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GENERAL STRUCTURAL NOTES:

A. GENERAL:

- THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS BEFORE THEY ARE PROVIDED TO THE OWNER AND STRUCTURAL ENGINEER. THE CONTRACTOR'S REVIEW SHALL BE DOCUMENTED WITHIN THE SUBMITTAL. THE OWNER AND STRUCTURAL ENGINEER OF RECORD RESERVE THE RIGHT TO REJECT SUBMITTALS THAT HAVE NOT BEEN FIRST REVIEWED BY THE CONTRACTOR. THE ACCURACY AND COMPLETENESS OF THE SUBMITTALS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING ALL ERRORS AND OMISSIONS. IN ADDITION, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL MEANS, METHODS, AND SEQUENCING OF CONSTRUCTION.
- THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE EXPERIENCED AND QUALIFIED TO PERFORM THE TYPE OF CONSTRUCTION REQUIRED TO COMPLETE THE WORK PRESCRIBED BY THE CONTRACT DOCUMENTS. THE CONTRACT DOCUMENTS WERE PREPARED AS A COMPLETE SET OF PROJECT DRAWINGS AND SPECIFICATIONS. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL INFORMATION PROVIDED IN THE CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARCHITECT/ENGINEER IMMEDIATELY OF ANY CONFLICTS, OMISSIONS, OR DISCREPANCIES. THIS COORDINATION SHALL BE PERFORMED BEFORE THE PROCUREMENT OF MATERIALS AND/OR FABRICATION OF ANY PROJECT COMPONENTS.
- WHERE SECTION IS SHOWN AND DETAILED, OTHER SECTIONS OF SIMILAR CONDITION SHALL BE DETAILED THE SAME OR OPPOSITE HAND, WHETHER SPECIFICALLY NOTED OR NOT.
- CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE BEGINNING CONSTRUCTION. NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES.
- COORDINATE SIZES AND LOCATIONS OF ALL FLOOR AND ROOF PENETRATIONS WITH PLUMBING, MECHANICAL, AND ARCHITECTURAL REQUIREMENTS.
- ENGINEER OF RECORD'S APPROVAL MUST BE SECURED FOR ALL SUBSTITUTIONS. SUCH APPROVAL MAY ALSO BE WITHHELD AT THE SOLE DISCRETION OF THE ENGINEER OF RECORD.
- THE STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF THE FOLLOWING:
 - INTERNATIONAL BUILDING CODE, 2021 EDITION (IBC 2021).
 - AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES," 2016 EDITION (ASCE 7-16).
 - INTERNATIONAL EXISTING BUILDING CODE, 2021 EDITION (IEBC 2021).
- THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL PERMANENT SUPPORTS AND LATERAL BRACING ARE IN PLACE, AS WELL AS EXISTING TO REMAIN DURING DEMOLITION.
- DO NOT SCALE DRAWINGS, USE DIMENSIONS.

- DESIGN LOADS USED IN THE DESIGN OF THE STRUCTURAL SYSTEMS IN THIS PROJECT ARE AS FOLLOWS:

- RISK CATEGORY IV (U.N.O.)
II (AT EXTERIOR EQUIPMENT PLATFORMS AND STAIR TOWER)
- DEAD LOAD:
EXISTING ROOF (JOIST SELF WT. INCLUDED) 25 psf
EQUIPMENT PLATFORM 12 psf
- LIVE LOAD (UNFACTORED SERVICE LOAD):
ROOF 20 psf (REDUCIBLE)
EQUIPMENT PLATFORM 60 psf
STAIRS 100 psf
- ROOF SNOW LOAD:
GROUND SNOW LOAD, p_g 15 psf
SNOW EXPOSURE FACTOR, C_e 0.9
THERMAL FACTOR, C_t 1.0
IMPORTANCE FACTOR, I_s 1.2
FLAT ROOF SNOW LOAD, p_f 11.3 psf
BALANCED SNOW LOAD, p_s 11.3 psf
UNIFORM ROOF SNOW LOAD 18 psf
- WIND DESIGN CRITERIA:
EXPOSURE CATEGORY C
INTERNAL PRESSURE COEFFICIENT, GC_p ± 0.18
BASIC WIND SPEED, V 120 mph (FACTORED, ULTIMATE LOAD)
93 mph (UNFACTORED, SERVICE LOAD)
INTERIOR WIND LOADING (PARTITIONS) 5 psf (UNFACTORED, SERVICE LOAD)
WIND DESIGN CRITERIA FOR RISK CATEGORY II:
BASIC WIND SPEED, V 115 mph (FACTORED, ULTIMATE LOAD)
89 mph (UNFACTORED, SERVICE LOAD)
- SEISMIC DESIGN CRITERIA:
SPECTRAL RESPONSE ACCELERATION:
 S_s (SHORT PERIOD (0.2 SECOND)) 0.34 g
 S_1 (LONG PERIOD (1.0 SECOND)) 0.153 g
 S_{DS} (SHORT PERIOD (0.2 SECOND)) 0.346 g
 S_{D1} (LONG PERIOD (1.0 SECOND)) 0.234 g
SITE CLASS CLASS C

- SEISMIC DESIGN CRITERIA FOR RISK CATEGORY IV:
SEISMIC DESIGN CATEGORY D
IMPORTANCE FACTOR 1.50

- AT DUCT SUPPORT FRAMES
LATERAL FORCE RESISTING SYSTEM STEEL ORDINARY MOMENT FRAMES PER AISC 360 FOR NON-BUILDING STRUCTURES SIMILAR TO BUILDINGS
RESPONSE MODIFICATION COEFF., R 1.0
SEISMIC RESPONSE COEFFICIENT, C_s 0.419
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
SEISMIC BASE SHEAR, V $V = 0.419W$ (W:EFFECTIVE SEISMIC WEIGHT)

- AT INTERIOR PLATFORMS
LATERAL FORCE RESISTING SYSTEM STEEL ORDINARY CONCENTRICALLY BRACED FRAMES
RESPONSE MODIFICATION COEFF., R 3.25
SEISMIC RESPONSE COEFFICIENT, C_s 0.16
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
SEISMIC BASE SHEAR, V $V = 0.16W$ (W:EFFECTIVE SEISMIC WEIGHT)

- AT BREAKER PLATE BUILDING
LATERAL FORCE RESISTING SYSTEM STEEL ORDINARY MOMENT FRAMES
RESPONSE MODIFICATION COEFF., R 3.5
SEISMIC RESPONSE COEFFICIENT, C_s 0.148
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
SEISMIC BASE SHEAR, V $V = 0.148W$ (W:EFFECTIVE SEISMIC WEIGHT)

- SEISMIC DESIGN CRITERIA FOR RISK CATEGORY II:
SEISMIC DESIGN CATEGORY C
IMPORTANCE FACTOR 1.00

- AT EXTERIOR EQUIPMENTS PLATFORMS AND STAIR TOWER
LATERAL FORCE RESISTING SYSTEM STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
RESPONSE MODIFICATION COEFF., R 3.0
SEISMIC RESPONSE COEFFICIENT, C_s 0.098
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
SEISMIC BASE SHEAR, V $V = 0.098W$ (W:EFFECTIVE SEISMIC WEIGHT)

- ALL VERTICAL ELEVATIONS ARE BASED ON EXISTING DRAWINGS PROVIDED BY OWNER OR BY CONTROL ELEVATION FROM SURVEY BY OTHERS.
- THE CONNECTION OF EQUIPMENT, PIPES, DUCTS, AND OTHER ITEMS TO SUPPORTS IS BY THE CONTRACTOR UNLESS OTHERWISE SHOWN ON THE CONTRACT DRAWINGS.

