CASPER COLLEGE
GATEWAY HVAC REDESIGN

CONSTRUCTION DOCUMENTS

ISSUE DATE: 01/26/2022

PROJECT TEAM

CLIENT	CASPER COLLEGE 125 COLLEGE DR CASPER, WY 82601 ATTN: ERIC RULOFSON	307-268-2492
ARCHITECT OF RECORD	GSG ARCHITECTURE 1042 S DAVID ST. CASPER, WY 82601 ATTN: TIM SCHENK, AIA ATTN: PERRY GILBERT	307-234-8968
CIVIL ENGINEER	ECS ENGINEERS 111 W 2ND ST STE 205 CASPER, WY 82601 ATTN: SHAWN GUSTAFSON, P.E.	307-235-5690
STRUCTURAL ENGINEER	LOWER & COMPANY, P.C. 1607 CY AVENUE, SUITE 201 CASPER, WYOMING 82604 ATTN: BOB LOWER, P.E.	307-234-6984
MECHANICAL ENGINEER	CATOR, RUMA AND ASSOCIATES 420 WEST LINCOLN WAY CHEYENNE, WY 82001 ATTN: SEAN CONVERY, P.E. ATTN: AARON STIDOLPH	307-274-3829
ELECTRICAL	CATOR, RUMA AND ASSOCIATES 420 LINCOLN WAY CHEYENNE, WYOMING 82001 ATTN: EVAN HRACHOVEC, E.I	307-274-3829

GSGarchitecture
DESIGN
ARCHITECTURE/PLANNING
CASPER, WY - GREELEY, CO - SHERIDAN, WY

DRAWING INDEX

GRAPHIC SYMBOLS

BREAK LINE

BUILDING SECTION REFERENCE (1 / A101 — 1 / A101)

CALLOUT REFERENCE (SIM; 1 / A101)

CENTER LINE REFERENCE

COLUMN GRID REFERENCE (0)

DOOR REFERENCE MARK (101)

TOILET ROOM ACCESSORIES (1)

LEVEL REFERENCE (PLAN LEVEL 100'-0")

NORTH ARROW

SPOT ELEVATION REFERENCE

EXTERIOR ELEVATION REFERENCE (1 Ref / A101 / 1 Ref)

ROOM NAME AND NUMBER REFERENCE (Room name 101)

VIEW REFERENCE WITH DRAWING SCALE AND REFERENCED SHEET VIEW (1 / R101 — View Name — 1/8" = 1'-0")

WALL SECTION REFERENCE (1 / A101)

WALL TYPE REFERENCE (1)

WINDOW REFERENCE (A)

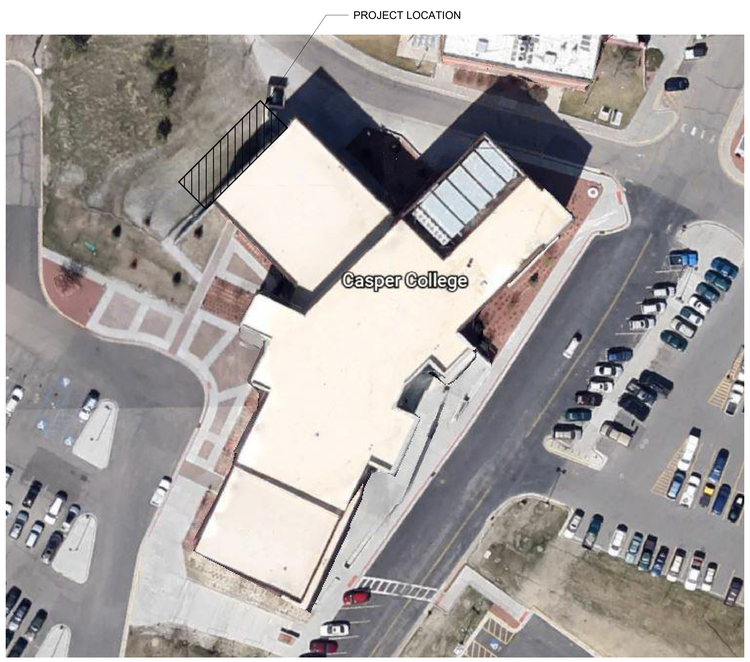
KEY NOTE DESIGNATION (A)

PROPERTY, BOUNDARY, AND MATCH LINES

LINE ABOVE OR HIDDEN LINE

REVISION DESIGNATION (CLOUD ENCLOSES AREA OF REVISION) (1)

INTERIOR ELEVATION REFERENCE AS NUMBERED ON SHEET 9.2 (1 Ref / A101 / 1 Ref)



LOCATION MAP

SITE ADDRESS
1910 LISCO DR
CASPER, WY 82601

TRUE NORTH

JOB #
2170

GATEWAY HVAC REDESIGN
2170
01/26/2022

NOTES

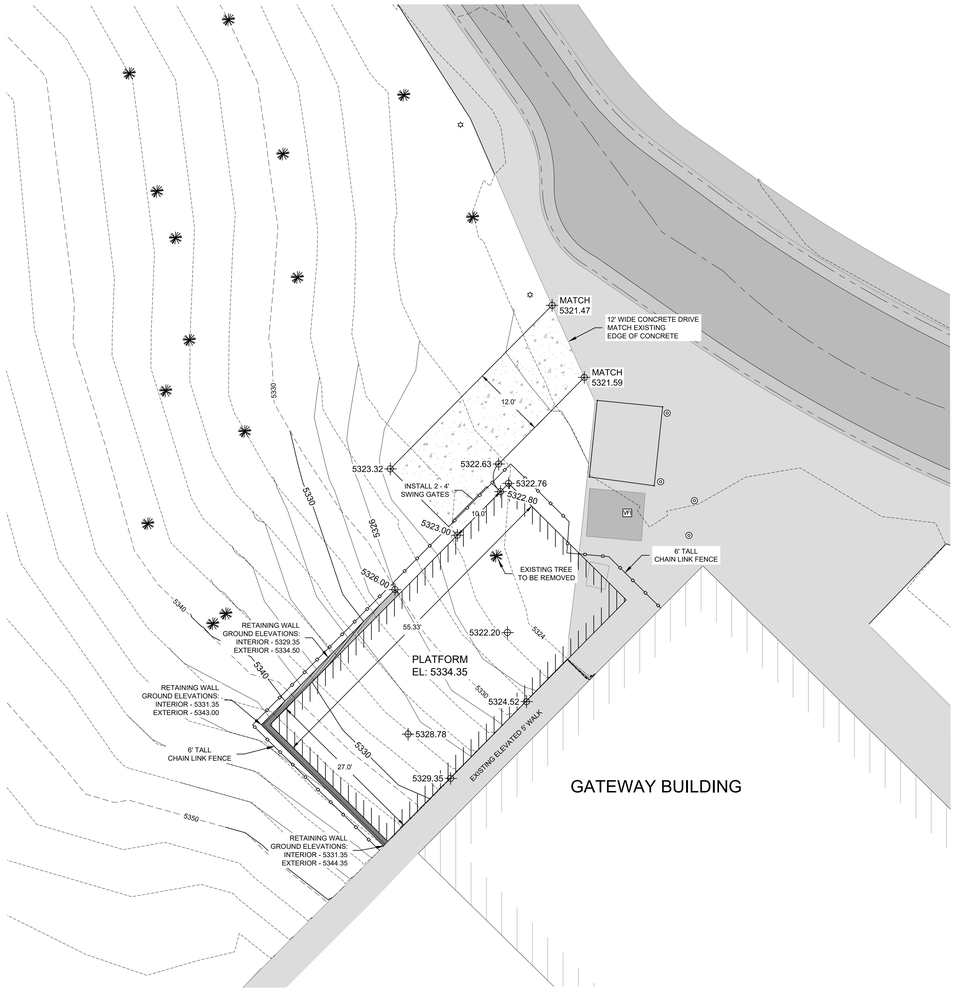
1. ALL WORK SHALL BE IN ACCORDANCE WITH THE CITY OF CASPER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND INFRASTRUCTURE IMPROVEMENTS, UNLESS OTHERWISE STATED IN THESE PLANS AND SPECIFICATIONS.
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND SIZES OF UNDERGROUND PUBLIC AND PRIVATE UTILITIES PRIOR TO CONSTRUCTION AND COORDINATE WITH THOSE UTILITIES DURING CONSTRUCTION.
3. THE CITY OF CASPER PUBLIC WORKS DEPARTMENT SHALL BE CONTACTED PRIOR TO ANY WORK ON CITY OWNED INFRASTRUCTURE. ALL CITY PERMITTING IS THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR STAKING AND MATERIALS TESTING.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO COMPLY WITH FEDERAL, STATE, COUNTY, AND CITY REGULATIONS INCLUDING WYPDES THAT PROHIBIT DISCHARGE OF POLLUTANTS, INCLUDING SEDIMENTS RESULTING FROM EROSION OR OTHER CONSTRUCTION ACTIVITIES.
6. THE CONTRACTOR SHALL PROVIDE DUST CONTROL AND SHALL CONDUCT WORK SO THAT SEDIMENT IS NOT TRANSFERRED ONTO ROADWAY OR ADJACENT PROPERTY.
7. THE LOCATION OF THE EXISTING UTILITIES IN THE PLANS ARE APPROXIMATE. THE ENGINEER AND OWNER SHALL NOT BE HELD ACCOUNTABLE FOR THE COMPLETENESS OR ACCURACY OF THE UTILITY LOCATIONS.
8. ALL NEW CONCRETE SURFACING TO BE INSTALLED PER DETAIL - THIS SHEET.
9. ALL UNPAVED DISTURBED AREAS OUTSIDE OF PLATFORM TO BE SEEDED AND MULCHED FOLLOWING FINAL GRADING AND PLACEMENT OF TOPSOIL..

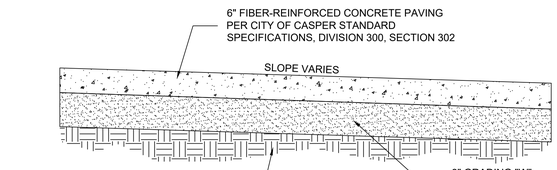
SYMBOLS

- TREE
- ECS CONTROL POINT
- ELECTRICAL VAULT
- FIBER OPTIC PEDESTAL
- FIRE HYDRANT
- PROFILE FIRE HYDRANT
- FLARED END SECTION
- GAS METER
- CATCH BASIN
- GUY WIRE ANCHOR
- POWER POLE
- SANITARY SEWER MAHOLE
- SANITARY SEWER CLEANOUT
- IRRIGATION VALVE BOX
- STORM SEWER MANHOLE
- STREET LAMP
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- BORE HOLE LOCATION
- WATER TEE
- WATER CROSS
- WATER VALVE
- CURB STOP
- ELECTRICAL METER CABINET
- SINGLE SIGN POST
- BOLLARD
- PROPERTY CORNER

LEGEND

- RIGHT OF WAY
- PROPERTY LINES
- EASEMENT LINES
- EXISTING CENTERLINE
- PROPOSED CENTERLINE
- EDGE EXISTING ASPHALT
- EXISTING WOOD FENCE
- EXISTING CHAIN LINK FENCE
- PROPOSED CHAIN LINK FENCE
- EXISTING GAS LINE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING SANITARY LINE
- PROPOSED SANITARY LINE
- EXISTING STORM PIPE
- PROPOSED STORM PIPE
- OVERHEAD POWER LINE
- TELEPHONE LINE
- UNDERGROUND POWER
- FIBEROPTIC LINE
- CABLE TV LINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOURS
- EXISTING MINOR COUNTOURS
- PROPOSED CONCRETE SURFACING
- EXISTING CONCRETE SURFACING
- EXISTING ASPHALT SURFACING





TYPICAL CONCRETE PAVING SECTION

(Not To Scale)

GSGarchitecture
DESIGN
ARCHITECTURE/PLANNING
CASPER, WY - GREELEY, CO - SHERIDAN, WY

ENGINEERS
111 W. 2ND STREET, SUITE 600
CASPER, WYOMING 82601
(307) 337-2883

NO.	REV. DESCRIPTION	DATE

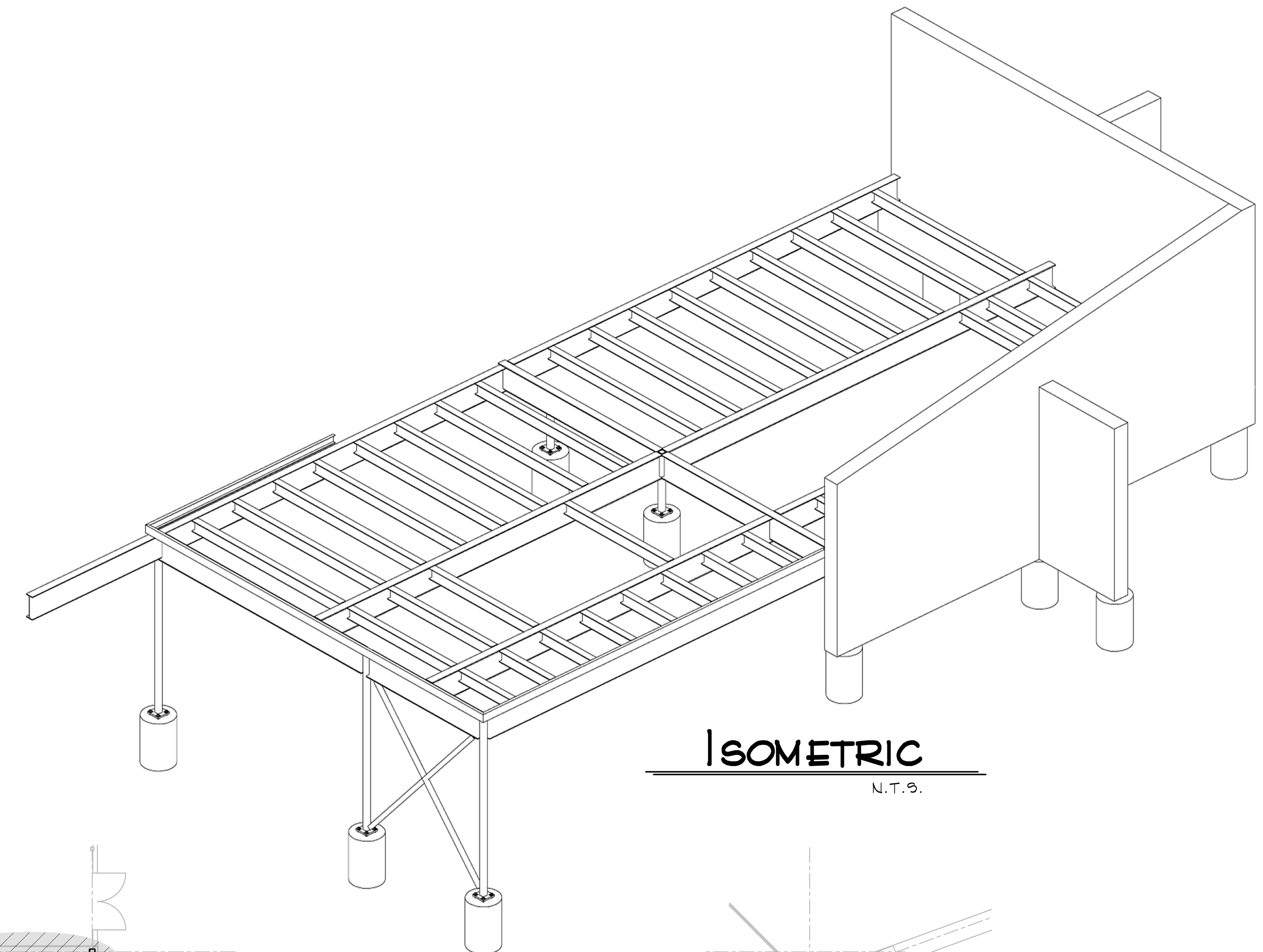
CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper, WY 82601

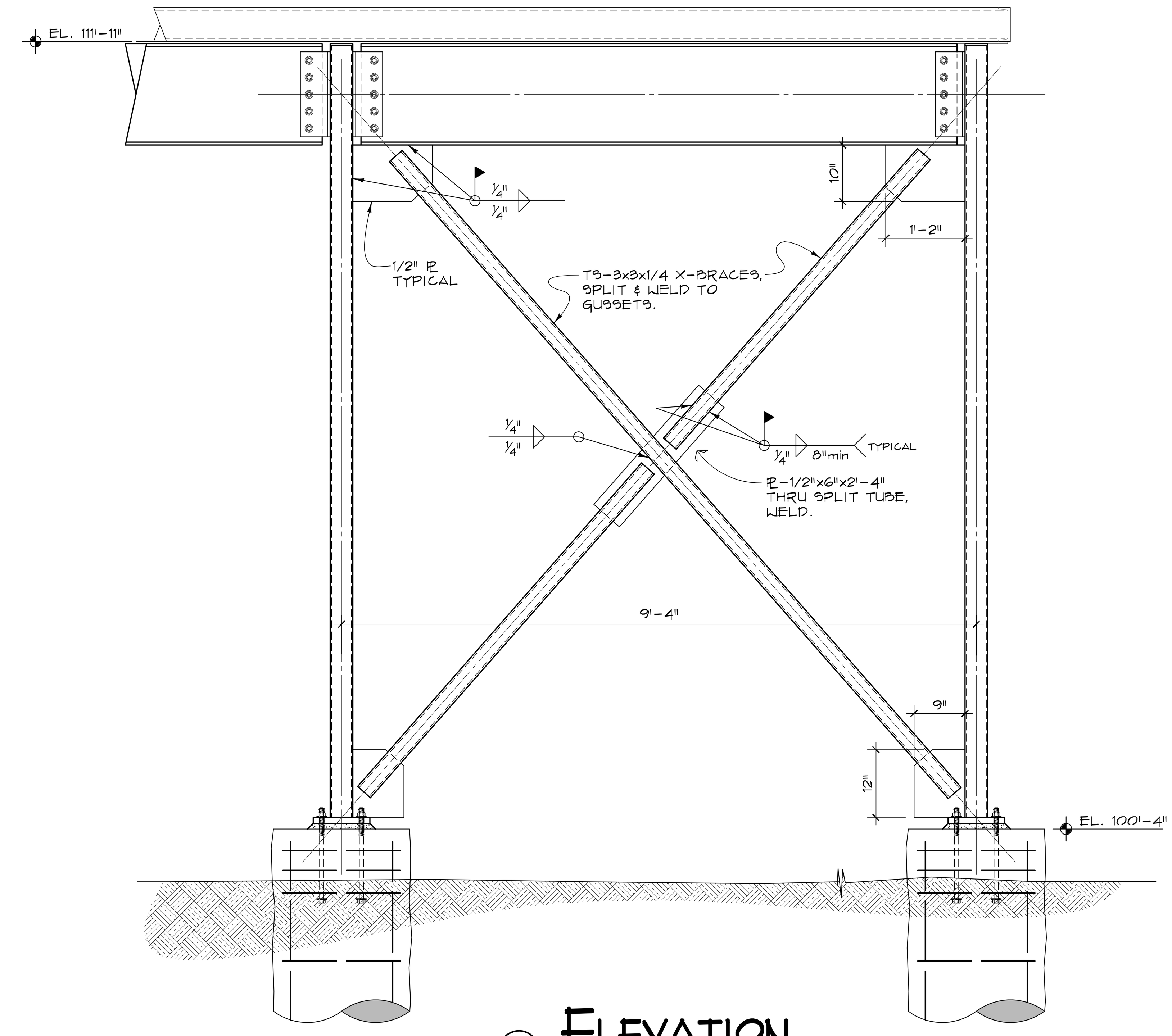
PROJECT #: 210029
DATE: 01/26/2022
DRAWN BY: MFM

PROFESSIONAL ENGINEER (CIVIL)
BENJAMIN J. GUSTAFSON
6936
WYOMING
Date March 22

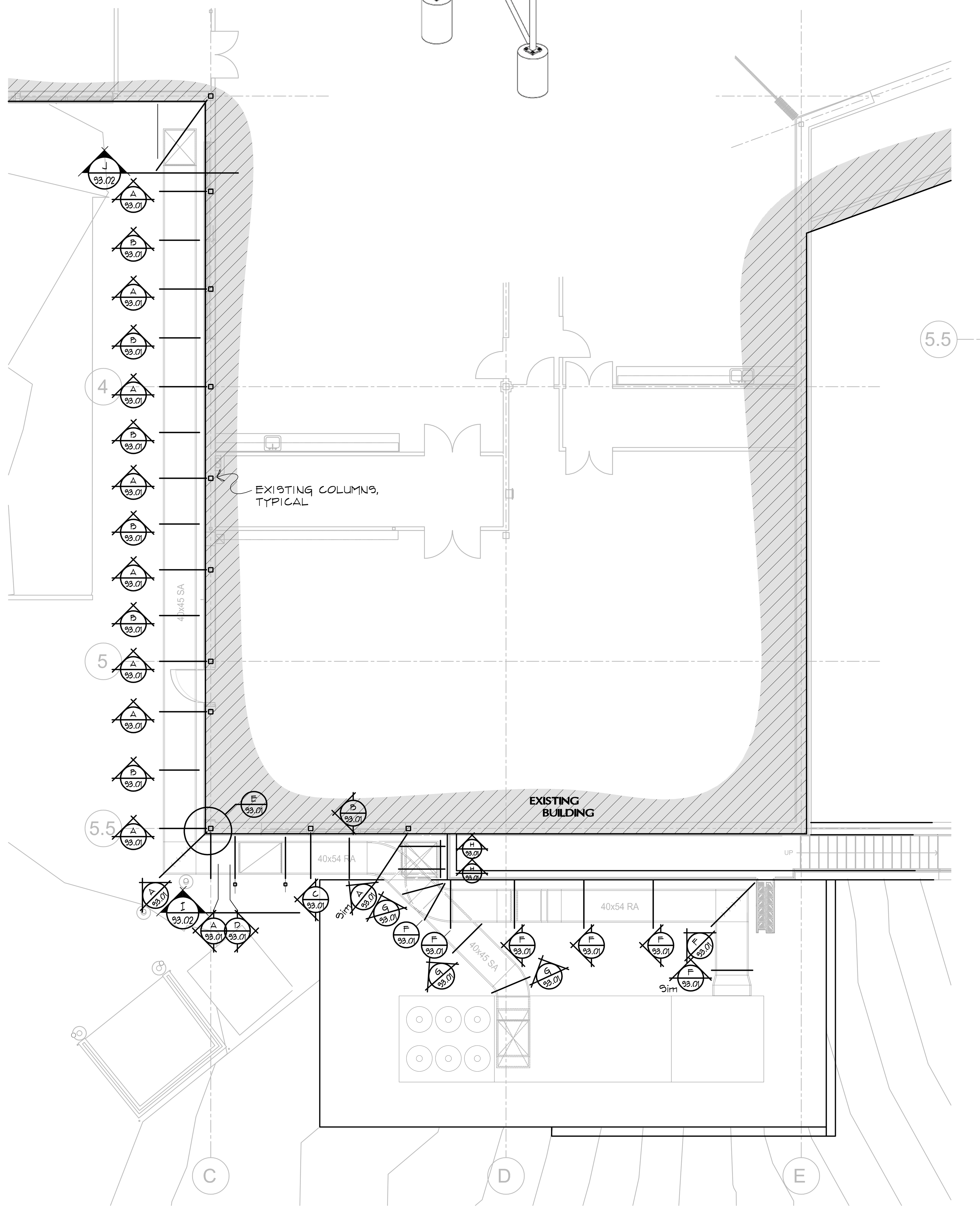
SITE PLAN

C1.00





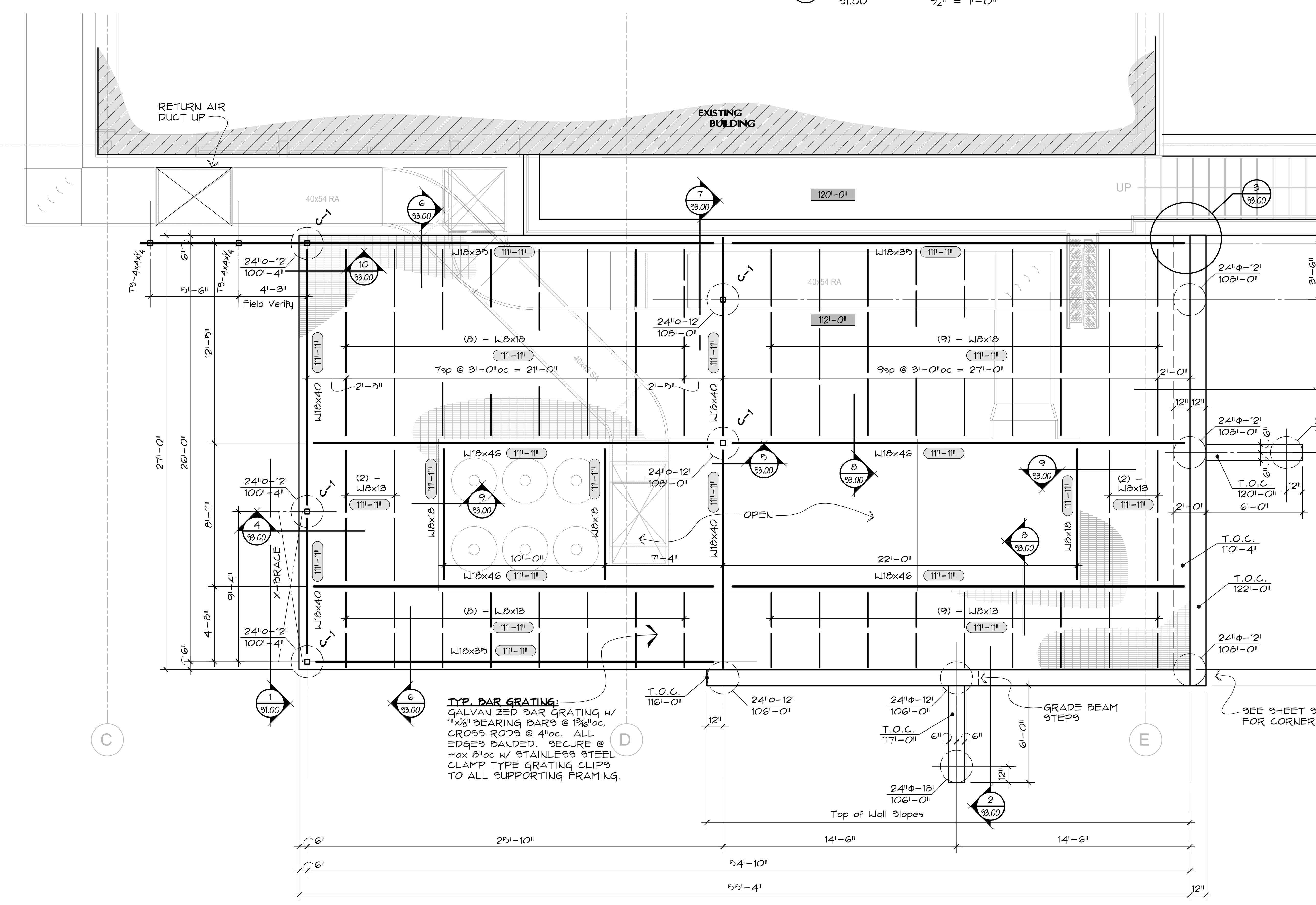
1 Elevation
S1.00 3/4" = 1'-0"



Duct Support Plan

1/8" = 1'-0"

NOTES:
- ALL STEEL SHOP PRIMED PER NOTE SHEET S3.01



Platform Framing Plan

1/4" = 1'-0"

NOTES:
- COLUMN TYPE DENOTED THUS: C1
- TOP OF STEEL ELEVATION DENOTED THUS:
- DENOTES PIER DIAMETER: 24"Ø-12'
- TOP OF PIER ELEVATION: 108'-0"
- BEDROCK PENETRATION
- ALL FRAMING FOR PLATFORM HOT DIPPED GALVANIZED AFTER FABRICATION (ASTM A123)
- TOP OF BAR GRATING ELEVATION: 112'-0"

GSGarchitecture
DESIGN
ARCHITECTURE/PLANNING
606 SOUTH DAVID STREET . CASPER, WYOMING 82601 T: 307.234.8968
3535 WEST 12th STREET . GREELEY, COLORADO 80634 T: 970.888.3273

LOWER CO., P.C.
STRUCTURAL ENGINEERS

No. Revision Description Date

CASPER COLLEGE GATEWAY HVAC REDESIGN

1910 Lisco Dr, Casper WY 82601

PROJECT #:	2170
DATE:	1/26/2022
DRAWN BY:	SMJ

PLATFORM FRAMING PLAN / DUCT SUPPORT PLAN

S1.00

GENERAL NOTES:

I. DESIGN LOADS:

A. CODE -- IBC 2021 EDITION

B. ROOFS ------------------ ROOF SNOW LOAD - 30 PSF IN AREAS WITHOUT DRIFTING, DRIFTING IS ADDED IN AREAS WHERE APPLICABLE.
SNOW EXPOSURE Ce = 1.0
IMPORTANCE FACTOR Is = 1.1
THERMAL FACTOR Ct = 1.0

C. WIND UPLIFT (NET) -- TYPICAL = 40 PSF

D. MECHANICAL PLATFORM -- = 125 PSF

E. WIND ------------------ BASIC WIND SPEED = 120 MPH
EXPOSURE - C
COMPONENTS AND CLADDING SHALL BE DESIGNED FOR BASIC WIND SPEED V = 120 MPH AND WIND PRESSURES PER TABLE 1609.6.2.

F. SEISMIC ----------------- DESIGN CATEGORY - B
RISK CATEGORY - III
SITE CLASS - C
MAPPED SPECTRAL RESPONSE ACCELLERATION Ss = 34% G
S1 = 8% G
DESIGN SPECTRAL RESPONSE ACCELLERATION Ss = 27% G
S1 = 9% G
SEISMIC IMPORTANCE FACTOR Ie = 1.25
ANALYSIS PROCEDURE USED; EQUIVALENT LATERAL FORCE METHOD.
SEISMIC FORCE RESISTING SYSTEM(S):
ORDINARY CONCENTRICALLY BRACED STEEL FRAMES - R = 3.25.
SEISMIC RESPONSE COEFFICIENT Cs = 0.07
DESIGN BASE SHEAR: V = 0.07W
SYSTEM OVERSTRENGTH FACTOR (OMEGA) = 2.0 / 2.5.

II. REINFORCED CONCRETE:

A. DESIGN IS BASED ON "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACE 318). CONCRETE WORK SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301).

B. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. MINIMUM CEMENT CONTENT 600lbs./CY. MAXIMUM W/C = 0.45. TYPE-F FLY ASH IS PERMITTED. COARSE AGGREGATE SHALL HAVE A MINIMUM OF 50% FRACTURED FACES ON A #4 PLUS ROCK.

C. ALL CONCRETE FOR FLOOR SLABS ON GRADE OR ON STEEL DECK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS. MINIMUM CEMENT CONTENT 517lbs./CY. MAXIMUM W/C = 0.50. TYPE-F FLY ASH IS PERMITTED. COARSE AGGREGATE SHALL HAVE A MINIMUM OF 50% FRACTURED FACES ON A #4 PLUS ROCK.

D. ALL REINFORCING STEEL SHALL BE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO A.S.T.M. SPECIFICATION A-615, #4 AND LARGER GRADE 60, (ONLY #3 TIES MAY BE GRADE 40). DO NOT WELD OR REBEND ANY BARS WITH A YIELD POINT GREATER THAN 40,000 PSI.

E. SLABS ON GRADE SHALL BE REINFORCED AS NOTED ON THE PLAN. LAP BARS 20" AT SPLICES.

F. CONTROL AND CONSTRUCTION JOINTS SHALL BE LOCATED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ARCHITECT.

G. AT ALL WALL CORNERS AND INTERSECTIONS PROVIDE CORNER BARS HAVING A CLASS "B" SPLICE WITH ADJACENT WALL BARS.

H. ALL BAR LENGTHS ARE DRAWN TO SCALE UNLESS NOTED. NO SPLICES OF REINFORCEMENT SHALL BE MADE EXCEPT AS DETAILED OR AUTHORIZED BY THE STRUCTURAL ENGINEER. ALL LAP SPLICES TO BE CLASS "B" UNLESS OTHERWISE NOTED.

I, DETAIL ALL REINFORCING AND PROVIDE BAR SUPPORTS IN ACCORDANCE WITH A.C.I. DETAILING MANUAL, LATEST EDITION.

J. PROVIDE LATERAL SUPPORT FOR WALLS WHILE EARTH BACKFILL IS BEING PLACED AND COMPACTED.

K. REINFORCEMENT PROTECTION:
1. CONCRETE POURED AGAINST EARTH ------------------------------------3"
2. CONCRETE POURED IN FORMS BUT EXPOSED TO WEATHER OR EARTH ------------2"
3. WALLS, SLABS AND JOINTS --1"
4. BEAMS AND COLUMNS ---1 1/2"

L. UNLESS OTHERWISE SHOWN, PLACE 4-#5 WITH 2'-0" PROJECTION AROUND ALL OPENINGS IN CONCRETE WALLS, GRADE BEAMS OR SLABS.

M. NO HORIZONTAL JOINTS ARE PERMITTED IN SLABS, JOINTS, WALLS OR BEAMS. ANY STOP IN CONCRETE WORK MUST BE MADE AT THE CENTER OF THE SPAN (OR SUPPORT) WITH VERTICAL BULKHEADS AND HORIZONTAL KEYS, UNLESS OTHERWISE SHOWN OR APPROVED

N. SEE ARCHITECTURAL DRAWINGS FOR CHAMFERS, KERFS, NOSINGS, ETC.

III. STRUCTURAL STEEL:

A. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS, AND CODE OF STANDARD PRACTICE.

B. ALL WIDE FLANGE SHAPES AND CHANNELS SHALL BE ASTM A572 GD 50. ALL ANGLES AND PLATES SHALL BE A.S.T.M. A36, TUBE SHAPES ASTM A53 GRADE B.

C. FOR BEAM CONNECTIONS USE FRAMED BEAM CONNECTIONS WITH 3/4" & 7/8" DIA. A-325N BOLTS AS SHOWN IN TABLES II AND III, PART 4 OF THE CURRENT A.I.S.C. MANUAL, UNLESS NOTED OTHERWISE. BOLTS SHALL BE LOAD INDICATOR TYPE. (TWIST OFF BOLTS). SELECT CONNECTIONS TO SUPPORT 60% OF THE TOTAL UNIFORM LOAD CAPACITY IN BENDING FOR EACH BEAM AND SPAN AS SHOWN IN THE A.I.S.C. UNIFORM LOAD CONSTANT TABLES, UNLESS NOTED OTHERWISE ON THE DRAWINGS. IF PLATES OR "WT" CONNECTIONS ARE USED (NOT FRAMED CONNECTIONS) PROVIDE ENOUGH BOLTS TO DEVELOP REACTION IN SINGLE SHEAR.

D. WELDING SHALL BE DONE BY CERTIFIED WELDERS IN ACCORDANCE WITH AISC AND AWS SPECIFICATIONS AND RECOMMENDATIONS USING E70-XX ELECTRODES.

E. SEE ARCHITECTURAL DRAWINGS FOR NAILERS, BOLTS, ETC.

F. ALL COLUMN BASE PLATES SHALL BE GROUTED WITH NON-METALLIC, NON-SHRINK GROUT AS COLUMNS ARE ERECTED.

IV. SHOP DRAWINGS:

A. CONSTRUCTION DOCUMENTS ARE COPYRIGHTED AND SHALL NOT BE COPIED FOR USE AS ERECTION PLANS OR SHOP DETAILS.

B. ALL SHOP AND ERECTION DRAWINGS SHALL BE CHECKED AND STAMPED BY THE GENERAL CONTRACTOR PRIOR TO SUBMISSION FOR STRUCTURAL ENGINEER'S REVIEW. UNCHECKED SUBMITTALS WILL BE RETURNED WITHOUT REVIEW. FURNISH DIGITAL FILES (PDF) OF SHOP AND ERECTION DRAWINGS FOR REINFORCING STEEL, STRUCTURAL STEEL, STEEL JOISTS, STEEL DECK, PLANT FABRICATED WOOD JOISTS, WOOD TRUSSES GLUED-LAMINATED TIMBER AND PRECAST CONCRETE TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.

C. SUBMIT IN A TIMELY MANNER TO PERMIT TEN (10) WORKING DAYS FOR REVIEW BY STRUCTURAL ENGINEER.

D. THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS SHALL SUBMIT IN WRITING ANY REQUESTS TO MODIFY THE PLANS OR SPECIFICATIONS. SHOP DRAWINGS, SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN WRITING" UNLESS SPECIFIC SUGGESTED CHANGES ARE CLEARLY MARKED. IN ANY EVENT, SUCH CHANGES BY MEANS OF THE SHOP DRAWING SUBMITTAL PROCESS BECOME THE RESPONSIBILITY OF THE ONE INITIATING SUCH CHANGE.

V. FIELD VERIFICATION OF EXISTING CONDITIONS:

A. CONTRACTOR SHALL THOROUGHLY INSPECT AND SURVEY EXISTING STRUCTURE TO VERIFY CONDITIONS WHICH AFFECT THE WORK SHOWN ON THE DRAWINGS. CONTRACTOR SHALL REPORT ANY VARIATIONS OR DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING.

VI. STRUCTURAL ERECTION AND BRACING REQUIREMENTS:

A. THE STRUCTURAL DRAWINGS ILLUSTRATE THE COMPLETED STRUCTURE WITH ELEMENTS IN THEIR FINAL POSITIONS, PROPERLY SUPPORTED AND BRACED. THESE CONSTRUCTION DOCUMENTS CONTAIN TYPICAL AND REPRESENTATIVE DETAILS TO ASSIST THE CONTRACTOR. DETAILS SHOWN APPLY AT ALL SIMILAR CONDITIONS UNLESS OTHERWISE INDICATED. ALTHOUGH DUE DILIGENCE HAS BEEN APPLIES TO MAKE THE DRAWINGS AS COMPLETE AS POSSIBLE, NOT EVERY DETAIL IS ILLUSTRATED, NOR IS EVERY EXCEPTIONAL CONDITION ADDRESSED. ALL PROPRIETARY CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS. ALL WORK SHALL BE ACCOMPLISHED IN A WORKMANLIKE MANNER AND IN ACCORDANCE WITH THE 2021 IBC AND LOCAL CODES AND ORDINANCES.

B. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL WORK, INCLUDING LAYOUT AND DIMENSION VERIFICATION, MATERIALS COORDINATION, SHOP DRAWING REVIEW, AND THE WORK OF SUBCONTRACTORS, ANY DISCREPANCIES OR OMISSIONS DISCOVERED IN THE COURSE OF THE WORK SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT FOR RESOLUTION. CONTINUATION OF WORK WITHOUT NOTIFICATION OF DISCREPANCIES RELIEVES THE ARCHITECT AND STRUCTURAL ENGINEER FROM ALL CONSEQUENCES.

C. UNLESS OTHERWISE SPECIFICALLY INDICATED, THE DRAWINGS DO NOT DESCRIBE METHODS OF CONSTRUCTION. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PROVIDE PROPER SHORING AND BRACING AS MAY BE REQUIRED DURING CONSTRUCTION TO ACHIEVE THE FINAL COMPLETED STRUCTURE. THE CONTRACTOR, IN THE PROPER SEQUENCE, SHALL PERFORM OR SUPERVISE ALL WORK NECESSARY TO ACHIEVE THE FINAL COMPLETED CONSTRUCTION. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR EXCAVATION, FORMWORK, SCAFFOLDING, SAFETY DEVICES AND PROGRAMS OF ALL KINDS, SUPPORT AND BRACING OR CRANES AND OTHER ERECTION EQUIPMENT. **DO NOT PLACE BACKFILL** AGAINST BASEMENT OR RETAINING WALLS UNTIL SUPPORTING SLABS AND FLOOR FRAMING ARE IN PLACE AND SECURELY ANCHORED, UNLESS ADEQUATE BRACING IS PROVIDED. THE STRUCTURAL STEEL FRAME IS "NON-SELF-SUPPORTING" PER AISC CODE OF STANDARD PRACTICE. TEMPORARY BRACING SHALL REMAIN IN PLACE UNTIL ALL FLOORS, WALLS, ROOFS AND ANY OTHER SUPPORTING ELEMENTS ARE IN PLACE. THE ARCHITECT AND STRUCTURAL ENGINEER BEAR NO RESPONSIBILITY FOR THE ABOVE ITEMS, AND OBSERVATION VISITS TO THE SITE DO NOT IN ANY WAY INCLUDE INSPECTION OF THEM.

