

SHEET KEYNOTE LEGEND

N1 Scale 1 1/2" = 1'-0"

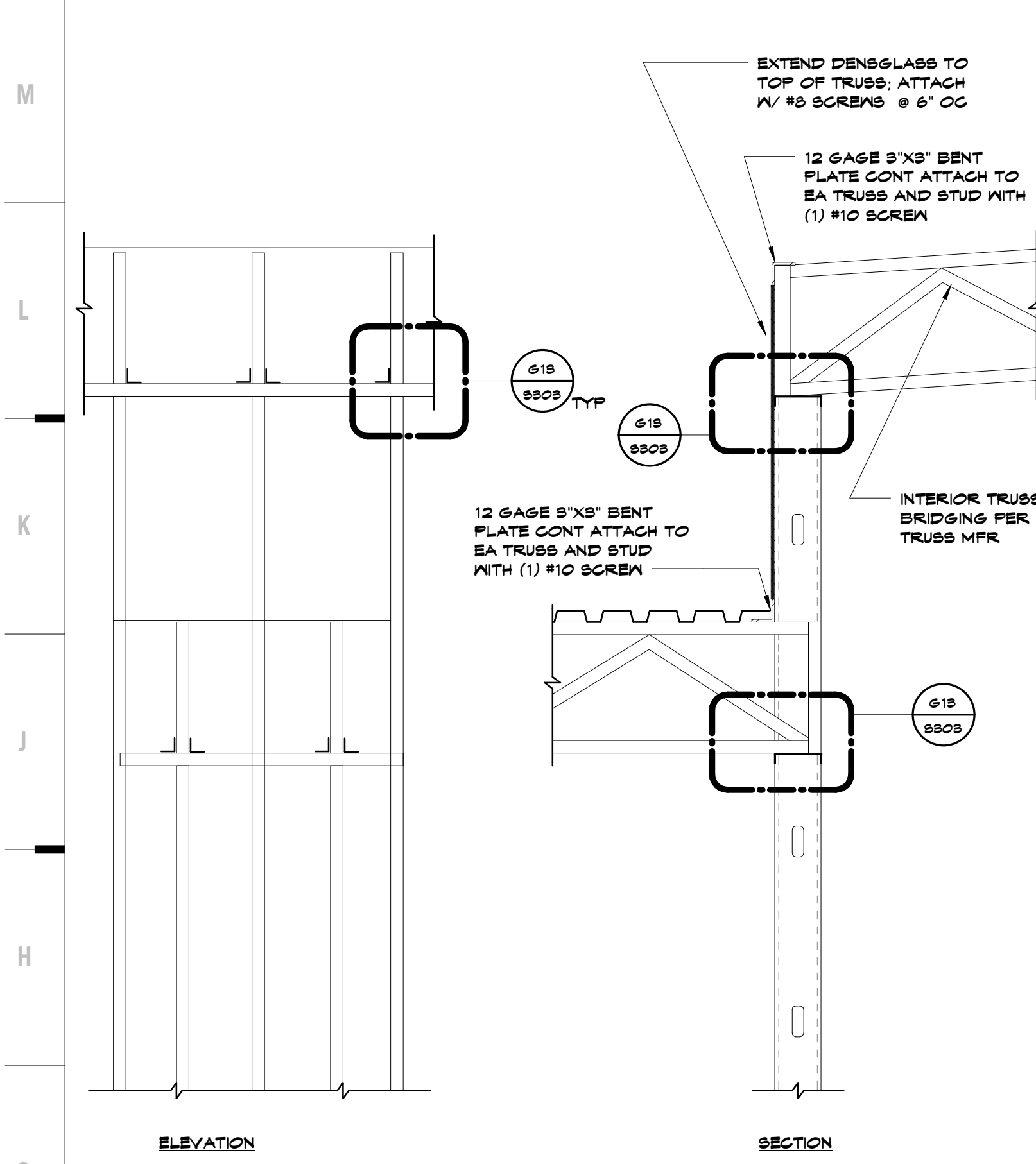
Kicker Detail

N5 Scale 1 1/2" = 1'-0"

Top of Kicker Detail

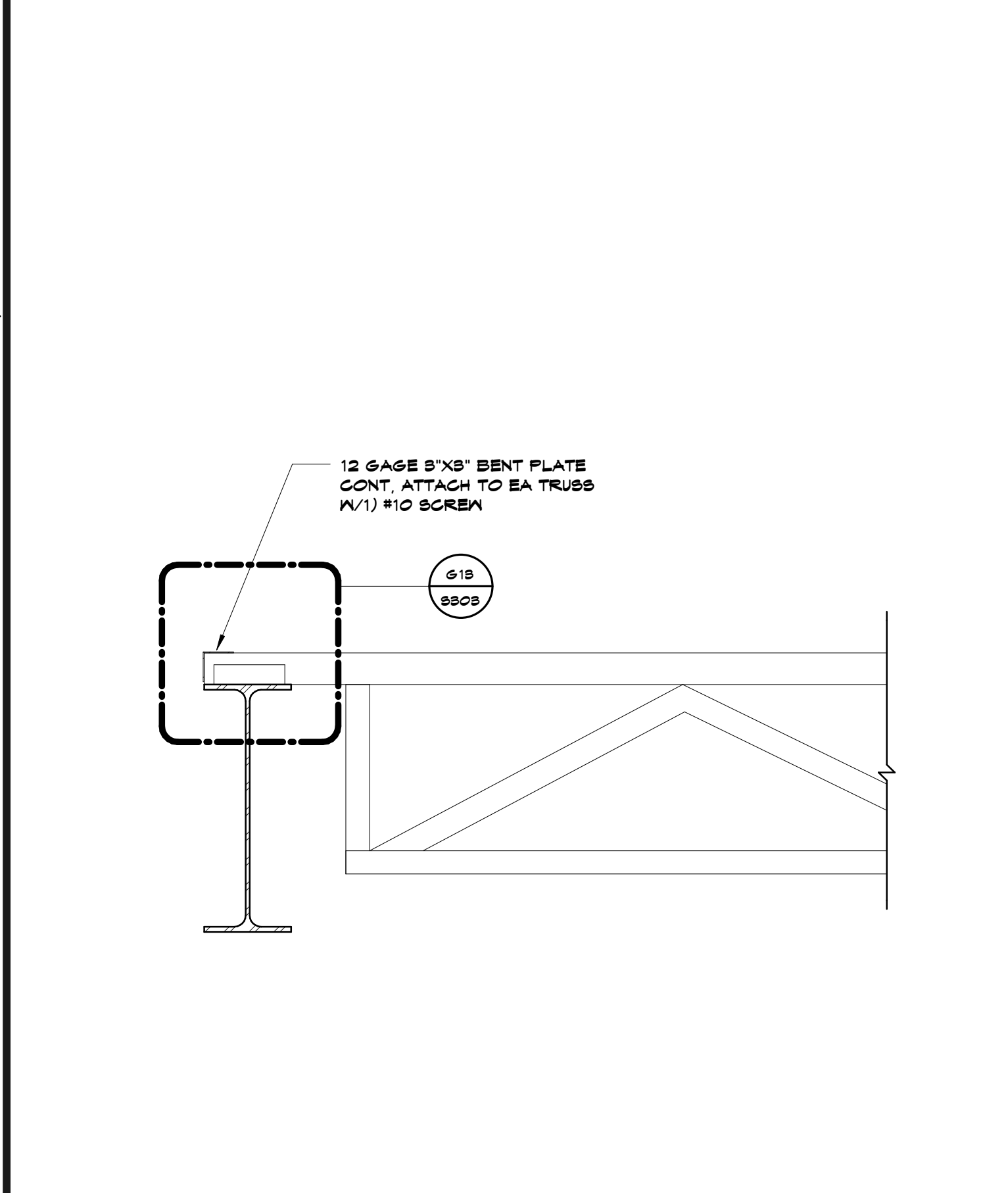
N9 Scale 12" = 1'-0"

Typical Swing Support



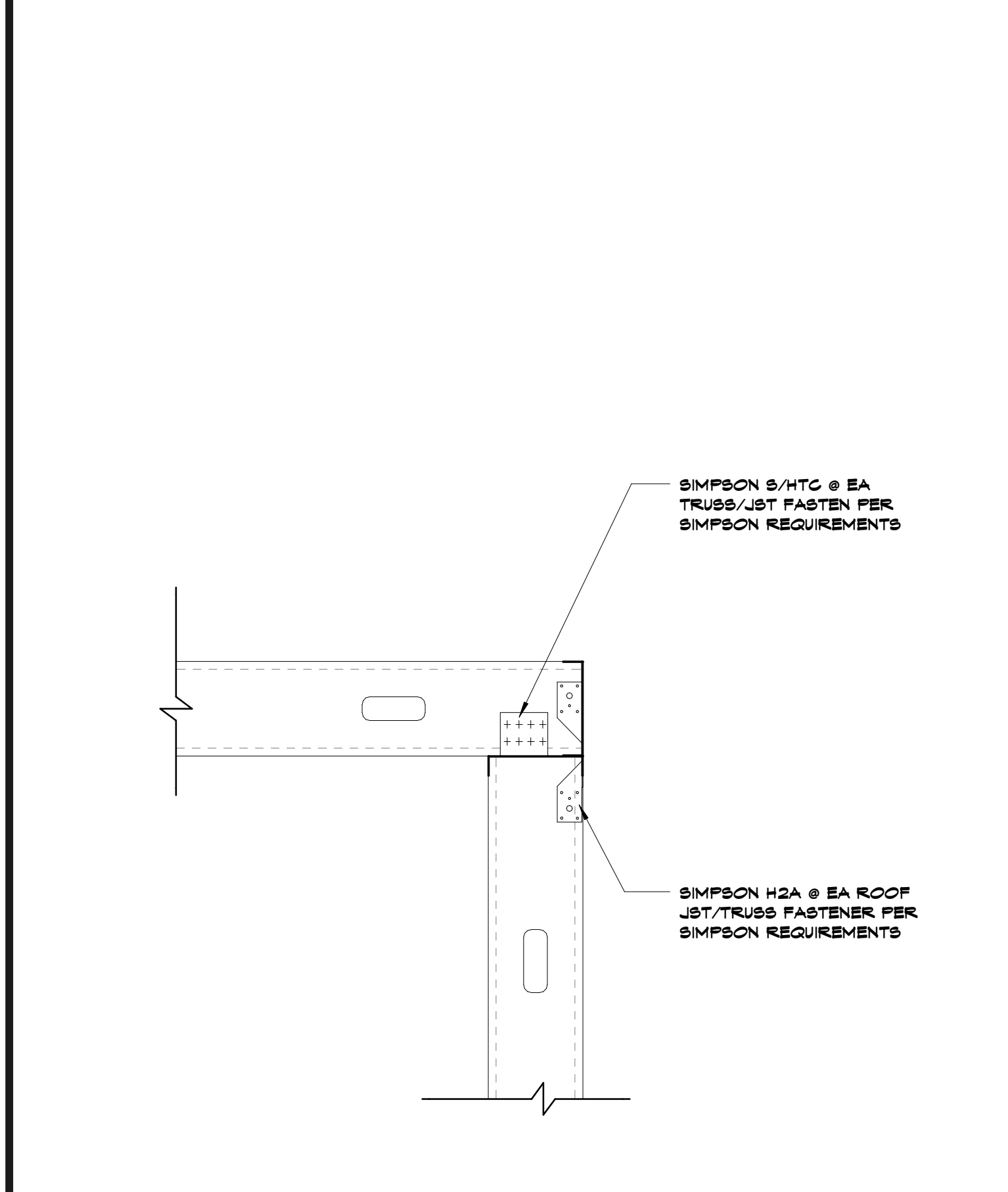
G1 Scale 3/4" = 1'-0"

High/Low Truss Bearing Detail



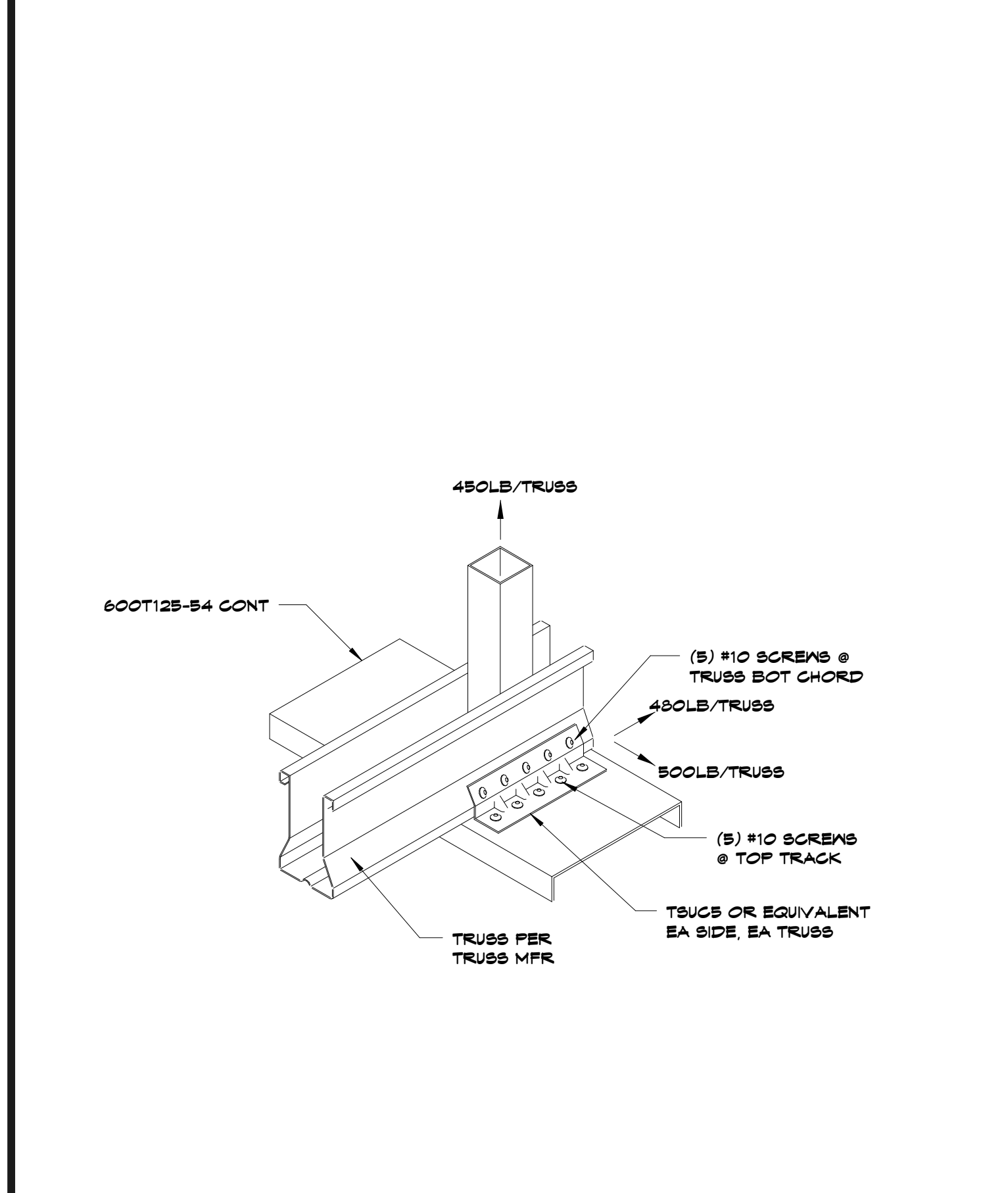
G5 Scale 1 1/2" = 1'-0"

Truss to Beam Connection Detail



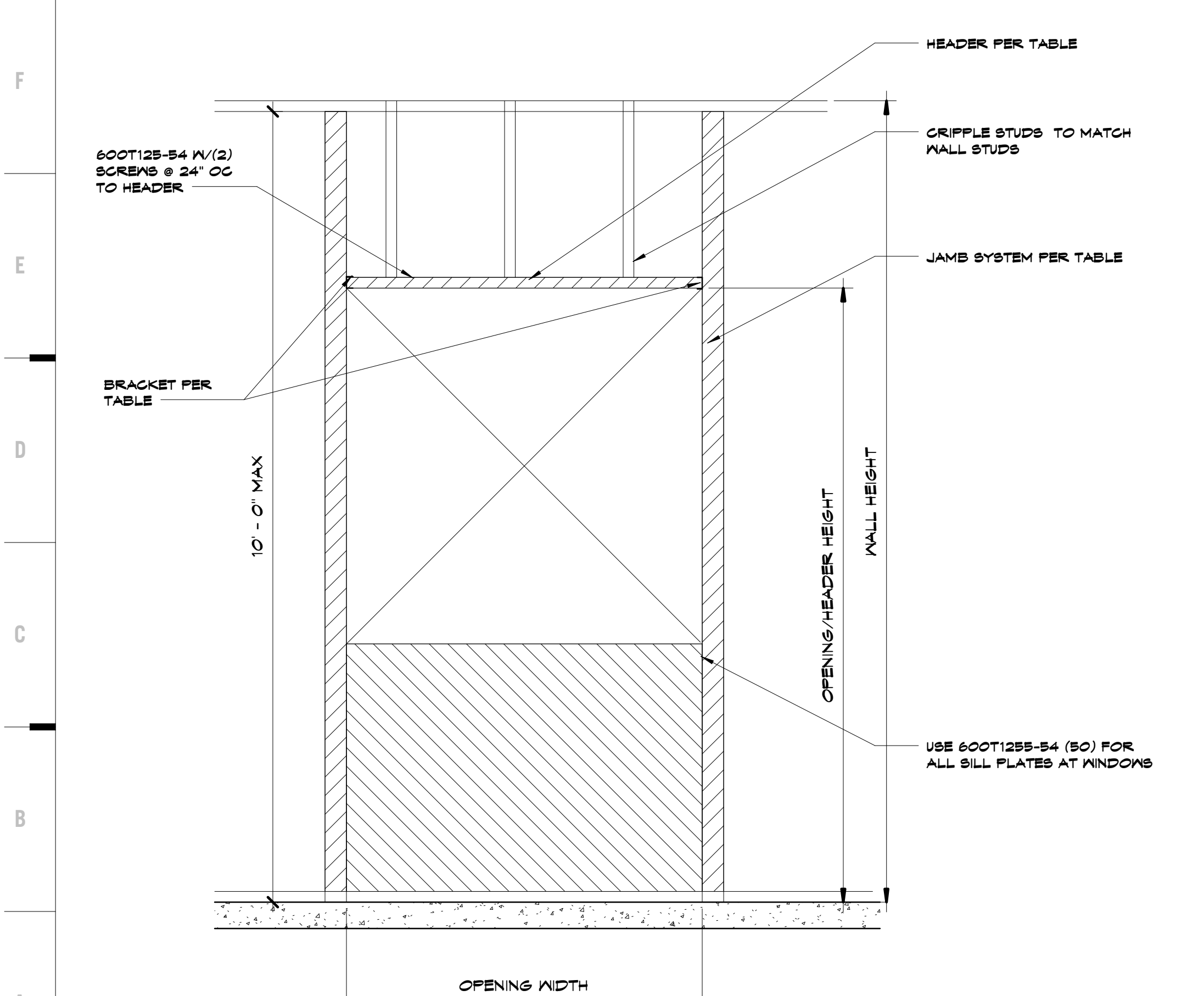
G9 Scale 1 1/2" = 1'-0"

Stud Roof Joist to Wall Connection Detail



G13 Scale 12" = 1'-0"

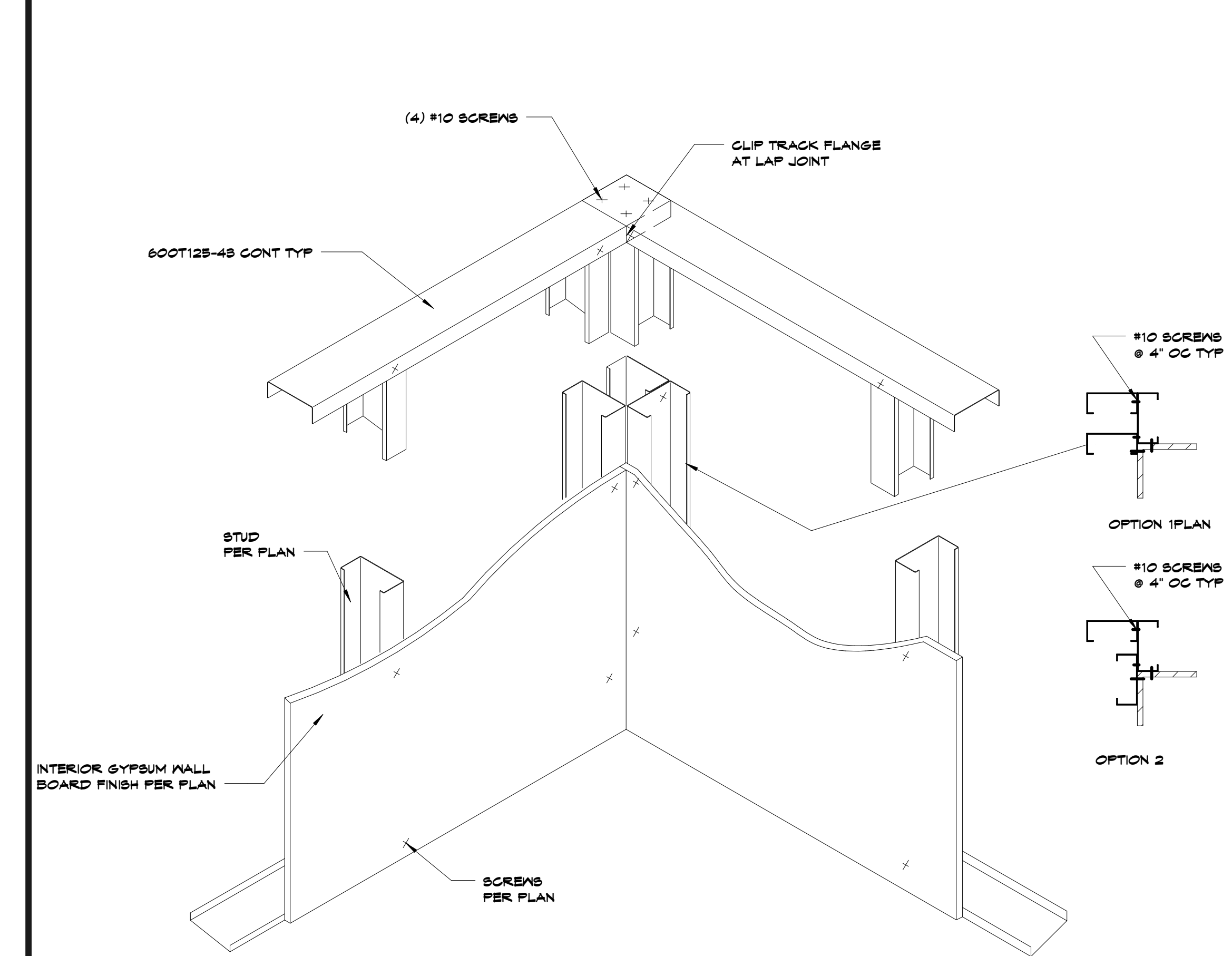
Truss Bearing Connection



A1 Scale 3/4" = 1'-0"

Interior Non Load Bearing Wall Opening Framing

RED HEADER PRO HEADER AND JAMB SYSTEM OR EQUIVALENT UNO						
	WIDTH	HEIGHT	WALL HEIGHT	HEADER SYSTEM	JAMB SYSTEM	HEADER BRACKET
WINDOW	2'-0"	1'-2"	15'	600PRO500-S4	600PRO550-S4	H50C-PT-PRO
	2'-0"	2'-0"	15'			
	2'-0"	6'-0"	15'			
	7'-4"	5'-2"	15'			
	5'-4"	4'-0"	15'			
	5'-4"	5'-2"	15'			
	5'-4"	6'-0"	15'			
DOOR	5'-2"	4'-0"	15'	600PRO550-RT	600PRO550-S4	600PRO550-S4
	6'-0"	4'-0"	15'			
	6'-0"	4'-0"	15'			
	5'-4"	7'-4"	15'	600PRO500-S4	600PRO550-S4	
	4'-4"	7'-4"	15'			
	8'-0"	12'-0"	15'	RED HEADER NOT AVAILABLE		



A11 Scale 1 1/2" = 1'-0"

Metal Stud Detail - Wall Framing at Corner

hollis architects
+ miller

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Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date

STATE OF MISSOURI
Professional Engineer
John E. Funk
E-20080399
Professional Engineer

John E. Funk
E-20080399

The Professional Engineer shall be held responsible for the design of this work. All drawings, specifications and other documents prepared by the engineer shall be controlled by the engineer and the engineer retains the right to modify the design, drawings or documents without notice.