B. FOUNDATION

- FOUNDATIONS FOR THIS STRUCTURE HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL ENGINEERING REPORT, PREPARED BY GTS CONSULTING DATED JANUARY 27, 2026 AND TITLED "PLANNED VANTIVE DEVELOPMENT" WITH JOB NO. 26-15111. THIS REPORT IS NOT A PART OF THE CONTRACT DOCUMENTS. THIS REPORT INCLUDES THE SUBMITTALS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING ALL ERRORS AND OMISSIONS. IN ADDITION, THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL MEANS, METHODS, AND SEQUENCING OF CONSTRUCTION.
- FOUNDATIONS REQUIRE AGGREGATE COLUMN SOIL IMPROVEMENTS. AFTER AGGREGATE COLUMN SOIL IMPROVEMENTS HAVE BEEN INSTALLED AND THE SUBGRADE HAS BEEN PREPARED, THE MAXIMUM ALLOWABLE BEARING CAPACITY USED FOR THE DESIGN OF FOOTINGS IS 3,000 psf WITH A 1" MAXIMUM TOTAL SETTLEMENT AND A 1/2" MAXIMUM DIFFERENTIAL SETTLEMENT. THE MODULUS OF SUBGRADE REACTION SHALL NOT BE LESS THAN 100 PCI FOR THE FOUNDATIONS AS STATED IN THE GEOTECHNICAL REPORT RECOMMENDATIONS. AGGREGATE COLUMN SOIL IMPROVEMENTS ARE A DEFERRED SUBMITTAL / DELEGATED DESIGN AS STATED IN GENERAL NOTE C ON SHEET ds-001 AND GENERAL NOTE M ON SHEET ds-002.
- DESIGN SOIL PRESSURES AND PROPERTIES:
 - ESTIMATED SOIL UNIT WEIGHT = 120 LBS/FT³
 - ANGLE OF INTERNAL FRICTION = 32°
 - ULTIMATE BARE SHEAR COEFFICIENT OF FRICTION = 0.32
 - ACTIVE LATERAL EARTH PRESSURE COEFFICIENT (K_a)= 0.33
 - AT REST LATERAL EARTH PRESSURE COEFFICIENT (K_r)= 0.50
 - PASSIVE LATERAL EARTH PRESSURE COEFFICIENT (K_p)= 3.0
- REFER TO THE GEOTECHNICAL REPORT FOR REQUIREMENTS FOR REMOVAL OF UNSATISFACTORY MATERIAL UNDER FOOTINGS, SLABS, AND FOUNDATIONS AND FOR THE BACKFILLING, COMPACTION, AND TESTING OF SATISFACTORY MATERIAL TO REPLACE IT. REFER TO GEOTECHNICAL REPORT FOR ALL ADDITIONAL PREPARATION REQUIREMENTS. THE CONSTRUCTION PROFESSIONAL SHALL PROVIDE INDEPENDENT VERIFICATION FOR THESE ITEMS AS STATED IN ITEM 1 ABOVE.
- PRIOR TO PLACING FOUNDATION CONCRETE, AND AFTER COMPACTION OF SUBGRADE, ALL FOUNDATION EXCAVATIONS SHALL BE INSPECTED AND TESTED BY A QUALIFIED GEOTECHNICAL TECHNICIAN. TESTING SHALL INCLUDE IN PLACE DENSITY TESTING, WHICH WILL REQUIRE ESTABLISHING THE OPTIMUM MOISTURE CONTENT OF THE SUBGRADE. IF THE SUBGRADE HAS LESS THAN THE STATED ALLOWABLE BEARING CAPACITY (SEE NOTE 2 ABOVE) THE WEAK SUBGRADE SHALL BE REMOVED, RECOMPACTED, AND RETESTED UNTIL IT IS SATISFACTORY AT NO ADDITIONAL COST TO THE OWNER. CONCRETE PLACEMENT SHALL NOT PROCEED UNTIL THE SUBGRADE MEETS THE MINIMUM DENSITY REQUIREMENTS OF THE GEOTECHNICAL REPORT.
- NO UNBALANCED BACKFILLING SHALL BE DONE AGAINST CONCRETE OR MASONRY WALLS UNLESS WALLS ARE SECURELY BRACED AGAINST OVERTURNING, EITHER BY TEMPORARY CONSTRUCTION BRACING OR BY PERMANENT CONSTRUCTION.
- WATER SHALL NOT BE ALLOWED TO ACCUMULATE IN EXCAVATIONS. THE CONSTRUCTION PROFESSIONAL SHALL PROVIDE ALL CONSTRUCTION Dewatering REQUIREMENTS NECESSARY AT COST TO THE CONSTRUCTION PROFESSIONAL. Dewatering SHALL BE A DEFERRED SUBMITTAL / DELEGATED DESIGN BY THE CONSTRUCTION PROFESSIONAL.

