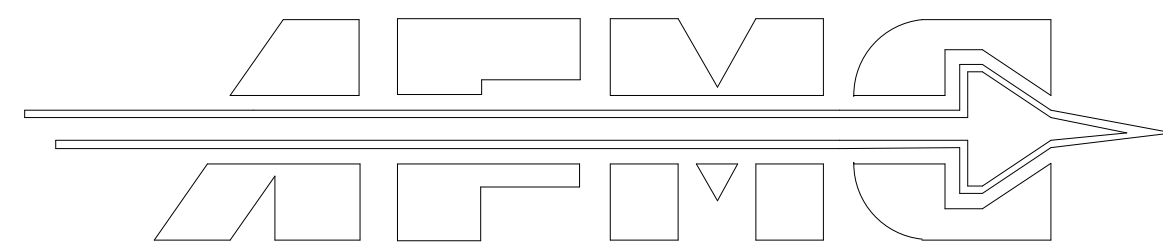


ADDITION/RENOVATION RESERVE CIVIL ENGINEER FACILITY

BLDG. 591

CAPITAL PROJECT NUMBER: 1033268



FINAL DESIGN (100%)

07/15/2020



HILL AFB,
UTAH

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
419TH CIVIL ENGINEER GROUP

PROJECT ARCHITECT

STANTEC ARCHITECTURE
1050 17TH ST. SUITE A-200
DENVER, CO 80265
PHONE 303.295.1717
FAX NA

CIVIL ENGINEER

STANTEC
2890 E COTTONWOOD PKWY #300
SALT LAKE CITY, UT 84121
PHONE 801.617.3200
FAX NA

MECHANICAL ENGINEER

COLVIN ENGINEERING ASSOCIATES
505 EAST SOUTH TEMPLE, SUITE 100
SALT LAKE CITY, UT 84102
PHONE 801.505.5417
FAX NA

ELECTRICAL ENGINEER

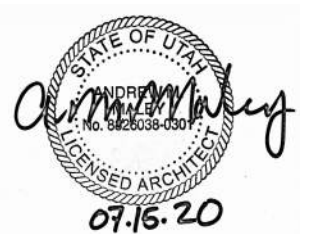
SPECTRUM ENGINEERS
324 STATE ST. # 400
SALT LAKE CITY, UT 84111
PHONE 801.328.5151
FAX NA

STRUCTURAL ENGINEER

REAVELEY ENGINEERS
675 EAST 500 SOUTH, SUITE 400
SALT LAKE CITY, UT 84102
PHONE 801.505.4008
FAX NA

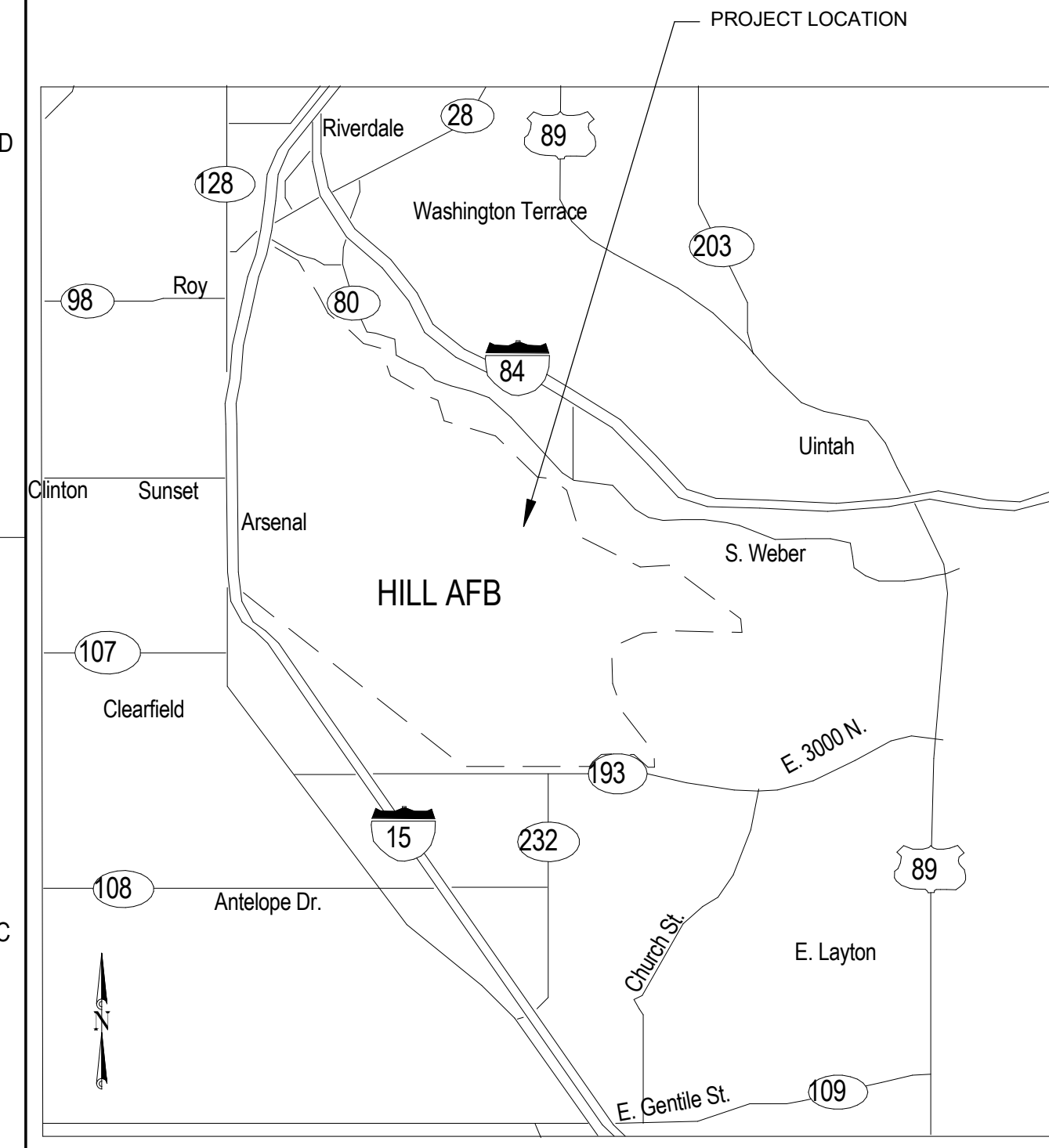
COST CONTROL

JOHAN KEMP ESTIMATING SERVICES
7129 E HERITAGE PLACE N.
CENTENNIAL, CO 80111
PHONE 303.668.5328
FAX NA

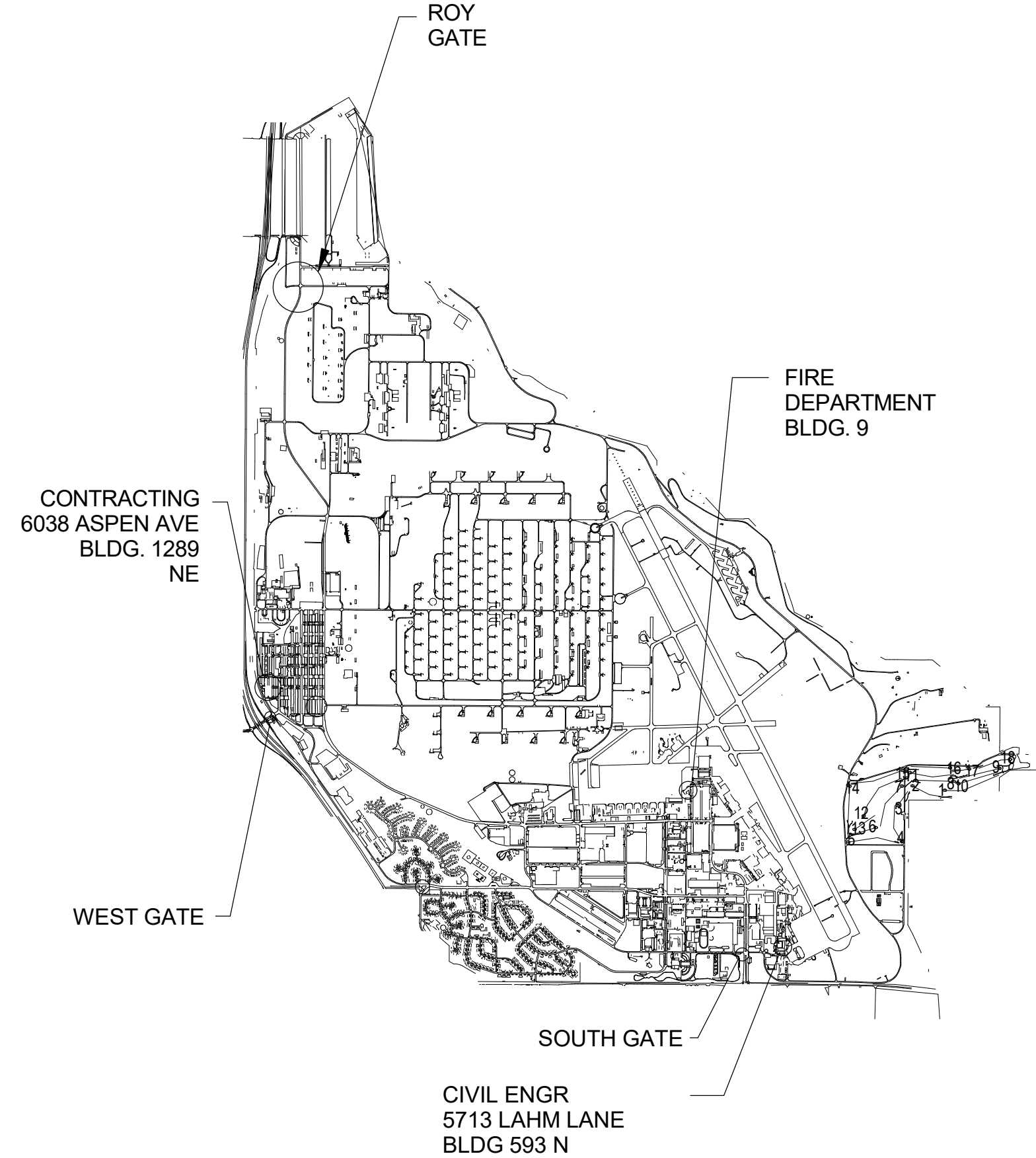


REVISION	DATE	DESCRIPTION	BY
		DEPARTMENT OF THE AIR FORCE 75TH AIR BASE WING 419TH CIVIL ENGINEER GROUP	
		COVER	G001
			PRIME A-E FIRM STANTEC
			A & E PROJECT MANAGER SCOTT BOLTON
			BASE PROJECT MANAGER BEVERLY LANGUE
			DATE 07/15/2020
			CAPITAL PROJECT NUMBER 1033268
			LEGACY PROJECT NUMBER
			WORK TASK NO. 6602776
			SHEET 1 of 94

VICINITY MAP



LOCATION MAP



CODE CRITERIA

Table with columns for Fire Resistive Requirements (Building Element, O-HR) and Code Review Criteria (Occupancy Group, Type of Construction, etc.).

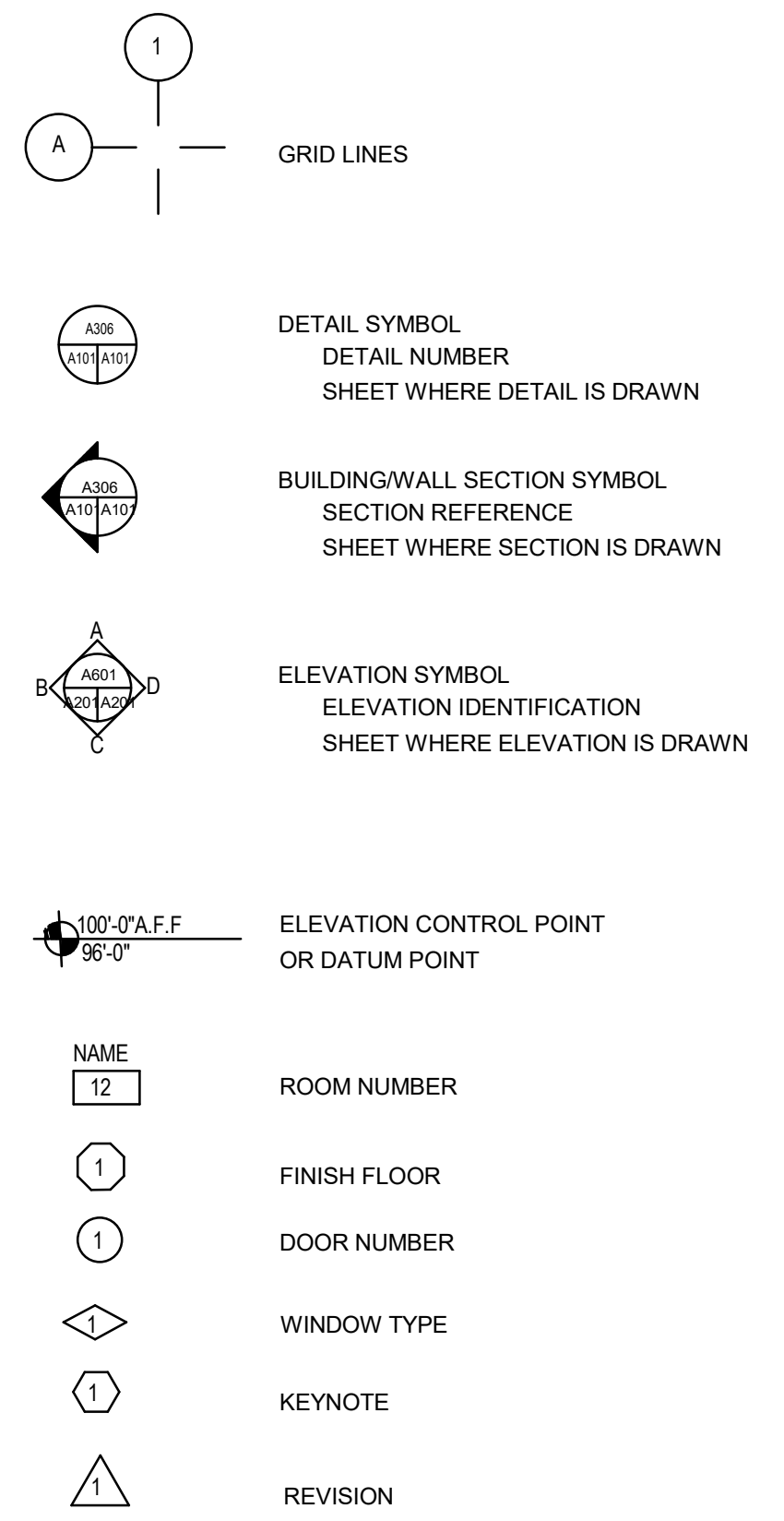
SCOPE OF WORK SUMMARY: BRIEFLY AND WITHOUT FORCE OR EFFECT UPON THE CONTRACT DOCUMENTS, THE WORK OF THIS CONTRACT CAN BE SUMMARIZED AS FOLLOWS: 1. ARCHITECTURAL: FULL RENOVATION OF EXISTING OFFICE SPACE... 2. CIVIL: GRADING FOR NEW ADDITION WITH SIDEWALK AND ENTRY STAIR... 3. STRUCTURAL: ONE-STORY STEEL STRUCTURE WITH SHALLOW REINFORCED CONCRETE SPREAD FOOTINGS...

INDEX OF DRAWINGS WITH SUBMITTAL: # SHEET NO. SHEET NAME. Includes sections for 00-GENERAL, 05-CIVIL, 07-STRUCTURAL, 08-ARCHITECTURE, 14-MECHANICAL, 14-PLUMBING, 15-ELECTRICAL, and 16-FIRE PROTECTION.

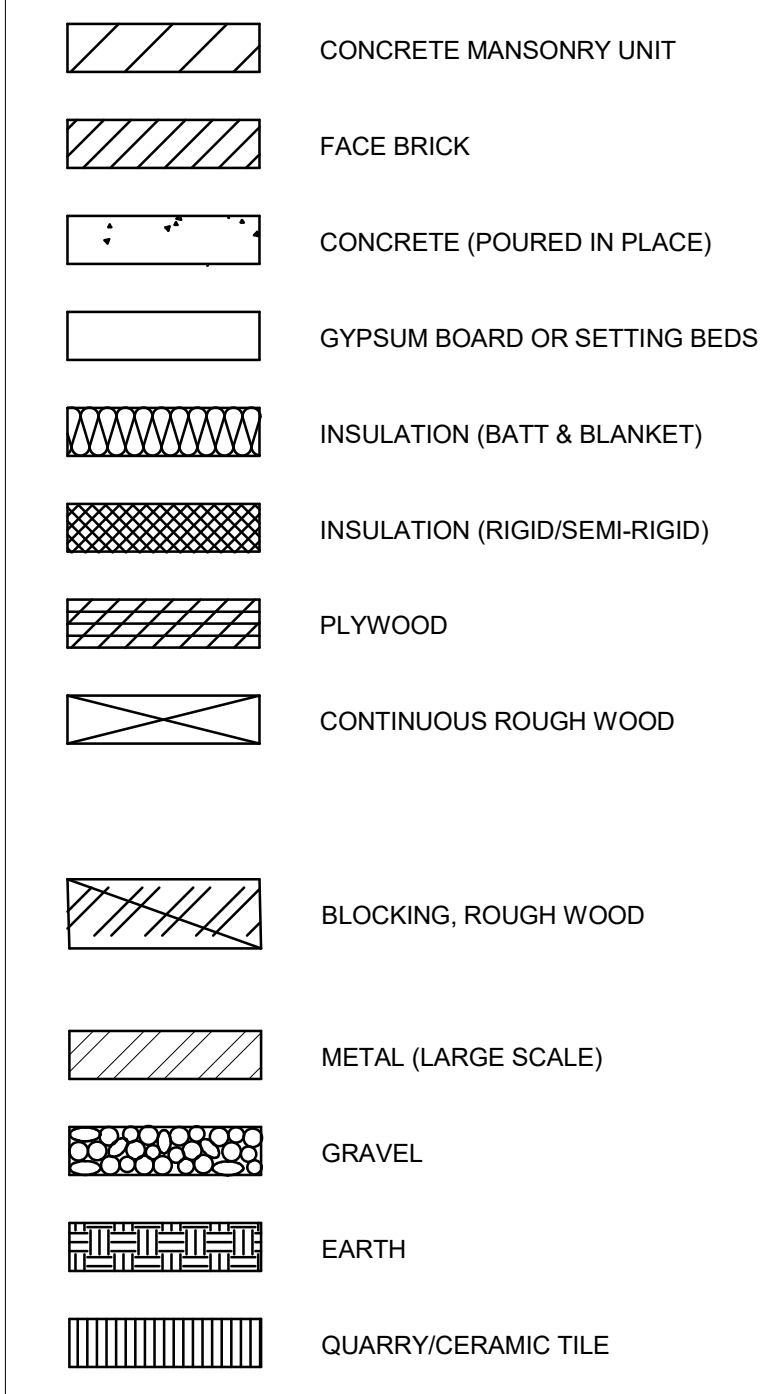
ABBREVIATIONS

Large table of abbreviations with columns for symbol, number, description, and quantity. Includes categories like AT (Center Line Diameter), EA (Each Face), I.D. (Inside Diameter), and MAINT. (Maintenance).

GRAPHIC SYMBOLS



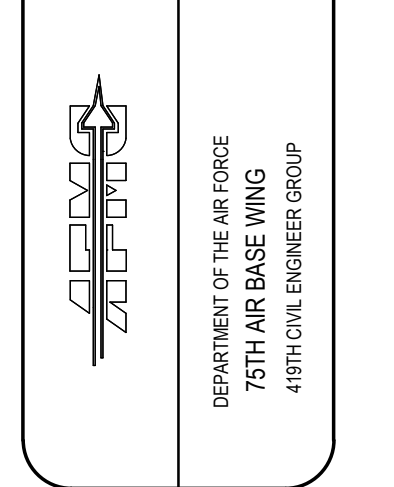
MATERIALS/LEGEND



MARKING table with columns for DATE, APPR, and MARK.



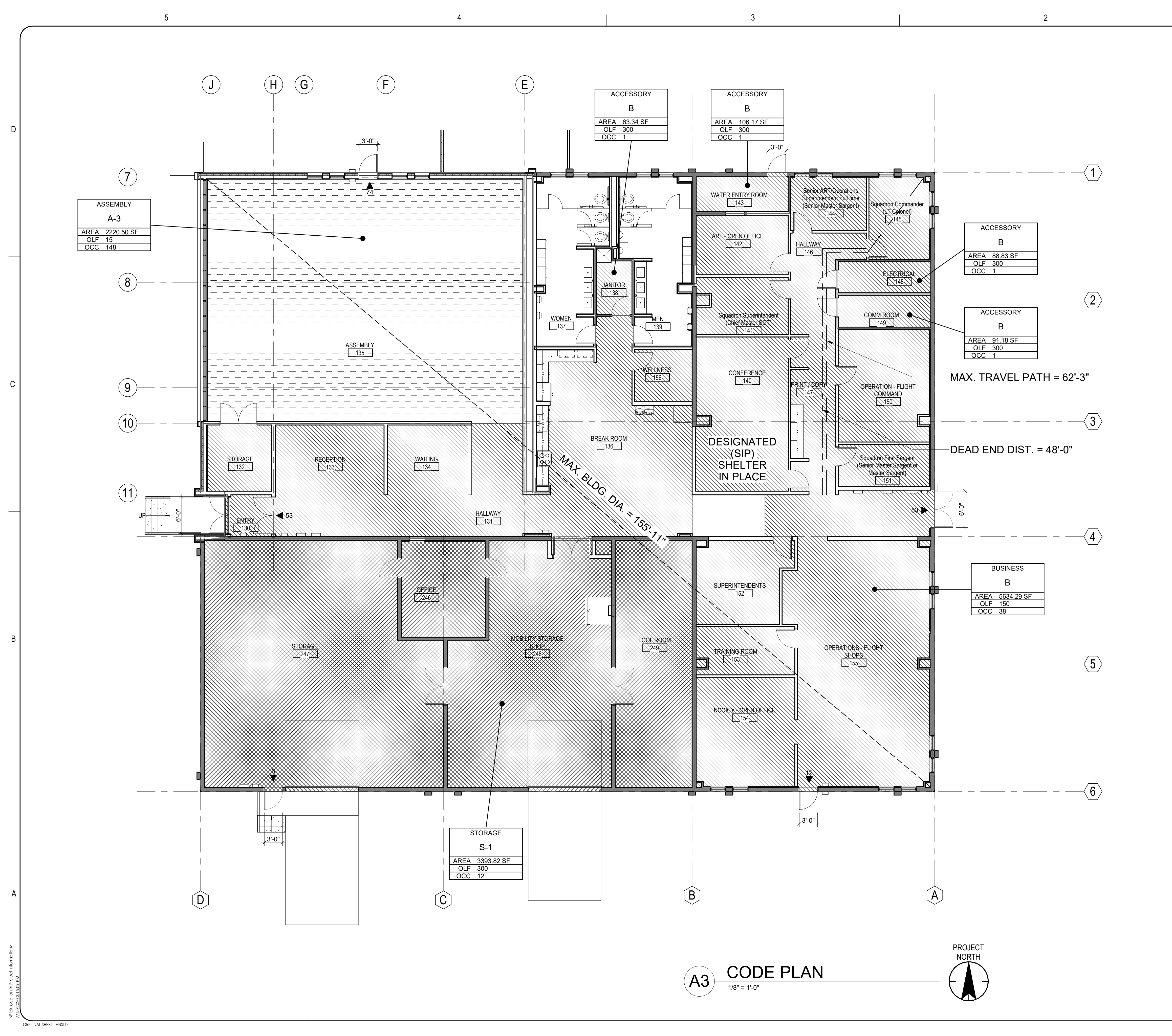
DESIGNED BY, CHECKED BY, and DATE table for project documentation.



ADDITION/RENOVATION RESERVE CIVIL ENGINEER FACILITY - BLDG. 591 GENERAL INFORMATION

G002 Sheet: 2 of 94

Check location in Project Information 7/15/2020 3:15:07 PM ORIGINAL SHEET - ANS-D



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SHEET NOTES

DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		



DESIGNED BY	CHECKED BY
Designer	Checker
DATE	DATE
07/15/2020	07/15/2020
PROJECT NO.	PROJECT NO.
1033248	1033248
LEGACY PROJECT NO.	LEGACY PROJECT NO.
BASE PROJECT MANAGER	BASE PROJECT MANAGER
BEVERLY LANGLIE	BEVERLY LANGLIE

CODE LEGEND

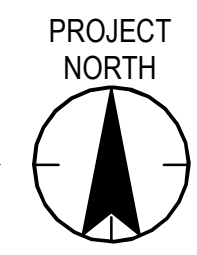
- 1 HOUR FIRE BARRIER
- 2 HOUR FIRE BARRIER
- 3 HOUR FIRE BARRIER
- 4 HOUR FIRE BARRIER
- DEAD END CORRIDOR
- MAX TRAVEL PATH
- MAX BLDG DIAG

- ASSEMBLY A-3
- BUSINESS B
- STORAGE S-1

- EXIT #
- OCCUPANCY CLASSIFICATION
- AREA
- OCCUPANCY LOAD FACTOR
- NUMBER OF OCCUPANTS



A3 CODE PLAN
 1/8" = 1'-0"



**ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591**
CODE / LIFE SAFETY PLAN

File location in project information:
 7/15/2020 3:10:27 PM

CODE ANALYSIS

JURISDICTION

HILL AIR FORCE BASE - OGDEN, UT

CODES IN EFFECT

INTERNATIONAL BUILDING CODE, 2018 EDITION
INTERNATIONAL PLUMBING CODE, 2018 EDITION
INTERNATIONAL MECHANICAL CODE, 2018 EDITION
INTERNATIONAL ENERGY CONSERVATION CODE, 2018 EDITION
INTERNATIONAL FIRE CODE, 2018 EDITION
ICC/ANSI A117.1-2009 AMERICAN NATIONAL STANDARD
NATIONAL ELECTRICAL CODE (NEC), 2018 EDITION

BUILDING DESCRIPTION

OFFICE BUILDING
CONSTRUCTION TYPE II-B, FULLY SPRINKLERED

CODE SUMMARY

1.0 USE & OCCUPANCY CLASSIFICATION (IBC CHAPTER 3)

A. CLASSIFICATION: ASSEMBLY (SECTION 304): GROUP A-3.

2.0 GENERAL BUILDING HEIGHTS AND AREAS (IBC CHAPTER 5)

A. ALLOWABLE BUILDING HEIGHT: 75' (PER TABLE 504.3), 3 STORIES (PER TABLE 504.4)
BUILDING HEIGHT: 24'-9", 1 STORY
B. ALLOWABLE FLOOR AREA : 38,000 SF (PER TABLE 506.2)
BUILDING FLOOR AREA : 12,316 GROSS SF
TOTAL BUILDING AREA: 12,316 GROSS SF

3.0 TYPE OF CONSTRUCTION (IBC CHAPTER 6)

CONSTRUCTION CLASSIFICATION: TYPE II-B

A. FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (IBC TABLE 601), ALL BUILDING ELEMENTS BELOW ARE OF NONCOMBUSTIBLE MATERIALS (EXCEPT AS PERMITTED IN SECTION 603 AND ELSEWHERE IN THE IBC).

Table with 2 columns: ELEMENT and RATING. Lists structural frame, bearing walls, and floor/roof construction with their respective fire ratings.

B. WOOD AND OTHER COMBUSTIBLE MATERIALS USED IN TYPE II-B CONSTRUCTION SHALL COMPLY WITH IBC SECTION 603.

4.0 MEANS OF EGRESS (IBC CHAPTER 10)

A. OCCUPANT LOAD (IBC 1004)

- 1. NO FIRE SEPARATION REQUIRED BETWEEN B AND A-3 OCCUPANCIES, AREA OF A-3 OCCUPANCY IS <10% OF TOTAL AREA OF LEVEL 2 (IBC 508.2.3).
2. SMALL ASSEMBLY ROOM OR SPACES WITH OCCUPANT LOAD OF LESS THAN 50 PERSONS AND LESS THAN 750 SF AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A GROUP B OCCUPANCY OR A PART OF THAT OCCUPANCY (IBC 303.1.2)

Table with 4 columns: NAME, OCC, AREA, RATIO, TOTAL. Lists occupancy types like OFFICE, WATER ENTRY, ELECTRICAL, COMM., JANITOR, ASSEMBLY, STORAGE with their respective counts.

PROJECT TOTAL 202 OCCUPANTS

B. EGRESS WIDTH PROVIDED (INCHES) PER OCCUPANT SERVED

STAIRWAYS - 0.3
OTHER EGRESS COMPONENTS - 0.2

C. ACCESSIBLE MEANS OF EGRESS (IBC 1009)

D. MAXIMUM EXIT ACCESS TRAVEL DISTANCE = 300 FT (IBC TABLE 1017.2)

E. COMMON PATH OF EGRESS TRAVEL SHALL NOT EXCEED 100'-0" (IBC TABLE 1006.2.1)

F. CORRIDOR FIRE RESISTANCE RATING = 0-HOUR (IBC TABLE 1020.1)

G. MINIMUM CORRIDOR WIDTH = 44 INCHES (IBC TABLE 1020.2)

H. DEAD END CORRIDORS = 50 FT MAXIMUM (IBC 1020.4, EXCEPTION 2)

I. MINIMUM NUMBER OF EXITS = 2 (IBC TABLE 1006.3.2)

J. EGRESS WIDTH PROVIDED (INCHES) PER OCCUPANT SERVED

Table with 4 columns: #OCC, # EXITS, MIN. WIDTH, PROVIDED WIDTH. Shows 202 occupants, 5 exits, and a provided width of 252 inches.

CODE ANALYSIS - CONTINUED

5.0 FIRE AND SMOKE PROTECTION FEATURES (IBC CHAPTER 7 & 9)

A. FIRE-RESISTANT CONSTRUCTION

- 1. FIRE WALLS (SECTION 706): NOT REQUIRED
2. FIRE BARRIERS (SECTION 707): NOT REQUIRED
3. FIRE PARTITIONS (SECTION 708): NOT REQUIRED
4. SMOKE BARRIERS (SECTION 709): NOT REQUIRED
5. HORIZONTAL ASSEMBLIES (SECTION 711): NOT REQUIRED
6. SHAFT ENCLOSURES (SECTION 713): NOT REQUIRED
7. PENETRATIONS (SECTION 714): RATING AS REQUIRED FOR ASSEMBLY

B. FIRE PROTECTION SYSTEMS

- 1. AUTOMATIC SPRINKLER SYSTEM (SECTION 903): PROVIDED
2. STANDPIPE SYSTEM (SECTION 905): NOT REQUIRED
3. PORTABLE FIRE EXTINGUISHERS (SECTION 906): NOT REQUIRED
4. FIRE ALARM DETECTION SYSTEMS (SECTION 907): AUTOMATIC
5. SMOKE CONTROL SYSTEMS (SECTION 909): PROVIDED

C. OPENING PROTECTION (SECTION 705)

Table with 3 columns: FIRE SEPERATION DISTANCE (FEET), DEGREE OF OPENING, ALLOWABLE AREA. Shows 30' OR GREATER, UNPROTECTED, SPRINKLERED, NO LIMIT.

6.0 INTERIOR FINISHES (IBC CHAPTER 8)

A. INTERIOR WALL AND CEILING FINISHES TO MEET SECTION 803.1.1 CLASS A.

7.0 ACCESSIBILITY (IBC CHAPTER 11)

A. ACCESSIBILITY STANDARDS TO BE PER IBC CHAPTER 11 AND ANSI A117.1

8.0 PLUMBING FIXTURES

Table with 6 columns: USE GROUP, # OCC, # WC M** / W, # LAV M / W, DRINKING FOUNTAINS, SERVICE SINKS. Lists fixture requirements for groups B, A-3, and S-1.

**PER IPC SECTION 424.1 SUBSTITUTION FOR WATER CLOSETS, URINALS SHALL NOT BE SUBSTITUTED FOR MORE THAN 50% OF THE REQUIRED WATER CLOSETS.



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Table with 4 columns: DESCRIPTION, DATE, APPR, MARK. Row 1: FINAL DESIGN 100%, 07/15/2020.



Table with 4 columns: DESIGNED BY, CHECKED BY, DATE, PROJECT NO. Lists Designer: Beverly Langlie, Checker: Beverly Langlie, Date: 07/15/2020, Project No: 1033248.

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
CODE ANALYSIS

G102
Sheet: 4 of 94

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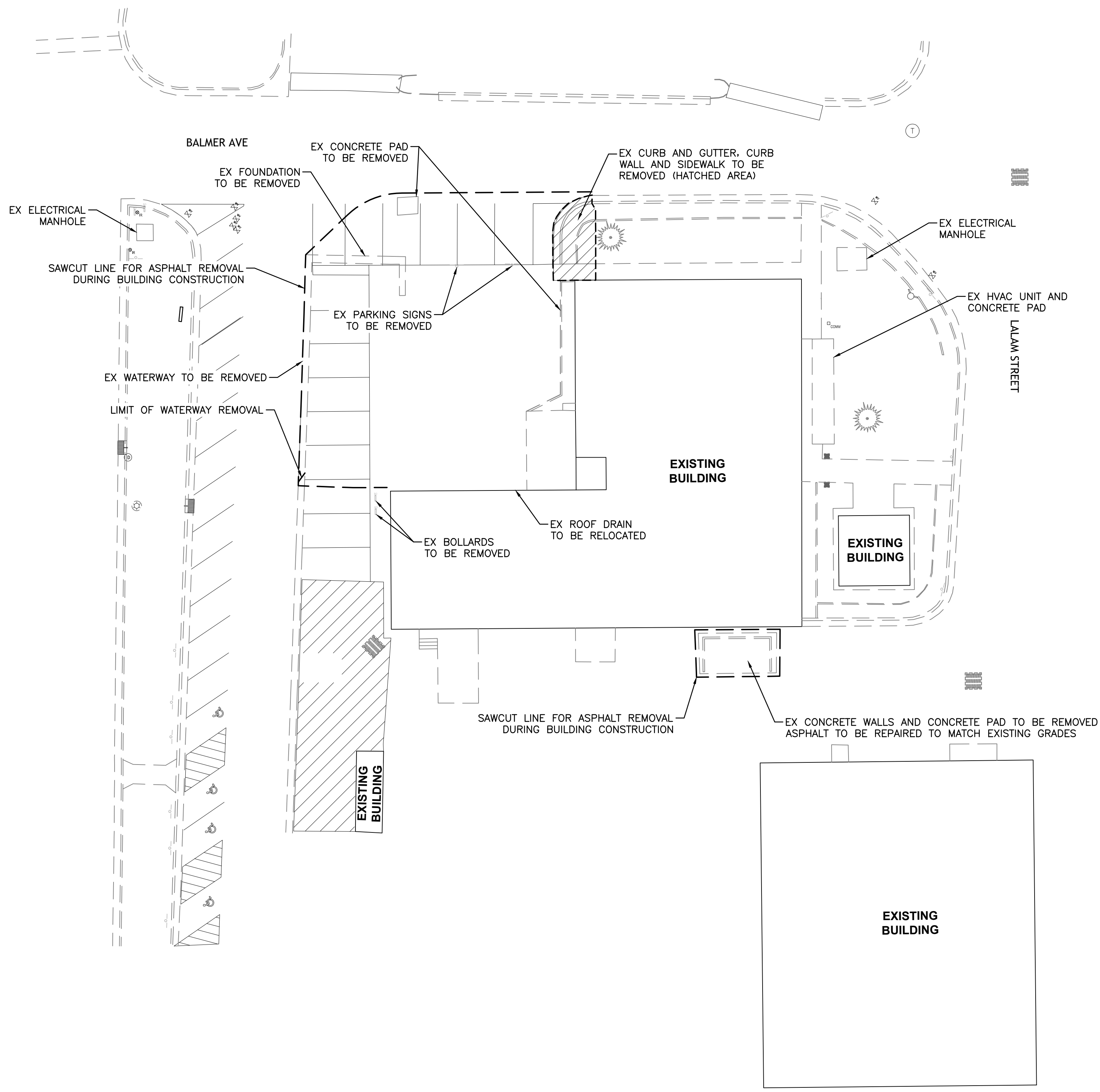
1

D

C

B

A



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 Salt Lake City, Utah 84121
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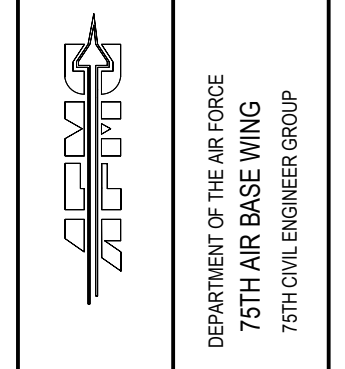
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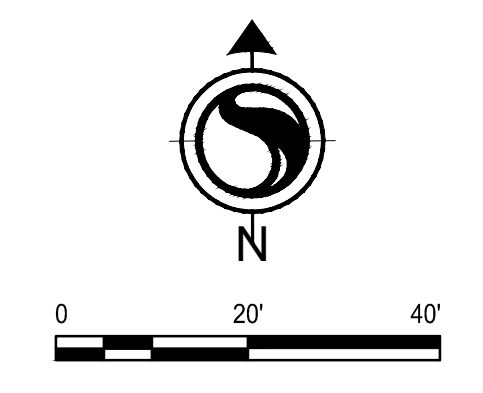
DESCRIPTION	DATE	APPR.	MARK
FINAL DESIGN 100%	07/15/2020		



DESIGNED BY	PROJECT NO.	DATE
DALE ALLEN WATSON	181063-0202	07/15/2020



HILL AIR FORCE BASE - BUILDING 591
 EXISTING SITE DEMOLITION PLAN



C001
 Sheet: 5 of 94

5

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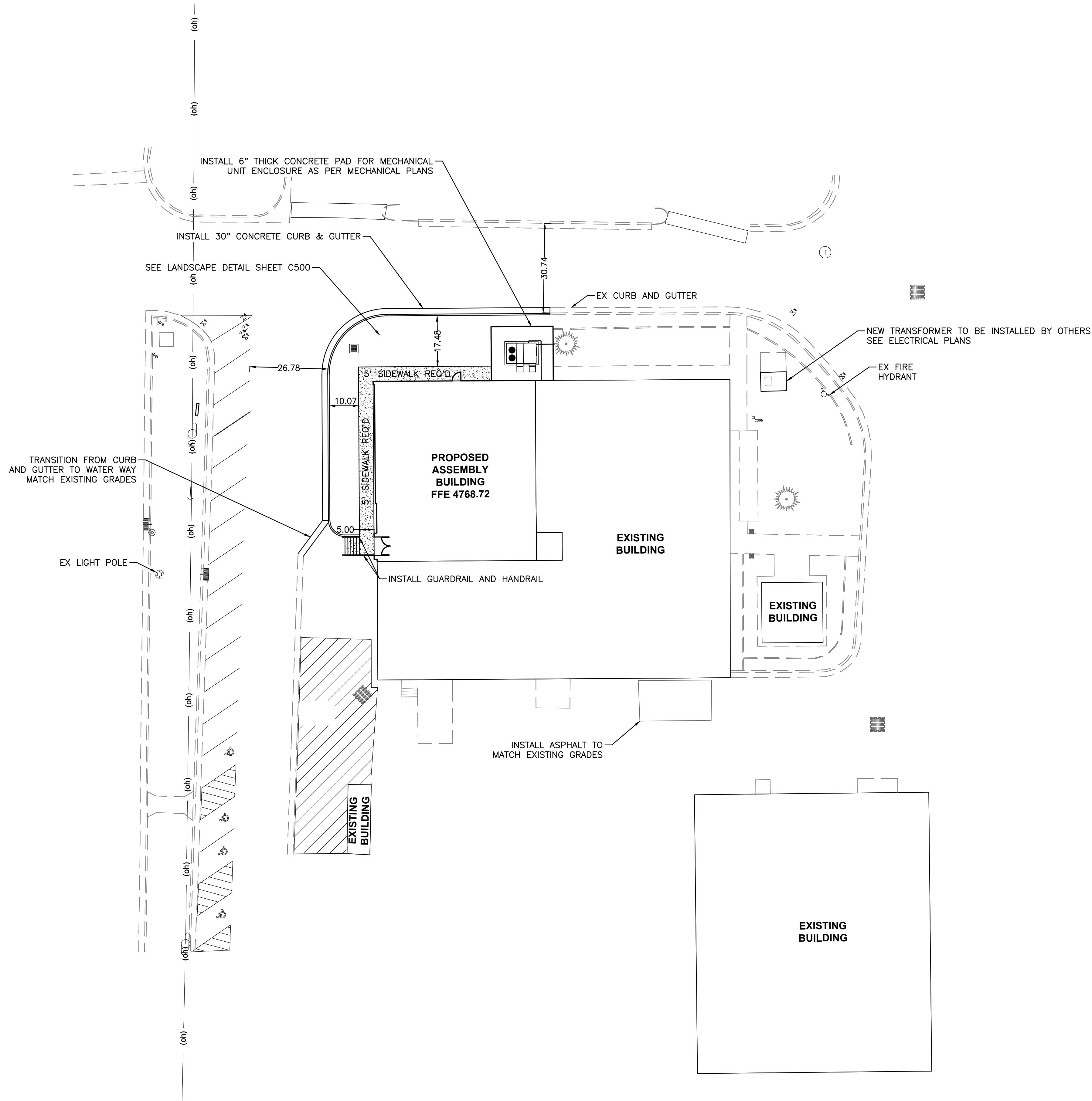
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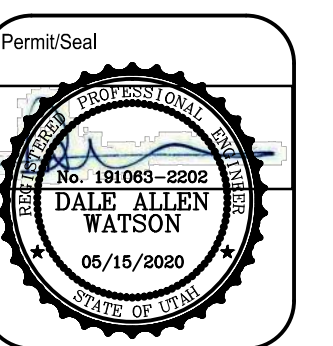


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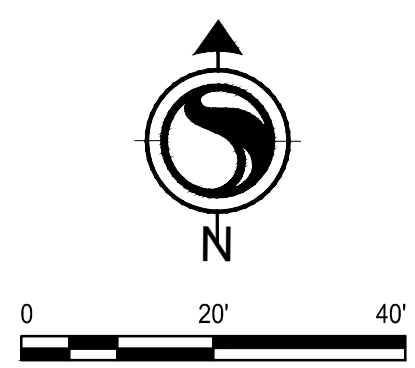
DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		



DESIGNED BY	PROJECT NO.	DATE
DALE ALLEN WATSON	75TH AIR BASE WING	07/15/2020

HILL AIR FORCE BASE - BUILDING 591
 SITE PLAN

C100
 Sheet: 6 of 94



5

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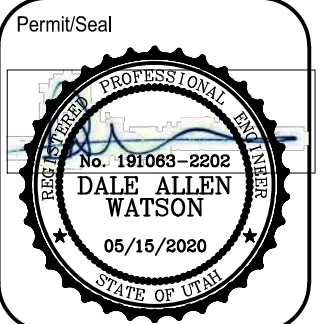


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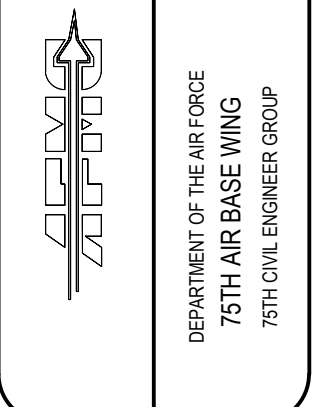
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DESCRIPTION	DATE	APPR.	MARK
FINAL DESIGN 100%	07/15/2020		



REVISION BY	DATE	DATE
PROJECT NO.	DATE CODE	DATE
LEGACY PROJECT NO.	DATE	DATE
TEAM	DATE	DATE
BASE PROJECT NUMBER		



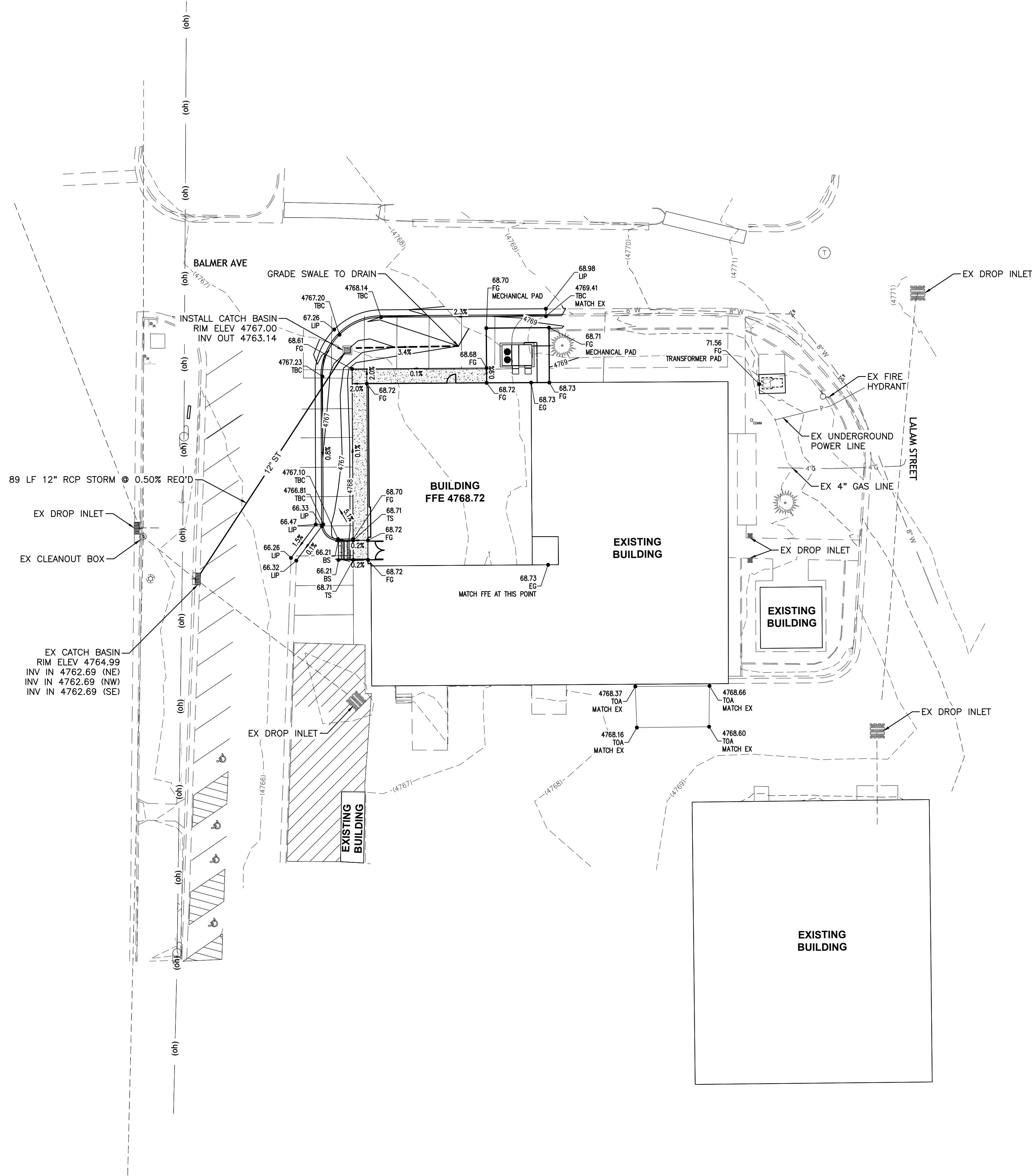
DEPARTMENT OF THE AIR FORCE
 75TH AIR BASE WING
 75TH CIVIL ENGINEER GROUP

HILL AIR FORCE BASE - BUILDING 591

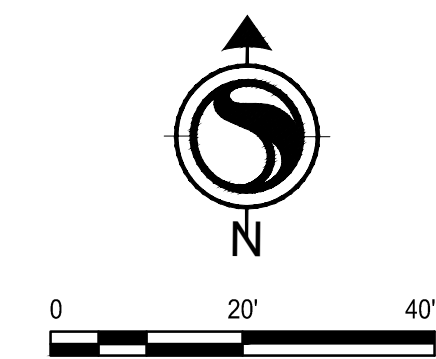
GRADING DRAINAGE PLAN

C200

Sheet: 7 of 94



- ABBREVIATIONS**
- FG FINISH GRADE
 - EG EXISTING GRADE
 - EX EXISTING
 - TBC TOP BACK CURB
 - FFE FINISH FLOOR ELEVATION
 - TW TOP OF WALL
 - BW BOTTOM OF WALL
 - TS TOP OF STAIRS
 - BS BOTTOM OF STAIRS



1. Design Criteria

- 1.1. Governing Building Code.....2018 International Building Code (IBC)
UFC 3-301-01
- A. Risk Category.....II
- 1.2. Roof Live Loading
 - A. Roof Live Load.....20 psf
 - B. Roof Snow Load.....30 psf + Drift per IBC
 - 1. Ground Snow Load, P_g.....47 psf
 - 2. Snow Exposure Factor, C_e.....1.0
 - 3. Importance Factor, I_s.....1.0
 - 4. Thermal Factor, C_t.....1.0
 - 5. Slope Factor, C_s.....1.0
 - C. Roof Rain Load Intensity, i.....1.54 in. per hour
- 1.3. Earthquake
 - A. Seismic Design Category.....D
 - B. Spectral Response Accelerations
 - S_s = 1.326 g S_{DS} = 0.894 g
 - S₁ = 0.477 g S_{D1} = 0.477 g
 - C. Soil Site Class.....D
 - F_a = 1.0 F_v = 1.5
 - D. Basic Seismic-Force-Resisting System.....Steel Ordinary Concentric Brace Frame
 - R = 3.25 Ω₀ = 2.0 C_u = 3.25
 - E. Importance Factor, I_e.....1.0
 - F. Redundancy Factor, ρ.....1.0
 - G. Analysis Procedure.....Equivalent Lateral Force (Static)
 - H. Seismic Design Coefficient, C_s.....0.354
 - I. Design Base Shear.....54 kips
- 1.4. Wind
 - A. Basic Design Wind Speed, V.....107 mph
 - B. Velocity pressure exponent coefficient, K_d.....0.85
 - C. Ground elevation factor, K_e.....0.84
 - D. Exposure category.....C
 - E. Internal Pressure Coefficient, GC_p.....0.18
 - F. Topographic Factor, K_t.....1.0

- 1.5. Foundation
 - A. Soil Bearing Pressure:.....Footings are designed for 3000 psf allowable soil bearing pressure per HAFB instructions. Footings shall bear on a minimum of 12 inches of compacted structural fill or more as required to reach suitable native soil.
 - B. Coefficient of Friction:.....0.40
- 1.6. Classification for Fire Rated Construction
 - A. For the purpose of determining fire-resistive assemblies, the following framing systems shall be considered unrestrained.
 - 1. Open web steel framing members supporting metal decking.
 - 2. Single span and simply supported end spans of multiple bays that are supported by bearing walls:
 - a. Steel beams supporting metal decking.
 - b. Open web steel joists supporting concrete slabs or precast concrete units.
 - c. Metal decking.
 - 3. Interior spans of multiple bays supported by bearing walls:
 - a. Steel beams supporting metal decking.
 - B. All other steel floor and roof framing members shall be considered restrained.
 - C. Diagonal members in vertical braced frames shall be considered as secondary members for fire proofing protection.

2. Earthwork

- 2.1. Clearing: The area of the new addition shall be scraped to remove the top 4 inches of soil, including all vegetation and debris.
- 2.2. Proof rolling: The natural undisturbed soil below all footings shall be proof rolled prior to placing concrete. Remove all soft spots and replace with compacted structural fill.
- 2.3. Compacted structural fill: All fill material shall be a well-graded granular material with a maximum size less than 4 inches and with not more than 10 percent passing a No. 200 sieve. It shall be compacted to 95 percent of the maximum laboratory density as determined by ASTM D1557. All fill shall be tested (See Specifications and the Quality Assurance section of the GSN).
- 2.4. It shall be the responsibility of the Contractor to brace and shore excavations as required.

3. Concrete

- 3.1. Materials shall comply with the Standards specified in American Concrete Institute (ACI) 318-14, "Building Code Requirements for Structural Concrete".
 - A. Concrete mix design requirements shall be as follows:

Location	Fc at 28 days (psi)	Max W/C Ratio	Air Content (%)	Max Aggregate Size	Exposure Classes*		
					F	S	C
Footings	3000	0.50	-	1"	F0	S0	C0
Interior Slabs on Grade	3000	0.45	-	1"	F0	S0	C0
Exterior Walls	4500	0.45	6	¾"	F1	S0	C1
Walls	4000	0.45	-	¾"	F0	S0	C0
Fiers	4000	0.45	-	¾"	F0	S0	C0
All other site cast concrete	4500	0.45	6	1"	F1	S0	C1

 - * Exposure Classes are per ACI 318, Section 19.13.1.1, where F, S and C are exposure categories for freezing and thawing, sulfate, and corrosion protection of reinforcement, respectively.
 - B. Cementitious Materials:
 - 1. Portland Cement (ASTM C150):
 - a. Type I or II for exposure class S0.
 - b. Type II or V for exposure class S1.
 - c. Type V for exposure class S2 and S3.
 - 2. Fly Ash (ASTM C618, Class C or F): maximum fly ash content as a percentage of total weight of cementitious materials shall be 25 percent.
 - C. Concrete Density (Maximum Air Dry Weight):
 - 1. Normal weight concrete shall be approximately 145 to 155 pounds per cubic foot. Aggregate shall be ASTM C33.
 - D. Steel Reinforcement:
 - 1. ASTM A615 Grade 60, fy = 60,000 psi min. unless noted otherwise.
 - E. Fiber Reinforcement:
 - 1. Synthetic Micro-Fiber: fibrillated polypropylene micro-fibers engineered and designed for use in concrete, complying with ASTM C 1116, 1/2 to 1-1/2 inches long. Add to concrete at a dosage rate of 1.5 lb/cu yd where indicated.
 - 2. Macrosynthetic Fibers: monofilament, non-fibrillating fibers made of a polypropylene/polyethylene blend. Macro fibers shall comply with ASTM C 1116, Type III, and meet the criteria of ASTM D 7508.
 - a. Where noted in the Steel Deck Schedule, macrosynthetic fibers shall be added to concrete over steel deck at a dosage rate determined by the fiber manufacturer but not less than 4 lb/cu yd.
 - b. Do not burn off exposed fibers.
 - F. Admixtures:
 - 1. Air-entraining admixtures, comply with ASTM C 260 (when used).
 - a. Tolerance on air content as delivered shall be +/- 1.5%.
 - b. When air content of a trowel finished floor slab exceeds 3%, there is an increased risk for delaminations and blistering to occur. When this situation is present, the Contractor shall pay special attention to the finishing procedures to help minimize such risks. Refer to ACI 302.1R-15 "Guide for Concrete Floor and Slab Construction" for proper finishing guidelines.
 - 2. The use of super plasticizers and water reducers is allowed, but not required.
 - 3. Calcium chloride or admixtures containing calcium chloride shall not be added to the concrete mix.

- G. Chloride Ion: Maximum water soluble chloride ion concentrations in hardened concrete at age between 28 and 42 days contributed from the ingredients including water, aggregates, cementitious materials, and admixtures shall not exceed a maximum, by weight of cement, of 1.00% for concrete with exposure class C0, 0.30% for concrete with exposure class C1, 0.15% for concrete with exposure class C2, and 0.06% for all prestressed concrete.
- H. Slump Limit: 4 inches, maximum for all concrete prior to the addition of plasticizers and water reducing admixtures. The concrete supplier shall indicate the final slump of each concrete mix in the submitted mix design.
- I. Shrinkage Limit: Interior slabs on grade shall have a drying shrinkage limit of 0.040 percent tested in accordance with ASTM C157. Drying shrinkage test results shall be submitted with mix designs.
- J. Only one grade or type of concrete shall be poured on the site at any given time.

- 3.2. Formwork shall comply with ACI Standards Publication 347 and the project specifications. The Contractor shall be responsible for the design, detailing, care, placement and removal of the formwork and shores.
 - A. Pre-camber screeds with a camber of 1/4" per every 10'-0" of span to compensate for dead load deflection, unless noted otherwise.

- 3.3. Concrete cover requirements for deformed bar reinforcing steel shall comply with ACI 318, "Building Code Requirements for Structural Concrete".
 - A. Cast-in-place Concrete: Specified Cover
 - 1. Cast against and permanently exposed to earth:.....3"
 - 2. Formed concrete exposed to earth or weather:
 - #6 thru #18 bars.....2"
 - #5 and smaller bars.....1.1/2"
 - 3. Concrete not exposed to weather or in contact with ground:
 - Slabs, Walls, Joists; #11 bars and smaller.....3/4"
 - Beams, Columns: primary reinforcement, ties, stirrups, spirals.....1.1/2"

- 3.4. Construction Joints and Control Joints:
 - A. Provide a surface intentionally roughened to ¼" amplitude in all wall footings. A continuous keyway shall not be used for concrete shear wall to footing connections, unless specifically indicated. Refer to project plans, schedules and details for the shear wall to footing connection requirements.
 - B. All horizontal and vertical construction joints shall have a surface intentionally roughened to ¼" amplitude. A continuous 2 X 4 keyway may be used on elements other than shear walls.
 - C. Provide reinforcement dowels to match the member reinforcement across the joint, unless noted otherwise. For dowels across construction joints and wall to footing connections of concrete shear walls, refer to specific project plans, schedules, and details.
 - D. Slabs on grade shall have construction or control joints spaced not to exceed 30 times the slab thickness in any direction.
 - E. Control joints shall be installed in slabs on grade so the length to width ratio of the slab is no more than 1.25:1. Control joints shall be completed within 12 hours of concrete placement. See typical details for joint configuration.
 - F. Control joints in visually exposed walls, unless noted otherwise: (Joints shall line up with masonry and architectural joints, see drawings.)
 - 1. Vertical control joints at 10'-0" on center.
 - 2. Reinforcing shall be continuous through control and construction joints, unless noted otherwise.

- 3.5. Detailing: All reinforcing, including welded wire fabric, shall be detailed, bolstered & supported to comply with ACI 315, "Details and Detailing of Concrete Reinforcement" and the Concrete Reinforcing Steel Institute (CRSI) recommendations. Reinforcing bars shall not be welded unless specifically shown on drawings.
 - A. All reinforcing shall be developed in compliance with the CONCRETE REINFORCING BAR DEVELOPMENT AND LAP SPLICE SCHEDULE. As indicated in the drawings or upon approval of the Contracting Officer Representative, standard tension hooks or headed bars described by the TENSION HOOK DEVELOPMENT SCHEDULE or the TENSION HEADED BAR DEVELOPMENT SCHEDULE may be used in lieu of straight bars.
 - B. All mechanical splices shall have the capacity to develop at least 1.25fy of the bar in tension or compression. Type 2 couplers have the capacity to develop the full tension capacity of the bar. Type 1 couplers shall not be used in moment frames and shear wall jamb columns. Mechanical splices shall have a current ICC or IAPMO code evaluation report; "Lenton" (IAPMO No. 0129), "Taper-Lock" (IAPMO No. 0319) or "SAS Stressteel" (ICC ESR-1163), "Bar-Lock" (ICC ESR-2495) or approved equivalent may be used. Mechanical couplers on adjacent bars shall be staggered a minimum of 24" apart along the longitudinal axis of the reinforcing bars.
 - C. All embedded elements and dowels shall be securely tied to formwork or to adjacent reinforcing prior to the placement of concrete.
 - D. Use chairs or other support devices recommended by CRSI to support and tie reinforcement bars and welded wire fabric prior to placing concrete. Welded wire fabric shall be continuously supported at 36" o.c. maximum.
 - E. See typical details for reinforcing at wall intersections and ends, reinforcing around wall openings and suspended slab openings, vertical wall dowels, concrete column ties and splices in vertical column reinforcing.
 - F. See typical details for column cross-ties. The 90-degree hooks of two successive cross-ties engaging the same longitudinal bars shall be alternated end for end.
 - G. Where required, reinforcement is to be terminated in a standard hook or headed bar anchor. Refer to the TENSION HOOK DEVELOPMENT SCHEDULE, the TENSION HEADED BAR DEVELOPMENT SCHEDULE and the REINFORCEMENT END HOOK SCHEDULE as appropriate. Unless otherwise noted, a standard hook or headed bar are equivalent and may be substituted at the Contractor's option.
 - H. Contractor shall coordinate placement of all openings, curbs, dowels, sleeves, conduits, bolts, inserts and other embedded items prior to concrete placement.
 - I. All reinforcement shall be bent cold, and shall be bent only once at the same location. All reinforcement shall be shop bent, unless otherwise permitted by the Contracting Officer Representative.

- 3.6. Minimum Reinforcing: Wall reinforcing shall be as follows, unless noted otherwise:

Wall Thickness	Horizontal Reinforcing	Vertical Reinforcing
6"	#4 @ 13" o.c.	#4 @ 18" o.c.
8"	#5 @ 15" o.c.	#4 @ 16" o.c.
10"	#5 @ 12" o.c.	#4 @ 13" o.c.
12"	#4 @ 13" o.c. Each Face	#4 @ 18" o.c. Each Face
Others	0.25% of Wall Area	0.15% of Wall Area

Spacing shall exceed neither three times the wall thickness nor 18". In addition to the above reinforcing, 2 - #5 x continuous horizontal bars shall be placed at the bottom of the wall (near the footing) and at each floor level, at the roof level and at the top of wall.

- 3.7. No aluminum conduit or product containing aluminum or any other material injurious to concrete shall be embedded in concrete.
- 3.8. Unless otherwise noted, all slabs on grade shall be 4" thick.

4. Structural Steel

- 4.1. Material:
 - A. W-Shapes: ASTM A992, (Fy = 50 ksi), except as noted otherwise
 - B. All Other Shapes and Plates: ASTM A36 (Fy = 36 ksi), except as noted otherwise
 - C. Rectangular and Square Hollow Structural Sections (HSS): ASTM A500, Grade C (Fy = 50 ksi)
 - D. Round HSS: ASTM A500, Grade C (Fy = 46 ksi)
 - E. Steel Pipe: ASTM A53, Grade B (Fy = 35 ksi)
 - F. Steel Deck:
 - 1. Galvanized Steel Sheet: ASTM A653 or A1063, Grade 50 with G60 galvanized coating.
 - G. High-Strength Bolts:
 - 1. Group A: ASTM F3125 Grades A325 & F1625
 - 2. Group B: ASTM F3125 Grades A490 & F2280
 - 3. Group C: ASTM F3043 & ASTM F3111
 - H. Deformed Bar Anchors (DBA): ASTM A496 or ASTM A1064, 70 ksi minimum yield strength.
 - I. Headed Stud Anchors (HSA): ASTM A108, with dimensions complying with AISC specifications.
 - J. Anchor Rods: ASTM F1554, Grade 36, unless noted otherwise, with ASTM A563 heavy hex nuts and ASTM F436 hardened washers
- 4.2. Fabrication and construction shall comply with the following Codes and Standards:
 - A. Steel fabricator must be AISC certified in the State of Utah. Contractor shall provide fabricator's company name and certification number on a submittal form stamped and signed by the Contractor.
 - B. American Institute of Steel Construction (AISC) 360-16, "Specification for Structural Steel Buildings"
 - C. AISC 341-16, "Seismic Provisions for Structural Steel Buildings"



The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing. Any errors or omissions shall be reported to Stantec without delay. The Copyright to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.



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- D. AISC 303-16, "Code of Standard Practice for Steel Buildings and Bridges" excluding the following: Section 3.3 (last two sentences of first paragraph), Section 4.4, Section 4.4.1, Section 4.4.2, Section 4.5, and Section 7.13.3
 - 1. The architectural drawings are the prime contract drawings. Consultants' drawings by other disciplines are supplementary to the architectural drawings. The structural drawings shall be used in conjunction with the architectural drawings. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in architectural, structural, and/or other consultants' drawings. Refer to the Special Instructions section of the general notes, below.
- E. AISC/RCS 2014, "Specification for Structural Joints Using High-Strength Bolts"
- F. American Welding Society (AWS) D1.1:2015, "Structural Welding Code – Steel" (specific items do not apply when they conflict with the AISC requirements)
- G. American Welding Society (AWS) D1.8:2016, "Structural Welding Code – Seismic Supplement" (specific items do not apply when they conflict with the AISC requirements)
- H. Steel Joist Institute (SJI): 100-15, "44th Edition Standard Specification Load Tables and Weight Tables for Steel Joists and Joist Girders K-Series, LH-Series, DLH-Series, Joist Girders"; 200-15, "Standard Specification for Composite Steel Joists, CJ-Series"
- I. American Iron and Steel Institute (AISI) S100-16, "North American Specification for the Design of Cold-Formed Steel Structural Members"

- 4.3. Structural shapes and plates shall be fabricated from newly rolled (milled) one-piece sections without splices, unless specifically noted otherwise on the structural drawings. Connections for structural steel shall comply with the structural drawings, unless written approval is given by the Contracting Officer Representative.

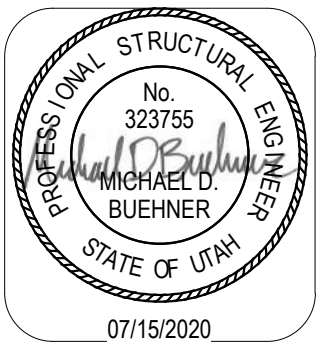
- 4.4. Welding:
 - A. It is recommended the steel erection contractor and steel fabricator contact the Quality Assurance Agency prior to beginning any welds. A program of joint preparation and welding procedures should be worked out between the two parties before the welding is started so that correct welds will be made from the beginning.
 - B. Certification of Welders: All shop and field welding shall be executed by AWS certified welders who have been specifically certified for the process of welding being performed. The welder's certification will be considered as being current unless the welder is not engaged in the process of welding being performed for a period exceeding six months or there is a specific reason to question a welder's ability as required by AWS. Certification and records must comply with AWS Standards. Certification and appropriate records must be provided to the Contracting Officer Representative prior to beginning work.
 - C. Electrodes: E-70 XX or as noted otherwise. E60 XX may be used for welding steel floor and roof decks.
 - D. Minimum Welds: All intersecting steel shapes that are not bolted shall be connected by a fillet weld all around, unless noted otherwise. Fillet weld sizes that are not shown shall be 1/16" less than the thinnest of the connected parts for thicknesses 1/4" and larger. Fillet welds on plates less than 1/4" shall be of the same size as the thinnest of the connected parts.
 - E. Reinforcing Bars: Do not weld rebar except as specifically detailed in the drawings. In such cases, use only AWS standards. Do not substitute reinforcing bars for deformed bar anchors (DBAs), machine bolts, or headed stud anchors (HSAs).
 - F. Bolts: Do not apply any welds, including "tack" welds to bolts, including anchor bolts, except as specifically detailed in the drawings.
 - G. Headed Stud Anchor (HSA) welding and Deformed Bar Anchor (DBA) welding shall conform to the manufacturer's specifications. Welding shall comply with AWS D1.1 Section 7.6 through 7.9 and Annex G.
 - H. Special Provisions for Welds in the SFRS (Seismic Force Resisting System): Welds used in members and connections of braced frames and collector elements shall comply with these requirements. Welding methods, procedures and quality control shall comply with AISC 341 Chapter J, AWS D1.1, AWS D1.8 and the following:
 - 1. Demand Critical Welds: The following CJP groove welds are demand critical and shall comply with the special requirements for Demand Critical Welds.
 - a. Beam flanges to columns, single plate shear connections to columns.
 - b. Column splice welds including column bases in braced frames.
 - c. Other welds designated as demand critical in the drawings.
 - 2. Welding shall be performed in accordance with AISC 341 Chapter J and a welding procedure specification (WPS) as required in AWS D1.1. WPS variables shall be within the parameters established by the filler metal manufacturer. WPS for demand critical welds shall also comply with AWS D1.8 Section 6.1.
- 3. Consumables for Welding:
 - a. Welds used in members and connections of the SFRS shall be made with filler metals meeting the requirements specified in section 6.3 of AWS D1.8.
 - b. Filler metal properties shall be as follows:

Property	70 ksi Classification	80 ksi Classification
Yield Strength, ksi	58 min	68 min
Tensile Strength, ksi	70 min	80 min
Elongation (%)	22 min	19 min
CVN Toughness, ft-lbf	20 min @ 0 degrees F	20 min @ 20 degrees F

- c. Filler metals in Demand Critical Welds shall receive Heat Input Testing that achieves the properties listed above with CVN toughness of 40 ft-lbf min @ 70 degrees F and shall comply with AWS D1.8 section 6.3.5 to 6.3.8.
- d. Diffusible Hydrogen: Welding electrodes and electrode-flux combinations shall meet the requirements of AWS D1.8 Table 6.3. The manufacturer's Certificate of Conformance shall be considered adequate proof of this requirement.
- e. Intermixed filler metals shall meet the requirements of AWS D1.8 section 6.3.4.
- 4. Backer bars shall be removed from the beam bottom flange to columns. The root of the weld shall be bag gouged to sound metal to remove all slag and cracks. Weld the bag gouged region and finish welding using a reinforcing fillet weld. Comply with AWS D1.8 sections 6.7 and 6.8. This requirement also applies to all non-fusible backing used at beam to column CJP welds. Comply with AWS D1.8 section 6.9.
- 5. Steel backer bars need not be removed from the beam top flange connections to columns or at continuity plate connections to columns provided that the backer bars are welded to the column flange with a continuous 5/16 inch fillet weld on the edge below the CJP groove weld for the entire length of the backer bar.
- 6. Backing at beam flange to column flange joints shall not be welded to the underside of the beam flange, nor tack welded at this location. If fillet welds or tack welds are placed between the backing and the beam flange in error, they shall be repaired per AWS D1.8 Section 6.9.3.
- 7. Details and treatment of weld tabs shall be per AWS D1.8 Section 6.11. Use weld tabs as specified in AWS D1.1 Section 5.31 except at the end of CJP welds adjacent to the column web/flange juncture at continuity plates. Remove weld tabs to within 1/8 inch of the base metal surface after welding. Where weld tabs are used at continuity plates, remove them to within 1/4 inch of the base metal surface after welding. Finish the edge where weld tabs are removed to a surface roughness of 500 micro-inches.
- 8. Quality requirements for weld access holes for all demand critical welds shall comply with AWS D1.8 Section 6.10. Weld access hole shape shall be per AWS D1.8 Figure 6.2.
- 9. Beam bottom flange welding sequence shall comply with AWS D1.8 Section 6.14.
- 10. Preheat, and interpass temperatures shall comply with AWS D1.1 Section 3.5 and AWS D1.8 Section 6.5. Additional welding provisions applicable to demand critical welds only are as follows:
 - a. Welding processes shall comply with AWS D1.8 Section 6.2.
 - b. Filler metal packaging and exposure limitations shall comply with AWS D1.8 Section 6.4.



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ADDITION/RENOVATION RESERVE
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GENERAL STRUCTURE NOTES

SE001
Sheet: 8 of 94

7/16/2020 11:04:15 AM ORIGINAL SHEET - ANS D

- 11. Tack welds shall comply with AWS D1.1 Section 5.18 and AWS D1.8 Section 6.6 and 6.16. Tack welds attaching backing bars and weld tabs at demand critical welds shall be placed where they are incorporated into a final weld.
- 12. Brazeed Frame Welding: Lengths shown for fillet welds at brace-to-gusset, gusset-to-baseplate, and column-to-gusset connections are minimums, intended for establishing gusset plate dimensions. Weld entire contact length at these joints, typical.

4.5. Bolted Connections:

- A. Provide snug tightened joints with Group A (threads not excluded) bolts for steel to steel connections, unless noted otherwise. Snug tightened joints shall be used in connections for simple span framing and beam (or girder) to bearing plate connections. Snug tight is the condition that exists when all of the plies in a connection have been pulled into firm contact by the bolts in the joint and all of the bolts in the joint have been tightened sufficiently to prevent the removal of the nuts without the use of a wrench. The snug tightened condition is typically achieved with a few impacts of an impact wrench, application of an electric torque wrench until the wrench begins to slow, or the full effort of a worker on an ordinary spud wrench.
- B. Provide pretensioned joints with Group A (threads not excluded) Type 1 bolts for all steel to steel connections that are part of the Lateral Force Resisting System (LFRS). Faying surfaces shall meet the requirements of a slip-critical Class A surface except for faying surfaces of end plate moment connections. Tighten bolts by the turn of the nut, calibrated wrench, or direct tension indicator method. Alternate fastener designs as defined by AISC shall be submitted to the Contracting Officer Representative for review and acceptability prior to installation. Provide hardened washers beneath turned element.
- C. Provide hardened washers beneath the turned element of all bolts or nuts. Provide hardened beveled washers, to compensate for the lack of parallelism, where the outer face of the bolted parts has a slope greater than one in twenty with respect to the plane normal to the bolt axis. Hardened washers or plates installed over oversized holes or slotted holes shall be at least 5/16" thick and shall conform to ASTM F436. Plates or bars installed at slotted holes shall have a size sufficient to completely cover the slot after installation.
- D. Where a steel to steel beam connection is not detailed in the drawings, provide a standard AISC framed connection with the capacity to support one half of the total uniform load capacity of the given shape for the span and for the steel specified.
- E. Bolts, nuts and washers shall not be reused.

4.6. Beam Web Stiffener Plates:

- A. Provide full-height web stiffener plates to each side of all beams above all bearing points. Unless noted otherwise, stiffener plates shall be the thickness indicated in the typical stiffener plate detail.

4.7. Open Web Steel Joists:

- A. The steel joist supplier shall be responsible for the design of all open web steel joists. Joists with slopes greater than 1/2 inch per foot shall be designed to meet or exceed the load capacities, listed in the SJ load tables, of the joist sizes indicated on the framing plan, as if the joists were installed level.
- B. Open web joists shall be designed with deflection limits of L/240 for total load and L/360 for live load, where L is the joist span.
- C. Where uplift loads due to wind are indicated, rows of bottom chord bridging shall be provided at the first bottom chord panel points per SJ Specifications. This is in addition to the bridging shown on the framing plans.
- D. Provide special bearing ends to accommodate slopes from sloped joists or sloped bearing conditions.
- E. Camber: All joists shall be cambered as specified in the SJ specifications, unless noted otherwise.
- F. Field Modifications: Do not modify any joist, including holes through the top and bottom chords, without the written consent and direction from the manufacturer.
- G. Shop Drawings and Design Calculations: Shop drawings for all joists used in the project shall be submitted for review. Prior to the fabrication of joists, the open web steel joist manufacturer shall prepare complete joist calculations under the direct supervision of a Professional Engineer licensed in the State of Utah. Calculations shall be submitted for review for joists designated as SPECIAL or SP and for all joists or girders with axial loads or additional concentrated loads (as noted on the drawings). Submitted calculations shall bear the seal of a Professional Engineer licensed in the State of Utah.
- H. Stabilizer Plates: Provide steel joist and joist girder stabilizer plates as indicated. Stabilizer plates shall be 6" x 6" with a 13/16" diameter hole with 1.1/2" minimum edge distance, and shall extend 3" minimum below the bottom chord of the joist. Plate thickness shall be equal to the chord gap minus 1/4", or 3/4", whichever is less.
- I. Verify size, weight, location and configuration of all roof top equipment with Contracting Officer Representative. Provide steel frames for support of roof top equipment as indicated on structural details in the structural drawings. Coordinate openings with the Mechanical and General Contractor.
- J. All concentrated loads greater than 100 pounds supported by open web steel joists shall be located within 6 inches of joist panel points or the joist shall be reinforced with an additional web member. Refer to the "TYPICAL DETAIL AT ADDITIONAL CONCENTRATED POINT LOAD" in the structural drawings.
- K. Concentrated point loads, single or multiple, totaling 100 pounds or less can be located at any point along the top or bottom chord of an open web steel joist between adjacent panel points without meeting the requirements above. A limit of four concentrated 100# maximum point loads per joist will be permitted on spans of 12' or greater, one concentrated 100# max. load on spans less than 12', unless specifically noted otherwise on the structural drawings.
- L. Joist bridging shall never be used to support hanging loads.
- M. Bracing of miscellaneous items (mechanical, electrical, plumbing, etc.) to the bottom chord of joists will not be allowed in any instance. All lateral braces must connect to the top flange/top chord of the framing member above unless noted otherwise on the structural drawings.

5. Miscellaneous

5.1. Post-Installed Anchors in Concrete and Masonry

- A. Anchorage to hardened concrete and grout-filled masonry shall include all mechanical and adhesive anchors and epoxy doweled reinforcing bars of size, quantity, spacing, and embedment as shown on the drawings. Additional anchors shall not be used without approval from the Contracting Officer Representative prior to installation.
- B. Special inspection is required during the installation of all post-installed anchors. Refer to applicable code evaluation reports and the Quality Assurance and Statement of Special Inspections sections of the General Structural Notes.
- C. Anchorage to Concrete:
 - All post-installed anchors into hardened concrete shall be selected from the following pre-approved products, unless noted otherwise:

Steel Screw Anchor	Evaluation Report
Hilti KWIK HUS-EZ	ICC ESR-3027
DeWalt Screw-Bolt+	ICC ESR-3889
Simpson Titen HD	ICC ESR-2713

Steel Expansion/Wedge Anchor	Evaluation Report
Hilti KWIK Bolt TZ	ICC ESR-1917
ITW Red Head Trubolt+	ICC ESR-2427
DeWalt Power-Stud+ SD2	ICC ESR-2502
Simpson Strong-Bolt 2	ICC ESR-3037

Adhesive Anchor System	Evaluation Report
Hilti HIT-HY 200	ICC ESR-3187
Hilti HIT-RE 500-V3	ICC ESR-3814
DeWalt AC200+	ICC ESR-4027
DeWalt Pure 110+	ICC ESR-3298
Simpson SET-XP	ICC ESR-2508

- 2. Adhesive anchors shall be installed into concrete having a minimum age of 21 days. For installations sooner than 21 days, consult the adhesive manufacturer.

D. Anchorage to Masonry:

- 1. All post-installed anchors into grout-filled masonry shall be selected from the following pre-approved products, unless noted otherwise:

Steel Screw Anchor	Evaluation Report
Hilti KWIK HUS-EZ	ICC ESR-3056
DeWalt Screw-Bolt+	ICC ESR-4042
Simpson Titen HD	ICC ESR-1056

Steel Expansion/Wedge Anchor	Evaluation Report
Hilti KWIK Bolt 3	ICC ESR-1385
DeWalt Power-Stud+ SD1	ICC ESR-2966
Simpson Wedge-All	ICC ESR-1396

Adhesive Anchor System	Evaluation Report
Hilti HIT-HY 270	ICC ESR-4143
DeWalt AC100+ Gold	ICC ESR-3200

- E. Alternate anchors or adhesives are permitted with approval of the Contracting Officer Representative. The Contractor shall submit the proposed anchor product data and code evaluation report demonstrating the anchor is equivalent or exceeds the capacity of the specified anchor.
- F. Installation of adhesive anchors horizontally or upwardly inclined to support sustained tension loads shall be performed by personnel certified by an applicable certification program. Certification shall include written and performance tests in accordance with the ACI/CRSI Adhesive Anchor Installer Certification program, or equivalent. Proof of current certification shall be submitted to the Contracting Officer Representative for approval prior to commencement of installation.
- G. Anchors shall be installed according to the Manufacturer's Printed Installation Instructions and applicable code evaluation reports including:
 - Hole diameter, depth, and cleaning procedure
 - Adhesive mixing, preparation, and placement
 - Installation torque
- H. Locate all existing reinforcement and embedded items prior to drilling into concrete or masonry elements. Do not damage rebar or embeds while drilling or installing anchors.
- I. Grout all defective or abandoned holes with non-shrink grout or an injectable epoxy adhesive matching the surrounding concrete compressive strength. Consult the Contracting Officer Representative for additional requirements at architecturally exposed concrete.
- J. Drilled anchors are not allowed in post-tensioned concrete without approval of the Contracting Officer Representative.
- K. Carbon steel anchors are limited to use in dry, interior locations.

- 5.2. The project specifications are not superseded by the General Structural Notes but are intended to be complementary to them. Consult the specifications for additional requirements in each section. Notes and specific details on the drawings shall take precedence over General Structural Notes and typical details.

- 5.3. The architectural drawings are the prime contract drawings. Consultant drawings by other disciplines are supplementary to the architectural drawings. All omissions or conflicts, including dimensions, between the various elements of the consultants' drawings and/or specifications shall be brought to the attention of the Contracting Officer Representative before proceeding with any work involved. In case of conflict, follow the most stringent requirement as directed by the Contracting Officer Representative without additional cost to the Owner. Any work done by the Contractor after discovery of such discrepancy shall be done at the Contractor's risk.

- 5.4. The structural drawings shall be used in conjunction with the architectural drawings. Primary structural elements and overall structural layout are indicated within the structural plans and details. Some secondary elements, architectural layouts, alcoves, elevations, slopes, depressions, curbs, mechanical equipment and electrical equipment, are not indicated within the structural drawings. Detailing and shop drawing production for structural elements will require information (including dimensions) contained in the architectural, structural and/or other consultants' drawings.

5.5. Shoring and Bracing Requirements:

- A. Roof Structures -- The General Contractor is responsible for the method and sequence of all structural erection. The Contractor shall provide temporary shoring and bracing as the method of erection requires to provide adequate vertical and lateral support. Shoring and bracing shall remain in place as the chosen method requires until all permanent members are in place and all final connections are completed, including all roof and floor attachments. The building shall not be considered stable until all connections are complete.
- B. Walls above grade shall be braced until the structural system is complete. Walls shall not be considered to be self-supporting.

- 5.6. All expansion joints (E.J.) shown in the structural drawings shall be considered seismic separation joints, unless noted otherwise.

- 5.7. Submittals: A copy of all shop drawings that have been submitted for review must be kept at the construction site for reference. These drawings must bear the appropriate review stamps. The shop drawing review shall not relieve the Contractor of the responsibility of completing the project according to the contract documents. The General Contractor shall review and mark all shop drawings prior to submitting them to the Contracting Officer Representative for review. Shop Drawings made from reproductions of (these) contract drawings will be rejected.

- 5.8. Project Coordination: It shall be the responsibility of the General Contractor to coordinate with all trades any and all items that are to be integrated into the structural system. Openings or penetrations through, or attachments to the structural system that are not indicated on these drawings shall be the responsibility of the General Contractor and shall be coordinated with the Contracting Officer Representative. The order of construction is the responsibility of the General Contractor. It is the Contractor's obligation to provide all items necessary for the chosen procedure.

- 5.9. Contractor shall field verify all dimensions, and conditions. If the contract drawings do not represent actual conditions, Contractor shall notify Contracting Officer Representative prior to fabrication or construction within that area.

- 5.10. Notice of Copyright: The structural drawings, plans, schedules, notes and details are hereby copyrighted by Reaveley Engineers. Submission or distribution of documents to meet official regulatory requirements or for similar purposes in connection with the project is not to be construed as publication in derogation of Reaveley Engineers' reserved rights. The documents defining the structure are instruments of service prepared by Reaveley Engineers for one use only. Furthermore, these documents shall not be reproduced, or copied, in whole or in part by the Contractor or subcontractors for preparation of shop drawings or other submittals.

6. Quality Assurance

6.1. Quality Assurance Agency Requirements:

- A. The Contractor shall engage a qualified Quality Assurance Agency (QAA) to provide all special inspection and quality assurance testing for the project. The QAA shall provide all information necessary for the building official to determine that the agency meets the applicable requirements.
 - The QAA shall be objective, competent and independent from the Contractor responsible for the work being inspected. The agency shall disclose to the building official and the registered design professional in responsible charge possible conflicts of interest so that objectivity can be confirmed.
 - The QAA shall have adequate equipment to perform required tests. The equipment shall be periodically calibrated.
 - The QAA shall employ experienced personnel educated in conducting, supervising and evaluating tests and special inspections. Experience or training shall be considered relevant where the documented experience or training is related in complexity to the same type of special inspection or testing activities for projects of similar complexity and material qualities.
 - The QAA shall send copies of all inspection and testing reports to the Contracting Officer Representative and Contractor. Reports shall indicate that the work inspected was or was not completed in conformance to the approved construction documents. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If they are not corrected, the discrepancies shall be brought to the attention of the Contracting Officer Representative.
 - The QAA shall submit a final report documenting required special inspections and tests, and correction of any discrepancies noted in the inspections or tests. The final report shall be distributed to the Contracting Officer Representative in a timely manner prior to the completion of the project.

6.2. Contractor Responsibilities:

- A. The Contractor shall submit a written statement of responsibility to the Contracting Officer Representative prior to the commencement of work on the systems or components listed in the statement of special inspections. The Contractor's statement of responsibility shall contain acknowledgement or awareness of the special requirements contained in the statement of special inspections.
- B. Notification of QAA: The Contractor shall notify the QAA in a timely manner so that inspection and testing may be performed as outlined in the statement of special inspections.



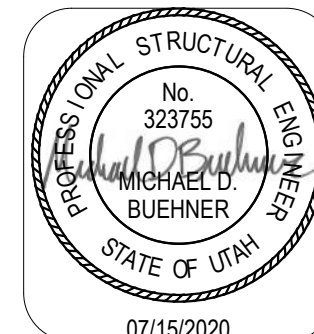
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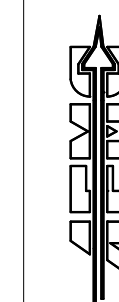
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DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN NOTES	07/15/2020		



DESIGNED BY: MD/RE/A	MD/RE/A	DATE: 07/15/2020
DRAWN BY: MD/RE/A	MD/RE/A	
CHECKED BY: MD/RE/A	MD/RE/A	
DATE: 07/15/2020		
PROJECT NO: 1033248		
LEAD PROJECT MANAGER: BEVERLY LANGIE		
BASE PROJECT MANAGER: BEVERLY LANGIE		



DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
419TH CIVIL ENGINEER GROUP

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591

GENERAL STRUCTURE NOTES

SE002

Sheet: 9 of 94

7. Statement of Special Inspections

- 7.1. The following materials, systems and components require special inspection or testing per Chapter 17 of the International Building Code (IBC).
- 7.2. For items requiring continuous inspection, a special inspector must be present onsite during the performance of that task. In most cases, periodic inspections/tests shall be performed prior to commencing the task, intermittently during the task, and at the completion of the task. Frequency marked with (E) designates periodic inspections that must be performed prior to or upon completion of every task.
- 7.3. The Contractor shall verify that Special Inspection forms include the name of the inspection company, the name of the inspector and their license/certification number. Inspection forms shall be signed, stamped and dated by the Contractor.

Structural Steel per IBC Section 1705.2.1, 1705.12.1 & 1705.13.1

Item	Frequency	Detailed Instructions
<i>Prior to Welding (Table N5.4-1, AISC 360-16):</i>		
Verify welding procedures (WPS) and consumable certificates	Periodic (E)	
Material identification	Periodic	Verify type and grade of material.
Welder identification	Periodic	A system shall be maintained by which a welder who has welded a joint or member can be identified.
Fit-up groove welds	Periodic	Verify joint preparation, dimensions, cleanliness, tacking, and backing.
Access holes	Periodic	Verify configuration and finish.
Fit-up of fillet welds	Periodic	Verify alignment, gaps at root, cleanliness of steel surfaces, and tack weld quality and location.
<i>During Welding (Table N5.4-2, AISC 360-16):</i>		
Use of qualified welders	Periodic	Verify that welders are appropriately qualified.
Control and handling of welding consumables	Periodic	Verify packaging and exposure control.
Cracked tack welds	Periodic	Verify that welding does not occur over cracked tack welds.
Environmental conditions	Periodic	Verify wind speed is within limits as well as precipitation and temperature.
WPS followed	Periodic	Verify items such as settings on welding equipment, travel speed, welding materials, shielding gas type/flow rate, preheat applied, interpass temperature maintained, and proper position.
Welding techniques	Periodic	Verify interpass and final cleaning, each pass is within profile limitations, and each pass meets quality requirements.
Steel headed stud anchors	Periodic	Verify placement and installation of steel headed stud anchors.
<i>After Welding (Table N5.4-3, AISC 360-16):</i>		
Welds cleaned	Periodic	Verify that welds have been properly cleaned.
Size, length, and location of welds	Periodic (E)	
Welds meet visual acceptance criteria	Periodic (E)	Verify weld meets visual acceptance criteria based upon crack prohibition, weld/base-metal fusion, crater cross section, weld profiles, weld size, undercut, and porosity.
Arc strikes	Periodic (E)	
k-area	Periodic (E)	When welding of doubler plates, continuity plates or stiffeners has been performed in the k-area, visually inspect the web k-area for cracks within 3 in. of the weld.
Backing & weld tabs removed	Periodic (E)	
Repair activities	Periodic (E)	
Document acceptance or rejection of welded joint/member	Periodic (E)	
No prohibited welds	Periodic (E)	Verify no prohibited welds have been added without approval of the EOR.
<i>Nondestructive Testing (Section N5.5, AISC 360-16):</i>		
CJP welds (Risk Cat. II)	Periodic	Ultrasonic testing shall be performed on 10% of CJP groove welds in butt, T- and corner joints subject to transversely applied tension loading in materials 5/16-inch thick or greater per Section N5.5b. Testing rate must be increased to 100% if > 5% of welds tested have unacceptable defects per Section N5.5f.
Welded joints subject to fatigue	Periodic (E)	Reduction of ultrasonic testing is prohibited.
<i>Prior to Bolting (Table N5.6-1, AISC 360-16):</i>		
Certifications of fasteners	Continuous	
Fasteners marked	Periodic	Verify that fasteners have been marked in accordance with ASTM requirements.
Proper fasteners for joint	Periodic	Verify grade, type, and bolt length if threads are excluded from the shear plane.
Proper bolting procedure	Periodic	Verify proper procedure is used for the joint detail.
Connecting elements	Periodic	Verify appropriate faying surface condition and hole preparation, if specified, meet requirements.
Pre-installation verification testing	Periodic	Observe and document verification testing by installation personnel for fastener assemblies and methods used.
Proper storage	Periodic	Verify proper storage of bolts, nuts, washers, and other fastener components.
<i>During Bolting (Table N5.6-2, AISC 360-16):</i>		
Fastener assemblies	Periodic	Verify that fastener assemblies are of suitable condition, placed in all holes, and washers and nuts are positioned as required.
Snug-tight prior to pretensioning	Periodic	Verify that joints are brought to snug-tight condition prior to pretensioning operation.
Fastener component	Periodic	Verify that fastener component not turned by wrench is prevented from rotating.
Pretensioned fasteners	Periodic	Verify that fasteners are Pretensioned in accordance with RCSC Specification, progressing systematically from the most rigid point toward the free edges.

<i>After Bolting (Table N5.6-3, AISC 360-16):</i>		
Document acceptance or rejection of bolted connections	Periodic (E)	
<i>Other Steel Inspections (Section N5.8, AISC 360-16: Table J8-1, J10-1, AISC 341-17):</i>		
Structural steel details	Periodic	All fabricated steel or steel frames shall be inspected to verify compliance with the details shown in the construction documents, such as braces, stiffeners, member locations, and proper application of joint details at each connection.
Anchor rods and other embedments supporting structural steel	Periodic	Shall be on the premises during the placement of anchor rods and other embedments supporting structural steel for compliance with construction documents. Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.
Galvanized steel members	Periodic	Exposed cut surfaces of galvanized structural steel main members and exposed corners of rectangular HSS shall be visually inspected for cracks subsequent to galvanizing. Cracks shall be repaired or the member shall be rejected.

Steel Construction Other Than Structural Steel per IBC Section 1705.2.2

Item	Frequency	Detailed Instructions
<i>Steel Roof and Floor Decks (IBC Table 1705.2.2):</i>		
Material verification of cold-formed steel deck	Periodic	Confirm that identification markings are provided to conform to ASTM standards specified on construction documents.
Roof deck welds	Periodic	Visual inspection is required to confirm that weld meets acceptance criteria of AWS D1.3. Welder qualifications should also be verified.

Concrete Construction per IBC Sections 1705.3 & 1705.12

Item	Frequency	Detailed Instructions
Reinforcing steel	Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
Welding of reinforcing steel	Periodic	Verify weldability of reinforcing steel other than A706. Continuous inspection is required for welding of reinforcing steel used in intermediate or special concrete moment frames, boundary elements of special structural walls or shear reinforcement.
Cast-in bolts & embeds	Periodic	
Post-installed adhesive anchors	Continuous	All post-installed anchors/dowels shall be installed in horizontally or upwardly inclined orientations to resist sustained tension loads
Post-installed mechanical anchors and adhesive anchors not defined above	Periodic	
Use of required mix design	Periodic	Verify that all mixes used comply with the approved construction documents; ACI 318: Ch. 19, 26.4.3-26.4.4; and IBC 1904.1, 1908.2, 1908.3.
Concrete sampling for strength tests, slump, air content, and temperature	Continuous	Samples for strength tests shall be taken in accordance with ASTM C172, cured per ASTM C31 and tested in accordance with ASTM C39 by a testing agency complying with ASTM C1077. Acceptance criteria for strength tests shall be per ACI 318 Section 26.12.3. For each mix placed, samples shall be taken not less than once a day, nor less than once for each 150 yd ³ of concrete, nor less than once for each 5000 ft ² of surface area for slabs or walls. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.
Concrete placement	Continuous	
Curing temperature and techniques	Periodic	Verify that concrete is maintained at a temperature of at least 50°F and in a moist condition for at least 7 days after placement. Verify that high-early-strength concrete is maintained at a temperature of at least 50°F and in a moist condition for at least 3 days after placement. Accelerated curing methods may be used (see ACI 318: 26.5.3.2(c)). Shotcrete shall be maintained at a temperature of at least 40°F for the same period of time as noted for concrete and kept in the moist condition during curing periods in accordance to IBC 1908.9 All concrete materials, reinforcement, forms, fillers, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio is not exceeded.
In-situ strength verification	Periodic	Verify that adequate strength has been achieved prior to the removal of shores and forms or the stressing of post-tensioned tendons.
Formwork	Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.
<i>Welding of Reinforcing Steel (IBC Table 1705.3):</i>		
Verification of weldability	Periodic	Verify weldability of reinforcing steel other than A706 based upon carbon equivalent and in accordance with AWS D1.4. Continuous inspection is required for welding of reinforcing steel used in intermediate or special concrete moment frames, boundary elements of special structural walls or shear reinforcement.

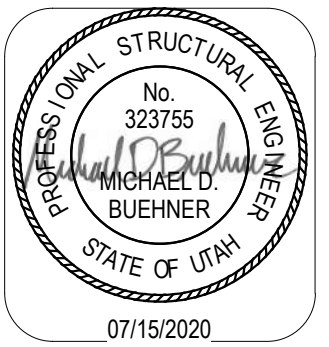


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Item	Frequency	Detailed Instructions
Other reinforcing steel	Periodic	Visually inspect all welds in accordance with AWS D1.4.
Single-pass fillet welds, 5/16" max	Periodic	
All other welds	Continuous	



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ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
GENERAL STRUCTURE NOTES

SE003
Sheet: 10 of 94

PLAN LEGEND

	FOOTING - CONTINUOUS		CONCRETE WALL		EXISTING FOOTING - CONTINUOUS
	FOOTING - THICKENED SLAB		CONCRETE WALL - RECESSED (FDTN PLAN) CONCRETE LINTEL (FRAMING PLAN)		EXISTING FOOTING - THICKENED SLAB
	FOOTING - SQUARE FOOTING - RECTANGULAR FOOTING - MAT FOOTING		CONCRETE WALL - RECESSED AT DOOR		EXISTING FOOTING - SQUARE, RECTANGULAR, OR MAT
	SLAB BLOCK-OUT AT COLUMN		CONCRETE PIER IN CONCRETE WALL, TOP OF PIER RECESSED BELOW SLAB.		EXISTING CONCRETE SHEAR WALL, FOUNDATION WALL OR RETAINING WALL
	SLAB CONTROL/CONSTRUCTION JOINT		CONCRETE COLUMN		EXISTING OPENING THROUGH CONCRETE WALL
	SPECIAL SLAB OR DECK AREA		STEEL/WOOD BEAM OR GIRDER		EXISTING CONCRETE PIER IN CONCRETE WALL. PIER RECESSED BELOW SLAB.
	SPECIAL SLAB OR DECK AREA		STEEL/WOOD JOIST OR PURLIN		EXISTING STEEL COLUMN - TUBE
	SPECIAL SLAB OR DECK AREA		STEEL BRACED FRAME - ABOVE		EXISTING STEEL COLUMN - WIDE FLANGE
	SPECIAL SLAB OR DECK AREA		STEEL BRACED FRAME		EXISTING STEEL COLUMN - PIPE
	RECESSED/DEPRESSED SLAB		STEEL ANGLE BRACE / KICKER. SEE ___/___ FOR SLAB EDGE KICKER. SEE ___/___ FOR FRAME BRACE		EXISTING STEEL BEAM OR GIRDER
	OPENING		HORIZONTAL BRIDGING		EXISTING STEEL JOIST OR PURLIN
	CONCRETE HOUSEKEEPING PAD		STEEL COLUMN - TUBE (HSS)		EXISTING CROSS BRIDGING
	CONCRETE BEAM		STEEL COLUMN - WIDE FLANGE		EXISTING HORIZONTAL BRIDGING
	CONCRETE SUSPENDED SLAB		STEEL COLUMN - PIPE (HSS)		EXISTING TO BE REMOVED
	CONCRETE OVER STEEL DECK		EXISTING OPENING		
	STEEL DECK STEEL GRATE				

STEEL FRAMING CONNECTION LEGEND

	MOMENT FRAME CONNECTION (LFRS) -/---
	GRAVITY BEAM MOMENT CONNECTION -/---
	WELDED SINGLE PLATE COLLECTOR/CHORD CONNECTION -/---
	STRAP PLATE COLLECTOR/CHORD CONNECTION AT BEAMS PARALLEL TO MARK. -/---
	DOUBLE ANGLE CONNECTION -/---
	DROP-IN BEAM CONNECTION -/---

STEEL FRAMING MEMBER DESIGNATION

TEXT INDICATES ADDITIONAL REQUIREMENTS FOR BOLTS AT SPECIFIED CONNECTION:
 SC = SLIP CRITICAL BOLTS
 PT = FULLY PRETENSIONED BOLTS
 SS = SHORT SLOTTED HOLES
 LS = LONG SLOTTED HOLES

INDICATES STEEL JOIST, BEAM OR GIRDER SIZE

INDICATES MEMBER IS PART OF LFRS

NUMBER OF HEADED STUDS ON BEAM

POSITIVE OR UPWARD CAMBER AT MIDSPAN

WHERE NOTED, NUMBER INDICATES DIMENSION FROM TOP OF STEEL ELEVATION REFERENCED ON PLAN (TOST). SEE ARCH FOR DECK BEARING ELEVATIONS AT SLOPED ROOF FRAMING.

CONNECTION TYPE. SEE FRAMING CONNECTION LEGEND. IF ABSENT, PROVIDE TYPICAL SINGLE PLATE CONNECTION.

ABBREVIATIONS

@	AT
AB	ANCHOR BOLT (S)
ABV	ABOVE
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
BLDG	BUILDING
BLW	BELOW
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
CJ	CONSTRUCTION JOINT OR CONTROL JOINT
CJP	COMPLETE JOINT PENETRATION
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
D.B.	DECK BEARING
db	DIAMETER OF REINFORCING BAR
DBA	DEFORMED BAR ANCHORS
DBL	DOUBLE
DET	DETAIL
DIA (OR Ø)	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DK	DECK
DN	DOWN
DWG	DRAWING
DWL	DOWEL
E.F.	EACH FACE
E.J.	EXPANSION JOINT (SEISMIC SEPARATION JOINT)
E.W.	EACH WAY
EA	EACH
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
ENG	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST (E)	EXISTING
EXP	EXPANSION / EXPOSED
EXT	EXTERIOR
F.D.	FLOOR DRAIN
F.F.	FINISH FLOOR
F.V.	FIELD VERIFY
FDTN	FOUNDATION
FIN	FINISH
FL	FLOOR
FT	FOOT
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GLB	GLU-LAMINATED BEAM
GR	GRADE
GSN	GENERAL STRUCTURAL NOTES
HB	HORIZONTAL BRIDGING
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHORS
HSS	HOLLOW STRUCTURAL STEEL
HT	HEIGHT
I.F.	INSIDE FACE
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
IN	INCH
INSUL	INSULATION
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIPS - 1,000 POUNDS
KLF	KIPS PER LINEAL FOOT
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LBS	POUNDS

ABBREVIATIONS

Ld, Lt, Lsb, Lsbt, Ldc, Lsc	SEE CONCRETE REINFORCING BAR DEVELOPMENT AND LAP LENGTH SCHEDULE
LF	LINEAL FOOT
LFRS	LATERAL FORCE RESISTING SYSTEM (SFRS & WFRS)
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
MAS	MASONRY
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MFGR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NIC	NOT IN CONTRACT
NORM	NORMAL
NTS	NOT TO SCALE
O.C.	ON CENTER
O.F.	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OWSJ	OPEN WEB STEEL JOIST
P.T.	POST-TENSIONED
PCF	POUNDS/CUBIC FOOT
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS/LINEAL FOOT
PNL	PANEL
PSF	POUNDS/SQ FOOT
PSI	POUNDS/SQ INCH
R.D.	ROOF DRAIN
REINF	REINFORCING
REQD	REQUIRED
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SI	SPECIAL INSPECTION (SP. INSP.)
SIM	SIMILAR
SOG	SLAB ON GRADE
SQ	SQUARE
STAG	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
T & B	TOP AND BOTTOM
T.O.	TOP OF
TEMP	TEMPERATURE
THDS	THREADS
TOC	TOP OF CONCRETE
TOCP	TOP OF CONCRETE PIER
TOF	TOP OF FOOTING
TOS	TOP OF SLAB
TOST	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
W.P.	WORK POINT
WI	WITH
WF	WIDE FLANGE
WFRS	WIND FORCE RESISTING SYSTEM
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD

PLAN MARKS

BF-#	BRACED FRAME
CB-#	CONCRETE BEAM
CC-#	CONCRETE COLUMN
CCSS-#	CANTILEVERED CONCRETE SUSPENDED SLAB
CDP-#	CONCRETE DRILLED PIER
CFW-#	CONCRETE FOUNDATION WALL
CGB-#	CONCRETE GRADE BEAM
CJ-#	CONCRETE JOIST
CJ-#	CONCRETE JAMB COLUMN
CL-#	CONCRETE LINTEL
CP-#	CONCRETE PIER
CRW-#	CONCRETE RETAINING WALL
CSG-#	CONCRETE SLAB ON GRADE
CSH-#	CONCRETE SHEAR HEAD
CSS-#	CONCRETE SUSPENDED SLAB
CSWF-#	CONCRETE SHEAR WALL
CW-#	CONCRETE WALL
FC#	CONTINUOUS FOOTING
FM#	MAT FOOTING
FR#	RECTANGULAR FOOTING
FS#	SQUARE FOOTING
FTS#	THICKENED SLAB FOOTING
HD-#	HOLD DOWN ANCHOR
MC-#	MASONRY COLUMN
MF-#	MOMENT FRAME
ML-#	MASONRY LINTEL
MP-#	MASONRY PIER
MW-#	MASONRY WALL
PTB-#	POST-TENSIONED CONCRETE BEAM
SBP-#	STEEL BASE PLATE
SC-#	STEEL COLUMN
SCP-#	STEEL CAP PLATE
SD-#	STEEL DECK
SDA-#	STEEL DECK ATTACHMENT
SG-#	STEEL GIRDER
SJ-#	STEEL JOIST
SND-#	SNOW DRIFT
WB-#	WOOD BEAM
WBW-#	WOOD BEARING WALL
WC-#	WOOD COLUMN
WD-#	WOOD DIAPHRAGM
WJ-#	WOOD JOIST
WSW-#	WOOD SHEAR WALL

STRUCTURAL DRAWING LIST

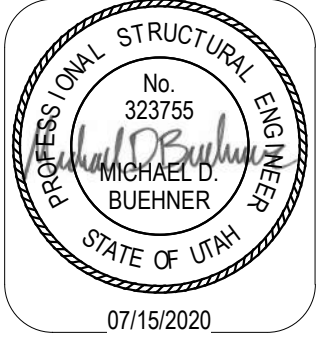
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SE003	GENERAL STRUCTURE NOTES
SE004	LEGENDS & ABBREVIATIONS
SB101	FOOTING AND FOUNDATION PLAN
SB102	CONTROL JOINT PLAN
SB501	TYPICAL FOOTING & FOUNDATION DETAILS
SB601	CONCRETE SCHEDULES
SF101	ROOF FRAMING PLAN
SF201	FRAMING ELEVATIONS
SF202	BRACED FRAME DETAILS
SF501	TYPICAL ROOF FRAMING DETAILS
SF502	FRAMING DETAILS
SF503	FRAMING DETAILS
SF601	STEEL SCHEDULES
SF602	STEEL SCHEDULES



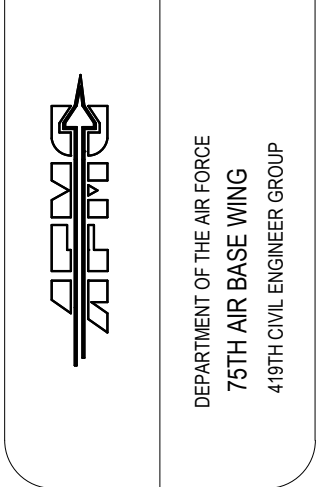
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ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 LEGENDS & ABBREVIATIONS

SE004
 Sheet: 11 of 94



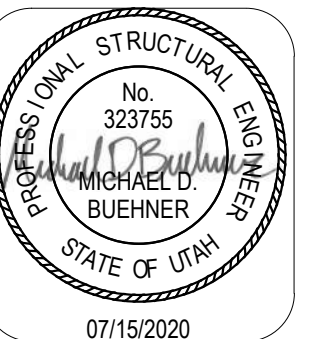
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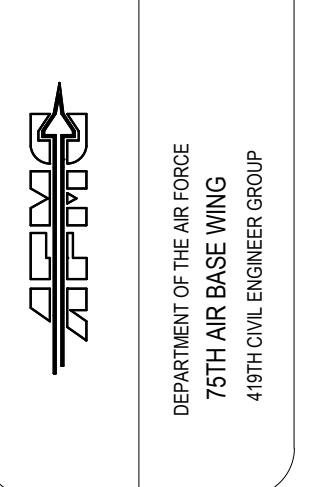
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DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN LOGS	07/15/2020		

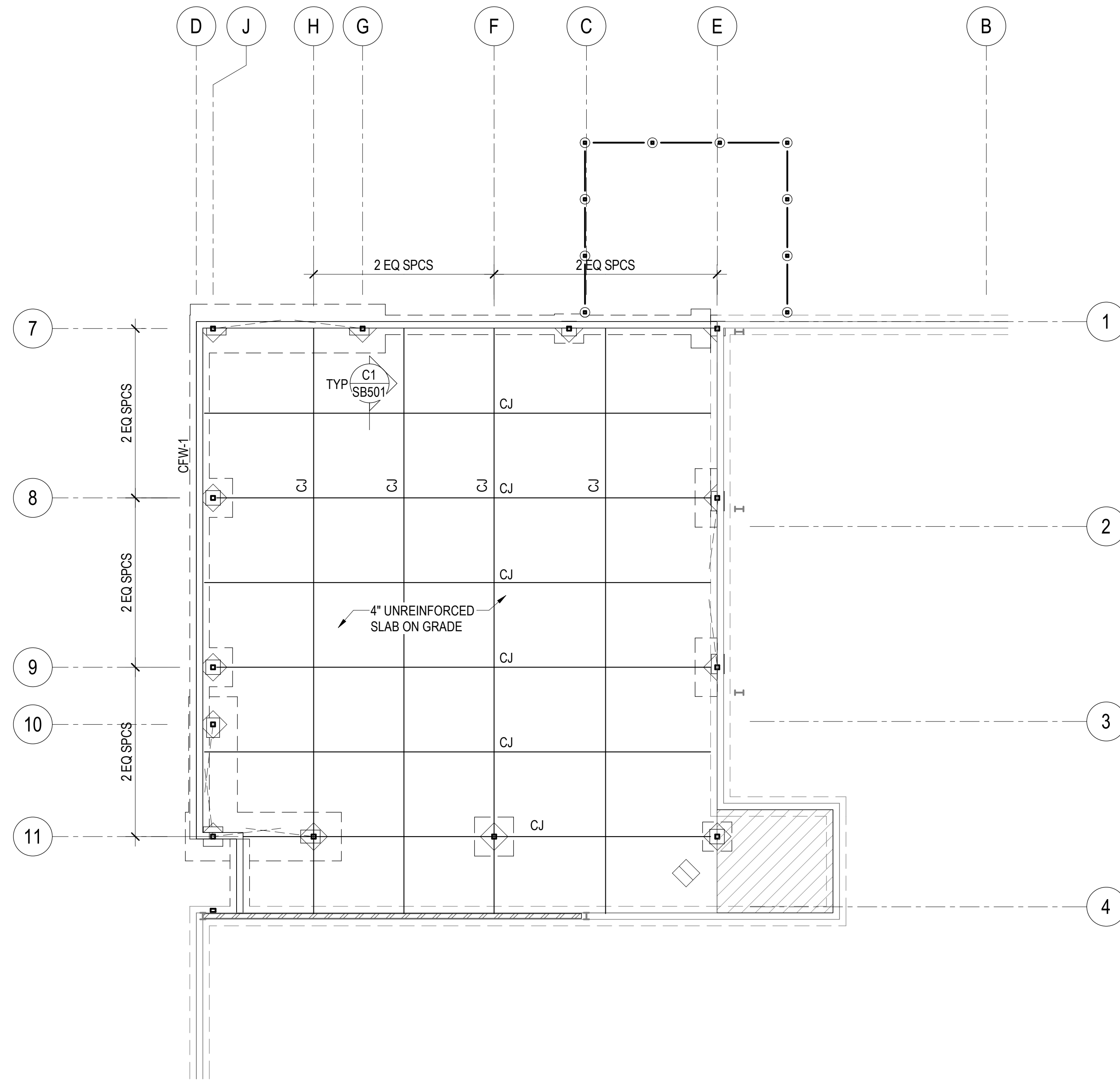


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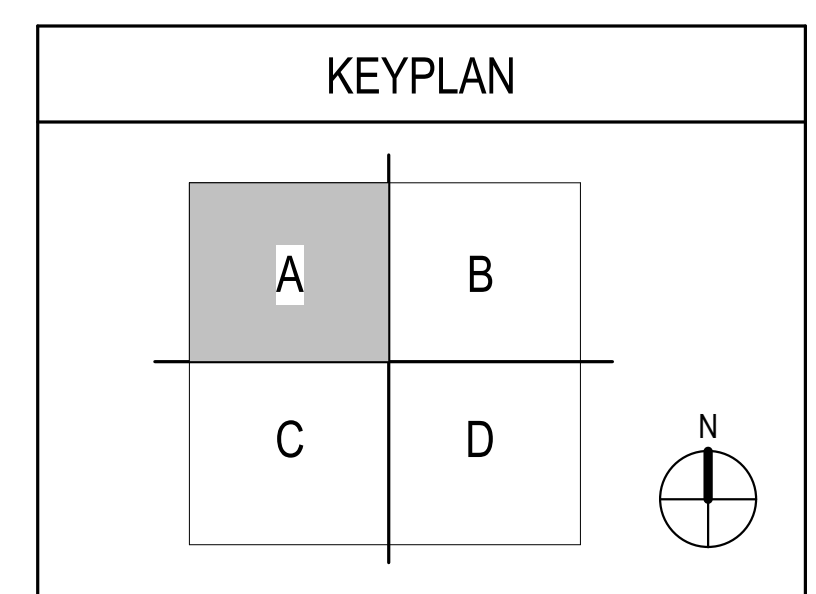
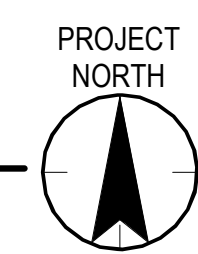


ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
CONTROL JOINT PLAN

SB102
Sheet: 13 of 94



A2 CONTROL JOINT PLAN
SB102 SCALE: 1/8" = 1'-0"



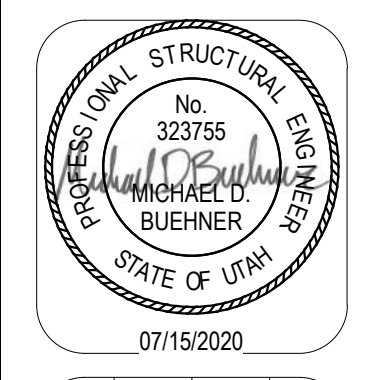


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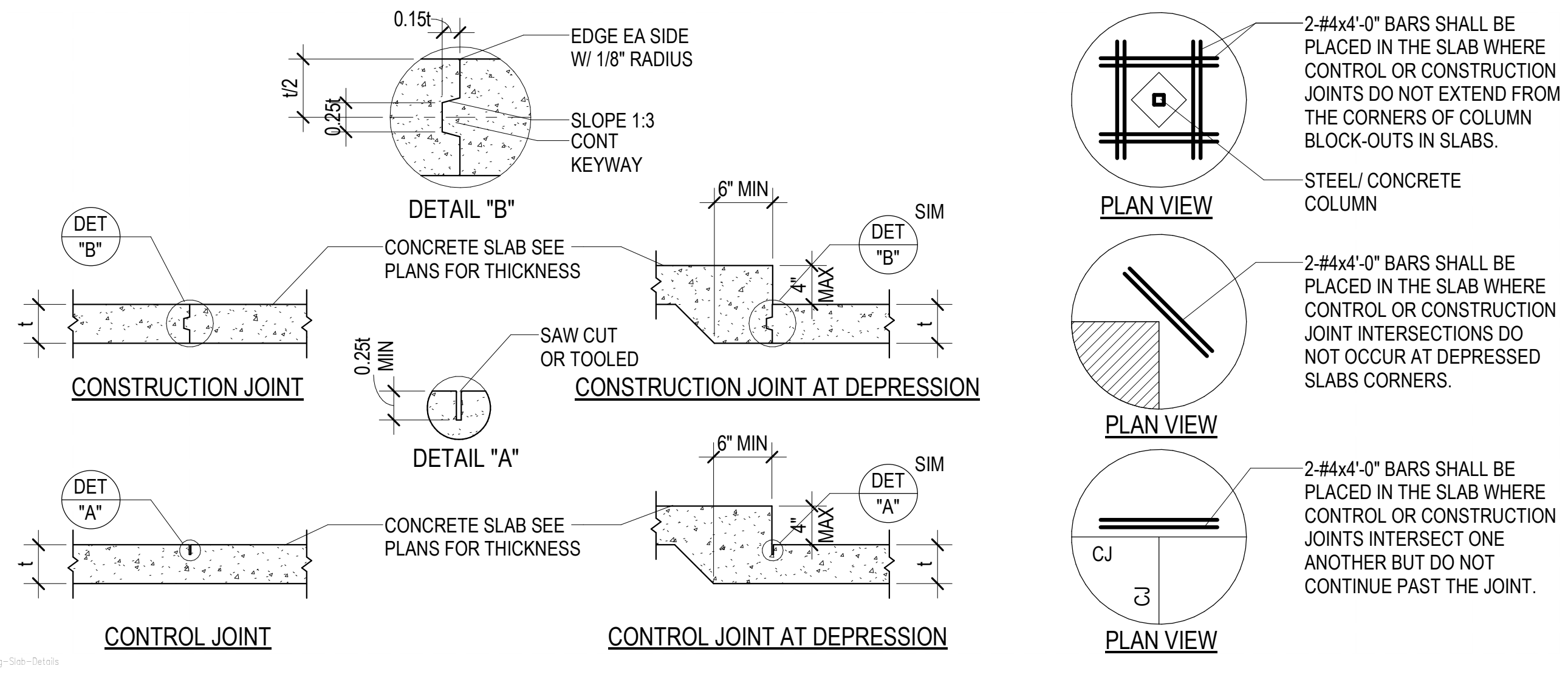


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MICHAEL D. BUEHNER		07/15/2020

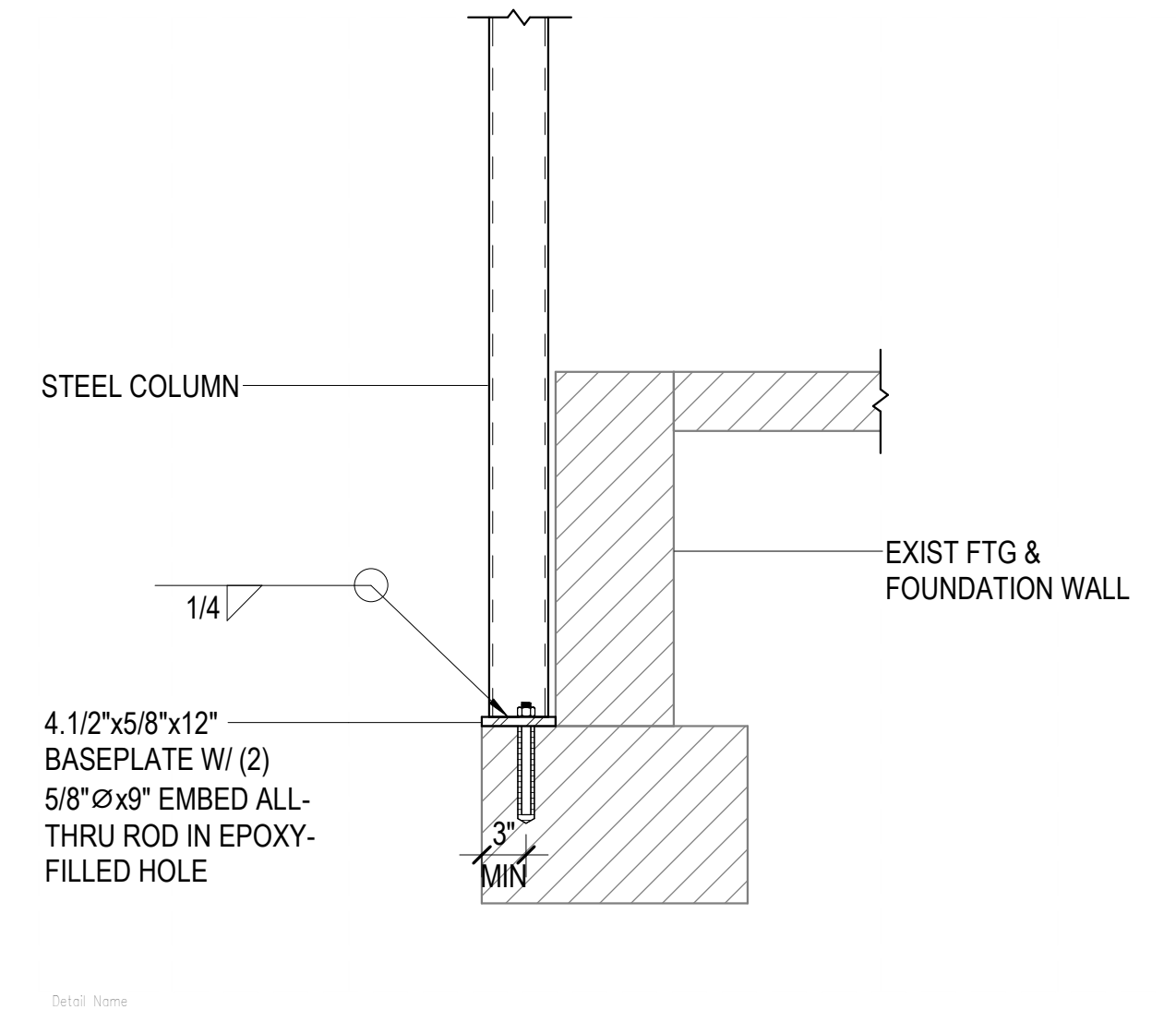
ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
TYPICAL FOOTING & FOUNDATION
DETAILS

SB501
Sheet: 14 of 94

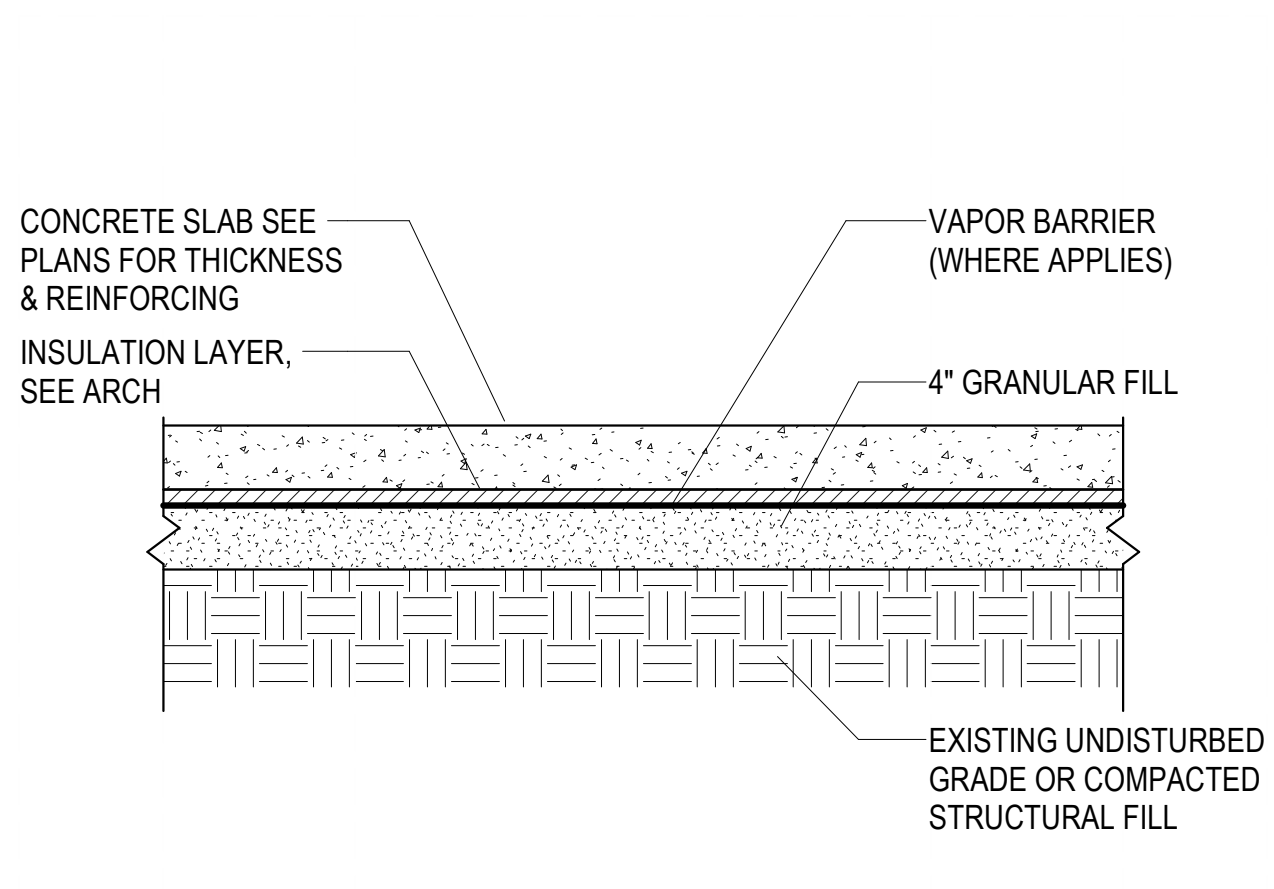
D
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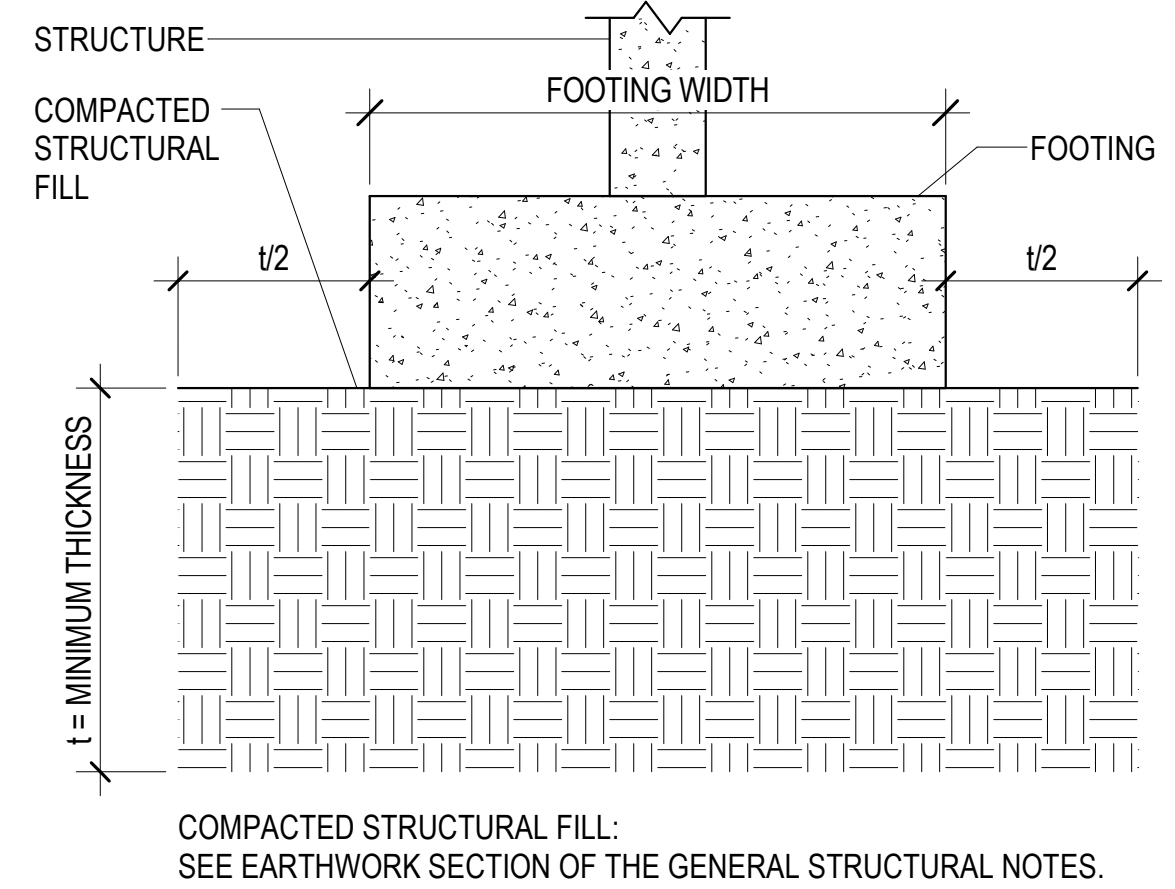
C1 TYPICAL CONCRETE SLAB ON GRADE DETAILS
SB501 NO SCALE



