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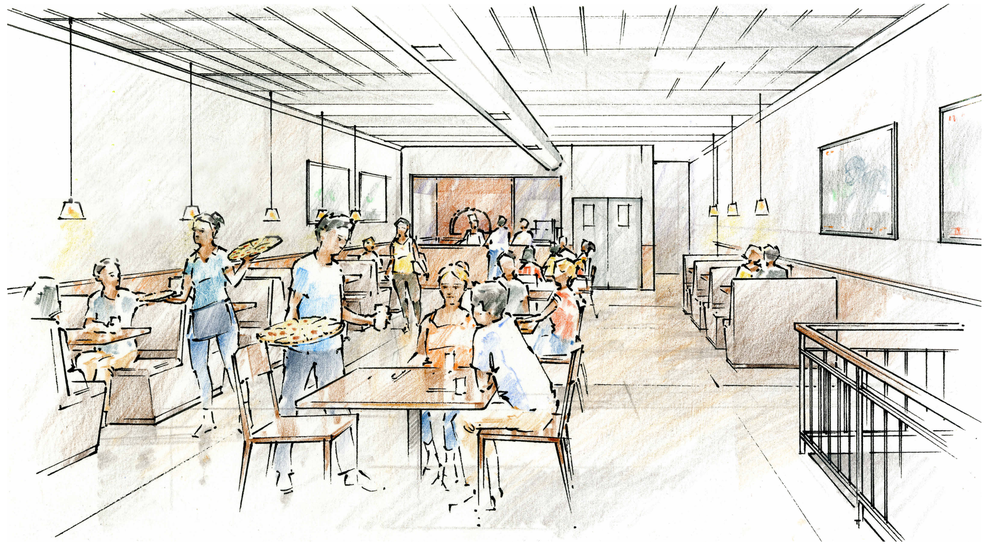


BAILEY-ROBBINS BUILDING RENOVATIONS
PENNINGTON GAP, VA.

BID SET
OCTOBER 1, 2023

PROJECT DATA

PROJECT DESCRIPTION:

REHIBILITATION AND STABILIZATION OF BAILEY-ROBBINS BUILDING INTO A "WHITE BOX" FOR FUTURE TENANT UPFIT. PROJECT INCLUDES EXTERIOR AND INTERIOR WORK AND UPDATES TO MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS.

APPLICABLE CODES:

2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC)
2018 VIRGINIA CONSTRUCTION CODE (VCC)
2018 VIRGINIA EXISTING BUILDING CODE (VEBC)
2018 VIRGINIA ENERGY CONSERVATION CODE (VECC)
2018 VIRGINIA MECHANICAL CODE (VMC)
2018 VIRGINIA PLUMBING CODE (VPC)
NFPA 70: NATIONAL ELECTRICAL CODE, 2017
2010 ADA STANDARDS

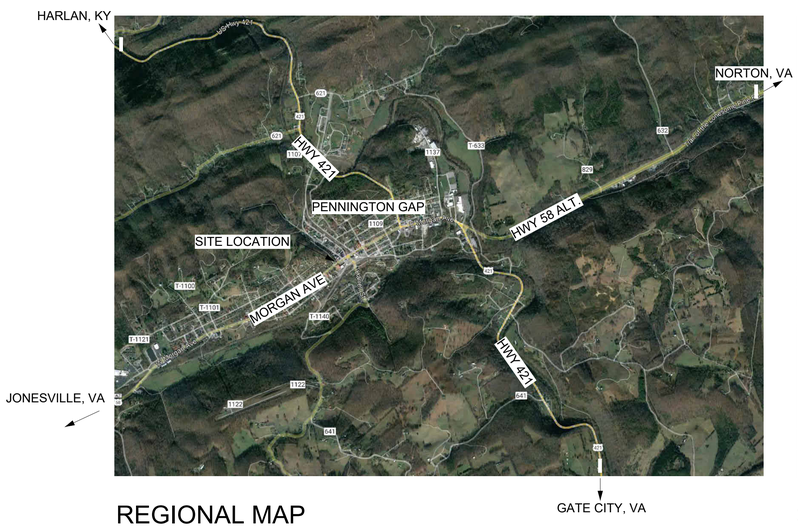
CODE DATA:

USE GROUP M
AREA: 3,926 SF
HEIGHT: 20' ABOVE AVERAGE GRADE
NOT SPRINKLED

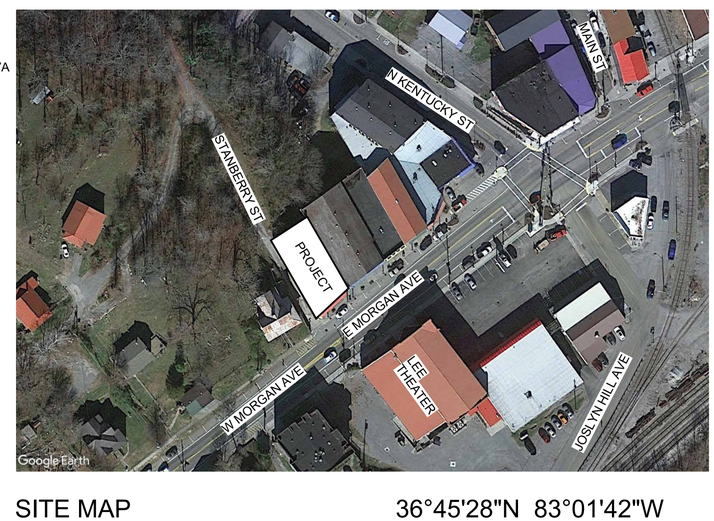
REFER TO LS1.1 FOR DETAILED BUILDING DATA

DRAWING LIST

CVR	TITLE SHEET
A0.1	GENERAL NOTES, SYMBOLS, ABBREVIATIONS, AND LEGENDS
A0.2	GENERAL NOTES, SYMBOLS, ABBREVIATIONS, AND LEGENDS
S001	STRUCTURAL NOTES
S002	STRUCTURAL NOTES
S003	SPECIAL INSPECTIONS
S004	SPECIAL INSPECTIONS
S005	SPECIAL INSPECTIONS
S100	BASEMENT, MAIN FLOOR AND ROOF FRAMING PLAN
S500	STRUCTURAL SECTIONS AND DETAILS
LS1.1	LIFE SAFETY
AD1.1	FLOOR PLANS - DEMO
AD2.1	ELEVATIONS - DEMO
A1.1	FLOOR PLANS
A2.1	ELEVATIONS
A3.1	BUILDING SECTIONS
A3.2	WALL SECTIONS
A3.3	WALL SECTIONS & DETAILS
A6.2	INTERIOR ELEVATIONS
A7.1	SCHEDULES
E1.1	ELECRICAL FLOOR PLANS
E1.2	SPECIFICATIONS & ONE LINE DIAGRAMS
M1.1	MECHANICAL SPECIFICATIONS
M2.1	MECHANICAL LEGEND, SCHEDULES, NOTES, CONTROLS
M3.1	MECHANICAL FLOOR PLANS
M4.1	MECHANICAL DETAILS
P1.1	PLUMBING SPECIFICATIONS, LEGEND, SCHEDULES, DETAILS
P2.1	PLUMBING FLOOR PLANS



REGIONAL MAP



SITE MAP

36°45'28"N 83°01'42"W

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Architecture
Community Planning
Historic Preservation

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10/01/23
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TITLE SHEET

10/01/2023
Revisions:

Drawn By: AB
Review By FE
Project No. 2310

Sheet No.
CVR

ABBREVIATIONS

ABBV.	LABEL
ABV	ABOVE
AFF	ABOVE FINISH FLOOR
A.P.	ACCESS PANEL
ACT	ACOUSTICAL CEILING TILE
ACP	ACOUSTICAL CEILING PANEL
ADD	ADDENDUM
ADJ	ADJACENT
A/C	AIR CONDITIONING
AHU	AIR HANDLING UNIT
ALUM	ALUMINUM
ADA	AMERICANS WITH DISABILITIES ACT
A.B.	ANCHOR BOLTS
ARA	AREA OF RESCUE ASSISTANCE
ARCH	ARCHITECT (URAL)
ASPH	ASPHALT
AWI	ARCHITECTURAL WOOD WORK INSTITUTE
BSMT	BASEMENT
BM	BEAM
BRG	BEARING
BLK	BLACK
BLKG	BLOCKING
BD.	BOARD
BOT	BOTTOM
BLDG	BUILDING
CAB	CABINET
CSMT	CASEMENT
CSWK	CASEWORK
CLG	CEILING
CL	CENTER LINE
CM	CENTIMETER
CT	CERAMIC TILE
CIR	CIRCLE
CIRC	CIRCUMFERENCE
COL	COLUMN
COMM	COMMUNICATIONS
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONST	CONSTRUCTION
CONT.	CONTINUOUS OR CONTINUE
C.J.	CONTROL JOINT
CS	COUNTER SINK
COOR	COORDINATE
CORR	CORRIDOR
CFT	CUBIC FOOT
CYD	CUBIC YARD
DL	DEAD LOAD
DEMO	DEMOLISH OR DEMOLITION
D	DEPTH
DTL	DETAIL
DIA.	DIAMETER
DIM.	DIMENSION
DR	DOOR
DH	DOUBLE-HUNG
DS	DOWNSPOUT
DI	DRAIN INTLET
DWG	DRAWING
DF	DRINKING FOUNTAIN
EA	EACH
E	EAST
ELEC	ELECTRIC(AL)
EWH	ELECTRIC WATER HEATER
EL.	ELEVATION
ELEV.	ELEVATION
EMER	EMERGENCY
ENC	ENCLOS(URE)
EQ	EQUAL
EUIP.	EQUIPMENT
ETC.	ET CETERA
EXIST.	EXISTING
E.B.	EXPANSION BOLT
E.J.	EXPANSION JOINT
EXT.	EXTERIOR
E.I.F.S	EXTERIOR INSULATION FINISH SYSTEM
FB	FACE BRICK
FOC	FACE OF CONCRETE
FOB	FACE OF BLOCK
FOS	FACE OF STUD
FOW	FACE OF WALL
FCU	FAN COIL UNIT
FFHA	FEDERAL FAIR HOUSING ACT
FT	FEET, FOOT
FIN	FINISH
FFE	FINISH FLOOR ELEVATION
FFL	FINISH FLOOR LINE
FRT	FIRE RETARDANT TREATED
FP	FIREPROOF
FLR	FLOOR(ING)
FD	FLOOR DRAIN
FTG	FOOTING
FR	FRAME(D)(ING)
FS	FLOOR SINK
FE	FIRE EXTINGUISHER
F.S.	FRAME SIZE
FBO	FURNISHED BY OTHERS
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GB	GRAB BAR
GD	GRADE, GRADING
GYP	GYPSUM
GWB	GYPSUM WALL BOARD

ABBV.	LABEL
HDWR	HARDWARE
HDR	HEADER
HTG	HEATING
HVAC	HEATING/VENTILATING AIR CONDITIONING
HT	HEIGHT
HM	HOLLOW METAL
HOR	HORIZONTAL
HB	HOSE BIB
HWH	HOT WATER HEATER
HR	HOUR
ID	INSIDE DIAMETER
INCL	INCLUDING
INS	INSULATE (D)(ION)
I.J.	ISOLATION JOINT
INT	INTERIOR
JC	JANITORS CLOSET
JT	JOINT
JST	JOIST
K.F.	KRAFT FACED
LBL	LABEL
LAB	LABORATORY
LB	LAG BOLT
LAM	LAMINATED
LAV	LAVATORY
L.H.	LEFT HAND
LT	LIGHT
LL	LIVE LOAD
MFR	MANUFACTURE (ER)
MAS	MASONRY
M.O.	MASONRY OPENING
MATL	MATERIAL (S)
MAX	MAXIMUM
MECH	MECHANIC (AL)
MED	MEDIUM
MTL	METAL
M	METER
MM	MILLIMETER
MIN	MINIMUM
MN	MINUTE
MISC	MISCELLANEOUS
MR	MOISTURE RESISTANT
MLD	MOLDING
MT	MOUNT(ED)(ING)
N.E.R.	NATIONAL EVALUATION REPORT
NOM	NOMINAL
N	NORTH
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
NO. #	NUMBER
O.C.	ON CENTER
OPG	OPENING
OPP	OPPOSITE
OPP.H.	OPPOSITE HAND
OD	OUTSIDE DIAMETER
OA	OVERALL
PCC	PRECAST
PNT	PAINT
PNTD	PAINTED
PNL	PANEL
PB	PANIC BAR
PAR	PARALLEL
PK	PARKING
PVMT	PAVEMENT
PERF	PERFORATED (D)
PLAM	PLASTIC LAMINATE
PL	PLATE
PLUMB	PLUMBING
PLWD	PLYWOOD
PNT	POINT
PVC	POLYVINYL CHLORIDE
PCF	POUNDS PER CUBIC FEET
PLF	POUNDS PER LINEAL FOOT
PSI	POUNDS PER SQUARE INCH
PCC	PRECAST CONCRETE
PT	PRESSURE TREATED
PROD.	PRODUCT
QT	QUARRY TILE
RAD	RADIUS
RWL	RAIN WATER LEADER
REF	REFERENCE
RFL	REFLECT(ED)(IVE)(OR)
REFR	REFRIGERATOR
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RA	RETURN AIR
REV	REVISION (S), REVISED
RH	RIGHT HAND
R.O.W.	RIGHT OF WAY
RD	ROOF DRAIN
RFG	ROOFING
RM	ROOM
R.O.	ROUGH OPENING
RS	RISER
SAT	SUSPENDED ACOUSTICAL TILE
SCH	SCHEDULE

ABBV.	LABEL
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SC	SOLID CORE
S	SOUTH
SPEC	SPECIFICATION(S)
SQ	SQUARE
STD	STANDARD
STL	STEEL
STO	STORAGE
SD	STORM DRAIN
STRUCT.	STRUCTURAL
SYM	SYMMETRY(ICAL)
SYN	SYNTHETIC
SYS	SYSTEM
TEL	TELEPHONE
TV	TELEVISION
TEMP	TEMPORARY
THK	THICK (NESS)
TPD	TOILET PAPER DISPENSER
TOL	TOLERANCE
TOM	TOPS OF MASONRY
T & G	TONGUE AND GROOVE
TB	TOWEL BAR
TRD	TREAD
TRTD	TREATED
TS	TUBULAR STEEL
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UFAS	UNIFORM FEDERAL ACCESSIBILITY STANDARD
UON	UNLESS OTHERWISE NOTED
UR	URINAL
VB	VAPOR BARRIER
V.I.F.	VERIFY IN FIELD
VER	VERIFY
VERT	VERTICAL
VCT	VINYL COMPOSITION TILE
WSCT	WAINSCOT
WC	WATER CLOSET
WP	WATERPROOFING
WWF	WELDED WIRE FABRIC
W	WEST, WIDTH, WIDE
WIN	WINDOW / WINDOWS
W/	WITH
W / O	WITHOUT
WD	WOOD

GENERAL NOTES

1. THIS PROJECT INCLUDES RENOVATIONS TO A BUILDING WHERE THE FULL EXTENT OF CONDITIONS IS UNKNOWN. THE GENERAL CONTRACTOR SHALL EXPECT UNANTICIPATED EXISTING MATERIALS/CONDITIONS TO BE UNCOVERED DURING THE CONSTRUCTION PROCESS - AND SHALL ALLOW FOR CONTINGENCIES TO DEAL WITH THESE ISSUES. THE GENERAL CONTRACTOR SHALL FIELD VERIFY ALL CRITICAL EXISTING DIMENSIONS/CONDITIONS PRIOR TO PROCEEDING WITH THE WORK.

2. PROVIDE A FINISHED, COMPLETE AND WATERTIGHT BUILDING AS DESCRIBED AND ILLUSTRATED IN THESE CONSTRUCTION DOCUMENTS. FULLY COMPLETE ALL PORTIONS OF THE WORK, INCLUDING THOSE ITEMS OF WORK, FINISHES, FIXTURES, EQUIPMENT OR MATERIALS THAT MAY NOT BE SHOWN BUT WOULD REASONABLY BE INCLUDED IN A FINISHED PROJECT OF THIS NATURE.

3. ATTENTION IS CALLED TO THE REQUIREMENTS SET FORTH IN PROJECT MANUAL PREPARED BY HILL STUDIO.

4. ALL COMPONENTS, SYSTEMS AND ALL OTHER MANUFACTURED ARTICLES, MATERIALS COMPONENTS, COATINGS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED, STORED, HANDLED, CONDITIONED AND MAINTAINED, ETC. AS PER MANUFACTURER'S RECOMMENDATIONS. THERE SHALL BE NO EXCEPTION TO THIS REQUIREMENT WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT. ANY CONFLICT, DISCREPANCY OR QUESTION CONCERNING THESE DOCUMENTS OR MANUFACTURERS' RECOMMENDATIONS SHOULD BE BROUGHT, IN WRITING, TO ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. ALL ASSEMBLIES REQUIRED TO BE FIRE RATED MUST BE UL LISTED OR FACTORY MUTUAL RATED.

5. EQUAL MATERIALS OR COMPONENTS TO THOSE SPECIFIED MAY BE CONSIDERED. REFER TO THE PROJECT MANUAL FOR THE REQUIRED PROCEDURE FOR SUBSTITUTIONS AND SUBMITTING SAMPLES OR INFORMATION TO HILL STUDIO FOR REVIEW BEFORE ORDERING OR PROCEEDING WITH WORK.

6. ALL FINISHED WORK SHALL BE PROPERLY PROTECTED FROM DAMAGE BY SUBSEQUENT WORK OR TRADES. ALL DAMAGES SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF PARTIES RESPONSIBLE FOR DAMAGE. ANY SURFACES, MATERIALS, OR EQUIPMENT DEVELOPING CRACKS, TEARS, DISLOCATIONS, BLEMISHES, OR PROBLEMS OF LIKE NATURE SHALL BE REPLACED, REPAIRED OR RELIEVED IN A MANNER ACCEPTABLE TO THE ARCHITECT. ALL COST RELATED THERETO SHALL BE PAID BY THE CONTRACTOR WITHOUT ADDITIONAL COST TO OWNER.

7. THE CONTRACTOR IS RESPONSIBLE FOR CAREFULLY AND THOROUGHLY REVIEWING ALL DRAWINGS AND SPECIFICATIONS BEFORE BEGINNING ANY WORK OR ORDERING ANY MATERIALS. ANY DISCREPANCIES IN THE DRAWINGS SHOULD IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.

8. IT IS EXPECTED AND REQUIRED THAT THE GENERAL CONTRACTOR, SEPARATE SPECIALIZED CONTRACTORS AND ALL SUBCONTRACTORS BE EXPERIENCED IN THEIR TRADES AND SHALL USE WORKMEN WHO ARE SKILLED IN THEIR PARTICULAR FIELD. QUALITY WORKMANSHIP AND TROUBLE-FREE CONSTRUCTION WILL BE THE STANDARD OF ACCEPTANCE.

9. IT IS FURTHER EXPECTED THAT CONSTRUCTION SHALL PROCEED IN COMPLIANCE WITH WHAT IS CONSIDERED TO BE GOOD BUILDING PRACTICES, IF THERE IS ANY QUESTION CONCERNING NEED FOR ADDITIONAL DETAIL, METHOD, SUBSTITUTION OF MATERIAL OR EQUIPMENT, ETC. THE CONTRACTOR SHALL CONSULT THE ARCHITECT FOR ADDITIONAL DRAWINGS OR CLARIFICATION OF THE INTENT OF THE DOCUMENTS BEFORE PROCEEDING WITH THE WORK.

10. DO NOT SCALE THESE DRAWINGS. WHERE DIMENSIONS ARE INCOMPLETE OR DIRECTIONS ARE NOT CLEAR, CONTACT THE ARCHITECT FOR CLARIFICATION

11. WHERE THE WORD "CERTIFY" OR "CERTIFICATION" IS USED OR IMPLIED, IT SHALL MEAN A DOCUMENT SIGNED AND/OR SEALED BY A PROFESSIONAL MEMBER OF THE FIRM OF HILL STUDIO, ATTESTING THAT PROFESSIONAL SERVICES HAVE BEEN PERFORMED BY AN ARCHITECT OR ENGINEER. THE OPINIONS OR "CERTIFICATIONS" RENDERED ARE BASED ON THAT PERSON'S KNOWLEDGE AND INFORMATION, AND IN ACCORDANCE WITH COMMONLY ACCEPTED PROCEDURES CONSISTENT WITH APPLICABLE STANDARDS OF PROFESSIONAL PRACTICE, AND IS NOT A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

12. ACCESS TO THE BUILDING DURING DEMOLITION AND CONSTRUCTION SHALL BE MAINTAINED.

FIRE ALARM

THE FIRE ALARM SYSTEMS DESIGN AND INSTALLATION SHALL BE FULLY COORDINATED WITH THE ARCHITECTURAL DRAWINGS AND OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THOROUGHLY REVIEWING THE ARCHITECTURAL DRAWINGS FOR COORDINATION OF EQUIPMENT, CABLING AND ACCESS PANEL LOCATIONS. CONFLICTS AND ACCESS PANEL LOCATIONS SHALL BE REFERRED TO THE ARCHITECT FOR RESOLUTION / COORDINATION DURING SHOP DRAWING PREPARATION, PRIOR TO CONSTRUCTION. NO EXTRA CHARGES SHALL BE ALLOWED FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT. GIVE CONSIDERATION TO ALL OTHER TRADES. MAKE ARRANGEMENTS TO AVOID CONFLICTS AND INTERFERENCE WITH OTHER WORK. FULLY COORDINATE ALL COMPONENTS OF FIRE ALARM SYSTEMS WITH MINOR ADJUSTMENTS AS REQUIRED, INCLUDING PROVISION OF OFFSETS AND ACCESSORIES TO MEET ACTUAL CONDITIONS.

MECHANICAL

THE MECHANICAL SYSTEMS INSTALLATION SHALL BE FULLY COORDINATED WITH THE ARCHITECTURAL DRAWINGS AND OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THOROUGHLY REVIEWING THE ARCHITECTURAL DRAWINGS FOR COORDINATION OF EQUIPMENT, DUCTWORK, PIPING AND ACCESS PANEL LOCATIONS. CONFLICTS AND ACCESS PANEL LOCATIONS SHALL BE REFERRED TO THE ARCHITECT FOR RESOLUTION / COORDINATION DURING SHOP DRAWING PREPARATION, PRIOR TO CONSTRUCTION. NO EXTRA CHARGES SHALL BE ALLOWED FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT. PREPARE AND SUBMIT COORDINATION DRAWINGS FOR REVIEW. COORDINATION DRAWINGS SHALL INCLUDE MECHANICAL, ELECTRICAL, PLUMBING, FIRE SUPPRESSION, TELECOMMUNICATIONS, A/V SECURITY, AND FIRE ALARM SYSTEMS AND SHALL BE COLOR-CODED BY TRADE INDICATING PIPING AND DUCT LAYOUT LOCATIONS COORDINATED WITH CEILING INSTALLATION, DEVICES, COMPONENTS, ACCESSORIES AND SYSTEM CONTROLS. GIVE CONSIDERATION TO ALL OTHER TRADES. MAKE ARRANGEMENTS TO AVOID CONFLICTS AND INTERFERENCE WITH OTHER WORK. FULLY COORDINATE ALL COMPONENTS OF MECHANICAL SYSTEMS WITH MINOR ADJUSTMENTS AS REQUIRED, INCLUDING PROVISION OF OFFSETS, TRANSITIONS, FITTINGS, AND ACCESSORIES TO MEET ACTUAL CONDITIONS.

PLUMBING

THE PLUMBING SYSTEMS INSTALLATION SHALL BE FULLY COORDINATED WITH THE ARCHITECTURAL DRAWINGS AND OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THOROUGHLY REVIEWING THE ARCHITECTURAL DRAWINGS FOR COORDINATION OF EQUIPMENT, PIPING AND ACCESS PANEL LOCATIONS. CONFLICTS AND ACCESS PANEL LOCATIONS SHALL BE REFERRED TO THE ARCHITECT FOR RESOLUTION / COORDINATION DURING SHOP DRAWING PREPARATION, PRIOR TO CONSTRUCTION. NO EXTRA CHARGES SHALL BE ALLOWED FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT. PREPARE AND SUBMIT COORDINATION DRAWINGS FOR REVIEW. COORDINATION DRAWINGS SHALL INCLUDE MECHANICAL, ELECTRICAL, PLUMBING, FIRE SUPPRESSION, TELECOMMUNICATIONS, A/V SECURITY, AND FIRE ALARM SYSTEMS AND SHALL BE COLOR-CODED BY TRADE INDICATING PIPING LAYOUT LOCATIONS COORDINATED WITH CEILING INSTALLATION, DEVICES, COMPONENTS, AND ACCESSORIES. GIVE CONSIDERATION TO ALL OTHER TRADES. MAKE ARRANGEMENTS TO AVOID CONFLICTS AND INTERFERENCE WITH OTHER WORK. FULLY COORDINATE ALL COMPONENTS OF PLUMBING SYSTEMS WITH MINOR ADJUSTMENTS AS REQUIRED, INCLUDING PROVISION OF OFFSETS, TRANSITIONS, FITTINGS, AND ACCESSORIES TO MEET ACTUAL CONDITIONS.

ELECTRICAL

THE ELECTRICAL SYSTEMS INSTALLATION SHALL BE FULLY COORDINATED WITH THE ARCHITECTURAL DRAWINGS AND OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THOROUGHLY REVIEWING THE ARCHITECTURAL DRAWINGS FOR COORDINATION OF EQUIPMENT, PIPING AND ACCESS PANEL LOCATIONS. CONFLICTS AND ACCESS PANEL LOCATIONS SHALL BE REFERRED TO THE ARCHITECT FOR RESOLUTION / COORDINATION DURING SHOP DRAWING PREPARATION, PRIOR TO CONSTRUCTION. NO EXTRA CHARGES SHALL BE ALLOWED FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THIS REQUIREMENT. PREPARE AND SUBMIT COORDINATION DRAWINGS FOR REVIEW. COORDINATION DRAWINGS SHALL INCLUDE MECHANICAL, ELECTRICAL, PLUMBING, FIRE SUPPRESSION, TELECOMMUNICATIONS, A/V SECURITY, AND FIRE ALARM SYSTEMS AND SHALL BE COLOR-CODEDBY TRADE INDICATING PIPING LAYOUT LOCATIONS COORDINATED WITH CEILING INSTALLATION, PANEL LOCATIONS, DEVICES, COMPONENTS, AND ACCESSORIES. GIVE CONSIDERATION TO ALL OTHER TRADES. MAKE ARRANGEMENTS TO AVOID CONFLICTS AND INTERFERENCE WITH OTHER WORK. FULLY COORDINATE ALL COMPONENTS OF ELECTRICAL SYSTEMS WITH MINOR ADJUSTMENTS AS REQUIRED, INCLUDING PROVISION OF OFFSETS, TRANSITIONS, FITTINGS, AND ACCESSORIES TO MEET ACTUAL CONDITIONS.

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ARCHITECT

GENERAL NOTES, SYMBOLS, ABBREVIATIONS, AND LEGENDS

10/01/2023

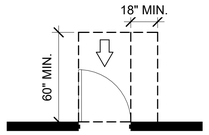
Revisions:

Drawn By: AB
Review By FE
Project No. 2310

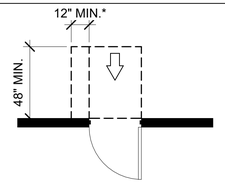
Sheet No.

A0.1

ADA 2010 STANDARDS



(A) FRONT APPOACH, PULL SIDE



(B) FRONT APPOACH, PUSH SIDE
* IF BOTH CLOSER AND LATCH ARE PROVIDED

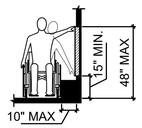
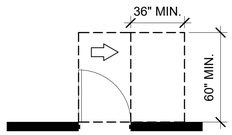
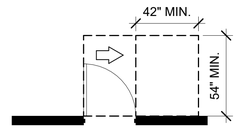


FIG. 308.3.1 UNOBSTRUCTED SIDE REACH



(C) HINGE APPOACH, PULL SIDE



(D) HINGE APPOACH, PULL SIDE

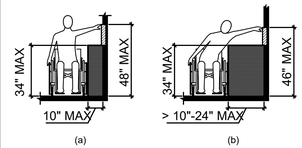
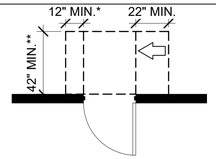
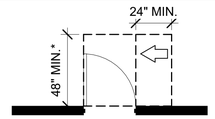


FIG. 308.3.2 OBSTRUCTED HIGH SIDE REACH



(E) HINGE APPOACH, PUSH SIDE
* IF BOTH CLOSER AND LATCH ARE PROVIDED
** 48 MIN IF BOTH CLOSER AND LATCH ARE PROVIDED



(F) LATCH APPOACH, PULL SIDE
*54 MIN IF CLOSER IS PROVIDED

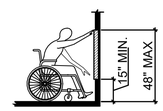
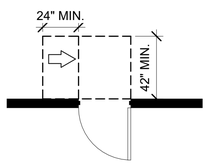
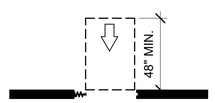


FIG. 308.2.1 UNOBSTRUCTED FORWARD REACH



(G) LATCH APPOACH, PUSH SIDE
*48 MIN. IF CLOSER IS PROVIDED



(H) FRONT APPROACH

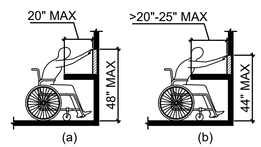
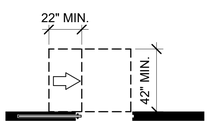
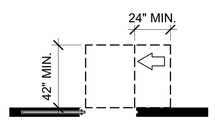


FIG. 308.3.2 OBSTRUCTED HIGH FORWARD REACH



(H) POCKET OR HINGE APPROACH



(H) STOP OR LATCH APPROACH

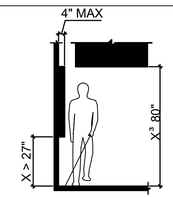
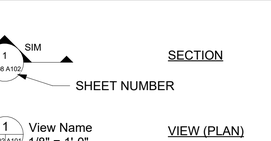


FIG. 307.2 LIMITS OF PROTRUDING OBJECTS



(A) STAIRS (B) RAMPS (C) WALKING SURFACES

FIG. 505.4 HANDRAIL HEIGHT

FIG. 505.5 HANDRAIL CLEARANCE

FIG. 505.6 HORIZONTAL PROJECTIONS BELOW GRIPPING SURFACE

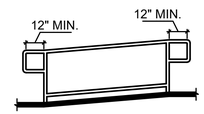


FIG. 505.10.1 TOP AND BOTTOM HANDRAIL EXTENSION AT RAMPS

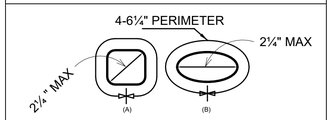
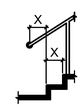


FIG. 505.7.2 HANDRAIL NON-CIRCULAR CROSS SECTION

FIG. 505.10.2 TOP HANDRAIL EXTENSION AT STAIRS



NOTE: X = TREAD DEPTH

FIG. 505.10.3 BOTTOM HANDRAIL EXTENSION AT STAIRS

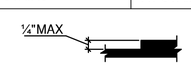


FIG 303.2 VERTICAL CHANGE IN LEVEL

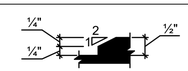


FIG. 303.3 BEVELED CHANGE IN LEVEL

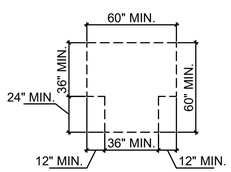
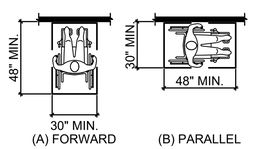


FIG. 304.3.2 T-SHAPED TURNING SPACE



(A) FORWARD (B) PARALLEL

FIG. 305.5 POSITION OF CLEAR FLOOR OR GROUND SPACE

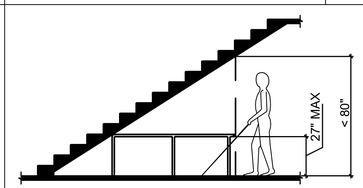


FIG. 307.4 REDUCED VERTICAL CLEARANCE

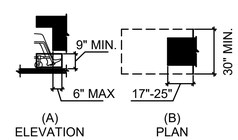


FIG. 306.2 TOE CLEARANCE

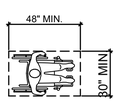


FIG. 305.3 CLEAR FLOOR OR GROUND SPACE

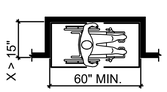


FIG 305.7.2 MANEUVERING CLEARANCE IN AN ALCOVE, PARALLEL APPROACH

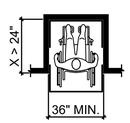
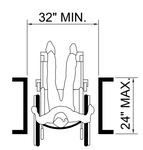
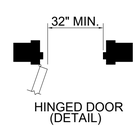


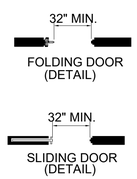
FIG. 305.7.1 MANEUVERING CLEARANCE IN AN ALCOVE, FORWARD APPROACH



MAX. DOORWAY DEPTH



HINGED DOOR (DETAIL)



FOLDING DOOR (DETAIL)

SLIDING DOOR (DETAIL)

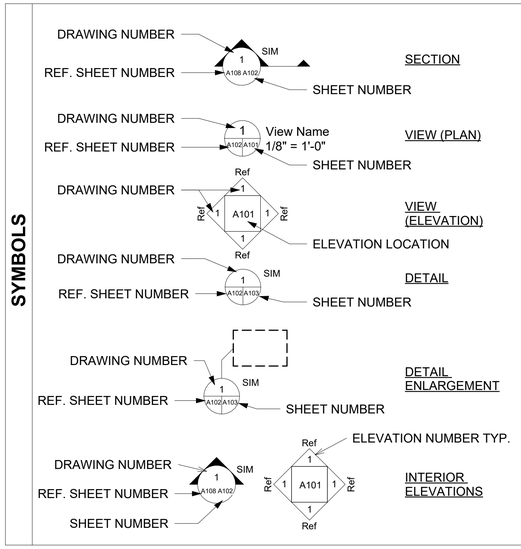
FIG. 404.2.3 CLEAR WIDTH OF DOORWAYS

MOUNTING HEIGHTS

TOILET PAPER AND SANITARY NAPKIN DISPENSER - 15"
ROBE HOOK - 48" MAX.
MIRRORS - 40" MAX. TO REFLECTIVE SURFACE

DRINKING FOUNTAIN - 36" MAX. FOR WHEELCHAIR USE, 43" MAX. FOR STANDING PERSONS
ELECTRICAL OUTLETS - 15" MIN.
SWITCHES - 48" MAX.