C. SOIL IMPROVEMENT SYSTEM / AGGREGATE PIERS

- IN ACCORDANCE WITH REQUIREMENTS/RECOMMENDATIONS STATED IN THE PROJECTS GEOTECHNICAL REPORT REFERENCED IN GENERAL NOTE B ON SHEET ds-001, THE GENERAL CONTRACTOR SHALL COMMISSION SERVICES OF A SOIL IMPROVEMENT SPECIALTY SUBCONTRACTOR TO DESIGN AGGREGATE PIERS SOIL IMPROVEMENT COLUMN SYSTEM TO MITIGATE LIQUEFACTION, IMPROVE LOAD CARRYING CAPACITY AND REDUCE SETTLEMENT OF THE SOIL BENEATH THE NEW STRUCTURES.
- THE SOIL IMPROVEMENT SPECIALTY SUBCONTRACTOR SHALL DESIGN AND INSTALL THE SOIL IMPROVEMENT COLUMN SYSTEM BASED ON THE REQUIREMENTS OF THE PROJECTS GEOTECHNICAL REPORT AND THESE DRAWINGS.
- THE DESIGN OF THIS SOIL IMPROVEMENT SYSTEM IS INTENDED TO BE DELEGATED TO A QUALIFIED SPECIALTY FIRM AS A DESIGN / BUILD PACKAGE. SEE NOTE M ON S-002 FOR ADDITIONAL REQUIREMENTS.
- THE SOIL IMPROVEMENT SPECIALTY SUBCONTRACTOR SHALL HAVE A MINIMUM OF 5 YEARS OF EXPERIENCE AND HAVE COMPLETED AT LEAST 20 SIMILAR PROJECTS.
- UPON COMPLETION OF THE SOIL IMPROVEMENT SYSTEM, THE BUILDING SUB GRADE SHALL MEET THE FOLLOWING DESIGN OBJECTIVES:
MINIMUM ALLOWABLE BEARING CAPACITY FOR EQUIPMENT FOUNDATIONS: 3000 psf
MINIMUM COLUMN FOUNDATION'S ALLOWABLE BEARING CAPACITY: 3000 psf
MINIMUM SOIL'S MODULUS OF SUB GRADE: 125 PCI
MAXIMUM ALLOWED TOTAL SETTLEMENT UNDER FOOTINGS & SLABS 1"
MAXIMUM ALLOWED DIFFERENTIAL SETTLEMENT UNDER FOOTINGS & SLABS 1/2"
- SEE DETAIL C1/ds-004 FOR APPROXIMATE / ESTIMATED AREA OF AGGREGATE PIER SOIL IMPROVEMENTS. SOIL IMPROVEMENT SHALL BE PERFORMED FOR THE ENTIRE FOOTPRINT OF THE STRUCTURE AS SHOWN.
- THE SOIL IMPROVEMENT SPECIALTY CONTRACTOR SHALL SUBMIT DRAWINGS AND CALCULATIONS FOR REVIEW BY THE GENERAL CONTRACTOR AND THE PROJECT'S GEOTECHNICAL ENGINEER AND THE STRUCTURAL ENGINEER OF RECORD FOR THE DESIGN OF THE SOIL IMPROVEMENT SYSTEM. THE ENGINEER WHO SIGNS AND SEALS THE DRAWINGS AND CALCULATIONS SHALL BE THE SAME ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN OF THE SOIL IMPROVEMENT SYSTEM AND SHALL BE REGISTERED IN PUERTO RICO. INSTALLATION OF THE SOIL IMPROVEMENT SYSTEM SHALL NOT START UNTIL SUBMITTED DRAWINGS AND CALCULATIONS ARE REVIEWED AND APPROVED.
- THE NUMBER OF PIERS, DIAMETERS, AND DEPTH OF THE AGGREGATE PIERS SHALL BE DETERMINED BY THE CONTRACTOR'S SPECIALTY DESIGNER BASED ON THE SOIL STRATA AND THE REQUIREMENTS STATED IN THE PROJECT'S GEOTECHNICAL REPORT AND/OR ANY ADDITIONAL EXPLORATIONS PERFORMED BY THE SPECIALTY SOIL IMPROVEMENT DESIGNER. THE AGGREGATE PIERS SHALL EXTEND TO A MINIMUM DEPTH REQUIRED BY THE GEOTECHNICAL REPORT. THE SOIL IMPROVEMENT ENGINEER SHALL COORDINATE THE DESIGN OF THE SOIL IMPROVEMENT SYSTEM WITH THE STRUCTURAL ENGINEER OF RECORD.
- THE NUMBER OF SOIL IMPROVEMENT COLUMNS TO BE TESTED TO VERIFY LOAD CAPACITY OF SOIL IMPROVEMENT COLUMNS SHALL BE A MINIMUM OF (2) IN THE BUILDING AREA.
- ALL SOIL IMPROVEMENT OPERATIONS, INCLUDING TESTING OF THE SOIL IMPROVEMENT COLUMNS FOR COMPRESSIVE CAPACITY, SHALL BE MONITORED BY THE PROJECT'S GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE.