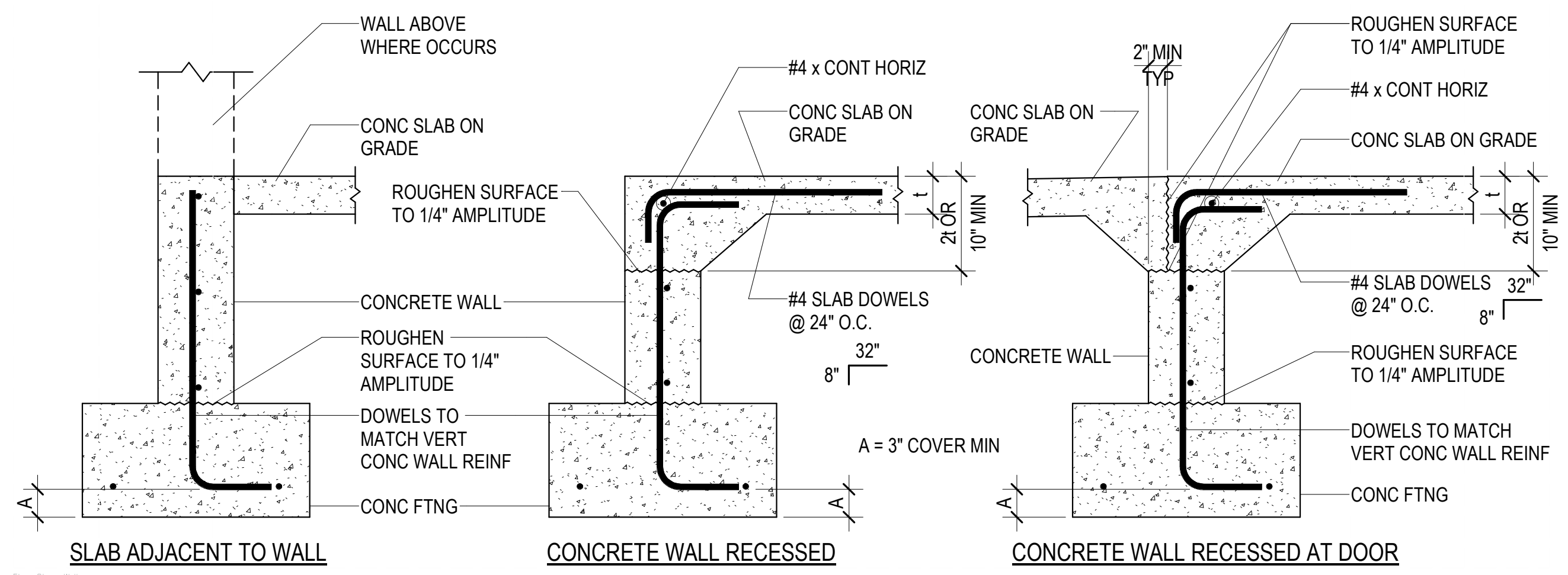
C3 COLUMN TO EXIST FOOTING DETAIL
SB501 NO SCALE



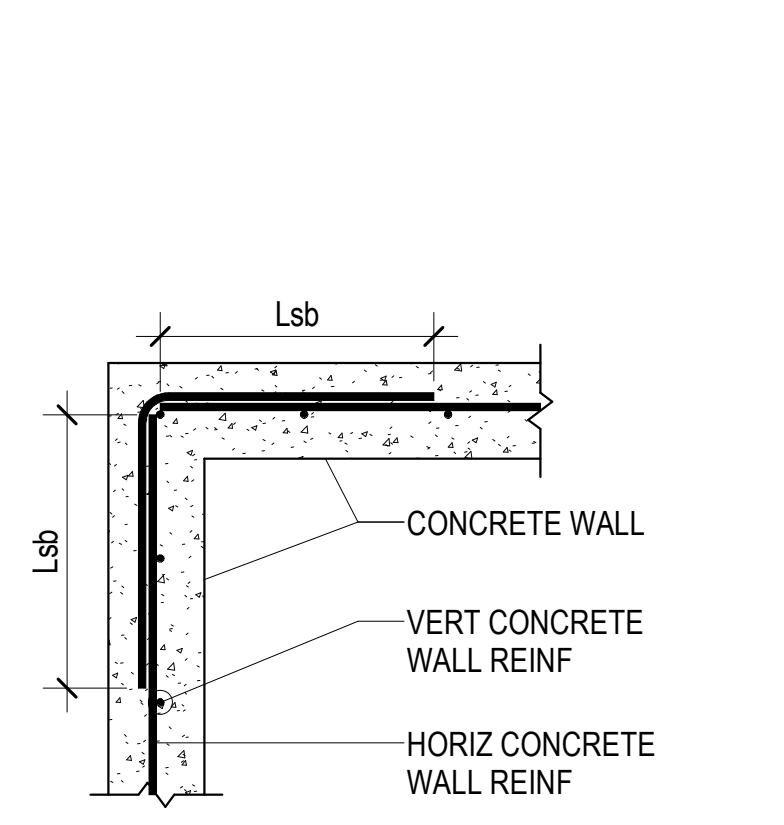
B1 TYPICAL CONCRETE SLAB ON GRADE PROFILE
SB501 NO SCALE



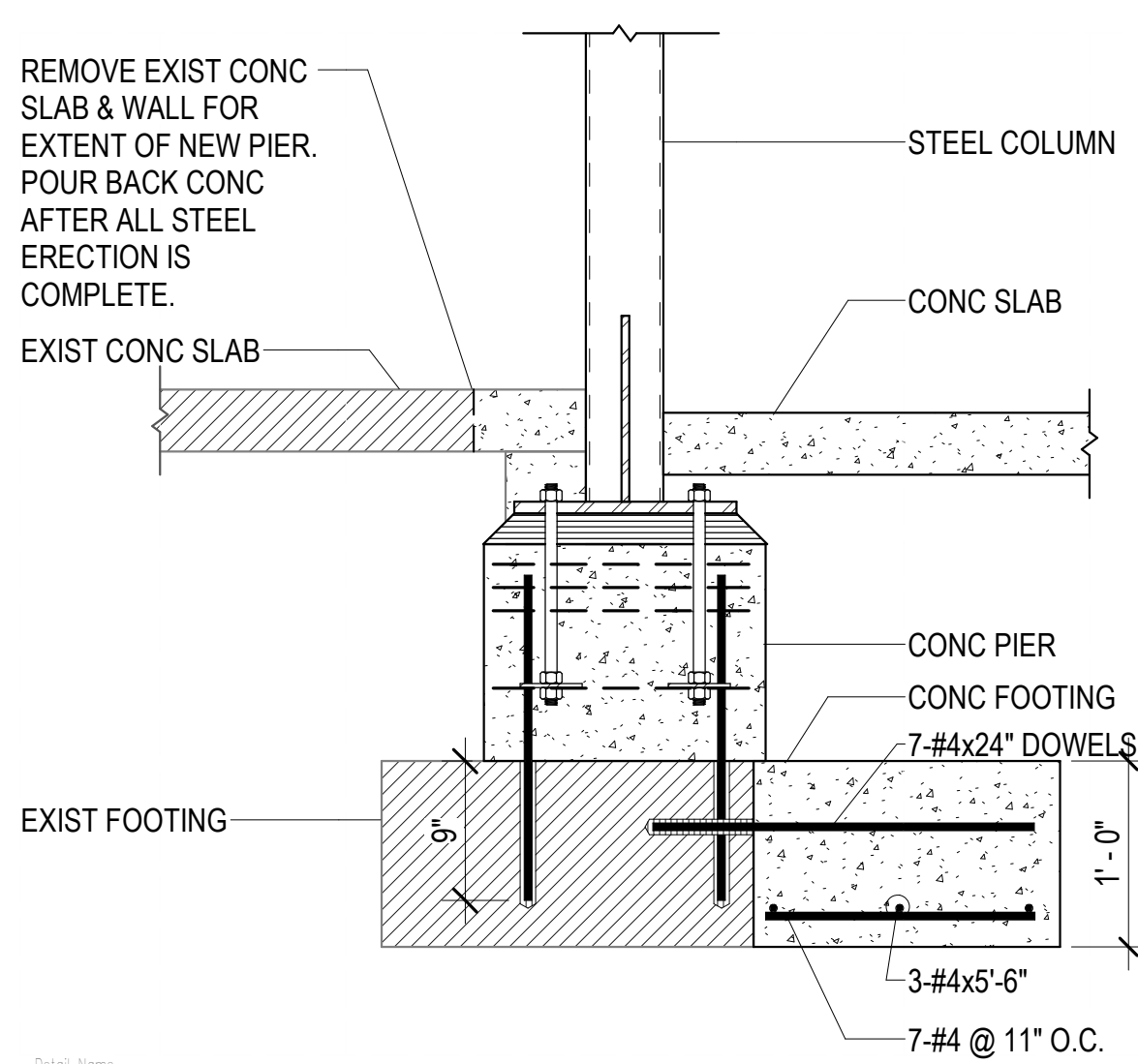
B2 TYPICAL COMPACTED STRUCTURAL FILL DETAIL
SB501 NO SCALE



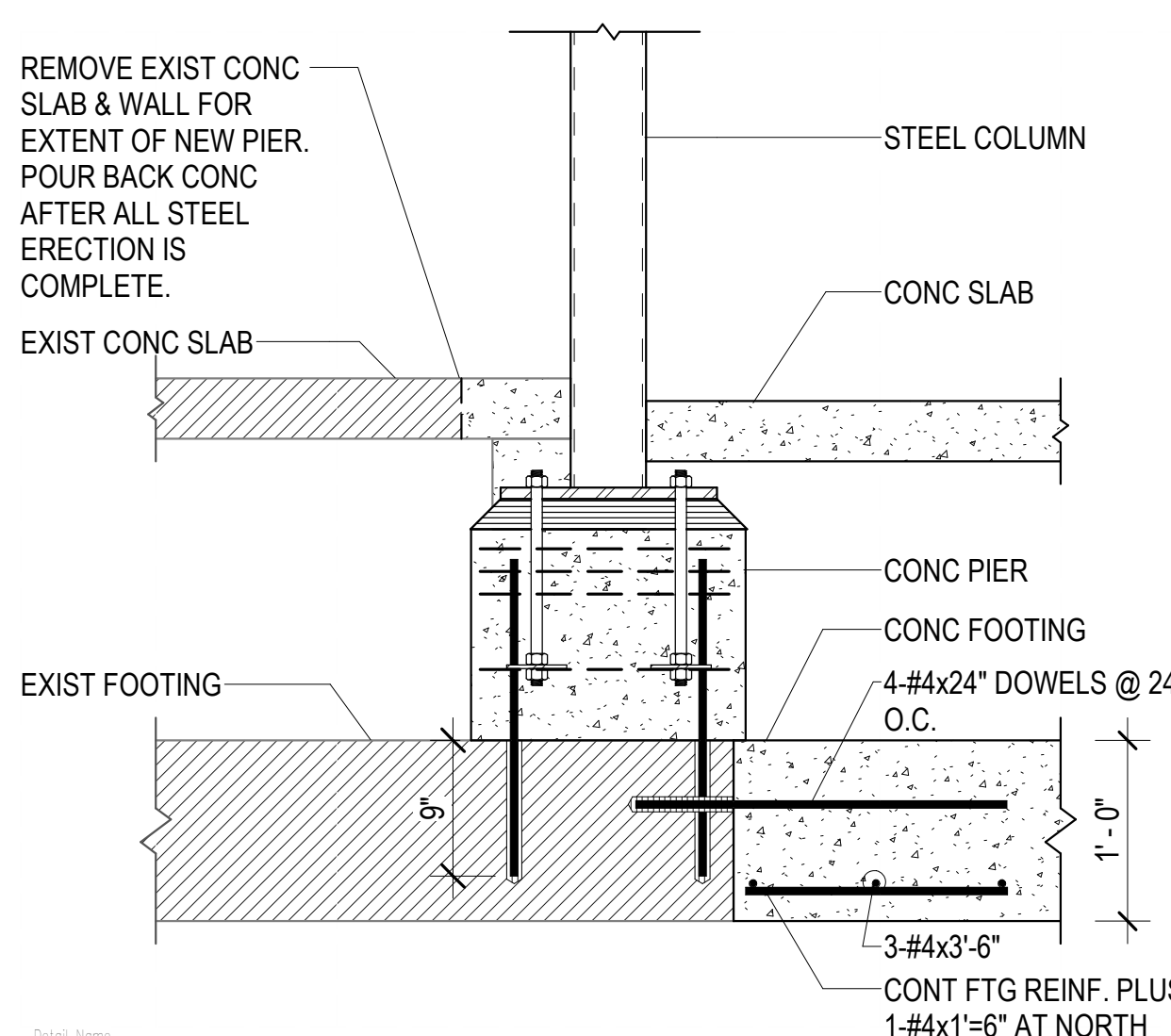
B3 TYPICAL CONCRETE FOUNDATION WALL WITH CONCRETE SLAB ON GRADE
SB501 NO SCALE



A1 TYPICAL CONCRETE WALL REINFORCING AT CORNERS (PLAN VIEWS)
SB501 NO SCALE



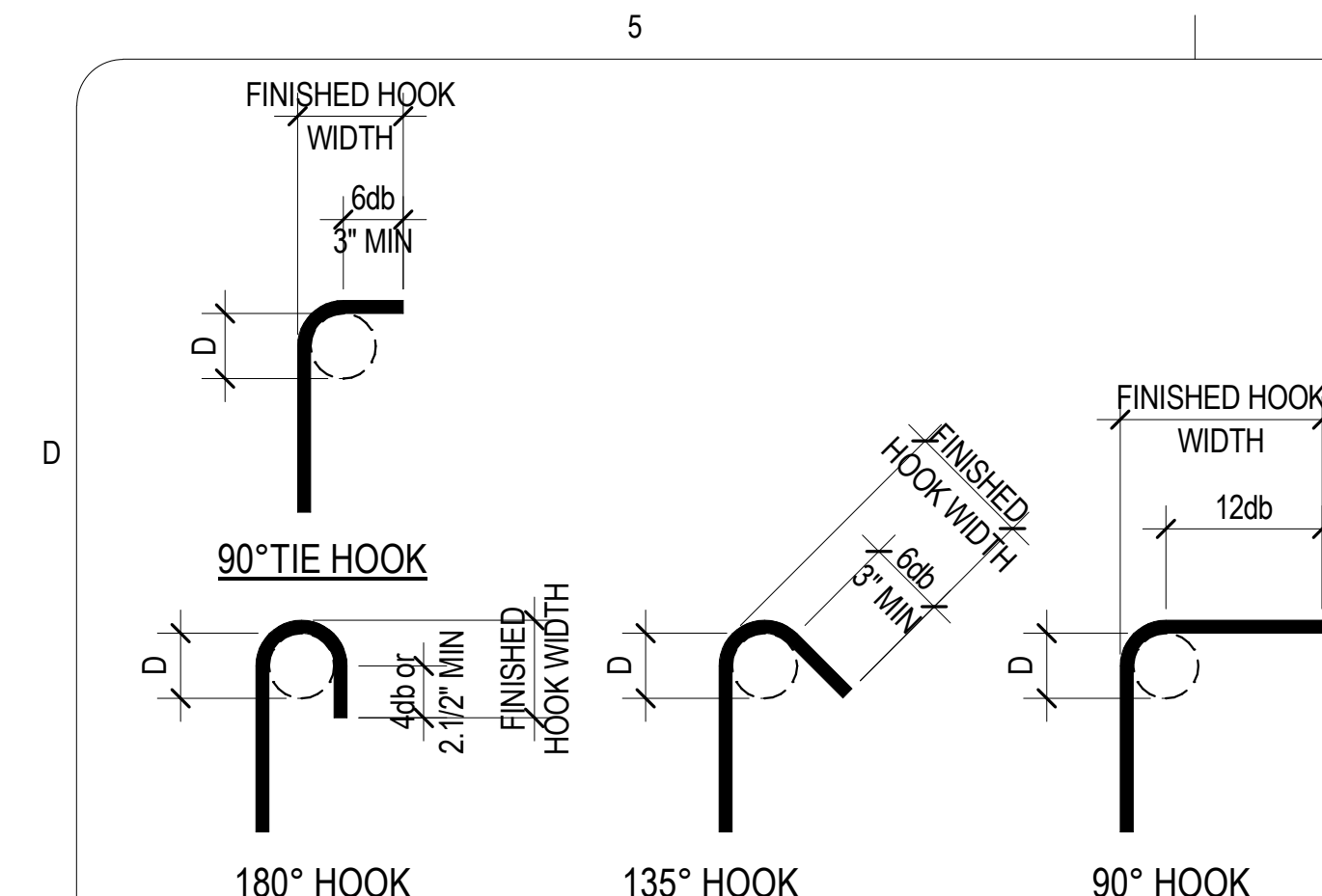
A2 CONCRETE FOOTING AT EXIST FOOTING
SB501 NO SCALE



A3 CONCRETE FOOTING AT EXISTING SLAB
SB501 NO SCALE

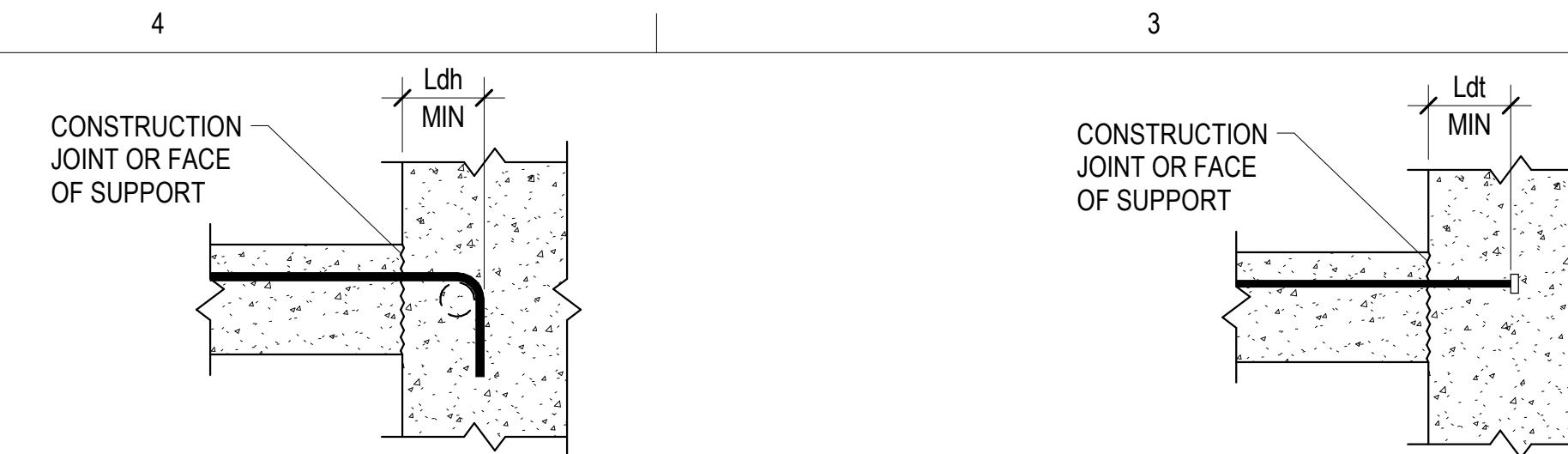
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ORIGINAL SHEET - ANSI D



END HOOK SCHEDULE					
BAR SIZE	D	FINISHED HOOK WIDTH			
		180° HOOK	135° HOOK	90° HOOK	90° TIE HOOK
#3	2.1/4"	3"	4.1/4"	6"	4"
#4	3"	4"	4.1/2"	8"	4.1/2"
#5	3.1/4"	5"	5.1/2"	10"	6"
#6	4.1/2"	6"	8"	12"	--
#7	5.1/4"	7"	9"	14"	--
#8	6"	8"	10.1/2"	16"	--
#9	9.1/2"	11.3/4"	--	19"	--
#10	10.3/4"	13.1/4"	--	22"	--
#11	12"	14.3/4"	--	24"	--
#14	18.1/4"	21.3/4"	--	31"	--
#18	24"	28.1/2"	--	41"	--

D1 REINFORCEMENT END HOOK SCHEDULE
SB601 NO SCALE



BAR SIZE	TENSION HOOK DEVELOPMENT LENGTH (Ldh)				
	NORMAL WEIGHT CONCRETE, f _c = PSI				
	3,000	4,000	4,500	5,000	6,000
#3	6"	6"	6"	6"	6"
#4	8"	7"	7"	7"	7"
#5	10"	9"	8"	8"	7"
#6	12"	10"	10"	9"	8"
#7	14"	12"	11"	11"	10"
#8	16"	14"	13"	12"	11"
#9	18"	15"	14"	14"	13"
#10	20"	17"	16"	15"	14"
#11	22"	19"	18"	17"	16"
#14	37"	32"	31"	29"	27"
#18	50"	43"	41"	39"	35"

NOTES:
1. VALUES HERE VALID FOR ALL CASES IF:
A. CLEAR COVER OF BAR ≥ 2*db, WHERE db IS BAR DIAMETER IN INCHES
B. CLEAR SPACING BETWEEN BARS ≥ 4*db
C. NET BEARING AREA OF HEAD A_{brg} ≥ 4*Ab, WHERE Ab IS AREA OF BAR
2. MULTIPLY VALUES IN SCHEDULE BY 1.33 FOR LIGHTWEIGHT CONCRETE
3. MULTIPLY VALUES IN SCHEDULE BY 1.2 FOR USE WITH EPOXY COATED REBAR

D2 TENSION HOOK DEVELOPMENT SCHEDULE
SB601 NO SCALE

BAR SIZE	TENSION HEADED BAR DEVELOPMENT LENGTH (Ldt)				
	NORMAL WEIGHT CONCRETE, f _c = PSI				
	3,000	4,000	4,500	5,000	6,000
#3	7"	6"	6"	6"	6"
#4	9"	8"	8"	7"	7"
#5	11"	10"	9"	9"	8"
#6	14"	12"	11"	11"	10"
#7	16"	14"	13"	12"	11"
#8	18"	16"	15"	14"	13"
#9	20"	18"	17"	16"	14"
#10	23"	20"	19"	18"	16"
#11	25"	22"	21"	20"	18"

NOTES:
1. VALUES HERE VALID FOR ALL CASES IF:
A. CLEAR COVER OF BAR ≥ 2*db, WHERE db IS BAR DIAMETER IN INCHES
B. CLEAR SPACING BETWEEN BARS ≥ 4*db
C. NET BEARING AREA OF HEAD A_{brg} ≥ 4*Ab, WHERE Ab IS AREA OF BAR
2. MULTIPLY VALUES IN SCHEDULE BY 1.2 FOR USE WITH EPOXY COATED REBAR.
3. FOR GRADE 60 REINFORCING ONLY.

D3 TENSION HEADED BAR DEVELOPMENT SCHEDULE
SB601 NO SCALE



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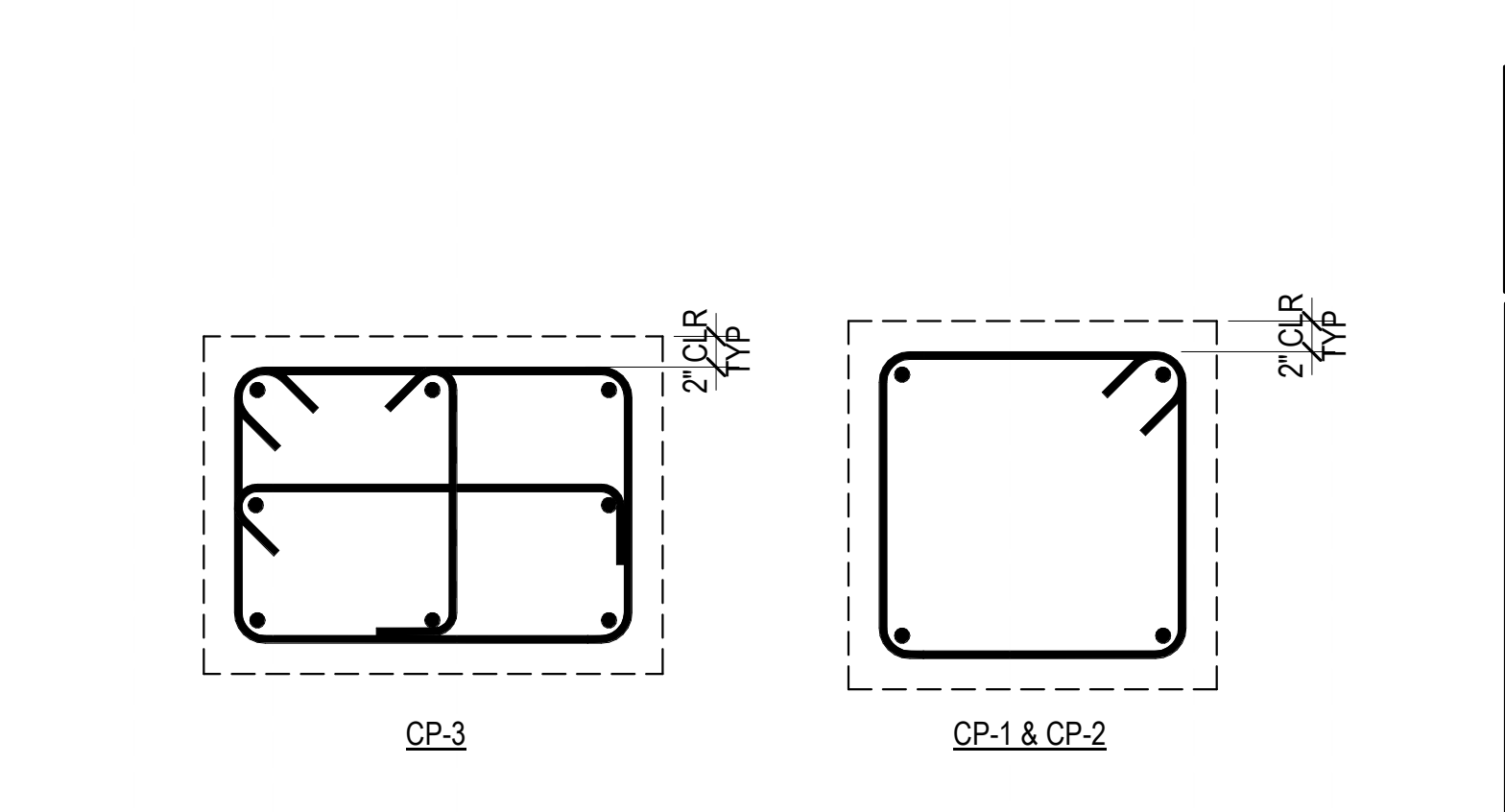


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CONCRETE FOOTING SCHEDULE												
MARK	WIDTH	LENGTH	THICK	CROSSWISE REINFORCING				LENGTHWISE REINFORCING				REMARKS
				NO.	SIZE	LENGTH	SPACE	NO.	SIZE	LENGTH	SPACE	
FC2.0	2' - 0"	CONT.	1' - 0"	--	NONE	REQ'D	--	3	#4	CONT.	9"	
FM5.0X16.0	5' - 0"	16'-0"	1' - 1"	8	#4	4' - 6"	7.71"	8	#4	15'-6"	7.71"	
FM5.0X20.0	5' - 0"	20'-0"	1' - 1"	8	#4	4' - 6"	7.71"	8	#4	19'-6"	7.71"	
FS3.0	3' - 0"	3' - 0"	1' - 0"	4	#4	2' - 6"	10"	4	#4	2' - 6"	10"	
FS4.0	4' - 0"	4' - 0"	1' - 0"	6	#4	3' - 6"	8.4"	6	#4	3' - 6"	8.4"	

- PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER UNLESS NOTED OTHERWISE.
- TOP REINFORCING, WHERE SPECIFIED, SHALL BE PLACED IN THE TOP OF THE FOOTING WITH 2" CLEAR CONCRETE COVER.
- SPOT FOOTINGS SHALL BE CENTERED UNDER COLUMNS AND CONTINUOUS FOOTINGS SHALL BE CENTERED UNDER WALLS, UNLESS NOTED OTHERWISE.
- ALL FOOTINGS SHALL BE FORMED. FOOTINGS SHALL NOT BE EARTH FORMED OR OVERSIZED WITHOUT WRITTEN PERMISSION FROM THE CONTRACTING OFFICER REPRESENTATIVE.

CONCRETE PIER SCHEDULE					
MARK	DIMENSIONS		REINFORCING		REMARKS
	DEPTH	WIDTH	VERTICAL	TIES	
CP-1	1' - 6"	1' - 6"	4 - #9	#3 @ 9" O.C.	
CP-2	2' - 0"	1' - 4"	4 - #9	#3 @ 8" O.C.	
CP-3	2' - 0"	2' - 0"	8-#8	3-#3 @ 12" O.C.	



A3 TYPICAL CONCRETE PIER REINFORCEMENT/TIE DIAGRAM
SB601 NO SCALE

CONCRETE FOUNDATION WALL SCHEDULE					
MARK	THICK	HORIZONTAL REINFORCING	VERTICAL REINFORCING	T & B HORIZ. BARS	PLACEMENT
CFW-1	8"	#5 @ 15"	#4 @ 16"	1 - #5	TYPE A

NOTES:
1. HORIZONTAL WALL REINFORCING SHALL BE CONTINUOUS THRU CONSTRUCTION & CONTROL JOINTS.
2. SPLICES IN HORIZONTAL WALL REINFORCING SHALL BE TYPE Lsb, STAGGERED SUCH THAT SPLICES DO NOT OVERLAP. SPLICES IN TWO CURTAINS SHALL NOT OCCUR IN THE SAME LOCATION.

PLACEMENT TYPE

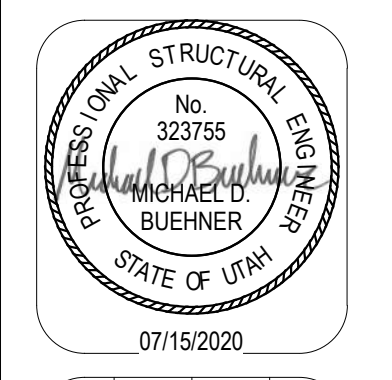
E.F. = EACH FACE
O.F. = OUTSIDE FACE (AGAINST SOIL)
I.F. = INSIDE FACE
3L = THREE LAYERS

BAR SIZE	CONCRETE REINFORCING BAR DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULE																					
	f _c = 3000 PSI				f _c = 4000 PSI				f _c = 4500 PSI				f _c = 5000 PSI				f _c = 6000 PSI				f _c = ALL	
	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ld	Lt	Lsb	Lsbt	Ldc	Lsc
#3	17"	22"	22"	28"	15"	19"	19"	25"	14"	18"	18"	23"	13"	17"	17"	22"	12"	16"	20"	8"	12"	
#4	22"	29"	29"	38"	19"	25"	25"	33"	18"	24"	24"	31"	17"	23"	23"	29"	16"	21"	21"	27"	10"	15"
#5	28"	36"	36"	47"	24"	31"	31"	41"	23"	30"	30"	38"	22"	28"	28"	36"	20"	26"	26"	33"	12"	19"
#6	33"	43"	43"	56"	29"	37"	37"	49"	27"	35"	35"	46"	26"	34"	34"	44"	24"	31"	31"	40"	15"	23"
#7	48"	63"	63"	81"	42"	54"	54"	71"	40"	51"	51"	67"	38"	49"	49"	63"	34"	45"	45"	58"	17"	27"
#8	55"	72"	72"	93"	48"	62"	62"	81"	45"	59"	59"	76"	43"	56"	56"	72"	39"	51"	51"	66"	19"	30"
#9	62"	81"	81"	105"	54"	70"	70"	91"	51"	66"	66"	86"	48"	63"	63"	81"	44"	57"	57"	74"	22"	34"
#10	70"	91"	91"	118"	61"	79"	79"	102"	57"	74"	74"	96"	54"	71"	71"	92"	50"	64"	64"	84"	24"	39"
#11	78"	101"	101"	131"	67"	87"	87"	114"	64"	82"	82"	107"	60"	78"	78"	102"	55"	71"	71"	93"	27"	43"
#14	93"	121"	NA	NA	81"	105"	NA	NA	76"	99"	NA	NA	72"	94"	NA	NA	66"	86"	NA	NA	33"	NA
#18	124"	161"	NA	NA	108"	140"	NA	NA	101"	132"	NA	NA	96"	125"	NA	NA	88"	114"	NA	NA	43"	NA

- NOTES:
1. DEFINITIONS:
Ld: TENSION DEVELOPMENT LENGTH FOR REINFORCEMENT SATISFYING THE FOLLOWING CONDITIONS:
SLABS AND WALLS: CLEAR SPACING > 2db AND CONCRETE CLEAR COVER > db
BEAMS AND COLUMNS: CLEAR COVER SPACING > db AND CONCRETE CLEAR COVER > db
Lt: DEVELOPMENT LENGTH FOR TOP BARS IN TENSION
Lsb: TENSION LAP SPLICE LENGTH FOR OTHER THAN TOP BARS (CLASS B)
Lsbt: TENSION LAP SPLICE LENGTH OF TOP BARS
Ldc: DEVELOPMENT LENGTH FOR BARS IN COMPRESSION
Lsc: TIED COLUMN LAP SPLICE IN COMPRESSION
db: NOMINAL BAR DIAMETER (INCHES)
TOP BARS: HORIZONTAL BEAM REINFORCEMENT WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW
- MULTIPLY VALUES IN SCHEDULE BY 1.5 IF CLEAR SPACING OR CONCRETE COVER DO NOT MEET REQUIREMENTS FOR Ld IN NOTE 1.
 - MULTIPLY VALUES IN SCHEDULE BY 1.3 FOR USE IN LIGHTWEIGHT AGGREGATE CONCRETE.
 - FOR EPOXY COATED BAR: MULTIPLY VALUES IN SCHEDULE BY 1.5 FOR BARS WITH CLEAR COVER < 3db OR CLEAR SPACING < 6db. OTHERWISE MULTIPLY VALUES BY 1.2.
 - FOR BUNDLED BARS OF THREE OR LESS MULTIPLY LENGTHS BY 1.2.
FOR BUNDLED BARS OF FOUR OR MORE MULTIPLY LENGTHS BY 1.33.
INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED.
 - SCHEDULE LENGTHS ARE FOR f_y=60ksi REINFORCING, MULTIPLY LENGTHS BY 1.25 FOR f_y=75ksi REINFORCING.
 - LAP SPLICES ARE NOT PERMITTED FOR #14 & #18 BARS. USE BAR COUPLERS PER G.S.N.



DATE	APPR	MARK
07/15/2020		



DESIGNED BY	MOD/REV-A	DATE
REBEVELEY	MOD/REV-A	07/15/2020

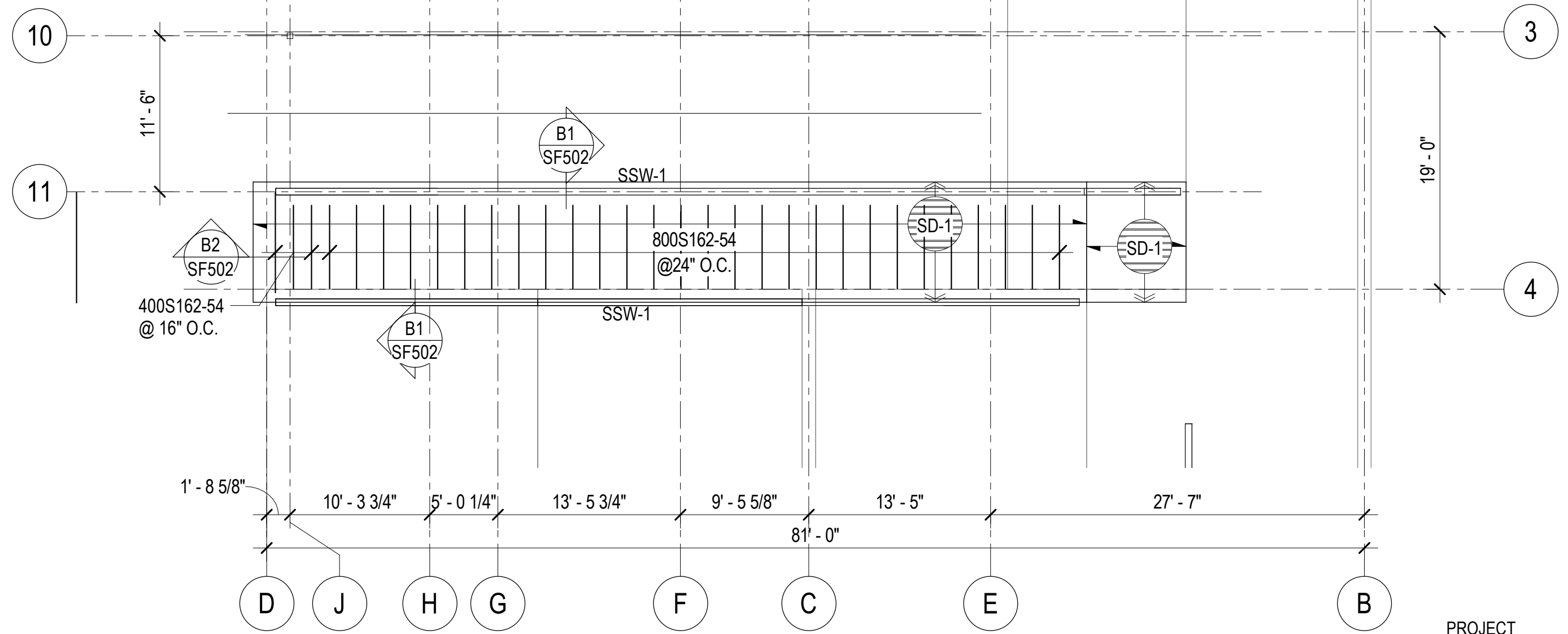
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CONCRETE SCHEDULES

D

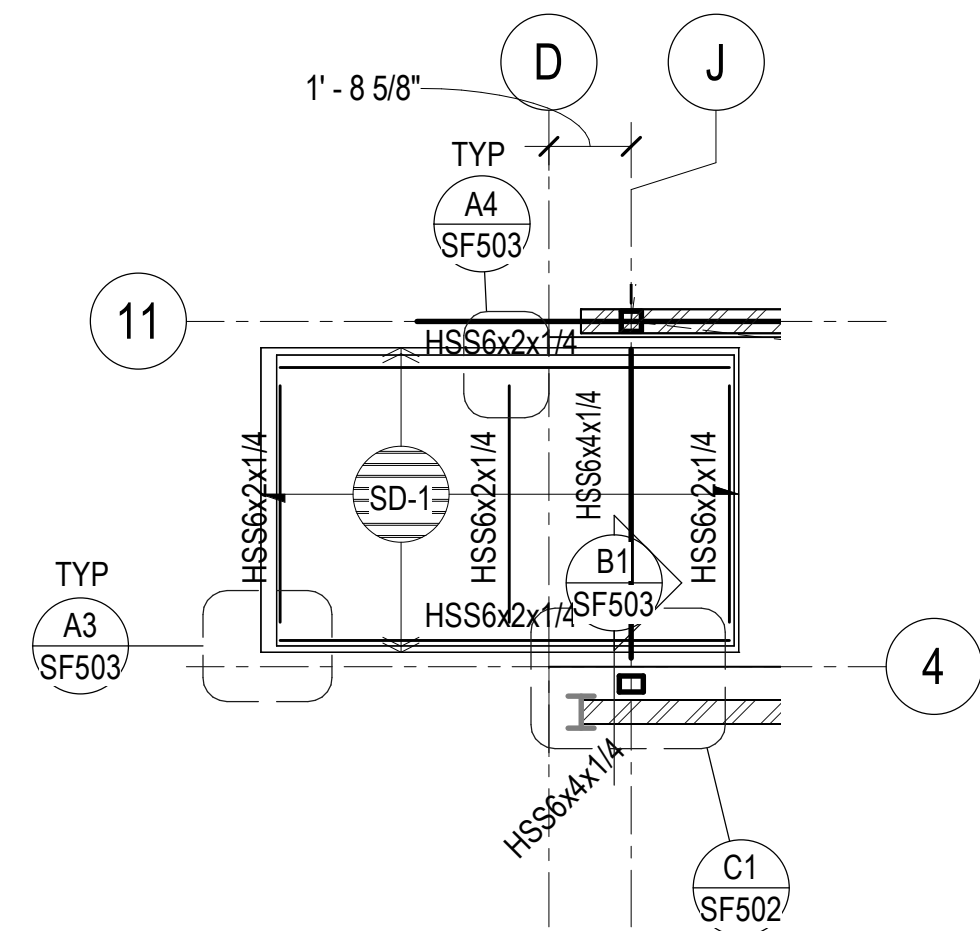
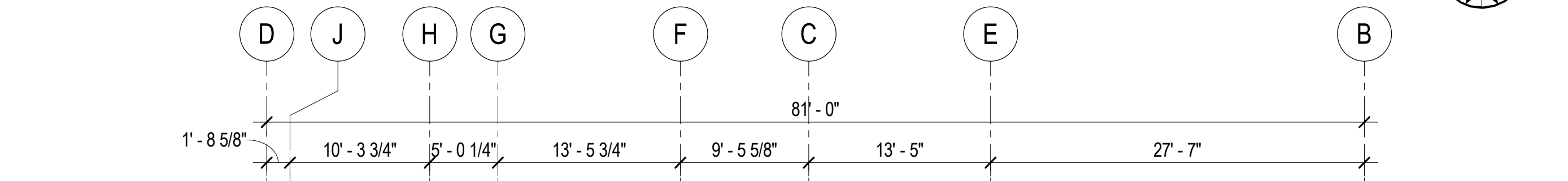
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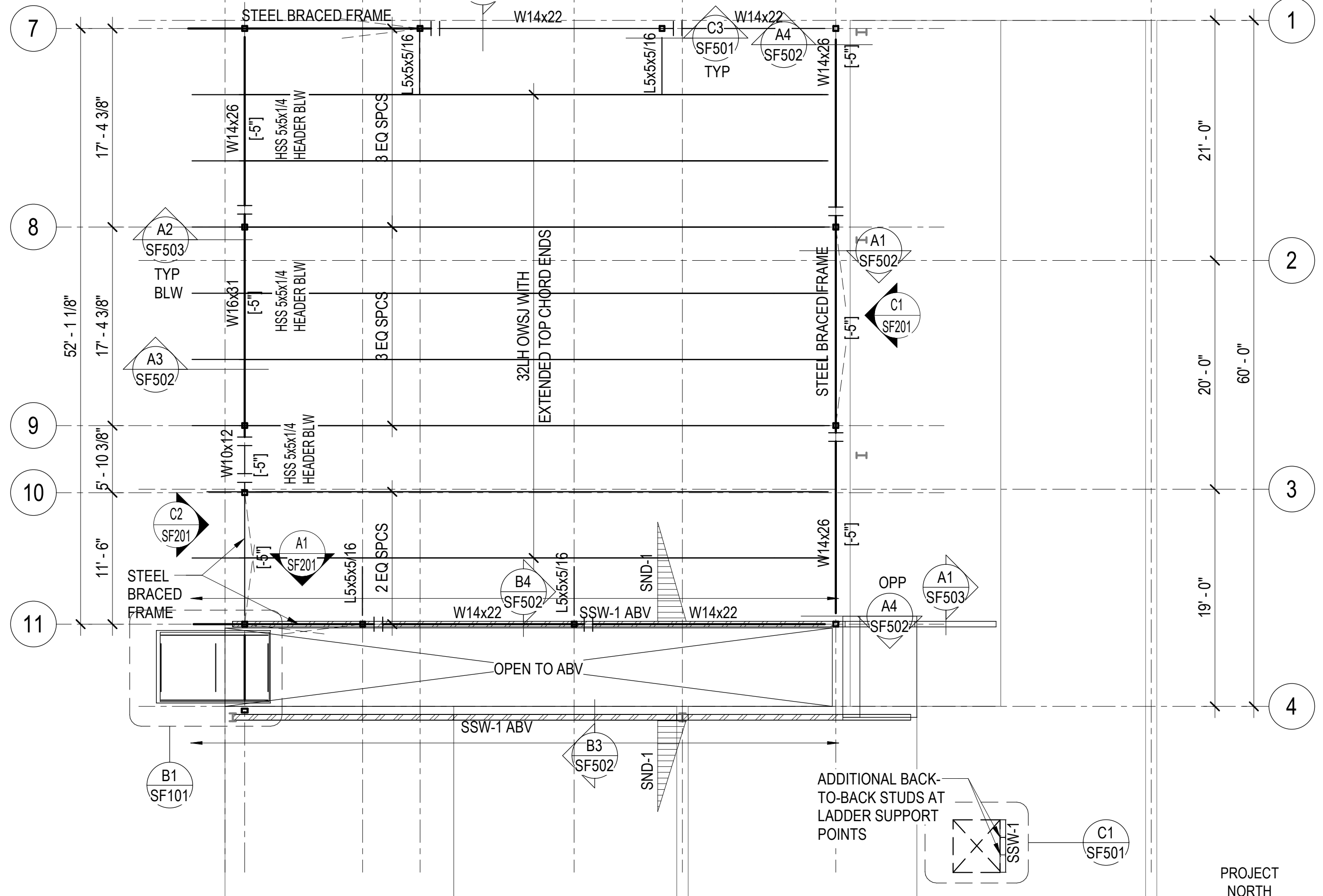
A



C2 HIGH ROOF FRAMING PLAN
SF101 SCALE: 1/8" = 1'-0"



B1 LOW ROOF FRAMING PLAN
SF101 SCALE: 1/4" = 1'-0"



A2 LOW ROOF FRAMING PLAN
SF101 SCALE: 1/8" = 1'-0"

EXISTING BUILDING NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DETAILING, FABRICATING, ERECTING OR INSTALLING ANY STRUCTURAL ELEMENT. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER REPRESENTATIVE IN A TIMELY MANNER SUCH THAT WORK WILL NOT BE DELAYED.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING OF EXISTING STRUCTURE DURING CONSTRUCTION.



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OPEN WEB JOIST FRAMING PLAN NOTES

1. OPEN WEB STEEL JOISTS SHALL BE DESIGNED BY THE MANUFACTURER TO SUPPORT THE MECHANICAL AND LATERAL LOADS SHOWN ON THE ROOF FRAMING PLANS IN ADDITION TO THE UNIFORM AND POINT LOADS SHOWN. LOADS SHOWN ARE UNFACTORED, UNO.
2. +#.#k - INDICATES POINT LOAD ON STEEL JOIST IN ADDITION TO UNIFORM LOADING SHOWN. + INDICATES DOWNWARD AND - INDICATES UPWARD LOADS. LOADS SHOWN ARE UNFACTORED, UNO.
3. ALL LOADS SUPPORTED BY OPEN WEB STEEL JOISTS SHALL BE LOCATED WITHIN 6" OF JOIST PANEL POINT OR THE JOIST SHALL BE REINFORCED PER DETAIL A4/SF501.
4. HORIZONTAL CROSS BRIDGING SHALL BE SIZED AND SUPPLIED BY THE JOIST MANUFACTURER. CONNECT TO WALLS AS INDICATED ON DETAILS.
5. WHERE SKYLIGHTS OR MECHANICAL UNITS INTERRUPT HORIZONTAL BRIDGING, PROVIDE CROSS BRIDGING AT JOIST SPACES ON EACH SIDE, TYP.
6. ALL OPEN WEB STEEL JOISTS WITH A SLOPE OF 3/8" PER FOOT OR LARGER SHALL HAVE SLOPED BEARING SEATS.
7. OPEN WEB STEEL JOISTS AT ROOF AREAS SHALL BE DESIGNED FOR THE FOLLOWING WIND UNFACTORED NET UPLIFT LOADS: 43 PSF WITHIN 13 FT OF ROOF EDGES, 12 PSF AT ALL OTHER AREAS.

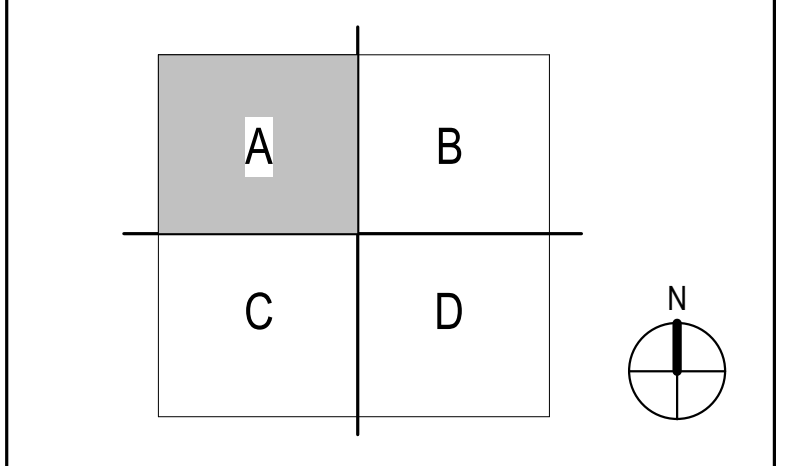
NON-COMPOSITE FRAMING PLAN NOTES

1. SEE STEEL DECK SCHEDULE ON SHEET SF601 FOR DECK PROFILE AND DECK ATTACHMENT REQUIREMENTS.
2. PROVIDE FRAMING AT OPENINGS THROUGH STEEL DECK PER DETAIL C1/SF501 FOR ROUND OPENINGS LESS THAN 12 INCHES IN DIAMETER SEE DETAIL C2/SF501.
3. PROVIDE STEEL FRAMES FOR SUPPORT OF ROOF HATCH PER DETAIL C1/SF501 COORDINATE OPENINGS WITH CONTRACTOR OFFICER REPRESENTATIVE.

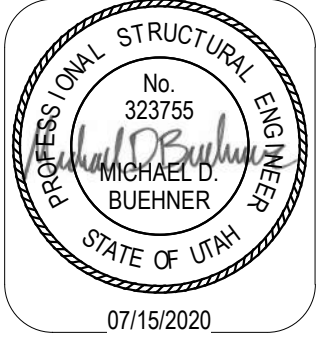
ROOF FRAMING PLAN NOTES

1. SEE ARCHITECTURAL FOR ROOF SLOPES AND DRAINS. PROVIDE STEEL FRAMES PER DETAIL A1/SF501 AT STEEL DECK.

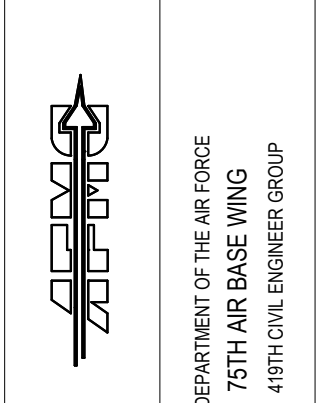
KEYPLAN



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07/15/2020		



DESIGNED BY	MOD/REV-A	DATE
MOB/RE-A <td></td> <td>07/15/2020</td>		07/15/2020



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419TH CIVIL ENGINEER GROUP

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ROOF FRAMING PLAN**

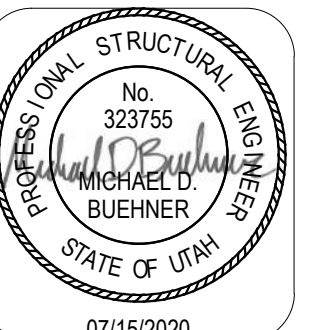


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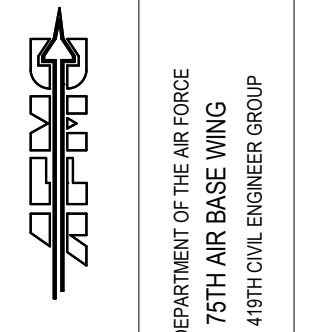
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FINAL DESIGN LOGS	07/15/2020		



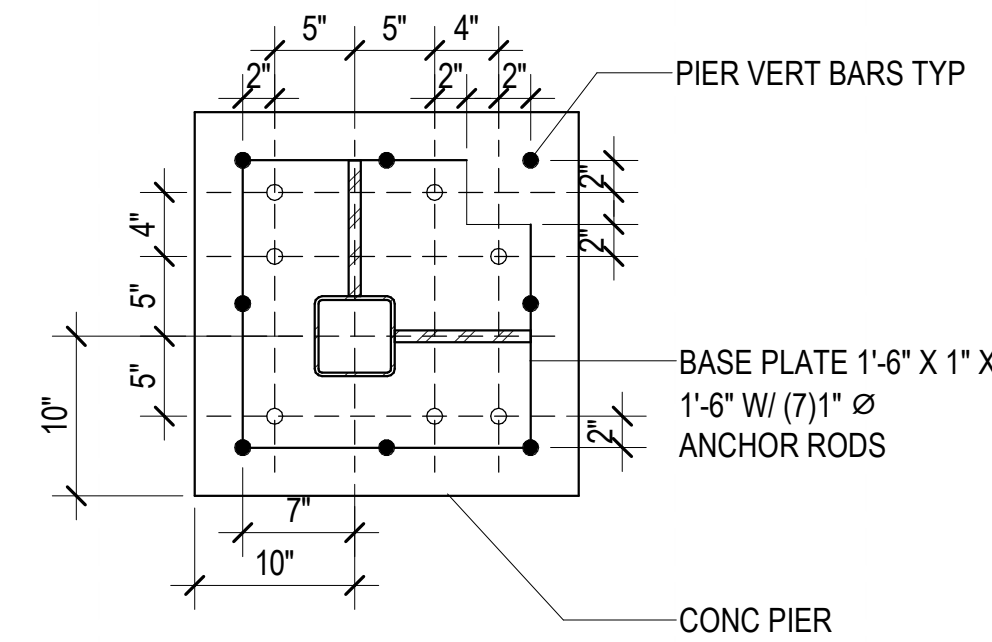
DESIGNED BY: MDOB/RE-A	MOD/RE-A	DATE: 07/15/2020
DRAWN BY: BEVERLY LANGUE	BASE PROJECT MANAGER	
CAPITAL PROJECT NO: 1033248	LEGACY PROJECT NO:	



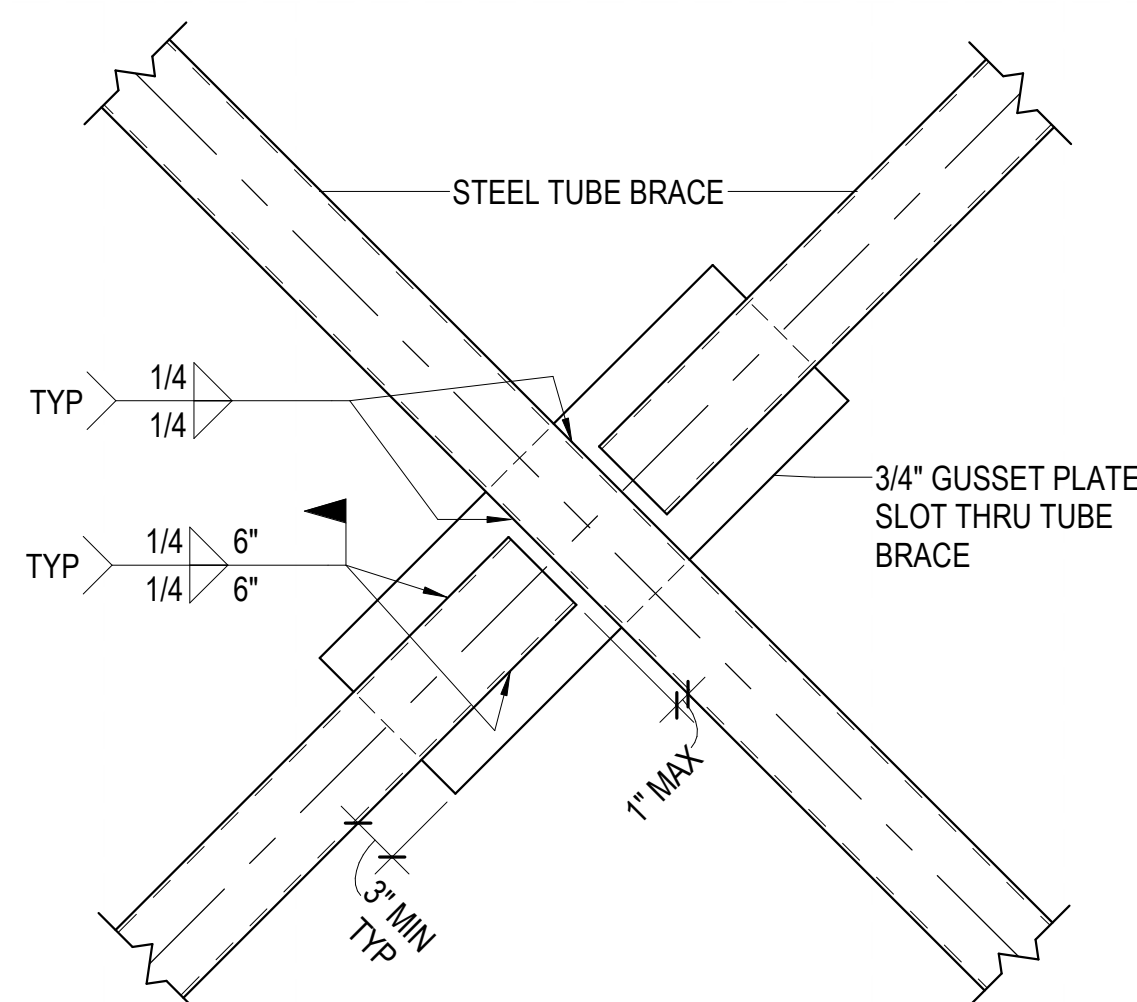
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BRACED FRAME DETAILS

SF202

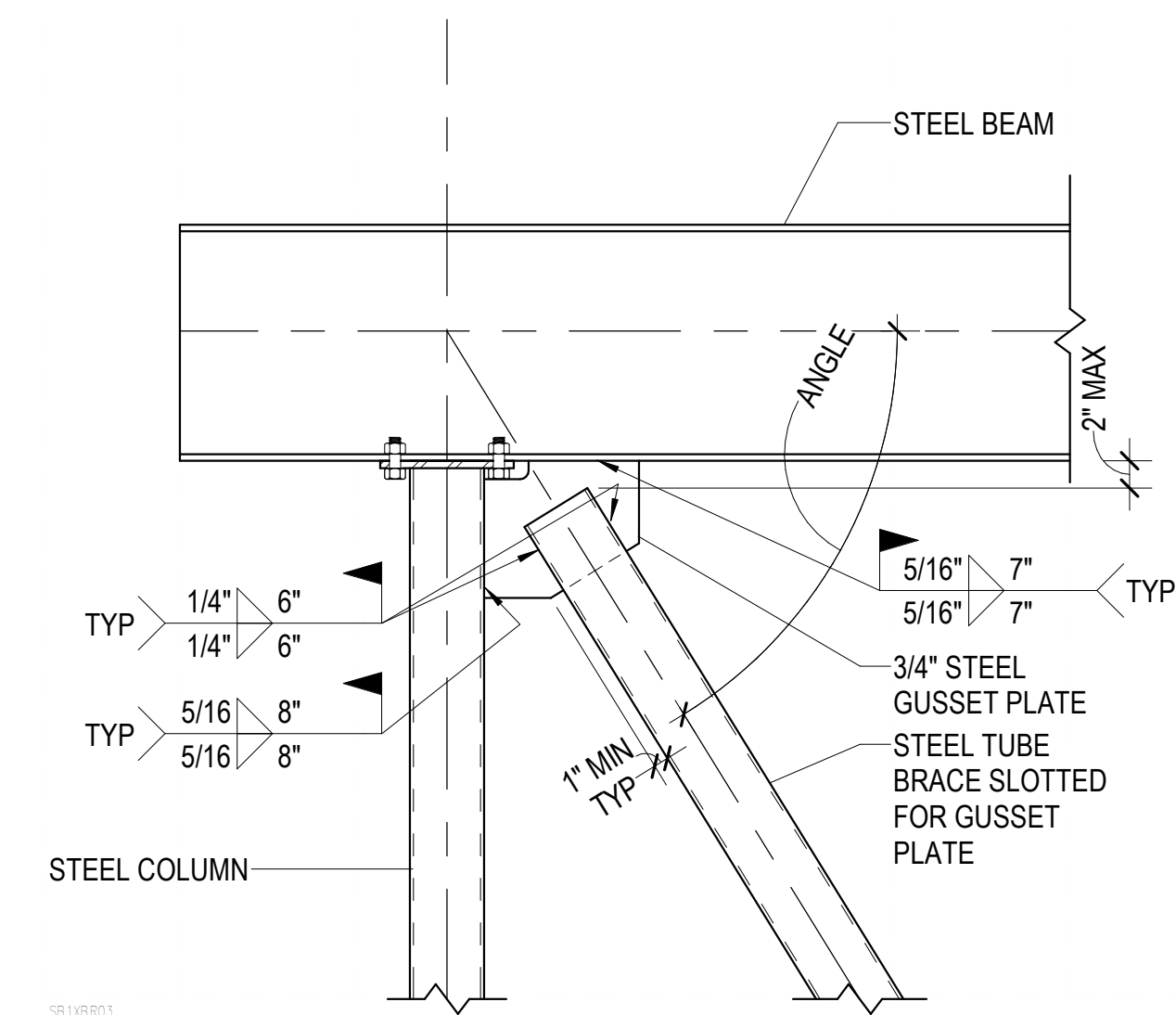
Sheet: 18 of 94



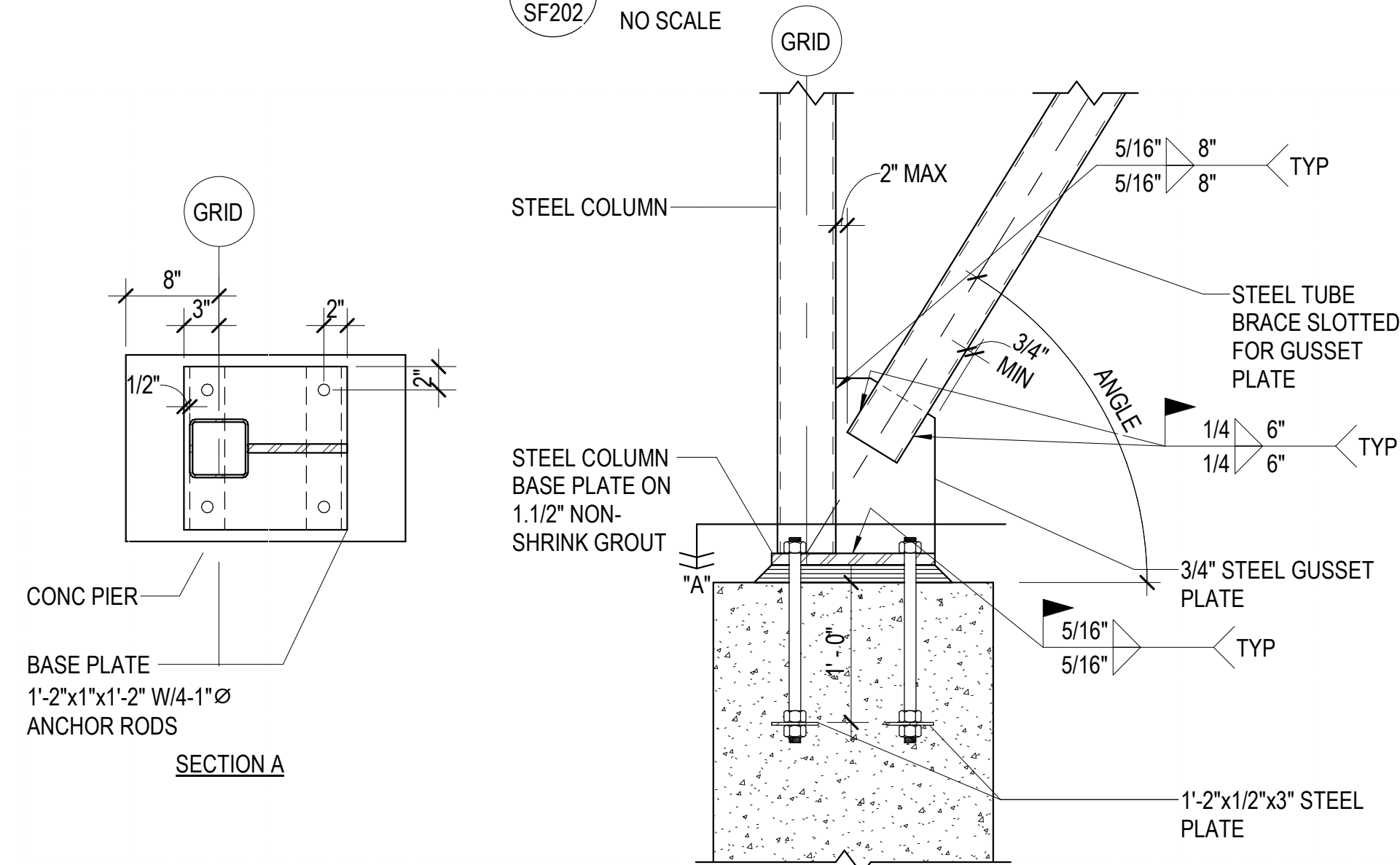
B3 PLAN DETAIL AT GRID J/11
NO SCALE



A3 TYPICAL X-BRACE INTERSECTION CONNECTION
NO SCALE



B4 TYPICAL STEEL BEAM TO STEEL COLUMN CONNECTION WITH BRACED FRAME CONNECTION BELOW
NO SCALE



A4 TYPICAL X-BRACE CONNECTION
NO SCALE

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ORIGINAL SHEET - ANS D



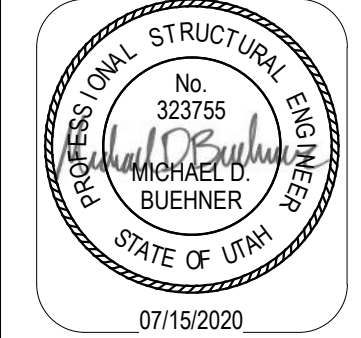
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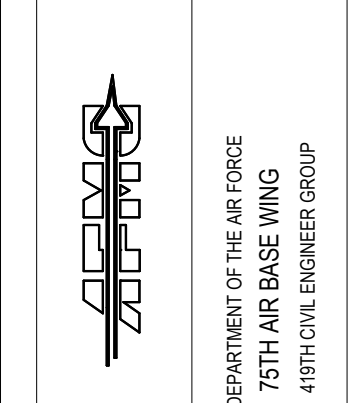
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DESCRIPTION		
FINAL DESIGN 100%		



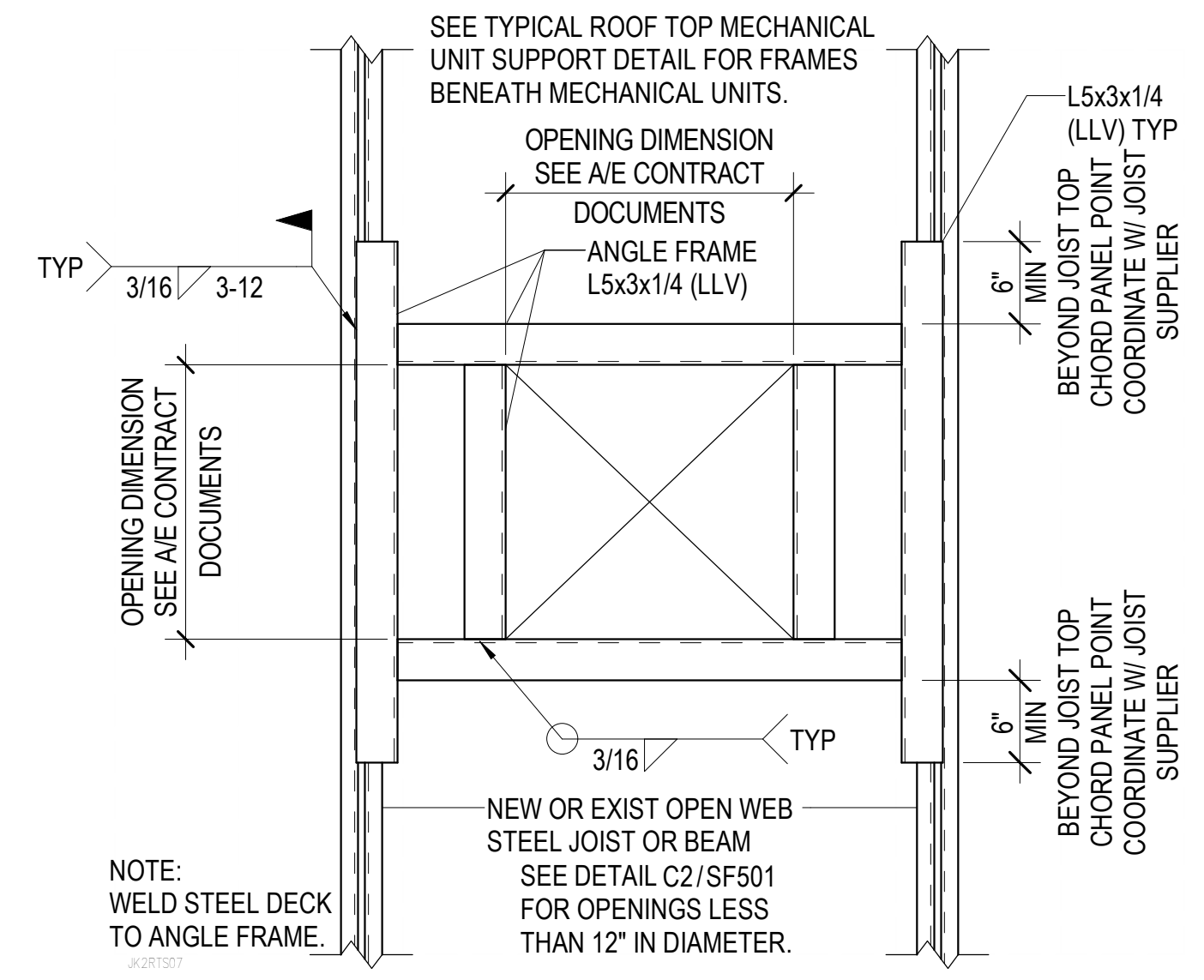
DESIGNED BY:	MDR/RE-A	DATE:	07/15/2020
CHECKED BY:	MDR/RE-A	PROJECT NO.:	1033248
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DATE:	07/15/2020	BASE PROJECT MANAGER:	BEVERLY LANGUE



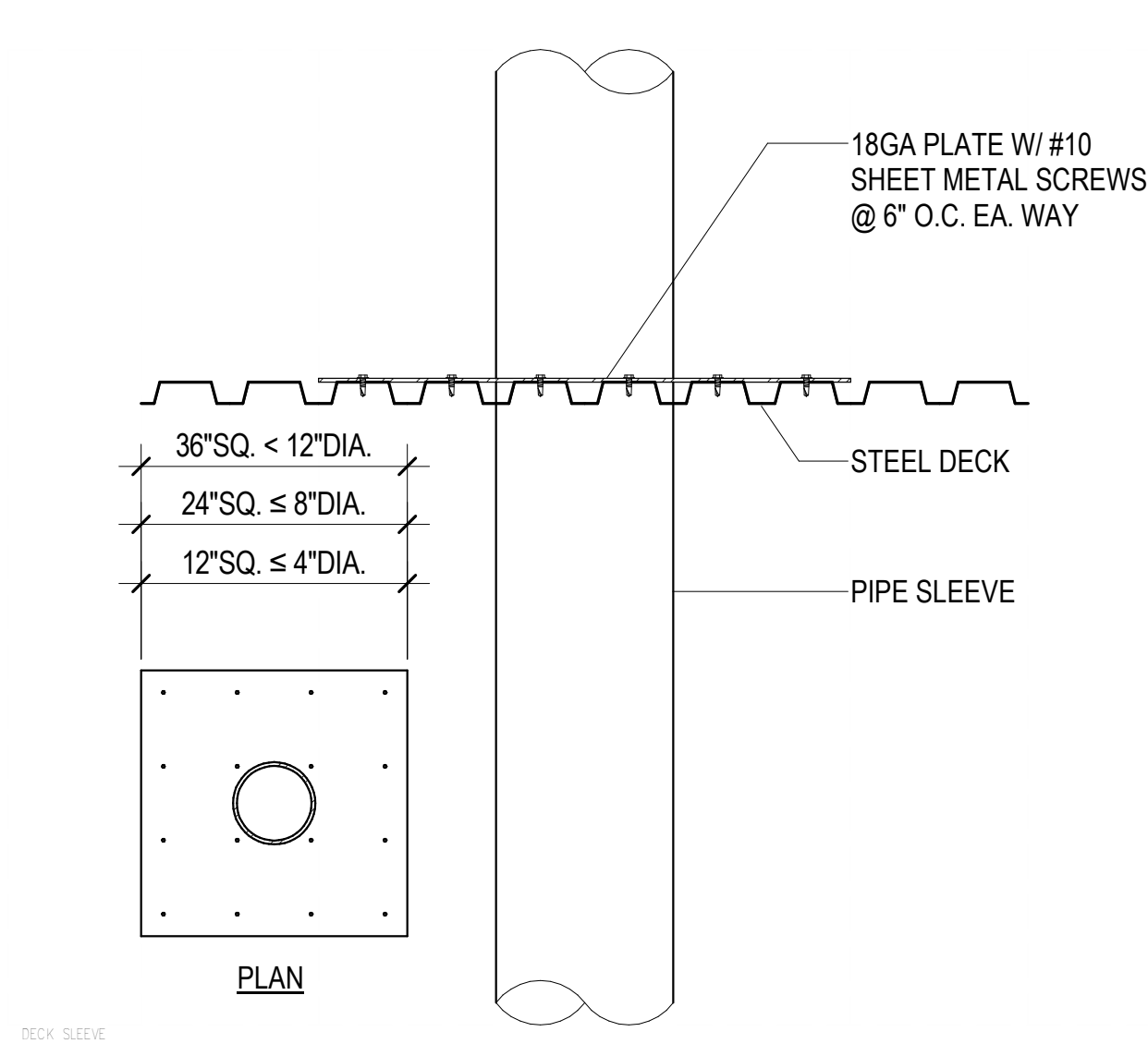
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ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
TYPICAL ROOF FRAMING DETAILS

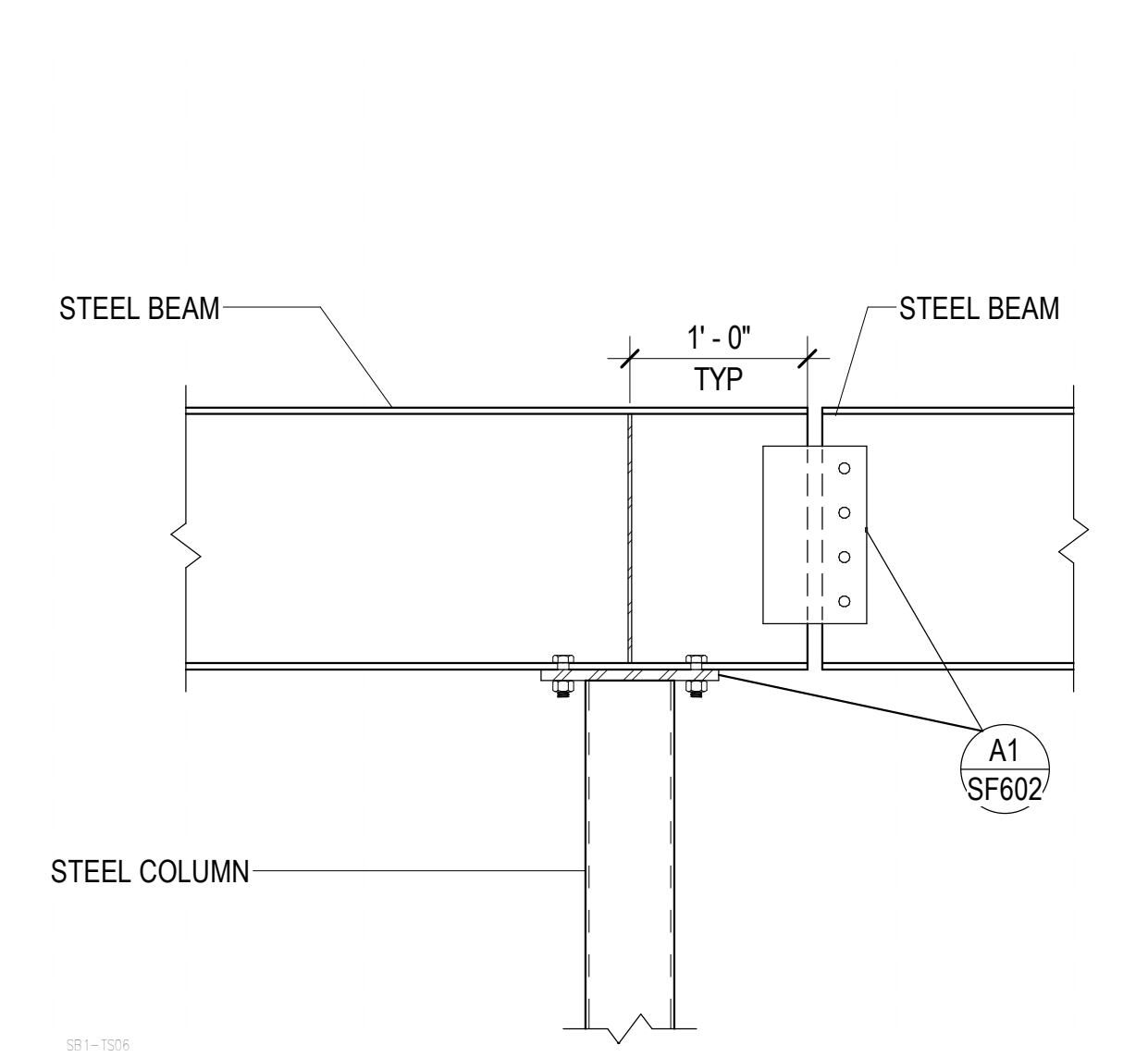
SF501
Sheet: 19 of 94



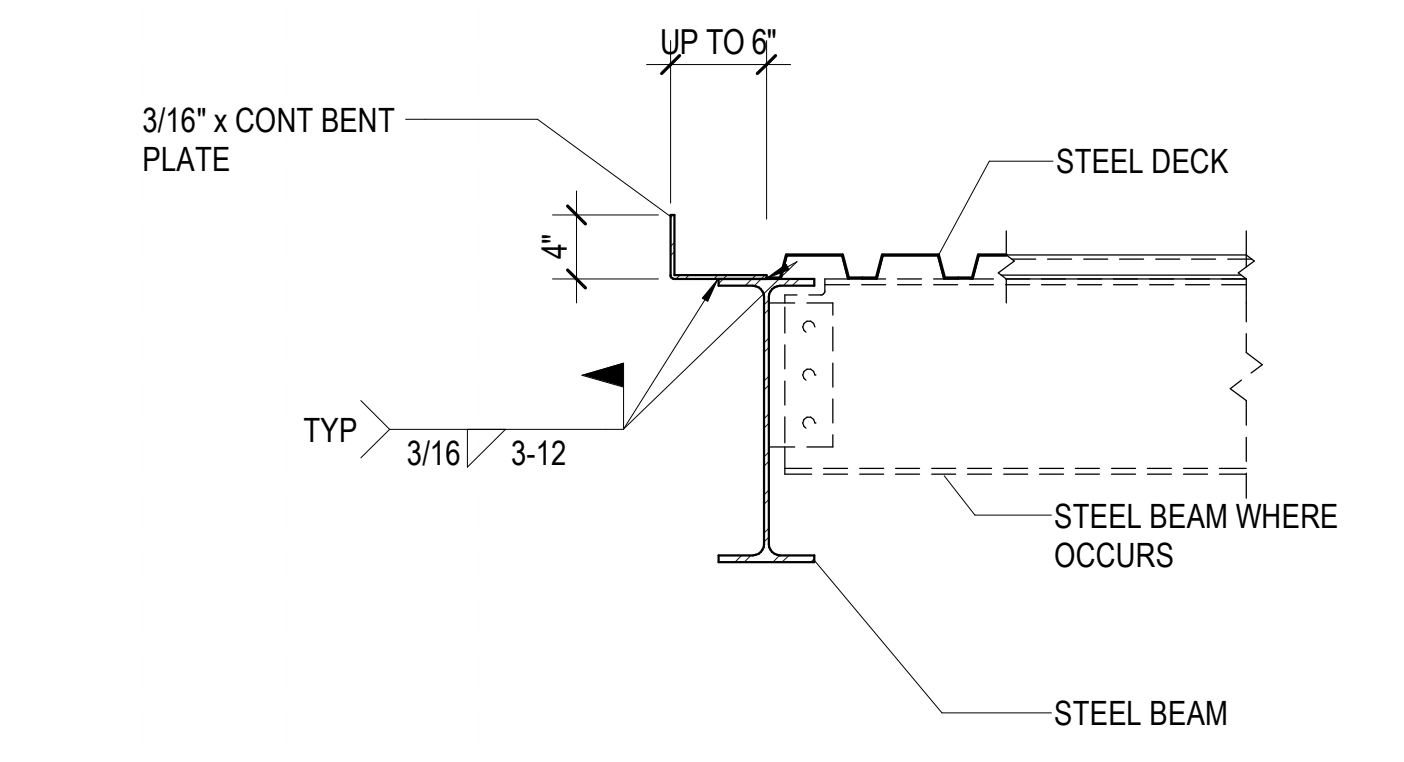
C1 TYPICAL ROOF OPENING DETAIL (PLAN VIEW)
SF501 NO SCALE



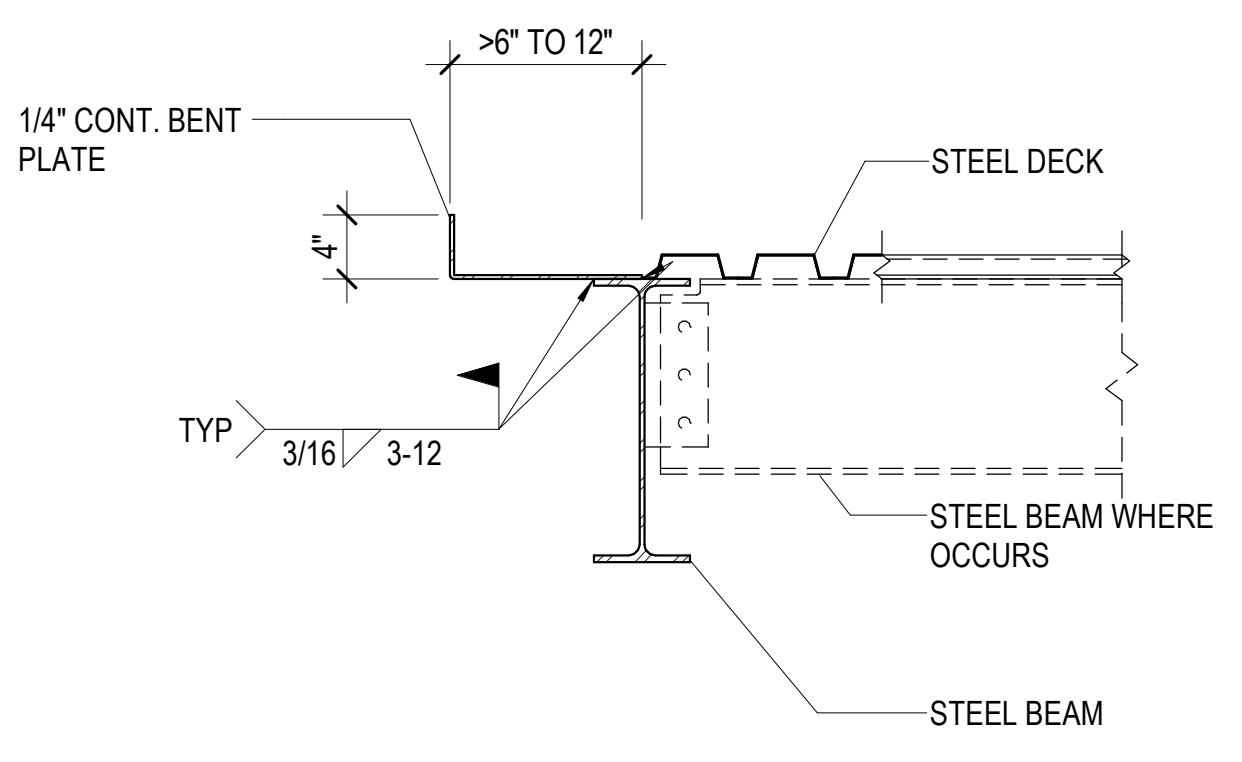
C2 TYPICAL PIPE SLEEVE HOLE THRU ROOF DECK
SF501 NO SCALE



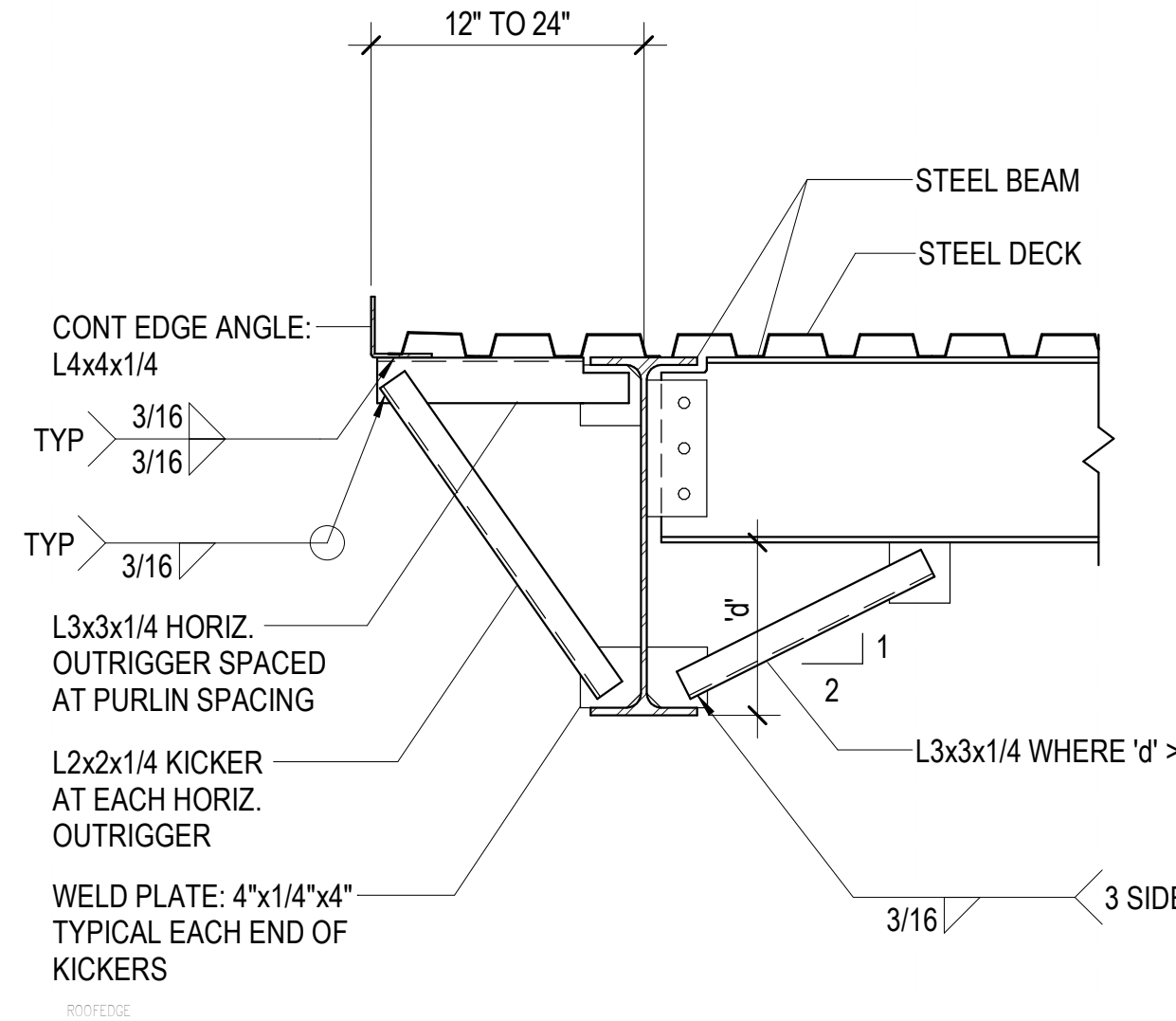
C3 STEEL BEAM TO STEEL COLUMN AT DROP-IN BEAM
SF501 NO SCALE



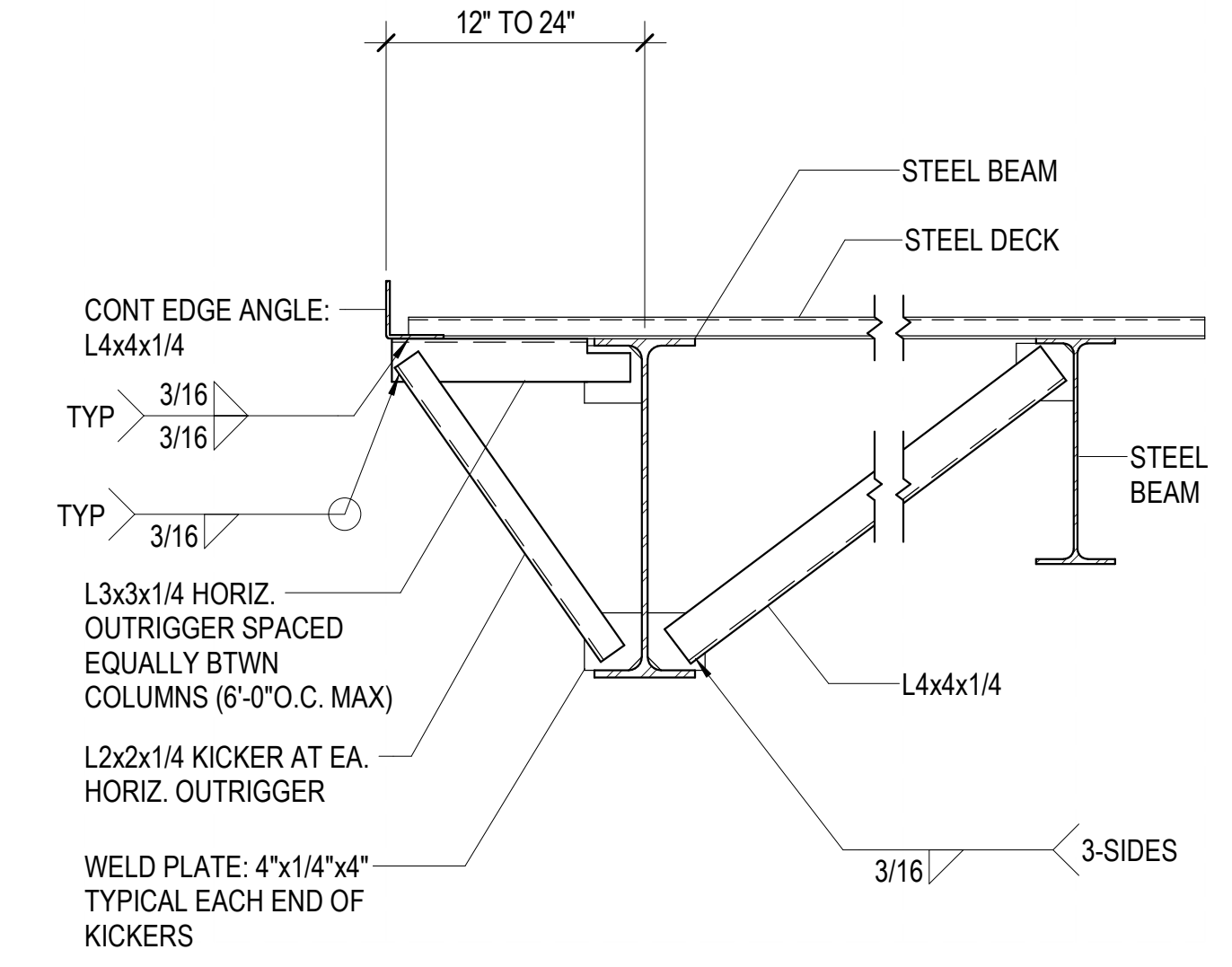
B1 TYPICAL ROOF EDGE DETAILS AT STEEL BEAMS
SF501 NO SCALE



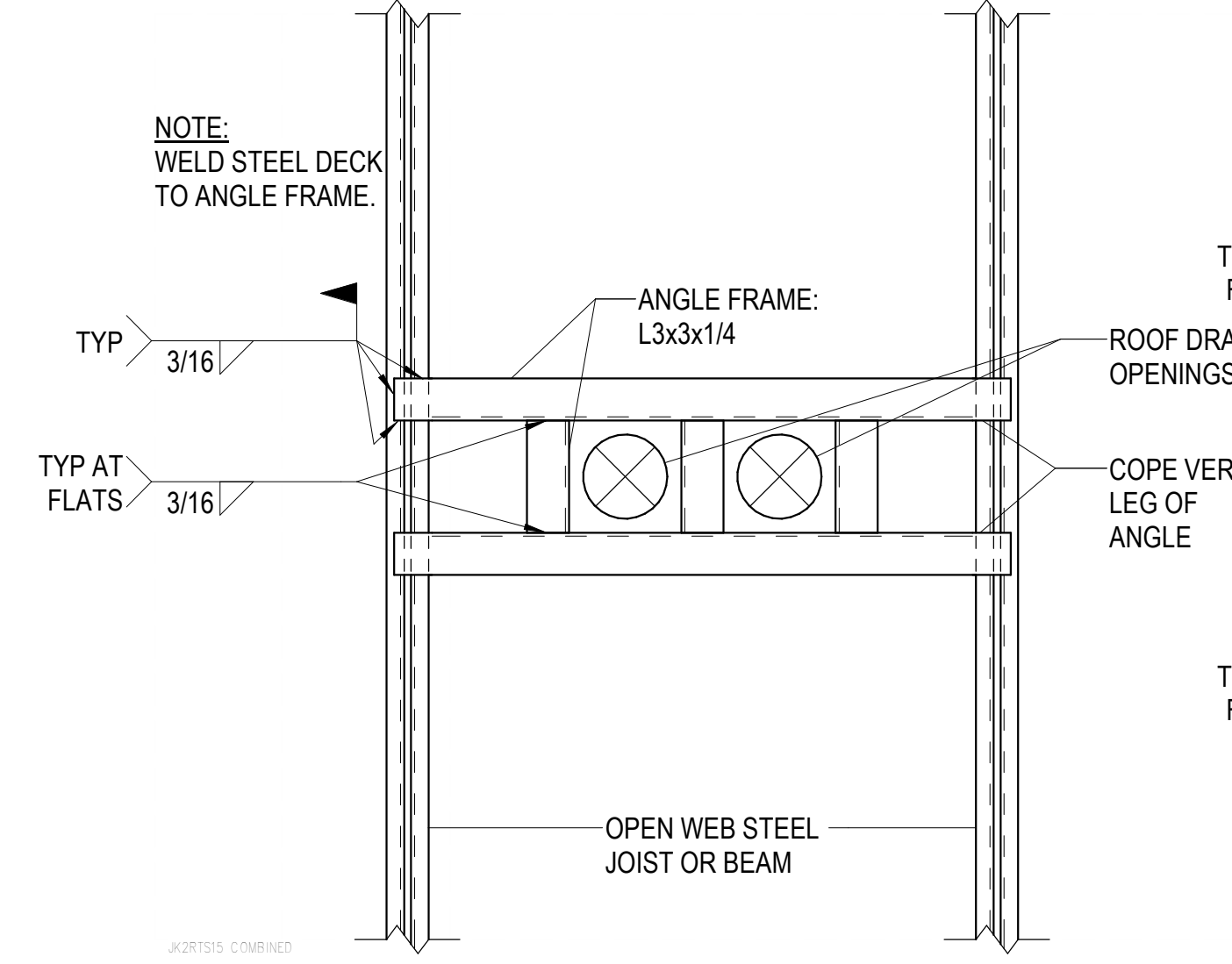
B2 TYPICAL ROOF EDGE DETAILS AT STEEL BEAMS
SF501 NO SCALE



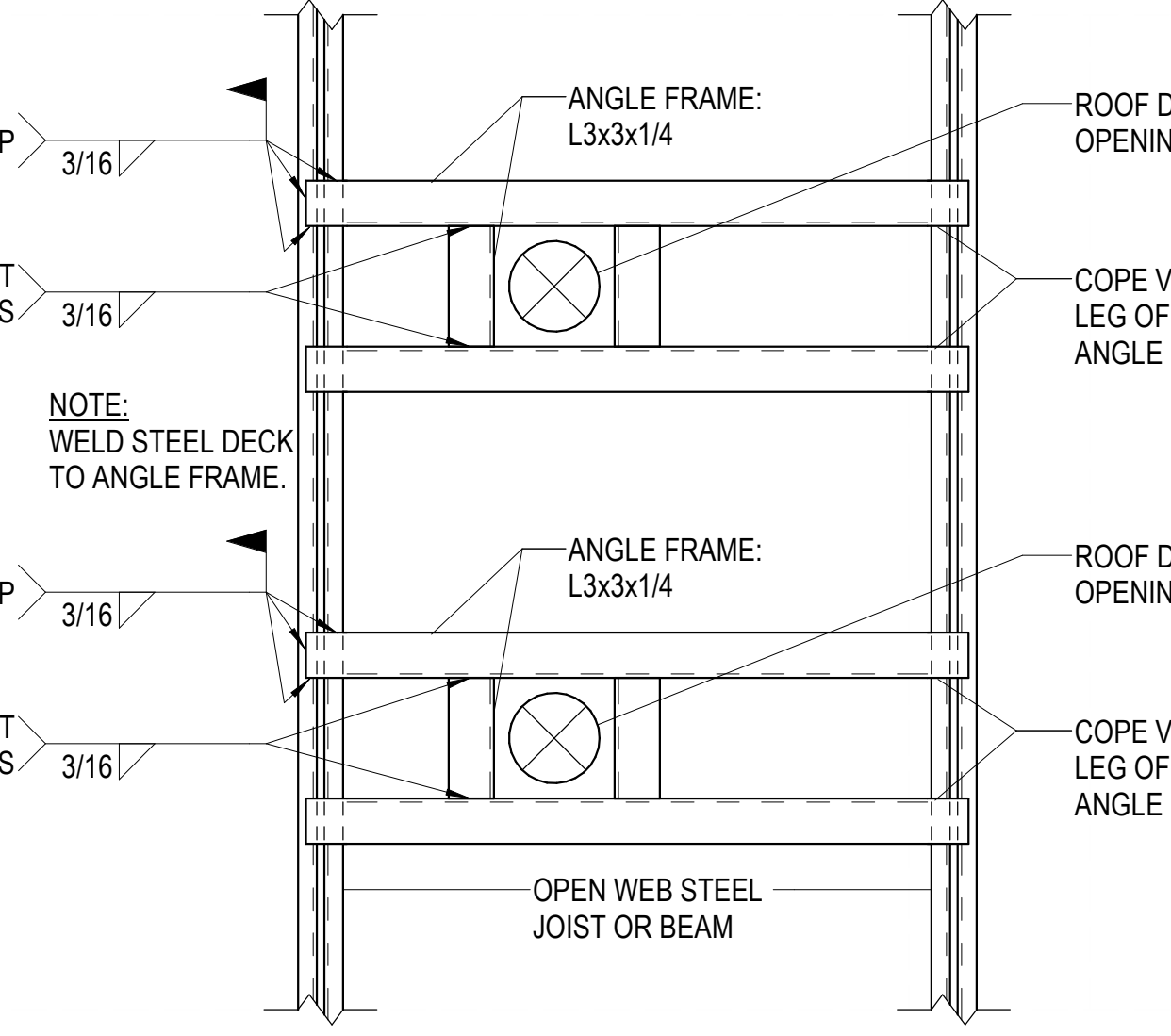
A3 TYPICAL JOIST BEARING AT STEEL BEAM
SF501 NO SCALE



A4 TYPICAL DETAIL AT ADDITIONAL CONCENTRATED POINT LOAD
SF501 NO SCALE



A1 TYPICAL ROOF DRAIN OPENING (PLAN VIEW)
SF501 NO SCALE



A2 TYPICAL ROOF DRAIN OPENING (PLAN VIEW)
SF501 NO SCALE



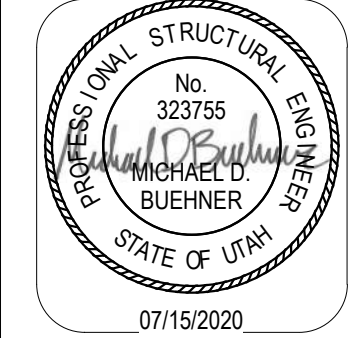
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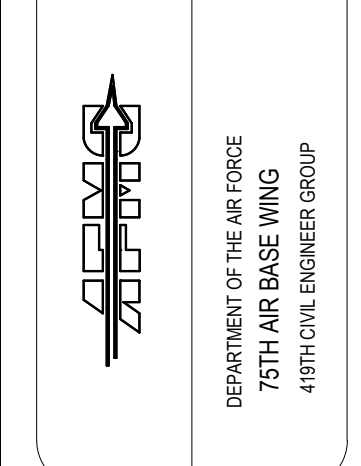
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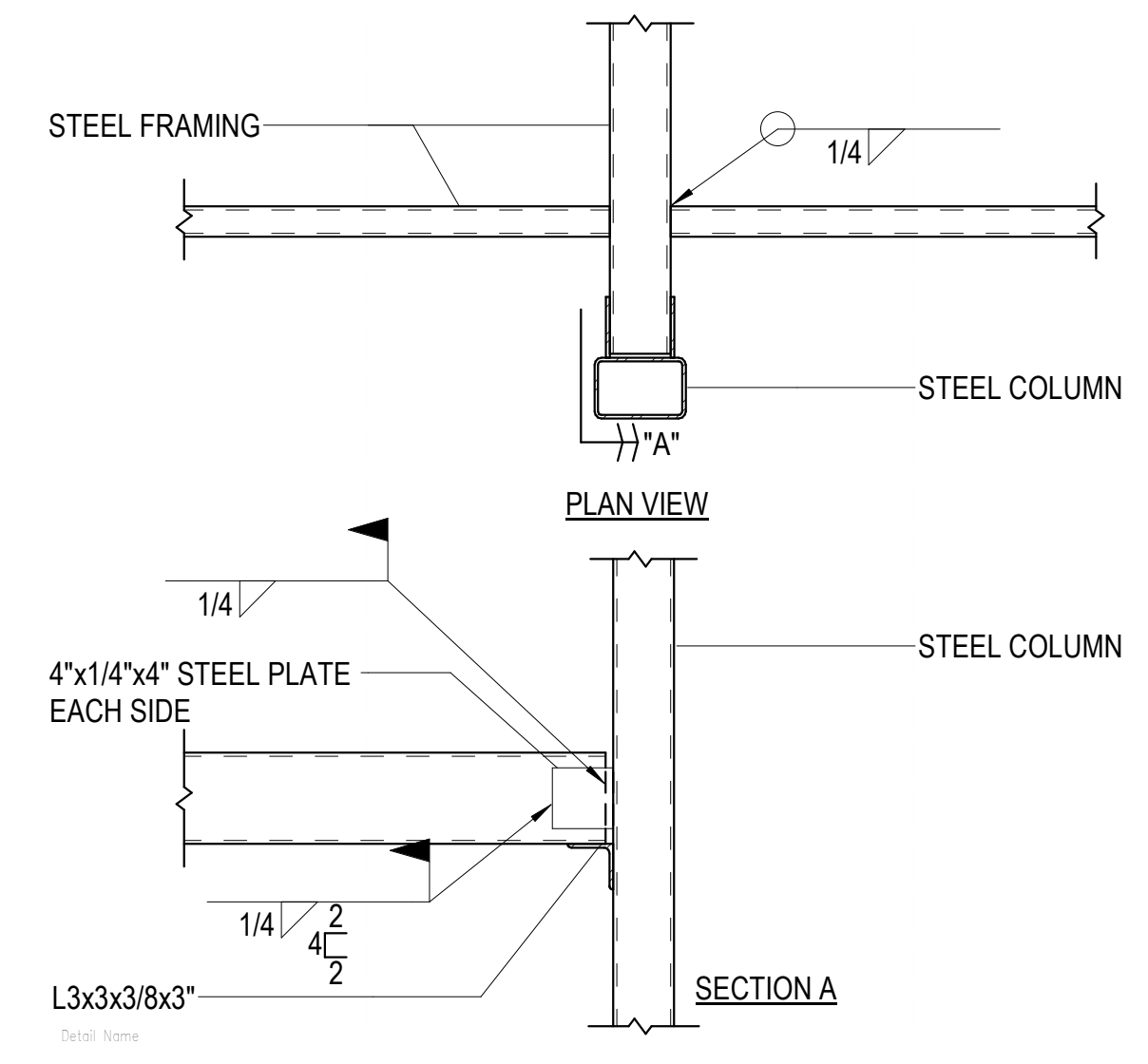


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DRAWN BY: MICHAEL D. BLUHNER	DATE: 07/15/2020
PROJECT NO: 1033248	LEGACY PROJECT NO:
BASE PROJECT MANAGER: BEVERLY LANGUE	

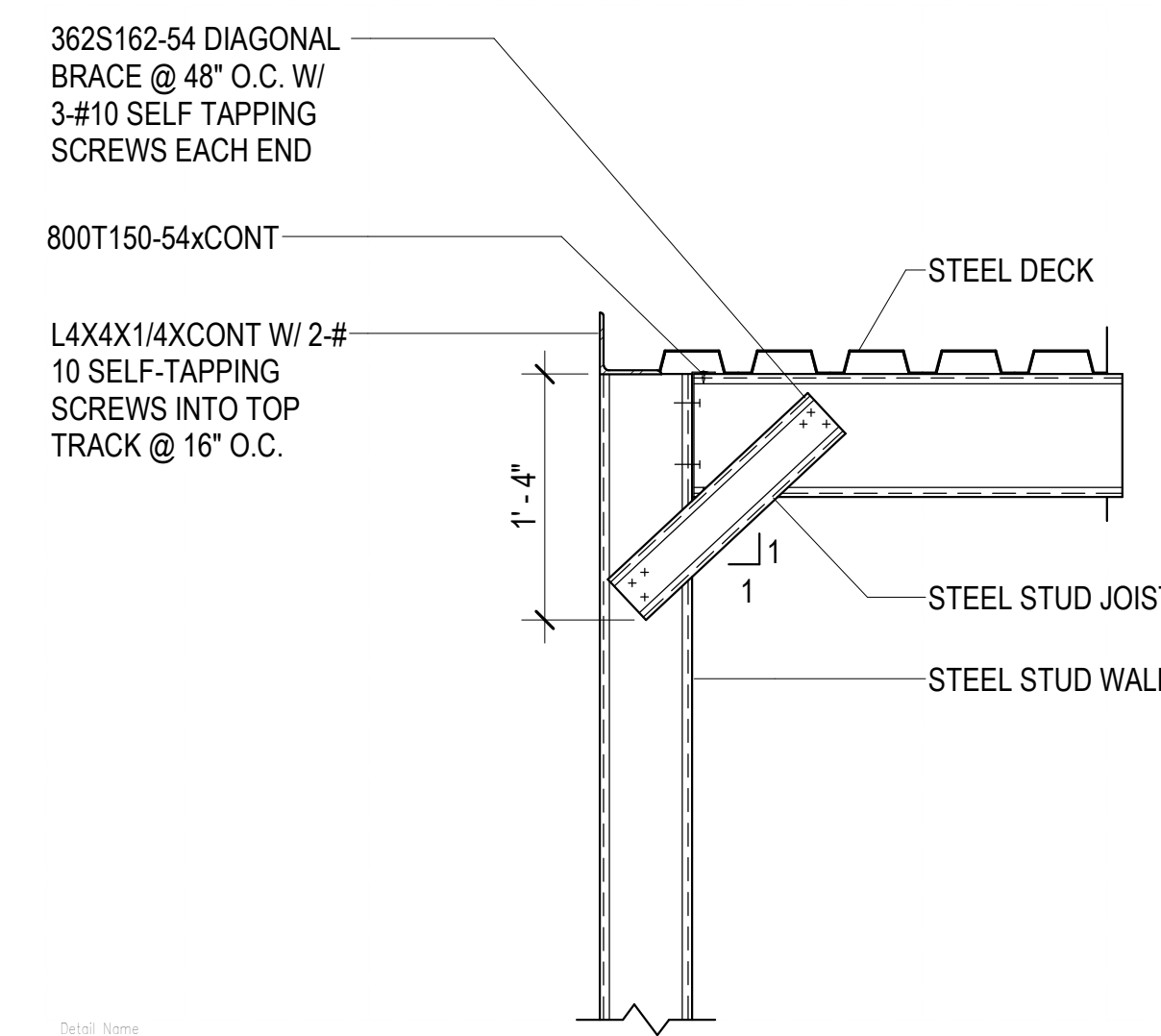


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FRAMING DETAILS

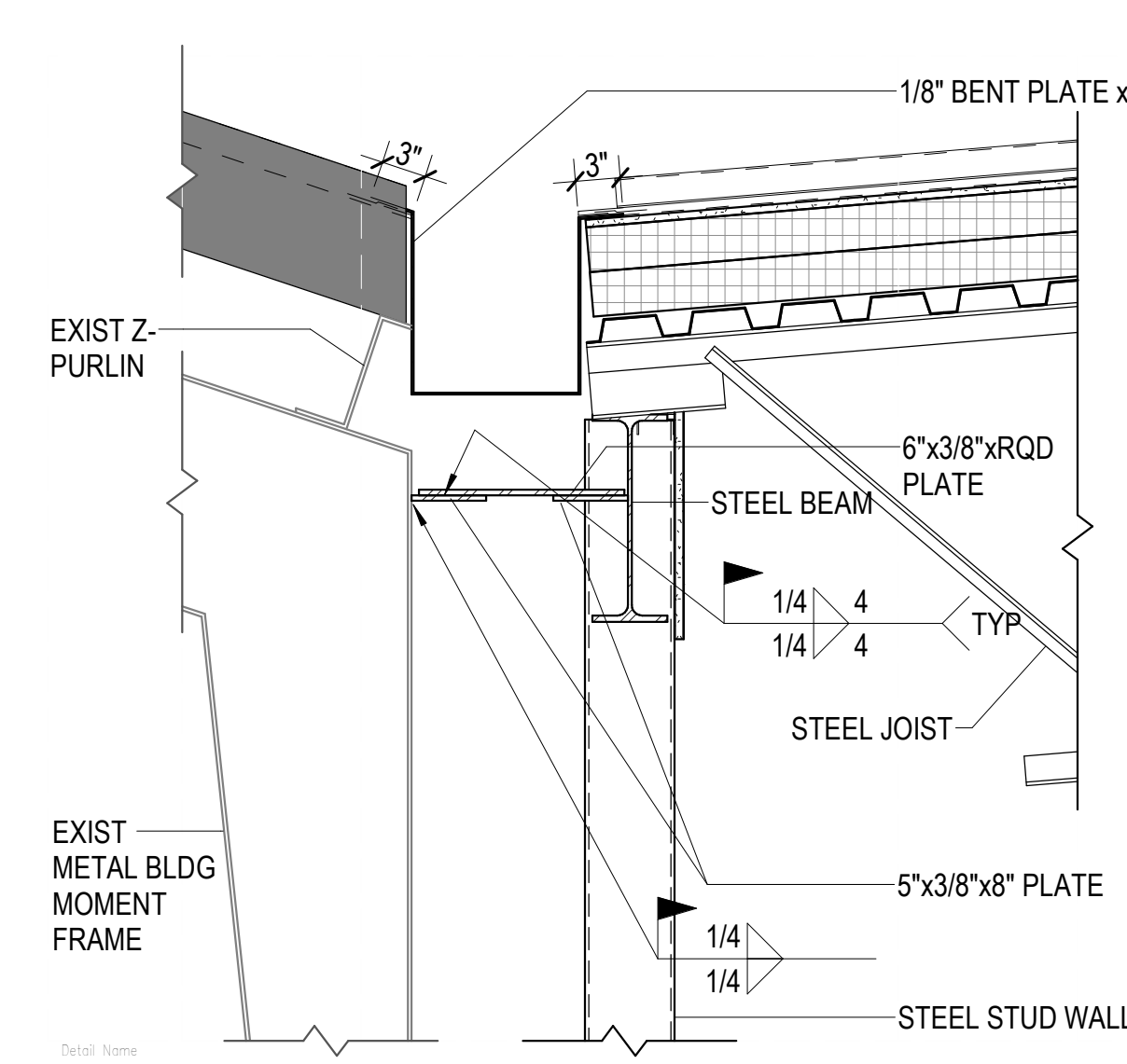
SF502
Sheet: 20 of 94



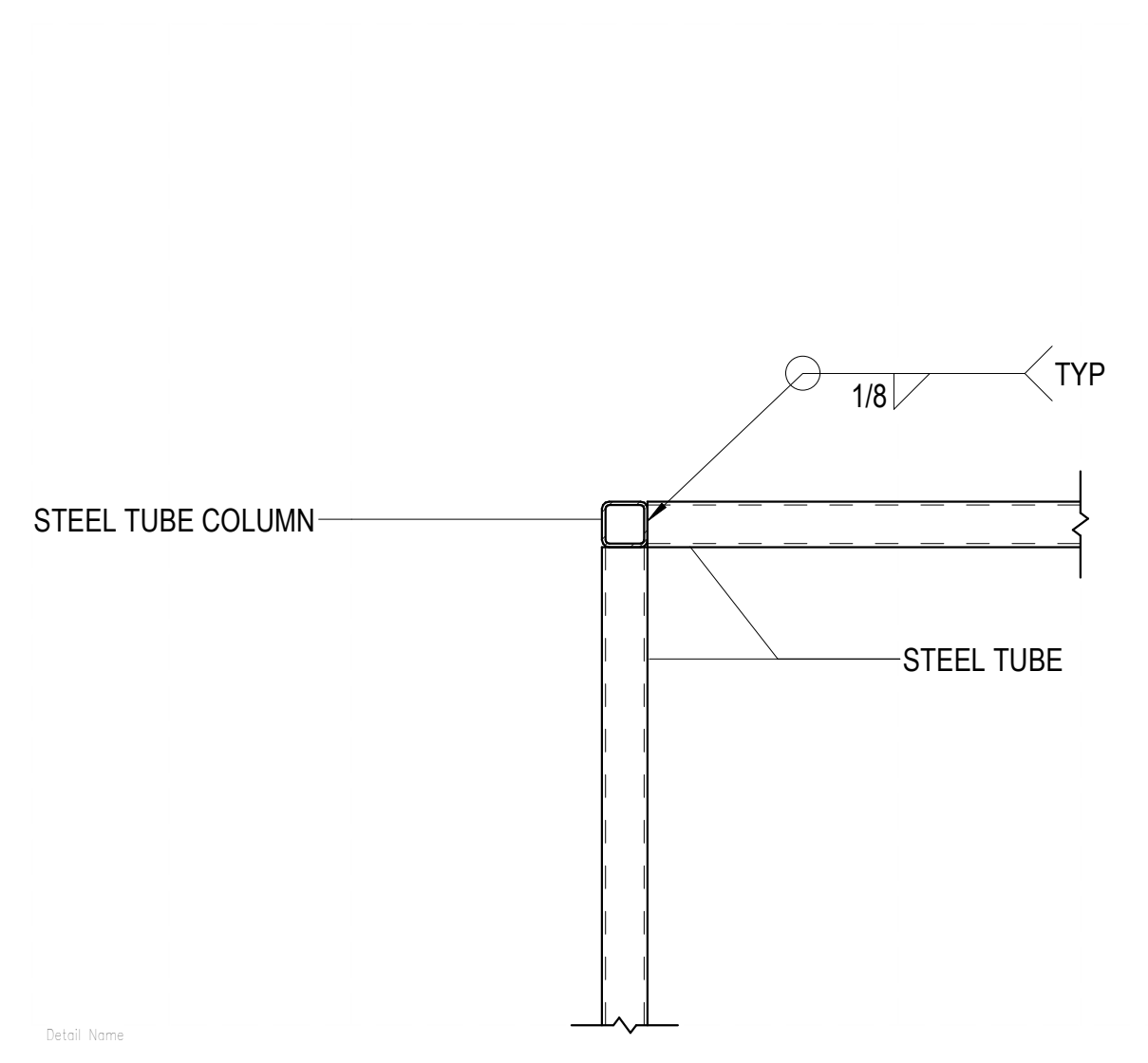
C1 COLUMN AT CANOPY
SF502 NO SCALE



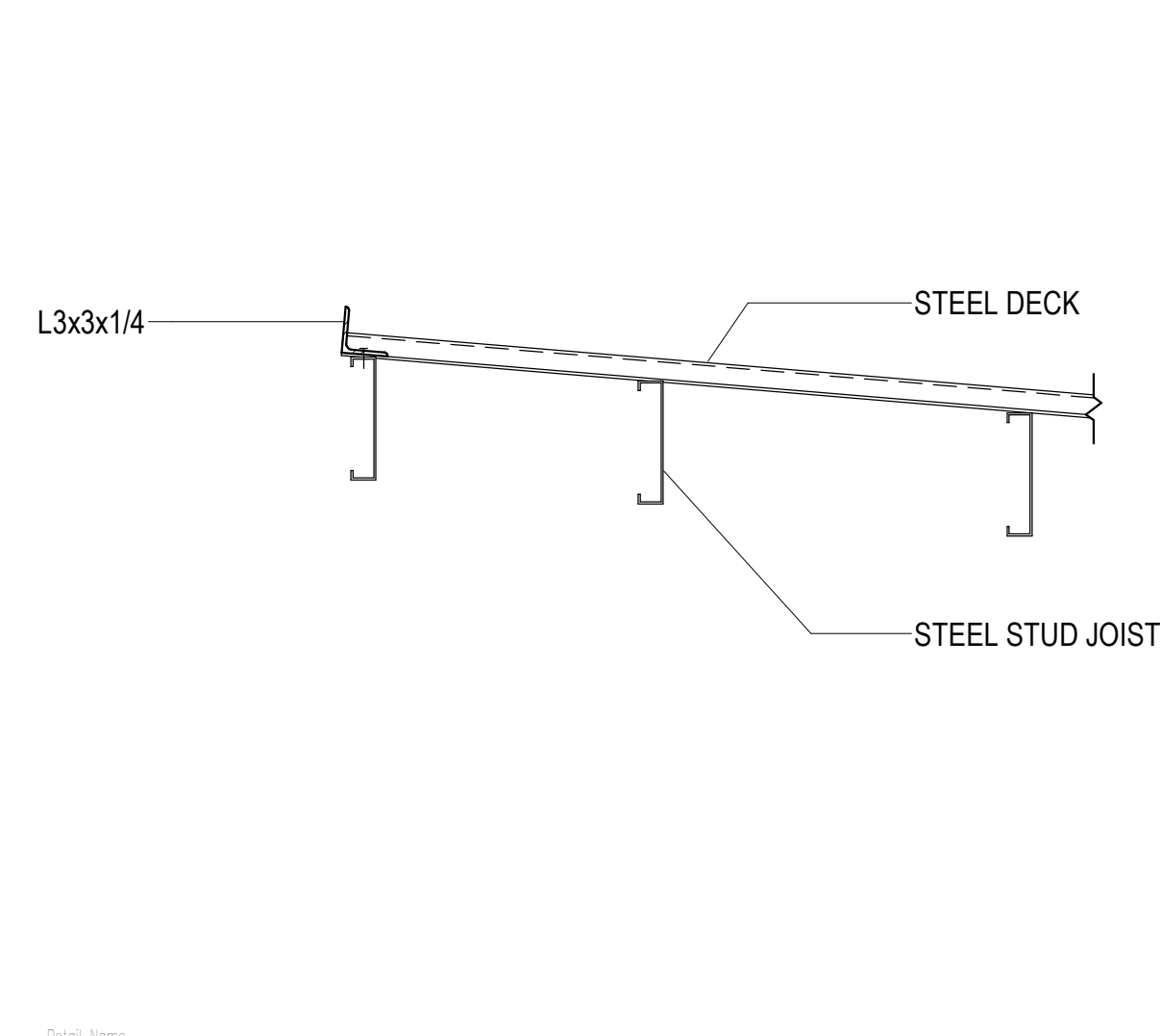
B1 STEEL STUD WALL AT ROOF DECK
SF502 NO SCALE



