GENERAL:

Structural drawings shall be used in conjunction with the architectural, mechanical, electrical and shop drawings, and specifications.

- Unless otherwise noted, sections, details, notes, materials, and methods shown on any drawings are to be considered typical for all similar conditions.
- In the event of a conflict between plans, specifications, and details, the Structural Engineer shall be notified immediately for clarification.
- All dimensions, elevations, and conditions must be verified in the field by the Contractor. Any discrepancies between these drawings and as-built conditions shall be brought to the attention of the Structural Engineer before proceeding with any work.
- The structure has been designed to be self-supporting and stable after the work shown on these drawings has been completed. The Contractor shall be responsible for the stability of the structure prior to the completion of work including but not limited to, jobsite safety, all shoring, bracing, erection methods, erection sequence, and forms required during construction. Temporary supports required for stability during all intermediate stages of construction shall be designed, furnished, and installed by the Contractor.
- Shop drawings shall be submitted to the Structural Engineer (see each section for specific items and requirements). Fabrication shall not proceed until a satisfactory review is received, the Contractor is proceeding at their own risk if failure to do so. Erection shall be executed from final reviewed shop drawings only.
- Items noted on drawings as "by others" or "designated for design by others" indicates design and supply of structural items not by TFM. These items are a designated design item that shall be submitted for approval. See Deferred Submittals.
- These plans were prepared under the supervision of a licensed professional engineer. TFMoran Inc. assumes no liability as a result of any changes or non-conformance with these plans except upon the written approval of the Engineer of Record.
- TFMoran Inc. assumes no liability for work performed without an acceptable program of testing and inspection as approved by the Engineer of Record.
- Reproduction of structural drawings for shop drawings is not permitted. Electronic drawing files will not be provided to the Contractor unless a transfer agreement has been completed between the Structural Engineer and the Contractor.
- 11. All work shall comply with the building codes referenced on these drawings.
- 12. Do not scale drawings. Contact the Architect or Structural Engineer for dimensions not specifically shown.

CODE:

2015 International Building Code as amended, altered, or deleted by the provisions of the New Hampshire State Building Code.

DESIGN LOADS:

- MINIMUM UNIFORM LIVE LOADS AND MINIMUM CONCENTRATED LIVE LOADS: UNIFORM CONCENTRATED OCCUPANCY or USE Storage Warehouse: 125 psf N/A Light: CONCENTRATED FLOOR LOADS: If listed above, the concentrated load shall be used to determine the greatest load effect. Unless otherwise specified, the indicated concentration shall be assumed to be uniformly
- distributed over an area of 2.5 feet square and located to produce the max. load effects. ROOF SNOW LOAD: Risk Category: 70 psf at 700 ft Ground Snow Load, Pg : Allowed Reduction per ERDC/CRREL TR-02-6: 0.01*(700-300)*2.1=8.4 psf Ground Snow Load per ERDC/CRREL TR-02-6: 61.6 psf at 300 ft Snow Load Importance Factor, Is: 1.0 1.0 Snow Exposure Factor, Ce: 1.2 Thermal Factor, Ct: Flat Roof Snow Load, Pf: 51.7 psf Drifting, sliding, and unbalanced snow loads: Per ASCE-7 Rain loads: Per ASCE-7 Roof live load: 20 psf MIN DEAD LOAD: 3 psf Roof dead load: WIND DESIGN DATA: Wind loads have been determined using ASCE-7 Method 1 Simplified Procedure. Risk Category: Ultimate Wind Speed (3 second gust), Vult: 115 mph Wind Exposure Category: Internal Pressure Coefficient: 0.00 Components and Cladding Design Wind Pressure: Zone Per ASCE-7 MAX Positive (20 sf) MAX Negative (20 sf) 22.6 psf 43.5 psf 51.3 psf 22.6 psf 63.5 psf 22.6 psf 26.1 psf 26.1 psf 26.1 psf 52.2 psf EARTHQUAKE DESIGN DATA: Risk Category: XX X.X Seismic Importance Factor, le: 0.2s Mapped Spectral Response Acceleration, Ss: 0.XXXg 1.0s Mapped Spectral Response Acceleration, S1: 0.XXXg 0.2s Spectral Response Coefficient, Sds: 0.XXXg 1.0s Spectral Response Coefficient, Sd1: 0.XXXg Site Class: Seismic Design Category: Х Basic Seismic-Force-Resisting System: Analysis Procedure: Equivalent Lateral Force Response Modification Factor, R: Seismic Response Coefficient, Cs: 0.XXX Deflection Amplification Factor, Cd: Х XXX kips Design Base Shear, V: Other Loads: Retaining Walls Lateral Equivalent Fluid Pressure: XX pcf Vertical Live Load Surcharge: XX psf

FOUNDATIONS:

finished grade.

