

COVINGTON-NEWTON COUNTY 911 CENTER

PERMIT SET

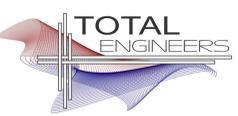
ALPHA BLDG SET 08-14-2025



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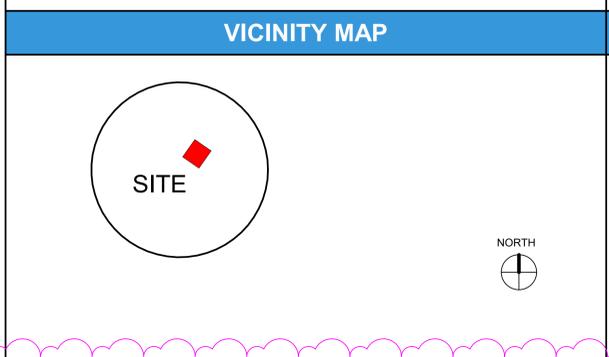


COVINGTON-NEWTON COUNTY 911 CENTER
CITY OF COVINGTON and NEWTON COUNTY
10706 HWY 26
COVINGTON, GA 30014

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PROJECT DIRECTORY		
OWNER:	COVINGTON-NEWTON COUNTY 11234 ALCOVY ROAD NE COVINGTON, GA 30014	TRUDY HENRY TEL: 770-385-2050 trudy.henry@covington-newton911.com
CONTRACTOR:	SUNBELT BUILDERS 10641 HIGHWAY 36 COVINGTON, GA 30014	MIKE McCROREY TEL: 404-644-2939 mmccrorey@sunbeltbuilders.com
ARCHITECT:	JERICHO DESIGN GROUP 3333 PRESTON RIDGE ROAD SUITE 380 ATLANTA, GA 30005	DOUG SHAW TEL: 678-983-5992 dshaw@jericho-design.com
CIVIL:	GEORGIA CIVIL 311 NORTH MAIN ST. UNIT C MADISON, GA 30650	JASON BROWN TEL: 706-342-1104 jason@georgiacivil.com
STRUCTURAL:	SHEAR STRUCTURAL 931 MONROE DR. SUITE A102-491 ATLANTA, GA 30308	HOLLY JEFFREYS TEL: 678-438-2879 hjeffreys@shearstructural.com
MECHANICAL & PLUMBING:	TOTAL ENGINEERS 169 NEW STREET MACON, GA 31201	KRUNAL PATEL TEL: 478-741-4632 krunalpatel@totalengineers.com
ELECTRICAL:	ELECTRICAL DESIGN CONSULTANTS 175 NEW STREET SUITE 1 MACON, GA 31201	JEFFREY McGEE TEL: 478-781-1833 jmcgee@edc1973.com

DRAWING INDEX		DRAWING INDEX		DRAWING INDEX		DRAWING INDEX		DRAWING INDEX	
SHEET NO.	SHEET NAME	SHEET NO.	SHEET NAME	SHEET NO.	SHEET NAME	SHEET NO.	SHEET NAME	SHEET NO.	SHEET NAME
01 COVER		S-1.02	ROOF FRAMING PLAN	A-4.01	EXTERIOR ELEVATIONS	ID-2.01	FINISH & REFERENCE PLAN - LEVEL 1	M-1.1	ENLARGED MECHANICAL PLAN
CS-1.01	COVER SHEET	S-3.01	FOUNDATION DETAILS	A-5.01	BUILDING SECTIONS	ID-2.51	ENLARGED FINISH PLANS & ELEVATIONS	M-1.2	ENLARGED MECHANICAL PLAN
02 LIFE SAFETY		S-4.01	MASONRY DETAILS	A-5.02	BUILDING SECTIONS	ID-4.01	INTERIOR ELEVATIONS	11 ELECTRICAL	
LS-1.01	LIFE SAFETY PLAN	S-4.02	MASONRY DETAILS	A-5.51	WALL SECTIONS	ID-5.01	INTERIOR SECTIONS & DETAILS	E-1.01	ELECTRICAL LEGEND, SPECIFICATIONS, AND SCHEDULES
LS-1.02	ENVELOPE COMCHECK	S-5.01	FRAMING DETAILS	A-5.52	WALL SECTIONS	ID-5.02	INTERIOR SECTIONS & DETAILS	E-1.02	ELECTRICAL SPECIFICATIONS
LS-1.03	ENVELOPE COMCHECK	S-5.04	FRAMING ELEVATIONS	A-5.53	WALL SECTIONS	ID-5.01	INTERIOR SECTIONS & DETAILS	E-1.03	ELECTRICAL SPECIFICATIONS
03 GENERAL		07a ARCHITECTURAL		A-5.54	WALL SECTIONS	09 PLUMBING		E-2.01	FLOOR PLAN - LIGHTING
G-1.01	ADA REGULATORY DETAILS & DIAGRAMS	AS-1.01	ARCHITECTURAL SITE PLAN	A-5.71	SECTION DETAILS	P-0.1	FIRE SPECIFICATIONS	E-2.01	FLOOR PLAN - POWER & TEL/DATA SYSTEMS
G-2.01	PARTITION TYPES	07c ARCHITECTURAL		A-7.01	DOOR SCHEDULE AND ELEVATIONS	P-0.2	PLUMBING SPECIFICATIONS & SCHEDULES	E-3.02	ROOF PLAN - POWER & TEL/DATA SYSTEMS
06 STRUCTURAL		A-1.01D	DIMENSION PLAN	A-7.02	WINDOW ELEVATIONS	P-1.0	OVERALL PLUMBING PLANS	E-4.01	FLOOR PLAN - LOW VOLTAGE SYSTEMS
S-0.01	STRUCTURAL GENERAL NOTES	A-1.01R	REFERENCE PLAN	A-7.51	DOOR DETAILS	P-1.1	ENLARGED PLUMBING PLAN - SEWER	E-4.02	FLOOR PLAN - ERRAC SYSTEM
S-0.02	SCHEDULE OF SPECIAL INSPECTIONS	A-1.02	SLAB EDGE PLAN	A-7.52	WINDOW DETAILS	P-1.2	ENLARGED PLUMBING PLAN - SEWER	E-5.01	POWER RISER DIAGRAM & DETAILS
S-0.03	SPECIAL INSPECTIONS	A-1.51	ENLARGED PLANS	A-7.53	WINDOW DETAILS	P-1.3	ENLARGED PLUMBING PLAN - WATER	E-5.02	ELECTRICAL SCHEDULES
S-0.04	ABBREVIATIONS, WIND DIAGRAM & LEGEND	A-2.01	REFLECTED CEILING PLAN	A-7.61	DOOR HARDWARE SCHEDULE	P-1.4	ENLARGED PLUMBING PLAN - WATER	E-6.01	ELECTRICAL DETAILS
S-0.05	SPECIFICATIONS	A-2.02	ENLARGED REFLECTED CEILING PLANS	A-7.62	DOOR HARDWARE SCHEDULE	10 MECHANICAL			
S-0.06	SPECIFICATIONS	A-2.51	CEILING DETAILS	A-7.63	DOOR HARDWARE SCHEDULE	M-0.1	MECHANICAL SPECIFICATIONS		
S-0.07	SPECIFICATIONS	A-3.01	ROOF PLAN	08 INTERIORS		M-0.2	MECHANICAL SCHEDULES		
S-1.01	FOUNDATION PLAN	A-3.51	ROOF DETAILS	ID-1.01	FINISH SCHEDULE & GENERAL NOTES	M-0.3	MECHANICAL DETAILS		



ABBREVIATIONS		ABBREVIATIONS	
@	AT ACOUSTICAL CEILING TILE	JT.	JOINT LANDLORD
ACT	ALUMINUM ABOVE FINISHED FLOOR	L.L.	LANDLORD MANUFACTURER
A.F.F.	ALUMINUM ABOVE FINISHED FLOOR	MFR.	MANUFACTURER MATERIAL
ALUM.	ALUMINUM	MAT.	MATERIAL
B.	BOTTOM OF BOARD BUILDING	MAX.	MAXIMUM MECHANICAL
BLDG.	BUILDING	MECH.	MECHANICAL MINIMUM METAL
BR	BRICK BEARING	MIN.	MINIMUM METAL
BRG	BEARING	MTL.	METAL
CMF	COLD FORMED METAL FRAMING	NC.	NON-COMBUSTIBLE
C.L.	CENTER LINE	N.I.C.	NOT IN CONTRACT
CLR	CLEAR	N.T.E.	NOT TO EXCEED
C.J.	CONTROL JOINT	N.T.S.	NOT TO SCALE
CMF	COLD FORMED METAL FRAMING	O.D.	OVERFLOW DRAIN
C.O.	CONCRETE MASONRY UNIT	OPF.	OPPOSITE SCHEDULE
COORD.	COORDINATE	PL.	PLASTIC LAMINATE
COL	COLUMN	PLYWD.	PLYWOOD
CONC.	CONCRETE	PR.	PAIR
CONT.	CONTINUOUS	P.T.	PRESSURE TREATED
Ø	DIAMETER	O.C.	ON CENTER
DWG.	DRAWING	R.D.	ROOF DRAIN
D.S.	DOWN SPOUT	S.B.O.	SUPPLIED BY OWNER
E.A.	EACH	S.S.	SCHEDULE
ELEV.	ELEVATION	SIM.	SIMILAR
ELEC.	ELECTRIC	STL.	STEEL
E.S.	EQUIPMENT SUPPLIER	STRUCT.	STRUCTURAL
EXP.	EXPANSION	T.	TOP OF
EXT.	EXTERIOR	T&G	TONGUE AND GROOVE
E.W.C.	ELECTRIC WATER COOLER	TYP.	TYPICAL
F.D.	FLOOR DRAIN	U.N.O.	UNLESS NOTED OTHERWISE
FEC	FIRE EXTINGUISHER CABINET	VERT.	VERTICAL
F.F.	FINISHED FLOOR	VFC	VINYL WALL COVERING
FL.	FLOOR	W	WIDE
F.O.	FACE OF FINISH	W/	WITH
F.O.F.	FACE OF FINISH	WD.	WOOD
F.O.M.	FACE OF MASONRY	W.W.F.	WELDED WIRE FABRIC
FOIC	FURNISHED BY OWNER INSTALLED BY CONTRACTOR		
F.R.	FIRE RETARDANT		
FRAN.	FRANCHISEE		
FRP	FIBERGLASS REINFORCED POLYESTER		
G.C.	GENERAL CONTRACTOR		
GYP. BD.	GYP. BOARD		
H.M.	HOLLOW METAL		
HT	HEIGHT		
I.B.C.	INSTALLED BY CONTRACTOR		

SYMBOLS		SYMBOLS	
1 (A-3.1)	ELEVATION MARK	[Cross-hatch]	BATT INSULATION
[Triangle]	SECTION MARK 'SIM' - SIMILAR 'OH' - OPPOSITE HAND	[Stippled]	EARTH
[Circle]	ENLARGED PLAN / DETAIL MARK	[Granular]	GRANULAR
[001]	DOOR REFERENCE NUMBER	[Concrete]	CONCRETE
[OFFICE 101]	ROOM NAME & NUMBER	[Brick]	BRICK
[A]	COLUMN AND GRID NUMBER	[Steel/Iron]	STEEL, IRON
[SF-1]	WINDOW REFERENCE NUMBER	[Wood]	WOOD
[Solid]	SOLID GROUT	[Mortar Net]	MORTAR NET
[Wood Dim]	WOOD DIMENSIONAL		
[Sheathing]	SHEATHING		
[Plaster]	PLASTER, GYPSUM WALLBOARD		
[Rigid Insul]	RIGID INSULATION		

GENERAL NOTES

- THESE DRAWINGS ARE THE PROPERTY OF JERICHO DESIGN GROUP, LLC AND SHALL NOT BE REPRODUCED OR COPIED (PHYSICALLY AND/OR DIGITALLY) IN PART OR WHOLE. THEY ARE TO BE USED FOR THIS PROJECT ONLY AND ARE NOT TO BE USED ON ANY OTHER PROJECT.
- DRAWINGS AND SPECIFICATIONS ARE INTENDED TO AGREE AND BE MUTUALLY EXPLANATORY. THEY SHALL BE ACCEPTED/USED AS A WHOLE; NOT SEPARATELY. SHOULD ANY ITEMS BE OMITTED FROM THE DRAWINGS AND BE HEREIN SPECIFIED, OR VICE VERSA, IT SHALL BE EXECUTED THE SAME AS IF SHOWN AND COMBINED IN BOTH. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY ENTIRE SET TO EACH SUBCONTRACTOR.
- THE CONTRACTOR IS TO NOTIFY ARCHITECT OF ANY DISCREPANCIES AFTER FULL REVIEW OF CONTRACT DOCUMENTS TO INCLUDE BUT NOT LIMITED TO ERRORS, OMISSIONS, INCONSISTENCIES, DISCREPANCIES, AND CONFLICTS WITH THE DRAWINGS/SPECIFICATIONS OR AS RELATED TO FIELD CONDITIONS. CONTRACTOR TO CONTACT ARCHITECT IMMEDIATELY TO DISCUSS A RESOLUTION.
- DO NOT SCALE THE DRAWINGS UNDER ANY CONDITION.
- WORK PERFORMED SHALL BE IN ACCORDANCE TO ALL FEDERAL, STATE AND LOCAL BUILDING CODE REQUIREMENTS PER INDUSTRY STANDARDS. ALL REQUIRED PERMITS AND FEES ASSOCIATED ARE TO BE THE RESPONSIBILITY OF THE CONTRACTOR NECESSARY FOR START AND COMPLETION OF THE PROJECT. COPIES OF INSPECTIONS AND PERMITS SHALL BE FURNISHED TO OWNER AT REQUEST AND/OR AT PROJECT CLOSEOUT.
- CONTRACTOR TO TAKE PRECAUTIONS IN PROTECTING THE WORK DURING CONSTRUCTION. ANY DAMAGE TO BE RESTORED TO ORIGINAL CONSTRUCTION BY THE CONTRACTOR. PATCH AND REPAIR ALL ITEMS DAMAGED OR ALTERED DURING CONSTRUCTION BY THE CONTRACTOR. ALL PATCHES SHALL BLEND WITH ADJACENT MATERIAL, COLOR, FINISH, AND TEXTURE. ALL EXISTING WORK FURNISHINGS, EQUIPMENT OR MATERIAL TO REMAIN THAT ARE DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- REQUESTS FOR SUBSTITUTIONS MUST BE SUBMITTED IN WRITING TO THE ARCHITECT FOR CONSIDERATION ONLY IF IMPACT TO SCHEDULE, COST CHANGE OR QUALITY OF PRODUCT. ACCEPTANCE BY ARCHITECT DOES NOT IDENTIFY PRODUCT TO BE OF BETTER QUALITY THAN SPECIFIED PRODUCT.
- SEAL ALL EXTERIOR PENETRATIONS AND VOIDS ON EXTERIOR BUILDING ENVELOPE.
- FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND CONTRACT DOCUMENTS PRIOR TO ANY CONSTRUCTION ACTIVITY IN AREA OF CONCERN.
- THE LOCATION OF THE EXISTING UTILITIES & STRUCTURES SHOWN HEREIN ARE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE & ACTUAL LOCATIONS OF ALL SHOWN OR NOT SHOWN. ANY DAMAGES RESULTING BY CONTRACTORS' ACTIVITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING & SHORING FOR ALL WORK DURING THE CONSTRUCTION PERIOD.
- PROVIDE SEPARATION BETWEEN ALL DISSIMILAR METALS INCLUDING SCREWS, NAILS & OTHER FASTENING DEVICES TO AVOID GALVANIC CORROSION.
- PROVIDE EXPANSION AND CONTROL JOINTS IN ALL WORK AS PER PRODUCT MANUFACTURER'S STANDARDS, OR SPECIFICATIONS, UNLESS NOTED OTHERWISE.
- ALL DIMENSIONS ARE WITNESSED TO THE OUTSIDE FACE OF MASONRY, FACE OF STUD, CENTER OF COLUMN, TOP OF STRUCTURAL CONCRETE SLAB OR ROUGH WINDOW OPENING UNLESS NOTED OTHERWISE.
- NOTES APPEAR ON VARIOUS SHEETS FOR DIFFERENT SYSTEMS AND MATERIALS. SHEETS ARE TO BE REVIEWED AND NOTES ON INDIVIDUAL SHEETS SHALL BE APPLIED TO RELATED DRAWINGS AND DETAILS.
- INTERIOR PARTITION MOVEMENT CONTROL - VERTICAL CONTROL JOINTS FOR ANY WALL LENGTH ARE TO OCCUR AT NOT MORE THAN 30'-0" O.C. IN THE HORIZONTAL DIRECTION UNLESS NOTED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL PARTS OF THE WORK SO THAT NO WORK SHALL BE LEFT IN AN UNFINISHED OR INCOMPLETE CONDITION.

ENERGY CODE INFORMATION		
R VALUES: 2015 INTERNATIONAL ENERGY CONSERVATION CODE TABLE C402.1.3 - THERMAL ENVELOPE MINIMUM REQUIREMENTS CLIMATE ZONE #3a CI = CONTINUOUS INSULATION		
CODE REQUIREMENT	CONDITION	BUILDING ELEMENT
R-25CI	INSULATION ENTIRELY ABOVE DECK	ROOF
R-13+R7.5CI	INSULATION @ METAL FRAMED WALL	WALLS, ABOVE GRADE
R-7.6CI	INSULATION @ MASS WALL	WALLS, ABOVE GRADE
NR	UNHEATED SLABS	FLOORS, SLAB ON GRADE

PRINT RECORD		
No.	DATE	DESCRIPTION
02/07/2025	02/07/2025	50% DISTRIBUTION
04/30/2025	04/30/2025	PERMIT SET
06/18/2025	06/18/2025	PERMIT COMMENTS

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 Author: [Blank] Checker: [Blank]

Date: 02/07/2025 Job No. 24029
 Sheet Title: COVER SHEET

Sheet No. CS-1.01
 RELEASED FOR CONSTRUCTION

ALPHA BLDG SET 08-14-2025

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OCCUPANCY LOAD		
	EXERCISE W/EQUIP	474SF / 50SF = 10
	CLASSROOM /TRAINING	1,201SF / 20SF = 61
	STORAGE/ MECH	1,451SF / 500SF = 3
	BUSINESS	6,508SF / 150SF = 44
TOTAL OCCUPANTS = 118		



BUILDING DATA		
OCCUPANCY CLASSIFICATION:	MIXED/NONSEPARATED (LSC 3.3.196 10/IBC 508.3)	
	BUSINESS (LSC 6.1 & CHPT 38) GROUP B (IBC CHPT 302)	
	ASSEMBLY (LSC 6.1 & CHPT. 12) GROUP A-3 (IBC CHPT 302) AS ANCILLARY	
TYPE OF CONSTRUCTION (IBC 602):	TYPE II-B, UNPROTECTED, SPRINKLERED	
HEIGHT AND AREA LIMITS (IBC):	ALLOWABLE HEIGHT (TABLE 504.3): 75FT	
	-TYPE II-B CONSTRUCTION (BOTH 'B' AND 'A3')	
	ACTUAL HEIGHT: 20'	
	ALLOWABLE STORIES ABOVE GRADE PLANE (TABLE 504.4)	
	-OCCUPANCY 'B': 4 STORIES	
	-OCCUPANCY 'A-3': 3 STORIES	
	ACTUAL STORIES: 1 STORY	
	ALLOWABLE AREA FACTOR (TABLE 506.2)	
	-OCCUPANCY 'B': 92,000SF	
	-OCCUPANCY 'A-3': 38,000SF	
	ACTUAL AREA: 10,359SF	
BUILDING AREAS (IBC):	BUILDING OCCUPANCY (LSC):	
LEVEL 000 = 10,359 GSF	LEVEL 000 = 118	
TOTAL = 10,359 GSF	TOTAL = 118	
INTERIOR WALL AND CEILING FINISH REQUIREMENTS (LSC CHAPT 10.2.2.1):		
INTERIOR EXIT ENCLOSURES: CLASS A OR B (7.1.4.1)		
INTERIOR FLOOR FINISH IN EXIT ENCLOSURES: CLASS II (7.1.4.2)		
OCCUPANCY SEPARATIONS (IBC TABLE 508.4):		
A TO B = 1 HRS		

APPLICABLE CODES			
2018 INTERNATIONAL BUILDING CODE WITH GEORGIA AMENDMENTS (2020)(2022)(2024) (2025)	2015 INTERNATIONAL ENERGY CONSERVATION CODE WITH GEORGIA SUPPLEMENTS AND AMENDMENTS (2020)(2022) (2023)	2018 INTERNATIONAL FIRE CODE WITH 2022 GEORGIA STATE FIRE COMMISSIONER AMENDMENTS 120-3-3-.04 (72)	2018 NFPA 101, LIFE SAFETY CODE WITH 2022 GEORGIA STATE FIRE COMMISSIONER AMENDMENTS 120-3-3-.04(72)
2018 INTERNATIONAL PLUMBING CODE WITH GEORGIA AMENDMENTS (2020)(2022)(2023) (2024)	2019 NFPA 72, NATIONAL FIRE ALARM & SIGNALING CODE WITH GEORGIA CURRENT AMENDMENTS	2018 INTERNATIONAL MECHANICAL CODE WITH GEORGIA AMENDMENTS (2020)(2024)	2019 NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS WITH GEORGIA CURRENT AMENDMENTS
2018 INTERNATIONAL FUEL GAS CODE WITH GEORGIA AMENDMENTS (2020)(2022)	2010 AEOGIA ACCESSIBILITY CODE CHAPTER 120-3-20(.01-.08) WITH 2022 GEORGIA STATE FIRE COMMISSIONER AMENDMENTS 120-3-3-.08 THROUGH .11 - 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN	2023 NFPA 70 NATIONAL ELECTRICAL CODE	2019 NFPA 13 FIRE SPRINKLER SYSTEMS WITH 2022 GEORGIA STATE FIRE COMMISSIONER AMENDMENTS
2018 NFPA 10 STANDARD FOR PORTABLE FIRE EXTINGUISHERS WITH 2022 GEORGIA STATE FIRE COMMISSIONER AMENDMENTS			

LIFE SAFETY PLAN LEGEND	
SEPARATION PER IBC CHAPTER 5	OCCUPANCY LOAD FACTOR LSC 7.3.1.2 W/GEORGIA AMENDMENTS
--- 2-HOUR RATED PARTITION	AREA SF / OCCUPANT LOAD FACTOR = OCCUPANCY COUNT (REFER TO PLANS FOR ROOM OCCUPANCY CALCULATIONS)
--- 1-HOUR RATED PARTITION	ACCESSORY STORAGE AREAS, MECHANICAL, ELECTRICAL ROOMS = 500 GSF/PERSON
--- SMOKE PARTITION	ASSEMBLY (CONCENTRATED) = 7 NSF/PERSON
--- NON-RATED PARTITION	ASSEMBLY (UNCONCENTRATED) = 15 NSF/PERSON
EXTINGUISHER LOCATION PER NFPA 10	CLASSROOM/TRAINING = 20 NSF/PERSON
FEC FIRE EXTINGUISHER IN RECESSED CABINET	EXERCISE W/ EQUIPMENT = 50 NSF/PERSON
● FE BRACKET MOUNTED FIRE EXTINGUISHER	EXERCISE W/O EQUIPMENT = 15 NSF/PERSON
CAPACITY PER LSC TABLE 7.3.3.1	BUSINESS AREAS = 150 GSF/PERSON
STAIRS = 0.3"/PERSON	ALLOWABLE DISTANCE PER LSC 12.2.6
DOORS = 0.2"/PERSON	TRAVEL DISTANCE LIMIT - MAX. 300 FT. SPRINKLERED
32"W DOOR = 30" CLR. = 150 CAPACITY	COMMON PATH LIMIT - MAX. 100 FT. SPRINKLERED
36"W DOOR = 34" CLR. = 170 CAPACITY	DEAD END LIMIT - MAX. 50 FT. SPRINKLERED
42"W DOOR = 40" CLR. = 200 CAPACITY	PATH OF EGRESS WITHIN BUILDING
48"W DOOR = 46" CLR. = 230 CAPACITY	TRAVEL DISTANCE & COMMON PATH (SEE NOTES ON PLANS)
68"W DOOR = 64" CLR. = 320 CAPACITY	NUMBER OF EXITS PER IBC 1006 & LSC 7.4.1.2
72"W DOOR = 68" CLR. = 340 CAPACITY	○ ACTUAL EGRESS COUNT ○ EGRESS CAPACITY OF STAIR
96"W DOOR = 92" CLR. = 460 CAPACITY	◇ EGRESS CAPACITY OF EXIT
FIRST FLOOR: DOOR: 23.6' / 180"	
DOORS PER IBC 1010.1	
EXIT SIGNS PER IBC 1013	
EXIT SIGNAGE (SHADING INDICATES FACE OF SIGN; ARROW SHOWN INDICATES DIRECTION)	

PLUMBING FIXTURE REQUIREMENTS (IBC 2902.01)				
OCCUPANCY	WATER CLOSETS	LAVATORIES	DRINKING FOUNTAINS	SERVICE SINK
ASSEMBLY A-3	1 PER 125 (MALE) 1 PER 65 (FEMALE)	1 PER 200	1 PER 200	1
BUSINESS	1 PER 25 FOR THE FIRST 50 AND 1 PER 50 FOR THE REMAINDER EXCEEDING 50	1 PER 40 FOR THE FIRST 80 AND 1 PER 80 FOR THE REMAINDER EXCEEDING 80	1 PER 100	1

PLUMBING FIXTURE COUNT: (TOTAL OCCUPANCY X,XXX)								
OCCUPANCY	WATER CLOSETS		LAVATORIES		DRINKING FOUNTAINS		SERVICE SINK	
ASSEMBLY A-3 71 PERSONS	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
	M	F	M	F				
	1	1	1	1	1		1	
BUSINESS 44 PERSONS	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
	M	F	M	F				
	1	1	1	1	1		1	
TOTAL (BUSINESS + ASSEMBLY)	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
	M	F	M	F	M	F	M	F
	2	2	3	3	2	2	2	2
ADDITIONAL SINGLE OCCUPANT HCAP RESTROOMS	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED
	UNISEX	UNISEX	UNISEX	UNISEX				
	XX	2	XX	2				

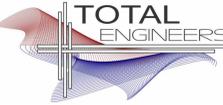
1 LIFE SAFETY PLAN

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



208 Pirkle Ferry Road, Suite C
Cumming, GA 30040







931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
SHEARSTRUCTURAL.COM

COVINGTON-NEWTON COUNTY 911 CENTER
 CITY OF COVINGTON and NEWTON COUNTY
 10796 HWY 26
 COVINGTON, GA 30014

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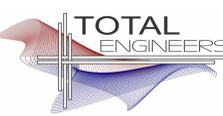
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 Author:
 Checked By:
 Checker:
 Date: 02/07/2025
 Job No.: 24029
 Sheet Title:
LIFE SAFETY PLAN

Sheet No.:
LS-1.01
 RELEASED FOR CONSTRUCTION

ALPHA BLDG SET 08-14-2025



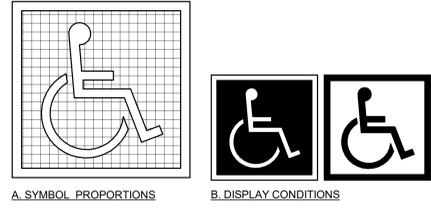
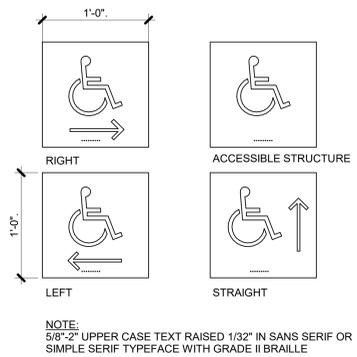
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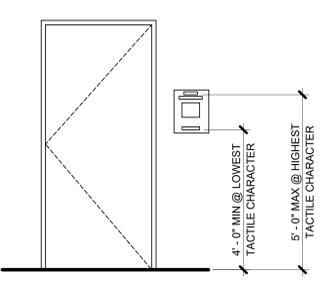
COVINGTON-NEWTON COUNTY 911 CENTER

CITY OF COVINGTON and NEWTON COUNTY

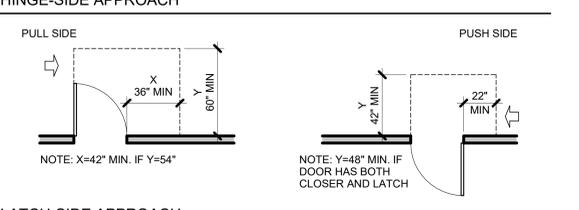
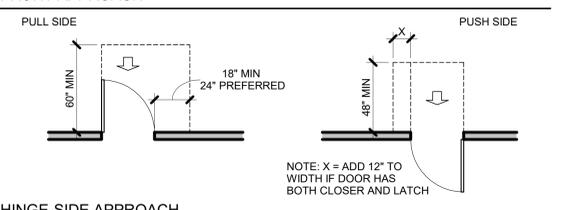
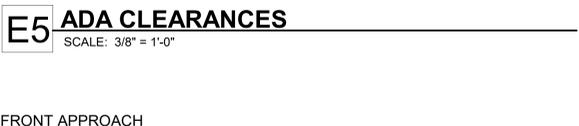
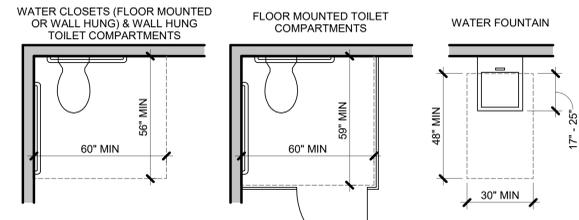
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COVINGTON, GA 30014



NOTE:
SYMBOL SIZE SHALL BE AS SCHEDULED IN SIGN LAYOUT DIAGRAMS. STROKE WIDTH TO HEIGHT RATIO SHALL BE BETWEEN 1.5 & 1:10.
SIGN LETTERS/ NUMBERS WIDTH TO HEIGHT RATIO SHALL BE BETWEEN 1.5 & 1:10.



NOTE: LOCATE SIGN ALONGSIDE THE DOOR AT THE LATCH SIDE, WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH ONE ACTIVE LEAF. THE SIGN SHALL BE LOCATED ON THE INACTIVE LEAF. WHERE A TACTILE SIGN IS PROVIDED AT DOUBLE DOORS WITH TWO ACTIVE LEAFS, THE SIGN SHALL BE LOCATED TO THE RIGHT OF THE RIGHT HAND DOOR, WHERE THERE IS NO WALL SPACE AT THE LATCH SIDE OF A SINGLE DOOR OR AT THE RIGHT SIDE OF DOUBLE DOORS. SIGNS SHALL BE LOCATED ON THE NEAREST ADJACENT, SIGNS CONTAINING TACTILE CHARACTERS SHALL BE LOCATED SO THAT A CLEAR FLOOR SPACE OF 18"x18" MIN, CENTERED ON THE TACTILE CHARACTERS, IS PROVIDED BEYOND THE ARC OF ANY DOOR SWING BETWEEN THE CLOSED POSITION AND 45 DEGREE OPEN POSITION. WHEN MOUNTED, RAISED CHARACTER BASE LINES MUST FALL BETWEEN 48" AND 60" AFF.



INTERNATIONAL ACCESSIBILITY

D1 DIRECTIONAL WALL SYMBOLS

D2 SYMBOL

D3 SIGNAGE MOUNTING REQMTS

- CHARACTER TYPE: CHARACTERS ON SIGNS SHALL BE RAISED 1/32" MINIMUM AND SHALL BE SANS SERIF UPPERCASE CHARACTERS ACCOMPANIED BY GRADE II BRAILLE.
- CHARACTER SIZE: RAISED CHARACTERS SHALL BE A MINIMUM OF 5/8" (15.9mm) AND A MAXIMUM OF 2" (51mm) HIGH.
- FINISH AND CONTRAST: CONTRAST BETWEEN CHARACTERS, SYMBOLS AND THEIR BACKGROUND MUST BE 70% MINIMUM AND HAVE A NON-GLARE FINISH.
- PROPORTIONS: CHARACTERS ON SIGNS SHALL HAVE A WIDTH-TO-HEIGHT RATIO OF BETWEEN 3:5 AND 1:1 AND A STROKE WIDTH-TO-HEIGHT RATIO OF BETWEEN 1:5 AND 1:10.

TEMPLATE FOR CHECKING CHARACTER AND STROKE WIDTH TO HEIGHT PROPORTIONS

CHARACTER WIDTH	STROKE WIDTH
1:1 100%	1:5 20%
3:5 60%	1:10 10%

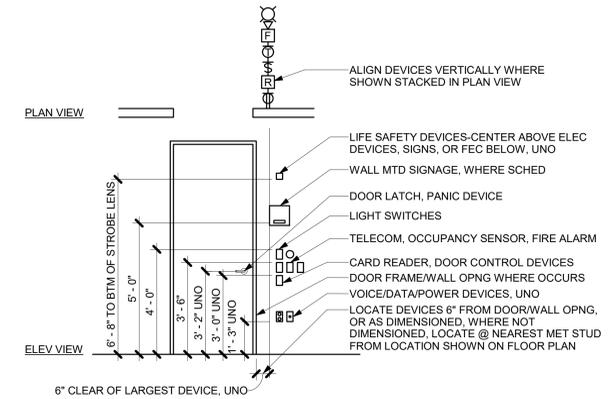
MEASUREMENT RANGE

	MIN - MAX
A: DOT BASE DIAMETER	0.059" - 0.063"
B: DOT HEIGHT	0.025" - 0.037"
C: DISTANCE BETWEEN CORRESPONDING DOTS IN ADJACENT CELLS	0.241" - 0.300"
D: DISTANCE BETWEEN DOTS IN THE SAME CELL	0.090" - 0.100"
E: DISTANCE BETWEEN CORRESPONDING DOTS FROM ONE CELL DIRECTLY BELOW	0.395" - 0.400"

BRAILLE CELL (Grid diagram)

BRAILLE DOT (A, B, C, D, E labels)

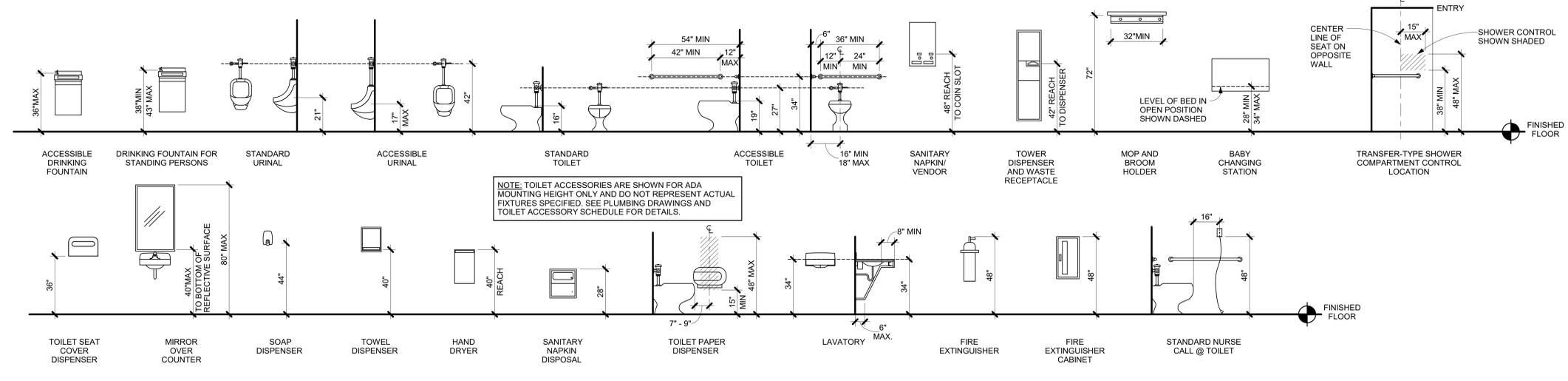
ROUNDED DOT (ACCEPTABLE) vs **SQUARED DOT (NOT ACCEPTABLE)**



B1 BRAILLE REQUIREMENTS

B3 DEVICE ALIGNMENT DIAGRAM

B5 DOOR CLEARANCES



PRINT RECORD

No.	DATE	DESCRIPTION
02/07/2025	50% DISTRIBUTION	
04/30/2025	PERMIT SET	

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G-1.01
RELEASED FOR CONSTRUCTION

GENERAL

- 1. NO PROVISION OF ANY REFERENCED STANDARD SPECIFICATION, MANUAL OR CODE (WHETHER OR NOT SPECIFICALLY INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS) SHALL BE EFFECTIVE TO CHANGE THE DUTIES AND RESPONSIBILITIES OF OWNER, CONTRACTOR, DESIGN PROFESSIONAL, SUPPLIER, OR ANY OF THEIR CONSULTANTS, AGENTS, OR EMPLOYEES FROM THOSE SET FORTH IN THE CONTRACT DOCUMENTS.
2. CONTRACT DOCUMENTS INCLUDE, BUT ARE NOT LIMITED TO, THE STRUCTURAL DOCUMENTS (DRAWINGS AND SPECIFICATIONS), BUT DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS, OR MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR.
3. REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST STANDARD, CODE, SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE.
4. CONTRACT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATIONS OF ACI, PCI, AISI, SJI OR OTHER STANDARDS, WHERE A CONFLICT OCCURS WITHIN THE CONTRACT DOCUMENTS, THE STRICTEST REQUIREMENT SHALL GOVERN.
5. MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE REFERENCED BUILDING CODE.
6. CONTRACTOR SHALL COORDINATE THE STRUCTURAL DOCUMENTS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DOCUMENTS. DESIGN PROFESSIONAL SHALL BE NOTIFIED OF ANY DISCREPANCY OR OMISSION, FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS SEE THE ARCHITECTURAL DRAWINGS.
7. CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK. DESIGN PROFESSIONAL SHALL BE NOTIFIED OF ANY DISCREPANCY.
8. CONTRACTOR SHALL VERIFY THE STRUCTURALLY SUPPORTED MECHANICAL EQUIPMENT WEIGHTS, OPENING SIZES AND LOCATIONS IDENTIFIED ON THE STRUCTURAL DRAWINGS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
9. CONTRACTOR SHALL VERIFY THAT MISCELLANEOUS FRAMING SHOWN ON THE STRUCTURAL DRAWINGS FOR MECHANICAL EQUIPMENT, OWNER-FURNISHED ITEMS, PARTITIONS, ETC. IS CONSISTENT WITH THE REQUIREMENTS OF SUCH ITEMS.
10. CONTRACTOR HAS SOLE RESPONSIBILITY FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
11. THE STRUCTURE IS STABLE ONLY IN ITS COMPLETED FORM. TEMPORARY SUPPORTS REQUIRED FOR STABILITY DURING ALL INTERMEDIATE STAGES OF CONSTRUCTION SHALL BE DESIGNED, FURNISHED, AND INSTALLED BY THE CONTRACTOR.
12. CONTRACTOR HAS SOLE RESPONSIBILITY TO COMPLY WITH ALL OSHA REGULATIONS.
13. ELECTRONIC DRAWING FILES WILL NOT BE PROVIDED TO THE CONTRACTOR. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.
14. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE DESIGN PROFESSIONAL DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK ALL SUBMITTALS AND SHOP DRAWINGS BEFORE SUBMITTING TO THE DESIGN PROFESSIONAL. CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS.
15. DETAILS LABELED "TYPICAL" ON THE STRUCTURAL DRAWINGS APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THE TYPICAL DETAILS UNLESS THOSE LOCATIONS ARE SPECIFICALLY DETAILED OTHERWISE.
16. STRUCTURAL DESIGN PROFESSIONAL IS NOT RESPONSIBLE FOR THE DESIGN OF CURTAIN WALL/WINDOW WALL SYSTEMS, COLD-FORMED METAL FRAMING, OR OTHER SYSTEMS NOT SHOWN IN THE STRUCTURAL DOCUMENTS. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED AS REQUIRED BY OTHER PORTIONS OF THE CONTRACT DOCUMENTS.
17. SUBMITTALS
17.1 SUBMITTALS BY THE CONTRACTOR ARE NOT A PART OF THE CONTRACT DOCUMENTS. PRIOR TO THE INITIAL SUBMITTAL, CONTRACTOR SHALL SUBMIT TO THE DESIGN PROFESSIONAL A SCHEDULE OF SUBMITTED INFORMATION.
17.2 SUBMITTALS SHALL BE ACCOMPANIED BY A TRANSMITTAL LETTER WITH THE FOLLOWING INFORMATION:
- PROJECT NAME
- CONTRACTOR'S NAME
- DATE SUBMITTED
- DESCRIPTION OF ITEMS SUBMITTED. IDENTIFY WORK AND PRODUCT BY SPECIFICATION SECTION
- NUMBER OF DRAWINGS AND OTHER PERTINENT DATA.
17.3 CONTRACTOR SHALL DIRECT SPECIFIC ATTENTION ON THE SUBMITTAL TO ANY DEVIATION FROM THE CONTRACT DOCUMENTS. CONTRACTOR SHALL STAMP AND SIGN EACH SHEET OF SHOP DRAWINGS AND PRODUCT DATA, AND SIGN OR INITIAL EACH SAMPLE TO CERTIFY COMPLIANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS. SUBMITTALS RECEIVED WITHOUT THE CONTRACTOR'S STAMP OR SIGN WILL BE RETURNED TO THE CONTRACTOR FOR REVIEW AND RESUBMITTAL.
17.4 WORK REQUIRING SHOP DRAWINGS, WHETHER CALLED FOR BY THE CONTRACT DOCUMENTS OR REQUESTED BY THE CONTRACTOR, SHALL NOT COMMENCE UNTIL THE SUBMISSION HAS BEEN REVIEWED BY THE DESIGN PROFESSIONAL. WORK MAY COMMENCE IF THE CONTRACTOR VERIFIES THE ACCURACY OF THE DESIGN PROFESSIONAL'S CORRECTIONS AND NOTATIONS AND COMPLES WITH THEM WITHOUT EXCEPTION AND WITHOUT REQUESTING CHANGE IN CONTRACT SUM OR CONTRACT TIME AT COPY OF THE MARKED STRUCTURAL SHOP DRAWINGS WITH THE DESIGN PROFESSIONAL'S REVIEW STAMP TO BE MAINTAINED AT THE JOB SITE.

