THE WATER HOLE REBUILD

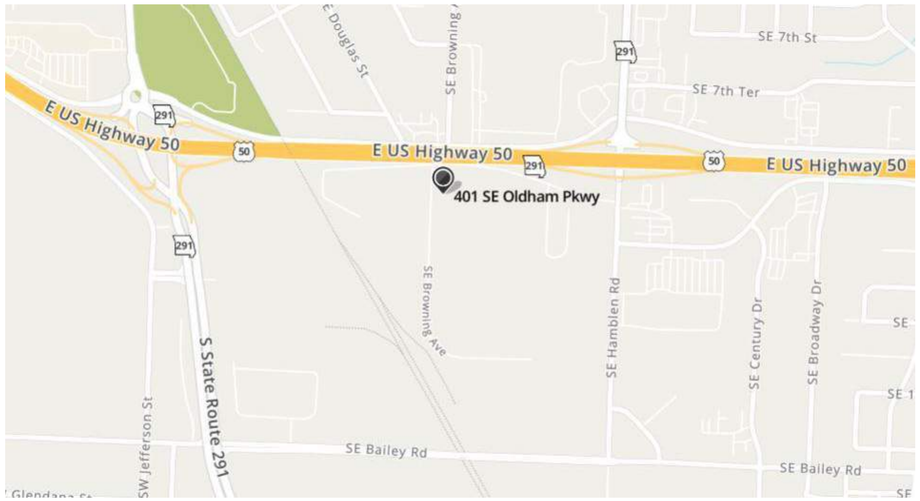
CONSTRUCTION SET

NOVEMBER 07, 2022

ABBREVIATIONS

A	
A/C	AIR CONDITIONING
A/V	AUDIO/VISUAL
ACT	ACOUSTICAL CEILING TILE
A.F.F.	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALUM.	ALUMINUM
APPROX.	APPROXIMATELY
ARCH.	ARCHITECT/ARCHITECTURAL
B	
BD.	BOARD
BLDG.	BUILDING
B.O.	BOTTOM OF
BOT.	BOTTOM
BRG.	BEARING
C	
CFM	CUBIC FEET PER MINUTE
C.I.P.	CAST IN PLACE
CJ	CONTROL JOINT
CLG.	CEILING
CLOS.	CLOSET
CLR.	CLEAR/CLEARANCE
CMU	CONCRETE MASONRY UNIT
COL.	COLUMN
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CTR.	CENTER
D	
DBL.	DOUBLE
DEMO	DEMOLISH/DEMOLITION
DEPT.	DEPARTMENT
DF	DRINKING FOUNTAIN
DIA.	DIAMETER
DIM.	DIMENSION
DR.	DOOR
DS	DOWNSPOUT
DTL.	DETAIL
DWG./DWGS.	DRAWING/DRAWINGS
E	
EA.	EACH
EF	EXHAUST FAN
EJ	EXPANSION JOINT
EL.	ELEVATION (HEIGHT)
ELEC.	ELECTRICAL
ELEV.	ELEVATION (DRAWING)
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXP.	EXPANSION/EXPANDED
F	
FD	FLOOR DRAIN
FDC	FIRE DEPT. CONNECTION
FDN.	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FIN.	FINISHED
FLR.	FLOOR
FT.	FEET/FOOT
FTG.	FOOTING
G	
GA.	GAUGE
GALV.	GALVANIZED
GFRC	GLASS FIBER REINF. CONC.
GYP.	GYPSUM
H	
HDR	HEADER
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HT.	HEIGHT
HVAC	HEATING/VENTILATION/ AIR CONDITIONING
I	
I.D.	INSIDE DIAMETER
IN.	INCH
INFO	INFORMATION
INSUL.	INSULATION/INSULATED
J	
JAN.	JANITOR
JST.	JOIST
JT.	JOINT
K	
KIT.	KITCHEN
L	
LAV.	LAVATORY
L.F.	LINEAR FEET/FOOT
LT.	LIGHT
M	
MAX.	MAXIMUM
MECH.	MECHANICAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MIRR.	MIRRORED
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTL.	METAL
N	
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
N.T.S.	NOT TO SCALE
O	
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.H.	OPPOSITE HAND
OVHD.	OVERHEAD
OZ.	OUNCE/OUNCES
P	
PEMB	PRE-ENGINEERED METAL BUILDING
P.LAM	PLASTIC LAMINATE
POLY	POLYETHYLEN
PREFAB.	PREFABRICATED
PREFIN.	PREFINISHED
PREMFRD.	PREMANUFACTURED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PTD.	PAINTED
PVC	POLYVINYL CHLORIDE
Q	
QTY.	QUANTITY
R	
R's	RISERS
RD	ROOF DRAIN
RE:	REFERENCE/REFER TO
REINF.	REINFORCING
REQ'D/REQ'S	REQUIRED/REQUIREMENTS
REV.	REVISION
RM.	ROOM
R.O.	ROUGH OPENING
RTU	ROOF TOP UNIT
R/W	RIGHT OF WAY
S	
SAN.	SANITARY
SCH./SCHED.	SCHEDULE
SECT.	SECTION
S.F.	SQUARE FEET/FOOT
SHT.	SHEET
SIM.	SIMILAR
SOG	SLAB ON GRADE
SQ.	SQUARE
SS	STAINLESS STEEL
STC	SOUND TRANMISSION COEFFICIENT
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SUSP.	SUSPENDED
S.Y.	SQUARE YARDS
SYM.	SYMMETRICAL
T	
T's	TREADS
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
TEMP.	TEMPORARY
THRU	THROUGH
T.O.	TOP OF
TV	TELEVISION
TYP.	TYPICAL
U	
U/G	UNDERGROUND
UNFIN.	UNFINISHED
U.N.O.	UNLESS NOTED OTHERWISE
V	
VCT	VINYL COMPOSITION TILE
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
W	
W/	WITH
WC	WATER CLOSET
WD.	WOOD
WDW	WINDOW
WT.	WEIGHT
Y	
YD.	YARD/YARDS

MISCELLANEOUS	
@	AT
&	AND
Ø	DIAMETER



PROJECT LOCATION

SHEET INDEX	
SHEET NUMBER	SHEET NAME
CS 1	COVER SHEET
G1.00	CODE PLAN & GENERAL INFORMATION
AS1.00	SITE PLAN
A1.01	FLOOR PLANS & ROOF PLAN
A2.01	EXTERIOR ELEVATIONS
A2.02	EXTERIOR ELEVATIONS
A3.11	BUILDING SECTION
A3.21	WALL SECTIONS
A3.22	WALL SECTIONS
A5.01	DOOR & WINDOW DETAILS
A6.01	CEILING PLAN & INTERIOR DETAILS
A6.02	CASEWORK PLANS & DETAILS
A8.01	SIGNAGE PLAN
A9.01	SPECIFICATIONS
A9.02	SPECIFICATIONS
A9.03	SPECIFICATIONS
A9.04	SPECIFICATIONS
S0	GENERAL NOTES & DETAILS
S1.00	FOUNDATION PLAN & DETAILS
S2.00	MEZZANINE PLAN & DETAILS
S3.00	ROOF FRAMING PLAN & DETAILS
MP0.00	MECHANICAL/ PLUMBING SPECIFICATIONS
M1.00	MECHANICAL PLAN
M2.00	MECHANICAL DETAILS
P1.00	PLUMBING WASTE & VENT PLAN
P2.00	PLUMBING WATER & GAS PLAN
P3.00	PLUMBING MEZZANINE PLAN
P4.00	PLUMBING DETAILS
E0.00	ELECTRICAL SPECIFICATIONS
E1.00	ELECTRICAL LIGHTING PLAN
E2.00	ELECTRICAL POWER PLAN

DESIGN LAB
architectural solutions
5007 W. 63rd Terrace
Prairie Village, KS 66208
Ph: 913-461-4325
ARCHITECT

THE WATER HOLE REBUILD
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date

STATE OF MISSOURI
DENNIS O'ROARK
NUMBER A-2010024479
11-08-2022
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

COVER SHEET

CS 1

Scale 1/4" = 1'-0"

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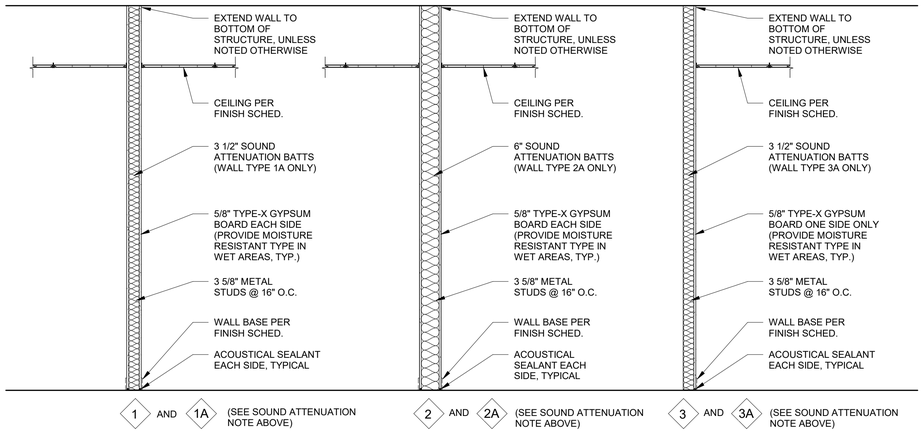
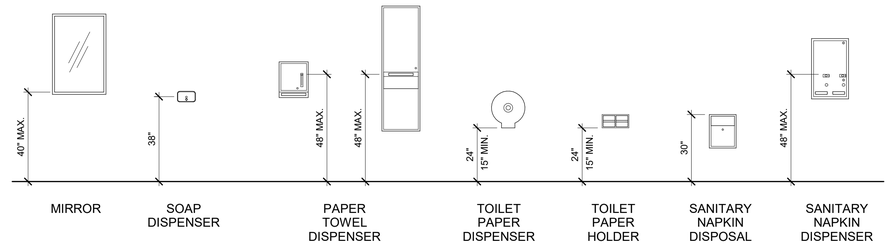
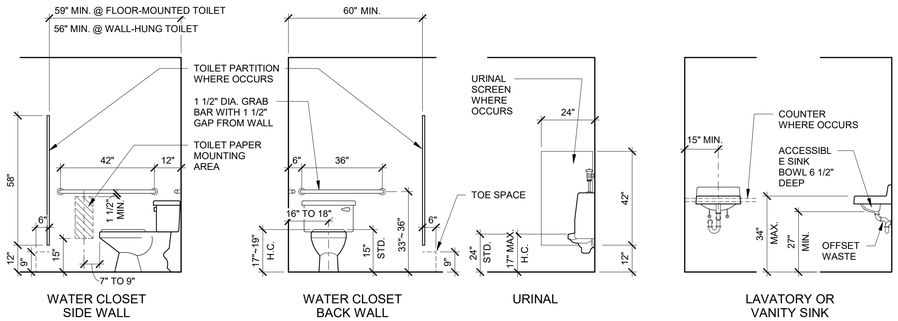


WALL TYPE LEGEND



TYPICAL TOILET ACCESSORIES MOUNTING HEIGHTS



TYPICAL PLUMBING FIXTURES AND ACCESSORIES CONFIGURATIONS

CODE SUMMARY

APPLICABLE CODES (AS AMENDED BY THE AUTHORITY HAVING JURISDICTION)

BUILDING CODE:	2018 INTERNATIONAL BUILDING CODE (IBC)
ELECTRICAL CODE:	2017 NATIONAL ELECTRICAL CODE (NEC)
MECHANICAL CODE:	2018 INTERNATIONAL MECHANICAL CODE (IMC)
PLUMBING CODE:	2018 INTERNATIONAL PLUMBING CODE (IPC)
ENERGY CODE:	NOT APPLICABLE

ACCESSIBILITY STD: ICC/ANSI A117.1-2009

CONSTRUCTION TYPE: V-B
OF STORIES: 1 TOTAL

IBC SECTION	DESCRIPTION	VALUE
302.1	Occupancy Classification	Showroom: M (Mercantile) Office Area: B (Business) Storeroom & Mezzanine Areas: S-1 (Storage)
504.3	Allowable Building Height Actual Building Height	40'-0" (based on V-B construction type, non-sprinklered) 21'-10"
504.4	Allowable # of Stories Actual # of Stories	2 (based on V-B construction type, non-sprinklered) 1
506.2	Tabular Area Factor (Table 506.2) Perimeter with Open Frontage (F) Building Perimeter (P) Frontage Width (W) Frontage Increase Factor (If) Allowable Area of Building Actual Area of Building	9,000 SF (B, M & S-1 occupancies are equally restrictive) 356' 356' > 30'-0" (Full length of perimeter) [356'/356' - 0.25] x (30'/30) = 0.75 9,000 SF + (9,000 SF x 0.75) = 15,750 SF 5,201 SF
1004.1	Occupant Load	65 (See Code Plan for occupant load of individual occupancies)
1006.2.1	Means of Egress	Common Path of Egress Travel: 75' for B occupancy Exits Required: 2 (due to common path of egrss travel) Exits Provided: 3
1006.2.1	Exit Access Travel Distance	B, M & S-1 Occupancies: 200' maximum Maximum Actual Travel Distance: 85'-0"

GENERAL NOTES

1. THE DRAWINGS REPRESENT THE DESIGN INTENT FOR THE FINISHED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE NEW AND EXISTING STRUCTURE DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, BRACING, SHORING FOR CONSTRUCTION LOADS AND EQUIPMENT, ETC. THE ARCHITECT IS NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS AND METHODS, SEQUENCES OF CONSTRUCTION, OR THE SAFETY PROGRAM.

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

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

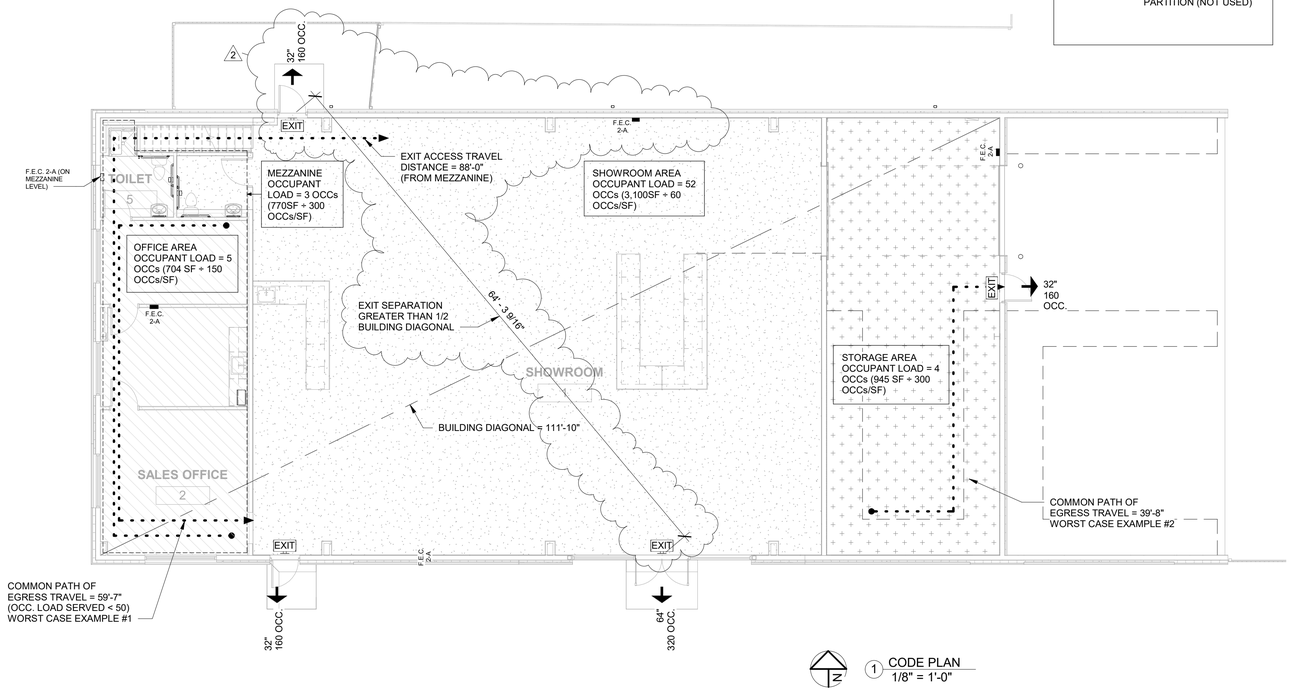
4. CONTRACTOR IS TO ESTABLISH AND VERIFY OPENINGS AND INSERTS FOR ITEMS TO BE INSTALLED BY OTHER TRADES PRIOR TO SUBMITTAL OF SHOP DRAWINGS AND CONSTRUCTION.

APPLICABLE CODE: PROJECT SHALL COMPLY WITH THE 2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC), IN CONJUNCTION WITH THE 2018 INTERNATIONAL BUILDING CODE (IEBC), WITH AMENDMENTS AS ADOPTED BY THE GOVERNING JURISDICTION. WHERE DISCREPANCIES EXIST BETWEEN THE PLANS AND THE CODE, THE MOST RESTRICTIVE SHALL APPLY. CONSULT WITH THE LOCAL JURISDICTION FOR INSPECTION REQUIREMENTS.

ENERGY CODE: 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC), WHERE REQUIRED BY THE 2018 IEBC.

CODE PLAN SYMBOLS

- WALL-MOUNTED EXIT SIGN
- CEILING-MOUNTED EXIT SIGN W/ DIRECTIONAL ARROWS
- F.E.C. 2-A — FIRE EXTINGUISHER CABINET W/ EXTINGUISHER RATING
- 32" 160 OCC. — BUILDING EXIT W/ CLEAR WIDTH AND OCCUPANT CAPACITY
- ONE-HOUR FIRE RATED PARTITION (NOT USED)
- TWO-HOUR FIRE RATED PARTITION (NOT USED)



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CONSTRUCTION SET

#	Description	Date
2	PRECONSTRUCTION REVISIONS	03/21/23

STATE OF MISSOURI
DENNIS O'ROARK
NUMBER A-2010024479
4.4.2023
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

CODE PLAN & GENERAL INFORMATION
G1.00

Scale: As indicated

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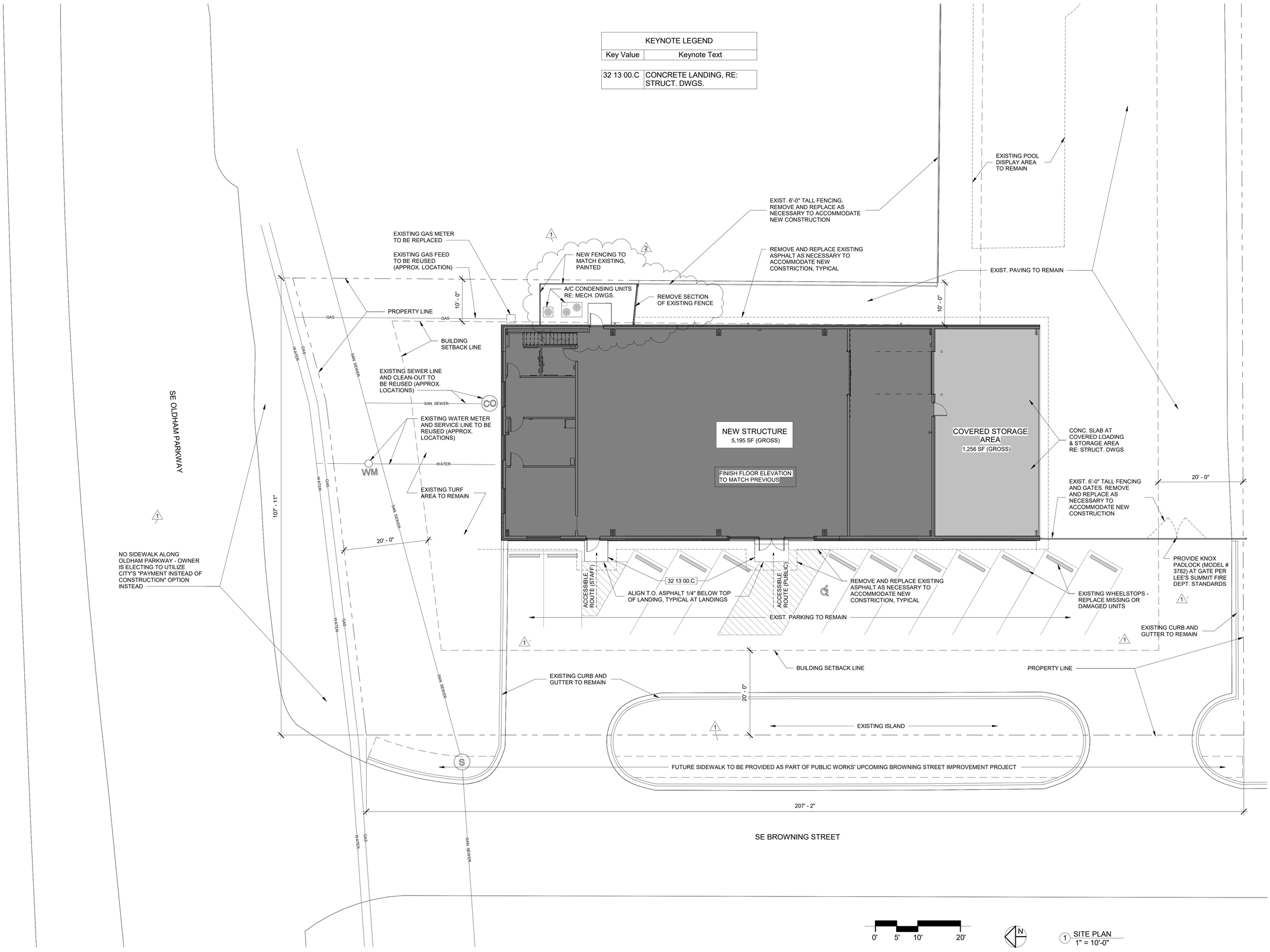
KEYNOTE LEGEND	
Key Value	Keynote Text
32 13 00.C	CONCRETE LANDING, RE: STRUCT. DWGS.



1 SITE PLAN
1" = 10'-0"

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401 SE OLDHAM PARKWAY
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CONSTRUCTION SET

#	Description	Date
1	CITY COMMENTS	12/02/22
2	PRECONSTRUCTION REVISIONS	03/21/23

DENNIS O'ROARK
NUMBER A-2018024479
3-9-2023
STATE OF MISSOURI
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

SITE PLAN

AS1.00

Scale 1" = 10'-0"

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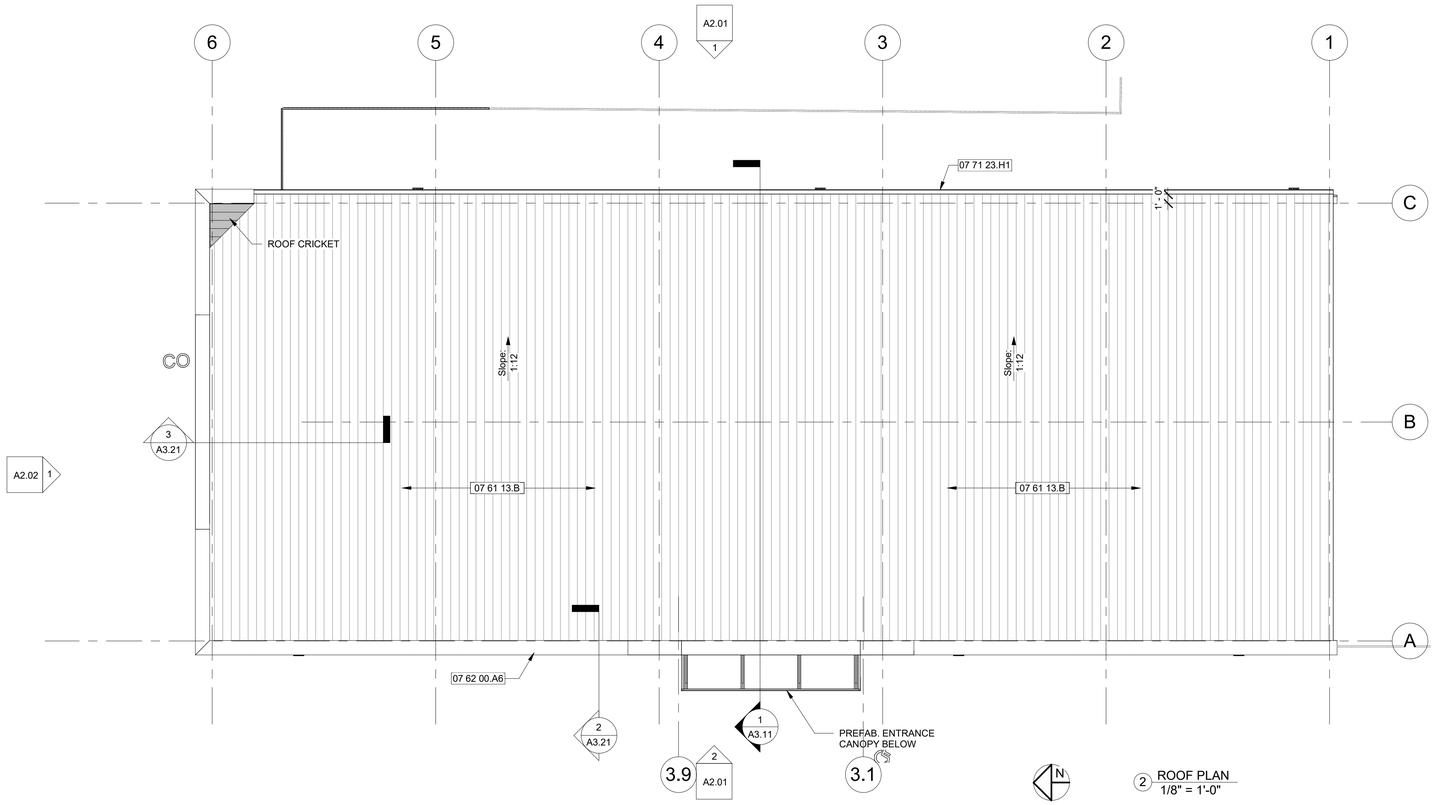


ROOF LEGEND

- STANDING SEAM METAL ROOFING
- SINGLE PLY MEMBRANE ROOFING (INSIDE FACE OF PARAPET ONLY)
- STANDING SEAM METAL ROOFING CRICKET

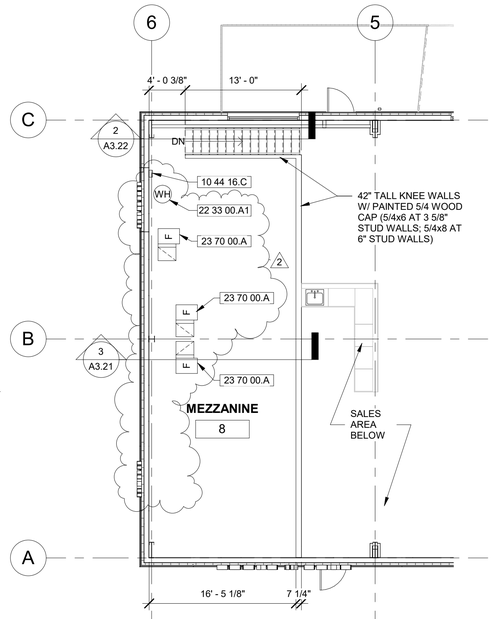
3 A2.02

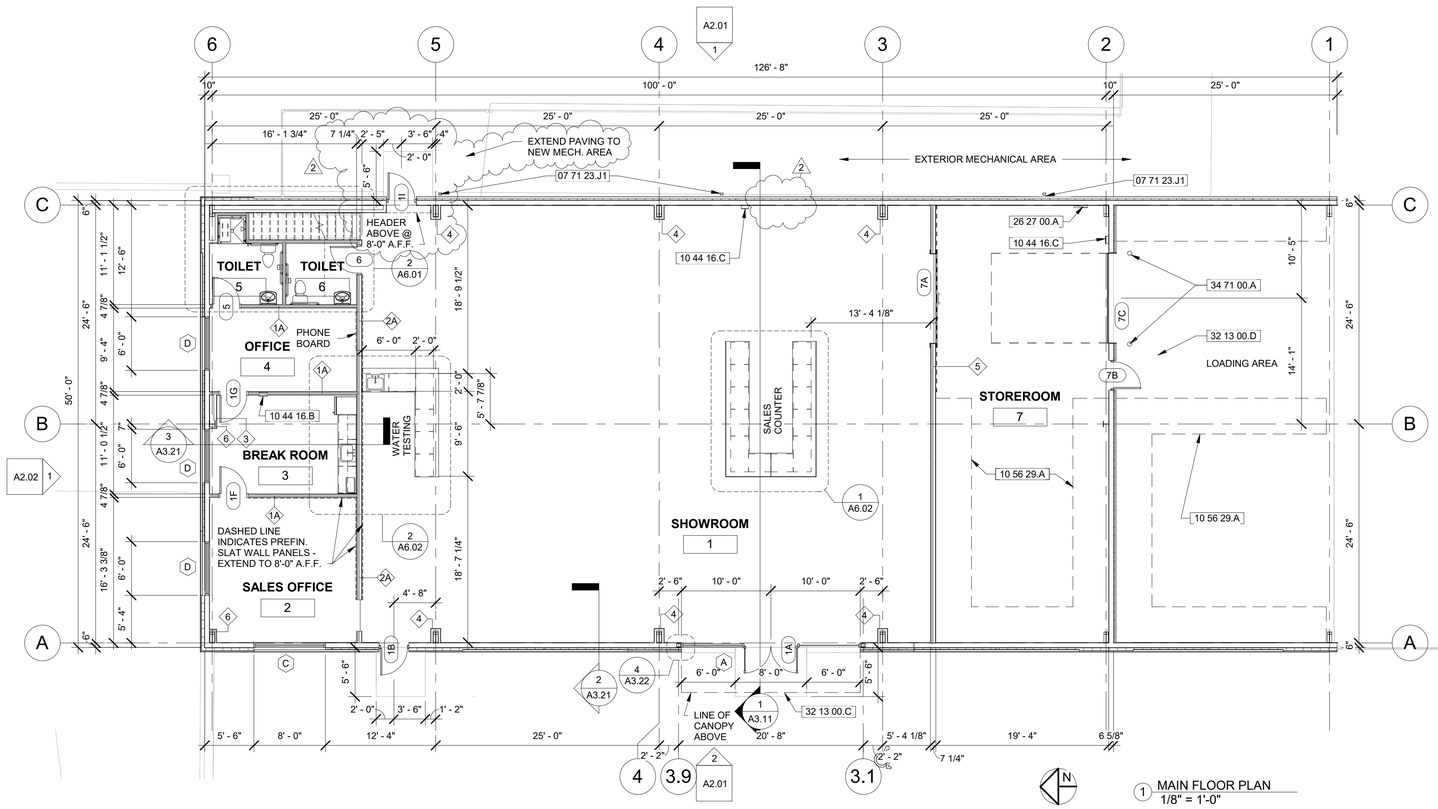
KEYNOTE LEGEND	
Key Value	Keynote Text
07 61 13.B	STANDING SEAM METAL ROOFING BY PEMB SUPPLIER
07 62 00.A6	PARAPET CAP FLASHING
07 71 23.H1	PREFIN. GUTTER BY PEMB SUPPLIER
07 71 23.J1	PREFIN. METAL DOWNSPOUT, 3"x4"
10 44 16.B	FIRE EXTINGUISHER CABINET, SEMI-RECESSED; RE: CODE PLAN
10 44 16.C	FIRE EXTINGUISHER CABINET, SURFACE-MOUNTED; RE: CODE PLAN
10 56 29.A	PRE-MFRD STORAGE RACKS
22 33 00.A1	WATER HEATER, RE: PLUMB. DWGS.
23 70 00.A	HVAC EQUIP.; RE: MECH. DWGS.
26 27 00.A	ELECTRICAL EQUIP.; RE: ELEC. DWGS.
32 13 00.C	CONCRETE LANDING, RE: STRUCT. DWGS.
32 13 00.D	CONCRETE APRON, RE: STRUCT. DWGS.
34 71 00.A	CONCRETE FILLED STEEL BOLLARD, PTD.

FLOOR PLAN GENERAL NOTES

1. DIMENSIONS SHOWN ARE TO FINISH FACE OR CENTER LINE, UNLESS NOTED OTHERWISE.
2. SEE SHEETS G1.00 A3.01 FOR LEGENDS AND SCHEDULES, INCLUDING WALL TYPES, FINISHES AND DOORS, ETC.

3 A2.02





0' 2' 4' 8' 16'

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STATE OF MISSOURI
DENNIS O'ROARK
NUMBER A-2018024478
11-7-2022
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

FLOOR PLANS & ROOF PLAN

A1.01

Scale 1/8" = 1'-0"

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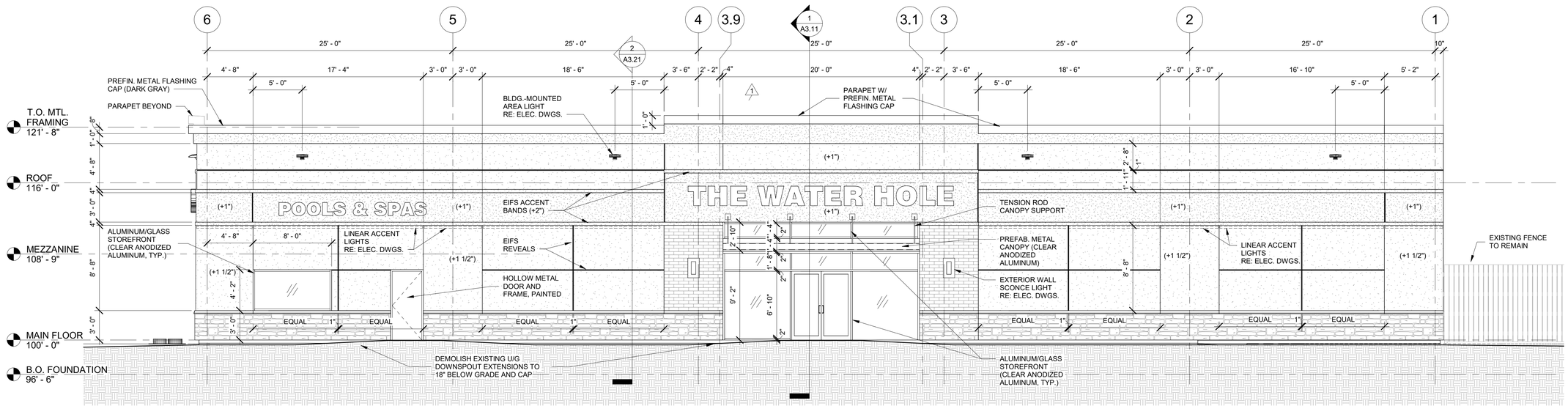
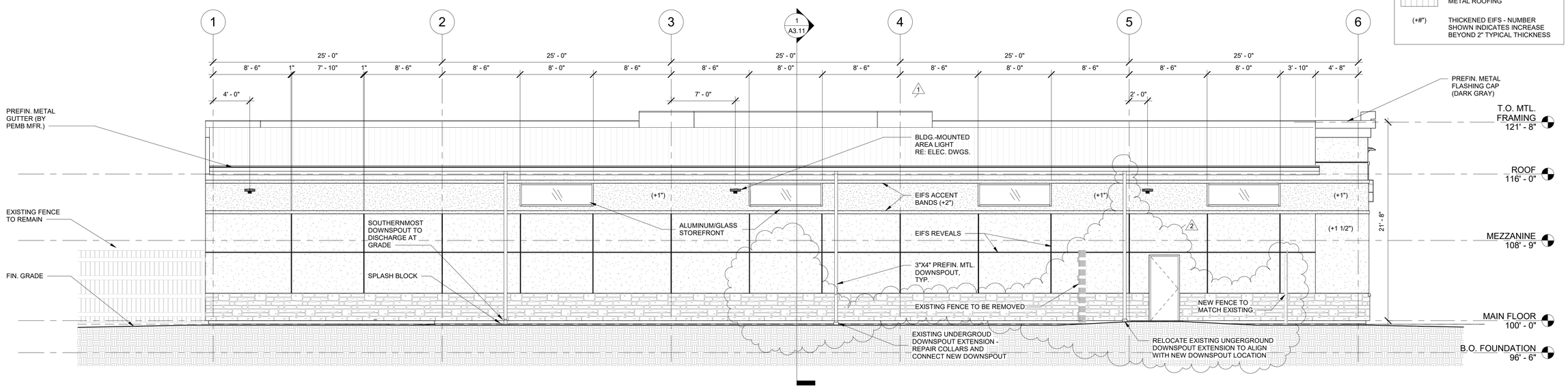


2 WEST ELEVATION
3/16" = 1'-0"

EXTERIOR MATERIALS LEGEND

- ADHERED MASONRY - CORONADO STONE, 6" SPLIT LIMESTONE, COLOR: SUMMIT GREY
- ADHERED MASONRY - CORONADO STONE, WIRECUT BRICK, COLOR: ICEBERG
- EXTERIOR INSULATION FINISH SYSTEM (EIFS) COLOR: MATCH SHERWIN WILLIAMS PURE WHITE (SW 7005)
- EXTERIOR INSULATION FINISH SYSTEM (EIFS) COLOR: MEDIUM GRAY
- STANDING SEAM METAL ROOFING
- (+#") THICKENED EIFS - NUMBER SHOWN INDICATES INCREASE BEYOND 2" TYPICAL THICKNESS



1 EAST ELEVATION
3/16" = 1'-0"

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STATE OF MISSOURI
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NUMBER A-2010024479
ARCHITECT
4.4.2023

Date	11-07-2022
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Checked by	DO

EXTERIOR ELEVATIONS

A2.01

Scale: As indicated

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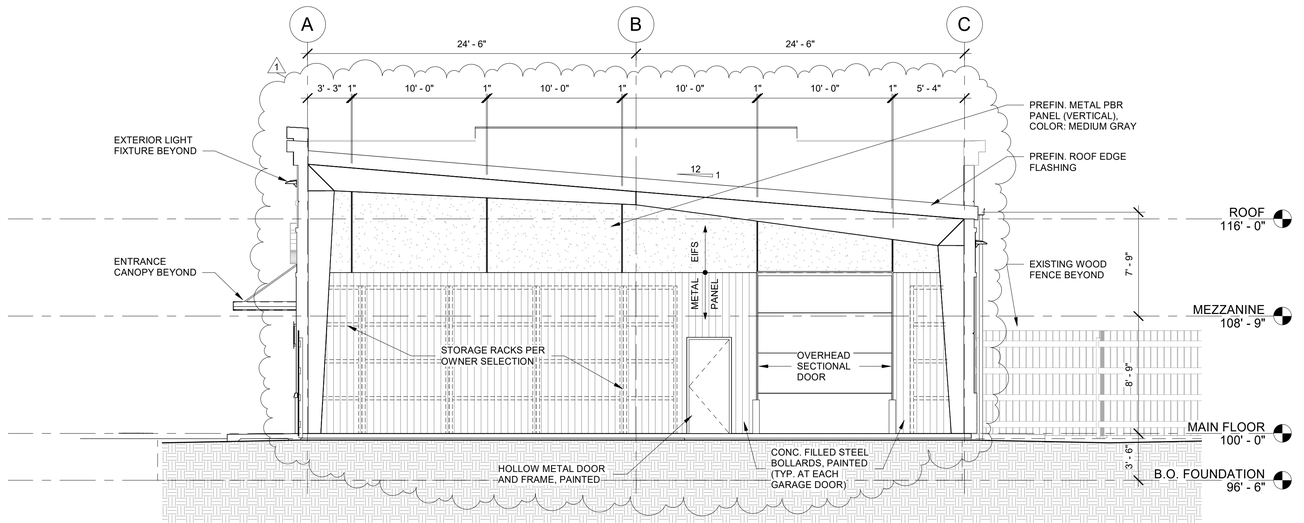
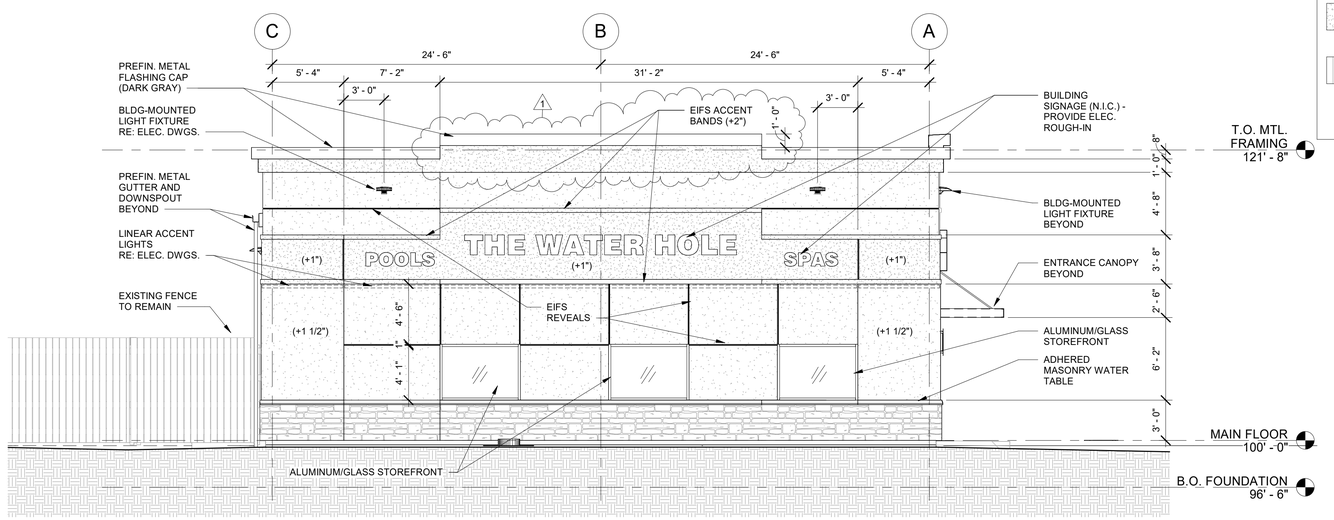


3 SOUTH ELEVATION
3/16" = 1'-0"



1 NORTH ELEVATION
3/16" = 1'-0"

EXTERIOR MATERIALS LEGEND

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DENNIS O'ROARK
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11-23-2022
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

EXTERIOR ELEVATIONS

A2.02

Scale: As indicated

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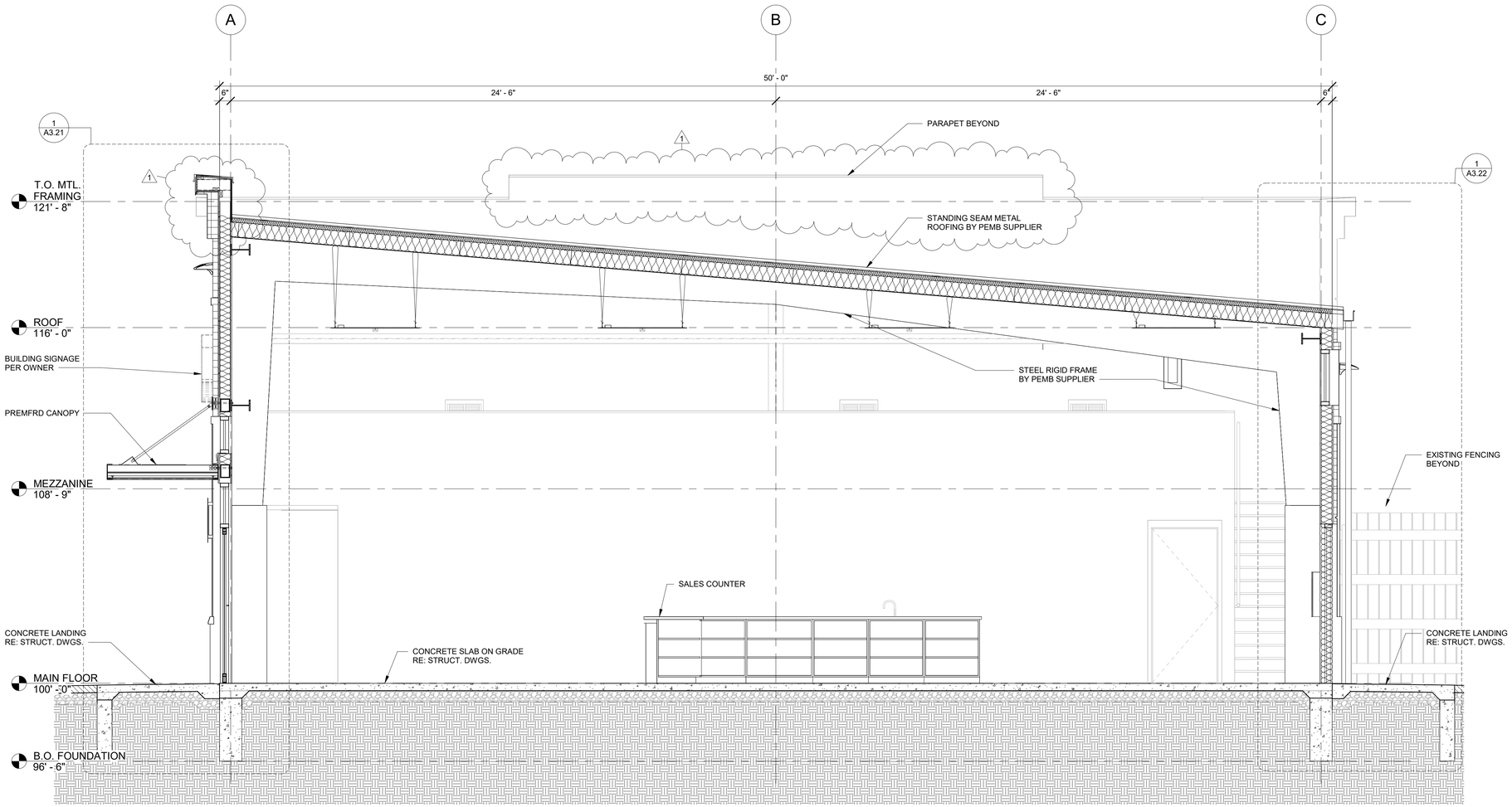

1 BUILDING SECTION
3/8" = 1'-0"

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BUILDING SECTION

A3.11

Scale 3/8" = 1'-0"

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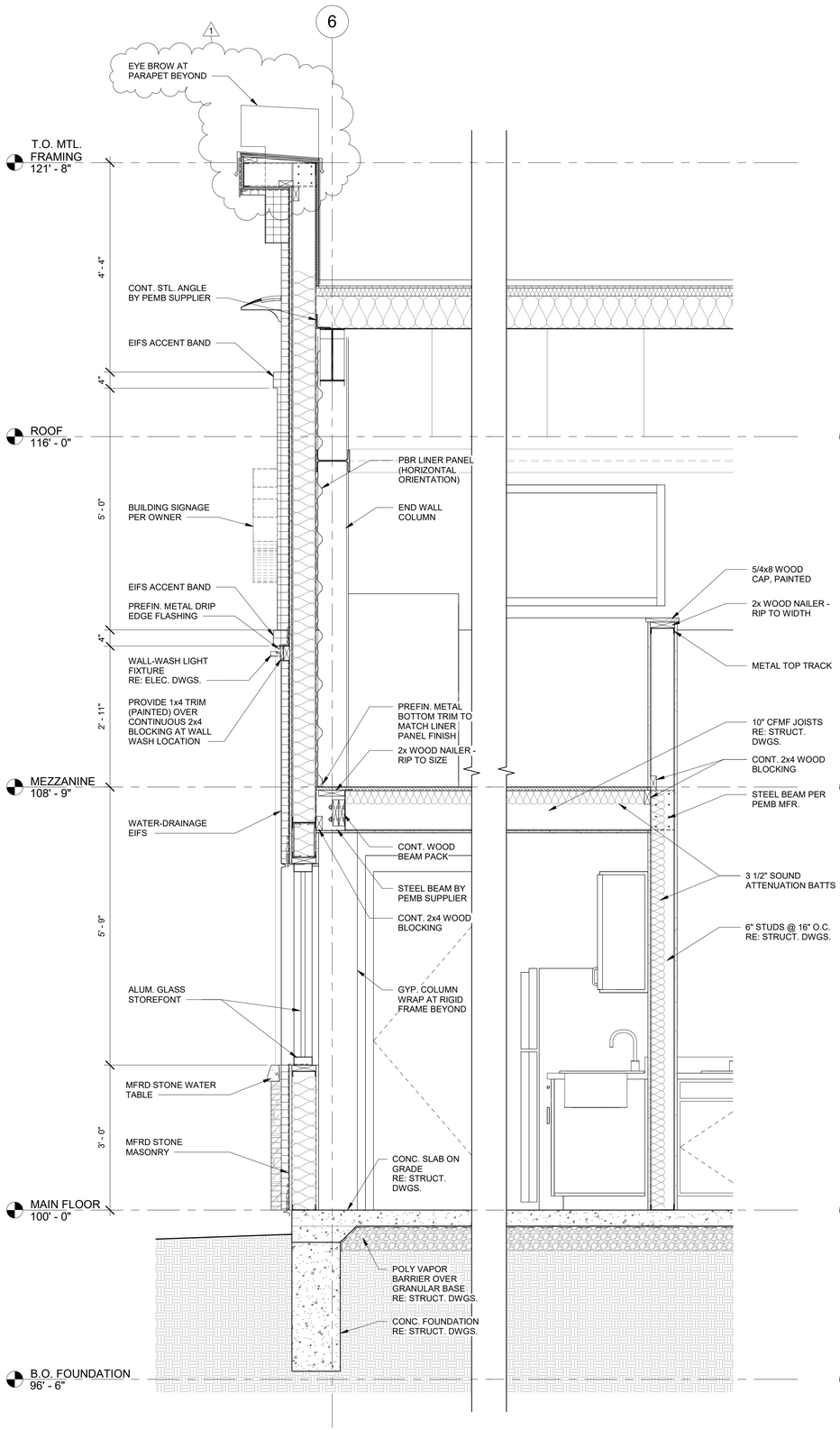
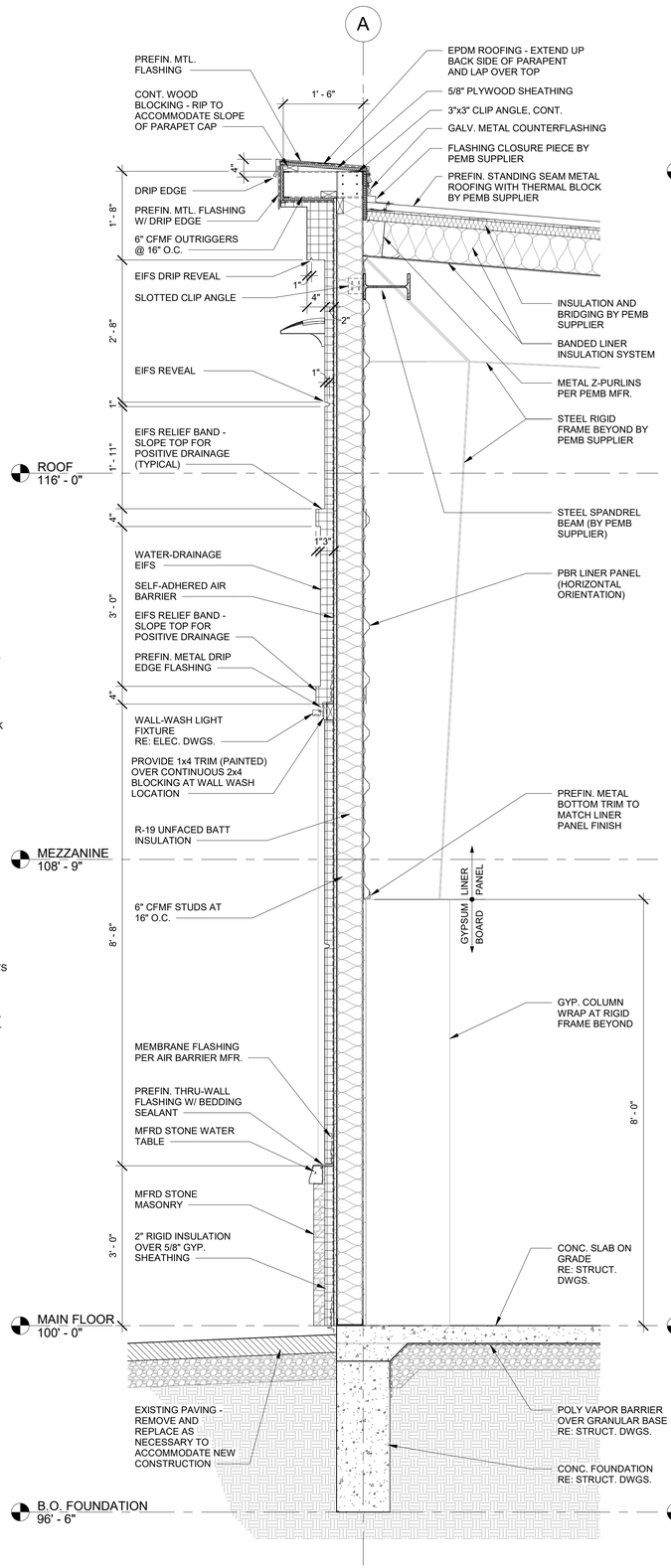
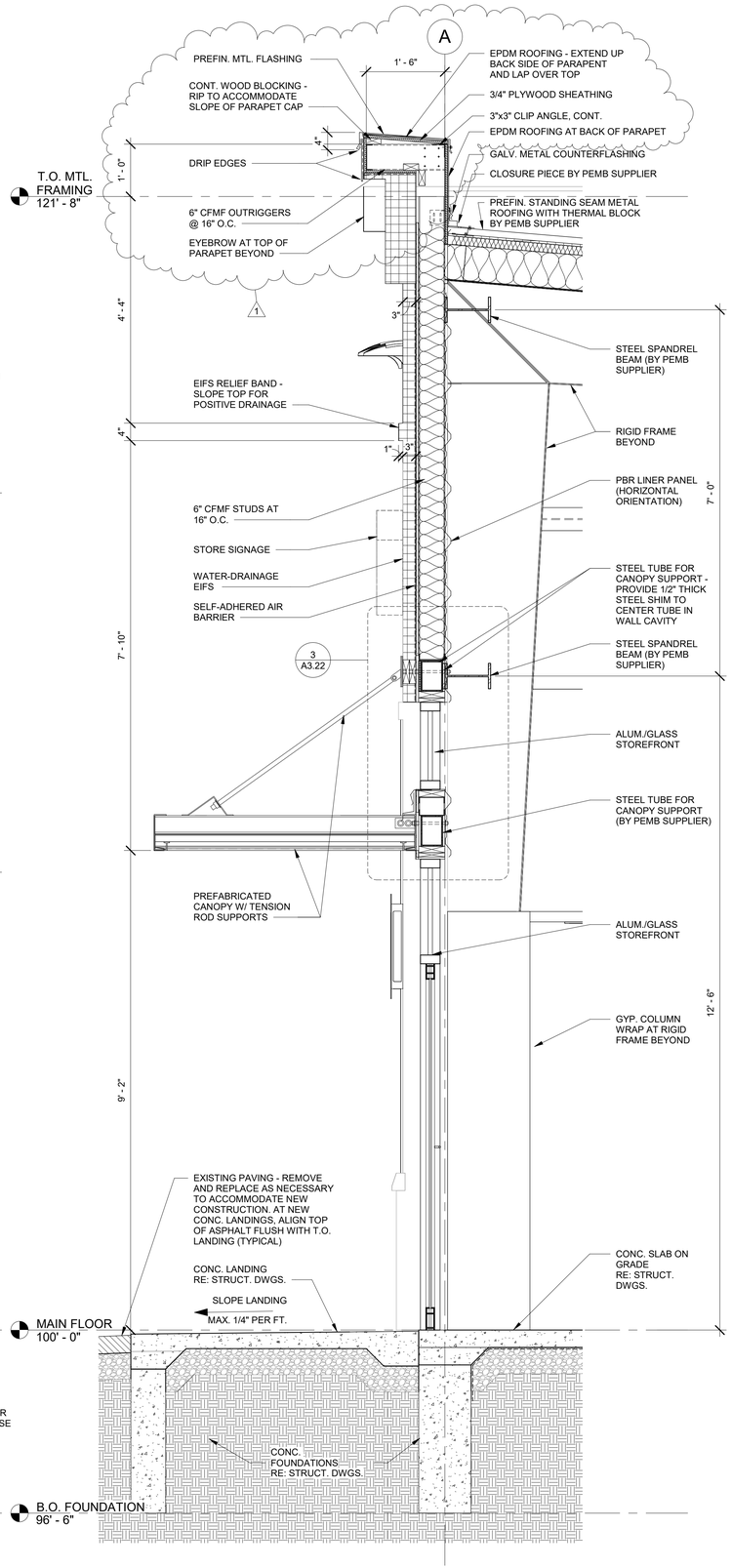