SYMBOLS



GENERAL PROJECT NOTES

1. DO NOT SCALE THESE DRAWINGS; VERIFY EXISTING DIMENSIONS
2. COORDINATE ALL ARCHITECTURAL GENERAL NOTES WITH THE GENERAL NOTES RELATED TO SITE WORK AND STRUCTURAL AS WELL AS MECHANICAL, PLUMBING, ELECTRICAL, AND FIRE SUPPRESSION REQUIREMENTS.
3. SUBCONTRACTORS RESPONSIBLE FOR PROVIDING MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS TO CAREFULLY STUDY ARCHITECTURAL, STRUCTURAL AND CIVIL DOCUMENTS TO ENSURE NO CHANGES TO THE PROPOSED DESIGN INCLUDING BUT NOT LIMITED TO MAINTAINING THE FOLLOWING: INTEGRITY OF U.L. LISTED FIRE-RATED FLR./CLG AND WALL ASSEMBLIES.
4. PROVIDE BLOCKING AS REQUIRED IN ALL WALLS FOR THE SUPPORT OF WALL HUNG AND WALL ATTACHED ELEMENTS SUCH AS GRAB BARS, CASEWORK, HANDRAILS, MIRRORS, SINKS, ETC. ALL APPLICABLE ELEMENTS, E.G. GRAB BARS, HANDRAILS, BATHROOM SINKS, MUST BE IN FULL COMPLIANCE WITH APPLICABLE CODES AND REQUIREMENTS.
5. EXTERIOR DIMENSIONS ARE TO FACE OF EXTERIOR WALL.
6. INTERIOR DIMENSIONS ARE TO FACE OF GWB, PLASTER, CMU, CONC., ETC. UNLESS OTHERWISE NOTED.
7. ALL PENETRATIONS OF RATED CONSTRUCTION TO BE FIRE-STOPPED W/ U.L. APPROVED FIRE STOPPING MATERIAL. PROVIDE FIRESTOP BLOCKING IN ALL WALLS, FLOORS, SOFFITS, CEILINGS, ETC. AS REQUIRED BY APPLICABLE CODES AND REGULATIONS.
8. PROVIDE ADEQUATE CONTROL JOINTS TO PREVENT CRACKING IN ALL EXTERIOR CONC. SLABS & SLOPE EXTERIOR SLABS TO DRAIN AWAY FROM BLDG. MIN. 1/4" PER FOOT.
9. REFER TO SHT. LS1.1 FOR WALL CONSTRUCTION TYPES.
10. REFER TO THE A6 SERIES SHEETS FOR INTERIOR ELEVATIONS AND INFORMATION.
11. REFER TO THE A7 SERIES SHEETS FOR WINDOW SCHEDULE, DOOR SCHEDULE, AND DETAILS.
12. ALL RAIN WATER LEADERS TO BE EXTENDED BELOW GRADE AND CONNECTED TO STORMWATER MANAGEMENT SYSTEMS.
13. ALL ROOF PENETRATIONS (VENTS, VENT STACKS, ETC.) OR ROOF MOUNTED COMPONENTS TO BE WRAPPED IN PRE-FINISHED ALUMINUM BREAK METAL, OR EQUAL. PROVIDE SAMPLES FOR ARCHITECTS APPROVAL. COORDINATE WITH PLUMBING CONTRACTOR AND ALL OTHER SUBCONTRACTORS RESPONSIBLE FOR ROOF PENETRATIONS OR ROOF MOUNTED COMPONENTS.
14. ALL EXTERIOR WALL PENETRATIONS (VENTS, ETC.) OR EXTERIOR WALL MOUNTED COMPONENTS TO BE WRAPPED IN PRE-FINISHED METAL, OR EQUAL, IN A COLOR TO MATCH SURROUNDING WALL SURFACE. PROVIDE SAMPLES FOR ARCHITECT'S APPROVAL. COORDINATE W/ PLUMBING & MECH. CONTRACTOR AND ALL OTHER SUBCONTRACTORS RESPONSIBLE FOR WALL PENETRATIONS OR WALL MOUNTED COMPONENTS.
15. REFER TO A0.2 FOR ACCESSIBLE GUIDELINES AND CLEARANCES.
16. ALL WOOD COMING INTO CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.

MATERIAL LEGEND

CMU	WOOD SIDING (HORIZ., LAP)	BLOCKING
CMU (PLAN)	SHINGLE (ASPHALT)	CERAMIC TILE
EARTH	SHINGLE (WOOD)	NEW CONSTRUCTION
METAL (STEEL)	STONE (HISTORIC)	EXISTING CONSTRUCTION
BATT INSULATION	STONE (RANDOM RUBBLE)	CONCRETE
GRAVEL	STONE (COURSED RUBBLE)	CONCRETE (PLAN)
GYPSUM BOARD	STONE (RANDOM ASHLAR)	TO BE DEMOLISHED
RIGID INSULATION	STONE (COURSED ASHLAR)	TO BE DEMOLISHED
PLYWOOD	STONE (BEDROCK)	BELOW GRADE
FINISHED WOOD	BRICK	
ROUGH WOOD	BRICK (PLAN)	

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COMMONWEALTH OF VIRGINIA
10/01/23
FRED ESENWEIN
Lic No. 040101471 1
ARCHITECT

GENERAL NOTES, SYMBOLS, ABBREVIATIONS, AND LEGENDS

10/01/2023

Revisions:

Drawn By:	AB
Review By	FE
Project No.	2310

Sheet No.

A0.2

STRUCTURAL NOTES:

LOAD CHART

BUILDING CODE		
	2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE	
	PART I - VIRGINIA CONSTRUCTION CODE	
	PART II - VIRGINIA EXISTING BUILDING CODE	
	2018 INTERNATIONAL BUILDING CODE	
	2018 INTERNATIONAL EXISTING BUILDING CODE	
	ASCE 7-116	
RISK CATEGORY	2018 IBC TABLE 1604.5	II
SLAB ON GRADE		
	NOT DESIGNED FOR CONCENTRATED OR PATTERN LOADS	
FLOOR DEAD LOAD	BEYOND SELF WEIGHT OF STRUCTURAL SYSTEM	
	ELEVATED FLOOR AT ENTRY (EAST SPACE)	30 PSF
FLOOR LIVE LOAD	LIVE LOAD REDUCTION HAS NOT BEEN USED (ASCE 7 4.7)	ASCE 7 - TABLE 4.3-1
	RETAIL - FIRST FLOOR (EAST SPACE ELEVATED FLOOR)	100 PSF/1000 LB. CONC.
ROOF DEAD LOAD	BEYOND SELF WEIGHT OF STRUCTURAL SYSTEM	38 PSF
ROOF LIVE LOAD	MINIMUM UNIFORM DESIGN LOAD	20 PSF
	MINIMUM CONCENTRATED LOAD (ALL PRIMARY ROOF MEMBERS)	300 LBS
CONSTRUCTION		
	FLOOR CONSTRUCTION PHASE LOADING	20 PSF
	ROOF CONSTRUCTION PHASE LOADING	20 PSF
SNOW		
	SNOW IMPORTANCE FACTOR, Is	1.0
	GROUND SNOW LOAD, Pg	20 PSF
	FLAT ROOF SNOW LOAD, Pf	14 PSF
	SNOW EXPOSURE FACTOR, Ce	1.0
	THERMAL FACTOR, Ct	1.0
	SLOPE FACTOR, Cs	1.0
	SNOW DRIFT AREA 1 (OFF ADJACENT BUILDING TO THE EAST SIDE)	
	SURCHARGE	37 PSF
	WIDTH OF DRIFT	9 FT
	RAIN ON SNOW SURCHARGE	5 PSF
WIND		
	PROCEDURE	DIRECTIONAL (CH. 27 ASCE 7)
	BASIC WIND SPEED, V	115 MPH
	ALLOWABLE STRESS DESIGN WIND SPEED, Vasd	90 MPH
	WIND EXPOSURE CATEGORY	B
	INTERNAL PRESSURE COEFFICIENT, GCpi	+/-0.18
	COMPONENTS & CLADDING	SEE CHART
SEISMIC		
	SEISMIC IMPORTANCE FACTOR, Ie	1.0
	MAPPED SPECTRAL RESPONSE, Ss	33.40%
	MAPPED SPECTRAL RESPONSE, S1	9.60%
	SITE CLASS	D
	SPECTRAL RESPONSE COEFFICIENT, Sds	34.20%
	SPECTRAL RESPONSE COEFFICIENT, Sd1	15.40%
	SEISMIC DESIGN CATEGORY	C
	SEISMIC-FORCE RESISTING SYSTEM	ASCE 7 - TABLE 12.2-1
	ORDINARY PLAIN MASONRY SHEAR WALLS	
	SEISMIC RESPONSE COEFFICIENT, Cs	0.23
	SEISMIC MODIFICATION FACTOR, R	1.5
	ANALYSIS PROCEDURE	EQ. LATERAL FORCE
	DESIGN BASE SHEAR	136 KIPS
ICE		
	ICE THICKNESS	1.0 INCH
	GUST SPEED	30 MPH
RAIN		
	15-MINUTE PRECIPITATION INTENSITY	5.48 IN./HR.
	60-MINUTE PRECIPITATION INTENSITY	2.89 IN./HR.
FLOOD		
	FLOOD ZONE	X
RAILINGS		
	UNIFORM LOAD - ANY DIRECTION - APPLIED TO TOP	50 PLF
	CONCENTRATED LOAD - ANY DIRECTION - APPLIED TO TOP	200 LBS
	COMPONENTS (OVER 1 SQUARE FOOT)	50 LBS
SOIL		
	MODULUS OF SUBGRADE REACTION	125 PCI
	NET ALLOWABLE BEARING PRESSURE	2000 PSF

COMPONENTS AND CLADDING CHART

ROOF

AREA	SURFACE PRESSURE (PSF) 200 SF	350 SF	500 SF	1000 SF
NEGATIVE ZONE 1	-25.8 PSF	-23.8 PSF	-22.6 PSF	-22.6 PSF
NEGATIVE ZONE 1'	-17.8 PSF	-16.0 PSF	-16.0 PSF	-16.0 PSF
NEGATIVE ZONE 2	-34.3 PSF	-31.9 PSF	-30.3 PSF	-30.3 PSF
NEGATIVE ZONE 3	-38.4 PSF	-33.4 PSF	-30.3 PSF	-30.3 PSF
POSITIVE ALL ZONES	16.0 PSF	16.0 PSF	16.0 PSF	16.0 PSF
OVERHANG ZONE 1&1'	-25.7 PSF	-21.7 PSF	-19.2 PSF	-19.2 PSF
OVERHANG ZONE 2	-26.5 PSF	-23.2 PSF	-21.1 PSF	-21.1 PSF
OVERHANG ZONE 3	-30.5 PSF	-24.8 PSF	-21.1 PSF	-21.1 PSF

a = 7.6 FT SEE DIAGRAMS

PARAPET

	AREA	SURFACE PRESSURE (PSF) 10 SF	20 SF	50 SF	100 SF
CASE A:	ZONE 2 :	61.3 PSF	57.4 PSF	52.1 PSF	48.1 PSF
	ZONE 3 :	78.6 PSF	71.5 PSF	62.3 PSF	55.2 PSF
CASE B :	INTERIOR ZONE :	-36.2 PSF	-34.4 PSF	-32.0 PSF	-30.1 PSF
	CORNER ZONE :	-41.4 PSF	-38.6 PSF	-35.0 PSF	-32.3 PSF

qp = 19.2 PSF

WALLS

AREA	SURFACE PRESSURE (PSF) 10 SF	20 SF	50 SF	100 SF
NEGATIVE ZONE 4	-22.4 PSF	-21.5 PSF	-20.3 PSF	-19.4 PSF
NEGATIVE ZONE 5	-27.6 PSF	-25.8 PSF	-23.3 PSF	-21.5 PSF
POSITIVE ZONE 4 & 5	20.7 PSF	19.8 PSF	18.6 PSF	17.7 PSF

STRUCTURAL NOTES - RENOVATION:

A. SPECIAL INSPECTIONS ARE REQUIRED BY THE BUILDING CODE. REFER TO PROJECT SPECIFICATIONS, AND STATEMENT OF SPECIAL INSPECTIONS FOR SPECIFIC REQUIREMENTS.
1. THE CONTRACTOR SHALL COORDINATE INSPECTIONS WITH A MINIMUM OF 48 HOUR NOTICE TO INSPECTOR.
2. THE CONTRACTOR SHALL PROVIDE FULL ACCESS TO ALL ITEMS NECESSARY FOR INSPECTION – IF ITEMS NEED TO BE REMOVED FOR ACCESS, CONTRACTOR SHALL REMOVE AT NO COST TO OWNER.

B. STRUCTURAL REVIEW AND DESIGN IS LIMITED TO THE AREAS INDICATED. THE STRUCTURAL ENGINEER ASSUMES NO RESPONSIBILITY FOR THE EXISTING BUILDING STRUCTURE EXCEPT AS SPECIFICALLY MODIFIED OR INDICATED.

C. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.

D. THE CONTRACTOR SHALL VERIFY THE REQUIREMENT OF OTHER TRADES FOR SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES AND ADDITIONAL ITEMS TO BE PLACED OR SET SIMULTANEOUS WITH STRUCTURAL WORK.

E. DETAILS AND SECTIONS SHOWN ARE TYPICAL AND APPLY TO SIMILAR OR LIKE CONDITIONS.

WHEN THE WORD "SIMILAR" (SIM.) OR "TYPICAL" (TYP.) APPEARS ON THE DRAWINGS, IT HAS A GENERAL MEANING AND MUST NOT BE INTERPRETED AS MEANING IDENTICAL. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING DRAWINGS, LOCATING SIMILAR AND TYPICAL CONDITIONS AND WORKING OUT DETAILS IN RELATION TO THEIR LOCATION AND CONNECTION WITH OTHER PARTS OF THE WORK.

F. DO NOT SCALE DRAWINGS, FOLLOW DIMENSIONS ON PLANS.

G. DO NOT CHANGE THE SIZE, LENGTH OR SPACING OF STRUCTURAL ELEMENTS WITHOUT APPROVAL OF STRUCTURAL ENGINEER.

H. DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING AND TEMPORARY SUPPORTS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH OSHA SAFETY REGULATIONS.

I. THE CONTRACTOR SHALL VERIFY THE FOLLOWING ITEMS AS A MINIMUM AND COORDINATE POSITIONS AND CLEARANCES WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND CIVIL DRAWINGS AND DETAILS:

1. ROOF MOUNTED MECHANICAL EQUIPMENT WEIGHTS. NOTIFY ARCHITECT AND ENGINEER IF WEIGHTS ARE GREATER THAN THOSE INDICATED ON THE DRAWINGS.
2. FLOOR, ROOF, OR WALL PENETRATION SIZES AND LOCATIONS. PROVIDE SUPPLEMENTAL FRAMING AROUND ROOF/DECKING PENETRATIONS.
3. SIZES OF EQUIPMENT PADS.
4. PIPE AND CONDUIT ROUTING, SUPPORTS AND CLEARANCES WITH STRUCTURAL ELEMENTS.

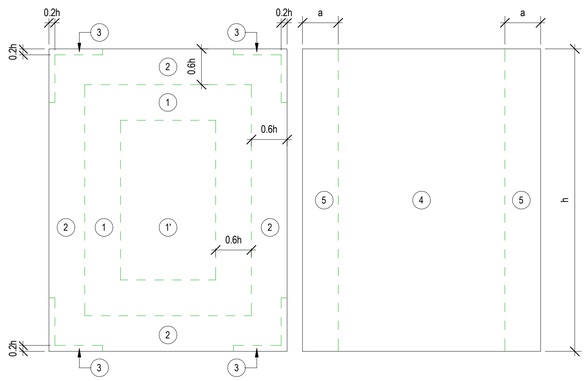
J. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS INCLUDING DIMENSIONS TO EXISTING STRUCTURES, GRADES, UTILITIES, FRAMING, FOUNDATIONS AND HIDDEN CONDITIONS AND COORDINATE THESE CONDITIONS WITH THE CONTRACT DOCUMENTS. NOTIFY THE ARCHITECT AND ENGINEER OF EXISTING CONDITIONS THAT ARE NOT AS SHOWN.

K. PRIOR TO CUTTING OR DRILLING ANY NEW PENETRATION IN EXISTING STRUCTURE:
1. INSPECT BOTH SIDES OF WALL OR SLAB FOR BEAMS, JOISTS, OR OTHER ELEMENTS THAT CAN BE HARMED BY PENETRATION. ADJUST PENETRATIONS TO MISS STRUCTURAL ELEMENTS.
2. ALL PENETRATIONS THROUGH WALLS SHALL BE SLEEVED USING SCHEDULE 40 GALVANIZED STEEL PIPE SET IN CONCRETE FORMS PRIOR TO PLACEMENT OF CONCRETE. INFILL ANCILLARY SPACE WITH COMPRESSIBLE, INSULATING, SEALANT MATERIAL APPROVED BY THE ARCHITECT.

L. IF REINFORCEMENT IN CONCRETE SLAB OR WALL IS CUT OR DAMAGED, CONTACT ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO PROCEEDING FURTHER WITH ANY INSTALLATIONS WITHIN THIS PENETRATION.

M. DO NOT CUT, CORE, ALTER, OR DAMAGE EXISTING STRUCTURAL ELEMENTS (FOOTINGS, COLUMNS, BEAMS, JOISTS, TRUSSES, RAFTERS, ETC.) OF THE BUILDING UNLESS SPECIFICALLY DETAILED. SHOULD ACCIDENTAL DAMAGE OCCUR, CONTACT THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO PROCEEDING.

N. NEW PIPE SUPPORT:
1. WHEN NEW PIPE RUNS OF 3-INCH OR LARGER DIAMETER ARE INSTALLED PARALLEL TO EXISTING BEAMS, JOISTS, RAFTERS, TRUSSES, ETC., SUPPORT PIPE(S) FROM (2) ADJACENT STRUCTURAL ELEMENTS USING UNI-STRUT OR SIMILAR PRODUCT, USING CLAMPS OR BEARING TYPE SUPPORT. DO NOT DAMAGE THE SUPPORTING STRUCTURE.
2. WHEN NEW PIPE RUNS OF 3-INCH OR LARGER DIAMETER ARE INSTALLED PERPENDICULAR TO EXISTING BEAMS, JOISTS, RAFTERS, TRUSSES, ETC., SUPPORT PIPE(S) FROM EACH STRUCTURAL ELEMENT USING CLAMPS OR BEARING TYPE SUPPORT. DO NOT DAMAGE THE SUPPORTING STRUCTURE.
3. SEE TYPICAL DETAILS FOR REQUIRED REINFORCEMENT OF OPEN-WEB STEEL JOISTS FOR POINT LOADS OF 100 LBS OR MORE.



ROOF PLAN WALL ELEVATION

CC DIAGRAM - FLAT/HIP/GABLE (0° ≤ θ ≤ 7°)

NOTE:
FOR HIP ROOFS WITH θ ≤ 25°, ZONE 3 SHALL BE TREATED AS ZONE 2e AND 2r

EARTHWORK FOR STRUCTURES:

A. SUBGRADES AND FILL SHALL BE OBSERVED BY A GEOTECHNICAL ENGINEER REGISTERED AS A PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF VIRGINIA TO VERIFY CONFORMANCE. OBSERVING ENGINEER SHALL APPROVE SUBGRADES PRIOR TO CONCRETE PLACEMENT. OBSERVATIONS ARE EXPECTED TO BE LIMITED TO NEW SLAB SUBGRADES.

B. SOIL DESIGN PARAMETERS:
1. MIN. ALLOWABLE BEARING PRESSURE 2000 PSF
2. UNIT WEIGHT OF SOIL 110 PCF
3. MODULUS OF SUBGRADE REACTION 125 PCI

C. SLAB-ON-GRADE PREPARATION:
1. VERIFY MINIMUM MODULUS OF SUBGRADE ABOVE
2. INTERIOR SLABS:
   a. UNDERLAIN BY 4 INCHES (MIN.) NO. 57 CRUSHED STONE BED. DO NOT PLACE PIPE/CONDUIT WITHIN THE STONE BED.
   b. (10)-MIL (MIN.) ASTM 1745 VAPOR RETARDER (ON TOP OF STONE)
      TAPE ALL SEAMS WITH MANUFACTURER'S SUPPLIED TAPE
      SEAL TO PERIMETER FOUNDATION WALLS
      TAPE/SEAL ALL EDGES AND ALL PENETRATIONS
      REPAIR/PATCH ANY DAMAGE OR PUNCTURES
      CLEAR VAPOR RETARDER OF ALL DEBRIS PRIOR TO PLACEMENT OF CONCRETE
3. EXTERIOR SLABS:
   a. UNDERLAIN BY MINIMUM 6 INCHES THICK NO. 57 CRUSHED STONE BED. DO NOT PLACE PIPE/CONDUIT WITHIN THE STONE BED.
   b. REMOVE ROCK PINNACLES WITHIN ZONE OF SLAB OR STONE SUB-BASE TO AT LEAST THE BOTTOM ELEVATION OF THE STONE SUB-BASE.

D. FILL: NO. 57 STONE
1. DO NOT PLACE FILL ON FROZEN OR OVER-WET SUBGRADES.

E. BLASTING IS NOT PERMITTED.

F. IF NON-UNIFORM ROCK OR DISINTEGRATED ROCK IS ENCOUNTERED AT FOUNDATION DESIGN SUBGRADE ELEVATION, UNDERCUT THIS MATERIAL ONE FOOT MINIMUM AND REPLACE WITH COMPACTED FILL.

G. EVIDENCE OF KARST ACTIVITY OR SINKHOLES SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER PRIOR TO PROCCEDING.

STRUCTURAL SHEET INDEX

SHEET NUMBER	SHEET NAME
S001	STRUCTURAL NOTES
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S003	SPECIAL INSPECTIONS
S004	SPECIAL INSPECTIONS
S005	SPECIAL INSPECTIONS
S100	BASEMENT, MAIN FLOOR AND ROOF FRAMING PLAN
S500	STRUCTURAL SECTIONS AND DETAILS

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BID SET - OCTOBER 1, 2023

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023840
October 9, 2023

STRUCTURAL NOTES

Revisions:

Drawn By: JCL
Review By AL
Project No. 2023029

Sheet No.

S001

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STRUCTURAL NOTES:

CONCRETE AND REINFORCEMENT NOTES:

A. GENERAL CONCRETE SHALL BE:

LOCATION	WEIGHT	STRENGTH (PSI)	AIR (%) (+/- 1%)	SLUMP (IN.) (+/- 1/2)	MAX W/C RATIO	CLASS - ACI 318 TABLE 4.2.1
SLAB-ON-GRADE WITH CRACK CONTROL FIBER	NW	3000	<3	4	0.52	F0
FIELD SAMPLING SHALL BE OBTAINED FROM MIDDLE OF BATCH						

1. NORMAL WEIGHT (NW) CONCRETE SHALL BE 145 – 150 PCF
2. SLUMPS ABOVE ARE PRIOR TO ADDITION OF PLASTICIZERS OR MID RANGE WATER REDUCER. MAXIMUM SLUMP AFTER APPROVED ADDITIVES SHALL BE (8) INCHES MAXIMUM.
3. MATERIALS:
   CEMENT: ASTM C 150 TYPE I/II
   FLY ASH: ASTM C618 CLASS C OR F, 20% MAX.
   AGGREGATE: ASTM C33, GRADED: SLAB ON GRADE- 1 INCH MAXIMUM
4. FIBROUS REINFORCEMENT (CRACK CONTROL):
   ASTM C 1116 TYPE III AND ASTM C1018 PERFORMANCE LEVEL I I5
   100 PERCENT VIRGIN POLYPROPYLENE, FIBRILLATED FIBERS
   MINIMUM VOLUME PER CUBIC YARD OF 0.1 PERCENT (1.5 POUNDS)
   WHEN INDICATED, FIBER SHALL BE IN ADDITION TO STEEL REINFORCEMENT.

B. CONCRETE WORK SHALL BE IN FULL ACCORDANCE WITH:
   AMERICAN CONCRETE INSTITUTE (ACI) 301, 315, AND 318
   CRSI RECOMMENDED PRACTICE OF PLACING REINFORCING BARS
   ACI 117 FOR PLACEMENT TOLERANCES (CONCRETE AND REINFORCEMENT)
   ACI 302.1 CONRETE FLOOR AND SLAB CONSTRUCTION
   ACI 306 AND ACI 305 COLD/HOT WEATHER CONCRETING
   ACI 308.1 FOR CURING OF CONCRETE
   ACI 309R-05 GUIDE FOR CONSOLIDATION OF CONCRETE
   ACI 347-04 (CHAPTER 5) GUIDE TO FORMWORK FOR CONCRETE
   ACI "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES".

C. SLABS GENERAL
1. CEMENTITIOUS MATERIAL CONTENT IN ACCORDANCE WITH TABLE 8.4.4b OF ACI 302.1.
2. MINIMUM MODULUS OF RUPTURE (MOR) PER ASTM C 496:
   3000 PSI MIX – 492 PSI
3. MORTAR FRACTION (VOLUME PERCENTAGE OF CEMENTITIOUS MATERIALS, AGGREGATE, WATER AND AIR THAT PASS THE NO. 8 SIEVE) SHALL BE 55 TO 57 PERCENT.
4. USE BOND BREAK / THERMAL SEPARATION MATERIAL (1/4 IN. MAX. THICKNESS) ALONG FOUNDATION WALLS, AROUND COLUMNS AND OTHER ITEMS THE SLAB IS CAST AGAINST.
5. COMBINED AGGREGATE GRADATIONS:

3/4 OR 1 INCH STONE	8 TO 22 PERCENT ON EACH SIEVE ABOVE 100
#4 TO #16	0 TO 4 PERCENT (ROUND OR CUBICALLY SHAPED AGGREGATE)
	4 TO 8 PERCENT (SLIVERED, SHARP OR ELONGATED)
#30 AND #50 SIEVES	8 TO 15 PERCENT ON EACH
#100 SIEVE	1 1/2 TO 5 PERCENT

   a. PERCENT RETAINED ON TWO ADJACENT SIEVE SIZES SHALL NOT FALL BELOW (5) PERCENT
   b. PERCENT RETAINED ON THREE ADJACENT SIEVE SIZES SHALL NOT FALL BELOW (8) PERCENT
   c. IF PERCENT RETAINED ON TWO ADJACENT SIEVE SIZES IS LESS THAN (8) PERCENT, THEN THE TOTAL PERCENT RETAINED ON EITHER SIEVE AND ADJACENT OUTSIDE SIEVE SHALL BE AT LEAST (13) PERCENT.
6. FLOOR FLATNESS:
   a. PER ACI 302 AND ACI 117
   b. CLASS B (1/4-INCH IN 10 FEET)

D. SLAB CONTROL JOINTS:
1. CUT IN ACCORDANCE WITH ACI 302.1R
2. CUT AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN 4 HOURS OF SLAB PLACEMENT
3. USE 'SOFT CUT' EARLY-ACCESS SAW – USE HIGH SPEED 3600 RPM (MIN.)
4. LENGTH TO WIDTH RATIOS OF PATTERN SHALL NOT EXCEED 1.25
5. JOINTS SHOWN ON THE PLANS ARE GUIDELINES. THE CONTRACTOR SHALL SUBMIT PLAN OF JOINT LOCATIONS AND PROPOSED INSTALLATION.

E. REINFORCING:
1. ASTM A615, GRADE 60 FOR DEFORMED BARS
2. ASTM A185, FOR FLAT SHEET WELDED WIRE FABRIC
3. DEVELOPMENT LENGTH FOR REINFORCEMENT (db = BAR DIAMETER):

STRENGTH	DEVELOPMENT LENGTH, LD		
	#6 AND SMALLER	#7 AND LARGER	HOOK, LDH
3000 PSI	44 db	55 db	22 db

4. DEVELOPMENT LENGTH MINIMUM OF 12 INCHES. HOOK DEVELOPMENT LENGTH MINIMUM 6 INCHES. DEVELOPMENT LENGTH ADJUSTMENTS:
   CLASS B TENSION LAPS: ABOVE MULTIPLIED BY 1.3.
5. SPLICES SHALL BE CLASS B TENSION SPLICES UNLESS NOTED. WELDED WIRE FABRIC SHALL HAVE A MINIMUM LAP OF 6 INCHES.
6. CONCRETE CLEAR COVER SHALL BE (UNLESS NOTED OTHERWISE):

BELOW GRADE (UNFORMED)	3"
BELOW GRADE (FORMED)	2"
EXPOSED TO WEATHER OR WATER	2"

7. PROVIDE (2) #4 X 4'-0" LONG AT ALL SLAB RE-ENTRANT CORNERS (RB)

A. CONCRETE FINISHES:
1. COORDINATE FLOOR SLAB LAYOUT WITH ARCHITECTURAL DRAWINGS FOR EXACT LIMITS, EXTENT OF DEPRESSIONS AND FINISHES.
2. SLAB EXPOSED TO VIEW, COVERED WITH RESILIENT FLOORING, CARPET, PAINT OR OTHER FILM-FINISH COATING SHALL RECEIVE A TROWEL FINISH.
3. EXTERIOR SIDEWALKS, RAMPS, STEPS AND PLATFORMS SHALL RECEIVE A NONSLIP BROOM FINISH
4. PROVIDE 1-INCH CHAMFER AT EXPOSED CONCRETE CORNERS

I. REINFORCING STEEL AND EMBEDDED ITEMS SHALL BE ACCURATELY PLACED IN THE POSITIONS SHOWN, TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.

J. IF APPROVED BY THE ENGINEER PRIOR TO USE, EPOXY GROUTING OF DEFORMED BAR DOWELS OR ANCHOR RODS INTO EXISTING OR HARDENED CONCRETE SHALL BE INSTALLED ACCORDING TO EPOXY MANUFACTURERS RECOMMENDATION TO PROVIDE FULL DEVELOPMENT OF THE BAR OR BOLT FOR THE SPECIFIC CONCRETE STRENGTH AT POINT OF ATTACHMENT.
1. APPLY LOADS ONLY AFTER EPOXY HAS REACHED FULL STRENGTH.
2. ALL PARTS OF ANCHORING SYSTEM (RODS, NUTS, WASHERS, BITS, EPOXY, ETC.) SHALL BE FROM A SINGLE SUPPLIER.

K. NO REPAIR OR RUBBING OF CONCRETE SHALL BE MADE PRIOR TO INSPECTION BY ARCHITECT/ENGINEER OR OWNER'S REPRESENTATIVE.

CONCRETE MASONRY NOTES:

A. MASONRY CONSTRUCTION SHALL BE IN CONFORMANCE WITH:
1. THE MASONRY SOCIETY (TMS) 402 / 602 "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES" – ALLOWABLE STRESS DESIGN
2. TMS 602 FOR PLACEMENT TOLERANCES FOR MASONRY & REINFORCEMENT
3. TMS 602 FOR COLD/HOT WEATHER METHODS
4. ACI "MANUAL OF STANDARD PRACTICES FOR DETAILING REINFORCED CONCRETE STRUCTURES"
5. ASTM C270 STANDARD SPECIFICATION FOR MORTAR FOR UNIT MASONRY

B. MASONRY UNITS:
1. ASTM C90 GRADE N
2. MINIMUM NET COMPRESSIVE STRENGTH:
   CONCRETE MASONRY UNITS: 3250 PSI NET AREA AT TIME OF DELIVERY
   MASONRY ASSEMBLAGE (f'm): 2500 PSI AT 28 DAYS VERIFIED USING THE UNIT STRENGTH METHOD DESCRIBED IN TMS 402 SECTION 1.4 B.2
3. WEIGHT: LIGHTWEIGHT

C. MORTAR (ASTM C270):
1. COMPLY WITH ASTM C270 PROPORTION SPECIFICATION
2. MASONRY CEMENT (ASTM C91): TYPE S
   MORTAR PLACEMENT: FULL BEDDING

D. GROUT:
1. ASTM C-476 FINE OR COARSE PER GROUT SPACE REQUIREMENTS IN TABLE 3.2.1 OF TMS 602
2. MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI
3. BE CONSOLIDATED BY MECHANICAL VIBRATION
4. PLACED PER SECTION 3.5 OF TMS 602

E. REINFORCING:
1. ASTM A615, GRADE 60 FOR DEFORMED BARS
2. JOINT REINFORCEMENT:
   PLACE IN ALL WALLS – INTERIOR, EXTERIOR, BEARING, NON-BEARING AND RETAINING
   9 GAGE LADDER TYPE - GALVANIZED
   16" ON CENTER VERTICAL SPACING MAXIMUM
   INCORPORATE PRE-FORMED T'S AND EL'S AT CORNERS
   SPLICE 8-INCHES
3. MINIMUM REINFORCEMENT, UNLESS NOTED OTHERWISE: (1) - #5 VERTICAL BAR:
   AT END OF WALLS
   10'-0" O.C.
   ALONG EACH SIDE OF OPENINGS
4. MAINTAIN REINFORCEMENT SPACING ABOVE AND BELOW OPENINGS
5. GROUT ALL CELLS CONTAINING REINFORCEMENT
6. GROUT ALL CELLS BELOW GRADE/SLAB ELEVATION
7. LOCATE VERTICAL REINFORCEMENT IN MIDDLE OF CELLS UNLESS NOTED OTHERWISE. USE REBAR POSITIONERS.
8. REFER TO SCHEDULES FOR REBAR DEVELOPMENT LENGTH, SPLICES AND HOOK DIMENSIONS
9. PROVIDE DOWELS IN FOUNDATIONS/SLABS TO MATCH THE SIZE, QUANTITY AND SPACING OF VERTICAL REINFORCEMENT

F. BRACING AND GENERAL CONSTRUCTION OF MASONRY WALLS:
1. INSTALL AND MAINTAIN BRACING AND WARNINGS IN ACCORDANCE WITH BIA/LIUNA/MCAA/NCMA/PCA'S "STANDARD PRACTICE FOR BRACING MASONRY WALLS UNDER CONSTRUCTION"

G. IF APPROVED BY THE A/E PRIOR TO INSTALLATION OR AS INDICATED ON THE PLANS, EPOXY GROUTING OF DEFORMED BAR DOWELS OR ANCHOR RODS INTO MASONRY SHALL BE INSTALLED ACCORDING TO EPOXY MANUFACTURERS RECOMMENDATION TO PROVIDE FULL DEVELOPMENT OF THE BAR OR BOLT FOR THE SPECIFIC CONCRETE STRENGTH AT POINT OF ATTACHMENT.
1. APPLY LOADS ONLY AFTER EPOXY HAS REACHED FULL STRENGTH.
2. ALL PARTS OF ANCHORING SYSTEM (RODS, NUTS, WASHERS, BITS, EPOXY, ETC.) SHALL BE FROM A SINGLE SUPPLIER UNLESS SPECIFIED OTHERWISE.
3. WORK MUST BE PERFORMED BY ACI CERTIFIED EPOXY ANCHOR INSTALLER.
4. PROVIDE MANUFACTURERS RECOMMENDED SCREENS IN HOLLOW BLOCK UNITS AS REQUIRED.

STRUCTURAL STEEL NOTES:

A. STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH:
1. ANSI/AISC 360-16 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" - ALLOWABLE STRESS DESIGN
2. AISC 303-16 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"
3. AWS D1.1 "STRUCTURAL WELDING CODE - STEEL"
4. AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.

B. MATERIALS SHALL COMPLY WITH:

1. STRUCTURAL STEEL SHAPES	ASTM A572 GR 50 or ASTM A992 GR 50
2. STRUCTURAL PIPE (STD, X-STG, XX-STG)	ASTM A53 GRADE B
3. STRUCTURAL PLATES & BAR	ASTM A36 OR ASTM A572 GRADE 50
4. STRUCTURAL BOLTS	ASTM A325
5. STRUCTURAL NUTS	ASTM A563
6. STRUCTURAL WASHERS	ASTM F436
7. ANCHOR RODS	ASTM F1554 GRADE 36
8. GROUT	ASTM C1107 NON-METALLIC, NON-SHRINK

C. AISC PLANT CERTIFICATION IS NOT A REQUIREMENT.

D. COATINGS:
1. PRIME PAINT STRUCTURAL STEEL IF STEEL IS TO RECEIVE FINAL PAINT OR IS INDICATED AS INTERIOR EXPOSED WITHIN THE FINAL PROJECT.
2. STRUCTURAL STEEL EXPOSED TO WEATHER, WATER, ELEMENTS, EXTERIOR TO PRIMARY BUILDING ENVELOPE (OUTSIDE OF EXTERIOR SHEATHING/INSULATION LAYER) OR AS INDICATED SHALL BE GALVANIZED PER ASTM A-123.
3. STEEL BELOW GRADE SHALL BE COATED WITH HEAVY CONSTRUCTION GRADE MASTIC MATERIALS.

E. WELDING SHALL BE:
1. PERFORMED BY AWS CERTIFIED WELDERS
2. ELECTRODES PER TABLE 4.1 OF ANSI/AWS D1.1

F. CONNECTIONS SHALL BE:
1. IN ACCORDANCE WITH AISC SPECIFICATIONS
2. SHALL BE IN ACCORDANCE WITH PARTS 9 THROUGH 15 OF THE STEEL CONSTRUCTION MANUAL.