CODE/DESIGN CRITERIA

- 1. STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE FOLLOWING:
- INTERNATIONAL BUILDING CODE, 2018 EDITION WITH GEORGIA AMENDMENTS.
2. GRAVITY LOADS
2.1 UNIFORM FLOOR LIVE LOADS (REDUCED AS ALLOWED BY THE BUILDING CODE):
- SLAB ON GRADE 100 PSF
2.2 UNIFORM ROOF LIVE LOADS (REDUCED AS ALLOWED BY THE BUILDING CODE):
- ROOF, L 20 PSF
- GROUND SNOW LOAD, P_g 5 PSF
PONDING AND DRIFT EFFECTS HAVE BEEN INCLUDED IN THE DESIGN.
2.4 DEAD LOADS (IN ADDITION TO STRUCTURE SELF-WEIGHT):
ROOF: 20 PSF
3. WIND LOADS:
- BASIC DESIGN WIND SPEED, V = 120 MPH
- ALLOWABLE DESIGN WIND SPEED, V_50 = 93 MPH
- RISK CATEGORY: IV
- EXPOSURE C
- INTERNAL PRESSURE COEFFICIENT = +/- 0.18
SEEM COMPONENT AND CLADDING DESIGN WIND PRESSURE DIAGRAM ON S-003.
4. EARTHQUAKE LOADS:
- RISK CATEGORY: IV
- SEISMIC IMPORTANCE FACTOR: I = 1.5
- SHORT PERIOD MAPPED SPECTRAL RESPONSE COEFFICIENT, S_s = 0.179
- 1 SECOND PERIOD MAPPED SPECTRAL RESPONSE COEFFICIENT, S_1 = 0.082
- SITE CLASS: D (ASSUMED)
- SHORT PERIOD DESIGN SPECTRAL RESPONSE COEFFICIENT, S_DS = 0.191
- 1 SECOND PERIOD DESIGN SPECTRAL RESPONSE COEFFICIENT, S_D1 = 0.131
- SEISMIC DESIGN CATEGORY: C
- BASIC SEISMIC-FORCE RESISTING SYSTEM:
- E-911 STRUCTURE
- INTERMEDIATE REINFORCED MASONRY SHEAR WALLS
- DESIGN BASE SHEAR, 34 KIPS
- SEISMIC RESPONSE COEFFICIENT, C_s = 0.0082
- RESPONSE MODIFICATION FACTOR, R = 3.5
- ADMINISTRATIVE BUILDING
- STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
- DESIGN BASE SHEAR, 34 KIPS
- SEISMIC RESPONSE COEFFICIENT, C_s = 0.0096
- RESPONSE MODIFICATION FACTOR, R = 3
- ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
5. UNLESS NOTED OTHERWISE CALCULATED INDIVIDUAL MEMBER DEFLECTIONS (IN INCHES) DO NOT EXCEED THE FOLLOWING:
ROOF MEMBERS:
- DEAD LOAD L_360
- LIVE LOAD L_240
- DEAD + LIVE LOAD L_240
- WHERE, L = SPAN LENGTH (IN INCHES) BETWEEN SUPPORTS. FOR CANTILEVERS, L IS TWICE THE LENGTH OF THE CANTILEVER. NOTE THAT THE TOTAL MAXIMUM CALCULATED FLOOR SYSTEM DEFLECTION WILL BE THE SUM OF THE DEFLECTIONS OF THE SUPPORTED ELEMENTS IN A BAY.
- THE CALCULATED DEFLECTION FOR INDIVIDUAL MEMBERS SUPPORTING MASONRY DO NOT EXCEED L/600 FOR DESIGN LOADS APPLIED AFTER THE INSTALLATION OF THE MASONRY.

Table with 3 columns: DEAD LOAD, LIVE LOAD, DEAD + LIVE LOAD. Rows for L_360, L_240, L_240.

- 6. SPECIAL INSPECTIONS:
6.1 THE STRUCTURAL TESTING/INSPECTION AGENCY, SEE SPECIFICATION SECTION 014525, WILL PERFORM SPECIAL INSPECTIONS AS REQUIRED BY CHAPTER 17 OF THE BUILDING CODE. MATERIALS AND WORK TO BE INSPECTED INCLUDE SOIL, CONCRETE, MASONRY, AND STEEL CONSTRUCTION. SEE SPECIFICATION SECTIONS 014525 FOR A COMPLETE LIST OF WORK REQUIRING SPECIAL INSPECTIONS.
6.2 SPECIAL INSPECTION AS REQUIRED BY CHAPTER 17 OF THE BUILDING CODE ARE REQUIRED FOR STRUCTURAL COMPONENTS AND ASSEMBLIES WHICH ARE NOT FABRICATED AT THE CONSTRUCTION JOB SITE INCLUDING BUT NOT LIMITED TO AND ROOF JOISTS OF STEEL MATERIALS AND STRUCTURAL STEEL FRAMING.
6.3 SPECIAL INSPECTION AS REQUIRED BY CHAPTER 17 OF THE BUILDING CODE MAY BE WAIVED FOR ITEMS WHICH ARE PRODUCED ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION. APPROVAL SHALL BE BASED UPON REVIEW OF THE FABRICATOR'S WRITTEN PROCEDURAL AND QUALITY CONTROL MANUALS AND BY PERIODIC AUDITING OF FABRICATION PRACTICES BY AN APPROVED SPECIAL INSPECTION AGENCY. THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE CHIEF COMMERCIAL BUILDING INSPECTOR OR HIS DESIGNEE WHICH STATES THAT THE FABRICATION WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
6.4 THE PROJECT OWNER WILL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PERFORM INSPECTIONS AS REQUIRED BY CHAPTER 17 OF THE BUILDING CODE DURING CONSTRUCTION OF THE PROJECT. DOCUMENTATION THAT SUMMARIZES THE QUALIFICATION AND CREDENTIALS OF EACH SPECIAL INSPECTOR AND DEMONSTRATES COMPETENCE FOR INSPECTION OF EACH PARTICULAR TYPE OF CONSTRUCTION REQUIRING SPECIAL INSPECTION SHALL BE SUBMITTED TO THE CHIEF COMMERCIAL BUILDING INSPECTOR OR HIS DESIGNEE FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
6.5 APPROVED SPECIAL INSPECTORS SHALL FURNISH INSPECTION REPORTS TO THE CHIEF COMMERCIAL BUILDING INSPECTOR OR HIS DESIGNEE AND TO THE DESIGN PROFESSIONAL WHICH INDICATE THAT THE WORK INSPECTED WAS DONE IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. A FINAL REPORT WHICH DOCUMENTS THE RESULTS OF THE SPECIAL INSPECTIONS PERFORMED INCLUDING CORRECTION OF ANY DISCREPANCIES IDENTIFIED DURING INSPECTION SHALL BE SUBMITTED PERIODICALLY AT A FREQUENCY APPROVED BY THE CHIEF COMMERCIAL BUILDING INSPECTOR PRIOR TO CONSTRUCTION.
6.6 SPECIAL INSPECTION REPORTS AND FINAL REPORT IN ACCORDANCE WITH SECTION 1704.2.4 SHALL BE SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO THE TIME THAT PHASE OF WORK IS APPROVED FOR OCCUPANCY.
7. NO PROVISIONS HAVE BEEN MADE FOR FUTURE HORIZONTAL OR VERTICAL EXPANSION.

FOUNDATION

- 1. ALL FOUNDATIONS SHALL BE INSTALLED UNDER THE GUIDANCE OF A REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER IN THE PROJECT STATE. THE GEOTECHNICAL ENGINEER SHALL GIVE CONSIDERATION TO THE TYPE OF BUILDING AND FOUNDATION LOADS INVOLVED AS WELL AS THE REQUIREMENTS OF THESE DOCUMENTS. DESIGN PROFESSIONAL IS NOT RESPONSIBLE FOR SUBSURFACE CONDITIONS ENCOUNTERED IN THE FIELD DIFFERENT TO THOSE ASSUMED FOR DESIGN.
2. STRUCTURAL TESTING/INSPECTION AGENCY SHALL CERTIFY THE BEARING MEDIUM.
3. INDIVIDUAL SPREAD FOOTINGS AND CONTINUOUS FOOTINGS SHALL BEAR ON SOIL CAPABLE OF SUPPORTING 2,000 PSF AND 2,000 PSF, RESPECTIVELY.
3.1 NO FOOTINGS SHALL BEAR ON ROCK, UNDERCUT ROCK A MINIMUM OF 2 FEET BELOW BOTTOM OF FOOTING AND REPLACE WITH STRUCTURAL FILL.
4. PROOF ROLL BUILDING AREAS WITH TWO COMPLETE COVERAGES OF A LOADED DUMP-TRUCK OR SCRAPER, REPLACE SOFT AREAS WITH COMPACTED STRUCTURAL FILL AS REQUIRED BY THE SPECIFICATIONS.
5. STRUCTURAL FILL SHALL CONTAIN NO ORGANIC MATERIAL AND BE APPROVED BY A GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. STRUCTURAL FILL UNDER SLABS AND WITHIN 10'-0" OF THE BUILDING FOOTPRINT SHALL BE PLACED IN LIFTS OF THICKNESS DETERMINED BY THE INDEPENDENT TESTING AGENCY AND COMPACTED TO AT LEAST 95% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D998. THE TOP 12" SUB-BASE UNDER SLABS ON GRADE SHALL BE COMPACTED TO AT LEAST 98% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY. ALL BACKFILL, COMPACTION AND PROOF ROLLING OPERATIONS SHALL BE OBSERVED BY AN INDEPENDENT TESTING LABORATORY. STRUCTURAL FILL SOIL DENSITY SHALL BE 110 PCF.
6. SLABS-ON-GRADE SHALL BE PLACED ON A 4" GRANULAR BASE, COMPACTED TO 98% OF ITS STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D998, AND COVERED WITH CONTINUOUSLY SEALED VAPOR BARRIER. SEE ARCHITECT FOR THICKNESS OF VAPOR BARRIER THE BASE FOR SLABS-ON-GRADE SHALL BE INSPECTED BY A GEOTECHNICAL ENGINEER PRIOR TO EACH PLACEMENT OF CONCRETE.
7. BACKFILL SHALL NOT BE PLACED AGAINST EXTERIOR OR RETAINING WALLS UNTIL THE WALLS HAVE ACHIEVED THEIR DESIGN STRENGTH AND THEIR LATERAL SUPPORT ELEMENTS ARE INSTALLED. PROVIDE ADEQUATE DRAINAGE AT BASEMENT AND RETAINING WALLS (SEE ARCHITECTURAL).
8. FOOTINGS SHALL BE CENTERED ABOUT COLUMN LINES UNLESS NOTED OTHERWISE.
9. ALL FOOTINGS AND TURN DOWN SLAB EDGES SHALL PENETRATE TO A MINIMUM DEPTH OF 12" BELOW FINISHED GRADE.

REINFORCEMENT

- 1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
2. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064 AND HAVE MINIMUM SIDE AND END LAPS OF 8".
3. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE REINFORCING BAR SIZES AND PLACEMENT. WRITTEN DESCRIPTION OF REINFORCEMENT WITHOUT ADEQUATE SECTIONS, ELEVATIONS, AND DETAILS IS NOT ACCEPTABLE.
4. SPLICES SHALL BE CLASS B IN ACCORDANCE WITH ACI 318, UNLESS NOTED OTHERWISE. REINFORCEMENT SHALL BE SPLICED ONLY AT LOCATIONS SHOWN OR NOTED IN THE STRUCTURAL DOCUMENTS, EXCEPT REINFORCEMENT MARKED "CONTINUOUS" CAN BE SPLICED AT LOCATIONS DETERMINED BY CONTRACTOR. SPLICES AT OTHER LOCATIONS SHALL BE APPROVED IN WRITING BY THE DESIGN PROFESSIONAL.
5. PROVIDE DOWELS FROM FOUNDATIONS THE SAME SIZE AND NUMBER AS THE VERTICAL WALL OR COLUMN REINFORCING, UNLESS NOTED OTHERWISE.
2.4 DEAC REINFORCEMENT AS FOLLOWS, UNLESS NOTED OTHERWISE:
6.1 CONCRETE REINFORCEMENT COVER
EXPOSED TO EARTH OR WEATHER:
- UNFORMED CAST AGAINST EARTH 3" CLEAR
- FORMED #8 AND LARGER 2" CLEAR
- FORMED #5 AND SMALLER 1-1/2" CLEAR
NOT EXPOSED TO EARTH OR WEATHER:
- WALLS 1" CLEAR
- SLABS 3/4" CLEAR
6.2 MASONRY REINFORCING STEEL SHALL BE PLACED IN THE CENTER OF THE WALL UNLESS NOTED OTHERWISE.
7. REINFORCING STEEL DESIGNATED CONTINUOUS SHALL BE LAPPED AS FOLLOWS:
- CONCRETE REINFORCEMENT: CLASS B TENSION LAP
- MASONRY REINFORCEMENT: SEE DETAIL 5/5-4-01
8. ADHESIVE FOR REINFORCING DOWELS IN EXISTING CONCRETE SHALL CONFORM TO ASTM C881-02, TYPE IV, GRADE 3, CLASS A, B, & C EXCEPT GEL TIMES AND EPOXY CONTENT. ADHESIVE SHALL CONSIST OF A TWO COMPONENT ADHESIVE SYSTEM CONTAINED IN SIDE BY SIDE PACKAGING CONNECTED TO A MIXING NOZZLE WHICH THOROUGHLY MIXES THE COMPONENTS AS IT IS INJECTED INTO THE HOLE. ADHESIVE SHALL HAVE PASSED ICC EVALUATION SERVICES, INC (ICC-ES) ACCEPTANCE CRITERIA 308 FOR LONG TERM CREEP. REINFORCING INSTALLED IN CONCRETE THAT MAY BECOME CRACKED UNDER SERVICE LOADS SHALL BE EVALUATED BY ICC-ES ACCEPTANCE CRITERIA 308 AND BE SPECIFICALLY APPROVED FOR USE IN CRACKED CONCRETE. CONTACT DESIGN PROFESSIONAL FOR DETERMINATION OF CRACKED OR UNCRACKED CONCRETE CONDITION IS NOTED ON THE DRAWINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT LENGTH SHALL BE 12 BAR DIAMETERS, UNLESS NOTED OTHERWISE.
9. ALL DOWELS AND TERMINATING BARS SHALL HAVE A STANDARD 90 DEGREE HOOK.
10. ALL HORIZONTAL REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL AND/OR CONSTRUCTION JOINTS AND AROUND CORNERS, UNLESS SHOWN OTHERWISE IN DETAILS.

CAST-IN-PLACE CONCRETE

- 1. CONCRETE WORK SHALL CONFORM TO ACI 318 AND CRSI STANDARDS.
2. CONCRETE SHALL HAVE THE FOLLOWING MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH:
2.1 NORMAL WELDED STRUCTURAL CONCRETE:
- FOOTINGS 3000 PSI F0
- SLABS-ON-GRADE 4000 PSI F0
- CONCRETE ON METAL FORM DECK 3500 PSI F0
3. PIPES OR DUCTS SHALL NOT EXCEED ONE-THIRD THE SLAB OR WALL THICKNESS INCLUDING CROSSING UNLESS SPECIFICALLY DETAILED IN THE STRUCTURAL DOCUMENTS. ALL PIPES AND DUCTS SHALL BE PLACED IN THE MIDDLE THIRD OF THE SLAB OR WALL THICKNESS UNLESS SPECIFICALLY DETAILED OTHERWISE IN THE STRUCTURAL DOCUMENTS. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION OF SLEEVES, ACCESSORIES, ETC.
4. REFER TO ARCHITECTURAL DRAWINGS FOR MOLDS, GROOVES, ORNAMENTS, CLIPS OR GROUNDS REQUIRED TO BE ENCASED IN CONCRETE AND FOR LOCATION OF FLOOR FINISHES AND SLAB DEPRESSIONS.
5. CONSTRUCTION JOINT LOCATIONS SHALL BE APPROVED BY THE DESIGN PROFESSIONAL. NO HORIZONTAL CONSTRUCTION JOINTS ARE PERMITTED EXCEPT THOSE SHOWN ON THE STRUCTURAL DRAWINGS.
6. DEFECTIVE AREAS IN CONCRETE INCLUDING, BUT NOT LIMITED TO, HONEY-COMBING, SPALLS, AND CRACKS WITH WIDTHS EXCEEDING 0.016 INCH SHALL BE REPAIRED. EXTENT OF DEFECTIVE AREA TO BE DETERMINED BY THE DESIGN PROFESSIONAL.

CONCRETE MASONRY

- 1. MINIMUM 28-DAY COMPRESSIVE STRENGTH OF ASTM C90 CONCRETE MASONRY UNITS SHALL BE FM = 2000 PSI.
2. NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY = 2000 PSI.
3. MORTAR SHALL COMPLY WITH THE BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY AND ASTM C270. MORTAR SHALL BE OF THE FOLLOWING TYPE:
- WALLS BELOW GRADE TYPE M
- BEARING WALLS TYPE M OR S
4. CONCRETE MASONRY UNITS SHALL BE GROUTED WITH 2500 PSI COARSE GROUT AS SHOWN IN THE STRUCTURAL DOCUMENTS. GROUT FOR REINFORCED AND NONREINFORCED MASONRY SHALL CONFORM TO ASTM C476.
5. PROVIDE HORIZONTAL LADDER-TYPE JOINT REINFORCEMENT WITH NO. 9 GAGE DEFORMED LONGITUDINAL WIRES AT 16" C/C VERTICALLY AND AT 8" BELOW GRADE, UNLESS NOTED OTHERWISE. PROVIDE SPECIAL ACCESSORIES FOR CORNERS, INTERSECTIONS, ETC. LONGITUDINAL WIRES SHALL BE PLACED IN THE MORTAR JOINTS.
6. PROVIDE OPEN BOTTOM BEAM BLOCK UNITS WITH 3" DEEP MINIMUM WEB OPENINGS AT HORIZONTAL REINFORCEMENT LOCATIONS. A MINIMUM CLEAR SPACE OF ONE BAR DIAMETER SHALL BE PROVIDED BETWEEN THE REINFORCING BARS AND THE FACE OF MASONRY UNITS.
7. PROVIDE CONTROL JOINTS IN ALL CONCRETE MASONRY WALLS AT LOCATIONS APPROVED BY THE DESIGN PROFESSIONAL AT A MAXIMUM SPACING OF 3 TIMES THE WALL HEIGHT OR 25'-0", WHICHEVER IS LESS.
8. PROVIDE DOVETAIL ANCHORS AT 16" C/C, UNLESS NOTED OTHERWISE, WHERE MASONRY WALLS ABUT CONCRETE SURFACES.
9. SUBMIT WRITTEN CONSTRUCTION PROCEDURES PRIOR TO THE START OF MASONRY CONSTRUCTION.
10. MINIMUM VERTICAL WALL REINFORCEMENT SHALL BE #5@24" CENTERED, UNLESS NOTED OTHERWISE.
11. MINIMUM VERTICAL WALL REINFORCEMENT FOR INTERIOR NON-LOAD BEARING PARTITION WALLS SHALL BE #4@48" CENTERED, UNLESS NOTED OTHERWISE.
12. SUBMIT SHOP DRAWINGS FOR MASONRY REINFORCEMENT IN ACCORDANCE WITH SPECIFICATION SECTION 032000.

STRUCTURAL STEEL

- 1. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992, UNLESS NOTED OTHERWISE.
- STRUCTURAL STEEL HSS SHAPES SHALL CONFORM TO ASTM A500, GRADE C.
- MISCELLANEOUS PLATES AND CONNECTION MATERIAL SHALL CONFORM TO ASTM A36, UNLESS NOTED OTHERWISE.
2. BOLTS AND ANCHORS:
2.1 BOLTED CONNECTIONS SHALL BE TYPE N (BEARING TYPE WITH THREADS INCLUDED IN SHEAR PLANE) WITH MINIMUM 3/4" DIAMETER F3125 BOLTS. SUBMIT PROPOSED BOLT TIGHTENING PROCEDURE FOR REVIEW. BOLTED CONNECTIONS SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH RCSC-2014 (SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS).
2.2 ANCHOR BOLTS SHALL BE HEADED BOLTS CONFORMING TO ASTM F1554 GRADE 36 AND SHALL BE HEADED RODS OR THREADED RODS WITH HEAVY HEXAGONAL NUT WELDED TO THE BOTTOM OF THE THREADED ROD, GRADE A563A, UNLESS NOTED OTHERWISE.
2.3 EXPANSION ANCHORS SHALL HAVE BEEN EVALUATED BY THE ICC EVALUATION SERVICES, INC (ICC-ES) WITH A PUBLISHED EVALUATION REPORT. ANCHORS INSTALLED IN CONCRETE THAT MAY BECOME CRACKED UNDER SERVICE LOADS SHALL BE EVALUATED BY ICC-ES ACCEPTANCE CRITERIA 103 AND BE SPECIFICALLY APPROVED FOR USE IN CRACKED CONCRETE. CONTACT DESIGN PROFESSIONAL FOR DETERMINATION OF CRACKED OR UNCRACKED CONCRETE CONDITION UNLESS CONDITION IS NOTED ON THE DRAWINGS. ALL ANCHORS SHALL BE APPROVED FOR RESISTING WIND AND SEISMIC LOADS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE EQUAL TO 4.5 TIMES THE ANCHOR DIAMETER, UNLESS NOTED OTHERWISE.
2.4 ADHESIVE ANCHORS SHALL CONSIST OF AN ALL-THREAD STEEL ANCHOR WITH ADHESIVE CONFORMING TO ASTM C881-02, TYPE IV, GRADE 3, CLASS A, B, & C EXCEPT GEL TIMES AND EPOXY CONTENT. ADHESIVE SHALL CONSIST OF A TWO COMPONENT ADHESIVE SYSTEM CONTAINED IN SIDE BY SIDE PACKAGING CONNECTED TO A MIXING NOZZLE WHICH THOROUGHLY MIXES THE COMPONENTS AS IT IS INJECTED INTO THE HOLE. ADHESIVE SHALL HAVE PASSED ICC EVALUATION SERVICES, INC (ICC-ES) ACCEPTANCE CRITERIA 308 FOR LONG TERM CREEP. ANCHORS INSTALLED IN CONCRETE THAT MAY BECOME CRACKED UNDER SERVICE LOADS SHALL BE EVALUATED BY ICC-ES ACCEPTANCE CRITERIA 308 AND BE SPECIFICALLY APPROVED FOR USE IN CRACKED CONCRETE. CONTACT DESIGN PROFESSIONAL FOR DETERMINATION OF CRACKED OR UNCRACKED CONCRETE CONDITION IS NOTED ON THE DRAWINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE EQUAL TO 4.5 TIMES THE ANCHOR DIAMETER, UNLESS NOTED OTHERWISE.

- 3. STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED ACCORDING TO BOTH THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
4. SUBMIT SHOP DRAWINGS WHICH ADEQUATELY DEPICT THE STRUCTURAL ELEMENTS AND CONNECTIONS SHOWN IN THE CONTRACT DOCUMENTS. CONNECTIONS SHALL BE DETAILED BASED ON THE DESIGN INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS. CONNECTIONS SHALL BE DESIGNED FOR THE SERVICE LOAD REACTION VALUES SHOWN ON THE STRUCTURAL DRAWINGS. FOR STEEL MEMBERS ARE NOT SHOWN, THE DESIGN REACTION SHALL BE OBTAINED FROM THE TABLES ENTITLED "MAXIMUM TOTAL UNIFORM LOAD" IN PART 3 OF THE AISC "MANUAL OF STEEL CONSTRUCTION", FIFTEENTH (15TH) EDITION. THE DESIGN REACTION IS EQUAL TO HALF THE TABULATED VALUE FOR NONCOMPOSITE BEAMS. DEVIATION FROM THE CONNECTION DETAILS DEPICTED IN THE CONTRACT DOCUMENTS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM THE DESIGN PROFESSIONAL. DESIGN PROFESSIONAL SHALL BE COMPENSATED BY THE CONTRACTOR FOR THE COST INVOLVED IN THE REDESIGN OF CONNECTIONS FOR THE CONVENIENCE OF THE CONTRACTOR. STEEL CONNECTIONS NOT COMPLETELY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED BY THE CONTRACTOR. THIS DESIGN SERVICE SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE OF SERVICES. SHOP DRAWINGS AND CALCULATIONS FOR SUCH CONNECTIONS SHALL BE SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE. REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR THE DESIGN AND ADEQUACY OF SUCH CONNECTIONS. DETAILS DEPENDING ON THE DESIGN ARRANGEMENT AND CONTRACT DOCUMENTS SHALL BE SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE. REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR THE DESIGN AND ADEQUACY OF SUCH CONNECTIONS. DETAILS DEPENDING ON THE DESIGN ARRANGEMENT AND CONTRACT DOCUMENTS SHALL BE SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE.
5. USE PRE-QUALIFIED WELDED JOINTS IN ACCORDANCE WITH AISC AND THE STRUCTURAL WELDING CODE OF THE AMERICAN WELDING SOCIETY D1.101-1M-2015. "NON-PRE-QUALIFIED JOINTS" SHALL BE QUALIFIED PRIOR TO CONSTRUCTION. PROOF OF WELDER CERTIFICATION SHALL BE AVAILABLE AT THE JOB SITE DURING TIMES OF INSPECTION.
6. STRUCTURAL STEEL EXPOSED TO WEATHER SHALL BE GALVANIZED.

STEEL JOISTS

- 1. STEEL JOISTS, BRIDGING, AND THEIR CONNECTIONS SHALL BE DESIGNED, FABRICATED, AND ERECTED ACCORDING TO THE SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI).
2. STEEL ROOF JOISTS AND BRIDGING SHALL BE DESIGNED FOR A NET UNIFORM UPLIFT LOAD AS INDICATED ON THE COMPONENTS AND CLADDING DIAGRAM MINUS THE SELF WEIGHT OF THE JOIST AND 5 PSF SUPERIMPOSED DEAD LOAD.
3. BRIDGING SHALL BE DESIGNED TO FULLY BRACE TOP CHORD OF JOISTS UNDER SERVICE LOADS FOR ROOF JOISTS NOT BRACED BY STEEL ROOF DECK.
4. DESIGN OF STEEL JOISTS, BRIDGING, AND THEIR CONNECTIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REVIEW OF SHOP DRAWINGS SHALL BE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS REGARDING ARRANGEMENT AND SIZES OF MEMBERS AND THE CONTRACTOR'S INTERPRETATION OF THE DESIGN LOADS AND CONTRACT DOCUMENT DETAILS. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR THE DESIGN OF THE STEEL JOISTS, BRIDGING AND THEIR CONNECTIONS. SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE.
5. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION AND ERECTION OF WALLS, BEAM FRAMING, AND CEILING SYSTEMS TO TO ENSURE COMPATIBILITY OF ROOF AND WALL SYSTEMS CONSIDERING PITCH AND CAMBER OF STEEL JOISTS.
6. ALL JOIST SEATS SHALL BE CAPABLE OF RESISTING A 2,000 LB SERVICE OVERTURNING FORCE.

METAL DECK

- 1. DECK DESIGN IS BASED ON THE STEEL DECK INSTITUTE DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS.
2. PROVIDE GALVANIZED ROOF DECK WITH THE FOLLOWING MINIMUM PROPERTIES:
- 1 1/2 INCH DEPTH
- 20 GAGE THICKNESS
- 0.224 IN^2/FT SECTION MODULUS
- 0.197 IN^2/FT MOMENT OF INERTIA
- 50,000 PSI YIELD STRESS
3. PROVIDE GALVANIZED FORM DECK WITH THE FOLLOWING MINIMUM PROPERTIES:
- 0.625 INCH DEPTH
- 28 GAGE THICKNESS
- 0.034 IN^2/FT SECTION MODULUS
- 0.012 IN^2/FT MOMENT OF INERTIA
- 60,000 PSI YIELD STRESS
4. DECK IS SPECIFIED BASED ON A THREE SPAN CONDITION. FURNISH HEAVIER GAGE DECK IF REQUIRED FOR ONE OR TWO SPAN CONDITIONS.

DEFERRED SUBMITTALS

- 1. DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD.
2. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD THROUGH THE ARCHITECT AND GENERAL CONTRACTOR. ONCE THE SUBMITTAL DOCUMENTS HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS, THE ENGINEER OF RECORD WILL FORWARD THEM TO THE ARCHITECT WITH A NOTATION INDICATING THAT THEY ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE ARCHITECT WILL FORWARD THE DEFERRED SUBMITTAL DOCUMENTS TO THE GENERAL CONTRACTOR WHO WILL MAINTAIN ONE SET ON SITE FOR REFERENCE BY THE BUILDING INSPECTOR. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
3. DEFERRED SUBMITTALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT SHOP DRAWINGS, CALCULATIONS, DESIGN LOAD DATA AND SUPPORT REACTIONS OF THE COMPONENTS SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE.
4. ITEMS THAT ARE SUBMITTED FOR CONSIDERATION AS DEFERRED SUBMITTALS ARE AS FOLLOWS:
a. STEEL JOISTS
b. STEEL CONNECTION DESIGN
c. COLD-FORMED STEEL FRAMING
d. PRE-FABRICATED CANOPIES

COLD-FORMED STEEL

- 1. DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS AND THEIR CONNECTIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SUBMIT SHOP DRAWINGS SEALED BY AN ENGINEER LICENSED IN THE PROJECT STATE. REVIEW OF SHOP DRAWINGS SHALL BE FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS REGARDING ARRANGEMENT AND SIZES OF MEMBERS AND THE CONTRACTOR'S INTERPRETATION OF THE DESIGN LOADS AND CONTRACT DOCUMENT DETAILS. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR THE DESIGN OF THE COLD-FORMED STEEL STRUCTURAL MEMBERS AND THEIR CONNECTIONS.
2. COLD-FORMED STEEL DESIGN, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH AISI "SPECIFICATION FOR DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" OR "LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR COLD-FORMED STEEL STRUCTURAL MEMBERS".
3. CONTRACTOR SHALL FURNISH COMPLETE FABRICATION AND ERECTION DRAWINGS FOR APPROVAL BY THE STRUCTURAL ENGINEER PRIOR TO THE COMMENCEMENT OF FABRICATION. INCLUDE PLACING DRAWINGS FOR FRAMING MEMBERS SHOWING SIZE AND GAGE DESIGNATIONS, NUMBER, TYPE, LOCATION AND SPACING. INDICATE SUPPLEMENTAL STRAPPING, BRACING, SPLICES, BRIDGING, ACCESSORIES AND DETAILS REQUIRED FOR PROPER INSTALLATION.
4. COLD-FORMED STEEL SHALL BE DESIGNED FOR THE DESIGN LOADS SHOWN IN THE CONTRACT DOCUMENTS. REFER TO THE SPECIFICATIONS.
5. MATERIAL TESTING AGENCY TO CONFIRM CFMF HAS BEEN INSTALLED PER CONTRACT DRAWINGS AND APPROVED SHOP DRAWINGS.
6. WELDING OF COLD-FORMED STEEL SHALL BE IN ACCORDANCE WITH THE STANDARD CODE OF ARC AND GAS WELDING IN BUILDING CONSTRUCTION.
7. PROVIDE 1 1/2" GAP AT ALL DEFLECTION TRACKS TO STRUCTURE.

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208 Pirkle Ferry Road, Suite C Cumming, GA 30040



SHEAR STRUCTURAL 931 MONROE DRIVE SUITE A102-491 ATLANTA, GA 30308 (678) 684-8051 SHEARSTRUCTURAL.COM

COVINGTON-NEWTON COUNTY 911 CENTER CITY OF COVINGTON and NEWTON COUNTY 10706 HWY 26 COVINGTON, GA 30014

PRINT RECORD

Table with 3 columns: No., DATE, DESCRIPTION. Multiple empty rows for recording.

Drawn By Checked By CW HJ

Date Job No. 04/29/2025 24029

Sheet Title STRUCTURAL GENERAL NOTES

Sheet No.

S-0.01 RELEASED FOR CONSTRUCTION

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SCHEDULE OF SPECIAL INSPECTION SERVICES. PROJECT: COVINGTON EOC 911 CENTER. Includes sections for 1705.1.1 Special Cases, 1705.2.1 Structural Steel Construction, 1705.3 Concrete Construction, 1705.4 Masonry Construction, and 1705.2.2 Cold-Formed Steel Deck.

SCHEDULE OF SPECIAL INSPECTION SERVICES. PROJECT: COVINGTON EOC 911 CENTER. Includes sections for 1705.2.3 Open-Web Steel Joists and Joist Girders, 1705.2.4 Cold-Formed Steel Trusses, 1705.3 Concrete Construction, 1705.4 Masonry Construction, and 1705.5 Wood Construction.

SCHEDULE OF SPECIAL INSPECTION SERVICES. PROJECT: COVINGTON EOC 911 CENTER. Includes sections for 1705.5 Wood Construction, 1705.6 Soils, 1705.7 Driven Deep Foundations, 1705.8 Cast-in-Place Deep Foundations, and 1705.9 Helical Pile Foundations.

SCHEDULE OF SPECIAL INSPECTION SERVICES. PROJECT: COVINGTON EOC 911 CENTER. Includes sections for 1705.10 Fabricated Items, 1705.11 Structural Wood Special Inspections, 1705.12 Structural Wood Special Inspections, 1705.13 Cold-Formed Steel Special Inspections, 1705.14 Wind-Resisting Components, 1705.15 Fire-Resistant Penetrations, and 1705.16 Exterior Insulation and Finish Systems.

SCHEDULE OF SPECIAL INSPECTION SERVICES. PROJECT: COVINGTON EOC 911 CENTER. Includes sections for 1705.12.9 Cold-Formed Steel Bolted Moment Frames, 1705.13.1 Structural Steel Testing, 1705.13.2 Seismic Certification, 1705.13.3 Seismic Certification, 1705.13.4 Seismic Certification, and 1705.16 Exterior Insulation and Finish Systems.