D. WHERE PERIODIC OR CONTINUOUS INSPECTION IS REQUIRED BY THESE DOCUMENTS BY CODE OR LOCAL ORDINANCE, THE OWNER SHALL EMPLOY AN INSPECTOR CERTIFIED IN THE PARTICULAR AREA OF CONCERN. THE INSPECTOR SHALL BE RESPONSIBLE TO, AND REPORT TO, THE ARCHITECT AND BUILDING DEPARTMENT.

VII. FOUNDATIONS:

A. ALLOWABLE SOIL PRESSURE USED IN DESIGN: 20,000. PSF END BEARING
2,000. PSF SIDE SHEAR IN BEDROCK.

B. PIERS SHALL BE DRILLED A MINIMUM OF TWELVE FEET INTO THE SOUND BEDROCK AND SHALL HAVE A MINIMUM TOTAL LENGTH OF TWENTY FEET.

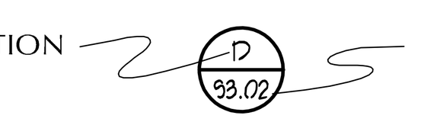
C. ALL PIERS SHALL BE REINFORCED THEIR FULL LENGTH AS SHOWN ON THE DRAWINGS.

D. PIER HOLES SHALL BE THOROUGHLY CLEANED AND DEWATERED AND SHALL BE INSPECTED BY A REPRESENTATIVE OF A GEOTECHNICAL ENGINEERING FIRM PRIOR TO CONCRETE PLACEMENT. THE TOP PORTION OF ALL PIERS SHALL NOT BE ALLOWED TO HAVE "MUSHROOM" TOPS, CONTRACTOR SHALL PROVIDE FORMS THAT MATCH PIER DIAMETERS FOR THE TOP 2'-0" (MINIMUM) OF PIERS IF TOP DIAMETER OF PIER AT GROUND SURFACE INCREASES 6" OR MORE DUE TO LOOSE SOIL SLOUGHING.

E. A COPY OF THE GEOTECHNICAL REPORT IS AVAILABLE FOR REVIEW IN THE STRUCTURAL ENGINEER'S OR ARCHITECT'S OFFICE UPON REQUEST.

VIII. EXPLANATION OF SECTION DESIGNATION:

SECTION



STRUCTURAL SHEET WHERE SECTION IS DRAWN

IX. SPECIAL INSPECTION PROGRAM

a. THE OWNER SHALL EMPLOY INSPECTORS AND SPECIAL INSPECTORS AS REQUIRED DURING CONSTRUCTION TO PROVIDE INSPECTIONS OF THE ITEMS OF WORK LISTED. THESE INSPECTORS SHALL BE QUALIFIED PERSON(S) WHO DEMONSTRATE COMPETENCE IN EACH PARTICULAR TYPE OF CONSTRUCTION TO THE SATISFACTION OF THE LOCAL BUILDING OFFICIAL AND THE RESPECTIVE GOVERNING CODE.

b. CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS NECESSARY TO PROVIDE FOR PERSONNEL LIFTING EQUIPMENT, INCLUDING AN OPERATOR TO FACILITATE STRUCTURAL STEEL SPECIAL INSPECTOR'S REQUIREMENTS. IT IS ESTIMATED THAT THIS WILL INCLUDE A MAXIMUM OF 12 HOURS OF EQUIPMENT AND OPERATOR TIME. THE LIFTING EQUIPMENT MUST BE ABLE TO REACH ALL AREAS OF THE WORK.

ITEM OF CONSTRUCTION:

A. FOOTINGS AND FOUNDATIONS, 2021 IBC SECTION 1705.6.
REQUIRED VERIFICATION AND INSPECTION OF SOILS

VERIFICATION AND INSPECTION TASK	INSPECTION FREQUENCY
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	PERIODIC
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	PERIODIC
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	PERIODIC
4. VERIFY USE OF PROPER FILL MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	CONTINUOUS
5. PRIOR TO PLACEMENT OF FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	PERIODIC

B. CAST - IN - PLACE DEEP FOUNDATIONS, 2021 IBC SECTION 1705.8.
REQUIRED VERIFICATION AND INSPECTION OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION TASK	INSPECTION FREQUENCY
1. OBSERVE DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	CONTINUOUS
2. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM ELEMENT DIAMETERS, LENGTHS, EMBEDMENT INTO BEDROCK AND ADEQUATE END-BEARING STRATA CAPACITY. RECORD CONCRETE VOLUMES.	CONTINUOUS
3. FOR CONCRETE ELEMENTS, PERFORM ADDITIONAL INSPECTIONS IN ACCORDANCE WITH IBC SECTION 1705.3. (ITEM "C." BELOW")	

C. CONCRETE CONSTRUCTION, 2021 IBC SECTION 1705.3.
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	REF. STANDARDS
1. INSPECTION OF REINFORCING STEEL, INCLUDING PLACEMENT.	PERIODIC	ACI 318: 3.5, 7.1 - 7.7; IBC: 1913.4
2. INSPECTION OF ANCHORS CAST IN CONCRETE.	PERIODIC	ACI 318: 8.1.3, 21.2.8; IBC: 1908.5, 1909.1
3. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.	PERIODIC	ACI 318: 3.8.6, 8.1.3, 21.2.8; IBC: 1909.1
4. VERIFYING USE OF REQUIRED MIX DESIGN.	PERIODIC	ACI 318: Ch. 4, 5.2-5.4; IBC: 1904.2, 1910.2, 1910.3
5. 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.	CONTINUOUS	ASTM C172, C31 ACI 318: 5.6, 5.8 IBC: 1910.10
6. INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	CONTINUOUS	ACI 318: 5.9, 5.10 IBC: 1913.6, 1913.7, 1913.8
7. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	PERIODIC	ACI 318: 5.11 - 5.13 IBC: 1910.9
6. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSION OF THE CONCRETE MEMBER BEING FORMED.	PERIODIC	ACI 318: 6.1.1

D. STRUCTURAL STEEL, 2021 IBC SECTION 1705.2.
SPECIAL INSPECTION SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360. ITEMS IDENTIFIED BELOW REPRESENT A PARTIAL/SUMMARIZED LIST OF THE INSPECTION REQUIREMENTS AND ARE NOT MEANT TO SUPERSEDE THE REQUIREMENTS OF AISC 360 AND ITS ASSOCIATED REFERENCES.
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

VERIFICATION AND INSPECTION	INSPECTION FREQUENCY	REF. STANDARDS
1. MATERIAL VERIFICATION OF STRUCTURAL STEEL:		
a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	PERIODIC	AISC 360: N3.2, N5.2
b. MANUFACTURERS CERTIFIED MILL TEST REPORTS.		AISC 360: A3.1, N3.2
2. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS:	PERIODIC	AISC 360: N5.7
a. DETAILS SUCH AS BRACING AND STIFFENING.		
b. MEMBER LOCATIONS		
c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION.		
d. HEADED ANCHOR STUD APPLICATION		
3. MATERIAL VERIFICATION OF HIGH STRENGTH BOLTS, NUTS AND WASHERS:		
a. MANUFACTURERS CERTIFICATE OF COMPLIANCE REQUIRED.		ASIC 360: N5.6
b. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS:	PERIODIC	AISC 360: N5.6 ASTM STANDARDS
c. CORRECT FASTENER SELECTION (LENGTH, TYPE, GRADE, THREAD EXCLUSION) FOR JOINT DETAILS:	PERIODIC	AISC 360: N5.6
4. INSPECTION OF HIGH STRENGTH BOLTING FOR STRUCTURAL STEEL:		
a. PROPER BOLTING PROCEDURES UTILIZED ACCORDING TO AISC RCSC SPECIFICATION.	PERIODIC	ASIC 360: N5.6 RCSC SECTION 9
b. FASTENERS PLACED IN ALL HOLES IN PROPER POSITION AND ALIGNMENT WITH TENSION MECHANISM COMPLETED:	PERIODIC	AISC 360: N5.6
5. VERIFICATION OF WELD MATERIALS AND PROCEDURES:		
a. WELDING PROCEDURE SPECIFICATIONS AVAILABLE.		AISC 360: N5.4 AWS D1.1
b. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE.		AISC 360: N5.4 AWS D1.1
c. MATERIAL IDENTIFICATION:	PERIODIC	AISC 360: N5.4 AWS D1.1
6. INSPECTION OF WELDING FOR STRUCTURAL STEEL:		
a. FIT-UP OF MEMBERS TO BE WELDED INCLUDING JOINT GEOMETRY, ALIGNMENT, PREPARATION, TACKING, BACKING, AND FINISH.	PERIODIC	AISC 360: N5.4 AWS D1.1
b. PROPER WELDING PROCEDURES AND TECHNIQUES FOLLOWED.	PERIODIC	AISC 360: N5.4 AWS D1.1
c. SIZE, LENGTH AND LOCATION OF WELDS IN ACCORDANCE WITH CONTRACT DOCUMENTS.	COMPLETE	AISC 360: N5.4 AWS D1.1
d. VISUAL ACCEPTANCE CRITERIA MET FOR ALL WELDED JOINTS.	COMPLETE	AISC 360: N5.4 AWS D1.1
e. INSPECTION CRITERIA FOR WELDED JOINTS BASED ON WELD SIZE/TYPE:		AWS D1.1
1. CJP & PJP GROOVE WELDS.	CONTINUOUS	
2. MULTIPASS FILLET WELDS.	CONTINUOUS	
3. SINGLE PASS FILET WELDS > 5/6".	CONTINUOUS	
4. SINGLE PASS FILET WELDS = < 5/16".	PERIODIC	
5. HEADED ANCHOR STUDS.	PERIODIC	

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Casper, Wyoming 82604
307-254-6984

No.	Revision Description	Date

CASPER COLLEGE GATEWAY HVAC REDESIGN

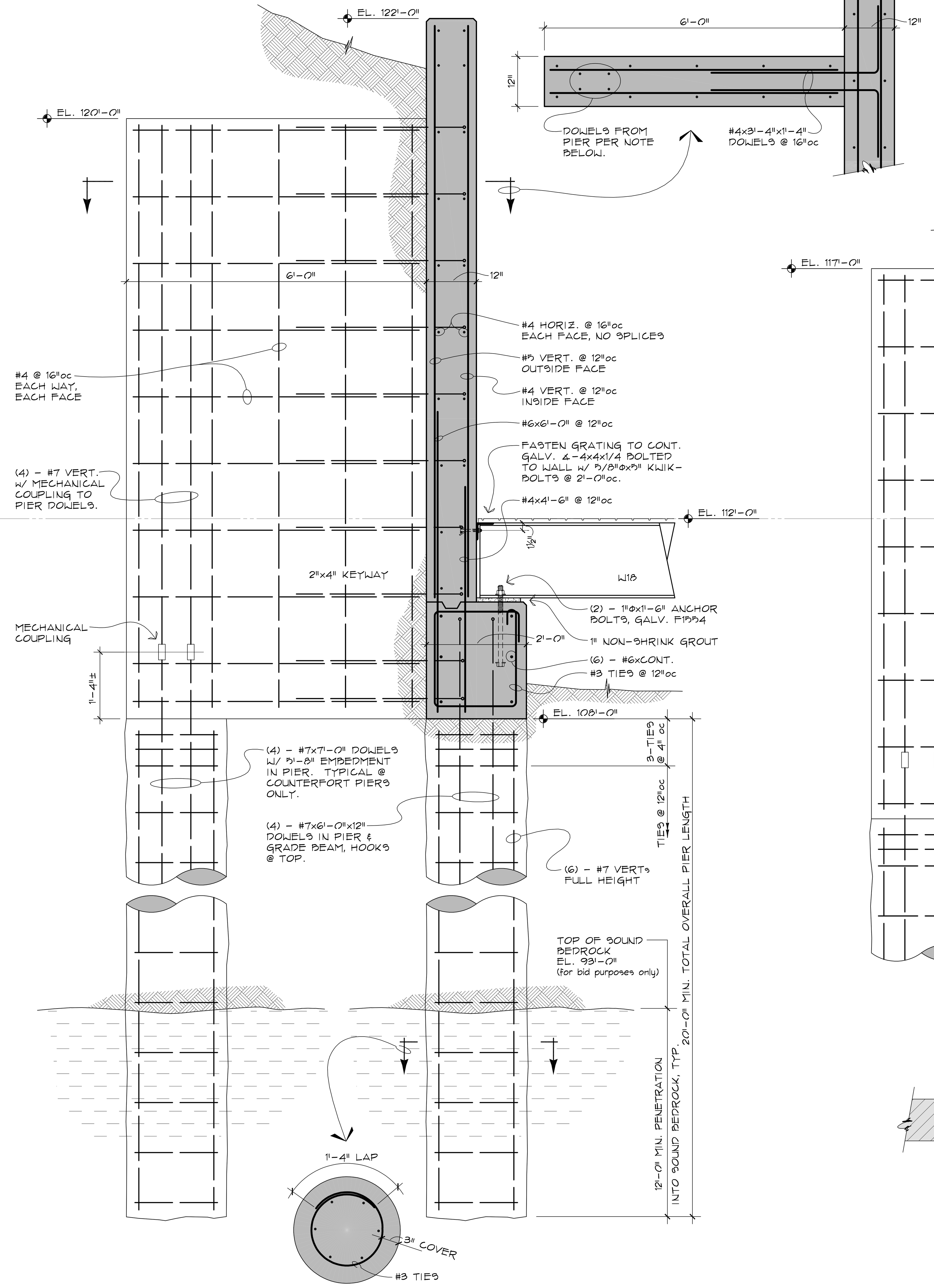
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 1/26/2022
DRAWN BY: SMW

Professional Engineer ROBERT E. LOWER WYOMING 1/26/22

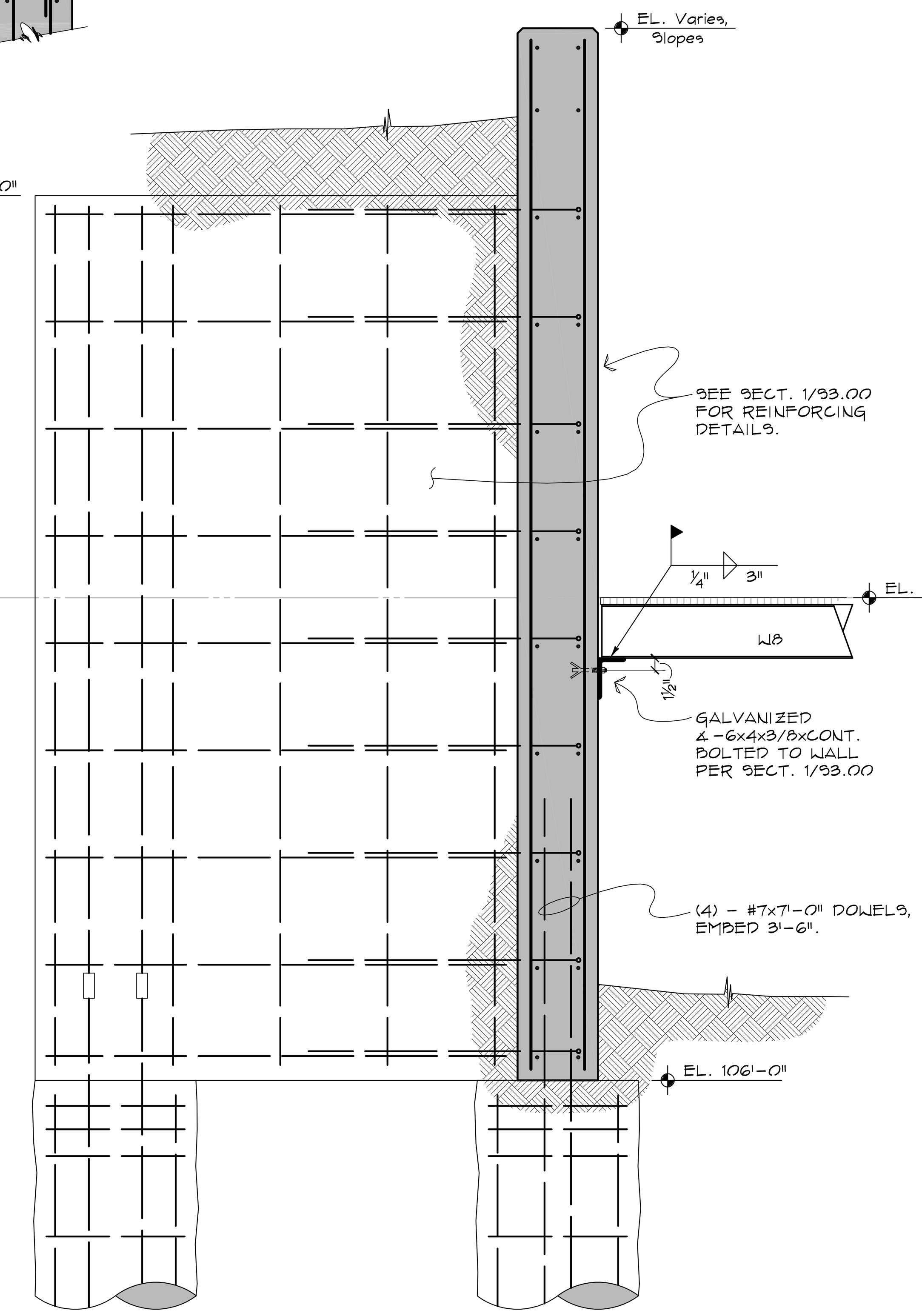
GENERAL STRUCTURAL NOTES

S2.00



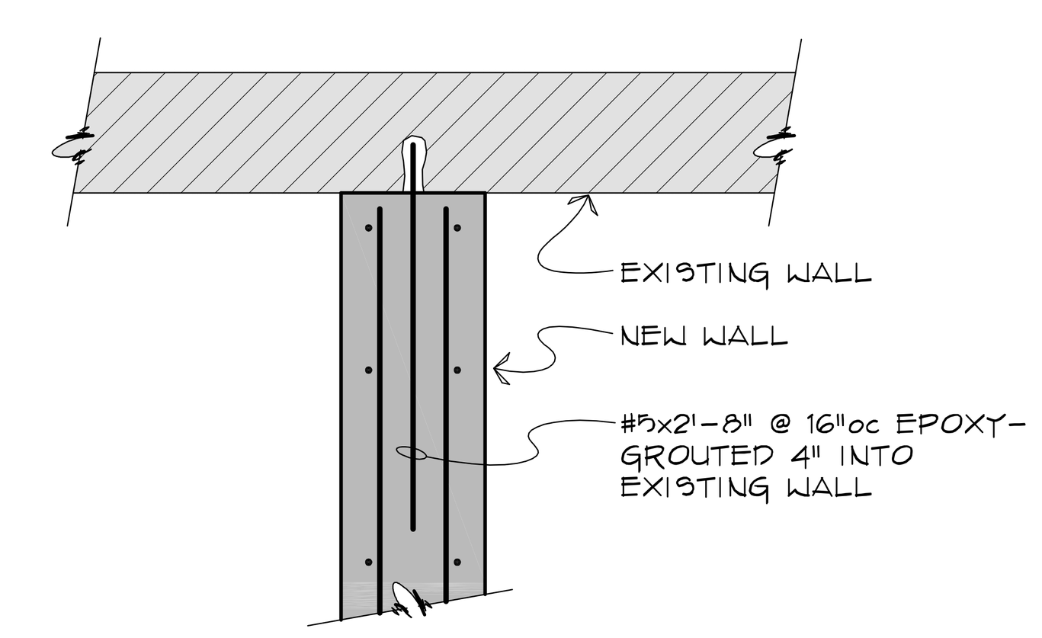
① SECTION

S1.00 3/4" = 1'-0"



② SECTION

S1.00 3/4" = 1'-0"



③ DETAIL

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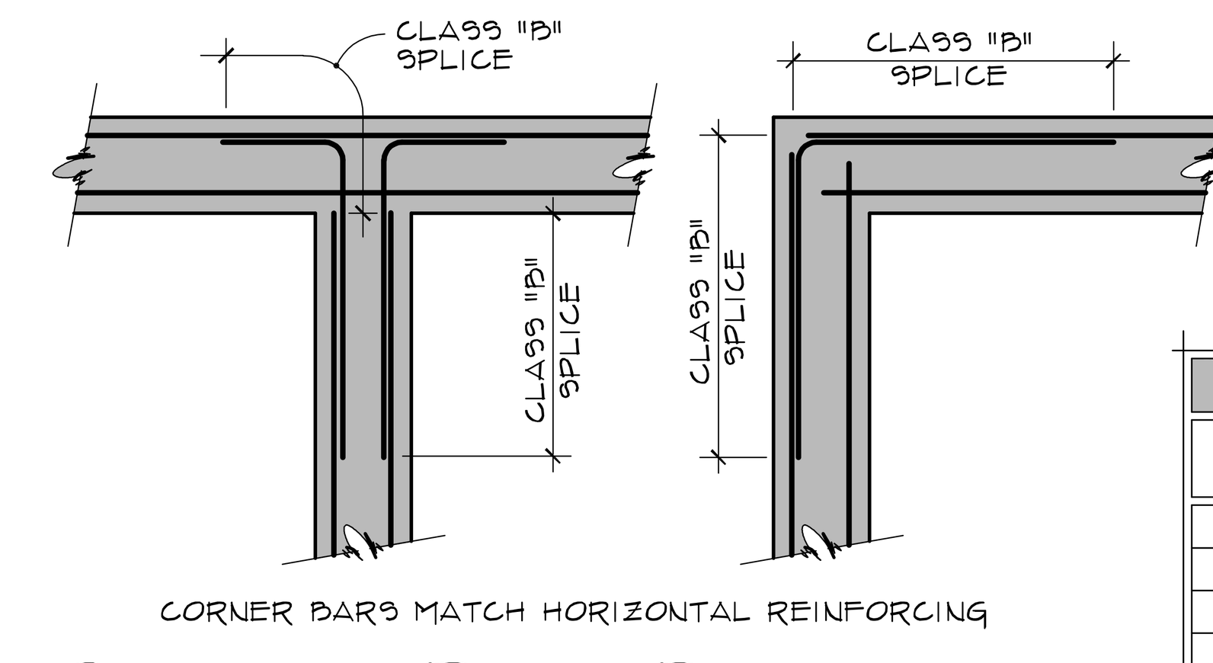
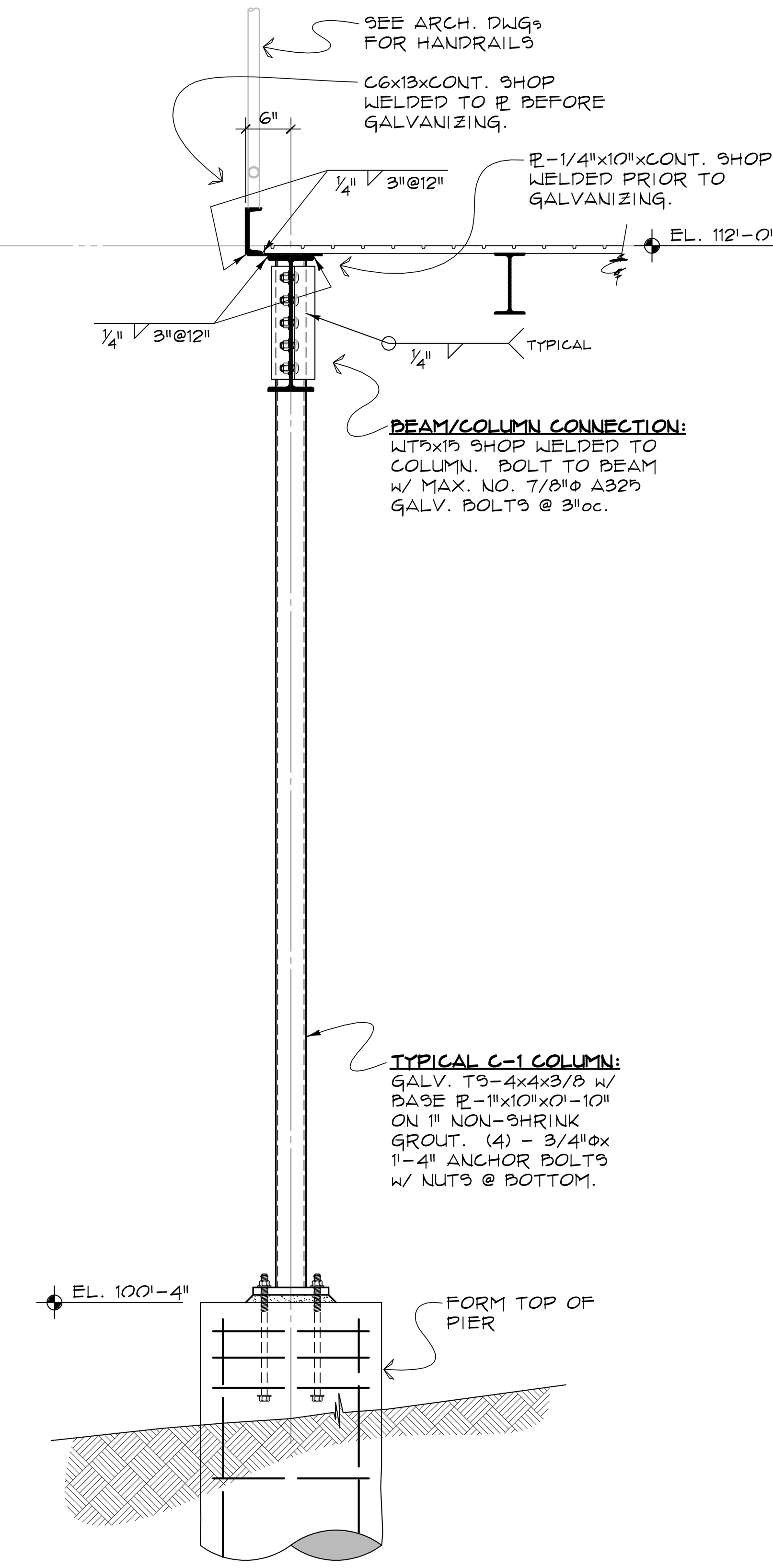


CORNER BAR DETAILS

NOT TO SCALE

CLASS "B" SPLICE LENGTHS		
BAR SIZE	SPLICE LENGTH	
	TOP BARS	OTHER BARS
#3	24"	19"
#4	32"	25"
#5	40"	31"
#6	48"	37"
#7	70"	54"
#8	80"	62"



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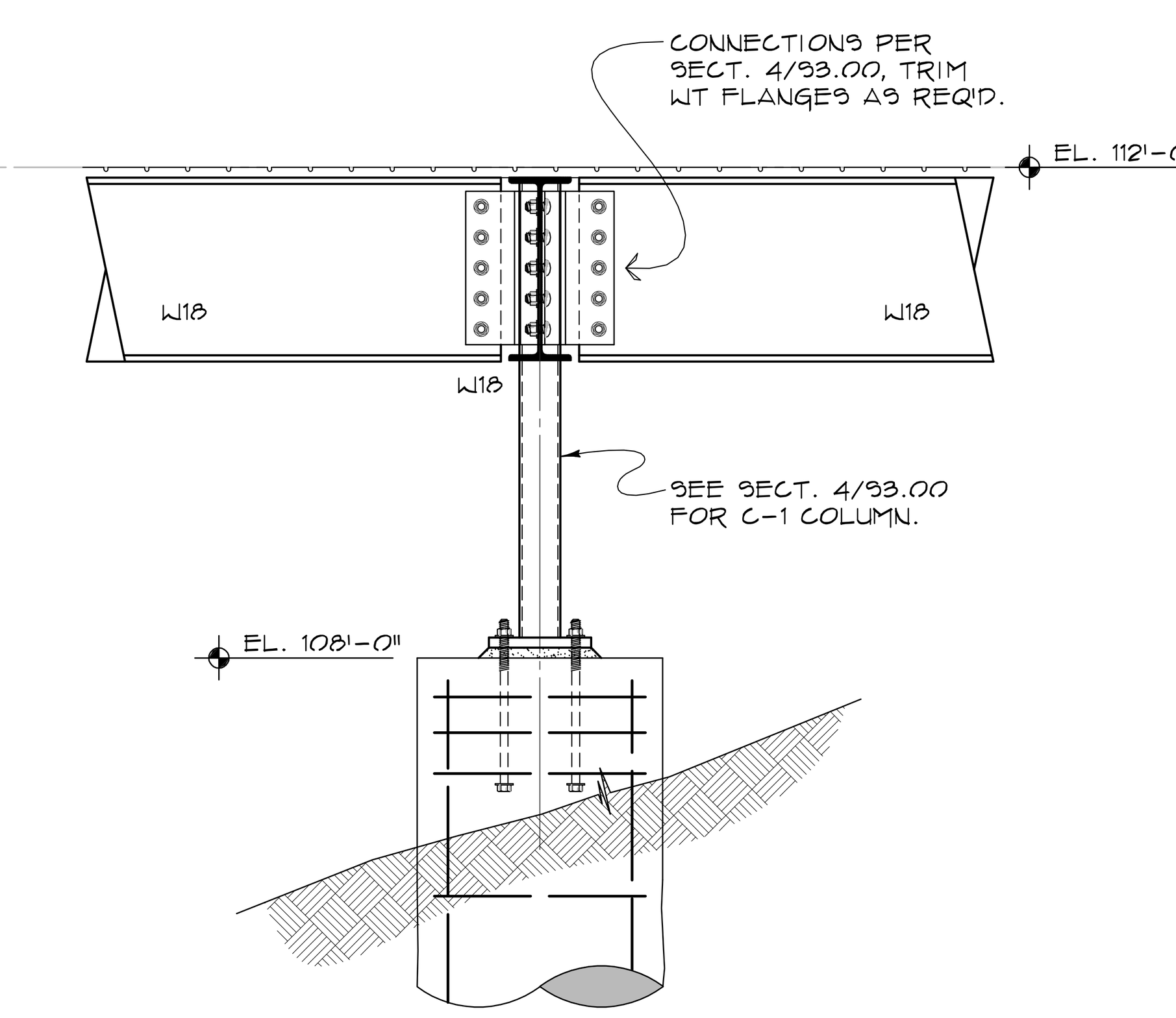

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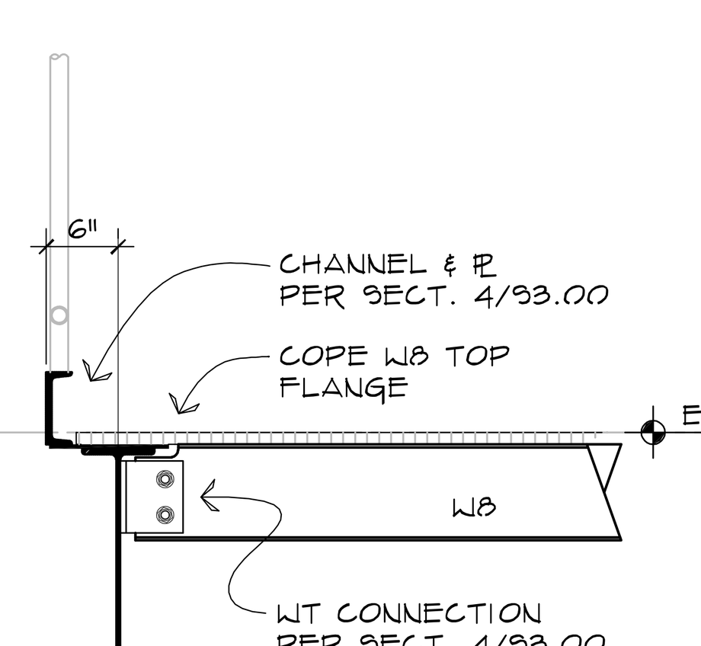

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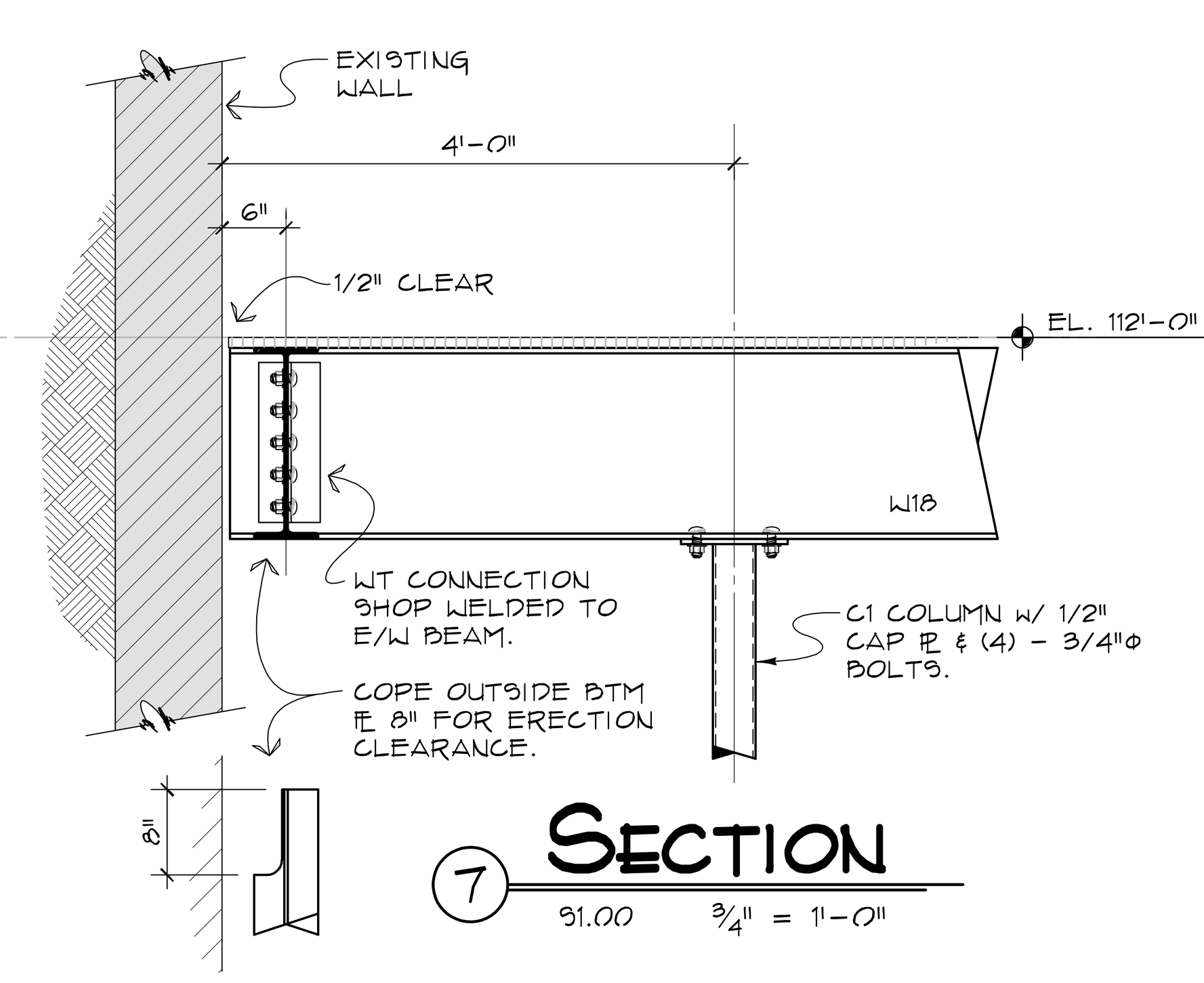

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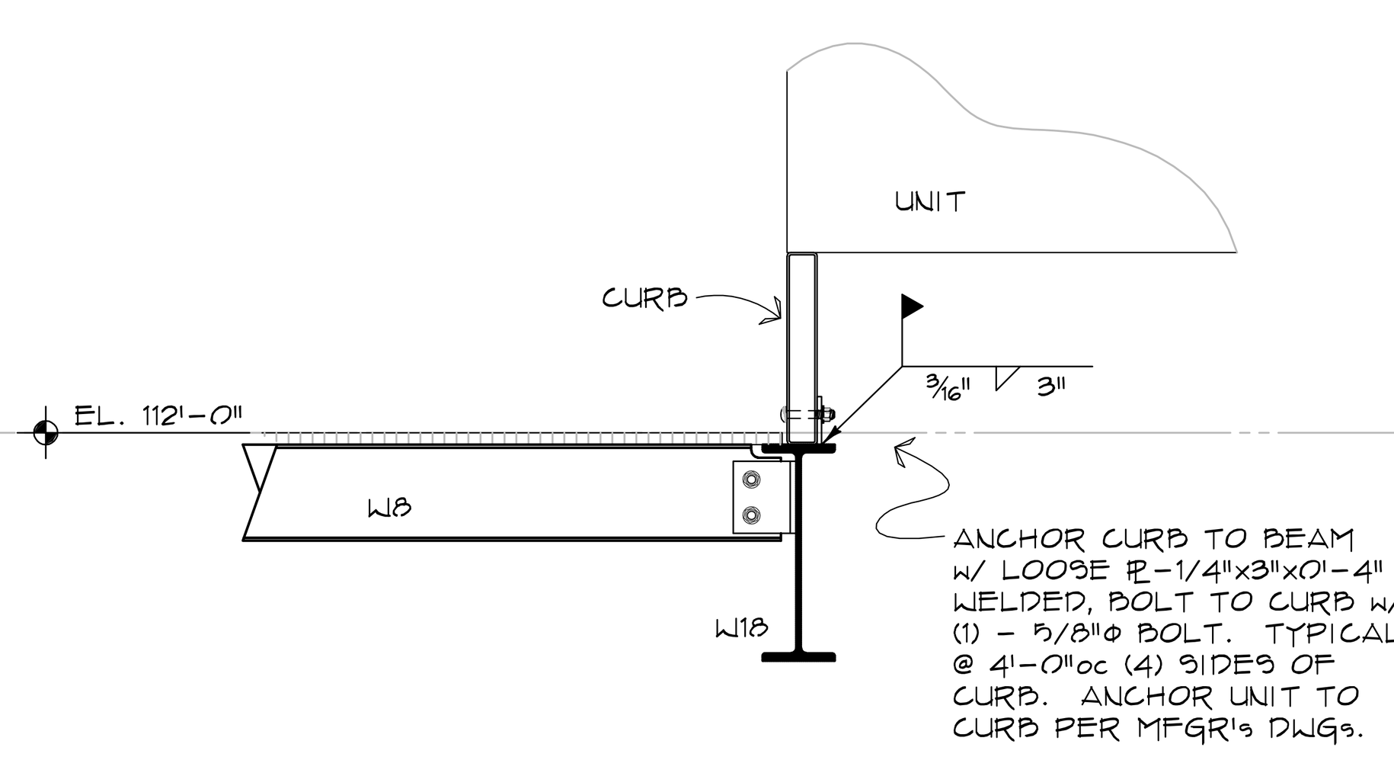

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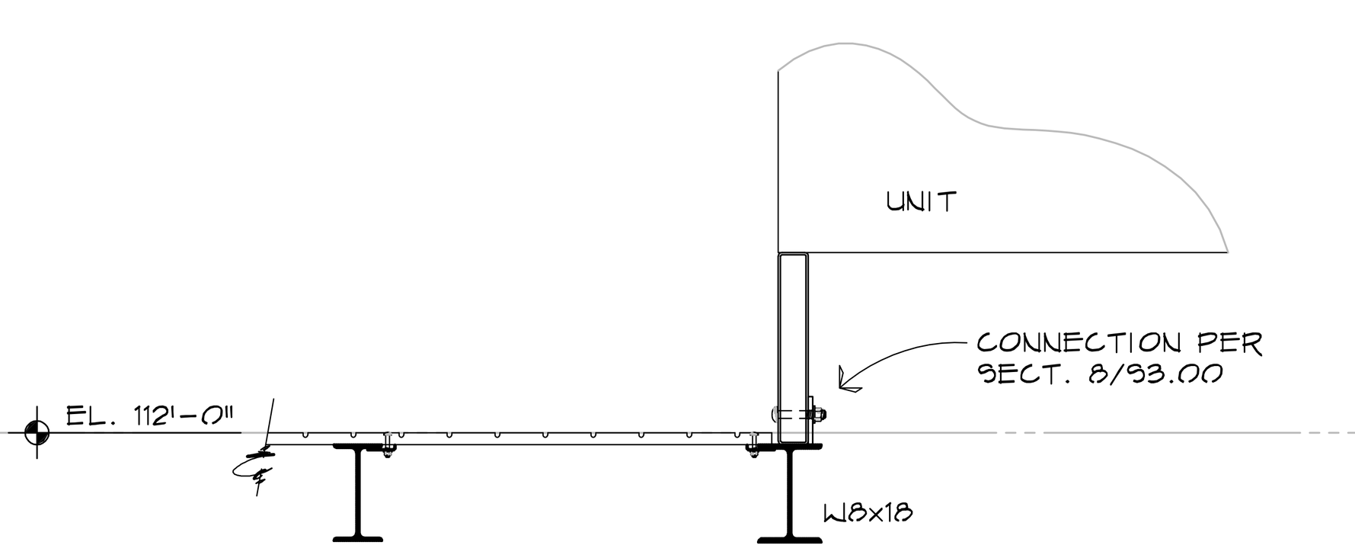