G. PROTECTION OF EXISTING BUILDING: CONTRACTOR SHALL PROTECT THE EXISTING BUILDING DURING STRUCTURAL MODIFICATIONS.
1. DO NOT OVERHEAT EXISTING STEEL DURING WELDING OPERATIONS TO A MANNER TO WEAKEN THE STEEL. IF HEAT GENERATED IS HIGH ENOUGH TO TEMPORARILY WEAKEN STEEL FRAME, INSTALL SHORING AND MAINTAIN UNTIL WORK IS COMPLETE.
2. IF DAMAGE TO EXISTING STRUCTURE DOES OCCUR, INSTALL OR LEAVE SHORING IN PLACE AND CONTACT ENGINEER FOR DIRECTIONS. DO NOT PROCEED WITH WORK ON DAMAGED MEMBERS WITHOUT SPECIFIC DIRECTIONS.
3. PROTECT ALL AREAS FROM WELDING SPARKS BY USE OF WELDING MATS OR OTHER NON-FLAMMABLE PROTECTIVE DEVICES.

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COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023840
October 2023

STRUCTURAL NOTES

Revisions:

Drawn By:	JCL
Review By	AL
Project No.	2023029
Sheet No.	S002

SPECIAL INSPECTIONS:

SCHEDULE OF SPECIAL INSPECTION NOTES

1. Special Inspections shall comply with the requirements of:
   2018 Virginia Construction Code - Chapter 17
   2018 International Building Code - Chapter 17
2. The Inspection and Testing Agent(s) shall be engaged by the Owner or the Owner's Agent and not by the Contractor or Sub-Contractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The Qualifications of the Special Inspector(s) and/or testing agencies must be subject to the approval of the Building Official and/or the Design Professional.

a. A pre-inspection meeting is to occur between the Special Inspector, Contractor, Owner, Geotechnical Engineer, Architect, Structural Engineer and Civil Engineer (Building Official to be invited). The following shall be reviewed (minimum):
   - List of inspectors that will be on site, with disipline and copy of qualifications/certifications for each
   - Contractor anticipated schedule of work for inspectors. This is to be updated monthly.
   - Establish notice time for Contractor to contact Special Inspector to notify of work to be inspected.
   - Contact information within Special Inspection firm for Contractor (primary, backup) and method of contact.
   - Special Inspector shall have a full set of contract documents, specifications along with updates.
   - Contractor shall provide Special Inspector a copy of approved shop drawings that are relevant to inspections.
   - Code Requirements for Special Inspector.
   - Review list of required special inspections for Project.

   Special Inspector shall present samples of each checklist to be utilized by inspectors that directly correlates to required IBC inspections. Examples are: Structural Fill Observations, Summary of Field Density, Foundation Excavation Observations, Reinforcement Observations, Concrete Placement Observations, Concrete/Grout Truck Field Log, Structural Masonry CMU, Mortar, Grout and Reinforcement Observations.

b. Special Inspection reports to be submitted to Contractor, Owner, Architect, Structural Engineer, Civil Engineer and Building Official no later than:
   - Noted Deficiency that is not immediately addressed and reinspected: 24 hours
   - Test Reports: 24 hours
   - Inspection / Field Reports: 72 hours
   - Deficiency Log (updated): Once per month

c. Special Inspector / Report Requirements:
   - Digital photos (12 megapixel sensor size, 3200 image resolution) must be taken of EVERY inspection observed. Key photos and photos of deficiencies are to be contained within report, other photos are to be maintained by Special Inspector sorted by date of inspection, inspection report number and location of inspection. Photos are to be available immediately to team upon request. At closure of project, provide copy of digital photos to Owner.
   - Contained in each field report, a graphical copy of the floor plan (or appropriate portion) shall be highlighted to show where the inspection took place.
   - Report shall clearly indicate project name, date and time of inspection, inspectors name, weather (including temperature), location (see above graphic requirement), items inspected/observed and condition thereof, deficiencies (with resolution if applicable), any areas that could not be inspected, and any areas where work had occurred without notification for inspections

d. Special Inspector, upon request, shall be on site during Structural or Civil Engineer visits to site.

3. The list of Special Inspectors may be submitted as a separate document, if noted so above.
4. Special Inspections as required by IBC Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.1.
5. Observe on a random basis; operations need not be be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection or steel element.
6. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 306, N6.
7. RDP shall review fabricator/supplier/producer certificates and/or shop drawings for conformance with appropriate standards of practice, quality assurance and compliance with contract documents
8. Review records and test results for conformance with requirements and specifications
9. P - Inspections performed prior to final acceptance of item
10. PR - Task performed for each bolted connection OB - Observe on a random basis. Operations need not be delayed pending these inspections

Are *Requirements for Seismic Resistance* included in the *Statement of Special Inspections?* *No*
Are *Requirements for Wind Resistance* included in the *Statement of Special Inspections?* *No*

Registered Design Professional (RDP) in Responsible Charge:

Signature: Allan Long

October 1, 2023
Date

2018 IBC SCHEDULE OF SPECIAL INSPECTION SERVICES

1705.6 SOILS (IBC TABLE 1705.6)

MATERIAL	ITEM	WORK UNDERWAY/INSPECTION	SERVICE	REQ'D	REFERENCE STANDARD	IBC REFERENCE	FREQUENCY CONTINUOUS	FREQUENCY PERIODIC	FREQUENCY NOTE
Soil	1	Verify materials below shallow foundations are adequate to achieve the design bearing capacity	Field Inspection	X		1705.6	-	X	-
	2	Verify excavations are extended to proper depth and have reached proper material	Field Inspection	X		1705.6	-	X	-
	3	Perform classification and testing of compacted fill materials	Field Inspection	X		1705.6	-	X	-
	4	Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	Field Inspection	X		1705.6	X	-	-
	5	Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly	Field Inspection	X		1705.6	-	X	-

2018 IBC SCHEDULE OF SPECIAL INSPECTION SERVICES

1705.3 CONCRETE CONSTRUCTION (IBC TABLE 1705.3 - MODIFIED)

MATERIAL	ITEM	WORK UNDERWAY/INSPECTION	SERVICE	REQ'D	REFERENCE STANDARD	IBC REFERENCE	FREQUENCY CONTINUOUS	FREQUENCY PERIODIC	FREQUENCY NOTE
Reinf. Steel	1	Inspect reinforcement, including prestressing tendons and verify placement	Shop (4) and Field Inspection	X	ACI 318 CH 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4	-	X	-
	2	Reinforcing bar welding:							
	2a	Verify weldability of reinforcing bars other than ASTM A 706	Shop (4) and Field Inspection		AWS D1.4, ACI 318: 26.6.4		X	-	7
	2b	Inspect single-pass fillet welds, maximum 5/16 in.	Shop (4) and Field Inspection				X	-	7
	2c	Inspect all other welds	Shop (4) and Field Inspection				X	-	7
Anchors	3	Inspect anchors cast in concrete	Shop (4) and Field Inspection	X	ACI 318: 17.8.2		-	X	7
	4	Inspect anchors post-installed in hardened concrete members:							
	4a	Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads	Field Inspection		ACI 318: 17.8.2.4	Table 1705.3 Footnote (b)	X	-	7
	4b	Mechanical anchors and adhesive anchors not defined in (4a)	Field Inspection	X	ACI 318: 17.8.2		-	X	7
		Inspection of anchors and reinforcing steel post-installed in hardened concrete: per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, and/or embedment and tightening torque.	Field Inspection	X			-	Or as required by the research report issued by an approved agency	7
Concrete	5	Verify use of required mix design	Shop (4) and Field Inspection	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3	-	X	7
	6	Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete	Shop (4) and Field Inspection	X	ASTM C 172, ASTM C 31, ACI 318: 26.5, 26.12	1908.10	X	-	8
	7	Inspect concrete and shotcrete placement for proper application techniques.	Field Inspection	X	ACI 318; 26.5	1908.6, 1908.7, 1908.8	X	-	-
	8	Verify maintenance of specified curing temperatures and techniques	Field Inspection	X	ACI 318: 26.5.3-26.5.5	1908.9	-	X	8
Prestressed	9	Inspect prestressed concrete:							
	9a	Application of prestressing forces	Field Inspection		ACI 318: 26.10		X	-	7
	9b	Grouting of bonded prestressing tendons	Field Inspection		ACI 318: 26.9		X	-	7
Precast	10	Inspect erection of precast concrete members	Field Inspection		ACI 318: 26.11.2	per construction documents	-	X	-
		Perform inspections of welding and bolting in accordance with Section 1705.2	Field Inspection			1705.2	-	X	-
Post Tension	11	Verify in-situ concrete strength, prior to stressing tendons in post-tensioned concrete prior to removal of shores and forms from beams and structural slabs	Shop (4) and Field Inspection		ACI 318: 26.11.2		-	X	-
Formwork	12	Inspect formwork for shape, location and dimensions of the concrete member being formed, shoring and reshoring	Field Inspection		ACI 318: 26.11.1.2 (b)		-	X	-
SUBMITTALS									
Concrete		Ready-Mix Plant Quality Control	Submittals	X	Specs, 1704.2.5		-	-	7
Concrete		Mix Design Tests And Certificates	Submittals	X	Specs, 1705.3		-	-	7
Reinf. Steel		Shop Drawings Of Reinforcing Steel	Submittals	X	Specs		-	-	7
Reinf. Steel		Special Construction	Submittals		1704.5.7		-	-	7
Prestressed		Shop Drawings Of Prestressed Units	Submittals		Specs		-	-	7
Precast		Quality Control Of Manufacturer	Submittals		1704.2.5		-	-	7
Precast		Shop Drawings Of Precast	Submittals		Specs		-	-	7
Shotcrete		Reinforcing Steel-Test Panel	Submittals		1908.5, 1705.3		-	-	8

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October 1, 2023

SPECIAL INSPECTIONS

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S003

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SPECIAL INSPECTIONS:

2018 IBC SCHEDULE OF SPECIAL INSPECTION SERVICES

1705.2 STRUCTURAL STEEL

MATERIAL	ITEM	WORK UNDERWAY/INSPECTION	SERVICE	REQ'D	REFERENCE STANDARD AISC 360 (UNO)	REFERENCE	FREQUENCY CONTINUOUS	FREQUENCY PERIODIC	FREQUENCY NOTE
Structural Steel	1	Fabricator and erector quality control	Submittal Review		N2		-	X	7, 8
	1a	Material identification	Submittal Review		N2, paragraph 1		-	X	7, 8
		Fabricator quality control procedures	Submittal Review		N2, paragraph 2		-	X	7, 8
		Erector quality control procedures	Submittal Review		N2, paragraph 3		-	X	7, 8
	1b	Submittals for steel construction	Submittal Review		N3, paragraph 1		-	X	7, 8
		Available documents for steel construction	Submittal Review		N3, paragraph 2		-	X	7, 8
		Quality control inspector qualifications	Submittal Review		N4, paragraph 1		-	X	7, 8
		Quality assurance inspector qualifications	Submittal Review		N4, paragraph 2		-	X	7, 8
		NDT personnel qualifications	Submittal Review		N4, paragraph 3		-	X	7, 8
	2	Embedments (verify diameter, grade, type, length, embedment)	Field Inspection	X		ACI 318 17.8.2, TMS 602 ART. 2.4 B & 2.4 H	-	X	-
	3	Verify member locations, braces, stiffeners, and application of joint details at each connection complies with construction documents	Field Inspection	X			-	X	-
Welding	4a	Prior to welding: Perform/observe the QA tasks listed in Table N5.4-1 for each welded joint or member	Shop (4) and Field Inspection	X	TABLE N5.4-1		-	-	5 - Observe or perform as noted
		Welder qualification records and continuity records	Shop (4) and Field Inspection	X	TABLE N5.4-1		-	OB	-
		WPS available (welder procedure specification)	Shop (4) and Field Inspection	X	TABLE N5.4-1		PR	-	-
		Manufacturer certifications for welding consumables available	Shop (4) and Field Inspection	X	TABLE N5.4-1		PR	-	-
		Material identification (type/grade)	Shop (4) and Field Inspection	X	TABLE N5.4-1		-	OB	-
		Welder identification system	Shop (4) and Field Inspection		TABLE N5.4-1		-	OB	-
		Fit-up groove welds (including joint geometry) Joint preparations Dimensions (alignment, root opening, root face, bevel) Cleanliness (condition of steel surfaces) Tacking (tack weld quality and location) Backing type and fit (if applicable)	Shop (4) and Field Inspection	X	TABLE N5.4-1		-	OB	-
		Fit-up of CJP groove welds of HSS T-, Y- and K- joints without backing (including joint geometry) Joint preparations Dimensions (alignment, root opening, root face, bevel) Cleanliness (condition of steel surfaces) Tacking (tack weld quality and location)	Shop (4) and Field Inspection		TABLE N5.4-1		-	OB	-
		Configuration and finish of access holes	Shop (4) and Field Inspection		TABLE N5.4-1		-	OB	-
		Fit-up of fillet welds Dimensions (alignment, gaps at root) Cleanliness (condition of steel surfaces) Tacking (tack weld quality and location)	Shop (4) and Field Inspection	X	TABLE N5.4-1		-	OB	-
		Check welding equipment	Shop (4) and Field Inspection	X	TABLE N5.4-1		-	OB	-
	4b	During welding: Perform/observe the QA tasks listed in Table N5.4-2 for each welded joint or member	Shop (4) and Field Inspection	X	TABLE N5.4-2		-	-	5 - Observe
		Control and handling of weldables Packaging Exposure control	Shop (4) and Field Inspection	X	TABLE N5.4-2		-	OB	-
		No welding over cracked tack welds	Shop (4) and Field Inspection	X	TABLE N5.4-2		-	OB	-
		Environmental conditions Wind speed within limits Precipitation and temperature	Shop (4) and Field Inspection		TABLE N5.4-2		-	OB	-
		WPS followed Settings on welding equipment Travel speed Selected welding materials Shielding gas type/flow rates Preheat applied Interpass temperature maintained (min./max.) Proper position (F, V, H, OH)	Shop (4) and Field Inspection	X	TABLE N5.4-2		-	OB	-
		Welding techniques Interpass and final cleaning Each pass within profile limitations Each pass meets quality requirements	Shop (4) and Field Inspection	X	TABLE N5.4-2		-	OB	-
		Placement and installation of steel headed stud anchors	Shop (4) and Field Inspection		TABLE N5.4-2		PR	-	-
	4c	After welding: Perform/observe the QA tasks listed in Table N5.4-3 for each welded joint or member	Shop (4) and Field Inspection	X	TABLE N5.4-3		-	-	5 - Observe or perform as noted
		Welds cleaned	Shop (4) and Field Inspection	X	TABLE N5.4-3			OB	-
		Size, length and location of welds	Shop (4) and Field Inspection	X	TABLE N5.4-3		PR	-	-
		Welds meet visual acceptance criteria Crack prohibition Weld/base-metal fusion Crater cross section Weld profiles Weld size Undercut Porosity	Shop (4) and Field Inspection	X	TABLE N5.4-3		PR	-	-
		Arc strikes	Shop (4) and Field Inspection		TABLE N5.4-3		PR	-	-
		k-area	Shop (4) and Field Inspection		TABLE N5.4-3		PR	-	-
		Weld access holes in rolled heavy shapes and built-up heavy shapes	Shop (4) and Field Inspection		TABLE N5.4-3		PR	-	-
		Backing removed and weld tabs removed (if required)	Shop (4) and Field Inspection		TABLE N5.4-3		PR	-	-
		Repair activities	Shop (4) and Field Inspection	X	TABLE N5.4-3		PR	-	-
		Document acceptance or rejection of welded joint or member	Shop (4) and Field Inspection	X	TABLE N5.4-3		PR	-	-
		No prohibitive welds have been added without approval of EOR	Shop (4) and Field Inspection	X	TABLE N5.4-3			OB	-
Non-Destructive Testing	5	Non-Destructive Testing (NDT) of welded joints		X	AWS D1.1 & AISC 360 Commentary		-	-	-
		Complete penetration groove welds 5/16" or greater in Risk Category III or IV	Shop (4) or field ultrasonic testing - 100%		N5, paragraph 5b		-	X	-
		Complete penetration groove welds 5/16" or greater in Risk Category II	Shop (4) or field ultrasonic testing - 10% of welds, min.		N5, paragraph 5b		-	X	-
		Thermally cut surfaces of access holes when material t > 2"	Shop (4) or field magnetic particle or penetrant testing				-	X	-
		Welded joints subject to fatigue when required by AISC 360	Shop (4) or field radiographic or ultrasonic testing		Appendix 3, Table A-3.1		-	X	-
		Fabricators NDT reports when fabricator performs NDT	Verify reports	X			-	-	6 - Each submittal
Bolting	6a	Prior to bolting: Perform/observe the QA tasks listed in Table N5.6-1 for each bolted connection	Shop (4) and Field Inspection	X	TABLE N5.6-1		-	-	5 - Observe or perform as noted
		Manufacture's certifications available for fastener materials	Shop (4) and Field Inspection	X	TABLE N5.6-1		PR	-	-
		Fasteners marked in accordance with ASTM requirements	Shop (4) and Field Inspection	X	TABLE N5.6-1		-	OB	-
		Correct fasteners selected for the joint detail (grade, type, bolt length, if threads are to be excluded from shear plane)	Shop (4) and Field Inspection	X	TABLE N5.6-1		-	OB	-
		Correct bolting procedure selected for joint detail	Shop (4) and Field Inspection	X	TABLE N5.6-1		-	OB	-
		Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	Shop (4) and Field Inspection	X	TABLE N5.6-1		-	OB	-
		Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	Shop (4) and Field Inspection		TABLE N5.6-1		-	OB	-
		Protected storage provided for bolts, nuts, washers and other fastener components	Shop (4) and Field Inspection	X	TABLE N5.6-1		-	OB	-
	6b	During bolting: Perform/observe the QA tasks listed in Table N5.6-2 for each bolted connection	Shop (4) and Field Inspection	X	TABLE N5.6-2		-	-	5 - Observe
		Fastener assemblies placed in all holes and washers and nuts are positioned as required	Shop (4) and Field Inspection	X	TABLE N5.6-2		-	OB	-
		Joint brought to the snug-tight condition prior to the pre-tensioning operation	Shop (4) and Field Inspection	X	TABLE N5.6-2		-	OB	-
		Fastener component not turned by the wrench prevented from rotation	Shop (4) and Field Inspection	X	TABLE N5.6-2		-	OB	-
		Fasteners are pretensioned in accordance with RCSC Specification, progressing systematically from the most rigid point toward free edges	Shop (4) and Field Inspection		TABLE N5.6-2		-	OB	-
	6c	After bolting: Perform/observe the QA tasks listed in Table N5.6-3 for each bolted connection	Shop (4) and Field Inspection	X	TABLE N5.6-3		-	-	5 - Perform
		Document acceptance or rejection of bolted connections	Shop (4) and Field Inspection	X	TABLE N5.6-3		PR	-	-
Pre-Tensioned & Slip-Critical	7	Pre-Tensioned and slip-critical joints	Shop (4) and Field Inspection		N Para 6		-	-	-
		Turn-of-nut with matching markings	Shop (4) and Field Inspection		N Para 6		-	X	-
		Direct tension indicator	Shop (4) and Field Inspection		N Para 6		-	X	-
		Twist-off type tension control bolt	Shop (4) and Field Inspection		N Para 6		-	X	-
		Turn-of-nut without matching markings	Shop (4) and Field Inspection		N Para 6		X	-	-
		Calibrated wrench	Shop (4) and Field Inspection		N Para 6		X	-	-
		Snug-tight joints	Shop (4) and Field Inspection	X	N Para 6		-	X	-

OB - Observe these items on a random basis. Operations need not be delayed pending these inspections	N Para 6
PR - These tasks shall be performed on each bolted connection	

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October 2023

SPECIAL INSPECTIONS

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Review By AL
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SPECIAL INSPECTIONS:

2018 IBC SCHEDULE OF SPECIAL INSPECTION SERVICES

1705.4 MASONRY CONSTRUCTION

MATERIAL	ITEM	TYPE OF INSPECTION	SERVICE	REQ'D	REFERENCE STANDARD		IBC REFERENCE	FREQUENCY		
					TMS 402	TMS 602		CONTINUOUS	PERIODIC	NOTE
		Minimum verification requirements		X		TABLE 3	1705.4			
		LEVEL 1, 2, 3								
Masonry		Prior to construction, verification of compliance of submittals	Submittal review	X		ART. 1.5			X	
		LEVEL 2, 3								
Masonry		Prior to construction, verification of f'm and f'aac, except where specifically exempted by the Code	Testing by unit strength method	X		ART. 1.4B			X	
Grout		During construction verification of Slump flow and Visual Stability Index (VSI) when self-consolidating grout is delivered to the project site	Field Inspection	X		ART. 1.5 & 1.6.3			X	
		LEVEL 3								
Masonry		During construction verification of f'm and f'aac for every 5000 sq. ft.	Testing by unit strength method			ART. 1.4B			X	
Grout & Mortar		During construction, verification of proportions of materials as delivered to the project site for premixed ot preblender mortar, prestressing grout, and grout othe than self-consolidating grout	Field Inspection			ART. 1.4B			X	
		Minimum Special Inspection Requirements (LEVEL 2)		X		TABLE 4				
	1	As masonry construction begins, verify that the following are in compliance:								
Mortar	1a	Proportions of site prepared mortar	Field Inspection	X		ART. 2.1, 2.6, A & 2.6 C			X	
Anchors	1b	Grade and size of prestressing tendons and anchorages	Field Inspection	X		ART. 2.4 B & 2.4 H			X	
Reinforcement	1c	Grade, type and size of reinforcement, connectors, anchor bolts, and prestressing tendons and anchorages	Field Inspection	X		ART. 3.4 & 3.6 A			X	
	1d	Prestressing technique	Field Inspection			ART. 3.6 B			X	
Mortar	1e	Proportions of thin-bed mortar for AAC masonry	Field Inspection			ART. 2.1 C.1			X	
	1f	Sample panel construction	Field Inspection			ART. 1.6 D			X	
	2	Prior to grouting, verify that the following are in compliance:								
Grout	2a	Grout space	Field Inspection	X		ART. 3.2 D & 3.2 F			X	
Tendons	2b	Placement of prestressing tendons and anchorages	Field Inspection		SEC. 10.8 & 10.9	ART. 2.4 & 3.6			X	
Anchors	2c	Placement of reinforcement, connectors, and anchor bolts	Field Inspection	X	SEC. 6.1, 6.3.1, 6.3.6, & 6.3.7	ART. 3.2E & 3.4			X	
Grout	2d	Proportions of site prepared grout and prestressing grout for bonded tendons	Field Inspection	X		ART. 2.6 B, & 2.4 G.1.b			X	
	3	Verify compliance with the following during construction:								
	3a	Materials and procedures with the approved submittals	Field Inspection	X		ART. 1.5				
Masonry	3b	Placement of masonry units and mortar joint construction	Field Inspection	X		ART. 3.3 B				
Masonry	3c	Size and location of structural members	Field Inspection	X		ART. 3.3 F				
Anchors	3d	Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction	Field Inspection	X	SEC. 1.2.1 (e), 6.2.1, & 6.3.1					
Reinforcement	3e	Welding of reinforcement	Field Inspection	X	SEC. 6.1.6.1.2			X		
Masonry	3f	Preparation, construction, and protection of masonry during cold weather (temperature below 40 degrees (F) or hot weather (temperatures above 90 degrees (F))	Field Inspection	X		ART. 1.8 C & 1.8 D				
Tendons	3g	Application and measurement of prestressing force	Field Inspection			ART. 3.6 B		X		
Grout	3h	Placement of grout and prestressing grout for bonded tendons in in compliance	Field Inspection			ART. 3.5 & 3.6 C		X		
Masonry	3i	Placement of AAC masonry units and construction of thin-bed mortar joints	Field Inspection			ART. 3.3 B.9 & 3.3 F.1.b		X	X	
Grout	4	Observe preparatoin of grout specimens, mortar specimens, and/or prisms	Field Inspection			ART. 1.4 b.2.a.3, 1.4 B.2.b.3, 1.4 b.2.c.3, 1.4 B.3, & 1.4 B.4			X	

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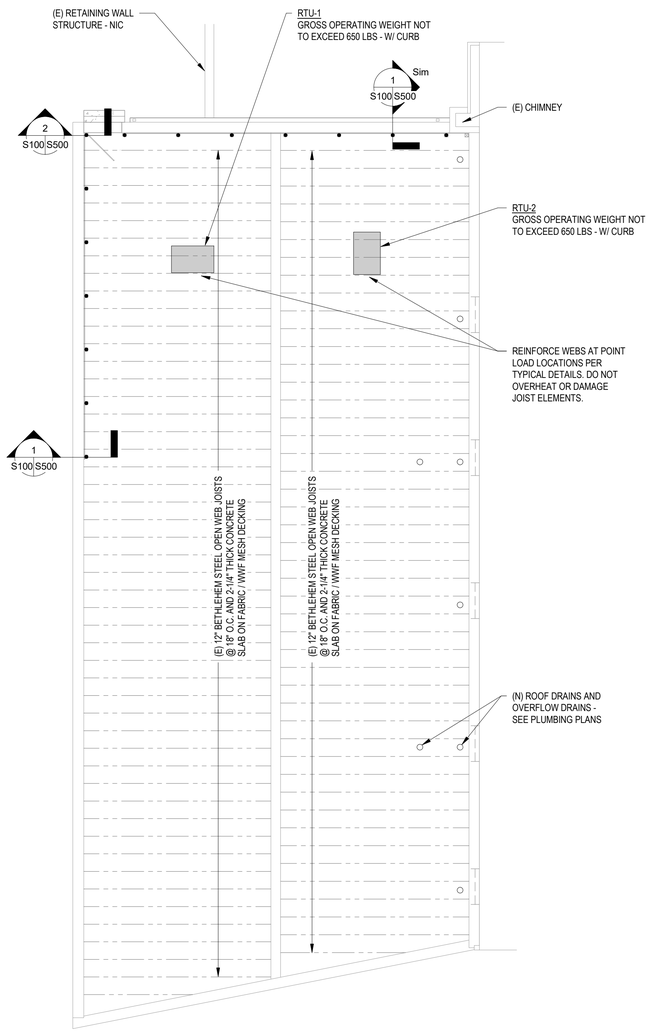
S005

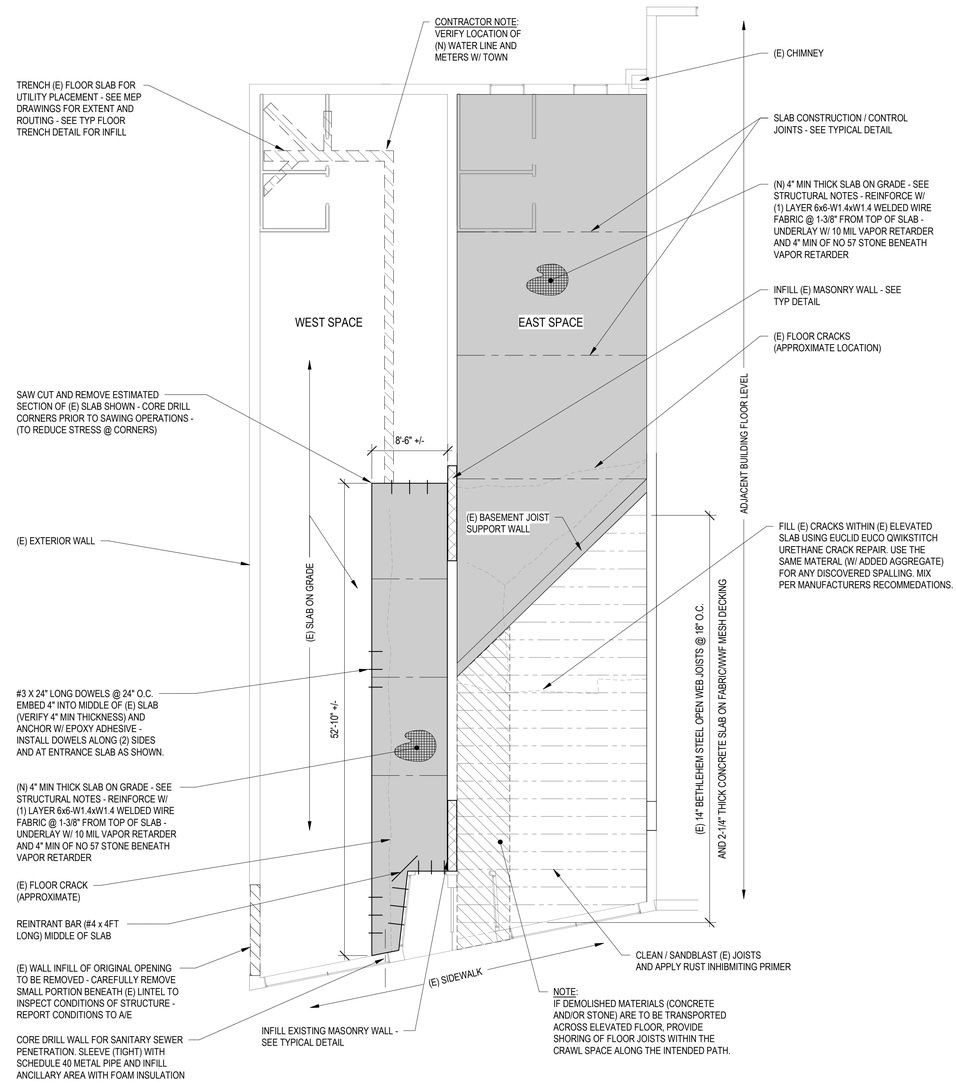
NOTE:
REPAIR ANY DISCOVERED CRACKS WITHIN EXISTING WALLS USING:
1. MULTI-WYTHE BRICK WALLS - EUCLID DURAL FAST SET GET INJECTED INTO CRACKS USING PORTS AND GUNNED INTO PLACE.
2. WIDER CRACKS OR VOIDS - EUCLID NS GROUT PREPARED AND INSTALLED ACCORDING TO THE MANUFACTURERS RECOMMENDATIONS.

IN ALL CASES, PREPARE SURFACES AS REQUIRED.



ROOF FRAMING PLAN

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



MAIN FLOOR / SLAB PLAN

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

BASEMENT PLAN

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

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BASEMENT, MAIN FLOOR AND ROOF FRAMING PLAN

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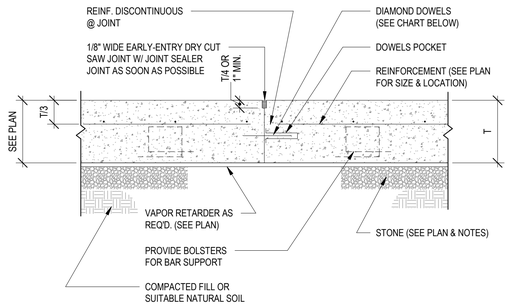
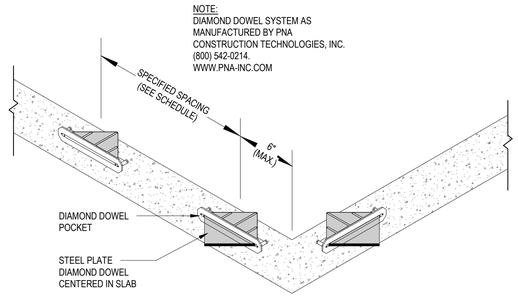


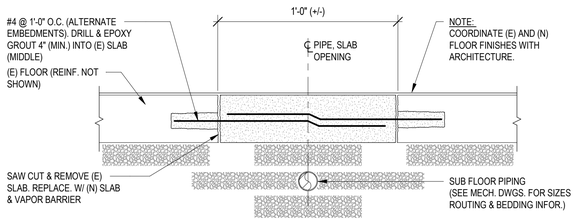


DOWEL SIZE AND SPACING CHART

SLAB THICKNESS (IN.) (T)	DIAMOND DOWEL DIMENSIONS (IN.)	DOWEL SPACING C/C (IN.)
4-6	1/4 x 4 1/2 x 4 1/2	18
7-8	3/8 x 4 1/2 x 4 1/2	18
9-11	3/4 x 4 1/2 x 4 1/2	20

SLAB CONSTRUCTION JOINT (CSJ) DETAIL

N.T.S.



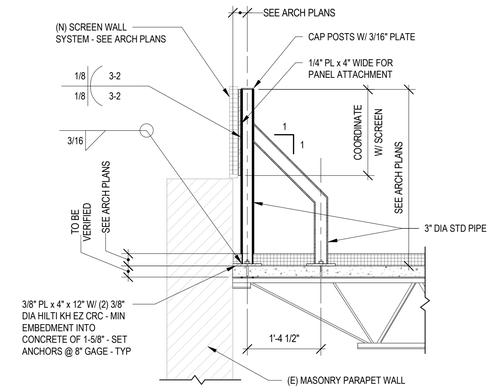
SUBSLAB PIPE INSTALLATION DETAIL

N.T.S.

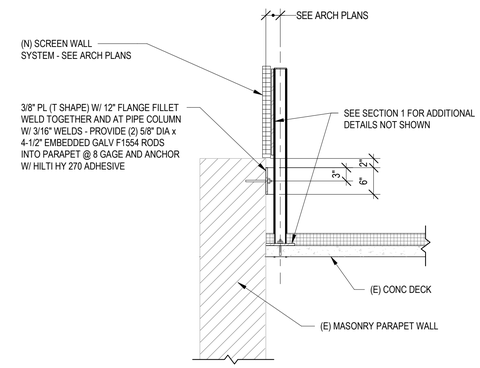
MASONRY REINFORCEMENT LAP DIMENSIONS

ALLOWABLE STRESS DESIGN
fs = 24,000 PSI MAX.
fy = 60,000 PSI
f'm = 1500 PSI

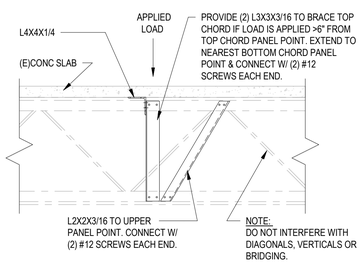
ASTM BAR SIZE	LAP	LDH	PERMITTED BLOCK SIZE
3	18	11	6, 8, 10, 12
4	24	15	6, 8, 10, 12
5	30	18	8, 10, 12
6	43	34	8, 10, 12
7	46	36	10, 12
8	70	59	10, 12
9	73	61	12



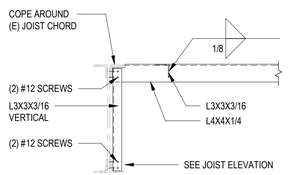
1 (S100 | S500) SCREEN WALL SECTION
SCALE: 3/4" = 1'-0"



2 (S100 | S500) SCREEN WALL - END SECTION
SCALE: 3/4" = 1'-0"



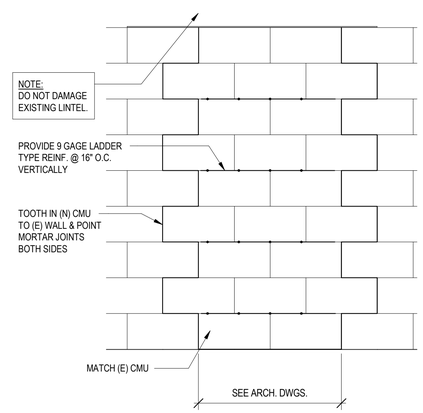
JOIST ELEVATION



JOIST SECTION

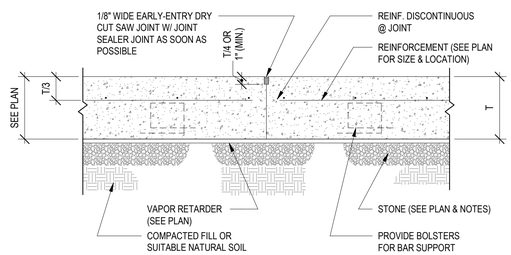
(N) ROOFTOP EQUIP. SUPPORT - SUPPLEMENTAL JOIST FRAMING (RENOVATION)

N.T.S.