JOB NO: 16054
DRAWN BY: SAH
CHECKED BY: DBH
DATE: 09.30.2016

S303

9/30/2016 1:30:07 PM

SHEET KEYNOTE LEGEND

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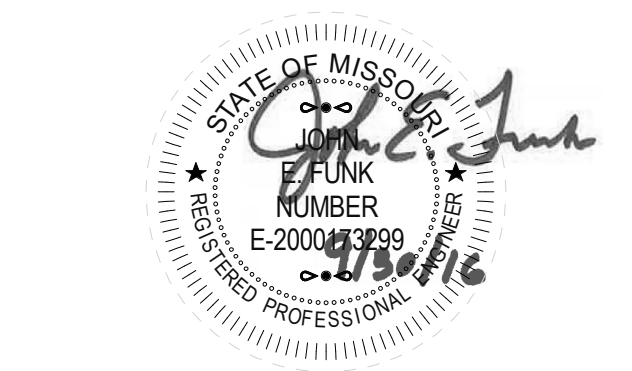
Smith & Boucher Engineers
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Joplin Early Childhood Center
Joplin Schools

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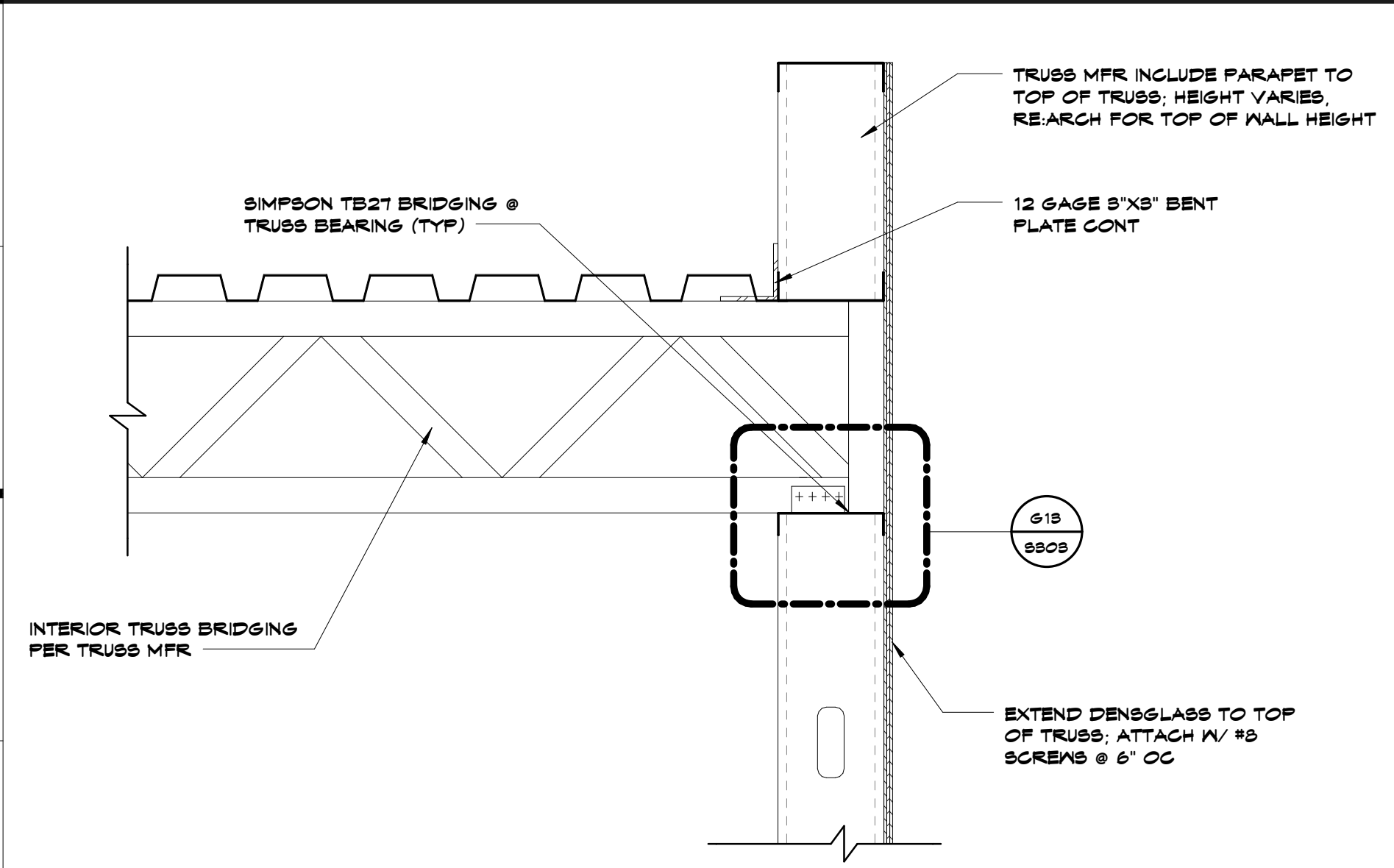
John E. Funk
E-2000173299

The Professional Engineer seal of the State of Missouri is hereby used in accordance with the provisions of the Missouri Professional Engineers Act, Chapter 320, RSMo, and the engineer hereby declares that he is the author of the design and drawings shown on this sheet and that he is duly licensed as a Professional Engineer in the State of Missouri.

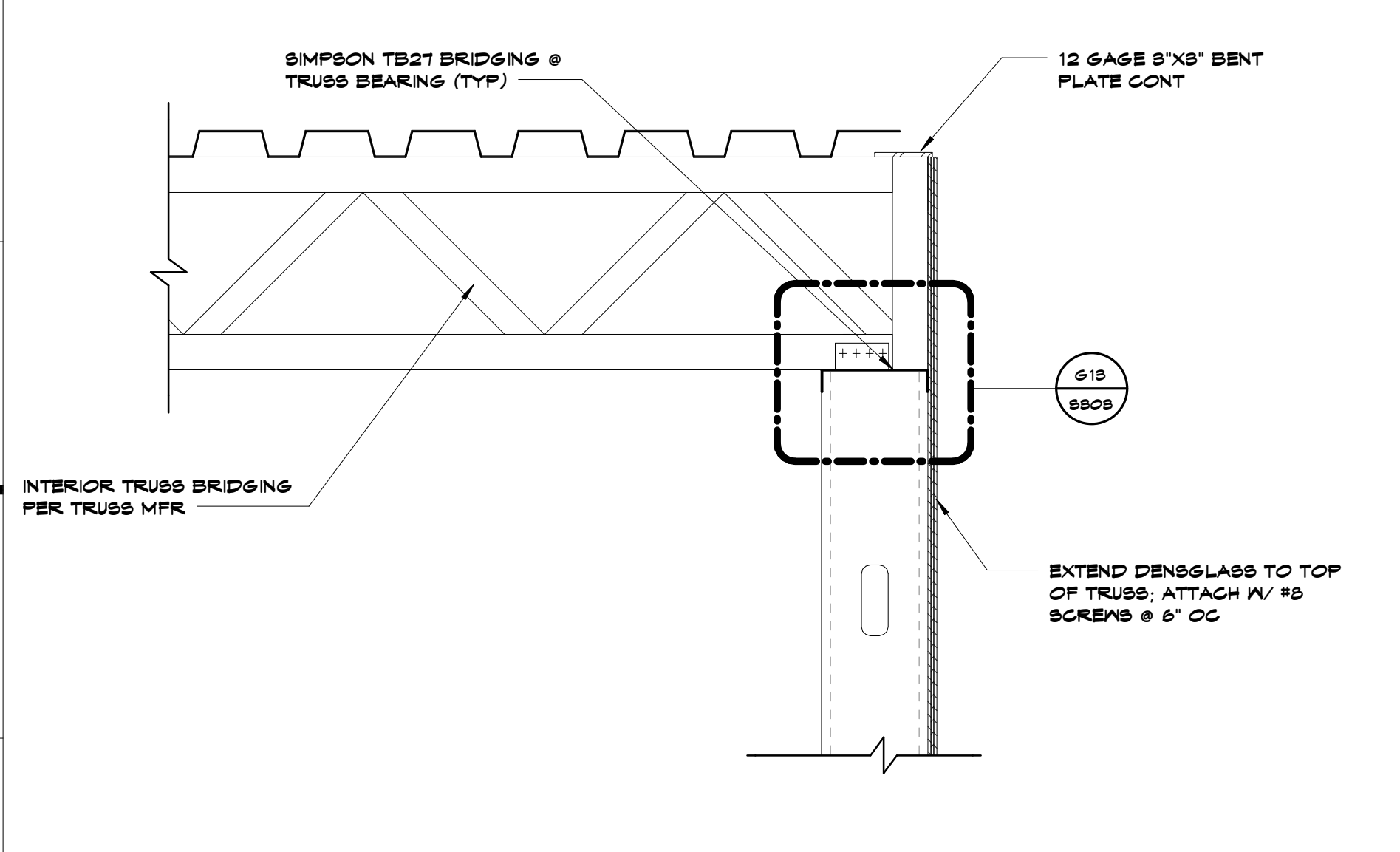
JOB NO: 16054
DRAWN BY: SAH
CHECKED BY: DBH
DATE: 09.30.2016

S304

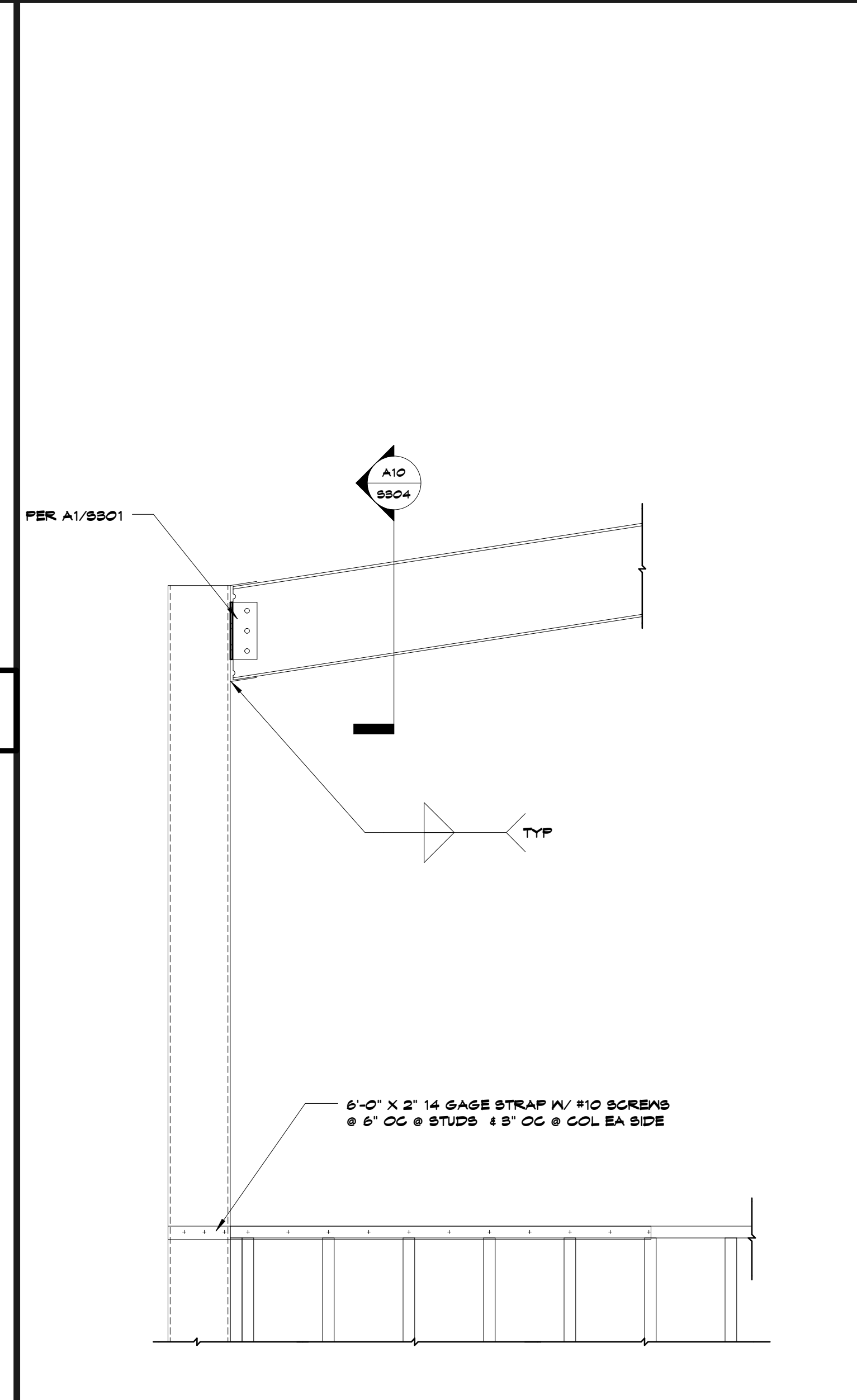
OF



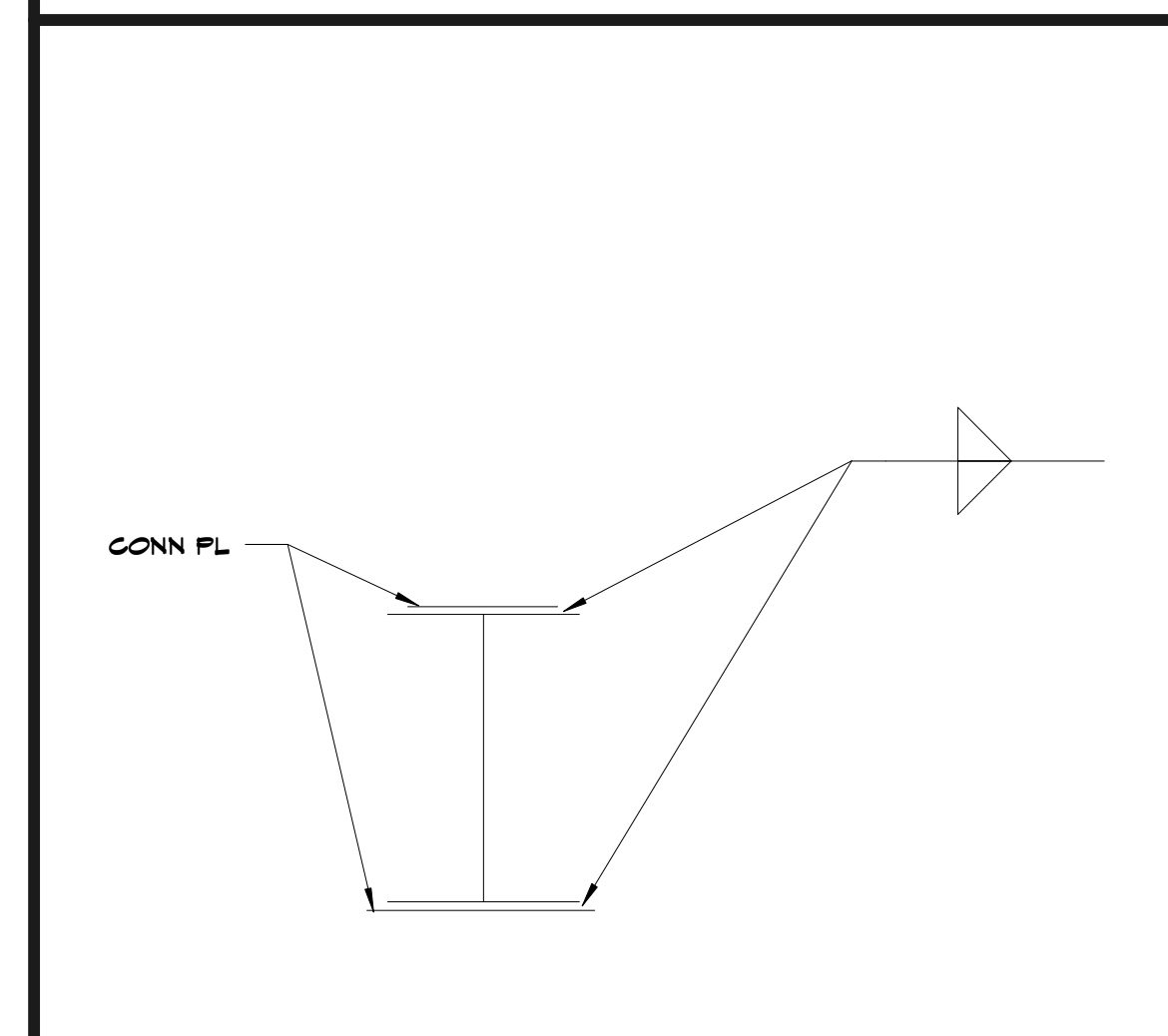
E1 Scale 1 1/2" = 1'-0" Truss Bearing With Parapet Detail



A1 Scale 1 1/2" = 1'-0" Truss Bearing Detail

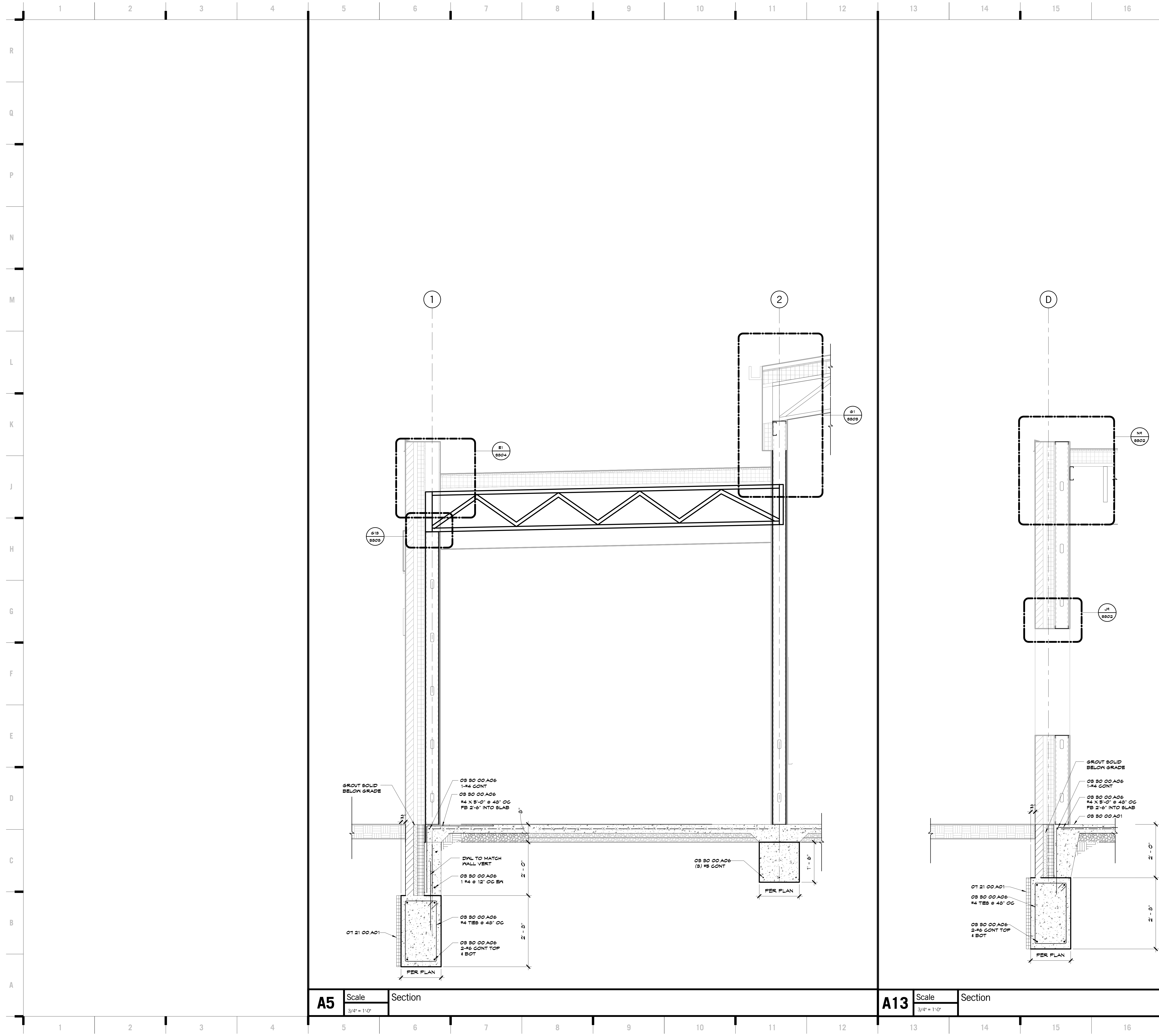


A6 Scale 3/4" = 1'-0" Column Connections Detail



A10 Scale 1 1/2" = 1'-0" Detail

9/30/2016 1:30:08 PM



SHEET KEYNOTE LEGEND

08 80 00 A01	CAST-IN-PLACE CONCRETE
08 80 00 A06	REINFORCING BARS
07 21 00 A01	EXTRUDED POLYSTYRENE BOARD INSULATION

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Structural # 0000101

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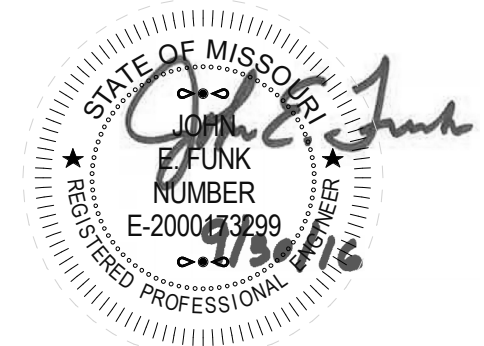
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Joplin Early Childhood Center
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REVISIONS:

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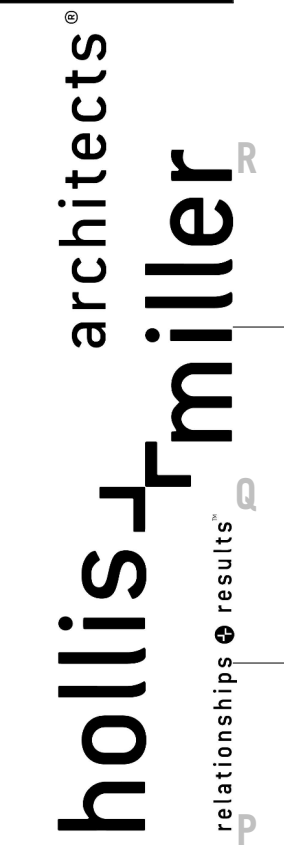


John E. Funk
E-2000173299

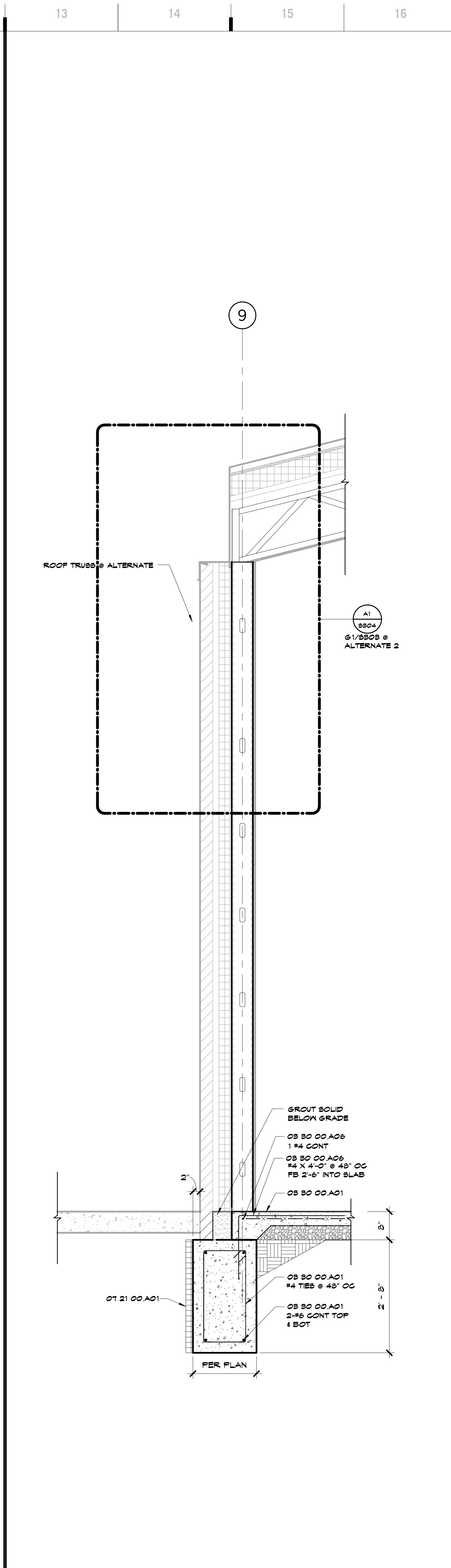
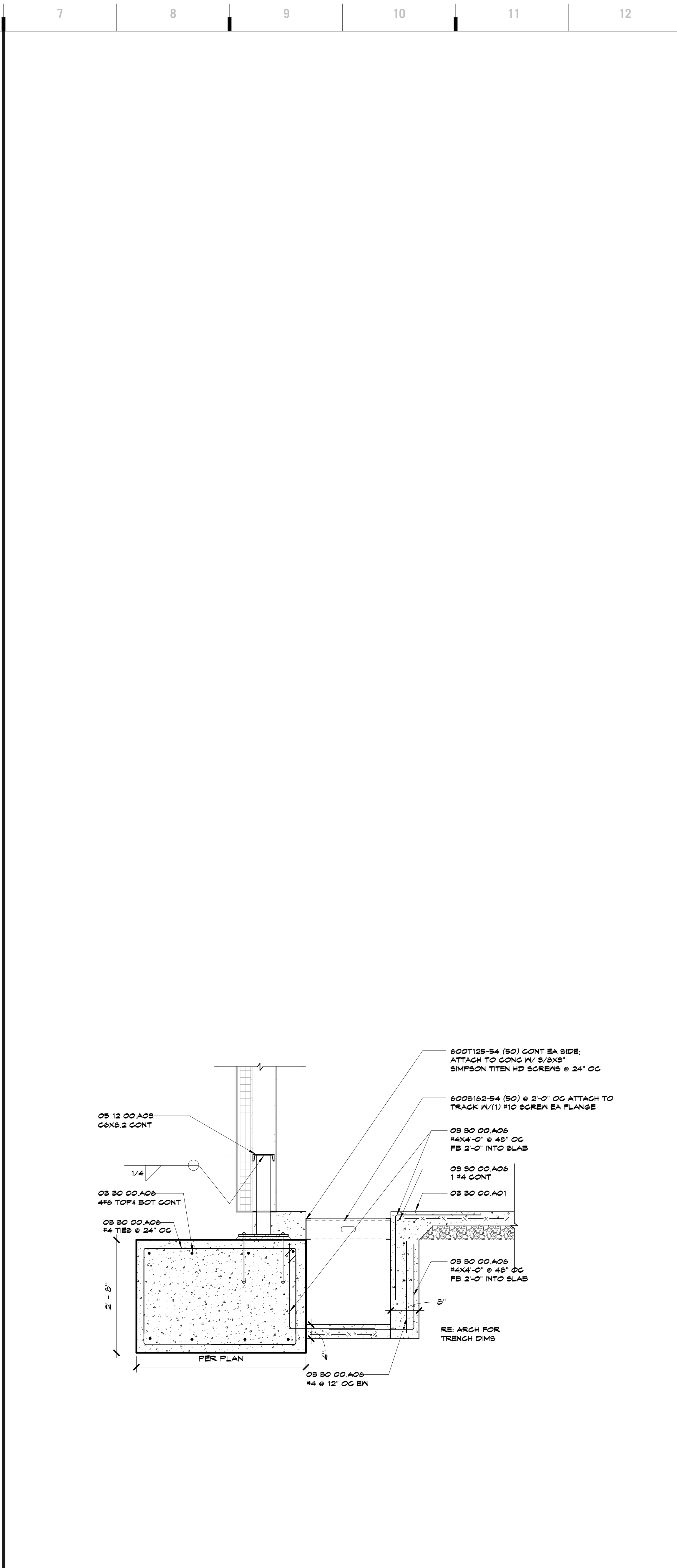
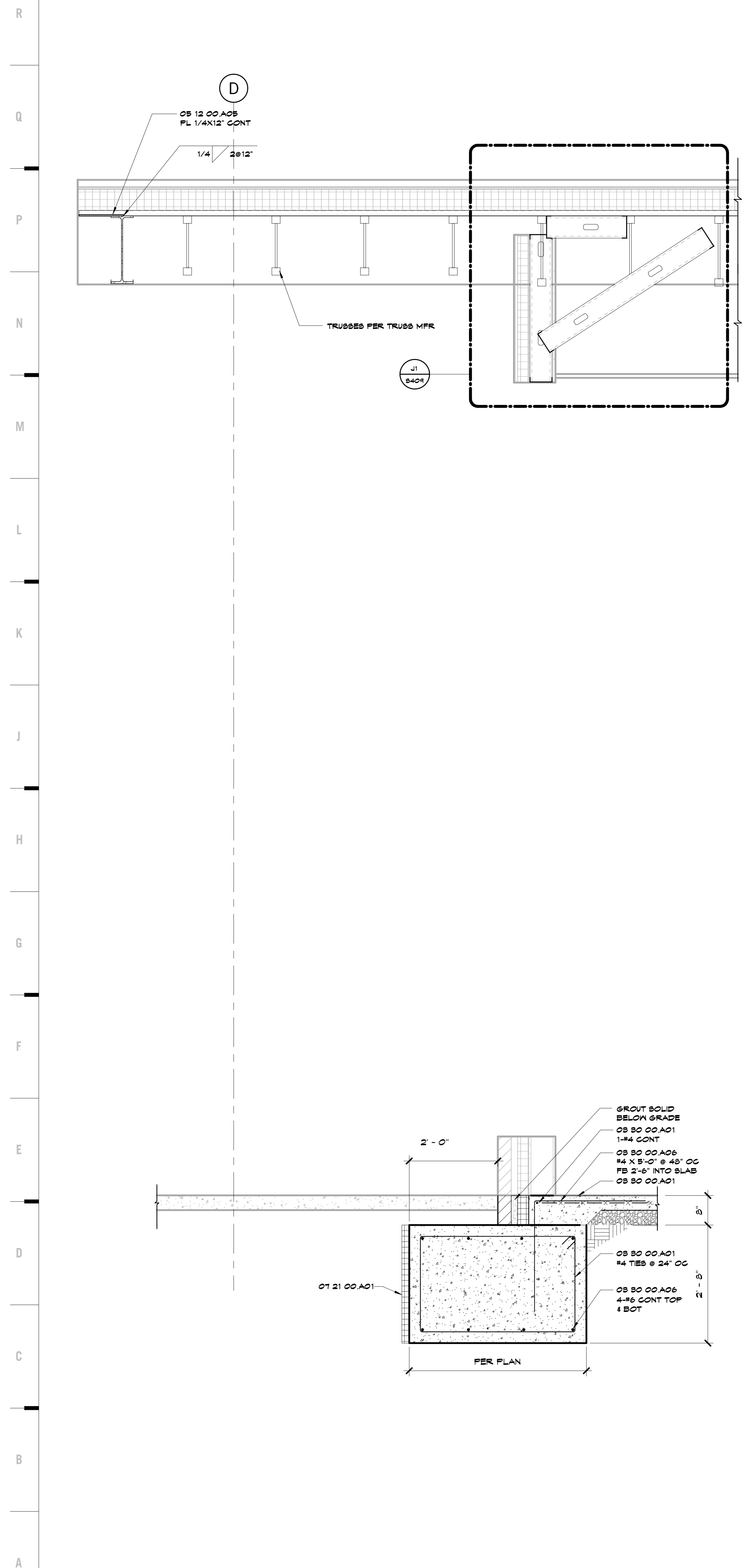
The Professional Engineer seal of the State of Missouri is hereby used in accordance with the provisions of the Missouri Statutes, Chapter 320, R.S.Mo., and the engineer hereby declares that the design is his original work and that he is a duly licensed Professional Engineer in the State of Missouri.

