

STRUCTURAL NOTES

GENERAL

1. THIS PROJECT MEETS THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ) AND THE LOCAL BUILDING CODE DESIGN CRITERIA NOTED BELOW.
2. THE GENERAL CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL OPENINGS (COORDINATE WITH APPLICABLE TRADES). THE CONTRACTOR SHALL PROVIDE FOR ALL OPENINGS, WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. ANY DEVIATION FROM OPENINGS SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION FOR APPROVAL PRIOR TO CONSTRUCTION.
3. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS WITH THE ARCHITECT BEFORE CONSTRUCTION AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING WITH THE WORK.
4. COMPLETE SHOP DRAWINGS AS REQUIRED FOR THE STRUCTURAL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. SUCH REVIEW BY THE ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR CORRECT FABRICATION AND CONSTRUCTION OF THE WORK. ALLOW TEN (10) BUSINESS DAYS FOR REVIEW FROM THE TIME SUBMITTALS ARE RECEIVED IN OUR OFFICE.
5. ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE DETAILED ON THESE DRAWINGS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS THAT ARE SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.
6. THE STRUCTURAL DRAWINGS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
7. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION UNLESS SO STATED OR NOTED. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE WORKMEN AND OTHER PERSONS DURING CONSTRUCTION.
8. REFERENCES TO EXISTING BUILDING STRUCTURE ARE BASED ON SITE SURVEY DRAWINGS BY MIKE MARTIN (APOGEE ARCH.) ON FEB. 9, 2028 AND THE EXISTING ST. DRAWINGS BY C.G. FENDERGRAF JR. (BULLARD AND ASSO.) ON SEP. 24, 1988.

SPECIAL INSPECTION

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION:
(REFER TO SHEET S-001 FOR ADDITIONAL INFORMATION.)

1. CONCRETE CONSTRUCTION
2. STEEL CONSTRUCTION

DESIGN LOAD CRITERIA

1. BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE, WITH LOCAL ADOPTED AMENDMENTS.
2. ROOF LIVE LOAD: 20 PSF
3. ROOF DEAD LOAD: 25 PSF
4. MEZZANINE LIVE LOAD: 100 PSF
5. MEZZANINE DEAD LOAD: 20 PSF
6. FLOOR LIVE LOAD: 100 PSF
7. SEE ROOF PLAN FOR ADDITIONAL MECHANICAL LOADS.
8. WIND LOADS:
ULTIMATE STRESS DESIGN WIND SPEED (V_{ULT}) = 115 MPH
ALLOWABLE STRESS DESIGN WIND SPEED (V_{ASD}) = 90 MPH
RISK CATEGORY = III
WIND EXPOSURE CATEGORY = C
INTERNAL PRESSURE COEFF. (GC/P_f) = ±0.18
COMPONENTS AND CLADDING: SEE TABLE BELOW
CORNER/EDGE ZONE DIMENSION 'a' = 9'-0"
MEAN ROOF DECK HEIGHT 'h' = REF. PLAN

ULTIMATE WALL PRESSURES PSF			
COMPONENT	WIND AREA	CORNER ZONE 5	INTERIOR ZONE 4
10 SQ. FT.		+20.9, -27.9	+20.9, -22.7
50 SQ. FT.		+19.9, -26.2	+19.9, -21.8
100 SQ. FT.		+17.8, -21.8	+17.8, -19.6
PARAPETS		N/A	N/A

ULTIMATE ROOF PRESSURES (") PSF				
COMPONENT	WIND AREA	CORNER ZONE 3	EDGE ZONE 2	INTERIOR ZONE 1
10 SQ. FT.		+16.0, -59.9	+16.0, -43.9	+16.0, -33.4
50 SQ. FT.		+16.0, -54.3	+16.0, -41.1	+16.0, -31.2
100 SQ. FT.		+16.0, -41.1	+16.0, -34.6	+16.0, -26.1
OVERHANGS 10 SQ. FT.		N/A, -56.8	N/A, -40.8	N/A, -30.2

