

C:\Users\DemmyFolmar\Scalene Design\Robert Macia - 1 - SCALENE DESIGN\Projects\S20-017.00 Campbell Hobson Smoke Evac\4-Drawings-Model\Revit Model\S20-017.00 Campbell Hobson Smoke Evac - Structural\_vt.18.rvt

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1

**DESIGN CRITERIA**  
 BUILDING CODES: 2018 NORTH CAROLINA STATE BUILDING CODE  
 ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES

RISK CATEGORY: III  
 DESIGN LIVE LOADS: UNIFORM CONCENTRATED  
 20 PSF 300 LBS

ROOF: \*ALL LIVE LOADS ARE REDUCED BASED ON TRIBUTARY AREA AS ALLOWED BY THE BUILDING CODES.

SNOW LOAD: GROUND SNOW LOAD, PG 15 PSF  
 IMPORTANCE FACTOR, IS 1.1  
 SNOW EXPOSURE FACTOR, CE 1.0  
 THERMAL FACTOR, CT 1.0  
 FLAT ROOF SNOW LOAD, PF 16.5 PSF

WIND LOAD: BASIC WIND SPEED (3 SECOND GUST) 125 MPH  
 EXPOSURE CATEGORY B ENCLOSED  
 ENCLOSURE CLASSIFICATION INTERNAL PRESSURE COEFFICIENT, GCPI ±0.18  
 TOPOGRAPHY FACTOR, KZ 1.00  
 APPLIED DIRECTIONALITY FACTOR, KD 0.85  
 \*\*ALL BUILDING COMPONENTS AND CLADDING WITH STRUCTURAL DESIGN DELEGATED TO THE CONTRACTOR/MANUFACTURER/SUPPLIER ARE REQUIRED TO BE DESIGNED FOR WIND LOADS DETERMINED USING THE ABOVE DESIGN CRITERIA IN ACCORDANCE WITH THE GOVERNING BUILDING CODE(S).

SEISMIC LOAD: USGS DESIGN MAP ASCE 7-10  
 DESIGN METHOD EQUIVALENT LATERAL FORCE  
 IMPORTANCE FACTOR, IE 1.25  
 SITE CLASS D  
 MAPPED SPECTRAL RESPONSE ACCEL, SS 17.9%  
 MAPPED SPECTRAL RESPONSE ACCEL, ST 8.5%  
 SPECTRAL RESPONSE COEFFICIENT, SDS 19.1%  
 SPECTRAL RESPONSE COEFFICIENT, SD1 13.6%  
 SEISMIC DESIGN CATEGORY C

\*\*ALL BUILDING COMPONENTS AND CLADDING WITH STRUCTURAL DESIGN DELEGATED TO THE CONTRACTOR/MANUFACTURER/SUPPLIER ARE REQUIRED TO BE DESIGNED FOR SEISMIC LOADS DETERMINED USING THE ABOVE DESIGN CRITERIA IN ACCORDANCE WITH THE GOVERNING BUILDING CODE(S).

FUTURE LOADS: UNLESS SPECIFICALLY INDICATED ON THE STRUCTURAL DESIGN DRAWINGS THERE HAVE BEEN NO DESIGN PROVISIONS MADE TO ACCOMMODATE FUTURE LOADS OR TO ACCOMMODATE FUTURE ADDITIONS TO THE STRUCTURE.

**GENERAL**

G-01 THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH CIVIL, LANDSCAPE ARCHITECTURAL, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DOCUMENTS AS WELL AS ANY OTHER APPLICABLE TRADES. THE CONTRACTOR IS TO NOTIFY THE DESIGN TEAM OF ANY IDENTIFIED DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION USING THE REQUEST FOR INFORMATION AND/OR SUBMITTAL PROCESS OUTLINED IN THE PROJECT SPECIFICATIONS.

G-02 THE STRUCTURAL CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE AND EXCEPT WHERE SPECIFICALLY SHOWN DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE AND PROCEDURES.

G-03 THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE AND FOR APPLICATION OF CONSTRUCTION LOADS TO THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE IS COMPLETE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION AND REMOVAL OF ALL TEMPORARY BRACING, FORMWORK, SUPPORTS, AND SHORING REQUIRED TO STABILIZE THE STRUCTURE DURING CONSTRUCTION. THE CONTRACTOR IS TO UTILIZE A THIRD PARTY STRUCTURAL ENGINEER TO PROVIDE THE DESIGN AND DOCUMENTATION FOR TEMPORARY BRACING, FORMWORK, SUPPORTS AND SHORING AS REQUIRED BY THE PROJECT SPECIFICATIONS.