- Foundations have been designed to consist of continuous and spread f 1. inorganic, undisturbed natural soil or compacted structural fill having an bearing pressure of 2000 pounds per square foot. The contractor is resp these subsurface conditions, failure to do so will result in a disclaimer of Structural Engineer.
- Subgrade exploration has not been performed, the Structural Engineer concerning the suitability of any soil or ledge material, nor the absence of either naturally occurring or formerly buried.

3. Structural fill shall be granular material meeting the following gradation

<u>SIEVE SIZE</u>	<u>% PASSING BY WEIGHT</u>	SIEVE SIZE	%
8"	100	3/4"	4
6"		No. 4	3
3"	70-100	No. 10	2
2"		No. 40	1
1-1/2"		No. 200	0
1"			

A soils testing lab shall test all material proposed for structural fill for cla ASTM D2487 and for laboratory compaction curve according to ASTM in-place soils shall be tested for compaction to a minimum 95% of its ma optimum moisture.

- 4. Unless otherwise noted, foundations shall be centered under supported 5. The bottom of perimeter and exterior foundations not on solid rock shall
- Keep foundation excavations free of water at all times. Protect all soil su footings from freezing and frost action during the course of construction
- Bottom of excavations shall be reviewed by the Structural or Geotechnie placement of concrete.
- 8. Provide formwork for all footings, walls, and piers. Unless otherwise not foundations are not allowed.
- 9. Place backfill simultaneously on both sides of foundation walls to the gra backfill or temporarily brace walls with uneven backfill until the floor slab been poured and/ or the concrete has attained 75% of its design compre
- 10. The bottom three (3) inches of footing excavations shall be finished with or by hand shovel.
- 11. Use lean concrete (f'c = 1,500 psi) or structural fill for over-excavation of
- 12. The G.C. shall identify all below grade utilities prior to commencing exca
- 13. Submittals to the Structural Engineer and Geotechnical Engineer are re material.

CONCRETE:

- 1. Place epoxy/adhesive/acrylic anchors in materials at manufacturer reco ranges. If temperature ranges cannot be achieved, coordinate appropria epoxy/adhesive/acrylic material substitute for approval with structural en
- 2 Post installed anchors shall be installed in sound concrete in accordanc recommendations / instructions. Reinforcing steel shall not be cut in ord
- 3. Submittals to the Structural Engineer are required for epoxy/adhesive/ad product data.

REINFORCING STEEL

- 1. Reinforcing steel shall be deformed bars, free from loose rust and scale, ASTM A615, Grade 60.
- 2. Accessories in contact with forms to be removed shall have upturned led after fabrication. Accessories for reinforcing shall be in accordance with
- 3. Shop or Erection drawings shall be submitted to the Structural Engineer spacing, lap lengths, quantity and sizes of all concrete reinforcing.
- 4. Submittals to the Structural Engineer are required for product data of all mechanical connectors.

PRECAST STRUCTURAL CONCRETE:

- 1. All precast concrete work shall comply with ACI 318 and with design rec MNL 120, "PCI Design Handbook - Precast and Prestressed Concrete" precast concrete structural concrete.
- 2. The precast concrete manufacturing plant shall be certified by the Prestr (PCI) plant certification program prior to the start of production.
- 3. The precast concrete manufacturer shall comply with PCI MNL 116, "Ma for Plants and Production of Structural Precast Concrete Products."
- 4. The precast concrete manufacturer shall engage a registered structural precast structural concrete units and certify that manufacturing is in acco requirements. Design shall include plank, structural topping, headers, h carry all live and dead loads, including wind, roof, snow and seismic load applicable building code and all applicable state and local codes.
- 5. Shop or Erection drawings shall be submitted to the Structural Engineer quantity, locations, elevations, shapes and sections, openings, support and types of reinforcement.