7. SEISMIC LOADS:
I_s = 1.0
S_s = 0.34g
S₁ = 0.085g
SITE CLASS D
S_{ms} = 0.34g
S_u = 0.136g
DESIGN CATEGORY: C
BASIC SEISMIC-FORCE-RESISTING SYSTEM: CONCRETE WALL
ANALYSIS PROCEDURE: SIMPLIFIED ANALYSIS
8. SNOW LOADS:
GROUND SNOW P_g = 10 PSF
FLAT ROOF SNOW P_f = 10 PSF
C_e = 1.0
I_s = 1.0
C_i = 1.0

CONCRETE

1. ALL CONCRETE SHALL BE NORMAL WEIGHT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS, (U.N.O.).
2. CEMENT SHALL CONFORM TO ASTM C150, AND SHALL BE TYPE I OR TYPE II MATERIAL, U.N.O. MAXIMUM WATER TO CEMENT RATIO SHALL BE 0.55.
3. MINIMUM CEMENT CONTENT SHALL BE 5 SACKS PER CUBIC YARD.
4. TYPE C OR F FLY ASH MAY BE USED UP TO 20% OF TOTAL CEMENT CONTENT BY VOLUME. THIS IS ONLY FOR CONCRETE SPECIFIED IN THESE STRUCTURAL DRAWINGS. REFER TO SPECIFICATIONS BY OTHER DISCIPLINES.
5. MAXIMUM SLUMP SHALL BE 5 IN., U.N.O.
6. MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE'S "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301.
7. CONCRETE MIX SHALL NOT USE ANY ADMIXTURES WHICH CONTAIN CALCIUM CHLORIDE.
8. CONCRETE TEST REPORTS SHALL BE MADE AVAILABLE AT THE JOB SITE. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN PER SPECIFICATIONS PRIOR TO PLACEMENT CONCRETE.

REINFORCING STEEL

1. BARS SHALL BE ASTM A615, GRADE 60.
2. DETAIL, FABRICATE, AND PLACE IN CONFORMANCE WITH ACI 315 AND 318.
3. LAP ALL REINFORCING STEEL 40 BAR DIAMETERS (U.N.O.).
4. LAP CONTINUOUS BARS IN GRADE BEAMS 40 BAR DIAMETERS (U.N.O. ON DRAWINGS). TOP BARS TO BE SPLICED BETWEEN SUPPORTS AND BOTTOM BARS TO BE SPLICED AT SUPPORTS, AS APPLICABLE.
5. PROVIDE ACCESSORIES FOR SUPPORT OF ALL REINFORCING.
6. SUBMIT SHOP DRAWINGS SHOWING ALL REINFORCING FOR APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
7. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

	MINIMUM COVER, IN.
A. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3
B. CONCRETE EXPOSED TO EARTH OR WEATHER: #6 THROUGH #18 BAR #5 BAR, W31 OR D31 WIRE, AND SMALLER	2 1½
C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND: SLABS, WALLS, JOISTS: #14 AND #18 BARS #11 BAR AND SMALLER BEAMS, COLUMNS: PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS	1½ ¾ 1½

POST-INSTALLED ANCHORS

1. EXCEPT WHERE INDICATED ON THE DRAWINGS, THE FOLLOWING HILTI OR SIMPSON PRODUCTS MAY BE USED. CONTACT HILTI AT (800) 879-8000 OR SIMPSON AT WWW.STRONGTIE.COM FOR PRODUCT RELATED QUESTIONS.
- A. ANCHORAGE TO CONCRETE
- a. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
- (1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HIT-Z ROD OR HAS-E THREADED ROD PER ICC-ES ESR-3187.
- (2) SIMPSON SET-3G SYSTEM WITH F1554 THREADED ROD PER ICC-ES ESR-4057
- b. MEDIUM DUTY MECHANICAL ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
- (1) HILTI KWIK HUS EZ AND KWIK HUS EZ-I SCREW ANCHORS PER ICC-ES ESR-3027
- (2) SIMPSON TITEN HD SCREW ANCHORS PER ICC-ES ESR-2713
- (3) SIMPSON TITEN HD STAINLESS STEEL SCREW ANCHOR PER IAMPO UES ER-493
- B. REBAR DOWELING INTO CONCRETE
- a. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
- (1) HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187.
- (2) SIMPSON SET-3G SYSTEM WITH CONTINUOUSLY DEFORMED REBAR PER ICC-ES ESR-4057.
2. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. 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 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.
3. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
4. CONTRACTOR SHALL USE THE NECESSARY MEANS, AS REQUIRED BY OSHA, TO PROTECT FROM DUST DURING DRILLING OPERATIONS.
5. INSTALL ACCORDING TO MANUFACTURER'S SPECIFICATIONS. THREADED ROD AND REBAR DIAMETERS AND EMBEDMENT LENGTHS SHALL BE AS NOTED ON DRAWINGS.
6. OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING PRODUCTS WHICH HAVE SPECIFIC APPLICATIONS THAT ARE INTENDED FOR OVERHEAD USE.
7. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
8. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
9. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.