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SECTION 01330 STRUCTURAL SUBMITTALS
PART 1 - GENERAL
1.1 SECTION INCLUDES
A. Structural submittals include shop drawings, design calculations, diagrams, illustrations, schedules, performance charts, nomenclature charts, samples, brochures and other data prepared by the Contractor or any subcontractor, manufacturer, supplier, fabricator, or distributor and which illustrate some portion of the Project.
1.2 RELATED SECTIONS
A. Section 01330 - Submittals
1.3 SUBMITTALS
A. Prior to the initial submittal, Contractor shall submit to the Design Professional a completed Submittal Information and Schedules form given in Appendix I.
B. Submittals shall be accompanied by a transmittal letter with the following information:
1. Project name.
2. Contractor's name.
3. Date submitted.
4. Description of items submitted; identify work and product by Specification.
5. Number of drawings and other pertinent data.
6. Provide blank space on each submittal for the Design Professional's review stamp.
7. The type and number of submittals for each item listed in accordance with Section 013000.
C. Contractor shall direct specific attention on the submittal to any deviation from the Contract Documents.
1.4 CONTRACTOR RESPONSIBILITY
A. Contractor shall make all submittals in advance of installation or construction to allow the Design Professional sufficient time for review.
B. Contractor shall stamp and sign each sheet of shop drawings and product data, and sign or initial each sample to certify compliance with requirements of Contract Documents. SUBMITTALS RECEIVED WITHOUT THE CONTRACTOR'S STAMP OF REVIEW WILL BE RETURNED TO THE CONTRACTOR FOR REVIEW AND RESUBMITTAL.
C. Contractor shall understand that the submittal of the required documents does not constitute compliance with the requirements of the Contract Documents, only submittals reviewed by the Design Professional constitute compliance.
D. It is the Contractor's responsibility to furnish equipment, materials, and labor for the Project which meets the requirements of the codes and authorities quoted as well as the Contract Documents. Proprietary items specified herein only establish a minimum functional and aesthetic standard and it is incumbent upon the Contractor to ascertain conformance of these proprietary items, or any proposed substitution with the codes and authorities.
E. By reviewing, approving and submitting shop drawings, product data, or samples, Contractor thereby represents that he has determined and verified all field measurements; field construction criteria, materials, member sizes catalog numbers, and similar data and that he has checked and coordinated shop drawings with the requirements of the Project and of the Contract Documents.
F. Work requiring shop drawings, whether submitted by the Contractor at the time requested by the Contractor, shall not commence until the submission has been reviewed by the Design Professional. Work may commence if the Contractor verifies the accuracy of the Design Professional's corrections and notations and complies with them without exception and without requesting change in Contract Sum or Contract Time.
1.5 DESIGN PROFESSIONAL REVIEW
A. Design Professional will review submittals with reasonable promptness.
B. Design Professional's review or corrections refer only to the general arrangement and conformance of the subject of the submittals with the Contract Documents, not the project and with the information given in the Contract Documents. Under no conditions should the Contractor consider the review to include the dimensions, quantities, and details of the items nor the approval of an assembly in which the item functions.
C. Design Professional's review shall not relieve the Contractor from responsibility for errors or omissions on the submittals.
D. Design Professional's review of submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Design Professional has directed specific attention to the deviation in the submission and the Design Professional has given written approval to the specific deviation.
E. Design Professional's review of submittals shall not be construed as authorizing any change in the Contract Sum or Contract Time.
1.6 SHOP DRAWINGS
A. Present a clear and thorough manner. Title each drawing with Project name and number; identify each element of drawings by reference to sheet number and detail of Contract Documents.
B. Reproduction of Structural Drawings for shop drawings is not permitted. Electronic drawing files will not be provided to the Contractor.
C. Identify field dimensions; show relationship to adjacent or critical features of Work products.
D. A copy of the marked structural shop drawings with the Design Professional's review stamp is to be maintained at the job site.
1.7 PRODUCT
A. Submit only pages which are pertinent; mark each copy of standard printed data to identify pertinent products; refer to Specification Section and Article number. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.
B. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the work. Delete information which is not applicable.
C. Provide manufacturer's preparation, assembly, and installation instructions.
1.8 SAMPLES
A. Submit full range of manufacturer's standard finishes except where more restrictive requirements are specified, indicating colors, textures, and patterns.
B. Submit samples to illustrate functional characteristics of products, including parts and attachments as required by Design Professional.
C. Approved samples which are of proper size may be incorporated in Work.
D. Label each sample with identification.
E. Field Finishes: Provide full samples at Project; all locations acceptable to Design Professional, as required by individual Specification Section. Install each sample complete and finished. Acceptable finishes in place may be retained in completed work.
1.9 RESUBMITTALS
A. When submittals are returned to the Contractor with the Design Professional's corrections the Contractor shall make the required corrections. Upon request, resubmit one corrected set.
B. Contractor shall direct specific attention on the resubmittal to all revisions including those requested by the Design Professional on previous submission.
1.10 DISTRIBUTION
A. Distribute reproductions of shop drawings, copies of product data, and samples which bear the Design Professional's review stamp to job site file, Record Documents file, subcontractors, suppliers, other affected contractors, and other entities requiring information.
B. Work shall be in accordance with and performed from the reviewed drawings.
PART 2 - PRODUCTS
Not Used.
PART 3 - EXECUTION
Not Used.

SECTION 014525 STRUCTURAL TESTING/INSPECTION AGENCY SERVICES
PART 1 - GENERAL
1.1 SECTION INCLUDES
A. Section summarizes the responsibility of the Contractor and the Structural Testing/Inspection Agency in the performance of the testing/inspection specified in the Contract Documents.
B. Neither the observation of the Design Professional in the administration of the contract, nor tests/inspections by the Testing/Inspection Agency, nor approvals by persons other than the Design Professional shall relieve the Contractor from his obligation to perform the work in accordance with the Contract Documents.
1.2 RELATED SECTIONS
A. Section 03300 - Structural Submittals.
B. Section 014000 - Quality Control Services.
1.3 REFERENCES
A. ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
B. ASTM E329 - Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.
C. American Concrete Institute - Independent Laboratories - Recommended Requirements for Independent Laboratories Qualifications.
1.4 SELECTION AND PAYMENT
A. Owner will employ and pay for the structural testing/inspection services that are required by the Contract Documents.
B. Contractor shall pay for any additional structural testing/inspection required for work or materials not complying with Contract Documents due to negligence or nonconformance.
C. Contractor shall pay for any additional structural testing/inspection required for his convenience.
D. Qualifications: Minimum Special Inspector qualifications shall be per Table F704.2 of 2022 Georgia State Amendments to the International Building Code (2018 Edition).
1.5 STRUCTURAL TESTING/INSPECTION REQUIREMENT SUMMARY
A. Specific structural testing/inspection requirements are given in the following specification sections.
Specification 03 1000 - Concrete Formwork Inspection
Specification 03 2000 - Concrete Reinforcement Inspection
Specification 03 3000 - Concrete Testing/Inspection
Specification 03 2020 - Non-Shrink GROUT Inspection
Specification 04 2200 - Masonry Testing/Inspection
Specification 05 1000 - Structural Steel Inspection
Specification 05 2000 - Steel Joist Inspection
Specification 05 3000 - Metal Deck Inspection
1.6 STATEMENT OF SPECIAL INSPECTIONS
A. Structural Testing/Inspection Agency is required to meet the provisions of the Schedule of Special Inspection Services indicated in the Contract Documents.
PART 2 - MATERIALS
Not Used.
PART 3 - EXECUTION
3.1 STRUCTURAL PRECONSTRUCTION MEETING
A. A structural preconstruction meeting may be conducted at the construction site by the Design Professional to discuss quality issues. The parties involved may be the Design Professional, Contractor, Structural Testing/Inspection Agency, appropriate subcontractors, inspectors, and detailers.
3.2 STRUCTURAL TESTING/INSPECTION AGENCY'S RESPONSIBILITIES
A. Cooperate with the Contractor and provide timely service.
B. Upon arriving at the construction site, sign in and notify the Contractor of presence.
C. Select the representative samples that are to be tested/inspected.
D. Perform tests/inspections as outlined in Contract Documents, the applicable codes, and as directed by the Design Professional.
E. Report work and materials not complying with Contract Documents immediately to the Contractor and Design Professional.
F. Leave copies of field notes with the Contractor prior to leaving the construction site. Field notes shall include the message given to the Contractor, date, time of message, name of Contractor's representative informed, type and location of work or materials tested/inspected, whether the work or materials complies with Contract Documents and name of the Structural Testing/Inspection Agency's representative.
G. Report and distribute results of tests/inspections promptly in the form of written reports as directed by the Design Professional.
H. Structural Testing/Inspection Agency shall not alter requirements of Contract Documents, approve or reject any portion of the work, or perform duties of the Contractor.
3.3 CONTRACTOR'S RESPONSIBILITIES
A. Provide copy of Contract Documents to the Structural Testing/Inspection Agency.
B. Arrange the preconstruction meeting to discuss quality issues.
C. Notify the Structural Testing/Inspection Agency sufficiently in advance of operations to allow assignment of personnel and scheduling of tests.
D. Cooperate with Structural Testing/Inspection Agency and provide access to work.
E. Provide samples of materials to be tested in required quantities.
F. Furnish copies of mill test reports when requested.
G. Provide storage space for Structural Testing/Inspection Agency's exclusive use, such as for storing and curing concrete testing samples.
H. Provide labor to assist the Structural Testing/Inspection Agency in performing tests/inspections.
3.4 OPTIONS
A. If the Structural Testing/Inspection Agency is located at such a distance from the project that travel expenses will be a consideration, or if the amount of sampling performed is minor, and by mutual agreement of the Design Professional and the Contractor, the Contractor may be requested to take samples and forward them to the Structural Testing/Inspection Agency for testing/inspection.
END OF SECTION

SECTION 031000 CONCRETE FORMWORK
PART 1 - GENERAL
1.1 SECTION INCLUDES
A. Section includes the design and erection of formwork, shoring and restoring for cast-in-place concrete and accessories.
1.2 RELATED SECTIONS
A. Section 01330 - Structural Submittals.
B. Section 032000 - Concrete Reinforcement.
C. Section 033000 - Cast-In-Place Concrete.
1.3 REFERENCES
A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials.
B. ACI 301 - Standard Specifications for Structural Concrete.
C. ACI 318 - Building Code Requirements for Structural Concrete.
D. ACI 347 - Standard Specification for Formwork for Concrete.
E. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
F. ASTM E154 - Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover.
1.4 SUBMITTALS
A. Product Data: For each of the following:
1. Exposed surface form-facing material.
2. Concealed surface form-facing material.
3. Form ties.
4. Isolation joint filler.
5. Tiesets.
6. Form-release agent.
B. Shop Drawings: Prepared by, and signed and sealed by, a qualified professional engineer responsible for their preparation, detailing fabrication, assembly and support of forms.
1. For exposed vertical concrete walls, indicate dimensions and form locations for reinforcement and placement of concrete.
2. Indicate dimension and locations of construction and movement joints to be constructed in the structure in accordance with ACI 301.
3. Indicate form layout and form line termination details.
PART 2 - PRODUCTS
2.1 PERFORMANCE REQUIREMENTS
A. Concrete Formwork: Design, engineer, erect, shore and brace, and maintain formwork, shores and bracing in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, sizes, and dimensions.
1. Design wood panel forms in accordance with APA's "Concrete Forming Design/Construction Guide."
2. Locate and provide adequate deflection of form-facing material to 1/60 of center-to-center spacing of supports.
2.2 FORM-FACING MATERIALS
A. Cast Surface Form-Facing Material:
1. Provide continuous, true, and smooth concrete surfaces.
2. Furnish in largest practicable sizes to minimize number of joints.
3. Acceptable Materials: As required to comply with Surface Finish designations specified in Section 033000 "Cast-In-Place Concrete, and as follows:
a. Plywood, metal, or other approved panel materials, complying with DOC P5.1, and as follows:
1) APA ADO (high-density overlay).
2) APA MDO (medium-density overlay); mill-release agent treated and edge sealed.
3) Structural Plyform, B-B or better; mill oiled and edge sealed.
4) APA Plyform Class 1, B-B or better; mill oiled and edge sealed.
B. Concealed Surface Form-Facing Material: Lumber, plywood, metal, plastic, or another approved material.
C. Formwork Accessories: As required to comply with Surface Finish designations specified in Section 033000 "Cast-In-Place Concrete, and as follows:
1. Formwork accessories that are embedded in concrete, including ties and hangers, shall be commercially manufactured products. Do not use nonfabricated wire form ties.
2.4 FORM RELEASE AGENT
A. Form release agent shall not bond with, stain, nor adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.
1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
2. Form release agent for form liners shall be acceptable to form liner manufacturer.
2.5 FORM TIES
A. Factory-fabricated, removable or snap-off, glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to provide spalling of concrete.
1. Furnish units that leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
2. Furnish ties that, when removed, leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
3. Furnish ties with integral water-barrier plates to walls indicated to receive damp-proofing or waterproofing.
2.6 DOVETAIL ANCHORS
A. Dovetail anchors shall consist of 24 gage galvanized steel dovetail anchoring slabs with fiber strips and 16 gage galvanized dovetail anchors, unless otherwise noted on Drawings.
2.7 VAPOR BARRIER
A. Vapor barrier shall consist of polyethylene sheeting. See Architect for thickness.
2.8 ISOLATION JOINT FILLER
A. Asphalt impregnated preformed fibreglass isolation joint filler shall conform with ASTM D1751 and be 1/2-inch thick by full thickness of slab or joint, unless indicated otherwise on the Drawings.
2.9 CONSTRUCTION JOINTS
A. Provide type steel forms by Vulcan screed joints, Burke Keyed Kold joint form or Form-A-Key.
PART 3 - EXECUTION
3.1 INSTALLATION OF FORMWORK
A. Comply with ACI 301.
B. Construct formwork, so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerances limits of ACI 117 and to comply with the Surface Finish designations specified in Section 033000 "Cast-In-Place Concrete" for access/finishes.
C. Limit concrete surface irregularities as follows:
1. Surface Finish-1.0: ACI 117 Class C, 1/2 inch (12 mm).
2. Surface Finish-2.0: ACI 117 Class B, 1/4 inch (6 mm).
a. To be used on concrete surfaces exposed to view.
D. Construct forms tight enough to prevent loss of concrete mortar.
1. Minimize joints.
2. Exposed Concrete: Symmetrically align joints in forms.
E. Construct removable forms for easy removal without hammering or prying against concrete surfaces.
1. Provide crush or weeping plates where stripping may damage cast-concrete surfaces.
a. Slump.
b. Air content.
c. Temperature, ambient and concrete.
d. Location of placement.
e. Any pertinent information, such as addition of water, addition of admixtures, etc.
2. Test concrete slabs for specified flatness and levelness in accordance with ASTM E1155. As a minimum, test three placements: the first placement and two additional placements as directed by the Design Professional. If the tested placement does not meet the specified overall values, test the next placement.
B. The ready-mixed concrete plant shall be certified for conformance with the requirements of the National Ready Mix Concrete Association.
C. Installer qualifications: Installer shall be experienced in placing concrete systems similar in complexity to this project as evidenced by 10 completed projects.
D. The Structural Testing / Inspection Agency shall provide special inspectors as required by Chapter 17 of the building code as required in Specification 01.4525.
1.6 CONCRETE MIX DESIGN
A. Establish concrete mix design proportions in accordance with ACI 318, Chapter 19 and 26 for each concrete strength noted on the contract drawings.
B. Submit concrete mix designs. Include the following:
1. Type and quantities of materials.
2. Slump.
3. Air content.
4. Fresh unit weight.
5. Aggregates sieve analysis.
6. Design compressive strength.
7. Location of placement in structure.
8. Method of placement.
9. Method of curing.
10. Seven-day and 28-day compressive strengths.
L. Construction and Movement Joints:
1. Construct joints true to line with faces perpendicular to surface plane of concrete.
2. Install seal and appearance of concrete are not impaired, at locations indicated or as approved by Design Professional.
3. Place joints perpendicular to main reinforcement.
4. Locate joints for beams, slabs, joists, and girders in the middle third of spans.
a. Offset joints in girders a minimum distance of twice the beam width from column faces.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Spacial joints in walls per Specification 033000 Cast-In-Place Concrete.
a. Locate joints beside piers integral with walls, near corners, and in concealed concrete areas.
7. Provide construction joints in accordance with ACI 318.
8. Provide 1/2-inch-deep key type construction joints at end of each placement for slabs, beams, walls, and footings. Bevel forms for the next removal.
9. Remove loose particles and latency from surface prior to placing the next lift. Chip the surface to a depth equal to exposure surface concrete.
M. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection.
1. Locate ports and openings in bottom of vertical forms, in inconspicuous location, to allow flushing water to drain.
2. Close temporary ports and openings with tight-fitting panels, flush with formwork design pressures and in a manner to avoid inclined construction joints.
N. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, residual, dirt, and other debris just before placing concrete.
O. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
P. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing concrete. Do not allow excess form release agent to accumulate in forms or come in contact with concrete surfaces against which fresh concrete will be placed.
3.2 CAMBER
A. Camber formwork for slabs and beams to compensate for anticipated deflections in formwork prior to hardening of concrete to maintain tolerances specified by ACI 117.
B. Set screws to a like camber to maintain specified concrete thickness.
3.3 FOUNDATION ELEMENTS

A. Form foundation elements if soil or other conditions are such that earth trench forms are unsuitable.
B. Sides of exterior turned-down slabs shall be formed.
C. Maintain minimum coverage of reinforcing steel as indicated on Structural Drawings.
3.4 INSTALLATION OF EMBEDDED ITEMS
A. Set and secure embedded items, bearing plates, and anchor bolts in accordance with approved setting drawings and in such a manner to prevent displacement during placement of concrete.
B. Install anchor rods, rods, and bolts, to elevations required and complying with tolerances in Section 7.5 of ASCE 303.
C. Install and secure in position required inserts, hangers, sleeves, anchors, and nails.
D. Install continuous vertical dovetail anchoring slabs with fiber strips at intersections of concrete and masonry walls unless indicated otherwise by the Drawings.
E. Clean embedded items immediately prior to concrete placement.
3.5 VAPOR BARRIER
A. Where indicated on Drawings, place vapor barrier over sewer, piping, and expansion joints and below conduits and ducts, and behind insulation and granular soils at sidewalls.
B. Lap vapor barrier six inches minimum at splices.
3.6 REMOVING AND REUSING FORMS
A. Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations needs to be maintained.
1. Leave formwork for beam soffits, joists, slabs, and other structural elements that support weight of concrete in place until concrete has achieved at least 10 percent of its 28-day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
B. Clean top surfaces of forms to be reused in the Work.
1. Split, fray, delaminated, or otherwise damaged form-facing material are unacceptable for exposed surfaces.
2. Apply new form-release agent.
C. When forms are reused, clean surfaces, remove fins and lantance, and tighten to close joints.
1. Align and secure joints to avoid offsets.
2. Do not use patched forms for exposed concrete surfaces unless approved by Architect.
3.7 SHORING AND RESTORING INSTALLATION
A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and restoring.
1. Do not remove shoring or restoring until measurement of slab tolerances is complete.
2. Plan sequence of removal of shores and restore to avoid damage to concrete.
3. Locate and provide adequate restoring to support construction without excessive stress or deflection.
3.8 FIELD QUALITY CONTROL
A. Special Inspection: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
B. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
C. Inspections:
1. Inspect formwork for shape, location, and dimensions of the concrete member being formed.
2. Inspect insulating concrete forms for shape, location, and dimensions of the concrete member being formed.
END OF SECTION
SECTION 033000 CAST-IN-PLACE CONCRETE
PART 1 - GENERAL
1.1 SECTION INCLUDES
A. Section includes cast-in-place concrete work indicated in the Contract Documents or otherwise required for proper completion of the work.
1.2 RELATED SECTIONS
A. Section 013300 - Structural Submittals.
B. Section 014525 - Structural Testing/Inspection Agency Services.
C. Section 031000 - Concrete Formwork.
D. Section 032000 - Concrete Reinforcement.
E. Section 036000 - Non-Shrink GROUT.
1.3 REFERENCES
A. ACI 301 - Specifications for Structural Concrete for Buildings.
B. ACI 318 - Building Code Requirements for Structural Concrete.
C. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
D. ASTM C33 - Standard Specification for Concrete Aggregates.
E. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
F. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
G. ASTM C138 - Standard Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.
H. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
I. ASTM C150 - Standard Specification for Portland Cement.
J. ASTM C172 - Standard Practice for Sampling and Testing of Freshly Mixed Concrete.
K. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
L. ASTM C230 - Standard Specification for Flow Table and Use in Tests of Hydraulic Cement.
M. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
N. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.
O. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
P. ASTM C618 - Standard Specification for Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
Q. ASTM E1155 - Standard Test Method for Determining Form Flatness and Levelness Using the F-Number System.
R. ASTM C115 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
1.4 NOTICE
A. Notify Design Professional and Structural Testing/Inspection Agency not less than 48 hours prior to placing concrete.
1.5 QUALITY ASSURANCE
A. Structural Testing/Inspection Agency shall perform the following quality related items:
1. Examine concrete in truck to verify that concrete appears properly mixed.
2. Perform a slump test as deemed necessary for each concrete load.
3. Record if water or admixtures are added to the concrete at the job site.
4. Perform additional slump tests after job site adjustments.
5. Concrete testing: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu yd, plus one sample for each additional 100 cu yd.
a. At a minimum, obtain 5 compressive strength tests for each concrete mixture per ACI 318.
4. Per composite sample taken, mold four standard cured specimens per set for compressive strength testing. For each set molded, record:
a. Slump.
b. Air content.
c. Temperature, ambient and concrete.
d. Location of placement.
e. Any pertinent information, such as addition of water, addition of admixtures, etc.
5. Test concrete slabs for specified flatness and levelness in accordance with ASTM E1155. As a minimum, test three placements: the first placement and two additional placements as directed by the Design Professional. If the tested placement does not meet the specified overall values, test the next placement.
B. The ready-mixed concrete plant shall be certified for conformance with the requirements of the National Ready Mix Concrete Association.
C. Installer qualifications: Installer shall be experienced in placing concrete systems similar in complexity to this project as evidenced by 10 completed projects.
D. The Structural Testing / Inspection Agency shall provide special inspectors as required by Chapter 17 of the building code as required in Specification 01.4525.
1.6 CONCRETE MIX DESIGN
A. Establish concrete mix design proportions in accordance with ACI 318, Chapter 19 and 26 for each concrete strength noted on the contract drawings.
B. Submit concrete mix designs. Include the following:
1. Type and quantities of materials.
2. Slump.
3. Air content.
4. Fresh unit weight.
5. Aggregates sieve analysis.
6. Design compressive strength.
7. Location of placement in structure.
8. Method of placement.
9. Method of curing.
10. Seven-day and 28-day compressive strengths.
L. Construction and Movement Joints:
1. Construct joints true to line with faces perpendicular to surface plane of concrete.
2. Install seal and appearance of concrete are not impaired, at locations indicated or as approved by Design Professional.
3. Place joints perpendicular to main reinforcement.
4. Locate joints for beams, slabs, joists, and girders in the middle third of spans.
a. Offset joints in girders a minimum distance of twice the beam width from column faces.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Spacial joints in walls per Specification 033000 Cast-In-Place Concrete.
a. Locate joints beside piers integral with walls, near corners, and in concealed concrete areas.
7. Provide construction joints in accordance with ACI 318.
8. Provide 1/2-inch-deep key type construction joints at end of each placement for slabs, beams, walls, and footings. Bevel forms for the next removal.
9. Remove loose particles and latency from surface prior to placing the next lift. Chip the surface to a depth equal to exposure surface concrete.
M. Provide temporary ports or openings in formwork where required to facilitate cleaning and inspection.
1. Locate ports and openings in bottom of vertical forms, in inconspicuous location, to allow flushing water to drain.
2. Close temporary ports and openings with tight-fitting panels, flush with formwork design pressures and in a manner to avoid inclined construction joints.
N. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, residual, dirt, and other debris just before placing concrete.
O. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
P. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing concrete. Do not allow excess form release agent to accumulate in forms or come in contact with concrete surfaces against which fresh concrete will be placed.
3.2 CAMBER
A. Camber formwork for slabs and beams to compensate for anticipated deflections in formwork prior to hardening of concrete to maintain tolerances specified by ACI 117.
B. Set screws to a like camber to maintain specified concrete thickness.
3.3 FOUNDATION ELEMENTS

C. Concrete supplier shall submit certifications that the materials used above meet applicable ASTM Specifications. Mix designs not conforming to the above will be rejected.
D. Limits on cementitious material substitutes in concrete mix design:
1. Fly ash (ASTM C618) 25%
2. Slag Cement (ASTM C989) 30%
3. Total of Fly Ash plus Slag Cement 40%
1.7 SLUMP
A. Design concrete with a maximum slump of five inches.
B. If a slump greater than five inches is desired it shall be achieved with a high-range water reducer. Design the concrete mix with a high range water reducer slump of two and one-half inches plus or minus one and one-half inches. The maximum slump after high-range water reducers are added shall be eight inches.
1.8 FRESH UNIT WEIGHT
A. Normal weight concrete shall have a fresh unit weight of 140 to 152 pcf.
1.9 AIR CONTENT
A. No entrained air content is required in concrete placed in the foundation.
B. Provide entrained air content per the table below and exposure category specified on structural drawings. Tolerance on air content as delivered shall be +/-1.5 percent.
Nominal maximum aggregate size, in.* Air Content, percent
Exposure Class F1 Exposure Classes F2 and F3
2 3/8 6 7.5
1/2 5.5 7
3/4 5 6
1 4.5 6
1-1/2 4.5 5.5
* See ASTM C373 for tolerance on oversize for various nominal maximum size designations.
1.10 WATER/CEMENT RATIO
A. Concrete elements shall have a maximum water/cement ratio of 0.50, unless noted otherwise.
B. Air entrained concrete elements shall have a maximum water/cement ratio of 0.45.
C. Concrete elements with aggressive environment (Exposure Class F2) shall have a maximum water/cement ratio of 0.45.
1.11 SUBMITTALS
A. Submit concrete mix design as specified above for each type of concrete included in the work.
B. Submit a certification from each manufacturer or supplier stating that materials meet the requirements of the ASTM and ACI standards referenced.
C. Submit manufacturer's data including Product Data and installation instructions for the following items. Manufacturer's data shall include the name of the manufacturer and date of the publication. All manufacturer's data shall be maintained at the project site by the contractor.
1. Admixtures
2. Water-reducing admixtures
3. Joint sealing materials
4. Expansion joint filler
5. Patching compounds
6. Bonding agents
PART 2 - PRODUCTS
2.1 MATERIALS
A. Materials designated by specific manufacturer's trade names are approved, subject to compliance with the quality and performance indicated by the manufacturer. Instructions and specifications, published by the manufacturer of such materials are included in and are a part of these specifications. Upon request, provide certification from manufacturer or supplier that materials designated by reference to ASTM and ACI standards meet the requirements of these standards.
2.2 CONCRETE STRENGTH
A. Concrete concrete strengths indicated on the Structural Drawings.
2.3 CEMENTITIOUS MATERIALS
A. Portland cement shall conform to ASTM C150, Type I.
B. Blended Hydraulic Cement shall conform to ASTM C695, Type II.
C. Fly Ash shall conform to ASTM C618, Class C or F.
1. Class F fly ash shall have a loss on ignition of less than five percent.
2. Class C fly ash shall have a loss on ignition of less than one percent.
D. Slag Cement shall conform to ASTM C989, Grade 100 or 120.
2.4 AGGREGATE
A. Coarse aggregate shall conform to ASTM C33.
B. Coarse aggregate of gravel or crushed stone shall conform to ASTM C33, Class 3M. Size coarse aggregate in accordance with ACI 318.
2.5 WATER
A. Water shall be potable and free of deleterious substances in accordance with ACI 318.
2.6 AIR ENTRAINING AGENT
A. Air entraining agent shall conform to ASTM C260.
2.7 WATER REDUCER
A. Water-reducing agent shall conform to ASTM C494.
2.8 HIGH-RANGE WATER REDUCER
A. High-range water reducers (superplasticizers) shall conform to ASTM C494.
2.9 CHLORIDE
A. Use no chlorides of any form in concrete.
2.10 CURING MATERIALS
A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
B. Clear, Waterborne, Membrane-Forming, Curing Compound: ASTM C309, Type 1, Class B.
C. Moisture-Retaining Membrane-Forming, Curing Compound: ASTM C309, Type 1, Class B, 18 to 25 percent solids, nondispersing, certified by curing compound manufacturer to not interfere with bonding of floor covering.
1. Color:
a. Ambient Temperature Below 50 deg F (10 deg C): Black.
b. Ambient Temperature between 50 deg F (10 deg C) and 85 deg F (29 deg C): Any color.
c. Ambient Temperature Above 85 deg F (29 deg C): White.
D. Curing Paper: Eight-foot, (2438-mm) wide paper, consisting of two layers of fibred kraft paper laminated with double coating of asphalt.
E. Water: Potable or complying with ASTM C1602/M.
F. Clear, Waterborne, Membrane-Forming, Dispersing Curing Compound: ASTM C309, Type 1, Class B.
G. Clear, Waterborne, Membrane-Forming, Nondispersing Curing Compound: ASTM C309, Type 1, Class B, certified by curing compound manufacturer to not interfere with bonding of floor covering.
H. Clear, Waterborne, Membrane-Forming, Curing Compound: ASTM C309, Type 1, Class B, 18 to 25 percent solids, nondispersing, certified by curing compound manufacturer to not interfere with bonding of floor covering.
I. Clear, Solvent-Borne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class A.
J. Clear, Waterborne, Membrane-Forming, Curing and Sealing Compound: ASTM C1315, Type 1, Class A.
2.11 ACCELERATORS
A. Non-chloride accelerators shall conform to ASTM C494.
2.12 RETARDERS
A. Retarders shall conform to ASTM C494.
PART 3 - EXECUTION
3.1 HIGH-RANGE WATER REDUCERS
A. High-range water reducers are to be added at dosage recommended by the manufacturer. The slump of the concrete shall be one to four inches at the time the high-range water reducers are added, and not permit fresh concrete containing superplasticizers to come in contact with fresh concrete not containing superplasticizers.
3.2 ADDITION OF WATER AT JOB SITE
A. Provide batch tickets indicating the amount of mix water withheld at the batch plant for each load of concrete delivered. Water may be added to the batch only if neither the maximum permissible water/cement ratio nor the maximum slump is exceeded.
B. Water shall not be added to the batch after the required on-site testing has been performed.
3.3 PLACEMENT OF CONCRETE
A. Deposit concrete as near as practical to final position to prevent segregation of concrete.
B. Do not use aluminum equipment in placing and finishing concrete.
C. Place thickened slabs for partitions integral with floor slabs.
D. Prepare place of deposit, mix, curing, and place, and cure concrete in accordance with ACI 301 and ACI 318. Wet forms before placing concrete.
E. Concrete Placement
1. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.
a. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
b. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.
2. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.
3. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect in writing, but not to exceed the amount indicated on the concrete delivery ticket.
a. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
4. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301 (ACI 301M), but not to exceed the amount indicated on the concrete delivery ticket.
a. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
5. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.
a. If a section cannot be placed continuously, provide construction joints.
b. Deposit concrete to avoid segregation.
c. Deposit concrete in horizontal layers of depth not to exceed maximum design pressures and in a manner to avoid inclined construction joints.
d. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301 (ACI 301M).
1. Do not use vibrators to transport concrete inside forms.
2. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer.
3. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
4. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and compact embedment of reinforcement and other embedded items without causing mix constituents to segregate.
5. Deposit and consolidate concrete for floors and walls in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
a. Do not place concrete floors and slabs in a checkerboard sequence.
6. Consolidate concrete during placement operations, so concrete is thoroughly worked and reinforced and other embedded items and corners.
a. Maintain reinforcement in position on chairs during concrete placement.
c. Scream slab surfaces with a straightedge and strike off to correct elevations.
d. Concrete, cut high areas, and fill low areas.
e. Slope surfaces uniformly to drains where required.
f. Begin initial floating using ball floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
g. Do not further disturb slab surfaces before starting finishing operations.
3.4 TIME LIMIT
A. Deposit concrete within one and one-half hours after batching.
3.5 FINISHES FORMED SURFACES
A. As-Cast Surface Finishes:
1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material.
a. Patch voids larger than 1-1/2 inches (38 mm) wide or 1/2 inch (13 mm) deep.
b. Remove projections larger than 1/2 inch (25 mm).
c. Tie holes do not require patching.
d. Surface Tolerance: ACI 117 Class C.
e. Apply to concrete surfaces not exposed to public view.
2. ACI 301 Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.
a. Patch voids larger than 3/4 inch (19 mm) wide or 1/2 inch (13 mm) deep.
b. Remove projections larger than 1/4 inch (3 mm).
c. Patch tie holes.
d. Surface Tolerance: ACI 117 Class B.
e. Apply to concrete surfaces exposed to public view.
3. ACI 301 Surface Finish SF-3.0.
a. Patch voids larger than 3/4 inch (19 mm) wide or 1/2 inch (13 mm) deep.
b. Remove projections larger than 1/8 inch (3 mm).
c. Patch tie holes.
d. Surface Tolerance: ACI 117 Class A.
e. Locations: Apply to concrete surfaces exposed to public view.
3.6 CURING
A. Begin curing procedures immediately following the commencement of the finishing operation.
B. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
1. Maintain moisture loss no more than 0.2 lbs/sq. ft. x h (1 kg/sq. m x h), calculated in accordance with ACI 308.1, before and during finishing operations.
C. Curing Formed Surfaces: Comply with ACI 308.1 as follows:
1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar forms.
2. Cure concrete containing color pigments in accordance with color pigment manufacturer's instructions.
3. If forms remain during curing period, moist cure after loosening forms.
4. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:
a. Continuous Formed Surfaces: Maintain standing water on concrete surface until final setting of concrete.
b. Continuous Sprinkling: Maintain concrete surface continuously wet.
c. Absorbent Cover: Maintain absorbent material before application; apply additional water to absorbent material to maintain concrete surface continuously wet.
d. Water-Retaining Compound: Cover exposed concrete surfaces with sheathing material, taping, or lapping seams.
e. Membrane-Forming Curing Compound: Apply uniformly in continuous operation over entire area of surface, in accordance with manufacturer's written instructions.
1. Recast areas subject to heavy rainfall within three hours after initial application.
2. Maintain continuity of coating and repair damage during curing period.
D. Curing Unformed Surfaces: Comply with ACI 308.1 as follows:
1. Begin curing immediately after finishing concrete.
2. Interior Concrete Floors:
a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the following:
1. Absorbent Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorbent cover over entire area of floor.
i. Lap edges and ends of absorbent cover not less than 12-inches (300-mm).
ii. Maintain absorbent cover water saturated, and in place, for duration of curing period, but not less than seven days.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive.
i. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
ii. Curing for not less than seven days.
3. Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
i. Water.
ii. Continuous water-fog spray.
b. Floors to Receive Penetrating Liquid Floor Treatments: Contractor has option of the following:
1. Absorbent cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorbent cover over entire area of floor.
i. Lap edges and ends of absorbent cover not less than 12 inches (300 mm), and sealed by waterproof tape or adhesive.
ii. Maintain absorbent cover water saturated, and in place, for duration of curing period, but not less than seven days.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive.
i. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
ii. Cure for not less than seven days.
3. Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
i. Water.
ii. Continuous water-fog spray.
c. Floors to Receive Polished Finish: Contractor has option of the following:
1. Absorbent Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorbent cover over entire area of floor.
i. Lap edges and ends of absorbent cover not less than 12 inches (300 mm), and sealed by waterproof tape or adhesive.
ii. Maintain absorbent cover water saturated, and in place, for duration of curing period, but not less than seven days.
2. Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:
i. Water.
ii. Continuous water-fog spray.
3. Recast areas subjected to heavy rainfall within three hours after initial application.
Repeat process and apply a second coat.
4. Maintain continuity of coating, and repair damage during curing period.
3.7 ENVIRONMENTAL PROVISIONS
A. Hot weather concrete
1. Procedure applies when concrete mix starts to 77 degrees Fahrenheit.
2. Forms, reinforcing steel and subgrade shall be fogged or sprinkled with cool water, prior to concrete in placement.
3. Expect all elements of the concrete placement.
4. Moist curing shall commence as soon as the surfaces are finished and shall continue for at least seven days.
5. Hot weather concreting shall comply with ACI 305.1.
B. Cold weather concrete



208 Pkline Ferry Road, Suite C Cumming, GA 30040



931 MONROE DRIVE SUITE A102-411 ATLANTA, GA 30308 (678) 864-8051 SHEARSTRUCTURAL.COM

COVINGTON-NEWTON COUNTY 911 CENTER CITY OF COVINGTON and NEWTON COUNTY 10706 HWY 26 COVINGTON, GA 30014

Table with columns: FOUNDATION, CONCRETE & REINFORCING, STRUCTURAL STEEL, MASONRY. Includes submittal dates and dates for GROUT & Mortar, Block Prim & Comp. Strength, Reinforcing, and Deck.

Table with columns: SUBMITTAL, DATE, SUBMITTAL, DATE, SUBMITTAL, DATE. Lists items like Site Preparation, Equipment Information, Concrete Mix Design, Foundation Reinforcing, Joists, and Deck.

Table with columns: REMARKS, COMPLETED BY, DATE. Includes notes on project completion and dates.

ALPHA BLDG SET 08-14-2025

Table with columns: No., DATE, DESCRIPTION. Lists items for PRINT RECORD.

