ABBREVIATIONS

(NOT ALL ABBREVIATIONS USED)

#XX	NUMBER
A.F.F.	ABOVE FINISHED FLOOR
ADD'L	ADDITIONAL
ADJ	ADJACENT
ARCH.	ARCHITECTURAL
B.F.F.	BELOW FINISHED FLOOR
BLDG.	BUILDING
BOT	BOTTOM
BTWN	BETWEEN
CJ	CONTROL/ CONSTRUCTION/ CONTRACTION JOINT
CL	CENTER LINE
CLR.	CLEAR
COL.	COLUMN
CONC.	CONCRETE
CONN.	CONNECTION
CONT.	CONTINUOUS
DBA	DEFORMED BAR ANCHOR
DIA	DIAMETER
DTL	DETAIL
E.F.	EACH FACE
EA.	EACH
ELEV.	ELEVATION
EW	EACH WAY
FF	FINISHED FLOOR
FLR	FLOOR
FS	FAR SIDE
FTG	FOOTING
G.C.	GENERAL CONTRACTOR
GA.	GAUGE
GALV.	GALVANIZED
HORIZ.	HORIZONTAL
HSS	ROUND, SQUARE, OR RECTANGULAR STRUCTURAL TUBING
ID	INSIDE DIAMETER
JT.	JOINT
K or k	KIP (1,000 LBS)
KCJ	KEYED CONTROL JOINT
KSI	KIPS PER SQUARE INCH
L	ANGLE
LBS	POUNDS
LF	LINEAL FOOT
MANUF.	MANUFACTURER
MATL.	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
MISC	MISCELLANEOUS
N.T.S.	NOT TO SCALE
NS	NEAR SIDE
Ø	DIAMETER
O.C.	ON CENTER
OPP	OPPOSITE
P.J.	PANEL JOINT
PL	PLATE
PLBG	PLUMBING
PSF	POUNDS PER SQ FOOT
PSI	POUNDS PER SQ INCH
REINF.	REINFORCEMENT
REQ'D.	REQUIRED
SECT.	SECTION
SHT.	SHEET
SIM.	SIMILAR
SJ	SAWN JOINT
SPA.	SPACE
SQ	SQUARE
STD.	STANDARD
T&B	TOP AND BOTTOM
T.O.F.	TOP OF FOOTING
T.O.S.	TOP OF STEEL or TOP OF SLAB
THRU	THROUGH
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT. OR V	VERTICAL
VSC	VERTICAL SLIDING CLIP
W.W.R.	WELDED WIRE REINF.
w/	WITH
WP	WORK POINT
X/S-YYY	SECTION/DETAIL "X" ON SHEET "S-YYY"
XX#	POUNDS
ZRC	ZINC BASE PAINT

STRUCTURAL DESIGN CRITERIA

BUILDING CODE: 2021 ARKANSAS FIRE PREVENTION CODE (BASED ON 2021 IBC)

RISK CATEGORY (2021 IBC TABLE 1604.5): II

GRAVITY LOADS (REFERENCE: 2021 IBC & ASCE 7-16):

DEAD LOADS:	UNIFORM
ROOF:	10 PSF
HARDENED ROOM ROOF:	75 PSF
COLLATERAL ROOF:	5 PSF
FLOOR LIVE LOADS:	UNIFORM
TYPICAL	100 PSF
ROOF LIVE LOADS:	20 PSF (NON-REDUCIBLE)
RAIN LOADS:	
15 MINUTE DURATION / 100 YR RETURN PERIOD	i15 = 6.75 IN./H
60 MINUTE DURATION / 100 YR RETURN PERIOD	i60 = 3.60 IN./H
SNOW LOADS:	
GROUND SNOW LOAD	Pg = 10 PSF
FLAT ROOF SNOW LOAD	Pf = 9 PSF
SLOPED ROOF SNOW LOAD	Ps = 9 PSF
SNOW LOAD IMPORTANCE FACTOR	Is = 1.00
SNOW EXPOSURE FACTOR	Ce = 1.0
THERMAL FACTOR	Ct = 1.2

LATERAL LOADS (REFERENCE: 2021 IBC & ASCE 7-16):

WIND:	
ULTIMATE WIND SPEED	Vult = 104 MPH
NOMINAL WIND SPEED	Vasd = 81 MPH
TERRAIN EXPOSURE	C
INTERNAL PRESSURE COEFFICIENTS	+/- 0.18
COMPONENTS & CLADDING WIND LOAD	SEE SHEET S-002
SEISMIC:	
SEISMIC IMPORTANCE FACTOR	Ie = 1.00
MAPPED SPECTRAL RESPONSE ACCELERATIONS	Ss = 0.187
	S1 = 0.098
SITE CLASS	D
DESIGN SPECTRAL RESPONSE ACCELERATIONS	SDS = 0.200
	SD1 = 0.156
SEISMIC DESIGN CATEGORY	C
SEISMIC FORCE RESISTING SYSTEM	
STRUCTURAL STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE / ORDINARY REINFORCED MASONRY SHEAR WALLS	
DESIGN BASE SHEAR	V = 0.066W / 0.100W
SEISMIC RESPONSE COEFFICIENT	Cs = 0.066 / 0.100
RESPONSE MODIFICATION COEFFICIENT	R = 3 / 2
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

SYSTEMS AND COMPONENTS REQUIRING SPECIAL INSPECTION: SEE SPECIFICATION SECTION 014533

STRUCTURAL DESIGN APPROACH:

THIS PROJECT CONSISTS OF THREE INDEPENDENT STRUCTURES:

THE GUARD POST IS A SINGLE STORY STEEL FRAME BUILDING. THE ROOF CONSISTS OF A METAL DECK SUPPORTED BY STEEL WIDE FLANGE BEAMS THAT BEAR ON WIDE FLANGE STEEL GIRDERS. ROOF FRAMING IS SUPPORTED BY HSS COLUMNS. A SLAB ON GRADE IS USED THROUGHOUT THE BUILDING. STEEL MOMENT FRAMES PROVIDE LATERAL RESISTANCE FOR THE STRUCTURE. THE ENTIRE STRUCTURE IS SUPPORTED BY A SHALLOW FOUNDATION SYSTEM.

THE HARDENED ROOM IS A SINGLE STORY REINFORCED MASONRY WALL STRUCTURE WITH A CONCRETE ROOF SUPPORTED BY METAL DECK AND STEEL BEAMS. THE CMU WALLS PROVIDE LATERAL RESISTANCE FOR THE STRUCTURE. THE HARDENED ROOM HAS BEEN DESIGNED FOR 250 MPH ULTIMATE WIND SPEED AND IS NOT AN ICC 500 SHELTER OR FEMA SAFE ROOM AND CANNOT BE IDENTIFIED AS SUCH.

THE CANOPY IS AN EXTERIOR STEEL FRAME STRUCTURE. THE ROOF CONSISTS OF A METAL DECK SUPPORTED BY STEEL WIDE FLANGE BEAMS THAT BEAR ON WIDE FLANGE STEEL GIRDERS. ROOF FRAMING IS SUPPORTED BY HSS COLUMNS. STEEL MOMENT FRAMES PROVIDE LATERAL RESISTANCE FOR THE STRUCTURE. THE ENTIRE STRUCTURE IS SUPPORTED BY A SHALLOW FOUNDATION SYSTEM.

STRUCTURAL GENERAL NOTES

A. CONTRACTOR DELEGATED DESIGN COMPONENTS:

1. THE FOLLOWING ITEMS ARE NOTED AS A DELEGATED DESIGN COMPONENT AND SHALL BE DESIGNED BY THE CONTRACTOR. THE CONTRACTOR SHALL EMPLOY A SPECIALTY STRUCTURAL ENGINEER LICENSED IN THE STATE OF ARKANSAS TO DESIGN THE FOLLOWING ITEMS:
   a. SHORING AND TEMPORARY STRUCTURES
   b. COLD-FORMED STEEL FRAMING
2. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR EACH DELEGATED DESIGN COMPONENT. ALL STRUCTURAL DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY THE SPECIALTY STRUCTURAL ENGINEER. THE DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR AND THE DESIGN ENGINEER PRIOR TO SUBMITTAL. INCOMPLETE SHOP DRAWINGS AND SHOP DRAWINGS THAT HAVE NOT BEEN REVIEWED BY THE CONTRACTOR AND THE SPECIALTY STRUCTURAL ENGINEER WILL BE RETURNED WITHOUT REVIEW BY THE ARCHITECT/ENGINEER.
3. THE CONTRACTOR SHALL COORDINATE THE LOCATIONS OF ALL DELEGATED DESIGN COMPONENTS AND THEIR ACCESSORIES WITH OTHER TRADES TO AVOID CONFLICTS, e.g., FIRE SUPPRESSION SYSTEMS.

B. SPECIAL INSPECTIONS:

1. QUALIFIED INSPECTORS SHALL CONDUCT SPECIAL INSPECTIONS AND TESTS AND FURNISH REPORTS AS SPECIFIED IN SECTION 014533 AND IN ACCORDANCE WITH CHAPTER 17, INTERNATIONAL BUILDING CODE.
2. THE CONTRACTOR SHALL COORDINATE THE SPECIAL INSPECTIONS AND TESTING SERVICES WITH THE PROGRESS OF THE WORK, PROVIDE THE APPROPRIATE DOCUMENTATION AND PERFORM OTHER TASKS AS SPECIFIED IN SECTION 014533.
3. CONSTRUCTION THAT REQUIRES CONTINUOUS INSPECTION PER SECTION 014533 CAN NOT PROGRESS WITHOUT INSPECTORS PRESENT.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL OTHER INSPECTIONS OR TESTS IN THE SPECIFICATIONS NOT LISTED IN THE SCHEDULE OF SPECIAL INSPECTION SERVICES IN SECTION 014533.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF REPAIR, REINSPECTION AND RETESTING FOR ITEMS THAT DO NOT PASS THE INSPECTIONS OR TESTS.
6. SPECIAL INSPECTION SERVICES DO NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR COMPLIANCE WITH OTHER CONSTRUCTION DOCUMENT REQUIREMENTS OR REGULATORY REQUIREMENTS.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF DEMOLITION, RECONSTRUCTION, INSPECTION AND TESTING OF ANY WORK COMPLETED WITHOUT INSPECTION AND TESTING AS SPECIFIED IN SECTION 014533.

C. STABILITY DURING CONSTRUCTION, SHORING, & TEMPORARY STRUCTURES:

1. PERMANENT STABILITY OF THE BUILDING AND COMPONENTS IS NOT PROVIDED UNTIL ALL THE STRUCTURAL ELEMENTS ARE INSTALLED AS SHOWN ON THE CONTRACT DRAWINGS.
2. PROVIDE STABILITY TO ALL NON-SELF-SUPPORTING ELEMENTS UNTIL PERMANENT STRUCTURAL SUPPORTS ARE INSTALLED. PROVIDE BRACING, SHORING, AND/OR TEMPORARY STRUCTURES AS REQUIRED IN ORDER TO SATISFY THE CONTRACT REQUIREMENTS.
3. PROVIDE ALL BRACING NECESSARY TO STABILIZE THE BUILDING DURING THE ERECTION PROCESS. BRACING SHALL BE DESIGNED AND INSTALLED SUCH THAT IT DOES NOT TWIST OR DISTORT MEMBERS. BRACING SHALL BE DESIGNED FOR LOADS AS REQUIRED BY APPLICABLE CODES. THE DESIGN OF THE BRACING SHALL TAKE INTO ACCOUNT FORCES DUE TO THERMAL EXPANSION AND CONTRACTION OF THE BUILDING FRAME AND BRACES.
4. ANCHOR RODS FOR STEEL COLUMNS ARE NOT DESIGNED TO STABILIZE STRUCTURE BY PROVIDING FIXITY OF THE COLUMN BASE. PROVIDE TEMPORARY BRACING FOR STABILITY DURING THE ERECTION PHASE UNTIL ALL LATERAL LOAD RESISTING ELEMENTS ARE IN PLACE AND WELDING AND/OR BOLTING INSPECTIONS ARE COMPLETE.
5. COMPLY WITH ALL APPLICABLE OSHA SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION.

D. GENERAL REQUIREMENTS:

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH DRAWINGS RELATING TO OTHER TRADES. CHECK AND COORDINATE DIMENSIONS, CLEARANCES, OPENINGS, PIPE SLEEVES, CURBS, ETC. WITH THE WORK OF OTHER TRADES.
2. WORK NOT INDICATED ON A PART OF THE DRAWING BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE REPEATED.
3. DETAILS DESIGNATED AS "TYPICAL" APPLY TO ALL AREAS WHERE THE CONDITIONS ARE SIMILAR TO THOSE DESCRIBED IN THE DETAIL.
4. THE PLANS AND DETAILS IN THE CONTRACT DRAWINGS SHALL NOT BE REVISED WITHOUT PRIOR APPROVAL BY THE ARCHITECT/ENGINEER.
5. ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS.
6. PRINCIPAL OPENINGS THROUGH THE FRAMING ARE SHOWN ON THESE DRAWINGS. EXAMINE THE DRAWINGS FOR REQUIRED OPENINGS AND PROVIDE FOR ALL OPENINGS WHETHER SHOWN ON THE STRUCTURAL DRAWINGS OR NOT. VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH ALL SUB-CONTRACTORS. PIPE SLEEVES THROUGH THE DECK WILL NOT REQUIRE ADDITIONAL FRAMING UNLESS THE DIAMETER EXCEEDS 10".
7. SPLICING OF STRUCTURAL MEMBERS WHERE NOT DETAILED IS PROHIBITED WITHOUT PRIOR APPROVAL OF ARCHITECT/ENGINEER. IF APPROVED, ADDITIONAL TESTING AND INSPECTION SHALL BE AS SPECIFIED BY THE ARCHITECT/ENGINEER AND PAID FOR BY THE CONTRACTOR.
8. NO CHANGE IN SIZE OR POSITION OF THE STRUCTURAL ELEMENTS SHALL BE MADE: HOLES, SLOTS, CUTS, ETC., ARE NOT PERMITTED THROUGH ANY MEMBER UNLESS THEY ARE DETAILED ON THE APPROVED SHOP DRAWINGS.
9. ENSURE THAT ALL CONSTRUCTION LOADS DO NOT EXCEED THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS AND THAT THESE LOADS ARE NOT PUT ON THE STRUCTURAL MEMBERS PRIOR TO THE TIME THAT THE CONCRETE REACHES THE FULL DESIGN STRENGTH AND ALL FRAMING MEMBERS AND THEIR CONNECTIONS ARE IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE ADEQUACY OF SLABS ON GRADE FOR SUPPORTING ALL CONSTRUCTION EQUIPMENT, INCLUDING AREAL LIFTS.