JOB NO: 16054
DRAWN BY: SAH
CHECKED BY: DBH
DATE: 09.30.2016

S400
OF



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17



SHEET KEYNOTE LEGEND

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Architecture # 000001330

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Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date

STATE OF MISSOURI
Professional Engineer
John E. Funk
E-2000173299

Job NO: 16054
DRAWN BY: SAH
CHECKED BY: DBH
DATE: 09.30.2016

S401
OF _____
SECTIONS

A1 Scale Section
3/4" = 1'-0"

A7 Scale Section
3/4" = 1'-0"

A13 Scale Section
3/4" = 1'-0"

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

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John E. Funk
E-2008001860

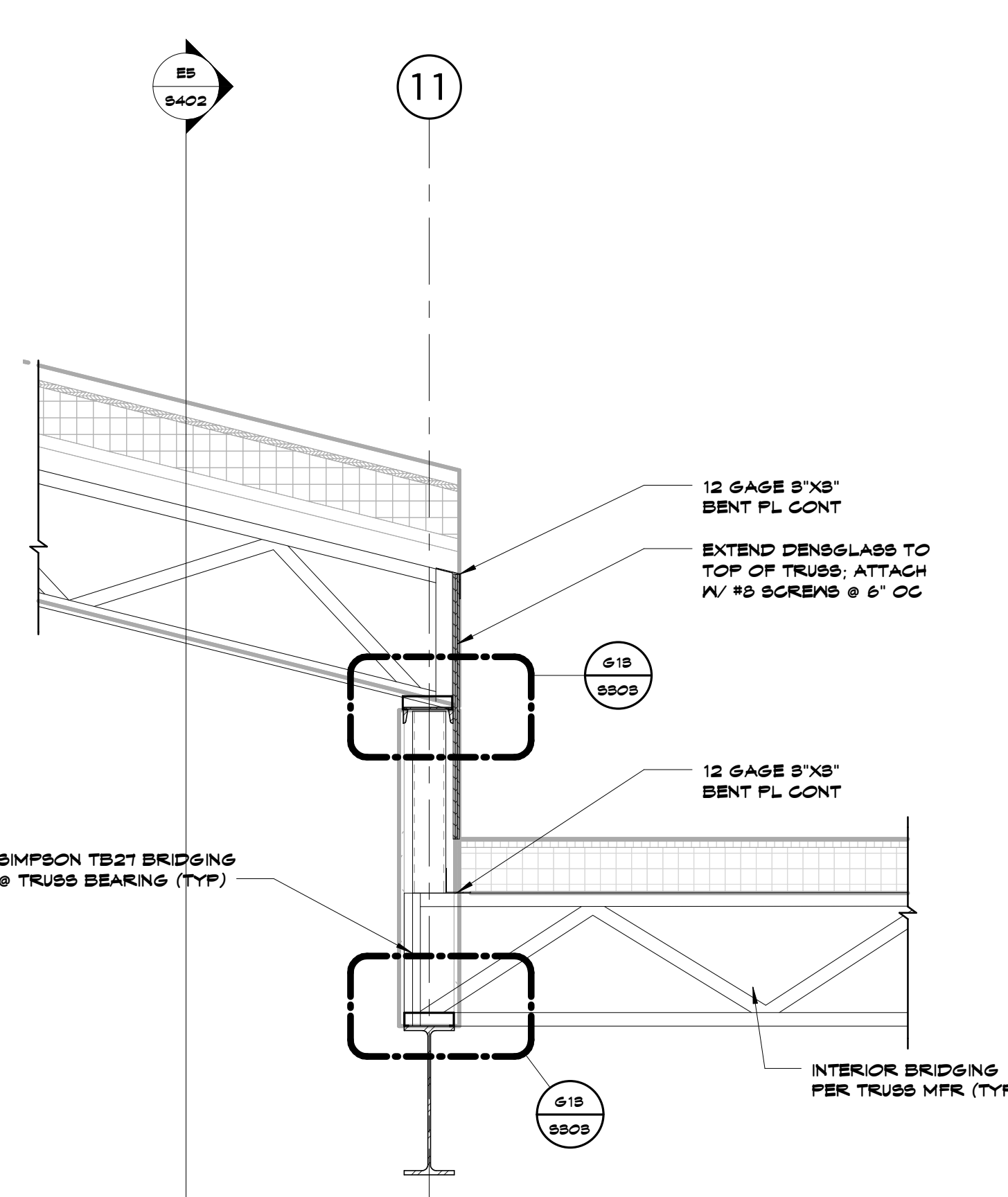
The Professional Engineer seal of the State of Missouri is not valid unless the engineer is duly licensed and the engineer is responsible for the design and construction of the project.

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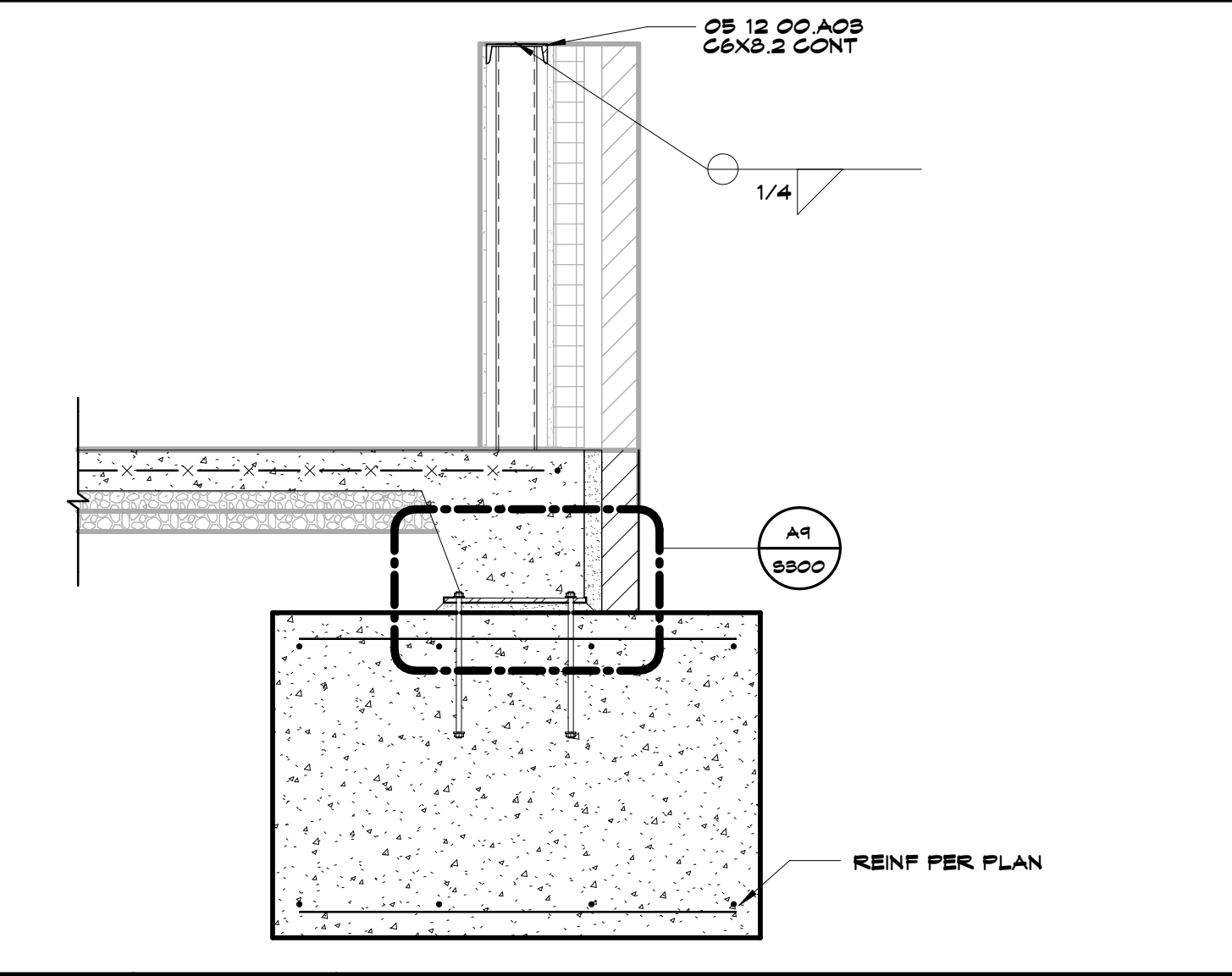
S402

OF

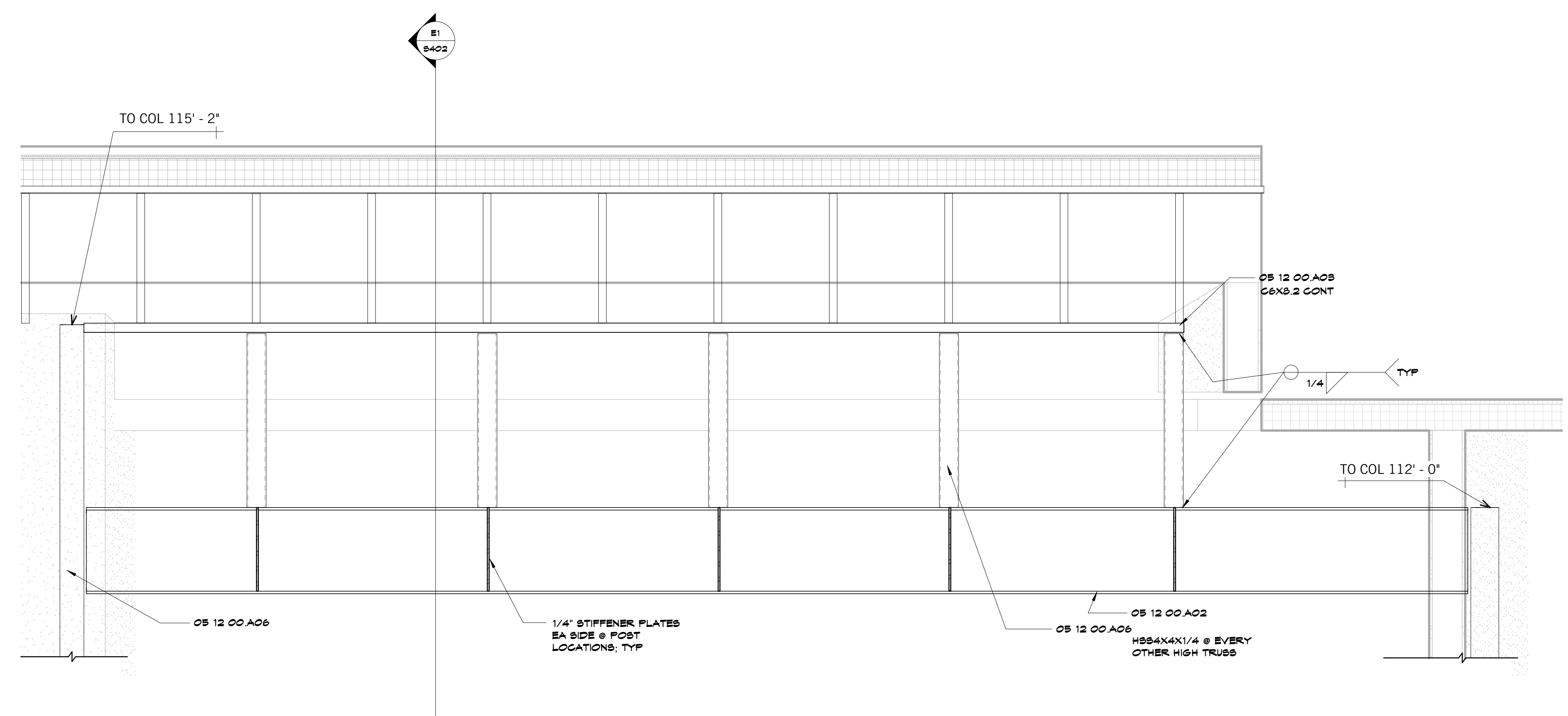
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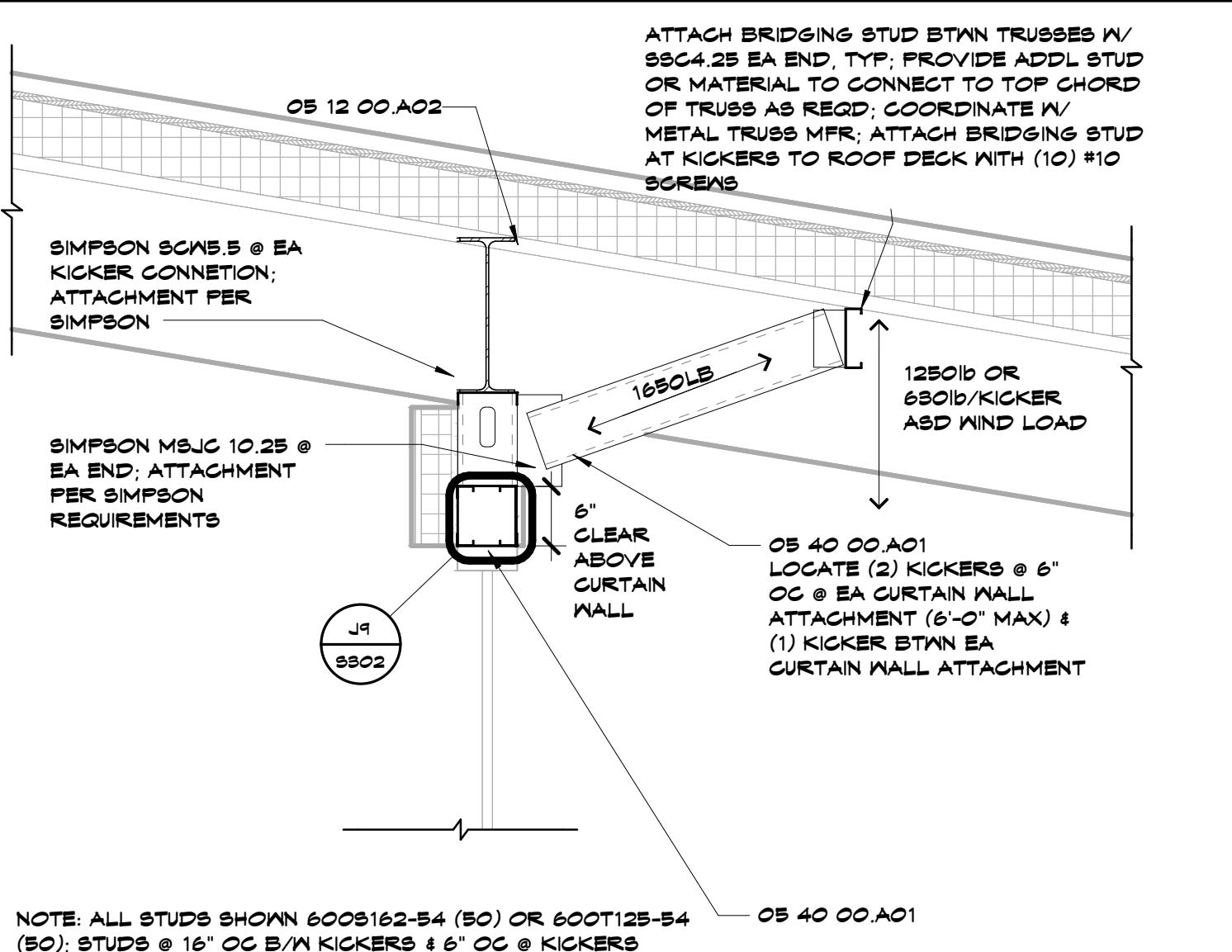
E1 Scale Section
3/4" = 1'-0"



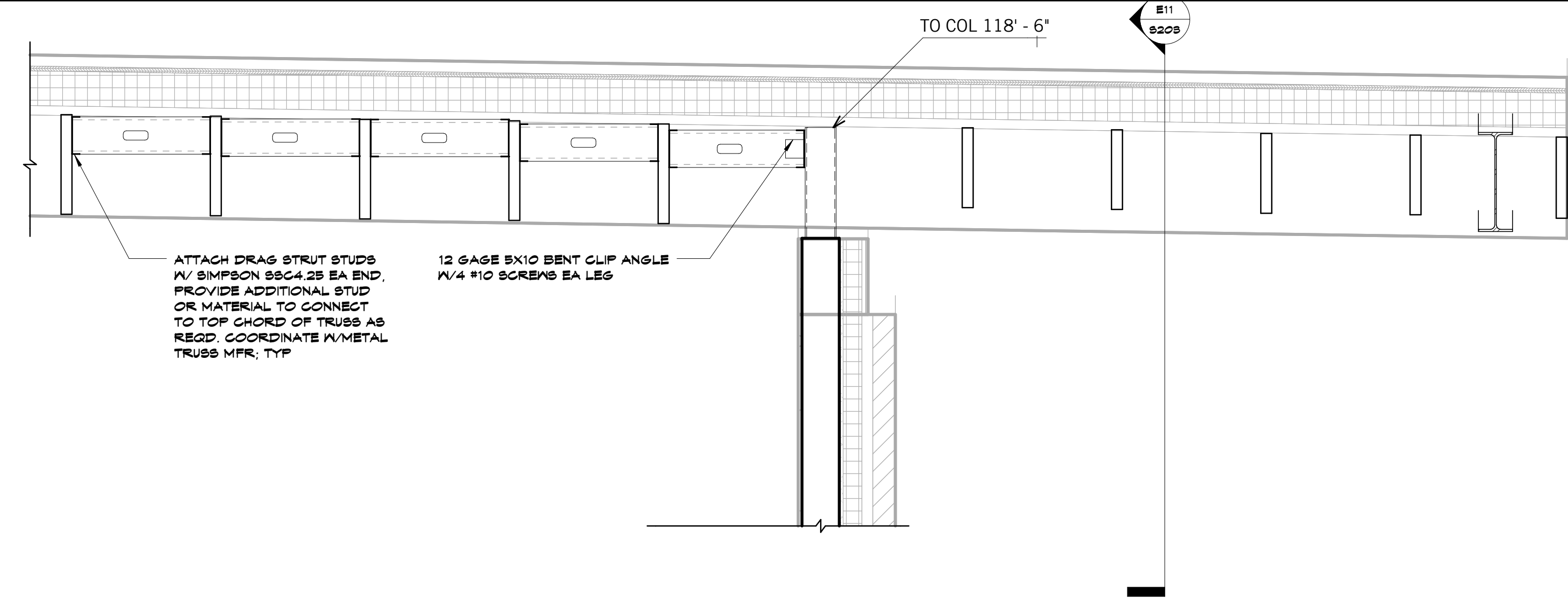
A1 Scale Section
3/4" = 1'-0"



E5 Scale Section
3/4\" = 1'-0"



A5 Scale Section
3/4\" = 1'-0"



A9 Scale Section
3/4\" = 1'-0"

9/30/2016 1:30:09 PM

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 Structural # 1335001133

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Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date



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 E-2000173299

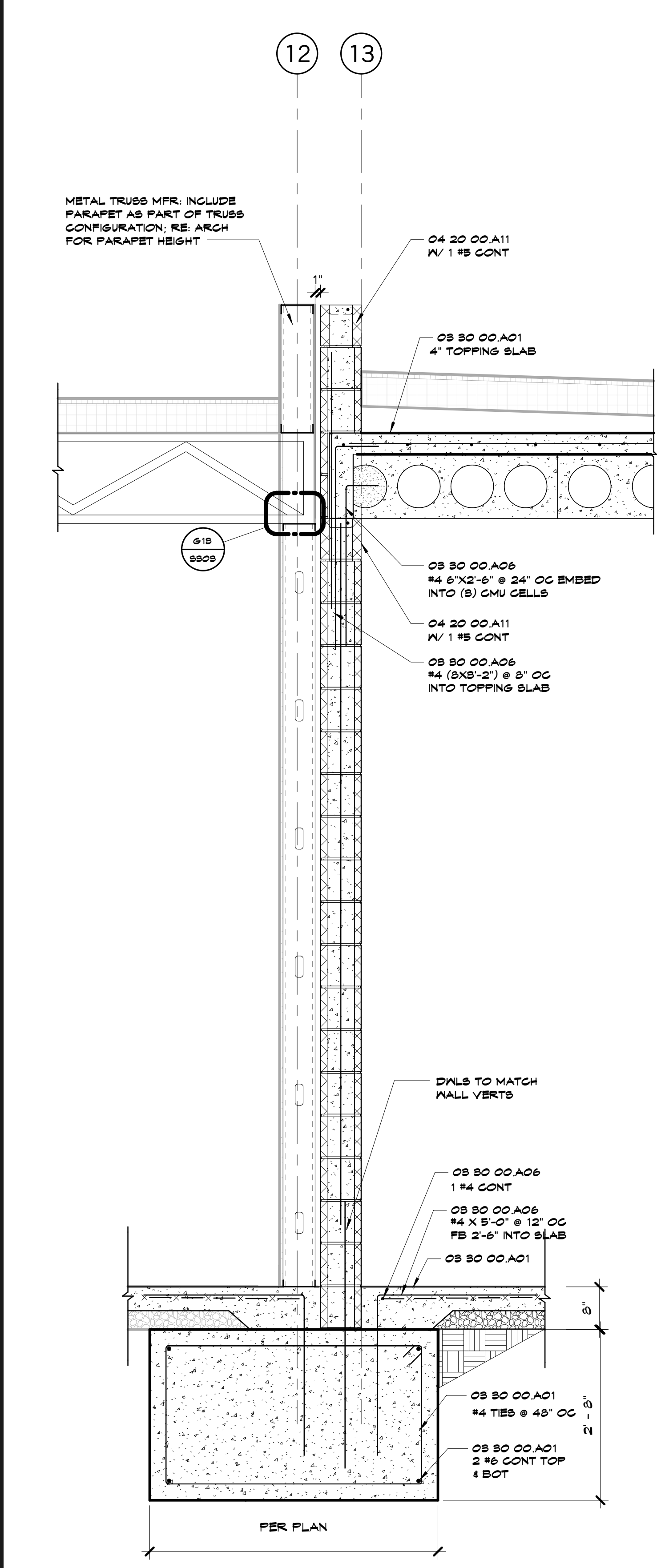
The Professional Engineer seal of the State of Missouri is not subject to a "use it or lose it" rule. However, members of the Missouri Board of Engineering are required to complete continuing education and the engineer retains their license for each year, drawing or document not including this seal.

