

APPLICABLE CODE: CONSTRUCTION SHALL CONFORM TO CURRENT EDITIONS OF THE 2018 INTERNATIONAL BUILDING CODE (IBC), THE 2018 INTERNATIONAL ENERGY CODE (IECC), AS WELL AS ALL OTHER CURRENT LOCAL, STATE, AND FEDERAL CODES AND REGULATIONS APPLICABLE TO THIS PROJECT. CONTRACTOR SHALL CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE APPLICABLE CODES RELEVANT TO THIS PROJECT.

BUILDING CODE SUMMARY

APPLICABLE CODES:
BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE (IBC)
EXISTING BUILDING CODE: 2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
FIRE CODE: 2018 INTERNATIONAL FIRE CODE (IFC)
PLUMBING CODE: 2018 INTERNATIONAL PLUMBING CODE (IPC)
MECHANICAL CODE: 2018 INTERNATIONAL MECHANICAL CODE (IMC)
ELECTRICAL CODE: NFPA 70-2017 NATIONAL ELECTRICAL CODE (NEC)
FIRE PROTECTION: PER 2018 IBC CHAPTER 9 AND NFPA 13-02
FIRE ALARM: PER 2018 IBC CHAPTER 9 AND NFPA 72-02
FUEL GAS: 2018 INTERNATIONAL FUEL GAS CODE
ACCESSIBILITY: PER 2018 IBC CHAPTER 11 AND ICC/ANSI A117.1-2009
ELEVATORS: AMERICAN SOCIETY OF ENGINEERS (ASME) AS ADOPTED BY NJAC 5:23-12
ENERGY CODE: 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

ADDITIONAL APPLICABLE STANDARDS:
• NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS
• NFPA 30 - FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE
• NFPA 34 - NATIONAL FUEL GAS CODE
• NFPA 55 - STANDARD FOR STORAGE, USE AND HANDLING OF COMPRESSED AND LIQUEFIED GASES

PROJECT INFORMATION:
PROJECT NAME: CITY OF CHESTER DEPARTMENT OF PUBLIC WORKS
PROJECT NUMBER: C00C0004A
PREPARED BY: _____ CHECKED BY: _____
DATE: _____

OCCUPANCY CLASSIFICATION AND MIXED OCCUPANCIES:
 SINGLE ACCESSORY - GROUP _____ % OF FLOOR AREA
 MIXED OCCUPANCY SEPARATED NON-SEPARATED COMBINATION
IF SEPARATED, FIRE RESISTANCE RATING OF FIRE BARRIER: _____ HR.
OCCUPANCY CLASSIFICATION(S): S-1/S-2/B
USES: _____

AUTOMATIC SPRINKLER SYSTEM PROVIDED THROUGHOUT BUILDING:
 YES NO
PARTIALLY LIMITED AREA SPRINKLER SYSTEM:
 YES NO
NFPA STANDARD: 13 13R ALT. FIRE PROTECTION SYSTEM:

CONSTRUCTION TYPE: IIB SECTION 601

BUILDING ELEMENTS	REQUIRED	PROVIDED	SECTION
STRUCTURAL FRAME	0	0	(TABLE 601)
BEARING WALLS (EXTERIOR)	0	0	(TABLE 601)
BEARING WALLS (INTERIOR)	0	0	(TABLE 601)
NON-BEARING WALLS (EXTERIOR)	0	0	(TABLE 602)
NON-BEARING WALLS (INTERIOR)	0	0	(TABLE 601)
FLOOR CONSTRUCTION	0	0	(TABLE 601)
ROOF CONSTRUCTION	0(c)	0	(TABLE 601)

HEIGHT & AREA - ALLOWABLE:

OCCUPANCY CLASSIFICATION	TABULAR AREA A _i PER FLOOR	TABULAR HEIGHT	
		FEET	STORIES
S-1, S-2, & B	70,000 sf	75 ft	1
	sf	ft	

HEIGHT & AREA - ACTUAL:

BUILDING HEIGHT	HEIGHT IN FEET	HEIGHT IN STORIES
NEW	24'-11"	1

BUILDING AREA SUMMARY	BUILDING AREA
FIRST	10,270 sf
TOTAL NET FLOOR AREA (GROSS AREA)	10,270 sf

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY
 COVERED AND OPEN MALL BUILDINGS (402) SPRAY APPLICATION OF FLAMMABLE FINISHES (416)
 HIGH-RISE BUILDINGS (403) DRYING ROOMS (417)
 ATRIUMS (404) ORGANIC COATINGS (418)
 UNDERGROUND BUILDINGS (405) LIVELY WORK UNITS (419)
 MOTOR VEHICLE RELATED OCCUPANCIES (406) GROUP I-1, R-1, R-2, R-3 (420)
 GROUP I-2 (HEALTH CARE) (407) HYDROGEN FUEL GAS ROOMS (421)
 GROUP I-3 (CORRECTIONAL OR DETENTION) (408) AMBULATORY CARE FACILITY (422)
 MOTION PICTURE PROJECTION ROOMS (409) STORM SHELTERS (423)
 STAGES, PLATFORMS AND TECHNICAL PRODUCTION AREAS (410) CHILDREN'S PLAY STRUCTURES (424)
 SPECIAL AMUSEMENT BUILDINGS (411) AND STORAGE (426)
 AIRCRAFT RELATED OCCUPANCIES (412) MEDICAL GAS SYSTEMS (427)
 COMBUSTIBLE STORAGE (413) HIGHER EDUCATION LABORATORIES (428)
 HAZARDOUS MATERIALS (414) HYPERBARIC FACILITIES (429)
 CONTROL AREAS (5003.8 - FIRE CODE) HEALTH CARE FACILITIES (429)
 GROUP H1 THROUGH H5 (415) LIVE FIRE TRAINING FACILITIES (430)
 EQUIPMENT PLATFORM (505.3)

NOTE: SEE SPECIAL DETAILED REQUIREMENTS NOTES FOR CLARITY AND SPECIAL CODE CONSIDERATIONS FOR ADDITIONAL REQUIREMENTS, AS APPLICABLE.

SPECIAL DETAILED REQUIREMENTS NOTES:
SECTION 406.6 ENCLOSED PARKING GARAGES
SEE SECTIONS 406.2 AND 406.6

SECTION 406.2.3 ACCESSIBLE PARKING SPACES
WHERE PARKING IS PROVIDED, ACCESSIBLE PARKING SPACES, ACCESS AISLES, AND VEHICULAR ROUTES SERVING ACCESSIBLE PARKING SPACES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 1106.

SECTION 406.2.4 FLOOR SURFACES
FLOOR SURFACES SHALL BE OF CONCRETE OR SIMILAR APPROVED NONCOMBUSTIBLE AND NONABSORBENT MATERIALS. THE AREA OF FLOOR USED FOR PARKING OF AUTOMOBILES OR OTHER VEHICLES SHALL BE SLOPED TO FACILITATE THE MOVEMENT OF LIQUIDS TO A DRAIN OR TOWARD THE MAIN VEHICLE ENTRY DOORWAY.
EXCEPTION #3: SLIP RESISTANT, NONABSORBENT, INTERIOR FLOOR FINISH HAVING A CRITICAL RADIANT FLUX NOT MORE THAN 0.45 W/M², AS DETERMINED BY ASTM E848 OR NFPA 253, SHALL BE PERMITTED IN REPAIR GARAGES.

SECTION 406.2.7 ELECTRIC VEHICLE CHARGING STATION
WHERE PROVIDED, ELECTRICAL VEHICLE CHARGING STATIONS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70, ELECTRICAL VEHICLE CHARGING SYSTEM EQUIPMENT SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 2202. ELECTRIC VEHICLE SUPPLY EQUIPMENT SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 2294. ACCESSIBILITY TO ELECTRIC VEHICLE CHARGING STATIONS SHALL BE PROVIDED IN ACCORDANCE WITH CHAPTER 11.

SECTION 406.2.8 MIXED OCCUPANCY AND USES
MIXED USES PERMITTED IN THE SAME BUILDING AS PUBLIC PARKING GARAGE & REPAIR GARAGES IN ACCORDANCE WITH SECTION 508.1

406.2.9 EQUIPMENT AND APPLIANCES
EQUIPMENT AND APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 406.2.9.1 THROUGH 406.2.9.3 AND THE INTERNATIONAL MECHANICAL CODE, INTERNATIONAL FUEL AND GAS CODE AND NFPA 70

406.2.9.1 & 406.2.9.1.1
EQUIPMENT WITH AN IGNITION SOURCE LOWER THAN 18" A.F.F. SHALL HAVE VESTIBULE DOORS OR SHALL BE RAISED ON A PLATFORM

406.6 ENCLOSED PARKING GARAGES
ENCLOSED PARKING GARAGES SHALL COMPLY WITH SECTION 406.2 AND 406.4 AND 406.6.

406.6.2 VENTILATION
MECHANICAL VENTILATION AND EXHAUST SHALL BE PROVIDED PER CHAPTERS 4 & 5 OF THE IMC.

406.6.3 AUTOMATIC SPRINKLER SYSTEM
ENCLOSED PARKING GARAGE SHALL BE EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH SECTION 903.2.10 & 903.3.1.1

505.3 EQUIPMENT PLATFORMS
EQUIPMENT PLATFORMS IN BUILDINGS SHALL NOT BE CONSIDERED AS A PORTION OF THE FLOOR BELOW SUCH EQUIP PLATFORMS SHALL NOT CONTRIBUTE TO EITHER THE BUILDING AREA OR THE NUMBER OF STORIES AS REGULATED BY SECTION 503.1. THE AREA OF THE EQUIP. PLATFORM SHALL NOT BE INCLUDED IN DETERMINING THE FIRE AREA IN ACCORDANCE WITH SECTION 903. EQUIP PLATFORMS SHALL NOT BE PART OF ANY MEZZANINE AND SUCH PLATFORMS AND WALKWAYS, STAIRS, ALTERNATING TREAD DEVICES AND LADDERS PROVIDING ACCESS TO AN EQUIP PLATFORM SHALL NOT SERVE AS A PART OF THE MEANS OF EGRESS FROM THE BUILDING.

505.3.1 AREA LIMITATIONS
THE AREA OF AN EQUIP PLATFORM WITHIN A ROOM SHALL BE NOT GREATER THAN 2/3 OF THE AREA OF THE ROOM IN WHICH THEY ARE LOCATED. IF COMBINED WITH A MEZZANINE THE COMBINED AREA SHALL NOT EXCEED 2/3 OF THE ROOM IN WHICH THEY ARE LOCATED.

505.3.2 AUTOMATIC SPRINKLER SYSTEM
EQUIP PLATFORMS SHALL BE FULLY PROTECTED BY SPINKLERS ABOVE AND BELOW THE PLATFORM, WHERE REQ'D BY THE STANDARDS REFERENCED IN SECTION 903.3

505.3.3 GUARDS
EQUIPMENT PLATFORMS SHALL HAVE GUARDS WHERE REQ'D BY SECTION 1015.2 (1015.2 EXCEPTION #3 ALLOWS GUARDS DESIGNED THAT ALLOW SPHERES UP TO 21" TO PASS THROUGH OPENINGS TO BE INSTALLED IN AREAS WHERE ELECTRIC, MECHANICAL AND PLUMBING SYSTEMS OR EQUIPMENT ARE ACCESSED AND USED)

INTERIOR FINISH:

OCCUPANCY:	'S-1' & 'S-2' STORAGE		
FINISH CLASS	LOCATION	GARAGE	
<input type="checkbox"/> A	<input type="checkbox"/> EXITS	<input type="checkbox"/> CORRIDORS/ EXIT ACCESS	<input type="checkbox"/> ROOMS/ SPACES
<input type="checkbox"/> B	<input type="checkbox"/> EXITS	<input type="checkbox"/> CORRIDORS/ EXIT ACCESS	<input type="checkbox"/> ROOMS/ SPACES
<input checked="" type="checkbox"/> C	<input checked="" type="checkbox"/> EXITS	<input checked="" type="checkbox"/> CORRIDORS/ EXIT ACCESS	<input checked="" type="checkbox"/> ROOMS/ SPACES

OCCUPANCY: 'B' BUSINESS

FINISH CLASS	LOCATION	OFFICE	
<input type="checkbox"/> A	<input type="checkbox"/> EXITS	<input type="checkbox"/> CORRIDORS/ EXIT ACCESS	<input type="checkbox"/> ROOMS/ SPACES
<input checked="" type="checkbox"/> B	<input checked="" type="checkbox"/> EXITS	<input checked="" type="checkbox"/> CORRIDORS/ EXIT ACCESS	<input checked="" type="checkbox"/> ROOMS/ SPACES
<input type="checkbox"/> C	<input type="checkbox"/> EXITS	<input type="checkbox"/> CORRIDORS/ EXIT ACCESS	<input type="checkbox"/> ROOMS/ SPACES

FIRE PROTECTION SYSTEMS:

SECTION	REQUIRED	PROVIDED	SECTION
AUTOMATIC SPRINKLER	YES	YES	(903)
ALT. AUTOMATIC FIRE-EXTINGUISHING SYST	NO	NO	(904)
STANDPIPE	NO	NO	(905)
PORTABLE FIRE EXTINGUISHER	YES	YES	(906)
FIRE ALARM & DETECTION	NO	YES	(907)
EMERGENCY ALARM	NO	NO	(908)
SMOKE CONTROL SYSTEM	NO	NO	(909)
FIRE COMMAND CENTER	NO	NO	(911)
FIRE DEPARTMENT CONNECTIONS	YES	YES	(912)
FIRE PUMP	NO	NO	(913)
EMERGENCY RESPONDER SAFETY	NO	NO	(914)
CARBON MONOXIDE DETECTION	YES	YES	(915)
GAS DETECTION	NO	NO	(916)
MASS NOTIFICATION SYSTEMS	NO	NO	(917)
EMERGENCY RESPONDER RADIO	NO	NO	(918)

MEANS OF EGRESS:

OCCUPANCY	FIRST FLOOR
A - CORP	S2
B - OFFICE	11
B - LOCKERS	12
S2 - PARKING	16
S1 - REPAIR	13
TOTAL	109

MEANS OF EGRESS ELEMENT	REQUIRED	PROVIDED	SECTION
NUMBER OF EXITS	4	4	(1006.3.2)
EXIT ACCESS TRAVEL DISTANCE	400'-0"	226'-7"	(TABLE 1017.2)
DEAD-END LIMIT	50	0	(1006.2.1)
COMMON PATH OF TRAVEL LIMIT	100'-0"	81'-5"	(1006.2.1)
CORRIDOR FIRE-RESIST. RATING	N/A	N/A	(TABLE 1020.1)

EGRESS WIDTH

DOORS/OTHER	REQUIRED	PROVIDED	SECTION
FIRST FLOOR	0.2 X 109 OCCUPANTS = 21.8	SEE PLANS	(1005.3.2)
			(1007.1.1)

CORRIDORS

FIRST FLOOR	EGRESS WIDTH	SECTION
	44" MIN	(TABLE 1020.2)