footings bearing on assumed allowable ponsible for verifying f responsibility by the	1.	 Fabricate and erect structural steel in accordance with the applicable "Specification for Structu Steel for Buildings" and the "Code of Standard Practice" of AISC. Welding shall conform to the requirements of the "Structural Welding Code" of the American Welding Society. 		
makes no representations of deleterious materials,	2.	Structural steel wide flange shapes shall conform Sections (HSS) shall conform to ASTM A500, Gr ksi). Pipe shall be ASTM A53, Grade B (Fy = 35 plates, and angles shall conform to ASTM A36 (F	n to ASTM A992 (Fy = 50 ksi). Hollow Structural rade B (Rectangular Fy = 46 ksi, Round Fy = 42 ksi). Structural steel channels, misc. shapes, Fy = 36 ksi), unless otherwise noted.	
	3.	Do not splice structural steel members without w	ritten approval of the Structural Engineer.	
requirements:	4.	Bolted connections shall be made with three-qua	rter inch diameter high strength, ASTM A325-N	
<u>6 PASSING BY WEIGHT</u> 15-95 30-90 25-80		bolts, unless otherwise noted. Connections at mo and hangers shall be made with three-quarters in unless otherwise noted.	oment frames, braced frames, column splices nch diameter A325-SC (Slip critical) bolts,	
0-50)-12	5.	Welding electrodes shall conform to AWS A5.1 E weld (low hydrogen).	70XX series with proper rod to produce optimum	
assification according to	6.	Provide all angles, plates, anchors, bolts, etc., sh	own on architectural drawings.	
D1557. In addition, aximum density at or near	7.	Structural steel exposed to weather shall be hot-o	dip galvanized according to ASTM A123.	
l members. I be at least 4'-0" below	8.	The Steel fabricator is responsible for the design and detailing of all connections including moment connections, braced frame connections and beam and/or column stiffeners and doublers if required. All connections must be designed by a registered professional engineer in the state in which the project is being constructed. Certification of this design shall be provided with the shop drawings submittal for review by the engineer of record.		
urrounding and under า.	9.	The design of steel stairs, hand rails, and guard r the general contractor. All must be designed by a which the project is being constructed. Certification drawings submittal for review by the engineer of t	rails are delegated for design by others and of a registered professional engineer in the state in on of this design shall be provided with the shop record	
cal Engineer prior to the	10.	Shop or Erection drawings shall be submitted to	the Structural Engineer for fabrication and	
ted, earth formed	. –			
ades indicated. Do not	<u>A</u> E	<u>BBREVIATIONS</u>	ABBREVIATIONS (cont'd)	
o at the top of the wall has ressive strength.	2x =	2" NOMINAL THICK LUMBER	LB = POUND LGM = LIGHT GALIGE METAL	
h smooth-edged bucket	AB : AFF	= ANCHOR BOLT = ABOVE FINISH FLOOR	LLH = LONG LEG HORIZONTAL	
	ALT ALU	. = ALTERNATE JM. = ALUMINUM	LONG LEG VERTICAL LONG. = LONGITUDINAL	
of footings.	APF AR(PROX. = APPROXIMATE CH. = ARCHITECTURAL	L.P. = LOW POINT LP = LEVELING PLATE	
avation activities.	B/, E	3/0 = BOTTOM OF	LSL = LAMINATED STRAND LUMBER LVL = LAMINATED VENEER LUMBER	
equired for structural fill	BCX BJ =	<pre>K = BOTTOM CHORD EXTENSION = BAR JOIST</pre>	MANUF. = MANUFACTURER	