JOB NO: 16054
 DRAWN BY: SAH
 CHECKED BY: DBH
 DATE: 09.30.2016

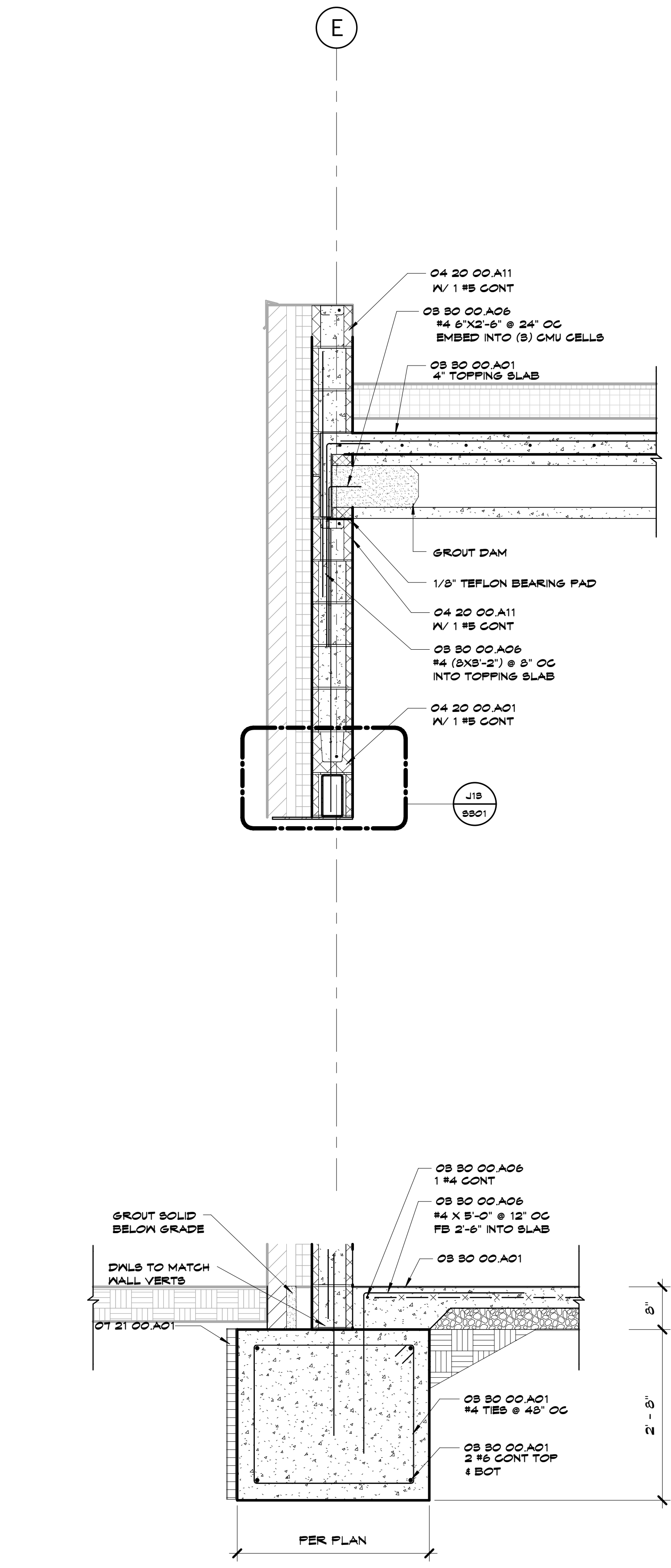
S403

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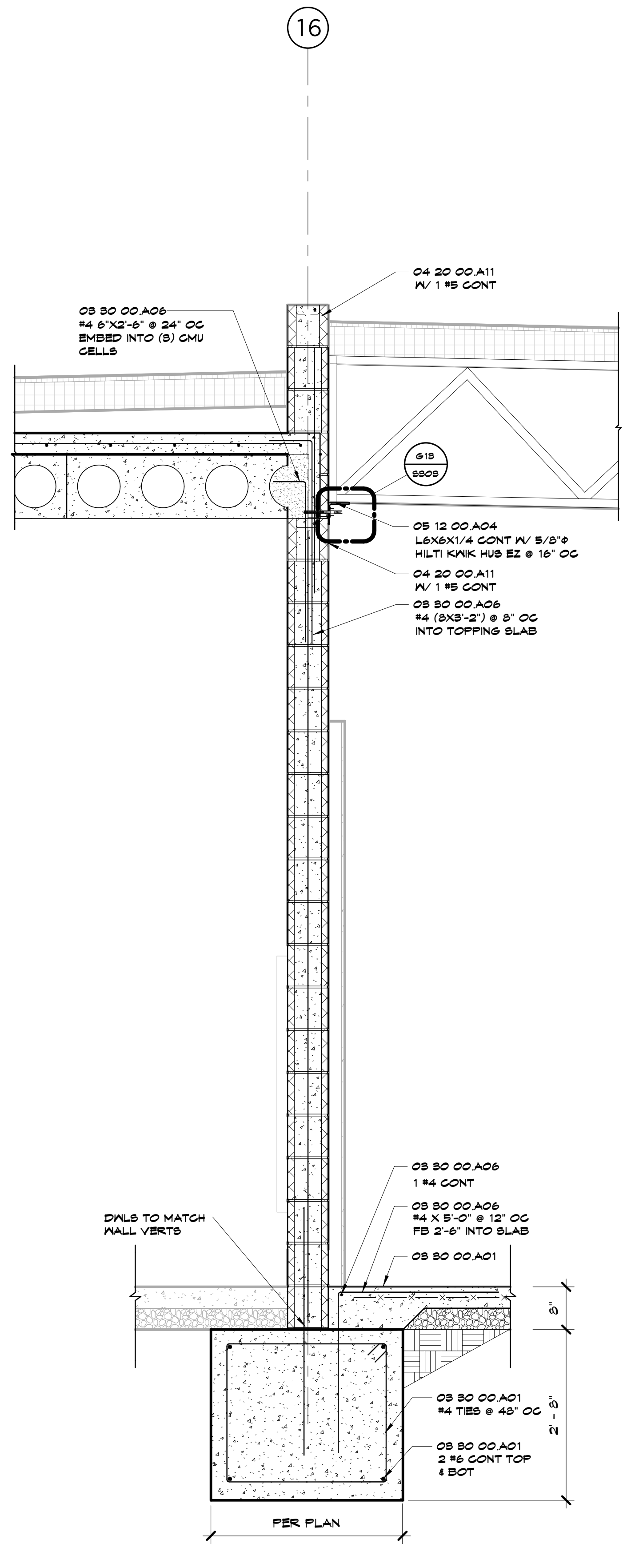
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A5 Scale 3/4" = 1'-0" Section

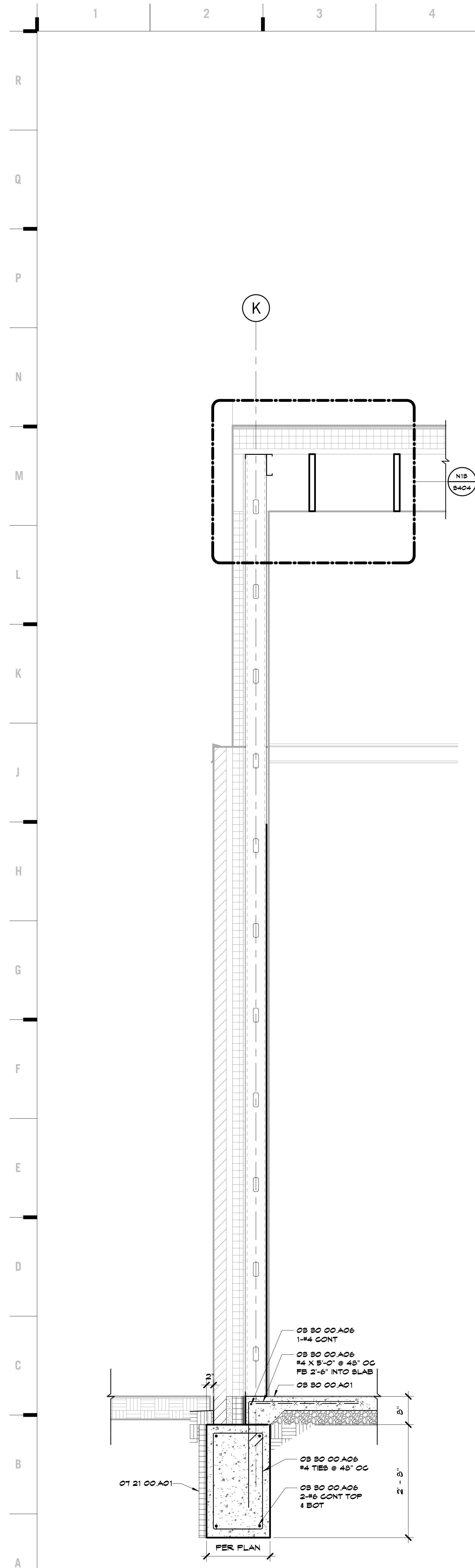


A9 Scale 3/4" = 1'-0" Section

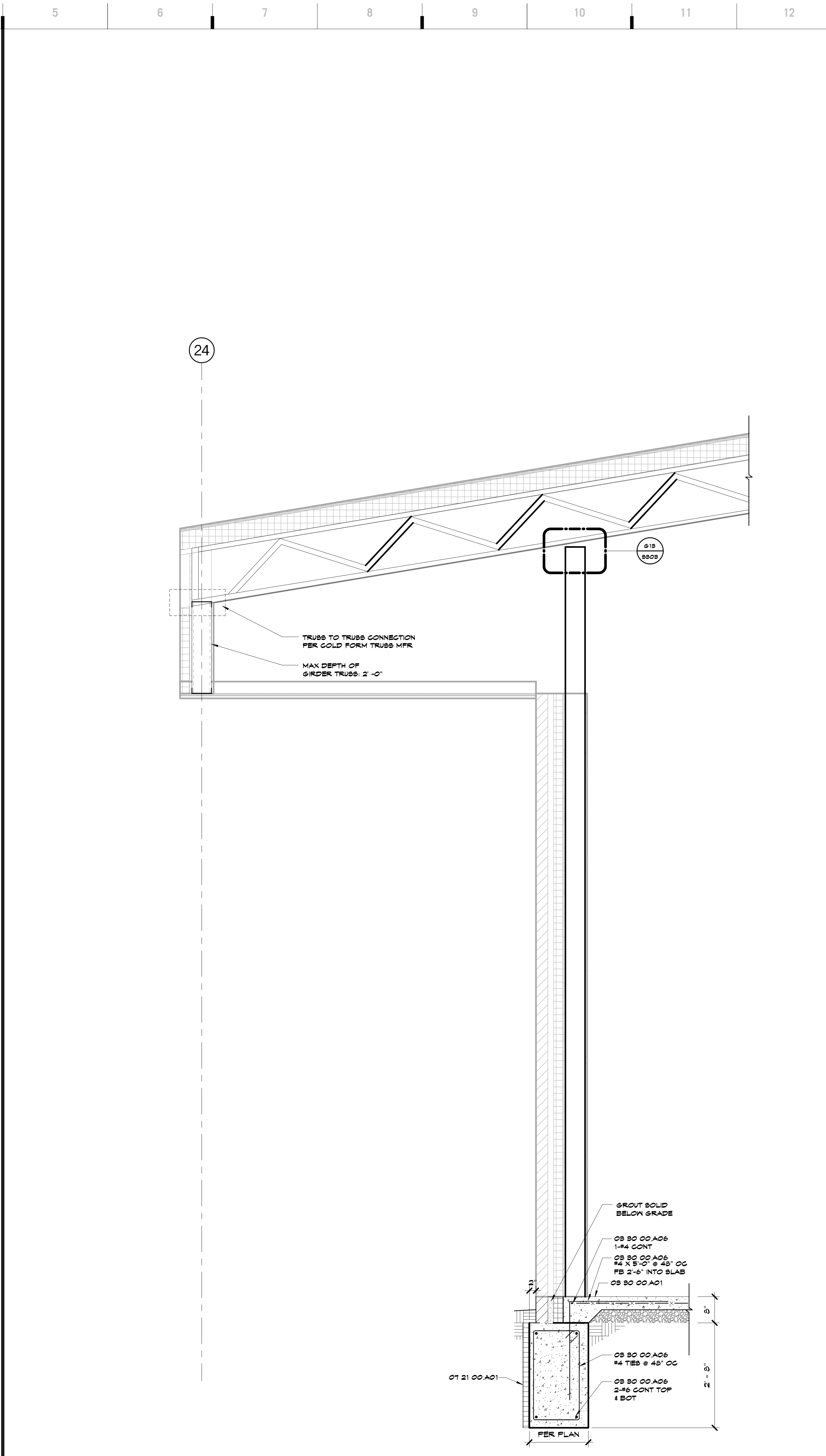


A13 Scale 3/4" = 1'-0" Section

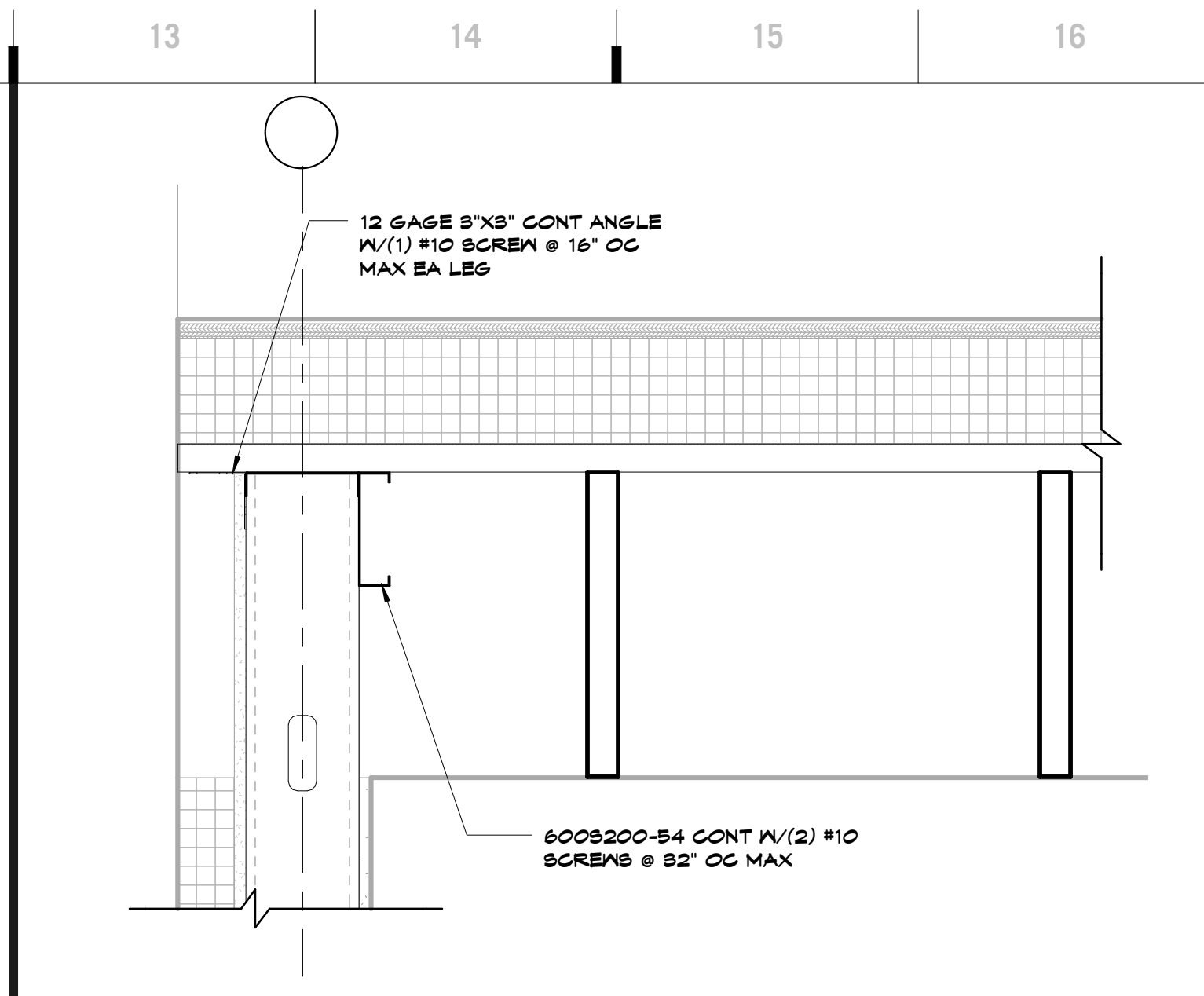
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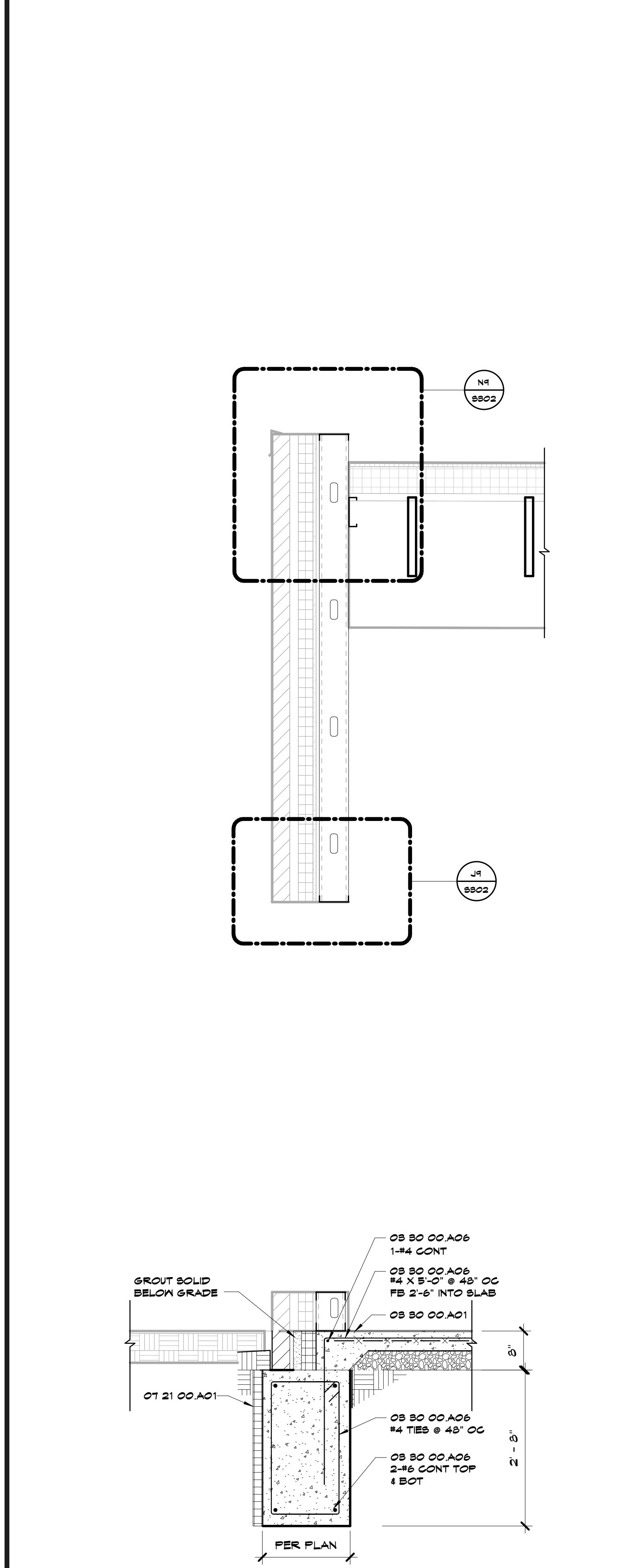
A1 Scale Section
3/4" = 1'-0"



A5 Scale Section
3/4" = 1'-0"



N13 Scale Callout
1 1/2" = 1'-0"



A13 Scale Section
3/4" = 1'-0"

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Professional # 000001331

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Joplin Schools

REVISIONS:

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E-2000173299

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S404

SHEET KEYNOTE LEGEND

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John E. Funk
E-2008001860

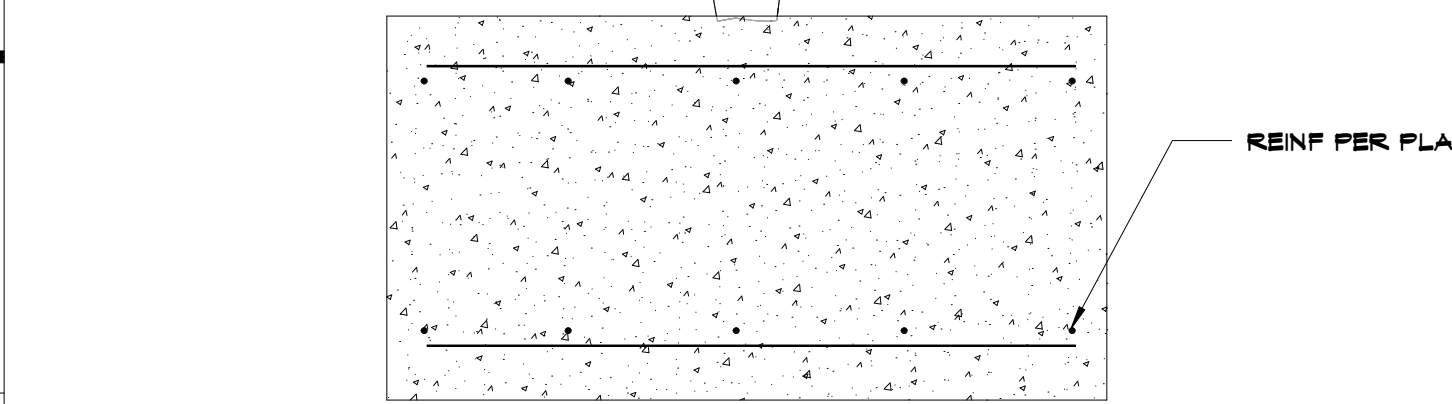
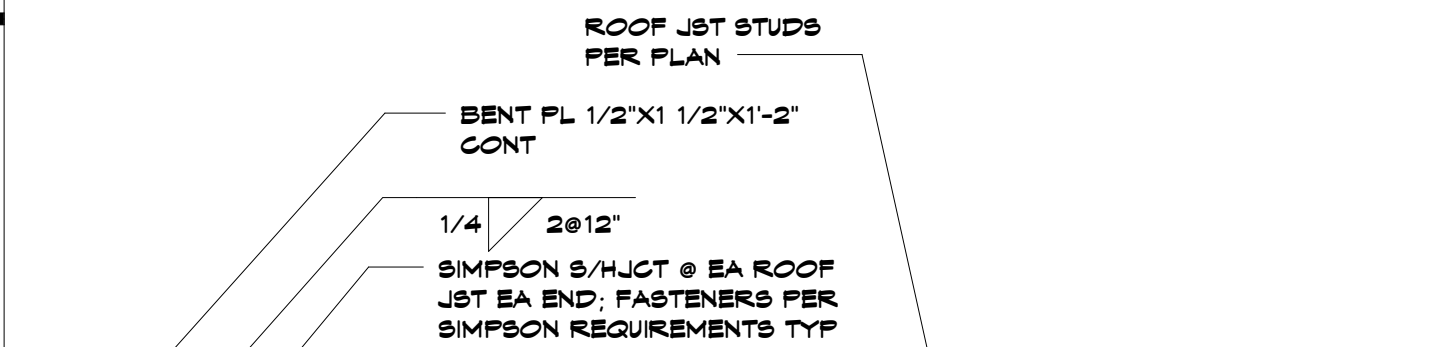
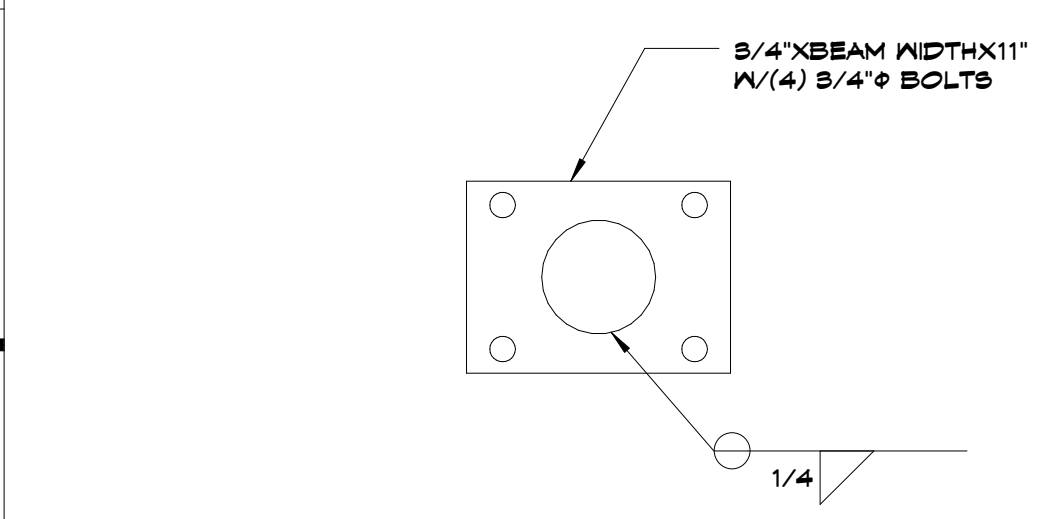
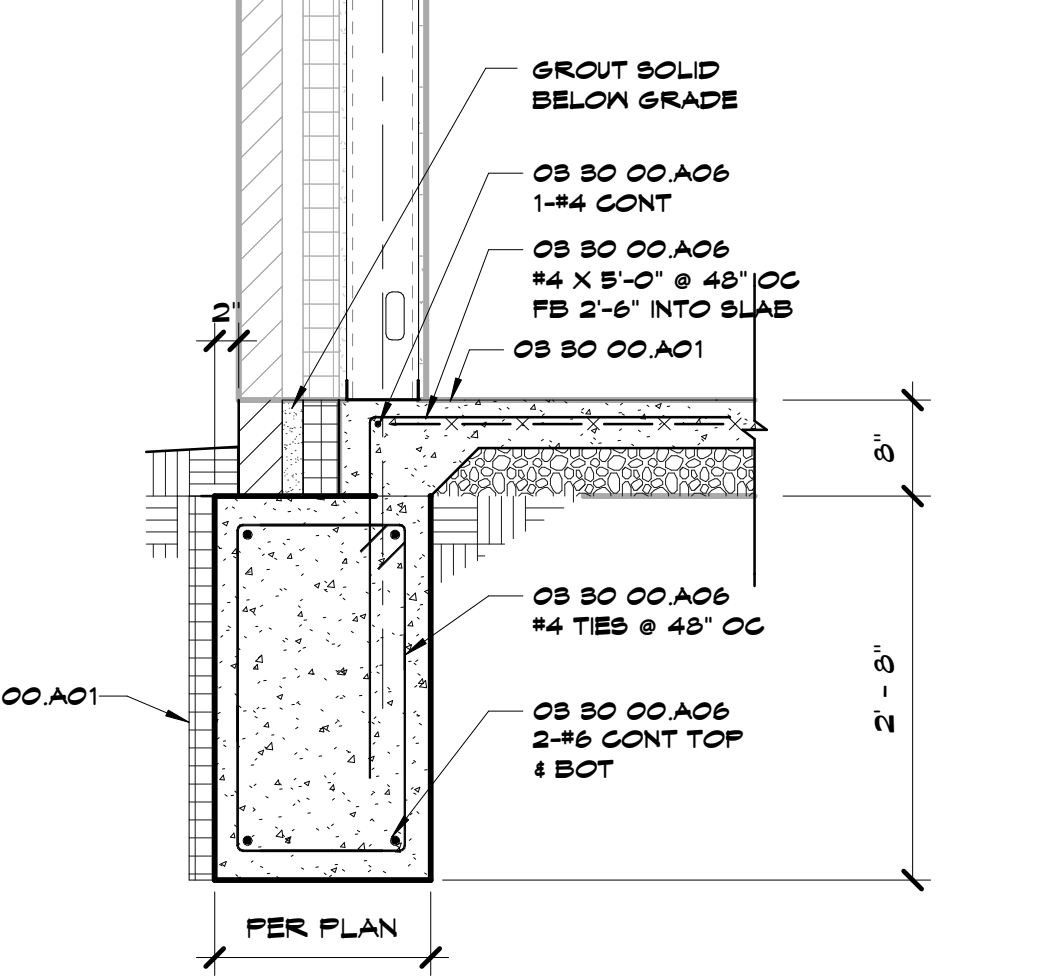
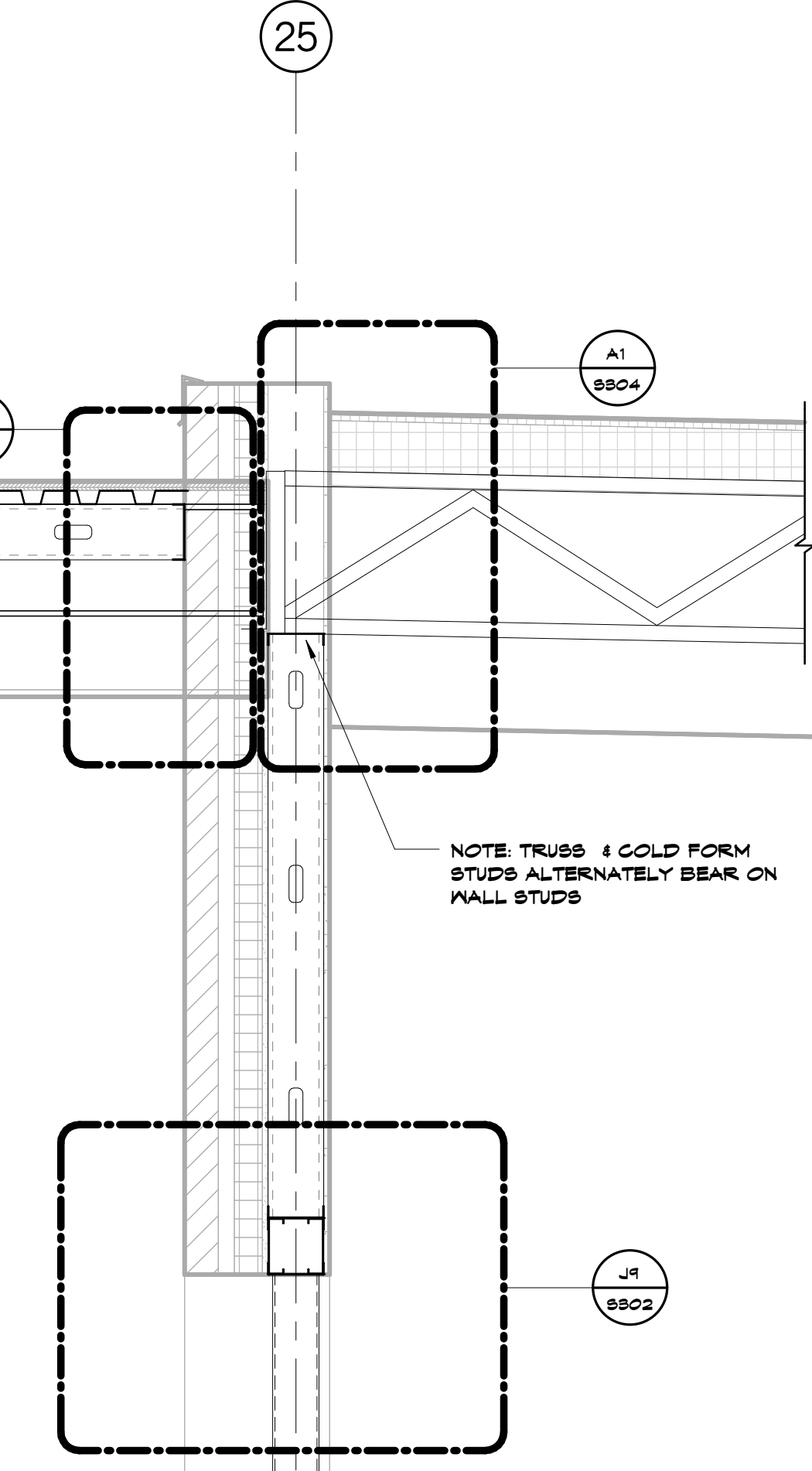
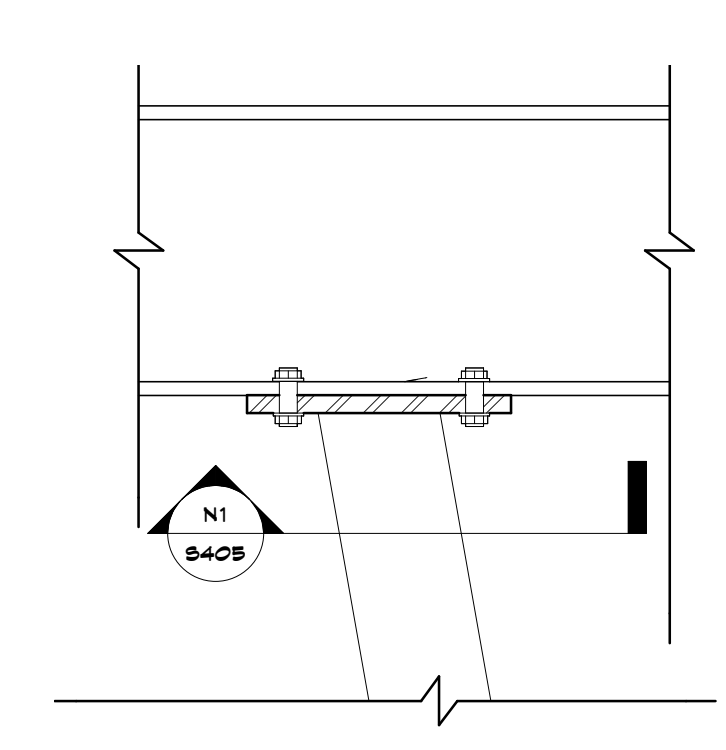
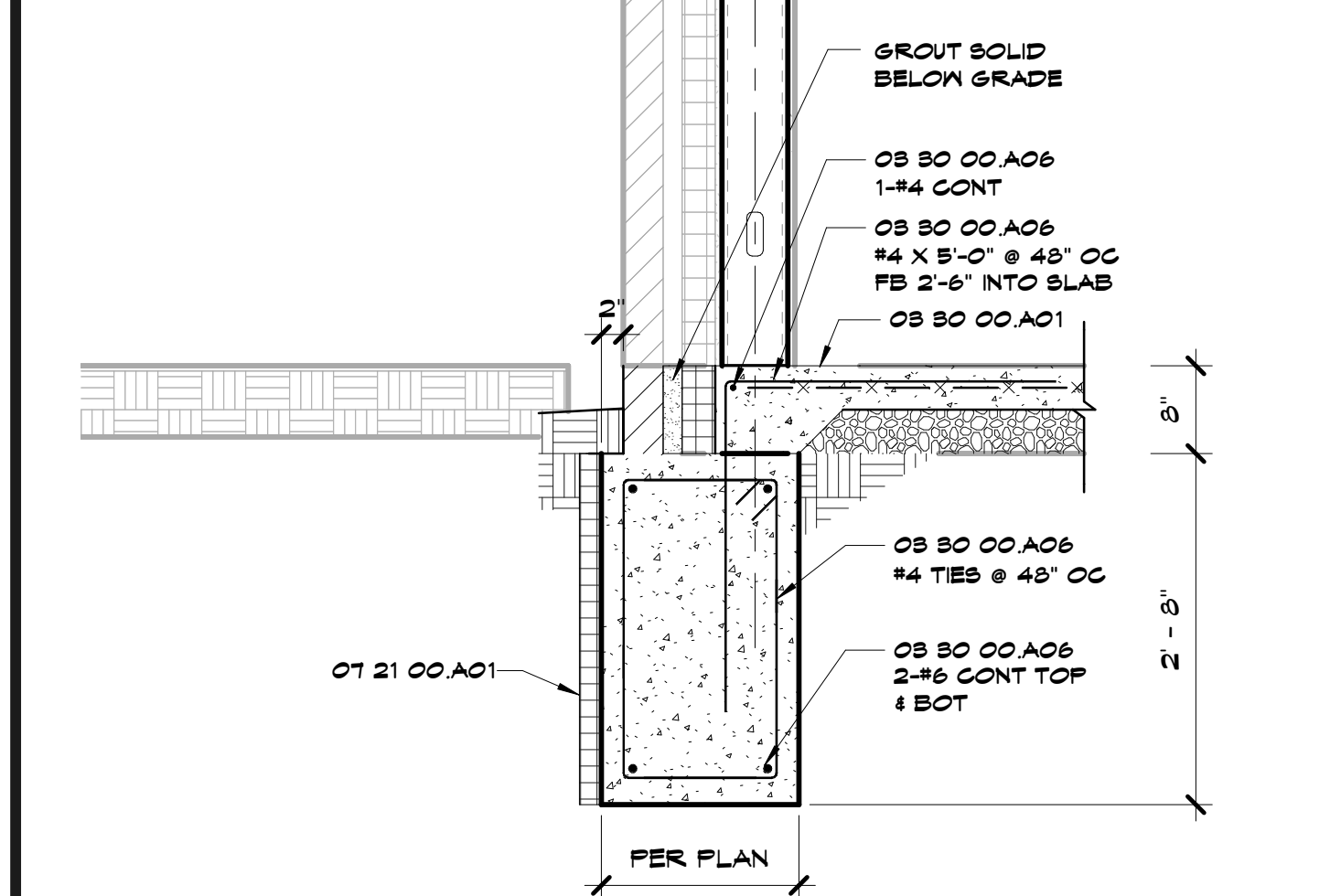
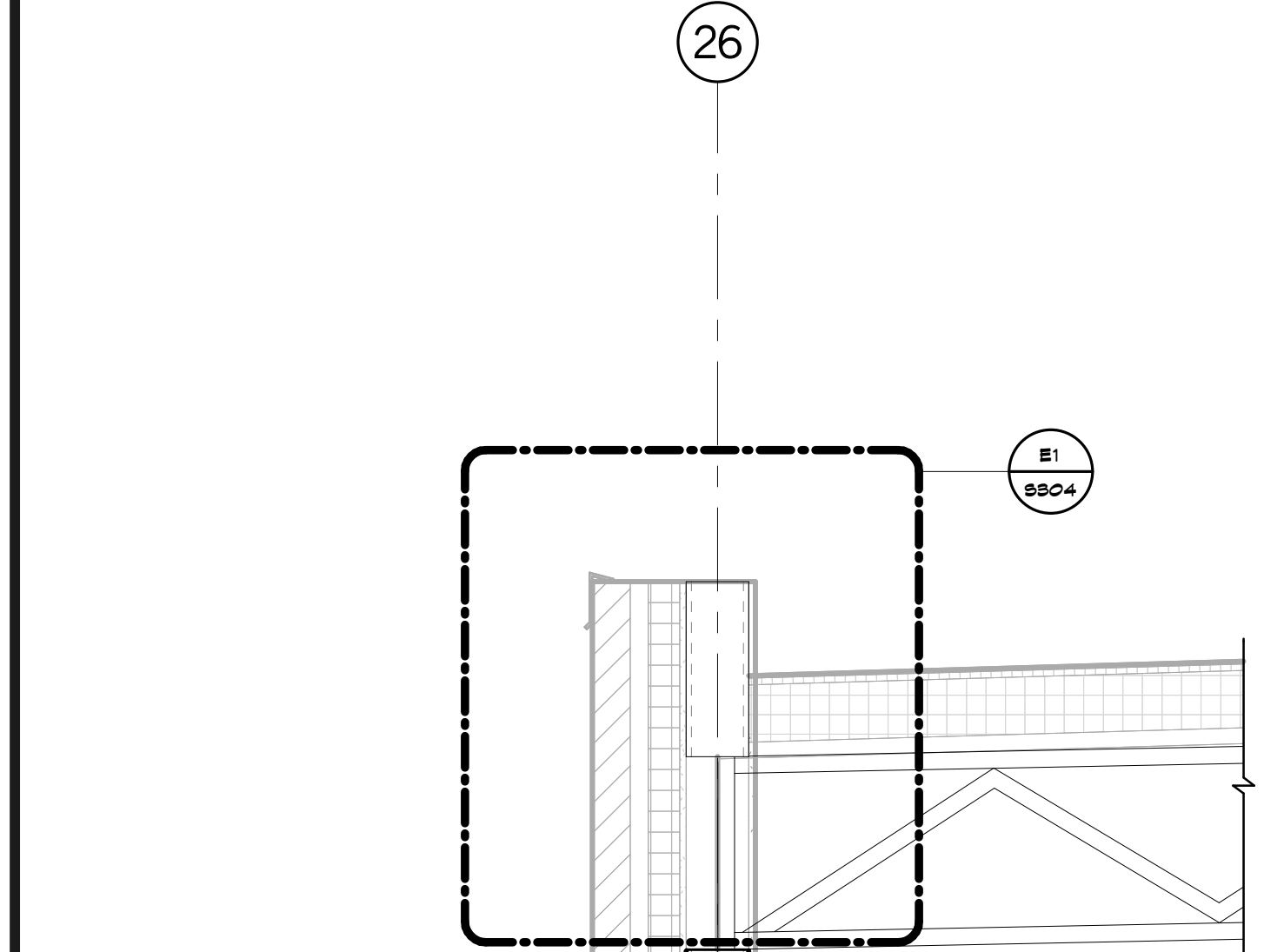
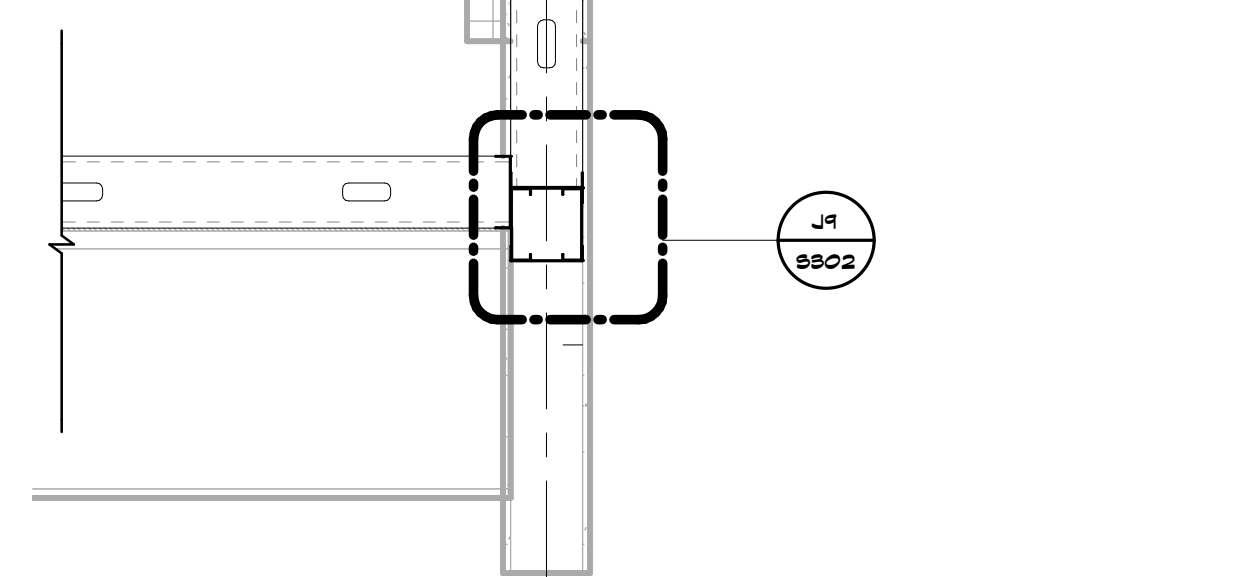
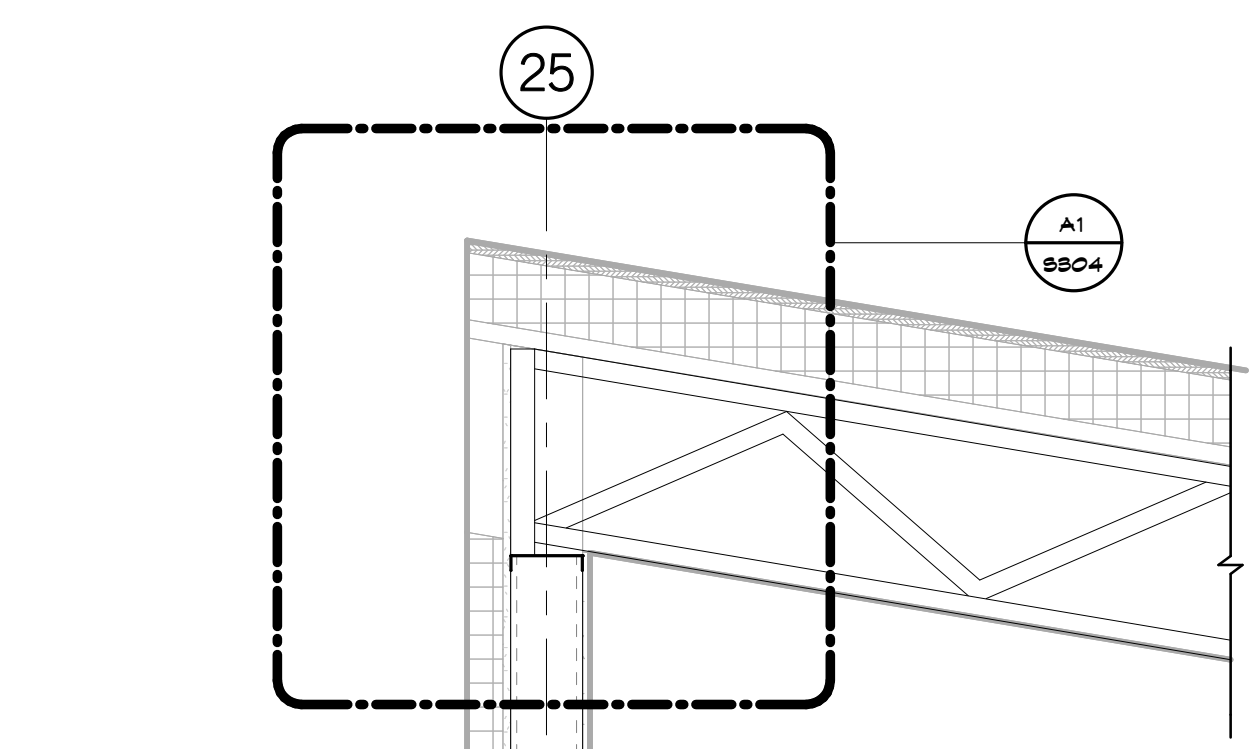
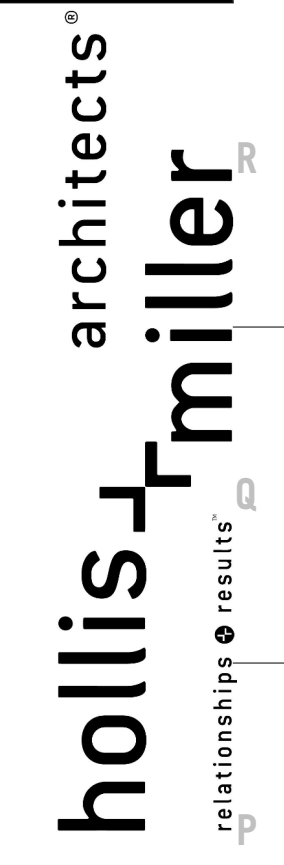
The Professional Engineer seal is not applicable to this project as it does not meet the requirements of the Missouri Professional Engineer Act.

JOB NO: 16054
DRAWN BY: SAH
CHECKED BY: DBH
DATE: 09.30.2016

S405

OF

SECTIONS



N1 Scale 1 1/2" = 1'-0" Detail

N5 Scale 1 1/2" = 1'-0" Callout

A1 Scale 3/4" = 1'-0" Section

A9 Scale 3/4" = 1'-0" Section

A13 Scale 3/4" = 1'-0" Section

3/4" X BEAM WIDTH X 11"
W/ (4) 3/4" BOLTS

ROOF JOINT STUDS PER PLAN
BENT PL 1/2" X 1 1/2" X 1'-2" CONT
1/4" 2@12"
SIMPSON 5/8" X 1/2" @ EA ROOF JOINT EA END FASTENERS PER SIMPSON REQUIREMENTS TYP

NOTE: TRUSS 4 GOLF FORM STUDS ALTERNATELY BEAR ON WALL STUDS

GROUT SOLID BELOW GRADE
08 80 00 A06 1-#4 CONT
08 80 00 A06 #4 X 5'-0" @ 48" OC FB 2'-6" INTO SLAB
08 80 00 A01

08 80 00 A06 #4 TIES @ 48" OC
08 80 00 A06 2-#6 CONT TOP 4 BOT
07 21 00 A01

08 80 00 A06 1-#4 CONT
08 80 00 A06 #4 X 5'-0" @ 48" OC FB 2'-6" INTO SLAB
08 80 00 A01

08 80 00 A06 #4 TIES @ 48" OC
08 80 00 A06 2-#6 CONT TOP 4 BOT
07 21 00 A01

GROUT SOLID BELOW GRADE
08 80 00 A06 1-#4 CONT
08 80 00 A06 #4 X 5'-0" @ 48" OC FB 2'-6" INTO SLAB
08 80 00 A01

08 80 00 A06 #4 TIES @ 48" OC
08 80 00 A06 2-#6 CONT TOP 4 BOT
07 21 00 A01

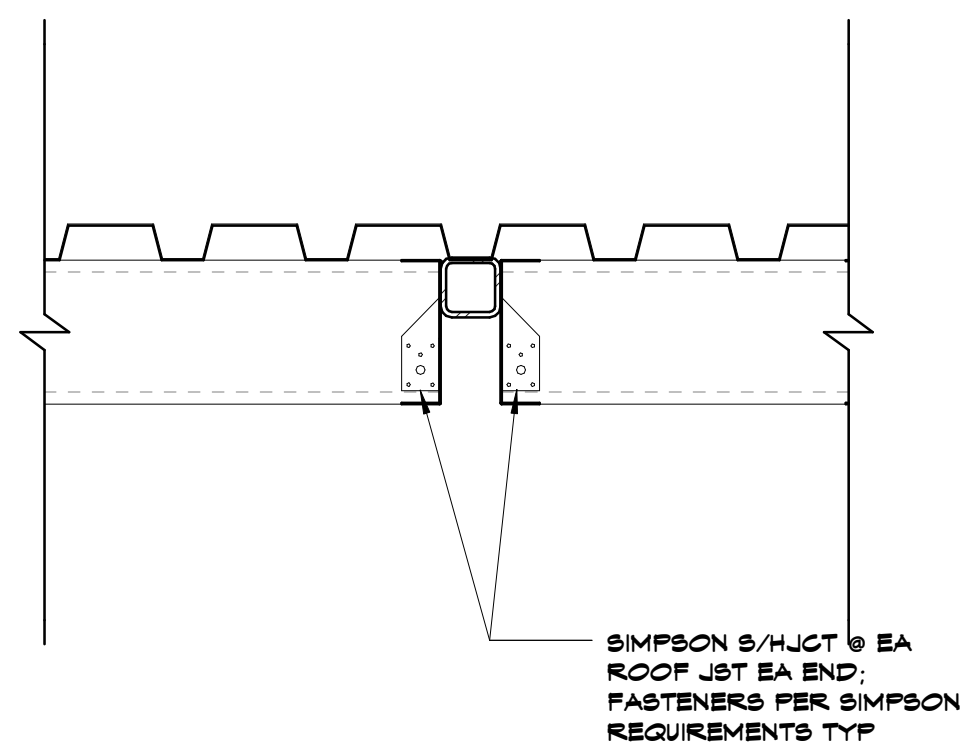
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PER PLAN