COMBUSTIBLE MATERIALS ON EXTERIOR WALLS (FOAM PLASTIC INSULATION):
EXTERIOR WALLS OF BUILDING OF ANY HEIGHT (SECTION 2603.5):
 FIRE-RESISTANCE-RATED WALLS (SECTION 2603.5.1)
 THERMAL BARRIER (SECTION 2603.5.2)
 POTENTIAL HEAT (SECTION 2603.5.3) SEE NOTE #1 BELOW
 FLAME SPREAD AND SMOKE DEV-INDICES (SECTION 2603.5.4)
 VERTICAL AND LATERAL FIRE PROPAGATION (SECTION 2603.5.5)
 LABEL REQUIRED (SECTION 2603.5.6)
 IGNITION (SECTION 2603.5.7)

NOTES:
1. SECTION 2603.4.1.4 FOR ONE STORY BUILDING, FOAM PLASTIC HAVING A FLAME SPREAD INDEX OF 25 OR LESS, AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 450, SHALL BE PERMITTED WITHOUT THERMAL BARRIERS IN OR ON EXTERIOR WALLS IN A THICKNESS NOT MORE THAN 4 INCHES (102 MM) WHERE THE FOAM PLASTIC IS COVERED BY A THICKNESS OF NOT LESS THAN 0.032 INCH-THICK (0.81 MM) ALUMINUM

FIRE APPARATUS ACCESS ROAD (FIRE CODE CHAPTER 9)
 NON-SPRINKLERED BUILDING - EXTEND TO WITHIN 150' OF ALL PORTIONS OF EXTERIOR WALL AT 1ST STORY (F 503.1.1)
 AUTOMATIC SPRINKLER SYSTEM THROUGHOUT - EXTEND TO WITHIN 300' OF ALL PORTIONS OF EXTERIOR WALL AT 1ST STORY (F 503.1.1)
 MINIMUM 20' WIDE / 13'-6" VERTICAL CLEARANCE (F 503.2.1)
 SURFACE DESIGNED TO SUPPORT FIRE APPARATUS LOADS MAINTAINED FOR ALL-WEATHER DRIVING CAPABILITIES (F 503.2.3)
 TURNING RADIUS APPROVED BY THE AUTHORITY HAVING JURISDICTION (F 503.2.4)
 DEAD ENDS EXCEEDING 150' PROVIDED WITH TURN AROUND AREA (F 503.2.5)
 GRADES WITHIN LIMITS ESTABLISHED BY AUTHORITY HAVING JURISDICTION (F 503.2.7)

CONSTRUCTION SAFETY COMPLIANCE WITH:
 CHAPTER 33 SAFE GUARDS DURING CONSTRUCTION OF THE IBC
 CHAPTER 33 FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION OF THE IFC

PLUMBING FIXTURE REQUIREMENTS:

OCCUPANCY CLASSIFICATION	OCCUPANT LOAD	WATER CLOSETS		URINALS		D.F.		LAVATORIES				
		REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED	REQUIRED	PROVIDED			
B	78	2	1	1	0	2	1	1	2	1	1	
S	34	1	1	0	0	0	0	0	1	1	0	0

SEPARATE FACILITIES FOR EACH GENDER REQUIRED? YES NO (2902.2) EXC. # _____
SEPARATE EMPLOYEE FACILITIES REQUIRED? YES NO (2902.3) EXC. # _____
LOCATION OF EMPLOYEE FACILITIES COMPLIES? YES NO (2902.3) EXC. # _____
LOCATION OF PUBLIC FACILITIES COMPLIES? YES NO (2902.3.1) EXC. # _____
OTHER PLUMBING FIXTURE REQUIREMENTS?

ENERGY CONSERVATION CODE: 2018 IECC
COMPLIANCE PATH: PRESCRIPTIVE COMCHECK ASHREA 90.1
 APPROVED SOFTWARE

CLIMATE ZONE: (C401) 1 2 3 4 5 6
 LOW ENERGY BUILDINGS (C402.1.1) COMPLIANCE WITH BUILDING THERM. ENVELOPE NOT REQ'D.

MINIMUM INSULATION:
ROOF (INSULATION ENTIRELY ABOVE DECK) = R30ci (MIN)
WALLS ABOVE GRADE (METAL BUILDING) = U0.052 (MIN)
WALLS ABOVE GRADE (MASS) = R8.5 ci (MIN)
WALLS BELOW GRADE = R7.5 ci
SLAB-ON-GRADE FLOORS (UNHEATED) = R10 (MIN) 24" BELOW
OPAQUE DOORS (SWINGING) U-0.61
GARAGE DOORS <14% GLAZING U-0.31

VERTICAL FENESTRATION:
FIXED 0.38
OPERABLE N/A
ENTRANCE DOORS 0.77

SHGC:
PF < 0.2 SEW-0.36, N-0.48
0.2 < PF < 0.5 SEW-0.43, N-0.53
PF > 0.5 SEW-0.58, N-0.58

ADDITIONAL EFFICIENCY PACKAGE: (C406)
 1. HVAC PERFORMANCE (C406.2) 5. OUTDOOR AIR SYSTEM (C406.6)
 2. REDUCED LIGHTING (C406.3) 6. SERVICE WATER HEATING (C406.7)
 3. ENHANCED LIGHTING CONTROLS (C406.4) 7. ENHANCED ENVELOPE PERFORMANCE (C406.8)
 4. ON-SITE RENEWABLE ENERGY (C406.5) 8. REDUCED AIR INFILTRATION (C406.9)

MANDATORY REQUIREMENTS:
 AIR LEAKAGE (C402.5)
 BUILDING MECHANICAL SYSTEMS (C403)
 SERVICE WATER HEATING (C404)
 ELECTRICAL AND POWER LIGHTING SYSTEMS (C405)

COMPLIANCE STATEMENT: SEE COMPLIANCE STATEMENTS IN DISCIPLINE SPECIFIC DRAWING PACKAGES

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ISSUED FOR BID/PERMIT SET - INTENDED FOR CONSTRUCTION

REV	DATE	DESCRIPTION	BY	CHKD
0				

Professional Certification: I certify that these documents were prepared or approved by me, and that I am a duly licensed _____ under the laws of the (state, commonwealth or district) of _____
License No. _____
Expiration Date: _____

PUBLIC WORKS FACILITY

PENNELLS ST. & W 2ND ST. CHESTER, PA 19013

Colliers Engineering & Design
CED Architecture, Inc. 1814 Bergmann Architectural Associates, Inc.

SCALE: AS SHOWN DATE: 04/28/2025 DRAWN BY: KR/ESB CHECKED BY: ESB
PROJECT NUMBER: C00C0004A DRAWING NAME: _____ REVIEWED BY: ESB

SHEET TITLE: CODE REVIEW

SHEET NUMBER: G001

STRUCTURAL DESIGN CRITERIA - GARAGE & OFFICE BUILDING

1. GOVERNING CODES		
a. BUILDING CODE	2018 PA BUILDING CODE 2018 INTERNATIONAL BUILDING CODE	
b. GENERAL DESIGN LOADS	ASCE 7-16	
c. CONCRETE	ACI 318-14	
d. STEEL FRAMING	ASCE 360-18 & AISC 341-16	
e. COLD-FORMED STEEL FRAMING	ASIS 5000-16	
f. MASONRY	TMS 402-2016	
g. WOOD	ANSI AWC NDS-2018 ANSI AWC SDPW-2016	
2. RISK CATEGORY	III	
3. ROOF (PEMB)		
a. ROOF DEAD LOAD	PER PEMB MANUF	
b. ROOFING, INSULATION, STRUCTURE	7.5 PSF	
c. PRIMARY COLLATERAL	PER ARCH/PEM DWGS	
d. SECONDARY COLLATERAL	PER ARCH/PEM DWGS	
e. SUPENDED EQUIPMENT		
b. ROOF LIVE LOAD	20 PSF	
4. GARAGE EQUI		
a. DEAD LOAD		
b. FLYWOOD DECK + FINISH	5 PSF	
c. CFS FRAMING	5 PSF	
d. MSCOLLATERAL	5 PSF	
e. TOTAL	15 PSF	
b. LIVE LOAD	125 PSF (LIGHT STORAGE)	
5. SNOW LOADS		
a. GROUND SNOW LOAD (P _g)	20 PSF	
b. FLAT ROOF SNOW LOAD (P _f)	17 PSF	
c. MINIMUM ROOF SNOW LOAD (P _m)	2.0 PSF	
d. SNOW EXPOSURE FACTOR (C _e)	1.0	
e. SNOW IMPORTANCE FACTOR (I _s)	1.1	
f. THERMAL FACTOR (C _t) (MAIN BUILDING)	1.1	
g. SLOPE FACTOR (C _s)	1.0	
h. SNOW DRIFT LOADS & UNBALANCED LOADS TO BE CALCULATED & APPLIED BY THE PEMB MANUF		
6. WIND LOADS		
a. DESIGN WIND SPEED (S SEC QUST -ULTIMATE)	125 MPH	
b. DESIGN WIND SPEED (S SEC QUST -ASD)	97 MPH	
c. EXPOSURE CATEGORY	C	
d. ENCLOSURE CLASSIFICATION	ENCLOSURED	
e. INTERNAL PRESSURE COEFFICIENT	±0.18	
f. COMPONENTS AND CLADDING	PER PEMB MANUF	
7. SEISMIC DESIGN DATA		
a. SEISMIC DESIGN CATEGORY	B	
b. SEISMIC IMPORTANCE FACTOR (I _s)	1.0	
c. SEISMIC SITE CLASS (PER GEOTECH)	D	
d. MAPPED SPECTRAL RESPONSE	S _{0.1} = 0.179 S ₁ = 0.047	
e. DESIGN SPECTRAL RESPONSE	S _{0.2} = 0.191 S _{0.3} = 0.075	
f. SEISMIC RESISTING SYSTEM:		
g. STRUCTURAL STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE		
h. RESPONSE MODIFICATION FACTOR	R = 3.0	
i. SEISMIC RESPONSE COEFFICIENT	C _s = 0.064	
j. SEISMIC BASE SHEAR	V = C _s x W _e	
k. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE		
8. FLOOD DESIGN DATA		
a. FLOOD DESIGN CLASS	NOT APPLICABLE	
b. ELEVATION OF LOWEST FLOOR/BASEMENT	NOT APPLICABLE	
c. DRY FLOOD-PROOFING ELEVATION	NOT APPLICABLE	
9. GEOTECHNICAL VALUES		
a. REPORT #00CDD004 BY CED DATED 11/14/2024		
b. DESIGN SOIL PRESSURE	3000 PSF	
c. LOCAL FROST DEPTH REQUIREMENT	36" PER GEOTECH	
10. RAIN LOAD DATA		
a. RAIN INTENSITY (I)	3.12 INCHES PER HOUR	

STRUCTURAL DESIGN CRITERIA - SALT SHED & PARKING CANOPY

1. GOVERNING CODES		
a. BUILDING CODE	2018 PA BUILDING CODE 2018 INTERNATIONAL BUILDING CODE	
b. GENERAL DESIGN LOADS	ASCE 7-16	
c. CONCRETE	ACI 318-14	
d. STEEL FRAMING	ASCE 360-18 & AISC 341-16	
e. COLD-FORMED STEEL FRAMING	ASIS 5000-16	
f. MASONRY	TMS 402-2016	
g. WOOD	ANSI AWC NDS-2018 ANSI AWC SDPW-2016	
2. RISK CATEGORY	I	
3. ROOF		
a. DEAD LOAD	PER DELEGATED DESIGNER	
b. ROOF LIVE LOAD	20 PSF	
4. SNOW LOADS		
a. GROUND SNOW LOAD (P _g)	20 PSF	
b. FLAT ROOF SNOW LOAD (P _f)	13.4 PSF	
c. MINIMUM ROOF SNOW LOAD (P _m)	16 PSF	
d. SNOW EXPOSURE FACTOR (C _e)	1.0	
e. SNOW IMPORTANCE FACTOR (I _s)	0.8	
f. THERMAL FACTOR (C _t)	1.2	
g. SLOPE FACTOR (C _s)	1.0	
5. WIND LOADS		
a. DESIGN WIND SPEED (S SEC QUST -ULTIMATE)	105 MPH	
b. DESIGN WIND SPEED (S SEC QUST -ASD)	81 MPH	
c. EXPOSURE CATEGORY	C	
d. ENCLOSURE CLASSIFICATION	PARTIALLY ENCLOSED	
e. INTERNAL PRESSURE COEFFICIENT	±0.25	
f. COMPONENTS AND CLADDING	PER DELEGATED DESIGNER	
6. SEISMIC DESIGN DATA		
a. SEISMIC DESIGN CATEGORY	B	
b. SEISMIC IMPORTANCE FACTOR (I _s)	1.0	
c. SEISMIC SITE CLASS (PER GEOTECH)	D	
d. MAPPED SPECTRAL RESPONSE	S _{0.1} = 0.179 S ₁ = 0.047	
e. DESIGN SPECTRAL RESPONSE	S _{0.2} = 0.191 S _{0.3} = 0.075	
f. SEISMIC RESISTING SYSTEM:		
g. RESPONSE MODIFICATION FACTOR	PER DELEGATED DESIGNER	
h. SEISMIC RESPONSE COEFFICIENT	PER DELEGATED DESIGNER	
i. SEISMIC BASE SHEAR	V = C _s x W _e	
j. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE		
7. FLOOD DESIGN DATA		
a. FLOOD DESIGN CLASS	NOT APPLICABLE	
b. ELEVATION OF LOWEST FLOOR/BASEMENT	NOT APPLICABLE	
c. DRY FLOOD-PROOFING ELEVATION	NOT APPLICABLE	
8. GEOTECHNICAL VALUES		
a. REPORT #00CDD004 BY CED DATED 11/14/2024		
b. DESIGN SOIL PRESSURE	3000 PSF	
c. LOCAL FROST DEPTH REQUIREMENT	36" PER GEOTECH	
9. RAIN LOAD DATA		
a. RAIN INTENSITY (I)	2.88 INCHES PER HOUR	