3 SECTION AT MEZZANINE
3/4" = 1'-0"



2 TYPICAL WALL SECTION AT FRONT
3/4" = 1'-0"



1 SECTION AT MAIN ENTRANCE
3/4" = 1'-0"

DESIGN LAB
architectural solutions
5007 W. 63rd Terrace
Prairie Village, KS 66208
Ph: 913-461-4325
ARCHITECT

THE WATER HOLE REBUILD
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date
1	CITY COMMENTS	12/02/22

STATE OF MISSOURI
DENNIS O'ROARK
NUMBER A-2010024479
11-23-2022
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

WALL SECTIONS

A3.21

Scale 3/4" = 1'-0"

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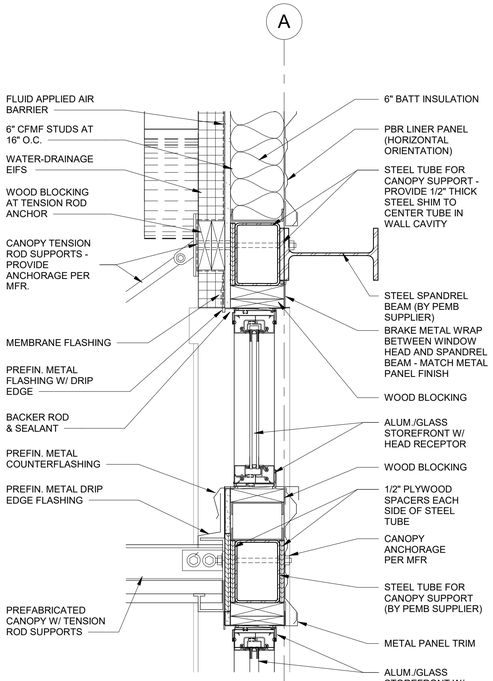
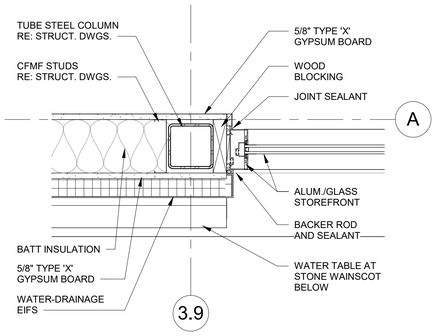
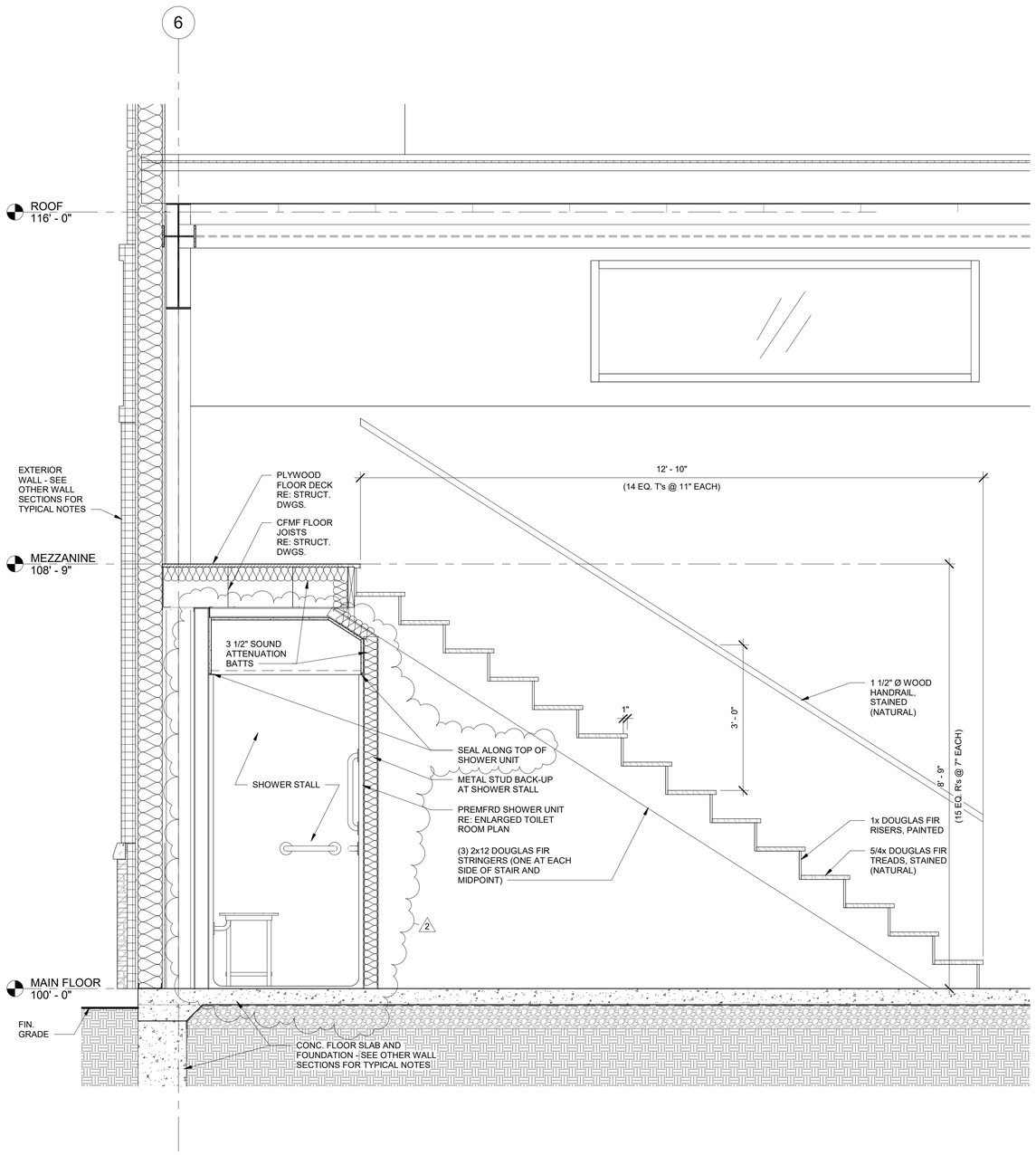


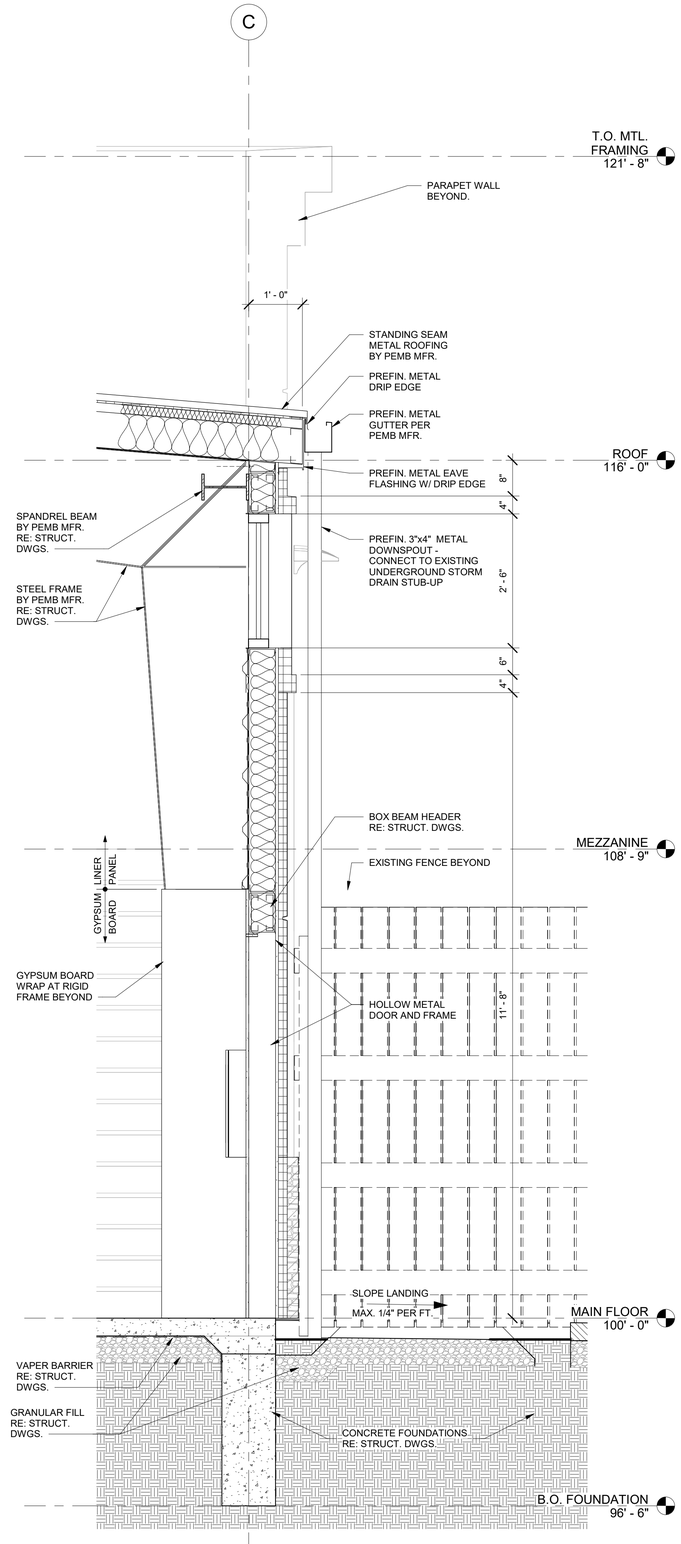
3 STOREFRONT HEAD AT CANOPY
1 1/2" = 1'-0"



4 STOREFRONT JAMB AT STEEL COLUMN
1 1/2" = 1'-0"



2 SECTION AT STAIR
3/4" = 1'-0"



1 SECTION AT EAST WALL
3/4" = 1'-0"

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SUN MOTORSPORT COMPANY, LLC
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date
2	PRECONSTRUCTION REVISIONS	03/21/23

STATE OF MISSOURI
DENNIS O'ROARK
ARCHITECT
A-2019024479
4.4.2023
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

WALL SECTIONS

A3.22

Scale: As indicated

3/22/2023 12:28:07 AM

DOOR HARDWARE SETS

HARDWARE SET: **01**
DOOR NUMBER:
1A
EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	112XY	628	IVE
1	EA	THRESHOLD BOLT	4015	603	ADA
1	EA	HEADER BOLT	4085		ADA
1	EA	DEADBOLT W/ INDICATOR	MS1850 X 4089	628	ADA
1	EA	MORTISE CYL TURN	09-904 114 36-083	626	SCH
1	EA	MORTISE CYLINDER	986	626	FAL
2	EA	PUSH/PULL BAR	9190EZHD-12"-NO	630-316	IVE
2	EA	SURFACE CLOSER	4050A SHCUSH	689	LCN
2	EA	PA MOUNTING PLATE	4050A-18PA SRT	689	LCN
2	EA	CUSH SHOE SUPPORT	4050A-30 SRT	689	LCN
2	EA	BLADE STOP SPACER	4050A-61 SRT	689	LCN
1	EA	RAIN DRIP	142AA	AA	ZER
2	EA	DOOR SWEEP	8197AA	AA	ZER
1	EA	THRESHOLD	65A-223	A	ZER
1	EA	WEATHERSTRIP	BY DOOR/FRAME MANUFACTURER		

HARDWARE SET: **02**
DOOR NUMBER:
7B
EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	APARMENT CORRDR LOCK	MA531P6 LTG	626	FAL
1	EA	SURFACE CLOSER	4050A SHCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	SET	GASKETING	429AA-S	AA	ZER
1	EA	DOOR SWEEP	8197AA	AA	ZER
1	EA	THRESHOLD	65A-223	A	ZER

HARDWARE SET: **03**
DOOR NUMBER:
1B **1C**
EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PANIC HARDWARE	25-R-L-NL-LAT	626	FAL
1	EA	MORTISE CYLINDER	986	626	FAL
1	EA	SURFACE CLOSER	4050A SHCUSH	689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA	RAIN DRIP	142AA	AA	ZER
1	SET	GASKETING	429AA-S	AA	ZER
1	EA	DOOR SWEEP	8197AA	AA	ZER
1	EA	THRESHOLD	65A-223	A	ZER

HARDWARE SET: **04**
DOOR NUMBER:
3 **4**
EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGES	BY DOOR/FRAME MANUFACTURER		UNK
1	EA	PASSAGE SET	W101S LAT	626	FAL
1	EA	WALL STOP	WS406/407CCV	626	IVE

HARDWARE SET: **05**
DOOR NUMBER:
5 **6**
EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HINGES	BY DOOR/FRAME MANUFACTURER		UNK
1	EA	PRIVACY LOCK	W301S LAT	626	FAL
1	EA	WALL STOP	WS406/407CCV	626	IVE

HARDWARE SET: **06**
DOOR NUMBER:
7A
EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	SINGLE RUN	SR180 BI-PARTING 180-A60 SR180-H1PK 1SS/250 106RB/94 94PPA-A20		BRI
4	EA	FLUSH PULL	962	626	IVE

HARDWARE SET: **07**
DOOR NUMBER:
7C
EACH TO HAVE:

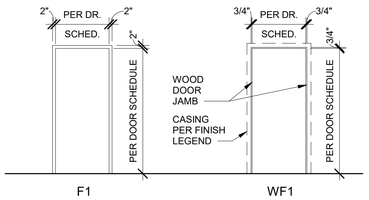
QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1	EA	MORTISE CYLINDER	VERIFY TYPE REQUIRED		
1	EA	PRIMUS CORE	20-740	626	SCH
1			HARDWARE BY DOOR / FRAME MANUFACTURER SHOWN BELOW		

DOOR SCHEDULE

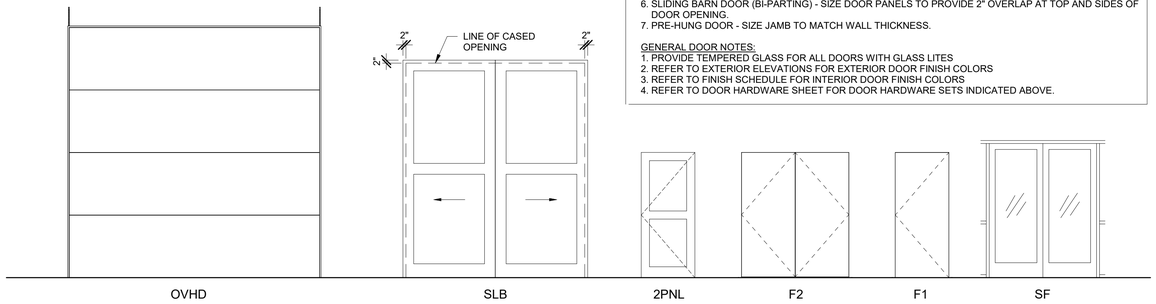
DOOR #	From Room: Name	To Room: Name	DOOR WIDTH	DOOR HEIGHT	DOOR MATERIAL	DOOR TYPE	FRAME MATERIAL	FRAME TYPE	HEAD	JAMB	HARDWARE	COMMENTS
1A		SHOWROOM	6' - 0"	7' - 0"	ALUM./GLASS	SF	ALUMINUM				1	1, 2
1B		SHOWROOM	3' - 0"	7' - 0"	HOLLOW METAL	F1	HOLLOW METAL	F1	2/A5.01	1/A5.01	2	3
1C		SHOWROOM	3' - 0"	7' - 0"	HOLLOW METAL	F1	HOLLOW METAL	F1	2/A5.01	1/A5.01	2	3
1F	SALES OFFICE	BREAK ROOM	3' - 0"	7' - 0"	WOOD	2PNL	WOOD	WF1	8/A5.01	7/A5.01	3	7
1G	BREAK ROOM	OFFICE	3' - 0"	7' - 0"	WOOD	2PNL	WOOD	WF1	8/A5.01	7/A5.01	4	7
5	OFFICE	TOILET	3' - 0"	7' - 0"	WOOD	2PNL	WOOD	WF1	8/A5.01	7/A5.01	5	7
6	TOILET	SHOWROOM	3' - 0"	7' - 0"	WOOD	2PNL	WOOD	WF1	8/A5.01	7/A5.01	5	7
7A	SHOWROOM	STOREROOM	10' - 0"	12' - 0"	WOOD	SLB	WOOD	WF1	10/A5.01	9/A5.01	6	6
7B		STOREROOM	3' - 0"	7' - 0"	HOLLOW METAL	F1	HOLLOW METAL	F1	4/A5.01	3/A5.01	2	3
7C		STOREROOM	10' - 0"	12' - 0"	STEEL	OVHD			6/A5.01	5/A5.01	7	4, 5

NUMBERED COMMENTS:
1. DOOR INSTALLED IN STOREFRONT SYSTEM
2. GLASS LITES TO HAVE INSULATED GLASS TO MATCH STOREFRONT SYSTEM
3. EXTERIOR DOOR - PROVIDE DOOR WITH MAXIMUM U-VALUE OF 0.4 (MIN. R-VALUE OF 2.5).
4. EXTERIOR OVERHEAD DOOR - PROVIDE DOOR WITH MAXIMUM U-VALUE OF 0.066 (MIN. R-VALUE OF 15).
5. PROVIDE JACKSHAFT TYPE MOTORIZED DOOR OPENER.
6. SLIDING BARN DOOR (BI-PARTING) - SIZE DOOR PANELS TO PROVIDE 2" OVERLAP AT TOP AND SIDES OF DOOR OPENING.
7. PRE-HUNG DOOR - SIZE JAMB TO MATCH WALL THICKNESS.

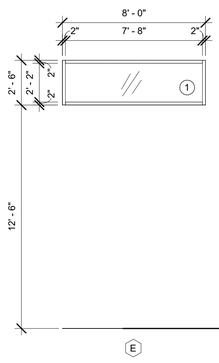
GENERAL DOOR NOTES:
1. PROVIDE TEMPERED GLASS FOR ALL DOORS WITH GLASS LITES
2. REFER TO EXTERIOR ELEVATIONS FOR EXTERIOR DOOR FINISH COLORS
3. REFER TO FINISH SCHEDULE FOR INTERIOR DOOR FINISH COLORS
4. REFER TO DOOR HARDWARE SHEET FOR DOOR HARDWARE SETS INDICATED ABOVE.



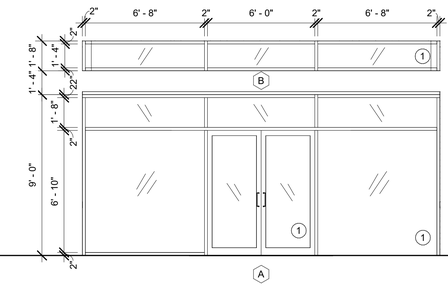
FRAME TYPES



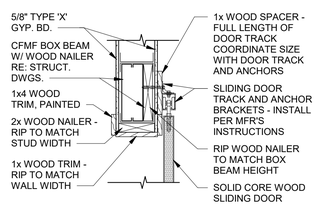
DOOR TYPES



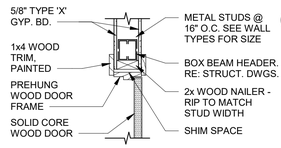
GLASS TYPE LEGEND	
TYPE	DESCRIPTION
1	1" INSULATED DOUBLE GLAZED ASSEMBLY WITH 1/2" AIRSPACE, LOW-E COATING AND ARGON FILL. EXTERIOR GLAZING: 1/4" THICK SOLARBAN 70 OPTIGRAY; INTERIOR GLAZING: 1/4" THICK CLEAR GLASS. PROVIDE TEMPERED GLASS WHERE INDICATED BY "T SYMBOL ON STOREFRONT/WINDOW ELEVATIONS.



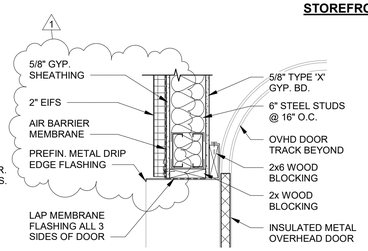
STOREFRONT TYPES



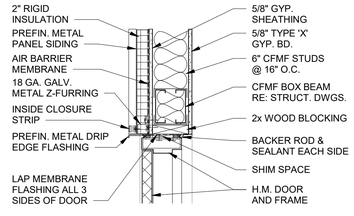
10 HEAD DETAIL @ SLIDING BARN DOORS
1" = 1'-0"



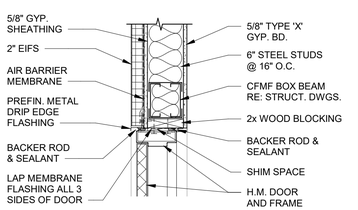
8 HEAD DETAIL @ INTERIOR DOOR
1" = 1'-0"



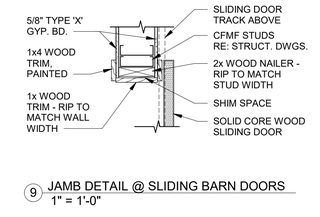
6 HEAD DETAIL @ EXTERIOR OVHD DOOR
1" = 1'-0"



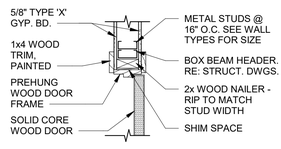
4 HEAD DETAIL @ EXTERIOR DOOR - METAL PANEL
1" = 1'-0"



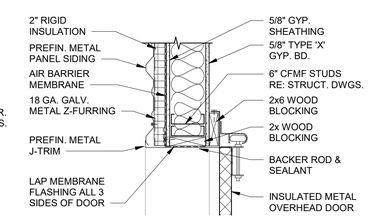
2 HEAD DETAIL @ EXTERIOR DOOR - EIFS
1" = 1'-0"



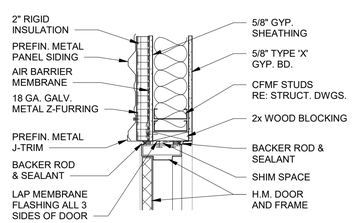
9 JAMB DETAIL @ SLIDING BARN DOORS
1" = 1'-0"



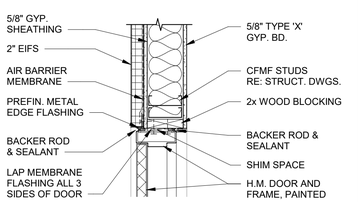
7 JAMB DETAIL @ INTERIOR DOOR
1" = 1'-0"



5 JAMB DETAIL @ EXTERIOR OVHD DOOR
1" = 1'-0"



3 JAMB DETAIL @ EXTERIOR DOOR - METAL PANEL
1" = 1'-0"



1 JAMB DETAIL @ EXTERIOR DOOR - EIFS
1" = 1'-0"

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CONSTRUCTION SET

#	Description	Date
1	CITY COMMENTS	12/02/22

STATE OF MISSOURI
DENNIS O'ROARK
NUMBER A-2018024470
11-23-2022
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

DOOR & WINDOW DETAILS
A5.01

Scale: As indicated

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INTERIOR FINISH MATERIAL LEGEND

FLOOR FINISH

EPR1 - EPOXY RESIN FLOORING
MFR: ELITE CRETE SYSTEMS, INC.
PRODUCT: REFLECTOR ENHANCER FLOORING SYSTEM (E100-VR1)
COLOR: BLUE (PER OWNER SELECTION)

VCT1 - VINYL COMPOSITION TILE
MFR: ARMSTRONG
PRODUCT: STANDARD EXCELON IMPERIAL TEXTURE
COLOR: SHADOW BLUE

WALL BASE

RB1 - RUBBER COVE BASE
MFR: TARKETT, INC.
PRODUCT: DURACOVE RUBBER (4")
COLOR: IRONSTONE

EPRB1 - EPOXY RESIN INTEGRAL COVE BASE
MFR: ELITE CRETE SYSTEMS, INC.
COLOR: AS SELECTED BY ARCHITECT

WALL FINISH

P1 - LATEX PAINT
MFR: SHERWIN WILLIAMS
COLOR: WHITE (MATCH LPNL FINISH)

EP1 - EPOXY PAINT
MFR: SHERWIN WILLIAMS
COLOR: WHITE (MATCH LPNL FINISH)

LPNL - PREFINISHED METAL LINER PANEL
MFR: METAL PANELS, INC.
PRODUCT: PBR PANEL (24 GA.)
COLOR: REGAL WHITE

CEILING FINISH

P1 - SEE P1 WALL FINISH

BL - BANDED LINER (ROOF INSULATION FACING)
MFR: PER PEMB SUPPLIER
COLOR: AS SELECTED BY ARCHITECT FROM MFR'S STANDARD COLORS

CASEWORK FINISHES

PL1 - PLASTIC LAMINATE
MFR: WILSONART
COLOR: DESIGNER WHITE
LOCATION: BASE & WALL CABINET EXTERIORS

PL2 - PLASTIC LAMINATE
MFR: PIONITE
COLOR: ROYAL BLUE
LOCATION: COUNTERTOPS

PL3 - PLASTIC LAMINATE
COLOR: WHITE MELAMINE
LOCATION: BASE & WALL CABINET INTERIORS

MISCELLANEOUS FINISHES

EP2 - EPOXY PAINT
LOCATION: STAIR RISERS, MEZZANINE GUARD RAIL TOP CAP
MFR: SHERWIN WILLIAMS
COLOR: GRAY (AS SELECTED BY ARCHITECT)

ST1 - WOOD STAIN WITH POLYURETHANE FINISH
MFR: BONA (DRIFAST STAIN; TRAFFIC HD ANTI-SLIP FINISH)
LOCATION: STAIR TREADS
COLOR/SHEEN: AGED PEWTER (STAIN); SATIN (FINISH)
COATS: 1 COAT STAIN, 2 COATS FINISH

FINISH SCHEDULE

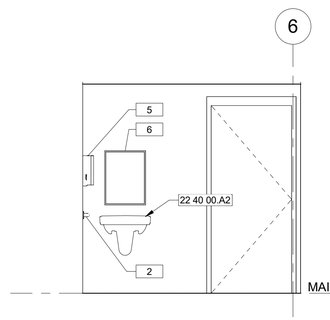
ROOM #	ROOM NAME	FLOOR FINISH	WALL BASE FINISH	WALL FINISH	CEILING FINISH	CEILING HEIGHT	COMMENTS
1	SHOWROOM	EPR1	RB1	P1/ LPNL	BL		1, 3, 4
2	SALES OFFICE	EPR1	RB1	P1	P1	7' - 8"	3
3	BREAK ROOM	EPR1	RB1	P1	P1	7' - 8"	4
4	OFFICE	EPR1	RB1	P1	P1	7' - 8"	
5	TOILET	EPR1	EPRB1	EP1/FGP	P1	7' - 8"	
6	TOILET	EPR1	EPRB1	EP1/FGP	P1	7' - 8"	
7	STOREROOM	EPR1	RB1	EP1	BL		2
8	MEZZANINE	VCT1	RB1	P1/LPNL	BL		5

COMMENTS:
1. AT INTERIOR SIDE OF EXTERIOR WALLS, PROVIDE GYPSUM BOARD TO 8'-0" A.F.F. AND PREFIN. METAL LINER PANEL FROM 8'-0" A.F.F. TO TOP OF WALL.
2. PROVIDE B-C PLYWOOD TO 12'-0" A.F.F. AND PREFIN. METAL LINER PANEL FROM 12'-0" A.F.F. TO TOP OF WALL.
3. PROVIDE PREFINISHED SLAT BOARD OVER GYPSUM BOARD FROM TOP OF WALL BASE TO 8'-0" A.F.F. AT LOCATIONS INDICATED ON FLOOR PLAN.
4. SEE FINISH MATERIAL LEGEND FOR CASEWORK FINISHES FOR THIS SPACE.
5. WITHHOLD WALL BASE ALONG WALLS WITH METAL LINER PANEL EXTENDING TO FLOOR LEVEL.

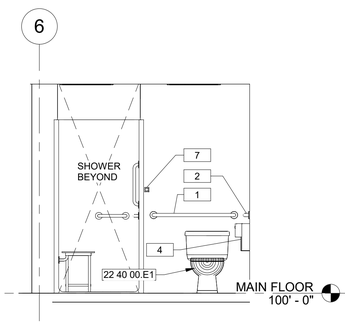
GENERAL FINISH NOTES:
1. SEE WALL TYPES ON SHEET G1.00 FOR INTERIOR WALL SUBSTRATE.
2. INSTALL FINISHES PER MANUFACTURER'S INSTRUCTIONS AND USING ADHESIVES, ACCESSORIES, ETC. AS PROVIDED BY OR APPROVED BY THE FINISH MANUFACTUERER FOR THE PRODUCT INDICATED.

TOILET ACCESSORY SCHEDULE

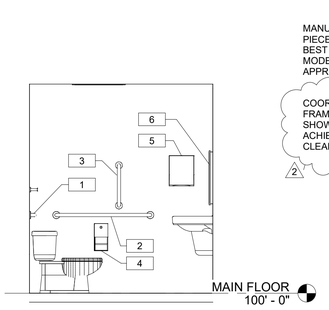
TYPE MARK	DESCRIPTION	MANUFACTURER	MODEL	MATERIAL/ FINISH	COMMENTS
1	1 1/2" DIA. x 36" LONG HORIZONTAL GRAB BAR	AMERICAN SPECIALTIES, INC.	3801-36	STAINLESS STEEL - SATIN	
2	1 1/2" DIA. x 42" LONG HORIZONTAL GRAB BAR	AMERICAN SPECIALTIES, INC.	3801-42	STAINLESS STEEL - SATIN	
3	1 1/2" DIA. x 18" LONG VERTICAL GRAB BAR	AMERICAN SPECIALTIES, INC.	3801-18	STAINLESS STEEL - SATIN	
4	TOILET TISSUE DISPENSER - DOUBLE ROLL	AMERICAN SPECIALTIES, INC.	20030	STAINLESS STEEL - SATIN	
5	PAPER TOWEL DISPENSER	AMERICAN SPECIALTIES, INC.	20210	STAINLESS STEEL - SATIN	
6	MEDICINE CABINET - RECESSED	AMERICAN SPECIALTIES, INC.	8340	STAINLESS STEEL - SATIN	
7	TOWEL HOOK	AMERICAN SPECIALTIES, INC.	7301-B	STAINLESS STEEL - SATIN	



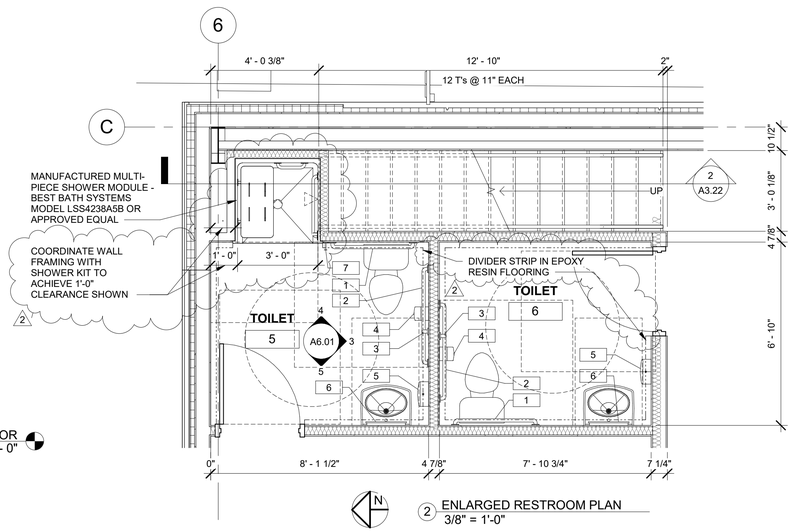
5 BATHROOM ELEVATION - WEST
3/8" = 1'-0"



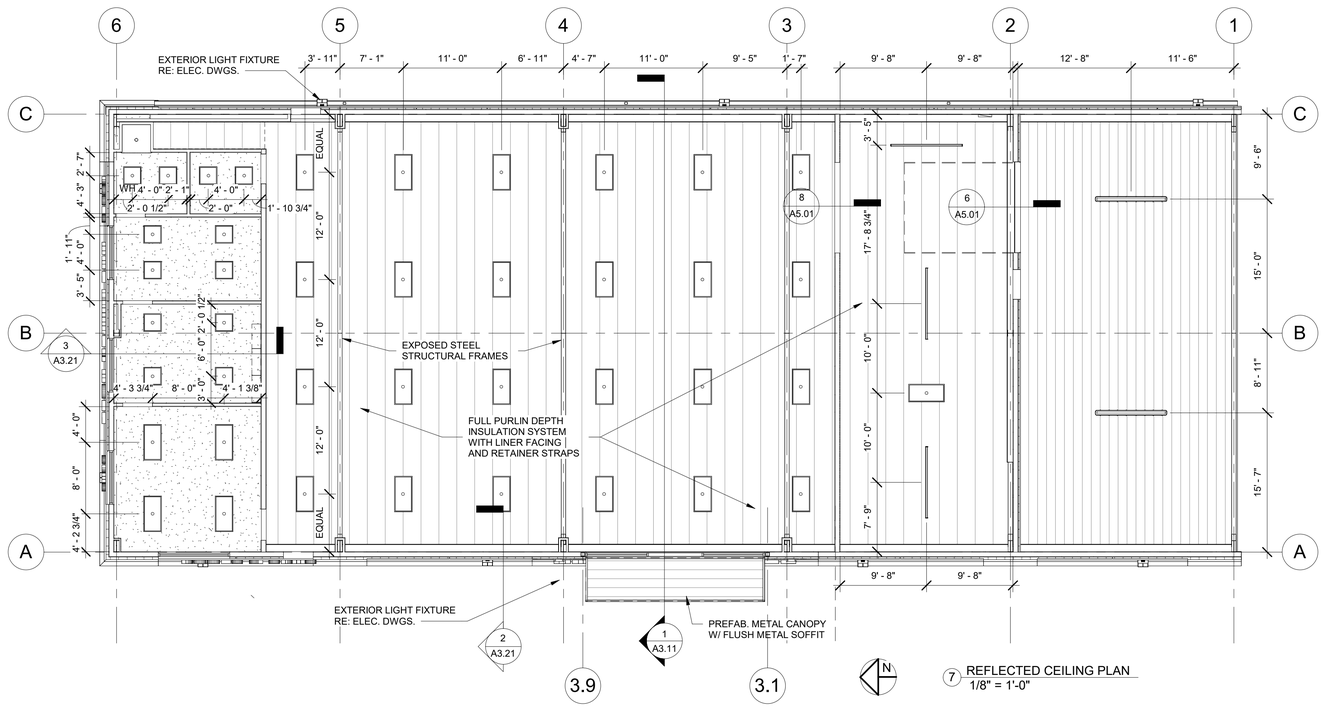
4 BATHROOM ELEVATION - EAST
3/8" = 1'-0"



3 BATHROOM ELEVATION - SOUTH
3/8" = 1'-0"



2 ENLARGED RESTROOM PLAN
3/8" = 1'-0"



7 REFLECTED CEILING PLAN
1/8" = 1'-0"

CEILING LEGEND

- BANDED INSULATION LINER RE: FINISH SCHEDULE
- GYP. BOARD CEILING ON METAL FRAMING (PAINTED) RE: FINISH SCHEDULE
- PREFINISHED METAL SOFFIT PANELS RE: FINISH SCHEDULE
- LED TROFFER LIGHT
- LED RECESSED CAN LIGHT
- LED STRIP - PENDANT MOUNT
- LED STRIP - SURFACE MOUNT, GASKETED
- SUPPLY AIR DIFFUSER
- RETURN AIR GRILLE
- EXHAUST FAN

DESIGN LAB
architectural solutions
5007 W. 63rd Terrace
Prairie Village, KS 66208
Ph: 913-461-4325
ARCHITECT

THE WATER HOLE REBUILD
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date
2	PRECONSTRUCTION REVISIONS	03/21/23

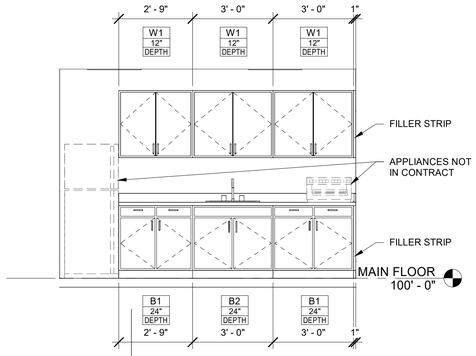
STATE OF MISSOURI
DENNIS O'ROARK
NUMBER A-2018024478
3-21-2023
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

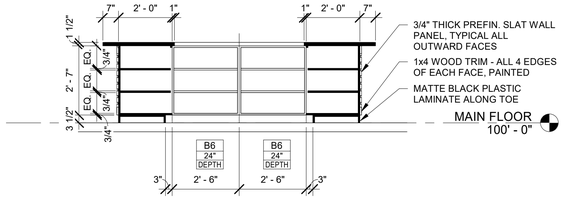
CEILING PLAN & INTERIOR DETAILS
A6.01

Scale: As indicated

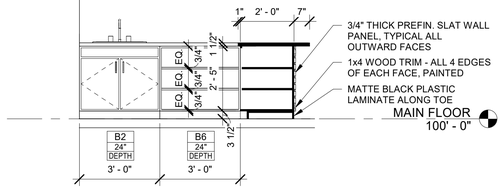
3/22/2023 12:28:09 AM



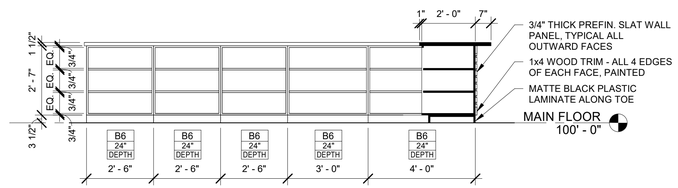
8 BREAK ROOM ELEVATION
3/8" = 1'-0"



5 SALES COUNTER CASEWORK - WEST
3/8" = 1'-0"



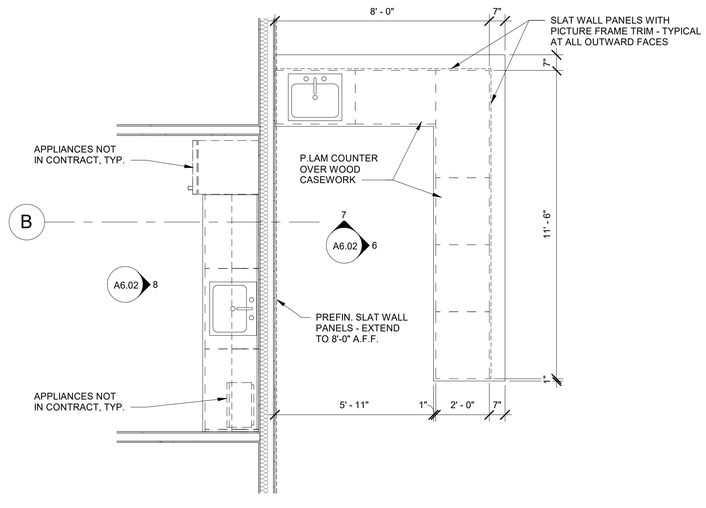
7 TESTING STATION CASEWORK - EAST
3/8" = 1'-0"



4 SALES COUNTER CASEWORK - SOUTH
3/8" = 1'-0"

6 TESTING STATION CASEWORK - SOUTH
3/8" = 1'-0"

3 SALES COUNTER CASEWORK - NORTH
3/8" = 1'-0"



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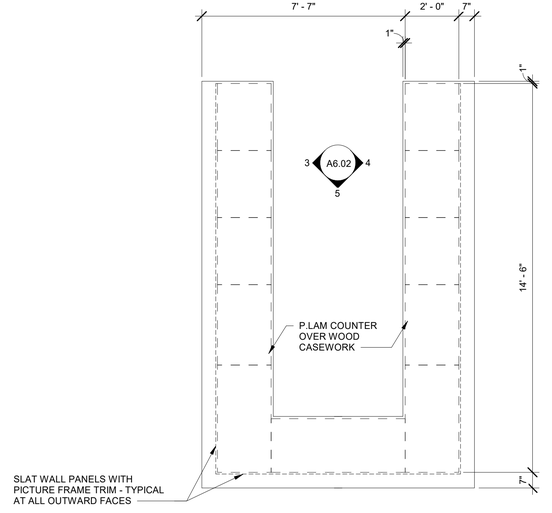
2 ENLARGED BREAK ROOM PLAN
3/8" = 1'-0"



N

1 ENLARGED SALES COUNTER PLAN
3/8" = 1'-0"

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THE WATER HOLE REBUILD
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LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date

STATE OF MISSOURI
DENNIS O'ROARK
NUMBER
A-2018024479
11-08-2022
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

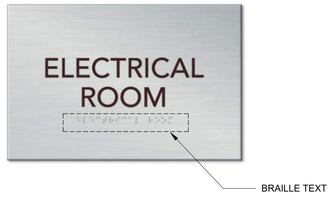
CASEWORK PLANS & DETAILS
A6.02

Scale 3/8" = 1'-0"

11/8/2022 9:08:19 PM

ADA RESTROOM SIGN
APPROX. 12" WIDE X 12" TALL

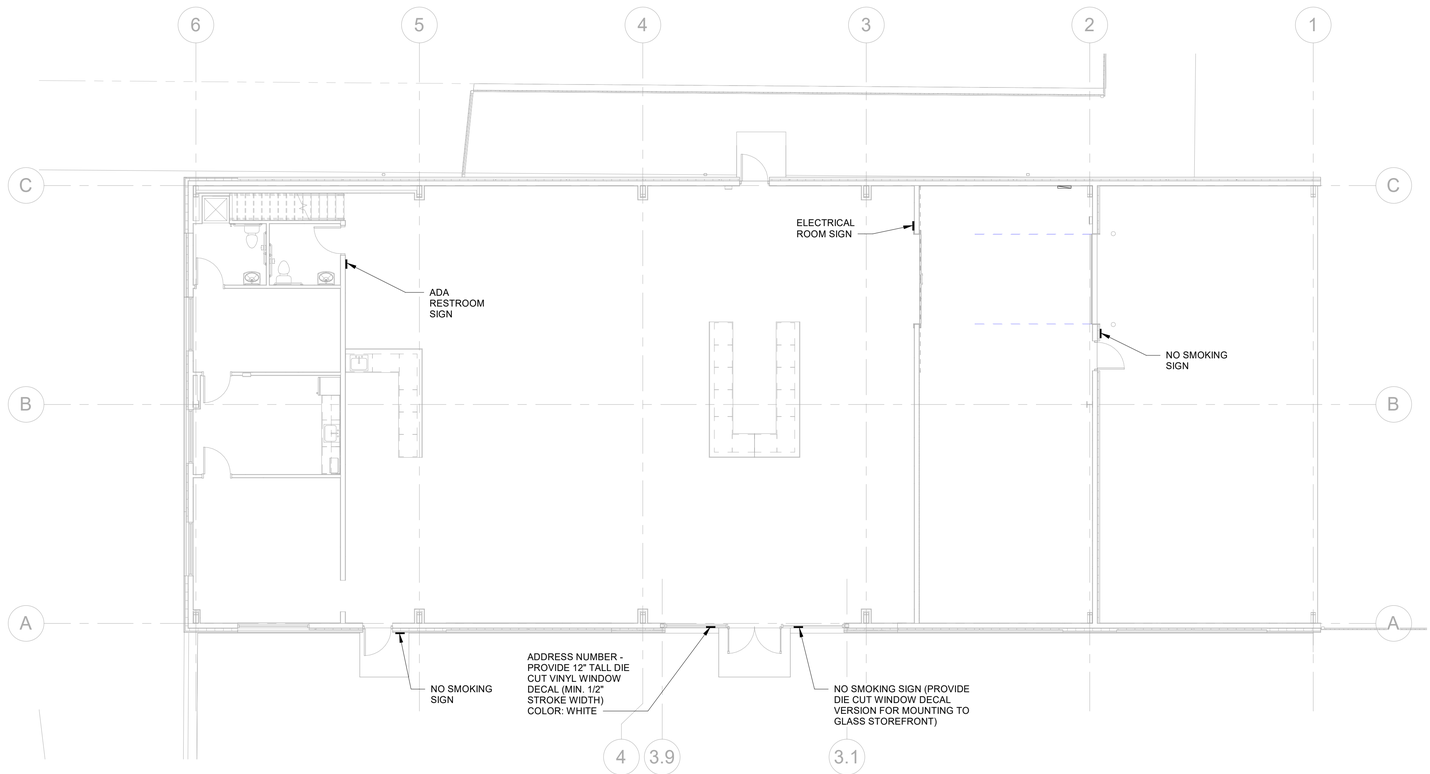
ADA RESTROOM SIGN
APPROX. 8" WIDE X 8" TALL
BRUSHED ALUMINUM
BRAILLED SUBTEXT



ELECTRICAL ROOM SIGN
APPROX. 8" WIDE X 4" TALL
BRUSHED ALUMINUM
BRAILLED SUBTEXT

SINGAGE NOTES:

1. ALL EXTERIOR SIGNS SHALL BE ALUMINUM WITH A WEATHER RESISTANT FINISH, UNLESS NOTED OTHERWISE.
2. OBTAIN INTERIOR SIGNS WITH BRUSHED ALUMINUM FINISH FROM SAME MANUFACTURER TO OBTAIN CONSISTENT FINISH.
3. ALL SIGNS ARE TO BE WALL MOUNTED, UNLESS NOTED OTHERWISE. PROVIDE FASTENERS APPROPRIATE FOR THE WALL SUBSTRATRE ONTO WHICH THE SIGNS WILL BE PLACED.
4. PROVIDE SELF-ADHERING VINYL DECALS FOR ADDRESS NUMBER SIGNAGE. DECAL NUMERALS SHALL BE INDIVIDUAL, RATHER THAN CONTIGUOUS.
5. MOUNT INTERIOR ADA SIGNAGE BETWEEN 48" AND 60" ABOVE FINISHED FLOOR.



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

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THE WATER HOLE REBUILD
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LEE'S SUMMIT, MO 64081
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#	Description	Date

STATE OF MISSOURI
DENNIS OSOSKIE
NUMBER
A-2018024479
11-08-2022
ARCHITECT

Date	11-07-2022
Drawn by	DO
Checked by	DO

SIGNAGE PLAN

A8.01

Scale 1/8" = 1'-0"

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GENERAL REQUIREMENTS

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS, REGISTRATION FEES AND APPROVALS FOR THE WORK.

2. ALL WORK SHALL BE DONE BY SKILLED AND PROPERLY EQUIPPED PERSONNEL, IN ACCORDANCE WITH THE HIGHEST QUALITY STANDARDS OF THE INDUSTRY FOR MATERIAL AND INSTALLATION. ALL WORK SHALL CARRY A ONE-YEAR WARRANTY. REPAIR OR REPLACEMENT OF ALL WARRANTIED WORK AND ANY AREA AFFECTED BY FAILURE OF THE WARRANTIED ITEM, SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

3. ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH ANY AND ALL APPLICABLE CODES, RULES AND LAWS. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES THAT ARE ADOPTED BY AUTHORITIES HAVING JURISDICTION, AND IN ACCORDANCE WITH ANY DESIGN OR CONSTRUCTION CRITERIA ISSUED BY THE OWNER/LANDLORD (IF SUCH CRITERIA EXISTS).

4. GENERAL CONTRACTOR SHALL PROVIDE AND PAY FOR: LABOR, MATERIAL, EQUIPMENT, TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY, WATER, HEAT AND UTILITIES REQUIRED FOR CONSTRUCTION AS WELL AS ANY OTHER FACILITIES AND SERVICE NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE WORK WHEN WORK IS PERFORMED.

5. GENERAL CONTRACTOR SHALL SECURE AND PAY FOR THE FOLLOWING ITEMS NECESSARY FOR EXECUTION AND COMPLETION OF THE WORK: PERMITS, FEES, LICENSES, BONDS, AND ALL INSURANCE REQUIRED BY LOCAL AUTHORITIES AND/OR OWNER/LANDLORD. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY CERTIFICATES OF INSURANCE TO THE OWNER, AS WELL AS ANY TENANTS AFFECTED (IF APPLICABLE).

6. WORK SHALL COMPLY WITH THE APPLICABLE SPECIFICATIONS AND STANDARDS OF UL, ASTM, ANSI, AWI, NEMA, AIA AND ALL OTHER STANDARDS OF MANUFACTURERS ASSOCIATIONS.

