THIS PROJECT CONSISTS OF AN INTERIOR FRAMING SYSTEM TO SUPPORT INSULATED PANELS INSIDE AN EXISTING BUILDING. THE CEILING CONSISTS OF INSULATED PANELS SUPPORTED BY HANGER RODS SUSPENDED FROM STEEL BEAMS SPANNING BETWEEN STEEL GIRDERS. GIRDERS ARE SUPPORTED BY STEEL COLUMNS. LATERAL STABILITY IS PROVIDED BY THE INSULATED PANELS AND STEEL STRUCTURE. THE EXTERIOR CANOPIES CONSIST OF A METAL DECK SPANNING BETWEEN STEEL TUBE GIRDERS. THE GIRDERS ARE SUPPORTED BY STEEL COLUMNS. LATERAL STABILITY FOR THE CANOPIES IS PROVIDED BY STEEL MOMENT FRAMES. THE ENTIRE STRUCTURE USES A SHALLOW FOUNDATION SYSTEM.

STRUCTURAL GENERAL NOTES

A. CONTRACTOR DELEGATED DESIGN COMPONENTS:

T&B

T.O.F.

TOP AND BOTTOM

TOP OF FOOTING

T.O.S. TOP OF STEEL or TOP

OTHERWISE

W.W.R. WELDED WIRE REINF.

WORK POINT

X/S-YYY SECTION/DETAIL "X"

ON SHEET "S-YYY"

OF SLAB

THROUGH

TYPICAL

U.N.O. UNLESS NOTED

OR V VERTICAL

WITH

- 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. SUBFLOOR INJECTION GROUTING
 - FOUNDATIONS FOR FIRE PUMP AND WATER STORAGE TANK
- 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., JOIST BRIDGING AND FIRE SUPPRESSION SYSTEMS

STRUCTURAL GENERAL NOTES

SPECIAL INSPECTIONS:

- 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
- 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
- THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF REPAIR, REINSPECTION AND RETESTING FOR ITEMS THAT DO NOT PASS THE INSPECTIONS OR TESTS
- SPECIAL INSPECTION SERVICES DO NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR COMPLIANCE WITH OTHER CONSTRUCTION DOCUMENT REQUIREMENTS OR REGULATORY REQUIREMENTS
- 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 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. TEMPORARY STRUCTURES SHALL BE DESIGNED AND BUILT BY THE CONTRACTOR 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.

RENOVATIONS AND ADDITIONS TO EXISTING BUILDINGS:

- 1. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. NOTIFY ARCHITECT/ENGINEER IF THE EXISTING CONDITIONS AND DIMENSIONS ARE DIFFERENT FROM THOSE INDICATED OR SHOWN ON THE CONTRACT DRAWINGS. INCORPORATE NECESSARY CHANGES INTO THE CONTRACT DOCUMENTS
- SCHEDULE AND COORDINATE WORK TO PREVENT DAMAGE TO THE BUILDING OUTSIDE THE LIMITS OF THE CONTRACT. REPAIR AT NO ADDITIONAL COST TO THE OWNER ANY DAMAGE CAUSED BY THE CONSTRUCTION
- FIELD VERIFY SIZES AND LAYOUT OF EXISTING STRUCTURAL MEMBERS NOTED ON THE STRUCTURAL DRAWINGS. NOTIFY ARCHITECT/ENGINEER IF SIZES OR LAYOUT DIFFERS. INCORPORATE NECESSARY CHANGES INTO THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS:

- 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
- ALL DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS AND DETAILS 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. 7. 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. 8. FRAMING TO SUPPORT MECHANICAL EQUIPMENT IS BASED ON THE WEIGHTS OF ASSUMED EQUIPMENT AS INDICATED ON THE MECHANICAL DRAWINGS. ANY CHANGES IN TYPE, SIZE, OR NUMBER OF PIECES OF EQUIPMENT SHALL BE REPORTED TO THE ARCHITECT/ENGINEER FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO
- THE PLACEMENT OF SUCH EQUIPMENT. 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. 10. CEILING PANELS OF WALK-IN COOLERS/FREEZERS SHALL BE SUSPENDED FROM ROOF STRUCTURAL MEMBERS BY HANGER SUPPORTS ONLY AT LOCATIONS SHOWN ON DRAWINGS. VERIFY SUPPORT DETAILS AND LOADS WITH COOLER MANUFACTURER. ANY ADDITIONAL STEEL REQUIRED SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

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
 - INDICATE ALL REINFORCING STEEL IN FOUNDATIONS AND SLABS ON GRADE
 - INDICATE ALL HORIZONTAL, VERTICAL, AND TIE REINFORCING
- INDICATE TYPE AND LOCATION OF ALL REINFORCING STEEL SPLICES
- b. STRUCTURAL STEEL
- c. COLD-FORMED STEEL FRAMING
- d. SUBFLOOR INJECTION GROUTING
- 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.

- G. EARTHWORK: FOUNDATION DESIGN IS BASED ON SOIL INVESTIGATION AND REPORT BY GRUBBS, HOSKYN, BARTON & WYATT, LLC, dba UES (JOB NO.: A24184.00248)
- 2. FOUNDATION DESIGN IS BASED ON THE FOLLOWING MINIMUM NET ALLOWABLE BEARING PRESSURE
 - 1750 PSF EXTERIOR INDIVIDUAL PAD FOOTINGS:
 - 800 PSF b. INTERIOR FOOTINGS ON EXISTING SLAB:
- 275 PSI/IN MODULUS OF SUBGRADE: BEARING PRESSURE AND MODULUS OF SUBGRADE FOR EXISTING SLAB IS BASED ON MINIMUM 4 INCHES HIGH-MOBILIT POLYURETHANE GROUTING BELOW SLAB, SEE S-101. 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 1 FOOT BELOW EXISTING GRADE IN PROPERLY COMPACTED ON-SITE FILL OR SELECT FILL.
- 4. THE SITE SHALL BE PROOF ROLLED, COMPACTED FILL PLACED, AND EXCAVATED AS REQUIRED FOR FOUNDATION. SEE SPECIFICATION DIVISION 31 FOR EARTHWORK REQUIREMENTS
- POSITIVE SURFACE DRAINAGE 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 FOUNDATIONS 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.
- 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
- 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 OR GRADE BEAMS SUSTAINING MORE THAN 3'-0" OF EARTH PRESSURE. THIS BRACING SHALL REMAIN IN PLACE UNTIL SLAB ON GRADE AND/OR FLOOR SLAB HAVE BEEN
- 12. IN NO CASE SHALL BULLDOZERS OR OTHER HEAVY EQUIPMENT BE PERMITTED CLOSER THAN 8'-0" FROM ANY FOUNDATION WALL.

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 (fc): COMPRESSIVE STRENGTH

3500 PSI INTERIOR FOOTINGS

EXTERIOR SLABS, PADS, AND FOOTINGS 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 II

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: CONCRETE EXPOSED TO EARTH OR WEATHER: #5 BARS AND SMALLER: #6 BARS AND LARGER SLABS, WALLS, AND JOISTS

- BEAMS AND COLUMNS: 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

48 BAR DIAMETERS BARS #6 AND SMALLER: 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. STAGGER ALL TENSION LAP SPLICE LOCATIONS UNLESS NOTED OTHERWISE
- 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) 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.

501.372.2900

Project

CROMWELL

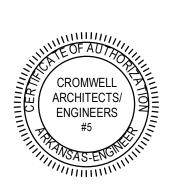
1300 East 6th Street Little Rock, AR 72202

N Ш Δ Ш **CONSTRUCTION**

DOCUMENTS

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. CROMWELL ARCHITECTS ENGINEERS, INC.

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10-09-2024

Project Number -2024-079 Issue Date -

> Sheet Title STRUCTURAL DESIGN CRITERIA AND

> > **GENERAL NOTES**

Sheet Number

STRUCTURAL GENERAL NOTES (cont'd)

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 AND CHANNELS 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 TYPICA
- b. THE FABRICATOR'S STEEL DETAILER SHALL SELECT AND COMPLETE TYPICAL CONNECTIONS BASED ON THE PLANS AND THE FOLLOWING:
- 1. TYPICAL STEEL GIRDER TO COLUMN CONNECTIONS: DETAIL 3/S-401.
- 2. TYPICAL STEEL BEAM-TO-BEAM CONNECTIONS: DETAIL 2/S-401.
- 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
- 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 4/S-301 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. THE STEEL FABRICATOR MAY SPLICE THE COLUMNS EITHER AT EACH FLOOR OR AT ANY FLOOR AS LONG AS THE COLUMN SIZE REMAINS AS SHOWN ON THE LOWER LEVEL.
- 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.