GENERAL

- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING LOCAL MUNICIPAL CODES AND SPECIFICATIONS (INCLUDING SUPPLEMENTS & AMENDMENTS) FOR THIS TYPE OF CONSTRUCTION. THE STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING CODES AND REFERENCED STANDARDS LISTED IN THE STRUCTURAL DESIGN CRITERIA SECTION AS ADOPTED BY THE LOCAL JURISDICTION.
- THE STRUCTURAL DRAWINGS ARE INTENDED TO BE USED IN CONJUNCTION WITH THE ARCHITECTURAL DRAWINGS AND ALL OTHER APPLICABLE DISCIPLINE DRAWINGS. IN THE EVENT OF CONFLICT BETWEEN NOTES, DETAILS, OR SPECIFICATIONS, THE MOST RESTRICTIVE REQUIREMENTS SHALL GOVERN.
- THE CONTRACTOR SHALL NOT DEVIATE FROM THE DESIGN DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT AND/OR ENGINEER OF RECORD. CHANGES BY THE CONTRACTOR TO CONTRACTOR PROPOSED ALTERNATIVES OR TO CORRECT CONTRACTOR ERRORS/OMISSIONS, MUST BE SUBMITTED TO THE ARCHITECT/ENGINEER OF RECORD FOR APPROVAL. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS INCLUDING ENGINEERING FEES FOR REVIEW, OBSERVATIONS, STRUCTURAL CALCULATIONS, AND REVISIONS. THE CONTRACTOR SHALL ALSO PROCESS THE REVISED PLANS REFLECTING ALL SUBSTITUTIONS THROUGH THE APPROPRIATE OFFICE OF ALL GOVERNING AGENCIES.
- THE STRUCTURE IS DESIGNED AS SELF-SUPPORTING AFTER THE BUILDING IS FULLY COMPLETED. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION METHODS, PROCEDURES AND SEQUENCES, UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS. TEMPORARY BRACING, SHEETING, SHORING, ETC., TO ENSURE THE STRUCTURAL STABILITY OF THE NEW STRUCTURE, EXISTING STRUCTURES, SIDEWALKS, AND UTILITIES, IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE LOCAL JURISDICTION. LOADS GREATER THAN THE INDICATED DESIGN LIVE LOADS SHALL NOT BE PLACED ON THE STRUCTURE. ALL CONSTRUCTION PROCESSES SHALL MEET ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REQUIREMENTS.
- THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING BUT NOT LIMITED TO SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER FREE AND HARMLESS OF ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER.
- ALL SECTIONS AND DETAILS, WHETHER EXPLICITLY CUT ON PLAN OR NOT, SHALL BE CONSIDERED TYPICAL AND SHALL APPLY AT SIMILAR CONDITIONS. SIGNIFICANT ADJUSTMENTS ACCOUNTING FOR VARYING CONDITIONS IN THE FIELD SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER OF RECORD FOR APPROVAL AND BE RESOLVED PRIOR TO BEGINNING WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK AND COORDINATION INVOLVED TO PROVIDE OPENINGS, CHASES, EQUIPMENT PADS, HANGERS, INSERTS, SLEEVES, ETC., INDICATED ON ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS. OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE REVISED WITHOUT APPROVAL FROM THE ARCHITECT/ENGINEER OF RECORD.
- REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS AND INFORMATION NOT SHOWN. WORKING DIMENSIONS SHALL NOT BE SCALED FROM STRUCTURAL PLANS, SECTIONS, OR DETAILS. ANY REFERENCE TO WATERPROOFING AND FIREPROOFING ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS FOR SPECIFIC REQUIREMENTS.
- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY EXISTING CONDITIONS AND UTILITIES PRIOR TO STARTING ANY CONSTRUCTION. [STRUCTURAL MEMBER INFORMATION INDICATED AS EXISTING ON DRAWINGS WAS OBTAINED DURING LIMITED FIELD OBSERVATIONS AND/OR FROM LIMITED DRAWINGS IF AVAILABLE.] ACTUAL CONDITIONS MAY DIFFER FROM THAT WHICH IS INDICATED ON PLAN. IF FIELD CONDITIONS VARY FROM THOSE SHOWN ON CONTRACT DOCUMENTS, THE CONTRACTOR SHALL CONTACT THE ARCHITECT IMMEDIATELY. ALL FIELD DIMENSIONS SHALL BE VERIFIED AND NOTED AS SUCH ON SHOP DRAWING PRIOR TO FABRICATION OF ANY NEW STRUCTURAL MEMBERS.
- SEISMIC DESIGN AND ANCHORAGE OF NON-STRUCTURAL COMPONENTS SHALL BE IN ACCORDANCE WITH REFERENCE STANDARDS BELOW AND ANY LOCAL MUNICIPAL CODES. SEISMIC ANCHORAGES OF NON-STRUCTURAL COMPONENTS ARE NOT INDICATED ON THESE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND/OR PLUMBING DRAWINGS FOR MORE INFORMATION.
- STRUCTURAL COMPONENTS HAVE NOT BEEN DESIGNED FOR EQUIPMENT VIBRATIONS UNLESS SPECIFICALLY NOTED. VIBRATING EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATORS/INERTIA PADS PROVIDED BY THE OWNER/EQUIPMENT MANUFACTURER.
- THESE DRAWINGS DO NOT DEFINE THE ENTIRE SCOPE OF THE CONTRACTOR OR SUBCONTRACTOR CONTRACTS. REFER TO ALL APPLICABLE ARCHITECTURAL, STRUCTURAL, AND OTHER DISCIPLINE DRAWINGS AS REQUIRED.

SHOP DRAWINGS / DELEGATED DESIGN

- SHOP DRAWINGS FOR ALL STRUCTURAL ELEMENTS ON THE CONTRACT DOCUMENTS MUST BE SUBMITTED TO THE ENGINEER OF RECORD BY THE CONTRACTOR/OWNER IF THE CONTRACTOR/OWNER FAILS TO SUBMIT THE SHOP DRAWINGS. THE ENGINEER OF RECORD WILL NOT BE RESPONSIBLE FOR THE STRUCTURAL CERTIFICATION OF THIS PROJECT. SEE APPLICABLE SECTIONS OR SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
- SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO BEING SUBMITTED FOR APPROVAL AND ANY DISCREPANCY, DEFICIENCY, AND/OR OMISSION FROM THE CONTRACT DRAWINGS SHALL BE NOTED IN WRITING. BY SUBMITTING DRAWINGS TO THE ENGINEER OF RECORD FOR REVIEW, THE CONTRACTOR CERTIFIES ALL MATERIALS, DIMENSIONS, CONDITIONS, AND QUANTITIES AS SHOWN AND/OR CORRECTED ARE VERIFIED.
- SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER OF RECORD PRIOR TO THE FABRICATION OR COMMENCEMENT OF WORK. THE REQUIRED REVIEW PERIOD SHALL BE A MINIMUM OF (10) BUSINESS DAYS.
- SHOP DRAWING SUBMITTALS SHALL BE PROPORTIONED INTO REASONABLY SIZED PACKAGES, CONTAINING NOT MORE THAN 200 SHEETS PER SUBMITTAL, UNLESS APPROVED BY THE ENGINEER OF RECORD PRIOR TO SUBMISSION.
- REPRODUCTION OF CONTRACT DOCUMENTS WILL NOT BE ACCEPTED AS SHOP DRAWINGS. SHOP DRAWINGS WILL BE RETURNED IN PDF FORMAT ONLY.
- REVIEW OF SHOP DRAWING SUBMITTALS IS LIMITED TO REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE CONSTRUCTION DOCUMENTS, APPROVAL, CORRECTIONS, AND COMMENTS MADE ON THE SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS.
- SUBMITTAL REVIEW IS LIMITED TO ITEMS THAT ARE INDICATED AS BEING SUBMITTED FOR APPROVAL. CHANGES TO PREVIOUSLY REVIEWED ELEMENTS MUST BE CLOUDED AND ARE NOT REVIEWED UNLESS SPECIFICALLY REQUESTED. SUBMITTALS LABELED "FOR RECORD," "FOR FIELD USE," OR SIMILAR WILL NOT BE REVIEWED BY THE ENGINEER OF RECORD.
- NON-STRUCTURAL COMPONENT SUBMITTALS ARE REVIEWED FOR EFFECT TO BUILDING SUPERSTRUCTURE ONLY. ALL LOADS IMPOSED ON THE STRUCTURE SHALL BE INCLUDED IN THE SUBMITTAL.
- DELEGATED DESIGN SUBMITTALS ARE REVIEWED AND APPROVED FOR GENERAL COMPLIANCE WITH THE DESIGN CRITERIA ONLY.
- THE FOLLOWING DELEGATED DESIGN ITEMS ARE NOT IN THE ENGINEER OF RECORD'S SCOPE OF WORK AND SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE LOCAL JURISDICTIONS. DELEGATED DESIGN SHOP DRAWINGS AND CALCULATIONS TO BE SUBMITTED FOR APPROVAL INCLUDE:
 - PRE-ENGINEERED METAL BUILDING (PEMB)
 - PRE-FABRICATED PARKING CANOPY
 - COLD-FORMED METAL FRAMING
 - METAL STAIRS
 - METAL HANDRAILS AND GUARDRAILS
 - CURTAINWALL, VENEERS, AND STONEFRONT (INCLUDING ANY SUPPLEMENTARY SUPPORT)
 - STEEL CONNECTIONS NOT SPECIFICALLY DETAILED ON CONTRACT DOCUMENTS
 - UNISTRUT (OR SIMILAR) SUPPORT SYSTEMS
 - PRE-FABRICATED CANOPIES

STATEMENT OF SPECIAL INSPECTIONS

- THIS PROJECT REQUIRES SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC CHAPTER 17) AND ANY LOCAL PROVISIONS DEEMED NECESSARY BY THE BUILDING OFFICIAL.
- INSPECTIONS AND TESTING SHALL BE PERFORMED AT THE OWNER'S EXPENSE. THE OWNER, THROUGH THE CONTRACTOR, SHALL HIRE AN INDEPENDENT QUALIFIED INSPECTOR, APPROVED BY THE BUILDING OFFICIAL, TO PERFORM ALL THE NECESSARY INSPECTIONS. THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR PERFORMING OR OBTAINING THE INSPECTION SERVICES AS PART OF THE DESIGN SERVICE. THE ARCHITECT, WITH INPUT FROM THE ENGINEER OF RECORD, IS RESPONSIBLE FOR PREPARING AND SUBMITTING THE STATEMENT OF SPECIAL INSPECTIONS IN ACCORDANCE WITH IBC CHAPTER 17.
- THE INSPECTION AGENCY SHALL REVIEW THE TEST PROCEDURES AND INSPECTIONS WITH THE ENGINEER OF RECORD, CONTRACTOR, AND OWNER PRIOR TO CONDUCTING TESTS AND INSPECTIONS.
- INSPECTIONS SHALL BE GIVEN ADEQUATE NOTICE OF ALL PHASES OF CONSTRUCTION BY THE CONTRACTOR AND SHALL BE PROVIDED A FIELD LIST OF ALL SCHEDULED CONSTRUCTION ACTIVITIES REQUIRING SPECIAL INSPECTIONS.
- SITE VISITS AND VISIT REPORTS ISSUED BY THE ENGINEER OF RECORD ARE TO REVIEW GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS AND SHALL NOT BE CONSTRUED AS MEETING SPECIAL INSPECTION REQUIREMENTS.
- THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND SHALL FURNISH REPORTS TO THE BUILDING OFFICIAL, ARCHITECT, AND ENGINEER OF RECORD. A FINAL REPORT OF SPECIAL INSPECTIONS DOCUMENTING ALL REQUIRED SPECIAL INSPECTIONS AND CORRECTIONS OF ANY DISCREPANCIES SHALL BE SUBMITTED TO THE BUILDING OFFICIAL, ARCHITECT, AND ENGINEER OF RECORD AT THE COMPLETION OF CONSTRUCTION.
- ALL REQUIRED TESTING AND TEST PROCEDURES SHALL BE REVIEWED BY THE OWNER, GENERAL CONTRACTOR, ENGINEER OF RECORD, AND SPECIAL INSPECTION AGENCY PRIOR TO PERFORMING ANY CONSTRUCTION ACTIVITIES.

FOUNDATION

- FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT AND SOIL BEARING PRESSURE INDICATED IN THE STRUCTURAL DESIGN CRITERIA SECTION. REFER TO GEOTECHNICAL REPORT FOR ALL PROJECT REQUIREMENTS PERTAINING TO EARTHWORK, INCLUDING BUT NOT LIMITED TO, EXCAVATION, BACKFILLING, COMPACTION, AND MATERIALS. IF THE GEOTECH REPORT IS NOT INCLUDED IN THE SPECIFICATIONS, IT IS THE RESPONSIBILITY OF THE GC TO REQUEST THE REPORT FROM THE PROJECT MANAGER OR ARCHITECT PRIOR TO ANY FOUNDATION WORK.
- PRIOR TO PLACING FOUNDATIONS, IN-PLACE SOIL DENSITY AND SOIL BEARING CAPACITY TESTING TO BE PERFORMED BY A QUALIFIED ENGINEERING TECHNICIAN. TEST REPORTS TO BE SUBMITTED TO THE ARCHITECT, THE ENGINEER OF RECORD ASSUMES NO LIABILITY FOR THESE DESIGN ASSUMPTIONS OR FOR ANY FOUNDATION REDESIGN NECESSITATED BY DIFFERING SOIL CONDITIONS.
- THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL UTILITY SERVICES IN THE AREA PRIOR TO ANY EXCAVATION WORK.
- MINIMUM COVER TO BOTTOM OF EXTERIOR FOUNDATIONS TO BE AS NOTED IN THE STRUCTURAL DESIGN CRITERIA TOLERANCE BELOW FINISHED GRADE TO MEET LOCAL FROST DEPTH REQUIREMENTS. COORDINATE BOTTOM OF FOUNDATION ELEVATIONS WITH FINAL CIVIL GRADING PLANS. ALL ELEVATIONS INDICATED ON PLAN ARE FROM TOP OF SLAB ON GRADE DATUM ELEVATION 0'-0" AND ARE A MINIMUM DIMENSION. FOOTINGS MAY NEED TO BE LOWERED ADDITIONALLY FOR UTILITY INVERTS. COORDINATE WITH CIVIL DRAWINGS.
- FOUNDATION CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN SUBGRADE MATERIAL. PROTECT IN-PLACE FOUNDATIONS AND SLABS-ON-DECK FROM FROST PENETRATION UNTIL CONSTRUCTION IS COMPLETED.
- FOUNDATION UNITS SHALL BE CENTERED UNDER SUPPORT STRUCTURAL MEMBERS, UNLESS NOTED OTHERWISE ON THE CONTRACT DRAWINGS.
- REFER TO THE GEOTECHNICAL REPORT FOR ACCEPTABLE FOUNDATION BACKFILL, SLAB-ON-GRADE SUBGRADE MATERIAL, AND ANY ADDITIONAL COMPACTION REQUIREMENTS FOR BACKFILL AND FILL MATERIALS. DO NOT PLACE FILL UNTIL SUBMITTAL FOR FILL MATERIAL IS APPROVED BY THE ARCHITECT/ENGINEER OF RECORD. PLACE BACKFILL AND FILL MATERIALS IN HORIZONTAL LAYERS NOT MORE THAN 8" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4" IN LOOSE DEPTH FOR MATERIAL COMPACTED BY OPERATED TAMPERS. BACKFILL AND FILL MATERIALS SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY. ACCORDING TO THE MODIFIED PROCTOR TEST (ASTM D-1557).
- DO NOT BACKFILL CONCRETE FOUNDATION/BASEMENT/RETAINING WALLS UNTIL MINIMUM 7 DAYS AFTER CONCRETE PLACEMENT. THE FOLLOWING PROCEDURES SHALL BE FOLLOWED DURING CONCRETE WALL CONSTRUCTION:
 - RETAINING WALL SLAB ON GRADE SUPPORTED BY SLAB ON GRADE AT TOP OF WALL. RETAINING WALLS HAVE BEEN DESIGNED AS CANTILEVERED. BACKFILL BOTH SIDES OF WALL EVENLY UNTIL FINISHED GRADE IS MET ON LOW SIDE) SO THAT GRADE DIFFERENCE IS NO MORE THAN 1'-0" AT ANY TIME.
 - NON-RETAINING FOUNDATION WALLS. BACKFILL WALLS EVENLY SO THAT GRADE DIFFERENCE IS NO MORE THAN 1'-0" AT ANY TIME.
- ALL FOUNDATION ELEMENTS SHALL BE PLACED ON UNDISTURBED NATIVE SOIL OR ON A MINIMUM OF 1'-0" OF APPROVED, COMPACTED, STRUCTURAL FILL. STRUCTURAL FILL SHALL EXTEND A MINIMUM OF 4'-0" BEYOND THE FOUNDATION ELEMENT AND THEN DOWNWARD TO NATURAL SOILS AT A SLOPE OF 2 HORIZONTAL TO 1 VERTICAL.
- EACH PRIME CONTRACTOR SHALL PROVIDE ALL TRENCHING WORK REQUIRED FOR ITS CONTRACT, INCLUDING TRENCH EXCAVATION, AND BACKFILL WITH ACCEPTABLE FILL PER GEOTECHNICAL REPORT TO WITHIN 1'-0" OF FINISH GRADE. FOR ALL TRENCHING WORK WITHIN THE BUILDING FOOTPRINT SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. GENERAL CONTRACTOR MUST ACCEPT, IN WRITING, THE QUALITY OF THE TRENCH BACKFILL OF OTHER PRIME CONTRACTORS BEFORE BEGINNING WORK OVER THE TOP OF THE TRENCH.
- EXCAVATION AND BACKFILL OPERATIONS SHALL BE MAINTAINED IN A DRY CONDITION. SURFACE AND INFILTRATING WATER SHALL BE REMOVED BY SITE GRADING AND PUMPING FROM BUMPS AS REQUIRED. FOUNDATION CONCRETE SHALL NOT BE PLACED IN WATER OR ON FROZEN SUBGRADE MATERIAL.
- THE CONTRACTOR IS RESPONSIBLE FOR EXCAVATION SAFETY. EXCAVATIONS MUST BE PERFORMED IN ACCORDANCE WITH THE CURRENT OSHA STANDARDS. PROVIDE TEMPORARY OR PERMANENT SUPPORTS WHETHER SHORING, SHEETING OR BRACING SO THAT NO HORIZONTAL MOVEMENT OR VERTICAL SETTLEMENT OCCURS TO EXISTING STRUCTURES, STREETS OR UTILITIES ADJACENT TO THE PROJECT SITE.

