

STRUCTURAL DESIGN BASIS

ALL WORK ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT SHALL COMPLY WITH THE 2021 INTERNATIONAL BUILDING CODE AND THE ASSOCIATED ASCE 7-16:

1. DESIGN LIFE	40 YRS
2. DESIGN LOADING	
A. GRAVITY	
DESIGN SNOW LOAD:	20 PSF
DEAD LOAD OF EQUIPMENT:	EQUIPMENT WEIGHT, AS PROVIDED BY MANUFACTURER.
B. WIND	
WIND EXPOSURE:	C
RISK CATEGORY:	I
BASIC WIND SPEED, V:	101 MPH
C. ICE	
ICE THICKNESS:	2.00 IN
GUST SPEED:	40 MPH
D. SEISMIC	
SITE CLASS:	E — SOFT CLAY SOIL
MAPPED SPECTRAL RESPONSE ACCELERATION, S_s :	0.149
MAPPED SPECTRAL RESPONSE ACCELERATION, S_f :	0.087
DESIGN SPECTRAL RESPONSE ACCELERATION, S_{DS} :	0.239
DESIGN SPECTRAL RESPONSE ACCELERATION, S_{D1} :	0.244
SEISMIC DESIGN CATEGORY:	D

2. GEOTECHNICAL DESIGN BASIS

FOUNDATION DESIGN PROPERTIES ARE PROVIDED BY THE GEOTECHNICAL ENGINEER(S) IN THE FOLLOWING GEOTECHNICAL REPORT:

[1] ANS GEOTECHNICAL REPORT "CEMETERY SUN" BY, VATSAL SHAH, PE, PH.D, DATED 5/8/2024

3. CORROSION DESIGN BASIS

TRACKER FOUNDATION DESIGN CONSIDERS LOSS OF STEEL DUE TO CORROSION DURING THE 40YR DESIGN LIFE OF THE FACILITY. THE RATE OF STEEL LOSS DUE TO CORROSION WAS ESTIMATED BASED UPON SOIL TEST RESULTS WITHIN THE FOLLOWING REPORT:

- [1] "CORROSION OF METALS AND ALLOYS -- CORROSIVITY OF ATMOSPHERES -- CLASSIFICATION, DETERMINATION AND ESTIMATION" ISO 9223:2012, INTERNATIONAL ORGANIZATION FOR STANDARDIZATION.
- [2] "CORROSION OF METALS AND ALLOYS -- CORROSIVITY OF ATMOSPHERES -- GUIDING VALUES FOR THE CORROSIVITY CATEGORIES, ISO 9224:2012, INTERNATIONAL ORGANIZATION FOR STANDARDIZATION.
- [3] "UNDERGROUND CORROSION" BY MELVIN ROMANOFF (NATIONAL BUREAU OF STANDARDS CIRCULAR 579)

4. EQUIPMENT FOUNDATIONS EXTEND BELOW THE FROST LINE OF THE LOCALITY AS REQUIRED PER IBC 1809.5. UPLIFT FORCES DUE TO ADFFREEZE AND EXPANSIVE SOILS ARE CONSIDERED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER WITH A FACTOR OF SAFETY OF 1.5 APPLIED TO THE ULTIMATE VALUES OF THE SOILS.