⑨ SECTION

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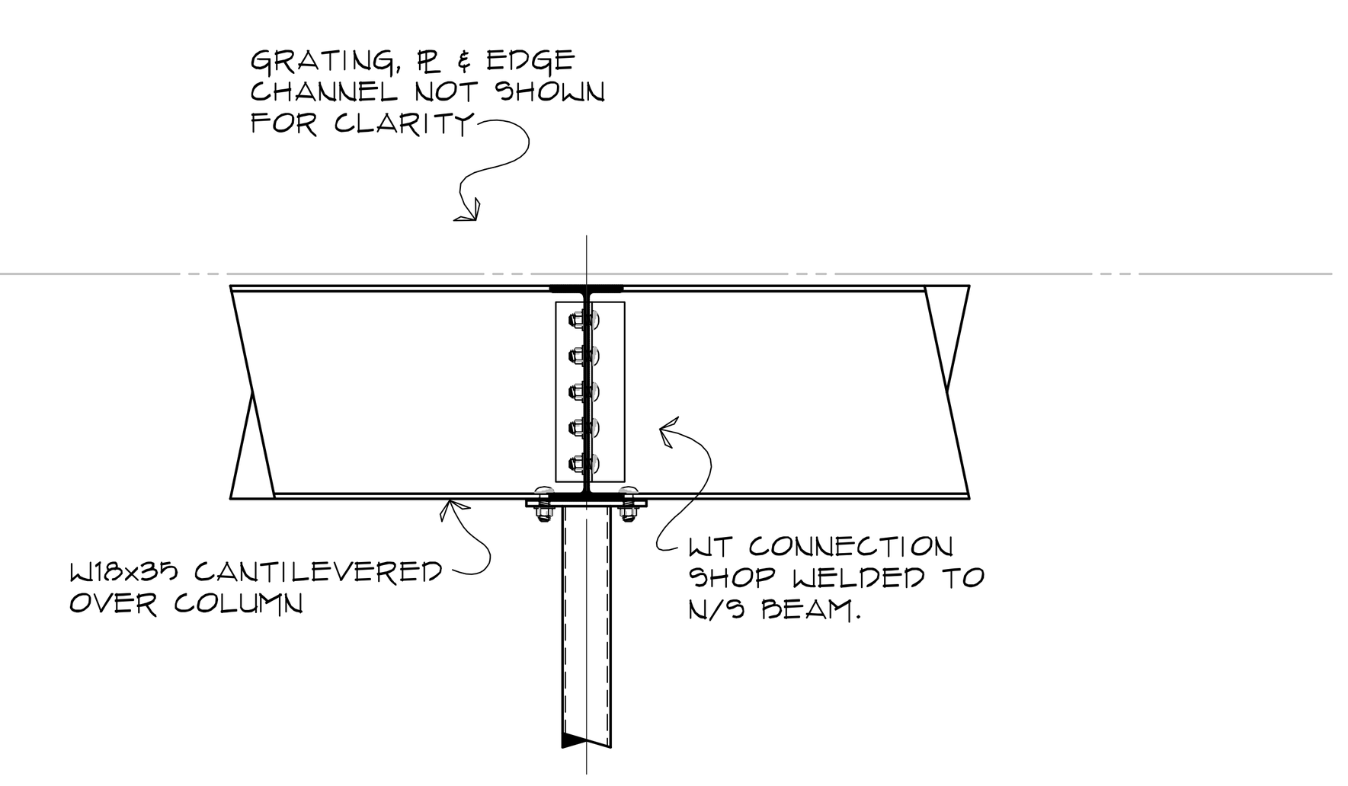

⑩ SECTION

S1.00 3/4" = 1'-0"

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No.	Revision Description	Date

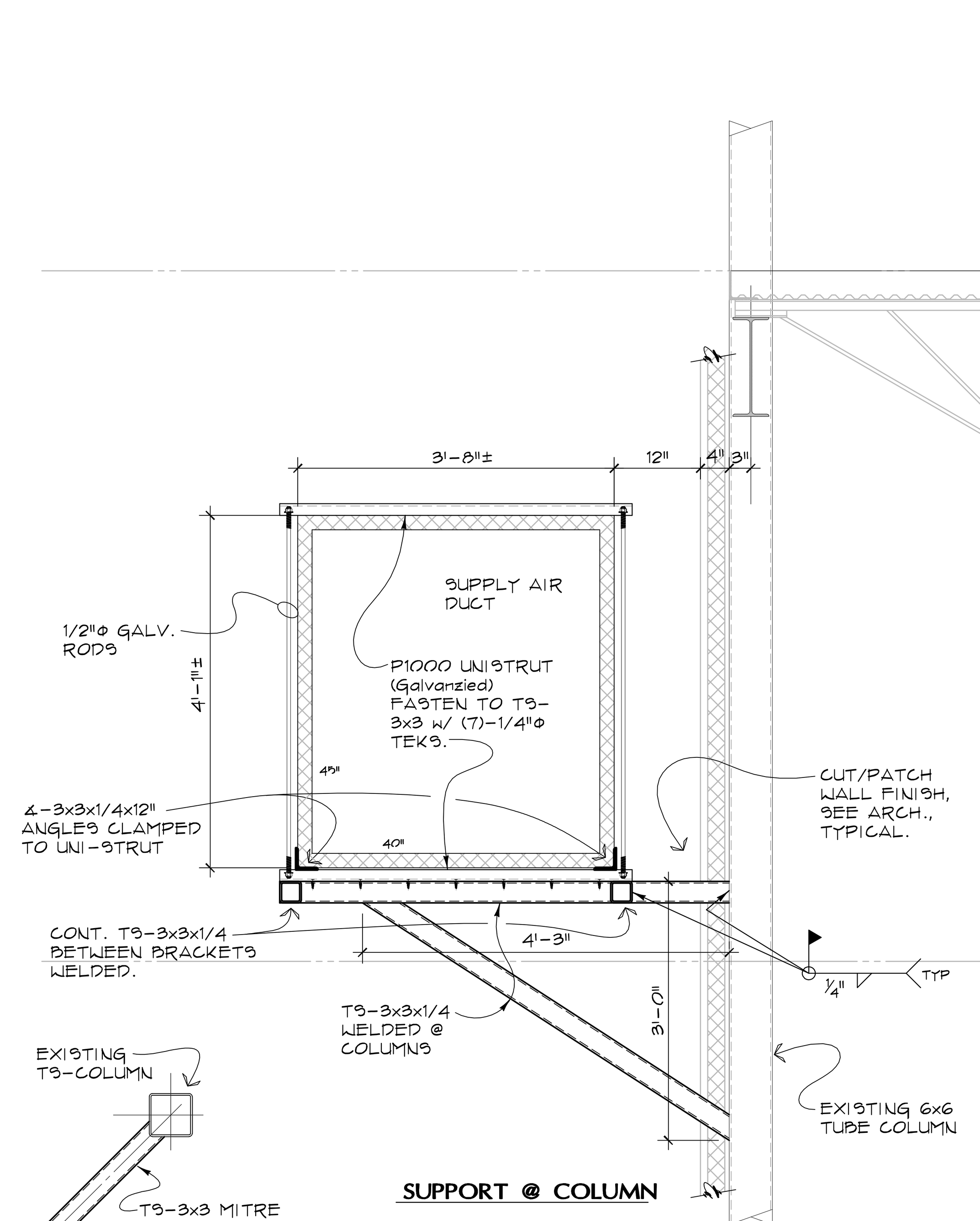
CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 1/26/2022
DRAWN BY: SMW

Professional Engineer (Structural)
ROBERT E. LOWER
5818
Date 1/26/22
WYOMING

PLATFORM FRAMING SECTIONS

S3.00



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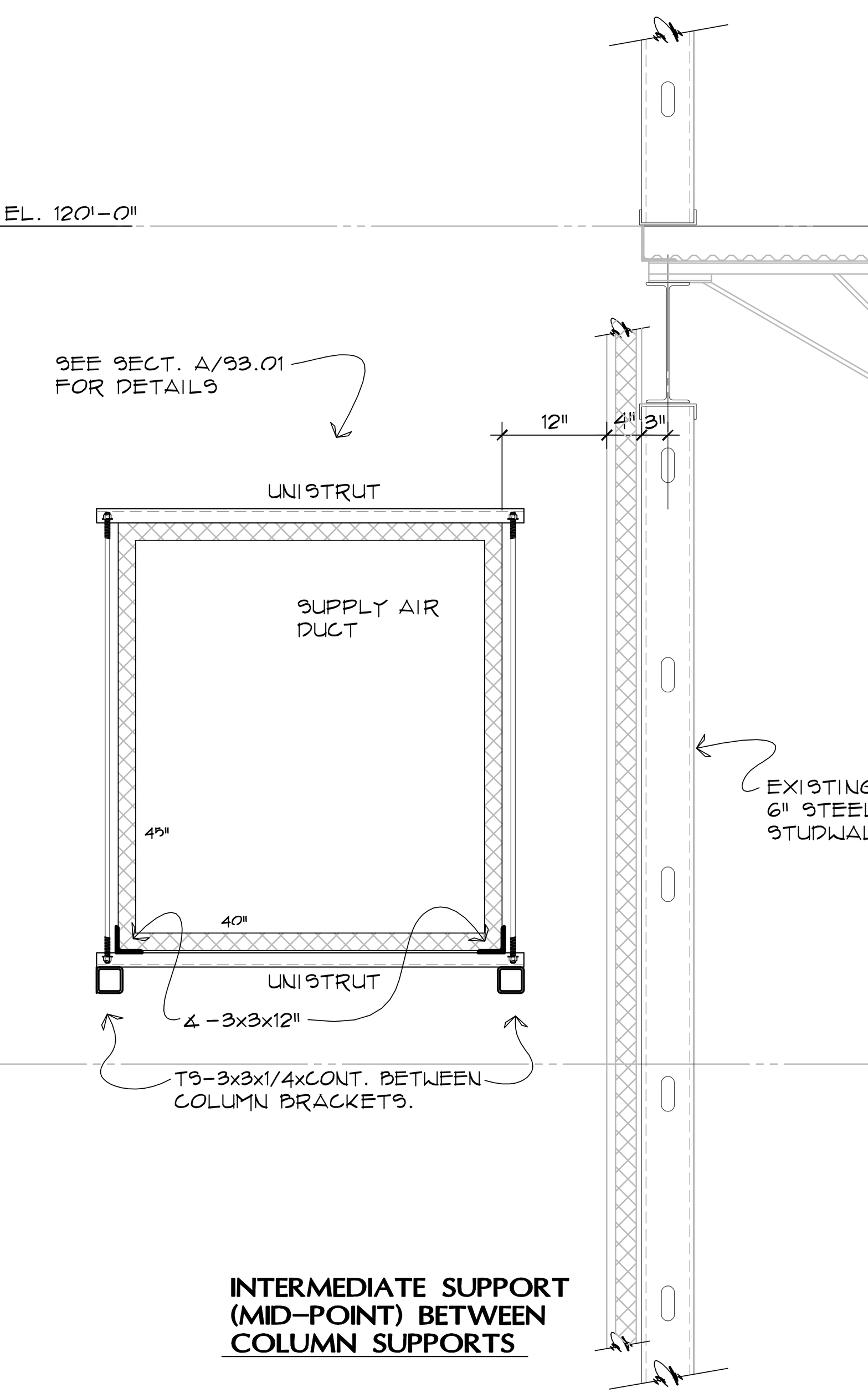

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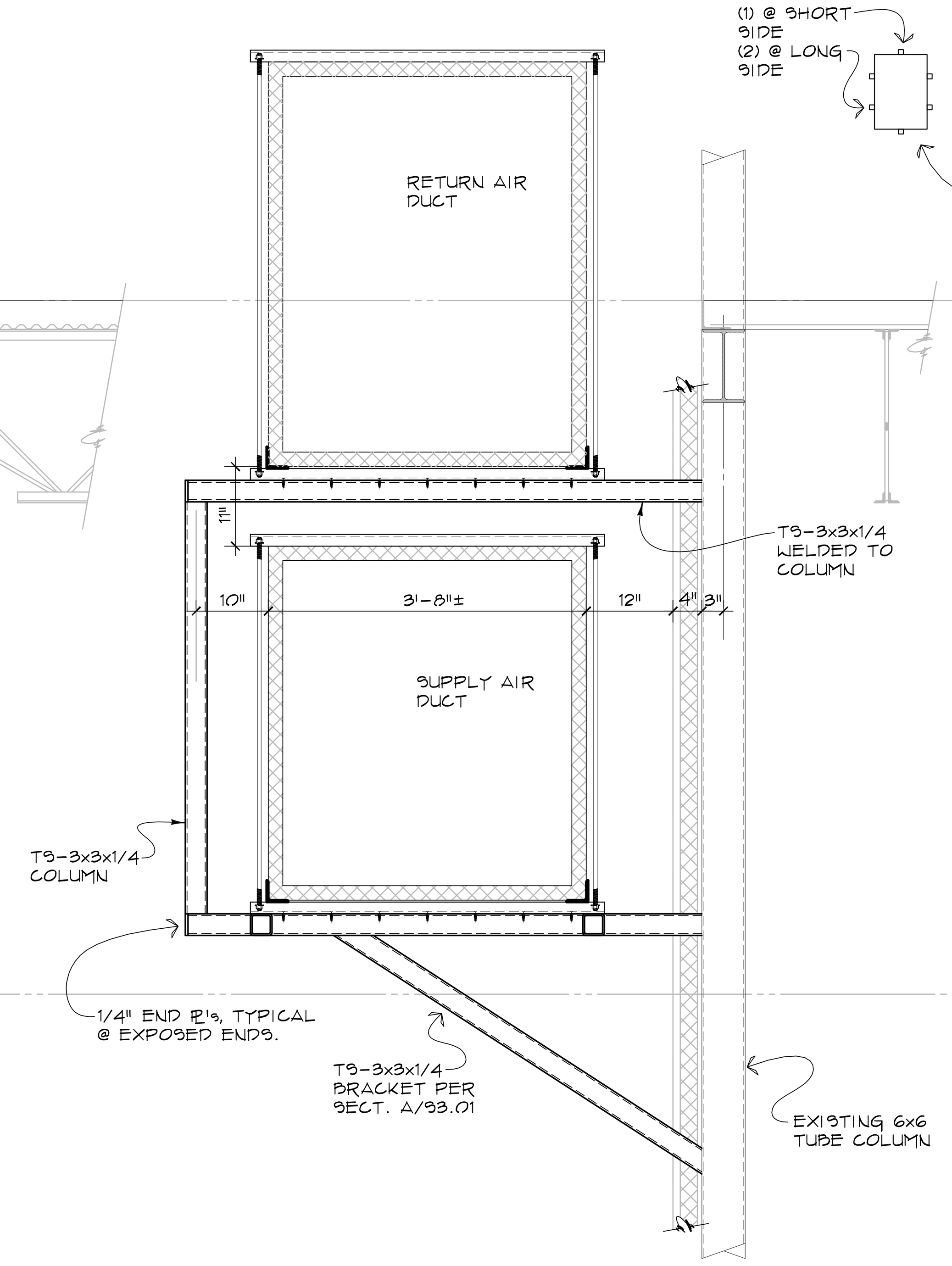

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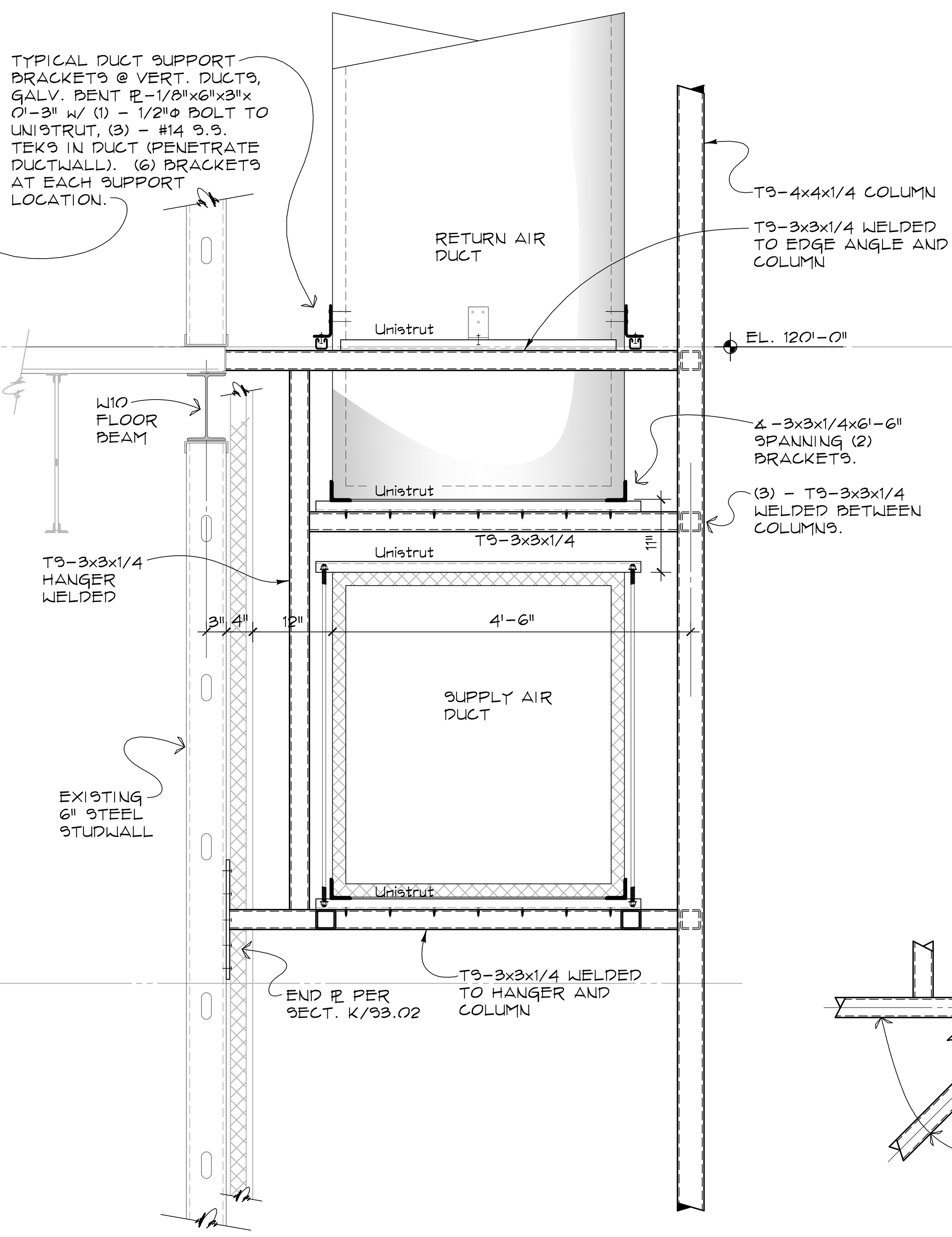

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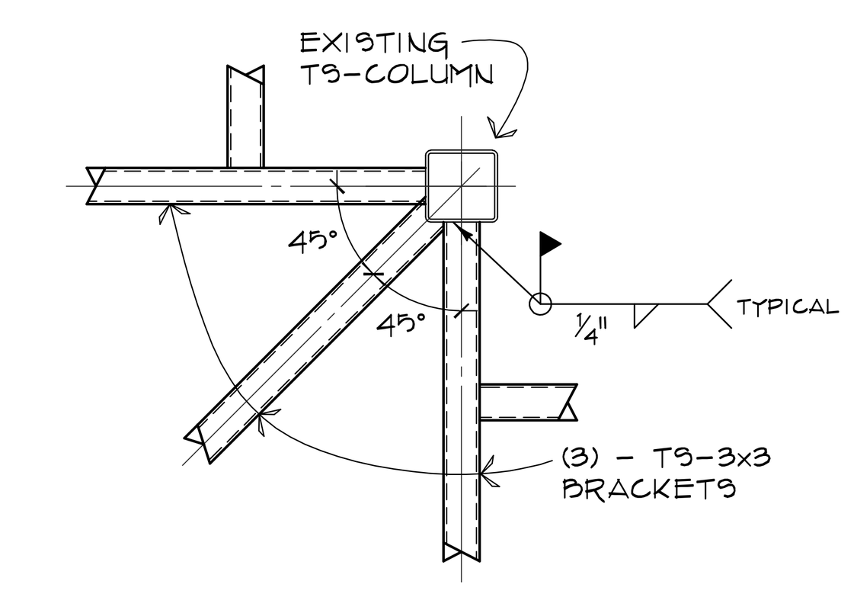
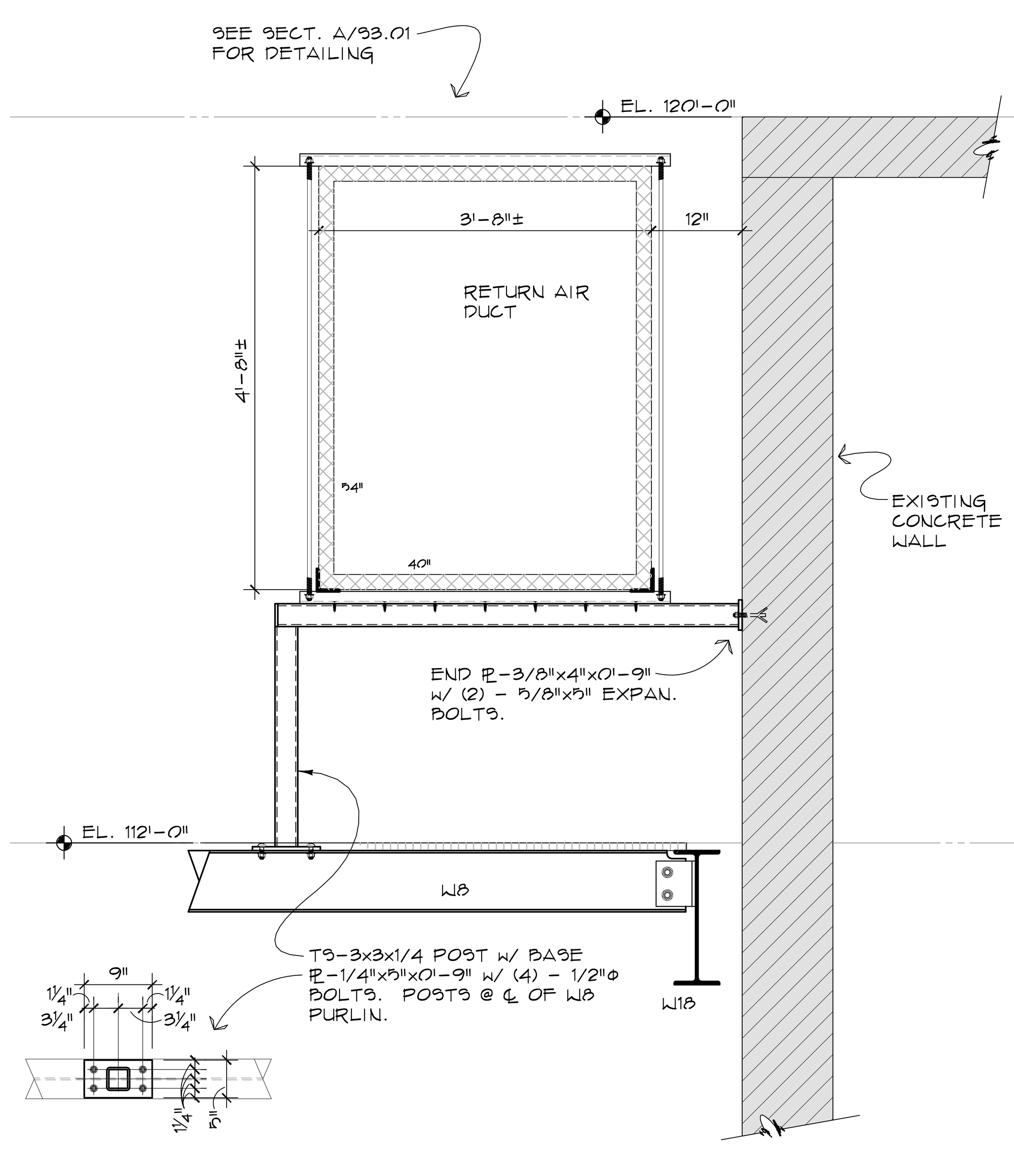


E DETAIL
S1.00 3/4" = 1'-0"



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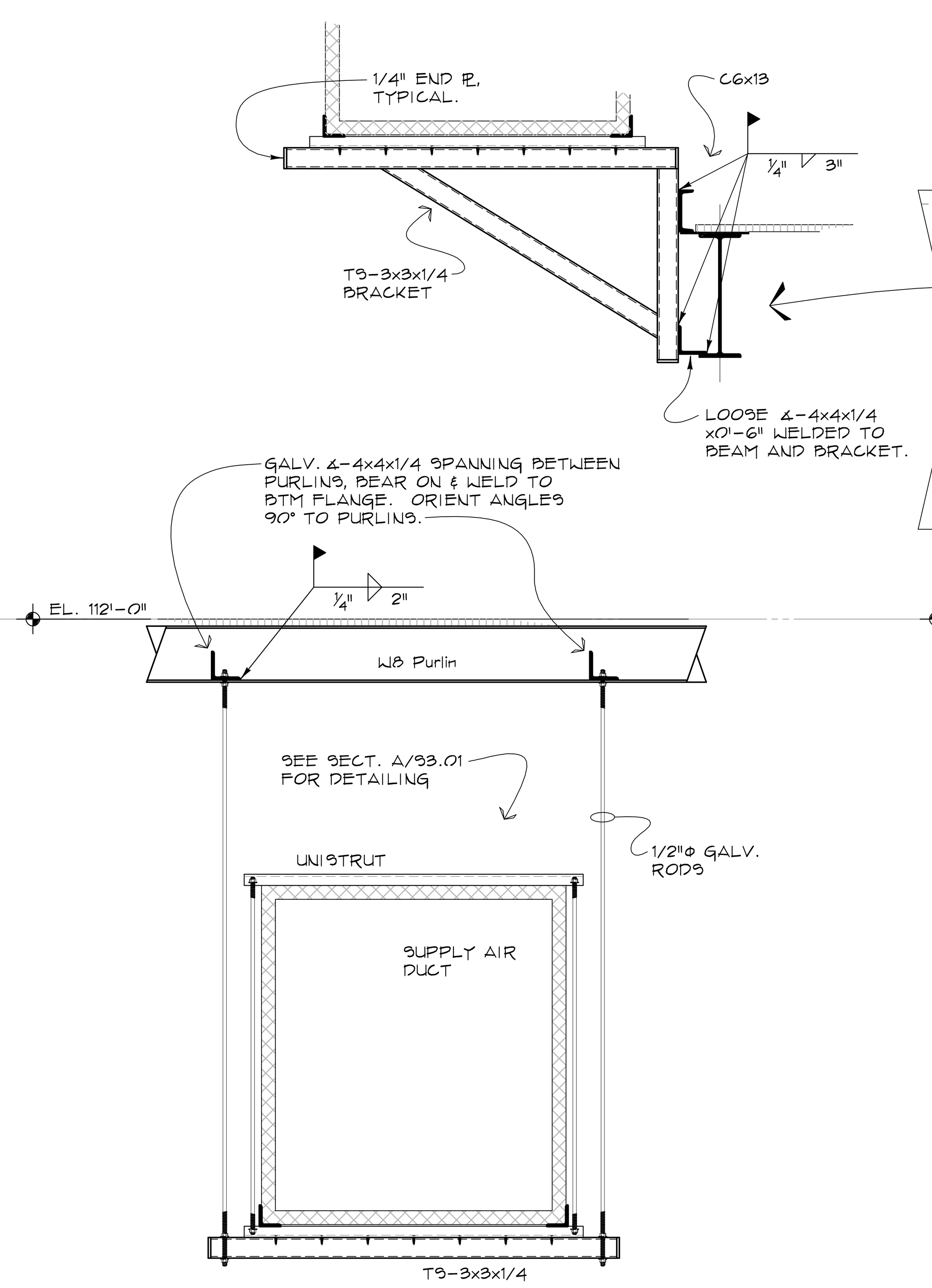
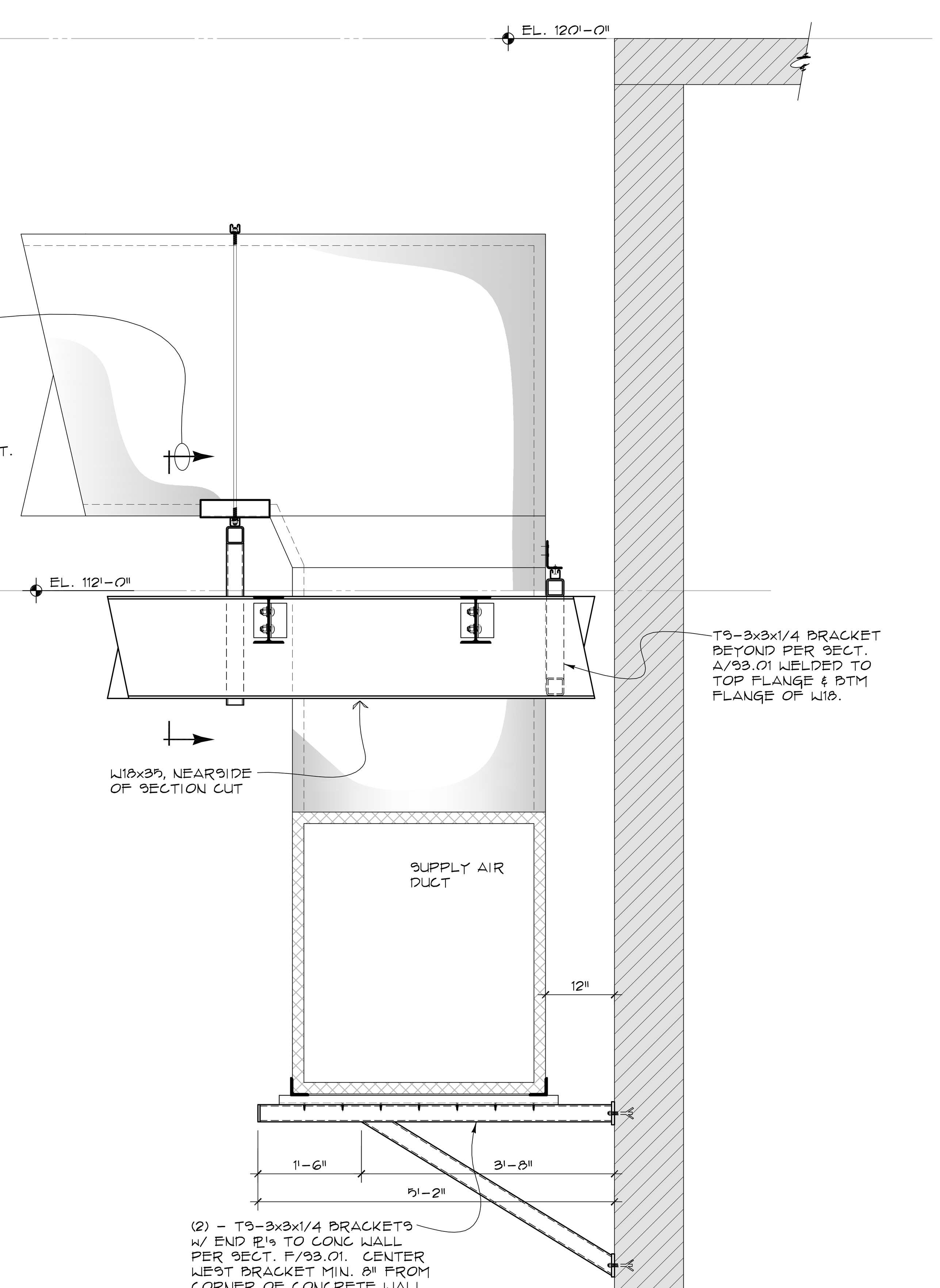


G SECTION
S1.00 3/4" = 1'-0"



H SECTION
S1.00 3/4" = 1'-0"

NOTE:
ALL DUCT SUPPORT FRAMING SHOP PRIMED W/ HIGH PERFORMANCE PRIMER & FINISH PAINTED IN THE FIELD WITH HIGH PERFORMANCE PAINT, SEE SPECIFICATIONS.

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No.	Revision Description	Date

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1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 1/26/2022
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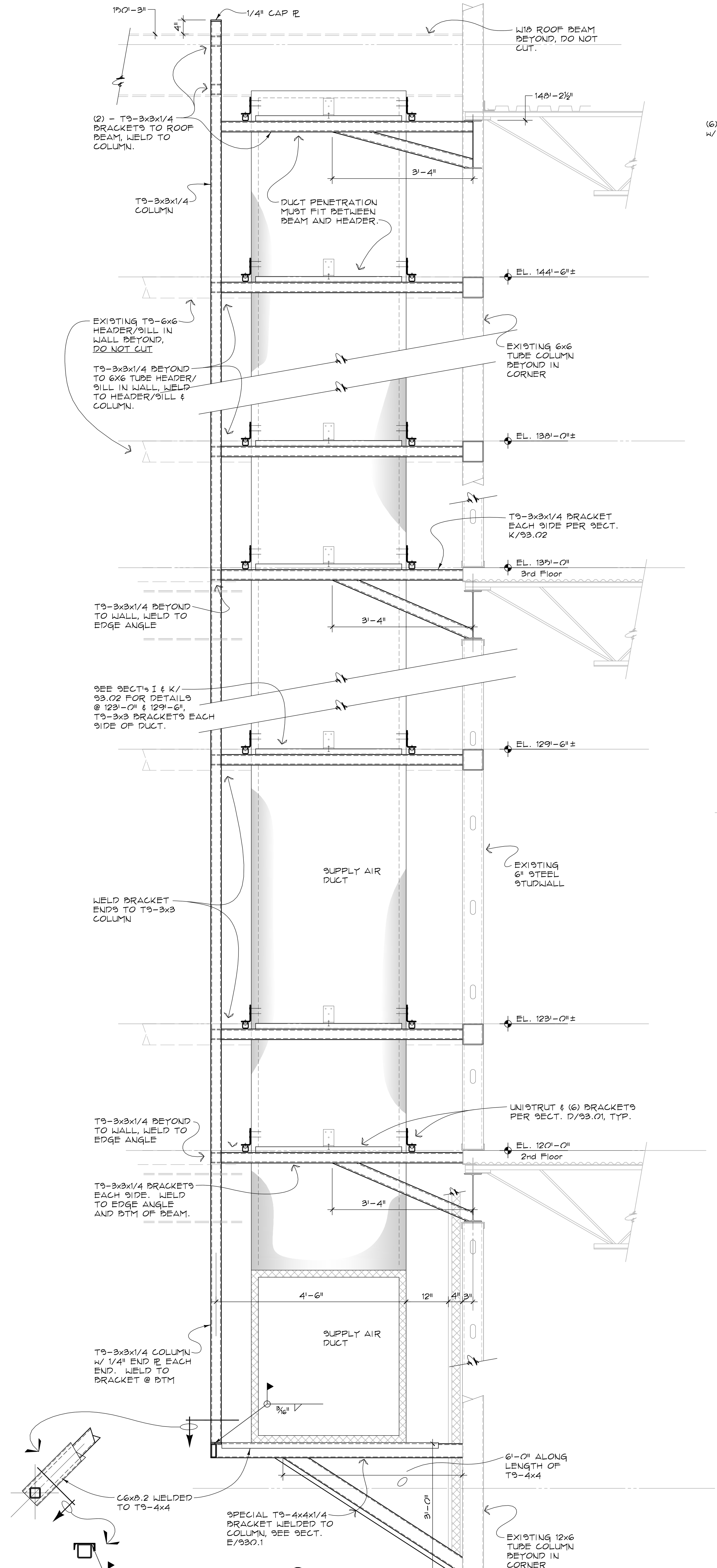
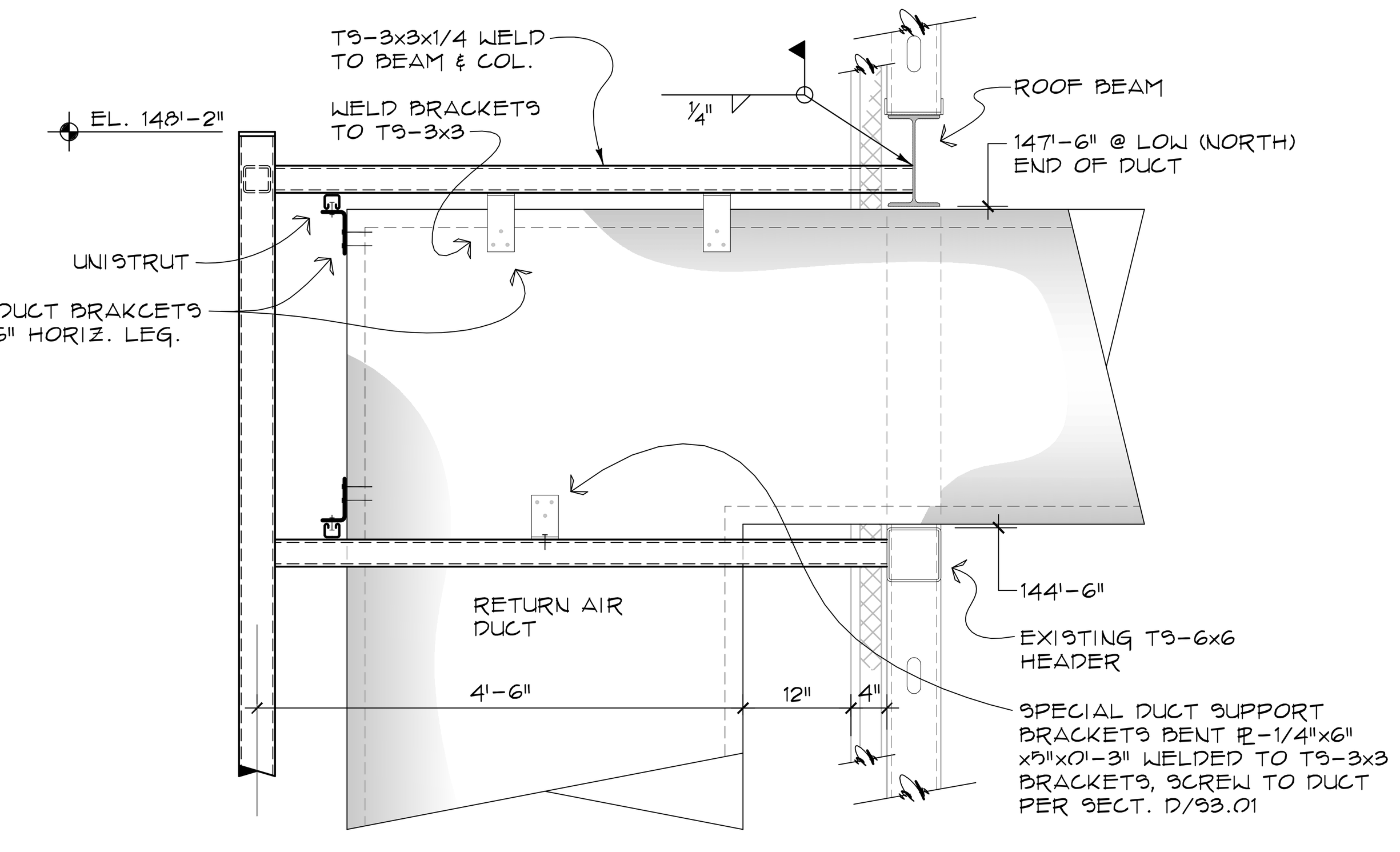
DUCT SUPPORT FRAMING SECTIONS

S3.01



J SECTION
S1.00 3/4" = 1'-0"



