THE LINE SHOWN ABOVE IS EXACTLY ONE INCH WHEN PLOTTED ON ORIGINAL PAPER SIZE

1.0 CODES AND STANDARDS:

1.1 "2018 North Carolina State Building Code" and "International Building Code", 2015.

1.2 "Minimum Design Loads for Buildings and other Structures" SEI/ASCE 7–16.

1.3 "Building Code Requirements for Structural Concrete (ACI 318–14)" American Concrete Institute 2014.

1.4 "Manual of Standard Practice", Concrete Reinforcing Steel Institute, latest edition.

1.5 "Specification for Structural Steel Buildings (AISC 360–10)" American Institute of Steel Construction, 2011 – 14th Edition

1.6 "Structural Welding Code – Steel (AWS D1.1)" and "Structural Welding Code – Reinforcing Steel (AWS D1.4)", American Welding Society.

1.7 "Specification for the Design of Cold–Formed Steel Structural Members", American Iron and Steel Institute (AISI), S100–12.

1.8 "Building Code Requirements for Masonry Structures", ACI 530–13, ASCE 5–13, TMS 402–13.

1.9 "Standard Specifications for Joist Girders (JG–10)", "Standard Specifications for Open Web Steel Joists, K–Series (k–10)", "Standard Specifications for Long Span Steel Joist, LH Series and Deep Longspan Steel Joists, DLH Series (LH/DLH–1.1)", Steel Joist Institute

1.10 "Design Manual For Floor Decks and Roof Decks", Steel Deck Institute, latest edition.

2.0 DESIGN LOADS:
Project Located in: City of Wilmington, County of New Hanover, State of North Carolina.

2.1 Risk Category = III

2.2 Gravity Loads: (Reduced where allowed)

GRAVITY LIVE LOADS		
Location	Uniform (psf)	Concentrated (lbs) (Over 2.5'x2.5')
Roof Loads:		
Live Load	20	300
Floor Live Loads:		
Office	81	2000
Assembly	100	
Mechanical & Electrical Rooms	150	
Storage	125	
Stage Floors	150	
Reading Rooms	60	1000
Stack Rooms	150	1000
Corridors Above 1st Floor	80	1000
Museum Exhibit Areas	175	

2.3 Drifting Snow Loads per N.C. Building Code.

Pg = 10 psf
I = 1.1
Ce = 0.9
Ct = 1.0

2.4 Wind Loads per N.C. State Building Codes, 2018 edition (IBC 2015) & ASCE 7–16 (3–second gust)

Main Wind Force Resisting System:
Vult 154mph
Vasd 119.3mph
Exposure Category "C"

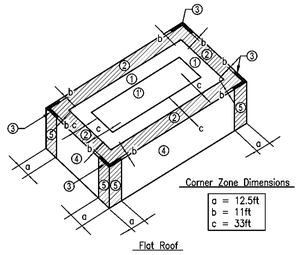
Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & –0.18
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85

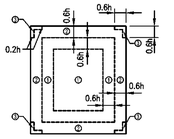
Calculated Wind Base Shear (Vult For MWFRS)
Vx = 613k Vy = 1278k

Components and Cladding:
Vult 154mph
Vasd 119.3mph
Exposure Category "C"

Components and Cladding Wind Pressure (psf)										
Walls	Area = 10ft²		Area = 20ft²		Area = 50ft²		Area = 100ft²		Area = 500ft²	
Zone 4	69.2	-74.9	66.1	-71.9	61.9	-67.8	58.8	-64.7	58.8	-64.7
Zone 5	69.2	-92.5	66.1	-86.2	61.9	-78.0	58.8	-71.9	58.8	-71.9
Roof	Area = 10ft²		Area = 20ft²		Area = 50ft²		Area = 100ft²		Area = 500ft²	
Zone 1	28.0	-110.2	26.3	-102.9	24.1	-93.3	22.3	-86.1	22.3	-86.1
Zone 1'	28.0	-63.3	26.3	-63.3	24.1	-63.3	22.3	-63.3	22.3	-63.3
Zone 2	28.0	-145.8	26.3	-135.8	24.1	-123.5	22.3	-114.3	22.3	-114.3
Zone 3	28.0	-198.0	26.3	-179.4	24.1	-154.7	22.3	-135.8	22.3	-135.8