G-04 THE CONTRACTOR IS TO VERIFY ALL EXISTING SITE GRADING CONDITIONS, EXISTING UTILITIES AND EXISTING BUILDING DIMENSIONS AND CONDITIONS AS THEY APPLY TO THE NEW STRUCTURAL CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY THE DESIGN TEAM OF ANY IDENTIFIED DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION USING THE REQUEST FOR INFORMATION AND/OR SUBMITTAL PROCESS OUTLINED IN THE PROJECT SPECIFICATIONS.

G-05 THE CONTRACTOR IS TO PROTECT ALL EXISTING AND NEW UTILITIES, STRUCTURES, AND FACILITIES FROM DAMAGE DURING CONSTRUCTION.

G-06 ANY WORK NOT IN CONFORMANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS OR THE APPLICABLE BUILDING CODE(S) WILL BE CORRECTED BY THE CONTRACTOR IN A MANNER ACCEPTABLE TO THE STRUCTURAL ENGINEER OF RECORD.

G-07 SECTIONS, DETAILS AND NOTES APPLY TO ALL LIKE OR SIMILAR CONDITIONS.

G-08 DO NOT SCALE STRUCTURAL DRAWINGS TO OBTAIN DIMENSIONAL INFORMATION. THE CONTRACTOR IS TO REQUEST ANY DIMENSIONAL INFORMATION REQUIRED USING THE REQUEST FOR INFORMATION AND/OR SUBMITTAL PROCESS OUTLINED IN THE PROJECT SPECIFICATIONS.

G-09 THE STRUCTURAL PLANS DO NOT SHOW EVERY OPENING OR PENETRATION REQUIRED THROUGH STRUCTURAL ELEMENTS. THE CONTRACTOR IS TO VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES, TRADES AND SHOP DRAWINGS. OPENINGS ARE TO BE CONSTRUCTED USING TYPICAL DETAILS AND CRITERIA PROVIDED ON THE STRUCTURAL DRAWINGS. OPENINGS REQUIRED THAT CANNOT CONFORM TO THE TYPICAL DETAILS OR CRITERIA PROVIDED ON THE STRUCTURAL DRAWINGS ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

**DEMOLITION**

D-01 THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE EXISTING STRUCTURE AND FOR APPLICATION OF CONSTRUCTION LOADS TO THE EXISTING STRUCTURE DURING THE DEMOLITION PROCESS AND UNTIL THE FINAL CONSTRUCTION OF THE STRUCTURE IS COMPLETE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, INSTALLATION AND REMOVAL OF ALL TEMPORARY BRACING, FORMWORK, SUPPORTS, AND SHORING REQUIRED TO STABILIZE THE EXISTING STRUCTURE DURING CONSTRUCTION. THE CONTRACTOR IS TO UTILIZE A THIRD PARTY STRUCTURAL ENGINEER TO PROVIDE THE DESIGN AND DOCUMENTATION FOR TEMPORARY BRACING, FORMWORK, SUPPORTS AND SHORING AS REQUIRED BY THE PROJECT SPECIFICATIONS.

D-02 ALL EXISTING FOUNDATIONS AND FRAMING SHOWN ON THE STRUCTURAL CONTRACT DRAWINGS ARE INDICATED FOR REFERENCE ONLY AND ARE TO BE FIELD VERIFIED BY THE CONTRACTOR. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THOSE SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS. EXISTING STRUCTURAL FRAMING AND FOUNDATIONS SHOWN ARE BASED ON FIELD VERIFICATION OF VISIBLE ELEMENTS. EXISTING STRUCTURAL DRAWINGS PREPARED BY J.M. KENNEDY ARCHITECT DATED APRIL 1925 AND W.H. PRUDEN III DATED 4/30/19.

**POST-INSTALLED ADHESIVE/MECHANICAL ANCHORS**

A-01 REFER TO PROJECT SPECIFICATIONS FOR ALL REQUIREMENTS FOR POST-INSTALLED MECHANICAL AND ADHESIVE ANCHORS. INFORMATION PROVIDED IN THESE GENERAL STRUCTURAL NOTES IS A BRIEF SUMMARY OF MATERIAL AND CONSTRUCTION REQUIREMENTS. ALL CONSTRUCTION IS TO BE IN FULL AND COMPLETE COMPLIANCE WITH THE PROJECT SPECIFICATIONS.

