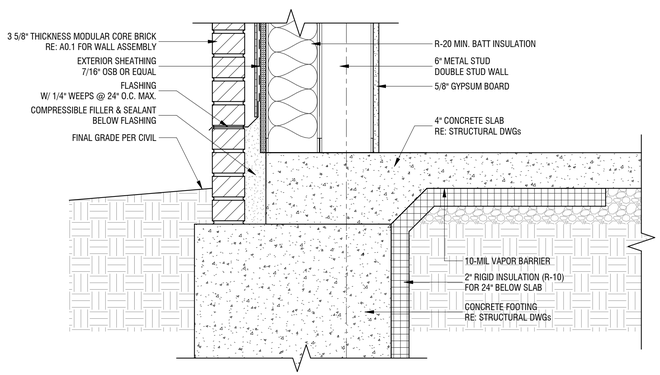
6 SECTION DETAIL - BRICK BASE CAP 2
1 1/2" = 1'-0"



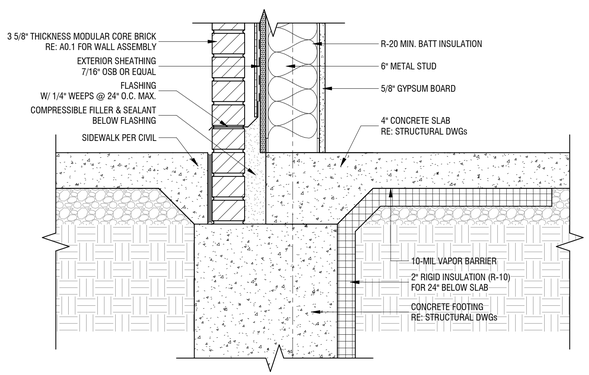
5 SECTION DETAIL - BRICK BASE CAP 1
1 1/2" = 1'-0"



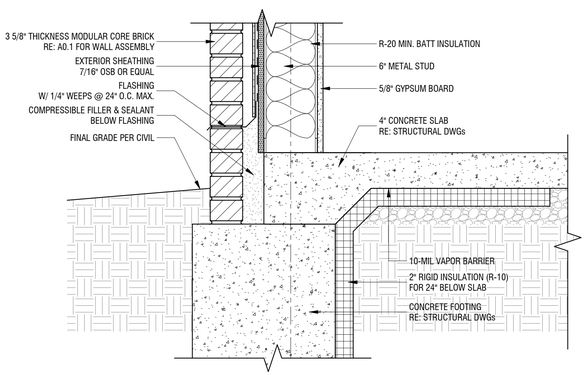
4 SECTION DETAIL - FOUNDATION 4
1 1/2" = 1'-0"



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



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



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

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A NEW BUILDING FOR:

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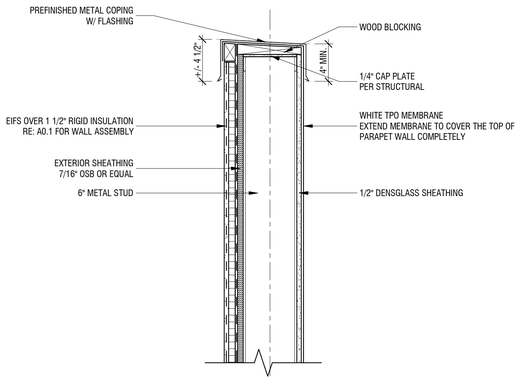
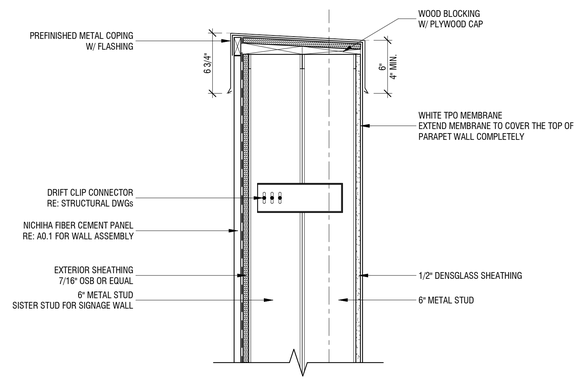
A5.0

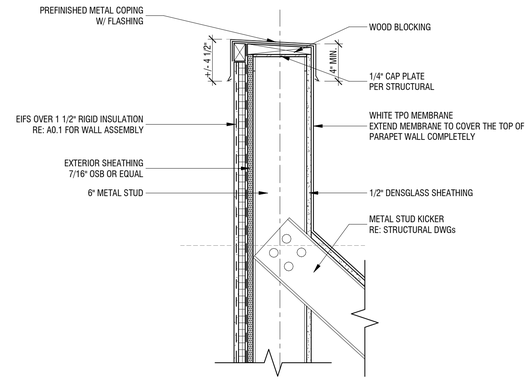
DETAILS



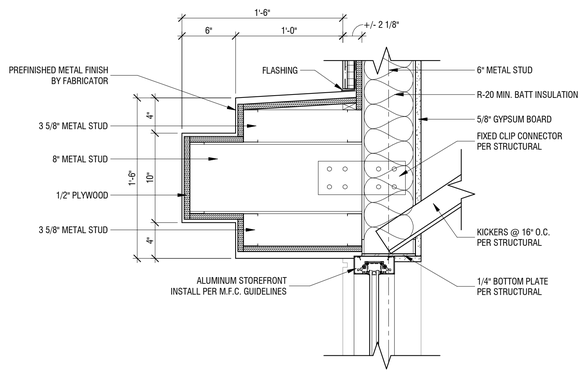
3 SECTION DETAIL - PARAPET 1
1 1/2" = 1'-0"



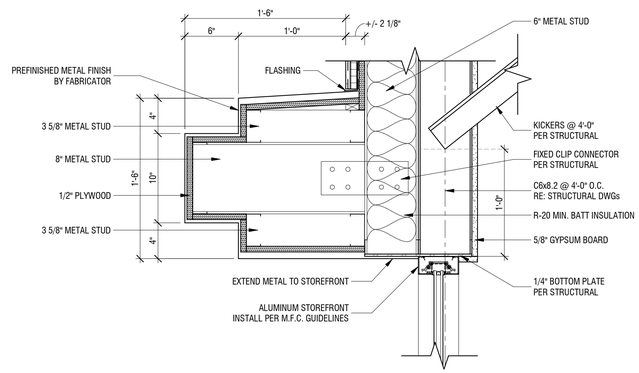
4 SECTION DETAIL - PARAPET 2
1 1/2" = 1'-0"



5 SECTION DETAIL - PARAPET W/ KICKER
1 1/2" = 1'-0"



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



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

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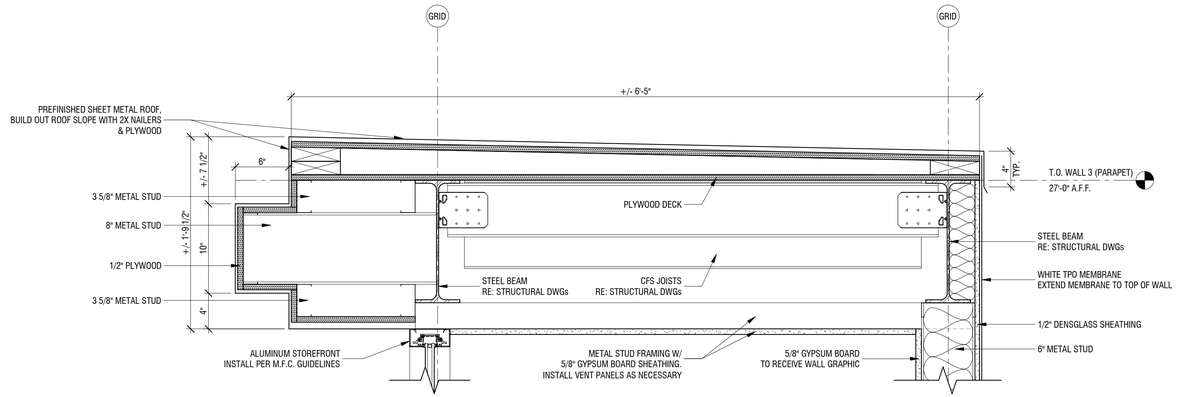
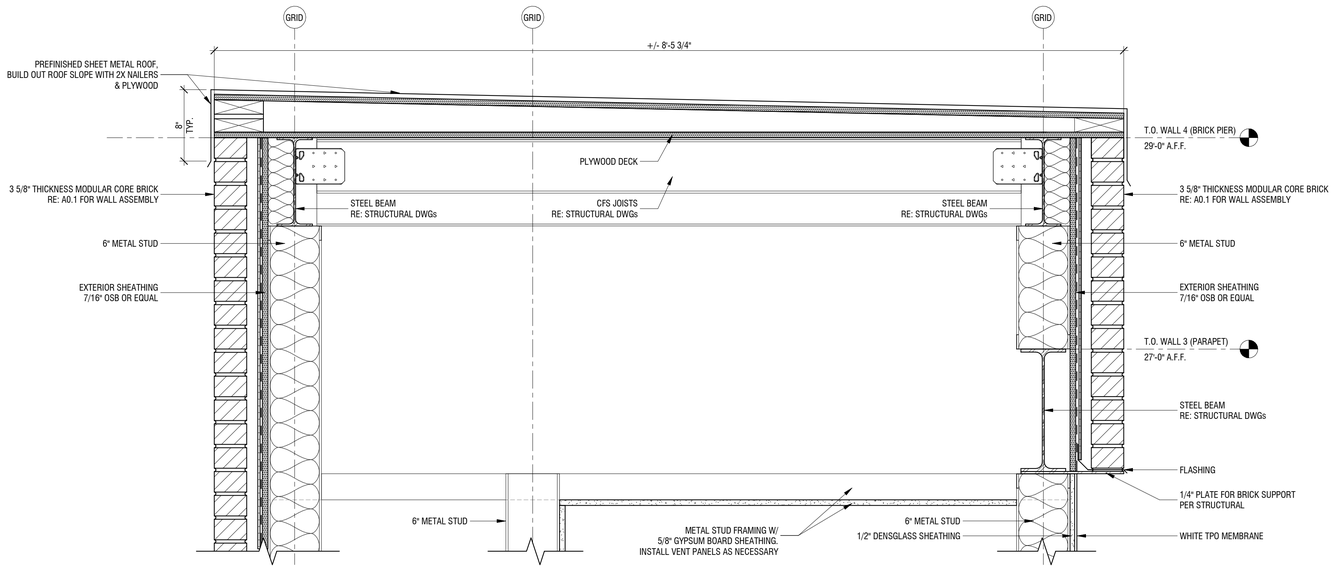
A5.1

DETAILS



1 SECTION DETAIL - METAL ROOF 1
1 1/2" = 1'-0"



2 SECTION DETAIL - METAL ROOF 2
1 1/2" = 1'-0"

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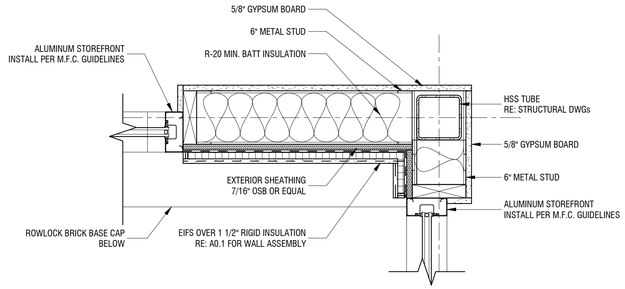
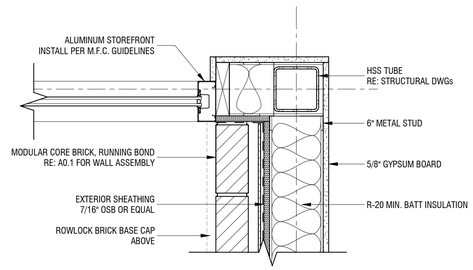
A5.2

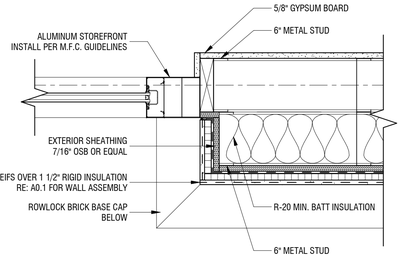
DETAILS



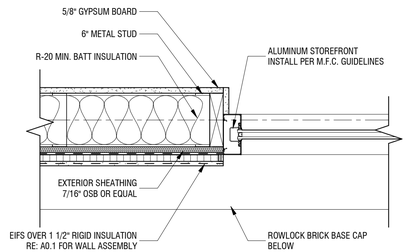
2 PLAN DETAIL - STOREFRONT JAMB 2
1 1/2" = 1'-0"



3 PLAN DETAIL - STOREFRONT JAMB 3
1 1/2" = 1'-0"



4 PLAN DETAIL - STOREFRONT JAMB 4
1 1/2" = 1'-0"



1 PLAN DETAIL - STOREFRONT JAMB 1
1 1/2" = 1'-0"

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A NEW BUILDING FOR:

ASSOCIATED PLASTIC SURGEONS

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
C. KEVIN CAMPBELL
NUMBER A-2010097498
ARCHITECT

01/28/2025

PROJECT NO. 231206

DRAWING ISSUANCE: JAN 28, 2025

NO.	REVISION	DATE

SHEET NUMBER

A5.3

DETAILS

DOOR SCHEDULE

DOOR NUMBER	ELEVATION	LOCATION	SIZE			OPERATION	FIRE RATING	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	HARDWARE SET	REMARKS
			WIDTH	HEIGHT	THICKNESS									
FIN. FLR.														
01a	E	CLINIC & MED SPA ENTRANCE	6' - 0"	7' - 0"	0' - 2"	SW	NON	AF-GP	ALUM/GL	ANODIZED	ALUM	ANODIZED	1	ENTRY/EGRESS DOOR
01b	E	CLINIC & MED SPA ENTRANCE - VESTIBULE	6' - 0"	7' - 0"	0' - 2"	SW	NON	AF-GP	ALUM/GL	ANODIZED	ALUM	ANODIZED	1	ENTRY/EGRESS DOOR
02	B	CLINIC & MED SPA CORRIDOR - EXIT	3' - 0"	7' - 0"	0' - 1 5/8"	SW	NON	AF-GP	ALUM/GL	ANODIZED	HM	PAINTED	3	EGRESS DOOR
03	A	ELECTRICAL ROOM	3' - 0"	7' - 0"	0' - 1 5/8"	SW	NON	F	HM	PAINTED	HM	PAINTED	4	
04	A	FIRE ROOM	3' - 0"	7' - 0"	0' - 1 5/8"	SW	NON	F	HM	PAINTED	HM	PAINTED	4	
05	A	ASC CORRIDOR - EXIT	3' - 0"	7' - 0"	0' - 1 5/8"	SW	NON	F	HM	PAINTED	HM	PAINTED	3	EGRESS DOOR
06	A	SERVICE DOOR	3' - 0"	7' - 0"	0' - 1 5/8"	SW	NON	F	HM	PAINTED	HM	PAINTED	4	
07	A	SERVICE DOOR	3' - 0"	7' - 0"	0' - 1 5/8"	SW	NON	F	HM	PAINTED	HM	PAINTED	4	
08	A	SERVICE DOOR	3' - 0"	7' - 0"	0' - 1 5/8"	SW	NON	F	HM	PAINTED	HM	PAINTED	4	
09	E	ASC DISCHARGE	6' - 0"	7' - 0"	0' - 2"	SW	NON	AF-GP	ALUM/GL	ANODIZED	ALUM	ANODIZED	1	ENTRY/EGRESS DOOR
10a	D	ASC ENTRANCE	3' - 0"	7' - 0"	0' - 1 3/4"	SW	NON	AF-GP	ALUM/GL	ANODIZED	ALUM	ANODIZED	2	ENTRY/EGRESS DOOR
10b	D	ASC ENTRANCE - VESTIBULE	3' - 0"	7' - 0"	0' - 1 3/4"	SW	NON	AF-GP	ALUM/GL	ANODIZED	ALUM	ANODIZED	2	ENTRY/EGRESS DOOR
12														

Grand total: 12

ABBREVIATION LEGEND

DOOR OPERATION

SW	SWING
OH	OVERHEAD
BF	BIFOLD
PKT	POCKET
SL	SLIDING
BYP	BYPASS

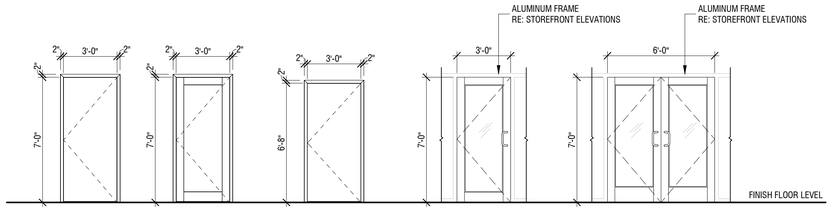
DOOR MATERIALS

WD	WOOD
MTL	METAL
SCW	SOLID CORE WOOD
HCW	HOLLOW CORE WOOD
HM	HOLLOW METAL
ALUM	ALUMINUM
GL	GLASS

DOOR PANEL TYPE

F	FLUSH PANEL
WF-GP	WOOD FRAME/GLASS PANEL
AF-GP	ALUMINUM FRAME/GLASS PANEL
MF-GP	METAL FRAME/GLASS PANEL

DOOR ELEVATIONS



TYPE A
METAL FRAME - HOLLOW METAL DOOR

TYPE B
METAL FRAME - GLASS PANEL DOOR

TYPE C
METAL FRAME - SOLID CORE WOOD DOOR

TYPE D
STOREFRONT FRAME/ ALUMINUM FRAME - GLASS PANEL DOOR

TYPE E
STOREFRONT FRAME/ ALUMINUM FRAME - GLASS PANEL DOOR

HARDWARE SCHEDULE:

SET 1
(6) BUTTS
(1) CARD READER LOCK SET
(1) FIRE EXIT/PANIC HARDWARE
(1) STOP
CLOSER
THRESHOLD

SET 2
(3) BUTTS
(1) CARD READER LOCK SET
(1) FIRE EXIT/PANIC HARDWARE
(1) STOP
CLOSER
THRESHOLD

SET 3
(3) BUTTS
(1) FIRE EXIT/PANIC HARDWARE
(1) STOP
CLOSER
THRESHOLD

SET 4
(3) BUTTS
(1) STORAGE LOCK SET
(1) STOP
CLOSER
THRESHOLD

NOTES:
1. PROVIDE MISC. ASSOCIATED HARDWARE (SILENCERS, SWEEPS) AS REQUIRED.
2. INSTALL EACH HARDWARE ITEM TO COMPLY WITH THE MANUFACTURER'S INSTRUCTIONS.
3. PROVIDE DRIP FLASHING AT ALL EXTERIOR DOORS.
4. SET THRESHOLDS FOR EXTERIOR DOORS IN FULL BED OF BUTYL RUBBER OR POLYISOBUTYLENE SEALANT.

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STATE OF MISSOURI
C. KEVIN CAMPBELL
NUMBER A-2010007496
ARCHITECT

01/28/2025

PROJECT NO. 231206

DRAWING ISSUANCE: JAN 28, 2025

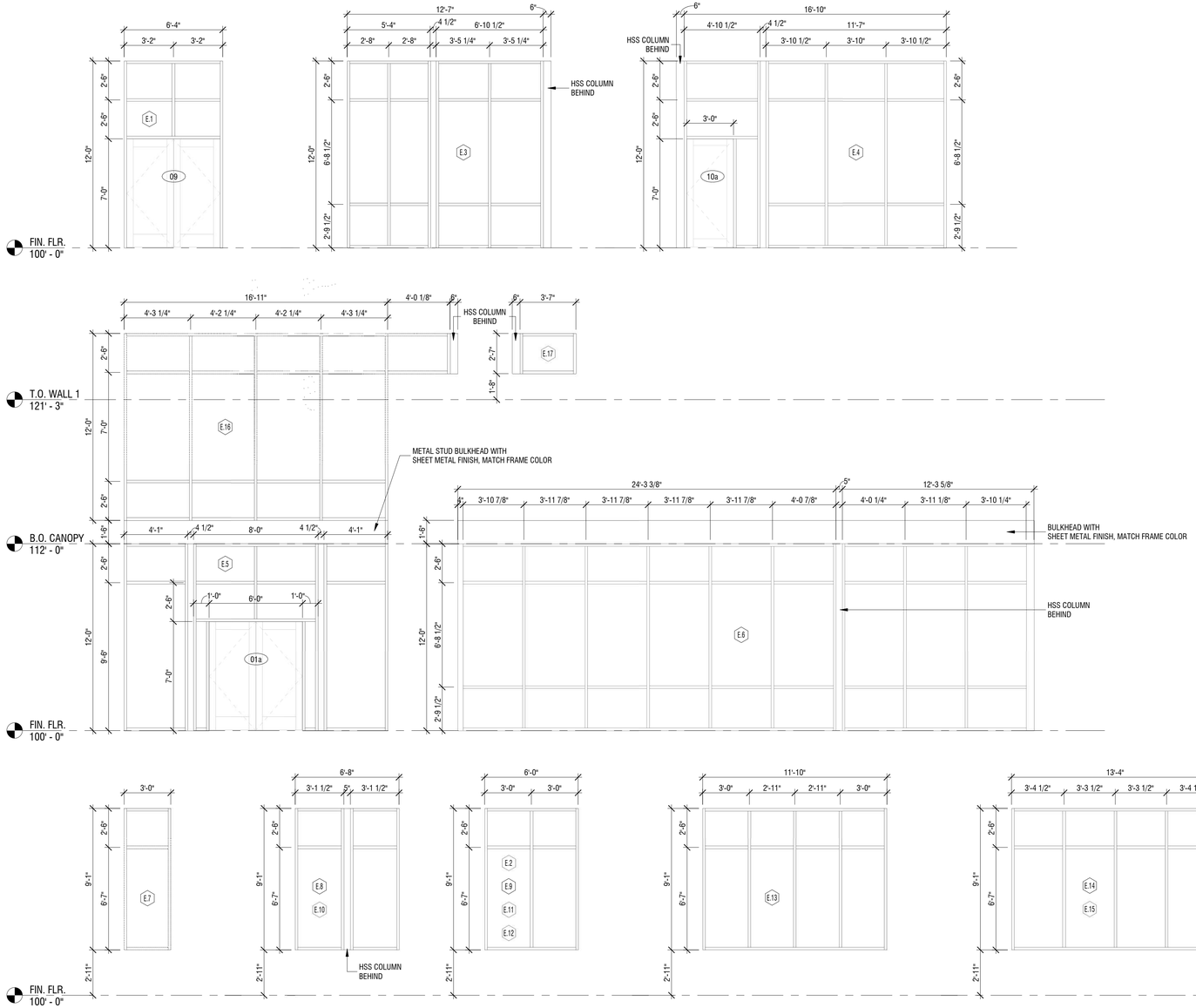
NO.	REVISION	DATE

SHEET NUMBER

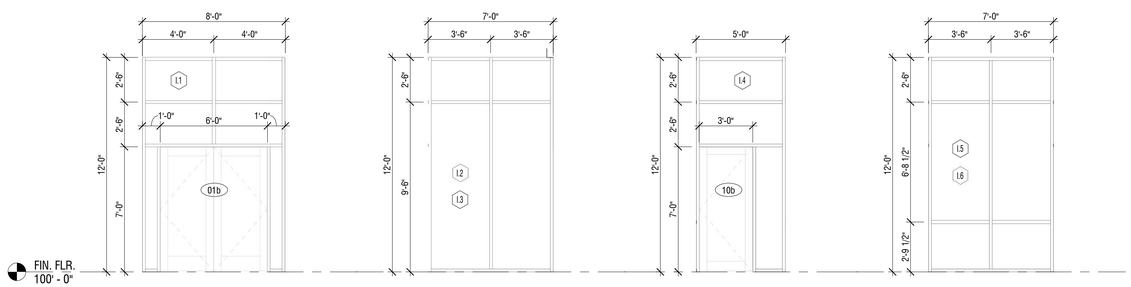
A6.0

DOOR & HARDWARE SCHEDULE

STOREFRONT ELEVATIONS - EXTERIOR



STOREFRONT ELEVATIONS - INTERIOR



STOREFRONT NOTES

1) RE: EXTERIOR FINISHING SCHEDULE FOR INFORMATION ON MATERIALS, SYSTEMS, AND COLORS
2) STOREFRONT TO BE INSTALLED PER MANUFACTURER'S APPROVED PROCEDURES, METHODS AND APPLICABLE INDUSTRY STANDARDS
3) COORDINATE PLACEMENT OF ALL VENTS AND OTHER EXTERIOR ELEMENTS WITH LOCATIONS OF SCORE JOINTS (TYP.)
4) STOREFRONT GLAZING TO BE SUNGUARD-SUPERNEUTRAL 68
   SOLAR HEAT GAIN COEFFICIENT 0.38
   VISIBLE LIGHT TRANSMITTANCE 68%
   U-VALUE 0.29

STOREFRONT SCHEDULE - EXTERIOR

MARK	WIDTH	HEIGHT	SILL HEIGHT	TYPE MARK	REMARK
FIN. FLR.					
E.1	6' - 4"	12' - 0"	0' - 0"	SF	
E.2	6' - 0"	9' - 1"	2' - 11"	SF	
E.3	12' - 7"	12' - 0"	0' - 0"	SF	
E.4	17' - 0 1/4"	12' - 0"	0' - 0"	SF	
E.5	16' - 11"	12' - 0"	0' - 0"	SF	
E.6	37' - 0"	12' - 0"	0' - 0"	SF	
E.7	3' - 0"	9' - 1"	2' - 11"	SF	
E.8	6' - 8"	9' - 1"	2' - 11"	SF	
E.9	6' - 0"	9' - 1"	2' - 11"	SF	
E.10	6' - 8"	9' - 1"	2' - 11"	SF	
E.11	6' - 0"	9' - 1"	2' - 11"	SF	
E.12	6' - 0"	9' - 1"	2' - 11"	SF	
E.13	11' - 10"	9' - 1"	2' - 11"	SF	
E.14	13' - 4"	9' - 1"	2' - 11"	SF	
E.15	13' - 4"	9' - 1"	2' - 11"	SF	
B.O. CANOPY					
E.16	16' - 11"	12' - 0"	1' - 6"	SF	
T.O. WALL 1					
E.17	3' - 7"	2' - 7"	1' - 8"	SF	

Grand total: 17

STOREFRONT SCHEDULE - INTERIOR

MARK	WIDTH	HEIGHT	SILL HEIGHT	TYPE MARK	REMARK
FIN. FLR.					
I.1	8' - 4 1/2"	12' - 0"	0' - 0"	SF	
I.2	7' - 0"	12' - 0"	0' - 0"	SF	
I.3	7' - 0"	12' - 0"	0' - 0"	SF	
I.4	5' - 2 1/4"	12' - 0"	0' - 0"	SF	
I.5	7' - 0"	12' - 0"	0' - 0"	SF	

Grand total: 5

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STATE OF MISSOURI
C. KEVIN CAMPBELL
NUMBER A-2010067490
ARCHITECT

01/28/2025

PROJECT NO. 231206

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SHEET NUMBER

A6.1

STOREFRONT SCHEDULE

03_Abbreviation Schedule

Abbreviation	Abbreviation Name
+/-	PLUS OR MINUS
ADDNL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
AR	ANCHOR ROD
ARCH	ARCHITECT OR ARCHITECTURAL
B/	BOTTOM OF
B/W	BETWEEN
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BWP	BRACED WALL PANEL
CFS	COLD FORMED STEEL
CHKD	CHECKED
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
CTR	CENTER
db	DIA OF REINF BAR, DIA OF BOLT
DBA	DEFORMED BAR ANCHOR
DIA or Ø	DIAMETER
DIAG	DIAGONAL
DIR	DIRECTION
DWL	DOWEL
EA	EACH
EE	EXTENDED END
EJ	EXPANSION JOINT
ELEV	ELEVATION
EN	EDGE NAILING
ENGR	ENGINEER
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EW	EACH WAY
EXIST	EXISTING
EXT	EXTERIOR
FDN	FOUNDATION
FLG	FLANGE
FLR	FLOOR
FS	FAR SIDE
FTG	FOOTING
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
IF	INSIDE FACE
INT	INTERIOR
JST	JOIST
K	KIPS (1000 LBS)
LCE	COMPRESSION EMBEDMENT LENGTH
LCS	COMPRESSION LAP SPLICE LENGTH
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SLOTTED HOLE
LTE	TENSION EMBEDMENT LENGTH
LTS	TENSION LAP SLICE LENGTH
LW	LIGHTWEIGHT
MFCR	MANUFACTURER
MTL	METAL
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OPP	OPPOSITE
OVS	OVERSIZED
P/C	PRECAST
PAF	POWDER ACTUATED FASTENER
PAR	PARALLEL
PEMB	PRE-ENGINEERED METAL BUILDING
PEN	PENETRATION
PERP	PERPENDICULAR
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
RC	REINFORCED CONCRETE
RE:	REFER TO
REINF	REINFORCING
REQD	REQUIRED
RF	RIGID FRAME
SC	SLIP CRITICAL
SDS	SELF DRILLING SCREW
SIM	SIMILAR
SLV	SHORT LEG VERTICAL
SOG	SLAB ON GRADE
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STIR	STIRRUPS
STL	STEEL
SW	SHEAR WALL
SYM	SYMMETRIC
T&B	TOP AND BOTTOM
T/	TOP OF
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WF	WIDE FLANGE
WP	WORK POINT
WWR	WELDED WIRE REINFORCEMENT

STRUCTURAL DESIGN CRITERIA (2018 IBC AND ASCE 7-16):

1. BUILDING OCCUPANCY RISK CATEGORY II.

2. LIVE LOADS [UNIFORM (PSF) / POINT LOADS (KIPS)]:
-- ROOF:...20 PSF / 300#
-- GROUND LEVEL SLAB ....100 PSF / 2.0 K

3. ROOF SNOW LOAD:
-- GROUND SNOW LOAD (Pg):........................... 20 PSF
-- FLAT ROOF SNOW LOAD (Pf): .... 22 PSF + DRIFT PER PLAN
-- MIN UNIFORM ROOF SNOW LOAD (Pm):.......... 22 PSF (NO DRIFT OR RAIN)
-- RAIN ON SNOW SURCHARGE (Prs) ....5.0 PSF
-- SNOW EXPOSURE FACTOR (Ce):...................1.0, EXPOSURE C
-- SNOW LOAD IMPORTANCE FACTOR (Is):..........1.0
-- THERMAL FACTOR (Ct):..............................1.1 (just above freezing)
– SLOPE FACTOR (CS)...1.0 (for ¼ per foot roofs)

4. WIND DESIGN DATA:
-- BASIC WIND SPEED (3 SEC GUST):.................117 MPH
– ASD WIND SPEED, V(ASD).....................................88 MPH
-- WIND EXPOSURE:.......................................C
-- GROUND ELEVATION ABOVE SEA LEVEL........987 FT
-- DIRECTIONALITY FACTOR (Kd) 0.85
-- INTERNAL PRESSURE COEFF:......................0.18

5. EARTHQUAKE DESIGN DATA:
-- SEISMIC IMPORTANCE FACTOR (Ie):...............1.25
-- MAPPED SPECTRAL RESP ACCEL (Ss / S1):.....0.1 / 0.068
-- SITE CLASS:...C
-- SPECTRAL RESPONSE COEFF (Sds / Sd1):......0.107 / 0.109
-- SEISMIC DESIGN CATEGORY:.......................B
-- SEISMIC FORCE RESISTING SYSTEM:............R=3, STEEL
-- DESIGN BASE SHEAR:..................................13 K (ELF AND ASD)
-- SEISMIC RESPONSE COEFF (Cs):..................0.045
-- ANALYSIS PROCEDURE:..............................ELF

6. RAIN LOAD DATA:
– 15-MIN RAIN INTENSITY...............................8.31 IN/HR
– 60-MIN RAIN INTENSITY...............................3.92 IN/HR
DESIGN ASSUMES APPROPRIATE ROOF SLOPE AND DRAINAGE (INCLUDING OVERFLOWS) ARE PROVIDED. ROOF IS DESIGNED FOR LIVE LOAD INDICATED ABOVE

STRUCTURAL GENERAL NOTES:

1. DESIGN AND CONSTRUCTION SHALL CONFORM TO THE "INTERNATIONAL BUILDING CODE, 2018 EDITION" AS AMENDED BY THE CITY OF LEE'S SUMMIT, MO. REFER TO THE SPECIAL STRUCTURAL INSPECTION NOTES FOR ADDITIONAL REQUIREMENTS.

2. CONTRACTOR TO VERIFY ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO COMMENCING WORK.

3. IF DISCREPANCIES EXIST BETWEEN STRUCTURAL PLANS, ARCHITECTURAL PLANS, OTHER PLANS, OR SPECIFICATIONS, THE CONTRACTOR OR SUBCONTRACTOR SHALL PROVIDE A WRITTEN REQUEST FOR CLARIFICATION FROM THE ARCHITECT AND/OR ENGINEER PRIOR TO PROCEEDING WITH THE WORK.

4. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO EXECUTE AND DETERMINE FINAL ERECTION PROCEDURES, SEQUENCING AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES WHATEVER SHORING, SHEETING, TEMPORARY BRACING, GUYING OR TIE DOWNS WHICH MIGHT BE NECESSARY.

5. THE STRUCTURE AND FOUNDATIONS ARE NOT DESIGNED FOR FUTURE EXPANSION.

6. FABRICATORS AND SUPPLIERS SHALL CLEARLY NOTE AND HIGHLIGHT CHANGES MADE IN SHOP DRAWINGS, WHICH DO NOT COMPLY WITH THE CONTRACT DOCUMENTS.

7. COLUMNS, BEAMS, JOISTS, OR TRUSSES SHALL NOT BE FIELD CUT OR TRIMMED FOR ANY REASON WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.

8. HOLES, PIPES, SLEEVES, ETC. NOT SHOWN ON THE DRAWINGS MUST BE REVIEWED BY THE ARCHITECT/ENGINEER BEFORE PLACEMENT THROUGH STRUCTURAL MEMBERS.

9. IF MECHANICAL AND ELECTRICAL EQUIPMENT SIZES, WEIGHTS, OR LOCATIONS DO NOT COINCIDE WITH EQUIPMENT SHOWN ON THE PLANS, COORDINATE ADJUSTMENTS WITH THE ARCHITECT.

10. NO AREA OF THE STRUCTURE SHALL BE LOADED WITH CONSTRUCTION MATERIALS OR EQUIPMENT THAT EXCEEDS FINAL DESIGN CRITERIA.

11. BEAMS, COLUMNS, WALLS AND FOOTING CENTERS SHALL BE CENTERED UNDER SUPPORTING MEMBERS (TYPICAL UNLESS NOTED OTHERWISE).

12. DELEGATED DESIGN - DEFERRED SUBMITTALS SHALL BE SIGNED/ SEALED PRIOR TO SUBMITTAL FOR REVIEW. THESE INCLUDE:
A. STRUCTURAL STEEL CONNECTIONS

SUBMIT THESE SHOP DRAWINGS AND CALCULATIONS SEALED BY A STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE JURISDICTION OF THE PROJECT SHALL BE FURNISHED TO THE ENGINEER OF RECORD FOR REVIEW. CONTRACTOR SHALL SUBMIT COPIES OF DEFERRED SUBMITTALS TO BUILDING DEPARTMENT AFTER ARCH/ENG REVIEW.

13. TYPICAL DETAILS ARE SHOWN ON SHEETS DESIGNATED "S0XX". THE INCLUDED TYPICAL DETAILS MAY OR MAY NOT BE CUT / REFERENCED ON PLANS OR SECTIONS, BUT ARE TO BE USED AS APPLICABLE

SUBMITTALS:

1. GENERAL CONTRACTOR TO PROVIDE A SHOP DRAWING SUBMITTAL LOG AND SUBMITTAL SCHEDULE ITEMIZING ALL PROPOSED SUBMITTALS FOR APPROVAL BY STRUCTURAL ENGINEER OF RECORD.

2. ALL SHOP DRAWINGS SHALL BE CHECKED BY THE FABRICATOR AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTAL TO THE STRUCTURAL ENGINEER OF RECORD. SHOP DRAWING REVIEW BY ENGINEER IS LIMITED TO VERIFYING GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR ANY CHANGES FROM THE CONTRACT DOCUMENTS, DIMENSIONAL ERRORS, COORDINATION ERRORS, OR OMISSIONS IN SHOP DRAWINGS. EOR IS NOT RESPONSIBLE FOR ANY DELAYS CAUSED BY THESE REQUIREMENTS NOT BEING MET.

3. SHOP DRAWINGS SHALL INCLUDE CONNECTIONS AS WELL AS SIZE, SPACING, AND GRADE OF ALL MEMBERS AND MATERIALS. PLANS AND ANY DETAILING NECESSARY FOR DETERMINING FIT AND PLACEMENT SHALL ALSO BE INCLUDED.

4. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND ARE SUBJECT TO REVIEW AND APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD PRIOR TO RELEASE FOR FABRICATION AND CONSTRUCTION.

5. DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY THE CONTRACTOR SHALL BEAR THE SEAL AND SIGNATURE OF AN ENGINEER REGISTERED IN THE APPROPRIATE STATE AND SHALL BE SUBMITTED TO THE ARCHITECT / ENGINEER PRIOR TO FABRICATION AND CONSTRUCTION. CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE, CONSIDERING LOCALIZED EFFECTS ON STRUCTURAL ELEMENTS INDUCED BY THE CONNECTION LOADS. ITEMS THAT ARE DESIGNED BY THE CONTRACTOR SHALL BE DESIGNED TO RESIST THE LIVE LOADS INDICATED IN STRUCTURAL NOTES, DEAD LOAD, SELF WEIGHT, ANY ADDITIONAL LOADING INDICATED ON PLANS AND DETAILS, SNOW DRIFT, AND A NET WIND UPLIFT. THESE ITEMS DESIGNED BY THE CONTRACTOR SHALL INCLUDE ANY RELEVANT TECHNICAL LITERATURE FROM THE MANUFACTURER , SUCH AS ICC-ES REPORTS DEMONSTRATING CODE COMPLIANCE.

6. FIELD ENGINEERED DETAILS DEVELOPED BY THE CONTRACTOR THAT DIFFER FROM OR ADD TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND ARE SUBJECT TO REVIEW AND APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD PRIOR TO RELEASE FOR FABRICATION AND CONSTRUCTION.

7. UNLESS DICTATED OTHERWISE BY THE CONTRACT DOCUMENTS, THE ENGINEER SHALL HAVE A MINIMUM OF 10 WORKING DAYS FROM RECEIPT OF SHOP DRAWINGS FOR REVIEW AND SHALL HAVE A MINIMUM OF 3 WORKING DAYS FOR RFI RESPONSES.

8. SEE MATERIAL SPECIFIC SECTIONS IN THE GENERAL NOTES FOR REQUIRED SHOP DRAWINGS AND CALCULATIONS TO BE SUBMITTED.

SPECIAL INSPECTIONS:

1. PROVIDE SPECIAL STRUCTURAL INSPECTIONS AND VERIFICATIONS BY A THIRD PARTY MEETING THE REQUIREMENTS OF CHAPTER 17 OF THE BUILDING CODE AND THE BUILDING OFFICIAL.

2. SPECIAL INSPECTORS SHALL BE QUALIFIED AND FURNISH THEIR REPORTS IN A TIMELY MANNER TO THE CONTRACTOR, BUILDING OFFICIALS, ARCHITECT, AND/OR ENGINEER

3. SHOULD INSPECTOR IDENTIFY ANY DISCREPANCY, THEY SHALL NOTIFY CONTRACTOR FIRST, AND THEN ARCH/ENGINEER IMMEDIATELY THEREAFTER IF CORRECTIVE ACTION IS NEEDED.

4. SPECIAL INSPECTIONS AS REQUIRED BY CODE:
A. STEEL: SECTION 1705.2, AND AISC 360. PERIODIC OBSERVATIONS OF CONNECTION, ALL BRACED-FRAME CONNECTIONS, WELDERS & FIELD WELDING.
B. CONCRETE: SECTION 1705.3 AND TABLE 1705.3 CONCRETE MATERIAL SAMPLING AND TESTING, REBAR OBSERVATIONS. TAKE SET OF (3) CYLINDERS FOR EVERY 50 C.Y., BUT NOT LESS THAN ONE SET OF SAMPLES PER DAY'S WORK AND PER MIX.
C. SOILS: SECTION 1705.6. FOUNDATION BEARING, EXCAVATION, FILL PLACEMENT.
D. POST-INSTALLED ANCHORS: TABLE 1705.3

EARTHWORK AND FOUNDATIONS:

1. REFERENCE THE GEOTECHICAL INVESTIGATION PREPARED BY ALPHA OMEGA GEOTECH, INC DATED JUNE 7, 2024 (JOB NO. 240117 E). THE CONTRACTOR SHALL OBTAIN A COPY OF THIS REPORT AND FOLLOW ALL RECOMMENDATIONS WITHIN.