Notes:
1. Areas noted are effective wind areas as per ASCE 7–16, 26.2 definitions.
2. See figures below for Zone locations.
3. Plus and minus signs signify pressures acting toward and away from surfaces, respectively.
4. Design pressures shown in table are strength design wind pressures. Allowable stress design wind pressures may be calculated by factoring the pressures by 0.6.
5. Design pressures for effective wind areas between those noted in schedule may be interpolated.
6. Tributary area = greater of LxW or LxL/3.
7. Deflections may be calculated based on 42% of these loads.





2.5 Seismic Loads per 2018 North Carolina State Building Code (IBC 2015) & ASCE 7–16

Risk Category = III
Site class = "D" (Per Geotechnical Report)
Spectral Response Coefficients:
SS = 0.157g
S1 = 0.068g
SDS = 0.167g
SD1 = 0.11g
Cs = 0.0418

Seismic Design Category = "B"
Seismic Importance Factor = 1.25
Basic Seismic – Force – Resisting System
Bearing Wall System – Ordinary Reinforced Concrete Shear Walls

RX=RY=4.0, QX=QY=2.5, CDX=CDY=4.0
Design Base Shear Vx = 956k Vy = 1,029k
Building Height Limit = 160'
Analysis Procedure – 12.8.1 ASCE 7–16
Equivalent Lateral Force Procedure

2.6 Guardrail designed per North Carolina State Building Code, Section 1607.8

Guardrail:
Uniform load = 50 plf, any direction – per 1607.8.1
Concentrated load = 200 lbs, any direction – per 1607.8.1.1
Intermediate Rail: (all those except handrail) per 1607.8.1.2

2.7 Flood Loads:
Project is not located in a flood zone.

3.0 FOUNDATIONS:

3.1 Foundation design is based on geotechnical report #22.3116, addendum letter #1 #22:31167.A1 and addendum letter #2 22:31667.A2 by ECS Southeast, LLP Wilmington, NC dated December 13, 2021, April 1, 2022 and July 6, 2022, respectively. This report is available in the project manual. The recommendations contained in this report are herein made part of the requirements of these contract documents.

3.2 Foundation design is based on 16" diameter auger cast piles with an allowable compressive capacity of 90 tons, allowable uplift capacity of 22.5 tons and an allowable lateral capacity of 10 tons. The owner shall contract a Geotechnical Engineer to verify pile capacities and to set drilling criteria for installation. Pile load tests will be required as outlined in the Geotechnical Report. See sheet S–301 for Auger Cast Pile Specifications.

3.3 Top of footing (T/FTG) elevations are shown on the drawings or are to be determined by the Contractor in the field in accordance with the guidelines set forth in the drawings.

3.4 Bottom of exterior footings, grade beams and walls shall bear at a minimum depth of 1'–0" below final grade for frost protection.

3.5 Testing and Inspection:
a. All areas to have slabs on grade shall be proof rolled in accordance with and under observation of the Geotechnical Engineer and approved prior to preparation for concrete placement.
b. All foundation bearing strata shall be inspected and approved by the Geotechnical Engineer prior to any concrete placement.
c. Geotechnical Engineer shall be the sole judge as to suitability of all foundation and/or slab bearing strata.
d. Footing bearing elevations shall be adjusted in the field as required to meet the design bearing pressures by additional excavation or compaction and/or backfilling or by other means acceptable to the Geotechnical Engineer.

3.6 Undercutting to remove existing fill beneath footings and slab shall be performed at the direction of the Geotechnical Engineer.

3.7 Engineered Fill: All fill material shall be selected in accordance with the Geotechnical Report. Material shall be a clean, low plastic soil with a plasticity index less than 30 (less than 15 is preferred), liquid limit less than 50, and unit weight of 120 pcf (+ 5 pcf)

3.8 Compaction: All fill shall be placed in loose lifts not exceeding 8 inches in thickness and compacted to a minimum of 96 percent Standard Proctor (ASTM D–698) except that the top 12 inches shall be compacted to a minimum of 98 percent Standard Proctor. Moisture shall be controlled to within 3 percent above or below optimum content.