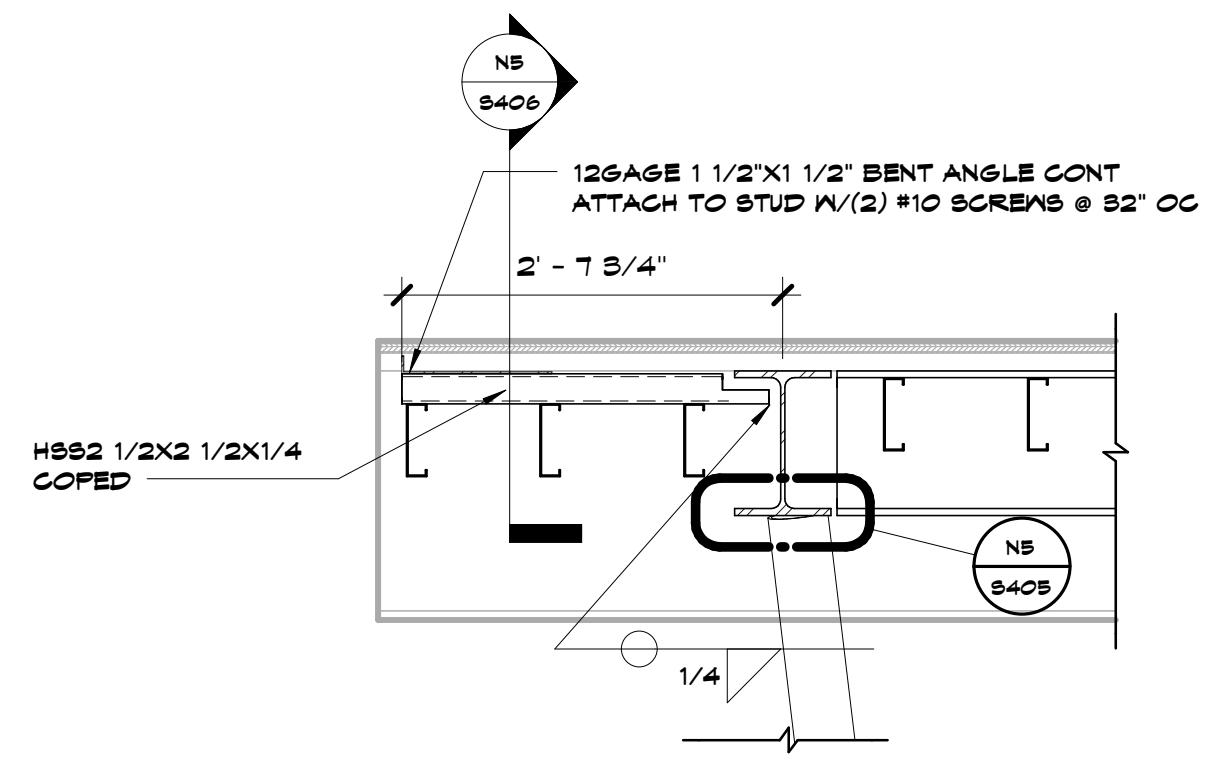
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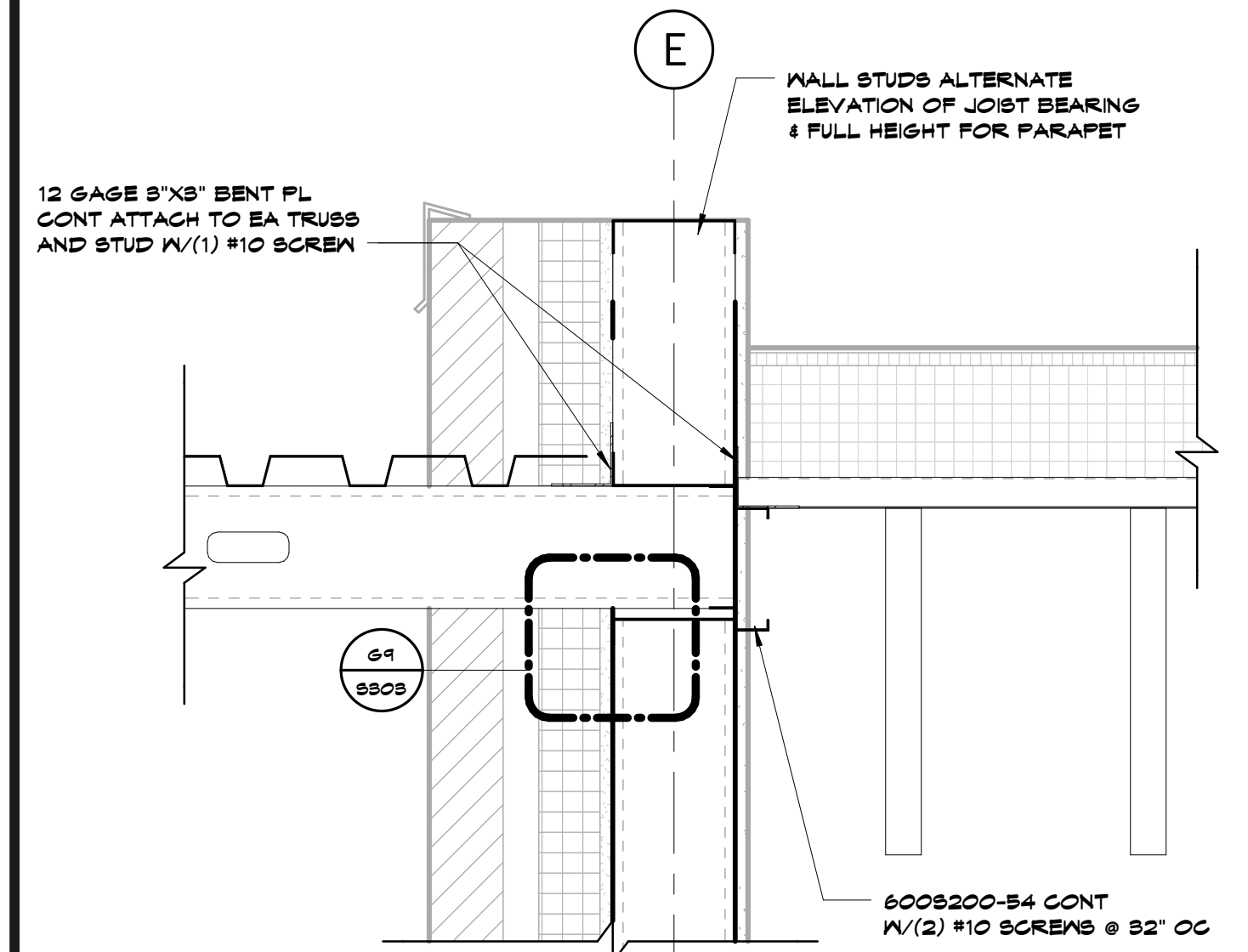
N5 Scale: 1 1/2" = 1'-0" Detail



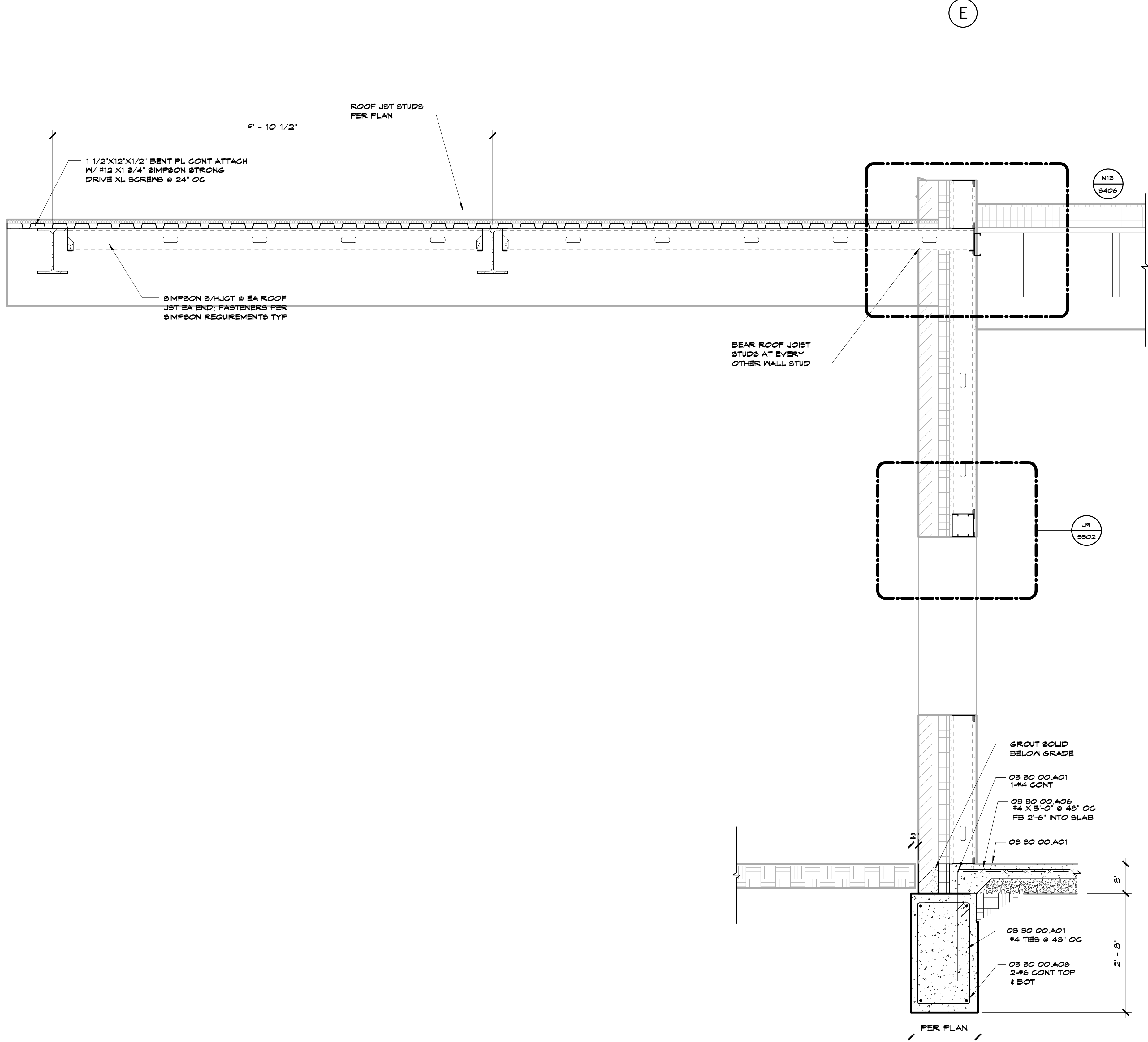
N9 Scale: 3/4" = 1'-0" Section



N13 Scale: 1 1/2" = 1'-0" Callout



A7 Scale: 3/4" = 1'-0" Section



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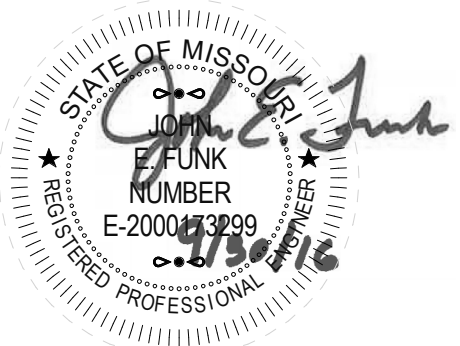
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**Joplin Early Childhood Center
 Joplin Schools**

REVISIONS:

#	Description	Date

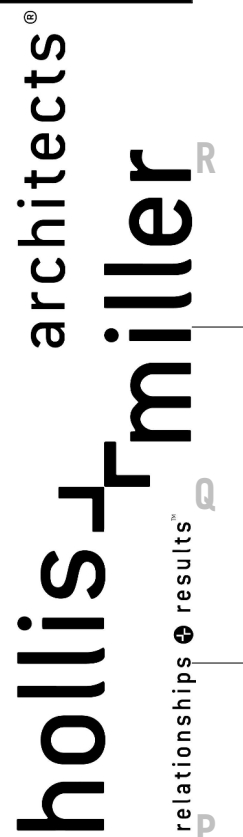


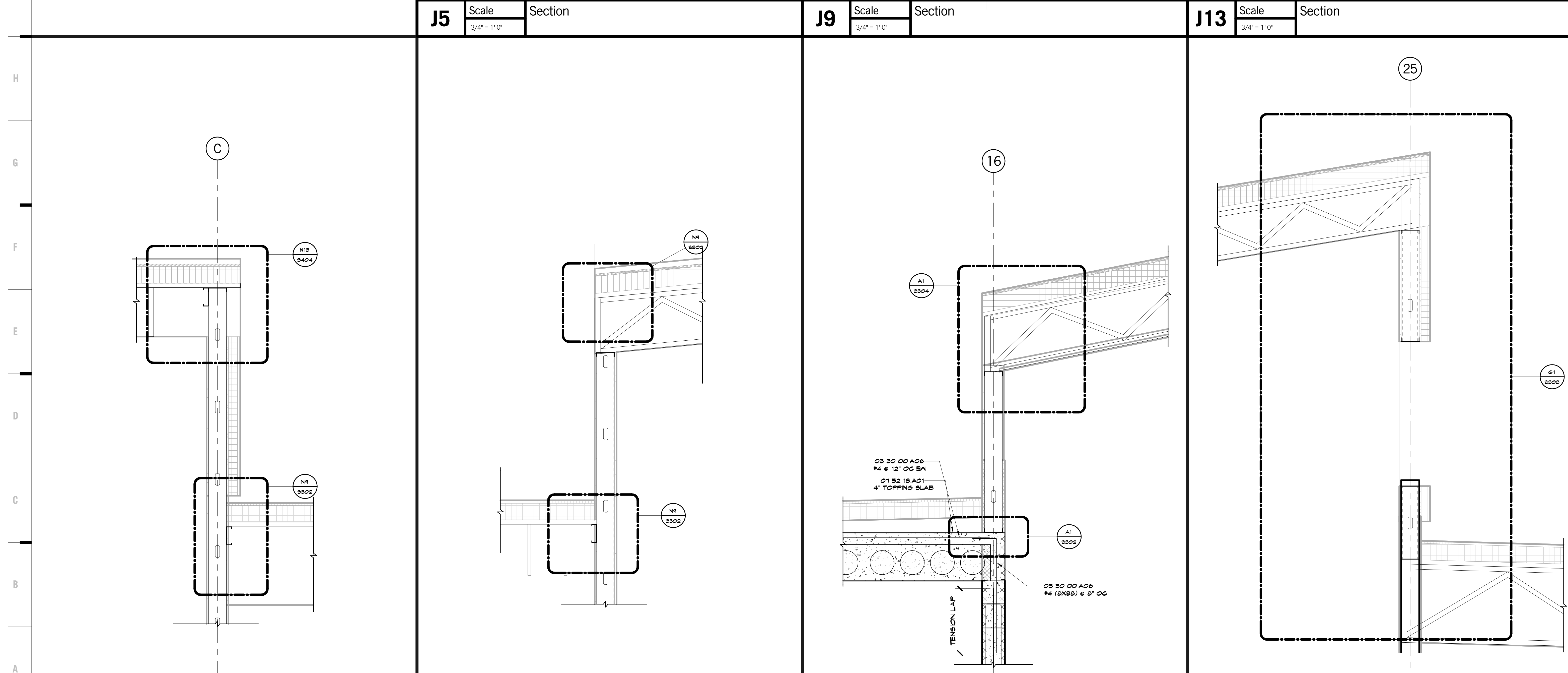
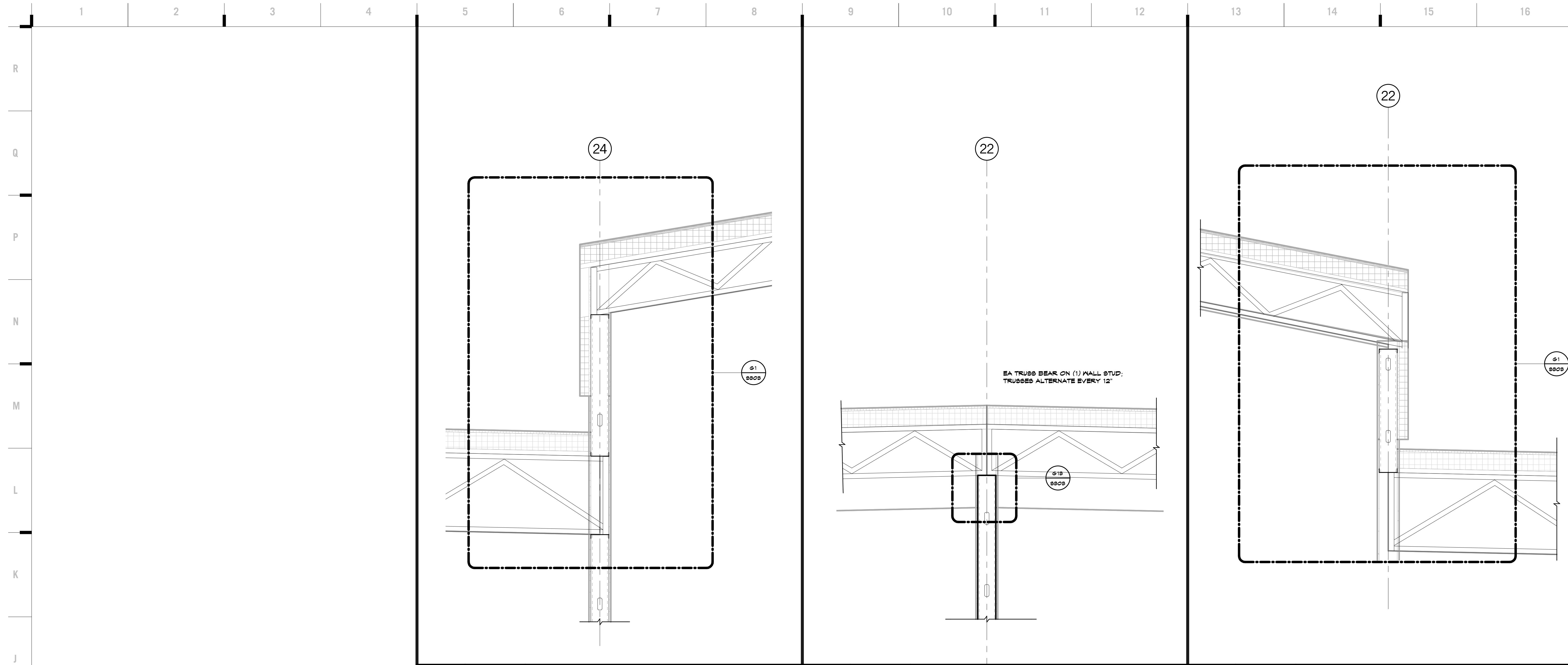
John E. Funk
 E-20080399

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S406





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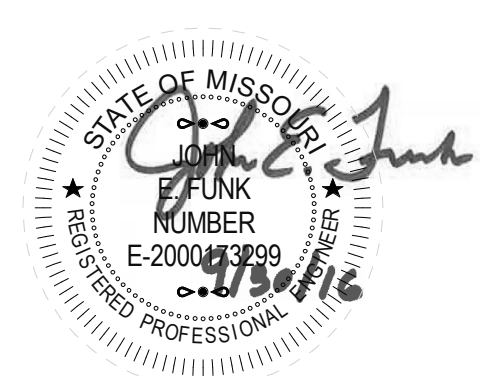
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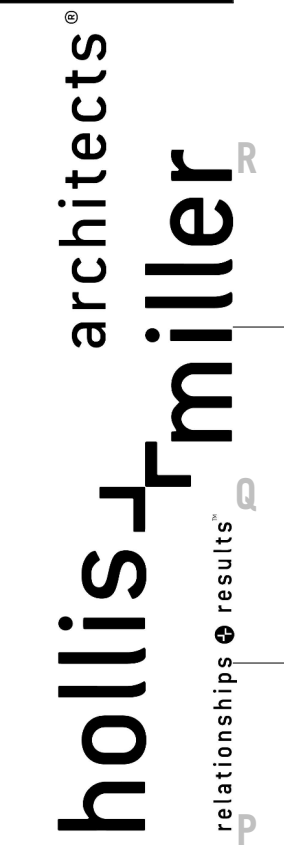
John E. Funk
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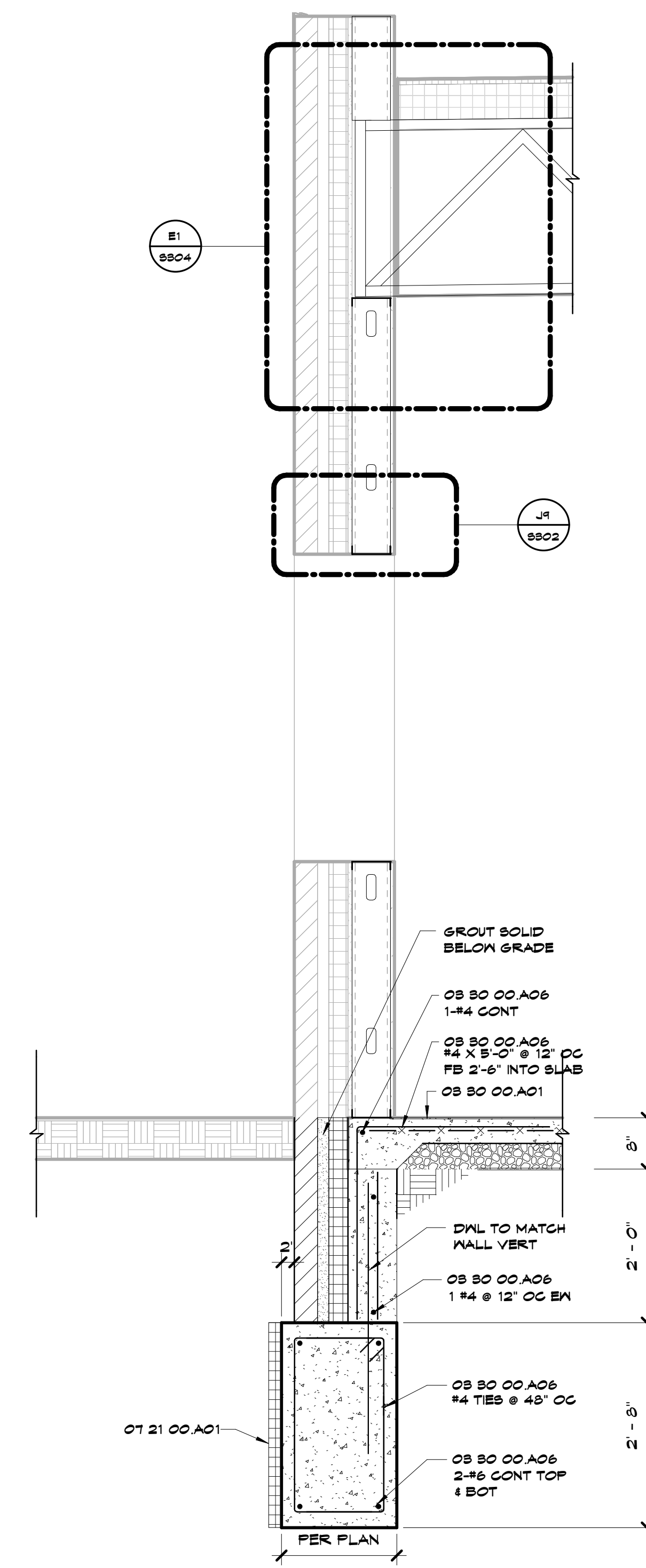
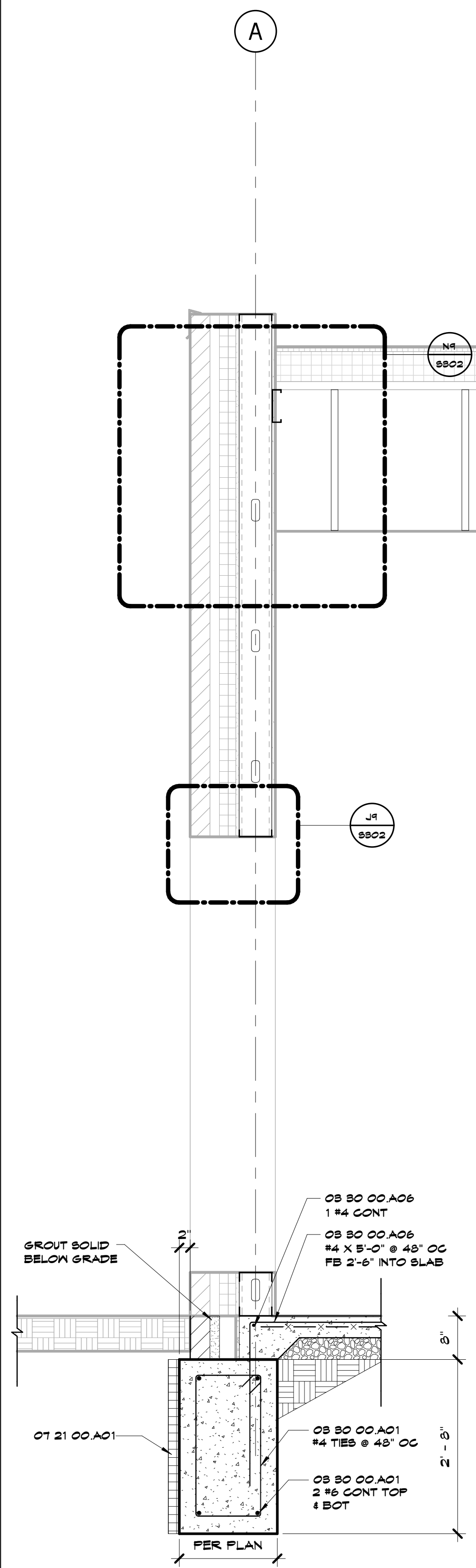
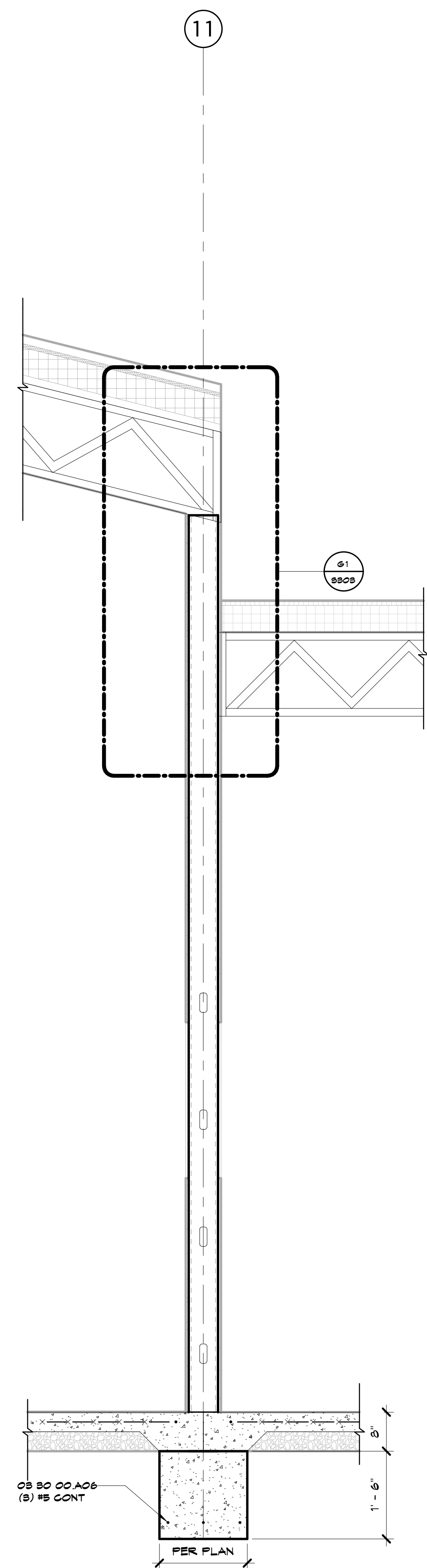
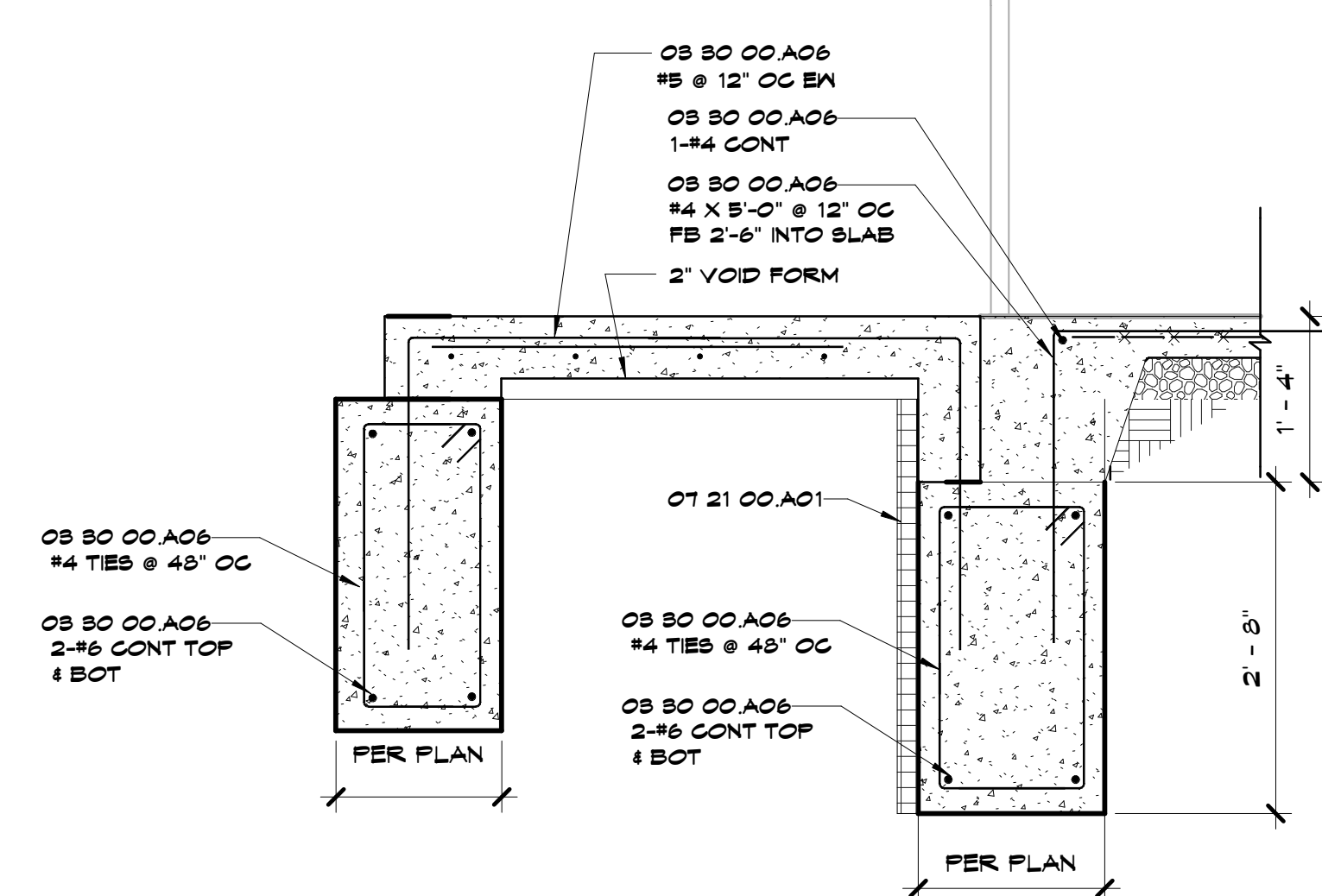
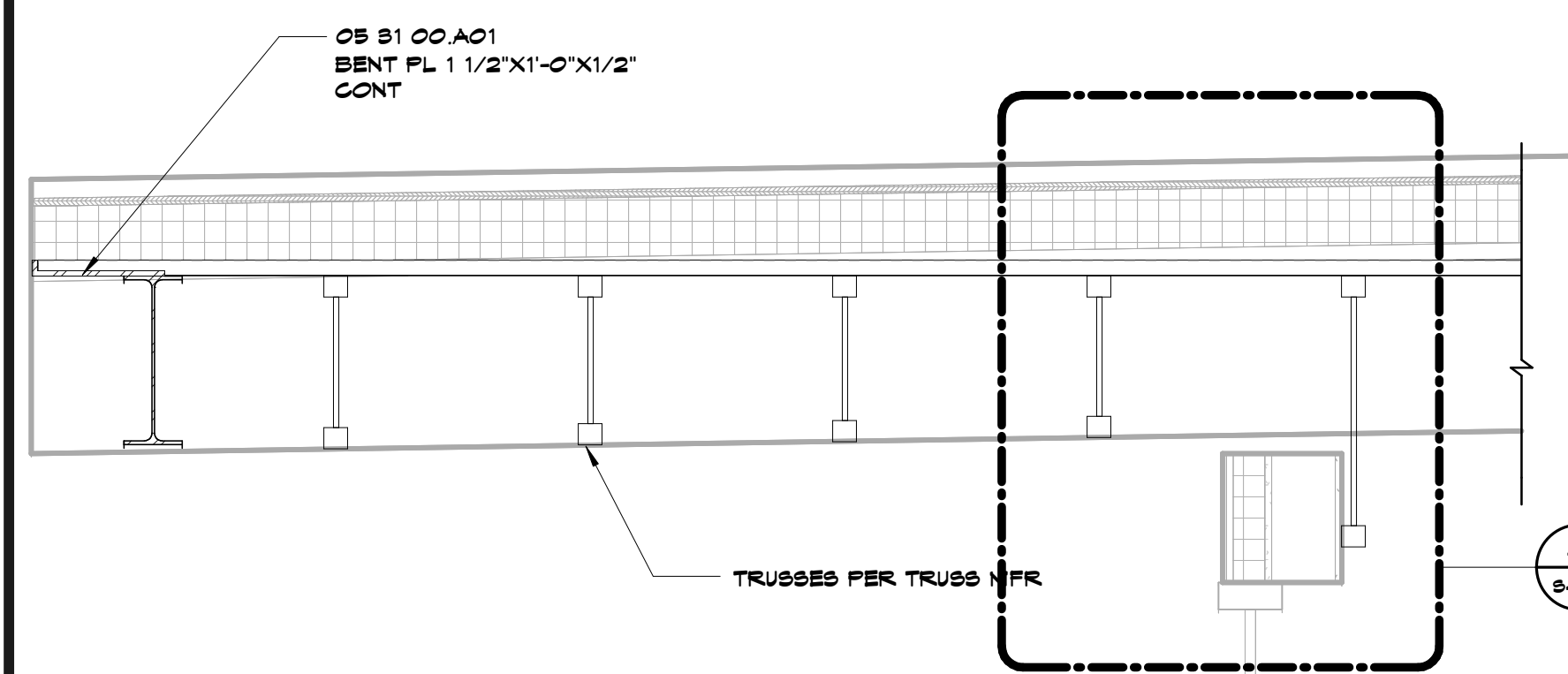
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SECTIONS