CMU WALL INFILL DETAIL

N.T.S.



SLAB CONTRACTION JOINT (CTJ) DETAIL

N.T.S.

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PROSIM
MDR
CARBO

BID SET - OCTOBER 1, 2023

COMMONWEALTH OF VIRGINIA
ALLAN J. LONG
Lic. No. 023840
October 2023

STRUCTURAL SECTIONS AND DETAILS

Revisions:

Drawn By:	JCL
Review By	AL
Project No.	2023029
Sheet No.	S500

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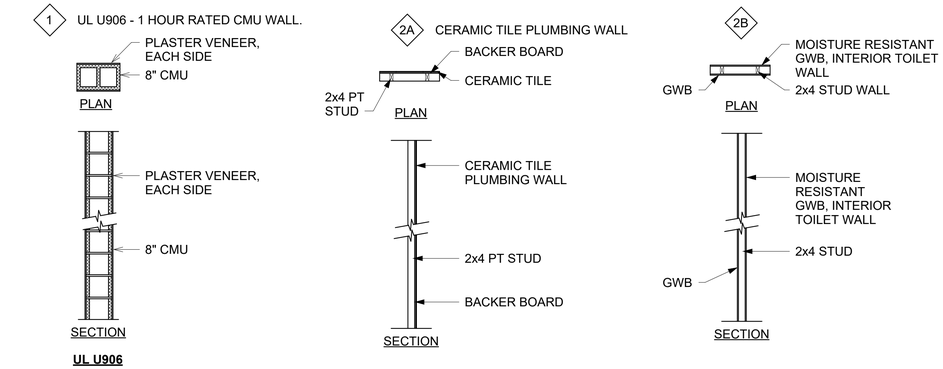
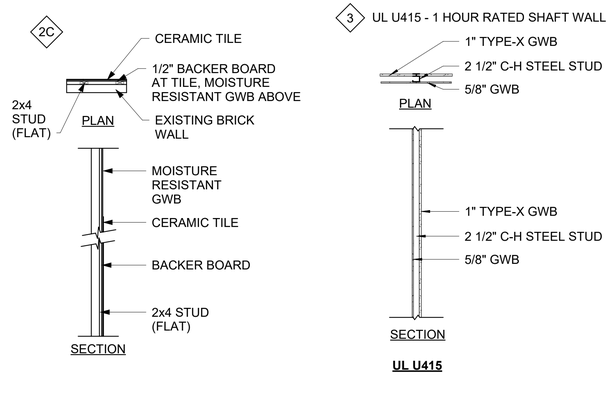
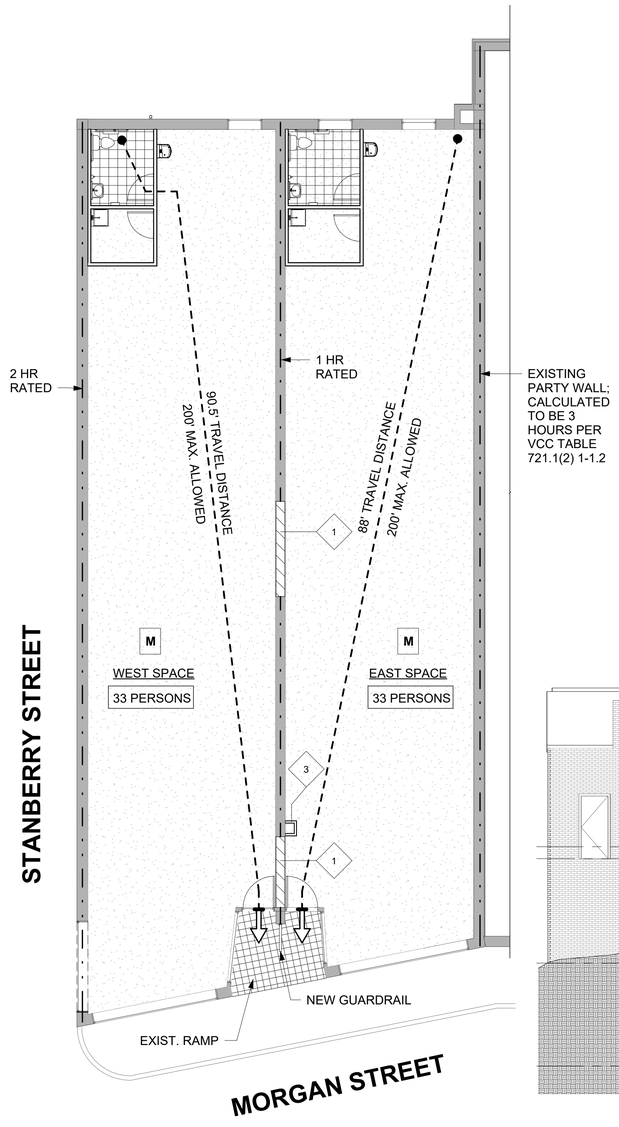
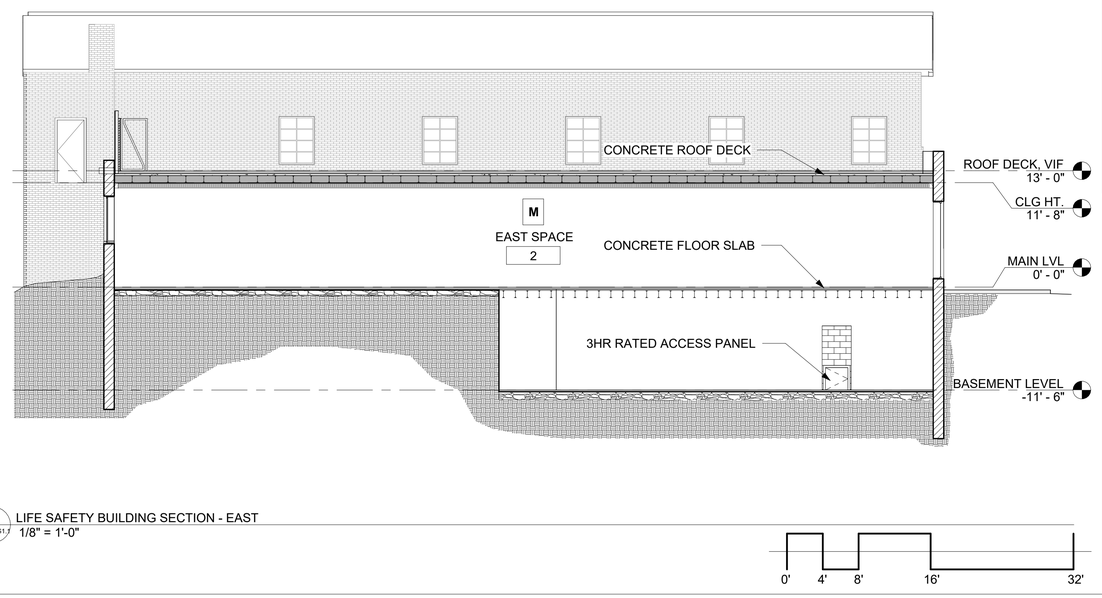
WALL TYPES







1 A2.1,LS1.1 MAIN LEVEL - LIFE SAFETY
1/8" = 1'-0"



2 LS1.1 LIFE SAFETY BUILDING SECTION - EAST
1/8" = 1'-0"

BUILDING CODE DATA

APPLICABLE CODES
2018 VIRGINIA UNIFORM STATEWIDE BUILDING CODE (VUSBC)
2018 VIRGINIA CONSTRUCTION CODE (VCC)
2018 VIRGINIA EXISTING BUILDING CODE (VEBC)
2018 VIRGINIA MECHANICAL CODE (VMC)
2018 VIRGINIA PLUMBING CODE (VPC)
2010 ADA DESIGN STANDARDS
NFPA 101
2018 VIRGINIA ENERGY CODE (VEC)

COMPLIANCE NOTES
THIS IS NOT A HISTORIC BUILDING AS DEFINED BY THE VEBC; CHAPTER 9 DOES NOT APPLY.

VEBC ALTERATION LEVEL 2 – REHABILITATION INFORMATION
CONSTRUCTION REQUIREMENTS

	EXISTING	ALTERATION	
OCCUPANCY	M; MERCANTILE	NO CHANGE	
HAZARD CATEGORY	2	NO CHANGE	
CONSTRUCTION	IIIB	NO CHANGE	
NO. OF STORIES	2 + BASEMENT	1 + BASEMENT	
HEIGHT	30' ABOVE AVERAGE GRADE	20' ABOVE AVERAGE GRADE	
FULLY SPRINKLERED	NO	NO	
ALLOWED HEIGHT	55'	55'	VCC 504.3
AREA PER FLOOR	3,926 SF MAX	NO CHANGE	

FIRE RATINGS – IIIB CONSTRUCTION

STRUCTURAL FRAME	0 MIN	VCC TABLE 601
EXTERIOR WALLS, BEARING	2 HR	VCC TABLE 601
EXTERIOR WALLS, NON-BEARING	1HR	VCC TABLE 602
EXTERIOR WALLS, FIRE SEPARATION		VCC TABLE 602
0 TO 5'	2HR	
5' TO 10'	1HR	
10' TO 30'	1HR	
>30'	0 MIN	
INTERIOR WALLS, BEARING	0 MIN	VCC TABLE 601
INTERIOR WALLS, NON-BEARING	0 MIN	VCC TABLE 601
FLOOR CONSTRUCTION	0 MIN	VCC TABLE 601
ROOF CONSTRUCTION	0 MIN	VCC TABLE 601 705.8.6 EXCEPT 1
INTERIOR STAIR ENCLOSURES	N/A	
FIRE PARTITIONS (TENANT SEP.)	1HR	VCC TABLE 402.4.2, VCC 708.3
SHAFT ENCLOSURES	N/A	VCC 713.4
CORRIDORS	0 MIN	VCC TABLE 1020.1 -EXC. 4
OCCUPANCY SEPARATION	NO CHANGE	
DOORS – 1 HR WALLS	N/A	
DOORS – 30 MIN WALLS	N/A	
PARTY WALL WITH CREECH BUILDING	3 HR	VCC 706.4

POTENTIAL ROOF RATING FOR OPENING PROTECTION
VCC TABLE 721.1(2)

EXISTING ROOF DECK IS A CONCRETE SLAB OF UNKNOWN THICKNESS. IF LIGHTWEIGHT CONCRETE AND 2 1/2" THICKNESS MIN; 1 HOUR RATING.

OPENING PROTECTION NOT REQUIRED PER VEBC 707.4, EXCEPTION 4.

OCCUPANT LOAD REQUIREMENTS

GROUP	ALLOWANCE	SF PER FLOOR	PERMITTED COUNT	ACTUAL
M (WEST SPACE)	60 GROSS	1,992	33 per floor	33
M (EAST SPACE)	60 GROSS	1,928	32 per floor	33

MEANS OF EGRESS REQUIREMENTS
NO. OF EXITS

	MIN REQUIRED	ACTUAL	
BASEMENT	0	0	
FIRST FLOOR	1 PER 50	1 PER 33	VCC TABLE 1006.2.1
MAX TRAVEL DISTANCE	200' MAX	UNDER 100'	VCC 1017.2

EGRESS WIDTHS

	CALCULATED MIN	PRACTICAL MIN	ACTUAL
CORRIDORS (OL*0.2)	6"	36" (<50 people)	N/A
STAIRS (OL*0.3)	9"	36" (<50 people)	N/A
EXITS (OL*0.2)	6"	36"	40"

ACCESSIBILITY REQUIREMENTS
THERE IS AN EXISTING RAMP TO THE WEST SPACE. IT IS IMPRACTICAL TO MEET ADA HANDRAIL TERMINATION DUE TO DOOR LOCATION AT TOP OF RAMP (NO LANDING). THE DESIGN INCLUDES A NEW HANDRAIL WITH WHEEL EDGE PROTECTION TO IMPROVE THE EXISTING CONDITION.

GENERAL LIFE SAFETY NOTES

1. FOR EACH UL FIRE RESISTANCE DESIGN REFERENCED, PROVIDE MATERIALS, METHODS, AND ALL NECESSARY ACCESSORIES REQUIRED FOR THE LISTED DESIGN, MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTIONS TO PROVIDE RATED ASSEMBLIES INDICATED.
2. ALL PENETRATIONS OR OPENINGS IN OR THROUGH FIRE-RATED ASSEMBLIES INCLUDING, BUT NOT LIMITED TO, WALLS, FLOORS, CEILINGS, SHAFTS, ETC...WILL REQUIRE APPROVED UL LISTED "THROUGH PENETRATION FIRESTOP" SYSTEMS TO ENSURE INTEGRITY OF RATED ASSEMBLY. CONSULT CURRENT UL FIRE RESISTANCE DIRECTORY FOR APPROVE OPTIONS AND CONFIRM FINAL SELECTION WITH OWNER BEFORE PROCEEDING WITH THE WORK.
3. FIRE-RESISTANCE ASSEMBLY MARKING: CONCEALED FIRE WALLS, VERTICAL FIRE SEPARATION ASSEMBLIES, FIRE PARTITIONS AND SMOKE BARRIERS SHALL BE DESIGNATED ABOVE CEILINGS AND ON THE INSIDE OF ALL CEILING ACCESS DOORS, WHICH PROVIDE ACCESS TO SUCH FIRE RATED ASSEMBLIES, BY SIGNAGE HAVING LETTERS NO SMALLER THAN ONE INCH (25.4 MM) IN HEIGHT. SUCH SIGNAGE SHALL CONTAIN THE WORDING "FIRE RATED ASSEMBLY" AND BE PROVIDED AT HORIZONTAL INTERVALS OF NO MORE THAN EIGHT FEET.
4. ALL BEAMS, FLOOR / CEILING ASSEMBLIES AND ROOF ASSEMBLIES AND ROOF CEILING ASSEMBLIES SHALL BE CONSIDERED UNRESTRAINED CONSTRUCTION.

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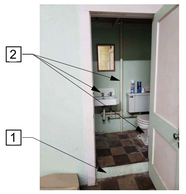
LIFE SAFETY

10/01/2023
Revisions:
MONTH. DAY. YEAR

Drawn By: AB
Review By FE
Project No. 2310

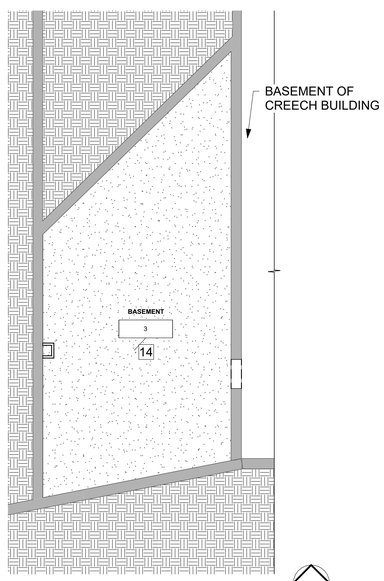
Sheet No.
LS1.1

WEST SPACE - WALL PANELING DEMO

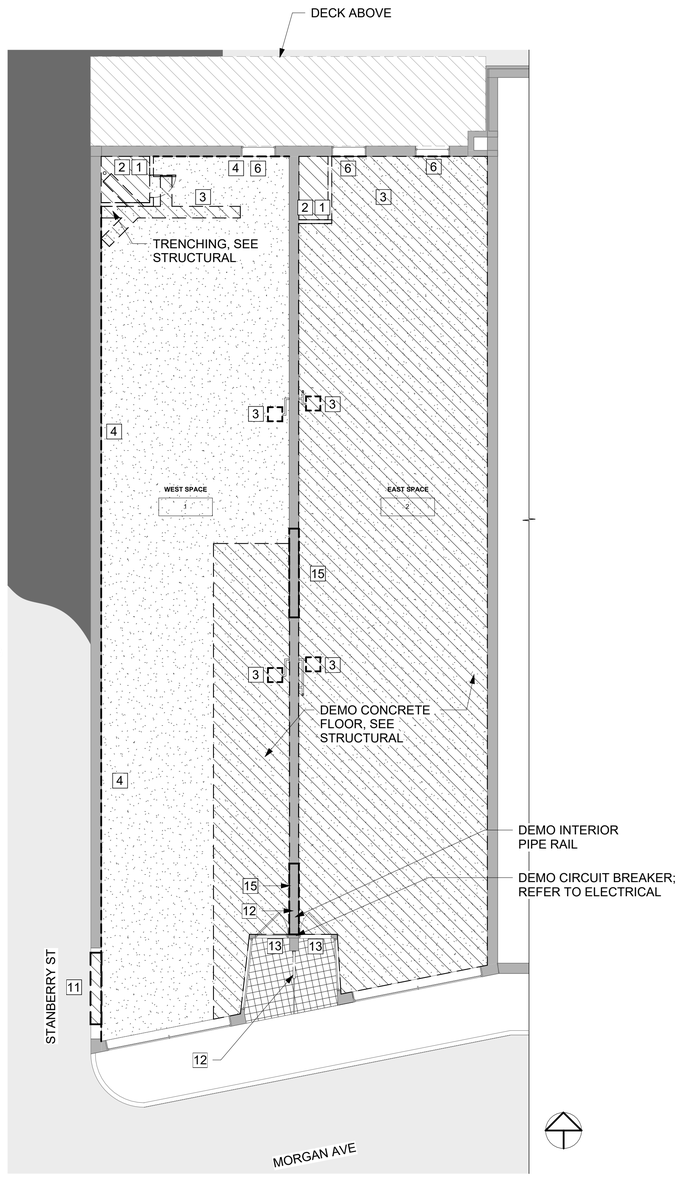


TOILET ROOM - EAST/WEST SPACE DEMO

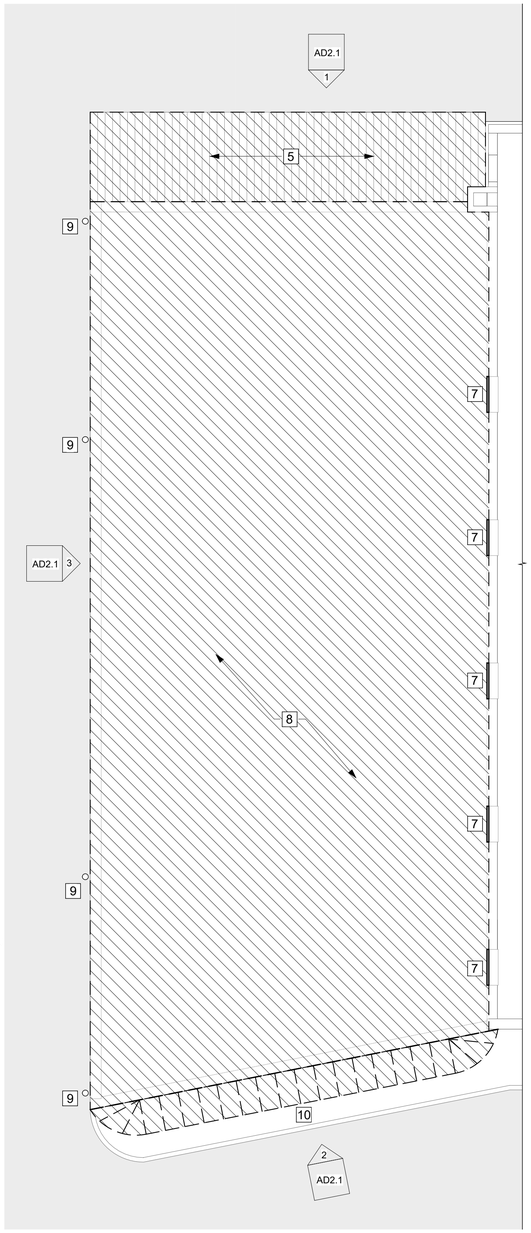
EXISTING WINDOWS - REAR RESTORATION



3 A3.1 AD1.1 BASEMENT LEVEL - DEMO
1/8" = 1'-0"



2 A2.1 AD1.1 MAIN LEVEL - DEMO
1/8" = 1'-0"



1 AD1.1 ROOF PLAN - DEMO
1/8" = 1'-0"

DEMOLITION KEY NOTES

1. CAREFULLY LEVEL CONC .PADS TO SURROUNDING FINISH FLOOR HEIGHT. DEMO REAR BATHROOM WALLS TO SURROUNDING WALLS AS INDICATED ON FLOOR PLANS. PATCH, AND PAINT REMAINING WALLS AS NEEDED.
2. CAREFULLY REMOVE EXISTING PLUMBING FIXTURES AND ASSOCIATED PLUMBING.
3. REMOVE HEATERS AND ASSOCIATED COMPONENTS, ALONG WITH HVAC UNITS AND DUCTWORK.
4. CAREFULLY DISMANTLE WAINSCOTTING
5. CAREFULLY REMOVE STRUCTURAL MEMBERS AND ASSOCIATED BOARDS OF THE ATTACHED DECK. DO NOT ADVERSELY AFFECT THE STRUCTURE OF THE ADJACENT BUILDINGS.
6. CAREFULLY REMOVE INTERIOR WINDOW COVERINGS. RETAIN AND PROTECT WINDOW.
7. PROTECT WALL AND WINDOW OPENINGS OF ADJACENT BUILDING DURING DEMOLITION. COVER WINDOWS FOR PROTECTION DURING DEMOLITION AND CONSTRUCTION.
8. CAREFULLY DISMANTLE AND REMOVE GABELED ROOF SUPERSTRUCTURE AND ASSOCIATED MATERIALS (ROOFING, SHEATHING, SIDING, ETC.) DOWN TO EXISTING ROOFING CONCRETE DECK. DO NOT DAMAGE THE INTEGRITY OF THE EXISTING BUILDING AND ORIGINAL ROOF STRUCTURE.
9. REMOVE DOWNSPOUTS.
10. CAREFULLY REMOVE AWNING. DO NOT DAMAGE THE EXISTING BRICK FACADE.
11. CAREFULLY REMOVE BRICK AND MORTAR INFILL WITHIN EXISTING OPENING.
12. CAREFULLY REMOVE PIPE HANDRAILS.
13. CAREFULLY DISMANTLE DOOR AND DOOR HINGES FROM FRAME FOR FUTURE USE IN SAME LOCATION. SALVAGE ALL HARDWARE FOR FUTURE USE. DOOR SWING WILL BE FLIPPED.
14. CONSULT WITH OWNER ON MATERIAL TO BE REMOVED FROM BASEMENT.
15. DEMO STEPS; REFER TO STRUCTURAL DRAWINGS.

ROOF SUPERSTRUCTURE AND ASSOCIATED MATERIALS DEMO

DECK - REAR DEMO

0' 4' 8' 16' 32'

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10/01/23
FRED ESENWEIN
Lic No. 040101471 1
ARCHITECT

FLOOR PLANS - DEMO

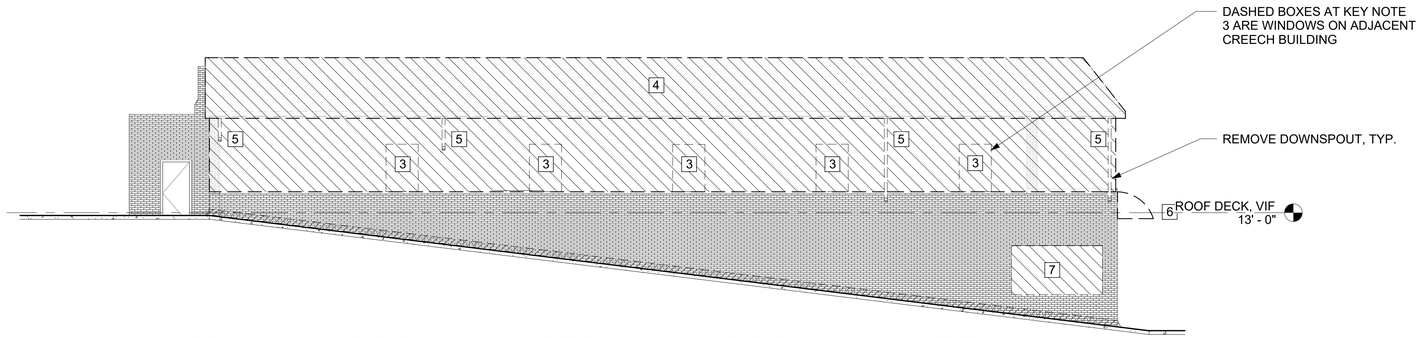
10/01/2023

Revisions:

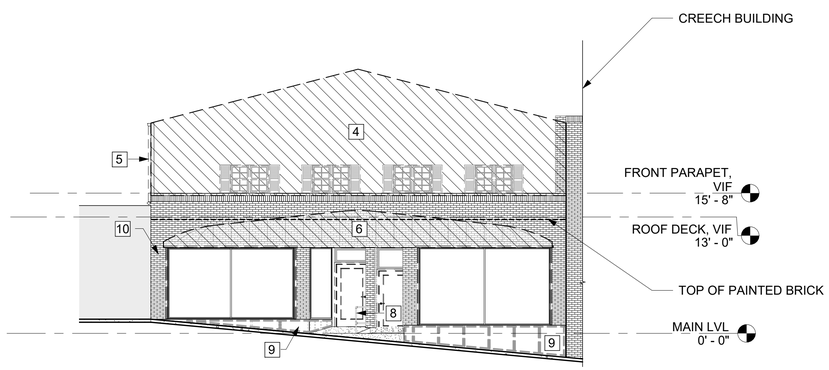
Drawn By:	AB
Review By	FE
Project No.	2310

Sheet No.

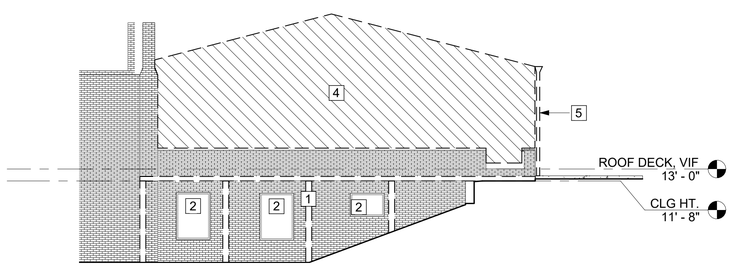
AD1.1



3 AD1.1 AD2.1 WEST EXTERIOR ELEVATION - DEMOLITION
1/8" = 1'-0"



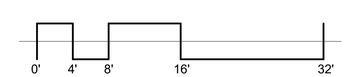
2 AD1.1 AD2.1 SOUTH ELEVATION -DEMOLITION
1/8" = 1'-0"



1 AD1.1 AD2.1 NORTH ELEVATION - DEMOLITION
1/8" = 1'-0"

ELEVATION DEMOLITION KEY NOTES

1. CAREFULLY REMOVE STRUCTURAL MEMBERS AND ASSOCIATED BOARDS OF THE ATTACHED DECK. DO NOT ADVERSELY AFFECT THE STRUCTURE OF THE ADJACENT BUILDINGS.
2. CAREFULLY REMOVE WINDOW COVERINGS.
3. PROTECT WALL AND WINDOW OPENINGS OF ADJACENT BUILDING DURING DEMOLITION. COVER WINDOWS FOR PROTECTION DURING DEMOLITION.
4. CARFULLY DISMANTLE AND REMOVE GABELED ROOF SUPERSTRUCTURE AND ASSOCIATED MATERIALS (ROOFING, SHEATHING, SIDING, WINDOWS ETC.). DO NOT DAMAGE THE INTEGRITY OF THE EXISTING BUILDING AND ITS ROOF STRUCTURE OR MEMBRANE.
5. CARFULLY REMOVE DOWNSPOUTS.
6. CARFULLY REMOVE AWNING. DO NOT DAMAGE THE EXISTING BRICK FACADE.
7. CARFULLY REMOVE BRICK INFILL WITHIN EXISTING OPENING.
8. CAREFULLY REMOVE PIPE HANDRAIL.
9. REMOVE PLYWOOD AND WOOD TRIM AT STOREFRONT BASES. REPORT CONDITION BEHIND PLYWOOD TO ARCHITECT.
10. CAREFULLY REMOVE PAINT FROM BRICK (PRESENT ON FRONT ELEVATION ONLY)



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ELEVATIONS - DEMO

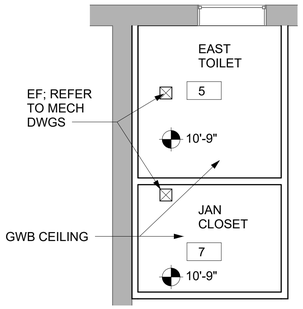
10/01/2023

Revisions:

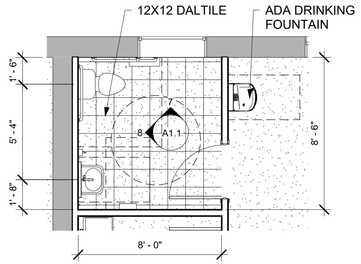
Drawn By:	AB
Review By	FE
Project No.	2310

Sheet No.

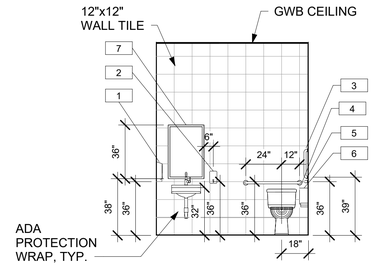
AD2.1



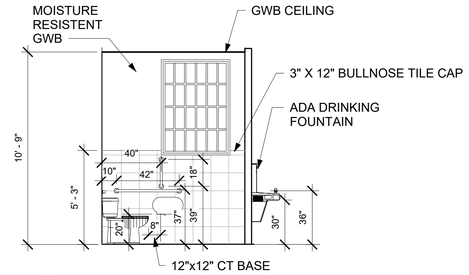
10 (A2.1/A1.1) ADA TOILET ROOM & JANITOR CLOSET - RCP - EAST
1/4" = 1'-0"



9 (A1.1/A1.1) ADA TOILET ROOM - EAST
1/4" = 1'-0"



8 (A1.1/A1.1) ADA TOILET ELEVATION - EAST
1/4" = 1'-0"



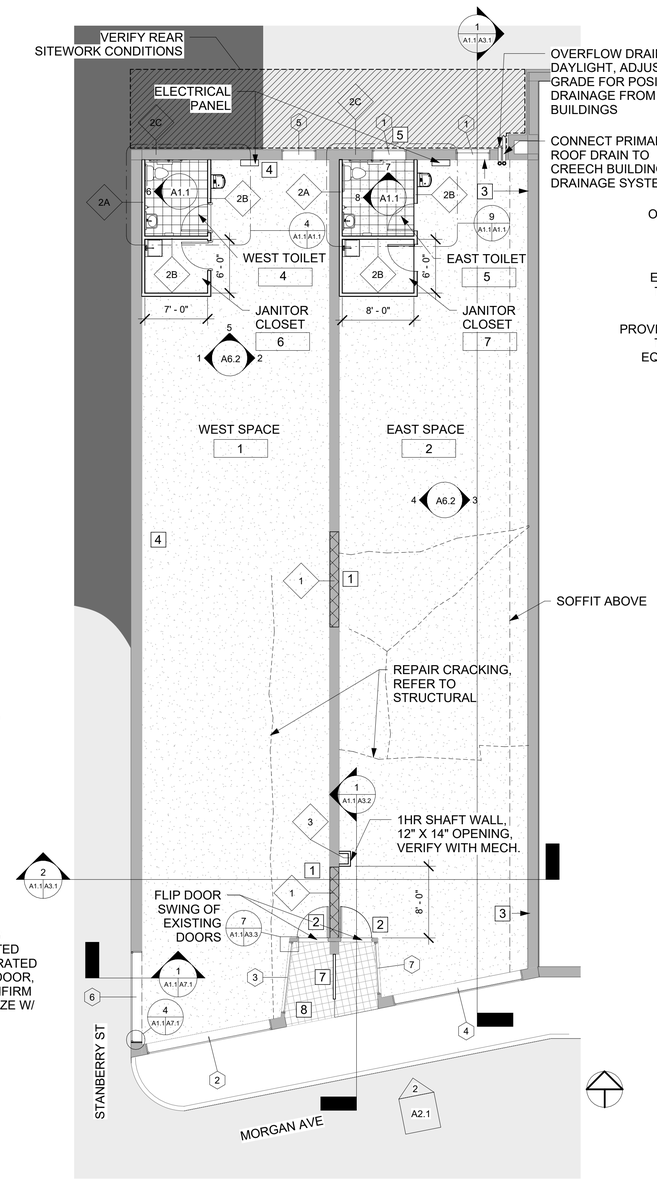
7 (A1.1/A1.1) NORTH ELEVATION - EAST
1/4" = 1'-0"

FLOOR PLAN KEY NOTES

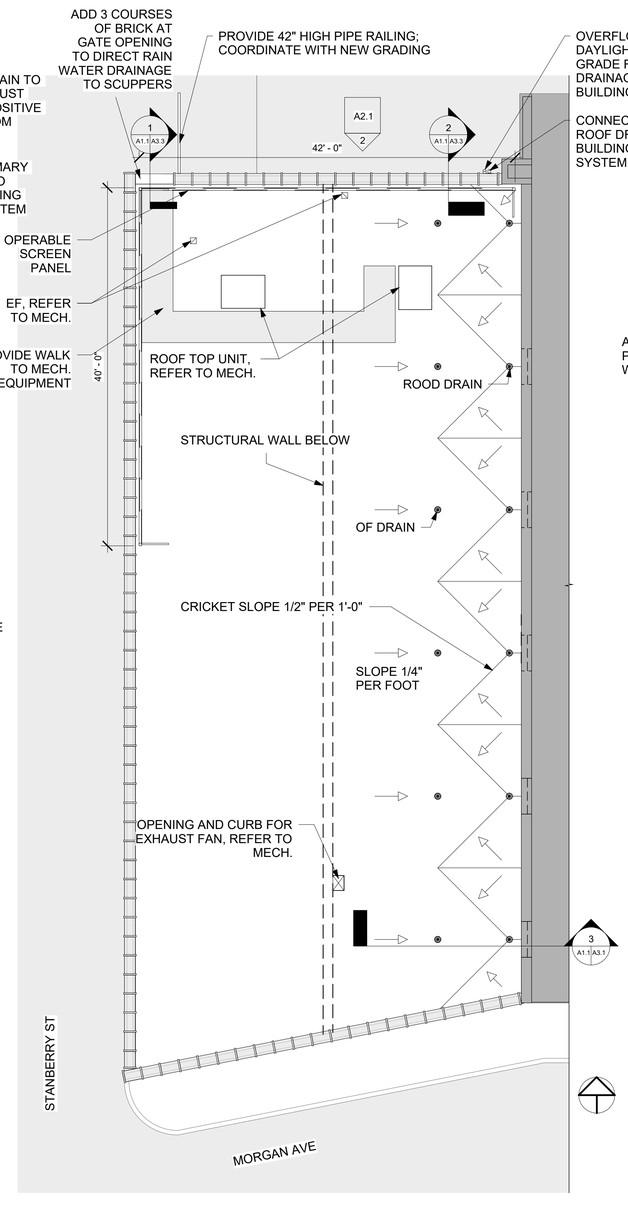
1. PROVIDE WALL INFILL.
2. FLIP SWING OF EXISTING DOORS.
3. REPAIR DAMAGED PLASTER, REFER TO SHEET A6.1.
4. REPORT TO ARCHITECT THE EXTENT OF WATER DAMAGE ON WALLS OF WEST SPACE.
5. PROVIDE TRANSLUCENT FILM OVER WINDOW GLAZING.
6. NOT USED
7. PROVIDE METAL GUARDRAIL.
8. CLEAN QUARRY TILE.