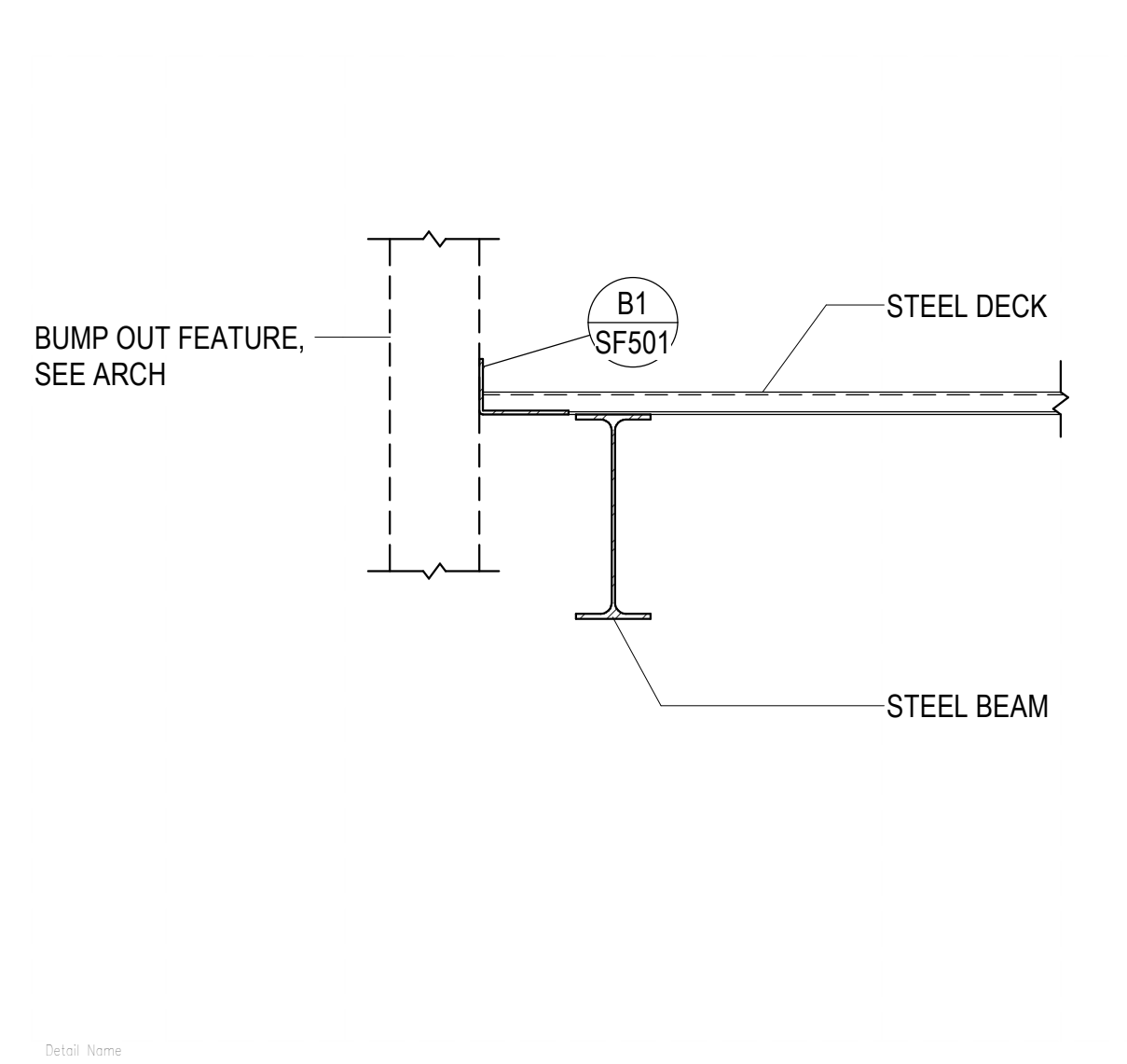
A1 STEEL DECK AT EXISTING CONNECTION
SF502 NO SCALE



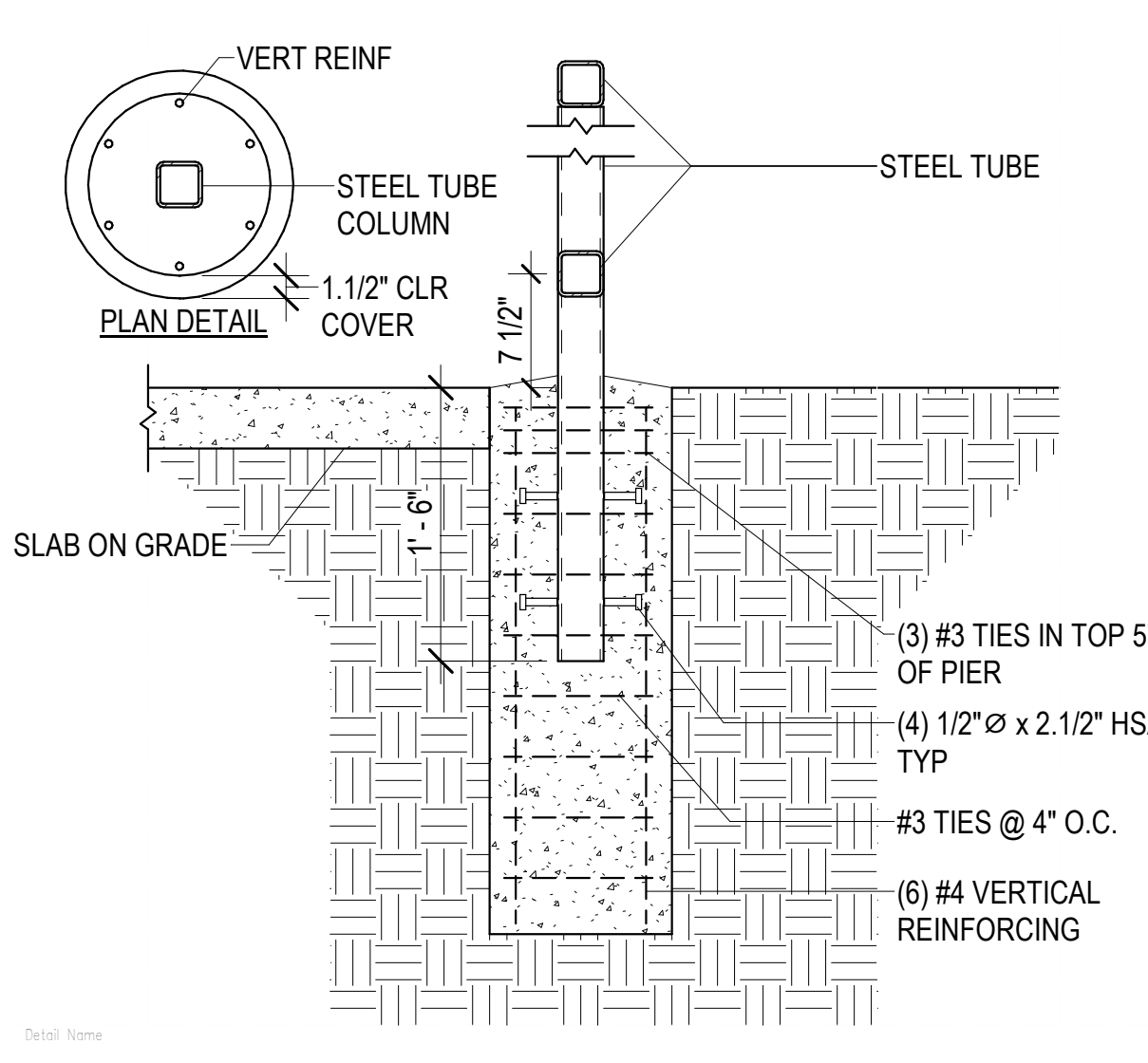
D2 FENCE PLAN DETAIL
SF502 NO SCALE



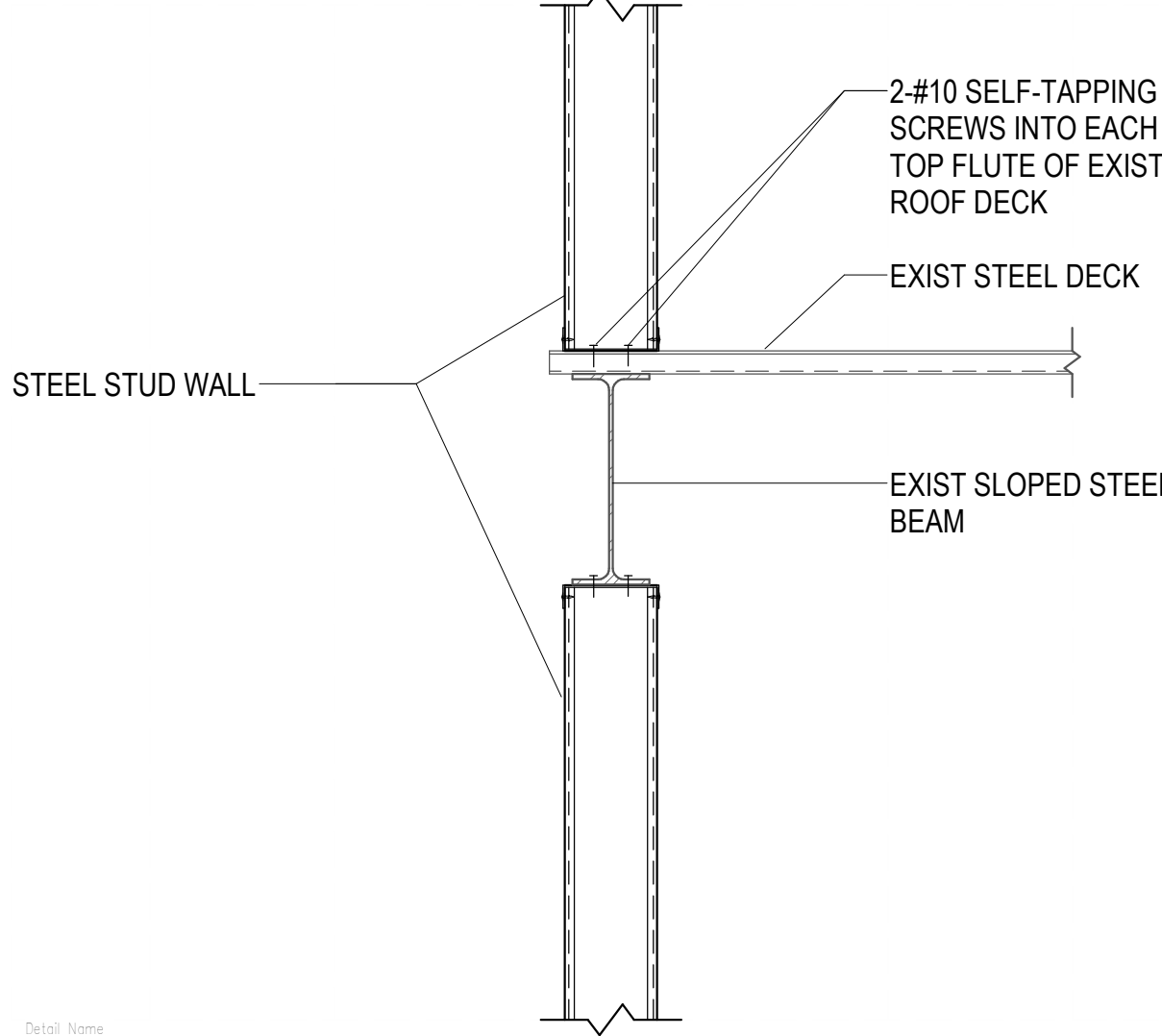
B2 HIGH ROOF EXTENSION
SF502 NO SCALE



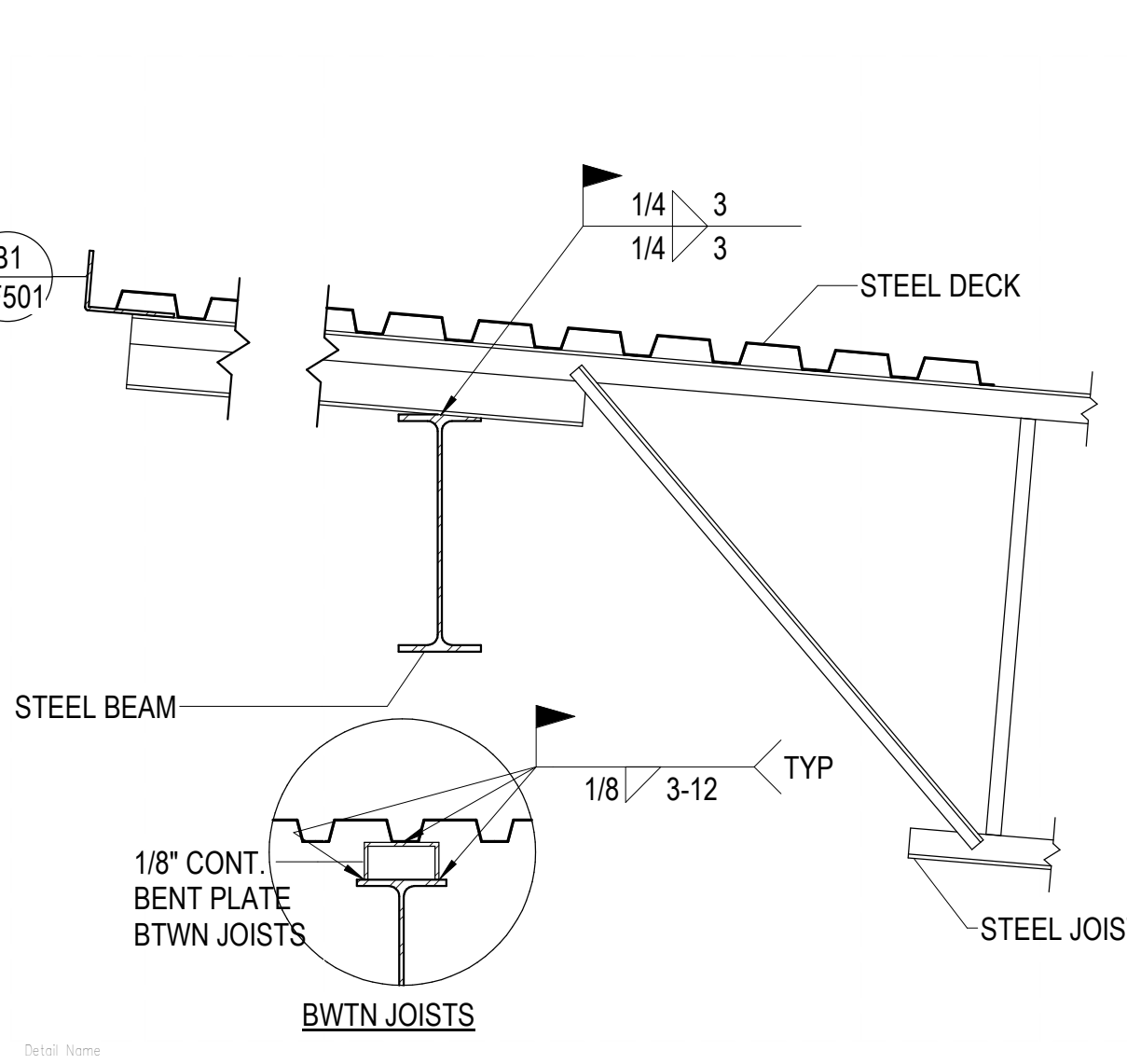
A2 STEEL DECK EXTENSION
SF502 NO SCALE



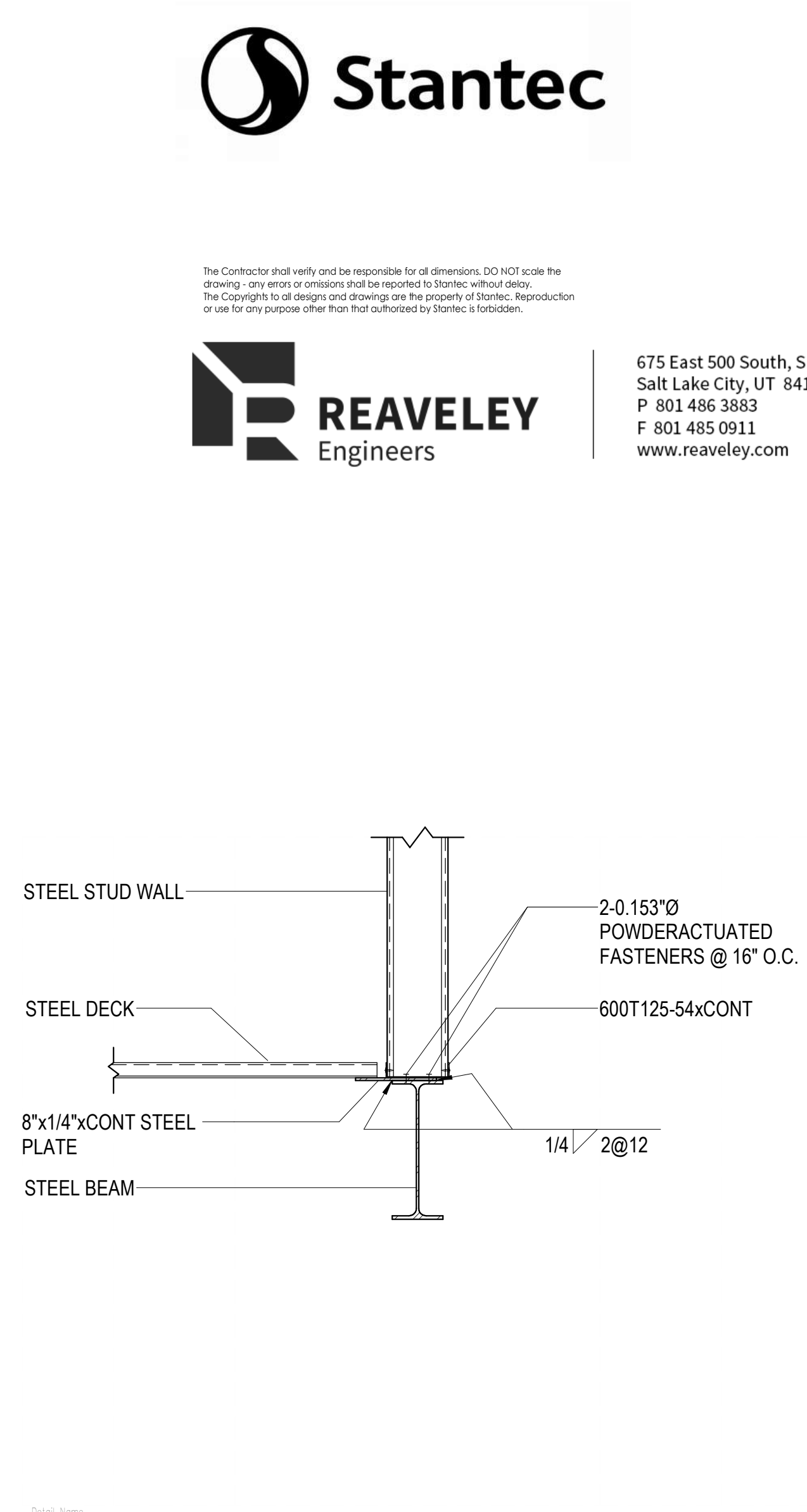
D3 FENCE FOUNDATION DETAIL
SF502 NO SCALE



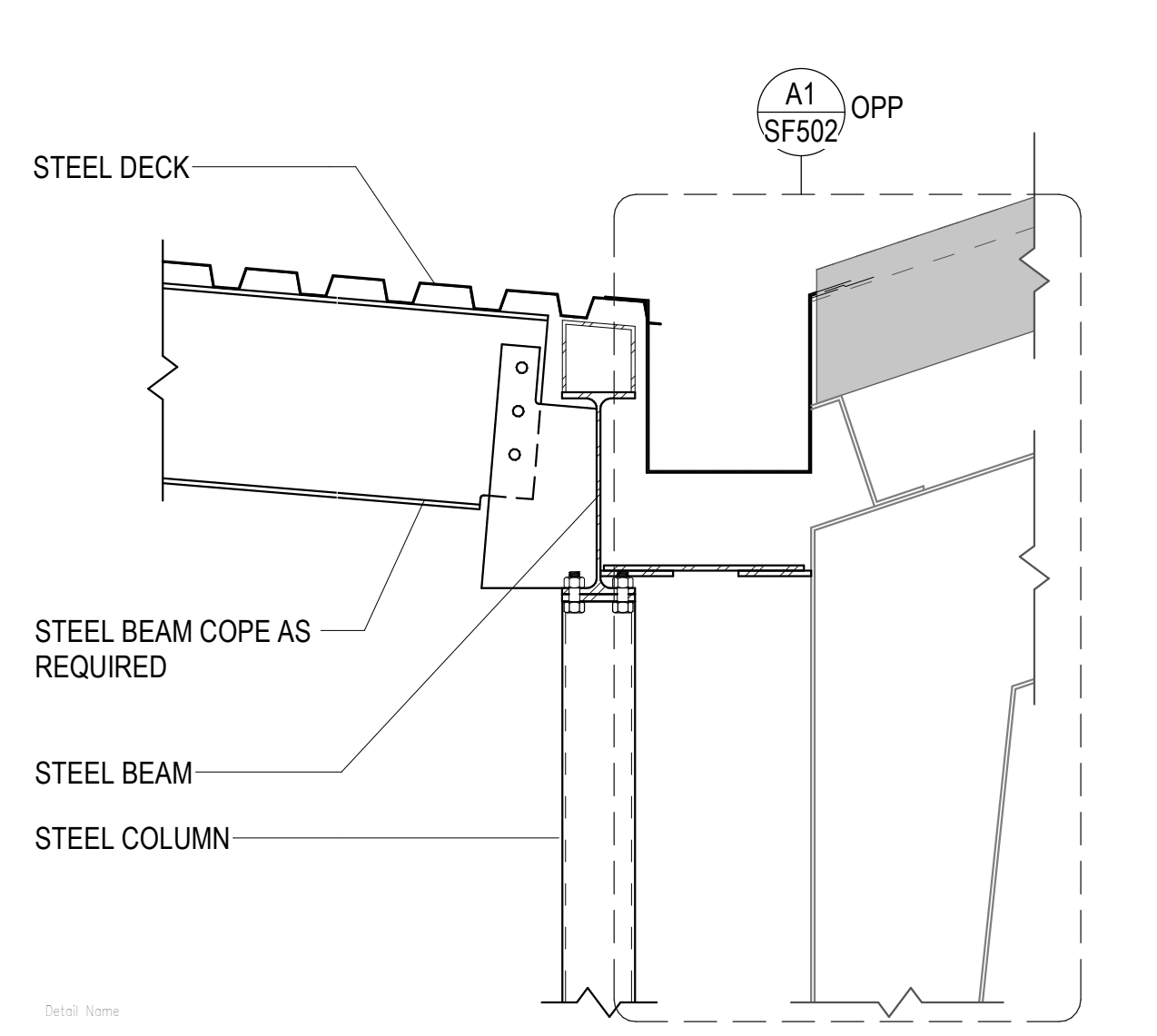
B3 STEEL STUD WALL AT EXISTING ROOF DECK
SF502 NO SCALE



A3 STEEL DECK AT JOIST EXTENSION
SF502 NO SCALE

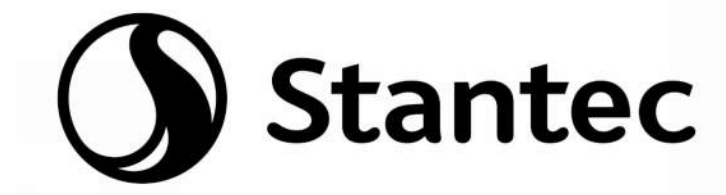


B4 STEEL STUD WALL AT STEEL BEAM
SF502 NO SCALE



A4 STEEL DECK AT STEEL BEAM
SF502 NO SCALE

7/14/2020 11:42:42 AM



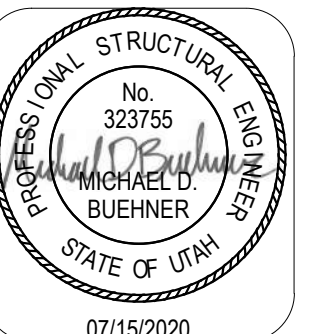
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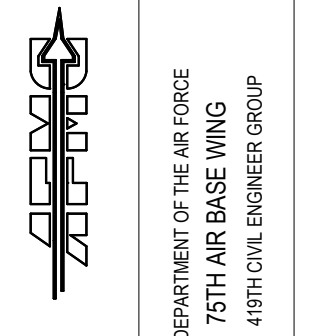
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CHECKED BY:	MDR/RE-A	DATE:	07/15/2020
DRAWN BY:	MDR/RE-A	DATE:	07/15/2020
PROJECT NO.:	1033248	PROJECT NAME:	BASE PROJECT MANAGER
LEGACY PROJECT NO.:		LEGACY PROJECT NAME:	BEVERLY LANGUE

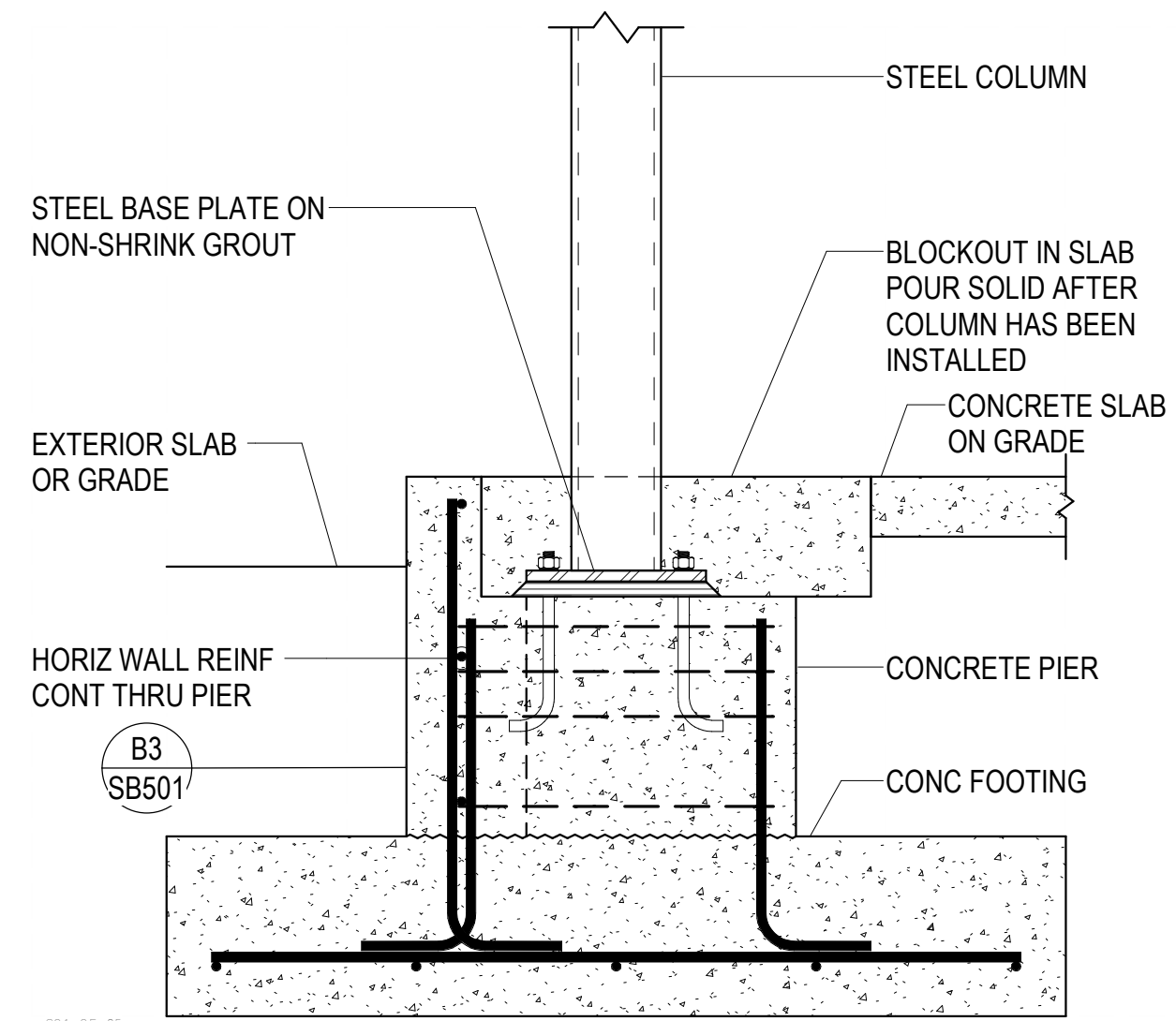


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75TH AIR BASE WING
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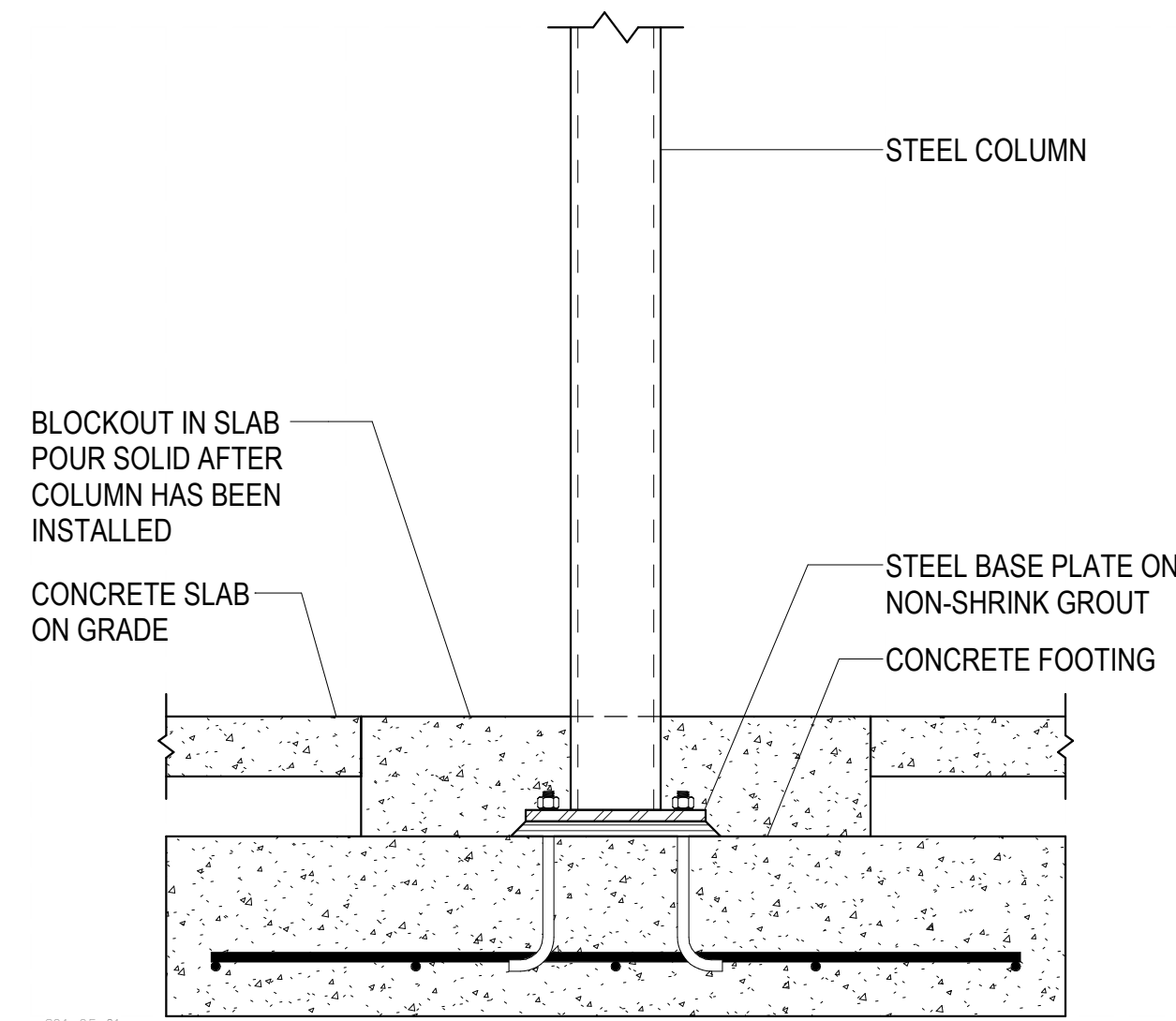
ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
FRAMING DETAILS

SF503

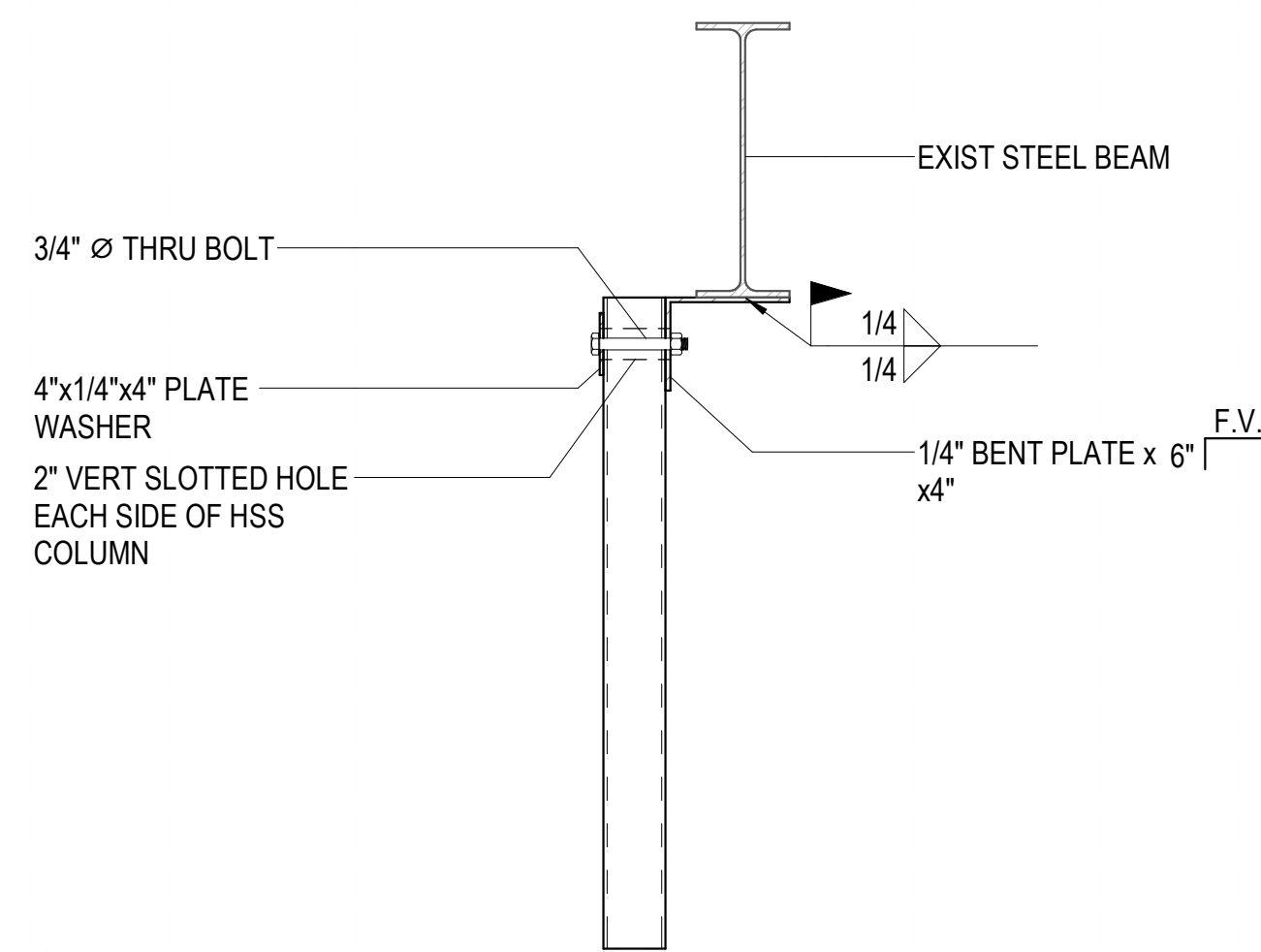
Sheet: 21 of 94



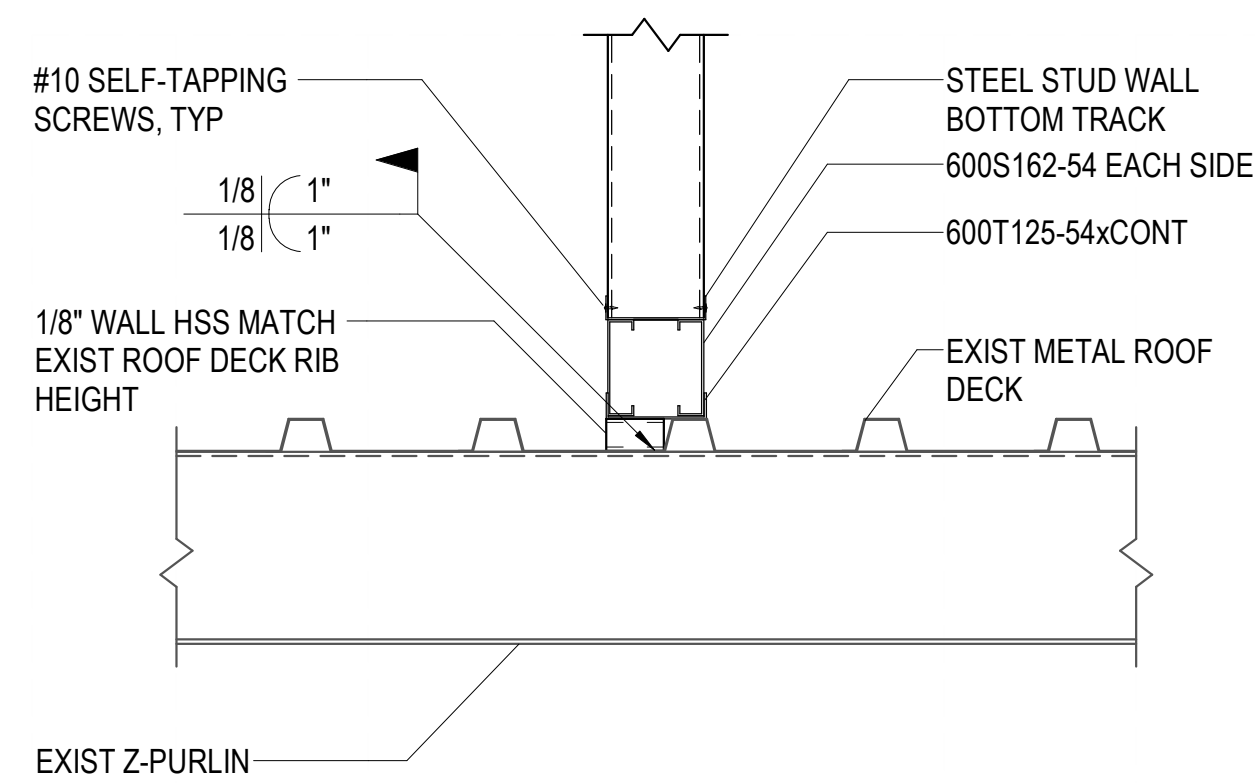
C1 TYP STEEL COLUMN BASE AT CONC PIER IN FOUNDATION WALL
SF503 NO SCALE



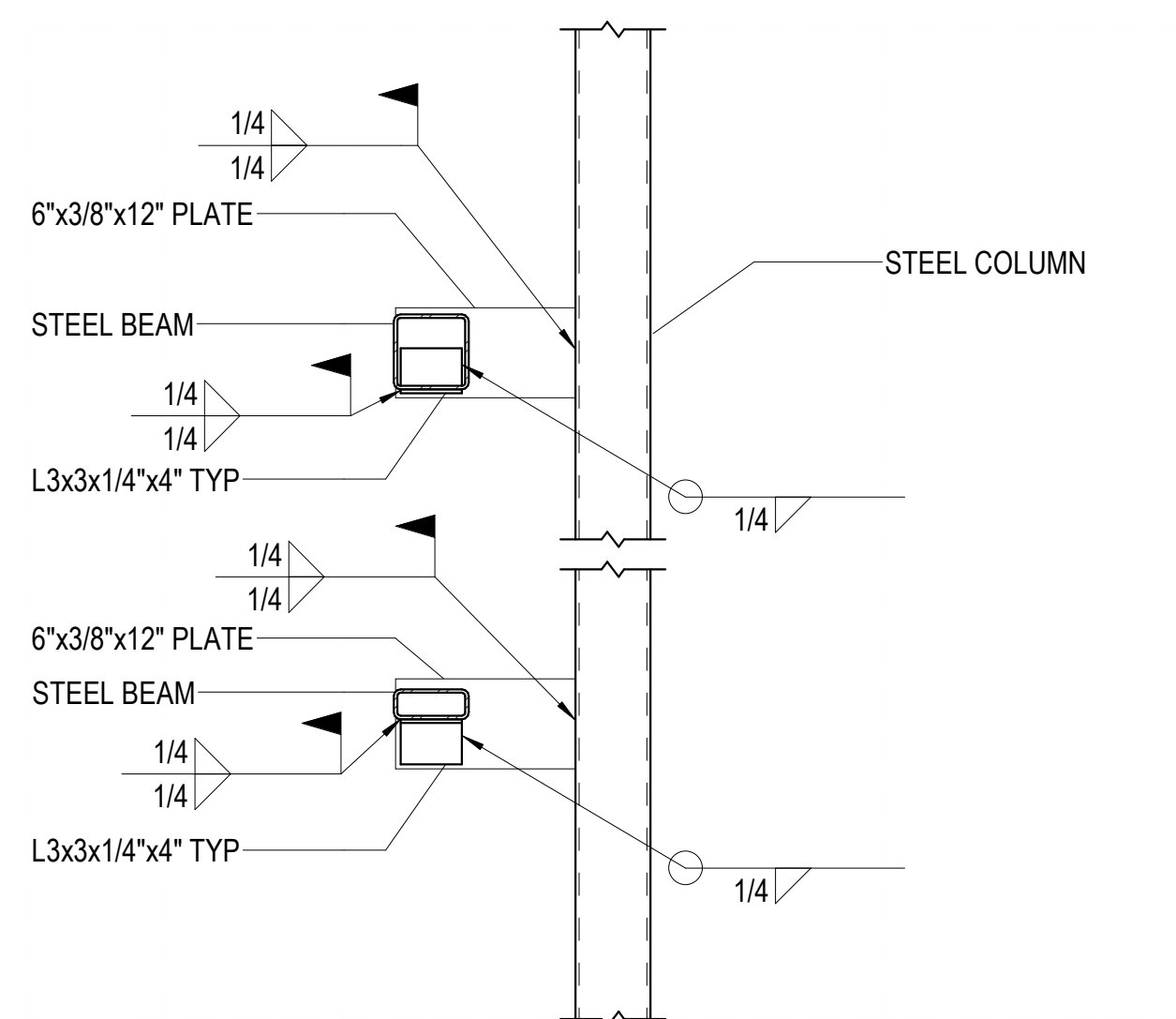
C2 TYPICAL STEEL COLUMN BASE AT FOOTING
SF503 NO SCALE



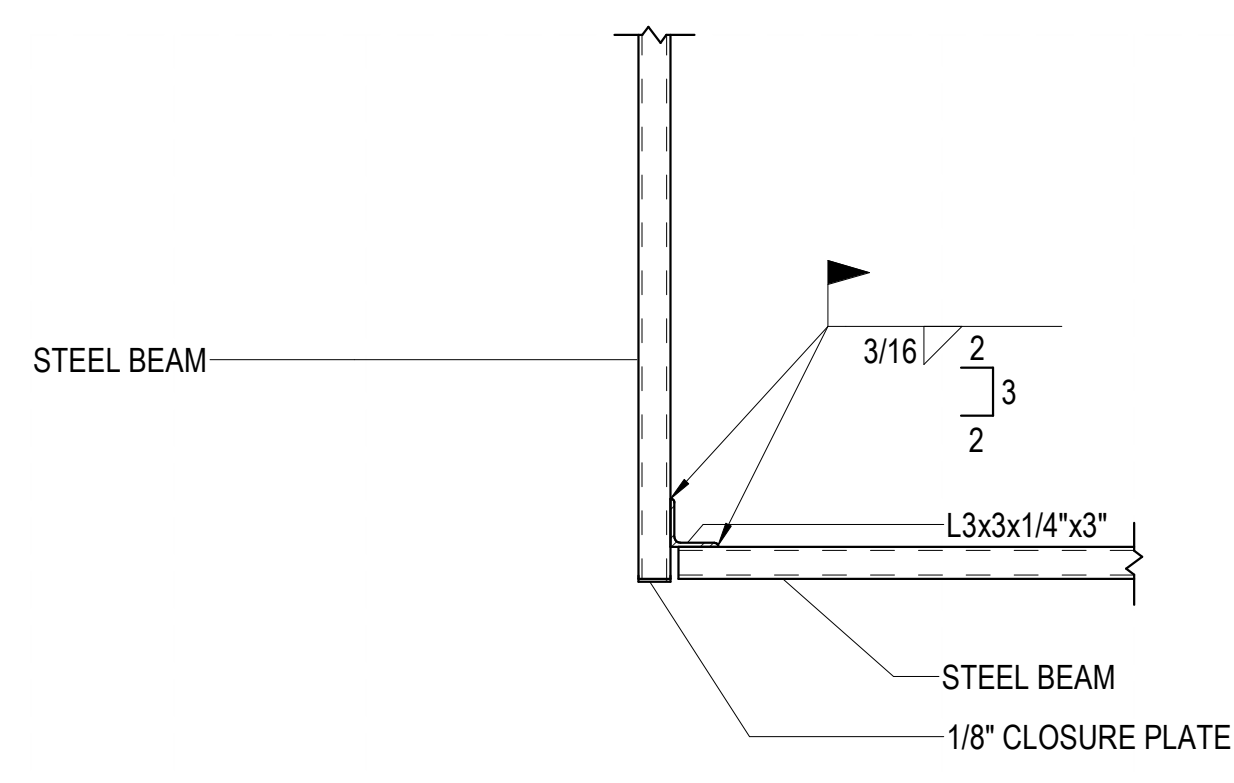
B1 STEEL COLUMN TO EXIST BEAM DETAIL
SF503 NO SCALE



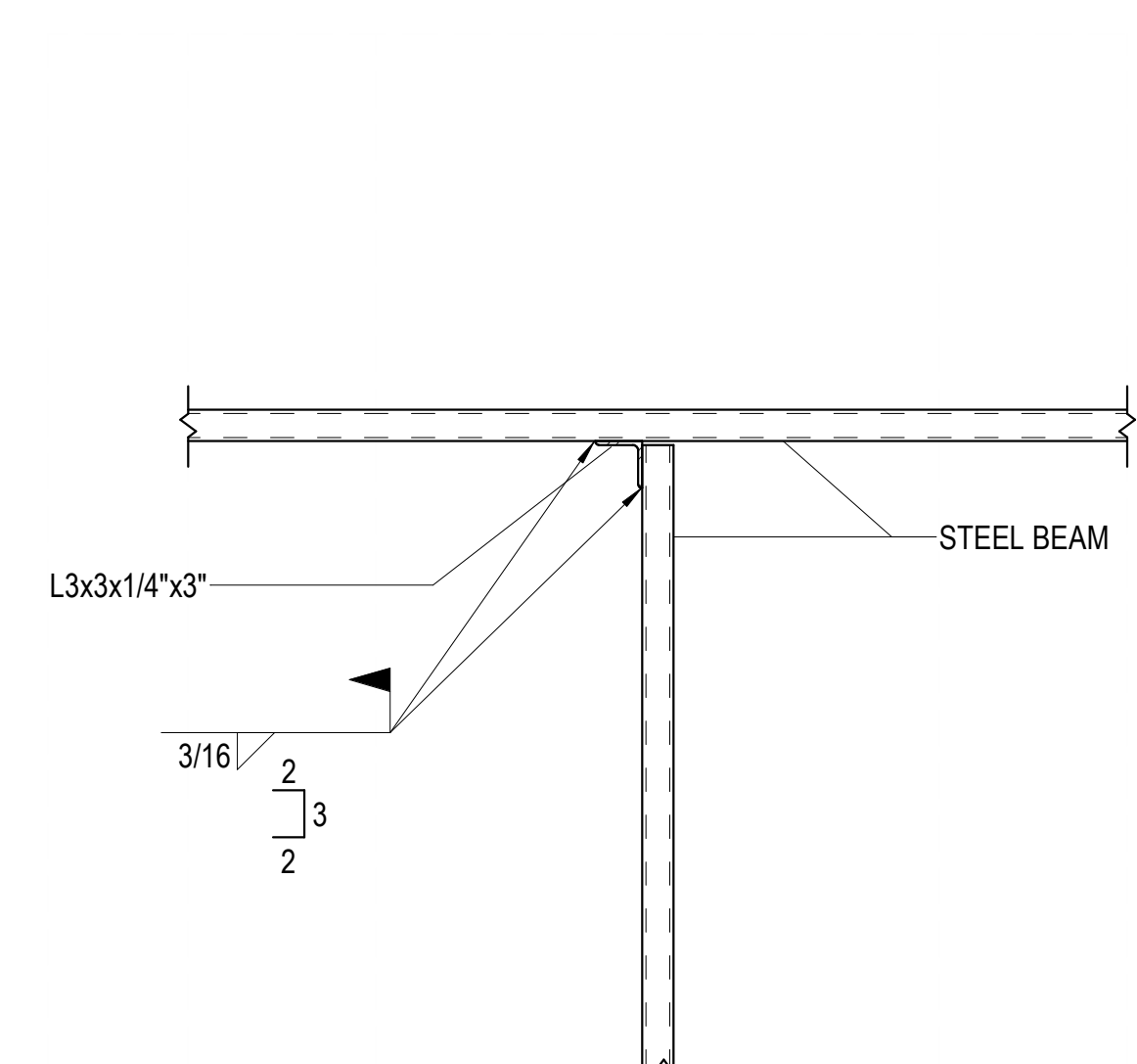
A1 NEW METAL STUD WALL CONNECTION TO EXISTING ROOF
SF503 NO SCALE



A2 WIND GIRT CONNECTION
SF503 NO SCALE



A3 STEEL BEAM AT CANOPY PLAN VIEW
SF503 NO SCALE



A4 STEEL BEAM AT CANOPY PLAN VIEW
SF503 NO SCALE

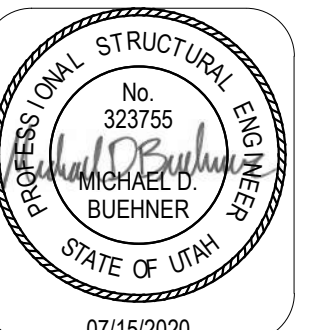
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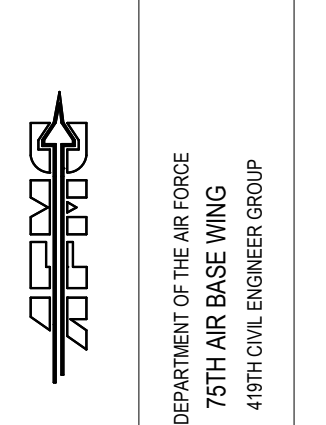


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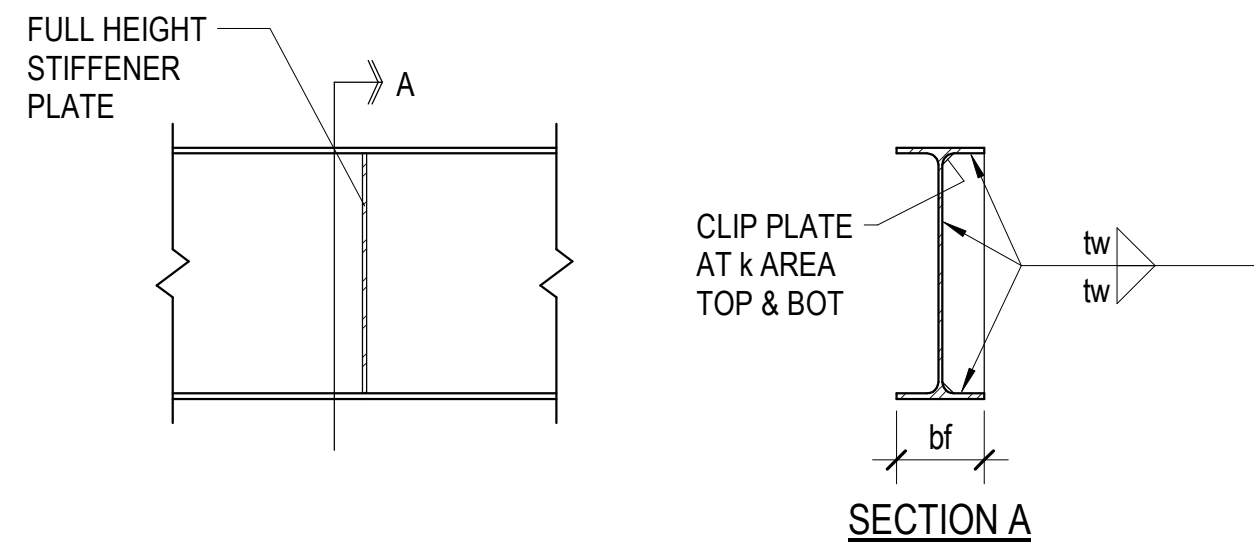
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CHECKED BY:	MDR/RE-A	BASE PROJECT MANAGER:	BEVERLY LANGUE
DRAWN:			



ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
STEEL SCHEDULES

SF602

Sheet: 23 of 94



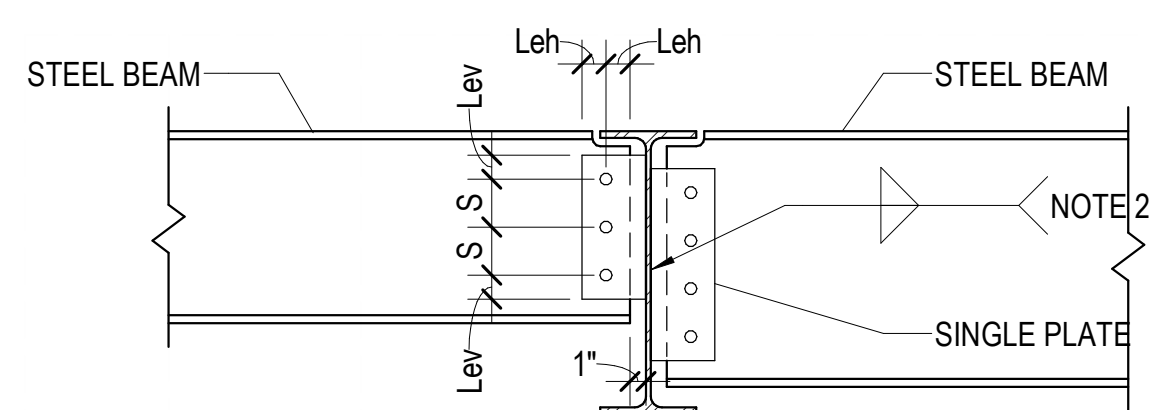
WELD SCHEDULE		
bf	THICKNESS*	tw
UP TO 8.25"	1/4"	3/16"
> 8.25" ≤ 12.25"	3/8"	1/4"
> 12.25" ≤ 16.5"	1/2"	5/16"
> 16.5" ≤ 22"	5/8"	5/16"

* STIFFENER THICKNESS IS BASED UPON WIDTH OF BEAM FLANGE (bf) UNLESS NOTED OTHERWISE IN DETAILS

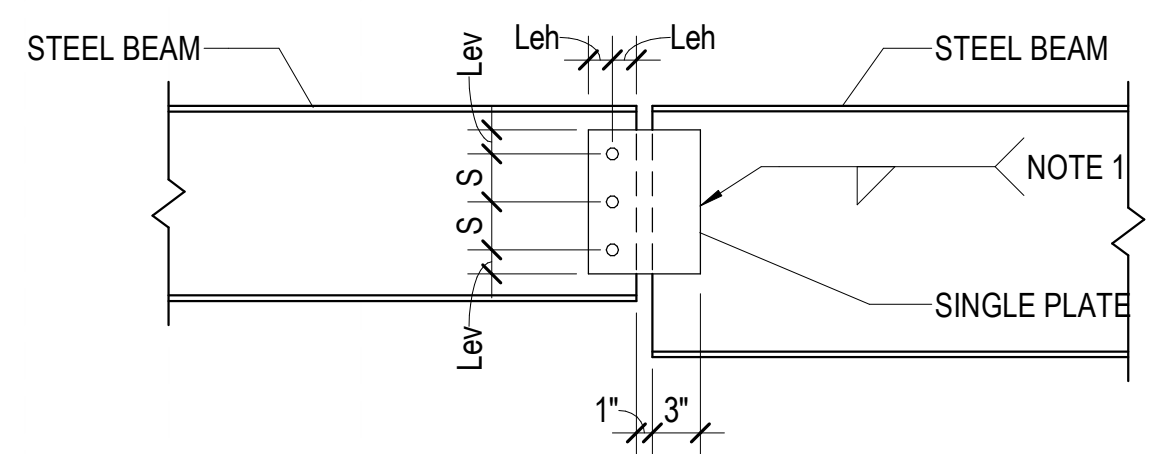
C1 TYPICAL STIFFENER PLATE DETAIL
SF602 NO SCALE

SINGLE PLATE CONNECTION SCHEDULE			
BEAM SIZE	WEB PLATE THICKNESS (t)	A325N BOLTS	
		NUMBER	SIZE
W8 AND W10	3/8"	2	7/8"Ø
W12 AND W14	3/8"	3	7/8"Ø
W16	3/8"	4	7/8"Ø

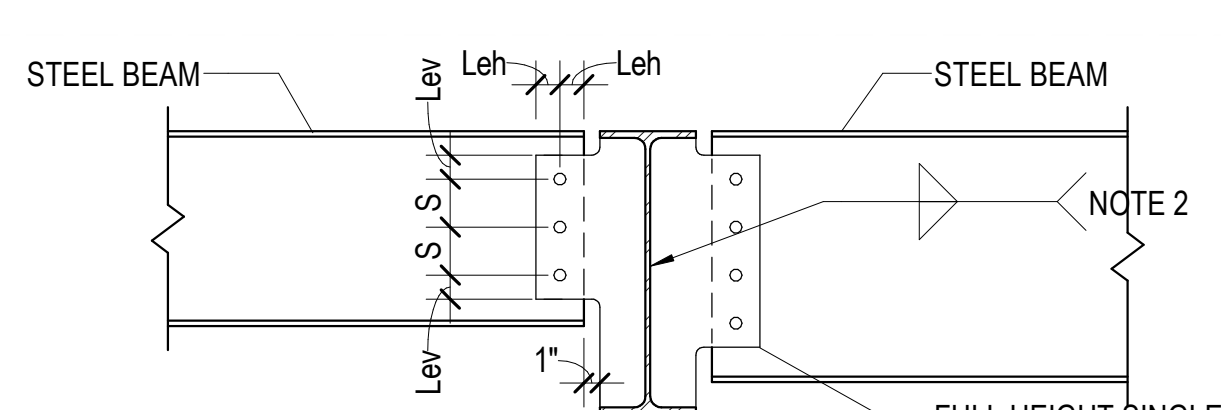
NOTES:
1. FILLET WELDS ONE SIDE SHALL EQUAL THE PLATE THICKNESS MINUS 1/16" (1/4" MIN.)
2. FILLET WELDS TWO SIDES SHALL BE 5/8 THE PLATE THICKNESS (1/4" MIN.) EACH SIDE
3. BOLT EDGE DISTANCE SHALL BE AS FOLLOWS: Lev = 2 x BOLT DIAMETER; Lev = 1.1/2".
4. BOLT SPACING (S) SHALL BE 3".
5. AT SKEWED JOINTS PROVIDE AN EQUIVALENT LEG SIZE TO NOTE 2 PER AWS D1.1.
6. PROVIDE SHORT SLOTTED HOLES WHEN 6 OR MORE BOLTS ARE REQUIRED AND BOLT DIAMETER IS ≤ 3/4".



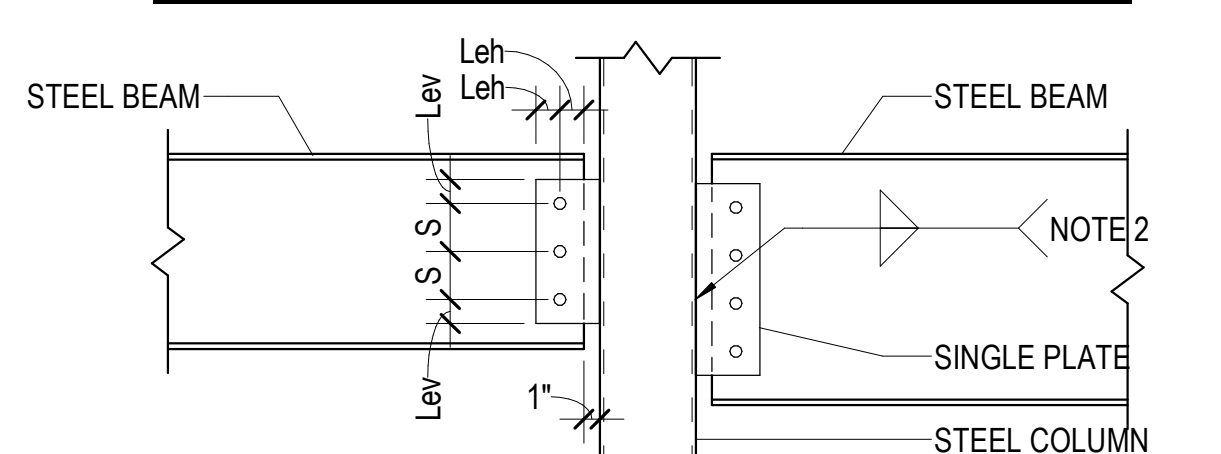
BEAM TO BEAM CONNECTION



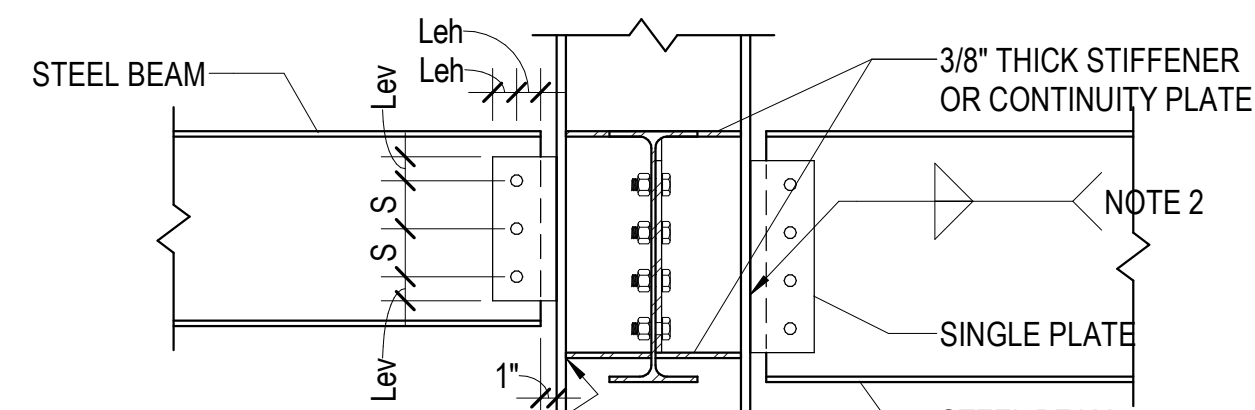
BEAM TO BEAM CONNECTION



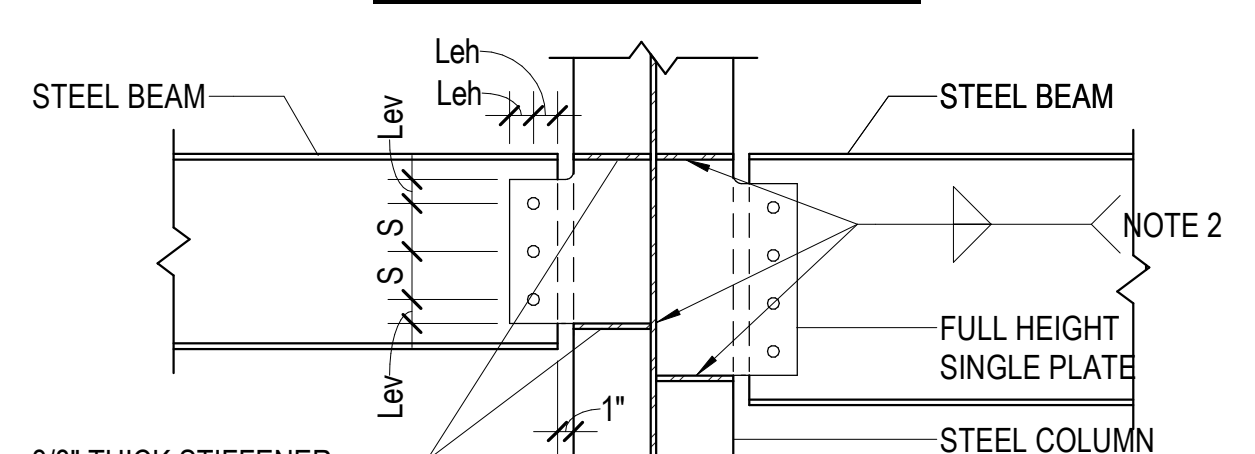
BEAM TO BEAM CONNECTION AT FULL HEIGHT STIFFENER



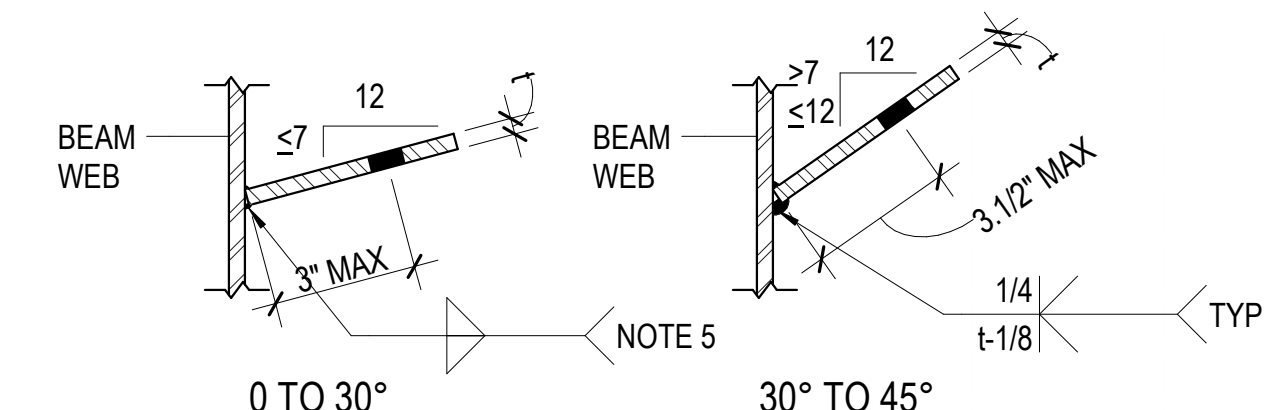
BEAM TO COLUMN CONNECTION



BEAM TO COLUMN CONNECTION

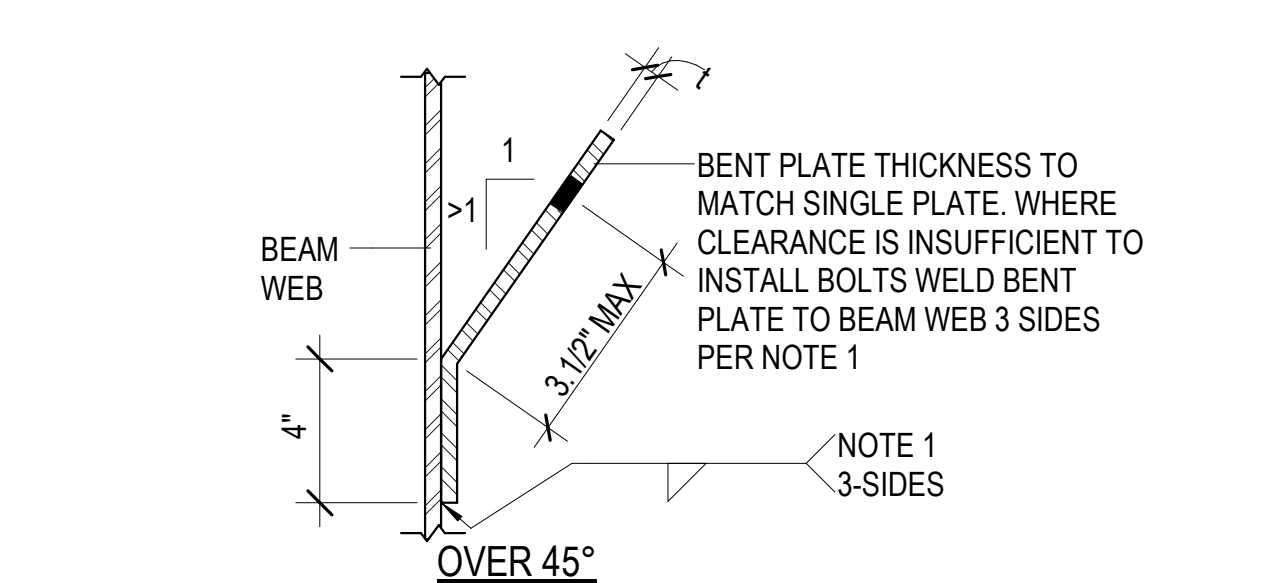


3/8" THICK STIFFENER OR CONTINUITY PLATE
BEAM TO COLUMN CONNECTION



0 TO 30°

30° TO 45°



OVER 45°

SKEWED CONNECTION (PLAN VIEW)

Sheet Single Sheet

A1 TYPICAL SINGLE PLATE CONNECTION DETAILS AND SCHEDULE
SF602 NO SCALE



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2			
3			
4			
5			
6			
7			
8			

DEMOLITION NOTES

- THESE DEMOLITION DRAWINGS HAVE BEEN COMPILED FROM THE BEST AVAILABLE INFORMATION AND ARE NOT INTENDED TO LIMIT THE SCOPE OF THE WORK.
- INTENT IS TO REMOVE EVERYTHING NECESSARY TO ALLOW NEW CONSTRUCTION TO BE ACCOMPLISHED. SEE DRAWINGS SHOWING NEW CONSTRUCTION.
- REMOVE WALL FINISH MATERIAL AND SUBSTRATE TO EXPOSE EXISTING STUDS IN AREAS INDICATED ON PLAN(S). NEW SUBSTRATE AND FINISH MATERIALS TO BE INSTALLED ON EXISTING STUDS.
- PROTECT EXISTING FINISHES, TRIM, FIXTURES, AND EQUIPMENT TO REMAIN.
- SEE PLAN AND PLAN NOTES FOR ITEMS TO BE SALVAGED. ALL ITEMS IDENTIFIED AS SALVAGED TO BE DELIVERED TO BUILDING USER.
- REMOVE FINISH FLOORING MATERIAL AND BACKERS, U.N.O. REMOVE EXISTING ADHESIVES TO ALLOW PROPER INSTALLATION OF NEW FLOORING, PER MANUFACTURER'S REQUIREMENTS.
- REMOVE ACT CEILINGS (TILES AND GRIDS) AND GWB CEILINGS AND SOFFITS, U.N.O.
- COORDINATE REMOVAL/RELOCATION OF ALL FASCIA MOUNTED DEVICES WITH CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE.

SHEET NOTES

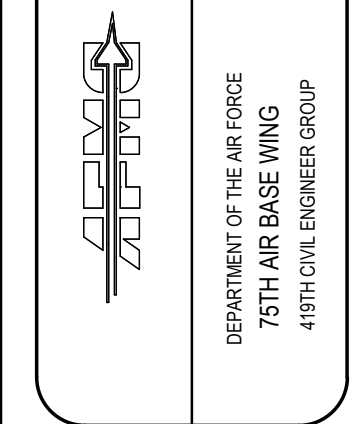
- 02.08 REMOVE EXISTING GYPSUM BOARD. PREP FOR NEW FINISH.
- 02.16 DEMO EXTERIOR METAL PANEL AND INSULATION. PREP EXISTING STUDS FOR NEW FINISHES.



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DATE	DATE	DATE
PROJECT NO.	PROJECT NO.	PROJECT NO.
PROJECT MANAGER	PROJECT MANAGER	PROJECT MANAGER

DEMOLITION PLAN LEGEND

- EXISTING PARTITION TO BE REMOVED
- EXISTING PARTITION TO REMAIN
- EXISTING DOOR TO BE REMOVED
- EXISTING DOOR TO REMAIN
- ▨ EXISTING FLOOR FINISH TO BE REMOVED
- BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED
- ▩ EXISTING ROOF TO BE REMOVED

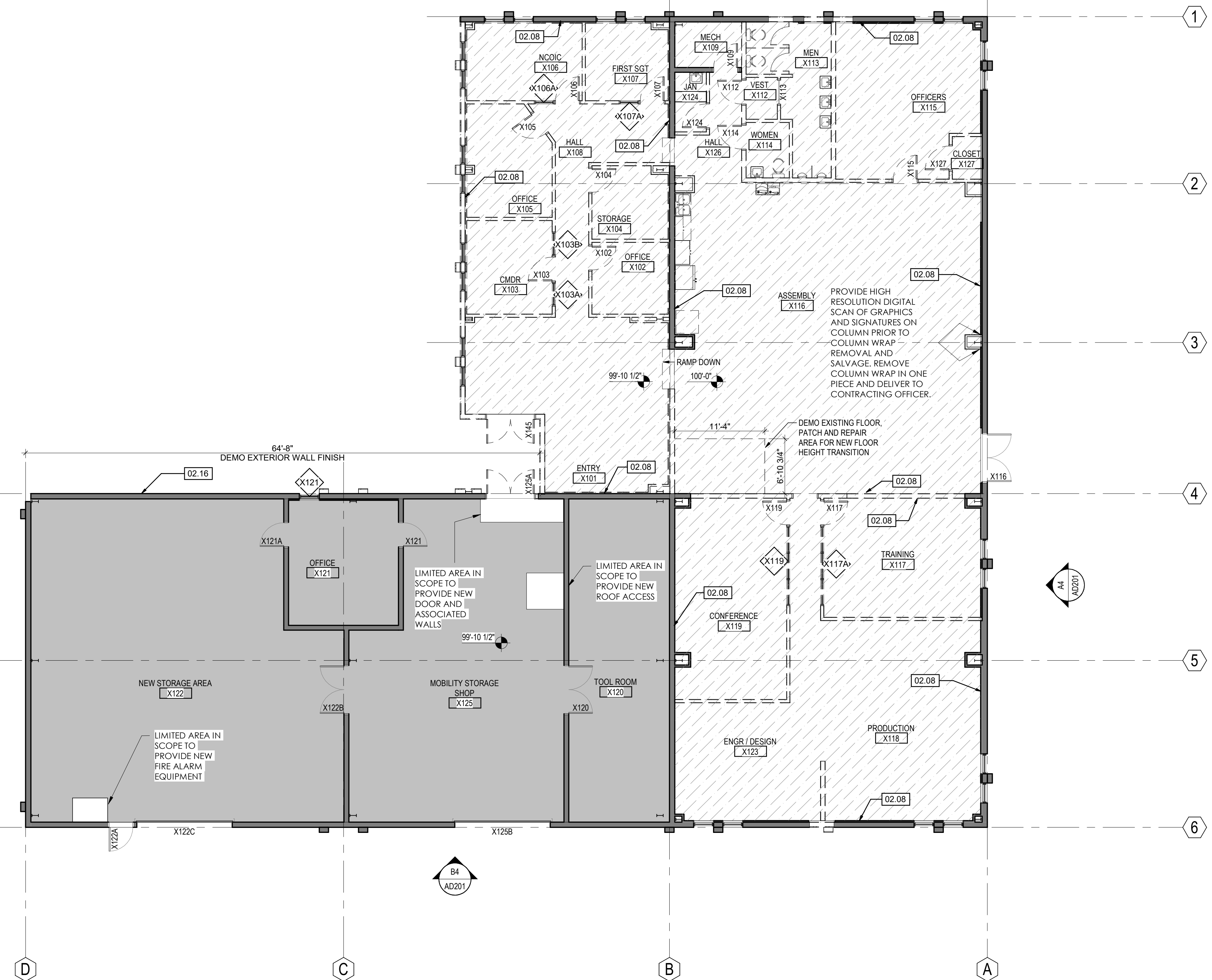


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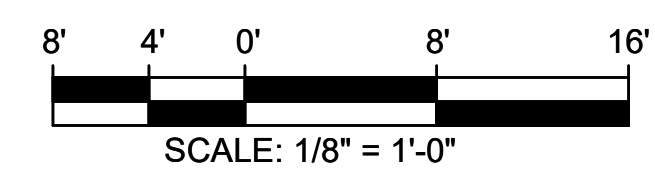
ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
DEMOLITION PLAN

AD101
Sheet: 24 of 94

D
C
B
A



A3 DEMOLITION PLAN
1/8" = 1'-0"





A3 DEMOLITION REFLECTED CEILING PLAN
1/8" = 1'-0"



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3	REMOVE WALL FINISH MATERIAL AND SUBSTRATE TO EXPOSE EXISTING STUDS IN AREAS INDICATED ON PLAN(S). NEW SUBSTRATE AND FINISH MATERIALS TO BE INSTALLED ON EXISTING STUDS.
4	PROTECT EXISTING FINISHES, TRIM, FIXTURES, AND EQUIPMENT TO REMAIN.
5	SEE PLAN AND PLAN NOTES FOR ITEMS TO BE SALVAGED. ALL ITEMS IDENTIFIED AS SALVAGED TO BE DELIVERED TO BUILDING USER.
6	REMOVE FINISH FLOORING MATERIAL AND BACKERS, U.N.O. REMOVE EXISTING ADHESIVES TO ALLOW PROPER INSTALLATION OF NEW FLOORING, PER MANUFACTURER'S REQUIREMENTS.
7	REMOVE ACT CEILINGS (TILES AND GRIDS) AND GWB CEILINGS AND SOFFITS, U.N.O.
8	COORDINATE REMOVAL/RELOCATION OF ALL FASCIA MOUNTED DEVICES WITH CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE.

SHEET NOTES	
02.04	REMOVE EXISTING CEILING SYSTEM.
02.14	DEMO EXTERIOR WALL, FASCIA, WINDOWS AND ROOF IN AREA SHOWN
02.16	DEMO EXTERIOR METAL PANEL AND INSULATION. PREP EXISTING STUDS FOR NEW FINISHES.

DEMOLITION RCP LEGEND

- TYPICAL SYMBOL NOMENCLATURE
 "E" DENOTES EXISTING DEVICE
 "R" DENOTES RELOCATED DEVICE
 "X" DENOTES DEVICE TO BE REMOVED
- EXISTING 2X2 ACT CEILING TO REMAIN
 - EXISTING 2X2 ACT CEILING TO BE REMOVED
 - EXISTING 2X4 ACT CEILING TO REMAIN
 - EXISTING 2X4 ACT CEILING TO BE REMOVED
 - EXISTING GWB CEILING TO REMAIN
 - EXISTING GWB CEILING TO BE REMOVED
 - BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED



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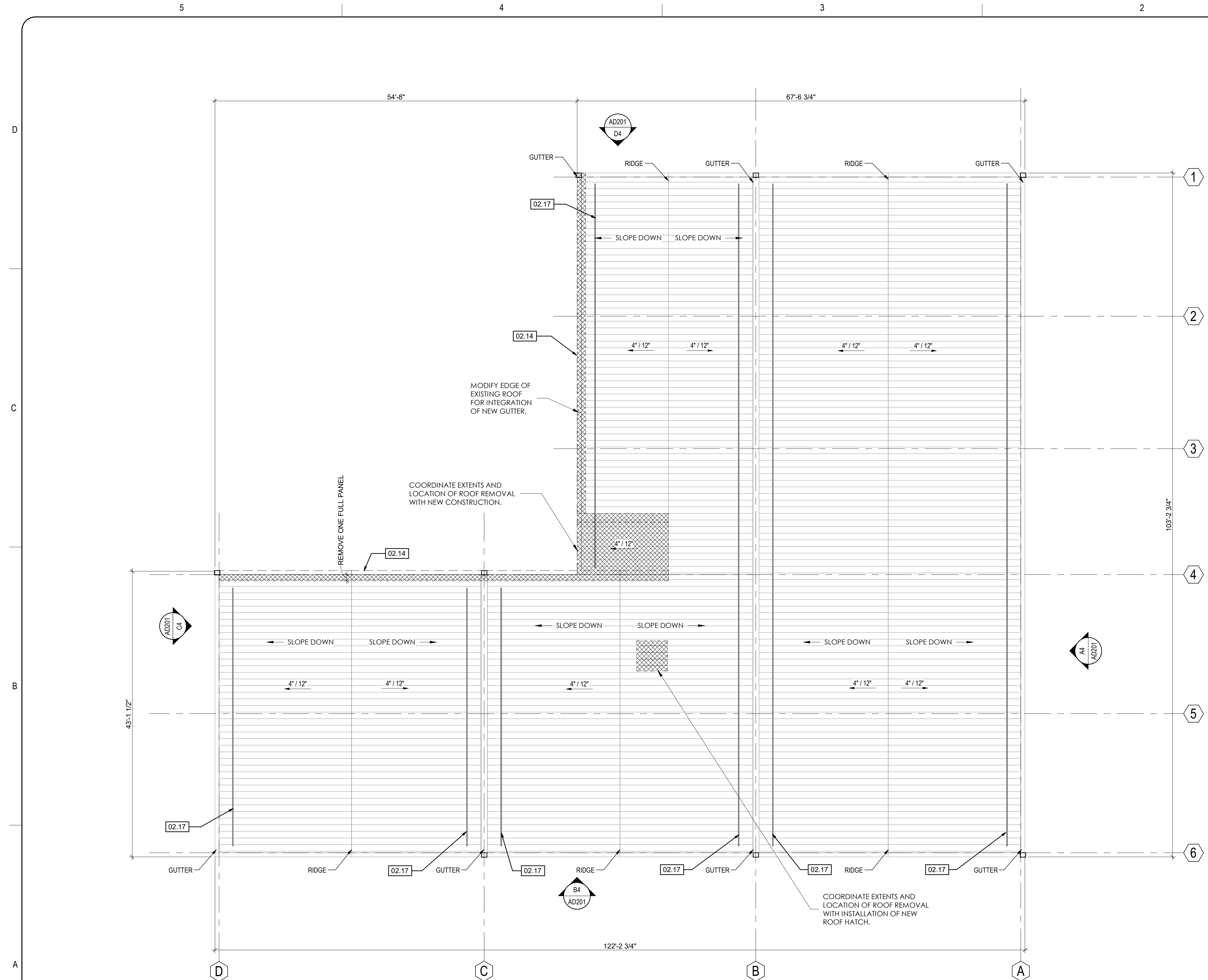


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DESIGNER	CHECKER
DRAWING PROJECT NO. 1033248	SITE CODE
LEGACY PROJECT NO.	DATE: 07/15/2020
SCALE	BASE PROJECT MANAGER
	BEVERLY LANGLIE

ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 DEMOLITION REFLECTED CEILING
 PLAN

AD102
 Sheet: 25 of 94

File location in project information: \\p02031\3\1033248



A3 ROOF - DEMOLITION PLAN
1/8" = 1'-0"



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8	COORDINATE REMOVAL/RELOCATION OF ALL FASCIA MOUNTED DEVICES WITH CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE.

SHEET NOTES	
02.14	DEMO EXTERIOR WALL, FASCIA, WINDOWS AND ROOF IN AREA SHOWN
02.17	EXISTING SNOWGUARD - SHORTEN AND RESECURE AS NEEDED TO ACCOMMODATE NEW WALLS AND ROOF.

DEMOLITION PLAN LEGEND

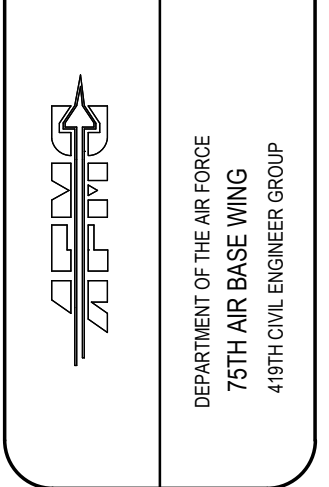
- EXISTING PARTITION TO BE REMOVED
- EXISTING PARTITION TO REMAIN
- EXISTING DOOR TO BE REMOVED
- EXISTING DOOR TO REMAIN
- EXISTING FLOOR FINISH TO BE REMOVED
- BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED
- EXISTING ROOF TO BE REMOVED



DESCRIPTION	DATE	APPR	MARK
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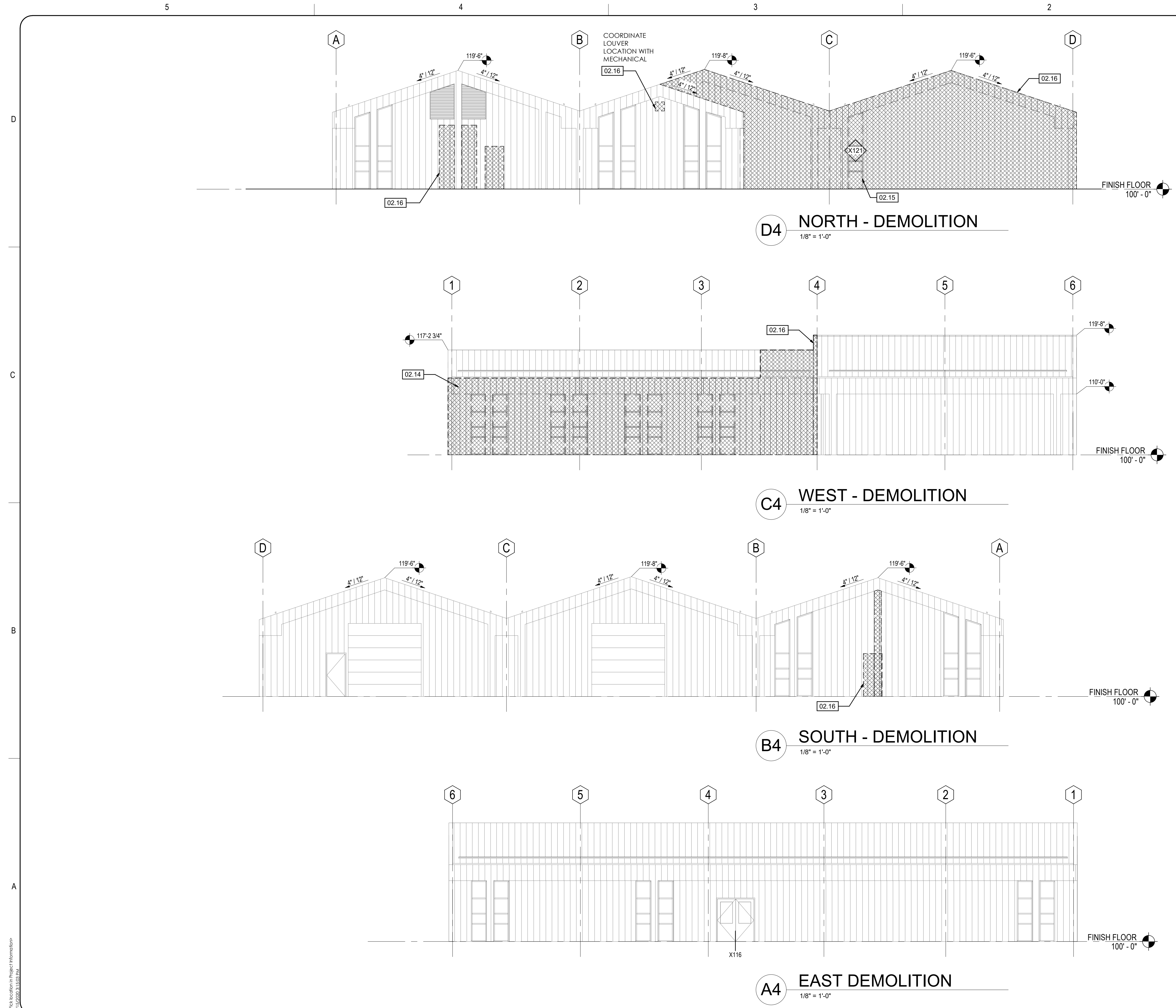
RESPONSIBLE BY	CHECKED BY
DESIGNER DATE: 07/15/2020 PROJECT NO: 1033268 LEGACY PROJECT NO: JOB NO: BASE PROJECT MANAGER BEVERLY LANGLIE	CHECKER DATE: 07/15/2020 PROJECT NO: 1033268 LEGACY PROJECT NO: JOB NO: BASE PROJECT MANAGER BEVERLY LANGLIE



ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
DEMOLITION ROOF PLAN

AD103
Sheet: 26 of 94

File location in Project Information: \\p0203\31031201



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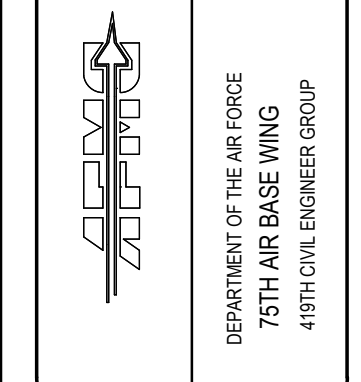
DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		

SHEET NOTES

02.14	DEMO EXTERIOR WALL, FASCIA, WINDOWS AND ROOF IN AREA SHOWN
02.15	DEMO EXISTING STOREFRONT, PATCH AND REPAIR EXISTING EXTERIOR WALL
02.16	DEMO EXTERIOR METAL PANEL AND INSULATION. PREP EXISTING STUDS FOR NEW FINISHES.



DESIGNED BY	DESIGNER	CHECKER	DATE
PROJECT NO.	LEGACY PROJECT NO.	SITE CODE	DATE
1033268			07/15/2020
BASE PROJECT MANAGER		BEVERLY LANGLIE	



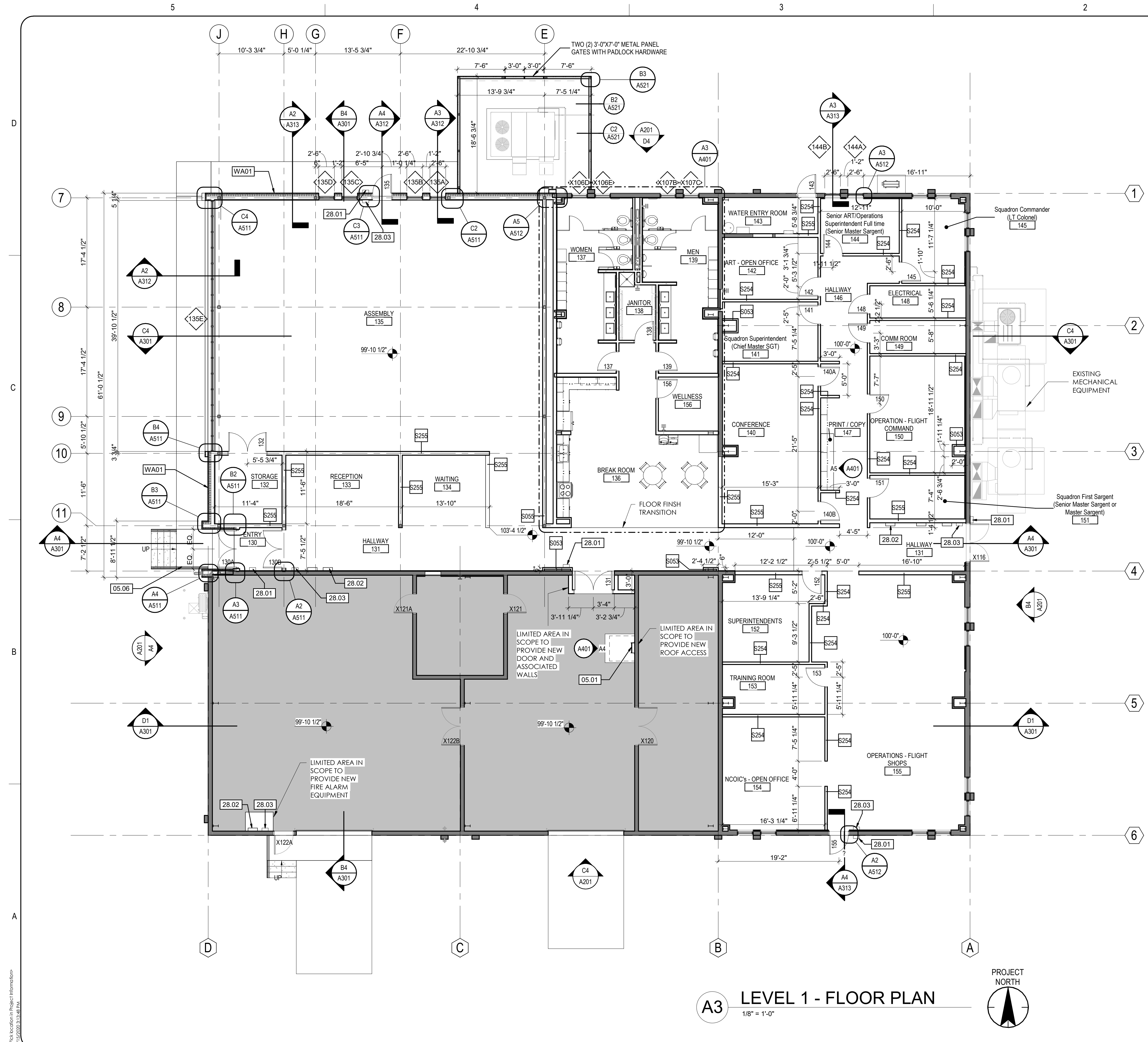
ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
DEMOLITION ELEVATIONS



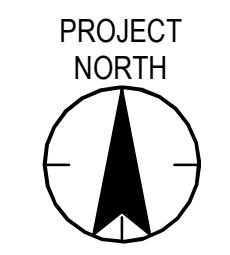
AD201
Sheet: 27 of 94

File location in Project Information:
7/15/2020 3:10:53 PM

ORIGINAL SHEET - ANS D



A3 LEVEL 1 - FLOOR PLAN
1/8" = 1'-0"



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GENERAL NOTES

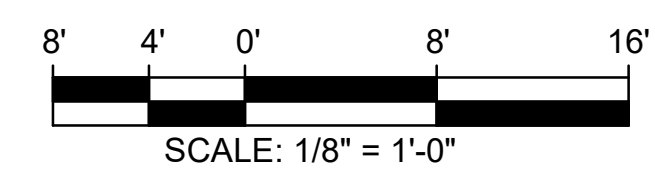
- SEE SHEET A501 FOR ALL BUILDING ASSEMBLY TYPES.
- SEE SHEET A601 FOR ALL INTERIOR PARTITION TYPES AND LIMITING WALL HEIGHT TABLES.
- DIMENSIONS ARE TAKEN FROM CENTERLINE GRID, FACE OF STRUCTURE, OR FINISH FACE OF FRAMED PARTITIONS
- PROVIDE GYPSUM BOARD FINISH ON ALL EXISTING INTERIOR METAL FRAMING PREPARED FROM DEMO.

SHEET NOTES

- 05.01 ROOF ACCESS LADDER
- 05.06 GUARDRAIL & HANDRAIL - RE:CIVIL
- 28.01 CARD READER - RE:ELECTRICAL
- 28.02 FIRE ALARM PANELS - RE:FIRE ALARM
- 28.03 FIRE ALARM PULL STATION - RE:FIRE ALARM
- WA01 SEE SHEET A501 FOR WALL ASSEMBLY ATTRIBUTES

PLAN LEGEND

- EXISTING PARTITION
- BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED
- SPEAKER
- BELL
- EXIT SIGN
- FIRE ALARM
- FIRE ALARM COMBINATION
- SMOKE ALARM W/ TUBE
- SMOKE ALARM
- MOTION SENSOR
- SPRINKLER
- RETURN GRILLE
- EXHAUST
- SUPPLY DIFFUSER
- LIGHT FIXTURES
 - EXTERIOR
 - DOWN LIGHT
 - STRIP LIGHT
 - HIGH BAY
 - RECESSED
 - RECESSED EMERGENCY



DATE	APPR	MARK
07/15/2020		

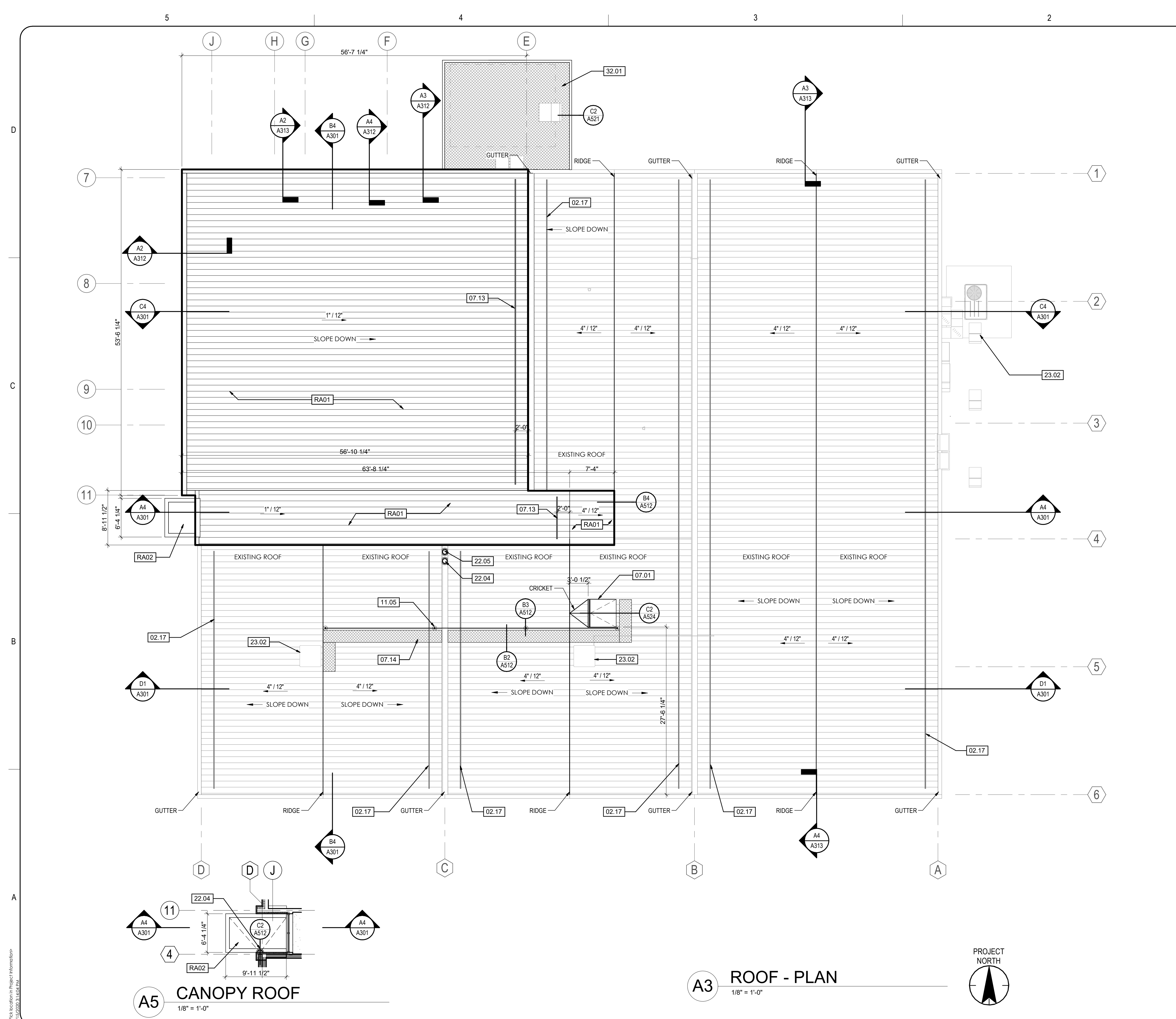


DESIGNED BY	CHECKED BY
Designer	Checker
DIGITAL PROJECT NO. 1033268	SITE CODE
LEGACY PROJECT NO.	DATE: 07/15/2020
BASE PROJECT MANAGER	BEVERLY LANGUE

**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591**
FLOOR PLAN

A101
Sheet: 28 of 94

File location in project information:
P:\2020\303268.rvt



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ROOF PLAN NOTES

- 1 REPLACE ALL RUSTED FASTENERS WITH NEW PREFINISHED COMPATIBLE METAL NEOPRENE-HEADED GASKETED FASTENERS.

SHEET NOTES

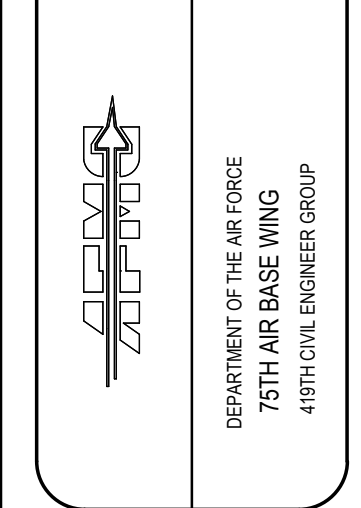
- 02.17 EXISTING SNOWGUARD - SHORTEN AND RESECURE AS NEEDED TO ACCOMMODATE NEW WALLS AND ROOF.
- 07.01 ROOF HATCH
- 07.13 SNOW GUARDS - STANDING SEAM MOUNTED
- 07.14 ROOF WALKWAY - STANDING SEAM MOUNTED
- 11.05 FACILITY FALL PROTECTION - STANDING SEAM MOUNTED CABLE SYSTEM
- 22.04 ROOF DRAIN - RE-PLUMBING
- 22.05 ROOF DRAIN OVERFLOW - RE-PLUMBING
- 23.02 EXISTING MECHANICAL EQUIPMENT - RE-MECHANICAL
- 32.01 CHAIN-LINK FENCE - 2' MESH SIZE
- RA01 SEE SHEET A501 FOR ROOF ASSEMBLY ATTRIBUTES
- RA02 SEE SHEET A501 FOR ROOF ASSEMBLY ATTRIBUTES



DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		



DESIGNED BY	CHECKED BY
Designer: BEVERLY LANGLEY	Checker: BEVERLY LANGLEY
DRAWING PROJECT NO: 1033248	SITE CODE: 07/15/2020
LEGACY PROJECT NO: 0000	DATE: 07/15/2020
BASE PROJECT NUMBER: 0000	DATE: 07/15/2020
BASE PROJECT MANAGER: BEVERLY LANGLEY	DATE: 07/15/2020

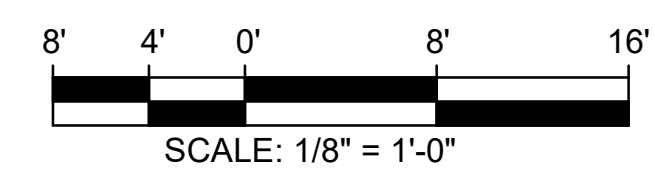


ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 ROOF PLAN

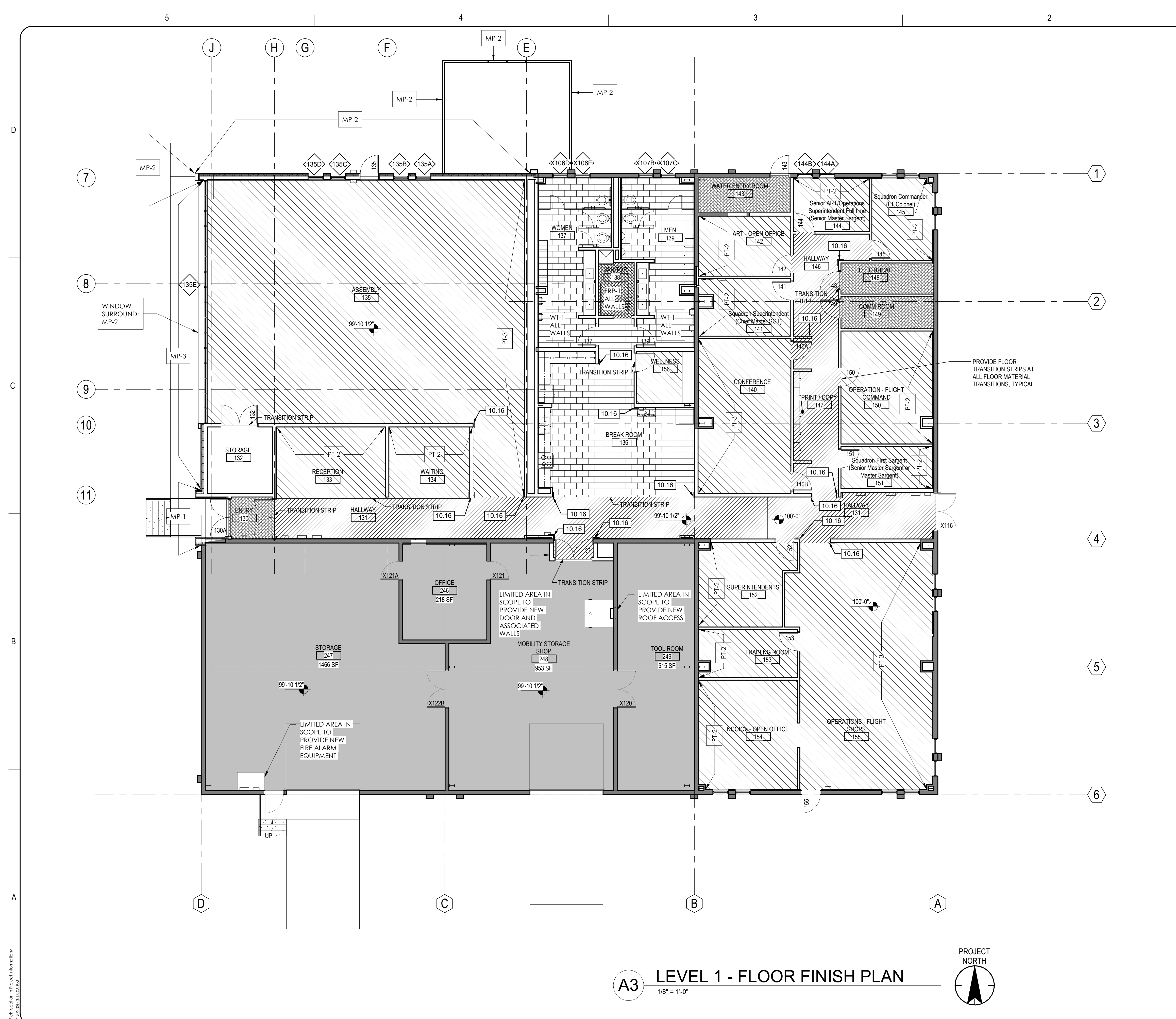
A103
 Sheet: 30 of 94

A5 CANOPY ROOF
 1/8" = 1'-0"

A3 ROOF - PLAN
 1/8" = 1'-0"



File location in Project Information:
 7/15/2020 3:10:24 PM



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SHEET NOTES
 10.16 CORNER GUARD - HEIGHT:48" ABOVE FINISHED FLOOR - 1 1/2"X1 1/2" CLEAR PLASTIC

FINISH LEGEND

	CARPET (CPT-1)		TILE
	SEALED CONCRETE		BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED
	LUXURY VINYL TILE (LVT)		

- METAL WALL PANEL**
 MP-1: MBCI - DESIGNER SERIES (CONSEALED FASTENER)
 COLOR: WHITE
 MP-2: MBCI - DESIGNER SERIES (CONSEALED FASTENER)
 COLOR: YELLOW BEIGE (TO MATCH EXISTING FROM MANUFACTURERS FULL RANGE OF COLORS)
 MP-3: MBCI - DESIGNER SERIES (CONSEALED FASTENER)
 COLOR: DAKOTA BROWN
- CARPET TILE**
 CPT-1: J + J FLOORING GROUP 18"X36"
 COLOR: GENERATE EXCITEMENT (BLUE)
- LUXURY VINYL TILE**
 LVT-1: J + J FLOORING GROUP 5MM 9" X 48" PLANK
 TIMELESS - GIFT
- FLOOR TILE**
 FT-1: CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE)
 COLOR: CARBON
- WALL BASE**
 WB-1: ROPPE (RUBBER BASE)
 COLOR: BURNT UMBER
 WB-2: SCHLUTER
 DILEX COVE
- PAINT**
 PT-1: COLOR: SW7757 HIGH REFLECTIVE WHITE
 (NOTE: ALL PAINTED SURFACES TO BE PT-1 U.N.O.)
 PT-2: COLOR: SW7671 ON THE ROCKS
 (NOTE: ALL HOLLOW METAL FRAMES TO BE PAINTED PT-2 U.N.O.)
 PT-3: COLOR: AF-530 LUCERNE
- WALL TILE**
 WT-1: CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE)
 COLOR: MIST
- FRP**
 FRP-1: TEXTURE: PEBBLE
 COLOR: WHITE
- WOOD DOORS**
 WD-1: MARSHFIELD-ALGOMA - ASPIRO SERIES
 COLOR: RED OAK - PLAIN SLICED - CUSTOM COLOR 266347C
- CASEWORK**
 CW-1: INTERIOR ARTS - PLASTIC LAMINATE
 COLOR: 2023LIN ASH VEIL
- COUNTERTOPS**
 SS-1: PENTAL QUARTZ
 COLOR: BQ8710P ONDULATO POLISHED
- CEILINGS**
 ACT: ROCKFON - ARTIC
 COLOR: WHITE

DATE	APPR	MARK
07/15/2020		

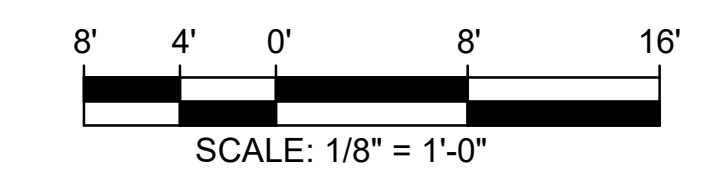
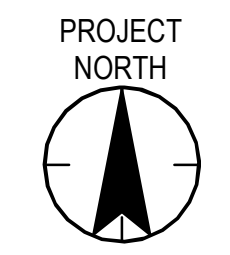


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DRAWN BY: 1033248	SITE CODE: 07/15/2020
DATE: 07/15/2020	DATE: 07/15/2020
PROJECT NO. 1033248	PROJECT NAME: 75TH AIR BASE WING
DESIGNER: BEVERLY LANGUE	CHECKER: BEVERLY LANGUE

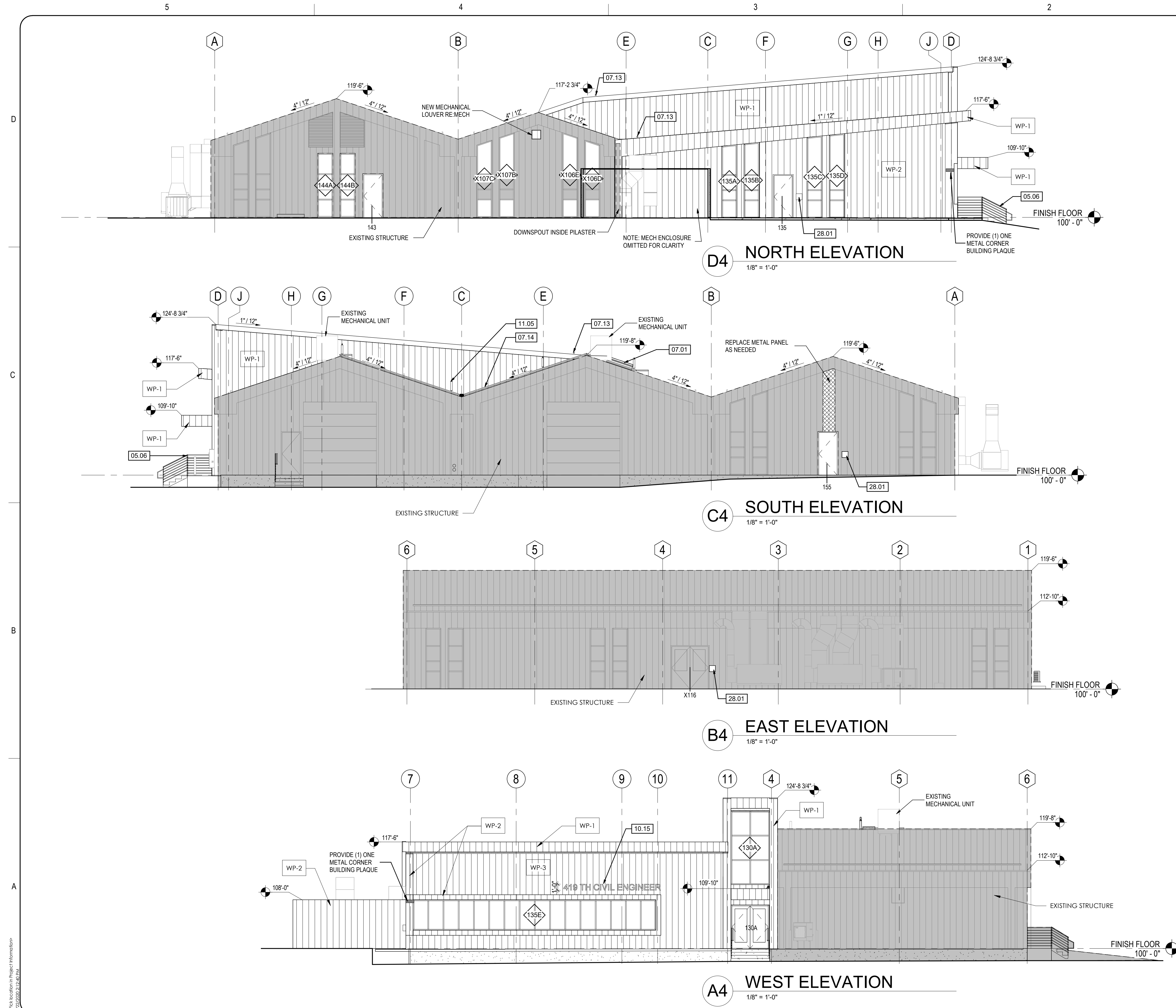
ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 FINISH FLOOR PLAN

AF101
 Sheet: 31 of 94

A3 LEVEL 1 - FLOOR FINISH PLAN
 1/8" = 1'-0"



File location in project information:
 202008231033248



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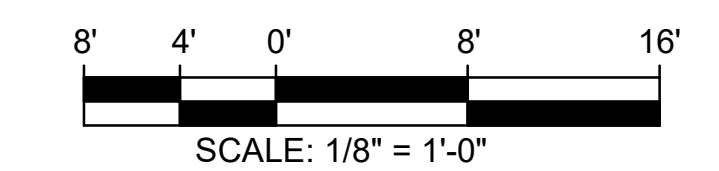
SHEET NOTES

05.06	GUARDRAIL & HANDRAIL - RE:CIVIL
07.01	ROOF HATCH
07.13	SNOW GUARDS - STANDING SEAM MOUNTED
07.14	ROOF WALKWAY - STANDING SEAM MOUNTED
10.15	DIMENSIONAL LETTER SIGNAGE - ALUMINUM
11.05	FACILITY FALL PROTECTION - STANDING SEAM MOUNTED CABLE SYSTEM
28.01	CARD READER - RE:ELECTRICAL

FINISH LEGEND

	CARPET (CPT-1)		TILE
	SEALED CONCRETE		BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED
	LUXURY VINYL TILE (LVT)		

METAL WALL PANEL	
MP-1:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: WHITE
MP-2:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: YELLOW BEIGE (TO MATCH EXISTING FROM MANUFACTURERS FULL RANGE OF COLORS)
MP-3:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: DAKOTA BROWN
CARPET TILE	
CPT-1:	J + J FLOORING GROUP 18"X36" COLOR: GENERATE EXCITEMENT (BLUE)
LUXURY VINYL TILE	
LVT-1:	J + J FLOORING GROUP 5MM 9" X 48" PLANK TIMELESS - GIFT
FLOOR TILE	
FT-1:	CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE) COLOR: CARBON
WALL BASE	
WB-1:	ROPPE (RUBBER BASE) COLOR: BURNT UMBER
WB-2:	SCHLUTER DILEX COVE
PAINT	
PT-1:	COLOR: SW7757 HIGH REFLECTIVE WHITE (NOTE: ALL PAINTED SURFACES TO BE PT-1 U.N.O.)
PT-2:	COLOR: SW7671 ON THE ROCKS (NOTE: ALL HOLLOW METAL FRAMES TO BE PAINTED PT-2 U.N.O.)
PT-3:	COLOR: AF-530 LUCERNE
WALL TILE	
WT-1:	CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE) COLOR: MIST
FRP	
FRP-1:	TEXTURE: PEBBLE COLOR: WHITE
WOOD DOORS	
WD-1:	MARSHFIELD-ALGOMA - ASPIRO SERIES COLOR: RED OAK - PLAIN SLICED - CUSTOM COLOR 266347C
CASEWORK	
CW-1:	INTERIOR ARTS - PLASTIC LAMINATE COLOR: 2023LIN ASH VEIL
COUNTERTOPS	
SS-1:	PENTAL QUARTZ COLOR: B08710P ONDULATO POLISHED
CEILING	
ACT:	ROCKFON - ARTIC COLOR: WHITE



DESCRIPTION	MARK
FINAL DESIGN 100%	



DESIGNED BY	DESIGNER	CHECKER
DATE	DATE	DATE
PROJECT NO.	PROJECT NO.	PROJECT NO.
PROJECT NAME	PROJECT NAME	PROJECT NAME
PROJECT MANAGER	PROJECT MANAGER	PROJECT MANAGER

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
ELEVATIONS

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7/20/2024 10:46:20 AM
ORIGINAL SHEET - ANS D

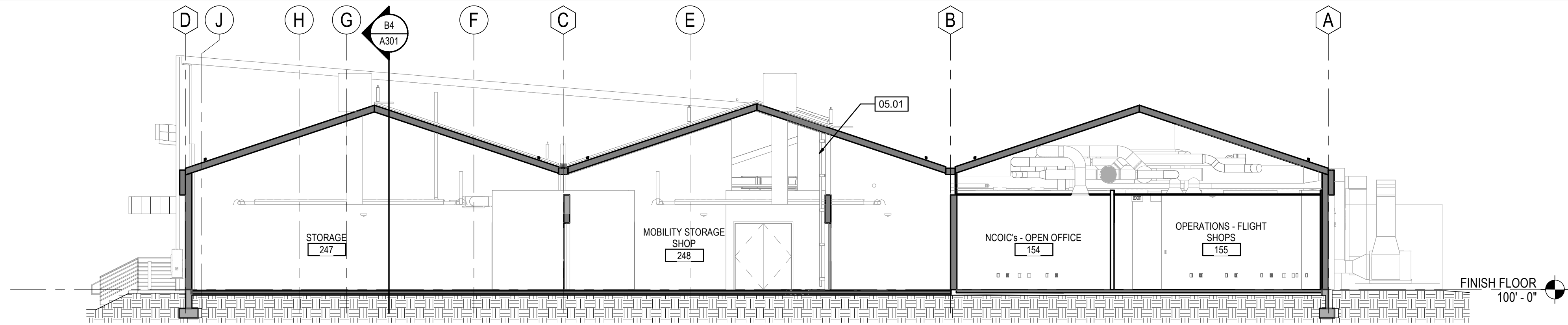
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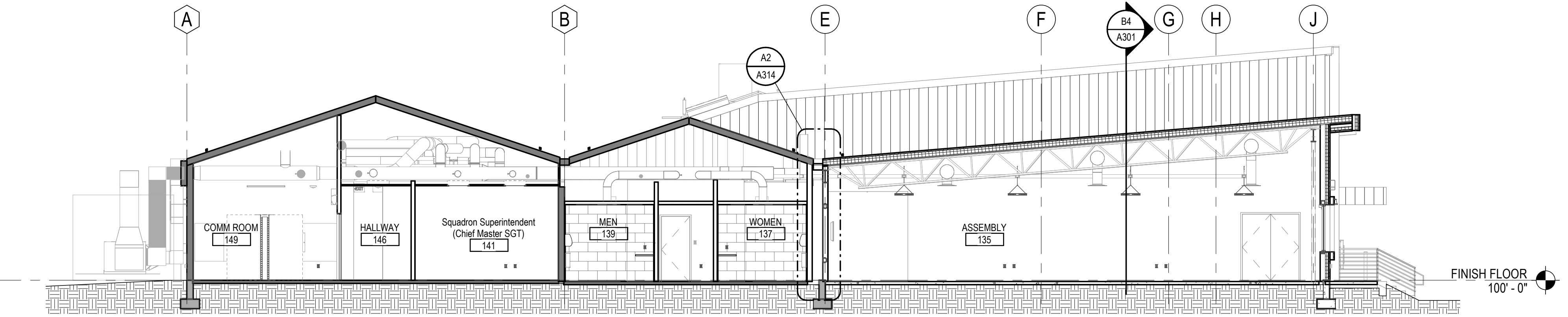
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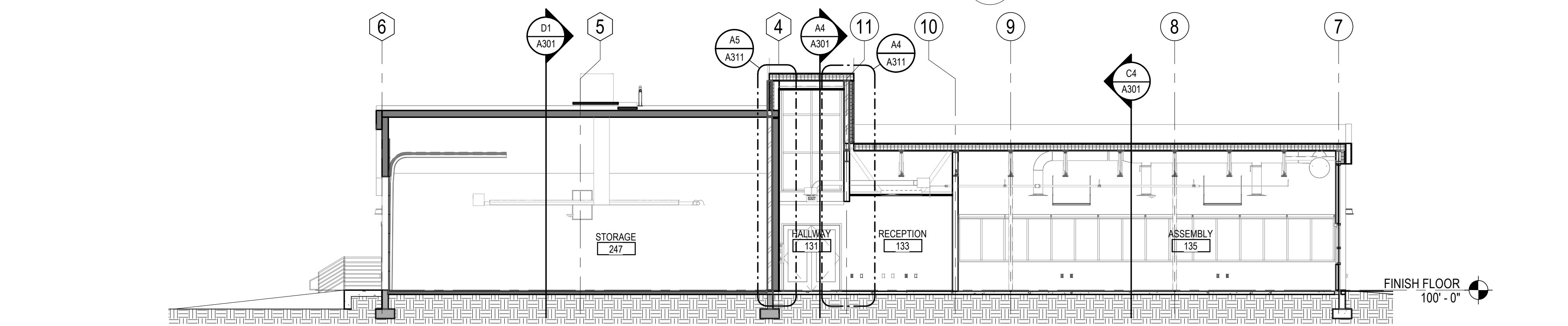
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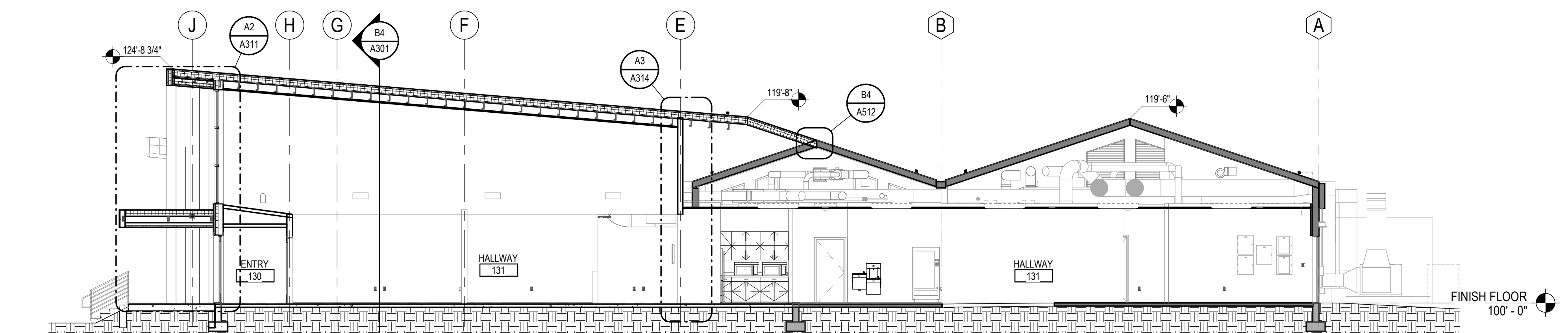
D1 BUILDING SECTION
1/8" = 1'-0"



C4 BUILDING SECTION
1/8" = 1'-0"



B4 BUILDING SECTION
1/8" = 1'-0"



A4 BUILDING SECTION
1/8" = 1'-0"



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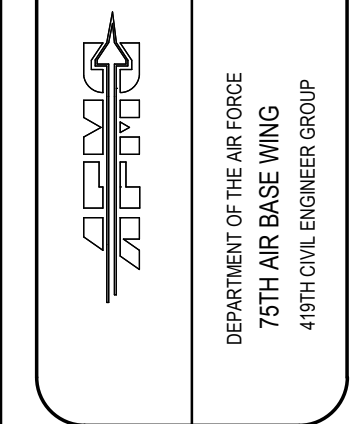
DATE	APPR	MARK
07/15/2020		

SHEET NOTES

05.01 ROOF ACCESS LADDER

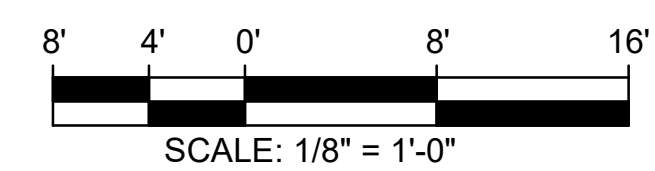


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DRAWING PROJECT NO: 1033248	SITE CODE:
LEGACY PROJECT NO:	DATE: 07/15/2020
BASE PROJECT MANAGER: BEVERLY LANGUE	

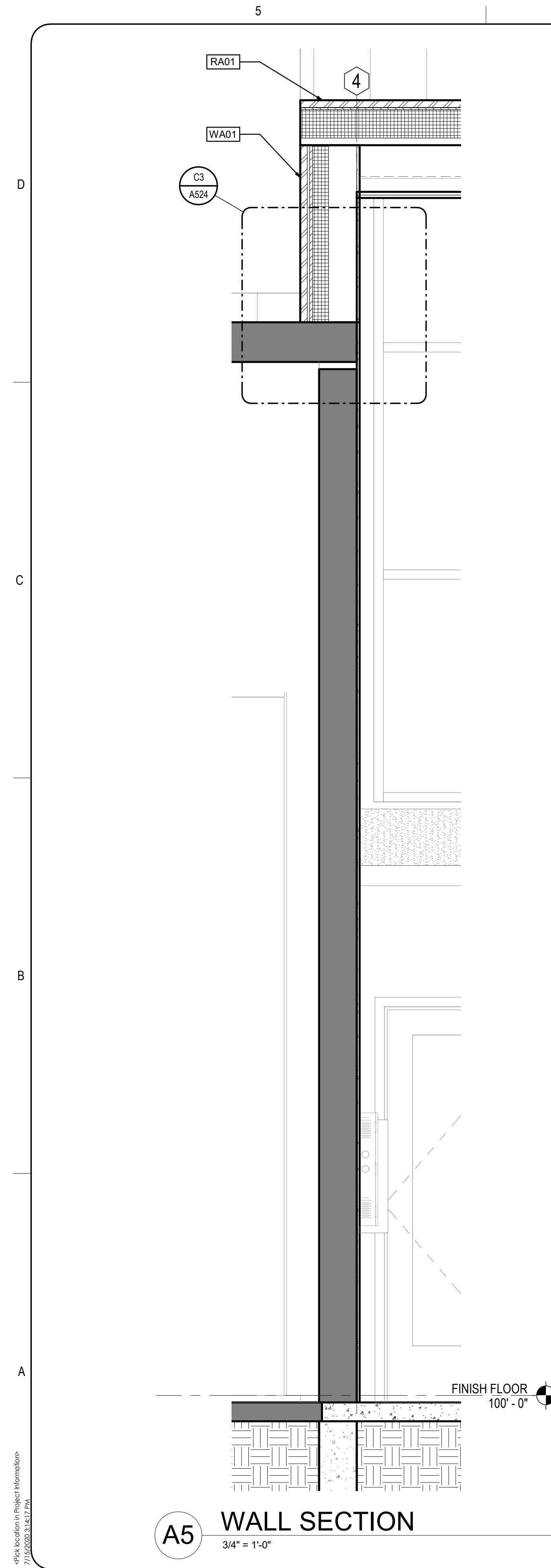


ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
BUILDING SECTIONS

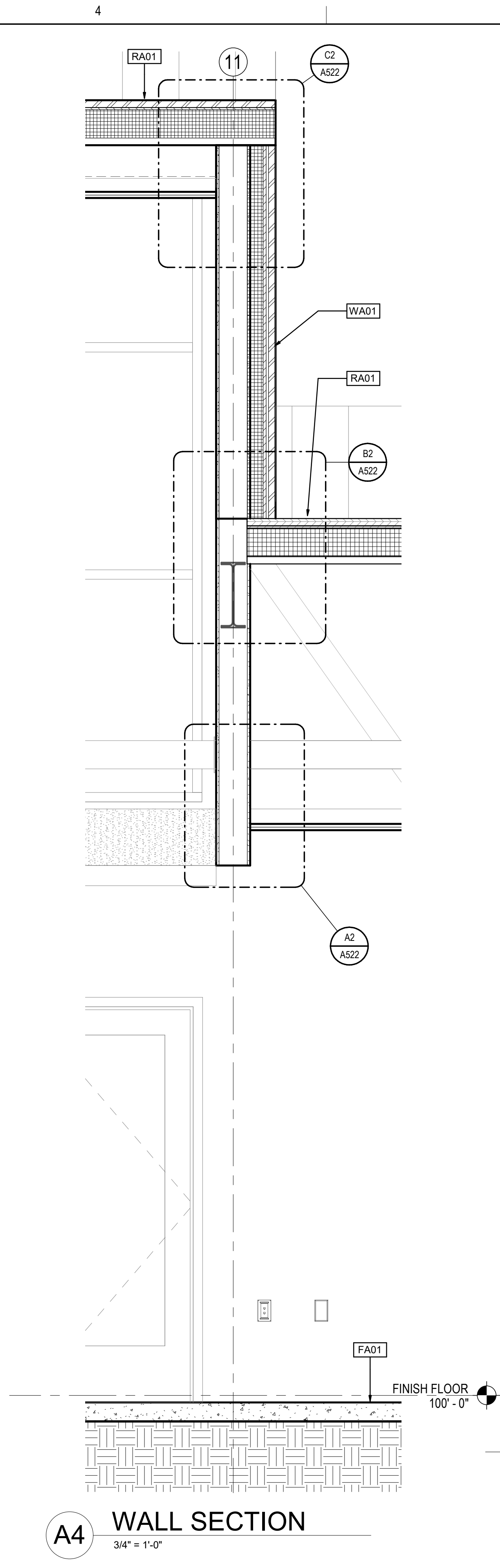
A301
Sheet: 33 of 94



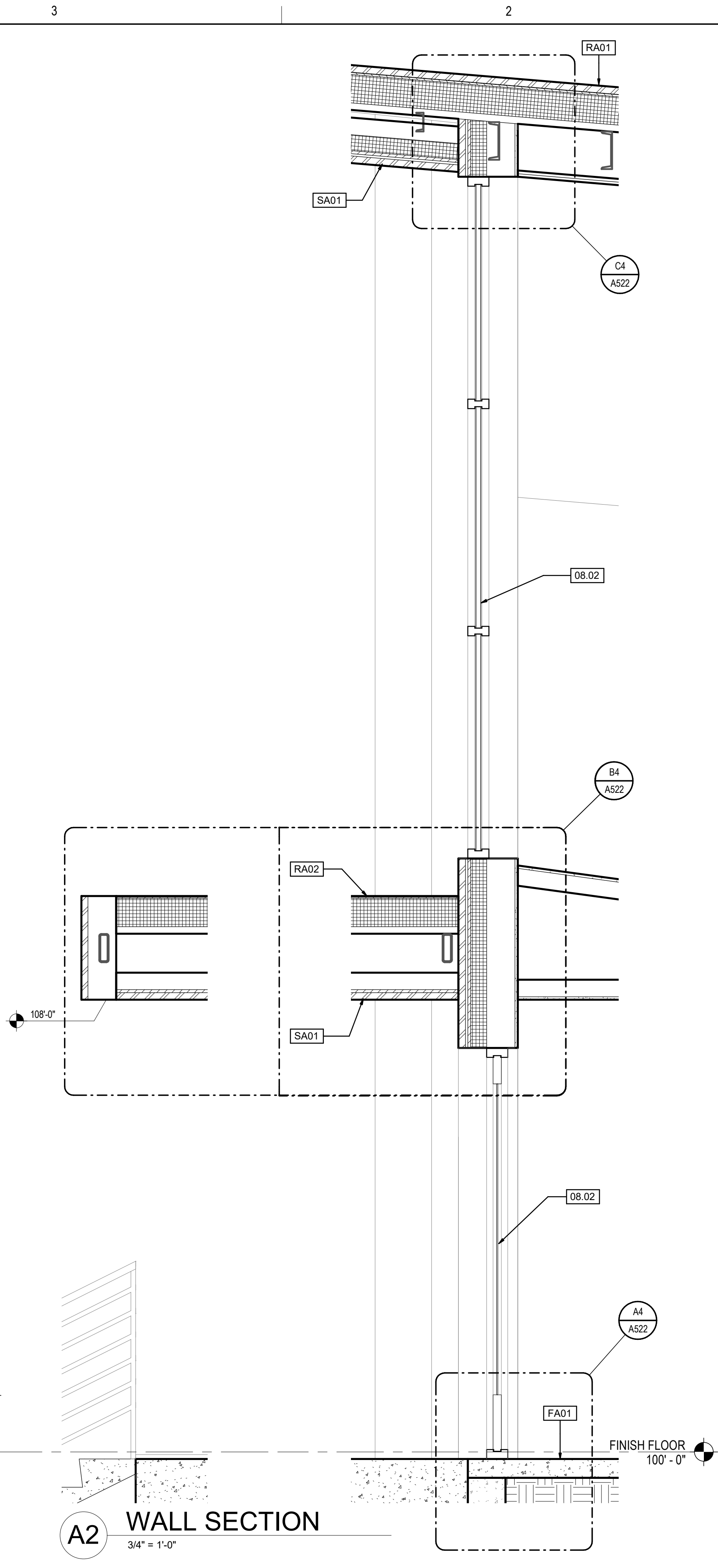
File location in Project Information: 20200303_1033248



A5 WALL SECTION
3/4" = 1'-0"



A4 WALL SECTION
3/4" = 1'-0"



A2 WALL SECTION
3/4" = 1'-0"



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SHEET NOTES

08.02	ALUMINUM ENTRANCE & STOREFRONT - COLOR: DARK BRONZE
FA01	SEE SHEET A501 FOR FLOOR ASSEMBLY ATTRIBUTES
RA01	SEE SHEET A501 FOR ROOF ASSEMBLY ATTRIBUTES
RA02	SEE SHEET A501 FOR ROOF ASSEMBLY ATTRIBUTES
SA01	SEE SHEET A501 FOR SOFFIT ASSEMBLY ATTRIBUTES
WA01	SEE SHEET A501 FOR WALL ASSEMBLY ATTRIBUTES



DATE	APPR	MARK
07/15/2020		
DESCRIPTION FINAL DESIGN 100%		

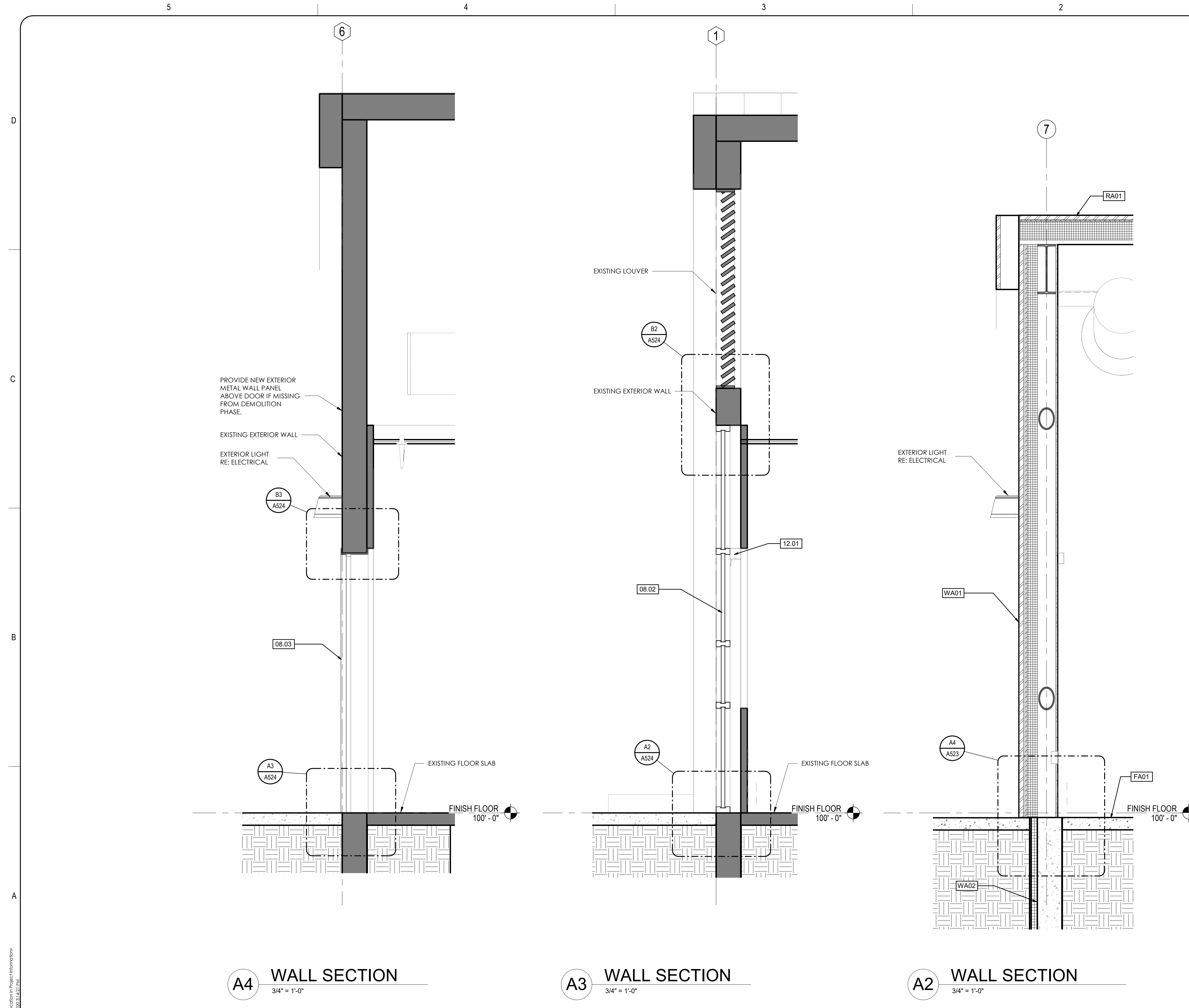


DESIGNED BY: Designer	CHECKED BY: Checker
DATE: 07/15/2020	DATE: 07/15/2020
PROJECT NO: 1033248	PROJECT NAME: 75TH AIR BASE WING
PROJECT MANAGER: BEVERLY LANGLIE	

**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
WALL SECTIONS**

A311
Sheet: 34 of 94

File location in Project Information:
7/15/2020 3:11:17 PM



A4 WALL SECTION
3/4" = 1'-0"

A3 WALL SECTION
3/4" = 1'-0"

A2 WALL SECTION
3/4" = 1'-0"



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SHEET NOTES	
08.02	ALUMINUM ENTRANCE & STOREFRONT - COLOR: DARK BRONZE
08.03	HOLLOW METAL DOOR & FRAME - EXTERIOR COLOR: DAKOTA BROWN - INTERIOR COLOR:PT-2
12.01	ROLLER SHADES - SHADE COLOR:BLACK
FA01	SEE SHEET A501 FOR FLOOR ASSEMBLY ATTRIBUTES
RA01	SEE SHEET A501 FOR ROOF ASSEMBLY ATTRIBUTES
WA01	SEE SHEET A501 FOR WALL ASSEMBLY ATTRIBUTES
WA02	SEE SHEET A501 FOR WALL ASSEMBLY ATTRIBUTES



DATE	APPR	MARK
07/15/2020		



DESIGNED BY	DESIGNER	CHECKER
DATE	DATE	DATE
PROJECT NO.	PROJECT NO.	PROJECT NO.
PROJECT MANAGER	PROJECT MANAGER	PROJECT MANAGER
BEVERLY LANGLIE	BEVERLY LANGLIE	BEVERLY LANGLIE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
WALL SECTIONS

A313
Sheet: 36 of 94

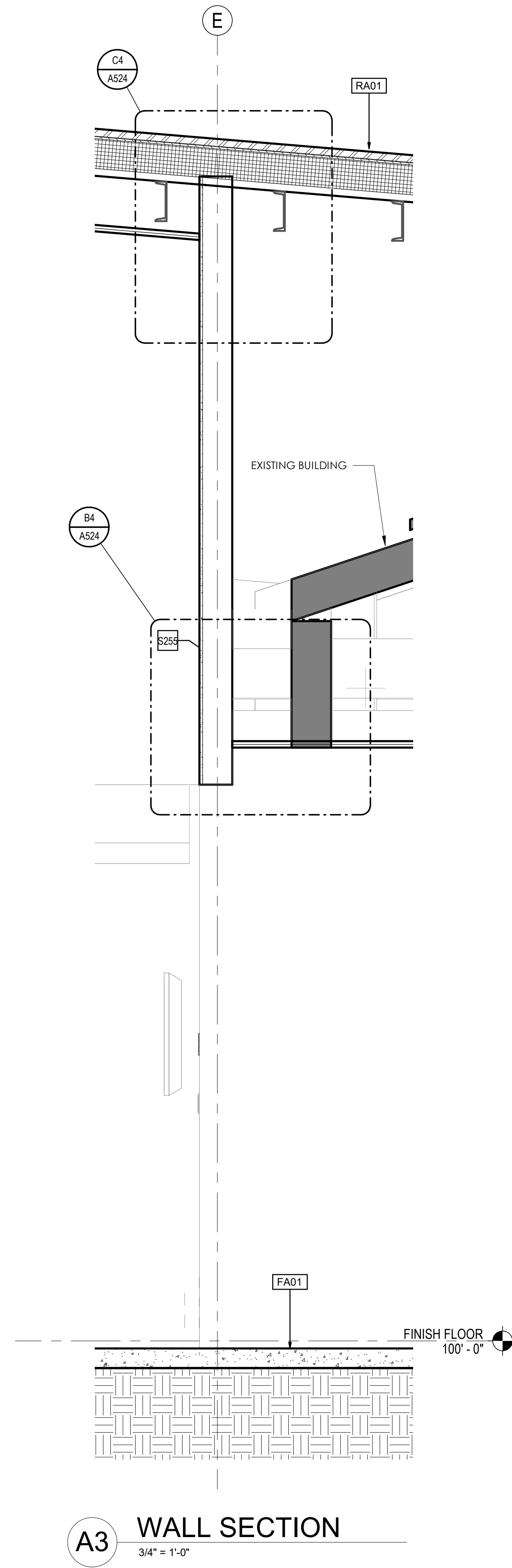
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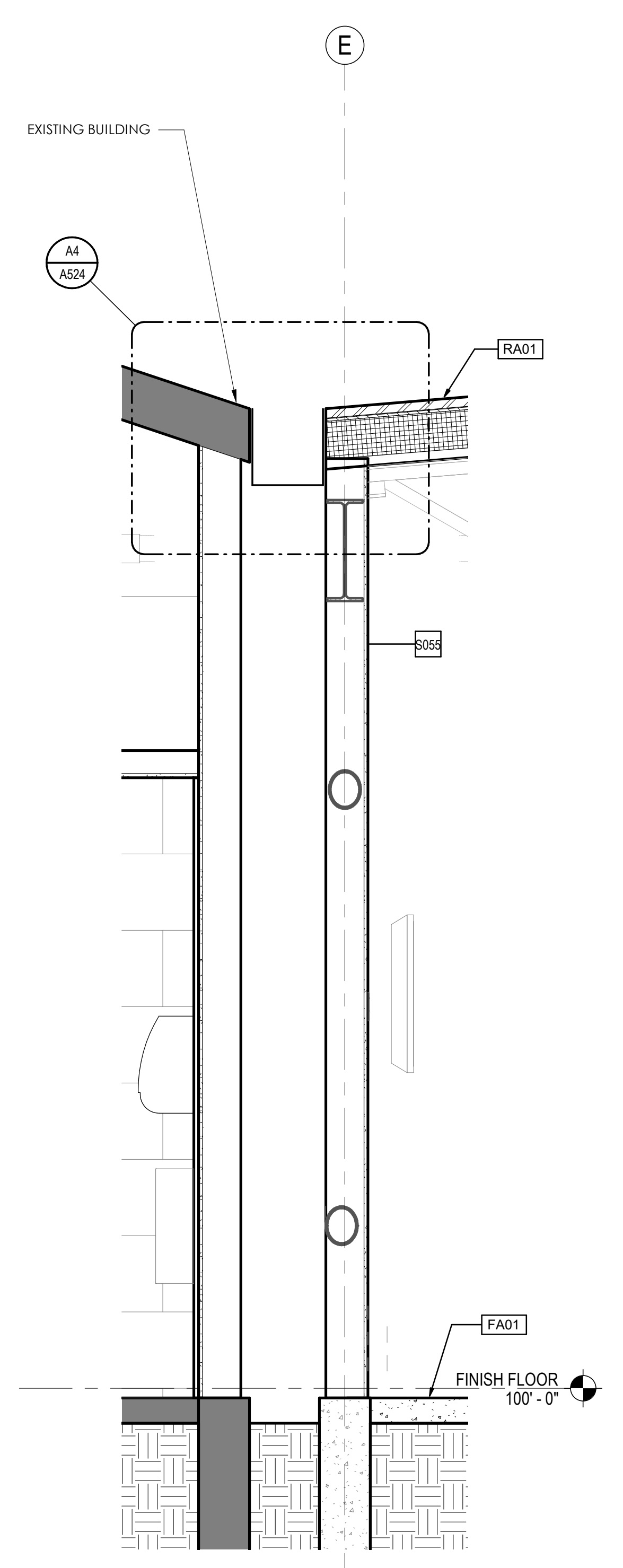
C

B

A



A3 WALL SECTION
3/4" = 1'-0"



A2 WALL SECTION
3/4" = 1'-0"



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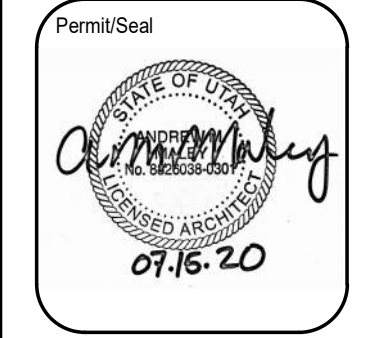
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SHEET NOTES

FA01	SEE SHEET A501 FOR FLOOR ASSEMBLY ATTRIBUTES
RA01	SEE SHEET A501 FOR ROOF ASSEMBLY ATTRIBUTES



DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		



	DESIGNED BY: Designer	CHECKED BY: Checker
	SERIAL PROJECT NO: 1033268 LEGACY PROJECT NO: DATE: 07/15/2020 BASE PROJECT MANAGER: BEVERLY LANGUE	

**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
WALL SECTIONS**

A314
Sheet: 37 of 94



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DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		



DESIGNED BY	CHECKED BY	DATE
DESIGNER	CHECKER	DATE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
ENLARGED PLAN & INT. ELEVATIONS

A401
Sheet: 38 of 94

GENERAL NOTES	
1	SEE SHEET A501 FOR ALL BUILDING ASSEMBLY TYPES.
2	SEE SHEET A601 FOR ALL INTERIOR PARTITION TYPES AND LIMITING WALL HEIGHT TABLES.
3	DIMENSIONS ARE TAKEN FROM CENTERLINE GRID, FACE OF STRUCTURE, OR FINISH FACE OF FRAMED PARTITIONS
4	PROVIDE GYPSUM BOARD FINISH ON ALL EXISTING INTERIOR METAL FRAMING PREPARED FROM DEMO.