2. PERIMETER AND EXTERIOR FOOTINGS SHALL BEAR AT A MINIMUM OF 3'-0" BELOW ADJACENT GRADE.

3. ALL FOOTINGS SHALL BEAR ON FIRM NATIVE MATERIALS, COMPACTED OR ENGINEERED FILL CAPABLE OF SUPPORTING AN ALLOWABLE BEARING PRESSURE OF 2,500 PSF (3,000 PSF AT INVIDIVIDUAL COLUMN FOOTINGS) PER THE GEOTECHNICAL REPORT. DEEPEN FOOTINGS, AND REMOVE AND REPLACE UNACCEPTABLE SOILS WITH ENGINEERED FILL AS REQUIRED TO PROVIDE THIS MINIMUM DEPTH AND SUITABLE BEARING.

4. UNDERCUT THE PAD TO A DEPTH OF 24-INCHES BELOW BOTTOM OF FLOOR SLAB ELEVATION AND REPLACE WITH LOW-VOLUME-CHANGE MATERIALS PER THE GEOTECHNICAL REPORT.

5. FILL PLACEMENT, COMPACTION, AND SOIL BEARING TESTS SHALL BE PERFORMED BY A GEOTECHNICAL ENGINEER PRIOR TO INSTALLING FOOTINGS TO ENSURE DESIGN ALLOWABLE BEARING VALUES AND SLAB SUBGRADE REQUIREMENTS ARE SATISFIED. IF ACTUAL SITE CONDITIONS DO NOT SATISFY THESE REQUIREMENTS, COORDINATE ADJUSTMENTS WITH ARCHITECT/ENGINEER/ GEOTECHNICAL ENGINEER

6. SURFACE WATER SHALL NOT BE ALLOWED TO STAND ADJACENT TO OR DRAIN TOWARDS THE FOUNDATION AND SLAB SUBGRADES UNDER ANY CIRCUMSTANCES. PAVEMENTS OR GRADED SOILS AT THE PERIMETER OF THE BUILDING, EXCEPT AS REQUIRED AT EXITS OR AS NOTED, SHALL BE SLOPED AWAY AT 5% OR 6" MIN FOR THE FIRST TEN FEET AND AS REQUIRED TO PROVIDE POSITIVE DRAINAGE.

7. FOOTINGS MAY BE POURED TO NEAT LINES OF EXCAVATIONS PROVIDING VERTICAL LINES OF EXCAVATIONS CAN BE MAINTAINED DURING CONCRETE PLACEMENT.

8. FOUNDATION WALL BACKFILL SHALL NOT BE UNBALANCED BY MORE THAN TWO FEET ON EITHER SIDE AT ANY TIME. BASEMENT WALL AND RESTRAINED RETAINING WALL BACKFILL SHALL NOT BE PLACED, UNLESS THE WALL IS ADEQUATELY BRACED. RETAINING WALL AND BASEMENT WALL BACKFILL SHALL BE FREE DRAINING GRANULAR BACKFILL ACCEPTABLE TO THE GEOTECHNICAL ENGINEER.

9. DO NOT PLACE CONCRETE UNLESS FOOTING EXCAVATIONS ARE FREE OF ALL WATER, FROST, ICE AND LOOSE SOIL. CONCRETE SHALL BE PLACED AS SOON AS POSSIBLE AFTER EXCAVATION SO THAT EXCESSIVE DRYING OF BEARING MATERIALS DOES NOT OCCUR. BEARING MATERIAL SHALL BE INSPECTED BY A QUALIFIED INDEPENDENT TESTING LAB PRIOR TO PLACEMENT OF CONCRETE.

CONCRETE REINFORCING STEEL:

1. SUBMIT SHOP DRAWINGS FOR REBAR. ALL REINFORCING BARS SHALL MEET ASTM A615 GRADE 60.

2. ALL WELDED WIRE REINFORCEMENT (WWR) SHALL MEET ASTM A1064: LAP A MINIMUM OF 8" OR ONE FULL MESH, WHICHEVER IS GREATER.

3. REINFORCING BAR QUANTITIES SHOWN ARE FOR ESTIMATING PURPOSES ONLY.

4. MAINTAIN MINIMUM CONCRETE PROTECTION OR COVER FOR REINFORCING AS INDICATED, UNLESS NOTED OTHERWISE:
A. 3" CLEAR WHERE CONCRETE IS CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND.
B. 2" CLEAR WHERE CONCRETE IS EXPOSED TO WEATHER OR IN CONTACT WITH GROUND BUT CAST AGAINST FORMS FOR BARS LARGER THAN #5.
C. 1 ½" CLEAR WHERE CONCRETE IS EXPOSED TO WEATHER OR IN CONTACT WITH GROUND BUT CAST AGAINST FORMS FOR BARS #5 OR SMALLER
D. ¾" CLEAR FOR SLABS, JOISTS AND WALLS NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND.
E. 1 ½" CLEAR FOR BEAMS AND COLUMNS NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND.

5. CONTRACTOR SHALL VERIFY THAT ALL REINFORCEMENT, SLAB DOWELS, INSERTS, SLEEVES AND EMBEDDED ITEMS ARE PROPERLY LOCATED AND RIGIDLY SECURED PRIOR TO CONCRETE PLACEMENT, "WET STICKING" DOWELS WILL NOT BE ALLOWED.

6. REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH THE LATEST A.C.I. DETAILING MANUAL BY A QUALIFIED AND EXPERIENCED FIRM AND PERSON. PLACE AND SUPPORT REINFORCEMENT WITH ACCESSORIES: MAXIMUM SPACING - 48" CENTERS (PLASTIC-TIPPED LEGS FOR EXPOSED SURFACES). USE 3" SBP SUPPORTS AT ALL FOOTINGS.

7. ALL STRUCTURAL ADHESIVE FOR REINFORCING SHALL BE SIMPSON SET-3G OR HILTI HIT-HY 200-R OR EQUIVALENT. ALL STRUCTURAL ADHESIVE SHALL BE INSTALLED PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL WITH APPROPRIATE ICC-ES EVALUATION REPORTS.

CAST IN PLACE CONCRETE:

1. SUBMIT PROPOSED MIXED DESIGNS OF EACH TYPE FOR REVIEW.
REQUIRED MINIMUM CONCRETE COMPRESSIVE STRENGTHS AT 28 DAYS:
a. FOOTING AND GRADE BEAM CONCRETE.....................4000 PSI
b. BASEMENT / FOUNDATION WALL CONCRETE.............4000 PSI
c. SLAB ON GRADE ....4000 PSI

2. ALL CONCRETE MIX DESIGNS SHALL HAVE WATER TO CEMENT RATIOS LESS THAN 0.52 (0.45 FOR MOISTURE SENSITIVE FLOORING), WITH A MAXIMUM 60/40 FINE TO COARSE AGGREGATE RATIO. CONCRETE MIX DESIGNS THAT DO NOT CONFORM TO THE ABOVE STANDARD AND/OR CONTAIN WATER REDUCING ADMIXTURES SHALL BE SUBMITTED WITH APPROPRIATE TEST DATA PER A.C.I.. ALL CONCRETE SHALL BE IN CONFORMANCE WITH THE A.C.I. 301 STANDARD THAT IS REFERENCED IN THE BUILDING CODE AT THE TIME OF PERMITTING THE PROJECT..

3. EXTERIOR CONCRETE (FLOOR SLABS, WALLS, ETC) SHALL HAVE 6.5% (PLUS/MINUS 1.5%) ENTRAINED AIR.

4. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" (VERIFY WITH ARCHITECT).

5. NO ALUMINUM SHALL BE EMBEDDED IN ANY CONCRETE.

6. NO CALCIUM CHLORIDE SHALL BE USED IN CONCRETE

7. THE DESIGN, CONSTRUCTION, AND SAFETY OF ALL FORMWORK IS THE RESPONSIBILITY OF THE CONTRACTOR

8. ALL CONCRETE IS REINFORCED UNLESS SPECIFICALLY NOTED AS UNREINFORCED. REINFORCE ALL CONCRETE NOT OTHERWISE SHOWN WITH THE SAME REINFORCING AS SIMILAR SECTIONS OR AREAS.

9. CONSTRUCTION JOINTS IN GRADE BEAMS, CONTINUOUS FOOTINGS, AND WALLS THAT DO NOT CHANGE DIRECTION SHALL BE SPACED NO GREATER THAN 60'-0". INTERMEDIATE CONTROL JOINTS SHALL BE SPACED AT 25'-0" MAX FOR WALLS. CONTROL JOINTS IN WALLS SHALL ALSO BE LOCATED 15'-0" FROM CORNERS AND AT CHANGES IN WALL THICKNESS

10. WHERE FRESH CONCRETE IS DEPOSITED AGAINST HARDENED CONCRETE (GREATER THAN 8 HRS OLD), CLEAN EXISTING SURFACE OF LAITANCE AND FOREIGN MATERIAL AND DAMPEN THE EXISTING SURFACE. IF REQUIRED, ROUGHEN EXISTING CONCRETE TO ¼" AMPLITUDE.

11. SLABS ON GRADE SHALL BE 4" THICK MINIMUM ON 4" OF GRANULAR FILL. REINF SLAB WITH 6 X 6-W2.1xW2.1 WWR OR #3 BARS @ 18" OC EA WAY. PLACE REINF IN UPPER 1/3 OF SLAB THICKNESS. AT INTERIOR SLABS, A 10 MIL VAPOR BARRIER SHALL BE PLACED BETWEEN THE CONCRETE AND GRANULAR BASE AND CARE SHOULD BE TAKEN DURING CURING TO PREVENT SLAB CURLING. THIS NOTE SHALL BE TYPICAL UNLESS NOTED OTHERWISE

12. SAW CUT JOINTS OR KEYED CONSTRUCTION JOINTS IN SLABS ON GRADE SHALL BE SPACED TO DIVIDE THE SLAB INTO PANELS NOT TO EXCEED 225 SQUARE FEET. THE LONGER DIMENSION OF EACH PANEL SHALL NOT EXCEED THE SHORTER DIMENSIONS BY MORE THAN 40%. JOINTS SHALL BE LOCATED AT COLUMN CENTERLINES WHERE POSSIBLE. SPACING BETWEEN JOINTS SHALL NOT EXCEED 15 FEET. CONTRACTOR SHALL SUBMIT JOINT LAYOUT TO ARCHITECT FOR APPROVAL. REFER TO TYPICAL DETAILS.

13. REINFORCEMENT SHALL BE CONTINUOUS AND LAPPED PER TYPICAL DETAIL (2' -6" MIN) EXCEPT AS NOTED AND PROVIDE CORNER BARS OF SAME SIZE AND SPACING.

14. MINIMUM CONCRETE WALL REINFORCING (WALL 10" OR GREATER) SHALL BE #5 AT 10" CENTERS EACH WAY, EACH FACE

15. MINIMUM REINFORCING AROUND CONCRETE WALL OPENINGS 2'-0" OR GREATER (TYPICAL UNLESS NOTED): 2 - #5, EXTEND REINF 2'-0" PAST OPENINGS. PROVIDE 2-#5 x 4'-0" DIAGONAL BARS AT CORNERS

16. CONTRACTOR SHALL COORDINATE ALL CURING COMPOUNDS WITH FLOOR FINISH REQUIREMENTS TO ENSURE COMPATIBILITY.

17. FOUNDATION CONTRACTOR TO ENSURE PROPER ANCHOR ROD PROJECTION AND THAT ANCHOR RODS ARE HELD SECURELY IN POSITION PRIOR TO CONCRETE PLACEMENT. INSTALL ANCHOR RODS TO THE STRICT DIMENSIONAL TOLERANCES PER AISC REQUIREMENTS. STRUCTURAL STEEL COLUMN ANCHOR RODS SHALL BE SET WITH A RIGID TEMPLATE.

18. AGGREGATES AND/OR CONCRETE MIXES SHALL BE CERTIFIED TO BE FREE OF AND ELIMINATE DAMAGE OF CONCRETE DUE TO ALKALI-SILICA REACTION OR ALKALI-AGGREGATE REACTIONS WHEN EXPOSED TO SOILS AND/OR AN EXTERIOR ENVIRONMENT.

19. ALL CONCRETE MIX DESIGNS EXPOSED TO AN EXTERIOR ENVIRONMENT SHALL MEET THE REQUIREMENTS OF THE KANSAS CITY METRO MATERIALS BOARD (KCMMB) OR THE JOHNSON COUNTY CONCRETE BOARD (JCCB).

STRUCTURAL STEEL:

1. STRUCTURAL STEEL SHAPES AND PLATE MATERIAL REQUIREMENTS (TYPICAL UNLESS NOTED OTHERWISE):
a. WIDE FLANGE SHAPES - ASTM A992 (FY = 50 KSI MIN.)
b. CHANNELS, ANGLES, AND PLATES: - ASTM A36 (FY = 36 KSI MIN)
c. ROUND HSS - ASTM A500, GR B (FY = 42 KSI)
d. RECTANGULAR HSS - ASTM A500, GR B (FY = 46 KSI)
e. PIPE - ASTM A53, GR B (FY = 35 KSI)
f. ANCHOR RODS - ASTM F1554 (FY = 36 KSI MIN.),
g. ADHESIVE ANCHORS - SIMPSON SET-3G, HILTI HIT-HY 200, OR EQUIVALENT

2. STRUCTURAL STEEL SHALL BE NEW AND MEET THE 15TH EDITION A.I.S.C. "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS AND BRIDGES", AND THE "CODE OF STANDARD PRACTICES FOR STEEL BUILDINGS AND BRIDGES", EXCLUDING SECTION 4.4.1.B. STRUCTURAL STEEL THROUGHOUT THE PROJECT HAS BEEN DESIGNED USING ASD DESIGN METHODOLOGY.

3. THE STRUCTURAL STEEL FABRICATOR SHALL BE AN AISC QUALITY CERTIFIED COMPANY FOR THE CATEGORY OF WORK IN THIS PROJECT OR PROVIDE A QUALITY ASSURANCE PLAN AND SPECIAL INSPECTIONS AS DEFINED IN THE CODE.

4. USE STANDARD AISC FRAMING CONNECTIONS WITH A325-N BOLTS, F436 WASHERS, AND A563 HEAVY-HEX NUTS AS REQUIRED, UNLESS NOTED OTHERWISE.

5. BOLTS IN MOMENT AND BRACED FRAME CONNECTIONS SHALL BE PRE-TENSIONED. ALL A490 BOLTS SHALL BE PRE-TENSIONED. OTHER BOLTED CONNECTIONS USING A325 BOLTS MAY BE SNUG-TIGHTENED, UNLESS NOTED OTHERWISE.

6. STEEL BEAMS SHALL BE FABRICATED WITH MILL CAMBER UP.

7. WELDING SHALL CONFORM TO THE CURRENT AND APPLICABLE AWS STANDARDS AND BE COMPLETED BY AN AWS CERTIFIED WELDER. ALL WELDS SHALL UTILIZE E70xx ELECTRODES. SHOP DRAWINGS SHALL SHOW FIELD WELDS, AS APPROPRIATE.
a. AWS D1.1 - STRUCTURAL WELDING CODE - STEEL
b. AWS D1.3 - STRUCTURAL WELDING CODE - SHEET STEEL

8. WELD SIZES SHALL BE INCREASED TO MEET THE REQUIRED EFFECTIVE THROAT WIDTH IF GAPS EXIST AT THE FAYING SURFACE.

9. NO COLUMN OR BEAM SPLICES, UNLESS CLEARLY INDICATED ON THE STRUCTURAL DRAWINGS, WILL BE ALLOWED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

10. SEE ARCHITECTURAL PLANS FOR FIREPROOFING & FINISHING REQUIREMENTS, AND COORDINATE STEEL PRIMING & COATINGS ACCORDINGLY.

11. GROUT WHERE INDICATED ON PLANS AT BASE PLATES SHALL BE NON-METALLIC NON-SHRINK WITH A MINIMUM COMPRESSIVE STRENGTH OF 6000 PSI AT 28 DAYS CONFORMING TO ASTM C1107

12. ALL POST-INSTALLED ANCHORS WHERE NOTED SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE OR HILTI, INC. AND INSTALLED PER MANUFACTURER'S SPECIFICATIONS. SUBSTITUTIONS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL WITH APPROPRIATE IC-ES EVALUATION REPORTS.

13. ALL STEEL AND ASSOCIATED FASTENERS NOT PROTECTED FROM WEATHER OR WHOLLY WITHIN A CONDITIONED SPACE (INCLUDING ALL MASONRY LINTELS) SHALL BE HOT DIPPED GALVANIZED PER ASTM A123.

14. CONNECTION REQUIREMENTS:
REACTIONS SHOWN ON THE DRAWINGS ARE ASD UNFACTORED ALLOWABLE STRESS DESIGN METHOD, THAT SHALL NOT BE REDUCED FURTHER THAN SHOWN. CONTRACTOR MAY OPT TO USE THE TYPICAL DETAILS SHOWN WHERE THE CAPACITIES ARE GREATER THAN THE REACTIONS INDICATED ON THE DRAWINGS.

CONNECTION DESIGN IS REQUIRED ELSEWHERE AS FOLLOWS:
A. AT BRACED FRAMES
B. AT AXIALLY LOADED BEAM CONNECTIONS
C. AT MOMENT CONNECTIONS
D. AT ALL CONDITIONS NOT COVERED BY THE TYPICAL STANDARD SHEAR CONNECTION
E. AT ALTERNATIVE CONNECTION TYPES DESIRED BY FABRICATOR OR ERECTOR IF FIRST REQUESTED AND APPROVED BY THE EOR.
F. STAIR FRAMING AND RAILINGS

PROHIBITED CONNECTIONS AND NOTES:
A. SINGLE-ANGLE SHEAR CONNECTIONS ARE PROHIBITED
B. DOUBLE-ANGLE SHEAR CONNECTIONS ARE NOT PERMISSIBLE AT CONNECTIONS WITH AXIAL LOADS OR AT BRACED FRAMES

ADDITIONAL REQUIREMENTS:
A. USE STANDARD AISC FRAMING CONNECTIONS WITH A325-N BOLTS, F436 WASHERS, AND A563 HEAVY-HEX NUTS AS REQUIRED, UNLESS NOTED OTHERWISE.
B. ALL CONNECTIONS REQUIRE A MINIMUM OF 2 BOLTS AND A MINIMUM CAPACITY OF 10 KIPS.
C. FOR STEEL BEAMS 10-FT OR LESS IN LENGTH, IF REACTION ON PLAN IS NOT SHOWN ASSUME 10 KIPS (ASD).
D. FOR BEAMS GREATER THAN 10-FT IN LENGTH, IF REACTION ON PLAN IS NOT SHOWN THE REACTION SHALL BE ASSUMED TO BE ONE HALF THE TOTAL ALLOWABLE UNIFORM CODE FOR THE BEAM SPAN FROM AISC STEEL CONSTRUCTION MANUAL UNLESS THE VALUE IS OBTAINED FROM THE ENGINEER OF RECORD.

SUBMIT SIGNED/SEALED SHOP DRAWINGS AND CALCULATIONS FOR THE DESIGN OF ALL STEEL CONNECTIONS, AND A LETTER SEALED BY AN ENGINEER REGISTERED IN THE STATE OF THE PROJECT STATING THAT THEY HAVE REVIEWED THE STEEL SHOP DRAWINGS FOR CONFORMANCE TO THE DESIGN REQUIREMENTS.

15. CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL FIELD VERIFICATION PRIOR TO PRODUCTION OF SHOP DRAWINGS OR FABRICATION OF STRUCTURAL ELEMENTS. ARCHITECT / ENGINEER WILL RETURN "REJECTED" ANY SUBMITTAL REQUESTING FIELD VERIFICATION OF EXISTING CONDITIONS OR DIMENSIONS.

OPEN WEB STEEL BAR JOISTS:

1. OPEN-WEB STEEL JOISTS SHALL BE ENGINEERED AND MANUFACTURED BY AN SJI-CERTIFIED COMPANY TO CONFORM TO THE CURRENT SJI SPECIFICATIONS AND SJI REQUIREMENTS.

2. SUBMIT SHOP DRAWINGS FOR JOIST. DESIGN, DETAIL AND INSTALL JOIST-BRIDGING IN ACCORDANCE WITH SJI REQUIREMENTS, PROVIDING X-BRIDGING AT LOCATIONS WHERE HORIZONTAL BRIDGING IS DISCONTINUOUS AND INTERRUPTED. INSTALL ADDITIONAL ROW OF BOTTOM CHORD BRIDGING AT EACH END OF JOISTS AT THE FIRST BOTTOM CHORD PANEL POINTS AS REQUIRED FOR NET WIND UPLIFT.

3. BOLT OR WELD ALL JOISTS TO BEARINGS PER SJI GUIDELINES, INCLUDING BOTTOM CHORD EXTENSIONS AND CONNECTIONS AT COLUMN LINES PER SJI AND PER OSHA REQUIREMENTS. MIN JOIST SEAT WELDS SHALL BE AS FOLLOWS: K-SERIES = (2) 1/8" x 2-1/2" LONG; LH 02-06 = (2) 3/16" x 3" LONG; LH/DLH 07-17 = (2) 1/4" x 3" LONG.

4. REINFORCE WEBS OF JOISTS WITH ADDITIONAL ANGLES FIELD-WELDED PER THE TYPICAL DETAILS AT ALL LOCATIONS WHERE POINT LOADS OCCUR BETWEEN PANEL POINTS, INCLUDING AT EDGES AND CORNERS OF CURBS & FRAMES SUPPORTING ROOF TOP EQUIPMENT.

5. PROVIDE EXTENDED ENDS FOR SUPPORT OF ROOF DECK EDGE ANGLES THROUGHOUT THE PROJECT AS MAY BE REQUIRED. PROVIDE SPECIAL SLOPED BEARING SEATS WHERE NEEDED BASED ON ROOF SLOPES SHOWN IN ACCORDANCE WITH SJI.

6. WHERE SPECIAL "SP" JOISTS ARE INDICATED, DESIGN JOISTS FOR THE FOLLOWING, BUT IN NO CASE SHALL CHORD SIZES BE LESS THAN INDICATED ON THE FRAMING PLANS:
A. UNIFORM DEAD LOAD OF 15 PSF IN ADDITION TO SELF WT.
B. UNIFORM ROOF LIVE, SNOW, AND RAIN ON SNOW LOADS INDICATED IN STRUCTURAL GENERAL NOTES.
C. SNOW DRIFTS AROUND PARAPETS AS INDICATED ON DRIFT LOADING PLAN.
D. WIND NET UPLIFT PER WIND UPLIFT PLAN (ASD).
E. SPECIAL HANGING POINT LOADS AND ROOF EQUIPMENT LOADS AS DENOTED ON THE FRAMING PLAN.

METAL DECK:

1. SUBMIT SHOP DRAWINGS FOR ALL METAL DECKING.
A. ROOF DECK: 1.5B 22 GA (FY = 50 KSI MIN), PAINTED, MIN. FASTENING PATTERN: 36/4 WITH 3 SIDELAPS PER SPAN (UNO)

2. STEEL DECK MANUFACTURER SHALL BE A MEMBER OF THE STEEL DECK INSTITUTE (S.D.I.). ALL METAL DECK TO BE ERECTED PER MANUFACTURER REQUIREMENTS AND SPECIFICATIONS

3. DECK SHALL BE WELDED AT SUPPORTS WITH 5/8" DIA PUDDLE WELDS MIN. AND SIDELAP CONNECTIONS SHALL BE #10 TEK SCREWS MIN (UNO).

4. ALL METAL DECK HAS BEEN DESIGNED TO BE CONTINUOUS OVER 2 SPANS MINIMUM AND SHALL BEAR 2" MINIMUM ON STEEL SUPPORTS. FOR ONE OR TWO SPAN CONDITIONS CONTRACTOR SHALL PROVIDE SHORING AS REQUIRED OR FURNISH THICKER GAUGE DECK TO SUPPORT ALL APPLICABLE LOADS. CONTRACTOR TO SUBMIT ALTERNATES FOR APPROVAL.

5. PROVIDE REINFORCING CHANNELS, STANDARD CLOSURES, CANT STRIPS, SUMP PANS, AND OTHER ACCESSORIES AS REQUIRED FOR A PROPERLY FINISHED JOB, EVEN IF NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS. PROVIDE BEARING ANGLES WELDED TO COLUMNS AS REQUIRED TO SUPPORT METAL DECK.

6. ONE OPENING PER DECK SHEET, 6" OR LESS IN DIAMETER, IS PERMISSIBLE. HOLES LARGER THAN 6" IN DIAMETER OR MORE THAN ONE HOLE PER DECK SHEET REQUIRES REINFORCING PER SDI. HOLES LARGER THAN 12" (ROUND OR SQUARE) REQUIRE A STEEL FRAME

7. OPENINGS IN ROOF DECK TO BE FRAMED WITH L6x4x5/16 (LLV) ANGLE. EXTEND ANGLES TO STRUCTURAL SUPPORTS, BLOCK VERTICAL LEGS AND FIELD WELD. SEE TYPICAL DETAIL FOR ADDITIONAL INFORMATION.

COLD FORMED STEEL FRAMING NOTES:

1. SUBMIT SHOP DRAWINGS AND CALCULATIONS PER THE SUBMITTAL SECTION REQUIREMENTS. SHOP DRAWINGS SHALL INCLUDE PLAN AND SECTION DETAILS TO SHOW LAYOUT, SPACINGS, SIZES, THICKNESSES, AND TYPES OF COLD-FORMED STEEL FRAMING. IN ADDITION, SHOP DRAWINGS SHALL INCLUDE ALL FASTENING, ANCHOR DETAILS, SUPPLEMENTAL FRAMING, STRAPPING, BRACING, BRIDGING, CONNECTION DETAILS, AND ATTACHMENTS TO ADJOINING WORK

CFS DESIGN CRITERIA:
-- TOP OF WALL VERTICAL DEFLECTION TO UNDERSIDE OF PRIMARY STRUCTURE ....MIN (½", L/360)
-- EXTERIOR WALLS: WIND PRESSURE PER BUILDING DESIGN CRITERIA;H/600 FOR WALLS BRACING MASONRY; H/360 FOR WALLS SUPPORTING TILE OR METAL PANEL; H/240 FOR ALL OTHER WALLS.
-- INTERIOR WALLS: 5 PSF HORIZONTAL PRESSURE;H/600 FOR WALLS BRACING MASONRY; H/360 FOR WALLS SUPPORTING TILE OR METAL PANEL; H/240 FOR ALL OTHER WALLS.

LIGHT GAUGE FRAMING MEMBERS SHALL HAVE THE FOLLOWING MINIMUM MATERIAL PROPERTIES: FY = 33 KSI FOR 18 GA AND LIGHTER MEMBERS, FY = 50 KSI FOR ALL DIAGONAL STRAP BRACING AND FOR 16 GA AND HEAVIER MEMBERS. ALL MATERIALS, CONNECTORS, FASTENERS SHALL BE GALVANIZED

CFS SUPPLIER SHALL INCLUDE AN ALLOWANCE (2% OF CFS BID PACKAGE) FOR MISC CLIPS, CONNECTORS, AND ANGLES TO ADDRESS ANY ADDITIONAL CFS ITEMS NEEDED DURING THE SHOP DRAWING REVIEW AND CONSTRUCTION PROCESS.

2. ALL DESIGN, FABRICATION, AND ERECTION SHALL BE IN CONFORMANCE WITH AISI "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS."

3. ALL EXTERIOR OR LOAD BEARING INTERIOR STUDS SHALL BE 600S162-43 (6" DEEP 18 GA) AT 16 INCHES ON CENTER MIN, UNLESS NOTED: REFER TO PLANS.

4. MINIMUM GAUGE OF STRUCTURAL STUDS SHALL BE 43 mils (18 GAUGE), UNLESS NOTED OTHERWISE.

5. TRACKS SHALL BE SECURELY ANCHORED TO THE SUPPORTING STRUCTURE TO PROPERLY TRANSFER IMPOSED LOADS. MINIMUM GAUGE OF TRACKS SHALL BE 43 mils (18 GAUGE). DEFLECTION TRACKS AT EXTERIOR WALL SHALL BE 16 GA MINIMUM.

6. PROVIDE WALL STUD BRIDGING FOR EACH STUD AS RECOMMENDED BY THE MANUFACTURER. MAXIMUM SPACING SHALL BE 4'-0" CENTERS.

7. ALL FRAMING COMPONENTS SHALL BE CUT SQUARELY FOR ATTACHMENTS TO PERPENDICULAR MEMBER. MEMBERS SHALL BE HELD POSITIVELY IN PLACE UNTIL PROPERLY FASTENED.

8. NOTCHES OR SPLICES IN ANY STRUCTURAL STUDS WILL NOT BE PERMITTED.

9. DO NOT NOTCH, DRILL OR CUT ANY HOLES IN LOAD BEARING STUDS FOR ELECTRICAL OR MECHANICAL EQUIPMENT: USE EXISTING FABRICATED HOLES.

10. ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAUGE STEEL FRAMING WORK. TOUCH UP ALL WELDS WITH GALVANIZE COATING.

11. SCREWS IN LIGHT GAUGE FRAMING SHALL BE INSTALLED WITH MINIMUM EDGE DISTANCES OF 1/2" AND MINIMUM SPACING BETWEEN SCREWS OF 3/4".

12. WHERE BACK-TO-BACK STUD COLUMNS ARE USED, ATTACH WITH #10 SCREWS @ 12" OC MAX, UNO.

13. LATERAL BRACING MUST BE IN PLACE IN EACH DIRECTION BEFORE ANY LOAD IS APPLIED TO THE WALLS & LEFT IN PLACE UNTIL THE WORK IS PERMANENTLY STABILIZED.

NON-LOAD-BEARING COLD FORMED STEEL FRAMING NOTES:

1. METAL STUD MANUFACTURERS GENERALLY RECOMMEND HORIZONTAL BRIDGING OR STRAPPING TO BE PROPERLY INSTALLED AT 5 FT TO 6 FT OC, MECHANICALLY ATTACHED TO EACH STUD TO PREVENT DAMAGE DURING CONSTRUCTION, EVEN IF ONE SIDE OR BOTH SIDES ARE TO BE SHEATHED WITH RIGID FACING MATERIALS.

2. WHEN RIGID FACING MATERIALS ARE NOT ATTACHED TO EITHER SIDE, SUCH AS ABOVE CEILINGS, HORIZONTAL BRIDGING OR STRAPPING AT EACH FACE SHALL BE INSTALLED

3. WHERE THE TOP OF THE STUD WALLS TERMINATE AGAINST PRIMARY STRUCTURAL FRAMING, A "DEFLECTION TRACK" SHOULD BE USED TO ALLOW FOR VERTICAL MOVEMENT. ONE ROW OF THE RECOMMENDED HORIZONTAL BRIDGING SHALL BE PROPERLY INSTALLED BY MECHANICAL ATTACHMENTS TO EACH STUD AS CLOSE TO THE TOP AS POSSIBLE. ANY TEMPORARY SCREWS FROM THE TOP DEFLECTION TRACK TO THE METAL STUDS SHALL BE REMOVED AS SOON AS POSSIBLE TO ALLOW VERTICAL DEFLECTION OF THE PRIMARY FRAMING AND TO PREVENT DAMAGE TO THE STUD WALL. METAL STUDS SHOULD NEVER BE ATTACHED DIRECTLY TO HORIZONTAL STRUCTURAL FRAMING SYSTEMS WITHOUT A DEFLECTION TRACK OR VERTICALLY SLOTTED.

RTU CURBS:

1. MECHANICAL ROOFTOP EQUIPMENT SUPPLIER SHALL SUPPLY A STRUCTURAL SUPPORT CURB (AND/OR ADAPTER) FOR THE PLENUM, OF THE SPECIFIED HEIGHT, AS SHOWN ON THE MECHANICAL DRAWINGS.
– DESIGN OF THE CURB AND ADAPTER IS A DELEGATED DESIGN SUBMITTAL. EQUIPMENT SUPPLIER SHALL ENGAGE AN ENGINEER LICENSED IN THE STATE OF THE PROJECT TO DEVELOP A DESIGN FOR THE CURB AND ADAPTER. DESIGN SHALL CONSIDER ALL CODE REQUIRED GRAVITY AND WIND LOADS. THE DESIGN SHALL INCLUDE ALL FASTENERS AND CONNECTORS REQUIRED TO ANCHOR THE CURB TO THE ROOF STRUCTURE. SUBMIT SIGNED AND SEALED ANALYSIS CALCULATIONS, DESIGN AND SHOP DRAWINGS TO MECHANICAL AND STRUCTURAL ENGINEER FOR REVIEW

2. CURB SHALL BE FABRICATED OF A MINIMUM OF 14 GA GALVANIZED STEEL.

3. CURBS SHALL BE INSULATED

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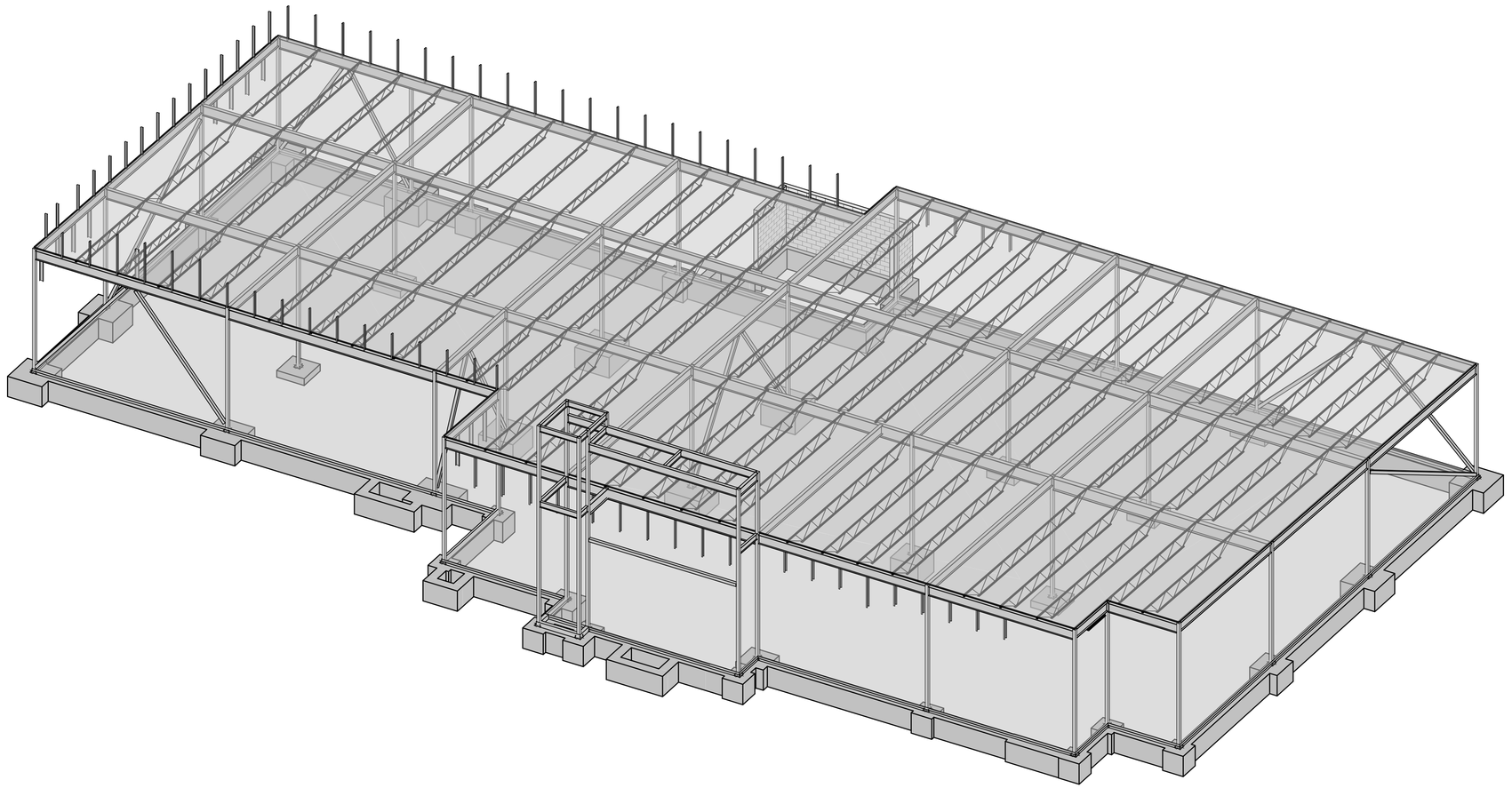
A NEW BUILDING FOR:
ASSOCIATED PLASTIC SURGEONS
I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

JOHN E. FUNK
NUMBER E-2000173299
01/28/25

PROJECT NO. 231206
01/28/2025

NO.	REVISION	DATE

SHEET NUMBER
S001
STRUCTURAL GENERAL NOTES



1 **3D - VIEW**

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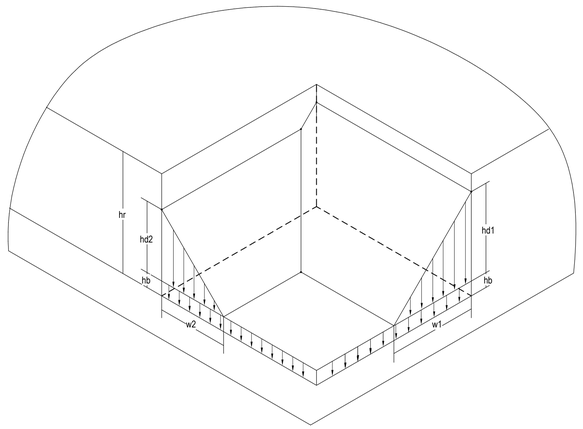
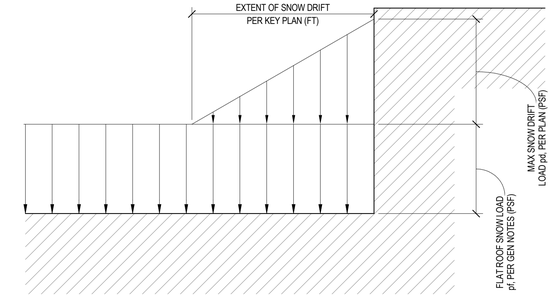
S002

STRUCTURAL 3D VIEW



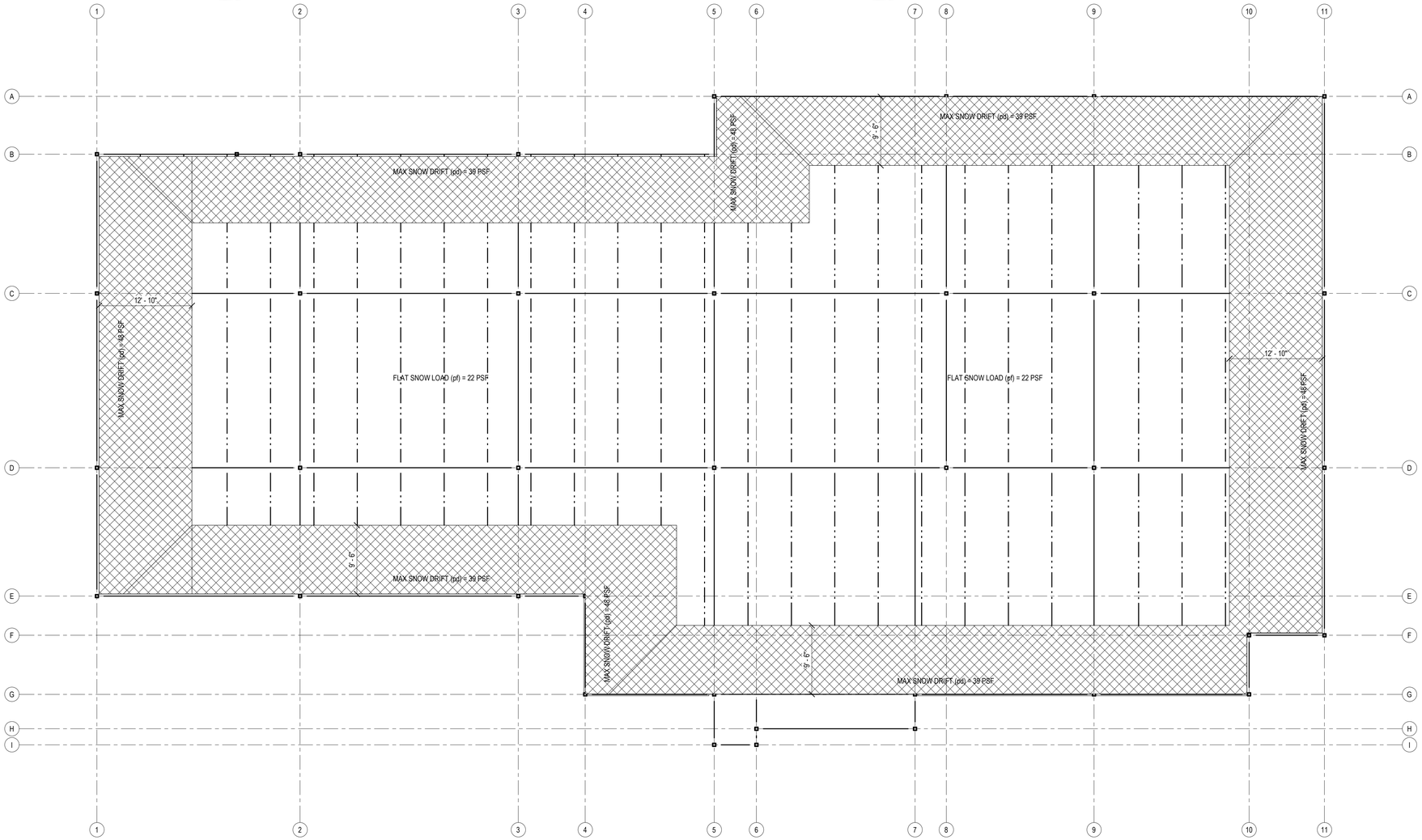
3 SNOW LOAD DIAGRAM - INTERSECTING SNOW DRIFT

1/2" = 1'-0"