RESTROOM ACCESSORIES

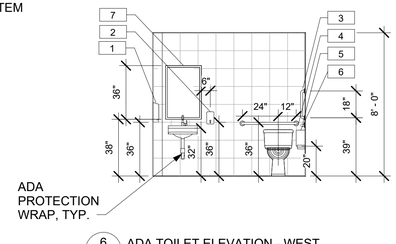
MARK	ITEM
1	PAPER TOWEL DISPENSER
2	SOAP DISPENSER
3	VERTICAL GRAB BAR 18"
4	BACK HORIZONTAL GRAB BAR 36"
5	SIDE HORIZONTAL GRAB BAR 42"
6	TOILET TISSUE DISPENSER
7	WALL MOUNTED MIRROR



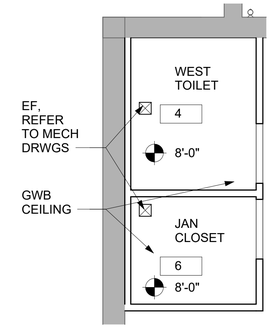
2 (A2.1/A1.1) MAIN LVL
1/8" = 1'-0"



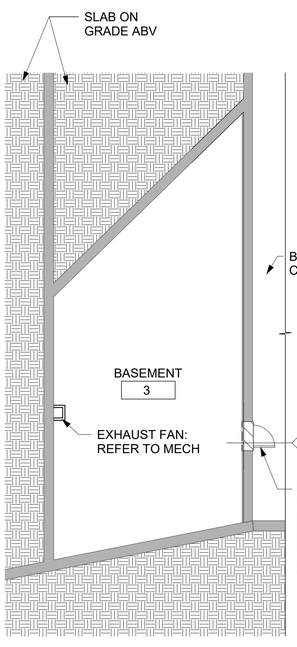
1 (A1.1) ROOF PLAN
1/8" = 1'-0"



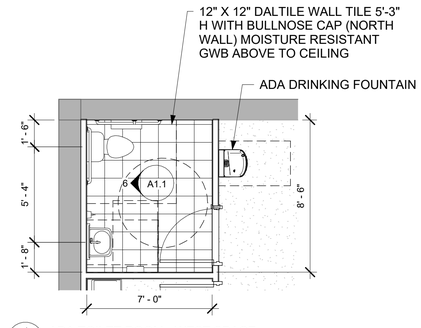
6 (A1.1/A1.1) ADA TOILET ELEVATION - WEST
1/4" = 1'-0"



5 (A2.1/A1.1) ADA TOILET ROOM & JANITOR CLOSET -RCP - WEST
1/4" = 1'-0"



3 (A3.1/A1.1) BASEMENT LEVEL
1/8" = 1'-0"



4 (A1.1/A1.1) ADA TOILET ROOM - WEST SPACE
1/4" = 1'-0"

0' 4' 8' 16' 32'

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FLOOR PLANS

10/01/2023

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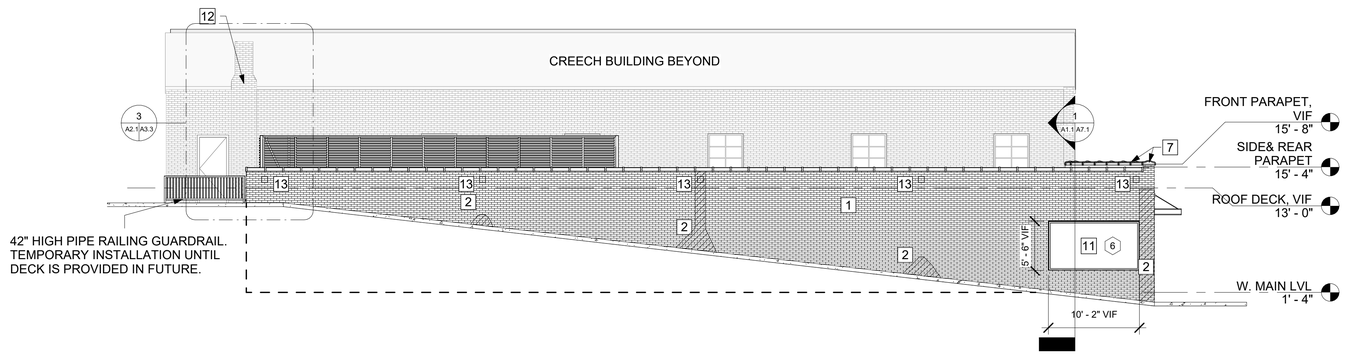
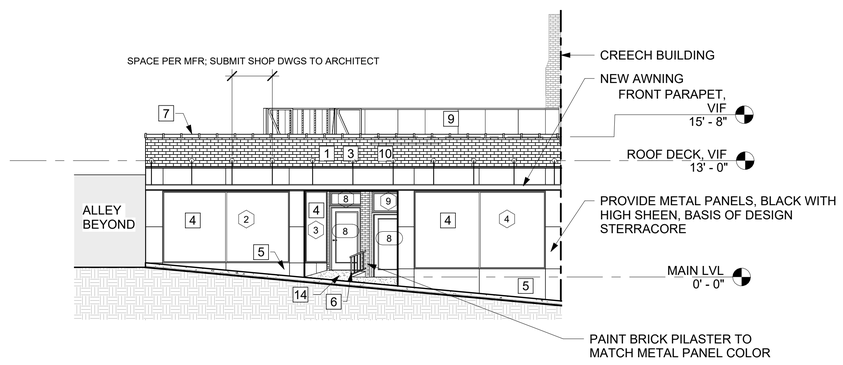
Review By FE
Project No. 2310

Sheet No.

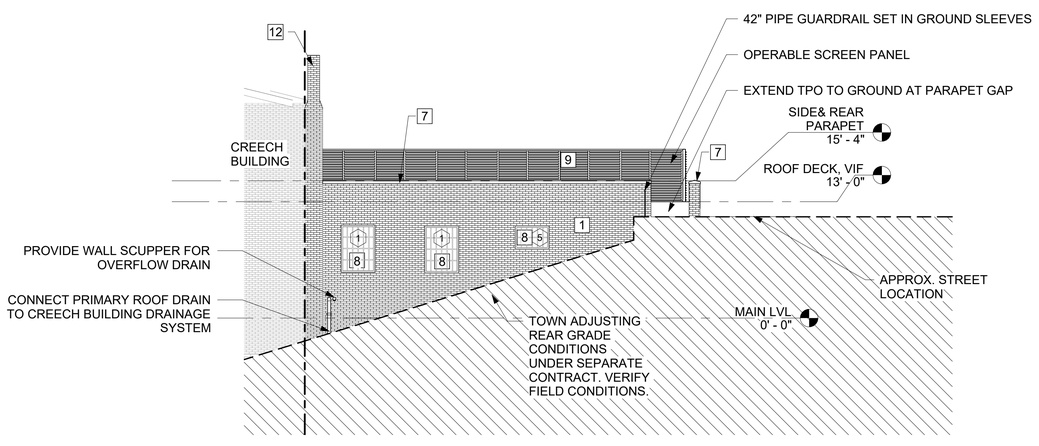
A1.1



3 A2.1 WEST ELEVATION
1/8" = 1'-0"



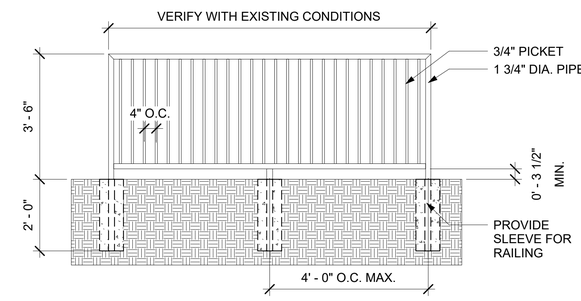
2 A1.1/A2.1 SOUTH ELEVATION
1/8" = 1'-0"



1 A2.1 NORTH ELEVATION
1/8" = 1'-0"

ELEVATION KEY NOTES

1. CLEAN BRICK WALL.
2. REPAIR DAMAGED BRICK
3. NOT USED
4. CLEAN STOREFRONT SYSTEMS AND REPLACE MISSING PIECES IN KIND.
5. RESTORE STOREFRONT BULKHEAD, CONDITION UNKNOWN.
6. PROVIDE METAL HANDRAIL.
7. PROVIDE CAMELBACK TERRACOTTA PARAPET COPING.
8. RESTORE METAL WINDOWS.
9. PROVIDE MECH. ROOF SCREEN ENVISOR BY CITYSCAPES OR ARCHITECT APPROVED EQUAL.
10. PROVIDE ALUM HORIZONTAL MARQUEE AWNING.
11. PROVIDE STOREFRONT WINDOW.
12. REPAIR/REPOINT CHIMNEY.
13. PATCH EXISTING SCUPPER OPENINGS ON WEST WALL (5)
14. CLEAN/RESTORE EXISTING QUARRY TILE



4 A2.1 PIPE RAILING DETAIL
1/2" = 1'-0"

0' 4' 8' 16' 32'

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ELEVATIONS

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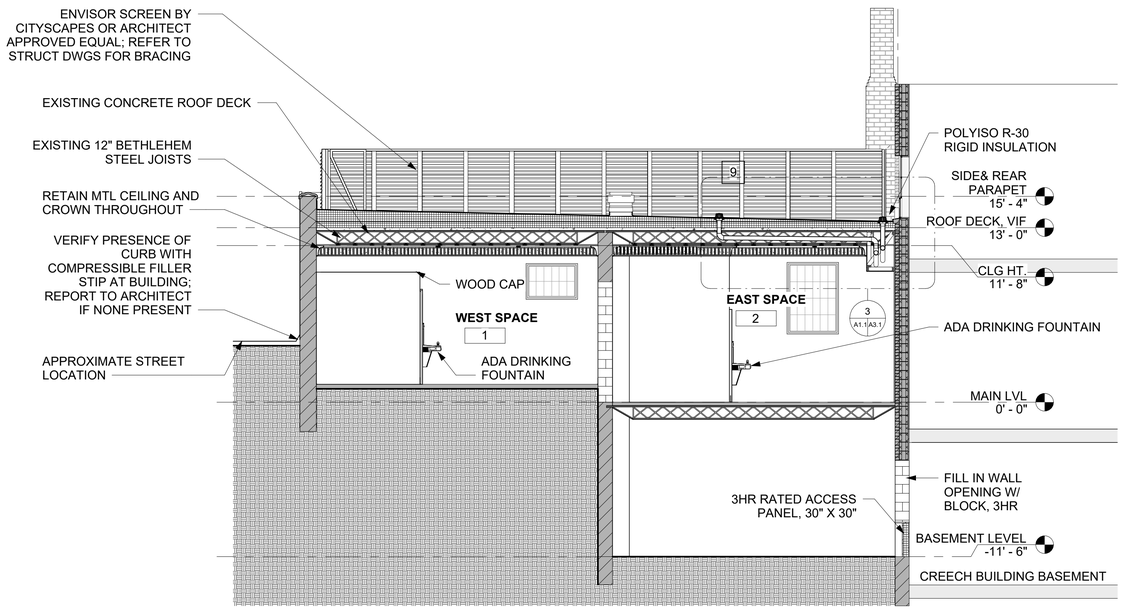
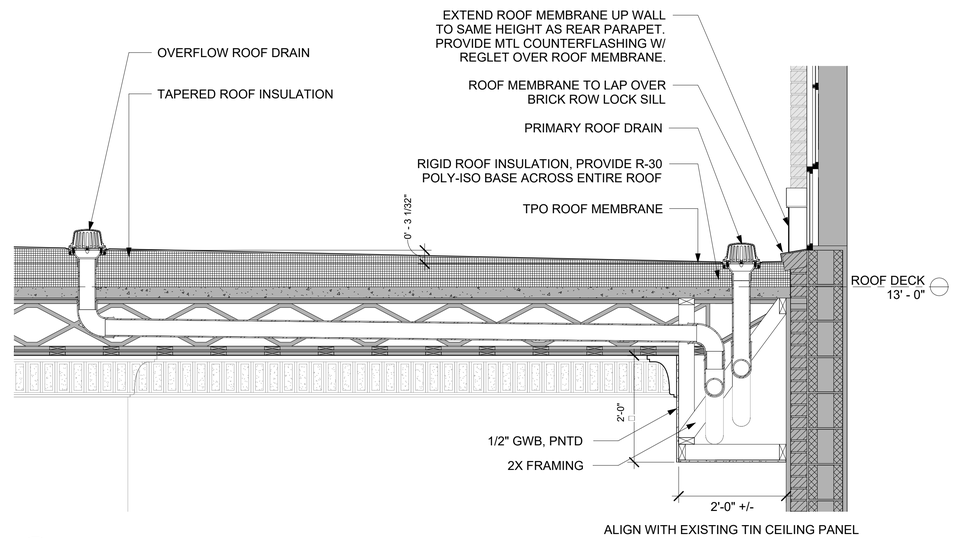
A2.1

GENERAL ROOF NOTES:

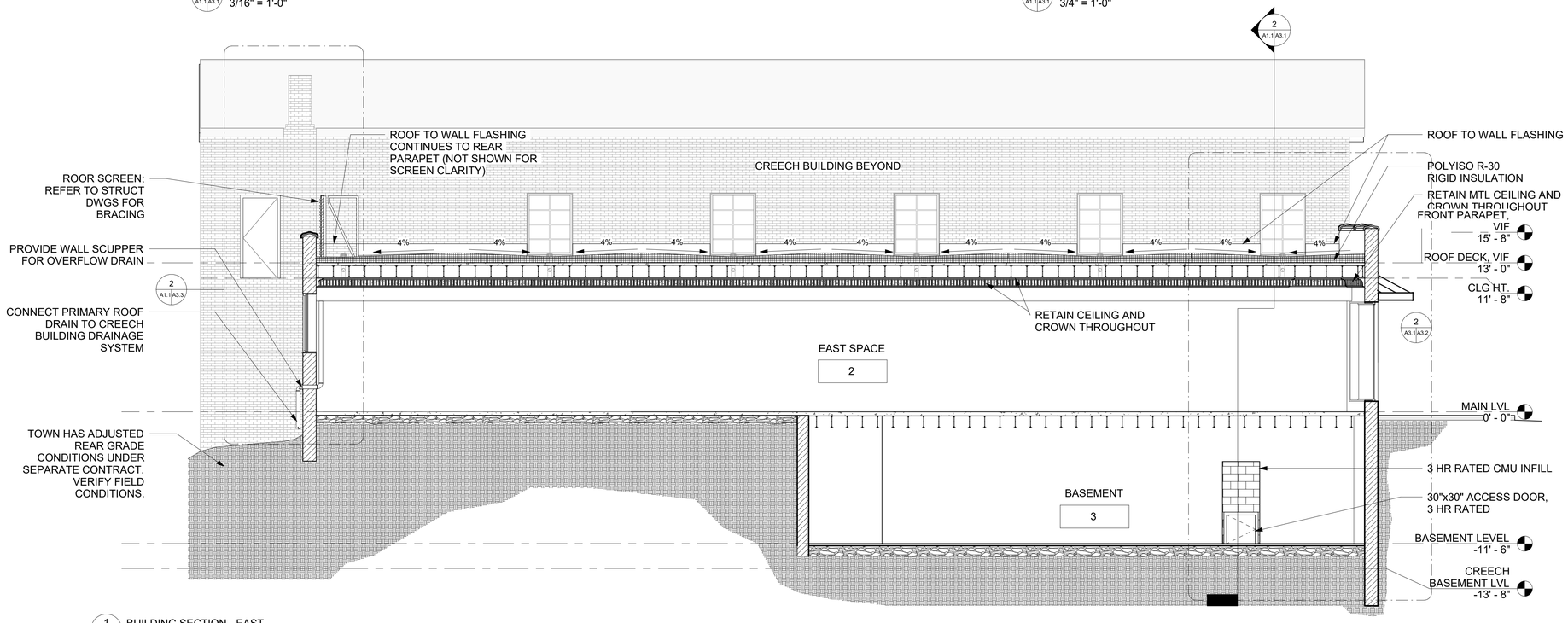
1. CONTINUE TPO MEMBRANE UP BACK FACE OF PARAPET AND UNDER TERRACOTTA COPING
2. VEBC 601.4.5 - 100Y ROOF REPLACEMENT
3. VEC TABLE C402.1.3 - ALL INSULATION ABV DECK R-30 MINIMUM



2 A1.1 A3.1 BUILDING SECTION - NORTH
3/16" = 1'-0"



3 A1.1 A3.1 ROOF DRAIN DETAIL AND INTERIOR SOFFIT
3/4" = 1'-0"



1 A1.1 A3.1 BUILDING SECTION - EAST
3/16" = 1'-0"

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BUILDING SECTIONS

10/01/2023

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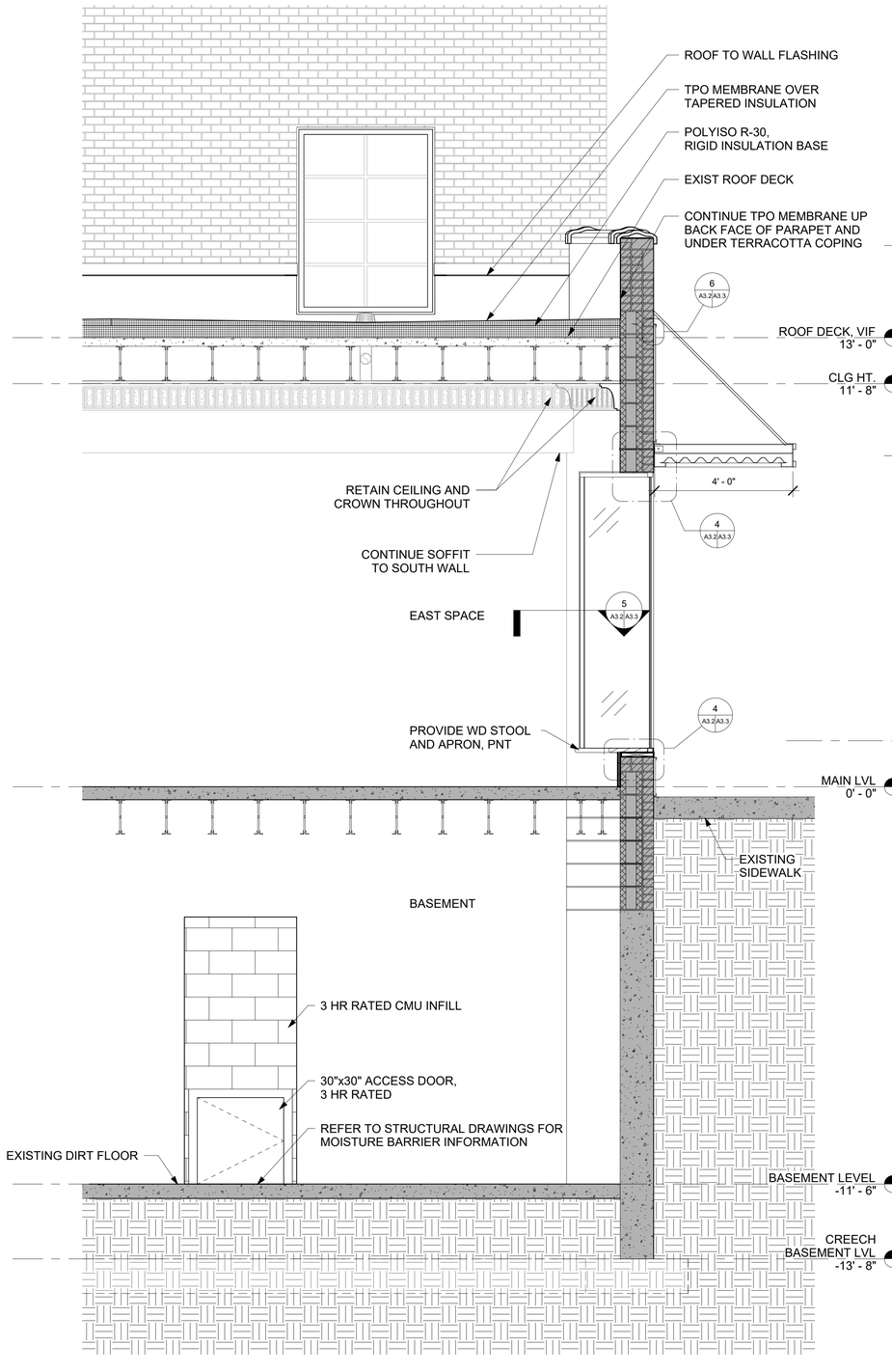
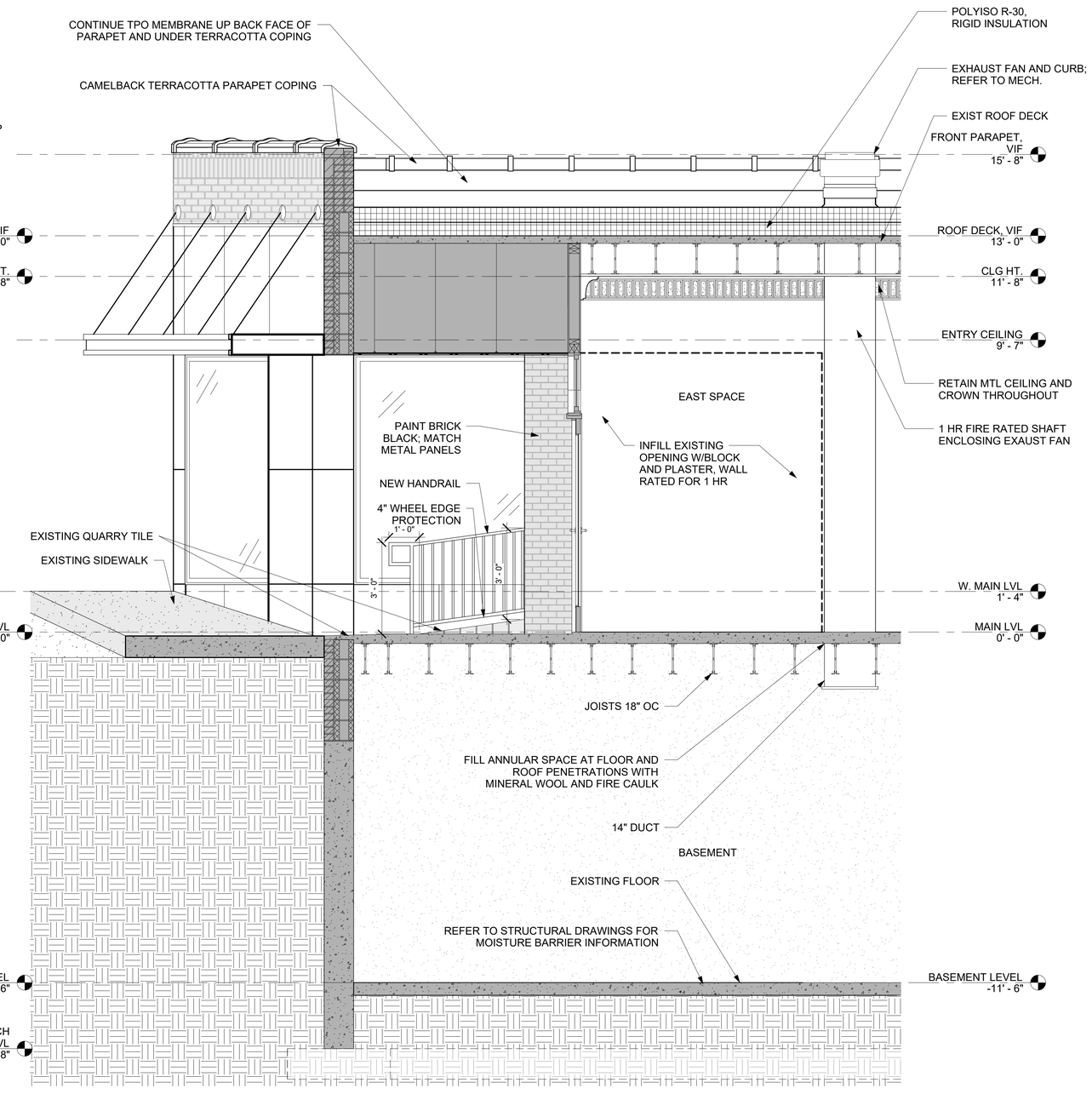


2 A3.1/A3.2 EAST SPACE WALL SECTION LOOKING AT CREECH BUILDING
1/2" = 1'-0"



1 A1.1/A3.2 EAST SPACE WALL SECTION LOOKING WEST AT RAMP
1/2" = 1'-0"

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WALL SECTIONS

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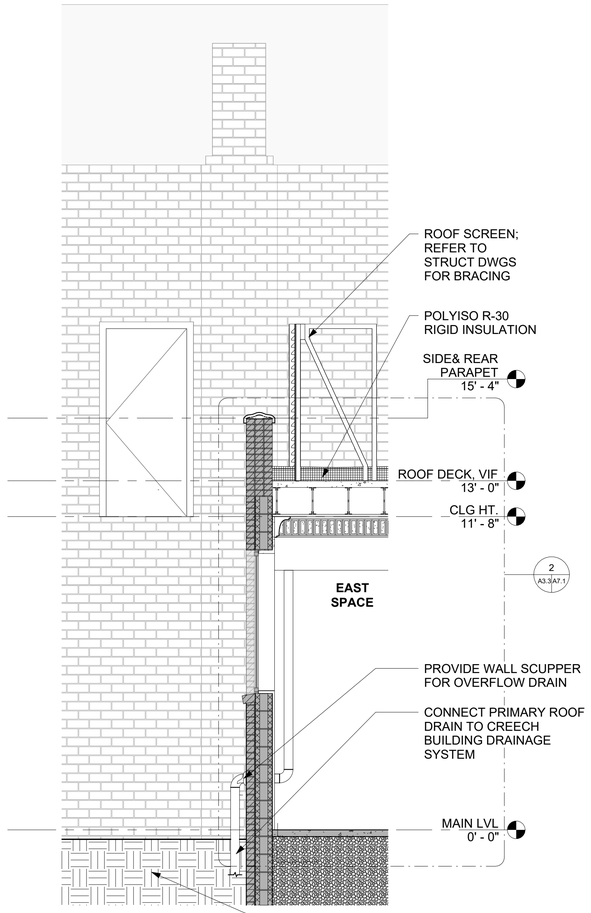
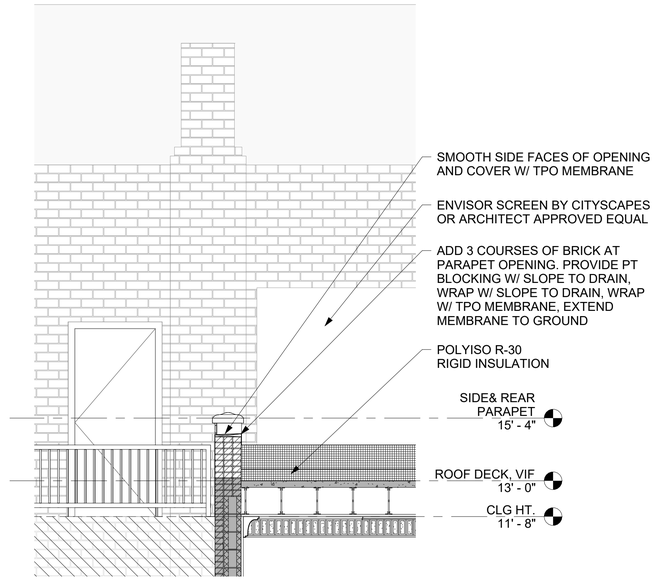
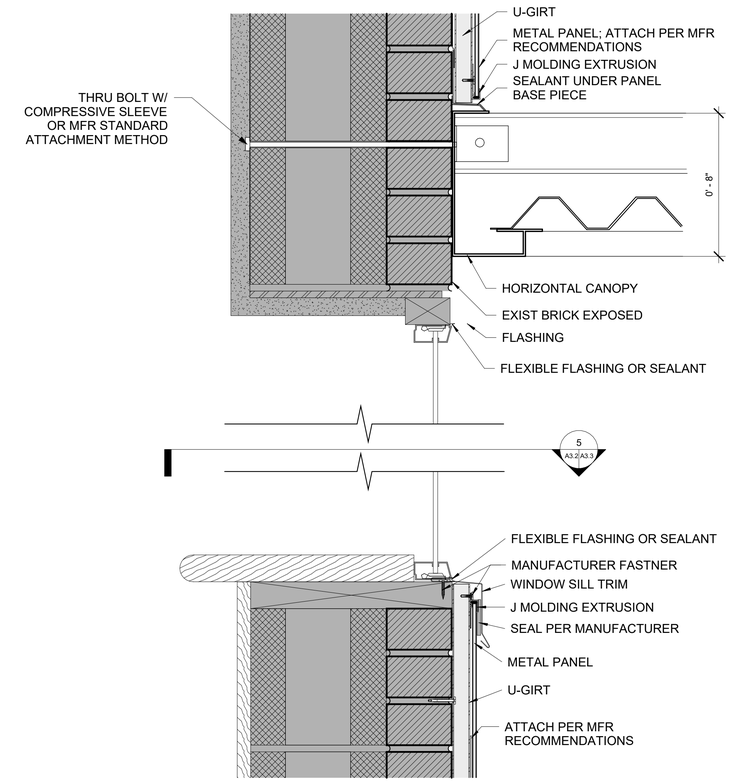
A3.2



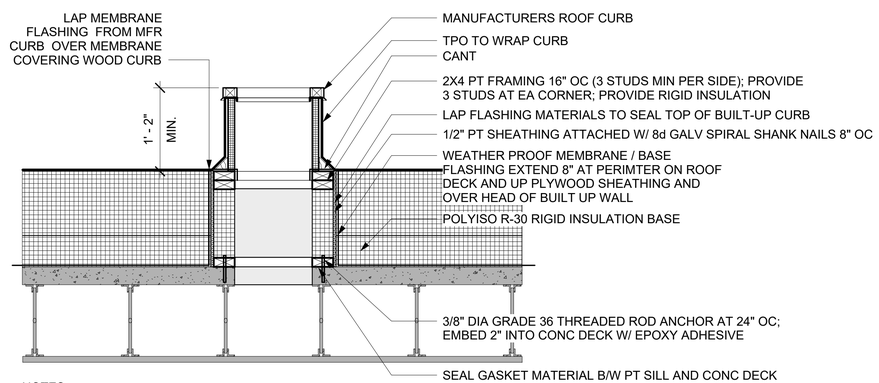
2 A1.1 A3.3 WALL SECTION - NORTH WALL
3/8" = 1'-0"



3 A2.1 A3.3 PARAPET GAP DETAIL AT SCREEN ACCESS
3/8" = 1'-0"



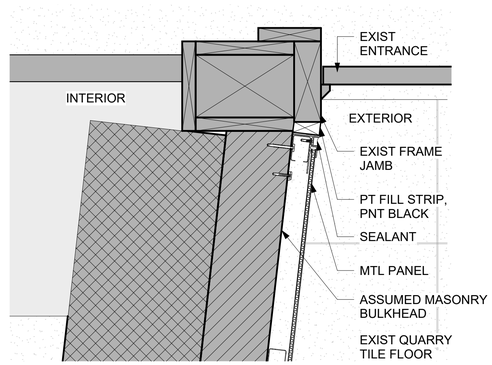
4 A3.2 A3.3 METAL PANEL CLADDING DETAIL - WINDOW HEAD AND SILL
3" = 1'-0"



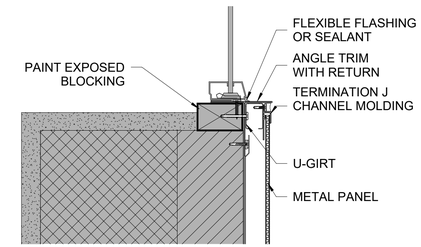
NOTES:

1. PROVIDE MANUFACTURER APPROVED CURB FOR EQUIPMENT. PROVIDE FRAMING TO ELEVATE CURB WHEN NECESSARY TO MAINTAIN NECESSARY CLEARANCES.
2. SIZE ROOF OPENINGS BASED ON MANUFACTURERS SPECIFICATIONS.
3. REFER TO STRUCT DWGS FOR SUPPORTING STEEL JOIST REINFORCEMENT.

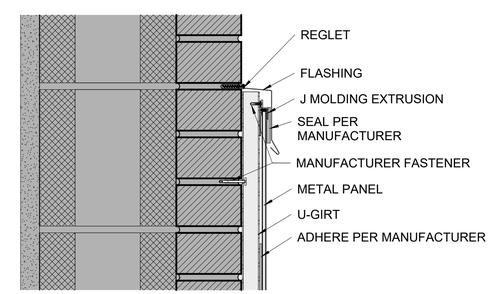
1 A1.1 A3.3 ROOF CURB DETAIL
1" = 1'-0"



7 A1.1 A3.3 METAL PANEL CLADDING AT ENTRY JAMB
3" = 1'-0"



5 A3.2 A3.3 METAL PANEL CLADDING DETAIL - WINDOW JAMB
3" = 1'-0"



6 A3.2 A3.3 METAL PANEL CLADDING DETAIL - TOP TERMINATION
3" = 1'-0"

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WALL SECTIONS & DETAILS

10/01/2023
Revisions:

Drawn By: Author
Review By Checker
Project No. 2310

Sheet No.
A3.3

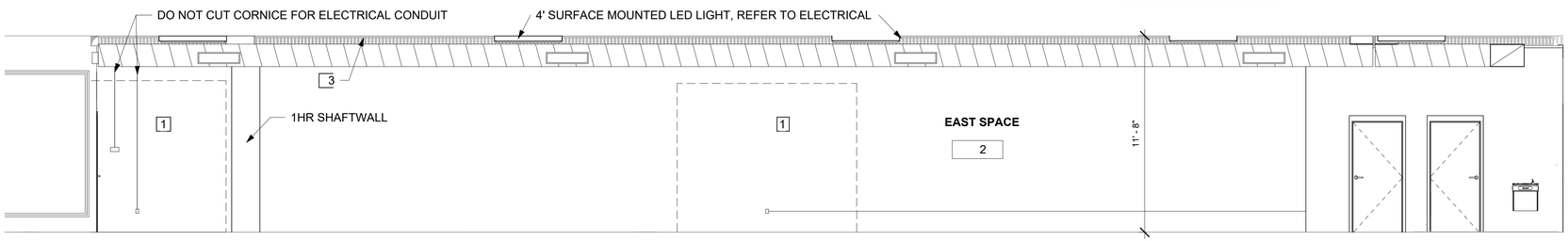
5 A1.1/A6.2 NORTH ELEVATION - INTERIOR EAST AND WEST SPACE
1/4" = 1'-0"

WEST SPACE, NE CORNER

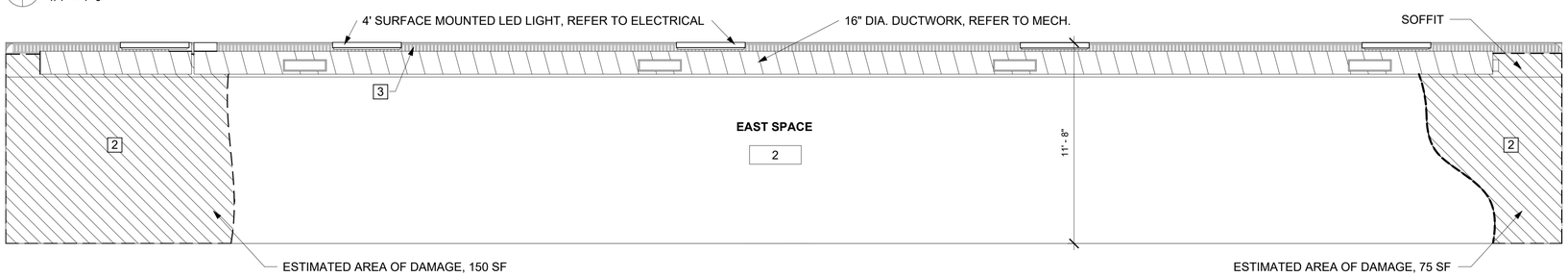
INTERIOR ELEVATION NOTES

1. INFILL EXISTING OPENINGS W/ CONC. BLOCK FOR ONE HOUR SEPERATION PER UL U906. PLASTER OVER BLOCK.
2. INVESTIGATE THE EXTENT OF WATER DAMAGE AND REPLACE DAMAGED BRICK, MORTAR, AND PLASTER IN KIND.
3. RETAIN MTL CEILING AND CROWN, TYP. BOTH SPACES.
4. ELECTRICAL PANEL. REFER TO ELECTRICAL DRAWINGS.