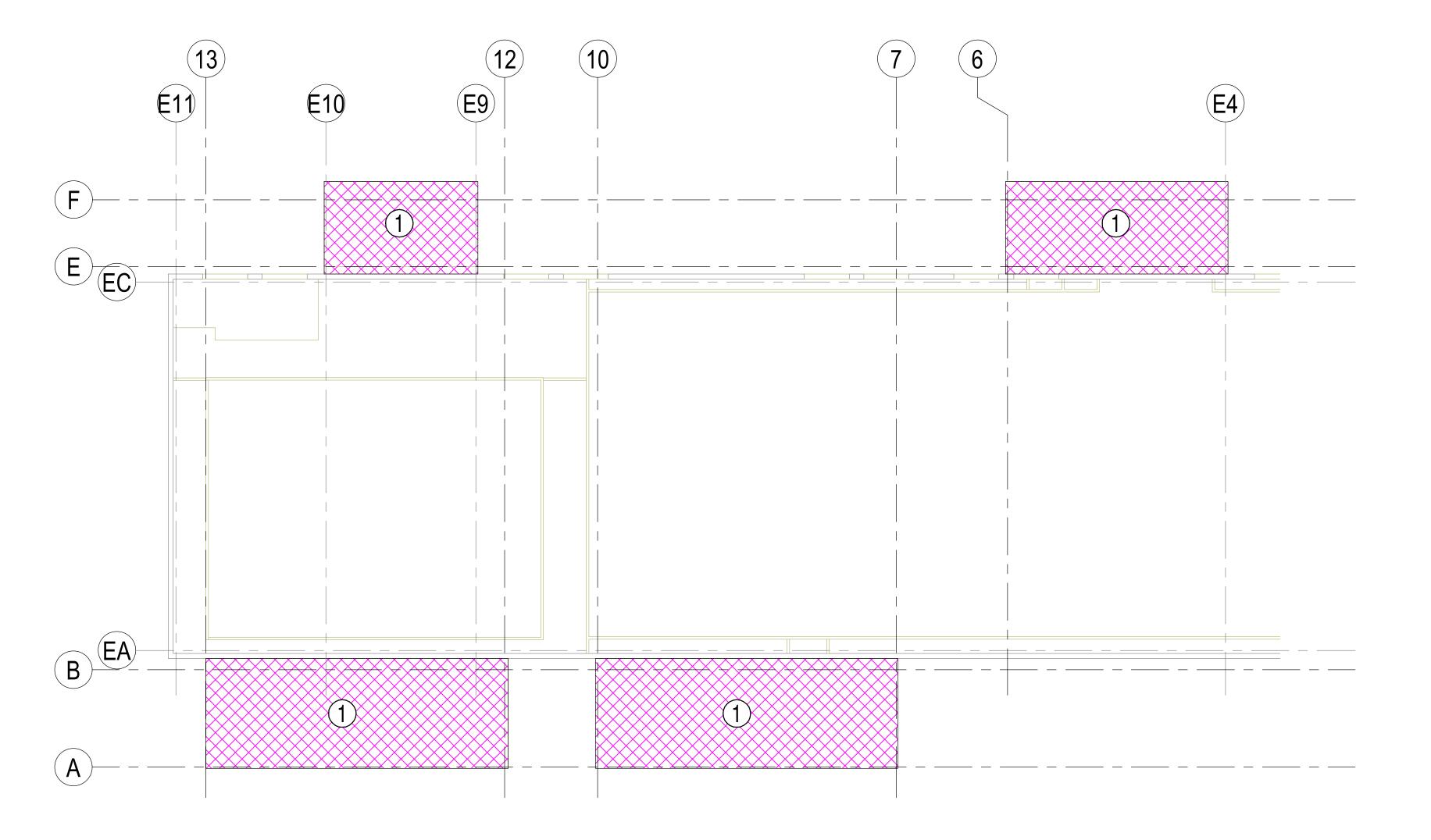
 19. GALVANIZING OF ALL STEEL MEMBERS SHALL CONFORM TO ASTM A123. ALL GALVANIZED STEEL REQUIRED TO BE PAINTED SHALL BE CLEANED AND PREPPED ACCORDING TO ASTM D6386.
- 20. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS SPECIFICATIONS LATEST EDITIONS. WELDING SHALL BE INSPECTED AND TESTED AS NOTED IN THE SPECIFICATIONS. WELDING INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELDING INSPECTOR.
- 21. FINAL BOLTING OR WELDING SHALL NOT BE PERFORMED UNTIL THE STRUCTURE HAS BEEN PROPERLY ALIGNED.

J. COLD-FORMED STEEL FRAMING:

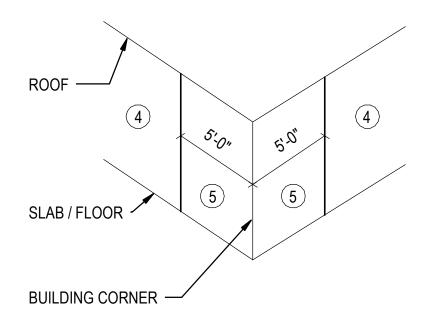
- 1. THE DESIGN OF THE COLD FORMED STEEL FRAMING IS BASED ON AISI S100-16 w/S2-20, NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL
- 2. ALL MATERIAL SHALL BE COLOR CODED TO INDICATE THE GAUGE OF THE MATERIAL.

K. POST-INSTALLED ANCHORS IN CONCRETE:

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 SECTION 033000 FOR ADDITIONAL INFORMATION.







	TRIBUTARY AREA (SQ. FT.)				
ZONE	10	50	100		
2	-27/+25 PSF	-25/+23 PSF	-24/+22 PSF		
3	-34/+25 PSF	-29/+23 PSF	-26/+22 PSF		

(STRENGTH DESIGN) ZONE TRIBUTARY AREA (SQ. FT.) 10 50 100 100 -95/+16 PSF -65/+16 PSF -52/+16 PSF

GROSS WIND UPLIFT

NOTES:

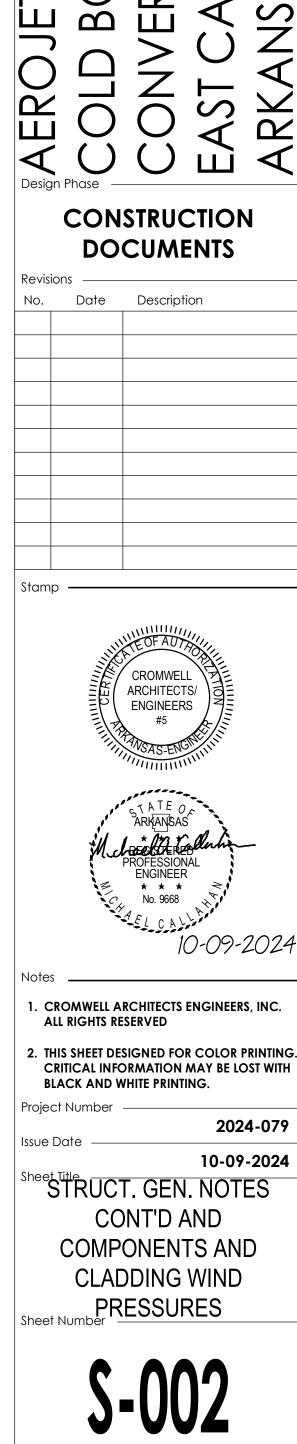
1. ULTIMATE WIND SPEED: 104 MPH

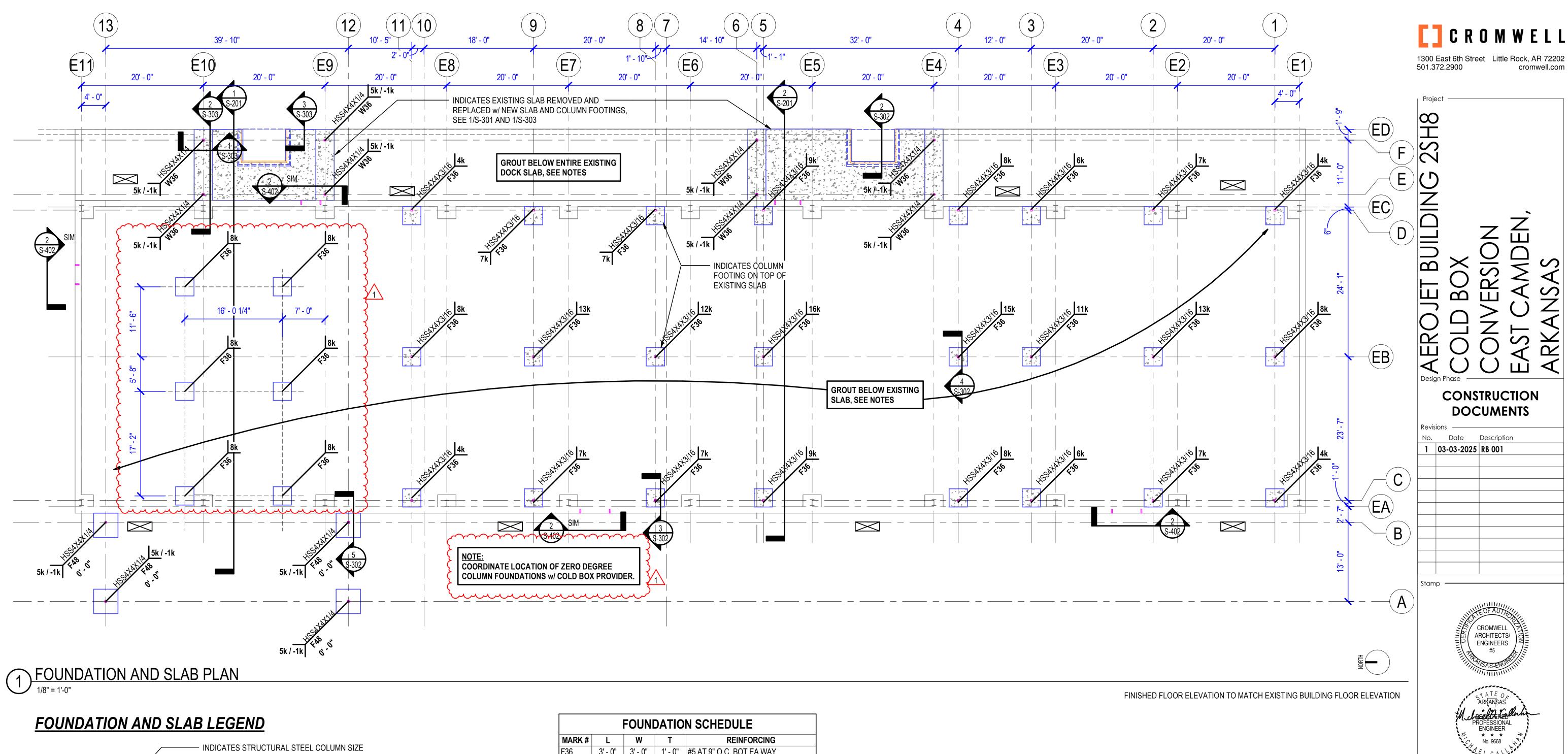
- 2. NOMINAL WIND SPEED: 81 MPH
- 3. WIND PRESSURES ARE BASED ON ASCE 7-16 STRENGTH DESIGN (ULTIMATE).
- 4. POSITIVE / NEGATIVE VALUES INDICATE FORCES ARE ACTING TOWARDS / AWAY FROM ELEMENT, RESPECTIVELY.
- 5. COMPONENTS SUBJECTED TO PARAPET WIND FORCE ON BOTH SIDES (e.g. WALL PANELS) SHALL BE DESIGNED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

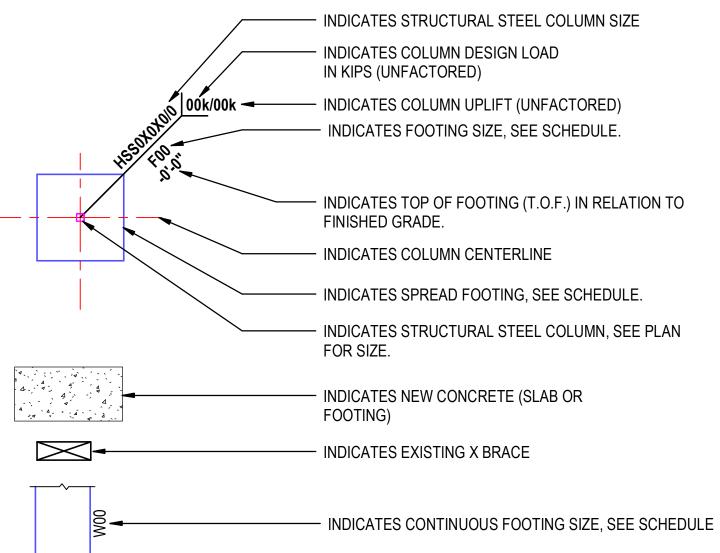
COMPONENTS AND CLADDING WALL WIND PRESSURES

COMPONENTS AND CLADDING ROOF WIND PRESSURES





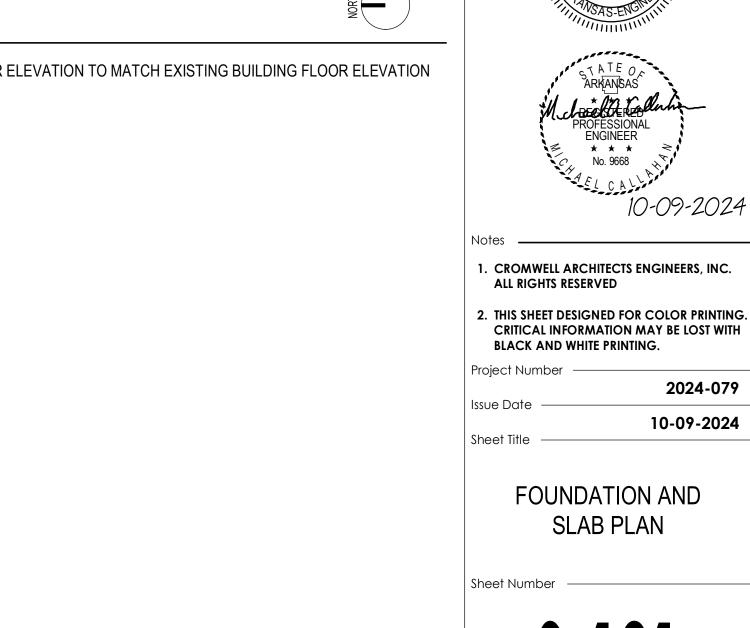




		FOUNI	DATIO	N SCHEDULE
MARK#	L	W	Т	REINFORCING
F36	3' - 0"	3' - 0"	1' - 0"	#5 AT 9" O.C. BOT EA WAY
F48	4' - 0"	4' - 0"	1' - 6"	#5 AT 9" O.C.TOP AND BOT EA WAY
W36	CONT.	3' - 0"	1' - 6"	SEE DETAIL 1/S-303

GROUT NOTES:

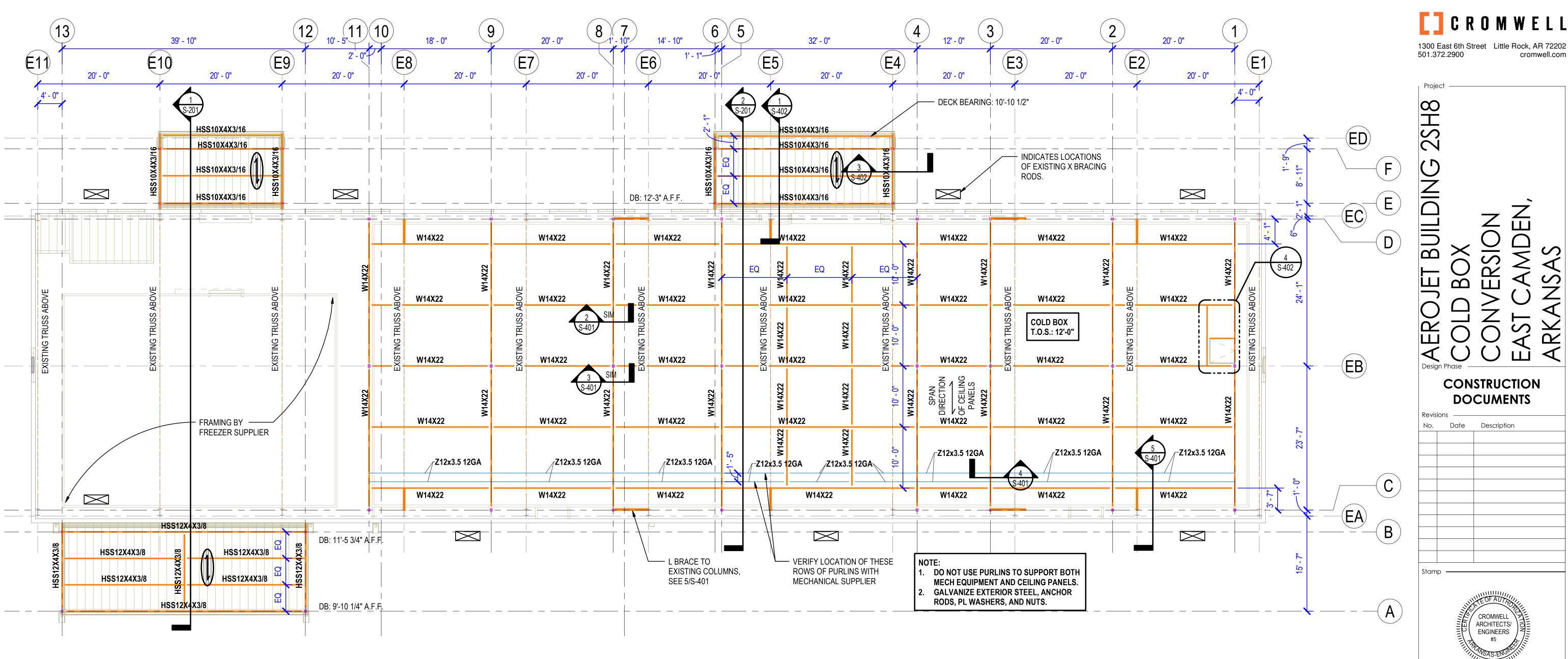
- INSTALL HIGH-MOBILITY POLYURETHANE GROUT BELOW SLAB IN EXISTING BUILDING AND BELOW EXTERIOR DOCK SLAB USING A REGULAR PATTERN OF INJECTION HOLES.
- INSTALL GROUT BELOW DOCK SLAB PRIOR TO DEMOLITION OF **SLAB WHERE SHOWN ON PLANS.**
- **GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 38 PSI** AND PLACED IN HARD CONTACT WITH SUBGRADE.
- APPLY GROUT AT LOW PRESSURE AND TERMINATE WHEN GROUT IS NOTED IN ADJACENT INJECTION POINTS OR WHEN MOVEMENT OF FLOOR SLAB OR OTHER FIXED FEATURES IS OBSERVED.
- ALL OPENINGS AND JOINTS SHALL BE THOROUGHLY SEALED PRIOR
- TO GROUTING. GROUT TAKE SHALL BE MEASURED DURING GROUTING. GROUT MIX DESIGN AND APPLICATION METHOD SHALL BE DEVELOPED BY A COMPETENT AND EXPERIENCED GROUTING
- CONTRACTOR. SEE SPECIFICATION SECTION 03 64 00 AND THE SLAB SURVEY REPORT BY GRUBBS, HOSKYN, BARTON & WYATT, LLC, dba UES FOR ADDITIONAL INFORMATION.