DOCUMENTS AND LIMITATIONS

1. THIS STRUCTURAL DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, ARE INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY KIMLEY-HORN AND ASSOCIATES, INC. SHALL BE WITHOUT LIABILITY TO KIMLEY-HORN AND ASSOCIATES, INC.
2. IT IS UNDERSTOOD THAT THE STRUCTURAL ENGINEER OF RECORD MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO FINDINGS, DESIGNS, RECOMMENDATIONS, SPECIFICATIONS, OPINION, OR PROFESSIONAL ADVICE, EXCEPT THAT THESE INSTRUMENTS OF SERVICE HAVE BEEN PREPARED IN ACCORDANCE WITH THE CURRENT GENERALLY ACCEPTED PROFESSIONAL ENGINEERING PRACTICES.
3. IT IS UNDERSTOOD THAT THE STRUCTURAL ENGINEER OF RECORD MAKES NO WARRANTY ASSOCIATED WITH DESIGN INFORMATION THAT IS PROVIDED BY OTHERS, INCLUDING BUT NOT LIMITED TO GEOTECHNICAL DESIGN PROPERTIES, MANUFACTURERS' LOADS AND/OR EQUIPMENT WEIGHTS, ETC. THE MANUFACTURER'S LOADS INCORPORATE THE RESULTS OF THEIR INDEPENDENT WIND TUNNEL ANALYSIS AND WERE NOT VALIDATED BY KIMLEY-HORN. ALL RESPONSIBILITY ASSOCIATED WITH THE LOADS REMAINS WITH THE MANUFACTURER.
4. RARE INSTANCES MAY OCCUR WHERE CORROSION OF STEEL LOSS EXCEEDS THE ESTIMATED VALUES DUE TO SOILS CONDITIONS NOT PRESENTED IN THE GEOTECHNICAL REPORT, DISSIMILAR METALS, AND/OR OTHER CIRCUMSTANCES UNKNOWN TO KIMLEY-HORN AT THE TIME OF DESIGN. IF CIRCUMSTANCES UNKNOWN TO KIMLEY-HORN AT THE TIME OF DESIGN OCCUR AND CAUSE CORROSION GREATER THAN THE DESIGN VALUES, KIMLEY-HORN SHALL BE WITHOUT LIABILITY.
5. WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER OF RECORD IS REQUIRED FOR ALL FIELD MODIFICATIONS TO THE STRUCTURAL SYSTEM. ENGINEER IS NOT RESPONSIBLE FOR WORK THAT ENGINEER DOES NOT REVIEW AND/OR WORK NOT COMPLETED IN ACCORDANCE WITH ENGINEER'S PLANS.

FOUNDATIONS

1. FOUNDATION DESIGN IS BASED ON THE LIMITED GEOTECHNICAL INVESTIGATION COMPLETED BY THE GEOTECHNICAL ENGINEER. OTHER SOIL CONDITIONS, NOT OBSERVED BY THE GEOTECHNICAL ENGINEER, MAY BE PRESENT AT THE SITE. KIMLEY-HORN CANNOT AND DOES NOT GUARANTEE THE SOIL CONDITIONS ARE CONSISTENT THROUGHOUT THE ENTIRE SITE. THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT AND MONITOR THE SOIL CONDITIONS DURING INSTALLATION. SOIL CONDITION MONITORING MAY INCLUDE RECORDING DRIVE TIMES, PERFORMING PILE LOAD TESTING, ADDITIONAL SUPPLEMENTAL GEOTECHNICAL INVESTIGATIONS, OR OTHER MEANS AS DETERMINED BY THE CONTRACTOR. IF SOILS ARE PRESENT THAT ARE UNREPRESENTATIVE OF THE SOILS OBSERVED IN THE REPORT, CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER AND THE FOUNDATION DESIGN MAY NEED TO BE REVISED IN SUCH AREAS.
2. SLAB ON GRADE SUBGRADE SHALL BE PREPARED PER THE RECOMMENDATIONS STATED IN THE GEOTECHNICAL REPORT TO ENSURE ADEQUATE PROTECTION FROM FROST CONDITIONS. THIS REQUIRES FREE-DRAINING, GRANULAR FILL BENEATH THE FOUNDATION.
3. FOUNDATIONS AND SURROUNDING SOIL ARE NOT TO BE DISTURBED FOLLOWING INSTALLATION WITHOUT CONSULTATION FROM THE GEOTECHNICAL ENGINEER.

SLOTTED CHANNEL FRAMING (UNISTRUT)

1. STRUT SYSTEM AND COMPONENTS SHALL BE UNISTRUT®.
2. ALL CHANNEL MEMBERS SHALL BE FABRICATED CONFORMING TO ASTM A 1011 SS GRADE 33 AND HOT-DIPPED GALVANIZED PER ASTM A123 OR A153.
 - A. ZINC COATED AFTER ALL MANUFACTURING OPERATIONS ARE COMPLETE
 - B. ZINC COATING THICKNESS SHALL BE G65 (2.6 MILS = 1.50 OZ./ SQ. FT. SURFACE AREA)
3. ANCHOR MATERIAL FIRMLY IN PLACE, AND TIGHTEN ALL CONNECTIONS TO THEIR RECOMMENDED TORQUES.