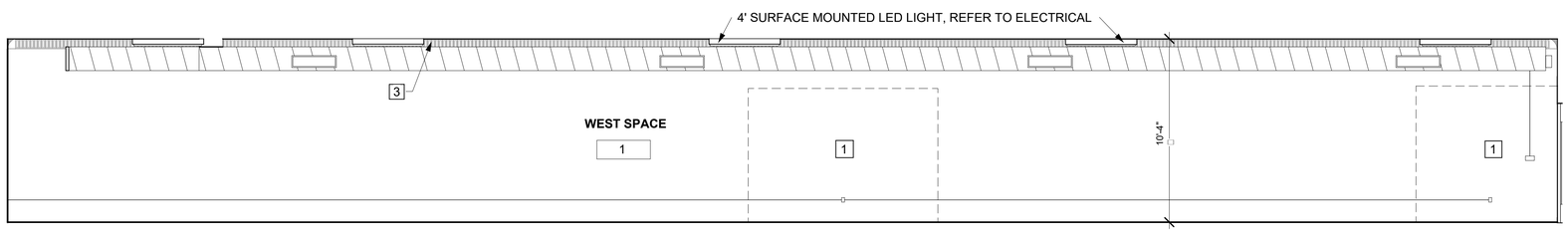
SWITCHES, OUTLETS, AND CONDUITS SHOWN ARE FOR CONTEXT ONLY. REFER TO ELECTRICAL DRAWINGS.



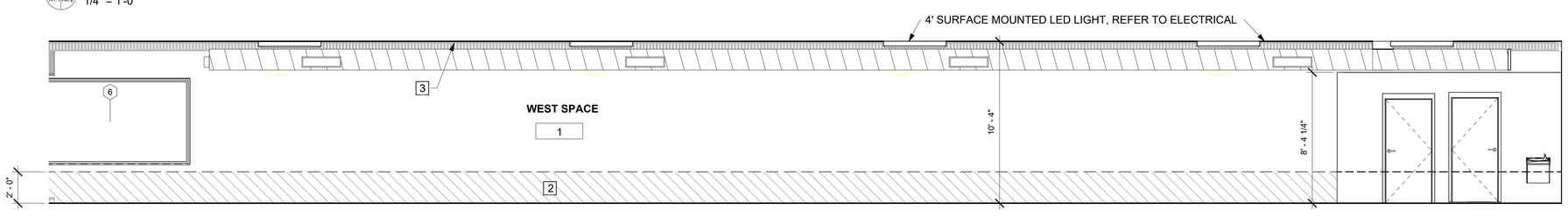
4 A1.1/A6.2 WEST ELEVATION - INTERIOR EAST SPACE
1/4" = 1'-0"



3 A1.1/A6.2 EAST ELEVATION - INTERIOR EAST SPACE
1/4" = 1'-0"



2 A1.1/A6.2 EAST ELEVATION - INTERIOR WEST SPACE
1/4" = 1'-0"



1 A1.1/A6.2 WEST ELEVATION - INTERIOR WEST SPACE
1/4" = 1'-0"

0' 4' 8' 16' 32'

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INTERIOR ELEVATIONS

10/01/2023

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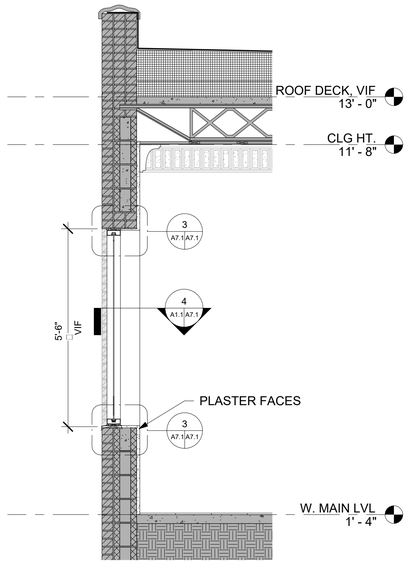
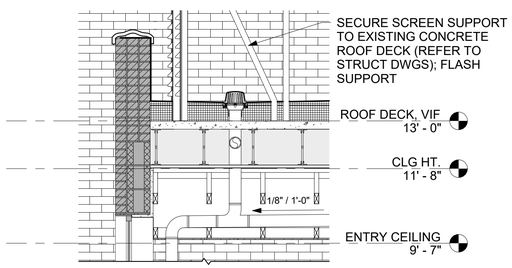
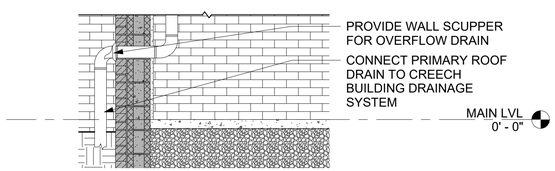
A6.2

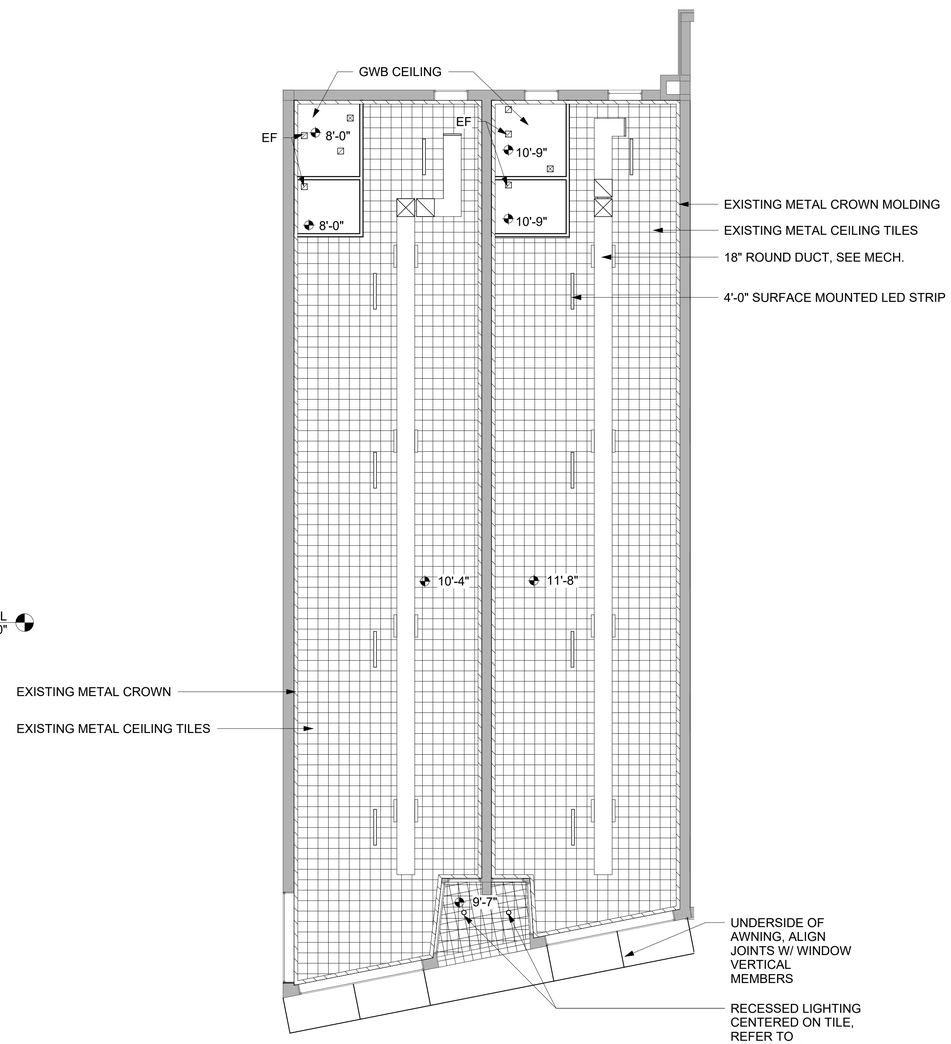


1 A1.1 A7.1 WALL SECTION
1/2" = 1'-0"





2 A3.3 A7.1 SCUPPER DETAIL
1/2" = 1'-0"



5 A2.1 A7.1 EXISTING MAIN RCP
1/8" = 1'-0"

ROOM SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH	CEILING FINISH	CEILING HEIGHT	COMMENTS
1	WEST SPACE	SEALED CONCRETE	-	EXISTING OR PATCHED PLASTER	RETAIN CEILING	NO CHANGE	
2	EAST SPACE	SEALED CONCRETE	-	EXISTING OR PATCHED PLASTER	RETAIN CEILING	NO CHANGE	
3	BASEMENT	-	-	-	NONE	NONE	REFER TO STRUCT. DRAWINGS
4	WEST TOILET	CERAMIC TILE	CERAMIC TILE	MOISTURE RESISTANT GWB/CERAMIC TILE	GWB	8' - 0"	
5	EAST TOILET	CERAMIC TILE	CERAMIC TILE	MOISTURE RESISTANT GWB/CERAMIC TILE	GWB	10' - 9"	
6	JANITOR CLOSET - WEST	SEALED CONCRETE	RUBBER	MOISTURE RESISTANT GWB	GWB	8' - 0"	
7	JANITOR CLOSET - EAST	SEALED CONCRETE	RUBBER	MOISTURE RESISTANT GWB	GWB	10' - 9"	

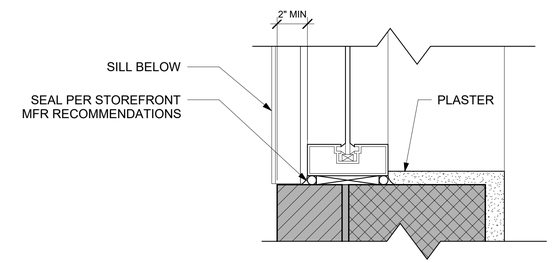
DOOR SCHEDULE

DOOR NUMBER	DOOR TYPE	DOOR				
		WIDTH	HEIGHT	FRAME	MATERIAL	FINISH
1	NEW, HOLLOW CORE	3'-0"	6'-8"	HM	WD	PNT
2	NEW, HOLLOW CORE	3'-0"	6'-8"	HM	WD	PNT
3	NEW, HOLLOW CORE	3'-0"	6'-8"	HM	WD	PNT
4	NEW, HOLLOW CORE	3'-0"	6'-8"	HM	WD	PNT
5	STOREFRONT W/ TRANSOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING
6	STOREFRONT W/ TRANSOM	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING

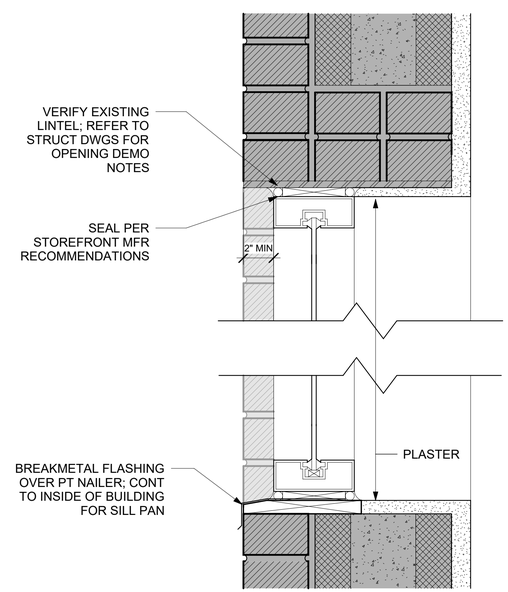
HARDWARE: THREE HINGES, LEVER HANDLE AND LOCKSET, HINGE OR WALL STOP, SILENCERS.

WINDOW SCHEDULE

TYPE MARK	ROUGH OPENING		COMMENTS
	WIDTH	HEIGHT	
1	3'-10"	5'-4"	(2) WINDOWS AT REAR - EAST SPACE
2	14'-2"	8'-0"	STOREFRONT - WEST SPACE
3	14'-8"	8'-8"	STOREFRONT ENTRY - WEST SPACE
4	8'-0"	8'-0"	STOREFRONT - EAST SPACE
5	3'-10"	2'-8"	WINDOW AT REAR - WEST SPACE
6	5'-6"	10'-2"	WEST WALL - REOPEN EXIST. - V.I.F.
7	5'-10"	8'-8"	STOREFRONT ENTRY - EAST SPACE



4 A1.1 A7.1 WEST STOREFRONT JAMB
3" = 1'-0"



3 A7.1 A7.1 WEST STOREFRONT SILL AND HEADER
3" = 1'-0"

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SCHEDULES

10/01/2023

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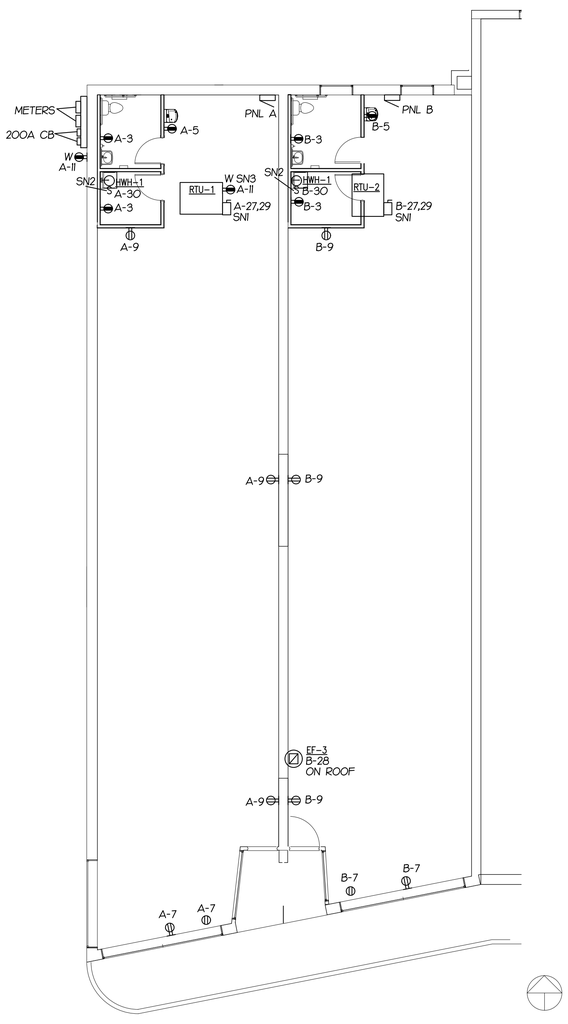
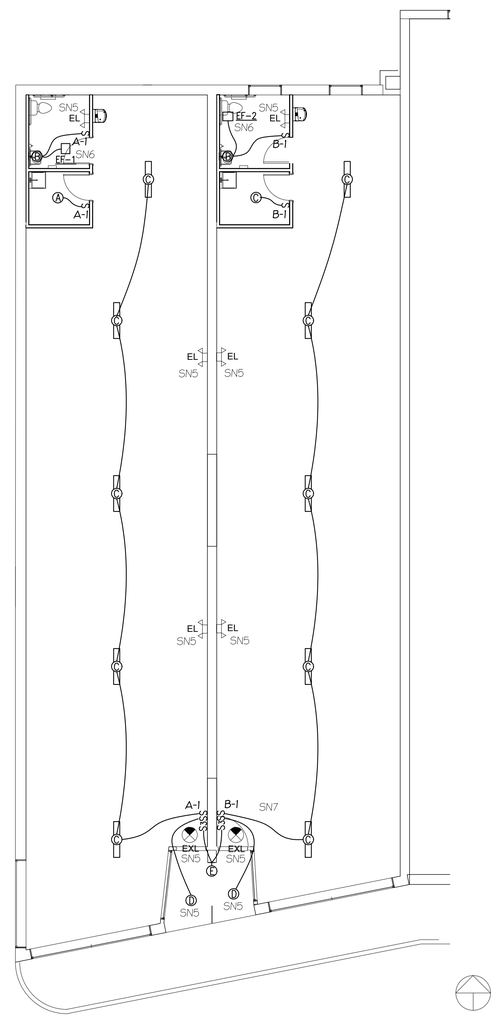
A7.1



1 MAIN LEVEL POWER PLAN
E1.1 E1.1
1/8" = 1'-0"



2 MAIN LEVEL LIGHTING PLAN
E1.1 E1.1
1/8" = 1'-0"

0' 4' 8' 16' 32'

LIGHT FIXTURE SCHEDULE				
MARK	DESCRIPTION	LAMP	MOUNTING	BASIS OF DESIGN
A	7" SURFACE MOUNTED DOWN LIGHT	LED	CEILING	RAB SM34 7R 9W 930 120W
B	VANITY LIGHT	LED	WALL	LITHONIA FMVTSL 24IN MVOLT 30K 90CRI BN M4
C	4 FT SURFACE LED STRIP	LED	CEILING	RAB SR4 30W
D	RECESSED 6" EMERGENCY LIGHT	LED	CEILING	E2 LIGHTING E2-P6INCH-16W-G2
E	SURFACE MOUNT EGRESS LIGHT	LED	WALL	LITHONIA A0V13 YOW NODIM 15W 35K MVOLT OP BRZ EMB310 CAB
EXL	COMBINATION EXIT/EMERGENCT LIGH	LED	WALL	LITHONIA EXG LED M6
EL	EMERGENCY LIGHT	LED	WALL	LITHONIA EU2 LED M12

PANEL A

120/240 VOLT
1 PHASE 3 WIRE
30 POLE

200 AMP MCB - SE RATED
22 KAIC
COPPER BUS

SQUARE D QO
SURFACE MOUNTED
NEMA 1

CRK	BRK	DESCRIPTION	WIRE SIZE	VA LOAD	VA LOAD	WIRE SIZE	DESCRIPTION	BRK	CRK
1	20	LIGHTS	12	272			SPARE	20	2
3	20	BATHROOM RECEPT	12	180			SPARE	20	4
5	20	WATER FOUNTAIN	12	600			SPARE	20	6
7	20	STOREFRONT RECEPTS	12	360			SPARE	20	8
9	20	RECEPTS	12	540			SPARE	20	10
11	20	EXTERIOR RECEPT AT SERVICE	12	180			SPARE	20	12
13	20	SPARE					SPACE		14
15	20	SPARE					SPACE		16
17	20	SPARE					SPACE		18
19	20	SPARE					SPACE		20
21		SPACE					SPACE		22
23		SPACE							24
25		SPACE							26
27	110/2	RTU	2	9986					28
29			2	9984	1650	12	WATER HEATER	20	30

PANEL B

120/240 VOLT
1 PHASE 3 WIRE
30 POLE

200 AMP MCB - SE RATED
22 KAIC
COPPER BUS

SQUARE D QO
SURFACE MOUNTED
NEMA 1

CRK	BRK	DESCRIPTION	WIRE SIZE	VA LOAD	VA LOAD	WIRE SIZE	DESCRIPTION	BRK	CRK
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9	20	RECEPTS	12	540			SPARE	20	10
11	20	EXTERIOR RECPT	12	180			SPARE	20	12
13	20	SPARE					SPACE		14
15	20	SPARE					SPACE		16
17	20	SPARE					SPACE		18
19	20	SPARE					SPACE		20
21		SPACE					SPACE		22
23		SPACE							24
25		SPACE							26
27	110/2	RTU	2	6684	528	12	EXHAUST FAN EF-3	20	28
29			2	9984	1650	12	WATER HEATER	20	30

SHEET NOTES:

SN1 - PROVIDE A 200A/2P NON FUSED NEMA 3R DISCONNECT SWITCH FOR RTU ON ROOF.

SN2 PROVIDE A 20A SINGLE POLE SWITCH FOR WATER HEATER DISCONNECT SWITCH.

SN3 - PROVIDE A 20A WEATHERPROOF SINGLE POLE SWITCH FOR EXHAUST FAN EF-3 ON ROOF.

SN4 - PROVIDE A 20A WP GFI RECEPTACLE ON OR ADJACENT TO RTU.

SN5- CONNECT EGRESS LIGHT TO UN-SWITCHED LEG OF LOCAL LIGHTING BRANCH CIRCUIT.

SN6 - CONNECT BATHROOM EXHAUST FAN TO SWITCHED ROOM LIGHT.

SN7 - AT ENTRANCE TO BUILDING CRAWL SPACE PROVIDE A LIGHT SWITCH, LED JELLY JAR LIGHT AND GFI RECEPTACLE, CONNECT TO CIRC B-11.

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ELECTRICAL FLOOR PLANS

01/10/2023

Revisions:
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Drawn By: WBB
Review By WBB
Project No. 2310

Sheet No.
E1.1

GENERAL SPECIFICATIONS-ELECTRICAL WORK

ISCOPE:
THIS SECTION OF THE SPECIFICATIONS SHALL GOVERN ALL PHASES OF ELECTRICAL WORK REFERENCED HERETO. THESE SPECIFICATIONS DEFINE THE BASIC REQUIREMENTS FOR THE ELECTRICAL INSTALLATION. THE SPECIFICATIONS ARE INTENDED TO CONVEY THE SCOPE OF WORK AND TO INDICATE THE GENERAL REQUIREMENTS FOR THE EQUIPMENT AND IT'S INSTALLATION. THE CONTRACTOR SHALL PROVIDE QUALIFIED SUPERVISION, LABOR, EQUIPMENT, MATERIALS AND OTHER ITEMS NECESSARY FOR A SAFE, COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM WHETHER OR ALL INCIDENTAL MATERIAL OR EQUIPMENT IS INDICATED HEREIN.

PRIORITY OF SPECIFICATIONS:
"GENERAL CONDITIONS," "SPECIAL CONDITIONS," "INSTRUCTIONS TO BIDDERS," OR OTHER SIMILAR GENERAL SPECIFICATION REQUIREMENTS ISSUED FOR THIS PROJECT SHALL APPLY TO ALL ELECTRICAL WORK.

WHEREVER THE WORD "PROVIDE" IS USED IN THESE SPECIFICATIONS OR ON THE DRAWINGS IT SHALL MEAN "THE ELECTRICAL CONTRACTOR IS TO PROVIDE AND INSTALL COMPLETE AND READY FOR INTENDED USE BY THE OWNER". THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT SHOW ALL DETAILS NECESSARY FOR A COMPLETE ELECTRICAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ITEMS REQUIRED FOR COMPLETE AND FUNCTIONAL SYSTEMS.

ITEMS OF WORK SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THESE SPECIFICATIONS OR ITEMS OF WORK CALLED FOR IN THE SPECIFICATIONS BUT NOT SHOWN ON THE DRAWINGS SHALL BE CONSIDERED AS BEING SHOWN ON THE PLANS AND SPELLED OUT IN THE SPECIFICATIONS.

DRAWINGS:
THE ELECTRICAL DRAWINGS SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND APPURTENANCES AND SHALL BE FOLLOWED AS CLOSELY AS ACTUAL PROJECT CONSTRUCTION AND THE WORK OF OTHER TRADES WILL PERMIT. BECAUSE OF THE SMALL SCALE OF THE ELECTRICAL DRAWINGS, IT IS NOT FEASIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL INVESTIGATE THE CONSTRUCTION CONDITIONS AFFECTING THE WORK AND PROVIDE FITTINGS AND ACCESSORIES AS REQUIRED TO MEET ACTUAL CONDITIONS. VERIFY ALL ROUGH-IN DIMENSIONS, DO NOT SCALE FROM DRAWINGS.

REGULATIONS AND ORDINANCES:
ALL ELECTRICAL WORK SHALL BE INSTALLED IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. THE INSTALLATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), 2017 EDITION OF NFPA 70, AND ALL APPLICABLE STATE AND LOCAL CODES/ORDINANCES. ALL EQUIPMENT AND MATERIALS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE FOLLOWING STANDARDS, WHERE APPLICABLE:
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

MATERIALS AND WORKMANSHIP:
EQUIPMENT AND MATERIAL USED IN THE PROJECT SHALL BE NEW AND UNDAMAGED. THE ELECTRICAL INSTALLATION SHALL FIT INTO THE SPACE ALLOTTED AND SHALL ALLOW ADEQUATE, ACCEPTABLE, CLEARANCES FOR ENTRY, SERVICING AND MAINTENANCE. WORK SHALL BE PREFORMED BY QUALIFIED TRADESMEN SKILLED IN THE TRADE INVOLVED UNDER DIRECT SUPERVISION OF A LICENSED MASTER ELECTRICIAN.

COORDINATION OF WORK:
THE CONTRACT DOCUMENTS INDICATE THE EXTENT AND GENERAL ARRANGEMENT OF THE ELECTRICAL SYSTEMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION AND PROPER RELATION OF THEIR WORK TO THE PROJECT AND TO THE WORK OF OTHER TRADES. NO ADDITIONAL COMPENSATION NOR EXTENSION OF COMPLETION TIME WILL BE GRANTED FOR EXTRA WORK CAUSED BY THE LACK OF COORDINATION.

EQUIPMENT INSTALLATION:
EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS TO CONFORM WITH THE DETAILS AND APPLICATION INDICATED. PROVIDE NECESSARY SUPPORTS FOR ALL EQUIPMENT AND APPURTENANCES AS REQUIRED. THIS INCLUDES BUT IS NOT LIMITED TO FRAMES OR SUPPORTS FOR ITEMS SUCH AS ENCLOSED CIRCUIT BREAKERS AND OTHER SIMILAR ITEMS REQUIRING SUPPORTS.

GUARANTEE:
THE ELECTRICAL CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT AND MATERIAL FURNISHED UNDER HIS SCOPE OF WORK FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF FINAL ACCEPTANCE. EQUIPMENT MANUFACTURER'S WARRANTIES SHALL BE PASSED TO THE OWNER. SHOULD ANY DEFECTS APPEAR WITHIN THIS PERIOD, THE CONTRACTOR SHALL REPAIR OR REPLACE SAID DEFECTS OR ANY DAMAGE TO BUILDING OR CONTENTS CAUSED BY DEFECTIVE WORKMANSHIP OR EQUIPMENT, AND SHALL MAKE REQUIRED ADJUSTMENTS AT NO COST TO THE OWNER.

ELECTRICAL REQUIREMENTS BY OTHER TRADES:
POWER (ALL VOLTAGES 120 AND GREATER) WIRING AND CONNECTIONS TO HVAC EQUIPMENT, PLUMBING EQUIPMENT AND RELATED EQUIPMENT SHALL BE MADE BY THE ELECTRICAL CONTRACTOR. ALL HVAC CONTROL WIRING WILL BE THE RESPONSIBILITY OF THE INSTALLING TRADE.

EQUIPMENT CONNECTIONS:
PROVIDE FLEXIBLE METAL CONDUIT CONNECTIONS FOR MOTOR CONNECTIONS AND OTHER EQUIPMENT SUBJECT TO MOVEMENT AND VIBRATION. PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR CONNECTION OF MOTORS AND OTHER EQUIPMENT SUBJECT TO MOVEMENT AND VIBRATION WHERE SUBJECT TO HUMID, DAMP OR WET CONDITIONS.

SUPPORTS AND HANGERS:
THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SUPPORTS AND HANGER MATERIALS REQUIRED TO SUPPORT CONDUIT; BOXES; FIXTURES AND EQUIPMENT REQUIRED FOR THIS PROJECT. HANGER/SUPPORT SPACING SHALL BE AS REQUIRED IN THE NEC. MATERIALS USED SHALL BE NEW AND APPROVED FOR THE PURPOSE. SUPPORT FOR LIGHT FIXTURES AS REQUIRED BE THE NEC SHALL BE PROVIDED.

WIRE:
PROVIDE WIRE AND CABLE SUITABLE FOR THE LOCATION WHERE INSTALLED. USE BUILDING WIRE WITH 600 VOLT INSULATION. SIZE ALL CONDUCTORS TO COMPLY WITH NEC REQUIREMENTS FOR VOLTAGE DROP. MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG. TYPE NM, NMS OR NMC (NONMETALLIC-SHEATHED CABLES) AND YPE MC CABLE ARE ACCEPTABLE WIRING METHODS WHEN INSTALLED AND SUPPORTED IN ACCORDANCE THE NEC.

PROVIDE SOLID CONDUCTORS FOR POWER AND LIGHTING CIRCUITS NO. 10 AWG AND SMALLER UNLESS INDICATED OR SPECIFIED OTHERWISE. PROVIDE STRANDED CONDUCTORS FOR SIZES NO. 8 AWG AND LARGER UNLESS INDICATED OR SPECIFIED OTHERWISE. ALL CONDUCTORS SHALL BE COPPER. PROVIDE THHN WIRE AND CABLE FOR VOLT BRANCH CIRCUIT CABLES (NO. 10 AND SMALLER). PROVIDE XHHW OR THHN WIRE FOR FEEDER CIRCUIT CONDUCTORS (NO. 8 AND LARGER).

ALL BRANCH CIRCUITS SHALL HAVE THERE OWN NEUTRAL CONDUCTOR. NO SHARED NEUTRALS.

WIRE SHALL BE CODED BY THE INSULATION COLOR ON NO. 10 AWG AND SMALLER. COLORED TAPE TO IDENTIFY CONDUCTORS SHALL BE SIZES LARGER THAN #6 AWG. COLOR CODE FOR 120/240V HIGH-LEG SYSTEM SHALL BE AS FOLLOWS:

120/240 VOLTS	
BLACK	PHASE
RED	PHASE
WHITE	NEUTRAL
GREEN	GROUND

CONDUIT:
CONDUIT SHALL BE CONCEALED IN FINISHED AREAS. CONDUITS SHALL BE SECURELY FASTENED. A MAXIMUM OF FOUR 90-DEGREE BONDS BETWEEN ANY TWO BOXES, FIXTURES OR PANELS SHALL BE PERMITTED FOR EACH CONDUIT RUN. CONDUIT SHALL BE SIZED IN ACCORDANCE WITH THE ALLOWABLE FILL PERMITTED BY THE NEC. WHERE CONDUIT CAN NOT BE CONCEALED IN WALL PROVIDE STEEL SURFACE MOUNTED RACEWAY AND BOXES. RACEWAY SHALL BE WIREMOLD SERIES 700 MINIMUM SIZE.

CONDUIT FOR CONCEALED POWER AND LIGHTING SHALL BE ELECTRICAL METALLIC TUBING (EMT) WITH STEEL FITTINGS FITTINGS LISTED FOR THE PURPOSE. DIE CAST FITTING SHALL NOT BE USED ON THIS PROJECT.

BOXES AND COVERS:
NEC-APPROVED KNOCKOUT BOXES SHALL BE FURNISHED AND INSTALLED FOR LIGHTS AND SWITCHES, AND NEC-APPROVED JUNCTION BOXES SHALL BE FURNISHED AND INSTALLED AS REQUIRED, WHETHER OR NOT SPECIFICALLY CALLED OUT ON PLANS. ONLY METAL BOXES SHALL BE USED. METAL BOXES ARE TO BE 2 1/8" DEEP. DO NOT INSTALL BOXES BACK TO BACK.

BOXES SHALL BE FLUSH MOUNTED UNLESS OTHERWISE SHOWN ON PLANS, OR UNLESS USED IN EXPOSED CONDUIT AREAS. EXPOSED BOX COVERS AND WALL PLATES IN FINISHED AREAS SHALL BE NYLON. COVERS SHALL PROVIDE PROPER MOUNTING FOR SWITCHES.

PROVIDE GROUNDING/BONDING PIGTAILS FOR ALL BOXES, USE STEEL CITY #GBC-12 OR EQUAL.

SPLICES:
SPLICES SHALL ONLY BE MADE AT OUTLET, JUNCTION OR PULL BOXES. SPLICES IN CONDUIT ARE SPECIFICALLY PROHIBITED. SPLICES FOR NO. 10 OR SMALLER CONDUCTORS SHALL BE WITH SPRING INSERT WIRE NUTS. SLIP ON WIRE CONNECTORS SHALL NOT BE USED. SPLICES FOR NO. 8 AND LARGER CONDUCTORS SHALL BE WITH MECHANICAL BOLTED CONNECTORS, TAPED TO PROVIDE INSULATION AT LEAST EQUAL TO THE INSULATION OF THE CONDUCTORS BEING SPLICED. SLIP ON WIRE CONNECTORS SIMILAR TO "WAGO PUSH CONNECTORS" SHALL NOT BE USED.

SWITCHES AND RECEPTACLES:
DEVICES SHALL BE AS SPECIFIED ON THE DRAWINGS. SWITCHES SHALL BE PES, BRYANT, GENERAL ELECTRIC, HUBBELL, OR LEVITON. COLOR TO BE SELECTED BY ARCHITECT.

FACE PLATES SHALL BE NYLON, COLOR TO BE SELECTED BY ARCHITECT. PROVIDE METAL HEAVY DUTY "IN USE" TYPE DUPLEX GFI WEATHERPROOF RECEPTACLES ON THE BUILDING EXTERIOR.

ALL BRANCH CIRCUIT CONNECTIONS TO DEVICES SHALL BE MADE USING SCREW TERMINALS, THE USE OF PUSH IN BACK WIRE CONNECTIONS IS NOT ACCEPTABLE.

ALL DEVICE PLATES SHALL BE LABELED WITH PANEL ID AND CIRCUIT NUMBER.

LIGHT FIXTURES:
LIGHT FIXTURES SHALL BE AS SPECIFIED ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE CEILING FINISH SCHEDULE WITH THE GENERAL CONTRACTOR TO ENSURE THE PROPER LIGHTING FIXTURE INSTALLATION.

THE LIGHTING FIXTURE SCHEDULE ON DRAWINGS ESTABLISHES THE STANDARD OF QUALITY OF FIXTURES TO BE PROVIDED ON THIS PROJECT. SUPPORT LIGHTING FIXTURES BY APPROVED MEANS.

CLEAN ALL LIGHT FIXTURES, LAMPS, AND LENSES PRIOR TO FINAL ACCEPTANCE. REPLACE ALL INOPERATIVE LAMPS.

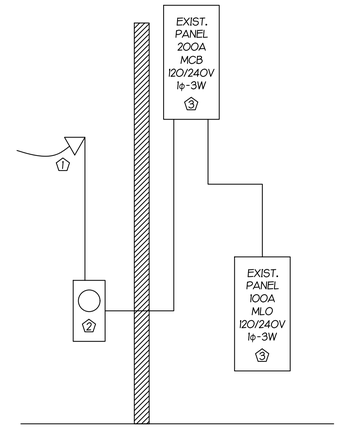
DISTRIBUTION EQUIPMENT:
PANELBOARD SHALL BE SQUARE D, GENERAL ELECTRIC, WESTINGHOUSE, SIEMENS, OR CUTLER HAMMER.

GROUNDING:
ALL BRANCH CIRCUITS SHALL HAVE A FULL SIZE EQUIPMENT GROUND CONDUCTOR.

ELECTRICAL IDENTIFICATION:
PROVIDE A TYPED CIRCUIT DIRECTORY FOR PANEL. PROVIDE ADDITIONAL ELECTRICAL IDENTIFICATION AS INDICATED ELSEWHERE IN THIS DOCUMENT. PROVIDE BLACK ON CLEAR LABEL WITH CIRCUIT ID ON DEVICE PLATES AND DISCONNECT SWITCHES.