E. SHOP DRAWINGS:

1. SUBMIT SHOP DRAWINGS FOR REVIEW BY THE ARCHITECT/ENGINEER FOR THE FOLLOWING ITEMS. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS:
   a. CONCRETE REINFORCING STEEL
      1. INDICATE ALL REINFORCING STEEL IN FOUNDATIONS AND SLABS ON GRADE
      2. INDICATE ALL HORIZONTAL, VERTICAL, AND TIE REINFORCING
      3. INDICATE TYPE AND LOCATION OF ALL REINFORCING STEEL SPLICES
   b. CONCRETE MASONRY
      1. INDICATE VERTICAL REINFORCING LOCATION AND METHOD OF SPLICE.
      2. INDICATE LOCATION OF CORES FILLED WITH GROUT.
      3. INDICATE BOND BEAM REINFORCING LOCATIONS, LENGTH, AND SPLICES.
   c. STRUCTURAL STEEL
   d. METAL DECKING
   e. COLD-FORMED STEEL FRAMING
2. SUBMIT OTHER SHOP DRAWINGS FOR REVIEW BY ARCHITECT/ENGINEER AS REQUIRED BY PROJECT SPECIFICATIONS.
3. DETAILS FOR SOME SPECIAL CONDITIONS WILL NEED TO BE DEVELOPED BY THE DETAILER DURING THE DETAILING PROCESS. FINAL REVIEW OF THE DETAILS WILL BE AT THE DISCRETION OF THE ENGINEER OF RECORD. NO ADDITIONAL CHARGES FOR MAKING CORRECTIONS, CHANGES, OR ADDITIONS TO THE SHOP DRAWINGS ("RE-DETAILING COST") WILL BE ALLOWED. CONTRACTOR SHALL MAKE PROVISIONS FOR DETAILING CORRECTIONS AND MISCELLANEOUS MATERIAL IN THE BID PRICE. ADJUSTMENTS TO THE CONTRACT WILL ONLY BE MADE FOR CHANGE ORDERS APPROVED PRIOR TO THE COMMENCEMENT OF ANY ACTION ON THE CHANGES.
4. ALL SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR / CONSTRUCTION MANAGER PRIOR TO SUBMITTAL. INCOMPLETE SHOP DRAWINGS AND SHOP DRAWINGS THAT HAVE NOT BEEN REVIEWED BY THE CONTRACTOR WILL BE RETURNED WITHOUT REVIEW BY THE ARCHITECT/ENGINEER.
5. VERIFY AND COORDINATE ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS WITH ARCHITECTURAL DRAWINGS. IN CASE OF CONFLICTS, THE ARCHITECT/ENGINEER IS TO BE NOTIFIED AND WILL PROVIDE THE CORRECT ELEVATIONS AND DIMENSIONS FOR WHICH SHALL BE INCORPORATED INTO THE SHOP DRAWINGS AT NO EXTRA COST.

F. EARTHWORK:

1. FOUNDATION DESIGN IS BASED ON SOIL INVESTIGATION AND REPORT BY GRUBBS, HOSKYN, BARTON & WYATT, LLC, dba UES (PROJECT NO. A24184.00054).
2. FOUNDATION DESIGN IS BASED ON THE FOLLOWING MINIMUM NET ALLOWABLE BEARING PRESSURE:
   a. CONTINUOUS FOOTINGS: 1.5 KSF
   b. INDIVIDUAL PAD FOOTINGS: 2.0 KSF
   ALL FOUNDATION BEARING CONDITIONS SHALL BE VERIFIED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.
3. BOTTOM OF FOUNDATION ELEVATIONS ARE GIVEN FOR BIDDING PURPOSES ONLY. ALL FOUNDATIONS SHALL BE FOUNDED A MINIMUM OF 2 FEET BELOW ADJACENT GRADE IN PROPERLY COMPACTED FILL.
4. THE SITE SHALL BE STRIPPED A MINIMUM OF 6", PROOF ROLLED, COMPACTED FILL PLACED, AND EXCAVATED AS REQUIRED FOR FOUNDATION. SEE SPECIFICATION DIVISION 31 FOR EARTHWORK REQUIREMENTS.
5. REMOVE 2 FEET OF EXISTING SUB GRADE MATERIAL UNDER THE BUILDING (EXTENDING 5 FEET BEYOND THE BUILDING PERIMETER) IN AREAS IDENTIFIED TO BE SOFT, THAT EXHIBIT PUMPING OR ARE OTHERWISE UNSUITABLE AFTER PROOF-ROLLING AND BACKFILL AS PER SPECIFICATION DIVISION 31, EARTHWORK, USING SPECIFIED BORROW MATERIAL.
6. THE SILTY FINE SAND AND FINE SANDY SILT ARE HIGHLY MOISTURE SENSITIVE AND WILL EXHIBIT REDUCED STABILITY WHEN SATURATED. THOUGH SITE CONDITIONS WILL VARY SIGNIFICANTLY WITH SEASONAL PRECIPITATION AND SURFACE RUNOFF, SITE GRADING OPERATIONS WILL BE SIGNIFICANTLY EASIER TO PERFORM DURING DRY SEASONS OF THE YEAR. POSITIVE SURFACE AND SUBSURFACE DRAINAGE SHOULD BE ESTABLISHED AT THE START OF CONSTRUCTION, MAINTAINED DURING THE WORK, AND INCORPORATED INTO FINAL DESIGN TO PREVENT SURFACE WATER PONDING AND SUBSEQUENT SATURATION OF SUBGRADE SOILS. DENSITY AND WATER CONTENT OF ALL EARTHWORK SHOULD BE MAINTAINED UNTIL THE FOUNDATION AND PAVEMENTS ARE COMPLETED. SUBGRADE SOILS THAT BECOME SATURATED BY PONDING WATER OR RUNOFF SHOULD BE EXCAVATED TO SUITABLE MATERIAL.
7. TAKE ADEQUATE MEASURES TO ALLOW FOR WORKING SURFACE DURING CONSTRUCTION OF FOUNDATIONS AND SLAB-ON-GRADE, SUCH AS GRAVEL BED OF ADEQUATE DEPTH, ETC.
8. PROVIDE EARTH RETENTION SYSTEMS AND TEMPORARY BRACING OR SHORING (INCLUDING UNDERPINNING) AS REQUIRED TO SUPPORT EXCAVATIONS AND TO PROTECT EXISTING STRUCTURES DURING CONSTRUCTION. TRENCHING AND EXCAVATIONS SHALL MEET ALL OSHA REQUIREMENTS.
9. WATER ACCUMULATION IS ANTICIPATED IN FOOTING EXCAVATIONS; PROVIDE DRAINAGE OF EXCAVATIONS FROM SURFACE WATER AND SEEPAGE. EXCAVATIONS SHALL BE DRAINED OR PUMPED DRY BEFORE POURING CONCRETE.
10. PROTECT ALL UTILITY LINES, ETC. ENCOUNTERED DURING EXCAVATION AND BACKFILLING.
11. NO BACKFILLING SHALL BE DONE AGAINST FOUNDATION WALLS UNTIL CONCRETE HAS ATTAINED ITS FULL DESIGN STRENGTH. BEFORE BACKFILLING, PROVIDE BRACING FOR WALLS SUSTAINING MORE THAN 3'-0" OF EARTH PRESSURE. THIS BRACING SHALL REMAIN IN PLACE UNTIL SLAB ON GRADE HAS BEEN PLACED AND CURED.
12. IN NO CASE SHALL BULLDOZERS OR OTHER HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION WALL.

G. CONCRETE AND REINFORCING STEEL:

1. THE DESIGN OF THE CONCRETE STRUCTURE IS BASED ON ACI318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
2. CAST IN PLACE CONCRETE SHALL HAVE THE FOLLOWING MINIMUM 28 DAY COMPRESSIVE STRENGTHS (f'c):

COMPONENT	COMPRESSIVE STRENGTH
FOOTINGS	3500 PSI
INTERIOR SLABS ON GRADE	3500 PSI
SLABS ON STEEL DECK	3500 PSI

   SEE SPECIFICATION SECTION 033000 FOR ADDITIONAL MIX DESIGN REQUIREMENTS.
3. ALL DEFORMED REINFORCING STEEL SHALL BE A615 GRADE 60 STEEL, U.N.O.
4. ALL WELDED WIRE REINFORCING STEEL SHALL BE A1064. ALL WELDED WIRE REINFORCEMENT SHALL BE PROVIDED IN SHEETS.
5. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST ACI CODE AND ACI DETAILING MANUAL.
6. MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE:

CONCRETE CAST AGAINST EARTH:	3"
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#5 BARS AND SMALLER:	1 ½"
#6 BARS AND LARGER:	2"
SLABS, WALLS, AND JOISTS:	1"
BEAMS AND COLUMNS:	1 ½"

7. ALL CONCRETE CONSTRUCTION AND MATERIALS SHALL BE PLACED ACCORDING TO ACI 117 TOLERANCES.
8. ALL CONCRETE REINFORCING STEEL SHALL BE SPLICED USING TENSION SPLICES:
   a. UNLESS NOTED OTHERWISE, LAP SPLICE ALL CONCRETE REINFORCING STEEL:

BARS #6 AND SMALLER:	48 BAR DIAMETERS
BARS #7 AND LARGER:	60 BAR DIAMETERS
WELDED WIRE REINFORCING:	ONE MESH PLUS 2"

   b. ONLY APPROVED MECHANICAL SPLICE SYSTEMS SHALL BE USED TO PROVIDE TENSION SPLICES. MECHANICAL SPLICES SHALL DEVELOP 125% OF THE YIELD STRENGTH OF THE BAR.
9. ALL CONCRETE REINFORCING SHALL BE SPLICED WHERE DETAILED ON THE DRAWINGS. UNLESS NOTED OTHERWISE:
   a. LAP GRADE BEAM TOP REINFORCEMENT AT CENTER OF SPAN.
   b. LAP GRADE BEAM BOTTOM REINFORCEMENT AT SUPPORT.
   c. STAGGER ALL TENSION LAP SPLICE LOCATIONS.
10. TERMINATE CONTINUOUS BARS AT NON-CONTINUOUS END WITH STANDARD HOOKS.
11. PROVIDE CORNER BARS IN ALL CONCRETE MEMBERS AT INTERSECTIONS. MATCH SIZE AND SPACING OF HORIZONTAL BARS IN THOSE MEMBERS.
12. ALL REINFORCING STEEL SHALL BE SECURELY HELD IN PLACE WHILE PLACING CONCRETE. ADDITIONAL BARS OR STIRRUPS SHALL BE PROVIDED AS REQUIRED TO FURNISH SUPPORT FOR ALL REINFORCING STEEL.
13. PROVIDE SUPPORT FOR ALL CONCRETE REINFORCING (INCLUDING SLABS ON GRADE AND ELEVATED COMPOSITE SLABS) AS REQUIRED TO MAINTAIN CLEAR COVER DIMENSIONS. SPACING SHALL NOT EXCEED 3'-0".
14. SUBMIT DRAWINGS SHOWING INTENDED POURING SEQUENCE AND LOCATION OF CONSTRUCTION JOINTS TO THE ARCHITECT/ENGINEER FOR APPROVAL.
15. HORIZONTAL CONSTRUCTION JOINTS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS. HORIZONTAL OR NEAR HORIZONTAL JOINTS SHALL BE PREPARED BY ROUGHENING THE SURFACE IN AN APPROVED MANNER SO THAT THE AGGREGATE IS EXPOSED UNIFORMLY, LEAVING NO LAITANCE, LOOSENED PARTICLES, OR DAMAGED CONCRETE.
16. PIPES OR CONDUITS PLACED IN FOUNDATIONS AND SLABS SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS ON CENTERS. PIPES AND CONDUITS PLACED IN SLAB SHALL NOT HAVE AN OUTSIDE DIAMETER LARGER THAN 1/3 OF SLAB THICKNESS. ALUMINUM CONDUITS SHALL NOT BE PLACED IN CONCRETE. NO CONDUIT SHALL BE PLACED WITHIN 24" OF COLUMN FACE.
17. LOCATION OF SLOTTED INSERTS, WELD PLATES AND ALL OTHER ITEMS TO BE EMBEDDED IN CONCRETE SHALL BE COORDINATED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
18. REINFORCING BARS SHALL NOT BE WELDED.
19. VERIFY DIMENSIONS AND LOCATIONS OF ALL OPENINGS, PIPE SLEEVE CURBS, ETC., AS REQUIRED BY OTHER TRADES BEFORE CONCRETE IS PLACED.
20. AGGREGATE FOR CONCRETE SHALL NOT CONTAIN LIGNITE, STEEL, OR OTHER MATERIALS THAT MAY BE DETRIMENTAL TO THE CONCRETE. ALKALI-SILICA REACTIVE (ASR) AGGREGATES ARE NOT ALLOWED.
21. MAXIMUM TOLERANCE FOR SLAB EDGES IS 1/2" +/- EXCEPT WHERE TIGHTER TOLERANCE IS REQUIRED FOR ARCHITECTURAL REASONS.
22. CONCRETE SHALL BE PLACED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS. WHEN THE AIR TEMPERATURE IS OVER 85 DEGREES FOLLOW THE RECOMMENDATIONS OF ACI 305R. WHEN THE AIR TEMPERATURE IS BELOW 40 DEGREES FOLLOW THE RECOMMENDATIONS OF ACI 306R.
23. STUDS AND DEFORMED BAR ANCHORS SHALL BE WELDED USING A WELDING GUN IN ACCORDANCE WITH CHAPTER 7 OF AWS D1.1. STUDS AND DEFORMED BAR ANCHORS SHALL NOT BE FILLET WELDED.