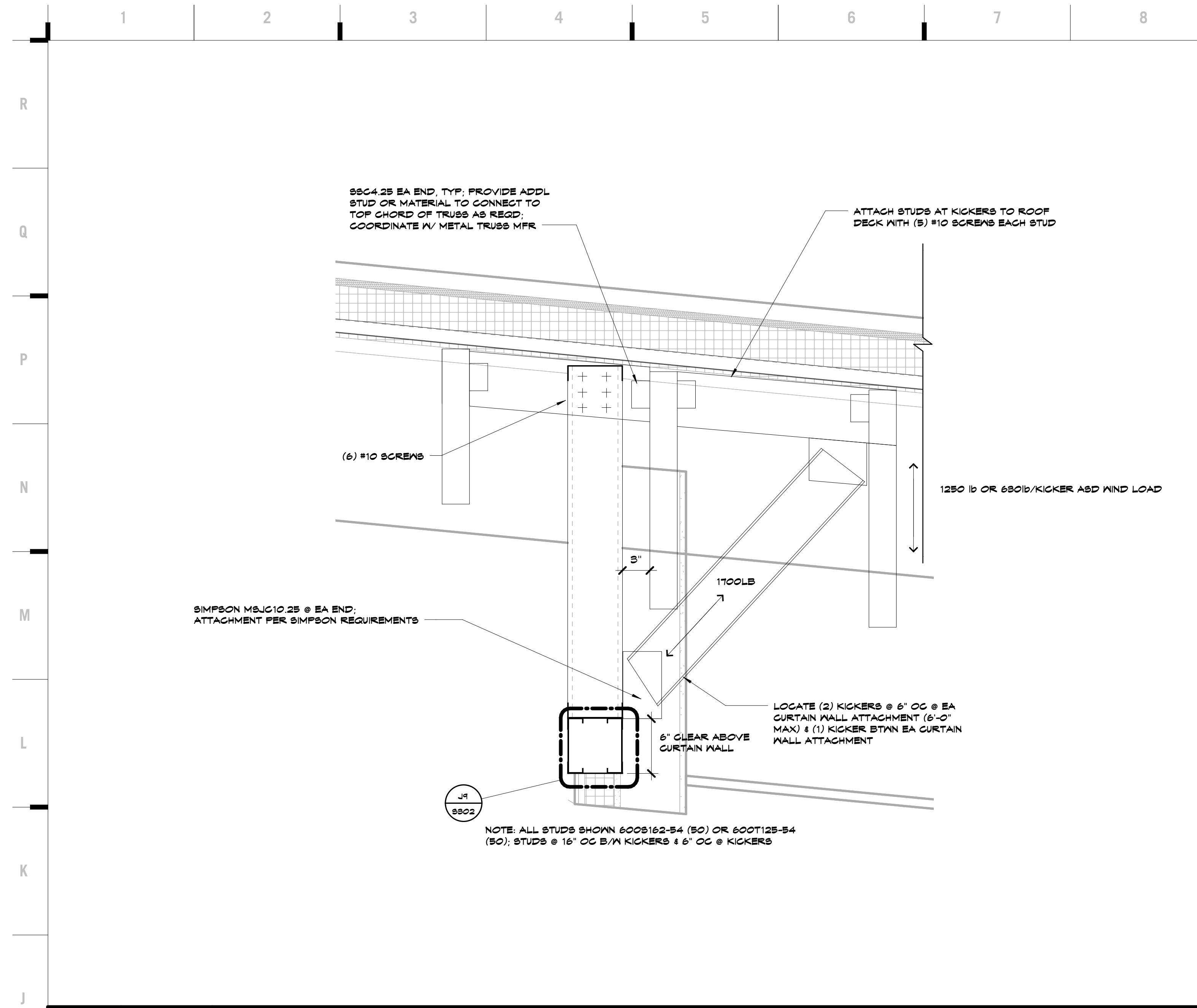
A1 Scale Section
3/4" = 1'-0"

A5 Scale Section
3/4" = 1'-0"

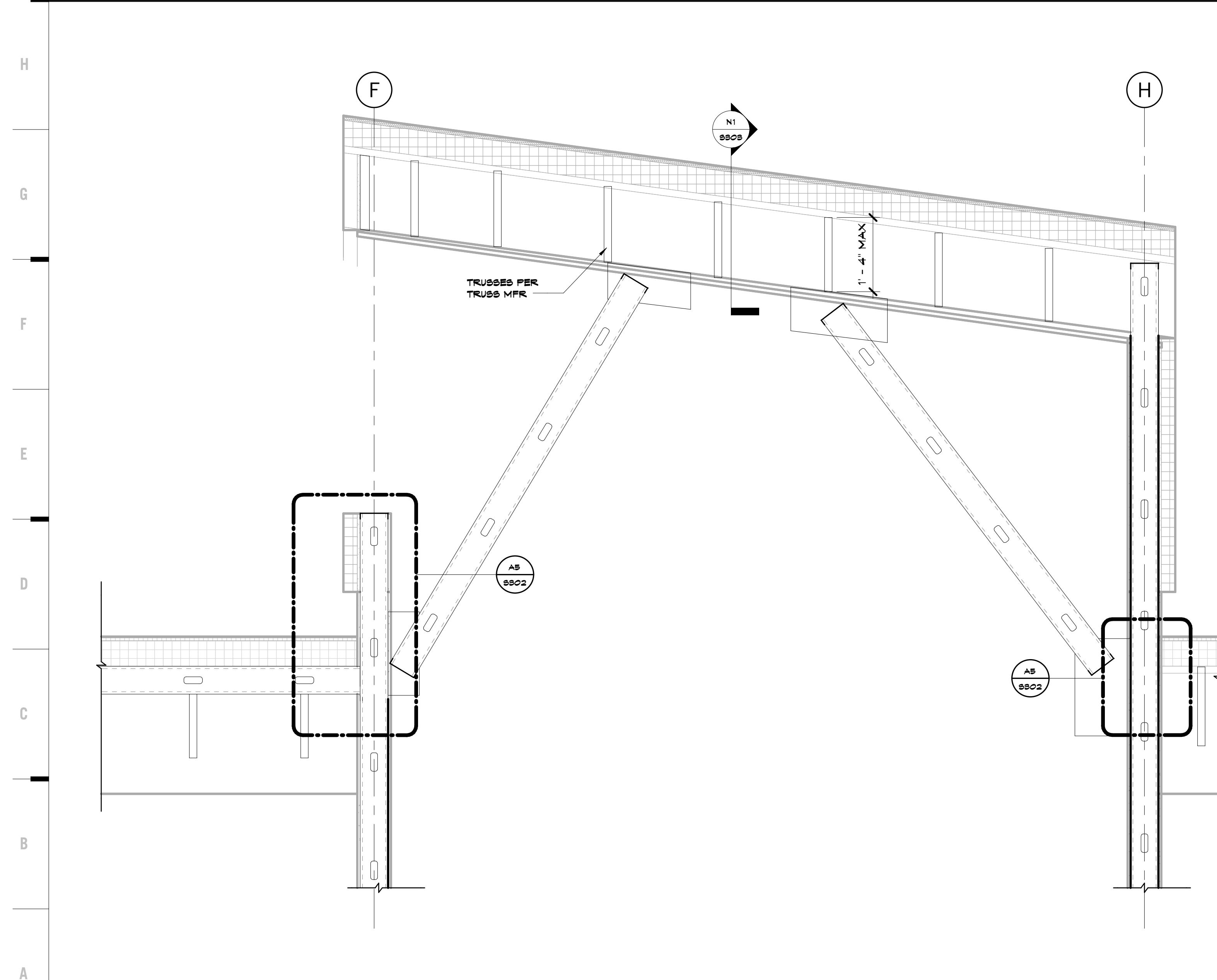
A10 Scale Section
3/4" = 1'-0"

A14 Scale Section
3/4" = 1'-0"

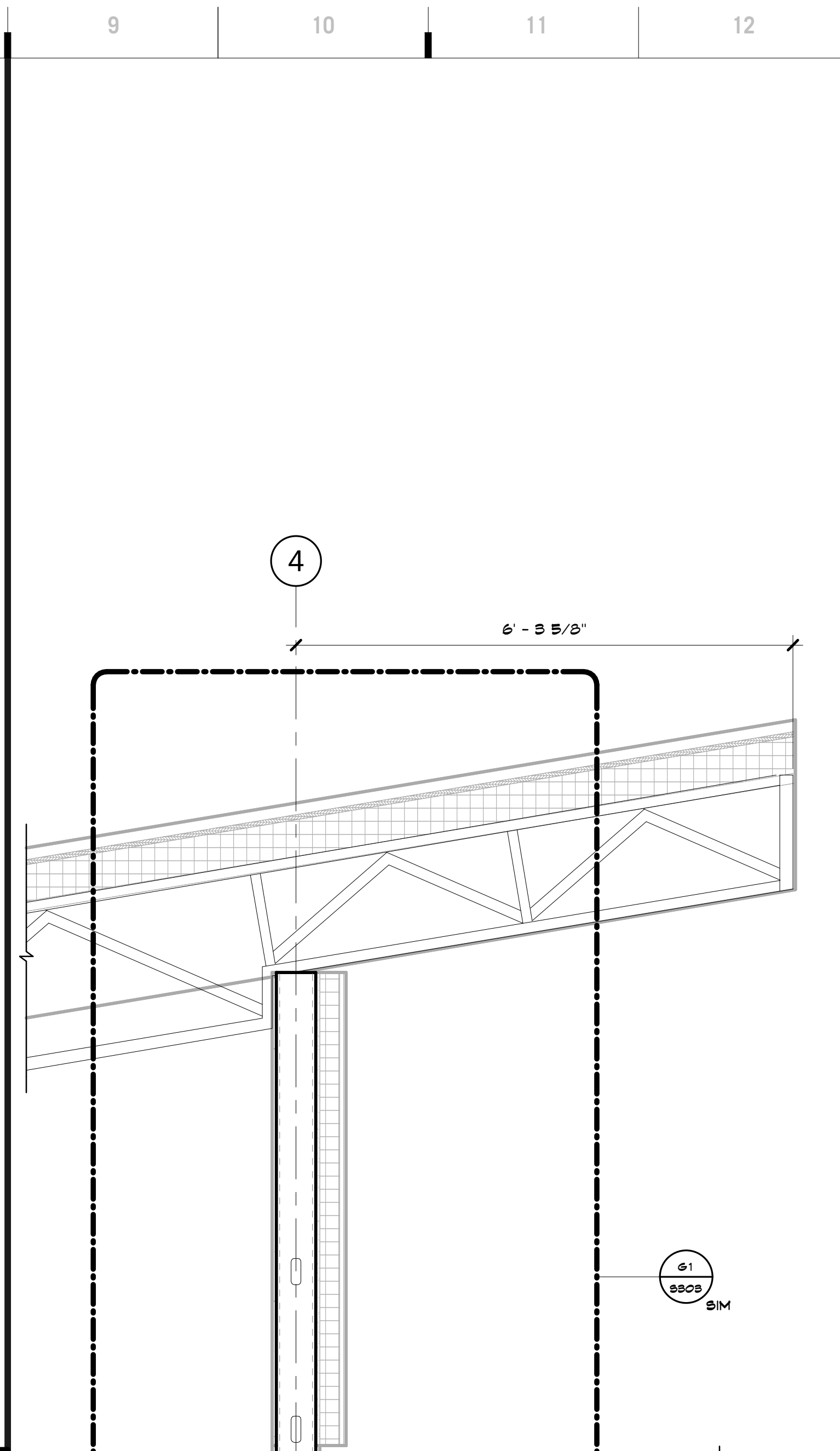
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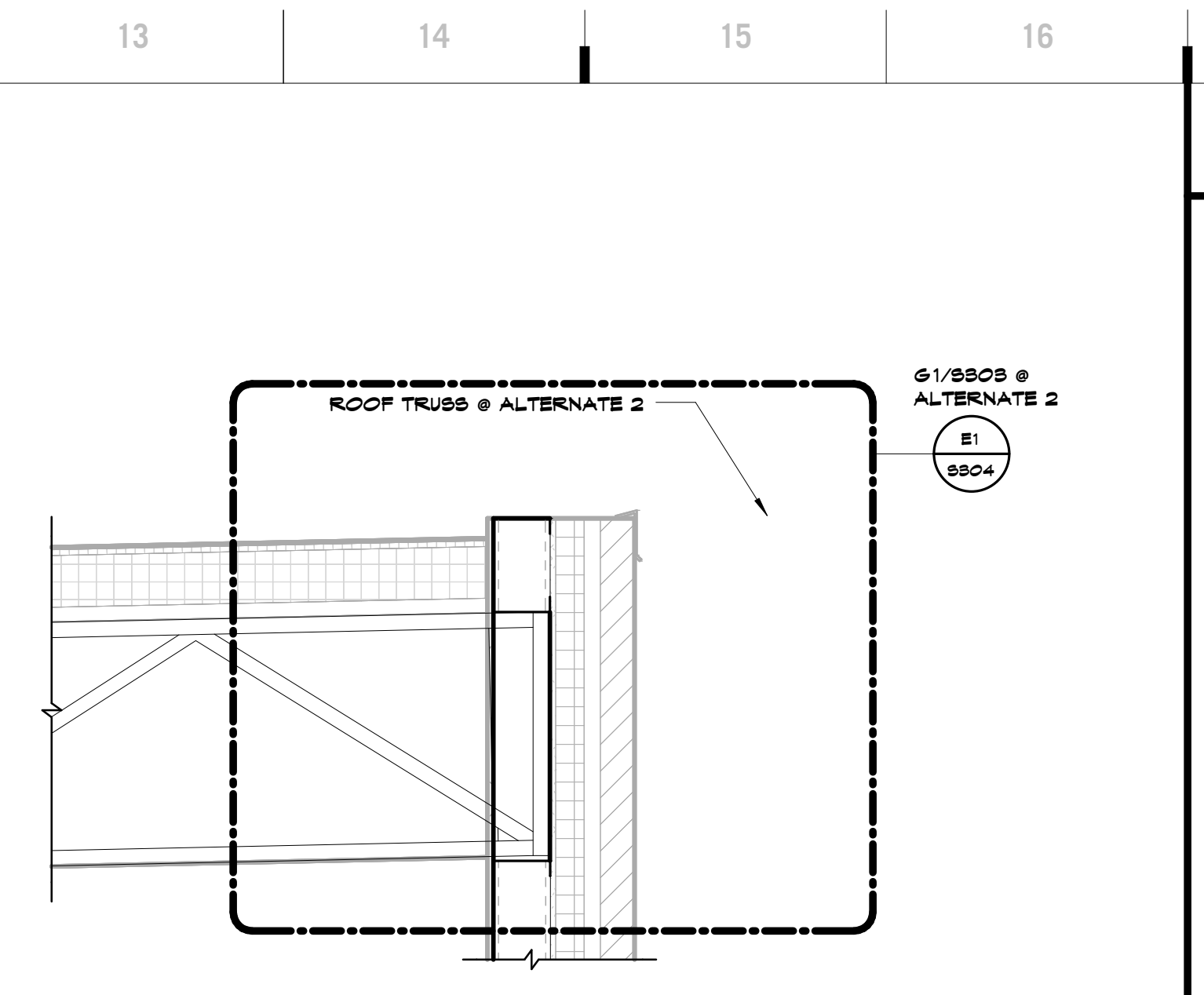
J1 Scale Section
1 1/2" = 1'-0"



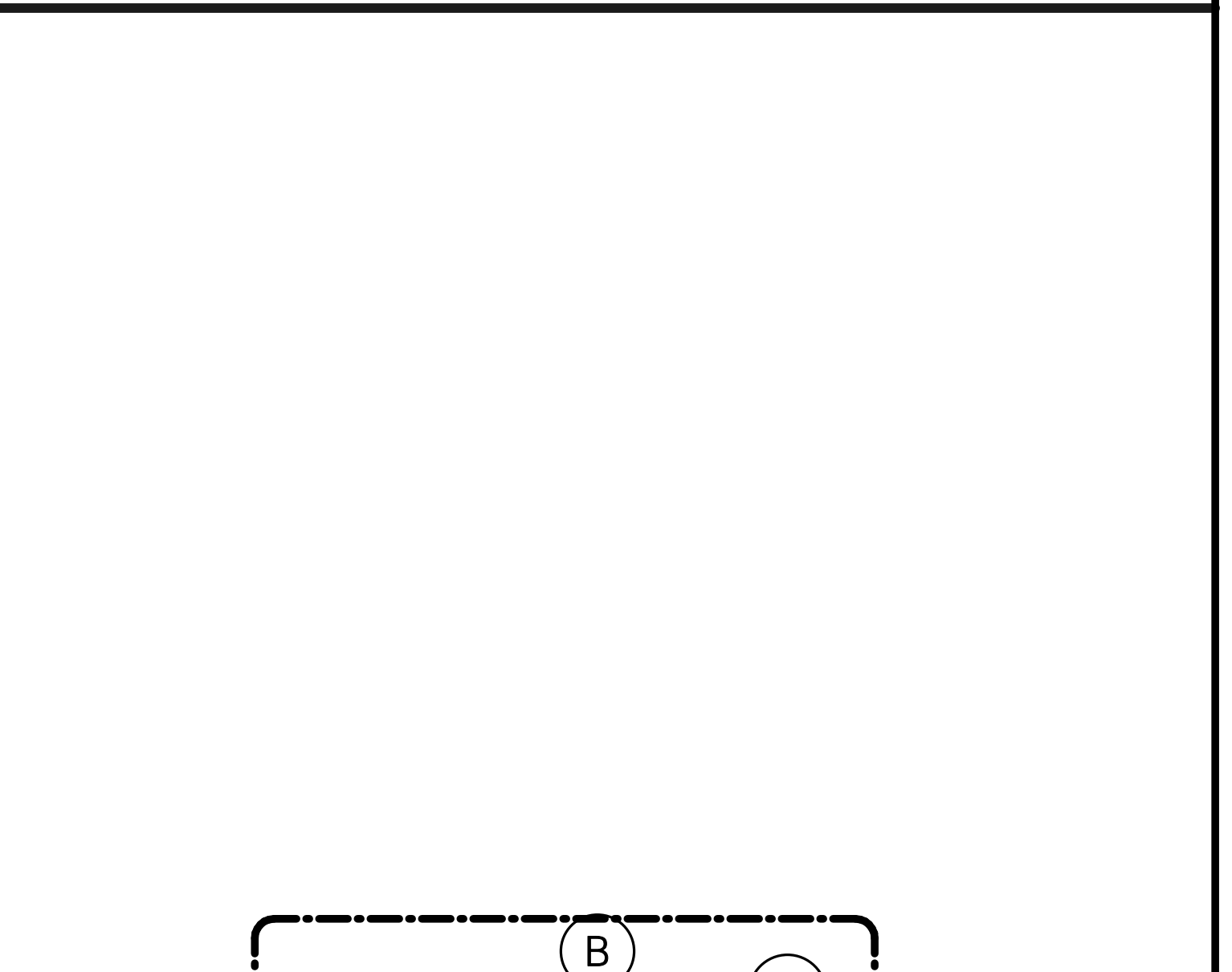
A1 Scale Section
3/4" = 1'-0"



A9 Scale Section
3/4" = 1'-0"



N13 Scale Section
3/4" = 1'-0"



A13 Scale Section
3/4" = 1'-0"