CONCRETE REINFORCEMENT

- DETAILING, FABRICATION, AND INSTALLATION OF REINFORCEMENT SHALL CONFORM TO ACI-318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, AND THE MOST RECENT EDITIONS OF SP-6 ACI DETAILING MANUAL AND THE CRSI MANUAL OF STANDARD PRACTICE.
- STEEL REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE FOLLOWING:
 - ASTM A615 GRADE 60 (MIN YIELD STRESS F_y = 60 KSI)
 - WELDED WIRE FABRIC (WWF) ASTM A185
- CONTRACTOR SHALL SUBMIT REBAR SHOP DRAWINGS FOR APPROVAL. PROVIDE AND SCHEDULE ON SHOP DRAWINGS THE NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN POSITION.
 - SLAB ON GRADE
 - SPECIFIED OVERALL F_y = 35 / F_t = 25
 - MINIMUM LOCAL F_y = 21 / F_t = 15
 - SPECIFIED OVERALL F_y = 35 / F_t = 20"
 - MINIMUM LOCAL F_y = 21 / F_t = 12"
- MINIMUM CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT, UNLESS NOTED OTHERWISE, SHALL BE AS FOLLOWS:
 - UNFORMED SURFACES CAST AGAINST AND PERMANENTLY IN CONTACT WITH EARTH 3.0"
 - FORMED SURFACES IN CONTACT WITH EARTH OR EXPOSED TO WEATHER
 - #6 THROUGH #18 BARS 2.0"
 - #5 BARS, #8" WIRE AND SMALLER 1.5"
 - FORMED SURFACES NOT IN CONTACT WITH EARTH OR EXPOSED TO WEATHER
 - #11 BARS AND SMALLER 1.5"
 - #14 AND #18 BARS 1.5"
 - BEAMS, GIRDERS AND COLUMNS:
 - PRINCIPAL REINFORCEMENT, TIES, STIRRUPS OR SPIRALS 1.5"
- WHERE CONTINUOUS REINFORCEMENT IS SPECIFIED IT SHALL BE EXTENDED CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPACES OR HOOKED AT DISCONTINUOUS ENDS. LAP SHALL BE CLASS B TENSION LAP SPLICES PER ACI 318, UNLESS NOTED OTHERWISE ON PLANS. STAGGER REINFORCING LAP SPLICES A MINIMUM OF 6 FEET.
- REINFORCEMENT SHALL BE CONTINUOUS THROUGH THE FOLLOWING, UNLESS NOTED OTHERWISE:
 - CONSTRUCTION JOINTS
 - FOUNDATION WALL REINFORCEMENT SHALL BE CONTINUOUS THROUGH COLUMN PIERS
 - WALL FOOTING REINFORCEMENT SHALL BE CONTINUOUS THROUGH COLUMN FOOTINGS
- WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS PROVIDE MINIMUM REINFORCEMENT REQUIRED BY THE APPLICABLE CODES.
- DOWELS FROM FOOTINGS INTO WALLS AND PIERS SHALL MATCH BAR SIZE AND NUMBER, UNLESS NOTED OTHERWISE.
- WELDED WIRE FABRIC
 - SHALL BE IN FLAT SHEETS
 - LAP SHEETS ONE AND ONE-HALF SPACES (Ø MINIMUM) AND WIRE TOGETHER AT 3'-0" OC MAX
 - SUPPORT SHEETS WITH APPROVED SLAB BOLSTERS OR CHAIRS AT NOT MORE THAN 4'-0" OC IN EACH DIRECTION AT THE PROPER ELEVATION.
- FIBER REINFORCEMENT FOR CONCRETE SLABS ON GRADE MAY BE UTILIZED IN LIEU OF WELDED WIRE FABRIC. TEMPERATURE AND SHRINKAGE REINFORCEMENT. PROPORTION FIBER QUANTITY IN MIX DESIGN AS REQUIRED FOR EQUIVALENT WELDED WIRE FABRIC REINFORCEMENT. SUBMIT PROPOSED SUBSTITUTION TO EOR FOR APPROVAL.
- PROVIDE 2 - #4 x 3'-0" LONG TOP BARS AT ALL RE-ENTRANT CORNERS.
- INSTALLATION OF REINFORCEMENT SHALL BE COMPLETED AND A FIELD REPRESENTATIVE SHALL BE INFORMED A MINIMUM OF 24 HOURS IN ADVANCE OF CONCRETE PLACEMENT, TO ALLOW FOR INSPECTION OF THE REINFORCING STEEL.

CAST-IN-PLACE CONCRETE

- CAST-IN-PLACE CONCRETE WORK SHALL CONFORM TO THE ACI-318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE.
- ALL CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED AND PLACED IN THE PRESENCE OF A REPRESENTATIVE OF AN APPROVED TESTING AGENCY.
- PRIOR TO PLACEMENT OF CONCRETE, A FIELD REPRESENTATIVE SHALL BE INFORMED A MINIMUM OF 24 HOURS IN ADVANCE OF PLACEMENT, TO ALLOW FOR INSPECTION OF REINFORCING STEEL AND PREPARATION FOR TAKING CONCRETE SAMPLES. INDEPENDENT TESTING IS REQUIRED FOR ALL CONCRETE PLACEMENTS. CONCRETE TO BE SAMPLED IN ACCORDANCE WITH ACI 318 AND APPLICABLE ASTM TESTING PROCEDURES. QUANTITY OF SPECIMENS, FREQUENCY OF SAMPLING AND CYLINDER COMPRESSION TESTING SCHEDULE TO BE DETERMINED BY ACI 318, OWNERS REQUIREMENTS AND/OR LOCAL JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT.
- UNLESS NOTED OTHERWISE, STRUCTURAL CONCRETE SHALL HAVE THE FOLLOWING STRENGTH, AND DURABILITY REQUIREMENTS:

TYPE	EXPOSURE CLASS	AIR CONTENT	MIN 28 DAY COMP. STRENGTH
INT SLAB-ON-GRADE	F 30 W0 C0	1.0% - 3.0%	4000 PSI
INT ELEVATED SLAB-ON-DECK	F0 S0 W0 C0	1.0% - 3.0%	4000 PSI
EXT SLAB-ON-GRADE	F2 S0 W0 C1	4.5% - 7.5%	4500 PSI
RETAINING WALL/EXT PIERS	F2 S0 W0 C1	4.5% - 7.5%	4500 PSI
FOOTINGS/INT PIERS	F1 S0 W0 C0	1.0% - 3.0%	3000 PSI
SALT SHED - SLAB-ON-GRADE	F3 S0 W0 C3	4.5% - 7.5%	5000 PSI
SALT SHED - FDN WALLS & EXT COLS	F3 S0 W0 C3	4.5% - 7.5%	5000 PSI
PARKING CANOPY - FTG/SPISERS	F3 S0 W0 C3	4.5% - 7.5%	5000 PSI
- ALL CONCRETE EXPOSED TO WEATHER IN THE FINISHED PROJECT SHALL BE AIR ENTRAINED PER ACI 318 BASED ON AGGREGATE SIZE, OR PER EXPOSURE CLASS, WHICHEVER IS MORE STRINGENT.
- UNLESS NOTED OTHERWISE, ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE (144 PCF +/-) WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE I/II. MAXIMUM AGGREGATE SIZE SHALL BE 1-1/2" FOR FOOTINGS AND 3/4" FOR WALLS AND SLABS, CONFORMING TO ASTM C33, WHEN NOTED, LIGHT WEIGHT CONCRETE (110 PCF +/-) SHALL BE PROVIDED WITH ALL CEMENT CONFORMING TO ASTM C150, TYPE I/II. MAXIMUM AGGREGATE SIZE SHALL BE 3/4" AND CONFORM TO ASTM C330.
- CONTRACTOR SHALL SUBMIT A CONCRETE MIX DESIGN IN ACCORDANCE WITH ACI 318 FOR EACH TYPE OF CONCRETE APPLICABLE TO THE PROJECT PRIOR TO THE PLACEMENT OF CONCRETE FOR APPROVAL. THE ADDITION OF WATER AT THE PLANT OR IN THE FIELD GREATER THAN THE SPECIFIED WATER CONTENT IS PROHIBITED. ADMIXTURE PRODUCT DATA SHALL BE SUBMITTED FOR APPROVAL.
- THE USE OF HIGH EARLY STRENGTH CONCRETE MAY BE REQUESTED BY THE CONTRACTOR. MIX DESIGN DATA USING FIELD CURED SPECIMENS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.
- ALL FORMWORK TO BE CONSTRUCTED IN ACCORDANCE WITH ACI-347 GUIDE TO FORMWORK FOR CONCRETE WITHIN TOLERANCE BELOW FINISHED GRADE TO MEET LOCAL FROST DEPTH REQUIREMENTS FOR CONCRETE CONSTRUCTION AND MATERIALS.
- CONCRETE FOR FOOTINGS IS TO BE POURED ON THE SAME DAY AS THE SUBGRADE PREPARATION IS APPROVED BY THE INDEPENDENT INSPECTION AGENCY / GEOTECHNICAL ENGINEER.
- CONCRETE SHALL NOT BE POURED OVER STANDING WATER, SATURATED OR FROZEN SOILS.
- STRUCTURAL STEEL BELOW GRADE SHALL BE ENCASED IN CONCRETE WITH A MINIMUM COVER OF 2".
- REVIEW ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR LOCATIONS AND ELEVATIONS OF ALL SLAB PENETRATIONS, FLOOR DRAINS, EQUIPMENTS PADS, TRENCHES, CHASES, ANCHOR RODS, ETC. ALL PENETRATIONS AND ALL PIPE PENETRATIONS THROUGH FOUNDATION WALLS SHALL BE SCHEDULED. REFER TO APPLICABLE DRAWINGS FOR SIZES AND LOCATIONS. PLUMBING LINES AND ELECTRICAL CONDUITS ARE TO BE PLACED BELOW (NOT WITHIN) THE SLAB ON GRADE. VERTICAL PENETRATIONS ARE PERMITTED.
- UTILITY PIPING SHALL NOT PASS THROUGH FOOTINGS. TOP OF UTILITY PIPING MUST BE AT LEAST 12" BELOW BOTTOM OF WALL FOOTINGS OR ABOVE OR OTHERWISE FOOTINGS MUST BE LOWERED. COORDINATE LOCATIONS WITH CIVIL AND MEP DRAWINGS. ALL PIPE PENETRATIONS THROUGH FOUNDATION WALLS SHALL BE SCHEDULED. 4" PVC PIPE SLEEVES TWO SIZES LARGER THAN PROPOSED PIPE OR CONDUIT. DO NOT CUT OR BEND MAIN REINFORCING STEEL AT SLEEVE LOCATIONS.
- OPENINGS IN SLABS AND WALLS LESS THAN 12" Ø ROUND OR 12" SQUARE ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. OPENINGS SHOWN ON STRUCTURAL DRAWINGS SHALL NOT BE REVISED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT.
- ANY CUTTING/CORING OF CONCRETE IS PROHIBITED UNLESS APPROVED BY THE ENGINEER OF RECORD.
- CONTRACTOR SHALL PROVIDE THE FOLLOWING CONTRACTION AND ISOLATION JOINTS IN SLABS ON GRADE:
 - ISOLATION JOINTS AT COLLINS SHALL BE 1/2" PREFORMED JOINT FILLER, AS INDICATED ON THE TYPICAL DETAILS.
 - UNLESS NOTED OTHERWISE ON DRAWINGS, PROVIDE CONTRACTION JOINTS AT COLUMN LINES AND ADDITIONALLY AS REQUIRED SO THAT THE SPACING DOES NOT EXCEED 12 FEET AND THE AREA BOUNDED BY JOINTS LENGTH TO WIDTH RATIO NOT EXCEED 1.5 TO 1.
 - BEGIN SAW CUTTING ONCE CONCRETE HAS HARDENED SUFFICIENTLY TO PREVENT DISLACEMENT OF AGGREGATES. SAW CUTS ARE TO BE 1/4 SLAB DEPTH (1" MINIMUM) AND SHALL BE MADE WITHIN 6 TO 18 HOURS OF PLACING THE SLAB. DO NOT DELAY CONTRACTION JOINT SAW CUTS BY MORE THAN 24 HOURS AFTER CONCRETE PLACEMENT.
 - AFTER CONCRETE PLACED FOR SLABS INSIDE THE BUILDING HAS CURED AND IS READY FOR PLACEMENT OF FLOOR FINISHES, ALL CONTROL JOINTS SHALL BE FILLED WITH AN APPROVED JOINT FILLER.
- PROVIDE CONTRACTION AND CONTROL JOINTS IN CONCRETE WALLS. DO NOT EXCEED 65 FEET BETWEEN JOINTS AND NOT WITHIN 5 FEET OF A CORNER. COORDINATE JOINT LOCATIONS WITH BRICK VENEER CONTROL JOINT LOCATIONS, SEE ARCHITECTURAL DRAWINGS.
- PROVIDE 1/2" PREFORMED JOINT FILLER AND CAULK WHERE ALL HORIZONTAL CONCRETE SURFACES MEET ANY VERTICAL SURFACES.
- PROVIDE 3/4" x 3/4" CHAMFER AT ALL EDGES OF EXPOSED CONCRETE COLUMNS, PIERS AND WALLS.
- CONTRACTOR SHALL PROTECT THE CONCRETE FROM THE FOLLOWING IMMEDIATELY AFTER PLACEMENT:
 - PREMATURE DRYING
 - HOT WEATHER REFER TO ACI-305R "HOT WEATHER CONCRETING"
 - COLD WEATHER / FREEZING, REFER TO ACI-308R "COLD WEATHER CONCRETING"
- BEGIN THE SELECTED CURING METHOD OF CONCRETE SLABS WITHIN TWO HOURS AFTER SURFACE FINISHING OPERATIONS ARE COMPLETED. CURING METHOD SHALL REMAIN IN PLACE UNTIL THE CONCRETE HAS REACHED A MINIMUM OF 75% OF THE REQUIRED 28 DAY COMPRESSIVE STRENGTH.