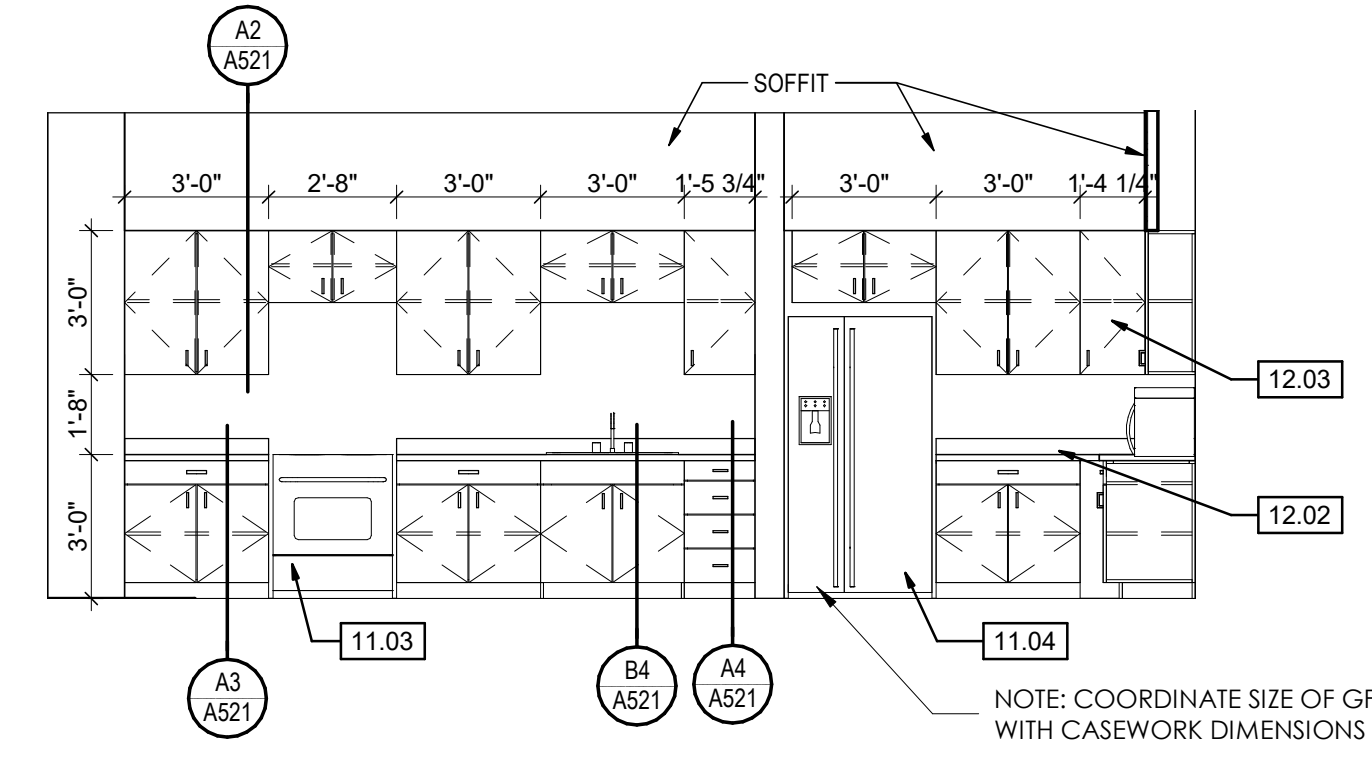
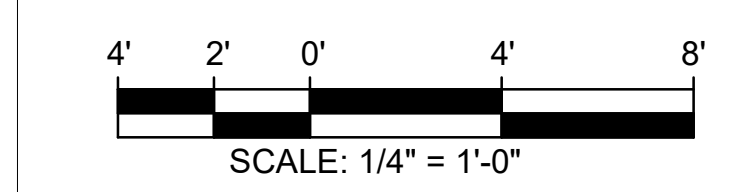
SHEET NOTES

05.01	ROOF ACCESS LADDER
07.01	ROOF HATCH
10.02	METAL LOCKERS
10.04	ADA LOCKER ROOM BENCH
11.01	VENDING MACHINE - BEVERAGE (NIC) - OF/OI
11.02	RESIDENTIAL APPLIANCES - MICROWAVE - OF/OI
11.03	RESIDENTIAL APPLIANCES - ELECTRIC STOVE & OVEN - OF/OI
11.04	RESIDENTIAL APPLIANCES - REFRIGERATOR - OF/OI
12.02	SOLID SURFACE COUNTERTOP WITH BACKSPLASH (SS-1)
12.03	PLASTIC LAMINATE FACED CASEWORK (CW-1)
22.02	ELECTRIC DRINKING FOUNTAIN - RE: PLUMBING
22.03	UTILITY SINK - RE: PLUMBING

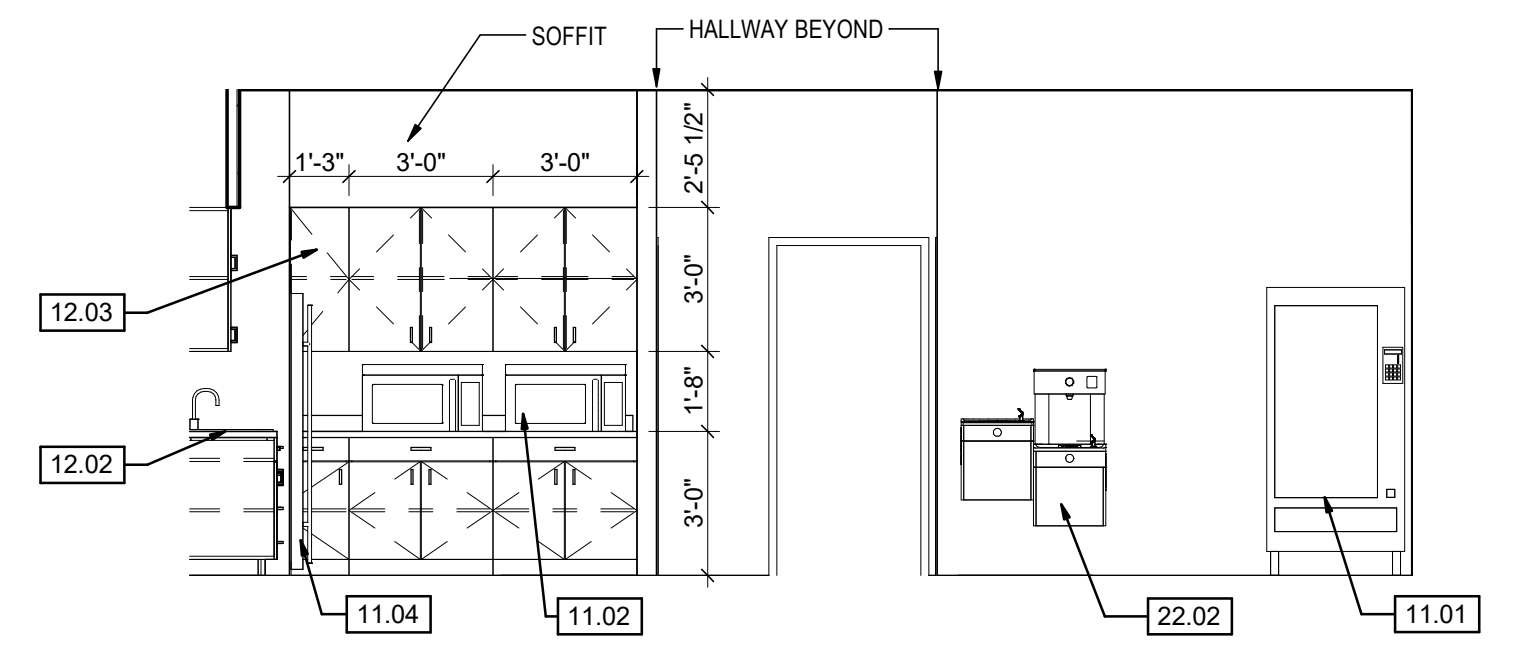
FINISH LEGEND

	CARPET (CPT-1)		TILE
	SEALED CONCRETE		BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED
	LUXURY VINYL TILE (LVT)		

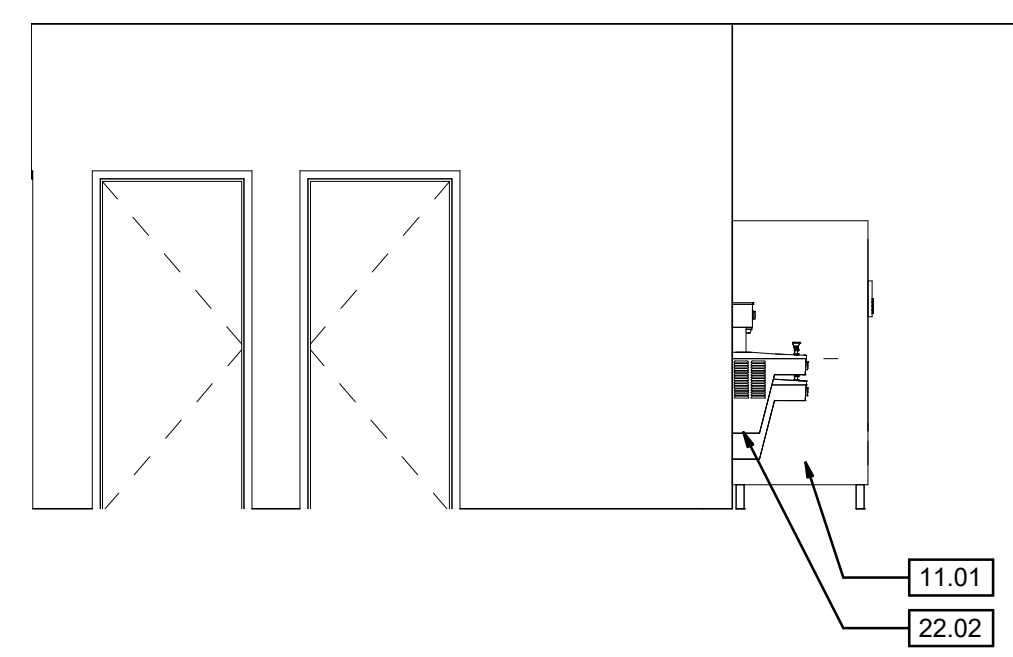
METAL WALL PANEL	
MP-1:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: WHITE
MP-2:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: YELLOW BEIGE (TO MATCH EXISTING FROM MANUFACTURERS FULL RANGE OF COLORS)
MP-3:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: DAKOTA BROWN
CARPET TILE	
CPT-1:	J + J FLOORING GROUP 18"X36" COLOR: GENERATE EXCITEMENT (BLUE)
LUXURY VINYL TILE	
LVT-1:	J + J FLOORING GROUP 5MM 9" X 48" PLANK TIMELESS - GIFT
FLOOR TILE	
FT-1:	CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE) COLOR: CARBON
WALL BASE	
WB-1:	ROPPE (RUBBER BASE) COLOR: BURNT UMBER
WB-2:	SCHLUTER DILEX COVE
PAINT	
PT-1:	COLOR: SW7757 HIGH REFLECTIVE WHITE (NOTE: ALL PAINTED SURFACES TO BE PT-1 U.N.O.)
PT-2:	COLOR: SW7671 ON THE ROCKS (NOTE: ALL HOLLOW METAL FRAMES TO BE PAINTED PT-2 U.N.O.)
PT-3:	COLOR: AF-530 LUCERNE
WALL TILE	
WT-1:	CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE) COLOR: MIST
FRP	
FRP-1:	TEXTURE: PEBBLE COLOR: WHITE
WOOD DOORS	
WD-1:	MARSHFIELD-ALGOMA - ASPIRO SERIES COLOR: RED OAK - PLAIN SLICED - CUSTOM COLOR 266347C
CASEWORK	
CW-1:	INTERIOR ARTS - PLASTIC LAMINATE COLOR: 2023LIN ASH VEIL
COUNTERTOPS	
SS-1:	PENTAL QUARTZ COLOR: BQ8710P ONDULATO POLISHED
CEILING	
ACT:	ROCKFON - ARTIC COLOR: WHITE



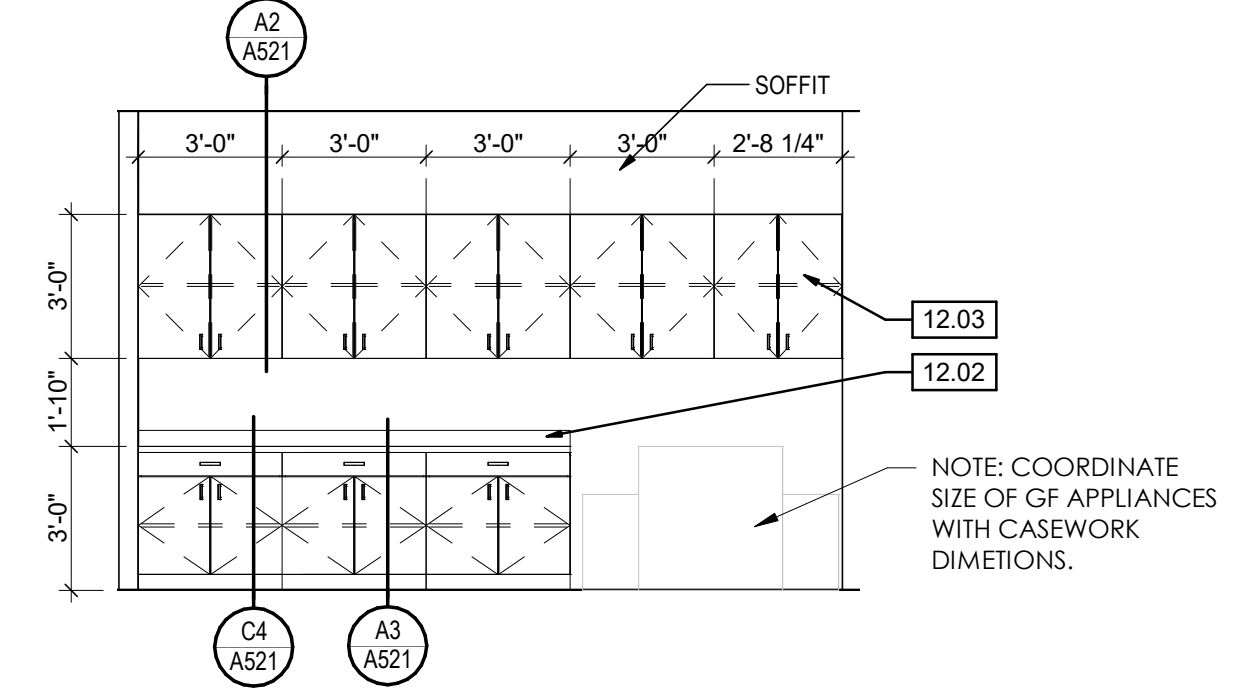
D5 BREAK ROOM 136 - WEST
1/4" = 1'-0"



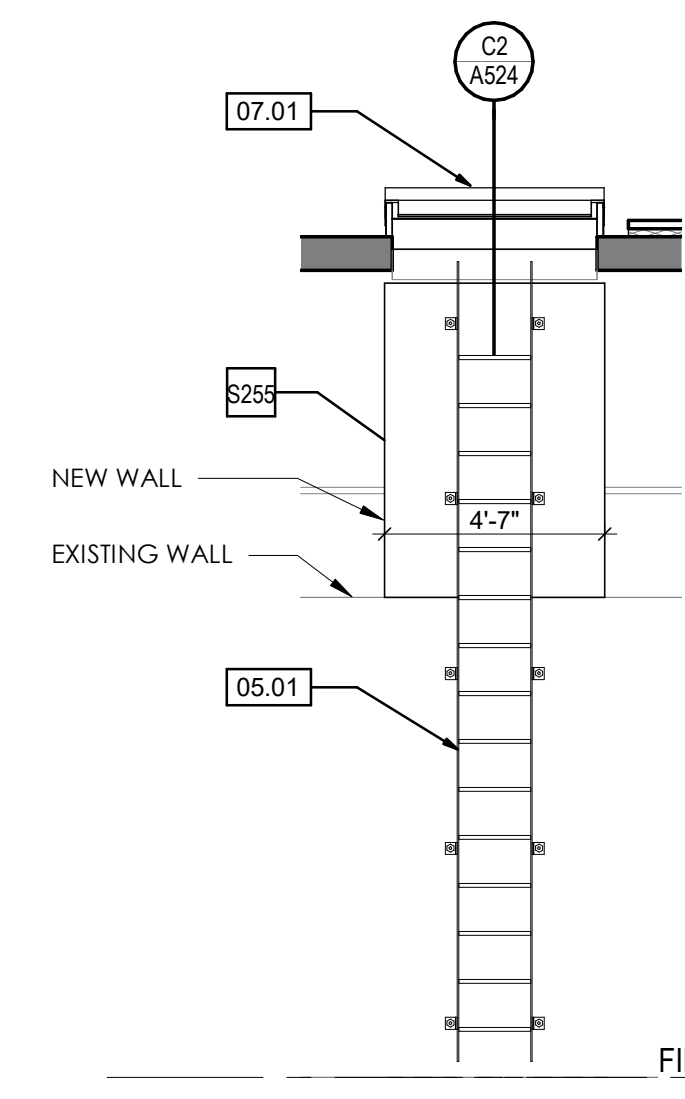
C5 BREAK ROOM 136 - NORTH
1/4" = 1'-0"



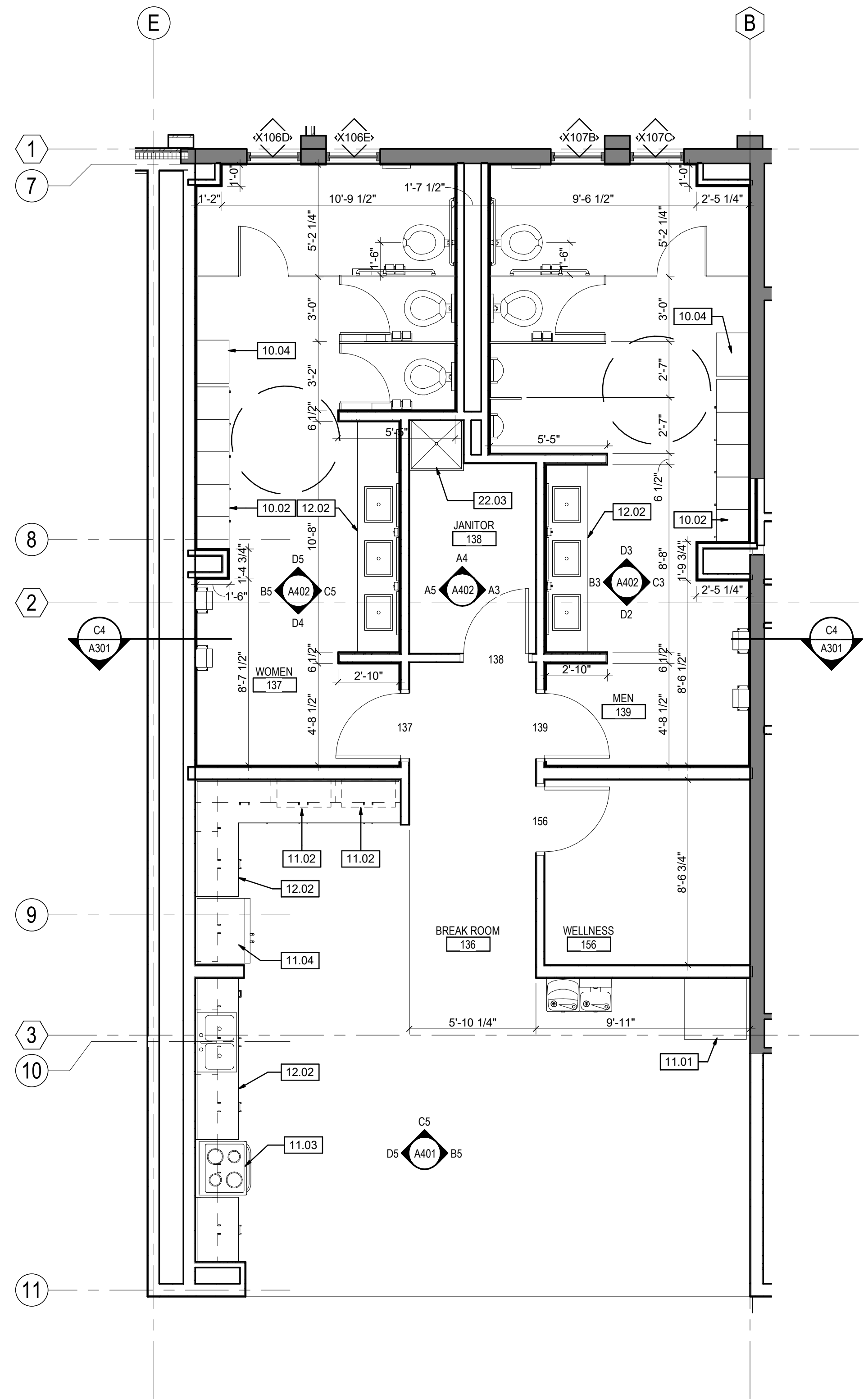
B5 BREAK ROOM 136 - EAST
1/4" = 1'-0"



A5 PRINT / COPY 147
1/4" = 1'-0"



A4 ROOF ACCESS LADDER
1/4" = 1'-0"



A3 ENLARGED PLAN
1/4" = 1'-0"





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SHEET NOTES	
09.03	WALL TILE (WT-1)
10.02	METAL LOCKERS
10.03	TOILET COMPARTMENTS - PHENOLIC
10.04	ADA LOCKER ROOM BENCH
10.05	MIRROR - METAL FRAME
10.06	TOILET ACCESSORIES - GRAB BAR (CF/CI)
10.08	TOILET ACCESSORIES - PAPER TOWEL DISPENSER (RECESSED) (CF/CI)
10.09	TOILET ACCESSORIES - SANITARY NAPKIN DISPOSAL (GF/CI)
10.10	TOILET ACCESSORIES - SHELF (MOP & BROOM HOLDER) (CF/CI)
10.11	TOILET ACCESSORIES - SOAP DISPENSER (WALL-MOUNTED) (GF/CI)
10.12	TOILET ACCESSORIES - TOILET SEAT COVER DISPENSER (CF/CI)
10.13	TOILET ACCESSORIES - TOILET TISSUE DISPENSER (GF/CI)
10.14	TOILET ACCESSORIES - WASTE RECEPTACLE (RECESSED) (CF/CI)
12.02	SOLID SURFACE COUNTERTOP WITH BACKSPLASH (SS-1)
22.03	UTILITY SINK - RE: PLUMBING

FINISH LEGEND	
	CARPET (CPT-1)
	TILE
	SEALED CONCRETE
	BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED
	LUXURY VINYL TILE (LVT)

METAL WALL PANEL	
MP-1:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: WHITE
MP-2:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: YELLOW BEIGE (TO MATCH EXISTING FROM MANUFACTURERS FULL RANGE OF COLORS)
MP-3:	MBCI - DESIGNER SERIES (CONSEALED FASTENER) COLOR: DAKOTA BROWN

CARPET TILE	
CPT-1:	J + J FLOORING GROUP 18"X36" COLOR: GENERATE EXCITEMENT (BLUE)

LUXURY VINYL TILE	
LVT-1:	J + J FLOORING GROUP 5MM 9" X 48" PLANK TIMELESS - GIFT

FLOOR TILE	
FT-1:	CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE) COLOR: CARBON

WALL BASE	
WB-1:	ROPPE (RUBBER BASE) COLOR: BURNT UMBER
WB-2:	SCHLUTER DILEX COVE

PAINT	
PT-1:	COLOR: SW7757 HIGH REFLECTIVE WHITE (NOTE: ALL PAINTED SURFACES TO BE PT-1 U.N.O.)
PT-2:	COLOR: SW7671 ON THE ROCKS (NOTE: ALL HOLLOW METAL FRAMES TO BE PAINTED PT-2 U.N.O.)
PT-3:	COLOR: AF-530 LUCERNE

WALL TILE	
WT-1:	CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE) COLOR: MIST

FRP	
FRP-1:	TEXTURE: PEBBLE COLOR: WHITE

WOOD DOORS	
WD-1:	MARSHFIELD-ALGOMA - ASPIRO SERIES COLOR: RED OAK - PLAIN SLICED - CUSTOM COLOR 266347C

CASEWORK	
CW-1:	INTERIOR ARTS - PLASTIC LAMINATE COLOR: 2023LN ASH VEIL

COUNTERTOPS	
SS-1:	PENTAL QUARTZ COLOR: BQ8710P ONDULATO POLISHED

CEILINGS	
ACT:	ROCKFON - ARTIC COLOR: WHITE

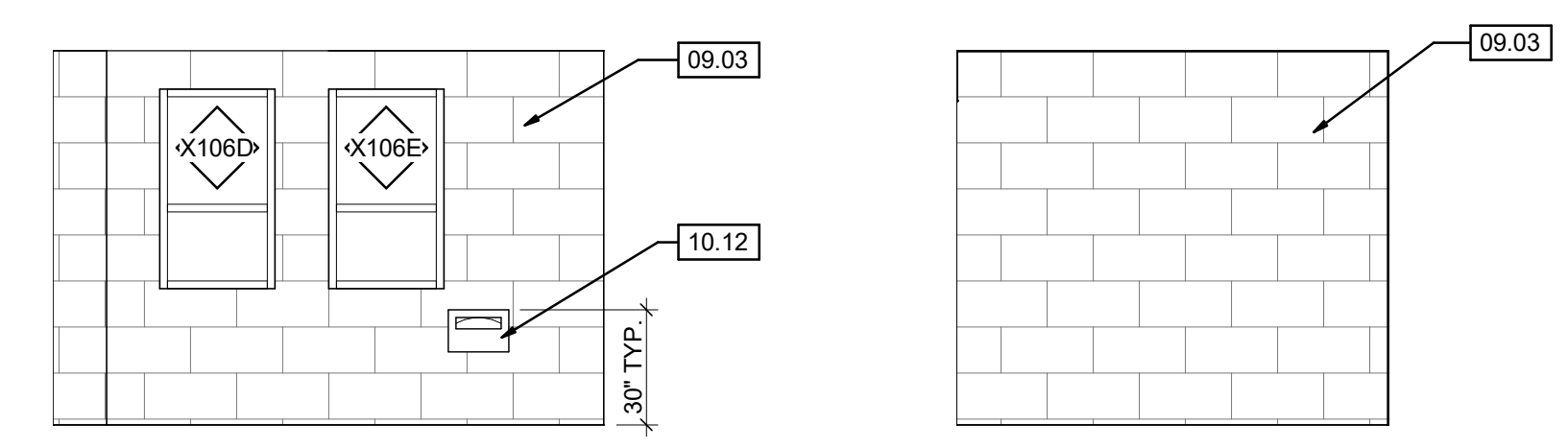
DATE	APPR	MARK
07/15/2020		



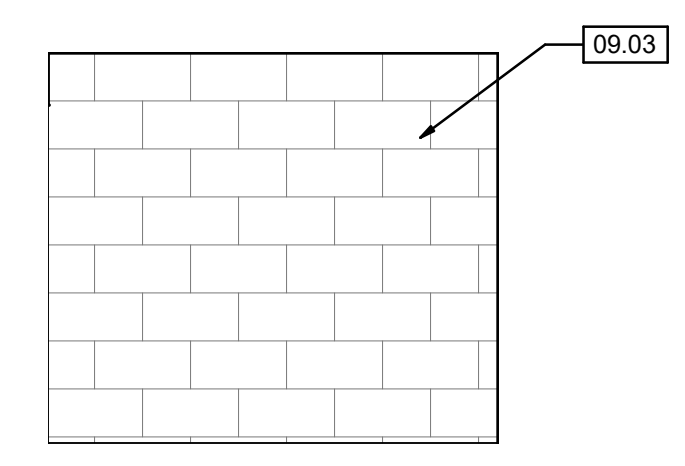
DESIGNED BY	CHECKED BY
Designer	Checker
DATE: 07/15/2020	DATE: 07/15/2020
PROJECT NO: 1033248	PROJECT NO: 1033248
BASE PROJECT MANAGER	BASE PROJECT MANAGER
BEVERLY L. LANGLEY	BEVERLY L. LANGLEY

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
ENLARGED PLAN & INT. ELEVATIONS

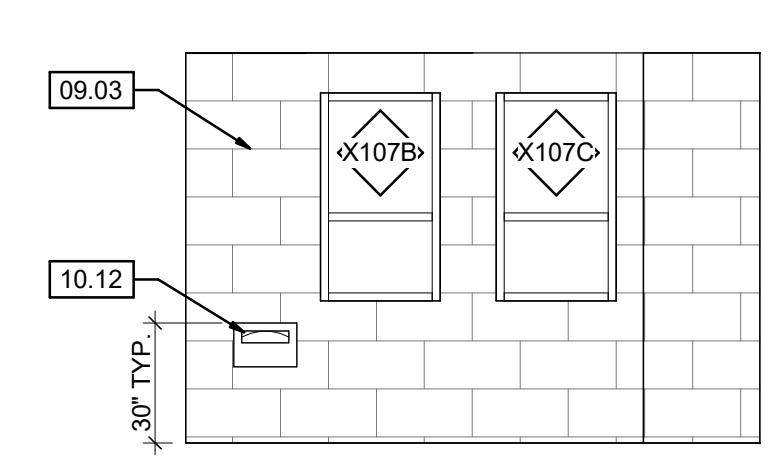
A402
Sheet: 39 of 94



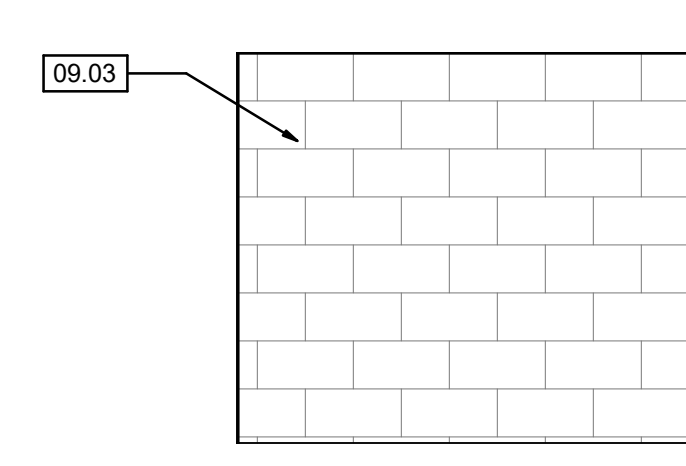
D5 WOMENS 137 - NORTH
1/4" = 1'-0"



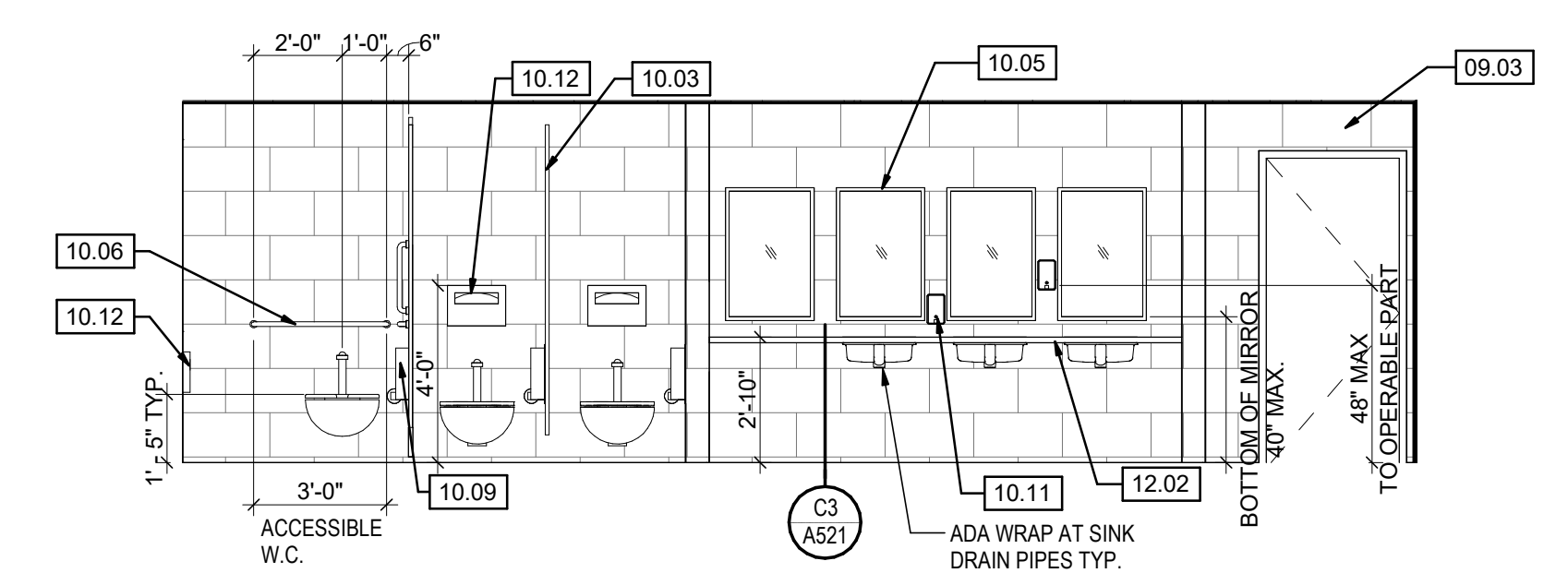
D4 WOMENS 137 - SOUTH
1/4" = 1'-0"



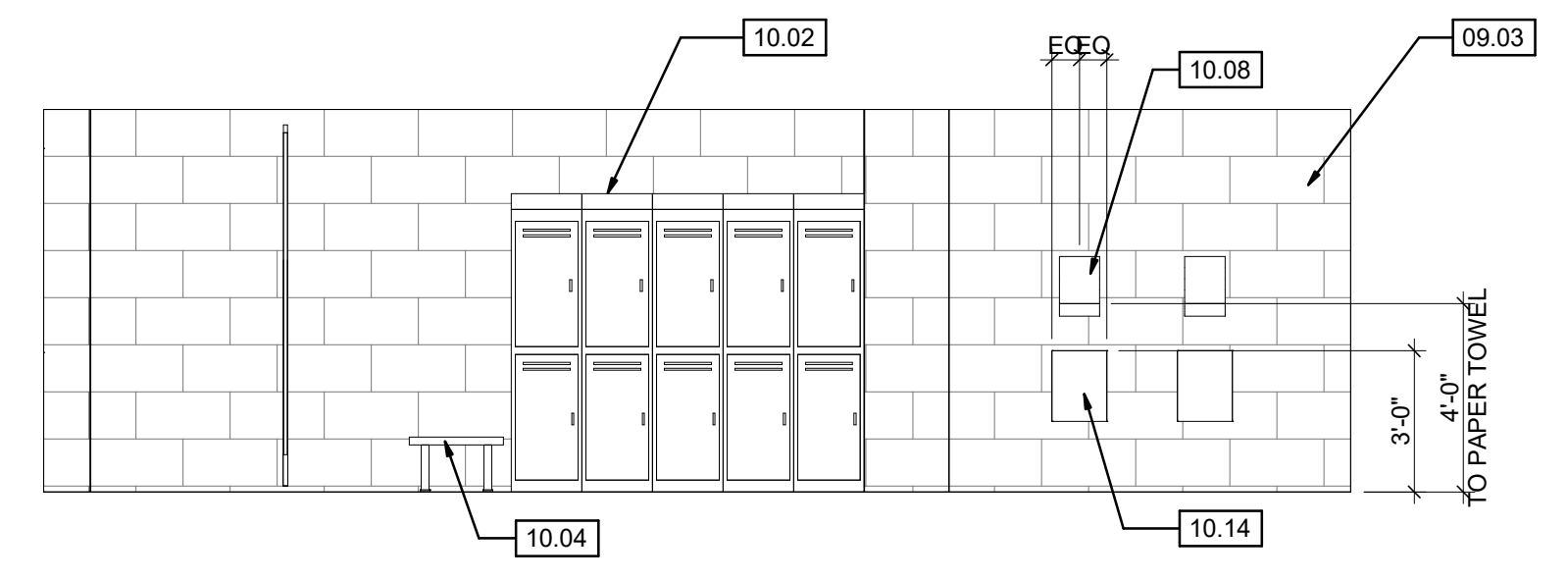
D3 MENS 139 - NORTH
1/4" = 1'-0"



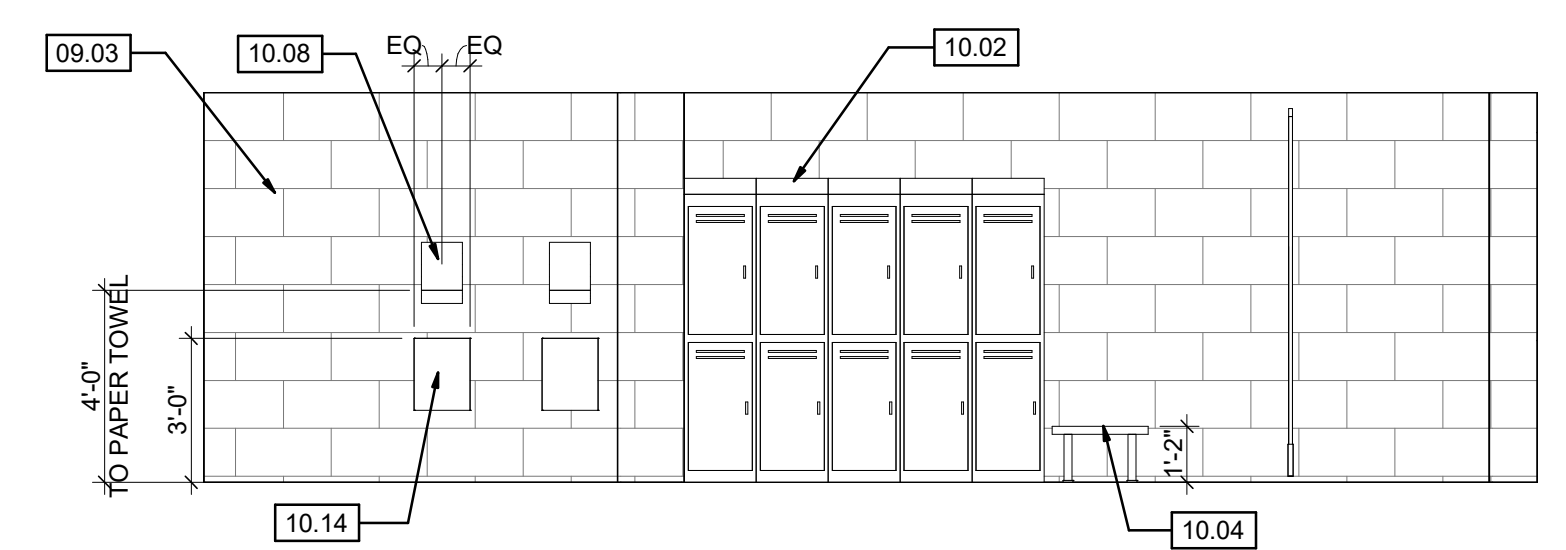
D2 MENS 139 - SOUTH
1/4" = 1'-0"



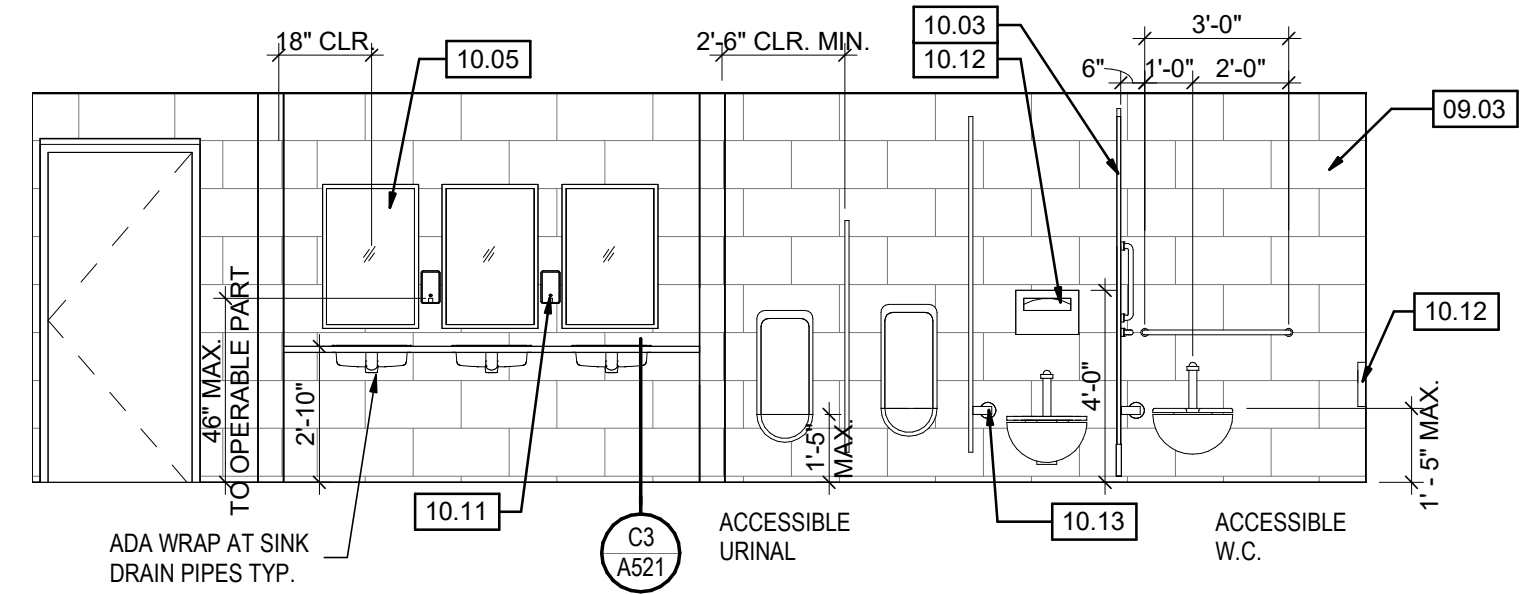
C5 WOMENS 137 - EAST
1/4" = 1'-0"



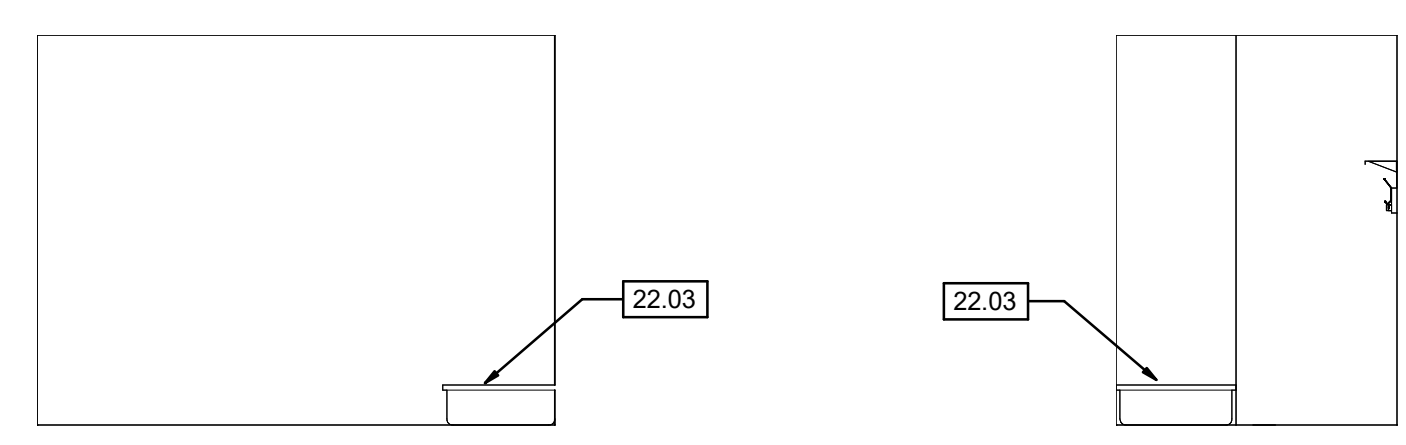
C3 MENS 139 - EAST
1/4" = 1'-0"



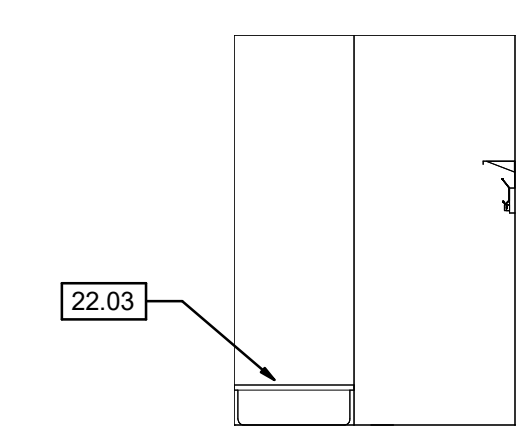
B5 WOMENS 137 - WEST
1/4" = 1'-0"



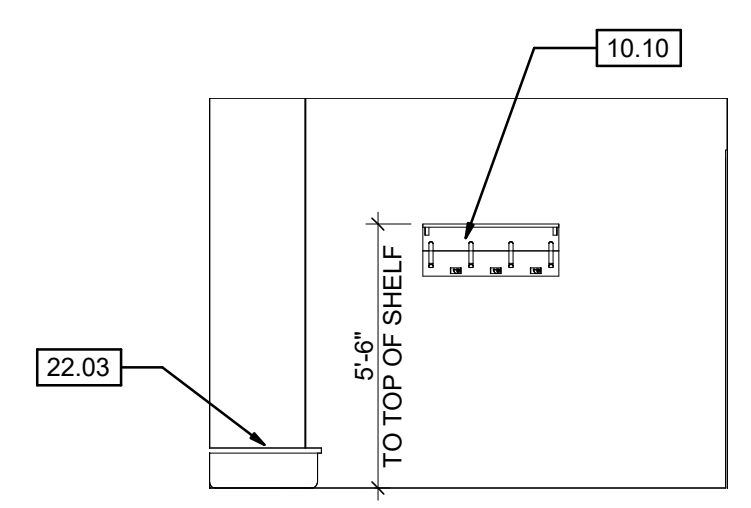
B3 MENS 139 - WEST
1/4" = 1'-0"



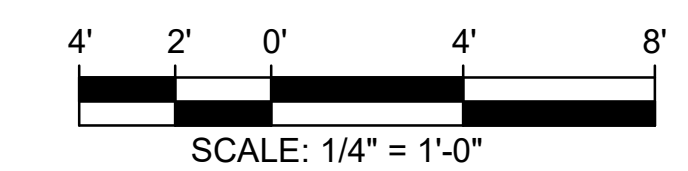
A5 JANITOR 138 - WEST
1/4" = 1'-0"

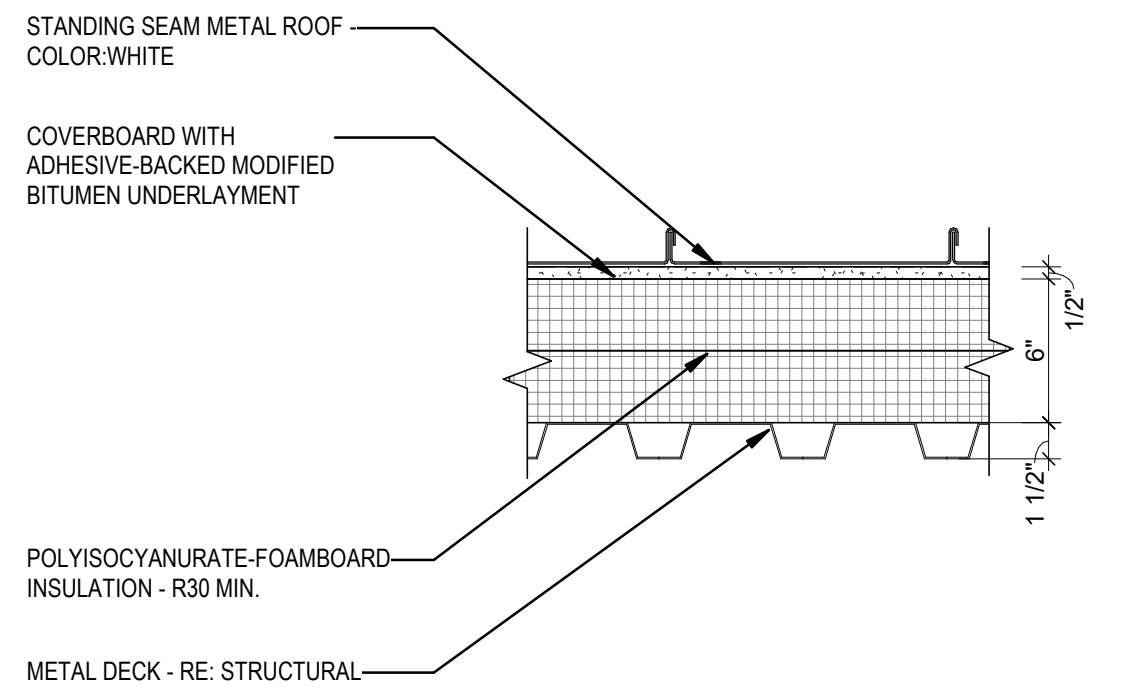


A4 JANITOR 138 - NORTH
1/4" = 1'-0"



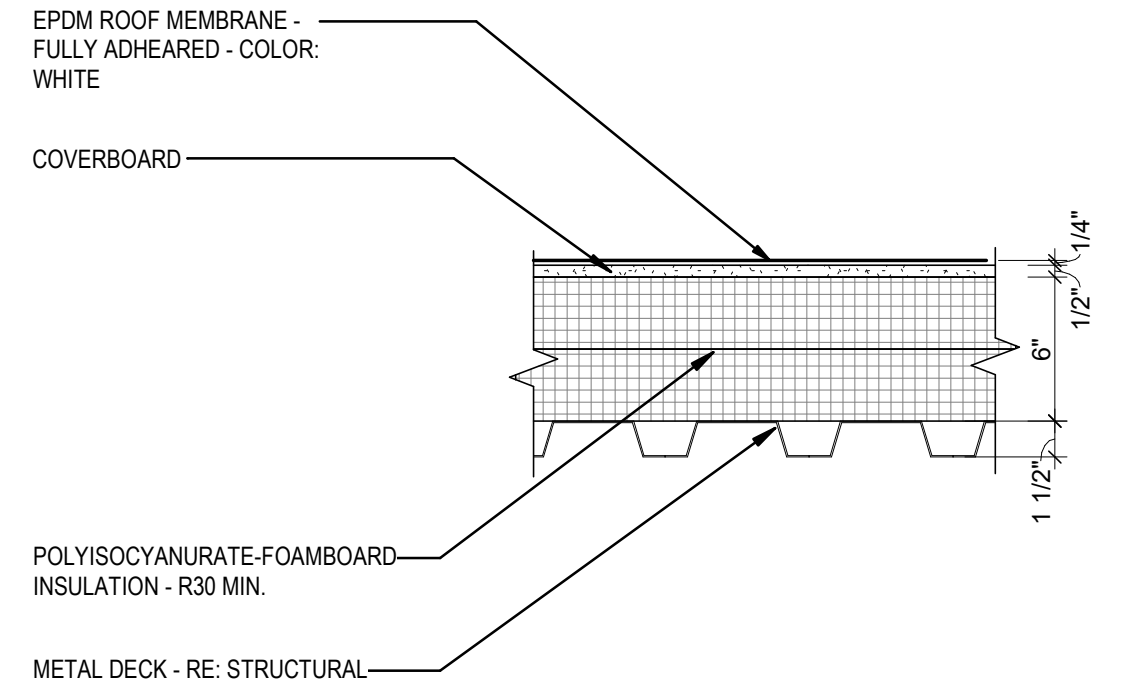
A3 JANITOR 138 - EAST
1/4" = 1'-0"





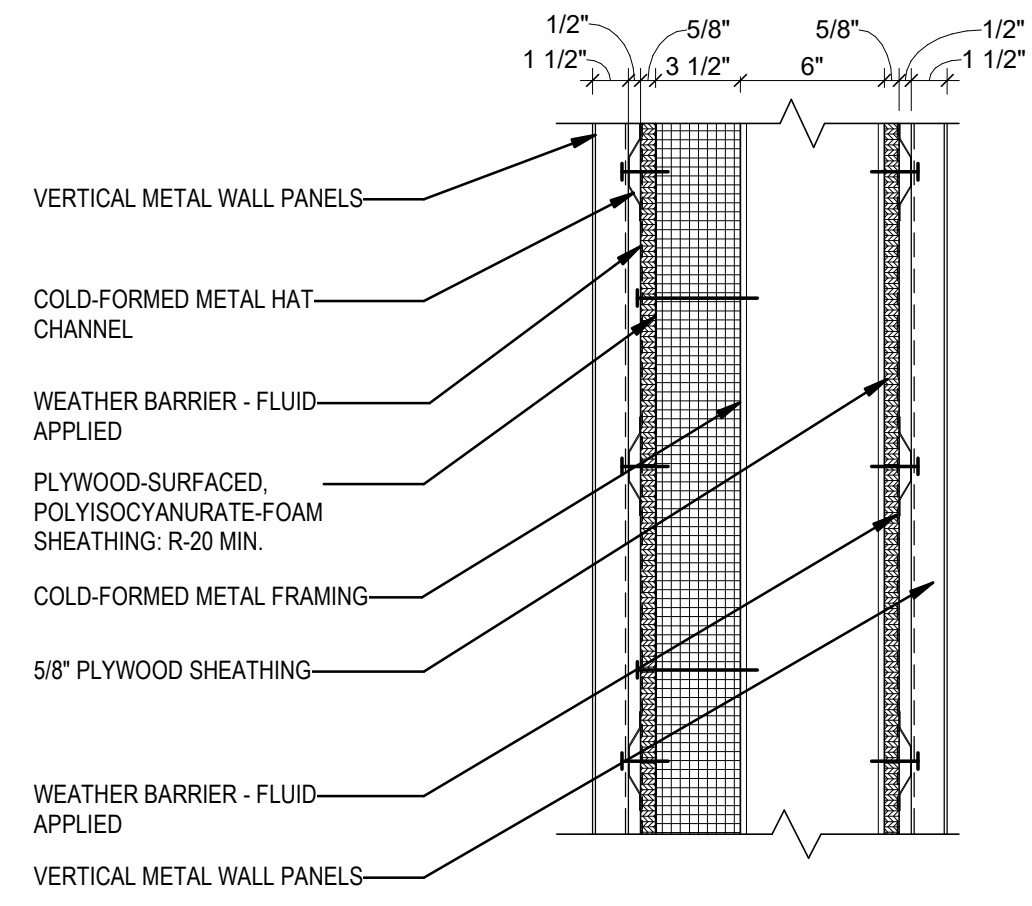
(RA01) ROOF ASSEMBLY 01

1 1/2" = 1'-0"



(RA02) ROOF ASSEMBLY 02

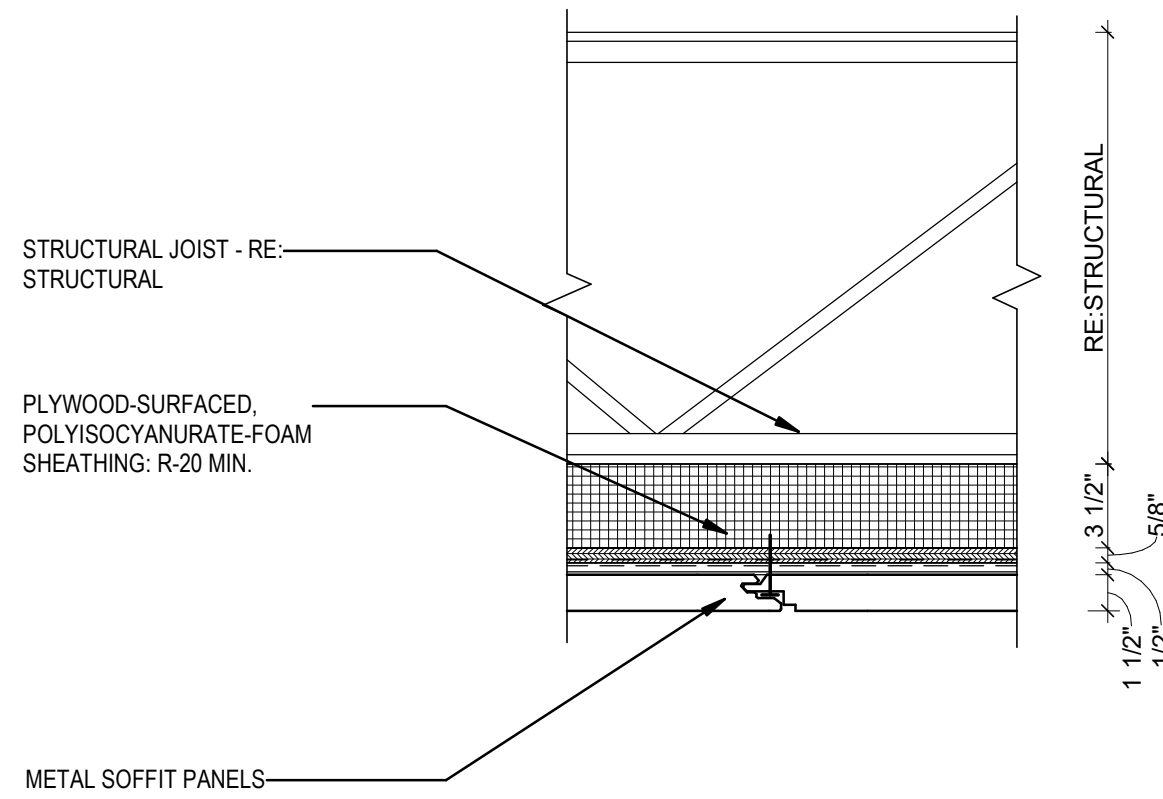
1 1/2" = 1'-0"



NOTE: SEE FINISH PLAN FOR METAL PANEL COLORS

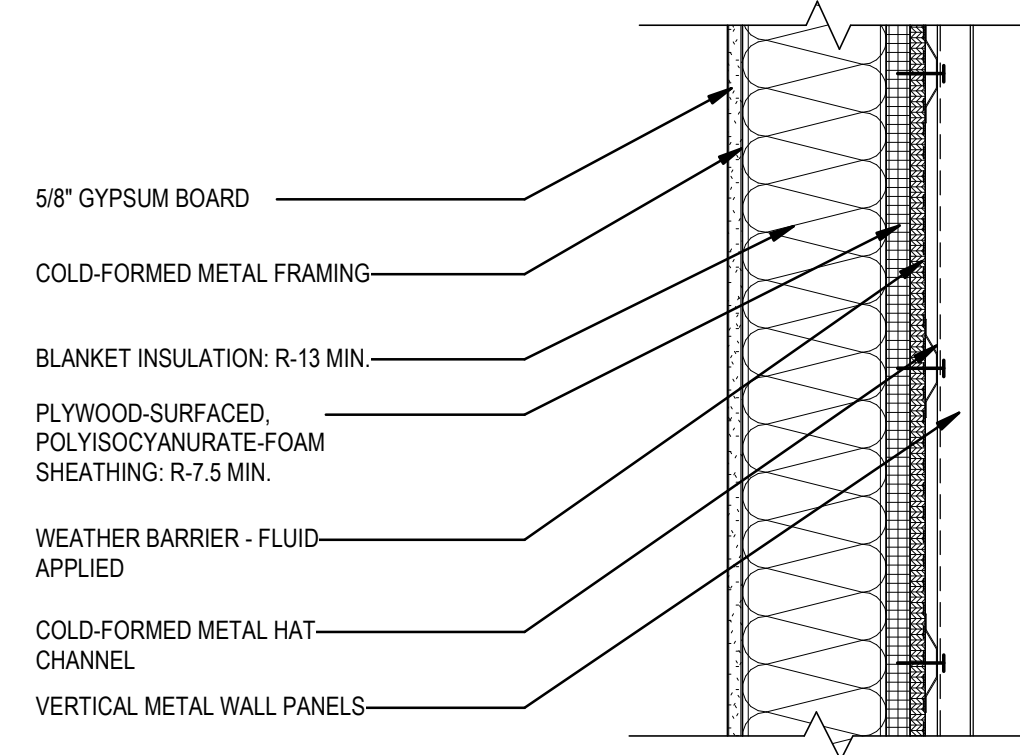
(WA03) WALL ASSEMBLY 03

1 1/2" = 1'-0"



(SA01) SOFFIT ASSEMBLY 01

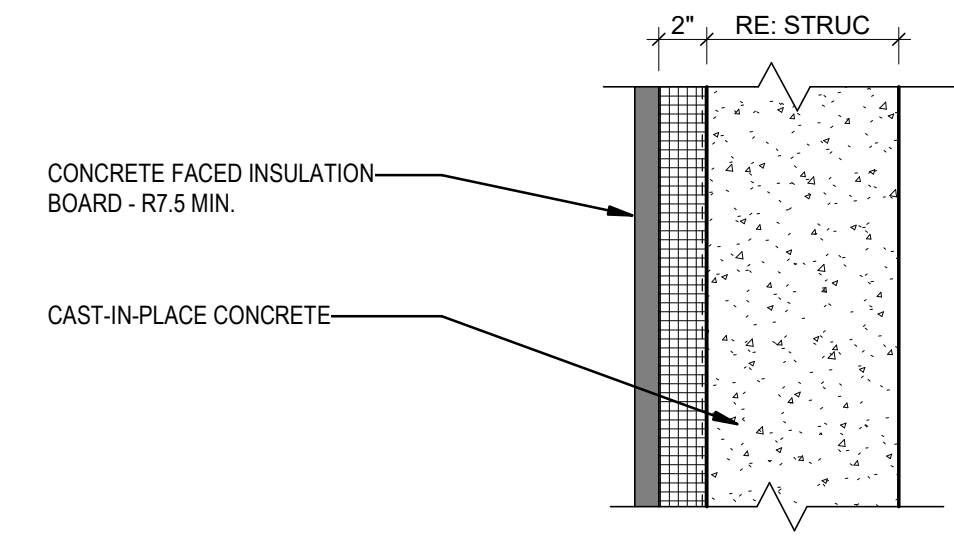
1 1/2" = 1'-0"



NOTE: SEE FINISH PLAN FOR METAL PANEL COLORS

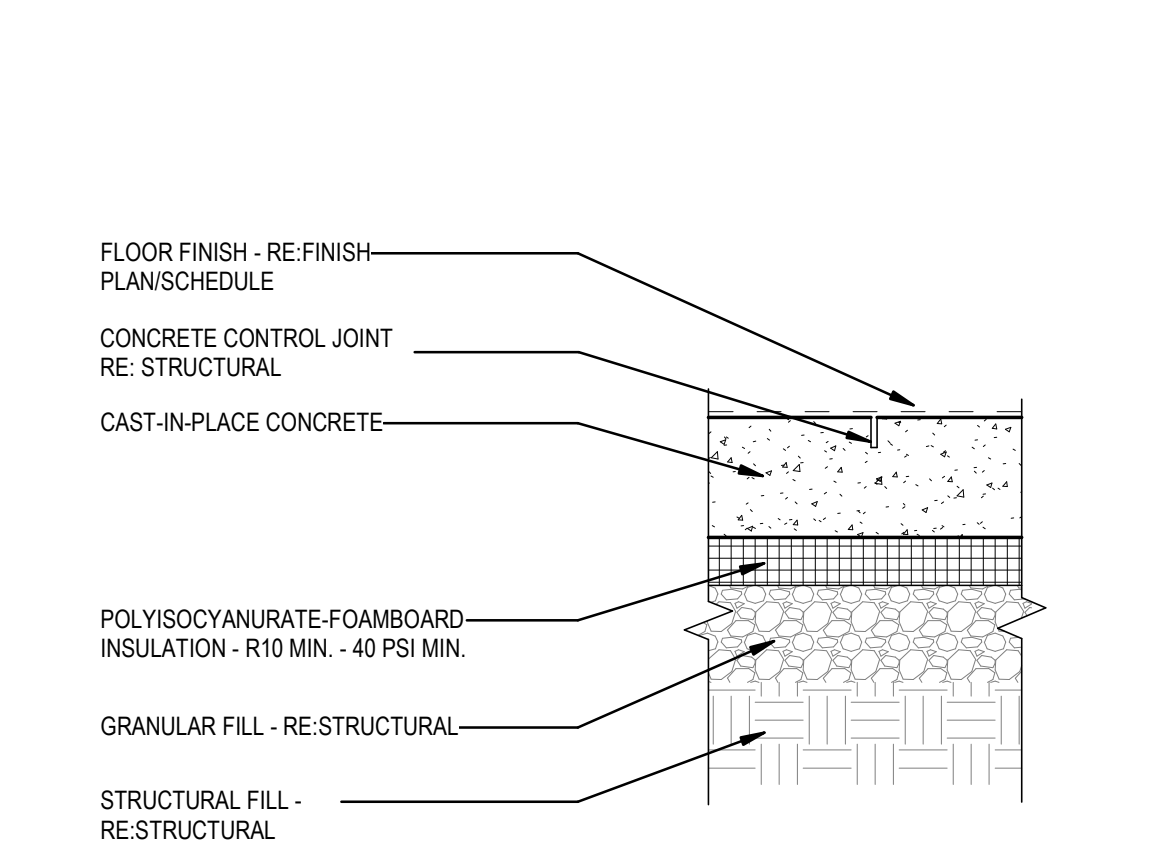
(WA05) WALL ASSEMBLY 05

1 1/2" = 1'-0"



(WA02) WALL ASSEMBLY 02

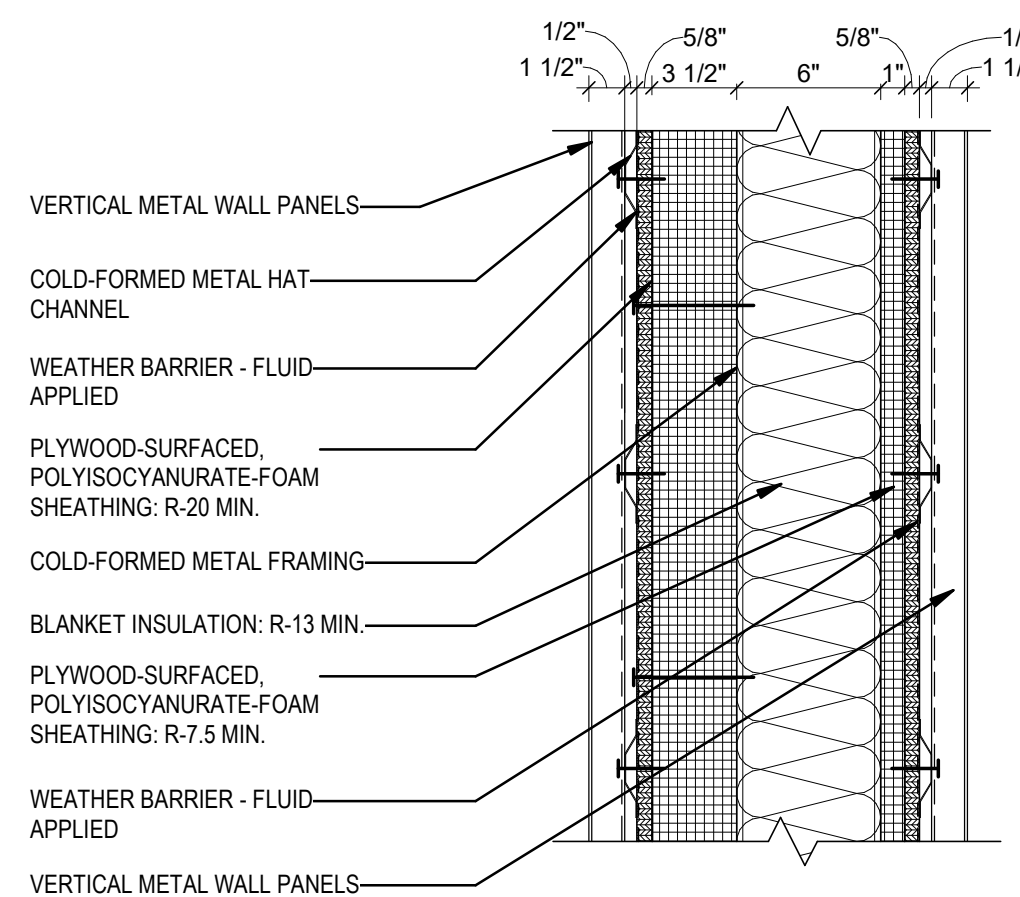
1 1/2" = 1'-0"



PERIMETER INSULATION TO RECIEVE MINIMUM R-10

(FA01) FLOOR ASSEMBLY 01

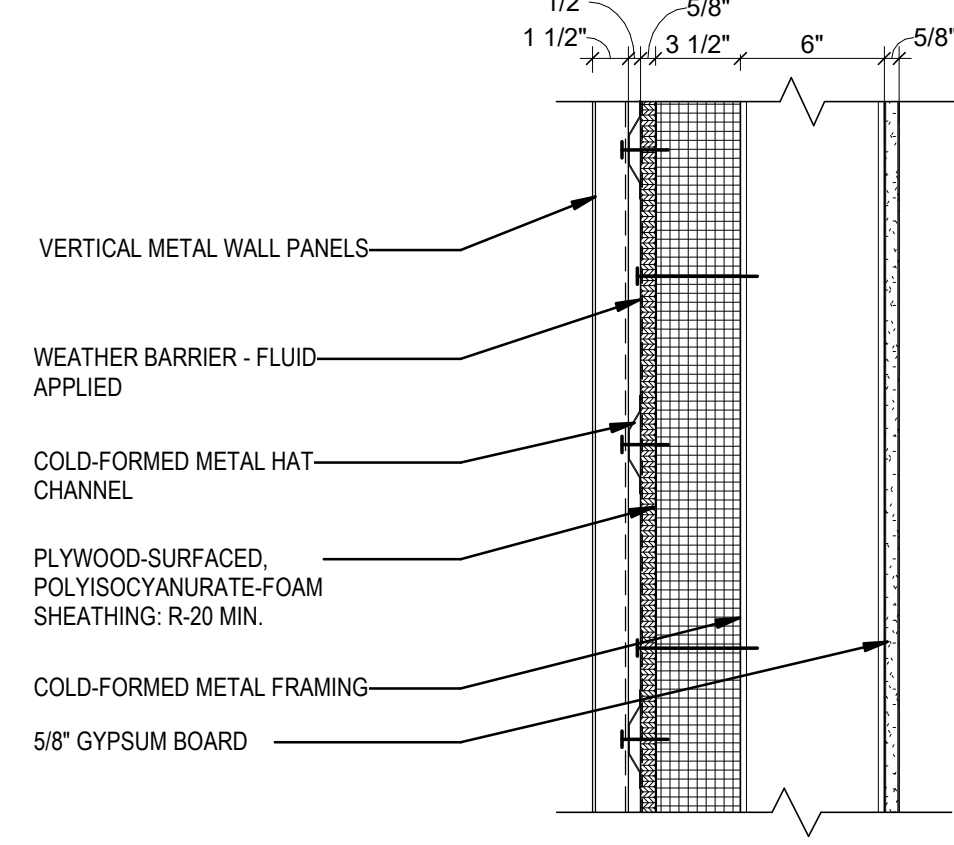
1 1/2" = 1'-0"



NOTE: SEE FINISH PLAN FOR METAL PANEL COLORS

(WA04) WALL ASSEMBLY 04

1 1/2" = 1'-0"



NOTE: SEE FINISH PLAN FOR METAL PANEL COLORS

(WA01) WALL ASSEMBLY 01

1 1/2" = 1'-0"



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DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		

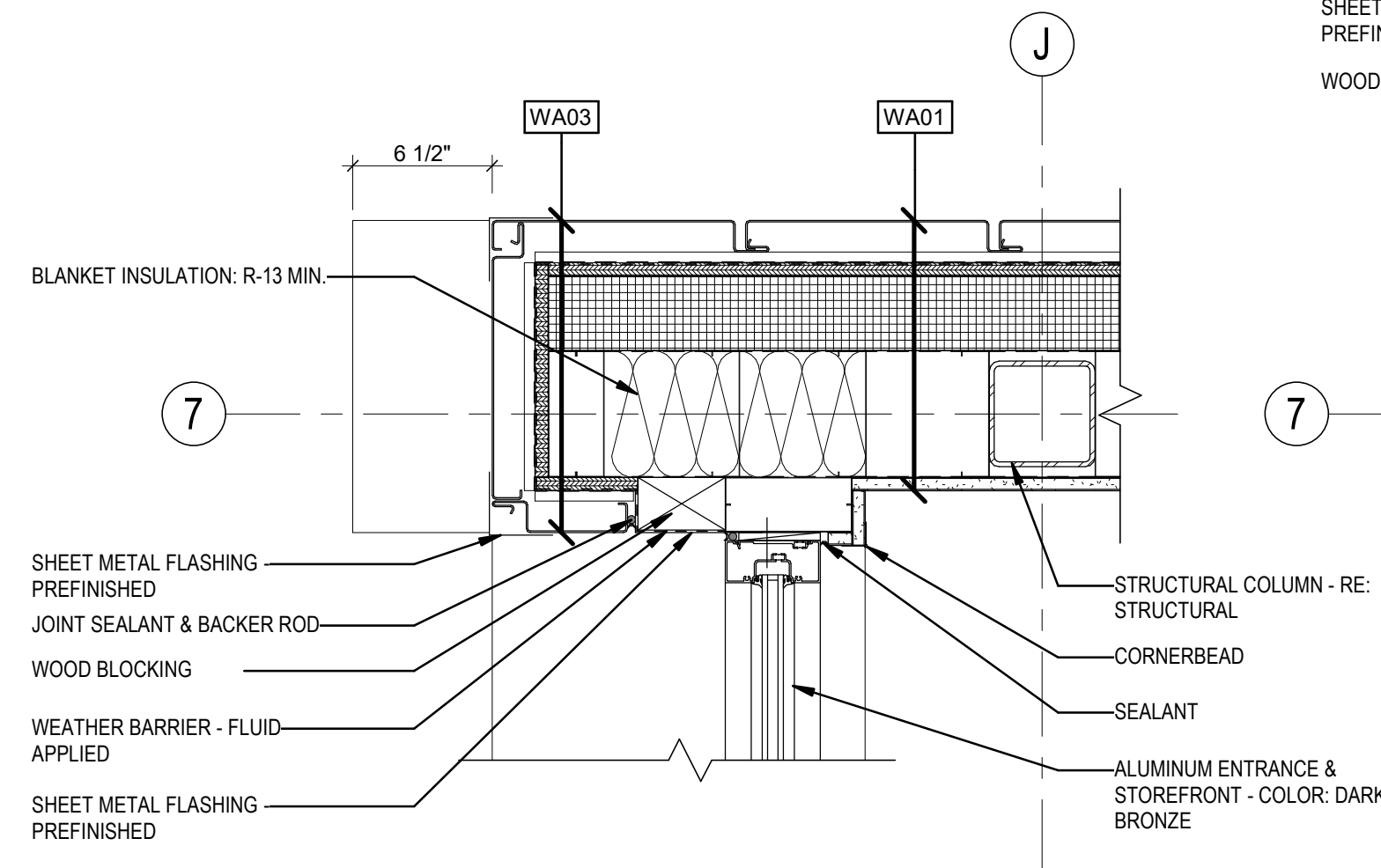


DESIGNED BY	CHECKED BY
DESIGNER	CHECKER
DRAWING PROJECT NO.	SITE CODE
1033268	
LEGACY PROJECT NO.	DATE
	07/15/2020
SCALE	BASE PROJECT MANAGER
	BEVERLY LANGLEY

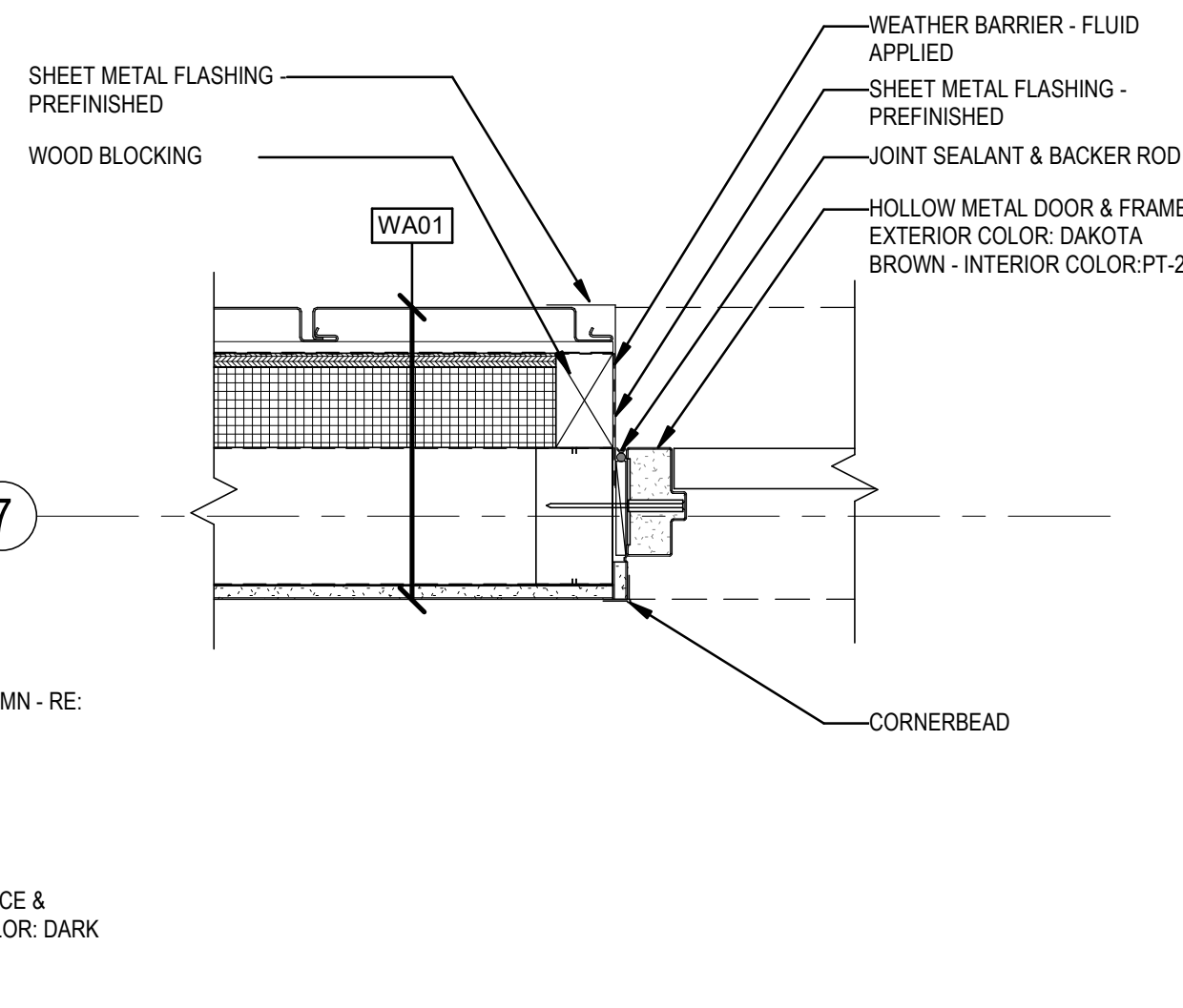


ADDITION/RENOVATION RESERVE
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ASSEMBLY TYPES

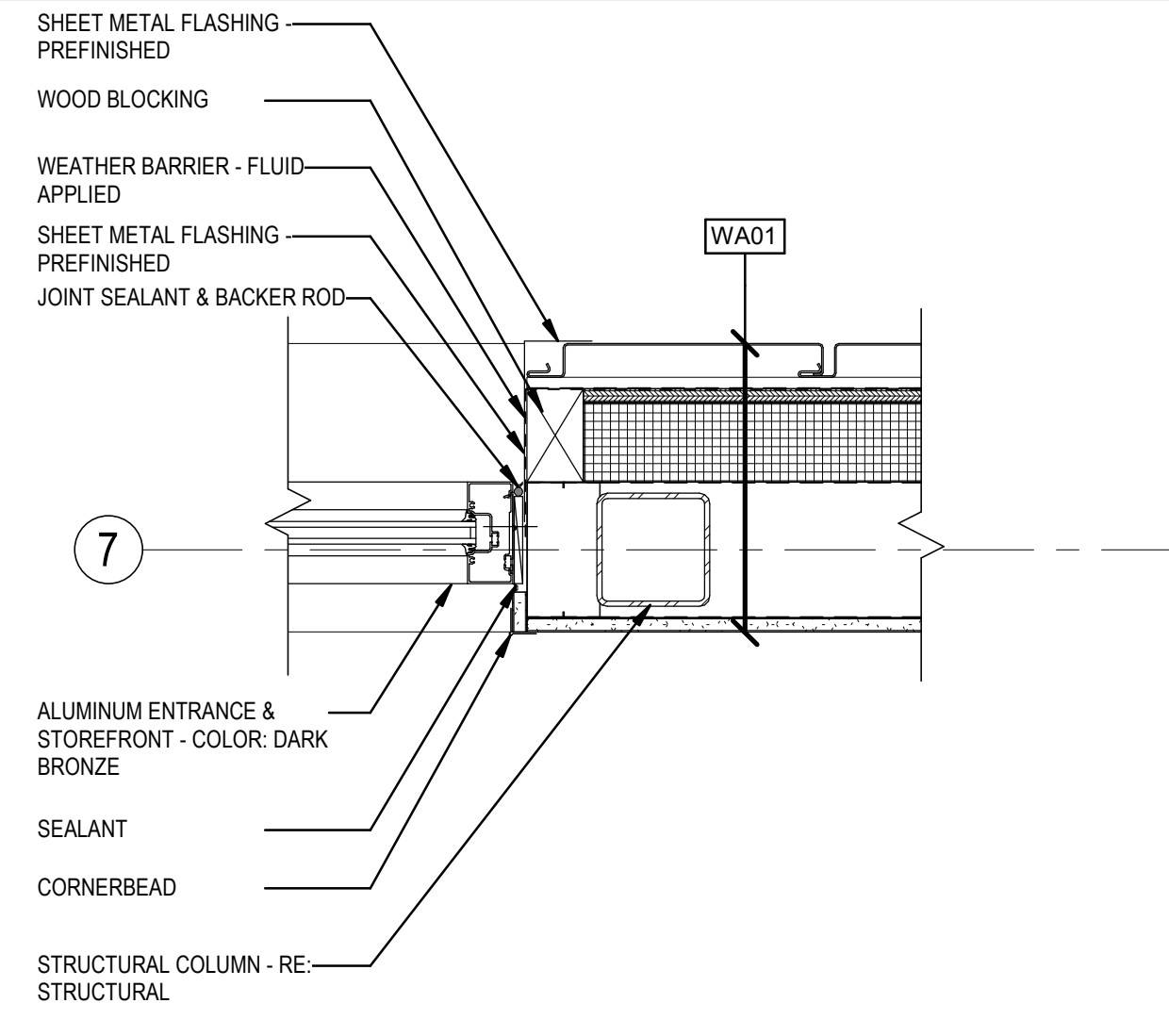
A501
Sheet: 40 of 94



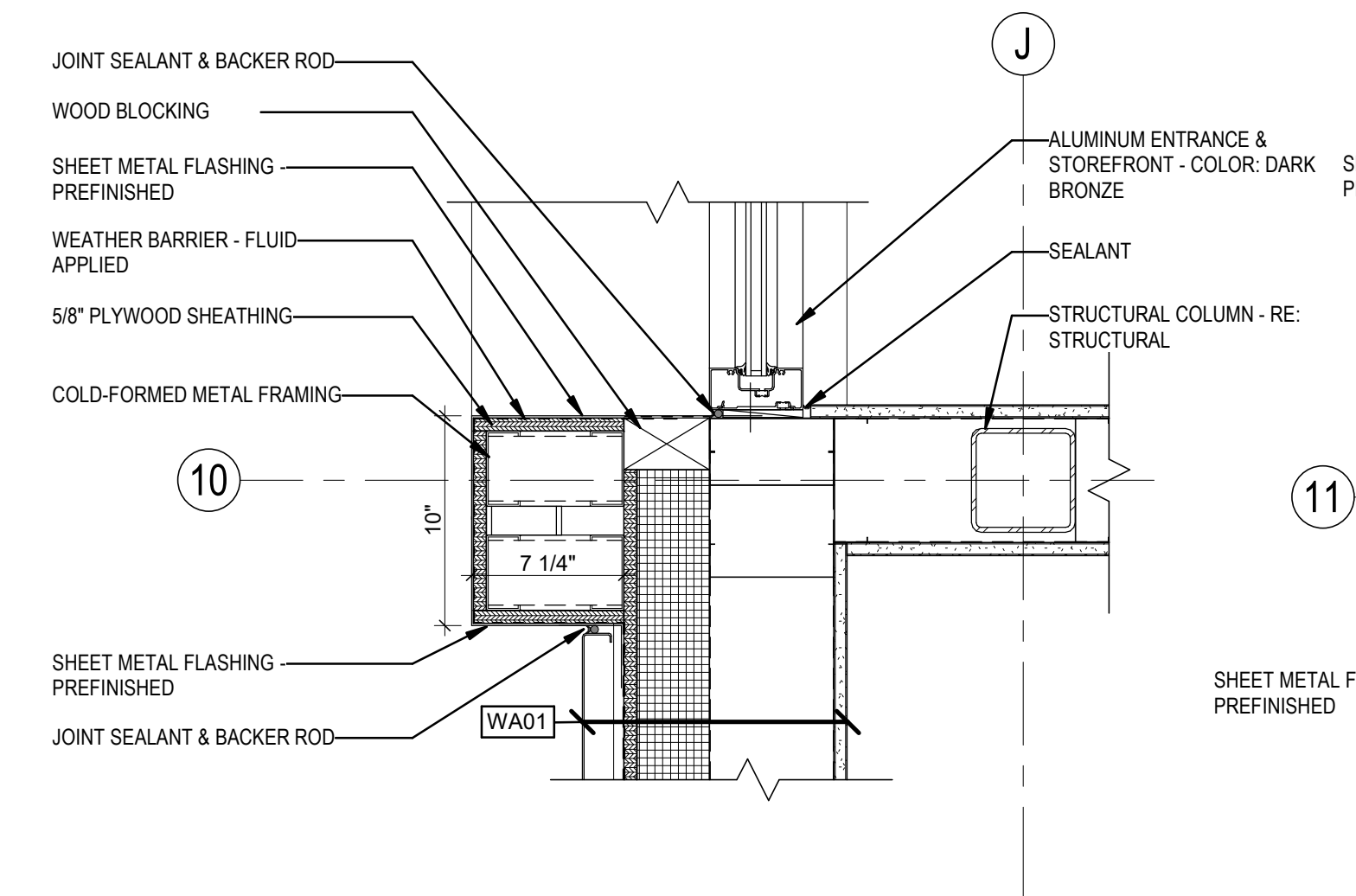
C4 METAL PANEL CORNER
1 1/2" = 1'-0"



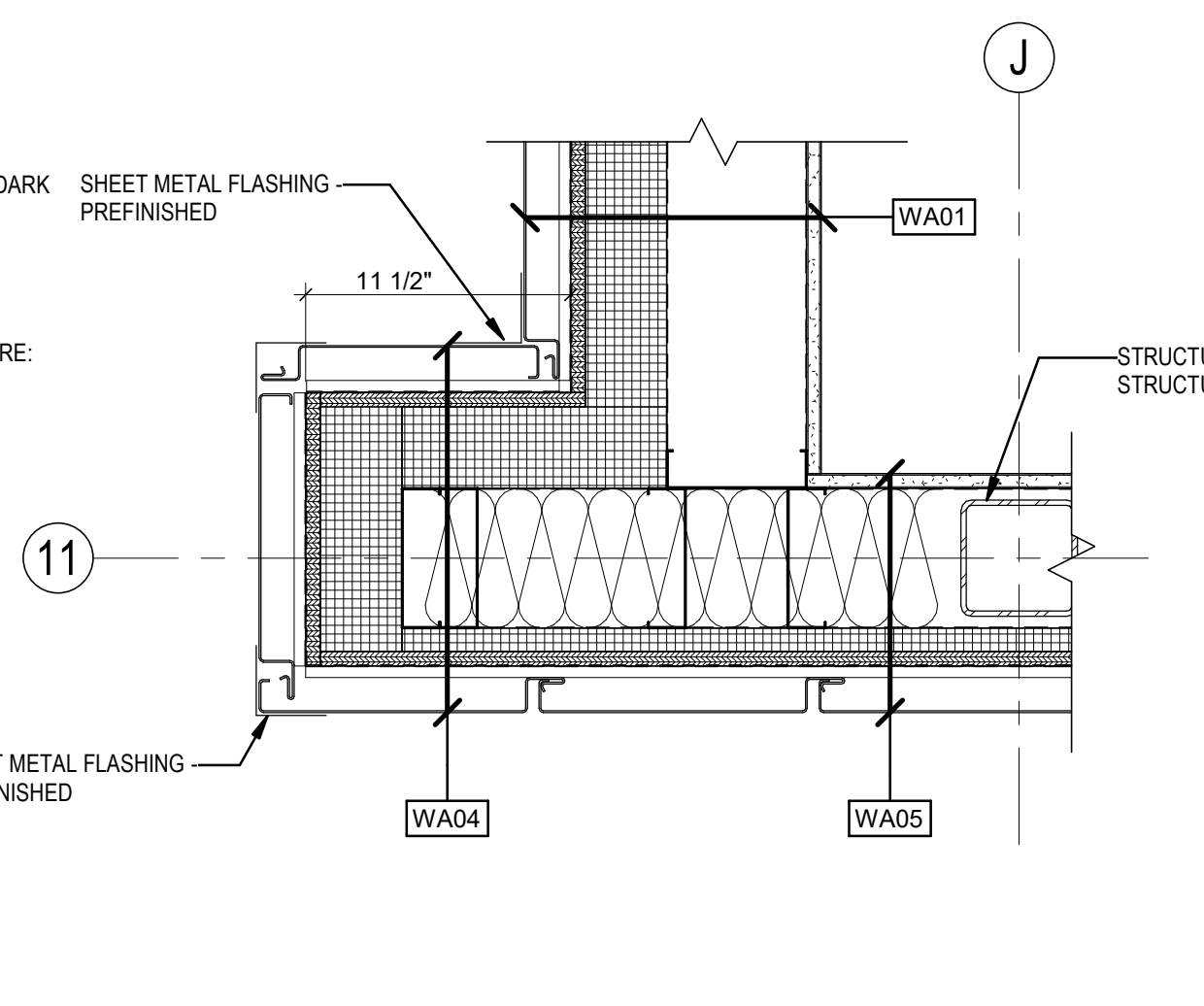
C3 HOLLOW METAL DOOR JAMB
1 1/2" = 1'-0"



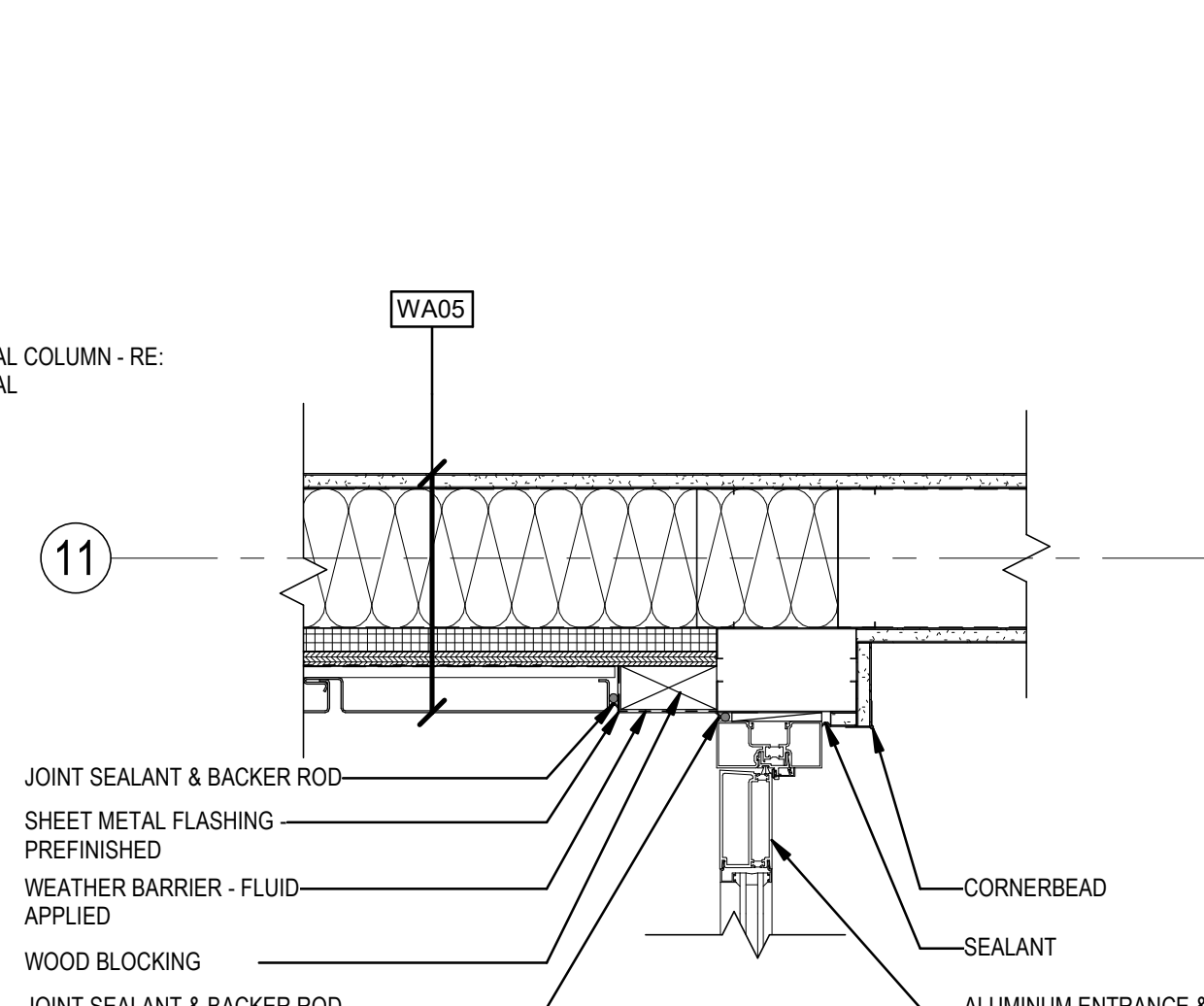
C2 STOREFRONT JAMB
1 1/2" = 1'-0"



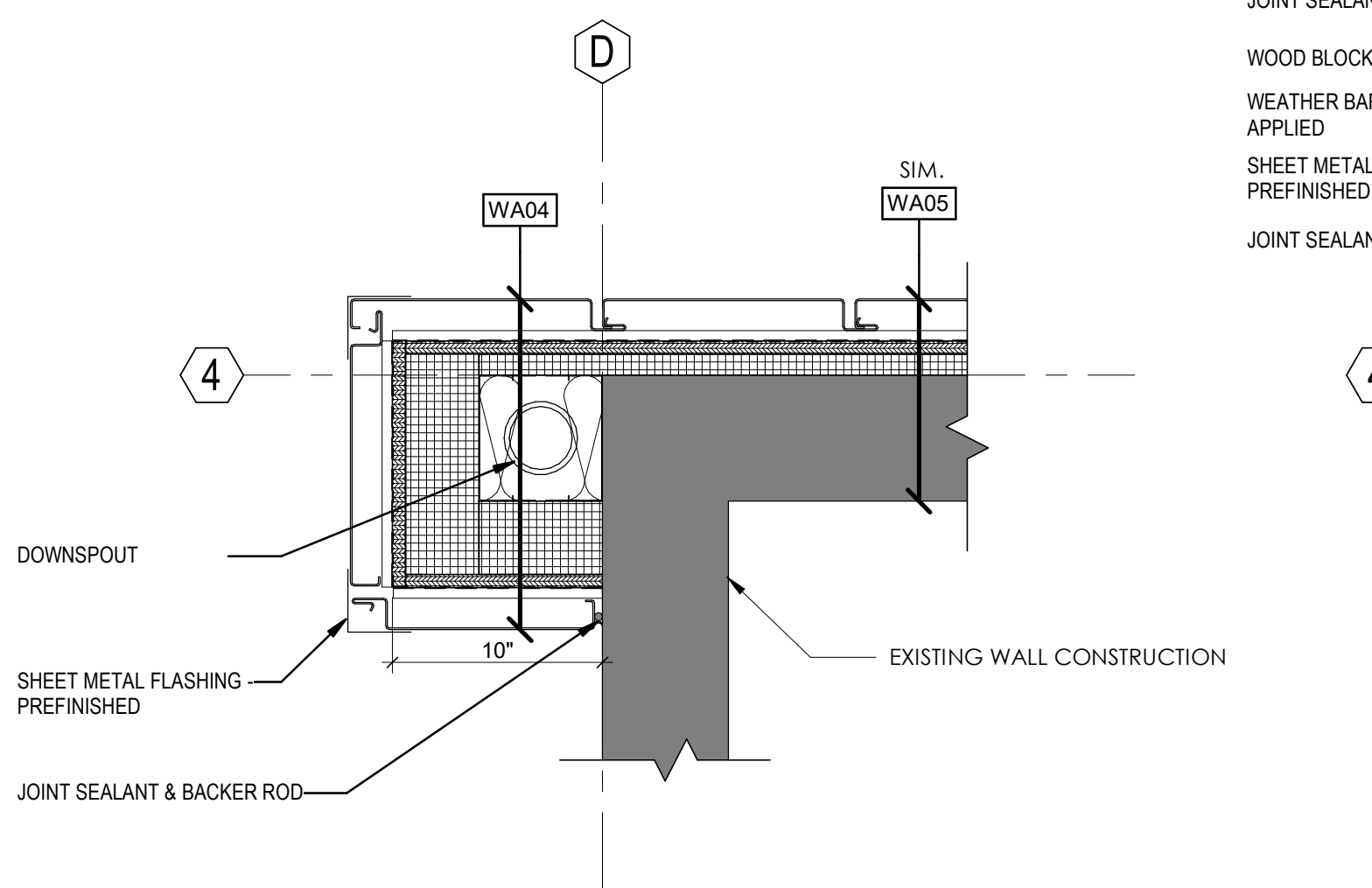
B4 STOREFRONT JAMB
1 1/2" = 1'-0"



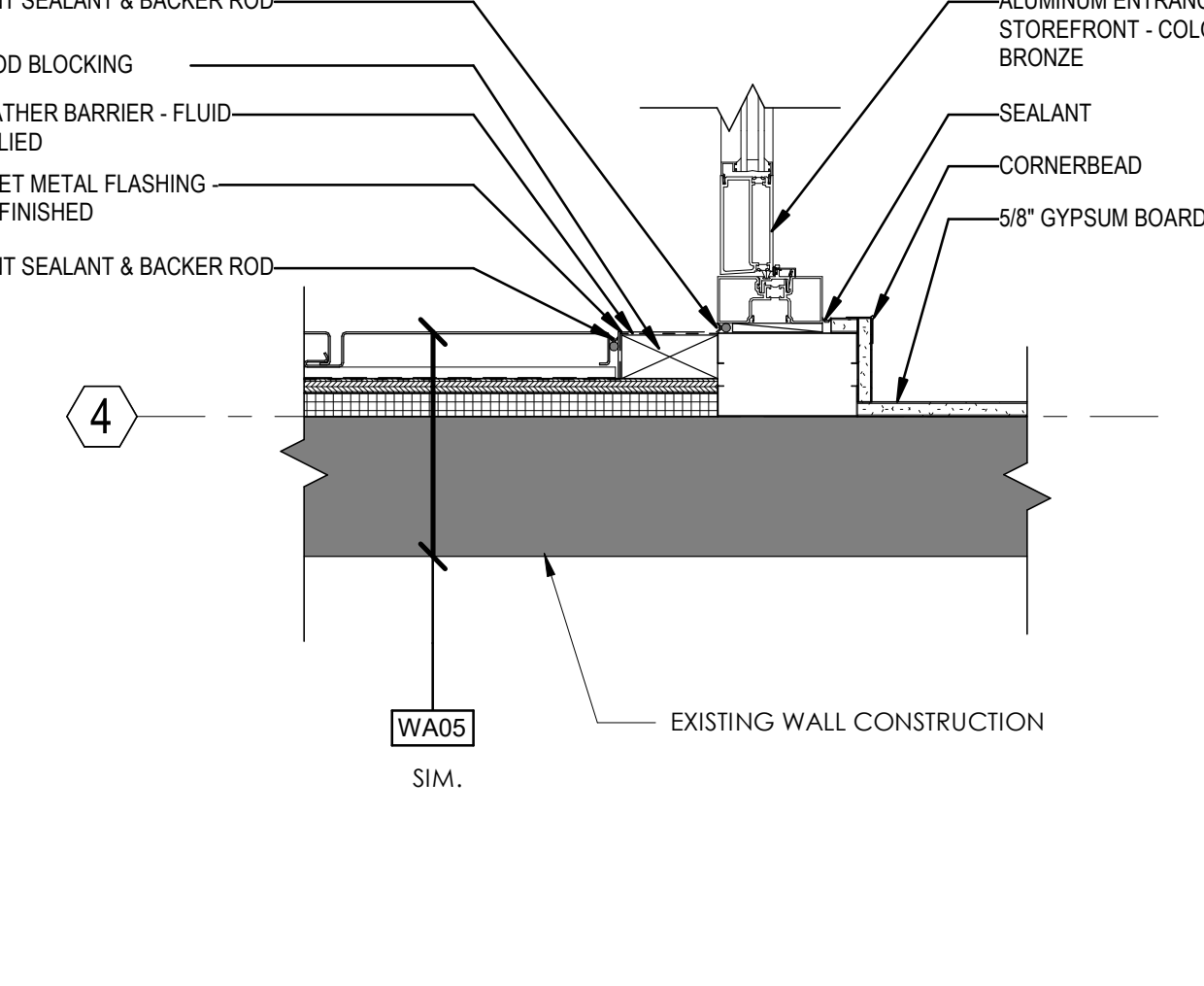
B3 ENTRY PILASTER NORTH
1 1/2" = 1'-0"



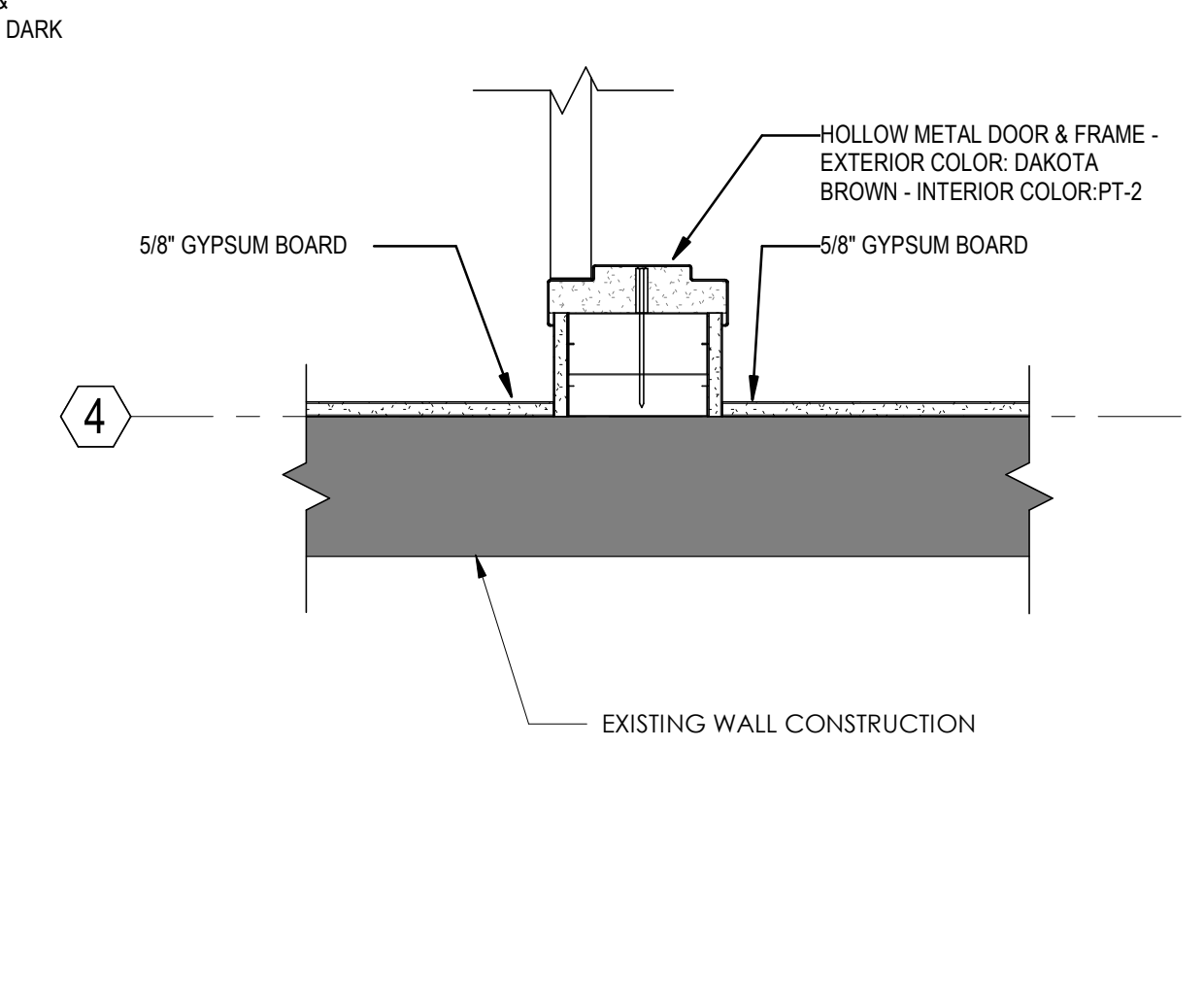
B2 STOREFRONT DOOR JAMB
1 1/2" = 1'-0"



A4 ENTRY PILASTER SOUTH
1 1/2" = 1'-0"



A3 STOREFRONT DOOR JAMB
1 1/2" = 1'-0"



A2 HOLLOW METAL DOOR JAMB
1 1/2" = 1'-0"



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- PROVIDE GYPSUM BOARD FINISH ON ALL EXITING INTERIOR METAL FRAMING PREPARED FROM DEMO.



DATE	07/15/2020
APPR	
MARK	
DESCRIPTION	FINAL DESIGN 100%



DESIGNED BY	Designer	DATE	07/15/2020
CHECKED BY	Checker	PERMIT/SEAL	
PROJECT NO.	1033268	PROJECT MANAGER	BEVERLY LANGLEY
LEGACY PROJECT NO.			
DEPARTMENT	75TH AIR BASE WING		
	419TH CIVIL ENGINEER GROUP		

**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591**

DETAILS

A511
Sheet: 41 of 94



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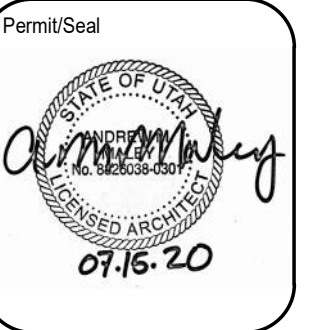
The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay. The Copyrights to all designs and drawings are the property of Stantec. Reproduction or use for any purpose other than that authorized by Stantec is forbidden.