2024-079

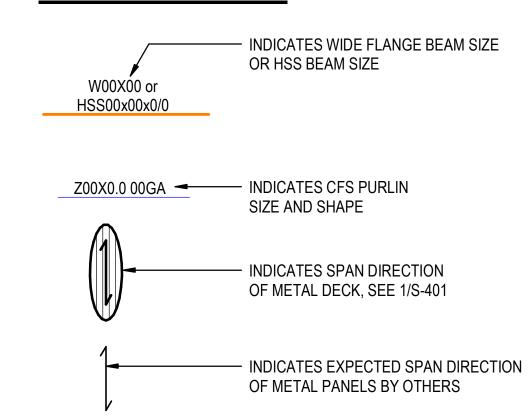
10-09-2024

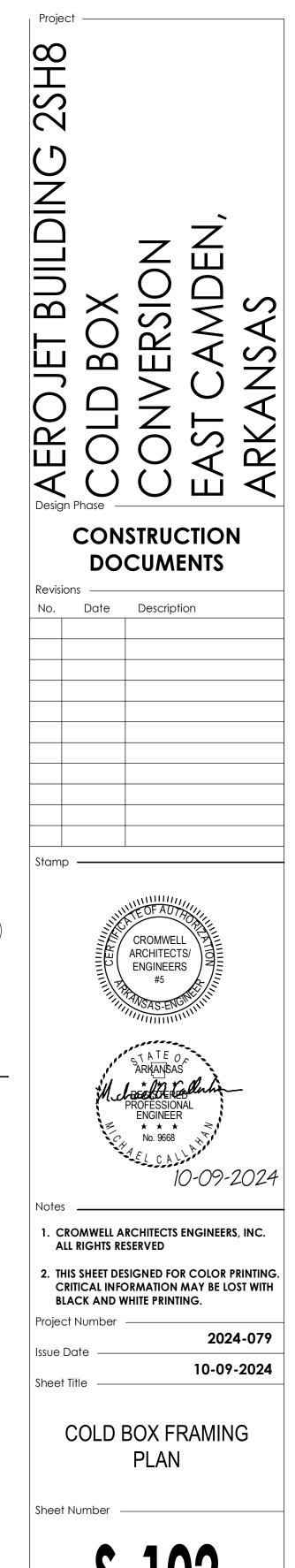
SLAB PLAN



(1) COLD BOX SUPPORT FRAMING AND CANOPY PLAN

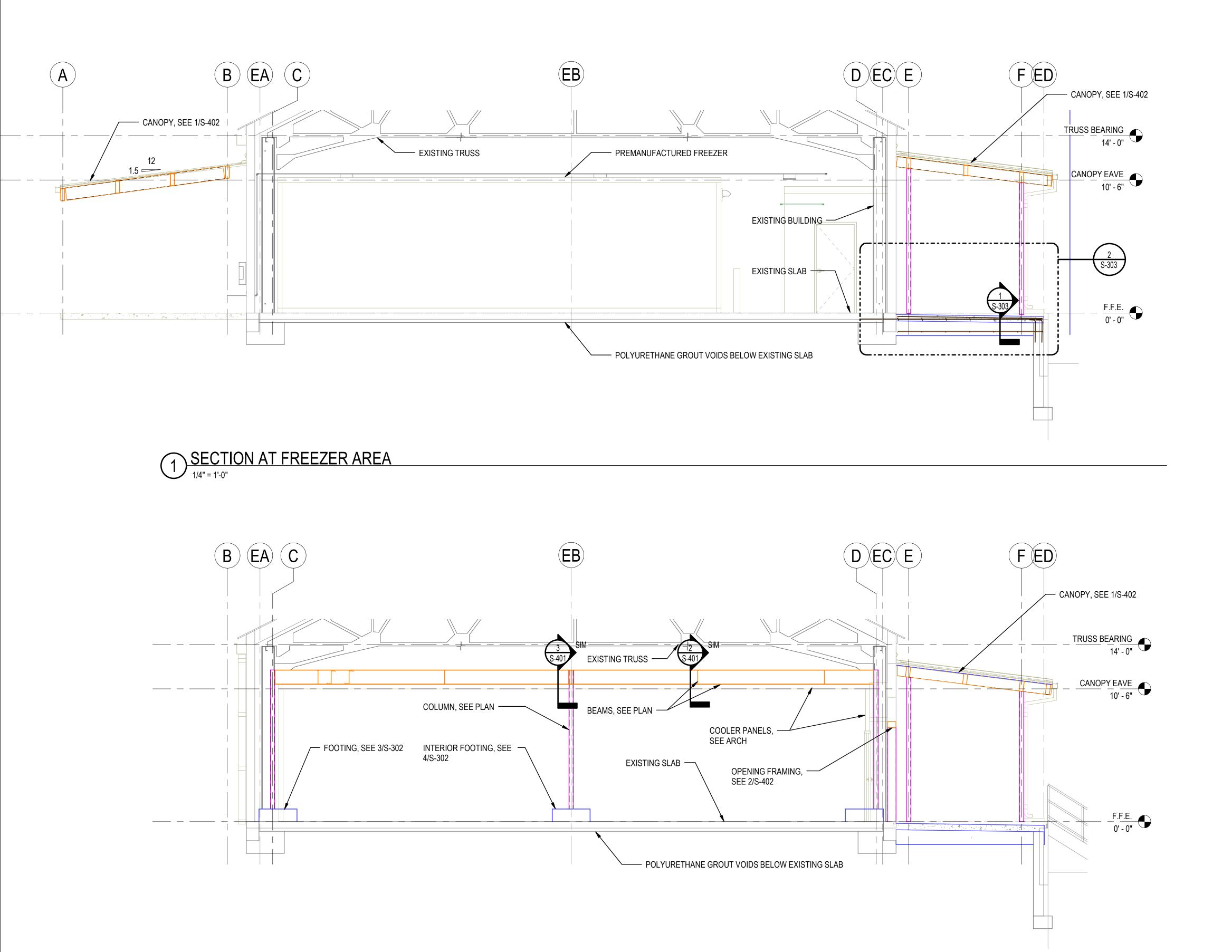






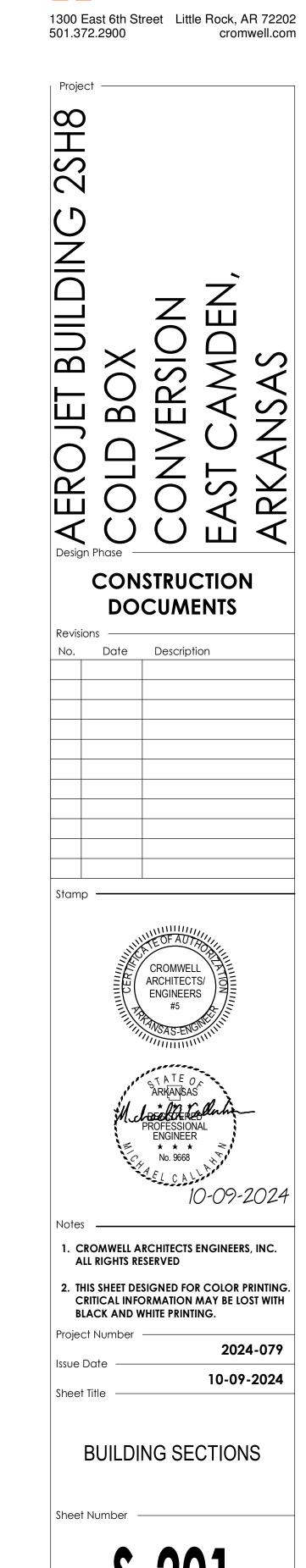
NORTH

[] CROMWELL

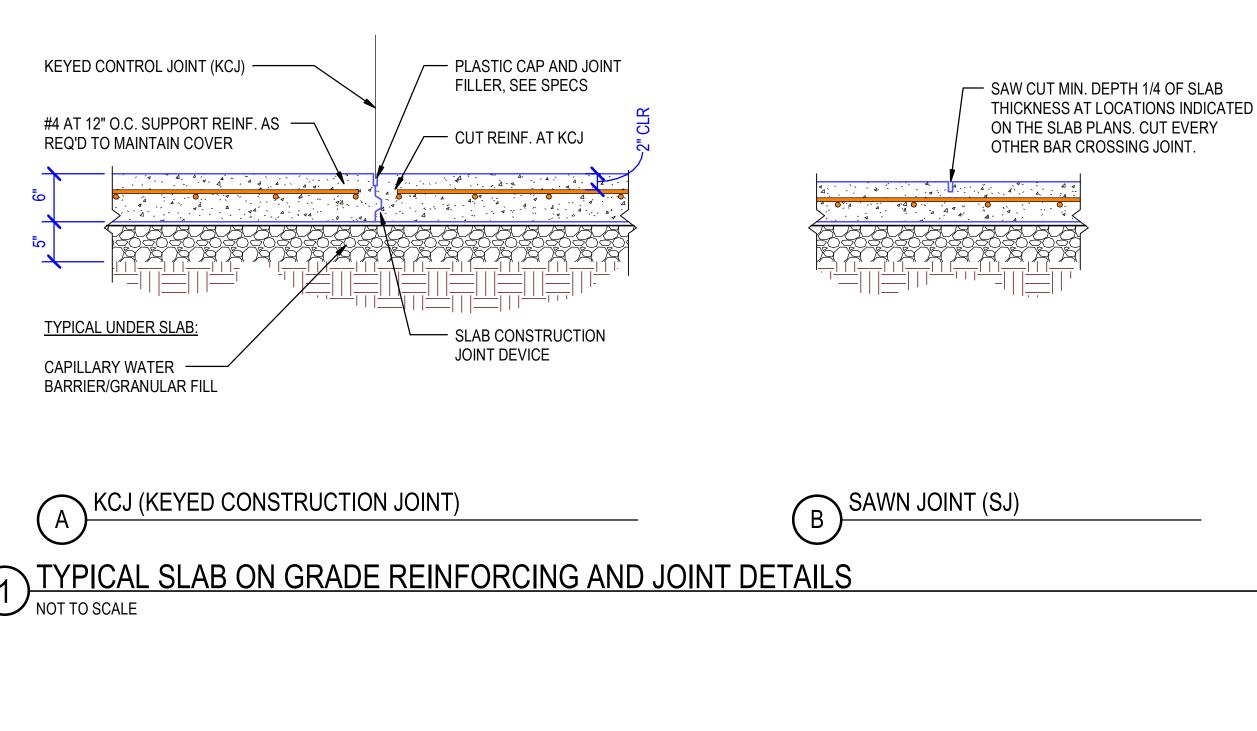


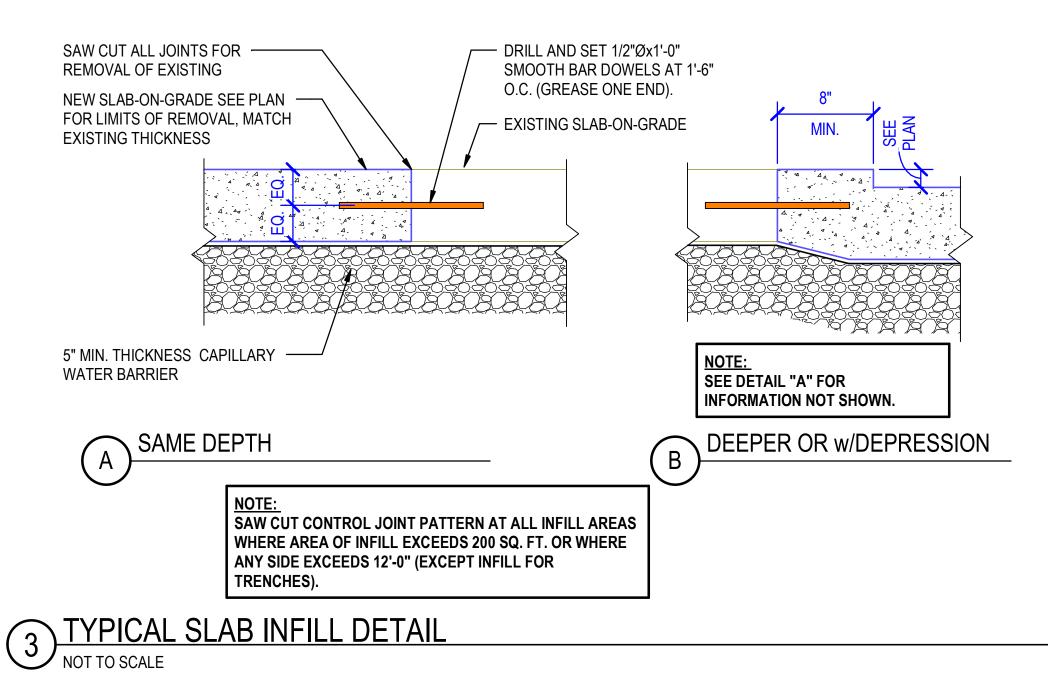
2 SECTION AT COOLER AREA

1/4" = 1'-0"



[] CROMWELL





BASEPLATE SCHEDULE AND DETAILS NOT TO SCALE

AISC TABLE J2.4

HEAVY HEX NUT ---