D. CAST-IN-PLACE CONCRETE

- CAST-IN-PLACE CONCRETE FOR THIS PROJECT SHALL COMPLY WITH THE AMERICAN CONCRETE INSTITUTE (ACI) "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND COMMENTARY" ACI 318-14 AND ACI 318R-14.
- CONCRETE SHALL HAVE THE FOLLOWING PROPERTIES:

AREA	f_c (28 DAYS)	TYPE	AIR CONTENT	MAX. W/C RATIO	SLUMP
FOUNDATIONS, U.N.O.	3,000 psi	NORMAL WEIGHT	< 3%	0.50	4" +/- 1"
INTERIOR SLAB-ON-GRADE	4,000 psi		< 3%	0.45	4" +/- 1"
EXTERIOR DRILLED PIERS	5,000 psi		6% $\pm$ 1.5%	0.40	6" +/- 1"
EXTERIOR EXPOSED FOUNDATIONS	5,000 psi		6% $\pm$ 1.5%	0.40	4" +/- 1"
- ALL EXPOSED CONCRETE EDGES SHALL HAVE 3/4" CHAMFER, WHETHER SPECIFICALLY NOTED OR NOT.
- TYPICAL SLAB FINISH SHALL BE BROOM FINISH FOR EXTERIOR SLABS AND INTERIOR WET SLABS AND STEEL TROWEL FINISH FOR INTERIOR DRY SLABS.
- ALL ANCHOR RODS IN INTERIOR CONDITIONS EMBEDDED IN CONCRETE SHALL BE BLACK STEEL, U.N.O. ALL OTHER ANCHORS SHALL BE HOT-DIPPED GALVANIZED PER APPLICABLE ASTM REQUIREMENTS, U.N.O.
- CONCRETE FORMWORK SHALL COMPLY WITH ACI 347, LATEST EDITION. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL FORMWORK.
- DURING AND IMMEDIATELY AFTER PLACING, CONCRETE SHALL BE THOROUGHLY COMPACTED BY SPADING OR MECHANICAL VIBRATING TO PROVIDE DENSE CONCRETE FREE OF HONEYCOMBING.
- DIRECTLY AFTER FORMS HAVE BEEN REMOVED, ALL EXPOSED TIE WIRES AND STAPLED ENDS SHALL BE REMOVED FROM CONCRETE SURFACES TO BE EXPOSED. CUT TIES FLUSH WITH FINISHED SURFACES FOR ALL OTHER CONCRETE. RUB SMOOTH OR CUT OFF FINS AND ROUGH PLACES. REMOVE ALL LOOSE CONCRETE AND OTHER IRREGULARITIES. PATCH AND FILL VOIDS WITH BONDING AGENT AS REQUIRED.
- ROUGHEN ALL CONSTRUCTION JOINTS TO A MINIMUM OF 1/4" AMPLITUDE, UNLESS NOTED OTHERWISE.
- IF ANY SLAB CUTTING IS REQUIRED, NO OVERCUTTING OF THE SLAB IS ALLOWED. DRILLED CORNERS WILL BE REQUIRED.