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DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		



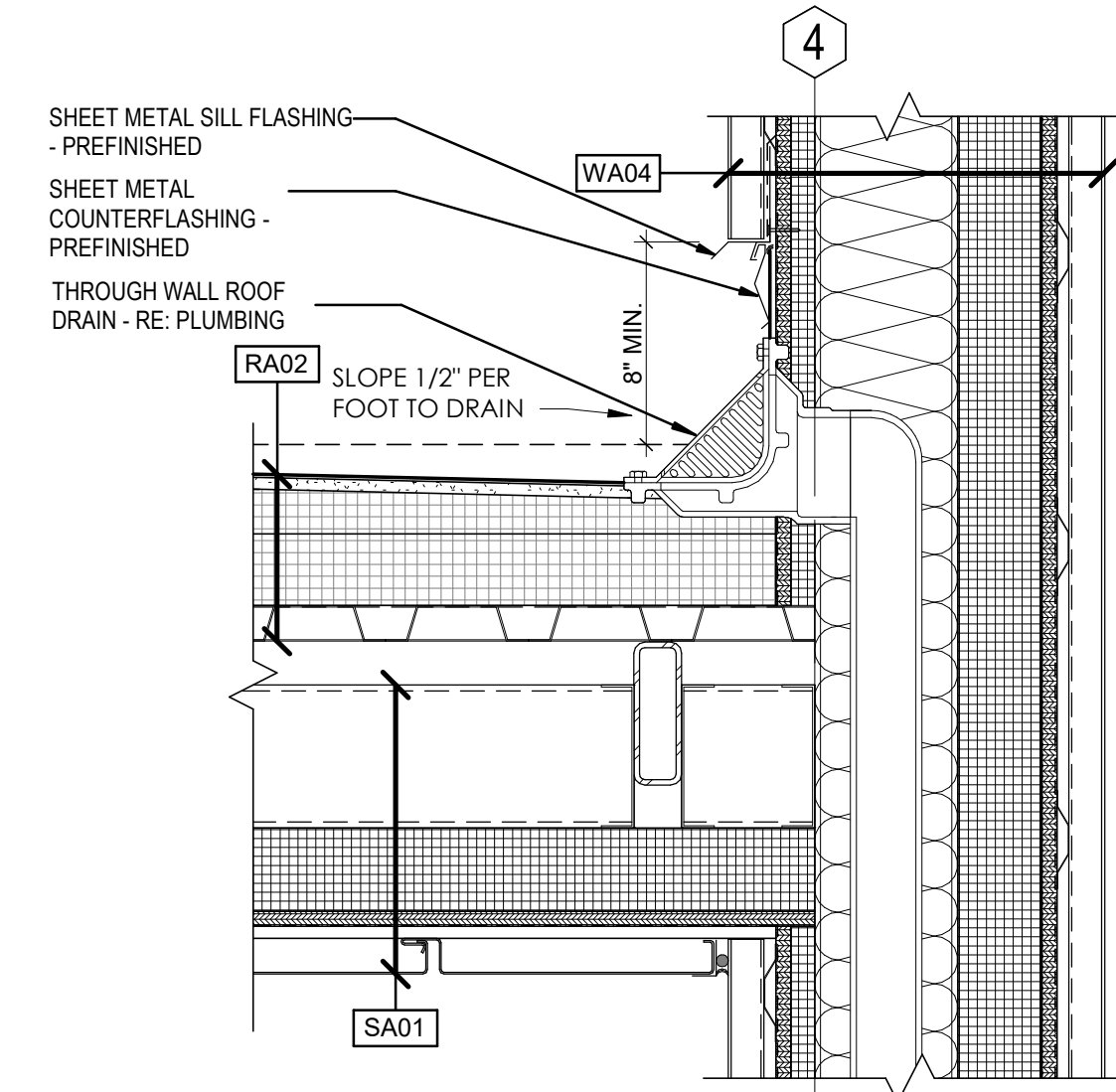
DESIGNED BY: Designer	CHECKED BY: Checker
DRAWING PROJECT NO: 1033268	SITE CODE:
LEGACY PROJECT NO:	DATE: 07/15/2020
SCALE:	BASE PROJECT MANAGER: BEVERLY LANGLIE



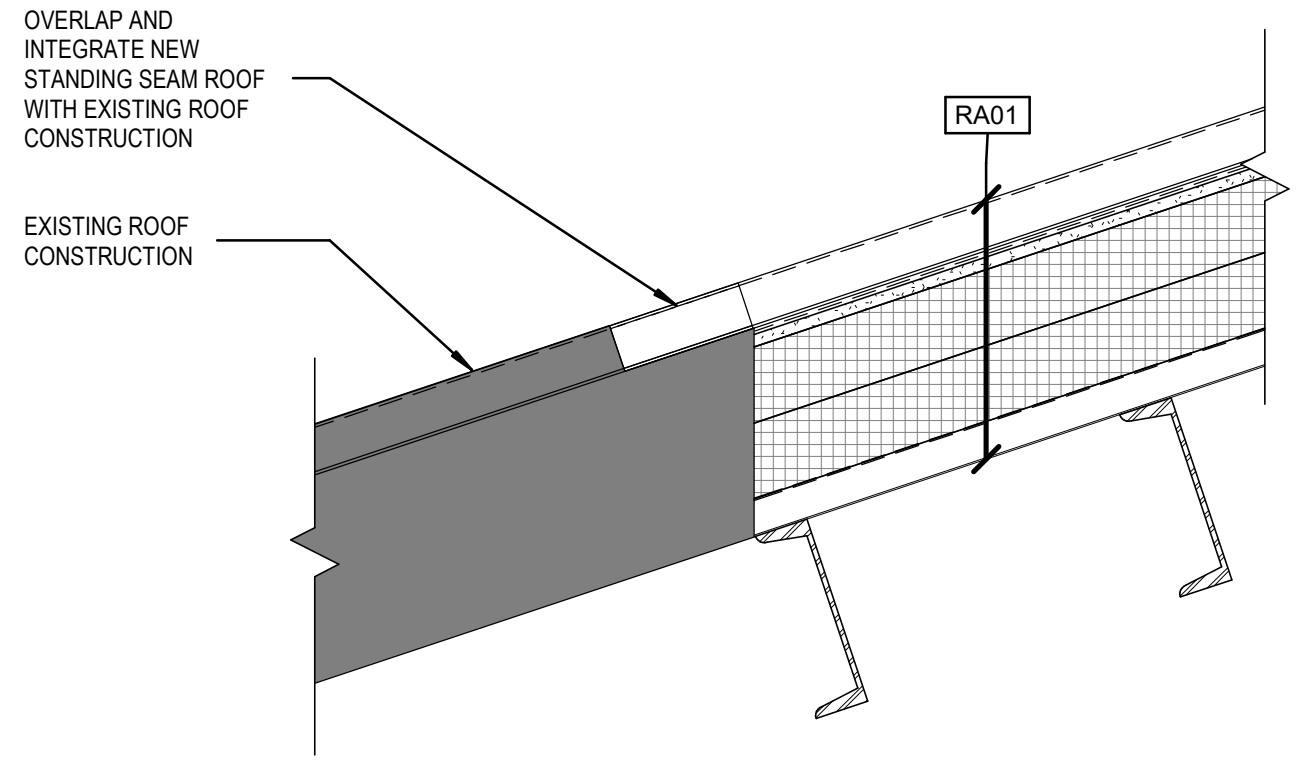
ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
DETAILS

A512

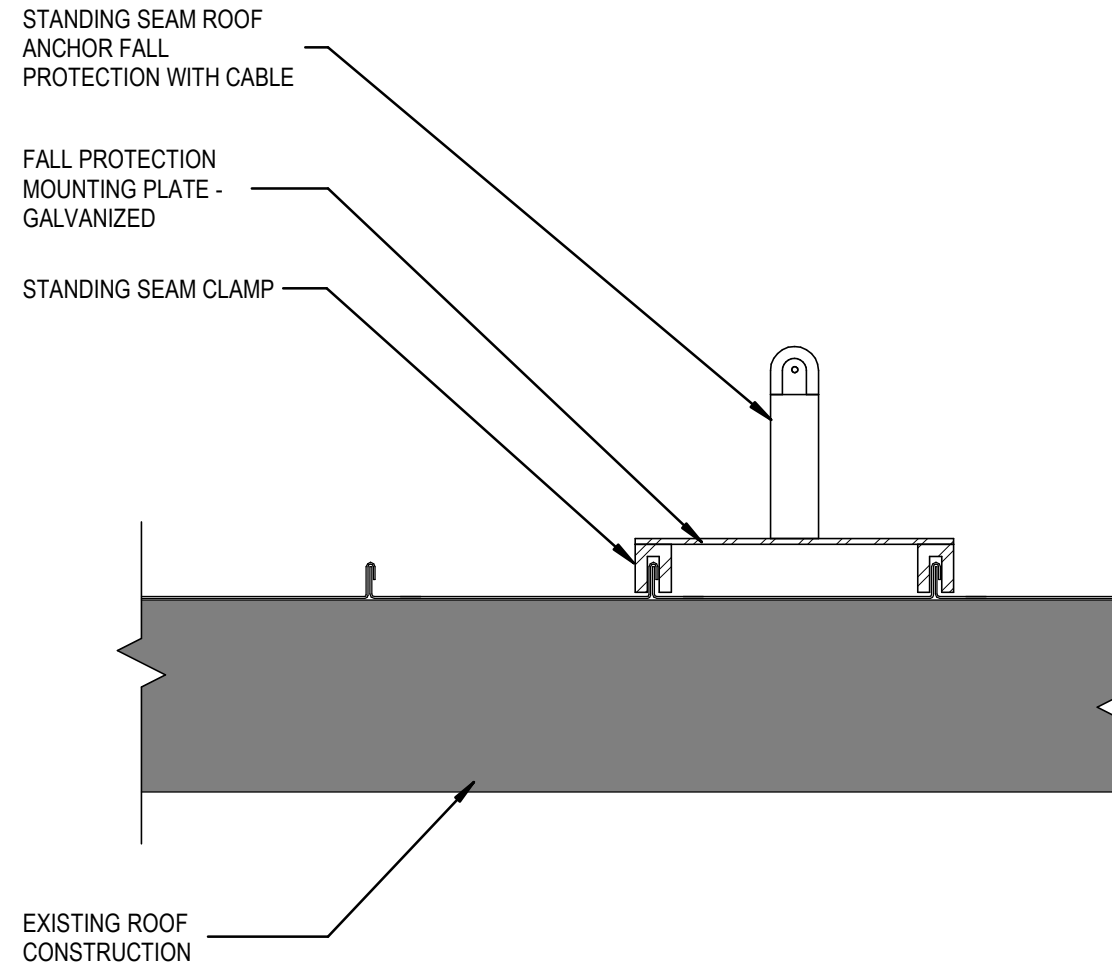
Sheet: 42 of 94



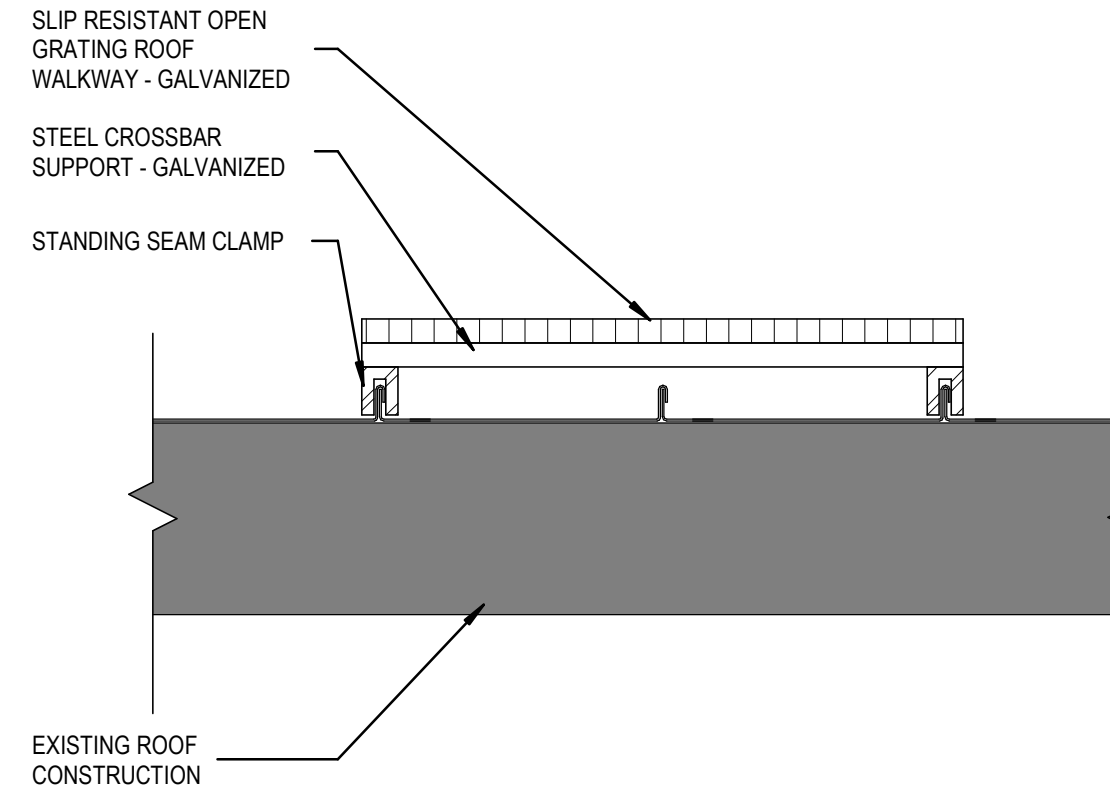
C2 CANOPY DRAIN
1 1/2" = 1'-0"



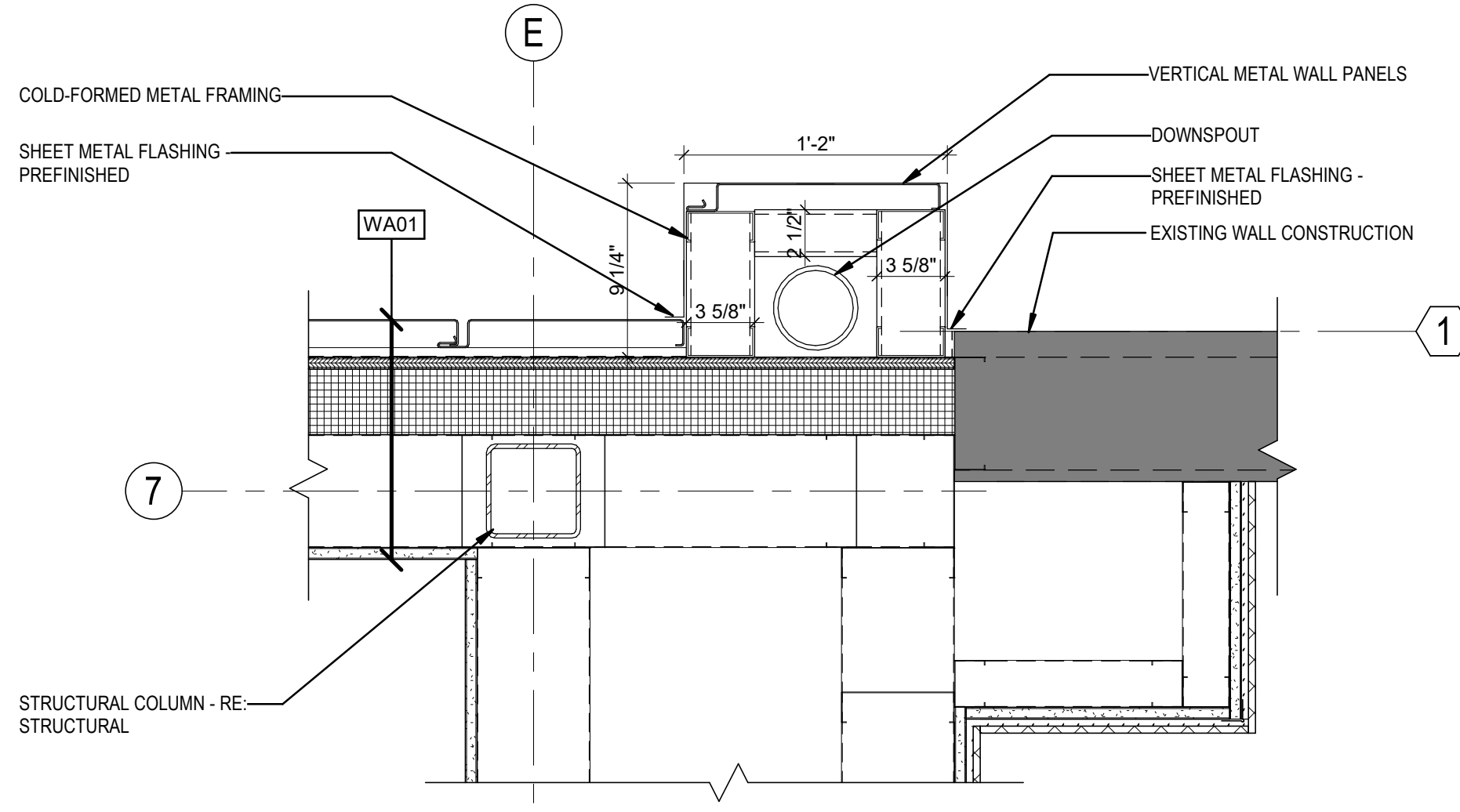
B4 NEW & EXISTING ROOF
1 1/2" = 1'-0"



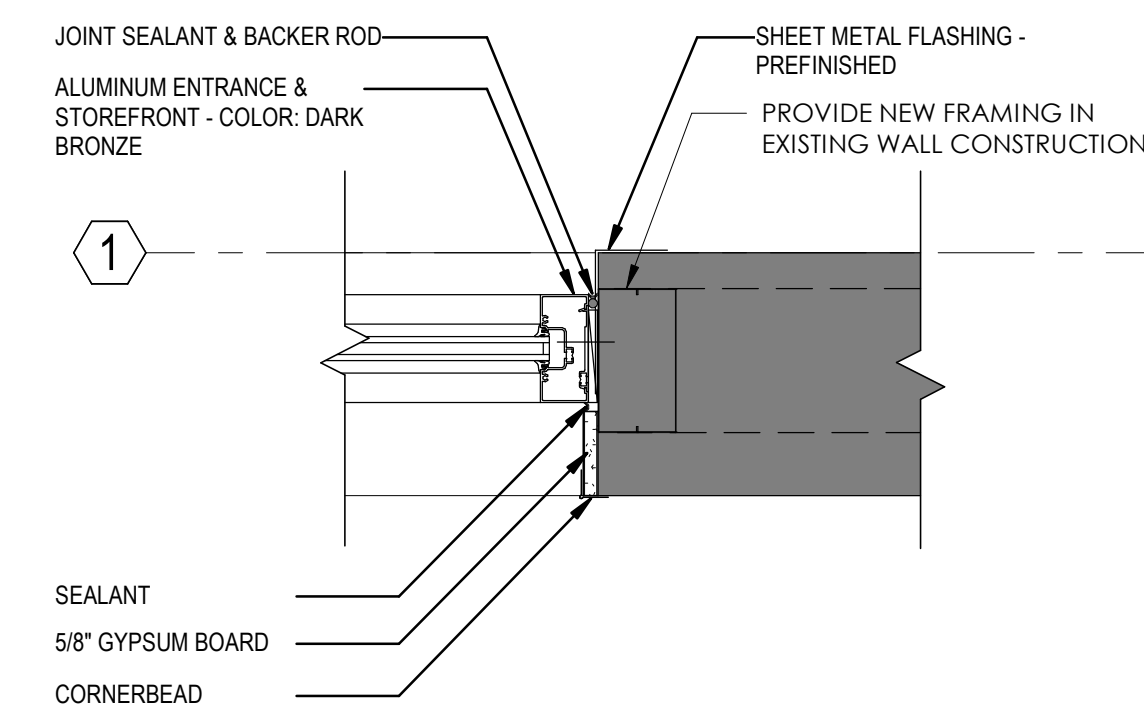
B3 FALL PROTECTION
1 1/2" = 1'-0"



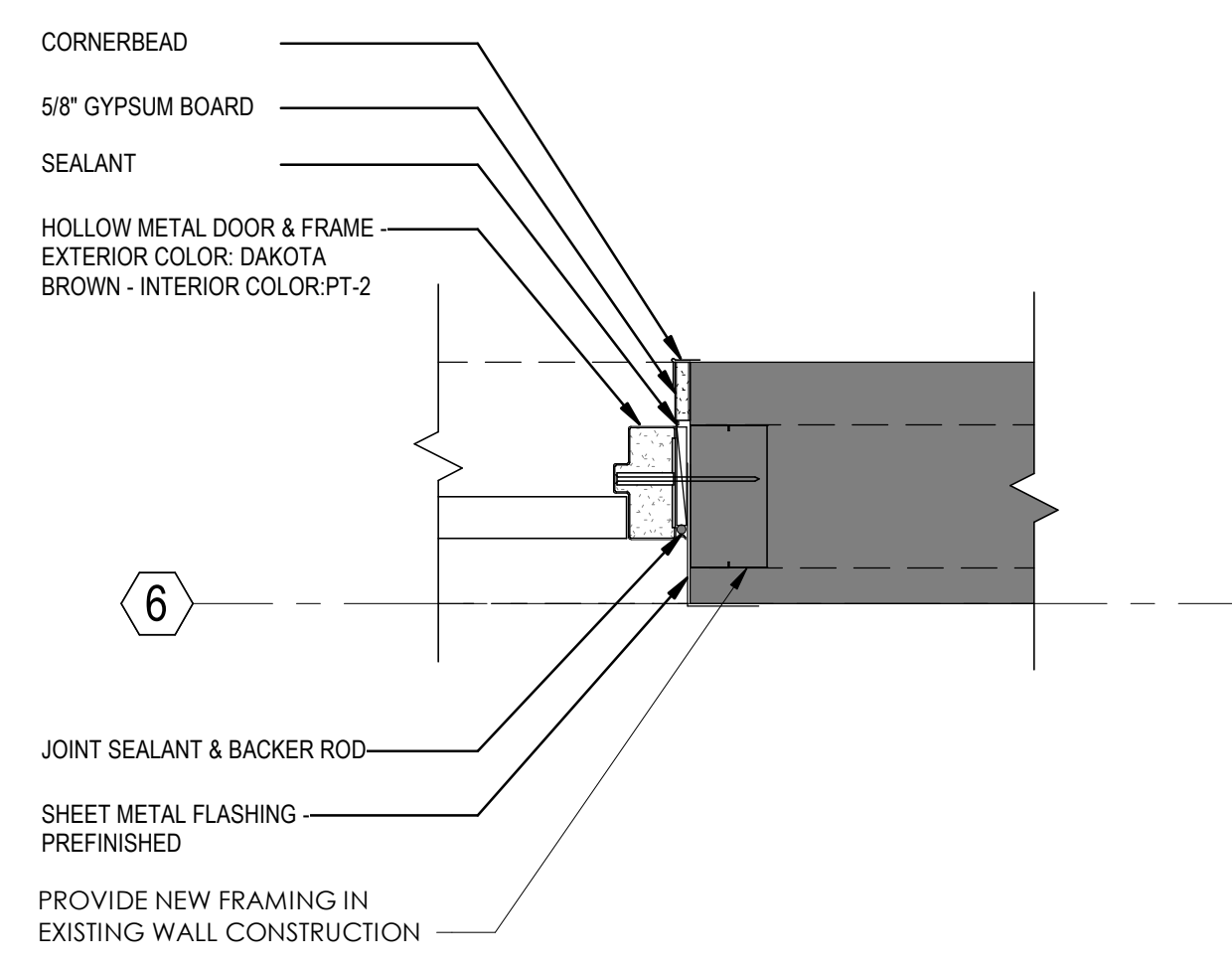
B2 ROOF WALKWAY
1 1/2" = 1'-0"



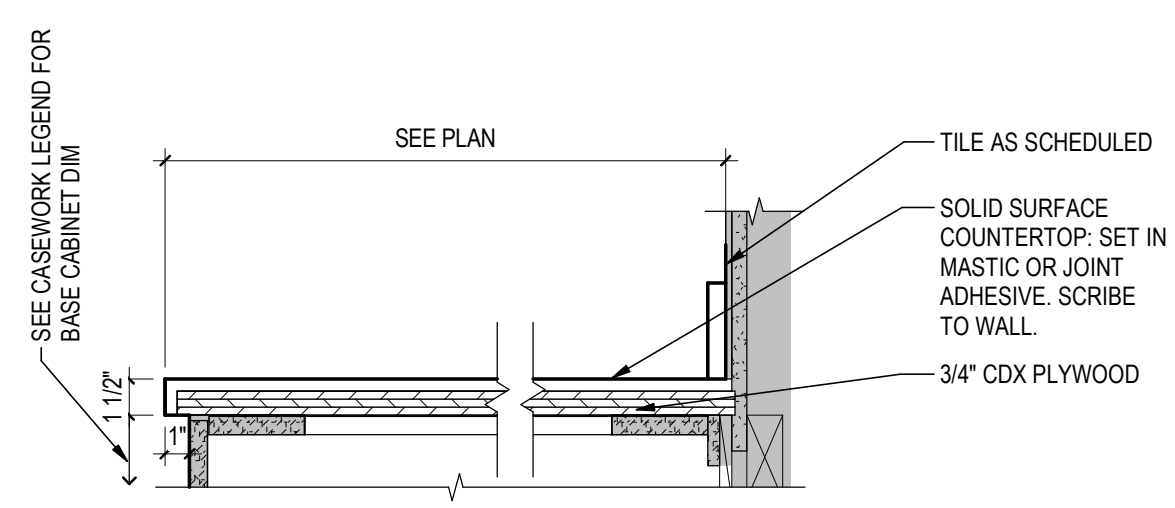
A5 NEW & EXISTING BUILDING CONNECTION
1 1/2" = 1'-0"



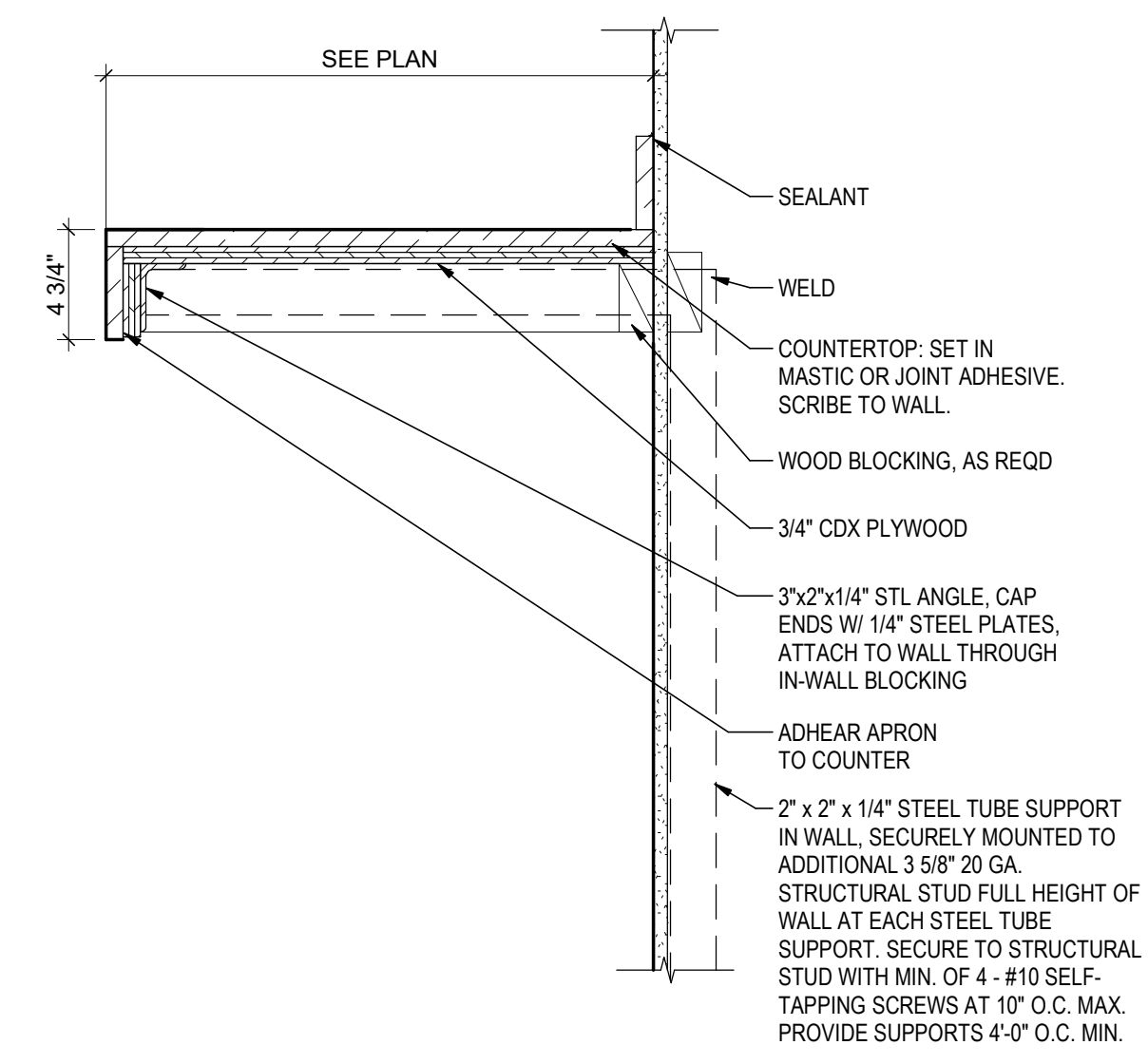
A3 PLAN DETAIL
1 1/2" = 1'-0"



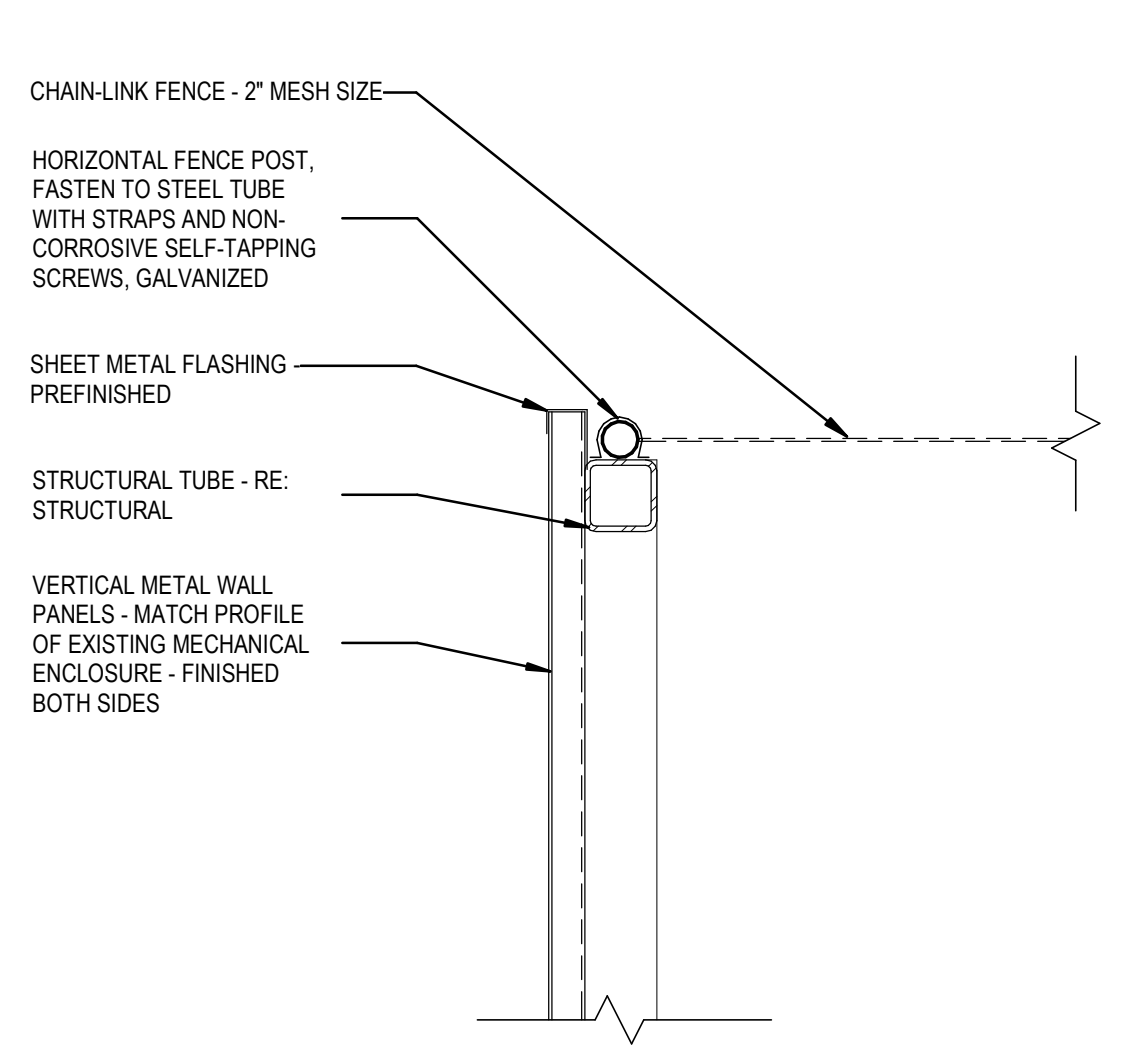
A2 PLAN DETAIL
1 1/2" = 1'-0"



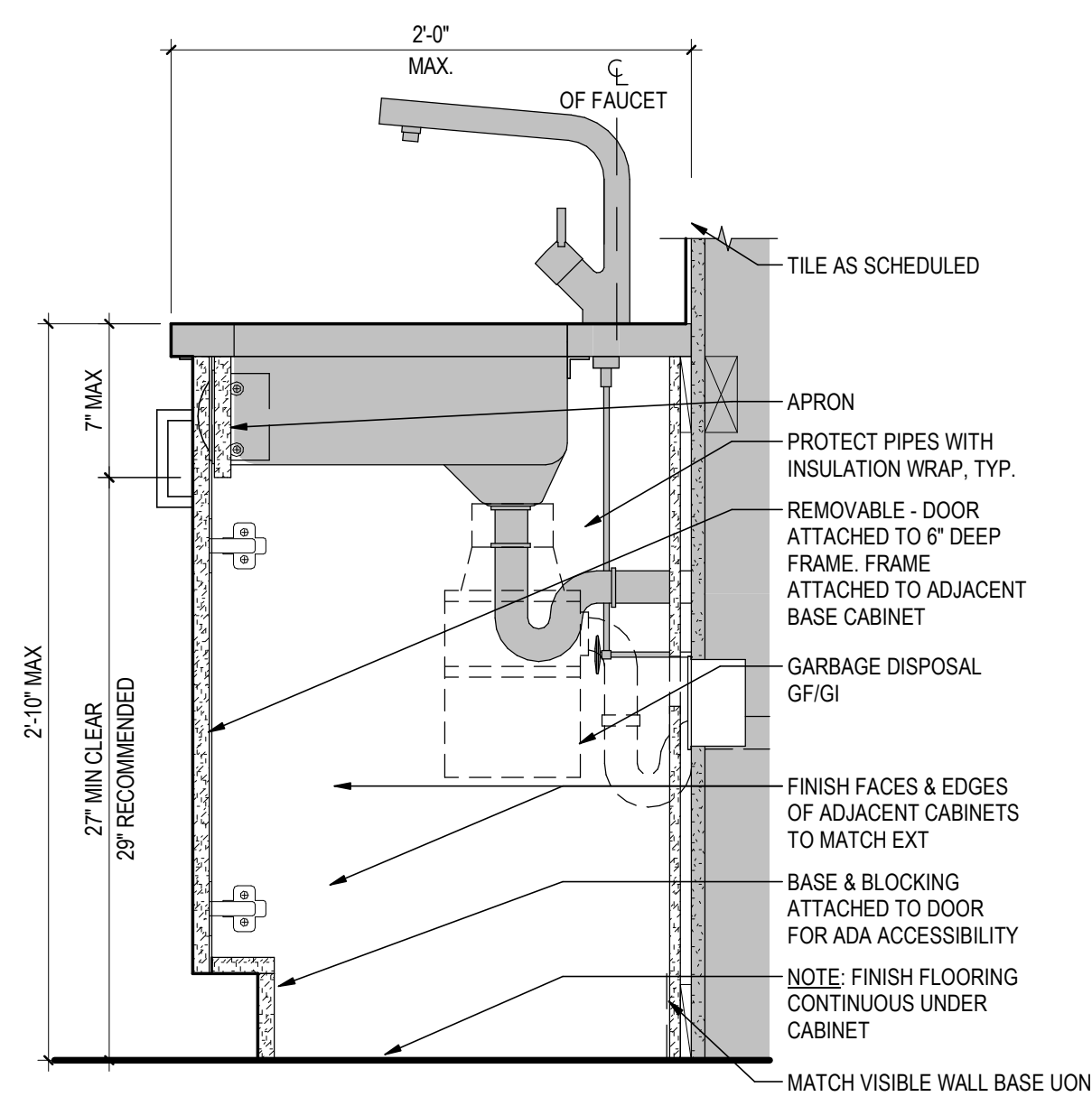
C4 CASEWORK EDGE
1 1/2" = 1'-0"



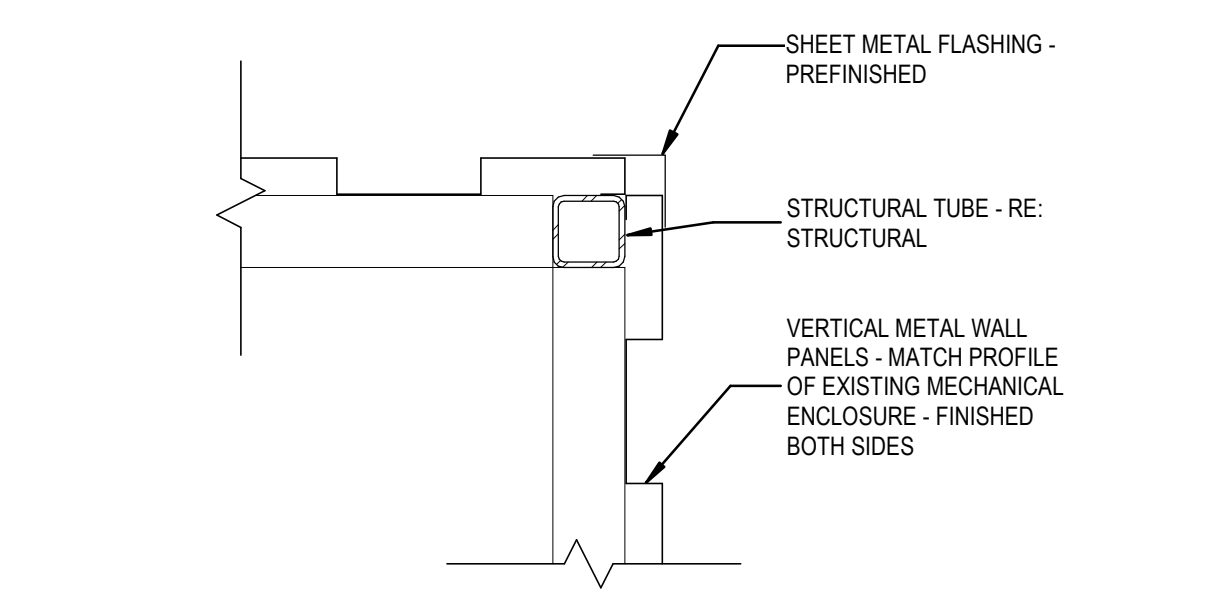
C3 COUNTERTOP EDGE & SUPPORT
1 1/2" = 1'-0"



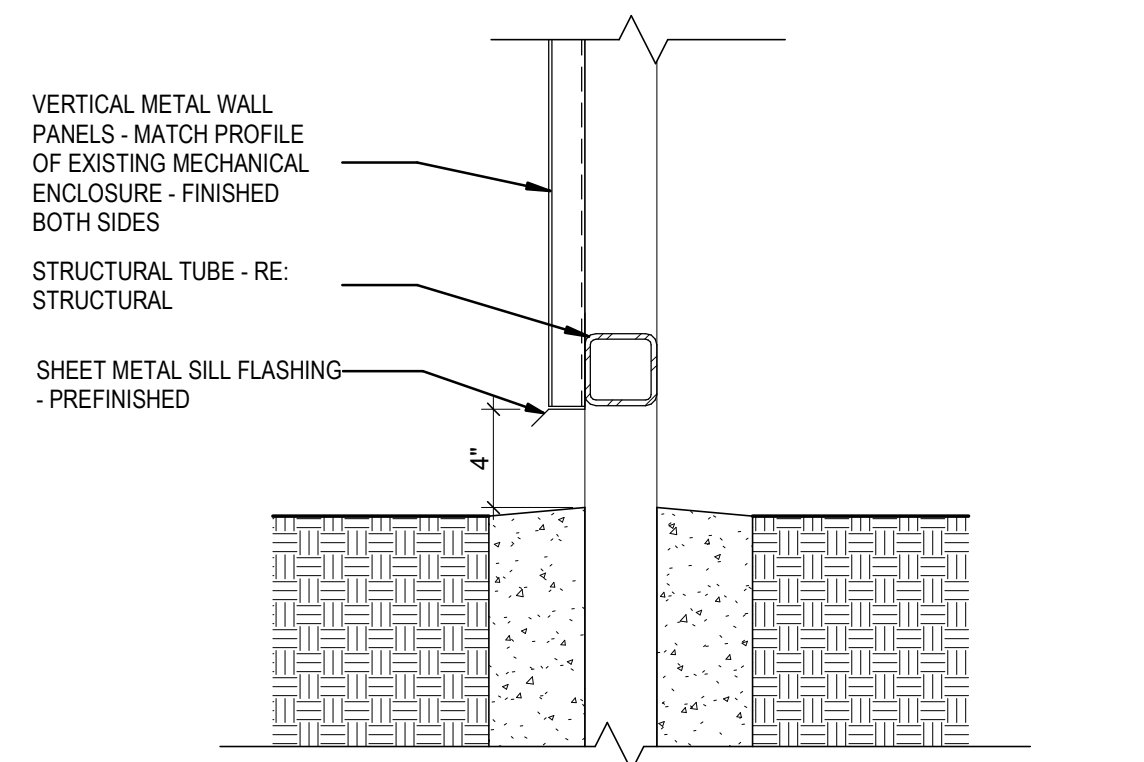
C2 MECHANICAL ENCLOSURE TOP
1 1/2" = 1'-0"



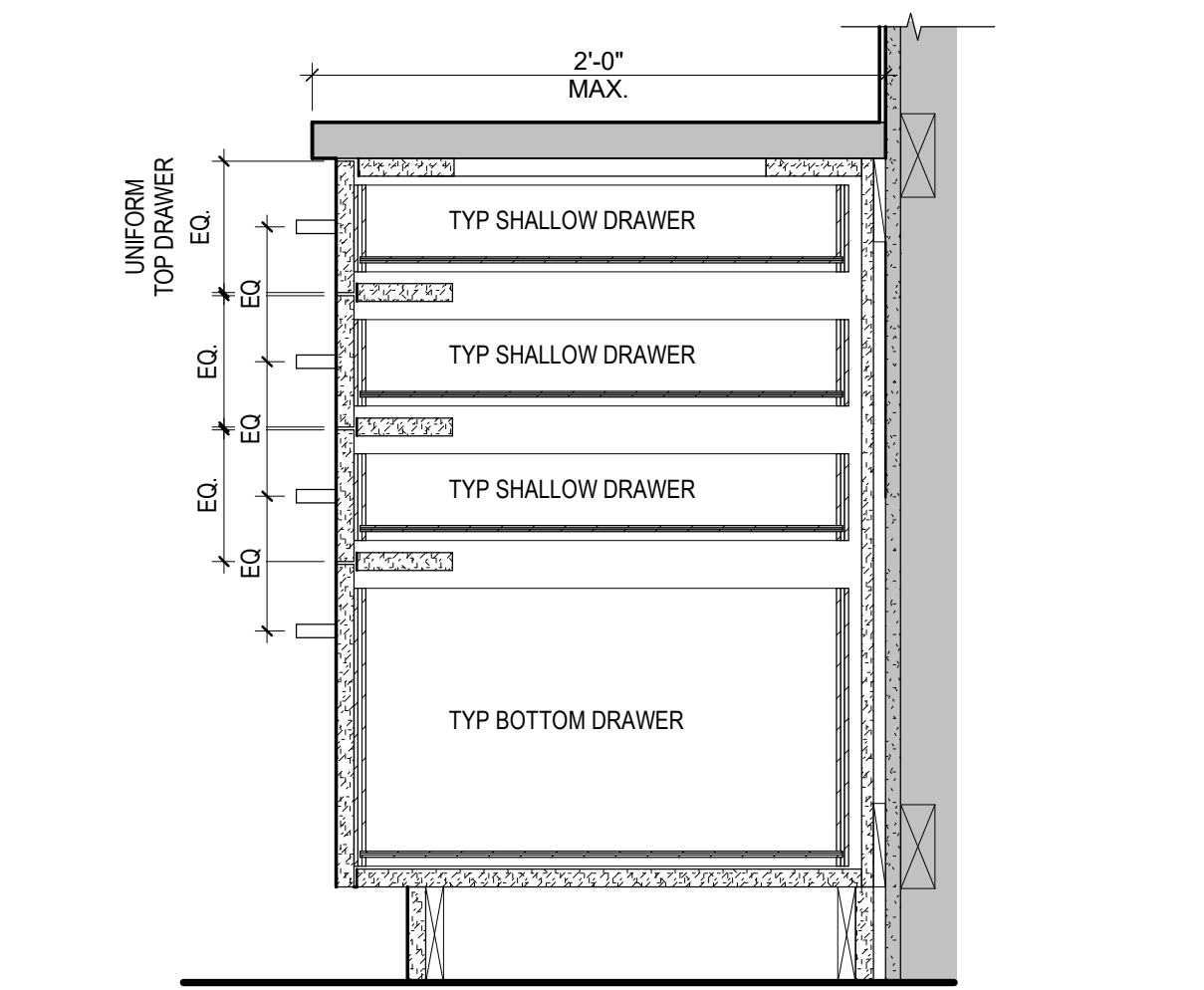
B4 ADA BASE CABINET @ SINK
1 1/2" = 1'-0"



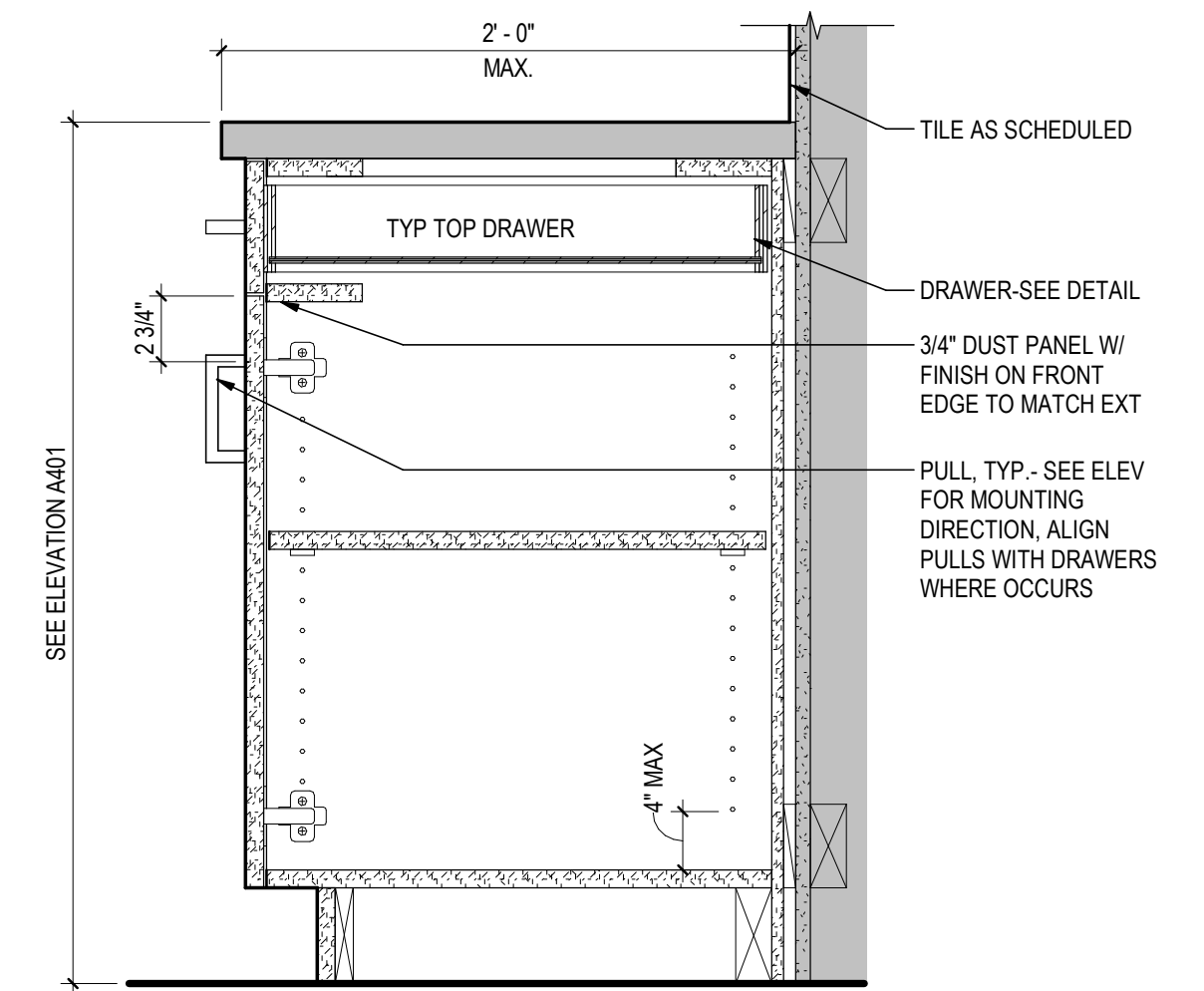
B3 MECHANICAL ENCLOSURE PLAN
1 1/2" = 1'-0"



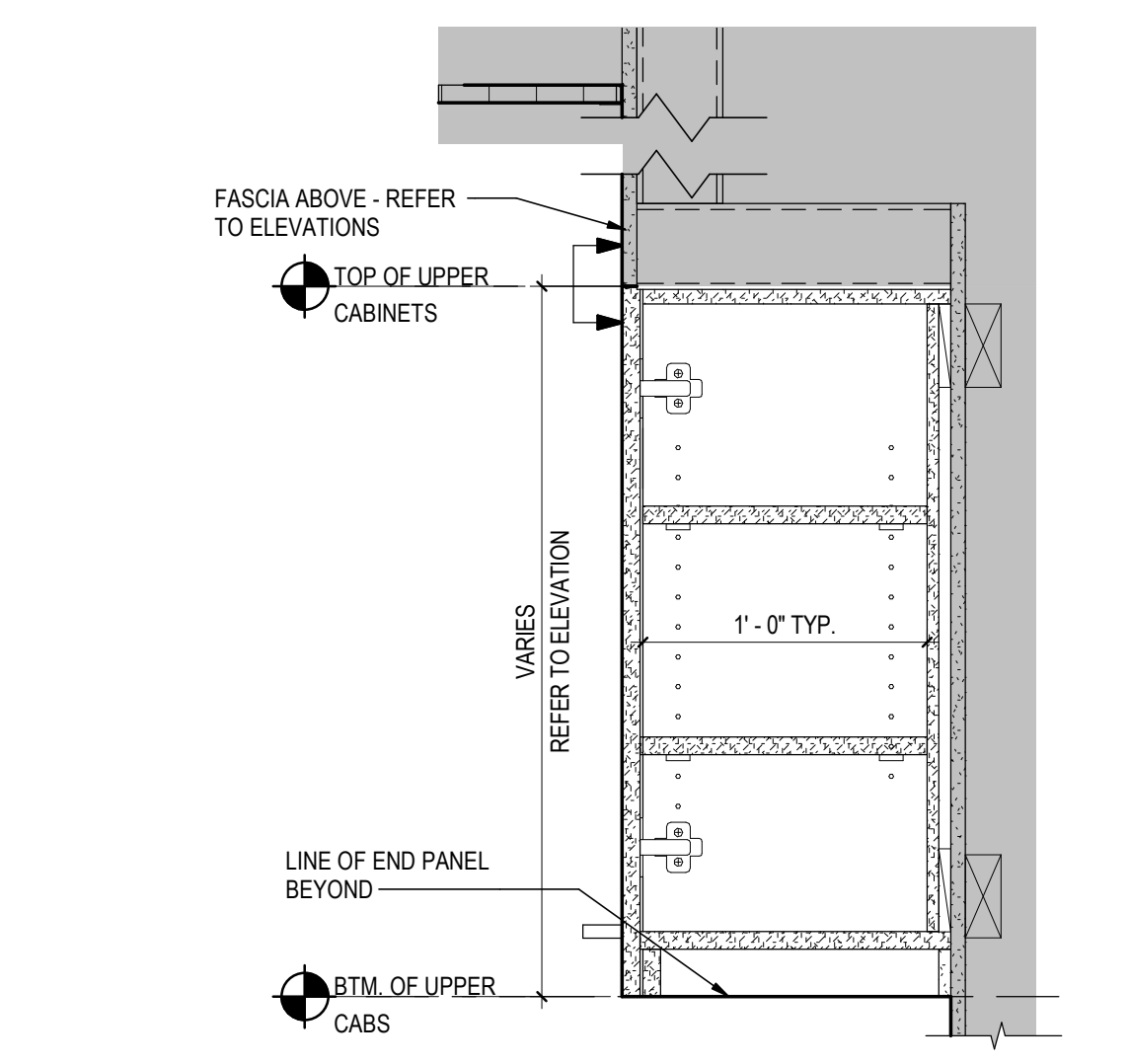
B2 MECHANICAL ENCLOSURE BASE
1 1/2" = 1'-0"



A4 BASE DRAWERS
1 1/2" = 1'-0"



A3 BASE CABINET
1 1/2" = 1'-0"



A2 UPPER CABINET
1 1/2" = 1'-0"



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- PROVIDE GYPSUM BOARD FINISH ON ALL EXISTING INTERIOR METAL FRAMING PREPARED FROM DEMO.



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07/15/2020		

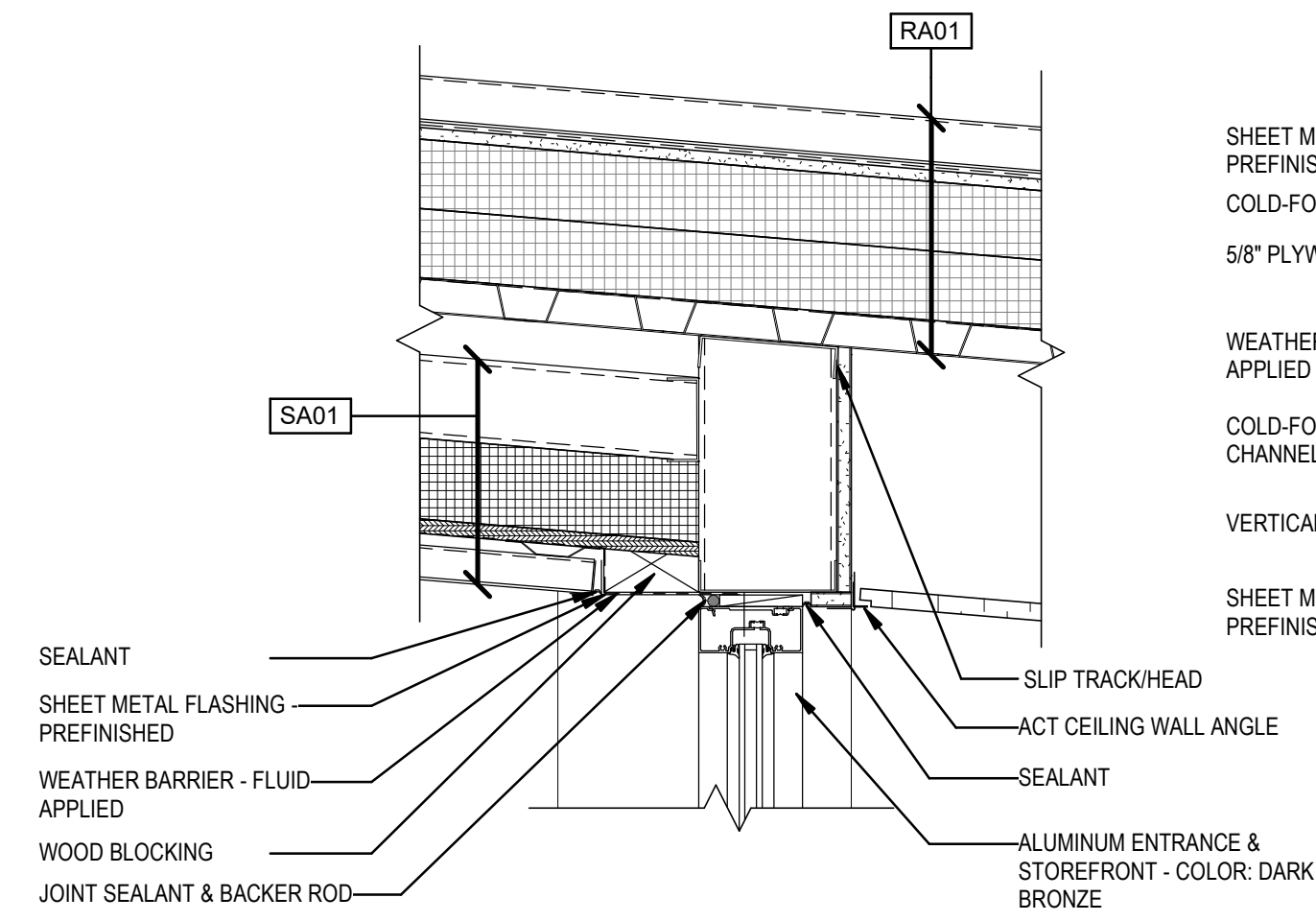


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Designer	Checker
DRAWING PROJECT NO. 1033268	SITE CODE
LEGACY PROJECT NO.	DATE: 07/15/2020
DATE	BASE PROJECT MANAGER
	BEVERLY LANGLEY

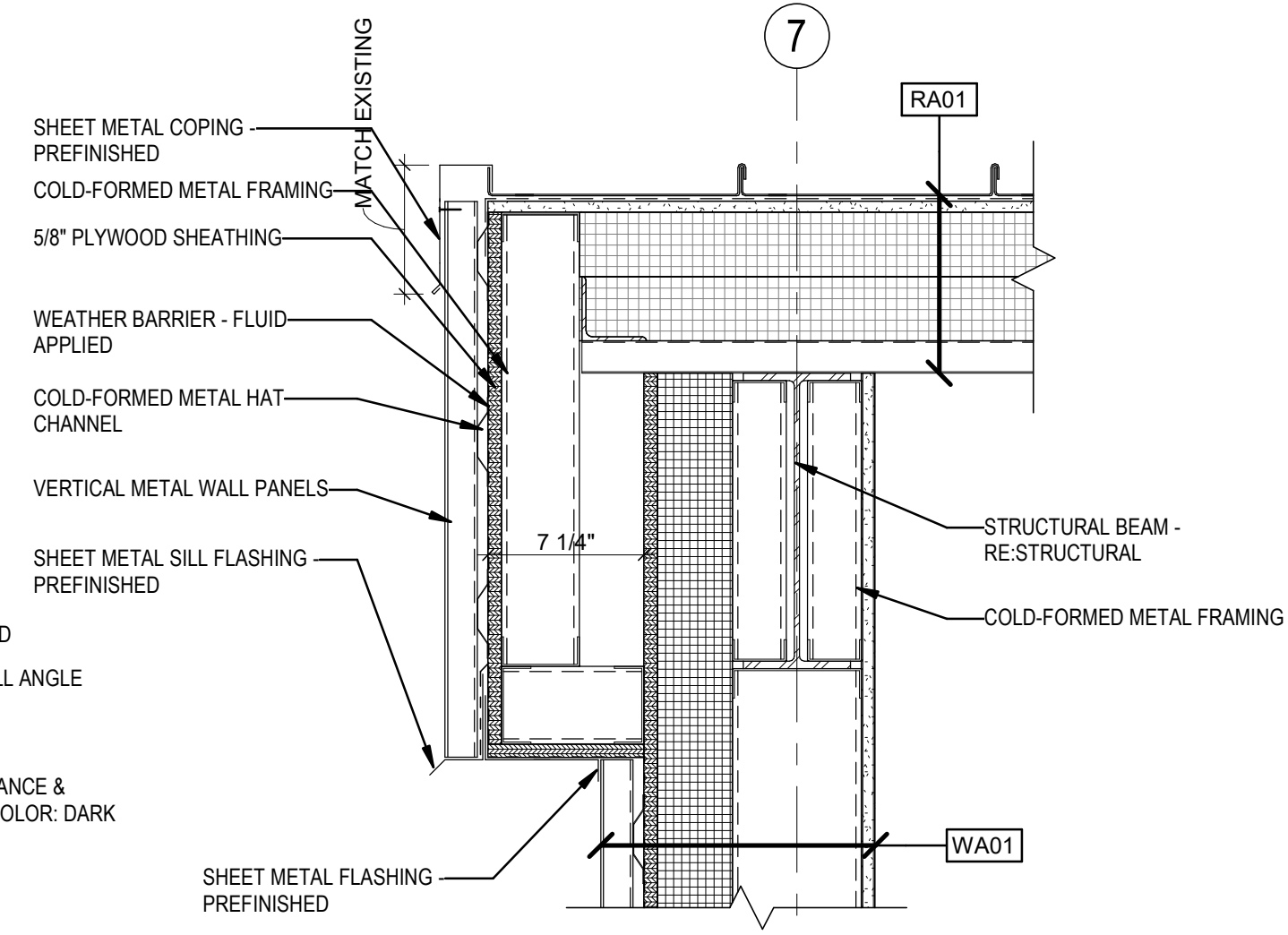
AFPMG
DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
419TH CIVIL ENGINEER GROUP

**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591**
DETAILS

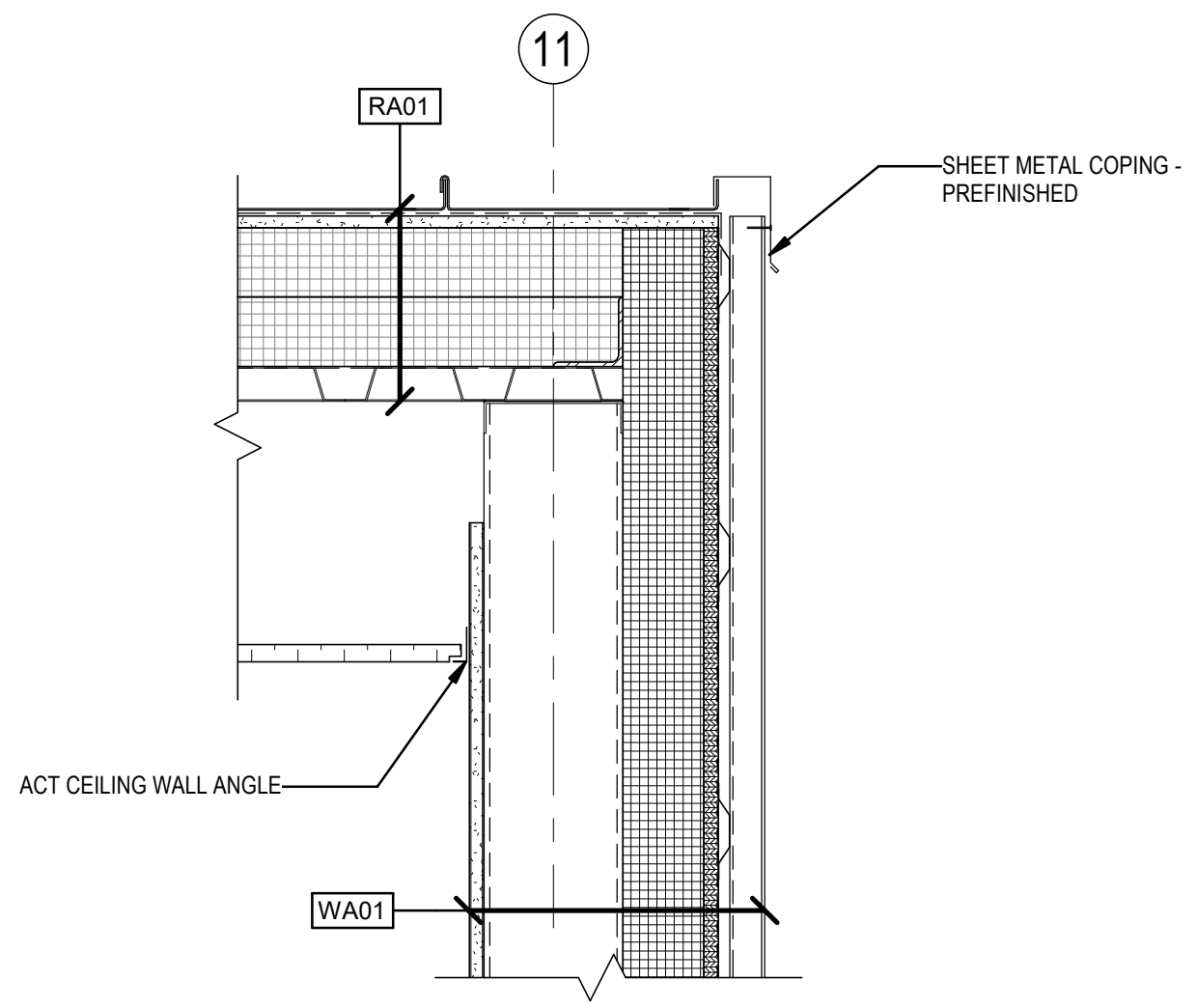
A521
Sheet: 43 of 94



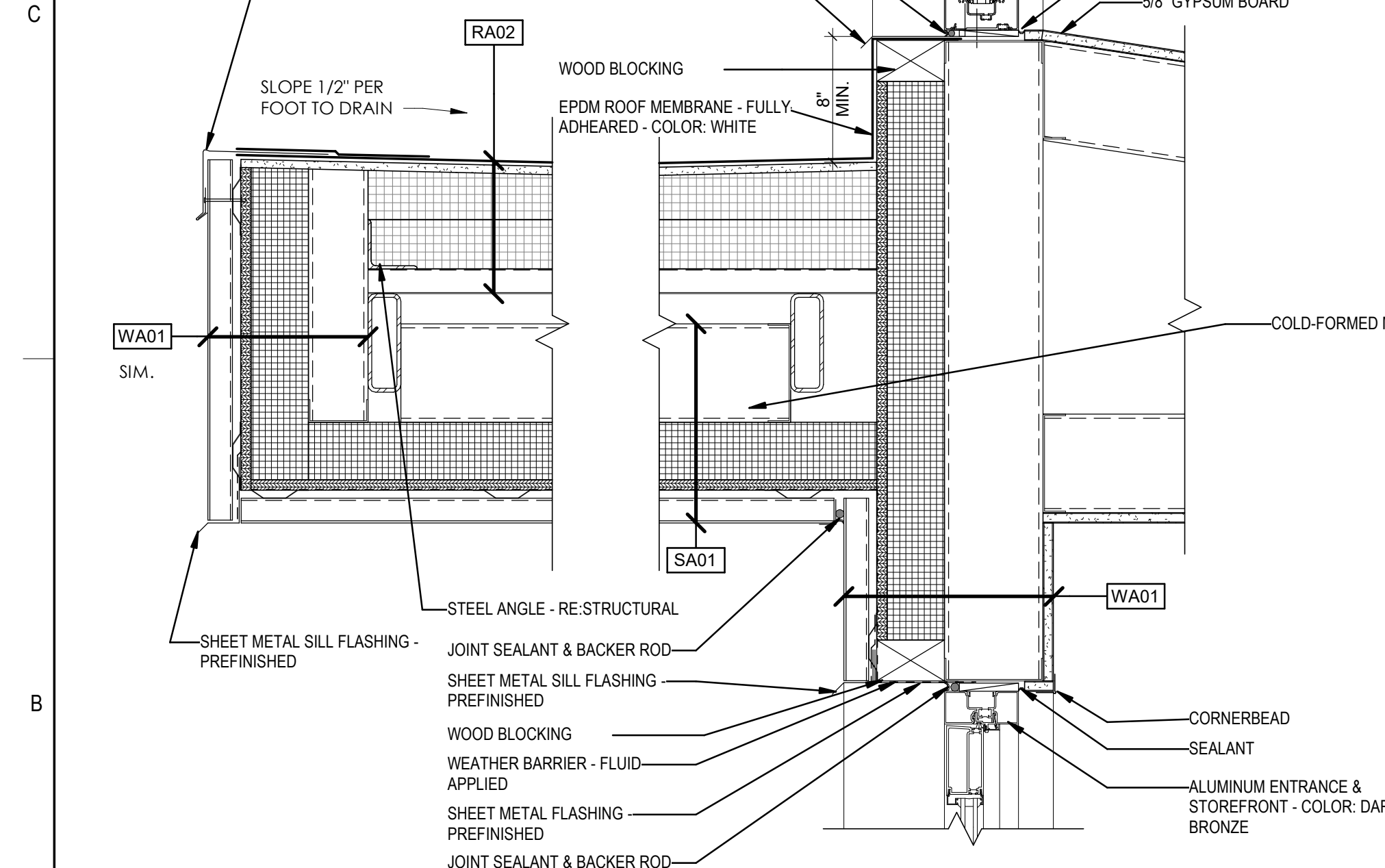
C4 STOREFRONT HEAD
1 1/2" = 1'-0"



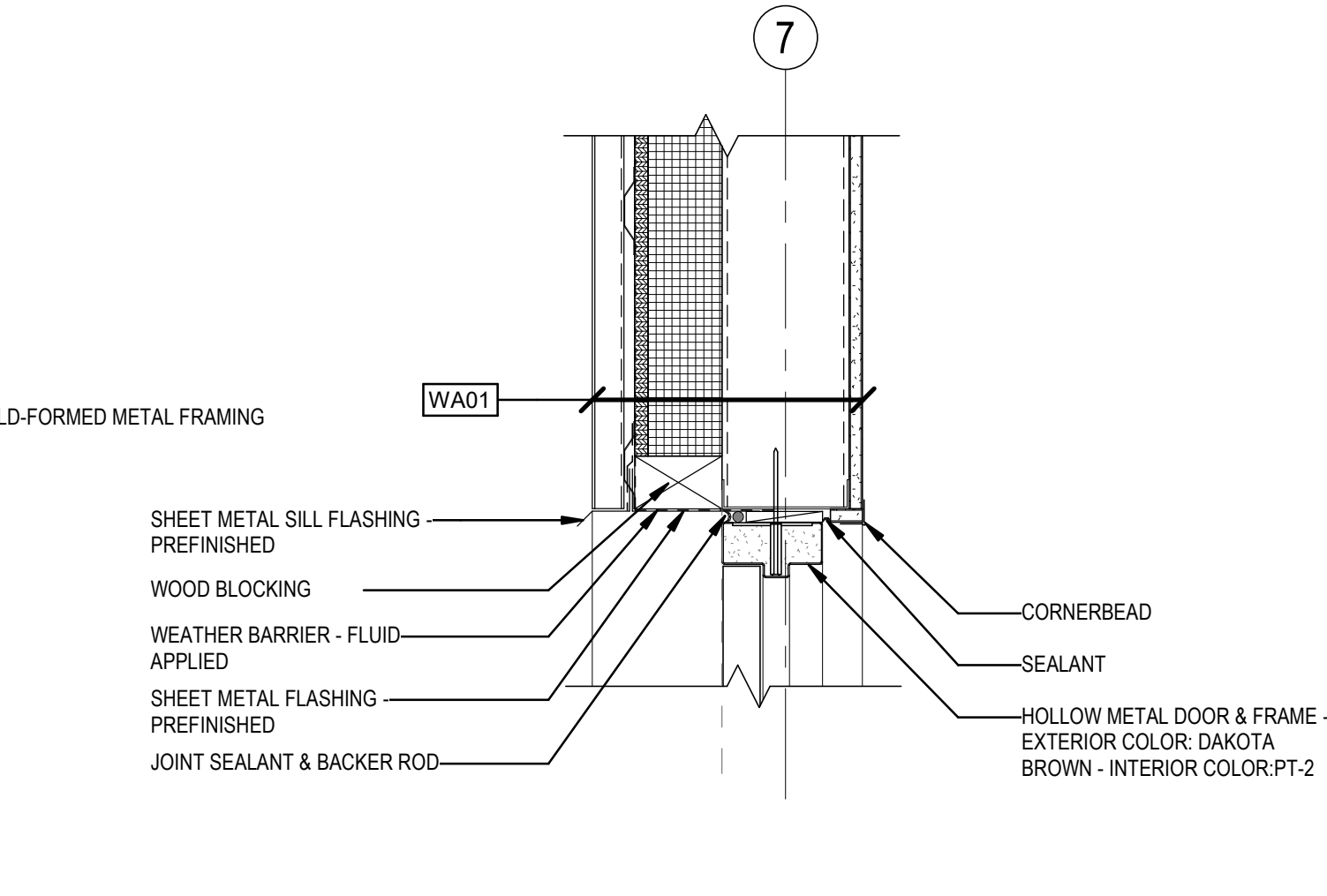
C3 ROOF EDGE
1 1/2" = 1'-0"



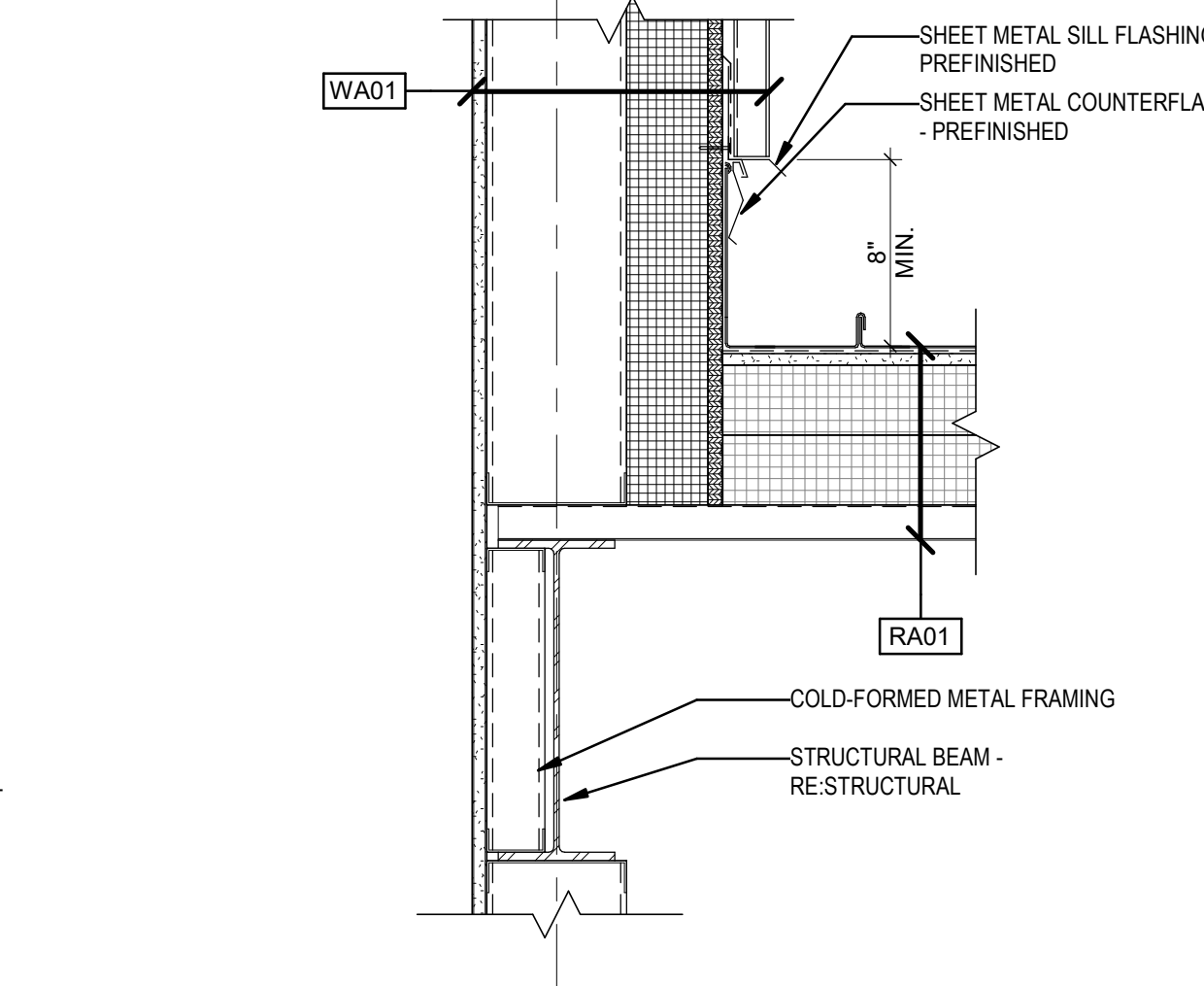
C2 ROOF EDGE
1 1/2" = 1'-0"



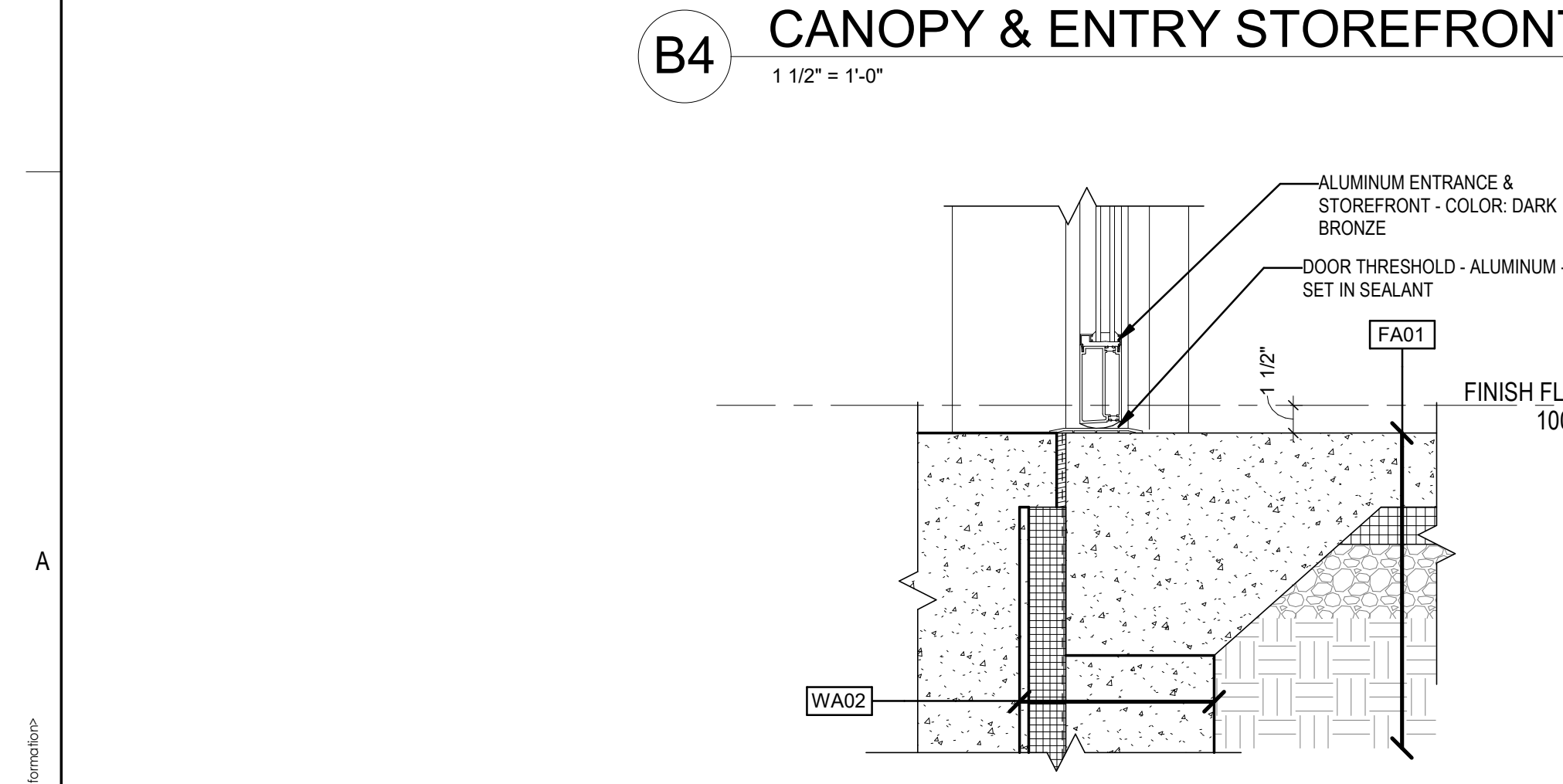
B4 CANOPY & ENTRY STOREFRONT
1 1/2" = 1'-0"



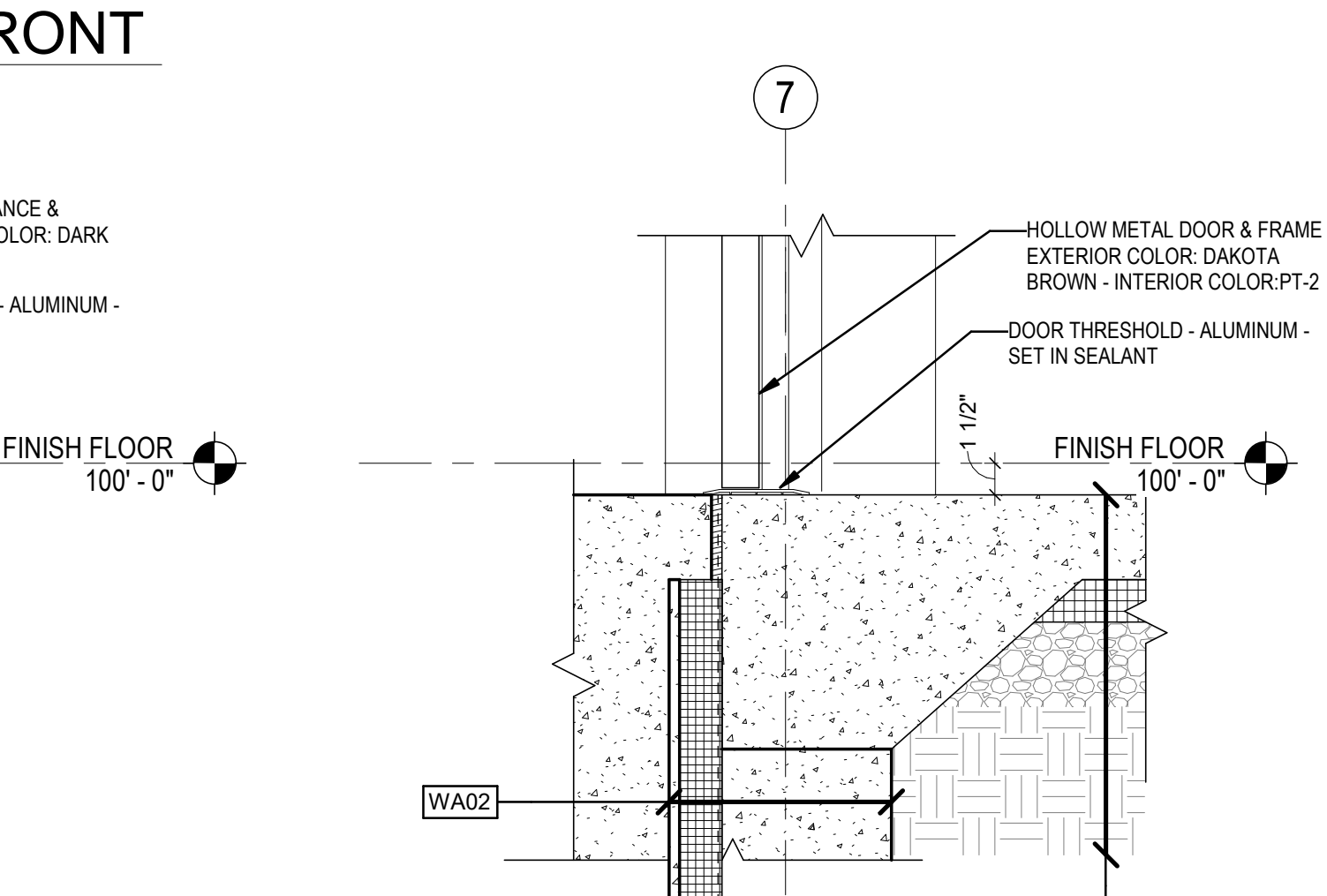
B3 HM DOOR HEAD
1 1/2" = 1'-0"



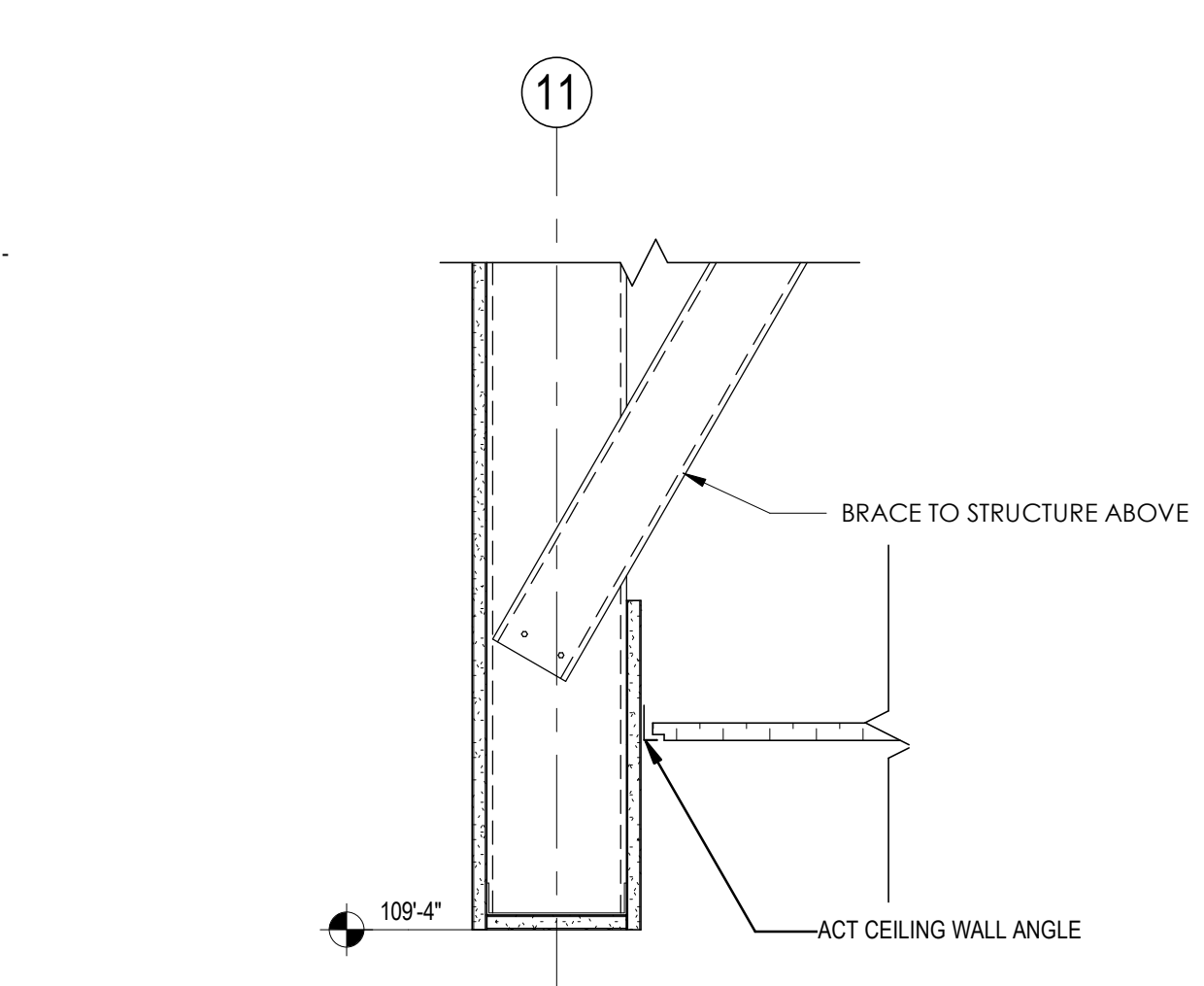
B2 ROOF & WALL
1 1/2" = 1'-0"



A4 STOREFRONT THRESHOLD
1 1/2" = 1'-0"



A3 HM DOOR THRESHOLD
1 1/2" = 1'-0"



A2 SOFFIT
1 1/2" = 1'-0"



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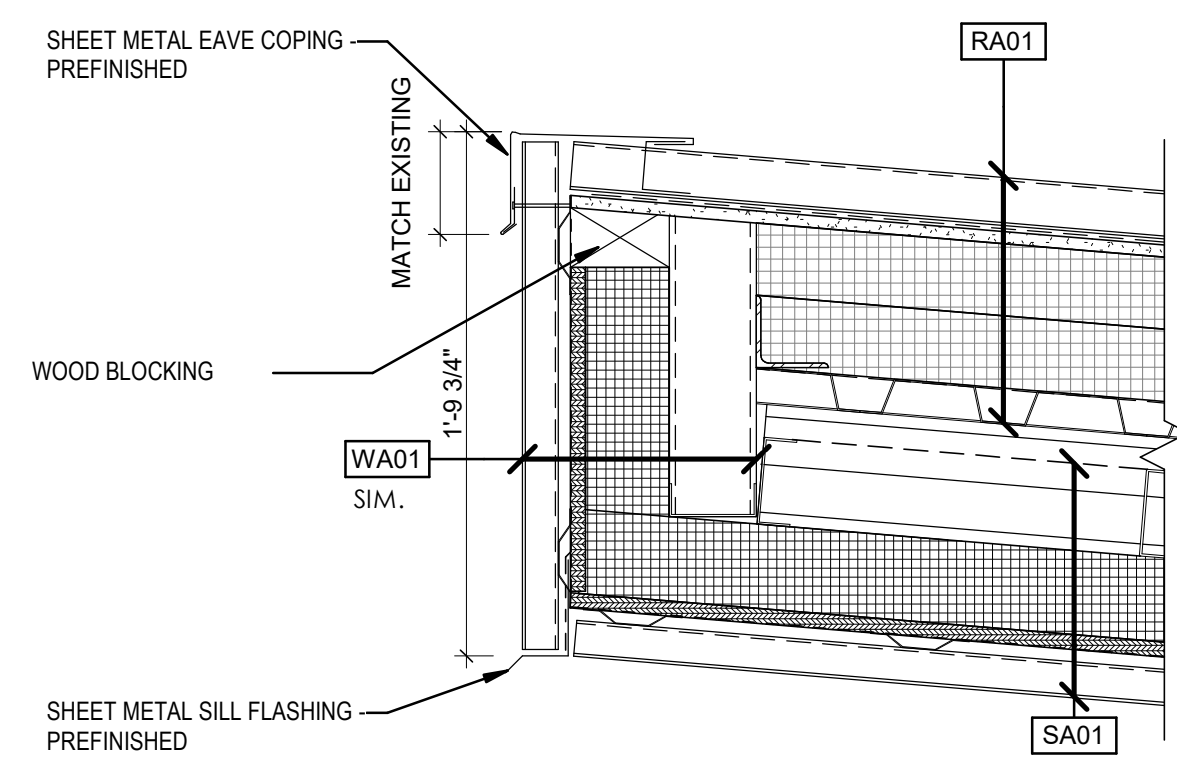


DATE	APPR	MARK
07/15/2020		

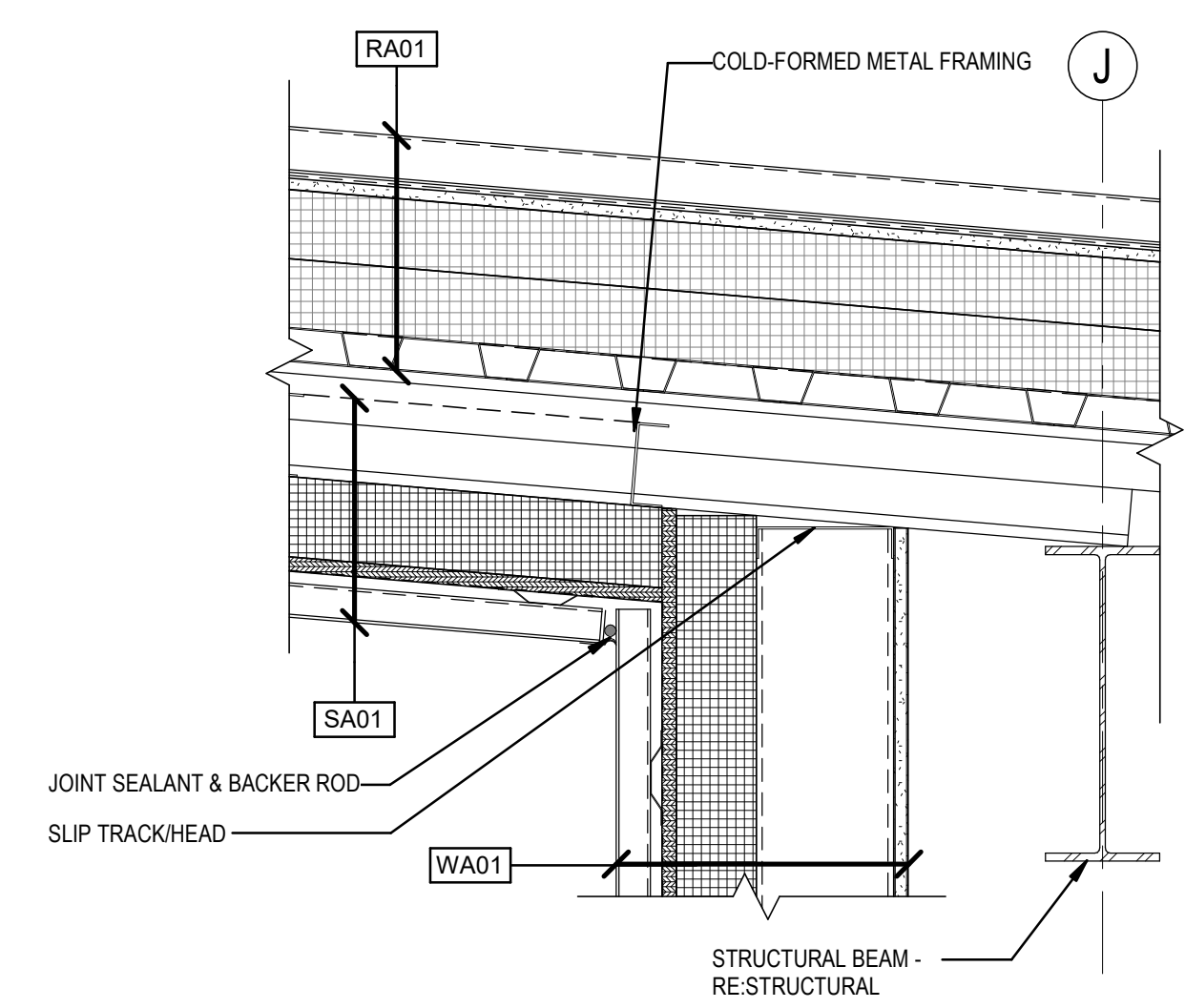


DESIGNED BY: Designer	CHECKED BY: Checker
DATE: 07/15/2020	DATE: 07/15/2020
PROJECT NO: 1033268	PROJECT NO: 1033268
PROJECT NAME: ADDITION/RENOVATION RESERVE CIVIL ENGINEER FACILITY - BLDG. 591	PROJECT NAME: ADDITION/RENOVATION RESERVE CIVIL ENGINEER FACILITY - BLDG. 591
DESIGNER: BEVERLY LANGLE	CHECKER: BEVERLY LANGLE

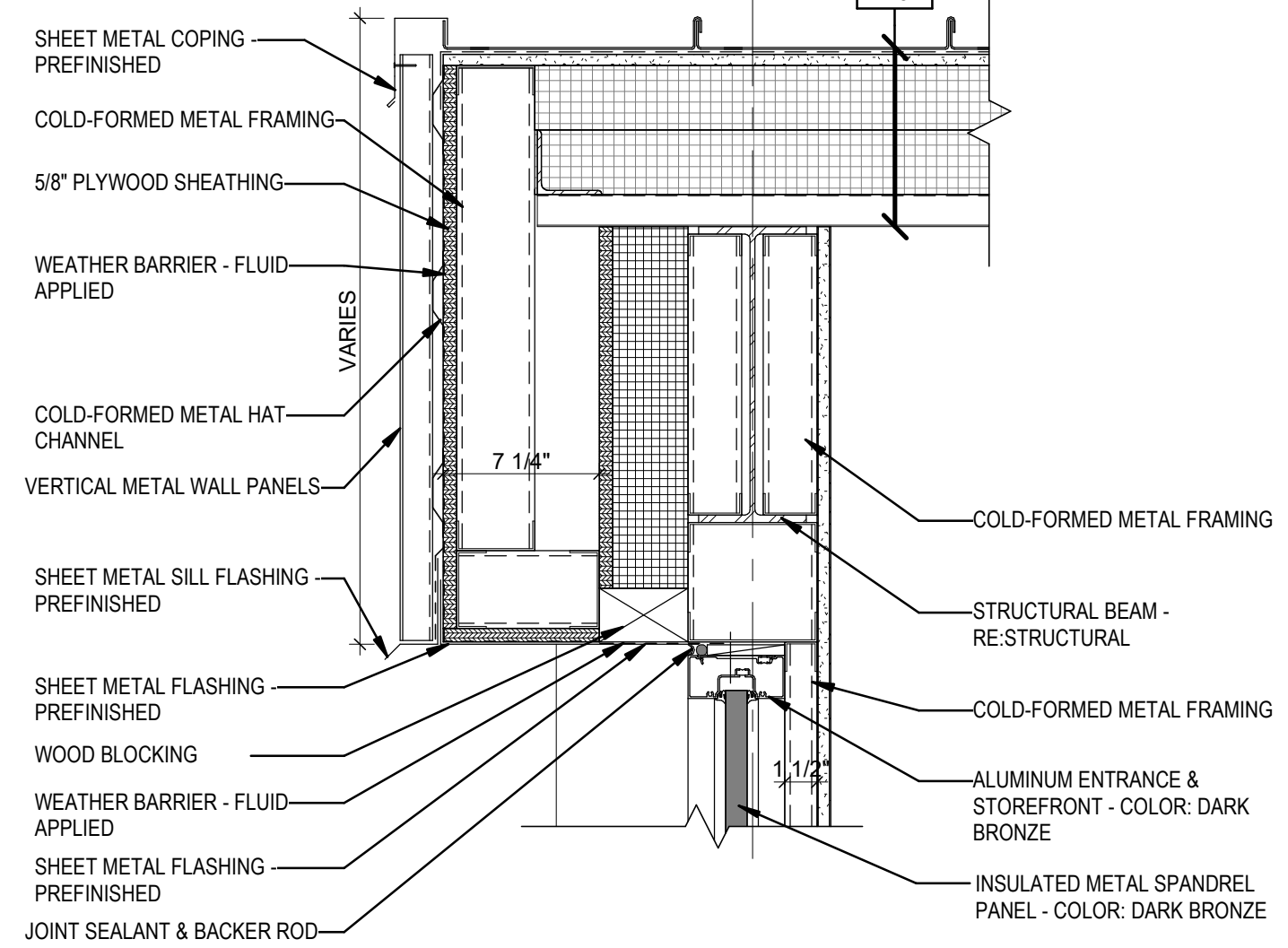
ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
DETAILS



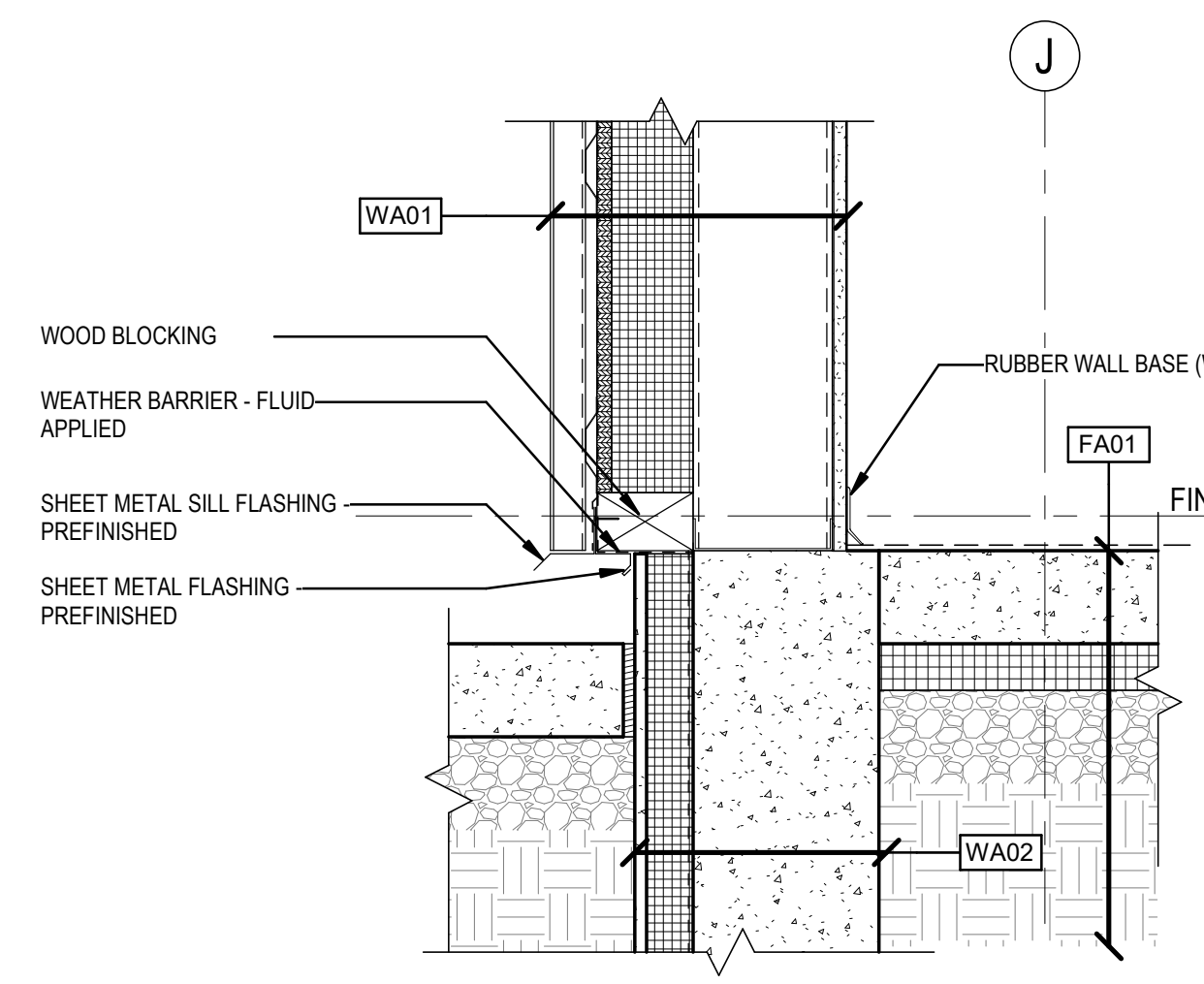
C4 ROOF OVERHANG
1 1/2" = 1'-0"



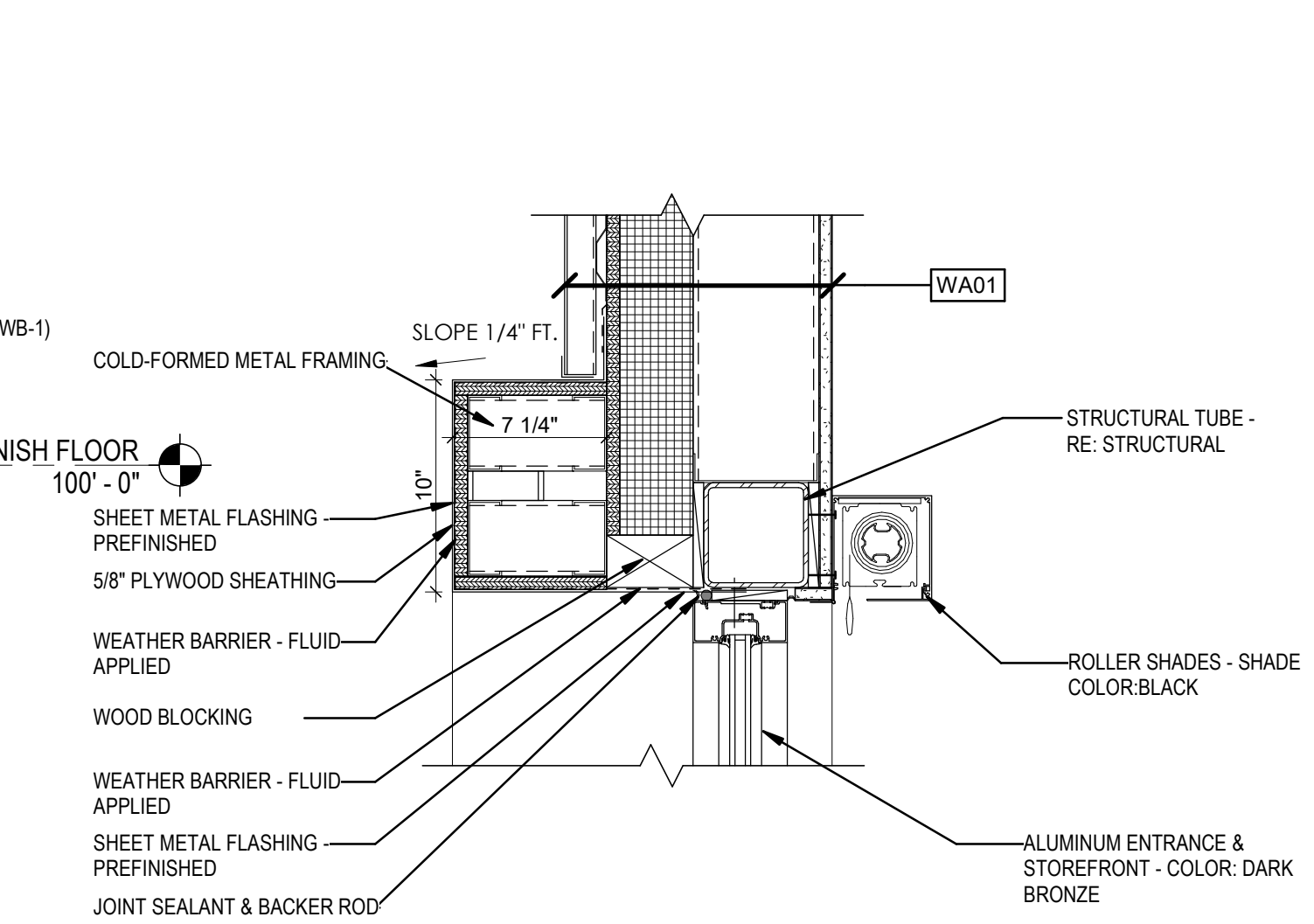
C3 ROOF & WALL
1 1/2" = 1'-0"



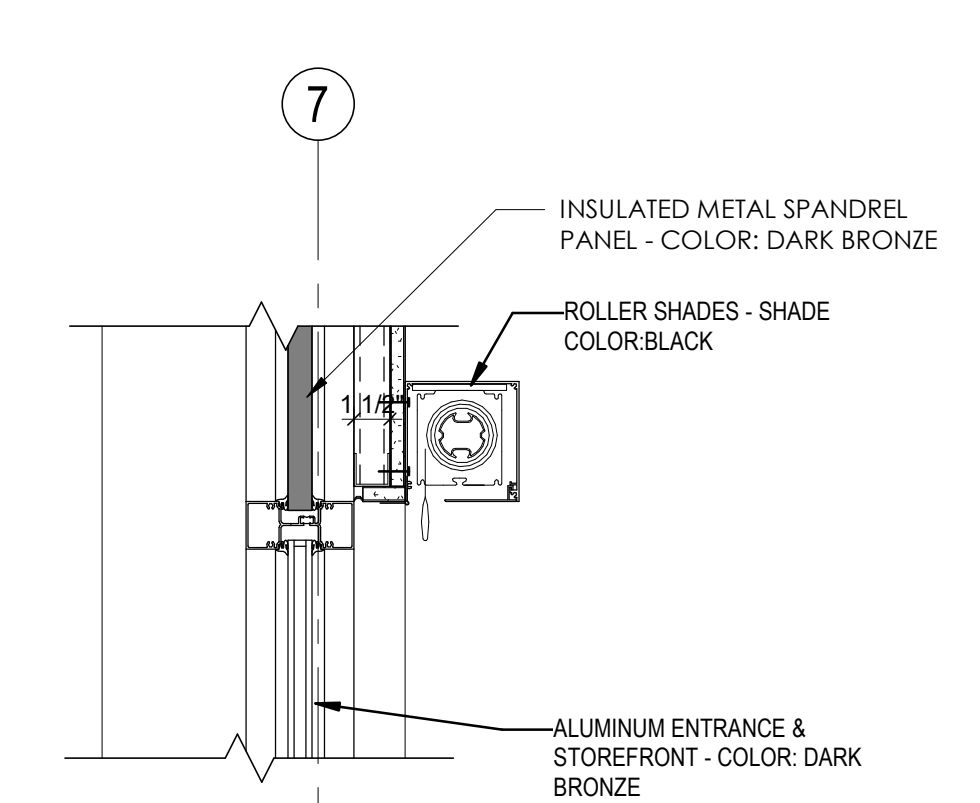
C2 STOREFRONT HEAD
1 1/2" = 1'-0"



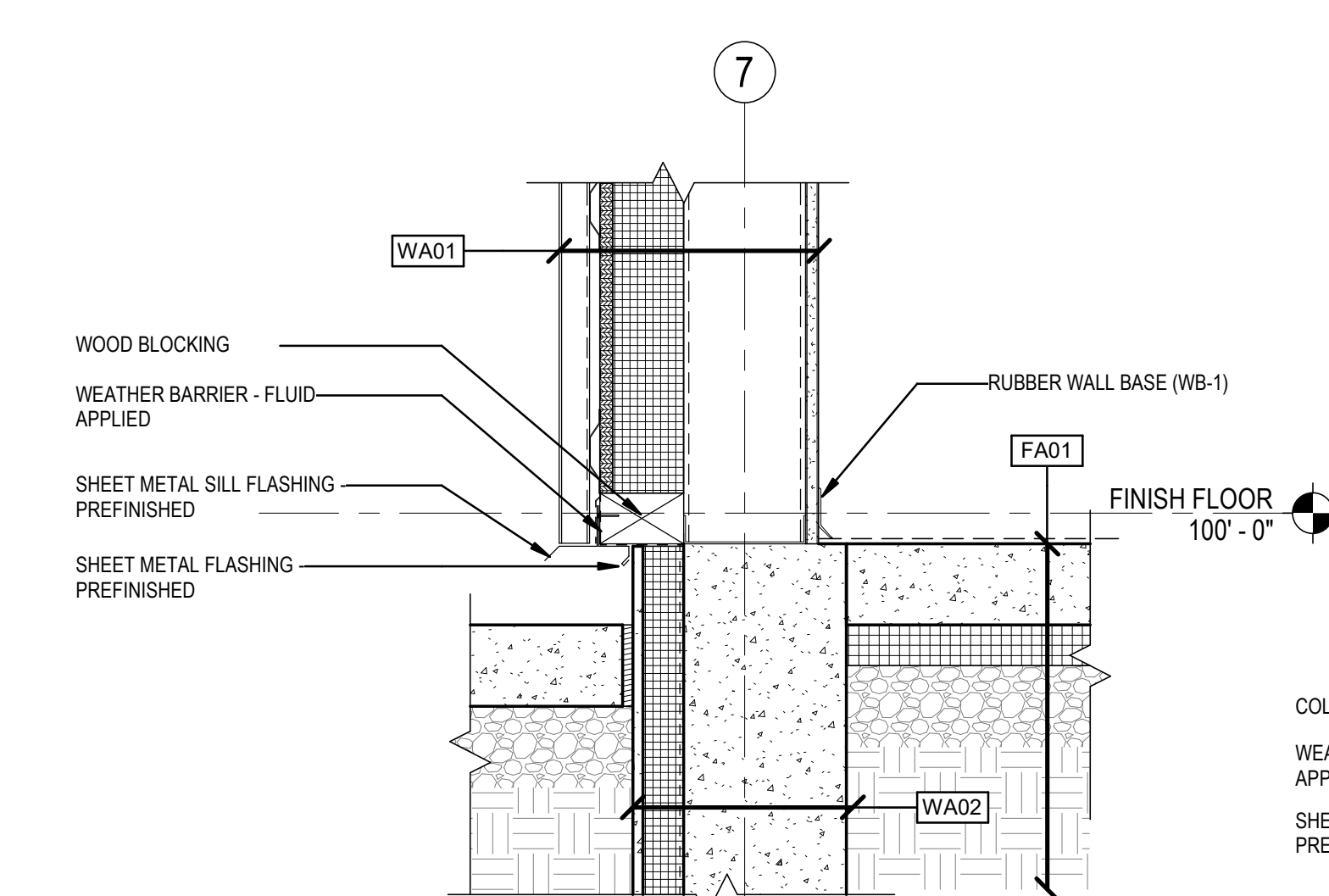
B4 WALL & FOUNDATION
1 1/2" = 1'-0"



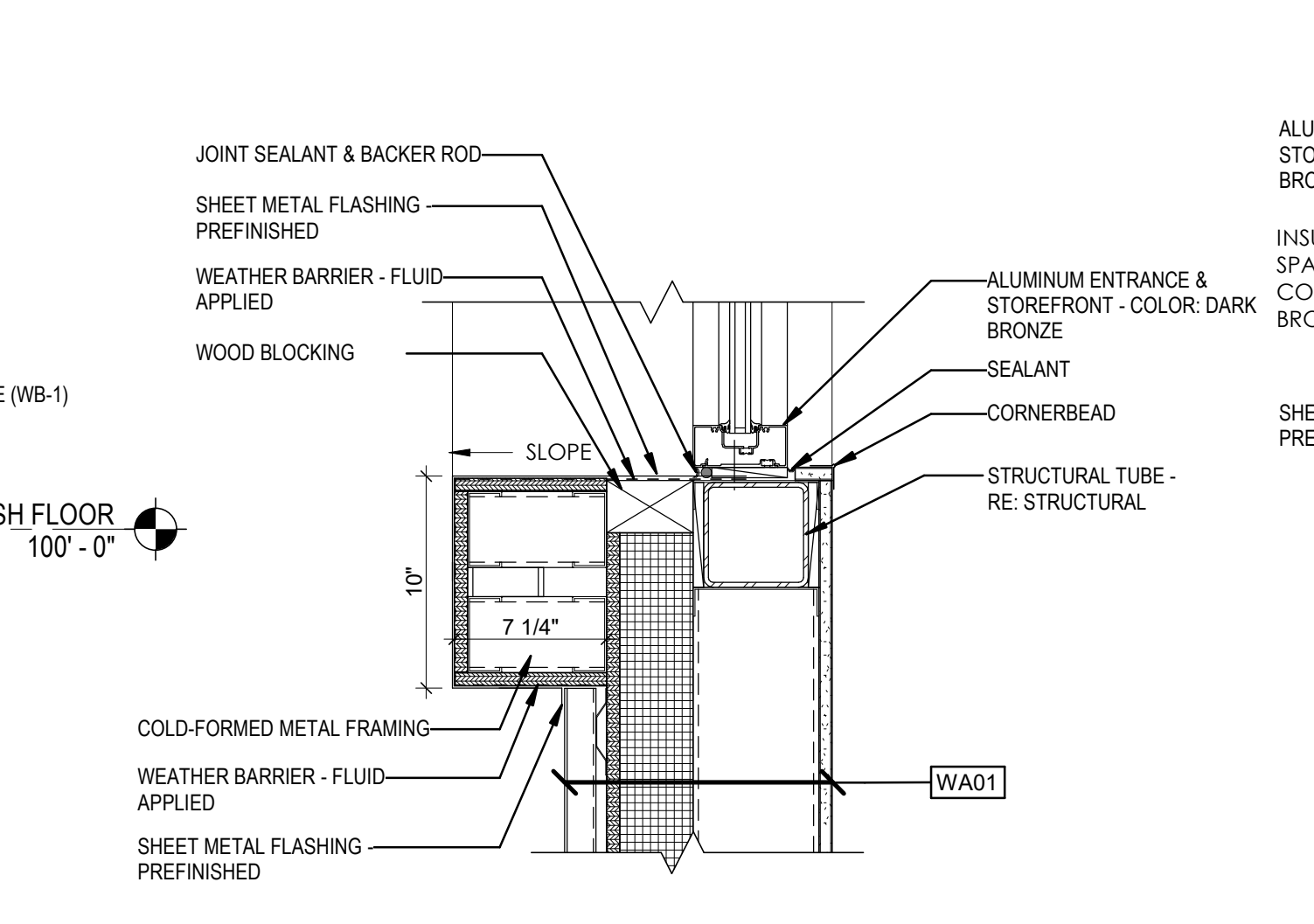
B3 STOREFRONT HEAD
1 1/2" = 1'-0"



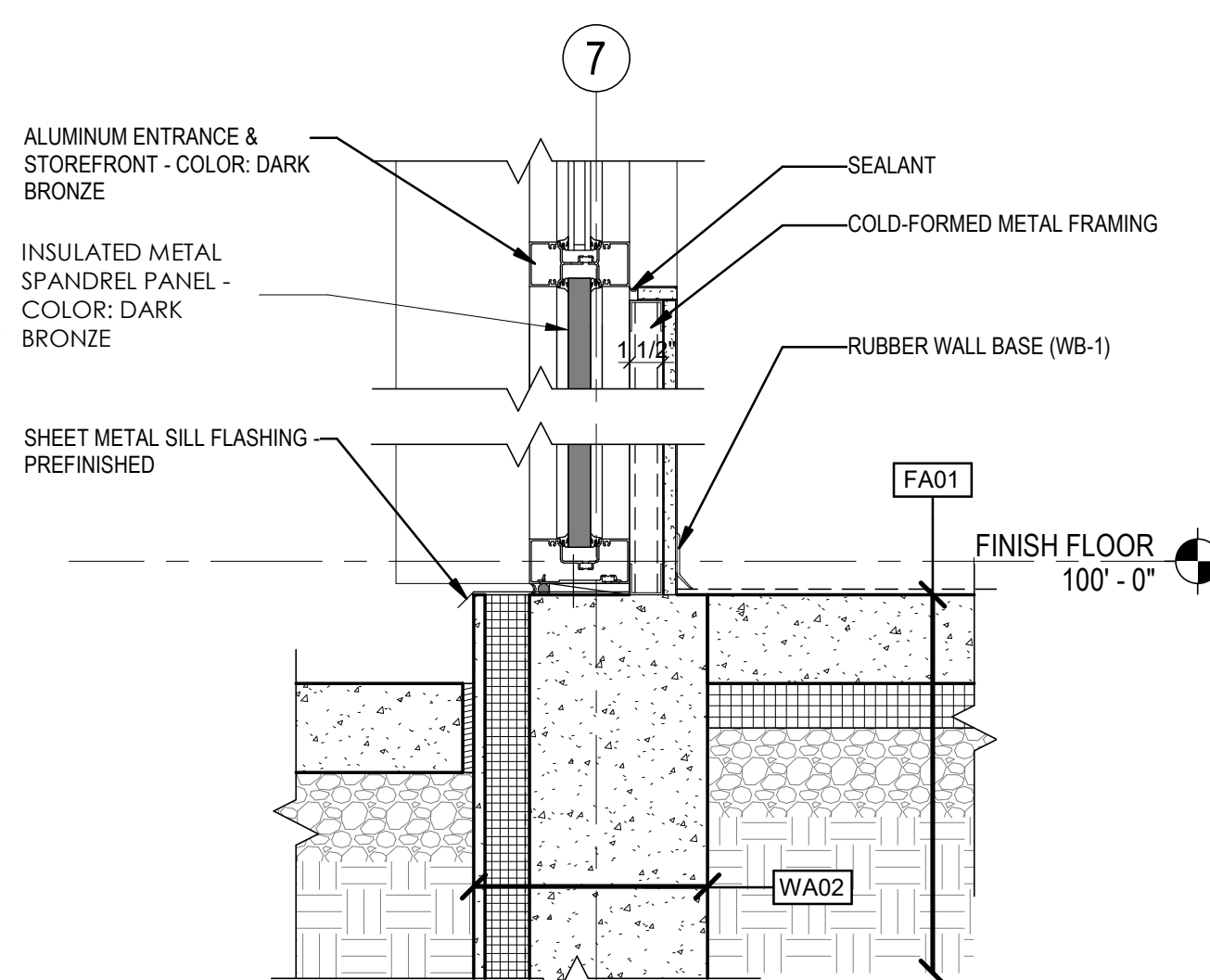
B2 STOREFRONT CENTER
1 1/2" = 1'-0"



A4 WALL & FOUNDATION
1 1/2" = 1'-0"



A3 STOREFRONT SILL
1 1/2" = 1'-0"



A2 STOREFRONT SILL
1 1/2" = 1'-0"



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CHECKED BY	Checker	SITE CODE	
PROJECT NO.	1033248	LEGACY PROJECT NO.	
DATE		BASE PROJECT NUMBER	
		DESIGNER	BEVERLY LANGLE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
DETAILS

A523
Sheet: 45 of 94



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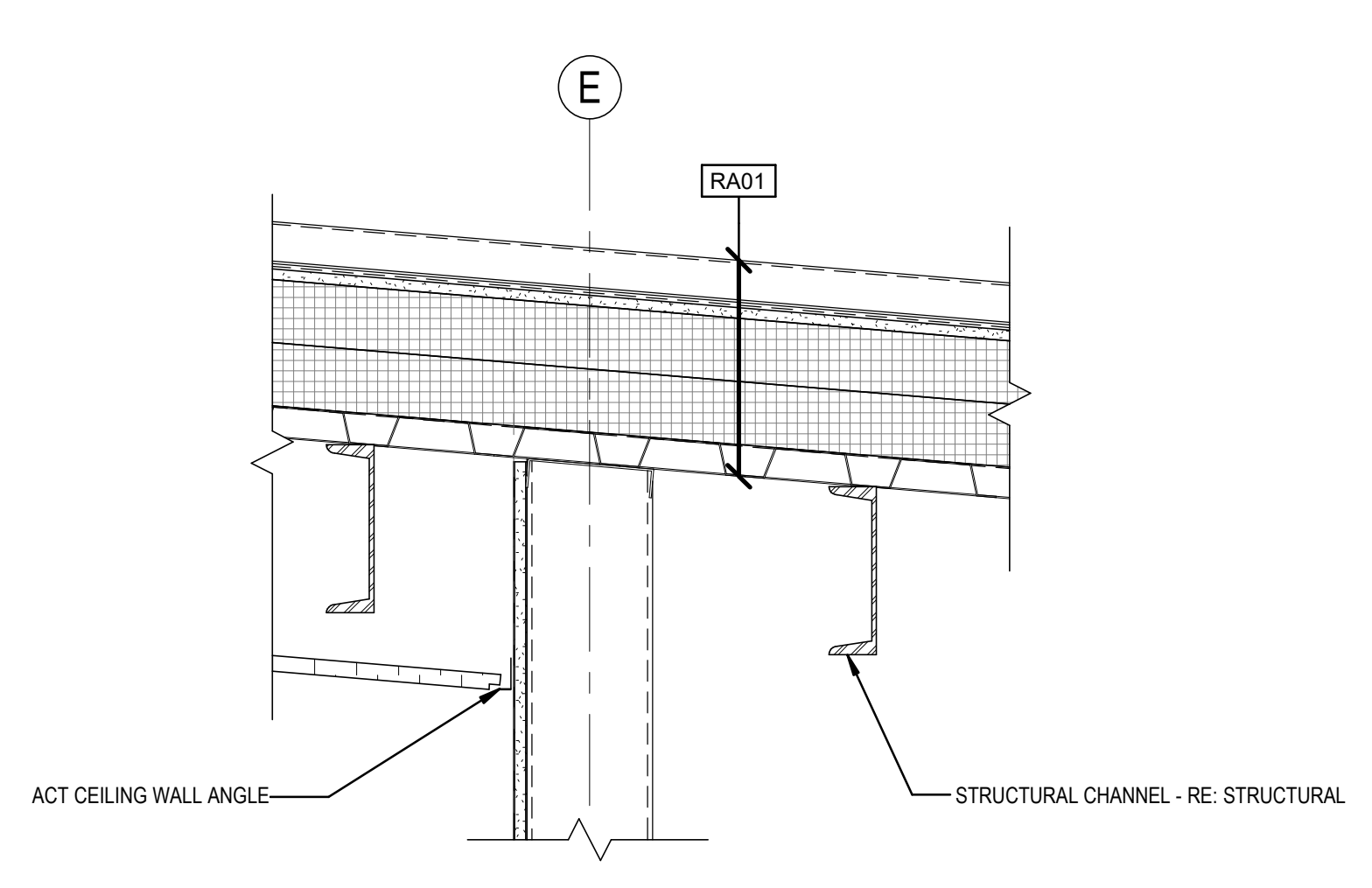


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DATE	07/15/2020	DATE	07/15/2020
PROJECT NO.	1033248	PROJECT NO.	1033248
LEGACY PROJECT NO.		LEGACY PROJECT NO.	
DATE		DATE	
BASE PROJECT MANAGER	BEVERLY LANGLEY	BASE PROJECT MANAGER	BEVERLY LANGLEY

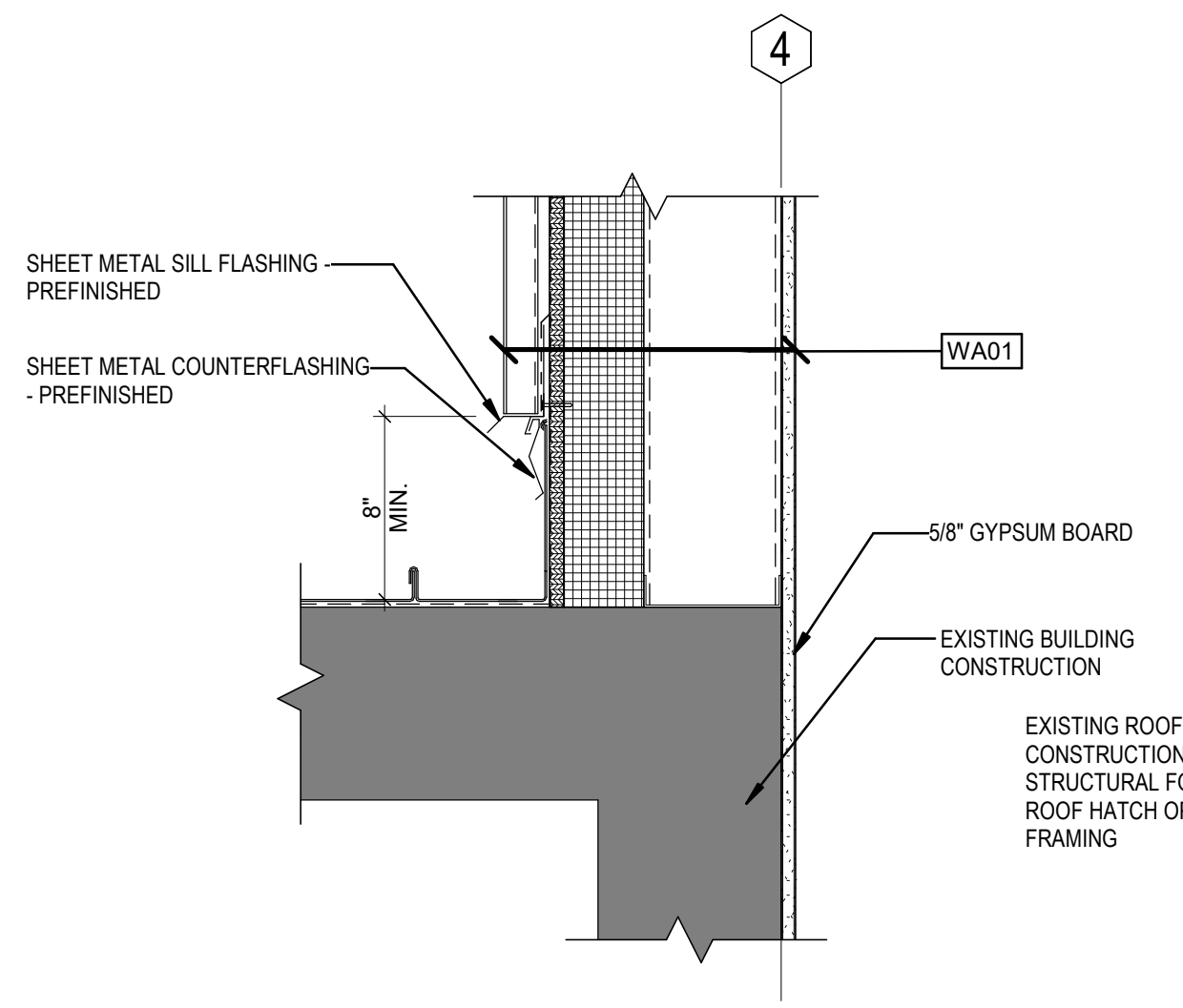
ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 DETAILS

A524
 Sheet: 46 of 94

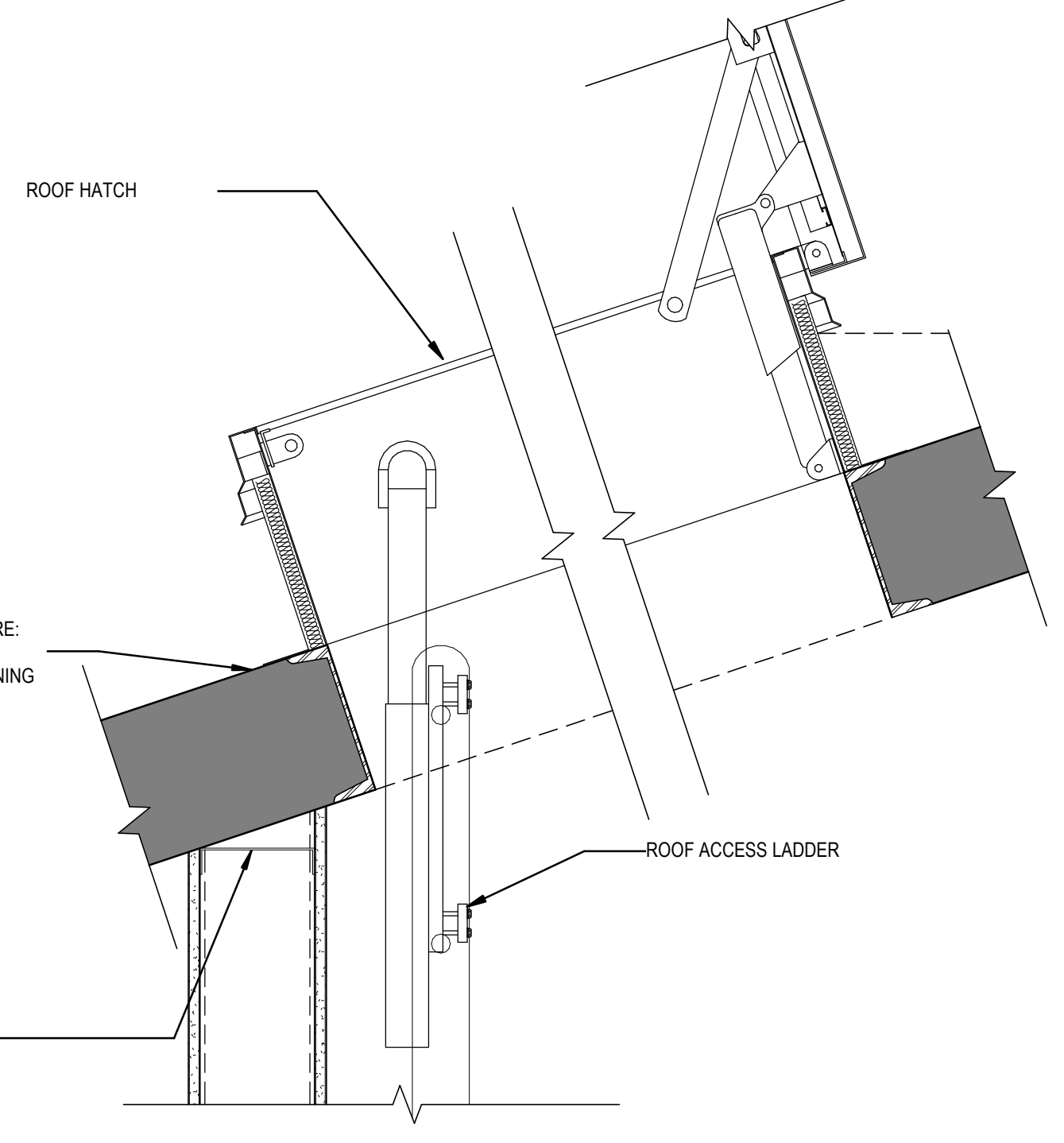
- GENERAL NOTES**
- SEE SHEET A501 FOR ALL BUILDING ASSEMBLY TYPES.
 - SEE SHEET A601 FOR ALL INTERIOR PARTITION TYPES AND LIMITING WALL HEIGHT TABLES.
 - DIMENSIONS ARE TAKEN FROM CENTERLINE GRID, FACE OF STRUCTURE, OR FINISH FACE OF FRAMED PARTITIONS.
 - PROVIDE GYPSUM BOARD FINISH ON ALL EXISTING INTERIOR METAL FRAMING PREPARED FROM DEMO.