2 SNOW LOAD DIAGRAM

3/4" = 1'-0"



1 SNOW DRIFT PLAN

1/8" = 1'-0"

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A NEW BUILDING FOR:

ASSOCIATED PLASTIC SURGEONS

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
JOHN E. FUNK
NUMBER E-2000173299
REGISTERED PROFESSIONAL ENGINEER

01/28/25

PROJECT NO. 231206

01/28/2025

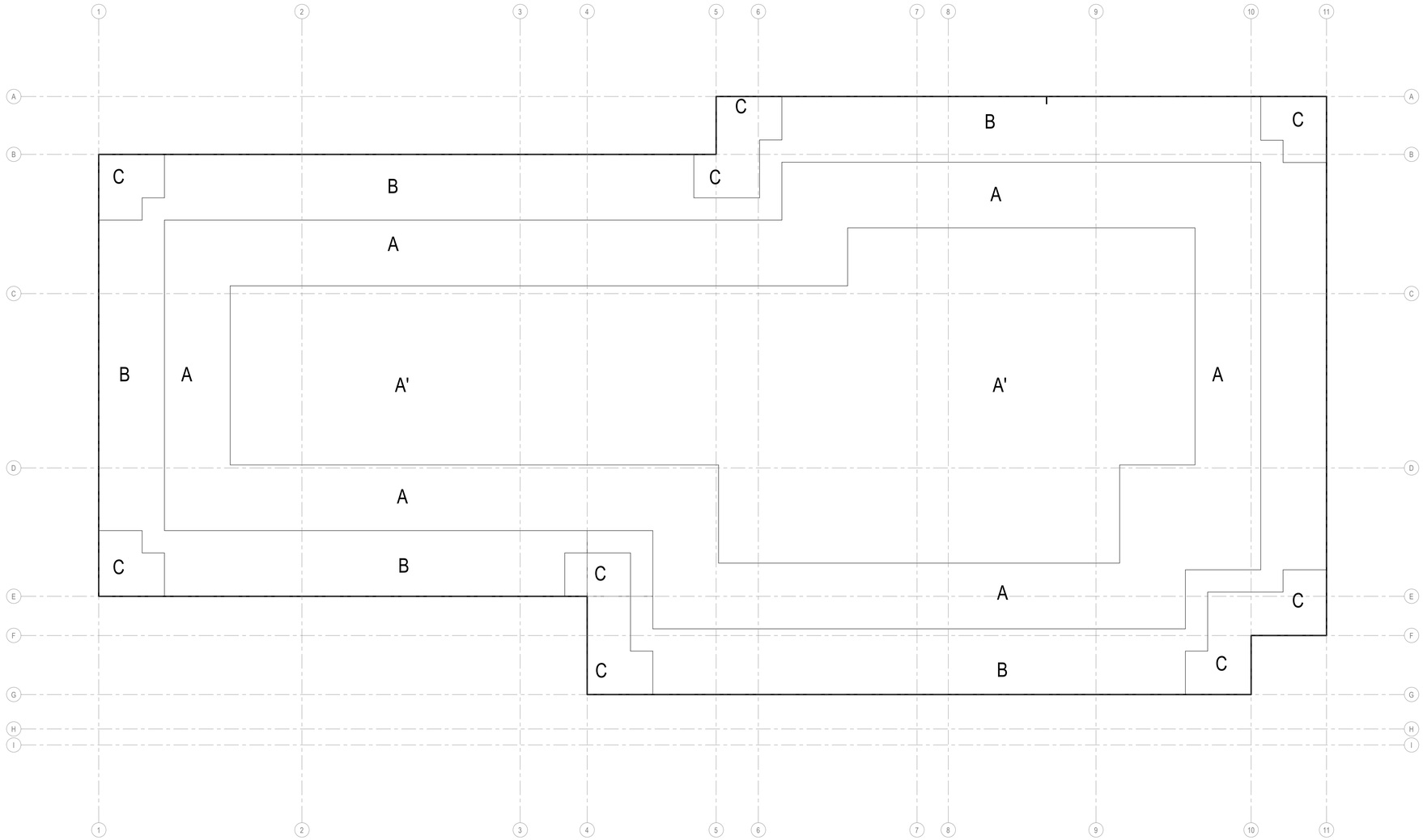
NO.	REVISION	DATE

SHEET NUMBER

S003

STRUCTURAL LOADING - SNOW

C&C WIND LOADING PRESSUES					
			ALLOWABLE REDUCTION		
ZONE	POS (PSF)	NEG (PSF)	100 SF	200 SF	500 SF
A'	16	16	1	1	1
A	16	46	0.8	0.8	0.8
B	27	61	0.85	0.8	0.75
C	27	61	0.85	0.8	0.75



1 C&C WIND PRESSURE

1/8" = 1'-0"

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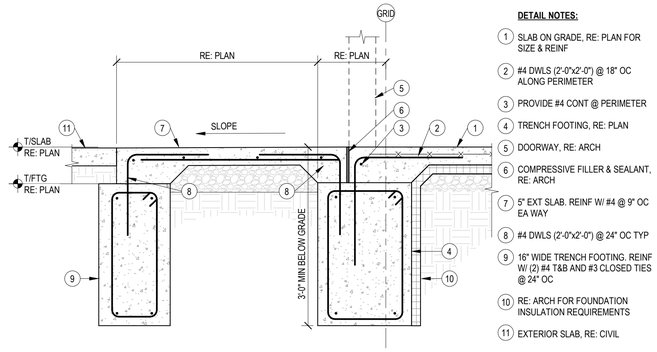
STRUCTURAL LOADING - WIND

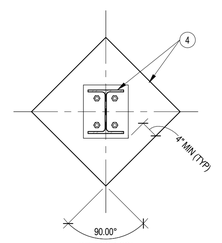


DETAIL NOTES:

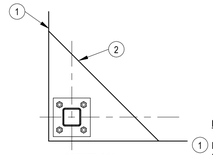
1. SLAB ON GRADE, RE: PLAN FOR SIZE & REINF
2. #4 DWLS (2'-0"x2'-0") @ 18" OC ALONG PERIMETER
3. PROVIDE #4 CONT @ PERIMETER
4. TRENCH FOOTING, RE: PLAN
5. DOORWAY, RE: ARCH
6. COMPRESSIVE FILLER & SEALANT, RE: ARCH
7. 5" EXT SLAB. REINF W/ #4 @ 9" OC EA WAY
8. #4 DWLS (2'-0"x2'-0") @ 24" OC TYP
9. 16" WIDE TRENCH FOOTING. REINF W/ (2) #4 T&B AND #3 CLOSED TIES @ 24" OC
10. RE: ARCH FOR FOUNDATION INSULATION REQUIREMENTS
11. EXTERIOR SLAB, RE: CIVIL

3 STOOP DETAIL

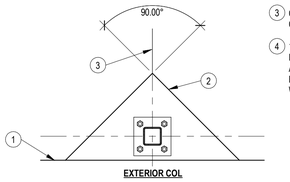
3/4" = 1'-0"



INTERIOR COL



CORNER COL



EXTERIOR COL

DETAIL NOTES:

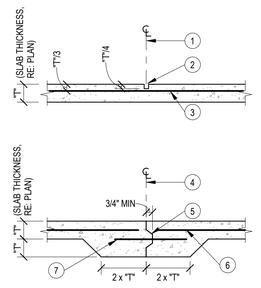
1. EDGE OF SLAB OR FACE OF WALL
2. EDGE OF BLOCKOUT
3. CONTROL OR CONSTRUCTION JOINT
4. 1/4" PREFORMED JOINT FILLER AROUND COLUMN AND AT EDGE OF BLOCKOUT. FILL JOINT WITH SEALANT (TYP)

NOTES:

A. PROVIDE SONOTUBE BLOCKOUT WHEN CONTROL/ CONSTRUCTION JOINTS DO NOT EXTEND FROM ALL CORNERS OF BLOCKOUT

2 SLAB ON GRADE JOINTS @ COLUMNS

3/4" = 1'-0"



DETAIL NOTES:

1. SAW CUT JOINT
2. SAW CUT JOINT AS SOON AS EQUIPMENT CAN BE PLACED ON SLAB WITHOUT DAMAGE
3. MESH OR REBAR CONT
4. KEYED CONSTRUCTION JOINT USE BOND BREAKER
5. FORMED KEY (NO METAL KEY)
6. CUT MESH OR REBAR AT JOINT
7. 3/4" x 16" SMOOTH DWLS @ 12" OC

NOTES:

A. THIS DETAIL MAY BE USED IN LIEU OF SAW CUT JOINT

1 SLAB ON GRADE CONTROL JOINTS

3/4" = 1'-0"

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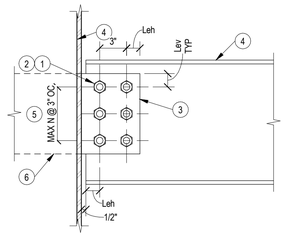
TYPICAL DETAILS - CONCRETE



DETAIL NOTES:

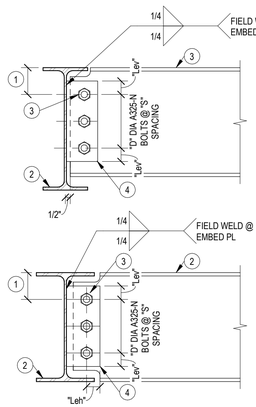
1. 3/4" Ø A325N BOLTS @ 3" OC (2 VERT LINES)
2. STANDARD SIZE HOLES REQD @ BM & PL
3. TAB PL A36 STL (UNO) Lev = 1 1/4" Leh = 1 1/2"
4. WELD TO SUPPORT 5/16" FILLET EA SIDE OF PL
5. PROVIDE MAX "N" ROWS OF BOLTS FOR THE FULL BM DEPTH
6. PROVIDE THROUGH-PLATE AT HSS COLUMNS AS REQD BY CONN DESIGN

NOTES:

AXIALLY LOADED BEAMS SHALL BE DESIGNED FOR THE LOADS SHOWN IN THE DRAWINGS, WHICH MAY REQUIRE MULTIPLE ROWS OF BOLTS.

9 BEAM AXIAL LOAD SHEAR PLATE

1 1/2" = 1'-0"



DETAIL NOTES:

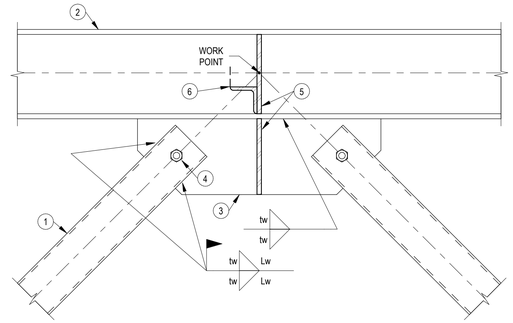
1. 3" TYP EXCEPT AS RECOMMENDED BY AISC FOR W8 & SMALLER BEAMS OR FOR LARGER BEAMS
2. STEEL BEAM, RE: PLAN
3. HOLES MAY BE HORIZ SHORT SLOTS AS REQD
4. 3/8" TAB PL WIDTH = 2 x "Leh"+ 1/2". DEPTH AS REQD

BEAM	"N"	V-ALLOW (K)	VARIABLES
W8	2	9.0	"Lev" = 1 1/2"
W10	2	14.0	"Leh" = 1 1/2"
W12, W14	3	23.8	"D" = 3/4"
W16	4	39.5	"N" = PER TABLE
W18	5	52.3	"S" = 3"
W21, W24	6	64.9	
W24	7	77.2	
W27	8	89.5	
W30	9	101.5	

6 SHEAR TAB CONN - COPED

1 1/2" = 1'-0"

NOTE: CONNECTION DETAILING AND NOTES SHOWN ARE MINIMUMNS. FABRICATOR'S ENGR TO PROVIDE FINAL DESIGN



DETAIL NOTES

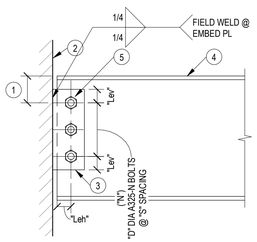
1. HSS BRACE, RE: PLAN FOR SIZE
2. STEEL BEAM, RE: PLAN FOR SIZE
3. 3/8" THICK GUSSET PL (A36), WIDTH & LENGTH AS REQD
4. ERECTION BOLT AS REQD
5. FULL DEPTH STIFFENER AS REQD BY CONNECTION DESIGN
6. L3x3x3/16 KICKER TO ADJACENT FRAMING

BRACE SIZE	tw, WELD THICKNESS	Lw, WELD LENGTH
HSS4x4	1/4"	3"
HSS5x5	5/16"	5"
HSS6x6	5/16"	6"

- WELD THICKNESS AND LENGTH SHOWN ARE MINIMUMS. INCREASE AS REQD FOR CONN DESIGN
- INCREASE WELD THICKNESSES SHOWN BY THE OVERSIZE OF THE BRACE SLOT

3 HSS BRACE - BEAM MIDSPAN CONN

1 1/2" = 1'-0"



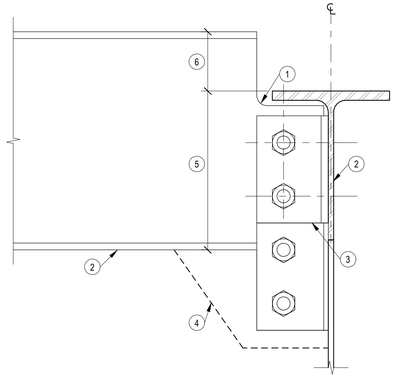
DETAIL NOTES:

1. 3" TYP EXCEPT AS RECOMMENDED BY AISC FOR W8 & SMALLER BEAMS OR FOR LARGER BEAMS
2. FACE OF BEAM WEB, COL FLG, COL WEB, OR EMBED PLATE
3. 3/8" TAB PL WIDTH = 2 x "Leh"+1/2" DEPTH AS REQD
4. STEEL BEAM, RE: PLAN
5. HOLES MAY BE HORIZ SHORT SLOTS AS REQD

BEAM	"N"	V-ALLOW (K)	VARIABLES
W8	2	9.0	"Lev" = 1 1/2"
W10	2	14.0	"Leh" = 1 1/2"
W12, W14	3	23.8	"D" = 3/4"
W16	4	39.5	"N" = PER TABLE
W18	5	52.3	"S" = 3"
W21, W24	6	64.9	
W24	7	77.2	
W27	8	89.5	
W30	9	101.5	

8 SHEAR TAB CONN

1 1/2" = 1'-0"

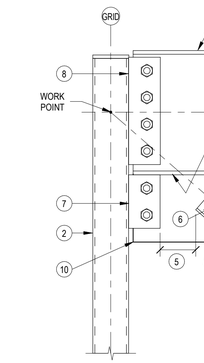


DETAIL NOTES:

1. COPE AS REQUIRED
2. BEAM SIZE, RE: PLAN
3. COPE FLANGE/ FLANGES AS REQUIRED. DOUBLE ANGLE, SINGLE ANGLE, OR TAB PLATE
4. PLATE SHALL MATCH THICKNESS OF WEB
5. SEE TYPICAL BOLTED CONNECTION DETAIL. NUMBER OF BOLTS AND ROWS TO FIT LOWER DIMENSION OF CONNECTING BEAM, RE: TYPICAL DETAILS
6. DEPTH TO MATCH ADJACENT JOIST SEAT DEPTH, OR RE: PLAN FOR DIMENSION

5 OFFSET TOP AND BOT BEAM COPE CONN

NTS



DETAIL NOTES:

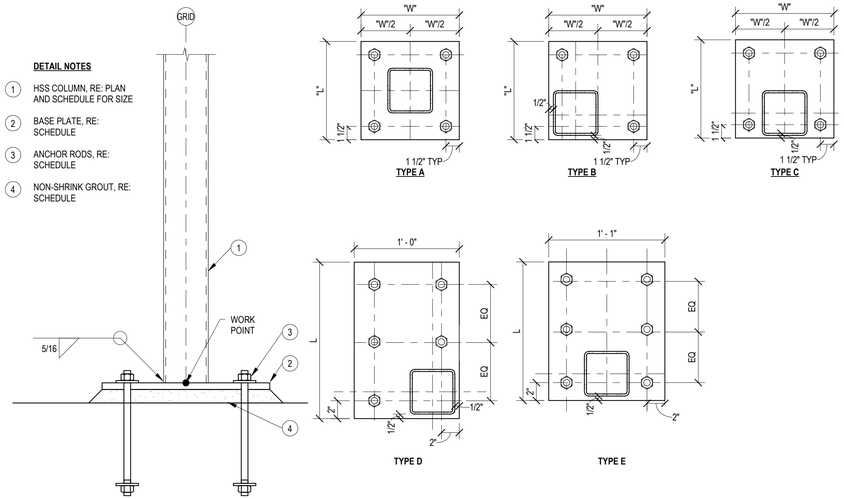
1. HSS BRACE, RE: BRACE ELEVATIONS
2. HSS COLUMN, RE: PLAN AND SCHEDULE
3. STEEL BEAM, RE: PLAN
4. 1" MIN DETAIL GUSSET TO MINIMIZE THE SIZE. ONE OF THE TWO DIMENSION SHOWN WILL CONTROL THE MIN DIMENSION SHOWN
5. "Lbr" + (2 x WELD THICKNESS)
6. AT CONTRACTOR OPTION PROVIDE BOLT FOR AN ERECTION AID
7. (2) BOLT SHEAR TAB PER TYPICAL DETAILS
8. BEAM CONNECTION PER TYPICAL DETAILS
9. 1/2" A36 GUSSET

2 HSS BRACE - ROOF BEAM TO COLUMN CONN

1 1/2" = 1'-0"

SCHEDULE - BASEPLATE

TYPE MARK	BASEPLATE TYPE	BASEPLATE DIMENSIONS [WxLxT]	ANCHOR ROD DIA.	ANCHOR ROD EMBEDMENT	GROUT THICKNESS
BP-1	A	3/4X11X11	3/4	10	1 1/2
BP-2	B	3/4X11X11	3/4	10	1 1/2
BP-3	C	3/4X11X11	3/4	10	1 1/2
BP-4	D	3/4X11X18	1	18	1 1/2
BP-5	E	3/4X12X18	1	18	1 1/2

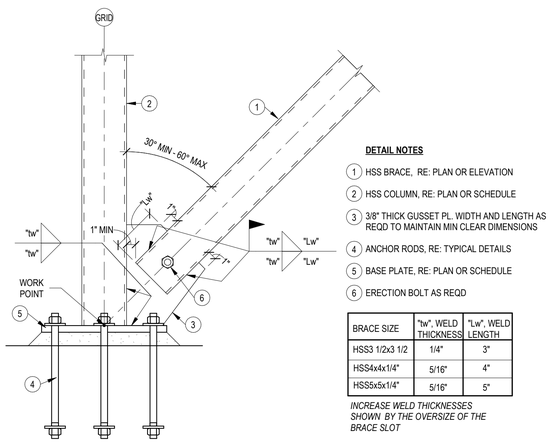


DETAIL NOTES

1. HSS COLUMN, RE: PLAN AND SCHEDULE FOR SIZE
2. BASE PLATE, RE: SCHEDULE
3. ANCHOR RODS, RE: SCHEDULE
4. NON-SHRINK GROUT, RE: SCHEDULE

7 COLUMN - BASE PLATE

1 1/2" = 1'-0"



DETAIL NOTES

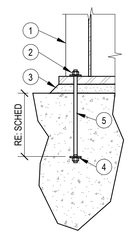
1. HSS BRACE, RE: PLAN OR ELEVATION
2. HSS COLUMN, RE: PLAN OR SCHEDULE
3. 3/8" THICK GUSSET PL. WIDTH AND LENGTH AS REQD TO MAINTAIN MIN CLEAR DIMENSIONS
4. ANCHOR RODS, RE: TYPICAL DETAILS
5. BASE PLATE, RE: PLAN OR SCHEDULE
6. ERECTION BOLT AS REQD

BRACE SIZE	"tw", WELD THICKNESS	"Lw", WELD LENGTH
HSS3 1/2x3 1/2	1/4"	3"
HSS4x4x1/4"	5/16"	4"
HSS5x5x1/4"	5/16"	5"

INCREASE WELD THICKNESSES SHOWN BY THE OVERSIZE OF THE BRACE SLOT

4 HSS BRACE - 6 BOLT BASE PLATE

1 1/2" = 1'-0"



DETAIL NOTES:

1. COL AND BASE PLATE, RE: PLAN & SCHEDULE
2. PROVIDE OVERSIZED HOLES IN BASE PLATE AND 1/4" PL WASHER WITH HEAVY HEX NUTS ON ANCHOR RODS. WELD WASHERS TO BASE PLATE 1" MIN ALL 4 SIDES. USE 2"x2" WASHERS @ 3/4" AR & 3"x3" WASHERS @ 1" AR.
3. 1 1/2" MIN NON-SHRINK NON-METALLIC GROUT
4. PROVIDE EITHER HEADED ANCHOR RODS, OR ALTERNATIVELY PROVIDE 3" SQ x 1/4" PL WASHER WITH HEAVY HEX NUT. TACK WELD WASHER AND NUT TO ANCHOR ROD
5. ANCHOR ROD PER BASEPLATE SCHEDULE. RODS TO EXTEND 1/2" MIN THRU NUTS TOP AND BOT

NOTES:

A. ACCOUNT FOR GROUT THICKNESS WHEN DETERMINING BOTTOM OF BASE PLATE ELEVATION

B. ANCHOR RODS SHALL BE F1554 GR. 36 UNO

1 ANCHOR ROD

3/4" = 1'-0"

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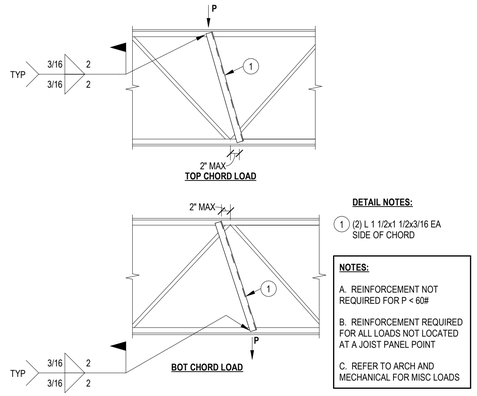
TYPICAL DETAILS - STEEL



DETAIL NOTES:

1. (2) L 1 1/2x1 1/2x3/16 EA SIDE OF CHORD

NOTES:

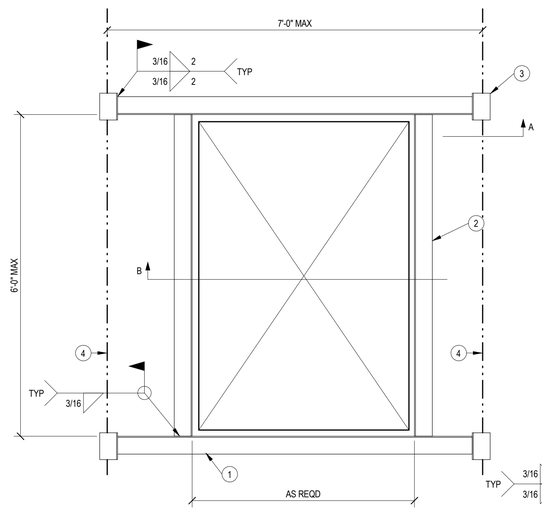
A. REINFORCEMENT NOT REQUIRED FOR P < 60#

B. REINFORCEMENT REQUIRED FOR ALL LOADS NOT LOCATED AT A JOIST PANEL POINT

C. REFER TO ARCH AND MECHANICAL FOR MISC LOADS

7 JOIST REINF @ POINT LOAD

3/4" = 1'-0"



DETAIL NOTES:

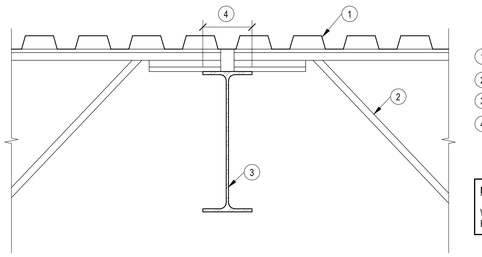
1. L6x4x5/16" (LLV) TYP 2 PLACES
2. L4x4x1/4 TYP 2 PLACES
3. L6x4x5/16"x0'-5" (LLV). TYP 4 PLACES
4. OPEN WEB JOISTS, RE: PLAN
5. CUT DECK AS REQD AT OPENING. FASTEN DECK TO ANGLES SIMILAR TO TYPICAL SUPPORT FASTENING (WELDS OR SCREWS)
6. MATCH T/JOIST ELEVATION

NOTES:

A. WELD DECK TO ANGLE SUPPORTS SIMILAR TO MAIN FRAMING PATTERN

6 ROOF OPENING

3/4" = 1'-0"



DETAIL NOTES:

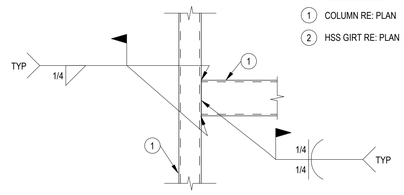
1. METAL ROOF DECK, RE:PLAN
2. K-SERIES JOISTS, RE: PLAN
3. STEEL BEAM, RE: PLAN
4. 5 1/2" MINIMUM FLANGE, TYPICAL FOR BUTTING ENDS OF JOISTS WHERE BEAM FLANGE IS LESS THAN 5 1/2", OFFSET JOIST BY 6" AND ADJUST JOIST AND DECK LAYOUT ACCORDINGLY

NOTE:

WHERE JOIST SLOPE EXCEEDS 1/4" PER FOOT PROVIDE SLOPED BEARING ENDS

5 K-SERIES JOIST BEARING BEAM

NTS

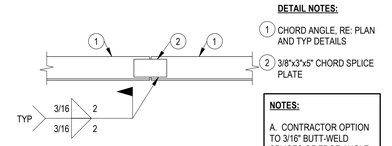


DETAIL NOTES:

1. COLUMN RE: PLAN
2. HSS GIRT RE: PLAN

4 TYP HSS TO HSS CONN

3/4" = 1'-0"



DETAIL NOTES:

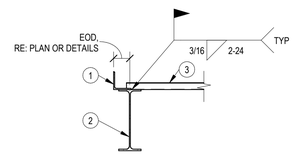
1. CHORD ANGLE, RE: PLAN AND TYP DETAILS
2. 3/8"x3"x5" CHORD SPLICE PLATE

NOTES:

A. CONTRACTOR OPTION TO 3/16" BUTT-WELD SPLICES OF EDGE ANGLE END TO END

3 EDGE ANGLE SPLICE

1" = 1'-0"



DETAIL NOTES:

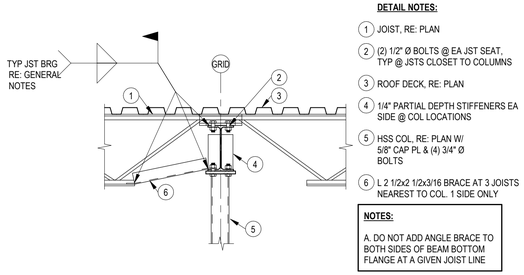
1. CONT EDGE ANGLE, RE: TYP DETAILS (L4x4x1/4" UNO)
2. STEEL BEAM, RE: PLAN
3. ROOF DECK, RE: PLAN
4. JOIST, RE: PLAN

NOTES:

A. SEE TYP DTL FOR EDGE ANGLE SPLICE DETAIL

2 ROOF EDGE ANGLE

3/4" = 1'-0"



DETAIL NOTES:

1. JOIST, RE: PLAN
2. (2) 1/2" Ø BOLTS @ EA JST SEAT, TYP @ JSTS CLOSET TO COLUMNS
3. ROOF DECK, RE: PLAN
4. 1/4" PARTIAL DEPTH STIFFENERS EA SIDE @ COL LOCATIONS
5. HSS COL, RE: PLAN W/ 5/8" CAP PL & (4) 3/4" Ø BOLTS
6. L 2 1/2x2 1/2x3/16 BRACE AT 3 JOISTS NEAREST TO COL. 1 SIDE ONLY

NOTES:

A. DO NOT ADD ANGLE BRACE TO BOTH SIDES OF BEAM BOTTOM FLANGE AT A GIVEN JOIST LINE

1 JOIST TO COLUMN CONN

3/4" = 1'-0"

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A NEW BUILDING FOR:

ASSOCIATED PLASTIC SURGEONS

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
JOHN E. FUNK
NUMBER E-2000173299
REGISTERED PROFESSIONAL ENGINEER

01/28/25

PROJECT NO. 231206

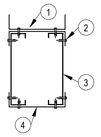
01/28/2025

NO.	REVISION	DATE

SHEET NUMBER

S051

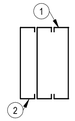
TYPICAL DETAILS - STEEL



DETAIL NOTES:

1. 12 GA RUNNER
2. #10 SCREWS @ 12" OC
3. CFS HEADER
4. 12 GA RUNNER TOP AND BOT

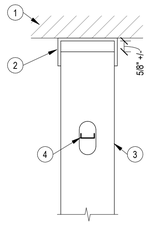
12 CFS BOX HEADER CONN
1 1/2" = 1'-0"



DETAIL NOTES:

1. (2) FULL HT STUDS EA SIDE MATCH WALL STUD SIZE
2. (1) 14 GA JACK STUD W/ 2" FLANGE EA SIDE OF OPENING

11 CFS BUILT-UP JAMB
1 1/2" = 1'-0"



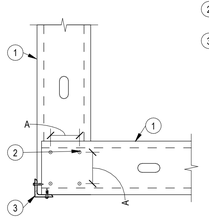
DETAIL NOTES:

1. PRIMARY STRUCTURE, RE: PLAN
2. DEEP TRACK CONT, 16 GA MIN
3. CFS STUDS, RE: PLAN
4. BRIDGING PER MFCR

NOTES:

SPACE VERT @ 4'-0" OC MAX

10 CFS T/STUD SLIP CONN
3/4" = 1'-0"

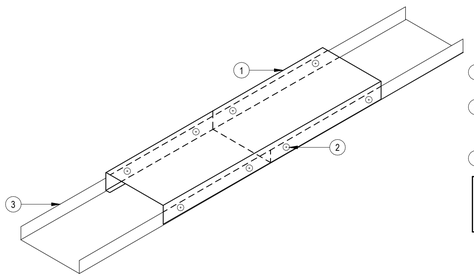


DETAIL NOTES:

1. CFS STUD
2. (4) #10 - 16 SCREWS PER LAP CONN
3. 2x2x18 GA CONT CLOSURE ANGLE @ OUTSIDE CORNERS (TYP) ATTACH W/ (1) #10 - 16 SCREW @ EA STUD

STUD DEPTH	A
3 5/8"	2 1/2"
6"	4"
8"	6"
10"	8"
12"	10"

9 CFS STUDS CORNER CONN
1 1/2" = 1'-0"



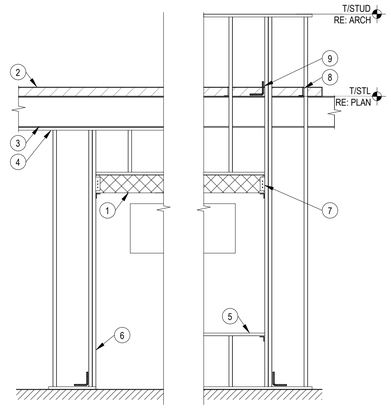
DETAIL NOTES:

1. 12" LONG SECTION OF STUD, SAVE GAGE & SIZE AS TRACK
2. SCREW ATTACH BOTH ENDS OF RUNNER TRACKS TO SHORT SECTION OF STUD W/ (2) #10 SCREWS ON BOTH SIDES
3. TRACK PER SECTION

NOTES:

A. ONLY REQUIRED WHERE TRACK IS LABELED CONTINUOUS

8 TYPICAL TRACK SPLICE
3" = 1'-0"



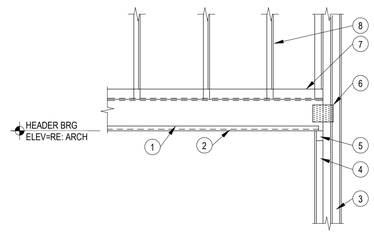
DETAIL NOTES:

1. CFS STUD HEADER AND SUPPORT CONN PER STUD SUPPLIER
2. EDGE ANGLE OR SLAB EDGE, RE: PLAN
3. STEEL BEAM, RE: PLAN
4. FOR CONDITIONS WHERE CFS STUDS TERMINATE @ BOT OF STRUCTURAL STEEL PROVIDE SLIP TRACK DETAIL OR ALT SLIP CONN. BOT FLANGE OF BEAM SHALL BE BRACED
5. FOR WINDOW OPENINGS PROVIDE A SILL & CONN
6. CFS STUD JAMB (WINDOW OR DOOR). PROVIDE DOUBLE STUDS MIN
7. RE: TYP DTL FOR SCHEMATIC DETAIL OF HEADER-TO-JAMB CONN
8. VERT SLIP CONN AT EA STUD CONNECT TO EDGE ANGLE OR SLAB EDGE
9. JAMB TOP CONN

NOTES:

A. COORDINATE ROUGH OPENING DIMENSIONS WITH ARCH

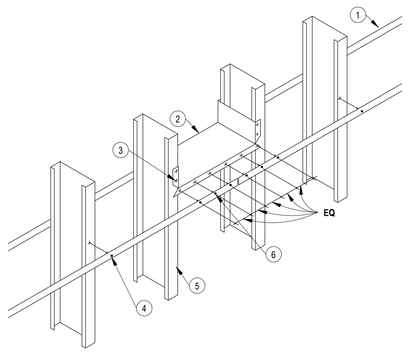
7 CFS STUDS @ STEEL BEAM ELEV
3/8" = 1'-0"



DETAIL NOTES:

1. CFS HEADER
2. CONT BOT RUNNER TRACK
3. FULL HT KING STUDS
4. BRG STUD
5. 16 GA RUNNER TRACK
6. SIMPSON TP57 EA FACE CENTER @ END OF LINTEL
7. CONT TOP RUNNER TRACK CONT
8. CFS STUDS @ 16" OC

6 CFS BOX HEADER ELEV
1/2" = 1'-0"



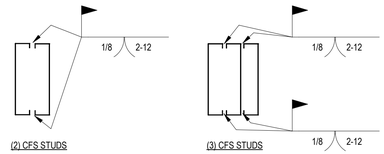
DETAIL NOTES:

1. 1 1/2" GA STRAPPING ON EA SIDE OF MEMBER (STRAPPING TO START END & SPLICE @ SOLID BLOCKING)
2. MIN 18 GA RUNNER TRACK SOLID BLOCKING @ 10'-0" OC MAX. MAKE RUNNER TRACK 8" LONGER THAN MEMBER INSIDE SPACING. CLIP FLANGES OF TRACK 4" FROM EA END. BEND TRACK @ CLIPPED FLANGES
3. ATTACH BLOCKING TO MEMBERS WITH (2) # 10-16 SCREWS IN EA FLANGE AS SHOWN
4. (1) #10-16 SCREW IN EA STUD FLANGE
5. TYP CFS MEMBER
6. USE (6) # 10-16 SCREWS ON EA SIDE OF BLOCKING

BLOCKING NOTE

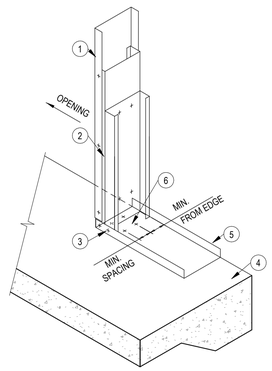
PLACE SOLID BLOCKING @ ENDS OF WALL OR FLOOR SYSTEM, ADJACENT TO OPENGINGS & AT 10'-0" OC MAX

5 CFS STUD STRAP & BLOCKING
3/4" = 1'-0"



(2) CFS STUDS (3) CFS STUDS

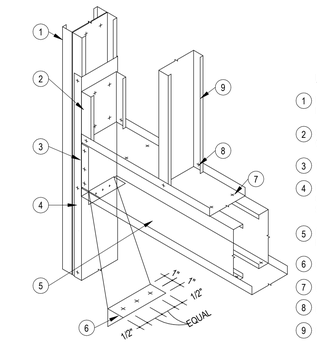
4 CFS BUILT-UP STUD COLUMNS
1 1/2" = 1'-0"



DETAIL NOTES:

1. CAP OPENING SIDE OF JAMB W/ TRACK ATTACHED W/ (1) #10-16 SCREW @ 16" OC IN EA LEG
2. (2) FULL HEIGHT 18 GA JAMB STUDS MATCH THE SIZE OF THE TYP WALL STUDS
3. (1) #10-16 SCREW @ EA FLANGE
4. CONC SLAB
5. RUNNER TRACK
6. ATTACH TRACK END TO SLAB W/ (4) 0.145"Ø PAF x 1 1/4" EMBED PROVIDE 4" CLEAR B/W EA PAF

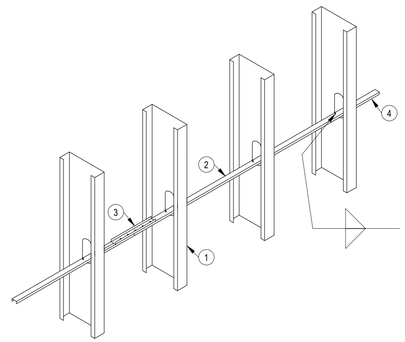
3 CFS SILL CONN @ OPENINGS
3/4" = 1'-0"



DETAIL NOTES:

1. FULL HEIGHT JAMB STUDS. QUANTITY & MEMBER SIZES AS REQD BY DESIGN
2. 6" LONG SECTION OF STUD ATTACHED TO JAMB W/ (4) #10-16 SCREWS
3. 18 GA MIN TRACK HEADER CONN
4. IF NO TRACK IN JAMB TYPE CAP OPENING SIDE OF JAMB W/ TRACK ATTACHED W/ (1) #10-16 SCREW @ 12" OC IN EA LEG
5. (2) UNPUNCHED STUDS. MEMBER SIZES AS REQD PER DESIGN
6. CLIP ANGLE SIZE AS REQD PER DESIGN
7. (2) #10-16 SCREWS @ 12" OC
8. (1) #10-16 SCREW TYP EA FLANGE
9. CRIPPLE STUDS

2 CFS JAMB STUD CONN
3/4" = 1'-0"



DETAIL NOTES:

1. CFS STUD 8" MAX DEPTH
2. 150U50-54 CONT COLD ROLLED CHANNEL
3. 150U50-54 x 12" LONG @ SPLICE LOCATIONS W/ (6) #10 - 16 SCREWS (3) EA END
4. ALL BRIDGING SHALL BE TERMINATED @ JAMBS CORNER STUDS OR COLUMNS. BRIDGING SHALL NOT HANG LOOSE

1 CFS STUD BRIDGING
3/4" = 1'-0"

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STATE OF MISSOURI
JOHN E. FUNK
NUMBER E-2000173299
REGISTERED PROFESSIONAL ENGINEER
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PROJECT NO. 231206
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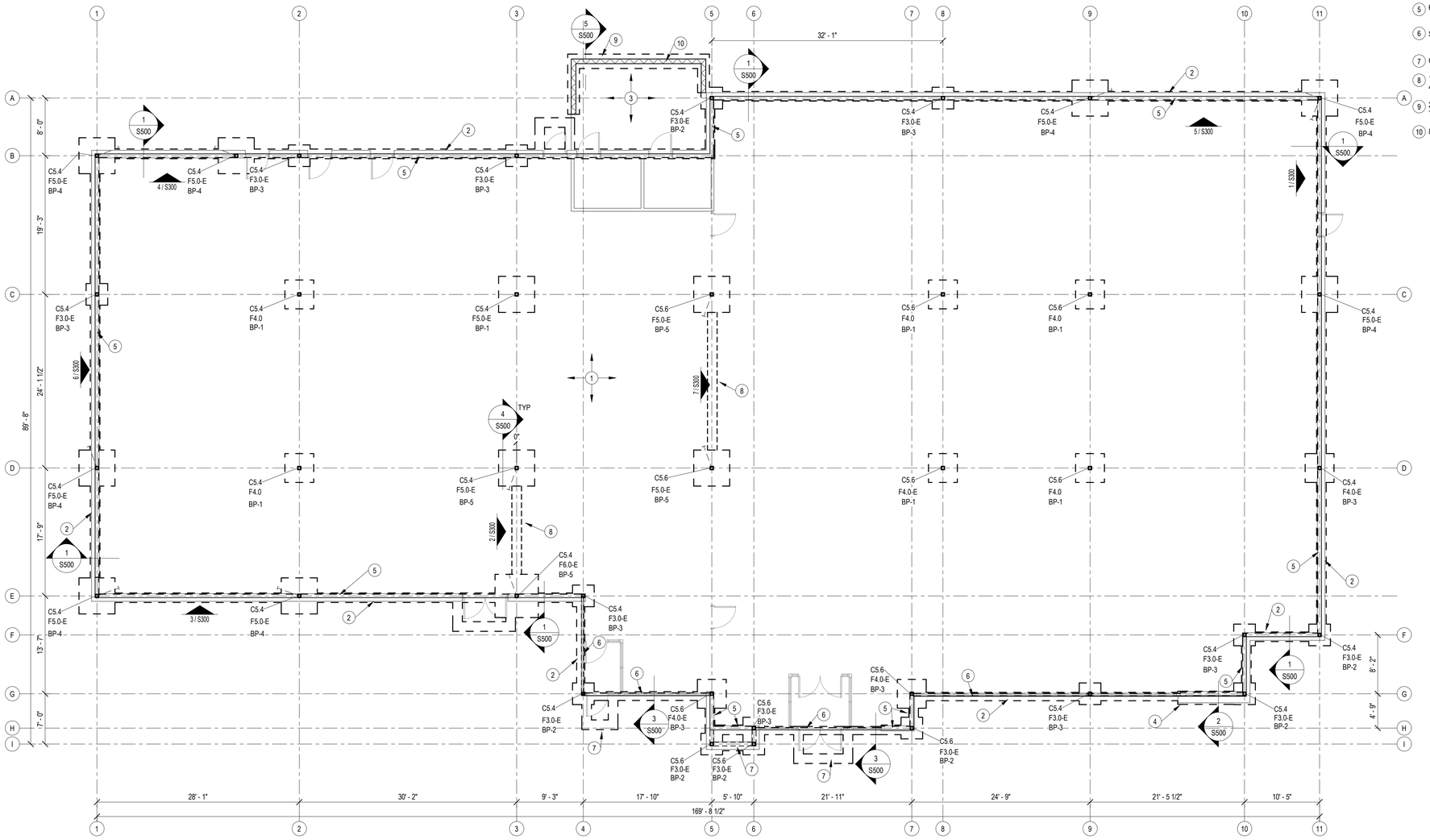
S054

TYPICAL DETAILS - CFS

SCHEDULE - SPREAD FOOTING				
TYPE MARK	LENGTH	WIDTH	THICKNESS	REINF
F4.0	4' - 0"	4' - 0"	1' - 0"	(5) #5 EW TOP & BOT
F3.0-E	3' - 0"	3' - 0"	3' - 0"	(4) #5 EW TOP & BOT
F4.0-E	4' - 0"	4' - 0"	3' - 0"	(5) #5 EW TOP & BOT
F5.0-E	5' - 0"	5' - 0"	3' - 0"	(7) #5 EW TOP & BOT
F6.0-E	6' - 0"	6' - 0"	3' - 0"	(7) #5 EW TOP & BOT

SCHEDULE - COLUMN	
TYPE MARK	TYPE
C4.4	HSS4x4x1/4
C5.4	HSS5x5x1/4
C5.6	HSS5x5x3/8



1 FOUNDATION PLAN

1/8" = 1'-0"

NORTH

SHEET NOTES:

A. REFERENCE SHEET S00x FOR STRUCTURAL GENERAL NOTES. REVIEW NOTES & DETAILS FOR APPLICABILITY.

B. SEE ARCHITECTURAL DRAWING FOR DETAILS & DIMENSIONS NOT SHOWN.

C. REFER TO S0xx FOR TYPICAL DETAILS.

D. TOP OF SLAB ELEVATION = 100'-0" UNO WHICH EQUALS FFE 997.00 PER CIVIL

E. TOP OF TRENCH FOOTING ELEVATION = 99'-4" UNO. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 3'-0" MIN BELOW GRADE, DEEPEN FOOTINGS AS REQUIRED. GRADE IS GENERALLY 6" BELOW FINISH FLOOR ELEVATION (COORDINATE WITH CIVIL).