A-02 POST-INSTALLED ANCHORS ARE TO BE USED ONLY WHERE INDICATED ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR IS TO SUBMIT ANY PROPOSED POST-INSTALLED ANCHORAGE NOT SHOWN ON THE CONTRACT DOCUMENT TO THE ENGINEER FOR REVIEW.

A-03 ALL POST-INSTALLED ANCHORS ARE TO BE INSTALLED AS INDICATED BY THE STRUCTURAL DRAWINGS AND IN STRICT ACCORDANCE WITH THE ANCHOR MANUFACTURER'S INSTRUCTIONS.

A-04 THE BASIS OF DESIGN FOR MECHANICAL ANCHORS ARE THE FOLLOWING PRODUCTS: HILTI KWIK BOLT T2, SIMPSON STRONG-TIE STRONG-BOLT WEDGE ANCHOR, POWERS POWER STUD-SD1

A-05 THE BASIS OF DESIGN FOR ADHESIVES/EPoxy ARE THE FOLLOWING PRODUCTS: HILTI HIT RE 500-SD, SIMPSON STRONG-TIE SET-XP, POWERS AC108+GOLD

A-06 THE CONTRACTOR MAY SUBMIT ALTERNATIVE MECHANICAL ANCHORS AND ADHESIVES/EPoxy THAT MEET OR EXCEED THE PROPERTIES AND LOAD CARRYING CAPACITIES OF THE BASIS OF DESIGN PRODUCTS TO THE ENGINEER FOR REVIEW.

A-07 PRIOR TO THE INSTALLATION OF ANY POST-INSTALLED ANCHORS, THE CONTRACTOR IS TO LOCATE ALL REINFORCING STEEL WITHIN STRUCTURAL ELEMENTS USING NON-DESTRUCTIVE METHODS. IF ANCHOR LOCATIONS ARE IN CONFLICT WITH ANY REINFORCING STEEL NOTIFY THE ENGINEER FOR DIRECTION.

**CONCRETE AND REINFORCING STEEL**

C-01 CONCRETE TO MEET THE FOLLOWING 28 DAY COMPRESSIVE STRENGTHS (F'c):  
 EXTERIOR SLAB ON GRADE 4,300 PSI, NORMAL WEIGHT W/ 5% AIR CONTENT  
 C-02 PROVIDE CLEAR COVER ON REINFORCING STEEL PER ACI 318 AND AS INDICATED BELOW:  
 CONVENTIONALLY REINFORCED CONCRETE 3"  
 CONCRETE CAST AGAINST AND EXPOSED TO EARTH 2" FOR BARS #6 AND LARGER 1 1/2" FOR BARS SMALLER THAN #6  
 CONCRETE EXPOSED TO WEATHER 2"

\*NOTE: "EXPOSED TO WEATHER" INCLUDES CONCRETE SURFACES PERMANENTLY EXPOSED TO THE ELEMENTS. CONCRETE SURFACES SUCH AS ROOF SLABS THAT ARE COVERED WITH PROTECTIVE SYSTEMS ARE NOT CONSIDERED TO BE EXPOSED TO WEATHER.

C-03 DETAIL, FABRICATE AND INSTALL ALL REINFORCING STEEL PER STRUCTURAL CONTRACT DOCUMENTS, ACI 318 AND ACI 315.

C-04 DO NOT WELD REINFORCING STEEL UNLESS SPECIFICALLY INDICATED ON STRUCTURAL CONTRACT DOCUMENTS.

C-05 EMBEDDED ITEMS SUCH AS ANCHOR BOLTS, REINFORCING STEEL DOWELS, AND EMBED PLATES ARE TO BE SET AND SECURED IN PLACE PRIOR TO THE PLACEMENT OF CONCRETE. "WET SETTING" OF EMBEDDED ITEMS IS NOT ACCEPTABLE.