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Project

AEROJET
New Guard
Post - 2

Design Phase

CONSTRUCTION DOCUMENTS

Revisions

No.	Date	Description

Stamp

CERTIFICATE OF AUTHORIZATION
CROMWELL ARCHITECTS/ ENGINEERS #5
ARKANSAS ENGINEER

STATE OF ARKANSAS
PROFESSIONAL ENGINEER
No. 9668
MICHAEL CALLAHAN
07-17-2024

Notes

1. **CROMWELL ARCHITECTS ENGINEERS, INC. ALL RIGHTS RESERVED**
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Project Number **2024-052**

Issue Date **07-17-2024**

Sheet Title

STRUCTURAL DESIGN CRITERIA AND GENERAL NOTES

Sheet Number

S-001

STRUCTURAL GENERAL NOTES CONT'D

H. MASONRY WALLS:

1. THE DESIGN OF THE MASONRY WALLS IS BASED ON TMS 402-16 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
2. SPECIFIED DESIGN COMPRESSIVE STRENGTH: f'm = 2,000 PSI. PER THE UNIT STRENGTH METHOD.
3. CONCRETE BLOCK SHALL CONFORM TO ASTM C-90, NORMALWEIGHT UNITS.
4. MORTAR SHALL CONFORM TO ASTM C-270.
   a. TYPE S: LOAD-BEARING WALL
5. GROUT SHALL CONFORM TO ASTM C476. GROUT SLUMP SHALL BE BETWEEN 9" AND 11". MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 2500 PSI.
6. PROVIDE TEMPORARY BRACING FOR ALL MASONRY WALLS UNTIL PERMANENT LATERAL SUPPORT IS COMPLETE.
7. PIPES, CONDUIT, AND OTHER ITEMS SHALL NOT BE PLACED IN MASONRY CELLS WITH VERTICAL OR HORIZONTAL REINFORCING.
8. FILL ALL BOND BEAMS, CELLS CONTAINING VERTICAL BARS, AND CELLS CONTAINING EXPANSION ANCHORS, STEEL EMBEDS, OR OTHER ANCHORS WITH COARSE GROUT. ALL GROUT SHALL BE CONSOLIDATED AND RECONSOLIDATED BY USE OF A MECHANICAL VIBRATOR.
9. DO NOT PLACE LOADS ON BOND BEAMS OR MASONRY CELLS FILLED WITH GROUT UNTIL THE GROUT HAS CURED FOR A MINIMUM OF 3 DAYS.
10. MASONRY CONSTRUCTION SHALL NOT PROGRESS WITHOUT PERIODIC AND CONTINUOUS INSPECTION AND TESTING AS SPECIFIED IN THE SCHEDULE OF SPECIAL INSPECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COST OF DEMOLITION, RECONSTRUCTION, INSPECTION AND TESTING OF ANY MASONRY CONSTRUCTED WITHOUT THE SPECIFIED INSPECTIONS AND TESTING.

I. STRUCTURAL STEEL:

1. THE DESIGN OF STRUCTURAL STEEL IS BASED ON AISC 360-16, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.
2. ALL STEEL MEMBERS SHALL CONFORM TO:

SECTION	ASTM STANDARD	YIELD STRENGTH
WIDE FLANGE	A992	50 KSI
ANGLES, PLATES, AND BARS	A572	50 KSI
RECTANGULAR AND SQUARE HSS	A500 GRADE C OR A1085	50 KSI

3. ALL BOLTED CONNECTIONS FOR STRUCTURAL STEEL TO STEEL SHALL BE ASTM F3125, GRADE F1852 "TWIST-OFF" STYLE TENSION CONTROL BOLT ASSEMBLIES (SHOP AND FIELD), UNLESS NOTED OTHERWISE. "H.S. BOLTS" DESIGNATES F1852 BOLT ASSEMBLIES.
4. ALL WELDING ELECTRODES FOR STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO AWS A5.1 GRADE E-70 BARE ELECTRODES.
5. COLUMN ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 36. ANCHOR RODS SHALL HAVE A PLATE WASHER PER AISC TABLE 14-1 AND ONE HEAVY HEX NUT AT THE TOP AND ONE HEAVY HEX NUT AT THE BOTTOM TACK WELDED TO THE ROD, UNLESS NOTED OTHERWISE.
6. PLACE AND SECURE ANCHOR RODS IN FOOTING EXCAVATION PRIOR TO POURING CONCRETE FOR FOOTING. DO NOT PLACE ANCHOR RODS IN WET CONCRETE.
7. PROVIDE LEVELING NUTS OR SHIM PACKS AS REQUIRED TO LEVEL COLUMN BASE PLATES. IF SHIM PACKS ARE USED, ENCASE SHIM PACKS WITH 1" MIN COVER OF NON-SHRINK GROUT WHEN PLACING GROUT UNDER BASE PLATE.
8. CONNECTION DETAILING:
   a. CONNECTIONS SHALL BE DETAILED AS INDICATED IN THE DRAWINGS, UNO.
   b. THE FABRICATOR'S STEEL DETAILER SHALL SELECT AND COMPLETE TYPICAL CONNECTIONS BASED ON THE PLANS AND THE FOLLOWING:
      1. TYPICAL STEEL BEAM AND GIRDER TO COLUMN CONNECTIONS: DETAIL 3/S-501.
      2. TYPICAL STEEL BEAM-TO-BEAM CONNECTIONS: DETAIL 2/S-501.
      3. TYPICAL CONNECTIONS SHALL USE, AS A MINIMUM, THE NUMBER OF BOLTS INDICATED IN THE TYPICAL DETAILS.
      4. IF BEAM END REACTIONS ARE LARGER THAN THE CAPACITY INDICATED IN THE SCHEDULES THE ARCHITECT/ENGINEER SHALL BE NOTIFIED FOR GUIDANCE.
   c. ANY NON-TYPICAL CONNECTIONS THAT ARE NOT DETAILED IN THE DRAWINGS SHALL BE DESIGNED BY THE FABRICATOR FOR THE LOADS INDICATED IN THE DRAWINGS. THE DESIGN SHALL BE DONE BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF ARKANSAS. THE CONNECTION DETAILS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY THE PROFESSIONAL ENGINEER AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR APPROVAL.
9. ALL STEEL FABRICATION AND ERECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE.
10. THE STRUCTURAL STEEL FRAMING FABRICATOR SHALL BE AN AISC CERTIFIED BUILDING FABRICATOR (BU).
11. ALL STEEL DETAILS SHALL BE IN ACCORDANCE WITH THE REQUIREMENT OF THE LATEST AISC SPECIFICATIONS WITH LATEST REVISIONS.
12. SUPPLY STRUCTURAL STEEL FRAMING CONNECTIONS THAT COMPLY WITH OSHA STANDARDS. IF MEETING THESE STANDARDS CONFLICTS WITH ANYTHING SHOWN IN THESE DRAWINGS THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING ADVISING OF ANY REQUIRED REVISIONS AND ACQUIRE THE ENGINEER'S APPROVAL BEFORE PROCEEDING WITH THE WORK.
13. THE MINIMUM PLATE THICKNESS SHALL BE 1/4", THE MINIMUM WELD SHALL HAVE A 1/4" THICK THROAT, THE MINIMUM BOLT DIAMETER SHALL BE 3/4", AND THE MINIMUM CONNECTION SHALL BE TWO BOLTS, U.N.O.
14. ALL COLUMN BEARING PLATES SHALL BE SIZED AS SHOWN ON DETAIL 1/S-303 AND SHALL HAVE ROLLED OR GAS CUT EDGES. MINIMUM EDGE DISTANCE TO CENTER OF BOLT HOLE, SPACING OF HOLES, AND SIZES OF HOLES SHALL BE AS PER AISC MANUAL UNLESS NOTED OTHERWISE.
15. PROVIDE WELDED STIFFENER PLATES ON BOTH SIDES OF THE WEB OF BEAMS AT POINTS OF CONCENTRATED LOAD. MINIMUM STIFFENER PLATE THICKNESS TO BE 1/2" OR FLANGE THICKNESS OF COLUMNS ABOVE OR BELOW, WHICHEVER IS GREATER, U.N.O.
16. PROVIDE 1/2" MINIMUM THICKNESS STIFFENERS ON ALL BEAMS RUNNING OVER TOPS OF COLUMNS. MINIMUM SIZE OF WELD TO BE 1/4" FILLET WELD, U.N.O.
17. ALL STEEL NOT REQUIRED TO BE SHOP PAINTED (SEE SPECIFICATIONS) SHALL BE CLEANED OF OIL, GREASE, DIRT, RUST, LOOSE MILL SCALE, ETC. AND ALL OTHER FOREIGN MATERIALS.
18. GALVANIZING OF ALL STEEL MEMBERS SHALL CONFORM TO ASTM A123. ALL GALVANIZED STEEL REQUIRED TO BE PAINTED SHALL BE CLEANED AND PREPPED ACCORDING TO ASTM D6386.
19. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS SPECIFICATIONS LATEST EDITIONS. WELDING SHALL BE INSPECTED AND TESTED AS NOTED IN THE SPECIFICATIONS. WELDING INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELDING INSPECTOR.
20. FINAL BOLTING OR WELDING SHALL NOT BE PERFORMED UNTIL THE STRUCTURE HAS BEEN PROPERLY ALIGNED.

J. STEEL ROOF DECKING:

1. THE DESIGN, FABRICATION, AND ERECTION OF STEEL DECKING SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF THE LATEST SDI STANDARDS AND SPECIFICATIONS:
   a. STEEL ROOF DECK: ANSI/SDI RD-2017, STANDARD FOR STEEL ROOF DECK.
2. STEEL DECKING FOR THE CONSTRUCTION OF ROOF DIAPHRAGMS IS BASED ON THE SDI DIAPHRAGM DESIGN MANUAL (FOURTH EDITION) AND AISI S310, NORTH AMERICAN STANDARD FOR THE DESIGN OF PROFILED STEEL DIAPHRAGM PANELS.
3. STEEL DECK SHALL BE ATTACHED TO SUPPORTING STEEL AS INDICATED ON:
   a. ROOF DECK: DETAIL 1/S-501.
4. ROOF DECK AND FORM DECK ENDS SHALL BE BUTTED OR LAPPED OVER SUPPORTS.
5. DO NOT SUPPORT ROOFTOP EQUIPMENT OR EQUIPMENT CURBS DIRECTLY FROM ROOF DECK. ATTACH CURBS DIRECTLY TO STRUCTURAL STEEL SUPPORTS OR PROVIDE TREATED BLOCKING IN FLUTES OF DECK BETWEEN STRUCTURAL STEEL SUPPORTS AND CURBS.
6. PROVIDE SUPPORT FOR METAL DECK AROUND COLUMNS, SCREED PLATES AROUND OPENINGS, AND EDGES OF SLABS.
7. PROVIDE MINIMUM 3/16" X 8" BENT PLATES AT HIPS, VALLEYS, AND RIDGES AS REQUIRED TO SUPPORT AND CONNECT DECK TO STRUCTURE.
8. SUSPENDED CEILINGS, LIGHT FIXTURES, EQUIPMENT, DUCTS, OR OTHER UTILITIES SHALL NOT BE SUPPORTED BY THE STEEL ROOF DECK.

K. COLD-FORMED STEEL FRAMING:

1. THE DESIGN OF THE COLD FORMED STEEL FRAMING SHALL BE BASED ON AISI S100-16 w/S2-20, NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.
2. COLD-FORMED STEEL STUDS SHALL CONFORM TO THE REQUIREMENTS ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. EXTERIOR COLD-FORMED STEEL WALL STUDS SHALL A MINIMUM OF 18 GAUGE. LIMIT DEFLECTION OF STUDS TO L/240.
3. EXTERIOR NON LOAD-BEARING STEEL STUDS SHALL BE CONNECTED TO THE BUILDING FRAME WITH RIGID CLIPS OR VERTICAL SLIDE CLIPS AS SHOWN ON THE STRUCTURAL DETAILS.
4. ALL MATERIAL SHALL BE COLOR CODED TO INDICATE THE GAUGE OF THE MATERIAL.

L. POST-INSTALLED ANCHORS IN CONCRETE OR MASONRY:

1. POST-INSTALLED ANCHORS (MECHANICAL OR ADHESIVE) SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER–OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS OR DOWELS. POST-INSTALLED ANCHORS SHALL BE BUILDING CODE COMPLIANT, INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND INSPECTED PER THE APPLICABLE ICC-ES OR IAPMO UES EVALUATION REPORT. SEE SPECIFICATIONS SECTIONS 033000 AND 042900 FOR ADDITIONAL INFORMATION.