F. SPREAD FOOTINGS DENOTED ON PLAN BY "Fx.x". REFER TO SCHEDULE ON THIS SHEET FOR SIZE AND REINFORCING.

G. PROVIDE BLOCKOUTS IN SLAB FOR COLUMNS PER TYPICAL DETAIL

H. STEEL COLUMNS ARE DENOTED ON PLAN AS "Cx.x". REFER TO SCHEDULE ON THIS SHEET FOR COLUMN SIZE, BASEPLATE TYPE, AND BASEPLATE DIMENSIONS.

PLAN NOTES:

① 4" CONCRETE SLAB ON GRADE. REINF W/ 6x6 W2.1xW2.1 WWR. RE:GENERAL NOTES GRANULAR FILL, VAPOR BARRIER AND JOINTING REQUIREMENTS

② 16" WIDE x 3'-0" DEEP TRENCH FOOTING. REINF W/ (2) #5 CONT TOP & BOT & #3 TIES @ 48" OC

③ 6" CONCRETE PATIO SLAB ON GRADE W/ #5 @ 12" OC RE: GENERAL NOTES FOR REINFORCING, GRANULAR FILL, VAPOR BARRIER AND JOINTING REQUIREMENTS

④ INCREASE FOOTING WIDTH 6" @ 2/S500

⑤ 6" CFS WALL @ 16" OC 18 GA MIN BY STUD SUPPLIER

⑥ STOREFRONT GLAZED PANELS WALL, RE: ARCH

⑦ CONCRETE STOOP RE: TYPICAL DETAIL

⑧ 16" WIDE x 1'-0" DEEP TIE BEAM. REINF W/ (2) #5 CONT TOP & BOT AND #3 TIES @ 48" OC

⑨ 24" WIDE x 3'-0" DEEP TRENCH FOOTING. REINF W/ (3) #5 CONT TOP & BOT & #3 TIES @ 24" OC

⑩ 8" FULLY GROUTED CMU WALLS, RE: 5/S500

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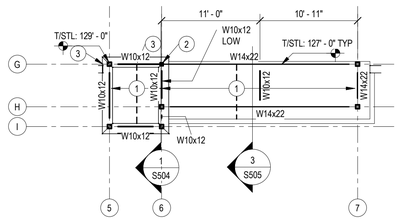
S100
FOUNDATION PLAN

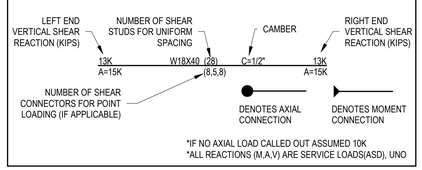


2 HIGH ROOF
1/8" = 1'-0"

PLAN NOTES:

1. 600S162-43 STUDS @ 24" OC.
2. HSS4X4X1/4 EXTENSION ON TOP OF W14X22. WELD ALL AROUND THE BASE W/ 1/4" FILLET. T/STL COLUMN SHOWN = 129'-0" = B/ROOF, RE: ARCH FOR B/ROOF.
3. 6" CFS WALL @ 16" OC 18 GA MIN BY STUD SUPPLIER. PROVIDE PLATE TO SUPPORT BRICK WALL WHEREVER WALL DOES NOT STACK DOWN.

BEAM LEGEND



*IF NO AXIAL LOAD CALLED OUT ASSUMED 10K
*ALL REACTIONS (M,A,V) ARE SERVICE LOADS(ASD), UNO

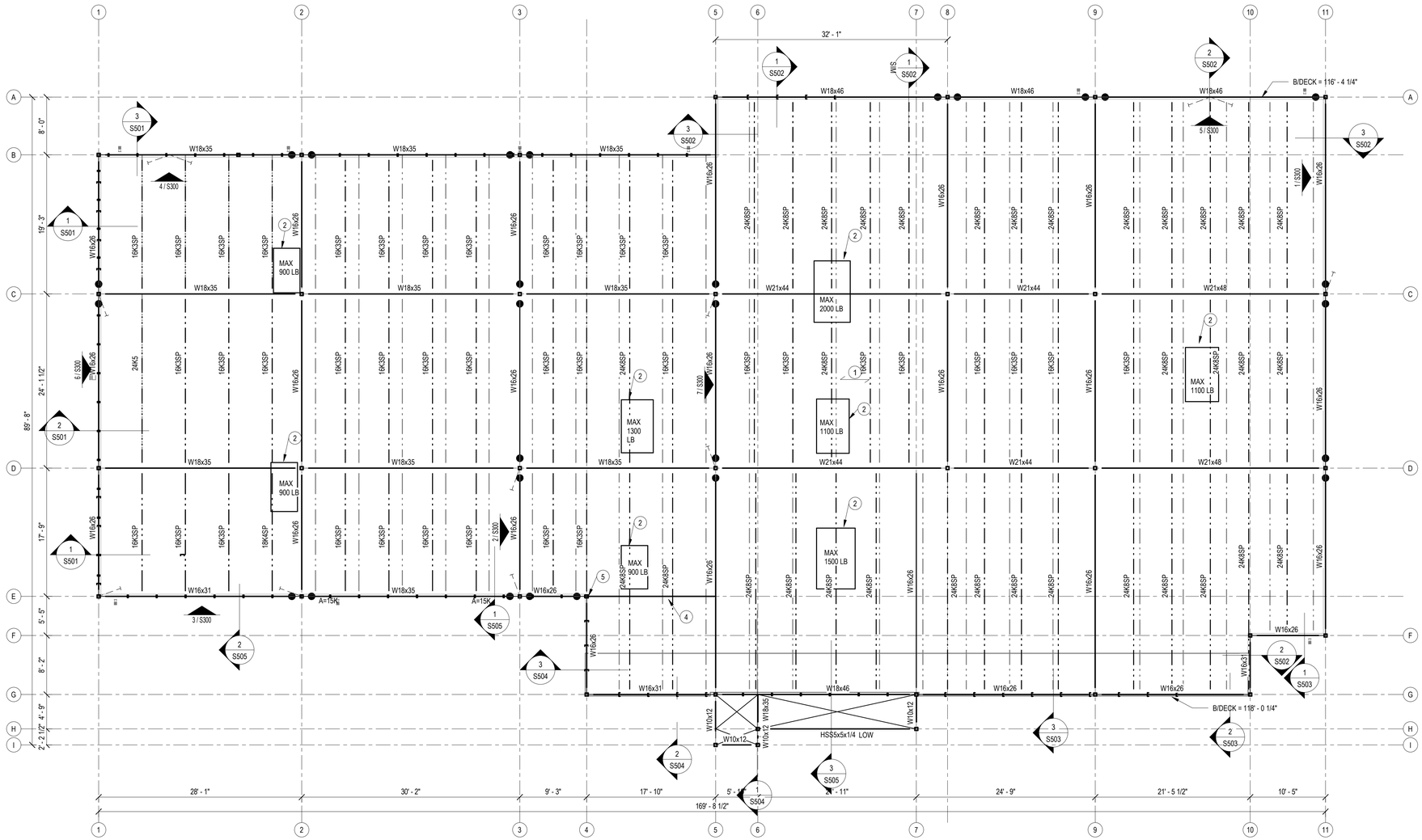
SHEET NOTES:

A. REFERENCE SHEET S00x FOR STRUCTURAL GENERAL NOTES. REVIEW NOTES FOR APPLICABILITY.

B. SEE ARCHITECTURAL DRAWING FOR DETAILS & DIMENSIONS NOT SHOWN.

C. REFER TO S0xx FOR TYPICAL FRAMING DETAILS.

D. MAXIMUM JOIST SPACING SHALL BE 6'-0" OC MAX



PLAN NOTES:

1. 1 1/2" DEEP x 22 GA TYPE B ROOF DECK RE: GENERAL NOTES FOR FASTENING REQUIREMENTS
2. PROVIDE L6x4x5/16 (LLV) AROUND ROOF HATCH & RTU OPENINGS PER TYP DETAILS. COORD SIZE & LOCATION W/ ARCH AND MECH. ALL DUCT DROPS SHALL PASS BETWEEN STRUCTURAL FRAMING. DO NOT CUT ANY BEAMS OR JOISTS
3. DESIGN KSP JOIST FOR 270/150 LOADING PLUS ADD-LOAD SHOWN ON PLAN FOR ANY LOCATION ALONG THE TOP CHORD. CONTRACTOR TO PROVIDE JOIST REINFORCEMENT AT RTU CURB AS SHOWN PER DETAIL
4. L4X4X1/4 ON TOP OF BAR JOISTS. WELD TO TOP OF BEAM/JOIST FLANGES WITH 1/4" FILLET ON EACH SIDE MIN 3".
5. FIELD WELD ANGLE TO COLUMN W/ 1/4" WELD ALL AROUND.

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

NORTH

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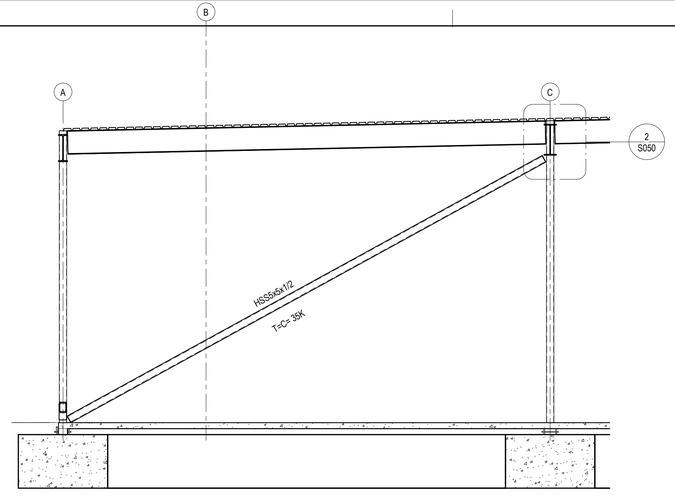
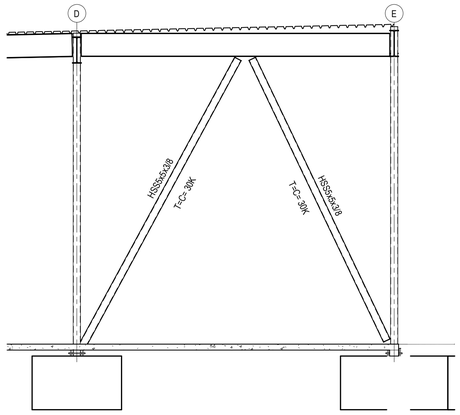
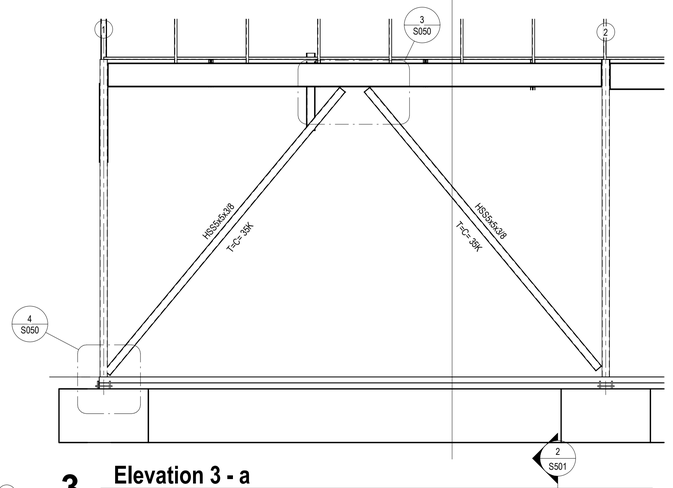
S101
ROOF FRAMING PLAN



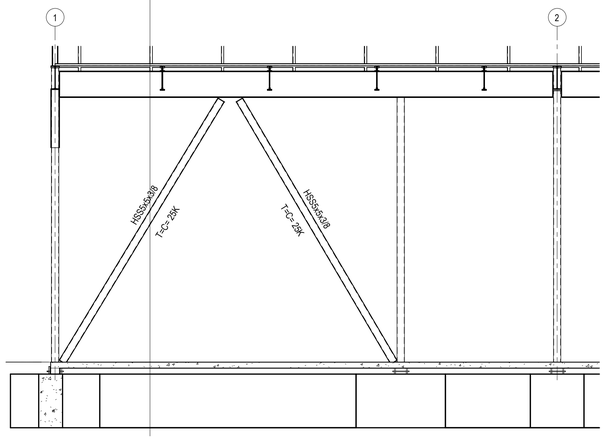
1 Elevation 1 - a
1/4" = 1'-0"



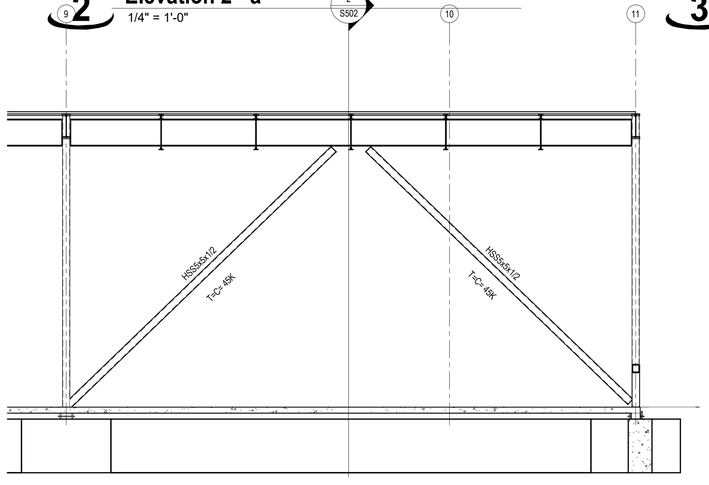
2 Elevation 2 - a
1/4" = 1'-0"



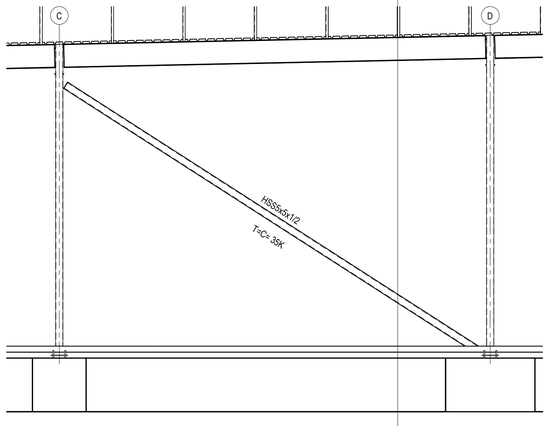
3 Elevation 3 - a
1/4" = 1'-0"



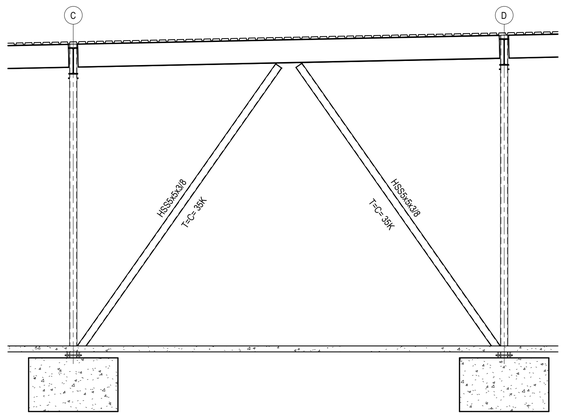
4 Elevation 4 - a
1/4" = 1'-0"



5 Elevation 5 - a
1/4" = 1'-0"



6 Elevation 6 - a
1/4" = 1'-0"



7 Elevation 7 - a
1/4" = 1'-0"

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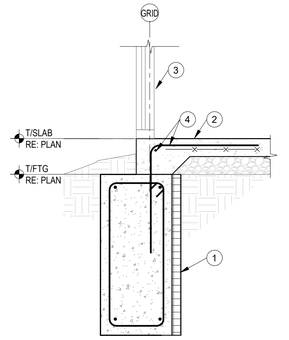
SHEET NUMBER
S300
BRACE ELEVATIONS

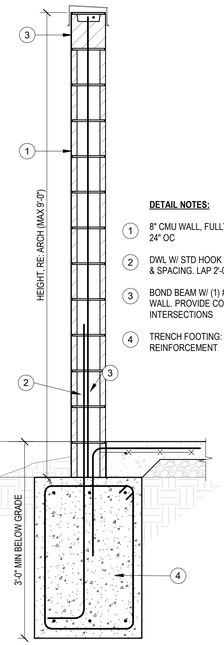


DETAIL NOTES:

1. TRENCH FOOTING, RE: PLAN FOR SIZE & REINF. RE: ARCH FOR INSULATION REQUIREMENTS
2. SOG, RE: PLAN FOR SIZE & REINF
3. STOREFRONT RE: ARCH
4. #4 DWL (2'-0"x2'-0") @ 24" OC & #4 CONT

3 TRENCH FOOTING AT STOREFRONT

3/4" = 1'-0"



DETAIL NOTES:

1. 8" CMU WALL, FULLY GROUTED. REINF W/ #5 VERT @ 24" OC
2. DWL W/ STD HOOK TO MATCH WALL VERT REINF SIZE & SPACING. LAP 2'-0" W/ WALL BAR
3. BOND BEAM W/ (1) #4 CONT @ 4'-0" OC AND TOP OF WALL. PROVIDE CORNER BARS @ WALL INTERSECTIONS
4. TRENCH FOOTING: RE; PLAN FOR SIZE AND REINFORCEMENT

5 TRENCH FOOTING AT CMU WALL

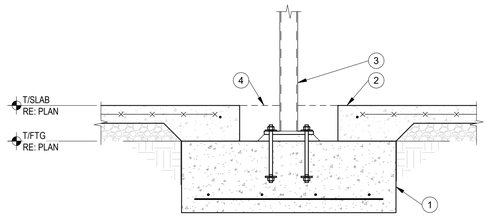
3/4" = 1'-0"

DETAIL NOTES:

1. TRENCH FOOTING, RE: PLAN FOR SIZE & REINF. RE: ARCH FOR INSULATION REQUIREMENTS
2. SOG, RE: PLAN FOR SIZE & REINF
3. CFS WALL, RE: ARCH
4. #4 DWL (2'-0"x2'-0") @ 24" OC & #4 CONT
5. FINISH, RE: ARCH

2 WIDENED TRENCH FOOTING

3/4" = 1'-0"

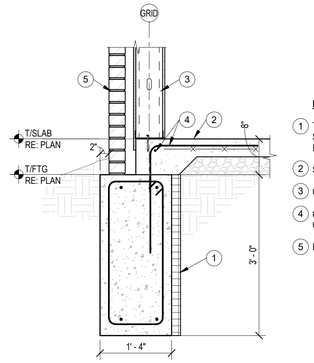


DETAIL NOTES:

1. FOOTING, RE: PLAN FOR SIZE & REINF
2. SOG, RE: PLAN FOR SIZE & REINF
3. COL, RE: PLAN FOR SIZE
4. BLOCK OUT RE: TYP DETAILS

4 INTERIOR MASS FTG

3/4" = 1'-0"



DETAIL NOTES:

1. TRENCH FOOTING, RE: PLAN FOR SIZE & REINF. RE: ARCH FOR INSULATION REQUIREMENTS
2. SOG, RE: PLAN FOR SIZE & REINF
3. CFS WALL, RE: ARCH
4. #4 DWL (2'-0"x2'-0") @ 24" OC & #4 CONT
5. FINISH, RE: ARCH

1 TYPICAL TRENCH FOOTING

3/4" = 1'-0"

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A NEW BUILDING FOR:

ASSOCIATED PLASTIC SURGEONS

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
JOHN E. FUNK
NUMBER E-2000173239
REGISTERED PROFESSIONAL ENGINEER

01/28/25

PROJECT NO. 231206

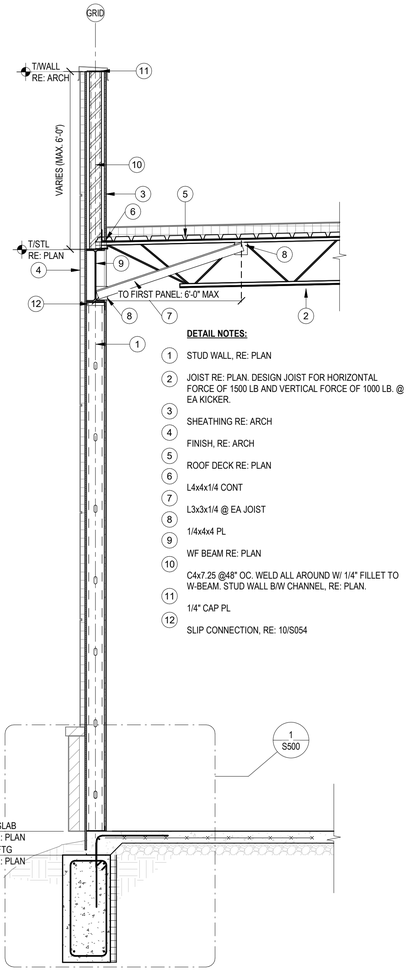
01/28/2025

NO.	REVISION	DATE

SHEET NUMBER

S500

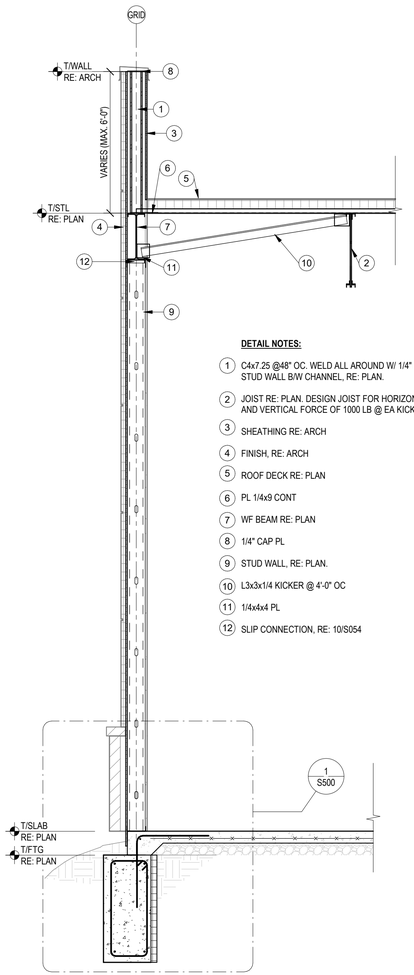
FOUNDATION SECTIONS



DETAIL NOTES:

1. STUD WALL, RE: PLAN
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB. @ EA KICKER.
3. SHEATHING RE: ARCH
4. FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. L4x4x1/4 CONT
7. L3x3x1/4 @ EA JOIST
8. 1/4x4x4 PL
9. WF BEAM RE: PLAN
10. C4x7.25 @48" OC. WELD ALL AROUND W/ 1/4" FILLET TO W-BEAM. STUD WALL B/W CHANNEL, RE: PLAN.
11. 1/4" CAP PL
12. SLIP CONNECTION, RE: 10/S054

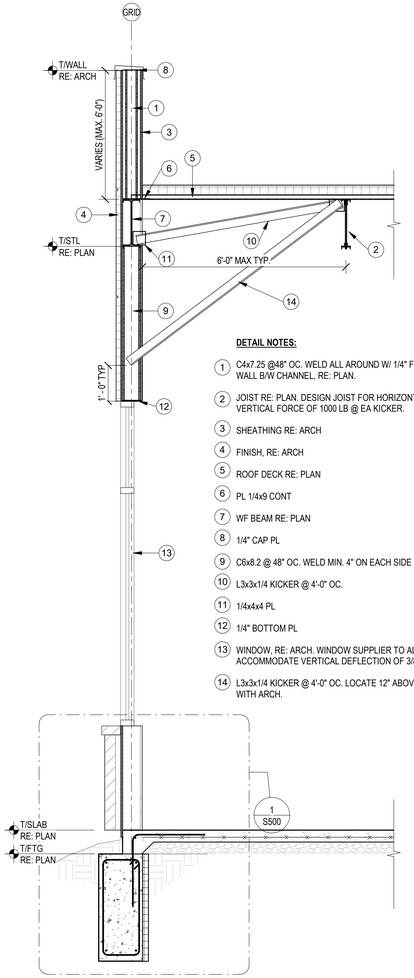
3 SECTION 3
1/2" = 1'-0"



DETAIL NOTES:

1. C4x7.25 @48" OC. WELD ALL AROUND W/ 1/4" FILLET TO W-BEAM. STUD WALL B/W CHANNEL, RE: PLAN.
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
3. SHEATHING RE: ARCH
4. FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. PL 1/4x9 CONT
7. WF BEAM RE: PLAN
8. 1/4" CAP PL
9. STUD WALL, RE: PLAN.
10. L3x3x1/4 KICKER @ 4'-0" OC
11. 1/4x4x4 PL
12. SLIP CONNECTION, RE: 10/S054

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



DETAIL NOTES:

1. C4x7.25 @48" OC. WELD ALL AROUND W/ 1/4" FILLET TO W-BEAM. STUD WALL B/W CHANNEL, RE: PLAN.
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
3. SHEATHING RE: ARCH
4. FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. PL 1/4x9 CONT
7. WF BEAM RE: PLAN
8. 1/4" CAP PL
9. C6x8.2 @ 48" OC. WELD MIN. 4" ON EACH SIDE W/1/4" FILLET
10. L3x3x1/4 KICKER @ 4'-0" OC.
11. 1/4x4x4 PL
12. 1/4" BOTTOM PL
13. WINDOW, RE: ARCH. WINDOW SUPPLIER TO ALLOW TOP TRACK TO ACCOMMODATE VERTICAL DEFLECTION OF 3/8" MIN.
14. L3x3x1/4 KICKER @ 4'-0" OC. LOCATE 12" ABOVE CEILING. COORDINATE WITH ARCH.

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

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A NEW BUILDING FOR:

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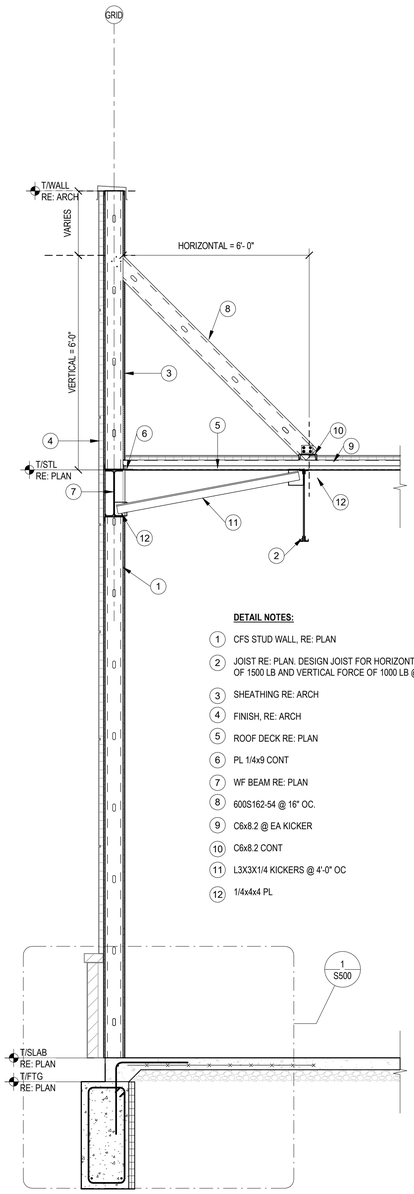
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
JOHN E. FUNK
NUMBER E-2000173299
REGISTERED PROFESSIONAL ENGINEER
01/28/25

PROJECT NO. 231206
01/28/2025

NO.	REVISION	DATE

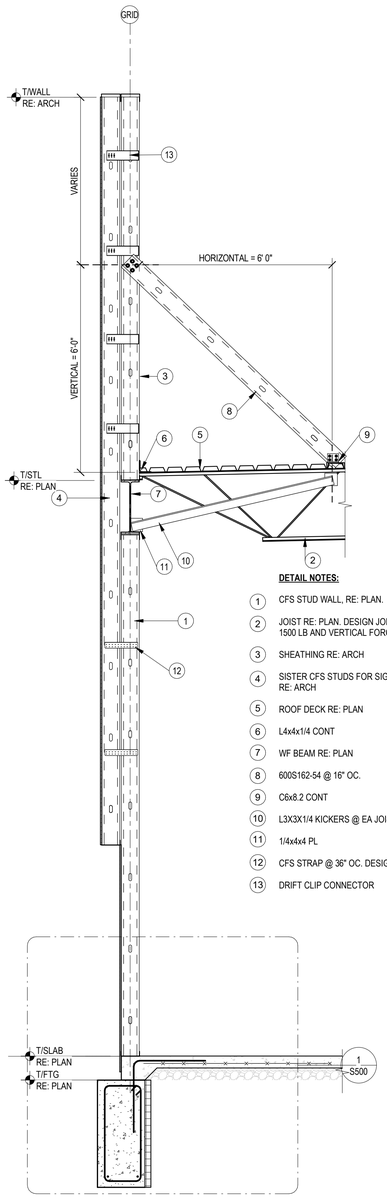
SHEET NUMBER
S501
ROOF FRAMING SECTIONS



DETAIL NOTES:

1. CFS STUD WALL, RE: PLAN
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
3. SHEATHING RE: ARCH
4. FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. PL 1/4x9 CONT
7. WF BEAM RE: PLAN
8. 600S162-54 @ 16" OC.
9. C6x8.2 @ EA KICKER
10. C6x8.2 CONT
11. L3X3X1/4 KICKERS @ 4'-0" OC
12. 1/4x4x4 PL

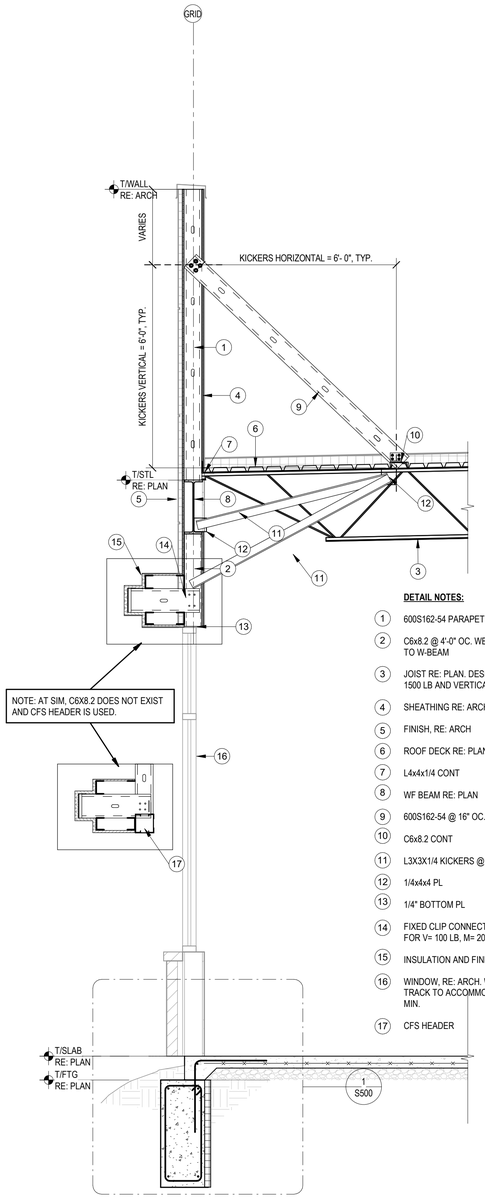
3 SECTION 6
1/2" = 1'-0"



DETAIL NOTES:

1. CFS STUD WALL, RE: PLAN.
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
3. SHEATHING RE: ARCH
4. SISTER CFS STUDS FOR SIGN FRAMING. EXTERNAL FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. L4x4x1/4 CONT
7. WF BEAM RE: PLAN
8. 600S162-54 @ 16" OC.
9. C6x8.2 CONT
10. L3X3X1/4 KICKERS @ EA JOIST
11. 1/4x4x4 PL
12. CFS STRAP @ 36" OC. DESIGN CONNECTION FOR V= 100 LB.
13. DRIFT CLIP CONNECTOR

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



DETAIL NOTES:

1. 600S162-54 PARAPET @ 16" OC.
2. C6x8.2 @ 4'-0" OC. WELD MIN. 4" ON EACH SIDE W/1/4" FILLET TO W-BEAM
3. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
4. SHEATHING RE: ARCH
5. FINISH, RE: ARCH
6. ROOF DECK RE: PLAN
7. L4x4x1/4 CONT
8. WF BEAM RE: PLAN
9. 600S162-54 @ 16" OC.
10. C6x8.2 CONT
11. L3X3X1/4 KICKERS @ EA JOIST
12. 1/4x4x4 PL
13. 1/4" BOTTOM PL
14. FIXED CLIP CONNECTOR AT EA STUD. DESIGN CONNECTION FOR V= 100 LB, M= 2000 LB-IN.
15. INSULATION AND FINISH, RE: ARCH
16. WINDOW, RE: ARCH. WINDOW SUPPLIER TO ALLOW TOP TRACK TO ACCOMMODATE VERTICAL DEFLECTION OF 3/8" MIN.
17. CFS HEADER

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

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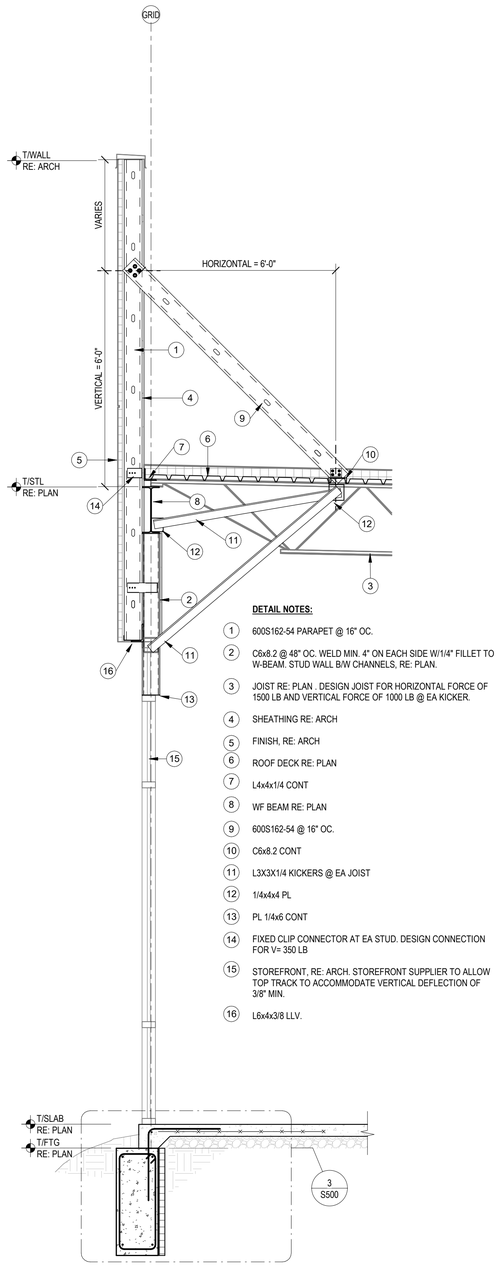
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
JOHN E. FUNK
NUMBER E-2000173299
REGISTERED PROFESSIONAL ENGINEER
01/28/25

PROJECT NO. 231206
01/28/2025

NO.	REVISION	DATE

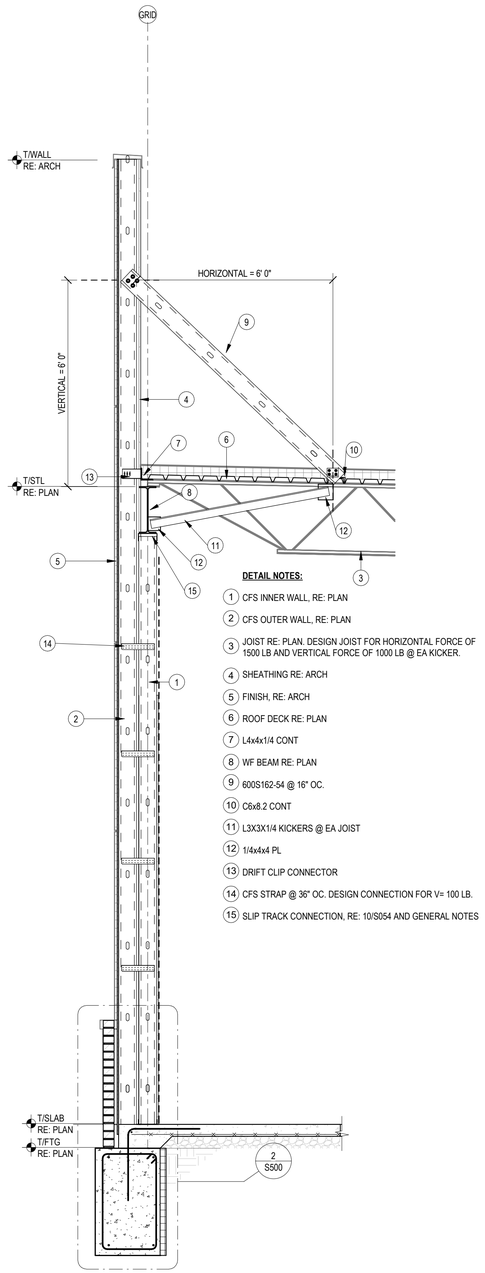
SHEET NUMBER
S502
ROOF FRAMING SECTIONS



DETAIL NOTES:

1. 600S162-54 PARAPET @ 16" OC.
2. C6x8.2 @ 48" OC. WELD MIN. 4" ON EACH SIDE W/1/4" FILLET TO W-BEAM. STUD WALL B/W CHANNELS. RE: PLAN.
3. JOIST RE: PLAN . DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
4. SHEATHING RE: ARCH
5. FINISH, RE: ARCH
6. ROOF DECK RE: PLAN
7. L4x4x1/4 CONT
8. WF BEAM RE: PLAN
9. 600S162-54 @ 16" OC.
10. C6x8.2 CONT
11. L3X3X1/4 KICKERS @ EA JOIST
12. 1/4x4x4 PL
13. PL 1/4x6 CONT
14. FIXED CLIP CONNECTOR AT EA STUD. DESIGN CONNECTION FOR V= 350 LB
15. STOREFRONT, RE: ARCH. STOREFRONT SUPPLIER TO ALLOW TOP TRACK TO ACCOMMODATE VERTICAL DEFLECTION OF 3/8" MIN.
16. L6x4x3/8 LLV.