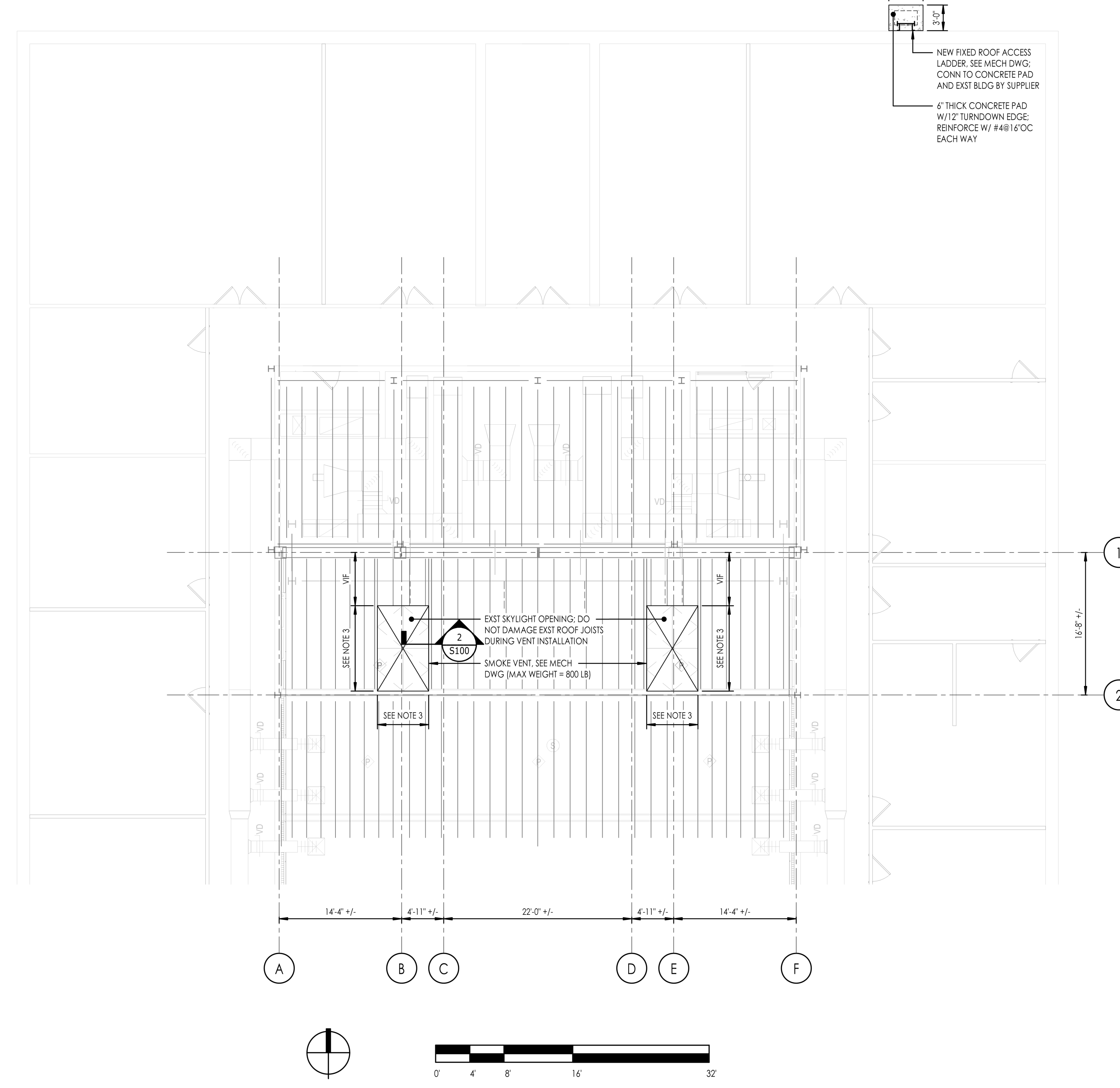
C-06 CLAY BRICK, ROCKS, WOOD, OR CMU BRICK ARE NOT TO BE USED TO SUPPORT REINFORCING STEEL IN SLABS ON GRADE.

C-07 FOLLOW STRUCTURAL DRAWINGS FOR ACCEPTABLE INSTALLATION OF PLUMBING, ELECTRICAL, TELECOMMUNICATION, MECHANICAL OR OTHER UTILITY LINES AND CONDUIT THROUGH AND WITHIN CONCRETE ELEMENTS. THE CONTRACTOR IS TO NOTIFY THE DESIGN TEAM OF ANY CONDITIONS THAT DO NOT COMPLY WITH DETAILS SHOWN ON THE STRUCTURAL DRAWINGS.

C-08 HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE ELEMENTS ARE NOT ACCEPTABLE WITHOUT PRIOR APPROVAL OF THE ENGINEER.