L SECTION
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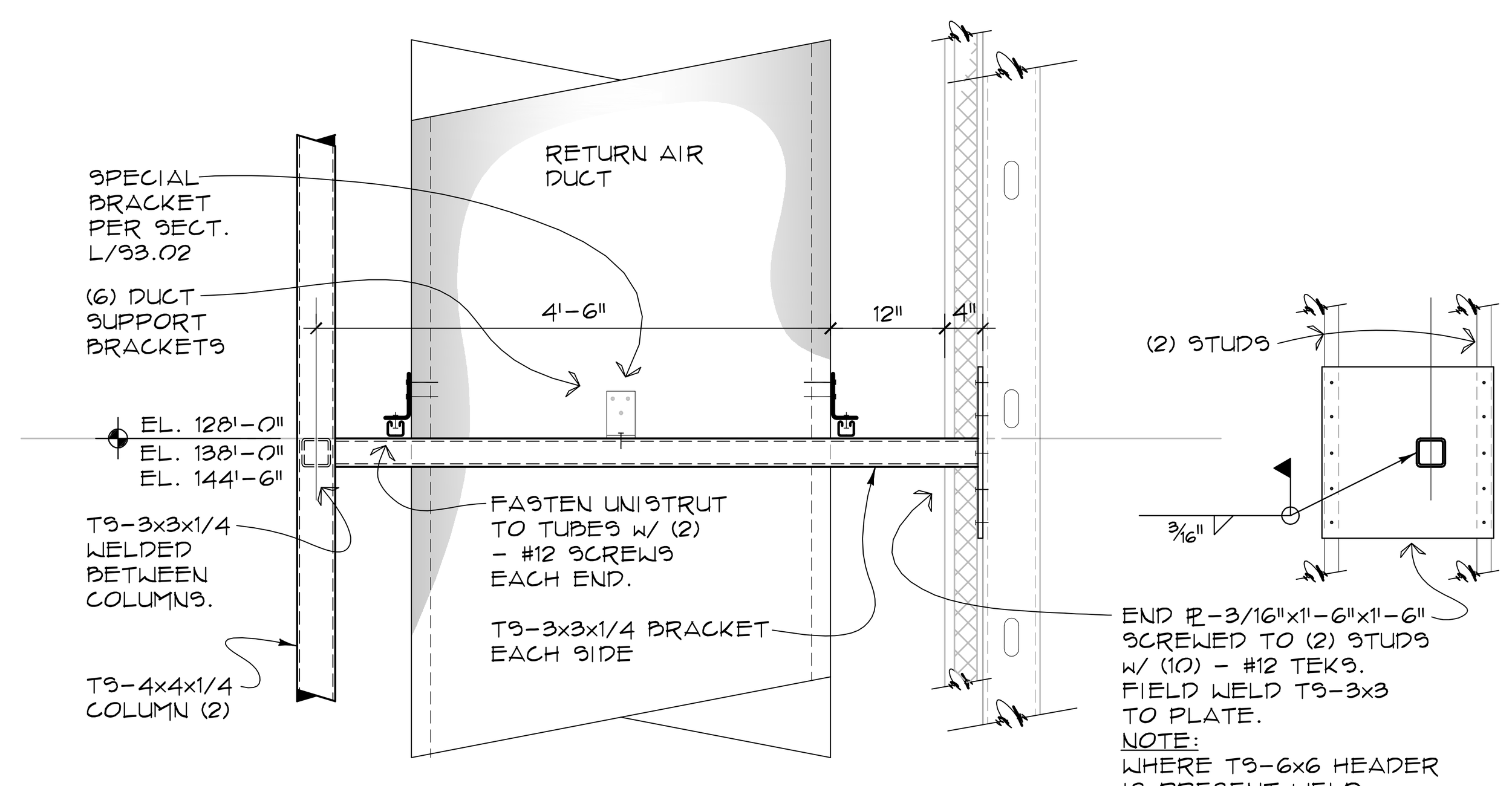

K SECTION
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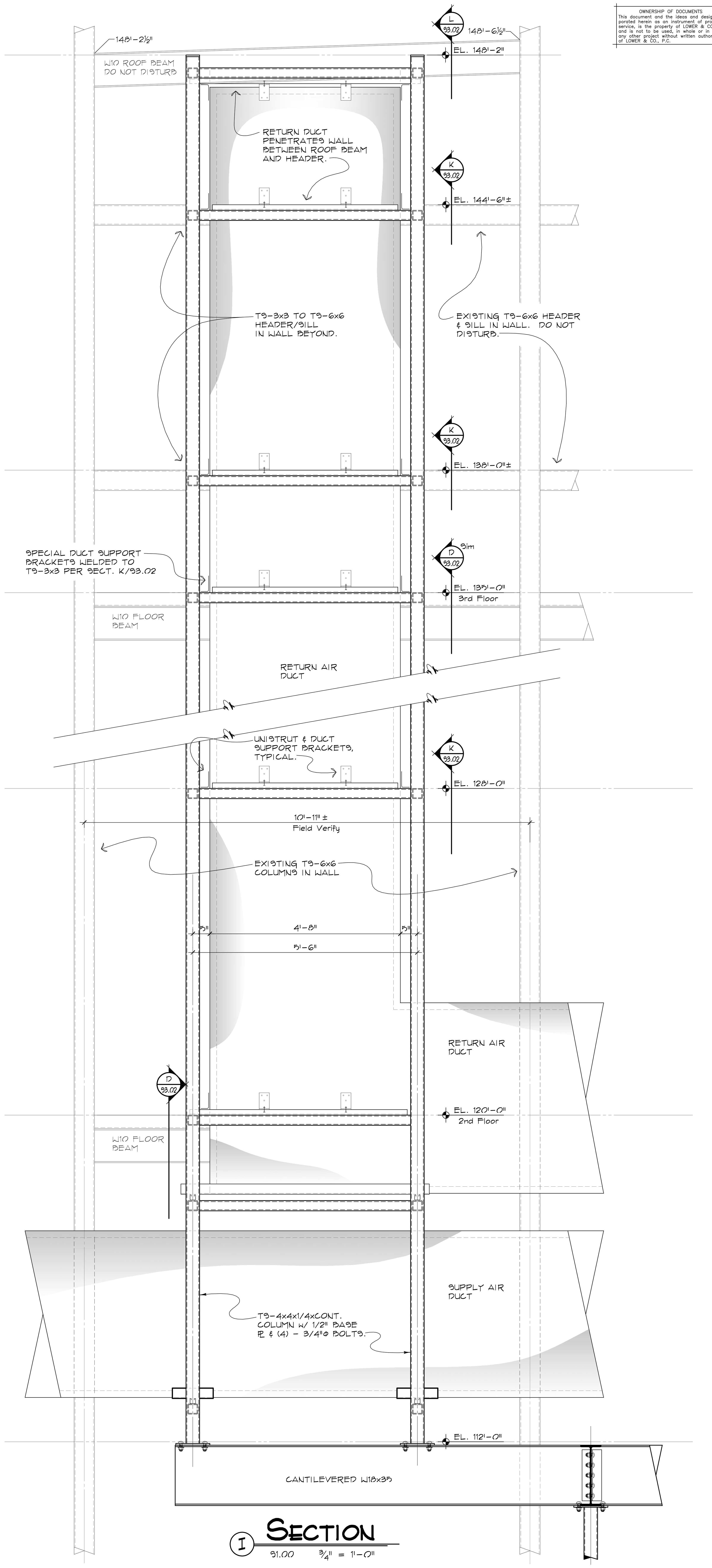

I SECTION
S1.00 3/4" = 1'-0"

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PROJECT #:	2170
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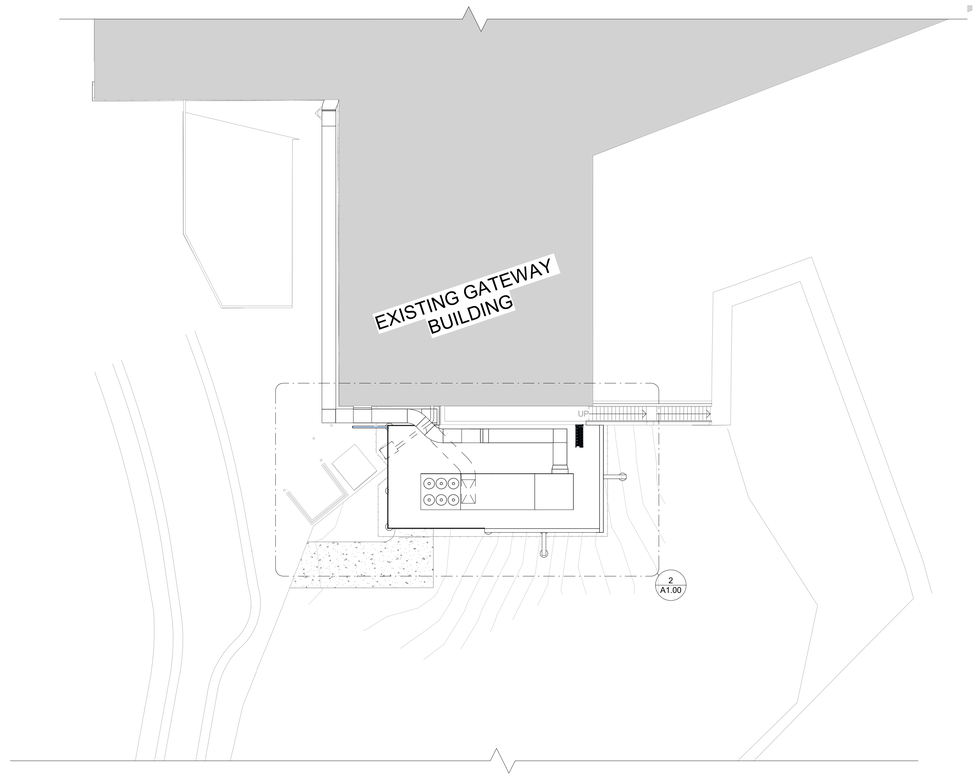
DUCT SUPPORT FRAMING SECTIONS

S3.02



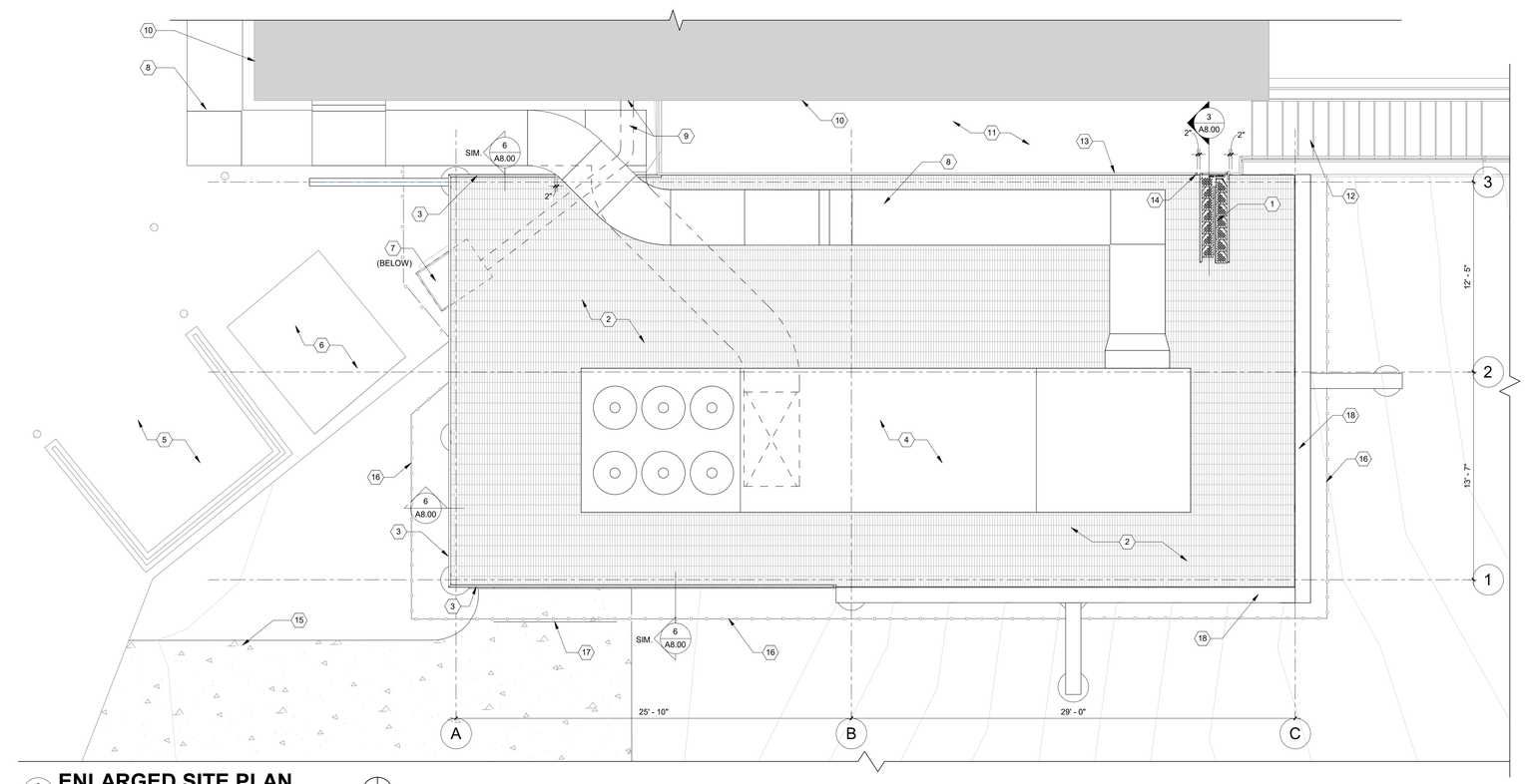
1 A1.00 **SITE PLAN**
1/16" = 1'-0"

SITE GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND SIZES OF UNDERGROUND PUBLIC AND PRIVATE UTILITIES PRIOR TO CONSTRUCTION AND COORDINATE WITH THOSE UTILITIES DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE FOR STAKING AND MATERIALS TESTING.
3. THE CONTRACTOR SHALL PROVIDE DUST CONTROL AND SHALL CONDUCT WORK SO THAT SEDIMENT IS NOT TRANSFERRED ONTO ROADWAY OR ADJACENT PROPERTY. CONTRACTOR IS TO MAINTAIN CONSTRUCTION MATERIAL STORAGE WITHIN THE CONSTRUCTION LIMITS, UNLESS NOTED OTHERWISE.
4. CONTRACTOR IS TO BE RESPONSIBLE FOR SECURITY OF THE SITE AT ALL TIMES.
5. CONTRACTOR TO PROVIDE TEMPORARY CONSTRUCTION FENCE.
6. CONTRACTOR TO BE RESPONSIBLE FOR FINISH GRADING AROUND THE BUILDING. PROVIDE POSITIVE SLOPE AWAY FROM THE BUILDING.
7. FEATHER ALL NEW GRADES TO MEET EXISTING.
8. ALL WALKWAYS AROUND BUILDING TO REMAIN OPEN FOR PUBLIC USE. WALKWAYS WITHIN CONSTRUCTION LIMITS SHALL NOT BE ACCESSIBLE TO THE PUBLIC, EXCEPT AS NOTED.
9. PROTECT ALL TREES AND SHRUBS TO REMAIN FROM DAMAGE.
10. SEE MECHANICAL & ELECTRICAL SITE PLANS FOR ALL MECHANICAL & ELECTRICAL SITE CONDITIONS CONTRACTOR IS TO MAINTAIN CONSTRUCTION MATERIAL STORAGE WITHIN THE CONSTRUCTION LIMITS, UNLESS NOTED OTHERWISE.
11. REFER TO CIVIL DRAWINGS FOR ALL SITE DIMENSIONS.
12. PROVIDE ALTERNATE PEDESTRIAN PATHS ALONG CONSTRUCTION AREA INCLUDING TEMPORARY SIGNAGE AND STREET CROSSING ZONES AS NECESSARY TO ENSURE SAFETY OF THE PUBLIC. COORDINATE THIS EFFORT WITH PROPER COLLEGE AUTHORITIES.

SITE KEYNOTES

1. NEW ALTERNATING TREAD STAIR WITH INTEGRATED GATE AT THE TOP OF LANDING, SEE SHEET A8.00 FOR ADDITIONAL INFORMATION.
2. NEW BAR GRATE PLATFORM, SEE STRUCTURAL DRAWINGS AND SHEET A8.00 FOR ADDITIONAL INFORMATION.
3. NEW GALVANIZED 2" PIPE GUARDRAIL AROUND PLATFORM, SEE SHEET A8.00 FOR ADDITIONAL INFORMATION.
4. NEW AIR HANDLING UNIT, SEE MECHANICAL FOR ADDITIONAL INFORMATION.
5. EXISTING TRASH ENCLOSURE TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
6. EXISTING TRANSFORMER TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
7. EXISTING DUST COLLECTOR TO REMAIN PROTECT FROM DAMAGE DURING CONSTRUCTION.
8. NEW DUCT WORK SEE MECHANICAL FOR ADDITIONAL INFORMATION.
9. REMOVE EXISTING DUCT FROM DUST COLLECTOR AND RELOCATE/RECONFIGURE DUCTS AS SHOWN ON MECHANICAL DRAWINGS. PATCH HOLE AT EXTERIOR WALL LOCATION WHERE DUCT WAS REMOVED TO MATCH EXISTING. DEMOLISH NEW HOLE IN EXTERIOR WALL TO ALLOW RELOCATED DUCT TO ENTER BUILDING AND RECONNECT TO EXISTING SYSTEM. SEE MECHANICAL FOR ADDITIONAL INFORMATION.
10. FACE OF EXISTING BUILDING.
11. EXISTING CONCRETE WALK TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
12. EXISTING CONCRETE STEPS TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
13. EXISTING GUARDRAIL TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
14. WHERE EXISTING GUARDRAIL WAS REMOVED ADD VERTICAL STEEL PIPE TO MATCH EXISTING, GRIND ALL WELDS SMOOTH, FINISH AND ATTACH AT BASE TO MATCH EXISTING.
15. NEW CONCRETE DRIVE, SEE CIVIL FOR ADDITIONAL INFORMATION.
16. NEW CHAINLINK FENCE, SEE CIVIL FOR ADDITIONAL INFORMATION.
17. 2 4'-0" WIDE GATES, SEE CIVIL FOR ADDITIONAL INFORMATION.
18. NEW CONCRETE RETAINING WALL AROUND NEW EQUIPMENT PLATFORM, SEE STRUCTURAL AND CIVIL FOR ADDITIONAL INFORMATION.



2 A1.00 **ENLARGED SITE PLAN**
1/4" = 1'-0"

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No.	Revision Description	Date

CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: BL/CW

TIM SCHENK
9-0151
REGISTERED PROFESSIONAL ARCHITECT
STATE OF WYOMING

PARTIAL SITE PLAN

A1.00

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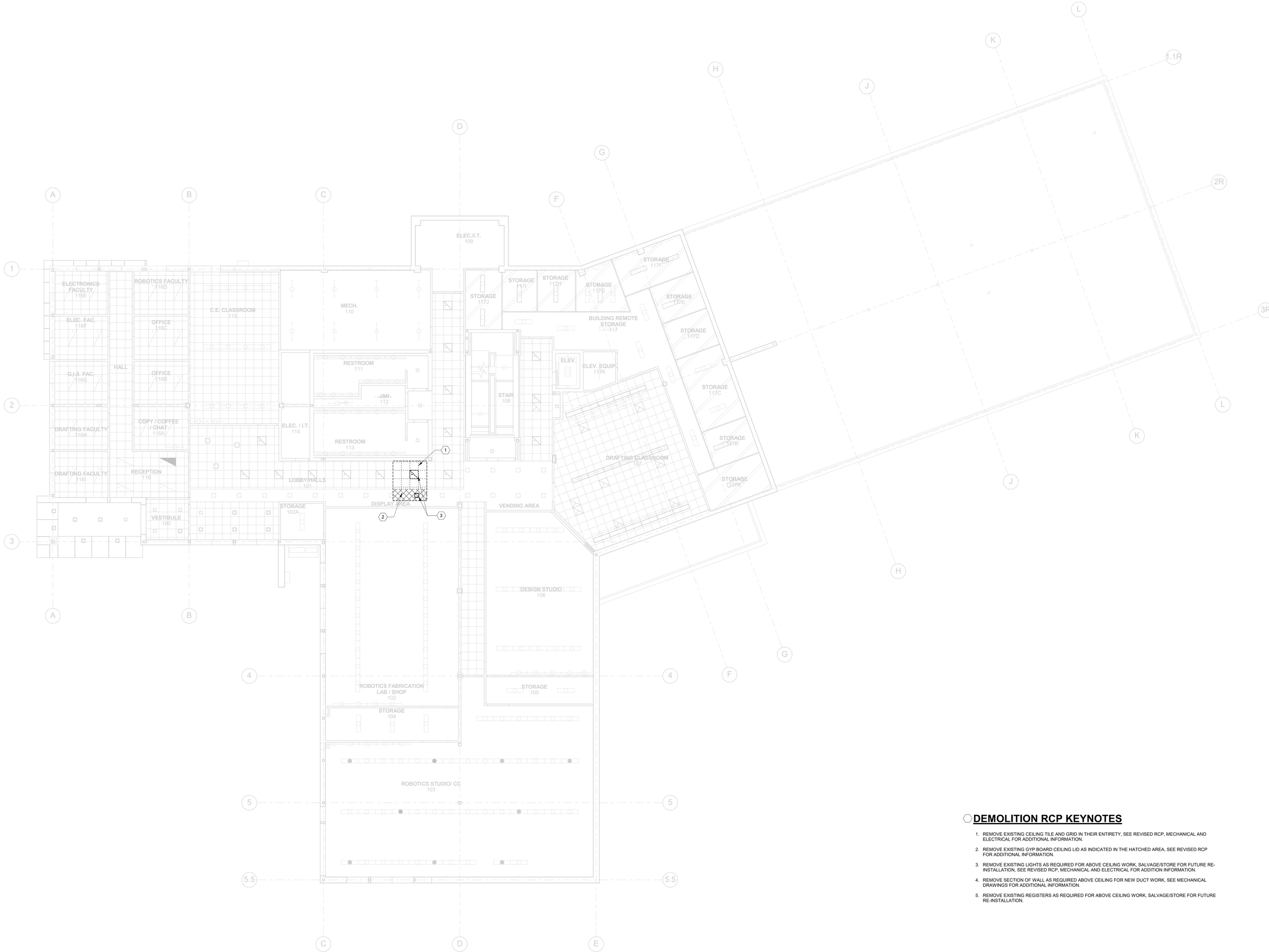

DEMOLITION RCP KEYNOTES

1. REMOVE EXISTING CEILING TILE AND GRID IN THEIR ENTIRETY, SEE REVISED RCP, MECHANICAL AND ELECTRICAL FOR ADDITIONAL INFORMATION.
2. REMOVE EXISTING GYP BOARD CEILING LID AS INDICATED IN THE HATCHED AREA, SEE REVISED RCP FOR ADDITIONAL INFORMATION.
3. REMOVE EXISTING LIGHTS AS REQUIRED FOR ABOVE CEILING WORK, SALVAGE/STORE FOR FUTURE RE-INSTALLATION, SEE REVISED RCP, MECHANICAL AND ELECTRICAL FOR ADDITION INFORMATION.
4. REMOVE SECTION OF WALL AS REQUIRED ABOVE CEILING FOR NEW DUCT WORK, SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. REMOVE EXISTING REGISTERS AS REQUIRED FOR ABOVE CEILING WORK, SALVAGE/STORE FOR FUTURE RE-INSTALLATION.

1 A3.10 **LEVEL 1 DEMOLITION REFLECTED CEILING PLAN**
1/8" = 1'-0"

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CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: BL

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B-0151
REGISTERED PROFESSIONAL ARCHITECT
STATE OF WYOMING

LEVEL 1 DEMOLITION REFLECTED CEILING PLAN

A3.10

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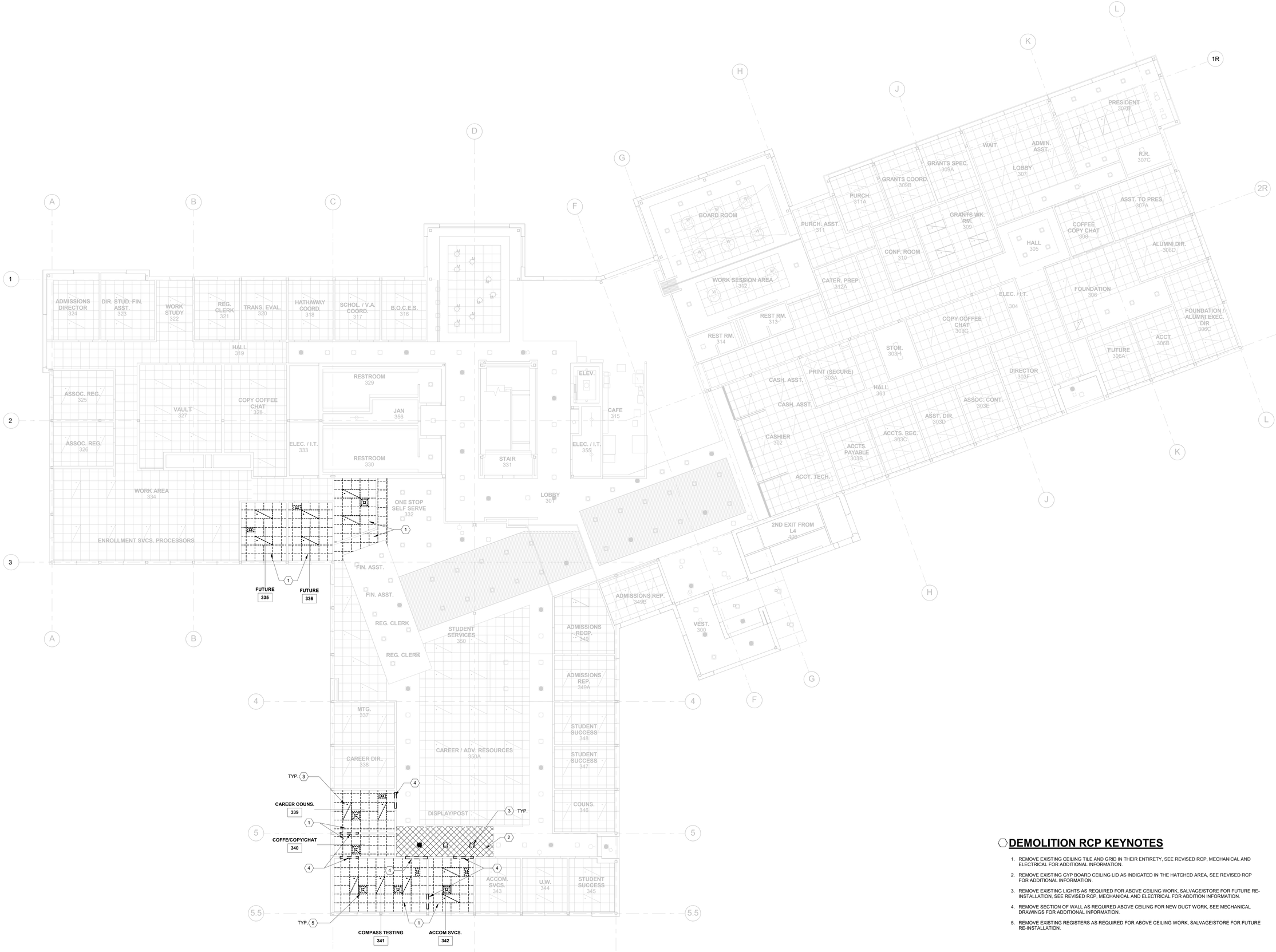

1 LEVEL 3 DEMOLITION REFLECTED CEILING PLAN

1/8" = 1'-0"

DEMOLITION RCP KEYNOTES

1. REMOVE EXISTING CEILING TILE AND GRID IN THEIR ENTIRETY, SEE REVISED RCP, MECHANICAL AND ELECTRICAL FOR ADDITIONAL INFORMATION.
2. REMOVE EXISTING GYP BOARD CEILING LID AS INDICATED IN THE HATCHED AREA, SEE REVISED RCP FOR ADDITIONAL INFORMATION.
3. REMOVE EXISTING LIGHTS AS REQUIRED FOR ABOVE CEILING WORK, SALVAGE/STORE FOR FUTURE RE-INSTALLATION, SEE REVISED RCP, MECHANICAL AND ELECTRICAL FOR ADDITION INFORMATION.
4. REMOVE SECTION OF WALL AS REQUIRED ABOVE CEILING FOR NEW DUCT WORK, SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
5. REMOVE EXISTING REGISTERS AS REQUIRED FOR ABOVE CEILING WORK, SALVAGE/STORE FOR FUTURE RE-INSTALLATION.

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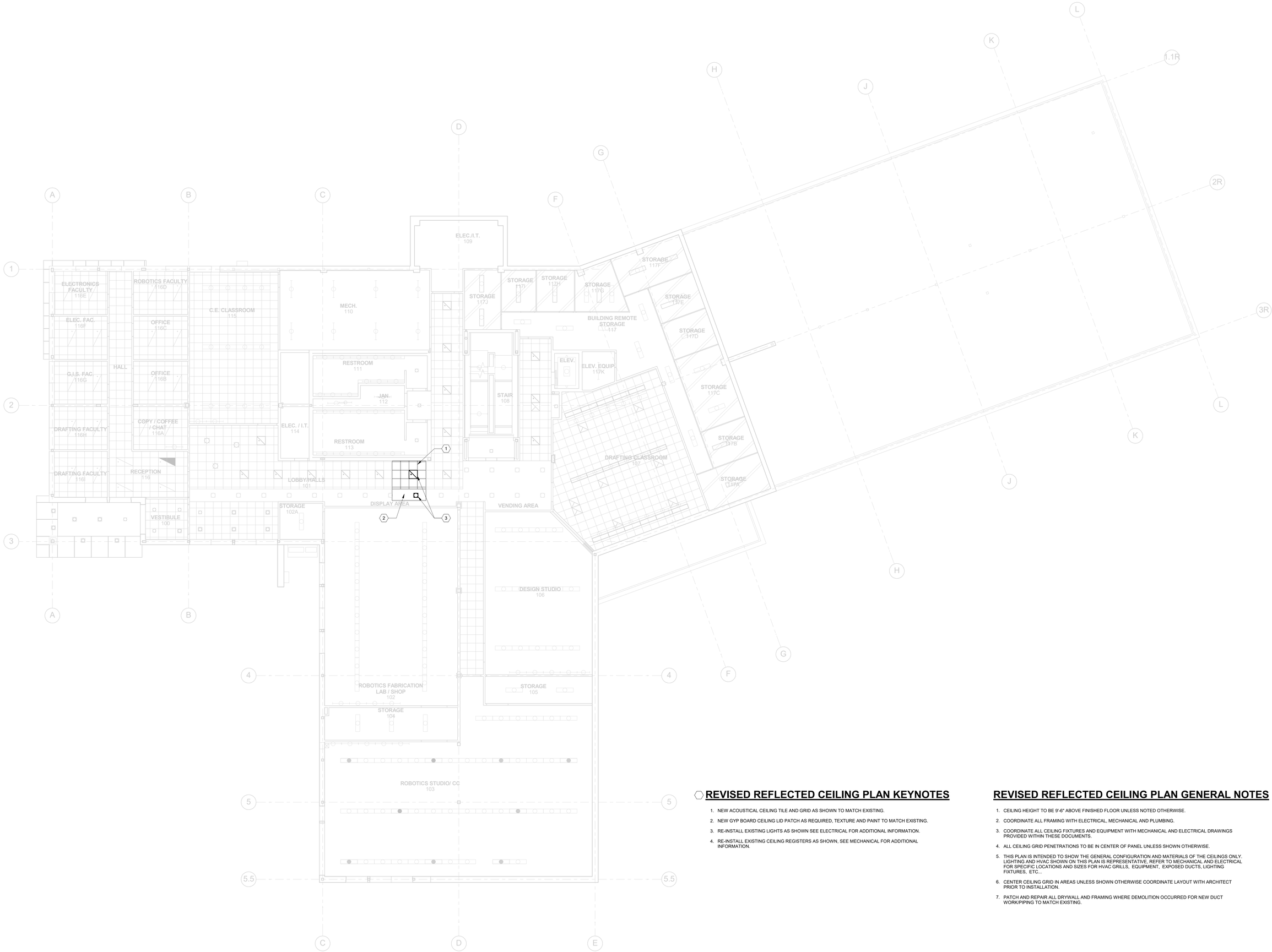
DRAWN BY: BL

TIM SCHENK
9-01/51
REGISTERED PROFESSIONAL ARCHITECT
STATE OF WYOMING

LEVEL 3 DEMOLITION REFLECTED CEILING PLAN

A3.11



REVISED REFLECTED CEILING PLAN KEYNOTES

1. NEW ACOUSTICAL CEILING TILE AND GRID AS SHOWN TO MATCH EXISTING.
2. NEW GYP BOARD CEILING LID PATCH AS REQUIRED, TEXTURE AND PAINT TO MATCH EXISTING.
3. RE-INSTALL EXISTING LIGHTS AS SHOWN SEE ELECTRICAL FOR ADDITIONAL INFORMATION.
4. RE-INSTALL EXISTING CEILING REGISTERS AS SHOWN, SEE MECHANICAL FOR ADDITIONAL INFORMATION.

REVISED REFLECTED CEILING PLAN GENERAL NOTES

1. CEILING HEIGHT TO BE 9'-6" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
2. COORDINATE ALL FRAMING WITH ELECTRICAL, MECHANICAL AND PLUMBING.
3. COORDINATE ALL CEILING FIXTURES AND EQUIPMENT WITH MECHANICAL AND ELECTRICAL DRAWINGS PROVIDED WITHIN THESE DOCUMENTS.
4. ALL CEILING GRID PENETRATIONS TO BE IN CENTER OF PANEL UNLESS SHOWN OTHERWISE.
5. THIS PLAN IS INTENDED TO SHOW THE GENERAL CONFIGURATION AND MATERIALS OF THE CEILINGS ONLY. LIGHTING AND HVAC SHOWN ON THIS PLAN IS REPRESENTATIVE, REFER TO MECHANICAL AND ELECTRICAL FOR SPECIFIC LOCATIONS AND SIZES FOR HVAC GRILLS, EQUIPMENT, EXPOSED DUCTS, LIGHTING FIXTURES, ETC...
6. CENTER CEILING GRID IN AREAS UNLESS SHOWN OTHERWISE COORDINATE LAYOUT WITH ARCHITECT PRIOR TO INSTALLATION.
7. PATCH AND REPAIR ALL DRYWALL AND FRAMING WHERE DEMOLITION OCCURRED FOR NEW DUCT WORK/PIPING TO MATCH EXISTING.

1 A3.20 **LEVEL 1 REVISED REFLECTED CEILING PLAN**
1/8" = 1'-0"

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No. Revision Description Date

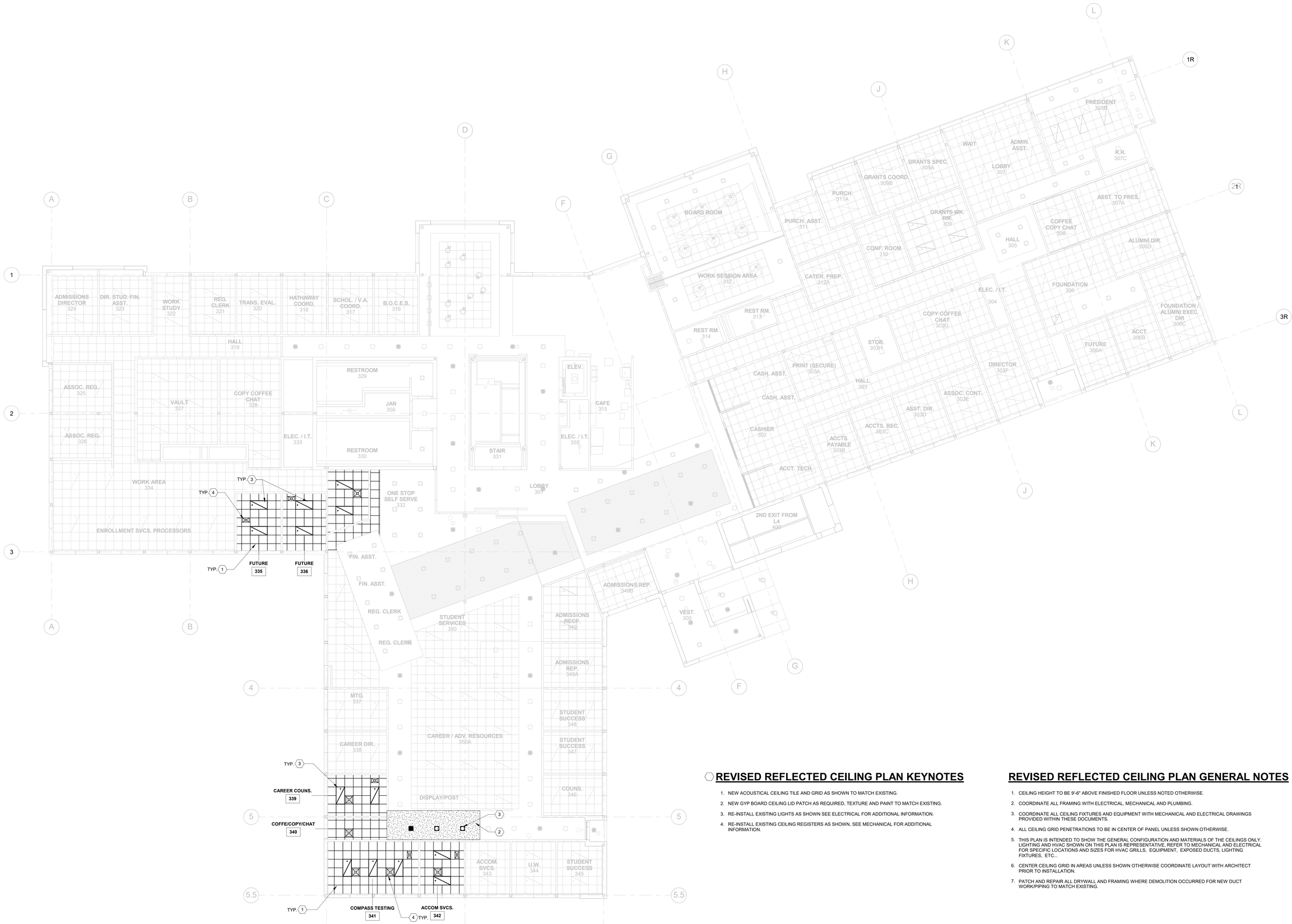
CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: BL

TIM SCHENK
B-0151
REGISTERED PROFESSIONAL ARCHITECT
STATE OF WYOMING

LEVEL 1 REVISED REFLECTED CEILING PLAN

A3.20



REVISED REFLECTED CEILING PLAN KEYNOTES

1. NEW ACOUSTICAL CEILING TILE AND GRID AS SHOWN TO MATCH EXISTING.
2. NEW GYP BOARD CEILING LID PATCH AS REQUIRED, TEXTURE AND PAINT TO MATCH EXISTING.
3. RE-INSTALL EXISTING LIGHTS AS SHOWN SEE ELECTRICAL FOR ADDITIONAL INFORMATION.
4. RE-INSTALL EXISTING CEILING REGISTERS AS SHOWN, SEE MECHANICAL FOR ADDITIONAL INFORMATION.

REVISED REFLECTED CEILING PLAN GENERAL NOTES

1. CEILING HEIGHT TO BE 9'-6" ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
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3. COORDINATE ALL CEILING FIXTURES AND EQUIPMENT WITH MECHANICAL AND ELECTRICAL DRAWINGS PROVIDED WITHIN THESE DOCUMENTS.
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6. CENTER CEILING GRID IN AREAS UNLESS SHOWN OTHERWISE COORDINATE LAYOUT WITH ARCHITECT PRIOR TO INSTALLATION.
7. PATCH AND REPAIR ALL DRYWALL AND FRAMING WHERE DEMOLITION OCCURRED FOR NEW DUCT WORK/PIPING TO MATCH EXISTING.