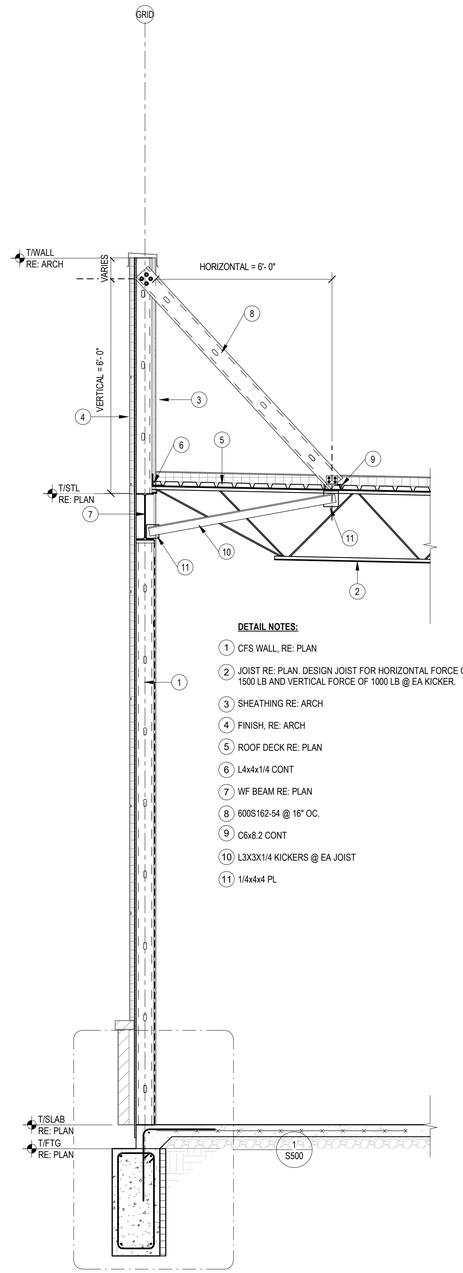
3 SECTION 9
1/2" = 1'-0"



DETAIL NOTES:

1. CFS INNER WALL, RE: PLAN
2. CFS OUTER WALL, RE: PLAN
3. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
4. SHEATHING RE: ARCH
5. FINISH, RE: ARCH
6. ROOF DECK RE: PLAN
7. L4x4x1/4 CONT
8. WF BEAM RE: PLAN
9. 600S162-54 @ 16" OC.
10. C6x8.2 CONT
11. L3X3X1/4 KICKERS @ EA JOIST
12. 1/4x4x4 PL
13. DRIFT CLIP CONNECTOR
14. CFS STRAP @ 36" OC. DESIGN CONNECTION FOR V= 100 LB.
15. SLIP TRACK CONNECTION, RE: 10/S054 AND GENERAL NOTES

2 SECTION 8
1/2" = 1'-0"



DETAIL NOTES:

1. CFS WALL, RE: PLAN
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
3. SHEATHING RE: ARCH
4. FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. L4x4x1/4 CONT
7. WF BEAM RE: PLAN
8. 600S162-54 @ 16" OC.
9. C6x8.2 CONT
10. L3X3X1/4 KICKERS @ EA JOIST
11. 1/4x4x4 PL

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

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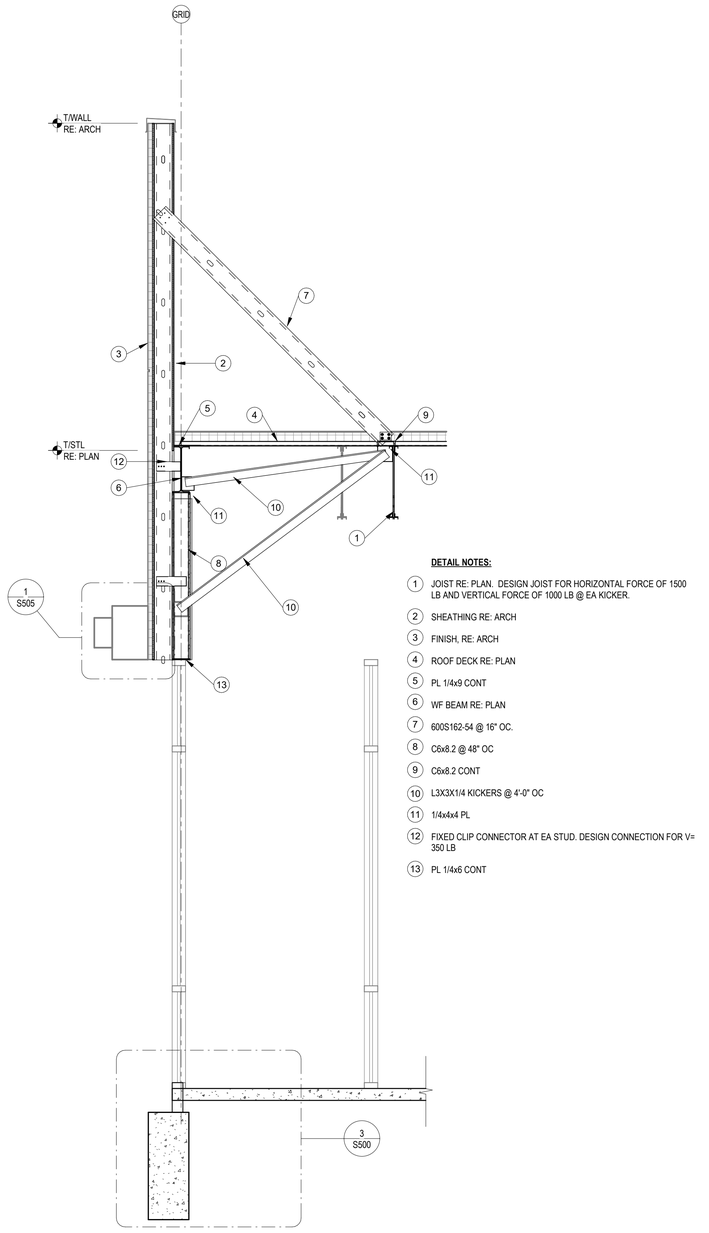
01/28/25

PROJECT NO. 231206
01/28/2025

NO.	REVISION	DATE

SHEET NUMBER
S503
ROOF FRAMING SECTIONS

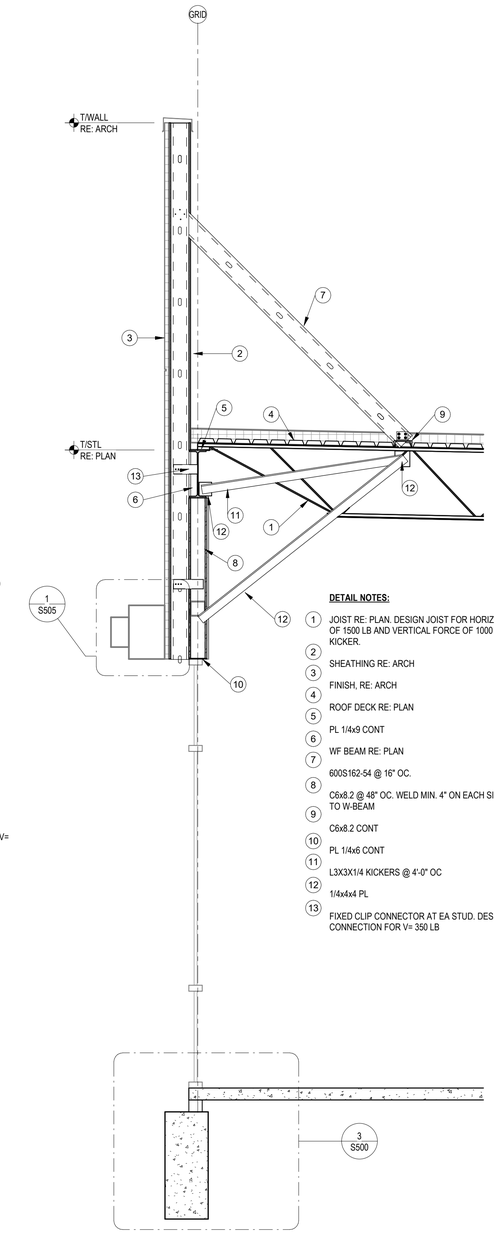


DETAIL NOTES:

1. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
2. SHEATHING RE: ARCH
3. FINISH, RE: ARCH
4. ROOF DECK RE: PLAN
5. PL 1/4x9 CONT
6. WF BEAM RE: PLAN
7. 600S162-54 @ 16" OC.
8. C6x8.2 @ 48" OC
9. C6x8.2 CONT
10. L3X3X1/4 KICKERS @ 4'-0" OC
11. 1/4x4x4 PL
12. FIXED CLIP CONNECTOR AT EA STUD. DESIGN CONNECTION FOR V= 350 LB
13. PL 1/4x6 CONT

3 SECTION 12

1/2" = 1'-0"

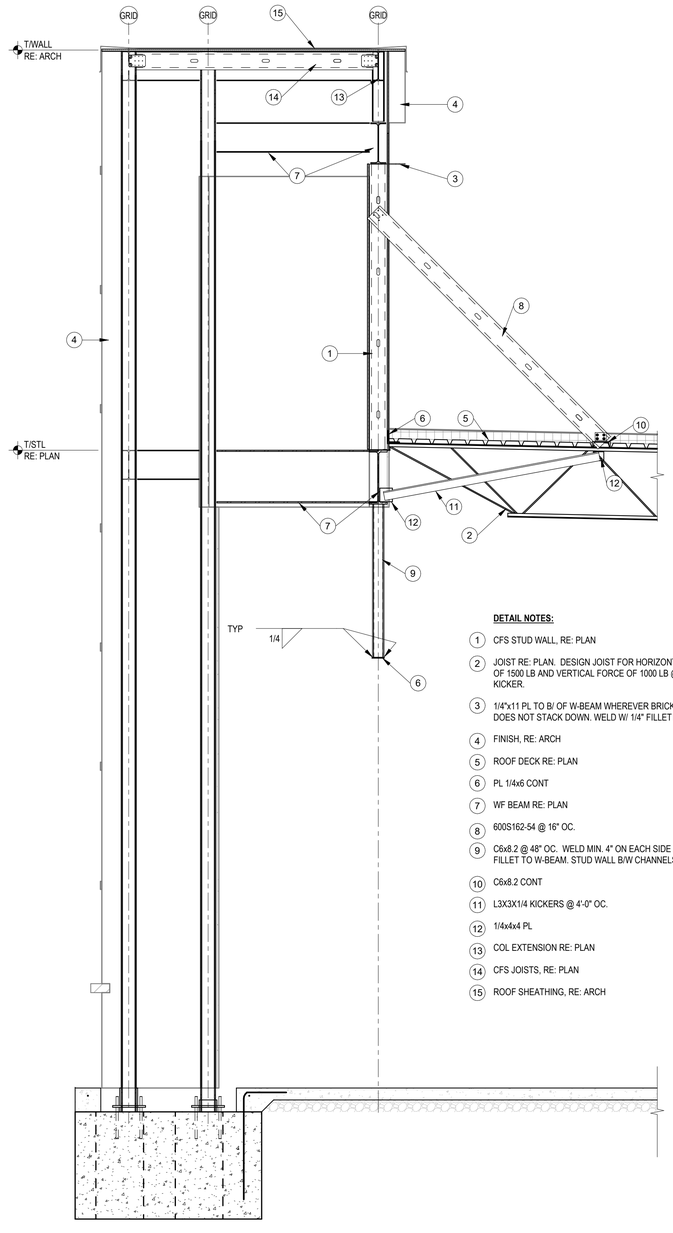


DETAIL NOTES:

1. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
2. SHEATHING RE: ARCH
3. FINISH, RE: ARCH
4. ROOF DECK RE: PLAN
5. PL 1/4x9 CONT
6. WF BEAM RE: PLAN
7. 600S162-54 @ 16" OC.
8. C6x8.2 @ 48" OC. WELD MIN. 4" ON EACH SIDE W/1/4" FILLET TO W-BEAM
9. C6x8.2 CONT
10. PL 1/4x6 CONT
11. L3X3X1/4 KICKERS @ 4'-0" OC
12. 1/4x4x4 PL
13. FIXED CLIP CONNECTOR AT EA STUD. DESIGN CONNECTION FOR V= 350 LB

2 SECTION 11

1/2" = 1'-0"



DETAIL NOTES:

1. CFS STUD WALL, RE: PLAN
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB @ EA KICKER.
3. 1/4"x11 PL TO B/ OF W-BEAM WHEREVER BRICK WALL DOES NOT STACK DOWN. WELD W/ 1/4" FILLET EA SIDE.
4. FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. PL 1/4x6 CONT
7. WF BEAM RE: PLAN
8. 600S162-54 @ 16" OC.
9. C6x8.2 @ 48" OC. WELD MIN. 4" ON EACH SIDE W/1/4" FILLET TO W-BEAM. STUD WALL B/W CHANNELS @ 16" OC
10. C6x8.2 CONT
11. L3X3X1/4 KICKERS @ 4'-0" OC.
12. 1/4x4x4 PL
13. COL EXTENSION RE: PLAN
14. CFS JOISTS, RE: PLAN
15. ROOF SHEATHING, RE: ARCH

1 SECTION 10

1/2" = 1'-0"

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01/28/25

PROJECT NO. 231206

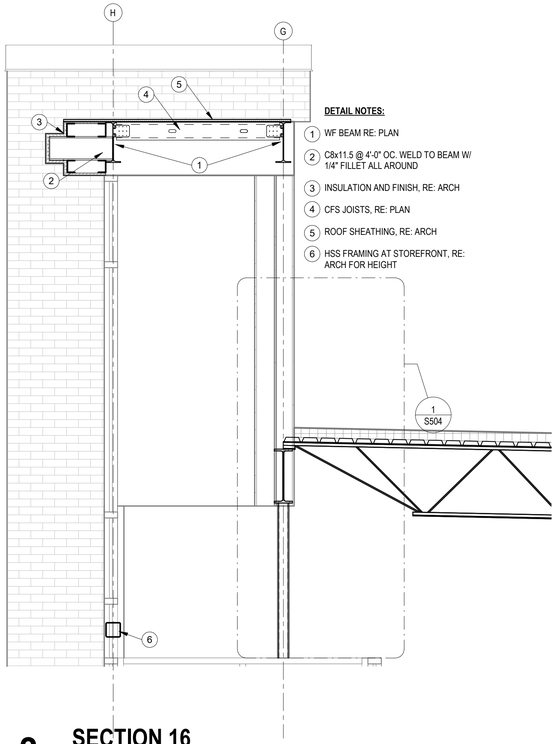
01/28/2025

NO.	REVISION	DATE

SHEET NUMBER

S504

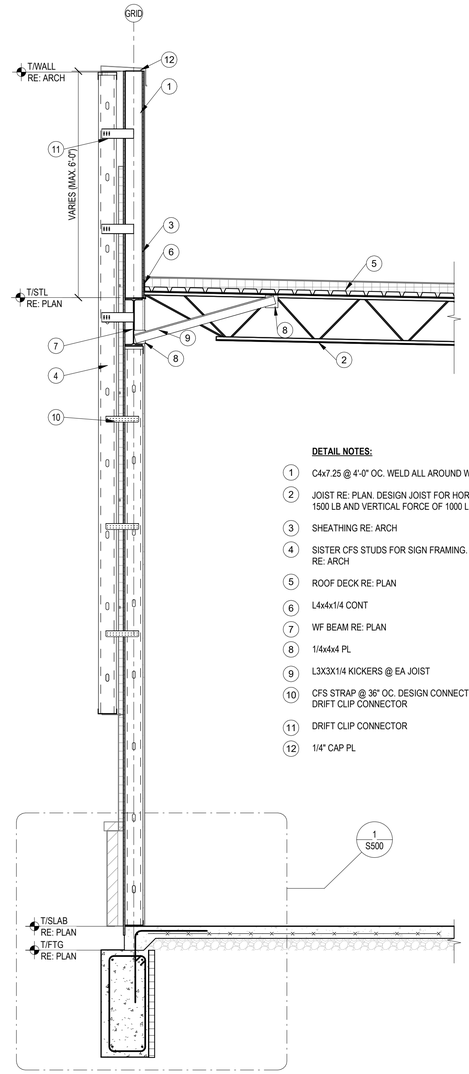
ROOF FRAMING SECTIONS



DETAIL NOTES:

1. WF BEAM RE: PLAN
2. C8x11.5 @ 4'-0" OC. WELD TO BEAM W/ 1/4" FILLET ALL AROUND
3. INSULATION AND FINISH, RE: ARCH
4. CFS JOISTS, RE: PLAN
5. ROOF SHEATHING, RE: ARCH
6. HSS FRAMING AT STOREFRONT, RE: ARCH FOR HEIGHT

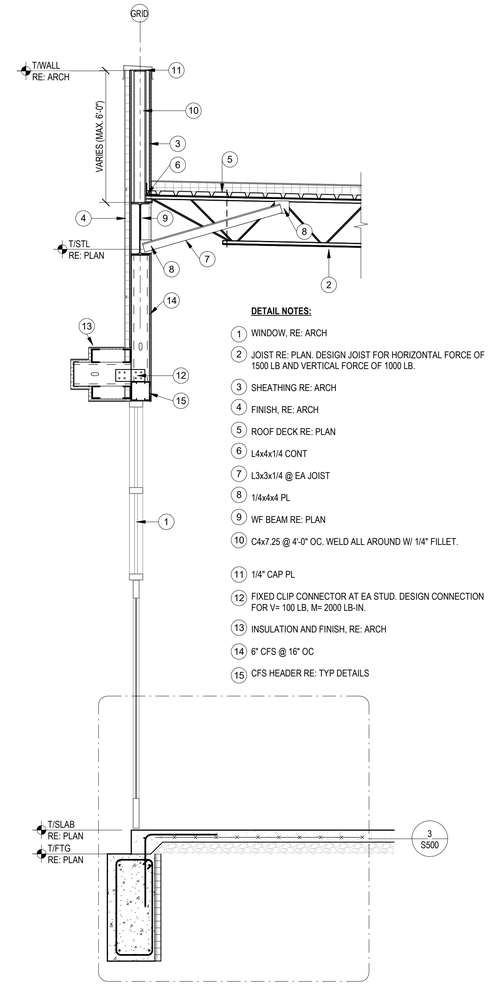
3 SECTION 16
1/2" = 1'-0"



DETAIL NOTES:

1. C4x7.25 @ 4'-0" OC. WELD ALL AROUND W/ 1/4" FILLET.
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB.
3. SHEATHING RE: ARCH
4. SISTER CFS STUDS FOR SIGN FRAMING. EXTERNAL FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. L4x4x1/4 CONT
7. WF BEAM RE: PLAN
8. 1/4x4x4 PL
9. L3X3X1/4 KICKERS @ EA JOIST
10. CFS STRAP @ 36" OC. DESIGN CONNECTION FOR V= 100 LB DRIFT CLIP CONNECTOR
11. DRIFT CLIP CONNECTOR
12. 1/4" CAP PL

2 SECTION 14
1/2" = 1'-0"



DETAIL NOTES:

1. WINDOW, RE: ARCH
2. JOIST RE: PLAN. DESIGN JOIST FOR HORIZONTAL FORCE OF 1500 LB AND VERTICAL FORCE OF 1000 LB.
3. SHEATHING RE: ARCH
4. FINISH, RE: ARCH
5. ROOF DECK RE: PLAN
6. L4x4x1/4 CONT
7. L3x3x1/4 @ EA JOIST
8. 1/4x4x4 PL
9. WF BEAM RE: PLAN
10. C4x7.25 @ 4'-0" OC. WELD ALL AROUND W/ 1/4" FILLET.
11. 1/4" CAP PL
12. FIXED CLIP CONNECTOR AT EA STUD. DESIGN CONNECTION FOR V= 100 LB, M= 2000 LB-IN.
13. INSULATION AND FINISH, RE: ARCH
14. 6" CFS @ 16" OC
15. CFS HEADER RE: TYP DETAILS

1 SECTION 13
1/2" = 1'-0"

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I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
JOHN E. FUNK
NUMBER E-2000173299
REGISTERED PROFESSIONAL ENGINEER

01/28/25

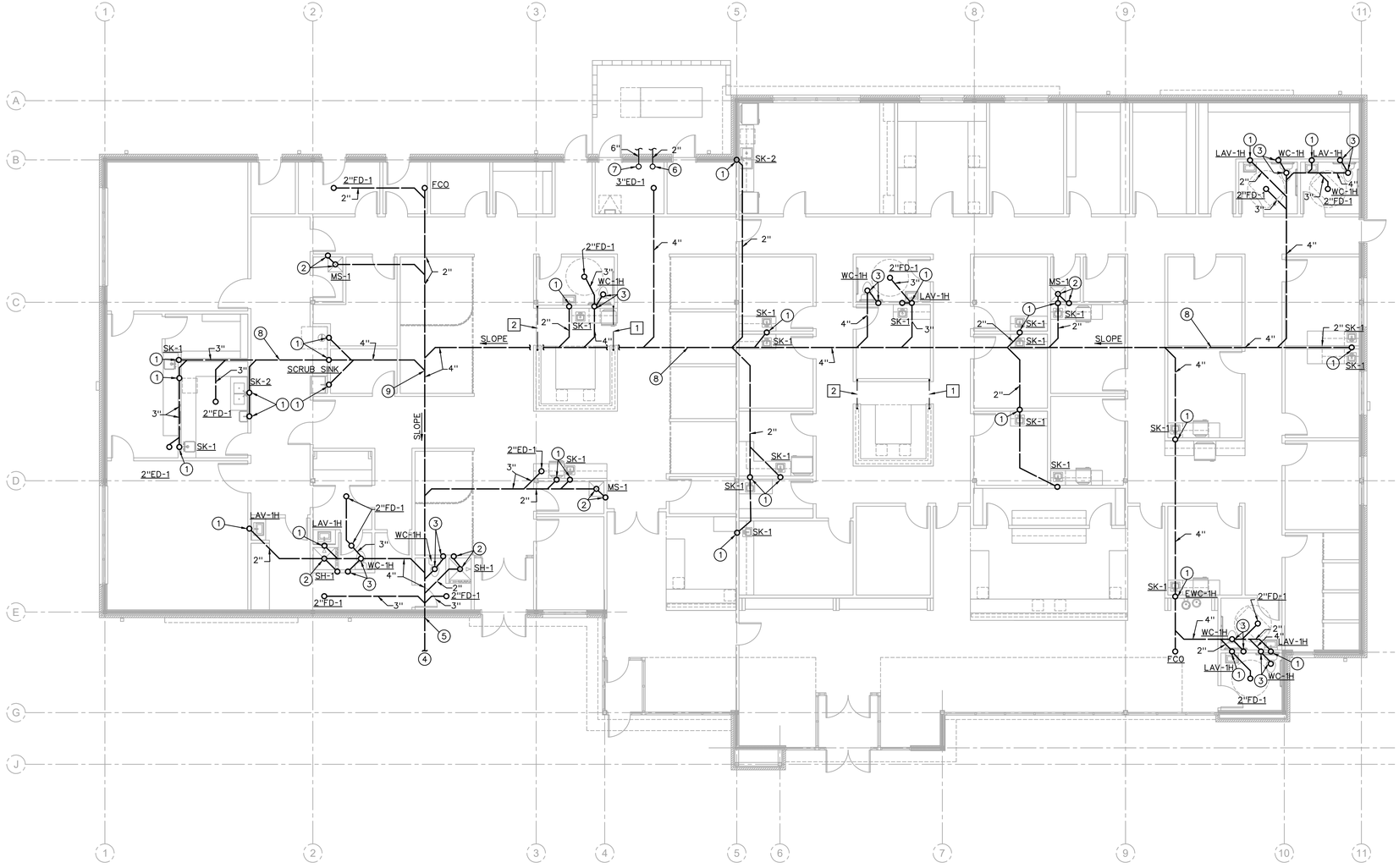
PROJECT NO. 231206
01/28/2025

NO.	REVISION	DATE

SHEET NUMBER

S505

ROOF FRAMING SECTIONS



PLUMBING/ELECTRICAL UNDERFLOOR PLAN

1/8" = 1'-0"

NORTH

PLUMBING PLAN NOTES (#)

1. 2"W UP TO FUTURE SINK, LAVATORY OR EQUIPMENT.
2. 2"W UP TO FUTURE MOP SINK OR SHOWER, 2"V OVER AND TURN UP INTO FUTURE WALL.
3. 4"S UP TO FUTURE WATER CLOSET, 2"V OVER AND TURN UP INTO FUTURE WALL.
4. SEE SITE UTILITIES PLAN FOR CONTINUATION. COORDINATE WITH CIVIL DRAWINGS
5. MINIMUM INVERT ELEVATION -42.125".
6. EXTEND 2" CW UP THROUGH FLOOR AND INSTALL BALL VALVE AND CAPPED CW SERVICE (FOR FUTURE EXTENSION).
7. EXTEND 6" FIRE SUPPRESSOR SERVICE UP THROUGH FLOOR AND INSTALL APPROVED GATE VALVE WITH BLIND FLANGE (FOR FUTURE EXTENSION).
8. SLOPE SANITARY AND WASTE PIPING A MINIMUM OF 1/8"/FT. (3" AND LARGER) AND 1/4"/FT (2 1/2" AND SMALLER).
9. SLOPE FROM THIS POINT TO THE EXTERIOR WALL SHALL BE A MINIMUM OF 1/4"/FT.

ELECTRICAL PLAN NOTES (#)

1. 1" CONDUIT INSTALLED BELOW GRADE FOR DATA CABLES AT NURSES STATION. STUB CONDUIT UP 6" AT BOTH ENDS, INSTALL PULL-STRING AND CAP AT BOTH ENDS FOR FUTURE USE.
2. 1" CONDUIT INSTALLED BELOW GRADE FOR WIRING OF RECEPTACLES AT NURSES STATION. STUB CONDUIT UP 6" AT BOTH ENDS, INSTALL PULL-STRING AND CAP AT BOTH ENDS FOR FUTURE USE.

DEV INC

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A NEW BUILDING FOR:

ASSOCIATED PLASTIC SURGEONS

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
GREGORY P. GLADFELTER
NUMBER E-2000150421
REGISTERED PROFESSIONAL ENGINEER

02/03/2025

PROJECT NO. 231206

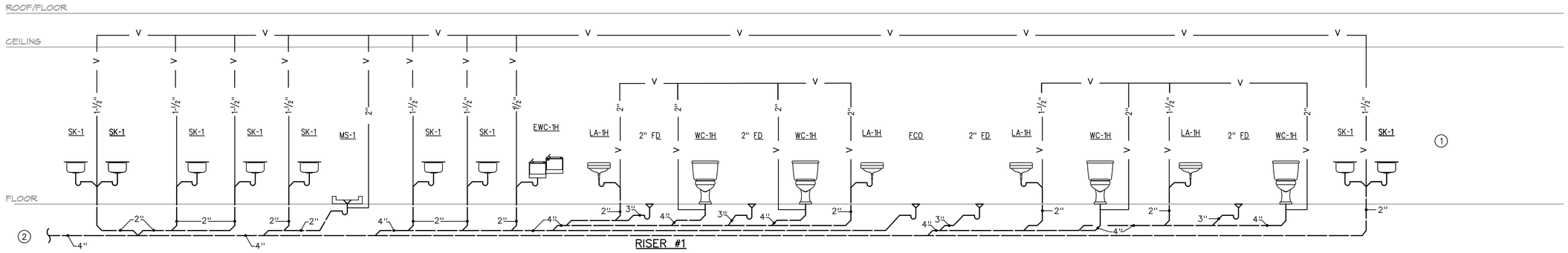
DRAWING ISSUANCE

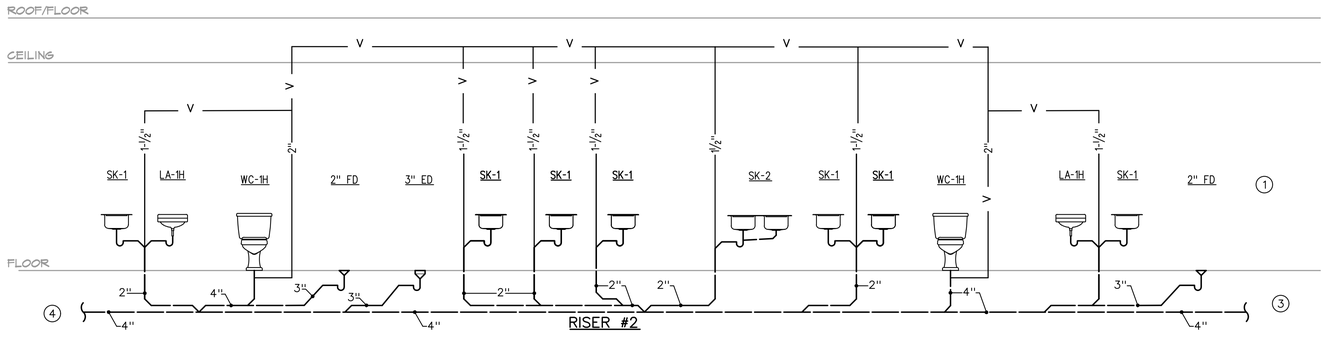
09/27/2024	BUILDING SHELL PERMIT
02/03/2025	BUILDING SHELL PERMIT

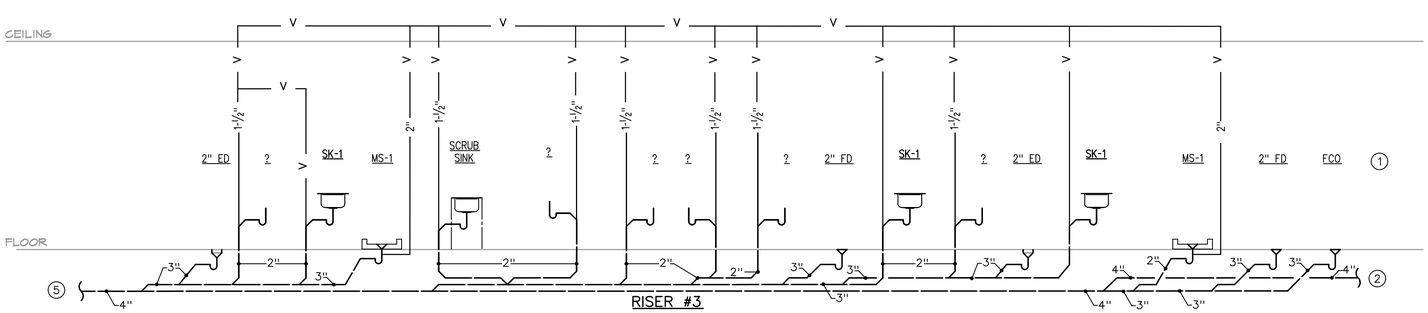
SHEET NUMBER

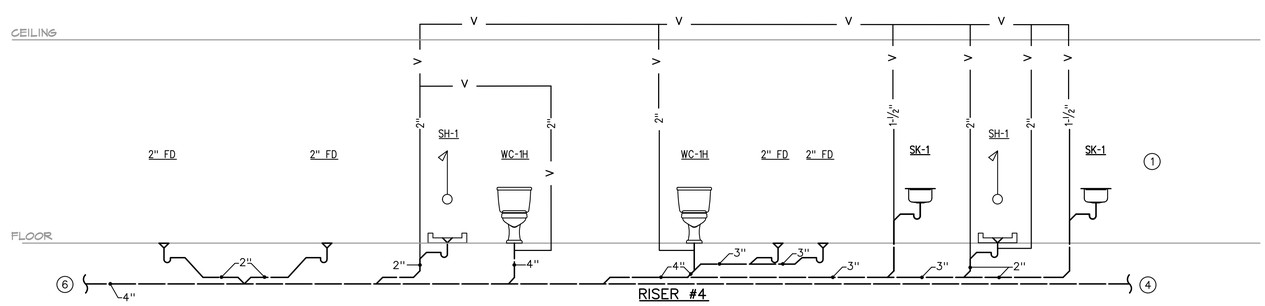
PE200S

FLOOR PLAN









RISER DIAGRAM NOTES:

1. PIPING INSTALLED DURING SHELL CONSTRUCTION SHALL BE LIMITED TO PIPING BELOW THE FLOOR.
2. SEE RISER #2 FOR CONTINUATION.
3. SEE RISER #1 FOR CONTINUATION.
4. SEE RISER #3 FOR CONTINUATION.
5. SEE RISER #4 FOR CONTINUATION.
6. SEE "PLUMBING/ELECTRICAL UNDER FLOOR PLAN", SHEET PE 200S, FOR CONTINUATION.

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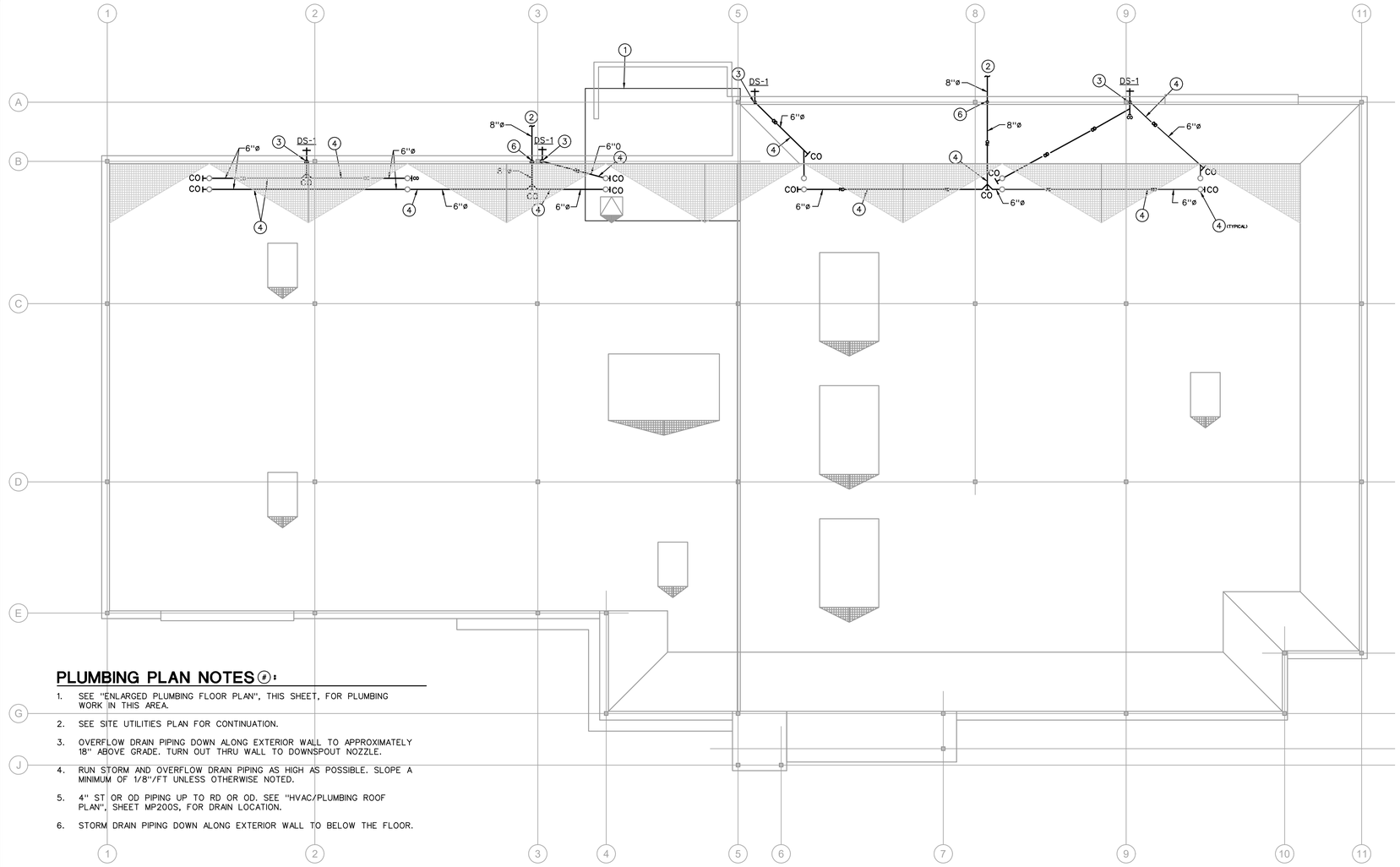
PE300S

FLOOR PLAN



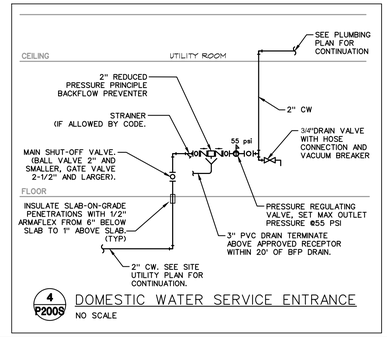
PLUMBING PLAN NOTES #:

1. SEE "ENLARGED PLUMBING FLOOR PLAN", THIS SHEET, FOR PLUMBING WORK IN THIS AREA.
2. SEE SITE UTILITIES PLAN FOR CONTINUATION.
3. OVERFLOW DRAIN PIPING DOWN ALONG EXTERIOR WALL TO APPROXIMATELY 18" ABOVE GRADE. TURN OUT THRU WALL TO DOWNSPOUT NOZZLE.
4. RUN STORM AND OVERFLOW DRAIN PIPING AS HIGH AS POSSIBLE. SLOPE A MINIMUM OF 1/8"/FT UNLESS OTHERWISE NOTED.
5. 4" ST OR OD PIPING UP TO RD OR OD. SEE "HVAC/PLUMBING ROOF PLAN", SHEET MP200S, FOR DRAIN LOCATION.
6. STORM DRAIN PIPING DOWN ALONG EXTERIOR WALL TO BELOW THE FLOOR.

ABOVE PLUMBING FLOOR PLAN

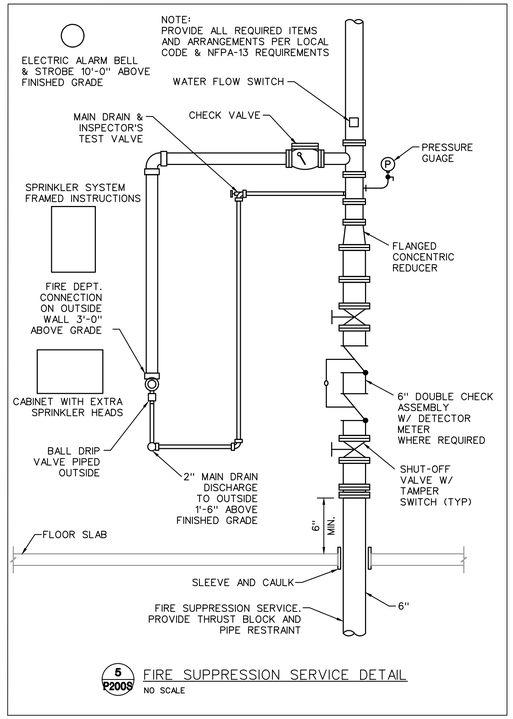
1/8" = 1'-0"

NORTH



4 P200S DOMESTIC WATER SERVICE ENTRANCE

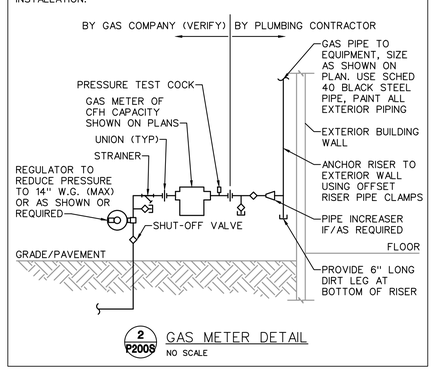
NO SCALE



5 P200S FIRE SUPPRESSION SERVICE DETAIL

NO SCALE

NOTE:
VERIFY & CONFORM TO REQUIREMENTS FOR METERING AND PIPING WITH GAS COMPANY. INSTALL OTHER UTILITIES MINIMUM TEN FEET FROM GAS LINE. PLUMBING CONTRACTOR SHALL PAY ALL GAS COMPANY FEES FOR INSTALLATION.