E. CONCRETE REINFORCEMENT

- REINFORCING STEEL SHALL CONFORM TO ASTM A615 SUPPLEMENT SI, GRADE 60, OF DOMESTIC MANUFACTURER.
- REINFORCEMENT SHALL BE FABRICATED TO SHAPES AND DIMENSIONS SHOWN AND SHALL CONFORM TO THE REQUIREMENTS OF CRSI AND ACI 318. REINFORCEMENT SHALL BE COLD BENT UNLESS OTHERWISE AUTHORIZED. BENDING MAY BE ACCOMPLISHED IN THE FIELD OR AT THE MILL. BARS SHALL NOT BE FIELD BENT WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
- REINFORCEMENT SHALL BE FREE FROM LOOSE RUST AND SCALE, DIRT, OIL, OR OTHER DELETERIOUS COATING THAT COULD REDUCE BOND WITH THE CONCRETE.
- NO SPLICES OF REINFORCEMENT SHALL BE PERMITTED EXCEPT AS DETAILED OR AUTHORIZED. MAKE BARS CONTINUOUS AROUND CORNERS WITH CORNER BARS. WHERE PERMITTED, SPLICES MADE BY CONTACT LAPS SHALL BE CLASS "B" TENSION LAPS.
- WHERE HOOKS ARE SHOWN, PROVIDE STANDARD 90 DEGREE HOOKS IN ACCORDANCE WITH CRSI AND ACI 318, UNLESS NOTED OTHERWISE.
- WHERE REQUIRED, PROVIDE DOWELS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCING FROM FOUNDATION. DOWELS SHALL HAVE STANDARD 90 DEGREE HOOKS.
- MINIMUM CONCRETE REINFORCING COVER REQUIREMENTS:

EXPOSURE	CONST. TYPE	BAR SIZE	MINIMUM COVER
CONCRETE CAST AGAINST EARTH:	ALL	ALL	3"
FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:	WALLS, SLABS	#6 BAR AND LARGER #5 BAR AND SMALLER	2" 1 1/2"
FORMED CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:	WALLS, SLABS	#11 BAR AND SMALLER	3/4"

- ALL REINFORCING STEEL AND EMBEDDED ITEMS SUCH AS ANCHOR RODS AND WELD PLATES SHALL BE PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.
- DETAIL BARS IN ACCORDANCE WITH "ACI DETAILING MANUAL-2004," PUBLICATION SP-66, ACI 318, AND ACI 315, OR LATEST EDITIONS.
- PROVIDE ACCESSORIES NECESSARY TO PROPERLY SUPPORT REINFORCING AT POSITIONS SHOWN ON PLANS.
- WELDING OF REINFORCEMENT IS ONLY PERMITTED IF REINFORCEMENT SATISFIES REQUIREMENTS OF ASTM A706 AND IS APPROVED BY THE ENGINEER OF RECORD.