MASONRY

- 1. DESIGN AND CONSTRUCTION OF CONCRETE UNIT MASONRY SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF TMS 402 BUILDING CODE FOR MASONRY STRUCTURES AND TMS 602 SPECIFICATION FOR MASONRY STRUCTURES.
2. ALL REINFORCED CONCRETE MASONRY UNIT SYSTEMS SHALL BE INSPECTED PER TMS 402 AND 602 QUALITY ASSURANCE PROGRAM REQUIREMENTS
3. CONCRETE MASONRY UNITS SHALL CONFORM TO C90 AND SHALL BE NORMAL WEIGHT UNITS.
4. COMPRESSIVE STRENGTH OF MASONRY SHALL BE DETERMINED BY THE UNIT STRENGTH METHOD AS SET FORTH IN TMS 602. THE NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY SHALL (Fm) SHALL BE 2000 PSI AT 28 DAYS.
5. MORTAR SHALL COMPLY WITH ASTM C270. MORTAR FOR CMU IN EXTERIOR BUILDING WALLS, BEARING WALLS, SHEAR WALLS AND MASONRY IN CONTACT WITH THE EARTH SHALL BE PORTLAND CEMENT/LIME MIX TYPE M OR S. TYPE N MORTAR MAY BE USED FOR ALL OTHER APPLICATIONS.
6. GROUT SHALL COMPLY WITH ASTM C476. THIS MIX SHALL CONTAIN NO ADMIXTURES. GROUT SHALL BE MIXED TO A SLUMP OF 8" TO 11" AS DETERMINED BY TEST METHOD C143. ALL GROUT SHALL BE FINE GROUT. THE MINIMUM 28-DAY COMPRESSIVE STRENGTH OF GROUT SHALL EQUAL TO OR EXCEED Fm. THE COMPRESSIVE STRENGTH OF GROUT SHALL BE DETERMINED IN ACCORDANCE WITH ASTM C1019.
7. STEEL REINFORCING BARS SHALL COMPLY WITH ASTM A615 GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE BENT OR HOOKED.
8. ALL BOND BEAMS, REINFORCED CELLS, AND CELLS WITH EXPANSION BOLTS, EMBED PLATES, OR OTHER ANCHORS, AND ALL CELLS BELOW GRADE SHALL BE GROUTED SOLID. GROUT PROCEDURE SHALL COMPLY WITH TMS 602.
9. WIRE JOINT REINFORCEMENT, TIES AND ANCHORS SHALL COMPLY WITH ASTM A82 SHEET STEEL TIES AND ANCHORS SHALL COMPLY WITH ASTM A366. ALL MASONRY ACCESSORIES SHALL BE CORROSION RESISTANT.
10. SUBMIT SHOP DRAWINGS INDICATING SIZE, LOCATION, AND DIMENSIONS OF REINFORCING STEEL FOR ALL REINFORCED MASONRY WALLS.
11. PROVIDE REINFORCING STEEL DOWELS OF THE SAME SIZE AND SPACING AS THE VERTICAL REINFORCING FROM THE SUPPORTING STRUCTURE. DOWELS SHALL HAVE STANDARD HOOKS IN ACCORDANCE WITH ACI 318.
12. REINFORCED MASONRY WALLS SHALL HAVE HORIZONTAL JOINT REINFORCING SPACED AT 16" ON CENTER AND IN TWO JOINTS IMMEDIATELY ABOVE AND BELOW ALL OPENINGS, EXTENDING A MINIMUM OF 2'-0" BEYOND THE JAMB ON EACH SIDE OF THE OPENINGS, IN ADDITION TO THE REINFORCING SHOWN ON THE DETAIL DRAWINGS. ALL REINFORCING INCLUDING BOND BEAMS SHALL BREAK AT CONTROL JOINTS, EXCEPT THE TOP MOST BOND BEAM WHICH SHALL BE CONTINUOUS IN EVERY WALL.
13. PROVIDE 2-COURSE SOLID MASONRY BEARING FOR LOOSE LINTELS.
14. USE LOW LIFT GROUTING TECHNIQUE. PLACE GROUT IN LIFTS UP TO 4'-0". CONSOLIDATE GROUT AT THE TIME OF PLACING. POURS UP TO 12" MAY BE CONSOLIDATED BY PUDDLING. POURS OVER 12" SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION.
15. DO NOT APPLY UNIFORM FLOOR OR ROOF LOADING FOR AT LEAST TWELVE (12) HOURS AFTER ERECTION OF MASONRY WALLS OR COLUMNS. DO NOT APPLY CONCENTRATED LOADS FOR AT LEAST THREE (3) DAYS.
16. REMOVE GROUT OR MORTAR ON FACE OF MASONRY IMMEDIATELY. KEEP CAVITIES FREE FROM MORTAR DROPPINGS.
17. PROVIDE MASONRY WALL CLIPS AT THE TOP OF MASONRY WALLS WHERE INDICATED ON FRAMING PLANS.
18. PROVIDE ADJUSTABLE ANCHOR TIES FOR MASONRY WALLS ABUTTING STEEL FRAMING. WELD ON CLIPS TO BE 12-GA MIN AND TIES TO BE 3/16" MIN SPACED 32" OC ON BEAMS AND 16" OC VERTICALLY AT COLUMNS
19. PROVIDE SHORING FOR ALL HUNG AND LOOSE STEEL LINTELS. SHORE AFTER LINTEL HAS BEEN ADJUSTED AND BEFORE MASONRY HAS BEEN PLACED. MASONRY LINTELS SHALL BE BUILT ON SHORED SUPPORTS. SHORING TO REMAIN IN PLACE FOR A MINIMUM OF THREE (3) DAYS AFTER MASONRY OVER LINTEL IS COMPLETE.
20. PROTECT MASONRY FROM FREEZING WHEN AIR TEMPERATURE IS 40°F AND FALLING. REFER TO TMS 602 FOR COLD WEATHER CONSTRUCTION REQUIREMENTS. PROTECT MASONRY FROM EXCESSIVE HEAT WHEN AIR TEMPERATURE IS 100°F AND RISING. REFER TO TMS 602 FOR HOT WEATHER CONSTRUCTION REQUIREMENTS.
21. HOT ROLLED STEEL ITEMS EMBEDDED IN MASONRY WALLS, INCLUDING STEEL LINTELS, ARE FURNISHED BY THE STEEL CONTRACTOR AND INSTALLED BY THE MASONRY CONTRACTOR. UNLESS DIRECTED OTHERWISE BY THE GENERAL CONTRACTOR. WALL REINFORCING AND TIES ARE FURNISHED AND INSTALLED BY THE MASONRY CONTRACTOR.
22. PROVIDE PLASTIC BAR POSITIONING DEVICES FOR ALL VERTICAL MASONRY REINFORCING BARS TO ENSURE THAT BARS ARE FIRMLY HELD IN POSITION. SPACE AT A MAXIMUM OF 4'-0" ON CENTER VERTICAL.
23. PROVIDE VERTICAL REINFORCING BARS AS INDICATED ON DRAWINGS, AND ONE (1) #5 VERTICAL REINFORCING BAR IN FULLY GROUTED CELLS WITHIN 16" OF ALL CORNERS, DOOR JAMBS AND OTHER OPENINGS. EXTEND REINFORCING BARS AT JAMBS AND OPENINGS A MINIMUM OF 3'-0" PAST THE TOP OF THE OPENING.
24. PROVIDE MASONRY CONTROL JOINTS IN CMU WALLS AS SHOWN ON THE CONTRACT DRAWINGS.

STRUCTURAL STEEL

- 1. STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL BUILDINGS. THE AISC CODE OF STANDARD PRACTICE AND SHALL COMPLY WITH ALL LOCAL LAWS AND ORDINANCES. WHERE CONFLICTING REQUIREMENTS OCCUR, THE MORE STRINGENT SHALL APPLY.
2. PROVIDE NEW MATERIAL CONFORMING TO THE FOLLOWING REQUIREMENTS FOR ALL STRUCTURAL STEEL:
MEMBER GRADE
WIDE FLANGE SHAPES ASTM A992, GRADE 50
PLATES, ANGLES & CHANNELS ASTM A588
PIPE TUBES ASTM A53, GRADE B
RECTANGULAR TUBES ASTM A500, GRADE C
ROUND TUBES ASTM A500, GRADE C
HIGH STRENGTH BOLTS ASTM A325 (MIN 3/4")
NUTS ASTM A563
WASHERS ASTM F438
ANCHOR RODS ASTM F1554, GRADE 36
WELDING ELECTRODE E70XX
STEEL DECK WELDING ELECTRODE E80XX MIN
3. A QUALITY CONTROL PROGRAM OF SHOP AND FIELD TESTING AND INSPECTION SHALL BE PERFORMED ON STRUCTURAL STEEL FABRICATION, ERECTION, AND CONNECTIONS IN ACCORDANCE WITH THE SPECIFICATIONS. SCHEDULE WORK AND PROVIDE ACCESS TO ALLOW THE TESTING REQUIREMENTS TO BE COMPLETED.
4. PERFORM ALL WELDING USING CERTIFIED WELDERS AND IN ACCORDANCE WITH THE AWS D1.1 STRUCTURAL WELDING CODE - STEEL, LATEST EDITION. COMPLY WITH AISC SPECIFICATION SECTION J2 FOR MINIMUM FILLET WELD SIZE, BUT DO NOT USE LESS THAN A 1/4 INCH FILLET UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
5. SUBMIT ENGINEERED AND CHECKED SHOP DRAWINGS TO THE ENGINEER FOR REVIEW, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE LOCAL JURISDICTION. SHOW SHOP FABRICATION DETAILS, FIELD ASSEMBLY DETAILS, AND ERECTION DIAGRAMS FOR ALL STRUCTURAL STEEL. SCHEDULE SUBMISSIONS TO ALLOW 10 WORKING DAYS FOR ENGINEER'S REVIEW.
6. DESIGN AND DETAILING OF THE CONNECTIONS IS THE RESPONSIBILITY OF THE FABRICATOR (PER OPTION 2 OR 3 OF THE CODE OF STANDARD PRACTICE SECTION 3.1.1). USE RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE FOR THE CRITERIA SET FORTH IN THE CONTRACT DOCUMENTS. THE DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL AND INDICATE THE MINIMUM REQUIREMENTS ONLY UNLESS NOTED OTHERWISE.
7. SHOP CONNECTIONS TO BE 3/4" BOLTED OR WELDED. FIELD CONNECTIONS TO BE HIGH STRENGTH BOLTED OR WELDED. BOLTED CONNECTIONS ARE SHEAR-BEARING CONNECTIONS AND SHALL BE INSTALLED TO THE SNUG TIGHT CONDITION UNLESS OTHERWISE INDICATED ON CONTRACT DRAWINGS (REFERENCE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING GROUP A AND/OR B BOLTS).
8. DESIGN SINGLE-PLATE CONNECTIONS, IF SELECTED, USING A MINIMUM 3/8 INCH THICK PLATE. USE RATIONAL ENGINEERING DESIGN TO PROPERLY ACCOUNT FOR THE INHERENT RIGIDITY OF THIS CONNECTION TYPE.
9. FABRICATE ALL BEAMS, WITH THE NATURAL CAMBER UP. PROVIDE ANY ADDITIONAL CAMBER SHOWN ON THE STRUCTURAL DRAWINGS. CANTILEVER BEAMS SHALL BE FABRICATED SO THAT THE NATURAL CAMBER RAISES THE CANTILEVERED END.
10. DO NOT FIELD CUT ANY STRUCTURAL STEEL WITHOUT THE PRIOR REVIEW AND ACCEPTANCE OF THE ENGINEER. CLEARLY INDICATE ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW ANY MEMBER OPENINGS REQUIRED BY OTHER TRADES.
11. ERECTION PROCEDURES, SEQUENCES AND COORDINATION OF WORK WITH OTHER TRADES IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE ANY ADDITIONAL STEEL REQUIRED FOR ERECTION PURPOSES AT NO COST TO THE OWNER. REMOVE THIS ADDITIONAL STEEL UNLESS DIRECTED OTHERWISE BY THE ENGINEER IN WRITING.
12. PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED FOR THE SAFETY, STABILITY AND ALIGNMENT OF THE STRUCTURE. LEAVE TEMPORARY BRACING IN PLACE FOR AS LONG AS NECESSARY. PERFORM FINAL BOLTING AND WELDING ONLY ON THOSE PORTIONS OF THE STRUCTURE THAT HAVE BEEN ALIGNED AND PLUMBED WITHIN THE SPECIFIED TOLERANCES.
13. AFTER FABRICATION, CLEAN STEEL OF ALL RUST, LOOSE MILL SCALE, DIRT, OIL, GREASE OR OTHER FOREIGN MATERIALS.
14. STRUCTURAL STEEL CONTRACTOR SHALL VERIFY ALL FRAMED MECHANICAL, ELECTRICAL & PLUMBING OPENINGS AS TO SIZE AND LOCATION WITH THE RESPECTIVE CONTRACTOR PRIOR TO SHOP DRAWINGS SUBMISSION. REFER TO PLANS & DETAILS FOR FRAMED OPENINGS IN FLOORS & DECKS.
15. STEEL ITEMS EMBEDDED IN CONCRETE AND MASONRY ARE TO BE PROVIDED BY STRUCTURAL STEEL CONTRACTOR AND INSTALLED BY GENERAL CONTRACTOR.
16. ALL STEEL THAT IS EXPOSED TO VIEW IN THE FINISHED WORK AT A MINIMUM SHALL BE AESS CATEGORY 2, UNLESS OTHERWISE NOTED ON IN THE CONTRACT DOCUMENTS & RECEIVE ONE COAT OF PRIMER AND TWO COATS OF FINISH PAINT.
17. REFER TO ARCHITECTURAL DRAWINGS FOR STEEL TO RECEIVE FIREPROOFING, AS REQUIRED. ALL STEEL THAT IS NOT TO BE FIREPROOFED OR ENCASED IN CONCRETE SHALL RECEIVE ONE SHOP COAT OF AN APPROVED RUST-INHIBITIVE PRIMER.
18. ALL EXTERIOR STEEL SHALL BE HOT-DIP GALVANIZED ASTM A123. STEEL MAY BE COATED WITH A ZINC RICH PRIMER AND PAINT UPON EOR APPROVAL.
19. FOR ALL HUNG LINTELS AND SUPPORTS, PROVIDE VERTICAL AND HORIZONTAL ADJUSTMENTS. WELD COMPONENTS TOGETHER AFTER FINAL ADJUSTMENTS ARE MADE.
20. FABRICATION DETAIL DRAWINGS MAY NOT BE STARTED UNTIL SUBMITTALS FOR ANCHOR ROD LAYOUT AND ERECTION DRAWINGS OF ENTIRE STRUCTURE HAVE BEEN APPROVED BY THE ENGINEER.
21. STEEL STAIRS AND RAILINGS (NOT DETAILED ON PLAN) TO BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER IN THE LOCAL JURISDICTION. STAIRS SHALL BE DESIGNED FOR A MINIMUM UNIFORM LIVE LOAD OF 100 PSF. TREADS SHALL BE DESIGNED FOR A 300 LB POINT LOAD DISTRIBUTED OVER 4 SQUARE INCHES. ALL HANDRAILS TO BE DESIGNED PER ASTM E846 FOR A LATERAL LOAD OF 60 PLF APPLIED TO THE TOP OF THE RAIL OR A 200-POINT LOAD AT ANY POINT IN ANY DIRECTION (WHICHEVER GOVERNS). SUBMIT SEALED SHOP DRAWINGS AND CALCULATIONS FOR APPROVAL.