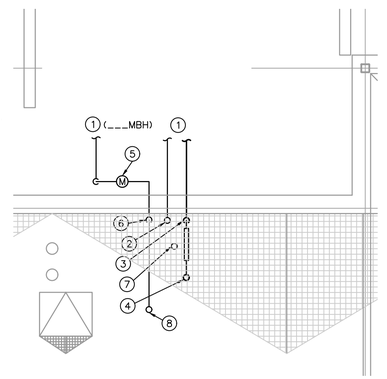


2 P200S GAS METER DETAIL

NO SCALE

ENLARGED PLUMBING PLAN NOTES #:

1. SEE SITE UTILITIES PLAN FOR CONTINUATION.
2. 6" FIRE SUPPRESSION SERVICE (EXTENDED BY THE FIRE SUPPRESSION CONTRACTOR). SEE "FIRE SUPPRESSION SERVICE DETAIL", THIS SHEET.
3. 2" CW FROM BELOW CONTINUING THRU BACKFLOW PREVENTER AND PRV. SEE "DOMESTIC CW SERVICE DETAIL", THIS SHEET, FOR CONFIGURATION OF DOMESTIC WATER PIPING.
4. CAP PIPING FOR FUTURE EXTENSION.
5. NATURAL GAS METER. SEE "NATURAL GAS METER DETAIL", THIS SHEET, FOR CONFIGURATION OF NATURAL GAS PIPING.
6. 2-1/2" NATURAL GAS PIPING UP ALONG WALL TO STRUCTURAL SPACE.
7. 3" ED-1. COORDINATE LOCATION WITH BACKFLOW PREVENTER.
8. 2-1/2" NG UP THRU ROOF.



ENLARGED PLUMBING FLOOR PLAN

1/4" = 1'-0"

NORTH

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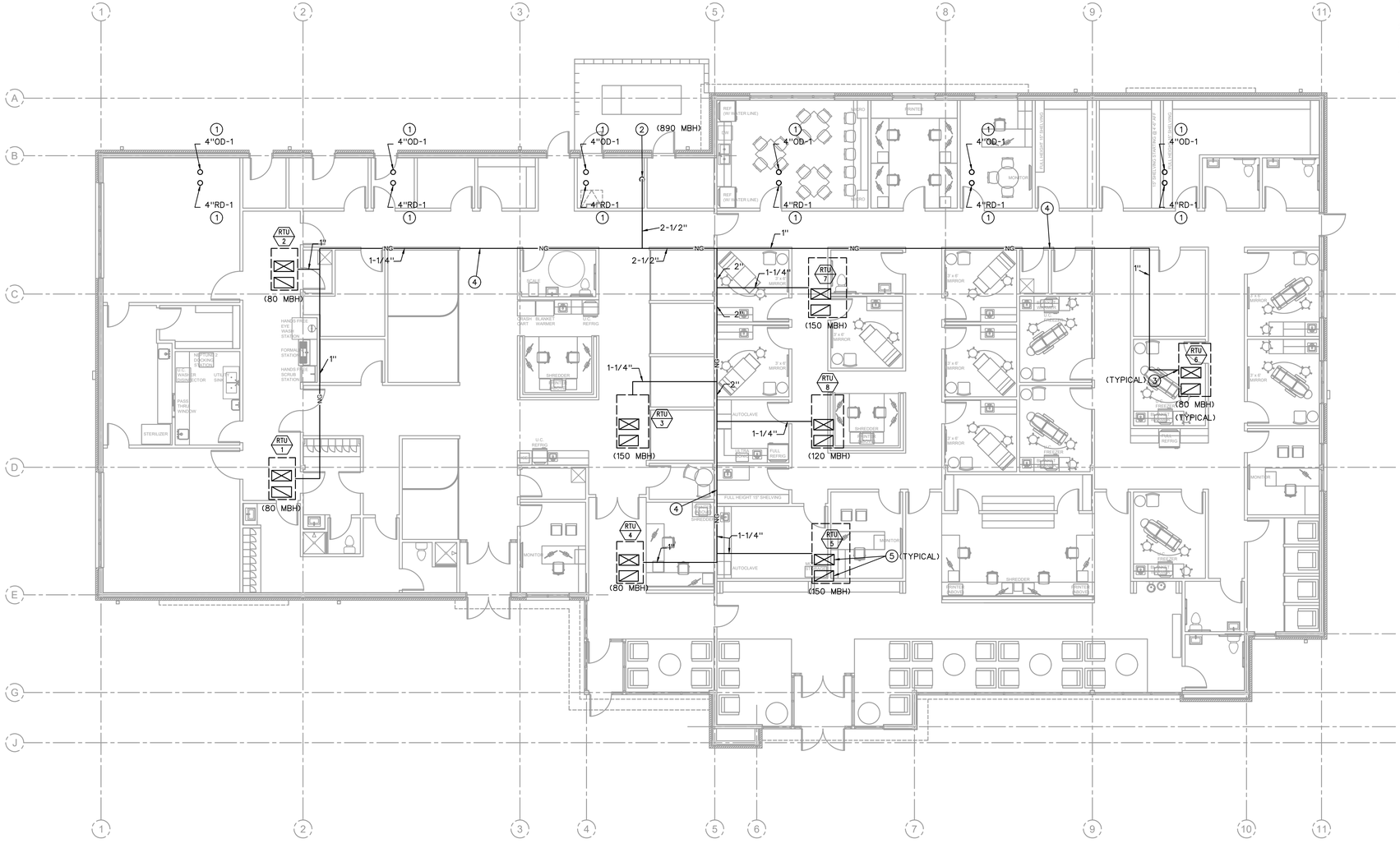
SHEET NUMBER

P200S

FLOOR PLAN

HVAC/PLUMBING PLAN NOTES (P):

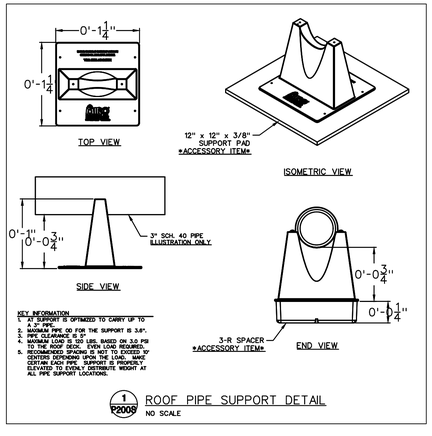
1. SEE "PLUMBING ABOVE FLOOR PLAN", SHEET P200S, FOR DRAIN PIPING TO RD OR OD.
2. 2-1/2" NG FROM BELOW.
3. SEE "GAS EQUIPMENT CONNECTION DETAIL", THIS SHEET, FOR PIPING CONNECTION AT RTU.
4. NG PIPING RUNNING ACROSS ROOF. SEE "ROOF PIPE SUPPORT DETAIL", THIS SHEET.
5. SA AND RA DOWN THROUGH ROOF. COORDINATE RTU LOCATION WITH STRUCTURAL ENGINEER.



HVAC/PLUMBING ROOF PLAN

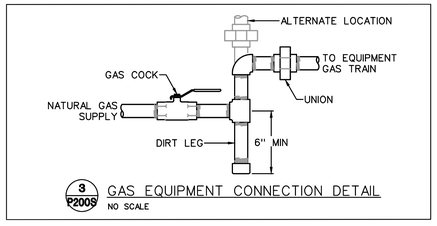
1/8" = 1'-0"

NORTH



1 P200S ROOF PIPE SUPPORT DETAIL

NO SCALE



3 P200S GAS EQUIPMENT CONNECTION DETAIL

NO SCALE

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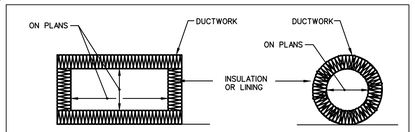
FLOOR PLAN



DUCT INSULATION SCHEDULE							NOTES
	INTERNAL INSULATION			EXTERNAL INSULATION			
	1/2"	1"	OTHER	1"	2"	OTHER	
LOW VELOCITY DUCTS:							
RETURN DUCTS		o					1
SUPPLY DUCTS (RECT.)		o					
SUPPLY DUCTS (ROUND)					o		3,4
EXHAUST DUCTS	o			o			2
OUTSIDE AIR DUCTS				o			
RELIEF DUCTS	o						1
MEDIUM/HIGH VELOCITY DUCTS:							
ROUND SUPPLY				o			
FLAT OVAL SUPPLY				o			

NOTES:

1. INSULATION SHALL BE INSTALLED WHEN INDICATED OTHERWISE IN THE CONSTRUCTION DOCUMENTS. OTHERWISE, NO INSULATION IS REQUIRED.
2. INSULATION IS REQUIRED WITHIN 6'-0" OF TERMINATION POINT OF EXHAUST AIR. RECTANGULAR DUCTS SHALL BE LINED, ROUND DUCTS SHALL BE WRAPPED.
3. CONCEALED ROUND SUPPLY AIR DUCTS AND ROUND SUPPLY AIR DUCTS IN UNCONDITIONED SPACES SHALL BE INSULATED AS INDICATED AND SHALL INCLUDE A VAPOR BARRIER TO PREVENT CONDENSATION FROM FORMING ON COLD METAL SURFACES. NO INSULATION IS REQUIRED FOR ROUND SUPPLY AIR DUCT EXPOSED IN CONDITIONED SPACES UNLESS INDICATED OTHERWISE.
4. AT CONTRACTORS OPTION, GALVANIZED STEEL ROUND DOUBLE WALL DUCT MAY BE USED WHERE ROUND SUPPLY AIR DUCTS ARE REQUIRED TO BE INSULATED. DOUBLE WALL DUCT SHALL BE LINX LINDLAB SPIRO-SAFE SPIRAL LOCKSEAM DUCTWORK. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
5. AT CONTRACTOR'S OPTION, ROUND DUCT LINER MAY BE USED WHERE ROUND SUPPLY AIR DUCTS ARE REQUIRED TO BE INSULATED. DUCT LINER SHALL BE JOHNS MANVILLE SPIRACOUSTIC PLUS, OR APPROVED EQUAL, 1.5" THICK (R6.4). SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

5 / MP3.1 INSULATED OR LINED DUCT DETAIL
NO SCALE

PLUMBING SPECIFICATION

1. INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL PLUMBING CODE, NFPA 90A AND 101 AND ALL STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS.
2. ALL WATER BEARING PIPING SHALL BE SLOPED FOR DRAINAGE WITH BALL DRAIN VALVES AT LOW POINTS.
3. DRAINAGE PIPING SHALL BE SLOPED IN ACCORDANCE WITH CODE, BUT NOT LESS THAN 1/8" PER FOOT FOR 3" AND LARGER PIPING AND 1/4" PER FOOT FOR 2-1/2" AND SMALLER PIPING. ALL INVERT ELEVATIONS SHALL BE COORDINATED WITH THE STRUCTURAL FOOTINGS.
4. PROVIDE DIELECTRIC UNIONS AT ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
5. CAULK AND SEAL ALL DUCT AND PIPING PENETRATIONS OF EXTERIOR OR DEMISING WALLS.
6. ABOVE GROUND WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT CEMENT JOINTS, EXCEPT USE STANDARD WEIGHT NO-HUB CAST IRON IN AIR PLENUMS. VENT PIPING MAY BE SCHEDULE 40 GALVANIZED STEEL WITH SCREWED JOINTS. PAINT ALL EXTERIOR PIPING WITH UV RESISTANT PAINT.
7. ABOVE GROUND WATER PIPING SHALL BE COPPER.
8. SERVICE VALVES FOR WATER PIPING SYSTEMS UP THRU 2" SHALL BE 1/4 TURN, 150 LB. BALL VALVE WITH BRONZE CHROME PLATED BALL AND TFE SEATS, NIBCO S-585-70.
9. COPPER DOMESTIC WATER PIPING SHALL BE INSULATED WITH 1" FIBERGLASS WITH ALL SERVICE JACKET OR COMPARABLE UNICELLULAR INSULATION WITH SMOKE/FLAME RATING OF 25/50. WHEN INSTALLED WITHIN A CHASE ALONG AN EXTERIOR WALL, THE INSULATION SHALL BE 1-1/2" FIBERGLASS AND THE PIPING SHALL BE LOCATED ON THE INTERIOR SIDE OF THE BUILDING WALL INSULATION.
10. NATURAL GAS PIPING (ABOVE GROUND) SHALL BE SCHEDULE 40 BLACK STEEL WITH THREADED JOINTS. CONNECT USING JOINT COMPOUND SUITABLE FOR NATURAL GAS PIPING. ALL EXPOSED BLACK STEEL NATURAL GAS PIPING SHALL BE PROTECTED WITH A RUST INHIBITING COATING IN ACCORDANCE WITH THE PLUMBING CODE.
11. SERVICE VALVES FOR WATER PIPING SYSTEMS UP THRU 2" SHALL BE 1/4 TURN, 150 LB. BALL VALVE WITH BRONZE CHROME PLATED BALL AND TFE SEATS, NIBCO S-585-70.
12. GAS SERVICE VALVES TO BE LUBRICATED PLUG COCKS, ROCKWELL 142 OR 143. CONNECTIONS TO EQUIPMENT SHALL HAVE SERVICE VALVES, 6" MINIMUM DIRT LEG AND UNION OR AT CONTRACTOR OPTION, UL LISTED APPLIANCE FLEXIBLE CONNECTORS MAY BE USED.
13. PROVIDE PLUMBING DRAINAGE FIXTURES AS SCHEDULED OR SELECTED BY OWNER WITH ALL REQUIRED TRIM AND ACCESSORIES FOR A COMPLETE WORKING AND CODE COMPLIANT INSTALLATION. REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATION OF THE DRAINAGE FIXTURES.
14. TEST AND CLEAN PIPING SYSTEMS PER INDUSTRY STANDARDS. PRESSURE TEST OF PRESSURE PIPING SHALL BE AT 1-1/2 TIMES THE ANTICIPATED OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR 2 HOURS. NON-PRESSURIZED SYSTEMS SHALL BE TESTED WITH 10' WATER COLUMN ABOVE NORMAL OPERATING CONDITIONS OR 5 PSI FOR 2 HOURS. THERE SHALL BE NO MEASURABLE DROP DURING THE TEST PERIOD.

MECHANICAL SPECIFICATION

1. INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL MECHANICAL AND FUEL GAS CODES, NFPA 90A AND 101 AND ALL STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS.
2. COORDINATE EXACT LOCATIONS AND ORIENTATION OF EQUIPMENT WITH ARCHITECTURAL AND STRUCTURAL REQUIREMENTS. EQUIPMENT SHALL BE SCREENED IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS AND AS SHOWN ON ARCHITECTURAL DRAWINGS.
3. DUCTWORK FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS.
4. ALL DUCTWORK SHALL BE SHEET METAL, CONSTRUCTED TO SMACNA STANDARDS, MINIMUM OF 2" WG PRESSURE CLASS AND SEAL CLASS 'C' MINIMUM. ALL LONGITUDINAL AND TRANSVERSE JOINTS TO BE SEALED, EXCEPT AS OTHERWISE NOTED. ROUND AND FLEX DUCT CONNECTIONS SHALL BE MADE WITH SPIN COLLARS WITH EXTRACTORS AND VOLUME DAMPERS.
5. RECTANGULAR DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR SHALL INCLUDE AN ALLOWANCE FOR 1" DUCT LINER IN LOW VELOCITY DUCTS WHERE APPLICABLE. CONCEALED ROUND DUCTS SHALL BE INSULATED WITH 2" DUCT WRAP. EXPOSED ROUND DUCTS DO NOT NEED TO BE INSULATED.
6. PROVIDE FLEXIBLE FABRIC CONNECTORS AT ALL DUCTWORK CONNECTIONS TO ROTATING EQUIPMENT. CONNECTORS EXPOSED TO SUNLIGHT SHALL BE MADE OF UV RESISTANT MATERIAL.
7. TRAP ALL CHILLED CONDENSATE DRAINS AS DETAILED OR AS REQUIRED. PROVIDE A TRAP DEPTH 1" GREATER THAT SYSTEM FAN DEVELOPED STATIC PRESSURE. INSURE AND CERTIFY THAT CONDENSATE DRAINS ARE POSITIVELY SLOPED AT 1"/20' MINIMUM IN DIRECTION OF FLOW.
8. ALL ROOF MOUNTING, FLASHINGS AND PENETRATION WORK ASSOCIATED WITH MECHANICAL AND PLUMBING WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE ROOFING MANUFACTURER'S WARRANTY REQUIREMENTS.
9. TEST AND CLEAN PIPING SYSTEMS PER INDUSTRY STANDARDS. PRESSURE TEST OF PRESSURE PIPING SHALL BE AT 1-1/2 TIMES THE ANTICIPATED OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR 2 HOURS. NON-PRESSURIZED SYSTEMS SHALL BE TESTED WITH 10' WATER COLUMN ABOVE NORMAL OPERATING CONDITIONS OR 5 PSI FOR 2 HOURS. THERE SHALL BE NO MEASURABLE DROP DURING THE TEST PERIOD.
10. TEST AND BALANCE ALL SYSTEMS.

PLUMBING DRAINAGE FIXTURE SCHEDULE

A. INSTALL PLUMBING FIXTURES AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. VERIFY ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S DRAWINGS AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE WATER-CONSERVING FIXTURES AND APPURTENANCES IF/AS REQUIRED BY LOCAL AUTHORITIES. CONFIRM ALL LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS AND/OR SPECIFICATIONS. CAULK FIXTURES TO WALLS/FLOORS. SET COUNTER MOUNTED SINKS AND LAVATORIES IN A BED OF CAULK. THE SPECIFIED PLUMBING FIXTURES, OR APPROVED EQUALS, SHALL BE USED UNLESS OTHERWISE NOTED OR INDICATED.

B. ROOF DRAINS (RD-1) WADE #3000-32CAST IRON ROOF DRAIN WITH FLANGE, FLASHING RING WITH GRAVEL STOP AND POLY LOCKING DOME STRAINER. J.R. SMITH FIGURE 1010_YE OR 1010_E (OR APPROVED EQUAL) WITH UNDERDECK CLAMP (WHERE REQUIRED), SUMP RECEIVER, EXTENSION SLEEVE (FOR INSULATED ROOFS), SECONDARY FLASHING DEVICE (IF REQUIRED) AND 16" DIAMETER ROUND TOP.

C. OVERFLOW ROOF DRAINS (OD-1) WADE #3000-32-D CAST IRON ROOF DRAIN WITH FLANGE FLASHING RING WITH GRAVEL STOP, 2" HIGH DAM AND POLY LOCKING DOME STRAINER. J.R. SMITH FIGURE 1080_YE OR 1080_E (OR APPROVED EQUAL), WITH UNDERDECK CLAMP (WHERE REQUIRED), SUMP RECEIVER, EXTENSION SLEEVE (FOR INSULATED ROOFS), SECONDARY FLASHING DEVICE (IF REQUIRED) AND 16" DIAMETER ROUND TOP.

D. DOWNSPOUT NOZZLES (DS-1) WADE #3940-3 ROUGH BRONZE DOWNSPOUT NOZZLE WITH FLANGE TO SECURE NOZZLE TO SECURE TO WALL. THREADED CONNECTIONS.

E. FINISHED FLOOR CLEANOUTS: (FFCO) WADE #6000-1-2-S CAST IRON FLOOR CLEANOUT WITH FLANGE, PLASTIC TAPERED PLUG AND SQUARE NICKEL BRONZE ADJUSTABLE TOP. PROVIDE WITH CARPET CLEANOUT MARKER WHEN CLEANOUT IS LOCATED BELOW CARPET. COORDINATE WITH ARCHITECTURAL PLANS.

F. FINISHED WALL CLEANOUTS: (FWCO) WADE #8560, W/ 8304-85-6 CAST IRON CLEANOUT TEE WITH BRASS PLUG AND 6" ROUND STAINLESS STEEL ACCESS COVER. J.R. SMITH FIGURE 4530, PROVIDE DUCO CAST IRON WALL CLEANOUT TEE WITH COUNTERSUNK PLUG. DELETE COVER PLATE IF CLEANOUT IS IN EXPOSED LOCATION.

HVAC SYSTEM SAFETY CONTROLS

1. DUCT SMOKE DETECTORS SHALL BE FURNISHED BY THE HVAC CONTRACTOR. SEE ELECTRICAL FOR INTEGRATION OF ALL SMOKE DETECTION AND SHUTDOWN OF EQUIPMENT. ALL HVAC EQUIPMENT IN EXCESS OF 2000 CFM SHALL BE EQUIPPED WITH SMOKE DETECTORS IN THE RETURN AIR STREAM OF THE UNIT. WHERE MULTIPLE HVAC UNIT FANS SHARE A COMMON RETURN AIR PLENUM (IN EXCESS OF 2,000 CFM COMBINED), ALL HVAC UNITS (INCLUDING VAV BOX FANS OR OTHER FANS ASSOCIATED WITH THE PLENUM) SHALL BE PROVIDED WITH A SMOKE DETECTOR. WHERE DUCT MOUNTED DETECTORS ARE SHOWN OR REQUIRED, USE DUCT INSERTION TUBE TYPE DETECTORS. IF FIRE ALARM SYSTEM IS INSTALLED, COORDINATE TYPE OF SMOKE DETECTOR WITH THE FIRE ALARM CONTRACTOR. IF A FIRE ALARM SYSTEM IS NOT PROVIDED, COORDINATE INSTALLATION OF A STROBE/HORN WITH THE ELECTRICAL CONTRACTOR TO NOTIFY OCCUPANTS OF THE SENSING OF SMOKE AT A SMOKE DETECTOR.

ROOFTOP UNIT SCHEDULE (GAS-FIRED)

MARK NO.	LOCATION	MANUFACTURER	MODEL NO.	ARRANGEMENT	DISCHARGE	DRY BULB ECONOMIZER	SUPPLY							COOLING									HEATING			ELECTRICAL					WEIGHT	REMARKS
							CFM	MIN. O.A.	EXT. S.P. IN. W.G.	FAN TYPE	FAN SIZE	RPM	EVAP. HP	AMBIENT °F	EDB °F	EWB °F	LDB °F	LWB °F	TOTAL MBH	SENS. MBH	MAX FPM	STAGES	UNIT EER	INPUT MBH	OUTPUT MBH	STAGES	VOLT	ø	HZ	MCA	MOCP		
RTU-1	ROOF	TRANE	YHK036A4S0L	HORIZ.	DOWN	Y	1325	-	1.0	-	-	879	1.0	105	72.3	64.5	57.8	55.8	33.4	19.8	-	-	13.0	80	64.8	2	460	3	60	11.0	15.0	807	1-7,9
RTU-2	ROOF	TRANE	YHK036A4S0L	HORIZ.	DOWN	Y	1340	-	1.0	-	-	884	1.0	105	72.4	64.7	58.1	56.1	33.6	18.7	-	-	13.0	80	64.8	2	460	3	60	11.0	15.0	807	1-7,9
RTU-3	ROOF	TRANE	YSK150A4S0L	HORIZ.	DOWN	Y	4000	-	0.5	-	-	1341	5.0	105	84.2	69.7	60.3	58.4	137.2	95.3	-	-	10.8	150	121.5	2	460	3	60	33	45	1326	1-9
RTU-4	ROOF	TRANE	YHK036A4S0L	HORIZ.	DOWN	Y	1390	-	0.5	-	-	901	0.75	105	77.7	65.7	59.3	57.28	34.9	26.47	-	-	13.0	80	64.8	2	460	3	60	11.0	15.0	807	1-7
RTU-5	ROOF	TRANE	YSK150A4S0L	HORIZ.	DOWN	Y	5235	-	0.50	-	-	1686	5.0	105	77.0	64.8	59.8	56.71	135.11	100.7	-	-	10.8	150	121.5	2	460	3	60	33	45	1451	1-8
RTU-6	ROOF	TRANE	YHK048A4S0L	HORIZ.	DOWN	Y	1650	-	0.50	-	-	725	3.0	105	76.8	66.3	57.8	56.5	45.50	30.60	-	-	13.0	80	64.8	2	460	3	60	16	20	1052	1-8
RTU-7	ROOF	TRANE	YSK150A4S0L	HORIZ.	DOWN	Y	4330	-	0.50	-	-	1432	5.0	105	78.5	66.3	59.26	56.46	138.01	93.6	-	-	10.8	150	121.5	2	460	3	60	33	45	1451	1-7
RTU-8	ROOF	TRANE	YSK102A4S0L	HORIZ.	DOWN	Y	3315	-	0.50	-	-	1233	3.0	105	80	67	58.5	57.3	102.9	75.7	-	-	11.0	120	97.2	2	480	3	60	26	35	1091	1-8

NOTES:

1. PROVIDE 2" MERV 8 THROWAWAY AIR FILTERS.
2. PROVIDE 14" HIGH INSULATED ROOF CURB.
3. PROVIDE WITH ENTHALPY ECONOMIZER.
4. PROVIDE WITH 7 DAY PROGRAMMABLE THERMOSTAT WITH STAGED HEATING AND COOLING CAPABILITY AS REQUIRED FOR OPERATION OF AUXILIARY HEATING, COOLING AND ECONOMIZER CONTROLS.
5. PROVIDE FLEXIBLE DUCT CONNECTORS AT ALL DUCT TO UNIT CONNECTIONS.
6. PROVIDE FUSED DISCONNECT SWITCH.
7. MINIMUM OA SETTING SHALL BE DETERMINED DURING TENANT IMPROVEMENT PHASE.
8. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL SMOKE DETECTORS IN SUPPLY AIR AND RETURN AIR DUCTS..
9. PROVIDE LOW AMBIENT CONTROL TO 0 DEGREES F.
10. DISABLE ECONOMIZER IF ONE EXISTS. OA VOLUME CALCULATED PER "MO DEPARTMENT OF HEALTH AND SENIOR SERVICES" REQUIREMENTS.
11. INFORMATION FROM ORIGINAL CONSTRUCTION DOCUMENTS FOR THIS SPACE USED TO POPULATE THIS SCHEDULE. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND NOTIFY ARCHITECT OF ANY DISCREPENCY.

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A NEW BUILDING FOR:

ASSOCIATED PLASTIC SURGEONS

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NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
GREGORY P. GLADFELTER
NUMBER E-2000150421
REGISTERED PROFESSIONAL ENGINEER
02/03/2025

PROJECT NO. 231206

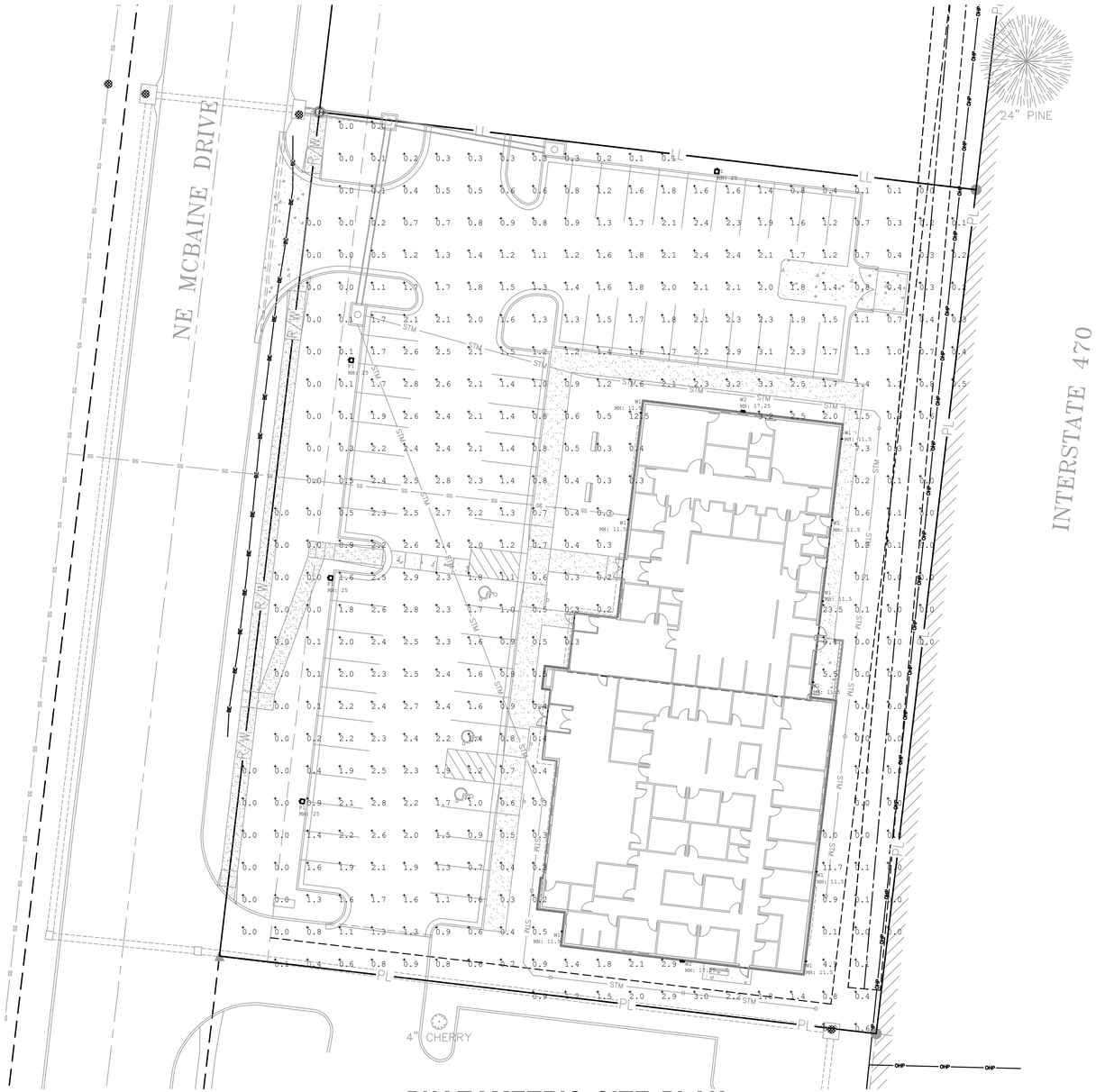
DRAWING ISSUANCE

09/27/2024	BUILDING SHELL PERMIT
02/03/2025	BUILDING SHELL PERMIT

SHEET NUMBER

MP300S

FLOOR PLAN



PHOTOMETRIC SITE PLAN

1" = 20'-0"

NORTH

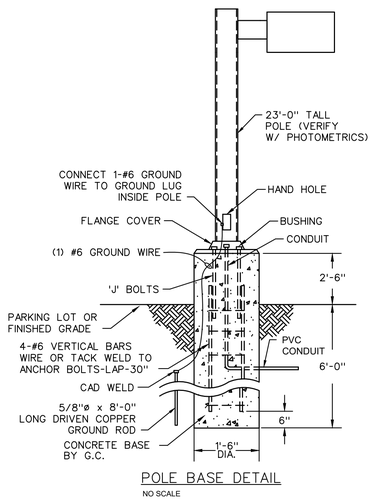
Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	9	SQF402-L1L10-FLD_1	Single	SQF402-L1L10-FLD	W1	1.000	1342	12	108
	2	DSXW1 LED 20C 1000 40K T2M MV	Single	DSXW1 LED 20C 1000 40K T2M MVOLT	W2	1.000	7372	73.2	146.4
	4	DSX1 LED P3 40K 80CRI BLC3	Single	DSX1 LED P3 40K 80CRI BLC3	P1	1.000	9184	102.17	408.68

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	Illuminance	Fc	1.21	23.5	0.0	N.A.	N.A.

P1

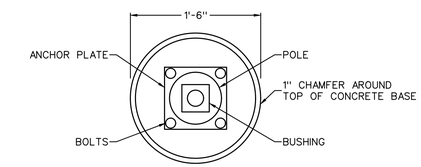
W1

W2



POLE BASE DETAIL

NO SCALE



PLAN SECTION AT BASE

NO SCALE

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12/06/2024

PROJECT NO. 231206

DRAWING ISSUANCE

09/27/2024 SHELL PERMIT

SHEET NUMBER

E1.0

SITE PLAN

ELECTRICAL SITE PLAN

1" = 20'-0"

ELECTRICAL SITE PLAN NOTES

1. LOCATION OF 750KVA UTILITY COMPANY TRANSFORMER. SEE 'ELECTRICAL RISER DIAGRAM', SHEET E3.0S, FOR INFORMATION.
2. INSTALL #10 (CU) WIRE THROUGHOUT ENTIRE LENGTH OF CIRCUIT RUN.
3. SEE 'LIGHTING FLOOR PLAN', SHEET E2.1S, FOR CONNECTION OF BUILDING LIGHTING.

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09/27/2024 SHELL PERMIT

SHEET NUMBER

E1.1
SITE PLAN

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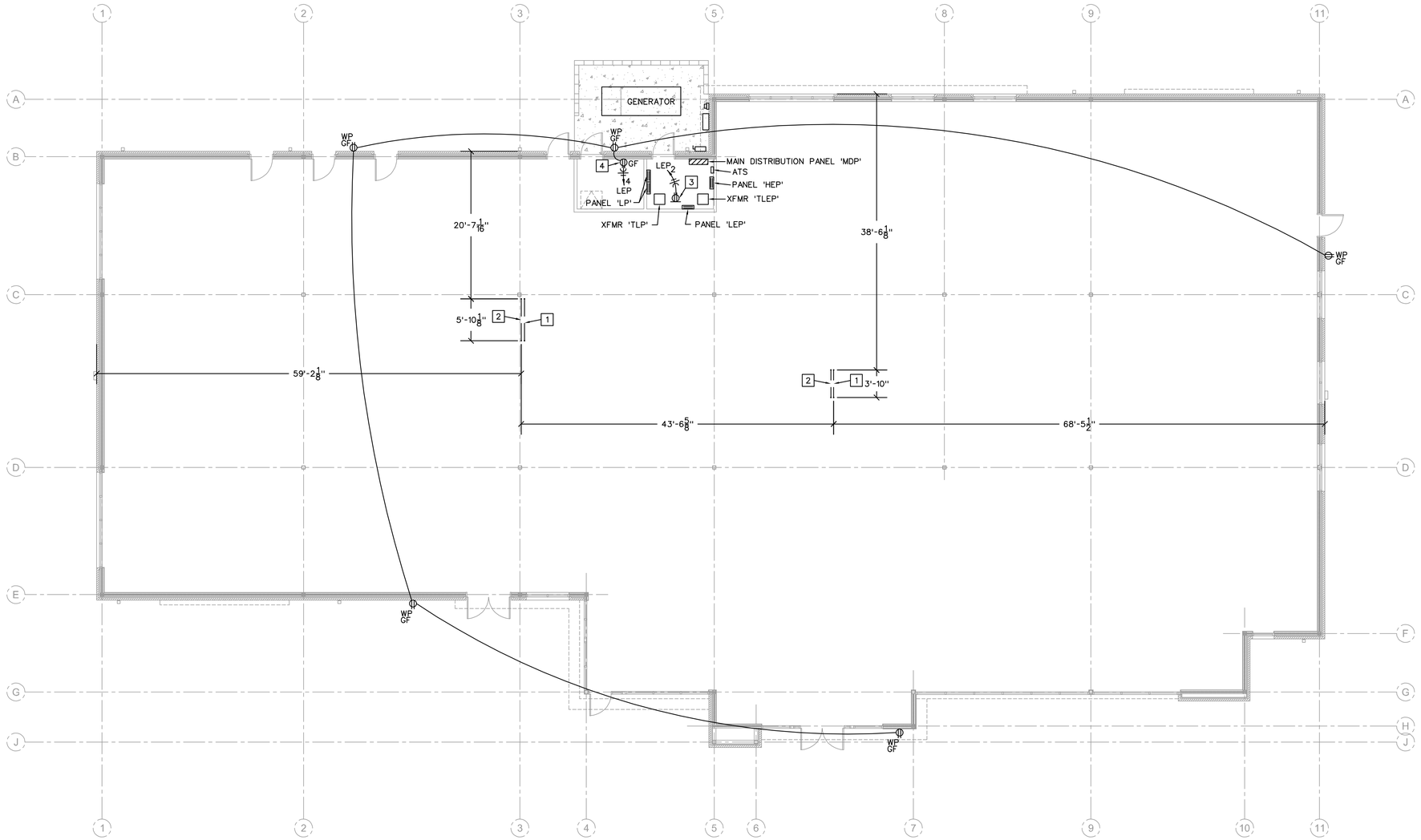

POWER FLOOR PLAN

1/8" = 1'-0" (SHELL)

NORTH

POWER FLOOR PLAN NOTES

1. 1" CONDUIT INSTALLED BELOW GRADE FOR DATA CABLES AT NURSES STATION. STUB CONDUIT UP 6" AT BOTH ENDS, INSTALL PULL-STRING AND CAP AT BOTH ENDS FOR FUTURE USE. VERIFY EXACT LOCATION WITH ARCHITECTURAL TENANT DRAWINGS.
2. 1" CONDUIT INSTALLED BELOW GRADE FOR WIRING OF RECEPTACLES AT NURSES STATION. STUB CONDUIT UP 6" AT BOTH ENDS, INSTALL PULL-STRING AND CAP AT BOTH ENDS FOR FUTURE USE. VERIFY EXACT LOCATION WITH ARCHITECTURAL TENANT DRAWINGS.
3. INSTALL OUTLET BOX FOR RECEPTACLE WITH TOP FLUSH TO BOTTOM OF PANEL.
4. INSTALL OUTLET BOX FOR WIRING DEVICE AT 42" AFF.

ELECTRICAL GENERAL NOTES

A) SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF LIGHT FIXTURES.

B) COORDINATE NEMA RATING OF APPLIANCE PLUGS WITH THE EQUIPMENT SPECIFICATIONS.

C) ALL RECEPTACLES WITHIN 6' OF WATER BEARING FIXTURES, EXTERIOR OUTLETS AND ALL OUTLETS IN KITCHEN AREAS SHALL BE GFI STYLE OR THE CIRCUIT SERVING THOSE DEVICES SHALL BE PROTECTED BY MEANS OF A GFI CIRCUIT BREAKER.

D) OUTLET AND SWITCH BOXES INSTALLED IN RATED WALLS SHALL BE PROVIDED WITH UL LISTED PUTTY PADS TO PROTECT THE RATING OF THE WALL.

E) CONNECT ALL NIGHT LIGHT, EXIT LIGHT AND EMERGENCY LIGHT FIXTURES TO UNSWITCHED HOT-LEG OF NEAREST 120V LIGHTING CIRCUIT IN SAME AREA.

F) CONDUIT INSTALLED IN AREAS OF BUILDINGS OR PORTIONS OF BUILDINGS WHERE MEDICAL CARE IS PROVIDED SHALL BE MEDICAL GRADE CONDUIT AND THE INSTALLATION SHALL CONFORM WITH CHAPTER 517 OF THE NEC (HEALTH CARE FACILITIES).

G) THE ELECTRICAL CONTRACTOR SHALL CONSULT WITH OTHER SUB-CONTRACTORS PROVIDING ENERGIZED EQUIPMENT TO ASSURE THAT ASSOCIATED ELECTRICAL EQUIPMENT MATCHES THE CHARACTERISTICS OF THE EQUIPMENT BEING PROVIDED.