F. POST INSTALLED ANCHORS:

- ALL POST INSTALLED ANCHORS SHALL BE INSTALLED WITH THE PRODUCT DIAMETER AND EMBEDMENT SHOWN IN THE DETAILS.
- INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS. CONTRACTOR SHALL CONTACT MANUFACTURER'S REPRESENTATIVE FOR PRODUCT INSTALLATION TRAINING.
- REFER TO THE PROJECT BUILDING CODE AND/OR EVALUATION REPORT FOR SPECIAL INSPECTIONS AND PROOF LOAD REQUIREMENTS.
- THREADED RODS SHALL HAVE A MINIMUM YIELD STRENGTH OF 36 ksi, U.N.O. ON DRAWINGS.
- ADHESIVE ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE DRILL BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-14 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-14 D.9.2.4.

G. STRUCTURAL STEEL:

- STRUCTURAL STEEL FOR THIS PROJECT HAS BEEN DESIGNED IN ACCORDANCE WITH THE FOURTEENTH EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "STEEL CONSTRUCTION MANUAL." STRUCTURAL STEEL SHALL BE FABRICATED IN ACCORDANCE WITH ANSI/AISC 303-10 AND ANSI/AISC 360-10.
- STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:

COMPONENT TYPE	STANDARD	YIELD STRENGTH
a. STRUCTURAL STEEL WIDE FLANGESHAPES:	ASTM A992	Fy = 50 ksi
b. HOLLOW STRUCTURAL SECTIONS (HSS):	ASTM A500 (GRADE C)	Fy = 50 ksi
c. OTHER STRUCTURAL STEEL SHAPES, PLATES, AND BARS, U.N.O.:	ASTM A36	Fy = 36 ksi
d. STEEL PIPE:	ASTM A53 (GRADE B)	Fy = 35 ksi
e. ANCHOR RODS, U.N.O.:	ASTM F1554	Fy = 36 ksi
- WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE - STEEL," LATEST EDITION. WELD ELECTRODES SHALL BE E70XX. PROVIDE 1/4" CONTINUOUS FILLET WELDS UNLESS NOTED OTHERWISE.
- INTERIOR STEEL SHALL BE COATED WITH A LATEX PRIMER IN ACCORDANCE WITH SSPC-PAINT 23 AND SHALL HAVE A MINIMUM THICKNESS OF 1.5 mils. SHOP PRIMERS SHALL BE COMPATIBLE WITH TOPCOATS TO APPLIED OVER THEM. CLEAN AND PREPARE STEEL SURFACES IN ACCORDANCE WITH SSPC-SP 3. SEE ARCHITECTURAL DRAWINGS FOR FINAL PAINT COATING. EXTERIOR STEEL TO BE HOT DIPPED GALVANIZED.
- HIGH-STRENGTH BOLTS SHALL CONFORM TO RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS."
- PROVIDE TEMPORARY SHORES, GUYS, BRACES, AND OTHER SUPPORTS DURING ERECTION TO KEEP STRUCTURAL STEEL SECURE, PLUMB, AND IN ALIGNMENT AGAINST TEMPORARY CONSTRUCTION LOADS. REMOVE TEMPORARY SUPPORTS WHEN PERMANENT STRUCTURAL STEEL CONNECTIONS, AND BRACES ARE IN PLACE.
- WELDING AND CUTTING THROUGH THE ROOF REQUIRE A HOT WORK PERMIT AND PRECAUTIONS TO BE TAKEN IN THE INTERIOR AREAS BELOW. CONTRACTOR AND SUBCONTRACTORS TO COORDINATE WITH OWNER'S REPRESENTATIVES DURING PLANNING STAGES TO AVOID ISSUES WITH FACILITY OPERATIONS.
- NON-SHRINK GROUT SHALL BE NONMETALLIC, SHRINKING-RESISTANT GROUT, CONFORMING TO ASTM C1107, FACTORY PACKAGED, NONCORROSIVE AND NONSTAINING, MIXED WITH WATER TO CONSISTENCY SUITABLE FOR APPLICATION AND A 30-MINUTE WORKING TIME. GROUT SHALL MEET A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 7000 psi.
- EXTERIOR STEEL SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123. FILL VENT AND DRAIN HOLES THAT ARE EXPOSED IN THE FINISHED WORK, UNLESS THEY FUNCTION AS VEEP HOLES, BY PLUGGING WITH ZINC SOLDER AND FILING OFF SMOOTH. REPAIR DAMAGED OR MISSING GALVANIZED SURFACES IN ACCORDANCE WITH ASTM A780.
- WELDING AND CUTTING THROUGH THE ROOF REQUIRE PRECAUTIONS TO BE TAKEN IN THE INTERIOR AREAS BELOW. CONTRACTOR AND SUBCONTRACTORS TO COORDINATE WITH OWNER'S REPRESENTATIVES DURING PLANNING STAGES TO AVOID ISSUES WITH FACILITY OPERATIONS.

