TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE

For use of this form, see ER 415-1-0; the proponent agency is CECW-CE

DATE: 5/16/2022

TRANSMITTAL NO.: 13 34 19-2

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the contractor)

TO:
Fort Huachuca Project Office
Bldg 71922, Corner of Carter and Lebo St
Ft Huachuca, AZ 85670

FROM: AMG
26535 Summit Circle
Santa Clarita California 91350
United States of America

CONTRACT NO.: W912PL21C0007

THIS IS A: NEW TRANSMITTAL

SPECIFICATION SEC. NO. (Covers only one section with each transmittal): 13 34 19-

PROJECT TITLE AND LOCATION 01: Ground Transport Equipment Building-EPG,Fort

THIS TRANSMITTAL IS FOR: (Check one)
☐ FIO ☒ GA ☐ DA ☐ CR ☐ DA/CR ☐ DA/GA ☐ S

ITEM NO. (See Note 3) a.	DESCRIPTION OF SUBMITTAL ITEM (Type size, model number/etc) b.	SUBMITTAL TYPE CODE (See Note 8) c.	NO. OF COPIES d.	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE g.	VARIATION (See Instruction No. 6) h.	FOR CE USE CODE (Note 9) i.
				SPEC. PARA NO. e.	DRAWING SHEET NO. f.			
33	Area A Redesign Architectural Drawings	15 - DRAWINGS	1			A	No	B

Remarks from Contractor

This line item was added to allow for the submission of Area"A" architectural redesign drawings. These drawings will correlate with previously approved 05 12 00-7 Structural redesign drawings area "A"

I certify that the above submitted items have been reviewed in detail and are correct and in the strict conformance with the contract drawings and specifications except as otherwise stated.

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE	CONTRACT NO. W912PL21C0007	PAGE 1 of 1
PROJECT TITLE Fort Huachuca	DATE 06/16/2022	TRANSMITTAL NO. 13 34 19-2
LOCATION Ground Transport Equipment Building-EPG		

Item	Description	Variation	QA Code
33	Area A Redesign Architectural Drawings	No	B

SECTION III - GOVERNMENT REVIEW REMARKS

Based on the coordination meeting, I have an understanding of what is being designed now between the Arch & structural Area A drawings at the East wall separation between Area B of the building. Attached quick seismic drift calculation to the structural Area A designer, and architect for verification.

The concern would be the rigid screw connection between the Area A east wall flashing (Detail 5 on A401), and the Area B roof. This joint should allow for movement, and that was the original intent. The more flexible steel structure, and more rigid masonry structure have different periods, and seismic drifts. The crane also imparts a drift into the steel Area A building, while area B is stationary. The roof line may tear apart if not allowed to move independent of one another at the walls and roof lines between the two building areas. suggest this detail be revised to allow for movement, unless the Area A structural has accounted for the drift elsewhere in the structure.

GENERAL PROJECT NOTES

1. ALL WORK SHALL CONFORM TO THE 2018 EDITION INTERNATIONAL BUILDING CODE.
2. THE DRAWINGS AND SPECIFICATIONS AND ALL COPIES THEREOF, ARE LEGAL INSTRUMENTS OF SERVICE FOR THE USE OF THE OWNER AND AUTHORIZED REPRESENTATIVE ON THE DESIGNATED PROPERTY ONLY. OTHER USE, WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE ARCHITECT, IS PROHIBITED.
3. SPECIFICATIONS, DETAILS AND SCHEDULES WHICH MAY BE BOUND SEPARATELY, ARE PART OF THESE CONTRACT DOCUMENTS. DRAWINGS BY SEPARATELY CONTRACTED CONSULTING PROFESSIONALS (SUCH AS STRUCTURAL, INTERIORS OR LANDSCAPE) ARE SUPPLEMENTARY TO THE DESIGN DRAWINGS AND ARE PART OF THESE CONTRACT DOCUMENTS.
4. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY IF INFORMATION IS NOT SHOWN OR IS UNCLEAR. REPORT APPARENT DISCREPANCIES ON DRAWINGS AND/OR SPECIFICATIONS TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
5. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FOR ALL WORK.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATING THE WORK FOR ALL UTILITIES AND SERVICES.
7. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. QUESTIONS REGARDING THE SAME, OR THEIR EXACT MEANING, SHALL BE DIRECTED TO THE ARCHITECT.
8. EXISTING CONDITIONS: CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS DESIGNATED AS, OR REQUIRED TO, INTERFACE WITH NEW CONSTRUCTION. REPORT ANY DISCREPANCIES, DEFICIENCIES, OR CONDITIONS INCOMPATIBLE WITH PROPOSED CONSTRUCTION PRIOR TO PROCEEDING.
9. IT IS THE RESPONSIBILITY OF THE G.C. TO INSTALL ALL TEMPORARY BRACING AND SHORING TO ENSURE THE SAFETY OF THE WORK UNTIL IT IS IN ITS COMPLETED FORM. DO NOT REMOVE EXISTING STRUCTURAL SUPPORTS OR BEARING WALLS WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT OR STRUCTURAL ENGINEER.
10. DIMENSIONS/ NOTES/ DETAILS: DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CONDITIONS IN FIELD, AND IMMEDIATELY REPORT ANY DISCREPANCIES OR EXISTING AND PROPOSED VARIATIONS TO THE ARCHITECT. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND COORDINATING DIMENSIONS. ALL WRITTEN DIMENSIONS TO TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, SECTIONS, AND DETAILS. SPECIFIC NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER ANY GENERAL NOTES OR DETAILS. CONDITIONS NOT SPECIFICALLY DETAILED SHALL BE CONSTRUCTED AS SIMILAR CONDITIONS DETAILED AND/OR INDICATED ON THE DRAWINGS. ANY WORK INSTALLED IN CONFLICT WITH THE DESIGN DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.
11. ALL EXTERIOR DIMENSIONS ARE TO ASSUMED FACE OF PLYWOOD SHEATHING OR FACE OF MASONRY UNO. INTERIOR DIMENSIONS ARE TO FACE OF GYPSUM BOARD FINISH OR CENTERLINE OF WALL UNO.
12. ONLY APPROVED WORKING DRAWINGS, WITH THE STATEMENT "APPROVED DRAWINGS" , ARE TO BE USED FOR CONSTRUCTION OF THIS PROJECT. CONTRACTORS USING OTHER THAN APPROVED DRAWINGS ARE SOLELY RESPONSIBLE FOR SUCH WORK.
13. GEOTECHNICAL REPORTS ARE NOT INCLUDED IN THE CONTRACT DOCUMENTS, BUT MAY BE MADE AVAILABLE TO THE CONTRACTOR FOR INFORMATION ONLY. THE ARCHITECT ASSUMES NO RESPONSIBILITY FOR ANY CONCLUSIONS THE CONTRACTOR MAY DRAW FROM SUCH INFORMATION. THE CONTRACTOR SHALL INVESTIGATE AND DETERMINE EXISTING SOILS AND SITE CONDITIONS UNDER WHICH CONTRACTOR WILL OPERATE IN PERFORMING THE WORK.
14. THE CONTRACTOR IS TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF DEMOLITION AND CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY, AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR SHALL RESTRICT GENERAL PUBLIC ACCESS TO THE DEMOLITION, CONSTRUCTION, AND STORAGE AREAS.
15. HAZARDOUS MATERIALS ARE NOT TO BE STORED IN THE BUILDING, NOR USED IN CONSTRUCTION, IN QUANTITIES EXCEEDING THOSE SPECIFIED IN THE IBC.
16. DURING DEMOLITION AND CONSTRUCTION THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR DETERMINING THE EXISTENCE AND PRECISE LOCATION OF UNDERGROUND PIPING AND OTHER STRUCTURES WHICH MAY BE AFFECTED BY CONSTRUCTION. PROMPTLY NOTIFY EACH UTILITY COMPANY, MUNICIPALITY, OR OTHER AGENCY OWNING OR OPERATING ANY AFFECTED FACILITIES OR STRUCTURES, AND REQUEST ENGINEERING INFORMATION AND MARKING OF FACILITIES IN FIELD, PRIOR TO COMMENCING ANY WORK ON THE SITE. REMOVE ALL ITEMS SPECIFIED TO BE ABANDONED, AND TAKE CARE TO PREVENT ANY DAMAGE TO, OR DISRUPTION OF, ITEMS TO REMAIN.
17. WHERE FIRE-RATED WALL OR CEILING ASSEMBLIES ARE PENETRATED BY RECESSED FIXTURES, MECHANICAL DUCTS, OR OTHER ITEMS, THE FIXTURES, DUCTS, OR OTHER ITEMS SHALL BE FIRE-RATED TO MATCH THE WALL OR CEILING ASSEMBLY.
18. U.N.O. ALL EXTERIOR DOORS SHALL LIMIT AIR INFILTRATION WHEN IN CLOSED POSITION AS FOLLOWS: PROVIDE WEATHERSTRIPPING AT HEAD, SILL AND JAMBS. INSTALL ASTRAGAL AT MEETING PORTION OF DOUBLE DOORS. DOORS REQUIRING VERTICAL TRACKS OR GUIDES SHALL USE CONTINUOUS MOUNTING ANGLE, AND SHALL BE SEALED TO LIMIT AIR LEAKAGE.
19. CONTRACTOR SHALL PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BLOCKING, BACKING, HANGERS, BACK-UP PLATES, AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF ALL CASEWORK, TOILET ROOM ACCESSORIES, FIXTURES, PARTITIONS, AND ALL WALL MOUNTED OR SUSPENDED MECHANICAL, KITCHEN, ELECTRICAL OR MISCELLANEOUS EQUIPMENT AND FURNISHING.
20. CONTRACTOR SHALL VERIFY EXACT SIZES AND LOCATIONS OF ALL MECHANICAL EQUIPMENT PADS, BASE STRUCTURES, ROOF OPENINGS, AS WELL AS POWER, WATER, DRAIN INSTALLATIONS AND STRUCTURAL STEEL SUPPORT LOCATIONS, WHEN APPLICABLE, WITH EQUIPMENT MANUFACTURERS BEFORE PROCEEDING WITH THE WORK. CHANGES TO ACCOMMODATE FIELD CONDITIONS OR APPROVED SUBSTITUTIONS SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.
21. ALL PIPES, CONDUIT, WIRES, AND DUCTS SHALL BE CONCEALED FROM VIEW UNO.
22. ALL GLAZING INSTALLED IN HAZARDOUS LOCATIONS, AS DEFINED BY IBC CHAPTER 24, SHALL BE TEMPERED GLASS. SKYLIGHTS ARE TO BE TEMPERED GLASS OR FIBERGLASS AS SPECIFIED.
23. INSTALL SEALANT AT JOINTS AROUND WINDOW AND DOOR FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AND ROOF, BETWEEN WALL PANELS, AND AT PENETRATIONS OF UTILITIES THROUGH THE BUILDING ENVELOPE, TO LIMIT AIR INFILTRATION.
24. THE CONTRACTOR SHALL PROVIDE THE OWNER A LIST OF THE FEATURES, MATERIALS, COMPONENTS, AND MECHANICAL DEVICES INSTALLED IN THE BUILDING, AND INSTRUCTIONS ON HOW TO USE THEM EFFICIENTLY. THE INSTRUCTIONS SHALL BE CONSISTENT WITH SPECIFICATIONS SET FORTH BY THE EXECUTIVE DIRECTOR OF THE STATE ENERGY COMMISSION. THE ENERGY "CERTIFICATION OF COMPLIANCE" SHALL BE SUBMITTED AFTER THE INSTALLATION OF THE REQUIRED EQUIPMENT AND/OR MATERIAL, AND PRIOR TO ANY REQUEST FOR A FINAL INSPECTION.
25. CONDITIONS OF APPROVAL: ALL WORK SHALL CONFORM TO THE CITY OF OJAI MINOR CONDITIONS OF APPROVAL AND PROPERTY OF OWNER'S GUIDELINES FOR THIS PROJECT. THE CONTRACTOR SHA;; READ THESE CONDITIONS FRIOR TO PREPARINGBIDS AND COMMENCING CONSTRUCTION, AND AVAILABLE DIRECTLY FROM THE OWNER.
26. ITEMS IN THESE DRAWINGS NOT SPECIFICALLY IDENTIFIED AS EXISTING ARE ASSUMED TO BE NEW
27. ALL ASTM AND/OR ANSI DESIGNATIONS REFERRED TO ON THESE DRAWINGS SHALL BE THE LATEST ADOPTED OR REVISED SPECIFICATIONS.
28. MATERIAL AND EQUIPMENT NECESSARY FOR WORK SHALL NOT BE PLACED OR STORED ON PUBLIC PROPERTY SO AS TO OBSTRUCT A FREE AND CONVENIENT APPROACH TO AND USE OF ANY FIRE HYDRANT, FIRE OR POLICE ALARM BOX, UTILITY BOX, CATCH BASIN OR MANHOLE OR SO AS TO INTERFERE WITH THE FREE FLOW OF WATER IN STREET OR ALLEY GUTTER. PROTECTION AGAINST DAMAGE SHALL BE PROVIDED TO SUCH UTILITY FIXTURES DURING THE PROGRESS OF THE WORK, BUT SIGHT OF THEM SHALL NOT BE OBSTRUCTED.
29. WHERE NOT SPECIFICALLY DESCRIBED IN ANY OF THE NOTES OR SPECIFICATIONS, WORKMANSHIP SHALL CONFORM TO THE METHODS AND OPERATIONS OF BEST STANDARDS AND ACCEPTED PRACTICES OF THE RESPECTIVE TRADE.
32. CONSTRUCTION EQUIPMENT AND MATERIALS SHALL BE STORED AND PLACED SO AS NOT TO ENDANGER THE PUBLIC, THE WORKERS OR ADJOINING PROPERTY FOR THE DURATION OF THE CONSTRUCTION PROJECT.
33. REQUIRED EXITS, EXISTING STRUCTURAL ELEMENTS, FIRE PROTECTION DEVICES AND SANITARY SAFEGUARDS SHALL BE MAINTAINED AT ALL TIMES DURING REMODELING, ALTERATIONS, REPAIRS OR ADDITIONS TO THE BUILDING UNLESS THE REQUIRED ELEMENTS OR DEVICES ARE BEING REMODELED, ALTERED, OR REPAIRED IN WHICH CASE ADEQUATE SUBSTITUTE PROVISIONS SHALL BE MADE.
34. SERVICE UTILITY CONNECTIONS SHALL BE DISCONTINUED AND CAPPED IN ACCORDANCE WITH THE APPROVED RULES AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
35. SANITARY FACILITIES SHALL BE PROVIDED DURING CONSTRUCTION, REMODELING, OR DEMOLITION ACTIVITIES IN ACCORDANCE WITH 2018 IPC.
36. AREAS OF CONSTRUCTION, ALTERATION OR DEMOLITION SHALL BE PROVIDED WITH NOT LESS THAN ONE APPROVED PORTABLE FIRE EXTINGUISHER PER 2018 IFC.
37. REQUIRED MEANS OF EGRESS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION, DEMOLITION, REMODELING, ALTERATIONS, AND ADDITIONS TO BUILDING UNLESS APPROVED TEMPORARY MEANS OF EGRESS SYSTEMS AND FACILITIES HAVE BEEN PROVIDED.
38. PENETRATIONS OF FIRE-RESISTANCE-RATED WALLS AND HORIZONTAL ASSEMBLIES SHALL BE PROTECTED AS REQUIRED IN IBC SECTIONS 714.4 AND 714.5.
39. STRUCTURAL OBSERVATION IN REQUIRED FOR THIS PROJECT AS INDICATED ON SHEET 0.1
40. MANUFACTURER'S INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE JOB SITE AT THE TIME OF INSPECTION.
41. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE SUPERVISION OF THE CONSTRUCTION WORK TO ENSURE THAT IT IS BUILT IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. THE ARCHITECT WILL PROVIDE ONLY PERIODIC OBSERVATION OF THE WORK.
42. GRADING PLANS, DRAINAGE IMPROVEMENTS, ROAD & ACCESS REQUIREMENTS AND ENVIRONMENTAL HEALTH CONSIDERATIONS SHALL COMPLY WITH ALL LOCAL ORDINANCES.
43. CUTTING, BORING, SAWCUTTING OR DRILLING THROUGH THE NEW OR EXISTING STRUCTURAL ELEMENTS TO BE DONE ONLY WHEN SO DETAILED IN THE DRAWINGS OR ACCEPTED BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
44. ALL BRACING OF DUCTS AND PIPINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE AND SMACNA GUIDELINES A. THE FIELD INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT, MECHANICAL ENGINEER AND FIELD ENGINEER. A COPY OF THE GUIDELINES PUBLISHED BY SMACNA SHALL BE PROVIDED BY THE CONTRACTOR AND KEPT ON THE JOB AT ALL TIMES.

APPLICABLE CODES

2018 INTERNATIONAL BUILDING CODE

AMERICAN WITH DISABILITIES ACT

NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS:
- NFPA 10-18 STANDARD FOR PORTABLE FIRE EXTINGUISHERS
- NFPA 13-16 STANDARD FOR INSTALLATION OF SPRINKLER SYSTEMS
- NFPA 14-16 STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEM
- NFPA 20-16 STANDARD D FOR THE INSTALL. OF STATIONARY PUMPS FOR FIRE PROTECTION
- NFPA 24-16 INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES
- NFPA 54-15 NATIONAL FUEL GAS CODE
- NFPA 72-16 NATIONAL FIRE ALARM AND SIGNALING CODE
- NFPA 80-16 STANDARD FOR FIRE DOORS AND OTHER OPENINGI PROTECTIVES
- NFPA 101-18 LIFE SAFETY CODE
- NFPA 105-16 STANDARD FOR SMOKE DOOR ASSEMBLIES AND OTHER OPENING PROTECTIVES
- NFPA 170-18 STANDARD FOR FIRE SAFETY AND EMERGENCY SYMBOLS
- NFPA 221-18 STANDARD FOR HIGH CHALLENGE FIRE WALLS, FIRE WALLS, AND FIRE BARRIER WALLS
- NFPA 252-17 STANDARD METHODS OF FIRE TESTS DOOR ASSEMBLIES
- NFPA 253-15 STANDARD METHOD OF TEST FOR CRITICAL RADIANT FLUX OF FLOOR COVERING SYSTEMS USING A RADIANT HEAT ENERGY SOURCE
- NFPA 257-17 STANDARD FOR FIRE TEST FOR WINDOW AND GLASS BLOCK ASSEMBLIES
- NFPA 720-15 STANDARD FOR THE INSTALLATION OF CARBON MONOXIDE (CO) DETECTION AND WARNING EQUIPMENT

DRAWING SHEET INDEX

TOTAL NO OF SHEETS: 19

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO

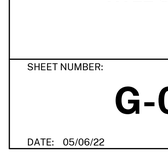
HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:



PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
(661) 251 - 7401
amgassociatesinc.com

PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

G-000

DATE: 05/06/22

SECTION *073011*
ROOFING UNDERLAYMENT, HIGH-TEMPERATURE

PART 1 GENERAL

1.01 SUMMARY

A. Installation of roofing underlayment, high temperature on surfaces indicated on drawings, consisting of preparation of existing and repaired roof deck surfaces. Selection of roof deck or insulation substrate and/or use of a primer or adhesive are the responsibility of the architect, specifier or roofing contractor to determine based on the roof assembly and environmental conditions.

1.02 RELATED SECTIONS

A. Section 061000 - Rough Carpentry.
B. Section *073113* - Asphalt Shingles.
C. Section *073116* - Metal Shingles.
D. Section *073119* - Mineral-Fiber Cement Shingles.
E. Section *073126* - Slate Shingles.
F. Section *073129* - Wood Shingles and Shakes.
G. Section *073200* - Roof Tiles.
H. Section *076100* - Sheet Metal Roofing.

1.03 REFERENCES

A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
B. ASTM D461 - Standard Test Methods for Felt.
C. ASTM D 903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
D. ASTM D1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
E. ASTM D3767 - Standard Practice for Rubber — Measurement of Dimensions.
F. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
G. ASTM G90 – EMMAqua test.

1.4 SYSTEM DESCRIPTION

A. Product provided by this Section is a high temperature, self-adhesive roofing underlayment membrane consisting of not less than 40 mils thickness, consisting of 36 mils of rubberized asphalt membrane laminated to a 4-mil skid-resistant membrane that is available in either black or white.

1.05 SUBMITTALS

A. General: Submit in accordance with Section 01 30 00.
B. Product Data: Submit manufacturer's product literature and installation instructions.
C. Subcontractor's approval by Manufacturer: Submit document stating manufacturer's acceptance of subcontractor as an Approved Applicator for the specified materials.
D. Warranty: Submit a sample warranty identifying the terms and conditions stated in Section 1.07.

Section 1.06 QUALITY ASSURANCE

A. Applicator Qualifications: Applicator shall have 5 years of experience in applying the same or similar materials and shall be specifically approved in writing by the membrane manufacturer.
B. Regulatory Requirements: Comply with applicable codes, regulations, ordinances, and laws regarding use and application of products that contain volatile organic compounds (VOC).
C. Pre-Application Conference: Prior to beginning work, convene a conference to review conditions, installation procedures, schedules and coordination with other work.

1.07 WARRANTY

A. Upon completion and acceptance of the work required by this section, the manufacturer will issue a warranty agreeing to promptly replace defective materials installed by an approved applicator for a period of 5 years.
B. The formation or presence of mold or fungi in a building is dependent upon a broad range of factors including, but not limited to, the presence of spores and nutrient sources, moisture, temperatures, climatic conditions, relative humidity, and heating/ventilating systems and their maintenance and operating capabilities. These factors are beyond the control of Carlisle and Carlisle shall not be responsible for any claims, repairs, restoration, or damages relating to the presence of any irritants, contaminants, vapors, fumes, molds, fungi, bacteria, spores, mycotoxins, or the like in any building or in the air, land, or water serving the building.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in original, factory-sealed, unopened containers bearing manufacturer's name and label intact and legible with following information.
   1. Name of material.
   2. Manufacturer's stock number and date of manufacture.
   3. Material safety data sheet.
B. Store materials in protected and well-ventilated area. Protect from damage from sunlight, weather, excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with local applicable regulations.

1.09 PROJECT CONDITIONS

A. Do not apply membrane when surface temperature is below or inclement weather conditions conflict with manufacturer's published requirements.
B. Coordinate waterproofing work with other trades. The applicator shall have sole right of access to the specified areas for the time needed to complete the installation.
C. Warn personnel against breathing of vapors and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.
D. Keep flammable products away from spark or flame. Do not allow the use of spark producing equipment during application and until all vapors have dissipated. Post "NO SMOKING" signs.
E. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide CCW MiraDRI 860/861 Sheet Membrane Waterproofing as manufactured by Carlisle Coatings and Waterproofing Incorporated, 900 Hensley Lane, Wylie, Texas 75098, Phone: (800) 527-7092 Fax: (972) 442-0076.

2.02 PRODUCTS

A. High temperature, self-adhesive roofing underlayment membrane consisting of not less than 40 mils thickness, consisting of 36 mils of rubberized asphalt membrane laminated to a 4-mil skid-resistant membrane, and shall meet or exceed the following requirements:
   1. Thickness: 40 mils, ASTM D 1970
   2. Tensile Strength (Machine Direction): 250 psi, ASTM D 412
   3. Tensile Strength (Transverse Direction): 1390 psi, ASTM D 412
   4. Elongation at Break Machine Direction: 250% minimum, ASTM D 412
   5. Elongation at Break Transverse Direction: 170% minimum, ASTM D 412
   6. Adhesion to Plywood at 75°F: 35 lbs./ft., ASTM D 1970
   7. Lap Seam Adhesion: 21.0 lb/in, ASTM D 1970
   8. Sealability Around Nail: Pass, ASTM D 1970
   9. Slip Resistance: Pass, ASTM D 1970
   10. Slip Resistance: Pass ASTM D 1970
   11. Thermal Stability: Pass ASTM D 1970
   12. Moisture Vapor Permeance: 0.02 perms ASTM D 1970
   13. Water Absorption: 0.5% ASTM D 1970
B. For application of air temperatures below 40°F, use CCW-702, CCW-702WB, Cav-Grip or CCW-AWP.

2.03 ACCESSORY PRODUCTS

A. Surface Primer: Shall be CCW-702, CCW-702WB, CCW-AWP or Cav-Grip.
B. Sealants: Shall be approved sealants by CCW.

PART 3 EXECUTION

3.01 INSPECTION

A. Before any underlayment work is started the waterproofing applicator shall thoroughly examine all surfaces for any deficiencies or unsatisfactory conditions detrimental to the proper completion of the work. Should any deficiencies exist, the architect, owner, or general contractor shall be notified in writing. Do not proceed with work until all deficiencies or unsatisfactory conditions are corrected.

3.02 SURFACE PREPARATION

A. Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods which are acceptable to manufacturer of sheet membrane waterproofing.

3.03 INSTALLATION

A. Install roofing underlayment on sloped surfaces at locations indicated on the Drawings, but not less than at hips, ridges, eaves, valleys, sidewalls and chimneys. Strictly comply with manufacturer's installation instructions including but not limited to the following:
   1. Schedule installation such that underlayment is covered by roofing within the published exposure limit of the underlayment.
   2. Do not install underlayment on wet or frozen substrates.
   3. Install when surface temperature of substrate is a minimum of 40 degrees F (5 degrees C) and rising.
   4. Remove dust, dirt, loose materials and protrusions from deck surface.
   5. Install membrane on clean, dry, continuous structural deck. Fill voids and damaged or unsupported areas prior to installation.
   6. Prime concrete and masonry surfaces using specified primer at a rate of 300-350 square feet per gallon. Priming is not required for other suitable clean and dry surfaces when temperatures are above 40°F.
   7. Install membrane such that all laps shed water. Work from the low point to the high point of the roof at all times. Apply the membrane in valleys before the membrane is applied to the eaves. Following placement along the eaves, continue application of the membrane up the roof. Membrane may be installed either vertically or horizontally after the first horizontal course.
   8. Side laps minimum 3 inches and end laps minimum 6 inches (152 mm) following lap lines marked on underlayment.
   9. Patch penetrations and damage using manufacturer's recommended methods.

3.04 CLEANING AND PROTECTION

A. Protection: Protect from damage during construction operations and installation of roofing materials. Promptly repair any damaged or deteriorated surfaces.
B. Repair minor damage to eliminate all evidence of repair. Remove and replace work which cannot be satisfactorily repaired in the opinion of the Architect.
C. Provide temporary protection to ensure work being without damage or deterioration at time of final acceptance. Remove protective film and reclean as necessary immediately before final acceptance.

End of Section

SECTION 074203.01
EXPOSED FASTENER
FACTORY MANUFACTURED PREFORMED WALL PANELS

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. This section covers the pre-finished, pre-fabricated exposed fastener metal roof and wall system. All metal trim, accessories, fasteners, insulation and sealants indicated on the drawings as part of this section.
B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section.
C. Related Work Specified Elsewhere
   1. Roof Deck structural steel, flat roof systems, perimeter edge systems. Roof hatches, firestopping not included in this section.

1.02 SUMMARY

A. Section Includes
   1. Factory formed exposed fastener metal roof and wall panels
B. Related work specified elsewhere. (Note: select from the below or add appropriate sections)
   1. Section 051200 - Structural Steel
   2. Section *052100* or *054000* - Steel Joists
   3. Section 076000 - Flashing and Sheet Metal

1.03 DEFINITIONS

A. Metal Roof/Wall Panel Assembly: Metal roof/ panels, attachment system components, miscellaneous metal framing, thermal, and accessories necessary for a complete weathertight roofing system.
B. References:
   1. American Society for Testing and Materials (ASTM)
      a. ASTM A 653: Steel Sheet, Zinc Coated by the Hot Dip Process
      b. ASTM A 792: Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot Dip Process
      c. ASTM B 209: Aluminum and Aluminum Alloy Sheet and Plate
      d. ASTM B370 Standard Specification for Copper Sheet and Strip for Building Construction
   2. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
      a. SMACNA Architectural Sheet Metal Manual, 1993 edition
   3. American Iron and Steel Institute (AISI)
      a. AISI Cold Formed Steel Design Manual
   4. Aluminum Association
      a. Aluminum Design Manual
   5. Metal Construction Association
      a. Preformed Metal Wall Guidelines
   6. Code References
      a. ASCE, Minimum Loads for Buildings and Other Structures
      b. BOCA National Building Codes
      c. UBC Uniform Building Code
      d. SBC Standard Building Code

1.04 QUALITY ASSURANCE

A. Petersen Aluminum Corp, Elk Grove Village, IL, 800-323-1960 products establish a minimum of quality required.
B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
C. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted.

1.05 SUBSTITUTIONS

A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.
B. Manufacturers listed in this section are prequalified manufacturers. Substitution of manufacturer's products for those specified shall not be allowed at any time during construction.

1.06 SYSTEM DESCRIPTION

A. Material to comply with:
   1. ASTM A792/A792M Standard Specification for Sheet Steel, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip process

1.07 ROOF SYSTEM PERFORMANCE TESTING

A. General Performance: Metal roof/wall panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation or other defects in construction.
B. Roof System shall be designed to meet Standard Building Code Wind Load requirements.
C. Panels to meet:
   1. Roof/Wall System shall be designed to meet applicable Local Building Code and the System shall have tested by the Manufacturer per ASTM E-1592 and have the applicable Load Tables published from this testing for loads.

1.08 WARRANTIES

A. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace standing seam metal roof panels that show evidence of deterioration of factory-applied finish within specified warranty period.
   1. Exposed Panels Finish - deterioration includes the following: .
      a. Color fading more than 5 hunter units when tested according to ASTM D 2244
      b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
      c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
   2. Warranty Period: 20 Years from the date of substantial completion
B. Applicator shall furnish written warranty for a two (2) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight condition.

1.09 SUBMITTALS

A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and types of sealants, and any other details as may be required for a weather-tight installation.
B. Provide finish samples of all colors specified.
C. Shop drawings: Show fabrication and installation layouts of metal roof panels, metal wall panels or metal soffit panels, details of edge conditions, side-seam joints, panel profiles, corners, anchorages, trim, flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work
D. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installer of the items involved:
   1. Roof panels and attachments
   2. Metal trusses, bracings and supports
   3. Roof-mounted items including snow guards and items mounted on roof curbs.
E. LEED Submittals
   1. Product Test reports for Credit SS 7.2. For roof panels, indicating that the panels comply with Solar Reflective Index requirement
   2. Product data for Credit MR 4.1 and credit MR 4.2: Indicating the percentages by weight of postconsumer and preconsumer recycled content for products having recycled content.

1.10 DELIVERY, STORAGE AND HANDLING

A. Ordering: Comply with manufacturer's ordering instruction and lead time requirements to avoid construction delays.
B. Deliver components, sheets, metal roof/wall panels and other manufactured items so as not to be damaged or deformed. Package metal roof/wall panels for protection during transportation and handling.
C. Unload, store and erect metal roof/wall panels in a manner to prevent bending, warping, twisting and surface damage.
D. Stack metal roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof/wall panels to ensure dryness. Do not store metal roof panels in contact with other materials that might cause staining, denting or other surface damage.
E. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

1.11 PROJECT CONDITIONS

A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed.
B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

1.12 COORDINATION

A. Coordinate sizes and locations of roof curbs, equipment supports and roof penetrations with actual equipment provided.
B. Coordinate metal roof panels with rain drainage work, flashing, trim and construction of decks, parapet walls and other adjoining work to provide a leakproof, secure and noncorrosive installation.

PART 2 PRODUCTS

2.01 PANEL DESIGN

A. General: Provide factory-formed, prefinished, lappable exposed fastener, structural ribbed metal roof/wall panel system, that has been pretested and certified by manufacturer to comply with specified requirements under installed conditions.
B. Roof panels shall be exposed fastener R-36 Panels with 1 1/4" deep profile ribs, 12" on center, total coverage of Roof/Wall panels when installed shall be 36" coverage.
C. Structural Requirements: Engineer panels for structural properties in accordance with latest edition of American Iron and Steel Institute's Cold Formed Steel Design Manual using effective width concept and Aluminum Associations Aluminum Design Manual.
D. Forming: Use continuous end rolling method. No end laps on panels. No portable rollforming machines will be permitted on this project, no installer-owned or installer-rented machines will be permitted. It is the intent of the Architect to provide Factory-Manufactured panel systems only for this project.
E. Panels shall be directly fastened to the substrate.
F. The panel shall have an overlapping sidelap feature.

2.02 ACCEPTABLE MANUFACTURERS

A. This project is detailed around the roofing product of Petersen Aluminum Corporation Petersen Aluminum Corp, Elk Grove Village, IL, 800-323-1960, R-36 Panel.

2.03 MATERIALS AND FINISHES

A. Preformed roofing panels shall be fabricated of 22 GA Steel
B. Color shall be Sandstone.
C. Texture: Panel shall be smooth.
D. Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over a 0.25 to 0.3 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil, to meet AAMA 621. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesions, flexibility and longevity as specified by Kynar 500 or Hylar 5000 finish supplier.
E. If Strippable coating to be applied on the pre-finished panels to the top side to protect the finish during fabrication, shipping and handling, film shall be removed before installation.
F. Trim: Trim shall be fabricated of the same material and finish to match the profile, and will be press broken in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer of their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting. Trim to be fabricated in accordance with standard SMACNA procedure and details.
G. Closures: shall be pre-molded polyethylene to match the profile of the exposed fastener panel and shall be in lengths as supplied by the panel manufacturer.
H. Accessories/Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates. Accessories and their fasteners shall be capable of resisting the specified design wind uplift forces and shall allow for thermal movement of the roof panel system. Exposed fasteners shall not restrict free movement of the roof panel system resulting from thermal forces, except at designed points of roof panel fixity
   1. Fasteners shall have combination steel and EPDM washers
   2. Screws for panel to girt/purlins shall be sufficient to penetrate the supporting member by 1". All fasteners shall be applied in accordance with the fastening schedule as provided by panel manufacturer.
   3. Screws for flashings and sidelaps shall be #14 HHA x 3/4" sheet metal stitch screws. All accessories, flashings and sidelaps shall be fastened 12" OC.
I. Substrate shall be Metal Purlins
J. Caulking: Shall be a polyurethane where it is exposed and there is no thermal movement. All caulking and sealing shall be done in a neat manner with excess caulking or sealant removed from exposed surfaces.
I. Caulking shall be non-skinning, non hardening gun grade butyl sealant or butyl sealant tape with a minimum thickness of ?" where it is concealed and where thermal movement must be accommodated. All caulking or sealing shall be done in a neat manner with excess caulking or sealant removed from exposed surfaces.
J. Vapor Retarder: retarder with a permeance of 0.05 or less as determined by ASTM 98.

2.04 FABRICATION

A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown, provide manufacturer's standard product fabrication.
B. Fabricate components of the system in factory, ready for field assembly.
C. Fabricate components and assemble units to comply with fire performance requirements specified.
D. Apply specified finishes in conformance with manufacturer's standard, and according to manufacturer's instructions.
E. Panels are lappable. It is recommended that individual aluminum roof panels not exceed 16' in length and steel roof panels not exceed 32' in length for thermal movement reasons.
F. Panels shall be roll formed on a stationary industrial type rolling mill to gradually shape the sheet metal. Portable rollformers rented or owned by the installer, are not acceptable.

PART 3 EXECUTION

3.01 INSPECTION

A. Examine alignment of structural steel and related supports, primary and secondary roof framing, solid roof sheathing, prior to installation. Components should comply with shop drawings and be smooth, even, sound and free of depressions.
B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 FASTENERS

A. Secure units to supports
B. Place fasteners as indicated in manufacturer's standards.

3.03 INSTALLATION

A. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.
B. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight installation. Conform to standards set forth in SMACNA architectural sheet metal manuals and approved shop drawings for this project.
C. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.
D. Install panel system so it is watertight, without waves, warps, buckles or distortions, and allow for thermal movement considerations.
E. Abrasive devices shall not be used to cut on or near roof or wall panel system.
F. Apply sealant tape or caulking as necessary at flashing and panel joints to prevent water penetration.
G. Remove any strippable film immediately upon exposure to direct sunlight.
H. Vapor retarder: The joints, perimeter, and all openings shall be sealed per the manufacturer's instructions to provide a continuous vapor retarder.
I. Underlayment (solid substrate):
   1. Provide one layer of 30# felt with horizontal overlaps and endlaps staggered between layers.
   2. Provide ice and water shield membrane at all valley and eave conditions as well as any area at less than a 3:12 slope.
   3. Lay parallel to ridge line with 2 1/2" horizontal laps and 6" vertical laps

3.04 DAMAGED MATERIAL

A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

END OF SECTION

SECTION 074213.02
PREFORMED METAL STANDING SEAM ROOFING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. This section covers the pre-finished, pre-fabricated Architectural standing seam roof system. All metal trim, accessories, fasteners, insulation and sealants indicated on the drawings as part of this section.
B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section.
C. Related Work Specified Elsewhere
   1. Roof Deck structural steel, flat roof systems, perimeter edge systems. Roof hatches, firestopping not included in this section.

1.02 SUMMARY

A. Section Includes
   1. Factory formed Standing Seam metal roof panels
B. Related work specified elsewhere. (Note: select from the below or add appropriate sections)
   1. Section 051200 - Structural Steel
   2. Section *052100 or 054000* - Steel Joists
   3. Section 076000 - Flashing and Sheet Metal

1.03 DEFINITIONS

A. Metal Roof Panel Assembly: Metal roof panels, attachment system components, miscellaneous metal framing, thermal, and accessories necessary for a complete weathertight roofing system.
B. References:
   1. American Society for Testing and Materials (ASTM)
      a. ASTM A 653: Steel Sheet, Zinc Coated by the Hot Dip Process
      b. ASTM A 792: Steel Sheet, Aluminum-Zinc Alloy Coated by the Hot Dip Process
      c. ASTM B 209: Aluminum and Aluminum Alloy Sheet and Plate
      d. ASTM B370 Standard Specification for Copper Sheet and Strip for Building Construction
   2. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
      a. SMACNA Architectural Sheet Metal Manual, 1993 edition
   3. American Iron and Steel Institute (AISI)
      a. AISI Cold Formed Steel Design Manual
   4. Aluminum Association
      a. Aluminum Design Manual
   5. Metal Construction Association
      a. Preformed metal Wall Guidelines
   6. Code References
      a. ASCE, Minimum Loads for Buildings and Other Structures
      b. BOCA National Building Codes
      c. UBC Uniform Building Code
      d. SBC Standard Building Code

1.04 QUALITY ASSURANCE

A. Products establish a minimum of quality required.
B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
C. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted.

1.05 SUBSTITUTIONS

A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

1.06 SYSTEM DESCRIPTION

A. Material to comply with:
   1. ASTM A792/A792M Standard Specification for Sheet Steel, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip process

1.07 ROOF SYSTEM PERFORMANCE TESTING

A. General Performance: Metal roof panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation or other defects in construction.
B. Roof System shall be designed to meet Standard Building Code Wind Load requirements.
C. Panels to meet:
   1. Water Penetration: When tested per ASTM E-283/1680 and ASTM E-331/1646 there shall be no uncontrolled water penetration or air infiltration through the panel joints.
   2. Roof System shall be designed to meet a UL Class 90 wind uplift in accordance with UL standard 580 and panel system shall be ASTM 1592 Tested and approved
   3. UL 2218 - Impact Resistance rated.

1.08 WARRANTIES

A. Weathertight warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace standing seam metal roof panel assemblies that fail to remain weathertight, including leaks, within specified warranty period.
   1. Warranty Period: 20 Years from date of Substantial Completion
B. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace standing seam metal roof panels that show evidence of deterioration of factory-applied finish within specified warranty period.
   1. Exposed Panels Finish - deterioration includes the following:
      a. Color fading more than 5 hunter units when tested according to ASTM D 2244
      b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
      c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
   2. Warranty Period: 20 Years from the date of substantial completion
C. Applicator shall furnish written warranty for a two (2) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight condition.

1.09 SUBMITTALS

A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and types of sealants, and any other details as may be required for a weather-tight installation.
B. Provide finish samples of all colors specified.
C. Shop drawings: Show fabrication and installation layouts of metal roof panels, metal wall panels or metal soffit panels, details of edge conditions, side-seam joints, panel profiles, corners, anchorages, trim, flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work
D. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, base don input from installer of the items involved:
   1. Roof panels and attachments
   2. Metal trusses, bracings and supports
   3. Roof-mounted items including snow guards and items mounted on roof curbs.
E. LEED Submittals
   1. Product Test reports for Credit SS 7.2. For roof panels, indicating that the panels comply with Solar Reflective Index requirement
   2. Product data for Credit MR 4.1 and credit MR 4.2: Indicating the percentages by weight of postconsumer and preconsumer recycled content for products having recycled content.

1.10 DELIVERY, STORAGE AND HANDLING

A. Ordering: Comply with manufacturer's ordering instruction and lead time requirements to avoid construction delays.
B. Deliver components, sheets, metal roof panels and other manufactured items so as not to be damaged or deformed. Package metal roof panels for protection during transportation and handling.
C. Unload, store and erect metal roof panels in a manner to prevent bending, warping, twisting and surface damage.
D. Stack metal roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof panels to ensure dryness. Do not store metal roof panels in contact with other materials that might cause staining, denting or other surface damage.
E. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

1.11 PROJECT CONDITIONS

A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed.
B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

1.12 COORDINATION

A. Coordinate sizes and locations of roof curbs, equipment supports and roof penetrations with actual equipment provided.
B. Coordinate metal roof panels with rain drainage work, flashing, trim and construction of decks, parapet walls and other adjoining work to provide a leakproof, secure and noncorrosive installation.

PART 2 PRODUCTS

2.01 PANEL DESIGN

A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side laps. Include clips, cleats, pressure plates and accessories required for a weathertight installation.
B. Roof panels shall be Snap Clad standing seam in 18" widths with 1 3/4" high seam.
C. Panels to be produced with Factory supplied hot melt mastic in the seams.
D. Panels to be produced Smooth - Factory Standard.
E. Panels to be designed for attachment with concealed fastener clips, spaced as required by the manufacturer to provide for both positive and negative design loads, while allowing for the expansion and contraction of the entire roof system resulting from variations in temperature.
F. Forming: Use continuous end rolling method. No end laps on panels. No portable rollforming machines will be permitted on this project, no installer-owned or installer-rented machines will be permitted. It is the intent of the Architect to provide Factory-Manufactured panel systems only for this project.

2.02 ACCEPTABLE MANUFACTURERS

A. This project is detailed around the roofing product of Petersen Aluminum Corporation , Snap Clad.

2.03 MATERIALS AND FINISHES

A. Preformed roofing panels shall be fabricated of 22 GA Steel
B. Color shall be Sandstone
C. Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over a 0.25 to 0.3 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil, to meet AAMA 621. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesions, flexibility and longevity as specified by Kynar 500 or Hylar 5000 finish supplier.
D. If Strippable coating to be applied on the pre-finished panels to the top side to protect the finish during fabrication, shipping and handling, film shall be removed before installation.
E. Trim: Trim shall be fabricated of the same material and finish to match the profile, and will be press broken in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer of their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO

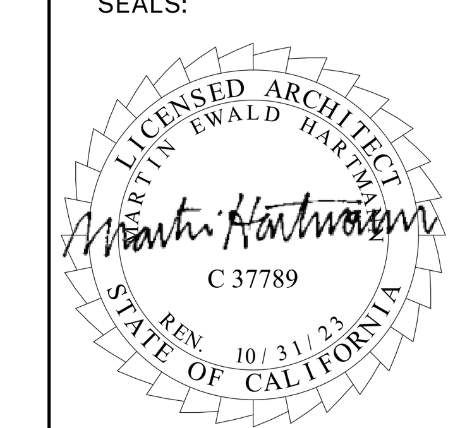
HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:



PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
(661) 251 - 7401
amgassociatesinc.com

PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

SHEET TITLE:

SPECIFICATIONS

SHEET NUMBER:

A.001

DATE: 05/06/22

F. Closures: use composition or metal profiled closures at the top of each elevation to close ends of the panels. Metal closures to be made in the same material and finish as face sheet.
G. Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates.
H. Substrate shall be Plywood
I. Roofing Underlayment
   1. On all surfaces to be covered with roofing material, furnish and install a 40 mil Peel & Stick membrane, required as outlined by metal panel manufacturer. Membrane to be a minimum of 40 mil thickness, smooth, non-granular, high temperature. **Basis of design:** Carlisle WIP 300 HT High Temperature Protection Self Adhering Roofing Underlayment. Other acceptable manufacturers include:
      a. W.R Grace "Ice & Water Shield"
      b. Interwrap Titanium PSU-30
      c. Tamko TW Tile and Metal Underlayment
   2. Underlayment shall be laid in horizontal layers with joints lapped toward the eaves a minimum of 6, and well secured along laps and at ends as necessary to properly hold the felt in place. All underlayment shall be preserved unbroken and whole.
   3. Peel and Stick Underlayment shall lap all hips and ridges at least 12 to form double thickness and shall be lapped 6 over the metal of any valley or built-in gutters and shall be installed as required by the Standing Seam Panel Manufacturer to attain the desired 20 Year Weathertightness Warranty.
J. Sealants
   1. Provide two-part polysulfide class B non-sag type for vertical and horizontal joints or
   2. one part polysulfide not containing pitch or phenolic extenders or
   3. Exterior grade silicone sealant recommended by roofing manufacturer or
   4. One part non-sag, gun grade exterior type polyurethane recommended by the roofing manufacturer.