7. THE GENERAL CONTRACTOR ASSUMES OVERALL RESPONSIBILITIES FOR THE WORK OF THIS PROJECT TO ASSURE THAT ALL ASSEMBLES, COMPONENTS AND PARTS INDICATED OR REQUIRED COMPLY WITH CONTRACT DOCUMENTS. ANY SUBSTITUTIONS MADE BY THE CONTRACTOR WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER OR ARCHITECT WILL BE REJECTED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

8. THE GENERAL CONTRACTOR SHALL VERIFY THAT ALL COMPONENTS REQUIRED TO SATISFACTORILY COMPLETE THE INSTALLATION ARE COMPATIBLE WITH EACH OTHER, WITH ADJOINING SUBSTRATES, MATERIALS AND WORK BY OTHER TRADES, AND WITH THE CONDITIONS OF INSTALLATION AND EXPECTED USE.

9. FIRE-RATED CONSTRUCTION: WHEREVER A FIRE RESISTANCE CLASSIFICATION IS INDICATED OR REQUIRED FOR CONSTRUCTION, PROVIDE MATERIALS, ACCESSORIES AND APPLICATION PROCEDURES WHICH COMPLY WITH THE REQUIREMENTS OF UL "FIRE RESISTANCE INDEX" FOR THE UL DESIGN NUMBERS CORRESPONDING WITH THE CONSTRUCTION ASSEMBLIES INDICATED.

10. ON-SITE PARKING PROVISIONS AND ACCESS TO THE SITE/SPACE SHALL BE CONFIRMED AND COORDINATED WITH THE BUILDING OWNER AND TENANT'S REPRESENTATIVES (IF APPLICABLE). CONTRACTOR SHALL HAVE USE OF PROJECT SITE FOR CONSTRUCTION OPERATIONS DURING CONSTRUCTION PERIOD, IN A MANNER ACCEPTABLE TO THE OWNER. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO THE AREA WITHIN THE CONTRACT LIMITS, AS INDICATED ON DRAWINGS OR AS COORDINATED WITH OWNER.

11. UNFORSEEN CONDITIONS: INCLUDE IN THE BASE BID AN ALLOWANCE FOR MISCELLANEOUS CUTTING AND PATCHING NECESSITATED AS A RESULT OF UNFORSEEN CONDITIONS AND THE REWORKING OF ABUTTING SURFACES AS REQUIRED TO MAKE NEW WORK JOIN AND MATCH EXISTING SURFACES TO REMAIN. UNUSED PORTIONS OF THIS ALLOWANCE SHALL BE RETURNED TO THE OWNER. GENERAL CONTRACTOR TO NOTIFY OWNER AND ARCHITECT IN SUCH INSTANCES WHERE UNFORESEEN CONDITIONS NECESSITATE USE OF ALLOWANCE FUNDS, PRIOR TO EXECUTION OF WORK.

12. OWNER FURNISHED – CONTRACTOR INSTALLED (OFCI) PRODUCTS: FOR ANY ITEMS DESIGNAGED AS OFCI, THE OWNER WILL ARRANGE AND PAY FOR PRODUCT DELIVERY TO THE SITE. UPON DELIVERY, THE OWNER WILL INSPECT PRODUCTS JOINTLY WITH THE CONTRACTOR, SUBMIT CLAIMS FOR TRANSPORTATION DAMAGE AND REPLACE DAMAGED, DEFECTIVE OR DEFICIENT ITEMS. THE CONTRACTOR SHALL PROTECT ALL ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS AND SHALL REPLACE OR REPAIR ITEMS DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS.

13. THERE MAY BE SEPARATE CONTRACTORS WORKING DIRECTLY FOR THE OWNER CONCURRENT WITH THIS WORK. WORK SHALL BE COORDINATED WITH SEPARATE CONTRACTORS TO MINIMIZE INTERFERENCE TO ALL PARTIES.

14. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE OWNER A CRITICAL-PATH-METHOD TYPE PROGRESS SCHEDULE FOR THE ENTIRE PROJECT. THE SCHEDULE SHALL BE UPDATED THROUGHOUT THE DURATION OF THE PROJECT. SCHEDULE SHALL BE UPDATED WITH A MINIMUM FREQUENCY OF ONCE PER MONTH, WITH UPDATES PROVIDED IN CONJUNCTION WITH CONSTRUCTION PROGRESS MEETINGS

15. MEETINGS: THE GENERAL CONTRACTOR SHALL ARRANGE A PRE-CONSTRUCTION CONFERENCE TO BE HELD AT THE JOB SITE PRIOR TO THE BEGINNING OF CONSTRUCTION, AT WHICH THE JOB SUPERINTENDENT AND PRIME SUBCONTRACTORS ARE PRESENT. THE GENERAL CONTRACTOR SHALL SCHEDULE AND ADMINISTER MEETINGS THROUGHOUT THE PROGRESS OF THE WORK AT MONTHLY INTERVALS (UNLESS MUTUALLY AGREED OTHERWISE BY ALL PARTIES), MAKE ARRANGEMENTS FOR MEETINGS, PREPARE AGENDA, PRESIDE AT MEETINGS AND ISSUE MEETING MINUTES.

16. SUBMITTALS: PRIOR TO PLACING PURCHASE ORDERS, CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL ALL SUBMITTALS LISTED AS REQUIRED ELSEWHERE IN THESE SPECIFICATIONS, AS WELL AS SPECIFICATIONS INCLUDED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS (E.G. INTERIOR DESIGN DRAWINGS, CIVIL DRAWINGS, STRUCTURAL DRAWINGS AND MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS).

17. APPLICATION FOR PAYMENT AND SCHEDULE OF VALUES SHALL BE SUBMITTED MONTHLY IN THE FOLLOWING FORMAT: (3) COPIES OF AIA DOCUMENT G702, APPLICATION AND CERTIFICATION FOR PAYMENT, SUPPORTED BY AIA DOCUMENT G703, CONTINUATION SHEET OR A COMPUTER GENERATED FACSIMILE THEREOF, APPROVED FOR USE IN ADVANCE BY THE OWNER. SUBMIT CONDITIONAL LIEN RELEASES WITH EACH APPLICATION FOR PAYMENT, WHICH ARE CONTINGENT UPON RECEIPT AND BANK CLEARANCE OF THE CURRENT INVOICED AMOUNT. SUBMIT UNCONDITIONAL LIEN RELEASES COVERING THE PREVIOUSLY PAID AMOUNT RECEIVED BY THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS OR MATERIAL SUPPLIERS, WITH SUBSEQUENT APPLICATIONS FOR PAYMENT. LIEN RELEASES SHALL BE IN A FORMAT APPROVED BY OWNER

19. AS-BUILT MECHANICAL, ELECTRICAL, FIRE PROTECTION AND ARCHITECTURAL DRAWINGS WILL BE REQUIRED AT THE CONCLUSION OF THE PROJECT. FOR AS-BUILTS SUBMITTED IN MARK-UP FORMAT, CONTRACTOR SHALL USE RED INK OR PENCIL TO CONTRAST WITH ORIGINAL PRINTS. FOR CAD-DRAWN OR OTHER DIGITAL AS-BUILTS, CONTRACTOR SHALL USE BOLD TEXT AND BOLD LINEWORK FOR ALL ITEMS THAT DIFFER FROM ORIGINAL DESIGN AND CLOUD EACH OF THEM. AS-BUILTS SHALL BE SUBMITTED AS FULL SIZE DOCUMENTS TO MATCH ORIGINAL CORRESPONDING DOCUMENTS. ALL TRADES WILL PROVIDE A TOUR OF THE COMPLETED CONSTRUCTION FOR THE OWNER'S MAINTENANCE CREW.

22. CONTROLLED SUBSTANCES AND FIREARMS: USE OF TOBACCO PRODUCTS AND OTHER CONTROLLED SUBSTANCES WITHIN THE EXISTING BUILDING, AND ON THE PROJECT SITE, IS NOT PERMITTED. NO FIREARMS ARE PERMITTED ON THE PROPERTY AND/OR WITHIN THE PROJECT BOUNDARIES.

SUMMARY OF WORK:

1. THE PROJECT IS LOCATED AT 401 SE OLDHAM PARKWAY IN LEE'S SUMMIT, MO AND CONSISTS OF A NEW POOL AND SPA STORE TO REPLACE A PREVIOUS POOL AND SPA STORE THAT SUFFERED FIRE DAMAGE AND WAS SUBSEQUENTLY DEMOLISHED. THE NEW STORE IS BEING REBUILT IN THE SAME LOCATION AS THE PREVIOUS ONE. THE STORE CONSISTS OF A SHOWROOM, STOREROOM AND ANCILLARY OFFICE SPACES, AS WELL AS A MEZZANINE. A COVERED STORAGE AREA WILL ALSO BE PROVIDED A THE SOUTH END OF THE BUILDING. THE NEW STORE CONTAINS APPROXIMATELY 5,942 GROSS SQ. FT. (INCLUDING MEZZANINE), WITH ANOTHER 1,256 SQ. FT. OF EXTERIOR COVERED STORAGE. THE NEW FACILITY WILL UTILIZE A PRE-ENGINEERED METAL BUILDING STRUCTURE, WITH COLD FORMED METAL FRAMING ALONG THE EXTERIOR WALLS. EXTERIOR IMPROVEMENTS WILL BE LIMITED TO NEW CONCRETE LANDINGS AT THE ENTRANCES AND EXITS, AS WELL AS REMOVAL AND REPLACEMENT OF EXISTING ASPHALT AS NECESSARY TO ACCOMMODATE NEW CONSTRUCTION.

2. WORK OF THE CONTRACT CAN BE SUMMARIZED BY REFERENCE TO THE CONTRACT DOCUMENTS, INCLUDING GENERAL CONDITIONS, SPECIFICATIONS, DRAWINGS AND ADDENDA, AS WELL AS MODIFICATIONS TO THESE DOCUMENTS ISSUED SUBSEQUENT TO THEIR INITIAL PRINTING.

PROTECTION:

1. PROTECT AND MAINTAIN ALL WORK THROUGHOUT CONSTRUCTION, INCLUDING BOTH NEW AND EXISTING FLOORING, SO THAT IT WILL BE FREE OF DAMAGE AT THE TIME OF ACCEPTANCE BY THE OWNER AND TENANT/USER. PROVIDE TEMPORARY WALK-OFF MATS AT ALL CONSTRUCTION ENTRANCES TO BUILDING AND REMOVE AND DISPOSE OF SUCH MATS AT THE COMPLETION OF CONSTRUCTION.

2. PROVIDE PROTECTIVE DUST BARRIERS TO ENCLOSE ANY DISTURBED AREAS SO AS TO AVOID IMPACT TO ONGOING SERVICES IN ADJACENT AREAS. PROVIDE AIR-TIGHT CLOSURES OVER ALL EXPOSED OPENINGS OF THE HVAC SYSTEM DURING CONSTRUCTION. IF HVAC SYSTEM USE IS REQUIRED DURING CONSTRUCTION PHASE, PROVIDE TEMPORARY FILTERS AT OPENINGS TO MEET MERV RATINGS AND OTHER REQUIREMENTS OF MECHANICAL SPECIFICATIONS.

3. DURING CONSTRUCTION, PROVIDE TYPE ABC FIRE EXTINGUISHERS AT LOCATIONS REQUIRED BY CODE AND AS REQUIRED TO BE BE REASONABLY EFFECTIVE IN EXTINGUISHING FIRES BY PERSONNEL AT THE PROJECT SITE. REMOVE SUCH TEMPORARY FIRE EXTINGUISHERS AT PROJECT COMPLETION.

4. PROTECTION OF PERSONNEL: ERECT SIGNS, BARRICADES AND SUCH OTHER FORMS OF WARNING AS MAY BE REQUIRED TO PREVENT PERSONNEL FROM PUTTING THEMSELVES IN THE WAY OF INJURY.

5. THE GENERAL CONTRACTOR SHALL EXECUTE PERIODIC CLEANING THOUGHOUT THE COURSE OF THE WORK, AS WELL AS AT THE COMPLETION OF THE WORK, SO THAT ALL FINISHED SURFACES ARE FREE OF ANY FOREIGN MATERIAL. CONDUCT CLEANING AND DISPOSAL OPERATIONS TO COMPLY WITH CODES, ORDINANCES, REGULATIONS, AND LANDLORD REQUIREMENTS. REMOVE FROM SIGHT ANY GREASE, MASTIC, ADHESIVES, DIRT, STAINS, LABELS AND OTHER FOREIGN MATERIALS ON EXPOSED SURFACES. GENERAL CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS FROM JOBSITE, ON A DAILY BASIS.

PRODUCT HANDLING:

1. DELIVER AND STORE MATERIALS IN SEALED CONTAINERS AND BUNDLES, FULLY IDENTIFIED WITH MANUFACTURERS NAME, BRAND, TYPE AND GRADE. PROTECT MATERIALS FROM CORROSION AND DAMAGE. STORE IN DRY VENTILATED SPACE, OFF THE GROUND. COORDINATE ALL DELIVERIES WITH THE LANDLORD AND TENANT SUPPLIED MATERIAL VENDORS.

2. GENERAL CONTRACTOR WILL RECEIVE AND UNLOAD ALL FIXTURES FROM THE FIXTURE SUPPLIER, ACCORDING TO THE TERMS AND CONDITIONS IMPOSED BY THE LANDLORD (IF APPLICABLE), I.E. SPECIAL TIMES TO UNLOAD, ETC. FIXTURES TO BE SET BY GENERAL CONTRACTOR.

3. FOR WORK IN TENANT SPACES: GENERAL CONTRACTOR WILL NOTIFY TENANT IMMEDIATELY OF ANY MISSING OR DAMAGED ITEMS THAT TENANT SUPPLIES AND GENERAL CONTRACTOR INSTALLS. GENERAL CONTRACTOR WILL OBTAIN AND FILL ALL NECESSARY PAPERWORK REQUIRED IN ORDER TO FACILITATE TENANT IN HIS ABILITY TO PROPERLY FILE CLAIM FOR DAMAGES OR LOSSES. REFER TO TENANT SHORTAGE/DAMAGE GOOD POLICY INCLUDED IN BID INSTRUCTIONS FROM TENANT.

EXISTING CONDITIONS:

1. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL VISIT THE JOB SITE TO THOROUGHLY REVIEW ALL EXISTING CONDITIONS PRIOR TO ANY PRICE ESTIMATING OR BIDDING OF THE PROJECT. THE DRAWINGS DO NOT NECESSARILY INDICATE THE FULL EXTENT OF THE WORK REQUIRED TO BE PERFORMED. INSPECT THE EXISTING CONSTRUCITON CAREFULLY TO DETERMINE THE FULL EXTENT OF WORK TO BE PERFORMED AND THE CHALLENGES INVOLVED. ANY DISCREPANCIES BETWEEN THE BID DOCUMENTS AND EXISTING CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO CONSTRUCTION. NO EXTRA COMPENSATION OR USE OF OF ANY CONTINGENCY ALLOWANCES WILL BE ALLOWED BECAUSE OF BIDDING ERRORS OR FAILURE TO ESTIMATE THE FULL EXTENT OF THE WORK DUE TO A FAILURE TO REVIEW THE EXISTING CONDITIONS.

2. GENERAL CONTRACTOR SHALL EXAMINE THE SUBSTRATES AND ADJOINING CONSTRUCTION, AND THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. DO NOT PROCEED UNTIL CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK HAVE BEEN CORRECTED.

3. BEFORE PERFORMING ANY WORK OR ORDERING ANY MATERIAL, THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS OF ANY EXISTING OR NEW WORK AND SHALL BE RESPONSIBLE FOR THEIR ACCURACY. ANY DIFFERENCES FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE PROCEEDING WITH WORK.

4. DATA AVAILABLEE: A REPORT OF THE SUBSURFACE INVESTIGATIONS OF THE BUILDING SITE, ENTITLED "GEOTECHNICAL REPORT PROPSED BUILDING 5401 MARTINDALE STREET SHAWNEE, KS", DATED JULY 9, 2021, HAS BEEN PREPARED FOR THE OWNER BY GEOTECHNOLOGY, INC. AND IS AVAILABLE TO CONTRACTOR. CONTRACTOR SHALL REVIEW THE REPORT AND OBTAIN ADDITIONAL DATA AT CONTRACTOR'S OWN EXPENSE, IF REQUIRED TO SATISFY HIM/HERSELF WITH THE CONDITIONS TO BE ENCOUNTERED. CONTRACTOR SHALL REQUEST A COPY OF THE REPORT FROM THE OWNER IF ONE IS NOT PROVIDED ALONG WITH CONSTRUCTION DRAWINGS.

SPECIAL CONDITIONS FOR WORK IN TENANT SPACES:

1. CONSTRUCTION ACCESS TO SPACES NOT OCCUPIED BY THIS TENANT BUT REQUIRED TO COMPLETE WORK SHALL BE COORDINATED THROUGH THE LANDLORD'SBUILDING OFFICE. AFTER-HOURS WORK IS REQUIRED TO MINIMIZE DISRUPTION OF OTHER TENANTS.

2. DUMPSTER LOCATIONS MUST BE COORDINATED THROUGH THE LANDLORD'S BUILDING OFFICE. EXTRA CHARGES FOR TRASH REMOVAL ARE THE RESPONSIBILITY OF THE CONTRACTOR.

3. DELIVERIES MAY OCCUR AT THE LOADING DOCK (IF ONE EXISTS) DURING NORMAL BUSINESS HOURS. ANY AFTER HOURS DELIVERIES MUST BE ARRANGED WITH THE LANDLORD'S BUILDING OFFICE.

4. IF ELEVATOR ACCESS IS REQUIRED TO ACCESS TENANT SPACE, ALL MATERIAL, EQUIPMENT AND PERSONNEL SHALL GAIN ACCESS TO THE SITE THROUGH THE FREIGHT ELEVATOR. THE USE OF THE FREIGHT ELEVATOR IS ON A FIRST COME FIRST SERVED BASIS. USE OF THE FREIGHT ELEVATOR AFTER NORMAL BUSINESS HOURS MUST BE COORDINATED THROUGH THE OFFICE OF THE BUILDING. THE CONTRACTOR IS RESPONSIBLE FOR ALL EXTRA CHARGES RELATING TO AFTER HOURS USE OF THE FREIGHT ELEVATOR (I.E. OPERATOR CHARGES, ETC.). IF NO FREIGHT ELEVATOR EXISTS, CONTRACTOR SHALL COORDINATE WITH BUILDING OWNER FOR USE OF OTHER ELEVATORS AND THE PROTECTION MEASURES REQUIRED FOR SUCH USE.

5. THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE LANDLORD AND TENANT ALL WORK THAT MAY EFFECT NORMAL DAILY OPERATIONS OF THE LANDLORDPREMISES OR TENANT SPACE AND COMPLY WITH ALL RESTRICTIONS THE LANDLORD OR TENANT MAY HAVE ON DEMOLITION AND/OR CONSTRUCTION SCHEDULES. COORPERATE FULLY TO THE END THAT CERTAIN FACILITIES AND SERVICES ARE MAINTAINED IN OPERATION UNTIL IMMEDIATELY BEFORE THEIR REMOVAL IS REQUIRED TO PERMIT INSTALLATION OF NEW WORK.

6. GENERAL CONTRACTOR IS RESPONSIBLE FOR THE ERECTION OF TEMPORARY PROTECTION AND/OR BARRICADES IN ACCORDANCE WITH THE LANDLORD REQUIREMENTS AND LOCAL FIRE CODES. GENERAL CONTRACTOR SHALL COORDINATE WITH LANDLORD ON SPECIFIC REQUIREMENTS FOR GRAPHICS AND PAINT COLORS ON TEMPORARY PROTECTION OR BARRICADES.

7. ALL WORK ABOVE THE CEILING SHALL BE DONE IN STRICT ACCORDANCE WITH LANDLORD'S PROCEDURES. ALL LOCAL, STATE AND FEDERAL REGULATIONS SHALL BE MET IF CONTACT OR EXPOSURE TO ANY HAZARDOUS MATERIAL IS REQUIRED TO ACCOMPLISH THE WORK.

8. CARRY ON ALL WORK IN A MANNER WHICH PRODUCES THE LEAST AMOUNT OF NOISE. INSTRUCT ALL WORKERS IN NOISE CONTROL PROCEDURES. COORDINATE WITH OWNER PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES THAT PRODUCE SIGNIFICANT NOISE OR VIBRATIONS THAT COULD BE DISRUPTIVE TO ADJACENT TENANTS.

FINAL CLEANING:

1. GENERAL CONTRACTOR TO PROVIDE A PROFESSIONAL CLEANING SERVICE TO EXECUTE FINAL CLEANING PRIOR TO TURNOVER.

2. CLEAN INTERIOR AND EXTERIOR GLASS, SURFACES EXPOSED TO VIEW; REMOVE TEMPORARY LABELS, STAINS AND FOREIGN SUBSTANCES, POLISH TRANSPARENT AND GLOSSY SURFACES, VACUUM CARPETED AND SOFT SURFACES. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION WITH CLEANING MATERIALS APPROPRIATE TO THE SURFACE AND MATERIAL BEING CLEANED.

4. REMOVE WASTE AND SURPLUS MATERIALS, RUBBISH AND CONSTRUCTION FACILITIES FROM THE SITE.

ADJUSTMENT, OPERATION AND MAINTENANCE, WARRANTIES:

1. ADJUST OPERATING PRODUCTS AND EQUIPMENT TO ENSURE TURNOVER AND SMOOTH AND UNHINDERED OPERATION.

2. SUBMIT DATA BOUND IN SIDE-RING BINDERS WITH DURABLE PLASTIC COVERS, FORMATTED ON 8-1/2 X 11 INCH PAGES, WITH LABELED TABS SEPARATING EACH SYSTEM OR PIECE OF EQUIPMENT INCLUDED. PROVIDE (3) COPIES, UNLESS INSTRUCTED OTHERWISE BY QUANTITIES SPECIFIED IN INDIVIDUAL SPECIFICATION SECTIONS. INCLUDE BINDER COVER WITH PRINTED TITLE "OPERATION AND MAINTENANCE INSTRUCTIONS" AS WELL AS TITLE OF PROJECT.

3. PROVIDE SPARE PARTS AND MAINTENANCE PRODUCTS RECEIVED WITH MATERIAL TO TENANT AND/OR LANDLORD.

4. EXECUTE AND ASSEMBLE TRANSFERABLE WARRANTY DOCUMENTS FROM SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS. SUBMIT WARRANTIES TO TENANT AND/OR LANDLORD IN DURABLE BINDERS SUITABLE FOR WARRANTIES SO AS NOT TO DAMAGE OR OBSCURE THE BODY OF ANY WARRANTY DOCUMENT. SEPARATE WARRANTIES WITH LABELED TABS FOR EACH SYSTEM OR PIECE OF EQUIPMENT INCLUDED.

5. FOR WORK IN TENANT SPACES: CONTACT BOTH TENANT AND LANDLORD TO CONFIRM APPROPRIATE RECIPIENT OF ITEMS ABOVE.

SUSTAINABILITY:

1. WOODWORK SHALL NOT CONTAIN WOOD FROM ENDANGERED WOOD SPECIES, AS LISTED BY THE CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES. ALL WOOD PRODUCTS SHALL USE WOOD CERTIFIED BY THE FORESTRY STEWARDSHIP COUNCIL (FSC) AND SHALL BE FREE OF FORMALDEHYDE.

2. ITEMS INDICATED TO BE LOW VOC (OR ZERO VOC) PRODUCTS MUST MEET THE FOLLOWING STANDARDS OR REQUIREMENTS:

a. ADHESIVE AND SEALANTS: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULE 1168
b. JOINT COMPOUND: NO MORE THAN 20 GRAMS PER LITER
b. ARCHITECTURAL COATINGS: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) RULE 1113
c. LATEX PAINT FOR INTERIOR WALLS: NO MORE THAN 3 GRAMS PER LITER
d. PAINT FOR EXPOSED METAL SURFACES (2 COATS): NO MORE THAN 3 GRAMS PER LITER
d. ALL OTHER ARCHITECTURAL COATINGS, PRIMERS AND UNDERCOATS: GREAN SEAL STANDARD GS-11, THIRD EDITION, AUGUST 17, 2011

DEMOLITION:

1. ANY AND ALL DEMOLTION REQUIRED TO COMPLETE CONSTRUCTION FOR THIS PROJECT MUST BE CONSIDERED PART OF THIS CONTRACT AND SHOULD BE EXECUTED IN ACCORDANCE WITH THE OWNER/LANDLORD'S REQUIREMENTS. THE CONSTRUCTION DOCUMENTS MAY INDICATE EXISTING ITEMS TO REMAIN, BUT THE ARCHITECT DOES NOT CERTIFY THAT ALL DEMOLITION WORK IS INDICATED ON THE PLANS.

2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL DEMOLITION, PATCHING AND REPAIRING. ANY EXISTING ITEMS NOTED TO BE REPAIRED OR ITEMS DAMAGED OR MODIFIED DUE TO CONSTRUCTION MUST BE REPAIRED TO A LIKE-NEW CONDITION BY A MEANS APPROVED BY THE OWNER. PERFORM CUTTING AND STRIPPING SO THAT THE WORK TO REMAIN IS UNDAMAGED AND SUCH THAT NEW WORK CAN BE PROPERLY CONNECTED TO IT.

3. THE GENERAL CONTRACTOR SHALL DEMOLISH AND REMOVE AND LEGALLY DISPOSE OF ALL DEMOLISHED MATERIALS IN A SAFE AND TIMELY MANNER. NO CONSTRUCTION MATERIALS ARE TO BE DISPOSED OF IN THE OWNER/LANDLORD'S OR TENANT'S (IF APPLICABLE) TRASH RECEPTACLES OR DUMPSTERS WITHOUT THE APPROPRIATE PARTY'S PRIOR APPROVAL.

4. ALL DEMOLITION WORK MUST BE COORDINATED WITH THE BUILDING OWNER AND TENANT'S REPRESENTATIVES (IF APPLICABLE). ANY INTERRUPTION OF THE UTILITY SERVICE MUST BE PRECEDED BY WRITTEN NOTICE, ONE WEEK IN ADVANCE. SALVAGEABLE MATERIALS SHALL BE REUSED OR REMOVED AS DIRECTED TO THE OWNER'S REPRESENTATIVE OR ARCHITECT.

5. ITEMS TO BE DEMOLISHED OR REMOVED, WHICH ARE SCAFFOLD HIGH OR HIGHER SHALL BE LOWERED BY CONTROLLED METHODS, NOT BY DROPPING.

6. IF STRUCTURAL ELEMENTS ARE REMOVED OR MODIFIED AS PART OF THE WORK, THE CONTRACTORS SHALL BE FULLY RESPONSIBLE FOR THE ADEQUACY AND INSTALLATION OF ALL TEMPORARY SHORING SYSTEMS USED DURING THE REMOVING OF ALL STRUCTURAL ELEMENTS.

7. DEMOLITION OF EXISTING CONSTRUCTION SHALL BE AS INDICATED ON THE DRAWINGS AND WHERE REQUIRED BY JOB CONDITIONS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

a. REMOVAL OF PARTITIONS, DOORS, FLOOR COVERINGS, AND CEILINGS.
b. REMOVAL OF FIXTURES, FURNISHINGS AND EQUIPMENT.
c. DEBRIS REMOVAL AND DISPOSAL.
d. REMOVAL OR CORING OF PORTIONS OF EXISTING CONCRETE CONSTRUCTION AS REQUIRED FOR SERVICE AND EQUIPMENT LINE INSTALLATION.

8. MECHANICAL, ELECTRICAL AND PLUMBING DEMOLITION:

a. CAREFULLY REVIEW PLANS AND DETERMINE LINES TO BE REMOVED AND THOSE TO KEPT ACTIVE OR TO BE REACTIVATED. PROTECT LINES TO REMAIN. PROVIDE FOR MINIMUM SERVICE INTERRUPTION OF LINES TO REMAIN.
b. REMOVE LINES COMPLETELY WHENEVER POSSIBLE. CAP OR PLUG LINES WHICH CAN'T BE REMOVED TO PREVENT ESCAPE OF GAS, LIQUID, ETC.
c. REPAIR, REPLACE, OR MAKE GOOD DAMAGE TO EXISTING CONSTRUCTION, AT CONTRACTOR'S OWN COST, WHICH RESULTS FROM DEMOLITION OPERATIONS. REPAIRS SHALL INCLUDE ANY ROOF PATCHING REQUIRED DUE TO DEMOLITION, WHICH SHALL BE COORDINATED WITH LANDLORD.
d. IN ADDITION TO THESE NOTES, REFER ALSO DEMOLITION NOTES IN MECHANICAL, ELECTRICAL AND PLUMBING DOCUMENTS. NOTIFY ARCHITECT IMMEDIATELY OF ANY CONFLICTS WITH THE INSTRUCTIONS LISTED ABOVE.

033000 CONCRETE

1. REFER TO STRUCTURAL DRAWINGS FOR CONCRETE SPECIFICATIONS.

047000 MANUFACTURED MASONRY

1. PROVIDE MANUFACTURED MASONRY PRODUCTS ACCORDING TO MFR/MODEL, SIZES, SHAPES, TEXTURES AND COLORS AS INDICATED ON PLANS. MANUFACTURED MASONRY PROUCTS SHALL CARRY A MANUFACTURER'S STANDARD 50 YEAR WARRANTY.

2. PROVIDE UNITS WITH A COMPRESSIVE STRENGTH OF 1,800 PSI PER ASTM C192 AND ASTM C39. BOND BETWEEN STONE UNIT, MORTAR AND BACKING SHALL BE 50 PSI PER ASTM C 482.

3. PROVIDE MANUFACTURER'S STANDARD TRIM AND ACCESSORY ITEMS SUCH AS SILLS AND SPECIALTY STONES FOR LIGHT FIXTURES, ELECTRICAL OUTLETS, HOSE BIBBS, ETC.

4. INSTALL UNITS USING A POLYMER-MODIFIED MORTAR MEETING ANSI A118.4 OR ANSI 118.15, USING COMPONENTS AND PROPORTIONS FOLLOWING MANUFACTURED MASONRY MANUFACTURER'S INSTALLATION INSTRUCTIONS. COMPLY WITH ASTM C 270. PROVIDE COLORED MORTAR PER ARCHITECTS SELECTION, WITH COLOR DERIVED FROM IRON OXIDE PIGMENTS.

5. INSTALL MASONRY OVER 3.4lb GALVANIZED EXPANDED RIB LATH OVER NO. 15 FELT COMPLYING WITH ASTM D226 TYPE 1. (NOTE: FELT SERVES AS A BOND BREAK - A SEPARATE WEATHER RESISTIVE BARRIER IS NEEDED IN ADDITION TO THE FELT. SEE AIR BARRIER REQUIREMENTS ELSEWHERE IN THESE SPECIFICATIONS). INSTALL LATH USING FASTENERS AS INDICATED BY MANUFACTURER. FOR MASONRY INSTALLED OVER CONTINUOUS INSULATION, PROVIDE FASTENERS SUITABLE FOR THE THICKNESS OF INSULATION INDICATED ON PLANS AS TESTED AND QUALIFIED BY ICC REPORT.

6. EXAMINE SUBSTRATES AND CONDITIONS PRIOR TO INSTALLATION AND COORDINATE WITH RESPONSIBLE PARTY TO CORRECT UNSATISFACTORY CONDITIONS. PREPARE SURFACE PER MANUFACTURER'S INSTRUCTIONS.

7. PREVENT WORK FROM OCCURRING ON OPPOSITE SIDE OF WALLS RECEIVING MANUFACTURED MASONRY FOR A PERIOD OF 48 HOURS AFTER INSTALLATION.

8. CLEAN EXCESS MORTAR AND OTHER RESIDUE FROM MASONRY AS WORK PROGRESSES AND BEFORE SUCH ITEMS CAN CURE.

9. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA; MORTAR SAMPLES OF MANUFACTURER'S FULL COLOR RANGE; FASTENER PRODUCT DATA WITH ASSOCIATED ICC REPORT (FOR MASONRY APPLIED OVER CONTINUOUS INSULATION)

051000 STRUCTURAL METAL FRAMING

1. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL METAL FRAMING SPECIFICATIONS.

054000 COLD FORMED METAL FRAMING

1. REFER TO STRUCTURAL DRAWINGS FOR COLD FORMED METAL FRAMING SPECIFICATIONS.

055000 METAL FABRICATIONS

1. PROVIDE FABRICATED METAL BOLLARDS AT LOCATIONS INDICATED ON PLAN UTILIZING SCHEDULE 40 STEEL PIPE. CAP BOLLARDS WITH 1/4" THICK STEEL PLATE.

8. FABRICATOR SHALL BE AN AISC CERTIFIED FABRICATOR WITH A MINIMUM OF 5 YEARS' EXPERIENCE DESIGN AND FABRICATION OF CUSTOM STEEL FABRICATIONS OF THE TYPE INDICATED FOR THIS PROJECT. INSTALLER SHALL BE A FIRM SPECIALIZING IN THE WORK OF THIS SECTION, WITH A MINIMUM OF 2 YEARS' EXPERIENCE.

10. METAL FABRICATIONS AND HARDWARE SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN COMPLIANCE WITH ASTM A 123/A 123M. SHOP PRIME WITH AN EPOXY RICH ZINC PRIMER COMPLYING WITH REQUIREMENTS INDICATED IN FOR STEEL SUBSTRATES IN SECTION 099000 PAINTS. COMPLY WITH REQUIREMENTS IN SSPC-PA 1, "SHOP, FIELD, AND MAINTENANCE PAINTING OF STEEL," FOR SHOP PAINTING. PREPARE UNCOATED FERROUS-METAL SURFACES FOR SHOP PRIMING IN COMPL

072419 WATER DRAINAGE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

1. PROVIDE WATER-DRAINAGE EIFS WITH A MEANS THAT ALLOWS WATER ENTERING INTO AN EIFS ASSEMBLY TO DRAIN TO THE EXTERIOR. EIFS SHALL BE CLASS PB, A NON-LOAD-BEARING, EXTERIOR WALL CLADDING SYSTEM THAT CONSISTS OF AN INSULATION BOARD ATTACHED ADHESIVELY, MECHANICALLY, OR BOTH TO THE SUBSTRATE; AN INTEGRALLY REINFORCED BASE COAT; AND A TEXTURED PROTECTIVE FINISH COAT. **BASIS OF DESIGN PRODUCT:** STOTHERM ci BY STO CORP.

2. PROVIDE EIFS HAVING PHYSICAL PROPERTIES AND STRUCTURAL PERFORMANCE SUCH THAT NO ADVERSE EFFECTS ARE OBSERVED IN COMPLIANCE WITH THE FOLLOWING: ABRASION RESISTANCE: ASTM D 968, METHOD A; ABSORPTION-FREEZE RESISTANCE: EIMA 101.01; ACCELERATED WEATHERING: ASTM G 153 OR ASTM G 154; FREEZE-THAW: EIMA 101.01; MILDEW RESISTANCE OF FINISH COAT: ASTM D 3273 AND ASTM D 3274; SALT-SPRAY RESISTANCE: ICC-ES AC235; TENSILE ADHESION: EIMA 101.03; WATER PENETRATION: EIMA 101.02; WATER RESISTANCE: ASTM D 2247; IMPACT RESISTANCE: EIMA 101.86 AND MEETING A MEDIUM IMPACT RESISTANCE OF 50 TO 89 INCH-LB OR HIGH IMPACT RESISTANCE OF 90 TO 150 INCH-LB, AS APPLICABLE; DRAINAGE: ICC-ES AC24; STRUCTURAL PERFORMANCE TESTING: ICC-ES AC235 WHEN TESTED PER ASTM E 330.

3. PROVIDE EIFS AND SYSTEM COMPONENTS WITH THE FOLLOWING FIRE-TEST-RESPONSE CHARACTERISTICS PER TEST METHOD INDICATED BELOW BY UL OR ANOTHER TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.

A. FIRE-RESISTANCE CHARACTERISTICS: PER ASTM E 119.
B. RADIANT HEAT EXPOSURE: NO IGNITION OF EIFS WHEN TESTED ACCORDING TO NFPA 268.
C. POTENTIAL HEAT: ACCEPTABLE LEVEL WHEN TESTED ACCORDING TO NFPA 259.
D. SURFACE-BURNING CHARACTERISTICS: FLAME-SPREAD INDEX OF 25 OR LESS AND SMOKE-DEVELOPED INDEX OF 450 OR LESS, PER ASTM E 84.

4. PROVIDE EIFS MATERIALS AND COMPONENTS THAT ARE SUPPLIED OR APPROVED BY EIFS MANUFACTURER FOR THE PROJECT AND WHICH ARE COMPATIBLE WITH ONE ANOTHER AND WITH THEIR SUBSTRATES. PROVIDE WATER-RESISTIVE COATINGS USING EIFS MANUFACTURER'S STANDARD LOW-VOC FORMULATION AND ACCESSORIES FOR USE AS WATER/WEATHER-RESISTIVE BARRIERS AND INCLUDING EIFS MANUFACTURER'S STANDARD LOW-VOC SUBSTRATE CONDITIONER. FLEXIBLE-MEMBRANE FLASHING SHALL BE EIFS MANUFACTURER'S STANDARD COLD-APPLIED, FULLY SELF-ADHERING, SELF-HEALING, RUBBERIZED-ASPHALT AND POLYETHYLENE-FILM COMPOSITE SHEET OR TAPE AND PRIMER. MIXED MATERIALS SHALL BE MIXED IN COMPLIANCE WITH EIFS MANUFACTURER'S REQUIREMENTS USING CLEAN CONTAINERS. PROVIDE POTABLE WATER WHEN WATER IS REQUIRED.

5. PROVIDE MOLDED, RIGID CELLULAR POLYSTYRENE BOARD INSULATION IN COMPLIANCE WITH ASTM C 578, TYPE I, INCLUDING DIMENSIONS AND PERMISSIBLE VARIATIONS. INSULATION SHALL BE AGED BY AIR DRYING FOR NOT LESS THAN SIX WEEKS AND HAVE FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES: 25 AND 450 OR LESS, RESPECTIVELY, PER ASTM E 84. PROVIDE INSULATION BOARDS NOT MORE THAN 24 BY 48 INCHES AND IN THICKNESS INDICATED BUT NOT MORE THAN 4 INCHES THICK OR LESS THAN THICKNESS ALLOWED BY ASTM C 1397. BOARD INSULATION SHALL HAVE FACTORY-FABRICATED PROFILE WITH VERTICAL DRAINAGE CHANNELS ON THE BACK SIDE OF BOARD. PROVIDE WITH PROFILES AND DIMENSIONS INDICATED ON DRAWINGS. PROVIDE INSULATION ADHESIVE DESIGNED FOR INDICATED USE AND COMPATIBLE WITH SUBSTRATE.

6. PROVIDE REINFORCING MESH USING GLASS-FIBER MESH TREATED FOR COMPATIBILITY WITH OTHER EIFS MATERIALS, WITH RETAINED MESH TENSILE STRENGTH OF NOT LESS THAN 120 LBF/IN. PER EIMA 105.01 AND COMPLYING WITH ASTM D 578 AND THE FOLLOWING:

A. INTERMEDIATE-IMPACT REINFORCING MESH: NOT LESS THAN 10 OZ./SQ. YD..
B. HIGH-IMPACT REINFORCING MESH: NOT LESS THAN 15 OZ./SQ. YD..
C. STRIP REINFORCING MESH: NOT LESS THAN 3.75 OZ./SQ. YD..
D. DETAIL REINFORCING MESH: NOT LESS THAN 4.0 OZ./SQ. YD..
E. CORNER REINFORCING MESH: NOT LESS THAN 7.2 OZ./SQ. YD.

7. PROVIDE BASE-COAT MATERIALS USING FACTORY-MIXED, ELASTOMERIC-POLYMER PRIMER FOR PREPARING BASE-COAT SURFACE FOR APPLICATION OF FINISH COAT. FINISH COAT SHALL BE ACRYLIC-BASED COATING WITH ENHANCED MILDEW RESISTANCE. PROVIDE MANUFACTURER'S WATERPROOF, CLEAR ACRYLIC-BASED SEALER FOR PROTECTING FINISH COAT. PROVIDE FINISH IN COLOR(S) TO MATCH ARCHITECT'S SAMPLE(S).

8. MECHANICAL FASTENERS SHALL BE EIFS MANUFACTURER'S STANDARD CORROSION-RESISTANT FASTENERS SUITABLE FOR SUBSTRATE AND WITH PROPERTIES REQUIRED TO RESIST DESIGN LOADS OF APPLICATION INDICATED; CAPABLE OF PULLING FASTENER HEAD BELOW SURFACE OF INSULATION.

9. PROVIDE TRIM ACCESSORIES OF TYPE DESIGNATED OR REQUIRED TO SUIT CONDITIONS INDICATED AND TO COMPLY WITH EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS. ACCESSORIES SHALL BE MANUFACTURED FROM UV-STABILIZED PVC AND COMPLY WITH ASTM D 1784, MANUFACTURER'S STANDARD CELL CLASS FOR USE INTENDED, AND ASTM C 1063.

072419 WATER DRAINAGE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) - CONTINUED

10. ELASTOMERIC SEALANT PRODUCTS SHALL BE EIFS MANUFACTURER'S LISTED AND RECOMMENDED CHEMICALLY CURING, ELASTOMERIC SEALANT THAT IS COMPATIBLE WITH JOINT FILLERS, JOINT SUBSTRATES, AND OTHER RELATED MATERIALS, AND COMPLIES WITH ASTM C 1481 AND WITH REQUIREMENTS IN DIVISION 07 SECTION "JOINT SEALANTS" FOR SINGLE-COMPONENT, NONSAG, NEUTRAL-CURING SILICONE SEALANT. COLOR: MATCH ARCHITECT'S SAMPLES.

11. STORE MATERIALS FLAT, OFF THE GROUND AND UNDER COVER, KEEPING THEM DRY AND PROTECTED FROM WEATHER, DIRECT SUNLIGHT, SURFACE CONTAMINATION, AND CONSTRUCTION ACTIVITIES.

12. ENGAGE AN INSTALLER WHO IS CERTIFIED IN WRITING BY EIFS MANUFACTURER AS QUALIFIED TO INSTALL MANUFACTURER'S SYSTEM USING TRAINED WORKERS. PROCEED WITH INSTALLATION ONLY AFTER EXAMINING SUBSTRATES AND OTHER SITE CONDITIONS AND ONLY AFTER SURFACES ARE DRY AND UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. AMBIENT WEATHER TEMPERATURES MUST BE ABOVE 40 DEG F FOR A MINIMUM OF 24 HOURS BEFORE, DURING, AND AFTER ADHESIVES OR COATINGS ARE APPLIED.

13. COMPLY WITH EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS FOR INSTALLATION OF EIFS AS APPLICABLE TO EACH TYPE OF SUBSTRATE INDICATED. PREPARE AND CLEAN SUBSTRATES TO COMPLY WITH EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS AND PROTECT EIFS AND WALL CONSTRUCTION BEHIND IT FROM INCLEMENT WEATHER. PROTECT ADJACENT WORK FROM MOISTURE DETERIORATION AND SOILING OR STAINING CAUSED BY EIFS INSTALLTION.

14. INSTALL FLEXIBLE-MEMBRANE FLASHING OVER WEATHER-RESISTIVE BARRIER, APPLIED AND LAPPED TO SHED WATER; SEAL AT OPENINGS, PENETRATIONS, TERMINATIONS, AND WHERE INDICATED BY EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS TO PROTECT WALL ASSEMBLY FROM DEGRADATION. PRIME SUBSTRATES, IF REQUIRED, AND INSTALL FLASHING TO COMPLY WITH EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS.

15. APPLY TRIM ACCESSORIES AT PERIMETER OF EIFS, AT EXPANSION JOINTS, AT WINDOW SILLS, AND ELSEWHERE AS INDICATED, ACCORDING TO EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS. COORDINATE WITH INSTALLATION OF INSULATION.

A. WEEP SCREED/TRACK: USE AT BOTTOM TERMINATION EDGES, AT WINDOW AND DOOR HEADS OF WATER-DRAINAGE EIFS UNLESS OTHERWISE INDICATED.
B. WINDOW SILL FLASHING: USE AT WINDOWS UNLESS OTHERWISE INDICATED.
C. EXPANSION JOINT: USE WHERE INDICATED ON DRAWINGS.
D. CASING BEAD: USE AT OTHER LOCATIONS.
E. PARAPET CAP FLASHING: USE WHERE INDICATED ON DRAWINGS.

16. ADHESIVELY AND MECHANICALLY ATTACH INSULATION TO SUBSTRATE IN COMPLIANCE WITH ASTM C 1397, EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS. MECHANICALLY ATTACH INSULATION OVER 4" THICK PER EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS. INSTALL TOP SURFACE OF FASTENER HEADS FLUSH WITH PLANE OF INSULATION. STAGGER VERTICAL JOINTS OF INSULATION BOARDS IN SUCCESSIVE COURSES TO PRODUCE RUNNING BOND PATTERN. LOCATE JOINTS SO NO PIECE OF INSULATION IS LESS THAN 12 INCHES WIDE OR 6 INCHES HIGH. OFFSET JOINTS NOT LESS THAN 6 INCHES FROM CORNERS OF WINDOW AND DOOR OPENINGS AND NOT LESS THAN 4 INCHES FROM AESTHETIC REVEALS.

17. CUT AESTHETIC REVEALS IN OUTSIDE FACE OF INSULATION WITH HIGH-SPEED ROUTER AND BIT CONFIGURED TO PRODUCE GROOVES, RABBETS, AND OTHER FEATURES THAT COMPLY WITH PROFILES AND LOCATIONS INDICATED. DO NOT REDUCE INSULATION THICKNESS AT AESTHETIC REVEALS TO LESS THAN 3/4". FORM JOINTS FOR SEALANT APPLICATION WITH BACK-TO-BACK CASING BEADS FOR JOINTS WITHIN EIFS AND WITH PERIMETER CASING BEADS AT DISSIMILAR ADJOINING SURFACES. MAKE GAPS BETWEEN CASING BEADS AND ADJOINING SURFACES OF WIDTH INDICATED.

18. INSTALL EXPANSION JOINTS AT LOCATIONS INDICATED, WHERE REQUIRED BY EIFS MANUFACTURER, AND AT EXPANSION JOINTS IN SUBSTRATES BEHIND EIFS, WHERE EIFS ADJOIN DISSIMILAR SUBSTRATES AND WHERE WALL HEIGHT OR BUILDING SHAPE CHANGES.

19. APPLY BASE COAT TO EXPOSED SURFACES OF INSULATION AND FOAM SHAPES IN MINIMUM THICKNESS RECOMMENDED IN WRITING BY EIFS MANUFACTURER, BUT NOT LESS THAN 1/16-INCH DRY-COAT THICKNESS. EMBED REINFORCING MESH BELOW IN WET BASE COAT TO PRODUCE WRINKLE-FREE INSTALLATION WITH MESH CONTINUOUS AT CORNERS AND OVERLAPPED NOT LESS THAN 2-1/2 INCHES. PROVIDE INTERMEDIATE-IMPACT REINFORCING MESH UNLESS OTHERWISE INDICATED. PROVIDE DOUBLE-LAYER REINFORCING MESH UP TO 2'-0" ABOVE GRADE, BY APPLYING SECOND BASE COAT AND SECOND LAYER OF REINFORCING MESH AFTER FIRST BASE COAT HAS CURED. APPLY STRIP REINFORCING MESH AROUND OPENINGS EXTENDING 4 INCHES BEYOND PERIMETER.

20. APPLY ADDITIONAL 9-BY-12-INCH STRIP REINFORCING MESH DIAGONALLY AT CORNERS OF OPENINGS (RE-ENTRANT CORNERS). APPLY 8-INCH- WIDE STRIP REINFORCING MESH AT BOTH INSIDE AND OUTSIDE CORNERS UNLESS BASE LAYER OF MESH IS LAPPED NOT LESS THAN 4 INCHES ON EACH SIDE OF CORNERS. AT AESTHETIC REVEALS, APPLY STRIP REINFORCING MESH NOT LESS THAN 8 INCHES WIDE. EMBED STRIP REINFORCING MESH IN BASE COAT BEFORE APPLYING FIRST LAYER OF REINFORCING MESH.

21. FINISH COAT: APPLY PRIMER OVER DRY BASE COAT ACCORDING TO EIFS MANUFACTURER'S WRITTEN INSTRUCTIONS. APPLY FINISH COAT OVER DRY PRIMED BASE COAT, MAINTAINING A WET EDGE AT ALL TIMES FOR UNIFORM APPEARANCE, IN THICKNESS REQUIRED BY EIFS MANUFACTURER TO PRODUCE A UNIFORM FINISH OF COLOR AND TEXTURE MATCHING ARCHITECT'S SAMPLE AND FREE OF COLD JOINTS, SHADOW LINES, AND TEXTURE VARIATIONS. APPLY SEALER COAT OVER DRY FINISH COAT, IN NUMBER OF COATS AND THICKNESS REQUIRED BY EIFS MANUFACTURER.

23. PREPARE JOINTS AND APPLY SEALANTS, OF TYPE AND AT LOCATIONS INDICATED, TO COMPLY WITH APPLICABLE REQUIREMENTS IN DIVISION 07 SECTION "JOINT SEALANTS" AND IN ASTM C 1481.

24. ENGAGE A QUALIFIED SPECIAL INSPECTOR TO PERFORM SPECIAL INSPECTIONS ACCORDING TO ICC-ES AC24 AND THE INTERNATIONAL BUILDING CODE. ENGAGE A QUALIFIED TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS ACCORDING TO ICC-ES AC24. PREPARE TEST AND INSPECTION REPORTS AND REMOVE AND REPLACE EIFS WHERE TEST RESULTS INDICATE THAT EIFS DO NOT COMPLY WITH SPECIFIED REQUIREMENTS.

25. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA FOR EACH TYPE AND COMPONENT OF EIFS INDICATED, INCLUDING INFORMATION ON LOW VOC PROPERTIES; SHOP DRAWINGS INCLUDING PLANS, ELEVATIONS, SECTIONS, COMPONENT DETAILS, FLASHING DETAILS AND JOINT LOCATIONS AND CONFIGURATIONS; PHYSICAL SAMPLES FOR EACH TYPE OF FINISH-COAT COLOR AND TEXTURE INDICATED, IN THE FORM OF 24-INCH- SQUARE PANELS; QUALIFICATION DATA FOR INSTALLER AND TESTING AGENCY; FIELD QUALITY-CONTROL REPORTS AND SPECIAL INSPECTION REPORTS.

072726 FLUID-APPLIED MEMBRANE AIR BARRIERS

1. PROVIDE FLUID-APPLIED, ELASTOMERIC MEMBRANE AIR BARRIER THAT IS CAPABLE OF PERFORMING AS A CONTINUOUS VAPOR-PERMEABLE AIR BARRIER AND AS A LIQUID-WATER DRAINAGE PLANE FLASHED TO DISCHARGE TO THE EXTERIOR INCIDENTAL CONDENSATION OR WATER PENETRATION. AIR-BARRIER ASSEMBLIES SHALL BE CAPABLE OF ACCOMMODATING SUBSTRATE MOVEMENT AND OF SEALING SUBSTRATE EXPANSION AND CONTROL JOINTS, CONSTRUCTION MATERIAL CHANGES, PENETRATIONS, ETC. **BASIS OF DESIGN PRODUCT:** STOGUARD SYSTEM WITH STO GOLD COAT BY STO CORP.

2. PROVIDE MANUFACTURERS ACCOMPANYING ACCESSORIES NECESSARY FOR COMPLETE AIR BARRIER INSULATION, SUCH AS MEBRANE FLASHING MATERIALS, JOINT TREATMENTS, REINFORCING, ETC.

3. AIR BARRIER SHALL BE INSTALLED BY AN ENTITY THAT EMPLOYS INSTALLERS AND SUPERVISORS WHO ARE TRAINED AND APPROVED BY MANUFACTURER.

4. EXAMINE PROJECT CONDITIONS PRIOR TO INSTALLATION. CLEAN AND PREPARE SUBSTRATE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

5. INSTALL STRIPS, TRANSITION STRIPS, AND ACCESSORY MATERIALS ACCORDING TO AIR-BARRIER MANUFACTURER'S WRITTEN INSTRUCTIONS TO FORM A SEAL WITH ADJACENT CONSTRUCTION AND MAINTAIN A CONTINUOUS AIR BARRIER. APPLY PRIMER TO SUBSTRATES AT REQUIRED RATE ACCORDING TO MANUFACTURER AND ALLOW IT TO DRY. REPRIME ANY AREAS LEFT EXPOSED FOR MORE THAN 24 HOURS.