3.9 Remove all topsoil and organic materials. The stripping should extend at least 10' beyond the proposed construction limits.

3.10 Contractor shall review all construction considerations as outlined in the Geotechnical report and bid accordingly.

4.0 CONCRETE:

4.1 Concrete Strength:
All concrete shall be in accordance with the American Concrete Institute (ACI) 301 and 318.

4.2 Concrete shall have a 28 day compressive strength and density as follows:
a. Footings, Pile Caps, Grade Beams, and Interior Slab–on–grade.....3,000psi, Density = ±145pcf
b. Elevated Slab, Columns and Walls.....5,000psi, Density = ±145pcf
c. Exterior Slab on Grade.....4,000psi, Density = ±145pcf
d. CMU Grout Fill.....3,000psi pea gravel mix Density = ±145pcf,
Slump 8"–11" or grout per Structural Masonry Notes, this sheet.

4.3 Concrete Mix Designs:
a. Submittals: Submit written reports of each proposed concrete mix not less than 15 days prior to the start of work.
b. Mix designs, including water, cement ratios and slumps, shall be prepared in accordance with ACI 301–05, Section 4, Cement shall conform to ASTM C 150 Type 1 or at contractor's option, ASTM C 595 Type IP where fly ash is permitted. Normal weight aggregate shall conform to ASTM C 33 and light weight aggregate shall conform to ASTM C 330. No admixtures containing calcium chloride shall be permitted in any concrete.
c. Aggregate size shall be #67 stone for supported slabs or other formed concrete elements; #57 stone for slabs on grade and footings or other concrete elements formed from and poured against earth; #89 stone for masonry grout.
d. Water reducing admixture shall be used in all concrete.
e. Air entraining admixture in accordance with ACI 301 shall be used in all concrete exposed freezing and thawing during construction or service conditions.
f. Concrete subjected to freezing/thawing shall have a maximum water/cement ratio of 0.45 and shall contain the amount of air entraining agent specified in ACI 301–05 Section 4.

4.4 Curing:
See specifications for curing method options and apply within two (2) hours after completion of finishing to all concrete flatwork and walls, U.N.O., other than footings and grade beams.

4.5 Use a non–corrosive, non–chloride accelerating admixture in concrete exposed to temperatures below 40 degrees. Uniformly heat the water and aggregates to a temperature of not less than 50 degrees. Place and cure concrete in accordance with ACI 306.

4.6 When hot weather conditions exist, place and cure concrete in accordance with ACI 301. Cool ingredients before mixing to maintain concrete temp. at time of placement below 90 degrees.

4.7 Reinforcing in all abutting concrete, including footings shall be continuous through or around all corners or intersections. Dowels or splices shall be equal in size and spacing to the reinforcing in the abutting members.

4.8 Refer to architectural drawings for door and window openings, drips, reglets, washes, masonry anchors, brick ledge elevations, slab depressions and miscellaneous embedded plates, bolts, anchors, angles, etc.

4.9 Refer to plumbing, mechanical and electrical drawings for underfloor, perimeter and other drains and for sleeves, outlet boxes, conduit, anchors, etc. The various trades are responsible for their items.

4.10 Base plates, anchor rods, support angles and other steel exposed to earth or granular fill shall be covered with a minimum of 3" of concrete.

4.11 Fill slabs, not shown on the structural drawings and all exterior slabs to be broom finished, shall be reinforced with a minimum of 6 x 6 x W2.0 x W2.0 WWM unless noted otherwise on other drawings.

4.12 Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
a. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values equal to ⅔ of the overall flatness and levelness values.
b. The composite F(F) and F(L) numbers shall be measured and reported within 72 hours after completion of slab concrete finishing operations and before removal of any supporting shores.

4.13 Non–shrink grout shall be pre–mixed, non–corrosive, non–metallic, non–staining containing silica sands, Portland cement, shrinkage compensating and water reducing agents. Product shall only require the addition of water. Minimum compressive strength shall be 2500 psi after one day and 7000 psi after 28 days. Grout shall be free of gas producing or air releasing and oxidizing agents and contain no corrosive iron, aluminum or gypsum.