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- Procedure applies when a period of more than 3 consecutive days the average daily air temperature drops below 40 degrees Fahrenheit and stays below 50 degrees for more than one half of a 24-hour period.
 - Provide wind break or heated enclosure to protect freshly placed concrete.
 - During curing operations, use polyethylene sheets or insulating blankets for at least seven days.
 - In no instance shall the concrete temperature drop below 50 degrees Fahrenheit prior to stripping forms and restoring the structure.
 - Cold weather concreting shall comply with ACI 308.1.
 - Protect concrete from drying and excessive temperature for the first seven days.
 - Protect fresh concrete from wind.
- 3.8 CONTRACT JOINTS**
- Obtain Design Professional's approval for location of contraction joints.
 - Do not place contraction joints in frame floor, concrete slabs, or shear walls.
 - Place contraction joints in slabs-on-groove as indicated on the Drawings.
- 3.9 CUTTING CONCRETE**
- Obtain Design Professional's written approval prior to cutting concrete for installation of other work.
- 3.10 PATCHWORK AND REPAIRS**
- Notify Design Professional of any defective areas in concrete to be patched or repaired. Repair and patch defective areas with non-shrink grout. Cut out defective areas over two inches in diameter to solid concrete, but not less than a depth of one inch. Make edges of cuts perpendicular to the concrete surface.
- 3.11 JOINT FILLING**
- Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.
 - Defler joint filling until concrete has aged at least three months.
 - Do not fill joints until construction traffic has permanently ceased.
 - Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.
 - Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.
 - Overfill joint, and trim joint filler flush with top of joint after hardening.
- 3.12 CONCRETE FINISHES**
- Finish concrete in accordance with ACI 301.
 - Finish concrete slabs to flatness and levelness tolerances which correspond to FF 25FL 20 minimum overall for composite of all measured values and FF 17FL 12 minimum for any individual floor section.
 - For concrete slabs to receive thin-set flooring, finish to flatness and levelness tolerances which correspond to FF 35FL 25 minimum overall for composite of all measured values and FF 17FL 12 minimum for any individual floor section.
 - For concrete slabs to receive wood flooring, finish to flatness and levelness tolerances which correspond to FF 45FL 30 minimum overall for composite of all measured values and FF 17FL 12 minimum for any individual floor section.
 - For metal deck construction, floors shall be finished to an FF 25.
 - For shored construction, FL values do not apply if slab is tested after shoring is removed.
 - Slabs, which do not meet the flatness and levelness criteria shall be repaired or replaced.
- 3.13 FIELD QUALITY CONTROL**
- Special Inspections: Special Inspector to perform field tests and inspections and prepare testing and inspection reports.
 - Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
 - For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.
 - Inspection:
 - Heard bolts and studs.
 - Verification of use of required design mixture.
 - Concrete placement, including conveying and depositing.
 - Curing procedures and maintenance of curing treatment.
 - Verification of concrete strength before removal of shores and forms from beams and slabs.
 - Batch Plant Inspections: On a random basis, as determined by Architect.
 - Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172 shall be performed in accordance with the following requirements:
 - Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture for each 100 cubic yards per Section 1.
 - When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted in accordance with ASTM C 172 shall be performed in accordance with the following requirements:
 - When five are used.
 - Slump: ASTM C143.
 - One test at each point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - Perform additional tests when concrete consistency appears to change.
 - Slump Flow: ASTM C1611.
 - One test at each point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - Perform additional tests when concrete consistency appears to change.
 - Air Content: ASTM C231 pressure method, for normal-weight concrete.
 - One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - Concrete Temperature: ASTM C1064.
 - One test hourly when air temperature is 40 deg F (4.4 deg C) and below or 80 deg F (27 deg C) and above, and one test for each composite sample.
 - Unit Weight: ASTM C138 fresh unit weight of structural concrete.
 - One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - Compression Test Specimens: ASTM C31.
 - Cast and laboratory cure four (each 150 mm) by 12-inch (300 mm) cylinder specimens for each composite sample. If testing agency chooses to use a 4 inch by 8 inch cylinders an additional cylinder will be required.
 - Compressive-Strength Tests: ASTM C39.
 - From each set.
 - Test one laboratory-cured specimen at seven days and two specimens at 28 days. Fourth specimen is to be held in reserve.
 - A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated. If 4 inch by 8 inch cylinders are used, it shall be from a set of three specimens.
 - When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
 - Strength of each concrete mixture will be satisfactory if both of the following conditions are met:
 - Every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength.
 - No compressive-strength test value falls below the specified compressive strength by: more than 500 psi (3.4 MPa) when specified compressive strength is less than or equal to 5000 psi (34.5 MPa) or more than 10 percent of specified compressive strength when the specified compressive strength is greater than 5000 psi (34.5 MPa).
 - Nondestructive Testing:
 - Nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
 - Additional Tests:
 - Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
 - Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

Measure floor and slab flatness and levelness in accordance with ASTM E1155 within 72 hours of completion of floor finishing and promptly report test results to Architect.

END OF SECTION

- SECTION 032000
CONCRETE REINFORCEMENT
- PART 1 - GENERAL**
- 1.1 RELATED SECTIONS
 - A. Section 013300 - Structural Submittals.
 - B. Section 014525 - Structural Testing/Inspection Agency Services.
 - C. Section 031000 - Concrete Formwork.
 - D. Section 033000 - Cast-in-Place Concrete.
 - 1.2 REFERENCES
 - A. ASTM C1107 - Standard Specifications for Tolerances for Concrete Construction and Materials.
 - B. ACI 301 - Standard Specifications for Structural Concrete.
 - C. ACI 318 Building Code Requirements for Structural Concrete.
 - D. ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete Reinforcement.
 - E. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - F. ASTM A706 - Standard Specification for Low-Alloy Steel Deformed Bars for Concrete Reinforcement.
 - G. AWS D1.4 - Structural Weld Code - Reinforcing Steel.
 - H. CRSI - Manual of Practice, and Documents B3 and B5.
 - 1.3 SUBMITTALS
 - A. Shop drawings:
 1. Notify Design Professional prior to detailing reinforcing steel shop drawings.
 2. Include placing drawings that detail fabrication, bending, and placement. Provide elevations of all wall reinforcement.
 3. Include locations of proposed construction joints for approval by EOR. Contractor to submit selections of placing concrete.
 4. Include bar sizes, lengths, materials, grades, bar schedules, strap spacing, bend diagrams, bar arrangements, location of splices, lengths of lap splices, details of mechanical splice couplers, details of welding splices, tie spacing, hook spacing, and supports for concrete reinforcement. Reinforcing steel shall be detailed in accordance with drawings and development lengths shall conform to ACI 318 unless noted otherwise on drawings.
 5. Include proposed field bending or cutting locations and cutting methods for approval by EOR.
 6. Written description of reinforcement without adequate sections, elevations, and details is not acceptable.
 7. All revisions to shop drawings shall be clouded.
 8. Reproduction of Structural Drawings for shop drawings is not permitted.
 9. Electronic drawings shall not be provided for reinforcement detailing.
 - B. Submit a certification from each manufacturer or supplier stating that materials meet the requirements of the ASTM and AISC standards referenced.
 - C. Submit mill test reports.
 - D. Submit manufacturer's data for tensile and compressive splices.
 - E. Submit manufacturer's data including installation recommendations for dowel adhesive.
 - 1.4 QUALITY ASSURANCE
 - A. Coordinate and schedule in a timely manner with the Structural Testing/Inspection Agency the following quality related items:
 1. Verify reinforcing steel for quantity, size, location, and support.
 2. Verify proper reinforcing steel concrete coverage.
 - B. Structural Testing/Inspection Agency shall provide special inspections as required by Chapter 17 of the building code and as required by Specification 014525.
 - C. Structural Testing/Inspection Agency shall be qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated.
 - 1.5 STORAGE AND PROTECTING
 - A. Store reinforcing steel above ground so that it remains clean. Maintain steel surfaces free from materials and coatings which may impair bond.
 - B. Deformed reinforcing steel shall conform to ASTM A615, refer to Structural Drawings for grade (Grade 60 minimum).
 - C. Welded mechanical splice couplers and reinforcement welding.
 1. Installer Qualifications: Certify a minimum of 2 years experience with similar masonry installations.
- PART 2 - PRODUCTS**
- 2.1 FABRICATION
 - A. Deformed reinforcing steel shall conform to ASTM A615, refer to Structural Drawings for grade (Grade 60 minimum).
 - B. Welded mechanical splice couplers shall conform to ASTM A1064.
 - 2.2 ACCESSORY MATERIALS
 - A. Annealed steel tie wire shall be 1/2-inch galv minimum.
 - B. Welded mechanical splice couplers shall conform to ASTM A1064.
 1. Specifications: Concrete brick may be used to support reinforcement to obtain proper clearance from earth.
 - 2.3 SPLICES
 - A. Tensile splices shall be capable of developing 125% of the reinforcing steel ASTM specified minimum yield strength.
 - B. Shear materials shall be the mechanical type such that the compression stress is transmitted by end bearing held in concentric contact.
 - 2.4 DOWEL ADHESIVE
 - A. Adhesive for reinforcing dowels in existing concrete shall conform to ASTM C881-13, Type IV, Grade C, Class A, B, & C except gel times and epoxy content. Adhesive shall consist of a two component adhesive system contained in side by side packaging connected to a mechanical type nozzle which thoroughly mixes the components as it is injected into the hole. Adhesive shall have passed ICC Evaluation Services, Inc. Acceptance Criteria 308 for long term creep and be specifically approved for use in cracked concrete.
- PART 3 - EXECUTION**
- 3.1 FABRICATION
 - A. Fabricate steel in accordance with ACI 318 and CRSI standards.
 - B. Bend bars cold. Do not heat or flame cut bars. No field bending of bars partially embedded in concrete is permitted, unless specifically approved Design Professional and checked by Testing and Inspection Agency.
 - C. Weld only as indicated. Perform welding in accordance with AWS D1.4.
 - D. Tag reinforcing steel for easy identification.
 - 3.2 INSTALLATION
 - A. Before placing concrete, clean reinforcement of foreign particles and coatings. Place, support on chairs, and secure reinforcement against displacement in accordance with ACI 318 and CRSI standards. Do not deviate from alignment or measurement. Maximum support spacing shall not exceed 48 inches.
 - B. Place concrete beam reinforcement support parallel to main reinforcement.
 - C. Install welded wire reinforcement, to provide a neat, uniform appearance. Prepare joints for seamless application, where indicated on the Drawings.
 - 3.3 MORTAR
 - A. Mortar shall be Type M or Type S Masonry cement in accordance with ASTM C270. Refer to Drawings for locations. For SDC D or greater, replace masonry cement with Portland Cement or Mortar Cement. Aggregate for Masonry Mortar shall be in accordance with ASTM C144.
 - B. Do not use admixtures that contain chlorides.
 - 3.4 COARSE GROUT
 - A. Coarse grout shall conform to ASTM C1064.
 - B. Coarse grout shall have the minimum compressive strength specified on the Drawings.
 - C. Coarse grout shall have a minimum compressive strength specified on the Drawings.
 - D. Mix grout to a consistency which has a slump between 8 and 10 inches.
 - E. Do not use admixtures that contain chlorides.
 - 3.5 WATER
 - A. Provide clean potable water free of deleterious substances.
 - 3.6 REINFORCEMENT
 - A. Horizontal and vertical reinforcing bars shall comply with Section 032000.
 - B. HORIZONTAL JOINT REINFORCEMENT shall be manufactured with longitudinal parallel, deformed side wires in accordance with ASTM A951 and of the size specified on the Drawings. Cross wires shall be No. 9 gauge spaced not more than 16" on center.
 - C. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - D. Provide additional side wires or eye sections for adjustable wall ties as specified for multiwythe wall construction.
 - E. Provide ladder type reinforcement.
 - F. Horizontal joint reinforcement shall be hot-dipped galvanized in accordance with ASTM A155, Class B-2.
 - G. Provide in lengths of not less than 10 feet. Provide prefabricated corner and tee steel reinforcement.
 - 3.7 CONNECTION JOINT MATERIAL
 - A. Connection joint material shall comply with ASTM D2000, M2AA-805 with rubber and shall have a minimum durometer hardness of 80.
- PART 3 - EXECUTION**
- 3.1 MIXING
 - A. Except as otherwise approved for small batches, mix in mechanically operated batch mixers of drum type in which water can be accurately and uniformly controlled. Allow live minutes maximum mixing time, two minutes for dry mixing and one minute for wet mixing. Do not use wheelbarrows. Do not permit volumes of batch to exceed manufacturer's rated capacity of mixer drum. Empty drum completely before placing next batch. Keep mixers and wheelbarrows clean. Do not deposit mortar upon or permit contact with ground.
 - B. Do not use anti-freeze compounds.
 - 3.2 CONSTRUCTION
 - A. Use dry masonry units. No frozen or wet units shall be used.
 - B. Discard cracked, chipped, and spalled masonry units.
 - C. Deliver mortar to mason's board at point of use within 45 minutes after mixing. Do not use mortar for back-sloped or other purposes. Obtain Architect's approval of sample replacement.
 - D. Prepare pointing mortar with as dry consistency as will produce mortar sufficiently plastic to be worked into joints.
 - E. Provide additional side wires or eye sections for adjustable wall ties as specified for multiwythe wall construction.
 - F. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - G. Provide additional side wires or eye sections for adjustable wall ties as specified for multiwythe wall construction.
 - H. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - I. Provide additional side wires or eye sections for adjustable wall ties as specified for multiwythe wall construction.
 - J. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - K. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - L. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - M. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - N. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - O. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - P. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - Q. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - R. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - S. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - T. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - U. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - V. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - W. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - X. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - Y. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - Z. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - 3.3 LACING AND BRACING
 - A. Lay masonry in full beds of mortar on mating surfaces, and properly jointed with other work. Buttering corners of joints, deep or excess furrowing of mortar joints is prohibited.
 - B. Fully bond external corners of concrete block. Where interior block partitions intersect other block walls or partitions, provide control joints with mortar raked and recessed.
 - C. Isolate masonry partitions from vertical structural framing members with control joints, with mortar raked back 1/4 inch.
 - D. Where non-bearing masonry partitions extend to underside of floor, roof deck or structural system, stop mortar stop 3/8 to 1/2 inch to allow for live load deflection. Fill gap with soft joint filler.
 - E. Where masonry walls are constructed, one wall can be stopped above ceiling to provide access joint.
 - 3.4 CONNECTION JOINTS
 - A. Protect control joints at locations indicated on the Drawings in all masonry walls. Do not run masonry reinforcement through contraction joints.
 - 3.5 TOLERANCES
 - A. Variation from Unit to Adjacent Unit: 1/32 inch maximum.
 - B. Variation from Plan of Wall: Maximum 1/4 inch in 10 feet, and 1/2 inch in 20 feet or more.
 - C. Variation from Plumb: +/- 1/4 inch in 10 feet, +/- 3/8 inch in 20 feet; +/- 1/2 inch maximum.
 - D. Variation in Level Coursing: +/- 1/4 inch in 10 feet; +/- 1/2 inch maximum.
 - E. Variation in Thickness: +/- 1/8 inch Maximum.
 - 3.6 HORIZONTAL JOINT REINFORCEMENT
 - A. Place horizontal joint reinforcement in the horizontal mortar beds at spacings as noted in the Drawings, except as specified herein.
 - B. For masonry below grade, space horizontal joint reinforcing at 8 inches vertically.
- END OF SECTION

- SECTION 042200
STRUCTURAL CONCRETE MASONRY
- PART 1 - GENERAL**
- 1.1 SECTION INCLUDES
 - A. Section includes structural concrete masonry shown on the Structural Drawings.
 - 1.2 RELATED SECTIONS
 - A. Section 013300 - Structural Submittals.
 - B. Section 014525 - Structural Testing/Inspection Agency Services.
 - C. Section 032000 - Concrete Reinforcement.
 - D. Section 033000 - Cast-in-Place Concrete.
 - E. Section 042000 - Unit Masonry.
 - 1.3 REFERENCES
 - A. AWS D02 - Specification for Masonry Structures.
 - B. ASTM A154 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - C. ASTM A1064 - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete Reinforcement.
 - D. ASTM C90 - Standard Specification for Load-Bearing Concrete Units.
 - E. ASTM C91 - Standard Specification for Mortar for Unit Masonry.
 - F. ASTM D109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens).
 - G. ASTM C144 - Standard Methods of Sampling and Testing Concrete Masonry Units.
 - H. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
 - I. ASTM C270 - Standard Specification for Mortar for Unit Masonry.
 - J. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
 - K. ASTM C476 - Standard Specification for Grout for Masonry.
 - L. ASTM C1019 - Standard Method of Sampling and Testing Grout.
 - M. ASTM D2000 - Standard Classification System for Rubber Products in Automotive Applications.
 - N. ASTM E447 - Standard Test Methods for Compressive Strength of Masonry Prisms.
 - O. TMS 402 - Building Code for Masonry Structures.
 - 1.4 SUBMITTALS
 - A. Submit material certificates signed by the material supplier for the following:
 1. Masonry unit material properties and test reports showing compliance with requirements. Include test methods and calculations establishing average net-area compressive strength of units.
 2. Integral water repellent used in CMUs.
 3. Cementitious materials. Include name of manufacturer, brand name, and type.
 4. Mortar admixtures.
 5. Prefabricated tie or mortar mixes. Include description of type and proportions of ingredients.
 6. Joint reinforcement.
 7. Anchors, ties, and metal accessories.
 - B. Mock Designs: For each type of mortar and grout, include description of type and proportions of ingredients.
 1. Include test reports for mortar mixes required to comply with property specifications or equal protection to those reports performed at least twelve months of the bid date of the project. Manufacturer shall certify that the masonry units supplied for the project shall be a minimum of 30 days old at time of shipment from manufacturer and shall be stored in accordance with the manufacturer's instructions.
 2. Include test reports, according to ASTM C1019, for grout mixes required to meet design strength and modulus of elasticity.
 3. Submit shop drawings for masonry reinforcement in accordance with Section 032000.
 4. Submit procedures for construction of masonry walls to be filled with coarse grout. Procedures should include high lift or low lift grouting as applicable to project.
 5. Manufacturer's Qualifications: Manufacturer shall have on file current certified test reports defined as those reports performed within twelve months of the bid date of the project. Manufacturer shall certify that the masonry units supplied for the project shall be a minimum of 30 days old at time of shipment from manufacturer and shall be stored in accordance with the manufacturer's instructions.
 - 1.5 QUALITY ASSURANCE
 - A. Structural Testing/Inspection Agency shall perform the following quality related items:
 1. Verify reinforcing steel for quantity, size, and location.
 2. Verify manufacturer's and installer's qualifications.
 3. Verify placement of coarse grout as indicated in high or low lift procedure.
 4. Verify compressive strength of concrete masonry units, mortar, coarse grout, or masonry prisms for each 5,000 sq. ft. of surface area as follows:
 - a. Three (3) concrete masonry units shall be tested in accordance with ASTM C1019.
 - b. Six (6) mortar cube specimens shall be tested, three (3) at 7-days and three (3) at 28-days, in accordance with ASTM C1019.
 - c. Three (3) coarse grout specimens shall be tested, two (2) at 7-days and two (2) at 28-days, in accordance with ASTM C1019.
 - d. In lieu of individual tests of masonry units, mortar, and grout, if directed by the Design Professional, perform one (1) prism test (which consists of three prisms) in accordance with ASTM 4427 Evaluation Services, Inc. Acceptance Criteria 308 for long term creep and be specifically approved for use in cracked concrete.
 - B. The Structural Testing/Inspection Agency shall provide special inspections as required by Chapter 17 of the building code as required by Specification 014525.
- PART 2 - PRODUCTS**
- 2.1 FABRICATION
 - A. Package, handle, and store materials to protect from elements and prevent contamination.
 - B. Fabricate materials to protect from elements and prevent contamination.
 - 2.2 CONCRETE MASONRY
 - A. Concrete masonry shall have the minimum compressive strength (Fm) specified on the Drawings. Concrete masonry shall have a minimum density of 125 pcf.
 - B. CONCRETE MASONRY UNITS
 - A. Provide masonry units that conform to ASTM C90.
 - B. Provide normal weight concrete masonry units.
 - C. Concrete masonry units shall have, as a minimum, the net area compressive strength listed in Table 1 of TMS 602 required for the specified Fm.
 - D. Provide standard units with face dimensions of 16" long x 8" high nominal, unless indicated otherwise.
 - E. Provide special shapes where indicated on the Drawings.
 - 2.3 MORTAR
 - A. Mortar shall be Type M or Type S Masonry cement in accordance with ASTM C270. Refer to Drawings for locations. For SDC D or greater, replace masonry cement with Portland Cement or Mortar Cement. Aggregate for Masonry Mortar shall be in accordance with ASTM C144.
 - B. Do not use admixtures that contain chlorides.
 - 2.4 COARSE GROUT
 - A. Coarse grout shall conform to ASTM C1064.
 - B. Coarse grout shall have the minimum compressive strength specified on the Drawings.
 - C. Coarse grout shall have a minimum compressive strength specified on the Drawings.
 - D. Mix grout to a consistency which has a slump between 8 and 10 inches.
 - E. Do not use admixtures that contain chlorides.
 - 2.5 WATER
 - A. Provide clean potable water free of deleterious substances.
 - 2.6 REINFORCEMENT
 - A. Horizontal and vertical reinforcing bars shall comply with Section 032000.
 - B. HORIZONTAL JOINT REINFORCEMENT shall be manufactured with longitudinal parallel, deformed side wires in accordance with ASTM A951 and of the size specified on the Drawings. Cross wires shall be No. 9 gauge spaced not more than 16" on center.
 - C. Provide as a minimum, one side wire for each face shell of hollow masonry units.
 - D. Provide additional side wires or eye sections for adjustable wall ties as specified for multiwythe wall construction.
 - E. Provide ladder type reinforcement.
 - F. Horizontal joint reinforcement shall be hot-dipped galvanized in accordance with ASTM A155, Class B-2.
 - G. Provide in lengths of not less than 10 feet. Provide prefabricated corner and tee steel reinforcement.
 - 2.7 CONNECTION JOINT MATERIAL
 - A. Connection joint material shall comply with ASTM D2000, M2AA-805 with rubber and shall have a minimum durometer hardness of 80.
- END OF SECTION

- SECTION 051000
STRUCTURAL STEEL
- PART 1 - GENERAL**
- 1.1 SECTION INCLUDES
 - A. Section includes fabrication and erection of structural steel indicated in the Contract Documents or otherwise required for proper completion of the work.
 - 1.2 RELATED SECTIONS
 - A. Section 013300 - Structural Submittals.
 - B. Section 014525 - Structural Testing/Inspection Agency Services.
 - C. Section 032000 - Concrete Reinforcement.
 - D. Section 033000 - Cast-in-Place Concrete.
 - E. Section 053000 - Metal Decking.
 - 1.3 REFERENCES
 - A. AISC - Code of Standard Practice for Steel Buildings and Bridges.
 - B. AISC 308-16 - Standard Specification for Structural Steel Buildings, 15th Edition.
 - C. RCSC - Specification for Structural Joints Using High-Strength Bolts.
 - D. AWS A5.1 - Specification for Carbon Steel Electrodes for Shield Metal Arc Welding.
 - E. AWS A5.5 - Specification for Low-Alloy Steel Covered Arc Welding Electrodes.
 - F. AWS A5.17 - Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding.
 - G. AWS A5.20 - Specification for Carbon Steel Electrodes for Flux Cored Arc Welding.
 - H. AWS D1.1 - Structural Welding Code.
 - I. ASTM A36 - Standard Specification for Structural Steel.
 - J. ASTM A133 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - K. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - L. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
 - M. ASTM F3125 - Standard Specification for High-Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi and 150 ksi Minimum Tensile Strength, Inch and Metric Dimensions.
 - N. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Tubing in Rounds and Shapes.
 - O. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
 - P. ASTM A563 - Standard Specifications for Carbon and Alloy Steel Nuts.
 - Q. ASTM A780 - Standard Practice for Repair of Damaged and Uncoated Areas of Cold-Chip Galvanized Coatings.
 - R. ASTM A992 - Standard Specification for Steel for Structural Shapes For Use in Building Framing.
 - S. ASTM F438 - Standard Specification for Hardened Steel Washers.
 - T. ASTM F844 - Standard Specification for Washers, Steel, Plain (Flat), Unhardened for General Use.
 - U. ASTM A563 - Standard Specifications for Carbon and Alloy (Flat).
 - V. SSPC - Steel Structures Painting Manual.
 - 1.4 SUBMITTALS
 - A. Contact Design Professional prior to detailing structural steel shop drawings.
 1. Reproduction of Structural Drawings for shop drawings is not permitted. Electronic drawing files will not be provided to the Contractor.
 2. Shop drawings shall include final elevations and types of fasteners, method of tightening fasteners, cambers, and the number, type and spacing of the headed shear connectors.
 3. For connections and elements designed by the contractor, submit shop drawings and calculations sealed by an engineer licensed in the project state.
 4. For record only, submit written welding procedures for each type of welded joint used in accordance with Appendix E of the AWS Structural Welding Code. Submit manufacturer certifications for welding consumables/materials.
 5. Maintain a construction office certification that high strength bolts supplied meet the specifications.
 6. In lieu of individual tests of masonry units, mortar, and grout, if directed by the Design Professional, perform one (1) prism test (which consists of three prisms) in accordance with ASTM 4427 Evaluation Services, Inc. Acceptance Criteria 308 for long term creep and be specifically approved for use in cracked concrete.
 - B. Maintain a construction office mill certification that the steel supplied meets the specifications.
 - C. Maintain a construction office certification that high strength bolts supplied meet the specifications.
 - D. In lieu of individual tests of masonry units, mortar, and grout, if directed by the Design Professional, perform one (1) prism test (which consists of three prisms) in accordance with ASTM 4427 Evaluation Services, Inc. Acceptance Criteria 308 for long term creep and be specifically approved for use in cracked concrete.
 - E. Submit certification that the fabricator meets the required qualifications. If fabricator must have an independent testing agency to inspect fabrication as required by these specifications, submit the name and qualifications of the independent testing agency.
 - F. For each approved fabricator that is exempt from Special Inspections of shop fabrications and implementation procedures in accordance with Section 1704.2 of the Building Code, submit Fabricator's Certificate of Compliance. Provide copies of fabricator's certification or building code evaluation services report and fabricator's quality control manual.
 - G. Submit certification that the fabricator meets the required qualifications.
 - H. Upon request, submit the erection sequence and procedures to be used by the steel erector.
 - I. Manufacturer's recommendations for expansion anchor installation.
 - J. Manufacturer's recommendations for adhesive anchor installation.
 - K. Qualification Data: For Erector, manufacturer, professional engineer, land surveyor and testing agencies.
 - 1.5 QUALITY ASSURANCE
 - A. Structural Testing/Inspection Agency shall perform the following quality related items:
 1. Anchor Bolts
 - a. Anchor bolt size, configuration, and embedment shall be verified prior to placement of concrete.
 2. Welded Connections
 - a. Inspection shall be in accordance with AWS Structural Welding Code.
 - b. Visually inspect all field welded connections. Visual inspection of welded joints include periodic examination of flux.
 - c. Ultrasonically inspect 100% of the complete penetration welds.
 - d. Review approved welding procedures. Verify that welding procedures are being adhered to during field welding.
 - e. Verify welder qualifications.
 3. Bolted Connections
 - a. Inspection and testing shall be in accordance with RCSC Specification for Structural Joints Using High-Strength Bolts.
 - b. Prior to visual and physical testing, tension testing using a calibration device must indicate tensions at least 5% in excess of the AISC minimum. Structural steel erector shall supply the tension calibration device.
 - c. Tension testing shall be a minimum of 10% of the bolted connections.
 - B. The Structural Testing/Inspection Agency shall provide special inspections as required by Chapter 17 of the building code as required by Specification 014525.
- FABRICATOR'S QUALIFICATIONS:**
- A. Steel fabricator shall be certified by the American Institute of Steel Construction (AISC) Quality Certification Program for Commercial Steel Buildings (QCP).
 - B. Fabricator not certified by the AISC Quality Certification Program shall have fabrication procedures and fabricated steel tested and inspected by the Materials Testing and Special Inspection Agency contracted by the Owner. Payment of these tests and inspections shall be by the fabricator. Tests and inspections shall be performed by AWS Certified Welding Inspectors. Prior to delivery of structural steel to the project, submit copies of the test reports to the Design Professional. The purpose of this inspection is to enable the testing/inspection agency to verify that, in general, the steel is being fabricated in accordance with the Contract Documents. A minimum of 5 trip per lot is recommended. The first trip should be scheduled at the first requirement for inspections as required by IBC Chapter 17. Contact Design Professional prior to initial inspection. Tests and inspections shall include the following:
 1. Examine mill test reports and verify that material being used is the same as the mill test reports.
 2. Review the fabricator's written welding procedures. Verify that the fabricator's welding procedures are being followed. Verify that welders are certified with current papers and that they demonstrate proper techniques. Observe high strength bolting and nut tightening procedures. Verify that shop installation of high strength bolts conform to AISC specifications.
 3. Examine joint preparation for complete penetration joints. Ultrasonically inspect 100% of the complete penetration joints.
 4. Examine fillet welds for proper size, profile, throat, porosity and end returns.
 5. Examine steel members for lamellar tearing. Spot check dimensions and hole sizes.
 6. Examine bolted areas for erectors.
- ERECTOR'S QUALIFICATION:**
- A. Erector shall be experienced in erecting structural systems similar in complexity to this project as evidenced by 10 completed projects.
 - B. Erector shall have a minimum of 5 years' experience in the erection of structural steel or is an AISC Certified Advanced Steel Erector.
- WELDER'S QUALIFICATIONS:** Qualify procedures and personnel in accordance with AWS D1.1.
- 1.8 STORAGE**
- A. Store materials off ground to permit easy access for inspection and identification.
 - B. Store steel members and packaged items in a manner that provides protection against contact with deleterious materials.
- PART 2 - PRODUCTS**
- 2.1 ANCHOR ROD
 - A. Anchor rods shall conform to ASTM F1554, Grade 36 (unless noted otherwise on drawings) and shall be a headed rod or threaded rod with a double heavy hexagonal nut at the bottom of the threaded rod, Grade A563A, unless noted otherwise.
 - B. Provide two heavy hexagonal nuts at the base of the anchor rod conforming to ASTM A563 Grade C with one nut and one washer being conforming to ASTM F844. Provide one heavy hexagonal nut at the top with plate washer listed below.
 - C. Provide 3/8-inch-thick plate washers (3-inch x 3-inch) in lieu of top steel washer on base plates with oversized holes conforming to ASTM A563, unless noted otherwise on drawings.
 - 2.2 ROLLED STEEL WIDE FLANGE CHANNEL AND WT SHAPES
 - A. Rolled steel wide flange channels and WT shapes shall conform to ASTM A992.
 - 2.3 PLATES, ANGLES AND BARS
 - A. Plates, angles and bars shall conform to ASTM A36.
 - 2.4 ROUND STRUCTURAL STEEL TUBING
 - A. Round structural steel tubing shall conform to ASTM 500, Grade C, 46 ksi minimum yield strength.
 - 2.5 RECTANGULAR STRUCTURAL STEEL TUBING
 - A. Rectangular structural steel tubing shall conform to ASTM A500, Grade C, 50 ksi minimum yield strength.
 - 2.6 HIGH-STRENGTH FASTENERS
 - A. High-strength bolts shall conform to ASTM F3125 Type 1, 120 ksi as noted on the Structural Drawings.
 - B. Provide 3/4-inch minimum diameter bolts, unless noted otherwise.
 - C. Hardened steel washers shall conform to ASTM F438.
 - D. Splice-type tension control bolts, plain hardened washers and suitable nuts are an acceptable alternate design to comply with the specifications.
 - E. Do not use load indicating washers.
- END OF SECTION

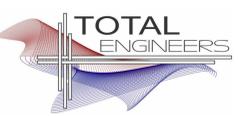
- SECTION 052000
PAINTS AND COATINGS
- PART 1 - GENERAL**
- 1.1 SECTION INCLUDES
 - A. Section includes fabrication and erection of structural steel indicated in the Contract Documents or otherwise required for proper completion of the work.
 - 1.2 RELATED SECTIONS
 - A. Section 013300 - Structural Submittals.
 - B. Section 014525 - Structural Testing/Inspection Agency Services.
 - C. Section 032000 - Concrete Reinforcement.
 - D. Section 033000 - Cast-in-Place Concrete.
 - E. Section 053000 - Metal Decking.
 - 1.3 REFERENCES
 - A. AISC - Code of Standard Practice for Steel Buildings and Bridges.
 - B. AISC 308-16 - Standard Specification for Structural Steel Buildings, 15th Edition.
 - C. RCSC - Specification for Structural Joints Using High-Strength Bolts.
 - D. AWS A5.1 - Specification for Carbon Steel Electrodes for Shield Metal Arc Welding.
 - E. AWS A5.5 - Specification for Low-Alloy Steel Covered Arc Welding Electrodes.
 - F. AWS A5.17 - Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding.
 - G. AWS A5.20 - Specification for Carbon Steel Electrodes for Flux Cored Arc Welding.
 - H. AWS D1.1 - Structural Welding Code.
 - I. ASTM A36 - Standard Specification for Structural Steel.
 - J. ASTM A133 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - K. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - L. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
 - M. ASTM F3125 - Standard Specification for High-Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi and 150 ksi Minimum Tensile Strength, Inch and Metric Dimensions.
 - N. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Tubing in Rounds and Shapes

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ALPHA BLDG
SET
08-14-2025

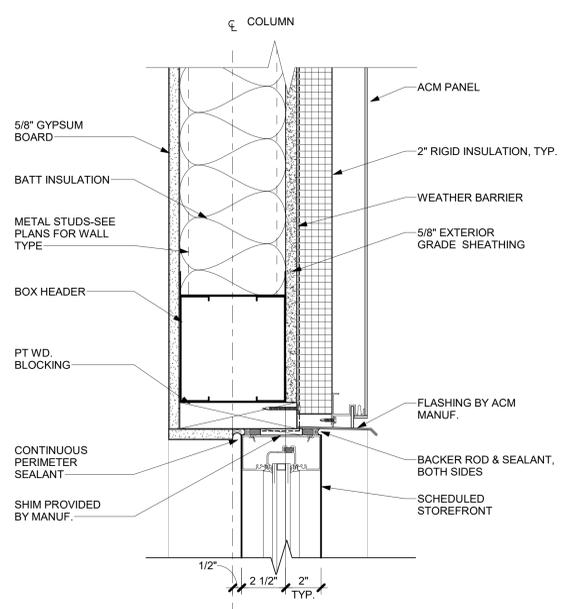


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931 MONROE DRIVE
SUITE A102-491
ATLANTA, GA 30308
(678) 664-8051
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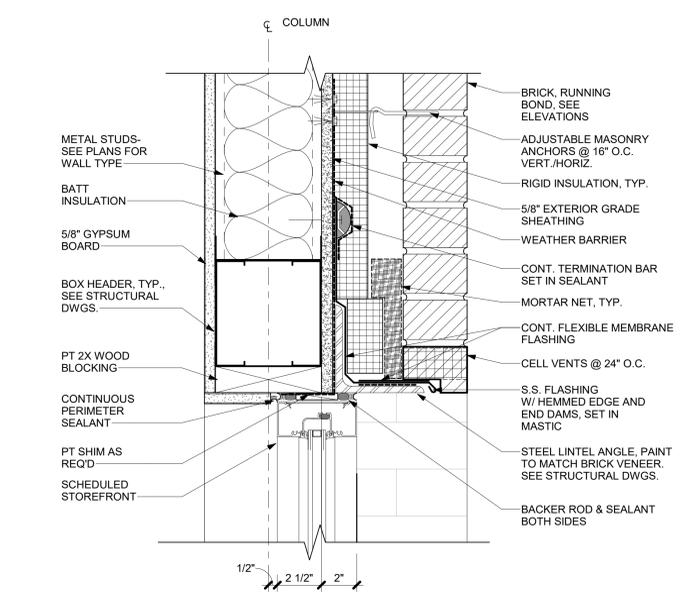
COVINGTON-NEWTON COUNTY 911 CENTER