1 / A3.21 **LEVEL 3 REVISED REFLECTED CEILING PLAN**
1/8" = 1'-0"

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No.	Revision Description	Date

PROJECT #: 2170
DATE: 01/26/2022
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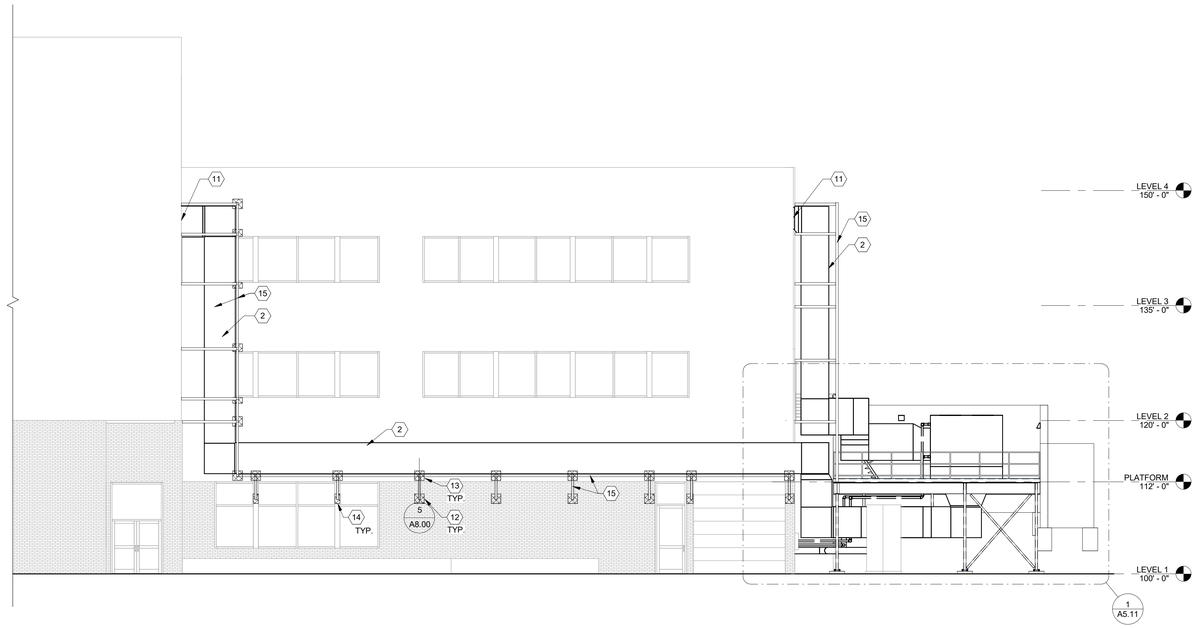
STATE OF WYOMING

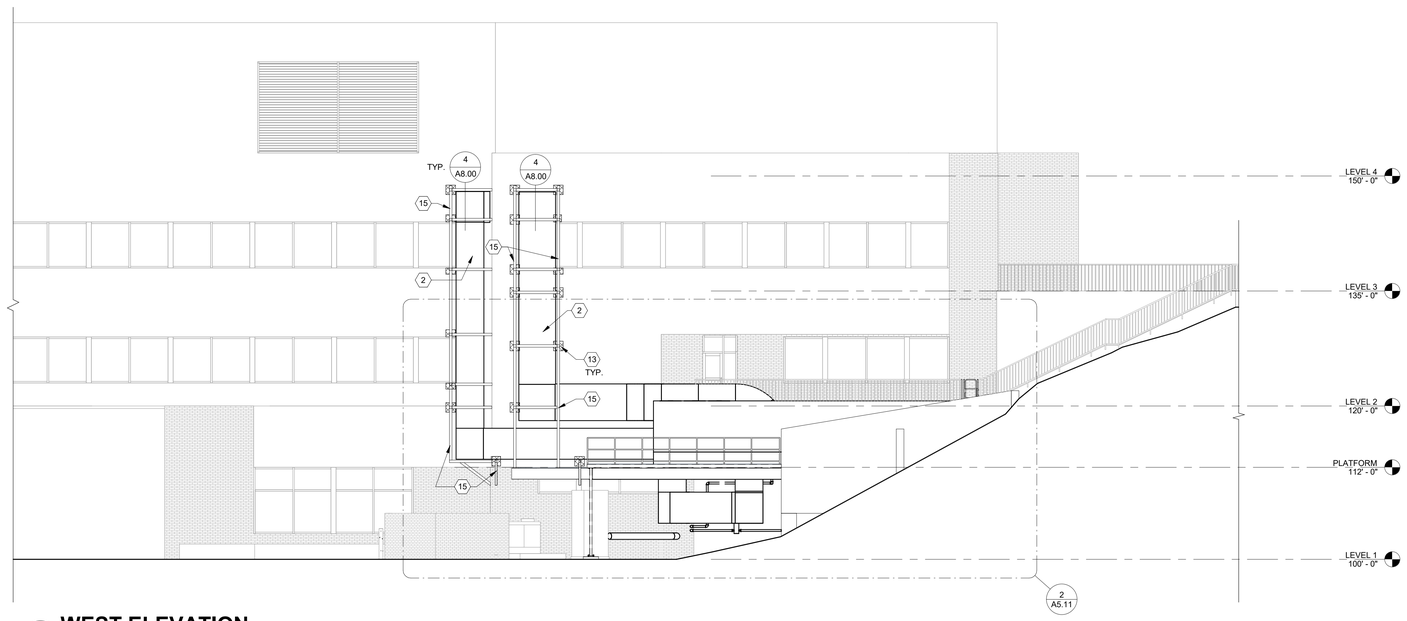
LEVEL 3 REVISED REFLECTED CEILING PLAN

A3.21



1 A5.10 **NORTH ELEVATION**

1/8" = 1'-0"



2 A5.10 **WEST ELEVATION**

1/8" = 1'-0"

BUILDING ELEVATION KEYNOTES

1. WHERE THE EXISTING DUCTWORK AT THE EXISTING DUCT COLLECTOR WAS REMOVED, PATCH AND REPAIR WALL AS REQUIRED TO MATCH EXISTING MATERIALS.
2. NEW MECHANICAL DUCTWORK. SEE STRUCTURAL SHEETS FOR ATTACHMENT SUPPORTS.
3. 42" HIGH GALVANIZED 2" STEEL PIPE GUARDRAIL SYSTEM.
4. MECHANICAL EQUIPMENT PLATFORM. SEE STRUCTURAL FOR ADDITIONAL INFORMATION.
5. AHU. SEE MECHANICAL FOR ADDITIONAL INFORMATION.
6. PROVIDE NEW HOLE PENETRATION AT EXTERIOR WHERE SHOWN TO ALLOW NEW DUCT AND PIPING ACCESS, SEE MECHANICAL FOR ADDITIONAL INFORMATION.
7. EXISTING GUARDRAIL TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
8. CONCRETE RETAINING WALL, SEE STRUCTURAL AND CIVIL FOR ADDITIONAL INFORMATION.
9. EXISTING DUST COLLECTOR TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
10. DASHED LINE INDICATES THE LIMITS OF NEW CHAINLINK FENCE, SEE CIVIL FOR ADDITIONAL INFORMATION.
11. DEMOLISH EXISTING HARDCOAT STUCCO, RIGID INSULATION, SHEATHING, AIR BARRIER, AND BATT INSULATION AS REQUIRED TO ALLOW NEW DUCT PENETRATION WHERE SHOWN. SEE ARCHITECTURAL AND STRUCTURAL FOR REVISED DETAILS.
12. SAWCUT AND REMOVE EXISTING BRICK VENEER, AIR BARRIER AND SHEATHING AS REQUIRED TO ALLOW ACCESS TO EXISTING TUBE STEEL COLUMN. SALVAGE EXISTING BRICK VENEER FOR FUTURE RE-USE, SEE ARCHITECTURAL DETAILS AND STRUCTURAL FOR ADDITIONAL INFORMATION.
13. DEMOLISH EXISTING HARDCOAT STUCCO, RIGID INSULATION, AIR BARRIER AND SHEATHING AS REQUIRED TO ALLOW ACCESS TO EXISTING TUBE STEEL COLUMN, SEE ARCHITECTURAL DETAILS AND STRUCTURAL FOR ADDITIONAL INFORMATION.
14. DEMOLISH EXISTING BRAKE METAL AS REQUIRED TO ALLOW ACCESS TO EXISTING TUBE STEEL COLUMN. AFTER NEW DUCT MOUNTING SUPPORTS ARE IN PLACE, ADD NEW BRAKE METAL TO MATCH EXISTING AS REQUIRED TO FLASH AROUND NEW DUCT MOUNTING SUPPORT.
15. STRUCTURAL MOUNT DUCT SUPPORTS, PAINT WITH HIGH PERFORMANCE PAINT TO MATCH DUCT FINISH COLOR, SEE STRUCTURAL FOR ADDITIONAL INFORMATION.

BUILDING ELEVATION GENERAL NOTES:

1. REFERENCE STRUCTURAL DRAWINGS TO COORDINATE EXTENT OF WALL PENETRATIONS NEEDED FOR NEW DUCT SUPPORTS. PATCH AND REPAIR WALL/AFFECTED ADJACENT MATERIALS AS REQUIRED, REFERENCE ARCHITECTURAL APPLICABLE DETAILS FOR MORE INFORMATION.

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No.	Revision Description	Date

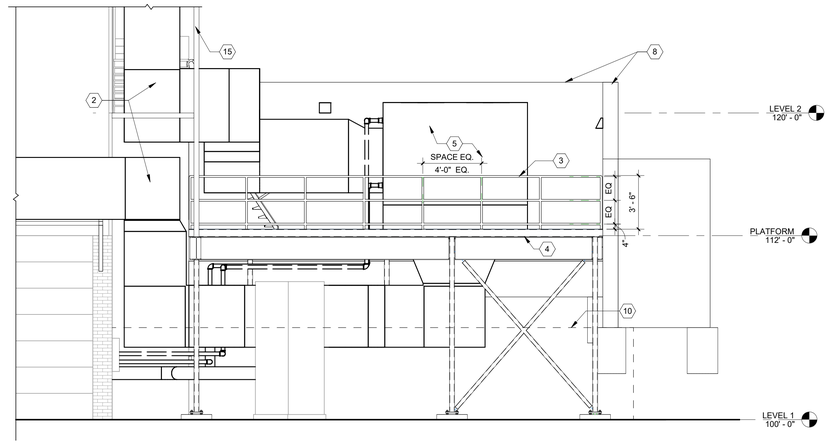
CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: BL/CW

TIM SCHENK
B-0151
REGISTERED PROFESSIONAL ARCHITECT
STATE OF WYOMING

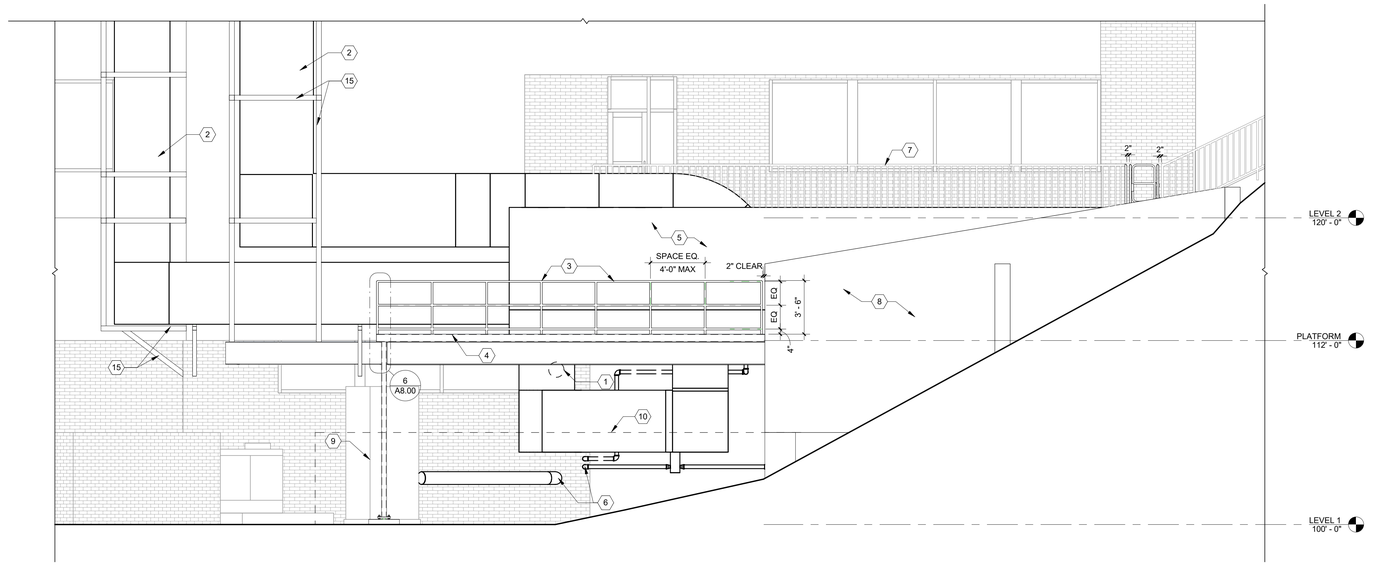
PARTIAL NORTH AND WEST ELEVATIONS

A5.10



1 A5.11 **ENLARGED NORTH ELEVATION**

1/4" = 1'-0"



2 A5.11 **ENLARGED WEST ELEVATION**

1/4" = 1'-0"

BUILDING ELEVATION KEYNOTES

1. WHERE THE EXISTING DUCTWORK AT THE EXISTING DUCT COLLECTOR WAS REMOVED, PATCH AND REPAIR WALL AS REQUIRED TO MATCH EXISTING MATERIALS.
2. NEW MECHANICAL DUCTWORK. SEE STRUCTURAL SHEETS FOR ATTACHMENT SUPPORTS.
3. 42" HIGH GALVANIZED 2" STEEL PIPE GUARDRAIL SYSTEM.
4. MECHANICAL EQUIPMENT PLATFORM. SEE STRUCTURAL FOR ADDITIONAL INFORMATION.
5. AHU. SEE MECHANICAL FOR ADDITIONAL INFORMATION.
6. PROVIDE NEW HOLE PENETRATION AT EXTERIOR WHERE SHOWN TO ALLOW NEW DUCT AND PIPING ACCESS, SEE MECHANICAL FOR ADDITIONAL INFORMATION.
7. EXISTING GUARDRAIL TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
8. CONCRETE RETAINING WALL, SEE STRUCTURAL AND CIVIL FOR ADDITIONAL INFORMATION.
9. EXISTING DUST COLLECTOR TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
10. DASHED LINE INDICATES THE LIMITS OF NEW CHAINLINK FENCE, SEE CIVIL FOR ADDITIONAL INFORMATION.
11. DEMOLISH EXISTING HARDCOAT STUCCO, RIGID INSULATION, SHEATHING, AIR BARRIER, AND BATT INSULATION AS REQUIRED TO ALLOW NEW DUCT PENETRATION WHERE SHOWN. SEE ARCHITECTURAL AND STRUCTURAL FOR REVISED DETAILS.
12. SAWCUT AND REMOVE EXISTING BRICK VENEER, AIR BARRIER AND SHEATHING AS REQUIRED TO ALLOW ACCESS TO EXISTING TUBE STEEL COLUMN. SALVAGE EXISTING BRICK VENEER FOR FUTURE RE-USE, SEE ARCHITECTURAL DETAILS AND STRUCTURAL FOR ADDITIONAL INFORMATION.
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15. STRUCTURAL MOUNT DUCT SUPPORTS, PAINT WITH HIGH PERFORMANCE PAINT TO MATCH DUCT FINISH COLOR, SEE STRUCTURAL FOR ADDITIONAL INFORMATION.

BUILDING ELEVATION GENERAL NOTES:

1. REFERENCE STRUCTURAL DRAWINGS TO COORDINATE EXTENT OF WALL PENETRATIONS NEEDED FOR NEW DUCT SUPPORTS. PATCH AND REPAIR WALL/AFFECTED ADJACENT MATERIALS AS REQUIRED, REFERENCE ARCHITECTURAL APPLICABLE DETAILS FOR MORE INFORMATION.

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No. Revision Description Date

CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

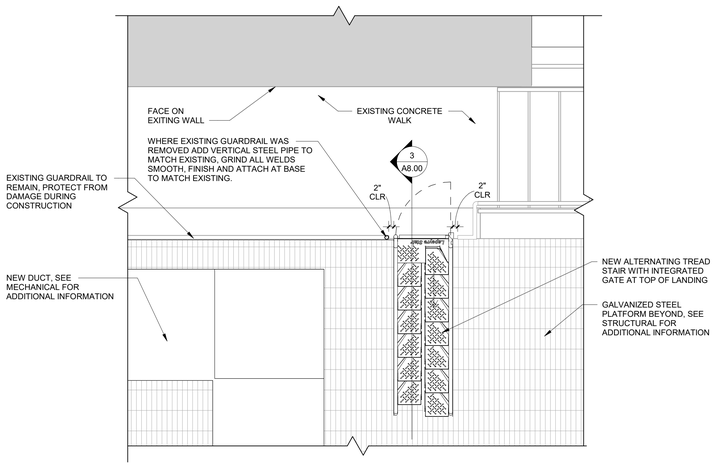
PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: BL/CW

TIM SCHENK
B-0151
STATE OF WYOMING
REGISTERED PROFESSIONAL ARCHITECT

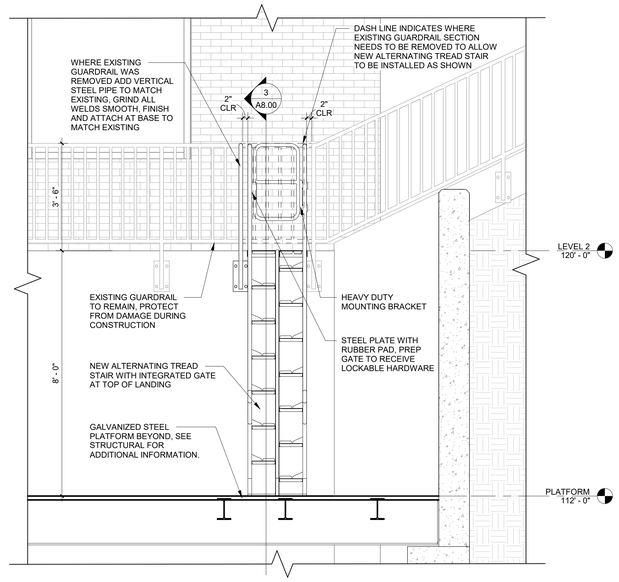
PARTIAL ENLARGED NORTH AND WEST ELEVATIONS

A5.11

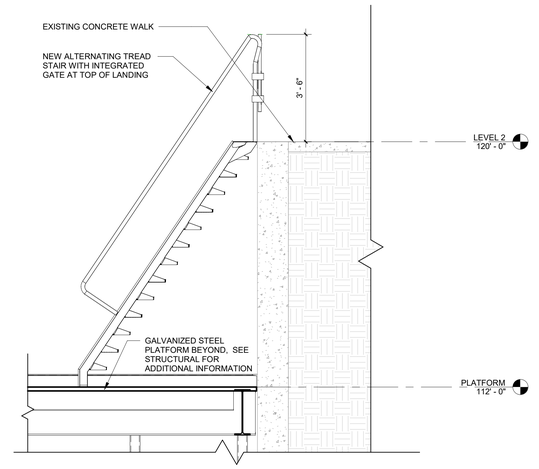
1/27/2022 10:33:50 AM C:\Users\pgilbert.GSGS\Documents\2170 Casper College Gateway HVAC Redesign_pgilbertTSLCZ.rvt



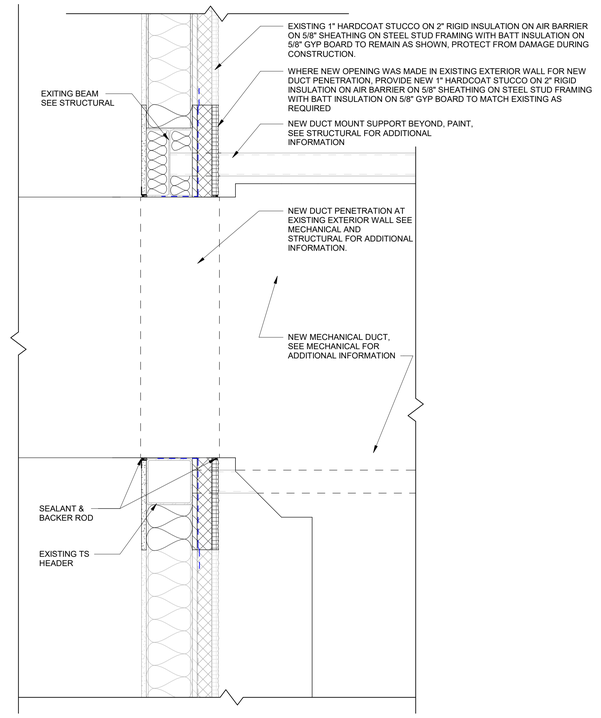
1 A8.00 **ENLARGED STAIR PLAN**
1/2" = 1'-0"



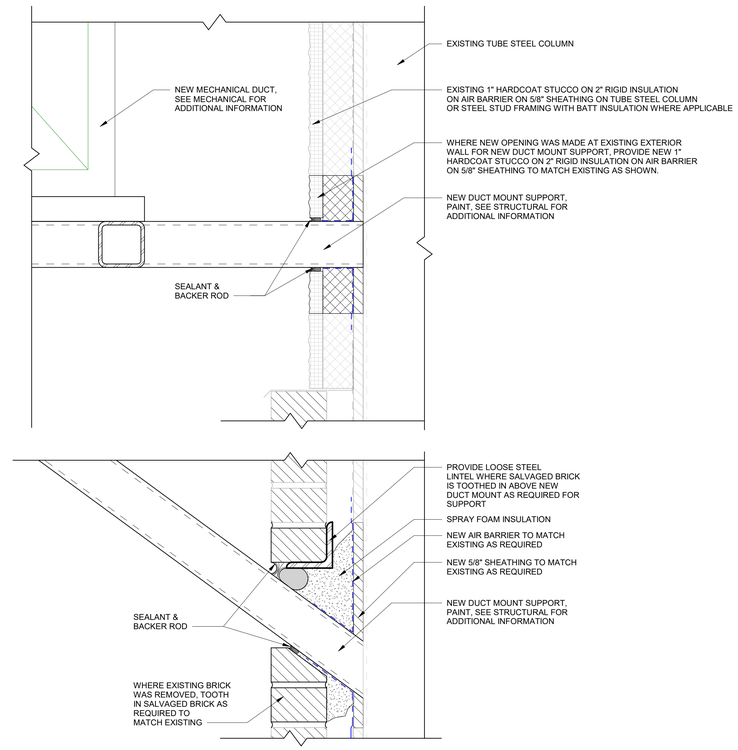
2 A8.00 **STAIR ELEVATION**
1/2" = 1'-0"



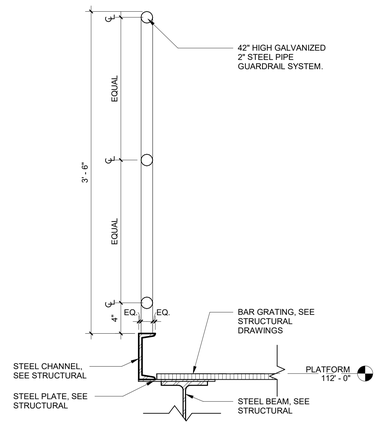
3 A8.00 **SECTION**
1/2" = 1'-0"



4 A8.00 **WALL PENETRATION DETAIL**
1 1/2" = 1'-0"



5 A8.00 **WALL PENETRATION DETAIL**
3" = 1'-0"



6 A8.00 **GUARDRAIL DETAIL**
1 1/2" = 1'-0"

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No. Revision Description Date

CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

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DATE: 01/26/2022
DRAWN BY: BL/CW

TIM SCHENK
B-0151
PROFESSIONAL ARCHITECT
STATE OF WYOMING

ENLARGED STAIR/ELEVATIONS, SECTIONS AND DETAILS

A8.00

GENERAL LEGEND

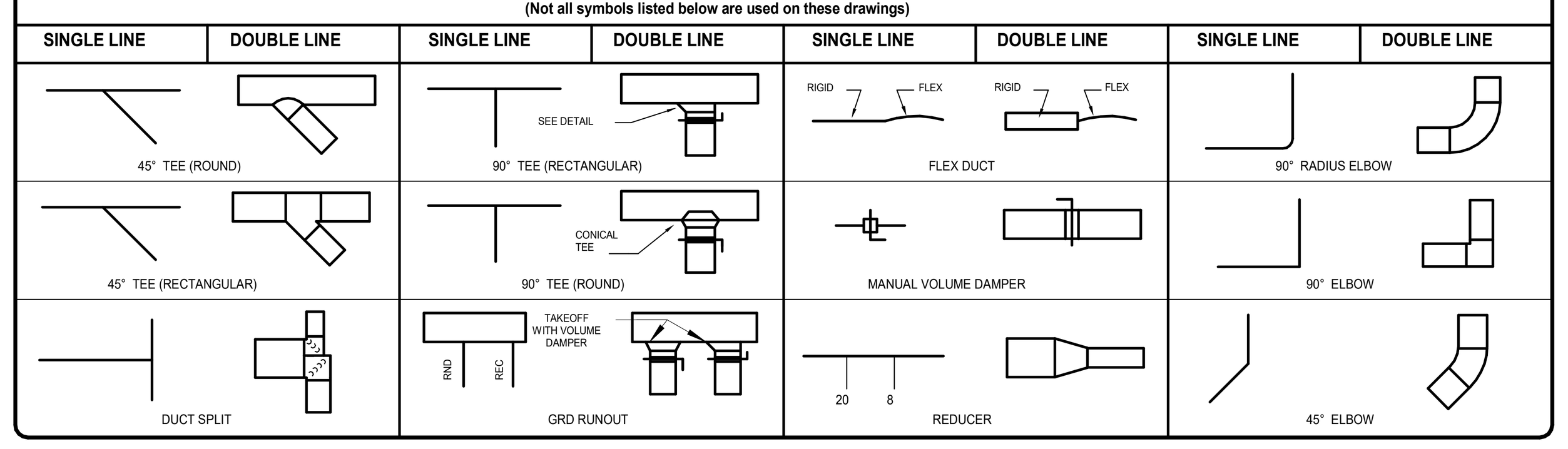
(Not all symbols listed below are used on these drawings)

ABBR.	SYMBOL	DESCRIPTION
	X / X-X	SECTION DESIGNATION SECTION CUT ON THIS SHEET
	X / X-X	VIEW REFERENCE DESIGNATION VIEW REFERENCE ON THIS SHEET
	X / 1-2-3	EQUIPMENT UNIT IDENTIFICATION EQUIPMENT UNIT NUMBER (UNIT SERVED - FLOOR - SEQUENCE #)
	A 10 250	DIFFUSER IDENTIFICATION DIFFUSER NECK DIAMETER DIFFUSER CFM
	E 8ø/24"L 9999	LINEAR DIFFUSER IDENTIFICATION LINEAR DIFFUSER NECK DIAMETER LINEAR DIFFUSER LENGTH LINEAR DIFFUSER CFM
	2'-6" 3'-6" FTR 28	FINNED TUBE RADIATOR ACTIVE ELEMENT LENGTH EQUIPMENT UNIT IDENTIFICATION EQUIPMENT UNIT NUMBER RADIATOR ENCLOSURE LENGTH (OR W-W=WALL-TO-WALL)
	X	KEY NOTE REFERENCE
	1	KITCHEN/OWNER/MEDICAL EQUIPMENT REFERENCE
		TYPICAL ROOM REFERENCE (TOP = RM #, BOTTOM = FLR)
		POINT OF CONNECTION, NEW TO EXISTING
		POINT OF DISCONNECTION, DEMO
		DIRECTION OF FLOW IN PIPE
		DUCTWORK, PIPING AND EQUIPMENT TO BE REMOVED
(E)		EXISTING
(N)		NEW
(R)		RELOCATED
(F)		FUTURE
DIA	Ø	DIAMETER
WAD		WALL ACCESS DOOR
NIC		NOT IN CONTRACT
AFF		ABOVE FINISHED FLOOR
GC		GENERAL CONTRACTOR
MC		MECHANICAL CONTRACTOR
EC		ELECTRICAL CONTRACTOR
UNO		UNLESS NOTED OTHERWISE
C		COMMON
NC		NORMALLY CLOSED
NO		NORMALLY OPEN

ABBR.	SYMBOL	DESCRIPTION
		CAP END OF PIPE
	SLOPE	PITCH DOWN IN DIRECTION OF ARROW
		PIPE ANCHOR
		PIPE ALIGNMENT GUIDE
		UNION OR FLANGE
		CONCENTRIC PIPE REDUCER
		ECCENTRIC PIPE REDUCER
PRV		PRESSURE REDUCING VALVE
PTRV		PRESSURE AND/OR TEMPERATURE RELIEF VALVE
		ISOLATION VALVE (RE: SPEC FOR TYPE)
		VERTICAL PIPE VALVE
CV		CHECK VALVE
		SOLENOID / MOTORIZED VALVE
		SOLENOID VALVE
		HOSE END DRAIN VALVE
P/T	P/T	PRESSURE / TEMPERATURE TAP
		STRAINER
		STRAINER W/ BLOWDOWN
		BRAIDED FLEXIBLE PIPE CONNECTOR
		DOUBLE-BOWL FLEXIBLE PIPE CONNECTOR
		THERMOMETER
		PRESSURE GAUGE
		SIGHT GLASS
C.A.P.		CEILING ACCESS PANEL
HWP		PUMP
TB		THRUST BLOCK
MAV		MANUAL AIR VENT
AAV		AUTOMATIC AIR VENT

DOUBLE/SINGLE LINE DUCT LEGEND

(Not all symbols listed below are used on these drawings)



HVAC LEGEND

(Not all symbols listed below are used on these drawings)

ABBR.	SYMBOL	DESCRIPTION
HWS	—HWS—	HEATING WATER SUPPLY PIPING
HWR	— HWR— —	HEATING WATER RETURN PIPING
HTWS	—HTWS—	HIGH TEMPERATURE HEATING WATER SUPPLY PIPING
HTWR	— HTWR— —	HIGH TEMPERATURE HEATING WATER RETURN PIPING
CHWS	—CHWS—	CHILLED WATER SUPPLY PIPING
CHWR	— CHWR— —	CHILLED WATER RETURN PIPING
D	—D—	COOLING COIL DRAIN PAN PIPING
CWS	—CWS—	CONDENSER WATER SUPPLY PIPING
CWR	— CWR— —	CONDENSER WATER RETURN PIPING
GHWS	—GHWS—	GLYCOL HEATING WATER SUPPLY PIPING
GHWR	— GHWR— —	GLYCOL HEATING WATER RETURN PIPING
PCWS	—PCWS—	PROCESS CHILLED WATER SUPPLY PIPING
PCWR	— PCWR— —	PROCESS CHILLED WATER RETURN PIPING
LPS	—LPS—	LOW PRESSURE STEAM SUPPLY PIPING (0 - 15#)
LPC	— LPC— —	LOW PRESSURE CONDENSATE RETURN PIPING
MPS	—MPS—	MEDIUM PRESSURE STEAM SUPPLY PIPING (16# - 60#)
MPC	— MPC— —	MEDIUM PRESSURE CONDENSATE RETURN PIPING
HPS	—HPS—	HIGH PRESSURE STEAM SUPPLY PIPING (61# - 125#)
HPC	— HPC— —	HIGH PRESSURE CONDENSATE RETURN PIPING
PC	—PC—	PUMPED CONDENSATE PIPING
BBD	—BBD—	BOILER BLOWDOWN PIPING
BF	—BF—	BOILER FEED WATER PIPING
RL	—RL—	REFRIGERANT LIQUID PIPING
RS	— RS — —	REFRIGERANT SUCTION PIPING
RHG	—RHG—	REFRIGERANT HOT GAS PIPING
TT	TT	THERMOSTATIC STEAM TRAP
F&T	F&T	FLOAT AND THERMOSTATIC STEAM TRAP
IBT	IBT	INVERTED BUCKET STEAM TRAP
TCV		(2 OR 3-WAY) TEMPERATURE CONTROL VALVE
		VENTURI METER
BV		CALIBRATED BALANCING VALVE
AFV		AUTO FLOW VALVE
RSV		REFRIGERANT SERVICE VALVE
DPS	DP	DIFFERENTIAL PRESSURE SWITCH
FS		FLOW SWITCH
EJ		EXPANSION JOINT
BJ		BALL JOINT EXPANSION COMPENSATOR

ABBR.	SYMBOL	DESCRIPTION
		SUPPLY DUCT UP / DOWN
		RETURN DUCT UP / DOWN
		EXHAUST DUCT UP / DOWN
		ROUND DUCT UP / ROUND DUCT DOWN
48F12		FLAT OVAL DUCTWORK
		FLEXIBLE DUCT CONNECTION
BDD		BACKDRAFT DAMPER
TCD		TEMP. CONTROL DAMPER-OPPOSED BLADE
TCD		TEMP. CONTROL DAMPER- PARALLEL BLADE
MVD		MANUAL VOLUME DAMPER
MD	M	DUCT MOTORIZED DAMPER
		CONICAL FITTING WITH MVD
		SPIN-IN FITTING WITH MVD
FD		DUCT FIRE DAMPER
FSD		COMBINATION DUCT FIRE/SMOKE DAMPER
SD		DUCT SMOKE DAMPER
	F	DUCT SMOKE DETECTOR
DAD		DUCT ACCESS DOOR
		TURNING VANES IN DUCT ELBOW
EP		ELECTRIC-PNEUMATIC CONTROL VALVE
PE		PNEUMATIC-ELECTRIC CONTROL SWITCH
	S ES	WALL SWITCH / EMERGENCY SWITCH
	TS	TEMPERATURE SENSOR
	T	WALL MOUNTED THERMOSTAT
	CO2	WALL MOUNTED CARBON DIOXIDE SENSOR
	O2	WALL MOUNTED OXYGEN SENSOR
	H	HUMIDISTAT
	T	UNIT MOUNTED THERMOSTAT
	P PM	PRESSURE SENSOR / PRESSURE MONITOR
	U	UNDERCUT DOOR
	L	LOUVER IN DOOR
	RISE	DUCT RISE
	DROP	DUCT DROP
A.L.		ACOUSTICALLY LINED DUCTWORK
TCOAD		TEMPERATURE CONTROL OUTSIDE AIR DAMPER
TCRAD		TEMPERATURE CONTROL RETURN AIR DAMPER
TCEAD		TEMPERATURE CONTROL EXHAUST AIR DAMPER
SP IN WC		STATIC PRESSURE IN INCHES WATER COLUMN
EOMD		END OF MAIN DRIP
SCCR		SHORT CIRCUIT CURRENT RATING
SD		SUPPLY AIR DEVICE
RG		RETURN AIR DEVICE
RG		RETURN AIR DEVICE WITH SOUND BOOT
EG		EXHAUST AIR DEVICE

BAS CONTROL LEGEND & NOTES

(Not all symbols listed below are used on these drawings)

ABBR.	SYMBOL	DESCRIPTION
D.I.	D.I.	DIGITAL INPUT
D.O.	D.O.	DIGITAL OUTPUT
A.I.	A.I.	ANALOG INPUT
A.O.	A.O.	ANALOG OUTPUT

GENERAL NOTES:

1. **THE TEMPERATURE CONTROL MATRIX, CONTROL DIAGRAMS, AND THE SEQUENCE OF OPERATIONS ARE ALL BINDING AND COMPLEMENTARY. IF THERE IS A DISCREPANCY BETWEEN THEM, THE WORST CASE SCENARIO SHALL BE USED FOR BIDDING PURPOSES. ADDITIONAL COSTS WILL NOT BE ALLOWED FOR DISCREPANCIES BETWEEN THE SPECIFICATIONS AND THE DRAWINGS.**
2. **IN ADDITION TO THE DDC POINTS LISTED, THE CONTRACTOR SHALL CAREFULLY REVIEW ALL DRAWINGS, ALL SPECIFICATIONS, AND ALL SEQUENCES OF OPERATION. THE DOCUMENTS ARE ALL INCLUSIVE AND COMPLIMENTARY TO EACH OTHER. THE PROJECT SHALL INCLUDE ANY AND ALL NECESSARY DDC POINTS TO SUPPORT THE REQUIREMENTS OF ALL THE DOCUMENTS.**
3. **ALWAYS REFER TO DRAWINGS FOR QUANTITY.**
4. **PROVIDE OPEN PROTOCOL COMMUNICATION WITH FACTORY SUPPLIED CONTROLLER.**
5. **BAS CONTRACTOR SHALL COORDINATE STATUS LEVEL FOR EACH ALARM POINT WITH THE OWNER TO DETERMINE WHICH ONES REQUIRE IMMEDIATE ATTENTION.**
6. **IF THERE IS A DISCREPANCY BETWEEN ANY DOCUMENTATION, THE WORST CASE SCENARIO SHALL BE USED FOR BIDDING PURPOSES. ADDITIONAL COSTS WILL NOT BE ALLOWED FOR DISCREPANCIES BETWEEN THE SPECIFICATIONS AND DRAWINGS.**

UNLESS NOTED OTHERWISE ALL SCHEDULED DATA IS LISTED AT ELEVATION 5250 FT

HVAC PLAN NOTES:

1. UNLESS OTHERWISE NOTED, ALL SUPPLY AIR DUCTWORK SHALL BE EXTERNALLY WRAPPED TO THICKNESS AS STATED IN SPECIFICATIONS. RETURN DUCTWORK IN THE THIRD FLOOR CEILING SHALL HAVE ACCOUSTIC LINING.
2. REFER TO ARCHITECTURAL DRAWINGS FOR PENETRATION DETAILS.
3. DUCT SIZES INDICATED ARE SHEET METAL SIZES. WHERE INTERNAL DUCT LINING IS PROVIDED, SHEET METAL SHALL NOT BE INCREASED IN SIZE.

GENERAL NOTES:

1. WORK INCLUDED IN THE CONTRACT IS DENOTED IN BOLD. EXISTING CONDITIONS TO REMAIN ARE DENOTED LIGHTLY.
2. A DETAILED METHOD OF PROCEDURE IS REQUIRED WHEN A CONSTRUCTION ACTIVITY AFFECTS THE SAFETY OF THE OCCUPANTS, OWNER'S EQUIPMENT OR VALUABLE CONTENTS OR ANY SYSTEM WHICH SUPPORTS THESE SYSTEMS; OR ESSENTIALLY AFFECTS THE BUILDING MANAGEMENT, OPERATIONS OR SECURITY.
3. CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK AND SHALL NOTIFY THE ENGINEER/ARCHITECT OF ANY DISCREPANCIES FOR RESOLUTION.
4. COORDINATE WORK WITH ALL TRADES.
5. CONTRACTOR IS RESPONSIBLE FOR SECURING AND WEATHERPROOFING ANY ROOF OR BUILDING OPENING NOT COMPLETED DURING WORKING HOURS.
6. COORDINATE ALL DUCTWORK AND PIPING WITH EQUIPMENT, STRUCTURE, ETC.
7. CONTRACTOR SHALL NOT SHUT DOWN / TAKE OUT OF SERVICE ANY SYSTEMS WITHOUT FIRST COORDINATING WITH OWNER AND PREPARING M.O.P.

DEMOLITION GENERAL NOTES:

1. EXISTING ITEMS TO REMAIN ARE DENOTED LIGHTLY UNLESS OTHERWISE NOTED. ALL ITEMS SHOWN DASHED & BOLD SHALL BE REMOVED UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL NOT SHUT-OFF OR PUT-OUT OF SERVICE ANY SYSTEMS OR SERVICE WITHOUT FIRST COORDINATING WITH THE OWNER.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND UNDERSTAND THE EXTENT OF THE REMODEL WORK REQUIRED PRIOR TO BID. NO EXTRAS WILL BE ALLOWED FOR WORK REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY THE CONTRACT DOCUMENT.
4. CONTRACTOR SHALL DETERMINE AND COORDINATE THE EXACT EXTENT OF DEMOLITION TO FACILITATE ALL WORK INDICATED BY THE CONTRACT DOCUMENT.
5. PRIOR TO COMMENCEMENT OF ANY DEMOLITION WORK, VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
6. ALL ITEMS IDENTIFIED TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY UNLESS OTHERWISE NOTED. REMOVED ITEMS SHALL BE TURNED OVER TO THE OWNER UNLESS OTHERWISE NOTED AND STORED IN THE AREA DESIGNATED BY THE OWNER. REMOVE FROM SITE AND LEGALLY DISPOSE OF ALL ITEMS THE OWNER CHOOSES NOT TO ACCEPT.
7. WHERE EXISTING PIPING, T.C. TUBING/WIRING ETC. ARE TO BE REMOVED FROM WALLS WHICH ARE REMAINING, THE WALLS SHALL BE REPAIRED TO MATCH ORIGINAL CONDITIONS.
8. WHERE EXISTING PIPING TO BE REMOVED PASSES THROUGH FLOORS, THEY SHALL BE CUT BACK TO WITHIN CONCRETE AND FILLED WITH GROUT TO ACHIEVE A SMOOTH AND EVEN FINISH WITH CONCRETE SURFACE.

EXISTING AHU REBALANCING AND REPAIR NOTES:

1. EXISTING AHU ON THE FOURTH FLOOR HAS SUSTAINED DAMAGE TO SHEET METAL BAFFLES DURING IT'S OPERATION THAT WILL BE REPAIRED AS PART OF THIS PROJECT. CONTRACTOR TO COORDINATE WITH EXISTING AHU MANUFACTURER, INNOVENT, AND LONG BUILDING TECHNOLOGIES.
2. AFTER THE NEW AHU IS IN OPERATION, CONTRACTOR TO RE-BALANCE HYDRONIC SUPPLY TO EXISTING AHU. ACCESS TO BALANCE VALVES FOR EXISTING AHU IS IN THE THIRD FLOOR CEILING. SEE M3.13 FOR LOCATION.