2.04 FABRICATION

A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown, provide manufacturer's standard product fabrication.
B. Fabricate components of the system in factory, ready for field assembly.
C. Fabricate components and assemble units to comply with fire performance requirements specified.
D. Apply specified finishes in conformance with manufacturer's standard, and according to manufacturer's instructions.

PART 3 EXECUTION

3.01 INSPECTION

A. Examine alignment of structural steel and related supports, primary and secondary roof framing, solid roof sheathing, prior to installation.
B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 FASTENERS

A. Secure units to supports
B. Place fasteners as indicated in manufacturer's standards.

3.03 INSTALLATION

A. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.
B. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight installation.
C. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.

3.04 DAMAGED MATERIAL

A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

END OF SECTION

ROOF & WALL EXTERIOR SHEATHING

Georgia-Pacific DensDeck® Prime Roof Board with EONIC™ TECHNOLOGY

Technical Service Hotline 1.800.225.6119 or
www.densdeck.com

Manufacturer
Georgia-Pacific Gypsum, 133 Peachtree Street, Atlanta, GA 30303
Georgia-Pacific Canada, 2180 Meadowvale Boulevard, Suite 200, Mississauga, ON L5N 5S3
Technical Service Hotline: 1-800-225-6119

Description
DensDeck® Prime Roof Board has been enhanced to provide a broader compatibility and higher performance with roofing adhesives. Face mat enhancements allow adhesives to be applied more uniformly and consistently. In adhered, single ply membrane testing, enhanced DensDeck Prime demonstrated an average of 24% better bond than the original products, when using solvent based adhesives. (Average based on 60 sq.ft./gal coverage rates.)* Choose DensDeck Prime Roof Boards for adhered and self-adhered "peel & stick" roofing systems, as well as hot mopped, cold mastic and torch-applied modified bitumen roofs. Enhanced DensDeck Prime Roof Boards create a stronger and more economical installation by reducing the amounts of mastic or adhesive used and potentially eliminates the field primer. Consult with membrane manufacturer for actual priming requirements.

DensDeck Prime Roof Boards are the first and only fiberglass mat gypsum roof boards with a 90-day weather exposure limited warranty when applied vertically on a parapet wall.** (Limited to 1/2" and 5/8" products only.)

Primary Uses
Roof system manufacturers and designers have found DensDeck Prime Roof Board to be compatible with many types of roofing systems, including: modified asphalt, single-ply, metal systems, recover board, as well as an overlayment for polyisocyanurate and polystyrene insulation. DensDeck Prime Roof Board can also be used as a form board for poured gypsum concrete deck in roof applications as well as a substrate for spray foam roofing systems. 1/2" (12.7 mm) and 5/8" (15.9 mm) DensDeck Prime Roof Board may also be used in vertical applications as a backer board or liner for the roof side of parapet walls.

DensDeck Prime Roof Board may allow the bonding of cold mastic modified bitumen and torching directly to the surface. ***Consult with the system manufacturer for recommendations on this application.***

DensDeck Prime Roof Board is the preferred substrate for vapor retarders.

Standards and Code Approvals
DensDeck Prime Roof Boards are manufactured to meet ASTM C1177 and have the following approvals:
- Florida Product Approved
- Miami-Dade County Product Control Approved

Recommendations and Limitations
DensDeck Prime Roof Boards are manufactured to act with a properly designed roof system following good roofing practices. The actual use of DensDeck Prime Roof Board as a roofing component in any system or assembly is the responsibility of the roofing system's design authority. Consult with the appropriate system manufacturer and/or design authority for system and assembly specifications and instructions on applying other products to DensDeck Prime Roof Board. Georgia-Pacific does not warrant and is not responsible for any systems or assemblies utilizing DensDeck Prime Roof Board or any component in such systems or assemblies other than DensDeck Prime Roof Board.

The need for a separator sheet between the DensDeck Prime Roof Board and the roofing membrane must be determined by the roof membrane manufacturer or roofing system designer.

* Testing was done in accordance with FM approvals 4470, Appendix C: Small Scale Tests, Membrane Delamination Tests for Roofing Membranes and Substrates Using Tensile Loading.
** For complete warranty details, visit www.DensDeck.com. (Limited to 1/2" and 5/8" products only.)

Confirm any priming requirements with the membrane manufacturer. When applying solvent-based adhesives or primers, allow sufficient time for the solvent to flash off to avoid damage to roofing components.

DensDeck Prime Roof Boards should not be subjected to abnormal or excessive loads or foot traffic, such as, but not limited to, use on plaza decks or under steel-wheeled equipment that may fracture or damage the panels. Provide suitable roofing system protection when required.

When using DensDeck Prime Roof Boards for hot-mopped applications, Georgia-Pacific recommends maximum asphalt application temperatures of 425°F (218°C) to 450°F (232°C). Application temperatures above these recommended temperatures may adversely affect roof system performance. Consult and follow the roofing system manufacturer's specifications for full mopping applications and temperature requirements.

When using DensDeck Prime Roof Board as a substrate for torch applications, ensure that the product is dry and that the proper torching technique is used. Limit the heat to the DensDeck Prime Roof Board. Maintain a majority of the torch flame directly on the roll.

Conditions beyond the control of Georgia-Pacific, such as weather conditions, dew, leaks, application temperatures and techniques may cause adverse effects with roofing systems.

Handling and Use–CAUTION
This product contains fiberglass facings which may cause skin irritation. Dust and fibers produced during the handling and installation of the product may cause skin, eye and respiratory tract irritation. Avoid breathing dust and minimize contact with skin and eyes. Wear long sleeve shirts, long pants and eye protection. Always maintain adequate ventilation. Use a dust mask or NIOSH/MSHA approved respirator as appropriate in dusty or poorly ventilated areas.

Moisture Management
DensDeck Prime Roof Boards, like other components used in roofing systems, must be protected from exposure to moisture before, during and after installation.

Remove the plastic packaging from all DensDeck Prime Roof Board immediately upon receipt of delivery. Failure to remove the plastic packaging may result in entrapment of condensation or moisture. DensDeck Prime Roof Board stored outside must be stored level and off the ground and protected by a breathable waterproof covering. Provide means for air circulation around and under stored bundles of DensDeck Prime Roof Board. DensDeck Prime Roof Board must be covered the same day as installed.

Avoid application of DensDeck Prime Roof Boards during rain, heavy fog and any other conditions that may deposit moisture on the surface, and avoid the overuse of non-vented, direct-fired heaters during winter months. When roofing systems are installed on new poured concrete or light weight concrete decks or when re-roofing over an existing concrete deck, a vapor barrier should be installed above the concrete to retard the migration of water from the concrete into the roof assembly. Always consult the roofing system manufacturer or design authority for specific instructions for applying other products to DensDeck Prime Roof Boards.

Moisture vapor movement by convection must be eliminated, and the flow of water by gravity through imperfections in the roof system must be controlled. After a leak has occurred, no condensation on the upper surface of the system should be tolerated, and the water introduced by the leak must be dissipated to the building interior in a minimum amount of time.

Although DensDeck Prime Roof Boards are engineered with fiberglass facings and high density gypsum cores, the presence of free moisture can have a detrimental effect on the performance of the product and the installation of roofing membranes. For example, hot asphalt applications can blister; torched modified bitumen may not properly bond; and adhesives for single ply membranes may not dry properly.

Submittal Approvals

Job Name ______________________

Contractor ______________________

Date ______________________

continued →

Stamps / Signatures

Georgia-Pacific DensDeck® Prime Roof Board with EONIC™ TECHNOLOGY

Technical Service Hotline 1.800.225.6119 or
www.densdeck.com

Moisture accumulation may also significantly decrease wind uplift and vertical pull resistance in the system or assembly. DensDeck® Prime Roof Boards containing excessive free moisture content may need to be evaluated for structural stability to assure wind uplift performance.

Fire Resistance Classifications
DensDeck Prime Roof Boards are excellent fire barriers over combustible and noncombustible roof decks, including steel decks.

UL 790 Classification. DensDeck Prime Roof Boards have been classified by Underwriters Laboratories LLC (UL) for use as a fire barrier over combustible and noncombustible decks in accordance with the ANSI/UL 790 test standard. The UL classification includes a comprehensive Class A, B or C rating. For additional information concerning the UL 790 classification, consult the UL Certification Directory.

UL 1256 Classification. DensDeck Prime Roof Boards have also been classified by UL in roof deck constructions for internal (under deck) fire exposure in accordance with the ANSI/UL 1256 Steiner Tunnel test. For additional information concerning the UL 1256 classification, consult the UL Certification Directory.

FM Class 1 Approvals. DensDeck Prime Roof Boards are included in numerous roofing assemblies with a Factory Mutual (FM) Class 1 fire rating. 1/4" (6.4 mm) DensDeck Prime Roof Boards have passed testing under the FM Calorimeter Standard 4450 and have been approved by FM as such for insulated steel deck roofs when installed according to the conditions identified by FM. For more information concerning FM Approvals and FM Class 1 assemblies with DensDeck Prime Roof Boards, consult FM or RoofNav®.

Type X. 5/8" (15.9 mm) DensDeck® Prime Fireguard® Roof Boards are manufactured to meet the "Type X" requirements of ASTM C1177 for increased fire resistance beyond regular gypsum board.

UL Fire Resistance Ratings. 5/8" (15.9 mm) DensDeck Prime Fireguard Roof Boards are designated as **Type DD** by UL and included in assembly designs investigated by UL for hourly fire resistance ratings. 5/8" (15.9 mm) DensDeck Prime Fireguard Roof Boards may also replace any unclassified 5/8" (15.9 mm) gypsum board in an assembly in the UL Fire Resistance Directory under the prefix "P".

Flame Spread and Smoke Developed. When tested in accordance with ASTM E84, DensDeck Prime Roof Boards had Flame Spread 0, Smoke Developed 0.

Wind Uplift
DensDeck Prime Roof Boards are included in numerous assemblies evaluated by FM or other independent laboratories for wind uplift performance. For information concerning such assemblies, please visit www.roofnav.com.

Physical Properties

Properties	1/4" (6.4 mm)	1/2" (12.7mm)	5/8" (15.9 mm)
Thickness, nominal	1/4" (6.4 mm) ± 1/16" (1.6 mm)	1/2" (12.7 mm) ± 1/32" (.8 mm)	5/8" (15.9 mm) ± 1/32" (.8 mm)
Width, standard	4' (1219 mm) ± 1/8" (3 mm)	4' (1219 mm) ± 1/8" (3 mm)	4' (1219 mm) ± 1/8" (3 mm)
Length, standard	4' (1219 mm) and 8' (2438 mm) ± 1/4" (6.4 mm)	4' (1219 mm) and 8' (2438 mm) ± 1/4" (6.4 mm)	4' (1219 mm) and 8' (2438 mm) ± 1/4" (6.4 mm)
Weight, nominal, lbs./sq. ft. (Kg/m^2)	1.2 (5.9)	2.0 (9.8)	2.5 (12.2)
Surfacing	Fiberglass mat with non-asphaltic coating	Fiberglass mat with non-asphaltic coating	Fiberglass mat with non-asphaltic coating
Flexural Strength[1], parallel, lbf. min. (N)	≥40 (178)	≥80 (356)	≥100 (444)
Flute Spanability[2]	2-5/8" (66.7 mm)	5" (127 mm)	8" (203 mm)
Permeance[3], Perms ($ng/Pa \cdot S \cdot m^2$)	>30 (>1710)	>23 (>1300)	>17 (>970)
R Value[4], $ft^2 \cdot °F \cdot hr/BTU$ ($m^2 \cdot K/W$)	.28	.56	.67
Linear Variation with Change in Temp., in/in °F (mm/mm/C°)	8.5×10^{-6} (15.3×10^{-6})	8.5×10^{-6} (15.3×10^{-6})	8.5×10^{-6} (15.3×10^{-6})
Linear Variation with Change in Moisture	6.25×10^{-6}	6.25×10^{-6}	6.25×10^{-6}
Water Absorption[5], % max	5	5	5
Compressive Strength[6], psi nominal	900	900	900
Surface Water Absorption, grams, nominal	1.0	1.0	1.0
Flame Spread, Smoke Developed (ASTM E84)	0/0	0/0	0/0
Bending Radius	4' (1219 mm)	6' (1829 mm)	8' (2438 mm)

1. Tested in accordance with ASTM C473 method B.
2. Tested in accordance with ASTM E661.
3. Tested in accordance with ASTM E96 (dry cup method).
4. Tested in accordance with ASTM C518 (heat flow meter).
5. Specified values per ASTM C1177.
6. Tested in accordance with ASTM C473.

Georgia-Pacific Gypsum

U.S.A. Georgia-Pacific Gypsum LLC
Georgia-Pacific Gypsum II LLC
Canada Georgia-Pacific Canada LP

SALES INFORMATION AND ORDER PLACEMENT
U.S.A. West: **1-800-824-7503**
Midwest: **1-800-876-4746**
South Central: **1-800-231-6060**
Southeast: **1-800-327-2344**
Northeast: **1-800-947-4497**
CANADA Canada Toll Free: **1-800-387-6823**
Quebec Toll Free: **1-800-361-0486**

TECHNICAL INFORMATION
U.S.A. and Canada: **1-800-225-6119,** www.gpgypsum.com

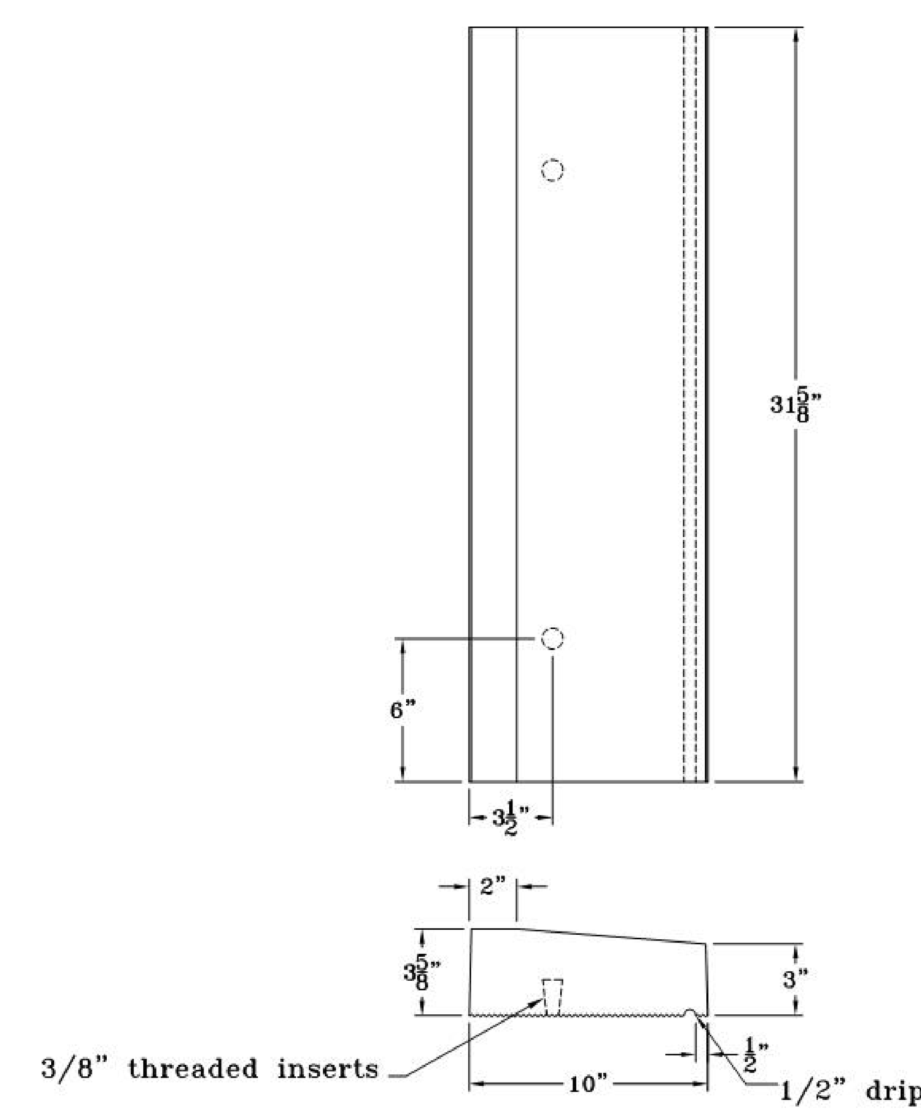
WARRANTIES, REMEDIES AND TERMS OF SALE For current warranty information for this product, please go to www.gpgypsum.com and select the product for warranty information. All sales of this product by Georgia-Pacific are subject to our Terms of Sale available at www.gpgypsum.com.

UPDATES AND CURRENT INFORMATION The information in this document may change without notice. Visit our website at www.gpgypsum.com for updates and current information.

CAUTION For product fire, safety and use information, go to www.buildgp.com/safetyinfo or call 1-800-225-6119.

FIRE SAFETY CAUTION Passing a fire test in a controlled laboratory setting and/or certifying or labeling a product as having a one-hour, two-hour, or any other fire resistance or protection rating and, therefore, as acceptable for use in certain fire rated assemblies/systems, does not mean that either a particular assembly/system incorporating the product, or any given piece of the product itself, will necessarily provide one-hour fire resistance, two-hour fire resistance, or any other specified fire resistance or protection in an actual fire. In the event of an actual fire, you should immediately take any and all actions necessary for your safety and the safety of others without regard for any fire rating of any product or assembly/system.

SI 155 S 31-5/8 dp ti
Weight Concrete ±75 lbs.



CONCRETE CAP

CONCRETE DESIGNS INC.
3650 S. BROADMONT DRIVE
TUCSON, AZ 85713-5247
(800)279-2278 (520)624-6653 FAX(520)624-3420
Website : www.concrete-designs.com
E-mail : info@concrete-designs.com

SCALE: 1-1/2"=1'-0"

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO

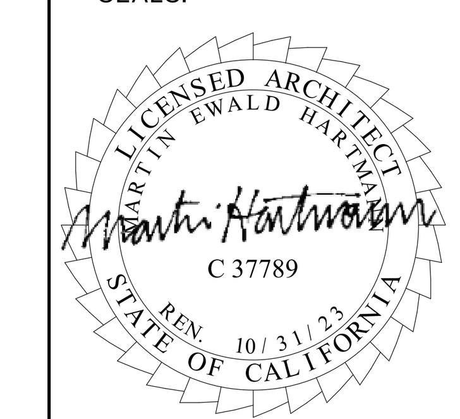
HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:



PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
(661) 251 - 7401
amgassociatesinc.com

PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	Author
REVIEWED BY:	Checker

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

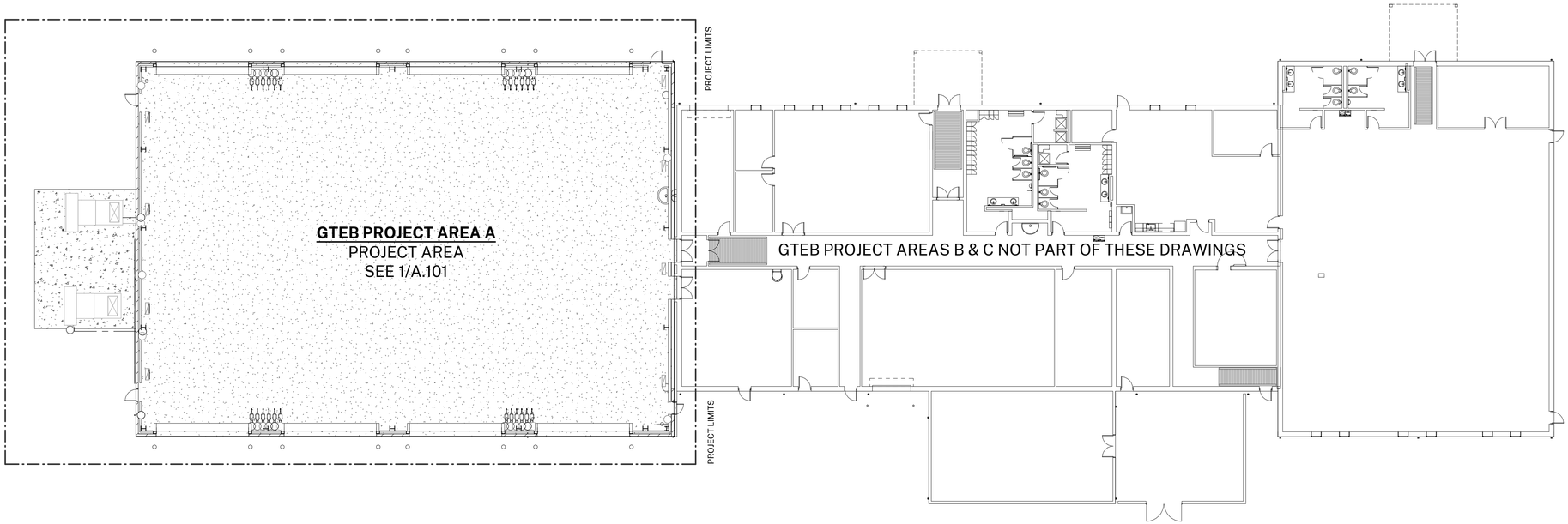
SHEET TITLE:

SPECIFICATIONS

SHEET NUMBER:

A.002

DATE: 05/06/22



1 FLOOR PLAN - OVERALL
1/16" = 1'-0"

PLAN NORTH

SYMBOL LEGEND

- DETAIL REFERENCE (SIM, A101) — MODIFIER, DWG. NO, SHEET NO
- DETAIL REFERENCE (SIM, A101) — MODIFIER, DWG. NO, SHEET NO
- SECTION (SIM, 1, A101) — MODIFIER, DWG. NO, SHEET NO
- EXT BLDG ELEVATION(S) (#, A-101, #) — DWG. NO, SHEET NO
- INT BLDG ELEVATION(S) (#, A-101, #) — DWG. NO, SHEET NO
- DOOR TAG (101) — REFER TO USACE A-621
- WINDOW TAG (1i) — REFER TO USACE A-620
- EQUIPMENT TAG (1i) — REFER TO SCHEDULE
- WALL TAG (1i) — REFER TO SCHEDULE
- KEYNOTE W/ ARROW (?)
- KEYNOTE W/ AREA INDICATOR (?)

- (E) WALL, REMOVE
- (E) FRAMED WALL, TO REMAIN
- (E) MASONRY WALL, TO REMAIN
- (E) CONCRETE WALL, TO REMAIN
- (N) FRAMED WALL REFER TO SCHEDULE
- (N) MASONRY WALL REFER TO SCHEDULE
- (N) CONCRETE WALL REFER TO SCHEDULE
- (N) FRAMED WALL - 1 HR FIRE BARRIER
- (E) DOOR, REMOVE
- (E) DOOR, TO REMAIN
- (N) DOOR (101)

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

MARTIN EWALD HARTMANN — LICENSED ARCHITECT — C 37789 — REN. 10/31/23 — STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
(661) 251 - 7401
amgassociatesinc.com

PROJECT ADDRESS:
CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

SHEET TITLE:

OVERALL FLOOR PLAN

SHEET NUMBER:

A.100

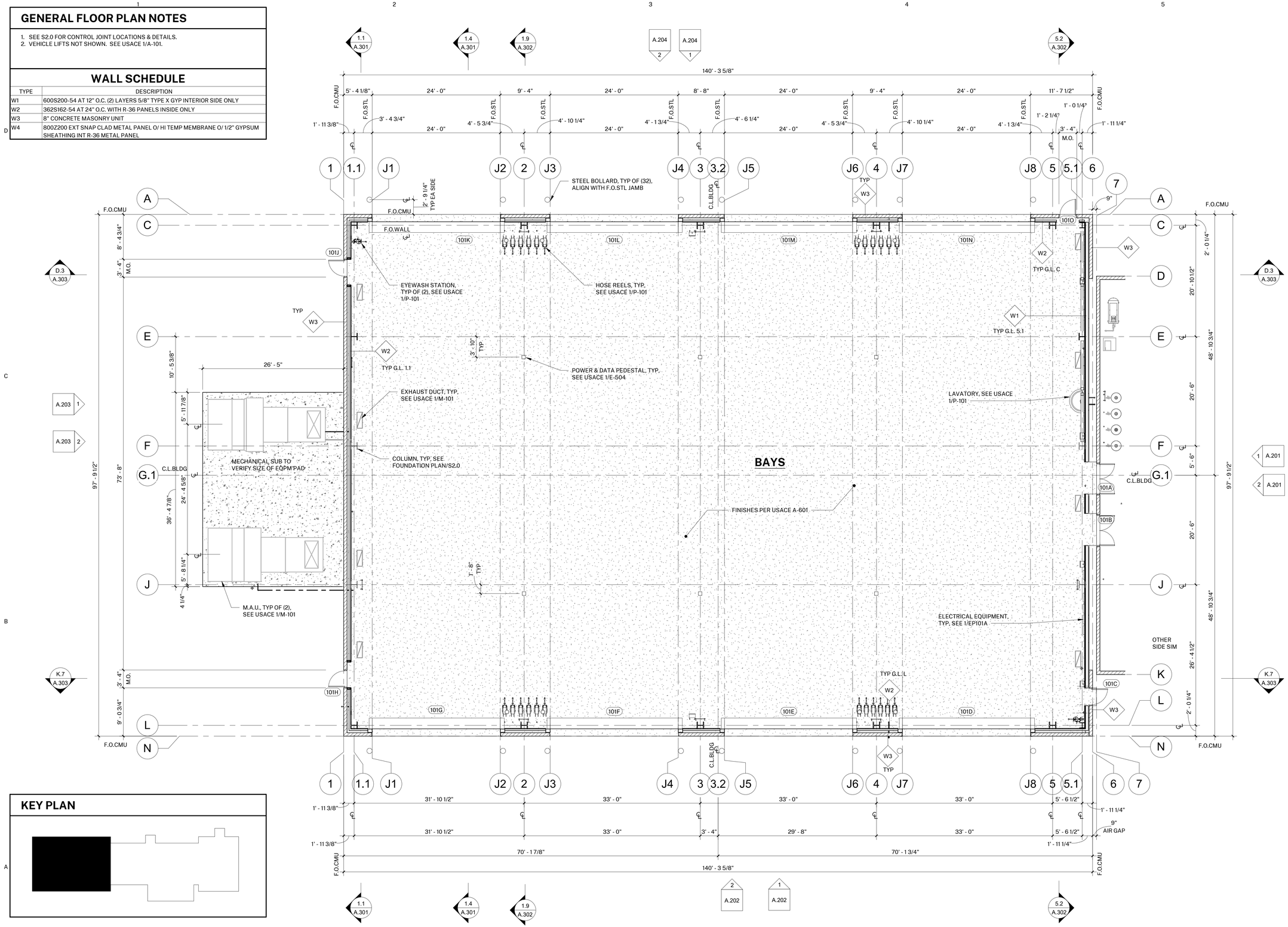
DATE: 05/06/22

GENERAL FLOOR PLAN NOTES

1. SEE S2.0 FOR CONTROL JOINT LOCATIONS & DETAILS.
2. VEHICLE LIFTS NOT SHOWN. SEE USACE 1/A-101.

WALL SCHEDULE

TYPE	DESCRIPTION
W1	600S200-54 AT 12" O.C. (2) LAYERS 5/8" TYPE X GYP INTERIOR SIDE ONLY
W2	362S162-54 AT 24" O.C. WITH R-36 PANELS INSIDE ONLY
W3	8" CONCRETE MASONRY UNIT
W4	800Z200 EXT SNAP CLAD METAL PANEL O/ HI TEMP MEMBRANE O/ 1/2" GYPSUM SHEATHING INT R-36 METAL PANEL



KEY PLAN

1.9 FLOOR PLAN - BAYS
1/8" = 1'-0"

PLAN NORTH

AGENCY APPROVAL:

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PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

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REVIEWED BY:	MEH

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SHEET TITLE:

FLOOR PLAN - GROUND LEVEL

SHEET NUMBER:

A.101

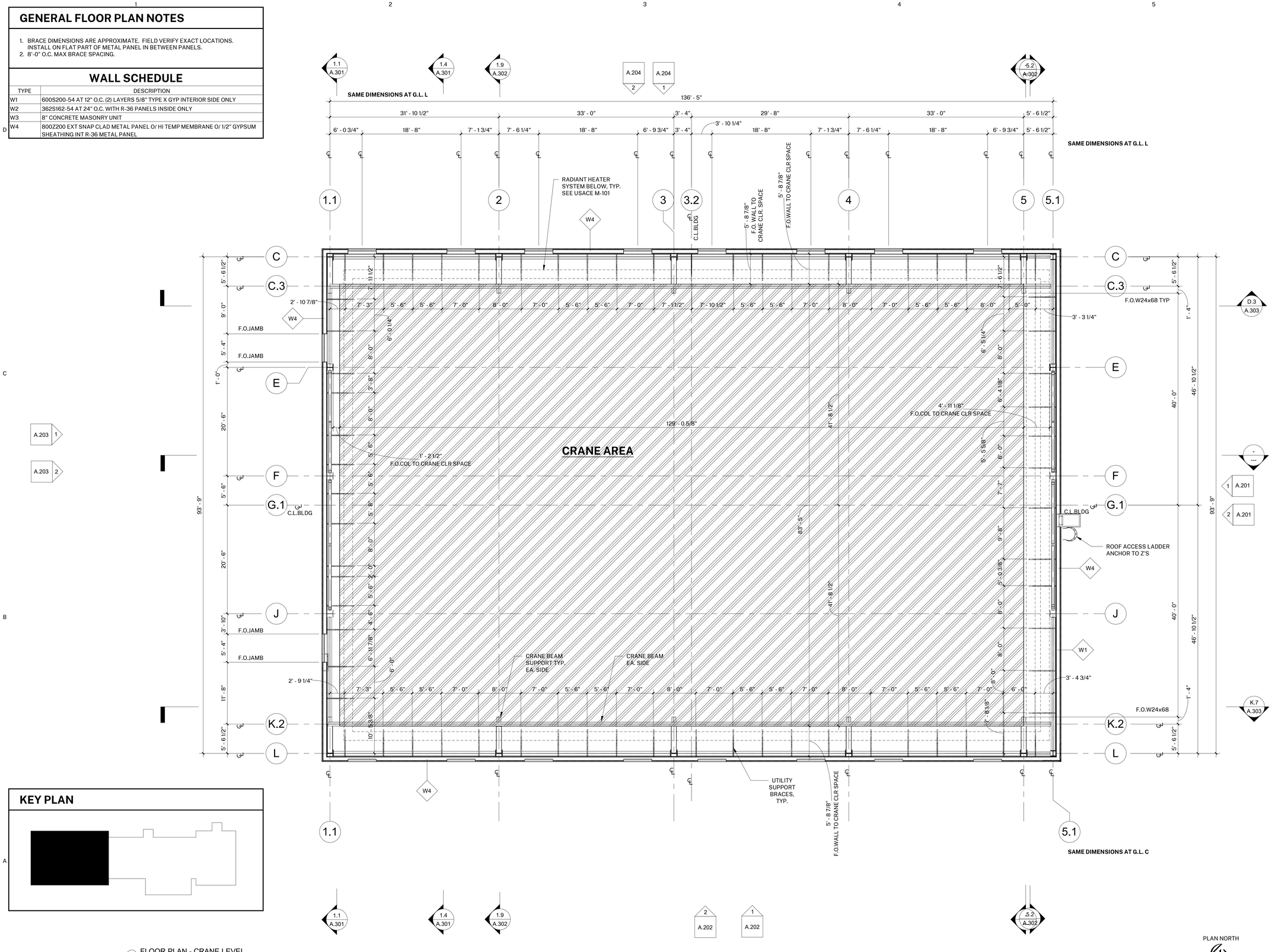
DATE: 05/06/22

GENERAL FLOOR PLAN NOTES

1. BRACE DIMENSIONS ARE APPROXIMATE. FIELD VERIFY EXACT LOCATIONS. INSTALL ON FLAT PART OF METAL PANEL IN BETWEEN PANELS.
2. 8'-0" O.C. MAX BRACE SPACING.

WALL SCHEDULE

TYPE	DESCRIPTION
W1	600S200-54 AT 12" O.C. (2) LAYERS 5/8" TYPE X GYP INTERIOR SIDE ONLY
W2	362S162-54 AT 24" O.C. WITH R-36 PANELS INSIDE ONLY
W3	8" CONCRETE MASONRY UNIT
W4	800Z200 EXT SNAP CLAD METAL PANEL O/ HI TEMP MEMBRANE O/ 1/2" GYPSUM SHEATHING INT R-36 METAL PANEL



KEY PLAN

1 FLOOR PLAN - CRANE LEVEL
1/8" = 1'-0"

PLAN NORTH

AGENCY APPROVAL:

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PROJECT:

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DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

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SHEET TITLE:

FLOOR PLAN - CRANE LEVEL

SHEET NUMBER:

A.102

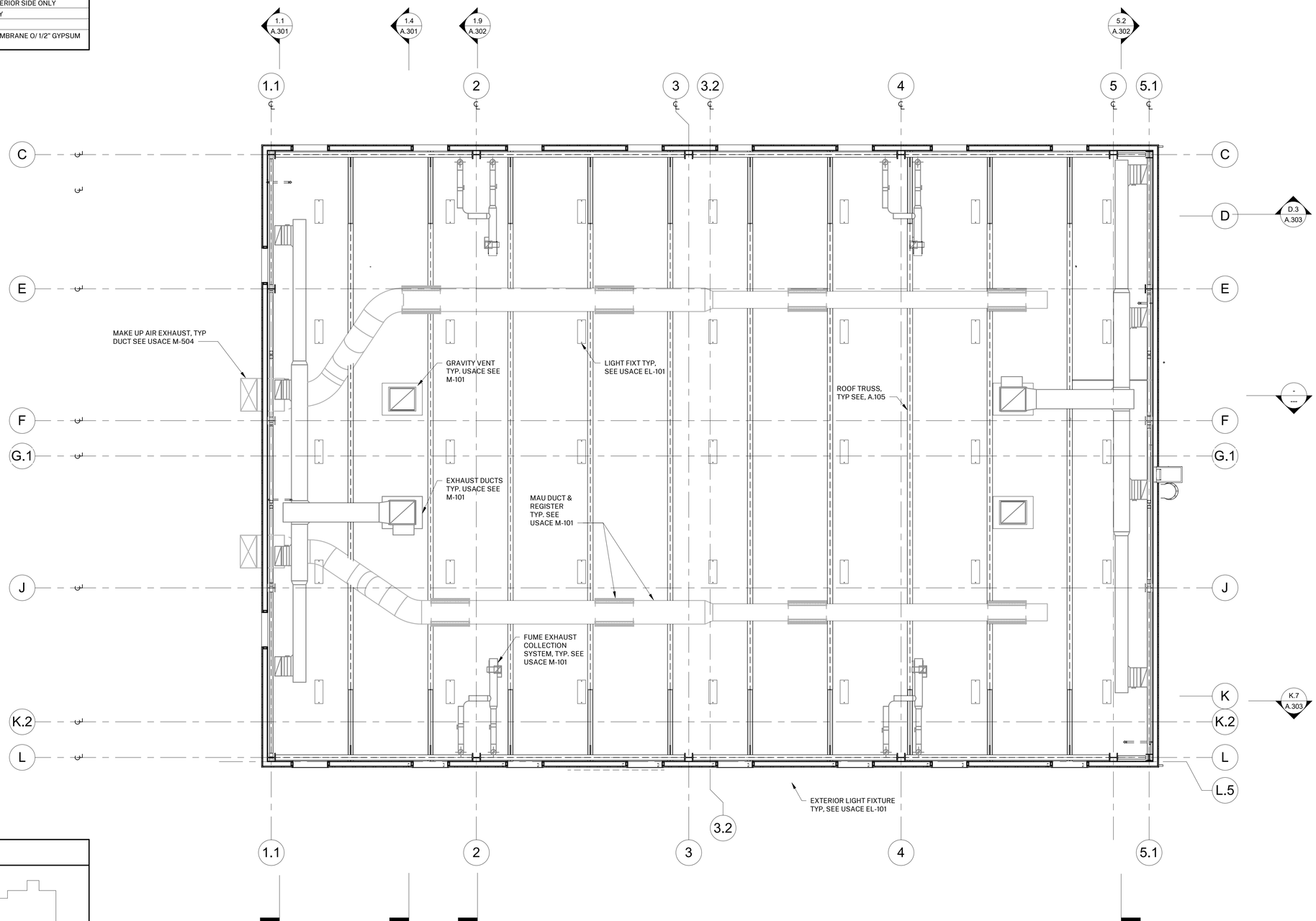
DATE: 05/06/22

GENERAL FLOOR PLAN NOTES

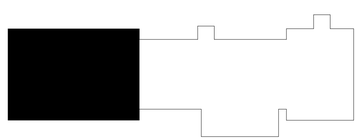
1. SEE 1/A.101 & A.105 FOR BUILDING DIMENSIONS

WALL SCHEDULE

TYPE	DESCRIPTION
W1	600S200-54 AT 12" O.C. (2) LAYERS 5/8" TYPE X GYP INTERIOR SIDE ONLY
W2	362S162-54 AT 24" O.C. WITH R-36 PANELS INSIDE ONLY
W3	8" CONCRETE MASONRY UNIT
W4	800Z200 EXT SNAP CLAD METAL PANEL O/ HI TEMP MEMBRANE O/ 1/2" GYPSUM SHEATHING INT R-36 METAL PANEL



KEY PLAN



1 RCP - PROPOSED
1/8" = 1'-0"

PLAN NORTH

AGENCY APPROVAL:

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hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN C 37789 REN. 10/31/23 STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

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REVIEWED BY:	MEH

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SHEET TITLE:

RCP

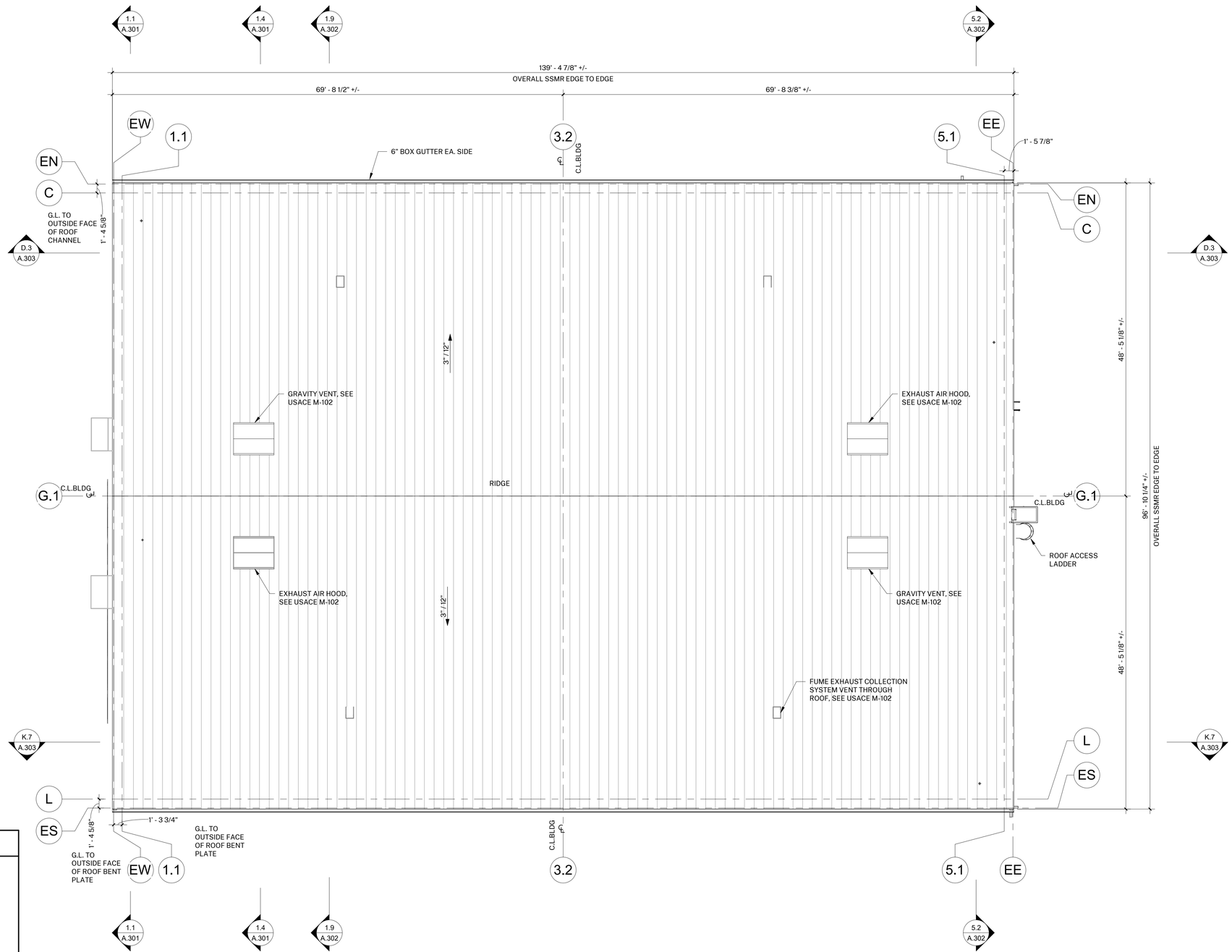
SHEET NUMBER:

A.103

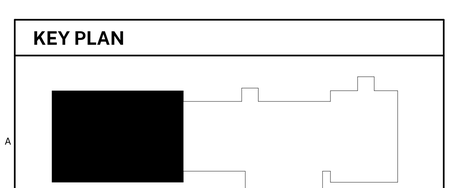
DATE: 05/06/22

ROOF MATERIAL LEGEND

STANDING SEAM METAL ROOF O/ ICE & WATER SHIELD O/ GYPSUM ROOF DECK O/ POLYISO FOAM BOARD O/ METAL DECK



KEY PLAN



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

PLAN NORTH

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
HARTMANNARCHITECTURESTUDIO.COM
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OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN
C 37789
REN. 10/31/23
STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

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REVIEWED BY:	MEH

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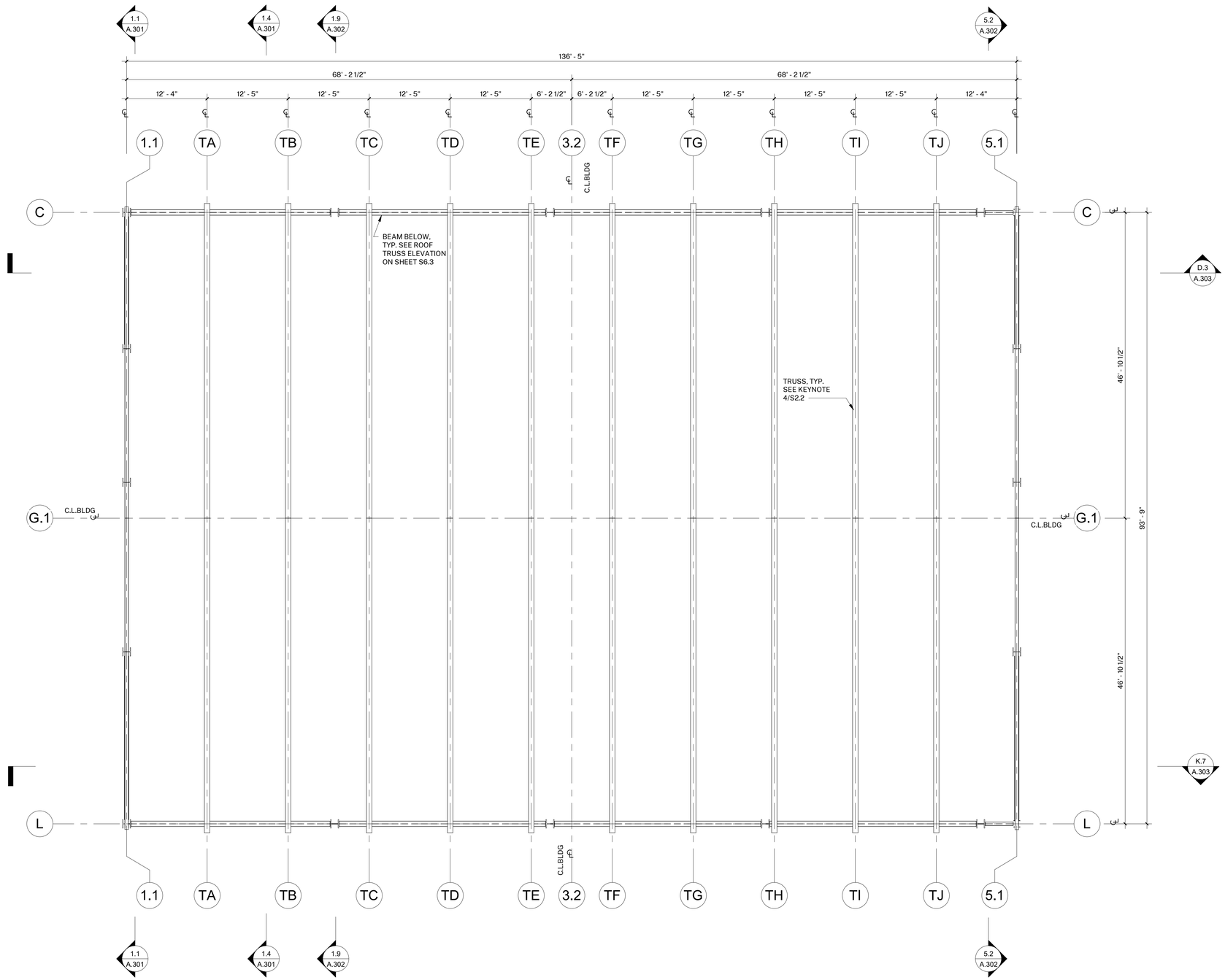
SHEET TITLE:

ROOF PLAN

SHEET NUMBER:

A.104

DATE: 05/06/22



1 ROOF TRUSS PLAN
1/8" = 1'-0"

PLAN NORTH

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
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PROJECT:

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CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
(661) 251 - 7401
amgassociatesinc.com

PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

SHEET TITLE:

ROOF TRUSS PLAN

SHEET NUMBER:

A.105

DATE: 05/06/22

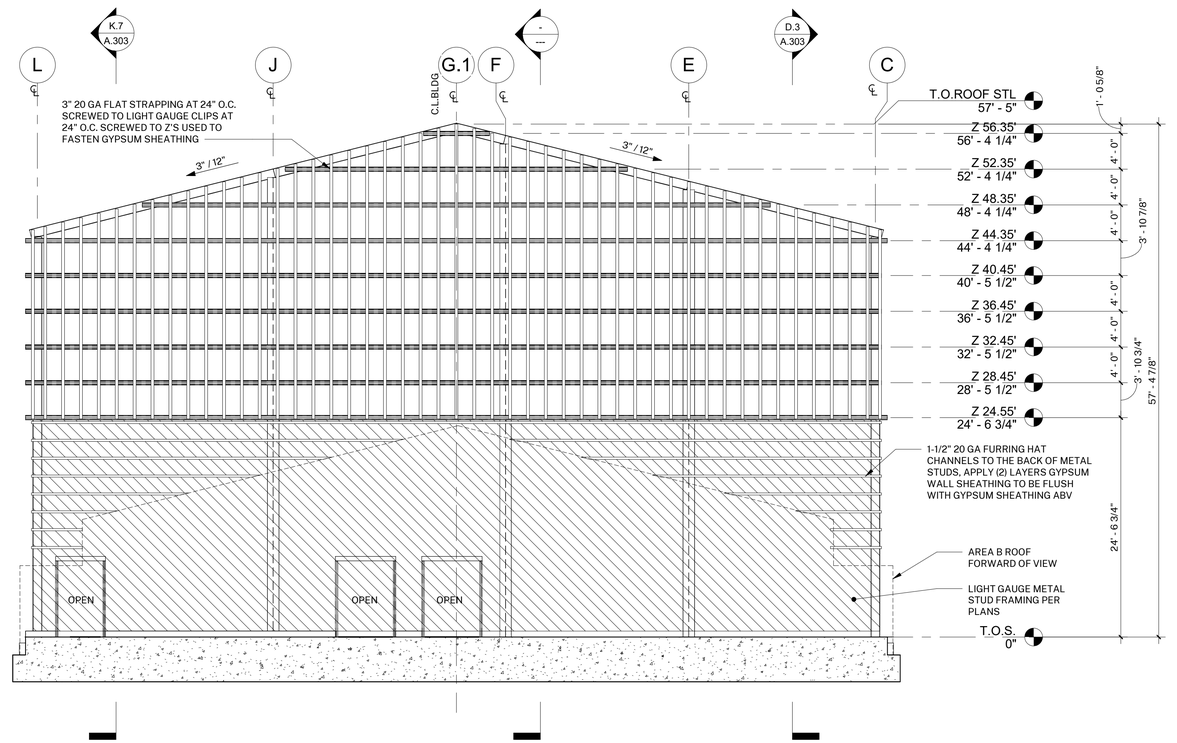
GENERAL ELEVATION NOTES

1. SEE S SHEETS FOR STRUCTURAL MEMBER IDENTIFICATION AND PROPERTIES.
2. SEE 1/A.101 & 1/A-102 FOR HORIZONTAL OPENING LOCATIONS
3. PROVIDE ALL SNAP CLAD CORNER, BASE, JAMB, SILL ETC. FOR COMPLETE INSTALLATION

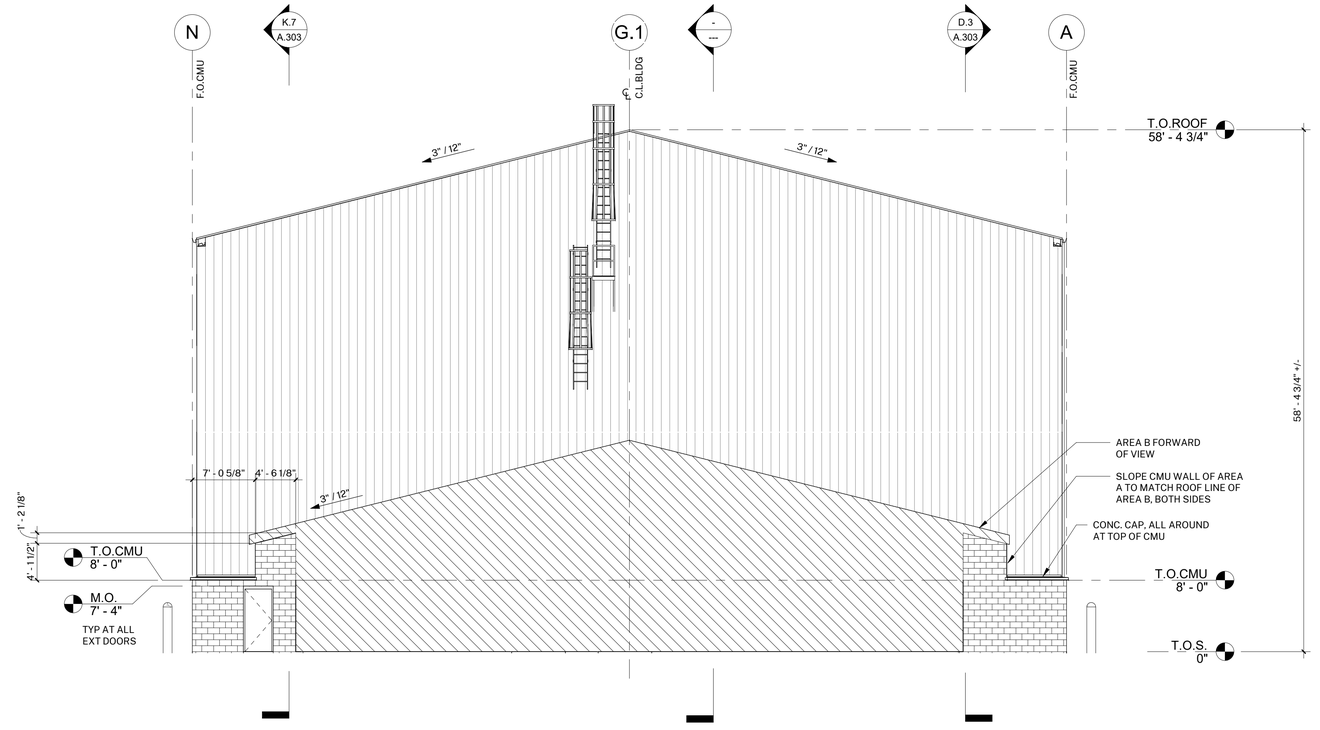
ELEVATION MATERIAL LEGEND

SNAP-CALD METAL WALL PANELS

CMU, SEE USAGE A-601



2 EAST ELEVATION - FRAMING
1/8" = 1'-0"



1 EAST ELEVATION
1/8" = 1'-0"

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN
C 37789
STATE OF CALIFORNIA
REN. 10/31/23

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
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(661) 251 - 7401
amgassociatesinc.com

PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

SHEET TITLE:

EXTERIOR ELEVATIONS - EAST

SHEET NUMBER:

A.201

DATE: 05/06/22

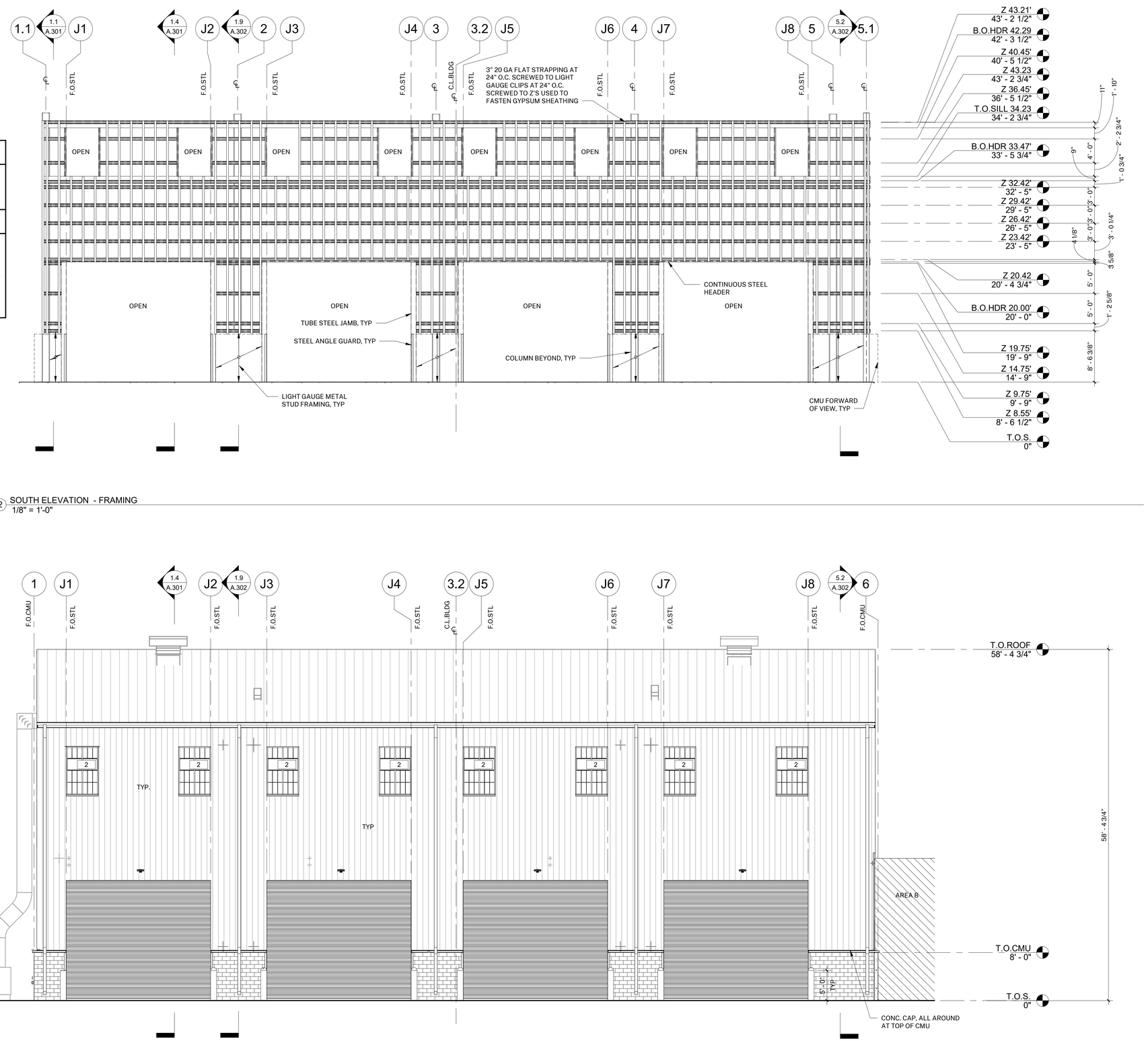
GENERAL ELEVATION NOTES

1. SEE S SHEETS FOR STRUCTURAL MEMBER IDENTIFICATION AND PROPERTIES.
2. SEE 1/A.101 & 1/A-102 FOR HORIZONTAL OPENING LOCATIONS
3. PROVIDE ALL SNAP CLAD CORNER, BASE, JAMB, SILL ETC. FOR COMPLETE INSTALLATION

ELEVATION MATERIAL LEGEND

SNAP-CALD METAL WALL PANELS

CMU, SEE USAGE A-601



2 SOUTH ELEVATION - FRAMING
1/8" = 1'-0"

1 SOUTH ELEVATION
1/8" = 1'-0"

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
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CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN C 37789 STATE OF CALIFORNIA REN. 10/31/23

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

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PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

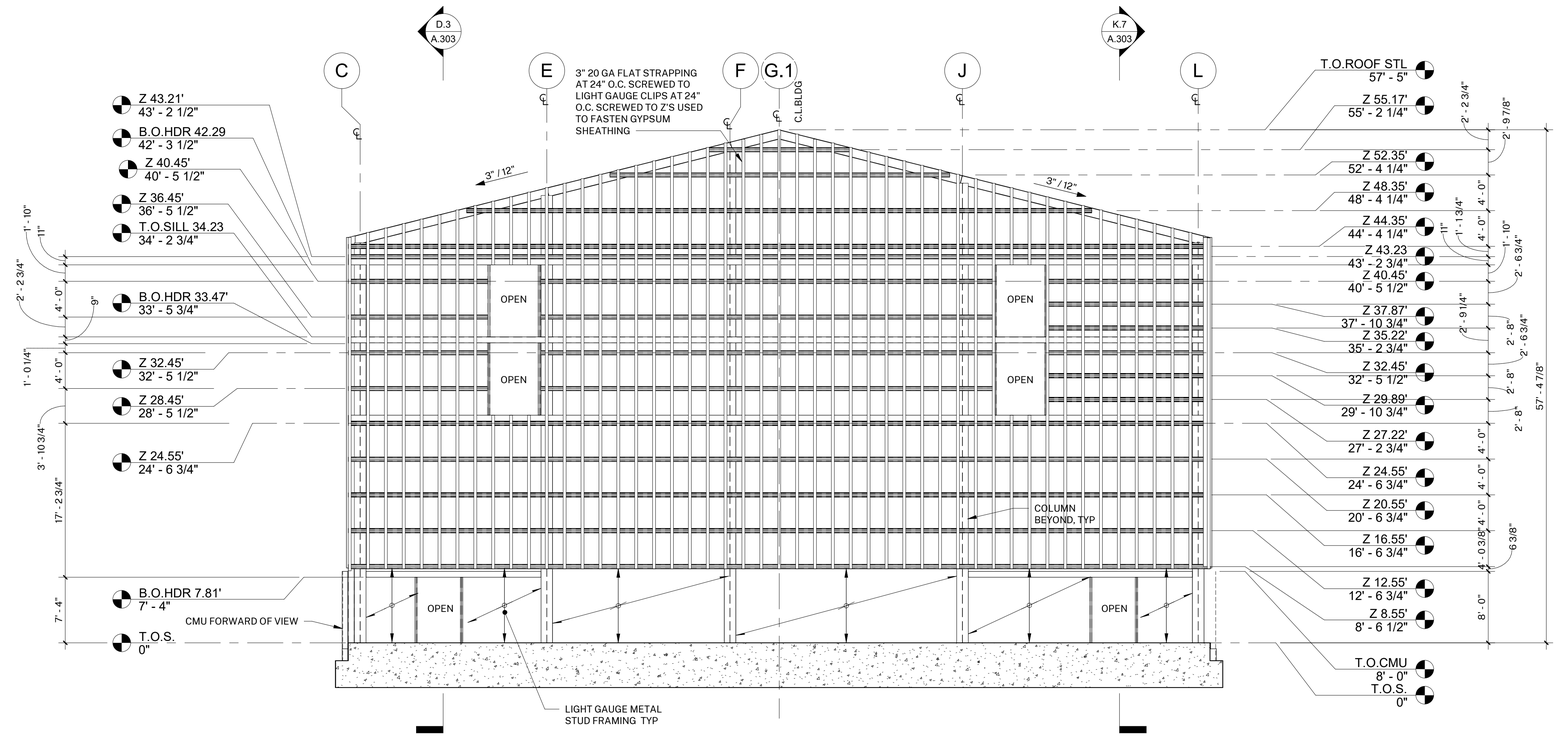
SHEET TITLE:

EXTERIOR ELEVATIONS - SOUTH

SHEET NUMBER:

A.202

DATE: 05/06/22



2 WEST ELEVATION - FRAMING
1/8" = 1'-0"

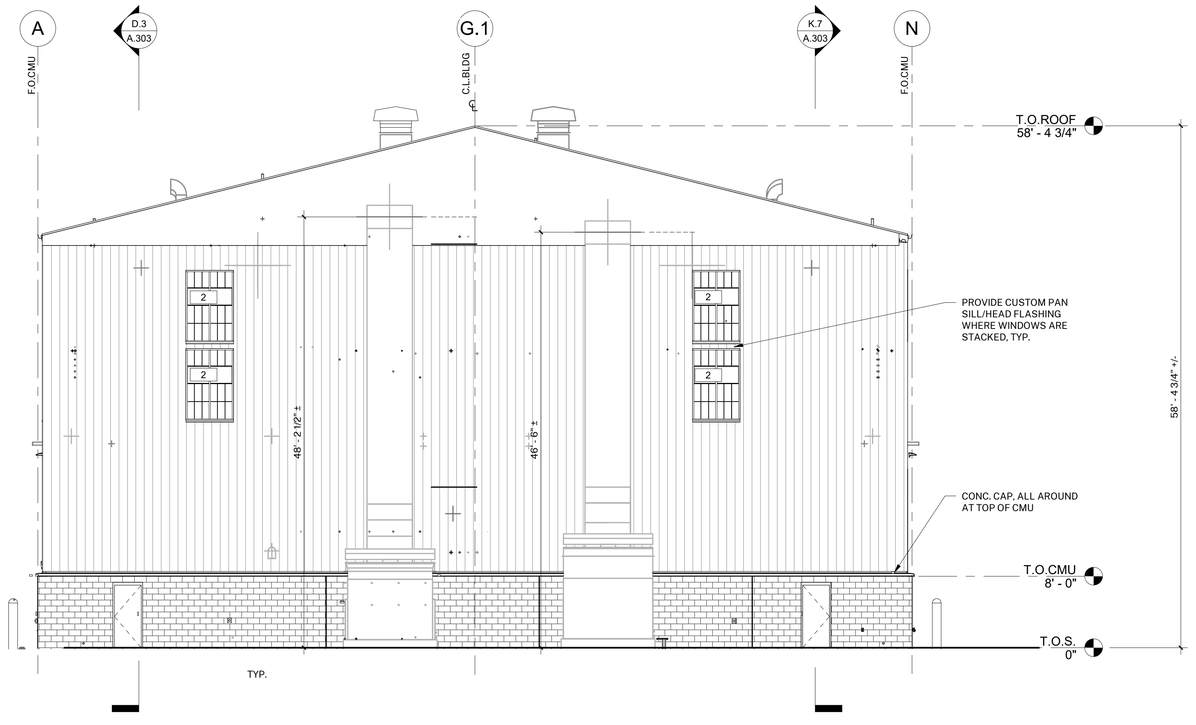
GENERAL ELEVATION NOTES

1. SEE S SHEETS FOR STRUCTURAL MEMBER IDENTIFICATION AND PROPERTIES.
2. SEE 1/A.101 & 1/A-102 FOR HORIZONTAL OPENING LOCATIONS
3. PROVIDE ALL SNAP CLAD CORNER, BASE, JAMB, SILL ETC. FOR COMPLETE INSTALLATION

ELEVATION MATERIAL LEGEND

SNAP-CALD METAL WALL PANELS

CMU, SEE USAGE A-601



1 WEST ELEVATION
1/8" = 1'-0"

AGENCY APPROVAL:

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hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

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(661) 251 - 7401
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PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
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ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

SHEET TITLE:

EXTERIOR ELEVATIONS - WEST

SHEET NUMBER:

A.203

DATE: 05/06/22

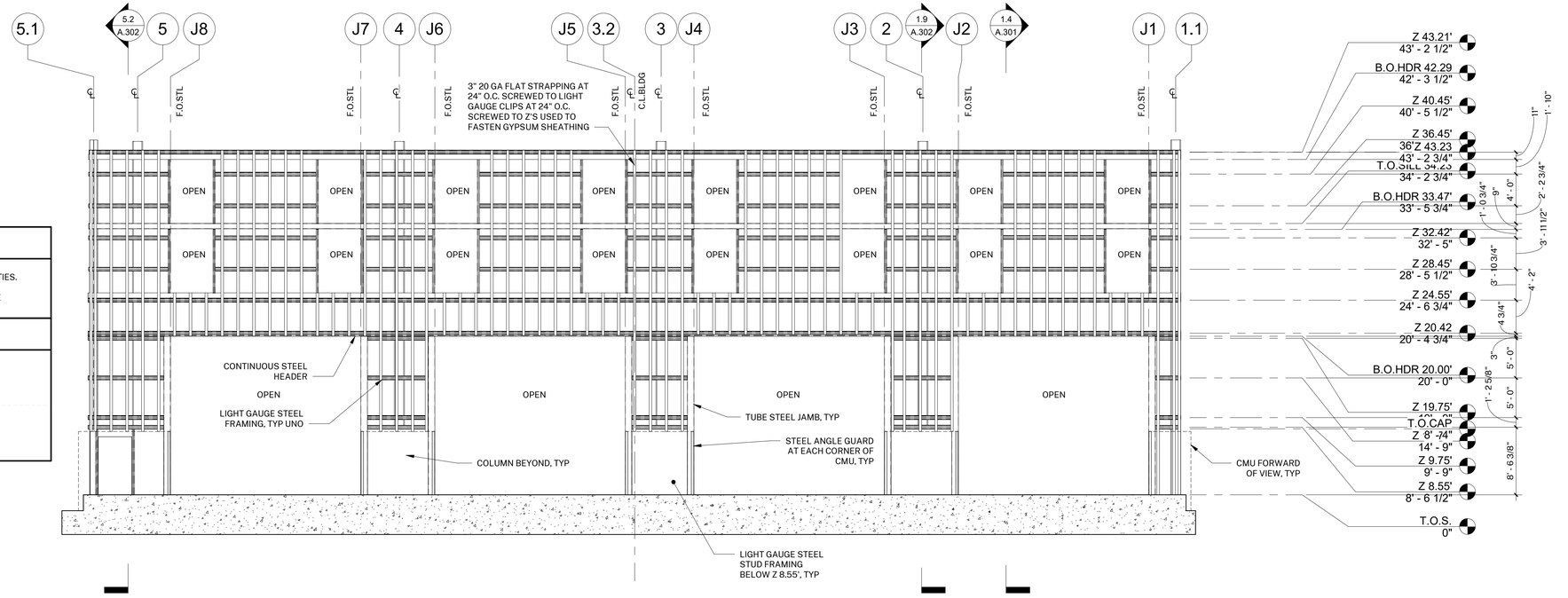
GENERAL ELEVATION NOTES

1. SEE S SHEETS FOR STRUCTURAL MEMBER IDENTIFICATION AND PROPERTIES.
2. SEE 1/A.101 & 1/A-102 FOR HORIZONTAL OPENING LOCATIONS
3. PROVIDE ALL SNAP CLAD CORNER, BASE, JAMB, SILL ETC. FOR COMPLETE INSTALLATION

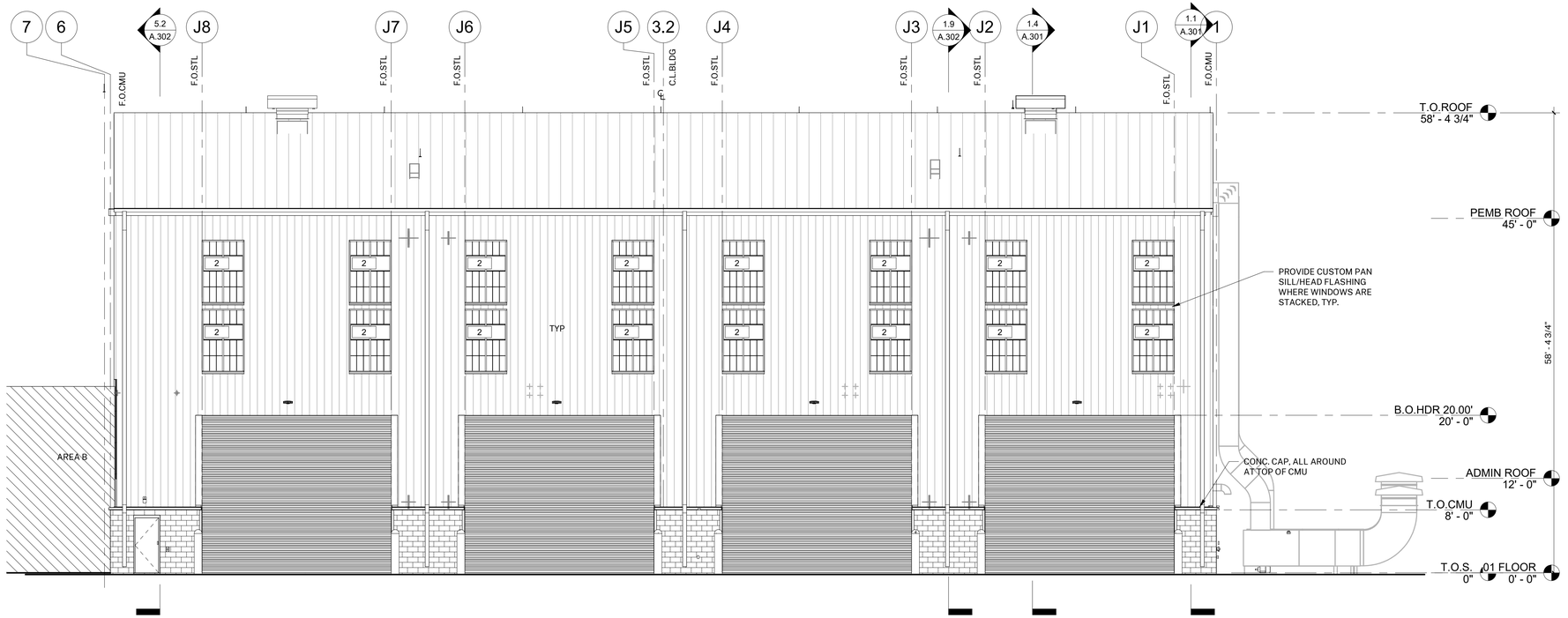
ELEVATION MATERIAL LEGEND

SNAP-CALD METAL WALL PANELS

CMU, SEE USAGE A-601



2 NORTH ELEVATION - FRAMING
1/8" = 1'-0"



1 NORTH ELEVATION
1/8" = 1'-0"

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
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CONSULTANTS:

STATUS:

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SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN C 37789 REN. 10/31/23 STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

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26535 SUMMIT CIRCLE
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(661) 251 - 7401
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ISSUE:

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PROJECT INFORMATION:

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PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

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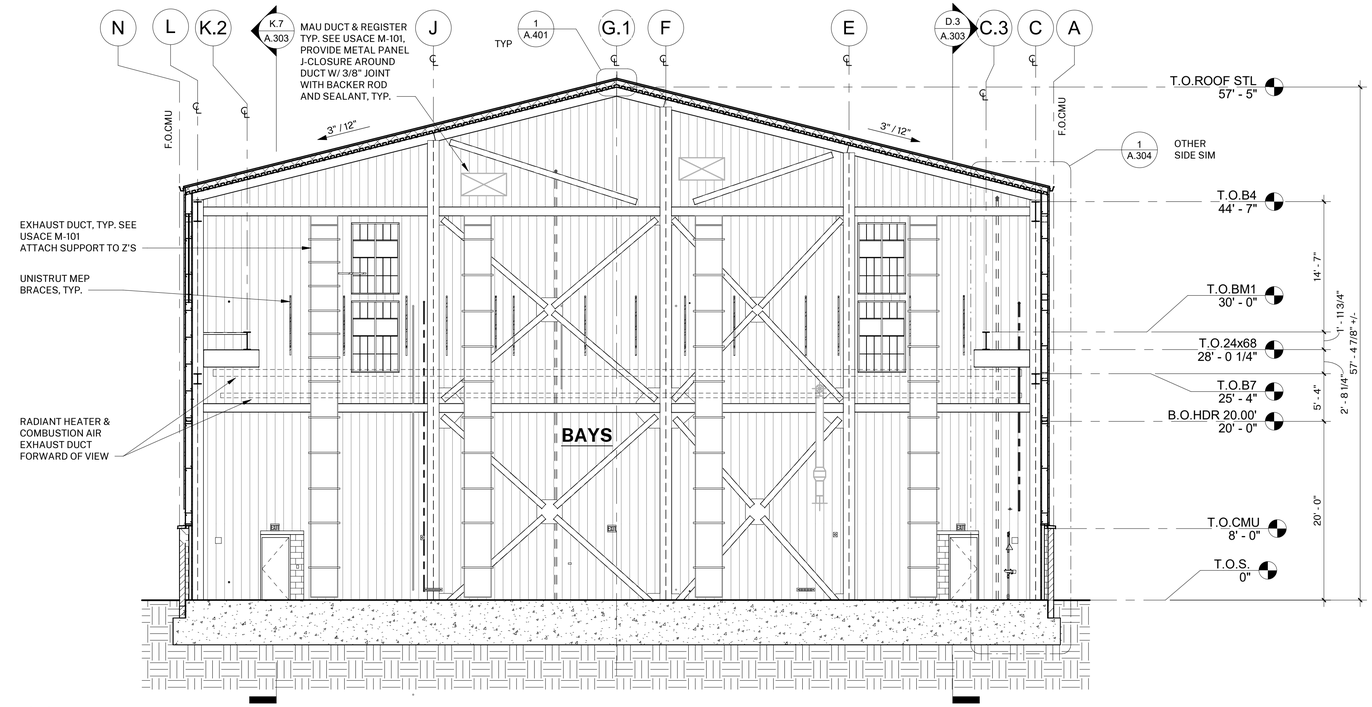
SHEET TITLE:

EXTERIOR ELEVATIONS - NORTH

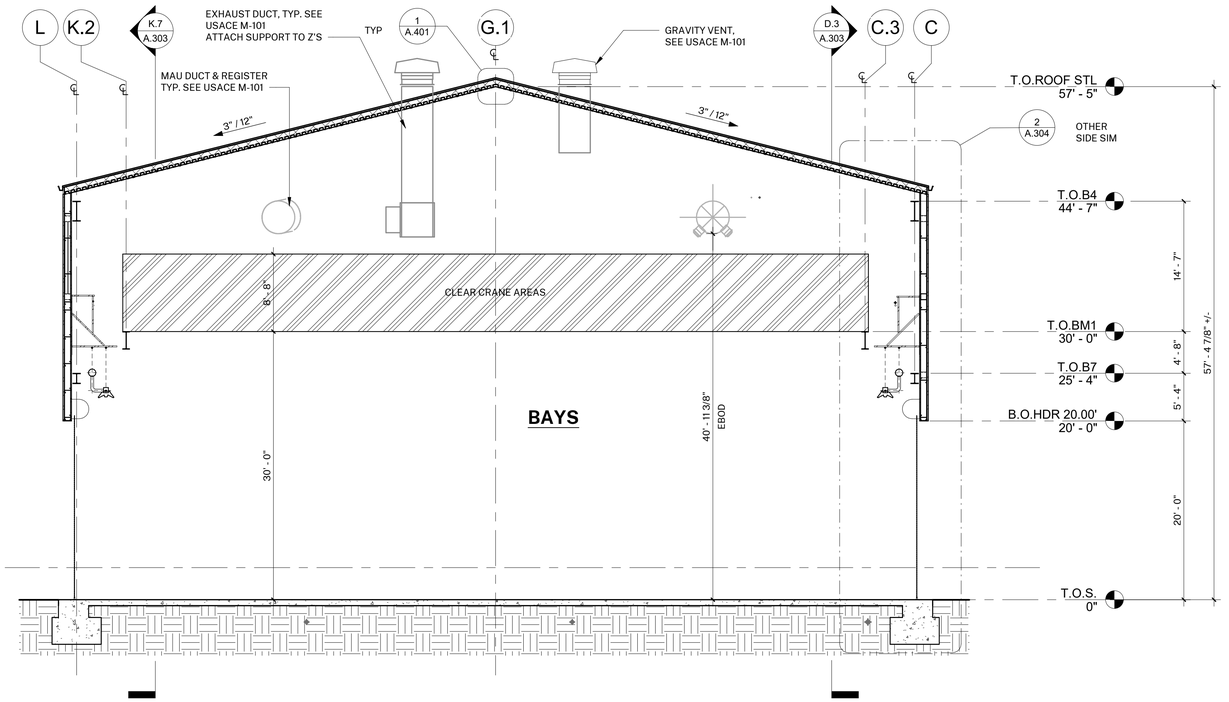
SHEET NUMBER:

A.204

DATE: 05/06/22



1.1 SECT 1.1
1/8" = 1'-0"



1.4 SECT 1.4
1/8" = 1'-0"

AGENCY APPROVAL:

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CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN
C 37789
REN. 10/31/23
STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
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(661) 251 - 7401
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PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

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PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

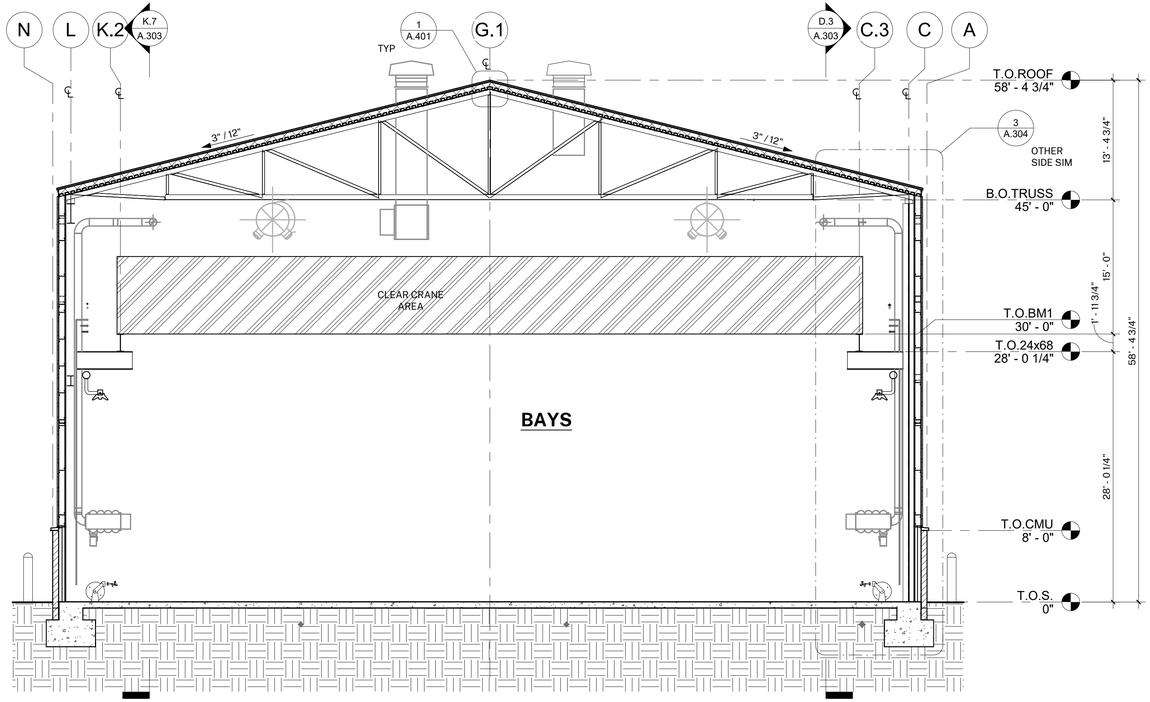
SHEET TITLE:

BUILDING SECTIONS

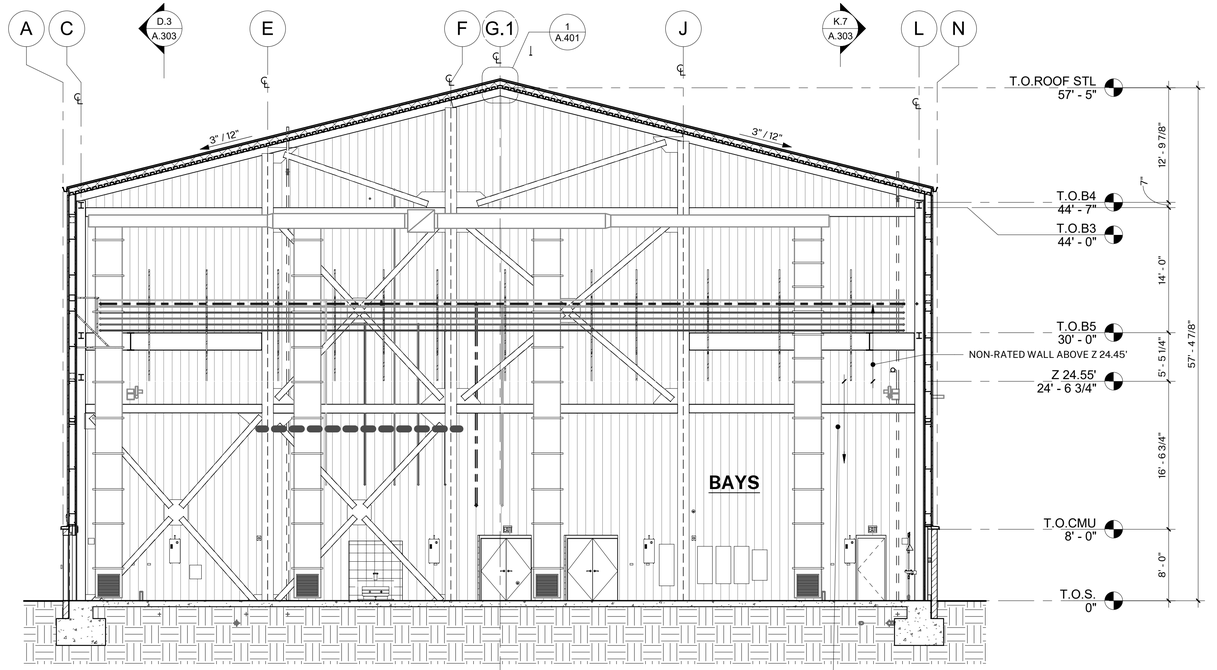
SHEET NUMBER:

A.301

DATE: 05/06/22



1.9 SECT 1.9
1/8" = 1'-0"



1-HR FIRE BARRIER BELOW Z 24.55', (2) LAYERS 5/8" TYPE X GYPSUM BOARD APPLIED DIRECTLY TO FRAMING. THE BASE LAYER OF GYPSUM BOARD IS APPLIED EITHER PARALLEL OR AT RIGHT ANGLES TO THE WALL FRAMING AND ATTACED WITH 1" TYPE S OR TYPE S-12 DRYWALL SCREWS SPACED 6" O.C. THE FACE LAYER OF GYPSUM BOARD IS APPLIED EITHER PARALLEL OR AT RIGHT ANGLES TO THE FRAMING AND ATTACHED WITH 1-5/8"" TYPE S OR TYPE S-12 DRYWALL SCREWS SPACED 8" O.C. JOINTS OF THE FACE LAYER ARE OFFSET 24" FROM THE JOINTS IN THE BASE LAYER. FACE LAYER JOINTS AND FASTENERS ARE FINISHED TO LEVEL 1 AS SPECIFIED IN GYPSUM ASSOCIATION GA-14 "LEVELS OF GYPSUM BOARD FINISH". ASSEMBLY BASED UPON UL DESIGN U 301. PROVIDE 1-HR PROTECTIONS AT ALL MEMBRANE PENERTAIONS

5.2 SECT 5.2
1/8" = 1'-0"

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN C 37789 REN. 10/31/23 STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
(661) 251 - 7401
amgassociatesinc.com

PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

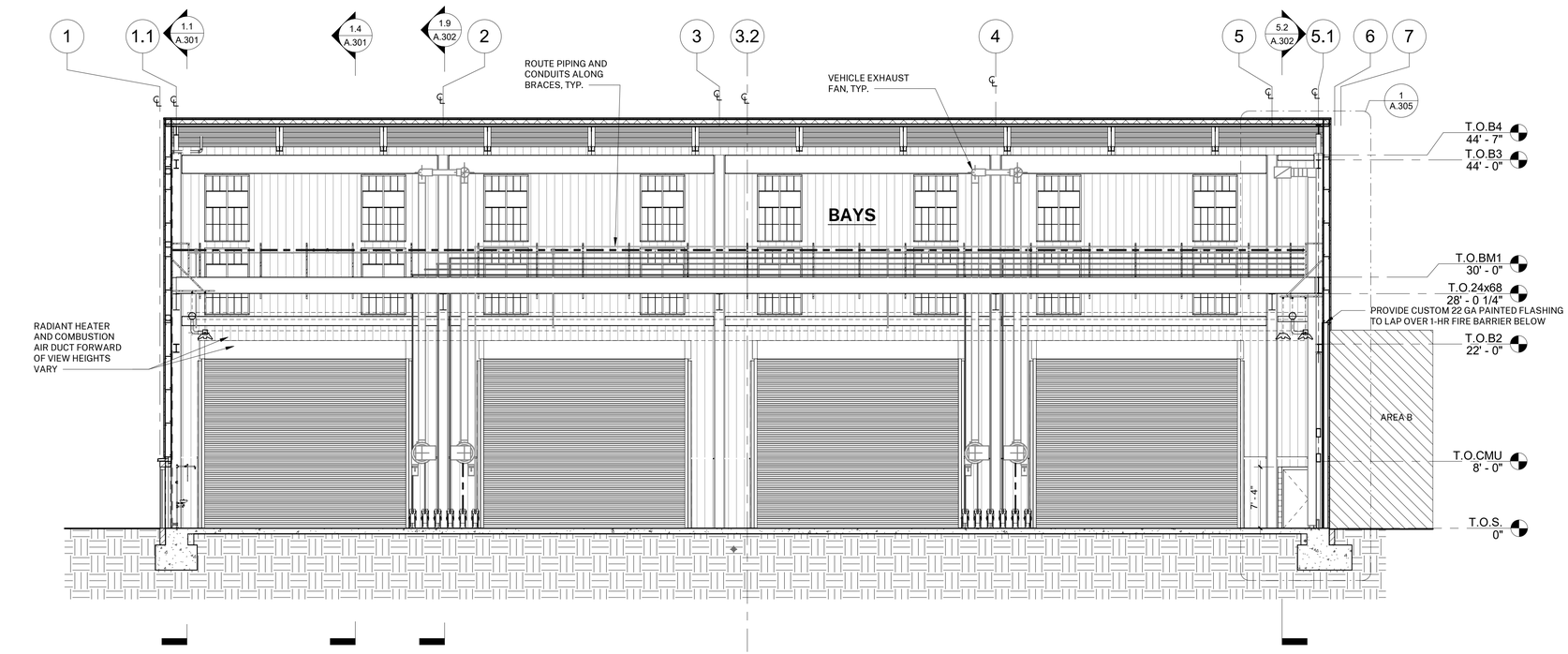
SHEET TITLE:

BUILDING SECTIONS

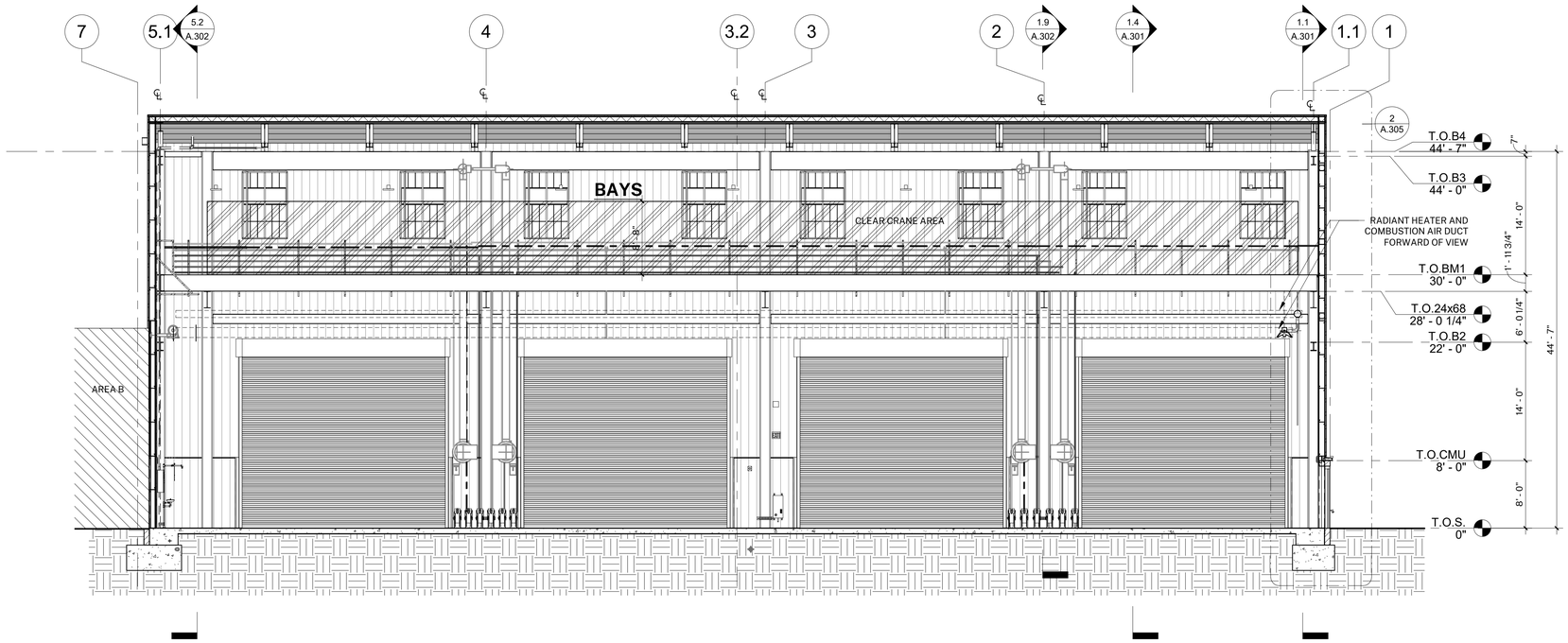
SHEET NUMBER:

A.302

DATE: 05/06/22



D.3 SECT D.3
1/8" = 1'-0"



D.3 SECT K.7
1/8" = 1'-0"

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
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(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN C 37789 REN. 10/31/23 STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
(661) 251 - 7401
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PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

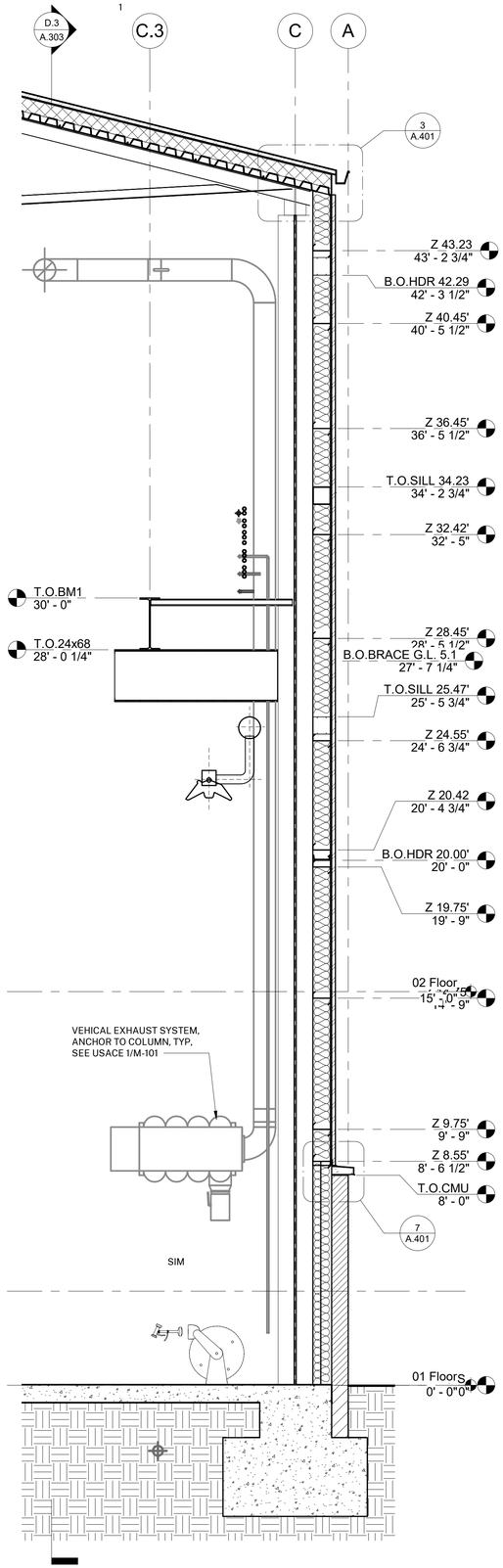
SHEET TITLE:

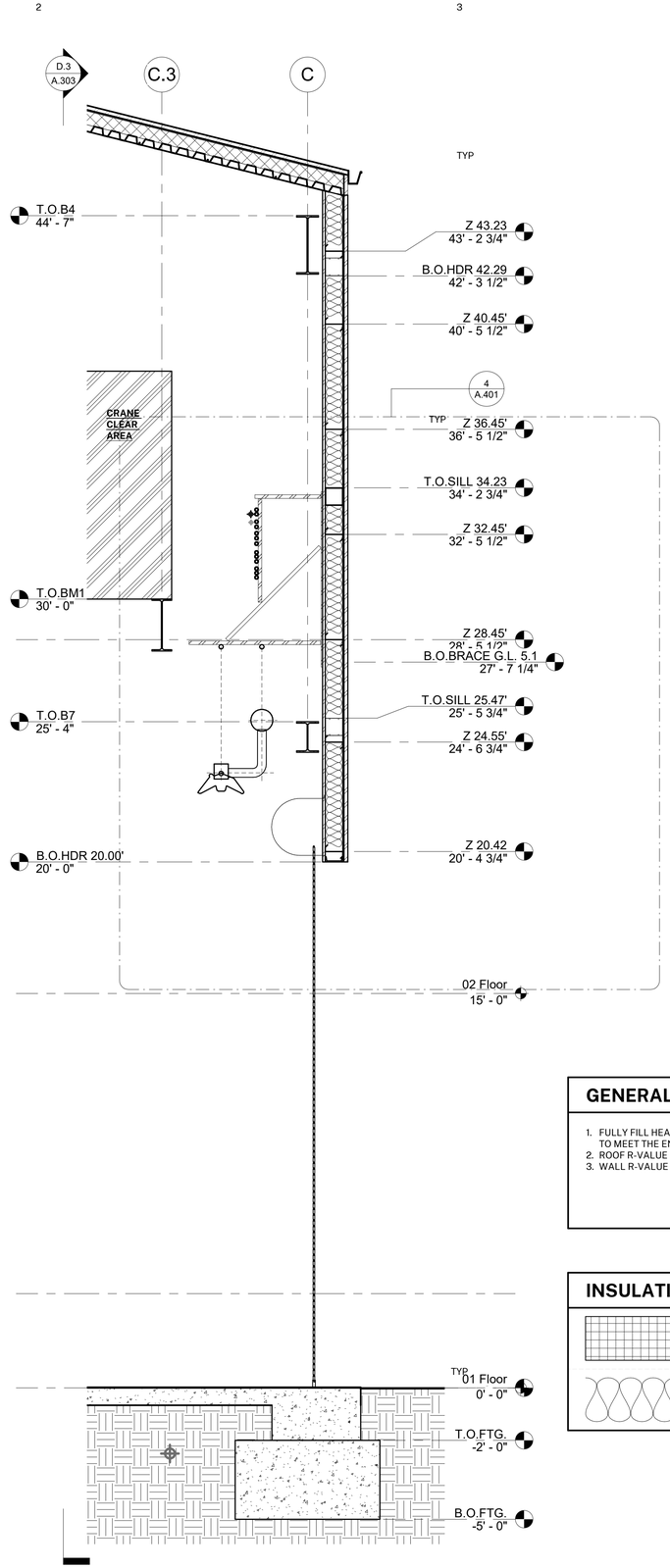
BUILDING SECTIONS

SHEET NUMBER:

A.303

DATE: 05/06/22





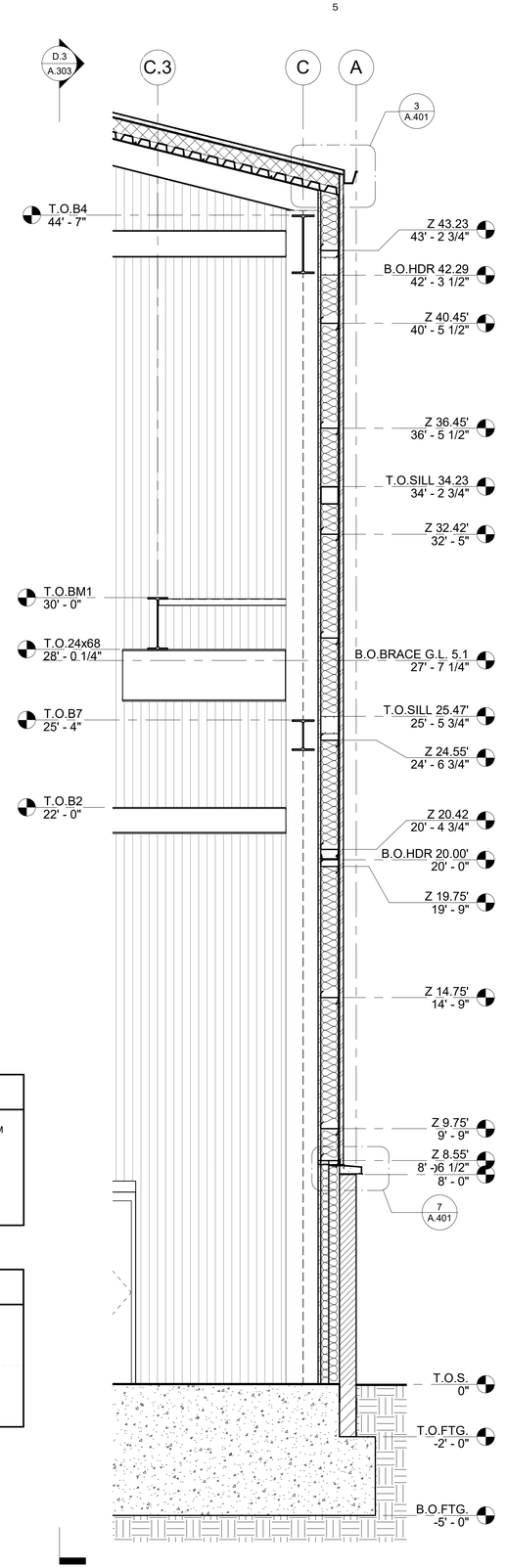
GENERAL WALL SECTION NOTES

1. FULLY FILL HEADERS AND AREAS WITH LIMIITED ACCESS WITH EXPANSIVE FOAM TO MEET THE ENVELOPE R-VALUES.
2. ROOF R-VALUE = R-34
3. WALL R-VALUE = R-20

INSULATION MATERIAL LEGEND

RIGID FOAM BOARD INSULATION

MINERAL FIBER BLANKET INSULATION



AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
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430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN
C 37789
10 / 31 / 23
REN.
STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
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PROJECT ADDRESS:

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FORT HUACHUCA, ARIZONA

ISSUE:

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PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

SHEET TITLE:

WALL SECTIONS

SHEET NUMBER:

A.304

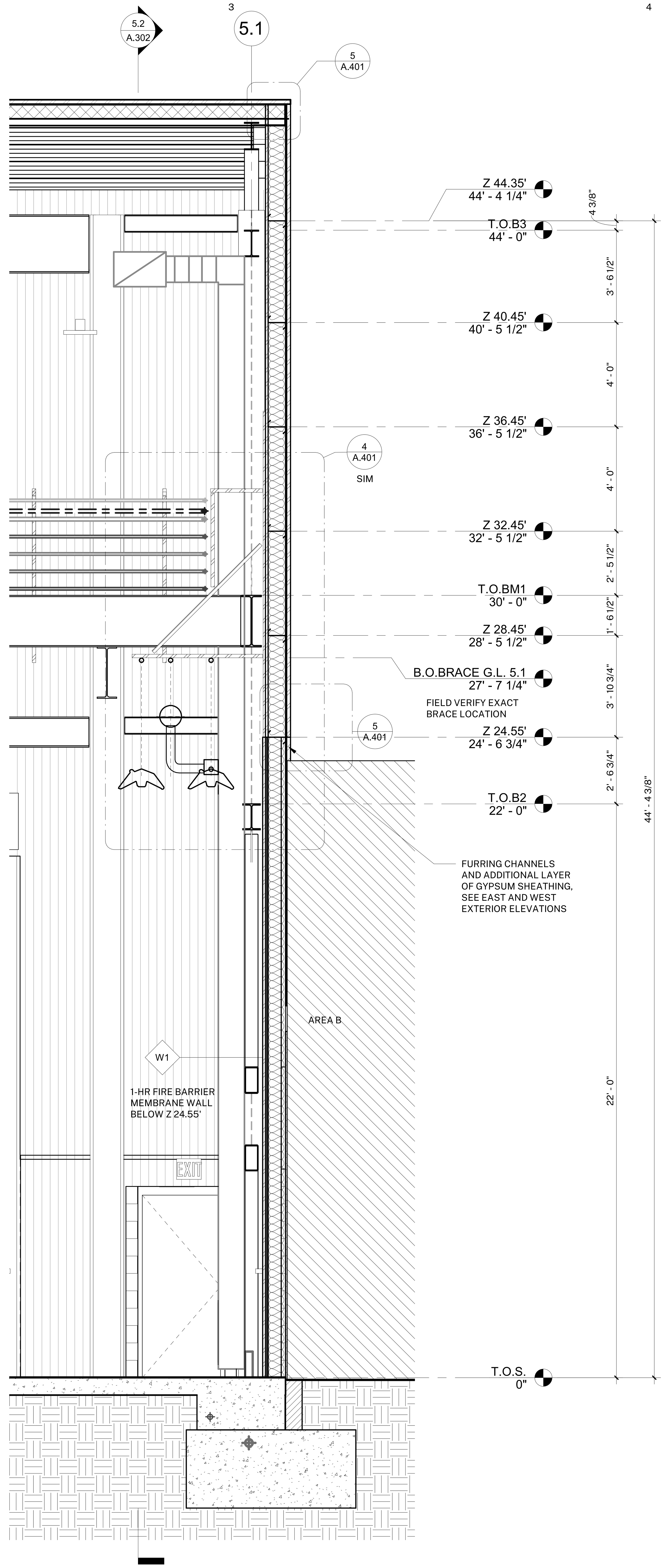
DATE: 05/06/22

GENERAL WALL SECTION NOTES

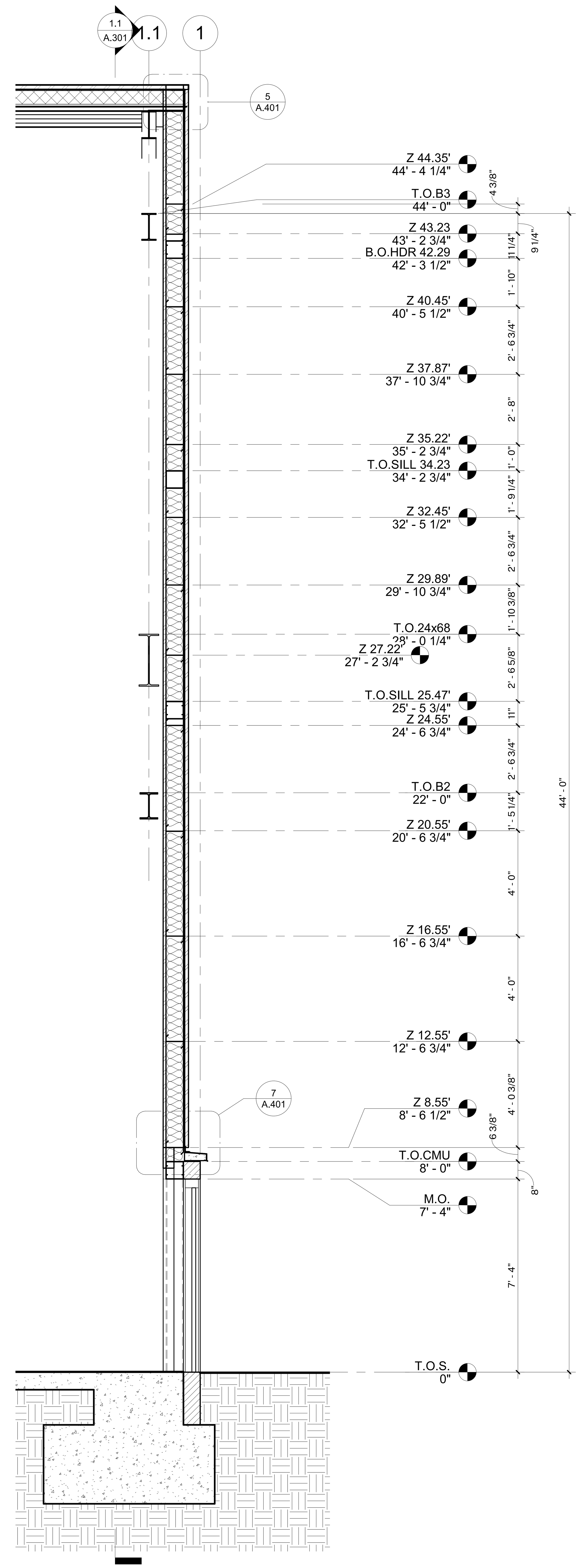
1. FULLY FILL HEADERS AND AREAS WITH LIMIITED ACCESS WITH EXPANSIVE FOAM TO MEET THE ENVELOPE R-VALUES.
2. ROOF R-VALUE = R-34
3. WALL R-VALUE = R-20

INSULATION MATERIAL LEGEND

(hatch)	RIGID FOAM BOARD INSULATION
(hatch)	MINERAL FIBER BLANKET INSULATION



1 WALL SECT 9
3/8" = 1'-0"



2 WALL SECT 8
3/8" = 1'-0"

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO

HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
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CONSULTANTS:

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PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
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REVIEWED BY:	MEH

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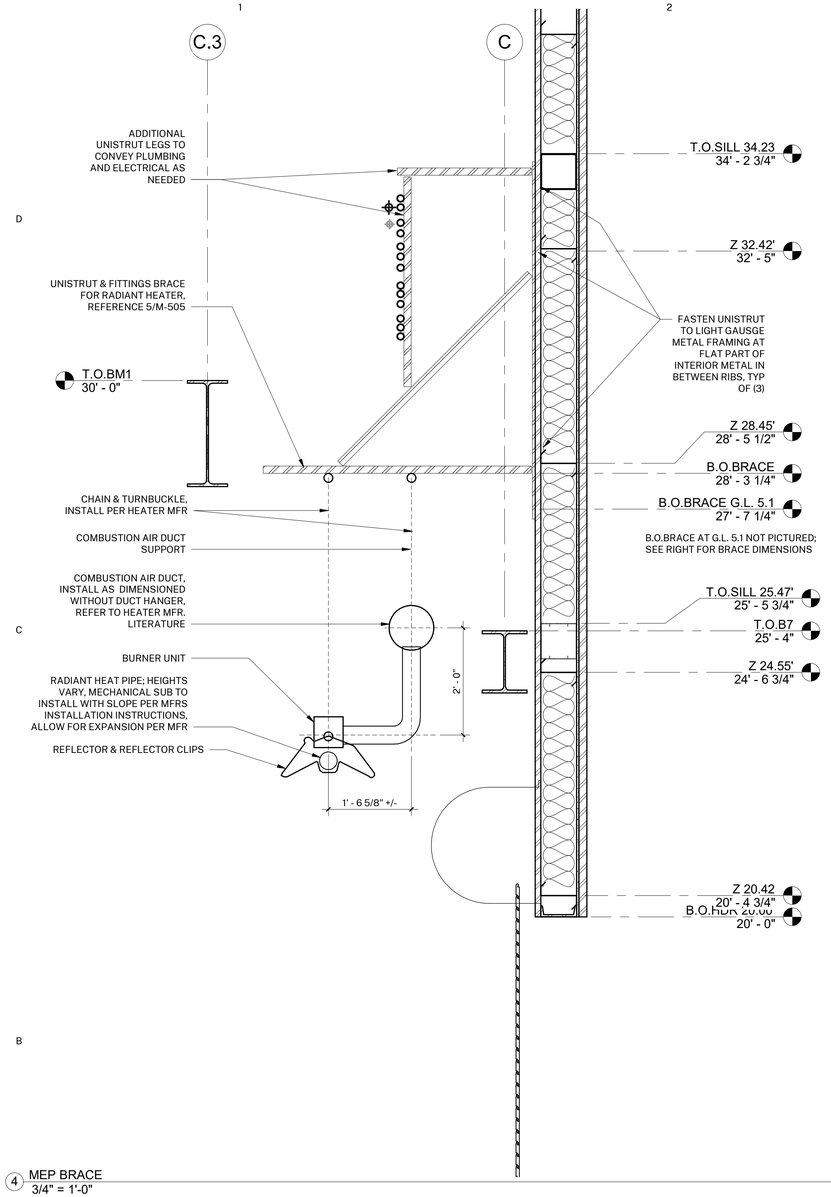
SHEET TITLE:

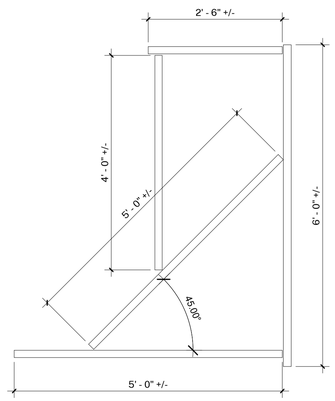
WALL SECTIONS

SHEET NUMBER:

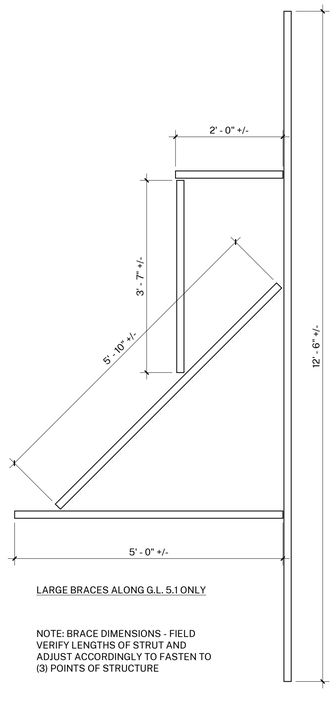
A.305

DATE: 05/06/22





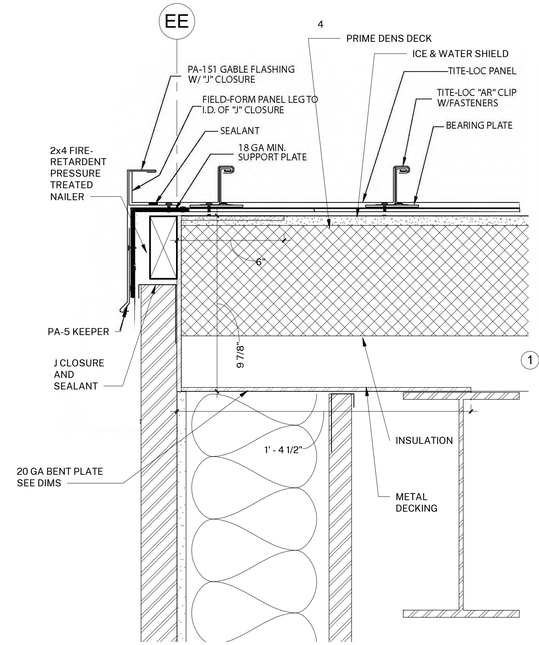
TYPICAL BRACE



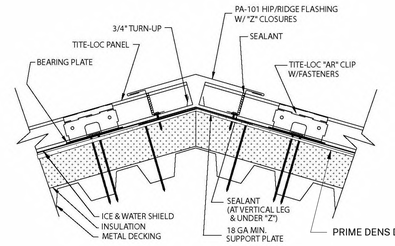
LARGE BRACES ALONG G.L. 5.1 ONLY

NOTE: BRACE DIMENSIONS - FIELD VERIFY LENGTHS OF STRUT AND ADJUST ACCORDINGLY TO FASTEN TO (3) POINTS OF STRUCTURE

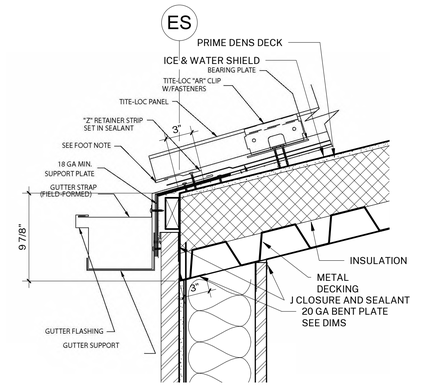
4 MEP BRACE
3/4" = 1'-0"



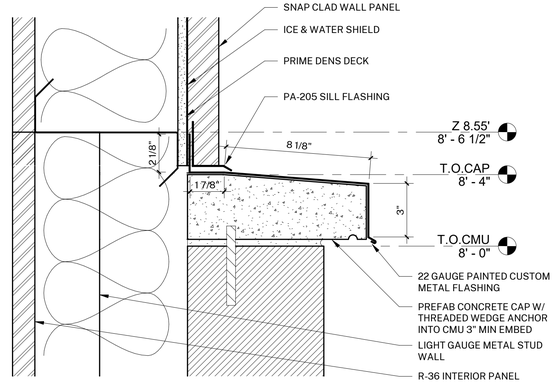
2 GABLE DETAIL
3" = 1'-0"



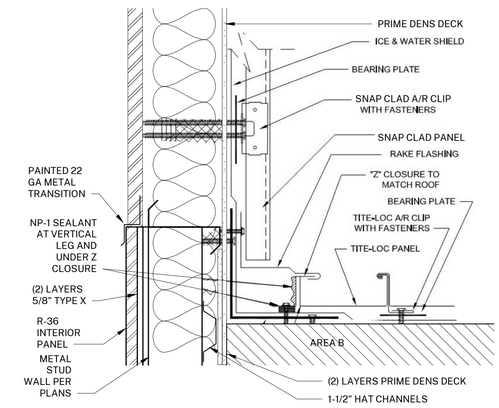
1 HIP RIDGE DETAIL
1 1/2" = 1'-0"



3 GUTTER & EAVE DETAIL
1 1/2" = 1'-0"



7 CONCRETE CAP DETAIL
3" = 1'-0"



5 RAKE WALL TO FASCIA
1 1/2" = 1'-0"

AGENCY APPROVAL:

HARTMANN ARCHITECTURE STUDIO
HARTMANNARCHITECTURESTUDIO.COM
430 S. CARRILLO RD.
OJAI, CALIFORNIA 93023
(805) 530-5559
hartmannarchitecturestudio.com

CONSULTANTS:

STATUS:

FOR CONSTRUCTION

SEALS:

LICENSED ARCHITECT MARTIN EWALD HARTMANN
C 37789
REN. 10/31/23
STATE OF CALIFORNIA

PROJECT:

FT. HUACHUCA NEW GROUND TRANSPORT EQUIPMENT BUILDING

OWNER:

US CORPS OF ENGINEERS
LOS ANGELES DISTRICT
915 WILSHIRE BLVD.
LOS ANGELES, CALIFORNIA 90017

CONTRACTOR:

AMG & ASSOCIATES
26535 SUMMIT CIRCLE
SANTA CLARITA, CALIFORNIA 91350
(661) 251 - 7401
amgassociatesinc.com

PROJECT ADDRESS:

CORNER OF ARIZONA ST. &
HUNT ST.
FORT HUACHUCA, ARIZONA

ISSUE:

MARK	DATE	DESCRIPTION

PROJECT INFORMATION:

PROJECT NUMBER:	2022.003
PROJECT PHASE:	CD
DRAWN BY:	MEH, PBS
REVIEWED BY:	MEH

THE ORIGINAL SIZE OF THIS SHEET IS 36"x24". IF THE CURRENT SIZE IS OTHER THAN 36"x24", THEN ADJUST THE SCALE OF THE DRAWINGS ACCORDINGLY.

SHEET TITLE:

DETAILS

SHEET NUMBER:

A.401

DATE: 05/06/22

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE

For use of this form, see ER 415-1-0; the proponent agency is CECW-CE

DATE: 5/3/2022

TRANSMITTAL NO.: 05 12 00-7

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the contractor)

TO:
Fort Huachuca Project Office
Bldg 71922, Corner of Carter and Lebo St
Ft Huachuca, AZ 85670

FROM: AMG
26535 Summit Circle
Santa Clarita California 91350
United States of America

CONTRACT NO.: W912PL21C0007

THIS IS A: NEW TRANSMITTAL

SPECIFICATION SEC. NO. (Covers only one section with each transmittal): 05 12 00-

PROJECT TITLE AND LOCATION 01: Ground Transport Equipment Building-EPG,Fort

THIS TRANSMITTAL IS FOR: (Check one)
☐ FIO ☒ GA ☐ DA ☐ CR ☐ DA/CR ☐ DA/GA ☐ S

ITEM NO. (See Note 3) a.	DESCRIPTION OF SUBMITTAL ITEM (Type size, model number/etc) b.	SUBMITTAL TYPE CODE (See Note 8) c.	NO. OF COPIES d.	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE g.	VARIATION (See Instruction No. 6) h.	FOR CE USE CODE (Note 9) i.
				SPEC. PARA NO. e.	DRAWING SHEET NO. f.			
33	Structural Re-Design of Area "A"	05 - DESIGN DATA	1			A	No	B

Remarks from Contractor

This submittal line item was added to allow for submission of Area "A" Re-Design. This re-design was authorized per serial C-004, that is why this submittal is not being submitted as a variation.

I certify that the above submitted items have been reviewed in detail and are correct and in the strict conformance with the contract drawings and specifications except as otherwise stated.

NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by Item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE	CONTRACT NO. W912PL21C0007	PAGE 1 of 1
PROJECT TITLE Fort Huachuca	DATE 05/05/2022	TRANSMITTAL NO. 05 12 00-7
LOCATION Ground Transport Equipment Building-EPG		

Item	Description	Variation	QA Code
33	Structural Re-Design of Area "A"	No	B

SECTION III - GOVERNMENT REVIEW REMARKS

Transmittal Code (B) given. Submittal is accepted. Resubmission is not required.

Contractor shall retain the structural engineer of record during construction for the Area A building to review and submit responses for the submittals called out on S1.1. Please submit the identified submittals for Area A during construction as information only for the government structural engineer to review.

The following submittals identified on S1.1 are;
Concrete Materials
Concrete Reinforcing Steel
Masonry Materials
Masonry Reinforcing Steel
Structural Steel Framing
Steel Deck
Steel Joists
Structural Light-Gage Steel Framing

All other required submittals are to be submitted as per the contract requirements.

1. Contractor Quality Control procedures which are a part of this contract require a complete review be conducted by the contractor prior to submission.
2. The Corps of Engineers review is for general conformance with the contract drawings and/or specifications. Deviations are not assumed by this review process unless specifically requested as such. Deviation request must include justification in order to be considered.
3. Changes in the contract documents involving cost or credits shall be affected only by written change order signed by the authorized government representative.
4. The Corps of Engineers review does not include review of quantities or dimensions beyond specific items, which may be discussed in the comments herein. Accuracy and coordination of quantities, dimensions, and fabrication process are a contractor responsibility. The contractor shall coordinate all trades.
5. No variation is indicated on the ENG 4025 Form; therefore, ALL requirements of the contract documents apply.
6. Acceptable subject to satisfactory installation in full compliance with contract drawings and specifications.
7. This acceptance will not infringe on the Government's right to require all design and work comply with the RFP requirements.
8. Install per manufacturer's recommendations.

GENERAL STRUCTURAL NOTES

(APPLY UNLESS NOTED OTHERWISE)

DESIGN CRITERIA:

2015 EDITION OF THE INTERNATIONAL BUILDING CODE, WITH LOCAL AMENDMENTS.
RISK CATEGORY III.

LOADS:

ROOF LIVE LOAD = 20 PSF (NON-REDUCIBLE).
ROOF RAIN LOAD DESIGN DATA, i = 3 IN/HR.
SUPERIMPOSED DEAD LOAD ON ROOF TRUSSES & JOISTS = 17.5 PSF.
35T CRANE WHEEL LOAD 48,384 LBS. HOIST AND TROLLEY DEAD LOAD 8,612 LBS (COORDINATE LOADING WITH MANUFACTURER)
GROUND SNOW LOAD = 10 PSF.
WIND DESIGN: ULTIMATE WIND SPEED(Vult) = 120 MPH (3 SECOND GUST). NOMINAL DESIGN WIND SPEED (Vasd) = 90 MPH. EXPOSURE C.
INTERNAL PRESSURE COEFFICIENT (GCpi) = +-0.18. C&C = +-25.6 PSF FOR ZONE 4
REGIONS PER ASCE 7-10. NET UPLIFT (ASD) = 10 PSF NET.
SEISMIC DESIGN: Ie = 1.25. Ss = 0.271. S1 = 0.085. SOIL SITE CLASS = C.
Sds = 0.194. SD1 = 0.080. SEISMIC DESIGN CATEGORY B. STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE. Vbase = 24.1 KIPS. Cs = 0.079. R = 3. EQUIVALENT LATERAL FORCE PROCEDURE.

GENERAL:

1. THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS). THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF ALL SCAFFOLDING, BRACING AND SHORING.
2. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
3. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA.
4. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS, AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.
5. OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF AN OPTION IS CHOSEN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS WITH ALL TRADES.
6. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT. FOR BIDDING PURPOSES, WHERE ANY MEMBER IS SHOWN BUT NOT CALLED OUT, THE LARGEST SIMILAR MEMBER SHALL BE UTILIZED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE ARCHITECT. DO NOT USE SCALED DIMENSIONS.
8. ALL DETAILS SHALL BE INCORPORATED INTO THE PROJECT AT ALL APPROPRIATE LOCATIONS, WHETHER SPECIFICALLY CUT OR NOT. TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE. FOR CLARITY, DETAILS MAY SHOW ONLY ONE SIDE OF FRAMING CONDITION.
9. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.
10. ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT OCCURS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL AND ALL NON-STRUCTURAL COMPONENT SUPPORTS AND ANCHORAGE PER ASCE 7-10 CHAPTER 13. CONTRACTOR SHALL PROVIDE DOCUMENTATION THAT CONFORMS WITH ASCE 7-10, SECTION 13.2.1.

FOUNDATIONS:

1. FOUNDATION DESIGN IS BASED UPON SOIL REPORT BY USACE SACRAMENTO DISTRICT DATED AUGUST 2018. ALL CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE SOILS REPORT. SPREAD FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL AND/OR ENGINEERED FILL PER THE SOILS REPORT. DESIGN SOIL BEARING VALUE =2500 PSF AT 2'-0", 4000 PSF AT 4'-0" BELOW LOWEST ADJACENT FINISHED GRADE.
2. PROVIDE POSITIVE DRAINAGE SLOPES, BOTH DURING AND AFTER CONSTRUCTION, FOR SURFACE AND ROOF RUNOFF. THERE SHALL BE A MINIMUM OF 10'-0" OF POSITIVE DRAINAGE FROM BUILDING FOUNDATIONS.
3. DO NOT BACKFILL AGAINST BASEMENT OR RESTRAINED WALLS UNTIL FRAMING TO SUPPORT WALL IS PERMANENTLY ATTACHED. DO NOT EXCEED 1'-0" DIFFERENTIAL IN FILL LEVEL ON OPPOSITE SIDES OF FOUNDATION WALLS.
4. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR ANY GEOTECHNICAL ASPECTS OF THIS PROJECT. THE OWNER SHALL EMPLOY A REGISTERED GEOTECHNICAL ENGINEER TO PERFORM NECESSARY TESTING AND QUALITY CONTROL INSPECTIONS TO ENSURE THAT THE REQUIREMENTS OF THE SOILS REPORT ARE COMPLIED WITH. ALL EARTHWORK SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER.
5. FOR CLARITY, ALL EXTERIOR SLABS AND SIDEWALKS MAY NOT BE SHOWN. FOR EXACT DIMENSIONS, LOCATIONS, JOINT AND SLOPE LINES, ETC. SEE ARCHITECTURAL DRAWINGS.

CONCRETE:

1. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301 AND ACI 318. CEMENT SHALL CONFORM TO ASTM C150, TYPE II. AGGREGATE SHALL CONFORM TO ASTM C33. CONCRETE SHALL BE READY MIXED IN ACCORDANCE WITH ASTM C94 AND SHALL BE DESIGNED FOR A MINIMUM 28-DAY COMPRESSIVE STRENGTH AS FOLLOWS:

GRADE BEAMS	4,000 PSI
SLABS ON GRADE	4,000 PSI*
FOUNDATIONS	4,000 PSI*

* DESIGNED FOR 2,500 PSI
* SEE NOTE 8 FOR SLABS CAST DIRECTLY ON A VAPOR BARRIER/RETARDER.

2. FLY ASH - SHALL CONFORM TO ASTM C618, CLASS F AND SHALL BE LIMITED TO 25% OF CEMENTITIOUS MATERIALS BY WEIGHT AND SHALL HAVE A REPLACEMENT FACTOR OF 1.2 RELATIVE TO CEMENT REPLACED. CONCRETE SHALL BE FREE OF CHLORIDE. MAXIMUM SLUMP 4 1/2" FOR CONCRETE WITHOUT PLASTICIZER. IF PLASTICIZER IS USED, AN 8" MAXIMUM SLUMP IS ALLOWED AT PLACEMENT. ALL MIX DESIGNS SHALL BE DESIGNED BY THE CONCRETE PRODUCTION FACILITY IN ACCORDANCE WITH ACI 301 AND SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO PLACEMENT. MIX DESIGNS FOR POST-TENSIONING CONCRETE SHALL BE PROPORTIONED SO AS TO MINIMIZE SHRINKAGE CRACKING.
3. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND UNDER-FLOOR DUCTS, ETC. DO NOT DROP CONCRETE MORE THAN FIVE FEET WITH OUT THE USE OF TREMIES. REVIBRATE TOPS OF CAISSONS 15 MINUTES AFTER PLACING CONCRETE. UNLESS APPROVED OTHERWISE IN WRITING BY THE ARCHITECT, ALL CONCRETE SLABS ON GRADE SHALL BE BOUND BY CONTROL JOINTS (KEYED OR SAW CUT), AS SHOWN ON THE FOUNDATION PLAN, SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 225 SQUARE FEET. KEYED CONTROL JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING POURING, ALL OTHER JOINTS MAY BE SAW CUT. CAST CLOSURE POUR AROUND COLUMNS AFTER COLUMN DEAD LOAD IS APPLIED. FOR EXPOSED ELEVATED CONCRETE SLABS THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING INDICATING ALL CONTROL JOINT LOCATIONS. THESE CONTROL JOINTS SHALL SATISFY THE FOLLOWING CRITERIA: CONCRETE SLABS OVER STEEL DECK SHALL BE BOUND BY KEYED CONTROL JOINTS SUCH THAT THE ENCLOSED AREA DOES NOT EXCEED 900 SQUARE FEET NOR DOES THE GEOMETRY OF THE ENCLOSED AREA EXCEED A 2:1 HEIGHT TO WIDTH RATIO. VERIFY LOCATION OF ALL CONTROL JOINTS IN CONCRETE SLABS OVER PRECAST ELEMENTS (HAMBRO JOISTS) WITH MANUFACTURER.
4. PROVIDE SLEEVES FOR ALL UTILITY OPENINGS. DO NOT CUT ANY REINFORCING AT OPENINGS. CONCRETE WHICH HAS CONTAINED WATER FOR MORE THAN 90 MINUTES (60 MINUTES IF AIR TEMPERATURE EXCEEDS 85 DEGREES) SHALL NOT BE USED. RETEMPERING OF CONCRETE AFTER INITIAL SET IS NOT ALLOWED. CURE EXPOSED CONCRETE PER ACI 301 FOR A MINUMUM OF 7 DAYS.
5. TESTING OF COMPRESSIVE STRENGTH AND SLUMP SHALL CONFORM TO ASTM C31, C39 AND C143. PROVIDE A MINIMUM OF 3 CYLINDERS FOR EACH DAY'S PLACEMENT U.N.O. A QUALIFIED TESTING LABORATORY SHALL TEST ONE CYLINDER AT 7 DAYS AND TWO CYLINDERS AT 28 DAYS, THREE CYLINDERS IF 4"X8" SAMPLES ARE USED.
6. THE SLABS ON GRADE ON THIS PROJECT ARE DIRECTLY CAST ONTO A VAPOR BARRIER/RETARDER. VAPOR BARRIERS/RETARDERS HAVE BEEN REPORTED TO AFFECT THE BEHAVIOR OF THE CONCRETE IN THE SLAB BY INCREASING FINISHING TIME, PROMOTING CRACKING, INCREASING SLAB CURLING, AND REDUCING STRENGTH. THEREFORE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR USING THEIR EXPERIENCE FOR APPLYING AND EMPLOYING MEASURES AND INSTALLING THE CONCRETE IN SUCH A WAY AS TO MITIGATE THESE UNDESIRABLE EFFECTS. THE FOLLOWING ARE SOME RECOMMENDATIONS THAT THE CONTRACTOR MAY CONSIDER IN THEIR CONCRETE PLACEMENT PLANS.

   A) USE OF CONCRETE MIXES WHICH USE THE LARGEST SIZE AGGREGATE POSSIBLE AND EVENLY DISTRIBUTED AGGREGATE MIXES WITH LIMITED GAP GRADING.
   B) USE OF SHRINKAGE REDUCING ADMIXTURES.
   C) USE OF MACRO FIBER ADMIXTURES WHICH REDUCE CURLING.
   D) CUTTING SLAB JOINTS WITHIN 12 HOURS USING AN EARLY ENTRY SAW.
   E) USING THE MAXIMUM AMOUNT OF FLYASH ALLOWABLE TO REDUCE CEMENT.
   F) REDUCE WATER CEMENT RATIOS WHILE USING WATER-REDUCING ADMIXTURES THAT DON'T INCREASE SHRINKAGE.
   G) AGGRESSIVE CURING MEASURES THAT RETARD THE EVAPORATION OF WATER FROM THE SURFACE OF THE CONCRETE.

MASONRY:

1. C.M.U. SHALL CONFORM TO ASTM C90, NORMAL OR MEDIUM WEIGHT, F'm =2,000 PSI AT 28 DAYS, RUNNING BOND, WITH A NET COMPRESSIVE STRENGTH OF 2000 PSI PER ASTM C140.
2. MORTAR SHALL CONFORM TO ASTM C270, TYPE S, 2,000 PSI USING PORTLAND CEMENT. FINE OR COURSE GROUT PER ASTM C476, 2,000 PSI AT 28 DAYS, TESTED PER ASTM C1019. GROUT SHALL BE FREE OF CHLORIDE. GROUT MAY CONTAIN UP TO 18% FLY ASH AT THE APPROVAL OF THE ARCHITECT.
3. SEE DRAWINGS FOR SIZE AND SPACING OF REINFORCING. LAP SPLICE ALL REINFORCING PER TYPICAL DETAIL. ALL REINFORCING SHALL BE ACCURATELY LOCATED PRIOR TO AND DURING GROUTING. TIE ALL VERTICAL REINFORCING AT 8'-0" VERTICALLY WITH SINGLE WIRE LOOP TIE BY A.A. WIRE PRODUCTS COMPANY. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH DOWELS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCING. PROVIDE BENT BARS TO MATCH HORIZONTAL BOND BEAM REINFORCING AT CORNERS AND WALL INTERSECTIONS.
4. HORIZONTAL JOINT REINFORCING SHALL BE 9 GAGE LADDER OR TRUSS TYPE JOINT REINFORCEMENT PER ASTM A951 AT 16" O.C. WITH 12" SPLICES. USE TRUSS TYPE JOINT REINFORCEMENT IN BRICK OR COMPOSITE WALLS.
5. ALL CELLS AND COURSES WITH REINFORCING AND ADDITIONAL CELLS AND COURSES NOTED ON DRAWINGS SHALL BE GROUTED SOLID. ALL MASONRY BELOW FINISHED FLOOR OR GRADE SHALL BE GROUTED SOLID. MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING AND AGAIN ABOUT 5 MINUTES LATER. PROVIDE CLEANOUTS IF GROUT POUR HEIGHT EXCEEDS 5'-4" IN BLOCK WALLS. IF THE MASONRY HAS CURED FOR AT LEAST 4 HOURS, THE GROUT SLUMP IS MAINTAINED BETWEEN 10" AND 11", AND NO INTERMEDIATE BOND BEAMS ARE PLACED BETWEEN THE TOP AND BOTTOM OF THE POUR HEIGHT, THEN GROUT MAY BE PLACED IN LIFTS UP TO 12'8" TALL. STOP ALL GROUT LIFTS 1-1/2" BELOW THE TOP COURSE OF THE LIFT. PLACE GROUT LIFTS CONTINUOUS FOR HEIGHT OF LINTELS. DO NOT INTERRUPT GROUTING FOR MORE THAN ONE HOUR. FOG SPRAY ERECTED CMU EVERY 8 HOURS FOR 48 HOURS FOLLOWING INSTALLATION WHEN TEMPERATURES EXCEED 100 DEGREES OR WHEN THE TEMPERATURE EXCEEDS 90 DEGREES AND THE WIND SPEED IS GREATER THAN 8 MPH.
6. LAY UP TWO-WYTHE WALL WITH FULL HEAD AND BED MORTAR JOINTS. ALL LONGITUDINAL VERTICAL JOINTS SHALL BE GROUTED SOLID. ONE TIER MAY BE CARRIED UP 16" BEFORE GROUTING, BUT THE OTHER TIER SHALL BE LAID UP AND GROUTED IN LIFTS NOT TO EXCEED SIX TIMES THE WIDTH OF THE GROUT SPACE OR 8" MAXIMUM. ROD GROUT IN VERTICAL SPACES IMMEDIATELY AFTER PLACING AND AGAIN ABOUT 5 MINUTES LATER.
7. UNLESS NOTED OTHERWISE ON THE PLANS, PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS 25'-0". CONTROL JOINTS SHALL NOT OCCUR AT WALL CORNERS, INTERSECTIONS, ENDS, WITHIN 24" OF CONCENTRATED POINTS OF BEARING OR JAMBS, OR OVER OPENINGS UNLESS SPECIFICALLY SHOWN ONTHE STRUCTURAL DRAWINGS.
8. MORTAR AND GROUT SHALL BE TESTED BY A QUALIFIED TESTING AGENCY. TEST MORTAR, GROUT, AND MASONRY UNITS AT THE FREQUENCY AND SAMPLING REQUIRED BY THE CONSTRUCTION DOCUMENT TESTING TABLES.