4.14 Provide concrete grout – not mortar – for reinforced masonry lintel and bond beams where indicated on drawing or as scheduled.

4.15 Tolerance for anchor rods and other embedded items shall be per the AISC Code of Standard Practice Section 7.5.

4.16 Unless otherwise shown in the architectural drawings, provide 3/4–inch chamfers at all column, wall, slab or beam edges that are exposed to view in the finished structure.

4.17 Concrete cover for cast–in–place concrete reinforcement:
Concrete cast against & permanently exposed to earth:.....3 Inches
Concrete exposed to earth or weather:
No. 6 through No. 18 Bars:.....2 Inches
No. 5 Bar and smaller:.....1½" Inches
Concrete not exposed to weather or in contact with ground:
Slabs, Walls, Joists:
No. 11 Bar and smaller:.....¾" Inches
Beams, Columns:
Primary Reinforcement, Ties, Stirrups:.....1½" Inches

5.0 REINFORCING STEEL:

5.1 Reinforcing shall be domestic new billet steel conforming to ASTM A615, Grade 60 or 60S including stirrups and ties, except that reinforcing which is required to be welded shall conform to ASTM A706.

5.2 Field bending of concrete reinforcing steel is not permitted.

5.3 Welded wire mat and fabric shall conform to ASTM A184 and A185 respectively and shall be provided in flat sheets. Welded wire mat/fabric shall be lapped 0'–6" at all splices.

5.4 Bar Splices:

	f'c = 3,000psi		f'c = 4,000psi		f'c = 5,000psi	
Bar Size	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)	Ld (in)	Class "B" Lap Splice (in)
#3	17	22	15	19	13	17
#4	22	29	19	25	17	23
#5	28	36	24	31	22	28
#6	33	43	29	37	26	34
#7	48	63	42	54	38	49
#8	55	72	48	62	43	56
#9	62	81	54	70	48	63
#10	69	90	60	78	54	69
#11	76	98	66	85	59	76

1. Values are based on normal weight concrete.
2. Ld = minimum embed of rebar
3. Class "B" lap splice refers to minimum distance bars must be lapped for a full tension splice.

Notes:
For Epoxy Coated bars multiply table values by 1.2
For Beam Top Bars multiply table values by 1.3
For Top Bars in Slabs 13in and thicker multiply table values by 1.3

6.0 UNBONDED SINGLE STRAND TENDONS (POST–TENSIONING CABLES)

6.1 Post–Tensioning supplier shall design all anchorage zones per the current ACI code guidelines. Post–Tensioning supplier shall work with Woods Engineering, PE on all value engineering items.

6.2 Prestressing steel used is unbonded single strand post–tensioning tendons shall conform to the requirements set forth in the Specifications for Unbonded Single Strand Tendons (Latest Edition) published by the Post–Tensioning Institute (PTI). Strands shall be per ASTM A 416/A 416M, Grade 270 – low relaxation type, 0.5" diameter, strand area is 0.153 sq. in.

6.3 Relaxation losses for low–relaxation material shall be based on relaxation tests of representative samples for a period of not less than 1000 h, tested at 68 F ± 3.5 F (20 C ± 2 C) and stressed initially to not less than 70% of specified minimum breaking strength of strand. Tests shall be in accordance with ASTM A 416/A 416M and ASTM E 328.

6.4 Each strand pack or coil shall be clearly identified as to grade, coil and heat number. Identification shall be included in the fabrication process documentation.

6.5 Material shall be packaged in a manner that prevents physical damage to the strand during transportation and protects the material from deleterious corrosion during transit and storage. Any damage to strand sheathing need to be repaired w/ approved tape before concrete placement.