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17215
Date 02/04/2022
WYOMING

No.	Revision Description	Date

No.	Revision Description	Date

CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: AKS

MECHANICAL
LEGENDS & NOTES

M0.01

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AIR HANDLING UNIT SCHEDULE (SEMI-CUSTOM)

COLUMN HEADING NOTES:

NOTE AA: THESE VALUES REFLECT THE EXPECTED OPERATIONAL CONDITIONS AT INITIAL START-UP (FOR INFORMATION ONLY). ACTUAL VALUES SHALL BE DETERMINED BY TESTING & BALANCING.
NOTE AB: COIL FLOW IS ACTUAL FLOW THROUGH COIL. SYSTEM FLOW IS THE FLOW THROUGH THE CONTROL VALVE. THESE MAY BE DIFFERENT FOR PUMPED COILS.
NOTE AC: HW COIL AIR PRESSURE DROP IS MEASURED AT MAX COOLING AIRFLOW

COMMON NOTES (APPLIES TO ALL AIR HANDLERS):

A. REFER TO ELECTRICAL DRAWINGS FOR POWER REQUIREMENTS, INCLUDING COORDINATION OF VOLTAGE, PHASE, SCCR, WIRE SIZES, AND OVERCURRENT PROTECTIVE DEVICES.
REFER TO ELECTRICAL ONE-LINE DIAGRAM FOR MINIMUM FAULT CURRENT RATING THAT EACH UNIT SHALL EXCEED. UNIT NAMEPLATE SHALL INDICATE THE SHORT CIRCUIT CURRENT RATING.
B. UNIT HEIGHT DOES NOT INCLUDE HEIGHT OF CURB.
C. PROVIDE BASE RAIL OR CURB HEIGHT TO ACCOMMODATE CONDENSATE DRAIN P-TRAP.
D. PROVIDE SHAFT GROUNDING RINGS FOR EACH BEARING ON MOTORS POWERED THROUGH VARIABLE FREQUENCY DRIVES.
E. MINIMUM 2-ROW HEATING COIL.
F. MINIMUM 6-ROW COOLING COIL.
G. PROVIDE A GRAVITY BACKDRAFT DAMPER ON EACH FAN IN A MULTI-FAN SECTION.
H. REFER TO SOUND DATA SCHEDULE FOR SOUND INFORMATION.
I. REFER TO MECHANICAL LEGENDS AND NOTES SHEET FOR PROJECT ELEVATION.
J. AHU-2 WILL BE PROVIDED TO THE CONTRACTOR BY THE OWNER FOR INSTALLATION.

DESIG.								SUPPLY FAN SECTION																				RETURN FAN SECTION												UNIT SIZE				
								ULTIMATE OPERATION AT ELEV			OPERATIONAL (NOTE-AA) AT ELEV				CONFIG		WHEEL			MOTORS								ULTIMATE OPERATION AT ELEV			OPERATIONAL (NOTE-AA) AT ELEV				WHEEL			MOTORS										
TAG	NO.	AREA SERVED	MFR	MODEL NO.	OUTDOOR OR INDOOR CASING	OUTSIDE AIR CFM MIN.	OUTSIDE AIR CFM MIN. OPERATIONAL (NOTE-AA)	CFM	ESP (IN WC)	TSP (IN WC)	CFM	ESP (IN WC)	TSP (IN WC)	NO. OF FANS	FANS/ ROW	ROWS HIGH	DIA. (IN)	TYPE	DRIVE (BELT/ DIRECT)	RPM APPROX.	EACH FAN REQ'D BHP	EACH FAN MAX POWER	SUM OF MAX POWER ALL FANS	VOLTAGE	PHASE	NO. OF VFDS	VFD BYPASS (YES/NO)	VIBRATION ISOLATOR TYPE	CFM	ESP (IN WC)	TSP (IN WC)	CFM	ESP (IN WC)	TSP (IN WC)	NO. OF FANS	DIA. (IN)	TYPE	DRIVE (BELT/ DIRECT)	RPM APPROX.	EACH FAN REQ'D BHP	EACH FAN MAX POWER	SUM OF MAX POWER ALL FANS	VOLTAGE	PHASE	NO. OF VFDS	VFD BYPASS (YES/ NO)	VIBRATION ISOLATOR TYPE	L (IN)	W (IN)	H (IN)	OPER WEIGHT (LBS)	REMARKS
AHU	2	THIRD FLOOR	JCI	GVH2L4	OUTDOOR	6,000	6,000	30,000	3.00	5.02	30000	3.00	5.02	2	2	1	27	AF/BI	DIRECT	1960	21.7 hp	25.0 hp	50 hp	460	3	1	No	SPRING	27,000	0.80	1.14	27000	0.80	1.14	1	33	AF/BI	DIRECT	1421	13.4 hp	20.0 hp	20 hp	460	3	1	No	SPRING	478	113	80	14,138	

DESIG.		HEATING COIL SECTION									COOLING COIL SECTION								REFRIGERATION SECTION										AIR FILTER SECTIONS				
		AT ELEV			EAT	LAT	WATER CONDITIONS (NOTE-AB)				AT ELEV				EAT		LAT		REFRIGERANT			COMPRESSORS			AHRI EFF		PRE-FILTER				
							COIL FLOW																					AIR P.D.			
TAG	NO.	NET FACE AREA (SF)	CFM	AIR P.D. (IN WC) NOTE-AC	MBH	°F DB	°F DB	GPM FROM SYSTEM (NOTE-AB)	GPM (NOTE-AB)	EWT °F	PROP GLYCOL %	P.D. (FT HD)	NET FACE AREA (SF)	CFM	AIR P.D. (IN WC)	MBH SENS	MBH TOTAL	°F DB	°F WB	°F DB	°F WB	REFRIG COIL (YES/NO)	TYPE	LOAD PER CIRCUIT (LBS)	NO. OF CIRCUITS	LOW STG VARIABLE SCROLL (YES/NO)	HOT GAS BYPASS (YES/NO)	VOLTAGE	PHASE	EER	IEER	AREA (SF)	MERV-A RATING	CLEAN (IN WC)	CHANGE OUT (IN WC)	REMARKS
AHU	2	37	15,000	0.28	401	25	73	30	60	140	30%	2.20	79	30000	1.17	588	668	80	63	55	54	Yes	R410-A	82.00	2	Yes	No	460	3	10.9	17.2	70	8	0.17	0.50	

PUMP SCHEDULE

APPLIES TO ALL:

A. REFER TO ELECTRICAL DRAWINGS FOR POWER REQUIREMENTS, INCLUDING COORDINATION OF VOLTAGE, PHASE, SCCR, WIRE SIZES, AND OVERCURRENT PROTECTIVE DEVICES.
REFER TO ELECTRICAL ONE-LINE DIAGRAM FOR MINIMUM FAULT CURRENT RATING THAT EACH UNIT SHALL EXCEED. UNIT NAMEPLATE SHALL INDICATE THE SHORT CIRCUIT CURRENT RATING.

REMARKS:

1. PUMPS OPERATING THRU VFDS: UPON SELECTING THE PUMP FOR THE SPECIFIED DUTY POINT, THE SUPPLIER SHALL PROVIDE THE PUMP WITH THE LARGEST IMPELLER SIZE AVAILABLE FOR THE CASING THAT DOES NOT EXCEED THE DUTY POINT MOTOR HP AT THE RIGHT END OF THE CURVE. SUBMITTAL DATA SHALL SHOW ALL IMPELLER CURVES AVAILABLE FOR THE PUMP MODEL. THIS APPLIES TO ALL MANUFACTURERS.
2. VARIABLE FREQUENCY DRIVE (VFD) IS REMOTE-MOUNTED RATHER THAN PUMP MOUNTED WHEN REQUIRED.
3. PROVIDE SHAFT GROUNDING RINGS FOR EACH BEARING ON MOTORS POWERED THROUGH VARIABLE FREQUENCY DRIVES.
4. MOTOR SHALL BE RATED TEFC.

DESIG.									DESIGN GPM					MOTOR								SIZE (INCHES)				
NAME	NO.	MFR	MODEL	PUMP TYPE	SERVICE	MAX PUMP OPER °F	PROP GLYCOL (%)	MAX FLOW	MIN FLOW	PRESSURE (FT HD)	NPSH (FT HD)	EFF. %	POWER	RPM @ 60 HZ	VOLTAGE	PHASE	VFD	VFD BYPASS (YES/NO)	VIBRATION ISOLATOR TYPE	INLET SIZE (IN.)	OUTLET SIZE (IN.)	L	W	H	OPER. WEIGHT LBS.	REMARKS
HWP	1	BELL & GOSSETT	1.5AB	IN-LINE CENTRIFUGAL	HW	250	30%	60	60	25	6.4	60%	1 HP	1800	480	3	No	No	SPRING HANGER	1.5	1.5	14	8	19	86	1, 2, 3, 4

DUCT PRESSURE CLASSIFICATION SCHEDULE

DUCT TYPE	MATERIAL	PRESSURE CLASS	REMARKS
MEDIUM PRESSURE SUPPLY	GALVANIZED STEEL	+4"	BETWEEN SYSTEM FAN & TERMINAL BOX
LOW PRESSURE SUPPLY	GALVANIZED STEEL	+2"	BETWEEN TERMINAL BOX & ROOM
LOW PRESSURE EXHAUST	GALVANIZED STEEL	-2"	BETWEEN TERMINAL BOX & ROOM
HIGH PRESSURE EXHAUST	GALVANIZED STEEL	-10"	RELOCATED DUST EXHAUST DUCT
RETURN / TRANSFER AIR	GALVANIZED STEEL	+/-2"	

EQUIPMENT SOUND DATA SCHEDULE

REMARKS:

DESIG.		INLET NC (Hz)							RADIATED NC (Hz)							DISCHARGE NC (Hz)							
NAME	NO.	63	125	250	500	1K	2K	4K	8K	63	125	250	500	1K	2K	4K	8K	63	125	250	500	1K	2K	4K	8K	REMARKS
AHU	2	97	96	104	91	88	91	83	76	100.5	96.5	100.5	99	95.5	96	92.5	84	94	92	101	97	95	89	85	80	

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CASPER COLLEGE
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1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
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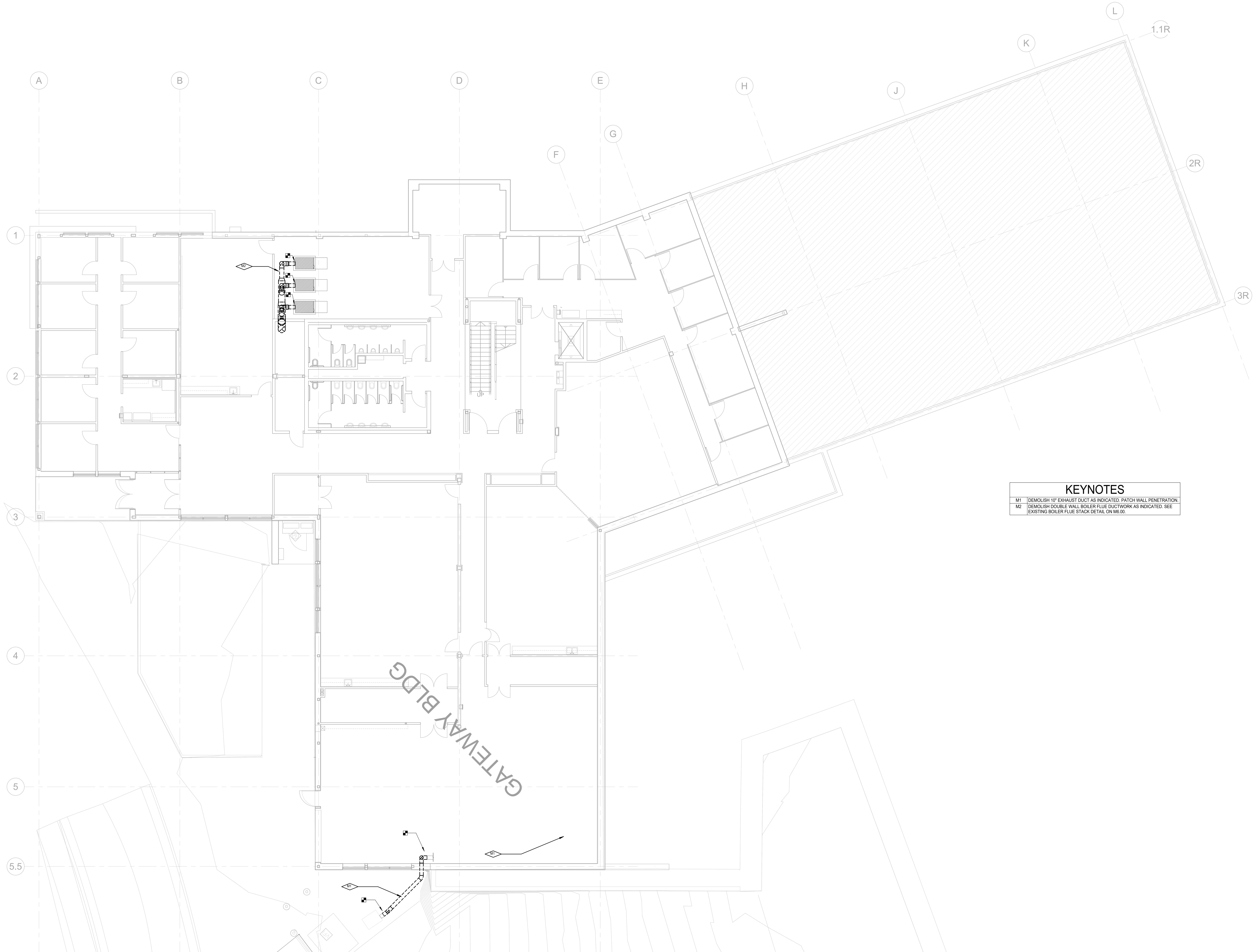
MECHANICAL SCHEDULES

M0.02



KEYNOTES

M1	DEMOLISH 10" EXHAUST DUCT AS INDICATED. PATCH WALL PENETRATION.
M2	DEMOLISH DOUBLE WALL BOILER FLUE DUCTWORK AS INDICATED. SEE EXISTING BOILER FLUE STACK DETAIL ON M6.00.

LEVEL 1 HVAC DEMOLITION PLAN

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

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LEVEL 1 HVAC DEMOLITION PLAN

MD3.11

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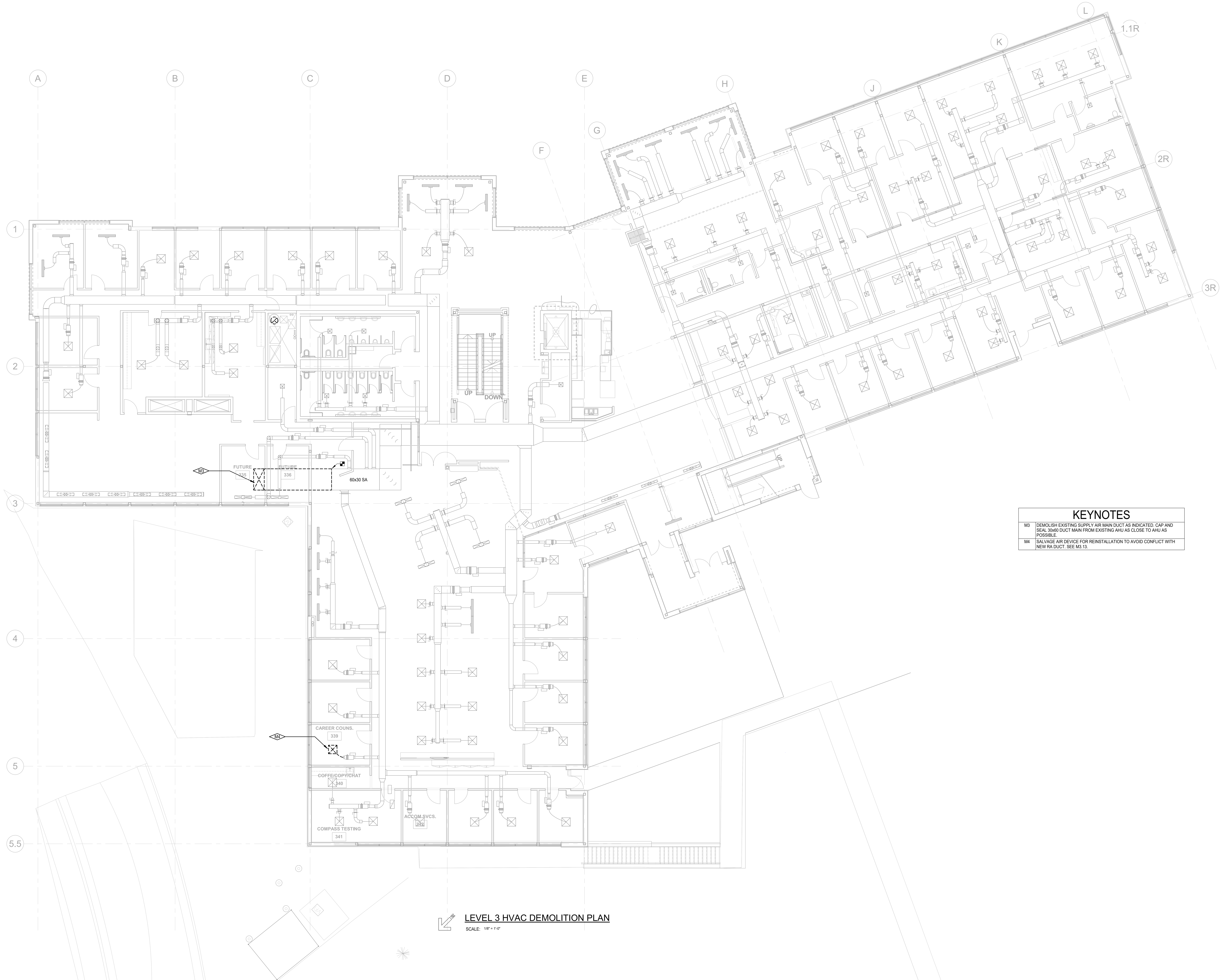

KEYNOTES

M3	DEMOLISH EXISTING SUPPLY AIR MAIN DUCT AS INDICATED. CAP AND SEAL 30x60 DUCT MAIN FROM EXISTING AHU AS CLOSE TO AHU AS POSSIBLE.
M4	SALVAGE AIR DEVICE FOR REINSTALLATION TO AVOID CONFLICT WITH NEW RA DUCT. SEE M3.13.

LEVEL 3 HVAC DEMOLITION PLAN

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

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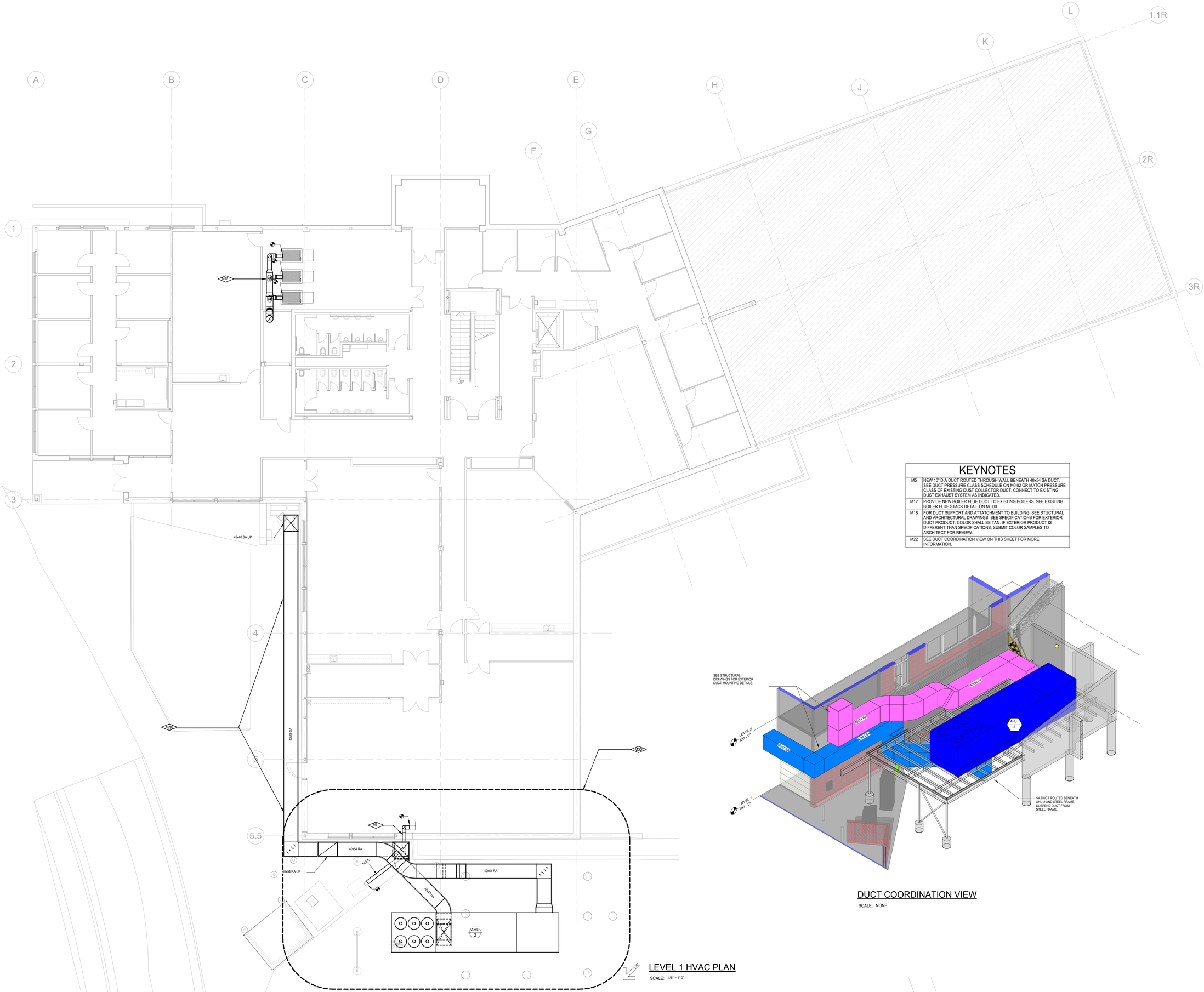
LEVEL 3 HVAC DEMOLITION PLAN

MD3.13



LEVEL 1 HVAC PLAN

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

KEYNOTES

M5	NEW 10" DIA DUCT ROUTED THROUGH WALL BENEATH 40x54 SA DUCT. SEE DUCT PRESSURE CLASS SCHEDULE ON M0.02 OR MATCH PRESSURE CLASS OF EXISTING DUST COLLECTOR DUCT. CONNECT TO EXISTING DUST EXHAUST SYSTEM AS INDICATED.
M17	PROVIDE NEW BOILER FLUE DUCT TO EXISTING BOILERS. SEE EXISTING BOILER FLUE STACK DETAIL ON M6.00
M18	FOR DUCT SUPPORT AND ATTATCHMENT TO BUILDING, SEE STUCTURAL AND ARCHITECTURAL DRAWINGS. SEE SPECIFICATIONS FOR EXTERIOR DUCT PRODUCT. COLOR SHALL BE TAN. IF EXTERIOR PRODUCT IS DIFFERENT THAN SPECIFICATIONS, SUBMIT COLOR SAMPLES TO ARCHITECT FOR REVIEW.
M22	SEE DUCT COORDINATION VIEW ON THIS SHEET FOR MORE INFORMATION.

DUCT COORDINATION VIEW

SCALE: NONE

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LEVEL 1 HVAC PLAN

M3.11

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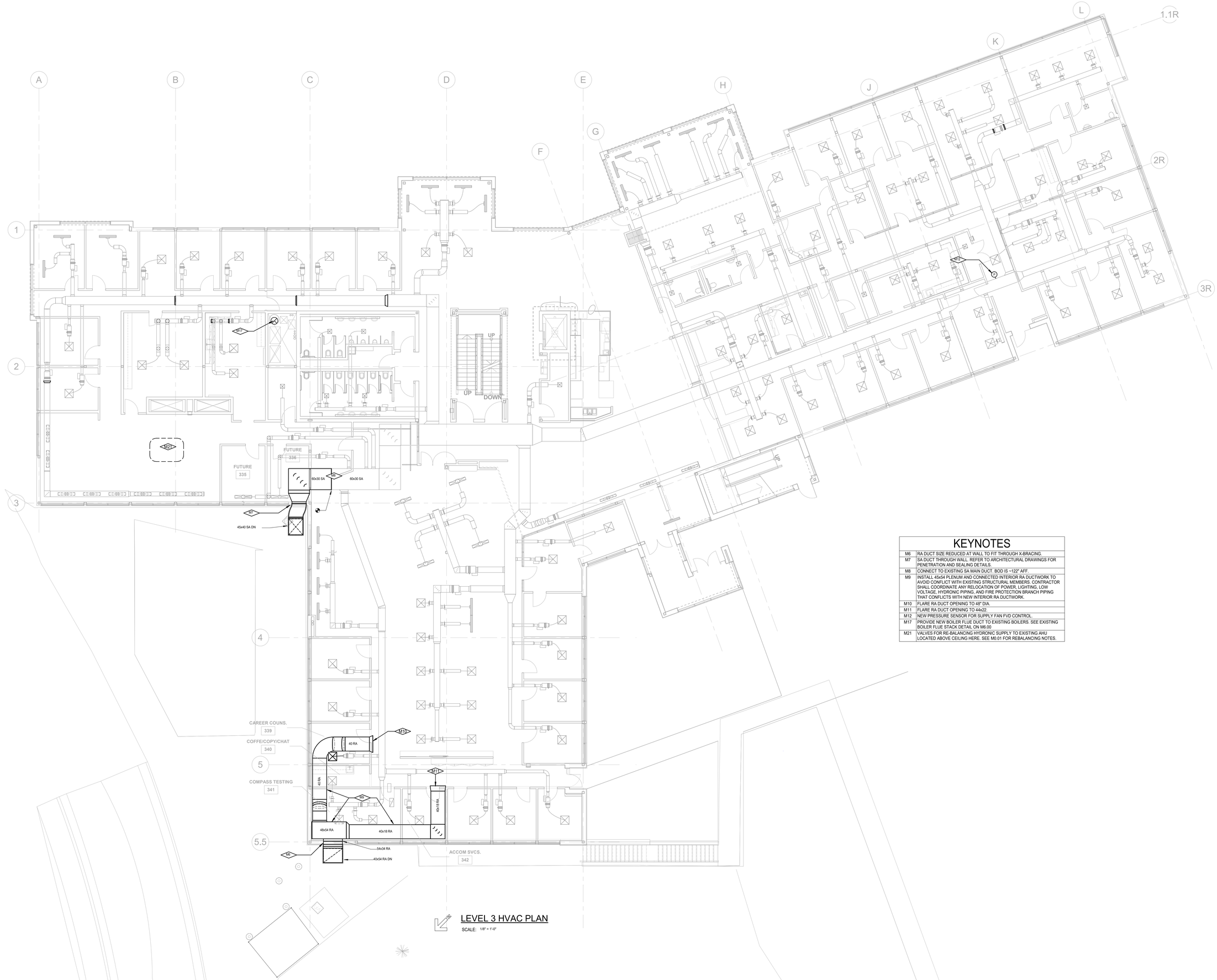

KEYNOTES

M6	RA DUCT SIZE REDUCED AT WALL TO FIT THROUGH X-BRACING.
M7	SA DUCT THROUGH WALL. REFER TO ARCHITECTURAL DRAWINGS FOR PENETRATION AND SEALING DETAILS.
M8	CONNECT TO EXISTING SA MAIN DUCT. BOD IS ~122" AFF.
M9	INSTALL 45x54 PLENUM AND CONNECTED INTERIOR RA DUCTWORK TO AVOID CONFLICT WITH EXISTING STRUCTURAL MEMBERS. CONTRACTOR SHALL COORDINATE ANY RELOCATION OF POWER, LIGHTING, LOW VOLTAGE, HYDRONIC PIPING, AND FIRE PROTECTION BRANCH PIPING THAT CONFLICTS WITH NEW INTERIOR RA DUCTWORK.
M10	FLARE RA DUCT OPENING TO 48" DIA.
M11	FLARE RA DUCT OPENING TO 44x22.
M12	NEW PRESSURE SENSOR FOR SUPPLY FAN FVD CONTROL.
M17	PROVIDE NEW BOILER FLUE DUCT TO EXISTING BOILERS. SEE EXISTING BOILER FLUE STACK DETAIL ON M6.00.
M21	VALVES FOR RE-BALANCING HYDRONIC SUPPLY TO EXISTING AHU LOCATED ABOVE CEILING HERE. SEE M0.01 FOR REBALANCING NOTES.

LEVEL 3 HVAC PLAN

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

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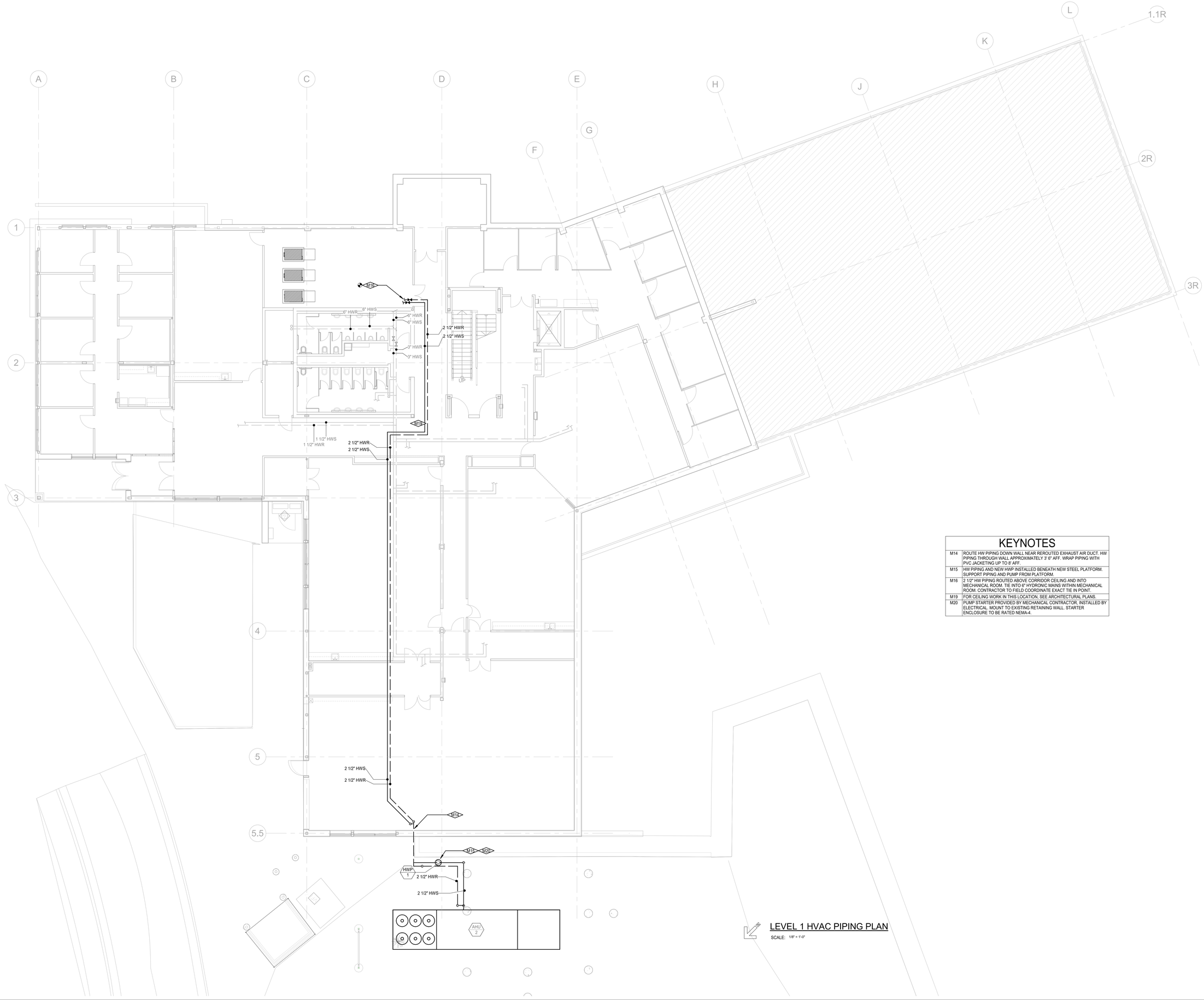
LEVEL 3 HVAC PLAN

M3.13



KEYNOTES

M14	ROUTE HW PIPING DOWN WALL NEAR REROUTED EXHAUST AIR DUCT. HW PIPING THROUGH WALL APPROXIMATELY 3' 6" AFF. WRAP PIPING WITH PVC JACKETING UP TO 8' AFF.
M15	HW PIPING AND NEW HWP INSTALLED BENEATH NEW STEEL PLATFORM. SUPPORT PIPING AND PUMP FROM PLATFORM.
M16	2 1/2" HW PIPING ROUTED ABOVE CORRIDOR CEILING AND INTO MECHANICAL ROOM. TIE INTO 6" HYDRONIC MAINS WITHIN MECHANICAL ROOM. CONTRACTOR TO FIELD COORDINATE EXACT TIE IN POINT.
M19	FOR CEILING WORK IN THIS LOCATION, SEE ARCHITECTURAL PLANS.
M20	PUMP STARTER PROVIDED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL. MOUNT TO EXISTING RETAINING WALL. STARTER ENCLOSURE TO BE RATED NEMA-4.

LEVEL 1 HVAC PIPING PLAN

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

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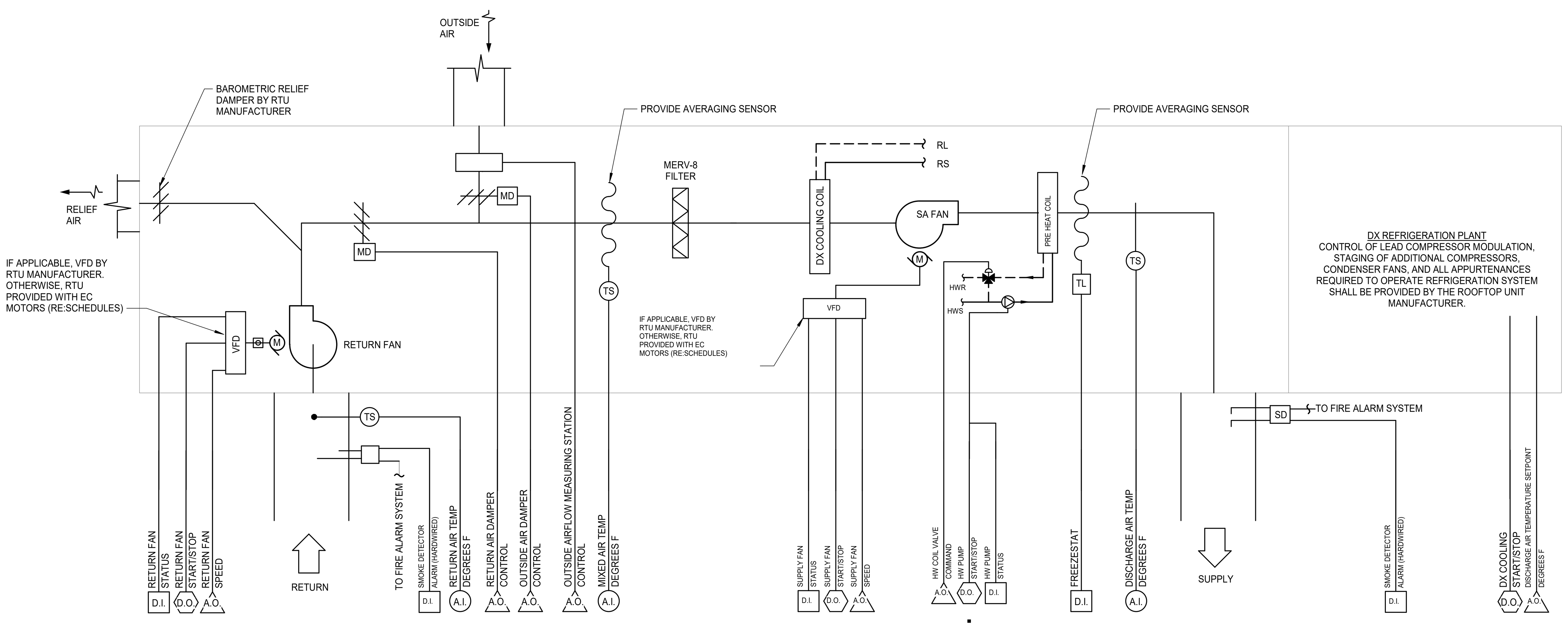
LEVEL 1 HVAC PIPING PLAN

M3.21



AHU CONTROL SCHEMATIC

SCALE: NONE

SEQUENCE OF OPERATIONS:

SUPPLY FAN CONTROL

1. SUPPLY FAN START/STOP
   A. SUPPLY FAN SHALL RUN WHEN SYSTEM IS NOT IN UNOCCUPIED MODE.
   B. IF THERE ARE ANY VAV-REHEAT BOXES ON PERIMETER ZONES, SUPPLY FAN SHALL ALSO RUN WHEN SYSTEM IS IN SETBACK MODE OR WARMUP MODE (I.E., ALL MODES EXCEPT UNOCCUPIED).
   C. TOTALIZE CURRENT AIRFLOW RATE FROM VAV BOXES TO A SOFTWARE POINT. DISPLAY THAT POINT ON THE GRAPHICS AND COMPARE THAT POINT TO THE SUPPLY AIRFLOW MONITORING STATION (IF APPLICABLE).
   D. STATIC PRESSURE CONTROL - THE SUPPLY FAN SPEED SHALL BE MODULATED TO MAINTAIN THE SUPPLY STATIC PRESSURE AT SETPOINT AS MEASURED BY THE DUCT STATIC PRESSURE SENSOR LOCATED IN THE DUCT.
2. STATIC PRESSURE SETPOINT RESET
   A. STATIC PRESSURE SETPOINT: SETPOINT SHALL BE RESET USING TRIM AND RESPOND LOGIC USING THE FOLLOWING PARAMETERS:

VARIABLE	VALUE
DEVICE	SUPPLY FAN
SP0	0.75 IWC
SPMIN	0.25 IWC
SPMAX	1.75 IWC (COORDINATE)
TD	10 MIN
T	2 MIN
I	4
R	ZONE STATIC PRESSURE RESET REQUESTS
SPTRIM	-0.05 INCHES
SPRES	+0.06 INCHES
SPRES-MAX	+0.13 INCHES

   B. TRIM AND RESPOND LOGIC SHALL RESET SETPOINT WITHIN THE RANGE SPMIN TO SPMAX. WHEN THE ASSOCIATED DEVICE IS OFF, THE SETPOINT SHALL BE SP0. THE RESET LOGIC SHALL BE ACTIVE WHILE THE ASSOCIATED DEVICE IS PROVEN ON, STARTING TD AFTER INITIAL DEVICE START COMMAND. WHEN ACTIVE, EVERY TIME STEP T. TRIM THE SETPOINT SPTRIM. IF THERE ARE MORE THAN I REQUESTS, RESPOND BY CHANGING THE SETPOINT BY SPRES * (R-I), (I.E., THE NUMBER OF REQUESTS MINUS THE NUMBER OF IGNORED REQUESTS), BUT NO MORE THAN SPRES-MAX. IN OTHER WORDS, EVERY TIME STEP T:
      1. CHANGE SETPOINT BY SPTRIM
      2. IF R>I, ALSO CHANGE SETPOINT BY (R-I) * SPRES BUT NO LARGER THAN SPRES-MAX.

RETURN FAN CONTROL

1. AIRFLOW TRACKING
   A. RETURN FAN OPERATES WHENEVER ASSOCIATED SUPPLY FAN IS PROVEN ON.
   B. RETURN FAN SPEED SHALL BE CONTROLLED TO MAINTAIN RETURN AIRFLOW EQUAL TO SUPPLY AIRFLOW LESS DIFFERENTIAL DETERMINED DURING BALANCING. THIS DIFFERENTIAL SHOULD BE DETERMINED IN 100% ECONOMIZER MODE AND SHOULD RESULT IN A SLIGHTLY POSITIVE BUILDING IN THAT MODE.
   C. RELIEF/EXHAUST DAMPERS SHALL BE ENABLED WHEN THE ASSOCIATED SUPPLY AND RETURN FANS ARE PROVEN ON AND CLOSED OTHERWISE. EXHAUST DAMPERS SHALL MODULATE AS THE INVERSE OF THE RETURN AIR DAMPER.
      a. THE RELIEF AIR DAMPER WILL BE CONTROLLED TO MAINTAIN A SLIGHTLY POSITIVE BUILDING (+0.05 IWC (ADJ)) AS MEASURED BY THE BAS.
      b. IF THE RETURN FAN SPEED REACHES MINIMUM (~20%) AND THE BUILDING IS STILL BELOW THE STATIC PRESSURE SETPOINT, TURN OFF THE RETURN FAN UNTIL THE BUILDING REACHES +0.07 IWC OF BUILDING PRESSURE.