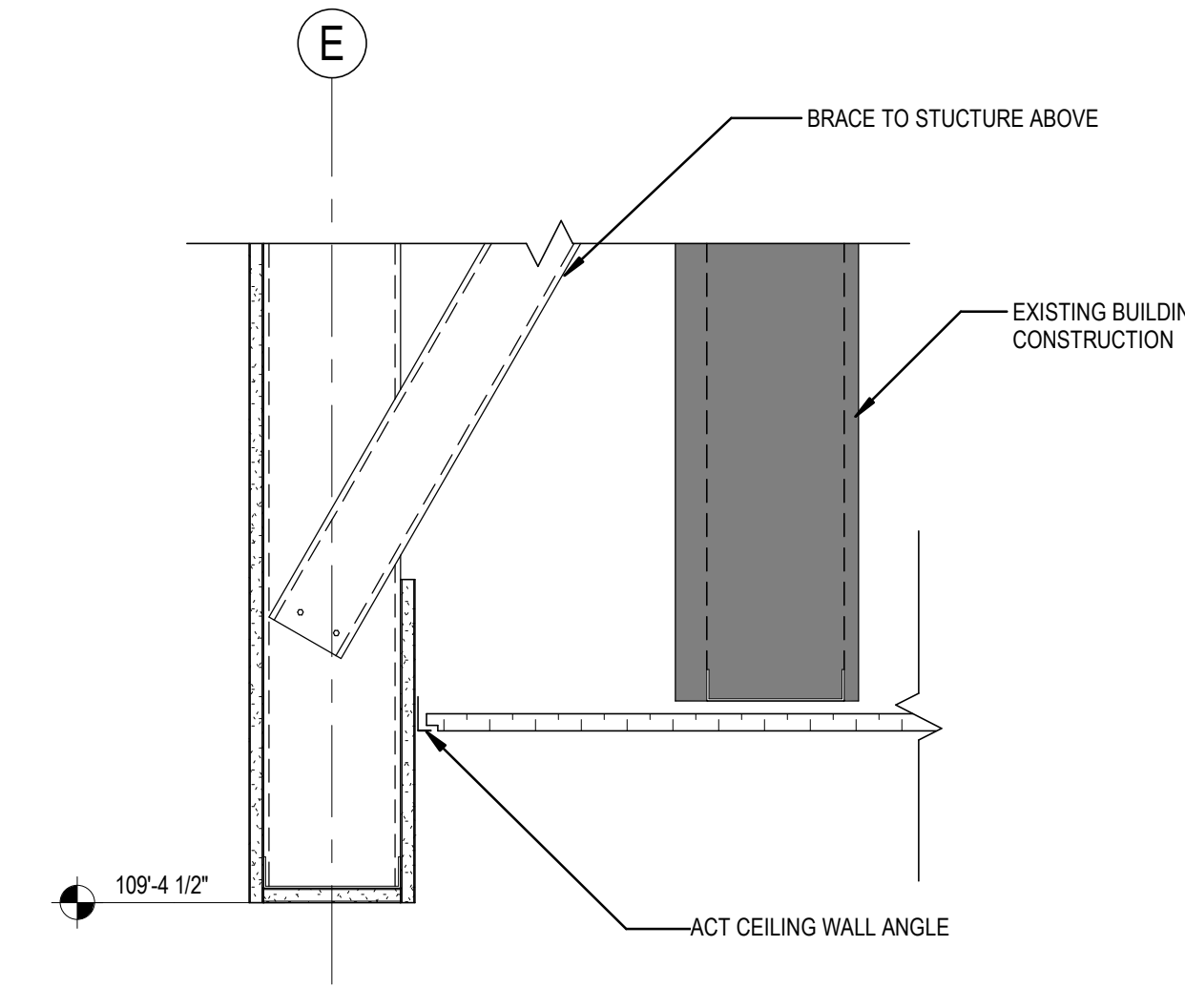
C4 ROOF & WALL
 1 1/2" = 1'-0"



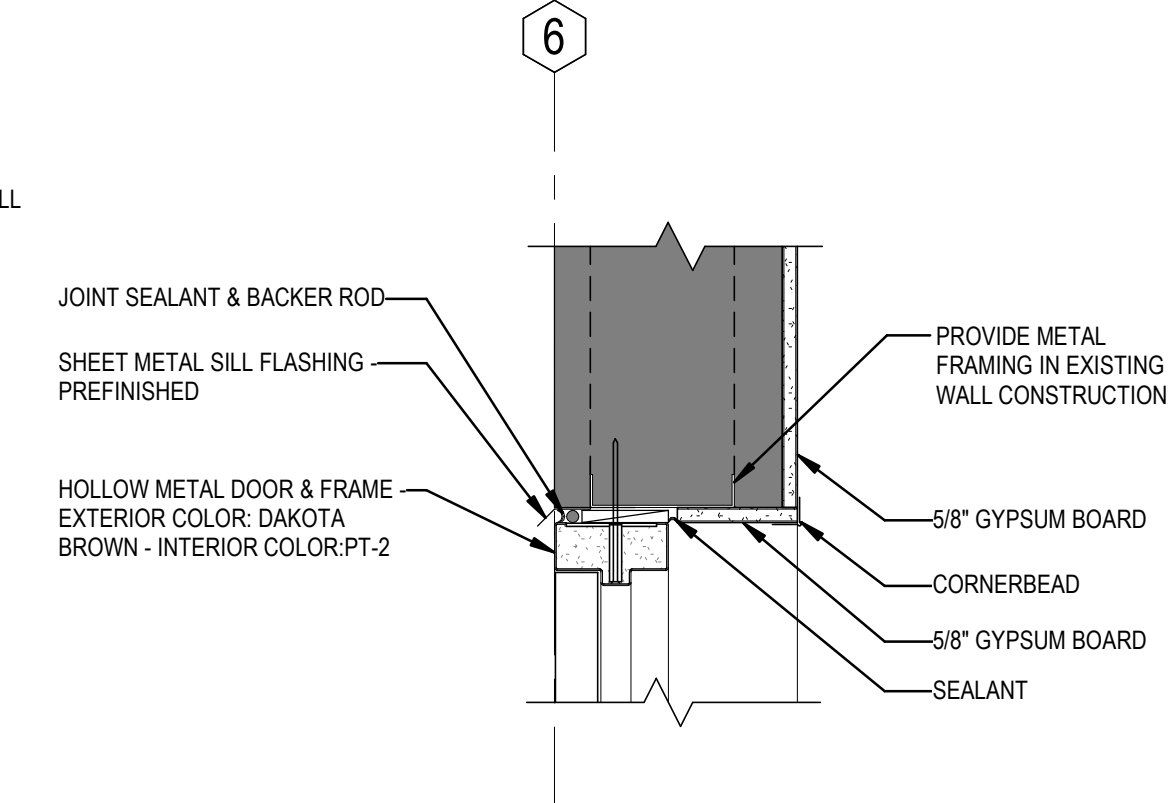
C3 WALL & EXISTING ROOF
 1 1/2" = 1'-0"



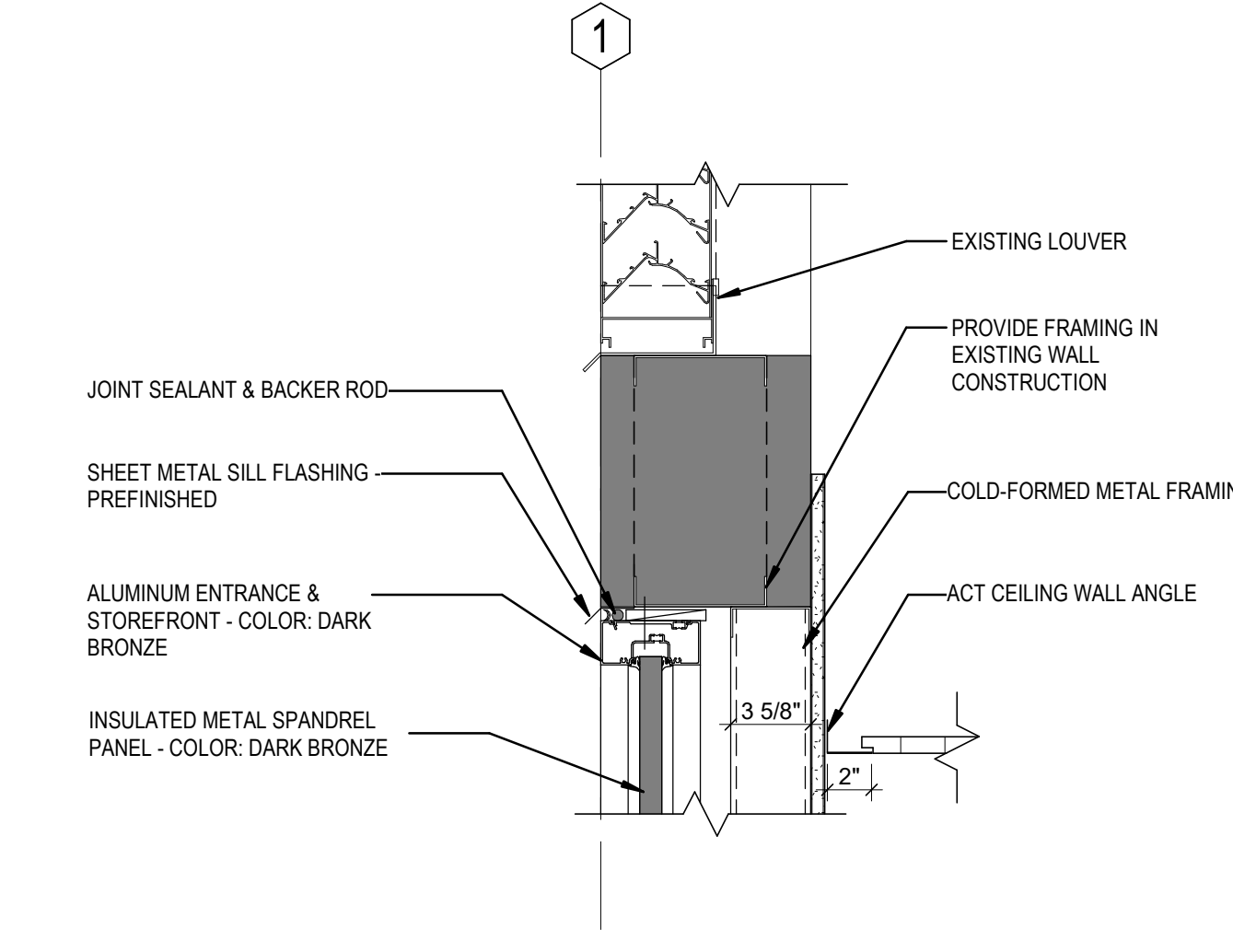
C2 ROOF HATCH
 1 1/2" = 1'-0"



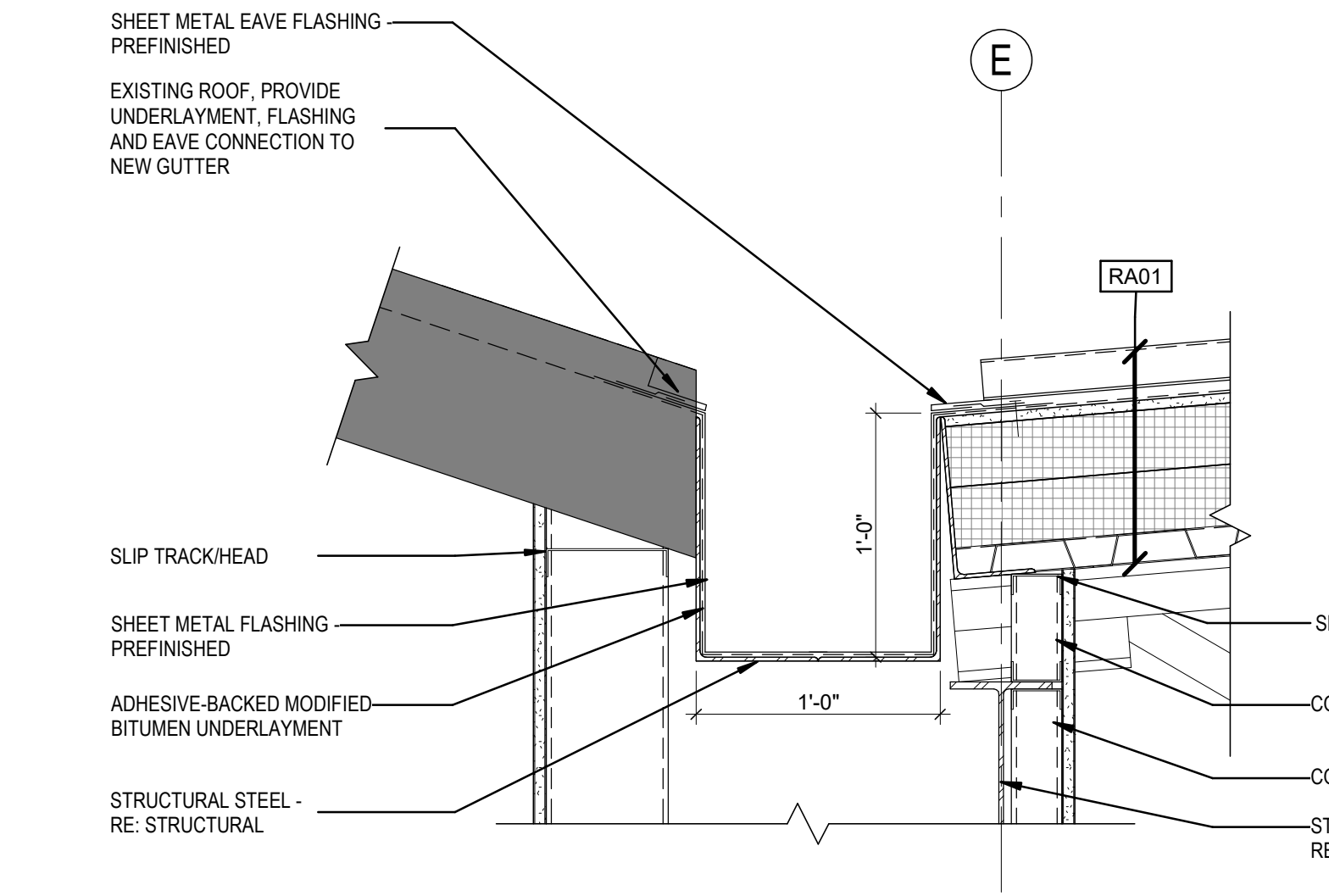
B4 SOFFIT
 1 1/2" = 1'-0"



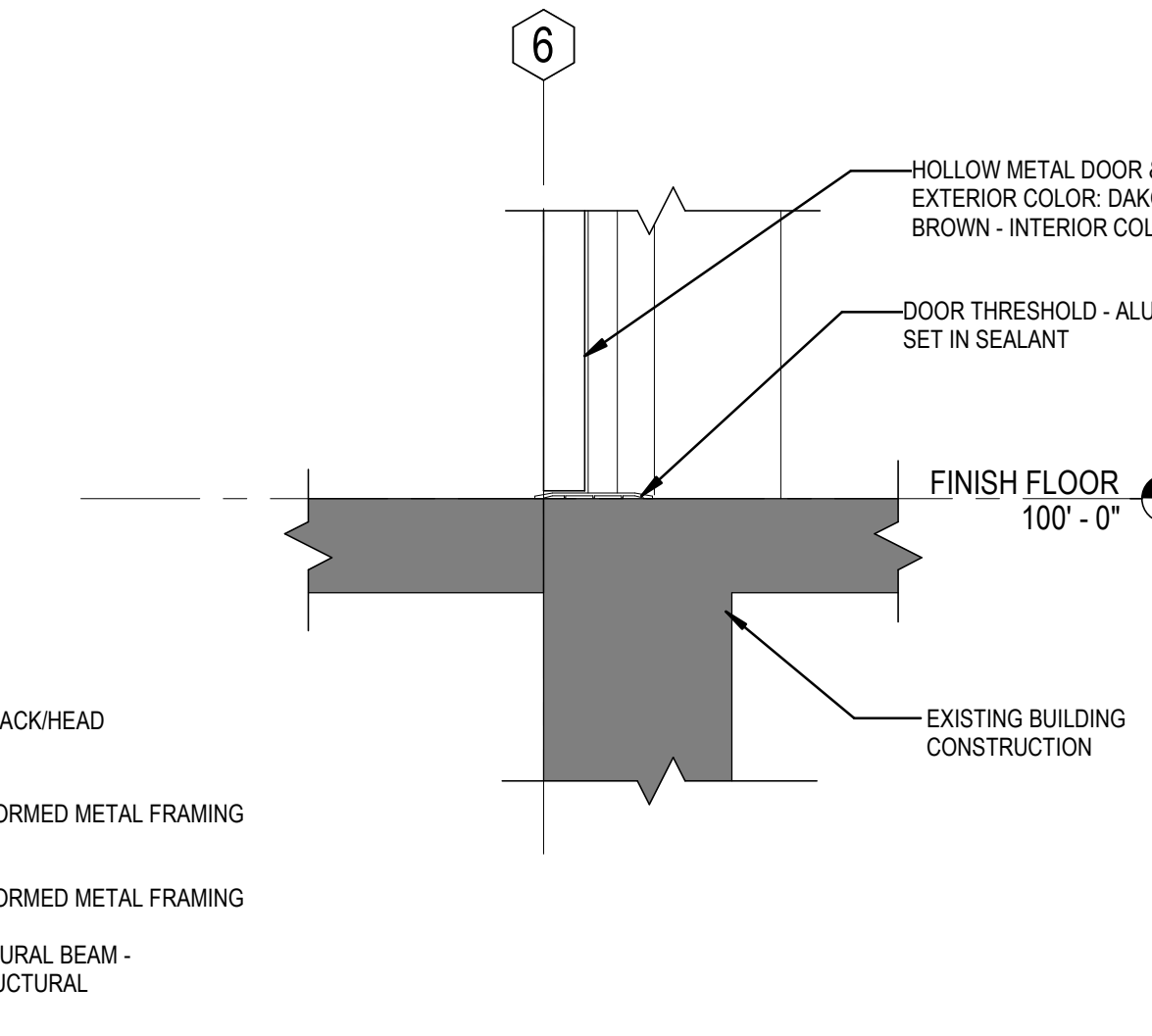
B3 HM DOOR HEAD
 1 1/2" = 1'-0"



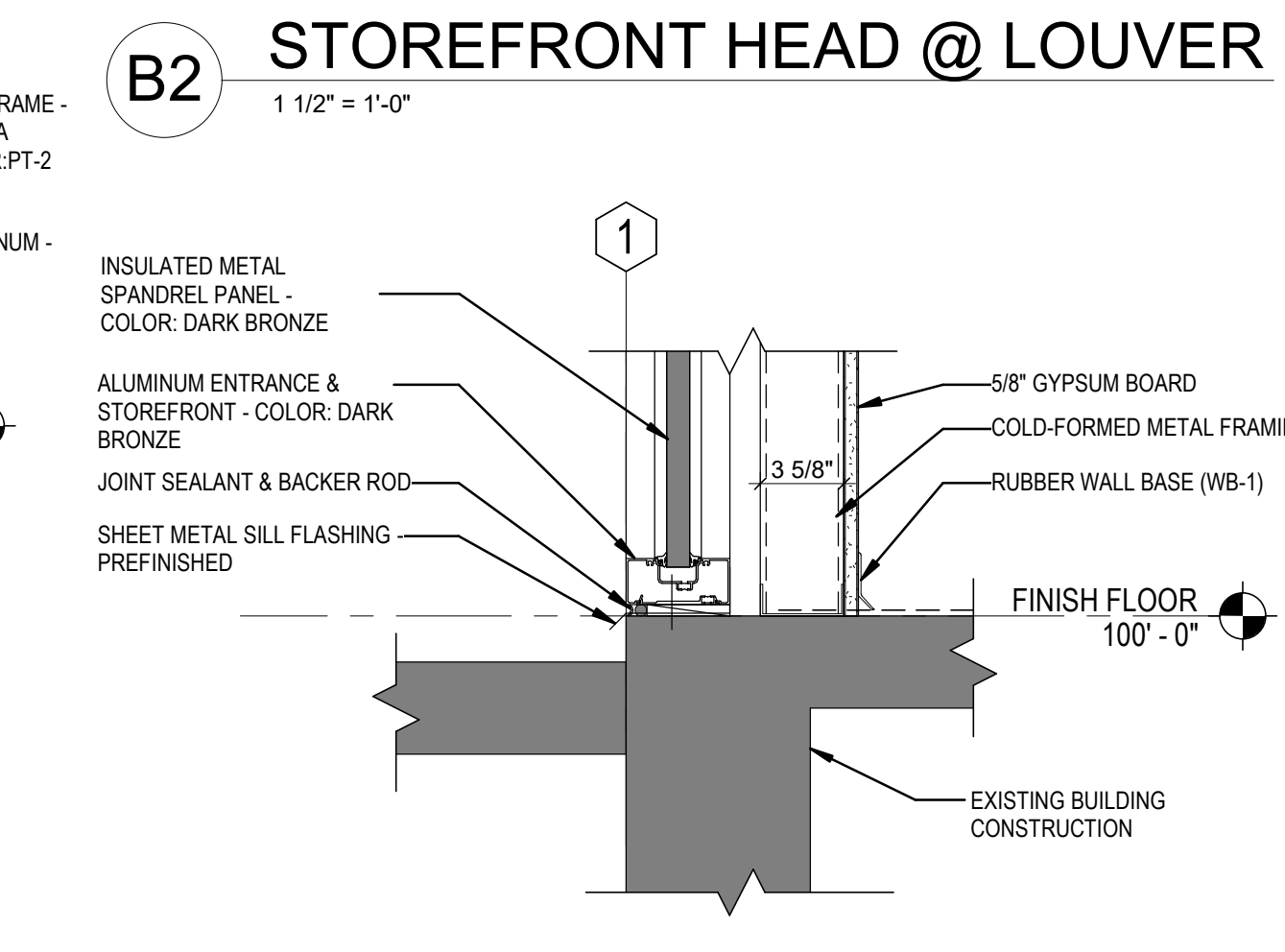
B2 STOREFRONT HEAD @ LOUVER
 1 1/2" = 1'-0"



A4 GUTTER
 1 1/2" = 1'-0"



A3 HM DOOR THRESHOLD
 1 1/2" = 1'-0"



A2 STOREFRONT SILL
 1 1/2" = 1'-0"

LWH TABLE 1-16

FOR NON-STRUCTURAL COMPOSITE PARTITIONS

STUD DEPTH	METAL THICKNESS	LIMITING WALL HEIGHT (LWH) FOR STUD SPACING @ 16 INCHES O.C.	
		LWH @ 5 PSF @ L240	LWH @ 5 PSF @ L360
		PAINTED WALLS (SEE LWH TABLE NOTE 1)	TILED WALLS (SEE LWH TABLE NOTE 2)
2-1/2"	18 MIL (25 GAGE)	11'-3"	9'-9"
	30 MIL (20 DW GAGE)	12'-0"	10'-6"
	33 MIL (20 ST GAGE)	12'-9"	11'-0"
	43 MIL (18 GAGE)	14'-9"	12'-9"
3-5/8"	18 MIL (25 GAGE)	14'-3"	12'-3"
	30 MIL (20 DW GAGE)	15'-6"	13'-6"
	33 MIL (20 ST GAGE)	16'-3"	14'-3"
	43 MIL (18 GAGE)	18'-0"	15'-6"
	54 MIL (16 GAGE)	19'-6"	17'-0"
6"	18 MIL (25 GAGE)	19'-9"	17'-9"
	30 MIL (20 DW GAGE)	23'-0"	20'-3"
	33 MIL (20 ST GAGE)	24'-6"	21'-3"
	43 MIL (18 GAGE)	28'-3"	24'-6"
	54 MIL (16 GAGE)	30'-0"	26'-0"
8"	43 MIL (18 GAGE)	34'-3"	30'-0"
	54 MIL (16 GAGE)	36'-6"	32'-0"
	68 MIL (14 GAGE)	39'-9"	34'-9"

LWH TABLE NOTES:
 1. USE "PAINTED WALLS" COLUMN FOR WALLS LEFT UNFINISHED, WALLS PAINTED, OR WALLS RECEIVING ADHERED TILE 4" IN GREATEST LENGTH OR WIDTH DIMENSION.
 2. USE "TILED WALLS" COLUMN FOR WALLS RECEIVING ADHERED TILE GREATER THAN 4" IN ANY LENGTH OR WIDTH DIMENSION.

LWH TABLE 1-16, NON STRUCTURAL, COMPOSITE

LWH TABLE 2-16

FOR NON-STRUCTURAL NON-COMPOSITE PARTITIONS

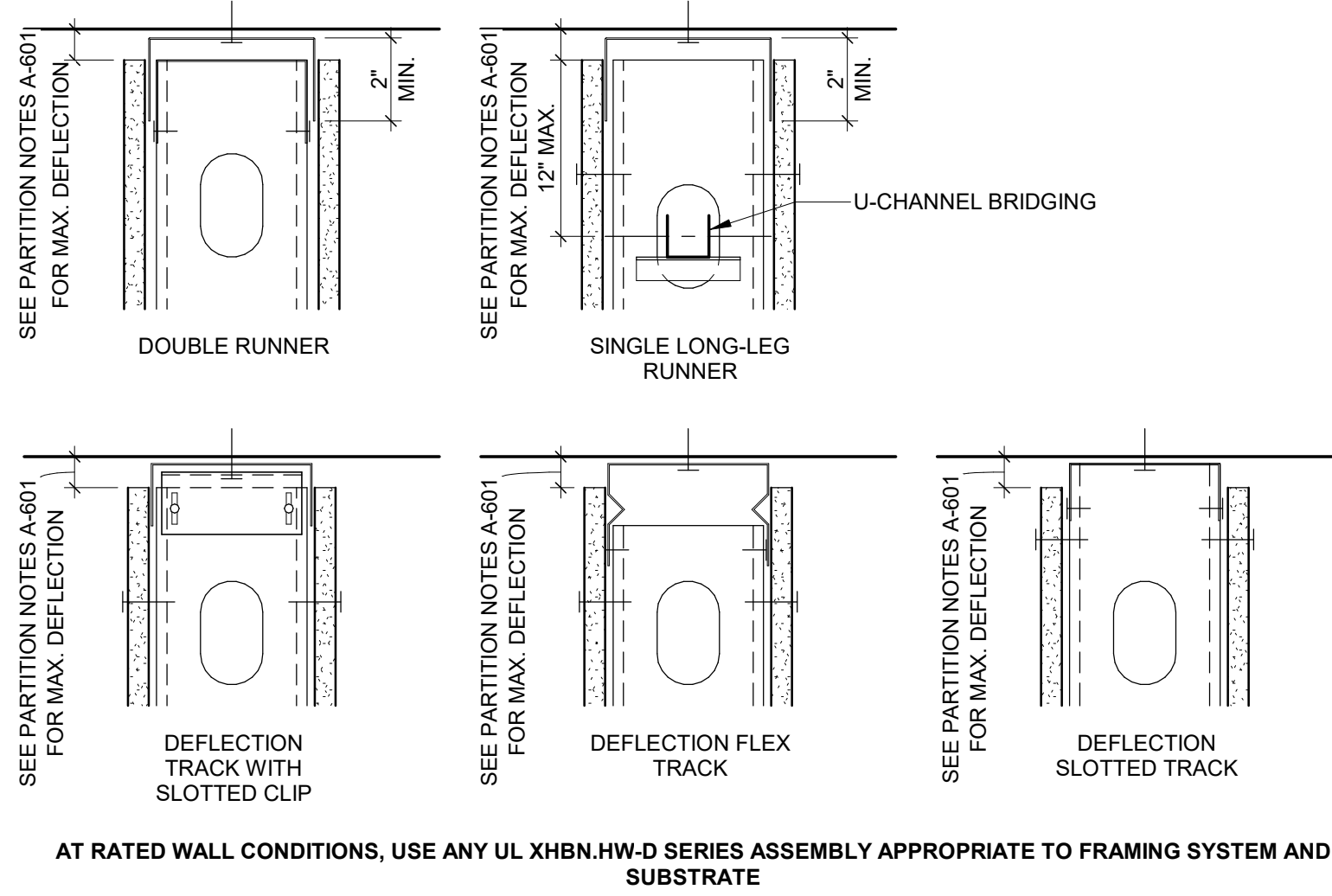
STUD DEPTH	METAL THICKNESS	LIMITING WALL HEIGHT (LWH) FOR STUD SPACING @ 16 INCHES O.C.	
		LWH @ 5 PSF @ L240	LWH @ 5 PSF @ L360
		PAINTED WALLS (SEE LWH TABLE NOTE 1)	TILED WALLS (SEE LWH TABLE NOTE 2)
2-1/2"	18 MIL (25 GAGE)	9'-6"	8'-3"
	27 MIL (22 GAGE)	11'-0"	9'-9"
	30 MIL (20 DW GAGE)	11'-6"	10'-0"
	33 MIL (20 ST GAGE)	11'-9"	10'-3"
	43 MIL (18 GAGE)	13'-0"	11'-3"
3-5/8"	18 MIL (25 GAGE)	12'-3"	10'-9"
	27 MIL (22 GAGE)	14'-6"	12'-6"
	30 MIL (20 DW GAGE)	15'-0"	13'-0"
	33 MIL (20 ST GAGE)	15'-6"	13'-6"
	43 MIL (18 GAGE)	16'-9"	14'-9"
6"	18 MIL (25 GAGE)	22'-3"	19'-6"
	30 MIL (20 DW GAGE)	23'-0"	20'-0"
	33 MIL (20 ST GAGE)	23'-9"	20'-9"
	43 MIL (18 GAGE)	26'-0"	22'-9"
	54 MIL (16 GAGE)	27'-9"	24'-3"
8"	43 MIL (18 GAGE)	33'-0"	28'-9"
	54 MIL (16 GAGE)	35'-6"	31'-0"
	68 MIL (14 GAGE)	38'-0"	33'-3"

LWH TABLE NOTES:
 1. USE "PAINTED WALLS" COLUMN FOR WALLS LEFT UNFINISHED, WALLS PAINTED, OR WALLS RECEIVING ADHERED TILE 4" IN GREATEST LENGTH OR WIDTH DIMENSION.
 2. USE "TILED WALLS" COLUMN FOR WALLS RECEIVING ADHERED TILE GREATER THAN 4" IN ANY LENGTH OR WIDTH DIMENSION.

LWH TABLE 2-16, NON STRUCTURAL, NON-COMPOSITE

PARTITIONS - LIMITING WALL HEIGHT AND TEST REFERENCES

PARTITION TYPE	FIRE TEST REFERENCE	SOUND TEST REFERENCE	SSMA STUD TYPE	LWH TABLE
S053	N/A	N/A	-	2-16
S054	N/A	N/A	-	2-16
S055	N/A	N/A	-	2-16
S254	N/A	N/A	-	2-16
S255	N/A	N/A	-	2-16



SLIP-TYPE HEAD JOINTS

3" = 1'-0"

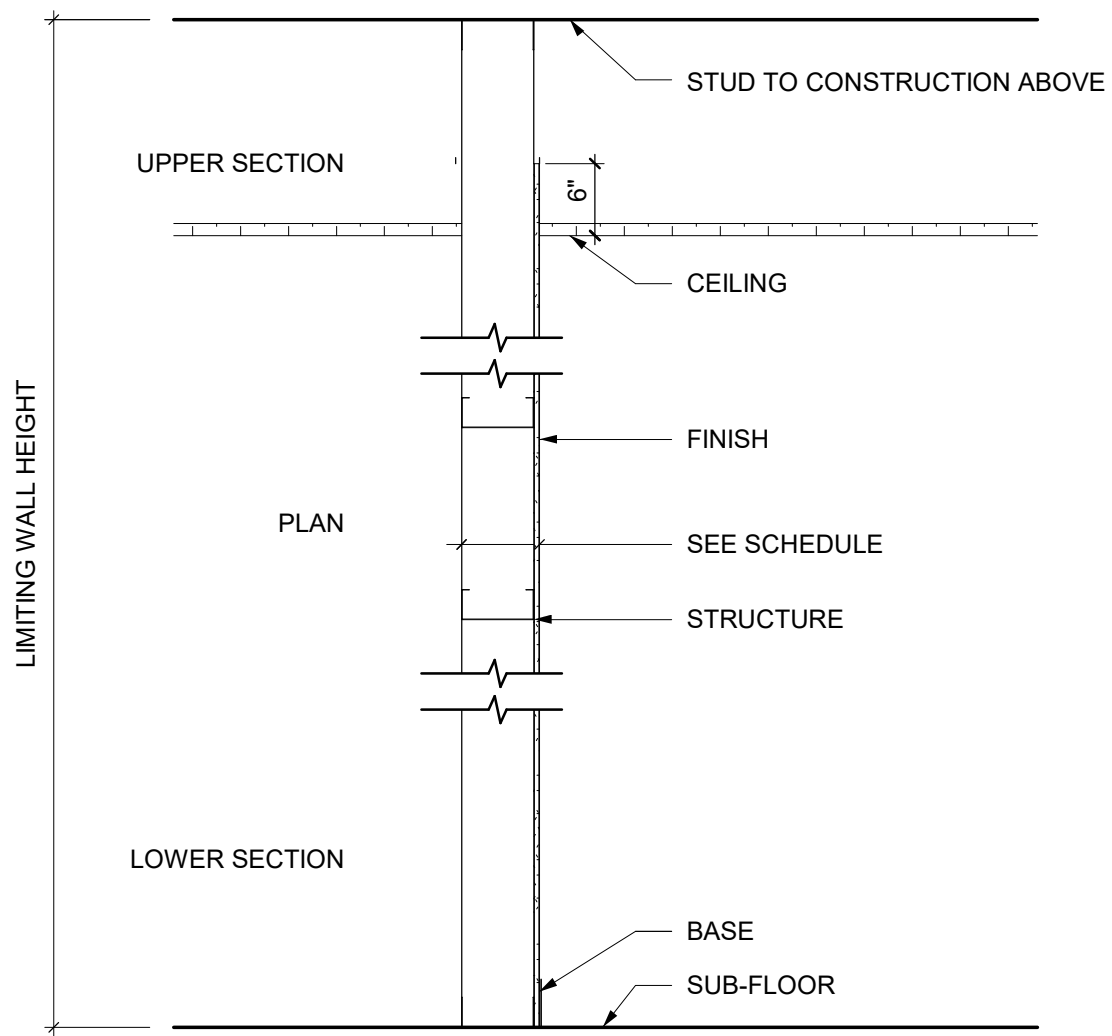


DIAGRAM S03

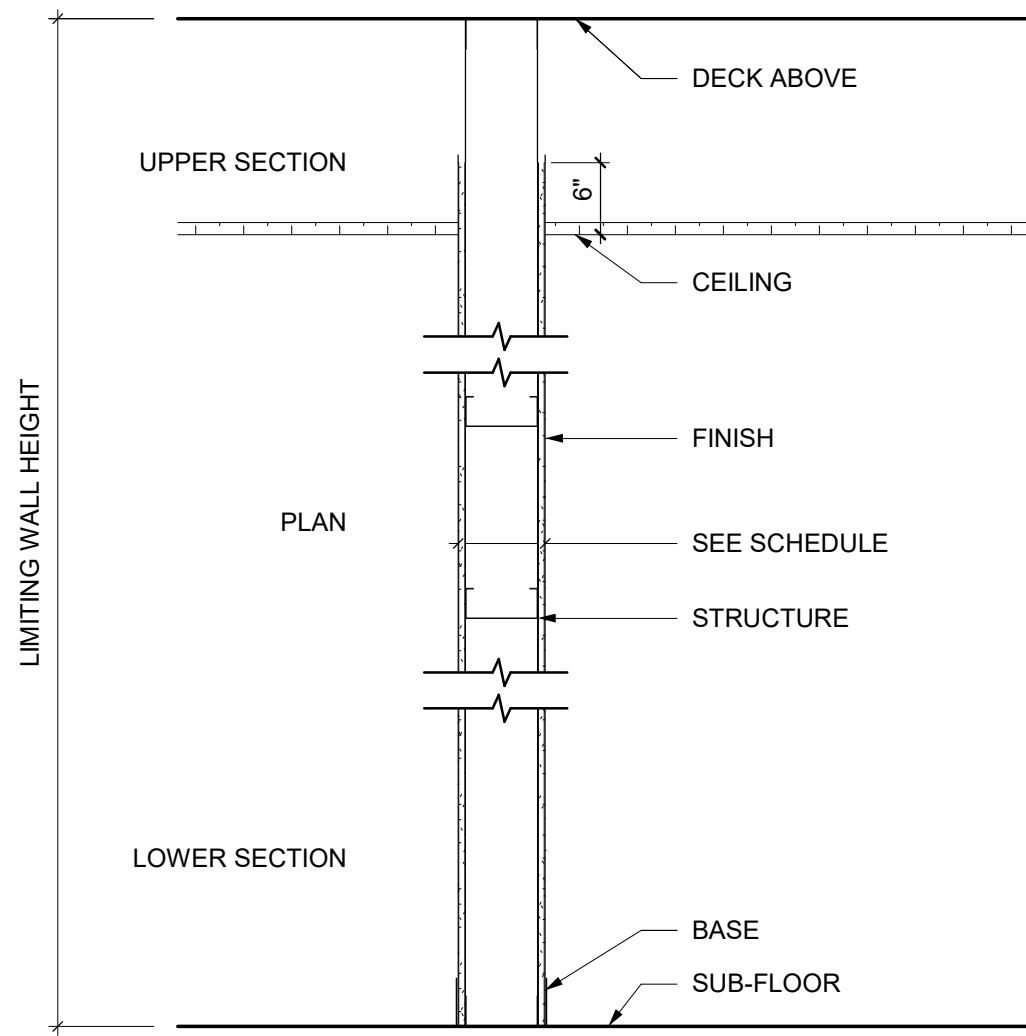


DIAGRAM S13

PARTITION SCHEDULE - DIAGRAM S03 (STANDARD)						
PARTITION TYPE	DESCRIPTION	STUD DEPTH	OVERALL WIDTH	STUD SPACING	HEAD OF WALL	STC RATING
	STL STUD SGL LVR 5/8" GYP BD (X)	2 1/2"	5/8"	16"	6" ABOVE CEILING	N/A
	STL STUD SGL LVR 5/8" GYP BD (X)	2 1/2"	4 1/2"	16"	6" ABOVE CEILING	N/A
S053	STL STUD SGL LVR 5/8" GYP BD (X)	2 1/2"	3 1/8"	16"	6" ABOVE CEILING	N/A
S054	STL STUD SGL LVR 5/8" GYP BD (X)	3 5/8"	4 1/4"	16"	6" ABOVE CEILING	N/A
S055	STL STUD SGL LVR 5/8" GYP BD (X)	6"	6 5/8"	16"	6" ABOVE CEILING	N/A

PARTITION SCHEDULE - DIAGRAM S13 (STANDARD)						
PARTITION TYPE	DESCRIPTION	STUD DEPTH	OVERALL WIDTH	STUD SPACING	HEAD OF WALL	STC RATING
S254	SGL LVR 5/8" GYP BD (X) STL STUD SGL LVR 5/8" GYP BD (X)	3 5/8"	4 7/8"	16"	6" ABOVE CEILING	N/A
S255	SGL LVR 5/8" GYP BD (X) STL STUD SGL LVR 5/8" GYP BD (X)	6"	7 1/4"	16"	6" ABOVE CEILING	N/A

* NOTE: ANY SPACE WITH NO CEILING (OPEN TO STRUCTURE) HEAD OF WALL AND GYPSUM BOARD TO EXTEND TO DECK.



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DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		



DESIGNED BY	CHECKED BY
DESIGNER: BEVERLY LANGLIE	CHECKER: BEVERLY LANGLIE
DATE: 07/15/2020	DATE: 07/15/2020

ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 PARTITION TYPES

A601
 Sheet: 47 of 94

DOOR SCHEDULE

Phase Created	Door		Room Name	Door								Frame			Opening		Comments					
	HDWR Set	No.		Clear Dim.		No. of Panels	Panel Widths		Thickness	Type	Mat'l	Finish	Security Set	Type	Mat'l	Finish		Details			Fire Label	Glaz
				Width	Height		Panel 1 Width	Panel 2 Width										Head	Jamb	Sill		
New Construction	2	130A	ENTRY	6'-0"	7'-0"	2	3'-0"	3'-0"	1 3/4"	ASF	ALUM.	PREFINISHED		F1	ALUM.	PREFINISHED	B4/A522	A3/A511	A4/A522	-	-	EXTERIOR DOOR JAMBS TO HAVE TWO (2) 6" 16 GA. STUD METAL FRAMING.
New Construction	3	130B	ENTRY	6'-0"	7'-0"	2	3'-0"	3'-0"	1 3/4"	FG	HM	PAINT	CARD READER	F1	HM	PAINT	A2/A611 SIM.	A2/A511	-	-	EXTERIOR DOOR JAMBS TO HAVE TWO (2) 6" 16 GA. STUD METAL FRAMING. PROVIDE MUD BOX IN FRAME FOR CARD READER.	
New Construction	4	131	MOBILITY STORAGE SHOP	6'-0"	7'-0"	2	3'-0"	3'-0"	1 3/4"	F	HM	PAINT	CARD READER	F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-	EXTERIOR DOOR JAMBS TO HAVE TWO (2) 6" 16 GA. STUD METAL FRAMING. PROVIDE MUD BOX IN FRAME FOR CARD READER.	
New Construction	5	132	STORAGE	6'-0"	7'-0"	2	3'-0"	3'-0"	1 3/4"	F	HM	PAINT		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	6	135	ASSEMBLY	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED	CARD READER	F1	HM	PAINT	B3/A522	C3/A511	A3/A522	-	-	EXTERIOR DOOR JAMBS TO HAVE TWO (2) 6" 16 GA. STUD METAL FRAMING. PROVIDE MUD BOX IN FRAME FOR CARD READER.
New Construction	7	137	WOMEN	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	1	138	JANITOR	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	7	139	MEN	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	8	140A	CONFERENCE	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	8	140B	CONFERENCE	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	9	141	Squadron Superintendent (Chief Master SGT)	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	9	142	ART - OPEN OFFICE	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	10	143	WATER ENTRY ROOM	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	HM	PAINT		F1	HM	PAINT	B3/A524 SIM.	A2/A512 SIM.	A3/A524 SIM.	-	-	
New Construction	9	144	Senior ART/Operations Superintendent Full time (Senior Master Sargent)	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	9	145	Squadron Commander (LT Colonel)	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	11	148	ELECTRICAL	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	12	149	COMM ROOM	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	9	150	OPERATION - FLIGHT COMMAND	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	9	151	Squadron First Sargent (Senior Master Sargent or Master Sargent)	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	9	152	HALLWAY	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	9	153	TRAINING ROOM	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		
New Construction	6	155	OPERATIONS - FLIGHT SHOPS	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	HM	PAINT	CARD READER	F1	HM	PAINT	B3/A524	A2/A512	A3/A524	-	-	EXTERIOR DOOR JAMBS TO HAVE TWO (2) 6" 16 GA. STUD METAL FRAMING. PROVIDE MUD BOX IN FRAME FOR CARD READER.
New Construction	13	156	WELLNESS	3'-0"	7'-0"	1	3'-0"	0'-0"	1 3/4"	F	WD	PREFINISHED		F1	HM	PAINT	A2/A611 SIM.	A2/A611	-	-		



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DOOR AND HARDWARE NOTES

- 1 ALL DOOR FRAMES TO MATCH HAFB STANDARDS. EXTERIOR TO BE PAINTED DAKOTA BROWN AND INTERIOR TO BE PAINTED PT-2 U.N.O.
- 2 ALL NEW DOORS TO RECEIVE HARDWARE. LEVERSET TO MATCH HAFB STANDARD. ALL HARDWARE TO BE ADA COMPLIANT.
- 3 KICK PLATES SHALL BE 8" HIGH, STAINLESS STEEL TO MATCH HAFB STANDARD FINISH AND SHALL BE APPLIED TO KICK SIDE OF DOOR U.N.O.
- 4 ALL LOCKSETS SHALL BE KEYPED TO THE BUILDING MASTER. COORDINATE REQUIREMENTS WITH CONTRACTING OFFICER TECHNICAL REPRESENTATIVE.



MARK	
APPR	
DATE	07/15/2020
DESCRIPTION	FINAL DESIGN 100%



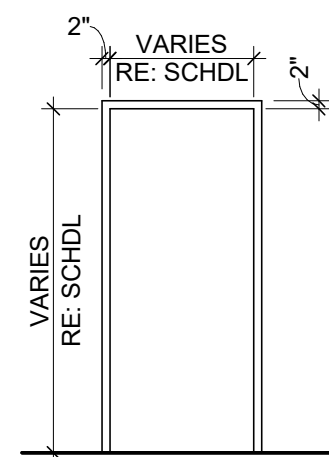
CHECKED BY	Designer	Checker
DESIGNED BY	1033268	DATE: 07/15/2020
DRAWN BY	DATE: 07/15/2020	BASE PROJECT MANAGER
		BEVERLY LANGUE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
DOOR SCHEDULE

A611
Sheet: 48 of 94

DOOR FRAME TYPES

NOTE: REFER TO DOOR SCHEDULES FOR FRAME HEIGHTS AND WIDTHS

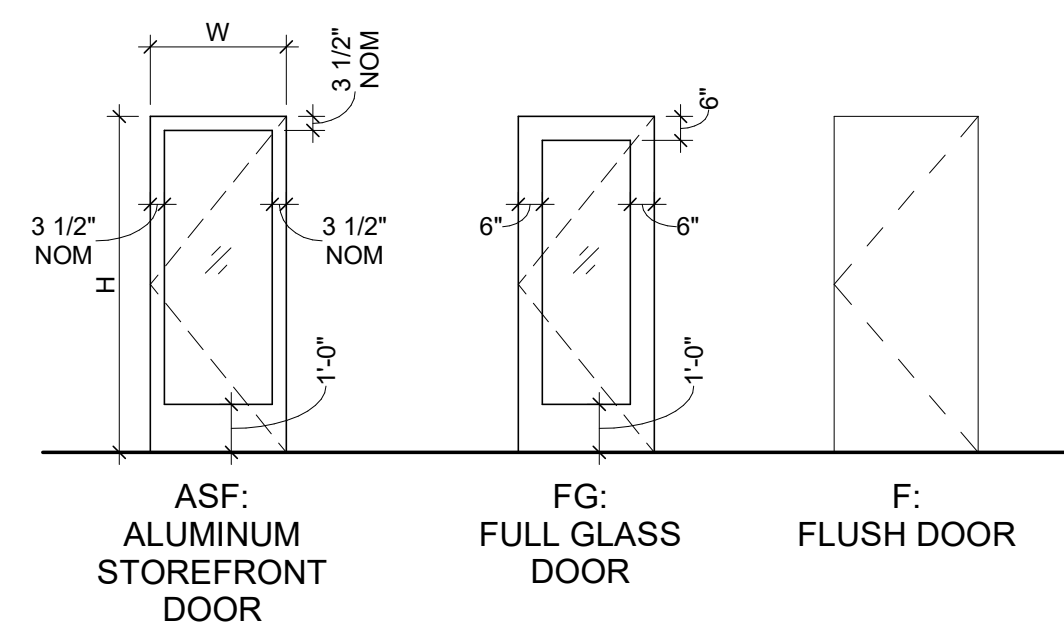


FRAME TYPE: F1

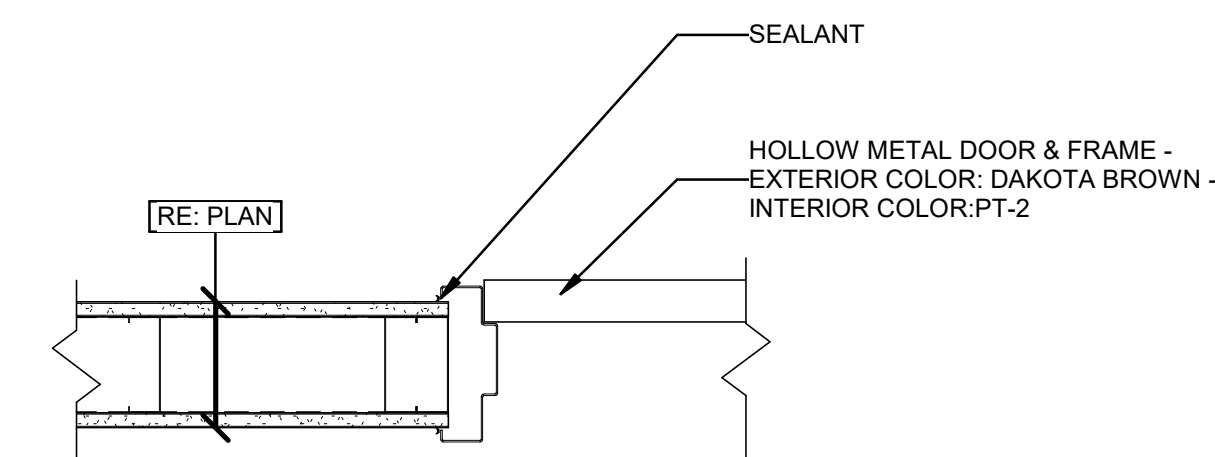
NOTE: ENSURE THE DOOR FRAMES ARE MATCHING MUD BOX AND VINDICATOR DETAILS ADJACENT. THE DOOR FRAMES NEED TO FOLLOW FOR THE VINDICATOR. ALL DOOR FRAMES MUST COME FROM THE MANUFACTURE PRE-CUT WITH A MUD BOX. NEW DOOR FRAMES CANNOT BE MODIFIED. ANY FRAME THAT DOES NOT COME PRE-CUT FOR THE STRIKE WITH A MUD BOX FROM THE MANUFACTURE WILL NOT BE ACCEPTABLE TO INCLUDE 1/2" RACEWAY FROM THE MUD BOX TO ABOVE THE CEILING.

DOOR PANEL TYPES

NOTE: REFER TO DOOR SCHEDULES FOR DOOR HEIGHTS AND WIDTHS

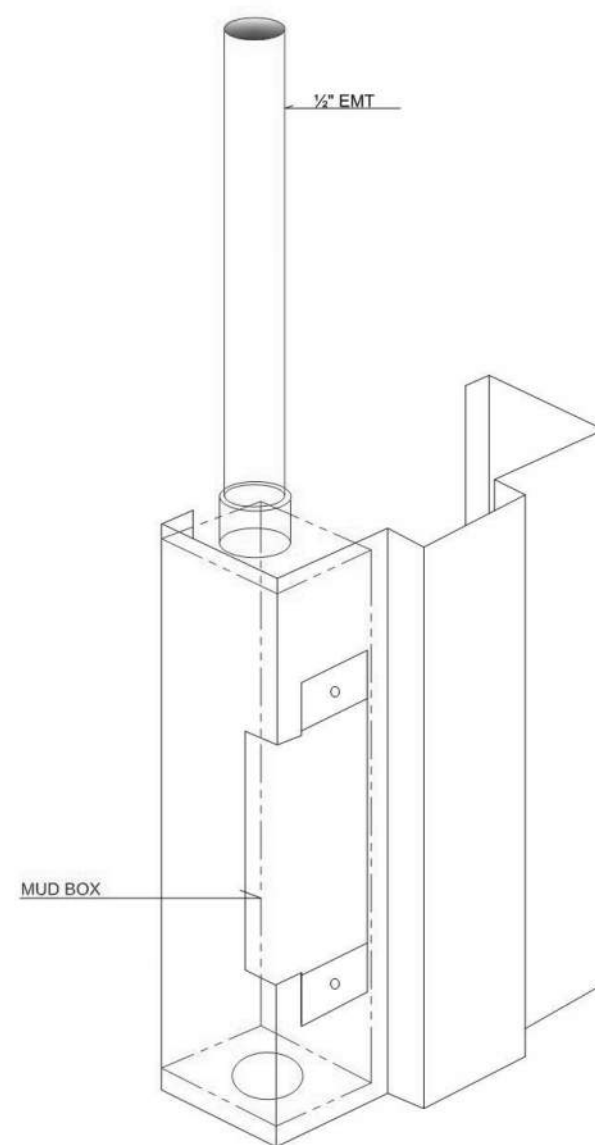
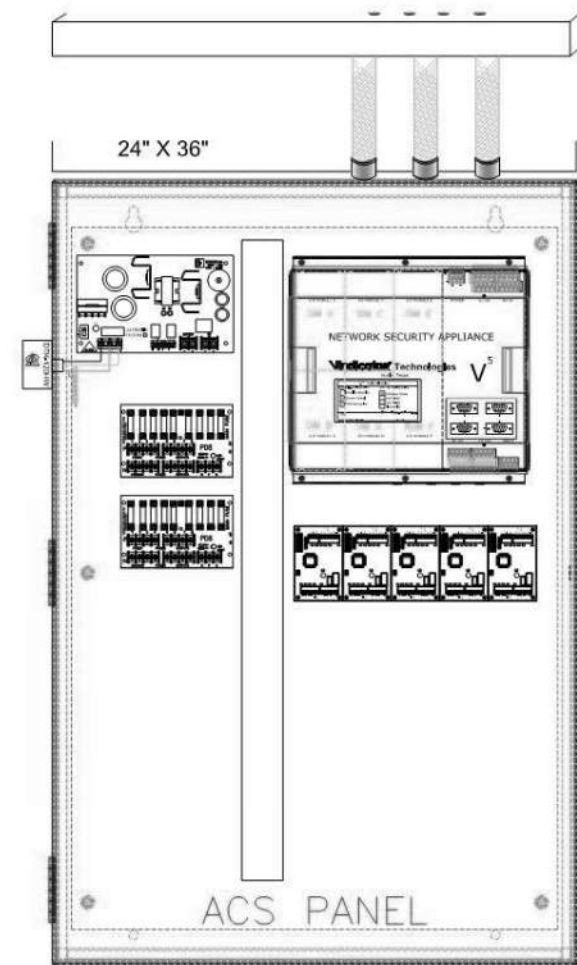


ASF: ALUMINUM STOREFRONT DOOR
FG: FULL GLASS DOOR
F: FLUSH DOOR



A2 HM DOOR JAMB
1 1/2" = 1'-0"

QTY.	ACCESS CONTROL SYSTEM:
1	IDS PANEL: 24" X 36" CUSTOM ENCLOSURE OLS180/PD8/18AH_BAT. PART NUMBER: 550-33731-03
1	V5 NETWORK SECURITY SERVER PART NUMBER: 548-33300-10
1	POWER SUPPLY: 292-33801-01
1	12 VOLT 18AH_BAT
2	POWER DISTRIBUTION PD8: 29223219-00
5	MR-50: 574-32658-02
5	HID CARD + PIN READER: 5455AGMOO
2	HES-9600 DOOR STRIKE
3	ADAMS RITE 7440-628
1	AE SAW 2 Standalone Client Workstation PART NUMBER: 548-51500-01 WITH PROTEUS CABLE
1	DITEK DKT-120HW SURGE PROTECTOR



WINDOW SCHEDULE														
Phase Created	NUMBER	FRAME					DETAIL			Fire Rating	GLAZING TYPE	COMMENTS	MAX U-FACTOR	MAX SHGC
		Width	SILL HEIGHT	HEIGHT	MAT'L	COLOR	HEAD	JAMB	SILL					
Existing														
Existing	X106D	2'-6"	0"	10' - 0"	ALUM.	DARK BRONZE					SEE ELEVATION	VISION PANEL TO RECIEVE PRIVACY FILM		
Existing	X106E	2'-6"	0"	10' - 0"	ALUM.	DARK BRONZE					SEE ELEVATION	VISION PANEL TO RECIEVE PRIVACY FILM		
Existing	X107B	2'-6"	0"	10' - 0"	ALUM.	DARK BRONZE					SEE ELEVATION	VISION PANEL TO RECIEVE PRIVACY FILM		
Existing	X107C	2'-6"	0"	10' - 0"	ALUM.	DARK BRONZE					SEE ELEVATION	VISION PANEL TO RECIEVE PRIVACY FILM		
New Construction														
New Construction	130A	6'-4 1/8"	10' - 6"	12' - 0 23/32"	ALUM.	DARK BRONZE	C4/A522	B4 & C4/A511 SIM.	B4/A522		SEE ELEVATION	EXTERIOR WINDOW JAMBS TO HAVE TWO (2) 4" 16 GA. STUD METAL FRAMING.	0.42	0.46
New Construction	135A	2'-6"	-1 1/2"	10' - 0"	ALUM.	DARK BRONZE	B2/A523	C2/A511	A2/A523		SEE ELEVATION	EXTERIOR WINDOW JAMBS TO HAVE TWO (2) 4" 16 GA. STUD METAL FRAMING.	0.42	0.46
New Construction	135B	2'-6"	-1 1/2"	10' - 0"	ALUM.	DARK BRONZE	B2/A523	C2/A511	A2/A523		SEE ELEVATION	EXTERIOR WINDOW JAMBS TO HAVE TWO (2) 4" 16 GA. STUD METAL FRAMING.	0.42	0.46
New Construction	135C	2'-6"	-1 1/2"	10' - 0"	ALUM.	DARK BRONZE	B2/A523	C2/A511	A2/A523		SEE ELEVATION	EXTERIOR WINDOW JAMBS TO HAVE TWO (2) 4" 16 GA. STUD METAL FRAMING.	0.42	0.46
New Construction	135D	2'-6"	-1 1/2"	10' - 0"	ALUM.	DARK BRONZE	B2/A523	C2/A511	A2/A523		SEE ELEVATION	EXTERIOR WINDOW JAMBS TO HAVE TWO (2) 4" 16 GA. STUD METAL FRAMING.	0.42	0.46
New Construction	135E	39'-10 3/8"	3' - 0"	5' - 0"	ALUM.	DARK BRONZE	B3/A523	B4 & C4/A511	A3/A523		SEE ELEVATION	EXTERIOR WINDOW JAMBS TO HAVE TWO (2) 4" 16 GA. STUD METAL FRAMING.	0.42	0.46
New Construction	144A	2'-6"	0"	10' - 6"	ALUM.	DARK BRONZE	B2/A524	A3/A512	A2/A524		SEE ELEVATION	EXTERIOR WINDOW JAMBS TO HAVE TWO (2) 4" 16 GA. STUD METAL FRAMING.	0.42	0.46
New Construction	144B	2'-6"	0"	10' - 6"	ALUM.	DARK BRONZE	B2/A524	A3/A512	A2/A524		SEE ELEVATION	EXTERIOR WINDOW JAMBS TO HAVE TWO (2) 4" 16 GA. STUD METAL FRAMING.	0.42	0.46



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DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN 100%	07/15/2020		

WINDOW NOTES

- 1 ALL DIMENSIONS TO BE VERIFIED IN FIELD PRIOR TO FABRICATION.

GLAZING SCHEDULE

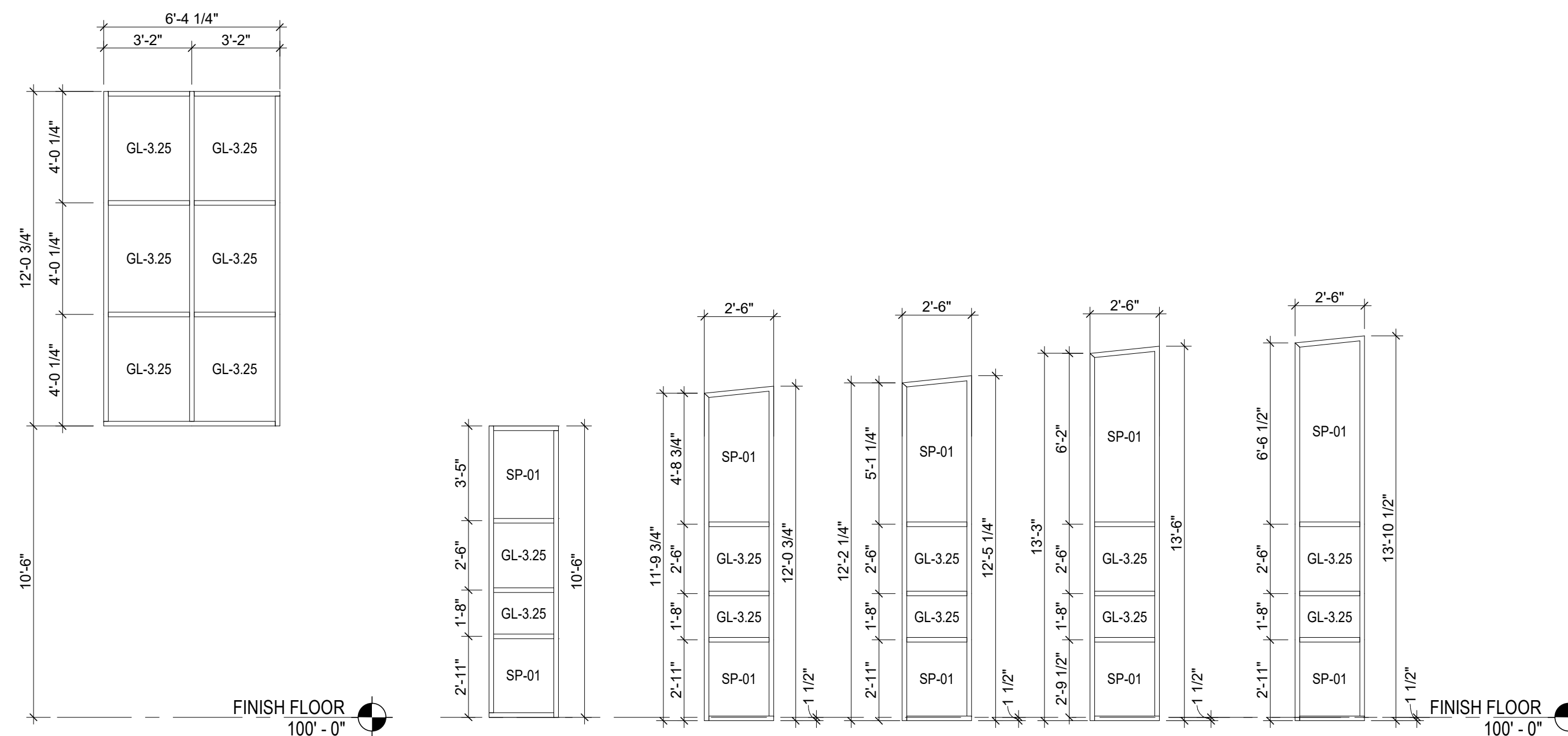
GL-3.25	LOW-E-COATED CLEAR INSULATING GLAZING, 1" O.A. THICKNESS - 1/4 IN. LAMINATED GLASS CONSISTING OF TWO NOMINAL 1/8 IN. GLASS PANEES BONDED TOGETHER WITH A MINIMUM OF A 0.030 IN. INTERLAYER OF A MATERIAL DESIGNED FOR BLAST RESISTANCE
SP-01	INSULATED METAL SPANDREL PANELS, 1" O.A. THICK. - COLOR: DARK BRONZE



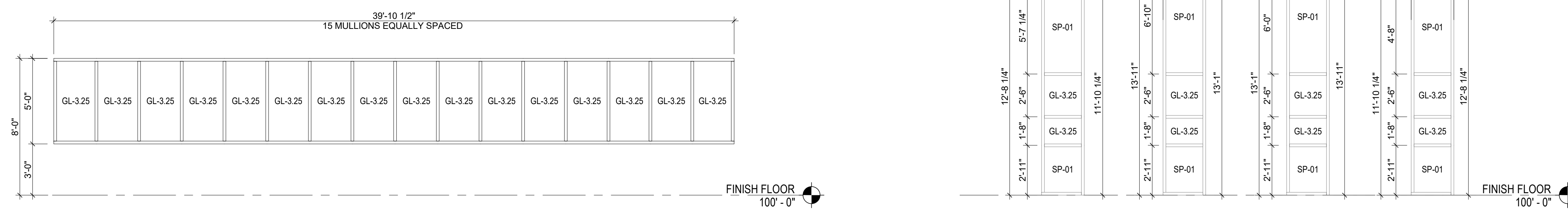
DESIGNED BY	CHECKED BY
DESIGNER	CHECKER
DATE	DATE
PROJECT NO.	PROJECT NO.
PROJECT NAME	PROJECT NAME
PROJECT MANAGER	PROJECT MANAGER

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
GLAZING SCHEDULE

A621
Sheet: 49 of 94



130A 1/4" = 1'-0"
144A & B 1/4" = 1'-0"
135A 1/4" = 1'-0"
135B 1/4" = 1'-0"
135C 1/4" = 1'-0"
135D 1/4" = 1'-0"



135E 1/4" = 1'-0"
X106D 1/4" = 1'-0"
X106E 1/4" = 1'-0"
X107B 1/4" = 1'-0"
X107C 1/4" = 1'-0"

ROOM FINISH SCHEDULE															
NO	NAME	FLOOR			WALLS								CEILING		REMARKS
		FINISH	SUBSTRATE	BASE	NORTH		SOUTH		EAST		WEST		FINISH	SUBSTRATE	
					FINISH	SUBSTRATE	FINISH	SUBSTRATE	FINISH	SUBSTRATE	FINISH	SUBSTRATE			
FINISH FLOOR															
130	ENTRY	SEALED	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
131	HALLWAY	LVT	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
132	STORAGE	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
133	RECEPTION	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	-	-	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
134	WAITING	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	-	-	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
135	ASSEMBLY	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
136	BREAK ROOM	TILE	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
137	WOMEN	TILE	CONCRETE	SCHLUTER	TILE	GYP SUM	TILE	GYP SUM	TILE	GYP SUM	TILE	GYP SUM	PAINT	GYP SUM	
138	JANITOR	SEALED	CONCRETE	SCHLUTER	FRP	GYP SUM	FRP	GYP SUM	FRP	GYP SUM	FRP	GYP SUM	PAINT	GYP SUM	
139	MEN	TILE	CONCRETE	SCHLUTER	TILE	GYP SUM	TILE	GYP SUM	TILE	GYP SUM	TILE	GYP SUM	PAINT	GYP SUM	
140	CONFERENCE	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
141	Squadron Superintendent (Chief Master SGT)	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
142	ART - OPEN OFFICE	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
143	WATER ENTRY ROOM	SEALED	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
144	Senior ART/Operations Superintendent Full time (Senior Master Sargent)	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
145	Squadron Commander (LT Colonel)	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
146	HALLWAY	LVT	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
147	PRINT / COPY	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
148	ELECTRICAL	SEALED	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
149	COMM ROOM	SEALED	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
150	OPERATION - FLIGHT COMMAND	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
151	Squadron First Sargent (Senior Master Sargent or Master Sargent)	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
152	SUPERINTENDENTS	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
153	TRAINING ROOM	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
154	NCOIC's - OPEN OFFICE	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
155	OPERATIONS - FLIGHT SHOPS	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	
156	WELLNESS	CARPET	CONCRETE	RUBBER	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	PAINT	GYP SUM	



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DESCRIPTION	DATE	APPR	MARK
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FINISH LEGEND

CARPET (CPT-1) TILE

SEALED CONCRETE BUILDING AREA NOT IN CONTRACT (NIC) WITH EXCEPTED AREAS AS NOTED

LUXURY VINYL TILE (LVT)

METAL WALL PANEL
MP-1: MBCI - DESIGNER SERIES (CONSEALED FASTENER)
COLOR: WHITE
MP-2: MBCI - DESIGNER SERIES (CONSEALED FASTENER)
COLOR: YELLOW BEIGE (TO MATCH EXISTING FROM MANUFACTURERS FULL RANGE OF COLORS)
MP-3: MBCI - DESIGNER SERIES (CONSEALED FASTENER)
COLOR: DAKOTA BROWN

CARPET TILE
CPT-1: J + J FLOORING GROUP 18"X36"
COLOR: GENERATE EXCITEMENT (BLUE)

LUXURY VINYL TILE
LVT-1: J + J FLOORING GROUP 5MM 9" X 48" PLANK
TIMELESS - GIFT

FLOOR TILE
FT-1: CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE)
COLOR: CARBON

WALL BASE
WB-1: ROPPE (RUBBER BASE)
COLOR: BURNT UMBER
WB-2: SCHLUTER
DILEX COVE

PAINT
PT-1: COLOR: SW7757 HIGH REFLECTIVE WHITE
(NOTE: ALL PAINTED SURFACES TO BE PT-1 U.N.O.)
PT-2: COLOR: SW7671 ON THE ROCKS
(NOTE: ALL HOLLOW METAL FRAMES TO BE PAINTED PT-2 U.N.O.)
PT-3: COLOR: AF-530 LUCERNE

WALL TILE
WT-1: CROSSVILLE - AMELIA 12"X24" THIRD SET (CERAMIC TILE)
COLOR: MIST

FRP
FRP-1: TEXTURE: PEBBLE
COLOR: WHITE

WOOD DOORS
WD-1: MARSHFIELD-ALGOMA - ASPIRO SERIES
COLOR: RED OAK - PLAIN SLICED - CUSTOM COLOR 266347C

CASEWORK
CW-1: INTERIOR ARTS - PLASTIC LAMINATE
COLOR: 2023LIN ASH VEIL

COUNTERTOPS
SS-1: PENTAL QUARTZ
COLOR: BQ8710P ONDULATO POLISHED

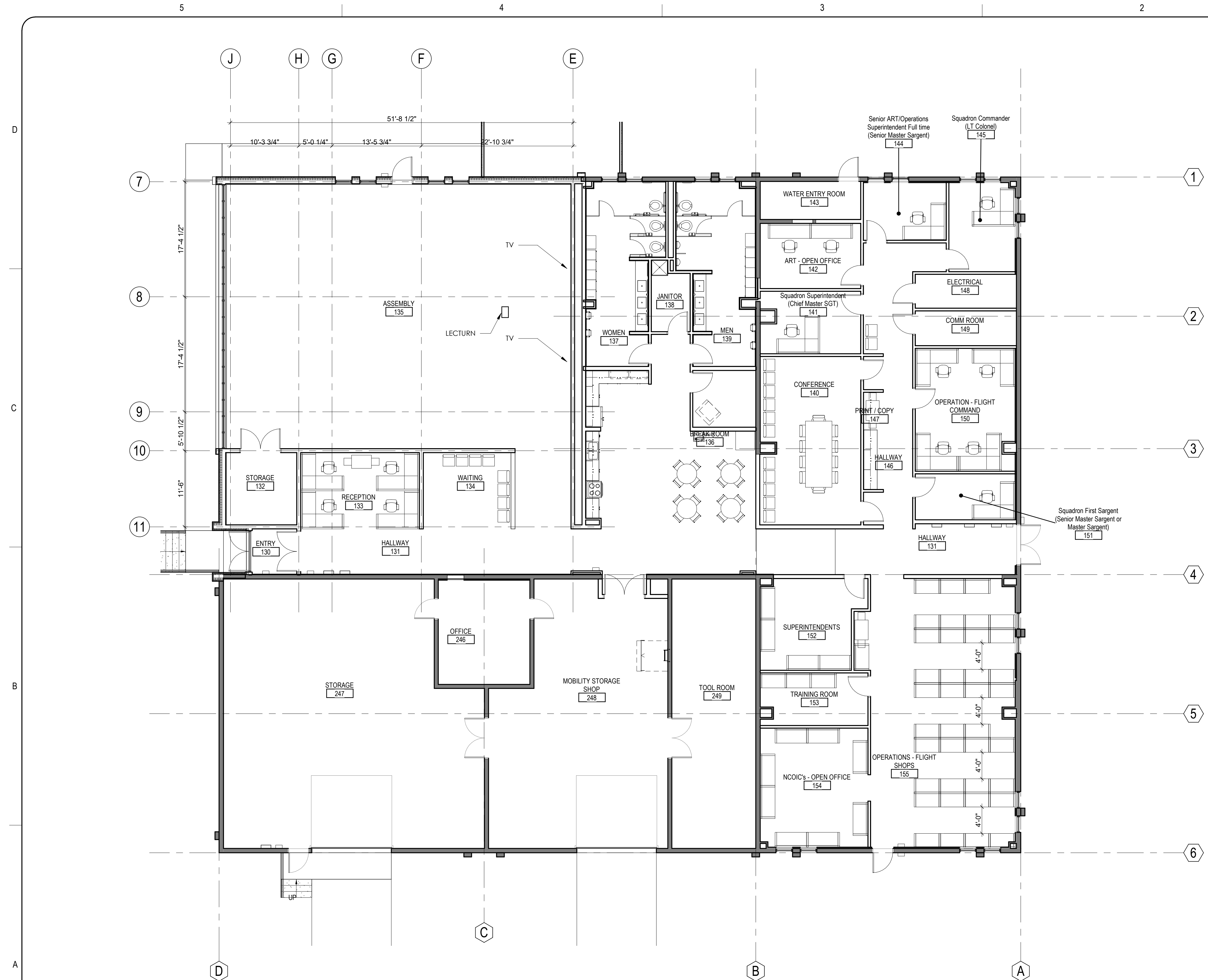
CEILINGS
ACT: ROCKFON - ARTIC
COLOR: WHITE



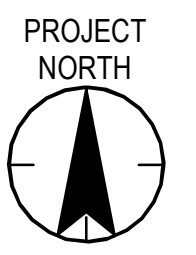
DESIGNED BY: Designer	CHECKED BY: Checker
DRAWING PROJECT NO: 1033268	SITE CODE:
LEGACY PROJECT NO:	DATE: 07/15/2020
DATE:	DATE:
BASE PROJECT MANAGER:	BEVERLY LANGLIE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
FINISH SCHEDULE

A631
Sheet: 50 of 94



A3 LEVEL 1 - FURNITURE PLAN
1/8" = 1'-0"



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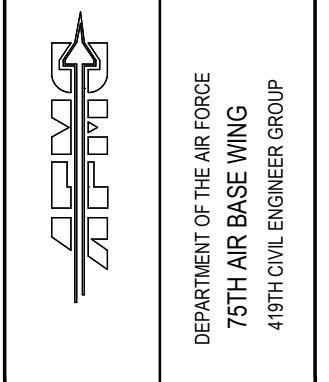
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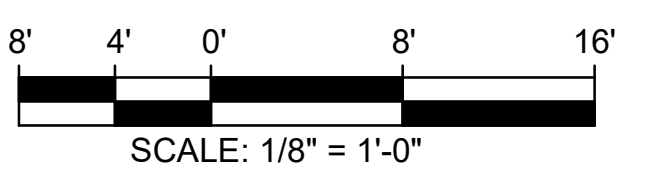


DESIGNED BY: Designer	CHECKED BY: Checker
DRAWING PROJECT NO: 1033268	SITE CODE:
LEGACY PROJECT NO:	DATE: 07/15/2020
SCALE:	BASE PROJECT MANAGER
	BEVERLY LANGLEY



ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
FURNITURE PLAN

IF101
Sheet: 51 of 94



File location in Project Information:
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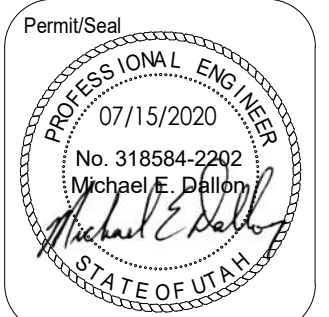


Table with columns: DESIGNED BY, CHECKED BY, DATE, PROJECT NO., LEGACY PROJECT NO., DATE, BASE PROJECT MANAGER, BEVERLY LANGUE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
MECHANICAL LEGEND, SYMBOLS & ABBREVIATIONS

M-001
Sheet: 52 of 94

MECHANICAL LEGEND

Main table for Mechanical Legend with columns for item name, symbol, and key name. Includes items like BURIED OR UNDERFLOOR DUCT, CHILLED WATER RETURN, TEMPERED WATER, etc.

ABBREVIATIONS

Table for Abbreviations with columns: Key Name, Comments. Includes items like AD ACCESS DOOR, AF AIRFOIL, AFF ABOVE FINISHED FLOOR, etc.

ABBREVIATIONS

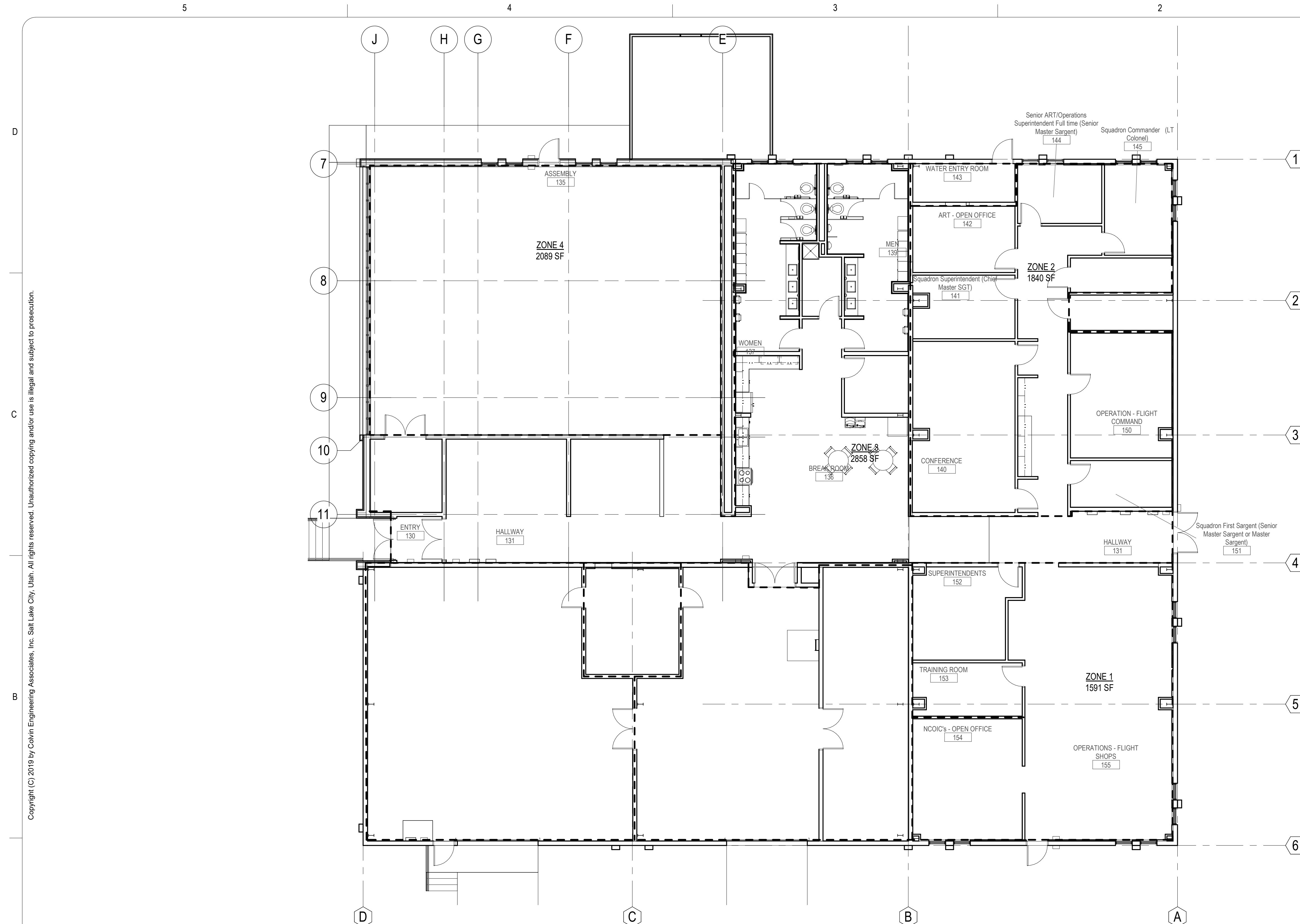
Table for Abbreviations with columns: Key Name, Comments. Includes items like MBH THOUSAND BRITISH THERMAL UNITS, MECH MECHANICAL, MIN MINIMUM, etc.

DRAWING INDEX - MECHANICAL

Table for Drawing Index with columns: #, SHEET NAME. Lists sheets M-001 through M-H602.

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4" x 6" location in Project Information
2/16/2020 10:57 AM
ORIGINAL SHEET - ANS D



1 MECHANICAL ZONE PLAN
 SCALE: 1/8" = 1'-0"
 0 4 8 16



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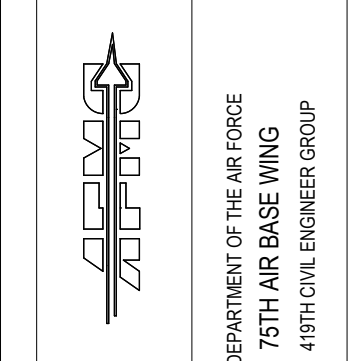
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MED	BRC
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LEGACY PROJECT NO.	DATE: 07/15/2020
ISSUE PROJECT MANAGER	BEVERLY LANGUE



DEPARTMENT OF THE AIR FORCE
 75TH AIR BASE WING
 419TH CIVIL ENGINEER GROUP

**ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 MECHANICAL ZONE PLAN**

M-002
 Sheet: 53 of 94

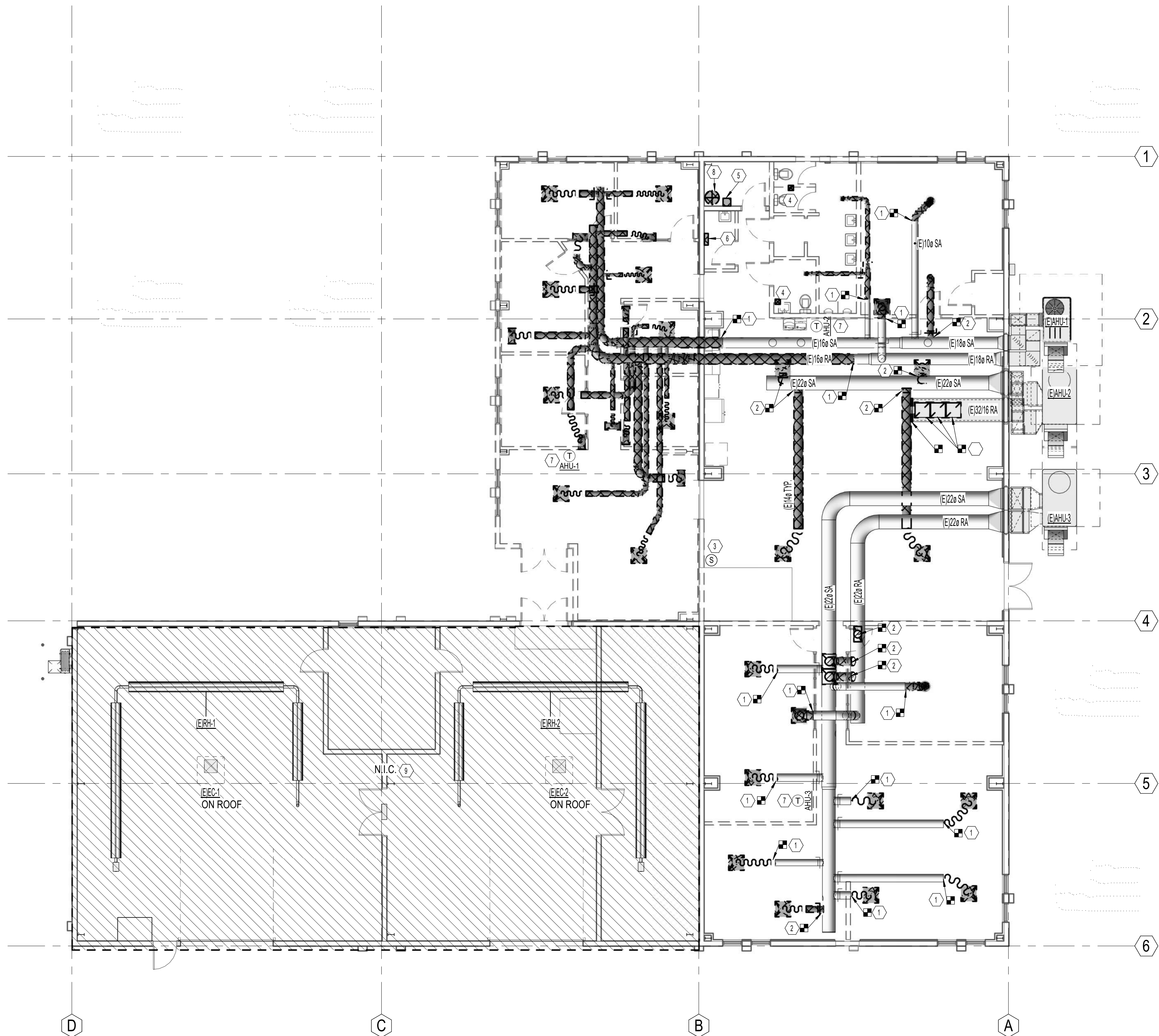
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ORIGINAL SHEET - ANS D



1 MECHANICAL DEMO PLAN
SCALE: 1/8" = 1'-0"
6 0' 4' 8' 16'



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- KEYED NOTES**
- 1 DEMO ALL DUCT, FITTINGS, AND DIFFUSERS DOWNSTREAM FROM THIS POINT.
 - 2 DEMO ALL DUCT, FITTINGS, AND DIFFUSERS DOWNSTREAM FROM THIS POINT. CAP, PATCH, AND SEAL AT MAIN.
 - 3 SALVAGE EXISTING EMERGENCY HVAC SHUTDOWN PULL SWITCH AND RELOCATE AS SHOWN ON MH101.
 - 4 DEMO EXISTING EXHAUST FAN, GRILLE, AND ANY ASSOCIATED DUCTWORK.
 - 5 EXISTING PRV STATION TO REMAIN.
 - 6 EXISTING DDC CONTROL PANEL TO BE RELOCATED AS SHOWN ON MH101.
 - 7 DEMOLISH EXISTING T-STAT.
 - 8 DEMOLISH EXISTING ELECTRIC WATER HEATER.
 - 9 HVAC EQUIPMENT AND DUCTWORK IN N.I.C. AREA SHOWN FOR REFERENCE ONLY.

- GENERAL NOTES**
- A. COORDINATE ALL DEMOLITION WITH ALL TRADES BEFORE STARTING ANY WORK.
 - B. EXISTING TO REMAIN DUCTWORK AND DIFFUSERS ARE SHOWN LIGHT AND WITH A THIN LINE. DEMOLITION DUCTWORK AND DIFFUSERS ARE SHOWN DARK WITH BOLD DASHED LINE. NEW DUCTWORK AND DIFFUSERS ARE SHOWN DARK AND WITH THICK LINE.

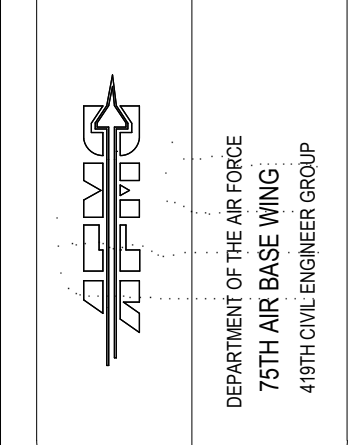


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DESCRIPTION
FINAL DESIGN 100%

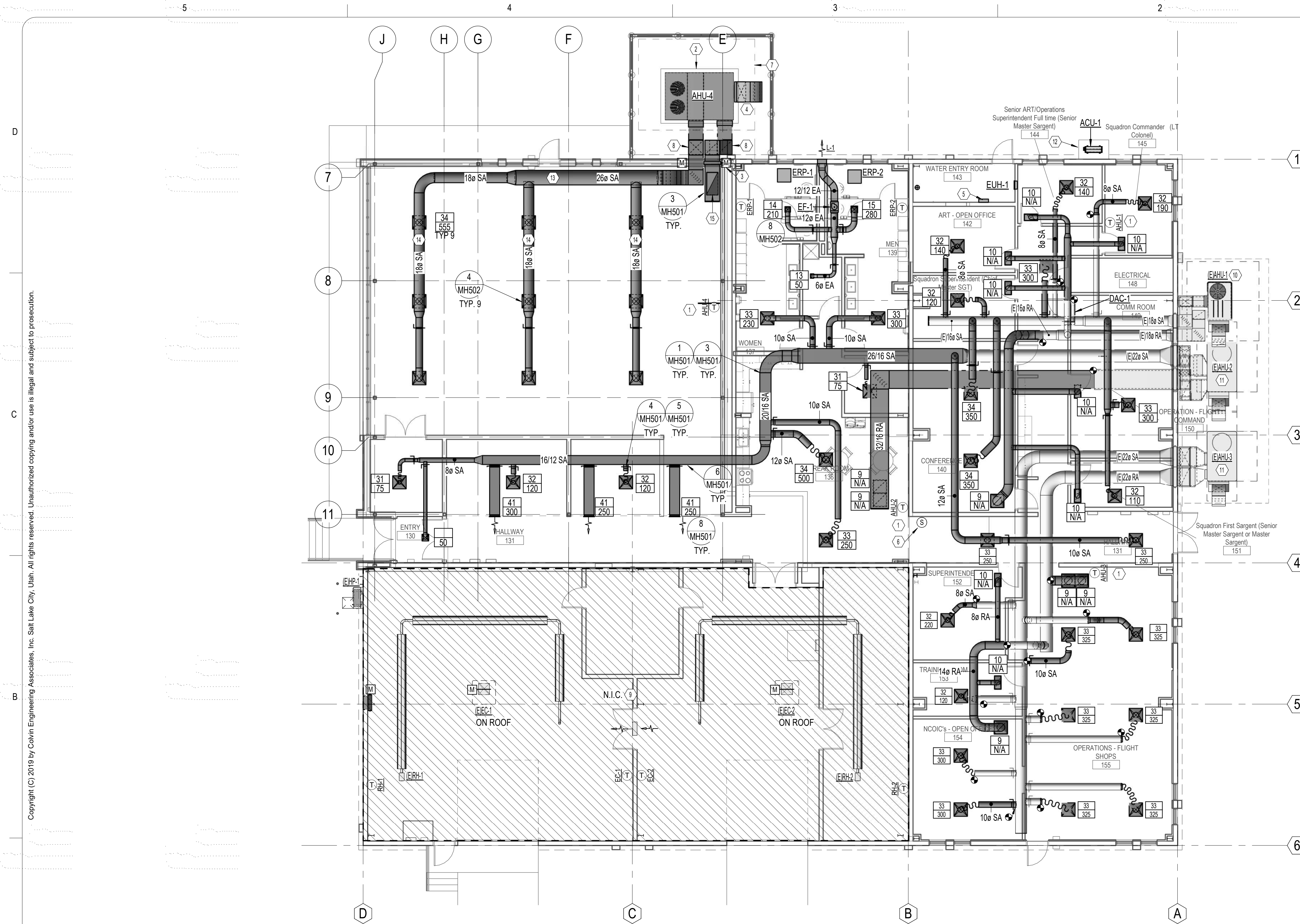


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CAPITAL PROJECT NO.	1033248	
LEGACY PROJECT NO.		
DATE		07/16/2020
BASE PROJECT MANAGER		BEVERLY LANGUE



**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
MECHANICAL DEMO PLAN**

MD101
Sheet: 54 of 94



1 MECHANICAL FLOOR PLAN
 SCALE: 1/8" = 1'-0"



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KEYED NOTES

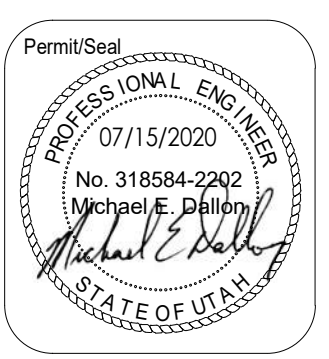
- 1 PROVIDE NEW T-STAT. COORDINATE LOCATION WITH ARCHITECTURAL AND FURNITURE.
- 2 INSTALL NEW UNIT ON CONCRETE PAD. PAD BY GENERAL CONTRACTOR. PROVIDE CONDENSATE DRAIN WITH P-TRAP ON DISCHARGE PER MANUFACTURER'S REQUIREMENTS.
- 3 PROVIDE LOW LEAKAGE DAMPER, MAXIMUM 3 CFM/SF WITH DIFFERENTIAL OF 1" WC PRESSURE. PROVIDE IN SUPPLY AND RETURN DUCT AT WALL PENETRATION. CONNECT TO EMERGENCY HVAC SHUTDOWN SWITCH.
- 4 36"x16" OUTSIDE AIR DUCT. CONNECT TO OUTSIDE AIR OPENING OF AIR HANDLER. ROUTE DUCT UP AND PROVIDE OPENING TO ATMOSPHERE. BOTTOM OF OUTSIDE AIR DUCT OPENING TO BE MINIMUM 10'-0" ABOVE GRADE. PROVIDE INSECT SCREEN AT OPENING. PROVIDE SUPPORTS AND ANCHOR DUCT AS REQUIRED. PROVIDE LOW LEAKAGE DAMPER AT UNIT.
- 5 RELOCATE SALVAGED DDC CONTROL PANEL TO THIS LOCATION. EXTEND ALL EXISTING WIRING TO ACCOMMODATE NEW LOCATION OF PANEL.
- 6 RELOCATE SALVAGED EMERGENCY HVAC SHUTDOWN PULL SWITCH TO THIS LOCATION.
- 7 SEE ARCHITECTURAL FOR EQUIPMENT ENCLOSURE. ENCLOSURE TO PROVIDE MFR REQUIRED CLEARANCE ON ALL SIDES.
- 8 PROVIDE WEATHERPROOF DUCT INSULATION PER SPECIFICATIONS FOR ALL EXPOSED EXTERIOR DUCT. STANDARD DUCT LINER NOT ALLOWED.
- 9 HVAC EQUIPMENT AND DUCTWORK IN N.I.C. AREA SHOWN FOR REFERENCE ONLY.
- 10 EXISTING 5 TON CURB MOUNTED ROOF TOP UNIT. CONTRACTOR TO BALANCE SUPPLY TO 2000 CFM AND SET OUTSIDE AIR MINIMUM TO 300 CFM.
- 11 EXISTING 7.5 TON CURB MOUNTED ROOF TOP UNIT. CONTRACTOR TO BALANCE SUPPLY TO 3000 CFM AND SET OUTSIDE AIR MINIMUM TO 450 CFM.
- 12 PROVIDE CONCRETE EQUIPMENT PAD AND MINIMUM 14" EQUIPMENT STAND FOR ACU-1. SECURE STAND TO CONCRETE PAD.
- 13 HOLD DUCT AS HIGH AS POSSIBLE AND MATCH SLOPE OF ROOF.
- 14 ROUTE DUCT THROUGH OPEN WEB JOIST. COORDINATE WITH STRUCTURAL AND OPENINGS IN JOIST.
- 15 PROVIDE 20X40 OPENING ON TOP OF RA DUCT.

GENERAL NOTES

- A. EXISTING TO REMAIN DUCTWORK AND DIFFUSERS IS SHOWN LIGHT AND WITH A THIN LINE. DEMOLITION DUCTWORK AND DIFFUSERS IS SHOWN DARK WITH BOLD DASHED LINE. NEW DUCTWORK AND DIFFUSERS IS SHOWN DARK AND WITH THICK LINE.
- B. COORDINATE ALL MECHANICAL EQUIPMENT, DUCTWORK, AND PIPE ROUTING AND LOCATION WITH ALL TRADES BEFORE STARTING ANY WORK.
- C. EXPOSED DUCT IS TO BE FLAT OVAL OR SPIRAL ROUND. THE DUCT IS TO BE CLEAN AND PAINTED. NO FLEXIBLE DUCT IN EXPOSED AREAS. ALL JOINTS TO BE SEALED WILL HAVE JOINT TAPPED OFF TO PROVIDE A NEAT AND CLEAN APPEARANCE. TO BE CLEAN AND READY FOR PAINT.
- D. ROUTE DUCTWORK AND PIPE AS HIGH AS POSSIBLE AT ALL TIMES. PROVIDE ALL NECESSARY FITTINGS AND TRANSITIONS TO MAXIMIZE SPACE BELOW DUCT.
- E. NO FLEX DUCT ABOVE HARD CEILINGS OR EXPOSED.
- F. INSTALL ALL MECHANICAL SYSTEMS PER MANUFACTURER'S RECOMMENDATIONS.
- G. ALL EQUIPMENT AND ACCESS AREAS TO BE INSTALLED TO BE FULLY ACCESSIBLE FOR MAINTENANCE.
- H. ALL NEW CONTROLS TO MATCH EXISTING BUILDING CONTROLS.
- I. ALL DUCT TO BE EXTERNALLY INSULATED UNLESS OTHERWISE NOTED IN COMPLIANCE WITH UFC 3-410-01.
- J. CONDENSATE PIPE IS SHOWN ON THE PLUMBING SHEETS.
- K. RUNOUT TO DIFFUSERS TO BE SAME SIZE AS DUCT CONNECTION UNLESS OTHERWISE NOTED.



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DESCRIPTION	FINAL DESIGN 100%	



DESIGNED BY	MEED	DATE	07/16/2020
CHECKED BY	BRC	DATE	07/16/2020
PROJECT NO.	1033248	PROJECT NAME	ADDITION/RENOVATION RESERVE CIVIL ENGINEER FACILITY - BLDG. 591
PROJECT MANAGER	BEVERLY LANGUE		

ADDITION/RENOVATION RESERVE CIVIL ENGINEER FACILITY - BLDG. 591
MECHANICAL FLOOR PLAN

MH101
 Sheet: 55 of 94

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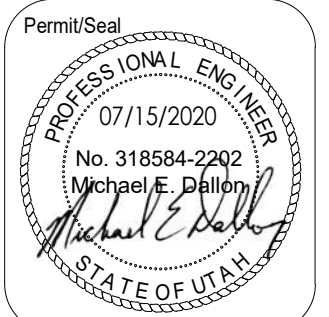
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DESCRIPTION	FINAL DESIGN 100%

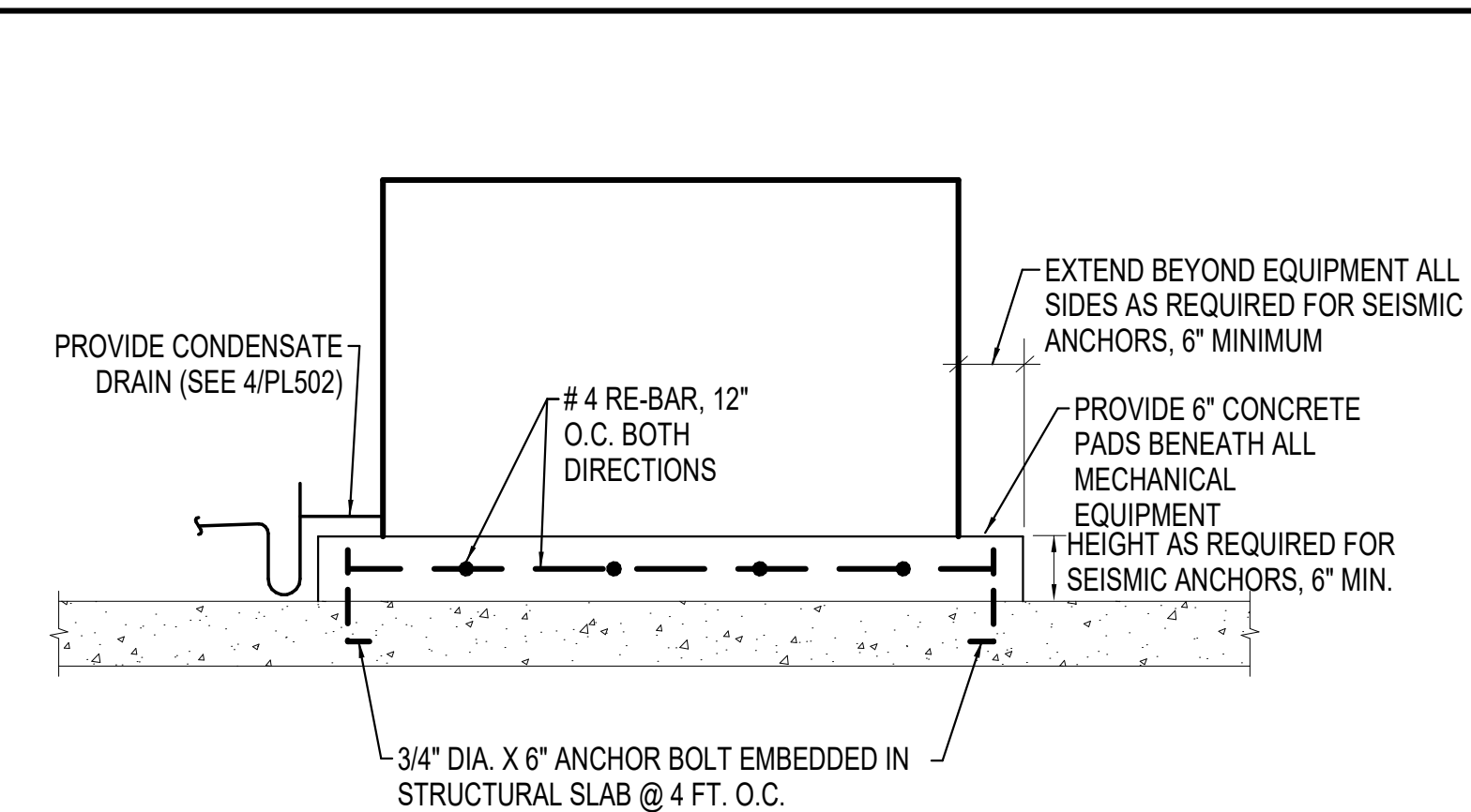


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CHECKED BY	MED
DATE	07/15/2020
PROJECT NO.	1033248
PROJECT NAME	ADDITION/RENOVATION RESERVE CIVIL ENGINEER FACILITY - BLDG. 591
PROJECT MANAGER	BEVERLY LANGUE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
MECHANICAL DETAILS

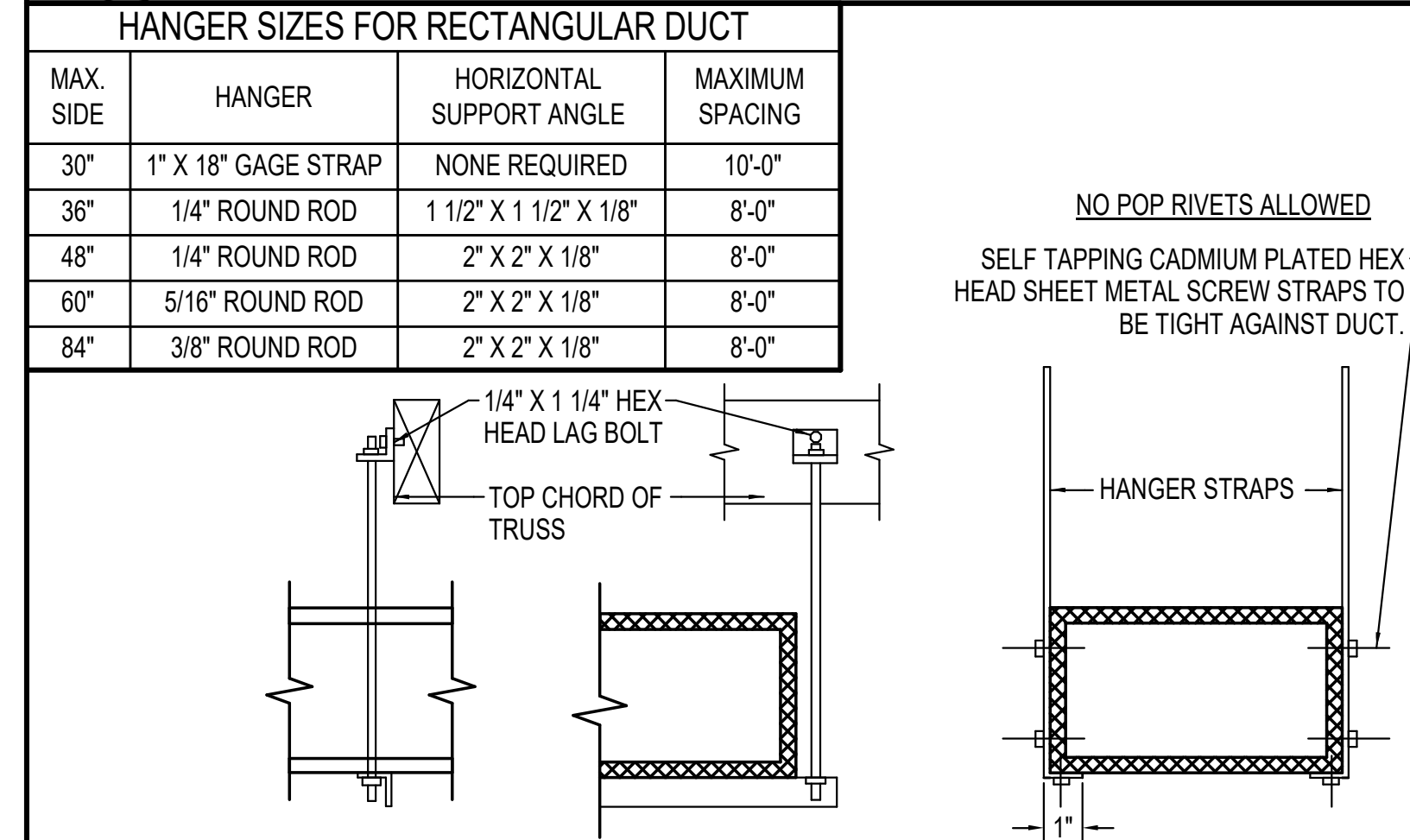
TRANSVERSE REINFORCING ①													
DIMENSION OF LONGEST SIDE, INCHES	SHEET METAL GAGE - ALL FOUR SIDES	MINIMUM REINFORCING ANGLE SIZE & MAXIMUM LONGITUDINAL SPACING BETWEEN JOINTS & OR INTERMEDIATE REINFORCING	MIN. H. IN.				BAR SLIP		STAND SEAM		POCKET LOCK		
			PLAIN S SLIP	HEMMEDED S SLIP	ALT. BAR SLIP	REINFOR. BAR SLIP	ANGLE SLIP	ANGLE REINFORCED STAND SEAM	ANGLE REINFORCED POCKET LOCK	ANGLE SLIP	ANGLE REINFORCED STAND SEAM	ANGLE REINFORCED POCKET LOCK	
UP THRU	12	26	NONE REQ.	1	26	26	24	24	24	NONE REQ.	NONE REQ.	24	NONE REQ.
13-18	24	NONE REQ.	1	24	24	24	24	24	24	NONE REQ.	NONE REQ.	24	NONE REQ.
19-30	24	1X1X1/8 @60"	1	-	24	24	24	24	24	NONE REQ.	NONE REQ.	24	NONE REQ.
31-42	22	1X1X1/8 @60"	1	-	-	22	22	22	22	NONE REQ.	NONE REQ.	22	NONE REQ.
43-54	22	1.5X1.5X1/8 @60"	1 1/2	-	-	22	22	22	22	1.5X1.5X1/8	NONE REQ.	22	NONE REQ.
55-60	20	1.5X1.5X1/8 @60"	1 1/2	-	-	-	22	22	22	1.5X1.5X1/8	NONE REQ.	22	NONE REQ.
61-84	20	1.5X1.5X1/8 @30"	1 1/2	-	-	-	22	22	22	1.5X1.5X1/8	1.5X1.5X1/8	22	1.5X1.5X1/8

① TRANSVERSE REINFORCING SIZE IS DETERMINED BY DIMENSION OF SIDE TO WHICH ANGLE IS APPLIED.



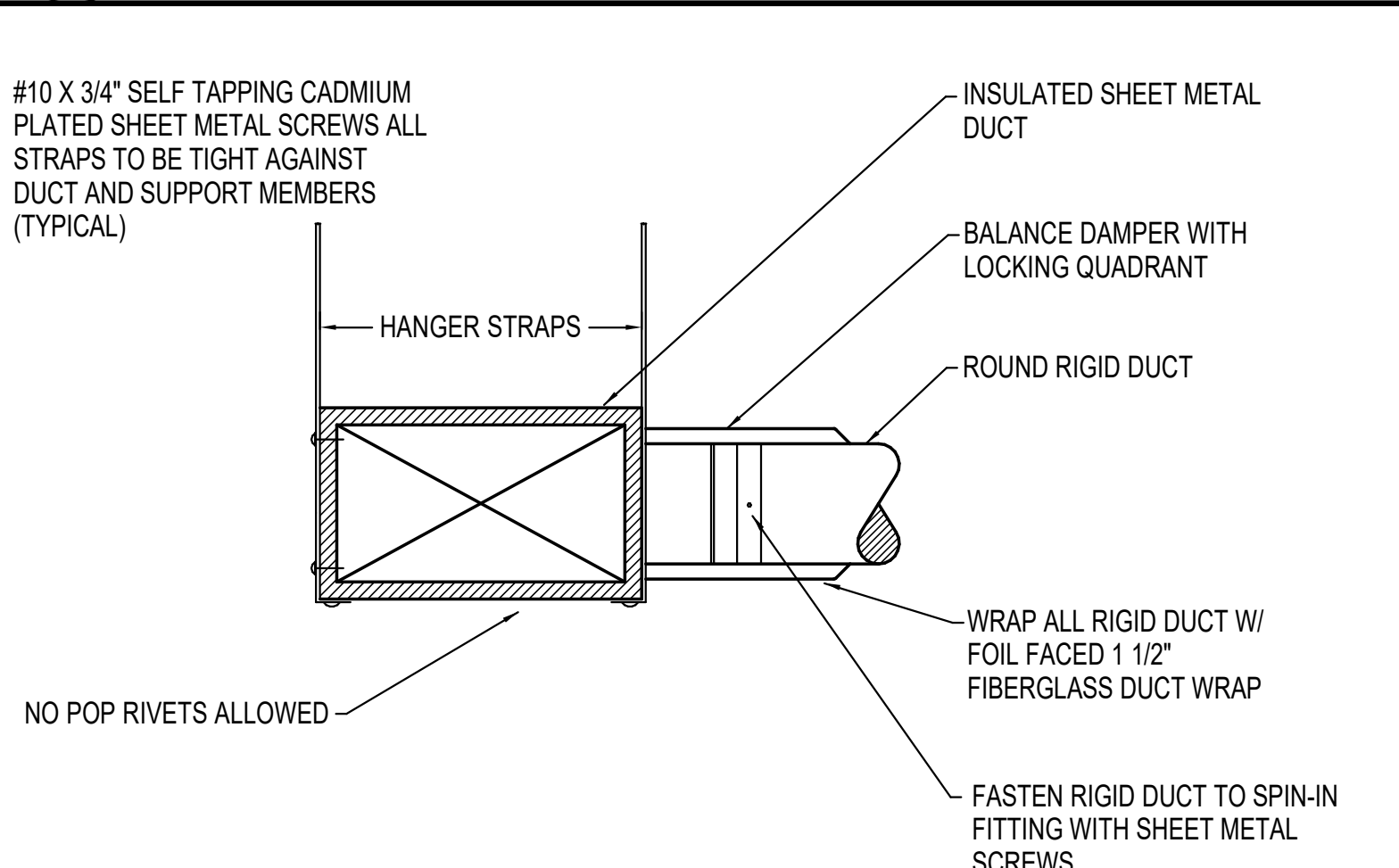
2 HOUSEKEEPING PAD DETAIL
NO SCALE

1 DUCT CONSTRUCTION DETAIL
NO SCALE

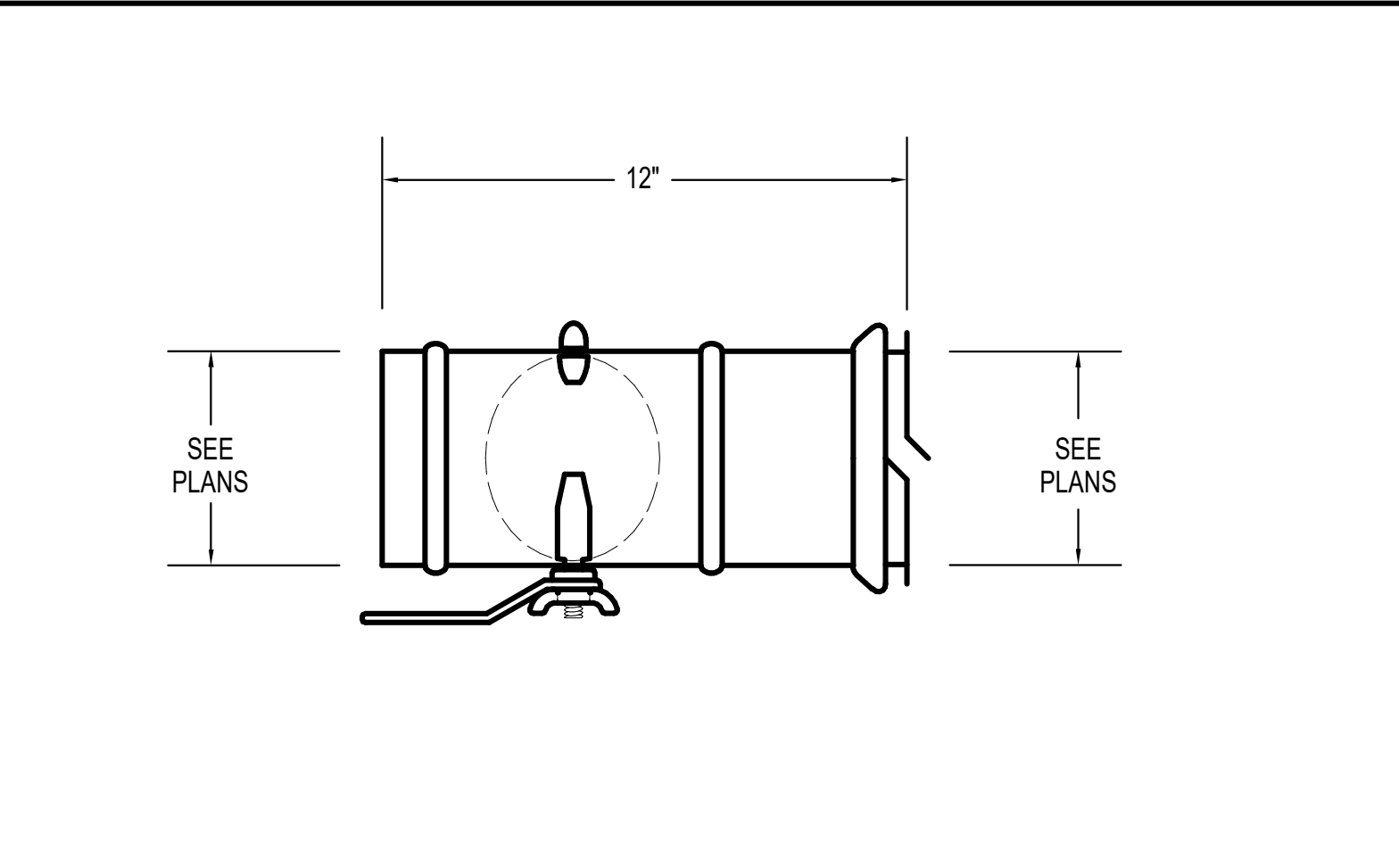


3 DUCT STRAP HANGER DETAIL
NO SCALE

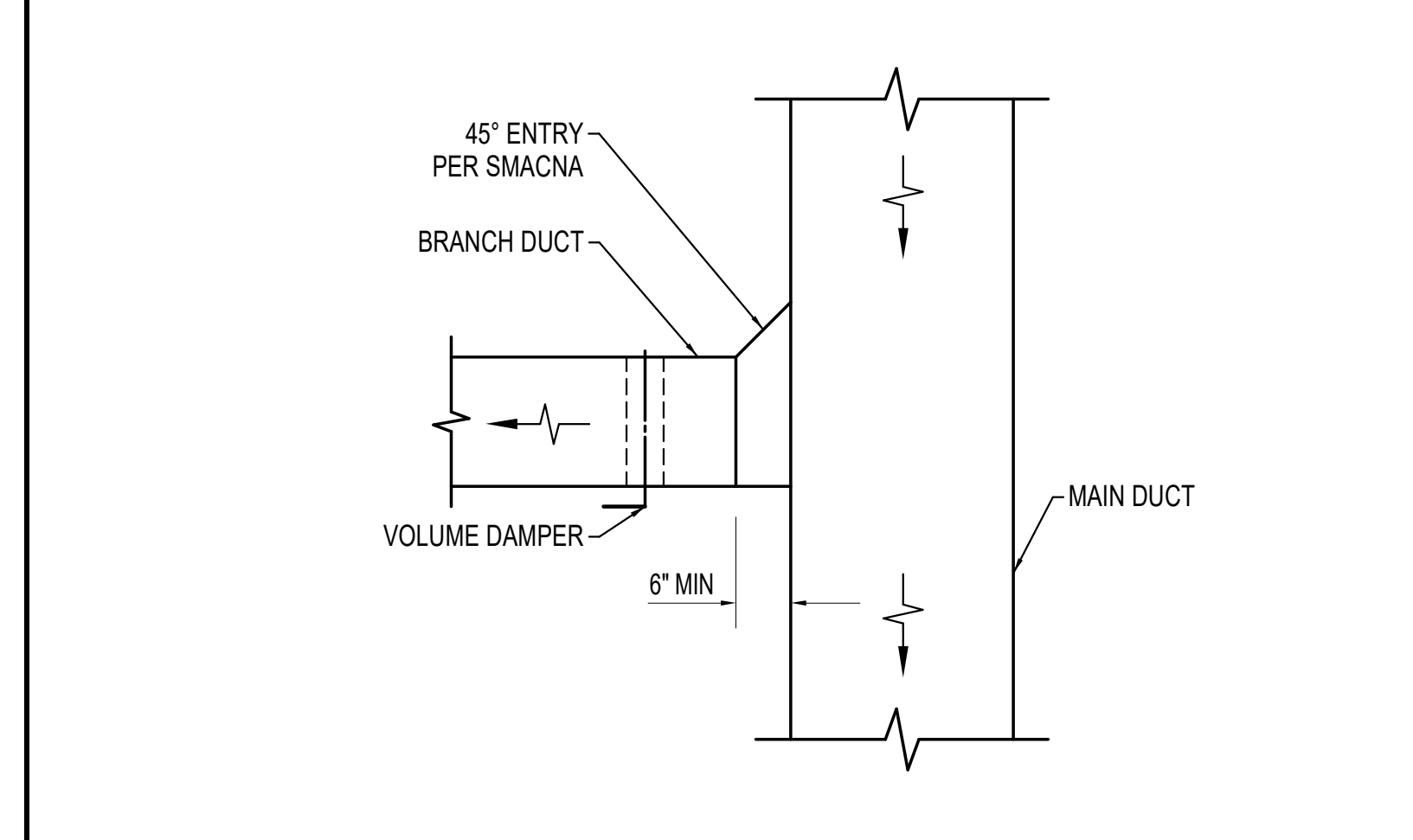
2 HOUSEKEEPING PAD DETAIL
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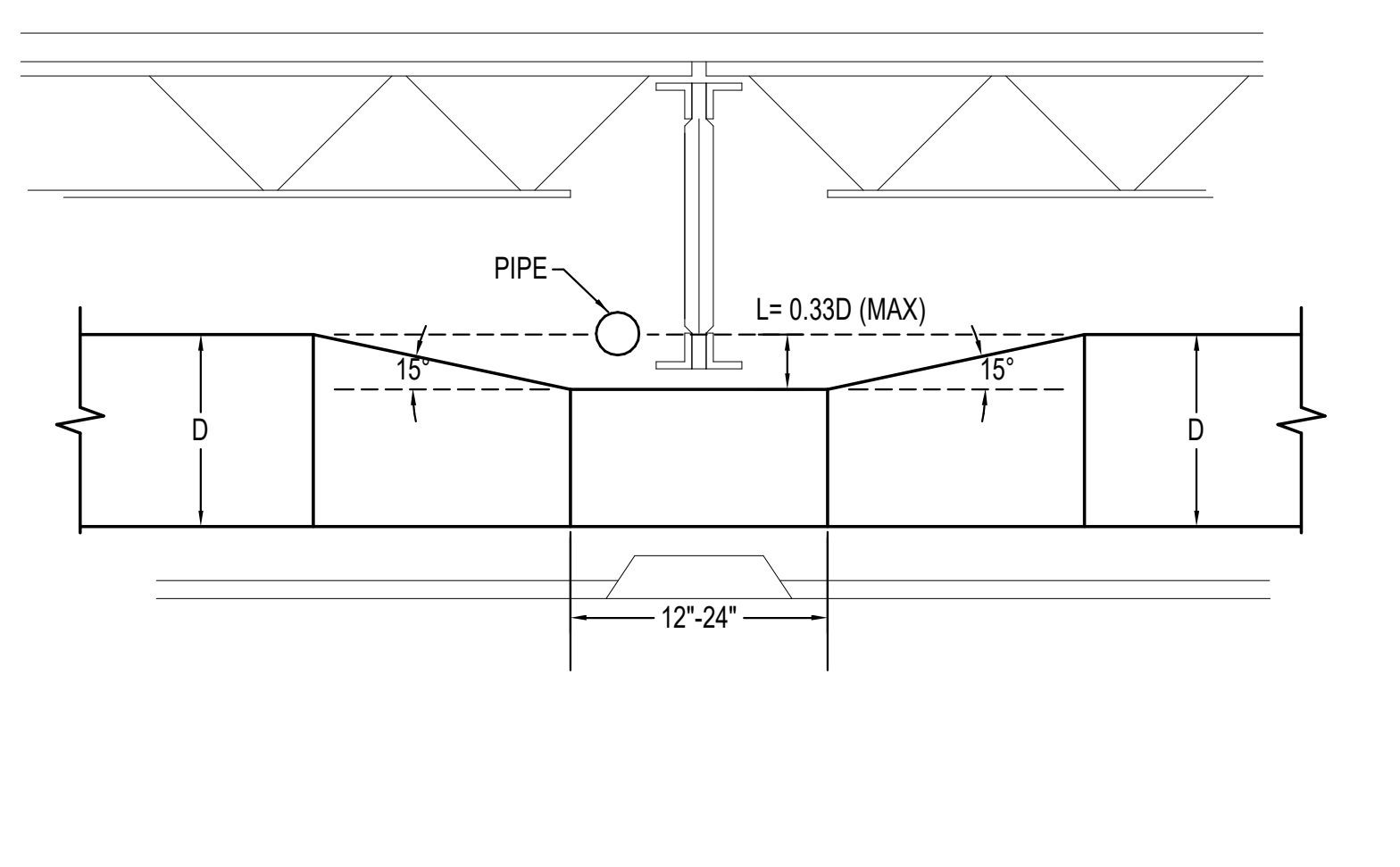
4 FLEX DUCT/SPIN-IN FITTING DETAIL
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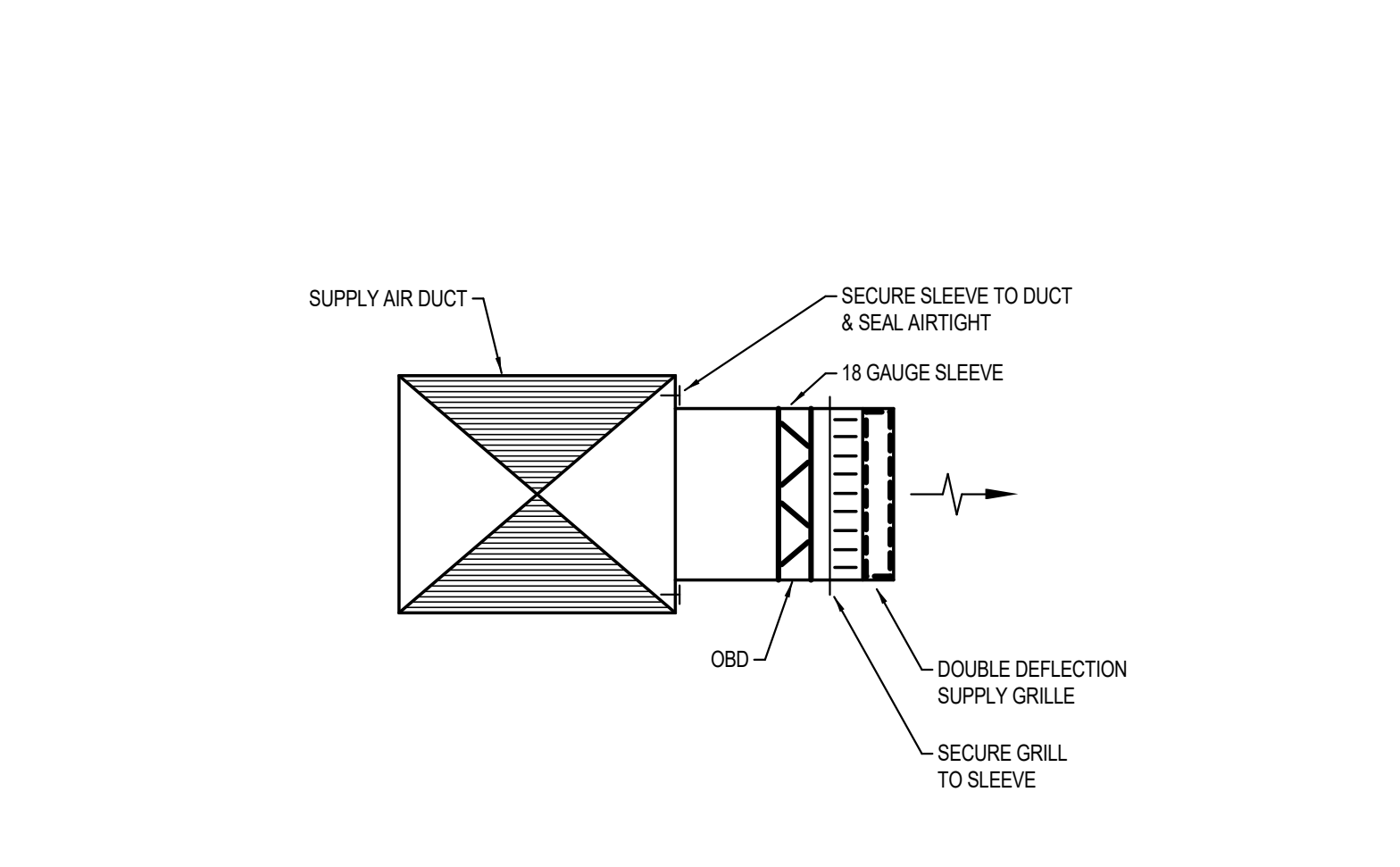
5 TYPICAL MANUAL VOLUME DAMPER DETAIL
NO SCALE



6 TYPICAL DUCT TAKEOFF DETAIL
NO SCALE



7 TYPICAL DUCT SLICE DETAIL
NO SCALE



8 SIDEWALL SUPPLY GRILLE DETAIL
NO SCALE

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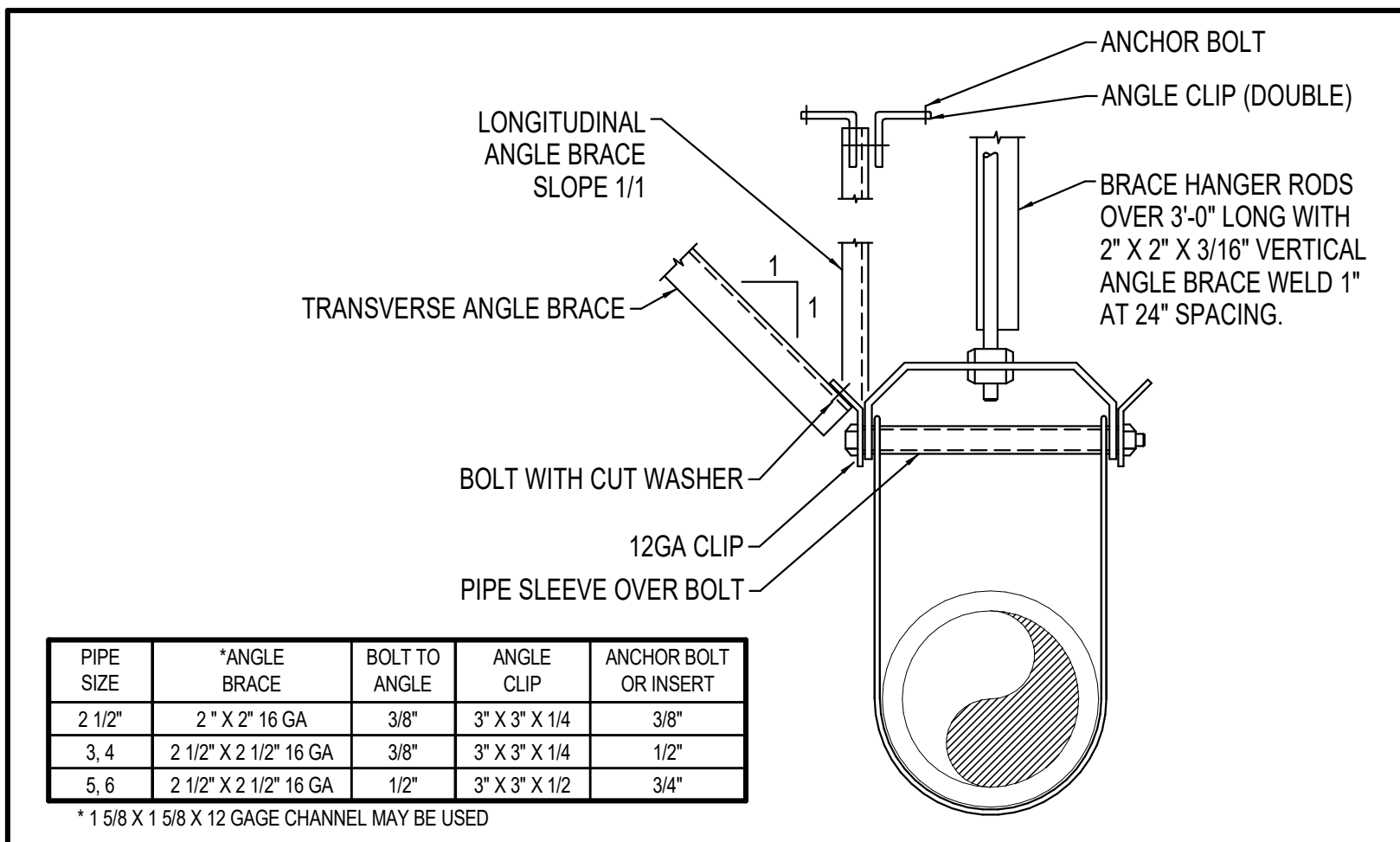
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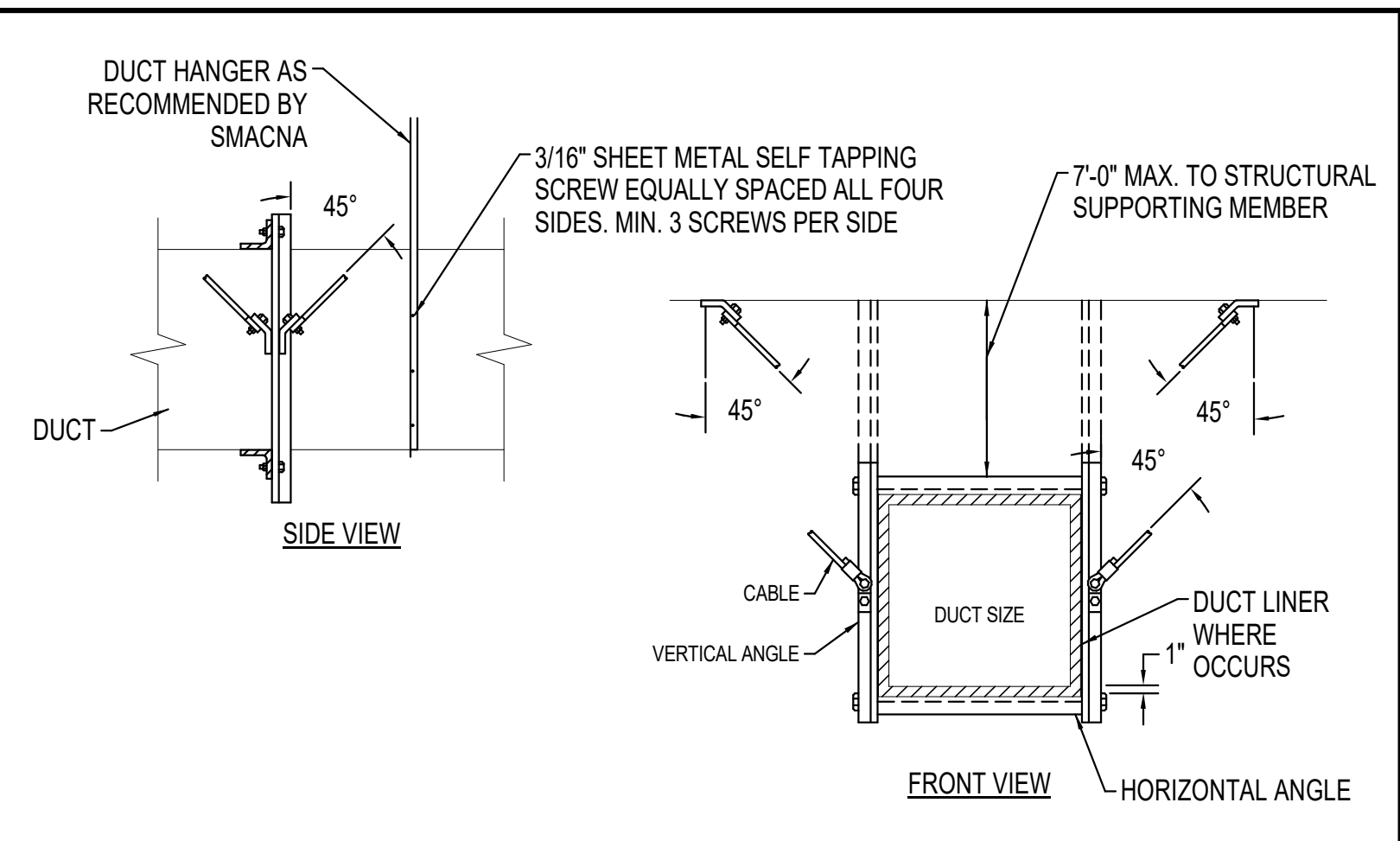
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CHECKED BY	BRC
DRAWN BY	
DATE	07/15/2020
PROJECT NO.	1033248
LEGACY PROJECT NO.	
BASE PROJECT MANAGER	BEVERLY LANGUE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
MECHANICAL DETAILS