**ABBREVIATIONS**

AT ABOVE FINISHED FLOOR  
 & AND  
 # NUMBER  
 AB ANCHOR BOLTS  
 ADL ADDITIONAL  
 AFF ABOVE FINISHED FLOOR  
 ALT ALTERNATE  
 ARCH ARCHITECT / ARCHITECTURAL  
 BOT BOTTOM  
 BCK BOTTOM CHORD EXTENSION  
 BLDG BUILDING  
 BOS BOTTOM OF STEEL  
 BRG BEARING  
 BTWN BETWEEN  
 CANT CANTILEVER  
 CJ CONTROL JOINT  
 CL CENTERLINE  
 CLR CLEAR  
 CMU CONCRETE MASONRY UNIT  
 COL COLUMN  
 CONC CONCRETE  
 CONN CONNECTION  
 CONS CONSTRUCTION  
 CONT CONTINUOUS  
 COORD COORDINATE  
 CTRO CENTERED  
 g PENNY (NAILS)  
 DBA DEFORMED BAR ANCHOR  
 PERF PERPENDICULAR  
 PL PLATE  
 DET DETAIL  
 DIA DIAMETER  
 DIM DIMENSION  
 DIST DISTANCE  
 DN DOWN  
 DWG DRAWING  
 DWL DOWEL  
 ENGR ENGINEER  
 EOD EDGE OF DECK  
 EOS EDGE OF SLAB  
 EQUL EQUAL  
 STL STEEL  
 EXW EACH WAY  
 THRU THROUGH  
 EXP EXPANSION  
 TOC TOP OF FOOTING  
 INT INTERIOR  
 JNT JOINT  
 K KIPS PER SQUARE INCH  
 LBS POUNDS  
 LLH LONG LEG HORIZONTAL  
 LLV LONG LEG VERTICAL  
 LWC LIGHTWEIGHT CONCRETE  
 MAX MAXIMUM  
 MC MOMENT CONNECTION  
 MECH MECHANICAL  
 MEFP MECHANICAL, ELECTRICAL, PLUMBING  
 MFR MANUFACTURER  
 MIN MINIMUM  
 MISCL MISCELLANEOUS  
 MOW MIDDLE OF WALL  
 NS NEAR SIDE  
 NOT TO SCALE  
 NWC NORMAL WEIGHT CONCRETE  
 OC ON CENTER  
 OPNG OPENING  
 OPHND OPPOSITE HAND  
 PAF POWDER ACTUATED FASTENER  
 PARL PARALLEL  
 PERP PERPENDICULAR  
 PLATE PLATE  
 PSF POUNDS PER SQUARE FOOT  
 PSI POUNDS PER SQUARE INCH  
 PRES PRESSURE TREATED  
 POST POST TENSIONED  
 REF REFERENCE  
 REIN REINFORCING  
 REQD REQUIRED  
 SCH SCHEDULE  
 SIM SIMILAR  
 SOG SLAB ON GRADE  
 SPEC SPECIFICATION(S)  
 SQ SQUARE  
 STD STANDARD  
 STIF STIFFENER  
 STRIR STRIP(S)  
 STEEL  
 TOC TOP CHORD EXTENSION  
 THRU THROUGH  
 TOC TOP OF CONCRETE  
 TOF TOP OF FOOTING  
 TOS TOP OF STEEL  
 TOW TOP OF WALL  
 TYP TYPICAL  
 UNO UNLESS NOTED OTHERWISE  
 VERT VERTICAL  
 VIF VERIFY IN FIELD  
 W/ WITH  
 WP WORK POINT