1. SUPPLY AIR TEMPERATURE CONTROL LOOP IS ENABLED WHEN THE SUPPLY AIR FAN IS PROVEN ON. THE LOOP IS DISABLED AND OUTPUT SET TO DEADBAND (NO HEATING, MINIMUM ECONOMIZER) OTHERWISE.
2. DURING OCCUPIED MODE: SUPPLY AIR TEMPERATURE SETPOINT SHALL BE RESET BASED ON A TRIM AND RESPONSE ALGORITHM.
   A. T-MAX SHALL BE RESET USING TRIM AND RESPOND LOGIC BETWEEN MIN_CLGSAT AND MAX_CLGSAT. THE FOLLOWING PARAMETERS ARE SUGGESTED AS A STARTING PLACE, BUT THEY WILL REQUIRE ADJUSTMENT DURING THE COMMISSIONING/TUNING PHASE:

VARIABLE	VALUE
SP0	SPMAX
SPMIN	55°F
SPMAX	65°F
TD	10 MIN
T	2 MIN
I	2
R	ZONE COOLING SAT REQUESTS
SPTRIM	+0.2°F
SPRES	-0.3°F
SPRES-MAX	-1.0°F

   B. DURING COOL-DOWN MODE: SETPOINT SHALL BE MIN_CLGSAT.
   C. DURING WARMUP AND SETBACK MODES: SETPOINT SHALL BE 95°F.
3. SUPPLY AIR TEMPERATURE SHALL BE CONTROLLED TO SETPOINT USING A CONTROL LOOP WHOSE OUTPUT IS MAPPED TO SEQUENCE THE HEATING COMMAND, COOLING COMMAND, OUTDOOR AIR DAMPER, AND RETURN AIR DAMPER AS APPLICABLE.
   A. ANYTIME THE UNIT IS IN HEATING MODE \OR THE OAT IS LESS THAN 35°F ENABLE THE HOT WATER COIL PUMP.
   B. ECONOMIZER DAMPER MAXIMUM (MAXOA-P) POSITION IS LIMITED FOR ECONOMIZER HIGH LIMIT LOCKOUT. IF THE SUPPLY AIR TEMPERATURE SETPOINT IS LESS THAN THE OUTSIDE AIR TEMPERATURE, THEN THE OUTSIDE AIR DAMPER WILL MODULATE TO THE MINIMUM VENTILATION POSITION.
4. MINIMUM OUTDOOR AIRFLOW SHALL BE CONTROLLED BY MONITORING THE OUTDOOR AIRFLOW VOLUME AND MODULATING THE OUTDOOR AIR DAMPER TO ACHIEVE THE SETPOINT.
   A. THE SETPOINT SHALL BE RESET BETWEEN THE ABSOLUTE MINIMUM AND THE VENTILATION MAXIMUM (SEE MECHANICAL SCHEDULE FOR SETPOINTS).
   B. WHEN ZONES ARE CALLING FOR ADDITIONAL VENTILATION AIR (CO2 CONTROL LOOP >50% AS DEFINED IN THE VAV SEQUENCE OF OPERATION) THEN UTILIZE A TRIM AND RESPONSE RESET ALGORITHM TO ADJUST THE MINIMUM VENTILATION SETPOINT BETWEEN THE ABSOLUTE MINIMUM AND THE VENTILATION MAXIMUM.

VARIABLE	VALUE
SP0	SPMIN
SPMIN	ABSOLUTE MIN OA
SPMAX	VENTILATION MAX OA
TD	10 MIN
T	2 MIN
I	0
R	ZONE VENTILATION REQUESTS
SPTRIM	+100 CFM
SPRES	-200 CFM
SPRES-MAX	-300 CFM

   C. WARMUP MODE: FOR EACH ZONE, THE BAS SHALL CALCULATE THE REQUIRED WARM UP TIME BASED ON THE ZONE'S OCCUPIED HEATING SETPOINT, THE CURRENT ZONE TEMPERATURE, THE OUTDOOR AIR TEMPERATURE, AND A MASS/CAPACITY FACTOR FOR EACH ZONE. ZONES WHERE THE WINDOW SWITCH INDICATES THAT A WINDOW IS OPEN SHALL BE IGNORED. THE MASS FACTOR SHALL BE MANUALLY ADJUSTED OR SELF-TUNED BY THE BAS. IF AUTOMATIC, THE TUNING PROCESS SHALL BE TURNED ON OR OFF BY A SOFTWARE SWITCH, TO ALLOW TUNING TO B STOPPED AFTER THE SYSTEM HAS BEEN TRAINED. WARMUP MODE SHALL START BASED ON THE ZONE WITH THE LONGEST CALCULATED WARM UP TIME REQUIREMENT, BUT NO EARLIER THAN 3 HOURS BEFORE THE START OF THE SCHEDULED OCCUPIED PERIOD AND SHALL END AT THE SCHEDULED OCCUPIED START HOUR.
   D. NIGHT SETBACK MODE: DURING UNOCCUPIED MODE OPERATE THE AIR HANDLING UNIT TO MAINTAIN ZONE TEMPERATURES.
      a. NSB HEATING: IF ANY 5 ZONES (OR ALL ZONES, IF FEWER THAN 5) IN THE ZONE GROUP FALL BELOW THEIR UNOCCUPIED HEATING SETPOINTS OR IF THE AVERAGE ZONE TEMPERATURE OF THE ZONE GROUP FALLS BELOW THE AVERAGE UNOCCUPIED HEATING SETPOINT, THE AHU SHALL ENTER SETBACK MODE UNTIL ALL SPACES IN THE ZONE GROUP ARE 5°F ABOVE THEIR UNOCCUPIED SETPOINTS.
         - THE OA DAMPER SHALL BE CLOSED IN NSB MODE THAT UNIT SHALL OPERATE IN 100% RETURN AIR MODE
         - SUPPLY AIR SETPOINT IS DEFINED IN THE SUPPLY AIR SECTION.
      b. NSB COOLING: IF ANY 5 ZONES (OR ALL ZONES, IF FEWER THAN 5(IN THE ZONE GROUP RISE ABOVE THEIR UNOCCUPIED COOLING SETPOINTS THE AHU SHALL ENTER NIGHT SETBACK MODE UNTIL ALL SPACES INT EH ZONE GROUP ARE 5°F BELOW THEIR UNOCCUPIED SETPOINTS.
         - THE OA DAMPER SHALL BE CLOSED IN NSB MODE THAT UNIT SHALL OPERATE IN 100% RETURN AIR MODE UNLESS OUTSIDE AIR TEMPERATURE IS BELOW THE SUPPLY AIR TEMPERATURE SETPOINT. THEN OUTSIDE AIR SHALL BE UTILIZED FOR COOLING.
   E. RETURN AND RELIEF DAMPER CONTROL
      a. MODULATE THE RELIEF DAMPER EQUAL TO THE OUTSIDE AIR DAMPER AND MODULATE THE RETURN AIR DAMPER EQUAL AND OPPOSITE TO THE OUTSIDE AIR DAMPER SO THAT WHEN THE UNIT IS IN FULL ECONOMIZER MODE (100% OSA) THE RELIEF DAMPER IS ALSO 100% OPEN AND THE RETURN AIR DAMPER IS 100% CLOSED.
      b. VERIFY THIS STRATEGY IS EFFECTIVE FOR BUILDING PRESSURE CONTROL DURING THE TAB AND COMMISSIONING PROCESS. COORDINATE WITH THE DESIGN TEAM TO MODIFY THE STRATEGY IF NECESSARY.

BAS CONTROL MATRIX

NOTES:

1. **IN ADDITION TO THE DDC POINTS LISTED BELOW, THE CONTRACTOR SHALL CAREFULLY REVIEW ALL DRAWINGS, ALL SPECIFICATIONS, AND ALL SEQUENCES OF OPERATION. THE DOCUMENTS ARE ALL INCLUSIVE AND COMPLIMENTARYTO EACH OTHER. THE PROJECT SHALL INCLUDE ANY AND ALL NECESSARY DDC POINTS TO SUPPORT THEREQUIREMENTS OF ALL THE DOCUMENTS.**
2. **ALWAYS REFER TO DRAWINGS FOR QUANTITY.**
3. **PROVIDE OPEN PROTOCOL COMMUNICATION WITH FACTORY SUPPLIED CONTROLLER.**
4. **BAS CONTRACTOR SHALL COORDINATE STATUS LEVEL FOR EACH ALARM POINT WITH THE OWNER TO DETERMINE WHICH ONES REQUIRE IMMEDIATE ATTENTION.**
5. **IF THERE IS A DISCREPANCY BETWEEN ANY DOCUMENTATION, THE WORST CASE SCENARIO SHALL BE USED FOR BIDDING PURPOSES. ADDITIONAL COSTS WILL NOT BE ALLOWED FOR DISCREPANCIES BETWEEN THE SPECIFICATIONS AND DRAWINGS.**

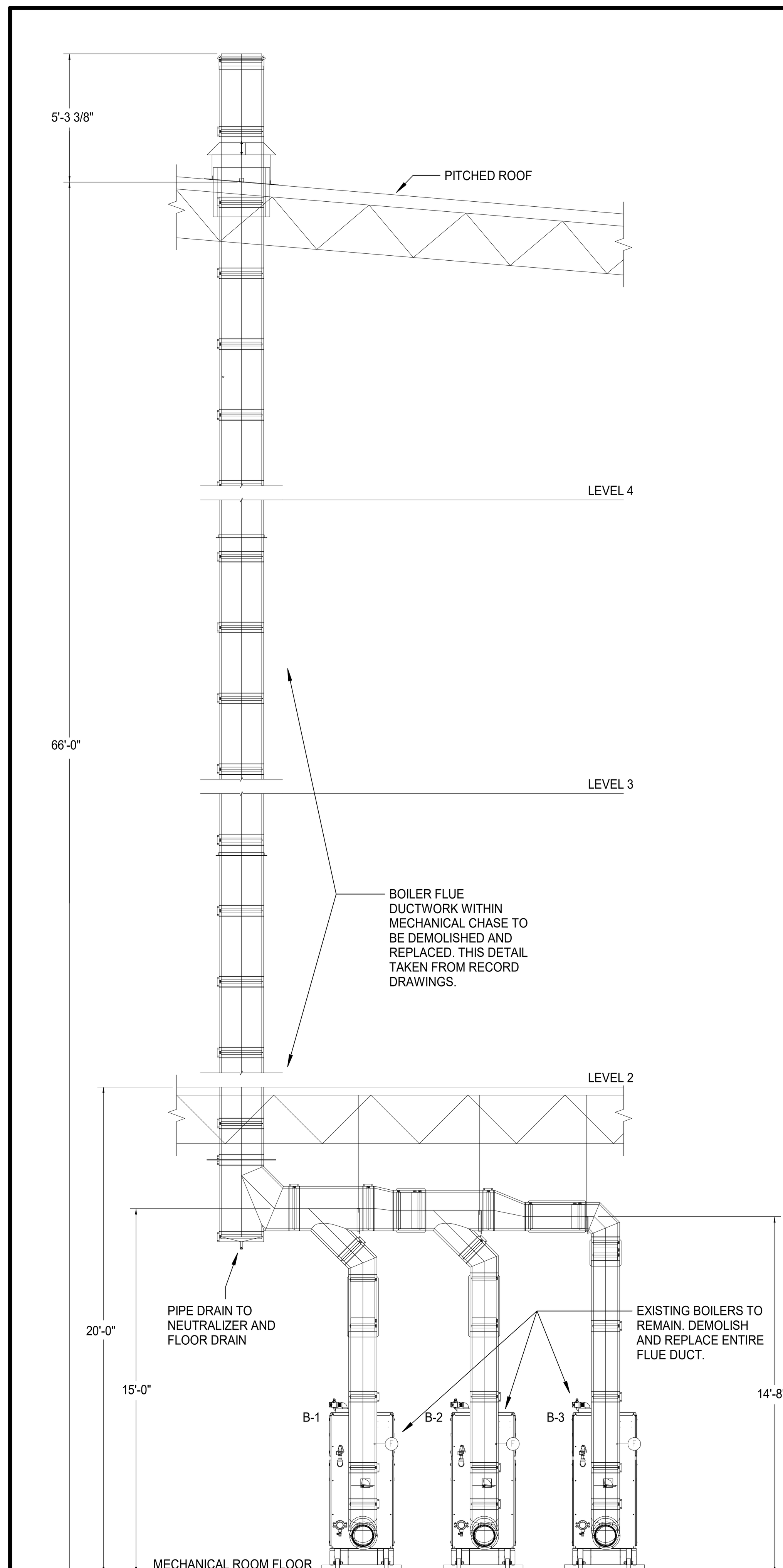
SYSTEM SPECIFIC REMARKS:

1. **THESE POINTS ARE EXTERNAL TO THE AHU. MOST OF THE CONTROL POINTS SHOWN ARE INTENDED TO BE INTEGRAL TO THE AHU ITSELF AND VISIBLE TO THE BACNET SYSTEM.**

		POINT TYPE							
EQUIPMENT, SYSTEM, AND POINT	NO. OF UNITS	DIGITAL INPUT	DIGITAL OUTPUT	ANALOG INPUT	ANALOG OUTPUT	STATUS	ALARM	NETWORK COMMUNICATIONS	REMARKS
RTU - DX/HW/SF/RF - SINGLE ZONE									
CARBON DIOXIDE, PPM				X			X		
DISCHARGE AIR TEMP, DEGREES F				X					
DISCHARGE AIR TEMPERATURE SETPOINT, DEGREES F					X				1
DX COOLING, START/STOP			X						
FREEZESTAT		X							
HW COIL VALVE, COMMAND					X				
HW PUMP, START/STOP			X						1
HW PUMP, STATUS		X				X			
MIXED AIR TEMP, DEGREES F				X					
OUTSIDE AIR DAMPER, CONTROL					X				
OUTSIDE AIRFLOW MEASURING STATION, CONTROL					X				
RETURN AIR DAMPER, CONTROL					X				
RETURN AIR TEMP, DEGREES F				X					
RETURN FAN, SPEED					X				
RETURN FAN, START/STOP			X						
RETURN FAN, STATUS		X				X			
ROOM TEMP, DEGREES F				X			X		
SMOKE DETECTOR, ALARM (HARDWIRED)		X					X		1
SMOKE DETECTOR, ALARM (HARDWIRED)		X					X		1
SUPPLY FAN, SPEED					X				1
SUPPLY FAN, START/STOP			X						1
SUPPLY FAN, STATUS		X				X			1
ZONE OVERRIDE, SWITCH		X							

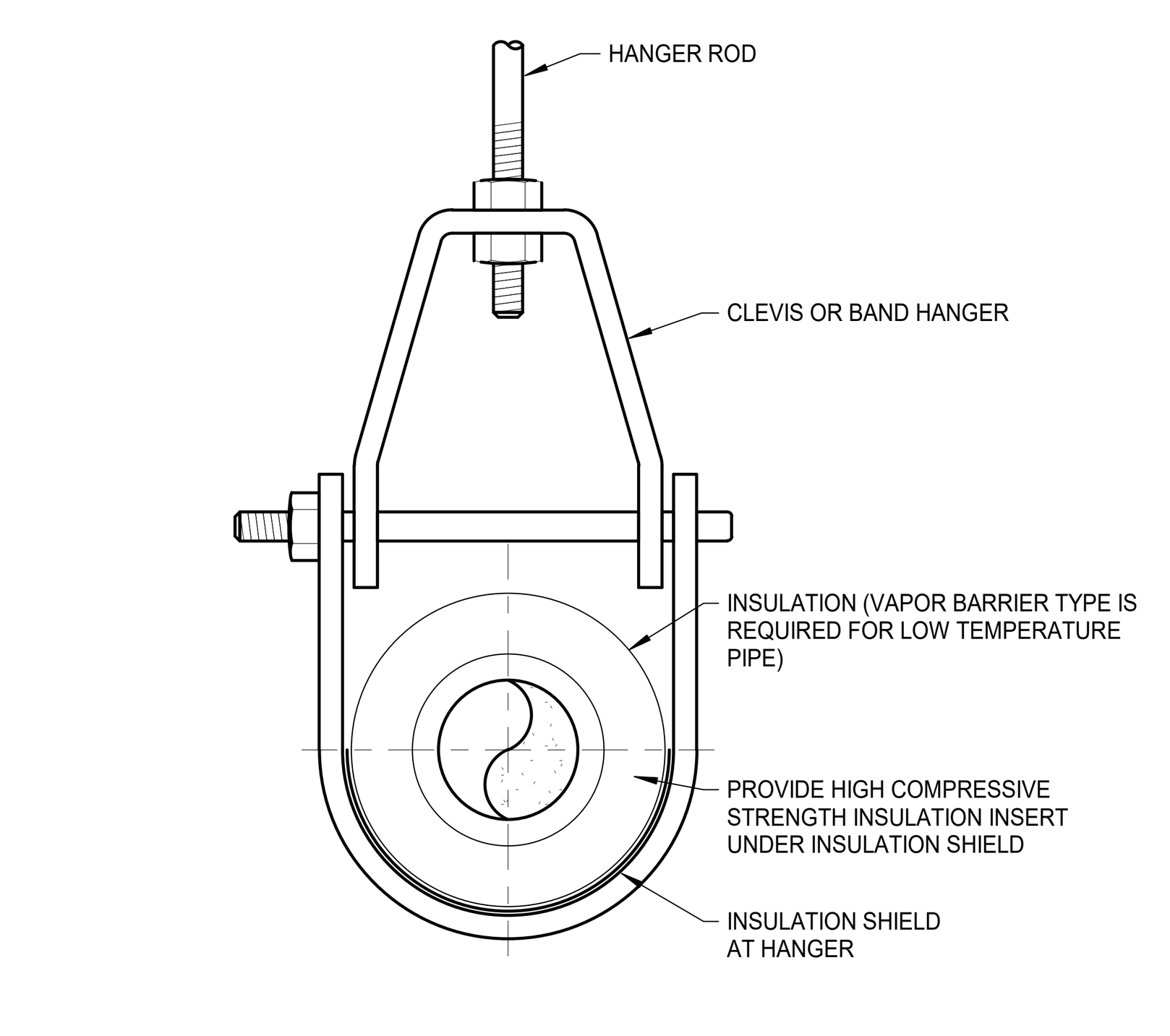
ALARMS AND SAFETIES

1. GENERATE A MAINTENANCE INTERVAL ALARM WHEN FAN HAS OPERATED FOR MORE THAN 1,500 HOURS: LEVEL 4. RESET INTERVAL COUNT WHEN ALARM IS ACKNOWLEDGED.
2. GENERATE A FAN FAILURE ALARM IF THE STATUS BEING DIFFERENT FROM THE COMMAND FOR A PERIOD OF 15 SECONDS.
   A. COMMAND ON, STATUS OFF: LEVEL 2
   B. COMMAND OFF, STATUS ON: LEVEL 4
3. GENERATE A FILTER MAINTENANCE ALARM IF PRESSURE DROP EXCEEDS ALARM LIMIT: LEVEL 4. THE ALARM LIMIT SHALL VARY WITH TOTAL AIRFLOW (IF AVAILABLE; USE FAN SPEED IF TOTAL AIRFLOW IS NOT KNOWN) AS FOLLOWS: $DP_X = DP_{100} * X^{1.4}$, WHERE DP_{100} IS THE HIGH LIMIT PRESSURE DROP AT DESIGN AIRFLOW (DETERMINE LIMIT FROM FILTER MANUFACTURER) AND DP_X IS THE HIGH LIMIT AT THE CURRENT AIRFLOW RATE X (EXPRESSED AS A FRACTION).
4. GENERATE A HIGH BUILDING PRESSURE ALARM IF THE BUILDING STATIC PRESSURE IS MORE THAN 0.10": LEVEL 3.
5. GENERATE A LOW BUILDING PRESSURE ALARM IF THE BUILDING STATIC PRESSURE IS NEGATIVE (LESS THAN 0.0"): LEVEL 4.
6. GENERATE A HEATING FAILURE ALARM IF THE SUPPLY AIR TEMPERATURE IS 15°F BELOW THE SETPOINT: LEVEL 2. IF THE SUPPLY AIR TEMPERATURE IS LESS THAN 40°F, SHUT THE UNIT DOWN UNTIL THE LOW TEMP ALARM IS RESET BY AN OPERATOR.
7. GENERATE A HEATING PUMP FAILURE IF THE HOT WATER COIL PUMP IS COMMANDED ON BUT THE STATUS DOES NOT INDICATE THE PUMP MOTOR IS RUNNING. LEVEL 3 ALARM.
8. GENERATE A COOLING FAILURE ALARM IF THE SUPPLY AIR TEMPERATURE IS 15°F ABOVE THE SETPOINT: LEVEL 2.
9. WHEN THE AIR TEMPERATURE DOWNSTREAM OF THE PREHEAT COIL IS 40°F (ADJ) GENERATE A LEVEL 2 ALARM. AT FREEZE STAT TRIP (35° (ADJ)), THE SUPPLY AND RETURN AIR FANS SHALL SHUT DOWN THROUGH A HARD-WIRE INTERLOCK, THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE 100% RETURN AIR DAMPERS SHOULD FAIL OPEN, AND A LEVEL 1 ALARM SHALL BE SENT TO THE BAS. UPON MANUAL RESET THE UNIT SHALL RETURN TO NORMAL OPERATION.
10. ON DETECTION OF SMOKE FROM THE UNIT MOUNTED SMOKE DETECTORS OR ON SIGNAL FROM THE FIRE ALARM SYSTEM, THE SUPPLY AND RETURN FANS SHALL CYCLE OFF THROUGH A HARD WIRE INTERLOCK AND THE OUTSIDE AIR, RETURN AIR AND EXHAUST AIR DAMPERS SHALL CLOSE, ALL ASSOCIATED FIRE/SMOKE DAMPERS SHALL CLOSE AND AN ALARM SHALL BE SENT TO THE BAS. UPON MANUAL RESET AT THE FIRE ALARM PANEL, THE UNIT SHALL RETURN TO NORMAL OPERATION.
11. SEVERAL DAMPERS ARE EQUIPPED WITH ANALOG POSITION FEEDBACK. TRACK THE POSITION OF THESE DAMPERS AND CREATE A UNIQUE ALARM FOR EACH DAMPER IF THE FEEDBACK AND THE COMMAND DIFFER BY MORE THAN 10%. LEVEL 3 ALARM.
12. ON DETECTION OF HIGH OR LOW STATIC PRESSURE IN THE SUPPLY AIR DUCTWORK, THE SUPPLY FANS SHALL CYCLE OFF THROUGH A HARD WIRE INTERLOCK, THE OUTSIDE AIR DAMPERS SHALL CLOSE, AND AN ALARM SHALL BE SENT TO BAS. UPON MANUAL RESET THE UNIT SHALL RETURN TO NORMAL OPERATION.



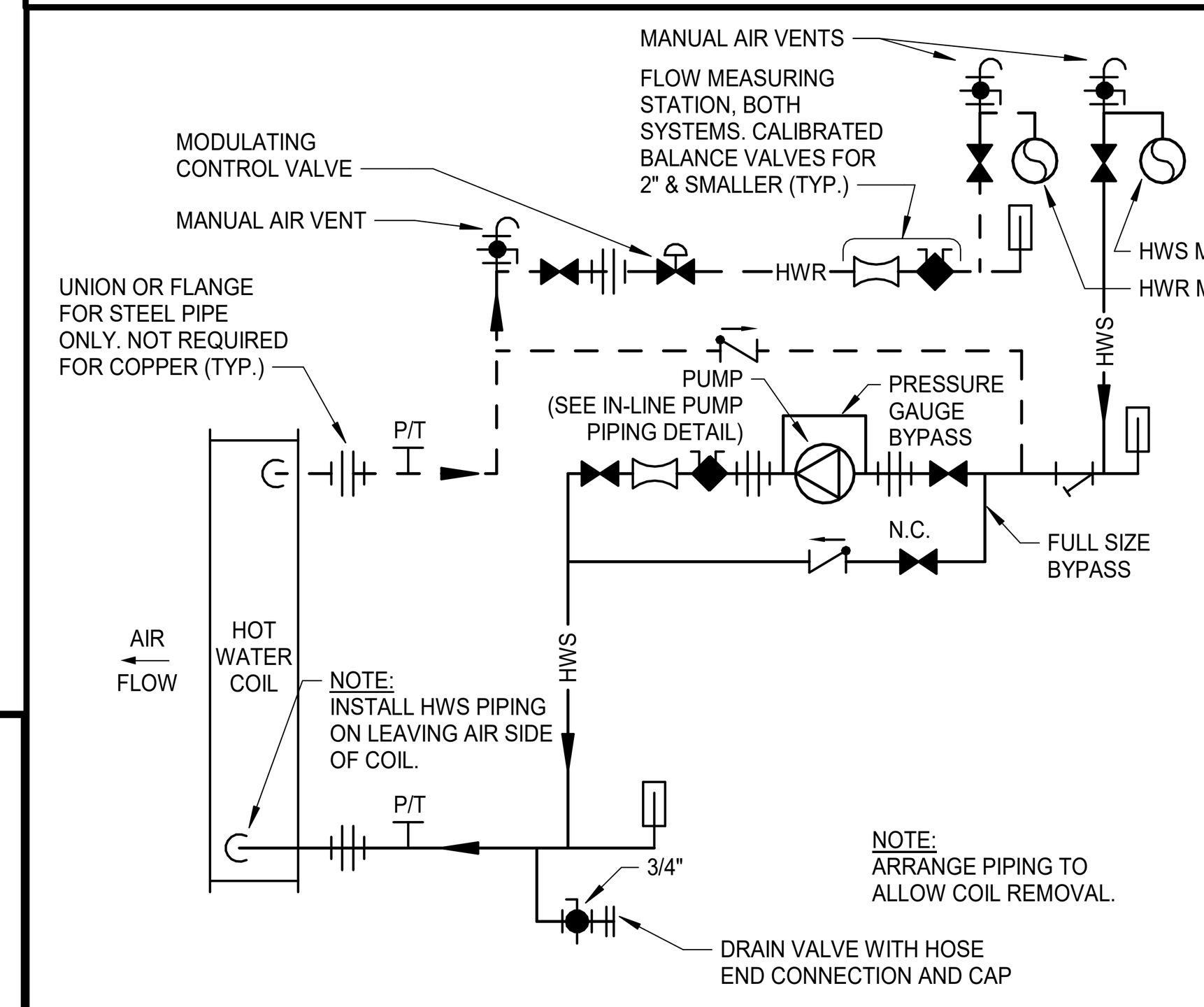
EXISTING BOILER FLUE STACK

SCALE: NONE



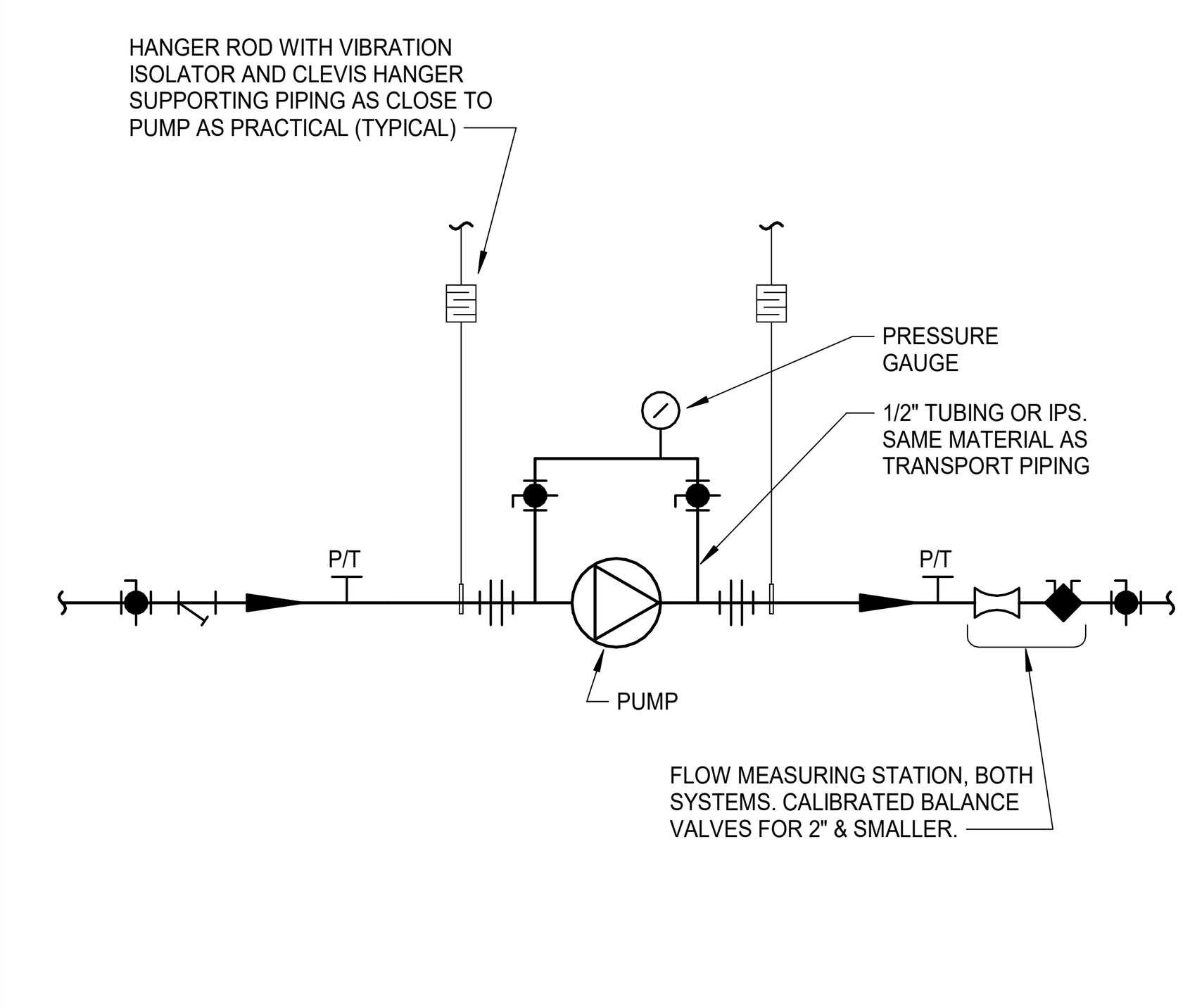
HANGER DETAIL

SCALE: NONE 0529-05



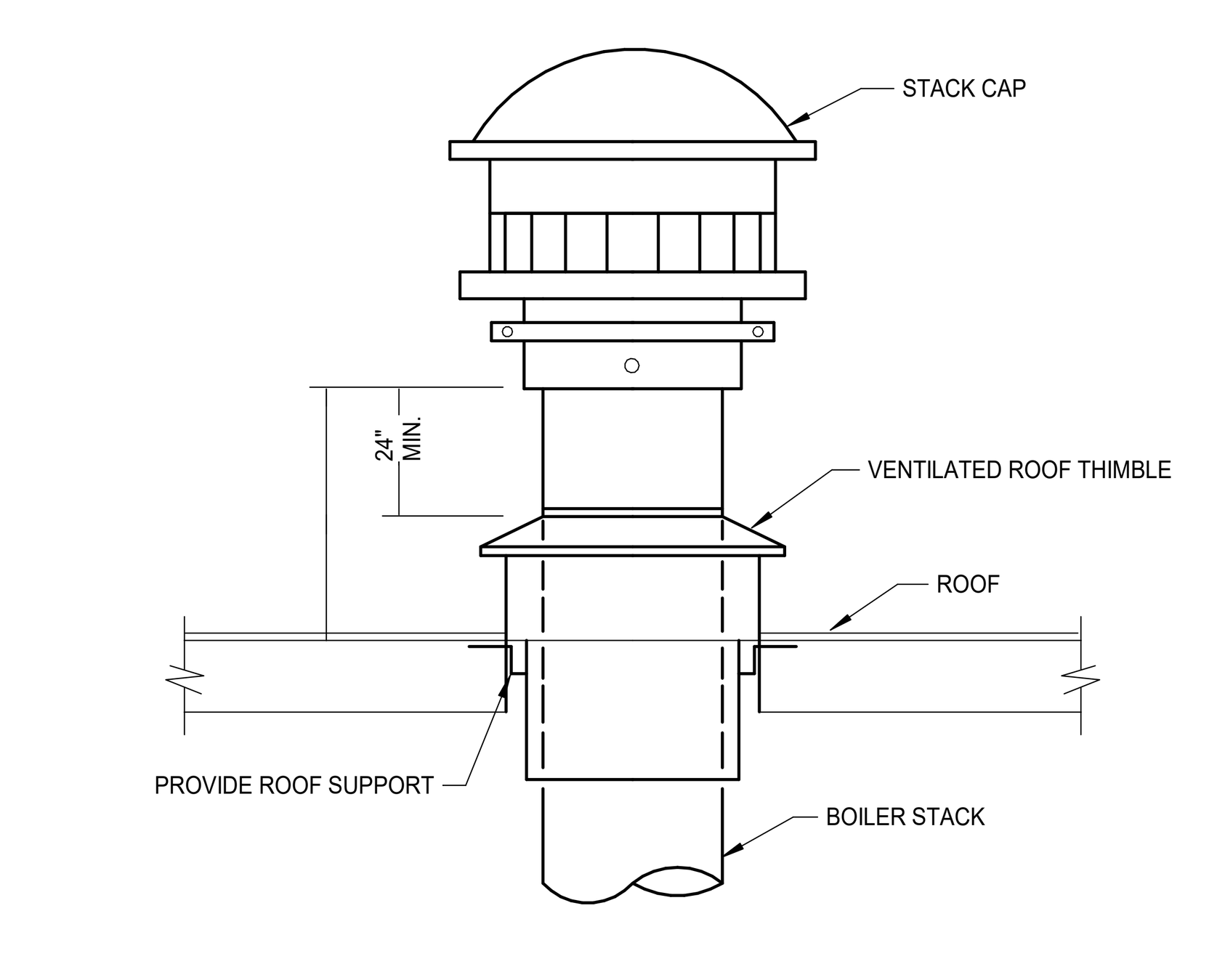
PUMPED HOT WATER COIL PIPING DETAIL (2-WAY VALVE, SINGLE COIL)

SCALE: NONE 8000-15 8.20.20



IN-LINE PUMP PIPING DETAIL

SCALE: NONE 2123-07 9.12.19



BOILER FLUE DETAIL

SCALE: NONE 5100-01

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DESIGN
ARCHITECTURE/PLANNING
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Professional Engineer SEAN CONVERY 17215 Date 02/04/2022 WYOMING

No.	Revision Description	Date

No.	Revision Description	Date

CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: AKS

MECHANICAL DETAILS

M6.00

P:\Wyoming\2021\2021-398 Casper College Gateway HVAC Renovation\Cad

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POWER LEGEND
(Not all symbols listed below are used on these drawings)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SINGLE RECEPTACLE		ELECTRICAL PANELBOARD, CONTROL PANEL, OR OTHER CABINET AS NOTED
	DUPLEX RECEPTACLE	PM	PLUG MOLD (MULTI-OUTLET ASSEMBLY)
	DOUBLE DUPLEX RECEPTACLE	WM	WIREMOLD (SURFACE RACEWAY)
	DUPLEX RECEPTACLE, HALF SWITCHED		CONDUIT CONCEALED
CLG	DUPLEX RECEPTACLE, CEILING MOUNTED	UG	CONDUIT, UNDERGROUND OR CONCEALED IN FLOOR AS ALLOWED PER SPECIFICATIONS
	DUPLEX RECEPTACLE, FLOOR MOUNTED		CONDUIT TURNING DOWN
	DOUBLE DUPLEX RECEPTACLE, FLOOR MOUNTED		CONDUIT TURNING UP
	SPECIAL RECEPTACLE		CONDUIT CAPPED
	SPECIAL RECEPTACLE, FLOOR MOUNTED		GROUND BAR
J	JUNCTION BOX, FLOOR OR CEILING MOUNTED		MAIN SWITCHBOARD/DISTRIBUTION CENTER
J	JUNCTION BOX, WALL MOUNTED	T	TRANSFORMER
M	MOTOR	CT	CURRENT TRANSFORMER
	DISCONNECT SWITCH (NON-FUSED)	T	THERMOSTAT
	DISCONNECT SWITCH (FUSED)	GANN	GENERATOR ANNUNCIATOR PANEL
	VARIABLE SPEED DRIVE WITH DISCONNECT	A-1	SHADING INDICATES EMERGENCY SYSTEM TEXT INDICATES PANEL AND CIRCUIT DESIGNATION
	ENCLOSED CIRCUIT BREAKER	M	UTILITY METER
S	TOGGLE SWITCH		

LIGHTING LEGEND
(Not all symbols listed below are used on these drawings)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
a A	SHADING INDICATES EM SYSTEM, LOWER CASE SUBSCRIPT INDICATES SWITCHING, UPPER CASE SUBSCRIPT INDICATES LUMINAIRE TYPE (TYP)		PENDANT LUMINAIRE - SINGLE SUSPENSION
	TROFFER - RECESSED		PENDANT LUMINAIRE - MULTIPLE SUSPENSION
	SURFACE LUMINAIRE		WALL MOUNTED LUMINAIRE
	LINEAR LUMINAIRE - RECESSED		IN-WALL LUMINAIRE
A B	FIELD MEASURED LUMINAIRE LENGTH AND SHAPE DENOTED BY LINEWORK SUBSCRIPT IN RECTANGLE INDICATES LUMINAIRE TYPE		POLE LUMINAIRE - ARM MOUNTED
	DOWNLIGHT - RECESSED		POLE LUMINAIRE - POST TOP
	DOWNLIGHT - SURFACE		BOLLARD
	EXIT SIGN - CEILING MOUNTED		TRACK HEAD AND TRACK
	EXIT SIGN - WALL MOUNTED (FLUSH TO WALL)		EXTERIOR STAKE MOUNTED
	EXIT SIGN - WALL MOUNTED (PROJECTS FROM WALL)		EMERGENCY LIGHTING UNIT - WALL MOUNTED
	INDICATES EXIT SIGN FACES - SINGLE OR DOUBLE		EMERGENCY LIGHTING UNIT - CEILING MOUNTED
	INDICATES EXIT SIGN CHEVRONS - LEFT/RIGHT OR BOTH	>	INDICATES DIRECTIONAL AIMING

CONTROLS LEGEND
(Not all symbols listed below are used on these drawings)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
S_a	SINGLE POLE SWITCH (SUBSCRIPT DENOTES SWITCHING)	S_{VS}	VARIABLE SPEED/SPEED CONTROLLER SWITCH
S_2	TWO POLE SWITCH	S_{EP}	EXPLOSION PROOF SWITCH
S_3	THREE-WAY SWITCH	S_{TO}	THERMAL OVERLOAD SWITCH
S_4	FOUR-WAY SWITCH	S_{MC}	MOMENTARY CONTACT SWITCH
S_K	KEY OPERATED SWITCH	S	COMBINATION SWITCH AND DUPLEX RECEPTACLE
S_M	MANUAL SWITCH, HORSEPOWER RATE	P	PHOTOCELL
S_D	DIMMER SWITCH		PUSH BUTTON
S_{PI}	SWITCH WITH PILOT LIGHT (PILOT LIGHT IS 'ON' WHEN SWITCH IS 'ON')	TC	TIME CLOCK
S_P	SWITCH WITH PILOT LIGHT LOCATOR (CONTINUOUSLY LIGHTED HANDLE)		OCCUPANCY SENSOR - WALL MOUNTED IR=INFRARED, US=ULTRASONIC, DT=DUAL TECHNOLOGY
S_{LV}	LOW VOLTAGE SWITCH		