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AEROJET
New Guard
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CONSTRUCTION DOCUMENTS

Revisions

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CERTIFICATE OF AUTHORIZATION
CROMWELL ARCHITECTS/ ENGINEERS #5
ARKANSAS ENGINEER

STATE OF ARKANSAS
PROFESSIONAL ENGINEER
No. 9668
MICHAEL CALLAHAN
07-17-2024

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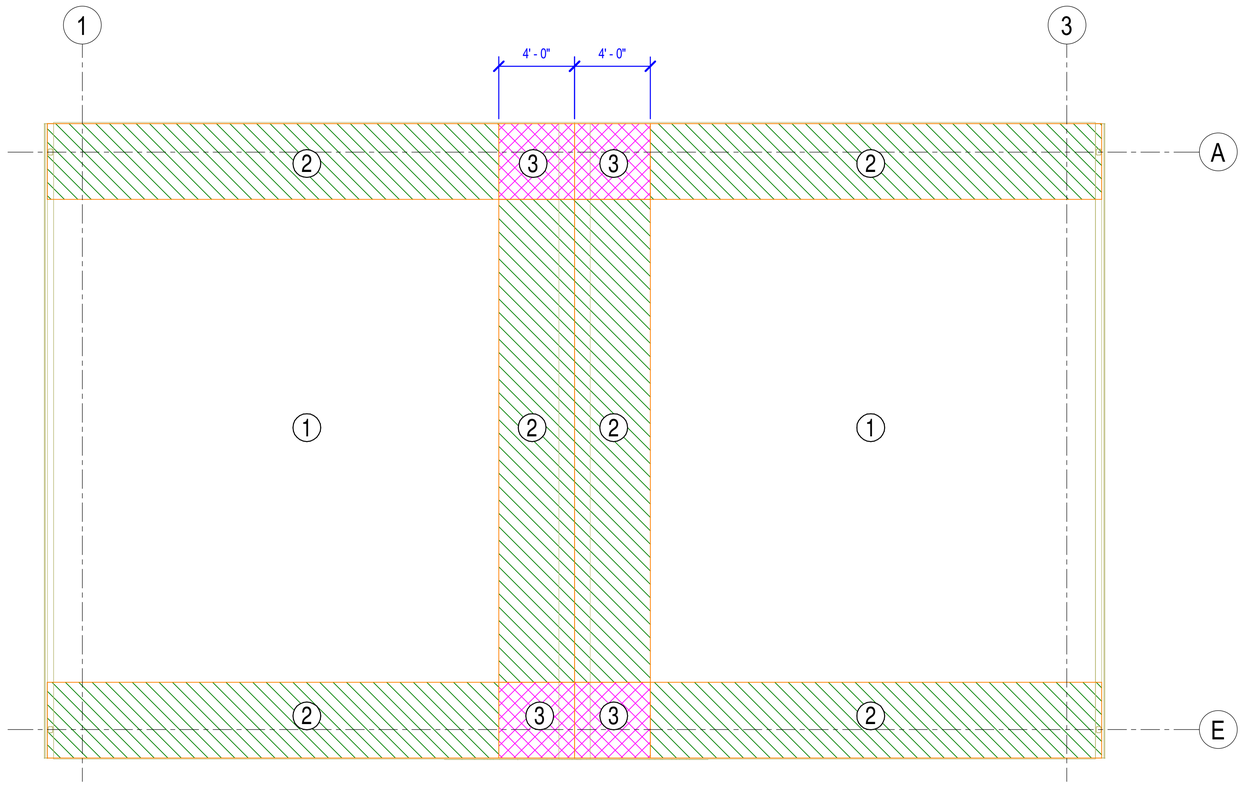
Sheet Title

STRUCTURAL GENERAL NOTES CONT'D

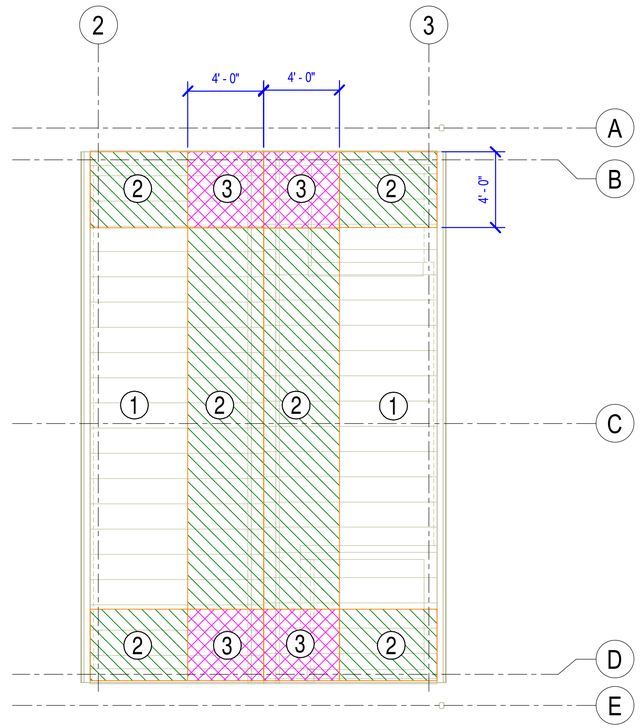
Sheet Number

S-002



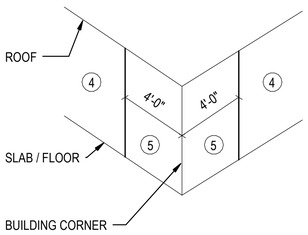
1 CANOPY COMPONENTS AND CLADDING WIND PRESSURE PLAN

1/4" = 1'-0"



2 GUARD POST COMPONENTS AND CLADDING WIND PRESSURE PLAN

1/4" = 1'-0"



GROSS WIND UPLIFT
(STRENGTH DESIGN)

ZONE	TRIBUTARY AREA (SQ. FT.)		
	10	50	100
4	-26/+24 PSF	-23/+21 PSF	-22/+20 PSF
5	-31/+24 PSF	-27/+21 PSF	-25/+20 PSF

ZONE	TRIBUTARY AREA (SQ. FT.)		
	10	50	100
1	-47/+16 PSF	-29/+16 PSF	-16/+16 PSF
2	-69/+16 PSF	-47/+16 PSF	-38/+16 PSF
3	-82/+16 PSF	-55/+16 PSF	-43/+16 PSF

NOTES:
1. ULTIMATE WIND SPEED: 104 MPH
2. NOMINAL WIND SPEED: 81 MPH
3. WIND PRESSURES ARE BASED ON ASCE 7-16 STRENGTH DESIGN (ULTIMATE).
4. POSITIVE / NEGATIVE VALUES INDICATE FORCES ARE ACTING TOWARDS / AWAY FROM ELEMENT, RESPECTIVELY.
5. COMPONENTS SUBJECTED TO PARAPETWIND FORCE ON BOTH SIDES (e.g. WALL PANELS) SHALL BE DESIGNED FOR CUMULATIVE FORCES.
6. SERVICE LEVEL LOADS MAY BE CALCULATED BY MULTIPLYING THE NUMBERS ABOVE BY 0.6.

COMPONENTS AND CLADDING WALL WIND PRESSURES

COMPONENTS AND CLADDING ROOF WIND PRESSURES

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STATE OF ARKANSAS
PROFESSIONAL ENGINEER
No. 9668
MICHAEL CALLAHAN
07-17-2024

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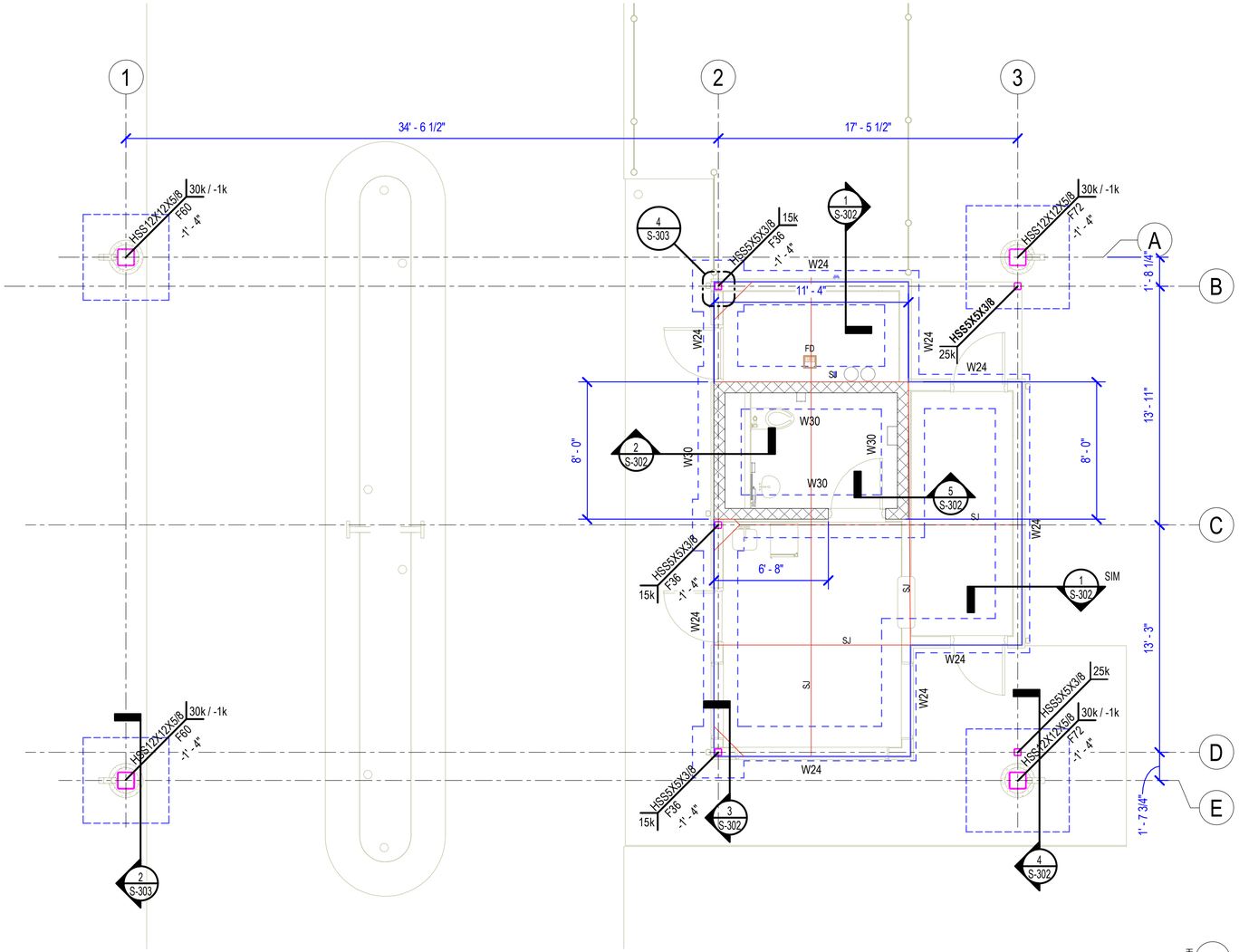
Sheet Title

COMPONENTS AND CLADDING WIND PRESSURE PLANS

Sheet Number

S-003



1 FOUNDATION AND SLAB PLAN

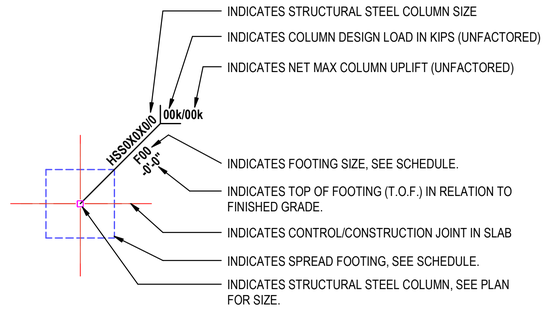
1/4" = 1'-0"

FINISHED FLOOR ELEVATION 0' - 0" = SITE ELEVATION SEE CIVIL

0 2 4 8

SCALE : 1/4" = 1'-0"

FOUNDATION AND SLAB LEGEND



NOTE:
GALVANIZE EXTERIOR COLUMNS

COL FOOTING SCHEDULE

MARK #	W	L	T	REINFORCING
F36	3' - 0"	3' - 0"	1' - 4"	#5 AT 9" O.C. BOT
F60	5' - 0"	5' - 0"	1' - 4"	#5 AT 9" O.C. TOP AND BOT
F72	6' - 0"	6' - 0"	1' - 4"	#5 AT 9" O.C. TOP AND BOT

CONT FOOTING SCHEDULE

MARK #	W	T	REINFORCING
W24	2' - 0"	1' - 4"	SEE 1/S-302
W30	2' - 6"	1' - 4"	SEE 2/S-302

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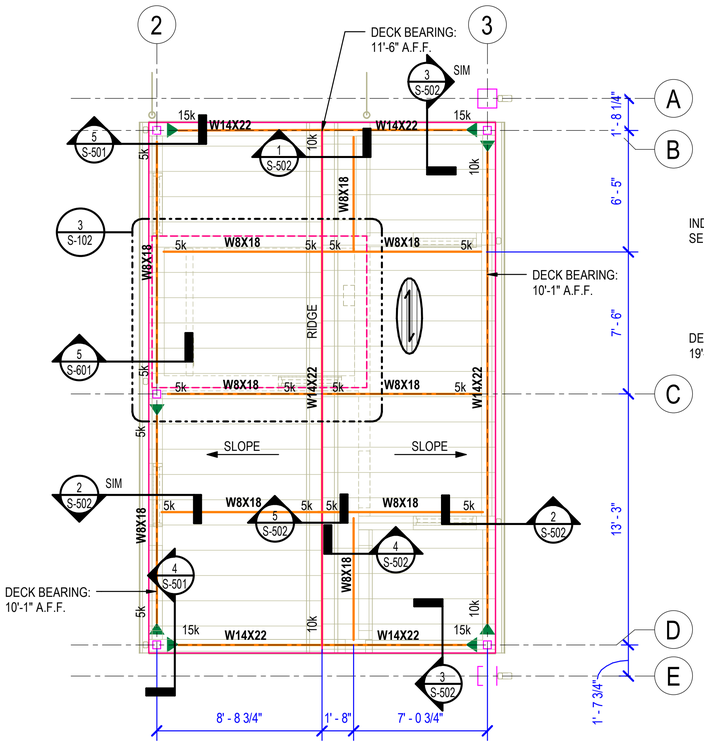
Issue Date **07-17-2024**