STRUCTURAL STEEL

1. MATERIALS (SHAPES NOT OTHERWISE INDICATED ARE PERMITTED TO BE ASTM A36 MATERIAL)
- | SHAPE TYPE | ASTM DESIGNATION |
|---------------------|--|
| W-SHAPES | A992 |
| M, S, HP-SHAPES | A572, Gr. 50 |
| C, MC-SHAPES | A992 |
| L-SHAPES | A572, Gr. 50 |
| HSS-RECTANGULAR | A500, Gr. C |
| HSS-ROUND | A500, Gr. C |
| PIPE | A53, Gr. B |
| PLATES | A572, Gr. 50 |
| ANCHOR BOLTS | F1554, Gr. 55 |
| HIGH STRENGTH BOLTS | F3125, Gr. A325 (TYPICAL U.N.O.) |
| COMMON BOLTS | A307, Gr.A |
| NUTS | A563 |
| WASHERS-PLAIN | F844 (TYPICAL U.N.O.) |
| WASHERS-HARDENED | F436 (USE WHEN INDICATED IN DOCUMENTS) |
2. STEEL DESIGN IS BASED ON THE CURRENT AISC MANUAL OF STEEL CONSTRUCTION (ASD).
3. WELDING ELECTRODES SHALL BE SERIES E70XX.
4. PERFORM WELDING IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY'S AWS D1.1 "STRUCTURAL WELDING CODE".
5. STEEL FABRICATORS SHALL BE A COMPANY THAT IS CERTIFIED BY AISC.
- NOTE: IF NOT CERTIFIED BY AISC, THEN SPECIAL INSPECTION FOR REVIEW OF SHOP FABRICATION AND QUALITY CONTROL PROCEDURES IS REQUIRED.)
6. SUBMIT SHOP DRAWINGS SHOWING LAYOUT OF MEMBERS, BRIDGING, BRACING AND ERECTION DETAILS.
7. SHOP PAINT: STANDARD RED PRIMER, U.N.O. IN SPECIFICATIONS. CONTRACTOR TO COORDINATE PAINT WITH PROPOSED FINISHES AS APPLICABLE.
8. FASTENERS FOR PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL BE HOT-DIPPED ZINC-COATED GALVANIZED STEEL.

LIGHT GAGE METAL FRAMING

1. STEEL STUD SIZES SHALL BE AS NOTED ON THE DRAWINGS, CONFORMING TO SSMA STANDARDS.
2. FABRICATE AND ERECT AS SPECIFIED. MANUFACTURER SHALL SUPPLY ALL CLIPS, FASTENERS, TEMPORARY BRACING, ACCESSORIES, STANDARD BRIDGING, ETC.
3. ALL STEEL STUDS SHALL HAVE A MINIMUM 16"x16" FLANGE WITH A 1/2" RETURN (U.N.O.).
4. ALL STUDS 18 GAGE AND THINNER SHALL HAVE A MINIMUM YIELD STRENGTH, F_y OF 33 KSI AND TENSILE STRENGTH, F_u OF 45 KSI. ALL STUDS 16 GAGE AND THICKER SHALL HAVE A MINIMUM STRENGTH OF 50 KSI AND TENSILE STRENGTH OF 65 KSI (U.N.O.).
5. TRACK SECTIONS SHALL BE EQUAL GRADE AND GAGE THICKNESS OF STUDS BEING USED, TYPICAL, U.N.O.
6. ALL FASTENERS SHALL BE SELF-TAPPING NO. 12-14 GAGE SCREWS, OR WELD IN ACCORDANCE WITH SECTION 6.0 OF THE AMERICAN WELDING SOCIETY'S "STRUCTURAL WELDING CODE - SHEET METAL" (AWS D1.3) AS SHOWN ON DRAWINGS.