6.6 The Contractor shall submit installation drawings to the Engineer of Record a minimum four (4) weeks prior to scheduled installation of the tendons. installation drawings shall show the tendon layout, all anchorage locations, and tendon supports with all details necessary to ensure proper installation. The review of the installation drawings by the Engineer of Records is only for general compliance with the intend of the structural drawings and specifications. In addition the Contractor shall provide long term calculations and anticipated field elongations at stressing along with field procedure for measuring elongations. Installation plans and calculations shall be sealed by a qualified Professional Engineer registered in the state of Tennessee. Electronic PDF format submittals are acceptable as long as they are signed and sealed.

6.7 Prestressing tendons shall be firmly supported at intervals not exceeding 4 ft. Tendons shall be attached to the supporting chairs or reinforcement w/out damaging the sheathing. Placing tolerances shall be in accordance with this section and ACI 117 (Latest edition), whichever is the most restrictive, unless stated otherwise in the Project specifications.

6.8 Vertical tolerances for tendon location shall not be more than ± 1/4" for concrete members with thickness equal or less than 8"; ± 3/8" for concrete members with thickness larger than 8" but less than 2ft; and ± 1/2" for concrete members thicker than 2ft. Access shall be provided to stressing ends.

6.9 All dimensions showing the vertical location of the prestressing tendons are to the center of gravity of the tendons (CGS) unless noted otherwise.

6.10 Tendon placement shall be per this specification and as otherwise directed in the project Construction Documents. In two–way slab construction at least two (2) tendons shall be placed directly over the supporting columns (within the column cage) in each orthogonal direction per ACI 318 latest edition.

6.11 Lateral deviations in tendon location shall be permitted if necessary to avoid openings, ducts, chases, and inserts. Such deviations shall have a radius of curvature of not less than 480 strand diameters. As a minimum #3 hairpin reinforcement @ max. 12" o.c. shall be provided for all tighter lateral curvatures.

6.12 Opening, penetrations and insert locations shall be determined to the fullest extend possible prior to tendon layout and concrete placements. No changes shall be made in the field without prior written approval of the Engineer of Record. Core drilling is not allowed without prior written approval of the Engineer of Record.

6.13 Project is located in aggressive environment therefore post–tensioned system shall be of encapsulated type.

6.14 All exposed components shall be fully protected within 7 days after their exposure during installation. In corrosive environment this requirement shall be reduced to 1 day. Use temporary corrosion inhibitor on all exposed strand tails & anchors if tendons are not patched within 7 days of final stressing.

6.15 Post–tensioning system is designed and based on initial concrete strength at transfer (stressing) equal to 3,000 psi as indicated by compression tests of field–cured cylinders

6.16 General stressing sequence for two–way slabs shall be as follows:
a. Stress first all continuous distributed (uniform) tendons
b. Stress second all continuous banded tendons
c. Stress added distributed (uniforms) tendons
d. Stress added banded tendons

6.17 Contractor shall furnish to Engineer of Record calibration charts for every jack/gage/pump set to be used on project for stressing prior to any post–tensioning operations. Each jack shall be used only with the gage and pump for which it was calibrated.

6.18 Elongation measurements shall be made at each stressing location and submitted to the Engineer of Record for approval within max. 7 days of stressing. Measured elongations shall be within ± 7% from calculated elongations as per ACI 318–08 section 18.20. Elongations at construction joint need to be approved by Engineer or Record before pouring the remaining slab. Discrepancies exceeding ± 7% shall be resolved by the post–tensioning installer/supplier to the satisfaction of the Engineer of Record.

6.19 Upon elongation approval Contractor shall cut all strand tails, seal and patch all anchors within 1 business day. If delay is envisioned weather protection shall be installed on all anchors of uncut tendons.

7.0 STRUCTURAL MASONRY:

7.1 All structural masonry shall conform to ACI 530 standards as appropriate to the material.

7.2 Concrete Masonry Units (CMU):
a. Units shall be lightweight cellular units conforming to ASTM C 90, Grade N–2. Concrete masonry net area unit strength shall be no less than 2,000psi in accordance with ASTM C 140, with a unit weight not exceeding 95 pcf.
b. Design compressive strength of CMU (fm) = 2,000psi.

7.3 Mortar shall conform to ASTM C 270. Mortar shall be type "S" and shall conform to the ASTM C270 proportion requirements.