REINFORCING STEEL:

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615 (Fy = 60 KSI) DEFORMED BARS FOR ALL REBAR. ALL REINFORCING TO BE WELDED SHALL BE ASTM A706. WELDED WIRE FABRIC PER ASTM A1064, WIRE PER ASTM A1064. NO TACK WELDING OF REINFORCINGBARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. LATEST ACI CODE AND DETAILING MANUAL APPLY.
2. ACCURATELY PLACE OR SUPPORT ALL REINFORCING, INCLUDING WELDED WIRE FABRIC, WITH GALVANIZED METAL CHAIRS, SPACERS OR HANGERS FOR THE FOLLOWING CLEAR CONCRETE COVERAGES:

   CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH --- 3"
   EXPOSED TO EARTH OR WEATHER
   #6 OR LARGER ---------- 2"
   #5 AND SMALLER ---------- 1 1/2"

   ALL OTHER PER LATEST EDITION OF ACI 318.

3. LAP SPLICES, UNLESS NOTED OTHERWISE, SHALL BE CLASS "B" TENSION LAP SPLICES PER LATEST EDITION OF ACI 318. LAP SPLICES IN CONCRETE COLUMNS SHALL BE STANDARD COMPRESSION LAP SPLICES. STAGGER SPLICES A MINIMUM OF ONE LAP LENGTH. LAPS IN WELDED WIRE FABRIC SHALL BE MADE SO THAT THE OVERLAP, MEASURED BETWEEN OUTERMOST CROSS WIRES OF EACH FABRIC SHEET, IS NOT LESS THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES.
4. ALL SPLICE LOCATIONS ARE SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. SPLICED BARS SHALL BE PLACED AT THE SAME EFFECTIVE DEPTH U.N.O. ALL REINFORCING NOTED AS "CONTINUOUS" SHALL BE FULLY CONTINUOUS AND SPLICED. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS.
5. REINFORCING BAR SPACING GIVEN ARE MAXIMUM ON CENTERS. ALL BARS PER CRSI SPECIFICATIONS AND HANDBOOK. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH STANDARD 90 DEGREE HOOKS UNLESS NOTED OTHERWISE. SKEW HOOKS AS REQUIRED TO MAINTAIN CONCRETE COVER. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE. CONCRETE COLUMN DOWEL EMBEDMENT SHALL BE A STANDARD COMPRESSION DOWEL WITH EMBEDMENT LENGTH ACCORDING TO THE LATEST EDITION OF ACI 318.

STRUCTURAL STEEL:

1. ALL STEEL CONSTRUCTION SHALL CONFORM WITH THE LATEST AISC HANDBOOK. ALL STRUCTURAL STEEL W SECTIONS SHALL BE ASTM A992 (Fy = 50 KSI). ALL RECTANGULAR HSS SHALL BE ASTM A500, GRADE B (Fy = 46 KSI). ALL ROUND HSS SHALL BE ASTM A500, GRADE B (Fy = 42 KSI). ALL PIPE STEEL SHALL BE ASTM A53, GRADE B (Fy = 35 KSI). ALL OTHER STRUCTURAL SHAPES AND PLATES SHALL BE ASTM A36 (Fy = 36 KSI). SHOP PAINT ALL STEEL SURFACES WITH FABRICATOR'S STANDARD RUST-INHIBITING PRIMER EXCEPT AT SURFACES ENCASED IN CONCRETE, SURFACES TO RECEIVE FIREPROOFING, OR SURFACES ENCLOSED WITHIN THE BUILDING FINISHES. BEAMS, COLUMNS AND BRACES SHALL NOT BE SPLICED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
2. BOLTS SHALL BE ASTM A325N, TYPE1, UNLESS NOTED OTHERWISE. BOLTS MAY BE TIGHTENED USING ANY AISC APPROVED METHOD. ALL HIGH STRENGTH BOLTING SHALL BE INSPECTED BY AN INDEPENDENT TESTING LABORATORY TO ENSURE BOLT TENSION. ANCHOR BOLTS SHALL BE ASTM A36 OR A307, GRADE A. ANCHOR RODS SHALL BE ASTM F1554, GRADE 36. THREADED RODS SHALL BE ASTM A36.
3. ALL WELDING PER LATEST AMERICAN WELDING SOCIETY STANDARDS, (EXCEPT STEEL JOISTS AND JOIST GIRDERS SHALL COMPLY WITH SJI STANDARDS). ALL WELDING SHALL BE PERFORMED BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY. ALL WELDING DONE BY E70 SERIES LOW HYDROGEN RODS UNLESS NOTED OTHERWISE. FOR GRADE 60 REINFORCING BARS, USE E80 SERIES. THESE DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS; THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT HIS DISCRETION. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW. ALL FULL (COMPLETE) PENETRATION WELDS SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY.
4. NON-SHRINK GROUT SHALL BE 5,000 PSI, FIVE STAR, SIKA 212 OR EQUIVALENT. INSTALL NON-SHRINK GROUT UNDER BEARING PLATES BEFORE FRAMING MEMBER IS INSTALLED. AT COLUMNS, INSTALL NON-SHRINK GROUT UNDER BASEPLATES AFTER COLUMN HAS BEEN PLUMBED BUT PRIOR TO FLOOR OR ROOF INSTALLATION.

STEEL DECK:

1. STEEL ROOF DECK SHALL BE 3" DEEP, 32" WIDE DGN-32, 20 GAGE GALVANIZED STEEL, AS MANUFACTURED BY ASC STEEL OR APPROVED EQUAL, WITH MINIMUM YIELD STRESS OF 33 KSI, WITH MINIMUM +S = 0.576 IN^3 AND I = 0.576 IN^4 PER FOOT OF WIDTH. DECK SHALL BE ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AS 3 SPAN MINIMUM AND SHALL BE ATTACHED FOR A MINIMUM DIAPHRAGM SHEAR CAPACITY OF 600 PLF USING THE FOLLOWING MINIMUM ATTACHMENTS:

   WELD DECK TO SUPPORTING MEMBERS WITH 5 - 5/8" DIAMETER OR 3/8" X 1" PUDDLE WELDS PER SHEET AT ENDS, END LAPS AND AT INTERMEDIATE SUPPORTS, AND AT 12 O.C. AT PERIMETER BEAMS AND OPENING EDGES RUNNING PARALLEL TO THE DECK.SIDE SEAM ATTACHMENT SHALL BE ASC STEEL DELTAGRIP SIDE SEAM ATTACHMENT OR APPROVED EQUAL.

   AT CONTRACTOR'S OPTION ATTACH DECK TO SUPPORTING MEMBERS WITH #12-24 X 1 1/4" LONG TEKS/5 HEX WASHER HEAD SCREWS PER SHEET AT ENDS, END LAPS, AND AT INTERMEDIATE SUPPORTS, AND AT 12" O.C. AT PERIMETER BEAM AND OPENING EDGES RUNNING PARALLEL TO THE DECK. SIDE SEAM ATTACHMENT SHALL BE ASC STEEL DELTAGRIP SIDE SEAM ATTACHMENT OR APPROVED EQUAL.

   AT CONTRACTOR'S OPTION ATTACH DECK TO SUPPORTING MEMBERS PER ICC ESR 2197 WITH 5 HILTI FASTENERS PER SHEET AT ENDS, END LAPS, AND AT INTERMEDIATE SUPPORTS, AND AT 12" O.C. AT PERIMETER BEAM AND OPENING EDGES RUNNING PARALLEL TO THE DECK. FASTENERS SHALL BE "ENKK" FASTENERS FOR SUPPORTS 1/8" TO 1/4" THICK AND "ENP" FASTENERS FOR SUPPORTS > 1/4" THICK. SIDE SEAM ATTACHMENT SHALL BE ASC STEEL DELTAGRIP SIDE SEAM ATTACHMENT OR APPROVED EQUAL.
2. ALTERNATIVELY STEEL DECK SHALL BE 3" DEEP, 32" WIDE, N-32, 20 GA. GALVANIZED STEEL DECK WITH PROPERTIES AND ATTACHMENT AS PER DGN-32, BUT TOP SEAM WELDED SIDE SEAM ATTACHMENT AT 24" O.C. IN LIEU OF DELTAGRIP ATTACHMENT AT 18" O.C.
3. ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAGE STEEL DECK WORK. WELD DECK WITH E60 SERIES LOW HYDROGEN RODS.
4. CONCENTRATED/HANGING LOADS ON STEEL ROOF DECK SHALL BE LIMITED TO SUSPENDED ACOUSTICAL CEILINGS AND LIGHT DUCT WORK. ALL OTHER CONCENTRATED/HANGING LOADS ARE NOT ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

STEEL JOISTS:

1. ALL JOISTS SHALL BE DESIGNED, FABRICATED, WELDED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS" OF THE STEEL JOIST INSTITUTE.
2. THE JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR THE COMPLETE DESIGN, FABRICATION AND ERECTION PROCEDURES OF ALL JOISTS, BRIDGING AND/OR BRACING, ETC. FOR A COMPLETE INSTALLATION OF THE JOIST SYSTEM. CONNECTIONS AND BEARING MATERIAL TO BE SHOP CONNECTED TO JOISTS AND DESIGNED AND FURNISHED BY JOIST FABRICATOR.
3. JOIST SIZES ARE INDICATED ON PLANS AND SCHEDULES. TYPICAL JOIST DESIGNATIONS ARE AS FOLLOWS: STEEL JOIST/24K9SP 320/160 WHERE 24 INDICATES JOIST DEPTH, K9 INDICATES JOIST TYPE AND EXPECTED SERIES, SP INDICATES THAT THE JOIST MANUFACTURER SHALL DESIGN THE JOIST FOR SPECIAL LOADING, 320 INDICATES THE TOTAL LOAD (PLF), 160 INDICATES THE TOTAL LIVE LOAD (PLF). THE UNIFORM LOADS INDICATED DO NOT INCLUDE SPECIAL OR ADDITIONAL LOADS NOTED ON THE PLANS OR DETAILS.
4. ADDITIONAL JOISTS SHALL BE SUPPLIED AS REQUIRED TO SUPPORT MECHANICAL EQUIPMENT IF REQUIRED.

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GENERAL STRUCTURAL NOTES

Registered Professional Engineer (Civil) CERTIFICATE NO. 27349 RONALD H. SCHNEIDER DATE SIGNED 04/22/22 ARIZONA, U.S.A.

This Electronic Signature
Has Been Authorized By Me
This 04/22/22

revisions

#	date	comment
0	1/25/2022	ISSUED FOR CONSTRUCTION
1	4/4/2022	ASI-001 CONCRETE STRENGTH

project 121366
engineer DCH
drafter MPG
date 11/10/21

sheet S1.0

GENERAL STRUCTURAL NOTES (CONTINUED)

(APPLY UNLESS NOTED OTHERWISE)

STEEL JOISTS (CONTINUED):

5. JOIST MANUFACTURER SHALL SUBMIT CALCULATIONS SEALED BY AN ARIZONA REGISTERED ENGINEER FOR ALL JOISTS, EXCEPT PARALLEL CHORD JOISTS WITH UNIFORM LOADS AND CONTINUOUSLY SUPPORTED COMPRESSION CHORDS PER SJI STANDARD LOAD TABLES. JOIST MANUFACTURER SHALL DESIGN AND SUBMIT CALCULATIONS BY A REGISTERED ENGINEER IN THE STATE IN WHICH THE PROJECT IS PERMITTED FOR ALL JOIST GIRDERS. MANUFACTURER SHALL DESIGN SLOPED JOIST SHOES AND JOIST SHOES WHERE BEARING LENGTH IS LESS THAN 4" AT LH SERIES JOIST AND LESS THAN 3" AT K SERIES JOIST. CALCULATIONS SHALL INCLUDE DEFLECTION AND CAMBER REQUIREMENTS. LIVE LOAD DEFLECTIONS SHALL BE LIMITED TO SPAN/360. ALL JOISTS AND JOIST GIRDERS SHALL BE CAMBERED FOR THE DESIGN DEAD LOAD. MANUFACTURER SHALL ADD ADDITIONAL WEB MEMBERS AS REQUIRED AND ADJUST CHORD AND WEB SIZES ACCORDINGLY BUT SHALL NOT ALTER DEPTH OF JOISTS AND JOIST GIRDERS. DESIGN CALCULATIONS SHALL INCLUDE SUPERIMPOSED LOADS FOR FRAMING SUPPORTED EQUIPMENT. VERIFY SIZE, WEIGHT AND LOCATION OF EQUIPMENT WITH ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.

6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER IN THE STATE IN WHICH THE PROJECT IS PERMITTED FOR REVIEW PRIOR TO MANUFACTURE. SHOP DRAWINGS AND CALCULATIONS SHALL INCLUDE DETAILS OF ANY OPTIONAL FIELD SPLICES, AND IF HIGH STRENGTH BOLTS OR FULL PENETRATION WELDS ARE UTILIZED, CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY TO CERTIFY COMPLIANCE WITH AISC AND AWS SPECIFICATIONS RESPECTIVELY.

7. ALL STEEL JOISTS OR BEAMS SHALL BEAR AT A PANEL POINT. JOISTS OR BEAMS TO BE EQUALLY SPACED BETWEEN COLUMN LINES - TYPICAL U.N.O. WHERE BOTTOM CHORD WELDING IS INDICATED, DO NOT WELD BOTTOM CHORD TO SUPPORT UNTIL FULL DEAD LOAD IS IN PLACE.

8. WHERE CROSS BRIDGING INTERFERES WITH MECHANICAL INSTALLATIONS, REMOVE THIS CROSS BRIDGING AFTER TOTAL DEAD LOAD IS APPLIED AND REPLACE WITH HORIZONTAL ANGLES 2X2X3/16 AT TOP AND BOTTOM CHORDS.

9. MANUFACTURER SHALL DESIGN JOIST IN ACCORDANCE WITH THE U.L. DESIGN REQUIREMENTS IN ORDER TO ACHIEVE THE FIRE RATING SPECIFIED IN ARCHITECTURAL DRAWINGS.

10. ALL FABRICATION SHALL BE PERFORMED ON THE PREMISES OF A FABRICATOR REGISTERED AND APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.

POST-INSTALLED ANCHORS:

1. EPOXY BOLTS OR DOWELS SHALL BE A THREADED ROD OR REINFORCING STEEL INSTALLED WITH THE ONE OF THE FOLLOWING APPROVED PRODUCTS SATISFYING CRACKED CONCRETE REQUIREMENTS IN ACCORDANCE WITH ACI APPENDIX D.

SIMPSON	"SET-3G"	ICC REPORT ESR-4057
DEWALT	"PURE110+"	ICC REPORT ESR-3298
DEWALT	"AC200+"	ICC REPORT ESR-4027

2. EPOXY BOLTS FOR MASONRY SHALL BE ONE OF THE FOLLOWING APPROVED PRODUCTS.

SIMPSON	"SET"	ICC REPORT ESR-1772
HILTI	"HIT-HY 270"	ICC REPORT ESR-4143 AND ESR-4144
DEWALT	"AC100+GOLD"	ICC REPORT ESR-3200

3. EXPANSION BOLTS OR SCREW BOLTS FOR MASONRY SHALL BE ONE OF THE FOLLOWING APPROVED PRODUCTS.

HILTI	"KWIK BOLT III"	ICC REPORT ESR-1385
SIMPSON	"TITEN HD"	ICC REPORT ESR-1056
SIMPSON	"WEDGE-ALL"	ICC REPORT ESR_1396
DEWALT	"POWER-STUD+SD1 WEDGE ANCHOR	ICC REPORT ESR-2966
DEWALT	"SCREW-BOLT+"	ICC REPORT ESR-4042

4. EXPANSION BOLTS FOR CONCRETE SHALL BE ONE OF THE FOLLOWING APPROVED PRODUCTS SATISFYING CRACKED CONCRETE REQUIREMENTS IN ACCORDANCE WITH ACI APPENDIX D.

HILTI	"KWIK BOLT TZ"	ICC REPORT ESR-1917
HILTI	"HDA UNDERCUT ANCHOR"	ICC REPORT ESR-1546
HILTI	"HSL-3 HD EXPANSION ANCHOR"	ICC REPORT ESR-1545
SIMPSON	"STRONG BOLT 2 WEDGE ANCHOR"	ICC REPORT ESR-3037
SIMPSON	"TORQ-CUT"	ICC REPORT ESR-2705
DEWALT	"POWER-STUD+SD1 WEDGE ANCHOR"	ICC REPORT ESR-2818
DEWALT	"POWER-STUD+SD2 WEDGE ANCHOR"	ICC REPORT ESR-2502
DEWALT	"ATOMIC+UNDERCUT ANCHOR"	ICC REPORT ESR-3067
DEWALT	"POWER-BOLT+ EXPANSION ANCHOR"	ICC REPORT ESR-3260

5. SCREW BOLTS FOR CONCRETE SHALL BE ONE OF THE FOLLOWING APPROVED PRODUCTS SATISFYING CRACKED CONCRETE REQUIREMENTS IN ACCORDANCE WITH ACI APPENDIX D.

SIMPSON	"TITEN HD"	ICC REPORT ESR-2713
DEWALT	"SCREW-BOLT+"	ICC REPORT ESR-3889

6. ANCHORS POST INSTALLED OR CAST-IN PLACE IN CONCRETE SHALL BE ONE OF THE FOLLOWING APPROVED PRODUCTS SATISFYING CRACKED CONCRETE REQUIREMENTS IN ACCORDANCE WITH ACI APPENDIX D.

DEWALT	"SNAKE+ ANCHOR"	ICC REPORT ESR-2272
SIMPSON	"BLUE BANGER HANGER"	
SIMPSON	"TITEN HD THREADED ROD HANGER"	ICC REPORT ESR-2713
DEWALT	"WOOD-KNOCKER2"	ICC REPORT ESR-3657
DEWALT	"BANG-IT"	ICC REPORT ESR-3657

7. THE CONTRACTOR MAY NOT USE SUBSTITUTES FOR EPOXY OR EXPANSION ANCHORS WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

8. FOR MINIMUM EMBEDMENT LENGTH SEE DETAILS. INSTALL ALL BOLTS AS OUTLINED IN MANUFACTURER'S SPECIFICATIONS, UTILIZING PROPER SIZE AND TYPE OF DRILL, CLEANING HOLE, DRIVING AND TIGHTENING BOLT.

9. SPECIAL INSPECTION OF ALL POST-INSTALLED ANCHORS IS REQUIRED.

COLD FORMED / STEEL STUD FRAMING:

1. ALL COLD FORMED STEEL FRAMING SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" BY THE AMERICAN IRON AND STEEL INSTITUTE.

2. STEEL FOR 97, 68 AND 54 MIL STUDS AND JOISTS, AND FOR ALL DIAGONAL TENSION STRAPS SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI AND SHALL CONFORM TOASTM A1003, STRUCTURAL GRADE 50, TYPE H. STEEL FOR ALL 43 AND 33 MIL STUDS AND JOISTS, AND FOR ALL THICKNESSES OF TRACK, ACCESSORIES AND BRIDGING SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI AND SHALL CONFORM TO ASTM A1003,STRUCTURAL GRADE 33, TYPE H. STUDS, JOISTS, TRACKS AND ACCESSORIES SHALL HAVE A MINIMUM METALLIC COATING COMPLYING WITH THE REQUIREMENTS OF ASTM A1003. ADDITIONAL CORROSION PROTECTION SHALL NOT BE REQUIRED ON EDGES OF METALLIC-COATED STEEL FRAMING MEMBERS, SHOP OR FIELD CUT, PUNCHED OR DRILLED. FRAMING MEMBERS SHALL BE LOCATED WITHIN BUILDING ENVELOPE AND ADEQUATELY SHIELDED FROM DIRECT CONTACT WITH MOISTURE FROM THE GROUND OR OUTDOOR CLIMATE.

3. THE FOUNDATION SHALL BE LEVEL AND FREE FROM DEFECTS BENEATH LOAD BEARING WALL TRACKS. IF THE FOUNDATION IS NOT LEVEL, PROVISIONS SHALL BE MADE TOPROVIDE A UNIFORM BEARING SURFACE WITH A MAXIMUM 1/4" GAP BETWEEN THEBOTTOM TRACK OR RIM TRACK AND THE FOUNDATION. THIS SHALL BE ACCOMPLISHED THROUGH THE USE OF LOAD BEARING SHIMS OR NON-SHRINK GROUTPROVIDED BETWEEN THE UNDERSIDE OF THE TRACK AND THE TOP OF THE FOUNDATIONAT BEARING STUD OR JOIST LOCATIONS.

4. ALL STUDS SHALL SEATED TIGHT FOR FULL END BEARING ON THE TOP AND BOTTOM TRACKS. TIGHT SEATING, PER THE AISI, SHALL CONSIST OF STUDS WITH NO MORETHAN A 1/8" GAP BETWEEN THE STUD AND THE WEB OF THE TRACK.DO NOT SPLICE OR NOTCH FLANGES OF STUDS, JOISTS OR TENSION STRAPSUNLESS NOTED. UNLESS NOTED OTHERWISE, PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, BEAM BEARINGS AND STEEL JOIST BEARINGS WHERE SPACING EXCEEDS 4'0" ON CENTER. DOUBLE UP JOISTS BELOW PARTITIONS AND AT ROOF (AND FLOOR) OPENINGS WHICH INTERRUPT ANY MEMBERS UNLESS NOTED OTHERWISE.

5. SCREW CONNECTIONS FOR STEEL TO STEEL AND SHEATHING TO STEEL SHALL CONFORMTO THE ASTM C1513 STANDARD. SCREW FASTENERS SHALL EXTEND THROUGH THE STEEL CONNECTION A MINIMUM OF THREE (3) EXPOSED THREADS. SCREW FASTENERSSHALL PENETRATE INDIVIDUAL COMPONENTS OF CONNECTIONS WITHOUT CAUSINGPERMANENT SEPERATION BETWEEN COMPONENTS.

6. WELDED CONNECTIONS FOR COLD FORMED STEEL SHALL BE IN ACCORDANCE WITHAISI S100 AND AWS D1.3.

7. BRIDGING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION WITH THE FOLLOWING MINIMUM REQUIREMENTS: FOR WALLS WITH NO AXIAL LOAD, PROVIDEBRIDGING AT MID-HEIGHT FOR WALLS LESS THAN OR EQUAL TO 10'-0" HIGH, AND5'-0" O.C. MAXIMUM FOR WALLS GREATER THAN 10'-0" HIGH. FOR AXIAL LOAD BEARING WALLS, PROVIDE BRIDGING EQUALLY SPACED AT 4'-0" MAXIMUM. IN ADDITION, BLOCKING OR BRIDGING SHALL BE PROVIDED AT ROOF (AND FLOOR) LINES AND ELSEWHERE AS NOTED ON THE DRAWINGS. SOLID BLOCKING SHALL BE INSTALLED IN LIEU OF BRIDGING WHERE NOTED ON THE DRAWINGS. WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAGE STEEL FRAMING CONSTRUCTION.

8. STUD WALLS SHALL BE 33 MIL THICK AT 16" O.C. UNLESS NOTED OTHERWISE. BLOCKING SHALL BE THE SAME GAGE AS THE STUDS. PLACE 1/2" DIAMETER ANCHOR BOLTS IN TRACKS WITH SPACINGS NOT TO EXCEED 4'-0" O.C. AND AT ALL JAMBS, INTERSECTIONS, CORNERS, AND WALL ENDS (2 ANCHOR BOLTS MINIMUM PER TRACK).

9. MEMBERS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES BASED ON ICC ESR-4943P:

	SIZE
STUDS	800S162-43*
TRACKS	800T125-43*

SHOP DRAWINGS AND PRODUCT DATA SUBMITTALS:

1. SUBMIT SHOP DRAWINGS AND/OR PRODUCT DATA FOR THE FOLLOWING ITEMS, PRIOR TO FABRICATION:

   CONCRETE MATERIALS
   CONCRETE REINFORCING STEEL
   MASONRY MATERIALS
   MASONRY REINFORCING STEEL
   STRUCTURAL STEEL FRAMING
   STEEL DECK
   STEEL JOISTS
   STRUCTURAL LIGHT-GAGE STEEL FRAMING

2. PROVIDE SUBMITTALS IN A TIMELY MANNER TO ALLOW FIVE WORKING DAYS FOR THE ENGINEER'S REVIEW. FOR HARD COPY SUBMITTALS, PROVIDE NO MORE THAN FOUR SETS FOR REVIEW (ONE COPY TO BE RETAINED BY THE ENGINEER). FOR ELECTRONIC SUBMITTALS, PROVIDE PDF FILES ONLY. ALL SUBMITTALS WITH A REQUESTED REVIEW TIME OF LESS THAN FIVE WORKING DAYS MAY BE RETURNED WITHOUT REVIEW AT THE ENGINEER'S DISCRETION.

3. CONSTRUCTION DOCUMENTS SHALL NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS. THE MANUFACTURER OR FABRICATOR SHALL CLOUD ANY CHANGES, SUBSTITUTIONS, AND/OR DEVIATIONS FROM THE CONTRACT DOCUMENTS. ANY CHANGES, SUBSTITUTIONS, AND/OR DEVIATIONS THAT ARE NOT CLOUDED OR FLAGGED SHALL NOT BE CONSIDERED ALLOWED AFTER THE ENGINEER'S REVIEW, UNLESS NOTED ACCORDINGLY BY THE ENGINEER.

4. THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL TO THE ENGINEER. CLEARLY INDICATE ITEMS NOT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. VERIFY DIMENSIONS WITH THE ARCHITECT.

5. THE ENGINEER'S REVIEW IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS AND COMPLETENESS SHALL REST WITH THE CONTRACTOR. SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF SIGNIFICANT ERRORS ARE FOUND DURING REVIEW.

6. THE SHOP DRAWINGS DO NOT REPLACE THE CONTRACT DOCUMENTS. SHOP DRAWINGS PROCESSED BY THE ENGINEER SHALL NOT BE CONSIDERED CHANGE ORDERS. ITEMS THAT ARE OMITTED OR SHOWN INCORRECTLY AND THAT ARE NOT FLAGGED BY THE ENGINEER ARE NOT TO BE CONSIDERED CHANGES TO CONTRACT DOCUMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT ITEMS ACCORDING TO THE CONTRACT DOCUMENTS. SHOULD A DISCREPANCY EXIST BETWEEN THE PROCESSED SHOP DRAWINGS AND THE CONTRACT DOCUMENTS, THE CONTRACT DOCUMENTS SHALL GOVERN.

7. THE ENGINEER RESERVES THE RIGHT TO MAKE CHANGES TO THE CONTRACT DOCUMENTS, AT ANY TIME BEFORE OR AFTER SHOP DRAWING REVIEW.

8. THE ADEQUACY OF ENGINEERING DESIGNS AND LAYOUT PERFORMED BY OTHERS RESTS WITH THE DESIGNING OR SUBMITTING PARTY.

DEFERRED SUBMITTALS (PER 2018 IBC 107.3.4.1):

1. FOR THE PURPOSES OF THIS SECTION, DEFERRED SUBMITTALS ARE DEFINED AS THOSE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD.

2. DEFERRAL OF ANY SUBMITTAL ITEMS SHALL HAVE PRIOR APPROVAL OF THE BUILDING OFFICIAL. THE ARCHITECT OR ENGINEER OF RECORD SHALL LIST THE DEFERRED SUBMITTALS ON THE PLANS AND THE CONTRACTOR SHALL SUBMIT THE DEFERRED SUBMITTAL DOCUMENTS FOR REVIEW BY THE BUILDING OFFICIAL.

3. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD A MINIMUM OF 30 DAYS PRIOR TO FABRICATION. THE DOCUMENTS SHALL BE REVIEWED FOR GENERAL CONFORMANCE WITH THE DRAWINGS. A COPY OF THE DEFERRED SUBMITTAL DOCUMENTS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

4. DEFERRED SUBMITTAL ITEMS:

   STEEL JOISTS

SPECIAL INSPECTIONS AND TESTING (PER 2018 IBC 1704):

1. THE OWNER (OR REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT) SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PROVIDE INSPECTION AND TESTING DURING CONSTRUCTION OF THE TYPES OF WORK REQUIRING SPECIAL INSPECTION AS INDICATED ON THE DRAWINGS.

2. EACH SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL AND STRUCTURAL ENGINEER OF RECORD, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

3. THE CONTRACTOR SHALL CONVENE A MEETING WITH THE SPECIAL INSPECTION AGENCY (AGENCIES), THE BUILDING OFFICIAL, THE ARCHITECT, AND THE STRUCTURAL ENGINEER OF RECORD TO REVIEW INSPECTION REQUIREMENTS AND PROCEDURES, PRIOR TO COMMENCING WITH CONSTRUCTION.

4. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

   A) THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS.

   B) THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE ENGINEER OR ARCHITECT OF RECORD. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE ENGINEER OR ARCHITECT OF RECORD AND THE BUILDING OFFICIAL PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.

   C) UPON COMPLETION OF THE ASSIGNED WORK, THE SPECIAL INSPECTOR SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT, TO THE BEST OF HIS KNOWLEDGE, THE WORK IS IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS, AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

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GENERAL STRUCTURAL NOTES

Registered Professional Engineer (Structural) CERTIFICATE NO. 27349 RONALD H. SCHNEIDER DATE SIGNED 04/22/22 ARIZONA, U.S.A.

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revisions

#	date	comment
0	1/25/2022	ISSUED FOR CONSTRUCTION

project 121366
engineer DCH
drafter MPG
date 11/10/21

sheet S1.1

TABLE 1: REQUIRED STRUCTURAL SPECIAL INSPECTIONS

891.0–IBC12

SYSTEM OR MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS	PERIODIC	
1. CONCRETE					
REINFORCING STEEL AND PRESTRESSING TENDON PLACEMENT	1705.3	ACI 318 1.3 ACI 318 3.5 ACI 318 7.5		X	
WELDING OF REINFORCING STEEL	1705.3	ACI 318 1.3 ACI 318 3.5.2 AWS D1.4			REFER TO STEEL FOR WELDING REQUIREMENTS
PLACEMENT OF CAST–IN–PLACE ANCHOR BOLTS	1705.3 1908.5 1909.1	ACI 318 1.3 ACI 318 1.3 ACI 318 D.9		X	ALL BOLTS VISUALLY INSPECTED
VERIFY USE OF REQUIRED MIX DESIGN(S)	1705.3 1904.2 1910.2 1910.3	ACI 318 1.3 ACI 318, CHAPTER 4		X	
CONCRETE PLACEMENT	1705.3	ACI 318 1.3 ACI 318 5.9, 5.10	X		
CONCRETE CURING	1705.3 1910.9	ACI 318 1.3 ACI 318 5.11–5.13		X	
2. MASONRY (LEVEL B)					
VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS	1705.4	ACI 530.1, 1.5		X	
AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
A. PROPORTIONS OF SITE–PREPARED MORTAR		ACI 530.1, 2.1, 2.6 A		X	
B. CONSTRUCTION OF MORTAR JOINTS		ACI 530.1, 3.3 B		X	
D. LOCATION OF REINFORCEMENT, CONNECTORS, AND ANCHORAGES		ACI 530.1, 3.4, 3.6 A		X	
PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:					
A. GROUT SPACES	1705.4	ACI 530.1, 3.2 D, 3.2 F		X	
B. GRADE, TYPE, AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS		ACI 530, 1.16 ACI 530.1, 2.4, 3.4		X	
C. PLACEMENT OF REINFORCEMENT CONNECTORS AND ANCHORAGES		ACI 530, 1.16 ACI 530.1, 3.2 E, 3.4, 3.6 A		X	
D. PROPORTIONS OF SITE–PREPARED GROUT		ACI 530.1, 2.6 B, 2.4 G.1.b		X	
E. CONSTRUCTION OF MORTAR JOINTS		ACI 530.1, 3.3 B		X	
VERIFY DURING CONSTRUCTION:					
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS	1705.4	ACI 530.1, 3.3 F		X	
B. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION		ACI 530, 1.16.4.3, 1.17.1		X	
C. WELDING REINFORCEMENT		ACI 530, 2.1.7.7.2, 3.3.3.4(c), 8.3.3.4(b)	X		
D. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C))		ACI 530, 1.8 C, 1.8 D		X	
F. PLACEMENT OF GROUT IS IN COMPLIANCE		ACI 530.1, 3.5, 3.6 C	X		
OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		ACI 530.1, 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4		X	

TABLE 1: REQUIRED STRUCTURAL SPECIAL INSPECTIONS (CONTINUED)

891.3–IBC12

SYSTEM OR MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS	PERIODIC	
3. STRUCTURAL STEEL					
FABRICATION OF STRUCTURAL ELEMENTS	1704.2.5	AISC 360 N7		X	INSPECTION MAY BE WAIVED WHEN PERFORMED IN A PRE–APPROVED SHOP
INSPECTION PRIOR TO WELDING					
			PERFORM THESE TASKS (P)	OBSERVE THESE ITEMS ON A RANDOM BASIS (O)	
WELDING PROCEDURE SPECIFICATIONS AVAILABLE	1705.2		P		
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	1705.2		P		
MATERIAL IDENTIFICATION (TYPE/GRADE)				O	
WELDER IDENTIFICATION SYSTEM				O	THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW–STRESS TYPE
FIT–UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)		AISC 360 N5.4–1		O	
JOINT PREPERATION				O	
CLEANLINESS (CONDITION OF STEEL SURFACE)				O	
TRACKING (TACK WELD QUALITY AND LOCATION)				O	
BACKING TYPE AND FIT (IF APPLICABLE)				O	
CONFIGURATION AND FINISH OF ACCESS HOLES				O	
FIT–UP OF FILLET WELDS				O	
DIMENSIONS (ALIGNMENT, GAPS AT ROOT)				O	
CHECK WELDING EQUIPMENT				O	
INSPECTION DURING WELDING					
USE OF QUALIFIED WELDERS		AISC 360 N5.4–2		O	
CONTROL AND HANDLING OF WELDING CONSUMABLES				O	
PACKAGING				O	
EXPOSURE CONTROL				O	
NO WELDING OVER CRACKED TACK WELDS				O	
ENVIRONMENTAL CONDITIONS				O	
WIND SPEED WITHIN LIMITS				O	
PRECIPITATION AND TEMPERATURE				O	
WPS FOLLOWING				O	
SETTINGS ON WELDING EQUIPMENT				O	
TRAVEL SPEED				O	
SELECTED WELDING MATERIALS				O	
SHIELDING GAS TYPE/FLOW RATE				O	
PREHEAT APPLIED				O	
INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.)				O	
PROPER POSITIONS (F, V, H, OH)				O	
WELDING TECHNIQUES				O	
INTERPASS AND FINAL CLEANING				O	
EACH PASS WITHIN PROFILE LIMITATIONS				O	
EACH PASS MEETS QUALITY REQUIREMENTS				O	

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SPECIAL INSPECTION TABLES

Registered Professional Engineer (Structural)
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This 04/22/22

revisions

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project 121366
engineer DCH
drafter MPG
date 11/10/21

sheet **S1.2**

TABLE 1: REQUIRED STRUCTURAL SPECIAL INSPECTIONS (CONTINUED)

891.3–IBC12

SYSTEM OR MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS	PERIODIC	
INSPECTION AFTER WELDING					
WELDS CLEANED		AISC 360 N5.4–3	P		
SIZE, LENGTH AND LOCATION OF WELDS			P		
WELDS MEET VISUAL ACCEPTANCE CRITERIA			P		
CRACK PROHIBITION			P		
WELD/BASE–METAL FUSION			P		
CRATER CROSS SECTION			P		
WELD PROFILES			P		
WELD SIZE			P		
UNDERCUT			P		
POROSITY			P		
ARC STRIKES			P		
K–AREA			P		WHEN WELDING OF DOUBLE PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K–AREA, VISUALLY INSPECT THE WEB K–AREA FOR CRACKS WITHIN 3 INCHES (75 MM) OF WELD
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)			P		
REPAIR ACTIVITIES			P		
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT MEMBER			P		
INSPECTION PRIOR TO BOLTING					
MANUFACTURER'S CERTIFICATION AVAILABLE FOR FASTENER MATERIALS		AISC 360 N5.6–1	P		
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS				O	
PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)				O	
PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL				O	
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS				O	
PRE–INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED			P		
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS				O	
INSPECTION DURING BOLTING					
FASTENER ASSEMBLIES, OR SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED		AISC 360 N5.6–2		O	
JOINT BROUGHT TO THE SNUG–TIGHT PRIOR TO THE PRE–TENSIONING OPERATION				O	
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING				O	
FASTENERS ARE PRE–TENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES				O	
INSPECTION AFTER BOLTING					
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTION		AISC 360 N5.6–3	P		
GENERAL INSPECTIONS					
VERIFICATION OF FRAME JOINT DETAILS INCLUDING MEMBER AND COMPONENT LOCATIONS, BRACING AND STIFFENERS		AISC 360 N5.7		O	
PLACEMENT OF ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS	1705.2	AISC 360 N5.7		O	AT A MINIMUM, THE DIAMETER, GRADE, TYPE, AND LENGTH OF THE ANCHOR ROD OR EMBEDDED ITEM AND THE EXTENT OR DEPTH OF EMBEDMENT INTO THE CONCRETE, SHALL BE VERIFIED PRIOR TO PLACEMENT OF CONCRETE

TABLE 1: REQUIRED STRUCTURAL SPECIAL INSPECTIONS (CONTINUED)

891.4–IBC12

SYSTEM OR MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS	PERIODIC	
4. POST–INSTALLED ANCHORS					
INSTALLATION IN HARDENED CONCRETE AND COMPLETED MASONRY	1705.3 1909.1	ACI 318, 3.8.6, 8.1.3, 21.2.8 ICC EVALUATION REPORT		X	SPECIAL INSPECTIONS APPLY TO ANCHOR PRODUCT NAME, TYPE, AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, ADHESIVE EXPIRATION DATE, ANCHOR/ADHESIVE INSTALLATION, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE

TABLE 2: REQUIRED TESTING FOR SPECIAL INSPECTIONS

894–IBC12

SYSTEM OR MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS	PERIODIC	
1. CONCRETE					
CONCRETE STRENGTH	1705.3 1905.6	ASTM C39	EACH 150 CY NOT LESS THAN ONE TEST EACH 5000 SF OF SLAB OR WALL PLACED EACH DAY		FABRICATE SPECIMENS AT TIME FRESH CONCRETE IS PLACED
CONCRETE SLUMP		ASTM C143			
CONCRETE AIR CONTENT		ASTM C231			
CONCRETE TEMPERATURE		ASTM C1064			
2. MASONRY					
UNIT STRENGTH METHOD	2105.2.2.1	ASTM C55 ASTM C90 ASTM C140 ASTM C476 ASTM C1019	PRIOR TO CONSTRUCTION ONLY		
PRISM TEST METHOD	2105.2.2.2	ASTM C1314	3 PRISMS EACH TEST		ONLY REQUIRED AS SPECIFICALLY INDICATED AND/OR IF MASONRY DOES NOT MEET THE REQUIREMENTS FOR APPLICATION OF THE REQUIREMENTS FOR APPLICATION OF THE UNIT STRENGTH METHOD.
3. STEEL					
MAGNETIC PARTICLE (MT) AND ULTRASONIC (UT) TESTING OF WELDS		MT – AWS D1.1 6.14.4 UT – AWS D1.1 6.13 & 6.14.3	PER DRAWINGS		SEE AISC 360 FOR QA ON GROOVE WELDS, ACCESS HOLES, AND FATIGUE WELDS

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INTERPRETATION OF DRAWINGS

ABBREVIATIONS

A.B.C.	AGGREGATE BASE COURSE
A.F.F.	ABOVE FINISHED FLOOR
ALT	ALTERNATE
A.B.	ANCHOR BOLT
B.F.F.	BELOW FINISHED FLOOR
B.O.B.	BOTTOM OF BEAM
B.O.D.	BOTTOM OF DECK
B.O.F.	BOTTOM OF FOOTING
B.O.S.	BOTTOM OF STEEL
BOT	BOTTOM
BRG	BEARING
C.I.P.	CAST IN PLACE
C.F.S.	COLD FORMED STEEL
CL	CENTERLINE
CLR	CLEAR
CONC	CONCRETE
CONC. C.J.	CONCRETE CONTROL JOINT
C.M.U.	CONCRETE MASONRY UNIT
CONN	CONNECTION
CONT	CONTINUOUS
D.L.	DEAD LOAD
DIA	DIAMETER
DN	DOWN
DWG(S)	DRAWING(S)
(E)	EXISTING
E.F.	EACH FACE
E.O.S.	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EXP. BOLT	EXPANSION BOLT
E.J.	EXPANSION JOINT
E.W.	EACH WAY
FDN	FOUNDATION
F.F.E.	FINISHED FLOOR ELEVATION
GA	GAGE
GALV	GALVANIZED
G.S.N.	GENERAL STRUCTURAL NOTES
G.L.B. (GLULAM)	GLUED-LAMINATED BEAM
HORIZ	HORIZONTAL
I.B.C.	INTERNATIONAL BUILDING CODE
I.C.C.	INTERNATIONAL CODE COUNCIL
I.C.F.	INSULATED CONCRETE FORM
K(KIP)	1000 POUNDS
L.L.	LIVE LOAD
LBS	POUNDS
L.L.H.	LONG LEG HORIZONTAL
L.L.V.	LONG LEG VERTICAL
MFR('S)	MANUFACTURER('S)
M.C.J.	MASONRY CONTROL JOINT
MECH	MECHANICAL
(N)	NEW
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
N.F.S.	NON-FROST SUSCEPTIBLE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OPP	OPPOSITE (MIRRORED)
P.A.F.	POWDER ACTUATED FASTENER
P.C.	PRECAST CONCRETE
P.C.F.	POUNDS PER CUBIC FOOT
P.L.F.	POUNDS PER LINEAR FOOT
PREFAB	PREFABRICATED
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
REINF	REINFORCING
SCH	SCHEDULE
SIM	SIMILAR
S.I.P.	STRUCTURAL INSULATED PANEL
S.L.R.S.	SEISMIC LOAD RESISTING SYSTEM
SP	SPACES
STD	STANDARD
T & B	TOP AND BOTTOM
T.L.	TOTAL LOAD
T.O.B.	TOP OF BEAM
T.O.C.	TOP OF CONCRETE
T.O.D.	TOP OF DECK
T.O.F.	TOP OF FOOTING
T.O.L.	TOP OF LEDGER
T.O.M.	TOP OF MASONRY
T.O.PL.	TOP OF PLATE
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W.S.P.	WOOD STRUCTURAL PANEL
W.W.F.	WELDED WIRE FABRIC
W/ (W/O)	WITH (WITHOUT)

PLAN LEGEND

SYMBOL	DESCRIPTION	REMARKS
101	DETAIL CUT ON PLANS	FOUNDATION DETAILS ARE 100 SERIES NUMBERS FRAMING DETAILS ARE 200 SERIES NUMBERS BRACED FRAME DETAILS ARE 300 SERIES NUMBERS STAIR DETAILS ARE 400 SERIES NUMBERS
1	KEYNOTE ON PLAN	
	8" MASONRY WALL U.N.O.	SEE PLANS AND SCHEDULES FOR REINFORCING
	12" MASONRY WALL U.N.O.	SEE PLANS AND SCHEDULES FOR REINFORCING
	CONCRETE WALL U.N.O.	SEE PLANS AND SCHEDULES FOR SIZE AND REINFORCING
	STEEL STUD WALL U.N.O.	SEE PLANS AND SCHEDULES FOR SIZE
	WOOD STUD WALL U.N.O.	SEE PLANS AND G.S.N. FOR SIZE
SW	SHEAR WALL	SEE PLANS FOR LOCATION, SIZE AND TYPE
SW / SW	TWO-SIDED SHEAR WALL	SEE PLANS FOR LOCATION, SIZE AND TYPE
H	HOLDOWN ANCHOR	SEE PLANS AND SCHEDULES FOR SIZE AND LOCATIONS
M.C.J.	MASONRY CONTROL JOINT	SEE PLANS FOR LOCATION
P.J.	PANEL JOINT	SEE PLANS FOR LOCATION
C.J.	CONTROL JOINT	SEE PLANS FOR LOCATION
	DIRECTION OF SLOPE	VERIFY SLOPE WITH ARCHITECTURAL AND/OR MECHANICAL DRAWINGS
	SLAB DEPRESSION/ CHANGE IN ELEVATION	VERIFY DEPTH WITH ARCHITECTURAL DRAWINGS
B (F)	FLUSH BEAM	
B (D)	DROPPED BEAM	
	BRACED FRAME MEMBERS	SEE PLANS AND SCHEDULES. DIAGONAL ARROW INDICATES BRACE UP.
	RIGID (MOMENT) CONNECTION	
	SIMPLE BEAM SPLICE CONNECTION	
	NUMBER OF ROWS OF BOLTS AT BEAM TO COLUMN OR BEAM TO BEAM CONNECTION	SEE PLANS FOR LOCATION. IF NO SYMBOL IS INDICATED, SINGLE ROW OF BOLTS OCCURS
(15") (15")	CIRCULAR OR RECTANGULAR OPENING IN BEAM WEB (SIZE)	SEE TYPICAL DETAIL U.N.O.
c=1/2"	BEAM CAMBER	
(-2 1/2")	TOP OF STEEL ELEVATION RELATIVE TO BOTTOM OF DECK ELEVATION	
(24)	QUANTITY OF HEADED STUDS ON COMPOSITE STEEL BEAM	SEE G.S.N. AND TYPICAL DETAILS FOR PLACEMENT
100'-0"	ELEVATION TARGET	
1	REVISION SYMBOL	
	OPENING	
	MECHANICAL EQUIPMENT	VERIFY SIZE AND LOCATION WITH ARCHITECTURAL AND/OR MECHANICAL DRAWINGS
	APPLIED LOAD OR POINT OF SUPPORT/SHORING	

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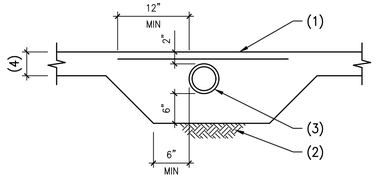
NOTES:

1. 4x4 – W1.4xW1.4 W.W.F. OR #4 AT 12" O.C.
2. FIRM UNDISTURBED SOIL OR COMPACTED BASE.
3. PIPE OR CONDUIT.
4. TYPICAL SLAB THICKNESS.