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12/06/2024

PROJECT NO. 231206

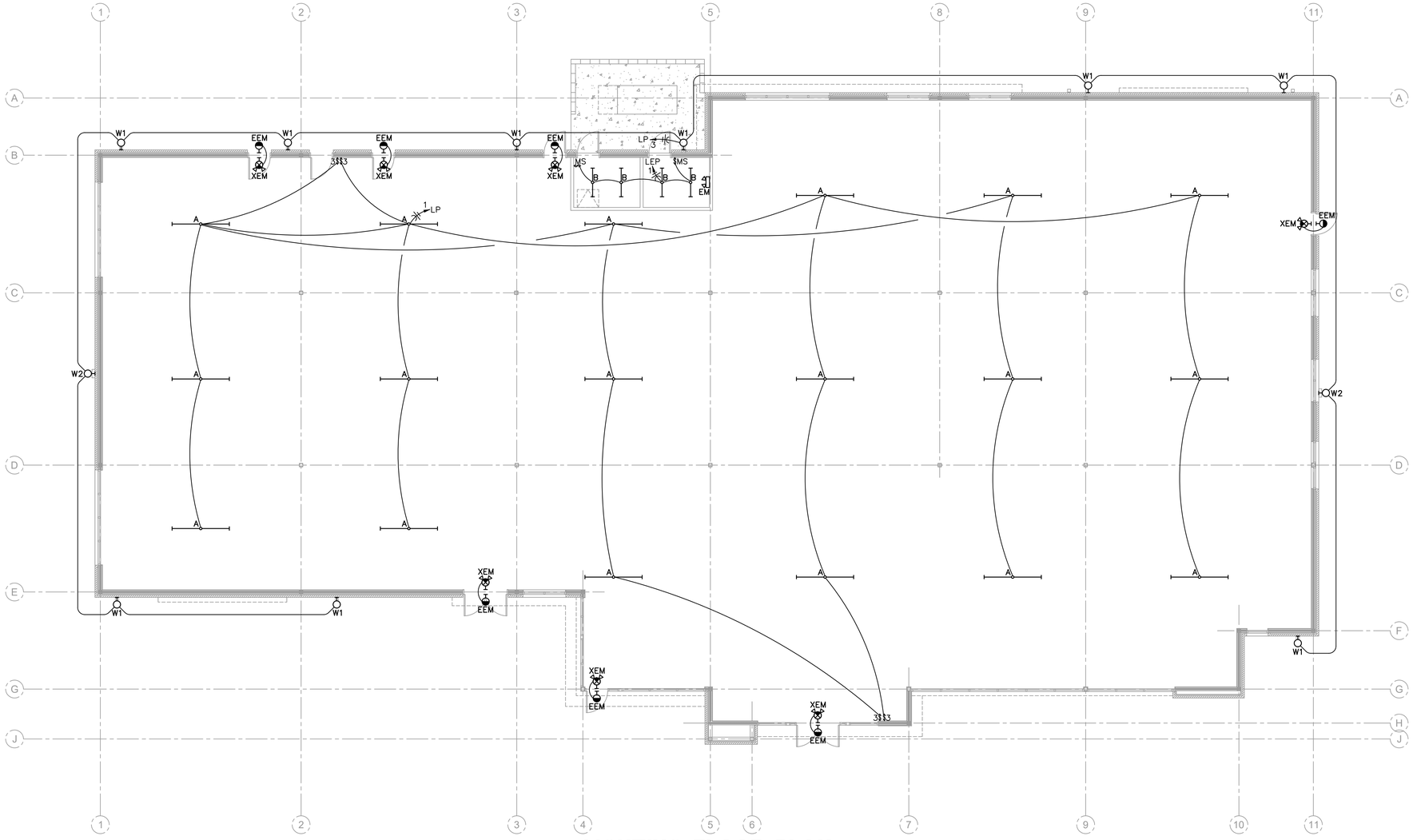
DRAWING ISSUANCE

09/27/2024 SHELL PERMIT

SHEET NUMBER

E2.0S

FLOOR PLAN



LIGHTING FLOOR PLAN

1/8" = 1'-0" (SHELL)

NORTH

LIGHTING FLOOR PLAN NOTES

1. NOTE...

ELECTRICAL GENERAL NOTES

A) SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF LIGHT FIXTURES.

B) COORDINATE NEMA RATING OF APPLIANCE PLUGS WITH THE EQUIPMENT SPECIFICATIONS.

C) ALL RECEPTACLES WITHIN 6' OF WATER BEARING FIXTURES, EXTERIOR OUTLETS AND ALL OUTLETS IN KITCHEN AREAS SHALL BE GFI STYLE OR THE CIRCUIT SERVING THOSE DEVICES SHALL BE PROTECTED BY MEANS OF A GFI CIRCUIT BREAKER.

D) OUTLET AND SWITCH BOXES INSTALLED IN RATED WALLS SHALL BE PROVIDED WITH UL LISTED PUTTY PADS TO PROTECT THE RATING OF THE WALL.

E) CONNECT ALL NIGHT LIGHT, EXIT LIGHT AND EMERGENCY LIGHT FIXTURES TO UNSWITCHED HOT-LEG OF NEAREST 120V LIGHTING CIRCUIT IN SAME AREA.

F) CONDUIT INSTALLED IN AREAS OF BUILDINGS OR PORTIONS OF BUILDINGS WHERE MEDICAL CARE IS PROVIDED SHALL BE MEDICAL GRADE CONDUIT AND THE INSTALLATION SHALL CONFORM WITH CHAPTER 517 OF THE NEC (HEALTH CARE FACILITIES).

G) THE ELECTRICAL CONTRACTOR SHALL CONSULT WITH OTHER SUB-CONTRACTORS PROVIDING ENERGIZED EQUIPMENT TO ASSURE THAT ASSOCIATED ELECTRICAL EQUIPMENT MATCHES THE CHARACTERISTICS OF THE EQUIPMENT BEING PROVIDED.

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12/06/2024

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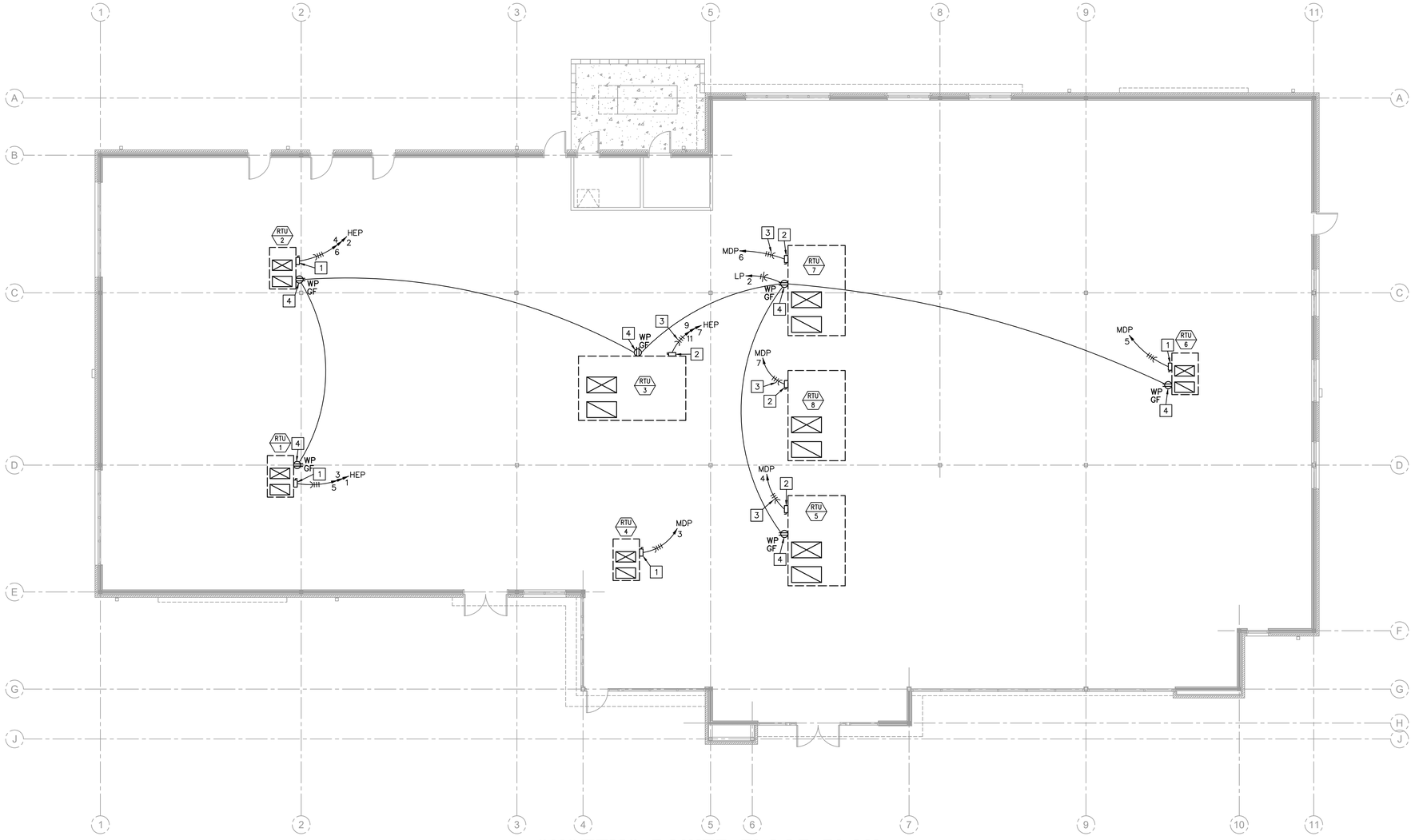
DRAWING ISSUANCE
09/27/2024 SHELL PERMIT

SHEET NUMBER

E2.1S

FLOOR PLAN



SYSTEMS POWER FLOOR PLAN

1/8" = 1'-0" (SHELL)

NORTH

SYSTEMS POWER FLOOR PLAN NOTES

1. 30A/3P, NON-FUSED, NEMA 3R DISCONNECT SWITCH INSTALLED ON SIDE OF UNIT. DO NOT INSTALL ON ACCESS PANEL.
2. 60A/3P, NON-FUSED, NEMA 3R DISCONNECT SWITCH INSTALLED ON SIDE OF UNIT. DO NOT INSTALL ON ACCESS PANEL.
3. 3/4" CONDUIT WITH 3-#8 (CU) AND 1-#10 (CU) EQUIPMENT GROUNDING CONDUCTOR.
4. WP/GF RECEPTACLE INSTALLED ON SIDE OF UNIT. DO NOT INSTALL ON ACCESS PANEL.

ELECTRICAL GENERAL NOTES

A) COORDINATE NEMA RATING OF APPLIANCE PLUGS WITH THE EQUIPMENT SPECIFICATIONS.

B) CONDUIT INSTALLED IN AREAS OF BUILDINGS OR PORTIONS OF BUILDINGS WHERE MEDICAL CARE IS PROVIDED SHALL BE MEDICAL GRADE CONDUIT AND THE INSTALLATION SHALL CONFORM WITH CHAPTER 517 OF THE NEC (HEALTH CARE FACILITIES).

C) THE ELECTRICAL CONTRACTOR SHALL CONSULT WITH OTHER SUB-CONTRACTORS PROVIDING ENERGIZED EQUIPMENT TO ASSURE THAT ASSOCIATED ELECTRICAL EQUIPMENT MATCHES THE CHARACTERISTICS OF THE EQUIPMENT BEING PROVIDED.

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SHEET NUMBER

E2.2S

FLOOR PLAN

ELECTRICAL SYMBOLS

	BRANCH CIRCUIT CONCEALED IN CEILING OR WALL. ARROWS INDICATE HOMERUNS TO PANEL. ALL CONDUCTORS ARE #12 EXCEPT AS NOTED.
	CONDUIT RUN UNDERGROUND OR BENEATH FLOOR SLAB.
	GROUNDING CONDUCTOR #12 EXCEPT AS NOTED.
	WALL MOUNTED JUNCTION BOX.
	CEILING MOUNTED JUNCTION BOX.
	PANELBOARD (SURFACE MOUNTED). INSTALL W/TOP 6'-0" AFF.
	DISTRIBUTION PANEL (SURFACE MOUNTED).
	DISCONNECT SWITCH. SIZED AS NOTED.
	DISCONNECT SWITCH FURNISHED WITH EQUIPMENT.
	COMBINATION EXIT/EMERGENCY LIGHT FIXTURE WITH (2) HEADS
	CEILING OR WALL MOUNTED EMERGENCY LIGHTING UNIT WITH (2) HEADS.
	LED STRIP FIXTURE.
	WALL MOUNTED LIGHT FIXTURE.
	REMOTE WEATHERPROOF EMERGENCY LIGHT FIXTURE.
S	SINGLE POLE SWITCH. +3'-10" AFF.
S^{3}	THREE-WAY SWITCH +3'-10" AFF.
S^{MS}	OCCUPANCY SENSOR. +3'-10" AFF.
	DUPLEX RECEPTACLE. +1'-6" AFF OR AS NOTED.
	DUPLEX RECEPTACLE INSTALLED ABOVE COUNTERTOP.
^{WP}	DUPLEX RECEPTACLE WITH WEATHERPROOF PLATE. HEIGHT AS NOTED.
^{GF}	DUPLEX RECEPTACLE W/GROUND FAULT PROTECTION. +1'-6" AFF OR AS NOTED.
	FOURLEX RECEPTACLE. +1'-6" AFF OR AS NOTED.
	COMBINATION VOICE/DATA OUTLET WITH 3/4" CONDUIT STUBBED UP OUT OF BOX TO ABOVE ACCESSIBLE CEILING. +1'-6" AFF OR AS NOTED.
	COMBINATION VOICE/DATA OUTLET WITH 3/4" CONDUIT STUBBED UP OUT OF BOX TO ABOVE ACCESSIBLE CEILING. INSTALLED ABOVE COUNTERTOP.
+3'-10"	HEIGHT TO CENTERLINE OF OUTLET BOX ABOVE FINISHED FLOOR.
RTU-1	ROOF TOP UNIT AND NUMBER.
AFF	ABOVE FINISH FLOOR.
EC	ELECTRICAL CONTRACTOR.
TTB	TELEPHONE TERMINAL BOARD
AFC	AVAILABLE FAULT CURRENT
EGC	EQUIPMENT GROUNDING CONDUCTOR (EQUIPMENT GROUNDS)
GEC	GROUNDING ELECTRODE CONDUCTOR (SERVICE GROUNDS)
MBJ	MAIN BONDING JUMPER

ELECTRICAL GENERAL NOTES

A) CONTRACTOR SHALL COORDINATE INSTALLATION REQUIREMENTS AND SCHEDULING OF ALL WORK WITH ARCHITECT AND GENERAL CONTRACTOR.

B) INSTALLATION SHALL COMPLY WITH LATEST EDITION OF N.E.C. AND LOCAL AUTHORITY HAVING JURISDICTION.

C) CONTRACTOR SHALL BE LICENSED TO PERFORM WORK IN MUNICIPALITY WHERE PROJECT IS LOCATED.

D) ALL WIRING SHALL BE INSTALLED IN CONDUIT. EMT CONDUIT WITH SET SCREW FITTINGS MAY BE UTILIZED WHERE PERMITTED BY CODE. MINIMUM CONDUIT SIZE SHALL BE 1/2".

E) ALL WIRING SHALL BE COPPER WITH 600 VOLT INSULATION AND COLOR CODED, UNLESS NOTED OTHERWISE.

F) ALUMINUM WIRING SHALL ONLY BE USED FOR FEEDERS FROM TRANSFORMER TO MAIN DISTRIBUTION PANEL. ALUMINUM CONDUCTORS SHALL BE ALCAN STABILOY AA-8000 SERIES, 600 VOLT INSULATION.

G) CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMIT AND INSPECTION FEES.

H) MC CABLE MAY BE INSTALLED WHERE PERMITTED BY CODE. CONDUCTORS SHALL BE MINIMUM #12 GAUGE AND COPPER.

I) INSTALL BLANK COVER PLATE ON ALL PULL BOXES AND JUNCTION BOXES.

J) TYPEWRITTEN PANELBOARD DIRECTORY SHALL BE PROVIDED FOR PANELBOARD AND CORRECTLY FILLED OUT.

K) CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL WORK WITH ALL OTHER TRADES INVOLVED WITH CONSTRUCTION OF PROJECT.

L) ALL WIRING DEVICES SHALL BE RATED 20 AMP, OR AS NOTED ON DRAWINGS. COORDINATE LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.

M) CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING OF ALL CONDUITS TO NEW EQUIPMENT.

N) FURNISH MATERIALS AND LABOR FOR A COMPLETE AND OPERATIONAL ELECTRICAL INSTALLATION.

O) MATERIAL AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE 'UL' LABELS AS REQUIRED.

P) CONTRACTOR SHALL COORDINATE INSTALLATION OF EQUIPMENT FURNISHED BY OTHERS.

Q) PANELBOARD, TRANSFORMERS, MAIN DISTRIBUTION PANEL AND DISCONNECT SWITCHES SHALL BE MANUFACTURED BY ITE/SIEMENS OR EQUAL.

R) ALL CONCRETE PADS AND POLE BASES ARE PROVIDED AND INSTALLED BY OTHERS.

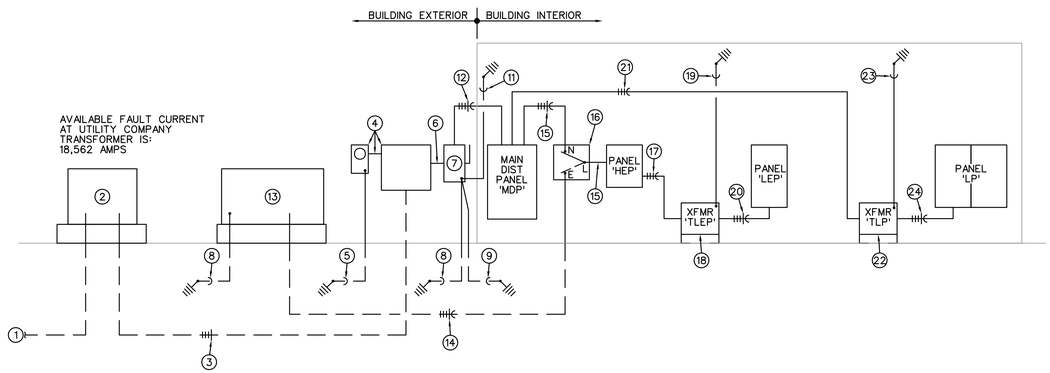
S) PVC (SCHEDULE 40) CONDUIT MAY BE USED FOR CONDUITS INSTALLED BELOW FINISHED GRADE OR CONCRETE FLOOR SLAB. PROVIDE WITH APPROVED FITTINGS.

T) DISCONNECT SWITCHES SHALL BE MANUFACTURED BY ITE/SIEMENS OR EQUAL. NEMA 1 FOR INDOOR INSTALLATION AND NEMA 3R FOR OUTDOOR INSTALLATION.

U) ALL LIGHT FIXTURES AND DEVICES MOUNTED IN CEILING SHALL BE BRACED TO RESIST SEISMIC FORCES IN ACCORDANCE WITH IBC, NEC, AND LOCAL AUTHORITY HAVING JURISDICTION.

V) THERMOSTAT OUTLET BOXES SHALL BE PROVIDED AND INSTALLED WITH 3/4" CONDUIT STUBBED UP OUT TOP OF BOX TO ABOVE ACCESSIBLE CEILING. PROVIDE BUSHING ON END OF CONDUIT.

W) EMERGENCY AND EXIT LIGHT FIXTURES SHALL BE PROVIDED WITH BATTERY BACK-UP FOR MINIMUM OF (90) MINUTES. EMERGENCY AND EXIT LIGHT FIXTURES SHALL BE CONNECTED TO HOT LEG OF CIRCUIT, NOT SWITCHED.



ELECTRICAL RISER DIAGRAM

NO SCALE

ELECTRICAL RISER DIAGRAM NOTES

1. TWO (2) 4" PVC CONDUITS FOR PRIMARY SERVICE CABLES. TERMINATE AT PROPERTY LINE. INSTALL CONDUITS WITH TOP MINIMUM OF 3'-6" BELOW FINISHED GRADE.
2. UTILITY COMPANY PAD MOUNT TRANSFORMER WITH 480Y/277V PRIMARY. INSTALL CONCRETE PAD PER UTILITY COMPANY STANDARDS.
3. THREE (3) SETS OF 3" PVC CONDUIT WITH 4-#400KCMIL (AL) IN EACH. INSTALL CONDUITS WITH TOP MINIMUM OF 3'-6" BELOW FINISHED GRADE.
4. UTILITY COMPANY CT CABINET, METER CAN/SOCKET AND 1-1/4" CONDUIT FOR METERING CABLES. INSTALL PER UTILITY COMPANY REQUIREMENTS.
5. 3/4" CONDUIT WITH 1-#6 (CU) GROUNDING ELECTRODE CONDUCTOR. CONNECT TO 5/8" ROUND x 10'-0" LONG COPPER CLAD STEEL DRIVEN GROUND ROD.
6. THREE (3) SETS OF 3" CONDUIT WITH 4-#400KCMIL (AL) IN EACH.
7. 800A/3P, FUSED, NEMA 3R DISCONNECT SWITCH WITH (3) 800A FUSES.
8. 3/4" CONDUIT WITH 1-#6 (CU) GROUNDING ELECTRODE CONDUCTOR. CONNECT TO 3/4" ROUND x 12'-0" LONG COPPER CLAD STEEL DRIVEN GROUND ROD.
9. 3/4" CONDUIT WITH 1-#4 (CU) GROUNDING ELECTRODE CONDUCTOR. CONNECT TO 20'-0" LONG COPPER CLAD STEEL CONDUCTOR IN CONCRETE BUILDING FOOTING.
10. NOT USED.
11. 3/4" CONDUIT WITH 1-#2/0 (CU) GROUND WIRE. CONNECT TO BUILDING STEEL.
12. THREE (3) SETS OF 3" CONDUIT WITH 4-#400KCMIL (AL) AND 1-#1/0 (CU) EQUIPMENT GROUNDING CONDCUTOR IN EACH.
13. 100KW/125KVA, 277/480V, 3-PHASE, 4-WIRE EMERGENCY GENERATOR WITH 150A/3P OUTPUT CIRCUIT BREAKER. NEMA 3R ENCLOSURE.
14. 2" PVC CONDUIT WITH 4-#1/0 (CU) AND 1-#6 (CU) EQUIPMENT GROUNDING CONDUCTOR IN EACH.
15. 2" CONDUIT WITH 4-#1/0 (CU) AND 1-#6 (CU) EQUIPMENT GROUNDING CONDUCTOR IN EACH.
16. 150A/3P/SN AUTOMATIC TRANSFORMER SWITCH. NEMA 1 ENCLOSURE.
17. 1-1/4" CONDUIT WITH 3-#3 (CU) AND 1-#8 (CU) EQUIPMENT GROUNDING CONDUCTOR.
18. 150KVA TRANSFORMER WITH 480VOLT DELTA PRIMARY - 208Y/120V, 3-PHASE, 4W SECONDARY. INSTALL ON VIBRATION ISOLATION PAD.
19. 3/4" CONDUIT WITH 1-#2 (CU) GROUNDING ELECTRODE CONDUCTOR. CONNECT TO BUILDING STEEL.
20. 2" CONDUIT WITH 4-#3/0 (CU) AND 1-#6 (CU) EQUIPMENT GROUNDING CONDUCTOR.
21. 2-1/2" CONDUIT WITH 3-#250KCMIL (CU) AND 1-#4 (CU) EQUIPMENT GROUNDING CONDUCTOR.
22. 150KVA TRANSFORMER WITH 480VOLT DELTA PRIMARY - 208Y/120V, 3-PHASE, 4W SECONDARY. INSTALL ON VIBRATION ISOLATION PAD.
23. 3/4" CONDUIT WITH 1-#2 (CU) GROUNDING ELECTRODE CONDUCTOR. CONNECT TO BUILDING STEEL.
24. TWO (2) SETS OF 2" CONDUITS WITH 4-#3/0 (CU) AND 1-#3 (CU) EQUIPMENT GROUNDING CONDUCTOR IN EACH.

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A NEW BUILDING FOR:

ASSOCIATED PLASTIC SURGEONS

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
GREGORY P. GLADFELTER
NUMBER E-2000150421
REGISTERED PROFESSIONAL ENGINEER

12/06/2024

PROJECT NO. 231206

DRAWING ISSUANCE
09/27/2024 SHELL PERMIT

SHEET NUMBER

E3.0S

RISER/NOTES

SCHEDULE OF 'MDP'
22kAIC

277/480 VOLTS 3 PHASE 4 WIRE

SERVICE ENTRANCE LABEL
100% NEUTRAL BUS, GROUND BUS
SURFACE MOUNTED, NEMA 1
800A MAINS

CIR. NO.	DESCRIPTION	BREAKER FRAME	BREAKER POLE	BREAKER TRIP	DEMAND AMPS	
M	MAIN CIRCUIT BREAKER	800	3	800	436.4	1
1	PANEL 'HEP'	200	3	150	137.4	1
2	XFMR 'TLP'	250	3	250	180.0	1
3	RTU-4	100	3	15	11.0	
4	RTU-5	100	3	45	33.0	
5	RTU-6	100	3	20	16.0	
6	RTU-7	100	3	45	33.0	
7	RTU-8	100	3	35	26.0	
8	SPARE	100	3	-	-	

PANEL SCHEDULE NOTES

1. ESTIMATED FUTURE DEMAND.

PANEL HEP 277/480 VOLTS ■ 200 A. BUS ☐ SERVICE ENTRANCE
3 PHASE ☐ - A. MAIN BREAKER ☐ FEED THRU LUGS
10kAIC SECTION 1 OF 1 4 WIRE ■ MAIN LUGS ONLY ☐ SUBFEED LUGS

CIRC. NO.	CIRCUIT DESCRIPTION	CIRC. AMPS	BRKR. POLES	VA	Ø	CIRC. NO.	CIRCUIT DESCRIPTION	CIRC. AMPS	BRKR. POLES	VA	
1	RTU-1	15	3	3051	A	2	RTU-2	15	3	3050	
3				3050	B	4				3051	
5				3051	C	6				3051	
7	RTU-3	40	3	8320	A	8	XFMR 'TLEP'	100	3	21600	1
9				8320	B	10				21600	1
11				8320	C	12				21600	1

TOTAL CONNECTED LOAD 108064 VA

■ SURFACE MOUNTED
☐ FLUSH MOUNTED

DEMAND FACTORS:
LARGEST MTR @ 125 % = 31200 VA
RECEPTS @ - % = - VA
RECEPTS @ - % = - VA
OTHER @ 100 % = 83104 VA
TOTAL DEMAND LOAD = 114304 VA

NEUTRAL BUS 100 %
POWER FACTOR 100 %
1 DEMAND CURRENT 137.4 AMPS

PANEL LP 120/208 VOLTS ■ 400 A. BUS ☐ SERVICE ENTRANCE
3 PHASE ■ 400 A. MAIN BREAKER ■ FEED THRU LUGS
10kAIC SECTION 1 OF 2 4 WIRE ☐ MAIN LUGS ONLY ☐ SUBFEED LUGS

CIRC. NO.	CIRCUIT DESCRIPTION	CIRC. AMPS	BRKR. POLES	VA	Ø	CIRC. NO.	CIRCUIT DESCRIPTION	CIRC. AMPS	BRKR. POLES	VA
1	STRIP LIGHTS	20	1	1262	A	2	WP/GF REC - RTU	20	1	900
3	LTS - EXTERIOR BLDG	20	1	358	B	4	-	20	1	-
5	SITE LIGHTING	20	1	408	C	6	-	20	1	-
7	-	20	1	-	A	8	-	20	1	-
9	-	20	1	-	B	10	-	20	1	-
11	-	20	1	-	C	12	-	20	1	-
13	-	20	1	-	A	14	-	20	1	-
15	-	20	1	-	B	16	-	20	1	-
17	-	20	1	-	C	18	-	20	1	-
19	-	20	1	-	A	20	-	20	1	-
21	-	20	1	-	B	22	-	20	1	-
23	-	20	1	-	C	24	-	20	1	-
25	-	20	1	-	A	26	-	20	1	-
27	-	20	1	-	B	28	-	20	1	-
29	-	20	1	-	C	30	-	20	1	-
31	-	20	1	-	A	32	-	20	1	-
33	-	20	1	-	B	34	-	20	1	-
35	-	20	1	-	C	36	-	20	1	-
37	-	20	1	-	A	38	-	20	1	-
39	-	20	1	-	B	40	-	20	1	-
41	-	20	1	-	C	42	-	20	1	-

TOTAL CONNECTED LOAD 2028 VA

■ SURFACE MOUNTED
☐ FLUSH MOUNTED

DEMAND FACTORS:
LIGHTS @ 125 % = 2535 VA
RECEPTS @ 100 % = - VA
RECEPTS @ 50 % = - VA
OTHER @ 100 % = - VA
TOTAL DEMAND LOAD = 2535 VA

NEUTRAL BUS 100 %
POWER FACTOR 100 %
1 DEMAND CURRENT 360.0 AMPS

PANEL LP 120/208 VOLTS ■ 400 A. BUS ☐ SERVICE ENTRANCE
3 PHASE ☐ - A. MAIN BREAKER ☐ FEED THRU LUGS
SECTION 2 OF 2 4 WIRE ■ MAIN LUGS ONLY ☐ SUBFEED LUGS

CIRC. NO.	CIRCUIT DESCRIPTION	CIRC. AMPS	BRKR. POLES	VA	Ø	CIRC. NO.	CIRCUIT DESCRIPTION	CIRC. AMPS	BRKR. POLES	VA
43	-	20	1	-	A	44	-	20	1	-
45	-	20	1	-	B	46	-	20	1	-
47	-	20	1	-	C	48	-	20	1	-
49	-	20	1	-	A	50	-	20	1	-
51	-	20	1	-	B	52	-	20	1	-
53	-	20	1	-	C	54	-	20	1	-
55	-	20	1	-	A	56	-	20	1	-
57	-	20	1	-	B	58	-	20	1	-
59	-	20	1	-	C	60	-	20	1	-
61	-	20	1	-	A	62	-	20	1	-
63	-	20	1	-	B	64	-	20	1	-
65	-	20	1	-	C	66	-	20	1	-
67	-	20	1	-	A	68	-	20	1	-
69	-	20	1	-	B	70	-	20	1	-
71	-	20	1	-	C	72	-	20	1	-
73	-	20	1	-	A	74	-	20	1	-
75	-	20	1	-	B	76	-	20	1	-
77	-	20	1	-	C	78	-	20	1	-
79	-	20	1	-	A	80	-	20	1	-
81	-	20	1	-	B	82	-	20	1	-
83	-	20	1	-	C	84	-	20	1	-

SEE SECTION 1 FOR
LOAD CALCULATIONS

PANEL LEP 120/208 VOLTS ■ 200 A. BUS ☐ SERVICE ENTRANCE
3 PHASE ■ 200 A. MAIN BREAKER ■ FEED THRU LUGS
10kAIC SECTION 1 OF 1 4 WIRE ☐ MAIN LUGS ONLY ☐ SUBFEED LUGS

CIRC. NO.	CIRCUIT DESCRIPTION	CIRC. AMPS	BRKR. POLES	VA	Ø	CIRC. NO.	CIRCUIT DESCRIPTION	CIRC. AMPS	BRKR. POLES	VA
1	LTS - MECH/ELEC	20	1	150	A	2	REC - ELEC RM	20	1	180
3	-	20	1	-	B	4	REC - WATER/EXTERI	20	1	1080
5	-	20	1	-	C	6	-	20	1	-
7	-	20	1	-	A	8	-	20	1	-
9	-	20	1	-	B	10	-	20	1	-
11	-	20	1	-	C	12	-	20	1	-
13	-	20	1	-	A	14	-	20	1	-
15	-	20	1	-	B	16	-	20	1	-
17	-	20	1	-	C	18	-	20	1	-
19	-	20	1	-	A	20	-	20	1	-
21	-	20	1	-	B	22	-	20	1	-
23	-	20	1	-	C	24	-	20	1	-
25	-	20	1	-	A	26	-	20	1	-
27	-	20	1	-	B	28	-	20	1	-
29	-	20	1	-	C	30	-	20	1	-
31	-	20	1	-	A	32	-	20	1	-
33	-	20	1	-	B	34	-	20	1	-
35	-	20	1	-	C	36	-	20	1	-
37	-	20	1	-	A	38	-	20	1	-
39	-	20	1	-	B	40	-	20	1	-
41	-	20	1	-	C	42	-	20	1	-

TOTAL CONNECTED LOAD 2310 VA

■ SURFACE MOUNTED
☐ FLUSH MOUNTED

DEMAND FACTORS:
LIGHTS @ 125 % = 188 VA
RECEPTS @ 100 % = 2160 VA
RECEPTS @ 50 % = - VA
OTHER @ 100 % = - VA
TOTAL DEMAND LOAD = 2348 VA

NEUTRAL BUS 100 %
POWER FACTOR 100 %
1 DEMAND CURRENT 360.0 AMPS

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	LAMP	VOLTS WATTS
A	LITHONIA LTG #TZL1D L96 6000LM FST MVOLT 35K 80CRI WH	LED	120 59
B	LITHONIA LTG #ZL1D L48 3000LM FST MVOLT 35K 80CRI WH	LED	120 30
P1	LITHONIA LTG #DSX1 LED P3 40K 80CRI BLC3	LED	120 102
W1	ACUITY BRANDS #SQP402-L1L10-FLD_1	LED	120 12
W2	LITHONIA LTG #DSXW1 LED 20C 1000 40K T2M MV	LED	120 73
EM	EXITRONIX #LED90	(2) LED HEADS WITH UNIT	120 10
EEM	EXITRONIX #MLED	WEATHERPROOF LED REMOTE	6 8
X	EXITRONIX #VEX-U-BP-WB-WH-120-R	RED LED WITH UNIT	120 10
XEM	EXITRONIX #VLED-1-WH-EL90-R	RED LED AND (2) LED HEADS WITH UNIT	120 15

NOTES:
1. TYPE 'X' AND/OR 'XEM' FIXTURES SHALL HAVE 12 WATTS OF REMOTE CAPACITY AND POWER TYPE 'EEM'.

MINIMUM SIZE OF EQUIPMENT GROUNDING CONDUCTORS FOR GRD'G RACEWAY & EQUIPMENT

(NEC TABLE 250-122)

RATING OR SETTING OF AUTOMATIC OVER CURRENT PROTECTION DEVICE IN CIRCUIT AHEAD OF EQUIPMENT, CONDUIT, ETC. NOT EXCEEDING THE FOLLOWING.	SIZE (AWG OR KCMIL) COPPER	ALUMINUM OR COPPER CLAD ALUMINUM
15 AMPERES	14	12
20 AMPERES	12	10
30 AMPERES	10	8
40 AMPERES	10	8
60 AMPERES	10	8
100 AMPERES	8	6
200 AMPERES	6	4
300 AMPERES	4	2
400 AMPERES	3	1
500 AMPERES	2	1/0
600 AMPERES	1	2/0
800 AMPERES	1/0	3/0

NOTE:
EQUIPMENT AND RACE WAY GROUNDING SHALL COMPLY, AS A MINIMUM, WITH THE CONDUCTOR SIZES REPRESENTED IN THIS TABLE AND WITH OTHER REQUIREMENTS AND ALLOWANCES SET FORTH IN THE NATIONAL ELECTRICAL CODE (NFPA 70).

MAXIMUM CIRCUIT LENGTH SCHEDULE

CIRCUIT AMPERES	WIRE SIZE	MAXIMUM CIRCUIT LENGTH IN FEET 2 WIRE, 1 PHASE 120 V	240 V	277 V	3 WIRE, 3 PHASE 208 V	480 V
20	#12	60	125	145	125	285
25	#10	80	160	180	160	365
30	#10	65	130	150	130	305
50	#6	95	195	225	195	450
60	#6	80	160	185	160	375
100	#3	95	195	225	195	450
125	#1	125	250	285	250	575
200	3/0	155	310	360	310	725

NOTES:
1. ALL CONDUCTORS ARE SOLID COPPER. APPLICATION OF CONDUCTOR SIZE IS LIMITED TO CONDUCTORS WITH THE FOLLOWING INSULATION TYPES: FEPW, RH, RHW, THHW, THW, THWN, XHHW, AND USE.
2. CIRCUIT LENGTH IS THE ONE WAY DISTANCE FROM THE OVER CURRENT PROTECTION DEVICE TO THE POINT OF USE.
3. IF THE INSTALLED CIRCUIT LENGTH EXCEEDS THE INDICATED MAXIMUM CIRCUIT LENGTH INDICATED, THEN THE CONDUCTORS SHALL BE INCREASED ONE NOMINAL WIRE SIZE.

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12/06/2024

PROJECT NO. 231206

DRAWING ISSUANCE
09/27/2024 SHELL PERMIT

SHEET NUMBER
E3.1S
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Gladfelter Engineering Group assumes design responsibility for this project for only the mechanical, plumbing and electrical disciplines with drawing sheet number beginning with M, P and E. All other drawings should be considered the work of others. Further, drawings in this project set may contain drawing information, including but not limited to: architectural plans, sections and elevations, site plans and surveys and other information pertinent to showing the mechanical, plumbing and electrical work which is furnished by others, generally indicated by screened or light type. Gladfelter Engineering Group assumes no responsibility or liability for the accuracy or regulatory compliance for work prepared by others even though shown on MPE drawings. Gladfelter Engineering Group assumes responsibility only for the design of mechanical, plumbing and electrical disciplines contained herein, generally indicated in bold type.

ELECTRICAL SPECIFICATIONS

1.COMMON WORK RESULTS FOR ELECTRICAL

COORDINATION

COORDINATE ARRANGEMENT, MOUNTING, AND SUPPORT OF ELECTRICAL EQUIPMENT:
- TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS THAT REDUCE HEADROOM ARE INDICATED.
- TO PROVIDE FOR EASE OF DISCONNECTING THE EQUIPMENT WITH MINIMUM INTERFERENCE TO OTHER INSTALLATIONS.
- TO ALLOW RIGHT OF WAY FOR PIPING AND CONDUIT INSTALLED AT REQUIRED SLOPE.
- SO CONNECTING RACEWAYS, CABLES, WIREWAYS, CABLE TRAYS, AND BUSWAYS WILL BE CLEAR OF OBSTRUCTIONS AND OF THE WORKING AND ACCESS SPACE OF OTHER EQUIPMENT.
- COORDINATE LOCATION OF ACCESS PANELS AND DOORS FOR ELECTRICAL ITEMS THAT ARE BEHIND FINISHED SURFACES OR OTHERWISE CONCEALED.

PRODUCTS

SLEEVE SEALS

DESCRIPTION: MODULAR SEALING DEVICE, DESIGNED FOR FIELD ASSEMBLY, TO FILL ANNULAR SPACE BETWEEN SLEEVE AND RACEWAY OR CABLE.

MANUFACTURERS:
- ADVANCE PRODUCTS & SYSTEMS, INC.
- CALPICO, INC.
- METRAFLEX CO.
- PIPELINE SEAL AND INSULATOR, INC.

SEALING ELEMENTS: EPDM INTERLOCKING LINKS SHAPED TO FIT SURFACE OF CABLE OR CONDUIT. INCLUDE TYPE AND NUMBER REQUIRED FOR MATERIAL AND SIZE OF RACEWAY OR CABLE.

PRESSURE PLATES: PLASTIC. INCLUDE TWO FOR EACH SEALING ELEMENT.

CONNECTING BOLTS AND NUTS: STAINLESS STEEL OF LENGTH REQUIRED TO SECURE PRESSURE PLATES TO SEALING ELEMENTS. INCLUDE ONE FOR EACH SEALING ELEMENT.

EXECUTION

COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

COMPLY WITH NECA 1.

SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

ELECTRICAL PENETRATIONS OCCUR WHEN RACEWAYS, CABLES, WIREWAYS, CABLE TRAYS, OR BUSWAYS PENETRATE CONCRETE SLABS, CONCRETE OR MASONRY WALLS, OR FIRE-RATED FLOOR AND WALL ASSEMBLIES.

CONCRETE SLABS AND WALLS: INSTALL SLEEVES FOR PENETRATIONS UNLESS CORE-DRILLED HOLES OR FORMED OPENINGS ARE USED. INSTALL SLEEVES DURING ERECTION OF SLABS AND WALLS.

USE PIPE SLEEVES UNLESS PENETRATION ARRANGEMENT REQUIRES RECTANGULAR SLEEVED OPENING.

FIRE-RATED ASSEMBLIES: INSTALL SLEEVES FOR PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES UNLESS OPENINGS COMPATIBLE WITH FIRESTOP SYSTEM USED ARE FABRICATED DURING CONSTRUCTION OF FLOOR OR WALL.

CUT SLEEVES TO LENGTH FOR MOUNTING FLUSH WITH BOTH SURFACES OF WALLS.

INTERIOR PENETRATIONS OF NON-FIRE-RATED WALLS AND FLOORS: SEAL ANNULAR SPACE BETWEEN SLEEVE AND RACEWAY OR CABLE, USING JOINT SEALANT APPROPRIATE FOR SIZE, DEPTH, AND LOCATION OF JOINT.

FIRE-RATED-ASSEMBLY PENETRATIONS: MAINTAIN INDICATED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT RACEWAY AND CABLE PENETRATIONS. INSTALL SLEEVES AND SEAL RACEWAY AND CABLE PENETRATION SLEEVES WITH FIRESTOP MATERIALS.

ROOF-PENETRATION SLEEVES: SEAL PENETRATION OF INDIVIDUAL RACEWAYS AND CABLES WITH FLEXIBLE BOOT-TYPE FLASHING UNITS APPLIED IN COORDINATION WITH ROOFING WORK.

ABOVEGROUND, EXTERIOR-WALL PENETRATIONS: SEAL PENETRATIONS USING STEEL PIPE SLEEVES AND MECHANICAL SLEEVE SEALS. SELECT SLEEVE SIZE TO ALLOW FOR 1-INCH (25-MM) ANNULAR CLEAR SPACE BETWEEN PIPE AND SLEEVE FOR INSTALLING MECHANICAL SLEEVE SEALS.

UNDERGROUND, EXTERIOR-WALL PENETRATIONS: INSTALL CAST-IRON PIPE SLEEVES. SIZE SLEEVES TO ALLOW FOR 1-INCH (25-MM) ANNULAR CLEAR SPACE BETWEEN RACEWAY OR CABLE AND SLEEVE FOR INSTALLING MECHANICAL SLEEVE SEALS.

SLEEVE-SEAL INSTALLATION

INSTALL TO SEAL EXTERIOR WALL PENETRATIONS.

FIRESTOPPING

APPLY FIRESTOPPING TO PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES FOR ELECTRICAL INSTALLATIONS TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.

2.GROUNDING AND BONDING

QUALITY ASSURANCE

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

COMPLY WITH UL 467 FOR GROUNDING AND BONDING MATERIALS AND EQUIPMENT.