6. PROTECT AIR-BARRIER SYSTEM FROM DAMAGE DURING APPLICATION AND REMAINDER OF CONSTRUCTION PERIOD, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. PROTECT AIR BARRIER FROM EXPOSURE TO UV LIGHT AND HARMFUL WEATHER EXPOSURE AS REQUIRED BY MANUFACTURER.

7. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA INCLUDING INFORMATION ON LOW VOC PROPERTIES.

074213 METAL WALL PANELS

1. PROVIDE EXPOSED FASTENER, LAP SEAM METAL WALL PANELS OF TYPE AND COLOR INDICATED ON PLANS. PROVIDE FACTORY-FORMED PANELS DESIGNED TO BE FIELD ASSEMBLED. PANELS SHALL CARRY A MANUFACTURER'S STANDARD WARRANTY OF AT LEAST 20 YEARS, INCLUDING THE PANEL'S FINISH.

2. PROVIDE PANELS MADE OF 24 GUAGE ALUMINUM-ZINC ALLOY-COATED STEEL SHEET, WITH A 2-COAT FLUOROPOLYMER FINISH, UNLESS NOTED OTHERWISE.

3. PROVIDE MANUFACTURER SUPPLIED (OR MANUFACTURER RECOMMENDED) ACCESSORIES AND COMPONENTS NECESSARY FOR A COMPLETE, WEATHERTIGHT PANEL SYSTEM, INCLUDING TRIM, CORNER UNITS, FASCIA, FLASHINGS, FILLERS, CLOSURE STRIPS, SEALANTS, GASKETS AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF PANELS UNLESS NOTED OTHERWISE.

4. FASTENERS SHALL BE SELF-TAPPING SCREWS, DESIGNED TO WITHSTAND DESIGN LOADS, WITH FACTORY APPLIED COATING TO MATCH PANEL COLOR.

5. PRIOR TO INSTALLATION EXAMINE PROJECT CONDITIONS AND COORDINATION CORRECTION OF ANY DEFICIENCIES WITH SUBSTRATE. INSTALL SUBFRAMING, FURRING OR OTHER MISCELLANEOUS PANEL SUPPORTS AS NECESSARY FOR PROPER INSTALLATION PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

6. INSTALL METAL PANELS IN ORIENTATION, SIZES AND LOCATIONS AS INDICATED ON PLANS. LOCATE AND SPACE FASTENINGS IN UNIFORM VERTICAL AND HORIZONTAL ALIGNMENT. STAGGER PANEL SPLICES AND END LAPS BY A MINIMUM OF 1/4 PANEL LENGTH.

7. INSTALL FLASHINGS AND TRIM AROUND OPENINGS AND SIMILAR ELEMENTS USING SELF-TAPPING SCREWS. PROVIDE WEATHERTIGHT ESCUTCHEONS FOR PIPE AND CONDUIT PENETRATIONS IN METAL PANELS.

SUBMITTAL(S): PRODUCT DATA INDICATING RECYCLED CONTENT; SHOP DRAWINGS WHICH INCLUDE PANEL PROFILES, LAYOUTS OF METAL PANELS, DETAILS OF EDGE CONDITIONS, CORNERS, JOINTS, TRIM, CLOSURES, FLASHINGS, ANCHORAGES AND SPECIAL DETAILS; CALCULATIONS SEALED BY PROFESSIONAL ENGINEER VERIFYING THAT WALL PANEL AND ATTACHMENT METHOD WILL RESIST WIND PRESSURES IMPOSED ON IT ACCORDING TO LOCAL BUILDING CODES; PHYSICAL SAMPLE (MIN. 4"x6") OF METAL PANEL IN COLOR INDICATED ON PLANS OR AS OTHERWISE SELECTED BY ARCHITECT.

075323 ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

1. PROVIDE A FULLY ADHERED, 60 MIL EPDM ROOFING SYSTEM CONFORMING TO ASTM D4637. PROVIDE A ROOF ASSEMBLY THAT CARRIES A MANUFACTURER'S 20 YEAR TOTAL SYSTEM WARRANTY COVERING BOTH LABOR AND ALL MATERIALS WITH NO DOLLAR LIMITATION.
BASIS OF DESIGN PRODUCT: SURE-WHITE EPDM BY CARLISLE SYNTECH INCORPORATED.

2. ROOFING ASSEMBLIES MUST HAVE BEEN SUCCESSFULLY TESTED BY A QUALIFIED TESTING AGENCY TO RESIST THE DESIGN UPLIFT PRESSURES CALCULATED ACCORDING TO INTERNATIONAL BUILDING CODE (IBC) AND AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE 7). ASSEMBLY SHALL ALSO HAVE A CLASS B FIRE EXPOSURE CLASSIFICATION AS TESTED IN ACCORDNACE WITH ASTM E 108 OR UL 790 FOR APPLICATION AND ROOF SLOPES INDICATED.

3. ROOF MEMBRANE SHALL BE WHITE IN COLOR AND ACHIEVE A MINIMUM SOLAR REFLECTANCE INDEX OF 0.78.

4. ROOF MEMBRANCE SHALL BE APPLIED OVER ROOFING MANUFACTURER'S POLYISOCYANURATE RIGID FOAM BOARD INSULATION, WHICH SHALL HAVE A MOISTURE-RESISTANT, COATED GLASS FIBER MAT FACER MEETING ASTM C 1289-06, TYPE II, CLASS 2, GRADE 3 (25 PSI). INSULATION SHALL BE INSTALLED IN MULTIPLE LAYERS WITH EACH LAYER MECHANICALLY FASTENED OR ADHERED TO THE SUBSTRATE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. JOINTS BETWEEN INSULATION BOARDS SHALL BE STAGGERED BOTH HORIZONTALLY AND VERTICALLY BETWEEN EACH LAYER.

5. PROVIDE MANUFACTURER'S STANDARD POLYETHYLENE (OR POLYETHYLENE COMPOSITE) VAPOR BARRIER BETWEEN INSULATION BOARDS AND STRUCTURAL ROOF DECK. INSTALLED WITH LAPPED AND STAGGERED EDGES PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

6. PROVIDE MANUFACTURER'S STANDARD ROOF ACCESSORIES AND OTHER MATERIALS AS REQUIRED TO INSTALL A COMPLETE ROOF SYSTEM, INCLUDING FASTENERS, FLASHING, ADHESIVES, SEALANTS, ETC. COMPONENTS AND MATERIALS PROVIDED SHALL BE SUITABLE FOR THE INTENDED USE AND COMPATIBILE WITH THE MEMBRANE ROOFING SYSTEM AND THE ROOF SYSTEM SUBSTRATE. ADHESIVES AND SEALANTS SHALL BE LOW VOC TYPE.

7. ROOF ASSEMBLY SHALL BE INSTALLED BY AN APPLICATOR AUTHORIZED AND TRAINED BY THE MANUFACTURER IN THE INSTALLATION OF MEMBRANCE ROOFING OF THE TYPE(S) INDICATED FOR PROJECT. THE ROOFING APPLICATOR SHALL HAVE AT LEAST FIVE (5) YEARS SUCCESSFUL EXPERIENCE INSTALLING SINGLE-PLY EPDM ROOFING SYSTEMS. INSTALL ROOF ASSEMBLY PER MANUFACTURER'S WRITTEN INSTRUCTIONS.

8. SUBMITTAL(S): PRODUCT DATA CONTAINING INFORMATION ON ALL COMPONENTS OF ROOF ASSEMBLY AND INCLUDING INFORMATION ON SOLAR REFLECTANCE INDEX AND LOW VOC CONTENT ; SHOP DRAWINGS SHOWING LAYOUT, DETAILS OF CONSTRUCTION AND IDENTIFICATION OF MATERIALS.

076113 STANDING SEAM SHEET METAL ROOFING

1. REFER TO SECTION 133419 METAL BUILDING SYSTEMS.

076200 SHEET METAL FLASHING AND TRIM

1. SHEET METAL FLASHING AND TRIM SHALL COMPLY WITH NRCA'S "THE NRCA ROOFING MANUAL" AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" REQUIREMENTS FOR DIMENSIONS AND PROFILES SHOWN UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED. PROVIDE PREFABRICATE FLASHING AND TRIM PRODUCTS AND INSTALLATIONS THAT ARE TESTED ACCORDING TO SPRI ES-1 AND CAPABLE OF RESISTING THE DESIGN PRESSURES CALCULATED ACCORDING TO INTERNATIONAL BUILDING CODE (IBC) AND AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE 7).

2. PROVIDE MATERIALS AND TYPES OF FASTENERS, SOLDER, WELDING RODS, PROTECTIVE COATINGS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED FOR COMPLETE SHEET METAL FLASHING AND TRIM INSTALLATION AND RECOMMENDED BY MANUFACTURER OF PRIMARY SHEET METAL UNLESS OTHERWISE INDICATED. FASTENERS SHALL BE SUITABLE FOR MATERIAL AND SUBSTRATE AND DESIGN TO WITHSTAND DESIGN LOADS APPLICABLE TO PROJECT.

3. FABRICATED ITEMS SHALL BE FABRICATED BY A SHOP SHOP THAT EMPLOYS SKILLED WORKERS WHO CUSTOM FABRICATE SHEET METAL FLASHING AND TRIM SIMILAR TO THAT REQUIRED FOR THIS PROJECT AND WHOSE PRODUCTS HAVE A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.

4. FABRICATE SHEET METAL FLASHING AND TRIM IN THICKNESS OR WEIGHT NEEDED TO COMPLY WITH PERFORMANCE REQUIREMENTS, BUT NOT LESS THAN THAT SPECIFIED FOR EACH APPLICATION AND METAL. OBTAIN FIELD MEASUREMENTS FOR ACCURATE FIT BEFORE SHOP FABRICATION. FORM SHEET METAL FLASHING AND TRIM WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS AND TRUE TO LINE AND LEVELS INDICATED, WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS. CONCEAL FASTENERS AND EXPANSION PROVISIONS WHERE POSSIBLE. EXPOSED FASTENERS ARE NOT ALLOWED ON FACES EXPOSED TO VIEW.

5. PROVIDE FLASHING AND TRIM FROM ALUMINUM SHEET PER ASTM B 209, ALLOY AS STANDARD WITH MANUFACTURER FOR FINISH REQUIRED, WITH TEMPER AS REQUIRED TO SUIT FORMING OPERATIONS AND PERFORMANCE REQUIRED. EXPOSED, PREFINISHED SURFACES SHALL HAVE AND TWO-COAT FLUOROPOLYMER FINISH PER AAMA 620 CONTAINING NOT LESS THAN 70 PERCENT PVDF RESIN BY WEIGHT IN BOTH COLOR COAT AND CLEAR TOPCOAT. PREPARE, PRETREAT, AND APPLY COATING TO EXPOSED METAL SURFACES TO COMPLY WITH COATING AND RESIN MANUFACTURERS' WRITTEN INSTRUCTIONS. **COLOR:** MATCH ARCHITECT'S SAMPLE. PRETREAT CONCEALED AND UNFINISHED SURFACES WITH MANUFACTURER'S STANDARD WHITE OR LIGHT-COLORED ACRYLIC OR POLYESTER BACKER FINISH, CONSISTING OF PRIME COAT AND WASH COAT WITH A MINIMUM TOTAL DRY FILM THICKNESS OF 0.5 MIL.

6. FABRICATE SHEET METAL FLASHING AND TRIM WITH THE MATERIAL TYPE, THICKNESSES, LENGTHS AND FEATURES AS INDICATED BELOW, UNLESS NOTED OTHERWISE:

a. ROOF EDGE FLASHINGS, COPINGS AND ROOF-TO-WALL TRANSITIONS: 0.050" ALUMINUM; IN 8'-0" TO 10'-0" LENGTHS.
b. BASE FLASHING: 0.040" ALUMINUM
c. FLASHING RECEIVERS AND COUNTERFLASHING: 0.032" ALUMINUM
d. ROOF-PENETRATION FLASHING: 0.019" STAINLESS STEEL
e. ROOF-DRAIN FLASHING: 0.016" STAINLESS STEEL
f. THRU-WALL FLASHING: 0.016" STAINLESS STEEL, IN 8'-0" TO 12'-0" LENGTHS WITH MIN. 2" END DAMS IF FLASHING IS NOT CONTINUOUS
g. OPENING FLASHING IN FRAME CONSTRUCTION: 0.032" ALUMINUM, WITH MIN. 2" END DAMS AT HEAD AND SILL
h. HANGING GUTTERS: 0.032" ALUMINUM, MIN. 8' LENGTHS WITH LAP EXPANSION JOINTS, SMACNA STYLE A, WITH WIRE BALL DOWNSPOUT STRAINERS AND VALLEY BAFFLES.
i. DOWNSPOUTS: 0.024" ALUMINUM, RECTANGULAR PROFILE OF SIZES INDICATED ON PLANS, WITH MITERED ELBOWS AND WITH HANGERS OF SAME MATERIAL IN SMACNA STYLE 1-35J.
j. PARAPET SCUPPERS: 0.032" ALUMINUM, IN SIZES INDICATED ON PLANS, WITH MIN. 4" FLANGES AND EXTENSIONS ON INTERIOR AND CLOSURE FLANGE TRIM ON EXTERIOR.
k. CONDUCTOR HEADS: 0.032" ALUMINUM, WITH FLANGED BACK AND STIFFENED TOP EDGE, SIZED AS NECESSARY TO ALLOW SIDES TO EXTEND A MIN. OF 2" BEYOND EACH SIDE EDGE OF SCUPPER.

7. ANCHOR SHEET METAL FLASHING AND TRIM AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT. PROVIDE UNIFORM, NEAT SEAMS WITH MINIMUM EXPOSURE OF SOLDER, WELDS, AND SEALANT. INSTALL SHEET METAL FLASHING AND TRIM TO FIT SUBSTRATES AND TO RESULT IN WATERTIGHT PERFORMANCE. VERIFY SHAPES AND DIMENSIONS OF SURFACES TO BE COVERED BEFORE FABRICATING SHEET METAL. SPACE CLEATS NOT MORE THAN 12 INCHES APART. INSTALL EXPOSED SHEET METAL FLASHING AND TRIM WITHOUT EXCESSIVE OIL CANNING, BUCKLING, AND TOOL MARKS.

8. **SUBMITTAL(S):** PHYSICAL SAMPLES (MIN. 4"x6" FOR EACH FINISH TYPE AND COLOR INDICATED; SHOP DRAWINGS SHOWING FABRICATION AND INSTALLATION LAYOUTS OF SHEET METAL FLASHING AND TRIM, INCLUDING PLANS, EXPANSION-JOINT LOCATIONS, AND KEYED DETAILS. IDENTIFICATION OF MATERIAL, THICKNESS, WEIGHT, AND FINISH FOR EACH ITEM AND LOCATION IN PROJECT. PROVIDE DETAILS FOR FORMING SHEET METAL FLASHING AND TRIM, INCLUDING PROFILES, SHAPES, SEAMS, AND DIMENSIONS. PROVIDE DETAILS FOR JOINING, TERMINATING, SUPPORTING, AND SECURING SHEET METAL FLASHING AND TRIM, INCLUDING LAYOUT OF FASTENERS, CLEATS, CLIPS, AND OTHER ATTACHMENTS.

078446 FIRE-RESISTIVE JOINT SYSTEMS

1. WHERE REQUIRED, PROVIDE FIRE-RESISTIVE JOINT SYSTEMS THAT ARE PRODUCED AND INSTALLED TO RESIST SPREAD OF FIRE ACCORDING TO REQUIREMENTS INDICATED, RESIST PASSAGE OF SMOKE AND OTHER GASES, AND MAINTAIN ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLIES IN OR BETWEEN WHICH FIRE-RESISTIVE JOINT SYSTEMS ARE INSTALLED. FIRE-RESISTIVE JOINT SYSTEMS SHALL ACCOMMODATE BUILDING MOVEMENTS WITHOUT IMPAIRING THEIR ABILITY TO RESIST THE PASSAGE OF FIRE AND HOT GASES.
BASIS OF DESIGN: PROVIDE PRODUCTS MANUFACTURED BY SPECIFIED TECHNOLOGIES, INC. OR APPROVED EQUAL.

2. PROVIDE FIRE-RESISTIVE JOINT SYSTEMS WITH RATINGS DETERMINED PER ASTM OR UL STANDARD APPLICABLE TO THE RESPECTIVE TYPE OF JOINT SYSTEM REQUIRED. FIRE-RESISTANCE RATING: EQUAL TO OR EXCEEDING THE FIRE-RESISTANCE RATING OF CONSTRUCTION THEY WILL JOIN OR THE FIRE SEPARATION BEING MAINTAINED. WHERE EXPOSED, PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF LESS THAN 25 AND 450, RESPECTIVELY, AS DETERMINED PER ASTM E 84.

3. PROVIDE COMPONENTS OF FIRE-RESISTIVE JOINT SYSTEMS, INCLUDING SEALANTS, PRIMERS AND FORMING MATERIALS, THAT ARE NEEDED TO INSTALL FILL MATERIALS AND TO M

084000 ALUMINUM ENTRANCES AND STOREFRONTS

1. PROVIDE THERMALLY BROKEN ENTRANCE AND STOREFRONT SYSTEMS CONSISTING OF MANUFACTURER'S STANDARD EXTRUDED-ALUMINUM FRAMING MEMBERS. PROVIDE ENTRANCE AND STOREFRONT SYSTEMS WHICH CARRY MANUFACTURER'S STANDARD WARRANTIES IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS THAT DO NOT COMPLY WITH REQUIREMENTS ACCORDING TO THE FOLLOWING: 5 YEARS (MATERIAL AND WORKMANSHIP; 20 YEARS (FINISHES). **BASIS OF DESIGN PRODUCT:** T14000 SERIES STOREFRONT BY TUBELITE, INC.

2. ENTRANCE DOORS: MANUFACTURER'S STANDARD GLAZED ENTRANCE DOORS FOR MANUAL-SWING OPERATION, THERMALLY BROKEN, 1-3/4-INCH OVERALL THICKNESS, WITH MINIMUM 0.125-INCH, EXTRUDED-ALUMINUM TUBULAR RAIL AND STILE MEMBERS. PROVIDE NONREMOVABLE GLAZING STOPS ON OUTSIDE OF DOOR. PROVIDE 3 1/2" NOMINAL WIDTH MEDIUM STILE DOORS, UNLESS NOTED OTHERWISE.

4. ENTRANCE DOOR HARDWARE: PROVIDE ENTRANCE DOOR HARDWARE AND ENTRANCE DOOR HARDWARE SETS INDICATED IN DOOR AND FRAME SCHEDULE FOR EACH ENTRANCE DOOR TO COMPLY WITH THE FOLLOWING REQUIREMENTS. PROVIDE HARDWARE SETS IN THE QUANTITY, ITEM, SIZE, FINISH OR COLOR INDICATED. PROVIDE BASIS-OF-DESIGN PRODUCTS INDICATED OR APPROVED EQUAL. PROVIDE ELECTRIFIED DOOR HARDWARE FUNCTION, SEQUENCE OF OPERATION, AND INTERFACE WITH OTHER BUILDING CONTROL SYSTEMS INDICATED. OPENING-FORCE REQUIREMENTS ARE AS FOLLOWS:

a. EGRESS DOORS: NOT MORE THAN 15 LBF TO RELEASE THE LATCH AND NOT MORE THAN 30 LBF TO SET THE DOOR IN MOTION AND NOT MORE THAN 15 LBF TO OPEN THE DOOR TO ITS MINIMUM REQUIRED WIDTH.
b. ACCESSIBLE INTERIOR DOORS: NOT MORE THAN 5 LBF TO FULLY OPEN DOOR.

5. FACTORY INSTALL ENTRANCE DOOR HARDWARE TO THE GREATEST EXTENT POSSIBLE. CUT, DRILL, AND TAP FOR FACTORY-INSTALLED ENTRANCE DOOR HARDWARE BEFORE APPLYING FINISHES.

6. MANUFACTURE ENTRANCES AND STOREFRONTS FROM ALUMINUM MATERIAL CONFORMING TO THE FOLLOWING STANDARDS: ASTM B 209, ASTM B 221, ASTM B 429, ASTM B 308/B 308M AND AWS A5.10/A5.10M (WELDING RODS AND BARE ELECTRODES). STEEL REINFORCEMENT SHALL HAVE A ZINC-RICH, CORROSION-RESISTANT PRIMER, COMPLYING WITH SSPC-PS GUIDE NO. 12.00 AND CONFORM TO THE FOLLOWING STANDARDS: ASTM A 36/A 36M, ASTM A 1008/A 1008M, ASTM A 1011/A 1011M. FABRICATE COMPONENTS FOR ASSEMBLY USING THE SCREW SPLINE SYSTEM.

7. SUPPLIER SHALL PROVIDE DESIGN FOR STRUCTURAL WIND LOAD PER LOCAL CODE, AS WELL AS SEISMIC LOAD PER LOCAL CODE, IF APPLICABLE. SUPPLIER TO DESIGN ALUMINUM-FRAMED SYSTEMS, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED:

a. DESIGN DEFLECTION NORMAL TO GLAZING PLANE: LIMITED TO 1/175 OF SPAN OR AN AMOUNT THAT RESTRICTS EDGE DEFLECTION OF INDIVIDUAL GLAZING LITES TO 3/4 INCH, WHICHEVER IS LESS.
b. DESIGN DEFLECTION PARALLEL TO GLAZING PLANE: THE SMALLER OF L/360 OR 1/8 INCH.
c. STRUCTURAL TESTING: ASTM E 330
d. WINDBORNE-DEBRIS-IMPACT-RESISTANCE PERFORMANCE: PROVIDE ALUMINUM-FRAMED SYSTEMS THAT PASS MISSILE-IMPACT AND CYCLIC-PRESSURE TESTS WHEN TESTED ACCORDING TO ASTM E 1886 AND TESTING INFORMATION IN ASTM E 1996
e. STORY DRIFT: ACCOMMODATE DESIGN DISPLACEMENT, ACCORDING TO BUILDING TYPE, ACCORDING TO AAMA 501.4 AT DESIGN DISPLACEMENT AND 1.5 TIMES DESIGN DISPLACEMENT.
f. AIR INFILTRATION: ASTM E 283
g. WATER PENETRATION: NO LEAKAGE WHEN TESTED PER ASTM E 331 (STATIC PRESSURE) AND AAMA 501.1 (DYNAMIC PRESSURE).
h. DESIGN TEMPERATURE CHANGE (RANGE): ACCOMMODATE 120 DEG F AMBIENT & 180 DEG F MATERIAL SURFACES, WITH AN INTERIOR AMBIENT-AIR TEMPERATURE 75 DEG F.
i. DESIGN CONDENSATION RESISTANCE FACTOR (CRF): NOT LESS THAN 45 PER AAMA 1503.1.
j. AVERAGE DESIGN THERMAL CONDUCTANCE (U-VALUE): NOT MORE THAN 0.35 PER AAMA 1503.1.

7. PROVIDE STANDARD ACCESSORIES, INCLUDING FLASHING, GASKETS AND SEALANTS, AS PRODUCED OR RECOMMENED BY MANUFACTURER, AS REQUIRED TO PROVIDE A COMPLETE AND WEATHERTIGHT INSTALLATION. SEALANTS SHALL BE LOW VOC TYPE. PROVIDE MANUFACTURER'S STANDARD CORROSION-RESISTANT, NONSTAINING, NONBLEEDING FASTENERS AND ACCESSORIES COMPATIBLE WITH ADJACENT MATERIALS.

8. STOREFRONT SYSTEMS SHALL BE CENTER SET, OUTSIDE GLAZED, UNLESS NOTED OTHERWISE. REFER TO SECTION 088000 GLAZING FOR STOREFRONT GLAZING SPECIFICATIONS.

9. STOREFONT FINISH: UNLESS NOTED OTHERWISE, PROVIDE ONE OF THE FOLLOWING FINISHES, AS INDICATED ON PLANS.

a. CLASS I ANODIZE COATING WITH ECO-FRIENDLY ETCH (O.7 MILS THICK MINIMUM) COMPLYING WITH AAMA 611. COLOR AND GLOSS: MATCH ARCHITECT'S SAMPLE.
b. HIGH-PERFORMANCE ORGANIC FINISH CONSISTING OF 2-COAT FLUOROPOLYMER FINISH COMPLYING WITH AAMA 2605 AND CONTAINING NOT LESS THAN 50 PERCENT PVDF RESIN BY WEIGHT IN COLOR COAT. COLOR AND GLOSS: MATCH ARCHITECT'S SAMPLE.

10. VERIFY ACTUAL LOCATIONS OF STRUCTURAL SUPPORTS FOR ALUMINUM-FRAMED SYSTEMS BY FIELD MEASUREMENTS BEFORE FABRICATION AND INDICATE MEASUREMENTS ON SHOP DRAWINGS.

11. INSTALLATION:

a. INSTALLATION SHALL BE PER MANUFACTURER'S WRITTEN INSTRUCTIONS AND BY MANUFACTURER'S AUTHORIZED INSTALLER. INSTALL FRAMING COMPONENTS TRUE IN ALIGNMENT WITH ESTABLISHED LINES AND GRADES TO THE FOLLOWING TOLERANCES: LIMIT VARIATION FROM PLANE TO 1/8 INCH IN 12 FEET. ALIGNMENT SHALL BE FLUSH AND SMOOTH IN VERTICAU HORIZONTAL PLANES AND AT CORNERS.
b. INSTALL DOORS WITHOUT WARP OR RACK. ADJUST DOORS AND HARDWARE TO PROVIDE TIGHT FIT AT CONTACT POINTS AND SMOOTH OPERATION. ADJUST OPERATING ENTRANCE DOOR HARDWARE TO FUNCTION SMOOTHLY AS RECOMMENDED BY MANUFACTURER.
c. COMPONENTS SHALL ALLOW WATER PASSING THROUGH JOINTS AND CONDENSATION AND MOISTURE OCCURRING OR MIGRATING WITHIN THE SYSTEM TO DRAIN TO THE EXTERIOR.
d. INSTALL GLAZING TO COMPLY WITH GLAZING MANUFACTURER'S REQUIREMENTS;
e. INSTALL SECONDARY SEALANT (WEATHER-SEAL) TO PRODUCE WEATHERPROOF JOINTS. REMOVE EXCESS SEALANT BEFORE IT CURES.
f. ISOLATE STOREFRONT SURFACES FROM INCOMPATIBLE OR CORROSIVE MATERIALS, USING MATERIALS AS RECOMMENDED BY MANUFACTURER.
g. BEFORE INSTALLATION OF INTERIOR FINISHES HAS BEGUN, WATER-SPRAY TEST A MINIMUM AREA OF 75 FEET BY 1 STORY OF ALUMINUM-FRAMED SYSTEMS ACCORDING TO AAMA 501.2. REPAIR OR REMOVE WORK IF THERE IS EVIDENCE OF WATER PENETRATION.

12. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED, INCLUDING CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS, FINISHES AND INDICATION OF LOW VOC CONTENT (SEALANTS AND ADHESIVES); SHOP DRAWINGS INCLUDING PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK, AS WELL AS TYPES, FUNCTIONS, QUANTITIES, AND LOCATIONS OF DOOR HARDWARE; PHYSICAL SAMPLE (4"x 6") OF STOREFRONT FINISH.

087100 HARDWARE

1. PROVIDE THE MATERIALS OR PRODUCTS INDICATED BELOW AND ON THE HARDWARE SCHEDULE. SUBSTITUTIONS WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF ARCHITECT. PROVIDE HARDWARE COMPLETE WITH ALL FASTENERS, ANCHORS, INSTRUCTIONS, LAYOUT TEMPLATES, AND ANY SPECIALIZED TOOLS AS REQUIRED FOR SATISFACTORY INSTALLATION AND ADJUSTMENT.

2. IN RENOVATION PROJECTS, HARDWARE IS REQUIRED TO MATCH CONDITIONS OF ADJACENT DOORS, UNLESS NOTED OTHERWISE AND SHALL CONTAIN COMPONENTS LISTED IN THE HARDWARE SCHEDULE. REUSE OF HARDWARE FROM DEMOLISHED DOORS IS PERMITTED IF THE HARDWARE IS IN GOOD WORKING CONDITION.

3. STANDARDS: COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE FOLLOWING STANDARDS, UNLESS INDICATED OTHERWISE:

A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) PUBLICATIONS:
B. BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA) PUBLICATIONS:
C. DOOR AND HARDWARE INSTITUTE (DHI) PUBLICATIONS:
D. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) PUBLICATIONS:
E. INTERNATIONAL BUILDING CODE - APPLICABLE EDITION AS INDICATED ON PLANS.
F. AMERICANS WITH DISABILITIES ACT (ADA).
G. ANSI A117.1

4. THE HARDWARE SUPPLIER WILL BE RESPONSIBLE TO FURNISH CORRECT HARDWARE ON LABELED DOORS TO SATISFY STATE AND LOCAL BUILDING CODES. PROVIDE HARDWARE FOR FIRE-RATED OPENINGS IN COMPLIANCE WITH NFPA STANDARD NO. 80, NO. 101 AND LOCAL BUILDING CODE REQUIREMENTS.

5. SECURITY: COORDINATE INSTALLATION OF DOOR HARDWARE, KEYING, AND ACCESS CONTROL WITH OWNER'S SECURITY CONSULTANT. COORDINATE LAYOUT AND INSTALLATION OF ELECTRIFIED DOOR HARDWARE WITH CONNECTIONS TO POWER SUPPLIES AND BUILDING SAFETY AND SECURITY SYSTEMS.

6. HARDWARE PRODUCTS:

a. HINGES: PROVIDE BALL BEARING HINGES IN THE FOLLOWING HINGE HEIGHTS: 4-1/2" FOR DOORS UP TO 36" WIDE; 5" FOR DOORS 36" TO 48" WIDE. PROVIDE NON-REMOVABLE PINS FOR ALL EXTERIOR DOORS AND ALL INTERIOR OUT-SWINING CORRIDOR DOORS. MANUFACTURER: IVES.
b. LOCKSETS: ALL LOCKSETS TO BE GRADE 1 HEAVY DUTY CYLINDRICAL OR MORTISE AS SPECIFIED, WITH 17A LEVERS. MANUFACTURER: FALCON T SERIES/MA SERIES
C. CLOSERS: PROVIDE PARALLEL ARMS FOR ALL OVERHEAD CLOSERS, EXCEPT AS OTHERWISE INDICATED, IN UNIT SIZES RECOMMENDED BY MANUFACTURER BASED ON DOOR SIZE, WEATHER EXPOSURE AND USAGE. MANUFACTURER: LCN – 4050/1450 SERIES
D. DOOR TRIM: PROVIDE PULLS OF SOLID BAR STOCK, DIAMETER AND LENGTH AS SCHEDULED. PROVIDE PULL PLATES 4 INCHES (102 MM) WIDE BY 16 INCHES (406 MM) HIGH BY 0.050 INCH (1 MM) THICK, BEVELED 4 EDGES, AND PREPPED FOR PULL. MANUFACTURER: IVES.
E. PROTECTION PLATES: PROVIDE KICK PLATES, MOP PLATES, AND ARMOR PLATES MINIMUM OF 0.050 INCH (1 MM) THICK AS SCHEDULED. PLATES SHALL BE BEVELED 4 EDGES WITH COUNTERSUNK SCREWS. MANUFACTURER: IVES.
F. OVERHEAD STOPS AND HOLDERS: PROVIDE HEAVY DUTY CONCEALED OR SURFACE MOUNTED OVERHEAD STOP OR HOLDER FOR INTERIOR DOORS AS SPECIFIED. MANUFACTURER: GLYNN-JOHNSON.
G. DOOR STOPS AND HOLDERS: PROVIDE WALL STOPS WHEREVER POSSIBLE. WHERE A WALL STOP CANNOT BE USED, PROVIDE OVERHEAD STOP. MANUFACTURER: IVES.
H. THRESHOLDS, SEALS & GASKETING: PROVIDE SYSTEMS AS SPECIFIED. ALL RESILIENT OR FLEXIBLE SEAL STRIP SHALL BE EASILY REPLACEABLE AND READILY AVAILABLE. PROVIDE INTUMESCENT SEAL WHERE REQUIRED BY DOOR/FRAME MANUFACTURER. MANUFACTURER: ZERO.
I. SILENCERS: PROVIDE "PUSH-IN" TYPE SILENCERS FOR HOLLOW METAL OR WOOD FRAMES - ONE SILENCER PER 30 INCHES (762 MM) OF HEIGHT ON EACH SINGLE FRAME, AND TWO FOR EACH PAIR FRAME. OMIT WHERE GASKETING IS SPECIFIED. MANUFACTURER: IVES.

7. HARDWARE SCHEDULE: HARDWARE IS SPECIFIED IN THE HARDWARE SCHEDULE BY SET, TYPE, AND FUNCTIONS, WHICH HAVE BEEN SELECTED AS BEST MEETING THE APPLICATION REQUIREMENTS. NO SUBSTITUTIONS ALLOWED WITHOUT PRIOR APPROVAL OR ARCHITECT. **REFER TO DOOR HARDWARE SHEET IN PLANS FOR HARDWARE SCHEDULE**.

8. KEYING: CYLINDERS TO BE KEYED TO A MASTER KEY SYSTEM AS COORDINATED WITH OWNER/TENANT. EXTERIOR DOORS TO INCORPORATE A HIGH SECURITY, PATENTED, RESTRICTED KEYWAY WITH SIDE BIT MILLING. INTERIOR DOORS TO HAVE STANDARD KEYWAY THAT IS COMPATIBLE WITH EXTERIOR LOCKS. PROVIDE 2 KEYS PER LOCK AND 6 MASTER KEYS (PER SYSTEM). STAMP ALL (MASTER-TYPE) KEYS WITH THE FOLLOWING: "DO NOT DUPLICATE"; KEY CHANGE NUMBER (ALL KEYS). PROVIDE KEY CONTROL SYSTEM IN STANDARD METAL WALL MOUNTED CABINET; MANUFACTURER: TELKEE, OR APPROVED EQUAL. PLACE KEYS ON MARKERS AND HOOKS IN CABINET AS DETERMINED BY FINAL KEY SCHEDULE.

10. HARDWARE FINISH: PROVIDE MATCHING FINISHES FOR HARDWARE UNITS AT EACH DOOR TO THE GREATEST EXTENT POSSIBLE, UNLESS OTHERWISE INDICATED. HARDWARE FINISHES ARE AS FOLLOWS: 626 – SATIN CHROME; 630 – STAINLESS STEEL.

11. INSTALLATION:

A. MOUNT HARDWARE UNITS AT HEIGHTS INDICATED IN RESPECTIVE DHI STANDARDS, EXCEPT AS SPECIFICALLY INDICATED, OR REQUIRED TO COMPLY WITH GOVERNING REGULATIONS. INSTALL EACH HARDWARE ITEM IN COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
B. DO NOT INSTALL SURFACE-MOUNTED ITEMS UNTIL FINISHES HAVE BEEN COMPLETED ON SUBSTRATE.
C. ADJUST DOOR CLOSERS AND EXIT DEVICES IMMEDIATELY UPON INSTALLATION. ADJUST PER MANUFACTURER'S PRINTED INSTRUCTIONS.
D. DURING THE WEEK PRIOR TO ACCEPTANCE OR OCCUPANCY, AND MAKE FINAL CHECK AND ADJUSTMENT OF ALL HARDWARE ITEMS.
E. FURNISH A COMPLETE SET OF SPECIALIZED TOOLS AND MAINTENANCE INSTRUCTIONS AS NEEDED FOR OWNER'S CONTINUED ADJUSTMENT, MAINTENANCE, AND REMOVAL AND REPLACEMENT OF FINISH HARDWARE.

12. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA FOR EACH HARDWARE ITEM; HARDWARE SCHEDULE ORGANIZED INTO SETS WITH DOOR NUMBERS AND HARDWARE SETS MATCH THOSE IN THE PLANS; KEYING SCHEDULE INDICATING KEYING FOR ALL LOCKS (KEYING SCHEDULE MUST BE APPROVED BEFORE ORDERING ANY LOCKS).

088000 GLAZING

1. PROVIDE GLAZING SYSTEMS OF THE TYPE AND SIZES INDICATED ON PLANS. GLAZING SHALL CARRY A MANUFACTURER'S STANDARD WARRANTY FOR A MINIMUM OF 10 YEARS, AGREEING TO REPLACE ANY GLASS LITES/UNITS THAT DETERIORATE.

2. GLAZING SYSTEMS SHALL BE CAPABLE OF WITHSTANDING NORMAL THERMAL MOVEMENT AND WIND AND IMPACT LOADS (WHERE APPLICABLE) WITHOUT FAILURE. PROVIDE KIND FT (FULLY TEMPERED) GLASS LITES WHERE SAFETY GLASS IS INDICATED ON PLANS OR OTHERWISE REQUIRED TO MEET BUILDING CODE REQUIREMENTS.

3. ANNEALED FLOAT GLASS: PROVIDE LITES MEETING ASTM C 1036, TYPE I (TRANSPARENT FLAT GLASS), QUALITY-Q3.

4. LAMINATED GLASS: PROVIDE LITES MEETING ASTM C1172-19, TYPE II (LAMINATED SAFETY GLASS). PROVIDE 1/4" OVERALL THICKNESS WITH 0.060" PVB INTERLAYER.

5. INSULATING-GLASS UNITS, GENERAL: PROVIDE NOMINAL 1" THICK, FACTORY-ASSEMBLED UNITS CONSISTING OF SEALED LITES OF GLASS SEPARATED BY A DEHYDRATED INTERSPACE, AND COMPLYING WITH ASTM E 774 FOR CLASS CBA UNITS AND WITH REQUIREMENTS SPECIFIED IN THIS ARTICLE AND IN PART 2 "INSULATING-GLASS UNITS" ARTICLE.

a. PROVIDE KIND HS (HEAT-STRENGTHENED) FLOAT GLASS IN PLACE OF ANNEALED GLASS WHERE NEEDED TO RESIST THERMAL STRESSES INDUCED BY DIFFERENTIAL SHADING OF INDIVIDUAL GLASS LITES.
b. PROVIDE KIND FT (FULLY TEMPERED) GLASS LITES WHERE SAFETY GLASS IS INDICATED OR AS OTHERWISE REQUIRED BY CODE. PERMANENTLY MARK GLAZING WITH CERTIFICATION LABEL OF CERTIFICATION AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
c. PROVIDE DUAL SEAL, WITH MANUFACTURER'S STANDARD PRIMARY AND SECONDARY SEALANTS
d. PROVIDE MANUFACTURER'S STANDARD SPACER MATERIAL AND CONSTRUCTION.

BASIS OF DESIGN PRODUCT(S): AS INDICATED ON PLANS.

5. FIRE RATED GLAZING: WHERE REQUIRED, PROVIDE MONOLITHIC CERAMIC GLAZING MATERIAL IN THE FORM OF CLEAR FLAT SHEETS OF THICKNESS REQUIRED TO ACHIEVE THE FIRE PROTECTION RATING INDICATED. RATED GLASS SHALL BE PERMANENTLY LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
BASIS OF DESIGN PRODUCT: "FIRELITE NT" (UNPOLISHED ON BOTH SURFACES) BY NIPPON ELECTRIC GLASS CO., LTD., AND DISTRIBUTED BY TECHNICAL GLASS PRODUCTS.

6. PROVIDE ALL MISCELLANEOUS MATERIALS AND ACCESSORIES, INCLUDING, GLAZING GASKETS, TAPES, SEALANTS, CLEANERS, PRIMERS, SETTING BLOCKS, SPACERS, EDGE BLOCKS, ETC. REQUIRED TO PROVIDE A STRUCTURALLY SOUND AND WEATHERTIGHT INSTALLATION AS RECOMMENDED BY GLASS AND STOREFRONT MANUFACTURERS FOR THE APPLICATIONS SHOWN.

7. ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN GLAZING TO MEET THE FOLLOWING PERFORMANCE REQUIREMENTS ACCORDING TO THE IBC AND ASTM E 1300:

a. DESIGN WIND PRESSURES: AS INDICATED ON DRAWINGS OR AS REQUIRED BY BUILDING CODE.
b. DESIGN WIND PRESSURES: DETERMINE DESIGN WIND PRESSURES APPLICABLE TO PROJECT ACCORDING TO ASCE/SEI 7, BASED ON HEIGHTS ABOVE GRADE INDICATED ON DRAWINGS.
c. MAXIMUM LATERAL DEFLECTION: FOR INSULATING GLASS., PROVIDE THICKNESS REQUIRED THAT LIMITS CENTER DEFLECTION AT DESIGN WIND PRESSURE TO 1/50 TIMES THE SHORT SIDE LENGTH OR 1 INCH, WHICHEVER IS LESS.
d. THERMAL MOVEMENTS: ALLOWS FOR THERMAL MOVEMENTS RESULTING FROM THE FOLLOWING MAXIMUM CHANGE (RANGE) IN AMBIENT AND SURFACE TEMPERATURES: 120 DEG F, AMBIENT; 180 DEG F, MATERIAL SURFACES.
e. THERMAL AND OPTICAL PERFORMANCE PROPERTIES: PROVIDE GLASS WITH THE PERFORMANCE PROPERTIES SPECIFIED AS DETERMINED ACCORDING TO THE FOLLOWING PROCEDURES FOR CENTER-OF-GLASS VALUES: NFRC 100 (U-FACTORS), NFRC 200 (SOLAR HEAT GAIN COEFFICIENT), NFRC 300 (SOLAR OPTICAL PROPERTIES).

8. CLEAN GLAZING CHANNELS AND OTHER FRAMING MEMBERS RECEIVING GLASS IMMEDIATELY BEFORE GLAZING. REMOVE COATINGS NOT FIRMLY BONDED TO SUBSTRATES.

9. INSTALLER SHALL BE AN EXPERIENCED INSTALLER WHO HAS COMPLETED GLAZING SIMILAR TO THAT INDICATED FOR THIS PROJECT; WHOSE WORK HAS A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE; AND WHO EMPLOYS GLASS INSTALLERS FOR THIS PROJECT WHO ARE CERTIFIED UNDER THE NATIONAL GLASS ASSOCIATION GLAZIER CERTIFICATION PROGRAM AS LEVEL 2 (SENIOR GLAZIERS) OR LEVEL 3 (MASTER GLAZIERS).

10. INSTALLATION SHALL COMPLY WITH COMBINED WRITTEN INSTRUCTIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS. DO NOT PROCEED WITH GLAZING WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE OUTSIDE LIMITS PERMITTED BY GLAZING MATERIAL MANUFACTURERS AND WHEN GLAZING CHANNEL SUBSTRATES ARE WET FROM RAIN, FROST, CONDENSATION, OR OTHER CAUSES.

11. PROTECT GLASS EDGES FROM DAMAGE DURING HANDLING AND INSTALLATION. REMOVE DAMAGED GLASS FROM PROJECT SITE AND LEGALLY DISPOSE OF OFF PROJECT SITE. PROTECT EXTERIOR GLASS FROM DAMAGE IMMEDIATELY AFTER INSTALLATION BY ATTACHING CROSSED STREAMERS TO FRAMING HELD AWAY FROM GLASS. REMOVE AND REPLACE GLASS THAT IS BROKEN, CHIPPED, CRACKED, OR ABRADED OR THAT IS DAMAGED FROM NATURAL CAUSES, ACCIDENTS, AND VANDALISM, DURING CONSTRUCTION PERIOD.

12. WASH GLASS ON BOTH EXPOSED SURFACES IN EACH AREA OF PROJECT NOT MORE THAN FOUR DAYS BEFORE DATE SCHEDULED FOR INSPECTIONS THAT ESTABLISH DATE OF SUBSTANTIAL COMPLETION. WASH GLASS AS RECOMMENDED IN WRITING BY GLASS MANUFACTURER.

13. **SUBMITTAL(S):** PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED, INCLUDING INDICATION OF LOW VOC CONTENT (SEALANTS, PRIMERS AND ADHESIVES); PHYSICAL SAMPLES (12" SQUARE) FOR EACH TYPE OF GLASS PRODUCT OTHER THAN CLEAR MONOLITHIC VISION GLASS; GLAZING SCHEDULE LISTING GLASS TYPES AND THICKNESSES FOR EACH SIZE OPENING AND LOCATION, USING SAME DESIGNATIONS INDICATED ON DRAWINGS.

092000 GYPSUM BOARD & NON-STRUCTURAL METAL FRAMING

1. PROVIDE ALL GYPSUM DRYWALL MATERIALS THROUGHOUT THE WORK PRODUCED BY ONE MANUFACTURER. PROVIDE METAL STUDS AND FRAMING MEMBERS OF TYPES, GAUGES, SIZES AND CORROSIVE RESISTIVE TREATMENTS AS SHOWN. FOR STEEL PRODUCTS, PROVIDE PRODUCTS WITH RECYCLED CONTENT NOT LESS THAN 25%..

2. FRAMING MEMBERS, GENERAL: PROVIDE PRODUCTS COMPLYING WITH ASTM C754 AND ASTM C 645, FABRICATED OF GALVANIZED STEEL PER ASTM A 653/A 653M

a. STUDS AND FRAMING: ROLL FORMED CHANNEL STUDS AND RUNNERS: PROVIDE PRODUCTS OF THE SIZES AND GAUGES SHOWN, WITH FLANGES NOT LESS THAN 1 ¼". PROVIDE SLOTTED TRACKS, DESIGNED TO ACCOMMODATE DEFLECTION, WHERE WALL FRAMING TERMINATES AT THE UNDERSIDE OF STRUCTURAL DECK OR FRAMING MEMBERS ABOVE.
b. METAL FURRING CHANNELS: HAT SHAPED, 7/8" HIGH (UNLESS NOTED OTHERWISE), 25 GAUGE GALVANIZED.

3. BACKER PLATES: 20 GAUGE GALVANIZED.

4. HANGER WIRE: GALVANIZED, SOFT TEMPER STEEL WIRE, SIZED IN ACCORDANCE WITH ASTM C-754. PROVIDE CONCRETE INSERTS, CLIPS, BOLTS, SCREWS AND OTHER DEVICES APPLICABLE TO THE INDICATED METHOD OF STRUCTURAL ANCHORAGE FOR CEILING HANGERS.

5. FURRING ANCHORAGES: 16 GAUGE GALVANIZED WIRE TIES, MANUFACTURER'S STANDARD WIRE-TYPE CLIPS, BOLTS, NAILS OR SCREWS, IN ACCORDANCE WITH ASTM C-754.

8. METAL-TO-METAL FASTENERS WITHIN THE DRYWALL SYSTEM: 3/8" TYPE "S" OR S-12, PAN HEAD. WHERE ADHESIVE IS REQUIRED, PROVIODE PRODUCTS AS RECOMMENDED BY THE GYPSUM BOARD MANUFACTURER WHICH ARE LOW VOC AND MEET REQUIREMENT OF SCAQMD, RULE 1168.

10. GYPSUM BOARD, GENERAL: 5/8" THICK UNLESS NOTED OTHERWISE, ASTM C 1396/C 1396M, TAPERED EDGES. PROVIDE "TYPE X" (FIRE RETARDANT) WHERE SHOWN AND AT DEMISING WALLS. PROVIDE PRODUCTS WITH RECYCLED CONTENT NOT LESS THAN 40%.

11. PROVIDE MOISTURE AND MOLD RESISTANT TYPE 'X' GYPSUM BOARD (GREENBOARD) FOR ALL INTERIOR WALLS, AS WELL AS INTERIOR FACE OF EXTERIOR WALLS, EXCEPT THOSE WALLS WHICH RECEIVE A CERAMIC TILE INSTALLATION.
BASIS OF DESIGN: USG SHEETROCK MOLD TOUGH PANELS FIRECODE X, BY UNITED STATES GYPSUM COMPANY.

PROVIDE GLASS-MAT FACED, WATER RESISTANT TILE BACKER BOARD BEHIND CERAMIC TILE INSTALLATIONS.
BASIS OF DESIGN: USG DUROCK GLASS-MAT TILE BACKERBOARD, BY UNITED STATES GYPSUM COMPANY.

12. PROVIDE TRIM ACCESSORIES OF THE SIZES REQUIRED FOR THE DRYWALL APPLICATIONS SHOWN SPECIFIED, FABRICATED FROM GALVANIZED STEEL, AND OF THE FOLLOWING TYPE:

a. PROVIDE DRYWALL MOULDING OF THE TYPE AND SIZE INDICATED. PROVIDE METAL CORNER BEAD AT EXTERNAL CORNERS WITH SMOOTH RIGID NOSE AND PERFORATED AND KNURLED FLANGES. CONCEAL FLANGES WITH AT LEAST TWO COATS OF JOINT COMPOUND FEATHERED OUT APPROXIMATELY 9" ON BOTH SIDES OF THE EXPOSED METAL.

b. WHERE DRYWALL ABUTS OR INTERSECTS DISSIMILAR CONSTRUCTION, PROVIDE SQUARE EDGE SEMI-FINISHING CASING BEAD (NO JOINT COMPOUND TREATMENT NECESSARY).

13. TAPE AND JOINT MATERIAL: PROVIDE PRODUCTS COMPLYING WITH ASTM C 475/C 475M AND WHICH HAVE A VOC CONTENT LESS THAN 20 GRAMS PER LITER WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24). PROVIDE ALL-PURPOSE COMPOUND ON INITIAL (EMBEDDING) COAT AND SANDABLE TOPPING COMPOUND FOR ALL SUCCESSIVE COATS. PROVIDE FINISH LEVELS PER ASTM C 840 ACCORDING TO THE FOLLOWING:

a. LEVEL 1: CONCEALED AREAS, AND WHERE INDICATED.
b. LEVEL 2: PANELS THAT ARE SUBSTRATE FOR TILE.
c. LEVEL 4: AT PANEL SURFACES THAT WILL BE EXPOSED TO VIEW, OTHER THAN THOSE INDICATED FOR LEVEL 5 FINISH BELOW OR AS OTHERWSE INDICATED.
d. LEVEL 5: FOR ALL PANEL SURFACES IN RECEPTION AREAS, CORRIDORS, WORK SPACES AND ASSEMBLY AREAS (BREAK ROOMS, CONFERENCE ROOMS, ETC.), AS WELL AS FOR ANY WALLS WITH GLASS MAT SHEATHING WHICH ARE TO RECEIVE PAINTED FINISH.

13. SOUND ATTENUATION BLANKETS: ASTM C 665, TYPE I (BLANKETS WITHOUT MEMBRANE FACING) CONTAINING MINERAL FIBERS MANUFACTURED FROM GLASS, SLAG WOOL OR ROCK WOOL. PROVIDE IN THICKNESSES AS INDICATED ON DRAWINGS (OR TO ACHIEVE THE STC RATINGS INDICATED), BUT NOT LESS THAN 3 1/2", FOR FIRE RATED ASSEMBLIES, COMPLY WITH MINERAL-FIBER REQUIREMENTS OF ASSEMBLY. PROVIDE LOW VOC AND FORMALDEHYDE FREE PRODUCTS.
BASIS-OF-DESIGN PRODUCT: THERMAFIBER SAFB FF BATTS, BY THERMAFIBER, INC. (OWENS CORNING)

14. INSTALL CONTROL JOINTS AT LOCATIONS INDICATED ON DRAWINGS AND AT VERTICAL EDGES OF DOOR FRAMES/JAMBS ACCORDING TO ASTM C 840 AND IN SPECIFIC LOCATIONS APPROVED BY ARCHITECT FOR VISUAL EFFECT.

15. TREAT GYPSUM BOARD JOINTS, INTERIOR ANGLES, EDGE TRIM, CONTROL JOINTS, PENETRATIONS, FASTENER HEADS, SURFACE DEFECTS, AND ELSEWHERE AS REQUIRED TO PREPARE GYPSUM BOARD SURFACES FOR DECORATION. PROMPTLY REMOVE RESIDUAL JOINT COMPOUND FROM ADJACENT SURFACES. FINISH GLASS-MAT FACED PANELS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

16. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED, INCLUDING DATA FOR RECYCLED CONTENT AND LOW VOC PROPERTIES.

096519 RESILIENT TILE FLOORING

1. PROVIDE RESILIENT PRODUCTS INDICATED IN THE FINISH SCHEDULE OR AN APPROVED EQUAL. VINYL TILE SHALL COMPLY WITH ASTM F 1700 AND BE A CLASS III, TYPE A, PRINTED VINYL TILE WITH A SMOOTH SURFACE AND A NOMINAL THICKNESS OF 0.120". PROVIDE SIZE(S) AS INDICATED ON DRAWINGS OR 18" X 18", IF NO SIZE IS INDICATED.

2. TROWELABLE LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED, PORTLAND CEMENT BASED OR BLENDED HYDRAULIC-CEMENT-BASED FORMULATION PROVIDED OR APPROVED BY MANUFACTURER FOR APPLICATIONS INDICATED.