Statement of Special Inspections

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☐ Soils and Foundations
- ☒ Steel Construction
- ☐ Concrete Construction
- ☐ Masonry Construction
- ☐ Wood Construction
- ☐ Special Cases

General Notes

The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

The qualifications of all personnel performing Special Inspections and testing activities are subject to the approval of the Building Official and E.O.R. The credentials of all inspectors and testing technicians shall be provided if requested.

The special inspectors shall keep records of inspections and shall furnish inspection reports to the owner, Engineer of Record (E.O.R.) and Architect of Record (A.O.R.). Field and testing result reports shall be submitted to all designated parties as they are completed. The reports shall indicate that the work performed was done in accordance to the construction drawings. Discrepancies shall be brought to the attention of the general contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the E.O.R. prior to completion of that phase of work. A final report that documents required special inspections and corrections of discrepancies shall be submitted by the General Contractor to the Owner, E.O.R. and A.O.R.

Steel Construction

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Bolting	Inspect installation and tightening of high-strength bolts. Verify that splices have separated from tension control bolts. Verify proper tightening sequence. Continuous inspection of bolts in slip-critical connections. Bolted connections shall be tested for the snug tight method (25% of the bolted connections shall be inspected for this method.)	P/C
2. Welding	Visually inspect all welds. Inspect pre-heat, post-heat and surface preparation between passes. Verify size and length of fillet welds. Ultrasonic testing of all full-penetration welds. • Complete and partial penetration groove welds shall be inspected continuously. • Multi-pass fillet welds shall be inspected continuously. • Single-pass fillet welds (> 5/16") shall be inspected continuously. • Single-pass fillet welds (< 5/16") shall be inspected periodically. • Floor and deck welds shall be inspected periodically.	
3. Shear connectors	Inspect size, number, positioning and welding of shear connectors. inspect studs for full 360 degree flash. Ring test all shear connectors with a 3 lb nemmer. Bend test all questionable studs to 15 degrees.	C
4. Structural Details	Inspect steel frame for compliance with structural drawings, including bracing, member configuration and connection details.	P

Concrete Construction

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Mix Design	Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design. Submit proposed mix design of each class of concrete to Structural Engineer of Record and to inspection and testing firm for review prior to commencement of work.	P
2. Material Certification	Review for conformance to contract documents. Submit to Structural Engineer of Record for review.	P
3. Reinforcement Installation	Inspect size, spacing, cover, positioning and grade of reinforcing steel. Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters. Submit certified copies of mill test report of reinforcement materials analysis.	P
4. Concrete Placement	Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.	C
5. Anchor Rod	Inspect size positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.	C
6. Anchors Post-installed in Hardened Concrete	a. Adhesive anchors installed in horizontally or upwardly inclined orientation to resist sustained tension loads. (ACI318:17.8.2.4) b. Mechanical anchors or adhesive anchors not defined in 6a. (ACI318: 17.8.2)	C P
7. Sampling and Testing of Concrete	Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064). Three concrete test cylinders will be taken for every 75 or less cubic yards of each class of concrete placed, or concrete placed on any given day. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete represents.	C
8. Curing and Protection	Inspect curing, cold weather protection and hot weather protection procedures.	P

Note: Special Inspection is not required for flatwork patios, driveways and sidewalks, on grade not shown on structural drawings.



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ISSUE RECORD
DESCRIPTION DATE
ISSUE FOR PERMIT 6/22/2026

REVISION RECORD
NO DATE REVISION

PROFESSIONAL SEAL



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PROJECT NAME

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NORMAN, OK 73069

PROJECT NUMBER
26-0061
SHEET TITLE
STRUCTURAL NOTES & SPECIAL INSPECTIONS

SHEET NUMBER

S-001