PLATE WASHER, SEE CHART

PLATE WASHER ON TOP OF LEVELING NUT, IF USED, TO MATCH

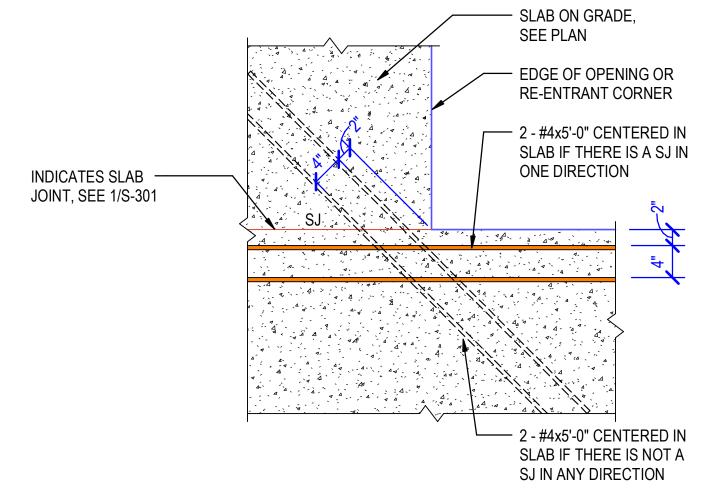
WASHER WIDTH FROM CHART

TOP OF FOUNDATION —

ANCHOR ROD, SEE SCHEDULE

AND NOTE I.5/S-001

HEAVY HEX NUT -

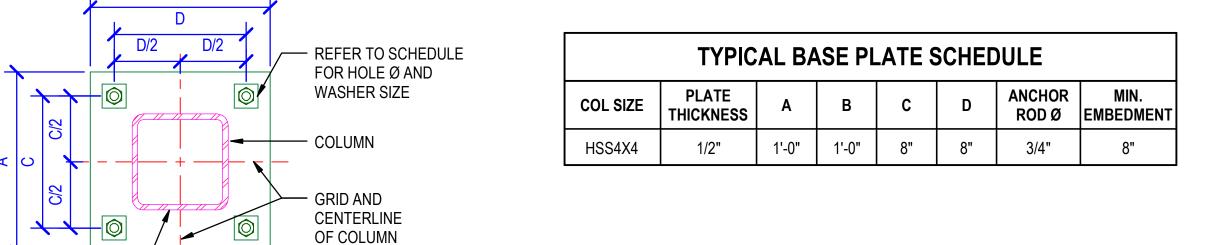


2 TYPICAL SLAB OPENINGS AND REENTRANT CORNERS NOT TO SCALE

TYPICAL COLUMN BASEPLATE

TYPICAL ANCHOR ROD DETAIL

SEE BASEPLATE HEDULE OR DETAILS



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"			