Sheet Title

FOUNDATION AND SLAB PLAN

Sheet Number

S-101



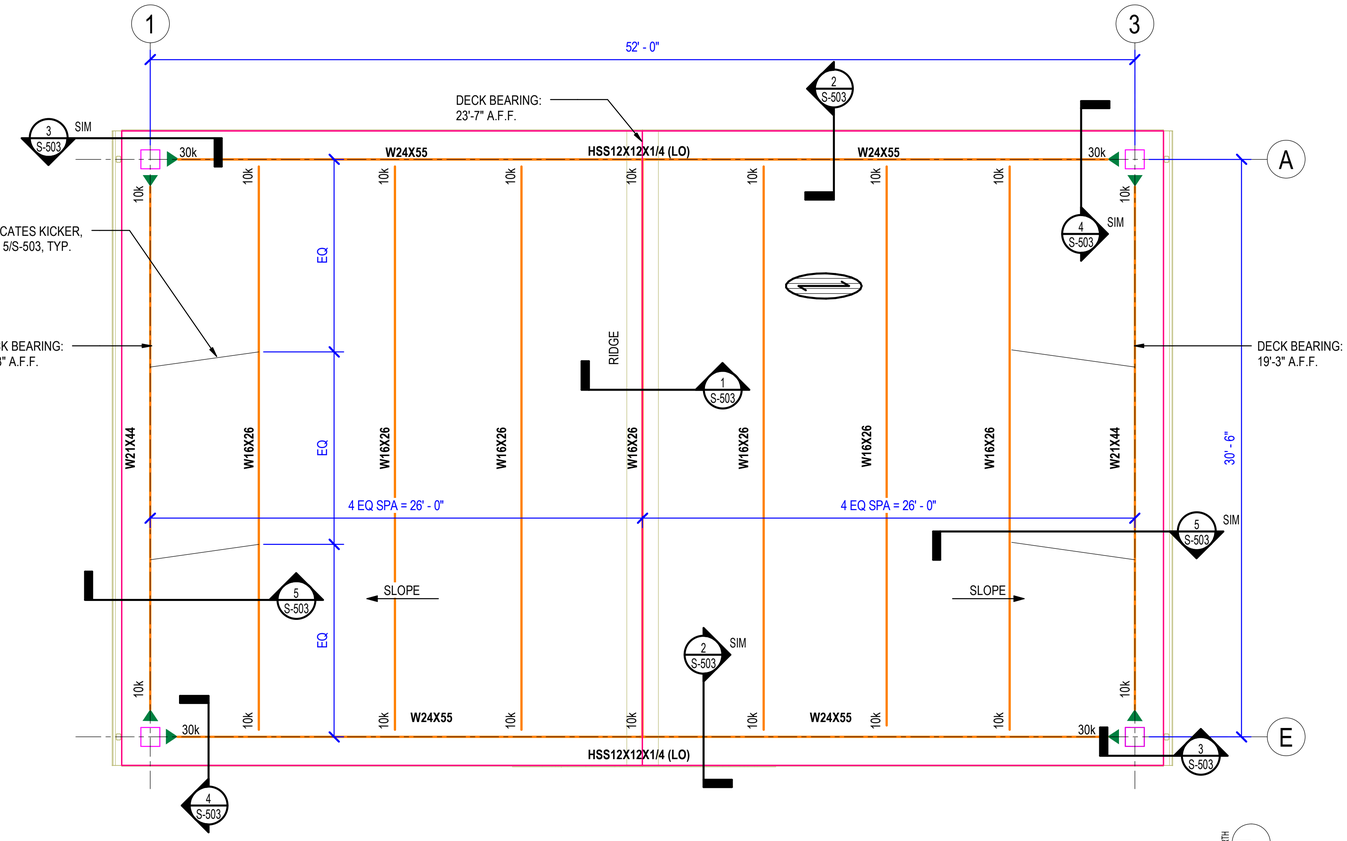
1 GUARD POST ROOF FRAMING

1/4" = 1'-0"

NORTH

0 2 4 8

SCALE : 1/4" = 1'-0"



2 CANOPY ROOF FRAMING

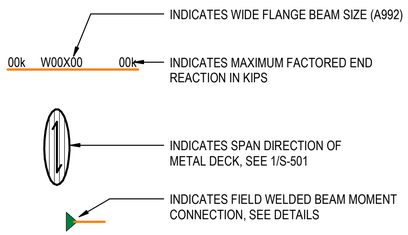
1/4" = 1'-0"

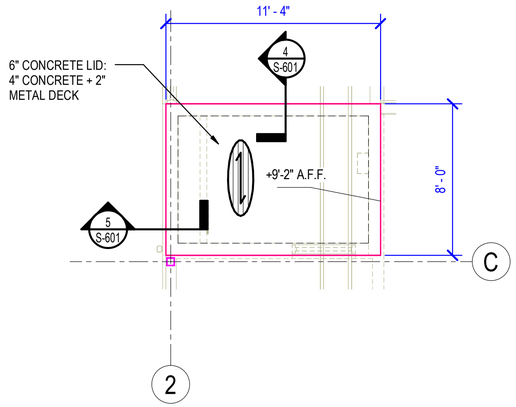
NORTH

0 2 4 8

SCALE : 1/4" = 1'-0"

FRAMING LEGEND





3 HARDENED ROOM FRAMING

1/4" = 1'-0"

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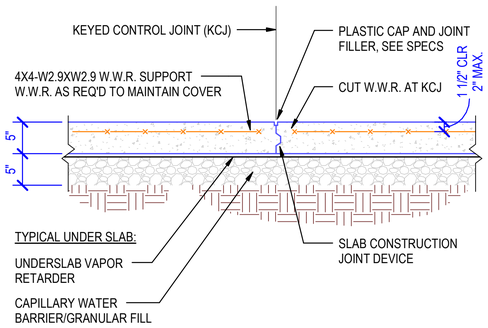
Issue Date **07-17-2024**

Sheet Title

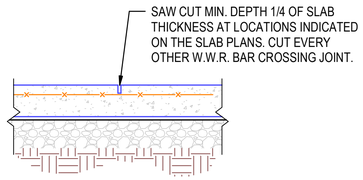
ROOF FRAMING PLAN

Sheet Number

S-102



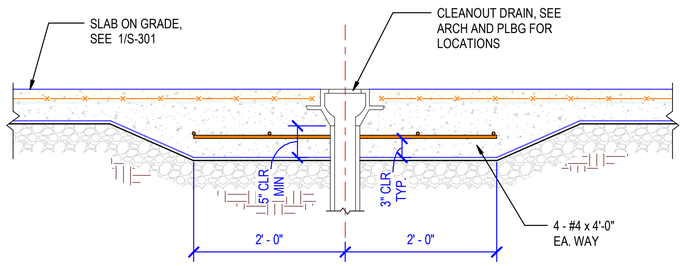
A KCJ (KEYED CONSTRUCTION JOINT)



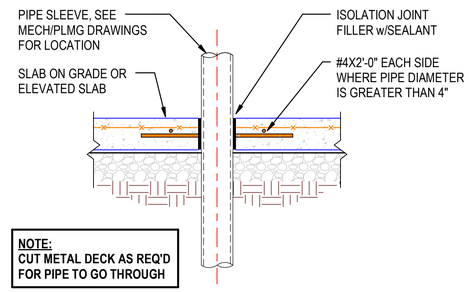
B SAWN JOINT (SJ)

1 TYPICAL SLAB ON GRADE REINFORCING AND JOINT DETAILS

NOT TO SCALE



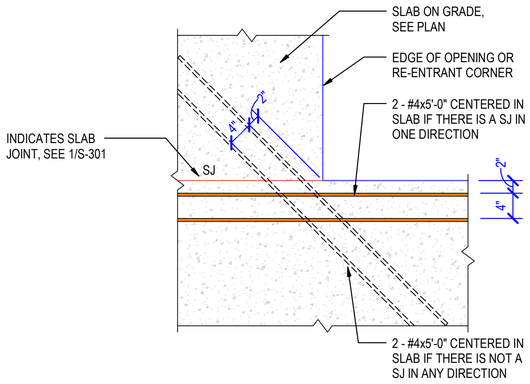
A FLOOR DRAIN AT SLAB



B MECH/PLMG PIPE THROUGH SLAB

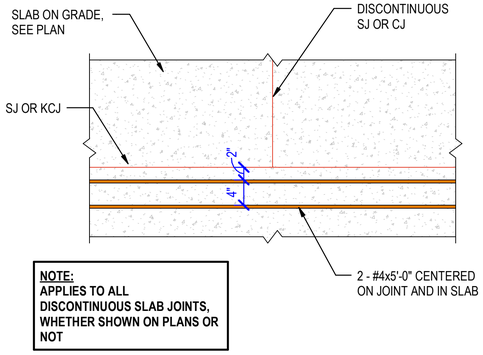
2 TYPICAL SLAB ON GRADE PENETRATION DETAILS

NOT TO SCALE



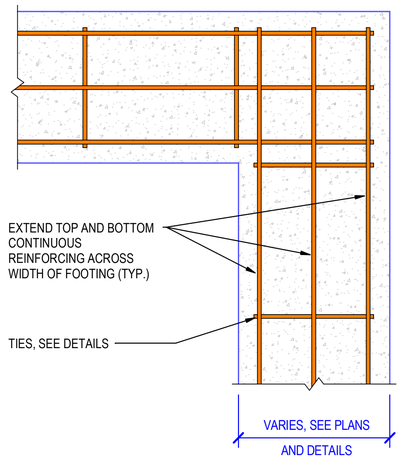
3 TYPICAL REENTRANT CORNER DETAIL

NOT TO SCALE



4 TYPICAL DISCONTINUOUS SLAB JOINT DETAIL

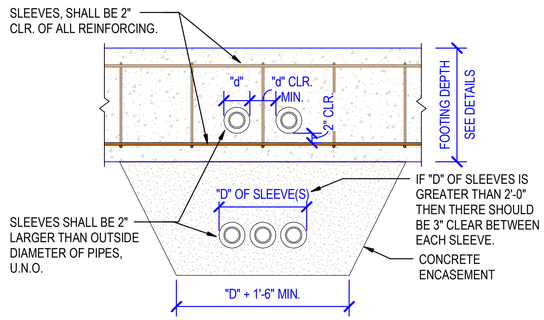
NOT TO SCALE



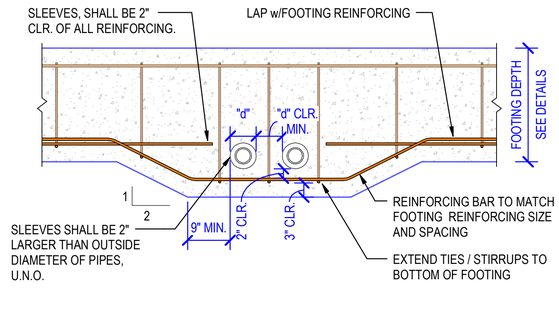
5 TYPICAL CONT. FOOTING REINF. AT CORNERS

NOT TO SCALE

NOTES:
1. PIPE SLEEVES SHALL BE PVC, CAST IRON, OR GALV. STEEL.
2. COORD. PIPE SLEEVE LOCATIONS w/MECH. ELEC. AND PLMG.
3. THE NOMINAL SLEEVE DIAMETER SHALL NOT BE GREATER THAN 1/4 OF THE FOOTING DEPTH. THICKEN FOOTING AS REQUIRED.
4. SLEEVES SHALL BE 2" CLEAR FROM TOP REINF.
5. SEAL EACH SIDE OF SLEEVES AROUND PIPE.



A PIPES THROUGH OR BELOW FOOTING



B PIPES THROUGH FOOTING (INTERUPTED REINFORCING)

6 TYPICAL HORIZONTAL PENETRATIONS THRU CONT. FOOTINGS

NOT TO SCALE

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AEROJET New Guard Post - 2

Design Phase

CONSTRUCTION DOCUMENTS

Revisions

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CERTIFICATE OF AUTHORIZATION — CROMWELL ARCHITECTS/ ENGINEERS #5 — ARKANSAS ENGINEER

STATE OF ARKANSAS — MICHAEL CALLAHAN — PROFESSIONAL ENGINEER — No. 9668

07-17-2024

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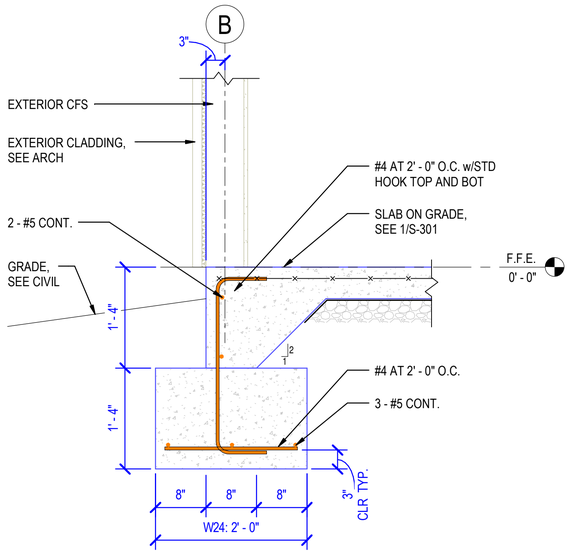
Sheet Title