3. ADHESIVES: WATER-RESISTANT TYPE RECOMMENDED BY FLOOR TILE AND ADHESIVE MANUFACTURERS TO SUIT FLOOR TILE AND SUBSTRATE CONDITIONS INDICATED.

4. ADHESIVES SHALL MEET THE TESTING AND PRODUCT REQUIREMENTS OF THE CDPH STANDARD METHOD AND COMPLY WITH THE FOLLOWING LIMITS FOR VOC CONTENT:

a. VINYL FLOOR TILE ADHESIVES: 50 G/L OR LES

099000 PAINTING

1. PROVIDE PAINTING AS SHOWN OR SPECIFIED. THE TERM "PAINT" INCLUDES ALL OPAQUE OR NATURAL, PRIME, INTERMEDIATE OR FINISH COATS OR FIELD APPLIED COATINGS. PROVIDE MATERIALS FOR USE WITHIN EACH PAINT SYSTEM THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH SUBSTRATES INDICATED, AS WELL AS FOR THE INTENDED APPLICATION. ALL PAINT AND PRIMER PRODUCTS SHALL BE LOW VOC. ADDITIONALLY, PAINT FOR INTERIOR WALL SURFACES AND EXPOSED METAL SURFACES SHALL HAVE A MAXIMUM VOC CONTENT OF 3 GRAMS PER LITER. OTHER ARCHITECTURAL PAINTS, COATINGS AND PRIMERS APPLIED TO INTERIOR WALLS AND CEILINGS SHALL MEET GREEN SEAL STANDARD GS-11, PAINTS AND COATINGS, THIRD EDITION.

2. PROVIDE PAINT SYSTEMS ACCORDING TO THE FOLLOWING, SUBJECT TO COMPLIANCE WITH THE REQUIREMENTS ABOVE:

a. EXTERIOR CONCRETE TRAFFIC SURFACES: WATER-BASED CLEAR SEALER SYSTEM, MPI EXT 3.2H, UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT. **BASIS-OF-DESIGN PRODUCT:** ASHFORD FORMULA, BY CURECRETE, INC.

b. EXTERIOR STEEL SUBSTRATES: ALKYD SYSTEM, MPI EXT 5.1D, UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT

e. EXTERIOR GALVANIZED METAL SUBSTRATES: LATEX OVER WATER-BASED PRIMER SYSTEM: MPI EXT 5.3H, UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT

d. INTERIOR CONCRETE NON-TRAFFIC SURFACES: INSTITUTIONAL LOW-ODOR/VOC LATEX SYSTEM: MPI INT 3.1M, SEMIGLOSS; UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT. **BASIS-OF-DESIGN PRODUCTS:**

WALLS: TOPCOAT(S) - SHERWIN WILLIAMS PROMAR® 200 HP ZERO VOC LATEX SEMI-GLOSS, B31-1900 SERIES ;
PRIMER - SHERWIN WILLIAMS LOXON® CONCRETE AND MASONRY PRIMER, LX02 SERIES

CEILINGS: TOPCOAT(S) - PPG PITT-TECHPLUS 4216HP, SEMI-GLOSSWITH
PRIMER - AS RECOMMENDED BY MANUFACTURER FOR SUBSTRATE.

e. INTERIOR CONCRETE TRAFFIC SURFACES: WATER-BASED CLEAR SEALER SYSTEM, MPI EXT 3.2G, UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT. **BASIS-OF-DESIGN PRODUCT:** ASHFORD FORMULA, BY CURECRETE, INC.

f. INTERIOR CMU SUBSTRATES: INSTITUTIONAL LOW-ODOR/VOC LATEX SYSTEM: MPI INT 4.2E, SEMI-GLOSS, UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT.
BASIS-OF-DESIGN PRODUCT: TOPCOAT(S) - SHERWIN WILLIAMS PROMAR® 200 HP ZERO VOC LATEX SEMI-GLOSS, B31-1900 SERIES;
PRIMER - SHERWIN WILLIAMS LOXON® CONCRETE AND MASONRY PRIMER, LX02 SERIES

g. INTERIOR STEEL SUBSTRATES: INSTITUTIONAL LOW-ODOR/VOC LATEX SYSTEM: MPI INT 5.1S, UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT

h. EXTERIOR GALVANIZED METAL SUBSTRATES: INSTITUTIONAL LOW-ODOR/VOC LATEX SYSTEM: MPI INT 5.3N, UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT

i. INTERIOR GYPSUM BOARD SUBSTRATES: INSTITUTIONAL LOW-ODOR/VOC LATEX SYSTEM, MPI INT 9.2M, UNLESS NOTED OTHERWISE BY BASIS-OF-DESIGN PRODUCT.
BASIS-OF-DESIGN PRODUCT: TOPCOAT(S) - SHERWIN WILLIAMS PROMAR® 200 HP ZERO VOC LATEX SEMI-GLOSS, B31-1900 SERIES;
PRIMER - SHERWIN WILLIAMS PROMAR® 200 ZERO VOC LATEX PRIMER, B28W2600

3. APPLY PAINT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL" APPLICABLE TO SUBSTRATES INDICATED. USE APPLICATORS AND TECHNIQUES BEST SUITED FOR SUBSTRATE AND TYPE OF MATERIAL BEING APPLIED.

4. APPLY PAINTS ONLY WHEN TEMPERATURE OF SURFACES TO BE PAINTED AND AMBIENT AIR TEMPERATURES ARE BETWEEN 50 AND 95 DEG F (10 AND 35 DEG C). DO NOT APPLY PAINTS WHEN RELATIVE HUMIDITY EXCEEDS 85 PERCENT; AT TEMPERATURES LESS THAN 5 DEG F (3 DEG C) ABOVE THE DEW POINT; OR TO DAMP OR WET SURFACES.

5. PROVIDE SUITABLE COVERING TO PROTECT WORK, THE WORK OF OTHERS AND ADJACENT SURFACES AND OBJECTS. REMOVE OR PROTECT SUCH ITEMS AS HARDWARE, ACCESSORIES, PLATES, LIGHT FIXTURES AND SIMILAR ITEMS PLACED PRIOR TO PAINTING. REPOSITION OR REMOVE PROTECTION UPON COMPLETION OF EACH SPACE. CLEAN OFF ALL PAINT SPLATTER OCCURING ON ADJACENT WORK. REPAIR OR REPLACE ALL SURFACES DEFACED AS A RESULT OF THE WORK OF THIS SECTION WITH NEW APPROVED MATERIAL AND LEAVE WORK IN A CLEAN, ACCEPTABLE CONDITION.

6. PREPARE SURFACES TO RECEIVE PAINT: THOROUGHLY CLEAN OFF GRIME, GREASE, DIRT, CHALK, DUST, LOOSE MATERIAL AND OTHER SUBSTANCES THAT MAY INTERFERE WITH PROPER ADHESION OF PAINT. FILL DENTS, CRACKS, HOLLOW PLACES, OPEN JOINTS AND OTHER IRREGULARITIES WITH AN APPROVED FILLER SUITABLE FOR THE PURPOSE. AFTER SETTING, SAND AND SMOOTH HARD FINISH.

7. DO NOT BEGIN PAINT APPLICATION UNTIL SUBSTRATE SURFACES ARE FULLY CURED AND COMPLETELY DRY. SAND LIGHTLY BETWEEN EACH SUCCEEDING COAT OF PAINT.

7. WOODWORK: PRIME WOODWORK SURFACES AND TRIMS WITH A WOOD PRIMER, AND APPLY TWO (2) COATS OF SATIN FINISH ENAMEL. WHEN TRANSPARENT FINISHES ARE CALLED FOR, USE MULTIPLE COATS TO PRODUCE GLASS-SMOOTH SURFACE FILM OF EVEN LUSTER. PROVIDE SATIN FINISH FOR FINAL COAT.

8. OMIT PRIMER ON EXPOSED METAL SURFACES THAT HAVE BEEN SHOP-PRIMED.

9. EXTRA MATERIAL: FURNISH EXTRA MATERIALS DESCRIBED BELOW THAT ARE FROM SAME PRODUCTION RUN (BATCH MIX) AS MATERIALS APPLIED AND THAT ARE PACKAGED FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
a. QUANTITY: FURNISH AN ADDITIONAL 5 PERCENT, BUT NOT LESS THAN 1 GAL. (3.8 L) OF EACH MATERIAL AND COLOR APPLIED.

10. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA FOR EACH PRODUCT INDICATED, INCLUDING INFORMATION ON LOW VOC PROPERTIES.

101400 - SIGNAGE

1. ALL SIGNS SHALL BE IN CONFORMANCE WITH THE BUILDING CODE AND ACCESSIBILITY STANDARDS APPLICABLE TO THE PROJECT. PROVIDE SIGNAGE AT THE LOCATIONS INDICATED ON THE PLANS, OR IF NOT INDICATED, AS OUTLINED BELOW, OR AS OTHERWISE REQUIRED BY THE BUILDING CODE:
a. BUILDING ADDRESS LETTERING (IN LOCATION NEAR MAIN ENTRANCE AS SELECTED BY ARCHITECT)
b. ADA PARKING STALLS (PROVIDE U-CHANNEL POLE MOUNTS UNLESS WALLS ARE PRESENT AT THE HEAD END OF STALLS)
c. TOILET ROOM IDENTIFICATION, INCLUDING ADA SYMBOL FOR ACCESSIBLE RESTROOMS
d. ELECTRICAL ROOM IDENTIFICATION
e. MECHANICAL ROOM IDENTIFICATION (ONLY THOSE ROOMS CONTAINING CONTROLS FOR HVAC SYSTEMS)
f. STAIRWAY IDENTIFICATION
g. FLOOR LEVEL IDENTIFICATION (FOR BUILDINGS WITH MORE THAN ONE LEVEL)
h. MAXIMUM OCCUPANT LOAD SIGNAGE FOR ASSEMBLY SPACES
i. FIRE RATED WALL ASSEMBLIES (IN INTERSTITIAL SPACE ABOVE CEILING): PROVIDE SIGNS OR STENCILED TEXT INDICATING "FIRE AND/OR SMOKE BARRIER PROTECT ALL OPENINGS". TEXT SHALL BE MIN. 3" TALL WITH MIN. 3/8" STROKE WIDTH. PLACE WITHIN 15'-0" OF EACH END OF WALL AND AT MAX. 30'-0" ON CENTER HORIZONTALLY.
j. FIRE DEPARMENT CONNECTION IDENTIFICATION (EXTERIOR OF BUILDING), WITH TEXT INDICATING "AUTOMATIC SPRINKLERS" (OR "STANDPIPES", IF APPLICABLE)
k. FIRE SPRINKLER RISER IDENTIFICATION

2. WHERE PRIVATE OFFICE IDENTIFICATION SIGNS ARE REQUIRED, PROVIDE SIGNS WITH REMOVABLE/REPLACEABLE OCCUPANT NAME INSERTS.

3. PROVIDE MATERIAL, COLOR AND TEXTURE AS INDICATED ON PLANS. IF NO SPECIFICATIONS ARE INDICATED, PROVIDE SIGNS WITH THE FOLLOWING PROPERTIES:
A. INTERIOR SIGNAGE: BRUSHED ALUMINUM SIGNS WITH MINIMUM 3/4" TEXT FOR ROOM NAME, NUMBER AND OCCUPANT NAME (IF APPLICABLE). TEXT SHALL BE RECESSED AND OF A COLOR THAT CONTRASTS WITH SIGN BODY. PROVIDE TACTILE AND/OR BRAILLE TEXT FEATURES AS REQUIRED BY THE APPLICABLE BUILDING CODE AND ACCESSIBILITY STANDARDS.
B. EXTERIOR SIGNS (OTHER THAN ADDRESS IDENTIFICATION): PROVIDE SHEET METAL SIGNS WITH BAKED ENAMEL, WEATHER RESISTANT PAINTED FINISH. PROVIDE SIZES AS REQUIRED BY APPLICABLE BUILDING CODE AND ACCESSIBILITY STANDARDS.
C. BUILDING/SUITE ADDRESS IDENTIFICATION: PROVIDE ALUMINUM BLOCK LETTERS FOR WALL-MOUNTED SIGNS, MINIMUM 12" TALL WITH MINIMUM 1/2" STROKE WIDTH FOR BUILDING STREET ADDRESS AND MINIMUM 4" TALL FOR SUITE NUMBER. FOR LOCATIONS INDICATED TO RECEIVE GLASS-MOUNTED ADDRESS SIGNAGE, PROVIDE VINYL DIE-CUT LETTERING COMPLYING WITH THE SAME SIZE REQUIREMENTS INDICATED FOR BLOCK LETTERS. ADDRESS LETTERING SHALL HAVE A FINISH COLOR THAT CONTRASTS WITH THE SURROUNDING WALL OR GLASS ON WHICH IT IS MOUNTED.

4. ALL SIGNS SHALL BE MECHANICALLY FASTENED TO THE SUBSTRATE OR SUPPORT ONTO WHICH THEY ARE MOUNTED AND IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

5. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA FOR EACH PRODUCT INDICATED, INCLUDING SIZES AND DETAILS FOR REMOVABLE INSERTS AND MOUNTING METHOD.

102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

1. PROVIDE PRODUCTS IDENTIFIED IN THE TOILET ACCESSORY SCHEDULE, ACCORDING TO THE MANUFACTURER, MODEL, SIZE AND FINISH INDICATED, OR AN APPROVED EQUAL. PROVIDE PRODUCTS OF SAME MANUFACTURER UNLESS OTHERWISE APPROVED BY ARCHITECT. PRODUCTS SHALL BE FABRICATED WITH TIGHT SEAMS AND JOINTS, AND EXPOSED EDGES ROLLED. EQUIP UNITS FOR CONCEALED ANCHORAGE AND WITH CORROSION-RESISTANT BACKING PLATES.

2. PRODUCT MATERIALS SHALL COMPLY WITH THE FOLLOWING MATERIAL STANDARDS AND PROPERTIES:
a. STAINLESS STEEL: ASTM A 666, TYPE 304, 0.0312-INCH MINIMUM NOMINAL THICKNESS, UNLESS OTHERWISE INDICATED.
b. BRASS: ASTM B 19 FLAT PRODUCTS; ASTM B 16, RODS, SHAPES, FORGINGS, AND FLAT PRODUCTS WITH FINISHED EDGES; OR ASTM B 30, CASTINGS.
c. STEEL SHEET: ASTM A 1008/A 1008M, DESIGNATION CS (COLD ROLLED, COMMERCIAL STEEL), 0.0359-INCH MINIMUM NOMINAL THICKNESS.
d. GALVANIZED STEEL SHEET: ASTM A 653/A 653M, WITH G60 HOT-DIP ZINC COATING.
e. GALVANIZED STEEL MOUNTING DEVICES: ASTM A 153/A 153M, HOT-DIP GALVANIZED AFTER FABRICATION.
f. FASTENERS: SCREWS, BOLTS, AND OTHER DEVICES OF SAME MATERIAL AS ACCESSORY UNIT AND TAMPER-AND-THEFT RESISTANT WHERE EXPOSED, AND OF GALVANIZED STEEL WHERE CONCEALED.
g. CHROME PLATING: ASTM B 456, SERVICE CONDITION NUMBER SC 2 (MODERATE SERVICE).
h. ABS PLASTIC: ACRYLONITRILE-BUTADIENE-STYRENE RESIN FORMULATION.

3. FOR MIRRORS, PROVIDE PRODUCTS WITH A MANUFACTURER'S STANDARD WARRANTY IN WHICH MANUFACTURER AGREES TO REPLACE MIRRORS THAT DEVELOP VISIBLE SILVER SPOILAGE DEFECTS AND THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN A 15 YEAR PERIOD.

4. COORDINATE ACCESSORY LOCATIONS WITH OTHER WORK TO PREVENT INTERFERENCE WITH CLEARANCES REQUIRED FOR ACCESS BY PEOPLE WITH DISABILITIES, AND FOR PROPER INSTALLATION, ADJUSTMENT, OPERATION, CLEANING, AND SERVICING OF ACCESSORIES. PROVIDE INSERTS AND ANCHORING DEVICES AS NECESSARY TO SET UNITS INTO CONCRETE OR MASONRY WHERE APPLICABLE.

5. INSTALL ACCESSORIES ACCORDING TO MANUFACTURERS' WRITTEN INSTRUCTIONS, USING FASTENERS APPROPRIATE TO SUBSTRATE INDICATED AND RECOMMENDED BY UNIT MANUFACTURER. INSTALL UNITS LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS AND AT HEIGHTS INDICATED.
INSTALL GRAB BARS TO WITHSTAND A DOWNWARD LOAD OF AT LEAST 250 LBF, WHEN TESTED ACCORDING TO METHOD IN ASTM F 446.

6. ADJUST ACCESSORIES FOR UNENCUMBERED, SMOOTH OPERATION. REPLACE DAMAGED OR DEFECTIVE ITEMS. REMOVE TEMPORARY LABELS AND PROTECTIVE COATINGS. CLEAN AND POLISH EXPOSED SURFACES ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS.

7. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA FOR EACH PRODUCT INDICATED, INCLUDING DIMENSIONS, MOUNTING REQUIREMENTS, MATERIAL AND FINISH DESCRIPTIONS AND WARRANTY; PRODUCT SCHEDULE INDICATING TYPES, QUANTITIES, SIZES, AND INSTALLATION LOCATIONS BY ROOM OF EACH ACCESSORY REQUIRED, USING DESIGNATIONS MATCHING THOSE SHOWN ON PLANS.

104400 - FIRE PROTECTION SPECIALTIES

1. PROVIDE FIRE EXTINGUISHER CABINET AND PORTABLE FIRE EXTINGUISHER PRODUCTS IDENTIFIED IN THE PLANS, ACCORDING TO THE MANUFACTURER, MODEL, SIZE AND FINISH INDICATED, OR AN APPROVED EQUAL. FOR FIRE EXTINGUISHER CABINETS, PROVIDE CABINETS SUITABLE FOR PORTABLE FIRE EXTINGUISHERS INDICATED.

2. FIRE EXTINGUISHER CABINETS: PRODUCT MATERIALS SHALL COMPLY WITH THE FOLLOWING MATERIAL STANDARDS AND PROPERTIES:
a. COLD-ROLLED STEEL SHEET: ASTM A 1008/A 1008M, COMMERCIAL STEEL (CS), TYPE B.
b. TEMPERED FLOAT GLASS: ASTM C 1048, KIND FT, CONDITION A, TYPE I, QUALITY Q3, 3 MM THICK, CLASS 1 (CLEAR).

3. WHERE CABINETS ARE SHOWN TO BE RECESS-MOUNTED OR SEMI-RECESSED MOUNTED IN FIRE RATED ASSEMBLIES, PROVIDE PRODUCTS THAT ARE LISTED AND LABELED TO COMPLY WITH REQUIREMENTS IN ASTM E 814 FOR FIRE-RESISTANCE RATING OF WALLS WHERE THEY ARE INSTALLED.

4. PROVIDE MANUFACTURER'S STANDARD BOX (TUB) WITH WELDED JOINTS THAT ARE GROUND SMOOTH AND FACTORY-DRILLED MOUNTING HOLES. DOOR FRAMES SHALL HAVE HOLLOW-METAL TUBULAR STILES AND RAILS, MINIMUM 1/2" THICK, WITH MITERED AND WELDED CORNERS. CABINET TRIM SHALL BE IN ONE PIECE WITH CORNERS MITERED, WELDED, AND GROUND SMOOTH. CABINET SHALL HAVE MANUFACTURER'S STANDARD BAKED ENAMEL FINISH, WITH MINIMUM DRY FILM THICKNESS OF 2 MILS.

5. UNLESS NOTED OTHERWISE, PROVIDE SEMIRECESSED CABINETS AT ALL METAL-STUD-FRAMED WALLS. SEMIRECESSED CABINETS SHALL BE CONSTRUCTED SUCH THAT TRIM AND PERIMETER DOOR FRAME OVERLAP SURROUNDING WALL SURFACE WITH EXPOSED TRIM FACE AND WALL RETURN AT OUTER EDGE (BACKBEND). PROVIDE ROLLED-EDGE TRIM WITH 2-1/2-INCH BACKBEND DEPTH.

6. PROVIDE THE FOLLOWING HARDWARE AND ACCESSORIES:
A. MANUFACTURER'S STANDARD DOOR HARDWARE FOR CABINET TYPE, TRIM STYLE, AND DOOR MATERIAL AND STYLE INDICATED, INCLUDING THE FOLLOWING: RECESSED DOOR PULL AND FRICTION LATCH, HINGE PERMITTING DOOR TO OPEN 180 DEGREES.
B. MANUFACTURER'S STANDARD STEEL FIRE EXTINGUISHER MOUNTING BRACKET, DESIGNED TO SECURE EXTINGUISHER TO CABINET, OF SIZES REQUIRED FOR TYPES AND CAPACITIES OF FIRE EXTINGUISHERS INDICATED.
C. CAM STYLE DOOR LOCK THAT ALLOWS DOOR TO BE OPENED DURING EMERGENCY BY PULLING SHARPLY ON DOOR HANDLE.
D. IDENTIFICATION LETTERING WITH THE WORDS "FIRE EXTINGUISHER" COMPLYING WITH AUTHORITIES HAVING JURISDICTION FOR LETTER STYLE, SIZE, SPACING, AND LOCATION. LETTERING SHALL BE PRESSURE-SENSITIVE VINYL AND MATCH COLOR OF CABINET BODY. LETTERING SHALL BE APPLIED TO DOOR GLAZING IN A VERTICAL ORIENTATION.
E. PROJECTION WALL-MOUNT SIGN, PLACED ABOVE ALL FIRE EXTINGUISHER CABINET LOCATIONS AT 7'-0" A.F.F. TO BOTTOM OF SIGN. PROVIDE MODEL NHE-6825PROJ FROM COMPLIANCESIGNS.COM OR EQUAL.

7. PORTABLE FIRE EXTINGUISHERS: PROVIDE EXTINGUISHERS FROM J. L. INDUSTRIES, INC. OR APPROVED EQUAL. UNLESS NOTED OTHERWISE, EXTINGUISHERS SHALL BE MULTIPURPOSE ABC TYPE, WITH MONOAMMONIUM PHOSPHATE-BASED DRY CHEMICAL IN ENAMELED-STEEL CONTAINER. PROVIDE EXTINGUISHERS OF TYPE, SIZE AND CAPACITY INDICATED ON PLANS. NOTIFY ARCHITECT PRIOR TO PURCHASING UNITS IF ANY OF THE INDICATED EXTINGUISHER TYPES ARE NOT SUITABLE FOR APPLICATION SHOWN.

8. PROVIDE PORTABLE FIRE EXTINGUISHERS WITH MANUFACTURER'S STANDARD VALVES, HANDLES AND LEVERS. INCLUDE PICTORIAL MARKING SYSTEM COMPLYING WITH NFPA 10, APPENDIX B AND BAR CODING FOR DOCUMENTING FIRE EXTINGUISHER LOCATION, INSPECTIONS, MAINTENANCE, AND RECHARGING. EXTINGUISHERS SHALL COMPLY WITH NFPA 10, "PORTABLE FIRE EXTINGUISHERS."

9. PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A MANUFACTURER'S STANDARD WARRANTY IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE FIRE EXTINGUISHERS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN A SIX YEAR PERIOD. FAILURES INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: FAILURE OF HYDROSTATIC TEST ACCORDING TO NFPA 10, FAULTY OPERATION OF VALVES OR RELEASE LEVERS.

10. FOR EXTINGUISHERS NOT LOCATED WITHIN CABINETS, PROVIDE MANUFACTURER'S STANDARD GALVANIZED STEEL MOUNTING BRACKETS WITH BAKED ENAMEL FINISH, DESIGNED TO SECURE FIRE EXTINGUISHER TO WALL OR STRUCTURE, OF SIZES REQUIRED FOR TYPES AND CAPACITIES OF FIRE EXTINGUISHERS INDICATED. PROVIDE IDENTIFICATION LETTERING IN RED LETTER DECALS WITH THE WORDS "FIRE EXTINGUISHER" COMPLYING WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. APPLY TO MOUNTING SURFACE IN VERTICAL ORIENTATION.

11. COORDINATE SIZES AND LOCATIONS OF FIRE PROTECTION CABINETS WITH RESPECTIVE PORTABLE FIRE EXTINGUISHERS AND WALL DEPTHS TO ENSURE THAT TYPE AND CAPACITY OF FIRE EXTINGUISHERS INDICATED ARE ACCOMMODATED. EXAMINE FIRE EXTINGUISHERS FOR PROPER CHARGING AND TAGGING.

12. INSTALL FIRE PROTECTION UNITS IN LOCATIONS SHOWN ON PLANS AND AT HEIGHTS AS LISTED BELOW, UNLESS OTHERWISE DIRECTED BY AUTHORITIES HAVING JURISDICTION. INSTALL CABINETS AND MOUNTING BRACKETS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, FASTENING UNITS TO STRUCTURE SUCH THAT CABINETS WILL BE SQUARE AND PLUMB.
a. HEIGHT OF FIRE PROTECTION CABINETS: 54 INCHES ABOVE FINISHED FLOOR TO TOP OF CABINET
b. HEIGHT OF PORTABLE EXTINGUISHERS NOT LOCATED IN CABINETS: 48 INCHES ABOVE FINISHED FLOOR TO TOP OF EXTINGUISHER

13. ON COMPLETION INSTALLATION, REMOVE TEMPORARY PROTECTIVE COVERINGS AND STRIPPABLE FILMS AND CLEAN INTERIOR AND EXTERIOR SURFACES. ADJUST FIRE PROTECTION CABINET DOORS AND OTHER HARDWARE SUCH THAT COMPONENTS OPERATE EASILY WITHOUT BINDING. TOUCH UP MARRED FINISHES, OR REPLACE FIRE PROTECTION CABINETS THAT CANNOT BE RESTORED TO FACTORY-FINISHED APPEARANCE.

14. **SUBMITTAL(S) REQUIRED:** PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED, INCLUDING CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, COMPONENT DIMENSIONS, ROUGH-IN DIMENSIONS AND FINISHES FOR FIRE PROTECTION CABINETS; PRODUCT SCHEDULE INCLUDING BOTH FIRE EXTINGUISHERS AND FIRE EXTINGUISHER CABINETS, INDICATING LOCATIONS OF EACH.

110000 & 120000 - FURNISHINGS & EQUIPMENT

1. CONTRACTOR SHALL COORDINATE ALL EQUIPMENT WORK AND PLACEMENT WITH THE WORK OF ALL OTHER TRADES AND MAKE ADJUSTMENTS AS REQUIRED TO ACCOMMODATE LOCATIONS OF EQUIPMENT.

2. ALL EQUIPMENT WORK SHALL COMPLY WITH ALL GOVERING BUILDING CODES AND LOCAL CODES.

3. EQUIPMENT SHALL BE FURNISHED, UNLOADED, UNPACKED OR UNCRATED AND PLACED ACCORDING TO THE CONSTRUCTION DOCUMENTS.

4. ALL EQUIPMENT PROVIDED BY OWNER AND INSTALLED BY GENERAL CONTRACTOR IS TO BE INCLUDED IN GENERAL BID.

5. GENERAL CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY OF ANY DAMAGE TO THE EQUIPMENT PRIOR TO INSTALLATION.

6. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINAL HOOKUP OF ALL EQUIPMENT SUCH AS ALL MECHANICAL WORK, PLUMBING, AND ELECTRICAL FOR THE EQUIPMENT LIST.

7. ALL EQUIPMENT MANUALS, INSTRUCTION BOOKLETS AND WARRANTY INFORMATION SHALL BE NEATLY BOUND AND TURNED OVER TO THE OWNER BEFORE FINAL APPROVAL OF THE BUILDING.

133419 METAL BUILDING SYSTEMS

1. PROVIDE A METAL BUILDING THAT IS DESIGNED AS A COMPLETE SYSTEM WITH THE FOLLOWING COMPONENTS:
a. PRIMARY STRCTURE, INCLUDING CLEAR SPAN RIGID FRAMES, SPANDREL BEAMS AND ENDWALL FRAME ELEMENTS.
b. ROOF STRUCTURE, INCLUDING STRUCTURAL PURLINS, METAL ROOFING AND INSLUATION SYSTEM.

2. ALL COMPONENTS OF THE SYSTEM SHALL BE SUPPLIED OR SPECIFIED BY THE SAME MANUFACTURER. METAL BUILDING SYSTEM SHALL CARRY THE FOLLOWING MANUFACTURER'S STANDARD WARRANTIES:
A. METAL BUILDING SYSTEM: ONE (1) YEAR, AGAINST FAILURE DUE TO DEFECTIVE MATERIAL OR WORKMANSHIP.
B. PAINT SYSTEM: MINIMUM 25 YEAR WARRANTY FOR THE METAL PANEL PAINT SYSTEM AGAINST CHIPPING, PEELING, BLISTERING, FADING IN EXCESS OF 5 NBS HUNTER UNITS, AND CHALKING IN EXCESS OF 8 UNITS AS SET FORTH IN ASTM D4214.
C. ZINC-ALUMINUM SYSTEMS: MINIMUM 20 YEAR FOR THE ZINC-ALUMINUM HOT-DIPPED ALLOY-COATED PANELS AGAINST ROOF AND RUPTURE, STRUCTURAL FAILURE, OR PERFORATION DUE TO NORMAL ATMOSPHERIC CONDITIONS.
D. ROOF SYSTEM WEATHERTIGHTNESS: 20 YEARS FROM THE FINAL INSPECTION AND ACCEPTANCE FROM THE MANUFACTURER.

3. PROVIDE DESIGN OF THE PRIMARY, PRIMARY ENDWALL AND SECONDARY FRAMING SYSTEMS FOR THE LOADS AS SPECIFIED IN THE CONTRACT DOCUMENTS, AND IN GENERAL CONFORMANCE WITH THE MBMA BUILDING SYSTEMS MANUAL AND THE APPLICABLE BUILDING CODE.
a. WIND LOADS SHALL BE BASED ON A RISK CATEGORY II BUILDING AND EXPOSURE CATEGORY 'B'
b. BASIC WIND SPEED (3-SECOND GUST) = 'V' = 110 MPH; 'Vasd' = 85 MPH.

4. DEFLECTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE AISC STEEL DESIGN GUIDE SERIES 3 – SERVICEABILITY DESIGN CONSIDERATIONS FOR LOW-RISE BUILDINGS, UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED AS FOLLOWS:

a. HORIZONTAL DRIFT OF FRAMES: NO GREATER THAN H/240

5. ACCEPTABLE METAL BUILDING SYSTEM MANUFACTURERS ARE AS FOLLOWS:
a. KIRBY BUILDING SYSTEMS; HTTP://WWW.KIRBYBUILDINGSYSTEMS.COM/
b. TOPLINE STEEL BUILDINGS; HTTPS://TOPLINEBUILDINGS.COM/
c. APPROVED EQUAL

6. PROVIDE BAY SPACING, EAVE HEIGHT AND ROOF SLOPE AS SHOWN ON THE CONTRACT DOCUMENTS.

7. THE PRIMARY FRAMING SYSTEM SHALL BE MANUFACTURED OF SOLID WEB MEMBERS, CONFORMING TO THE FOLLOWING STANDARDS:
a. STRUCTURAL FLAT PLATE, STRIP AND/OR BAR STOCK: ASTM A1008 / A1008M, ASTM A1011 / A1011M OR ASTM A572 / A572M AS APPLICABLE; MINIMUM YIELD STRENGTH OF 55,000 PSI.
b. W, M, AND S SHAPES, ANGLES, CHANNELS AND OTHER HOT-ROLLED SHAPES: ASTM A1008 / A1008M, ASTM A1011 / A1011M, ASTM A572 / A 572M OR ASTM A36 / A36M AS APPLICABLE; MINIMUM YIELD STRENGTHS 50,000 PSI OR 36,000 PSI.

8. SECONDARY FRAMING SHALL BE MANUFACTURED OF COLD-FORMED LIGHT GAUGE SECTIONS, WELDED PLATE SECTIONS, STRUCTURAL SECTIONS, AND/OR OPEN WEB MEMBERS.
a. EAVE STRUTS SHALL BE NOMINAL 6 INCHES, 8 INCHES, 9.5 INCHES, OR 12 INCHES DEEP "CEE" SHAPED MEMBERS; AND SHALL BE MANUFACTURED OF 0.057 – 0.105 GAUGE STEEL; AND SHALL BE DESIGNED AS SIMPLE SPAN FOR THE SPECIFIED LOADS.
b. PURLINS AND GIRTS SHALL BE NOMINAL 6 INCHES, 8 INCHES, 9.5 INCHES, OR 12 INCHES DEEP "ZEE" SHAPED MEMBERS; AND SHALL BE MANUFACTURED OF 0.057 – 0.105 GAUGE STEEL DESIGNED SIMPLE SPAN AND/OR CONTINUOUS SPAN FOR THE SPECIFIED LOADS.
SECONDARY FRAMING MATERIALS
c. HOT ROLLED FRAMING MATERIALS SHALL BE COMPOSED OF THE MATERIALS AND SHAPES SPECIFIED IN THE PRIMARY FRAMING MATERIAL SECTION.
COLD-FORM MEMBERS SHALL BE FABRICATED OF MATERIAL BASED ON THE REQUIREMENTS OF ASTM A1008 / A1008M, ASTM A1011 / A1011M OR ASTM A572 / A572M AS APPLICABLE, AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 55,000 PSI.

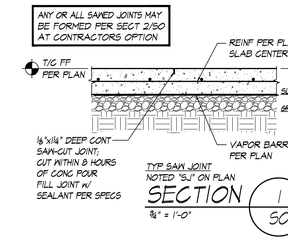
9. BRACING FOR LATERAL LOADS (WIND, SEISMIC, ETC.) SHALL BE A SYSTEM OF DIAGONAL BRACING DESIGNED FOR THE SPECIFIED LOADS IN ACCORDANCE WITH MANUFACTURER'S DESIGN PRACTICES. REFER TO ARCHITECTURAL AND/OR STRUCTURAL PLAN FOR LOCATIONS. NOTIFY ARCHITECT PRIOR TO FABRICATION IF LOCATIONS SHOWN ARE NOT FEASIBLE OR IF ADDITIONAL LOCATIONS ARE NECESSARY.

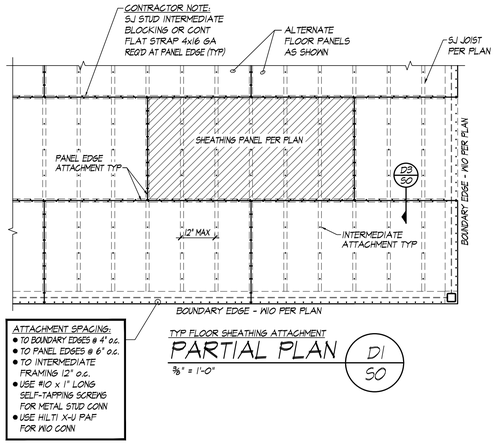
10. MATERIALS USED IN THE FABRICATION OF BRACING SYSTEMS SHALL BE DESIGNED UTILIZING MANUFACTURER'S STANDARD PRACTICES, GENERALLY IN COMPLIANCE WITH THE APPLICABLE SECTIONS OF AISC AND AISI. IN ADDITIONAL TO THE MATERIAL STANDARDS FOR STRUCTURAL FLAT PLATE, STRIP AND BAR STOCK, AS WELL AS W, M, & S SHAPES, ETC., BRACING MATERIALS SHALL ALSO CONFORM TO THE FOLLOWING STANDARDS:
a. CABLES SHALL BE ASTM A475, 7 STRAND, EXTRA-HIGH STRENGTH MATERIAL, 1/4 INCH DIAMETER MINIMUM.

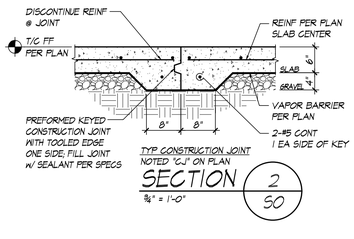
11. PROVIDE STANDING SEAM ROOF SYSTEMS CONSISTING OF THE ROOF PANELS AND THEIR ATTACHMENTS, AS WELL AS TRIM AND SEALANTS USED ON THE EXTERIOR OF THE ROOF, ACCORDING TO THE FOLLOWING REQUIREMENTS:
a. SHEET STEEL SHALL COMPLY WITH ASTM A653 / A653M, ASTM A792 / A792M OR ASTM A1063 / A1063M AS APPLICABLE. MINIMUM YIELD STRENGTH SHALL BE 50,000 PSI.
b. SIDELAPS SHALL CONTAIN FACTORY APPLIED MASTIC AND SHALL BE SEAMED MECHANICALLY AS SHOWN ON THE CONTRACT DOCUMENTS.
c. PANELS SHALL BE 24 GAUGE, INSTALLED IN CONTINUOUS LENGTHS FROM RIDGE TO EAVE, WITH METAL CLOSURES AT THE EAVE AND RIDGE.
d. PANEL EXTERIOR FINISH AND COLOR - PVDF FINISH; COLOR AS SHOWN ON THE PLANS. PANEL INTERIOR SHALL BE PRE-COATED WITH A POLYESTER WASH COAT – PAINTED PANELS ONLY.

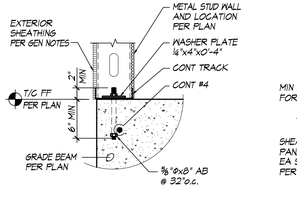
12. PROVIDE ROOF INSULATION SYSTEM SPECIFICALLY MANUFACTURED FOR USE IN PRE-ENGINEERED METAL BUILDINGS. INSULATION SHALL BE MULTILAYER, FIBERGLASS BLANKET ROOF INSULATION SYSTEM, COMPLETE WITH THERMAL BLOCKS, INSULATION BRIDGING AND BANDED LINER. PROVIDE MULTILAYER FIBERGLASS BLANKETS FULL DEPTH OF ROOF PURLINS WITH NOT LESS THAN AN R-VALUE OF 30.

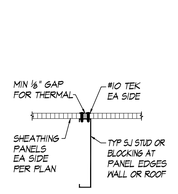
13. TRIM SHALL BE MANUFACTURER'S STANDARD MATERIAL YIELD STRENGTH AND THICKNESS AND SHALL B

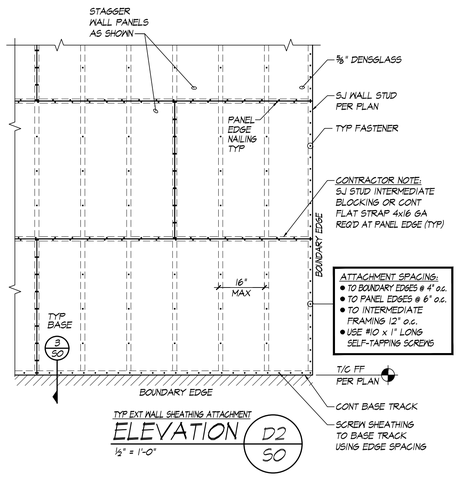


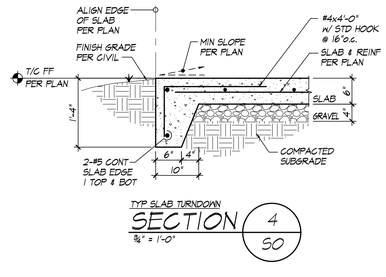


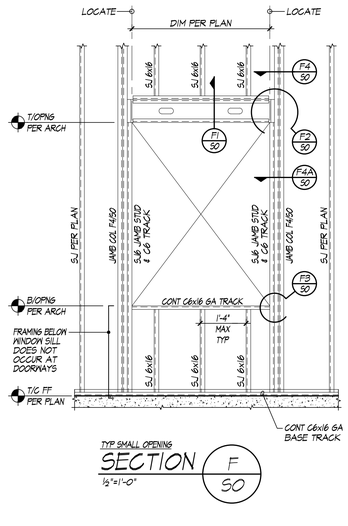


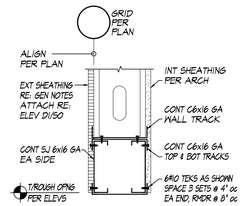


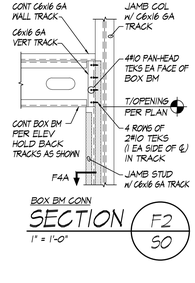


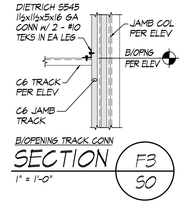


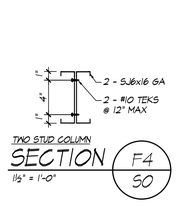


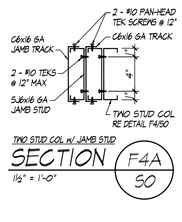












STRUCTURAL NOTES:

1. GENERAL
   - A. Design and construction shall conform to the 2018 International Building Code (IBC) as amended by the City of Lee's Summit, Missouri.
   - B. The Contractor shall notify the Structural Engineer when actual conditions vary relevantly from what these drawings portray. The Engineer is not responsible for the consequences of construction that do not comply with the requirements specified or the reasonable intent conveyed in these drawings or approved revisions thereof.
   - C. The Contractor shall coordinate any miscellaneous structural requirements that may be shown in architectural or other consultant's drawings.
   - D. The Contractor shall coordinate dimensions shown herein with dimensions shown on other drawings, and in case of relevant conflict, seek clarification with the Structural Engineer before proceeding with construction.
   - E. This design is valid only for the dimensions shown. This design may not be valid if actual constructed dimensions vary substantially from what is shown.
   - F. On the drawings details marked "Typical" shall apply to all situations occurring on the project that are the same or similar, as may be ascertained by the title of the detail, whether the section is cut on the drawing at each required location or not. If it is not clear how a particular typical detail applies to a specific location, the Contractor shall seek clarification from the Engineer before proceeding with construction.
   - G. The Contractor shall take all necessary and prudent precautions to maintain the full integrity of the structure during construction. The Contractor is also solely responsible for designing and installing all temporary shoring and bracing.
   - H. Structural members shall not be cut, notched or otherwise penetrated unless specifically approved by the Engineer in advance or as shown on these drawings.
   - I. These drawings and notes are for this specific project and no other use is authorized.

2. DESIGN CRITERIA [Occupancy Category II]

A. Floor	Live		Slab-on-grade 100 psf. Elevated mezzanine 125 psf storage.
	Dead		Self-weight + 20 psf additional dead load.
B. Roof	Live		20 psf (not reducible)
	Dead		Self-weight + 10 psf additional DL.
	Snow		Ground snow load 20 psf, Ce = 0.70, Ct = 1.0.
C. Lateral	Wind		Ultimate velocity 109 mph, Nominal velocity 85 mph, Internal pressure coeff +/- 0.18, Exposure B, Importance 1.00.
	Seismic		Ss = 0.100, S1 = 0.068; Sds = 0.107, Sd1 = 0.109; Soil site class "D", Importance 1.00, SDC "B", R = 6.5, Cd = 4.0 [re ASCE 7-16 Table 12.2-1], Cs = 0.017
D. Soil	Bearing		Allow 1500 psf [w/o geotechnical report]

3. FOUNDATIONS
   - A. All foundation excavations shall be approved by a geotechnical engineer licensed in the state of Missouri prior to placement of reinforcing steel or concrete.
   - B. All structure shall bear on continuous wall footings that are at least 18" wide and bear at least 36" in the ground.
   - C. The Contractor shall be entirely responsible for safely excavating into the ground and constructing stable soil slopes.
   - D. For plumbing or electrical installation, the Contractor may not core holes thru the footings. Rather, all such installations need to pass thru PVC sleeves set in concrete under the footing.
   - E. Zones of soil encountered at the bottom of footing excavations deemed inadequate by the geotechnical engineer shall be replaced or remediated as directed by him.
   - F. The Contractor shall provide dewatering of excavations from either surface water or seepage. The moisture content in soils prior to excavation should not be allowed to change relevantly after the excavation is made. Concrete for foundations shall not be placed on frozen ground or on ground softened from excess water.
   - G. The base of the excavation shall be free of water and loose soil prior to placement of reinforcing or concrete. Footing excavations left open for more than 24 hours shall be covered over and protected to reduce evaporation or entry of moisture. Ideally, foundation concrete shall be placed the same day the excavation is made.
   - H. Establish grades so that drainage flows positively away from the building perimeter.
   - I. Shrubs, trees or other plants with deep roots requiring large quantities of water shall not be planted within 20' of the building perimeter.
   - J. Unless noted otherwise, all concrete slabs-on-grade shall be poured upon 4" gravel on stabilized compacted fill. The gravel shall consist of well-graded crushed stone with 3/4" maximum particle size and less than 5% passing through No. 4 sieve. Prior to concrete placement, the gravel shall be compacted with a minimum of 4 passes of a vibratory plate compactor or vibratory drum roller.
   - K. Where shown for interior only, additionally place a continuous impenetrable 15 mil polyethylene vapor barrier, brand "Florprufe 120" or "EcoShield-P", on the gravel directly under the concrete slab according to ACI 302.1R-04.

4. STRUCTURAL CONCRETE
   - A. All concrete shall be designed and constructed according to ACI 318-14, "Building Code Requirements for Reinforced Concrete," and Commentary (ACI 318-14R).
   - B. All concrete shall develop a minimum ultimate compressive strength of 2800 psi in 3 days and 4000 psi in 28 days, with not less than 550 pounds of Type 1 Portland cement per cubic yard of concrete, regardless of the strengths obtained, not more than 6 gallons of water for each 100 pounds of cement, with aggregate not larger than 3/4" diameter, and slump that does not exceed 4-1/2".
   - C. All concrete other than flatwork may have up to 15% of Portland cement weight replaced with an equivalent weight of an approved Class F fly ash.
   - D. All large aggregate shall be comprised of either "hardrock" (granite, quartz, traprock or K-DOTs "CPA-3") or saturated-surface-dry ("SSD") limestone. Use only hardrock in all exterior exposed slab concrete.
   - E. Small aggregate shall be comprised of clean, uniformly graded sand or quartz crystals with at least 5% of the total weight passing thru #50 sieve and not more than 45% of the total weight passing thru any two consecutive standard sieves.
   - F. Water shall be potable. All of the water ingredient shall be mixed into the concrete at the batch plant. Concrete identified as having water added to it at the jobsite shall be removed at the contractor's expense.
   - G. For all admixture products to be used in concrete, the Contractor shall submit defining literature for review and approval by the EOR prior to placement in concrete. Unless approved otherwise, all admixtures shall be mixed at the batch plant according to manufacturere's written instructions. Admixtures shall not contain chlorine or any chemical detrimental to reinforcing, light-gage metal or structural steel.
   - H. Entrain exterior exposed concrete and concrete flatwork with 6% +/- 1% air.
   - I. Where specified on plan, concrete shall contain "fibrillated polypropylene" micro-fibers complying with ASTM C-1116 with specific gravity < 1.00 that are both alkali and acid resistant. Average fiber length shall be at least 1" long, not less than 3/4" and not more than 2" long. Dosage shall not be less than 1.5 lbs per cubic yard of concrete.
   - J. Do not embed or anchor aluminum items to concrete.
   - K. All concrete is reinforced unless specifically called out as unreinforced. Reinforce all concrete not otherwise shown with same steel as in similar sections or areas. Any sections not shown shall be detailed per ACI 315, "Details and Detailing of Concrete Reinforcement", current edition.
   - L. Clear minimum coverage of concrete over longitudinal reinforcing steel shall be minimized, but it shall not be less than the largest nominal bar diameter, nor less than the following unless noted otherwise (see next column):

1. Concrete placed against trenched earth	3"
2. Concrete placed against form in earth	2"
3. Un-tied elements (elevated slabs and walls)	1"
4. Tied elements (columns & elevated beams)	1-1/2"

   - M. Limit control joints in dirt-formed slab areas to 16'-0" apart along any side.
   - N. Cut saw joints in slab-on-grade concrete maximum 8 hours after concrete pour.

5. REINFORCING STEEL
   - A. Fabrication, erection and placement of reinforcing steel shall conform to Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice".
   - B. Bar reinforcing shall conform to ASTM A615 Gr 60 deformed reinforcing steel with 60 ksi yield minimum, except stirrups and ties shall comply with CRSI requirements for improved bendability.
   - C. Reinforcing steel shall not be heated or welded. All bar bends shall be made cold.
   - D. Reinforcing steel shall be clean of rust, grease or other material likely to impair bond.
   - E. Fabricate reinforcing bars in continuous lengths as is practible. Where discrete rebars require splicing, use direct contact bar laps according to the Schedule:

BAR SIZE	MIN LAP IN CONC	90° HOOK IN CONC	BAR SIZE	MIN LAP IN CONC	90° HOOK IN CONC
#3	15"	6"	#6	30"	12"
#4	20"	8"	#7	42"	14"
#5	24"	10"	#8	48"	16"

   - F. Place dowels between adjacent or sequential pours and as indicated. All dowels shall be same size and spacing as adjoining main bars. Unless noted otherwise, set equal legs into adjoining members and lap according to the Schedule above.
   - G. All reinforcing shall be secured from displacement prior to pouring concrete using wire ties and anchorage devices.
   - H. At all corners, supply corner bars minimum 2'-6" or 48 bar diameters in each direction in outside face, matching the size and spacing of horizontal bars.
   - I. At all holes in concrete slabs and slabs-on-ground, along each side of the hole place 2 #4's (one top, one bottom) continuous, extending 2'-0" straight beyond the corners.
   - J. At all re-entrant corners in concrete slab-on-grade not otherwise reinforced with edge bars, provide 2 #4 x 4'-0" (one top, one bottom) placed transverse diagonally and centered across the corner.
   - K. Allow 500 lbs of reinforcing bars #4 and #5 to be used as directed in the field by the Structural Engineer for special conditions. Labor for placing same to be included.

6. EPOXY ANCHORING
   - A. Where permitted in the drawings, drill clean holes not to exceed 1-1/2 times the diameter of the bar or anchor being installed. Prior to epoxying, the holes shall be cleaned of laitenance and debris.
   - B. Install epoxy product only according to the manufacturer's written instructions.
   - C. If not otherwise noted, the bar or anchor shall be drilled to such depth as to effectively develop 2.50 times the tensile yield force of the steel area.
   - D. The epoxy product shall be waterproof and be able to maintain bond within the range of 10 degrees F below zero up to 120 degrees F above zero.

7. STRUCTURAL STEEL
   - A. Design, fabrication and erection of steel shall be according to the AISC, "Manual of Steel Construction", 15th Edition, 2017 ["AISC #15"].
   - B. All structural steel shall be fabricated by an AISC-approved shop using the following:
     1. Standard Manual W, S or T: ASTM A992 Gr 50 w/ 50 ksi yield.
     2. Hollow structural sections (HSS): ASTM A500 Gr C w/ 50 ksi yield.
     3. Standard structural round pipe: ASTM A53 Gr B w/ 35 ksi yield.
     4. Standard C, MC, angles, plate or threaded rod: ASTM A36 w/ 36 ksi yield.
   - C. All welding shall conform to American Welding Society (AWS) specification D1.1 as defined by AISC #13, Section J2. All welding uses standard E-70XX electrodes.
   - D. All steel-to-steel fillet welds not otherwise detailed shall be 3/16". After completion all slag shall be removed from the weld surface and surrounding material.
   - E. All structural steel-to-steel connection bolts not otherwise specified shall be 3/4" Ø ASTM A325-N and shall be fully pre-tensioned according to "Specification for Structural Joints Using ASTM A325 or A490 Bolts", Section 8d.
   - F. Unless noted otherwise, all anchor bolts shall be 3/4" Ø, ASTM F-1554 all-thread with at least 36 ksi yield, at least 12" long, which includes a 4" threaded projection above top of concrete and threaded-end nut. "J-bolts" are not permitted.
   - G. All interior structural steel shall be painted with 2 coats of standard shop primer. All exterior steel exposed to the environment shall either be galvanized or painted with approved products as required to prevent corrosion.