ABBREVIATIONS

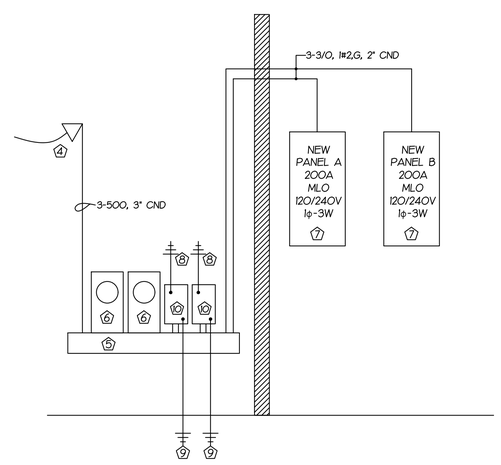
A, AMP - AMPERES
AFF - ABOVE FINISHED FLOOR
AFG - ABOVE FINISHED GRADE
AL - ALUMINUM
C - CONDUIT
CB - CIRCUIT BREAKER
CKT - CIRCUIT
CLG - CEILING
CU - COPPER
DISC - DISCONNECT
EC - EMPTY CONDUIT
ELEC - ELECTRICAL
ELEV - ELEVATOR
EM, EMERG - EMERGENCY
EMT - ELECTRICAL METALLIC TUBING
EX - EXISTING
F - FUSE
FBO - FURNISHED BY OTHERS
FLEX - FLEXIBLE
FLUOR - FLUORESCENT
FSS - FUSED SAFETY SWITCH
FTG - FITTING
G, GND - GROUND
GFI - GROUND FAULT INTERRUPTING
J-BOX, JB - JUNCTION BOX
KW - KILOWATT
MLO - MAIN LUGS ONLY
MTD - MOUNTED
N/A - NOT APPLICABLE
NFSS - NO FUSE SAFETY SWITCH
NIC - NOT IN CONTRACT
NTS - NOT TO SCALE
P - POLE
PB - PULL BOX, PUSH BUTTON
PH - PHASE
PNL - PANEL
RCPT - RECEPTACLE
RGS - RIGID GALVANIZED STEEL
SMR - SURFACE METAL RACEWAY
S/N - SOLID NEUTRAL
SS - STAINLESS STEEL
STD - STANDARD
SW - SWITCH
TBD - TO BE DETERMINED
TEL - TELEPHONE
TV - TELEVISION
TYP - TYPICAL
UNO - UNLESS NOTED OTHERWISE
V - VOLTAGE
VFD - VARIABLE FREQUENCY DRIVE
WP - WEATHERPROOF
XFMR - TRANSFORMER



1 (E1.2 | E1.2) EXISTING ONE LINE DIGRAM
NOT TO SCALE

ONE LINE NOTES:

1. EXISTING OVERHEAD UTILITY SERVICE TO BE REPLACED FOR 400A SERVICE.
2. EXISTING UTILTY METER TO BE REMOVED.
3. EXISTING PANEL TO BE REMOVED.
4. NEW 400A/120-240v/1ϕ/3W OVERHEAD SERVICE, COORDINATE LOCATION WITH UTILITY.
5. NEW 8X8 NEMA 3R TROUGH. PROVIDE CLEAR-TAP CONNECTIONS.
6. NEW 200A/1ϕ/3W UTILITY METER.
7. NEW PANELBOARD 200A 120/240V, 1P, 3W 200A MLO, NEMA 1 PANELBOARD.
8. BOND SERVICE TO BUILDING STEEL AND WATER MAIN WITH #4 CU. CONDUIT.
9. BOND SERVICE TO TWO 10FT-1/2" DRIVEN CU GROUND RODS WITH #4 CU.
10. 200A NEMA 3R SERVICE ENTRANCE RATED 2P/3W CIRCUIT BREAKER.



2 (E1.2 | E1.2) REVISED ONE LINE DIGRAM
NOT TO SCALE

DEVICE & SYMBOL LEGEND

SYMBOLS SHOWN ARE STANDARD SYMBOLS, SOME MAY NOT BE USED

B-12 — DUPLEX 20A RECEPTACLE, TAMPER RESISTANT NEMA 5-20R SPEC GRADE (UNLESS NOTED OTHERWISE).
B-12 INDICATES DEVICE IS TO BE ON PANEL B, CIRC. No. 12. TYPICAL AT ALL DEVICES AND SWITCHES.

DUPLEX 20A GFI RECEPTACLE, NEMA 5-20R TAMPER RESISTANT SPEC GRADE WITH HEAVY DUTY WEATHER PROOF IN-USE COVER, MOUNT AT 18" AFF UNO.

W — DUPLEX 20A GFI WR RECEPTACLE, NEMA 5-20R WEATHER/TAMPER RESISTANT SPEC GRADE WITH HEAVY DUTY METAL WEATHER PROOF IN-USE COVER, MOUNT AT 18" AFF UNO.

CEILING MOUNTED DUPLEX 20A RECEPTACLE, NEMA 5-20R SPEC GRADE

S — SINGLE POLE 20A SWITCH SPEC GRADE MOUNT AT 48" AFF TO CENTER.

NON-FUSED SAFETY SWITCH (SIZE AS NOTED).

B-3 — ARROW INDICATES HOME RUN CIRCUIT TO PANEL INDICATED (IE. PANEL B, CIRC. BKR. 3), 20A CIRCUIT, 2#12, 1#12G TYPICAL UNLESS NOTED OTHERWISE.

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SPECIFICATION & ONE LINE DIAGRAMS

01/10/2023
Revisions:
MONTH. DAY. YEAR

Drawn By:	WBB
Review By	WBB
Project No.	2310

Sheet No.
E1.2

MECHANICAL SPECIFICATIONS

1. GENERAL PROVISIONS

A. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE 2018 VIRGINIA MECHANICAL CODE INCLUDING REFERENCED CODES AND STANDARDS AND IN ACCORDANCE WITH MANDATES OF THE LOCAL BUILDING OFFICIALS.

B. THE GENERAL ARRANGEMENT AND LOCATIONS OF DUCTWORK, PIPING, FIXTURES, ETC. ARE INDICATED BY THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE THEREWITH; WITH THE EXCEPTION OF SUCH CHANGES AS MAY BE REQUIRED ON ACCOUNT OF OTHER TRADES. CONTRACTOR SHALL COORDINATE WORK WITH INSTALLATION OF OTHER SUBCONTRACTORS.

C. MECHANICAL WORK SHALL BE COORDINATED WITH THE CONTRACTOR AS TO SCHEDULING, DIMENSIONING AND LOCATION OF EQUIPMENT.

D. MAJOR ITEMS ARE SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.

E. TRADE NAMES AND CATALOG NUMBERS SHALL BE INTERPRETED AS ESTABLISHING A GENERAL DESIGN AND STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. UNLESS STATED OTHERWISE, THE CONTRACTOR MAY USE ANY ARTICLE WHICH, IN HIS JUDGEMENT, AND WITH WRITTEN COMMENT FROM THE ARCHITECT/ENGINEER INDICATING NO OBJECTION, IS EQUAL OR SUPERIOR TO THAT SPECIFIED. DRAWINGS SHOWING CHANGES OR REVISIONS REQUIRED BY THE SUBSTITUTION FOR SPECIFIED ITEMS SHALL BE SUBMITTED WITH THE SHOP DRAWING DATA, AND THE COSTS OF ALL SUCH CHANGES SHALL BE BORNE BY THE CONTRACTOR.

F. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.

G. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE CONTRACTOR.

H. ALL PIPING SHALL BE ABOVE CEILING UNLESS INDICATED OTHERWISE.

I. DO NOT INSTALL PVC PIPING OR ANY COMBUSTIBLE MATERIAL IN ANY AIR PLENUM.

J. ALL EQUIPMENT SHALL BE WIPED CLEAN, REMOVING ALL TRACES OF OIL, DIRT, OR PAINT SPOTS.

K. PROVIDE SUPPORTS TO RIGIDLY ATTACH ALL EQUIPMENT, APPURTENANCES AND PIPE AS REQUIRED FOR SUPPORT. PRIOR TO INSTALLATION OF HANGERS AND INSERTS, THE CONTRACTOR SHALL COORDINATE LOCATIONS AND REQUIREMENTS TO MINIMIZE CONFLICTS WITH OTHER BUILDING SYSTEMS. INSTALLATION OF PIPE HANGERS AND SUPPORTS SHALL BE IN STRICT ACCORDANCE WITH MSS SP-58, 69 AND 89.

L. CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.

M. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECT WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.

2. SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND PROJECT INFORMATION

A. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
(1) MECHANICAL SLEEVE SEALS
(2) FIRE BARRIER PENETRATION SEALS
(3) INSULATION
(4) ALL MECHANICAL EQUIPMENT

B. IDENTIFY ALL MECHANICAL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITH THE NAME OF THE PROJECT. CLEARLY MARK THE SPECIFIC ITEMS INTENDED FOR USE. SUBMIT ALL RELATED ITEMS AT ONE TIME.

C. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, SUBMIT THE FOLLOWING INFORMATION FOR REVIEW AND APPROVAL.
(1) OPERATING AND MAINTENANCE INSTRUCTIONS.
(2) "AS BUILT" DRAWINGS.

3. GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTS WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.

4. "AS BUILT" DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF THE LOCATION OF ALL CONCEALED DUCTWORK, PIPING, VALVES, CONTROLS, ETC., BOTH INTERIOR AND EXTERIOR. ON COMPLETION OF THE WORK, ONE PRINT EACH OF THE CONTRACT DRAWINGS WHICH ARE APPLICABLE SHALL BE NEATLY AND CLEARLY MARKED IN COLOR TO SHOW ALL VARIATIONS BETWEEN THE WORK ACTUALLY PROVIDED AND THAT INDICATED ON THE CONTRACT DRAWINGS.

5. OPERATING AND MAINTENANCE MANUALS

A. GENERAL: PRIOR TO COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE TWO HARDBACKED LOOSELEAF RING TYPE BINDERS, IDENTIFIED WITH THE NAME OF THE PROJECT. CONTRACTOR SHALL DELIVER THESE BINDERS TO THE ENGINEER FOR REVIEW AND TRANSMITTAL TO THE OWNER.

B. THE FOLLOWING ITEMS AND OTHER ADDITIONAL PERTINENT DATA FOR EACH ITEM OF EQUIPMENT SHALL BE INCLUDED:
(1) NAME OF MANUFACTURER.
(2) NAME, ADDRESS AND TELEPHONE NUMBER OF NEAREST MANUFACTURER'S REPRESENTATIVE.
(3) COPY OF LATEST APPROVED SHOP DRAWING.
(4) MANUFACTURER'S OPERATING AND MAINTENANCE MANUAL INCLUDING LUBRICATION DATA.
(5) PARTS NUMBERS FOR ALL REPLACEABLE ITEMS.
(6) SERIAL NUMBERS OF ALL PRINCIPAL ITEMS OF EQUIPMENT.
(7) CONTROL DIAGRAMS AND SEQUENCE OF OPERATION.
(8) MANUFACTURER'S WRITTEN GUARANTEES THAT EXTEND BEYOND THE CONTRACTOR'S ONE YEAR GUARANTEE.

C. THE OPERATING AND MAINTENANCE MANUALS SHALL BE CONSIDERED A PART OF THE FINAL INSPECTION AND THEY SHALL BE SUBMITTED FOR APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO REQUEST FOR FINAL INSPECTION.

6. ACCESS DOORS: ACCESS DOORS SHALL BE PROVIDED FOR ALL CONCEALED VALVES, CONTROLS, AND ANY OTHER EQUIPMENT OR MATERIALS REQUIRING INSPECTION OR MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED FOR FLOORS, WALLS AND CEILINGS, OF ADEQUATE SIZE SO THAT CONCEALED ITEMS WILL BE READILY ACCESSIBLE FOR SERVICING OR FOR REMOVAL AND REPLACEMENT IF NECESSARY.

7. PAINTING

A. SCOPE OF WORK: MECHANICAL EQUIPMENT, MATERIALS, AND RELATED PIPING DO NOT REQUIRE PAINTING EXCEPT AS INDICATED BELOW.

B. EQUIPMENT WITH A FACTORY APPLIED FINISH WILL NOT REQUIRE ADDITIONAL PAINTING EXCEPT TOUCH-UP WITH MATCHING FINISH WHERE IT IS DAMAGED.

C. PIPING, FABRICATED SUPPORTS, OR OTHER UNFINISHED AND UNPROTECTED MATERIALS LOCATED OUTDOORS SHALL BE PAINTED WITH A SUITABLE PRIMER AND COMPATIBLE FINISH PAINT. COLOR SHALL BE AS DIRECTED BY ENGINEER.

D. PAINT INSIDE OF DUCTWORK WITH MATTE BLACK PAINT WHERE VISIBLE BEHIND AIR INLETS AND OUTLETS.

E. PROTECTION OF WORK: PAINTING SHALL BE DONE WITH ALL POSSIBLE CARE TO PROTECT THIS WORK AND WORK OF OTHER TRADES. ALL DAMAGE TO THIS AND OTHER WORK CAUSED BY THE PAINTING OPERATIONS SHALL BE CORRECTED, CLEANED OR REPAIRED AS REQUIRED. HARDWARE, SPECIAL CONTROL ITEMS, GAUGES, THERMOMETERS, NAMEPLATES, INSTRUMENT GLASS AND OTHER SIMILAR ITEMS SHALL BE REMOVED OR PROPERLY PROTECTED DURING THE PAINTING OPERATIONS TO INSURE THAT THESE ITEMS ARE NOT COVERED OR SPLATTERED WITH PAINT.

8. IDENTIFICATION

A. SUBMITTALS
(1) SUBMIT LIST OF WORDING, SYMBOLS, LETTER SIZE, AND COLOR CODING FOR MECHANICAL IDENTIFICATION.
(2) SUBMIT VALVE CHART AND SCHEDULE, INCLUDING VALVE TAG NUMBER, LOCATION, FUNCTION, AND VALVE MANUFACTURER'S NAME AND MODEL NUMBER.
(3) PRODUCT DATA: PROVIDE MANUFACTURERS CATALOG LITERATURE FOR EACH PRODUCT REQUIRED.

B. NAMEPLATES
(1) DESCRIPTION: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR.

C. TAGS
(1) METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCHES (40 MM) DIAMETER.
(2) CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.

D. STENCILS
(1) STENCILS: WITH CLEAN CUT SYMBOLS AND LETTERS OF FOLLOWING SIZE:
(A) 3/4 TO 1-1/4 INCHES (20-30 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCHES (200 MM) LONG COLOR FIELD, 1/2 INCHES (15 MM) HIGH LETTERS.
(B) 1-1/2 TO 2 INCHES (40-50 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCHES (200 MM) LONG COLOR FIELD, 3/4 INCH (20 MM) HIGH LETTERS.
(C) 2-1/2 TO 6 INCHES (65-150 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 12 INCHES (300 MM) LONG COLOR FIELD, 1-1/4 INCHES (30 MM) HIGH LETTERS.
(D) 8 TO 10 INCHES (200-250 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 24 INCHES (600 MM) LONG COLOR FIELD, 2-1/2 INCHES (65 MM) HIGH LETTERS.
(E) OVER 10 INCHES (250 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 32 INCHES (800 MM) LONG COLOR FIELD, 3-1/2 INCHES (90 MM) HIGH LETTERS.
(F) DUCTWORK AND EQUIPMENT: 2-1/2 INCHES (65 MM) HIGH LETTERS.
(2) STENCIL PAINT: AS SPECIFIED IN SECTION 09900, SEMI-GLOSS ENAMEL, COLORS CONFORMING TO ASME A13.1.

E. PIPE MARKERS
(1) COLOR: CONFORM TO ASME A13.1.
(2) PLASTIC PIPE MARKERS: FACTORY FABRICATED, FLEXIBLE, SEMI- RIGID PLASTIC, PREFORMED TO FIT AROUND PIPE OR PIPE COVERING; MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.

F. CEILING TACKS
(1) DESCRIPTION: STEEL WITH 3/4 INCH (20 MM) DIAMETER COLOR CODED HEAD.
(2) COLOR CODE AS FOLLOWS:
(A) YELLOW – HVAC EQUIPMENT
(B) RED – FIRE DAMPERS/SMOKE DAMPERS
(C) GREEN – PLUMBING VALVES
(D) BLUE – HEATING/COOLING VALVES

G. INSTALLATION
(1) DEGREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR IDENTIFICATION MATERIALS.
(2) INSTALL PLASTIC NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS, OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION AND SEAL WITH CLEAR LACQUER.
(3) INSTALL TAGS WITH CORROSION RESISTANT CHAIN.
(4) INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
(5) IDENTIFY AIR CONDITIONING UNITS AND FANS WITH PLASTIC NAMEPLATES OR STENCIL PAINTING.
(6) IDENTIFY CONTROL PANELS AND MAJOR CONTROL COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES.
(7) IDENTIFY DUCTWORK WITH PLASTIC NAMEPLATES OR STENCILLED PAINTING. IDENTIFY WITH AIR HANDLING UNIT OR FAN AND AREA BEING SERVED.
(8) TAG AUTOMATIC CONTROLS, INSTRUMENTS, AND RELAYS. KEY TO CONTROL SCHEMATIC.
(9) IDENTIFY PIPING, CONCEALED OR EXPOSED, WITH PLASTIC PIPE MARKERS OR STENCILLED PAINTING. IDENTIFY SERVICE, FLOW DIRECTION, AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET (6 M) ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION.
(10) PROVIDE CEILING TACKS TO LOCATE VALVES ABOVE T-BAR TYPE PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.

10. INSULATION

A. FLAME/SMOKE RATINGS: PROVIDE COMPOSITE PLUMBING INSULATION (INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES) WITH FLAME-SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ANSI/ASTM E84 (NFPA 255) METHOD. INSULATION SHALL BE LABELED BY THE MANUFACTURER. THE LABEL SHALL INDICATE THE INSULATING VALUE, FLAME SPREAD AND SMOKE-DEVELOPED RATING.

B. SUBMITTALS: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF PLUMBING INSULATION. SUBMIT SCHEDULE SHOWING MANUFACTURER'S PRODUCT NUMBER, THICKNESS, AND FURNISHED ACCESSORIES FOR EACH PLUMBING SYSTEM REQUIRING INSULATION.

C. INSTALLATION: INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING ONLY ADHESIVES, MASTICS AND PLUMBING FASTENERS APPROVED BY THE INSULATION MANUFACTURER. INSULATION SHALL NOT BE APPLIED UNTIL AFTER THE EQUIPMENT HAS BEEN TESTED WITH RESULTS ACCEPTABLE TO THE ARCHITECT/ENGINEER. INSULATION WITH A VAPOR BARRIER JACKET SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN VAPOR SEAL AND ALL JOINTS SHALL BE SEALED WITH A VAPOR BARRIER ADHESIVE UNLESS OTHERWISE INDICATED. STAPLES, STICK CLIPS AND HANGERS SHALL BE VAPOR SEALED WHERE THEY PUNCTURE VAPOR BARRIER JACKETS.

D. MATERIALS:
(1) FLEXIBLE DUCT INSULATION: ASTM C1290, MINERAL FIBER BLANKET, WITH OPERATING TEMPERATURE OF 250°F. THERMAL CONDUCTIVITY "K"=0.30 AT 75°F, DENSITY=0.75 LB/CU. FT. F AT 75 DEGREES F. FACTORY APPLIED JACKET (ASJ) SHALL CONSIST OF WHITE KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBER YARN. EQUAL TO OWENS-CORNING ASJ.

E. DUCT INSULATION
(1) DUCT INSULATION: INSULATE ALL SUPPLY AIR AND RETURN AIR DUCTS.
(2) PROVIDE INSULATION WITH VAPOR RETARDER JACKETS. PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN.
(3) EXTEND DUCT INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.
(4) INSTALL PROTECTIVE METAL SHIELDS AND INSULATED INSERTS WHEREVER NEEDED TO PREVENT COMPRESSION OF INSULATION.
(5) CONCEALED DUCTWORK: INSULATE WITH 2" THICK FLEXIBLE DUCTWORK INSULATION.

12. DUCTWORK

A. GALVANIZED STEEL DUCTS: ASTM A653/A653M GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY, HAVING G60 ZINC COATING IN CONFORMANCE WITH ASTM A90/90M.

B. FLEXIBLE DUCTS: UL LABELED, BLACK POLYMER FILM SUPPORTED BY HELICAL WOUND SPRING STEEL WIRE. THE PRESSURE RATING SHALL BE 4" WG POSITIVE AND 0.5" WG NEGATIVE. THE MAXIMUM VELOCITY SHALL BE 4000 FPM AND THE TEMPERATURE RANGE SHALL BE -20°F TO 175°F.

C. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE.

D. WHERE RECTANGULAR ELBOWS ARE USED, FURNISH TURNING VANES.

E. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15° DIVERGENCE WHEREVER POSSIBLE; MAXIMUM 30° DIVERGENCE UPSTREAM OF EQUIPMENT AND 45° CEONVERGENCE DOWNSTREAM.

F. FLEXIBLE DUCT CONNECTIONS SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE.

G. VOLUME CONTROL DAMPERS SHALL BE RUSKIN MODEL MD-35 AND SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE.

H. FIRE DAMPERS SHALL BE DYNAMIC UNITS OF TYPES AND SIZES SUITABLE FOR THE MOUNTING POSITION AND PRESSURE CLASSIFICATION OF THE DUCTWORK IN WHICH INSTALLED. PROVIDE FIRE DAMPERS BEARING A 1-1/2 HOUR UL LABEL AND IN CONFORMANCE WITH NFPA 90A AND UL555.

13. DIFFUSERS, REGISTERS AND GRILLES

A. DIFFUSERS, REGISTERS AND GRILLES SHALL BE THE TYPE, MATERIAL, AIR PATTERN AND FINISH INDICATED ON THE DRAWINGS.

B. INSTALL AIR OUTLETS AND INLETS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL DIFFUSERS, REGISTERS AND GRILLES TO DUCTWORK WITH AIRTIGHT CONNECTION.

14. CLEANING AND TESTING

A. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION WITH CLEANING MATERIALS APPROPRIATE TO THE SURFACE AND MATERIAL BEING CLEANED. CLEAN DUCT SYSTEMS AND FORCE AIR AT HIGH VELOCITY THROUGH DUCT TO REMOVE ACCUMULATED DUST.

B. REPLACE FILTERS OF OPERATING EQUIPMENT.

C. HEATING AND COOLING SYSTEMS AND EXHAUST SYSTEMS SHALL BE TESTED, ADJUSTED AND BALANCED (TAB). AIR HANDLING SYSTEMS SHALL BE ADJUSTED TO WITHIN +/- 10% OF DESIGN. THE TOTAL OF AIR OUTLETS AND INLETS SHALL BE ADJUSTED TO WITHIN PLUS 10% AND MINUS 5% OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN +/- 10% OF DESIGN.

D. THE TAB CONTRACTOR SHALL NOT BE AFFILIATED IN ANY WAY BE WITH THE INSTALLING CONTRACTOR OR EQUIPMENT SUPPLIERS.

END OF SPECIFICATIONS

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10.01.2023
PROFESSIONAL ENGINEER

MECHANICAL SPECIFICATIONS

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M1.1

ROOFTOP AIR CONDITIONING UNIT SCHEDULE

MARK	MANUFACTURER & MODEL NO.	SA CFM	OA CFM	EVAP. FAN HP	VOLTS ø	S.P. IN WG	COOLING SECTION			HEATING SECTION		MCA	MOCP	WEIGHT (LBS)
						EXT.	TOTAL CAP, MBH	SENS CAP, MBH	EAT	KW	EAT			
RTU-1	TRANE 4WCC4060E	1990	470	1.0	240/1	0.75	58.7	49.7	79.1/65.9	20.0	57.3	104	110	600
RTU-2	TRANE 4WCC4060E	1990	470	1.0	240/1	0.75	58.7	49.7	79.1/65.9	20.0	57.3	104	110	600

NOTES:
1. UNITS TO HAVE ONE YEAR MANUFACTURER'S WARRANTY INCLUDING PARTS, LABOR AND REFRIGERANT, FIVE YEAR MANUFACTURER'S WARRANTY FOR COMPRESSORS. UNIT TO BE MINIMUM 15 SEER.
2. UNIT TO HAVE HINGED ACCESS DOORS, NON-FUSED DISCONNECT SWITCH, CONDENSER COIL GUARDS, LOW AMBIENT CONTROL, LOW LEAKAGE OUTDOOR AIR DAMPERS, ECONOMIZER AND ECONOMIZER CONTROLS.

GRILLES, REGISTERS AND DIFFUSERS SCHEDULE

MARK	MANUFACTURER & MODEL NO.	DESCRIPTION	MATERIAL	FINISH	ACCESSORIES & FEATURES
SUPPLY DIFFUSERS					
CD-1	METALAIRE 5000-1	6"X6" LOUVER FACE SURFACE MOUNT CEILING DIFFUSER	ALUM	WHITE	MODEL D5A DAMPER
GRILLES & REGISTERS					
TR-1	METALAIRE V4004-1	10"X6" DOUBLE DEFLECTION SIDEWALL SUPPLY REGISTER	STEEL	WHITE	OPPOSED BLADE DAMPER
CR-1	METALAIRE SRH	6"X6"FIXED BLADE CEILING EXHAUST REGISTER	STEEL	WHITE	OPPOSED BLADE DAMPER

FAN SCHEDULE

UNIT	CFM	S.P.	RPM	MOTOR			SELECTION BASED ON GREENHECK	CONTROL	WEIGHT LBS	NOTES
				WATTS	VOLTS	PH				
EF-1	150	0.25	666	67	120	1	CSP-A200	DURING OCCUPIED TIMES	24	1
EF-2	150	0.25	666	67	120	1	CSP-A200	DURING OCCUPIED TIMES	24	1
EF-3	650	0.25	1470	1/6 HP	120	1	GB-098	CONTINUOUSLY	57	2

SCHEDULE NOTES:
1. DIRECT DRIVE FAN WITH DISCONNECT, SPEED CONTROLLER, WALL CAP, BACKDRAFT DAMPERS. CONTROL AS INDICATED.
2. BELT DRIVE FAN WITH DISCONNECT, ROOF CURB, BACKDRAFT DAMPER. CONTROL AS INDICATED.

LEGEND

R	REFRIGERANT
12 x 6	RECTANGULAR DUCT
	FLEXIBLE CONNECTION
VD	VOLUME DAMPER
D	DROP IN DIRECTION OF AIRFLOW
R	RISE IN DIRECTION OF AIRFLOW
	SUPPLY DUCT UP (OR FROM ABOVE)
	SUPPLY DUCT DOWN (OR FROM BELOW)
	RETURN OR EXHAUST DUCT UP
	RETURN OR EXHAUST DUCT DOWN
	FLEXIBLE DUCT
MOD	MOTOR OPERATED DAMPER
	REDUCER
SDR	SMOKE DETECTOR, DUCT MOUNTED
T	THERMOSTAT OR TEMPERATURE SENSOR

ABBREVIATIONS

BTU	BRITISH THERMAL UNIT
CD	CEILING DIFFUSER
CFD	CEILING FIRE DAMPER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
COP	COEFFICIENT OF PERFORMANCE
CR	CEILING REGISTER
DB	DRY BULB TEMPERATURE
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EXT	EXTERNAL
F	DEGREES FAHRENHEIT
FPM	FEET PER MINUTE
FT	FEET
HP	HORSEPOWER
IN	INCH, INCHES
LAT	LEAVING AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
VD	VOLUME DAMPER
MH	MOUNTING HEIGHT
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OA	OUTSIDE AIR
PD	PRESSURE DROP
PS	PRESSURE SENSOR
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAGE
RA	RETURN AIR
SP	STATIC PRESSURE
TEMP	TEMPERATURE
TG	TOP GRILLE
TR	TOP REGISTER
TYP	TYPICAL
WB	WET BULB TEMPERATURE
WC, WG	WATER COLUMN
AFF	ABOVE FINISHED FLOOR
ABV	ABOVE
AD	ACCESS DOOR
BEL	BELOW
BET	BETWEEN
CLG	CEILING
CONN	CONNECT, CONNECTION
CONT	CONTINUED
DN	DOWN
EA	EACH
FL	FLOOR
FLEX	FLEXIBLE
FR	FROM
GALV	GALVANIZED
REQD	REQUIRED
SH	SHEET
SDR	DUCT MOUNTED SMOKE DETECTOR

GENERAL MECHANICAL NOTES

1. INSTALL THERMOSTATS, HUMIDISTATS AND TEMPERATURE AND HUMIDITY SENSORS WITH CENTER AT 4'8" ABOVE FLOOR. WHERE THERMOSTATS AND SNAP SWITCHES (SEE ELECTRICAL DRAWINGS) ARE INDICATED IN CLOSE PROXIMITY ON THE SAME WALL, THE LOCATIONS SHALL BE COORDINATED SO THAT THE THERMOSTAT IS CENTERED DIRECTLY OVER THE SNAP SWITCH OR GROUP OF SNAP SWITCHES.
2. DUCT DIMENSIONS INDICATED ARE SHEET METAL DIMENSIONS.
3. COORDINATE LOCATIONS OF CEILING MOUNTED DIFFUSERS, REGISTERS AND GRILLES WITH LIGHT FIXTURES AND CEILING GRID. REFER TO ELECTRICAL DRAWINGS.
4. FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF SIDE SHOWN OR INDICATED.
5. ACCESS SHALL BE MAINTAINED TO ALL CONTROL DEVICES. ACCESS PANEL SIZES AND LOCATIONS SHALL BE DETERMINED PRIOR TO BIDDING AND SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT WORK. ACCESS PANELS SHALL BE INSTALLED WHERE REQUIRED AND SHALL BE FIRE RATED WHEN USED IN FIRE RESISTIVE CONSTRUCTION.
6. PIPING AND DUCTWORK SHALL BE SUPPORTED FROM, OR ANCHORED TO, THE BUILDING STRUCTURE; CEILING CONSTRUCTION SHALL NOT BE USED FOR SUPPORT OR ANCHORING OF WORK.
7. TEMPERATURE CONTROL WIRING WIRING LESS THAN 100 VOLTS SHALL BE PROVIDED IN DIVISION 15. WIRING 100 VOLTS AND GREATER SHALL BE PROVIDED IN DIVISION 16.
8. MAINTAIN ACCESS BELOW EQUIPMENT INSTALLED ABOVE CEILINGS. DO NOT OBSTRUCT ACCESS WITH PIPING OR DUCTWORK.
9. PROVIDE MANUAL VOLUME DAMPERS AS REQUIRED TO PROPERLY BALANCE THE SYSTEM.
10. CONTRACTOR SHALL CLOSELY COORDINATE LOCATIONS OF ALL PANELBOARDS WITH LOCATIONS OF ALL DUCTWORK AND PLUMBING PIPING. DUCTWORK AND PLUMBING PIPING SHALL NOT BE INSTALLED OVER TOP OF ANY PANELBOARD. DUCTWORK AND PLUMBING PIPING SHALL NOT BE INSTALLED OVER ANY OF THE CODE REQUIRED CLEAR SPACES AT ANY PANELBOARD LOCATION.

HVAC CONTROLS

1. PROVIDE DOCUMENTATION AND TRAINING TO OWNER ALONG WITH ONE YEAR WARRANTY. LABEL ALL CONTROLS AND EQUIPMENT THE SAME AS IDENTIFIED ON THE DRAWINGS AND SUBMITTALS. SUBMIT SHOP DRAWINGS AND DETAILED SEQUENCE OF OPERATION OF CONTROL SYSTEM PRIOR TO INSTALLATION.
2. CONTROLS SHALL INCLUDE ALL THERMOSTATS, SENSORS, VALVES, DAMPERS, TRANSFORMERS, STARTERS, RELAYS, WIRING, INTERLOCKS AND OTHER DEVICES TO ENABLE THE SEQUENCE OF OPERATION. CONTROLS SHALL BE COORDINATED WITH THE EQUIPMENT PROVIDED.
3. PROVIDE START-UP AND VERIFICATION OF CONTROL SYSTEM & SEQUENCE OF OPERATION. COORDINATE WITH TEST & BALANCE CONTRACTOR TO OPERATE EQUIPMENT IN ALL MODES AND DEVICE POSITIONS.
4. ROOM SENSOR SHALL HAVE DIGITAL DISPLAY AND TIMED OVERRIDE BUTTON. ALL SENSORS SHALL HAVE THE CAPABILITY TO ADJUST ROOM TEMPERATURE SETPOINT OR TO HAVE THIS FUNCTION LOCKED OUT.
5. HVAC SYSTEMS: IN OCCUPIED MODE, THE SUPPLY FAN SHALL RUN CONTINUOUSLY, THE OUTSIDE AIR DAMPER SHALL OPEN AND THE UNIT CONTROLLER WILL MAINTAIN ROOM SETPOINT BY CYCLING THE COOLING/HEATING. IN UNOCCUPIED MODE, THE UNITS SHALL BE DE-ENERGIZED UNTIL A CALL FOR SETBACK HEATING OR COOLING BY THE UNIT CONTROLLER. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AT ALL TIMES DURING UNOCCUPIED MODE. OVERRIDE BUTTON ON THERMOSTAT SHALL PLACE THE UNIT IN OCCUPIED MODE FOR TWO HOURS (ADJUSTABLE).