CITY OF COVINGTON and NEWTON COUNTY

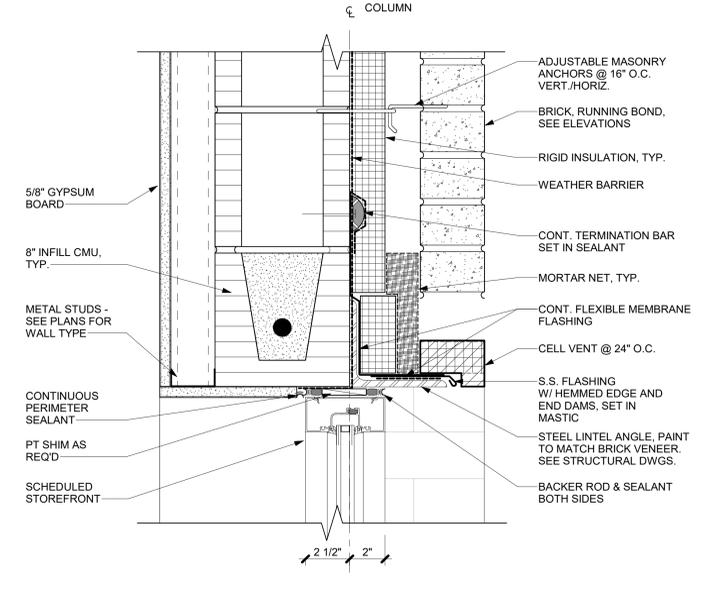
10796 HWY 26
COVINGTON, GA 30014



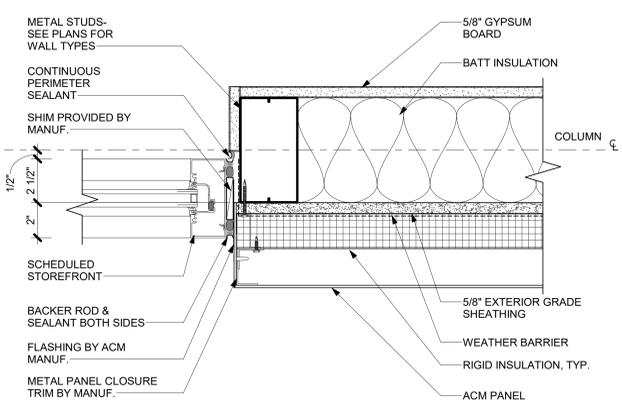
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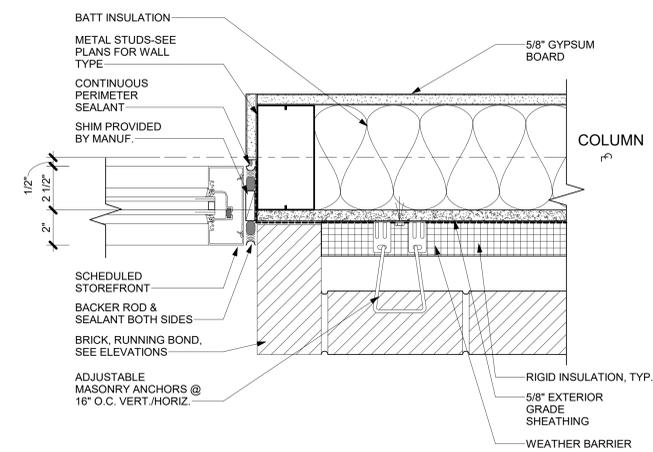
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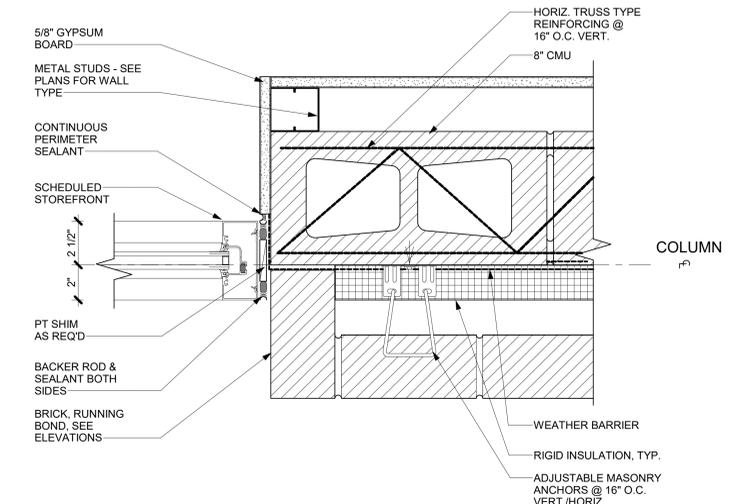
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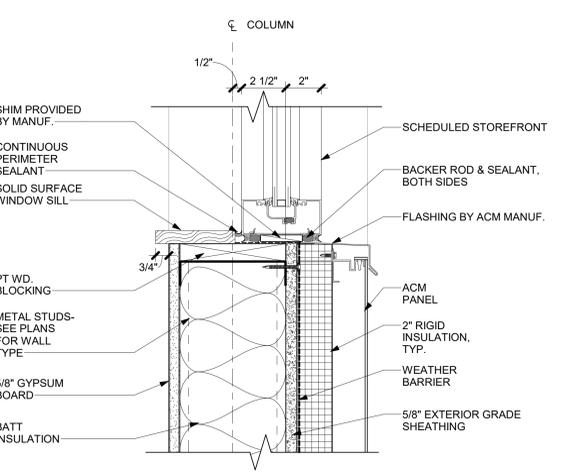
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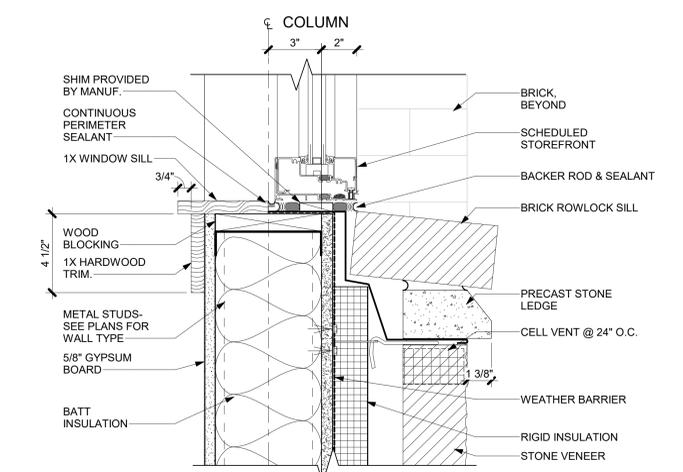
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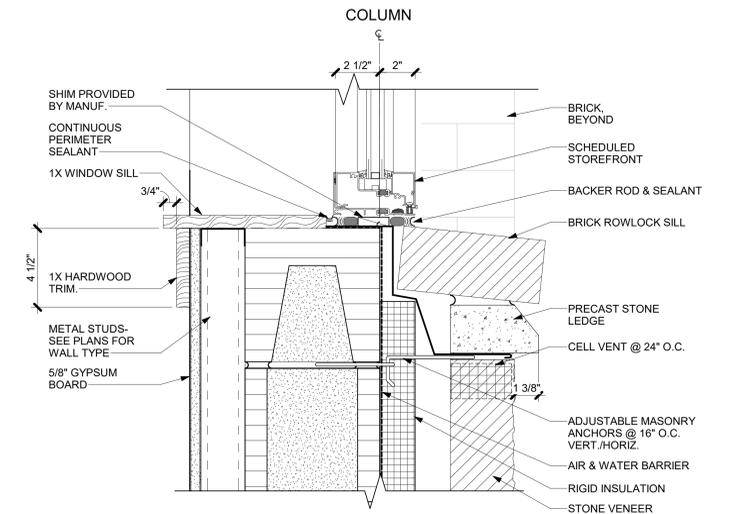
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7 EXT SF-ACM-SILL
SCALE: 3" = 1'-0"



4 EXT SF-BRICK W/METAL STUDS-SILL
SCALE: 3" = 1'-0"



1 EXT SF-BRICK/CMU-SILL
SCALE: 3" = 1'-0"

PRINT RECORD

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04/30/2025	PERMIT SET	

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Checked By: Checker
Date: 02/07/2025
Job No.: 24029

Sheet Title: WINDOW DETAILS

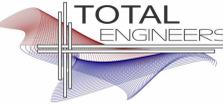
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ALPHA BLDG SET 08-14-2025



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COVINGTON, GA 30014

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- 1.02 SUMMARY
 - A. This Section includes commercial door hardware for the following:
 - Swinging doors.
 - B. Door hardware includes, but is not necessarily limited to, the following:
 - Mechanical door hardware.
 - Electromechanical door hardware.
 - Cylinders specified for doors in other sections.
 - C. Related Sections:
 - Division 08 Section "Hollow Metal Doors and Frames".
 - Division 08 Section "Flush Wood Doors".
 - Division 08 Section "Bullet Resistant Doors and Frame".
 - Division 08 Section "Aluminum-Framed Entrances and Storefronts".
 - D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - ICC/IBC - International Building Code.
 - NFPA 70 - National Electrical Code.
 - NFPA 80 - Fire Doors and Windows.
 - NFPA 101 - Life Safety Code.
 - NFPA 105 - Installation of Smoke Door Assemblies.
 - State Building Codes, Local Amendments.
 - E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any updated reference to a standard shall be interpreted as referring to the latest edition of that standard:
 - ANSI/BHMA Certified Product Standards - A156 Series.
 - UL10C - Positive Pressure Fire Test of Door Assemblies.
 - ANSIUL 294 - Access Control System Units.
 - UL 305 - Panic Hardware.
 - ANSUL 437 - Key Locks.

1.03 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - Format: Comply with scheduling sequence and vertical format in DH's "Sequence and Format for the Hardware Schedule."
 - Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 - Content: Include the following information:
 - Type, style, function, size, label, hand, and finish of each door hardware item.
 - Manufacturer of each item.
 - Fasteners and other pertinent information.
 - Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - Explanation of abbreviations, symbols, and codes contained in schedule.
 - Mounting locations for door hardware.
 - Door and frame sizes and materials.
 - Warranty information for each product.
 - Submit Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
 - Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
 - Elevation diagram of each point unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
 - Complete (risers, point-to-point) access control system block wiring diagrams.
 - Wiring instructions for each electronic component scheduled herein.
 - Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the Owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
 - Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.04 CLOSEOUT SUBMITTALS

- A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.
- B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.
- 1.05 QUALITY ASSURANCE
 - A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
 - B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
 - C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
 - D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehouse facility in Project vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
 - E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 - Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
 - F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.
 - G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - Function of building, purpose of each area and degree of security required.
 - Plans for existing and future key system expansion.
 - Requirements for key control storage and software.
 - Installation of permanent keys, cylinder cores and software.
 - Address and requirements for delivery of keys.
 - H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractor's personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - Review sequences of operation narratives for each unique access controlled opening.
 - Review and finalize construction schedule and verify availability of materials.
 - Review the required inspecting, testing, documentation, and demonstration procedures.
 - I. At completion of installation, provide written communication that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".
- 1.07 COORDINATION
 - A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
 - B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
 - C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.
- 1.08 WARRANTY
 - A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
 - B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - Structural failures including excessive deflection, cracking, or breakage.
 - Faulty operation of the hardware.
 - Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - Electrical component defects and failures within the systems operation.
 - C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

PART 2 SCHEDULED PRODUCTS

2.01 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
 - Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- C. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.
- 2.02 MATERIALS
 - A. Hardware shall not have any visible manufacturer names on exposed materials, except cylinders, when the door is in a closed position.
- 2.03 BUTT HINGES
 - A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
 - Quantity: Provide the following hinge quantity:
 - Two Hinges: For doors with heights up to 80 inches (1524 mm).
 - Three Hinges: For doors with heights 81 to 90 inches (2286 mm).
 - Four Hinges: For doors with heights 91 to 120 inches (3048 mm).
 - For doors with heights more than 120 inches (3048 mm), provide 4 hinges, plus 1 hinge for every 30 inches (762 mm) of door height greater than 120 inches.
 - Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - Widths up to 3"0": 4-1/2" standard or heavy weight as specified.
 - Sizes from 3-11" to 4-0": 5" standard or heavy weight as specified.
 - Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 - B. Hinge Options: Comply with the following:
 - Non-removable: With the application of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed, for all out-swinging lockable doors.
 - C. Manufacturers:
 - McKinney (MK) - TAA/TA Series, 5-knuckle.

2.04 CONTINUOUS HINGES

- A. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 continuous geared hinge, with minimum 0.120-inch thick extruded 6063-T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches (101.6 mm). Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
 - Manufacturers:
 - Pemko (PE)
- B. Pin and Barrel Continuous Hinges: ANSI/BHMA A156.26 Grade 1-600 pin and barrel continuous hinges with minimum 14 gauge Type 304 stainless steel hinge leaves, concealed stainless pin, and twin self-lubricated nylon bearings at each knuckle separation. Factory trim hinges to suit door height and prepare for electrical cut-outs.
 - Manufacturers:
 - Markar Products; ASSA ABL0Y Architectural Door Accessories (MR)
 - Pemko (PE)

2.05 POWER TRANSFER DEVICES

- A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets with a 1-year warranty. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
 - Manufacturers:
 - McKinney (MK) - OC (# wires) Option.
- B. Electrified Quick Connect Continuous Geared Transfer Hinges: Provide electrified transfer continuous geared hinges with a removable service panel cutout accessible without de-mounting door from the frame. Furnish with Molex™ standardized plug connectors with sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
 - Manufacturers:
 - Pemko (PE) - SER-OC (# wires) Option.
- C. Concealed Quick Connect Electric Power Transfers: Provide concealed wiring pathway housing mortised into the door and frame for low voltage electrified door hardware. Furnish with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connectors are not acceptable.
 - Manufacturers:
 - McKinney (MK) - Electrical Connector Kit - QC-R001.
- D. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.
 - Provide one each of the following tools as part of the base bid contract:
 - McKinney (MK) - Connector Hand Tool: QC-R003.

2.06 DOOR OPERATING TRIM

- A. Door Push Plates and Pulls: ANSI/BHMA A156.6 door pushes and pull units of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.
 - Push/Pull Plates: Minimum .050 inch (1.27 mm) thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
 - Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2-1/2 inches from face of door unless otherwise indicated.
 - Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
 - Pulls, where applicable, shall be provided with a 10" clearance from the finished floor on the push side to accommodate wheelchair accessibility.
- B. Fasteners: Provide manufacturer's designated fasteners as indicated in the Hardware Sets. When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
- C. Manufacturers:
 - Rockwood (RO).

2.07 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
 - Threaded mortise cylinders with rings and cam to suit hardware application.
 - Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
 - Tubular deadlocks and other auxiliary locks.
 - Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 - Keyway: Manufacturer's Standard.
- C. Large Format Interchangeable Cores: Provide removable cores (LFIC) as specified, core insert, removable by use of a special key, and for use with only the core manufacturer's cylinder and door hardware.
- D. Patented Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders employing a utility patented and restricted keying requiring the use of a patented key. Cylinders are to be protected from unauthorized manufacture and distribution by manufacturer's United States patents. Cylinders are to be factory keyed with owner having the ability for on-site original key cutting.
 - Patented key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.
 - Manufacturers:
 - Corbin Russwin (RU) - Access 3 AP.
 - Sargent (SA) - Degree DG1.
- E. Keying System: Each type of lock and cylinders to be factory keyed.
 - Supplier to provide keying schedule, "Keying Schedule" to define and document keying system instructions and requirements.
 - Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 - New System: Key locks to a new key system as directed by the Owner.
- F. Key Quantity: Provide the following minimum number of keys:
 - Change Keys per Cylinder: Two (2)
 - Master Keys (per Master Key Level/Group): Five (5)
 - Construction Keys (where required): Ten (10)
 - Construction Control Keys (where required): Two (2)
 - Permanent Control Keys (where required): Two (2)
- G. Construction Keying: Provide temporary key construction cores.
- H. Key Registration List (Bitting List):
 - Provide keying schedule to Owner's representative in the proper format for importing into key control software.
 - Provide transcript list in writing or electronic file as directed by the Owner.

2.08 KEY CONTROL

- A. Key Control Cabinet: Provide a key control system including envelopes, labels, and tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet. Key control cabinet shall have expansion capacity of 150% of the number of locks required for the project.
 - Manufacturers:
 - Lund Equipment (LU).
 - MMF Industries (MM).
 - Telkec (TK).

2.09 MORTISE LOCKS AND LATCHING DEVICES

- A. Mortise Locksets, Grade 1 (Heavy Duty): Provide ANSI/BHMA A156.13, Series 1000, Operational Grade 1 Certified Products Directory (CPD) listed mortise locksets. Listed manufacturers shall meet all functions and features as specified herein.
 - Electromechanical locksets shall have the following functions and features:
 - Universal Molex plug-in connectors that have standardized color-coded wiring and are available in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
 - EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
 - Options to be available for request-to-exit or enter signaling, latchbolt and deadbolt monitoring.
 - Two-year limited warranty on electrified functions.
- B. Manufacturers:
 - Corbin Russwin Hardware (RU) - ML2000 Series.
 - Sargent Manufacturing (SA) - 8200 Series.

2.10 CYLINDRICAL LOCKS AND LATCHING DEVICES

- A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed cylindrical locksets. Listed manufacturers shall meet all functions and features as specified herein.
 - Provide locksets with functions and features as follows:
 - Meets ANSI/BHMA A156.41 for single motion egress.
 - Where required by code, provide knurling or abrasive coating on all levers leading to hazardous areas.
 - Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies with levers that meet A117.1 Accessibility Code.
 - Exceeds ANSI/BHMA A156.2 requirements by 2.8 times for 3,100 inch (78740 mm)-lb. abusive locked lever torque with no entry while maintaining egress.
 - Exceeds ANSI/BHMA A156.2 requirements by 8 times for 1,600 lbs. offset lever pull with no entry for protection against attacks.
 - Exceeds ANSI/BHMA A156.3 requirements by 2 times for latch retraction with 100 lb. preload while maintaining operation in warped doors.
 - Exceeds ANSI/BHMA A156.3 requirements by 20 times for no access with minimum 100 vertical impacts for protection against vandalism attempts.
 - Independent return springs allow lock to exceed ANSI/BHMA A156.2 Grade 1 cycle requirements without lever sag.
 - Status indicators (red, green, blue, or black) are required on both sides of doors as specified with high visibility red/green or red/white icons to display locked or unlocked state in the rose.
 - Ten-year limited warranty for mechanical functions.
 - Electromechanical locksets shall have the following functions and features:
 - Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
 - EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
 - Options to be available for request-to-exit or enter signaling, latchbolt and deadbolt monitoring.
 - Two-year limited warranty on electrified functions.
- B. Manufacturers:
 - Corbin Russwin Hardware (RU) - CLX3300 Series.
 - Sargent Manufacturing (SA) - 10X Line.

2.11 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bot, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and the following:
 - Flat-Lip Strikes: For locks with three-piece installation latchbolts, as recommended by manufacturer.
 - Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 - Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 - Double-lipped Strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
 - Strikes for Mortise Locks and Latches: BHMA A156.13.
 - Strikes for Bored Locks and Latches: BHMA A156.2.
 - Strikes for Auxiliary Deadlocks: BHMA A156.36.
 - Dustproof Strikes: BHMA A156.16.

2.12 CONVENTIONAL EXIT DEVICES

- A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:
 - Exit devices shall have a five-year warranty.
 - At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
 - Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
 - Except on fire rated doors, provide exit devices with hex key permitting device to hold the pushbar and latch in a retracted position. Optional keyed cylinder dogging devices must fit flat against the door face with no gap that could dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
 - Flush End Caps: Provide flush end caps made of architectural metal in the same finish as the devices as in the Hardware Sets. Plastic end caps will not be acceptable.

- 7. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
- 8. Vertical Rod Exit Devices: Where surfaces or concealed vertical rod exit devices are used at interior openings, provide as less bottom rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.
- 9. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
- 10. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
- 11. Rail Staging: Provide exit device rails factory sized for proper door width application.
- 12. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 Certified Products Directory (CPD) listed exit devices. Listed manufacturers shall meet all functions and features as specified herein.
 - Electromechanical exit devices shall have the following functions and features:
 - Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
 - EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
 - Options to be available for request-to-exit or enter signaling, latchbolt and touchbar monitoring.
 - Field configurable electrified trim to fail-safe or fail-secure that operates from 12-24VDC.
 - Five-year limited warranty for electromechanical features.
- 2. Manufacturers:
 - Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
 - Sargent Manufacturing (SA) - 80 Series.

2.13 SURFACE DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
 - General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full size covers.
 - Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 - Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICCA117.1.
 - Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 - Closers shall not be installed on exterior or corridor side of doors, where possible install closers on door for optimum aesthetics.
 - Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6, and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.
 - Large body cast iron surface mounted door closers shall have a 30-year warranty.
 - Manufacturers:
 - Corbin Russwin Hardware (RU) - DC8000 Series.
 - Norton Raxson (NO) - 9500 Series.
 - Sargent Manufacturing (SA) - 281 Series.
- C. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, institutional grade door closers with complete spring power adjustment, sizes 1 thru 6, and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.
 - Manufacturers:
 - Corbin Russwin Hardware (RU) - DC6000 Series.
 - Norton Raxson (NO) - 8500 Series.
 - Sargent Manufacturing (SA) - 1431 Series.

2.14 OVERHEAD CONCEALED DOOR CLOSERS

- A. Door Closers, Overhead Concealed (Narrow Profile): ANSI/BHMA 156.4, Grade 1 Certified Products Directory (CPD) listed overhead concealed door closers designed for narrow profile frames and doors. Listed manufacturers shall meet all functions and features as specified herein.
 - Provide overhead concealed doors closers with functions and features as follows:
 - Meets UL and CUL Standard 10C Positive Pressure, Fire Test of Door Assemblies and A117.1 Accessibility Code.
 - Single acting, offset hung with a cast iron body.
 - Fully concealed body in the frame head and track assembly in the door.
 - Separate and independent valves for closing speed and backcheck adjustments.
 - Five-year limited warranty.
- 2. Manufacturers:
 - Norton Raxson (RF) - 91DCP Series.

2.15 ARCHITECTURAL TRIM

- A. Door Protective Trim
 - General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
 - Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
 - Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
 - Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:
 - Stainless Steel: 300 grade, .050-inch thick.
 - Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
 - Manufacturers:
 - Rockwood (RO).

2.16 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
 - Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
- 1. Manufacturers:
 - Rockwood (RO).

2.17 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
 - Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 - Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- B. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 - Pemko (PE).

2.18 ELECTRONIC ACCESSORIES

- A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-locks into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Fire Alarm Magnet installation on steel doors with flush top channels.
 - Manufacturers:
 - Securtron (SU) - DPS Series.
- B. Intelligent Switching Power Supplies: Provide the least number of power supplies at the appropriate amperage level sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
 - Power supplies shall meet all functions and features as specified herein.
 - UL listed dual voltage 12 or 24 VDC field selectable continuous output.
 - Dedicated fast charger to prolong battery life with low battery cutoff to protect batteries from deep discharge.
 - Enhanced surge immunity for input/output protection.
 - Separate, dedicated battery charging circuit to keep locks cooler.
 - Dual-color LED visual notification to prevent applying incorrect voltages to the power supply.
 - Instant auto-switch to battery on AC loss.
 - Expandable up to 16 outputs in the standard enclosure

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A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.

3.05 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.06 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame. B. Clean adjacent surfaces soiled by door hardware installation. C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.07 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.08 DOOR HARDWARE SETS

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

1. Quantities listed are for each pair of doors, or for each single door. 2. The supplier is responsible for handling and sizing all products. 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

B. Manufacturer's Abbreviations:

Table with 2 columns: Abbreviation and Name. Includes MK - MCKINNEY, PE - PEMKO, MR - MARKAR, SU - SECURITRON, SA - SARGENT, RO - ROCKWOOD, RF - RIXSON.

HARDWARE SETS

SET: 1.0

DOORS: 127A

DESCRIPTION: EXTERIOR - ALUM - CORRIDOR (CARD READER)

Hardware schedule table for SET: 1.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, RIM EXIT DEVICE, CORE, CONCEALED CLOSER, ELECTROLYNX HARNESS DOOR, etc.

NOTES:

*CONTACT FACTORY FOR SPECIAL TEMPLATING AND PRICING IF PRODUCTS OTHER THAN 3/4" OFFSET PIVOTS OR 4-1/2" X 4-1/2" BUTT HINGES ARE USED TO HANG DOOR.

**VERIFY LOCATION WITH THE DESIGN PROFESSIONAL BEFORE INSTALLING, DO NOT INSTALL IN ANY LOCATION WHERE DOOR STOP COULD BE A TRIP HAZARD.

* BALANCE OF HARDWARE: THRESHOLD, DOOR SWEEP AND PERIMETER GASKET FURNISHED BY THE ALUMINUM STOREFRONT DOOR AND FRAME MANUFACTURER.

* COORDINATE ALL HARDWARE WITH THE ALUMINUM STOREFRONT DOOR AND FRAME MANUFACTURER/SUPPLIER.

* VERIFY FINISH OF HARDWARE.

* COORDINATE WITH ELECTRICAL, ALARM AND SECURITY CONTRACTORS.

* ACCESS CONTROL PANEL, SECURITY MANAGEMENT SOFTWARE AND CREDENTIALS BY SECURITY CONTRACTOR.

OPERATIONAL NARRATIVE: 1. DOOR NORMALLY CLOSED AND SECURE.

2. AUTHORIZED ACCESS BY CARD READER RETRACTING EXIT DEVICE LATCH FOR PREDETERMINED TIME LIMIT. EXIT DEVICE LATCH CAN BE ELECTRICALLY HELD RETRACTED FOR OPEN ACCESS.

3. EGRESS FREE FOR IMMEDIATE EXIT.

4. REX SWITCH IN PUSH RAIL ALLOWS AUTHORIZED EXIT WITHOUT ALARM CONDITION.

5. DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

6. EXIT DEVICE LATCH RELEASES (FAIL SECURE) IN EVENT OF POWER LOSS. KEYED CYLINDER OVERRIDE FOR EMERGENCY ACCESS.

SET: 2.0

DOORS: 155A

DESCRIPTION: EXTERIOR - ALUM - VESTIBULE

Hardware schedule table for SET: 2.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, RIM EXIT DEVICE, CORE, CONCEALED CLOSER, DOOR STOP, DOOR POSITION SWITCH.

NOTES:

*CONTACT FACTORY FOR SPECIAL TEMPLATING AND PRICING IF PRODUCTS OTHER THAN 3/4" OFFSET PIVOTS OR 4-1/2" X 4-1/2" BUTT HINGES ARE USED TO HANG DOOR.

**VERIFY LOCATION WITH THE DESIGN PROFESSIONAL BEFORE INSTALLING, DO NOT INSTALL IN ANY LOCATION WHERE DOOR STOP COULD BE A TRIP HAZARD.

* BALANCE OF HARDWARE: THRESHOLD, DOOR SWEEP AND PERIMETER GASKET FURNISHED BY THE ALUMINUM STOREFRONT DOOR AND FRAME MANUFACTURER.

* COORDINATE ALL HARDWARE WITH THE ALUMINUM STOREFRONT DOOR AND FRAME MANUFACTURER/SUPPLIER.

* EXIT DEVICE CAN BE DOGGED DOWN FOR PUSH / PULL OPERATION.

* DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

* VERIFY FINISH OF HARDWARE.

SET: 3.0

DOORS: 116A, 118A

DESCRIPTION: EXTERIOR - CORRIDOR, DOGS (LEVEL 4 BALLISTIC; CARD READER)

Hardware schedule table for SET: 3.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, ELECTRIC POWER TRANSFER, RIM EXIT DEVICE, CORE, SURFACE CLOSER, KICK PLATE, RAIN GUARD, GASKETING, SWEEP, THRESHOLD, ELECTROLYNX HARNESS DOOR, etc.

NOTES:

* COORDINATE ALL HARDWARE WITH THE BALLISTIC DOOR AND FRAME MANUFACTURER AND ADD/MODIFY/DELETE DOOR HARDWARE AS/IF NEEDED.

* COORDINATE WITH ELECTRICAL, ALARM AND SECURITY CONTRACTORS.

* ACCESS CONTROL PANEL, SECURITY MANAGEMENT SOFTWARE AND CREDENTIALS BY SECURITY CONTRACTOR.

OPERATIONAL NARRATIVE (LOCAL AHJ SHOULD ALWAYS BE CONSULTED AND SIGN OFF ON THE OPERATION):

1. DOOR NORMALLY CLOSED AND SECURE.

2. AUTHORIZED ACCESS BY CARD READER RETRACTING EXIT DEVICE LATCH FOR PREDETERMINED TIME LIMIT.

- 3. EGRESS FREE FOR IMMEDIATE EXIT. 4. REX SWITCH IN PUSH RAIL ALLOWS AUTHORIZED EXIT WITHOUT ALARM CONDITION. 5. DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS. 6. EXIT DEVICE LATCH RELEASES (FAIL SECURE) IN EVENT OF POWER LOSS. KEYED CYLINDER OVERRIDE FOR EMERGENCY ACCESS.

SET: 4.0

DOORS: 114

DESCRIPTION: EXTERIOR - ELECTRICAL (LEVEL 4 BALLISTIC; CARD READER)

Hardware schedule table for SET: 4.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, ELECTRIC POWER TRANSFER, RIM EXIT DEVICE, CORE, SURFACE CLOSER, KICK PLATE, RAIN GUARD, GASKETING, SWEEP, THRESHOLD, ELECTROLYNX HARNESS DOOR, etc.

NOTES:

* COORDINATE ALL HARDWARE WITH THE BALLISTIC DOOR AND FRAME MANUFACTURER AND ADD/MODIFY/DELETE DOOR HARDWARE AS/IF NEEDED.

* KNURLING: WHERE REQUIRED BY LOCAL CODE PROVIDE KNURLING OR ABRASIVE COATING TO ALL LEVERS ON DOORS LEADING TO HAZARDOUS AREAS SUCH AS ELECTRICAL ROOMS, MECHANICAL ROOMS, BOILER AND FURNACE ROOMS, JANITOR CLOSETS, AND AS OTHERWISE REQUIRED.

* COORDINATE WITH ELECTRICAL, ALARM AND SECURITY CONTRACTORS.

* ACCESS CONTROL PANEL, SECURITY MANAGEMENT SOFTWARE AND CREDENTIALS BY SECURITY CONTRACTOR.

OPERATIONAL NARRATIVE (LOCAL AHJ SHOULD ALWAYS BE CONSULTED AND SIGN OFF ON THE OPERATION):

1. DOOR NORMALLY CLOSED AND SECURE.

2. AUTHORIZED ACCESS BY CARD READER RETRACTING EXIT DEVICE LATCH FOR PREDETERMINED TIME LIMIT.

3. EGRESS FREE FOR IMMEDIATE EXIT.

4. REX SWITCH IN PUSH RAIL ALLOWS AUTHORIZED EXIT WITHOUT ALARM CONDITION.

5. DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

6. EXIT DEVICE LATCH RELEASES (FAIL SECURE) IN EVENT OF POWER LOSS. KEYED CYLINDER OVERRIDE FOR EMERGENCY ACCESS.

SET: 5.0

DOORS: 135

DESCRIPTION: EXTERIOR - ELECTRICAL (CARD READER)

Hardware schedule table for SET: 5.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, RIM EXIT DEVICE, SURFACE CLOSER, KICK PLATE, RAIN GUARD, GASKETING, SWEEP, THRESHOLD, ELECTROLYNX HARNESS DOOR, etc.

NOTES:

* KNURLING: WHERE REQUIRED BY LOCAL CODE PROVIDE KNURLING OR ABRASIVE COATING TO ALL LEVERS ON DOORS LEADING TO HAZARDOUS AREAS SUCH AS ELECTRICAL ROOMS, MECHANICAL ROOMS, BOILER AND FURNACE ROOMS, JANITOR CLOSETS, AND AS OTHERWISE REQUIRED.

* COORDINATE WITH ELECTRICAL, ALARM AND SECURITY CONTRACTORS.

* ACCESS CONTROL PANEL, SECURITY MANAGEMENT SOFTWARE AND CREDENTIALS BY SECURITY CONTRACTOR.

OPERATIONAL NARRATIVE (LOCAL AHJ SHOULD ALWAYS BE CONSULTED AND SIGN OFF ON THE OPERATION):

1. DOOR NORMALLY CLOSED AND SECURE.

2. AUTHORIZED ACCESS BY CARD READER RETRACTING EXIT DEVICE LATCH FOR PREDETERMINED TIME LIMIT.

3. EGRESS FREE FOR IMMEDIATE EXIT.

4. REX SWITCH IN PUSH RAIL ALLOWS AUTHORIZED EXIT WITHOUT ALARM CONDITION.

5. DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

6. EXIT DEVICE LATCH RELEASES (FAIL SECURE) IN EVENT OF POWER LOSS. KEYED CYLINDER OVERRIDE FOR EMERGENCY ACCESS.

SET: 6.0

DOORS: 127

DESCRIPTION: EXTERIOR - TRAINING ROOM

Hardware schedule table for SET: 6.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, RIM EXIT DEVICE, SURFACE CLOSER, KICK PLATE, RAIN GUARD, GASKETING, SWEEP, THRESHOLD, DOOR POSITION SWITCH.

NOTES:

* DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

SET: 7.0

DOORS: 126A

DESCRIPTION: EXTERIOR - BREAKROOM (LEVEL 4 BALLISTIC; CARD READER)

Hardware schedule table for SET: 7.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, ELECTRIC POWER TRANSFER, ELECTRIFIED MORTISE LOCK, CORE, SURFACE CLOSER, KICK PLATE, RAIN GUARD, GASKETING, SWEEP, THRESHOLD, ELECTROLYNX HARNESS DOOR, etc.

NOTES:

* COORDINATE ALL HARDWARE WITH THE BALLISTIC DOOR AND FRAME MANUFACTURER AND ADD/MODIFY/DELETE DOOR HARDWARE AS/IF NEEDED.

* COORDINATE WITH ELECTRICAL, ALARM AND SECURITY CONTRACTORS.

* ACCESS CONTROL PANEL, SECURITY MANAGEMENT SOFTWARE AND CREDENTIALS BY SECURITY CONTRACTOR.

OPERATIONAL NARRATIVE (LOCAL AHJ SHOULD ALWAYS BE CONSULTED AND SIGN OFF ON THE OPERATION):

1. DOOR NORMALLY CLOSED AND SECURE.

2. AUTHORIZED ACCESS BY CARD READER UNLOCKING LEVER TRIM FOR A PREDETERMINED TIME LIMIT.

3. EGRESS FREE FOR IMMEDIATE EXIT.

4. ELECTRIFIED MORTISE LOCK REX SWITCH ALLOWS AUTHORIZED EXIT WITHOUT ALARM CONDITION.

5. DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

6. LEVER REMAINS LOCKED (FAIL SECURE) IN EVENT OF POWER LOSS. KEYED CYLINDER OVERRIDE FOR EMERGENCY ACCESS.

SET: 8.0

DOORS: 115, 117

DESCRIPTION: EXTERIOR - MECH, WATER (LEVEL 4 BALLISTIC; CARD READER)

Hardware schedule table for SET: 8.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, ELECTRIC POWER TRANSFER, ELECTRIFIED MORTISE LOCK, CORE.

Hardware schedule table for SET: 9.0. Columns include item number, description, manufacturer/quantity, and material. Items include SURFACE CLOSER, KICK PLATE, RAIN GUARD, GASKETING, SWEEP, THRESHOLD, ELECTROLYNX HARNESS DOOR, etc.

NOTES:

* COORDINATE ALL HARDWARE WITH THE BALLISTIC DOOR AND FRAME MANUFACTURER AND ADD/MODIFY/DELETE DOOR HARDWARE AS/IF NEEDED.

* KNURLING: WHERE REQUIRED BY LOCAL CODE PROVIDE KNURLING OR ABRASIVE COATING TO ALL LEVERS ON DOORS LEADING TO HAZARDOUS AREAS SUCH AS ELECTRICAL ROOMS, MECHANICAL ROOMS, BOILER AND FURNACE ROOMS, JANITOR CLOSETS, AND AS OTHERWISE REQUIRED.

* COORDINATE WITH ELECTRICAL, ALARM AND SECURITY CONTRACTORS.

* ACCESS CONTROL PANEL, SECURITY MANAGEMENT SOFTWARE AND CREDENTIALS BY SECURITY CONTRACTOR.

OPERATIONAL NARRATIVE (LOCAL AHJ SHOULD ALWAYS BE CONSULTED AND SIGN OFF ON THE OPERATION):

1. DOOR NORMALLY CLOSED AND SECURE.

2. AUTHORIZED ACCESS BY CARD READER UNLOCKING LEVER TRIM FOR A PREDETERMINED TIME LIMIT.

3. EGRESS FREE FOR IMMEDIATE EXIT.

4. ELECTRIFIED MORTISE LOCK REX SWITCH ALLOWS AUTHORIZED EXIT WITHOUT ALARM CONDITION.

5. DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

6. LEVER REMAINS LOCKED (FAIL SECURE) IN EVENT OF POWER LOSS. KEYED CYLINDER OVERRIDE FOR EMERGENCY ACCESS.

SET: 9.0

DOORS: 136, 137

DESCRIPTION: EXTERIOR - MECH, WATER (CARD READER)

Hardware schedule table for SET: 9.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, ELECTRIFIED MORTISE LOCK, CORE, SURFACE CLOSER, KICK PLATE, RAIN GUARD, GASKETING, SWEEP, THRESHOLD, ELECTROLYNX HARNESS DOOR, etc.

NOTES:

* KNURLING: WHERE REQUIRED BY LOCAL CODE PROVIDE KNURLING OR ABRASIVE COATING TO ALL LEVERS ON DOORS LEADING TO HAZARDOUS AREAS SUCH AS ELECTRICAL ROOMS, MECHANICAL ROOMS, BOILER AND FURNACE ROOMS, JANITOR CLOSETS, AND AS OTHERWISE REQUIRED.

* COORDINATE WITH ELECTRICAL, ALARM AND SECURITY CONTRACTORS.

* ACCESS CONTROL PANEL, SECURITY MANAGEMENT SOFTWARE AND CREDENTIALS BY SECURITY CONTRACTOR.

OPERATIONAL NARRATIVE (LOCAL AHJ SHOULD ALWAYS BE CONSULTED AND SIGN OFF ON THE OPERATION):

1. DOOR NORMALLY CLOSED AND SECURE.

2. AUTHORIZED ACCESS BY CARD READER UNLOCKING LEVER TRIM FOR A PREDETERMINED TIME LIMIT.

3. EGRESS FREE FOR IMMEDIATE EXIT.

4. ELECTRIFIED MORTISE LOCK REX SWITCH ALLOWS AUTHORIZED EXIT WITHOUT ALARM CONDITION.

5. DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

6. LEVER REMAINS LOCKED (FAIL SECURE) IN EVENT OF POWER LOSS. KEYED CYLINDER OVERRIDE FOR EMERGENCY ACCESS.

SET: 10.0

DOORS: 134A

DESCRIPTION: EXTERIOR - DIRECTOR (CARD READER)

Hardware schedule table for SET: 10.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, ELECTRIFIED MORTISE LOCK, CORE, SURFACE CLOSER, KICK PLATE, RAIN GUARD, GASKETING, SWEEP, THRESHOLD, ELECTROLYNX HARNESS DOOR, etc.

NOTES:

* COORDINATE WITH ELECTRICAL, ALARM AND SECURITY CONTRACTORS.

* ACCESS CONTROL PANEL, SECURITY MANAGEMENT SOFTWARE AND CREDENTIALS BY SECURITY CONTRACTOR.

OPERATIONAL NARRATIVE (LOCAL AHJ SHOULD ALWAYS BE CONSULTED AND SIGN OFF ON THE OPERATION):

1. DOOR NORMALLY CLOSED AND SECURE.

2. AUTHORIZED ACCESS BY CARD READER UNLOCKING LEVER TRIM FOR A PREDETERMINED TIME LIMIT.

3. EGRESS FREE FOR IMMEDIATE EXIT.

4. ELECTRIFIED MORTISE LOCK REX SWITCH ALLOWS AUTHORIZED EXIT WITHOUT ALARM CONDITION.

5. DOOR POSITION SWITCH MONITORS OPEN/CLOSED STATUS.

6. LEVER REMAINS LOCKED (FAIL SECURE) IN EVENT OF POWER LOSS. KEYED CYLINDER OVERRIDE FOR EMERGENCY ACCESS.

SET: 11.0

DOORS: 155B

DESCRIPTION: ALUM - LOBBY

Hardware schedule table for SET: 11.0. Columns include item number, description, manufacturer/quantity, and material. Items include CONTINUOUS HINGE, PUSH BAR & PULL, CONCEALED CLOSER, DOOR STOP.

NOTES:

* CONTACT FACTORY FOR SPECIAL TEMPLATING AND PRICING IF PRODUCTS OTHER THAN 3/4" OFFSET PIVOTS OR 4-1/2" X 4-1/2" BUTT HINGES ARE USED TO HANG DOOR.

* COORDINATE ALL HARDWARE WITH THE ALUMINUM STOREFRONT DOOR AND FRAME MANUFACTURER/SUPPLIER.

* VERIFY FINISH OF HARDWARE.

SET: 12.0

DOORS: 127C, 154

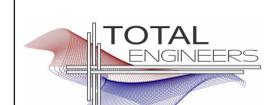
DESCRIPTION: CORRIDOR (CARD READER)

Hardware schedule table for SET: 12.0. Columns include item number, description, manufacturer/quantity, and material. Items include HINGE, FULL MORTISE, HVY WT, ELECTRIC HINGE, HVY WT, RIM EXIT DEVICE, NIGHTLATCH, CORE, SURFACE CLOSER, KICK PLATE, DOOR STOP, SILENCER, ELECTROLYNX HARNESS DOOR, etc.