10. LIGHT GAGE METAL STUD FRAMING
    - A. All properties, fabrication and erection shall be according to the AISI S100-16, "Specification for the Design of Cold-Formed Structural Members."
    - B. All light gage metal for structural shall comply with ASTM A1008 Grade 50 and not be less than 0.0428" delivered thickness. In contrast to tracks [noted "C"], structural joists [noted "SJ"] shall have at least 5/8" return flaps.
    - C. Structural members noted on plan shall have the following minimum properties:

PLAN MARK	DEEP (IN)	GAGE (in)	FLANG (IN)	AREA (IN2)	I-MAJOR (IN4)	I-MINOR (IN4)
SJ 10x14 GA	10	0.0677	1.625	0.976	12.31	0.245
SJ 10x16 GA	10	0.0538	1.625	0.782	9.95	0.203
SJ 8x16 GA	8	0.0538	1.625	0.670	5.740	0.195
SJ 8x18 GA	8	0.0428	1.625	0.537	4.634	0.160
SJ 6x16 GA	6	0.0538	1.625	0.557	2.862	0.181
SJ 6x18 GA	6	0.0428	1.625	0.447	2.316	0.148
SJ 3⅛ x 18 GA	3 5/8	0.0428	1.625	0.340	0.710	0.127

    - D. All framing members shall be cut as required to fit squarely against abutting members. Splicing of axially-loaded members is not permitted. Members shall be held in place until properly fastened. Attachments shall be made by either welds, screws or bolts; wire-tying is not permitted.
    - E. All vertically-oriented metal studs shall be framed between continuous top and bottom "C" tracks of matching gage. Tracks at base of walls not otherwise required to be secured with anchor bolts shall be anchored to the foundation slab at 12" on center to structure capable of resisting 200 #/ft pullout and 250 #/ft in-plane base shear.
    - F. Where horizontal lintels attach, provide 2 continuous SJ's, oriented open-face-to-open-face to form a closed tube, extended to top-of-wall. Per Elevation F/SO, at all window or door jambs, provide 3 SJ's back-to-back: terminate the inside one at lintel bearing, and continue the outside two to top-of-wall.
    - G. Internally brace all metal stud construction minimally with continuous 1-1/2" steel angle through stud holes installed at third points between supports.
    - H. All "SJ" framing members subjected to reversible transverse loading [such as walls] shall be braced in one either of 3 ways: (1) by sheathing attached both faces, or (2) by face-plating continuous "C" track of matching gage in order to create a closed tube section, connected with #10 teks @ 6" on center thru top and bottom flanges, or (3) by attaching continuous 2" x 20 GA strap @ 36" oc across the exposed face of studs.

11. METAL STUD FASTENERS
    - A. Fasteners used to connect light-gage steel members to each other shall be self-drilling, thread-cutting tapping screws with the material, process and performance reuirements of SAE J78, Buildex brand "tek" or approved equivalent, #10 (0.189" Ø) w/ 16 threads/inch & min 1450 lbs ultimate shear & min 1400 lbs breaking tension.
    - B. Fasteners used to connect light-gage steel members to structural steel members shall be smooth-shank collated gas fasteners, Hilti type "X-U 15" or approved equivalent, comprised of AISI 1060-1065 steel, austempered to a core hardness of 52-58 Rc with min 270 ksi tensile breaking strength & min 160 ksi ultimate shear strength.
    - C. Fasteners used to connect light-gage steel members to structural concrete shall be straight-shank collated gas fasteners, Hilti type "X-U" or approved equivalent, comprised of AISI 1060-1065 steel, austempered to a core hardness of 52-58 Rc with min 270 ksi tensile breaking strength & min 160 ksi ultimate shear strength.

12. CONSTRUCTION ADMINISTRATION
    - A. The Owner shall engage a Special Inspector independent from the Contractor to perform testing of structural materials and to regularly inspect if ongoing construction is in compliance with project contract documents and IBC provisions.
    - B. Individuals performing special inspections shall be qualified by IBC 1704.1 and shall be approved by the Architect. All special inspections shall be reported in a timely manner, providing the time of inspection, to the Engineer, Architect and Contractor.
    - C. The Contractor shall notify special inspector or special inspection agency at least 24 hours in advance of the requested time of inspection.
    - D. The Contractor shall submit the following shop drawings to the Engineer and Architect for review and approval prior to fabrication or construction.
      1. Concrete mix design.
      2. Mill verification for reinforcing steel and structural steel.
      3. For concrete: reinforcing steel placement drawings w/ bar lists and bar bends.
      4. For structural steel: erection drawings and shop fabrication drawings w/ Bill of Materials list and product data for Engineer's review and approval. Indicate component details, materials, finishes, connections and the relatioinship to the adjoining work.
    - E. The Special Inspector shall inspect:
      1. Placement of reinforcing steel in concrete forms - periodic.
      2. Placement of bolts set in concrete - periodic.
      3. Installation of anchors epoxied or set into existing concrete - periodic.
      4. If required design concrete mix is being used - periodic.
      5. Slump, air content & temperature of concrete - periodic.
      6. Placement of concrete - periodic.
      7. High-strength bolting (using twist-off legume bolts) - periodic.
      8. Structural welding for fillets > 5/16", grooves and plugs - periodic.
      9. Steel frame inspection - periodic.
      10. Verification of soils and inspection of fill placement per Section 1704.7 (to be executed by project geotechnical engineer) - periodic.
    - F. Materials testing shall be as dictated by project specifications.
    - G. The Contractor shall replace or repair all construction identified as defective in the Special Inspection reports, as required by the Engineer, without cost to the Owner.

13. COPYRIGHT & DISCLAIMER
    - A. Structural drawings marked S0, S1.00, S2.00, and S3.00 (4 drawings) dated November 2022 are the copyrighted work of CEO Structural Engineers, Inc., and shall not be reproduced except for use on this project without the expressed written permission of Alison M. Parker, P. E.
    - B. I, Alison M. Parker, P.E., registered engineer and a representative of CEO Structural Engineers, Inc., do hereby accept professional responsibility as required by the professional registration laws of the State of Missouri only for the aforementioned drawings prepared under my direct supervision and control.
    - C. I hereby disclaim responsibility for all other drawings in the document package, they possibly being the responsibility of other design professionals whose seals and signed statements may appear elsewhere in the construction document package.

      Alison M. Parker, P.E.
      Missouri License #PE-2015013007

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ARCHITECT

THE WATER HOLE REBUILD
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date

STATE OF MISSOURI — ALISON M PARKER — NUMBER PE-2015013007 — 11/7/22 — PROFESSIONAL ENGINEER

Date	11/7/22
Drawn by	MJR
Checked by	AMP

GENERAL NOTES & DETAILS
S0

Scale: As indicated

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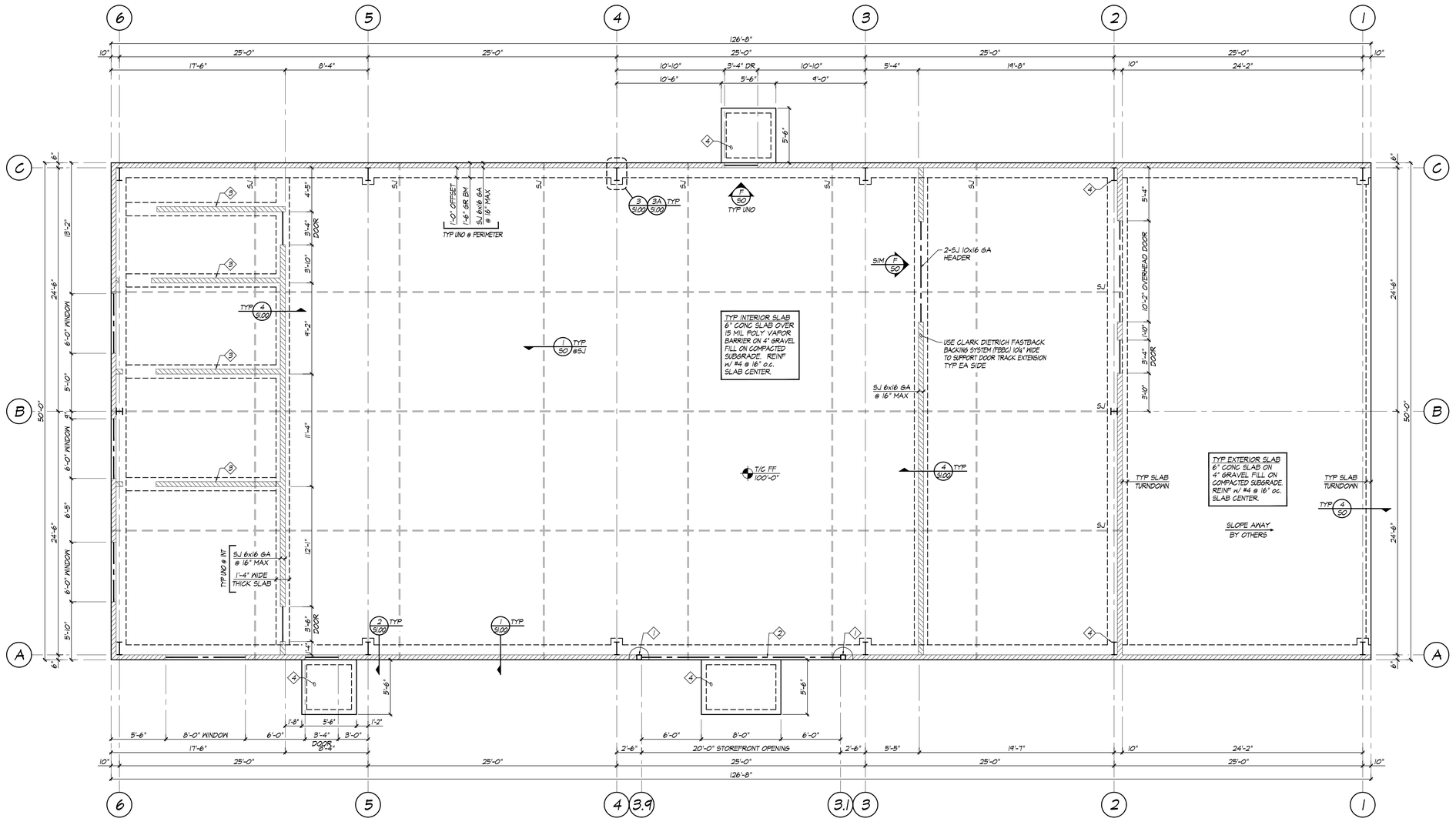

FOUNDATION PLAN A S1.00

3/16" = 1'-0"

T/GR BM 99'-0"
T/C FTG 99'-0"

NORTH

PLAN NOTES:

1. HSS 5x5x¼ COL
   - BASE ℄ RE BPI/S1.00
   - ABS 4 - ¾"Øx1'-4"
   - GROUT 1½"± DRY PACK
2. HSS 7x5x¼" HEADERS T/S 109'-10" & ℄/S 112'-6" CONT TO COL RE: 6/S3.00
3. TYP INTERIOR WALL SHEATHING PER ARCH INSTALL 2" x 16 GA DIAG FLAT STRAP EA FACE
4. TYP EXTERIOR SLAB 6" CONC. SLAB ON 4" GRAVEL FILL ON COMPACTED SUBGRADE REINF W/ #4 @ 16" OC SLAB CENTER TYP TURNDOWN @ EDGES RE: 4/S0.

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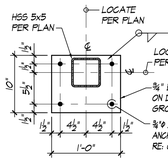
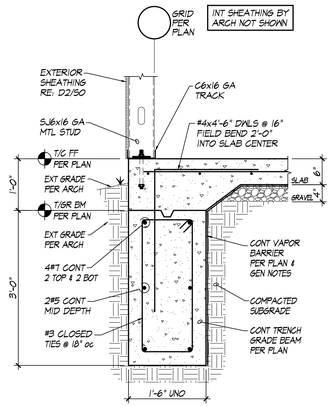
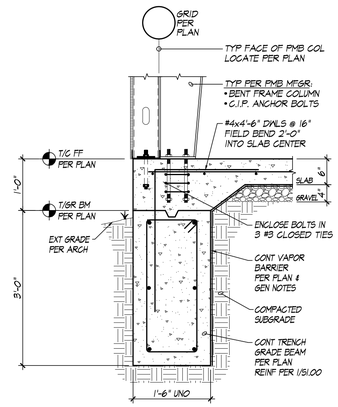


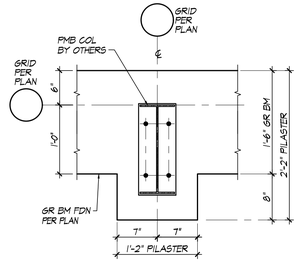
HSS 5x5 BASE ℄
PLATE BP1 S1.00
1" = 1'-0"



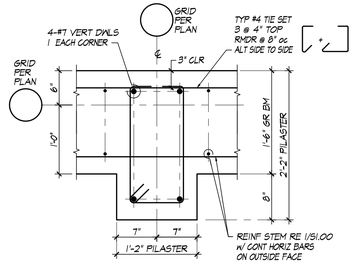
GR BM @ METAL BLDG WALL
SECTION 1 S1.00
3/4" = 1'-0"



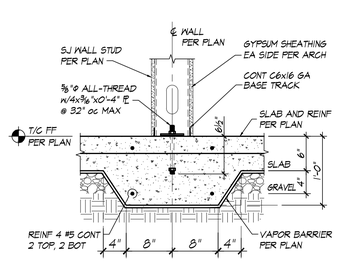
GR BM @ METAL BLDG COL
SECTION 2 S1.00
3/4" = 1'-0"



TYP PILASTER @ PMB BENT
PLAN DETAIL 3 S1.00
1" = 1'-0"



TYP PILASTER REINF
PLAN DETAIL 3A S1.00
1" = 1'-0"



TYP THICKENED SLAB
SECTION 4 S1.00
1" = 1'-0"

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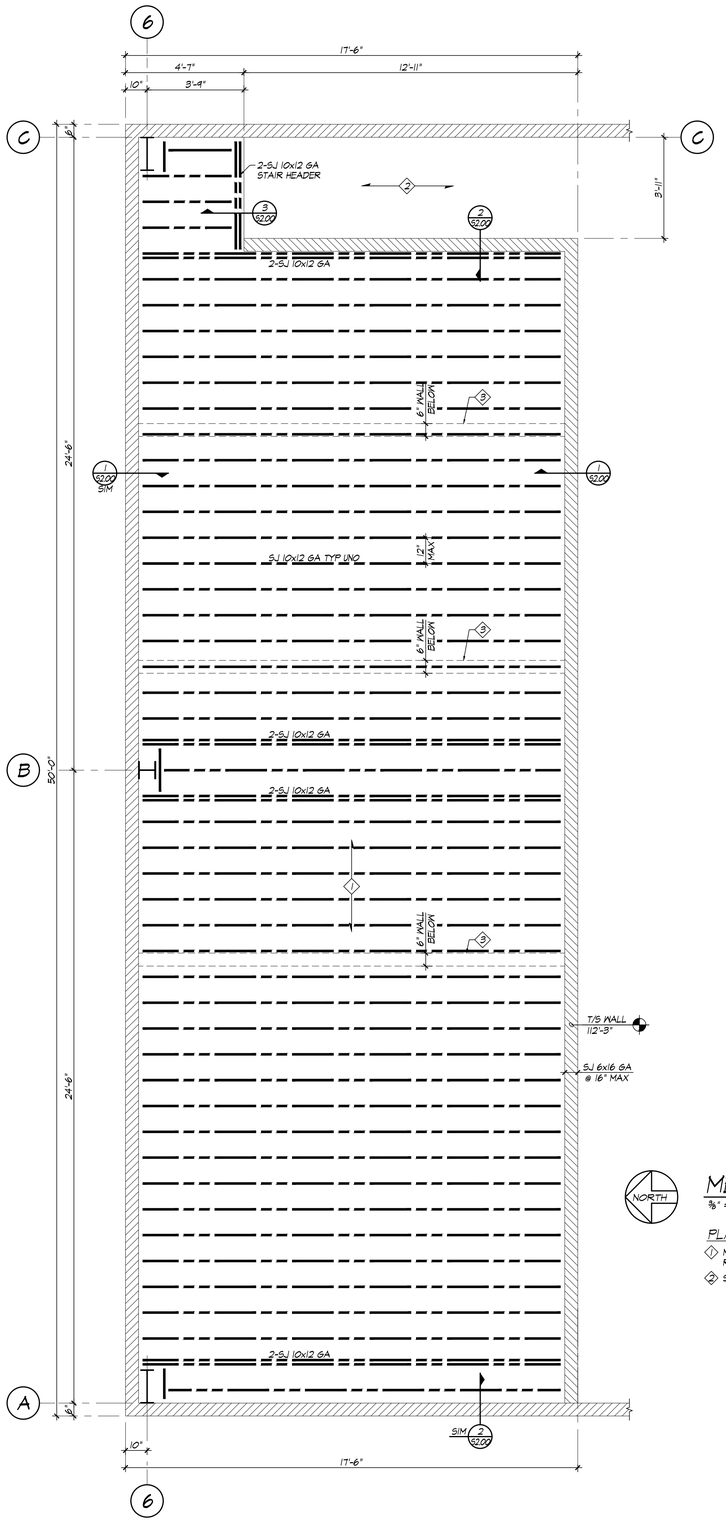
CONSTRUCTION SET

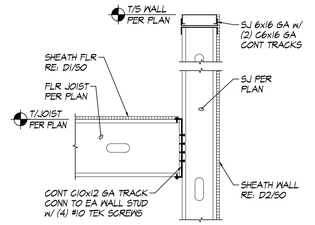
#	Description	Date

Date	11/7/22
Drawn by	MJR
Checked by	AMP

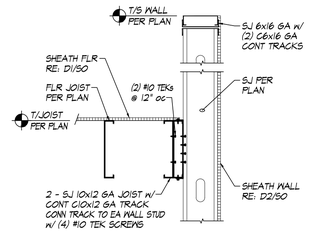
FOUNDATION PLAN & DETAILS
S1.00

Scale: As indicated

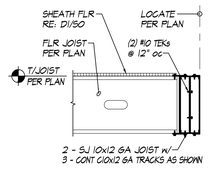




MEZZ FLR TO WALL CONN
SECTION 1 / S2.00
1" = 1'-0"



MEZZ FLR TO WALL CONN
SECTION 2 / S2.00
1" = 1'-0"



MEZZ FLR @ STAIR
SECTION 3 / S2.00
1" = 1'-0"

NORTH

MEZZ FRAMING PLAN — A / S2.00

3/8" = 1'-0" T/JOIST 108'-8½"

PLAN NOTES:

1. MIN 15/32" THICK SHEATHING, RE GEN NOTES ATTACH RE: D1/S0
2. STAIRS PER ARCH
3. PROVIDE BLOCKING AS REQ'D TO SCREW WALL TOP TRACK TO W/ (2) #10 TEK SCREWS @ 16" OC

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#	Description	Date

STATE OF MISSOURI
ALISON M PARKER
NUMBER PE-2010013607
PROFESSIONAL ENGINEER
11/7/22

Date	11/7/22
Drawn by	MJR
Checked by	AMP

MEZZANINE PLAN & DETAILS
S2.00

Scale As indicated

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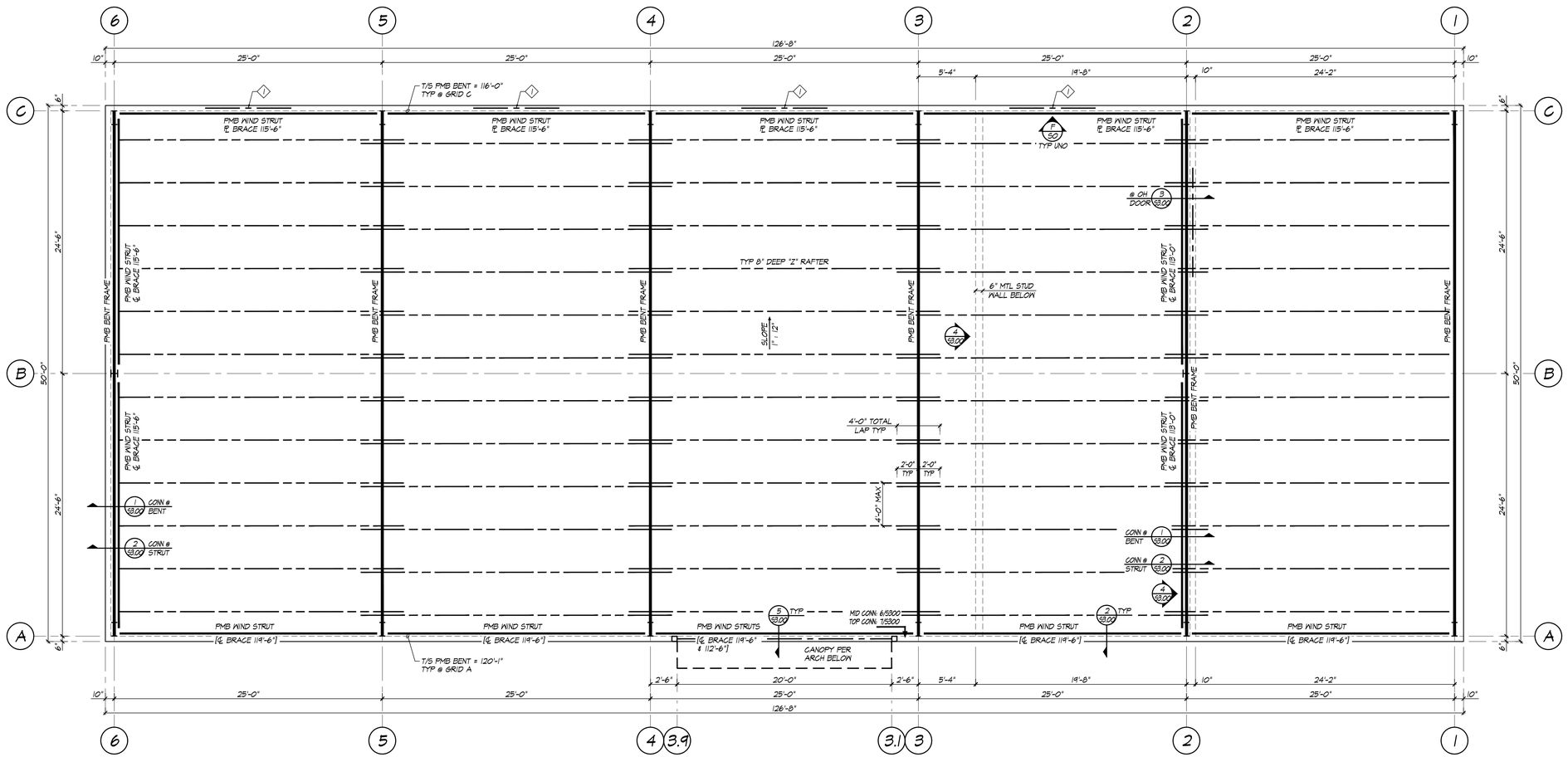


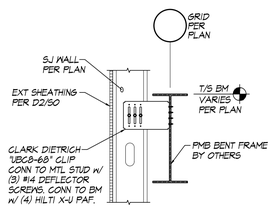
NORTH

FOUNDATION PLAN — A S3.00

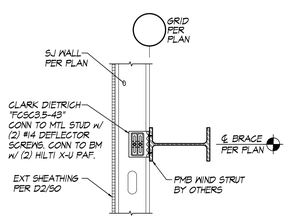
3/16" = 1'-0"

PLAN NOTES:

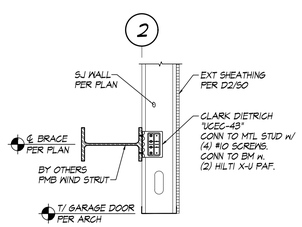
1. T/ORNG 115'-0" [VERIFY W/ ARCH]



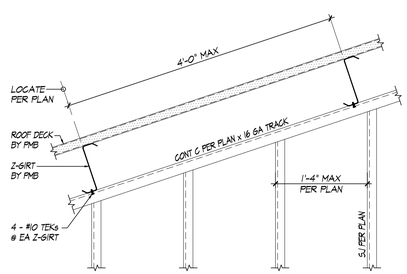
EXTERIOR WALL TO PMB BENT CONNECTION
SECTION 1 — S3.00
1" = 1'-0"



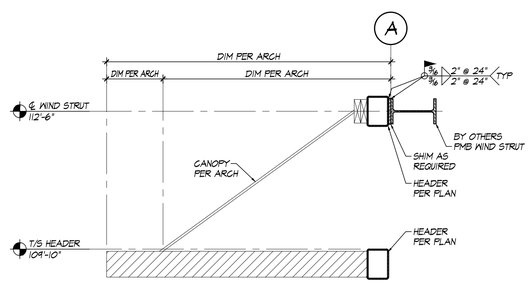
EXTERNAL WALL TO PMB WIND STRUT CONN.
SECTION 2 — S3.00
1" = 1'-0"



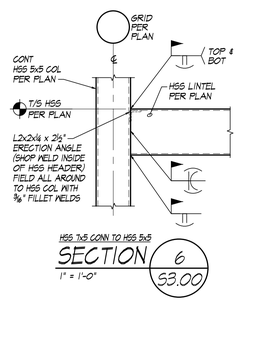
EXTERNAL WALL OVER GARAGE TO PMB WIND STRUT CONN.
SECTION 3 — S3.00
1" = 1'-0"



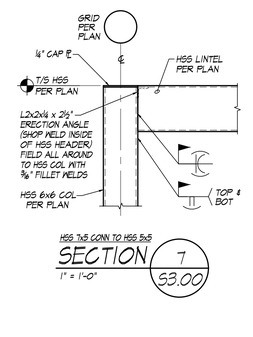
WALL TO PMB GIRTS
SECTION 4 — S3.00
1" = 1'-0"



MAIN ENTRANCE FRAMING
SECTION 5 — S3.00
3/4" = 1'-0"



HSS 7x5 CONN TO HSS 5x5
SECTION 6 — S3.00
1" = 1'-0"



HSS 7x5 CONN TO HSS 5x5
SECTION 7 — S3.00
1" = 1'-0"

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CONSTRUCTION SET

#	Description	Date

STATE OF MISSOURI
ALISON M PARKER
NUMBER PE-2010013047
11/7/22
PROFESSIONAL ENGINEER

Date	11/7/22
Drawn by	MJR
Checked by	AMP

ROOF FRAMING PLAN & DETAILS

S3.00

Scale: As indicated

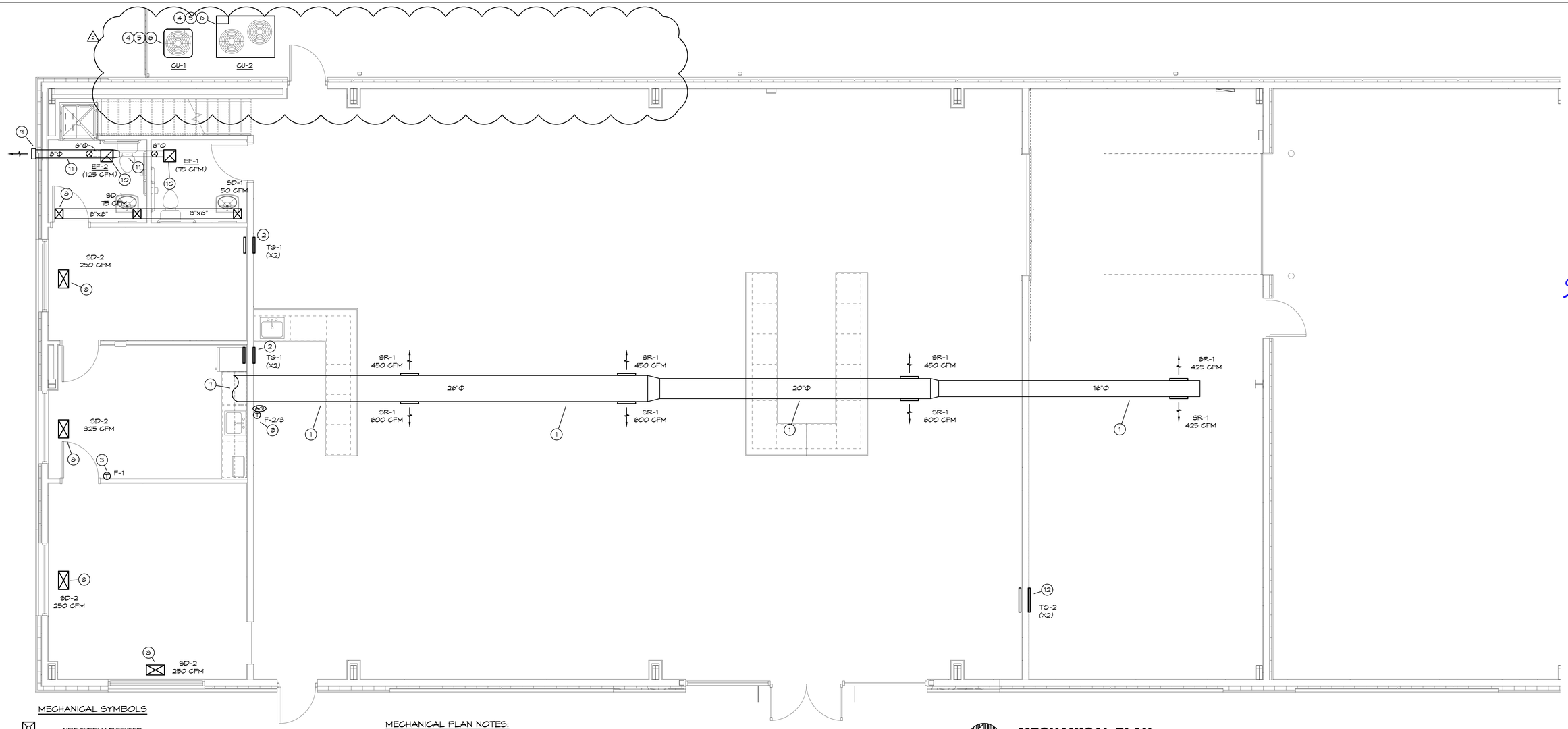
MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE PLUMBING AND MECHANICAL SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, PIPE, DUCT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE BOUND IN A 3-RING BINDER AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC.
3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. MOTORS:
   A. PROVIDE THERMAL OVERLOAD PROTECTION FOR EACH MOTOR PROVIDED BY THIS WORK.
5. TESTING, BALANCING, AND CLEANING:
   A. ALL PIPING SHALL BE TESTED FOR LEAKS BEFORE BEING CONCEALED IN WALL CONSTRUCTION OR COVERED WITH INSULATION.
   B. SEWER AND VENT PIPING SHALL BE HYDROSTATICALLY TESTED WITH NO LESS THAN 10 FEET OF HEAD FOR A PERIOD OF NOT LESS THAN 15 MINUTES, PER THE LOCAL PLUMBING CODE, WITH NO LEAKS.
   C. DOMESTIC WATER PIPING SHALL BE HYDROSTATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 60 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
   D. NATURAL GAS PIPING SHALL BE PNEUMATICALLY TESTED AT A PRESSURE OF NOT LESS THAN 1-1/2 TIMES THE OPERATING PRESSURE, BUT NOT LESS THAN 50 PSI, FOR A PERIOD OF NOT LESS THAN 2 HOURS, WITH NO LEAKS.
   E. DUCTWORK AND PIPING SHALL BE BALANCED BY QUALIFIED INDEPENDENT BALANCING PERSONNEL WHO HAVE PREVIOUS EXPERIENCE WITH BALANCING PROCEDURES AND ARE CERTIFIED BY THE ASSOCIATED AIR BALANCE COUNCIL, (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB).
      1) BALANCING SHALL INCLUDE THE BALANCING OF THE EQUIPMENT AND AIR DISTRIBUTION SYSTEMS TO PROVIDE DESIGN QUANTITIES INDICATED AND VERIFICATION OF PERFORMANCE OF ALL EQUIPMENT AND AUTOMATIC CONTROLS.
      2) WITH IN 30 DAYS OF THE COMPLETION OF THE TESTING AND BALANCING WORK, SUBMIT THE TEST AND BALANCING REPORT BEARING THE SIGNATURE OF THE TEST AND BALANCE ENGINEER. THE REPORTS SHALL BE CERTIFIED PROOF THAT THE SYSTEMS HAVE BEEN TESTED, ADJUSTED, AND BALANCED IN ACCORDANCE WITH THE REFERENCED STANDARDS; ARE AN ACCURATE REPRESENTATION OF HOW THE SYSTEMS HAVE BEEN INSTALLED AND ARE OPERATING. REPORTS SHALL BE BOUND IN A VINYL BINDER AND THE BINDER LABELED OR MAY BE AN ELECTRONIC PDF SUBMITTAL.
   F. BEFORE DOMESTIC WATER PIPING IS PLACED IN SERVICE, ALL DOMESTIC WATER DISTRIBUTION SYSTEMS, INCLUDING THOSE FOR GOLD WATER AND HOT WATER SYSTEMS, SHALL BE FLUSHED, STERILIZED AND CHLORINATED IN ACCORDANCE WITH HEALTH DEPARTMENT REGULATIONS. THE SYSTEMS SHALL BE THOROUGHLY FLUSHED OF ALL DIRT AND FOREIGN MATTER, THEN FILLED WITH WATER TREATED WITH 50 PPM OF CHLORINE. DURING THE FILLING PROCESS, VALVES AND FAUCETS SHALL BE OPENED SEVERAL TIMES TO ASSURE TREATMENT OF THE ENTIRE SYSTEM. THE TREATED WATER SHALL BE LEFT IN THE SYSTEM FOR 24 HOURS AFTER WHICH TIME THE SYSTEM SHALL BE FLUSHED. IF THE RESIDUAL CHLORINE IS NOT LESS THAN 10 PPM, THE FLUSHING SHALL BE REPEATED. AFTER STERILIZATION, SAMPLES OF WATER IN THE SYSTEM SHALL BE APPROVED BY THE BOARD OF HEALTH.
6. PLUMBING:
   A. PROVIDE AN APPROVED WATER HAMMER ARRESTOR FOR EACH PLUMBING FIXTURE SUPPLY AS REQUIRED BY FIXTURE MANUFACTURER.
   B. ALL EXPOSED WASTE PIPE SHALL BE CHROME PLATED BRASS PIPE, NO FERROUS PIPE.
   C. PROVIDE CLEANOUTS AT EACH CHANGE OF DIRECTION AND AT 100 FOOT INTERVALS IN STRAIGHT RUNS.
   D. PROVIDE ACCESS PANELS FOR ALL CONCEALED VALVES AND TRAPS.
   E. CLEANOUTS:
      1) VINYL TILE FLOOR: JR SMITH #4140, OR EQUAL.
      2) QUARRY TILE FLOOR: JR SMITH #4200, OR EQUAL.
      3) CARPETED FLOOR: JR SMITH #4020-Y, OR EQUAL.
      4) UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL.
      5) WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.
      6) GRADE: JR SMITH #4258, OR EQUAL, WITH HEAVY DUTY CAST IRON BODY AND COVER.
   F. PROVIDE DIELECTRIC UNIONS WITH APPROPRIATE END CONNECTIONS TO MATCH THE PIPE SYSTEM IN WHICH INSTALLED (SCREWED, SOLDERED, OR FLANGED). PROVIDE DIELECTRIC UNIONS ON ALL PIPING CONNECTIONS TO HOT WATER HEATERS AND EXPANSION TANKS.
   G. WATER HEATERS:
      1) EVERY WATER HEATER SHALL HAVE AN APPROVED MEANS INSTALLED ON THE COLD WATER SUPPLY LINE ABOVE THE EQUIPMENT TO PREVENT SIPHONING OF A STORAGE HEATER HEATER OR TANK.
      2) BOTTOM FED WATER HEATERS AND TANKS CONNECT TO WATER HEATERS SHALL HAVE A VACUUM RELIEF VALVE INSTALLED. ANSI Z21.22
      3) STORAGE HEATERS OPERATING ABOVE ATMOSPHERIC PRESSURE SHALL HAVE AN APPROVED PRESSURE RELIEF VALVE AND/OR TEMPERATURE RELIEF VALVE.
   H. ALL SEWER PIPING LOCATED INSIDE THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1) INSTALL 2-1/2" AND SMALLER PIPE AT 1/4" PER FOOT FALL.
      2) INSTALL 3" AND LARGER PIPE AT 1/8" PER FOOT FALL.
   I. ALL SEWER PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE INSTALLED WITH THE FOLLOWING SLOPES.
      1) INSTALL 4" AND SMALLER PIPE AT A MINIMUM OF 2% SLOPE.
7. PIPING:
   A. DOMESTIC GOLD, HOT, AND HOT WATER RECIRCULATING (ABOVEGROUND).
      1) TYPE L HARD DRAWN COPPER TUBING, ASTM B-88.
         a) WROUGHT COPPER SOLDERED FITTINGS, ASTM B75 ALLOY C12200, ANSI B16.22, MSS SP-104.
         b) MECHANICAL PRESS COPPER FITTINGS FOR USE IN PLUMBING OR MECHANICAL APPLICATIONS, ASME B16.22, ASME B16.51, or ASME B16.18. MECHANICAL PRESS COPPER FITTINGS SHALL CONFORM TO IAPMO PS-117 OR ASME B16.51.
      2) PEX, HIGH-DENSITY CROSS-LINKED POLYETHYLENE TUBING SHALL BE MANUFACTURED TO THE REQUIREMENTS OF ASTM F876 AND MEET THE STANDARD GRADE HYDROSTATIC PRESSURE RATING FROM PLASTIC PIPE INSTITUTE IN ACCORDANCE WITH TR-4/03. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
         a) PEX-A AND PEX-B MEETING ANSI/NSF61 AND ANSI/NSF372 STANDARDS FOR POTABLE WATER SAFETY AND LEAD-FREE STANDARDS AND MUST BE MARKED WITH "PW-B", "NSF-61-B" OR OTHER NSF-APPROVED MARKING. ASTM F2023 FOR USE WITH CHLORINATED WATER. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
         b) PEX MECHANICAL, CRIMP/INSERT OR EXPANSION FITTINGS INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PIPE SIZES GIVEN ON THE DRAWINGS ARE NOMINAL COPPER PIPE SIZE. INCREASE PEX PIPING SIZE TO EQUAL OR EXCEED COPPER PIPE INSIDE DIAMETER FOR SUPPLY MAINS. (MUST BE INSTALLED PER THE MANUFACTURERS REQUIREMENTS FOR PLENUM USE)
      3) VALVES
         a) TO BE INSTALLED ON THE FIXTURE SUPPLY TO EACH PLUMBING FIXTURE
         b) TO BE INSTALLED ON THE WATER SUPPLY SIDE TO EACH APPLIANCE OR MECHANICAL EQUIPMENT.
         c) TYPES:
            1. GATE VALVE: JOMAR T/S-3016 OR EQUAL. LEAD-FREE NSF 61, ANSI B1.20.1.
            2. GLOBE VALVE: JOMAR T66 OR EQUAL.
            3. BALL VALVE: JOMAR JP100PWP OR EQUAL COMPACT LEAD FREE BRASS BALL VALVE. UL842, CSA 3371-12 & 3371-92, FM, CALIFORNIA CODE AB1953, NSF61 ANNEX G APPROVED.
            4. BALL VALVE: JOMAR T-100NE OR EQUAL. UL842, FM, CSA, NSF 61-8, MSS SP-110

   B. DOMESTIC WATER SERVICE, 1"-3"
      1) TYPE K SOFT DRAWN COPPER TUBING, ASTM B-88.
         a) Cast Copper Alloy Fittings for Flared Copper Tube, ASME/ANSI B16.26:
      2) HDPE, PIGMENTED BLUE THROUGHOUT, CTS SIZES 1"-2" AWWA C901 4710 DR9 PC250
         IPS SIZES 2"-3", AWWA C901 4710 DR11 PC200
         MATERIAL AND INSTALLATION MUST CONFORM TO WATER DEPARTMENT REQUIREMENTS.
   C. LEAD CONTENT OF WATER SUPPLY PIPE AND FITTINGS:
      1) PIPE AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, UTILIZED IN THE WATER SUPPLY SYSTEM SHALL NOT HAVE MORE THAN 8% LEAD CONTENT.
      2) PIPE, PIPE FITTINGS, JOINTS, VALVES, FAUCETS, AND FIXTURE FITTINGS UTILIZED TO SUPPLY WATER FOR DRINKING OR COOKING PURPOSES SHALL COMPLY WITH NSF 372 AND SHALL HAVE A WEIGHTED AVERAGE LEAD CONTENT OF 0.25% OR LESS.
   D. SANITARY SEWER, AND VENTS.
      (UNDERGROUND, INTERIOR TO THE BUILDING).
      1) ABS PIPE AND FITTINGS: ABS PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS." FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL ABS PIPE: ASTM D 2661, SCHEDULE 40. ABS SOCKET FITTINGS: ASTM D 2661, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS. SOLVENT CEMENT: ASTM D 2235.
      2) PVC PIPE AND FITTINGS: PVC PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS." FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2665, DRAIN, WASTE, AND VENT. PVC SOCKET FITTINGS: ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE. ADHESIVE PRIMER: ASTM F 656. SOLVENT CEMENT: ASTM D 2564. (NOT FOR USE IN A RETURN AIR PLENUM)
      3) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF® INTERNATIONAL.
      4) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
   E. SANITARY SEWER, AND VENTS.
      (ABOVE GROUND, INTERIOR TO THE BUILDING).
      1) ABS PIPE AND FITTINGS: ABS PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS." FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL ABS PIPE: ASTM D 2661, SCHEDULE 40. ABS SOCKET FITTINGS: ASTM D 2661, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS. SOLVENT CEMENT: ASTM D 2235.
      2) PVC PIPE AND FITTINGS: PVC PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS." FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2665, DRAIN, WASTE, AND VENT. PVC SOCKET FITTINGS: ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE. ADHESIVE PRIMER: ASTM F 656. SOLVENT CEMENT: ASTM D 2564.
      3) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF® INTERNATIONAL.
      4) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
   F. SANITARY SEWER,
      (UNDERGROUND, EXTERIOR TO THE BUILDING).
      1) ABS PIPE AND FITTINGS: ABS PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS." FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL ABS PIPE: ASTM D 2661, SCHEDULE 40. ABS SOCKET FITTINGS: ASTM D 2661, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS. SOLVENT CEMENT: ASTM D 2235.
      2) PVC PIPE AND FITTINGS: PVC PIPE AND FITTINGS SHALL COMPLY WITH NSF 14, "PLASTICS PIPING SYSTEMS COMPONENTS AND RELATED MATERIALS." FOR PLASTIC PIPING COMPONENTS. INCLUDE MARKING WITH "NSF-DWV" FOR PLASTIC DRAIN, WASTE, AND VENT PIPING AND "NSF-SEWER" FOR PLASTIC SEWER PIPING. SOLID-WALL PVC PIPE: ASTM D 2665, DRAIN, WASTE, AND VENT. PVC SOCKET FITTINGS: ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE. ADHESIVE PRIMER: ASTM F 656. SOLVENT CEMENT: ASTM D 2564.
      3) HUBLESS CAST IRON SOIL PIPE AND FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 888 AND CISPI STANDARD 301. HUBLESS COUPLINGS SHALL CONFORM TO CISPI STANDARD 310 AND BE CERTIFIED BY NSF® INTERNATIONAL.
      4) HUB AND SPIGOT CAST IRON SOIL PIPE AND FITTINGS: HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A 74.
   G. CONDENSATE DRAINS & INDIRECT WASTE (ABOVEGROUND).
      1) DWV, WROUGHT COPPER, ANSI B-16.24 (CONDENSATE INSIDE BUILDING.)
      2) POLYVINYLCHLORIDE (PVC) DWV PIPE, SCHEDULE 40, SOLVENT JOINT (INDIRECT WASTE).
      3) DWV, WROUGHT COPPER, ANSI B-16.24 (WATER HEATER TAP, INDIRECT WASTE FROM DISHWASHER/SINKS).
   H. REFRIGERANT.
      1) ASTM B 280, TYPE ACR, HARD-DRAWN STRAIGHT LENGTHS, AND SOFT-ANNEALED COILS, SEAMLESS COPPER TUBING.
      2) WROUGHT COPPER, ANSI B16.22, STREAMLINED PATTERN, FITTINGS. BRAZED JOINTS, AWS A 5.8, CLASSIFICATION BAG-1 (SILVER).
      3) TUBING SHALL BE FACTORY CLEANED, READY FOR INSTALLATION, AND HAVE ENDS CAPPED TO PROTECT CLEANLINESS OF THE INTERIORS PRIOR TO SHIPPING.
      4) SIZE AND INSTALLATION OF PIPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
   I. NATURAL GAS.
      1) BLACK STEEL PIPE, SCHEDULE 40, ASTM A53.
         a) PIPE 3" AND SMALLER, 150 LB. MALLEABLE IRON, THREADED FITTINGS.
         b) PIPE 4" AND LARGER, WELDED. MEGAFLEX 5 FOR SIZES AND GAS. CSA LC4, T95A/ASME B31 FOR USE WITH ASTM A53 SCHEDULE 40 BLACK IRON PIPE.
         c) PIPE 2-1/2" AND LARGER, WELDED.
         d) PLUG VALVE: ROCKWELL/NORDSTROM FIGURE NO. 142 OR 143.
         e) BALL VALVE: JOMAR T-100NE. APPROVALS- UL842, FM, CSA, NSF 61-8, MSS SP-110
      2) GAS PIPING PAINTING:
         a) ALL BLACK STEEL GAS PIPING LOCATED EXTERIOR TO THE BUILDING SHALL BE PRIMED AND PAINTED TO EITHER MATCH ADJACENT EXTERIOR WHERE LOCATED ON OR NEAR EXTERIOR WALL AND PAINTED SAFETY YELLOW WHERE LOCATED ON THE ROOF.
   J. ALL PIPE HANGERS AND SUPPORTS SHALL BE STANDARD PRODUCTS OF GRINNELL, FEE AND MASON, OR ELGEN. HANGER SPACING SHALL BE IN ACCORDANCE WITH MSS-SP-69.
   K. SLEEVES
      1) PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK. ALL SLEEVES SHALL BE OF SUFFICIENT SIZE TO PERMIT PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION AND TO ACCOMMODATE PIPE INSULATION.
      2) INTERIOR PARTITIONS: 16 GAGE GALVANIZED STEEL, PACK BETWEEN PIPE AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
      3) ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WATERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
      4) PROTECTION AGAINST CONTACT: METALLIC PIPING, EXCEPT FOR CAST IRON, DUCTILE IRON AND GALVANIZED STEEL SHALL NOT BE PLACED IN DIRECT CONTACT WITH STEEL FRAMING MEMBERS, CONCRETE, OR CINDER WALLS AND FLOORS OR OTHER MASONRY. METALLIC PIPING SHALL NOT BE PLACED IN DIRECT CONTACT WITH CORROSIVE SOIL. SHEATHING USED TO PREVENT DIRECT CONTACT SHALL HAVE A THICKNESS OF GREATER THAN .003; AND THE SHEATHING SHALL BE MADE OF PLASTIC. ANY PIPING THAT PASSES THROUGH A FOUNDATION WALL OR FOOTING SHALL BE PROVIDED WITH A RELIEVING ARCH, OR A PIPE SLEEVE SHALL BE BUILT INTO THE FOUNDATION WALL. THE SLEEVE SHALL BE TWO SIZES GREATER THAN THE PIPE PASSING THOUGH THE WALL OR FOOTING.
      5) PLUMBING VENTS: FLASH ROOF VENT INTO ROOFING SYSTEM AS REQUIRED BY THE ROOFING CONTRACTOR TO MAINTAIN EXISTING ROOF WARRANTY. ALL PLUMBING VENT TERMINALS SHALL TERMINATE A MINIMUM OF 12" ABOVE ROOF OR EQUAL TO HEIGHT OF PARAPET, WHICHEVER IS GREATER.
   L. PROVIDE CHROME PLATED ESCUTCHEONS ON ALL PIPE ENTERING FINISHED AREAS.
8. WATER HEATERS
   A. RESIDENTIAL, ELECTRIC, STORAGE, DOMESTIC-WATER HEATERS:
      1. STANDARD: UL 174
      2. STORAGE-TANK CONSTRUCTION: STEEL.
         a. PRESSURE RATING: 150 PSIG.
         b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING LINING MATERIAL INTO TAPPINGS.
      3. FACTORY-INSTALLED, STORAGE-TANK APPURTENANCES:
         a. ANODE ROD: REPLACEABLE MAGNESIUM.
         b. DIP TUBE: REQUIRED UNLESS COLD-WATER INLET IS NEAR BOTTOM OF TANK.
         c. DRAIN VALVE: CORROSION-RESISTANT METAL WITH HOSE-END CONNECTION.
         d. INSULATION: COMPLY WITH ASHRAE/IES 90.1
         e. JACKET: STEEL, CYLINDRICAL, WITH ENAMELED FINISH OR HIGH-IMPACT COMPOSITE MATERIAL.
         f. HEAT-TRAP FITTINGS: INLET TYPE IN COLD-WATER INLET AND OUTLET TYPE IN HOT-WATER OUTLET.
         g. HEATING ELEMENTS: ELECTRIC, SCREW-IN IMMERSION TYPE.
         h. TEMPERATURE CONTROL: ADJUSTABLE THERMOSTAT.
         i. SAFETY CONTROL: HIGH-TEMPERATURE-LIMIT CUTOFF DEVICE OR SYSTEM.
         j. RELIEF VALVE: ASME RATED AND STAMPED FOR COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVES. INCLUDE RELIEVING CAPACITY AT LEAST AS GREAT AS HEAT INPUT, AND INCLUDE PRESSURE SETTING LESS THAN WORKING-PRESSURE RATING OF DOMESTIC-WATER HEATER. SELECT RELIEF VALVE WITH SENSING ELEMENT THAT EXTENDS INTO STORAGE TANK.
   B. DOMESTIC-WATER EXPANSION TANKS:
      1. DESCRIPTION: STEEL, PRESSURE-RATED TANK CONSTRUCTED WITH WELDED JOINTS AND FACTORY-INSTALLED, BUTYL-RUBBER DIAPHRAGM. INCLUDE AIR PRECHARGE TO MINIMUM SYSTEM-OPERATING PRESSURE AT TANK.
      2. CONSTRUCTION:
         a. TAPPINGS: FACTORY-FABRICATED STEEL, WELDED TO TANK BEFORE TESTING AND LABELING. INCLUDE ASME B1.20.1 PIPE THREAD.
         b. INTERIOR FINISH: COMPLY WITH NSF 61 AND NSF 372 BARRIER MATERIALS FOR POTABLE-WATER TANK LININGS, INCLUDING EXTENDING FINISH INTO AND THROUGH TANK FITTINGS AND OUTLETS.
         c. AIR-CHARGING VALVE: FACTORY INSTALLED.
      3. CAPACITY AND CHARACTERISTICS:
         a. WORKING-PRESSURE RATING: 150 PSIG .
9. INSULATION AND DUCT LINING:
   A. INSULATION AND ACCESSORIES SHALL HAVE A FIRE HAZARD CLASSIFICATION WITH A FLAME SPREAD RATING OF NOT OVER 25, A FUEL CONTRIBUTION RATING OF NOT OVER 50, AND A SMOKE DEVELOPED RATING OF NOT OVER 50, IN ACCORDANCE WITH NFPA.
   B. PIPE INSULATION - ABOVE GRADE:
      1) THE PIPING INSULATION USED SHALL HAVE A THERMAL CONDUCTIVITY OF 0.21 Btu PER in/hr*sqFt*F° OR LESS.
      2) FIBERGLASS INSULATION WITH FACTORY APPLIED VAPOR BARRIER, ASJ JACKET, FACTORY APPLIED PRESSURE SEALING LONGITUDE LAP JOINT, NO STAPLES, ZESTON PREMOLDED PVC FITTING COVERS. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
      3) FLEXIBLE CLOSED CELL ELASTOMERIC THERMAL INSULATION. INSULT OR PRESS-IT WITH PRESSURE SENSITIVE ADHESIVE SYSTEM FOR CLOSURE AND VAPOR SEALING, EQUAL TO ARMSTRONG AP ARMAFLEX OR ARMAFLEX 2000.
      4) FOR NON CIRCULATING SYSTEMS, THE FIRST 5 FEET OF INLET AND OUTLET PIPING BETWEEN THE TANK AND THE HEAT TRAP (INCLUDING THE HEAT TRAP) MUST BE INSULATED.
      5) FOR CIRCULATING SYSTEMS, ALL HOT WATER PIPING IN THE CIRCULATION LOOP MUST BE INSULATED AS SPECIFIED BELOW.
      6) INSULATION SCHEDULE:
         a) DOMESTIC COLD WATER 1/2"
         b) DOMESTIC HOT WATER 1"
         d) CONDENSATE DRAINS INSIDE BUILDING 1/2"
         e) REFRIGERANT SUCTION 3/4" FOR PIPING UP TO 1-1/4"Ø, & 1" FOR PIPING 1-1/2"Ø AND LARGER
   C. EQUIPMENT INSULATION:
      1) FLEXIBLE FIBERGLASS: GLASS FIBER INSULATION, ASTM C 553, TYPE 1, CLASS B-4, SEMI-RIGID BOARD, WITH FACTORY LAMINATED KRAFT ALUMINUM FOIL (ALL SERVICE JACKET); VAPOR BARRIER, OWENS/CORNING FIPE AND TANK INSULATION.
   D. DUCTWORK: ACOUSTICAL INSULATION.
      1) DUCT LINING: 2 LB/CF, THICKNESS AS SCHEDULED, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.
         a) DUCT LINING SCHEDULE:
            (1) RECTANGULAR SUPPLY DUCT 1/2" , THROUGHOUT THE FIRST 10 FEET OF DUCT.
            (2) RETURN AIR DUCT 1/2" - THROUGHOUT THE FIRST 10 FEET OF DUCT.