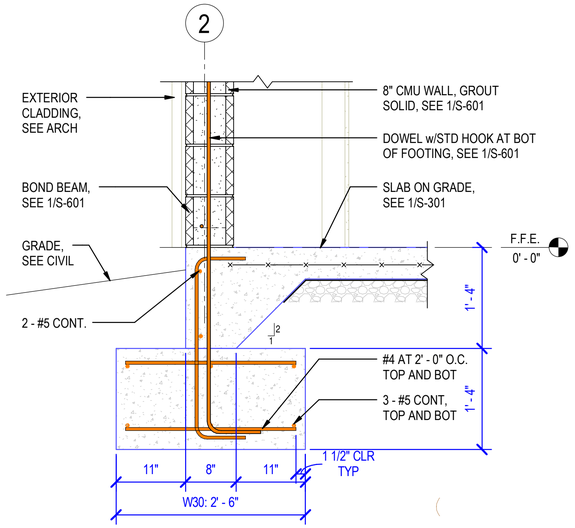
TYP FOUNDATION AND SLAB DETAILS

Sheet Number

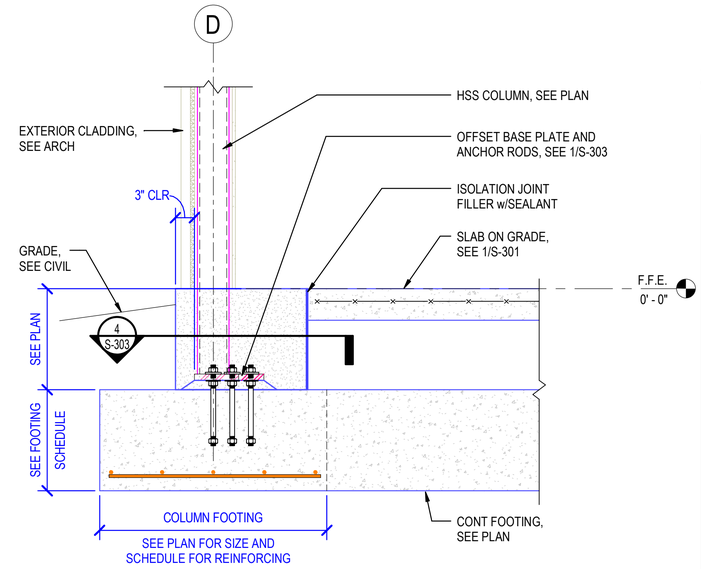
S-301



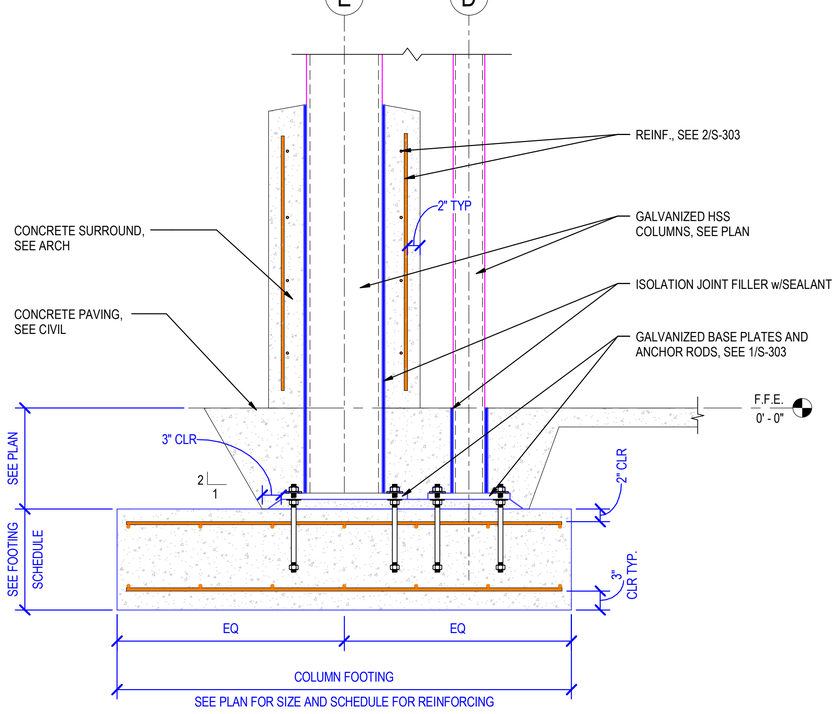
1 TYPICAL SLAB EDGE
1" = 1'-0"



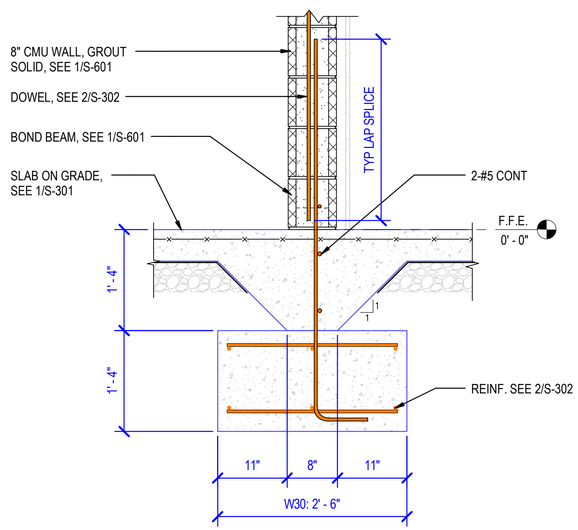
2 SECTION AT EXTERIOR CMU WALL
1" = 1'-0"



3 TYPICAL COLUMN DETAIL AT GUARD POST
1" = 1'-0"



4 TYPICAL COMBINED FOOTING
1" = 1'-0"



5 SECTION AT INTERIOR CMU WALL
1" = 1'-0"

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Project Number **2024-052**

Issue Date **07-17-2024**

Sheet Title

FOUNDATION DETAILS

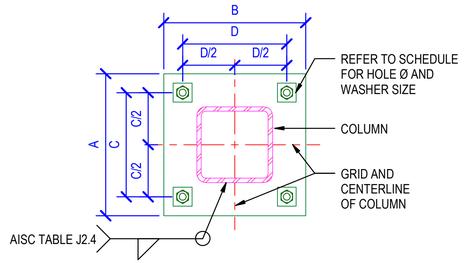
Sheet Number

S-302

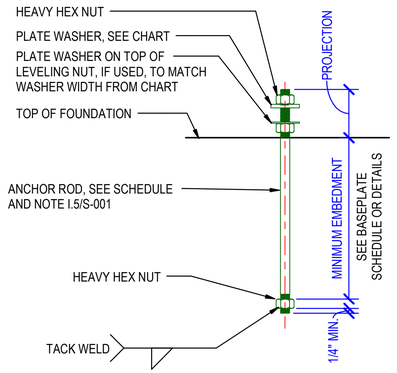
TYPICAL BASE PLATE SCHEDULE							
COL SIZE	PLATE THICKNESS	A	B	C	D	ANCHOR ROD Ø	MIN. EMBEDMENT
HSS5X5 (GRID LINE 3)	3/4"	1'-1"	1'-1"	9"	9"	3/4"	1'-0"
HSS12X12	1 1/2"	1'-8"	1'-8"	1'-4"	1'-4"	3/4"	1'-0"
HSS5X5 (GRID LINES 2 & 2.1)	3/4"	OFFSET, SEE 4/S-303				3/4"	1'-0"

ANCHOR ROD WASHERS AND HOLES SIZE			
ANCHOR ROD Ø	MAX HOLE Ø	MIN. WASHER SIZE	MIN. WASHER THICKNESS
3/4	1 5/16"	2"	1/4"

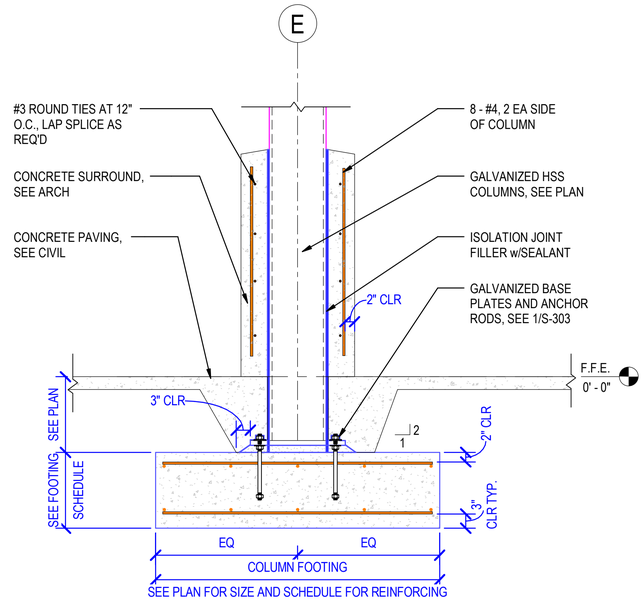
NOTES:
1. THIS CHART IS TAKEN FROM AISC TABLE 14-1. LATEST VERSION OF AISC TABLE 14-1 TAKES PRECEDENCE.
2. CIRCULAR OR SQUARE WASHERS ARE ACCEPTABLE.
3. ADEQUATE CLEARANCE MUST BE PROVIDED FOR THE WASHER SIZE SELECTED



TYPICAL COLUMN BASEPLATE

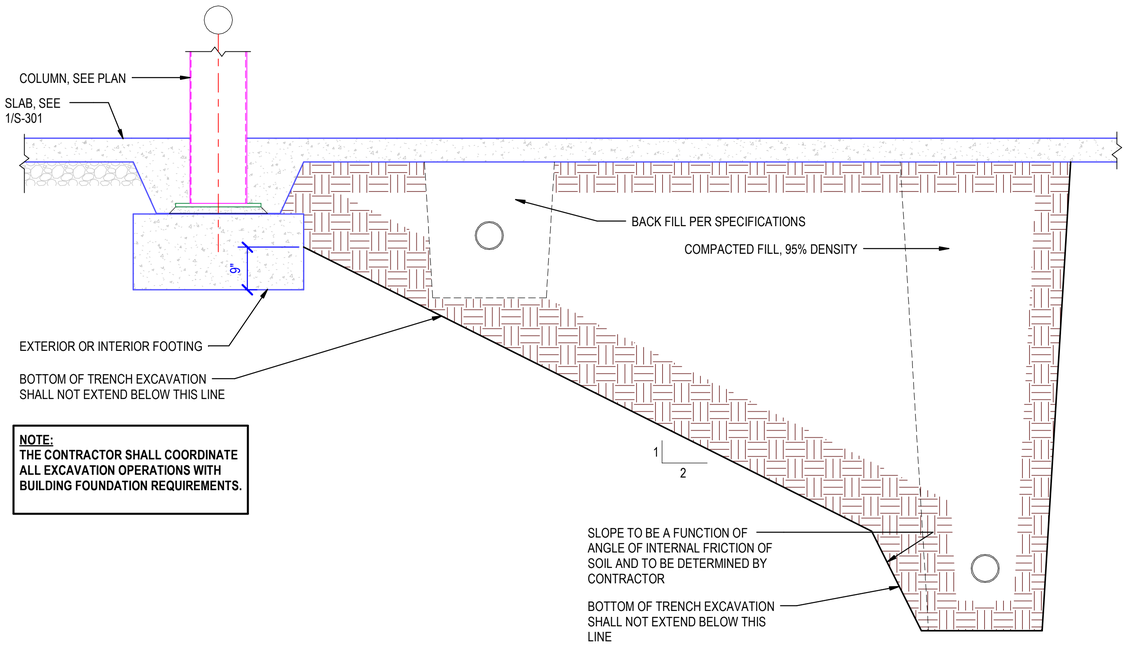


TYPICAL ANCHOR ROD DETAIL



1 BASEPLATE SCHEDULE AND DETAILS (HSS)

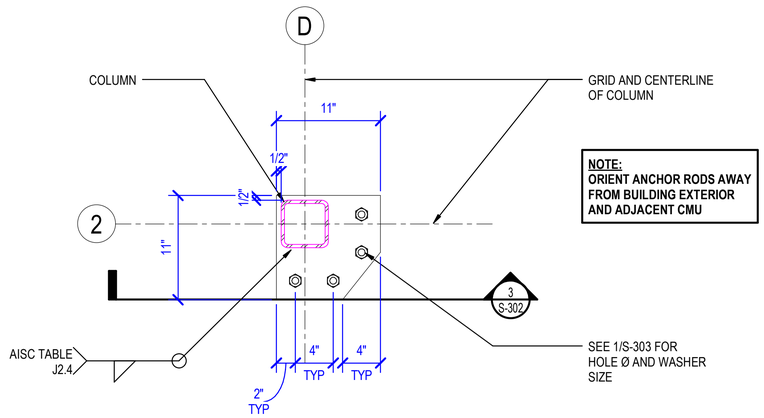
NOT TO SCALE



NOTE:
THE CONTRACTOR SHALL COORDINATE ALL EXCAVATION OPERATIONS WITH BUILDING FOUNDATION REQUIREMENTS.

2 TYPICAL CANOPY FOOTING

3/4" = 1'-0"



NOTE:
ORIENT ANCHOR RODS AWAY FROM BUILDING EXTERIOR AND ADJACENT CMU

3 TRENCH EXCAVATION AT VICINITY OF INTERIOR AND EXTERIOR FOOTINGS

NOT TO SCALE

4 TYPICAL OFFSET COLUMN BASEPLATE

1 1/2" = 1'-0"

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Project

AEROJET New Guard Post - 2

Design Phase

CONSTRUCTION DOCUMENTS

Revisions

No.	Date	Description

Stamp

CERTIFICATE OF AUTHORIZATION CROMWELL ARCHITECTS/ ENGINEERS #5 ARKANSAS ENGINEER

STATE OF ARKANSAS PROFESSIONAL ENGINEER No. 9668 MICHAEL CALLAHAN

07-17-2024

Notes

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Project Number **2024-052**

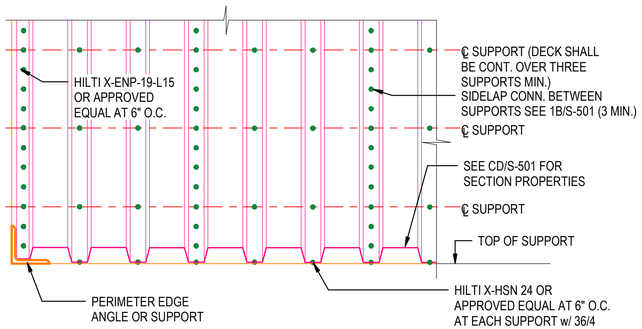
Issue Date **07-17-2024**

Sheet Title

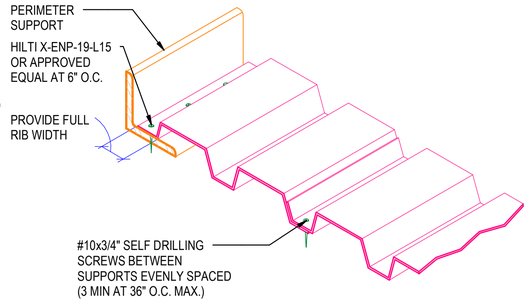
FOUNDATION DETAILS

Sheet Number

S-303



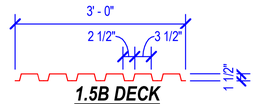
A TYP DECK CONNECTION PATTERN PLAN



B ISOMETRIC AT TYPICAL SIDE LAP

1. **EDGES OF SHEET SHALL BE COMPLETELY ENGAGED.**
2. **DECK GALVANIZING SHALL CONFORM TO ASTM a653 G60**

C DECK NOTES



LOCATION	DEPTH	GAGE	DIAPHRAGM SHEAR VALUE	WEIGHT LBS./SQ. FT. GALVANIZED	I (IN^4)/FT.	Sp (IN^3)/FT.	Sn (IN^2)/FT.
ROOF DECK	1.5" B	20	300 PLF AT 8'-0" SPAN	2.14	0.211	0.234	0.247
HARDENED ROOM ROOF	2" VLI	20	400 PLF AT 6'-8" SPAN	1.89	0.907	0.512	0.538

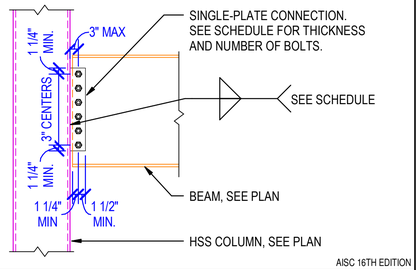
NOTES:
1.SECTION PROPERTIES SHOWN MAY VARY 10%.
2. DECK Fy = 33 ksi MIN.