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ALPHA BLDG SET 08-14-2025



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PRINT RECORD table with columns: No., DATE, DESCRIPTION. Includes entry for 04/30/2025 PERMIT SET.

Drawn By: KRM Checked By: [blank]

Date: 02/07/2025 Job No.: 24029

Sheet Title: DOOR HARDWARE SCHEDULE

Sheet No.:

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PLUMBING SPECIFICATIONS

Provide all plumbing items indicated on the drawings, described herein or otherwise required for a complete and proper installation, including:
A. Plumbing fixtures, fittings and equipment.
B. Hot and cold water systems.
C. Drain waste and vent piping systems.
D. Indirect waste piping, including all valves, traps, piping and accessories for all equipment. Size per equipment requirements.

Comply with all applicable codes, standards and ordinances, including requirements of the Georgia State Minimum Standard Plumbing Code (2018 International Plumbing Code with all Georgia State Amendments), Georgia State Minimum Standard Gas Code (2018 International Gas Code with all Georgia State Amendments), Georgia State Minimum Standard Energy Code (2015 International Energy Conservation Code with all Georgia State supplements and Amendments), and the DOJ 2010 ADA Standards for Accessible Design with Georgia Amendments of Rule 120-3-20.

The contractor shall not attempt to precisely scale dimensions from these drawings to obtain construction dimensions and clearances. The contractor shall verify all actual dimensions and clearances. Although these plans are diagrammatic in nature, they shall be followed as closely as site conditions, new construction, and work by other trades shall permit. Deviations from these drawings, which are required to conform to the available space or to actual building construction, shall be made at no additional cost to the owner.

The submission of a bid or proposal will be construed as evidence that the contractor has familiarized himself with the plans and building site. Claims made subsequent to the proposal for materials and/or labor due to difficulties encountered will not be recognized unless these difficulties could not have been foreseen, even though proper examination had been made.

Fabrication or ordering of any material or equipment prior to verification of site conditions shall be done at the contractor's risk.

All equipment and material shall be new and of first quality. Equipment and material shall be the same or equal to the basis of design listed on these drawings.

Coordinate with all trades and verify all equipment rough-in items and locations with the equipment supplier or contractor. All re-work and corrections required due to lack of coordination shall be the contractor's responsibility, and done at no cost to the owner.

Submit shop drawings and material data submittals to the engineer for approval before installation. No substitutions shall be allowed without prior approval by the engineer. Product data for piping, insulation, valves, specialties and all fixtures and equipment scheduled and specified here. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.

All equipment and fire materials shall be U.L. listed.

Installation shall comply with manufacturer requirements including all clearances recommended for proper operation of service. All serviceable parts shall be readily accessible.

Below ground sanitary drain and vent piping shall be solid-wall ASTM D2665 schedule 40 PVC. Install underground, PVC plastic drainage piping according to ASTM D2321. Above ground sanitary drain and vent piping shall be cellular-core ASTM F891 schedule 40 PVC. Install aboveground PVC piping according to ASTM D 2665. All aboveground piping shall be adequately supported. Sanitary drain and vent piping shall have PVC Socket Fittings (ASTM D 2865, made to ASTM D 3311, drain, waste, and vent patterns and to fit Schedule 40 pipe).

Insulate aboveground floor drains, traps, and sanitary drain piping within 10 feet of drain receiving condensate and equipment drain water below 60" with 1" thick type I performed glass-fiber pipe insulation, 1-1/2" cellular glass, or 1" flexible elastomeric.

All above ground domestic water distribution piping shall be ASTM D 2846, SDR11, schedule 40 CPVC with socket fittings. All piping shall be adequately supported. Disinfect all domestic water piping after installation. All underground domestic water distribution piping 1" and smaller shall be ASTM D 876 & ASTM F 877 PE-X with no fittings underground. All underground domestic water distribution piping 1-1/4" and larger shall be ASTM D 1785 schedule 40 PVC with ASTM D 2466 PVC socket fittings. Wrap piping larger than 2" in return or downcomers with fire barrier plenum rated wrap.

DOMESTIC WATER PIPING CLEANING

A. Clean and disinfect potable domestic water piping as follows:

- 1. Purge new piping and parts of existing piping that have been altered, extended, or repaired before using.
2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction; if methods are not prescribed, use procedures described in either AWWA C651 or AWWA C652 or follow procedures described below:
a. Flush piping system with clean, potable water until dirty water does not appear at outlets.
b. Fill and isolate system according to either of the following:
1) Fill system or part thereof with water/chlorine solution with at least 50 ppm (50 mg/L) of chlorine. Isolate with valves and allow to stand for 24 hours.
2) Fill system or part thereof with water/chlorine solution with at least 200 ppm (200 mg/L) of chlorine. Isolate and allow to stand for three hours.
c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.
d. Repeat procedures if biological examination shows contamination.
e. Submit water samples in sterile bottles to authorities having jurisdiction.

B. Prepare and submit reports of purging and disinfecting activities. Include copies of water-sample approvals from authorities having jurisdiction.

C. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.

Domestic water piping shall be insulated with Owens Corning type ASJ/SSL-II heavy density fiber glass with all service jacket. Insulation shall have a flame spread rating not to exceed 25 and a smoke density not to exceed 50 when tested in accordance with U.L.C. standard 42-1. Provide mastic on all joints and exposed ends of insulation. Insulate domestic Cold water piping in unconditioned spaces such as exterior corridors, attic, basements, etc with 1/2" thick insulation for piping 1-1/4" & smaller and 1" thick insulation for piping 1-1/2" & larger. Insulate all domestic Hot water supply and return piping with 1" thick insulation for piping 1-1/4" & smaller and 1-1/2" thick insulation for piping 1-1/2" & larger.

Above ground natural gas piping shall be ASTM A53; Type E or S; Grade B; Schedule 40; black steel with malleable iron threaded fitting per ASME 16.3 Class 150. Flexible connectors shall comply with ANSI Z21.24 of copper alloy. Gas stops shall have bronze body with AGA stamp and bronze plug with lever handle. Valves shall be ASME B16.33 with ISO-listed bronze body. Coordinate connection of gas service and installation of meter with gas utility company. All piping shall be adequately supported. Prime & paint all exposed outdoor piping. Line gas pressure regulators shall comply with ANSI Z21.80. Appliance gas pressure regulators shall comply with ANSI Z21.18. Provide vent limiting device for regulators located indoors. Provide vent protector device for regulators located outdoors.

Underground natural gas piping shall be ASTM D2513 PE pipe and fittings joined by heat fusion; service-line risers with tracer wire terminated in an accessible location. PE fittings shall be ASTM D 2683, socket-fusion type or ASTM D 3261, butt-fusion type with dimensions matching PE pipe. PE transition fittings shall be factory-fabricated fittings with PE pipe complying with ASTM D 2513, SDR 11; and steel pipe complying with ASTM A 53/A 53M, Schedule 40, Type E or S, Grade B. Install underground PE natural-gas piping according to ASTM D 2774. Use Factory fabricated and leak tested service-line risers. Buried underground gas piping at least 36 inches below finished grade. Underground natural gas piping shall be installed with detectable warning tape on underground gas piping. Install tape directly above underground gas piping. Located tape 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

HW & CW Valves: Use pipe size valves, as shown below:

- A. Ball: Spears CPVC True Union.
B. Check: Spears CPVC True Union.

Ball-Valve-Type Hose-End Drain Valves shall comply with MSS SP-110 for standard-port, two-piece ball valves. Copper alloy body, 3/4", 400-psi pressure rating, replaceable seats and seals, vinyl-covered steel handle, threaded short nipple outlet with garden-hose thread complying with ASME B1.20.7 and cap with brass chain.

Balancing valves shall conform to MSS SP-110 for two-piece, copper-alloy ball valves. Balancing valves shall be copper alloy, memory-stop type, chrome-plated brass ball, replaceable seats & seals, vinyl-covered steel handle with memory-setting device.

Fixture tailpieces, wall escutcheon, and traps for lavatories and sinks shall be brass tubing, semi-cast, or cast iron: All brass tubing shall be 17 gage, chrome plated. Exception: If the fixture tailpieces and traps are located in cabinets, the tailpiece & trap shall be PVC. Grid drains for public lavatories. Basket strainers for break room sinks.

Water Hammer Arrestors shall comply with standard ASSE 1010, metal bellows type or copper piston type.

Urinal Supports shall be type I, urinal carrier with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture for wall-mounting, urinal-type fixture. Include steel uprights with feet. For accessible-fixture support include rectangular steel uprights. Lavatory Supports shall be type II, lavatory carrier with concealed arms and tie rod for wall-mounting, lavatory-type fixture. Include steel uprights with feet. For accessible-fixture support include rectangular steel uprights. Plote type wall hangers for water coolers. Water closet carrier shall be ASME A112.6.1W waste-fitting assembly, as required to match drainage piping material and arrangement with foscipots, couplings gaskets, and feet; bolts and hardware matching fixture. Include additional extension coupling, foscipota, and feet for installation in wide pipe space if required.

Thermometers shall comply with standard ASME B40.200.

Lavatory Sink supply fittings: NSF Standard. Comply with NSF/ANSI 61 Annex G, "Drinking Water System Components - Health Effects," for supply-fitting materials that will be in contact with potable water. Standard: ASME A112.18.1/CSA B125.1, Supply Stops: Chrome-plated-brass, one-quarter-turn, ball-type valve with third connection matching supply piping. Wheel handle operation. Risers: Chrome-plated, soft-copper flexible tube for exposed applications and ASME A112.18.6, braided- or corrugated-stainless-steel, flexible hose for concealed behind cabinet applications.

Provide ADA Supply and Drain Protective Shielding Guards on ADA fixtures that piping is exposed. Supply and Drain Protective Shielding Guards shall comply with ICC A117.1 and Americans with Disabilities Act (ADA) requirements. Manufactured plastic wraps shall cover hot and cold water supplies, traps, and drain piping.

All pipe hangers, clamps and channels shall be adequately sized to carry pipe loads and prevent sagging.

All other materials not specifically described but required for a complete and proper installation of work of this section, shall be new, first quality of their respective kinds, and as selected by the contractor subject to acceptance by the engineer.

Lay out the plumbing system in careful coordination with the drawings, determining proper elevations for all components of the system and using only the minimum number of bends to produce a satisfactory functioning system. Follow the general layout shown on the drawings in all cases except where other work may interfere. Unless shown otherwise, lay out all pipes to fall within partition, wall floor, or roof cavities, and to not require furring other than as shown on the drawings.

Do not cut into or reduce the size of any load-carrying member without the prior approval of the architect. Install all pipes to clear all beams and obstructions.

Extend all plumbing vents above roof to parapet height.

Permanently close and make weathertight any openings or penetrations of the building envelope made for plumbing systems. All wall and floor penetrations shall be sleeved. All exterior wall or foundation wall penetrations shall use a mechanical seal.

Coordinate all roof penetrations with architectural plans and building and roofing trades.

Provide shut-off ball valves and unions at all water connections to equipment and appliances.

Isolate all dissimilar metals with "EPOC" dielectric unions, except for brass or bronze valves with steel pipe.

Protect the potable water supply against backflow and siphonage from equipment, fixtures, etc., using approved backflow and anti-siphon devices. Provide pressure reduction valve(PRV) for pressure above 65 PSi

Thoroughly clean all piping and equipment. Removing all dirt, rust, oil, and plaster.

Test Sanitary and storm drainage piping by plugging all openings and filling with water to a height equal to a 10 foot head. Allow to stand one hour or longer as required. Repair leaking joints and then re-test.

No work shall be covered until it has been inspected and accepted by the local authority.

Domestic water piping tests: Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. Leave new, altered, extended, or replaced domestic water piping uncovered and unconnected until it has been tested and approved. Expose work that was covered or concealed before it was tested. Cap and subject piping to static water pressure of 50 psig (345 Psf) above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow it to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired. Repair leaks and defects with new materials, and retest piping or portion thereof until satisfactory results are obtained.

The entire system shall be warranted for a period of one (1) year beginning with Owner's acceptance of the work. All labor and materials necessary to repair or replace the system, or portions thereof, during that time shall be warranted for a period of one (1) year from the repair or replacement.

Install piping in concealed locations, unless otherwise indicated and except in equipment rooms, and service areas. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal. Install piping to permit valve servicing. Install piping at indicated slopes. Install piping free of sags and bends. Install fittings for changes in direction and branch connections. Install piping to allow application of insulation. Select system components with pressure rating equal to or greater than system operating pressure. Install escutcheons for penetrations of walls, ceilings, and floors. Verify final equipment locations for roughing-in.

Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

Seal fixtures to wall and floor surfaces with sealant, color to match fixture.

All vents thru roof (VTR) shall be offset a minimum of 10'-0" from all outside air intakes.

Provide Plastic Pipe Markers on all aboveground plumbing piping that Comply with ASME A13.1. Minimum information indicating flow direction arrow and identification of fluid being conveyed. Install labeling on pipe at intervals of not more than 20 feet and at least once in each room.

Provide a complete through penetration fire stopping assembly for fire resistance rated wall assemblies. The through penetration assembly must be listed by an approved third-party test agency (UL), and include the entire listed assembly with all notations. Refer to architectural drawings for fire wall locations.

Approved substitutes: (Items submitted shall be approved by architect and engineer. Architect and engineer reserve the right to reject any item substituted for basis of design item for any reason.)

China Fixtures: American Standard, Kohler, Toto, Zurn, Sloan
Faucets: Delta, T&S Brass, Chicago Faucets, Zurn, Kohler, Grahe, Moen, Speakman, Symmons
Supplies & Traps: Engineered Brass CO., McGuire, Charlotte Pipe, Brasscraft, IPS, Watts, Zurn
Flush Valves: Sloan, Delany, Zurn, American Standard
Floor Drains & Cleanouts: Zurn, Jay R. Smith, Proseal, Watts, Mifab, Wade, Josam, Sioux Chief, Oatey
Water Heaters: A.O. Smith, Lochinox, Bradford White, State, Rheem
Tankless Gas Water Heaters: A.O. Smith, Rheem, Rinnai, Brody, Intellihot
Toilet Seats: Bemis, Centoc, Church Seats, Osonite, Beneka, Zurn, Makline
Stainless Steel Sinks: Dayton, Elkay, Just, Kohler, Moen, Sterling, Franke
ADA Protective Shielding Pipe Covers: Engineered Brass, McGuire, Plumberex, TRUEBRO, Zurn, Oatey
Fixture Supports: MIFAB, Jay R. Smith, Wade, Watts, Zurn
Wall Hydrants/ Hose Bibbs: MIFAB, Jay R. Smith, Wade, Watts, Woodford, Zurn
Expansion Tanks: AMTROL, State, Watts, Wilkins
Water Hammer Arrestors: AMTROL, Josam, MIFAB, PPP, Sioux Chief, Jay R. Smith, Wade, Watts, Zurn
Quiet Boxes: Acorn, IPS, Oatey
CPVC Valves: American, NIBCO, Spears
Circulation Pumps: Armstrong, Ball & Gossett, Grundfos, TACO
Showers: Aqua Bath, Aquarius, Clarion, Best Bath, Aqua Glass, Aquatic
Water Coolers: Elkay, Oasis, Hova
Mop Sinks: Stern Williams, Acorn, Fiat

Table with columns: #, FIXTURE TYPE, WASTE, WATER SUPPLY, WATER FIX. CONN., MODEL NUMBER. Rows include ADA WATER CLOSET, WATER CLOSET, ADA WALL HUNG LAVATORY, ADA DROP-IN LAVATORY, ADA URINAL, URINAL, FLOOR DRAIN WITH WATERLESS TRAP PRIMER, GRADE CLEANOUT, FLOOR CLEANOUT, BI-LEVEL ADA ELECTRIC WATER COOLER W/ BOTTLE FILLER, EXTERIOR HOSE BIBB, ICE MAKER BOX WITH WATER HAMMER ARRESTOR, WASHER BOX WITH WATER HAMMER ARRESTOR, ADA SHOWER 1.5 GPM, BREAK ROOM SINK, BAR SINK, MOLDED-STONE MOP SINK, FLOOR SINK.

NOTE: CONTRACTOR SHALL SUBMIT PLUMBING FIXTURE TO OWNER/INTERIOR DESIGNER FOR APPROVAL BEFORE PURCHASING FIXTURE.

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, TYPE, BTUH/KW. Rows include WH1, WH2, ET.

CONTRACTOR SHALL CONSULT THE ELECTRICAL DOCUMENTS FOR VOLTAGE AND PHASE

Table with columns: MARK, MANUFACTURER, MODEL NUMBER, TYPE, RATED GALLON, KW, MIN. DEF. VOLTS, ELECTRICAL PHASE. Rows include WH3, ET.

CONTRACTOR SHALL CONSULT THE ELECTRICAL DOCUMENTS FOR VOLTAGE AND PHASE.

Table with columns: MARK, PUMP TYPE, BASIS OF DESIGN MANUFACTURER, MODEL NUMBER, RPM, WATTS, GPM, FEET HEAD, ELECTRICAL VOLTS, PHASE. Rows include RC1, RC2.

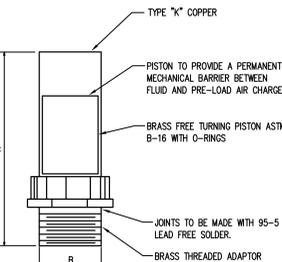
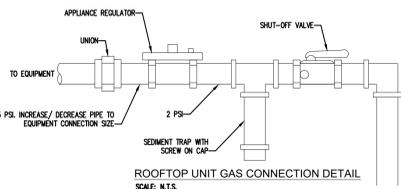
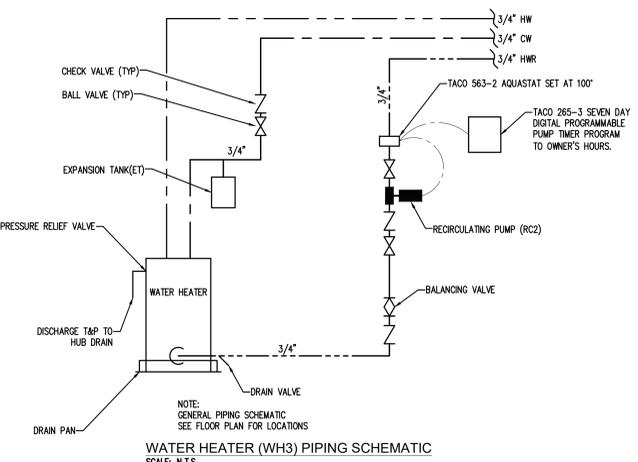
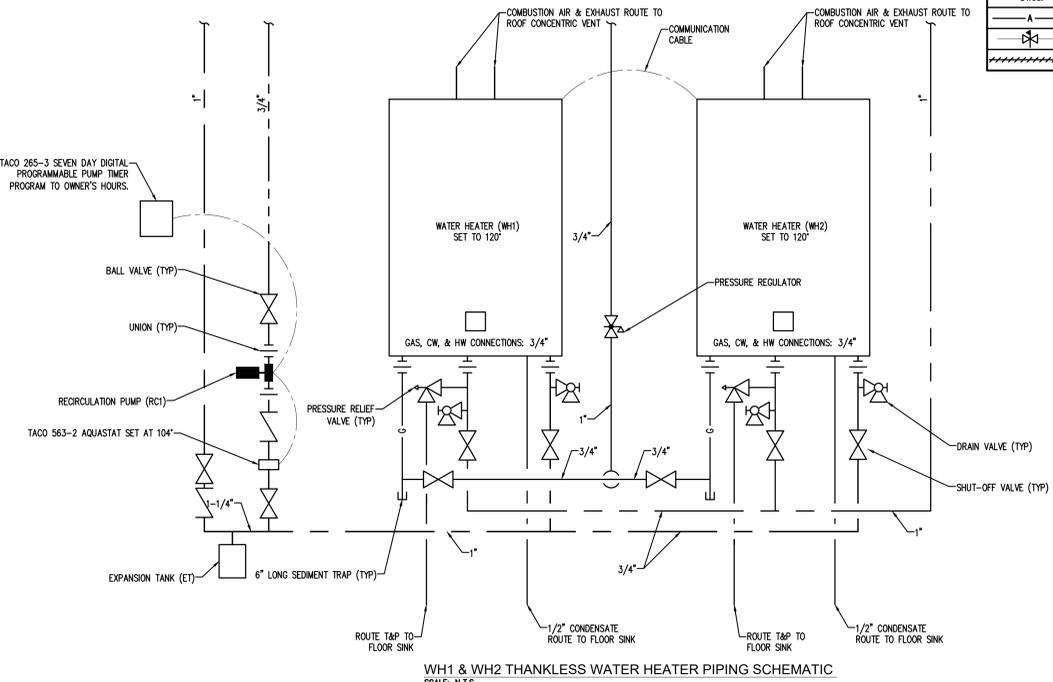


Table with columns: P.P.P. SIZE, P.D.I. SYMBOL, FIXTURE UNIT RATINGS, A SIZE, B SIZE. Rows include 1/2", 3/4", 1", 1-1/4", 1-1/2", 2".

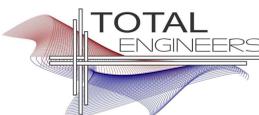


ALPHA BLDG SET 08-14-2025

Table with columns: SYMBOL, SHUTOFF VALVE, CHECK VALVE, PIPE UP, PIPE DOWN, PDI UNIT, DWGS. DRAWINGS, COMPRESSED AIR, PRESSURE REDUCING/REGULATOR VALVE, DEMOLITION, COLD WATER, HOT WATER, HOT WATER RETURN, GAS, GREASE LADEN SEWER, SEWER VENT, SEWER, FIRE SPRINKLER, EXISTING TO REMAIN, (TYP), C.T., DN, CONN., NTS, FFE, FLR, CONNECT TO EXISTING, TYPICAL, COUNTER-TOP, DOWN, CONNECTION, NOT TO SCALE, FINISHED FLOOR ELEVATION, AFF, CW, HW, HWR, B.F.F., CV, VENT THRU ROOF, ABOVE FINISHED FLOOR, COLD WATER, HOT WATER, HOT WATER RETURN, BELOW FINISH FLOOR, CLOSED VALVE.



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Owner

10706 HWY 26 COVINGTON, GA 30014

Table with columns: No., DATE, DESCRIPTION. Rows for print record.

Drawn By: Author, Checked By: Checker, Issue Date: 240229, Job No.

Sheet Title: PLUMBING SPECIFICATIONS & SCHEDULES

Sheet No.

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MECHANICAL SPECIFICATIONS

- 1) Provide all heating, ventilation and air conditioning items indicated on the drawings, described in this specification, or required for a complete and proper installation.
2) Comply with all pertinent codes, ordinances, and regulations. Refer to website for Dept. of Community Affairs for current Codes Editions.
3) The contractor shall not attempt to precisely scale dimensions from these drawings to obtain construction dimensions and clearances.
4) Furnish without extra charge, any additional material and labor required to comply with the above codes and standards, even though the work may not be described in the contract documents.
5) All equipment and material shall be new and of first quality. Equipment and material shall be the same or equal to the basis of design listed on these drawings and shall be UL listed.
6) Cooperate and coordinate with other trades in order that all systems in the work may be installed in the best arrangement.
7) Examine the areas and conditions under which work of this section will be installed. Correct conditions detrimental to the proper and timely completion of the work.
8) Avoid interference with structure, and with work of other trades. Install all equipment per manufacturer's instructions.
9) All other materials not specifically described but required for a complete and proper installation shall be as selected by the contractor subject to acceptance by the Engineer.
10) All ductwork shall be fabricated from galvanized sheet metal duct and conform to SMACNA HVAC Duct Construction Standards--Metal and Flexible.
11) Flexible duct: Flex master; Also UPC36(R-6.0); Also UPC31 (R-8) or Thermoflex, Type 3, insulated. 5'-10" Maximum length unless noted otherwise.
12) Duct Liner: Owens Corning Aeroflex Plus, or equivalent. Incombustible glass fiber complying with ASTM C 1071; flexible blanket; impregnated surface and edges coated with acrylic polymer used to fungus and bacteria resistant by testing to ASTM G 21.
13) Condensate drain piping shall be ASTM D2665 PVC with solvent welded fittings. Drain piping shall be no smaller than the drain connection size on equipment.
14) Refrigerant piping shall conform to manufacturer's recommendations and installation instructions. Refrigerant piping shall be ASTM E280 Type ACR or ASTM B88 Type 1 down copper tubing with wrought copper fittings.
15) Thermostats: Provide 24 volt, programmable 24-hour, 7-day thermostat to control heating stages in sequence with delay between stages and supply fan to maintain temperature setting.
16) Provide fire and smoke rated flexible connections between fans and ducts. Material shall comply with NFPA 90A requirements for material in supply air stream.
17) Install all equipment in accordance with manufacturer's instructions and recommendations including clearances recommended for proper operation or service.
18) Indoor duct insulation: Fall-faced fiberglass, Owens Corning type 75 or equal, 2.2" thick(R-6), unless the insulated duct is outside building insulation envelope (attic, crawlspace, or unconditioned space) in which case the duct insulation thickness shall be 3.2 thick(R-8).
19) All supply, return and outside air ducts shall be insulated. All outdoor ductwork, and dryer exhaust ducts shall be insulated.
20) All low-pressure duct branches shall contain manual balancing dampers. Manual balancing dampers shall also be installed in the continuation of the main, if the main duct is smaller or the same size as the branch duct, or if the continuation of the main serves only one device.
21) Make all duct elbows right angle type with single -thickness turning vanes or construct with centerline radius 1-1/2 times the duct width.
22) Duct sizes shown on plans are clear, interior dimensions. Duct sizes shown shall be enlarged to allow for liner at locations of interior liner.
23) Do not cut into or reduce the size of any structural member without the permission of the Architect.
24) Provide weather-proof flashing at all duct and pipe penetrations through the building walls and roof.
25) Support all HVAC units, ductwork, piping, and other appurtenances from structure, provide vibration isolation at all fans which are not internally isolated.
26) Thoroughly clean all components and remove all dirt, scale, oil, and other foreign substances.
27) Perform all tests necessary to demonstrate the integrity of the complete installation to the approval of the Engineer and all other authorities having jurisdiction.
28) The entire system shall be warranted for a period of one (1) year beginning with Owner's acceptance of the work.
29) SUBMITTALS AND SUBMITTAL PROCEDURES:
a. Contractor shall review the submittal data and check for the purpose of compliance with safety requirements, verification of dimensions, contract documents and methods and means prior to submitting to design professional.
b. Transmit each submittal electronically in PDF format.
c. Sequentially number submittal files and transmittal form.
d. Identify Project, the Contractor, Subcontractor, or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
e. Apply the Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

- 41) Sealant materials: joint and seam sealants, general: the term "sealant" is not limited to materials of adhesive or mastic nature but includes tapes and combinations of open-weave fabric strips and mastic.
42) Packaged Roof Top Units--Gas Heat: Outdoor packaged units, roof mounted, electrically controlled, 2-stage stage cooling with gas heat units, as scheduled, utilizing scroll hermetic compressor(s) for cooling duty and an indirect fired gas furnace section for heating duty.
43) Groovy Ventilators: Heavy gauge arched steel aluminum with interlocking seams or spun aluminum with base for curb mounting.
44) All HVAC equipment such as AH, CU, EF, AC, HP, and RTU shall have visible nameplates with their associated marks on them.
45) Louvers: 4" deep, 12 gauge (0.081) etched and 30-minute clear anodized extruded aluminum, drainable blades, and frame; back mounted 1/2" mesh 19-gauge screen; flange frame.
46) Ceiling Ventilator shall have corrosion resistant galvanized steel housing with four-point mounting capability.
47) Cabinet Exhaust Fan: Centrifugal Fan Unit: Direct driven with galvanized steel housing, resilient mounted motor, groovy backdraft damper in discharge.
48) Acceptable Manufacturers are: Carrier, Trane, York, Lennox; Mitsubishi, Daikin, Hitachi, Toshiba; Titus, Nalor, Price, Tuttle & Bailey, Kruger, Metal Aire; Twin-City, Cook, Greenheck, Penn Barr, Acme, American Cool Air, Captive Air, Solar & Palou; United Enertech, Greenheck, Ruskin, Arrow United, Air Balance; Provide thermostats by same manufacturer as equipment.

Air Handlers & Heat Pumps, Packaged Units: Carrier, Trane, York, Lennox
Small Split Units: Mitsubishi, Daikin, Hitachi, Toshiba
Grilles, Registers & Diffusers: Titus, Nalor, Price, Tuttle & Bailey, Kruger, Metal Aire
Fans: Twin-City, Cook, Greenheck, Penn Barr, Acme, American Cool Air, Captive Air, Solar & Palou
Louvers/Dampers/Fire Dampers: United Enertech, Greenheck, Ruskin, Arrow United, Air Balance
Controls-voided with units: Provide thermostats by same manufacturer as equipment

Table with 10 columns: SPACE, SPACE NAME, FLOOR, AREA, OCCUPANCY CLASSIFICATION, PER IBC TABLE 403.3.1.1, OCCUPANCY TIME AVERAGE, /JOURS, CFM/PERSON, CFM/SP, OUTSIDE AIR, EXHAUST AIR, PROVIDED OUTSIDE AIR. Includes data for RTU-3.

Table with 10 columns: SPACE, SPACE NAME, FLOOR, AREA, OCCUPANCY CLASSIFICATION, PER IBC TABLE 403.3.1.1, OCCUPANCY TIME AVERAGE, /JOURS, CFM/PERSON, CFM/SP, OUTSIDE AIR, EXHAUST AIR, PROVIDED OUTSIDE AIR. Includes data for RTU-2.

Table with 10 columns: SPACE, SPACE NAME, FLOOR, AREA, OCCUPANCY CLASSIFICATION, PER IBC TABLE 403.3.1.1, OCCUPANCY TIME AVERAGE, /JOURS, CFM/PERSON, CFM/SP, OUTSIDE AIR, EXHAUST AIR, PROVIDED OUTSIDE AIR. Includes data for RTU-1.

Table with 10 columns: SPACE, SUPPLY CFM, SPACE CFM, SPACE CEILING HEIGHT, OCCUPANCY CLASSIFICATION, PER IBC TABLE 403.3.1.1, OCCUPANCY TIME AVERAGE, /JOURS, CFM/PERSON, CFM/SP, OUTSIDE AIR, EXHAUST AIR, PROVIDED OUTSIDE AIR. Includes data for AH-3.

Table with 10 columns: SPACE, SUPPLY CFM, SPACE CFM, SPACE CEILING HEIGHT, OCCUPANCY CLASSIFICATION, PER IBC TABLE 403.3.1.1, OCCUPANCY TIME AVERAGE, /JOURS, CFM/PERSON, CFM/SP, OUTSIDE AIR, EXHAUST AIR, PROVIDED OUTSIDE AIR. Includes data for AH-2.

Table with 10 columns: SPACE, SUPPLY CFM, SPACE CFM, SPACE CEILING HEIGHT, OCCUPANCY CLASSIFICATION, PER IBC TABLE 403.3.1.1, OCCUPANCY TIME AVERAGE, /JOURS, CFM/PERSON, CFM/SP, OUTSIDE AIR, EXHAUST AIR, PROVIDED OUTSIDE AIR. Includes data for AH-1.

1 OUTSIDE AIR CALCULATIONS SCALE: N.T.S.

COMcheck Software Version 4.1.5.2 Mechanical Compliance Certificate

Project Information
Energy Code: 2015 IECC
Project Title: Covington EOC 911 Center
Location: Covington, Georgia
Climate Zone: 3a
Project Type: New Construction

Construction Site: Covington, GA 30014
Owner/Agent: Jericho Design Group
Designer/Contractor: Krunal Patel, Total Engineers

Additional Efficiency Packages
Credits: 1.0 Required 0.0 Proposed

Table with 2 columns: Quantity, System Type & Description. Lists RTU-1, RTU-2, RTU-3, RTU-4, HP-1, HP-2, HP-3, WH1 & WH2, WH3, Electric Storage Water Heater.

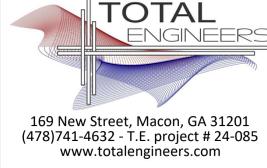
Project Title: Covington EOC 911 Center Report date: 06/16/25

Table with 2 columns: Quantity, System Type & Description. Lists HPU-1 & HPU-3, WH1 & WH2, WH3, Electric Storage Water Heater.

Mechanical Compliance Statement
Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application.
Krunal Patel - Mechanical Engineer Signature: Krunal Patel Date: 06/16-2025

Project Title: Covington EOC 911 Center Report date: 06/16/25

2 MECHANICAL COMPLIANCE CERTIFICATE SCALE: N.T.S.



169 New Street, Macon, GA 31201
(478)741-4632 - T.E. project # 24-008
www.totalengineers.com



COVINGTON EOC 911 CENTER

Owner

10706 HWY 26
COVINGTON, GA 30014

PRINT RECORD

Table with 3 columns: No., DATE, DESCRIPTION. Row 1: 1, 06/18/2025, PERMIT COMMENTS.

Drawn By: MGT/JWK Checked By: KMP

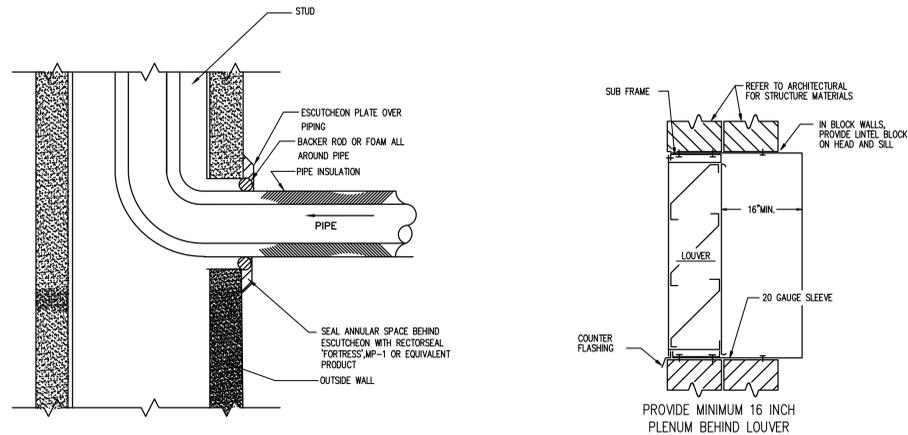
Date: Job No. 24029

Sheet Title: MECHANICAL SPECIFICATIONS

Sheet No. M-0.1

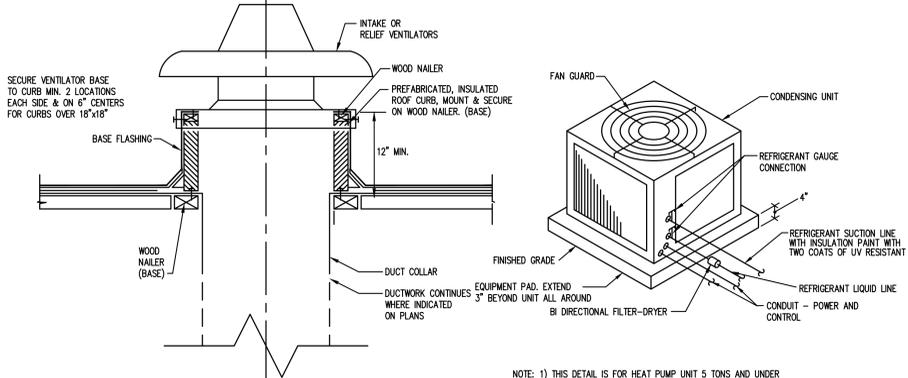
NOT RELEASED FOR CONSTRUCTION

ALPHA BLDG SET 08-14-2025



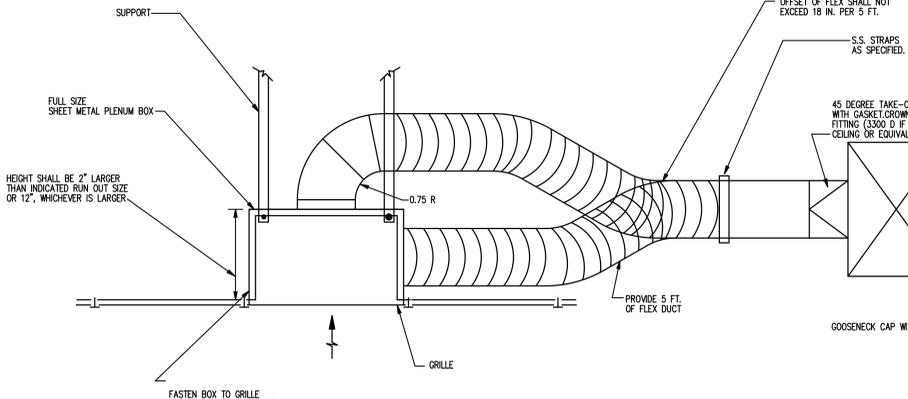
1 REFRIGERANT PIPE SLEEVE THROUGH WALL DETAIL
SCALE: N.T.S.