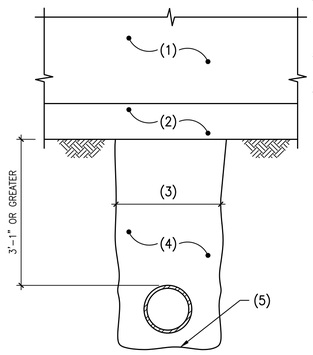


08 TYPICAL SLEEVE FOR PIPE AT SLAB

SCALE: NOT TO SCALE 200-022-TYP

NOTES:

1. STEM WALL.
2. CONCRETE FOOTING.
3. 1'-6" MAXIMUM. WHERE TRENCH EXCEEDS 1'-6", NOTIFY STRUCTURAL ENGINEER PRIOR TO PLACEMENT OF FOOTING.
4. BACKFILL AND RECOMPACT TRENCH PER SOILS REPORT AND SPECIFICATIONS.
5. BOTTOM OF TRENCH.

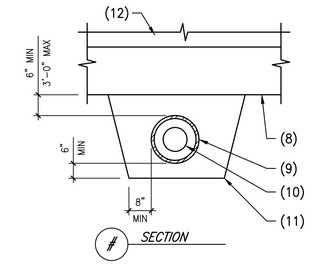


NOTE:
FOR TRENCH DEPTH OF 3'-6" OR LESS, SEE TYPICAL PIPE AT FOOTING DETAIL.

NO PIPE SHALL PASS THROUGH FOOTINGS OR UNDER COLUMN FOOTINGS.

05 TYPICAL PIPE PASSING BELOW WALL FOOTING IN DEEP TRENCH

SCALE: NOT TO SCALE 200-007-TYP



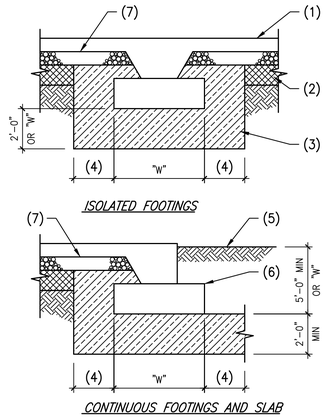
SECTION

NOTES:

1. CAST IRON SLEEVE 2" LARGER THAN PIPE.
2. NO SLEEVES PERMITTED THROUGH FOOTING.
3. EXCAVATION BELOW THESE LINES NOT PERMITTED.
4. CONCRETE FILL PIPE TRENCH. EXTEND 2'-0" EACH SIDE OF SLEEVE.
5. 3'-0" MAXIMUM. STEP FOOTING IF NECESSARY IN ORDER TO MAINTAIN 3'-0" MAX HEIGHT.
6. BACKFILL PER SPECS.
7. 90% DENSITY (ASTM D-698).
8. CONCRETE FOOTING.
9. SLEEVE. PROVIDE 1/2" MINIMUM CLEARANCE AROUND PIPE OR CONDUIT.
10. PIPE OR CONDUIT.
11. CONCRETE FILL TO BE PLACED BEFORE FOOTING IS POURED. FORM SAME AS FOOTING AND POUR FULL WIDTH OF PIPE TRENCH.
12. FOUNDATION WALL.

NOTES:
A. NO PIPE SHALL PASS THROUGH FOOTINGS OR UNDER COLUMN FOOTINGS.

B. FOR TRENCHES GREATER THAN 3'-0" BELOW BOTTOM OF FOOTING, SEE TYPICAL PIPE PASSING BELOW WALL FOOTING DETAIL.



ISOLATED FOOTINGS

CONTINUOUS FOOTINGS AND SLAB

NOTES:

1. CONCRETE SLAB.
2. SCARIFY, MOISTEN, OR DRY AS REQUIRED, AND COMPACT ALL SUB GRADE SOILS BENEATH SLABS.
3. COMPACTED ENGINEERED FILL. AFTER OVER EXCAVATION HAS BEEN ACCOMPLISHED, THE EXPOSED SOILS SHALL BE SCARIFIED, MOISTENED, OR DRIED AS REQUIRED, AND COMPACTED.
4. MINIMUM WIDTH OF RECOMPACTION/ENGINEERED FILL REQUIRED BEYOND THE FOOTING EDGE SHALL BE EQUAL TO 2'-0" MINIMUM. OR 0.6 x DEPTH OF RECOMPACTION.
5. FINISHED GRADE.
6. SEE PLANS FOR TOP OF FOOTING ELEVATION.
7. 2" ASTM FINE CONCRETE AGGRAGATE OVER 15 MIL ASTM E 1745 CLASS A VAPOR BARRIER PER SPECIFICATION 03 31 00.00 10 OVER 6" CAPILLARY WATER BARRIER (CWB) PER 31 00 00 EARTHWORK.

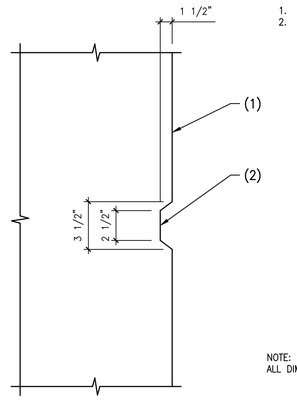
TYPICAL NOTE:
1. SEE G.S.N. FOR ADDITIONAL INFORMATION.

01 TYPICAL EARTHWORK DETAIL

SCALE: NOT TO SCALE 200-002-TYP

NOTES:

1. CONCRETE.
2. KEYED JOINT – REMOVE FORM MATERIAL PRIOR TO PLACING ADJACENT CONCRETE.



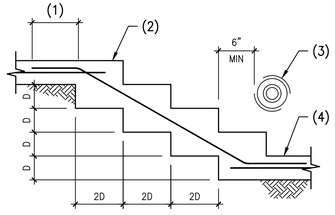
NOTE:
ALL DIMENSIONS ARE ±1/2".

09 TYPICAL KEY IN CONCRETE

SCALE: NOT TO SCALE 200-023-TYP

NOTES:

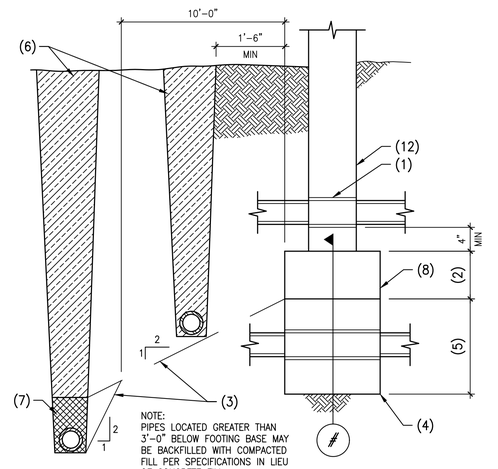
1. LAP PER G.S.N. (24" MIN) – TYPICAL.
2. TOP OF WALL FOOTING.
3. PIPE THROUGH STEM WALL AS OCCURS – SEE TYPICAL DETAIL.
4. RETURN TO FOOTING THICKNESS AS SHOWN ON PLAN.



NOTE:
D = 2'-0" MAXIMUM.

06 TYPICAL STEP IN CONCRETE FOOTING

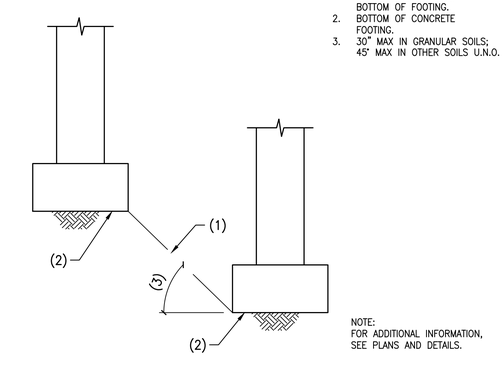
SCALE: NOT TO SCALE 200-020-TYP



NOTE:
PIPES LOCATED GREATER THAN 3'-0" BELOW FOOTING BASE MAY BE BACKFILLED WITH COMPACTED FILL PER SPECIFICATIONS IN LIEU OF CONCRETE FILL.

03 TYPICAL PIPE THROUGH FOUNDATION WALL AND TRENCH

SCALE: NOT TO SCALE 200-005-TYP



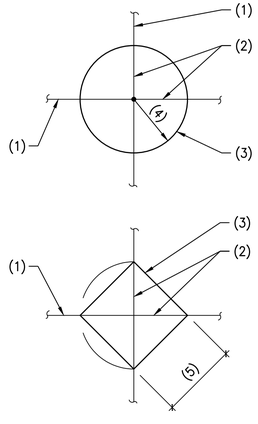
NOTE:
FOR ADDITIONAL INFORMATION, SEE PLANS AND DETAILS.

02 TYPICAL MAXIMUM SLOPE BETWEEN ADJACENT FOOTINGS

SCALE: NOT TO SCALE 200-004-TYP

NOTES:

1. CONCRETE CONTROL JOINT WHERE SHOWN ON PLAN.
2. CENTERLINE OF COLUMN.
3. KEYED JOINT – SEE TYPICAL THICKENED SLAB AT CONCRETE CLOSURE POUR DETAIL.
4. RADIUS 1'-6" MINIMUM; 3'-0" MAXIMUM.
5. 2'-0" MINIMUM; 4'-0" MAXIMUM.



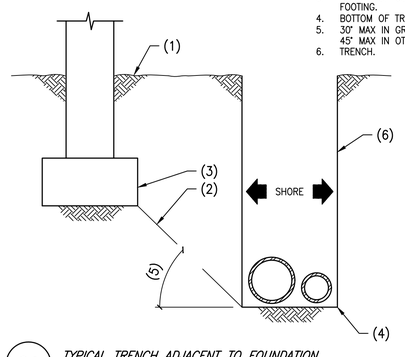
NOTE:
FOR CLARITY, COLUMNS OMITED. FOR CONFIGURATION OF SPECIFIC CLOSURE POURS, SEE PLAN.

07 TYPICAL COLUMN CLOSURE POUR AT CONCRETE SLAB ON GRADE

SCALE: NOT TO SCALE 200-021-TYP

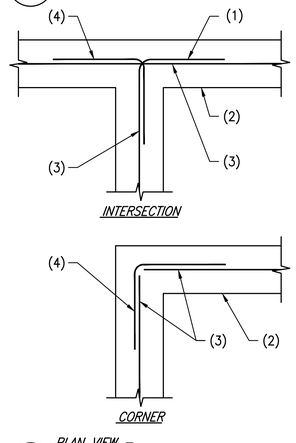
NOTES:

1. FINISHED GRADE.
2. DO NOT EXCAVATE TRENCH BELOW IMAGINARY LINE EXTENDING FROM BOTTOM OF FOOTING OR FOUNDATION.
3. BOTTOM OF CONCRETE FOOTING.
4. BOTTOM OF TRENCH.
5. 30° MAX IN GRANULAR SOILS; 45° MAX IN OTHER SOILS U.N.O.
6. TRENCH.



04 TYPICAL TRENCH ADJACENT TO FOUNDATION

SCALE: NOT TO SCALE 200-006-TYP



INTERSECTION

CORNER

10 PLAN VIEW – TYPICAL CORNER REINFORCING IN CONCRETE FOOTING AND/OR STEM WALL

SCALE: NOT TO SCALE 200-030-TYP

NOTES:

1. ALTERNATE BEND.
2. CONCRETE STEM WALL OR FOOTING.
3. REINFORCING PER PLANS AND/OR G.S.N.
4. CORNER BARS SAME SIZE AND SPACING AS HORIZONTAL REINFORCING. LAP PER G.S.N. (24" MINIMUM).

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TYPICAL DETAILS

Registered Professional Engineer (Structural)
CERTIFICATE NO.
27349
RONALD H. SCHNEIDER
DATE SIGNED 04/22/22
ARIZONA, U.S.A.

This Electronic Signature
Has Been Authorized By Me
This 04/22/22

revisions

#	date	comment
0	1/25/2022	ISSUED FOR CONSTRUCTION

project 121366
engineer DCH
drafter MPG
date 11/10/21

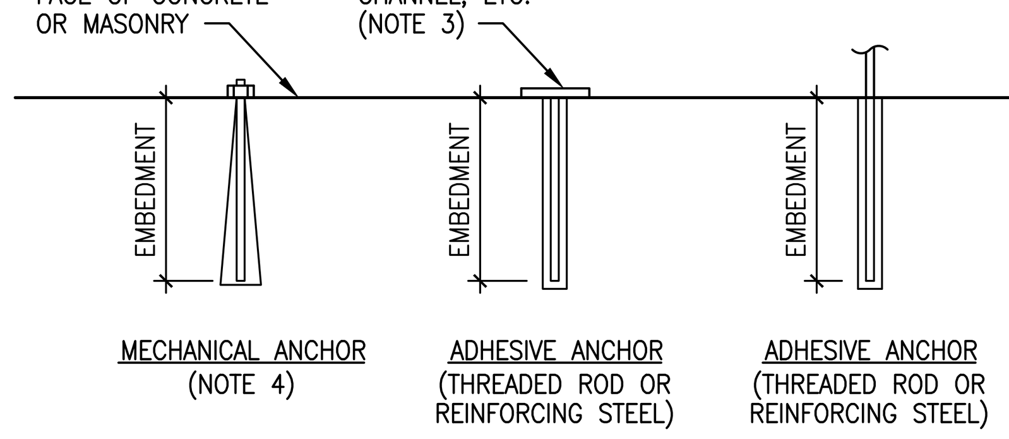
sheet **S1.5**

REINFORCING STEEL SIZE	REINFORCING STEEL EMBEDMENT LENGTH IN CONCRETE	REINFORCING STEEL EMBEDMENT LENGTH IN MASONRY
#3	3"	6"
#4	6"	8"
#5	6"	8"
#6	8"	8"
#7	8"	8"
#8	10"	8"
#9	12"	12"

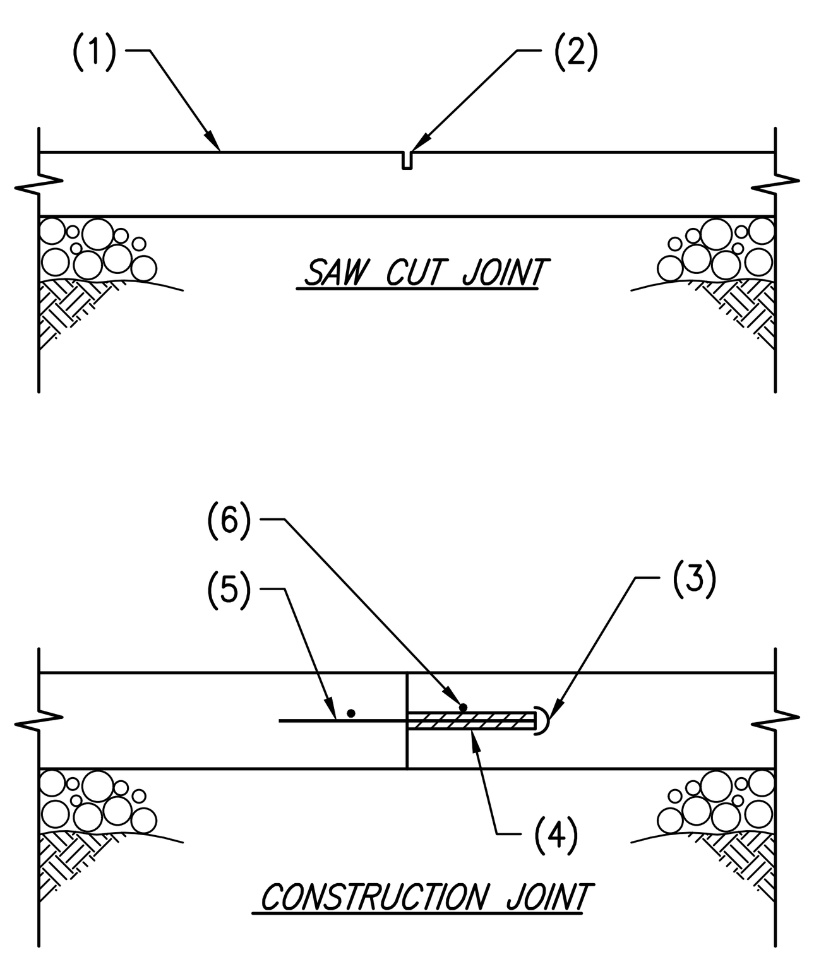
NOTES:

1. PROVIDE POST-INSTALLED ANCHORS AND REINFORCING STEEL PER THIS SCHEDULE UNLESS NOTED OTHERWISE ON PLANS OR DETAILS.
2. POST-INSTALLED ANCHORS SHALL HAVE I.C.C. APPROVAL.
3. THICKNESS OF DRYPACK DOES NOT APPLY TOWARDS EMBEDMENT.
4. MECHANICAL ANCHORS INCLUDE BUT ARE NOT LIMITED TO WEDGE, UNDERCUT, AND SCREW TYPE ANCHORS.

ANCHOR DIAMETER	MECHANICAL ANCHOR EMBEDMENT LENGTH IN CONCRETE	MECHANICAL ANCHOR EMBEDMENT LENGTH IN MASONRY	THREADED ROD ANCHOR EMBEDMENT LENGTH IN CONCRETE	THREADED ROD ANCHOR EMBEDMENT LENGTH IN MASONRY
3/8"	3"	2 3/4"	4 1/2"	3 1/2"
1/2"	4"	3 1/2"	5"	4 1/2"
5/8"	5 1/4"	4 1/2"	6 3/4"	6"
3/4"	5 3/4"	5 1/2"	6 3/4"	7"
7/8"	---	---	7"	---
1"	8"	8"	8"	---
1 1/4"	---	---	10"	---



18 *TYPICAL POST-INSTALLED ANCHOR AND REINFORCING STEEL SCHEDULE*
SCALE: NOT TO SCALE 501-002-TYP



NOTES:

1. CONCRETE SLAB ON GRADE.
2. SAWCUT – 1/8" WIDE x 1/4 SLAB THICKNESS IN DEPTH – CUT SHALL BE MADE SOON ENOUGH TO PREVENT SHRINKAGE CRACKING BUT NOT SO SOON AS TO CAUSE SPALLING OF THE CONCRETE WHILE SAWING. WORK MUST BE ACCOMPLISHED WITHIN 12 HOURS OF CONCRETE PLACEMENT.
3. 1 1/2" LONG MASTIC CAP INSTALL WITH 1/2" GAP AT END.
4. POLYETHYLENE WRAP TO ASSURE SLIPPAGE.
5. 3/4" DIA. x 16" LONG SMOOTH DOWEL AT 12" O.C. – DOWELS MUST BE CAREFULLY ALIGNED AND SUPPORTED DURING CONCRETING OPERATIONS. MISALIGNED DOWELS CAUSE CRACKING.
6. (1) #4 CONTINUOUS.

NOTE:
CONSTRUCTION JOINTS NEED ONLY OCCUR AT EXPOSED EDGES DURING PLACEMENT.

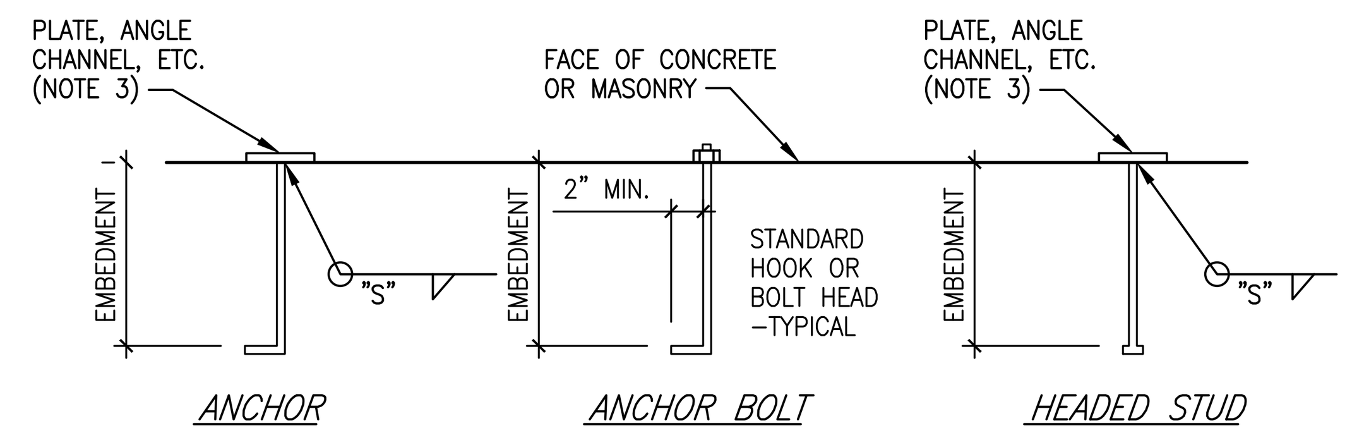
15 *TYPICAL CONTROL JOINTS IN CONCRETE SLAB ON GRADE*
SCALE: NOT TO SCALE 201-003-TYP

ANCHOR DIAMETER	VERT BOLT EMBEDMENT LENGTH	HORIZ BOLT EMBEDMENT LENGTH	HEADED STUD FILLET WELD SIZE, "S"
1/2"	7"	4"	1/4"
5/8"	7"	4"	5/16"
3/4"	7"	5"	5/16"
7/8"	8"	6"	5/16"
1"	9"	7"	3/8"
1 1/8"	10"	8"	---
1 1/4"	11"	9"	---

NOTES:

1. PROVIDE ANCHORS, ANCHOR BOLTS, AND HEADED STUDS PER THIS SCHEDULE UNLESS NOTED ON PLANS OR DETAILS.
2. SCHEDULE APPLIES TO ANCHORS IN CONCRETE AND MASONRY.
3. THICKNESS OF DRYPACK DOES NOT APPLY TOWARDS EMBEDMENT.

NOTE:
HEADED STUDS MAY BE AUTOMATICALLY WELDED IN LIEU OF FILLET WELDS SHOWN.

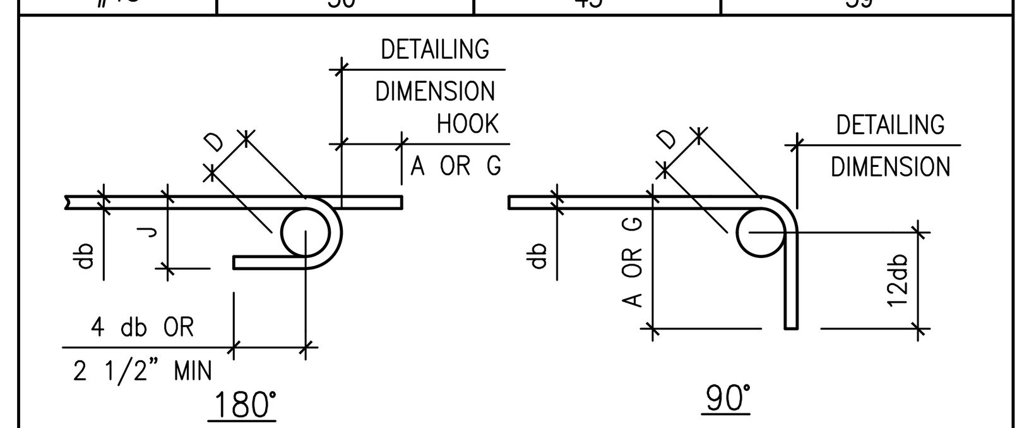


16 *TYPICAL CAST-IN-PLACE ANCHOR, ANCHOR BOLT, AND HEADED STUD SCHEDULE*
SCALE: NOT TO SCALE 501-001-TYP

NOTES:

1. TABULATED VALUES BASED ON GRADE 60 REINFORCING BARS AND NORMAL WEIGHT CONCRETE.
2. TENSION DEVELOPMENT LENGTHS OF STANDARD HOOKS ARE BASED ON ACI 318-14, SECTION 25.4.3. LENGTHS ARE IN INCHES.
3. FOR BAR SIZES #3 THROUGH #11 ONLY:
   A. IF CONCRETE COVER CONFORMS TO ACI 318-14, SECTION 25.4.3.2, THEN A MODIFICATION FACTOR OF 0.7 MAY BE APPLIED BUT THE RESULTING LENGTH MUST NOT BE LESS THAN 8DB NOR 6 IN.
   B. IF HOOK IS ENCLOSED IN TIES OR STIRRUPS CONFORMING TO ACI 318-14, SECTION 25.4.3.2, THEN A MODIFICATION FACTOR OF 0.8 MAY BE APPLIED BUT THE RESULTING LENGTH MUST NOT BE LESS THAN 8DB NOT 6 IN.
4. FOR EPOXY-COATED HOOKS, MULTIPLY THE TABULATED VALUES BY 1.2.

HOOK DEVELOPMENT LENGTH(ldh)			
BAR SIZE	F'C=3,000 PSI	F'C=4,000 PSI	F'C=5000 PSI
#3	9	7	7
#4	11	10	9
#5	14	12	11
#6	17	15	13
#7	19	17	15
#8	22	19	17
#9	25	22	19
#10	28	24	22
#11	31	27	27
#14	37	32	29
#18	50	43	39



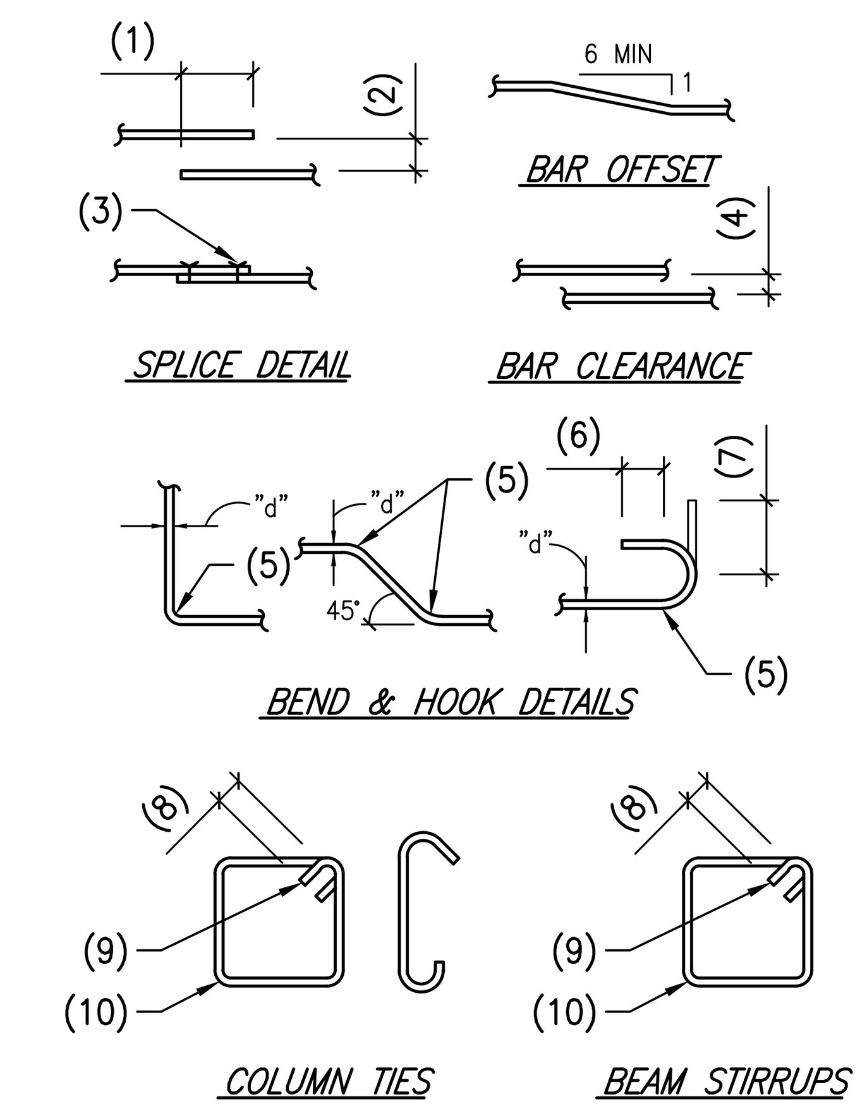
END HOOKS, ALL GRADES				
BAR SIZE	FINISHED BEND DIA. D, IN.	180° HOOKS		90° HOOKS
		A OR G, IN.	J, IN.	A OR G, IN.
#3	2.25	5	3	6
#4	3	6	4	8
#5	3.75	7	5	10
#6	4.5	8	6	12
#7	5.25	10	7	14
#8	6	11	8	16
#9	9.5	15	11.75	19
#10	10.75	17	13.25	22
#11	12	19	14.75	24
#14	18.25	27	21.75	31
#18	24	36	28.5	41

13 *TYPICAL REINFORCING HOOK SCHEDULE*
SCALE: NOT TO SCALE 200-045-TYP

	TENSION SPLICE LENGTHS (CLASS B)												COMP. BARS	
CONCRETE PSI	f'c=2,500/3,000 PSI				f'c = 4,000 PSI				f'c = 5,000 PSI				f'c = ALL	
BAR LOCATION	REGULAR		TOP		REGULAR		TOP		REGULAR		TOP		STD LAP	ENCLOSED WITH SPIRAL TIES
SPACING / SIZE	≥2db	OTHER	≥2db	OTHER	≥2db	OTHER	≥2db	OTHER	≥2db	OTHER	≥2db	OTHER		
#3	24"	36"	31"	46"	19"	28"	25"	37"	17"	25"	22"	33"	12"	12"
#4	32"	47"	41"	61"	25"	37"	33"	49"	23"	34"	29"	44"	15"	12"
#5	39"	59"	51"	77"	31"	47"	41"	61"	28"	42"	36"	54"	19"	15"
#6	47"	71"	61"	92"	37"	56"	49"	73"	34"	50"	44"	65"	23"	18"
#7	69"	103"	89"	134"	54"	81"	71"	106"	49"	73"	63"	95"	27"	21"
#8	78"	117"	102"	153"	62"	93"	81"	121"	56"	83"	72"	108"	30"	23"
#9	88"	132"	115"	172"	70"	105"	91"	136"	63"	94"	81"	122"	34"	26"
#10	100"	149"	129"	194"	79"	118"	102"	153"	71"	106"	92"	137"	39"	30"
#11	110"	165"	143"	215"	87"	131"	114"	170"	78"	117"	102"	152"	43"	33"

NOTES:
1. TOP BARS ARE ANY HORIZONTAL BARS PLACED SO THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.
2. CONCRETE COVERAGE AROUND REINFORCING SHALL NOT BE LESS THAN THE DIAMETER OF THE BAR.

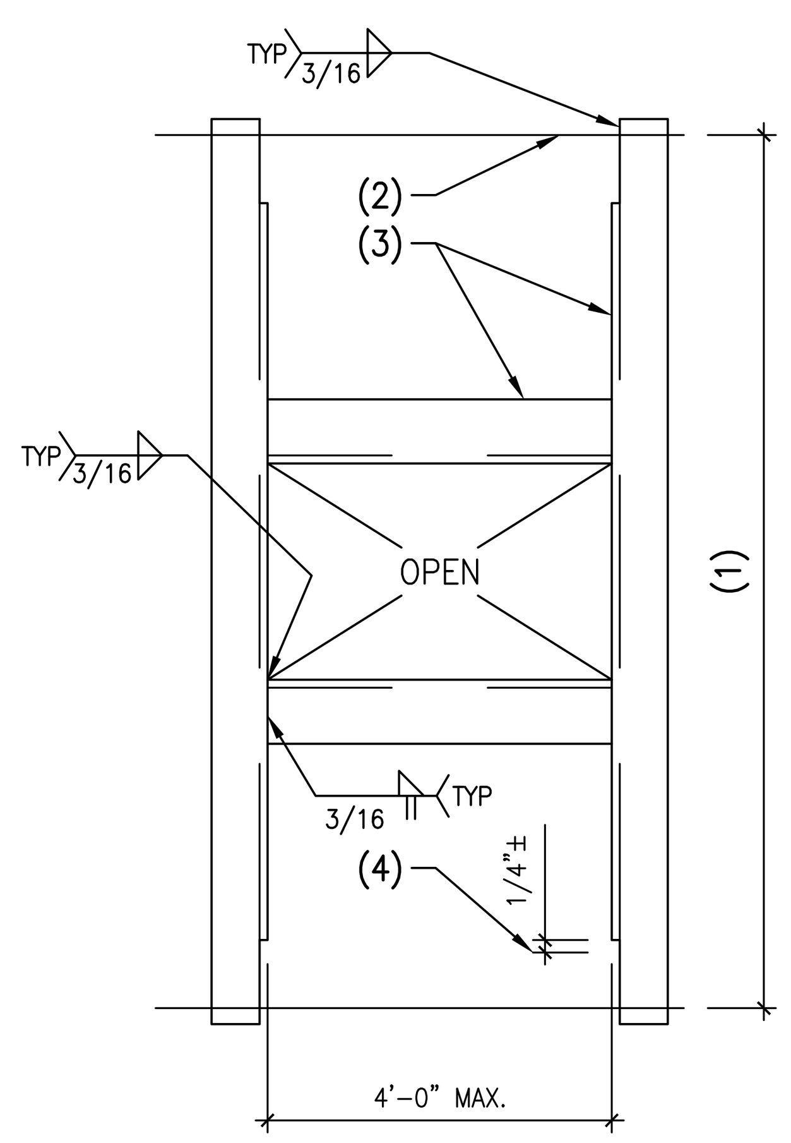
11 *TYPICAL MINIMUM REINFORCING BAR SPLICE LENGTHS IN CONCRETE*
SCALE: NOT TO SCALE 200-040-TYP



NOTES:

1. LAP – SEE G.S.N.
2. MAXIMUM 1/5 LAP BUT NOT MORE THAN 6".
3. WIRE TIES.
4. 1d (1" MINIMUM).
5. RADIUS=3d FOR BARS NOT OVER #8; 4d FOR #9, #10 AND #11 BARS; 5d FOR #14 AND #18 BARS. 5d FOR ALL GRADE 40 BARS WITH 180 DEGREE HOOK.
6. 4d (2 1/2" MINIMUM).
7. 12d (90 DEGREE HOOK).
8. 6d.
9. 135 DEGREE BEND.
10. BEND AROUND 1 1/2" PIN FOR #3 BARS. BEND AROUND 2" PIN FOR #4 BARS. BEND AROUND 2 1/2" PIN FOR #5 BARS.

12 *TYPICAL CONCRETE REINFORCING BAR DETAILS*
SCALE: NOT TO SCALE 200-050-TYP

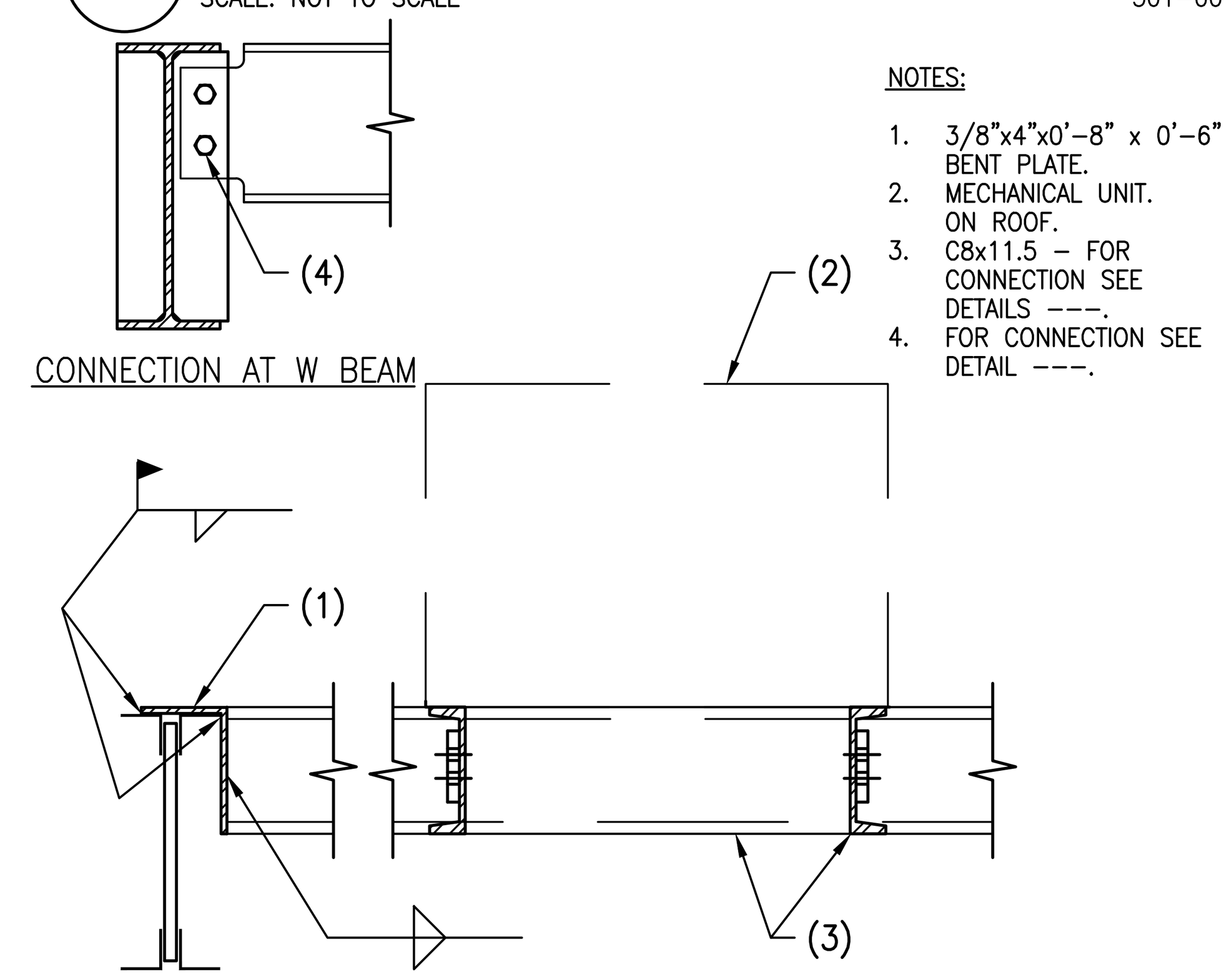


NOTES:

1. SEE PLAN FOR SPACING (8'-0" MAXIMUM).
2. CENTERLINE OF FRAMING MEMBER.
3. ANGLE L4x4x1/4.
4. FACE OF FRAMING MEMBER.

NOTE:
FOR CLARITY, ROOF DECK NOT SHOWN.

19 *PLAN VIEW – TYPICAL FRAME OPENING IN ROOF FRAMING*
SCALE: NOT TO SCALE 502-013-TYP



NOTES:

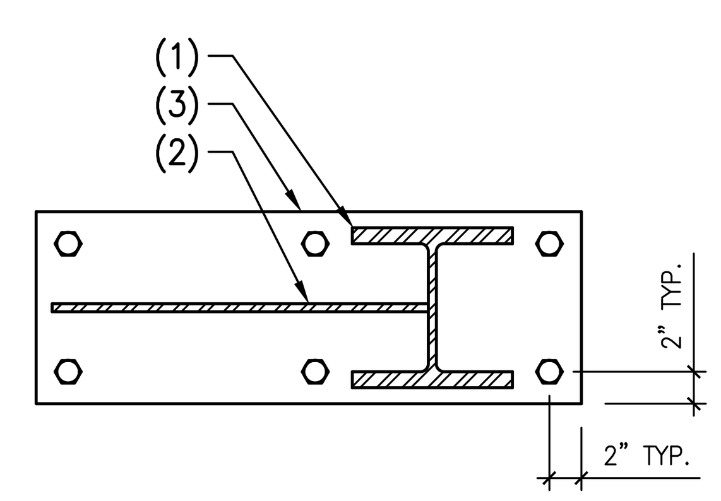
1. 3/8"x4"x0'-8" x 0'-6" BENT PLATE.
2. MECHANICAL UNIT. ON ROOF.
3. C8x11.5 – FOR CONNECTION SEE DETAILS ---.
4. FOR CONNECTION SEE DETAIL ---.

NOTE:
ROOF DECK NOT SHOWN FOR CLARITY.

17 *TYPICAL MECHANICAL UNIT SUPPORT FRAMING*
SCALE: NOT TO SCALE 502-012-TYP

NOTES:

1. STEEL COLUMN.
2. STEEL GUSSET PLATE.
3. STEEL BASE PLATE WITH LEVELING NUTS AND DOUBLE LOCK NUTS OVER 1 1/2"± DRYPACK. COORDINATE SIZE WITH B.R.B. MANUFACTURER.



14 *PLAN VIEW – TYPICAL BRACED FRAME COLUMN BASE PLATE*
SCALE: NOT TO SCALE 533-001-TYP

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TYPICAL DETAILS

Registered Professional Engineer (Structural)
CERTIFICATE NO.
27349
RONALD H. SCHNEIDER
DATE SIGNED 04/22/22
ARIZONA, U.S.A.

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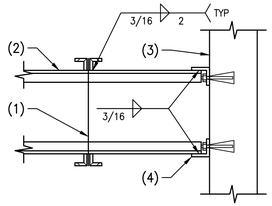
This Electronic Signature
Has Been Authorized By Me
This 04/22/22

revisions

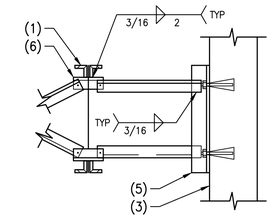
#	date	comment
0	1/25/2022	ISSUED FOR CONSTRUCTION

project 121366
engineer DCH
drafter MPG
date 11/10/21
sheet S1.6



HORIZONTAL BRIDGING AT K SERIES JOIST

NOTES:
1. STEEL JOIST.
2. BRIDGING AS REQUIRED BY JOIST MANUFACTURER.
3. WALL – FOR SIZE AND TYPE, SEE PLAN.
4. L3x3x1/4x4" LONG WITH (1) 5/8" DIA. EXPANSION BOLT.
5. L3x3x1/4xAS REQUIRED WITH (2) 5/8" DIA. EXPANSION BOLTS.
6. BRIDGING CLIP BY JOIST MANUFACTURER.