PRODUCTS

CONDUCTORS

INSULATED CONDUCTORS: COPPER WIRE OR CABLE INSULATED FOR 600 V UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE OR AUTHORITIES HAVING JURISDICTION.

BARE COPPER CONDUCTORS:
- SOLID CONDUCTORS: ASTM B 3.
- STRANDED CONDUCTORS: ASTM B 8.

GROUNDING ELECTRODES

GROUND RODS: COPPER-CLAD; 3/4 INCH BY10 FEET (19 MM BY 3 M) IN DIAMETER.

EXECUTION

APPLICATIONS

CONDUCTORS: INSTALL SOLID CONDUCTOR FOR NO. 8 AWG AND SMALLER, AND STRANDED CONDUCTORS FOR NO. 6 AWG AND LARGER, UNLESS OTHERWISE INDICATED.

GROUNDING BUS: INSTALL IN ELECTRICAL AND TELEPHONE EQUIPMENT ROOMS, IN ROOMS HOUSING SERVICE EQUIPMENT, AND ELSEWHERE AS INDICATED. INSTALL BUS ON INSULATED SPACERS 1 INCH (25 MM), MINIMUM, FROM WALL 6 INCHES (150 MM) ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED.

EQUIPMENT GROUNDING

INSTALL INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH ALL FEEDERS AND BRANCH CIRCUITS.

METAL POLES SUPPORTING OUTDOOR LIGHTING FIXTURES: INSTALL GROUNDING ELECTRODE AND A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO GROUNDING CONDUCTOR INSTALLED WITH BRANCH-CIRCUIT CONDUCTORS.

INSTALLATION

BONDING STRAPS AND JUMPERS: INSTALL IN LOCATIONS ACCESSIBLE FOR INSPECTION AND MAINTENANCE, EXCEPT WHERE ROUTED THROUGH SHORT LENGTHS OF CONDUIT.
- BONDING TO STRUCTURE: BOND STRAPS DIRECTLY TO BASIC STRUCTURE, TAKING CARE NOT TO PENETRATE ANY ADJACENT PARTS.
- BONDING TO EQUIPMENT MOUNTED ON VIBRATION ISOLATION HANGERS AND SUPPORTS: INSTALL SO VIBRATION IS NOT TRANSMITTED TO RIGIDLY MOUNTED EQUIPMENT.
- USE EXOTHERMIC-WELDED CONNECTORS FOR OUTDOOR LOCATIONS, BUT IF A DISCONNECT-TYPE CONNECTION IS REQUIRED, USE A BOLTED CLAMP.

GROUNDING AND BONDING FOR PIPING:
- METAL WATER SERVICE PIPE: INSTALL INSULATED COPPER GROUNDING CONDUCTORS, IN CONDUIT, FROM BUILDING'S MAIN SERVICE EQUIPMENT, OR GROUNDING BUS, TO MAIN METAL WATER SERVICE ENTRANCES TO BUILDING. CONNECT GROUNDING CONDUCTORS TO MAIN METAL WATER SERVICE PIPES, USING A BOLTED CLAMP CONNECTOR OR BY BOLTING A LUG-TYPE CONNECTOR TO A PIPE FLANGE, USING ONE OF THE LUG BOLTS OF THE FLANGE. WHERE A DIELECTRIC MAIN WATER FITTING IS INSTALLED, CONNECT GROUNDING CONDUCTOR ON STREET SIDE OF FITTING. BOND METAL GROUNDING CONDUCTOR CONDUIT OR SLEEVE TO CONDUCTOR AT EACH END.
- WATER METER PIPING: USE BRAIDED-TYPE BONDING JUMPERS TO ELECTRICALLY BYPASS WATER METERS. CONNECT TO PIPE WITH A BOLTED CONNECTOR.
- BOND EACH ABOVEGROUND PORTION OF GAS PIPING SYSTEM DOWNSTREAM FROM EQUIPMENT SHUTOFF VALVE.

GROUNDING FOR STEEL BUILDING STRUCTURE: INSTALL A DRIVEN GROUND ROD AT BASE OF EACH CORNER COLUMN AND AT INTERMEDIATE EXTERIOR COLUMNS AT DISTANCES NOT MORE THAN 60 FEET (18 M) APART.

3.HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

QUALITY ASSURANCE

COMPLY WITH NFPA 70.

PRODUCTS

SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

RACEWAY AND CABLE SUPPORTS: AS DESCRIBED IN NECA 1 AND NECA 101.

CONDUIT AND CABLE SUPPORT DEVICES: STEEL AND MALLEABLE-IRON HANGERS, CLAMPS, AND ASSOCIATED FITTINGS, DESIGNED FOR TYPES AND SIZES OF RACEWAY OR CABLE TO BE SUPPORTED.

SUPPORT FOR CONDUCTORS IN VERTICAL CONDUIT: FACTORY-FABRICATED ASSEMBLY CONSISTING OF THREADED BODY AND INSULATING WEDGING PLUG OR PLUGS FOR NON-ARMORED ELECTRICAL CONDUCTORS OR CABLES IN RISER CONDUITS. PLUGS SHALL HAVE NUMBER, SIZE, AND SHAPE OF CONDUCTOR GRIPPING PIECES AS REQUIRED TO SUIT INDIVIDUAL CONDUCTORS OR CABLES SUPPORTED. BODY SHALL BE MALLEABLE IRON.

EXECUTION

APPLICATION

COMPLY WITH NECA 1 AND NECA 101 FOR APPLICATION OF HANGERS AND SUPPORTS FOR ELECTRICAL EQUIPMENT AND SYSTEMS EXCEPT IF REQUIREMENTS IN THIS SECTION ARE STRICTER.

MAXIMUM SUPPORT SPACING AND MINIMUM HANGER ROD SIZE FOR RACEWAY: SPACE SUPPORTS FOR EMT, IMC, AND RMC AS REQUIRED BY NFPA 70. MINIMUM ROD SIZE SHALL BE 1/4 INCH (6 MM) IN DIAMETER.

MULTIPLE RACEWAYS OR CABLES: INSTALL TRAPEZE-TYPE SUPPORTS FABRICATED WITH STEEL SLOTTED SUPPORT SYSTEM, SIZED SO CAPACITY CAN BE INCREASED BY AT LEAST 25 PERCENT IN FUTURE WITHOUT EXCEEDING SPECIFIED DESIGN LOAD LIMITS. SECURE RACEWAYS AND CABLES TO THESE SUPPORTS WITH TWO-BOLT CONDUIT CLAMPS.

SUPPORT INSTALLATION

COMPLY WITH NECA 1 AND NECA 101 FOR INSTALLATION REQUIREMENTS EXCEPT AS SPECIFIED IN THIS ARTICLE.

RACEWAY SUPPORT METHODS: IN ADDITION TO METHODS DESCRIBED IN NECA 1, EMT, IMC, AND RMC MAY BE SUPPORTED BY OPENINGS THROUGH STRUCTURE MEMBERS, AS PERMITTED IN NFPA 70.

MOUNTING AND ANCHORAGE OF SURFACE-MOUNTED EQUIPMENT AND COMPONENTS: ANCHOR AND FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTS TO BUILDING STRUCTURAL ELEMENTS BY THE FOLLOWING METHODS UNLESS OTHERWISE INDICATED BY CODE:
- TO WOOD: FASTEN WITH LAG SCREWS OR THROUGH BOLTS.
- TO NEW CONCRETE: BOLT TO CONCRETE INSERTS.
- TO MASONRY: APPROVED TOGGLE-TYPE BOLTS ON HOLLOW MASONRY UNITS AND EXPANSION ANCHOR FASTENERS ON SOLID MASONRY UNITS.
- TO EXISTING CONCRETE: EXPANSION ANCHOR FASTENERS.
- INSTEAD OF EXPANSION ANCHORS, POWDER-ACTUATED DRIVEN THREADED STUDS PROVIDED WITH LOCK WASHERS AND NUTS MAY BE USED IN EXISTING STANDARD-WEIGHT CONCRETE 4 INCHES (100 MM) THICK OR GREATER. DO NOT USE FOR ANCHORAGE TO LIGHTWEIGHT-AGGREGATE CONCRETE OR FOR SLABS LESS THAN 4 INCHES (100 MM) THICK.
- TO STEEL: BEAM CLAMPS (MSS TYPE 19, 21, 23, 25, OR 27) COMPLYING WITH MSS SP-69.
- TO LIGHT STEEL: SHEET METAL SCREWS.
- ITEMS MOUNTED ON HOLLOW WALLS AND NONSTRUCTURAL BUILDING SURFACES: MOUNT
- CABINETS, PANELBOARDS, DISCONNECT SWITCHES, CONTROL ENCLOSURES, PULL AND JUNCTION BOXES, TRANSFORMERS, AND OTHER DEVICES ON SLOTTED-CHANNEL RACKS ATTACHED TO SUBSTRATE.

4. CONDUCTORS AND CABLES

QUALITY ASSURANCE

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

COMPLY WITH NFPA 70.

PRODUCTS

CONDUCTORS AND CABLES

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- ALCAN PRODUCTS CORPORATION; ALCAN CABLE DIVISION.
- AMERICAN INSULATED WIRE CORP.; A LEVITON COMPANY.
- GENERAL CABLE CORPORATION.
- SENATOR WIRE & CABLE COMPANY.
- SOUTHWIRE COMPANY.

COPPER CONDUCTORS: COMPLY WITH NEMA WC 70.

CONDUCTOR INSULATION: COMPLY WITH NEMA WC 70 FOR TYPE THHN-THWN.

MULTICONDUCTOR CABLE: COMPLY WITH NEMA WC 70 FOR METAL-CLAD CABLE, TYPE MC WITH GROUND WIRE.

CONNECTORS AND SPLICES

AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- AFC CABLE SYSTEMS, INC.
- HUBBELL POWER SYSTEMS, INC.
- O-Z/GEDNEY; EGS ELECTRICAL GROUP LLC.
- 3M; ELECTRICAL PRODUCTS DIVISION.
- TYCO ELECTRONICS CORP.

DESCRIPTION: FACTORY-FABRICATED CONNECTORS AND SPLICES OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR APPLICATION AND SERVICE INDICATED.

EXECUTION

CONDUCTOR MATERIAL APPLICATIONS

FEEDERS: COPPER. SOLID FOR NO. 10 AWG AND SMALLER; STRANDED FOR NO. 8 AWG AND LARGER.

BRANCH CIRCUITS: COPPER. SOLID FOR NO. 10 AWG AND SMALLER; STRANDED FOR NO. 8 AWG AND LARGER.

CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

SERVICE ENTRANCE, FEEDERS: TYPE THHN-THWN, SINGLE CONDUCTORS IN RACEWAY.

BRANCH CIRCUITS CONCEALED IN CONCRETE, BELOW SLABS-ON-GRADE, AND UNDERGROUND: TYPE THHN-THWN, SINGLE CONDUCTORS IN RACEWAY.

BRANCH CIRCUITS NOT CONCEALED IN CONCRETE: TYPE THHN-THWN, SINGLE CONDUCTORS IN RACEWAY OR METAL-CLAD CABLE, TYPE MC].

INSTALLATION OF CONDUCTORS AND CABLES

CONCEAL CABLES IN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.

INSTALL EXPOSED CABLES PARALLEL AND PERPENDICULAR TO SURFACES OF EXPOSED STRUCTURAL MEMBERS, AND FOLLOW SURFACE CONTOURS WHERE POSSIBLE.

IDENTIFY AND COLOR-CODE CONDUCTORS AND CABLES ACCORDING TO SECTION "HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS."

5.RACEWAYS AND BOXES

QUALITY ASSURANCE

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

COMPLY WITH NFPA 70.

PRODUCTS

METAL CONDUIT AND TUBING

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- ALLIED TUBE & CONDUIT; A TYCO INTERNATIONAL LTD. CO.
- O-Z GEDNEY; A UNIT OF GENERAL SIGNAL.
- WHEATLAND TUBE COMPANY.

FITTINGS FOR CONDUIT (INCLUDING ALL TYPES AND FLEXIBLE AND LIQUIDTIGHT), EMT, AND CABLE: NEMA FB 1; LISTED FOR TYPE AND SIZE RACEWAY WITH WHICH USED, AND FOR APPLICATION AND ENVIRONMENT IN WHICH INSTALLED.
- CONDUIT FITTINGS FOR HAZARDOUS (CLASSIFIED) LOCATIONS: COMPLY WITH UL 886.
- FITTINGS FOR EMT: STEEL OR DIE-CAST, SET-SCREW OR COMPRESSION TYPE FOR CONCEALED LOCATIONS. STEEL OR DIE-CAST, COMPRESSION TYPE FOR EXPOSED LOCATIONS.

NONMETALLIC CONDUIT AND TUBING

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- CANTEX INC.
- CERTAINTEED CORP.; PIPE & PLASTICS GROUP.
- RACO; A HUBBELL COMPANY.
- THOMAS & BETTS CORPORATION.

BOXES, ENCLOSURES, AND CABINETS

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- HOFFMAN.
- HUBBELL INCORPORATED; KILLARK ELECTRIC MANUFACTURING CO. DIVISION.
- O-Z/GEDNEY; A UNIT OF GENERAL SIGNAL.
- RACO; A HUBBELL COMPANY.
- THOMAS & BETTS CORPORATION.
- WALKER SYSTEMS, INC.; WIREMOLD COMPANY (THE).

EXECUTION

RACEWAY APPLICATION

OUTDOORS: APPLY RACEWAY PRODUCTS AS SPECIFIED BELOW, UNLESS OTHERWISE INDICATED:
- EXPOSED AND CONCEALED CONDUIT: RIGID STEEL CONDUIT.
- UNDERGROUND CONDUIT: RNC, TYPE EPC-40-PVC, DIRECT BURIED.
- CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): LFNC.
- BOXES AND ENCLOSURES, ABOVEGROUND: NEMA 250, TYPE 3R.

COMPLY WITH THE FOLLOWING INDOOR APPLICATIONS, UNLESS OTHERWISE INDICATED:
- EXPOSED: EMT.
- CONCEALED IN CEILINGS AND INTERIOR WALLS AND PARTITIONS: EMT, UNLESS MC ALLOWED PER “CONDUCTORS AND CABLES” SECTION.
- CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): FMC, EXCEPT USE LFMC IN DAMP OR WET LOCATIONS.
- DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT.
- RACEWAYS FOR OPTICAL FIBER OR COMMUNICATIONS CABLE: EMT.
- BOXES AND ENCLOSURES: NEMA 250, TYPE 1, EXCEPT USE NEMA 250, TYPE 4, NONMETALLIC IN DAMP OR WET LOCATIONS.

MINIMUM RACEWAY SIZE: 1/2-INCH (16-MM) TRADE SIZE.

DO NOT INSTALL ALUMINUM CONDUITS IN CONTACT WITH CONCRETE.

INSTALLATION

COMPLY WITH NECA 1 FOR INSTALLATION REQUIREMENTS APPLICABLE TO PRODUCTS SPECIFIED IN PART 2 EXCEPT WHERE REQUIREMENTS ON DRAWINGS OR IN THIS ARTICLE ARE STRICTER.

KEEP RACEWAYS AT LEAST 6 INCHES (150 MM) AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING.

SUPPORT RACEWAYS AS SPECIFIED IN "HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS."

ARRANGE STUB-UPS SO CURVED PORTIONS OF BENDS ARE NOT VISIBLE ABOVE THE FINISHED SLAB.

INSTALL NO MORE THAN THE EQUIVALENT OF THREE 90-DEGREE BENDS IN ANY CONDUIT RUN EXCEPT FOR COMMUNICATIONS CONDUITS, FOR WHICH FEWER BENDS ARE ALLOWED.
- CONCEAL CONDUIT AND EMT WITHIN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
- RACEWAYS EMBEDDED IN SLABS:
  - RUN CONDUIT LARGER THAN 1-INCH (27-MM) TRADE SIZE, PARALLEL OR AT RIGHT ANGLES TO MAIN REINFORCEMENT. WHERE AT RIGHT ANGLES TO REINFORCEMENT, PLACE CONDUIT CLOSE TO SLAB SUPPORT.
  - ARRANGE RACEWAYS TO CROSS BUILDING EXPANSION JOINTS AT RIGHT ANGLES WITH EXPANSION FITTINGS.
  - CHANGE FROM ENT TO RNC, TYPE EPC-40-PVC, RIGID STEEL CONDUIT, OR IMC BEFORE RISING ABOVE THE FLOOR.
- RACEWAY TERMINATIONS AT LOCATIONS SUBJECT TO MOISTURE OR VIBRATION: USE INSULATING BUSHINGS TO PROTECT CONDUCTORS, INCLUDING CONDUCTORS SMALLER THAN NO. 4 AWG.
- INSTALL PULL WIRES IN EMPTY RACEWAYS. USE POLYPROPYLENE OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN 200-LB (90-KG) TENSILE STRENGTH. LEAVE AT LEAST 12 INCHES (300 MM) OF SLACK AT EACH END OF PULL WIRE.
- RACEWAYS FOR OPTICAL FIBER AND COMMUNICATIONS CABLE: INSTALL RACEWAYS, METALLIC AND NONMETALLIC, RIGID AND FLEXIBLE, WITH A MAXIMUM OF TWO 90-DEGREE BENDS OR EQUIVALENT FOR EACH LENGTH OF RACEWAY UNLESS DRAWINGS SHOW STRICTER REQUIREMENTS. SEPARATE LENGTHS WITH PULL OR JUNCTION BOXES OR TERMINATIONS AT DISTRIBUTION FRAMES OR CABINETS WHERE NECESSARY TO COMPLY WITH THESE REQUIREMENTS.
- FLEXIBLE CONDUIT CONNECTIONS: USE MAXIMUM OF 72 INCHES (1830 MM) OF FLEXIBLE CONDUIT FOR RECESSED AND SEMIRECESSED LIGHTING FIXTURES, EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION, OR MOVEMENT; AND FOR TRANSFORMERS AND MOTORS.
  - USE LFMC IN DAMP OR WET LOCATIONS SUBJECT TO SEVERE PHYSICAL DAMAGE.
  - USE LFMC OR LFNC IN DAMP OR WET LOCATIONS NOT SUBJECT TO SEVERE PHYSICAL DAMAGE.
- RECESSED BOXES IN MASONRY WALLS: SAW-CUT OPENING FOR BOX IN CENTER OF CELL OF MASONRY BLOCK, AND INSTALL BOX FLUSH WITH SURFACE OF WALL.

6.WIRING DEVICES

QUALITY ASSURANCE

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

COMPLY WITH NFPA 70.

COORDINATION

RECEPTACLES FOR OWNER-FURNISHED EQUIPMENT: MATCH PLUG CONFIGURATIONS.

CORD AND PLUG SETS: MATCH EQUIPMENT REQUIREMENTS.

PRODUCTS

STRAIGHT BLADE RECEPTACLES

CONVENIENCE RECEPTACLES, 125 V, 20 A: COMPLY WITH NEMA WD 1, NEMA WD 6 CONFIGURATION 5-20R, AND UL 498.
- PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
  - COOPER; 5351 (SINGLE), 5352 (DUPLEX).
  - HUBBELL; HBL5351 (SINGLE), CR5352 (DUPLEX).
  - LEVITON; 5891 (SINGLE), 5352 (DUPLEX).
  - PASS & SEYMOUR; 5381 (SINGLE), 5352 (DUPLEX).

GFCI RECEPTACLES

DUPLEX GFCI CONVENIENCE RECEPTACLES, 125 V, 20 A:
- PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
  - COOPER; GF20.
  - PASS & SEYMOUR; 2084.
  - HUBBELL EQUAL
  - LEVITON EQUAL.

WALL PLATES

SINGLE AND COMBINATION TYPES TO MATCH CORRESPONDING WIRING DEVICES.
- PLATE-SECURING SCREWS: METAL WITH HEAD COLOR TO MATCH PLATE FINISH.
- MATERIAL FOR DAMP LOCATIONS: CAST ALUMINUM WITH SPRING-LOADED LIFT COVER, AND LISTED AND LABELED FOR USE IN "WET LOCATIONS."

WET-LOCATION, WEATHERPROOF COVER PLATES: NEMA 250, COMPLYING WITH TYPE 3R WEATHER-RESISTANT, DIE-CAST ALUMINUM WITH LOCKABLE COVER.

7.LIGHTING CONTROL DEVICES

QUALITY ASSURANCE

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

COORDINATION

COORDINATE LAYOUT AND INSTALLATION OF CEILING-MOUNTED DEVICES WITH OTHER CONSTRUCTION THAT PENETRATES CEILINGS OR IS SUPPORTED BY THEM, INCLUDING LIGHT FIXTURES, HVAC EQUIPMENT, SMOKE DETECTORS, FIRE-SUPPRESSION SYSTEM, AND PARTITION ASSEMBLIES.

PRODUCTS

TIME SWITCHES

BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE PRODUCT INDICATED ON DRAWINGS OR A COMPARABLE PRODUCT BY ONE OF THE FOLLOWING:
- INTERMATIC, INC.
- SQUARE D; SCHNEIDER ELECTRIC.
- TORK.
- WATT STOPPER (THE).

ELECTRONIC TIME SWITCHES: ELECTRONIC, SOLID-STATE PROGRAMMABLE UNITS WITH ALPHANUMERIC DISPLAY; COMPLYING WITH UL 917.
- CONTACT CONFIGURATION: SPST.
- CONTACT RATING: 20-A BALLAST LOAD, 120/240-V AC.
- PROGRAM: 2 ON-OFF SET POINTS ON A 24-HOUR SCHEDULE, ALLOWING DIFFERENT SET POINTS FOR EACH DAY OF THE WEEK.
- CIRCUITRY: ALLOW CONNECTION OF A PHOTOELECTRIC RELAY AS SUBSTITUTE FOR ON-OFF FUNCTION OF A PROGRAM.
- ASTRONOMIC TIME: ALL CHANNELS.
- BATTERY BACKUP: FOR SCHEDULES AND TIME CLOCK.

OUTDOOR PHOTOELECTRIC SWITCHES

BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE A PRODUCT BY ONE OF THE FOLLOWING:
- INTERMATIC, INC.
- SQUARE D; SCHNEIDER ELECTRIC.
- TORK.
- WATT STOPPER (THE).

DESCRIPTION: SOLID STATE, WITH SPST DRY CONTACTS RATED FOR 1800 VA TO OPERATE CONNECTED LOAD, RELAY, OR CONTACTOR COILS; COMPLYING WITH UL 773.

LIGHT-LEVEL MONITORING RANGE: 1.5 TO 10 FC (16.14 TO 108 LX), WITH AN ADJUSTMENT FOR TURN-ON AND TURN-OFF LEVELS WITHIN THAT RANGE.

TIME DELAY: 30-SECOND MINIMUM, TO PREVENT FALSE OPERATION.

LIGHTNING ARRESTER: AIR-GAP TYPE.

MOUNTING: TWIST LOCK COMPLYING WITH IEEE C136.10, WITH BASE.

LIGHTING CONTACTORS

BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE A PRODUCT BY ONE OF THE FOLLOWING:
- EATON ELECTRICAL INC.; CUTLER-HAMMER PRODUCTS.
- GE INDUSTRIAL SYSTEMS; TOTAL LIGHTING CONTROL.
- SQUARE D; SCHNEIDER ELECTRIC.

DESCRIPTION: ELECTRICALLY OPERATED AND ELECTRICALLY HELD, COMPLYING WITH NEMA ICS 2 AND UL 508.
- CURRENT RATING FOR SWITCHING: LISTING OR RATING CONSISTENT WITH TYPE OF LOAD SERVED, INCLUDING TUNGSTEN FILAMENT, INDUCTIVE, AND HIGH-INRUSH BALLAST (BALLAST WITH 15 PERCENT OR LESS TOTAL HARMONIC DISTORTION OF NORMAL LOAD CURRENT).
- FAULT CURRENT WITHSTAND RATING: EQUAL TO OR EXCEEDING THE AVAILABLE FAULT CURRENT AT THE POINT OF INSTALLATION.
- ENCLOSURE: COMPLY WITH NEMA 250.
- PROVIDE WITH CONTROL AND PILOT DEVICES AS INDICATED ON DRAWINGS, MATCHING THE NEMA TYPE SPECIFIED FOR THE ENCLOSURE.

EXECUTION

FIELD QUALITY CONTROL

OPERATIONAL TEST: VERIFY OPERATION OF EACH LIGHTING CONTROL DEVICE, AND ADJUST TIME DELAYS.

8.ENCLOSED SWITCHES

SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF ENCLOSED SWITCH. INCLUDE DIMENSIONED ELEVATIONS, SECTIONS, WEIGHTS, AND MANUFACTURERS' TECHNICAL DATA ON FEATURES, PERFORMANCE, ELECTRICAL CHARACTERISTICS, RATINGS, ACCESSORIES, AND FINISHES.

QUALITY ASSURANCE

PRODUCT SELECTION FOR RESTRICTED SPACE: DRAWINGS INDICATE MAXIMUM DIMENSIONS FOR ENCLOSED SWITCHES AND CIRCUIT BREAKERS, INCLUDING CLEARANCES BETWEEN ENCLOSURES, AND ADJACENT SURFACES AND OTHER ITEMS. COMPLY WITH INDICATED MAXIMUM DIMENSIONS.

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

COMPLY WITH NFPA 70.

COORDINATION

COORDINATE LAYOUT AND INSTALLATION OF SWITCHES AND COMPONENTS WITH EQUIPMENT SERVED AND ADJACENT SURFACES. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.

PRODUCTS

FUSIBLE AND NONFUSIBLE SWITCHES

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- EATON ELECTRICAL INC.; CUTLER-HAMMER BUSINESS UNIT.
- GENERAL ELECTRIC COMPANY; GE CONSUMER & INDUSTRIAL - ELECTRICAL DISTRIBUTION.
- SIEMENS ENERGY & AUTOMATION, INC.
- SQUARE D; A BRAND OF SCHNEIDER ELECTRIC.

TYPE GD, GENERAL DUTY, SINGLE THROW, 240-V AC, 800 A AND SMALLER: UL 98 AND NEMA KS 1, HORSEPOWER RATED, WITH CARTRIDGE FUSE INTERIORS TO ACCOMMODATE INDICATED FUSES, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.

TYPE HD, HEAVY DUTY, SINGLE THROW, [240] [600]-V AC, 1200 A AND SMALLER: UL 98 AND NEMA KS 1, HORSEPOWER RATED, WITH CLIPS OR BOLT PADS TO ACCOMMODATE [SPECIFIED] [INDICATED] FUSES, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.

ACCESSORIES:
- EQUIPMENT GROUND KIT: INTERNALLY MOUNTED AND LABELED FOR COPPER AND ALUMINUM GROUND CONDUCTORS.
- NEUTRAL KIT: INTERNALLY MOUNTED; INSULATED, CAPABLE OF BEING GROUNDED AND BONDED; LABELED FOR COPPER AND ALUMINUM NEUTRAL CONDUCTORS.
- LUGS: MECHANICAL TYPE, SUITABLE FOR NUMBER, SIZE, AND CONDUCTOR MATERIAL.
- SERVICE-RATED SWITCHES: LABELED FOR USE AS SERVICE EQUIPMENT.

ENCLOSURES

ENCLOSED SWITCHES AND CIRCUIT BREAKERS: NEMA AB 1, NEMA KS 1, NEMA 250, AND UL 50, TO COMPLY WITH ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION.
- INDOOR, DRY AND CLEAN LOCATIONS: NEMA 250, TYPE 1.
- OUTDOOR LOCATIONS: NEMA 250, TYPE 3R.

EXECUTION

INSTALLATION

INSTALL INDIVIDUAL WALL-MOUNTED SWITCHES AND CIRCUIT BREAKERS WITH TOPS AT UNIFORM HEIGHT UNLESS OTHERWISE INDICATED.

COMPLY WITH NECA 1.

IDENTIFICATION

COMPLY WITH REQUIREMENTS IN SECTION "ELECTRICAL IDENTIFICATION."
- IDENTIFY FIELD-INSTALLED CONDUCTORS, INTERCONNECTING WIRING, AND COMPONENTS; PROVIDE WARNING SIGNS.
- LABEL EACH ENCLOSURE WITH ENGRAVED METAL OR LAMINATED-PLASTIC NAMEPLATE.

9.PANELBOARDS

SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF PANELBOARD, SWITCHING AND OVERCURRENT PROTECTIVE DEVICE, TRANSIENT VOLTAGE SUPPRESSION DEVICE, ACCESSORY, AND COMPONENT INDICATED. INCLUDE DIMENSIONS AND MANUFACTURERS' TECHNICAL DATA ON FEATURES, PERFORMANCE, ELECTRICAL CHARACTERISTICS, RATINGS, AND FINISHES.

OPERATION AND MAINTENANCE DATA: FOR PANELBOARDS AND COMPONENTS TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

QUALITY ASSURANCE

SOURCE LIMITATIONS: OBTAIN PANELBOARDS, OVERCURRENT PROTECTIVE DEVICES, COMPONENTS, AND ACCESSORIES FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.

PRODUCT SELECTION FOR RESTRICTED SPACE: DRAWINGS INDICATE MAXIMUM DIMENSIONS FOR PANELBOARDS INCLUDING CLEARANCES BETWEEN PANELBOARDS AND ADJACENT SURFACES AND OTHER ITEMS. COMPLY WITH INDICATED MAXIMUM DIMENSIONS.

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

COMPLY WITH NEMA PB 1.

COMPLY WITH NFPA 70.

COORDINATION

COORDINATE LAYOUT AND INSTALLATION OF PANELBOARDS AND COMPONENTS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM, INCLUDING ELECTRICAL AND OTHER TYPES OF EQUIPMENT, RACEWAYS, PIPING, ENCUMBRANCES TO WORKSPACE CLEARANCE REQUIREMENTS, AND ADJACENT SURFACES. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.

WARRANTY

SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE TRANSIENT VOLTAGE SUPPRESSION DEVICES THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

EXTRA MATERIALS

KEYS: TWO SPARES FOR EACH TYPE OF PANELBOARD CABINET LOCK.

PRODUCTS

GENERAL REQUIREMENTS FOR PANELBOARDS

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- EATON ELECTRICAL INC.; CUTLER-HAMMER BUSINESS UNIT.
- GENERAL ELECTRIC COMPANY; GE CONSUMER & INDUSTRIAL - ELECTRICAL DISTRIBUTION.
- SIEMENS ENERGY & AUTOMATION, INC.
- SQUARE D; A BRAND OF SCHNEIDER ELECTRIC.
- ENCLOSURES: FLUSH- AND SURFACE-MOUNTED CABINETS AS SCHEDULED.
- RATED FOR ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION.
- INDOOR DRY AND CLEAN LOCATIONS: NEMA 250, TYPE 1.
- OUTDOOR LOCATIONS: NEMA 250, TYPE 3R.
- OTHER WET OR DAMP INDOOR LOCATIONS: NEMA 250, TYPE 4.

FINISHES:
- PANELS AND TRIM: STEEL, FACTORY FINISHED IMMEDIATELY AFTER CLEANING AND PRETREATING WITH MANUFACTURER'S STANDARD TWO-COAT, BAKED-ON FINISH CONSISTING OF PRIME COAT AND THERMOSETTING TOPCOAT.
- BACK BOXES: GALVANIZED STEEL.

PHASE, NEUTRAL, AND GROUND BUSES:
- MATERIAL: HARD-DRAWN COPPER, 98 PERCENT CONDUCTIVITY.
- EQUIPMENT GROUND BUS: ADEQUATE FOR FEEDER AND BRANCH-CIRCUIT EQUIPMENT GROUNDING CONDUCTORS; BONDED TO BOX.

CONDUCTOR CONNECTORS: SUITABLE FOR USE WITH CONDUCTOR MATERIAL AND SIZES.
- MATERIAL: HARD-DRAWN COPPER, 98 PERCENT CONDUCTIVITY.
- MAIN AND NEUTRAL LUGS: MECHANICAL TYPE.
- GROUND LUGS AND BUS-CONFIGURED TERMINATORS: MECHANICAL TYPE.
- FEED-THROUGH LUGS: MECHANICAL TYPE, SUITABLE FOR USE WITH CONDUCTOR MATERIAL. LOCATE AT OPPOSITE END OF BUS FROM INCOMING LUGS OR MAIN DEVICE.

SERVICE EQUIPMENT LABEL: NRTL LABELED FOR USE AS SERVICE EQUIPMENT FOR PANELBOARDS OR LOAD CENTERS WITH ONE OR MORE MAIN SERVICE DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES.

PANELBOARD SHORT-CIRCUIT CURRENT RATING: RATED FOR SERIES-CONNECTED SYSTEM WITH INTEGRAL OR REMOTE UPSTREAM OVERCURRENT PROTECTIVE DEVICES AND LABELED BY AN NRTL. INCLUDE SIZE AND TYPE OF ALLOWABLE UPSTREAM AND BRANCH DEVICES, LISTED AND LABELED FOR SERIES-CONNECTED SHORT-CIRCUIT RATING BY AN NRTL.

LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

MAINS: CIRCUIT BREAKER OR LUGS ONLY AS SCHEDULED.

BRANCH OVERCURRENT PROTECTIVE DEVICES: BOLT-ON CIRCUIT BREAKERS, REPLACEABLE WITHOUT DISTURBING ADJACENT UNITS.

EXECUTION

INSTALLATION

INSTALL PANELBOARDS AND ACCESSORIES ACCORDING TO NEMA PB 1.1.

MOUNT TOP OF TRIM 90 INCHES (2286 MM) ABOVE FINISHED FLOOR UNLESS OTHERWISE INDICATED.

MOUNT PANELBOARD CABINET PLUMB AND RIGID WITHOUT DISTORTION OF BOX. MOUNT RECESSED PANELBOARDS WITH FRONTS UNIFORMLY FLUSH WITH WALL FINISH AND MATING WITH BACK BOX.

INSTALL FILLER PLATES IN UNUSED SPACES.

COMPLY WITH NECA 1.

IDENTIFICATION

PANELBOARD NAMEPLATES: LABEL EACH PANELBOARD WITH A NAMEPLATE COMPLYING WITH REQUIREMENTS FOR IDENTIFICATION SPECIFIED IN SECTION "ELECTRICAL IDENTIFICATION."

10. FUSES

SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE CONSTRUCTION DETAILS, MATERIAL, DIMENSIONS, DESCRIPTIONS OF INDIVIDUAL COMPONENTS, AND FINISHES FOR SPARE-FUSE CABINETS. INCLUDE THE FOLLOWING FOR EACH FUSE TYPE INDICATED:

QUALITY ASSURANCE

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.

COMPLY WITH NEMA FU 1 FOR CARTRIDGE FUSES.

COMPLY WITH NFPA 70.

PRODUCTS

MANUFACTURERS

MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- COOPER BUSSMANN, INC.
- EDISON FUSE, INC.
- FERRAZ SHAWMUT, INC.
- LITTELFUSE, INC.

CARTRIDGE FUSES

CHARACTERISTICS: NEMA FU 1, NONRENEWABLE CARTRIDGE FUSES WITH VOLTAGE RATINGS CONSISTENT WITH CIRCUIT VOLTAGES.

EXECUTION

FUSE APPLICATIONS

CARTRIDGE FUSES:
- SERVICE ENTRANCE: CLASS RK1, FAST ACTING (0-600A); CLASS L, FAST ACTING (600A AND GREATER).

11. LIGHTING

SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF LIGHTING FIXTURE, ARRANGED IN ORDER OF FIXTURE DESIGNATION. INCLUDE DATA ON FEATURES, ACCESSORIES, FINISHES, AND THE FOLLOWING:
- PHYSICAL DESCRIPTION OF LIGHTING FIXTURE INCLUDING DIMENSIONS.
- EMERGENCY LIGHTING UNITS INCLUDING BATTERY AND CHARGER.
- BALLAST.
- ENERGY-EFFICIENCY DATA.
- PHOTOMETRIC DATA, IN IESNA FORMAT, BASED ON LABORATORY TESTS OF EACH LIGHTING FIXTURE TYPE, OUTFITTED WITH LAMPS, BALLASTS, AND ACCESSORIES IDENTICAL TO THOSE INDICATED FOR THE LIGHTING FIXTURE AS APPLIED IN THIS PROJECT.

OPERATION AND MAINTENANCE DATA: FOR LIGHTING EQUIPMENT AND FIXTURES TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.

WARRANTIES: SPECIAL WARRANTIES SPECIFIED IN THIS SECTION.

QUALITY ASSURANCE

ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

COMPLY WITH NFPA 70.

COORDINATION

COORDINATE LAYOUT AND INSTALLATION OF LIGHTING FIXTURES AND SUSPENSION SYSTEM WITH OTHER CONSTRUCTION THAT PENETRATES CEILINGS OR IS SUPPORTED BY THEM, INCLUDING HVAC EQUIPMENT, FIRE-SUPPRESSION SYSTEM, AND PARTITION ASSEMBLIES.

12. FIRE-ALARM SYSTEM (DEFERRED SUBMITTAL)

SUBMITTALS

Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work. Provide voltage drop and battery-size calculations. Show all devices and cable connections between each.

QUALITY ASSURANCE

Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project. Obtain fire-alarm system from single source from single manufacturer. Components shall be compatible with, and operate as, an extension of existing system. All components shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

PRODUCTS

MANUFACTURERS

Manufacturers: Provide products by one of the following:
- Bosch Security Systems.
- Fire Control Instruments, Inc.; a Honeywell company.
- Fire Lite Alarms; a Honeywell company.
- Gamewell; a Honeywell company.
- NOTIFIER; a Honeywell company.
- Siemens Building Technologies, Inc.; Fire Safety Division.
- SimplexGrinnell LP; a Tyco International company.

SYSTEMS OPERATIONAL DESCRIPTION

Fire-alarm signal initiation shall be by smoke detectors and duct smoke detectors.

Fire-alarm signal shall continuously operate alarm-notification appliances, identify alarm at the fire-alarm control unit and remote annunciators, transmit an alarm signal to the remote alarm receiving station, switch heating, ventilating, and air-conditioning equipment controls to fire-alarm mode, and record events in the system memory.

System trouble signal shall be initiated by open circuits, shorts, and grounds in designated circuits; opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices; loss of primary power at fire-alarm control unit; ground or a single break in fire-alarm control unit internal circuits; abnormal ac voltage at fire-alarm control unit; a break in standby battery circuitry; failure of battery charging; or an abnormal position of any switch at fire-alarm control unit or annunciator.

System Trouble and Supervisory Signal Actions shall initiate notification appliance and annunciate at fire-alarm control unit.

FIRE-ALARM CONTROL UNIT

Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL. Furnish with addressable control circuits for operation of mechanical equipment and elevator recall capabilities as required.

Continuously adjustable slider; with single-pole or three-way switching module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and digital alarm communicator transmitters shall be powered by 24-V dc source. Sealed lead calcium batteries shall be furnished for secondary power.

SYSTEM SMOKE DETECTORS

Photoelectric Smoke Detectors:

Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.

Duct Smoke Detectors: Photoelectric type complying with UL 268A.

Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with the supplied detector. Furnish with sampling tubes and relay fan shutdown.

NOTIFICATION APPLIANCES

Combination devices shall be factory-integrated audible and visible devices in a single-mounting assembly.

Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet (3 m) from the horn, using the coded signal prescribed in UL 464 test protocol.

Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch- (25-mm-) high letters on the lens. Furnish with white faceplate and 15/30/75/110 cd field selectable output

EXECUTION

EQUIPMENT INSTALLATION

Comply with NFPA 72 for installation of fire-alarm equipment.

Equipment Mounting: Install fire-alarm control unit and annuciator on finished floor with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.

Audible Alarm-Indicating Devices: Install 80” above the floor or 6” below ceiling, whichever is lower. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.

Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at 80” above the floor or 6” below ceiling, whichever is lower.

Manual Fire Alarm Boxes: Install at 48” to the top of the device.

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Gladfelter Engineering Group assumes design responsibility for this project for only the mechanical, plumbing and electrical disciplines with drawing sheet number beginning with M, P and E. All other drawings should be considered the work of others. Further, drawings in this project set may contain drawing information, including but not limited to: architectural plans, sections and elevations, site plans and surveys and other information pertinent to showing the mechanical, plumbing and electrical work which is furnished by others, generally indicated by screened or light type. Gladfelter Engineering Group assumes no responsibility or liability for the accuracy or regulatory compliance for work prepared by others even though shown on MPE drawings. Gladfelter Engineering Group assumes responsibility only for the design of mechanical, plumbing and electrical disciplines contained herein, generally indicated in bold type.

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COMPLY WITH all laws, codes, ordinances and regulations with authorities having jurisdiction and with requirements of the Landlord, if applicable. Do not start Work until all permits and required approvals are obtained.

A NEW BUILDING FOR:

ASSOCIATED PLASTIC SURGEONS

I-470 BUSINESS & TECHNOLOGY CENTER
NE McBAIN DRIVE
LEE'S SUMMIT, MISSOURI

GREGORY P. GLADFELTER
NUMBER E-2000150421
12/06/2024

PROJECT NO. 231206

DRAWING ISSUANCE

09/27/2024 SHELL PERMIT

SHEET NUMBER

E4.0S

SPECIFICATIONS