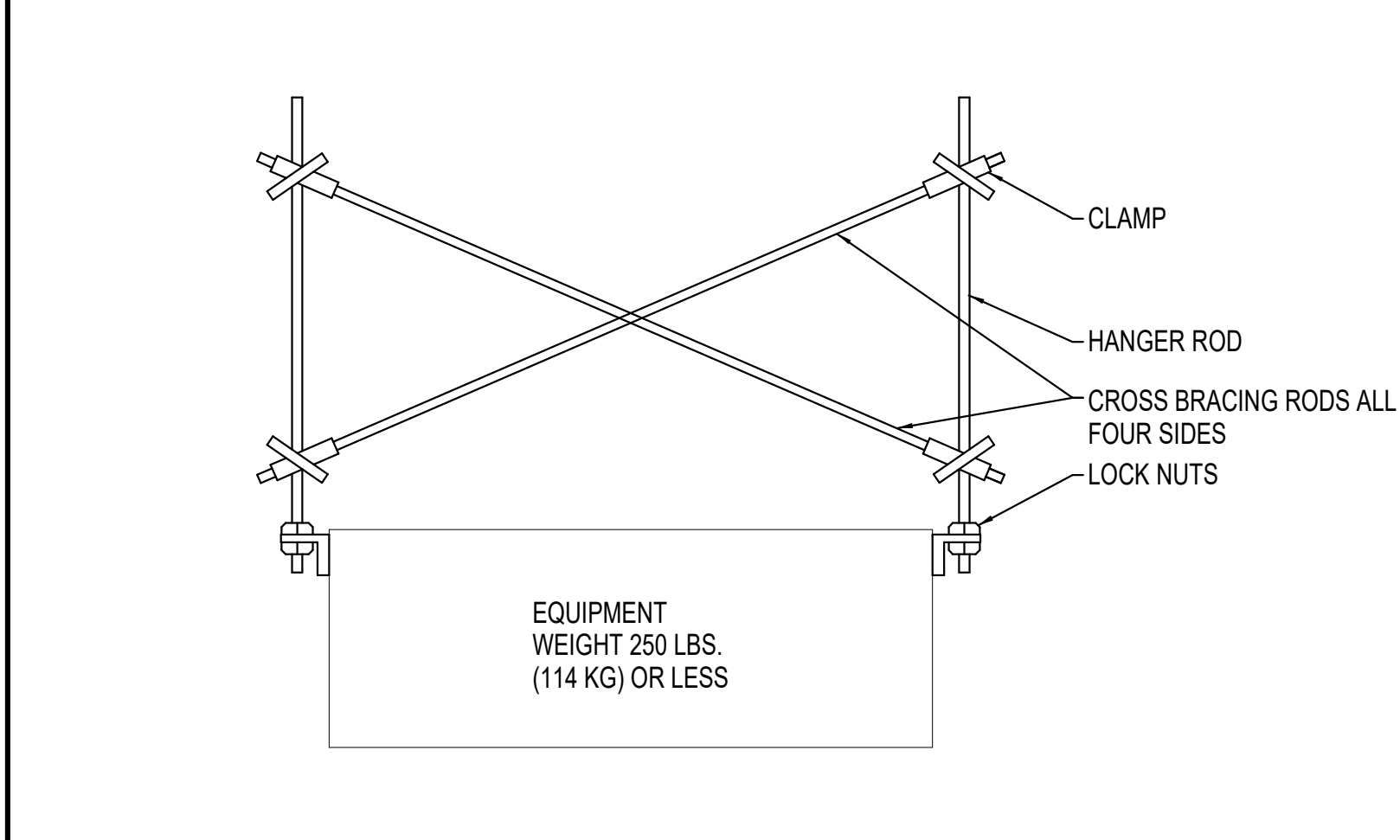
MH502
Sheet: 57 of 94



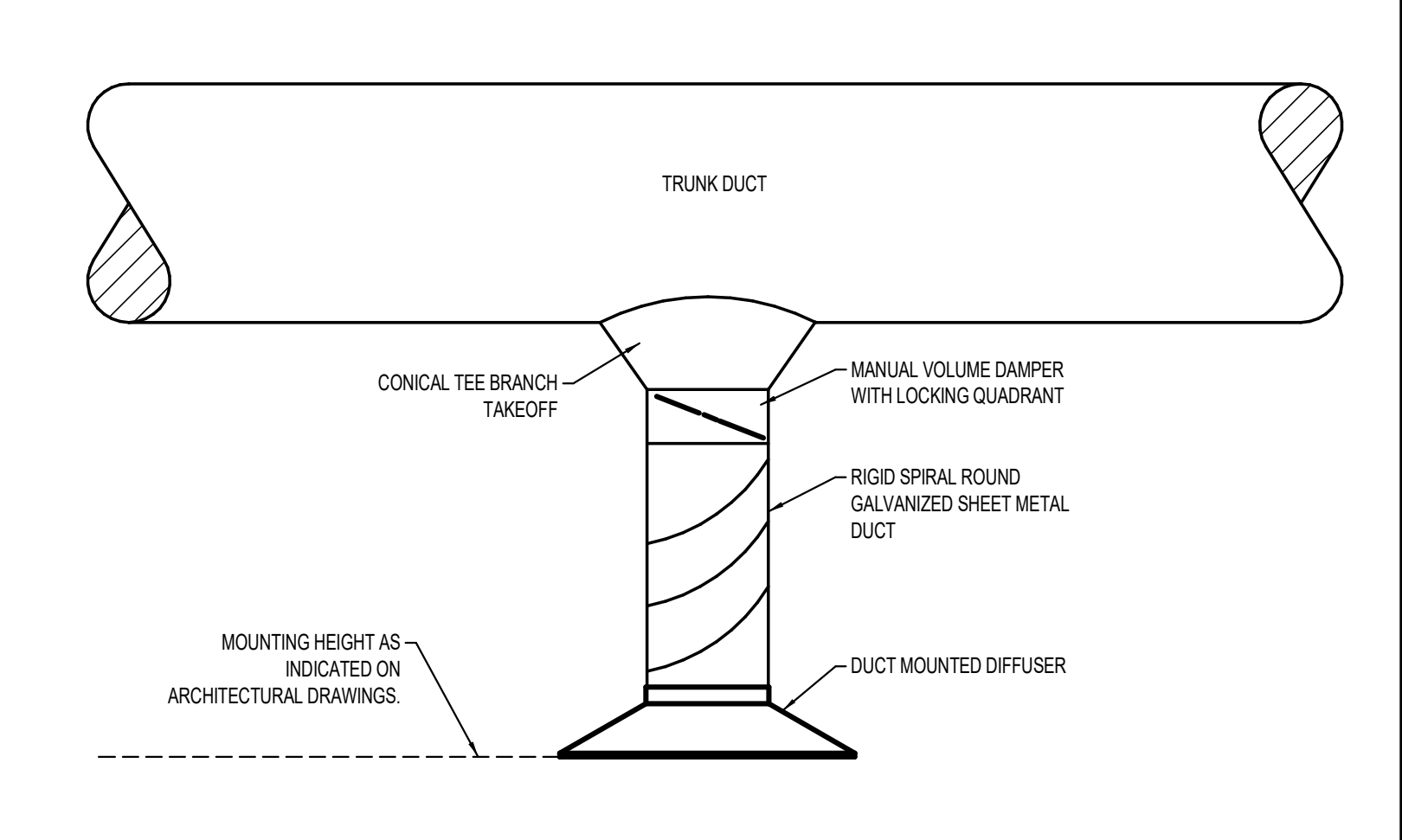
1 SEISMIC BRACING FOR PIPE
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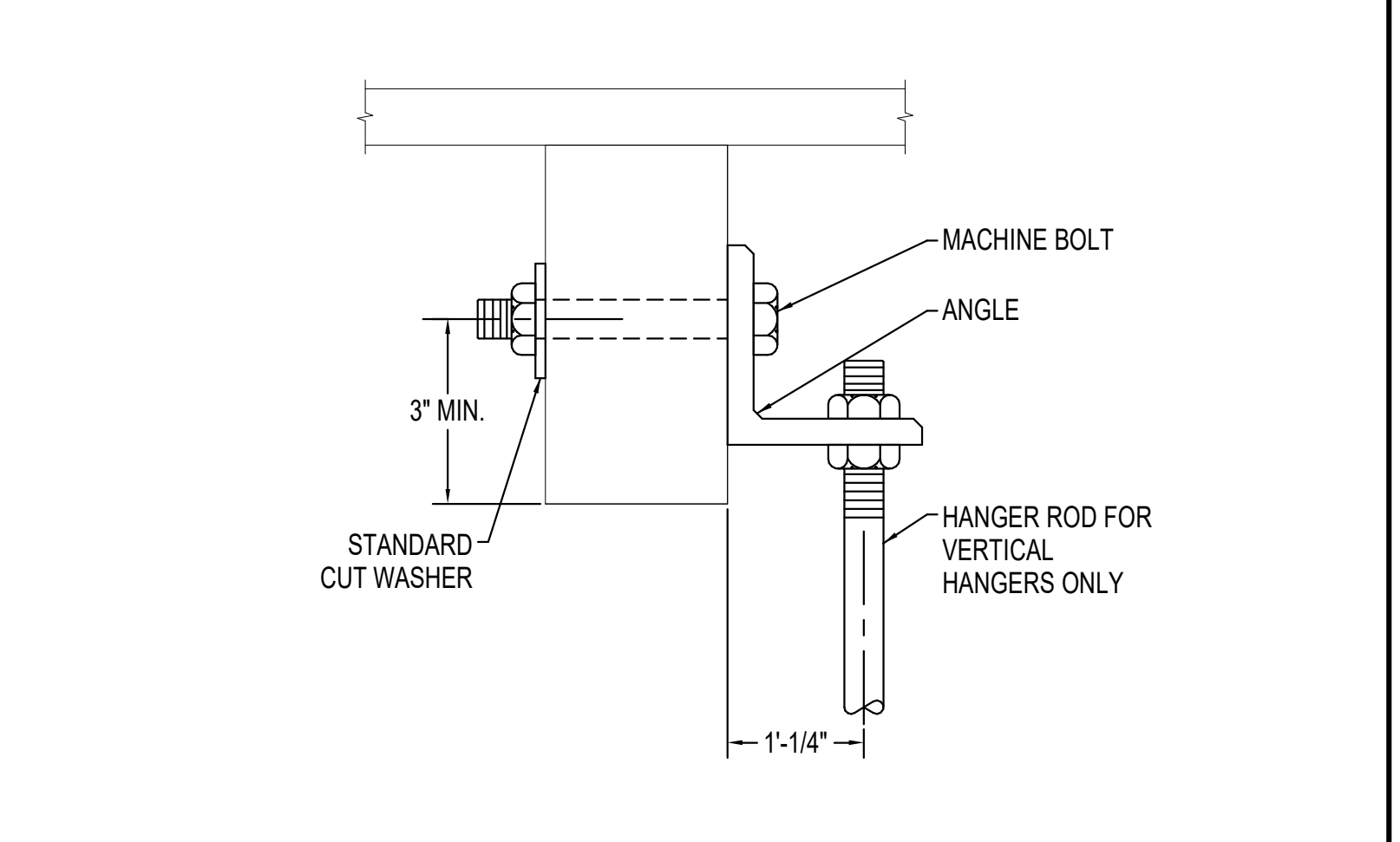
2 SEISMIC BRACING FOR RECTANGULAR DUCTS
NO SCALE



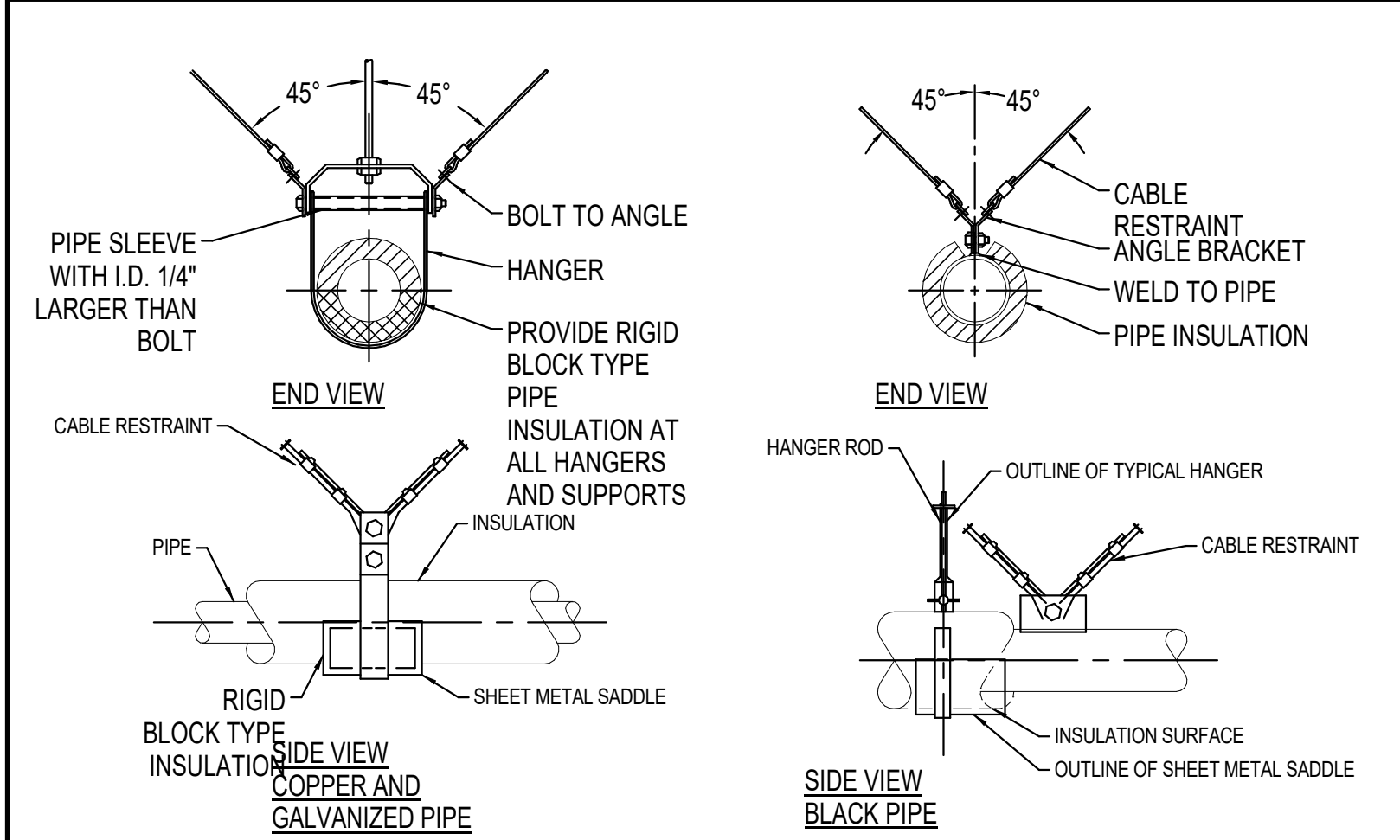
3 SEISMIC BRACING FOR SUSPENDED EQUIPMENT
NO SCALE



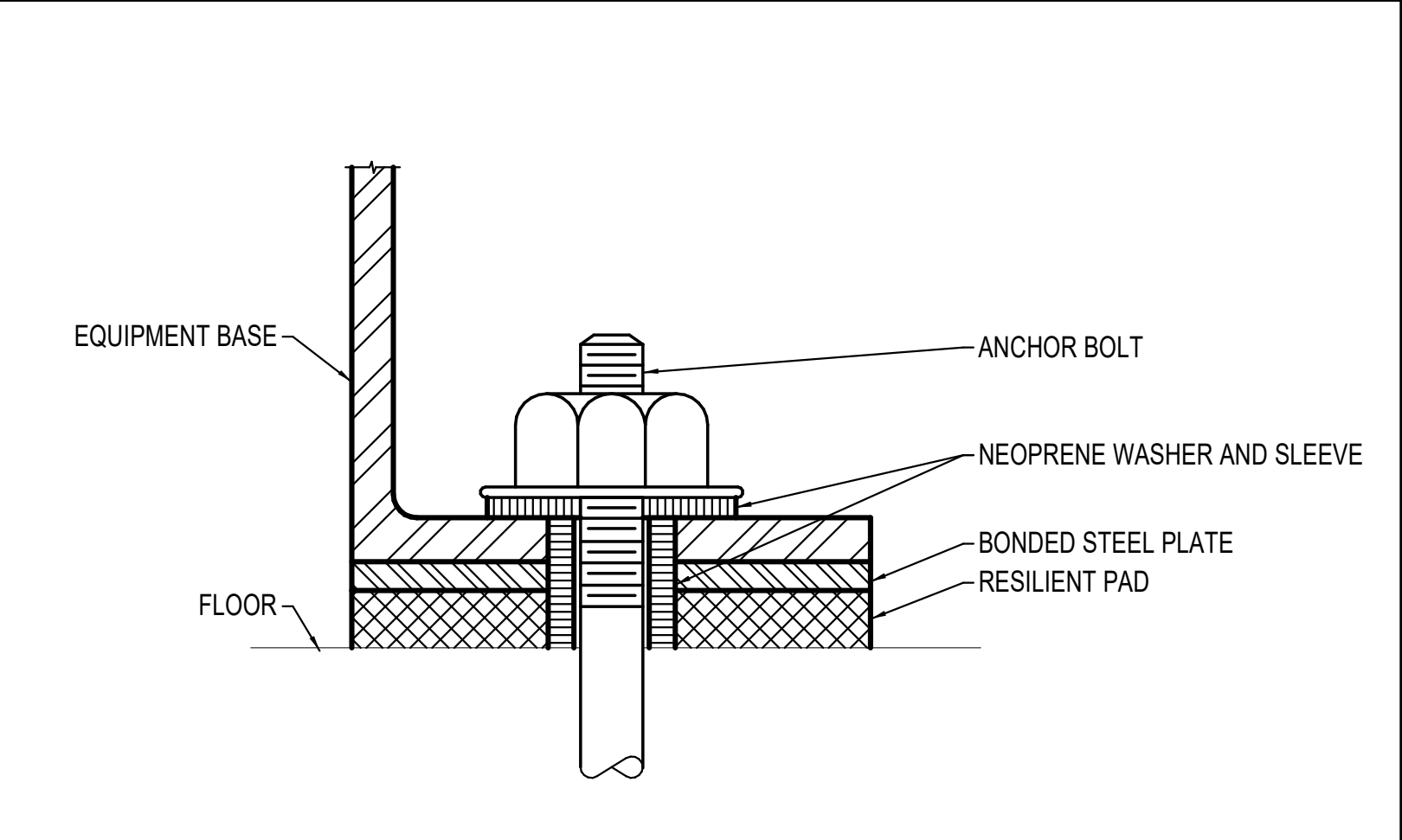
4 TYPICAL DUCT MOUNTING DETAIL
NO SCALE



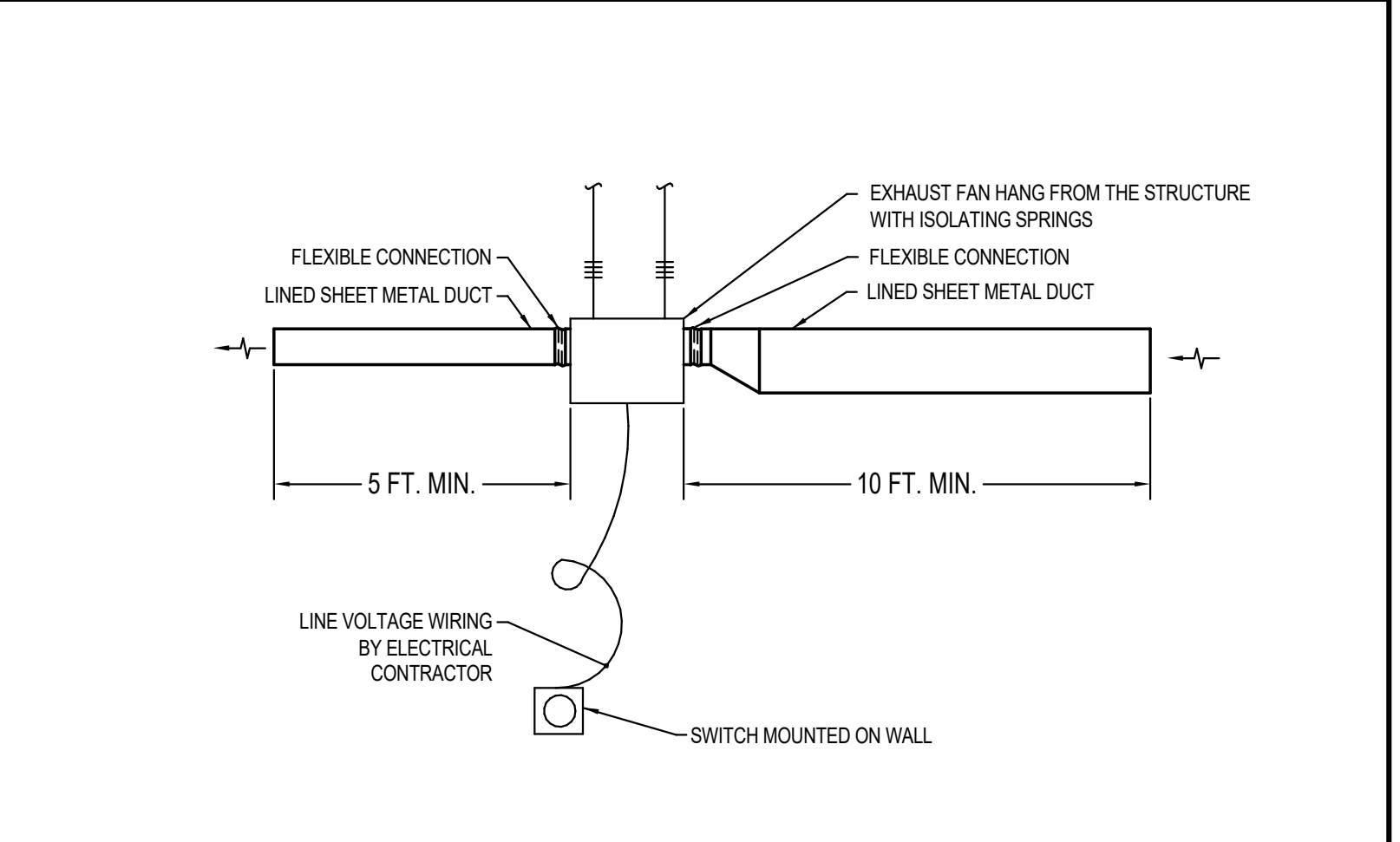
5 HANGER CONNECTION
NO SCALE



6 SEISMIC PIPING RESTRAINT
NO SCALE



7 RESILIENT EQUIPMENT PAD
NO SCALE



8 INLINE EXHAUST FAN DETAIL
NO SCALE

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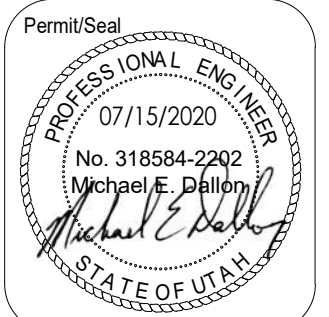
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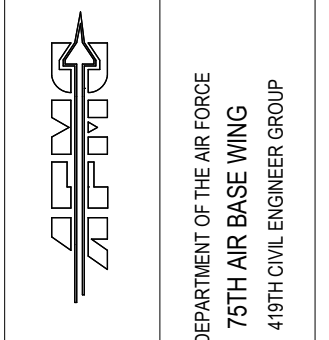
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DRAWN BY		DATE	07/16/2020
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BASE PROJECT MANAGER		BASE PROJECT MANAGER	BEVERLY LANGUE



ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 MECHANICAL SCHEDULES

MH601

Sheet: 58 of 94

AIR DEVICE SCHEDULE											 PLAN CODE GRILLE CFM	
PLAN CODE	TYPE & DUTY	FACE SIZE	NECK SIZE	CEILING TYPE (NOTE 2)	MAX CFM	MAX TP (IN WC)	NC LEVEL MAX	MIN THROW T50 (FT)	4-WAY MIN THROW (T50)	2-WAY MIN THROW (T50)	MANUFACTURER & MODEL NO.	REMARKS
9	PERFORATED RETURN	24" x 24"	22" x 22"	MATCH CEILING	1200	0.05	17	-	-	-	TITUS PAR	-
10	PERFORATED RETURN	24" x 12"	22" x 10"	MATCH CEILING	600	0.06	10	-	-	-	TITUS PAR	-
13	PERFORATED EXHAUST GRILLE	8" x 8"	6" x 6"	MATCH CEILING	120	0.12	10	-	-	-	TITUS 8F	-
14	PERFORATED EXHAUST GRILLE	10" x 10"	8" x 8"	MATCH CEILING	225	0.12	12	-	-	-	TITUS 8F	-
15	PERFORATED EXHAUST GRILLE	12" x 12"	10" x 10"	MATCH CEILING	360	0.12	14	-	-	-	TITUS 8F	-
31	ADJUSTABLE LOUVERED	24" X 24"	6"Ø	MATCH CEILING	170	0.13	25	ADJUSTABLE	11	18	TITUS TDCA	18" x 18" CORE
32	ADJUSTABLE LOUVERED	24" X 24"	8"Ø	MATCH CEILING	310	0.13	27	ADJUSTABLE	14	24	TITUS TDCA	18" x 18" CORE
33	ADJUSTABLE LOUVERED	24" X 24"	10"Ø	MATCH CEILING	440	0.13	28	ADJUSTABLE	17	26	TITUS TDCA	18" x 18" CORE
34	ADJUSTABLE LOUVERED	24" X 24"	12"Ø	MATCH CEILING	600	0.14	28	ADJUSTABLE	21	33	TITUS TDCA	18" x 18" CORE
35	ADJUSTABLE LOUVERED	24" X 24"	14"Ø	MATCH CEILING	800	0.13	29	ADJUSTABLE	24	39	TITUS TDCA	18" x 18" CORE
36	ADJUSTABLE LOUVERED	24" X 24"	16"Ø	MATCH CEILING	950	0.11	29	ADJUSTABLE	26	41	TITUS TDCA	18" x 18" CORE
41	SIDEWALL DIFFUSER	20" X 8"	18" X 6"	MATCH WALL	300	0.02	15	33	-	-	TTUS 300 FL	-
42	SIDEWALL DIFFUSER	20" X 10"	18" X 8"	DUCT MOUNTED	530	0.02	22	42	-	-	TTUS 300 FL	-
43	ADJUSTABLE LOUVERED	12" X 12"	6"Ø	MATCH CEILING	100	0.1	15	ADJUSTABLE	7	9	TITUS TDCA	-

1. RECOMMENDED MINIMUM DISTANCE BETWEEN DIFFUSERS IN 9' CEILING.
 2. VERIFY FRAME TYPE OF ALL AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLAN BEFORE ORDERING.

LOUVER SCHEDULE (L)							
PLAN CODE	CFM	VELOCITY (FPM)	REQ'D FREE AREA (SF)	MAX DIMS (IN)		MANUFACTURER & MODEL NO	REMARKS
				W	H		
L-1	540	800	0.7	18	18	GREENHECK SED-501	1, 2, 3

1 - PROVIDE WITH INSECT SCREEN.
 2 - PROVIDE WITH MOTORIZED DAMPER TO OPEN WHEN FAN IS ENABLED.
 3 - PROVIDE WITH LOW LEAKAGE DAMPER, MAXIMUM 3 CFM/SF WITH DIFFERENTIAL OF 1" WC PRESSURE, MEETING ATFP REQUIREMENTS.

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Table with columns: DATE, APPR, MARK, DESCRIPTION. Final design 100%.

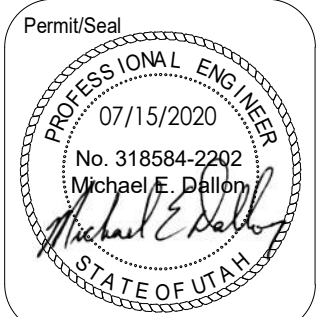


Table with columns: DESIGNED BY, CHECKED BY, CAPITAL PROJECT NO., LEGACY PROJECT NO., DATE, BASE PROJECT MANAGER, BEVERLY LANGUE.

ADDITION/RENOVATION RESERVE CIVIL ENGINEER FACILITY - BLDG. 591 MECHANICAL SCHEDULES

MH602 Sheet: 59 of 94

SINGLE ZONE AIR HANDLING UNIT SCHEDULE (AHU)

Table with columns: PLAN CODE, NOMINAL TONS, MIN OA (CFM), SEER/EER, SUPPLY FAN, COOLING, HEATING CAPACITY, ELECTRICAL, CURB, MAX DIMENSIONS, MANUFACTURER & MODEL NO., REMARKS.

1 - PROVIDE PHASE AND BROWN OUT PROTECTION ON UNIT. 2 - R-410A 3 - ALUMINIZED STEEL HEAT EXCHANGER 4 - POWERED EXHAUST - ON/OFF/FAN 5 - 115 V CONV OUTLET, PRE-WIRED WITH FACTORY SUPPLIED TRANSFORMER, MERV 8 FILTER, COIL GUARD, AND DISCONNECT SWITCH 6 - SMOKE DETECTOR IN SUPPLY AND RETURN DUCT 7 - FACTORY CONTROLS, BACNET COMPATIBLE, CONNECT TO EMCS. 8 - UNIT TO BE MOUNTED ON 6" CONCRETE HOUSEKEEPING PAD. SEE MH101.

AIR COOLED CONDENSING UNIT (ACU)

Table with columns: PLAN CODE, SYSTEM SERVED, SENSIBLE COOLING CAPACITY (BTUH), HEATING CAPACITY (BTUH), AMBIENT TEMP (°F), ELECTRICAL, MAX DIMENSIONS (IN), MANUFACTURER & MODEL NO., REMARKS.

1 - PROVIDE WITH LOW AMBIENT CONTROLS. 2 - PROVIDE WITH HOUSEKEEPING PAD. 3 - PROVIDE WITH CONTRACTOR'S SIZED LINE SETS. 4 - PROVIDE WITH WIRING AND DISCONNECT.

DUCTLESS AIR CONDITIONER (DAC)

Table with columns: PLAN CODE, OUTDOOR UNIT, SENSIBLE COOLING CAPACITY (BTUH), HEATING CAPACITY (BTUH), VOLT / PH, SEER, CFM, CONTROL, SOUND PRESSURE dB(A), MAX DIMENSIONS (IN), MANUFACTURER & MODEL NO., REMARKS.

1 - PROVIDE CONDENSATE PUMP. 2 - ROUTE CONDENSATE TO NEAREST FLOOR SINK. 3 - FACTORY CONTROLS, BACNET COMPATIBLE, CONNECT TO EMCS.

EXHAUST FAN SCHEDULE (EF)

Table with columns: PLAN CODE, AREA SERVED, TYPE, CFM @ ELEV, ESP @ ELEV, FAN RPM, MOTOR, DAMPER (GRAVITY OR MOTOR), METHOD OF CONTROL, OPENING SIZE, MAX OPERATING WT (LBS), MANUFACTURER & MODEL NO., REMARKS.

1. DIRECT DRIVE ECM MOTOR. 2. PROVIDE WITH ALUMINUM NAME PLATE. 3. PROVIDE VIBRATION ISOLATION HANGING KIT. 4 - FACTORY CONTROLS, BACNET COMPATIBLE, CONNECT TO EMCS.

ELECTRIC UNIT HEATER SCHEDULE (EUH)

Table with columns: PLAN CODE, AREA SERVED, ELECTRICAL, CFM, MOUNTING, MANUFACTURER & MODEL NO., REMARKS.

1 - WITH INTEGRAL TAMPER PROOF THERMOSTAT. 2 - COORDINATE COLOR WITH ARCHITECT. 3 - PROVIDE WITH SURFACE MOUNTING FRAME.

ELECTRIC RADIANT PANEL HEATER SCHEDULE (ERP)

Table with columns: PLAN CODE, OUTPUT (BTUH), LOCATION, WATTS, ELECTRICAL, DIMENSIONS, MANUFACTURER & MODEL NO., REMARKS.

1 - LINE VOLTAGE T-STAT ON WALL TO CONTROL PANEL. 2 - PROVIDE STARTER WITH UNIT.

SEQUENCE OF OPERATION

POINTS LIST: Control points shall include, but not limited to, the following:

- 1. AHU discharge air temperature.
2. AHU mixed air temperature.
3. Space setpoint.
4. Outside air temperature.

SINGLE ZONE AIR HANDLING UNIT (AHU)

- 1. AHU shall be connected via BACnet to EMCS.
2. The AHU shall be operated by factory controls. When enabled supply and return motorized dampers shall be opened and the supply fan shall run continuously, subject to a fire alarm interlock.
3. Economizer Control: When the supply fan is operating, the factory controlled economizer shall be enabled and the outside air damper shall open. Factory controls shall maintain the minimum outside air setting. In cooling mode factory controls shall modulate the OSA damper to modulate discharge air temp to maintain space setpoint. If space setpoint cannot be maintained with 100% OSA DX cooling stages will be enabled.
4. Cooling Control: On call for cooling from thermostat factory controls shall enable and disable DX cooling stages as needed to control discharge air temperature to maintain space setpoint.
5. Heating Control: On call for heat from thermostat outside air damper will open to minimum setting, the factory controls shall enable and disable gas heat stages to control discharge air temperature to maintain space setpoint.
6. Morning Warmup: During unoccupied periods and morning warm-up, the AHU shall cycle on if the space temperature drops below the unoccupied set point. The outside air dampers shall remain shut, gas heat shall control to maintain a discharge air temperature of 85 degrees F adjustable, until the space temperature returns to normal setback temperatures.

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Table with columns: DATE, APPR, MARK, DESCRIPTION, FINAL DESIGN 100%

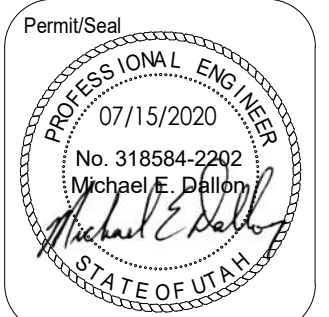


Table with columns: DESIGNED BY, CHECKED BY, DATE, PROJECT NO., LEGACY PROJECT NO., DATE, BASE PROJECT MANAGER, BEVERLY LANGUE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
PLUMBING LEGEND, SYMBOLS & ABBREVIATIONS

P-001
Sheet: 60 of 94

MECHANICAL LEGEND

Main table containing mechanical symbols and abbreviations such as BURIED OR UNDERFLOOR DUCT, CHILLED WATER RETURN, TEMPERED WATER, etc.

ABBREVIATIONS

Table with columns: Key Name, Comments. Lists abbreviations like AD ACCESS DOOR, AF AIRFOIL, AFF ABOVE FINISHED FLOOR, etc.

ABBREVIATIONS

Table with columns: Key Name, Comments. Lists abbreviations like MBH THOUSAND BRITISH THERMAL UNITS, MECH MECHANICAL, MIN MINIMUM, etc.

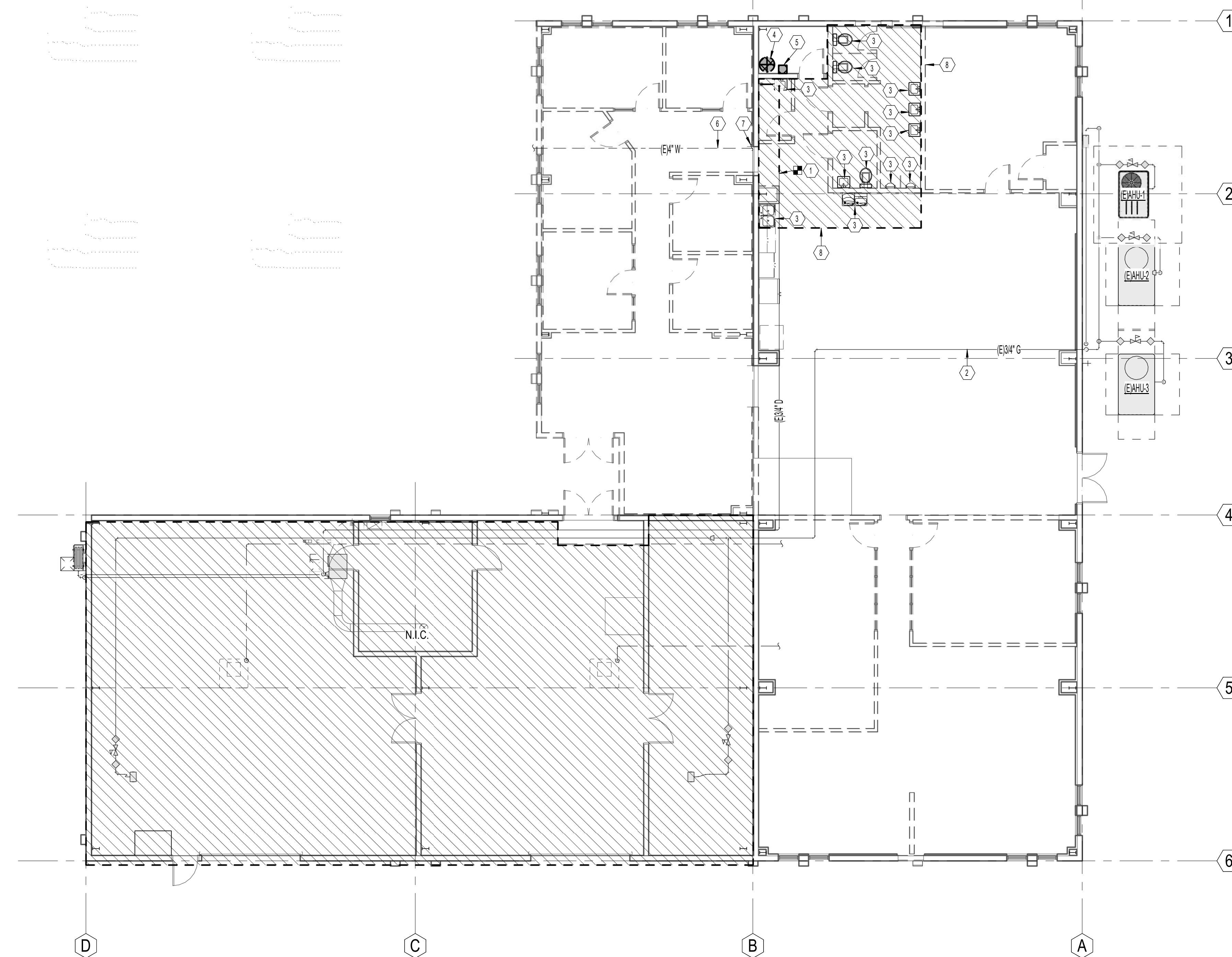
DRAWING INDEX - PLUMBING

Table with columns: #, SHEET NAME. Lists sheets like P-001 PLUMBING LEGEND, SYMBOLS & ABBREVIATIONS, PD101 PLUMBING DEMO PLAN, etc.

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ORIGINAL SHEET - ANS D



1 PLUMBING DEMO PLAN
SCALE: 1/8" = 1'-0"



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KEYED NOTES

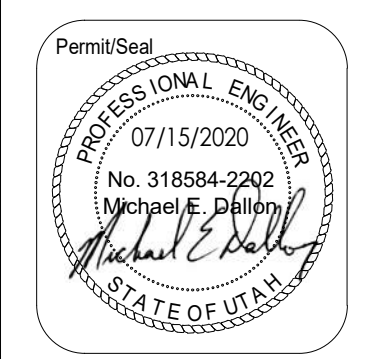
- 1 DEMO EXISTING CONDENSATE DRAIN LINE DOWNSTREAM FROM THIS POINT. RELOCATE DISCHARGE LOCATION AS SHOWN ON P401.
- 2 EXISTING NATURAL GAS LINE (G) TO REMAIN.
- 3 DEMO EXISTING PLUMBING FIXTURE. DEMO ALL SUPPLY PIPING CONNECTIONS BACK TO FIRE RISER ROOM AND CAP. DEMO VENT PIPE BACK TO MAIN AND CAP. DEMO WASTE BELOW FLOOR AND CAP. ALL ABANDONED PIPING TO BE REMOVED.
- 4 DEMOLISH EXISTING ELECTRIC WATER HEATER.
- 5 EXISTING DOMESTIC COLD WATER RISER, DEMOLISH EXISTING PRV. SEE PL401, 1/PL501, AND 8/PL501 FOR NEW PRV AND MIXING VALVE ASSEMBLY DETAILS.
- 6 LOCATION OF EXISTING BELOW GRADE WASTE LINE IS ASSUMED FROM ABOVE SLAB OBSERVATIONS. EXISTING PLUMBING DRAWINGS ARE NOT AVAILABLE. LOCATION AND SIZE OF EXISTING WASTE LINE TO BE FIELD VERIFIED BY CONTRACTOR. CONTRACTOR TO SCOPE AND CAMERA THE LINE TO VERIFY EXISTING LOCATION. CONTRACTOR TO ADJUST NEW PIPING AS REQUIRED TO CONNECT TO EXISTING.
- 7 CONTRACTOR TO VERIFY NO EXISTING FIXTURES ARE SERVICED UP STREAM OF THIS POINT.
- 8 HATCHED AREA SHOWS ESTIMATED AREA OF REQUIRED FLOOR DEMO TO REMOVE EXISTING BELOW GRADE WASTE PIPE. ALL EXISTING BELOW GRADE WASTE PIPING THAT IS ABANDONED DUE TO DEMOLISHED EQUIPMENT TO BE REMOVED. FLOOR DEMOLISHED FOR PIPE REMOVAL TO BE REPAIRED OR REPLACED. COORDINATE WITH ARCHITECTURAL PLANS.

GENERAL NOTES

- A. EXISTING TO REMAIN PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN LIGHT AND WITH A THIN LINE. DEMOLITION PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN DARK WITH BOLD DASHED LINE. NEW PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN DARK AND WITH THICK LINE.

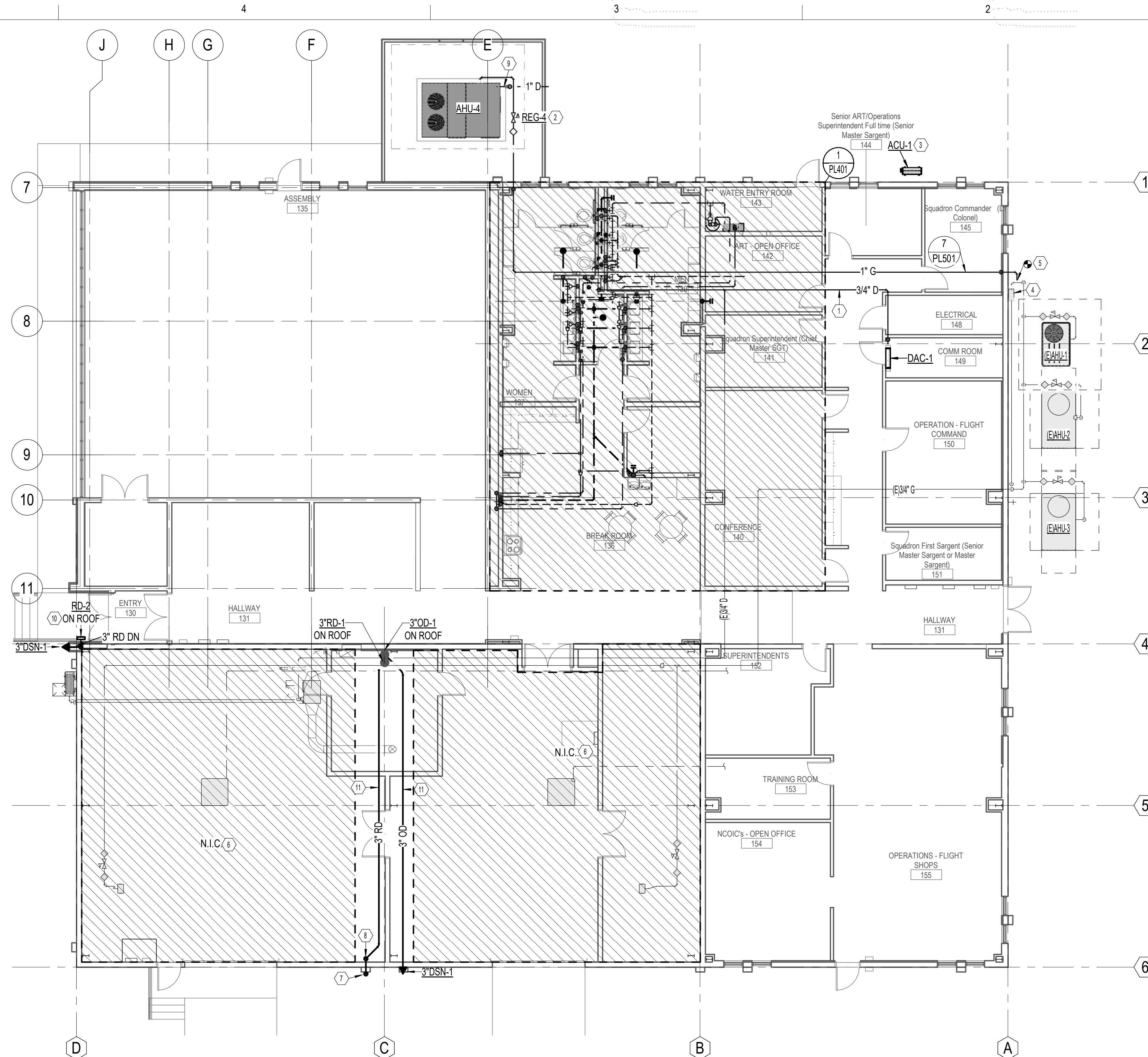


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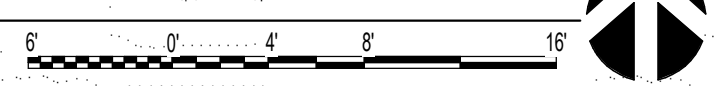


DESIGNED BY: M.E.D.	CHECKED BY: B.R.C.
DRAWN BY: BEVERLY LANGUE	DATE: 07/16/2020
PROJECT NO: 1033248	LEGACY PROJECT NO:
BASE PROJECT MANAGER:	BASE PROJECT MANAGER:
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**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
PLUMBING DEMO PLAN**



1 PLUMBING FLOOR PLAN
 SCALE: 1/8" = 1'-0"



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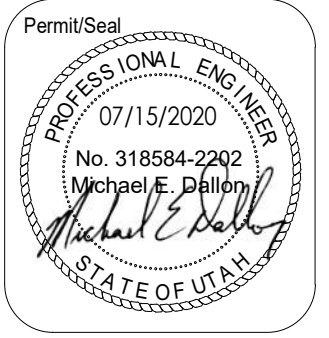
- 1 ROUTE 3/4" D FROM DAC-1 TO JANITOR'S CLOSET. DROP IN WALL AND DISCHARGE TO JANITOR'S SINK.
- 2 PROVIDE 2 PSI TO OZ REGULATOR AND GAS COCK.
- 3 PROVIDE MINIMUM 14" HIGH STAND FOR CONDENSING UNIT. SECURE TO CONCRETE PAD.
- 4 EXISTING 2 PSI GAS METER TO REMAIN. SEE REGULATOR SCHEDULE ON PL601 FOR TOTAL CONNECTED LOAD, EQUIVALENT LENGTH, AND PRESSURE.
- 5 CONNECT NEW 1" G LINE THIS LOCATION. CONNECT AFTER REGULATOR AND METER. OFFSET THROUGH EXTERIOR WALL. RISE IN WALL AND OFFSET THROUGH BUILDING AS SHOWN.
- 6 PLUMBING EQUIPMENT AND PIPING IN HATCHED N.I.C. AREA SHOWN FOR REFERENCE ONLY.
- 7 PENETRATE EXISTING WALL 18" ABOVE GRADE. PROVIDE ELBOW AND DISCHARGE TO EXISTING CATCH BASIN. COORDINATE DROP AND PENETRATION WITH CATCH BASIN LOCATION.
- 8 OFFSET RD AND DROP ALONG EXTERIOR WALL.
- 9 PROVIDE CONDENSATE DRAIN WITH TRAP. DRAIN OUTSIDE UNIT ENCLOSURE.
- 10 3" RD-2 SCUPPER DRAIN ON ENTRY CANOPY. ROUTED DRAIN DOWN PILASTER AND CONNECT TO 3" DSN-1. COORDINATE ELEVATION OF DSN WITH ARCHITECTURAL PLANS.
- 11 ALL HORIZONTAL AND VERTICAL PORTIONS OF ROOF DRAIN (RD) AND OVERFLOW DRAIN (OD) PIPING TO BE INSULATED PER SPEC 230700 TABLE 2.

GENERAL NOTES

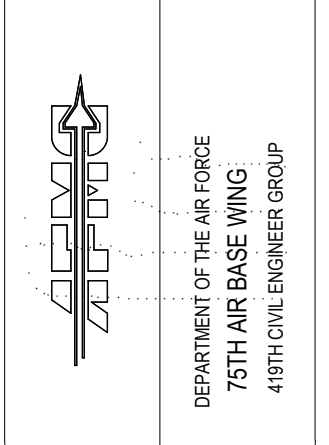
- A. EXISTING TO REMAIN PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN LIGHT AND WITH A THIN LINE. NEW PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN DARK AND WITH THICK LINE.
- B. COORDINATE PLUMBING PIPE ROUTING AND LOCATION WITH ALL TRADE BEFORE STARTING ANY WORK.
- C. ALL SANITARY WASTE PIPING 2 1/2" AND SMALLER TO BE RUN AT 1/4" PER FOOT SLOPE. PIPE 3" AND LARGER RUN AT 1/8" PER FOOT SLOPE.
- D. PROVIDE ACCESS DOORS TO ALL MIXING VALVES, SHUTOFF VALVES, ETC.
- E. PROVIDE ACCESS DOORS TO ALL MIXING VALVES, SHUTOFF VALVES, ETC.
- F. DO NOT ROUTE OR LOCATE ANY PLUMBING PIPING OR EQUIPMENT OVER ANY ELECTRICAL EQUIPMENT, IDF, MDF, AND COMMUNICATION ROOMS.
- G. PROVIDE PROSET TRAP GUARD FOR ALL FLOOR SINKS AND FLOOR DRAINS.
- H. PLUMBING CONTRACTOR IS RESPONSIBLE TO MAKE ALL FINAL CONNECTIONS TO PLUMBING FIXTURES.
- I. INLET AND OUTLET AND PIPE SIZE TO MIXING VALVES TO MATCH CONNECTION SIZES UNLESS NOTED OTHERWISE. PROVIDE ACCESS TO MIXING VALVE AS REQUIRED.
- J. ALL PLUMBING VENTS THROUGH ROOF WILL BE MINIMUM OF 4".
- K. REROUTE OR MODIFY ANY EXISTING PIPE TO ACCOMMODATE NEW CONSTRUCTION.



DATE	APPR	MARK
07/15/2020		



DESIGNED BY	MEED	DATE
MEED	1033248	07/16/2020



**ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 PLUMBING FLOOR PLAN**

PL101

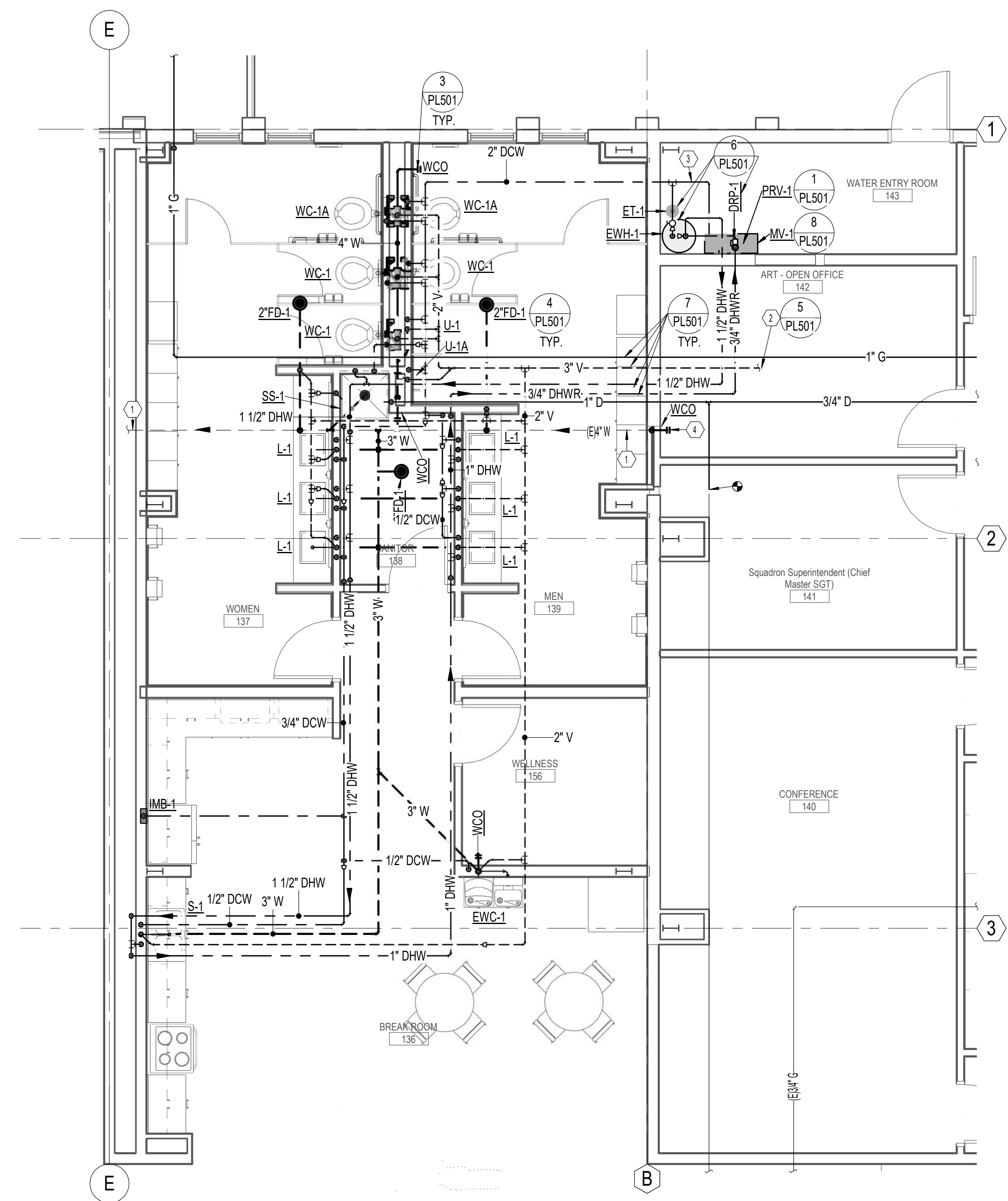
Sheet: 62 of 94

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1 ENLARGED PLUMBING FLOOR PLAN
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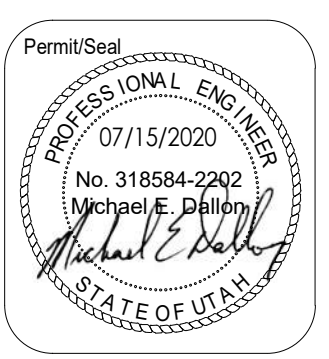
- 1 LOCATION OF EXISTING BELOW GRADE WASTE LINE IS ASSUMED FROM ABOVE SLAB OBSERVATIONS. EXISTING PLUMBING DRAWINGS ARE NOT AVAILABLE. LOCATION AND SIZE OF EXISTING WASTE LINE TO BE FIELD VERIFIED BY CONTRACTOR. CONTRACTOR TO SCOPE AND CAMERA THE LINE TO VERIFY EXISTING LOCATION. CONTRACTOR TO ADJUST NEW PIPING AS REQUIRED TO CONNECT TO EXISTING.
- 2 CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING VENT RISER THROUGH ROOF. EXTEND NEW 3" V TO EXISTING LOCATION AND RISE THROUGH ROOF WITH MINIMUM 4" VTR.
- 3 2" DCW FROM NEW PRV ASSEMBLY.
- 4 PROVIDE NEW WCO AT TERMINATION OF EXISTING WASTE LINE.

GENERAL NOTES

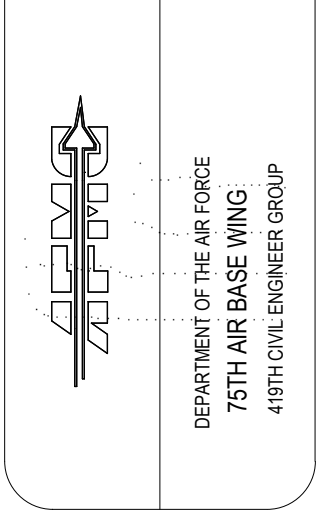
- A. EXISTING TO REMAIN PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN LIGHT AND WITH A THIN LINE. NEW PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN DARK AND WITH THICK LINE.
- B. COORDINATE PLUMBING PIPE ROUTING AND LOCATION WITH ALL TRADE BEFORE STARTING ANY WORK.
- C. ALL SANITARY WASTE PIPING 2 1/2" AND SMALLER TO BE RUN AT 1/4" PER FOOT SLOPE. PIPE 3" AND LARGER RUN AT 1/8" PER FOOT SLOPE.
- D. PROVIDE ACCESS DOORS TO ALL MIXING VALVES, SHUTOFF VALVES, ETC.
- E. PROVIDE ACCESS DOORS TO ALL MIXING VALVES, SHUTOFF VALVES, ETC.
- F. DO NOT ROUTE OR LOCATE ANY PLUMBING PIPING OR EQUIPMENT OVER ANY ELECTRICAL EQUIPMENT, IDF, MDF, AND COMMUNICATION ROOMS.
- G. PROVIDE PROSET TRAP GUARD FOR ALL FLOOR SINKS AND FLOOR DRAINS.
- H. PLUMBING CONTRACTOR IS RESPONSIBLE TO MAKE ALL FINAL CONNECTIONS TO PLUMBING FIXTURES.
- I. INLET AND OUTLET AND PIPE SIZE TO MIXING VALVES TO MATCH CONNECTION SIZES UNLESS NOTED OTHERWISE. PROVIDE ACCESS TO MIXING VALVE AS REQUIRED.
- J. ALL PLUMBING VENTS THROUGH ROOF WILL BE MINIMUM OF 4".
- K. REROUTE OR MODIFY ANY EXISTING PIPE TO ACCOMMODATE NEW CONSTRUCTION.



DATE	APPR	MARK
07/15/2020		



DESIGNED BY	MEED	DATE
MEED <td>1033268 <td>07/16/2020</td> </td>	1033268 <td>07/16/2020</td>	07/16/2020



**ADDITION/RENOVATION RESERVE
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 ENLARGED PLUMBING FLOOR PLAN**

PL401
 Sheet: 63 of 94



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CHECKED BY	BRC
DRAWN BY	
DATE	07/16/2020
PROJECT NO.	1033248
LEGACY PROJECT NO.	
BASE PROJECT MANAGER	BEVERLY LANGUE

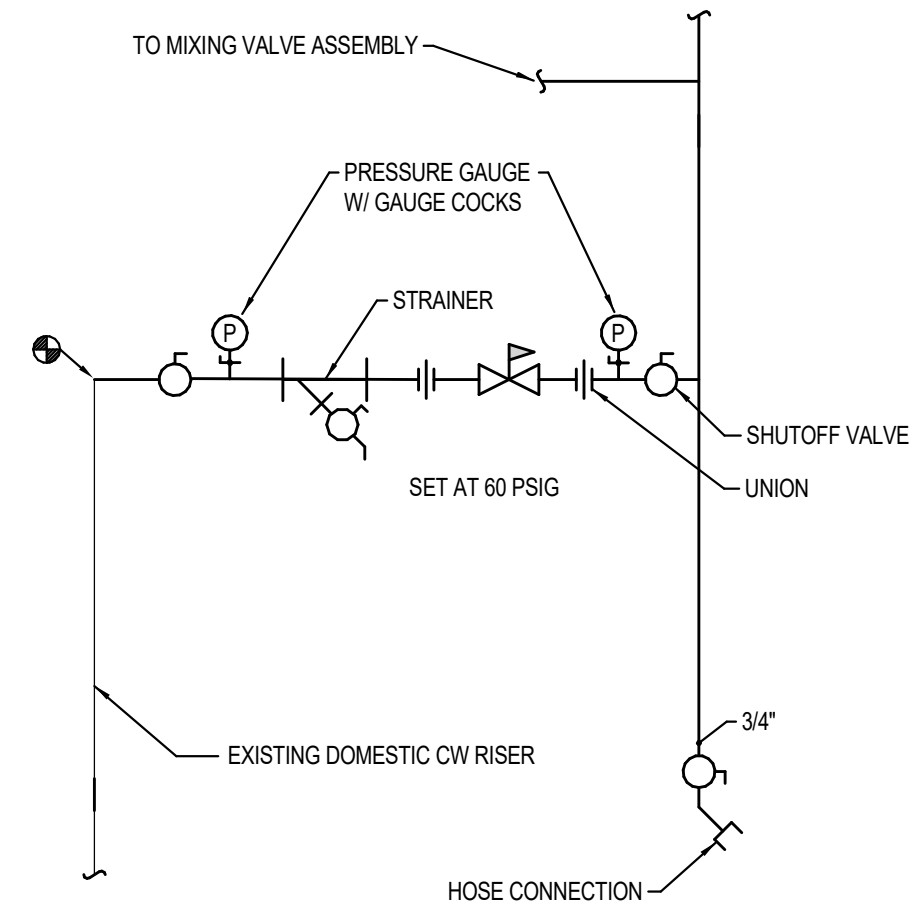
DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
419TH CIVIL ENGINEER GROUP

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
PLUMBING DETAILS

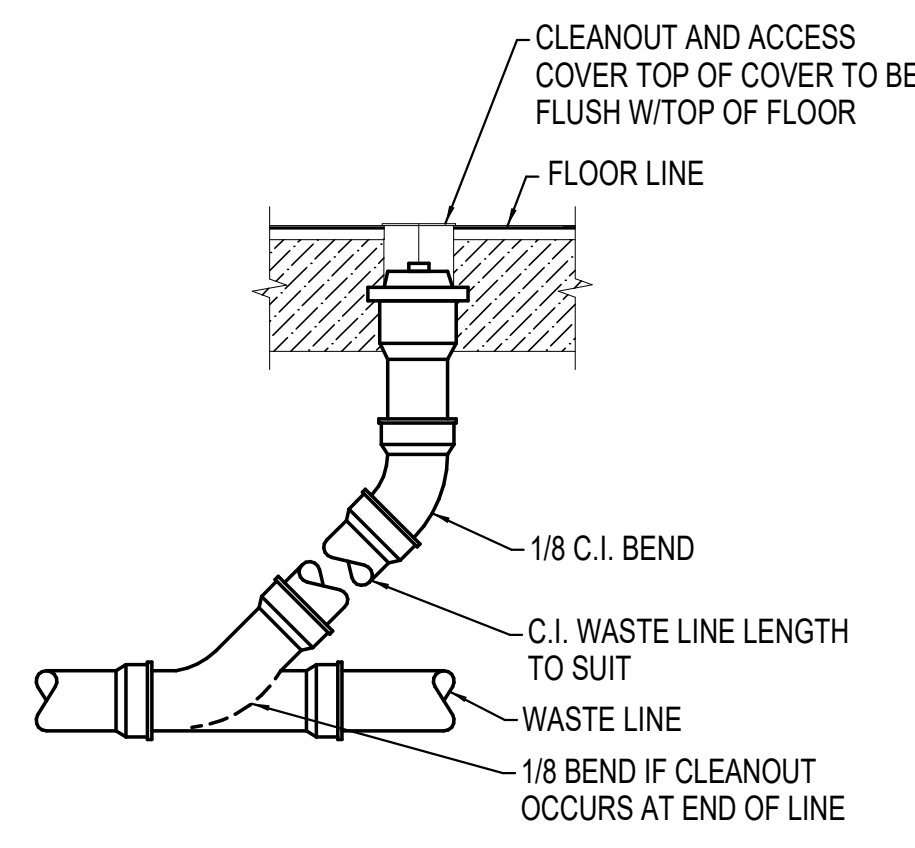
PL501

Sheet: 64 of 94

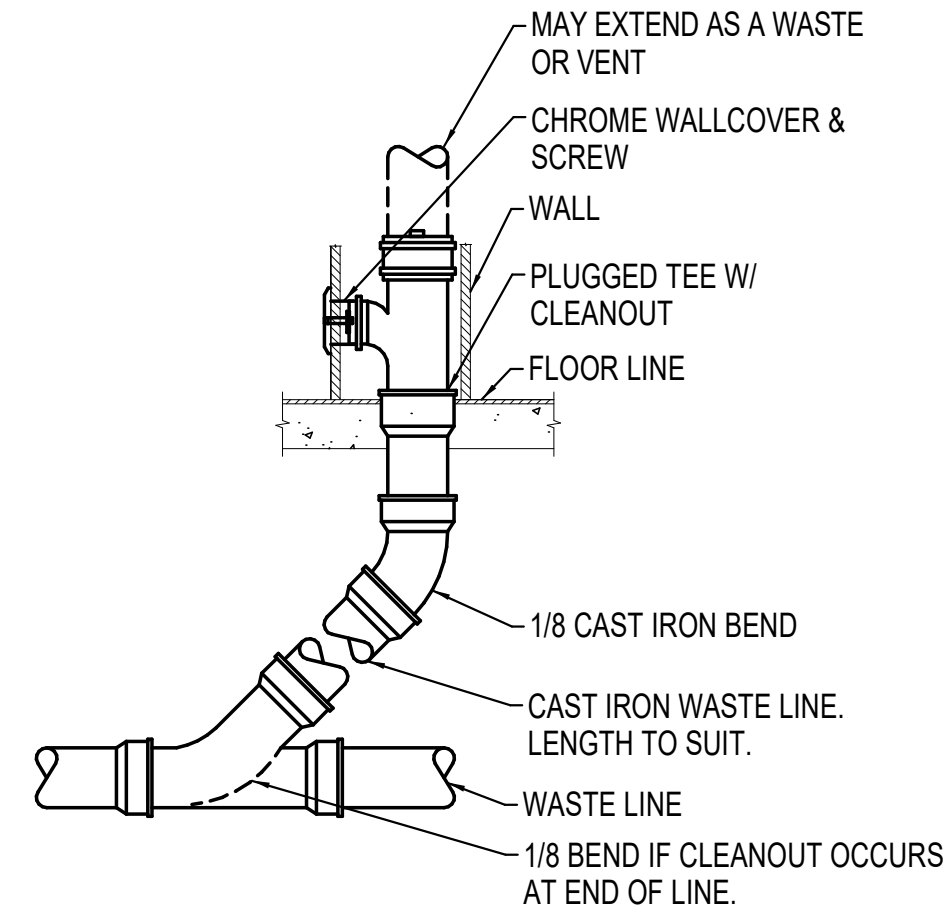
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PLAN CODE	SIZE	MAX GPM @ 10 PSI ΔP	MANUFACTURER & MODEL NO
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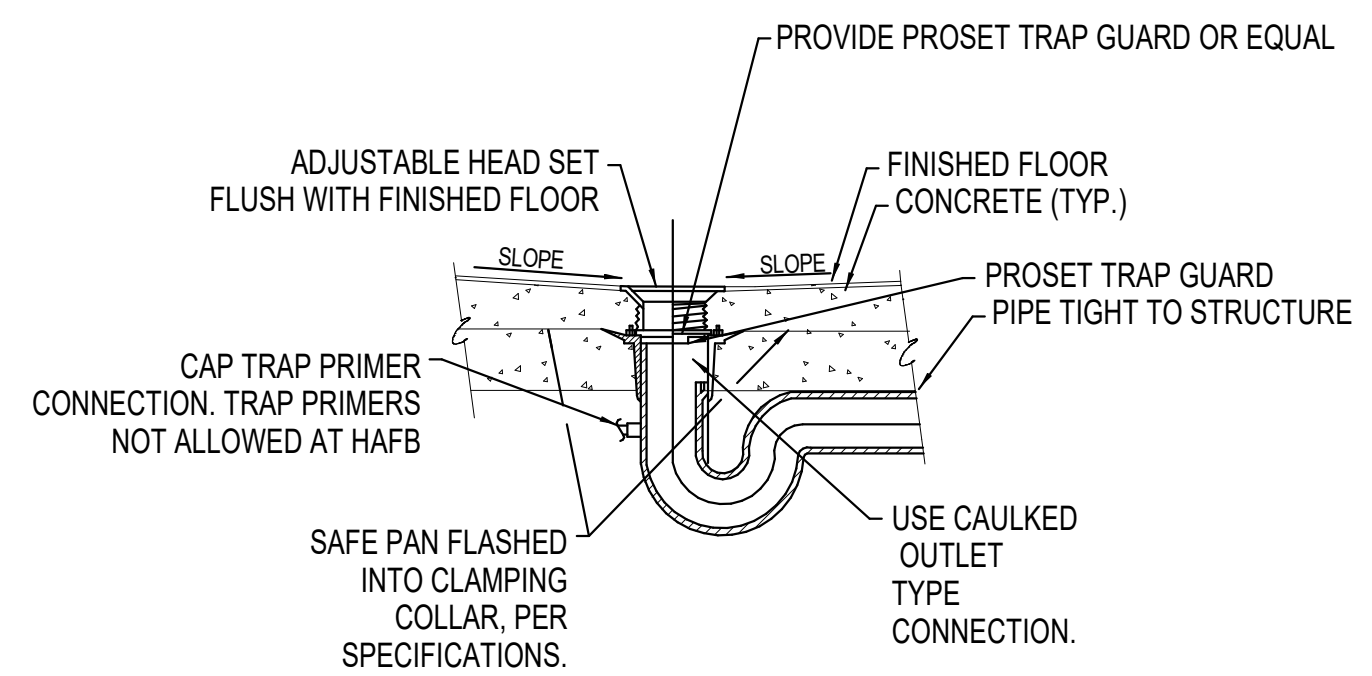
1 PRV STATION DETAIL
NO SCALE



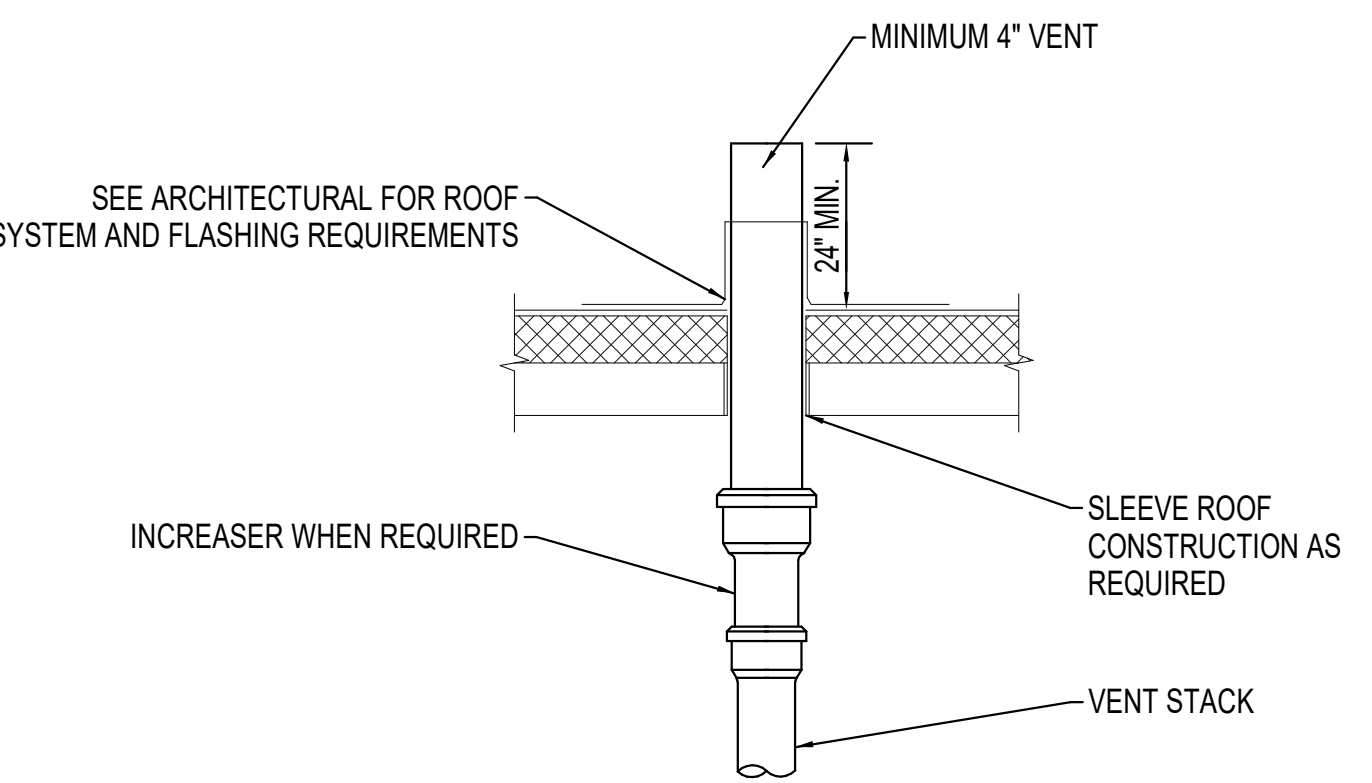
2 FLOOR CLEANOUT DETAIL
NO SCALE



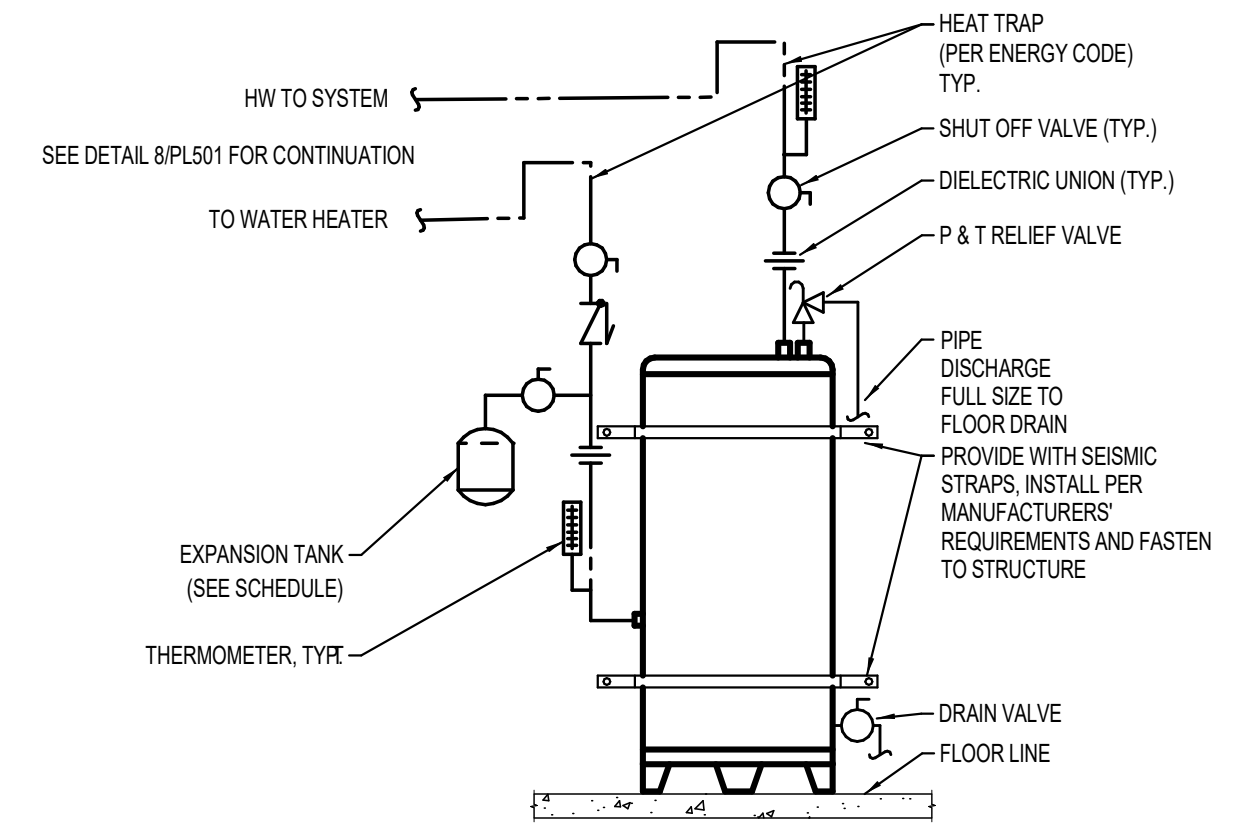
3 WALL CLEANOUT DETAIL
NO SCALE



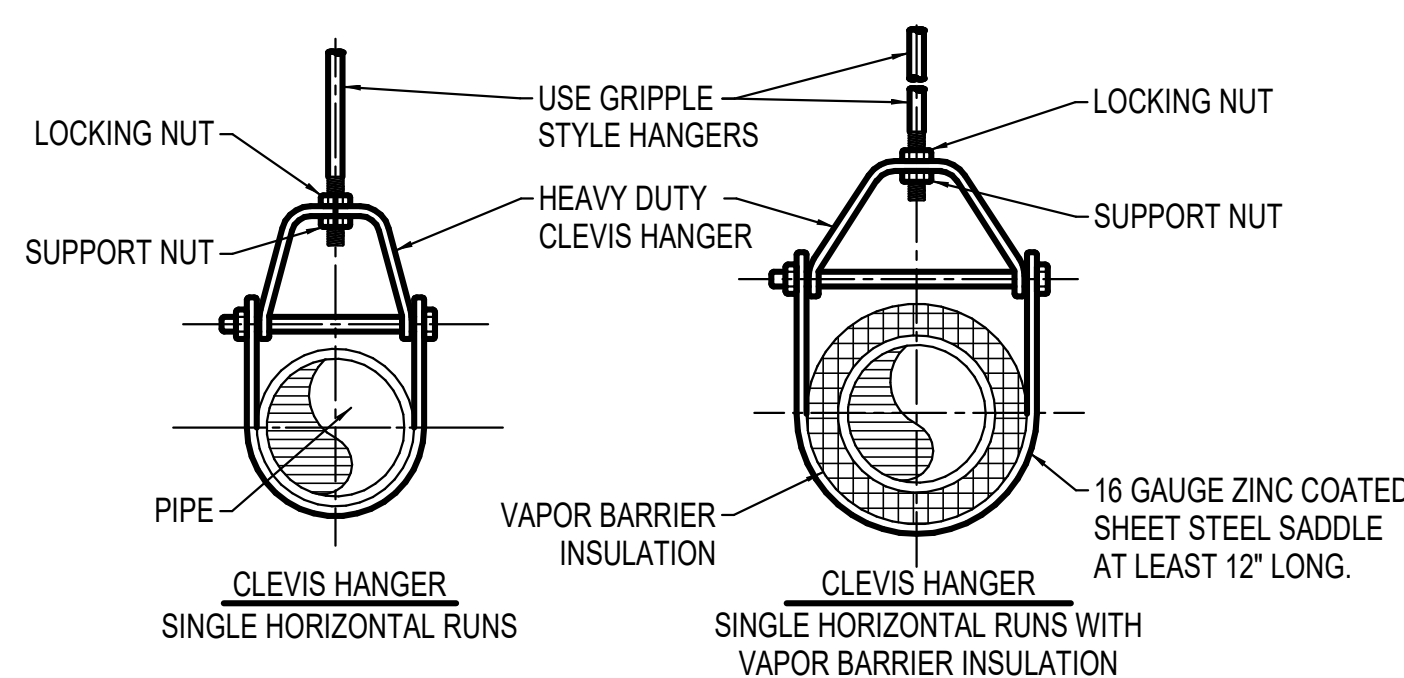
4 FLOOR DRAIN DETAIL
NO SCALE



5 VENT THROUGH ROOF DETAIL
NO SCALE

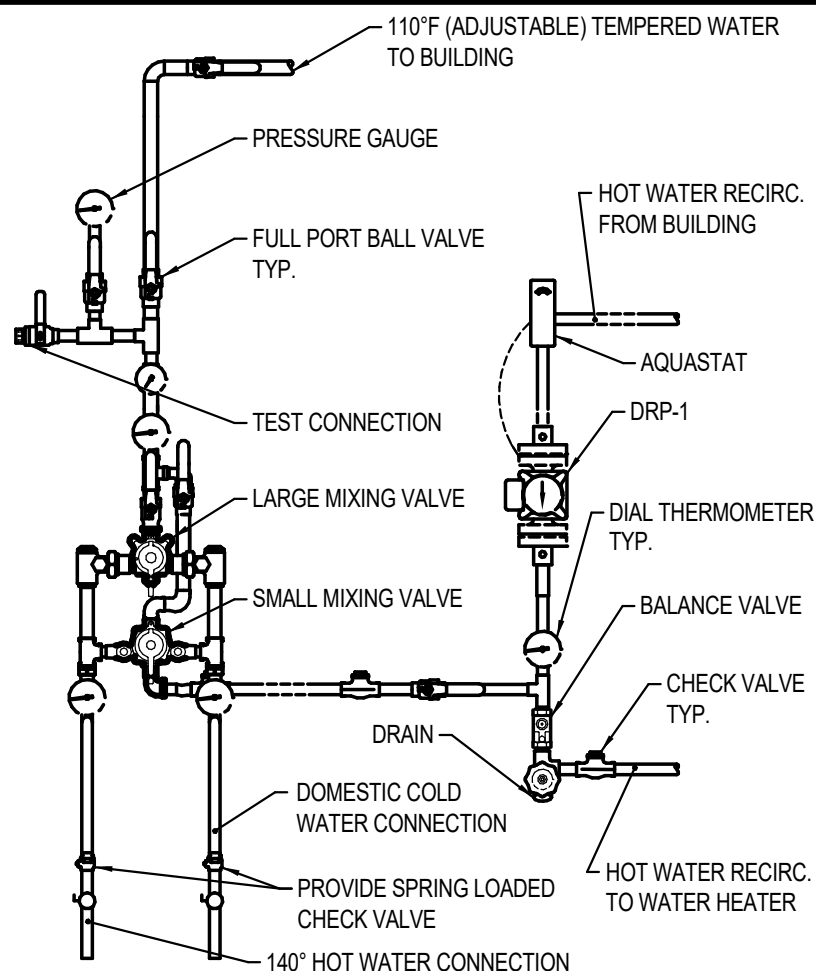


6 ELECTRIC WATER HEATER PIPING DETAIL
NO SCALE



7 CLEVIS PIPE HANGER DETAIL
NO SCALE

MIXING VALVE SCHEDULE (MV)					
PLAN CODE	MIN GPM	MAX GPM	INLET SIZE	OUTLET SIZE	MANUFACTURER & MODEL NO
MV-1	1	35	3/4"	1"	LEONARD TM-420



8 MIXING VALVE ASSEMBLY DUAL DOMESTIC DETAIL
NO SCALE

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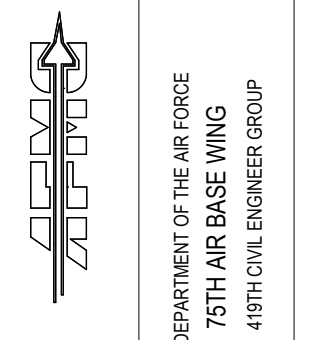
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505 East South Temple, Ste 100 / Salt Lake City, Utah 84102-1004
Phone 801.322.2400 / colvinengineering.com



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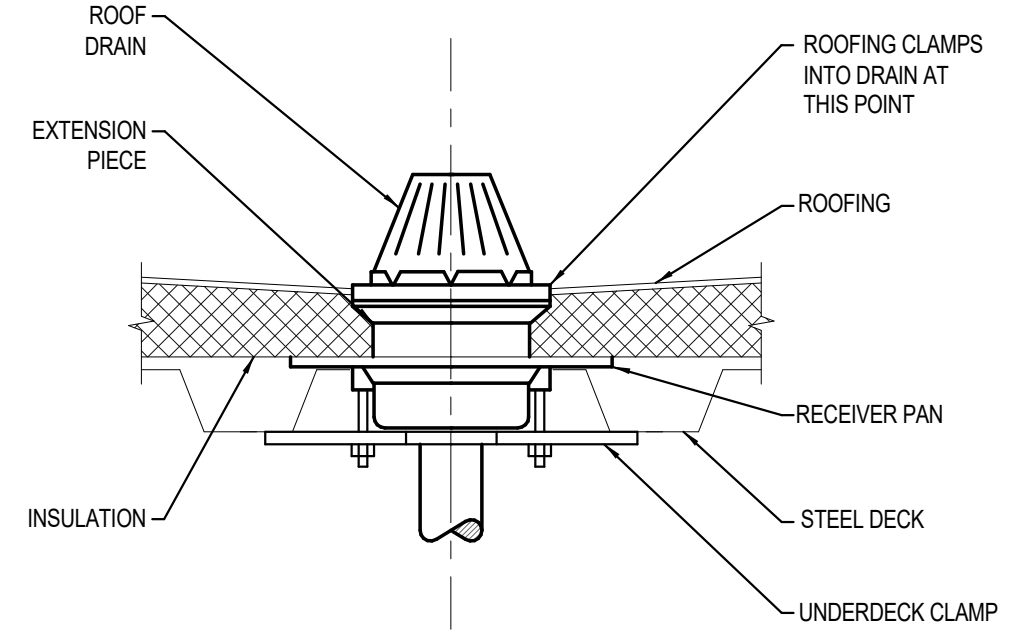
DESIGNED BY	Designer	CHECKED BY	Checker
DRAWING PROJECT NO.	1033248	SITE CODE	
LEGACY PROJECT NO.		DATE	07/16/2020
ISSUE		DATE	
BASE PROJECT MANAGER			BEVERLY LANGUE



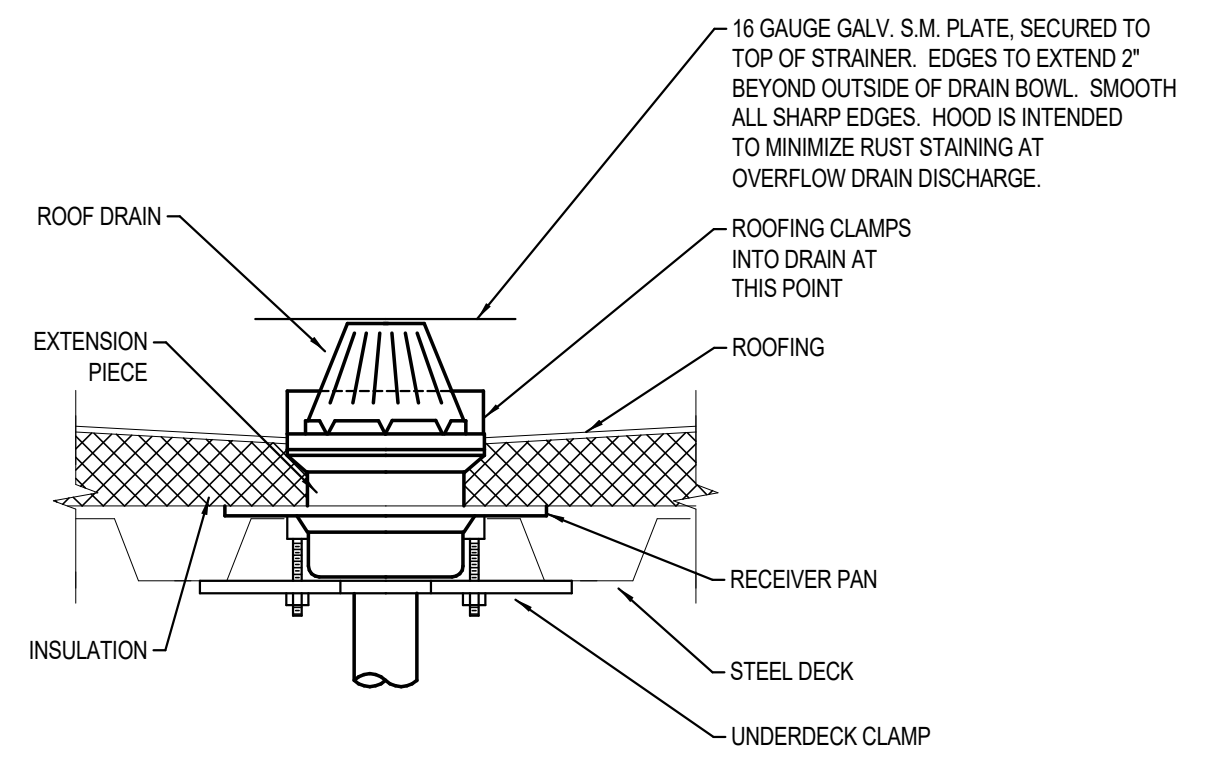
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ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
PLUMBING DETAILS

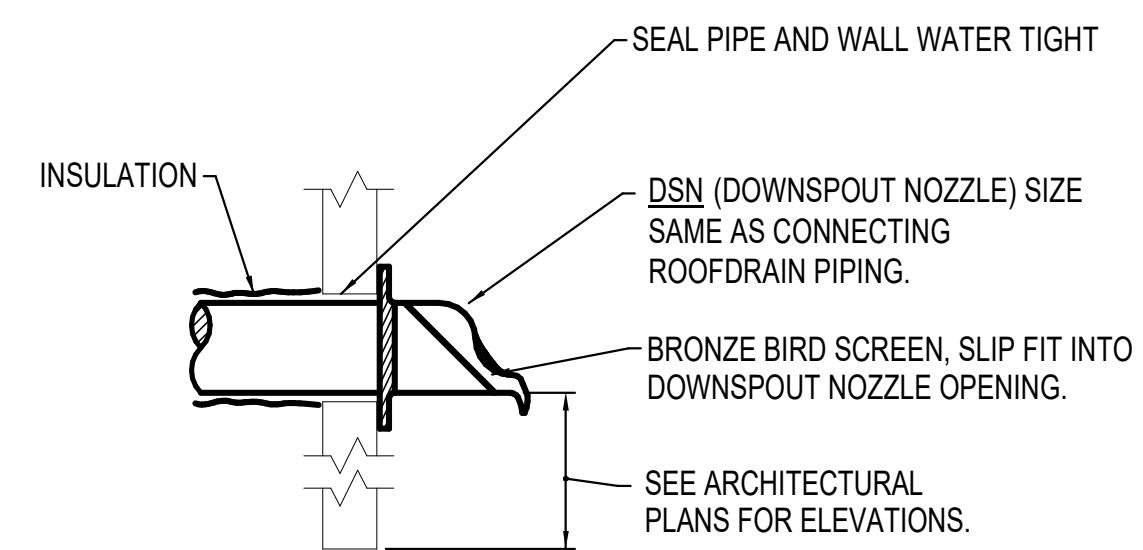
PL502
Sheet: 65 of 94



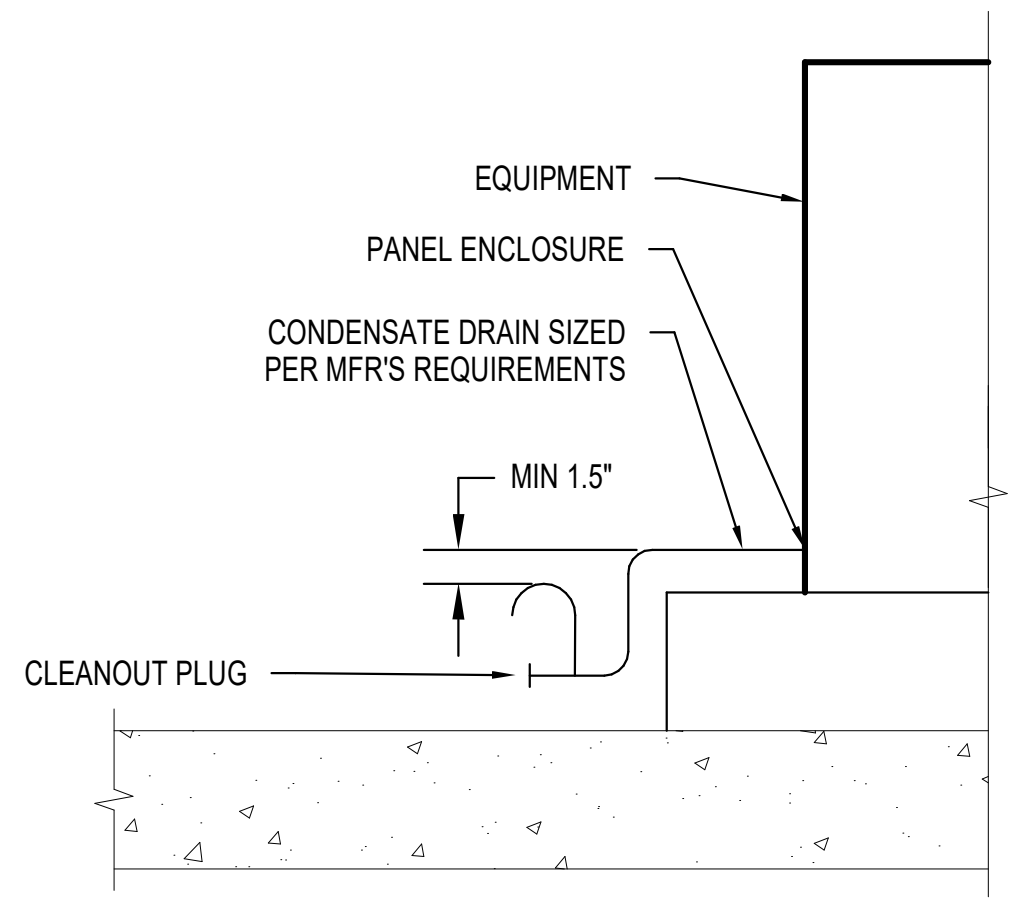
1 ROOF DRAIN DETAIL
NO SCALE



2 OVERFLOW ROOF DRAIN WITH HOOD DETAIL
NO SCALE



3 DOWNSPOUT NOZZLE DETAIL
NO SCALE



4 P-TRAP DETAIL
NO SCALE

NOT USED

5 NO SCALE

NOT USED

6 NO SCALE

NOT USED

7 NO SCALE

NOT USED

8 NO SCALE

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PLUMBING FIXTURE SCHEDULE

PLAN CODE	DESCRIPTION	ROUGH IN SIZE (IN)					MANUFACTURER & MODEL NO.	REMARKS
		CW	HW	TEMPERED	WASTE	VENT		
WC-1A	WATER CLOSET, ADA COMPLIANT, WALL MOUNT, MANUAL FLUSH VALVE, ELONGATED BOWL, VITREOUS CHINA 1.28 GPF	1	-	-	4	2	AMERICAN STANDARD 2859.128.020 SEAT: 5901.100 AMERICAN STANDARD SEAT SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.	COLOR: WHITE
WC-1	WATER CLOSET, WALL MOUNT, MANUAL FLUSH VALVE, ELONGATED BOWL, VITREOUS CHINA 1.28 GPF	1	-	-	4	2	AMERICAN STANDARD 2859.128.020 SEAT: 5901.100 AMERICAN STANDARD SEAT SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.	COLOR: WHITE
U-1	URINAL, VITREOUS CHINA, SIPHON JET, MANUAL FLUSH VALVE, 0.125 GPF	3/4	-	-	2	2	AMERICAN STANDARD 6590.503.020	COLOR: WHITE SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT.
U-1A	URINAL, ADA COMPLIANT, VITREOUS CHINA, SIPHON JET, MANUAL FLUSH VALVE, 0.125 GPF	3/4	-	-	2	2	AMERICAN STANDARD 6590.503.020	COLOR: WHITE SEE ARCHITECTURAL PLANS FOR ADA MOUNTING HEIGHT.
L-1	UNDERMOUNT LAVATORY SINK, VITREOUS CHINA, COORDINATE COUNTER DIMENSIONS W/ARCH, GRID DRAIN, 0.5 GPM FLOW	1/2	-	1/2	1 1/2	1 1/2	SINK: KOHLER K-20000 FAUCET: KOHLER K-97283-4-CP	SINK COLOR: WHITE, INSTALL TO MEET ADA STANDARDS, COORDINATE COUNTER DIMENSIONS W/ARCH.
S-1	DOUBLE COMPARTMENT, RECTANGULAR STAINLESS STEEL, UNDERMOUNT SINK, GOOSENECK SWING SPOUT WITH WING HANDLES, 18 GA, WITH 3/4 HP GARBAGE DISPOSAL.	1/2	1/2	-	1 1/2	1 1/4	BOWL: ELKAY ELUH3118PD FAUCET: ELKAY LKD232SBH5 STRAINER: ELKAY LK35 DISPOSAL: WASTE KING, MN: 9940	-
EWC-1	ELECTRIC WATER COOLER, BI-LEVEL, ADA COMPLIANT, FLEXIBLE BUBBLER GUARD, AND BOTTLE FILLER. COMPRESSOR TO BE 115V, 60 HZ WITH CAPACITY TO DELIVER AT LEAST 8.0 GPH OF 50°F WATER. COORDINATE ADA INSTALLATION WITH THE ARCHITECTURAL DRAWINGS	3/8	-	-	1 1/2	1 1/2	ELKAY LZSTL8WSLP	POWER: 5 AMPS
FD-1	FLOOR DRAIN, CAST IRON, HEEL PROOF STRAINER GRATE. PROVIDE WITH TRAP GUARD OR EQUAL. SEE PLAN FOR OUTLET SIZE.	-	-	-	SEE PLANS	2	J.R. SMITH MANUFACTURING FIGURE. 2005Y-NB-U	TRAP GUARD: RECTOR SEAL SURE SEAL
FCO	FLOOR CLEANOUT, CAST IRON ADJUSTABLE BODY, ABS PLUG, VANDAL PROOF SECURITY SCREWS.	-	-	-	SEE PLANS	-	J.R. SMITH MANUFACTURING SERIES 4020	-
WCO	WALL CLEANOUT, CAST IRON, ABS PLUG, STAINLESS STEEL COVER, AND VANDAL PROOF SCREWS.	-	-	-	SEE PLANS	-	JR. SMITH SERIES 4350	-
SS-1	PRECAST TERRAZZO, 24" WIDE, 24" LONG, 6" HIGH SIDES, 3" GRID DRAIN AND FAUCET WITH VACUUM BREAKER, STOPS, TOP BRACE, CHROME FINISH.	3/4	3/4	-	3	2	SINK: ACORN TRH-242406 FAUCET: KOHLER K-8007	-
SA-1	SHOCK ARRESTOR	-	-	-	-	-	JR SMITH SERIES 5000	FIGURE 5005 FIXTURE RATING 1-11 FIGURE 5010 FIXTURE RATING OF 12-32 FIGURE 5020 FIXTURE RATING 33-60 F FIGURE 5030 FIXTURE RATING 61-113
FS-1	FLOOR SINK, CAST IRON, DEEP SEAL TRAP AND TRAP GUARD. NO TRAP GUARD IN KITCHEN FLOOR SINKS	-	-	-	SEE PLANS	2	J.R. SMITH SERIES 3001	TRAP GUARD: TRAP GUARD RECTORSEAL-SURESEAL
IMB-1	ICE MAKER OUTLET BOX, LEAD FREE METAL CONSTRUCTION, QUARTER TURN BALL VALVE, WITH HAMMER ARRESTOR	1/2	-	-	-	-	GUY GRAY - IPS MIB1HAAB	-
RD-1	ROOF DRAIN - PRIMARY	-	-	-	-	-	SEE PLANS	J.R. SMITH MODEL 1330 GENERAL PURPOSE ROOF DRAIN. ROOF DRAIN SHALL BE PROVIDED WITH DUCO CAST IRON BODY, COMBINED FLASHING CLAMP AND GRAVEL STOP WITH NEOPRENE GASKET, GALVANIZED CAST IRON DOME, SUMP RECEIVER, UNDERDECK CLAMP AND VANDAL PROOF SECURITY SCREWS, OR EQUAL.
RD-2	ROOF DRAIN - SCUPPER DRAIN	-	-	-	-	-	SEE PLANS	J.R. SMITH MODEL 1530T SCUPPER DRAIN. DRAIN SHALL BE PROVIDED WITH DUCO CAST IRON BODY, ANGLE GRATE, COMBINED FLASHING CLAMP AND LOOSE SET GRATE, VANDAL PROOF SECURITY SCREWS, OR EQUAL.
OD-1	ROOF DRAIN - SECONDARY	-	-	-	-	-	SEE PLANS	J.R. SMITH MODEL 1015-C GENERAL PURPOSE OVERFLOW DRAIN. OVERFLOW DRAIN SHALL BE PROVIDED WITH DUCO CAST IRON BODY, REVERSIBLE COLLAR, COMBINED FLASHING CLAMP AND GRAVEL STOP WITH NEOPRENE GASKET, GALVANIZED CAST IRON DOME, SUMP RECEIVER, UNDERDECK CLAMP, VANDAL PROOF SECURITY SCREWS, OR EQUAL. MOUNT 2" HIGHER THAN RD-1. OR EQUAL
DSN-1	DOWN SPOUT NOZZLE	-	-	-	-	-	SEE PLANS	J.R. SMITH SERIES 1770 WITH WALL FLANGE. PROVIDE BIRD SCREEN.



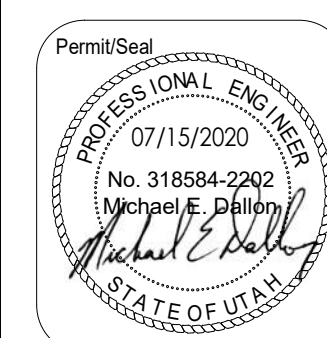
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CHECKED BY	BRC	DATE	07/16/2020
DRAWN BY		DATE	
PROJECT NO.	1033248	LEGACY PROJECT NO.	
BASE PROJECT MANAGER		DATE	
PROJECT MANAGER	BEVERLY LANGUE	DATE	

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
PLUMBING SCHEDULES

PL601
Sheet: 66 of 94

ELECTRIC WATER HEATER SCHEDULE (EWH)

PLAN CODE	CAP (GAL)	RECOVER @ ELEV (GPH)	INPUT (KW)	TEMP RISE (°F)	MAX DIMENSIONS				MAX OPERATING WT (LBS)	MANUFACTURER & MODEL NO	REMARKS
					DIA (IN)	HEIGHT (IN)	VOLT/PH	FLA			
EWH-1	40	23	5	90	21	46	208 / 1	24	450	AO SMITH DEN-40	1

1 - DOUBLE ELEMENT, NON-SIMULTANEOUS OPERATION.

EXPANSION TANK SCHEDULE (ET)

PLAN CODE	SYSTEM SERVED	WATER TEMP (°F)	TANK VOLUME (GAL)	ACCEPTANCE FACTOR	PRE-CHARGE (PSI)	MAX DIMENSIONS			MANUFACTURER & MODEL NO	REMARKS
						DIA (IN)	HEIGHT (IN)	OPERATING WT (LBS)		
ET-1	DOMESTIC HOT WATER	140	2	0.45	12	8	14	30	AMTROL ST-5C-DD	-

DOMESTIC WATER RECIRCULATION PUMP SCHEDULE (DRP)

PLAN CODE	SYSTEM SERVED	MAX GPM	MAX HEAD (FT)	PUMP RPM	MOTOR		MANUFACTURER & MODEL NO	REMARKS
					BHP	VOLT / PH		
DRP-1	DOMESTIC HOT WATER	5	10	2174	.04	120 / 1	BELL & GOSSETT ECOCIRC 19-16	1, 2

1 - STAINLESS STEEL BODY. 2 - PROVIDE WITH AQUASTAT.

NATURAL GAS PRESSURE REGULATOR SCHEDULE

EQUIPMENT PLAN CODE	GAS LOAD (MBH)	REGULATOR PLAN CODE	TYPE	INLET RESERVED (PSIG)	OUTLET RESERVED (OZ/SQ IN)	GAS DELIVERY (CFH)	NOTES
AHU-4	250	REG-4	SELF-OPERATED SPRING LOADED DIAPHRAGM	2	4	281	VENT LIMITER WITH OVER PRESSURE PROTECTION DEVICE
(E)AHU-1	120	(E)REG	SELF-OPERATED SPRING LOADED DIAPHRAGM	2	4	135	VENT LIMITER WITH OVER PRESSURE PROTECTION DEVICE
(E)AHU-2	160	(E)REG	SELF-OPERATED SPRING LOADED DIAPHRAGM	2	4	180	VENT LIMITER WITH OVER PRESSURE PROTECTION DEVICE
(E)AHU-3	160	(E)REG	SELF-OPERATED SPRING LOADED DIAPHRAGM	2	4	180	VENT LIMITER WITH OVER PRESSURE PROTECTION DEVICE
(E)RH-1	150	(E)REG	SELF-OPERATED SPRING LOADED DIAPHRAGM	2	4	169	VENT LIMITER WITH OVER PRESSURE PROTECTION DEVICE
(E)RH-2	150	(E)REG	SELF-OPERATED SPRING LOADED DIAPHRAGM	2	4	169	VENT LIMITER WITH OVER PRESSURE PROTECTION DEVICE
TOTAL BTU (MBH)	990				TOTAL LOAD (CFH)	1,112	

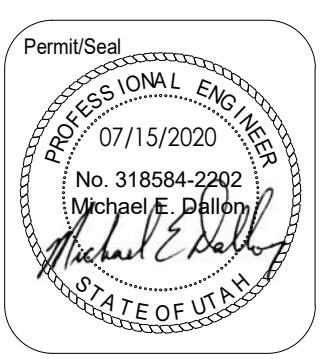
NOTE:
TOTAL CONNECTED GAS LOAD BASED ON MAX EQUIVALENT LENGTH OF 300 FEET PER LINE, 2 PSI METER, AND 890 BTU/CF FOR OGDEN AREA. EQUIPMENT AND REGULATORS WITH (E) PREFIX ARE EXISTING AND INCLUDED FOR REFERENCE ONLY.

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		1033268		07/16/2020		

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
PLUMBING SCHEMATICS

KEYED NOTES

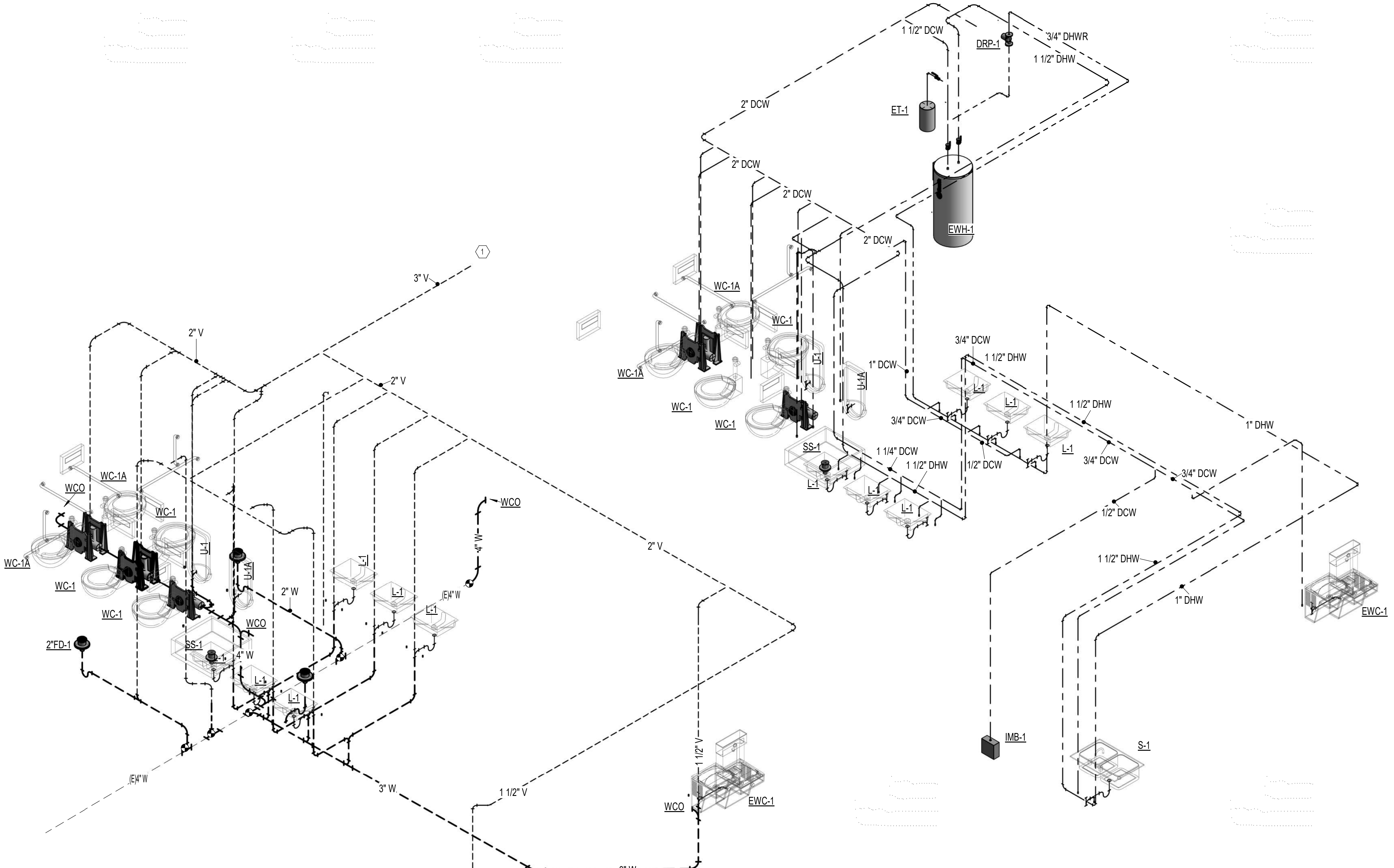
- CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING VENT RISER THROUGH ROOF. EXTEND NEW 3" V TO EXISTING LOCATION AND RISE THROUGH ROOF WITH MINIMUM 4" VTR.

GENERAL NOTES

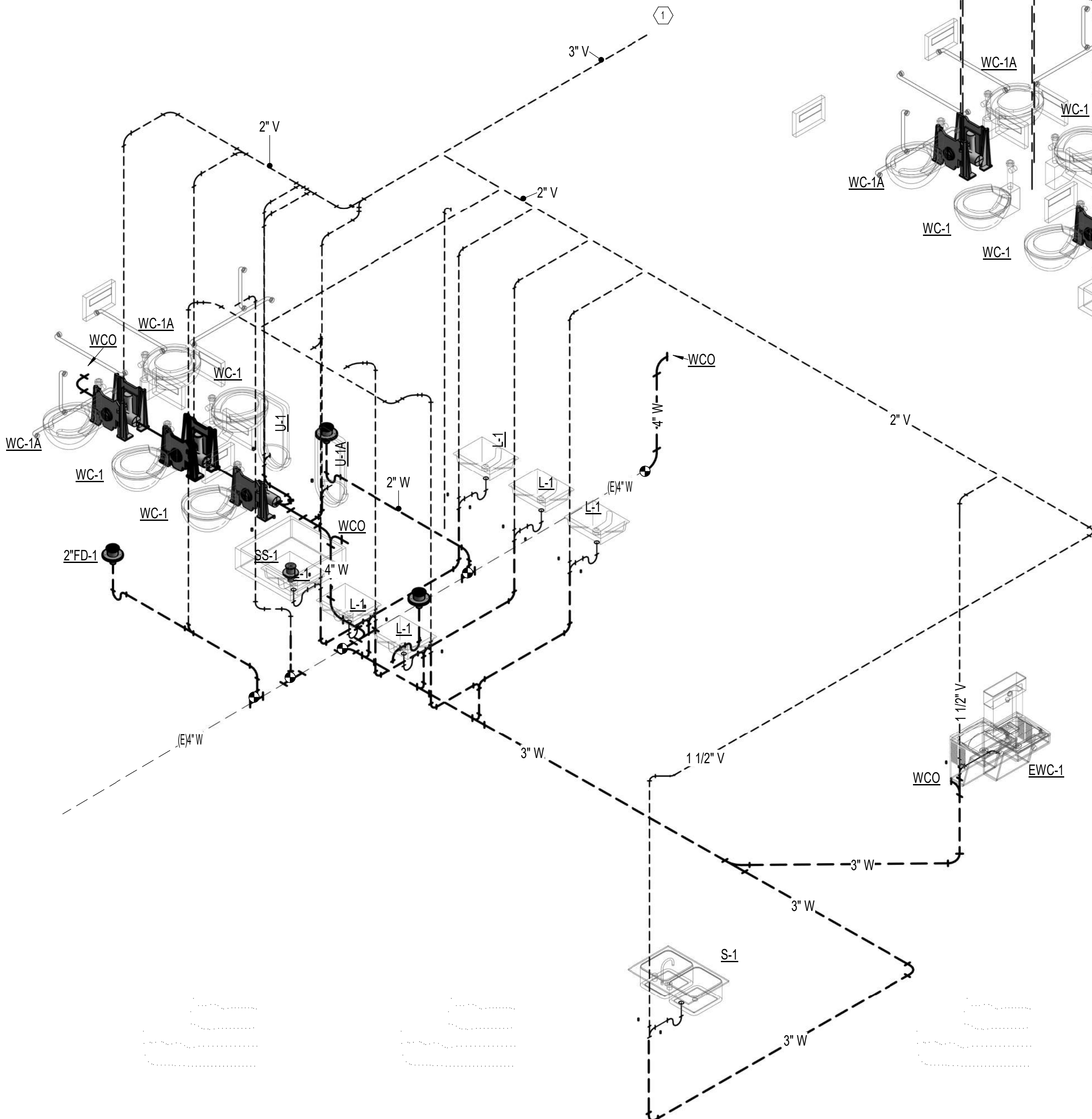
- EXISTING TO REMAIN PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN LIGHT AND WITH A THIN LINE. NEW PIPE, PIPE ACCESSORIES AND PLUMBING IS SHOWN DARK AND WITH THICK LINE.
- COORDINATE PLUMBING PIPE ROUTING AND LOCATION WITH ALL TRADE BEFORE STARTING ANY WORK.
- ALL SANITARY WASTE PIPING 2 1/2" AND SMALLER TO BE RUN AT 1/4" PER FOOT SLOPE. PIPE 3" AND LARGER RUN AT 1/8" PER FOOT SLOPE.
- PROVIDE ACCESS DOORS TO ALL MIXING VALVES, SHUTOFF VALVES, ETC.
- PROVIDE ACCESS DOORS TO ALL MIXING VALVES, SHUTOFF VALVES, ETC.
- DO NOT ROUTE OR LOCATE ANY PLUMBING PIPING OR EQUIPMENT OVER ANY ELECTRICAL EQUIPMENT, IDF, MDF, AND COMMUNICATION ROOMS.
- PROVIDE PROSET TRAP GUARD FOR ALL FLOOR SINKS AND FLOOR DRAINS.
- PLUMBING CONTRACTOR IS RESPONSIBLE TO MAKE ALL FINAL CONNECTIONS TO PLUMBING FIXTURES.
- INLET AND OUTLET AND PIPE SIZE TO MIXING VALVES TO MATCH CONNECTION SIZES UNLESS NOTED OTHERWISE. PROVIDE ACCESS TO MIXING VALVE AS REQUIRED.
- ALL PLUMBING VENTS THROUGH ROOF WILL BE MINIMUM OF 4".
- REROUTE OR MODIFY ANY EXISTING PIPE TO ACCOMMODATE NEW CONSTRUCTION.

NOTE:
FOR PIPE SIZES SEE
SHEET PL101 & PL401

1 DOMESTIC WATER SCHEMATIC
SCALE: NONE



2 WASTE AND VENT SCHEMATIC
SCALE: NONE



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SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
REFERENCE AND LINE SYMBOLS	
	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
	KEYNOTE INDICATOR.
	REVISION INDICATOR.
	EQUIPMENT INDICATOR.
	MECHANICAL EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "XMDP" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
	NEW LINE: MEDIUM LINE.
	HIDDEN FEATURES LINE: HIDDEN, THIN LINE
	EXISTING TO REMAIN LINE: THIN LINE.
	DEMOLITION LINE: DASHED, MEDIUM LINE
WIRING METHODS	
	WIRING.
	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. USE #12 CONDUCTORS, EXCEPT #10 CONDUCTORS SHALL BE INSTALLED IF DISTANCES EXCEED THOSE SPECIFIED IN THE ELECTRICAL SPECIFICATIONS.
	LOW VOLTAGE WIRING: DIVIDE, MEDIUM LINE.
	CONDUIT STUB. DIMENSION RECORD DRAWINGS AND MARK.
	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. REFER TO ONE-LINE DIAGRAM.
	ADA ACCESS PUSH PLATE
	JUNCTION BOX.
	EARTH GROUND (ONE-LINE DIAGRAM).
	JUNCTION BOX, CEILING.
	LADDER RACK.
	MECHANICAL EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCHEDULE FOR REQUIREMENTS.
WIRING DEVICES	
	RECEPTACLE, DUPLEX: NEMA 5-20R.
	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
	RECEPTACLE, DUPLEX, DEDICATED CIRCUIT: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, DRINKING FOUNTAIN: CONCEAL WATER COOLER RECEPTACLE BEHIND WATER COOLER. SEE MECHANICAL/PLUMBING SHOP DRAWINGS FOR INSTALLATION REQUIREMENTS.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WET LABEL, "WEATHERPROOF IN USE": NEMA 5-20R.
	RECEPTACLE, DUPLEX, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, SPECIAL PURPOSE. PROVIDE RECEPTACLE TO MATCH EQUIPMENT PLUG.
	RECEPTACLE, DRYER: NEMA 14-30R.
	RECEPTACLE, RANGE: NEMA 14-50R.
	DROP CORD. SEE DETAIL.
	THERMOSTAT.
	FLUSH FLOOR BOX. "F" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN THE ELECTRICAL SPECIFICATIONS FOR CONFIGURATION AND DEVICES.
	SWITCH, DIMMER.
	SWITCH, SINGLE POLE ("X" INDICATES FIXTURES CONTROLLED).

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
ELECTRICAL POWER AND DISTRIBUTION	
	CIRCUIT BREAKER, MOLDED CASE (ONE-LINE DIAGRAM).
	MOTOR.
	TRANSFORMER (ONE-LINE DIAGRAM).
	PANELBOARD (ONE-LINE DIAGRAM).
	PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE AS SHOWN (ONE-LINE DIAGRAM).
	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
	DIGITAL MULTIMETER (ONE-LINE DIAGRAM).
	SERVICE ENTRANCE SURGE PROTECTION (ONE-LINE DIAGRAM).
	PUSHBUTTON.
	PUSHBUTTONS, MOTOR CONTROL.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
	DISTRIBUTION PANEL OR SWITCHBOARD.
	LIGHTING RELAY, CONTACTOR PANEL, OR DIMMING ENCLOSURE.
	LIGHTING CONTROL STATION.
	DIMMING ENTRY STATION OR CONTROL STATION, FLUSH MOUNTED.
	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD PROTECTION.
	TRANSFORMER: NUMBER INDICATES KVA.
LIGHTING (REFER TO FIXTURE SCHEDULE FOR SYMBOLS)	
	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
	FIXTURE IDENTIFICATION, EMERGENCY WITH BATTERY PACK, CONNECTED TO GENERATOR AS INDICATED: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
	EGRESS DIRECTION ARROW (EXIT SIGNS).
	EXIT SIGN: SINGLE FACE; CEILING MOUNTED
	EXIT SIGN: SINGLE FACE; WALL MOUNTED
	EXIT SIGN: DOUBLE FACE; CEILING MOUNTED
	EXIT SIGN: DOUBLE FACE; WALL MOUNTED
LIGHTING CONTROL	
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
	OCCUPANCY SENSOR, DUAL TECHNOLOGY, DIRECTIONAL.
	VACANCY SENSOR, DUAL TECHNOLOGY, OMNI-DIRECTIONAL, CEILING.
	PHOTOCELL.
	LOW VOLTAGE DIGITAL LIGHTING CONTROL SWITCH: LETTER "a,b" INDICATES ZONING WHERE SHOWN (REFER TO PLANS, SCHEDULES, AND DETAILS FOR EXACT BUTTON CONFIGURATION AND PROGRAMMING REQUIREMENTS)

DEFINITIONS	
NOTE: ALL DEFINITIONS MAY NOT BE USED.	
INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE. NO LIMITATION ON LOCATION IS INTENDED.	
DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", "AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.	
APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.	
FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."	
INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."	
PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE."	
INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.	
TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC....	

SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
STRUCTURED CABLING	
	TELEPHONE, WALL MOUNTED ("X" INDICATES QUANTITY OF CABLES).
	DATA CONNECTION: WIRELESS ACCESS POINT (WAP). REQUIRES (2) DATA DROPS PER DEVICE
	TELEPHONE, WALL MOUNTED: WALL PHONE.
	OUTLET, DATA COMMUNICATION ("X" INDICATES QUANTITY OF CABLES).
	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.
	TWO-WAY EMERGENCY COMMUNICATION DEVICE PER IBC, WALL MOUNTED IN RECESSED BOX.
	TELEPHONE TERMINAL BOARD, FIRE TREATED PLYWOOD PAINTED.
	LAN RACK, FLOOR STANDING.

ABBREVIATIONS			
NOTE: ALL ABBREVIATIONS MAY NOT BE USED.			
1P	SINGLE POLE	KV	KILOVOLT
1PH	SINGLE-PHASE	KVA	KILOVOLT AMPERE
1WAY	ONE-WAY	KVAR	KILOVOLT AMPERE REACTIVE
2/C	TWO-CONDUCTOR	KW	KILOWATT
2WAY	TWO-WAY	KWh	KILOWATT HOUR
3/C	THREE-CONDUCTOR	LED	LIGHT EMITTING DIODE
3WAY	THREE-WAY	LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
4OUT	QUADRUPLE RECEPTACLE OUTLET	LFNC	LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT
4PDT	FOUR-POLE DOUBLE THROW	LPS	LOW PRESSURE SODIUM
4PST	FOUR-POLE SINGLE THROW	LRA	LOCKED ROTOR AMPS
4W	FOUR-WIRE	LTG	LIGHTING
4WAY	FOUR-WAY	LV	LOW VOLTAGE
A	ABOVE COUNTER	MATV	MASTER ANTENNA TELEVISION SYSTEM
AC	ARMORED CABLE	MAX	MAXIMUM
ADA	AMERICANS WITH DISABILITIES ACT	MC	METAL CLAD
ADJ	ADJACENT	MCA	MINIMUM CIRCUIT AMPS
AFF	ABOVE FINISHED FLOOR	MCB	MAIN CIRCUIT BREAKER
AFG	ABOVE FINISHED GRADE	MCC	MOTOR CONTROL CENTER
AIC	AMPERE INTERRUPTING CAPACITY	MCP	MOTOR CIRCUIT PROTECTION
ALUM	ALUMINUM	MDP	MAIN DISTRIBUTION PANEL
AMP	AMPERE	MG	MOTOR GENERATOR
ANN	ANNUNCIATOR	MH	MANHOLE
AP	ACCESS POINT (WIRELESS DATA)	MIN	MINIMUM
AR	AS REQUIRED	MLO	MAIN LUGS ONLY
ASC	AMPS SHORT CIRCUIT	MOCPP	MAXIMUM OVERCURRENT PROTECTION
ATS	AUTOMATIC TRANSFER SWITCH	NA	NOT APPLICABLE
AV	AUDIO VISUAL	NC	NORMALLY CLOSED
AWG	AMERICAN WIRE GAGE	NEC	NATIONAL ELECTRIC CODE
BB	BUCK-BOOST TRANSFORMER	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
BFMR		NFC	NATIONAL FIRE CODE
C	CEILING MOUNTED	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CATV	COMMUNITY ANTENNA TELEVISION	NIC	NOT IN CONTRACT
CB	CIRCUIT BREAKER	NL	NIGHT LIGHT
CCBA	CUSTOM COLOR AS SELECTED BY ARCHITECT	NO	NORMALLY OPEN
CCTV	CLOSED CIRCUIT TELEVISION	NTS	NOT TO SCALE
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	OC	ON CENTER
CF/OI	CONTRACTOR FURNISHED/ OWNER INSTALLED	OC/P	OVER CURRENT PROTECTION
CFBA	CUSTOM FINISH AS SELECTED BY ARCHITECT	OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
CKT	CIRCUIT	OF/OI	OWNER FURNISHED/ OWNER INSTALLED
CM	CONSTRUCTION MANAGER	OPF	OBTAIN FROM PLANS
CND	CONDUIT	OH DR	OVERHEAD (COILING) DOOR
CO	CONVENIENCE OUTLET	OL	OVERLOAD
COR	CONTRACTING OFFICER'S REPRESENTATIVE	PB	PUSHBUTTON
CP	CONTROL PANEL	PF	POWER FACTOR
CT	CURRENT TRANSFORMER	PH	PHASE
CTV	CABLE TELEVISION	PNL	PANEL
CU	COPPER	PT	POTENTIAL TRANSFORMER
dBA	UNIT OF SOUND LEVEL	PTZ	PAN/TILT/ZOOM
DDPT	DOUBLE POLE, DOUBLE THROW	QTY	QUANTITY
DS	DISCONNECT SWITCH	R	REMOVE
EA	EACH	RCP	REFLECTED CEILING PLAN
EM	EMERGENCY	RMC	RIGID METAL CONDUIT
EMT	ELECTRICAL METALLIC TUBING	RNC	RIGID NONMETAL CONDUIT
ENT	ELECTRIC NONMETALLIC TUBING	RPM	REVOLUTIONS PER MINUTE
EPO	EMERGENCY POWER OFF EQUIPMENT	RR	REMOVE AND RELOCATE
EQUIP	EQUIPMENT	S/S	START/STOP
F	EXISTING	SCA	SHORT CIRCUIT AMPS
FA	FURNITURE MOUNTED	SCBA	STANDARD COLOR AS SELECTED BY ARCHITECT
FAL	FIRE ALARM CONTROL PANEL	SF	SQUARE FOOT (FEET)
FCA	FIRE ALARM	SFBA	STANDARD FINISH AS SELECTED BY ARCHITECT
FCP	FIRE ALARM CONTROL PANEL	SPD	SURGE PROTECTIVE DEVICE
FLA	FULL LOAD AMPS	SPDT	SINGLE POLE, DOUBLE THROW
FMC	FLEXIBLE METAL CONDUIT	SPEC	SPECIFICATION
FOB	FREIGHT ON BOARD	SPST	SINGLE POLE, SINGLE THROW
FVNR	FULL VOLTAGE NON-REVERSING	ST	SINGLE THROW
FVR	FULL VOLTAGE REVERSING	SWBD	SWITCHBOARD
G	GROUND	SWGR	SWITCHGEAR
GEN	GENERATOR	TL	TWIST LOCK
GFCI	GROUND FAULT INTERRUPTER	TP	TELEPHONE POLE
GFP	GROUND FAULT PROTECTION	TP	TWISTED PAIR
HD	HEAVY DUTY	TTB	TELEPHONE TERMINAL BOARD
HID	HIGH INTENSITY DISCHARGE	TV	TELEVISION
HOA	HAND-OFF-AUTOMATIC	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
HP	HORSE POWER	TYP	TYPICAL
HPF	HIGH POWER FACTOR	UF	UNDERFLOOR
HPS	HIGH PRESSURE SODIUM	UGND	UNDERGROUND
HV	HIGH VOLTAGE	UPS	UNINTERRUPTIBLE POWER SUPPLY
HZ	HERTZ	V	VOLTS
I/O	INPUT/ OUTPUT	VA	VOLT AMPERE
IG	ISOLATED GROUND	VFCV/F	VARIABLE FREQUENCY MOTOR CONTROLLER
IMC	INTERMEDIATE METAL CONDUIT	W/	WITH
IN/IS	INSULATED/ ISOLATED	W/O	WITHOUT
IR	INFRARED	WP	WEATHERPROOF
J-BOX	JUNCTION BOX	XFMR	TRANSFORMER

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GENERAL ELECTRICAL NOTES	
1.	CLARIFICATION METHODS: AT THE TIME OF BIDDING, BIDDERS SHALL FAMILIARIZE THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC. SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.
2.	OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM. <ul style="list-style-type: none"> A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT. B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER. C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE. THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.
3.	EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.
4.	SUBMITTALS: PROVIDE ORIGINAL ELECTRONIC PDF FORMAT, BOUND, BOOKMARKED (EACH SECTION AND PRODUCT), AND HIGHLIGHTED. JOB NAME AND SUBCONTRACTOR SHALL BE ON THE FRONT COVER. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.
5.	REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.
6.	ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT NATIONAL ELECTRIC CODE (NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.