H. DELEGATED CONNECTION DESIGNS FOR STEEL MEMBERS:

- THE DESIGN OF STEEL CONNECTIONS NOT SPECIFICALLY DETAILED ARE INTENDED TO BE DELEGATED TO A QUALIFIED SPECIALTY PROFESSIONAL ENGINEER, REGISTERED IN THE STATE OF ARKANSAS.
- THE CONTRACTOR SHALL PROVIDE SIGNED AND SEALED CALCULATIONS FOR ALL STRUCTURAL STEEL CONNECTION DESIGNS.
- UNLESS NOTED OTHERWISE OR SPECIFICALLY DETAILED, ALL BEAM SHEAR CONNECTIONS AND BRACE END CONNECTIONS SHALL BE MADE USING MIN. 3/4" DIA. A325 BOLTS, BEARING TYPE WITH THREADS INCLUDED.
- IF REACTIONS ARE NOT PROVIDED, ALL GRAVITY ONLY BEAMS SHALL HAVE SIMPLE SHEAR CONNECTIONS DESIGNED TO SUPPORT THE GREATER OF THE FOLLOWING:
 - 1/2 THE TOTAL FACTORED UNIFORM LOAD FOR THE SUPPORTED BEAM, ITS SPAN, AND ITS GRADE OF STEEL SPECIFIED IN AISC 360.
 - 10 KIPS (SERVICE LOAD)
- ALL CONNECTIONS SHALL BE DESIGNED FOR THE AXIAL LOADS INDICATED ON THE PLANS AND ELEVATIONS. ALL CONNECTIONS SHALL ACCOUNT FOR BOTH TENSILE AND COMPRESSIVE AXIAL LOADS AND SHALL CONSIDER THE LOADS CONCURRENTLY WITH THE REQUIRED SHEAR AND MOMENT LOADS.
- ALL CONNECTIONS SHALL BE DESIGNED WITH A MINIMUM NUMBER OF BOLTS PER THE FOLLOWING:

BEAM CONNECTIONS						BRACE CONNECTIONS	
MINIMUM NUMBER OF BOLTS IN A VERTICAL ROW:	2	3	4	5	6	MINIMUM NUMBER OF BOLTS :	2
BEAM SIZE	W6 W8 W10	W12 W14 W16 W18	W16 W18	W21	W24	MEMBER SIZE	HSS3x3 HSS4x4 L3x3 L4x4, L5x5

- CONNECTIONS PART OF THE SEISMIC FORCE RESISTING SYSTEM SHALL MEET THE STRENGTH, DUCTILITY, AND DETAILING REQUIREMENTS OF AISC 341.



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EOR/AOR SEAL

COA SEAL

CLIENT INFORMATION

Vantive

PROJECT NAME

VANTIVE TUBING
CLEAN ROOM

1900 AR-201
MOUNTAIN HOME,
ARKANSAS 72653

DRAWING ISSUE

04/24/2026
01/23/2026
DATE

ISSUED FOR BID, RQ BID
ISSUED FOR APPROVAL
DESCRIPTION

C
A
MARK

DESIGNED BY: TR
DRAWN BY: TR
CHECKED BY: AB
SUBMITTED BY: MM
DATE: 04/24/2026
PROJECT #: 1241011

SHEET TITLE

GENERAL
STRUCTURAL
NOTES

SHEET NUMBER

ds-001

ORIGINAL SHEET SIZE:
36" X 42"

ISSUED FOR BID