POST-INSTALLED ANCHORS

- 1. ALL POST INSTALLED AND SPECIALTY ANCHORS, INSTALLATION, AND INSPECTIONS SHALL BE IN ACCORDANCE WITH ALL GOVERNING LOCAL MUNICIPAL REGULATIONS, ACI 318, BC CH 17, RELEVANT ICC-ESR REPORTS AND ALL ANCHORS SHALL BE PREQUALIFIED PER ACI 308 TESTING.
2. ALL MECHANICAL AND EPOXY POST INSTALLED ANCHORS (IN CONCRETE OR MASONRY) ARE TO BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTION (MPI) AS INCLUDED IN THE ANCHOR PACKAGING AND THE APPLICABLE ICC-ESR REPORT INCLUDING, BUT NOT LIMITED TO, DRILL BIT TYPE AND SIZE, PROPER CLEANING AND HOLE PREPARATION, INSTALLATION TORQUE, EMBEDMENT DEPTHS, CONCRETE TEMPERATURE RANGES, CONCRETE AGE, MOISTURE CONDITION, ETC.
3. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR SUCH OTHER METHOD AS APPROVED BY THE ENGINEER OF RECORD. SUBSTITUTION REQUEST FOR ALTERNATE PRODUCTS MUST BE PROVIDED IN WRITING BY THE ENGINEER OF RECORD PRIOR TO USE. THE CONTRACTOR SHALL PROVIDE SIGNED AND SEALED CALCULATIONS, FROM A PROFESSIONAL ENGINEER REGISTERED IN THE LOCAL JURISDICTION, DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
4. ALL ANCHORS SHALL MEET THE MINIMUM EMBEDMENT, SPACING, EDGE DISTANCES AND SIDE THICKNESS CRITERIA ESTABLISHED BY THE RELEVANT ICC-ESR REPORT. THE ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO THE EDGE OF CONCRETE OR MASONRY SURFACE.
5. EXCEPT WHERE INDICATED ON THE DRAWINGS, THE FOLLOWING POST-INSTALLED ANCHORS ARE APPROVED AS FURNISHED BY HILTI, INC. SUBSTITUTION OF THESE ANCHORS AND/OR USE OF ANY OTHER SPECIALTY ANCHORS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL.
A. MECHANICAL ANCHORS - CRACKED AND UNCRACKED CONCRETE
- HILTI KWIK HUS E2 AND E24 SCREW ANCHORS PER ICC ESR-3027
- HILTI KWIK BOLT-T2 EXPANSION ANCHORS PER ICC ESR-1917
- HILTI KWIK BOLT-3 EXPANSION ANCHORS PER ICC ESR-2932 (UNCRACKED CONCRETE ONLY)
- HILTI HDA UNDERCUT ANCHORS PER ICC ESR-1546
- HILTI HSL-3 EXPANSION ANCHORS PER ICC ESR-1545
B. MECHANICAL ANCHORS - SOLID GROUTED MASONRY
- HILTI KWIK BOLT-3 EXPANSION ANCHOR PER ICC ESR-1385
C. ADHESIVE ANCHORING - CRACKED AND UNCRACKED CONCRETE
- HILTI HIT-HY 200 SAFE SET SYSTEM WITH HAS-E ROD, HIT-E ROD, OR REBAR PER ICC ESR-3187
- HILTI HIT-HY 500 V3 SAFE SET SYSTEM WITH HAS-E ROD, HIT-E ROD, OR REBAR PER ICC ESR-3814
D. ADHESIVE ANCHORING - MASONRY
- HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM WITH HAS-E ROD OR REBAR PER ICC ESR-4143
6. PROVIDE APPROPRIATELY SIZED SCREEN TUBES IN HOLLOW AND MULTI-WYTHE MASONRY APPLICATIONS
7. EPOXY CARTRIDGES SHALL UTILIZE THE CORRECT MIXING NOZZLE AS SUPPLIED BY THE MANUFACTURER. THE CONTRACTOR SHALL NOT RE-USE, MODIFY (CUT) OR REMOVE THE MIXING INSERT FROM THE MIXING NOZZLE.
8. ALL EPOXY ANCHORS THAT ARE TO BE INSTALLED HORIZONTALLY OR UPWARDLY INCLINED (OVERHEAD) ARE TO BE INSTALLED WITH HILTI "PISTON-PLUG" ACCESSORY REGARDLESS OF THE EPOXY MANUFACTURER OR MODEL. USING AN EXTENSION TUBE AND RETAINING CAP IS NOT AN ACCEPTABLE METHOD AND SHALL BE REJECTED BY THE INSPECTOR.
9. THE ANCHOR MANUFACTURER SHALL MAKE A REPRESENTATIVE AVAILABLE TO PROVIDE ON-SITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED ON THE STRUCTURAL DRAWINGS. TRAINING SHALL BE AT THE CONTRACTOR'S REQUEST AND AT NO ADDITIONAL CHARGE TO THE CONTRACTOR OR OWNER. THE ANCHOR MANUFACTURER'S REPRESENTATIVE SHALL BE PRESENT DURING THE INITIAL INSTALLATION OF EACH TYPE OF ANCHOR TO REVIEW AND APPROVE THE CONTRACTOR'S INSTALLATION PROCEDURES.
10. EXISTING REINFORCING BARS IN THE CONCRETE OR MASONRY MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS INDICATED ON THE STRUCTURAL DRAWINGS. UNLESS NOTED OTHERWISE, THE REINFORCING BARS MAY NOT BE CUT. THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS (IF AVAILABLE) AND SHALL TAKE STEPS TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS USING NON-DESTRUCTIVE TESTING (FERROSCAN, GPR, X-RAY, OR OTHER APPROVED METHOD).
11. ALL ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR UPWARDLY INCLINED (OVERHEAD) TO SUPPORT SUSTAINED TENSION LOADS SHALL BE PERFORMED BY CERTIFIED PERSONNEL. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI 0808I ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM, OR AN APPROVED EQUIVALENT. THE CONTRACTOR SHALL SUBMIT CERTIFICATES FOR RECORD PRIOR TO INSTALLATION OF ANCHORS.
12. THE OWNER'S TESTING AGENCY SHALL OBSERVE THE INITIAL INSTALLATION OF EACH ANCHOR TYPE AND DURING CONSTRUCTION AT INTERVALS IN ACCORDANCE WITH THE BC CH 17 AND ACI 318. ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR VERTICALLY INCLINED (OVERHEAD) TO SUPPORT SUSTAINED TENSION LOADS SHALL BE CONTINUOUSLY OBSERVED BY THE SPECIAL INSPECTOR. THE SPECIAL INSPECTOR SHALL PROVIDE WRITTEN REPORTS TO THE ENGINEER OF RECORD.
13. ALL ANCHOR RODS, WASHERS, AND NUTS TO HAVE THE FOLLOWING CORROSION PROTECTIONS:
- INTERIOR, NON-CORROSIVE CONDITION - ZINC COATED PER ASTM B633
- EXPOSED TO WEATHER OR IN CONTACT WITH PT LUMBER OR CORROSIVE INDUCING ELEMENTS - MECHANICALLY DEPOSITED ZINC COATING PER ASTM B695 OR HOT DIP GALVANIZED (HDG) PER ASTM A153
- NEAR SALT WATER OR EXTERIOR CORROSIVE ENVIRONMENTS - STAINLESS STEEL AISI 316

COLD FORMED STEEL FRAMING (SPECIALTY)

- 1. CED IS ACTING AS A SPECIALTY STRUCTURAL COMPONENT ENGINEER, ONLY DESIGNING THE COLD FORMED STEEL FRAMING OF THE PROJECT IN THE AREAS INDICATED. CED TAKES FULL RESPONSIBILITY FOR THE DESIGN OF THE STRUCTURAL COLD FORMED STEEL FRAMING AND THEIR ATTACHMENTS TO THE SUPPORTING STRUCTURAL ELEMENTS OF THE BUILDING AS SHOWN IN THESE DRAWINGS. CED TAKES NO RESPONSIBILITY FOR THE DESIGN OF ANY SUPPORTING STRUCTURAL ELEMENTS OR COLD FORMED STEEL IN OTHER PORTIONS OF THE PROJECT. IT IS ASSUMED THAT ALL SUPPORTING STRUCTURAL ELEMENTS HAVE BEEN DESIGNED BY THE PROJECT ARCHITECT/ENGINEER OF RECORD TO WITHSTAND THE FORCES IMPOSED BY THE STRUCTURAL COLD FORMED STEEL FRAMING. CED EXPECTS THAT THIS COMPONENT SUBMITTAL WILL BE REVIEWED BY THE ARCHITECT/ENGINEER OF RECORD FOR THE CONFORMANCE WITH THE OVERALL PROJECT REQUIREMENTS.
2. SECTION PROPERTIES ARE ASSUMED TO BE IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE, "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" (201X EDITION) WITH SUPPLEMENTS. THE CONTRACTOR IS TO VERIFY THAT THE MATERIALS INSTALLED MEET OR EXCEED THESE DESIGN VALUES.
3. ALL COLD FORMED STEEL FRAMING HAS BEEN DESIGNED FOR THE UNIFORM LATERAL LOADS AND GRAVITY LOADS INDICATED.
4. THE CONTENTS OF THIS SUBMITTAL SHOW THE APPLICATION OF COLD FORMED STEEL FRAMING COMPONENTS. THE FRAMING CONTRACTOR IS TO REFER TO THE PROJECT CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
5. DIMENSIONS SHOWN HEREIN ARE FOR ENGINEERING PURPOSES ONLY AND MUST BE REVIEWED FOR THE PURPOSE OF APPROVAL. ALL CONDITIONS ARE SUBJECT TO SUCH APPROVAL, AND TO FIELD VERIFICATION PRIOR TO FABRICATION AND ERECTION.
6. FOR SPECIFIC REQUIREMENTS AND WARRANTY INFORMATION ON SYSTEMS OR MATERIALS CONNECTED AND APPURTENANT TO THE COLD FORMED STEEL FRAMING INCLUDING GLAZING, SHEATHING, ROOFING, WINDOWS, DOORS, CAULKING AND FLASHING, REFER TO THE MANUFACTURER'S DATA. THIS SUBMITTAL ASSUMES NO RESPONSIBILITY FOR THE PROPER CONSTRUCTION OR FUNCTION OF THE TOTAL ARCHITECTURAL ASSEMBLY. THE COORDINATION OF ARCHITECTURAL AND/OR STRUCTURAL BUILDING COMPONENTS IS NOT UNDER THE SCOPE OF THIS SUBMITTAL OR CONTRACT.
7. THIS SUBMITTAL DOES NOT TAKE PRECEDENCE OVER THE CONTRACT DOCUMENTS WITH REGARD TO MINIMUM KSI, THICKNESS, DEPTH, FLANGE WIDTH, OR SPACING, UNLESS APPROVED BY THE ARCHITECT/ENGINEER OF RECORD.
8. ALL STEEL STUDS, JOISTS, TRACKS, BRACING OR BRIDGING AND ACCESSORIES SHALL CONFORM TO ASTM C955, BE METALLIC COATED CP 60, AND HAVE THE FOLLOWING MATERIALS STRENGTHS UNLESS OTHERWISE NOTED:
A. 18 GAGE AND HEAVIER - Fy = 50 KSI
B. 18 GAGE AND LIGHTER - Fy = 30 KSI
9. ALL SELF-DRILLING AND SELF-TAPPING SCREWS SHALL CONFORM TO ASTM C1513. SCREW PENETRATION THROUGH JOINED MATERIALS SHALL NOT BE LESS THAN THREE (3) EXPOSED THREADS. SELECT SCREWS WITH AN ADEQUATE CUTTING TIP TO ACCOMMODATE THE TOTAL THICKNESS TO BE DRILLED. MAINTAIN A MINIMUM OF 1/2" DISTANCE FROM EDGE OF STEEL TO CENTERLINE OF SCREW AND A MINIMUM OF 3/4" BETWEEN SCREWS.
10. CUT ALL COLD FORMED STEEL FRAMING MEMBERS WITH SAWS OR SHEARS. FLAME CUTTING IS NOT PERMITTED.
11. ALL STUDS AND JOISTS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS.
12. INSTALLATION TOLERANCES FOR PLUMBNESS, LEVELNESS, STUD SPACING, AND SQUARENESS OF LOAD BEARING WALLS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C-107.
13. SEAT ALL SINGLE AND MULTIPLE MEMBER METAL STUDS SECURELY IN ALL TRACKS. STUD ENDS MUST BE SQUARE CUT.
14. SPLICING OF COLD FORMED STEEL FRAMING OTHER THAN TRACK COMPONENTS IS PROHIBITED.
15. PERFORM WELDING OF ALL COLD FORMED STEEL FRAMING IN ACCORDANCE WITH AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL" AND AWS D9.0 "WELDING ZINC-COATED STEEL".
16. ALL STUD WALLS AND JOISTS SHALL BE BRACED AGAINST ROTATION BY THE INSTALLATION OF MECHANICAL BRIDGING AT A MAXIMUM SPACING OF 4'-0" ON CENTER FOR WALLS AND 5'-0" ON CENTER FOR JOISTS, UNLESS OTHER SPACING IS INDICATED. INSTALLATION OF BRIDGING MUST BE COMPLETED BEFORE ANY LOADS ARE APPLIED TO THE SYSTEM. ALL BRIDGING SHALL BE TERMINATED AT JAMBS, CORNER STUDS OR COLUMNS. BRIDGING ENDS SHALL NOT HANG LOOSE. STUDS SHALL BE BRACED AGAINST ROTATION.
17. FRAMING SHALL BE ALIGNED WITH STUDS IN ACCORDANCE WITH AISI S200 SECTION C1.
18. ALL JOISTS SHALL HAVE WEB STIFFENERS AT REACTION POINTS AND CONCENTRATED LOADS.
19. ALL SCREW CONNECTIONS ARE BASED ON NASPEC SECTION E4, WHICH OUTLINES THE AISI SPECIFICATION PROVISIONS FOR SCREW CONNECTIONS.
20. FOR SCREWS A MINIMUM OF 1.5 X SCREW DIAMETER CLEARANCE MUST BE MAINTAINED FROM ALL EDGES OF STEEL MEMBERS. A MINIMUM OF 3.0 X SCREW DIAMETER ON-CENTER SPACING MUST BE MAINTAINED BETWEEN ADJACENT SCREWS.
21. TOUCH UP WELDS WITH ZINC-RICH PAINT (ASTM A-780). APPLY TO BOTH SIDES OF STUDS.
22. ANY SUBSTITUTION OF FASTENERS WITH EQUIVALENT PROPERTIES MUST BE SUBMITTED TO CED FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
23. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT FASTENERS ARE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. IT IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND ENSURE THE QUALITY OF FASTENER CONNECTIONS.
24. THE FOLLOWING ANCHORS ARE APPROVED. DIAMETER MINIMUM EDGE DISTANCES AND FASTENER SPACING PER DETAILS.