CONSTRUCTION SAFETY

1. IT IS UNDERSTOOD THAT THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK ON THE PROJECT. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF THE PERSONS AND PROTECT THEM AGAINST INJURY. LIKEWISE, THE CONTRACTOR SHALL PROTECT ALL PROPERTY AGAINST DAMAGE AND LOSS.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION FOR THE SAFETY OF PERSONS AND PROPERTY.
3. THE CONTRACTOR'S DUTIES AND RESPONSIBILITIES FOR THE SAFETY AND PROTECTION OF THE WORK SHALL CONTINUE UNTIL SUCH TIME AS THE WORK IS SATISFACTORILY COMPLETED, AND THE ENGINEER HAS ISSUED A NOTICE TO THAT EFFECT TO THE OWNER AND THE CONTRACTOR.

DIMENSIONS AND COORDINATION

1. SEE CIVIL AND ELECTRICAL PLANS FOR ADDITIONAL INFORMATION, INCLUDING SITE PLAN SHOWING LOCATIONS OF THE STRUCTURAL ELEMENTS.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS AND PILE REVEALS TO CONFIRM ALL PILES WILL BE INSTALLED PER THE REQUIREMENTS OF THE PILE SCHEDULE AND THE INFORMATION PROVIDED BY OTHERS. REPORT ANY DISCREPANCIES TO THE ENGINEER.
3. THE CONTRACTOR, BEFORE STARTING ANY WORK, SHALL CHECK ALL DIMENSIONS GIVEN ON THE STRUCTURAL DRAWINGS RELATING TO EQUIPMENT MOUNTING, MEMBER SIZES, ETC., WITH THE EQUIPMENT MANUFACTURER. IF ANY DISCREPANCY IS NOTICED, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
4. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS AND DETAILS BETWEEN ALL TRADES, SUBCONTRACTS, AND VENDOR SUPPLIED EQUIPMENT PRIOR TO COMMENCING ANY CONSTRUCTION. THE STRUCTURAL ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF ANY INCONSISTENCIES RELATED TO THE STRUCTURE. FAILURE TO DO SO SHALL RELIEVE THE ENGINEER OF ALL CONSEQUENCES RELATED TO THE INCONSISTENCY.
5. THE CONTRACTOR SHALL VERIFY THAT THE PROPOSED FOUNDATION LOCATIONS AND CONNECTIONS TO ELECTRICAL EQUIPMENT (BOLTING, DRILLING, WELDING, ETC.) ARE ACCEPTABLE TO THE EQUIPMENT MANUFACTURER AND DO NOT VOID WARRANTIES. IF REVISIONS TO THE PILE LOCATIONS OR CONNECTIONS ARE REQUIRED, NOTIFY ENGINEER.
6. THE CONTRACTOR SHALL REVIEW OWNER SPECIFICATIONS AND NOTIFY THE ENGINEER OF ANY CONFLICTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WORK SHALL BE IN CONFORMANCE WITH "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS." (AISC).
2. ALL STRUCTURAL MATERIALS SHALL HAVE ADEQUATE CORROSION PROTECTION FOR THE ENVIRONMENT. STRUCTURAL STEEL THAT REQUIRES GALVANIZATION BE HOT-DIPPED GALVANIZED PER ASTM A123 WITH A MINIMUM GALV. THICKNESS OF 3 MIL.
3. MATERIAL STANDARDS (UNLESS NOTED OTHERWISE):
 - A. STRUCTURAL I-BEAM SHAPES SHALL BE ASTM A992 OR A572, GR. 50
 - B. STRUCTURAL ANGLES SHALL BE ASTM A36
 - C. OTHER STRUCT. SHAPES & PLATES SHALL BE ASTM A36
 - D. HIGH-STRENGTH BOLTS SHALL BE ASTM A325
 - E. THREADED RODS SHALL BE ASTM A36
4. SHOP CONNECTIONS SHALL BE BOLTED OR WELDED; ALL MAJOR FIELD CONNECTIONS SHALL BE WELDED OR HIGH-STRENGTH BOLTED (A325). MINIMUM WELD SIZE, UNLESS OTHERWISE NOTED, IS TO BE $\frac{3}{8}$ " FILLET, E70XX ELECTRODES. ELECTRODES SHALL BE SUITED TO GRADE STEEL. WHERE FIELD-WELDING IS NOTED, IT SHOULD BE PERFORMED BY CERTIFIED WELDERS ONLY.