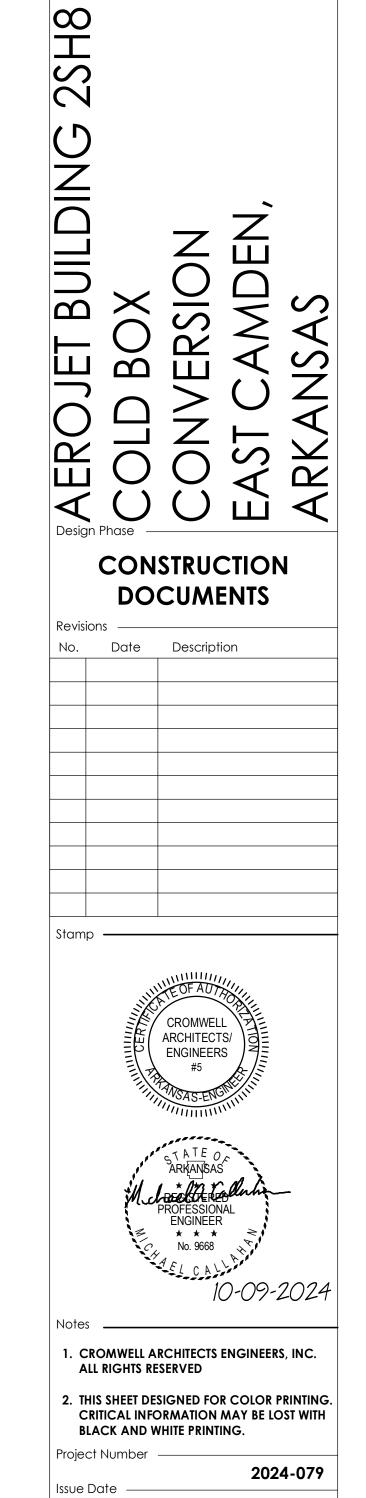
- 1. THIS CHART IS TAKEN FROM AISC TABLE 14-1. LATEST VERSION OF AISC TABLE
- 14-1 TAKES PRECEDENCE.
- CIRCULAR OR SQUARE WASHERS ARE ACCEPTABLE.
 ADEQUATE CLEARANCE MUST BE PROVIDED FOR THE WASHER SIZE SELECTED

Sheet Title ______

FOUNDATION AND SLAB DETAILS

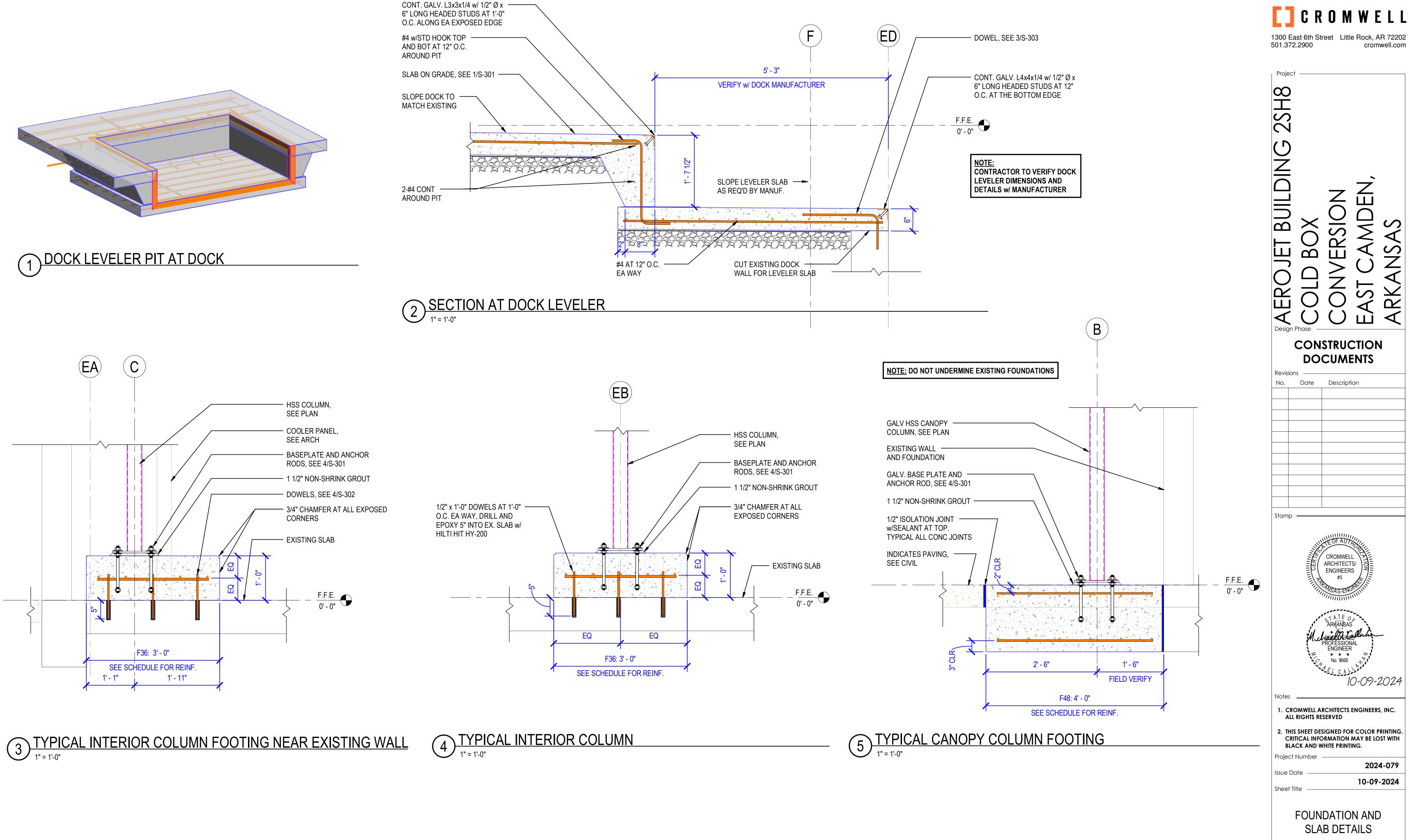
Sheet Number

S-301



[] CROMWELL

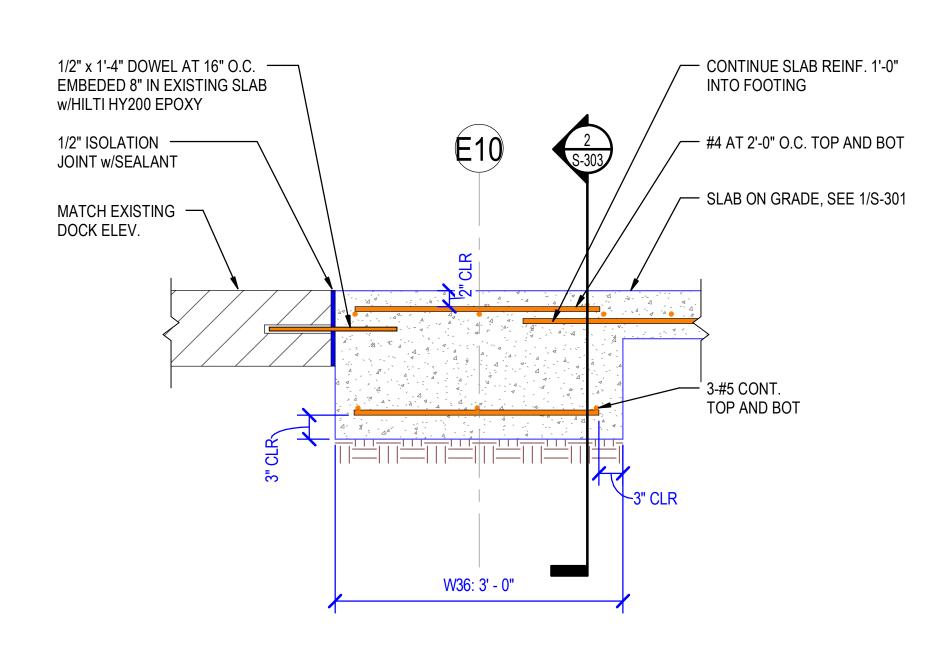
1300 East 6th Street Little Rock, AR 72202 501.372.2900 cromwell.com



1300 East 6th Street Little Rock, AR 72202 501.372.2900 cromwell.com 2SH8 BUILDING CONSTRUCTION **DOCUMENTS** Date Description ${\sf CROMWELL}$ ARCHITECTS/ ENGINEERS #5 ENGINEER

* * *

No. 9668 10-09-2024 1. CROMWELL ARCHITECTS ENGINEERS, INC. ALL RIGHTS RESERVED 2. THIS SHEET DESIGNED FOR COLOR PRINTING. CRITICAL INFORMATION MAY BE LOST WITH BLACK AND WHITE PRINTING. Project Number 2024-079 10-09-2024 Sheet Title FOUNDATION AND SLAB DETAILS Sheet Number



SLAB ON GRADE,
SEE 1/S-301

2'-0"

#4 DOWEL AT 12" O.C. DRILL
AND EPOXY 6" INTO DOCK
WALL WHILTI HIT HY-200

F.F.E.
0'-0"