2 WALL MOUNTED LOUVER WITH PLENUM
SCALE: N.T.S.



3 ROOF INTAKE VENTILATOR DETAIL
SCALE: N.T.S.

4 AIRCOOLED CONDENSING UNIT SLAB MOUNTED
SCALE: N.T.S.



5 TYPICAL GRILLE WITH LINED PLENUM DETAIL
SCALE: N.T.S.

6 DRYER VENT DETAIL
SCALE: N.T.S.

MECHANICAL SYMBOLS & ABBREVIATIONS LEGEND	
	NEW PIPE, DUCTWORK OR EQUIPMENT
	DUCT SIZE: FIRST DIMENSION IS SIDE DRAIN FLEXIBLE ROUND DUCTWORK
	FIRE DAMPER, SMOKE DAMPER, SMOKE DETECTOR
	CEILING SUPPLY DIFFUSER
	CEILING RETURN OR EXHAUST AIR
	S.A. DUCT OUT OF TU BOX WITH DUCT LINER FOR THR FIRST FIVE FEET OF DUCT OUT OF TU BOX
	CHANGE IN PIPE OR DUCT SIZE OR SHAPE
	REFRIGERANT PIPING
	CONDENSATE OR OTHER DRAIN PIPING
	ELBOW TURNED DOWN OR TURNED UP IN PIPING
	THERMOSTAT, ARROW SHOWS CONTROL WIRING PATH
	TIME CLOCK
	DIAMETER
	U.C. UNDER-CUT DOOR 3/4", UNLESS OTHER SIZE NOTED
	INDICATES EQUIPMENT ON PLANS; TOP ITEM SHOWS TYPE OF EQUIPMENT AND BOTTOM ITEM SHOWS SPECIFIC MARK NUMBER
	ITEM IN HEXAGON SHOWS AIR DEVICE MARK NUMBER; ITEM ABOVE LINE SHOWS NECK SIZE; ITEM BELOW LINE SHOWS AIR FLOW THROUGH DEVICE, AND NUMBER IN FRONT SHOWS QUANTITY IF MORE THAN ONE
	AHU AIR HANDLING UNIT
	BD BYPASS DAMPER
	BTU, MBH BRITISH THERMAL UNITS, THOUSAND BRITISH THERMAL UNITS
	CAP CAPACITY
	CFM CUBIC FEET PER MINUTE
	CLG CEILING
	CU CONDENSING UNIT
	DB, WB DRY BULB TEMPERATURE, WET BULB TEMPERATURE
	EA, EG EXHAUST AIR, EXHAUST GRILLE
	EF EXHAUST FAN
	EXT SP EXTERNAL STATIC PRESSURE (USUALLY EXPRESSED IN INCHES OF WATER IN GAGE)
	HP HEAT PUMP UNIT
	MVD, VD MANUAL VOLUME DAMPER
	OA OUTSIDE AIR
	RA, RG RETURN AIR, RETURN GRILLE
	RTU PACKAGED ROOFTOP UNIT
	SA SUPPLY AIR
	SF SUPPLY FAN FOR SHOP VENTILATION
	VAC, PH VOLTS ALTERNATING CURRENT, NUMBER OF PHASES
	W, KW WATTS, KILOWATTS
	UH UNIT HEATER
	AD AUDIBLE/VISUAL ALARM DEVICE CONNECTED TO DUCT SMOKE DETECTOR
	ACCESS DOOR
	RADIUS ELBOW (R=1.5)
	VANED ELBOW
	MANUAL VOLUME DAMPER (MVD), MOTOR OPERATED DAMPER (MOD)

LOUVER SCHEDULE						
MARK	W X H (INCHES)	EXHAUST MARK	FREE AREA (SQ. FT.)	PRESS. DROP (IN. W.G.)	(COLOR BY ARCHITECT)	BASIS OF DESIGN
L-1	36"x18"	495	1.81	0.06	ENAMEL	GREENHECK ESD 403 1:2-3:4

1. COORDINATE WITH ARCHITECTURAL PLANS FOR LOUVER ELEVATION. PAINT LOUVER TO MATCH EXTERIOR WALL.
2. STATIONARY EXTRUDED ALUMINUM DRAINABLE BLADE LOUVER. PROVIDE WITH BIRDSCREEN AND FACTORY BAKED ENAMEL FINISH. PROVIDE FULL SIZE 24-INCHES DEEP SHEET METAL PLENUM BEHIND PLENUM.
3. TOP OF LOUVER AT BOTTOM OF STRUCTURE.

GRAVITY VENTILATOR SCHEDULE					
UNIT MARK	SERVICE	SUPPLY CFM	MIN THROAT AREA (SQ. FT.)	THROAT	GREENHECK MODEL#
GV-1	EXHAUST	225	0.57	10"	GRSR 10

1. SPUN ALUMINUM GRAVITY VENTILATOR.

PACKAGED ROOFTOP UNIT SCHEDULE																				
MARK	AIRFLOW	SUPPLY AIR CFM	MIN. OUTSIDE AIR CFM	EXT. SP. IN. W.G.	NOMINAL TONS	EVAP. COIL DESIGN CONDITIONS		EVAP. COIL LEAVING AIR DESIGN CONDITIONS		SYSTEM COOLING REQUIREMENTS (MBH)		OUTSIDE AIR TEMP. CONDITIONS	GAS HEAT MBH	HEATING COIL OUTSIDE TEMP. °F						
						DB F	WB F	DB F	WB F	TOTAL	SENSIBLE									
RTU-1	VERTICAL	1400	250	0.60	4.0	78.2	65.3	55.0	54.0	48.0	36.0	95	50/40	67/54	65.0	90.0	208/3	48CEIN04M2M5-8B0A0	900	1:2:3:4:5:6:7:8:9:10
RTU-2	VERTICAL	1750	315	0.60	5.0	78.2	65.3	55.0	54.0	60.0	44.0	95	50/40	67/54	65.0	85.0	208/3	48CEIN06M2M5-8B0A0	900	1:2:3:4:5:6:7:8:9:10
RTU-3	VERTICAL	1400	250	0.60	4.0	78.2	65.3	55.0	54.0	48.0	36.0	95	50/40	67/54	65.0	90.0	208/3	48CEIN04M2M5-8B0A0	900	1:2:3:4:5:6:7:8:9:10
RTU-4	VERTICAL	1060	190	0.60	3.0	78.3	65.3	55.0	54.0	36.0	26.0	95	50/40	67/54	65.0	98.0	208/3	48CEIN04M2M5-8B0A0	900	1:2:3:4:5:6:7:8:9:10

1. PROVIDE FILTERS, ROOF CURB, CONDENSATE TRAP AND PIPING, FLEXIBLE CONNECTIONS, THRU THE BOTTOM CONNECTIONS, PROGRAMMABLE T-STAT, AND CONDENSATE P-TAP TO DISCHARGE INTO ROOF DRAIN.
2. VERIFY ELECTRICAL POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
3. ROOF TOP UNITS SHALL HAVE MEDIUM STATIC MOTOR.
4. PROVIDE MANUFACTURER'S SUPPLY AIR SMOKE DETECTOR. ELECTRICAL SHALL INTERLOCK IT WITH BUILDING FIRE ALARM SYSTEM. PROVIDE MANUFACTURER'S INTEGRAL CONDENSATE OVERFLOW SWITCH.
5. PROVIDE BUILT-IN HUMID-MIZER ADAPTIVE DEHUMIDIFICATION SYSTEM.
6. PROVIDE FLUE DISCHARGE DEFLECTOR THAT DEFLECTS FLUE UPWARD. PROVIDE FLUE DISCHARGE HEAT SHIELD.
7. PROVIDE TEMPERATURE ECONOMIZER W/ BAROMETRIC RELIEF.
8. 2-STAGE COOLING WITH HUMID-MIZER. PROVIDE 2-SPEED INDOOR FAN CONTROLLED. PROVIDE DIRECT DRIVE ECO BLUE EVAPORATOR FAN MOTOR.
9. UNDER HEATING MODE SUPPLY CFM SHALL BE SET TO PROVIDE 100% OF AIR AT BOTH STAGES. UNDER COOLING MODE STAGE FAN TO MATCH COOLING STAGE.
10. UNIT SHALL BE TWO STAGE HEATING UNIT. UNIT SHALL RUN ON SINGLE STAGE HEATING PRIMARY.

HEAT PUMP AIR HANDLING UNIT SCHEDULE															
MARK	SUPPLY AIR CFM	OUTSIDE AIR CFM	EXT. SP. IN. W.G.	EVAP. FAN HP	EVAP. COIL DESIGN CONDITIONS		EVAP. COIL LEAVING AIR DESIGN CONDITIONS		SYSTEM COOLING REQUIREMENTS (MBH)		SUPPLY HEAT (LBS)	POWER VAC/PH	BASIS OF DESIGN CARRIER	NOTES	
					DB F	WB F	DB F	WB F	TOTAL	SENSIBLE					
AH-1	700	115	0.60	1/2	78.0	65.0	55.0	54.0	24.0	17.0	6.0	250	208/1	FTSANXB24003	1:2:3:4:5:6:7:8
AH-2	1050	190	0.60	1/2	78.3	65.3	55.0	54.0	27.0	36.0	6.8	250	208/3	FTSANXC36L00	1:2:3:4:5:6:7:8
AH-3	1050	190	0.60	1/2	78.3	65.3	55.0	54.0	27.0	36.0	6.8	250	208/3	FTSANXC36L00	1:2:3:4:5:6:7:8:9

1. UNIT AT 208/16 AUXILIARY HEATER AT 208/16. UNIT SHALL HAVE SINGLE POINT CONNECTION. AIR-HANDLING UNIT WITH ECM MOTOR.
2. VERIFY ELECTRICAL POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
3. PROVIDE AIR FILTERS, DUCT CONNECTIONS AND VIBRATION ISOLATION. PROVIDE PROGRAMMABLE THERMOSTAT AND SUPP. ELEC. HEAT MODULE CONNECTED TO UNIT FOR SINGLE POINT OF CONNECTION.
4. PROVIDE CONDENSATE DRAIN AS RECOMMENDED BY MANUFACTURER AND ROUTE CONDENSATE PIPING TO HUB DRAIN.
5. PROVIDE AUXILIARY DRAIN PAN UNDER THE AIR HANDLER WITH FLOAT ACTIVATED SWITCH TO SHUT THE UNIT DOWN IN CASE OF CONDENSATE OVERFLOW. REFER TO DETAIL PROVIDED.
6. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT OF AIR-HANDLING UNIT.
7. FLOAT ACTIVATED CONDENSATE SWITCH SHALL BE PROVIDED AND INSTALLED BY HVAC CONTRACTOR. DUCT SMOKE DETECTORS SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR AND INSTALLED BY HVAC CONTRACTOR.
8. PROVIDE COIL OUTLET SWITCH TO SHUT UNIT DOWN IN CASE OF CONDENSATE OVERFLOW. WIRE COIL OUTLET SWITCH IN SERIES WITH AUXILIARY CONDENSATE SWITCH LOCATED IN DRAIN PAN.
9. UNIT SHALL BE CONTROLLED BY A MANUFACTURER'S THERMOSTAT WITH FOUR AVERAGING SENSORS.

AIR COOLED HEATPUMP UNIT SCHEDULE													
MARK	AHU SERVED	HEAT PUMP HEATING CAP (MBH)	SEER	HSPF	NOM. CAP. (TONS)	REFRIG.	O.A. TEMP. SUMMER (DB)	O.A. TEMP. WINTER (DB)	WEIGHT (LBS)	POWER VAC/PH	BASIS OF DESIGN CARRIER	NOTES	
													CONDENSING UNIT
HP-1	AH-1	15.8	17.5	8.1	2.0	R410A	96	23	350	208/1	27TPA824A003	1:2:3:4	
HP-2	AH-2	32.2	15.2	8.1	3.0	R410A	96	23	350	208/1	27TPA836A003	1:2:3:4	
HP-3	AH-3	32.2	15.2	8.1	3.0	R410A	96	23	350	208/1	27TPA836A003	1:2:3:4	

1. PROVIDE WITH DEFROST CONTROLS, LOW AMBIENT HEAD PRESSURE CONTROLS, AND ANTI-SHORT CYCLE TIMER. PROVIDE COIL GUARD.
2. VERIFY ELECTRICAL POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
3. PROVIDE MOUNTING PAD AS PER DETAIL PROVIDED.
4. 2-STAGE COMPRESSOR UNIT.

MINI SPLIT SYSTEM SCHEDULE													
OUTDOOR UNIT MARK	INDOOR UNIT MARK	MIN COOLING MBH @ 47°F	MIN HEATING MBH @ 47°F	SUPPLY AIR CFM	POWER VAC/PH	SEER2	HSPF2	CARRIER MODEL #		SERVES	NOTES		
								OUTDOOR	INDOOR				
HPU-1	AUJ-1	24.0	810	208/1	23.1	8.7	37MAR4024AA3	45MAHAQ24XA3	121	SERVERS	1:2:3:4:5:6:7:8:9:10		
HPU-2	AUJ-2	18.0	615	208/1	23.5	8.0	37MAR4018AA3	45MAHAQ18XA3	135	ELEC.	1:2:3:4:5:6:7:8:9:10		
HPU-3	AUJ-3	24.0	810	208/1	23.1	8.7	37MAR4024AA3	45MAHAQ24XA3	114	ELEC.	1:2:3:4:5:6:7:8:9:10		

1. VERIFY ELECTRICAL POWER REQUIREMENTS WITH ELECTRICAL PLANS WHICH TAKES PRECEDENCE OVER THIS INFORMATION.
2. ROUTE CONDENSATE AS NOTED ON PLANS. COORDINATE WITH PLUMBING.
3. CONDENSATE DRAIN SHALL BE 2-INCHES DEEP SHEET METAL PLENUM BEHIND PLENUM.
4. CONTRACTOR MUST COORDINATE EXACT LOCATION OF DRAIN IN THE FIELD WITH PLUMBING CONTRACTOR. MECHANICAL MUST ROUTE CONDENSATE TO APPROPRIATE LOCATION OF DISPOSAL.
5. PROVIDE DISCONNECT SWITCH TO SHUT UNIT DOWN IN CASE OF CONDENSATE OVERFLOW.
6. PROVIDE MANUFACTURER'S WIRED REMOTE CONTROLLER. KSAC200501AAL.
7. PROVIDE RECTOR SEAL. SENSITIVE CONDENSATE OVERFLOW SWITCH TO SHUT UNIT DOWN IN CASE OF CONDENSATE OVERFLOW.
8. MINI SPLIT SYSTEM MOUNTED ON WALL (SEE PLANS). PROVIDE MANUFACTURER'S WIRE THERMOSTAT.
9. PROVIDE FLOAT ACTIVATED CONDENSATE PUMP TO PUMP CONDENSATE DOWN TO DRAIN WHERE REQUIRED. PUMP SHALL BE INTEGRAL TO THE UNIT CABINET.

FAN SCHEDULE													
MARK	CFM	EXT. SP. IN. W.G.	DRIVE TYPE	MOTOR AMP/WATTS /HP	MAX. SONES	POWER/PHASE	SERVES	BASIS OF DESIGN	NOTES				
EF-1	390	0.40	DIRECT	191.0 W	2.0	115/1	147 & 147 MEN/WOMEN & 152 JAN	GREENHECK CSP-A510	1:2:3:4:6				
EF-2	70	0.25	DIRECT	80.0 W	0.7	115/1	124 TOILET	GREENHECK SP-B90	1:2:3:7				
EF-3	70	0.25	DIRECT	80.0 W	0.7	115/1	125 TOILET	GREENHECK SP-B90	1:2:3:7				
EF-4	70	0.25	DIRECT	80.0 W	0.7	115/1	126 BEAK ROOM	GREENHECK SP-B90	1:2:3:5				
EF-5	70	0.25	DIRECT	80.0 W	0.7	115/1	159 COPY STORAGE	GREENHECK SP-B90	1:2:3:5				
EF-6	70	0.25	DIRECT	80.0 W	0.7	115/1	129 LOCKER	GREENHECK SP-B90	1:2:3:5				

1. CEILING MOUNTED CENTRIFUGAL FAN. PROVIDE FACTORY SUPPLIED DISCONNECT SWITCH, BACKDRAFT DAMPER, VIBRATION ISOLATION, FAN SPEED CONTROLLER, GRILLE AND MOTOR WITH THERMAL OVERLOAD.
2. PROVIDE ROUND DUCT CONNECTION.
3. PROVIDE ELECTRICAL POWER REQUIREMENTS WITH ELECTRICAL PLANS, WHICH TAKE PRECEDENCE OVER THIS INFORMATION.
4. FAN SHALL BE CONTROLLED BY A 24/7 365 DAY TIME CLOCK LOCATED IN WATER ROOM. ELECTRICAL SHALL PROVIDE TIME CLOCK.
5. FAN SHALL BE CONTROLLED BY A SWITCH LOCATED IN ROOM IT SERVES.
6. IN-LINE CABINET FAN. PROVIDE FACTORY SUPPLIED DISCONNECT, BACK DRAFT DAMPER AND MOTOR WITH THERMAL OVERLOAD.
7. INTERLOCK FAN WITH LIGHTS. PROVIDE 10-MINUTE TIME DELAY.

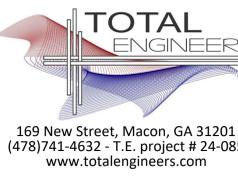
AIR DEVICE SCHEDULE													
MARK	SERVICE	NECK SIZE	SIZE	MATERIAL	TYPE	PATTERN	MOUNTING TYPE	LAYOUT BASIS	NOTES				
S1	SUPPLY	SEE PLANS	24" X 24"	STEEL	SQUARE CONC.	4-WAY	LAY-IN	TITUS TMS	1:2:3				
S2	SUPPLY	SEE PLANS	24" X 24"	STEEL	SQUARE CONC.	4-WAY	SURFACE	TITUS TMS	1:2:3				
S3	SUPPLY	SEE PLANS	12" X 12"	STEEL	SQUARE CONC.	4-WAY	SURFACE	TITUS TMS	1:2:3				
S4	SUPPLY	SEE PLANS	48"-4 SLOT	ALUMINUM	LINEAR SLOT	1-WAY	SURFACE	TITUS ML-38	3:4:5				
S5	SUPPLY	SEE PLANS	48"-4 SLOT	ALUMINUM	LINEAR SLOT	1-WAY	LAY-IN	TITUS ML-38	3:4:5				
S6	SUPPLY	SEE PLANS	NECK+1-3/4"	STEEL	DOUBLE DEFLECTION REGISTER	2-WAY	SURFACE/DUCT	TITUS 300RS	3:10				
S7	SUPPLY	SEE PLANS	12" X 12"	STEEL	SQUARE CONC.	4-WAY	LAY-IN	TITUS TMS	1:2:3				
R1	RETURN	SEE PLANS	24"x24"	ALUMINUM	EGGCRATE	---	LAY-IN	TITUS 50F	1:6				
R2	RETURN	SEE PLANS	NECK+1-3/4"	ALUMINUM	FULL LOUVERED FACE	---	SURFACE	TITUS 350R	7:8:10				
R3	RETURN	SEE PLANS	24"x12"	ALUMINUM	EGGCRATE	---	LAY-IN	TITUS 50F	1:6				
R4	RETURN	SEE PLANS	24"x24"	ALUMINUM	EGGCRATE	---	SURFACE	TITUS 50F	1:6				
E1	EXHAUST	SEE PLANS	12"x12"	ALUMINUM	EGGCRATE	---	SURFACE	TITUS 50F	1:6				
E2	EXHAUST	SEE PLANS	8"x8"	ALUMINUM	EGGCRATE	---	SURFACE	TITUS 50F	1:6				
E3	EXHAUST	SEE PLANS	12"x12"	ALUMINUM	EGGCRATE	---	LAY-IN	TITUS 50F	1:6				

1. PROVIDE STANDARD WHITE FINISH.
2. INSULATE BACK OF DEVICE.
3. BALANCE AIRFLOW TO QUANTITY SHOWN.
4. 4'-0" LENGTH AS STANDARD. PROVIDE FACTORY INSULATED PLENUM ON TOP OF DIFFUSER FOR DUCT CONNECTION. CONSULT ARCHITECT FOR DIFFUSER FINISH.
5. PROVIDE CONCEALED FASTENING, FLUSH MOUNT FRAME, AND BORDER.
6. PROVIDE FULL SIZE SHEET METAL PLENUM ON TOP OF GRILLE FOR CONNECTION TO DUCT.
7. PROVIDE BLADES IN HORIZONTAL DIRECTION. BLADES ARE AT 0-DEGREES BLADE DEFLECTION.
8. CONSULT ARCHITECT WITH GRILLE FINISH.
9. PROVIDE OPPOSED BLADE DAMPER(ED) THAT IS ACCESSIBLE FROM THE FACE OF DIFFUSER. GRILLE SHALL BE SAME COLOR AS DUCT IT IS MOUNTED ON. REFER TO ARCHITECT FOR DUCT FINISH.
10. PROVIDE OPPOSED BLADE DAMPER(ED) THAT IS ACCESSIBLE FROM THE FACE OF DIFFUSER. GRILLE SHALL BE SAME COLOR AS DUCT IT IS MOUNTED ON. REFER TO ARCHITECT FOR DUCT FINISH.

SELF-CLEANING IONIZATION SYSTEM SCHEDULE		
AIRFLOW CAPACITY MIN-MAX CFM	BASIS OF DESIGN GLOBAL PLASMA SOLUTIONS	NOTES
0-6000	GPS-MOD	1:2:3:4:5:6:7

1. ONE SELF-CLEANING IONIZATION SYSTEM SHALL BE INSTALLED FOR RTU-2.
2. SYSTEM SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.
3. USE THIS SYSTEM FOR PACKAGED UNIT RTU-2 ONLY.
4. MODULAR NEEDLEPOINT BIOPOLAR IONIZATION AIR IONIZATION SYSTEM.
5. THE UNIT SHALL MOUNT AT THE INLET OF THE COIL AND SHALL BE SIZED TO FIT THE WIDTH OF THE COIL.
6. UNIT SHALL BE EQUIPPED WITH VOLTAGE SELECTOR SWITCH, ILLUMINATED ON/OFF SWITCH, OPERATION STATUS LED, AND SIX HV OUTPUT PORTS.
7. INTERLOCK IONIZATION SYSTEM TO RUN WITH EVAPORATOR FAN.

ALPHA BLDG SET 08-14-2025



COVINGTON EOC 911 CENTER
 Owner
 10706 HWY 26
 COVINGTON, GA 30014

PRINT RECORD		
No.	DATE	DESCRIPTION
1	08/18/2025	PERMIT COMMENTS

Drawn By: MGT/JWK
 Checked By: KMP
 Date: Job No. 24029
 Sheet Title: MECHANICAL SCHEDULES

Sheet No. M-0.2
 NOT RELEASED FOR CONSTRUCTION

ELECTRICAL SPECIFICATIONS

DIVISION 26
ELECTRICAL

SECTION A: GENERAL ELECTRICAL REQUIREMENTS

- THESE PLANS AND SPECIFICATIONS APPLY TO COVINGTON-NEWTON COUNTY 911 CENTER, COVINGTON, GEORGIA. THE WORK DESCRIBED BY THESE PLANS AND SPECIFICATIONS APPLY TO THE INDICATED PROJECT AND MAY NOT BE MODIFIED OR REUSED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- ALL WORK SHALL BE PERFORMED BY LICENSED ELECTRICAL CONTRACTOR WITH MINIMUM OF TWO YEARS OF EXPERIENCE LIST OF PREVIOUS JOBS AND REFERENCES SHALL BE MADE AVAILABLE UPON REQUEST. CONTRACTOR SHALL PROVIDE ADEQUATE INSURANCE FOR PERSONNEL AND SHALL REPAIR ANY DAMAGE OCCURRING AS THE RESULT OF THIS PROJECT AND RELATED PROPERTY.
- ALL WORK SHALL BE PERFORMED IN A PROFESSIONAL MANNER IN ACCORDANCE WITH THE 2023 NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE NFPA 70, ADA CODE, GA ACCESSIBILITY CODE, STATE OF GEORGIA ENERGY CODE AND ALL OTHER APPLICABLE CODES AND ORDINANCES.
- ALL PERMITS AND FEES SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
- ALL EQUIPMENT, MATERIAL, AND DEVICES SHALL BE LISTED OR RECOGNIZED BY UNDERWRITERS LABORATORY OR ELECTRICAL TESTING LABORATORY AND USED AND INSTALLED IN ACCORDANCE WITH ITS LISTING.
- ALL WORK PERFORMED SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE FINAL COMPLETION DATE EXCEPT FOR FUSES AND LAMPS IN LIGHT FIXTURES. UPON NOTIFICATION OF THE PROBLEM, THE CONTRACTOR SHALL INVESTIGATE THE PROBLEM WITHIN 48 HOURS UNLESS A DIFFERENT TIME PERIOD IS AGREED TO. THE CONTRACTOR SHALL INVESTIGATE, REPAIR OR REPLACE ALL FAULTY EQUIPMENT WITHIN A REASONABLE TIME PERIOD WITHOUT CHARGE TO THE OWNER.
- THE TERM "PROVIDE" SHALL BE UNDERSTOOD TO MEAN OBTAIN THE ITEM DESCRIBED, INSTALL THE ITEM IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS, AND MANUFACTURER'S RECOMMENDATIONS.
- ALL PENETRATIONS MADE IN FIRE RATED BUILDING PORTIONS SHALL BE SEALED WITH A LISTED RESISTANT MATERIAL SUITABLE FOR THE APPLICATION.
- ALL INSTALLATIONS OF ELECTRICAL EQUIPMENT AND MATERIALS SHALL BE COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION.
- PLANS ARE DIAGRAMMATIC AND SHOW THE LOCATION OF THE EQUIPMENT, RACEWAY AND FIXTURES, AND ARE NOT TO BE SCALED. ALL DIMENSIONS SHALL BE VERIFIED AT THE BUILDING SITE.
- CONTRACTOR SHALL VERIFY AND COORDINATE ALL EQUIPMENT AND DEVICE LOCATIONS WITH OWNER'S PROJECT MANAGER PRIOR TO INSTALLATION.
- EQUIPMENT BREAKER AND WIRING REQUIREMENTS: THE CONTRACTOR SHALL SUBMIT FOR REVIEW A FABRICATED SHEET OF BREAKER AND WIRING REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT REQUIRING POWER AS SPECIFIED IN DIVISION 23. REQUIREMENTS SHALL BE IDENTIFIED BY HORSEPOWER OR KW, OPERATING AMPERAGE, REQUIRED VOLTAGE AND PHASE REQUIREMENTS. MANUFACTURER'S SUGGESTED OVERCURRENT CIRCUIT PROTECTION DEVICE SIZE AND MINIMUM CIRCUIT AMPACITY SIZE, WHERE THE ELECTRICAL REQUIREMENTS EXCEED THE MANUFACTURER'S SUGGESTED OVERCURRENT CIRCUIT PROTECTION SHOWN ON THE ELECTRICAL DRAWINGS (WHEN USING THE BASIS OF DESIGN UNIT LISTED IN THE MECHANICAL SCHEDULES/SPECIFICATIONS OR A SIMILAR UNIT OF THE SAME SIZE FROM LISTED MANUFACTURERS). THE CONTRACTOR SHALL MAKE THE NECESSARY ADJUSTMENTS TO THE BRANCH CIRCUITRY PER THE CURRENT NEC AT NO ADDITIONAL COST TO THE OWNER. WHEN CHANGES ARE MADE TO POWER REQUIREMENTS FOR EQUIPMENT DUE TO OWNER ARCHITECT/ENGINEER APPROVED VALUE ENGINEERING CHANGES TO EQUIPMENT, THE COST MUST BE INCLUDED IN THE VALUE ENGINEERING OVERSIGHT AND ADJUSTMENT COSTS. COSTS TO ADJUSTMENTS TO BRANCH CIRCUITRY TO EQUIPMENT DUE TO VALUE ENGINEERING CHANGES WILL NOT BE ALLOWED AFTER THE OVERALL VALUE ENGINEERING CHANGE ORDER HAS BEEN APPROVED. IN ALL CASES, BREAKER AND WIRING REQUIREMENTS FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER BEFORE OR AT THE SAME TIME AS THE SHOP DRAWINGS FOR THE ELECTRICAL DISTRIBUTION GEAR OR EQUIPMENT. IN NO CASE SHALL THE ELECTRICAL DISTRIBUTION GEAR OR EQUIPMENT BE ORDERED OR BRANCH CIRCUITRY ROUGHED IN PRIOR TO ENGINEER REVIEW AND COMMENT ON THIS DOCUMENT. ANY EQUIPMENT ORDERED OR BRANCH CIRCUITRY ROUGHED IN ON THE JOBSITE WITHOUT THIS REVIEW AND COMMENT WILL BE TOTALLY AT THE CONTRACTOR'S RISK.

SECTION B: BASIC MATERIALS

- ALL CONDUCTORS USED FOR 600 VOLTS OR LESS SHALL BE HIGH GRADE COPPER CONDUCTORS WITH 75 DEGREE C, THHN OR THWN THERMOPLASTIC INSULATION. ALL CONDUCTORS SHALL BE MADE IN THE USA. ALL CONDUCTORS ROUTED IN UNDERGROUND CONDUIT SHALL BE RATED FOR WET LOCATIONS.
- ALL INTERIOR 120/277 VOLT, 20 AMP POWER AND LIGHTING WIRING SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING OR "MC" CABLE (IF NOT EXPOSED) FOR ALL INTERIOR CIRCUITS UNLESS OTHERWISE NOTED. IF "MC" CABLE IS USED, HOMERUNS SHALL BE IN 3/4 IN. EMT. POWER CIRCUITS FOR HVAC EQUIPMENT SHALL BE IN 3/4" ELECTRICAL METALLIC CONDUIT MINIMUM. ALL CONDUIT SHALL BE SUPPORTED FROM BUILDING STRUCTURE. IT SHALL NOT BE SUPPORTED FROM DUCTWORK, PIPING, CEILING GRID OR CEILING GRID SUPPORTS, OR ANY OTHER NON-STRUCTURAL ITEM. CONDUIT SHALL BE SUPPORTED IN ACCORDANCE WITH THE NEC. CONDUIT IN EXPOSED STRUCTURE AREAS SHALL BE EMT, GALVANIZED RIGID STEEL CONDUIT SHALL BE USED IN AREAS WHERE IT WILL BE EXPOSED TO PHYSICAL DAMAGE.
- CONDUIT UNDERGROUND SHALL BE SCHEDULE 40 PVC, IF MORE THAN ONE CONDUIT IS PROVIDED IN A SINGLE TRENCH, THE CONDUIT SHALL BE RACKED WITH SPACERS EVERY FOUR FEET TO MAINTAIN A MINIMUM SPACING BETWEEN CONDUIT OF TWO INCHES. BACKLAYS USED FOR UNDERGROUND INSTALLATIONS SHALL BE FREE OF FOREIGN MATTER, WHERE EXPOSED TO WEATHER, CONDUIT SHALL BE GALVANIZED RIGID STEEL OR INTERMEDIATE METALLIC CONDUIT. THE CONDUIT SHALL BE TERMINATED WITH LISTED FITTINGS AND ALL CONDUIT ENDS SHALL BE REAMED AND SMOOTH. ALL CONDUIT ENDS IN BOXES SHALL BE PROVIDED WITH INSULATED BUSHINGS.
- A #12 INSULATED COPPER GROUNDING CONDUCTOR SHALL BE INCLUDED IN ALL BRANCH CIRCUITS RATED 20 AMPERS; ALL OTHER CIRCUITS AND FEEDERS WILL BE PROVIDED WITH AN INSULATED COPPER CONDUCTOR SIZED AS NOTED OR IN ACCORDANCE WITH THE NEC, WHICHEVER IS GREATER.
- THE MINIMUM SIZE OF ALL CONDUCTORS NOT OTHERWISE INDICATED IS #12 AND THE MINIMUM SIZE OF ALL CONDUIT UNLESS OTHERWISE INDICATED IS 1/2 IN.
- ALL JUNCTION BOXES SHALL BE PROVIDED WITH COVERS AND ALL UNUSED OPENINGS SHALL BE PLUGGED. ALL JUNCTION BOXES SHALL BE INDEPENDENTLY SUPPORTED FROM STRUCTURE. COVERS OF BOXES SHALL BE LABELED WITH THE CIRCUIT NUMBER WITH A BLACK PERMANENT MARKER IN 3/4 IN. HIGH LETTERS (LEGIBLE HANDWRITTEN LETTERING IS ACCEPTABLE).
- ALL OUTLET BOXES SHALL BE SQUARE METAL BOXES. PROVIDE PLASTER RINGS FOR ALL OUTLET BOXES CONTAINING DEVICES TO PROVIDE A FIRM MOUNTING SUPPORT FOR THE DEVICE.
- ALL CONVENIENCE RECEPTACLES SHALL BE SPECIFICATION GRADE 20 AMP RECEPTACLES, OWNER TO SELECT COLOR, TAMPER RESISTANT (TYPE "TR").
- ALL LIGHT SWITCHES SHALL BE SPECIFICATION GRADE 20 AMP TOGGLE SWITCHES FULL LOAD RATED FOR TUNGSTEN-HALOGEN LAMPS, OWNER TO SELECT COLOR.
- PROVIDE FACEPLATES FOR ALL RECEPTACLES AND SWITCHES. COORDINATE STYLE AND COLOR WITH OWNER'S PROJECT MANAGER.
- PROVIDE BETWEEN 12 AND 24 INCHES OF LIQUID TIGHT FLEXIBLE CONDUIT BETWEEN RIGID CONDUIT AND ANY EQUIPMENT CONTAINING MOTORS. THE FLEXIBLE CONDUIT SHALL BE SUPPORTED TO PREVENT THE CONDUIT FROM RESTING ON THE GROUND OR CONCRETE PAD.
- PROVIDE WEATHERPROOF RECEPTACLE WITHIN 25 FEET OF EACH PIECE OF EXTERIOR EQUIPMENT. THIS RECEPTACLE SHALL BE MOUNTED HORIZONTALLY WITH METAL HINGED "IN USE" COVER MOUNTED TO OPEN UP. THIS OUTLET SHALL BE A GFCI RECEPTACLE. THIS RECEPTACLE SHALL BE MOUNTED IN DIE CAST NON-CORRODING METAL BOX.
- WHEN OUTLETS OR BOXES ARE INDICATED INSTALLED ON OPPOSITE SIDES OF THE SAME WALL, THE CONTRACTOR SHALL ADJUST THE LOCATION TO OFFSET THE OUTLETS WITH A WALL STUD PROVIDING SEPARATION.

SECTION C: DISTRIBUTION EQUIPMENT

- CONTRACTOR SHALL PROVIDE CONDUCTORS AND CONDUIT FOR ALL FEEDERS IN ACCORDANCE WITH THE PLANS.
- SEPARATELY MOUNTED CIRCUIT BREAKERS SHALL BE MOUNTED IN NEMA TYPE I ENCLOSURES IN INDOOR APPLICATIONS AND IN NEMA 3R ENCLOSURES IN EXTERIOR OR WET LOCATIONS. ALL CIRCUIT BREAKER ENCLOSURES SHALL BE PROVIDED WITH HINGED COVERS AND PROVISIONS FOR PADLOCKING THE COVERS.
- ALL EQUIPMENT CONTAINING MOTORS SHALL BE PROVIDED WITH A DISCONNECTING MEANS WITHIN TEN FEET OF THE UNIT UNLESS OTHERWISE NOTED. THIS DISCONNECTING MEANS SHALL AS A MINIMUM BE A NON-FUSED SWITCH OR TOGGLE STARTER SIZED TO MATCH THE EQUIPMENT. PROVIDE OTHER DEVICES AS NOTED ON THE PLANS. PROVIDE NEMA TYPE I ENCLOSURES INDOORS AND NEMA 3R OUTDOORS.
- PROVIDE GFCI CIRCUIT BREAKERS AND RECEPTACLES AS INDICATED ON THE PLANS AND IN THESE SPECIFICATIONS. THESE DEVICES SHALL BE CLASS A GFCI DEVICES.

- PROVIDE PANELS AS SCHEDULED ON PLANS. CIRCUIT BREAKERS SHALL BE THERMAL-MAGNETIC BREAKERS WITH A MINIMUM INTERRUPTING RATING OF 10,000 AIC FOR 120/208V AND 4,000 AIC FOR 277/480V OR AS INDICATED ON THE PLANS. CIRCUIT BREAKERS SHALL HAVE 65/75 DEGREE C RATED TERMINATIONS. PANEL NOTED SHALL BE SERVICE ENTRANCE RATED. MOUNT PANELS WITH TOP OF PANEL 6 FT. ABOVE FLOOR. PROVIDE 3/4" GREY PAINTED PLYWOOD BACKBOARD FOR ALL PANELS. SECURE TO WALL WITH 1/4 IN. TOGGLE BOLTS. PANEL MANUFACTURERS SQUARE D, GENERAL ELECTRIC (GE), SIEMENS, AND EATON, ALL CURRENT CARRYING PARTS SHALL BE COPPER.
- SYSTEM COORDINATION: THE MANUFACTURER OF THE PANELBOARDS SHALL PROVIDE SERIES RATED EQUIPMENT BASED ON THE LISTED TEST RESULTS. THE CONTRACTOR SHALL VERIFY THE AVAILABLE SHORT CIRCUIT CURRENT AT THE SERVING TRANSFORMER.
- PROVIDE EACH PANELBOARD WITH A TYPEWRITTEN CIRCUIT BREAKER DIRECTORY CARD INSIDE A PLASTIC COVERING EVERY CIRCUIT AND CIRCUIT IDENTIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE. THE IDENTIFICATION SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS. THE DIRECTORY AND COVERING SHALL BE LOCATED INSIDE A STEEL FRAME PROVIDED INSIDE THE DOOR OF EACH PANELBOARD. THE DIRECTORY SHALL BE TYPED TO IDENTIFY THE LOAD FED BY EACH CIRCUIT BREAKER AND THE AREAS SERVED.
- PROVIDE NAMEPLATES FOR ALL PANELBOARDS, DISCONNECT SWITCHES, ENCLOSED CIRCUIT BREAKERS, COMBINATION STARTERS, CONTACTORS, AND ALL OTHER ELECTRICAL DISTRIBUTION EQUIPMENT PANELS. MOUNT NAMEPLATES ON EXTERIOR OF THE DOOR OF ALL SURFACE MOUNTED PANELS AND EQUIPMENT. NAME PLATES SHALL BE LAMINATED WITH 1/8" CLEAR POLYESTER FILM. IN HIGH WHITE LETTERS ETCHED ON BLACK BACKGROUND. NAME PLATES SHALL BE INSTALLED PARALLEL TO EQUIPMENT LINES, THE NAME OR IDENTIFICATION SHALL BE IN LARGE CAPITAL LETTERS. THE IDENTIFICATION SHALL INCLUDE TRANSPORTATION, REMOVAL, AND INSTALLATION OF NEW FIXTURE.