Table with 3 columns: ANCHOR TYPE, APPROVED ANCHOR, BASE MATERIAL. Rows include HILTI X-U, T1W BUILD'EX TEKS, and HILTI KWIK-COR II.

PRE-ENGINEERED METAL BUILDING (PEMB)

- 1. THE PRE-ENGINEERED METAL BUILDING IS CONSIDERED DELEGATED DESIGN AND THE MANUFACTURER'S ENGINEER IS RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE BUILDING. THE SPECIALTY ENGINEER MUST BE A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE LOCAL JURISDICTION. THE MANUFACTURER'S SPECIALTY ENGINEER MUST SEAL ALL DRAWINGS, DESIGN CALCULATIONS, AND SPECIFICATIONS.
2. THE PRE-ENGINEERED METAL BUILDING DESIGN AND CONSTRUCTION IS TO BE ACCORDANCE WITH BELOW (IN THE EVENT OF CONFLICT BETWEEN NOTES, DESIGN STANDARDS/CODES, DETAILS, OR SPECIFICATIONS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN):
APPLICABLE LOCAL BUILDING CODE, AMENDMENTS, AND CRITERIA LISTED IN 'DESIGN CRITERIA' SECTION
- STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL BUILDINGS, THE AISC CODE OF STANDARD PRACTICE AND SHALL COMPLY WITH ALL LOCAL LAWS AND ORDINANCES. MBMA'S METAL BUILDING SYSTEMS MANUAL - LATEST EDITION
- COLD FORMED STEEL FRAMING MEMBERS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISI S200 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS, AISI S200 NORTH AMERICAN STANDARD FOR COLD FORMED STEEL FRAMING - GENERAL PROVISIONS, AISI S202 CODE OF STANDARD PRACTICE FOR COLD FORMED STEEL STRUCTURAL FRAMING AND THE MANUFACTURER'S WRITTEN INSTRUCTIONS - LATEST EDITIONS
- PERFORM ALL WELDING USING CERTIFIED WELDERS AND IN ACCORDANCE WITH THE AWS D1.1 STRUCTURAL WELDING CODE - STEEL, LATEST EDITION.
3. THE PRE-ENGINEERED METAL BUILDING MANUFACTURER SHALL FURNISH THE FRAME REACTIONS TO THE ENGINEER OF RECORD PRIOR TO COMMENCEMENT OF FABRICATION AND FOUNDATION CONSTRUCTION. THE REACTIONS FURNISHED MUST INCLUDE ALL APPLICABLE LOAD CASES. IF FINAL FURNISHED REACTIONS SIGNIFICANTLY DIFFERENT THAN THE PRELIMINARY REACTIONS, FOUNDATION REDESIGN AS AN ADDITIONAL SERVICE MAY BE REQUIRED.
4. THE PRE-ENGINEERED METAL BUILDING TO BE DESIGNED FOR THE DEAD, LIVE, SNOW, WIND, SEISMIC, AND COLLATERAL LOADS PROVIDED IN THE DESIGN CRITERIA SECTION. SEE ALSO ARCHITECTURAL DRAWINGS FOR ADDITIONAL LOADING REQUIREMENTS. COLLATERAL LOADS ARE NOT TO BE INCLUDED IN LOAD COMBINATIONS INVOLVING WIND UPLIFT.
5. THE BUILDING MANUFACTURER'S SPECIALTY ENGINEER SHALL DETERMINE THE SIZE AND LOCATION OF ANCHOR BOLTS FOR THE BUILDING. THE BUILDING MANUFACTURER IS TO PROVIDE AN ANCHOR BOLT LAYOUT BASED ON THE COLUMN LOCATIONS INDICATED. ALL COLUMN BASES SHALL BE DESIGNED AS PINNED AND THERE IS TO BE NO MOMENT TRANSFER TO THE FOUNDATION SYSTEM.
6. THE BUILDING MANUFACTURER SHALL SUBMIT THE FOLLOWING FOR REVIEW AND APPROVAL PRIOR TO THE START OF FABRICATION AND DELIVERY OF MATERIALS:
- ERECTION DRAWINGS WHICH CLEARLY SHOW SIZES, ARRANGEMENT, AND CONNECTION DETAILS OF ALL SHOP FABRICATED ITEMS AND THE RELATION OF ALL COMPONENTS AND ACCESSORIES NECESSARY FOR THE ON-SITE ASSEMBLY OF THE COMPLETE BUILDING SYSTEM.
- BUILDING MANUFACTURER'S STANDARD DETAILS MAY BE USED PROVIDED THEY ARE CLEARLY MARKED TO IDENTIFY ONLY APPLICABLE DETAILS THAT PERTAIN TO THIS PROJECT. STANDARD DETAILS SHALL BE IDENTIFIED ON THE ERECTION DRAWINGS AT THE POINT OF APPLICATION.
- DESIGN CALCULATIONS SHOWING ALL ASSUMPTIONS, LOADS AND PRESSURES, LOAD COMBINATIONS AND APPLICATIONS, STRESS ANALYSIS AND VALUES, IDENTIFICATION OF ALLOWABLE STRESSES AND BASIS OF DETERMINATION, FRAME AND COMPONENT DEFLECTIONS, AND COLUMN BASE REACTIONS.
- COLUMN BASE REACTIONS FOR ALL DIFFERENT LOAD CASES. ALL COLUMNS SHALL BE DESIGNED AS A PINNED BASE CONNECTION TO THE FOUNDATION, AND THERE SHALL BE NO MOMENT TRANSFER TO THE FOUNDATION SYSTEM.
7. THE METAL BUILDING SYSTEM SHALL MEET THE SERVICEABILITY DEFLECTION CRITERIA LIMITS GIVEN IN THE MBMA METAL BUILDING SYSTEMS MANUAL, AISC-STEEL DESIGN GUIDE 3 (2ND EDITION), AND LISTED BELOW (WHICHEVER IS MOST STRINGENT):
- THE MAXIMUM FRAME DRIFT SHALL BE 1/200 RESULTING FROM A 10-YEAR WIND FORCE PER ASCE 7-16 APPENDIX C, WHERE H IS THE SAWE HEIGHT OF THE BUILDING
- THE MEMBER DEFLECTION REQUIREMENTS SHALL BE PER IBC CHAPTER 16 DEFLECTION LIMITS PER THE APPROPRIATE SUPPORTING MATERIAL.
8. INSTALLER TO SPECIFY AND PROVIDE TEMPORARY BRACING FOR STRUCTURE SO IT WILL BE STABLE DURING ALL STAGES OF CONSTRUCTION. IN ADDITION, PROVIDE ERECTION SEQUENCE FOR CONTRACTOR'S USE.
9. THE BUILDING MANUFACTURER SHALL BE CERTIFIED BY THE AISC QUALITY CERTIFICATION PROGRAM FOR METAL BUILDING SYSTEMS.
10. THE BUILDING MANUFACTURER SHALL BEAR ANY COST FOR REDESIGN AND CONSTRUCTION OF FOUNDATIONS TO ACCOMMODATE SPECIFIC BUILDING DETAILS OR LOADS THAT VARY FROM THE CONTRACT DOCUMENTS PROVIDED. ANY MODIFICATIONS TO THE FOUNDATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
11. THE BUILDING MANUFACTURER SHALL PROVIDE STRUCTURAL MEMBERS TO ACCOMMODATE SITUATIONS AND LOADS AS REQUIRED FOR SUPPORT OF MECHANICAL EQUIPMENT, PLUMBING, SMOKE CURTAINS, FAN OPENINGS, ETC.



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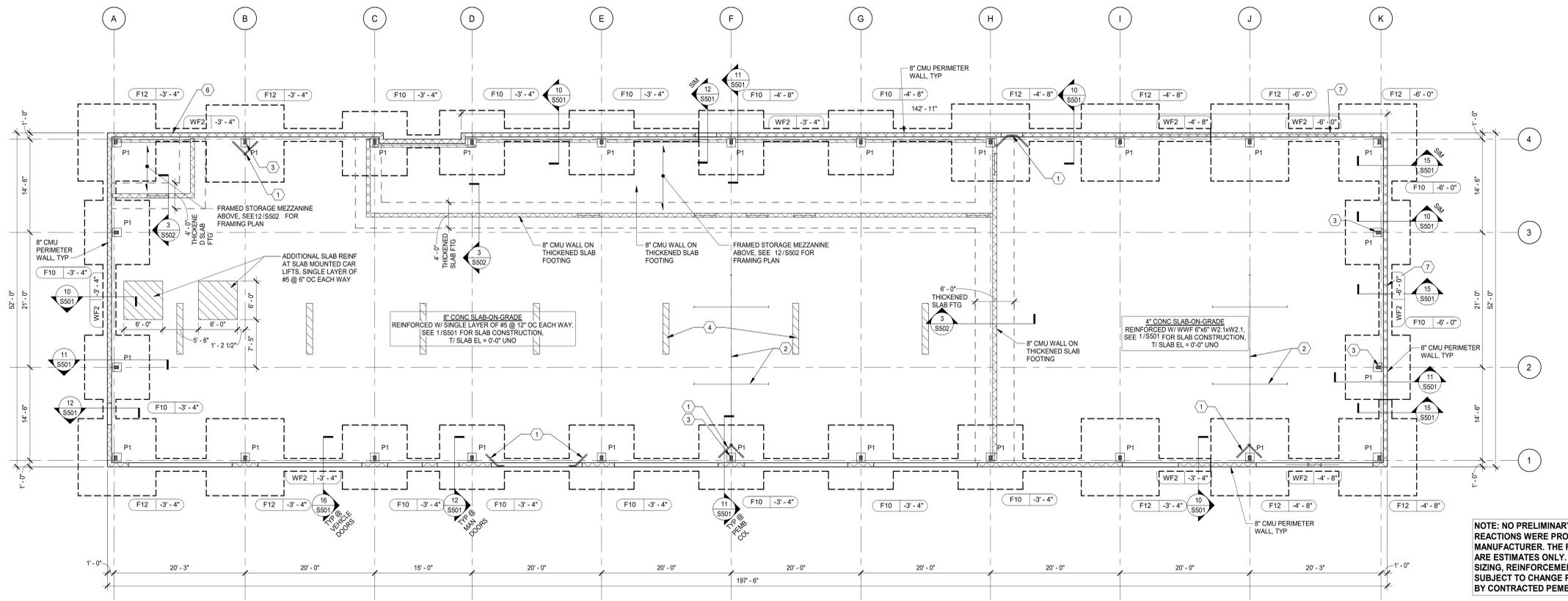
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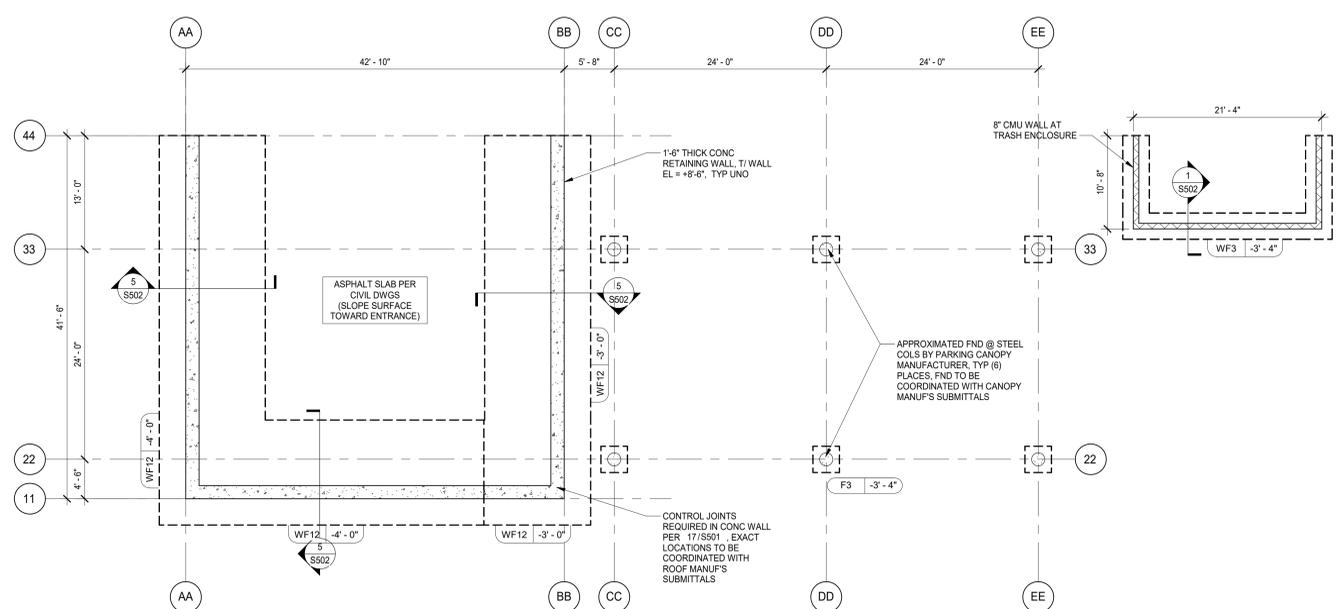
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SHEET NUMBER: STRUCTURAL NOTES 5002