5. BOLTED CONNECTIONS:
 - A. UNLESS NOTED OTHERWISE, PRIMARY BOLTED CONNECTIONS SHALL BE BEARING TYPE USING HIGH-STRENGTH BOLTS CONFORMING TO ASTM F3125, GRADE A325, TYPE 1 WITH NUTS CONFORMING TO ASTM A563, GRADE DH. PRIMARY BOLTED CONNECTIONS SHALL CONFORM TO RCSC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
 - B. BOLTS IN SLIP CRITICAL CONDITION SHALL BE SNUG TIGHTENED THEN PRETENSIONED PER AISC 360 TABLE J3.1 AND RCSC "SPECIFICATION" BY TURN OF THE NUT METHOD.
 - C. UNSUNCOATED FAYING SURFACES SHALL BE FREE OF SCALE, EXCEPT TIGHT MILL SCALE, AND FREE OF COATINGS, INCLUDING INADVERTENT OVERSPRAY, IN AREAS CLOSER THAN ONE BOLT DIAMETER BUT NOT LESS THAN 1 IN. FROM THE EDGE OF ANY HOLE AND IN ALL AREAS WITHIN THE BOLT PATTERN OR SHALL BE BLAST CLEANED.
 - D. GALVANIZED FAYING SURFACES SHALL FIRST BE HOT DIP GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A123 AND SUBSEQUENTLY ROUGHENED BY MEANS OF HAND WIRE BRUSHING. POWER WIRE BRUSHING IS NOT PERMITTED.
6. WELDED CONNECTIONS:
 - A. ALL WELDING SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE AMERICAN WELDING SOCIETY CODE D1.1 (LATEST EDITION). FIELD WELDING SHALL BE PERFORMED ONLY BY QUALIFIED WELDERS.
 - B. AS REQUIRED BY THE OWNER, INSPECTION AND TESTING (INCLUDING NONDESTRUCTIVE TESTING) OF SHOP AND FIELD WELDING OPERATIONS SHALL BE IN ACCORDANCE WITH THIS SECTION AND SECTION 1705.2.1. INSPECTIONS SHALL BE MADE BY A QUALIFIED WELDING INSPECTOR APPROVED BY THE ENFORCEMENT AGENCY. THE MINIMUM REQUIREMENTS FOR A QUALIFIED WELDING INSPECTOR SHALL BE AS THOSE FOR AN AWS CERTIFIED WELDING INSPECTOR (CW), AS DEFINED IN THE PROVISIONS OF THE AWS QC1.
 - C. THE WELDING INSPECTOR SHALL MAKE A SYSTEMATIC DAILY RECORD OF ALL WELDS. THIS RECORD SHALL INCLUDE:
 - IDENTIFICATION MARKS OF WELDERS.
 - LIST OF DEFECTIVE WELDS.
 - MANNER OF CORRECTION OF DEFECTS.
 - D. THE WELDING INSPECTOR SHALL CHECK THE MATERIAL, DETAILS OF CONSTRUCTION AND PROCEDURE, AS WELL AS WORKMANSHIP OF THE WELDS. THE INSPECTOR SHALL VERIFY THAT THE INSTALLATION OF END-WELDED STUD SHEAR CONNECTIONS IS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 2213.2 AND THE APPROVED PLANS AND SPECIFICATIONS. THE APPROVED AGENCY SHALL FURNISH THE ARCHITECT, STRUCTURAL ENGINEER, AND THE ENFORCEMENT AGENCY WITH A VERIFIED REPORT THAT THE WELDING HAS BEEN DONE IN CONFORMANCE WITH AWS D1.1, D1.3, D1.4, D1.8 AND THE APPROVED CONSTRUCTION DOCUMENTS.
 - E. ALL WELDING SHALL BE DONE BY THE SHIELDED ARC PROCESS USING APPROVED ELECTRODES PER AWS SPECIFICATIONS E70 (LOW HYDROGEN ELECTRODES).
 - F. ALL ELECTRODES FILLER MATERIAL SHALL BE A MINIMUM OF E70.
7. COATING REQUIREMENTS SHALL BE THE FOLLOWING, UNLESS OTHERWISE NOTED ON THE DRAWINGS:
 - A. A325 BOLTS - ELECTROGALVANIZED PER ASTM B695.
 - B. ALL DAMAGED OR REMOVED GALVANIZED COATINGS AND ALL WELDS SHALL BE REPAIRED/RECOATED WITH A MINIMUM OF ONE (1) COAT OF 93% ZINC AEROSOL SPRAY IN ACCORDANCE WITH ASTM 780.