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MECHANICAL LEGEND, SCHEDULES, NOTES, CONTROLS

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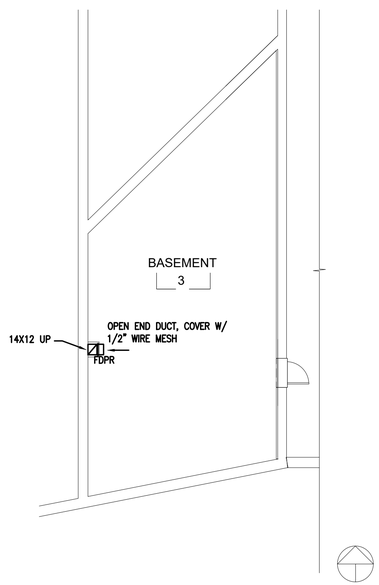
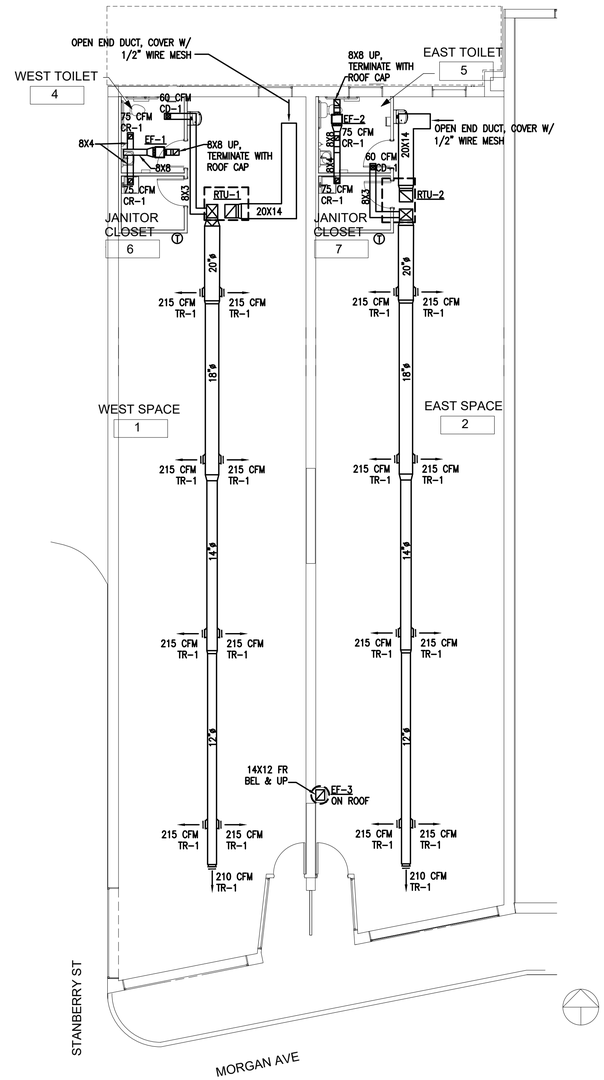


1 M3.1/M3.1 BASEMENT LEVEL - MECHANICAL
1/8" = 1'-0"



2 M3.1/M3.1 MAIN LVL - MECHANICAL
1/8" = 1'-0"

0' 4' 8' 16' 32'

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MECHANICAL
FLOOR PLANS

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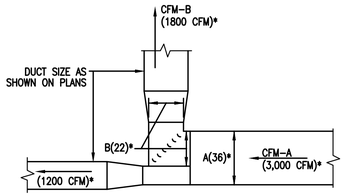
Sheet No.
M3.1



A – WIDTH OF DUCT MAIN BEFORE TAKEOFF.
B – WIDTH OF TAKEOFF CONNECTION.
CFM-A – TOTAL AIR QUANTITY PASSING THRU DUCT AT A INCLUDING QUANTITY REMOVED AT TAKEOFF B.
CFM-B – AIR QUANTITY REMOVED THRU TAKEOFF B

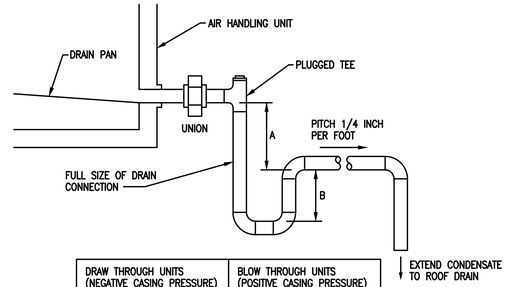
$B = \frac{CFM-B}{CFM-A} \times A$

* EXAMPLE: CFM-A = 3000 CFM
CFM-B = 1800 CFM
A = 36"

$B = \frac{1800\ CFM}{3000\ CFM} \times 36" = 21.6"$

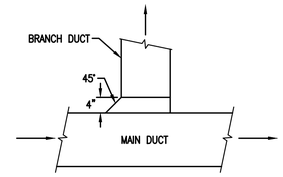
SAY B = 22" (ROUND OFF TO NEAREST INCH)

DETAIL – BRANCH DUCT CONNECTION
NO SCALE

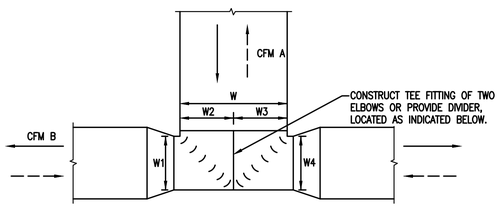


DRAW THROUGH UNITS (NEGATIVE CASING PRESSURE)	BLOW THROUGH UNITS (POSITIVE CASING PRESSURE)
A = 1 INCH PLUS MAXIMUM CASING STATIC PRESSURE	A = 1 INCH MINIMUM
B = A/2	B = 1 INCH PLUS MAXIMUM CASING STATIC PRESSURE

DETAIL – CONDENSATE DRAIN
NO SCALE



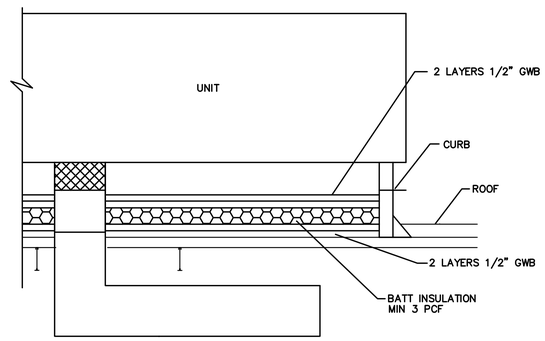
DETAIL – BRANCH DUCT CONNECTION
NO SCALE



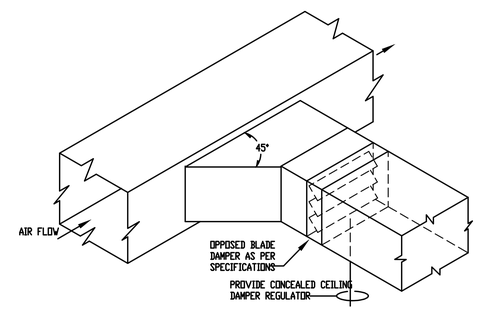
W1 = W2
W3 = W4
$W2 = \frac{CFM\ B}{CFM\ A} \times W$
W3 = W–W2

ALL RECTANGULAR ELBOWS SHALL HAVE TURNING VANES (EVEN IF NOT SHOWN). DOUBLE THICKNESS VANES SHALL BE USED ON DUCTS 36" AND LARGER.

DETAIL – DUCT TEE FITTING
NO SCALE



ROOFTOP AIR CONDITIONING UNIT DETAIL
SCHEMATIC



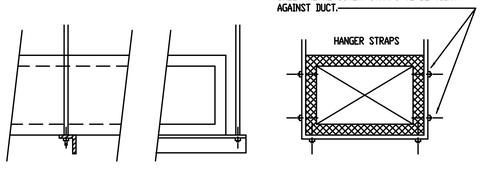
BRANCH DUCT TAKE-OFF @ SUPPLY MAIN
NOT TO SCALE

HANGER SIZES FOR RECTANGULAR DUCT			
MAX. SIDE	HANGER	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30"	1"X18" GAGE STRAP	NONE REQUIRED	10'-0"

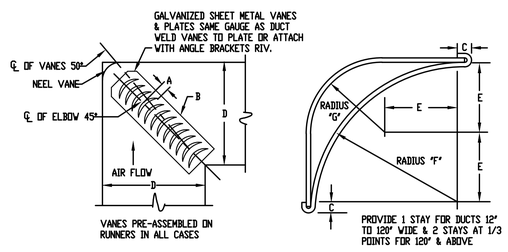
NOTE:
ALL SUPPLY AIR DUCT SHALL BE WRAPPED EXTERNALLY AS PER SPECIFICATIONS

NO POP RIVETS ALLOWED

SELF TAPPING CADMIUM PLATED HEX HEAD SHEET METAL SCREW STRAPS TO BE TIGHT AGAINST DUCT.

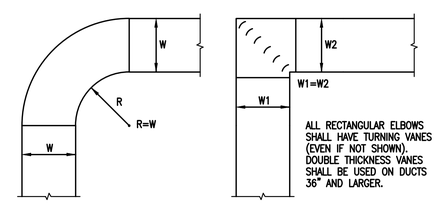


DUCT STRAP HANGER DETAIL
NOT TO SCALE



D & D UP TO 24"	A = 1-1/2"	B = 5"	TYPE "B" VANES
D & D OVER 24"	A = 3-1/4"	B = 9"	TYPE "A" VANES
TYPE "A" VANES	C = 1/2"	E = 2-1/4"	RADIUS "F" = 4-1/2" RADIUS "G" = 2-1/4"
TYPE "B" VANES	C = 1/4"	E = 1"	RADIUS "F" = 2" RADIUS "G" = 1"

SQUARE ELBOW DETAIL
NOT TO SCALE



DETAIL – DUCT ELBOWS
NO SCALE

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MELINDA D. RUBLE
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10.01.2023
PROFESSIONAL ENGINEER

MECHANICAL
DETAILS

10/01/2023
Revisions:
MONTH. DAY. YEAR

Drawn By: MDR
Review By MDR
Project No. 2310

Sheet No.
M4.1

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PLUMBING SPECIFICATIONS

1. GENERAL PROVISIONS

A. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE INCLUDING REFERENCED CODES AND STANDARDS AND IN ACCORDANCE WITH MANDATES OF THE LOCAL BUILDING OFFICIALS. ALL WORK SHALL BE FIRST CLASS, COMMERCIAL GRADE IN MATERIALS AND INSTALLATION.

B. THE GENERAL ARRANGEMENT AND LOCATIONS OF PIPING, FIXTURES, ETC. ARE INDICATED BY THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE THEREWITH; WITH THE EXCEPTION OF SUCH CHANGES AS MAY BE REQUIRED ON ACCOUNT OF OTHER TRADES. CONTRACTOR SHALL COORDINATE WORK WITH INSTALLATION OF OTHER SUBCONTRACTORS.

C. PLUMBING WORK SHALL BE COORDINATED WITH THE CONTRACTOR AS TO SCHEDULING, DIMENSIONING AND LOCATION OF EQUIPMENT.

D. MAJOR ITEMS ARE SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.

E. ALL PIPING SYSTEMS SHALL TERMINATE 5 FEET BEYOND THE BUILDING LINE UNLESS INDICATED OTHERWISE. EXTENSION OF THESE LINES SHALL BE PROVIDED BY THE SITE CONTRACTOR.

F. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.

G. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE CONTRACTOR.

H. ALL PIPING SHALL BE ABOVE CEILING UNLESS INDICATED OTHERWISE.

I. DO NOT INSTALL PVC PIPING OR ANY COMBUSTIBLE MATERIAL IN ANY AIR PLENUM.

J. ALL EQUIPMENT SHALL BE WIPED CLEAN, REMOVING ALL TRACES OF OIL, DIRT, OR PAINT SPOTS.

K. PROVIDE SUPPORTS TO RIGIDLY ATTACH ALL EQUIPMENT, APPURTENANCES AND PIPE AS REQUIRED FOR SUPPORT. PRIOR TO INSTALLATION OF HANGERS AND INSERTS, THE CONTRACTOR SHALL COORDINATE LOCATIONS AND REQUIREMENTS TO MINIMIZE CONFLICTS WITH OTHER BUILDING SYSTEMS. INSTALLATION OF PIPE HANGERS AND SUPPORTS SHALL BE IN STRICT ACCORDANCE WITH MSS SP-58, 69 AND 89.

L. CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.

2. SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND PROJECT INFORMATION

A. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
(1) STRAINERS
(2) FIRE BARRIER PENETRATION SEALS
(3) INSULATION
(4) CLEANOUTS
(5) FLOOR DRAINS
(6) GATE VALVES
(7) CHECK VALVES
(8) ALL SCHEDULED EQUIPMENT INDICATED ON SHEET P2.1

B. IDENTIFY ALL PLUMBING SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITH THE NAME OF THE PROJECT. CLEARLY MARK THE SPECIFIC ITEMS INTENDED FOR USE. SUBMIT ALL RELATED ITEMS AT ONE TIME.

C. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, SUBMIT THE FOLLOWING INFORMATION FOR REVIEW AND APPROVAL.

(1) OPERATING AND MAINTENANCE INSTRUCTIONS.
(2) "AS BUILT" DRAWINGS.

3. GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECTS WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.

4. "AS BUILT" DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF THE LOCATION OF ALL CONCEALED PIPING, VALVES, CONTROLS, ETC., BOTH INTERIOR AND EXTERIOR. ON COMPLETION OF THE WORK, ONE PRINT EACH OF THE CONTRACT DRAWINGS WHICH ARE APPLICABLE SHALL BE NEATLY AND CLEARLY MARKED IN COLOR TO SHOW ALL VARIATIONS BETWEEN THE WORK ACTUALLY PROVIDED AND THAT INDICATED ON THE CONTRACT DRAWINGS.

5. OPERATING AND MAINTENANCE MANUALS

A. GENERAL: PRIOR TO COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE TWO HARDBACKED LOOSELEAF RING TYPE BINDERS, IDENTIFIED WITH THE NAME OF THE PROJECT. CONTRACTOR SHALL DELIVER THESE BINDERS TO THE ENGINEER FOR REVIEW AND TRANSMITTAL TO THE OWNER.

B. THE FOLLOWING ITEMS AND OTHER ADDITIONAL PERTINENT DATA FOR EACH ITEM OF EQUIPMENT SHALL BE INCLUDED:

C. THE OPERATING AND MAINTENANCE MANUALS SHALL BE CONSIDERED A PART OF THE FINAL INSPECTION AND THEY SHALL BE SUBMITTED FOR APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO REQUEST FOR FINAL INSPECTION.

6. ACCESS DOORS: ACCESS DOORS SHALL BE PROVIDED FOR ALL CONCEALED VALVES, CONTROLS, AND ANY OTHER EQUIPMENT OR MATERIALS REQUIRING INSPECTION OR MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED FOR FLOORS, WALLS AND CEILINGS, OF ADEQUATE SIZE SO THAT CONCEALED ITEMS WILL BE READILY ACCESSIBLE FOR SERVICING OR FOR REMOVAL AND REPLACEMENT IF NECESSARY.

7 . IDENTIFICATION

A. SUBMITTALS
(1) SUBMIT LIST OF WORDING, SYMBOLS, LETTER SIZE, AND COLOR CODING FOR MECHANICAL IDENTIFICATION.
(2) SUBMIT VALVE CHART AND SCHEDULE, INCLUDING VALVE TAG NUMBER, LOCATION, FUNCTION, AND VALVE MANUFACTURER'S NAME AND MODEL NUMBER.
(3) PRODUCT DATA: PROVIDE MANUFACTURERS CATALOG LITERATURE FOR EACH PRODUCT REQUIRED.

B. NAMEPLATES
(1) DESCRIPTION: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR.

C. TAGS
(1) METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCHES (40 MM) DIAMETER.
(2) CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.

D. INSTALLATION
(1) DEGREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR IDENTIFICATION MATERIALS.
(2) INSTALL PLASTIC NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS, OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION AND SEAL WITH CLEAR LACQUER.
(3) INSTALL TAGS WITH CORROSION RESISTANT CHAIN.
(4) INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
(5) IDENTIFY CONTROL PANELS AND MAJOR CONTROL COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES.
(6) IDENTIFY VALVES IN MAIN AND BRANCH PIPING WITH TAGS.
(7) IDENTIFY PIPING, CONCEALED OR EXPOSED, WITH PLASTIC PIPE MARKERS OR STENCILLED PAINTING. IDENTIFY SERVICE, FLOW DIRECTION, AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET (6 M) ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION.
(8) PROVIDE CEILING TACKS TO LOCATE VALVES ABOVE T-BAR TYPE PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.

8. PIPING SPECIALTIES

A. PIPE ESCUTCHEONS: INSTALL PIPE ESCUTCHEONS ON EACH PIPE PENETRATION THRU FLOORS, WALLS PARTITIONS, AND CEILINGS WHERE PENETRATION IS EXPOSED TO VIEW AND ON EXTERIOR OF BUILDING. SECURE ESCUTCHEON TO PIPE OR INSULATION SO ESCUTCHEON COVERS PENETRATION HOLE, AND IS FLUSH WITH ADJOINING SURFACE. PROVIDE SHEET STEEL ESCUTCHEONS, SOLID OR SPLIT HINGED. FOR AREAS WHERE WATER AND CONDENSATION CAN BE EXPECTED TO ACCUMULATE, PROVIDE CAST BRASS OR SHEET BRASS ESCUTCHEONS, SOLID OR SPLIT HINGED.

B. PIPE SLEEVES: INSTALL PIPE SLEEVES WHERE PIPING PASSES THROUGH WALLS, FLOORS, CEILINGS, AND ROOFS. DO NOT INSTALL SLEEVES THROUGH STRUCTURAL MEMBERS OF WORK, EXCEPT AS DETAILED ON DRAWINGS, OR AS REVIEWED BY ARCHITECT/ENGINEER. SIZE SLEEVES SO THAT PIPING AND INSULATION (IF ANY) WILL HAVE FREE MOVEMENT IN SLEEVE, INCLUDING ALLOWANCE FOR THERMAL EXPANSION.

C. FIRE BARRIER PENETRATION SEALS: PROVIDE SEALS FOR ANY OPENING THROUGH FIRE-RATED WALLS, FLOORS, OR CEILINGS USED AS PASSAGE FOR PLUMBING COMPONENTS SUCH AS PIPING. INSTALLATION SHALL BE AS RECOMMENDED BY THE MANUFACTURER. SEALS SHALL BE EQUAL TO ONE OF THE FOLLOWING:

(1) DOW-CORNING FIRESTOP SYSTEM PENETRATION SEALS INCLUDING FIRE STOP SEALANT AND FIRE STOP FOAM.

(2) 3M BRAND "FIRE BARRIER WRAP/STRIP" NO. FS-195, FIRE BARRIER CAULK, CP-25 AND PUTTY NO. 303 SHALL BE USED WHERE PVC, POLYPROPYLENE OR OTHER NON-METALLIC PIPES PASS THROUGH FLOORS AND FIRE RATED WALLS.

9. INSULATION

A. FLAME/SMOKE RATINGS: PROVIDE COMPOSITE PLUMBING INSULATION (INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES) WITH FLAME-SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ANSI/ASTM E84 (NFPA 255) METHOD. INSULATION SHALL BE LABELED BY THE MANUFACTURER. THE LABEL SHALL INDICATE THE INSULATING VALUE, FLAME SPREAD AND SMOKE-DEVELOPED RATING.

B. SUBMITTALS: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF PLUMBING INSULATION. SUBMIT SCHEDULE SHOWING MANUFACTURER'S PRODUCT NUMBER, THICKNESS, AND FURNISHED ACCESSORIES FOR EACH PLUMBING SYSTEM REQUIRING INSULATION.

C. INSTALLATION: INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING ONLY ADHESIVES, MASTICS AND PLUMBING FASTENERS APPROVED BY THE INSULATION MANUFACTURER. INSULATION SHALL NOT BE APPLIED UNTIL AFTER THE EQUIPMENT HAS BEEN TESTED WITH RESULTS ACCEPTABLE TO THE ARCHITECT/ENGINEER.

D. MATERIALS:

(1) CELLULAR FOAM PIPE INSULATION: TUBULAR, FLEXIBLE, FIRE RESISTANT INSULATION WITH OPERATING TEMPERATURE RANGE OF -40 DEGREES F TO 220 DEGREES F, THERMAL CONDUCTIVITY "K"=0.27 BTU-IN/HOUR-SF-DEG F AT 75 DEGREES F. NO JACKET REQUIRED. EQUAL TO ARMSTRONG ARMAFLEX AP.

E. PIPE INSULATION

(1) INSULATION OMITTED: OMIT INSULATION ON EXPOSED PLUMBING FIXTURE RUNOUTS FROM FACES OF WALL OR FLOOR TO FIXTURE; ON UNIONS, FLANGES, STRAINERS, FLEXIBLE CONNECTIONS, AND EXPANSION JOINTS.

(2) COVER VALVES, FITTINGS AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN.

(3) EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.

(4) INSTALL PROTECTIVE METAL SHIELDS AND INSULATED INSERTS WHEREVER NEEDED TO PREVENT COMPRESSION OF INSULATION.

(5) DOMESTIC COLD WATER PIPING, ABOVE GROUND: PIPING SHALL BE INSULATED WITH 3/4 INCH THICK GLASS FIBER, CELLULAR FOAM, OR POLYETHYLENE PIPE INSULATION.

(6) DOMESTIC HOT WATER PIPING (INCLUDING HOT WATER RECIRCULATING): PIPING SHALL BE INSULATED WITH 1/2 INCH THICK GLASS FIBER, CELLULAR FOAM, OR POLYETHYLENE PIPE INSULATION. VAPOR SEAL IS NOT REQUIRED.

10. PLUMBING PIPING

A. DOMESTIC WATER PIPING ABOVE GROUND

PIPE: TYPE L HARD DRAWN COPPER OR CPVC
FITTINGS: CAST BRONZE OR WROUGHT COPPER OR CPVC
JOINTS: SOLDERED USING TIN-ANTIMONY (95-5) SOLDER

B. DOMESTIC WATER PIPING UNDERGROUND

PIPE: TYPE K SEAMLESS ROLL STOCK
FITTINGS: CAST BRONZE OR WROUGHT COPPER
JOINTS: SOLDERED USING TIN-ANTIMONY (95-5) SOLDER

C. SOIL, WASTE AND VENT PIPING BELOW GRADE AND STORM SEWER BELOW GRADE

SIZE: 4 INCHES AND SMALLER
PIPE: SERVICE WEIGHT CAST IRON ASTM A-74 OR SCH. 40 PVC-DWV ASTM D-2665
FITTINGS: SERVICE WEIGHT CAST IRON OR PVC SOCKET FITTINGS (DWV)
JOINTS: HUB & SPIGOT CAULKED OR COMPRESSION GASKETS FOR CAST IRON OR SOLVENT CEMENT JOINTS FOR PVC

D. SOIL, WASTE AND VENT PIPING ABOVE GRADE AND STORM DRAINS & ROOF LEADERS

SIZE: 3 INCHES AND LARGER
PIPE: SERVICE WEIGHT CAST IRON ASTM A-74 OR HUBLESS ASTM C-564
FITTINGS: SERVICE WEIGHT OR HUBLESS CAST IRON
JOINTS: HUB & SPIGOT CAULKED, COMPRESSION GASKETS OR NEOPRENE SLEEVES AND STAINLESS STEEL BANDS FOR CAST IRON

SIZE: 2-1/2 INCHES AND SMALLER: SAME AS 3 INCHES AND LARGER EXCEPT VENTS MAY BE SCH. 40 GALVANIZED STEEL ASTM A120/A53 WITH GALVANIZED CAST IRON OR MALLEABLE IRON FITTINGS.

E. ALL PIPE OF THE SAME SIZE SHALL BE THE SAME MATERIAL.

F. SLOPE ALL DRAIN LINES 1/4 INCH PER FOOT MINIMUM FOR SIZES LESS THAN 4 INCHES; SLOPE 1/8 INCH PER FOOT FOR SIZES 4 INCHES AND LARGER.

G. SOIL, WASTE AND VENT PIPING LOCATED BELOW GRADE SHALL BE MINIMUM 2 INCHES SIZE.

H. VENTS SHALL EXTEND 12 INCHES ABOVE THE ROOF. ROOF FLASHING SHALL BE COORDINATED WITH BY THE CONTRACTOR.

I. DOMESTIC HOT AND COLD WATER PIPING SHALL BE 1/2 INCHES SIZE UNLESS INDICATED OTHERWISE.

11. CLEANOUTS

A. CLEANOUTS SHALL BE THE SAME SIZE AS LINE SERVED, BUT NOT LARGER THAN 4 INCHES, AND SHALL BE PROVIDED AT THE BASE OF EACH SOIL AND WASTE STACK, AT ALL POINTS WHERE DIRECTION CHANGE IS MORE THAN 45 DEGREES, AT MINIMUM INTERVALS OF 50 FEET FOR 4 INCHES AND SMALLER PIPING, AT MINIMUM INTERVALS OF 100 FEET FOR PIPING LARGER THAN 4 INCHES, AS REQUIRED BY CODE AND AS INDICATED ON THE DRAWINGS. COVERS SHALL BE SET FLUSH WITH FLOOR OR WALL.

12. PLUMBING VALVES

A. PROVIDE SHUT-OFF VALVE AND UNION OR EQUIVALENT AT EACH HOT AND COLD WATER EQUIPMENT CONNECTION. PROVIDE SHUT-OFF VALVE ON EACH BRANCH OR RISER THAT SERVES TWO OR MORE PLUMBING FIXTURES.

B. LINE SHUT-OFF VALVES SHALL BE 125# BALL TYPE TO MATCH PIPING SYSTEM. ALL FIXTURE SHUT-OFF VALVES TO BE 1/4 TURN BALL TYPE.

13. WATER HEATERS

A. UL AND NEMA COMPLIANCE: PROVIDE ELECTRIC MOTORS AND ELECTRICAL COMPONENTS REQUIRED AS PART OF PLUMBING EQUIPMENT, WHICH HAVE BEEN LISTED AND LABELED BY UNDERWRITERS LABORATORIES AND COMPLY WITH NEMA STANDARDS.

B. NEC COMPLIANCE: COMPLY WITH NATIONAL ELECTRICAL CODE (ANSI/NFPA 70) AS APPLICABLE TO INSTALLATION AND ELECTRICAL CONNECTIONS OF ANCILLARY ELECTRICAL COMPONENTS OF PLUMBING EQUIPMENT.

C. WATER HEATERS SHALL BE FURNISHED WITH ASME RATED TEMPERATURE AND PRESSURE RELIEF VALVE WITH TEST LEVER.

14. PLUMBING FIXTURES

A. CODES AND STANDARDS: COMPLY WITH APPLICABLE PORTIONS OF NATIONAL STANDARD PLUMBING CODE PERTAINING TO MATERIALS AND INSTALLATION OF PLUMBING FIXTURES.

(1) ANSI STANDARDS: COMPLY WITH APPLICABLE ANSI STANDARDS PERTAINING TO PLUMBING FIXTURES AND SYSTEMS.

(2) PDI COMPLIANCE: COMPLY WITH STANDARDS ESTABLISHED BY PDI PERTAINING TO PLUMBING FIXTURE SUPPORTS.

(3) UL COMPLIANCE: CONSTRUCT WATER COOLERS IN ACCORDANCE WITH UL STANDARD 399 "DRINKING-WATER COOLERS", AND PROVIDE UL-LISTING AND LABEL.

(4) ANSI COMPLIANCE: CONSTRUCT AND INSTALL BARRIER FREE PLUMBING FIXTURES IN ACCORDANCE WITH ANSI STANDARD A117.1 "SPECIFICATIONS FOR MAKING BUILDINGS AND FACILITIES ACCESSIBLE TO AND USABLE BY PHYSICALLY HANDICAPPED PEOPLE".

B. ALL EXPOSED FIXTURE SUPPLIES AND WASTE LINES SHALL BE CHROME PLATED.

C. PLUMBING FIXTURES SHALL BE POSITIVELY VENTED AND TRAPPED IN ACCORDANCE WITH THE BOCA PLUMBING CODE, LATEST EDITION. WET VENTING IS ALLOWED IF WASTE PIPING IS OVERSIZED AND IN ACCORDANCE WITH CODE PROVISIONS. LOCATION OF VENT SHALL NOT EXCEED MAXIMUM DISTANCES TO THE TRAP AS ESTABLISHED WITHIN THE BOCA PLUMBING CODE.

D. WATER CLOSETS SHALL BE PROPERLY LEVELED, SECURED AND GROUTED IN PLACE.

E. GENERAL CONTRACTOR TO PROVIDE 2"X6" BACKING BOARD FOR MOUNTING OF WALL HUNG URINALS AND LAVATORIES.

15. CLEANING AND TESTING

A. ALL WATER PIPING, VALVES, ETC. SHALL BE THOROUGHLY FLUSHED OF FOREIGN MATTER AND TESTED FOR LEAKS FOR A PERIOD OF TWO HOURS AT NOT LESS THAN 25 PSIG. ANY LEAKAGE SHALL BE REPAIRED. DISINFECT DOMESTIC WATER PIPING INCLUDING WATER SERVICE PIPING IN ACCORDANCE WITH AWWA C601.

B. ALL DRAIN, WASTE AND VENT PIPING SHALL BE TESTED FOR LEAKS BY FILLING PIPING SYSTEM TO OVERFLOW AND ALLOWING TO STAND FOR 24 HOURS. NO VISIBLE DROP IN WATER LEVEL WILL BE ACCEPTABLE.

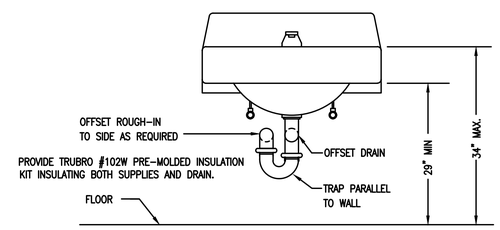
PLUMBING EQUIPMENT SCHEDULE

WC-1	KOHLER K-3979 HIGHLINE ELONGATED VITREOUS CHINA WATER CLOSET (HANDICAPPED), TANK TYPE, FLOOR MTD., 1.6 GAL/FLUSH CLASS FIVE FLUSHING TECHNOLOGY; #10-CC OLSONITE ELONGATED SEAT; BOLT CAPS.
L-1	AMERICAN STANDARD A0356.041, VITREOUS CHINA; MOEN FAUCET MODEL NO. 8417F15 WITH WHEELCHAIR OFFSET. GRID STRAINER, AND ANGLE SUPPLIES WITH LOOSE KEY STOPS. PROVIDE ZURN Z1251 CARRIER. PROVIDE THERMOSTATIC MIXING VALVE, WILKINS MODEL ZW1070, ASSE 1070 COMPLIANT
JS-1	FIAT #MSB-2424 MOLDED STONE MOP SERVICE BASIN, 24"x24"x10"; #830-AA WALL MTD FAUCET W/VACUUM BREAKER & BUCKET HOOK; #832-AA HOSE & BRACKET, #E-77-AA VINYL BUMPER GUARD. #889-CC MOP HANGER & #ODC-3-2 QUICK DRAIN CONNECTOR, #MSG2424 STAINLESS STEEL WALL GUARDS.
EWC-1	ELKAY #LZS8L SINGLE STATION ELECTRIC WATER COOLER, LIGHT GRAY GRANITE FINISH, FRONT AND SIDE PRESS BARS, LEAD FREE WORKING COMPONENTS; 8.0 GPH CAPACITY AND 5.0 AMPS.
FD-1	JOSAM #30000-5A-2-17 FLOOR DRAIN, SATIN FINISH BRONZE TOP, NON-CLOG STRAINER, SECURED GRATE; 4"DEEP SEAL TRAP. SET RIM FLUSH WITH FINISH FLOOR.
RPZ	WATTS #909 REDUCED PRESSURE ZONE BACKFLOW PREVENTOR, BRONZE CONSTRUCTION, EPOXY COATED CAST IRON CHECK VALVE BODY WITH BRONZE SEATS, FDA APPROVED EPOXY COATED CAST IRON RELIEF VALVE WITH TRIM. ASSEMBLY TO BE SUITABLE FOR VERTICAL INSTALLATION.
HWH-1	STATE MODEL PCE-6-10MSA-15 ELECTRIC WATER HEATER, SINGLE ELEMENT, 6 GAL. CAPACITY TANK, 1650 WATTS, 120V/SINGLE PHASE; T&P RELIEF VALVE, EXPANSION TANK, HOT AND COLD WATER SHUTOFF VALVES, DRAIN PAN.

PLUMBING FIXTURE INSTALLATION SCHEDULE

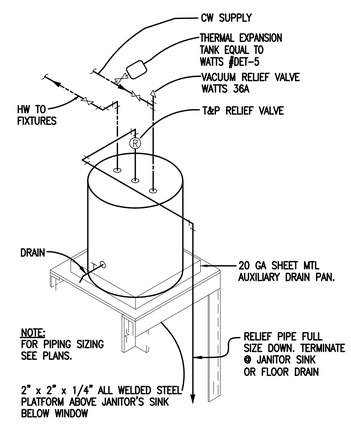
FIXTURE	MARK	MH	CW	HW	VENT	WASTE
WATER CLOSET(HC)	WC-1	17"	3/4"	--	2"	4"
LAVATORY	L-1	34"	1/2"	1/2"	1-1/2"	2"
JANITOR SINK	JS-1	FLOOR	1/2"	1/2"	1-1/2"	2"
ELECTRIC WATER COOLER	EWC-1	36"(A)	1/2"	--	1-1/2"	2"

NOTES
1. SIZE GIVEN ARE FOR FIXTURE ONLY. EXCEPTIONS, IF ANY, ARE SHOWN ON PLANS.
2. MOUNTING HEIGHT DIMENSIONS ARE TO FLOOD LEVEL RIM OF FIXTURE, UNLESS NOTED OTHERWISE.
   (A) MOUNTING HEIGHT TO SPOUT OUTLET.
3. THERMOSTATIC MIXING VALVE TO BE MOUNTED HIGH UNDER LAVATORY TO CONCEAL FROM VIEW.



DETAIL – HANDICAP LAVATORY L-1

NO SCALE



NOTE:
FOR PIPING SIZING SEE PLANS.

DETAIL – WATER HEATER

NO SCALE

LEGEND

- BRANCH CONNECTION – BOTTOM OF MAIN
- BRANCH CONNECTION – SIDE OF MAIN
- BRANCH CONNECTION – TOP OF MAIN
- PIPE DOWN OR PIPE FROM BELOW
- PIPE UP OR PIPE FROM ABOVE
- DIRECTION OF FLOW
- DOMESTIC COLD WATER
- DOMESTIC HOT WATER
- SPRINKLER HEAD
- SANITARY SEWER OR DRAIN
- SANITARY VENT
- RL — RAIN LEADER ABOVE LOWEST FLOOR
- SD — STORM SEWER OR DRAIN
- CO — CLEANOUT FLUSH WITH FLOOR
- CO — CLEANOUT BELOW FLOOR
- HOSE BIBBS (PLAN & ELEVATION)
- GATE VALVE
- BALL VALVE
- THERMOMETER
- PRESSURE REDUCING VALVE (PRV)
- R — RELIEF VALVE
- BACKFLOW PREVENTER (BFP)

ABBREVIATIONS

ABV	ABOVE
BTU	BRITISH THERMAL UNIT
BEL	BELOW
BET	BETWEEN
CLG	CEILING
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECT, CONNECTION
CW	COLD WATER
CONT	CONTINUED
DN	DOWN
EA	EACH
EWC	ELECTRIC WATER COOLER
F	DEGREES FARENHEIT
FD	FLOOR DRAIN
FL	FLOOR
FR	FROM
FT	FEET
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HB	HOSE BIBB
HW	HOT WATER
IN	INCH, INCHES
MAX	MAXIMUM
MIN	MINUMUM
RD	ROOF DRAIN
REQD	REQUIRED
RL	ROOF LEADER
SH	SHEET
TEMP	TEMPERATURE
TYP	TYPICAL
V	SANITARY VENT
VTR	VENT THRU ROOF
W	SANITARY WASTE
WH	WALL HYDRANT

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10.01.2023
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PLUMBING SPECIFICATIONS, LEGEND, SCHEDULES, DETAILS

10/01/2023
Revisions:
MONTH. DAY. YEAR

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Review By MDR
Project No. 2310

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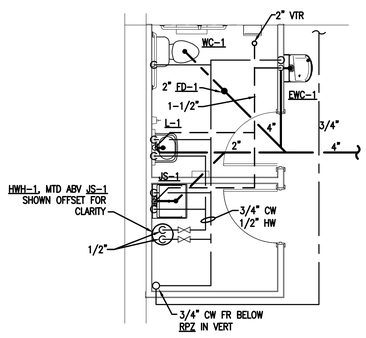
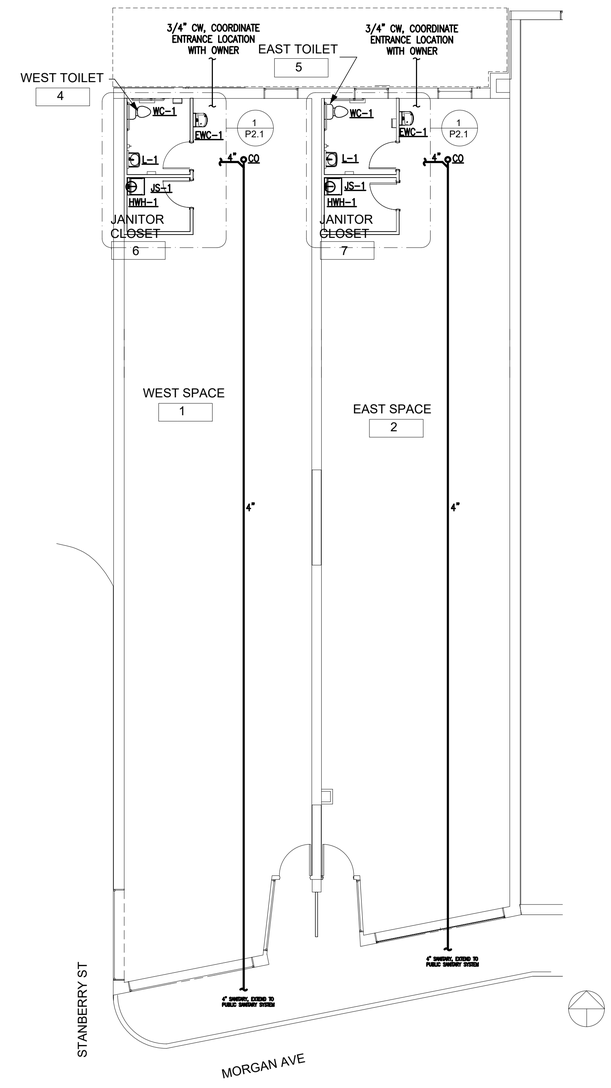


1 P2.1 | P2.1 ENLARGED TOILET PLAN - PLUMBING
1/4" = 1'-0"



2 P2.1 | P2.1 MAIN LVL - PLUMBING
1/8" = 1'-0"

0' 4' 8' 16' 32'

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