FIRE ALARM SYSTEM LEGEND
(Not all symbols listed below are used on these drawings)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL	M	MANUAL PULL STATION
FAPS	FIRE ALARM (NAC) POWER SUPPLY	AIM	ADDRESSABLE INPUT MODULE
FSA	FIRE ALARM SYSTEM ANNUNCIATOR PANEL (GRAPHIC/LED)	AOM	ADDRESSABLE OUTPUT MODULE
FAA	REMOTE ANNUNCIATOR PANEL	H15cd	AUDIOVISUAL DEVICE (H##cd=HORN/STROBE COMBINATION S=SPEAKER/STROBE COMBINATION, C=CHIME/STROBE COMBINATION)
GZM	GRAPHIC ZONE MAP	H	AUDIBLE DEVICE (H=HORN, S=SPEAKER, C=CHIME)
RACP	RESCUE ASSISTANCE SYSTEM HEAD END UNIT	15cd	FIRE ALARM STROBE (cd= CANDELA RATING 15, 30, 75, 110)
FSC	FIRE FIGHTER SMOKE CONTROL PANEL	J	EMERGENCY TELEPHONE STATION (J=JACK, H=HANDSET)
FAD	FIRE ALARM DIRECTORY ANNUNCIATOR	RA	RESCUE ASSISTANCE TELEPHONE STATION)
P	SMOKE DETECTOR (P=PHOTOELECTRIC, SB=WITH SOUNDER BASE, BR=BEAM RECEIVER, BT=BEAM TRANSMITTER)		MAGNETIC DOOR HOLD
F	THERMAL DETECTOR F=FIXED TEMPERATURE, R=FIXED TEMPERATURE & RATE OF RISE (TEMP. RATING)		TAMPER SWITCH
UV	FLAME DETECTOR (UV=ULTRAVIOLET, IR=INFRARED)		FLOW DETECTOR SWITCH
	DUCT SMOKE DETECTOR S=SUPPLY, R=RETURN		PRESSURE SWITCH
RTS	DUCT DETECTOR REMOTE INDICATOR ALARM AND TEST	FSD	FIRE/SMOKE DAMPER
	REMOTE INDICATOR LIGHT	CO	CARBON MONOXIDE ALARM/DETECTOR
		CO	CARBON MONOXIDE ALARM/DETECTOR, WALL MOUNTED

REFERENCE SYMBOLS LEGEND
(Not all symbols listed below are used on these drawings)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
X	KEY NOTE REFERENCE	1	KITCHEN/OWNER/MEDICAL EQUIPMENT REFERENCE
LPA-#	TYPICAL CIRCUIT NUMBER	E	EXISTING TO REMAIN
TG#	TYPICAL LUMINAIRE TYPE	R	EXISTING TO BE REMOVED
X X	TYPICAL ROOM REFERENCE (TOP = RM #, BOTTOM = FLR)	RL	EXISTING TO BE RELOCATED
UH	MECHANICAL EQUIPMENT REFERENCE	ER	EXISTING TO REMAIN - REPLACE DEVICE
LC1	LIGHTING CONTROL / EQUIPMENT REFERENCE	RR	EXISTING TO BE REMOVED AND REPLACED

ABBREVIATIONS LEGEND
(Not all symbols listed below are used on these drawings)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A	AMPERES	MCP	MOTOR CIRCUIT PROTECTOR
AC	ABOVE COUNTER, MOUNT HORIZONTALLY TO CENTERLINE OF DEVICE, +6" ABOVE COUNTER OR BACK SPLASH	MEC	SEE MECHANICAL EQUIPMENT SCHEDULE
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AFG	ABOVE FINISHED GRADE	MLO	MAIN LUGS ONLY
ANN	ANNUNCIATOR	MTS	MANUAL TRANSFER SWITCH
ARF	ABOVE RAISED FLOOR	NC	NORMALLY CLOSED
ASSD	AIR SAMPLING SMOKE DETECTION	NIC	NOT IN CONTRACT
ATS	AUTOMATIC TRANSFER SWITCH	NL	NIGHT LIGHT
BFG	BELOW FINISHED GRADE	NO	NORMALLY OPEN
C	CONDUIT	NTS	NOT TO SCALE
CATV	CABLE TELEVISION	OC	ON CENTER
CB	CIRCUIT BREAKER	OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
CCTV	CLOSED CIRCUIT TELEVISION	OFOI	OWNER FURNISHED, OWNER INSTALLED
(E)	EXISTING	OSWF	ON SITE WORK FORCE
EM	EMERGENCY	PB	PULL BOX
EMDC	EMERGENCY MAIN DISTRIBUTION CENTER	SB	STAND-BY
EP	EXPLOSION PROOF	SDC	SUB-DISTRIBUTION CENTER
EPO	EMERGENCY POWER OFF	TP	TAMPER PROOF
EVO	EMERGENCY VENTILATION ON/OFF	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
EWC	ELECTRIC WATER COOLER	TYP	TYPICAL
FA	FIRE ALARM	UF	UNDER FLOOR
G	GROUND	UG	UNDER GROUND
GCP	GENERATOR CONTROL PANEL	UON	UNLESS OTHERWISE NOTED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UPS	UNINTERRUPTIBLE POWER SUPPLY
HOA	HAND OFF AUTOMATIC	V	VOLTS
IG	ISOLATED GROUND	VFD	VARIABLE FREQUENCY DRIVE
MAX	MAXIMUM	W/	WITH
MCB	MAIN CIRCUIT BREAKER	W/O	WITHOUT
MCC	MOTOR CONTROL CENTER	WP	WEATHER PROOF
MDC	MAIN DISTRIBUTION CENTER	XFMR	TRANSFORMER

ONE-LINE DIAGRAM LEGEND
(Not all symbols listed below are used on these drawings)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	DISCONNECT SWITCH	A	PANELBOARD "A"
	DISCONNECT SWITCH, FUSED	PM	EM=ENERGY METER, PM=POWER METER, CM=CIRCUIT MONITOR
	CIRCUIT BREAKER	VS	VOLTMETER TEST SWITCH
	FUSE	AS	AMMETER TEST SWITCH
	GROUND	V	VOLTMETER
T ##	STEP DOWN TRANSFORMER, ## INDICATES KVA	A	AMMETER
TK ##	K-RATED STEP DOWN TRANSFORMER ## INDICATES KVA, # INDICATES K RATING	XXX	SEE FEEDER/MEC/TRANSFORMER SCHEDULES FOR FEEDER SIZE
	CURRENT TRANSFORMER	G	ENGINE GENERATOR
	POTENTIAL TRANSFORMER		CONTACTOR/RELAY/CAPACITOR (AS NOTED)
OR	SERVICE ENTRANCE TRANSFORMER		TRANSFER SWITCH - ATS=AUTOMATIC, MTS=MANUAL
M	METER	GFI	GROUND FAULT INTERRUPTER
	EQUIPMENT ENCLOSURE	SPD	SURGE PROTECTIVE DEVICE
	SERVICE WEATHERHEAD	ST	SHUNT TRIP
ISCA	SHORT CIRCUIT CURRENT AVAILABLE		TERMINATIONS LB=LOAD BREAK, NLB=NO LOAD BREAK
K a	KIRK KEY INTERLOCK, SUBSCRIPT INDICATES INTERLOCKED GROUP		DRAW-OUT DEVICE
E a	ELECTRICAL INTERLOCK, SUBSCRIPT INDICATES INTERLOCKED GROUP		PLUG-IN DEVICE
M	MECHANICAL INTERLOCK	EO	ELECTRICALLY OPERATED

LIGHTING PLAN NOTES:

1. COORDINATE LUMINAIRE LOCATIONS WITH MECHANICAL PIPING, DUCTWORK, ETC., TO AVOID CONFLICTS. SEE SPECIFICATIONS FOR COORDINATION REQUIREMENTS.
2. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH 120V AND 277V CIRCUIT.

POWER PLAN NOTES:

1. MAKE ALL FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT REQUIRING ELECTRICAL CONNECTION. THIS SHALL INCLUDE BUT NOT BE LIMITED TO ALL MECHANICAL AND OTHER EQUIPMENT INCLUDED IN THIS PROJECT.
2. COORDINATE EXACT REQUIREMENTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3. PROVIDE FUSES SIZED PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
4. DISCONNECT SWITCH LOCATIONS ARE SHOWN DIAGRAMMATICALLY AND SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO SUIT EQUIPMENT AND SPACE. DISCONNECT SWITCHES SHALL BE WITHIN SIGHT OF THE EQUIPMENT THEY SERVE AND MOUNTED AT 6'-3", MAXIMUM, TO TOP OF CABINET. MAINTAIN NEC WORK SPACE REQUIREMENTS.
5. ALL OUTDOOR AND ROOFTOP RECEPTACLES SHALL BE OUTDOOR RATED AND SHALL HAVE A WEATHERPROOF IN USE COVER.

FIRE ALARM PLAN NOTES:

1. FIRE ALARM EQUIPMENT AND DEVICES SHOWN ON THESE DRAWING INDICATE THE INTENT, PERFORMANCE, AND SCOPE OF THE SYSTEM. THE FULL DESIGN OF THE FIRE ALARM SYSTEM SHALL BE DONE BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE A SHOP DRAWING SUBMITTAL FOR APPROVAL BY THE LOCAL FIRE DEPARTMENT AND/OR THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL ARRANGE TO HAVE THE FIRE ALARM SYSTEM SUBMITTAL SEALED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER WHO WILL ASSUME THE DUTY OF ENGINEER OF RECORD FOR THE FIRE ALARM SYSTEM DESIGN. THE ELECTRICAL ENGINEER OF RECORD AT CATOR, RUMA & ASSOCIATES, CO. WILL NOT BE RESPONSIBLE FOR SEALING AND SIGNING THE FIRE ALARM SYSTEM SHOP DRAWING SUBMITTAL.
2. LOCATE SMOKE DETECTORS PER NFPA 72 AND MANUFACTURERS REQUIREMENTS. THE LOCATIONS OF SMOKE DETECTORS ON THE DRAWINGS ARE DIAGRAMMATIC ONLY.
3. NEW FIRE ALARM DEVICES SHALL MATCH EXISTING, UNLESS NOTED OTHERWISE. PROVIDE RE-PROGRAMMING OF SYSTEM AS REQUIRED TO ACCOMMODATE NEW DEVICES. REVISE EXISTING ANNUNCIATOR(S) AND GRAPHIC ZONE MAP(S) TO REFLECT PROJECT FIRE ALARM MODIFICATIONS. UPDATE GRAPHIC ZONE MAPS AS REQUIRED. SUBMIT TO ENGINEER AND BUILDING/FIRE DEPARTMENTS FOR REVIEW PRIOR TO INSTALLATION.

GENERAL NOTES:

1. FOR REMODELING, WORK INCLUDED IS DENOTED IN BOLD. EXISTING CONDITIONS TO REMAIN ARE DENOTED LIGHTLY.
2. PROTECT STRUCTURE AND OWNER EQUIPMENT FROM DAMAGE. IMMEDIATELY REPLACE OR REPAIR, TO ORIGINAL CONDITION, DAMAGE CAUSED BY THE CONTRACTOR WHETHER EQUIPMENT APPEARS TO BE CURRENTLY IN USE OR NOT, UNLESS WRITTEN AUTHORIZATION FROM THE OWNER INDICATED OTHERWISE. PREPARE LISTING OF ALL EXISTING DAMAGED ITEMS AND SUBMIT TO OWNER PRIOR TO BEGINNING WORK.
3. INSTALL CONDUIT CONCEALED IN FINISHED AREAS UNLESS OTHERWISE NOTED. PAINT EXPOSED CONDUIT TO MATCH EXISTING FINISHES WITHIN THE SURROUNDING AREA.
4. FIRE SEAL ALL FIRE RATED WALL AND FLOOR PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATED WALLS.
5. COORDINATE EXACT REQUIREMENTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN AND ORDERING MATERIALS OR EQUIPMENT.
6. A DETAILED WRITTEN METHOD OF PROCEDURE IS REQUIRED WHEN A CONSTRUCTION ACTIVITY OR AN OUTAGE AFFECTS THE SAFETY OF OCCUPANTS, TELEPHONE/DATA/FIRE ALARM EQUIPMENT OR COMPONENTS OF ANY SYSTEM WHICH SUPPORTS THIS EQUIPMENT OR ESSENTIALLY AFFECTS THE BUILDING MANAGEMENT, OPERATIONS OR SECURITY. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
7. EXISTING INFORMATION SHOWN ON THE DRAWINGS HAS BEEN TAKEN FROM OWNER FURNISHED DRAWINGS AND/OR LIMITED FIELD OBSERVATIONS. CATOR, RUMA & ASSOCIATES IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY INFORMATION OR THE ADEQUACY, SAFETY AND CONFORMANCE TO CURRENT PREVAILING CODES OF ANY WORK SHOWN AS EXISTING ON THESE DRAWINGS.
8. FIELD LOCATE EXISTING UNDERGROUND PUBLIC AND OWNER UTILITIES OF ALL TRADES AND BUILDING GROUNDING PRIOR TO ANY EXCAVATION. REPLACE OR REPAIR DAMAGED UTILITIES AND GROUNDING SYSTEMS TO ORIGINAL CONDITION.
9. PROVIDE SEPARATE INSULATED GROUNDING CONDUCTOR IN ALL FEEDER, HOMERUN AND BRANCH CIRCUITS.

DEMOLITION NOTES:

1. UNLESS NOTED OTHERWISE, BOLD ITEMS INDICATE EQUIPMENT, DEVICES, ETC. TO BE REMOVED. SEE SPECIFICATION SECTION 260500 FOR REMODEL/DEMOLITION DETAILED REQUIREMENTS.
2. DEMOLITION DRAWINGS MAY NOT SHOW EVERY ITEM TO BE DEMOLISHED. CONTRACTOR SHALL VISIT SITE TO DETERMINE AND COORDINATE THE EXACT EXTENT OF DEMOLITION TO FACILITATE ALL WORK INDICATED BY THE CONTRACT DOCUMENTS PRIOR TO QUOTATION. NO EXTRAS WILL BE ALLOWED FOR WORK REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY THE CONTRACT DOCUMENTS. REWORK EXISTING TERMINATIONS, CONNECTIONS, CONDUIT, WIRING, ETC. TO ACCEPT NEW WORK. MAINTAIN CIRCUIT CONTINUITY TO EXISTING CIRCUITS AND DEVICES TO REMAIN OR REMODEL/DEMOLITION DETAILED REQUIREMENTS TO BE RELOCATED. PRIOR TO COMMENCEMENT OF ANY DEMO WORK, CONFIRM EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES FOR RESOLUTION.
3. ALL ITEMS IDENTIFIED TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ALL WIRING AND EXPOSED CONDUIT AND CONDUIT SUPPORTS BACK TO POINT OF ORIGIN OR NEXT DEVICE TO REMAIN. REMOVED ITEMS SHALL BE TURNED OVER TO THE OWNER, UNLESS NOTED OTHERWISE, AND STORED IN THE AREA DESIGNATED BY THE OWNER. REMOVE FROM SITE AND LEGALLY DISPOSE OF ALL ITEMS THE OWNER CHOOSES NOT TO ACCEPT.
4. WHERE EXISTING CONDUITS ARE SHOWN TO BE REMOVED AND HAVE BEEN ROUTED IN CONCRETE FLOOR SLABS, CONCRETE WALLS OR CONCRETE CEILINGS, THEY SHALL BE CUT BACK FLUSH WITH CONCRETE. FILL WITH GROUT TO ACHIEVE A SMOOTH AND EVEN FINISH FLUSH WITH CONCRETE SURFACE AFTER CONDUCTORS HAVE BEEN REMOVED.

ONE-LINE DIAGRAM NOTES:

1. PANELBOARDS INDICATED ON ONE LINE DIAGRAMS DO NOT SHOW ALL BRANCH CIRCUITS. REFER TO PANELBOARD SCHEDULE(S).
2. EXISTING ONE-LINE DIAGRAM TAKEN FROM OWNER FURNISHED DRAWINGS. EXISTING INFORMATION SHOWN OTHER THAN LOCATIONS IMPACTED BY NEW WORK HAS NOT BEEN VERIFIED.

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Professional Engineer (Electrical)
KEVIN B. MILLER
PE-13926
Date 01/25/2022
WYOMING

No. Revision Description Date

No. Revision Description Date

CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: EJH

ELECTRICAL LEGENDS & NOTES

E0.01

Switchboard MDP

Location:
Supply From:
Mounting: Surface
Volts: 480/277 Wye
Phases: 3
Wires: 4
A.I.C. Rating: 22,000A
Mains Type: MLO
Bus Rating: 1600 A

Circuit Notes:
1. EXISTING LOAD SHOWN FOR REFERENCE.
2. PROVIDE NEW MOLDED CASE BREAKER IN EXISTING SPACE.

Load	Type	A	B	C	Note
PANEL HM	R; G	24848 VA	24241 VA	23737 VA	1
PANEL H1	R; G; L	49688 VA	47297 VA	44152 VA	1
PANEL H2	R; G; L	67712 VA	66767 VA	61332 VA	1
PANEL H3	R; G; L	48695 VA	40561 VA	38765 VA	1
PANEL H4A	R; G; L	32217 VA	31123 VA	30824 VA	1
RTU-1	G	180604 VA	180604 VA	180604 VA	1
PANEL H1R	R; G; M; L	37745 VA	35745 VA	35745 VA	1
AHU-2	G	60691 VA	60691 VA	60691 VA	2
Refer to one-line diagram for space, spare, and circuit breaker quantities.		502200 VA	487029 VA	475850 VA	
		1819 A	1764 A	1718 A	
		3	3	6	
		% A-B	% B-C	% C-A	

Load Type		Connected Load	Demand Factor	Demand Load	Switchboard Totals	
L	Lighting	76525 VA	125.00%	95656 VA	Power Factor:	
R	Receptacle	422488 VA	51.18%	216244 VA		
M	Motor	1746 VA	125.00%	2182 VA	Total Connected Load:	1465079 VA
C	Continuous	0 VA	0.00%	0 VA	Total Connected Current:	1762 A
G	General	964320 VA	100.00%	964320 VA		
K	Kitchen	0 VA	0.00%	0 VA	Total Demand Load:	1278403 VA
E	Existing	0 VA	0.00%	0 VA	Total Demand Current:	1538 A
O	Other	0 VA	0.00%	0 VA		

General Notes:

Panel H1R

Location: ACCOM SVCS. 41
Supply From: MDP
Mounting: Surface
Enclosure: Type 1
Voltage: 480/277 Wye
Phase: 3
Wire: 4
A.I.C. Rating:
Mains Type: MLO
Bus Rating: 125 A

Circuit Notes:
1. EXISTING LOAD SHOWN FOR REFERENCE
2. PROVIDE NEW BREAKER IN EXISTING SPACE TO MATCH EXISTING BREAKER TYPES.

Note	Circ...	Load	Type	Trip	Po...	A		B		C		Po...	Trip	Type	Load	Circ...	Note
1	1	PANEL L1R	R; G; L	100 A	3	21200...	3324 VA					3	20 A	R	RECEPTACLE	2	1
	3							19200...	3324 VA							4	
	5									19200...	3324 VA					6	
1	7	ROBOT	G	20 A	3	2667 VA	3324 VA					3	20 A	R	RECEPTACLE	8	1
	9							2667 VA	3324 VA							10	
	11									2667 VA	3324 VA					12	
	13						3324 VA					3	20 A	R	RECEPTACLE	14	1
	15								3324 VA							16	
	17										3324 VA					18	
2	19	M-CHILLER CIRC PUMP	M	15 A	3	582 VA	3324 VA					3	20 A	R	RECEPTACLE	20	
	21							582 VA	3324 VA							22	
	23									582 VA	3324 VA					24	
					Total Load:	37745 VA		35745 VA		35745 VA							
					Total Amps:	136 A		129 A		129 A							
					Phase Balance:	6 % A-B		0 % B-C		6 % C-A							

Load Type		Connected Load	Demand Factor	Demand Load	Panel Totals	
L	Lighting	0 VA	0.00%	0 VA	Power Factor:	1
R	Receptacle	69488 VA	57.20%	39744 VA		
M	Motor	1746 VA	125.00%	2182 VA	Total Connected Load:	109235 VA
C	Continuous	0 VA	0.00%	0 VA	Total Connected Current:	131 A
G	General	38001 VA	100.00%	38001 VA		
K	Kitchen	0 VA	0.00%	0 VA	Total Demand Load:	79927 VA
E	Existing	0 VA	0.00%	0 VA	Total Demand Current:	96 A
O	Other	0 VA	0.00%	0 VA		

General Notes:

MECHANICAL EQUIPMENT SCHEDULE

COMMON NOTES:

A. PRIOR TO WORK, VERIFY ELECTRICAL REQUIREMENTS (VOLTAGE, AMPERAGE, RECOMMENDED OCPD, CONDUCTORS, AND DISCONNECT) FOR EACH PIECE OF EQUIPMENT.
B. PRIOR TO WORK, VERIFY EXACT LOCATION FOR EACH PIECE OF EQUIPMENT.
C. COORDINATE AND PROVIDE ALL FIELD CONNECTIONS AS REQUIRED.
D. COORDINATE 120V POWER CONNECTIONS TO DAMPERS AND OTHER CONTROL CIRCUITS. GROUP EQUIPMENT CONTROL CIRCUITS SUCH THAT FAILURE OF ONE CONTROL CIRCUIT DOES NOT AFFECT OPERATION OF OTHER EQUIPMENT. FOR EXAMPLE, DO NOT CONNECT A DAMPER ASSOCIATED WITH ONE AIR HANDLING UNIT TO THE SAME BRANCH CIRCUIT AS DAMPERS ASSOCIATED WITH A DIFFERENT AIR HANDLING UNIT.
E. FEEDERS, BREAKERS, DISCONNECTS, AND FUSING APPLIES TO FIELD-INSTALLED AND/OR FACTORY-INSTALLED EQUIPMENT.
F. COORDINATE LOCATION OF VFD(S) AND WORKING SPACE CLEARANCES. IF INSTALLED REMOTE FROM EQUIPMENT, PROVIDE CIRCUIT CONNECTION FROM VFD TO MOTOR(S).
G. WHERE MULTIPLE MOTORS ARE SERVED BY A SINGLE VFD, COORDINATE FIELD-WIRING REQUIREMENTS WITH EQUIPMENT VENDOR.

SPECIFIC REMARKS:

1. VFDS FURNISHED BY MECHANICAL CONTRACTOR, POWER WIRING BY ELECTRICAL CONTRACTOR.
2. 120V CONVENIENCE RECEPTACLE INTEGRAL TO UNIT.
3. MOTOR STARTER FURNISHED BY MECHANICAL CONTRACTOR, POWER WIRING BY ELECTRICAL CONTRACTOR.

KEY	#	ITEM	HP	FLA	LOAD	EQ LOAD (VA)	VOLTAGE	FEEDERS			PROTECTION			Notes
								WIRE	GROUND	CONDUIT	BREAKER	DISCONNECT	FUSE	
AHU	2	AIR HANDLING UNIT	0	219 A	0 VA	182073 VA	480 V/ 3ph	3-250KCMIL	#4G	2 1/2"	250A	400A		1, 2
CP	1	CIRCULATION PUMP	1	0 A	0 VA	1746 VA	480 V/ 3ph	3#12	#12G	3/4"	20A	30A	5A	3

LUMINAIRE SCHEDULE

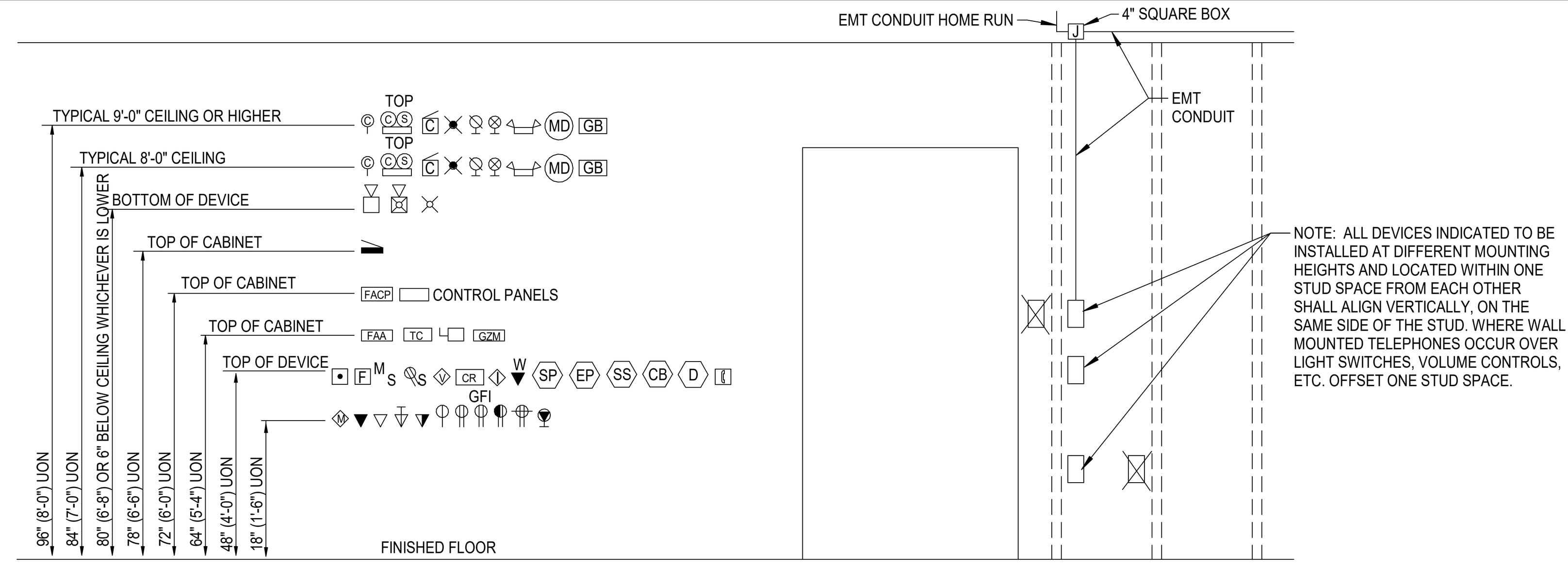
COMMON NOTES:

A. CATALOG NUMBER REFERS TO FIRST NAME LISTED UNDER MANUFACTURER PER LUMINAIRE TYPE. REMAINING MANUFACTURERS LISTED ARE CONSIDERED TO BE EQUIVALENT PRODUCTS FOR THIS PROJECT AND SHALL MEET ALL CRITERIA LISTED INCLUDING THAT CALLED FOR BY THE SPECIFIC LUMINAIRE CATALOG NUMBER. CATALOG NUMBERS DO NOT NECESSARILY REPRESENT COMPLETE CATALOG NUMBERS. ALL ITEMS LISTED IN THE DESCRIPTION SHALL BE PROVIDED.
B. REFER TO LIGHTING SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
C. PROVIDE UNIT PRICING FOR ALL LUMINAIRES BY TYPE AND SUBMIT WITH BID FORM.

SPECIFIC REMARKS:

1. VERIFY FINISH WITH ARCHITECT.

TYPE	DESCRIPTION	LAMP		BALLAST/DRIVER			APPARENT LOAD	MANUFACTURER	CATALOG SERIES	FINISH	MOUNTING	REMARKS
		COLOR	LUMENS	TYPE	DIM LEVEL	VOLTAGE						
W1	EXTERIOR ARCHITECTURAL WALL SCONCE. WIDE OPTIC; 80+ CRI 100+ LUMENS PER WATT EFFICACY; 100,000+ HR LIFE AT L70 DEPRECIATION; PROVIDE WITH SURFACE MOUNT BACK BOX; 5-YEAR WARRANTY.	3500K	1200			277 V	10 VA	LITHONIA	WDGE1	COORDINATE WITH ARCH	WALL	1

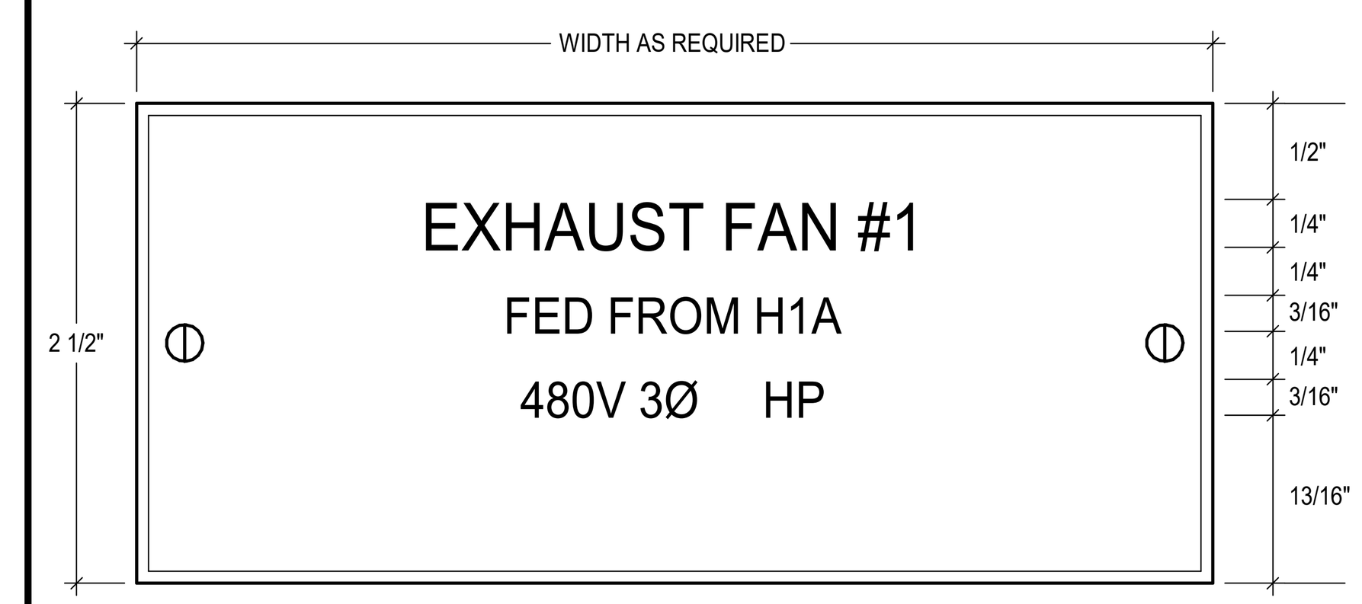


TYPICAL DEVICE MOUNTING HEIGHTS

NO SCALE

NOTES:

1. HEIGHTS SHOWN ARE TYPICAL TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
2. WHERE EVER DEVICES ARE INDICATED TO BE ABOVE DOORS, DEVICE SHALL BE CENTERED BETWEEN TOP OF DOOR TRIM AND CEILING LINE.
3. MOUNTING HEIGHTS SHOWN ON ARCHITECTURAL ELEVATIONS SHALL GOVERN OVER THOSE SHOWN ABOVE.
4. DEVICE MOUNTING HEIGHTS SHALL BE PER MOST CURRENT VERSION OF GOVERNING CODES AND STANDARDS NEC, IBC, NFPA, ADA, ETC. WHERE DESCREPANCIES BECOME EVIDENT CONSULT THE ARCHITECT AND ENGINEER OF RECORD.



UTILIZATION EQUIPMENT NAMEPLATE DETAIL

SCALE: FULL

NOTES:

1. SEE SPECIFICATIONS FOR ADDITIONAL NAMEPLATE INFORMATION.
2. REWORD NAMEPLATE FOR FIELD CONDITIONS.
3. HP SHALL INDICATE HORSEPOWER.

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KEVIN B. MILLER
PE-13926
Date 01/25/2022
WYOMING

No.	Revision Description	Date

No.	Revision Description	Date

CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: EJH

ELECTRICAL SCHEDULES & DETAILS

E0.02

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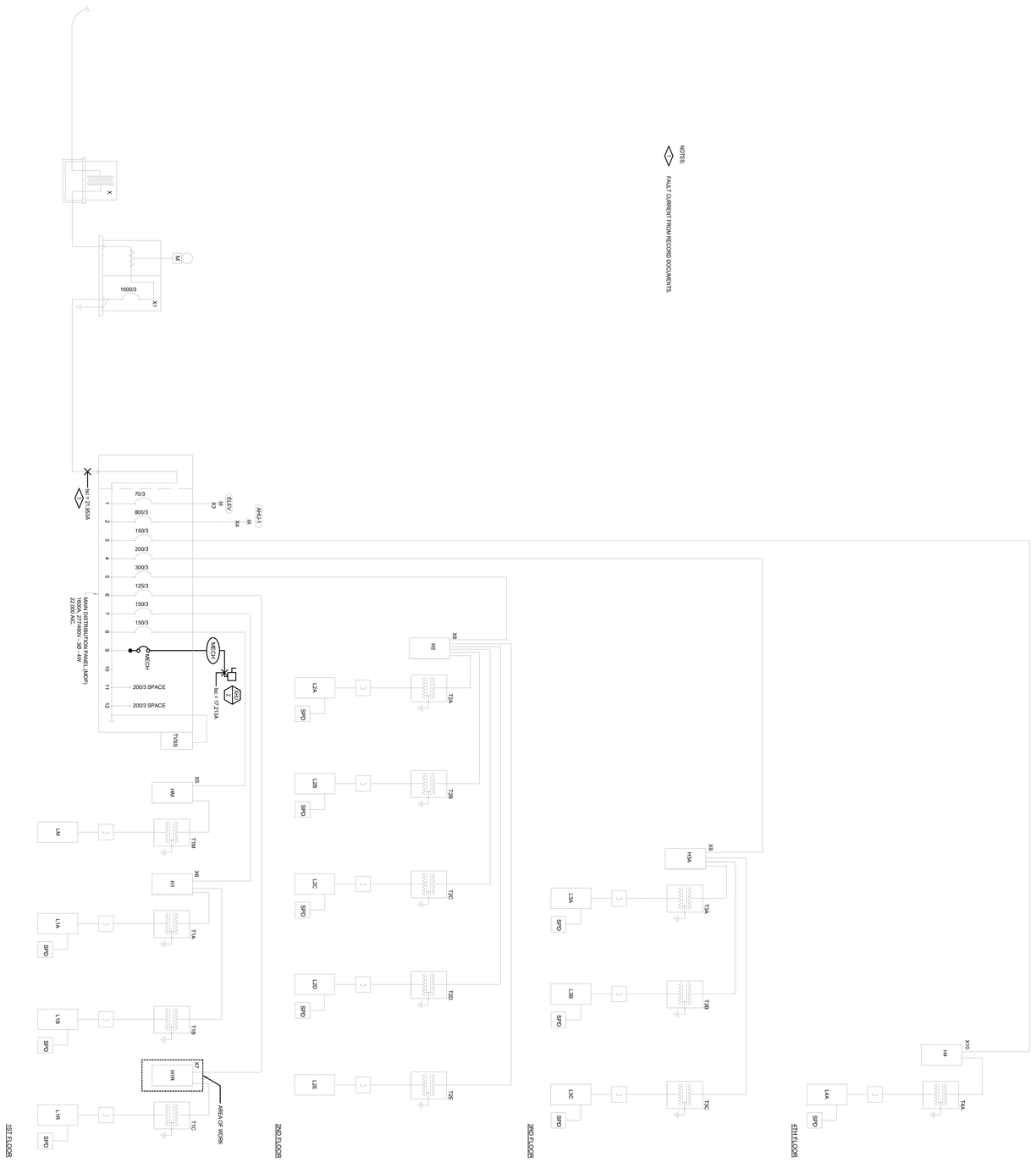
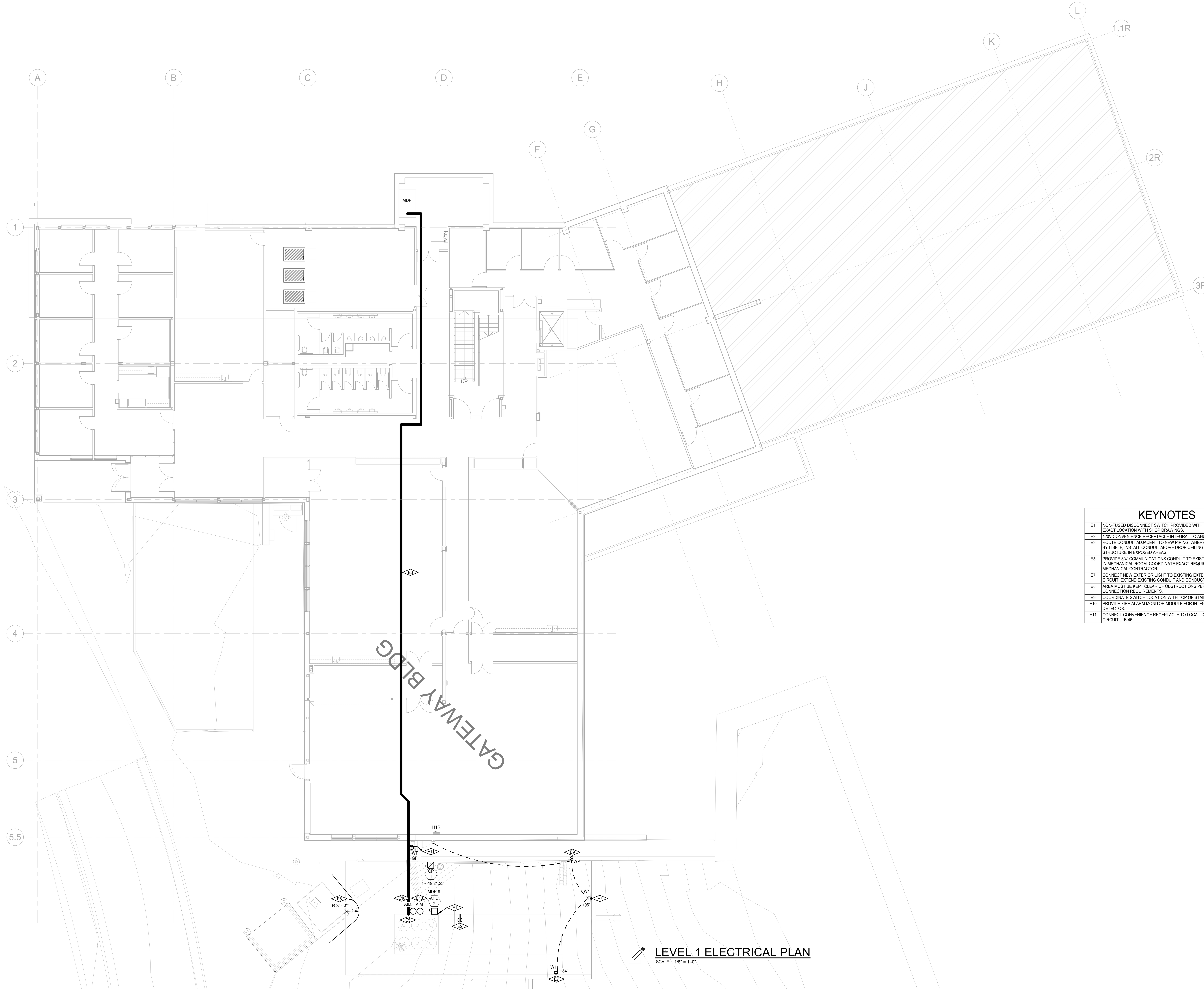
ELECTRICAL ONE-LINE DIAGRAM

SCALE: NONE



E0.11	ELECTRICAL ONE-LINE DIAGRAM		PROJECT #: 2170 DATE: 01/26/2022 DRAWN BY: EJH	**CASPER COLLEGE** **GATEWAY HVAC REDESIGN** **1910 Lisco Dr, Casper WY 82601**		No. Revision Description Date	CATOR RUMA GSGarchitecture DESIGN ARCHITECTURE/PLANNING CASPER, WY - GREELEY, CO - SHERIDAN, WY



LEVEL 1 ELECTRICAL PLAN

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

KEYNOTES

E1	NON-FUSED DISCONNECT SWITCH PROVIDED WITH UNIT. COORDINATE EXACT LOCATION WITH SHOP DRAWINGS.
E2	120V CONVENIENCE RECEPTACLE INTEGRAL TO AHU.
E3	ROUTE CONDUIT ADJACENT TO NEW PIPING. WHERE CONDUIT IS ROUTED BY ITSELF, INSTALL CONDUIT ABOVE DROP CEILING AND TIGHT TO STRUCTURE IN EXPOSED AREAS.
E5	PROVIDE 3/4" COMMUNICATIONS CONDUIT TO EXISTING BAS CONTROLLER IN MECHANICAL ROOM. COORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR.
E7	CONNECT NEW EXTERIOR LIGHT TO EXISTING EXTERIOR LIGHTING CIRCUIT. EXTEND EXISTING CONDUIT AND CONDUCTORS AS REQUIRED.
E8	AREA MUST BE KEPT CLEAR OF OBSTRUCTIONS PER ELECTRIC UTILITY CONNECTION REQUIREMENTS.
E9	COORDINATE SWITCH LOCATION WITH TOP OF STAIRS.
E10	PROVIDE FIRE ALARM MONITOR MODULE FOR INTEGRAL DUCT DETECTOR.
E11	CONNECT CONVENIENCE RECEPTACLE TO LOCAL 120V RECEPTACLE CIRCUIT L1B-46.

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Date 01/25/2022
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CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: EJH

LEVEL 1 ELECTRICAL PLAN

E3.11

LEVEL 3 ELECTRICAL PLAN

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

KEYNOTES

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No.	Revision Description	Date

No.	Revision Description	Date

CASPER COLLEGE
GATEWAY HVAC REDESIGN
1910 Lisco Dr, Casper WY 82601

PROJECT #: 2170
DATE: 01/26/2022
DRAWN BY: EJH

LEVEL 3 ELECTRICAL PLAN

E3.13

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