7.4 Neither type "N" mortar nor masonry cement shall be used as part of the lateral force resisting system.

7.5 Grouting:
a. Grout shall conform to ASTM C476 as specified by proportion. Masonry grout shall conform to the ASTM proportion requirements for coarse grout with a slump of 8 to 11 inches. Contractor may substitute grout with pea gravel concrete masonry fill, see note 4.2 this sheet.
b. All bond beams shall be filled with grout and reinforced as indicated on the drawings (details or schedules). Mortar fill is not permitted.
c. All masonry wall cells or cavities indicated as reinforced shall be grouted for the full height of the wall, unless specifically noted otherwise on the drawings. Unreinforced walls indicated as grouted shall be grouted full height, unless specifically noted otherwise. Mortar fill is not permitted.
d. All masonry cells or cavities below grade shall be grouted solid unless specifically noted otherwise on the drawings. Mortar fill is not permitted.
e. Vertical grouting shall be low lift or high lift as follows:
(1) Low lift grouting shall be used for all cavity walls and may be used for all walls at the option of the Contractor. Lifts shall not exceed 4'–0" in height.
(2) High lift grouting is permissible only for filling of cellular masonry units and shall not exceed 12'–8" in height. Clean out holes shall be provided at the base of each grouted cell.
f. Grouting shall be stopped 1–1/2" below the top of a course to form a key at the joint.
g. Grouting of masonry beams or lintels shall be done in one continuous operation.
h. Consolidate pours with mechanical vibrator and reconsolidate by mechanical vibration after initial water loss and settlement has occured.
i. Mechanical vibrator shall be a low velocity vibrator with a ¾" head.

7.6 Masonry Reinforcing:
a. Foundation dowels may slope a maximum of 1:6 to align with wall cavities or vertical CMU cores. Greater slopes will require replacement of the foundation dowels.
b. Spliced reinforcing shall be lapped a length calculated per IBC 2107.5 OR 15" OR as shown on drawings, whichever is greatest. All splices shall be wired together.
c. Vertical reinforcing bars shall have a minimum clearance of ¼" from masonry and shall be held in position top and bottom and at intervals not exceeding 4'–0". Accessories for such support shall be used. Provide "AA Wire Products Company" (or approved equal) Rebar Positioner AA225 or AA239 for vertical bars and AA238 for horizontal bars or approved equal products from other suppliers.
d. Horizontal joint reinforcing shall be lapped no less than 6" all splices, including corners and tees where no control joint is used.
e. All horizontal joint reinforcing shall stop at control joints.
f. Horizontal reinforcing in bond beams shall be continuous through control joints.
g. All CMU walls shall have joint reinforcing @ 16"o.c. All joint reinforcing shall have (2) 9 gauge (0.148"ø or W1.7) side rods & cross rods @ 16"o.c.

7.7 Masonry contractor shall provide for and coordinate with other trades for placement of all items to be embedded or built into the masonry.

MINIMUM SPLICING LENGTH (Ld) FOR MASONRY	
BAR SIZE	SPLICE LENGTH
#3	16"
#4	22"
#5	26"
#6	43"
#7	60"

8.0 COLD–FORMED STEEL FRAMING:

8.1 All members shall be designed in accordance with the American Iron and Steel Institute (AISI) "Specifications for the Design of Cold–formed Steel Structural Members", Latest Edition.

8.2 All framing members shall be formed from corrosion–resistant steel corresponding to the requirements of ASTM A446, with a minimum yield strength of 33 ksi for joists and studs and 33 ksi for runners.

8.3 All members shown are standard designations of Steel Stud Manufacturers Association (SSMA)

8.4 Design of members indicated in structural drawings is based on minimum properties of products produced per SSMA standards of members specified. No substitution of materials is acceptable for use without prior approval of the structural engineer. Substitutions shall meet or exceed all properties produced per SSMA standards of members specified

8.5 All shop drawing submittals shall show layout, spacing, sizes, thicknesses and types of cold–formed metal framing, fabrication, and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details and attachment to adjoining work.