SAWCUT EXISTING WALL

EXISTING DOCK WALL

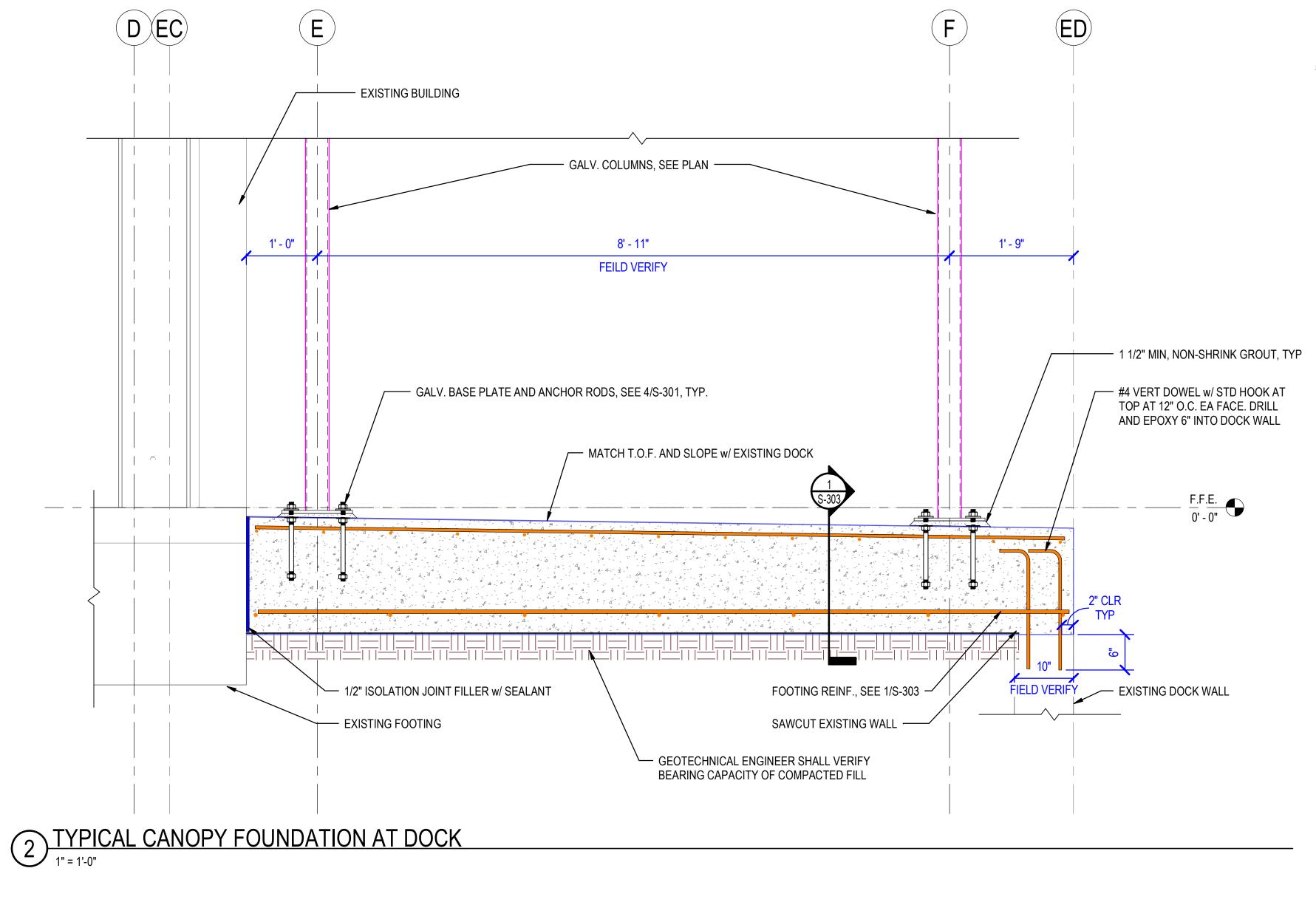
3

TYPICAL SLAB TO EXISTING DOCK CONNECTION

1" = 1'-0"

TYPICAL FOOTING AT DOCK

1" = 1'-0"



[] CROMWELL 1300 East 6th Street Little Rock, AR 72202 501.372.2900 cromwell.com Project 2SH8 BUILDING CONSTRUCTION **DOCUMENTS** Date Description CROMWELL ARCHITECTS/
ENGINEERS
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SLAB DETAILS

Sheet Number

TYPICAL BEAM TO HSS COLUMN CONN. SCHEDULE NOT TO SCALE

PREHEAT WELDS AS REQUIRED BY AISC.

TYPICAL PURLIN TO GIRDER CONNECTION 1" = 1'-0"

TYPICAL ANGLE BRACE CONNECTION 1" = 1'-0"

SEE SCHEDULE FOR THICKNESS AND NUMBER OF BOLTS. BEAM, SEE PLAN HSS COLUMN, SEE PLAN AISC 16TH EDITION **BOLT SCHEDULE** MIN. PLATE | MIN. FILLET ROWS OF 3/4" Ø H.S. CAPACITY **BEAM SIZE** THICKNESS | WELD SIZE W14 & W12 1/4" 3/16" 43k

CAPACITY IS BASED ON LRFD DESIGN WITH STANDARD OR SHORT

FOR STANDARD HOLES MINIMUM PLATE THICKNESS SHALL BE USED.

HORIZONTAL SLOTTED HOLES AND A MAXIMUM HSS WIDTH TO THICKNESS

NUMBER OF BOLTS SHOWN IS THE MINIMUM REQUIRED FOR CONNECTIONS

USE STANDARD HOLES ALONG BRACED FRAME OR MOMENT FRAME GRID

RATIO OF 33.7. OVERSIZE OR VERTICAL SLOTTED HOLES ARE NOT ALLOWED.

SINGLE-PLATE CONNECTION DETAIL

•

HILTI X-ENP-19-L15

EQUAL AT 6" O.C.

PERIMETER EDGE

ANGLE OR SUPPORT

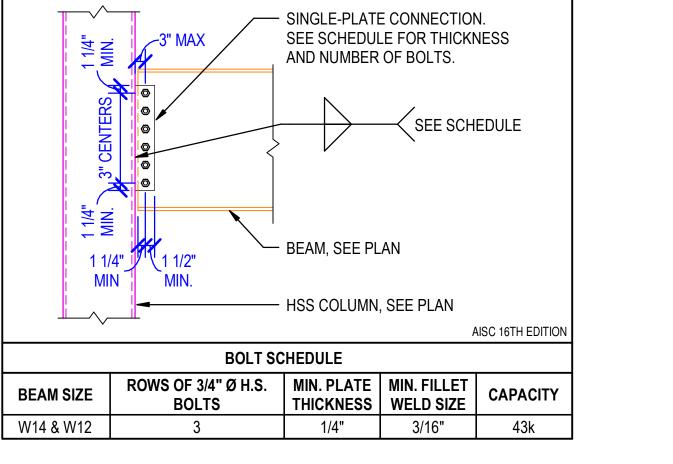
1. EDGES OF SHEET SHALL BE COMPLETELY ENGAGED.

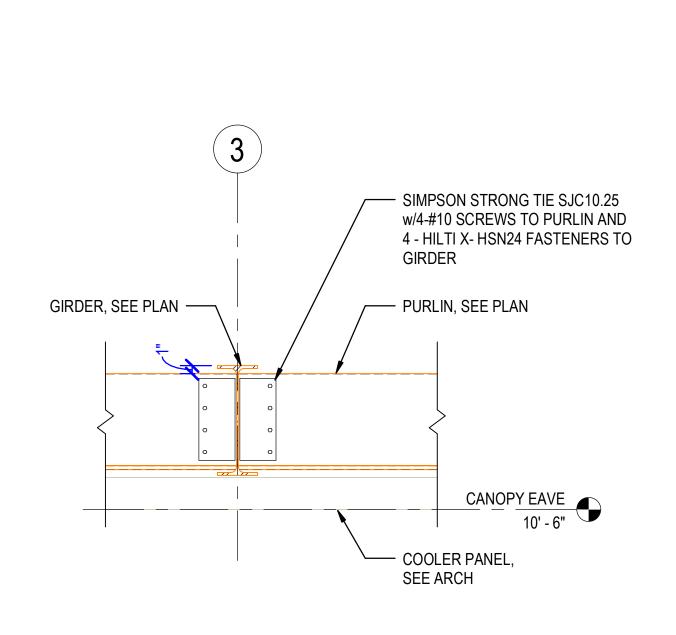
2. DECK GALVANIZING SHALL CONFORM TO ASTM a653 G60

TYPICAL 1.5B ROOF DECK ANCHORAGE

TYPICAL DECK FASTENING PATTERN PLAN

OR APPROVED





PERIMETER SUPPORT

HILTI X-ENP-19-L15

OR APPROVED

PROVIDE FULL **RIB WIDTH**

#10x3/4" SELF DRILLING

(3 MIN AT 36" O.C. MAX.)

2. DECK Fy = 33 ksi MIN.

SUPPORTS EVENLY SPACED

ISOMETRIC AT TYPICAL SIDE LAP

3' - 0"

ALLOWABLE

DIAPHRAGM

SHEAR VALUE

430 PLF AT 6'-0" SPAN

1.SECTION PROPERTIES SHOWN MAY VARY 10%

SECTION PROPERTIES

2 1/2"

1.5B DECK

WEIGHT

LBS./SQ. FT.

GALVANIZED

2.14

Sp

<u>(IN³)</u> FT.