D SECTION PROPERTIES

1 TYPICAL 1.5B ROOF DECK ANCHORAGE

NOT TO SCALE

SINGLE-PLATE CONNECTION DETAIL



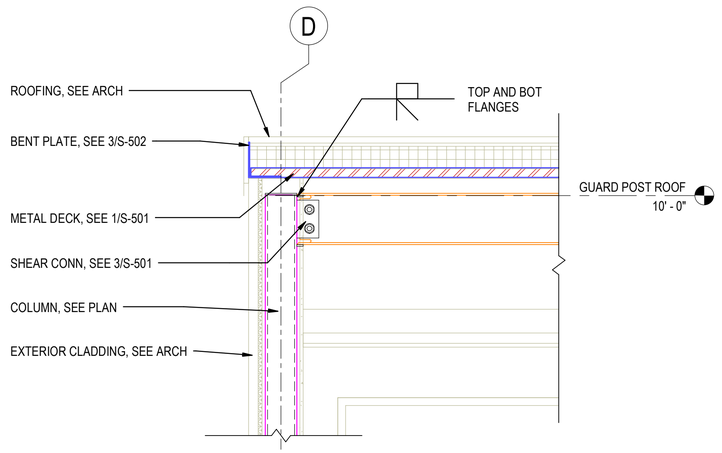
BOLT SCHEDULE

BEAM SIZE	ROWS OF 3/4" Ø H.S. BOLTS	MIN. PLATE THICKNESS	MIN. FILLET WELD SIZE	CAPACITY
W24	7	5/16"	5/16"	131k
W21	6	5/16"	1/4"	112k
W18	5	5/16"	1/4"	93k
W16	4	1/4"	3/16"	59k
W14 & W12	3	1/4"	3/16"	43k
W10 & W8	2	1/4"	3/16"	28k

NOTES:
1. CAPACITY IS BASED ON LRFD DESIGN WITH STANDARD OR SHORT HORIZONTAL SLOTTED HOLES AND A MAXIMUM HSS WIDTH TO THICKNESS RATIO OF 33.7. OVERSIZE OR VERTICAL SLOTTED HOLES ARE NOT ALLOWED. FOR STANDARD HOLES MINIMUM PLATE THICKNESS SHALL BE USED.
2. NUMBER OF BOLTS SHOWN IS THE MINIMUM REQUIRED FOR CONNECTIONS
3. PREHEAT WELDS AS REQUIRED BY AISC.
4. USE STANDARD HOLES ALONG BRACED FRAME OR MOMENT FRAME GRID LINES.

3 TYPICAL BEAM TO HSS COLUMN CONN. SCHEDULE

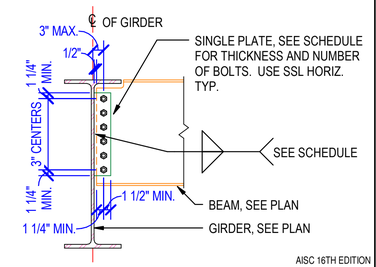
NOT TO SCALE



4 TYPICAL MOMENT CONNECTION

1" = 1'-0"

SINGLE-PLATE CONNECTION DETAIL



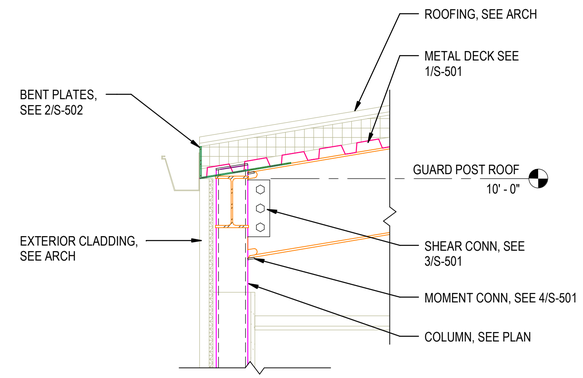
BOLT SCHEDULE

BEAM SIZE	ROWS OF 3/4" Ø H.S. BOLTS	MIN. PLATE THICKNESS	MIN. FILLET WELD SIZE	CAPACITY
W18	5	5/16"	1/4"	93k
W16	4	1/4"	3/16"	59k
W14 & W12	3	1/4"	3/16"	43k
W10 & W8	2	1/4"	3/16"	28k

NOTES:
1. CAPACITY IS BASED ON LRFD DESIGN WITH STANDARD OR SHORT HORIZONTAL SLOTTED HOLES. OVERSIZE OR VERTICAL SLOTTED HOLES ARE NOT ALLOWED. FOR STANDARD HOLES MINIMUM PLATE THICKNESS SHALL BE USED.
2. NUMBER OF BOLTS SHOWN IS THE MINIMUM REQUIRED FOR CONNECTIONS
3. PREHEAT WELDS AS REQUIRED BY AISC.
4. BEAMS WITH LARGE COPES MAY REQUIRE WEB STIFFENER.

2 TYPICAL SINGLE PLATE BEAM TO GIRDER CONNECTION

NOT TO SCALE



5 TYPICAL MOMENT CONN AT GABLE FRAME

1" = 1'-0"

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AEROJET
New Guard
Post - 2

Design Phase

CONSTRUCTION DOCUMENTS

Revisions

No.	Date	Description

Stamp

CERTIFICATE OF AUTHORIZATION — CROMWELL ARCHITECTS/ ENGINEERS #5 — ARKANSAS-ENGINEER

STATE OF ARKANSAS — MICHAEL CALLAHAN — PROFESSIONAL ENGINEER — No. 9668

07-17-2024

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Project Number **2024-052**

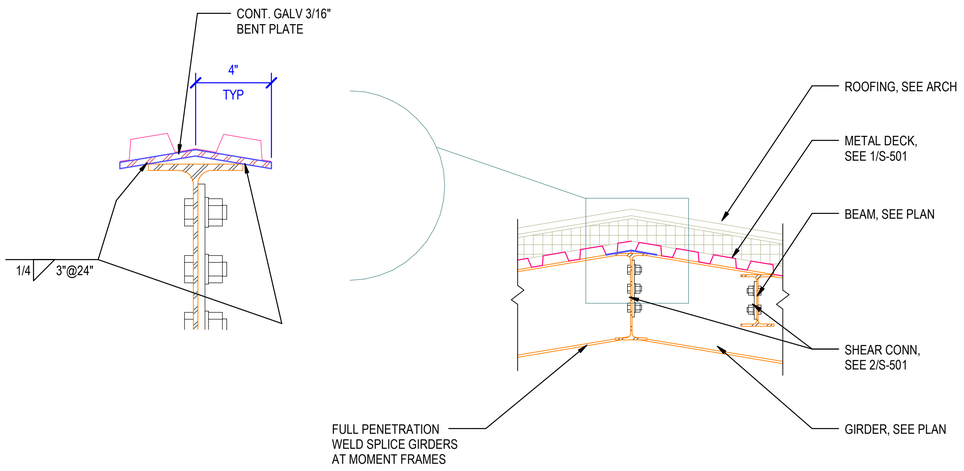
Issue Date **07-17-2024**

Sheet Title

TYPICAL ROOF FRAMING DETAILS

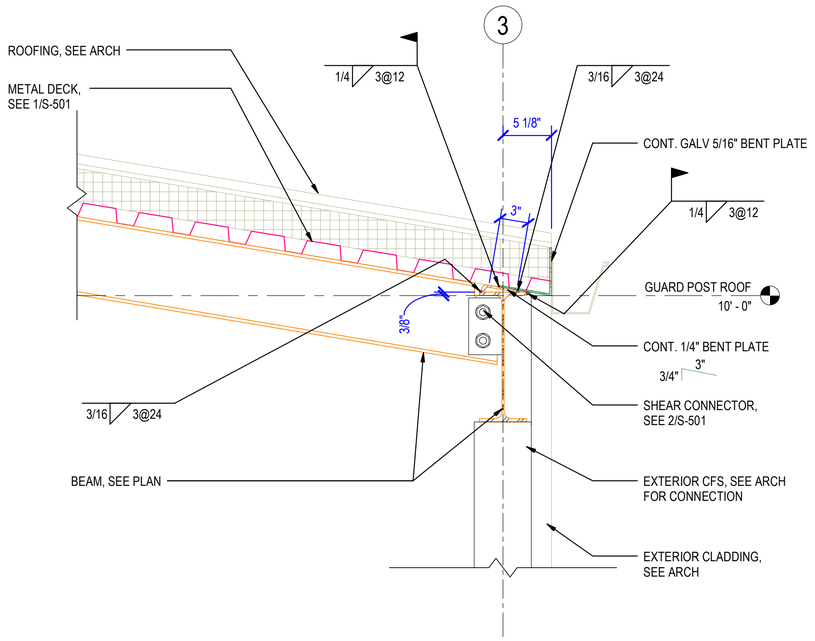
Sheet Number

S-501



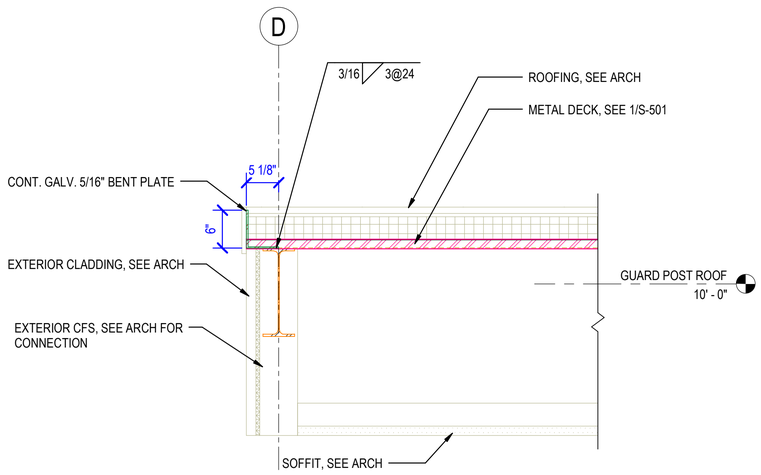
1 TYPICAL SECTION AT RIDGE

1" = 1'-0"



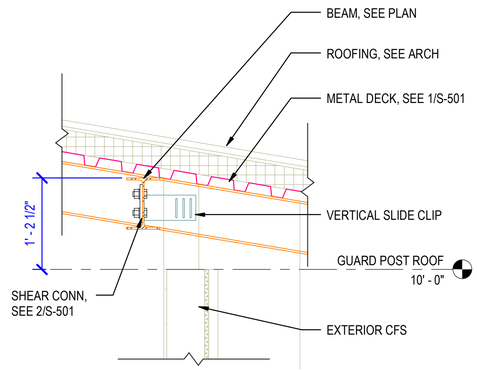
2 TYPICAL SECTION AT DECK EDGE

1 1/2" = 1'-0"



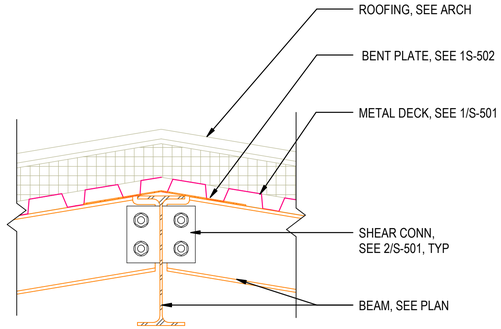
3 TYPICAL SECTION AT DECK EDGE

1" = 1'-0"



4 TYPICAL SECTION AT EXTERIOR WALL BEAM

1" = 1'-0"



5 TYPICAL BEAM TO GIRDER CONNECTION AT RIDGE

1 1/2" = 1'-0"

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AEROJET New Guard Post - 2

Design Phase

CONSTRUCTION DOCUMENTS

Revisions

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CERTIFICATE OF AUTHORIZATION
CROMWELL ARCHITECTS/ ENGINEERS #5
ARKANSAS ENGINEER