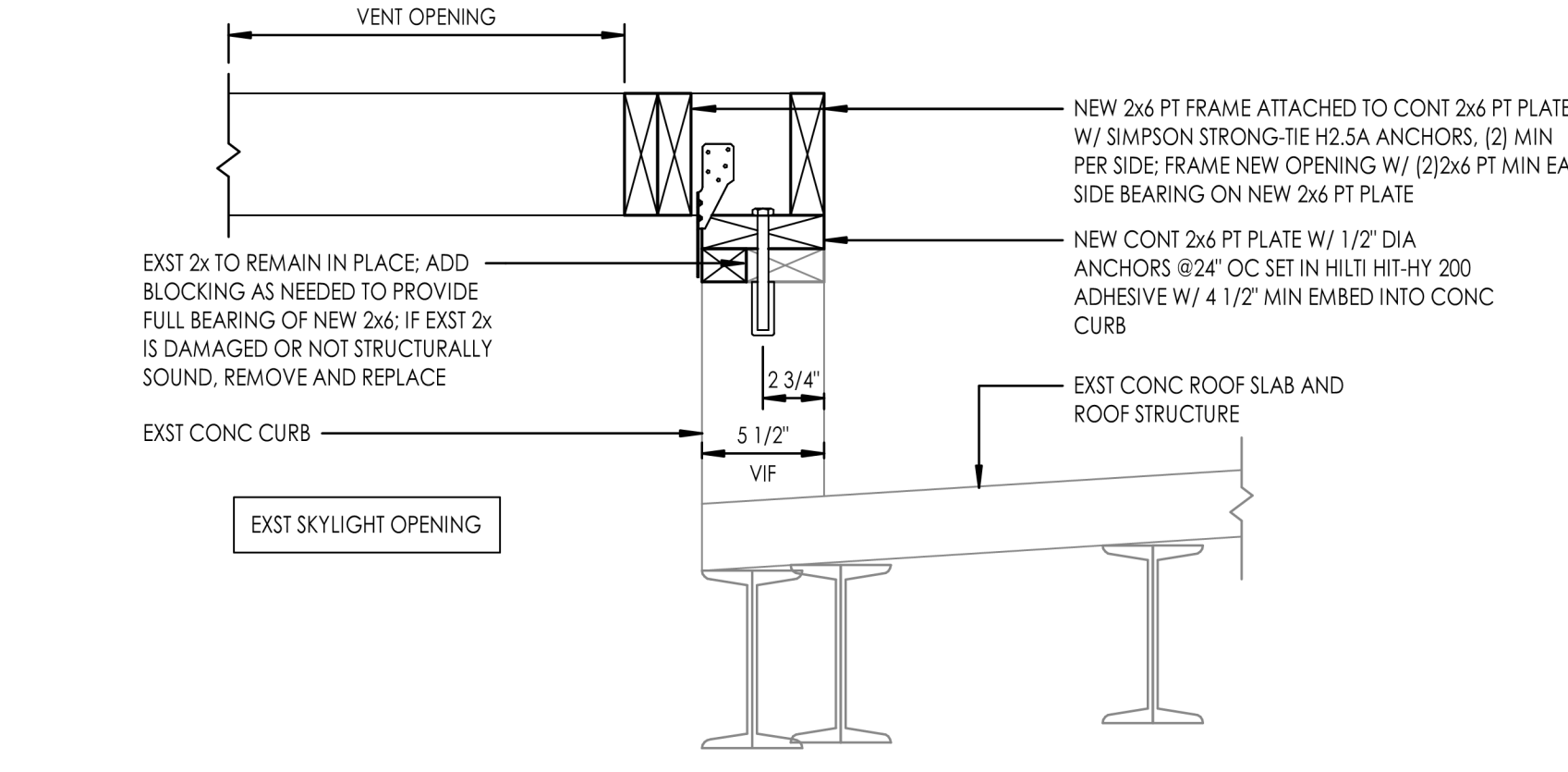


**NOTES:**

- SEE THIS SHEET FOR STRUCTURAL GENERAL NOTES AND ABBREVIATIONS.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS AND FRAMING PRIOR TO CONSTRUCTION.
- CONTRACTOR TO COORDINATE SMOKE VENT OPENING SIZE WITH SMOKE VENT SUPPLIER.

**1 ROOF FRAMING PLAN**  
 1/8" = 1'-0"

**2 SECTION**  
 1 1/2" = 1'-0"



**SCALENE DESIGN**  
 FUNCTION • STRUCTURE • FORM

555 FAIVETTEVILLE ST. SUITE 300 RALEIGH, NC 27601 919.853.0295

FORM LICENSE #P-1591 SCALENE DESIGN PROJECT NO. S20-017.00

01/22/2021  
 THIS DOCUMENT WAS ELECTRONICALLY SIGNED BY DENNY FOLMAR, PE

**RECORD DOCUMENTS**

REV	DESCRIPTION	DATE	APPROVED
3	VENT OPENING FRAMING	08/07/2020	
2	ASI-001	07/22/2020	
1	ROOF OPENING REVISION	06/03/2020	

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DRAWN BY: EKB DATE: 05/12/2020  
 DESIGNED BY: EKB SCALE: 1/8" = 1'-0"  
 CHECKED BY: DLF RMF JOB NO.: 220031.A0  
 PROJ. MGR.: DLF CLIENT JOB #:

**HOBSON PERFORMANCE CENTER SMOKE EVACUATION**



**ROOF FRAMING PLAN, GENERAL NOTES & ABBREVIATIONS**

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