STEEL PILES

1. CONTRACTOR SHALL FOLLOW ALL TOLERANCES PUBLISHED BY THE EQUIPMENT MANUFACTURER. UNLESS NOTED OTHERWISE PILES SHALL BE INSTALLED WITHIN $\pm 1"$ IN ALL DIRECTIONS.
2. PILES SHALL NOT BE INSTALLED UNTIL EARTHWORK IN AREAS WHERE THE PILES ARE TO BE INSTALLED HAS BEEN COMPLETED.
3. DRIVEN PILE INSTALLATION SHOULD BE OBSERVED AND DOCUMENTED TO VERIFY ADEQUATE DEPTH AND MINIMUM EMBEDMENT INTO THE BEARING MATERIALS. OBSERVATIONS ARE TO INCLUDE: INSTALLATION DATE, PILE LOCATION, INSTALLED EMBEDMENT DEPTH, APPROXIMATE DRIVING TIME, AND OTHER INSTALLATION NOTES. ANY DISCREPANCIES FROM THE STRUCTURAL DOCUMENTS SHALL BE REPORTED TO THE ENGINEER OF RECORD IMMEDIATELY.
4. PILES SHALL BE DRIVEN IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEERS RECOMMENDATIONS AND WITH APPROPRIATE MEANS AND METHODS TO PREVENT DAMAGE TO THE TOP OF PILE. IF REFUSAL IS ENCOUNTERED PRIOR TO THE MINIMUM EMBEDMENT, NOTIFY THE ENGINEER.
5. REPLACE DAMAGED OR DEFECTIVE PILES INCLUDING, BUT NOT LIMITED TO, PILES THAT HAVE BENT, OR BUCKLED OR CRACKED.

POST-INSTALLED ANCHORS

- | | | | |
|----|--|------------------------------|---------------------------|
| 1. | UNLESS OTHERWISE INDICATED ON PLANS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES, OR ENGINEER'S APPROVED EQUAL: | | |
| | SUBSTRATE | ADHESIVE ANCHOR | MECHANICAL ANCHOR |
| | SOLID CONCRETE | HILTI RE 500 V3 | HILTI KWIK BOLT TZ |
| | | HILTI HY 200 SAFE SET SYSTEM | HILTI KH-EZ SCREW ANCHOR |
| | | SIMPSON SET-XP | SIMPSON STRONG-BOLT |
| | GROUTED MASONRY | HILTI HY 70 | HILTI KH-EZ SCREW ANCHOR |
| | HOLLOW MASONRY OR BRICK | | HILTI HY 70 W/ SCREEN TUB |
| 2. | SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS 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 AND CURRENT BUILDING CODE. | | |
| 3. | INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING AND IN ACCORDANCE WITH THE INSTALLATION METHODS USED IN THE ESR REPORT. | | |
| 4. | REINFORCEMENT SHALL NOT BE CUT OR DAMAGED DURING INSTALLATION OF POST-INSTALLED ANCHORS. CONTRACTOR SHALL LOCATE REINFORCEMENT PRIOR TO DRILLING AND SHALL NOTIFY EOR IMMEDIATELY IF DAMAGE OCCURS IN THE FIELD. | | |