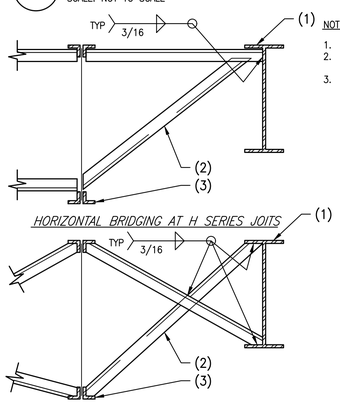


NOTE:
CROSS BRIDGING DETAIL SHALL APPLY FOR K SERIES JOISTS WHERE REQUIRED BY MFR.

CROSS BRIDGING AT LH AND DLH SERIES JOIST

25 TYPICAL STEEL JOIST BRIDGING TO WALL

SCALE: NOT TO SCALE 540-010-TYP

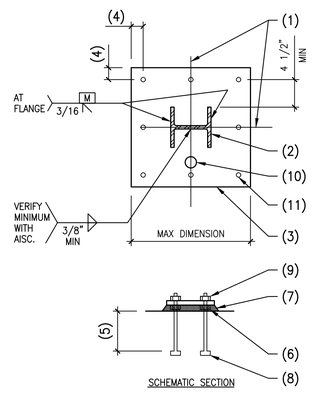


NOTES:
1. STEEL BEAM.
2. BRIDGING PER MANUFACTURER'S RECOMMENDATIONS.
3. STEEL JOIST.

CROSS BRIDGE AT LH AND DLM SERIES JOIST

26 TYPICAL BRACE CONNECTION STEEL JOIST TO STEEL BEAM

SCALE: NOT TO SCALE 540-012-TYP



NOTES:
1. CENTERLINE OF COLUMN AND STEEL BASE PLATE.
2. STEEL WIDE FLANGE COLUMN SEE PLAN.
3. STEEL BASE PLATE.
4. 1 1/2" MINIMUM.
5. EMBEDMENT PER BOLT SCHEDULE.
6. DOUBLE NUTS.
7. 2" ± DRYPACK.
8. HEX HEADED ENDS.
9. AFTER SETTING COLUMN, BASEPLATE NUTS SHALL BE FULLY TENSIONED USING TURN OF NUT METHOD OR LOAD INDICATING WASHER.
10. AT BASEPLATES OVER 12" SQUARE PROVIDE 1 1/2" GROUT HOLE.
11. HOLES SHALL NOT EXCEED BOLT DIA BY MORE THAN 1/8"

NOTE:
FOR ADDITIONAL INFORMATION, SEE COLUMN SCHEDULE.

27 PLAN VIEW – STEEL COLUMN AT STEEL BASE PLATE

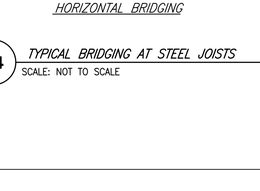
SCALE: NOT TO SCALE 239-007

NOMINAL BEAM DEPTH "D"	NUMBER OF 3/4" DIA. ASTM A325 BOLTS
UP TO 7"	2
8" – 11"	2
12" – 14"	3
15" – 17"	4
18" – 20"	5
21" – 23"	6
24" – 29"	7
30" – 32"	8
33" – 35"	9
36"	10

NOTES:
1. THE TYPICAL STEEL BEAM TO STEEL COLUMN OR STEEL BEAM TO STEEL BEAM CONNECTION CONSISTS OF 3/8" SINGLE SHEAR PLATES WITH 3/4" DIA. ASTM A325 BOLTS. USE 5/8" SHEAR PLATES WHERE "D" = 27" OR GREATER.
2. ALL BOLTS SHALL BE INSTALLED USING SHORT SLOTTED HOLES IN EITHER THE BEAM WEB OR THE SHEAR PLATE PER LATEST AISC SPECIFICATIONS.
3. CONNECTIONS REQUIRING DOUBLE ANGLES OR BENT PLATES WILL BE MARKED ON THE PLANS WITH AN ASTERISK (*). ALL DOUBLE ANGLES SHALL BE L4x4x1/4 AND ALL BENT PLATES SHALL BE 1/4" THICK – DETAIL PER THE LATEST AISC STEEL CONSTRUCTION MANUAL.

22 TYPICAL BOLT SCHEDULE FOR STEEL CONNECTIONS

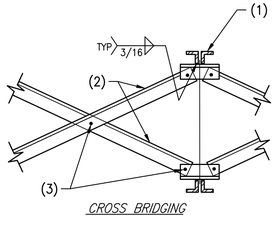
SCALE: NOT TO SCALE 512-010-TYP



NOTES:
1. BEVEL AS REQUIRED FOR SELECTED GROOVE WELD PROCEDURE.
2. 1/2" MAXIMUM, PLUS 1/4" OR MINUS 1/8".
3. 3/4" MINIMUM (± 1/4").
4. 3/8" MINIMUM RADIUS (PLUS NOT LIMITED, OR MINUS 0).
5. 2" (± 1/2").

23 TYPICAL MOMENT FRAME WELD ACCESS HOLE

SCALE: NOT TO SCALE 535-001-TYP

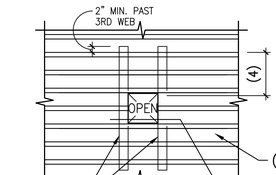


NOTES:
1. STEEL JOISTS.
2. BRIDGING SIZE PER MFR. RECOMMENDATIONS.
3. 1/2" DIA. BOLT.

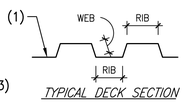
NOTE:
FOR CLARITY, STEEL DECK OMITTED. FOR ADDITIONAL INFORMATION, SEE PLAN AND G.S.N.

24 TYPICAL BRIDGING AT STEEL JOISTS

SCALE: NOT TO SCALE 540-009-TYP



NOTES:
1. STEEL DECK.
2. ANGLE SUPPORT 2"x2"x3/16" BELOW DECK – ANGLE MAY BE PLACE ON TOP OF DECK WITH PRIOR APPROVAL OF ARCHITECT.
3. WELD 2" AT EACH RIB – TYPICAL.
4. ANGLE SHALL EXTEND A MINIMUM OF 3 WEBS PAST THE DECK OPENING.



TYPICAL DECK SECTION

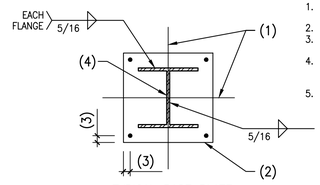
NOTE:
AN OPENING WHICH CUTS ONE WEB (4" MAX DIMENSION PERPENDICULAR TO RIBS), MAY BE CUT IN DECK WITHOUT ANY SPECIAL REINFORCING.

AN OPENING WHICH CUTS TWO WEBS (8" MAX DIMENSION PERPENDICULAR TO RIBS), WILL REQUIRE ANGLE SUPPORT SHOWN ABOVE.

ANY OPENING WHICH CUTS MORE THAN TWO WEBS, FRAME OPENING WITH TYPICAL ANGLE SUPPORT FRAME, SEE TYPICAL OPENING IN STEEL DECK DETAIL.

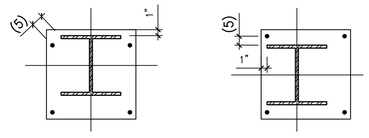
20 TYPICAL SMALL OPENING IN STEEL DECK

SCALE: NOT TO SCALE 502-020-TYP



TYPICAL BASE PLATE

NOTES:
1. CENTERLINE OF COLUMN AND STEEL BASE PLATE.
2. STEEL BASE PLATE.
3. 1 1/4" MINIMUM OR PER A.I.S.C. TABLE J3.5.
4. STEEL COLUMN – FOR TYPE, SIZE, BASE PLATE AND ANCHOR BOLTS, SEE SCHEDULE.
5. 2" MINIMUM OR AS REQUIRED FOR WRENCHING CLEARANCE.



OFFSET BASE PLATE OFFSET BASE PLATE

21 TYPICAL STEEL COLUMN BASE PLATE

SCALE: NOT TO SCALE 505-001-TYP

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TYPICAL DETAILS

Registered Professional Engineer (Structural)
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DATE SIGNED
ARIZONA, U.S.A.

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TYPICAL MASONRY WALL REINFORCING SCHEDULE

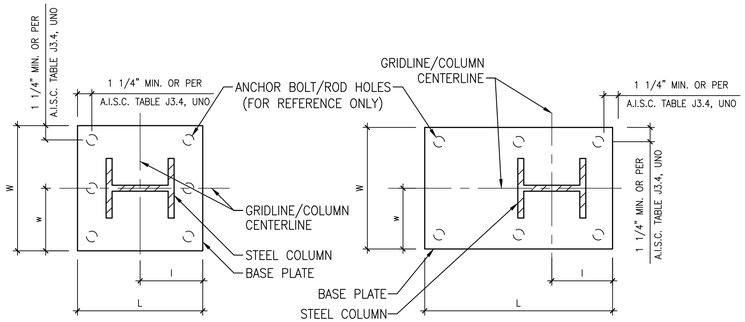
824

		8" MASONRY
VERTICAL	TYPICAL	#5 AT 32" O.C.
	CORNERS	(3) #5
	INTERSECTIONS	(2) #5
	MASONRY C.J. AND END OF WALLS	(1) #5
	JAMBS AT OPENINGS UP TO 4'-0"	(1) #5
HORIZONTAL	JOINT REINFORCING	AT 16" O.C.
	TOP OF WALL	(1) #5
	FLOOR AND ROOF LINES	(2) #5
	LINTELS	(2) #5 IN 16" BOND BEAM
	SILLS	(1) #4

NOTES:
1. FOR ADDITIONAL INFORMATION, SEE G.S.N. AND PLANS.
2. APPLIES U.N.O.

COLUMN (C) SCHEDULE

810 STEEL

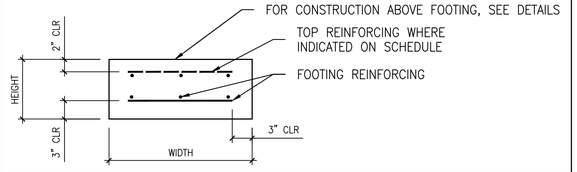


MARK	COLUMN SIZE	BASE PLATE THICKNESS	BASE PLATE DIMENSIONS				BASE PLATE ANCHORS	BASE PLATE SHEAR LUG SIZE	REMARKS
			W	w	L	l			
C1	W14x193	2"	28"	14"	24"	12"	(6) 1 1/2" DIA. ANCHOR BOLTS 24" MIN. EMBED	---	2 1/2" EDGE DISTANCE TO CENTER OF HOLE FOR BOLTS
C2	W14x176	2"	28"	14"	24"	12"	(6) 1 1/2" DIA. ANCHOR BOLTS 24" MIN. EMBED	---	---
C3	W14x145	2"	24"	12"	32"	10"	(6) 1 1/2" DIA. ANCHOR BOLTS 18" MIN. EMBED	---	---
C4	W14x145	2"	26"	13"	44"	22"	(6) 1 1/2" DIA. ANCHOR BOLTS 18" MIN. EMBED	---	---
C5	W12x72	1"	20"	10"	20"	10"	(4) 1" DIA. ANCHOR BOLTS 12" MIN. EMBED	---	---
C6	W12x72	1"	20"	10"	26"	7"	(4) 1" DIA. ANCHOR BOLTS 12" MIN. EMBED	---	---
C7	W14x145	1"	22"	11"	22"	11"	(4) 1" DIA. ANCHOR BOLTS 12" MIN. EMBED	---	---

GENERAL NOTES:
1. INSTALL LEVELING NUT AND LOCK NUT WITH STANDARD WASHERS AT EACH ANCHOR BOLT U.N.O..
2. TYPICAL GROUT SPACE AT COLUMN BASE PLATE IS 1-1/2" U.N.O. PROVIDE 2" GROUT SPACE AT BRACED FRAME COLUMNS.
3. PROVIDE OVERSIZE HOLES AND WASHERS PER AISC TABLE 14-2.

FOOTING (F) SCHEDULE

800



MARK	DIMENSIONS			FOOTING REINFORCING	REMARKS
	HEIGHT	WIDTH	LENGTH		
F1	3'-0"	5'-0"	SEE PLANS	(9) #6 LONG. TOP; (6) #8 LONG. BOTTOM, #6 AT 12" O.C. TRANS. TOP AND BOTTOM	
F2	3'-0"	5'-6"	SEE PLANS	(8) #6 LONG. TOP; (8) #8 LONG. BOTTOM; #4 AT 6" O.C. 2 LEGGED SHEAR REINFORCING; #6 AT 12" O.C. TRANS. TOP AND BOTTOM	
F3	3'-0"	SEE PLANS	SEE PLANS	(8) #8 LONG. TOP, (8) #8 LONG. BOTTOM, #6 AT 6" O.C. TRANS. BOTTOM	

NOTES:
1. FOR FOOTING BEARING DEPTH BELOW GRADE, SEE G.S.N. U.N.O..
2. CENTER FOOTINGS UNDER WALLS OR COLUMNS U.N.O..
3. WHERE FOOTINGS INTERSECT, THE GREATER REINFORCING REQUIREMENTS SHALL GOVERN.

BEAM (B) SCHEDULE

830

MARK	SIZE	CAMBER	END CONNECTION	REMARKS
B1	W24x104	---	--- ---	CONTINUOUS RUNWAY RAIL SUPPORT BEAM WITH WT12x27.5 WELDED TO WEB, SEE DETAIL 203
B2	W12x40	---	--- ---	---
B3	W12x26	---	--- ---	---
B4	W27x84	---	--- ---	---
B5	W8x24	---	--- ---	---
B6	W24x68	---	--- ---	---
B7	W14x61	---	--- ---	---

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SCHEDULES

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1	12-08-21	CMU UPDATE
2	02-21-22	BRACE LOCATIONS ALONG GL 5.1

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drafter MPG
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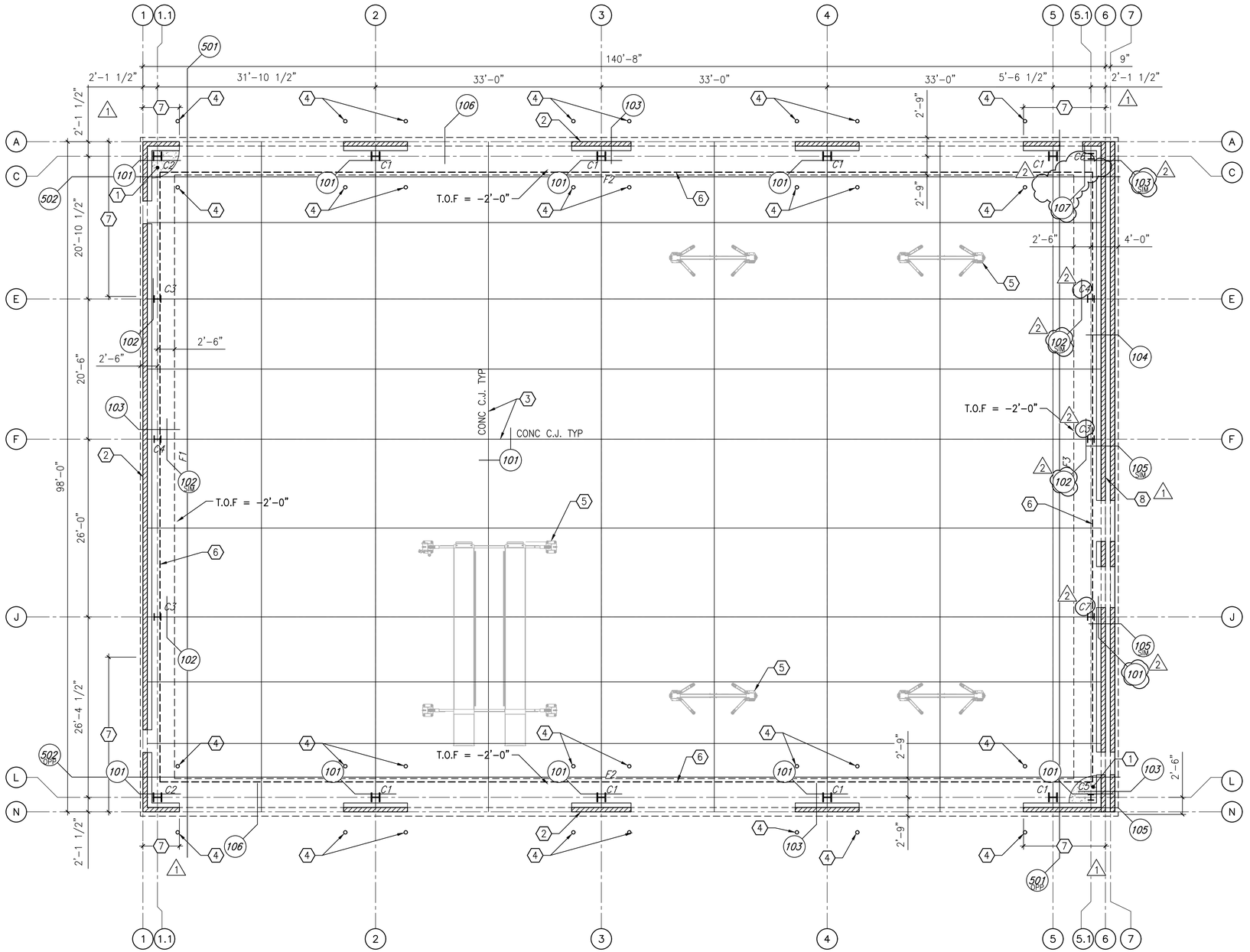
sheet **S1.8**



FOUNDATION KEYNOTES:

1. 8" CONCRETE SLAB ON GRADE REINFORCED WITH #4 AT 12" O.C., EACH WAY LOCATED 3" CLEAR FROM TOP OF SLAB. SEE TYPICAL DETAIL 01 ON SHEET S1.5 FOR ADDITIONAL INFORMATION. 1
2. 8" REINFORCED CMU WAINSCOTT WALL. SEE TYPICAL MASONRY WALL REINFORCING SCHEDULE S1.8 AND GSN FOR INFORMATION.
3. INSTALL CONCRETE CONTROL JOINT PER DETAIL. SPACING BETWEEN JOINTS SHALL NOT EXCEED 15'-0". GENERAL CONTRACTOR SHALL SUBMIT A JOINT LAYOUT PLAN FOR REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO CUTTING SLAB JOINTS.
4. BOLLARD. ALIGN OUTSIDE EDGE WITH DOOR OPENING.
5. SEE "O" SHEETS FOR INFORMATION ON VEHICLE LIFTS – TYPICAL.
6. OVERHEAD CRANE DESIGNED AND SUPPLIED BY OTHERS. 1
7. PROVIDE #5 AT 24" O.C. VERTICAL WAINSCOT WALL REINFORCING UP TO 16'-0" FROM CORNERS.
8. 8" REINFORCED CMU WAINSCOT WALL WITH #5 AT 8" O.C. VERTICAL REINFORCEMENT AT EAST FACADE. PROVIDE (2) #5 HORIZONTAL REINFORCEMENT IN BOND BEAM AT TOP OF WALL.

FOUNDATION PLAN

SCALE: 1/8"=1'-0"

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FOUNDATION PLAN

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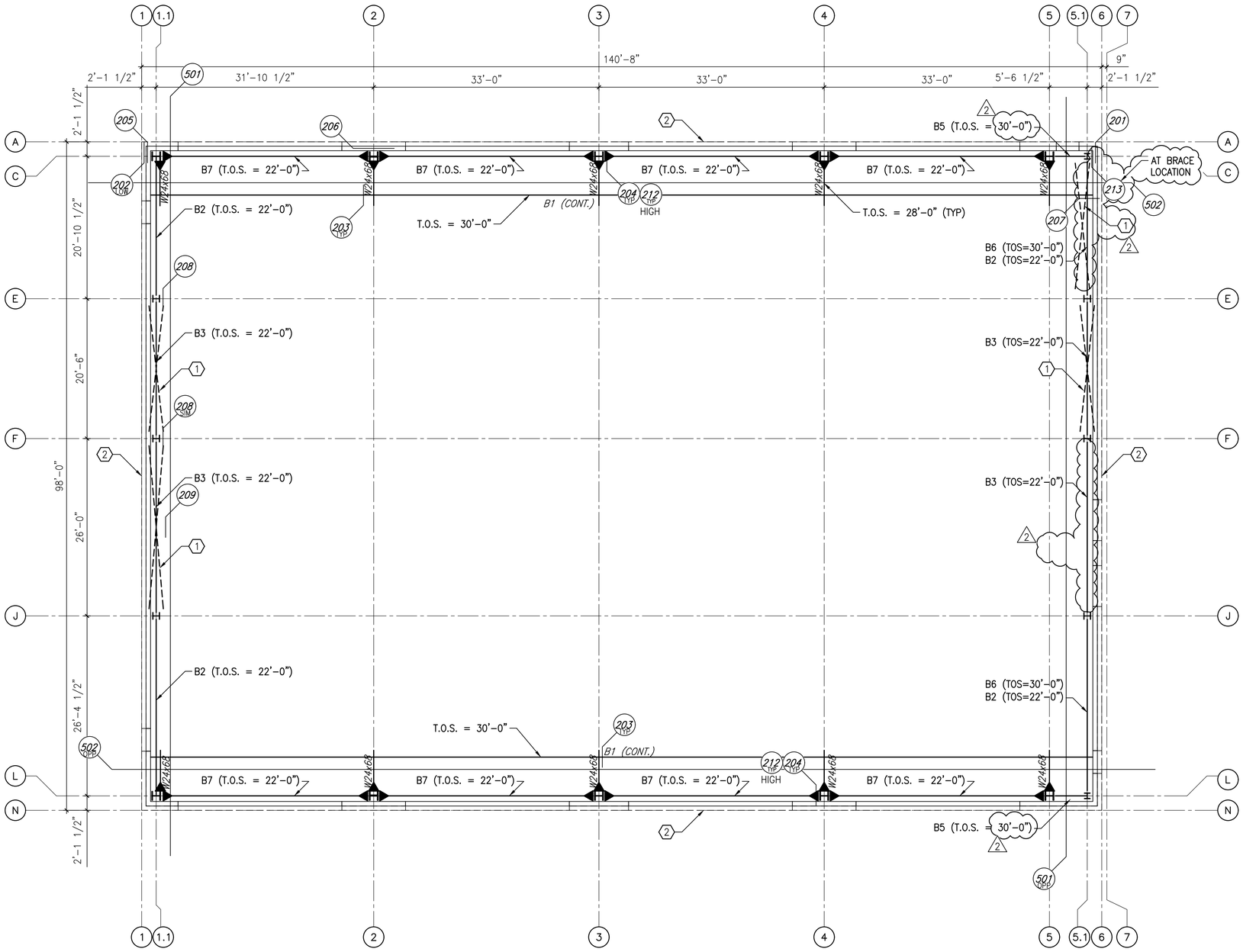
sheet S2.0

FRAMING KEYNOTES:

1. BRACE (LOW) SEE BRACE ELEVATION.
2. MASONRY WALL BELOW.



CRANE LEVEL FRAMING PLAN

SCALE: 1/8"=1'-0"

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CRANE LEVEL FRAMING PLAN

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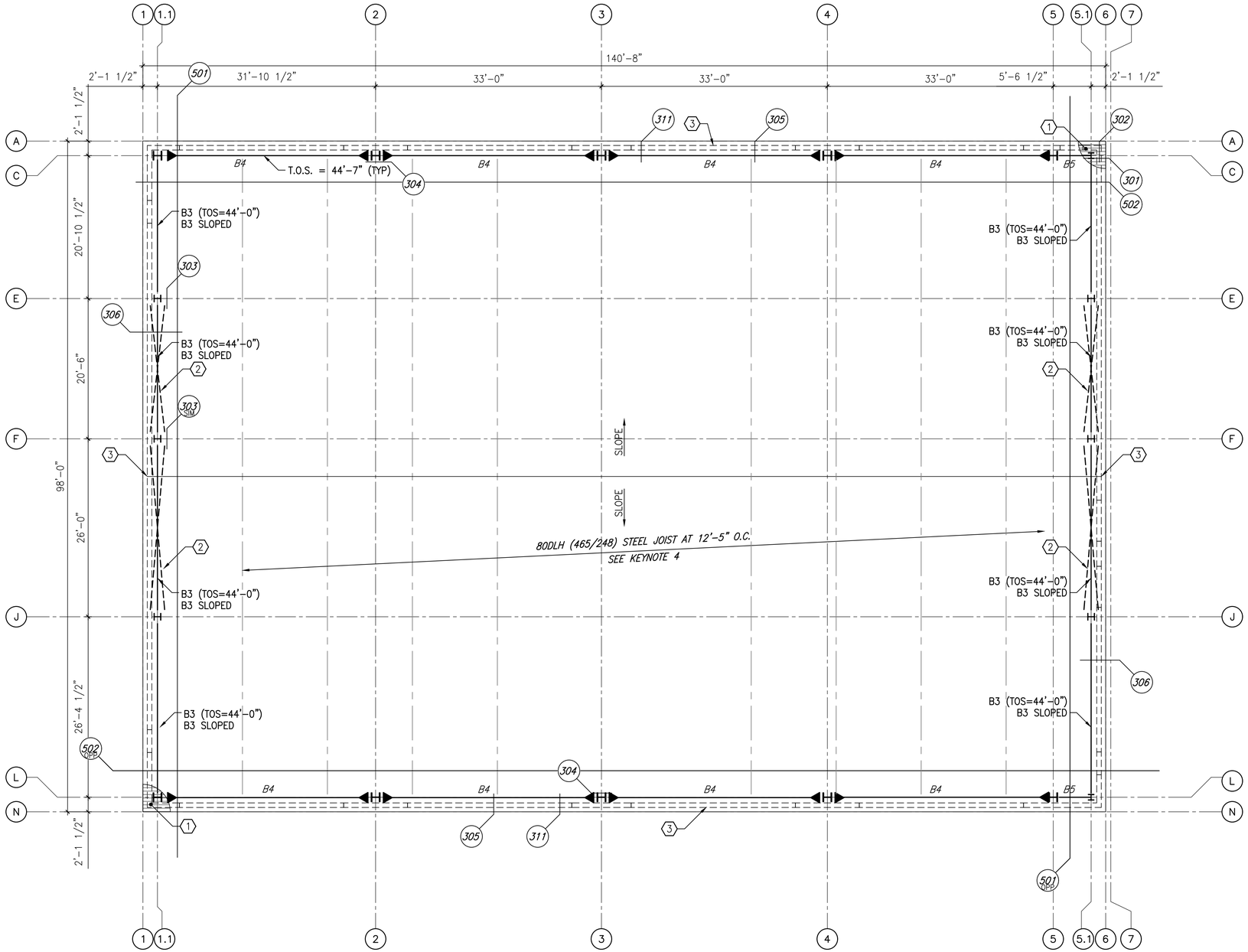

ROOF FRAMING PLAN

SCALE: 1/8"=1'-0"

FRAMING KEYNOTES:

1. 3", 20 GA. STEEL ROOF DECK. ATTACHMENT PER G.S.N.
2. BRACE (HIGH) SEE BRACE ELEVATION. FOR LOW BRACE SEE BRACE ELEVATION.
3. GIRT WALL BELOW.
4. ALTERNATIVELY STEEL JOISTS MAY BE CUSTOM DESIGNED MEETING ALL GRAVITY AND WIND UPLIFT LOADING CRITERIA. SEE SHEET S6.3 FOR ALTERNATE TRUSS DESIGN AND ELEVATION. TRUSSES ARE SPACED AT 12'-5" O.C.

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ROOF FRAMING PLAN

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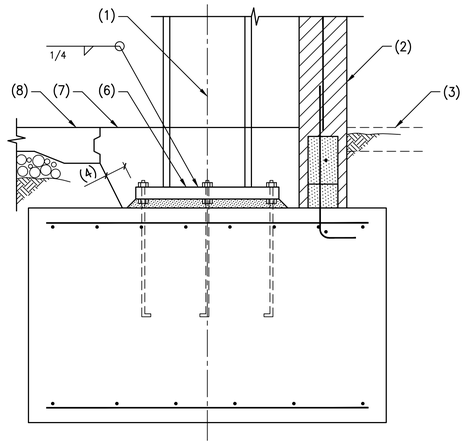
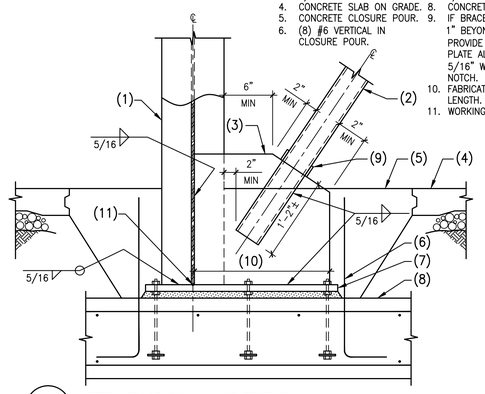


NOTES:
1. CENTERLINE OF STEEL COLUMN AND FOOTING.
2. MASONRY WALL.
3. FINISHED GRADE OR CONCRETE SLAB AS OCCURS.
4. 3" MINIMUM CONCRETE COVER AROUND ALL STEEL BELOW GRADE.
5. CONCRETE FOOTING.
6. STEEL BASE PLATE WITH DOUBLE NUTS OVER 1 1/2"± DRYPACK.
7. CONCRETE CLOSURE POUR PER TYPICAL DETAIL.
8. CONCRETE SLAB ON GRADE.

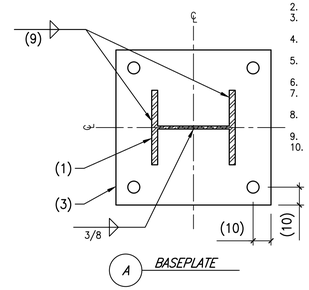
NOTE:
FOR DIRECTION OF COLUMN, SEE PLAN.

105 *EXTERIOR STEEL COLUMN FOOTING*
SCALE: NOT TO SCALE 238-019



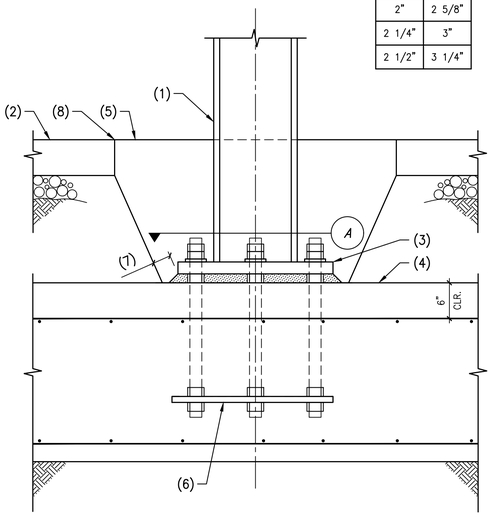
NOTES:
1. STEEL COLUMN.
2. STEEL BRACE.
3. 3/4" GUSSET PLATE.
4. CONCRETE SLAB ON GRADE.
5. CONCRETE CLOSURE POUR.
6. (8) #6 VERTICAL IN CLOSURE POUR.
7. STEEL BASE PLATE WITH DOUBLE NUTS OVER 1 1/2± DRYPACK.
8. CONCRETE FOOTING.
9. IF BRACE NOTCH EXCEEDS 1" BEYOND GUSSET, PROVIDE 1/8" COVER PLATE ALL AROUND WITH 5/16" WELD TO COVER NOTCH.
10. FABRICATOR TO DETERMINE LENGTH.
11. WORKING POINT.

102 *STEEL BRACE COLUMN AT FOOTING*
SCALE: NOT TO SCALE 121366-S3.0-102



NOTES:
1. STEEL COLUMN.
2. CONCRETE SLAB ON GRADE.
3. STEEL BASEPLATE AND ANCHOR RODS OVER GROUT.
4. CONCRETE FOOTING AND REINFORCING.
5. CONCRETE CLOSURE POUR PER TYPICAL DETAIL.
6. STEEL ANCHOR PLATE.
7. 3" MINIMUM CONCRETE COVER AROUND ALL STEEL.
8. DOWELED OR KEYED COLD JOINT PER TYPICAL DETAIL.
9. PER BRACED FRAME SCHEDULE.
10. EDGE DISTANCE PER TABLE UNLESS NOTED OTHERWISE IN COLUMN SCHEDULE.

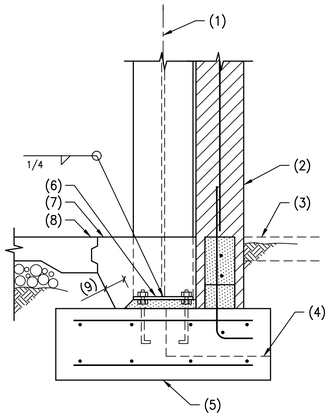
ANCHOR DIAMETER	EDGE DISTANCE
≤1"	1 1/2"
1 1/4"	1 5/8"
1 1/2"	2"
1 3/4"	2 3/8"
2"	2 5/8"
2 1/4"	3"
2 1/2"	3 1/4"



101 *STEEL MOMENT FRAME COLUMN AT CONCRETE FOUNDATION*
SCALE: NOT TO SCALE 121366-S3.0-101

NOTES:
1. MASONRY WALL BEYOND.
2. FINISHED GRADE OR CONCRETE SLAB WHERE OCCURS.
3. CONCRETE SLAB ON GRADE, TOOLED EDGE AT OPENING.
4. SOLID GROUTED MASONRY STEM WALL AND CONCRETE FOOTING WITH REINFORCING CONTINUOUS FROM BEYOND.

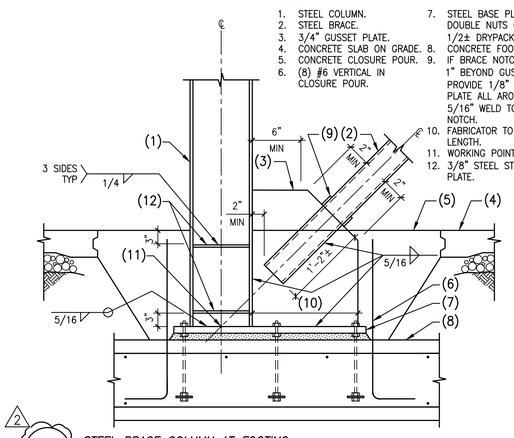
106 *EXTERIOR MASONRY WALL FOOTING AT OPENING*
SCALE: NOT TO SCALE 222-002



NOTES:
1. CENTERLINE OF STEEL COLUMN AND FOOTING – SEE PLANS FOR COLUMN ORIENTATION.
2. MASONRY WALL.
3. FINISHED GRADE OR CONCRETE SLAB AS OCCURS.
4. CONCRETE FOOTING BEYOND WITH REINFORCING CONTINUOUS.
5. CONCRETE FOOTING.
6. STEEL BASE PLATE WITH DOUBLE NUTS OVER 1 1/2"± DRYPACK.
7. CONCRETE CLOSURE POUR PER TYPICAL DETAIL.
8. CONCRETE SLAB ON GRADE.
9. 3" MINIMUM CONCRETE COVER AROUND ALL STEEL BELOW GRADE.

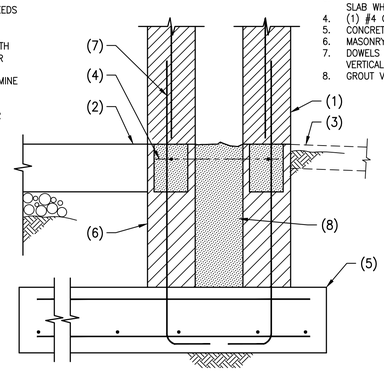
NOTE:
FOR DIRECTION OF COLUMN, SEE PLAN.

103 *EXTERIOR STEEL COLUMN FOOTING*
SCALE: NOT TO SCALE 238-020



NOTES:
1. STEEL COLUMN.
2. STEEL BRACE.
3. 3/4" GUSSET PLATE.
4. CONCRETE SLAB ON GRADE.
5. CONCRETE CLOSURE POUR.
6. (8) #6 VERTICAL IN CLOSURE POUR.
7. STEEL BASE PLATE WITH DOUBLE NUTS OVER 1 1/2± DRYPACK.
8. CONCRETE FOOTING.
9. IF BRACE NOTCH EXCEEDS 1" BEYOND GUSSET, PROVIDE 1/8" COVER PLATE ALL AROUND WITH 5/16" WELD TO COVER NOTCH.
10. FABRICATOR TO DETERMINE LENGTH.
11. WORKING POINT.
12. 3/8" STEEL STIFFENER PLATE.

107 *STEEL BRACE COLUMN AT FOOTING*
SCALE: NOT TO SCALE 121366-S3.0-107



NOTES:
1. MASONRY WALL.
2. CONCRETE SLAB.
3. FINISHED GRADE OR CONCRETE SLAB WHERE OCCURS.
4. (1) #4 CONTINUOUS.
5. CONCRETE FOOTING.
6. MASONRY STEM WALL.
7. DOWELS TO MATCH AND LAP VERTICALS REINFORCING.
8. GROUT VOID SOLID.

104 *EXTERIOR MASONRY WALL FOOTING*
SCALE: NOT TO SCALE 121366-S3.0-104

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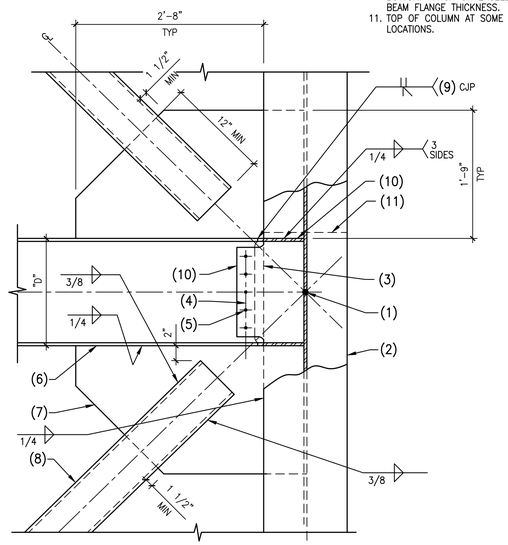
sheet **S3.0**

NOTES:

1. WORKING POINT.
2. STEEL COLUMN.
3. TRIM/COPE BEAM WEB FOR WELD ACCESS.
4. FOR NUMBER OF BOLTS, NOT SIZE OR TYPE, SEE TYPICAL BOLT SCHEDULE.
5. USE 1 1/4" DIA. ASTM A325 SLIP-CRITICAL BOLTS AT BRACED FRAMES.
6. STEEL BEAM.
7. 5/8" THICK GUSSET PLATE.
8. STEEL BRACE.
9. WELD TOP & BOTTOM FLANGE. DEMAND CRITICAL WELD. SEE GSN FOR FILLER METAL REQUIREMENTS. REMOVE BACKER, BACKGOUGE, AND BUTT WELD.
10. ASTM A572 GR. 50 STEEL CONTINUITY PLATE TOP AND BOTTOM. MATCH OR EXCEED BEAM FLANGE THICKNESS.
11. TOP OF COLUMN AT SOME LOCATIONS.

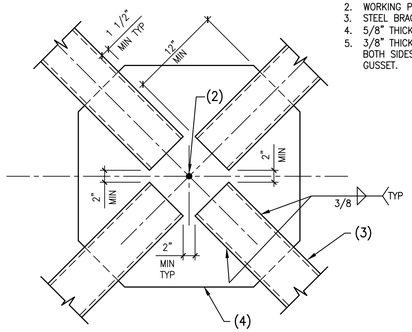


TYPICAL NOTE:
AT BEAM TO COLUMN CONNECTION PROVIDE A MINIMUM OF 6-11 1/4" DIA. A325 SC BOLTS.

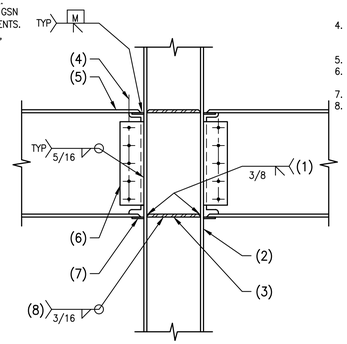
208 *STEEL BRACE CONNECTION TO COLUMN FLANGE*
SCALE: NOT TO SCALE 121366-S4.0-208

NOTES:

1. STEEL BEAM.
2. WORKING POINT.
3. STEEL BRACE.
4. 5/8" THICK GUSSET PLATE.
5. 3/8" THICK STIFFENER PLATE, BOTH SIDES, AT BRACED GUSSET.



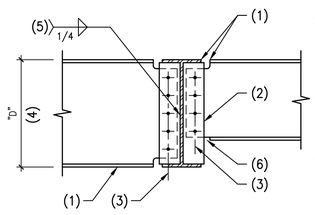
209 *STEEL BRACE CONNECTION AT INTERSECTION*
SCALE: NOT TO SCALE 121366-S4.0-209



NOTES:

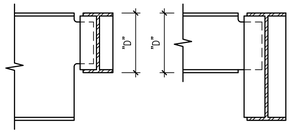
1. WELD EACH PLATE.
2. STEEL COLUMN.
3. STEEL PLATE TO MATCH BEAM FLANGE THICKNESS - TOP AND BOTTOM BOTH SIDES.
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. STEEL BEAM.
6. SHEAR PLATE PER TYPICAL CONNECTION DETAIL.
7. STEEL BACKER PLATE.
8. WELD 3 SIDES TYPICAL.

206 *TYPICAL MOMENT CONNECTION - STEEL BEAM TO STEEL COLUMN*
SCALE: NOT TO SCALE 514-053-TYP



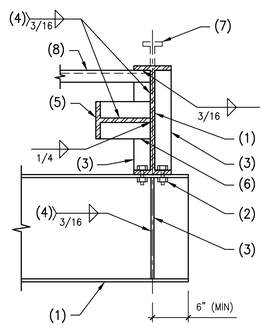
NOTES:

1. STEEL BEAM.
2. 3/8" STEEL SHEAR PLATE - USE 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
3. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
4. "D" = LESSER OF BEAM DEPTHS AS OCCURS.
5. WELD 3 SIDES TYPICAL - USE SAME CONNECTION AT STIFFENER PLATES WHEN REQUIRED.
6. COPE NEAR SIDE OF BEAM FLANGE TO CLEAR STIFFENER.



NOTE:
AT ONE SIDED CONNECTIONS, INSTALL 3/8" STIFFENER PLATE OPPOSITE SHEAR PLATE.

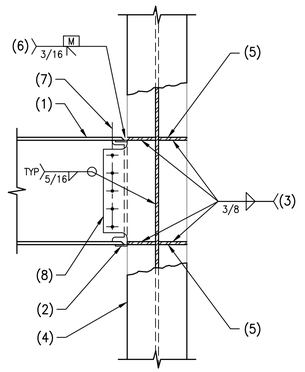
207 *TYPICAL FRAMED BEAM TO BEAM CONNECTION*
SCALE: NOT TO SCALE 513-010-TYP



NOTES:

1. STEEL BEAM.
2. (4) 3/4" DIA. BOLTS ON BEAM GAUGE.
3. 1/2" STIFFENER PLATE BOTH SIDES. ALIGN WITH SUPPORT BEAM WEB.
4. WELD 3 SIDES - TYP.
5. CONTINUOUS WT (SEE SCHEDULE) BETWEEN SUPPORTS, STOP 1'-0" FROM SUPPORT.
6. 1/2" STIFFENER PLATE, BOTH SIDES, AT 4'-0" O.C.
7. CRANE RAIL AND ATTACHMENT BY OTHERS.
8. C12x20.7, CENTERED AT SUPPORTS. CUT WEB TO ACCOMMODATE BEAM STIFFENER (PROVIDE 3/8" GAP ALL AROUND). SEE DETAIL 212 FOR CONNECTION AT COLUMN.

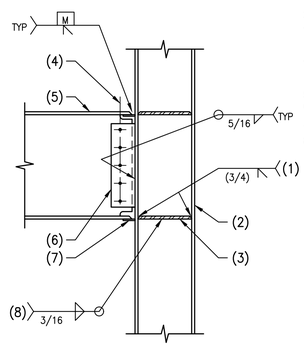
203 *STEEL BEAM TO STEEL BEAM CONNECTION*
SCALE: NOT TO SCALE 121366-S4.0-203



NOTES:

1. STEEL BEAM.
2. STEEL BACKER PLATE.
3. WELD EACH PLATE 3 SIDES TYPICAL.
4. STEEL COLUMN.
5. STEEL CONTINUITY PLATE AT LEVEL OF BOTTOM FLANGE FULL WIDTH OF COLUMN FLANGE EACH SIDE OF WEB - TYPICAL. MATCH THICKNESS OF BEAM FLANGE (1/2" MIN).
6. WELD TYPICAL TOP AND BOTTOM FLANGE.
7. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
8. SHEAR PLATE PER TYPICAL CONNECTION DETAIL.