STATE OF ARKANSAS
PROFESSIONAL ENGINEER
No. 9668
MICHAEL CALLAHAN
07-17-2024

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Project Number **2024-052**

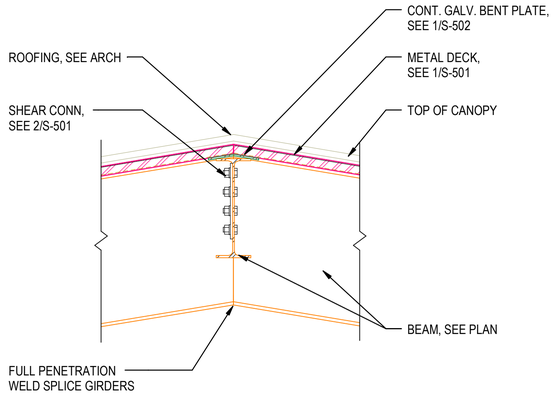
Issue Date **07-17-2024**

Sheet Title

TYPICAL ROOF FRAMING DETAILS

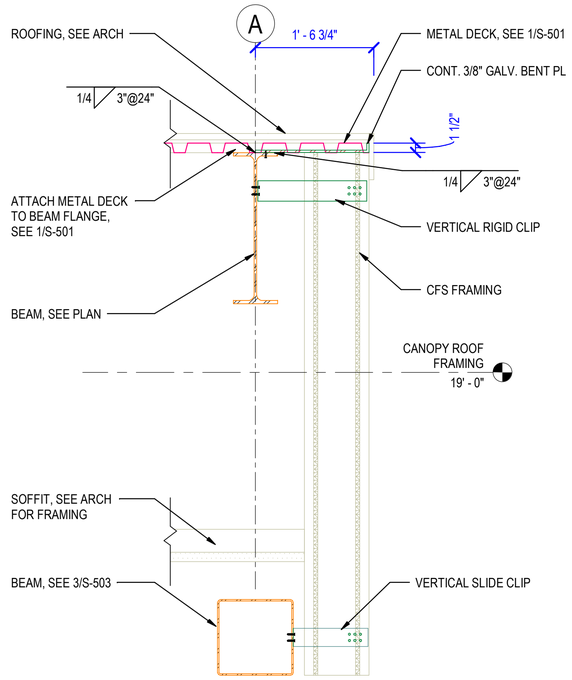
Sheet Number

S-502



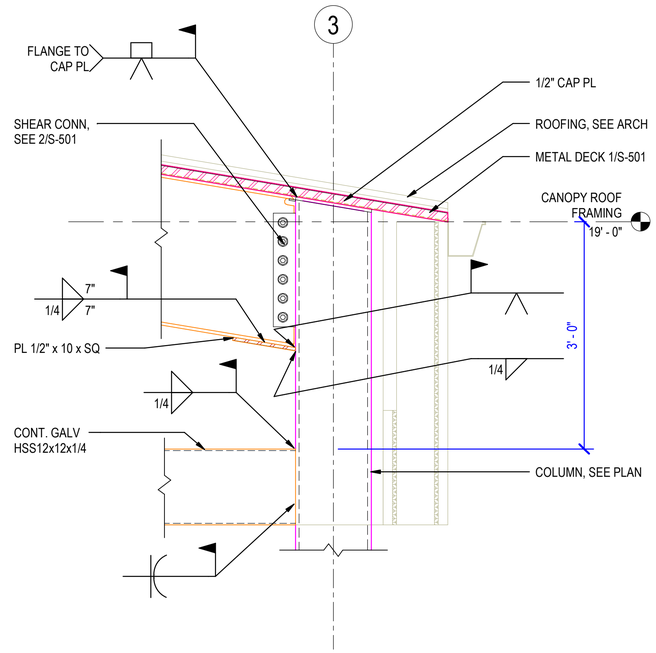
1 TYPICAL SECTION AT CANOPY RIDGE

1" = 1'-0"



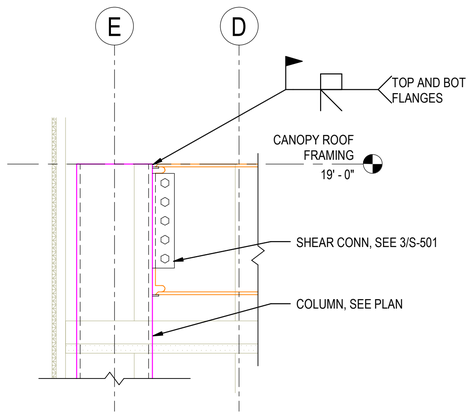
2 TYPICAL CANOPY FRAMING DETAIL

1" = 1'-0"



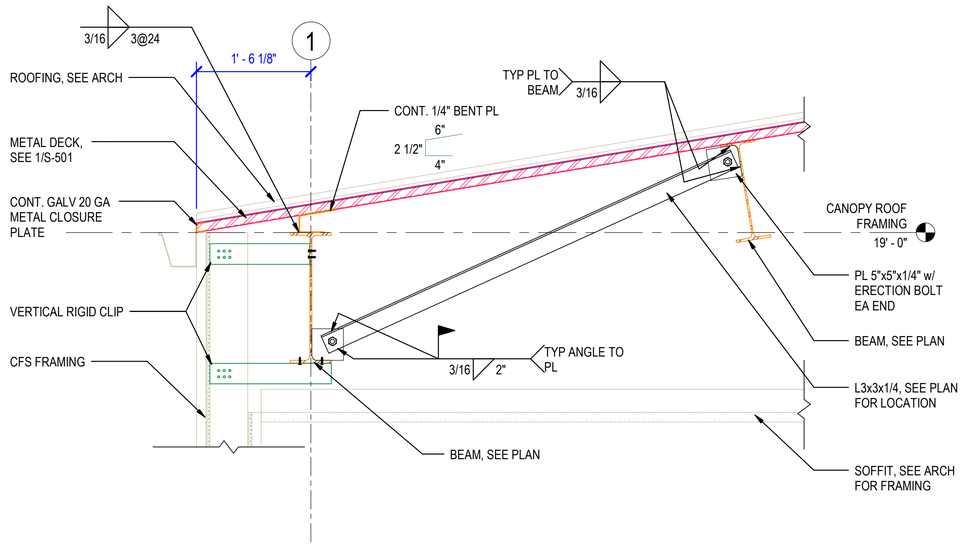
3 TYPICAL GABLE MOMENT CONNECTION AT CANOPY

1" = 1'-0"



4 TYPICAL CANOPY MOMENT CONNECTION

1" = 1'-0"



5 TYPICAL KICKER DETAIL

1" = 1'-0"

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Project

AEROJET New Guard Post - 2

Design Phase

CONSTRUCTION DOCUMENTS

Revisions

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Stamp

CERTIFICATE OF AUTHORIZATION
CROMWELL ARCHITECTS/ ENGINEERS #5
ARKANSAS ENGINEER

STATE OF ARKANSAS
PROFESSIONAL ENGINEER
No. 9668
MICHAEL CALLAHAN

07-17-2024

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Project Number **2024-052**

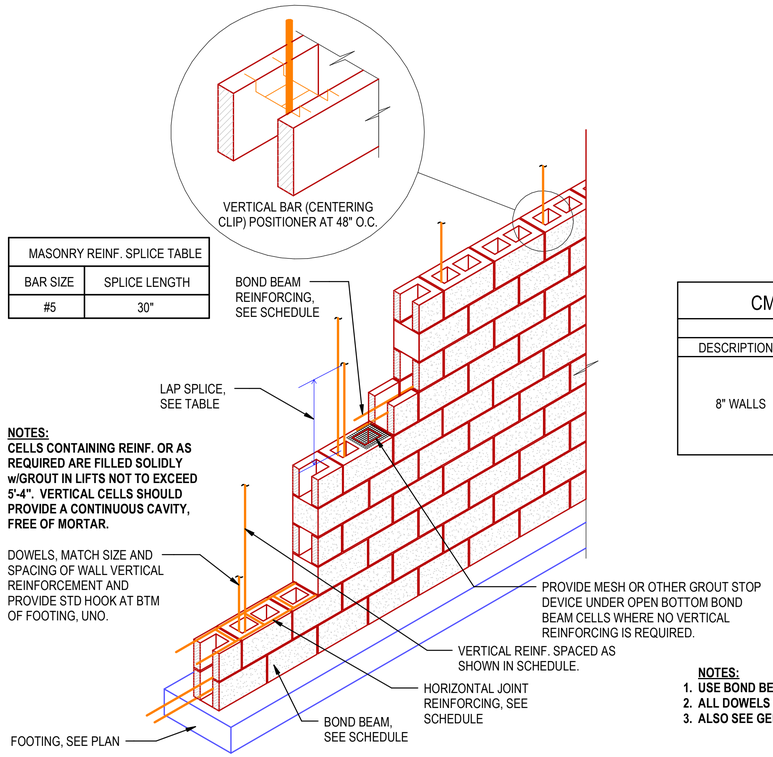
Issue Date **07-17-2024**

Sheet Title

TYPICAL CANOPY FRAMING DETAILS

Sheet Number

S-503



MASONRY REINF. SPLICE TABLE	
BAR SIZE	SPLICE LENGTH
#5	30"

NOTES:
CELLS CONTAINING REINF. OR AS REQUIRED ARE FILLED SOLIDLY w/GROUT IN LIFTS NOT TO EXCEED 5'-4". VERTICAL CELLS SHOULD PROVIDE A CONTINUOUS CAVITY, FREE OF MORTAR.

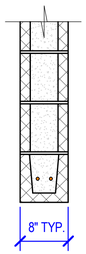
CMU WALL REINFORCEMENT SCHEDULE			
	REINFORCEMENT		
DESCRIPTION	VERTICAL	HORIZONTAL	REMARKS
8" WALLS	#5 AT 16" O.C. AND AT EACH SIDE OF OPENINGS	CONT. BOND BEAM w/1-#5 AT FLOOR SLAB AND AT TOP OF WALL. LADDER JOINT REINFORCEMENT AT 16" O.C.	GROUT SOLID

NOTES:
1. **USE BOND BEAM UNITS WITH OPEN BOTTOM AT CELLS WITH VERTICAL REINFORCMENT.**
2. **ALL DOWELS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT, U.N.O.**
3. **ALSO SEE GENERAL NOTES ON SHEET S-001 FOR ADDITIONAL INFORMATION.**

A MASONRY WALL ELEVATION AND SPLICE TABLE

B REINFORCEMENT SCHEDULE

1 TYPICAL CONCRETE MASONRY WALLS
NOT TO SCALE



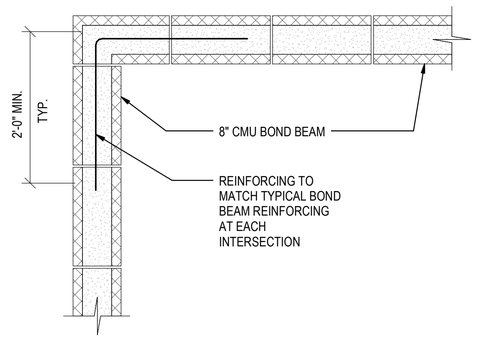
SINGLE WYTHE

OPENINGS < 6'-0"

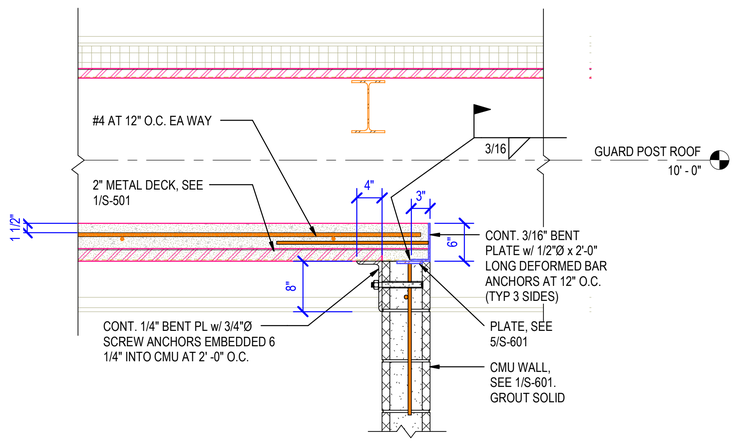
NOMINAL WALL THICKNESS (t)	WIDTH OF OPENING
	0'-10" TO 6'-0"
8"	8" CMU BOND BEAM w/2-#5 BOTTOM

NOTES:
1. **LINTEL SCHEDULE APPLIES UNLESS NOTED OR DETAILED OTHERWISE.**
2. **EXTEND LINTEL REINF. AT LEAST 24 INCHES PAST EDGE OF OPENINGS. WHERE ONLY 16 INCHES IS AVAILABLE USE STD HOOK AT ENDS.**

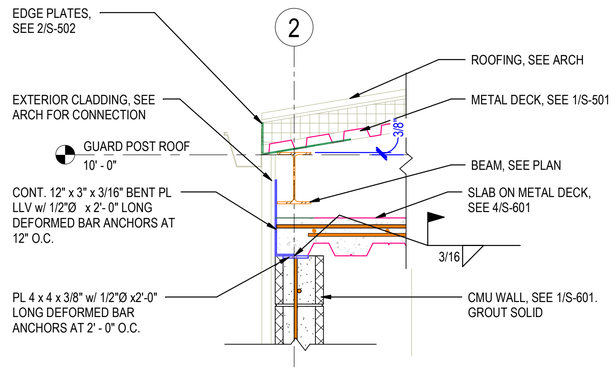
2 LINTEL SCHEDULE
1" = 1'-0"



3 TYPICAL BOND BEAM CORNER REINF.
1" = 1'-0"



4 TYPICAL DECK BEARING AT CMU WALL
1" = 1'-0"



5 TYPICAL DECK EDGE AT EXTERIOR CMU WALL
1" = 1'-0"

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Project

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New Guard
Post - 2

Design Phase

CONSTRUCTION DOCUMENTS

Revisions

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Stamp

CERTIFICATE OF AUTHORIZATION — CROMWELL ARCHITECTS/ ENGINEERS #5 — ARKANSAS-ENGINEER

STATE OF ARKANSAS — MICHAEL CALLAHAN — PROFESSIONAL ENGINEER — No. 9668

07-17-2024

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Project Number **2024-052**

Issue Date **07-17-2024**

Sheet Title

TYPICAL HARDENED ROOM DETAILS

Sheet Number

S-601