SUBMITTALS FOR REVIEW

1. THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER FOR REVIEW. THIS IS ANTICIPATED TO INCLUDE, BUT IS NOT LIMITED TO:
- A. STEEL SHOP DRAWINGS
 - B. PILE DRIVING QUALITY CONTROL PLAN
 - C. CONCRETE MIX DESIGN(S)

PILE DRIVING QUALITY CONTROL PLAN

A PILE DRIVING QUALITY CONTROL PLAN SHALL BE DEVELOPED AND EXECUTED BY THE CONTRACTOR FOR THE PROJECT. THE QUALITY CONTROL PLAN SHOULD OUTLINE THE PROCEDURES TO ENSURE THE QUALITY AND RELIABILITY OF THE CONSTRUCTED SYSTEM. THIS MAY INCLUDE PERIODIC VERIFICATION MEASUREMENTS, OBSERVATIONS, PRODUCTION PILE LOAD TESTING, METHODS TO VERIFY/CONFIRM PILE SIZES AND REVEAL HEIGHTS ARE WITHIN THE DESIGN VALUES, VERIFYING PLUMBNESS AND OTHER MEASUREMENTS TO ENSURE QUALITY. SUBMIT THE PILE DRIVING QUALITY CONTROL PLAN TO THE ENGINEER OF RECORD FOR REVIEW. QUALITY REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.

PILE REMEDIATION

PILES THAT DO NOT MEET THE MINIMUM PROJECT REQUIREMENTS SHALL BE REMEDIATED, AS REQUIRED BY THE ENGINEER AND DESCRIBED IN THE PILE REMEDIATION NOTES OR AS COORDINATED VIA FORMAL REQUEST FOR INFORMATION (RFI).

SPECIAL INSPECTION NOTES

1. ALL STEEL COMPONENTS, INCLUDING HIGH-STRENGTH BOLTS DELIVERED TO THE SITE, SHALL HAVE A TRACEABLE MANUFACTURER CERTIFICATION, INCLUDING MILL CERTS DOCUMENTS AND CONFORMANCE TO THE APPLICABLE SPECIFICATIONS AVAILABLE TO THE COUNTY INSPECTOR PRIOR TO ASSEMBLY OR ERECTION.
2. ALL SPECIAL DEPUTY INSPECTORS MUST BE CERTIFIED BY THE COUNTY OR GOVERNING AGENCY, IN THE CATEGORY OF WORK REQUIRED TO HAVE SPECIAL INSPECTION.
3. A PROPERTY OWNER'S FINAL REPORT FORM FOR WORK REQUIRED TO HAVE SPECIAL INSPECTIONS, TESTING AND STRUCTURAL OBSERVATIONS MUST BE COMPLETED BY THE PROPERTY OWNER, PROPERTY OWNER'S AGENT OF RECORD, ARCHITECT OF RECORD, OR ENGINEER OF RECORD, AND SUBMITTED TO THE INSPECTION SERVICES DIVISION.

REQUIRED SPECIAL INSPECTIONS

IN ADDITION TO THE REGULAR INSPECTIONS, THE FOLLOWING SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH CHAPTER 17 OF THE 2021 INTERNATIONAL BUILDING CODE. SPECIAL INSPECTIONS INDEPENDENT OF THE CONTRACTOR OR ENGINEER OF RECORD SHALL BE PROVIDED BY OWNER. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS, NOT THE SHOP DRAWINGS.

THE FOLLOWING SPECIAL INSPECTIONS ARE, IN ADDITION TO, AND NOT A SUBSTITUTE FOR, THOSE INSPECTIONS REQUIRED TO BE PERFORMED BY A COUNTY OR GOVERNING AGENCY'S BUILDING INSPECTOR.