1 FOUNDATION PLAN - OFFICE & GARAGE BUILDING
SCALE: 1/8" = 1'-0"



2 FOUNDATION PLAN - SALT SHED & PARKING CANOPY
SCALE: 1/8" = 1'-0"

SYMBOL LEGEND

COLUMN FOOTINGS

PIER, PIER MARK, FOOTING MARK, FOOTING, TOP OF FOOTING

WALL FOOTING

TOP OF WALL FOOTING ELEVATION, WALL FOOTING TYPE, FOUNDATION WALL

ALL ELEVATIONS REFERENCED FROM TOP OF SLAB ELEVATION = 0'-0"

- PLAN NOTES**
- REFER TO SHEETS S001 & S002 FOR STRUCTURAL NOTES & DESIGN CRITERIA.
 - COORDINATE ALL WORK INCLUDING EQUIPMENT LOCATIONS, FLOORROOF ELEVATIONS, DIMENSIONS, FINISH DETAILS, OPENINGS/PENETRATIONS, ETC WITH THE ARCHITECTURAL & MEP DRAWINGS AND EXISTING CONDITIONS.
 - FINISH FIRST FLOOR ELEVATION OF GARAGE/OFFICE 16.25 = DATUM ELEVATION UNLESS NOTED OTHERWISE. ALL ELEVATIONS SHALL BE REFERENCED FROM DATUM (+/- 'X'-Y').
 - TOP OF FOUNDATIONS ARE REFERENCED FROM FINISH SLAB DATUM ELEVATION 0'-0" AND ARE INDICATED AS THUS (+X'-Y') ON PLAN. VERIFY WITH FINAL CIVIL GRADING PLAN AND MAINTAIN MINIMUM 3'-6" TO BOTTOM OF FOOTING ELEVATION AT EXTERIOR FOUNDATIONS.
 - FOUNDATION TO BEAR ON UNDISTURBED NATURAL SOIL OR FILL COMPACTED AS SPECIFIED IN STRUCTURAL GENERAL NOTES & GEOTECHNICAL REPORT.
 - SPREAD FOOTINGS AND PIERS ARE CENTERED ON COLUMN LINES AND WALL FOOTING ARE CENTERED ON FOUNDATION WALLS UNLESS OTHERWISE NOTED. THICKENED SLAB FOUNDATIONS ARE CENTERED ON BEARING WALLS ABOVE.
 - SECTIONS INDICATED ON PLAN ARE CONSIDERED TYPICAL FOR SIM CONDITIONS.
 - FX, FY INDICATES FOOTING AND PIER DESIGNATIONS, RESPECTIVELY. REFER TO SCHEDULES.
 - GC TO COORDINATE LOCATIONS OF UTILITIES AND FOUNDATION WALL SLEEVES W/ CIVIL AND MEP DRAWINGS PRIOR TO PLACING CONCRETE.
 - CMU WALL CONTROL JOINTS REQUIRED. SEE 14/S001 FOR ADDITIONAL INFORMATION.
 - COORDINATE ALL DIMENSIONS SHOWN WITH FINAL APPROVED MANUFACTURER SUBMISSIONS FOR DELEGATED DESIGN ITEMS, INCLUDING PEMB STRUCTURE, FABRIC MEMBRANE ROOF STRUCTURE AND THE PARKING CANOPY STRUCTURE.

- KEYNOTES**
- PROVIDE ADDITIONAL REINFORCING BARS AT ALL RE-ENTRANT CORNERS. NOT ALL LOCATIONS SHOWN ON PLAN. SEE 3/S001 FOR ADDITIONAL INFORMATION.
 - PROVIDE ISOLATION AND CONTRACTION JOINTS AT ALL COLUMNS AND AT INTERMEDIATE SPACING BETWEEN COLUMN LINES. SEE 2/S001 FOR ADDITIONAL INFORMATION. NOT ALL LOCATIONS SHOWN IN PLAN.
 - PEMB COLUMN BY MANUFACTURER. SEE 9/S001 FOR ANCHORAGE INFORMATION.
 - SLOPE SLAB ON GRADE TO TRENCH DRAINS CENTERED ON GARAGE BAYS. SEE 4/S001 & 5/S001 FOR ADDITIONAL INFO. NOT ALL LOCATIONS SHOWN ON PLAN. COORDINATE WITH ARCH & MEP DWGS.
 - EXTERIOR CAST IN PLACE BOLLARD, COORDINATE LOCATIONS W/ ARCH DWGS. SEE 2/S002 FOR ADDITIONAL INFORMATION.
 - STEP FOOTING ELEVATION AS REQUIRED FOR UTILITY PENETRATION THROUGH FOUNDATION WALL. SEE 4/S002 FOR FOOTING STEP DETAIL. SEE 9/S002 FOR UTILITY PENETRATION AT FOUNDATION WALL. COORDINATE WITH ARCH/MEP DRAWINGS FOR ADDITIONAL INFORMATION.
 - PROVIDE #5 VERT @ 24" OC AT BASE OF CMU WALL P TO SLAB LEVEL BOND BEAM. BEAM 15/S001

FOOTING SCHEDULE

MARK	LENGTH	WIDTH	THICKNESS	REINFORCING
F3	3'-0"	3'-0"	1'-0"	3#6 EACH WAY - BOT
F10	10'-0"	10'-0"	1'-0"	10#6 EACH WAY - TOP & BOT
F12	12'-0"	12'-0"	2'-0"	12#6 EACH WAY - TOP & BOT
WF2	CONT	2'-0"	1'-0"	3#5 CONT & #5@12" OC TRANS
WF3	CONT	3'-0"	1'-0"	4#5 CONT & #5@12" OC TRANS
WF12	CONT	12'-0"	2'-0"	SEE DETAIL

PIER SCHEDULE

MARK	SIZE	VERT REINF	TIES	COMMENTS
P1	16 x 16 Pier	8-#6	#4 TIES @ 8" OC W/ TOP 4-#4 @ 2' OC	SHEAR & TENSION REINF REQ. SEE DETAILS

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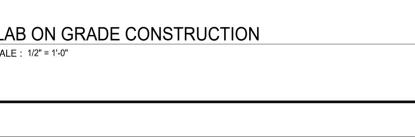
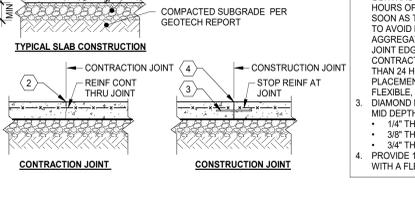
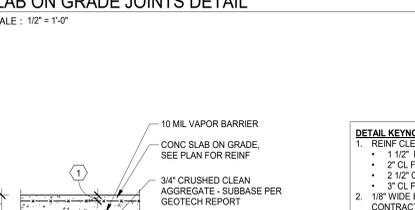
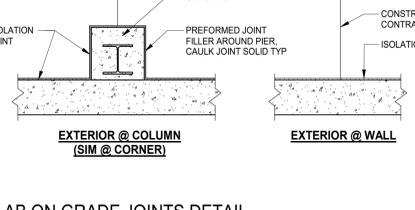
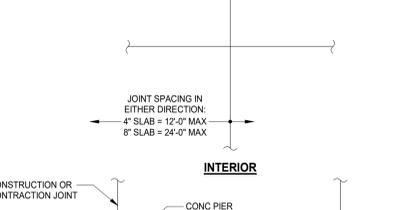
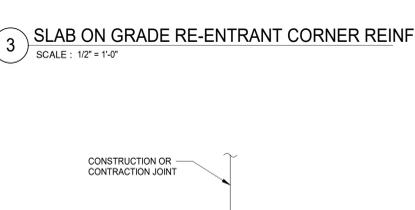
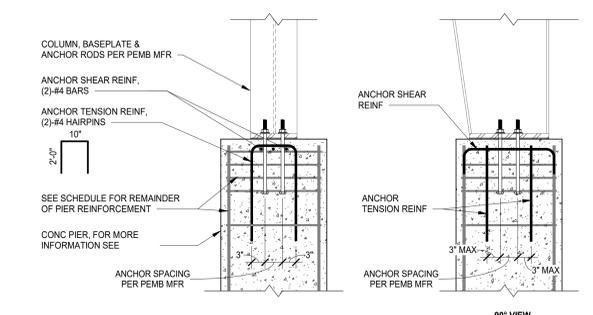
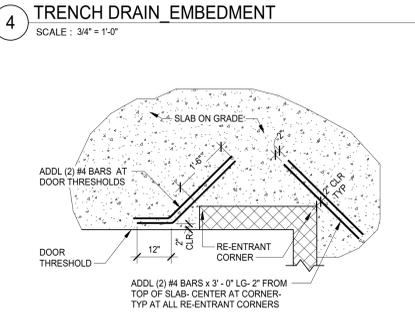
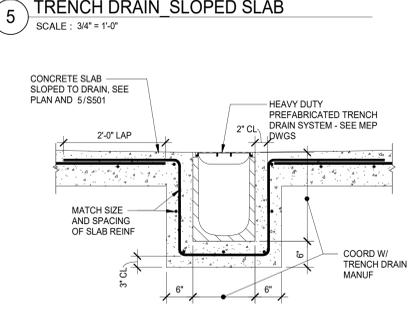
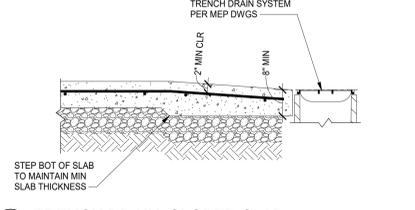
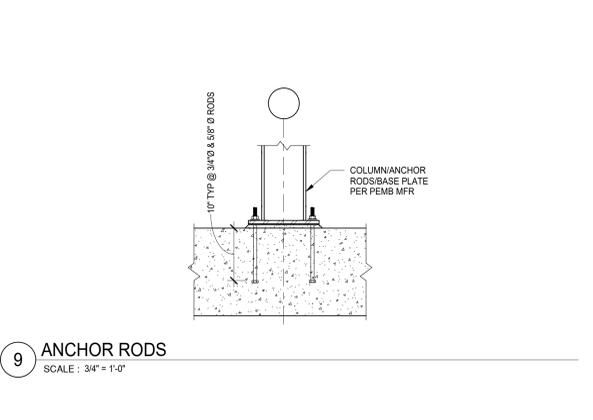
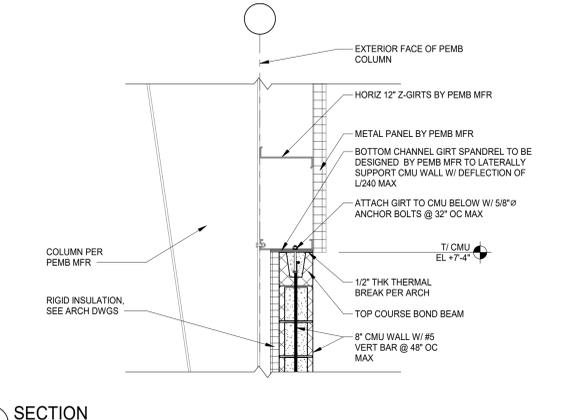
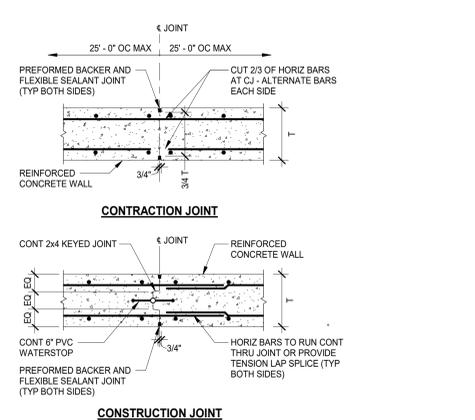
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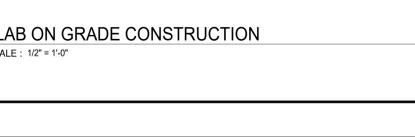
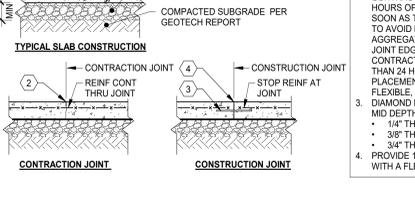
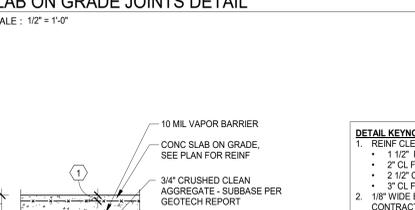
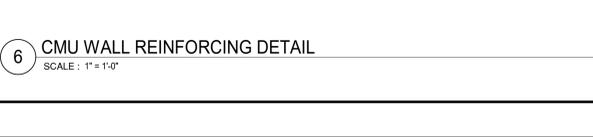
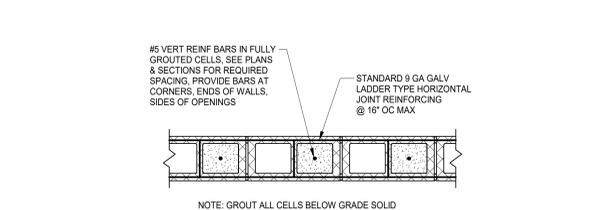
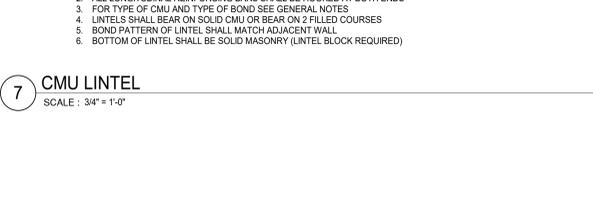
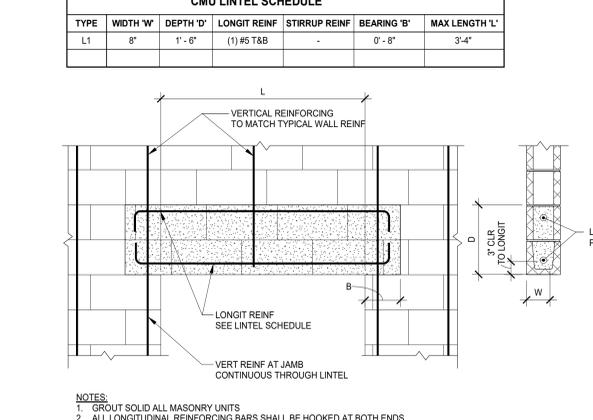
SHEET TITLE: FOUNDATION PLANS

SHEET NUMBER: S100



CMU LINTEL SCHEDULE

TYPE	WIDTH W'	DEPTH D'	LONGIT REINF	STIRRUP REINF	BEARING B'	MAX LENGTH L'
L1	8"	1'-0"	(1) #5 T&B	-	0'-6"	3'-4"



REV	DATE	DESCRIPTION	DESIGNED BY	BR/PERMIT SET
1	4/28/25			

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