MECHANICAL SPECIFICATIONS (CONTINUED)

   E. DUCTWORK: THERMAL INSULATION.
      1) DUCT COVERING: 3/4 LB/CF, FIBERGLASS BLANKET WITH FACTORY APPLIED VAPOR BARRIER AND FACING, THICKNESS AS SCHEDULED, INSTALLATION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
         a) DUCT COVERING SCHEDULE: MINIMUM R-6
            (1) ROUND SUPPLY DUCT 2"
            (2) RECTANGULAR SUPPLY DUCT 2"
            (4) OUTDOOR AIR 2"
      2) EXPOSED SPIRAL DUCT.
         a) DOUBLE WALL SPIRAL - DOUBLE WALL INSULATED SPIRAL DUCT AND FITTNGS WITH PERFORATED 'LINER WITH A K VALUE OF 0.27.
         b) SPIRAL DUCT LINING: JOHNS MANVILLE SPIRAGUOTIC PLUS ROUND DUCT LINER SYSTEM, VSD, SD, AND LD SIZES, 0'Ø AND UP. MEETS ASTM E 84 25/50 FLAME AND SMOKE, ASHRAE 62, MEA#237-86-M, SMACNA APPLICATION STANDARDS FOR DUCT LINERS, NAIMA FIBERGLASS DUCT LINER STANDARD. 1" THICKNESS, AIR STREAM SIDE COATED, INSTALL PER SMACNA STANDARDS.
   10. DUCTWORK:
      A. ALL DUCTWORK, UNLESS OTHERWISE INDICATED, SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A 527, LOCKFORMING QUALITY, WITH G 90 ZINC COATING IN ACCORDANCE WITH ASTM A 525, AND MILL PHOSPHATIZED FOR EXPOSED LOCATIONS.
      B. WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL IMPERFECTIONS INCLUDING PITTING, SEAM MARKS, ROLLER MARKS, STAINS AND DISCOLORATIONS, AND OTHER IMPERFECTIONS, INCLUDING THOSE WHICH WOULD IMPAIR PAINTING.
      C. DUCTWORK, METAL GAUGES, REINFORCING, ETC. SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS," LATEST EDITION FOR A 2 INCH WATER GAUGE STATIC PRESSURE.
         1) RECTANGULAR DUCT:
            a) ELBOWS, UNLESS INDICATED OTHERWISE SHALL BE CONSTRUCTED WITH CENTERLINE RADIUS OF NOT LESS THAN 1.5 DUCT WIDTH OR SQUARE ELBOW WITH DOUBLE WALL STREAMLINE VANES.
            b) RETURN AIR ACOUSTICAL ELBOWS AND SOUND BOOTS SHALL BE A SQUARE ELBOW WITH NO TURNING VANES.
            c) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
         2) ROUND AND OVAL SPIRAL SEAM DUCT:
            a) PROVIDE RADIUS TYPE FITTINGS FABRICATED OF MULTIPLE SECTIONS WITH MAXIMUM 15 DEGREE DIVERGENCE OF DIRECTION PER SECTION. UNLESS SPECIFICALLY DETAILED OTHERWISE, USE 45 DEGREE LATERALS FOR BRANCH TAKEOFF CONNECTIONS. WHERE 90 DEGREE BRANCHES ARE INDICATED PROVIDE CONICAL TYPE TEES.
            b) SLOPES FOR TRANSITIONS OR OTHER CHANGES IN DIMENSIONS SHALL BE MINIMUM 1 TO 3.
            c) AS AN OPTION, PROVIDE FACTORY-FABRICATED DUCT AND FITTINGS, IN LIEU OF SHOP-FABRICATED DUCT AND FITTINGS.
               (1) ELBOWS: ONE PIECE CONSTRUCTION FOR 90 DEGREES AND 45 DEGREE ELBOW 14" AND SMALLER. PROVIDE MULTIPLE GORE CONSTRUCTION FOR LARGER DIAMETERS WITH STANDING SEAM CIRCUMFERENTIAL JOINT.
               (2) DIVIDED FLOW FITTINGS: 90 DEGREE TEES, CONSTRUCTED WITH SADDLE TAP SPOT WELDED AND BONDED TO D



MECHANICAL SYMBOLS

- NEW SUPPLY DIFFUSER
- NEW RETURN AIR GRILLE
- EXHAUST GRILLE/FAN
- (T) THERMOSTAT, MOUNTED AT 48" AFF
- (SD) DUCT-MOUNTED SMOKE DETECTOR
- NEW DUCTWORK
- 32"X14" SIZE OF RECTANGULAR DUCT
- 6"Φ SIZE OF ROUND DUCT
- FLEXIBLE DUCTWORK
- FLEXIBLE CONNECTION TO FAN
- (3) FLOOR PLAN NOTE DESIGNATION
- S.A. SUPPLY AIR
- R.A. RETURN AIR
- EXH. EXHAUST AIR
- TRANSITION IN DUCT SIZE
- ELBOW WITH TURNING VANES
- MANUAL VOLUME DAMPER
- MANUAL VOLUME DAMPER
- SUPPLY AIR DUCT UP/DOWN
- RETURN AIR DUCT UP/DOWN
- EXHAUST AIR DUCT UP/DOWN
- UP CHANGE IN ELEVATION UP (UP) DOWN (DN) IN DIRECTION OF FLOW
- RTU-1 SCHEDULED MECHANICAL EQUIPMENT
- (AQ) AIR QUALITY SENSOR - CO2

MECHANICAL PLAN NOTES:

1. ROUTE DUCTWORK AS HIGH AS POSSIBLE, COORDINATE LOCATION WITH LIGHT PRIOR TO INSTALLATION.
2. HIGH/LOW RETURN AIR GRILLES - OFFICE SIDE GRILLE LOCATED AT 12" AFF. CENTRAL AREA SIDE LOCATED AT 8' AFF. TG-1, SEE DIFFUSER SCHEDULE.
3. PROVIDE 7-DAY PROGRAMMABLE AUTO/HEAT/COOL THERMOSTAT AT 48" AFF.
4. REFRIGERANT PIPING THROUGH EXTERIOR WALL AT 18" ABOVE GRADE. SEAL WALL PENETRATION WEATHERTIGHT. ROUTE PIPE UP INSIDE WALL TO AS HIGH AS POSSIBLE AND ROUTE TO UNITS.
5. CONNECT REFRIGERANT PIPING TO CONDENSING UNIT & COIL AS REQUIRED BY THE MANUFACTURER. PROVIDE AND INSTALL REFRIGERANT PIPING FOR CONDENSING UNIT AS REQUIRED BY MANUFACTURER.
6. PROVIDE PREFABRICATED PAD FOR CONDENSING UNITS.
7. SEE M2.00 FOR CONTINUATION OF DUCTWORK FROM TWINNED FURNACES ON MEZZANINE.
8. BRANCH DUCT DOWN FROM MEZZANINE FLOOR AND CONNECT TO REGISTER AS REQUIRED.
9. PROVIDE WALL VENT CAP WITH BACKDRAFT DAMPER FOR EXHAUST FAN. SEAL PENETRATIONS WEATHERTIGHT.
10. SUPPORT FAN FROM STRUCTURE AS REQUIRED BY THE MANUFACTURER.
11. ROUTE DUCT UP BETWEEN JOISTS AS REQUIRED.
12. INSTALL BOTTOM OF TRANSFER AIR GRILLES, TG-1, 8'AFF ON BOTH SIDES OF WALL.

NORTH

MECHANICAL PLAN

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

MECHANICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. THIS CONTRACTOR SHALL PERFORM ALL WORK INDICATED AND/OR AS REQUIRED FOR THE PROPER INSTALLATION AND OPERATION OF THE MECHANICAL SYSTEMS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF DIFFUSERS.
4. INSTALL ALL DUCT, PIPE, ETC. AS HIGH AS POSSIBLE.
5. DUCT SIZES SHOWN ARE ACTUAL SHEET METAL SIZES AND INCLUDE AN ALLOWANCE FOR DUCT LINER WHERE APPLICABLE.
6. PROVIDE FLEXIBLE CONNECTION BETWEEN DUCTWORK AND ROOFTOP UNITS, EXHAUST FANS, AND OTHER MOTORIZED EQUIPMENT.
7. NO DUCT SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
8. ALL MECHANICAL SYSTEMS SHALL BE BALANCED BY A CERTIFIED BALANCING CONTRACTOR. REFER TO SPECIFICATIONS FOR DETAILS.

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ARCHITECT

3/21/2023

STATE OF MISSOURI
STEVEN S. POND
NUMBER PE-2004008070
REGISTERED PROFESSIONAL ENGINEER

THE WATER HOLE REBUILD
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date
2	Preconstruction Revisions	3/21/23

Date	11-07-2022
Drawn by	SP/BH
Checked by	EK/DS

MECHANICAL PLAN

M1.00

Scale As indicated

BC PROJECT #: 22360
MISSOURI PE COA #2009003629

BC ENGINEERS INCORPORATED
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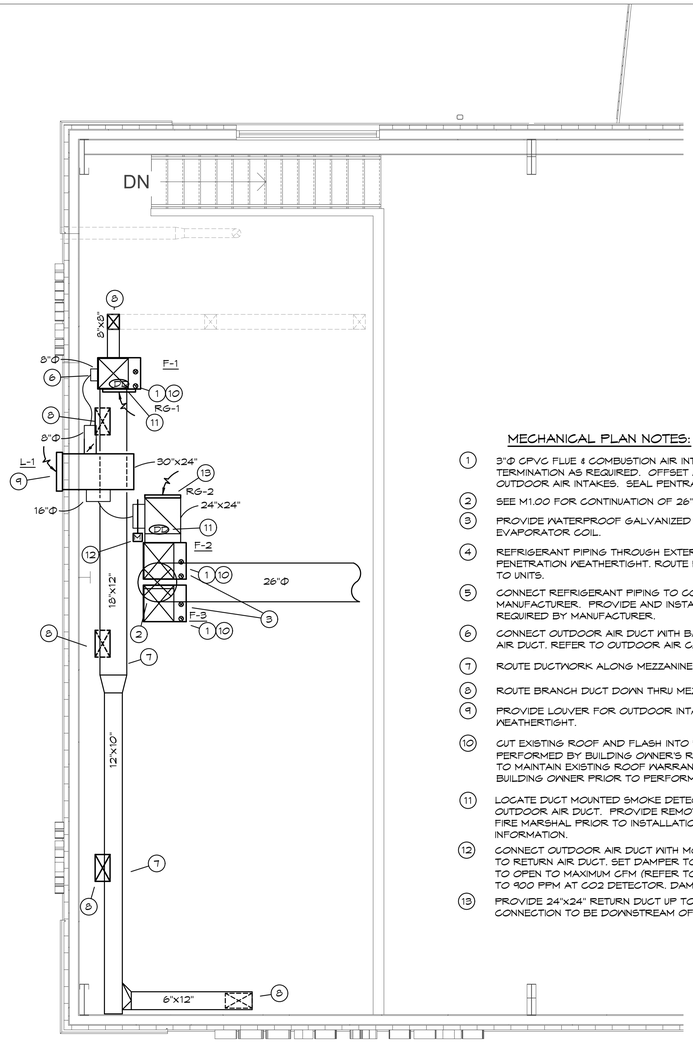


NORTH

MECHANICAL PLAN - MEZZANINE

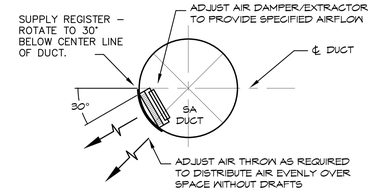
SCALE: 1/4" = 1'-0"

MECHANICAL PLAN NOTES:

1. 3"Ø CPVC FLUE & COMBUSTION AIR INTAKE UP THROUGH ROOF TO MANUFACTURER'S VENT TERMINATION AS REQUIRED. OFFSET AS REQUIRED TO MAINTAIN 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENTRATIONS WEATHER TIGHT.
2. SEE M1.00 FOR CONTINUATION OF 26"Ø DUCT.
3. PROVIDE WATERPROOF GALVANIZED SHEET METAL DRAIN PAN UNDER FURNACE & EVAPORATOR COIL.
4. REFRIGERANT PIPING THROUGH EXTERIOR WALL AT 18" ABOVE GRADE. SEAL WALL PENETRATION WEATHERTIGHT. ROUTE PIPE UP INSIDE WALL TO AS HIGH AS POSSIBLE AND ROUTE TO UNITS.
5. CONNECT REFRIGERANT PIPING TO CONDENSING UNIT & COIL AS REQUIRED BY THE MANUFACTURER. PROVIDE AND INSTALL REFRIGERANT PIPING FOR CONDENSING UNIT AS REQUIRED BY MANUFACTURER.
6. CONNECT OUTDOOR AIR DUCT WITH BALANCING DAMPER AND FLEX CONNECTION TO RETURN AIR DUCT. REFER TO OUTDOOR AIR CALCULATIONS FOR MINIMUM OUTDOOR AIR VOLUME.
7. ROUTE DUCTWORK ALONG MEZZANINE FLOOR.
8. ROUTE BRANCH DUCT DOWN THRU MEZZANINE FLOOR AND CONNECT TO REGISTER AS REQUIRED.
9. PROVIDE LOUVER FOR OUTDOOR INTAKE WITH BIRD SCREEN. SEAL PENETRATIONS WEATHERTIGHT.
10. CUT EXISTING ROOF AND FLASH INTO ROOF AS REQUIRED. ALL ROOFING WORK SHALL BE PERFORMED BY BUILDING OWNER'S ROOFING CONTRACTOR (AT THIS CONTRACTOR'S EXPENSE) TO MAINTAIN EXISTING ROOF WARRANTY. VERIFY APPROVED ROOFING CONTRACTOR WITH BUILDING OWNER PRIOR TO PERFORMING WORK.
11. LOCATE DUCT MOUNTED SMOKE DETECTOR IN RETURN DUCT PRIOR TO CONNECTION TO OUTDOOR AIR DUCT. PROVIDE REMOTE ENUNCIATOR AUDIO/VISUAL. VERIFY LOCATION WITH FIRE MARSHAL PRIOR TO INSTALLATION. REFER TO SPEC SHEET MP0.00 FOR ADDITIONAL INFORMATION.
12. CONNECT OUTDOOR AIR DUCT WITH MOTORIZED MODULATING DAMPER AND FLEX CONNECTION TO RETURN AIR DUCT. SET DAMPER TO MINIMUM POSITION DURING OCCUPIED HOURS. DAMPER TO OPEN TO MAXIMUM CFM (REFER TO SCHEDULE FOR AIRFLOW) WHEN CO2 LEVELS INGREASE TO 900 PPM AT CO2 DETECTOR. DAMPER TO CLOSE DURING UNOCCUPIED HOURS.
15. PROVIDE 24"x24" RETURN DUCT UP TO 6'AFF WITH TOP OF RETURN GRILLE 6'AFF. OUTDOOR AIR CONNECTION TO BE DOWNSTREAM OF DUCT-MOUNTED SMOKE DETECTOR, SEE NOTE #11.

DIFFUSER SCHEDULE

MARK	MFGR	MODEL	BORDER TYPE	NECK SIZE	FACE SIZE	FINISH	DAMPER	ACCESSORIES	NOTES
SD-1	TITUS	300RS	1	8"x6"	-	WHITE	O.B.D.	-	-
SD-2	↓	300RS	↓	12"x6"	-	WHITE	O.B.D.	-	-
SR-1		S300		18"x8"	-	ANODIZED	AIR SCOOP	-	-
TG-1		350RL		14"x6"	-	WHITE	-	-	-
TG-2		350RL		24"x10"	-	WHITE	-	-	-
RG-1		350RL		18"x16"	-	WHITE	O.D.B.	-	-
RG-2	↓	350RL	↓	24"x36"	-	WHITE	O.B.D.	-	-



SUPPLY REGISTER DETAIL

SCALE: NONE

EXHAUST FAN SCHEDULE

MARK	MFGR	MODEL	CFM	EXTERNAL STATIC P. IN. WG.	RPM	ELECTRICAL VOLT/Φ/HZ	ELECTRICAL FWR	FAN TYPE	CONTROLS	NOTES
EF-1	COOK	GC-128	75	0.1	750	120/1/60	29 W	CEILING EXH.	SWITCH	1
EF-2	↑	GC-148	125	0.1	1,075	↑	48 W	CEILING EXH.	SWITCH	1

NOTES: 1. PROVIDE CEILING GRILLE, INTEGRAL BACK DRAFT DAMPER, VARI-SPEED CONTROLLER (NEAR FAN AND ABOVE CEILING), AND WALL CAP.

FURNACE SCHEDULE

MARK	MFGR	MODEL NO.	CFM	EXT. STATIC P. IN. WG.	HEATING (GAS) BTUH INPUT	HEATING (GAS) BTUH OUTPUT	ELECTRICAL VOLT/Φ/HZ	ELECTRICAL HP	OUTSIDE AIR (CFM)	NOTES
F-1	LENNOX	ML196DF070XE48B	1,200	0.7	66,000	63,000	115/1/60	3/4	200	1,2,3,4,6,7,8,10
F-2	↓	EL196UH110XE60C	2,000	0.8	110,000	107,200	↓	1	640/1100	1,2,3,4,5,8,9,11,12
F-3	↓	EL196UH110XE60C	2,000	0.8	110,000	107,200	↓	1	↓	1,2,3,4,5,8,9,11,12

NOTES:
1. PROVIDE 2" THICK THROWAWAY TYPE FILTER WITH HOLDING FRAME FOR EACH UNIT.
2. PROVIDE EACH UNIT WITH 7-DAY PROGRAMMABLE HEAT/COOL/AUTO CHANGEOVER THERMOSTAT WITH OPTIMUM START CONTROLS.
3. CONDENSING UNITS, COOLING COILS, AND FURNACES SHALL ALL BE OF THE SAME MANUFACTURER.
4. EXTERNAL STATIC PRESSURE LISTED REPRESENTS STATIC PRESSURE REQUIRED FOR DUCTWORK AND DIFFUSERS OUTSIDE THE HVAC UNIT. COMPLETELY INDEPENDENT OF ANY PRESSURE DROP THROUGH THE HVAC EQUIPMENT INCLUDING BUT NOT LIMITED TO FILTERS AND COILS.
5. PROVIDE GALVANIZED WATERTIGHT DRAIN PAN AND CONDENSATE FLOAT SWITCH TO DE-ENERGIZE THE FURNACE IF THE DRAIN PAN FILLS WITH WATER.
6. PROVIDE WATER-LEVEL MONITORING DEVICE IN CONDENSATE TRAP TO SHUT OFF UNIT SHOULD THE PRIMARY DRAIN PAN FILL WITH WATER.
7. PROVIDE UNIT WITH SPECIFIED CONTROLS #SC-OAD-XX 8"Ø ROUND CONTROL DAMPER WITH 120V SPRING RETURN ACTUATOR FOR CONTROL OF OUTDOOR AIR SUPPLY. INTERLOCK WITH FURNACE CONTROLS SO THAT DAMPER IS OPEN WHEN FURNACE FAN IS ON, AND IS CLOSED WHEN FURNACE SUPPLY FAN IS NOT IN OPERATION.
8. PROVIDE CONDENSATE NEUTRALIZATION KIT.
9. PROVIDE WITH TWINNING KIT TO CONNECT F-2/F-3 TO CU-2.
10. PROVIDE 24" EQUIPMENT STAND FOR DOWNFLOW FURNACE TO ROUTE SUPPLY DUCTWORK ALONG FLOOR.
11. PROVIDE CO2 SENSOR FOR DEMAND CONTROL VENTILATION.
12. PROVIDE 24" EQUIPMENT STAND FOR UPFLOW TWINNED FURNACES TO ROUTE RETURN DUCTWORK BELOW UNIT FOR BOTTOM CONNECTION. PROVIDE FILTER RACK IN BOTTOM OF UNITS.

CONDENSING UNIT SCHEDULE

MARK	MFGR	MODEL NO.	COOLING TOTAL BTUH	COOLING AMB.	COOLING EVAP. EAT DB/WB	ELECTRICAL VOLT/Φ/HZ	ELECTRICAL MIN. MCA (AMPS)	ELECTRICAL MIN. MOCP (AMPS)	EVAP. COIL MODEL NO.	SEER /EER	NOTES
CU-1	LENNOX	ML14XC1-036	33,400	95	80/67	208/3/60	12.2	15	CR33-30/36B	14 / -	1,2,3,4
CU-2	↑	EL512054D	110,000	↑	↑	↑	33	45	(2) CX35-60C	- / 11.2	↑

NOTES:
1. PROVIDE TIME DELAY ON COMPRESSOR RE-START, CRANKCASE HEATER, AND COMPRESSOR LOCK-OUT WITH AMBIENT BELOW 35 °F. PROVIDE INDOOR COIL WITH THERMAL EXPANSION VALVE (TXV).
2. MECHANICAL CONTRACTOR SHALL COORDINATE ALL UNIT MOCP'S OF ACTUAL INSTALLED EQUIPMENT WITH ELECTRICAL CONTRACTOR.
3. PROVIDE CONCRETE OR PRE-MAUFACTURED POLYOLEFIN PAD FOR EACH UNIT.
4. PROVIDE HAIL GUARDS FOR EACH UNIT.

LOUVER SCHEDULE

MARK	MFGR	MODEL	FRAME	SIZE	REMARKS
L-1	RUSKIN	EME220DD	STANDARD	30"x24"	1,2

NOTES:
1. PROVIDE WITH BIRDSCREEN.
2. COLOR TO BE SELECTED BY OWNER/ARCHITECT AFTER AWARD OF CONTRACT.

MINIMUM OUTDOOR AIR CALCULATIONS

UNIT	Area (sqft)	OCCUPANCY CLASSIFICATION	Occupant Density #/1000 sqft	People outdoor airflow rate in breathing zone, (Rp) cfm/person	Area outdoor airflow rate in breathing zone, (Ra) cfm/sqft	Exhaust airflow rate cfm/sqft	Breathing zone outdoor airflow (Vbz)	Zone air distribution effectiveness (Ez)	Zone outdoor airflow (cfm)
F-2/3		**Retail stores, sales floors**							
	3100	Sales	0	7.5	0.12		372	0.8	465
	960	Shipping and receiving	0	10	0.12		115	0.8	144
	195	Storage rooms	0	0	0.12		23	0.8	29
								Total	638

MAXIMUM OUTDOOR AIR CALCULATIONS

UNIT	Area (sqft)	OCCUPANCY CLASSIFICATION	Occupant Density #/1000 sqft	People outdoor airflow rate in breathing zone, (Rp) cfm/person	Area outdoor airflow rate in breathing zone, (Ra) cfm/sqft	Exhaust airflow rate cfm/sqft	Breathing zone outdoor airflow (Vbz)	Zone air distribution effectiveness (Ez)	Zone outdoor airflow (cfm)
F-2/3		**Retail stores, sales floors**							
	3100	Sales	15	7.5	0.12		721	0.8	901
	960	Shipping and receiving	2	10	0.12		134	0.8	168
	195	Storage rooms	0	0	0.12		23	0.8	29
								Total	1098

OUTDOOR AIR CALCULATIONS

UNIT	Area (sqft)	OCCUPANCY CLASSIFICATION	Occupant Density #/1000 sqft	People outdoor airflow rate in breathing zone, (Rp) cfm/person	Area outdoor airflow rate in breathing zone, (Ra) cfm/sqft	Exhaust airflow rate cfm/sqft	Breathing zone outdoor airflow (Vbz)	Zone air distribution effectiveness (Ez)	Zone outdoor airflow (cfm)
F-1		**Offices**							
	430	Office spaces	5	5	0.06		37	0.8	46
	195	Break Room	25	5	0.06		36	0.8	45
		Public spaces							
	135	Toilet rooms public	0	0	0	50/10	0	0.8	0
								Total	91

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ARCHITECT

11/8/2022

STATE OF MISSOURI
STEVEN S. POND
NUMBER PE-2004000970
REGISTERED PROFESSIONAL ENGINEER

THE WATER HOLE REBUILD
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date

Date 11-07-2022
Drawn by SP/BH
Checked by EK/DS

MECHANICAL DETAILS

M2.00

Scale As indicated

BC PROJECT #: 22360
MISSOURI PE COA #2009003629

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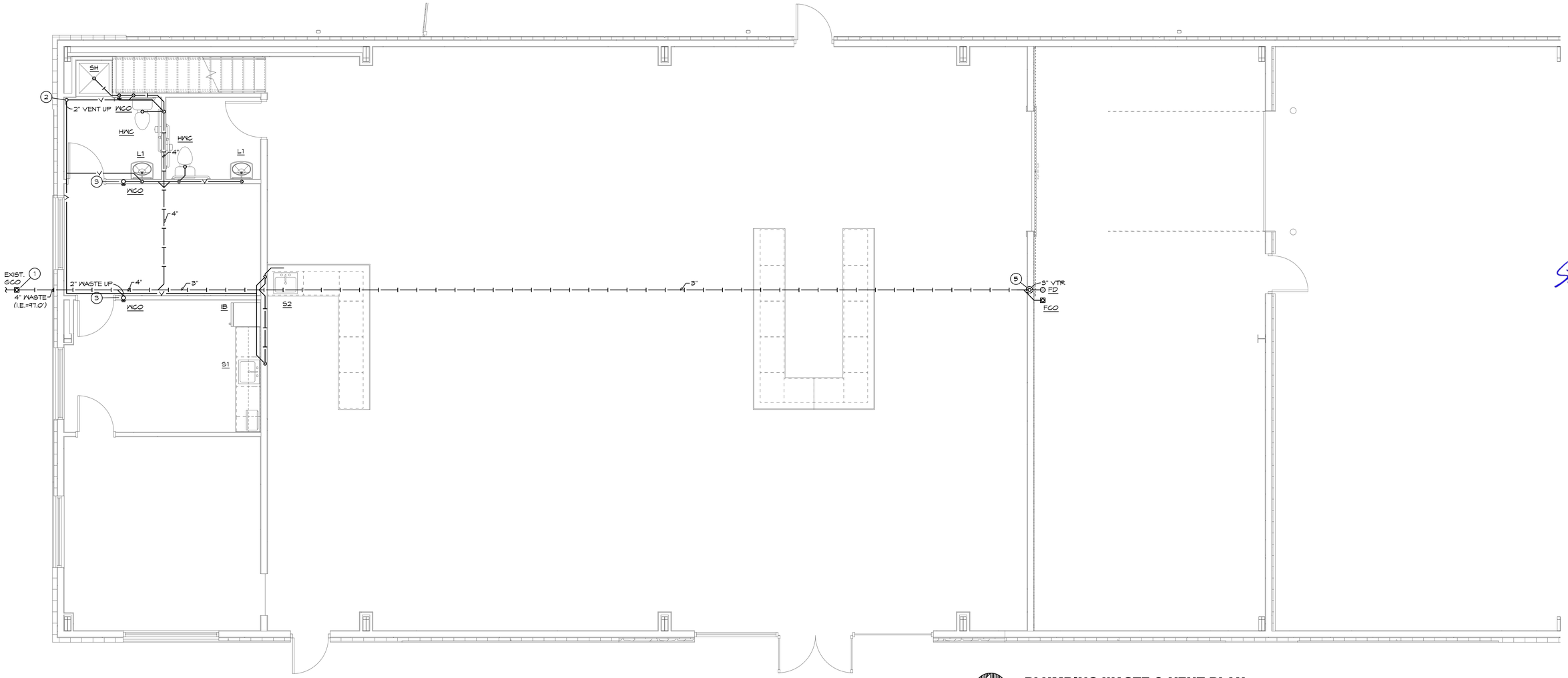

PLUMBING SYMBOLS

- SOIL AND WASTE PIPING BELOW FLOOR/GRADE
- SOIL AND WASTE PIPING ABOVE FLOOR/GRADE
- SANITARY VENT PIPING ABOVE GRADE
- SANITARY VENT PIPING BELOW GRADE
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- DOMESTIC HOT WATER RECIRCULATION PIPING
- GAS PIPING
- EQUIPMENT DRAIN LINE
- PIPING TURNING DOWN
- PIPING TURNING UP
- TEE TOP CONNECTION
- UNION
- BACKFLOW PREVENTER
- FD — FLOOR DRAIN
- FCO — FLOOR CLEAN OUT
- WCO — WALL CLEAN OUT
- GCO — GRADE CLEAN OUT
- VALVE
- BALANCING VALVE
- SOLENOID VALVE
- PRESSURE REGULATOR
- CHECK VALVE
- CONNECT TO EXISTING
- I.E. — INVERT ELEVATION OF PIPE
- MATCH MARKS ON PLUMBING RISER DIAGRAM

PLUMBING GENERAL NOTES:

1. INSTALL ALL PIPE, ETC. AS HIGH AS POSSIBLE.
2. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF FIXTURES.
4. REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING PIPING, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
5. NO PIPING SHALL BE ROUTED OVER THE TOP OF ELECTRICAL PANELS.
6. CONTRACTOR TO TEST WATER PRESSURE ON SITE AND PROVIDE PRESSURE REDUCING VALVE ON WATER SERVICE IF PRESSURE IS OVER 80 PSI.
7. ALL WATER SERVICE INSTALLATIONS INCLUDING BACKFLOW DEVICES ARE SUBJECT TO FIELD VERIFICATION AND APPROVAL BY THE WATER DEPARTMENT INSPECTOR.

PLUMBING PLAN NOTES:

1. CONNECT 4" WASTE TO EXISTING SANITARY SEWER AS REQUIRED. VERIFY EXACT LOCATION AND ELEVATION PRIOR TO INSTALLATION OF ANY PIPING.
2. ROUTE 2" VENT UP TO 3" VTR, SEE P3.00 FOR CONTINUATION.
3. ROUTE 2" WASTE FROM HUB DRAIN ABOVE TO BELOW FLOOR, SEE P2.00 FOR CONTINUATION. PROVIDE CLEANOUT AT BASE OF RISER.

NORTH

PLUMBING WASTE & VENT PLAN

SCALE: 1/4" = 1'-0" FFE=100.0'

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ARCHITECT

11/8/2022

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PLUMBING WASTE & VENT PLAN
P1.00

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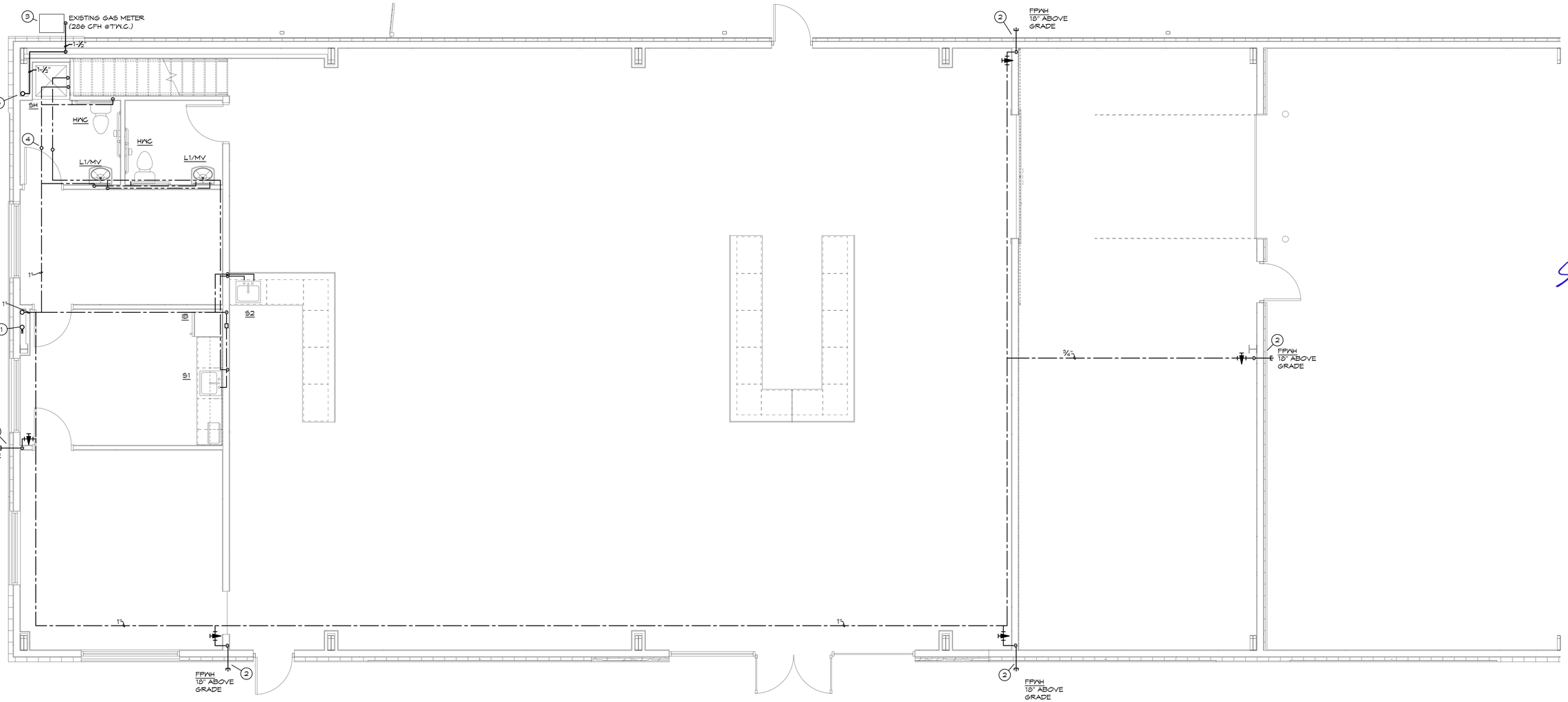

NORTH

PLUMBING WATER & GAS PLAN

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

PLUMBING PLAN NOTES:

1. TRANSITION AND CONNECT 1" GM TO EXISTING DOMESTIC GM AS REQUIRED. VERIFY EXACT SIZE AND LOCATION PRIOR TO INSTALLATION OF ANY PIPING. ROUTE PIPE UP TO RPZ ON MEZZANINE AS REQUIRED.
2. INSTALL WALL HYDRANT 18" ABOVE GRADE / FINISHED FLOOR, SEAL PENETRATION WEATHERTIGHT.
3. COORDINATE WITH GAS COMPANY FOR EXISTING GAS METER TO PROVIDE CAPACITY FOR 286 CFH @ 7"W.C. ROUTE 1-½" PIPING UP INSIDE THE EXTERIOR WALL AND PENETRATE BELOW ROOF. ALL CONCEALED JOINTS ARE TO BE WELDED OR USE FITTINGS APPROVED FOR CONCEALED USE. VERIFY ALL EQUIPMENT GAS CAPACITIES AND OPERATING PRESSURES PRIOR TO INSTALLATION OF ANY PIPING.
4. ROUTE ¾" GM AND ¾" HW UP TO WATER HEATER LOCATED ON MEZZANINE, SEE P3.00 FOR CONTINUATION.
5. ROUTE 1-½" GAS UP TO MEZZANINE, SEE P3.00 FOR CONTINUATION.

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ARCHITECT

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Date	11-07-2022
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PLUMBING
WATER & GAS
PLAN
P2.00

Scale	As indicated

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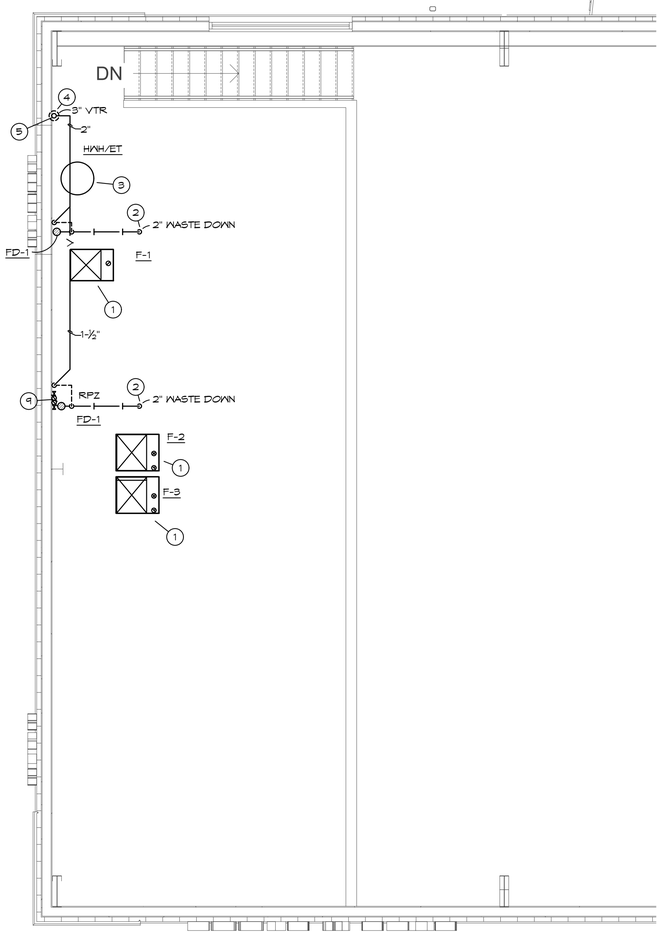
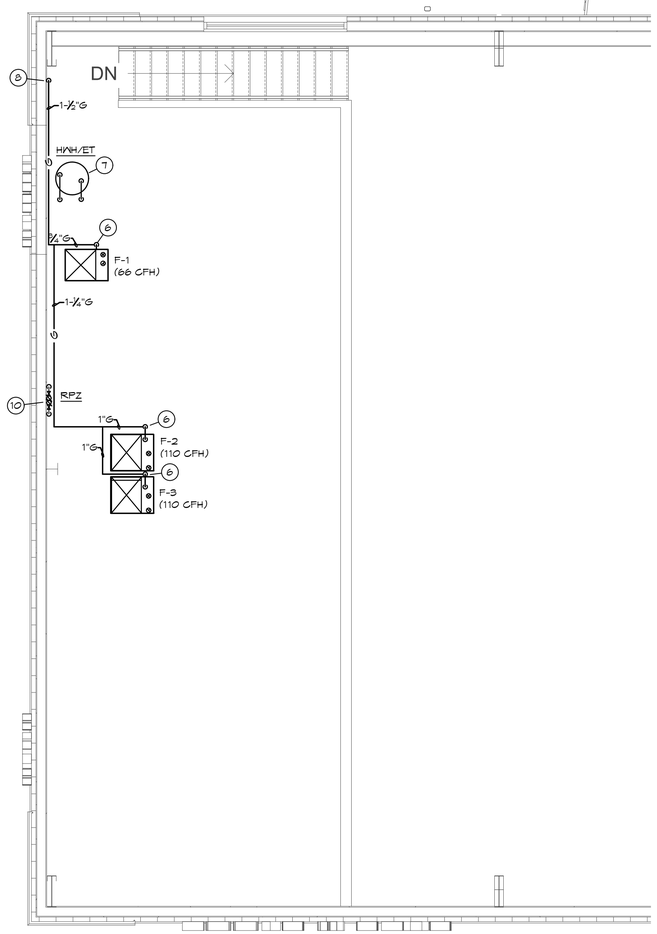


PLUMBING WASTE & VENT PLAN - MEZZANINE

NORTH

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



PLUMBING WATER & GAS PLAN - MEZZANINE

NORTH

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

PLUMBING PLAN NOTES:

1. ROUTE CONDENSATE FROM COOLING COIL AND FLUE CONDENSATE FROM FURNACE AND DISCHARGE TO FLOOR DRAIN WITH AIR GAP AS REQUIRED.
2. ROUTE 2" WASTE DOWN TO BELOW FLOOR, SEE P1.00 FOR CONTINUATION.
3. PROVIDE DRAIN PAN UNDER WATER HEATER AS REQUIRED.
4. 2" VENT FROM BELOW UP TO 3" VTR, SEE P1.00 FOR CONTINUATION.
5. LOCATION OF 3" VTR. VERIFY 10' CLEARANCE FROM ALL OUTDOOR AIR INTAKES. SEAL PENETRATION WEATHERTIGHT.
6. CONNECT GAS TO EQUIPMENT AS REQUIRED AND AS DETAILED.
7. CONNECT ¾" CW AND ¾" HW TO WATER HEATER AS REQUIRED, SEE P2.00 FOR CONTINUATION.
8. ROUTE 1-½" GAS DOWN, SEE P2.00 FOR CONTINUATION. EXTEND GAS PIPING ALONG FLOOR AND CONNECT TO FIXTURES AS REQUIRED AND AS PER DETAIL.
9. DISCHARGE DRAIN FROM RPZ TO FLOOR DRAIN WITH AIR GAP AS REQUIRED.
10. ROUTE 1" CW UP FROM BELOW AND CONNECT TO RPZ AS REQUIRED. SEE P2.00 FOR CONTINUATION.

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ARCHITECT

11/8/2022

STATE OF MISSOURI
STEVEN S. POND
NUMBER
PE-2004000070
REGISTERED PROFESSIONAL ENGINEER

THE WATER HOLE REBUILD

401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081

CONSTRUCTION SET

#	Description	Date

Date	11-07-2022
Drawn by	SP/BH
Checked by	EK/DS

PLUMBING
MEZZANINE PLAN

P3.00

Scale: As indicated

BC PROJECT #: 22360
MISSOURI PE COA #2009003629

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

8/17/2022 8:29:48 AM

PLUMBING FIXTURE BRANCH PIPING SCHEDULE				
FIXTURE	WASTE	VENT	CW	HW
WATER CLOSET (TANK TYPE)	3"	2"	1/2"	- -
LAVATORY	1-1/4"	1-1/4"	1/2"	1/2"
SINK	1-1/2"	1-1/2"	1/2"	1/2"
FLOOR DRAIN	2"	2"	- -	- -

NOTE: INDIVIDUAL VENTS FOR FIXTURES ON PLANS AND RISER DIAGRAMS HAVE BEEN INCREASED WHERE HORIZONTAL VENT LENGTH IS IN EXCESS OF THE MAXIMUM DISTANCE INDICATED BY THE CODE.

PLUMBING FIXTURE SCHEDULE: (OR EQUAL)

HWC — HANDICAP WATER CLOSET: GERBER, #GVP21518, "VIPER" CLOSE COUPLED TOILET, 1.6 GALLON FLUSH, 17" HIGH ELONGATED BOWL- ADA HEIGHT, FLOOR MOUNTED, FLOOR OUTLET, TANK TYPE, VITREOUS CHINA, SIPHON-JET ACTION, OPEN FRONT SEAT WITH CHECK HINGE AND LESS COVER, CHROME PLATED ANGLE STOP AND RISER. HANDLE ON WIDE SIDE OF FIXTURE.

L1 — HANDICAP LAVATORY, WALL HUNG: GERBER, #G0012384, "HAYES", 20"X 18", VITREOUS CHINA, FRONT OVERFLOW, #43-143 "MAXWELL" FAUCET, OFFSET GRID ELBOW DRAIN AND 1-1/4" TAILPIECE, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT (MOUNTED PARALLEL WITH WALL), CHROME PLATED ANGLE STOPS AND RISERS, AND CONCEALED ARM FLOOR MOUNTED FIXTURE SUPPORT. INSULATE EXPOSED DRAIN, WATER SUPPLIES, AND VALVES WITH PROWRAP SEAMLESS MOLDED CLOSED CELL VINYL INSULATION.

S1 — SINK: ELKAY, #LRAD-2222, 19"X16"X 6-1/2" DEEP BOWL,21-3/8"X 21-3/8" CUT-OUT, ADA COMPLIANT, SINGLE COMPARTMENT, SELF-RIMMING STAINLESS STEEL SINK WITH SATIN FINISH AND SOUND DAMPENING UNDERCOATING, PEERLESS #P299515LF FAUCET, SWING SPOUT, AERATOR, HAND SPRAY, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS, IN-SINK-ERATOR #BADGER 5 DISPOSAL, 1/2 HP, 120 VOLT.

S2 — SINK: KOHLER, #K-19011-3, 25"X22"X 13-5/8" DEEP BOWL, 20-3/4"X 19-1/8" CUT-OUT, SINGLE COMPARTMENT, SELF-RIMMING VITREOUS CHINA SINK WITH PEERLESS #P299515LF FAUCET LESS SPRAY, SWING SPOUT, AERATOR, CHROME PLATED CAST BRASS P-TRAP WITH CLEANOUT, CHROME PLATED ANGLE STOPS AND RISERS.

FPWH — FREEZEPROOF WALL HYDRANT: JR SMITH #5609, 3/4" SIZE, NICKEL-BRONZE FACE, KEY OPERATED, INTEGRAL VACUUM BREAKER.

FD — FLOOR DRAIN: JR SMITH, #2005-A, CAST IRON FLOOR DRAIN WITH ADJUSTABLE TOP, 6" NIKALOY STRAINER. PROVIDE WITH #2692 QUAD CLOSE TRAP SEAL DEVICE.

FD-1 — FLOOR DRAIN: JR SMITH, #2005-F37, CAST IRON FLOOR DRAIN WITH RECESSED 6" NIKALOY STRAINER. PROVIDE WITH #2692 QUAD CLOSE TRAP SEAL DEVICE.

HWH — HOT WATER HEATER: BRADFORD WHITE #RE350T6, 50 GALLON STORAGE, 208 VOLT 1-PHASE, (2) 4500 WATT ELEMENT, NON-SIMULTANEOUS, ASME TEMPERATURE AND PRESSURE RELIEF VALVE. SET TO 140°F.

ET — HOT WATER EXPANSION TANK: AMTROL, #ST-5, 2 GALLON EXPANSION TANK WITH DIAPHRAGM.

MV — MIXING VALVE: WATTS, #LFUSG-B, THERMOSTATIC CONTROLLED MIXING VALVE, LEAD FREE BRONZE BODY, LOCKED TEMPERATURE ADJUSTMENT CAP (VANDAL RESISTANT), COPPER ENCAPSULATED THERMOSTAT ASSEMBLY WITH BRASS SHUTTLE, STAINLESSSTEEL SPRINGS, INTEGRAL CHECK VALVES ON HOT AND COLD INLETS. (SET TO 110°F). ASSE 1070 LISTED.

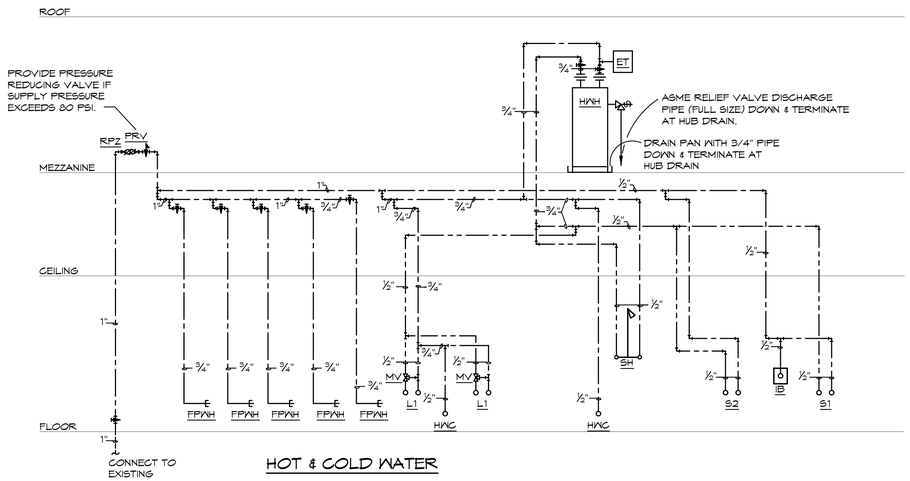
RPZ — REDUCED ZONE PRESSURE BACKFLOW PREVENTOR: WATTS #LF009, LEAD FREE BRONZE BODY CONSTRUCTION, TWO, IN-LINE INDEPENDENT CHECK VALVES, REPLACEABLE CHECK SEATS WITH AN INTERMEDIATE RELIEF VALVE, AND BALL VALVE TEST COCKS.

FCO/WCO — VINYL TILE FLOOR: JR SMITH #4140, OR EQUAL.
QUARRY TILE FLOOR: JR SMITH #4200, OR EQUAL.
CARPETED FLOOR: JR SMITH #4020-Y, OR EQUAL.
UNFINISHED FLOOR: JR SMITH #4020, OR EQUAL.
WALL: JR SMITH #4472, OR EQUAL, 24" ABOVE THE FLOOR.

IB — ICE BOX: GUY GRAY "AB-9700, ICE BOX WITH 1/2" CONNECTION AND 1/4-TURN SHUT OFF VALVE.

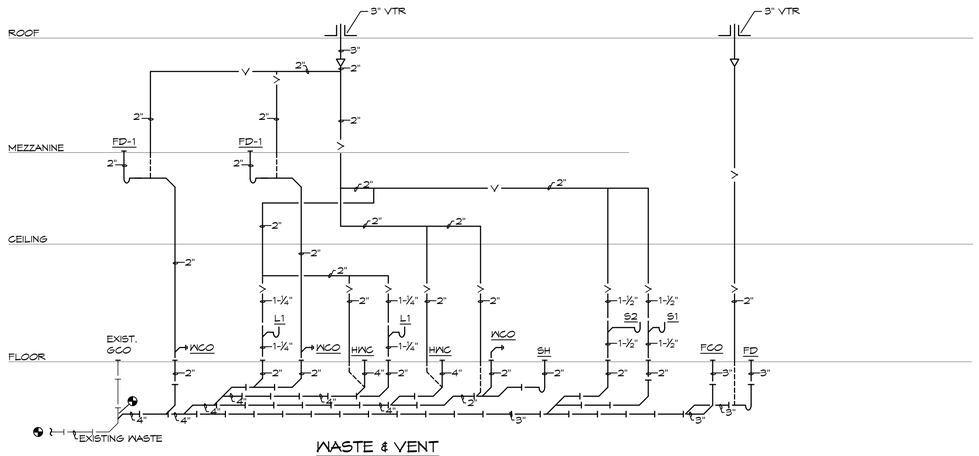
HB — HOSE BIBB: WOODFORD, "24, 3/4" HOSE NOZZLE OUTLET, BRASS FINISH, HANDWHEEL OPERATED, INTEGRAL VACUUM BREAKER.

SH — SHOWER: BEST BATH #LS642384SB ALCOVE SHOWER, ADA COMPLIANT 36"x 36"x77"H, FOUR PIECE WHITE UNIT, BUILT-IN SEAT, SOAP DISH, 2" DRAIN, CHROME PLATED STRAINER, CURTAIN AND ROD, SINGLE LEVEL HANDLE, SEMI-PERMANTENT THRESHOLD WITH WATER STOPPER, PRESSURE BALANCED VALVE AND 1.75 GPM FLOW RESTRICTOR, INTEGRAL CHECK STOPS, CAST WALL FLANGE AND LEVER HANDLE. MOUNT SHOWER HEAD 80" AFF.