ITEM	TYPE	REMARKS
STRUCTURAL STEEL AND WELDING (2021 IBC 1705.2 & AISC 360)	PERIODIC	PER IBC SECTION 1705.2.1, SPECIAL INSPECTION FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360.
CONCRETE (2021 IBC TABLE 1705.3 & ACI 318)	PERIODIC	INSPECT AND TEST REINFORCEMENT, AND VERIFY PLACEMENT.
		VERIFY USE OF REQUIRED DESIGN MIX.
	CONTINUOUS	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.
		VERIFY IN-SITU CONCRETE STRENGTH PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.
ANCHORS CAST IN CONCRETE & POST INSTALLED MECHANICAL ANCHORS (2021 IBC TABLE 1705.3)	PERIODIC	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.
		PRIOR TO AND DURING CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.
SOIL (2021 IBC TABLE 1705.6)	PERIODIC	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.
		SPECIAL INSPECTOR MUST MAKE PERIODIC INSPECTIONS TO VERIFY ANCHOR TYPE, ANCHOR DIMENSIONS, CONCRETE TYPE, CONCRETE THICKNESS, ANCHOR EMBEDMENT, AND ADHERENCE TO THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
	CONTINUOUS	VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.
		VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.
DRIVEN H-PILES (2021 IBC TABLE 1705.7)	PERIODIC (EMBED $\geq 8'$)	PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.
		PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.
	PERIODIC (EMBED $< 8'$)	DURING FILL PLACEMENT, VERIFY USE OF PROPER MATERIALS AND PROCEDURES IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT. VERIFY DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.
		VERIFY ELEMENT MATERIALS, SIZES AND LENGTHS COMPLY WITH THE REQUIREMENTS.
	CONTINUOUS (EMBED $\geq 8'$)	INSPECT DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.
	PERIODIC (EMBED $< 8'$)	VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT.

CONCRETE

1. ALL CONCRETE SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 19 AND ACI 318, LATEST CODE ADOPTED EDITION, WITH THE FOLLOWING PROPERTIES, UNLESS NOTED OTHERWISE:

A. SULFATE CORROSION EXPOSURE CLASS:	SO (NON-CORROSIVE)
B. FREEZE/THAW CLASSIFICATION	F2
C. MIN. CONCRETE STRENGTH (F'C):	4500 PSI
D. MAX. WATER/CEMENT RATIO BY WEIGHT:	0.45
E. MINIMUM CEMENT RATING:	TYPE I/II
2. CONCRETE MIX SHALL CONTAIN $5\% \pm 1\%$ BY VOLUME ENTRAINED AIR.
3. REINFORCEMENT SHALL CONFORM TO ASTM A615 (60 KSI) AND BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH CRSI "MANUAL OF STANDARD PRACTICE", LATEST EDITION.
4. DETAILING OF REBAR SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE ACI DETAILING MANUAL, AND CONCRETE REINFORCING INSTITUTE'S LATEST EDITION OF "MANUAL OF STANDARD PRACTICE".
5. PLACEMENT OF REINFORCING BARS SHALL BE DONE IN A MANNER TO AVOID INTERFERENCE WITH DRILLED ANCHORS. REBAR SHALL NOT BE CUT OR DAMAGED DURING INSTALLATION OF POST-INSTALLED ANCHORS. CONTRACTOR SHALL TAKE CARE TO LOCATE REBAR PRIOR TO DRILLING.
6. ALL SHOP DRAWINGS PERTAINING TO REBAR SHALL SUBMITTED TO THE ENGINEER FOR REVIEW. CONCRETE MIX DESIGN FOR ALL CONCRETE WORK IS REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW.
7. CONSTRUCTION JOINTS SHALL BE AS APPROVED BY THE ENGINEER.
8. LAP SPLICES SHALL BE AT LEAST 25" FOR #4 BARS AND 33" FOR #5 BARS.
9. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

A. CONCRETE CAST AGAINST & PERMANENTLY EXPOSED TO EARTH: 3" (ALL SIDES)

10. PROVIDE A $\frac{3}{4}$ " CHAMFER ON ALL EXPOSED CORNERS.

[illegible]