0.211 | 0.234 | 0.247

Sn

SCREWS BETWEEN

DEPTH GAGE

LOCATION

CANOPY DECK

EQUAL AT 6" O.C.

© SUPPORT (DECK SHALL

SIDELAP CONN. BETWEEN

SUPPORTS SEE 1B/S-401 (3 MIN.)

BE CONT. OVER THREE

SUPPORTS MIN.)

SEE CD/S-401 FOR SECTION PROPERTIES

TOP OF SUPPORT

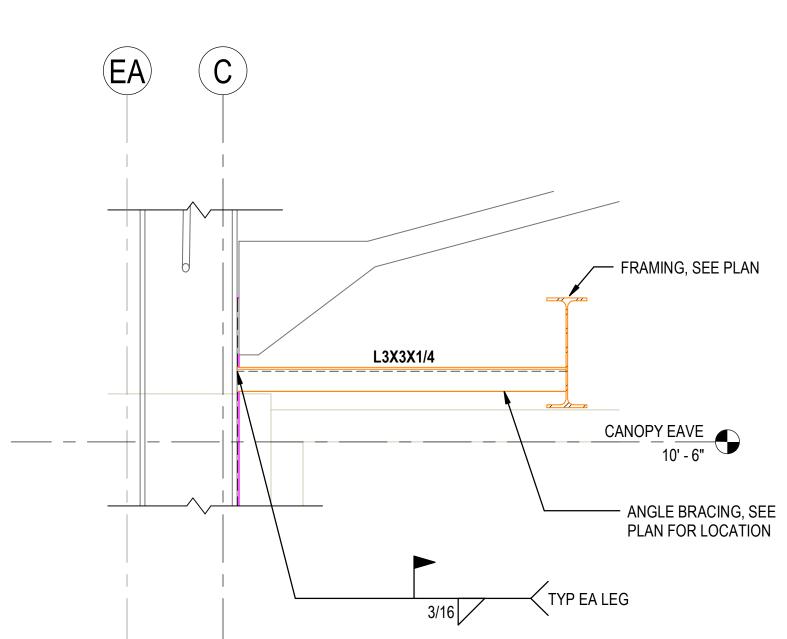
APPROVED EQUAL AT 6" O.C.

AT EVERY RIB AT EACH SUPPORT w/ 36/7 PATTERN

HILTI X-HSN 24 OR

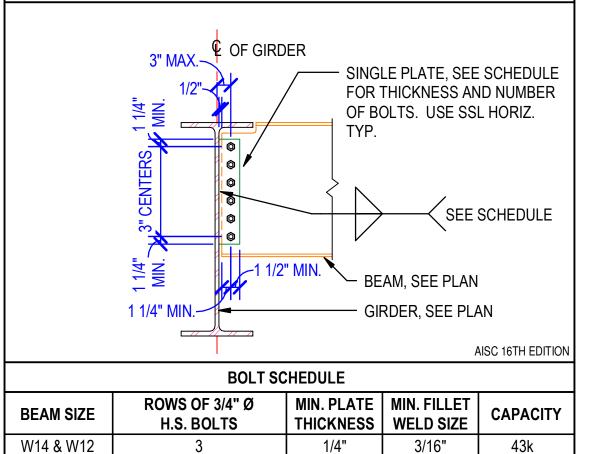
—Ç SUPPORT

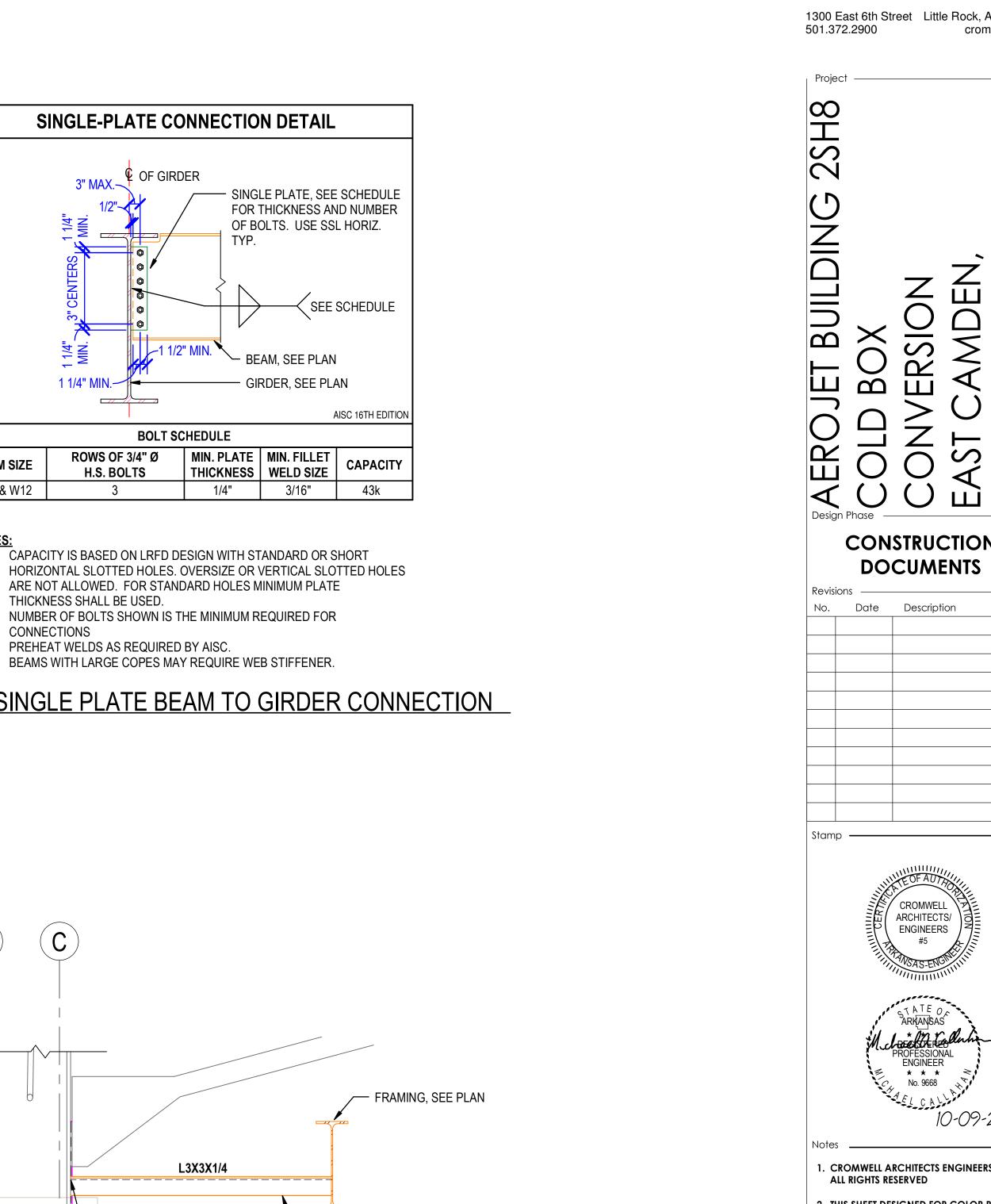
−© SUPPORT

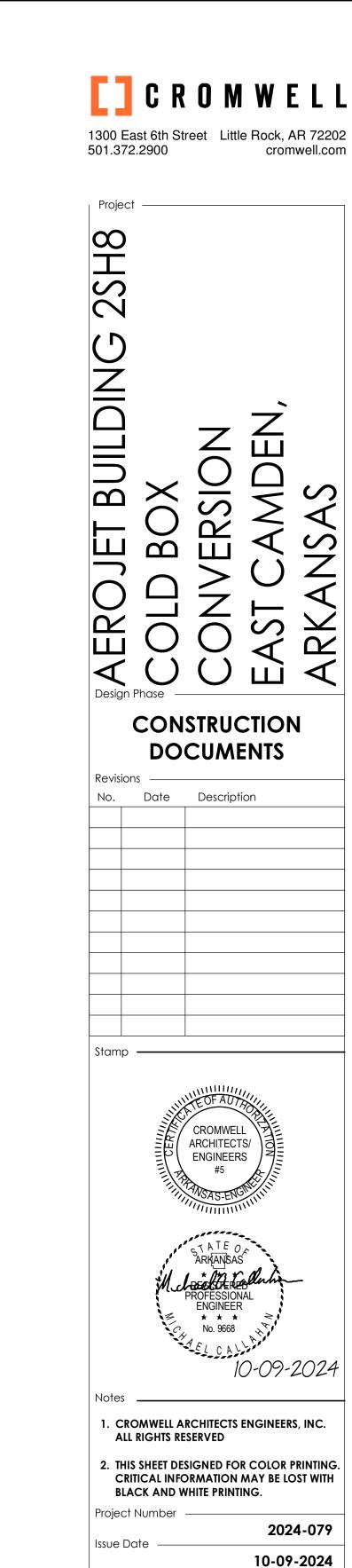












Sheet Title

Sheet Number

FRAMING DETAILS