	BLD BM. BOT BP =	OG. = BUILDING = BEAM F. = BOTTOM = BASE PLATE	MAX. = MAXIMUM MECH. = MECHANICAL MEP = MECHANICAL, ELECTRICAL, PLUMBING MIN. = MINIMUM MI. = MASONRY LINTEL	
ommended temperature ate ngineer.	BRC BRF BS = BTV	3. = BEARING P = BEARING PLATE = BRICK SHELF V = BETWEEN	MO = MASONRY OPENING MPH = MILES PER HOUR MAS. / MSNRY. = MASONRY	
ce with the manufacturer's	CAN		NIL. = METAL NIC = NOT IN CONTRACT/SCOPE	
der to install anchors.	CFS CIP CJ =	S = COLD FORMED STEEL = CAST IN PLACE = CONTROL JOINT	# / No. = NUMBER NTS = NOT TO SCALE	
crylic/expansion anchor	CL. CLF CMI	= CENTERLINE R. = CLEAR J = CONCRETE MASONRY UNIT	OC / o.c. = ON CENTER OF = OUTSIDE FACE OPNG. = OPENING	
	COL CON	= COLUMN NC. = CONCRETE	OSB = ORIENTED STRAND BOARD	
e, and conforming to	CON CON COO CTF	NST. = CONSTRUCTION NT. = CONTINUOUS ORD. = COORDINATE R. = CENTER	PC = PRECAST PE = PROFESSIONAL ENGINEER PEMB = PRE-ENGINEERED METAL BLDG. PL = PLATE	
gs and be plastic-dipped ACI current edition.	DBL	- = DOUBLE	PLF = POUNDS PER LINEAR FOOT	
r showing the layout,	DIM DIS	DIA. = DIAMETER I. = DIMENSION T. = DISTANCE	PRE-ENG. = PRE-ENGINEERED PSF = POUNDS PER SQUARE FOOT PSI = POUNDS PER SQUARE INCH	
l accessories, including	DK = DN. DW	= DECK = DOWN GS. = DRAWINGS	PT = PRESSURE TREATED PWD. = PLYWOOD	
	EA. EF = EIB(= EACH = EACH FACE C = EXISTING INTERNATIONAL BLDG. CODE	RAD. = RADIUS REC. = RECOMMENDATION REINF. = REINFORCING / REINFORCE(D)	
commendations in PCI applicable to types of	EL. ELE ELE	= ELEVATION C. = ELECTRICAL V. = ELEVATOR	REQ'D. = REQUIRED REV. = REVISION RF = ROOF RO = ROUGH OPENING	
tressed Concrete Institute	EME ENC EOE	BED. = EMBEDMENT G = ENGINEER D = EDGE OF DECK	RTU = ROOF TOP UNIT SCHD. = SCHEDULE	
anual for Quality Control	EOF EOS EQ.	R = ENGINEER OF RECORD S = EDGE OF SLAB = EQUAL	SE = STRUCTURAL ENGINEER SF = SQUARE FEET SIM. = SIMILAR	
ongineer to destant	ER\ EW	/ = ENERGY RECOVERY UNIT = EACH WAY	SPEC. = SPECIFICATION STD. = STANDARD	
cordance with design nangers and straps to not in accordance with the	E. / EXF EXT	EX. / EXIST. = EXISTING P. = EXPANSION T. = EXTERIOR	STIFF. = STIFFENER / STIFFEN(ED) STL. = STEEL STRUCT. = STRUCTURAL	
	FFE FIN.	. = FINISHED FLOOR ELEVATION . = FINISHED	TBD = TO BE DETERMINED T/, T/O = TOP OF	
r showing member conditions, connections	FLR FND FT.	R. = FLOOR DN. = FOUNDATION = FEET	TCX = TOP CHORD EXTENSION THK. = THICK TJ = TIE JOIST	
	FTG GA	= GAUGE	T/O STL, TOS = TOP OF BRICK SHELF T/O STL, TOS = TOP OF STEEL	
	GAL GC GEC	LV. = GALVANIZED = GENERAL CONTRACTOR DTECH. = GEOTECHNICAL	T/O WALL, TOW = TOP OF WALL TRANS. = TRANSVERSE TYP. = TYPICAL	
	HDO	G = HOT DIPPED GALVANIZED	U/S = UNDERSIDE UNO = UNLESS NOTED OTHERWISE	
	HSS	S = HOLLOW STRUCTURAL SECTION		
	IBC IF =	= INTERNATIONAL BLDG. CODE INSIDE FACE	VERT. = VERTICAL VIF = VERIFY IN FIELD	
	IN. =		W/ = WITH W/O = WITHOLIT	
	JNT	. = JOINT	WD. = WOOD	
	JP = JST	= JOIST BEARING PLATE = JOIST	WK. PT. = WORK POINT WS. = WATERSTOP	
	K =	KIP	WWF / WWM = WELDED WIRE FABRIC / MFSH	

WWF / WWM = WELDED WIRE FABRIC / MESH

STRUCTURAL STEEL

ABABINISA 8 Constitution Drive Bedford, NH 03110 8 Constitution Drive Bedford, NH 03110 Provide Statistical Statist			
RESS SET NOT FOR CONSTRUCTION SCRIPTION OF REV. REV. DATE			
12/24/2020 REV. # DES			
SOAKE POOLS STORAGE 798 SILVER HILLS DRIVE 798 SILVER HILLS DRIVE PREPARED FOR 800 NH, 03275 708 SILVER HILLS DRIVE, UNIT 9 708 SILVER HILLS DRIVE			
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