8.6 Shop drawings, design calculations and other structural data shall be prepared and sealed by a qualified engineer. The Structural Engineer shall be legally qualified to practice in the jurisdiction where the project is located and shall be experienced in providing engineering services of the kind indicated.

8.7 All framing components shall be cut squarely for attachment to perpendicular members or as required for an angular fit tight against abutting members. All load bearing stud/walls shall be factory assembled into panels with studs bearing squarely and fully in top and bottom tracks.

8.8 Fastening components shall be by self–drilling screws or by welding as defined below UNO on the drawings.

8.9 Screwed connections:
a. Screws shall be type S–12 or type S–4 for all framing members per manufacturer's recommendations.
b. A minimum of three (3) exposed threads shall penetrate through at joined materials.
c. Corrosion–resistant cadmium–plated screws shall be used for screws attaching metal lath, masonry ties, and other exterior materials.

8.10 Welded connections:
a. Gas metal arc welding (GMAW) shall be used for 20 ga. Or lighter members. AWSE–705–3, E–705–E, E–705–6 wire electrodes .030"–.035" diameter shall be used with carbon dioxide, argon–oxygen or argon–carbon dioxide shielding. Welding equipment 60–100 amperes at 25 volts using 220–volt 3–phase electric service.
b. Shielded metal arc welding (SMAW) shall be used for 18 ga' and heavier members. AWS E–6012, E–6013, or E–7014 electrodes of 3/32" or 1/8" diameter shall be used. Welding equipment heat setting shall be varied dependent on material thickness.
c. All welds shall be touched up with zinc rich paint, or paint similar to that used by the framing member manufacturer.

8.11 Alignment of studs (plumbness) and walls (straightness) shall be within 1/960 of their respective heights and lengths.

8.12 Studs shall be plumbed, aligned, and securely attached to top and bottom runners. Splices in studs are not permitted.

8.13 Where manufacturer's recommendations for erection, attachment, assembly, bracing, alignment, or other installation, or assembly requirements are more stringent than indicated in these drawings, the manufacturer's recommendations shall apply.

STEEL THICKNESS						
Gauge:	Mils	Design Thickness		Minimum Thickness		Yield Strength
		Inches	mm	Inches	mm	ksi
20	33	0.0346	0.879	0.0329	0.836	33
18	43	0.0451	1.146	0.0428	1.087	33
16	54	0.0566	1.438	0.0538	1.367	50
14	68	0.0713	1.811	0.0677	1.720	50
12	97	0.1017	2.583	0.0966	2.454	50

FLOOR ELEVATION TABLE	
LEVEL	ELEVATION
B/HIGH ROOF	SLOPES – SEE S–206EOS
B/LOW ROOF	50'–0"
LEVEL 3	35'–0"
LEVEL 2	18'–6"
LEVEL 1	0'–0"
LEVEL U1	–4'–0"
36.00 MSL	–5'–3"
PG ELEVATOR	–10'–3"

NEW HANOVER COUNTY, NORTH CAROLINA ESTABLISHED 1729
CFD Cape Fear Development
LS3P
101 NORTH THIRD STREET, SUITE 500
WILMINGTON, NORTH CAROLINA 28401
TEL. 910.790.3111 FAX. 910.790.9901
WWW.LS3P.COM
WOODS ENGINEERING Consulting Structural Engineers
254 North Front Street Phone: 910.343.8007
Suite 201 Fax: 910.343.8088
Wilmington, NC 28401 www.woodseng.com

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL No. C–1806 CORPORATE SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19475 DON R. WOODS

Digitally signed by Don R. Woods, PE
DN: cn=Don R. Woods, PE, o=WOODS ENGINEERING, P.A., l=Wilmington, S=North Carolina, C=US
Date: 2021.05.22 11:27:01-04'00'

Project Grace
Grace Street
Wilmington, NC 28401
LS3P PROJECT: 7701–177600
WOODS PROJECT: 21–3351

Δ	DATE	DESCRIPTION
0	2023.05.22	PERMIT SET

SHEET NAME:
GENERAL NOTES

ORIG SUBMISSION: 2023.05.22

SHEET:
S–101

PERMIT SET

10/20/2021 8:48:37 AM

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