SECTION D: LIGHTING

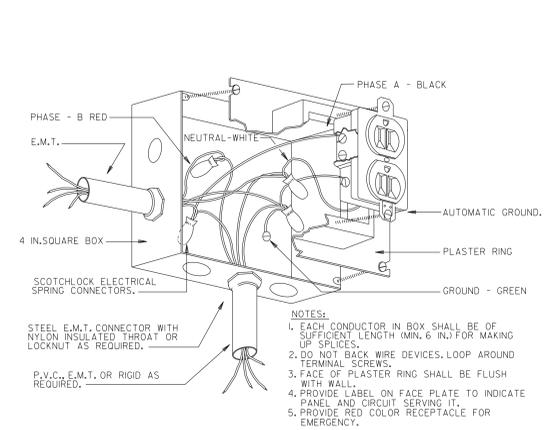
- TYPES AND SPECIFIC REQUIREMENTS ARE PROVIDED ON THE LIGHTING FIXTURE SCHEDULE. IN THE PLANS, LIGHT FIXTURES SHALL BE PROVIDED WITH LAMPS, DRIVERS, BALLASTS, AND FULLY FUNCTIONING AT COMPLETION OF PROJECT.
- ALL LED FIXTURES SHALL BE UL LISTED AND HAVE A MINIMUM OF 5 YEAR ON-SITE PRELIMINARY WARRANTY FOR DEFECTIVE OR NON-STARTING LED SOURCE ASSEMBLY. DRIVERS, AND FOR LUMINAIRE EXHIBITING INADEQUATE LUMEN OUTPUT, IT SHALL COVER THE FIXTURE AND THE WORKMANSHIP AND SHIPPING. ON-SITE REPLACEMENT SHALL INCLUDE TRANSPORTATION, REMOVAL, AND INSTALLATION OF NEW FIXTURE.
- RATED LUMINAIRE WATTAGE SHALL BE ACTUAL, ACCOUNTING FOR ANY REDUCTION IN EFFICIENCY DUE TO SUB-OPTIMAL LOADING OF DRIVERS.
- DRIVERS SHALL BE CAPABLE OF ACCEPTING THE VOLTAGE INDICATED ON THE LIGHTING FIXTURE SCHEDULE AND CAPABLE OF ACCEPTING THE DRIVERS SHALL HAVE A CLASS A RATING, TOTAL HARMONIC DISTORTION OF LESS THAN 20%, AND SHALL NOT CONTAIN ANY POLYCHLORINATED BIPHENYL (PCB).
- LED FIXTURES SHALL BE TESTED TO IES LM-79 AND IES LM-80 STANDARDS. OUTDOOR FIXTURES SHALL BE IP65 RATED, LED'S, DRIVERS AND ALL COMPONENTS SHALL HAVE A SYSTEM LIFETIME OF 50,000 HOURS OR MORE AT 25 DEGREES CELSIUS AND SHALL MAINTAIN A MINIMUM OF 85% OF INITIAL LUMEN OUTPUT AFTER 5000 HOURS OF OPERATION. LED'S SHALL HAVE COLOR RENDERING INDEX (CRI) OF 80 OR GREATER.
- ALL SURFACE MOUNTED FIXTURES SHALL BE INDEPENDENTLY SUPPORTED FROM STRUCTURE. ALL CEILING MOUNTED FIXTURES SHALL BE SUPPORTED FROM STRUCTURE AND BRACED TO PREVENT MOVEMENT IF APPLICABLE.
- ALL RECESSED FIXTURES IN LAYIN TYPE CEILINGS SHALL BE PROVIDED WITH GRID CLIPS TO FASTEN FIRMLY TO CEILING SUPPORT GRID. THE CEILING GRID SHALL BE SUPPORTED AT EACH CORNER OF A FIXTURE.
- CONNECTION TO ALL FIXTURES IN LAYIN CEILING SHALL BE BY FLEXIBLE CONDUIT OF FOUR TO SIX FEET IN LENGTH. A GROUND CONDUCTOR WILL BE INCLUDED WITH THIS CONNECTION.
- CONNECTIONS ON FIXTURES SHALL BE 0.25 INCH THICK MINIMUM. ALL HOUSINGS SHALL BE 22 GAUGE STEEL MIN. AND HAVE A POST FABRICATION HIGH REFLECTIVE WHITE FINISH.

SECTION E: FIRE ALARM SYSTEM (FULL VOICE EVAC SYSTEM COMPLETE WITH MICROPHONE PER CURRENT NFPA CODES)

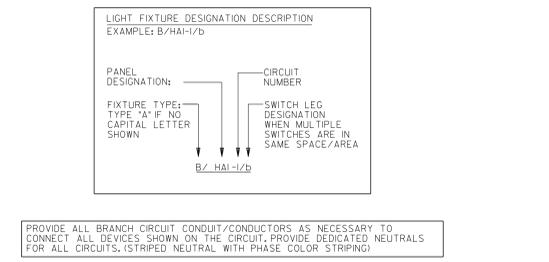
- ACCEPTABLE MANUFACTURERS: NOTIFIER, FIRE LITE, EDWARDS, SIMPLEX, OR SILENT KNIGHT.
- PROVIDE A COMPLETE OPERABLE VOICE EVAC FIRE ALARM SYSTEM FOR THIS PROJECT. THE MAIN PANEL SHALL BE LOCATED AS SHOWN. THE FIRE ALARM SYSTEM SHALL BE DESIGNED FOR CLASS B OPERATION. THE WIRING FOR THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN 1/2 IN. ELECTRICAL METALLIC TUBING. PROVIDE INSULATED FITTINGS ON ALL CONDUIT ENDS. THE FIRE ALARM SHALL BE MADE IN THE USA AND BE UL LISTED.
- WIRING AND DEVICES FOR THE SYSTEM SHALL BE SUPERVISED. COLOR CODE THE CONDUIT EVERY 24 IN. WITH RED MARKINGS (EXCEPT WHERE EXPOSED).
- THE MAIN PANEL SHALL HAVE A BATTERY BACKUP AND BE SURGE PROTECTED. THE BATTERY SHALL BE CAPABLE OF PROVIDING NORMAL OPERATION FOR A PERIOD OF 24 HOURS WITH ENOUGH RESERVE TO ANNUNCIATE A BUILDING ALARM FOR 90 MINUTES.
- NEW DEVICES SHALL BE PROVIDED WITH RECESSED METAL BOXES. ALL DEVICES SHALL BE MOUNTED FLUSH WITH WALL EXCEPT FOR PULL STATIONS WHICH SHALL BE SEMI-FLUSH.
- NEW SPEAKER/STROBE DEVICES SHALL MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT. THE SPEAKER SHALL PRODUCE A SOUND LEVEL OF 90 DECIBELS. THE STROBE SHALL PRODUCE A FLASHING PULSE OF LIGHT OF 75 CANDELLA.
- STROBE DEVICES SHALL PRODUCE A FLASHING PULSE OF LIGHT OF 75 CANDELLA.
- NEW PULL STATIONS SHALL BE NON-GLASS-BREAK TYPE AND KEYS THE SAME AS THE FIRE ALARM PANEL.
- THE SMOKE DETECTORS SHALL BE THE PHOTOELECTRIC TYPE POWERED FROM THE MAIN FIRE ALARM PANEL.
- THE GENERAL BUILDING ALARM WILL SOUND WHEN ACTIVATED AT THE CONTROL PANEL. BY SMOKE OR HEAT DETECTORS, OR BY A PULL STATION. ALARM WILL ALSO SOUND WHEN ACTIVATED BY A DUCT SMOKE DETECTOR OR SPRINKLER.
- THE MAIN PANEL SHALL PROVIDE INDICATION OF EACH INITIATING DEVICE LOCATION FOR ALARM, TROUBLE AND SUPERVISORY CONDITIONS. THE PANEL SHALL HAVE "LAMP TEST" ALARM SILENCE, TROUBLE AND SUPERVISORY SILENCE, SYSTEM RESET, AND ALARM INITIATE CONTROLS. THE PANEL SHALL ALSO INDICATE VOLTAGE AND BATTERY TEST. THE PANEL SHALL ALSO INCLUDE AN LCD DISPLAY. PANEL SHALL BE IN A SURFACE MOUNTED ENCLOSURE WITH LOCKABLE, SEE THROUGH, HINGED FRONT COVER.
- THE FIRE ALARM PANEL SHALL BE EQUIPPED WITH A DIGITAL TRANSMITTER AND CELLULAR COMMUNICATOR FOR OFF PREMISES REMOTE MONITORING (FIRE DEPARTMENT) DURING ALARM CONDITION. PROVIDE 3/4 IN. CONDUIT FROM FIRE ALARM PANEL TO TELEPHONE BACKBOARD, FIELD COORDINATE.
- PROVIDE REMOTE ANNUNCIATOR PANEL AS SHOWN ON PLANS. THE ANNUNCIATOR PANEL SHALL BE PROVIDED WITH AN LCD DISPLAY AND COMPLETE CONTROL PUSH BUTTONS INCLUDING, BUT NOT LIMITED TO, ALARM ACKNOWLEDGE, ALARM SILENCE, RESET, ETC.
- PROVIDE PHOTO ELECTRIC TYPE DUCT MOUNTED SMOKE DETECTORS WHERE SHOWN IN HVAC SUPPLY DUCT. UNIT SHALL HAVE SAMPLING TUBES THAT EXTEND THE WIDTH OF THE DUCT. PROVIDE REMOTE INDICATOR ACCESSIBLE IN NEAREST MECH/ELEC ROOM FOR EACH DETECTOR, WHICH WILL INDICATE WHICH DETECTOR IS ACTIVATED.
- SEE FIRE ALARM SUBCONTRACTOR SUBMITTAL TO AUTHORITY HAVING JURISDICTION ON SHEET E-5.4 FOR ADDITIONAL REQUIREMENTS. FIRE ALARM SUBCONTRACTOR IS RESPONSIBLE FOR ALL ADDITIONAL DEVICES AND EQUIPMENT AS REQUIRED TO MEET ALL NFPA, IBC, GEORGIA STATE, AND LOCAL CODES.

LIGHTING FIXTURE SCHEDULE		
TYPE	DESCRIPTION	MANUFACTURER
A	2 FT. X 4 FT. RECESSED LOW PROFILE ARCHITECTURAL TROFFER WITH ACRYLIC CENTER LENS AND MATTE WHITE POWDER PAINT REFLECTOR; STANDARD 0-10 DIMMING; FIELD SELECTABLE LUMEN AND COLOR TEMP. LAMPS: LED, 5310 LUMENS, 41 WATTS, 3500 DEGREE K DRIVER: UNV. VOLT	LITHONIA "STAKS 2X4 AL03 SWW7" COLUMBIA "CLT" SER., METALUX "ACHIEVA" SER., H.E. WILLIAMS "FT" SER.
B	2 FT. X 2 FT. RECESSED LOW PROFILE ARCHITECTURAL TROFFER WITH ACRYLIC CENTER LENS AND MATTE WHITE POWDER PAINT REFLECTOR; STANDARD 0-10 DIMMING; FIELD SELECTABLE LUMEN AND COLOR TEMP. LAMPS: LED, 4371 LUMENS, 35 WATTS, 3500 DEGREE K DRIVER: UNV. VOLT	LITHONIA "STAKS 2X2 AL03 SWW7" COLUMBIA "CLT" SER., METALUX "ACHIEVA" SER., H.E. WILLIAMS "FT" SER.
C	COMMERCIAL GRADE DOWNLIGHT, WHITE PAINTED FLANGE, 6 IN. ROUND APERTURE, SEMI-REFLECTOR FINISH, MEDIUM WATTAGE DISTRIBUTION; STANDARD 0-10 DIMMING TO 1%; FIELD SELECTABLE LUMENS AND COLOR TEMP. LAMPS: LED, 2533 LUMENS, 25 WATTS, 3500 DEGREE K DRIVER: UNV. VOLT	LITHONIA "LBR6 NCH AL03 SWW7" HALL COMMERCIAL "HCC" SER., PRESCOLITE "LBRP-RD" SER., OR APPROVED EQUAL BY H.E. WILLIAMS
D	RECESSED 2 IN. LINEAR LED SLOT, 20 FT. CONTINUOUS ROW INSTALLATION, UPPER HOUSING STEEL WITH EXTRUDED ALUMINUM TRIM, 0-10 DIMMING TO 1%. LAMPS: LED, 900 LM / FT., 8 W / FT., 3500 DEGREE K DRIVER: UNV. VOLT	NULITE "R62 D ST F09 L 35 UNV D 11 WH 20", FOCAL POINT "SEEM 2" SER., PINNACLE "EDGE EV2D" SER., FINELITE "HP-2" SER.
E	24 IN. WIDE PENDANT, EXTRUDED ALUMINUM HOUSING, MATTE WHITE DIFFUSER, STANDARD 0-10 DIMMING, COORDINATE FINISH WITH OWNER/ARCHITECT. LAMPS: LED, 1890 LUMENS, 35 WATTS, 3500 DEGREE K DRIVER: UNV. VOLT	OCL "PE1 P1D8 24 MW (FINISH) LED 35 UNV 48 DIM1 FWA", OR OWNER APPROVED EQUAL BY FOCAL POINT, ARANCIA, BYBA
F	2 IN. LINEAR RECESSED LED, 20 FT. CONTINUOUS ROW INSTALLATION, UPPER HOUSING STEEL WITH EXTRUDED ALUMINUM TRIM, BI-DIRECT DISTRIBUTION; 0-10 DIMMING TO 1%; COORDINATE FINISH WITH OWNER/ARCHITECT. LAMPS: LED, 900 LUMENS, 8 W / FT., 3500 DEGREE K DRIVER: UNV. VOLT	NULITE "RP24 B ST F09 L 35 UNV D 22 (FINISH) TX 1% COORDINATE FINISH WITH OWNER/ARCHITECT. FOCAL POINT "SEEM 2" SER., PINNACLE "EDGE EV2D" SER., FINELITE "HP-2" SER.
H	24 IN. LONG VANITY FIXTURE, MATTE WHITE DIFFUSER, BRUSHED ALUMINUM FINISH END CAP/DOOR BACK PLATE MOUNTING, DAMP LOCATION RATED; 0-10 DIMMING STANDARD. COORDINATE FINISH WITH OWNER/ARCHITECT. LAMPS: LED, 2050 LUMENS, 30 WATTS, 3500 DEGREE K DRIVER: UNV. VOLT	OCL "H01 S15A 24 MW (FINISH) LED 35 UNV DM1", OR OWNER APPROVED EQUAL BY THERM LIGHTING, WAC LIGHTING, ASL LIGHTING
J	4 FT. LENSED LED STRIPLIGHT, WITH FLAT FROSTED DIFFUSE LENS, PENDANT MOUNTED, STANDARD 0-10 DIMMING, SUSPEND FIXTURE SUCH THAT FIXTURE BOTTOM ELEVATION IS 9' 0" A.F.F. LAMPS: LED, 5000 LUMENS, 32 WATTS, 3500 DEGREE K DRIVER: UNV. VOLT	LITHONIA "CLX L48 5000LM SEF-DOLN KW02 LED 5SK BOKB" SER., METALUX "SMX" SER., COLUMBIA "MPS" SER., H.E. WILLIAMS "75R" SER.
OA	ARCHITECTURAL WALL PACK WITH DIE-CAST ALUMINUM HOUSING; WET LOCATION RATED. COORDINATE FINISH WITH OWNER/ARCHITECT. MOUNT FIXTURE SUCH THAT BOTTOM OF FIXTURE IS 14'-0" ABOVE GROUND. LAMPS: LED, 6615 LUMENS, 50 WATTS, 4000 DEGREE K DRIVER: UNV. VOLT	LITHONIA "ARC2 LED P5 40K MVOLT (FINISH)", SPITZER "PEAK JR" SER., BEACON LIGHTING "TRP2" SER., GARDOCC "101L" SER.
OB	ARCHITECTURAL WALL PACK WITH DIE-CAST ALUMINUM HOUSING; WET LOCATION RATED. COORDINATE FINISH WITH OWNER/ARCHITECT. MOUNT FIXTURE SUCH THAT BOTTOM OF FIXTURE IS 8'-0" ABOVE GROUND. PROVIDE 4 WATT EMERGENCY BATTERY PACK OPTION WHERE INDICATED ON THE DRAWINGS. LAMPS: LED, 3021 LUMENS, 25 WATTS, 4000 DEGREE K DRIVER: UNV. VOLT	LITHONIA "ARC1 LED P3 40K MVOLT (FINISH)", SPITZER "PEAK JR" SER., BEACON LIGHTING "TRP1" SER., GARDOCC "101L" SER.
OC	NOMINAL 11" ROUND SURFACE MOUNTED PANEL; SLEEK ULTRA LOW PROFILE; DIFFUSING LENS PROVIDING LIGHT UNIFORMITY; WET LISTED FOR COVERED CEILING; PROVIDE 10 WATT REMOTE EMERGENCY BATTERY PACK OPTION WHERE INDICATED ON THE DRAWINGS. LAMPS: LED, 1300 LUMENS, 15 WATTS, 4000 DEGREE K DRIVER: UNV. VOLT	JUNO "JF 11 131M SWWS 90 CRMVOLT 2T WH", HALCO "SMD" SER., PRESCOLITE "L8SE" SER., TGS "THINKER" SER.
IC	LED INTEGRATED THERMOPLASTIC COMBO EXIT/EMERGENCY, IMPACT RESISTANT HOUSING; TOP, END, OR BACK MOUNTING STANDARD; UNIVERSAL FIELD SELECTABLE LUMEN AND COLOR TEMP.; FIELD SELECTABLE RED OR GREEN ILLUMINATION; FIELD SELECTABLE CHEVRONS, WHITE / BLACK ENCLOSURE (PROVIDE 90 MIN. BACK-UP BATTERY). LAMPS: LED, 1 WATT BALLAST: UNV. VOLT	LITHONIA "LHQM" SER., SURE-LITES "LTK-C" SER., LIGHT ALARMS "LCA" SER., SURELITES "SELLI" SER., BEGHELLI "EPC" SER.
IB	LED 2 HEAD EMERGENCY UNIT, LOW PROFILE CONTEMPORARY DESIGN WITH THERMOPLASTIC HOUSING, IMPACT RESISTANT. (PROVIDE 90 MIN. BACK-UP BATTERY). LAMPS: LED (2), 3 WATTS BALLAST: UNV. VOLT	COMPASS "CU2" SER., LITHONIA "ELM2L" SER., LIGHT ALARMS "LCA" SER., SURELITES "SELLI" SER., BEGHELLI "8BX" SER.

NOTES:
1. CONTRACTOR TO VERIFY ALL VOLTAGES, GRID AND CEILING TYPES WITH THE ARCHITECT AND COORDINATE FIXTURE DIMENSION SIZE TO ENSURE A PROPER FIT IN ALL CEILING TYPES PRIOR TO ORDERING.
2. ALL LUMENS LISTED ARE DELIVERED LUMENS, ALL EQUALS TO SPECIFIED FIXTURES SHALL NOT BE ANY LOWER THAN 5% OF SPECIFIED LUMENS. WATTAGE SHALL NOT BE HIGHER THAN 15% OF SPECIFIED WATTAGE.
3. LISTING OF MANUFACTURERS DOES NOT EQUAL AUTOMATIC APPROVAL. ALL CHARACTERISTICS NOTED IN DESCRIPTION SECTION MUST BE MET IN ORDER TO BE APPROVED.



RECEPTACLE CONNECTION DETAIL
E-1.01 NOT TO SCALE



ELECTRICAL LEGEND

LIGHTING AND POWER	
	CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALL, HASH MARKS INDICATE NUMBER OF CONDUCTORS. (3 WIRE UNLESS SHOWN)
	CONDUIT RUN CONCEALED BELOW FLOOR SLAB, OR UNDERGROUND.
	HOMERUN TO PANELBOARD, LETTER OR LETTERS INDICATE PANELBOARD NUMBER. NUMBERS INDICATES CIRCUIT NUMBERS.
	LIGHT FIXTURE, SEE LIGHTING FIXTURE SCHEDULE FOR MOUNTING AND TYPE.
	LIGHT FIXTURE, SEE LIGHTING FIXTURE SCHEDULE FOR MOUNTING AND TYPE. PROVIDE WITH 90 MINUTE BATTERY PACK.
	LIGHTING FIXTURE, WALL BRACKET MOUNTED. MOUNTING HEIGHT AS NOTED ON DRAWINGS OR AS SHOWN ON ARCHITECTURAL ELEVATIONS.
	LIGHTING FIXTURE, WALL BRACKET MOUNTED. MOUNTING HEIGHT AS NOTED ON DRAWINGS OR AS SHOWN ON ARCHITECTURAL ELEVATIONS. PROVIDE WITH 90 MINUTE BATTERY PACK.
	POLE MOUNTED LIGHT FIXTURE, SEE SCHEDULE FOR TYPE.
	DUPLEX CONVENIENCE OUTLET, 18 IN. ABOVE FLOOR UNLESS OTHERWISE NOTED. '10' INDICATES ISOLATED GROUND)
	DUPLEX CONVENIENCE OUTLET, 8 IN. ABOVE COUNTER TOP OR 42 IN. MOUNTING HEIGHT UNLESS OTHERWISE NOTED.
	QUADRUPLEX CONVENIENCE OUTLET, 18 IN. ABOVE FLOOR UNLESS OTHERWISE NOTED. '10' INDICATES ISOLATED GROUND)
	DUPLEX CONVENIENCE OUTLET, GF TYPE, 18 IN. MOUNTING HEIGHT, "WP" WHERE SHOWN INDICATES WEATHERPROOF, PROVIDE METAL IN-USE WEATHERPROOF COVERPLATE.
	DUPLEX CONVENIENCE OUTLET, GF TYPE, MOUNTED 8 INCHES ABOVE COUNTER OR AT 42 IN. ABOVE FLOOR UNLESS OTHERWISE NOTED.
	JUNCTION BOX, FLUSH WALL MOUNTED, AT 18 IN. TO CENTERLINE UNLESS OTHERWISE NOTED.
	JUNCTION BOX LOCATED ABOVE CEILING.
	SPECIAL RECEPTACLE TO SUIT EQUIPMENT BEING FURNISHED. '10' INDICATES ISOLATED GROUND)
	FLUSH FLOOR BOX WITH DUPLEX CONVENIENCE OUTLET AND COMBINATION TELEPHONE AND DATA OUTLET IN FLUSH FLOOR BOX, PROVIDE WALKER 880 OMNIBOX SERIES (10' INDICATES ISOLATED GROUND)
	SINGLE POLE TOGGLE SWITCH, 42 IN. ABOVE FLOOR.
	THREE WAY OR FOUR WAY SWITCH AS INDICATED, 42 IN. MOUNTING HEIGHT.
	0-10 VOLT SLIDE TYPE DIMMER, 42 IN. ABOVE FLOOR, 2015 IECC COMPLIANT. (MANUAL ON TO 50%, DIM +100%, AUTO OFF). MUST BE COMPATIBLE WITH VAC SENSOR AND POWER PACK.)
	TRANSFORMER, SEE RISER DIAGRAM FOR SIZE AND VOLTAGE.
	PANELBOARD, SEE SCHEDULE.
	DISCONNECT SWITCH.

TELEPHONE/DATA SYSTEMS	
	COMBINATION COMPUTER AND TELEPHONE OUTLET, 18 IN. TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE. (2 DATA, 1 TEL)
	COMPUTER OUTLET, 18 IN. ABOVE FLOOR UNLESS NOTED OTHERWISE. (2 DATA)
	COMPUTER OUTLET, MOUNTED 8 INCHES ABOVE COUNTER OR AT 42 IN. ABOVE FLOOR UNLESS OTHERWISE NOTED. (2 DATA)
	COMBINATION COMPUTER AND TELEPHONE OUTLET, MOUNTED 8 INCHES ABOVE COUNTER OR AT 42 IN. ABOVE FLOOR UNLESS OTHERWISE NOTED. (2 DATA, 1 TEL)
	WIRELESS ACCESS POINT, (2 DATA)
	PLYWOOD BACKBOARD, "TB" INDICATES TELEPHONE BOARD.

LIGHTING CONTROL SYSTEMS	
	COMBINATION 360 DEGREE, ULTRASONIC AND PASSIVE INFRARED SENSOR (WATT STOPPER "VAC-300", GREENGATE, NOVITAS, HUBBELL, LEVITON, SENSOR SWITCH). ('V' INDICATES VACUENCY SENSOR, UNIT MUST COMPLY WITH IECC 2015 REQUIREMENTS AND BE COMPATIBLE WITH DIMMER)
	ULTRASONIC OCCUPANCY SENSOR (WATT STOPPER "WT-2250", GREENGATE, NOVITAS, HUBBELL, LEVITON, SENSOR SWITCH)
	WALL MOUNTED SENSOR SWITCH, 42 IN. MOUNTING HEIGHT (WATTSTOPPER DSW-300, GREENGATE, NOVITAS, HUBBELL, LEVITON, SENSOR SWITCH).

FIRE ALARM SYSTEM (VOICE EVAC SYSTEM)	
	FIRE ALARM CONTROL PANEL, SURFACE MOUNTED.
	FIRE ALARM ANNUNCIATOR, FLUSH MOUNTED.
	FIRE ALARM VOICE EVAC PANEL, FLUSH MOUNTED.
	STROBE LIGHT, 80 IN. ABOVE FLOOR TO THE BOTTOM OF THE LENS.
	FIRE ALARM SIGNAL, SPEAKER AND FLASHING LIGHT, 6 FT.-8 IN. MOUNTING HEIGHT.
	FIRE ALARM PULL STATION, WALL MOUNTED 42 IN. ABOVE FLOOR.
	SMOKE DETECTOR, PHOTOELECTRIC TYPE.
	CARBON MONOXIDE DETECTOR.
	FIRE ALARM DUCT SMOKE DETECTOR LOCATED IN HVAC SUPPLY AIR DUCT, PROVIDE IN UNITS 2000 CFM AND GREATER. DETECTOR SHALL SHUT DOWN UNIT UPON ACTIVATION.
	TAMPER SWITCH, FURNISHED AND INSTALLED WITH SPRINKLER SYSTEM. INTERLOCK WITH FIRE ALARM SYSTEM BY ELECTRICAL.
	FLOW SWITCH, FURNISHED AND INSTALLED WITH SPRINKLER SYSTEM. INTERLOCK WITH FIRE ALARM SYSTEM BY ELECTRICAL.

SECURITY SYSTEM (RACEWAY, BOXES, AND PULL STRING ONLY)	
	ACCESS CONTROL PROXIMITY READER, PROVIDE JUNCTION BOX AND RACEWAY WITH PULL STRING TO SECURITY EQUIPMENT LOCATION, COORDINATE WITH SECURITY CONTRACTOR PRIOR TO ROUGH-IN, COORDINATE MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.
	DOOR CONTACT POSITION SENSOR LOCATION, PROVIDE SINGLE GANG BOX AT DOOR FRAME ON SECURE SIDE OF DOOR, COORDINATE EXACT LOCATION WITH ACCESS CONTROL SYSTEM VENDOR, PROVIDE 3/4 IN. C. WITH PULL STRING TO STUB-OUT ABOVE CEILING.
	WALL MOUNTED CCTV SECURITY CAMERA, PROVIDE JUNCTION BOX AND RACEWAY WITH PULL STRING TO SECURITY EQUIPMENT LOCATION, COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL.

NOTES:
1. ALL MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO CENTERLINE OF OUTLET OR DEVICE.
2. ALL RECEPTACLES SHALL BE TAMPER RESISTANT (TYPE "TR").

GENERAL NOTES:

- ALL FLUSH RECESSED OUTLET BOXES SHALL BE INSTALLED SUCH THAT FRONT EDGE OF THE BOX WILL NOT BE SET BACK OF THE FINISHED SURFACE MORE THAN 1/4 IN. ORDER TO COMPLY WITH N.E.C. 314-20. SUPPORT OF OUTLET BOX BY RECEPTACLE AND COVERPLATE IS NOT ACCEPTABLE. CAREFULLY COORDINATE ROUGH-IN WITH BLOCK MASONS AND GROUT-IN CELL CONTAINING OUTLET BOX.
- DO NOT SCALE DRAWINGS TO LOCATE EQUIPMENT OR OUTLETS. MOUNTING HEIGHTS AS INDICATED ON THE DRAWINGS SHALL BE FROM THE FINISHED FLOOR TO THE CENTER LINE OF THE OUTLET BOX.
- THE ELECTRICAL DRAWINGS ARE ONLY A PART OF THE CONTRACT DOCUMENTS. ALL OF THE DRAWINGS AND SPECIFICATIONS MUST BE REVIEWED FOR THEIR INTERRELATIONSHIP AND REQUIRED COORDINATION BETWEEN DISCIPLINES.
- ALL RECEPTACLES SHALL BE TAMPER RESISTANT (TYPE "TR").

ALPHA BLOG SET

08-1

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VOLTAGE PHASE 3 WIRE 4 BUS AMPS	120			208			PANEL MAIN AMPS	MDP 800	LOCATION MOUNTING MAIN	ELECTRICAL 114 SURFACE LUGS	DESCRIPTION		
	A	B	C	A	B	C							
DESCRIPTION	VOLT AMPS			BRKR			CKT NO	BUS CONN	P NO	BRKR NO	VOLT AMPS	DESCRIPTION	
	A	B	C	A	B	C							
LUPS	9600	8800		125	2	1	A	2	3	225		PANEL A	
LUPS2	8400		8400	125	2	5	C	6	2	2682		PANEL B / LB2	
SPACE				7	A	8				400			
SPACE				3	13	A	14	3				SPACE	
SPACE				15	B	16							
SPACE				17	C	18				27343		31240	
SPACE				3	19	A	20	3					
TVSS				21	B	22							
				23	C	24							
TOTALS	18000	8800	8400								54205	59931	62117
VOLT AMPS	BUS A	80117		REMARKS: 55.0 KAIC MINIMUM									
	BUS B	68731		30 POLE PANEL									
	BUS C	62655											
	TOTAL	212453											

VOLTAGE PHASE 3 WIRE 4 BUS AMPS	120			208			PANEL MAIN AMPS	LA 400	LOCATION MOUNTING MAIN	ELECTRICAL 114 SURFACE LUGS	DESCRIPTION		
	A	B	C	A	B	C							
DESCRIPTION	VOLT AMPS			BRKR			CKT NO	BUS CONN	P NO	BRKR NO	VOLT AMPS	DESCRIPTION	
	A	B	C	A	B	C							
EXTERIOR RECEIPT	400			20	1	1	A	2	2	25		1893	
ELECTRICAL RECEIPT	600			20	1	3	B	4				HP-1	
CORRIDOR RECEIPT	400			20	1	5	C	6	2	40	2195	2195	
TOILET RECEIPT	400			20	1	9	B	10	2	40	2195	2195	
* EWC	1000			20	1	11	C	12	2	40	2195	2195	
MECH RECEIPT	200			20	1	13	A	14	3	30		AH-2	
WATER RECEIPT	200			20	1	15	B	16				2717	
DOSS RECEIPT	400			20	1	17	C	18				2717	
BREAK COUNTER	400			20	1	19	A	20	3	30		2717	
BREAK COUNTER	200			20	1	21	B	22				2717	
BREAKROOM RECEIPT	1000			20	1	23	C	24		45		3378	
COPR	1000			20	1	25	A	26	2	45		3378	
COPY RECEIPT	400			20	1	27	B	28				3378	
COPY RECEIPT	600			20	1	29	C	30	2	30	2247		
** REFRIGERATOR	1000			20	1	31	A	32				2247	
** REFRIGERATOR	1000			20	1	33	B	34	2	30	2247		
** FACP	500			20	1	35	C	36				2247	
TVSS	60			3	37	A	38	2				2250	
				39	B	40						2250	
				41	C	42	1	20	44			RC-2	
TOTALS	3400	3400	4100								14362	17397	17397
VOLT AMPS	BUS A	30877		REMARKS: 45.0 KAIC MINIMUM									
	BUS B	28467		SECTION 1 OF 2									
	BUS C	26862		FEED THRU LUGS									
	TOTAL	86206		** PROVIDE GFCI BREAKER									
				** LABEL CIRCUIT PER NEC 2023 FOR FIRE ALARM									
				CONTROL, PROVIDE HASP LOCK FOR BREAKER									

VOLTAGE PHASE 3 WIRE 4 BUS AMPS	120			208			PANEL MAIN AMPS	LA2 400	LOCATION MOUNTING MAIN	ELECTRICAL 114 SURFACE LUGS	DESCRIPTION		
	A	B	C	A	B	C							
DESCRIPTION	VOLT AMPS			BRKR			CKT NO	BUS CONN	P NO	BRKR NO	VOLT AMPS	DESCRIPTION	
	A	B	C	A	B	C							
DISPATCH LIGHTS	960			20	1	1	A	2	1	20		DISPATCH STATION	
DISPATCH LIGHTS	570			20	1	3	B	4	1	20		DISPATCH STATION	
LIGHTS	600			20	1	5	C	6	1	20	800	DISPATCH STATION	
LIGHTS	520			20	1	7	A	8	1	20	800	DISPATCH STATION	
DISPATCH STATION	800			20	1	9	B	10	1	20	800	DISPATCH STATION	
DISPATCH STATION	800			20	1	11	C	12	1	20	800	DISPATCH STATION	
DISPATCH STATION	800			20	1	13	A	14	1	20	800	DISPATCH STATION	
DISPATCH STATION	800			20	1	15	B	16	1	20	800	DISPATCH STATION	
DISPATCH STATION	800			20	1	17	C	18	1	20	800	DISPATCH STATION	
DISPATCH STATION	800			20	1	19	A	20	1	20	800	DISPATCH STATION	
DISPATCH STATION	800			20	1	21	B	22	1	20	1500	GEN BATTERY CHRGR	
DISPATCH STATION	800			20	1	23	C	24	2	40	3000	GEN HEATER	
DISPATCH STATION	800			20	1	25	A	26			3000	DISPATCH STATION	
DISPATCH STATION	800			20	1	27	B	28	2			SPACE	
SPARE				20	1	29	C	30				SPACE	
SPARE				20	1	31	A	32	3			SPACE	
SPARE				20	1	33	B	34				SPACE	
SPARE				20	1	35	C	36				SPACE	
SPARE				20	1	37	A	38	3			SPACE	
SPARE				20	1	39	B	40				SPACE	
SPARE				20	1	41	C	42				SPACE	
TOTALS	3880	3770	3000								5400	3900	6200
VOLT AMPS	BUS A	10980		REMARKS: 45.0 KAIC MINIMUM									
	BUS B	7870		SECTION 2 OF 2									
	BUS C	8400											
	TOTAL	26150											

VOLTAGE PHASE 3 WIRE 4 BUS AMPS	120			208			PANEL MAIN AMPS	LB 400	LOCATION MOUNTING MAIN	ELECTRICAL 135 SURFACE LUGS	DESCRIPTION		
	A	B	C	A	B	C							
DESCRIPTION	VOLT AMPS			BRKR			CKT NO	BUS CONN	P NO	BRKR NO	VOLT AMPS	DESCRIPTION	
	A	B	C	A	B	C							
CORRIDOR RECEIPT	600			20	1	1	A	2	1	20	400	TECH STOR. RECEIPT	
OFFICE RECEIPT	1000			20	1	3	B	4	1	20	400	TECH STOR. RECEIPT	
OFFICE RECEIPT	1000			1000	20	1	5	C	6	1	20	400	
OFFICE RECEIPT	1000			20	1	7	A	8	1	20	400	TECH STOR. RECEIPT	
OFFICE RECEIPT	1000			20	1	9	B	10	1	20	1000	OFFICE RECEIPT	
DIRECTOR RECEIPT	1000			800	20	1	11	C	12	1	20	1000	
DIRECTOR RECEIPT	1000			20	1	13	A	14	1	20	600	OFFICE RECEIPT	
OFFICE RECEIPT	1000			20	1	15	B	16	1	20	800	OFFICE RECEIPT	
CORRIDOR RECEIPT	600			20	1	17	C	18	1	20	800	STORAGE RECEIPT	
CORRIDOR RECEIPT	600			20	1	19	A	20	1	20	400	CORRIDOR COUNTER	
CORRIDOR RECEIPT	600			20	1	21	B	22	1	20	400	CORRIDOR COUNTER	
RESTROOM RECEIPT	1000			400	20	1	23	C	24	1	20	1000	
RESTROOM RECEIPT	1000			20	1	25	A	26	1	20	200	REFRIGERATOR	
RESTROOM RECEIPT	1000			20	1	27	B	28	1	20	400	LAUNDRY RECEIPT	
WATER RECEIPT	400			20	1	29	C	30	1	20	400	LAUNDRY RECEIPT	
TB	600			20	1	31	A	32	3	30	2250	2250	
SPARE				20	1	33	B	34				2250	
MECH RECEIPT	400			20	1	35	C	36	1	20	1000	* WASHER	
*** CORRIDOR LIGHTS	770			20	1	37	A	38	1	20	800	ROOF RECEIPT	
OFFICE LIGHTS	500			20	1	39	B	40	1	20	600	EXTERIOR LIGHTS	
OFFICE LIGHTS	610			20	1	41	C	42	1	20	560	EXTERIOR LIGHTS	
RESTROOM LIGHTS	850			20	1	43	A	44	1	20	500	LIGHT CONTROL	
TRAINING LIGHTS	1150			20	1	45	B	46	2	30	2250	2250	
LIGHTS	560			20	1	47	C	48				2250	
TVSS	60			3	49	A	50	2	30			2250	
				51	B	52						2250	
				53	C	54	1	20				SPARE	
TOTALS	6320	6250	4770								7210	10350	7900
VOLT AMPS	BUS A	31240		REMARKS: 15.0 KAIC MINIMUM									
	BUS B	31464		54 POLE PANEL									
	BUS C	27343		SECTION 1 OF 2									
	TOTAL	90447		FEED THRU LUGS									
				** PROVIDE GFCI BREAKER									
				*** PROVIDE HASP LOCK FOR BREAKER									

VOLTAGE PHASE 3 WIRE 4 BUS AMPS	120			208			PANEL MAIN AMPS	LB2 400	LOCATION MOUNTING MAIN	ELECTRICAL 135 SURFACE LUGS	DESCRIPTION	
	A	B	C	A	B	C						
DESCRIPTION	VOLT AMPS			BRKR			CKT NO	BUS CONN	P NO	BRKR NO	VOLT AMPS	DESCRIPTION
	A	B	C	A	B	C						
FITNESS RECEIPT	400			20	1	1	A	2	3	40		2688
FITNESS RECEIPT	400			20	1	3	B	4				2688
FITNESS RECEIPT	400			20	1	5	C	6			2688	RTU-2
FITNESS RECEIPT	400			20	1	7	A	8	3	40		2688
FITNESS RECEIPT	400			20	1	9	B	10				2688
FITNESS RECEIPT	400			20	1	11	C	12				2688
FITNESS RECEIPT	400			20	1	13	A	14	3	40		2688
FITNESS RECEIPT	400			20	1	15	B	16				2688
FITNESS RECEIPT	400			20	1	17	C	18				2688
LOBBY RECEIPT	600			20	1	19	A	20	3	25		2016
ANTE COUNTER	400			20	1	21	B	22				2016
ANTE												