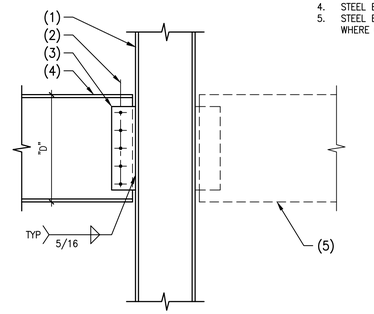
204 *TYPICAL MOMENT CONNECTION - STEEL BEAM TO STEEL COLUMN WEB*
SCALE: NOT TO SCALE 121366-S4.0-204



NOTES:

1. WELD EACH PLATE.
2. STEEL COLUMN.
3. 1" STEEL PLATE TOP AND BOTTOM - EACH SIDE OF WEB.
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. STEEL BEAM.
6. SHEAR PLATE PER TYPICAL CONNECTION DETAIL.
7. STEEL BACKER PLATE.
8. WELD 3 SIDES TYPICAL.

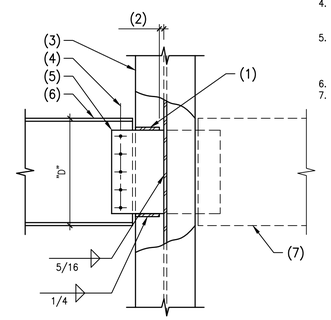
205 *TYPICAL MOMENT CONNECTION - STEEL BEAM TO STEEL COLUMN*
SCALE: NOT TO SCALE 514-050-TYP



NOTES:

1. STEEL COLUMN.
2. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
3. 3/8" STEEL SHEAR PLATE - 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
4. STEEL BEAM.
5. STEEL BEAM BOTH SIDES WHERE OCCURS.

201 *STEEL BEAM AT STEEL COLUMN*
SCALE: NOT TO SCALE 514-010



NOTES:

1. 3/8" HORIZONTAL STEEL STIFFENER PLATE TOP AND BOTTOM OF SHEAR PLATE.
2. GAP STIFFENER PLATES TO CLEAR COLUMN WEB FILLET.
3. STEEL COLUMN.
4. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
5. 3/8" STEEL SHEAR PLATE - 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
6. STEEL BEAM.
7. STEEL BEAM BOTH SIDES WHERE OCCURS.

202 *STEEL BEAM AT STEEL COLUMN*
SCALE: NOT TO SCALE 514-011

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FT. HUACHUCA, ARIZONA

FRAMING DETAILS

Registered Professional Engineer (Structural)
27349
RONALD H. SCHNEIDER
DATE SIGNED 04/22/22
ARIZONA, U.S.A.

This Electronic Signature
Has Been Authorized By Me
This 04/22/22

revisions

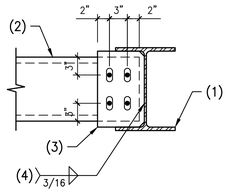
#	date	comment
0	1/25/2022	ISSUED FOR CONSTRUCTION

project 121366
engineer DCH
drafter MPG
date 11/10/21

sheet **S4.0**

NOTES:

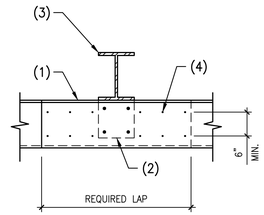
1. STEEL COLUMN.
2. CRANE BEAM BRACE CHANNEL. SEE DETAIL 203.
3. 1/2" STIFFENER PLATE WITH (4) 3/4" DIA. BOLTS IN 1 1/2" LONG SLOTTED HOLES (FINGER TIGHTEN NUT).
4. WELD 3 SIDES TYPICAL.



212 *PLAN VIEW – CRANE BEAM TOP FLANGE BRACE AT COLUMN*
SCALE: NOT TO SCALE 121366-S4.0-212

NOTES:

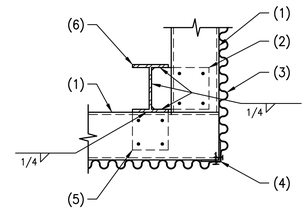
1. GIRT.
2. PL. 1/4x6x0'-6" WITH (4) 3/8" DIA. BOLTS.
3. COLUMN PER PLAN.
4. (2) ROWS OF #10 SCREWS AT 12" O.C. (6) SCREWS EACH SIDE OF COLUMN MINIMUM.



210 *PLAN VIEW – GIRT LAP DETAIL*
SCALE: NOT TO SCALE 121366-S4.0-210

NOTES:

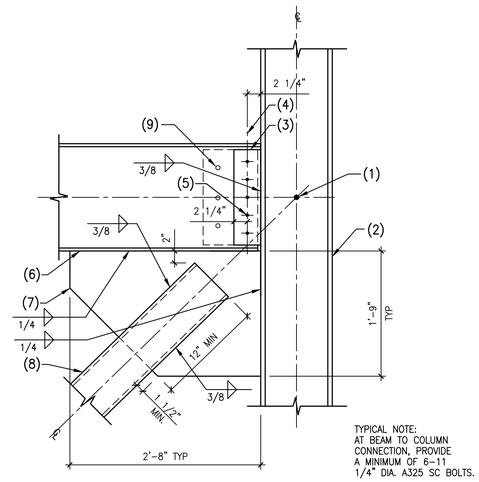
1. GIRT.
2. PLATE 1/4" WITH (4) 3/8" DIA. BOLTS.
3. SIDING PER ARCH.
4. L3x3x54MILxCONT. AT CORNERS WITH (1) #8 SCREW AT EACH FLANGE AT EACH INTERSECTING GIRT.
5. PLATE 1/4x6x0'-6" WITH (4) 3/8" DIA. BOLTS.
6. COLUMN PER PLAN.



211 *PLAN VIEW – GIRT AT CORNER*
SCALE: NOT TO SCALE 121366-S4.0-211

NOTES:

1. WORKING POINT.
2. STEEL COLUMN.
3. 3/8" PLATE.
4. FOR NUMBER OF BOLTS, NOT SIZE OR TYPE, SEE TYPICAL BOLT SCHEDULE.
5. USE 1 1/4" DIA. ASTM A325 SLIP-CRITICAL BOLTS AT BRACED FRAMES.
6. STEEL BEAM.
7. 5/8" THICK GUSSET PLATE.
8. STEEL BRACE.
9. IF 1 ROW OF (6) BOLTS DOES NOT FIT, PROVIDE 2 ROWS OF (3) BOLTS EACH, WITH 2 1/4" EDGE DISTANCES.



TYPICAL NOTE:
AT BEAM TO COLUMN CONNECTION, PROVIDE A MINIMUM OF 6-11 1/4" DIA. A325 SC BOLTS.

2 **213** *STEEL BRACE CONNECTION TO COLUMN FLANGE*
SCALE: NOT TO SCALE 533-041

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revisions

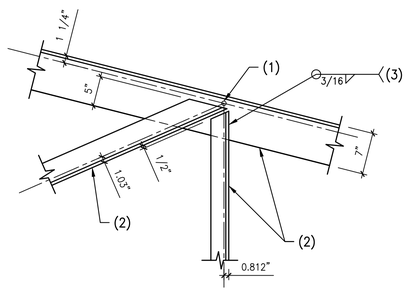
#	date	comment
0	1/25/2022	ISSUED FOR CONSTRUCTION
2	02-21-22	BRACE LOCATIONS ALONG GL 5.1

project 121366
engineer DCH
drafter MPG
date 11/10/21

sheet **S4.1**

NOTES:

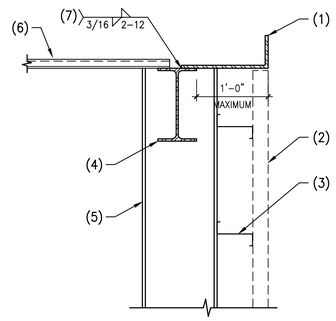
1. WORKING POINT.
2. TRUSS MEMBER PER ELEVATION.
3. 3–SIDE TYP.



309 *TYPICAL TRUSS CHORD CONNECTION DETAIL*
SCALE: NOT TO SCALE 121366–S5.0–309

NOTES:

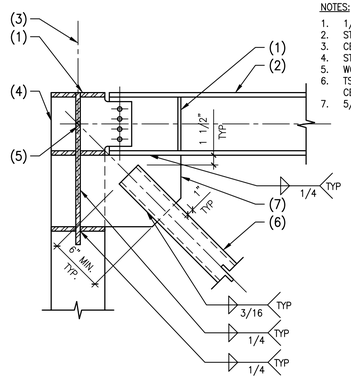
1. 1/4" CONTINUOUS BENT PLATE.
2. WALL PANEL BY OTHERS.
3. STEEL GIRTS.
4. STEEL BEAM.
5. STEEL COLUMN.
6. STEEL DECK.
7. WELD PLATE TO BEAM.



306 *STEEL GIRTS AT STEEL BEAM*
SCALE: NOT TO SCALE 121366–S5.0–306

NOTES:

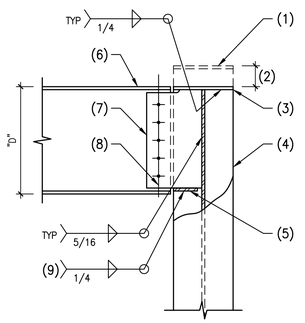
1. 1/2" STIFFENER PLATE, TYP.
2. STEEL BEAM.
3. CENTERLINE OF COLUMN.
4. STEEL COLUMN.
5. WORKING POINT.
6. TS BRACE (SLOT TUBE ON CENTERLINE).
7. 5/8" PLATE.



303 *BRACE CONNECTION AT BEAM TO COLUMN*
SCALE: NOT TO SCALE 533–031

NOTES:

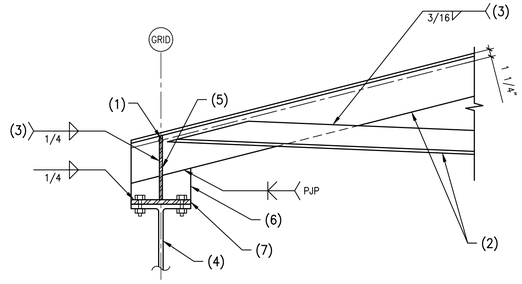
1. TOP OF COLUMN AT _____.
2. HEIGHT TO MATCH JOIST BEARING AS OCCURS.
3. 1/2" CAP PLATE – TYPICAL.
4. STEEL COLUMN.
5. 1/2" THICK HORIZONTAL STIFFENER PLATE – TYPICAL.
6. STEEL BEAM.
7. 3/8" STEEL SHEAR PLATE – 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
8. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
9. WELD PLATE TO COLUMN FLANGE – TYPICAL.



301 *TYPICAL SHEAR CONNECTION – STEEL BEAM TO STEEL COLUMN*
SCALE: NOT TO SCALE 514–013–TYP

NOTES:

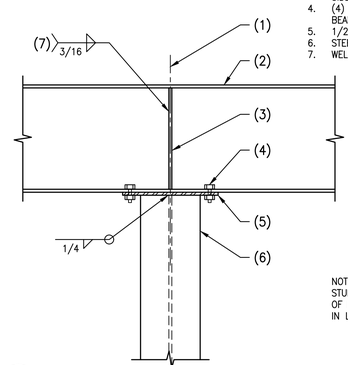
1. WORKING POINT.
2. TRUSS MEMBER PER ELEVATION.
3. 3–SIDE.
4. STEEL BEAM.
5. 1/2" STIFFENER EA. SIDE.
6. 3/8" STEEL PLATE.
7. 3/4"x10"x0'–10" STEEL BEARING PLATE.



310 *TRUSS TOP CHORD BEARING ON STEEL BEAM*
SCALE: NOT TO SCALE 121366–S5.0–310

NOTES:

1. CENTERLINE OF COLUMN.
2. STEEL BEAM.
3. 3/8" STIFFENER PLATE EACH SIDE OF BEAM.
4. (4) 3/4" DIA. BOLTS ON BEAM GAUGE.
5. 1/2" CAP PLATE.
6. STEEL COLUMN.
7. WELD 3 SIDES – TYPICAL.

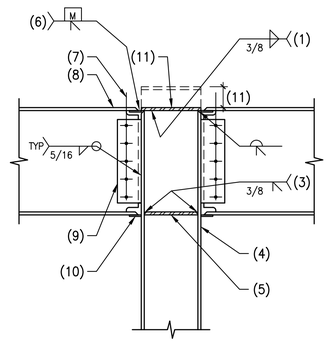


NOTE:
STUDS WELDED TO BOTTOM OF FLANGE MAY BE USED IN LIEU OF BOLTS.

307 *STEEL BEAM TO STEEL COLUMN CONNECTION*
SCALE: NOT TO SCALE 515–014

NOTES:

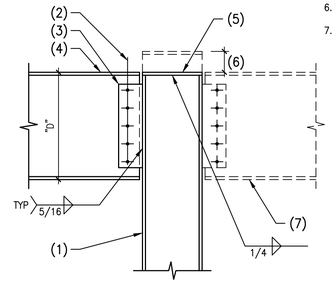
1. WELD BOTH PLATES.
2. 1/2" STEEL CONTINUITY PLATE.
3. WELD EACH PLATE – TYP.
4. STEEL COLUMN.
5. 1/2" THICK STEEL CONTINUITY PLATE AT LEVEL OF BOTTOM FLANGE FULL WIDTH OF COLUMN FLANGE EACH SIDE OF WEB – TYPICAL.
6. WELD TYPICAL TOP AND BOTTOM FLANGE.
7. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
8. STEEL BEAM.
9. SHEAR PLATE PER TYPICAL CONNECTION DETAIL.
10. STEEL BACKER PLATE.
11. HEIGHT TO MATCH JOIST BEARING AS OCCURS.



304 *TYPICAL MOMENT CONNECTION – STEEL BEAM TO STEEL COLUMN*
SCALE: NOT TO SCALE 121366–S5.0–304

NOTES:

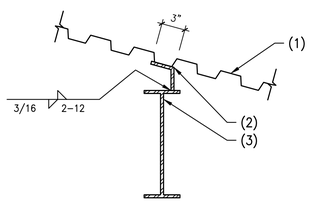
1. STEEL COLUMN.
2. FOR SIZE, TYPE AND NUMBER OF BOLTS, SEE TYPICAL BOLT SCHEDULE.
3. 3/8" STEEL SHEAR PLATE – 5/8" STEEL SHEAR PLATE WHERE "D" = 27" OR GREATER.
4. STEEL BEAM.
5. 1/2" CAP PLATE – TYPICAL.
6. HEIGHT TO MATCH JOIST BEARING AS OCCURS.
7. STEEL BEAM WHERE OCCURS.



302 *STEEL BEAM AT STEEL COLUMN*
SCALE: NOT TO SCALE 121366–S5.0–302

NOTES:

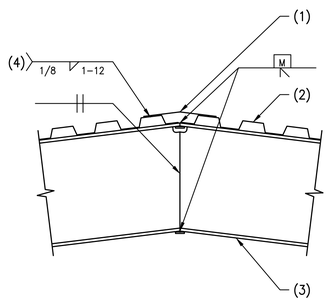
1. STEEL DECK – FOR DIRECTION OF DECK, SEE PLANS.
2. 3/16" CONTINUOUS BENT STEEL PLATE.
3. STEEL BEAM.



311 *BENT STEEL PLATE AT STEEL BEAM*
SCALE: NOT TO SCALE 583–013

NOTES:

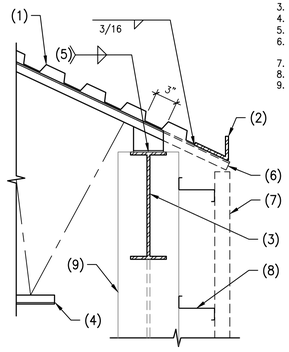
1. CONTINUOUS 16 GAUGE RIDGE PLATE BY DECK MFR.
2. STEEL DECK.
3. STEEL BEAM.
4. WELD EACH SIDE – TYP.



308 *PITCHED STEEL BEAM SPLICE*
SCALE: NOT TO SCALE 513–031

NOTES:

1. STEEL DECK.
2. 1/4" CONTINUOUS BENT STEEL PLATE – HEIGHT AS REQUIRED.
3. STEEL BEAM.
4. STEEL JOIST.
5. 1/4"x2" AT LH JOISTS.
6. STEEL JOIST EXTENSION BY OTHERS.
7. WALL PANEL BY OTHERS.
8. STEEL GIRTS –TYPICAL.
9. STEEL COLUMN BEYOND.



305 *STEEL JOIST AT STEEL BEAM*
SCALE: NOT TO SCALE 121366–S5.0–305

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ROOF FRAMING DETAILS

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revisions

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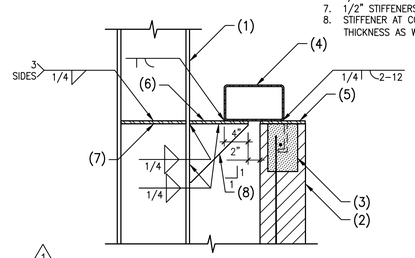
project 121366
engineer DCH
drafter MPG
date 11/10/21

sheet **S5.0**

NOTES:

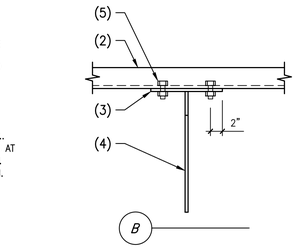
1. STEEL COLUMN. SEE PLANS FOR SIZE AND ORIENTATION. PROVIDE SIMILAR DETAIL WHERE PLATE IS ATTACHED TO COLUMN WEB.
2. MASONRY WALL.
3. MASONRY WALL TOP BOND BEAM.
4. WIND GIRT. SEE S6.2.
5. PL 1/2"x7 1/2"x CONTINUOUS WITH 3/4" DIAMETER ANCHORS AT 24" O.C.. INSTALL (3) 3/4" DIAMETER ANCHORS AT 12" O.C. AT CONNECTION TO COLUMN.
6. 1/2" PLATE x COLUMN FLANGE WIDTH.
7. 1/2" STIFFENERS EACH SIDE.
8. STIFFENER AT COLUMN WEB, SAME THICKNESS AS WEB, 1/2" MINIMUM.

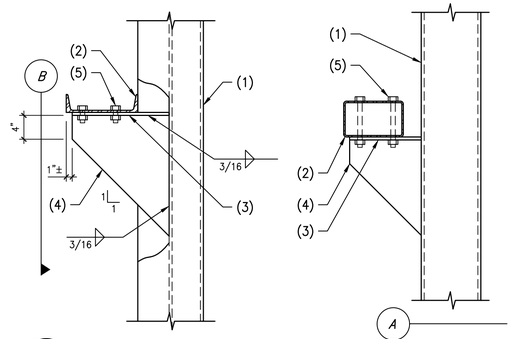


405 WIND GIRT AT TOP OF MASONRY WALL
SCALE: NOT TO SCALE 121366-S5.0-405

NOTES:

1. STEEL COLUMN.
2. STEEL HEADER.
3. 1/4"x12" WIDE STEEL PLATE WITH HORIZONTALLY LONG SLOTTED HOLES.
4. 1/2" STIFFENER CENTERED ON COLUMN AND HORIZONTAL PLATE.
5. (4) 3/4" DIA. BOLTS.

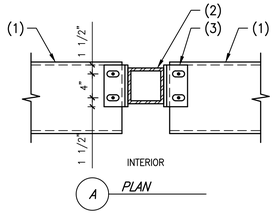


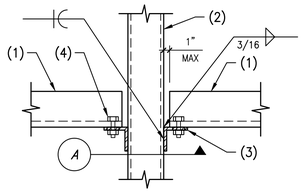


403 STEEL HEADER AT STEEL COLUMN
SCALE: NOT TO SCALE 121366-S5.0-403

NOTES:

1. STEEL GIRT.
2. STEEL COLUMN.
3. STEEL L4x4x1/4 x 0'-7" WITH LONG SLOTTED HOLES.
4. (2) 3/4" DIA. THROUGH BOLTS IN STANDARD HOLES IN GIRT. FINGER TIGHTEN NUTS AND DAMAGE THREADS.



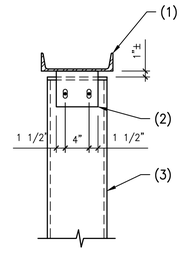


NOTE:
GIRT MAY OCCUR ON ONE SIDE ONLY.

401 STEEL HSS GIRTS AT STEEL COLUMN
SCALE: NOT TO SCALE 121366-S5.0-401

NOTES:

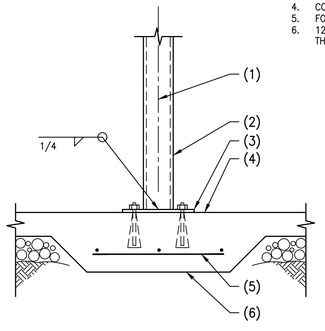
1. STEEL HEADER.
2. 1/4"x7"x0'-6" STEEL PLATE WITH VERTICAL LONG SLOTTED HOLES, EACH SIDE OF JAMB.
3. STEEL JAMB.



402 STEEL JAMB AT STEEL HEADER
SCALE: NOT TO SCALE 121366-S5.0-402

NOTES:

1. CENTERLINE OF COLUMN AND THICKENED SLAB.
2. STEEL COLUMN.
3. 1/2"x8"x1'-0" STEEL BASEPLATE WITH (4) 3/4" DIA. EXPANSION BOLTS.
4. CONCRETE SLAB ON GRADE.
5. FOOTING REINFORCING.
6. 12"x2'-0"x2'-0" MINIMUM THICKENED SLAB.



404 STEEL COLUMN AT THICKENED CONCRETE SLAB
SCALE: NOT TO SCALE 238-016

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FT. HUACHUCA GROUND TRANSPORT BUILDING
FT. HUACHUCA, ARIZONA

GIRT ELEVATION DETAILS

Registered Professional Engineer (Structural)
CERTIFICATE NO.
27349
RONALD H. SCHNEIDER
DATE SIGNED
ARIZONA, U.S.A.

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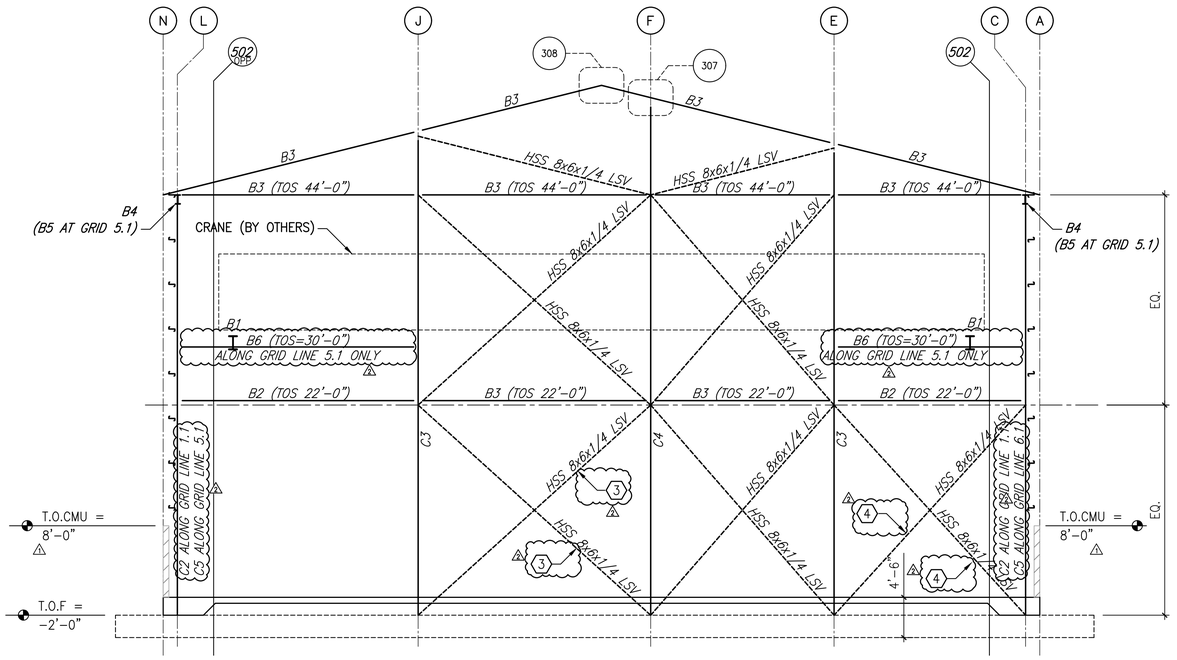
This 04/22/22

revisions

#	date	comment
0	1/25/2022	ISSUED FOR CONSTRUCTION
1	12-08-21	CMU UPDATE

project 121366
engineer DCH
drafter MPG
date 11/10/21

sheet S5.1

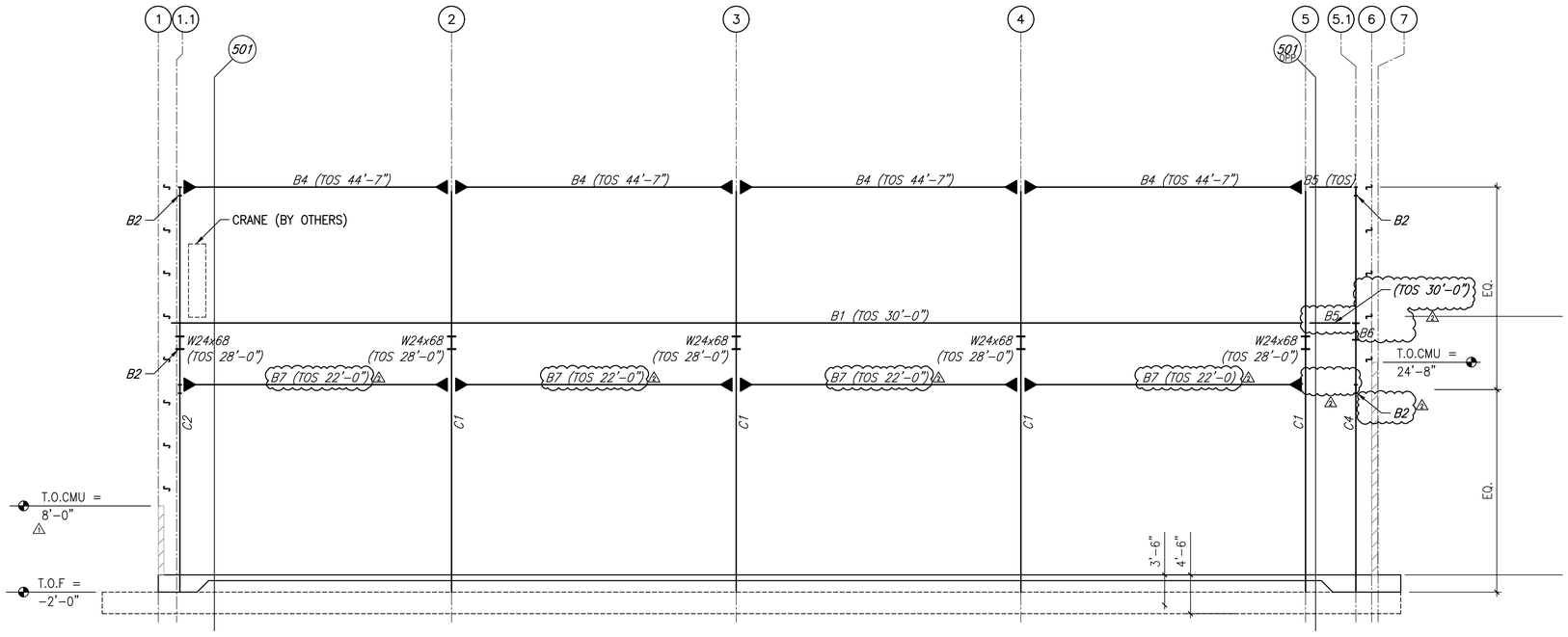


501 BRACED FRAME ALONG GRID LINE 1.1 OR GRID LINE 5.1 (AS NOTED)

SCALE: 1/8"=1'-0"

FRAMING KEYNOTES:

1. BRACE (LOW) SEE BRACE ELEVATION.
2. MASONRY WALL BELOW.
3. ALONG GRID LINE 1.1 ONLY.
4. ALONG GRID LINE 5.1 ONLY.



502 BRACED FRAME ALONG GRID LINE C (GRID LINE L OPPOSITE)

SCALE: 1/8"=1'-0"

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FRAMING ELEVATIONS

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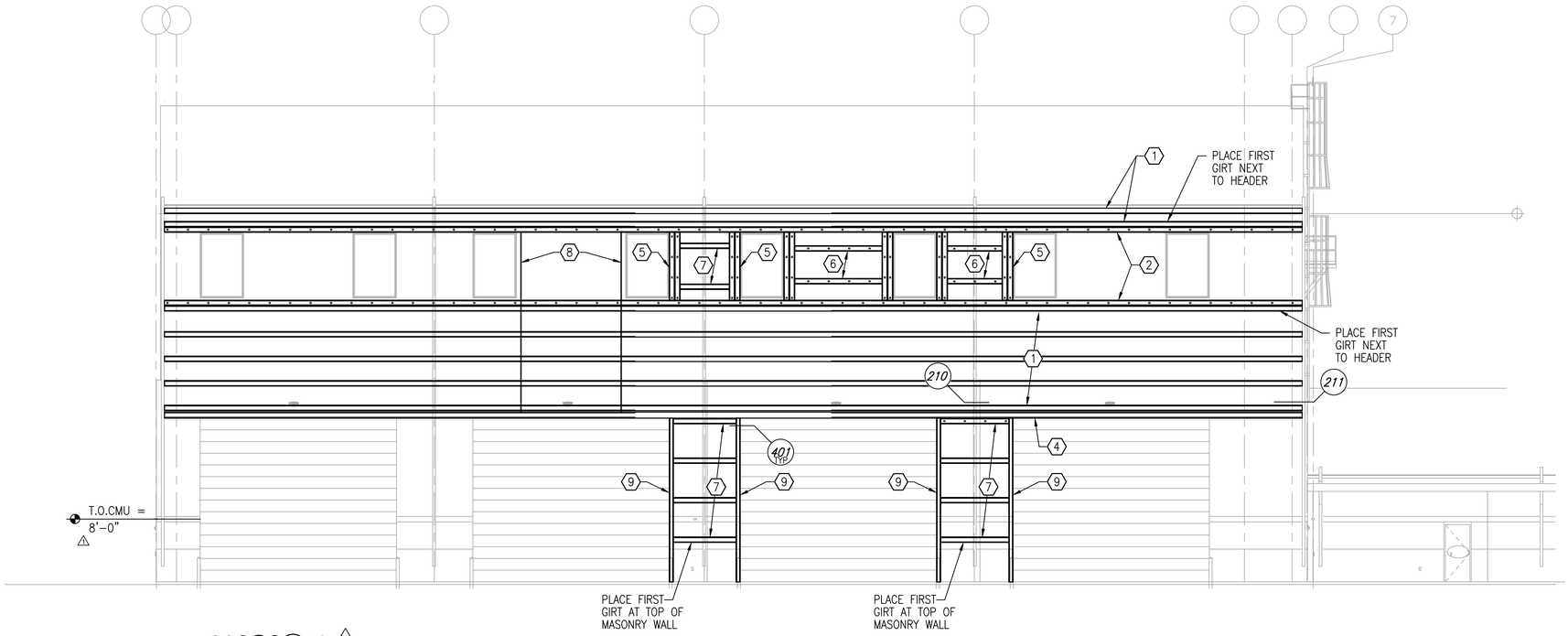
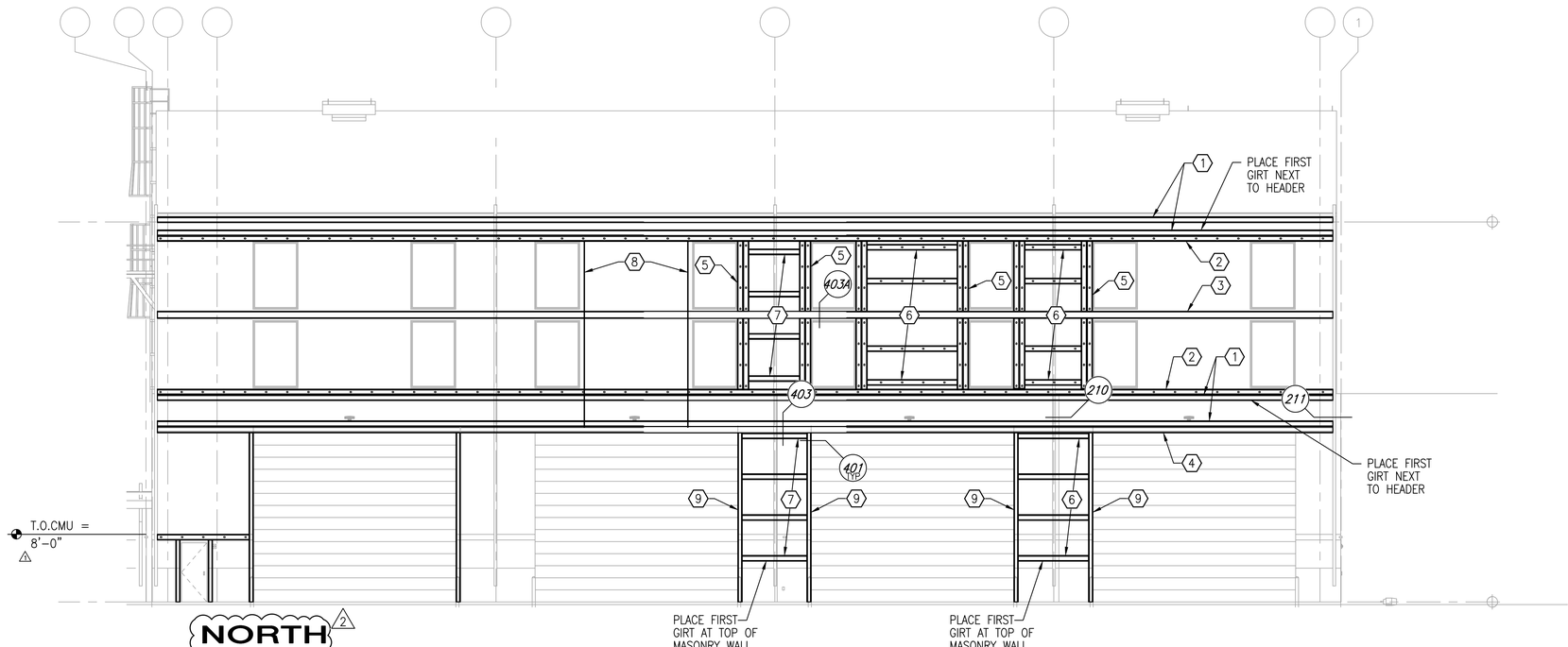
sheet S6.0



SOUTH WIND GIRT ELEVATION

SCALE: 1/8"=1'-0"



NORTH WIND GIRT ELEVATION

SCALE: 1/8"=1'-0"

ELEVATION KEYNOTES:

ALL KEYNOTES MAY NOT APPLY ON ALL SHEETS

1. 800Z200-97 (1" LIP) AT 3'-0" O.C. MAXIMUM GIRTS.
2. (2) 800S200-97 BACK-TO-BACK HEADER.
3. HSS10x4x3/16 LLH HEADER.
4. C9x20 WEB HORIZONTAL CONTINUOUS HEADER.
5. (2) 800S162-54 JAMB - TYPICAL.
6. 800S200-54 AT 4'-0" O.C.
7. 800Z200-54 AT 5'-0" O.C. GIRTS.
8. PROVIDE MINIMUM (2) SAG CABLES PER GIRT SPAN - TYPICAL.
9. HSS6x6x5/16 - SEE DETAIL 404.
10. 800Z200-68 AT 3'-0" O.C.
11. (2) 800S200-68 BACK-TO-BACK HEADER.
12. 800Z200-97 (1" LIP) AT 4'-0" O.C. GIRTS.
13. STEEL COLUMN BEYOND.

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ELEVATIONS

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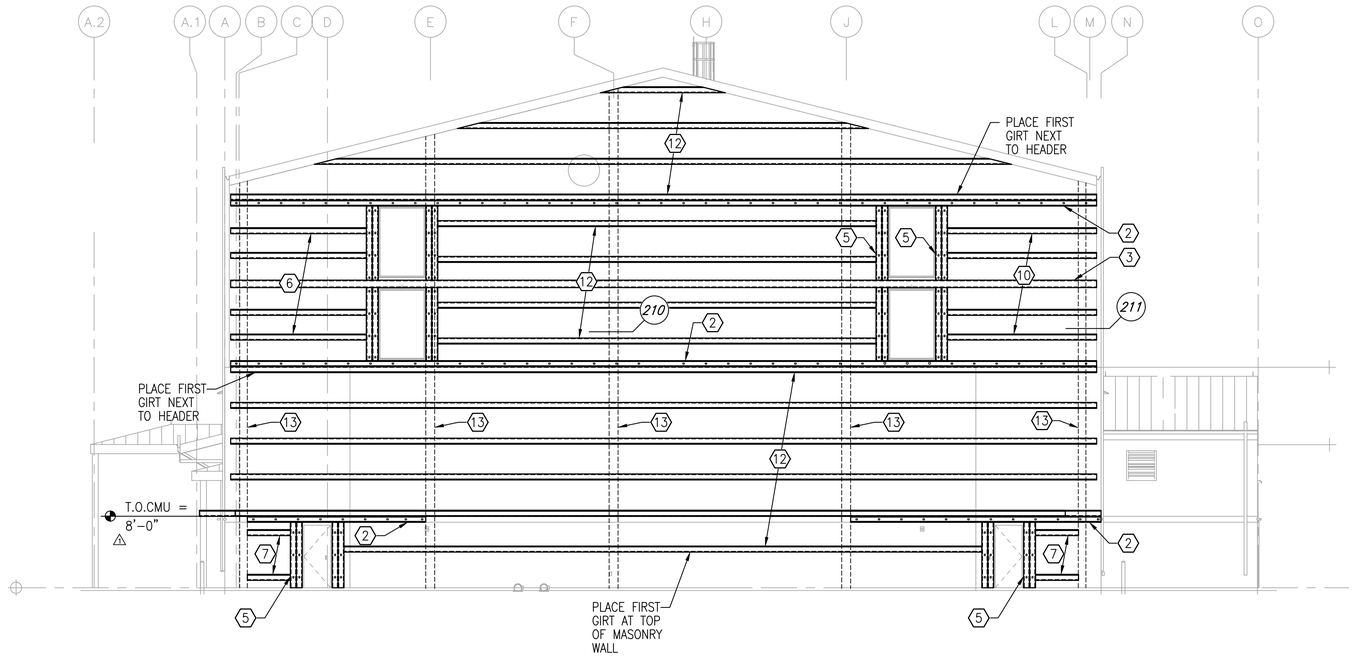
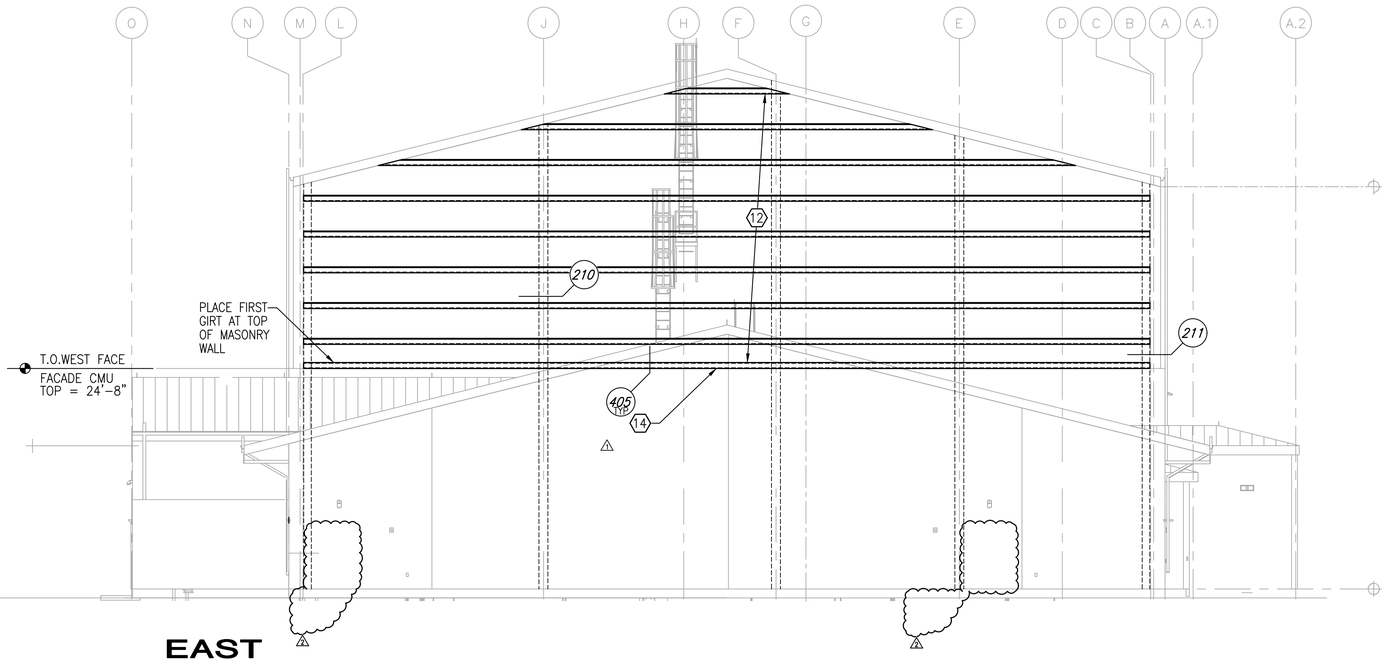
sheet S6.1



WEST WIND GIRT ELEVATION

SCALE: 1/8"=1'-0"



EAST WIND GIRT ELEVATION

SCALE: 1/8"=1'-0"

ELEVATION KEYNOTES:

ALL KEYNOTES MAY NOT APPLY ON ALL SHEETS

1. 800Z200-97 (1" LIP) AT 3'-0" O.C. MAXIMUM GIRTS.
2. (2) 800S200-97 BACK-TO-BACK HEADER.
3. HSS10x4x3/16 LLH HEADER.
4. C9x20 WEB HORIZONTAL CONTINUOUS HEADER.
5. (2) 800S162-54 JAMB - TYPICAL.
6. 800S200-54 AT 4'-0" O.C.
7. 800Z200-54 AT 5'-0" O.C. GIRTS.
8. PROVIDE MINIMUM (2) SAG CABLES PER GIRT SPAN - TYPICAL.
9. HSS6x6x5/16 - SEE DETAIL 404.
10. 800Z200-68 AT 3'-0" O.C.
11. (2) 800S200-68 BACK-TO-BACK HEADER.
12. 800Z200-97 (1" LIP) AT 4'-0" O.C. GIRTS.
13. STEEL COLUMN BEYOND.
14. HSS12X6X1/4 LONG SIDE HORIZONTAL CONTINOUS WIND GIRT.

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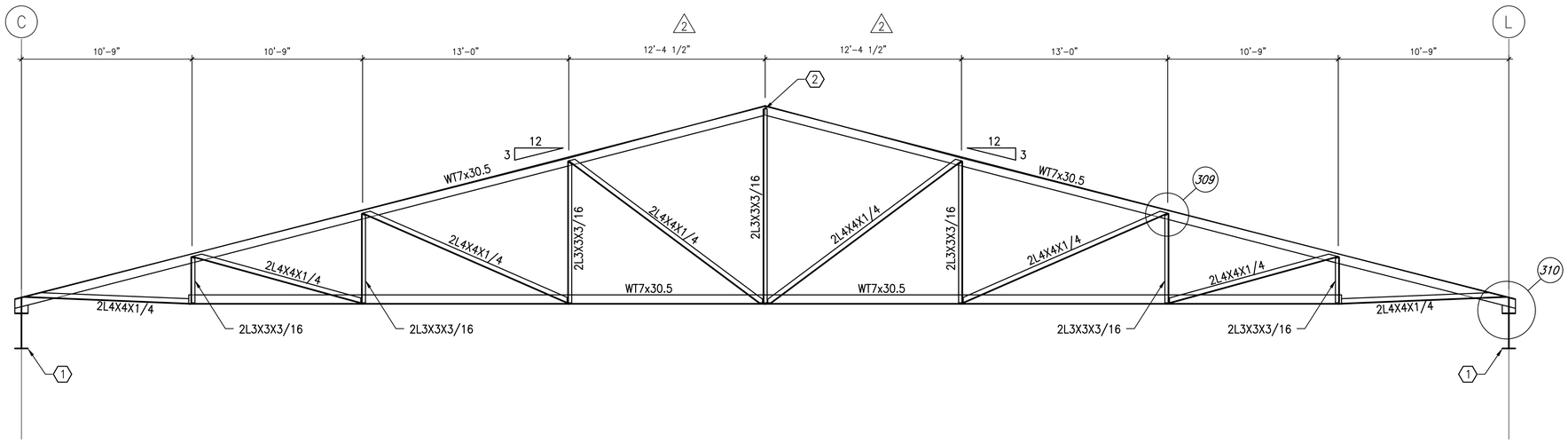
ELEVATION KEYNOTES:

1. BEAM PER PLAN.
2. AT TRUSS CHORDS CONNECTION – CJP WELD, BACKGOUGE, GRIND SMOOTH WEB TO WEB



ROOF TRUSS ELEVATION

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

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