HOT & COLD WATER

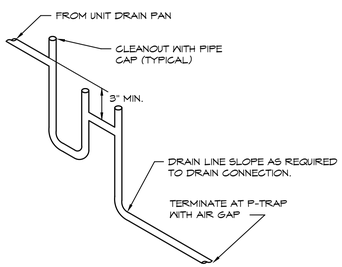
HOT & COLD WATER



WASTE & VENT

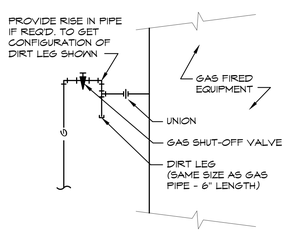
PLUMBING RISER DIAGRAMS

SCALE: NONE



CONDENSATE DRAIN DETAIL

SCALE: NONE



GAS CONNECTION DETAIL

SCALE: NONE

PLUMBING DRAINAGE CALCULATIONS			
FIXTURE	QUANTITY	FU	TOTAL FU
WATER CLOSETS	2	4	8
LAVATORIES	2	1	2
SINKS	2	2	4
FLOOR DRAIN	3	2	6
SHOWER	1	2	3
TOTAL			23

VENT MAINS - 2"
WASTE MAIN - 4"

PLUMBING FIXTURE WATER COUNT							
FIXTURE	QUANTITY	CW FU	CW TOTAL FU	HW FU	HW TOTAL FU	COMBINED FU	COMBINED TOTAL FU
WATER CLOSETS	2	5	10	0	0	5	10
LAVATORIES	2	1.5	3	1.5	3	2	4
SINKS	2	2.25	4.5	2.25	4.5	3	6
SHOWER (PRIVATE)	1	1	1	1	1	1.4	1.4
			18.5 FU		8.5 FU		21.4 FU

COLD WATER MAIN - 1"
HOT WATER MAIN - 3/4"

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ARCHITECT
3/21/2023
STATE OF MISSOURI
STEVEN S. POND
NUMBER PE-2004000070
REGISTERED PROFESSIONAL ENGINEER

THE WATER HOLE REBUILD
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date
2	Preconstruction Revisions	3/21/23

Date	11-07-2022
Drawn by	SP/BH
Checked by	EK/DS

PLUMBING DETAILS

P4.00

Scale: As indicated

BC PROJECT #: 22360
MISSOURI PE COA #2009003629

BC ENGINEERS INCORPORATED
5720 Reeder Shawnee, KS 66203 (913)262-1772

8/17/2022 8:29:48 AM

ELECTRICAL SPECIFICATIONS

1. GENERAL PROVISIONS:
   A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS OUTLINED.
   B. OBTAIN ALL PERMITS, FEES, LICENSES, INSPECTIONS, AND CERTIFICATES OF COMPLIANCE OR APPROVAL AS REQUIRED BY THE AUTHORITIES.
   C. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRIC CODE (NEC), AND ALL APPLICABLE LAWS, CODES AND REGULATIONS OF THE GOVERNMENTAL BODIES HAVING JURISDICTION OVER THE SITE.
   D. ALL TESTING REQUIRED BY AUTHORITIES SHALL BE CONSIDERED PART OF THIS WORK.
   E. DURING CONSTRUCTION, ALL FIXTURES, EQUIPMENT, CONDUIT, ETC. SHALL BE COVERED, PLUGGED, OR CAPPED AS REQUIRED TO KEEP CLEAN AND UNDAMAGED. ALL DAMAGED ITEMS SHALL BE RESTORED TO ORIGINAL CONDITION OR REPLACED. ALL PROTECTIVE COVERING SHALL BE REMOVED BEFORE FINAL ACCEPTANCE.
   F. PROVIDE ALL NECESSARY CUTTING AND PATCHING OF WALLS, FLOORS, CEILINGS, AND ROOFS AS NECESSARY. PATCH AROUND ALL OPENINGS SHALL MATCH ADJACENT AREA. COORDINATE ALL ROOFING WORK WITH OWNER OR RESPONSIBLE PARTY, SO THAT THE EXISTING ROOFING WARRANTY WILL BE MAINTAINED.
   G. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE.
   H. CONTRACTOR SHALL PROVIDE ACCESS PANELS WHERE NECESSARY FOR CONCEALED ELECTRICAL COMPONENTS.
   I. CONTRACTOR SHALL PROMPTLY CALL ENGINEERS ATTENTION TO ANY APPARENT CONTRADICTIONS, AMBIGUITIES, ERRORS, DISCREPANCIES, OR OMISSIONS IN THE PLANS OR SPECIFICATIONS.
2. OPERATION AND MAINTENANCE MANUALS:
   A. DURING THE COURSE OF CONSTRUCTION, COLLECT AND COMPILE OPERATING INSTRUCTIONS, WIRING DIAGRAMS, CATALOG CUTS, LUBRICATION AND PREVENTIVE MAINTENANCE INSTRUCTIONS, PARTS LISTS, ETC. FOR ALL EQUIPMENT FURNISHED UNDER THIS CONTRACT.
   B. ALL LITERATURE AND INSTRUCTIONS SHIPPED WITH THE EQUIPMENT SHALL BE SAVED FOR INCLUSION IN THE OPERATION AND MAINTENANCE MANUALS.
   C. ALL LITERATURE LISTED ABOVE AND ALL PAPERS LISTING WARRANTIES, ETC. SHALL BE COLLATED AND LABELED WITH THE PROJECT NAME, ADDRESS, ARCHITECT, ENGINEER, CONTRACTORS, ETC. CONTRACTORS, ETC. DOCUMENTS SHALL BE COMPILED AND BOUND IN DIGITAL FILE OR 3 RING BINDER.
3. MANUFACTURERS:
   A. MANUFACTURERS, MODEL NUMBERS, ETC. INDICATED OR SCHEDULED ON THE DRAWINGS SHALL BE INTERPRETED AS HAVING ESTABLISHED A STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. ARTICLES, FIXTURES, ETC. OF EQUAL QUALITY BY MANUFACTURERS SHALL BE ACCEPTABLE, SUBJECT TO STRUCTURAL AND ELECTRICAL CONSTRAINTS OF THE PROJECT DESIGN, UNLESS NOTED OTHERWISE.
4. TESTING, AND BALANCING:
   A. ALL CIRCUITS SHALL BE TESTED FOR CONTINUITY, SHORTS, AND GROUNDS BEFORE CONNECTING TO THE PROPER PHASE AS DESIGNED TO BALANCE THE LOADING BETWEEN PHASES.
   B. POWER AND LIGHTING PANELS SHALL BE PROPERLY PHASED TO DISTRIBUTE THE LOAD AND SHALL BE CONNECTED AND ADJUSTED TO OPERATE AS SPECIFIED.
   C. ALL MOTORS AND SIMILAR EQUIPMENT SHALL BE CHECKED FOR PROPER PHASE ROTATION AND OPERATION.
5. RACEWAYS:
   A. CONDUIT INSIDE THE BUILDING SHALL BE METALLIC TUBING (EMT), BEARING THE UL LABEL, WITH COMPRESSION TYPE FITTINGS OR SCREW SET FITTINGS.
   B. CONDUIT EXPOSED TO THE WEATHER, INSTALLED UNDERGROUND, IN CONCRETE, OR USED FOR SERVICE ENTRANCE SHALL BE STANDARD RIGID CONDUIT (GALVANIZED) WITH THREADED FITTINGS.
   C. UNDERGROUND CONDUIT MAY BE POLYVINYL CHLORIDE WITH A DEFLECTION TEMPERATURE, UNDER LOAD AT 264 PSI, OF 70 DEGREES C, AND A TENSILE STRENGTH OF 5,200 PSI. JOINTS SHALL BE FLUSH SOLVENT WELDED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL BE EQUAL TO CARLON POWER AND COMMUNICATIONS DUCT TYPE DB (DIRECT BURIAL). CONDUIT AND FITTINGS SHALL BE PRODUCED BY THE SAME MANUFACTURER.
   D. FLEXIBLE METAL CONDUIT SHALL ONLY BE USED FOR CONNECTIONS TO MOTORS, TRANSFORMERS, AND LIGHT FIXTURES. MAXIMUM LENGTH SHALL BE 6'-0".
6. CONDUCTORS:
   A. WIRES SHALL BE CONTINUOUS WITHOUT SPLICES OR TAPS IN CONDUIT RUNS. ALL SPLICES SHALL BE MADE IN JUNCTION, PULL, OR OUTLET BOXES. ALL WIRE SHALL BE INSTALLED IN CONDUIT, RACEWAYS, OR OTHER PROTECTIVE COVER SANCTIONED BY CODES.
   B. CONDUCTORS FOR LIGHTING AND POWER SHALL BE COPPER, MINIMUM NO. 12 A.W.G., 600 VOLT.
   C. NO. 10 GAUGE AND SMALLER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), SOLID CONDUCTOR, UNLESS OTHERWISE INDICATED.
   D. NO. 8 GAUGE AND LARGER CONDUCTORS SHALL BE TYPE THWN (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED, UNLESS OTHERWISE INDICATED.
   E. SERVICE ENTRANCE AND PANEL FEEDER CONDUCTORS, NO. 3 GAUGE AND LARGER SHALL BE TYPE XHHW-2 (WET LOCATIONS) OR THHN (DRY LOCATIONS), STRANDED COPPER, UNLESS OTHERWISE INDICATED.
7. MC CABLE:
   A. MC CABLE SHALL CONSIST OF INTERLOCK ARMORED CABLE MADE OF THREE OR FOUR TYPE THHN SOLID (#8 AWG AND LARGER MAY BE STRANDED) COPPER CONDUCTORS RATED 90°C. FOR DRY LOCATIONS, WITH NYLON OR EQUIVALENT JACKET, PER UL AND STANDARD 83. THE THREE CONDUCTORS SHALL BE TWISTED TOGETHER WITH THE COPPER GROUNDING CONDUCTOR, SUITABLE FILLERS, AND WRAPPED IN BINDER TAPE. THE ASSEMBLY SHALL BE ARMORED WITH SPIRALLY WRAPPED INTERLOCKED ARMOR OF ALUMINUM OR GALVANIZED STEEL.
   B. CABLES SHALL BE TESTED IN ACCORDANCE WITH UL STANDARD 1569 FOR TYPE MC CABLE AND RATED AT 600 VOLTS, 90 DEG. C FOR DRY LOCATIONS AND 75 DEG. C FOR WET LOCATIONS.
8. WIRING DEVICES:
   A. WALL SWITCHES SHALL BE SPECIFICATION GRADE, QUIET TYPE, FLUSH TOGGLE SWITCH, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES.
      1) SINGLE POLE: HUBBELL #CS1221-X, OR EQUAL.
      2) THREE WAY: HUBBELL #CS1223-X, OR EQUAL.
      3) AS SPECIFIED ON PLANS
   B. RECEPTACLES SHALL BE SPECIFICATION GRADE, DUPLEX, GROUNDING, THREE-WIRE TYPE, RATED FOR 20 AMPS, WITH THERMOPLASTIC COVER PLATES. HUBBELL #CR5352-X, OR EQUAL.
   C. GROUND FAULT INTERRUPTER RECEPTACLES (GFI) SHALL BE HUBBELL #GF20-XL. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.
   D. ISOLATED GROUND RECEPTACLES (IG) SHALL BE HUBBELL #CR5352IG, ORANGE COLOR. DEVICE COVER PLATES SHALL BE AS HEREINBEFORE SPECIFIED.
   E. RECEPTACLES OUTSIDE BUILDING AND WHERE NOTED AS WEATHERPROOF, SHALL BE LISTED WEATHER-RESISTANT HUBBELL #GFTR20-X OR EQUAL AND SHALL BE INSTALLED IN A WEATHERPROOF ENCLOSURE WHICH SHALL BE INTERMATIC #AP1010MXD OR #AP1010HMXD DIECAST METAL WEATHERPROOF RECEPTACLE COVER. COVER SHALL BE WEATHER PROOF RATED WHILE IN USE.
   F. VERIFY DEVICES AND DEVICE COVERPLATES COLOR AND STYLE WITH ARCHITECT.
9. BOXES:
   A. HOT DIPPED GALVANIZED STEEL BOXES. PROVIDE TYPE TO SUIT CONDITIONS FOR INSTALLATION.
   B. ALL BOXES SHALL BE FLUSH MOUNTED, UNLESS INDICATED OTHERWISE.
10. PANELBOARDS:
   A. FURNISH AND INSTALL CIRCUIT BREAKER PANELBOARDS AS SHOWN ON THE DRAWINGS. PANELBOARDS SHALL BE LISTED BY UL AND SO LABELED, AND SHALL BE FULLY RATED FOR THE VOLTAGE AND CURRENT CAPACITY INDICATED ON THE PANEL SCHEDULE. PANELBOARDS SHALL BE EQUAL TO SQUARE D TYPE NQ OR NF WITH BOLT IN TYPE BREAKERS. PANELBOARD LUGS SHALL BE RATED AT 75°C.
      1) CIRCUIT BREAKER INTERRUPTING CAPACITIES SHALL MEET OR EXCEED THE AVAILABLE RMS SYMMETRICAL FAULT CURRENTS INDICATED AND AS REQUIRED TO MEET OR EXCEED THE AVAILABLE FAULT CURRENT FROM LOCAL UTILITY.
   B. CIRCUIT BREAKERS SHALL MEET APPLICABLE PORTIONS OF UL STANDARD 489 AND NEMA AB-1. CIRCUIT BREAKERS SHALL BE BOLT-ON, GROUP MOUNTED, AMBIENT MAGNETIC WITH COMMON TRIP. UL RATED TO CARRY 80% OF NAMEPLATE RATING CONTINUOUSLY IN FREE AIR AT 40° C. CIRCUIT BREAKERS SHALL BE TRIP INDICATING AND FULLY INTERCHANGEABLE WITHOUT DISTURBING ADJACENT UNITS. WIRE TERMINALS SHALL BE RATED 75 DEGREES C. THE OPERATING MECHANISM SHALL BE TRIP-FREE SO THAT CONTACTS CANNOT BE HELD CLOSED AGAINST ANY ABNORMAL OVERCURRENT OR SHORT CIRCUIT CONDITION.
      a) BREAKERS SHALL MEET APPLICABLE NEMA AND/OR UL SPECIFICATIONS.
   C. PANELBOARD BOXES SHALL BE GALVANIZED SHEET STEEL WITH AMPLE WIRING GUTTER SPACE IN ACCORDANCE WITH NEC. FRONTS SHALL BE OF SHEET STEEL PAINTED LIGHT GREY OVER A SUITABLE RUST INHIBITOR PRIMER. PANELBOARDS SHALL BE EQUIPPED WITH ONE PIECE DOOR, CYLINDER TUMBLER TYPE LOCK, DIRECTORY CARD-HOLDER AND QUARTER-TURN ADJUSTABLE TRIM CLAMPS.
   D. PANELBOARD INTERIORS SHALL CONSIST OF REINFORCED GALVANIZED SHEET STEEL FRAMES WITH ALUMINUM BUS BARS AND CIRCUIT BREAKERS, PROPERLY SUPPORTED TO PREVENT VIBRATIONS AND BREAKAGE IN HANDLING. BUS BARS SHALL BE SEQUENCE PHASED. PANELBOARD SHALL HAVE A FULL SIZED SOLID ALUMINUM NEUTRAL AND GROUND BUS.
   E. BUS BAR BRACING SHALL BE UL LISTED AS INDICATED ON DRAWINGS. ADDITIONAL BRACING SHALL BE PROVIDED AS REQUIRED TO MEET OR EXCEED INDICATED AVAILABLE FAULT CURRENTS.
   F. DIRECTORY CARDS SHALL BE COMPLETELY FILLED IN BY TYPEWRITER, LISTING CIRCUIT NUMBERS AND LOAD SERVED, INCLUDING EXISTING CIRCUITS. CIRCUIT BREAKERS SHALL BE IDENTIFIED BY CIRCUIT NUMBER LABELS AS HEREINBEFORE SPECIFIED.

ELECTRICAL SPECIFICATIONS (CONTINUED)

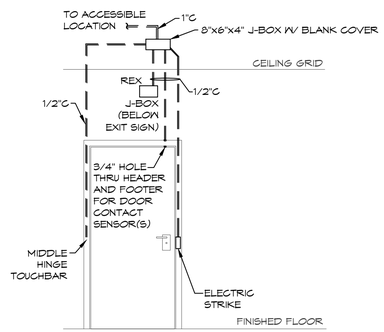
11. DISCONNECTS:
   A. DISCONNECTS SHALL BE EXTERNALLY OPERATED, QUICK-MAKE, QUICK-BREAK, SAFETY, WITH PROVISIONS FOR PAD LOCKING. FUSED AND NON-FUSED DISCONNECT SWITCHES SHALL BE PROVIDED AS INDICATED.
   B. INDOOR SWITCHES SHALL BE NEMA 1 AND OUTDOOR SWITCHES SHALL BE NEMA 3R, UNLESS INDICATED OTHERWISE.
12. FUSES:
   A. FUSES PROTECTING CIRCUIT BREAKER PANELS SHALL BE CURRENT LIMITING U.L. CLASS RK-1 FUSES WITH 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE SILVER FOR RATINGS ABOVE 60 AMPERES.
   B. ALL OTHER FUSES SHALL BE U.L. CLASS RK-5, DUAL-ELEMENT WITH A MINIMUM TIME-DELAY OF 10 SEGONDS AT 500% RATING. FUSES SHALL HAVE CURRENT-LIMITING SHORT-CIRCUIT LINKS AND 200,000 AMPERES RMS SYM INTERRUPTING CAPACITY. FUSING ELEMENTS SHALL BE COPPER.
13. LIGHT FIXTURES:
   A. WHERE LIGHT FIXTURES ARE MOUNTED IN A LAY-IN CEILING, PROVIDE A MINIMUM OF 2 SUPPORT WIRES ATTACHED DIRECTLY BETWEEN EACH LIGHT FIXTURE AND THE BUILDING STRUCTURE. SUPPORT WIRES SHALL BE A MINIMUM OF 12 GAUGE GALVANIZED STEEL WIRE, SOFT ANNEALED.
   B. FIXTURES ARE REQUIRED AT ALL LIGHTING OUTLETS SHOWN ON THE DRAWINGS. APPROVED LIGHTING FIXTURE WIRE IS REQUIRED IN ALL FIXTURES AND FIXTURE RACEWAYS. WEATHERPROOF WIRING IS REQUIRED FOR EXTERIOR FIXTURES. ALL PARTS OF FIXTURES AND WIRING SHALL BE IN ACCORDANCE WITH NEC REQUIREMENTS.
   C. ALL FIXTURES SHALL CARRY UL AND ETL LABELS.
14. SLEEVES:
   A. PROVIDE, SET, AND PROPERLY LOCATE PIPE SLEEVES AS REQUIRED FOR THIS WORK.
   B. INTERIOR PARTITIONS: 18 GAGE GALVANIZED STEEL, PACK BETWEEN CONDUIT AND SLEEVE WITH FIRE SAFING AND CAULK AT EACH END WITH FIRE RESISTANT SEALANT.
   C. ROOF: PROSET OR EQUAL, MANUFACTURED PVC SCHEDULE 40 PIPE SLEEVE WITH WEATHERPROOF SEAL. COORDINATE WITH ROOFING CONTRACTOR AND FLASH AS REQUIRED TO MAINTAIN ROOF WARRANTY.
15. GROUNDING:
   A. GROUND ALL ELECTRICAL APPARATUS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) 250, AND ANY LOCAL REQUIREMENTS. INSURE CONTINUOUS BOND WHERE FLEXIBLE CONDUIT IS USED. PROVIDE BONDING JUMPER INSIDE ALL FLEXIBLE CONDUIT.
   B. BOND METAL PIPING SYSTEMS IN COMPLIANCE WITH NEC 250.4(A)(4).

ELECTRICAL GENERAL NOTES:

1. COORDINATE ALL WORK WITH OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED TO PROPERLY INSTALL ALL SYSTEMS AS INTENDED, WITHIN THE CONFINES OF THE SPACES AVAILABLE, AND WITHOUT INTERFERENCES.
2. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM REGARDLESS OF CIRCUITING INDICATED.
3. ALL EXPOSED RACEWAYS SHALL BE IN EMT CONDUIT, MC CABLE IS NOT PERMITTED IN EXPOSED AREAS.
4. ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING ELECTRICAL EQUIPMENT, FIXTURES, SYSTEMS, CONDUIT AND WIRE, ETC. NOT BEING REUSED. DO NOT JUST ABANDON.
5. ELECTRICAL CONTRACTOR TO COORDINATE MANUFACTURER ELECTRICAL REQUIREMENTS FOR HVAC EQUIPMENT BEING FURNISHED WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. EQUIPMENT DISCONNECTS TO BE PROVIDED BY ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE IN MECHANICAL SCHEDULES.
6. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES AND DEVICES.
7. REFER TO ARCHITECTURAL & STRUCTURAL DRAWINGS FOR REQUIREMENTS FOR SUPPORTING TRANSFORMERS, EQUIPMENT, ETC. FROM THE STRUCTURE. PROVIDE ADDITIONAL STEEL AS REQUIRED TO PROPERLY SUPPORT SYSTEMS FROM THE STRUCTURE.
8. ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
9. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL PER NEC 210.4.
10. ALL BRANCH CIRCUITS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 3% VOLTAGE DROP. ALL FEEDERS SHALL BE SIZED TO ALLOW FOR A MAXIMUM OF 2% VOLTAGE DROP. ELECTRICAL CONTRACTOR SHALL VERIFY WIRING INDICATED IS SUFFICIENT AND INCREASE CONDUCTOR SIZE AS REQUIRED BASED OFF ACTUAL INSTALLED LENGTH OF CONDUCTORS.
11. PROVIDE LOW VOLTAGE WIRING BETWEEN ALL 0-10V DIMMING DRIVERS CONTROLLED BY 0-10V DIMMERS PER MANUFACTURER'S INSTRUCTIONS.
12. COORDINATE LOCATIONS AND REQUIREMENTS WITH SECURITY SYSTEM VENDOR FOR DOOR HARDWARE. SEE DETAIL ON THIS SHEET FOR MORE INFORMATION.
13. COORDINATE LOCATIONS AND REQUIREMENTS WITH CAMERA SYSTEM VENDOR.

ELECTRICAL SYMBOLS LIST

CIRCUITING & NOTES	
+46"	SPECIAL MOUNTING HEIGHT FOR ASSOCIATED DEVICE (CENTERLINE OF DEVICE)
GFI	GROUND FAULT CIRCUIT INTERRUPTER DEVICE
WP	WEATHERPROOF ENCLOSURE ON DEVICE
WR	WEATHERPROOF RESISTANT DEVICE
(TIE)	PARTIAL HOMERUN. REFER TO PLANS FOR ADDITIONAL DEVICES CONNECTED TO THIS CIRCUIT.
X	ELECTRICAL FLOOR PLAN NOTE WITH DESIGNATION
2 LP	CONDUIT CONCEALED WHERE POSSIBLE OR AS NOTED, ARROWS INDICATE HOME RUN TO PANEL. CIRCUIT NUMBERS INDICATED
	#12 WIRE IN CONDUIT, UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	GROUNDING CONDUCTOR, #12 WIRE UNLESS NOTED OTHERWISE ON DRAWINGS OR SPECIFICATION
	CONDUIT ROUTED UNDER FLOOR/GRADE
LIGHTING	
	EMERGENCY TWIN HEAD LIGHT FIXTURE
	EXIT LIGHT WITH DIRECTIONAL ARROWS INDICATED
A	STRIP FIXTURE WITH TYPE DESIGNATION
A	RECESSED OR SURFACE MOUNTED FIXTURE WITH TYPE DESIGNATION
A NL	NIGHT LIGHT, CONNECT TO UNSWITCHED CIRCUIT
A	CEILING OR RECESSED FIXTURE WITH TYPE DESIGNATION
A	WALL MOUNTED FIXTURE WITH TYPE DESIGNATION
POWER DEVICES	
	DUPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	FOURPLEX RECEPTACLE, BOTTOM OF BOX AT 16" AFF, UNLESS NOTED OTHERWISE
	DEVICE MOUNTED ABOVE COUNTER AND/OR SPLASH GUARD
	HEAVY DUTY OUTLET - NEMA CONFIGURATION SIZE PER EQUIPMENT MANUFACTURER'S RECOMMENDATION
	PANEL BOARD, TOP OF BOX 6'-0" AFF
	JUNCTION BOX
	NON-FUSED DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MOTOR WITH DESIGNATION
CONTROLS	
S	SINGLE POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_2	TWO POLE WALL SWITCH, TOP OF BOX AT 48" AFF
S_3	THREE-WAY WALL SWITCH, TOP OF BOX AT 48" AFF
S_4	FOUR-WAY WALL SWITCH, TOP OF BOX AT 48" AFF
S_D	DIMMER SWITCH, TOP OF BOX AT 48" AFF
S_M	MANUAL MOTOR STARTER WITH OVERLOADS
COMMUNICATIONS	
	DATA/TELEPHONE OUTLET WITH MINIMUM ¾" CONDUIT STUBBED UP TO ABOVE ACCESSIBLE CEILING, BOTTOM OF BOX AT 16", UNLESS NOTED OTHERWISE. PROVIDE WITH PULL STRING
TV	FLAT SCREEN TELEVISION - PROVIDE AND INSTALL ONE (1) HUBBELL #RR1510X RECESSED TAMPER-RESISTANT DUPLEX RECEPTACLE WITH COVERPLATE AND ONE(1) HUBBELL #HBL260 TWO GANG LARGE CAPACITY WALL BOX (UP TO 2" KNOCKOUT) W/ MUD RING AND COVERPLATE FOR DATA. PROVIDE 2'G WITH PULL STRING TO ABOVE ACCESSIBLE CEILING FOR DATA CABLES. MOUNT BOX AT 7'-6" AFF UNLESS NOTED OTHERWISE (VERIFY)
	CAMERA PROVISIONS. PROVIDE JUNCTION BOX AND 3/4"C TO TELCOM BOARD, PLAN NOTE 9, ON SHEET E2.00. VERIFY EXACT LOCATION PRIOR TO ROUGH IN.



SECURITY ROUGH-IN DETAIL
SCALE: NONE

LIGHT FIXTURE SCHEDULE

MARK NO.	MANUFACTURER & CATALOG NUMBER	VOLTS WATTS	LIGHT SOURCE	DESCRIPTION	EQUIVALENT MANUFACTURERS
A	LITHONIA CPX-2X2-ALO7-SWNT-M4 W/ DGA22	120 38	LED-3500K 4200LUM	2'X2' LED FLAT PANEL WITH SWITCHABLE LUMEN OUTPUT AND COLOR TEMPERATURE. PROVIDE DRYWALL GRID ADAPTER.	OR EQUAL
AE	LITHONIA CPX-2X2-ALO7-SWNT-M4 W/ ILBLP-CP10-HE-SD-A INVERTER & DGA22	120 38	LED-3500K 4200LUM	SAME AS TYPE A EXCEPT WITH EMERGENCY BATTERY BACK-UP VIA INVERTER	OR EQUAL
A2	LITHONIA CPX-2X4-ALO8-SWNT-M2	120 50	LED-4000K 6000LUM	2'X4' LED FLAT PANEL WITH SWITCHABLE LUMEN OUTPUT AND COLOR TEMPERATURE. VERIFY SUSPENSION HEIGHT WITH OWNER/ARCHITECT.	OR EQUAL
A2E	LITHONIA CPX-2X4-ALO8-SWNT-M2 W/ ILBLP-CP10-HE-SD-A INVERTER	120 50	LED-4000K 6000LUM	SAME AS TYPE A EXCEPT WITH EMERGENCY BATTERY BACK-UP VIA INVERTER	OR EQUAL
B	SIGNIFY S65-840-10-AL	120 15	LED-4000K 1000 LUMS	EXTERIOR RATED SQUARE SURFACE MOUNTED DOWNLIGHT. ALUMINUM FINISH - VERIFY WITH ARCHITECT PRIOR TO ORDERING.	OR EQUAL
BE	SIGNIFY S65-840-10-AL W/ IOTA 115-25	120 15	LED-4000K 1000 LUMS	SAME AS TYPE C EXCEPT WITH MICRO-INVERTER FOR EMERGENCY OPERATION. INSTALL INVERTER AT INTERIOR IN CONCEALED/ACCESSIBLE LOCATION.	OR EQUAL
C	LITHONIA CSS-L96-ALO4-MVOLT-SWNB-80CRI W/ ZACVH-M100 CABLE	120 88	LED-4000K 10000 LUM	8' LED STRIP WITH FIELD SELECTABLE LUMEN OUTPUT, COLOR TEMPERATURE, AND ADJUSTABLE 10' AIR CRAFT CABLE WITH Y HANGER. VERIFY SUSPENSION HEIGHT WITH OWNER/ARCHITECT.	OR EQUAL
CE	LITHONIA CSS-L96-ALO4-MVOLT-SWNB-80CRI-IE10NCPHE WZACVH-M100 CABLE	120 88	LED-4000K 10000 LUM	SAME AS TYPE C EXCEPT WITH EMERGENCY BATTERY BACK-UP.	OR EQUAL
D1-2	LITHONIA DSXN1-10C-350-40K-T2M-MVOLT-DNAXD	120 13	LED-4000K 1500 LUM	EXTERIOR RATED LED WALL MOUNTED FIXTURE WITH TYPE 2 DISTRIBUTION AND NATURAL ALUMINUM FINISH. MOUNT AT HEIGHT AS INDICATED ON PLANS. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION. FINISH TO BE CONFIRMED BY OWNER/ARCHITECT.	OR EQUAL
D1-2E	LITHONIA DSXN1-10C-350-40K-T2M-MVOLT-EM20NC-DNAXD	120 13	LED-4000K 1500 LUM	SAME AS TYPE D1-2E EXCEPT WITH MICRO-INVERTER FOR EMERGENCY OPERATION.	OR EQUAL
D2-2	LITHONIA DSXN1-10C-530-40K-T2M-MVOLT-DNAXD	120 19	LED-4000K 2000 LUM	EXTERIOR RATED LED WALL MOUNTED FIXTURE WITH TYPE 2 DISTRIBUTION AND NATURAL ALUMINUM FINISH. MOUNT AT HEIGHT AS INDICATED ON PLANS. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION. FINISH TO BE CONFIRMED BY OWNER/ARCHITECT.	OR EQUAL
D2-4	LITHONIA DSXN1-10C-530-40K-TFTM-MVOLT-DNAXD	120 19	LED-4000K 2000 LUM	EXTERIOR RATED LED WALL MOUNTED FIXTURE WITH TYPE FORWARD THROW DISTRIBUTION AND NATURAL ALUMINUM FINISH. MOUNT AT HEIGHT AS INDICATED ON PLANS. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION. FINISH TO BE CONFIRMED BY OWNER/ARCHITECT.	OR EQUAL
D4-4	LITHONIA DSXN1-10C-1000-40K-TFTM-MVOLT-DNAXD	120 39	LED-4000K 4000 LUM	EXTERIOR RATED LED WALL MOUNTED FIXTURE WITH TYPE FORWARD THROW DISTRIBUTION AND NATURAL ALUMINUM FINISH. MOUNT AT HEIGHT AS INDICATED ON PLANS. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION. FINISH TO BE CONFIRMED BY OWNER/ARCHITECT.	OR EQUAL
F	PROGRESS LIGHTING P2500085-009-MB	120 94	4-8.5W LED/A19 4000K	52" CEILING FAN WITH BRUSHED NICKEL FINNISH AND (4) MEDIUM BASE SOCKETS FOR A19 LED LAMPS. VERIFY SUSPENSION HEIGHT WITH OWNER/ARCHITECT.	OR EQUAL AS APPROVED BY ARCH/ENG
G	LITHONIA FEM-L96-18000LM-IMAFL-MD-MVOLT-SZ10-40K-80CRI-HALF-STSL	120 103	LED 4000K 7800 LUM	8' CEILING MOUNTED, ENCLOSED AND GASKETED FIBERGLASS INDUSTRIAL LED FIXTURE WITH STAINLESS STEEL MOUNTING BRACKETS. FIXTURE TO BE SURFACE MOUNTED TO CEILING STRUCTURE.	OR EQUAL
HX	LUMASCAPE LS4030-SD-4BW-T3-6-X-A-09-PS-WT-000 W/ LS6238-X-WT VISOR SHIELD	120 8/FT	LED RGBW 550 LUM/FT	LINE VOLTAGE WALL MOUNTED LINEAR RGBW WALL GRAZING FIXTURE WITH ADJUSTABLE BRACKET, 6° BEAM SPREAD, AND WHITE FINISH, AND 1-SIDED VISOR SHIELD. PROVIDE ADDITIONAL COMPATIBLE COMPONENTS FOR COMPLETE SYSTEM. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOCATION. "X" INDICATES LENGTH OF FIXTURE. FIXTURES BE INSTALLED END TO END.	OR EQUAL AS APPROVED BY ARCH/ENG
K	BETACALCO FRAMED 130020-40-DB-F20-MS	120 28	LED 1408 LUMS	LED WALL SCONCE TO BE MOUNTED AT +7'-6" VERIFY EXACT LOCATION WITH ARCHITECTURAL ELEVATION. FINISH TO BE CONFIRMED BY OWNER/ARCHITECT.	OR EQUAL AS APPROVED BY ARCH/ENG
	LITHONIA ECRG-RD-M6	120 3	INCL	COMBINATION EMERGENCY/EXIT LIGHT WITH LED LAMPS, RED LETTERS ON WHITE BACKGROUND, TWIN LED EMERGENCY LIGHT HEADS, UNIVERSAL MOUNT, BATTERY BACKUP	SURE-LITES LITHONIA OR EQUAL
	LITHONIA ECRG-HO-RD-M6 W/ ERE-GY-T-SQ-WP	120 5	INCL	COMBINATION EMERGENCY/EXIT LIGHT WITH LED LAMPS, RED LETTERS ON WHITE BACKGROUND, TWIN 6W EMERGENCY LIGHT HEADS, UNIVERSAL MOUNT, HIGH CAPACITY BATTERY BACKUP AND REMOTE TWIN HEAD OUTDOOR RATED FIXTURE	SURE-LITES LITHONIA OR EQUAL

NOTES:

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ARCHITECT
11/8/2022

STATE OF MISSOURI
BRETT M. HERMANN
NUMBER PE-2018035615
REGISTERED PROFESSIONAL ENGINEER

THE WATER HOLE REBUILD
401 SE OLDHAM PARKWAY
LEE'S SUMMIT, MO 64081
CONSTRUCTION SET

#	Description	Date

Date	11-07-2022
Drawn by	SP/BH
Checked by	EK/DS

ELECTRIAL SPECIFICATIONS

E0.00

Scale As indicated

BC PROJECT #: 22360
MISSOURI PE COA #2009003629

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5720 Reeder Shawnee, KS 66203 (913)262-1772

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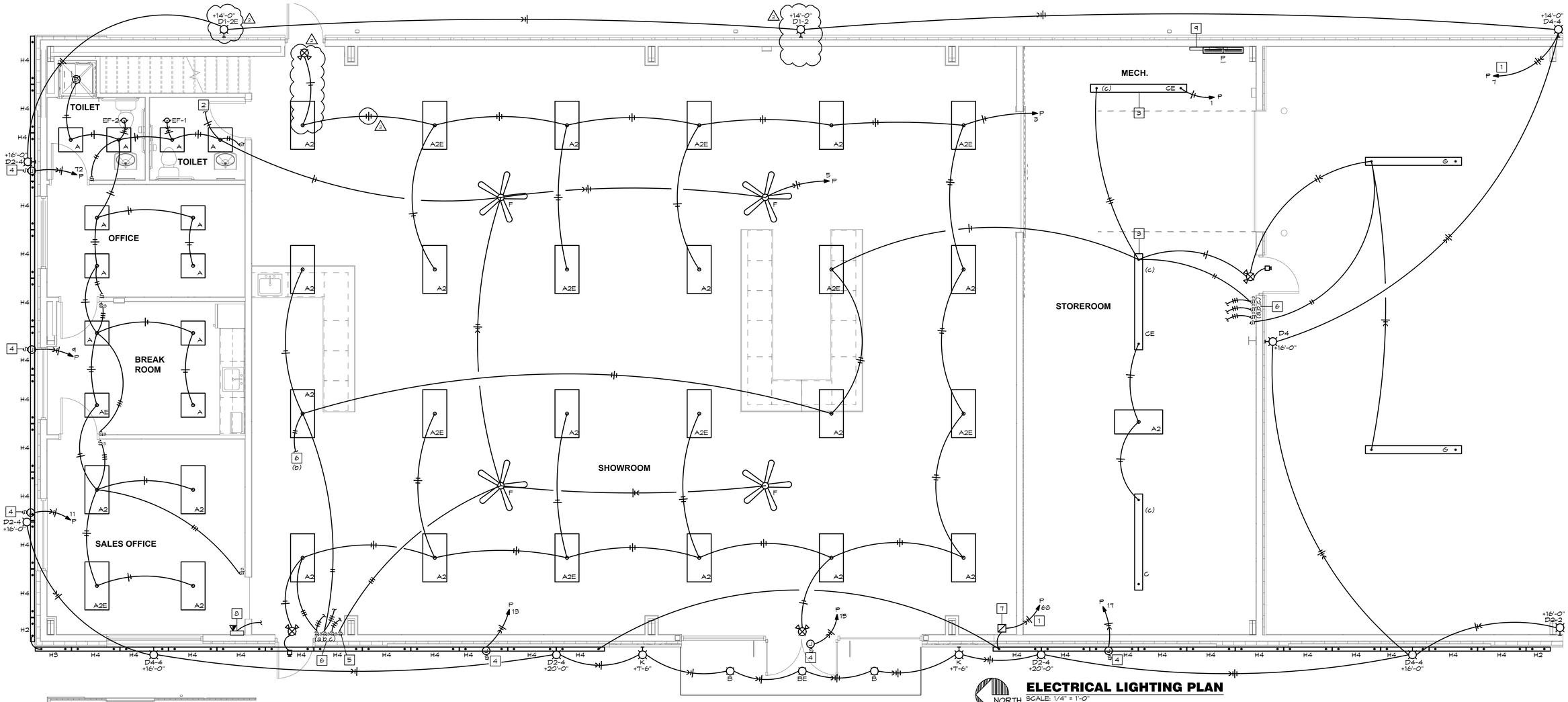
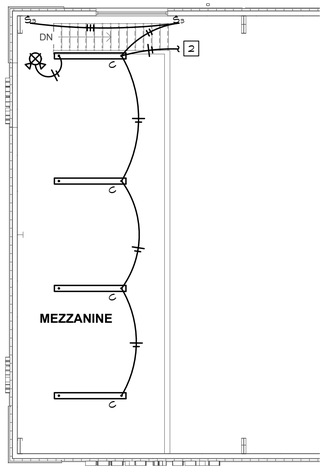


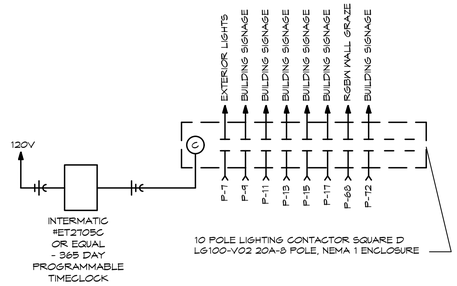
ELECTRICAL LIGHTING PLAN

NORTH SCALE: 1/4" = 1'-0"



ELECTRICAL LIGHTING PLAN - MEZZANINE

NORTH SCALE: 1/8" = 1'-0"



SIGNAGE CONTROL DIAGRAM

SCALE: NONE

LIGHTING PLAN NOTES:

1. ROUTE CIRCUIT TO PANEL INDICATED VIA EXTERIOR LIGHTING CONTROLS. SEE DETAIL ON THIS SHEET FOR MORE INFORMATION. PROVIDE ADDITIONAL CONDUCTOR NOT ROUTED THROUGH LIGHTING CONTROLS FOR CONNECTION TO EMERGENCY LIGHTING IF INDICATED.
2. MAKE CONNECTION BETWEEN LIGHT IN RESTROOM AND LIGHTS AT MEZZANINE.
3. LIGHT FIXTURE TO BE MOUNTED CLEAR OF OVERHEAD DOOR ASSEMBLY.
4. PROVIDE WEATHER PROOF JUNCTION BOX WITH DISCONNECTING MEANS FOR CONNECTION TO BUILDING MOUNTED SIGNAGE. MAKE FINAL CONNECTION TO SIGNAGE. REFER TO ACHITECTURAL ELEVATIONS FOR EXACT LOCATION. ROUTE CIRCUIT TO PANEL INDICATED VIA EXTERIOR LIGHTING CONTROLS. SEE DETAIL ON THIS SHEET FOR MORE INFORMATION.
5. PROVIDE COMBINATION DIMMER/FAN SPEED CONTROLLER COMPATIBLE WITH FAN.
6. MAKE CONNECTION BETWEEN 3-WAY SWITCHES AND SWITCH AT SWITCH BANK PER MANUFACTURERS INSTRUCTIONS.
7. PROVIDE LUMASCAPE POWERSYNC LINE VOLTAGE DATA INJECTOR LS6540-09-2D-WT FOR RGBW LIGHTING. MAKE CONNECTION TO FIXTURES(HX) AND TOUCH SCREEN CONTROLLER(PLAN NOTE 8, THIS SHEET) PER MANUFACTURES INSTRUCTIONS. BOX TO BE IN CONCEALED ACCESSIBLE LOCATION. PROVIDE ALL NECESSARY COMPONENTS FOR COMPLETE SYSTEM.
8. PROPOSED LOCATION OF PHAROS TPC-BN TOUCH SCREEN RGBW CONTROLLER. MAKE CONNECTION BETWEEN CONTROLLER AND POWER DATA WIRING BOXES(PLAN NOTE 7, THIS SHEET) PER MANUFACTURERS INSTRUCTION.
9. PROPOSED LOCATION OF EXTERIOR LIGHTING CONTROLS. SEE DETAIL ON THIS SHEET FOR INFORMATION.

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ARCHITECT

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ELECTRIAL LIGHTING PLAN

E1.00

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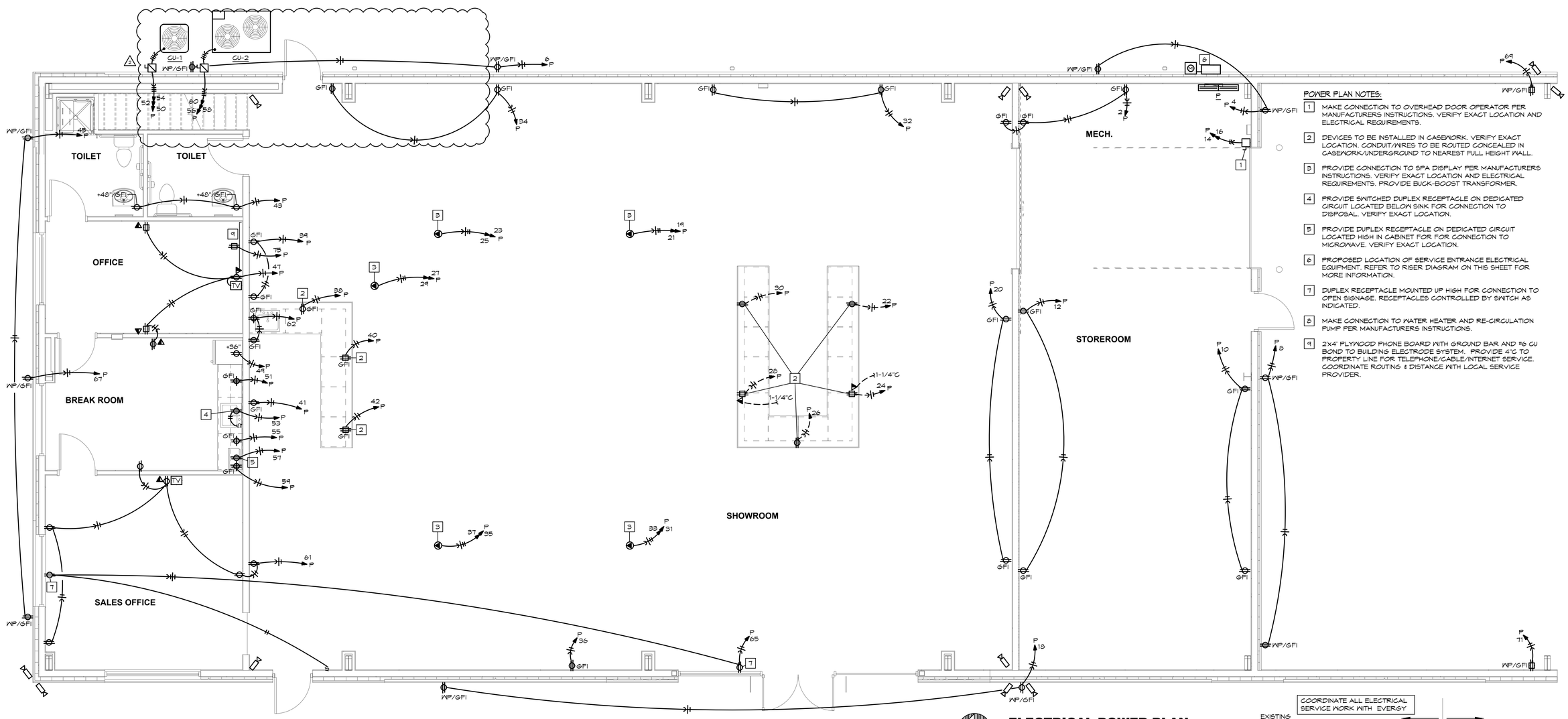


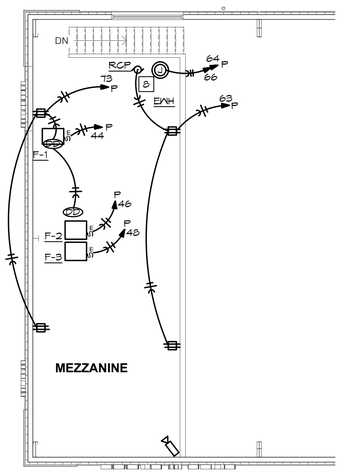
POWER PLAN NOTES:

1. MAKE CONNECTION TO OVERHEAD DOOR OPERATOR PER MANUFACTURERS INSTRUCTIONS. VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS.
2. DEVICES TO BE INSTALLED IN CASEWORK. VERIFY EXACT LOCATION. CONDUIT/WIRES TO BE ROUTED CONCEALED IN CASEWORK/UNDERGROUND TO NEAREST FULL HEIGHT WALL.
3. PROVIDE CONNECTION TO SPA DISPLAY PER MANUFACTURERS INSTRUCTIONS. VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS. PROVIDE BUCK-BOOST TRANSFORMER.
4. PROVIDE SWITCHED DUPLEX RECEPTACLE ON DEDICATED CIRCUIT LOCATED BELOW SINK FOR CONNECTION TO DISPOSAL. VERIFY EXACT LOCATION.
5. PROVIDE DUPLEX RECEPTACLE ON DEDICATED CIRCUIT LOCATED HIGH IN CABINET FOR FOR CONNECTION TO MICROWAVE. VERIFY EXACT LOCATION.
6. PROPOSED LOCATION OF SERVICE ENTRANCE ELECTRICAL EQUIPMENT. REFER TO RISER DIAGRAM ON THIS SHEET FOR MORE INFORMATION.
7. DUPLEX RECEPTACLE MOUNTED UP HIGH FOR CONNECTION TO OPEN SIGNAGE. RECEPTACLES CONTROLLED BY SWITCH AS INDICATED.
8. MAKE CONNECTION TO WATER HEATER AND RE-CIRCULATION PUMP PER MANUFACTURERS INSTRUCTIONS.
9. 2'x4' PLYWOOD PHONE BOARD WITH GROUND BAR AND #6 CU BOND TO BUILDING ELECTRODE SYSTEM. PROVIDE 4"C TO PROPERTY LINE FOR TELEPHONE/CABLE/INTERNET SERVICE. COORDINATE ROUTING & DISTANCE WITH LOCAL SERVICE PROVIDER.

ELECTRICAL POWER PLAN

NORTH

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



ELECTRICAL POWER PLAN - MEZZANINE

NORTH

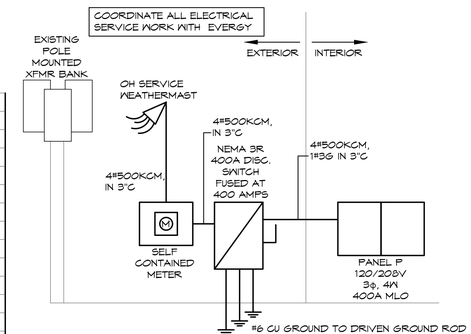
SCALE: 1/8" = 1'-0"

PANEL: P		VOLTS: 120/208V			PH: 3Φ		WIRE: 4W		LOCATION: MECH				MOUNTING: SURFACE		
BUS: 400A		MAIN: 400A MLO			IC: 22,000		RMS SYM AMPS						FEEDER: SEE RISER DIAGRAM		
CKT	DESCRIPTION	AMPS	POLE	WIRE	ΦA	ΦB	ΦC	ΦA	ΦB	ΦC	WIRE	POLE	AMPS	DESCRIPTION	CKT NO
1	STORE/SPECIALTY LTS	20	1	12	464			500			12	1	20	MECH AREA RECPS	2
3	SHOW ROOM LTS	20	1	12		1,000			500		12	1	20	EAST EXT RECPS	4
5	OFF/BREAK/MEZZ LTS	20	1	12			1,385			500	12	1	20	EAST EXT RECPS	6
7	EXT LTS	20	1	12	276			500			12	1	20	SOUTH EXT RECPS	8
9	BUILDING SIGNAGE	20	1	12		1,200			500		12	1	20	SOUTH STORE ROOM RECPS	10
11	BUILDING SIGNAGE	20	1	12			1,200			500	12	1	20	NORHT STORE ROOM RECPS	12
13	BUILDING SIGNAGE	20	1	12	1,200			800			12	2	20	OVERHEAD DOOR	14
15	BUILDING SIGNAGE	20	1	12		1,200			800						16
17	BUILDING SIGNAGE	20	1	12			1,200			500	12	1	20	WEST EXT RECPS	18
19	SPA DISPLAY [GFI]	60	2	6	5,500			500			12	1	20	SOUTH SALES RECPS	20
21						5,500			500		12	1	20	SHOWROOM MIDDLE CNT REC	22
23	SPA DISPLAY [GFI]	60	2	6			5,500			500	12	1	20	SHOWROOM MIDDLE CNT REC	24
25					5,500			500			12	1	20	SHOWROOM MIDDLE CNT REC	26
27	SPA DISPLAY [GFI]	60	2	6		5,500			500		12	1	20	SHOWROOM MIDDLE CNT REC	28
29							5,500			500	12	1	20	SHOWROOM MIDDLE CNT REC	30
31	SPA DISPLAY [GFI]	60	2	6	5,500			500			12	1	20	EAST SHOWROOM RECPS	32
33						5,500			500		12	1	20	EAST SHOWROOM RECPS	34
35	SPA DISPLAY [GFI]	60	2	6			5,500			250	12	1	20	WEST SHOWROOM REC	36
37					5,500			500			12	1	20	N SHOWROOM CNT REC	38
39	NORTH SHOWROOM RECPS	20	1	12		500			500		12	1	20	N SHOWROOM CNT REC	40
41	NORTH SHOWROOM REC	20	1	12			250			500	12	1	20	N SHOWROOM CNT REC	42

SECTION 2														
43	RESTROOM RECPS	20	1	12	500			1,250			12	1	15	FURNACE F-1	44
45	NORTH EXT RECPS	20	1	12		500			1,250		12	1	15	FURNACE F-2	46
47	OFFICE/BRK REC	20	1	12			1,080			1,250	12	1	15	FURNACE F-3	48
49	BRK REF [GFI]	20	1	12	1,200			1,500							50
51	BRK CNT REC	20	1	12		500			1,500		12	3	15	CU-1	52
53	BRK DISP [GFI]	20	1	12			700			1,500					54
55	BRK CNT REC	20	1	12	500			4,000							56
57	BRK MICROWAVE [GFI]	20	1	12		1,500			4,000		8	3	45	CU-2	58
59	BRK CNT REC	20	1	12			500			4,000					60
61	SALES OFFICE/BRK RECPS	20	1	12	1,080			500			12	1	20	N SHOWROOM CNT REC	62
63	MEZZANINE RECPS	20	1	12		800			2,250		10	2	30	WATER HEATER [HL]	64
65	OPEN SIGNAGE	20	1	12			500			2,250					66
67	WATER FEATURE REC	20	1	12	1,000			1,200			10	1	20	RGBW LIGHTING	68
69	EXT QUAD	20	1	12		500						1	20	SPARE	70
71	EXT QUAD	20	1	12			500			1,200	12	1	20	BUILDING SIGNAGE	72
73	MEZZANINE RECPS	20	1	12	800									BUSSED SPACE	74
75	PHONE BOARD	20	1	12		500								BUSSED SPACE	76
77	SPARE	20	1											BUSSED SPACE	78
79	BUSSED SPACE													BUSSED SPACE	80
81	BUSSED SPACE													BUSSED SPACE	82
83	BUSSED SPACE													BUSSED SPACE	84

NOTES:						
	29,520	24,700	23,815	12,250	12,800	13,450
(GFI)-GFCI BRKR 5mA, (HL)-HANDLE LOCK	41,770		37,500		37,265	

TOTAL CONNECTED LOAD:	116,535 VA
NEC DEMAND LOAD:	111,646 VA
DEMAND AMPS @ 208 VOLT / 3Φ:	310.04 A



ELECTRICAL RISER DIAGRAM

SCALE: NONE

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ELECTRIAL POWER PLAN

E2.00

Scale: As indicated

BC PROJECT #: 22360
MISSOURI PE COA #2009003629

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