ELECTRICAL SHEET INDEX	
E-001	SHEET INDEX, ABBREVIATIONS, AND GENERAL NOTES
E-002	SYMBOLS LEGEND
E-701	TYPICAL MOUNTING HEIGHT DETAILS
E-702	TYPICAL MOUNTING HEIGHT DETAILS
E-703	TYPICAL LABELING DETAILS
E-704	TYPICAL LABELING DETAILS
E-705	TYPICAL LABELING DETAILS
ED101	LEVEL 1 FLOOR PLAN - DEMO
ED102	LEVEL 1 CEILING PLAN PLAN - DEMO
ES101	SITE ELECTRICAL PLAN - NEW
ES501	SITE ELECTRICAL DETAILS
EP101	LEVEL 1 POWER PLAN - NEW
EP601	ONE-LINE DIAGRAM
EP602	EQUIPMENT SCHEDULE
EP603	PANEL SCHEDULES
EL101	LEVEL 1 LIGHTING PLAN - NEW
EL601	INTERIOR LIGHTING FIXTURE SCHEDULE
EL602	EXTERIOR LIGHTING FIXTURE SCHEDULE
EL603	LIGHTING CONTROL SCHEDULES
ET101	LEVEL 1 TELECOM PLAN - NEW
ET601	VOICE/ DATA CONDUIT RISER DIAGRAM
EY101	LEVEL 1 ACCESS CONTROL PLAN - NEW
EY601	AUXILIARY RISER DIAGRAMS
FA101	LEVEL 1 FIRE ALARM PLAN - NEW
FA601	FIRE ALARM RISER
FX001	FIRE PROTECTION SITE PLAN
FX101	LEVEL 1 FIRE PROTECTION PLAN - NEW



DATE	APPR	MARK
07/15/2020		



DESIGNED BY	P/C	DATE
		07/15/2020

DESIGNED BY	P/C	DATE
		07/15/2020

ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 SHEET INDEX, ABBREVIATIONS, AND
 GENERAL NOTES

E-001

Sheet: 68 of 94



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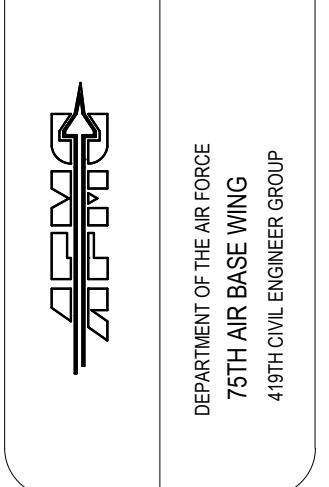
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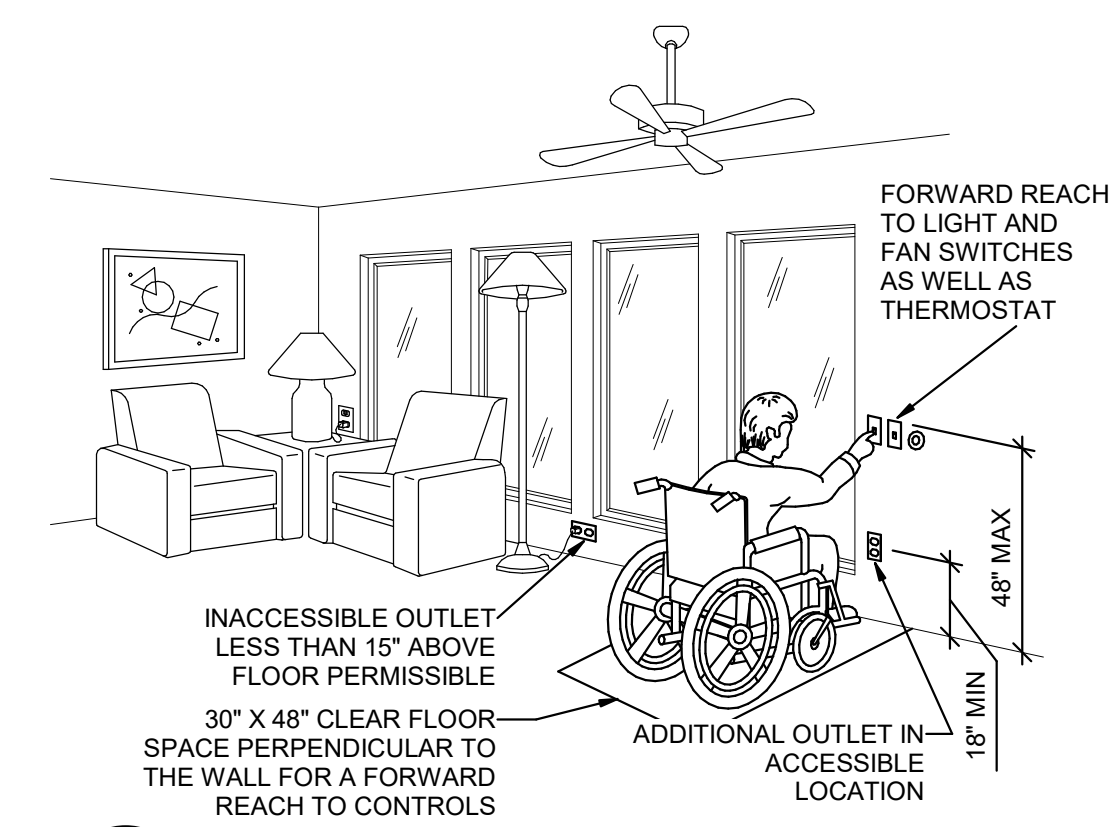
DESIGNED BY	CHECKED BY	P/J	P/J
BRADY BASE PROJECT MANAGER	BRADY BASE PROJECT MANAGER	1033248	1033248
DATE: 07/15/2020	DATE: 07/15/2020		



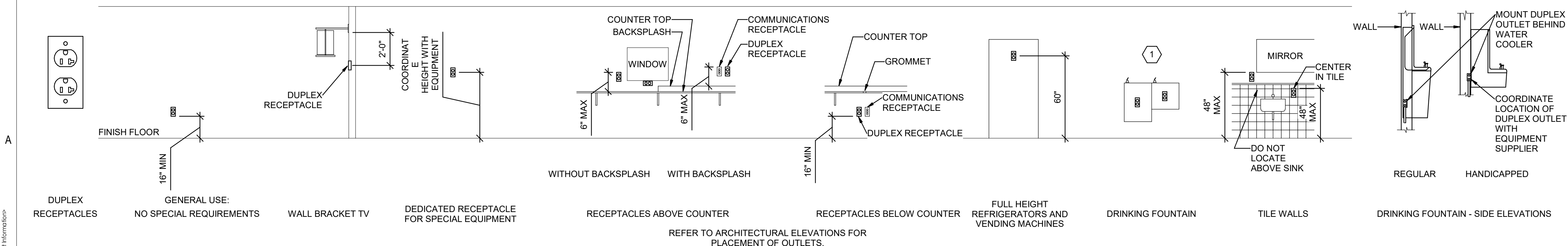
DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
419TH CIVIL ENGINEER GROUP

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
TYPICAL MOUNTING HEIGHT DETAILS

E-702
Sheet: 71 of 94



B1 ADA DETAIL
E-702 SCALE: NTS



A5 RECEPTACLE MOUNTING DETAILS
E-702 SCALE: NTS

File location in project information:
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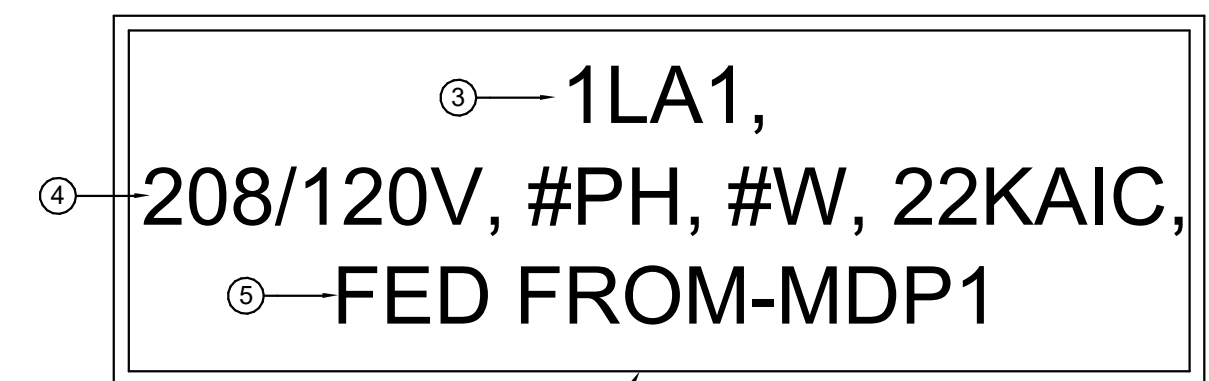
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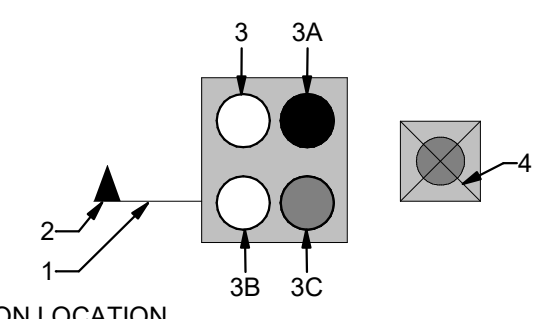


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- 1 LABEL TO BE PROVIDED AT EACH SWITCHBOARD, PANELBOARD, DISCONNECT/STARTER. LABEL IS TO BE 3" X REQUIRED LENGTH X 1/16" LAMINATED 2-PLY PLASTIC LAMACOID. LETTERS SHALL BE FORMED BY ENGRAVING OUTER WHITE PLY, EXPOSING BLACK PLY BENEATH.
- 2 LABEL IS TO BE MOUNTED USING DOUBLE SIDED ADHESIVE TAPE COVERING THE BACK OF THE LABEL.
- 3 FIRST LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. REPLACE THE LETTER/NUMBER WITH THOSE FOUND ON THE ONE-LINE DIAGRAM.
- 4 SECOND LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. THE FOLLOWING SHALL BE PROVIDED, VOLTAGE, PHASE, NUMBER OF WIRES, AND AIC RATING OF DEVICE.
- 5 THIRD LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. PROVIDE "FED FROM-" AND REPLACE MDP1 WITH THE DEVICES NAME THAT FEEDS THE PANELBOARD.



NOTE: EMERGENCY PANELS SHALL USE LAMACOID WITH RED OUTERPLY, EXPOSING WHITE LETTERING BENEATH. CONTRACTOR TO USE SAME LABEL SCHEME EXCEPT FIRST 'X' IS REPLACED WITH 'E' FOR EMERGENCY. SECOND 'X' TO BE 'L' FOR LOW OR 'H' FOR HIGH VOLTAGE (480/277V). LAST '#' TO BE REPLACED WITH LETTER INDICATING LOCATION OF PANEL.

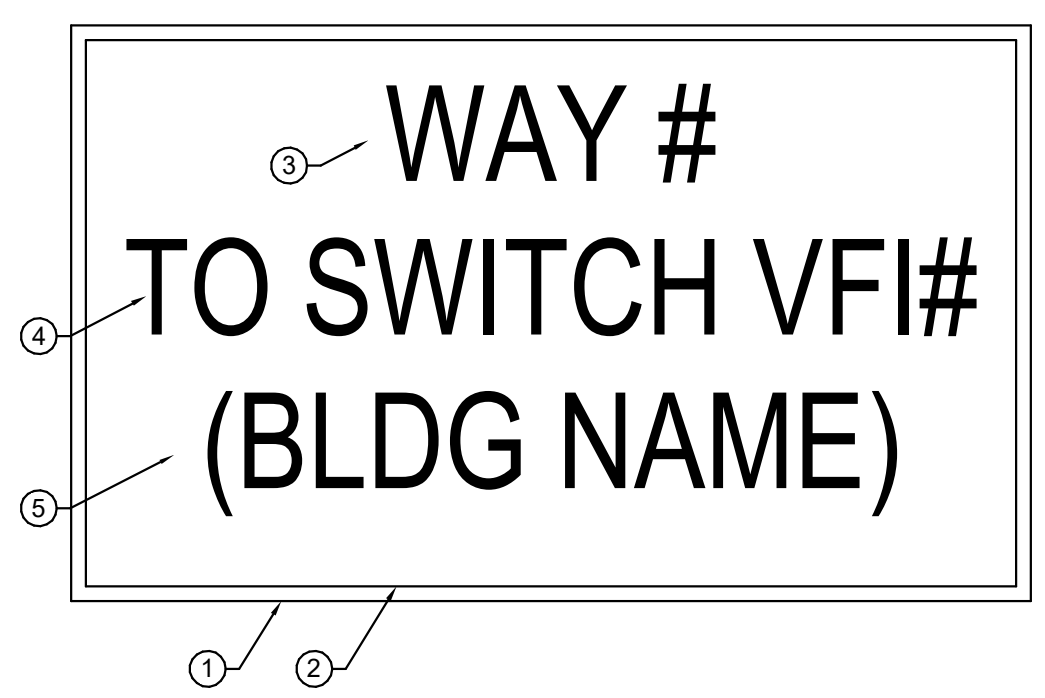


1. INDICATES SECTION LOCATION.
2. ARROW INDICATES THE DIRECTION DETAIL IS LOOKING ALONG DUCTBANK.
3. CIRCLES INDICATE NUMBER OF CONDUITS IN DUCTBANK.
3A. DARK FILLED CONDUIT INDICATES A CONDUIT WITH NEW CABLING IN CONDUIT.
3B. CONDUIT WITH NO FILL INDICATES AN EMPTY CONDUIT.
3C. LIGHT FILLED CONDUIT INDICATES A CONDUIT WITH EXISTING CABLING IN CONDUIT.
4. X IN DUCTBANK INDICATES CABLING TO BE DEMOLISHED

C5 TYPICAL PANELBOARD/SWITCHBOARD LABEL
E-704 SCALE: NTS

C3 DUCTBANK SECTION LEGEND
E-704 SCALE: NTS

- 1 MV SWITCH SECTION LABEL TO BE PROVIDED AT EACH SWITCH SECTIONWAY. LABEL IS TO BE 3" X 5" X 1/16" LAMINATED 2-PLY PLASTIC LAMACOID. LETTERS SHALL BE FORMED BY ENGRAVING OUTER YELLOW PLY, EXPOSING BLACK PLY BENEATH.
- 2 LABEL IS TO BE MOUNTED USING DOUBLE SIDED ADHESIVE TAPE COVERING THE BACK OF THE LABEL.
- 3 FIRST LINE. LETTERING IS TO BE 1/2" HIGH, CENTERED, AND FORMATTED AS SHOWN. "##" IS TO BE REPLACE WITH THE ASSOCIATED WAY'S NUMBER
- 4 SECOND LINE. DEVICE BEING SERVED. LETTERING IS TO BE 1/2" HIGH, CENTERED, AND FORMATTED AS SHOWN. REPLACE "SWITCH" AND "S#" WITH DEVICE NAME BEING SUPPLIED POWER TOO. NAME SHALL MATCH ONE-LINE.
- 5 THIRD LINE, SECTION. LETTERING IS TO BE 1/2" HIGH, CENTERED, AND FORMATTED AS SHOWN. REPLACE "BLDG NAME" WITH BUILDING NAME THAT IS ADJACENT TO DEVICE. CONFIRM NAMING WITH OWNER PRIOR TO ORDERING.



A5 MV SWITCH SECTION/WAY LABEL
E-704 SCALE: NTS

WARNING	
Arc Flash and Shock Hazard	
Appropriate PPE Required	
40 in	Flash Hazard Boundary
4.5 cal/cm ²	Flash Hazard at 18 in
Level 2	Arc-rated shirt & pants or arc-rated coverall
480 VAC	Shock Hazard when cover is removed
00	Glove Class
42 in	Limited Approach
12 in	Restricted Approach
1 in	Prohibited Approach
Location:	BUS-0001
SKM Systems Analysis, Inc.	
XEROX LEWISVILLE, TX	
Job#: 20130591	Prepared on: 01/20/15
By: Engineer	
Warning: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements	

- SHADED AREAS TO BE ORANGE ALL OTHER TO BE WHITE BACKGROUND
- (TYP) DISTANCES IN INCHES
- COORDINATE VOLTAGE VALUES WITH ONE-LINE
- MATCH NAME OF EQUIPMENT WITH NAMES ON ONE-LINE
- PROVIDE ADDRESS WHERE SKM ANALYSIS IS PERFORMED
- PROVIDE JOB NUMBER "#####", DATE OF ANALYSIS AND ENGINEER WHO PERFORMED STUDY
- *PROVIDE ARC FLASH LABEL FOR ALL ELECTRICAL EQUIPMENT PER SPECIFICATIONS AND REQUIRED BY NEC

A3 TYPICAL ARC FLASH LABEL
E-704 SCALE: NTS

DESCRIPTION	DATE	APPR	MARK
	07/15/2020		



DESIGNED BY:	P/J	DATE:	07/15/2020
CHECKED BY:	P/J	DATE:	07/15/2020
DRAWN BY:		DATE:	
PROJECT NO:	1033248		
LEGACY PROJECT NO:			
BASE PROJECT MANAGER:			

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
TYPICAL LABELING DETAILS



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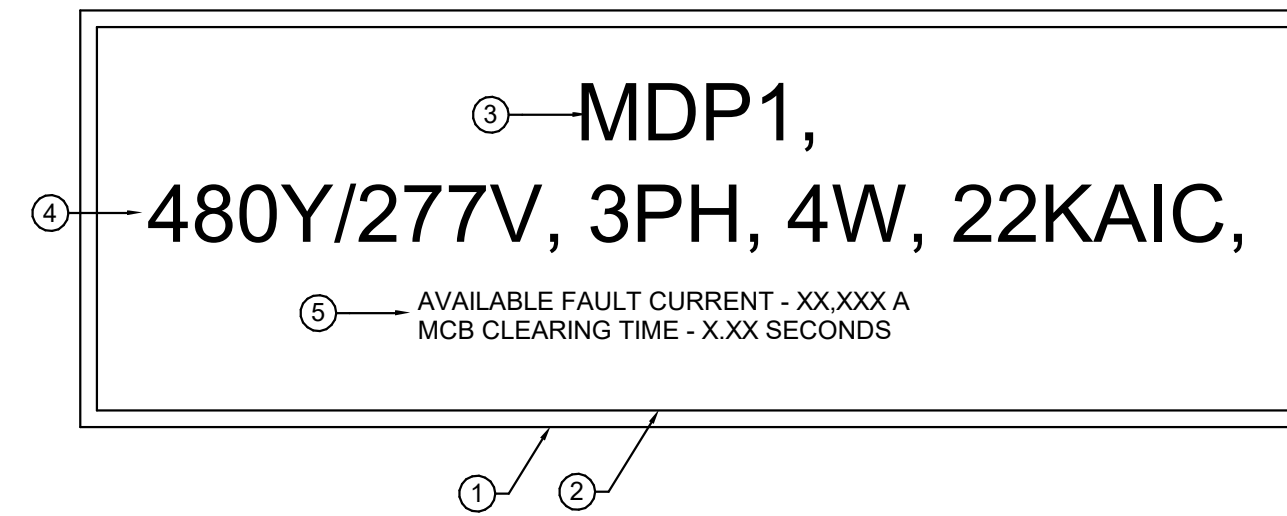


DESIGNED BY:	P/J	DATE:	07/15/2020
CHECKED BY:	P/J	DATE:	07/15/2020
DRAWN BY:	P/J	DATE:	07/15/2020
PROJECT NO.:	1033248	PROJECT NAME:	75TH AIR BASE WING
LEGACY PROJECT NO.:		PROJECT MANAGER:	BEREYLA, ANDRE

ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 TYPICAL LABELING DETAILS

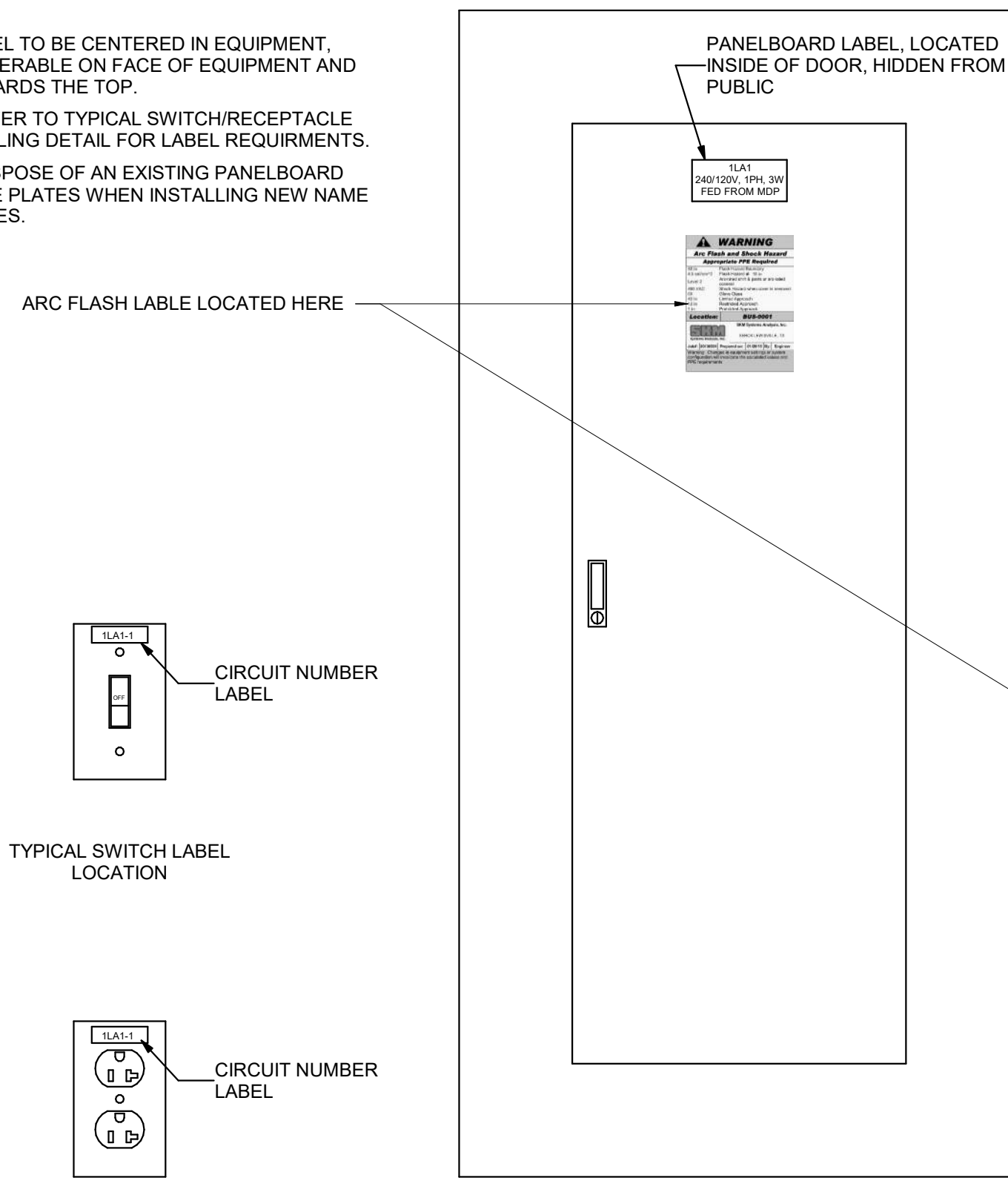
E-705
 Sheet: 74 of 94

- 1 LABEL TO BE PROVIDED THAT IS TO BE 4" X REQUIRED LENGTH X 1/16" LAMINATED 2-PLY PLASTIC LAMACOID. LETTERS SHALL BE FORMED BY ENGRAVING OUTER WHITE PLY, EXPOSING BLACK PLY BENEATH.
- 2 LABEL IS TO BE MOUNTED USING DOUBLE SIDED ADHESIVE TAPE COVERING THE BACK OF THE LABEL.
- 3 FIRST LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, WITH THE EQUIPMENT ID MATCHING PLANS.
- 4 SECOND LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. THE FOLLOWING SHALL BE PROVIDED, VOLTAGE, PHASE, NUMBER OF WIRES, AND AIC RATING OF GEAR.
- 5 THIRD & FOURTH LINE: LETTERING IS TO BE 3/8" HIGH, CENTERED, AND FORMATTED AS SHOWN. LABEL WITH ACTUAL AVAILABLE FAULT CURRENT AND ASSOCIATED CLEARING TIME.

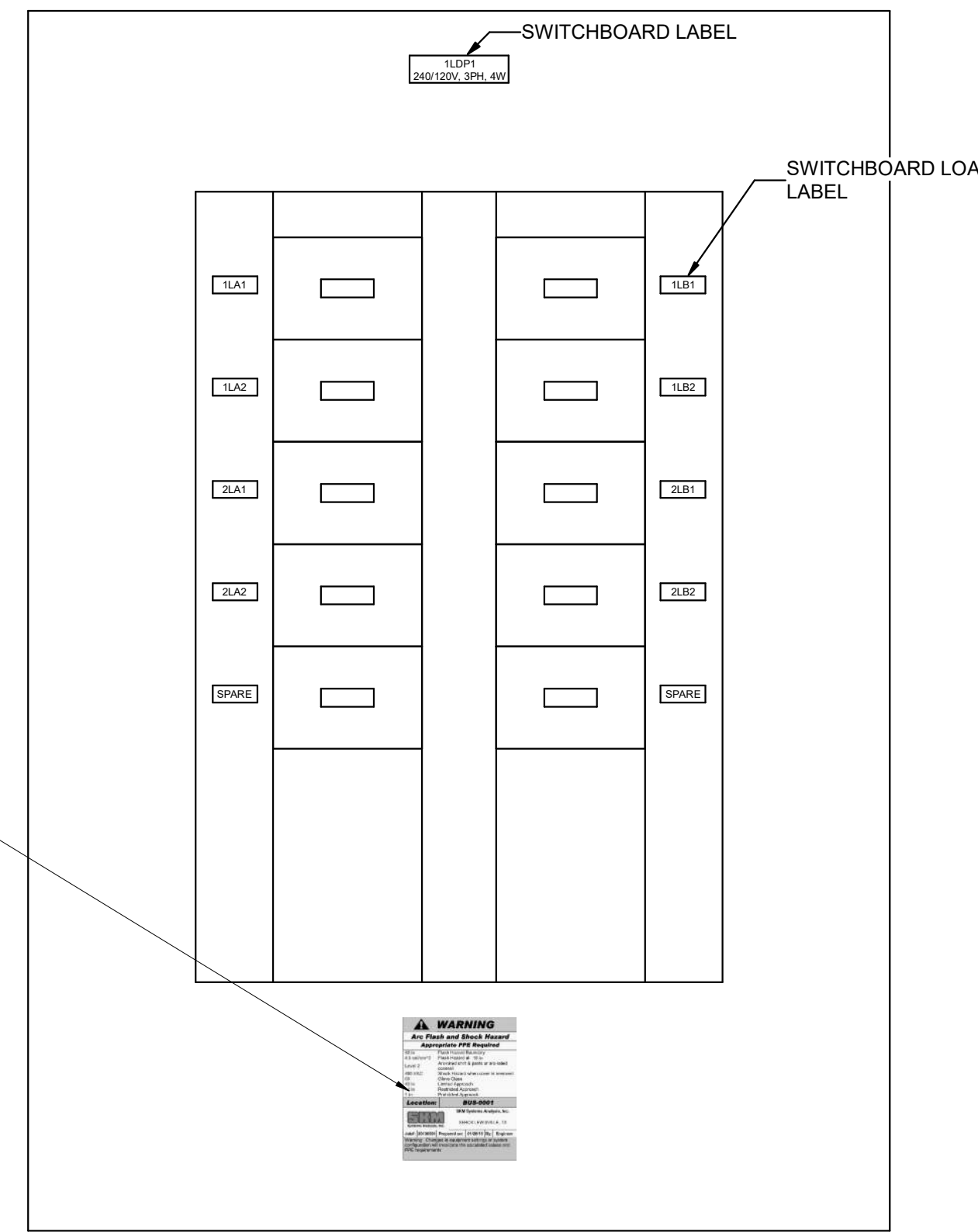


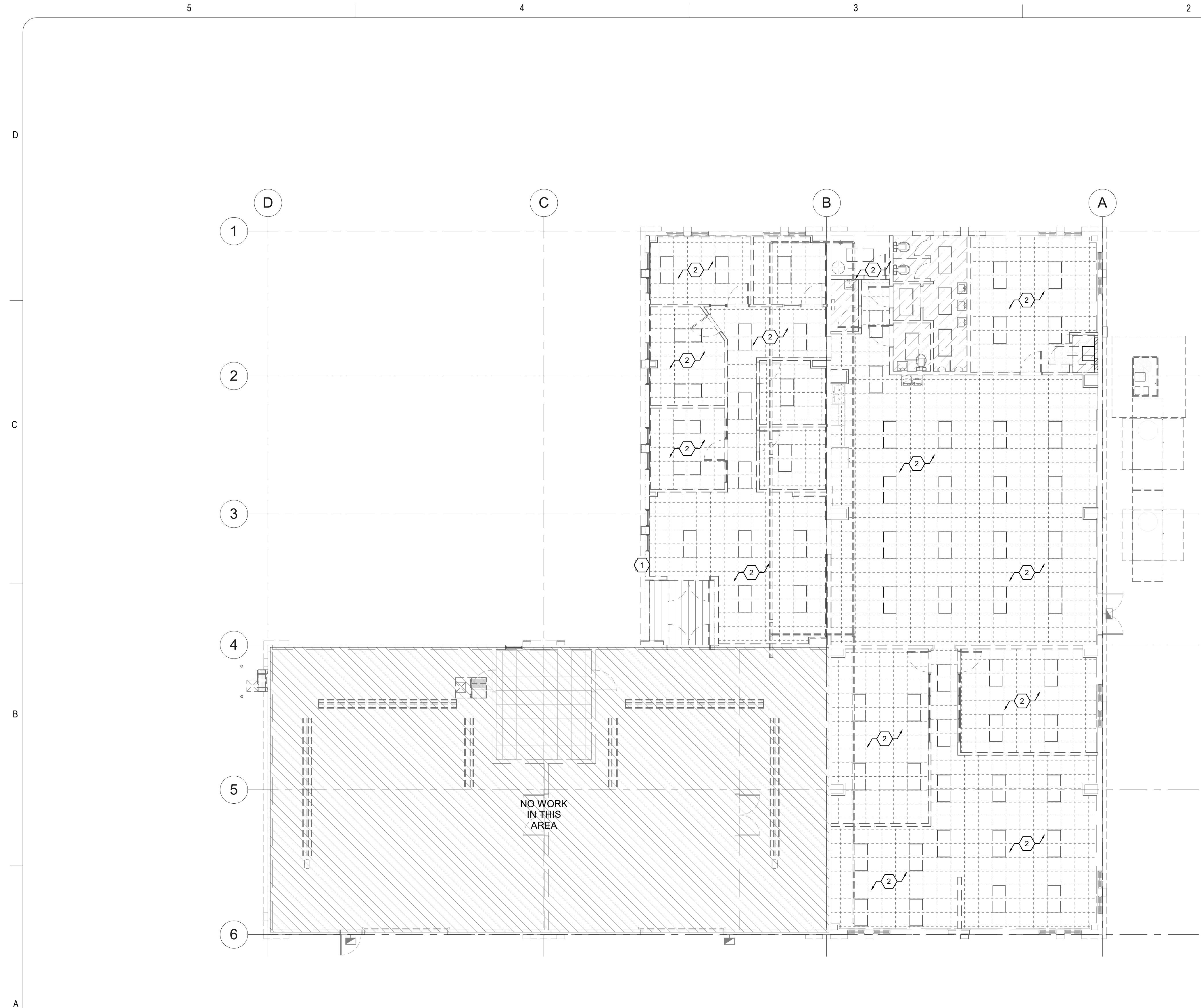
C4 TYPICAL MAIN SERVICE EQUIPMENT/GEAR LABEL
 E-705 SCALE: NTS

*LABEL TO BE CENTERED IN EQUIPMENT, PREFERABLE ON FACE OF EQUIPMENT AND TOWARDS THE TOP.
 **REFER TO TYPICAL SWITCH/RECEPTACLE LABELING DETAIL FOR LABEL REQUIREMENTS.
 ***DISPOSE OF AN EXISTING PANELBOARD NAME PLATES WHEN INSTALLING NEW NAME PLATES.



A4 TYPICAL SWITCH, RECEPTACLE AND PANELBOARD LABELING LOCATION DETAIL
 E-705 SCALE: NTS





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GENERAL SHEET NOTES

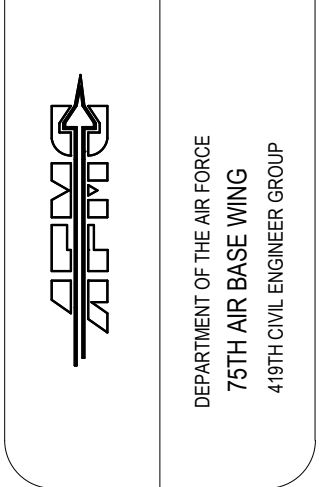
KEYNOTE SHEET

- 1 EXISTING WALL PACK TO BE REMOVED.
- 2 EXISTING LIGHT FIXTURES, CIRCUITING AND SWITCHING TO BE REMOVED.

DATE	APPR	MARK
07/15/2020		



DESIGNED BY	P/J	DATE
BEREYLA, DANIEL <td></td> <td>07/15/2020</td>		07/15/2020



**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
LEVEL 1 CEILING PLAN PLAN - DEMO**

ED102
Sheet: 76 of 94

File location in project information:
7/15/2020/2/20/2020

A5 LEVEL 1 CEILING PLAN - DEMO
ED102 SCALE: 1/8" = 1'-0"

ORIGINAL SHEET - ANS D



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GENERAL SHEET NOTES

SHEET KEYNOTES

- 1 PLACE TRANSFORMER PAD OR USE PRE-CAST TRANSFORMER PAD PER CLP STANDARDS.

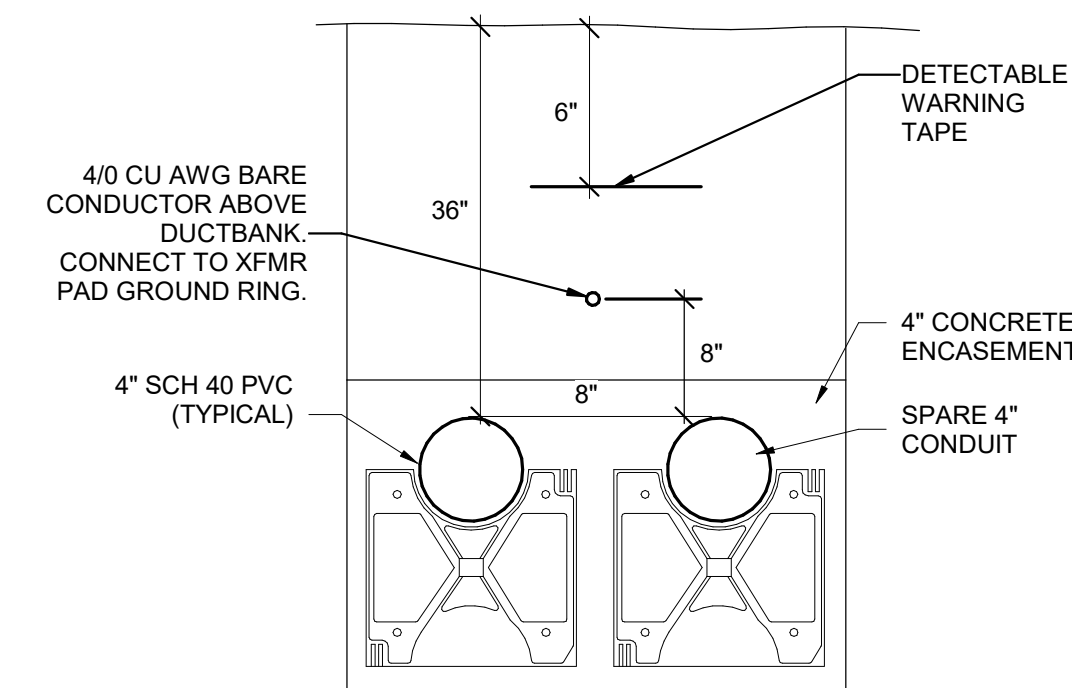
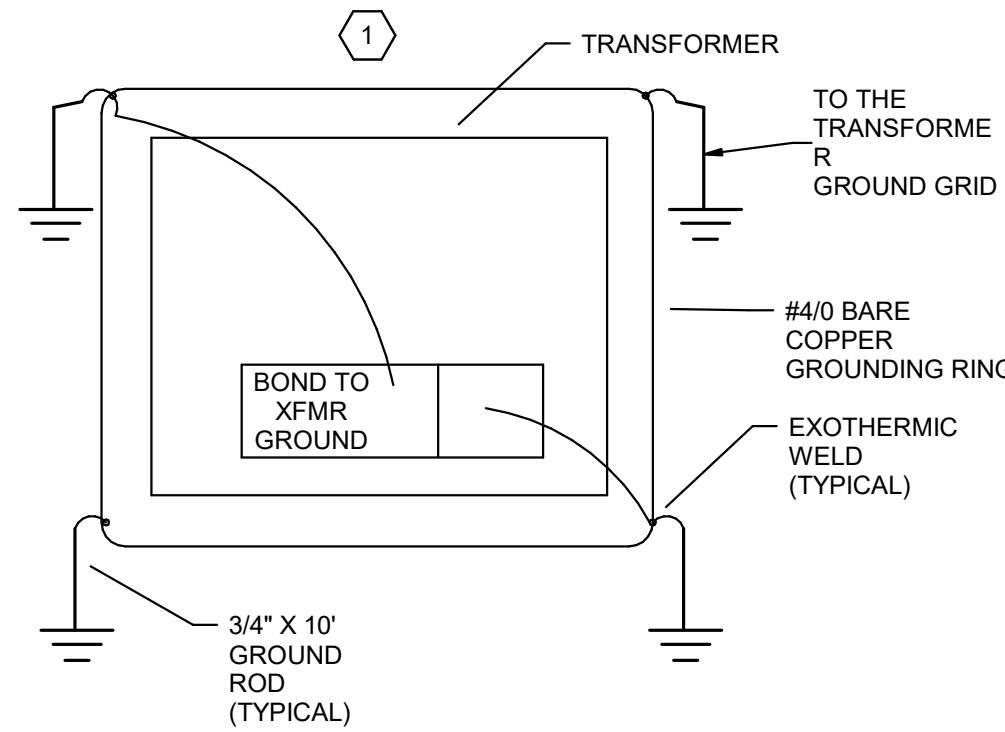
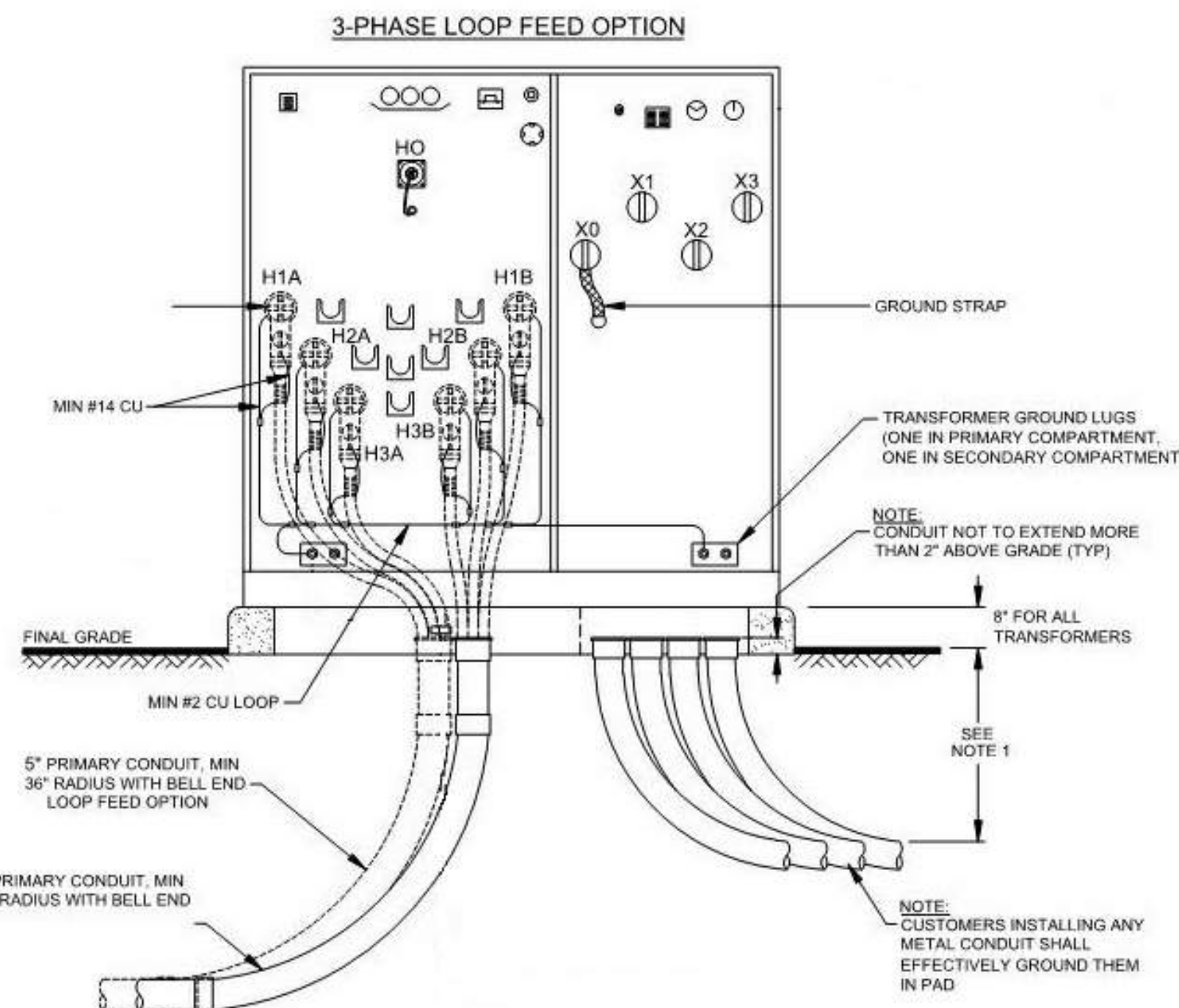
DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN ONLY	07/15/2020		



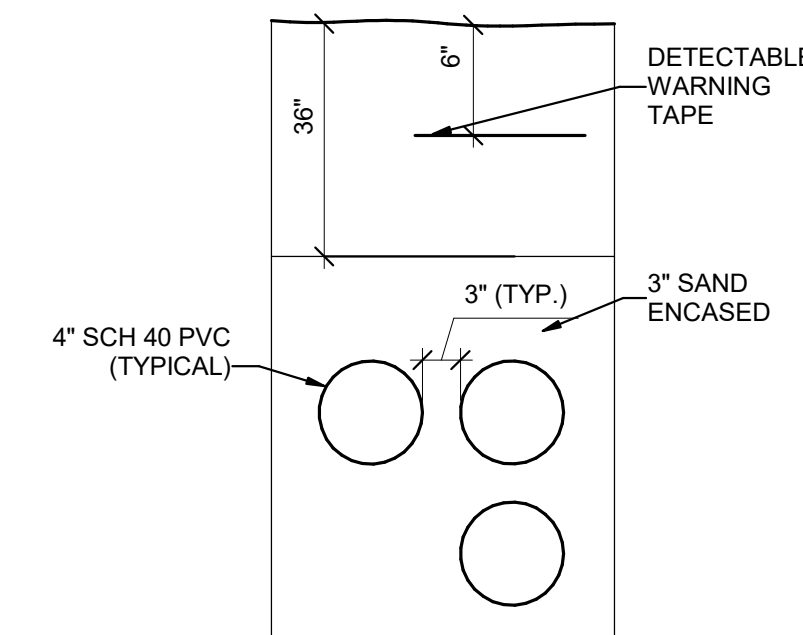
DESIGNED BY:	P/J	CHECKED BY:	P/J
DRAWN:	P/J	DATE:	07/15/2020
PROJECT NO:	1033248	PROJECT NAME:	75TH AIR BASE WING
LEGACY PROJECT NO:		BASE PROJECT MANAGER:	BEREYLANDE

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
SITE ELECTRICAL DETAILS

ES501
Sheet: 78 of 94



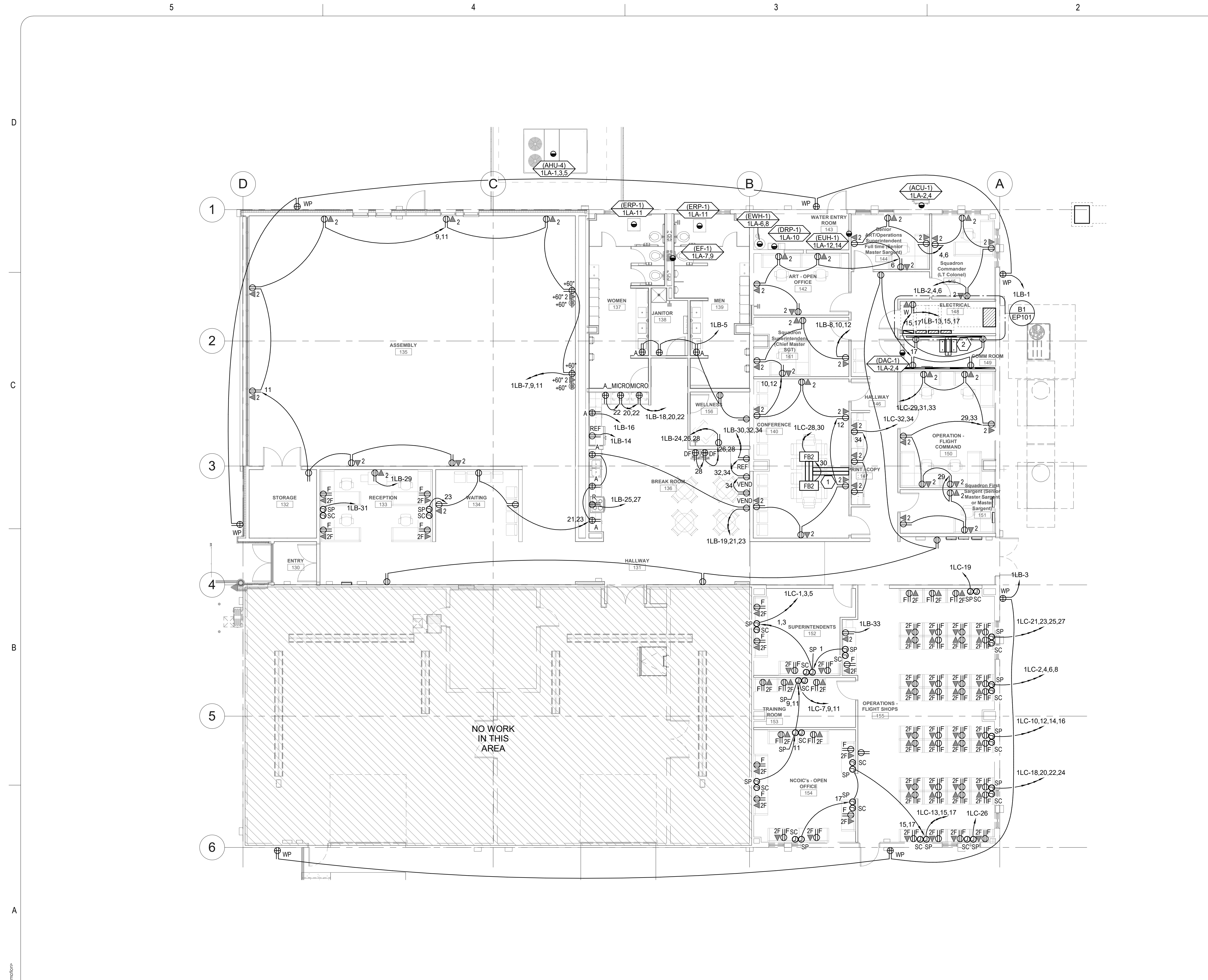
B2 BANK
ES501 SCALE: NTS



A2 DUCT BANK
ES501 SCALE: NTS

File location in project information:
75192020/24833248

A5 TRANSFORMER PAD GROUNDING DETAIL
ES501 SCALE: NTS



GENERAL SHEET NOTES

SHEET KEYNOTES

- FLOORBOX INSTALLED IN CARPET. CONNECT TRAC OR APPROVED EQUAL. FOR CHANNELS PROVIDE 1 EA PMC-MODC, 1 EA PM-RECM-QD-1111, 4 EA TC-KS01-BK & 1 EA TC-KS08-BK, IN-048-AL.
- EXISTING COMM CONDUIT WITH 12 STRAND FIBER CABLE AND 25 PAIR COPPER CABLE. RELOCATE TO NEW WALL.



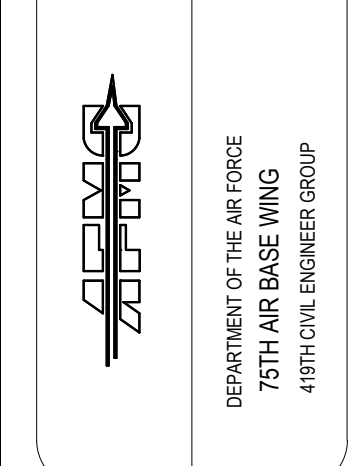
B1 ENLARGED ELECTRICAL ROOM
 EP101 SCALE: 1/4" = 1'-0"



DATE	APPR	MARK
07/15/2020		



DESIGNED BY	P/J	DATE
BEREYLANDE		07/15/2020



**ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 LEVEL 1 POWER PLAN - NEW**

COPPER CONDUCTOR AND CONDUIT SCHEDULE

SCHEDULE NUMBER (E.G. 5) IG

SUBSCRIPT (NOTE 5)

SYM	AMP	HH	CONDUIT SIZE	CONDUCTOR (NOTE 1) QTY	CONDUCTOR (NOTE 1) SIZE	G	IG/HH	SE	NOTES
1	20	-	.75	2	12	12	12	8	2
2	20	-	.75	3	12	12	12	8	2,3
3	20	24	.75	4	12	12	12	8	2,3
4	30	-	.75	2	10	10	10	8	2
5	30	-	.75	3	10	10	10	8	2
6	30	32	.75	4	10	10	10	8	2
7	40	-	1	2	8	10	8	6	2
8	40	-	1	3	8	10	8	6	2
9	40	44	1	4	8	10	8	6	2
10	55	-	1	2	6	10	8	4	2
11	55	-	1	3	6	10	8	4	2
12	55	60	1.25	4	6	10	8	4	2
13	70	-	1	2	4	8	4	2	2
14	70	-	1.25	3	4	8	4	2	2
15	70	76	1.25	4	4	8	4	2	2
16	85	-	1.25	2	3	8	3	2	2
17	85	-	1.25	3	3	8	3	2	2
18	85	92	1.25	4	3	8	3	2	2
19	95	-	1.25	3	2	8	2	2	2
20	95	104	1.50	4	2	8	2	2	2
21	130	-	1.50	3	1	6	2	2	2
22	130	116	1.50	4	1	6	2	2	2
23	150	-	2	3	1/0	6	2	1/0	2
24	150	136	2	4	1/0	6	2	1/0	2
25	175	-	2	3	2/0	6	2	2/0	2
26	175	156	2	4	2/0	6	2	2/0	2
27	200	-	2	3	3/0	6	2	2/0	2
28	200	180	2.50	4	3/0	6	2	2/0	2
29	230	-	2.50	3	4/0	4	2	2/0	2
30	230	208	2.50	4	4/0	4	2	2/0	2
31	255	-	2.50	3	250	4	1	2/0	2
32	255	232	2.50	4	250	4	1	2/0	2
33	310	-	3	3	350	3	1/0	3/0	2
34	310	280	3	4	350	3	1/0	3/0	2
35	380	-	3.50	3	500	3	3/0	3/0	2
36	380	344	4	4	500	3	3/0	3/0	2
37	400	-	2 EA 2	3	3/0	3	3/0	3/0	2
38	400	360	2 EA 2.50	4	3/0	3	3/0	3/0	2
39	510	-	2 EA 2.50	3	250	1	4/0	3/0	2
40	510	464	2 EA 3	4	250	1	4/0	3/0	2
41	620	-	2 EA 3	3	350	1/0	4/0	3/0	2,4
42	620	560	2 EA 3	4	350	1/0	4/0	3/0	2,4
43	760	-	2 EA 3.50	3	500	1/0	4/0	3/0	2,4
44	760	688	2 EA 4	4	500	1/0	4/0	3/0	2,4
45	855	-	3 EA 3	3	300	2/0	4/0	3/0	2,4
46	855	768	3 EA 3	4	300	2/0	4/0	3/0	2,4
47	1000	-	3 EA 3.50	3	400	2/0	4/0	3/0	4
48	1000	912	3 EA 3.50	4	400	2/0	4/0	3/0	4
49	1140	-	3 EA 4	3	500	3/0	4/0	3/0	4
50	1140	1032	3 EA 4	4	500	3/0	4/0	3/0	4
51	1240	-	4 EA 3	3	350	3/0	4/0	3/0	4
52	1240	1120	4 EA 3	4	350	3/0	4/0	3/0	4
53	1675	1520	5 EA 4	4	400	4/0	4/0	4/0	4
54	2010	1824	6 EA 4	4	400	250	250	250	4
55	2660	2408	7 EA 4	4	500	350	350	350	4
56	3040	2752	8 EA 4	4	500	500	500	500	4
57	4180	3784	11 EA 4	4	500	500	500	500	4
58	-	-	5 EA 4	-	-	-	-	-	6
59	-	-	5	-	-	-	-	-	6
60	-	-	10 EA 4	-	-	-	-	-	6

CONDUIT AND CONDUCTOR SCHEDULE NOTES

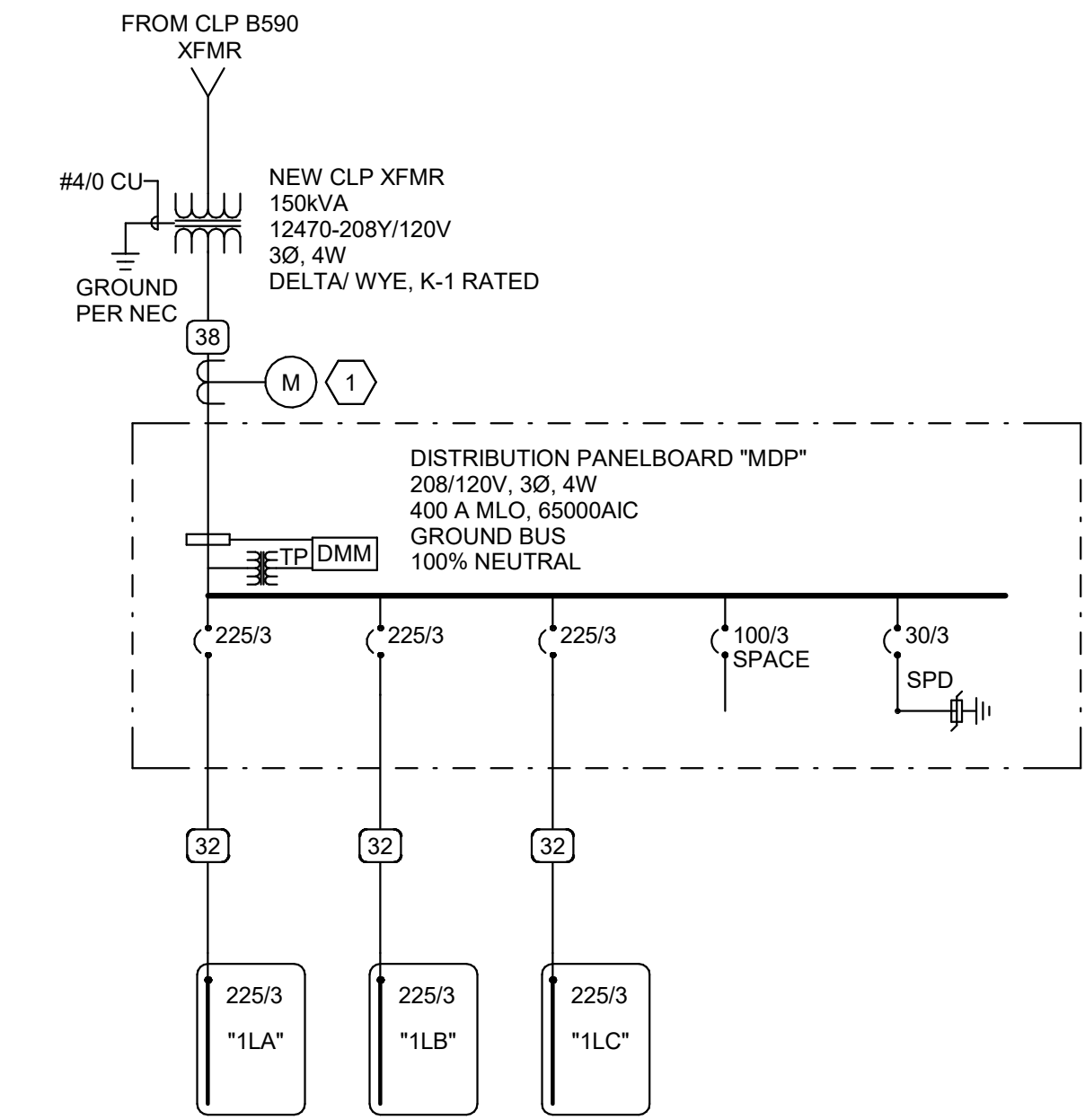
- CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS OTHERWISE NOTED.
- PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE.
- PROVIDE #10 NEUTRALS FOR MULTIWIRED BRANCH CIRCUITS SERVING COMPUTERS.
- GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE CONDUCTORS.
- SYMBOL SUBSCRIPTS:
 - "2N": INCLUDE TWO NEUTRAL CONDUCTORS SIZED AS SCHEDULED FOR PHASE AND NEUTRAL CONDUCTORS WHERE THE CONDUCTOR IS #1/0 OR LARGER. INCLUDE A SINGLE 200% RATED CONDUCTOR THAT IS TWICE THE AMPACITY OF THE SCHEDULED PHASE AND NEUTRAL CONDUCTOR WHERE THE CONDUCTOR IS BELOW #1/0 IN SIZE.
 - "FG": FULL SIZE GROUND. SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE SAME SIZE AS THE PHASE CONDUCTORS.
 - "HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY. PROVIDE THE IG/HH SIZE FOR THE EQUIPMENT GROUNDING CONDUCTOR.
 - "IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH THE GROUND OF EQUIPMENT GROUND CONDUCTOR.
 - "SE": SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.
- RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

BRANCH CIRCUIT CONDUCTOR AND CONDUIT SIZING TABLE

CIRCUIT AMPACITY/VOLTAGE	CIRCUIT LENGTH	CONDUCTOR SIZE (PHASE, NEUTRAL AND GR)	CONDUIT SIZE
20A/120V	0' - 60'	#12 AWG	0.75" Ø
20A/120V	60' - 95'	#10 AWG	0.75" Ø
20A/120V	95' - 150'	#8 AWG	1" Ø
20A/120V	150' - 240'	#6 AWG	1.25" Ø
20A/277V	0' - 140'	#12 AWG	0.75" Ø
20A/277V	140' - 220'	#10 AWG	0.75" Ø
20A/277V	220' - 350'	#8 AWG	1" Ø
20A/277V	350' - 550'	#6 AWG	1.25" Ø

NOTES:

- WIRE SIZING IS BASED ON COPPER CONDUCTORS SUPPLYING A 20A, 120V CIRCUIT AT THE INDICATED VOLTAGE. ASSUMED TO BE 80% LOADED (16A), WITH MAXIMUM VOLTAGE DROP OF 3% AT THE LOAD.
- DOWN-SIZED WIRE AT DEVICE/LOAD AS REQUIRED AND TERMINATE CONDUCTORS IN A SAFE AND CODE COMPLIANT MANNER.
- CONDUIT SIZE IS BASED ON A MAXIMUM OF 3 CIRCUITS PER CONDUIT, EACH WITH A SEPARATE NEUTRAL CONDUCTOR.



A3 ONE-LINE DIAGRAM
EP601 SCALE: NTS

EQUIPMENT NAMEPLATE SCHEDULE

EQUIPMENT ID SCHEME	FIRST DIGIT - BUILDING LEVEL (0, 1, 2, ETC) SECOND DIGIT - PANEL TYPE M - MECHANICAL H - (277/480) L - (120/208) E - EMERGENCY S - STANDBY Q - EQUIPMENT U - UPS K - KITCHEN (120/208) THIRD DIGIT - BUILDING AREA (A, B, C, ETC) FOURTH DIGIT - SEQUENCE # (1,2,3,...)
LABEL FORMAT	[NAME] [SYSTEM] [VOLTAGE] [FED FROM] [SOURCE(S)]
LABEL EXAMPLE	PANEL "4LA1" STANDBY POWER 120/208V FED FROM BUS-A / XFMR 4TA
BUSWAY	LABEL BUSWAY EVERY 6' WHERE EXPOSED TO VIEW AND EVERY 15' WHERE NOT EXPOSED TO VIEW
OTHER	

COLOR SCHEME

SYSTEM	EQUIPMENT	NAMEPLATE COLOR	
		TEXT	BACKGROUND
NORMAL POWER	ALL GEAR NOT INCLUDED BELOW	WHITE	BLACK
STANDBY POWER	MDPS1 AND ALL DOWNSTREAM GEAR, EXCEPT UPS GEAR AS NOTED	WHITE	ORANGE
EMERGENCY POWER	GDP1, GDP2, ATS-E AND ALL DOWNSTREAM GEAR	WHITE	RED
LEGALLY-REQUIRED STANDBY POWER	ATS-S AND ALL DOWNSTREAM GEAR	RED	WHITE
UPS "A" POWER	UPS-A AND ALL DOWNSTREAM GEAR	WHITE	BLUE
UPS "B" POWER	UPS-B AND ALL DOWNSTREAM GEAR	BLACK	YELLOW

PROVIDE PERMANENT LABEL ON "MAIN SWITCHBOARD" STATING:
"MAXIMUM CALCULATED AIC - XXXXXA, 1980-07- 11"

CALCULATIONS ARE BASED ON THE FOLLOWING ASSUMPTIONS:

- INFINITE PRIMARY
 - UTILITY TRANSFORMER SIZE XXXXVA
 - TRANSFORMER IMPEDANCE OF XX%
 - SUPPLY FEEDER LENGTH OF XX'
- NOTES:

- CONTRACTOR SHALL SUBMIT VARIATIONS FROM ASSUMPTIONS PRIOR TO ORDERING EQUIPMENT.
- THE SERVICE EQUIPMENT SHALL BE PROVIDED WITH A PERMANENT LABEL INCLUDING: NOMINAL SYSTEM VOLTAGE, AVAILABLE FAULT CURRENT, AND CLEARING TIME ON MAIN OVERCURRENT PROTECTIVE DEVICE BASED ON THE AVAILABLE FAULT CURRENT.

Stantec Architecture Inc.
1050 17th Street Suite A200
Denver, CO 80265-2016
Tel: (303) 295-1717
www.stantec.com

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324 S. State St., Suite 400
Salt Lake City, UT 84111
801-678-7077
801-328-5151
fax: 801-328-5155
www.spectrum-engineers.com

GENERAL SHEET NOTES

- PROVIDE NEMA 3R ENCLOSURES FOR EQUIPMENT LOCATED OUTDOORS. REFER TO PLANS FOR EQUIPMENT LOCATIONS.
- REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.
- ALL EQUIPMENT SHALL BE CONSTRUCTED AND BRACED FOR THE SEISMIC CONDITIONS OF THE PROJECT. REFER TO ELECTRICAL SPECIFICATIONS FOR REQUIREMENTS.
- PROVIDE PERFORMANCE TESTING FOR GROUND-FAULT PROTECTION SYSTEMS ON SITE WITH A WRITTEN RECORD OF THIS TEST SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PER NEC 230.95(C).

SHEET KEYNOTES

- METER PER CLP STANDARDS.

FAULT CURRENT TABLE

BUS	FAULT CURRENT (AMPS)	AIC RATING
1LA	7175.3	10000
1LB	7175.3	10000
1LC	7175.3	10000
MDP	7523.1	65000

PROVIDE FULLY RATED CIRCUIT BREAKERS IN PANELBOARDS FOR THE FAULT CURRENT SHOWN. SERIES RATINGS WITH NEXT LEVEL UPSTREAM OVERCURRENT PROTECTIVE DEVICES ARE PERMITTED SUBJECT TO FACTORY UL DOCUMENTATION OF SERIES RATING SUBMITTED TO ENGINEER. IF DEVICE OR EQUIPMENT FAULT CURRENT RATING IS NOT SHOWN, ASSUME 100,000 AIC.



DATE	APPR	MARK
07/15/2020		

DESCRIPTION: FINAL DESIGN



DESIGNED BY: P/G
CHECKED BY: P/G
DATE: 07/15/2020

DRAWN BY: B/M
DATE: 07/15/2020

PROJECT NO: 1033248
LEGACY PROJECT NO:
BASE PROJECT MANAGER:
BETTERLANDS

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
49TH CIVIL ENGINEER GROUP

**ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
ONE-LINE DIAGRAM**

DISTRIBUTION PANEL "MDP"

VOLTS/PHASE/WIRE: 120/208V, 3 PH, 4 WIRE		MAIN SIZE & TYPE: 400 AMPERE MAIN		LOCATION: ELECTRICAL 148		NOTES:		
ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR								
AIC RATING: 65000								
CKT NO	AMP	POLE	LOAD (kVA)			PHASE LOAD (kVA)		
			LTG	PWR	CO	A	B	C
1	225	3	5.0	23.3	0.0	9.3	9.2	9.7
2	225	3	0.0	4.2	14.6	7.2	6.2	5.4
3	225	3	0.0	10.1	2.5	4.7	4.3	3.6
4	100	3	--	--	--	0.0	0.0	0.0
5	30	3	--	--	--	0.0	0.0	0.0
TOTALS:						CONNECTED kVA PER PHASE	19.7	18.7
						CONNECTED AMPS PER PHASE	165	156
						TOTAL CONNECTED kVA =	59.6	
						AVERAGE CONNECTED AMPS PER PHASE =	166	
NEC DIVERSIFIED LOAD CALCULATIONS								
LIGHTING & CONTINUOUS LOADS: 5.0 kVA @ 125% = 6.3 kVA - 100% CONNECTED LOAD PLUS 25% TOTAL DIVERSIFIED kVA = 60.0								
RECEPTACLES: 17.1 kVA @ 79% = 13.6 kVA - FIRST 10kVA @ 100%, REMAINDER @ 50% AVERAGE AMPS PER PHASE = 167								
ALL OTHER LOADS @ 100%: 37.6 kVA - MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC...								

PANEL: "1LA"

VOLTS/PHASE/WIRE: 120/208V, 3 PH 4 WIRE		PANEL SIZE & TYPE: 22" W x 6" D, BOLT-ON		MAIN SIZE AND TYPE: 225 AMPERE MAIN LUGS		LOCATION: ELECTRICAL 148		CABINET: SURFACE		NOTES:		
ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR												
AIC RATING: 10000												
CKT NO	AMP	POLE	LOAD (kVA)			PHASE LOAD			LOAD (kVA)			CKT NO
			LTG	PWR	CO	A	B	C	CO	PWR	LTG	
1	20	3	0.0	11.0	0.0	3.7	1.8		0.0	3.6	0.0	2
3	--	--	--	--	--							4
5	--	--	--	--	--							6
7	20	2	0.0	1.8	0.0	0.9	0.9		0.0	1.8	0.0	8
9	--	--	--	--	--							10
11	20	1	0.0	2.2	0.0				0.0	1.1	0.0	12
13	--	--	--	--	--							14
15	20	1	0.8	0.0	0.0				0.0	0.0	1.1	16
17	20	1	1.3	0.0	0.0				0.0	0.0	0.8	18
19	20	1	0.8	0.0	0.0	0.8	0.3		0.0	0.0	0.3	20
21												22
23												24
25												26
27												28
29												30
31												32
33												34
35												36
37												38
39												40
41												42
TOTALS:						CONNECTED kVA PER PHASE	9	9	10	CONNECTED TOTAL kVA = 28		
						CONNECTED AMPS PER PHASE	78	77	81	AVERAGE CONNECTED AMPS PER PHASE = 78		
NEC DIVERSIFIED LOAD CALCULATIONS												
LIGHTING & CONTINUOUS LOADS: 5.0 kVA @ 125% = 6.3 kVA - 100% CONNECTED LOAD PLUS 25% DIVERSIFIED TOTAL kVA = 32												
RECEPTACLES: -- - FIRST 10kVA @ 100%, REMAINDER @ 50% AVERAGE AMPS PER PHASE = 89												
ALL OTHER LOADS @ 100%: 26.1 kVA - MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC												

LIGHTING RELAY PANEL SCHEDULE

PANEL NAME: 1RA		ACCESSORIES: INTEGRAL PROCESSOR																				
LOCATION: ELECTRICAL 148		ASTRONOMICAL TIMECLOCK																				
SUPPLY VOLTAGE:		LAN CONNECTIVITY AND CONTROL																				
MOUNTING: SURFACE																						
ENCLOSURE: NEMA 1																						
RELAY	DIMMING	PANEL...	DESCRIPTION	CHANNEL CONTROL						LOAD (WATTS)	CHANNEL CONTROL						DESCRIPTION	PANEL...	DIMMING	RELAY		
1			OFFICE LTG (R1)	X					768	1057						X			CORRIDOR LTG (R2)			2
3			OFFICE LTG (R3)	X					1279	802						X			ASSEMBLY LTG (R4)			4
5																						6
CHANNEL	DIMMING	CHANNEL DESCRIPTION	CHANNEL PROGRAMMING REQUIREMENTS																			
A	NO	MANUAL ON, AUTO SWEEP OFF	SWEEP OFF AT (10PM), MANUAL ON/OFF VIA LOW VOLTAGE SWITCH**																			
B	NO	CORRIDOR & COMMON SPACE	TIME OFF (10PM)/TIME ON (6AM)**																			
C	NO	NIGHT LIGHTS	ALWAYS ON - NIGHT LIGHTING, MANUAL OFF VIA LOW VOLTAGE SWITCH																			
D	NO	EXTERIOR LIGHTS OUT AT MIDNIGHT	EXTERIOR PHOTOCCELL ON/TIME OFF (12AM)																			
E	NO	EXTERIOR LIGHTING ALL NIGHT	EXTERIOR PHOTOCCELL ON/OFF																			
F	NO	SPARE	PROGRAM AS DIRECTED BY OWNER																			
GENERAL NOTES:																						
1. PROGRAMMING OF SYSTEM SHALL COMPLY WITH CURRENT IECC REQUIREMENTS.																						
2. COORDINATE INITIAL PROGRAMMING WITH OWNER AND MODIFY CONTROL TIMES AND OPERATION AS REQUESTED BY OWNER.																						
3. PROVIDE FINE TUNING PROGRAMMING AND ADJUSTMENTS UPON REQUEST BY OWNER WITHIN FIRST 6 MONTHS AFTER SUBSTANTIAL COMPLETION.																						
4. ALL SPARE RELAYS AND CHANNELS SHALL BE INCLUDED WITH ORIGINAL SYSTEM INSTALLATION.																						
5. UPON LOSS OF NORMAL POWER, ALL EMERGENCY LIGHTING RELAYS SHALL TURN ON TO 100% UNTIL NORMAL POWER IS RESTORED, THEN GO BACK TO STANDARD MODE.																						
** CHANNEL SHALL BE PROGRAMMED WITH 10 MINUTE WARNING PRIOR TO TURNING LIGHTS OFF BY BLINKING THE LIGHTS OFF/ON/OFF/ON.																						

PANEL: "1LC"

VOLTS/PHASE/WIRE: 120/208V, 3 PH 4 WIRE		PANEL SIZE & TYPE: 22" W x 6" D, BOLT-ON		MAIN SIZE AND TYPE: 225 AMPERE MAIN LUGS		LOCATION: ELECTRICAL 148		CABINET: SURFACE		NOTES:		
ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR												
AIC RATING: 10000												
CKT NO	AMP	POLE	LOAD (kVA)			PHASE LOAD			LOAD (kVA)			CKT NO
			LTG	PWR	CO	A	B	C	CO	PWR	LTG	
1	20	1	0.0	0.4	0.0	0.4	0.4		0.0	0.4	0.0	2
3	20	1	0.0	0.4	0.0			0.4	0.4			4
5	20	1	0.0	0.4	0.0					0.4	0.4	6
7	20	1	0.0	0.5	0.0	0.5	0.4					8
9	20	1	0.0	0.4	0.0			0.4	0.4			10
11	20	1	0.0	0.4	0.0					0.4	0.4	12
13	20	1	0.0	0.4	0.0	0.4	0.4					14
15	20	1	0.0	0.4	0.0			0.4	0.4			16
17	20	1	0.0	0.4	0.0					0.4	0.4	18
19	20	1	0.0	0.5	0.0	0.5	0.4					20
21	20	1	0.0	0.4	0.0			0.4	0.4			22
23	20	1	0.0	0.4	0.0					0.4	0.4	24
25	20	1	0.0	0.4	0.0	0.4	0.4					26
27	20	1	0.0	0.4	0.0			0.4	0.2			28
29	20	1	0.0	0.5	0.0					0.5	0.2	30
31	20	1	0.0	0.0	0.5			0.5	0.2			32
33	20	1	0.0	0.0	0.5					0.5	0.4	34
35	20	1	--	--	--							36
37	20	1	--	--	--			0.0	0.0			38
39	20	1	--	--	--					0.0	0.0	40
41	20	1	--	--	--					0.0	0.0	42
TOTALS:						CONNECTED kVA PER PHASE	5	4	4	CONNECTED TOTAL kVA = 13		
						CONNECTED AMPS PER PHASE	40	37	30	AVERAGE CONNECTED AMPS PER PHASE = 35		
NEC DIVERSIFIED LOAD CALCULATIONS												
LIGHTING & CONTINUOUS LOADS: -- - 100% CONNECTED LOAD PLUS 25% DIVERSIFIED TOTAL kVA = 13												
RECEPTACLES: 2.5 kVA @ 100% = 2.5 kVA - FIRST 10kVA @ 100%, REMAINDER @ 50% AVERAGE AMPS PER PHASE = 35												
ALL OTHER LOADS @ 100%: 10.1 kVA - MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC												

PANEL: "1LB"

VOLTS/PHASE/WIRE: 120/208V, 3 PH 4 WIRE		PANEL SIZE & TYPE: 22" W x 6" D, BOLT-ON		MAIN SIZE AND TYPE: 225 AMPERE MAIN LUGS		LOCATION: ELECTRICAL 148		CABINET: SURFACE		NOTES:		
ACCESSORIES: PANEL DIRECTORY, IDENTIFICATION, GROUNDING BAR												
AIC RATING: 10000												
CKT NO	AMP	POLE	LOAD (kVA)			PHASE LOAD			LOAD (kVA)			CKT NO
			LTG	PWR	CO	A	B	C	CO	PWR	LTG	
1	20	1	0.0	0.0	0.7	0.7	0.7		0.7	0.0	0.0	2
3	20	1	0.0	0.0	0.5		0.5	0.7		0.0	0.0	4
5	20	1	0.0	0.0	0.9			0.9	0.7	0.0	0.0	6
7	20	1	0.0	0.0	0.7		0.7			0.0	0.0	8
9	20	1	0.0	0.0	0.5		0.5	0.5		0.5	0.0	10
11	20	1	0.0	0.0	0.5			0.5	0.5	0.0	0.0	12
13	20	1	0.0	0.0	0.2	0.2	0.8			0.0	0.8	14
15	20	1	0.0	0.0	0.7		0.7	0.2		0.2	0.0	16
17	20	1	0.0	0.0	0.7			0.7	0.5	0.0	0.0	18
19	20	1	0.0	0.0	0.7	0.7	0.5			0.5	0.0	20
21	20	1	0.0	0.0	0.5		0.5	0.5		0.5	0.0	22
23	20	1	0.0	0.4	0.0			0.4	0.2	0.2	0.0	24
25	20	2	0.0	0.5	0.0	0.3	0.7			0.0	0.7	26
27	--	--	--	--	--			0.3	0.7			28
29	20	1	0.0	0.0	0.2			0.2	0.8	0.0	0.8	30
31	20	1	0.0	0.4	0.0	0.4	0.8			0.8	0.0	32
33	20	1	0.0	0.0	0.2		0.2	0.8		0.8	0.0	34
35	20	1	--	--	--			0.0	0.0	--	--	36
37	20	1	--	--	--			0.0	0.0	--	--	38
39	20	1	--	--	--			0.0	0.0	--	--	40
41	20	1	--	--	--			0.0	0.0	--	--	42
TOTALS:						CONNECTED kVA PER PHASE	7	6	5	CONNECTED TOTAL kVA = 19		
						CONNECTED AMPS PER PHASE	61	53	45	AVERAGE CONNECTED AMPS PER PHASE = 52		
NEC DIVERSIFIED LOAD CALCULATIONS												
LIGHTING & CONTINUOUS LOADS: -- - 100% CONNECTED LOAD PLUS 25% DIVERSIFIED TOTAL kVA = 17												
RECEPTACLES: 14.6 kVA @ 84% = 12.3 kVA - FIRST 10kVA @ 100%, REMAINDER @ 50% AVERAGE AMPS PER PHASE = 46												
ALL OTHER LOADS @ 100%: 4.2 kVA - MOTOR TOTALS INCLUDED IN ALL OTHER LOADS WITH LARGEST MOTOR CALCULATED @ 125% PER NEC												



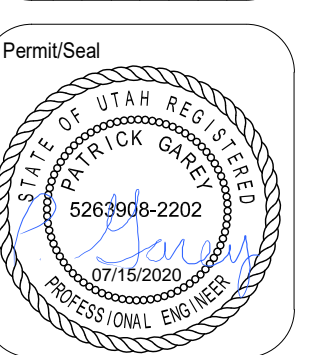
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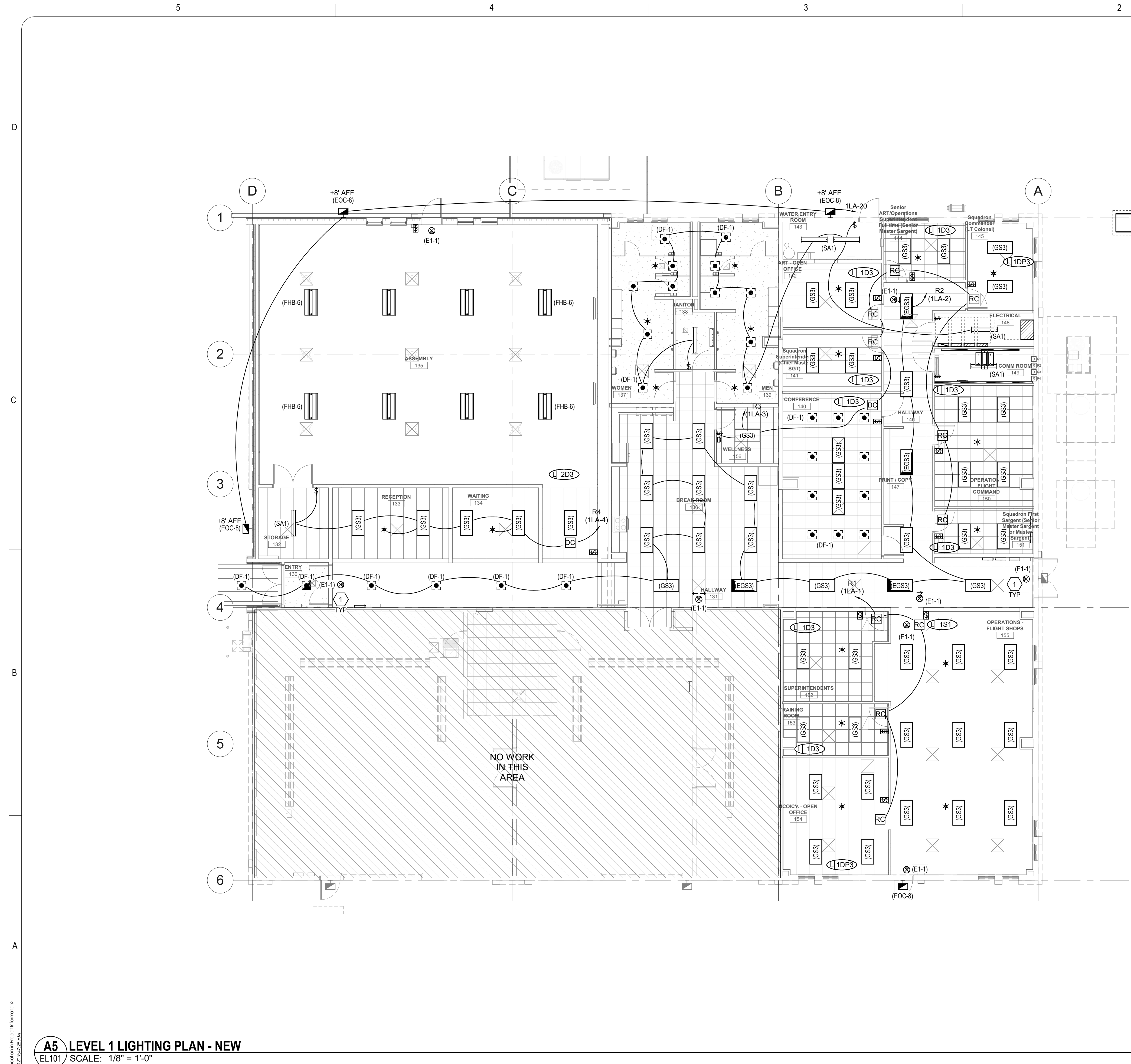


DATE	07/15/2020
APPR	
MARK	
DESCRIPTION	FINAL DESIGN



DESIGNED BY	P/G
DATE	07/15/2020
PROJECT NO	1033248
LEGACY PROJECT NO	
BASE PROJECT NUMBER	
REVIEWER	

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
PANEL SCHEDULES



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GENERAL SHEET NOTES

1 REFER TO SHEET EL603 FOR LIGHTING CONTROL REQUIREMENTS.

SHEET KEYNOTES

1 EXIT OR EGRESS LIGHTING CONNECT TO LOCAL UNSWITCHED LIGHTING CIRCUIT.



DATE	APPR	MARK
07/15/2020		



DESIGNED BY	P/J	DATE
1033248		07/15/2020

AFPMG
 DEPARTMENT OF THE AIR FORCE
 75TH AIR BASE WING
 419TH CIVIL ENGINEER GROUP

**ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591
 LEVEL 1 LIGHTING PLAN - NEW**

EL101
 Sheet: 83 of 94

File location in project information:
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LIGHTING/SPACE CONTROL TYPE SCHEDULE

Table with columns: WIRING LEGEND, APPROVED MANUFACTURERS, LIGHTING CONTROL ID, GENERAL NOTES (left), GENERAL NOTES (right).

Table with columns: ID, DETAIL, LIGHTS ON CONTROL, LIGHTS OFF CONTROL, LIGHTING CONTROL TYPE, DAYLIGHT SENSOR SETTING (FC), TIME DELAY TO OFF (MIN.), BAS AUX RELAY SIGNAL, PLUG LOAD CONTROLLER, NETWORKED CONTROLS, BUTTON_1 through BUTTON_9, NOTES.

1D3: Wiring diagram showing a dimming controller (LMRC-211) connected to a lighting load (0-10V DIMMING) and a 1-button dimming switch (LMDM-101). Includes notes on time on/off and dimming.

1DP3: Wiring diagram showing a dimming controller (LMRC-211) connected to a lighting load (0-10V DIMMING) and a 1-button dimming switch (LMDM-101). Includes a daylight photocell sensor (LML5-409). Includes notes on time on/off and dimming.

1S1: Wiring diagram showing a room controller (LMRC-101) connected to a lighting load (ON/OFF) and a 1-button dual technology switch (LMDW-101). Includes an isolated aux relay (LMRL-100). Includes notes on manual & occupancy control.

2D3: Wiring diagram showing a dimming controller (LMRC-212) connected to two lighting loads (0-10V DIMMING) and a 5-button scene switch (LMSW-105). Includes notes on time on/off, dimming, and scene control.

Table with columns: DATE, APPR, MARK, DESCRIPTION.



Table with columns: DESIGNED BY, CHECKED BY, P/J, B/E, DATE, PROJECT NO., LEGACY PROJECT NO., BASE PROJECT NUMBER, DEPARTMENT OF THE AIR FORCE, 75TH AIR BASE WING, 419TH CIVIL ENGINEER GROUP.

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
LIGHTING CONTROL SCHEDULES

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DESCRIPTION	DATE	APPR	MARK
FINAL DESIGN ONLY	07/15/2020		



DESIGNED BY:	P/J	CHEKED BY:	P/J
DRAWN BY:	BR	DATE:	07/15/2020
PROJECT NO.:	1033248	LEGACY PROJECT NO.:	
PROJECT NAME:	BASE PROJECT MANAGER	PROJECT MANAGER:	BEREYLANDE

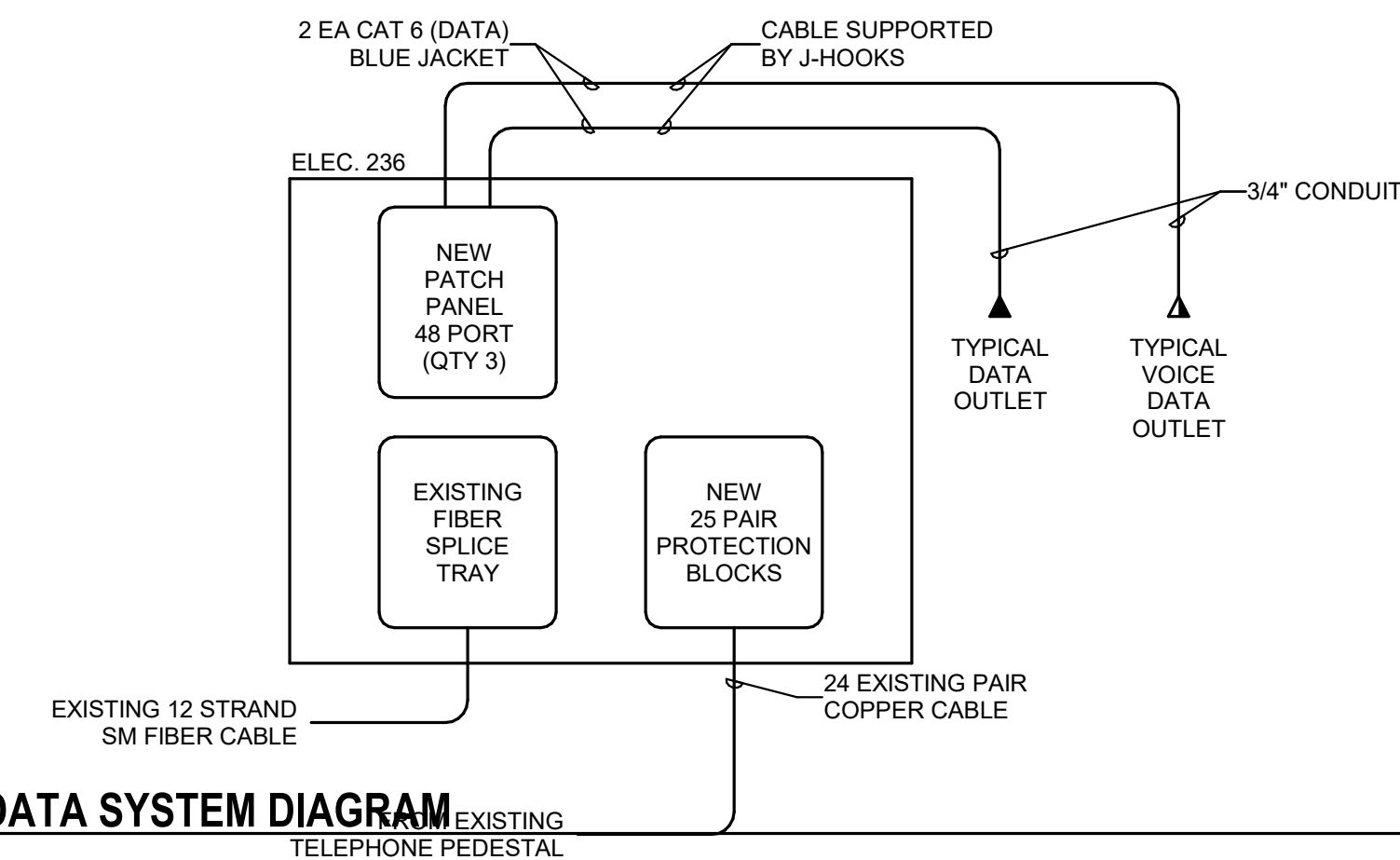
ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
VOICE/ DATA CONDUIT RISER
DIAGRAM

ET601
Sheet: 88 of 94

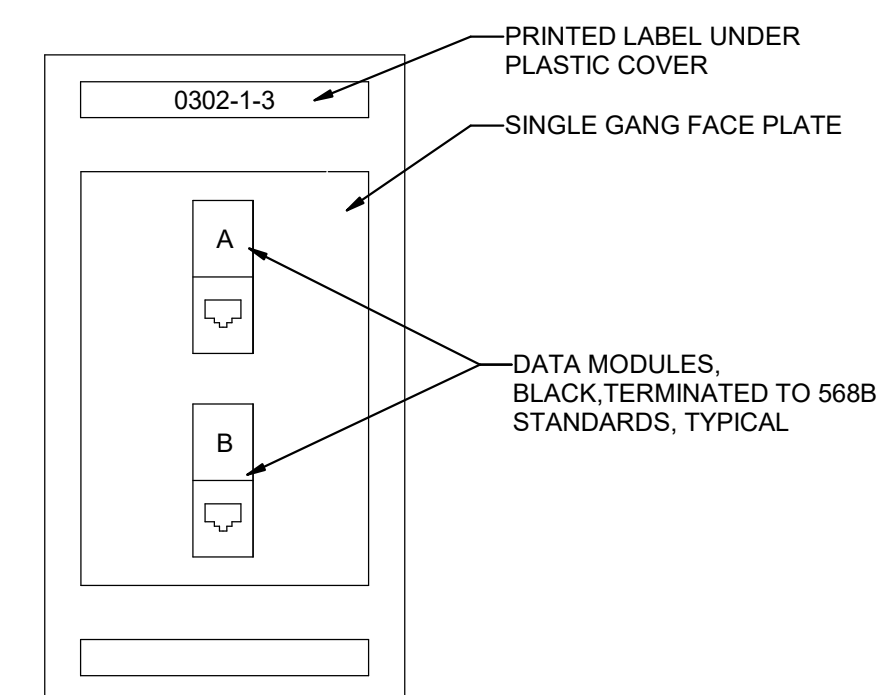
VOICE-DATA SCHEDULE			
ELECTRONIC SYSTEMS:		REFER TO DIVISION 26 SPECIFICATIONS AND WIRING DEVICE SCHEDULES FOR INSTALLATION REQUIREMENTS. MOUNTING HEIGHTS SHOWN ARE TYPICAL HEIGHTS. REFER TO DRAWINGS, ARCHITECTURAL ELEVATIONS, DRAWINGS AND SPECIFICATIONS FOR ACTUAL MOUNTING HEIGHTS.	
SYMBOL	MOUNTING	DESCRIPTION	ROUGH-IN MATERIALS
▼	WALL	DATA OUTLET	4-11/16" SQUARE, DEEP JUNCTION BOX WITH DOUBLE GANG MUD RING MOUNT AT ELECTRICAL OUTLET HEIGHT OR AS NOTED
▼	WALL	COMBINATIO N DATA/TELE OUTLET	4-11/16" SQUARE, DEEP JUNCTION BOX WITH DOUBLE GANG MUD RING MOUNT AT ELECTRICAL OUTLET HEIGHT OR AS NOTED

*A" INDICATES ABOVE COUNTER MOUNTING

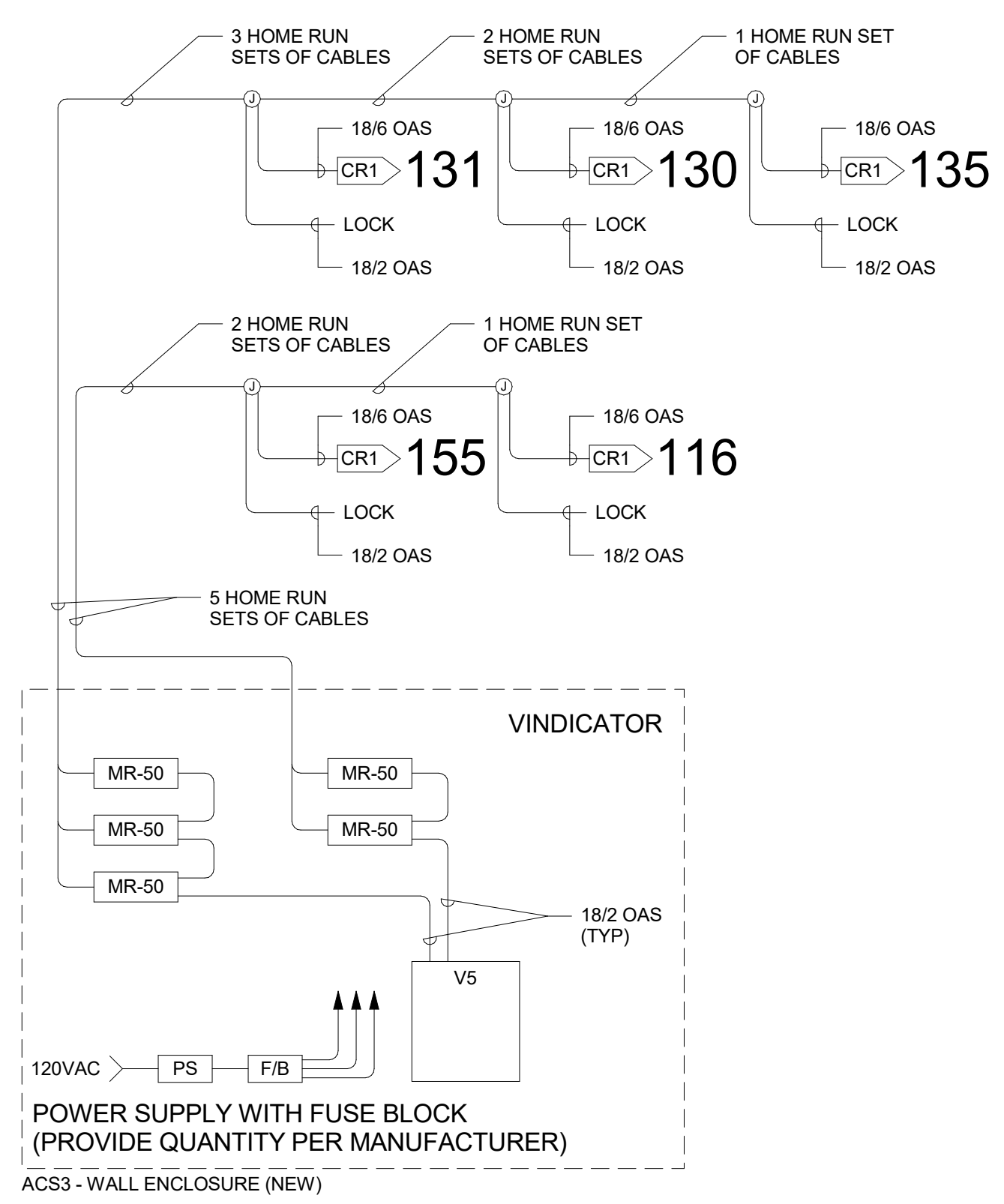
C2 VOICE DATA SCHEDULE
ET601 SCALE: NTS



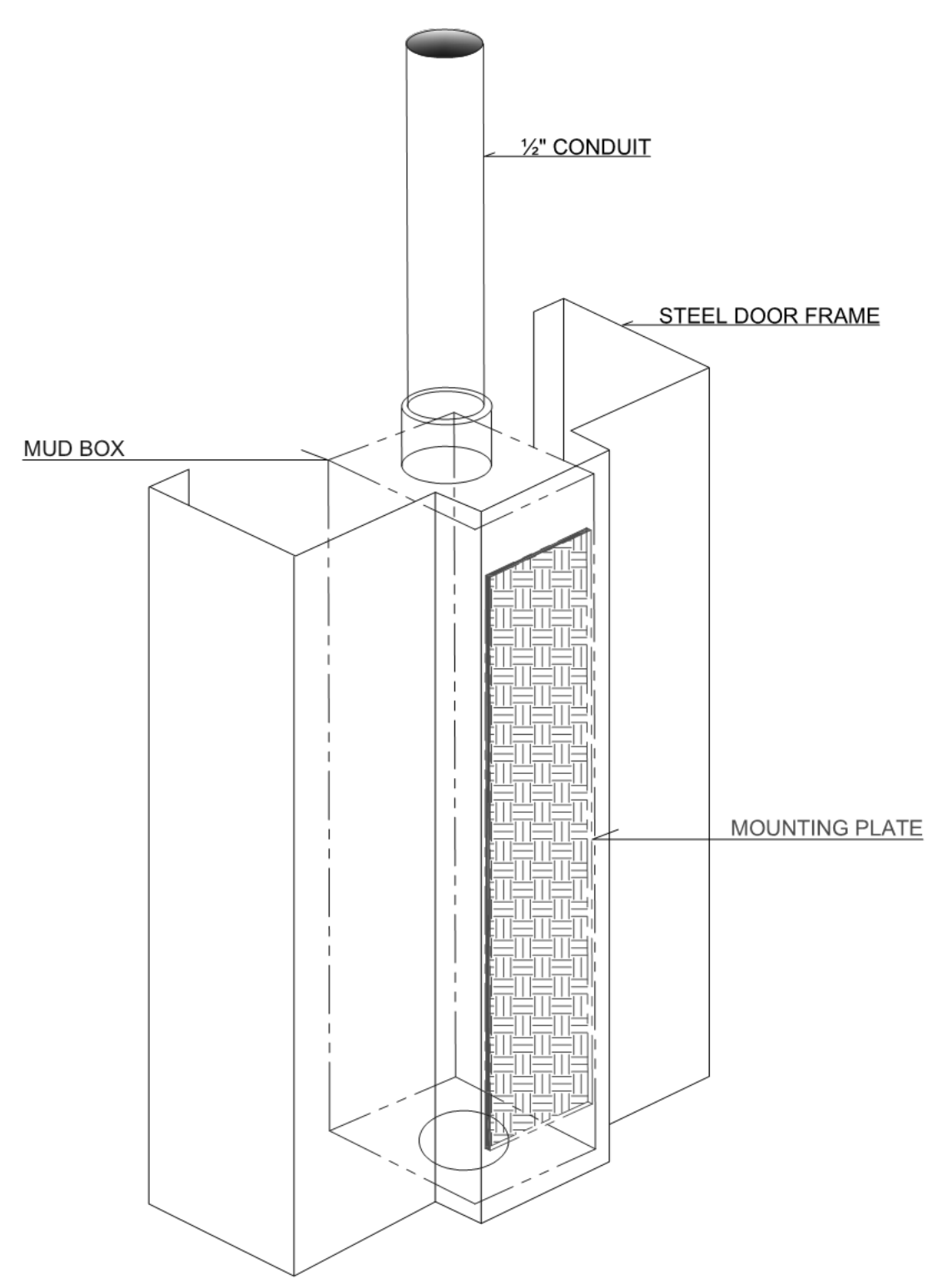
B2 TELECOM DATA SYSTEM DIAGRAM
ET601 SCALE: NTS



A2 WALL MOUNTED DATA OUTLET
ET601 SCALE: NTS

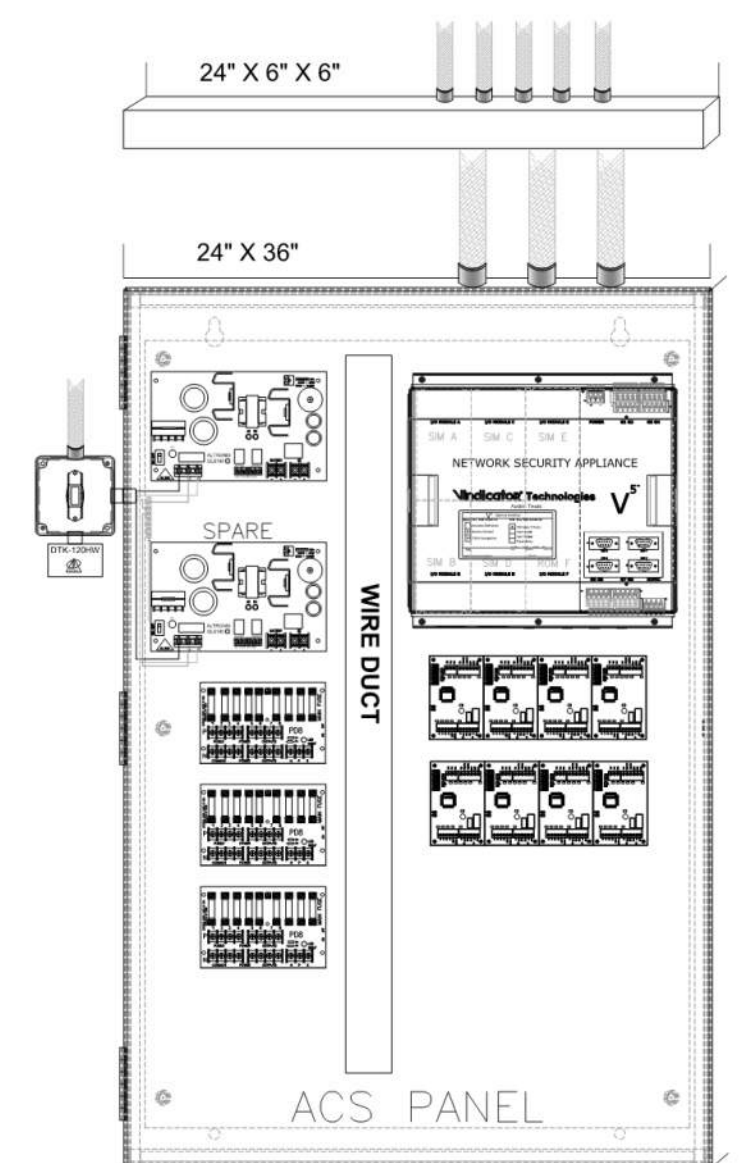


C5 ACCESS CONTROL SYSTEM (ACS) DIAGRAM
EY601 SCALE: NTS



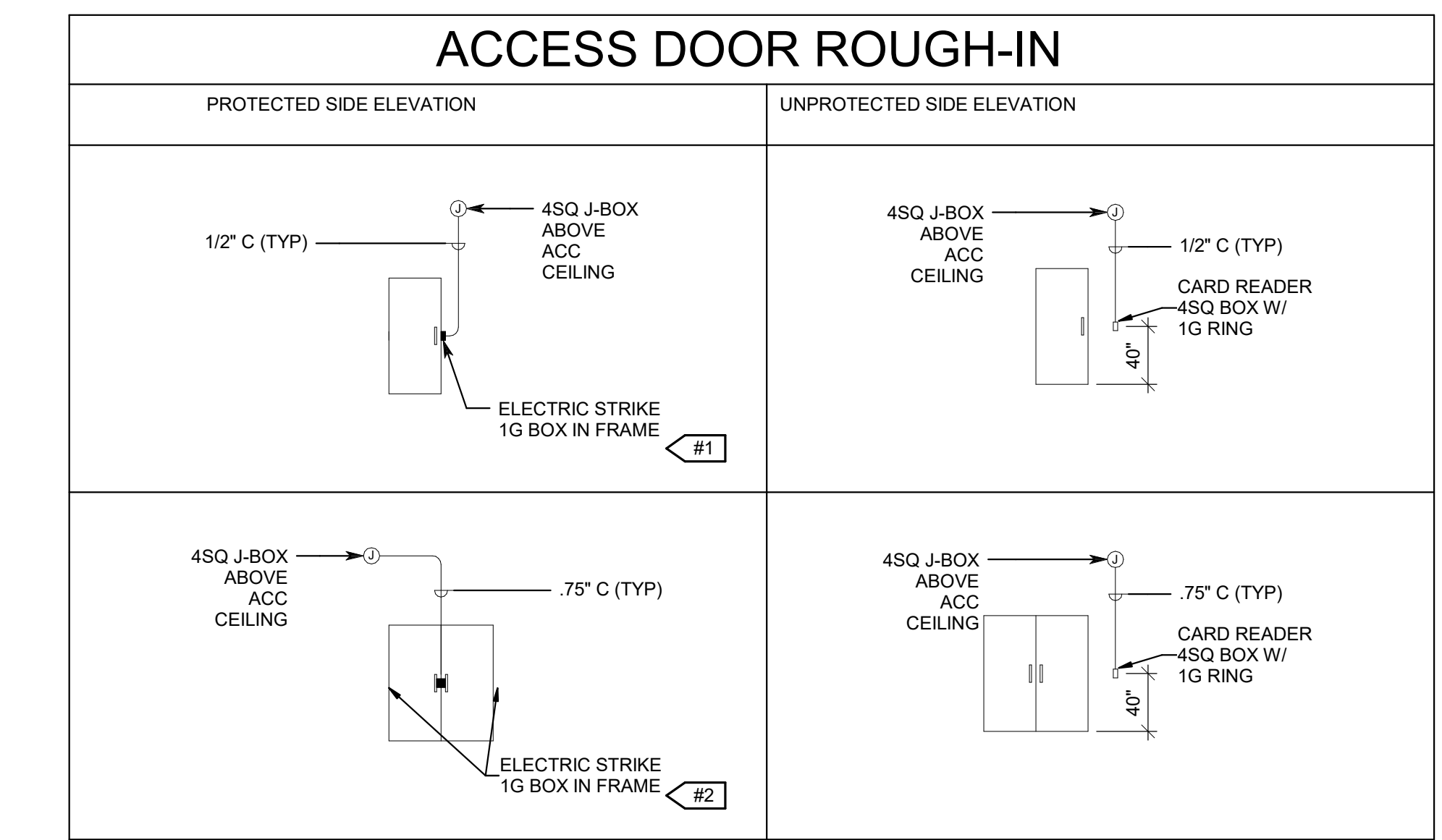
C3 MUD BOX (HES-9600) DETAIL
EY601 SCALE: NTS

QTY.	ACCESS CONTROL SYSTEM PARTS LIST (BLDG 591)
1	AE SAW 2 - STAND ALONE CLIENT WORKSTATION VINDICATOR PART NUMBER: 548-51500-01
1	19" COMPUTER MONITOR WITH VIDEO CABLE
1	AE AES V5 ACS ACCESS CONTROLLER VINDICATOR PART NUMBER: 548-54100-01
1	ACS PANEL: 24" X 36" CUSTOM ENCLOSURE VINDICATOR PART NUMBER: 550-33731-03
8	MR-50 WEIGAND INTERFACE: VINDICATOR PART NUMBER 574-32658-02
2	POWER SUPPLY: ALTRONIX PART NUMBER: OLS-180
3	POWER DISTRUBUTION FUSE BLOCK ALTRONIX PART NUMBER: PD8
2	BATTERY 12 VOLT 18AH
5	PROXIMITY CARD + PIN READER: HID PART NUMBER: 5355AGK00 CR1
5	DOOR STRIKE - USED WITH CRASH BARS HES-9600
1	SURGE PROTECTOR DITEK PART NUMBER: DKT-120HW



A5 ACCESS CONTROL SCHEDULE
EY601 SCALE: NTS

A4 ACCESS CONTROL CABINET
EY601 SCALE: NTS



A3 ACCESS DOOR ROUGH-IN
EY601 SCALE: NTS

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GENERAL SHEET NOTES

1 EC TO PROVIDE ACS ROUGH-IN. ACS SYSTEM TO BE GOVERNMENT FURNISHED AND GOVERNMENT INSTALLED.



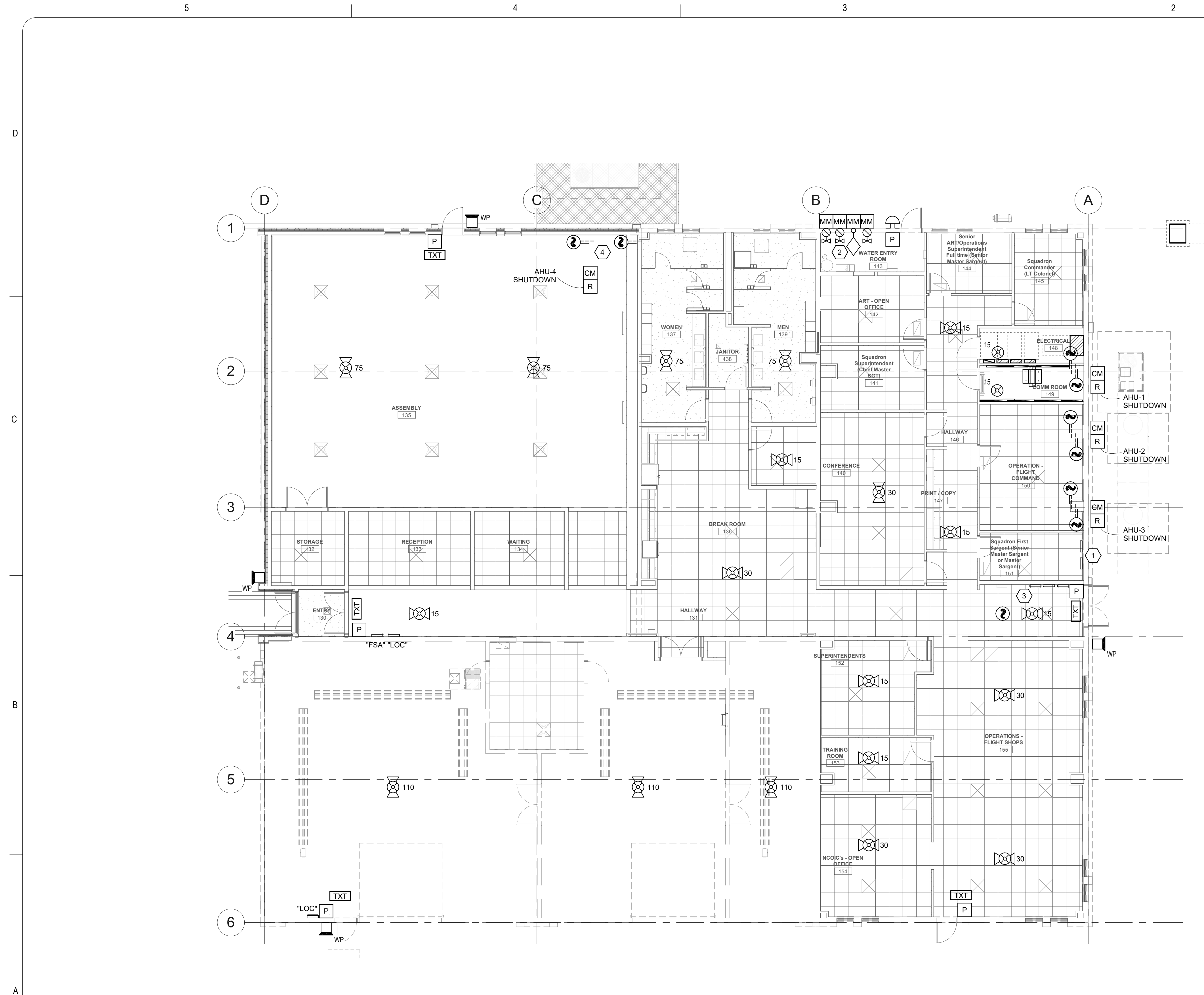
DATE	APPR	MARK
07/15/2020		



DESIGNED BY	P/J	DATE
1033248	07/15/2020	07/15/2020

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
AUXILIARY RISER DIAGRAMS

EY601
Sheet: 90 of 94

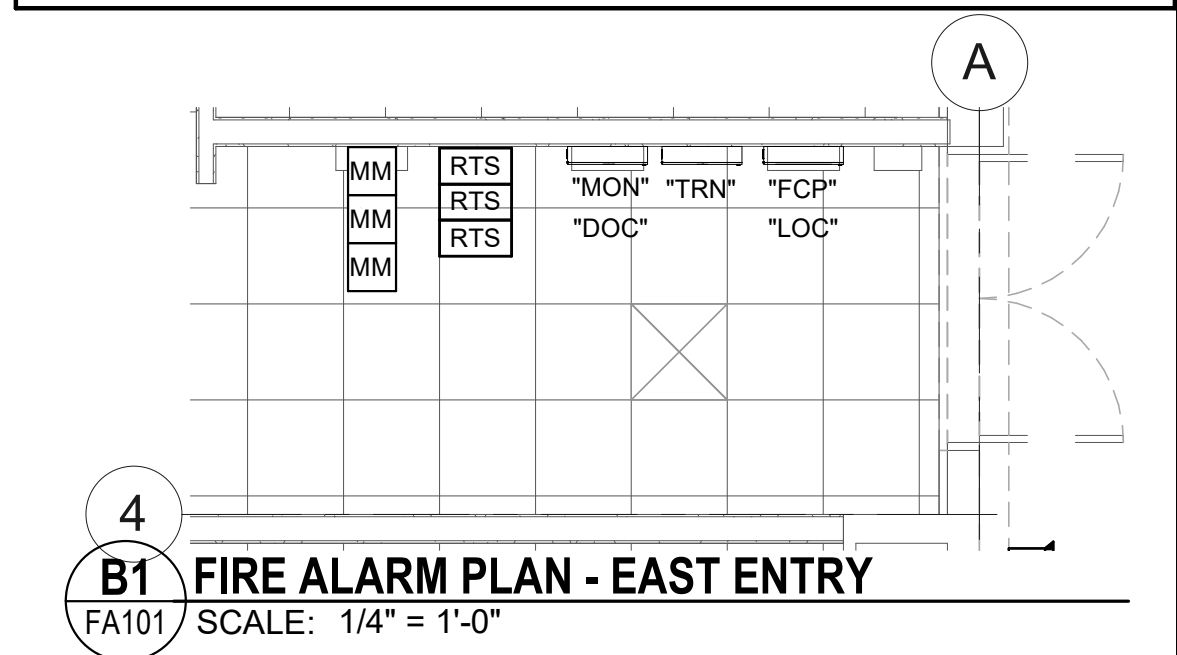


GENERAL SHEET NOTES

- THIS PROJECT INCLUDES THE REMOVAL OF EXISTING NOTIFICATION DEVICES IN THE EXISTING PORTION OF THE BUILDING, REPLACEMENT AND INSTALLATION OF NEW NOTIFICATION DEVICES THROUGHOUT THE NEW AND REMODELLED BUILDING, ADDITION OF TEXT SIGNS AT EXITS, AND INSTALLATION OF OTHER MONITORING/INITIATION DEVICES. THE EXISTING FIRE ALARM/MASS NOTIFICATION PANELS WILL REMAIN. EXISTING CIRCUITS WILL BE MODIFIED AND EXPANDED AND NEW CIRCUITS PROVIDED AS NECESSARY.
- THESE DOCUMENTS ARE FOR SUBMITTAL REVIEW AND COORDINATION AND MAY BE USED BY THE CONTRACTOR AS A DESIGN BASIS FOR INSTALLATION DRAWINGS. THE FIRE ALARM CONTRACTOR SHALL PROVIDE INSTALLATION DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- CONTRACTOR IS RESPONSIBLE FOR FINAL INSTALLATION DESIGN, INCLUDING BATTERY AND VOLTAGE DROP CALCULATIONS, AND SHALL BE COORDINATED PRIOR TO FABRICATION. DESIGNER SHALL BE A MINIMUM NICET LEVEL III TECHNICIAN OR LICENSED FIRE PROTECTION ENGINEER.
- THE FIRE ALARM CONTRACTOR SHALL COORDINATE WITH THE FIRE SPRINKLER CONTRACTOR AND OTHER TRADES FOR PROVISION OF CONNECTIONS BETWEEN THEIR RESPECTIVE SYSTEMS.
- ALL MATERIALS ARE TO BE UL LISTED OR FM APPROVED FOR USE IN FIRE ALARM SYSTEMS UNLESS OTHERWISE ALLOWED BY CODE OR AHJ.
- DESIGN, FABRICATION, INSTALLATION, AND TESTING SHALL BE IN ACCORDANCE WITH:
 - UNITED FACILITIES CRITERIA (UFC) 3-600-01, FIRE PROTECTION ENGINEERING FOR FACILITIES, 8 AUGUST 2016; CHANGE 4, 07 FEBRUARY 2020
 - NATIONAL FIRE PROTECTION ASSOCIATION 72 NATIONAL FIRE ALARM AND SIGNALING CODE, 2019.
 - HILL AIR FORCE BASE DESIGN GUIDE, LATEST EDITION.
- COORDINATE TESTING WITH OTHER TRADES AND BASE PERSONNEL PRIOR TO ACTION.

SHEET KEYNOTES

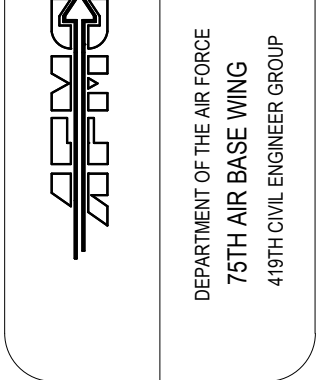
- EXISTING FIRE ALARM / MASS NOTIFICATION PANELS TO BE RELOCATED TO EAST ENTRY.
- EXISTING FIRE SPRINKLER SYSTEM MONITORING TO REMAIN.
- RELOCATE EXISTING FIRE ALARM / MNS EQUIPMENT HERE. REFER TO DETAIL A1 ON SHEET FA101.
- INSTALL DUCT DETECTORS IN SUPPLY AND RETURN ODUCTS ON AHU-1.



DATE	APPR	MARK
07/15/2020		



DESIGNED BY	CHECKED BY	DATE
JDD	JDD	07/15/2020



DEPARTMENT OF THE AIR FORCE
 75TH AIR BASE WING
 419TH CIVIL ENGINEER GROUP

**ADDITION/RENOVATION RESERVE
 CIVIL ENGINEER FACILITY - BLDG. 591**

LEVEL 1 FIRE ALARM PLAN - NEW

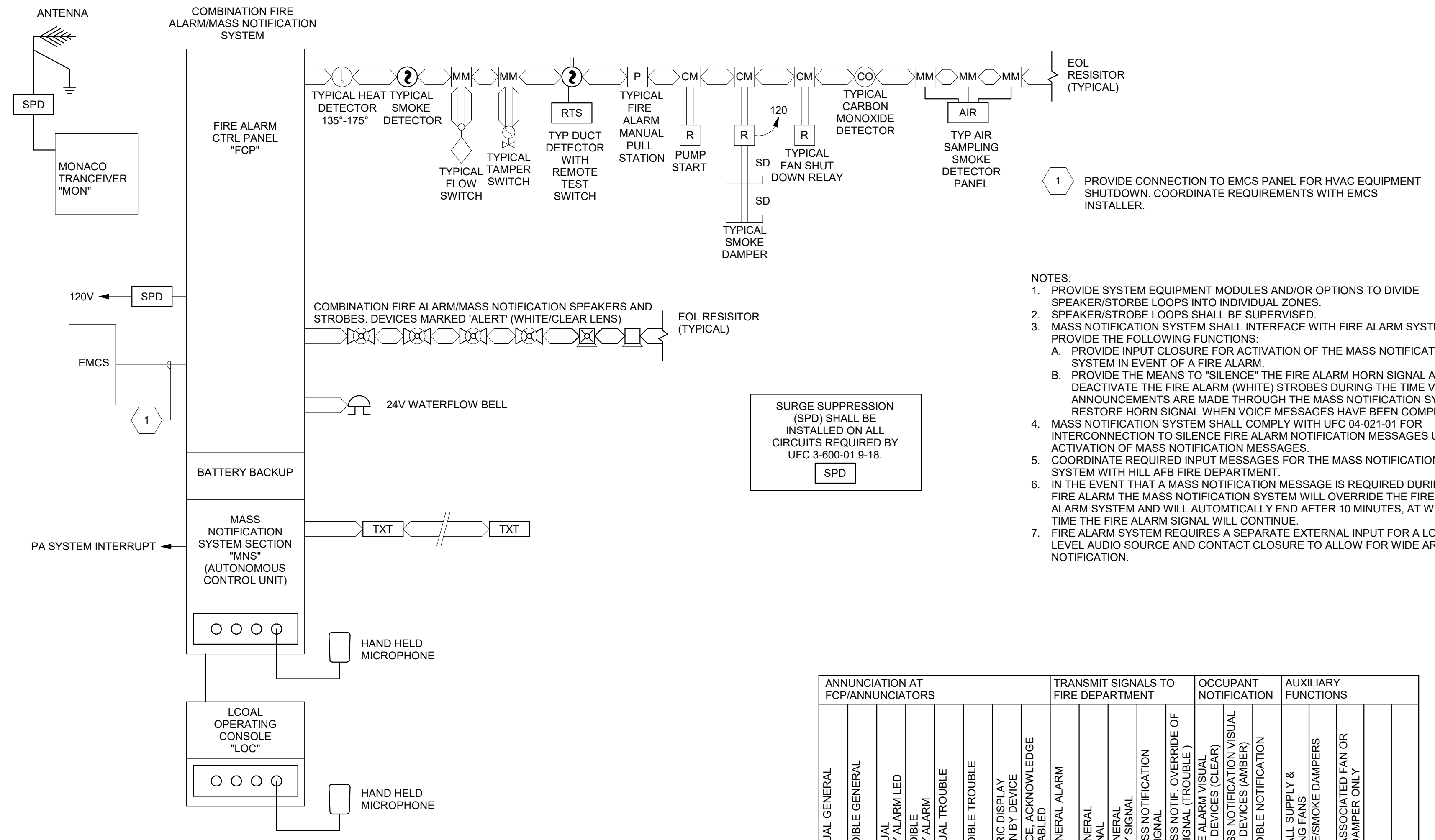
D

C

B

A

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1 PROVIDE CONNECTION TO EMCS PANEL FOR HVAC EQUIPMENT SHUTDOWN. COORDINATE REQUIREMENTS WITH EMCS INSTALLER.

- NOTES:
- PROVIDE SYSTEM EQUIPMENT MODULES AND/OR OPTIONS TO DIVIDE SPEAKER/STORBE LOOPS INTO INDIVIDUAL ZONES.
 - SPEAKER/STORBE LOOPS SHALL BE SUPERVISED.
 - MASS NOTIFICATION SYSTEM SHALL INTERFACE WITH FIRE ALARM SYSTEM TO PROVIDE THE FOLLOWING FUNCTIONS:
 - PROVIDE INPUT CLOSURE FOR ACTIVATION OF THE MASS NOTIFICATION SYSTEM IN EVENT OF A FIRE ALARM.
 - PROVIDE THE MEANS TO "SILENCE" THE FIRE ALARM HORN SIGNAL AND DEACTIVATE THE FIRE ALARM (WHITE) STROBES DURING THE TIME VOICE ANNOUNCEMENTS ARE MADE THROUGH THE MASS NOTIFICATION SYSTEM. RESTORE HORN SIGNAL WHEN VOICE MESSAGES HAVE BEEN COMPLETED.
 - MASS NOTIFICATION SYSTEM SHALL COMPLY WITH UFC 04-021-01 FOR INTERCONNECTION TO SILENCE FIRE ALARM NOTIFICATION MESSAGES UPON ACTIVATION OF MASS NOTIFICATION MESSAGES.
 - COORDINATE REQUIRED INPUT MESSAGES FOR THE MASS NOTIFICATION SYSTEM WITH HILL AFB FIRE DEPARTMENT.
 - IN THE EVENT THAT A MASS NOTIFICATION MESSAGE IS REQUIRED DURING A FIRE ALARM THE MASS NOTIFICATION SYSTEM WILL OVERRIDE THE FIRE ALARM SYSTEM AND WILL AUTOMATICALLY END AFTER 10 MINUTES, AT WHICH TIME THE FIRE ALARM SIGNAL WILL CONTINUE.
 - FIRE ALARM SYSTEM REQUIRES A SEPARATE EXTERNAL INPUT FOR A LOW LEVEL AUDIO SOURCE AND CONTACT CLOSURE TO ALLOW FOR WIDE AREA NOTIFICATION.

SURGE SUPPRESSION (SPD) SHALL BE INSTALLED ON ALL CIRCUITS REQUIRED BY UFC 3-600-01 9-18.

INPUT/OUTPUT MATRIX SYSTEM INPUTS

	ANNUNCIATION AT FCP/ANNUNCIATORS										TRANSMIT SIGNALS TO FIRE DEPARTMENT				OCCUPANT NOTIFICATION			AUXILIARY FUNCTIONS			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
FIRE ALARMS																					
1. SPOT-TYPE SMOKE DETECTOR	X	X					X	X	X					X		X	X	X			
2. WATER FLOW SWITCH (MAIN RISER)	X	X					X	X	X					X		X	X	X			
4.																					
5.																					
6.																					
SUPERVISORY SIGNALS																					
7. VALVE SUPERVISORY SWITCH			X	X			X	X			X										
8. DUCT SMOKE DETECTOR			X	X			X	X			X								X		
9.																					
TROUBLE CONDITIONS																					
12. LOW BATTERY VOLTAGE					X	X	X	X			X										
13. CIRCUIT FAULT					X	X	X	X			X										
14. AC POWER FAILURE					X	X	X	X			X										
15. OTHER SYSTEM TROUBLES					X	X	X	X			X										
16. LOW LEVEL AUTO DISABLE SWITCH					X	X	X	X			X										
17. CONTROL COMPONENT COMMON TROUBLE CONDITION					X	X	X	X			X										
MASS NOTIFICATION																					
12. SIGNAL FROM MAIN BASE MONITORING CENTER														X		X	X				
13. LOCAL PUSH BUTTON														X		X	X				
14. KEYED MICROPHONE														X		X	X				
15. MASS NOTIFICATION OVERRIDE OF FIRE ALARM															X						

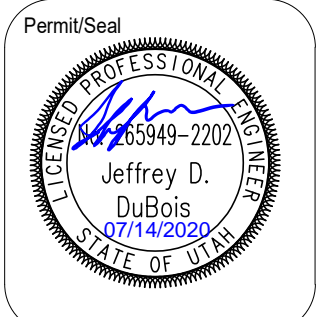
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07/15/2020		



DESIGNED BY: JDD	CHECKED BY: JDD
DRAWN BY: JDD	DATE: 07/15/2020
CAPITAL PROJECT NO: 1033248	LEGACY PROJECT NO:
BASE PROJECT MANAGER: BERRY, LANCE	

ADDITION/RENOVATION RESERVE
CIVIL ENGINEER FACILITY - BLDG. 591
FIRE ALARM RISER