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Joplin Early Childhood Center
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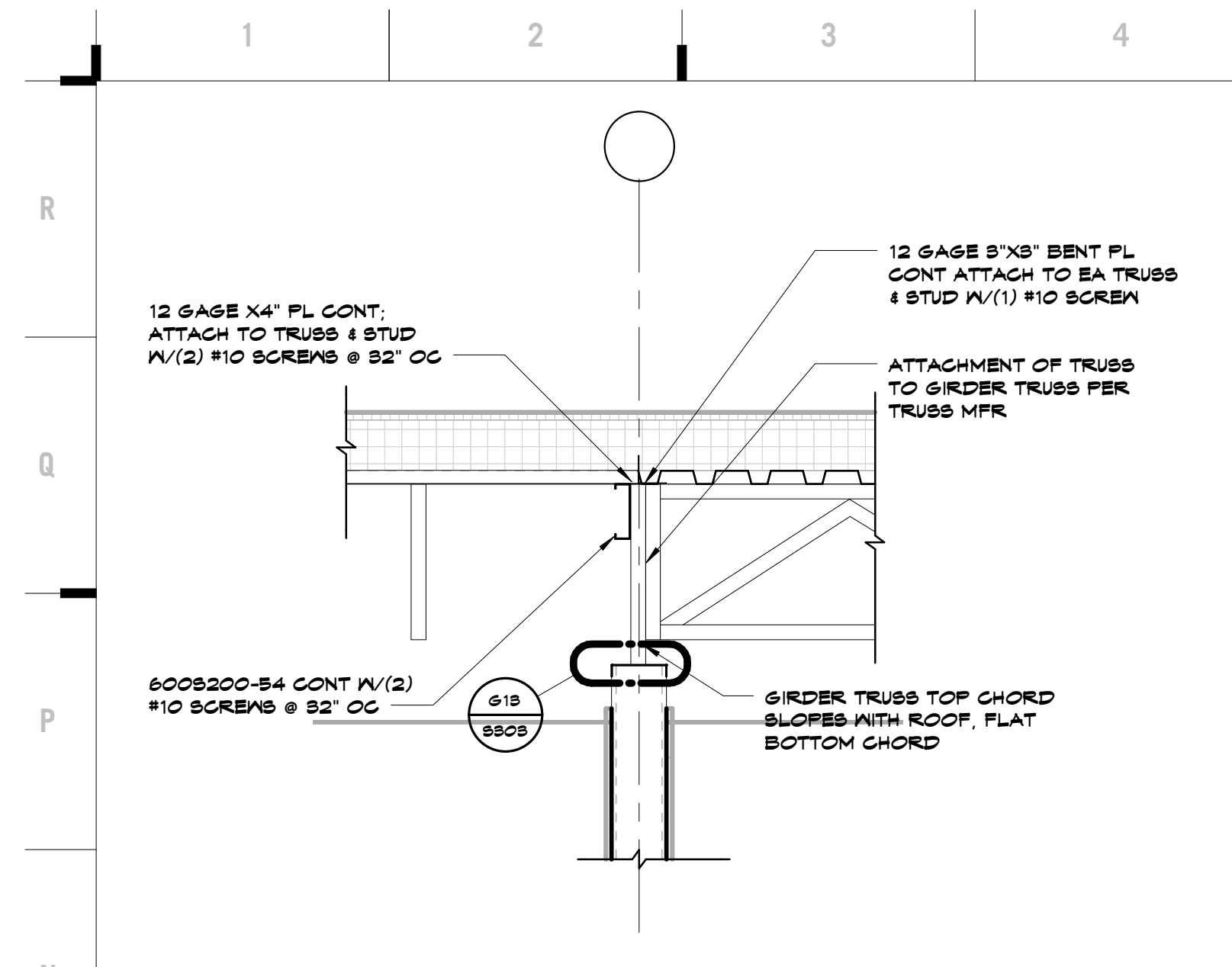
John E. Funk
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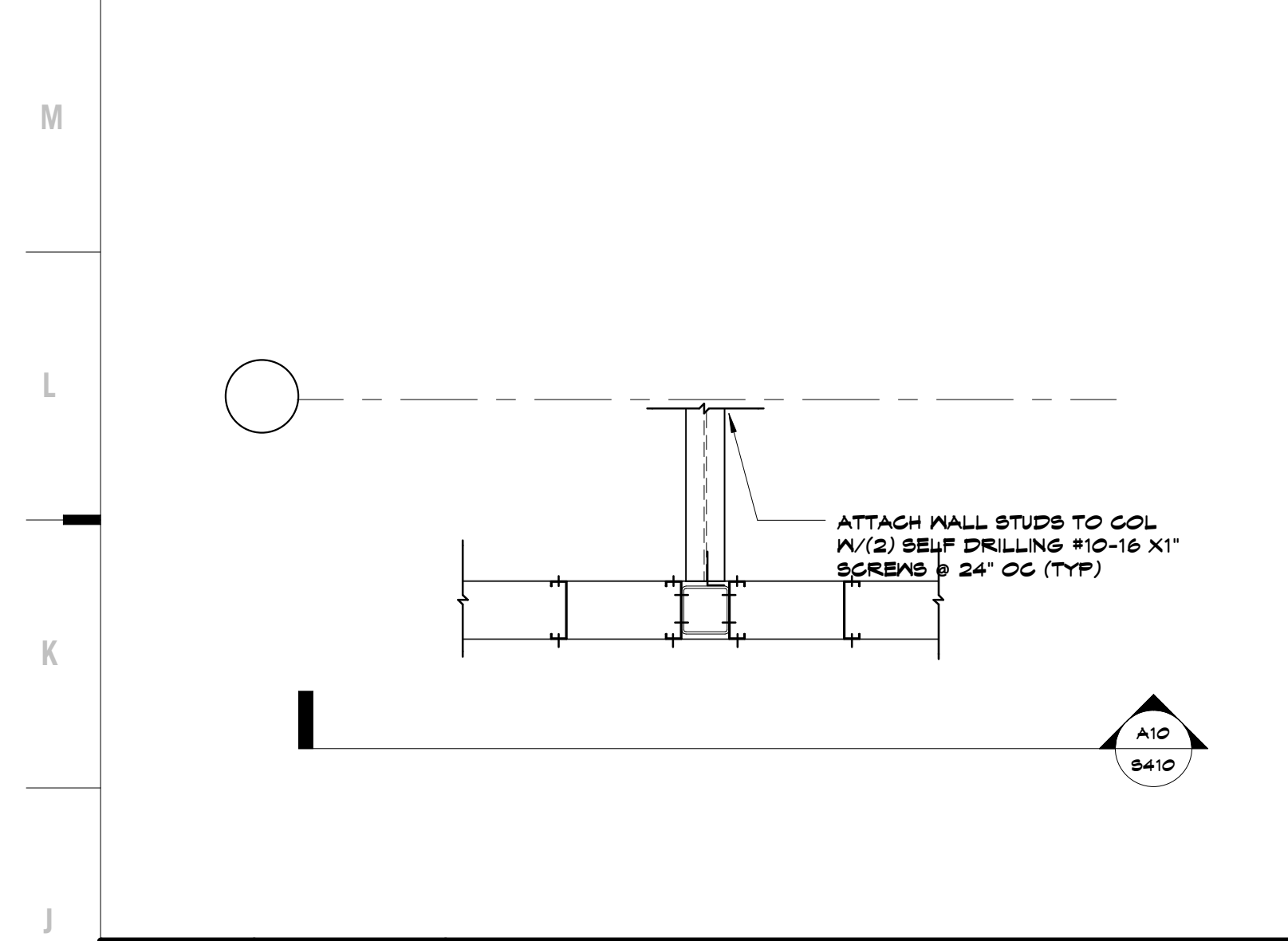
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S409

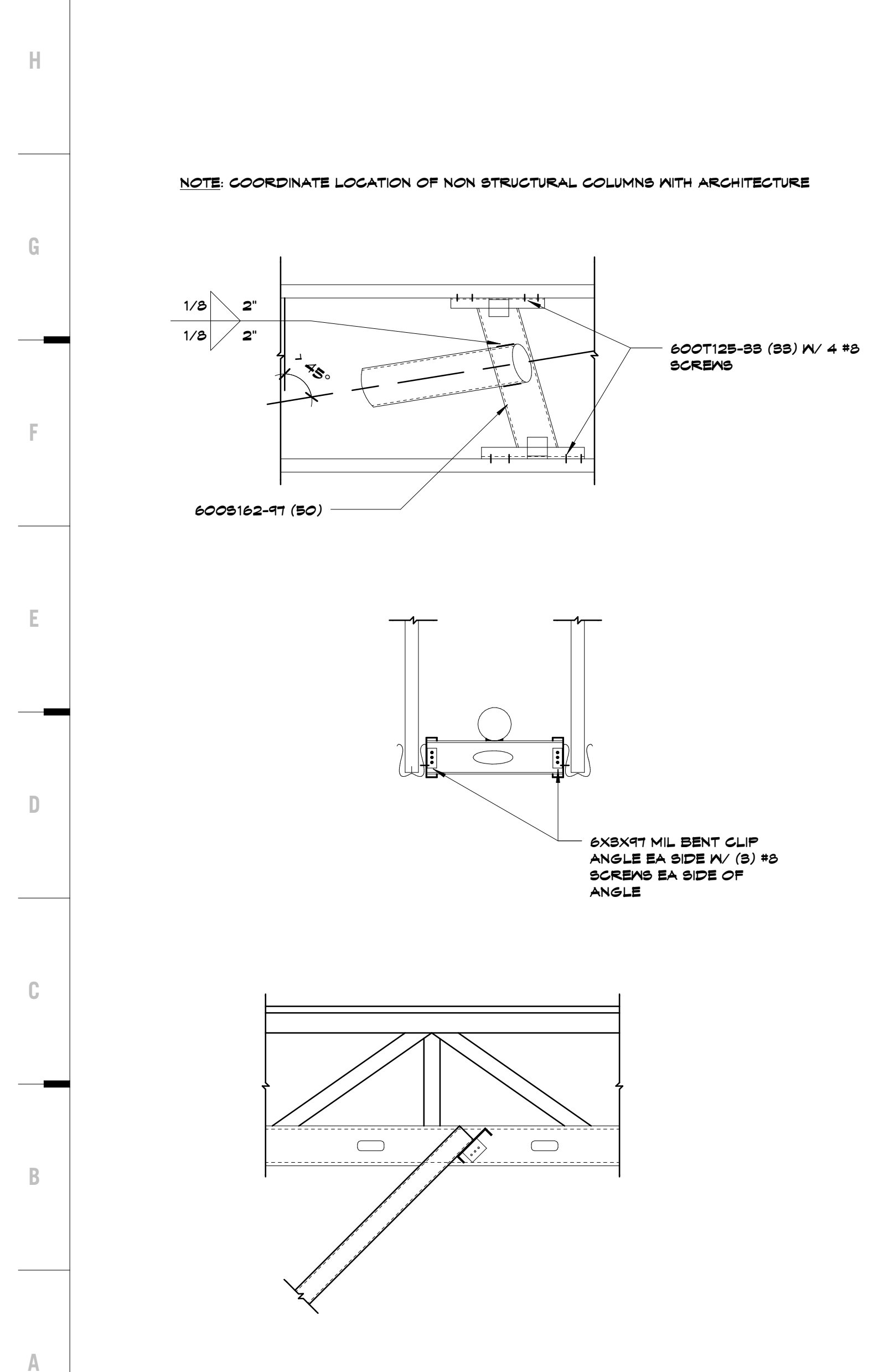
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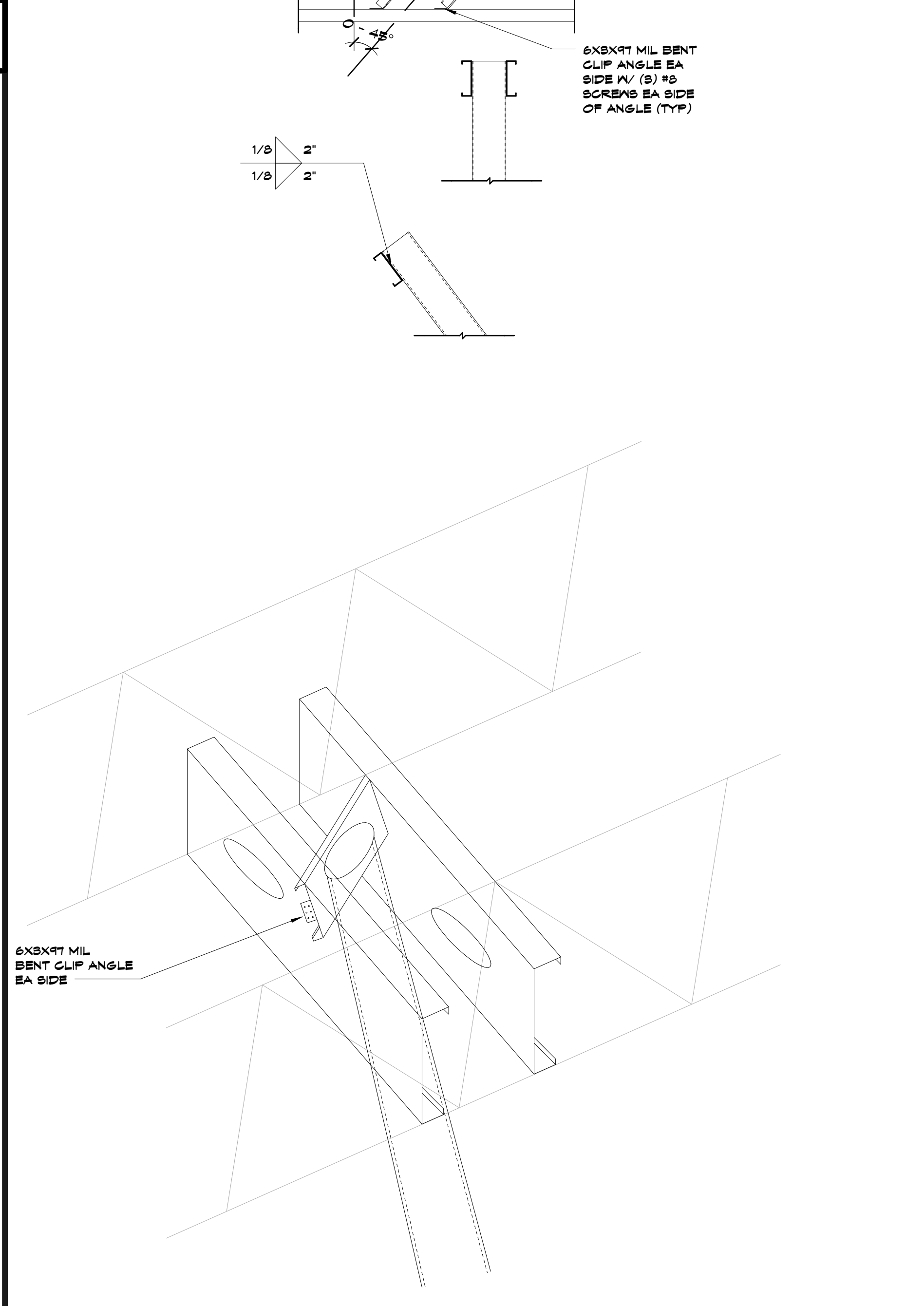
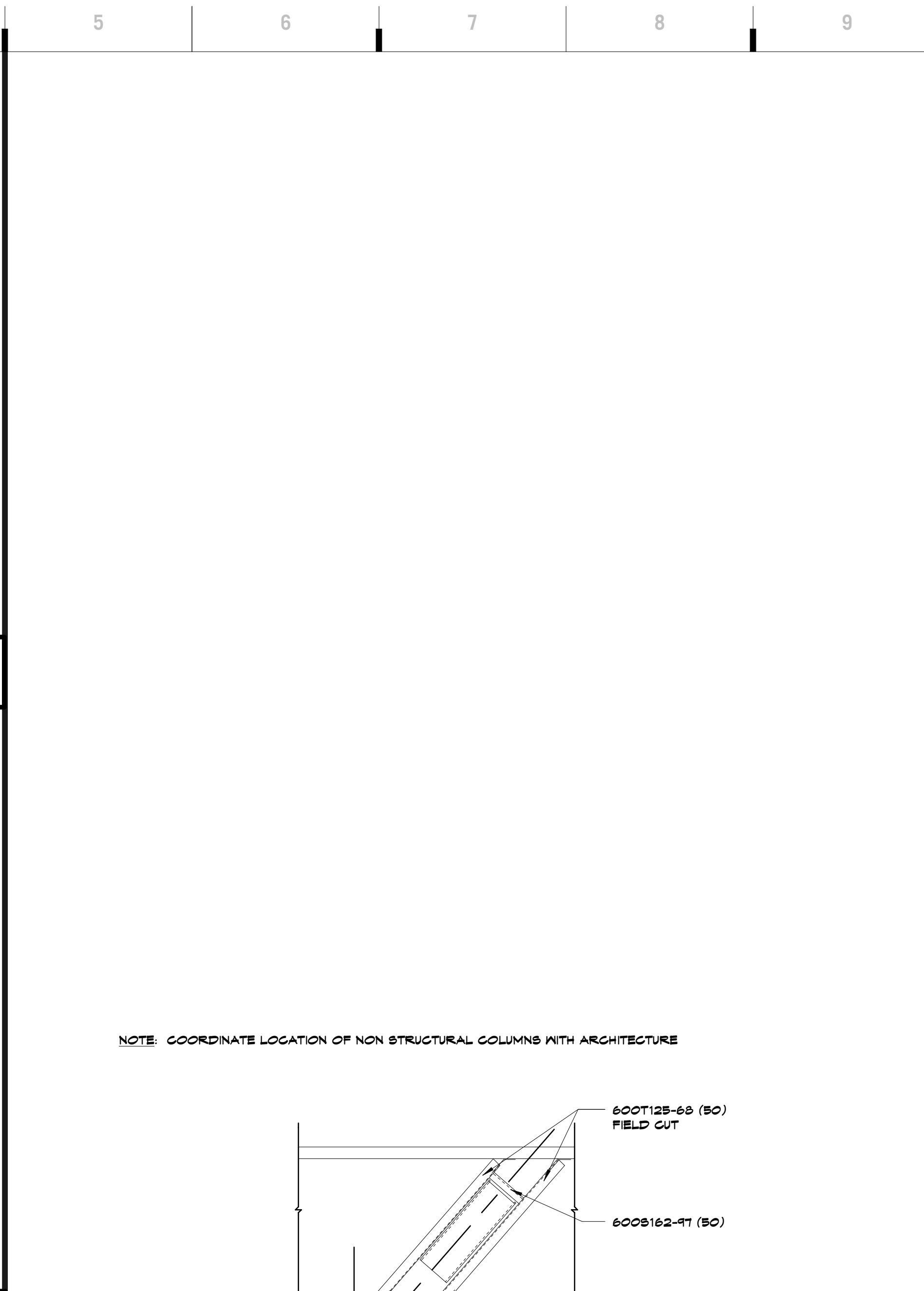
N1 Scale 3/4" = 1'-0" Callout



J1 Scale 3/4" = 1'-0" Section

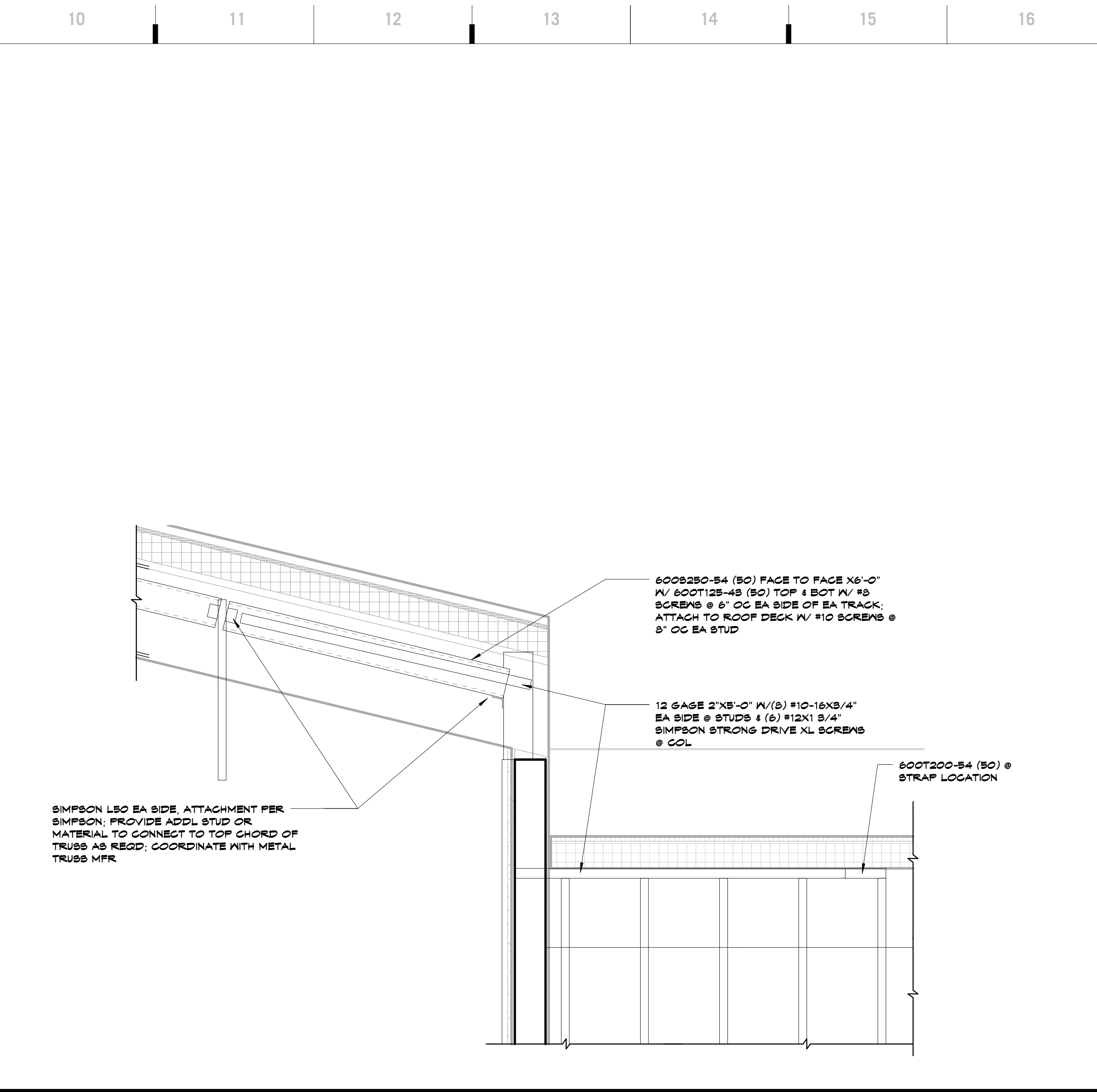


A1 Scale 3/4" = 1'-0" Detail

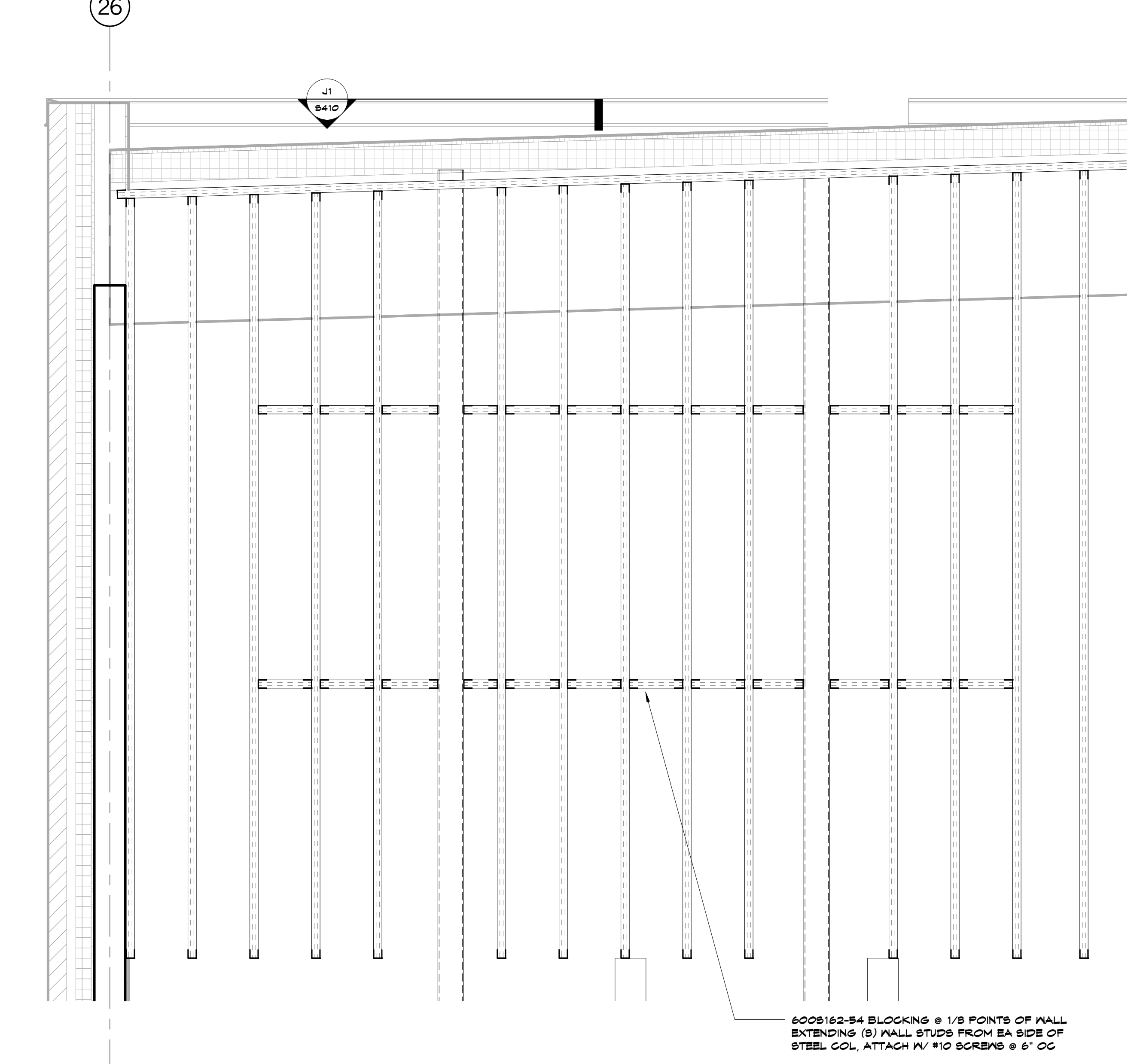


A5 Scale 3/4" = 1'-0" Detail

A10 Scale 3/4" = 1'-0" Section



J10 Scale 3/4" = 1'-0" Section



A10 Scale 3/4" = 1'-0" Section

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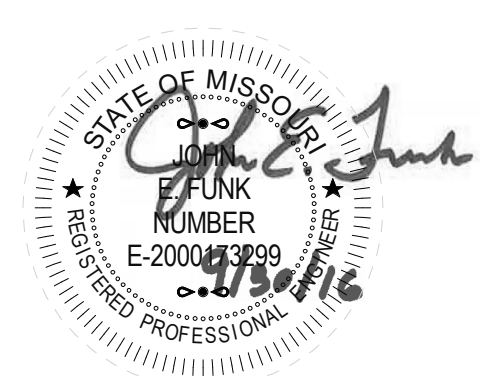
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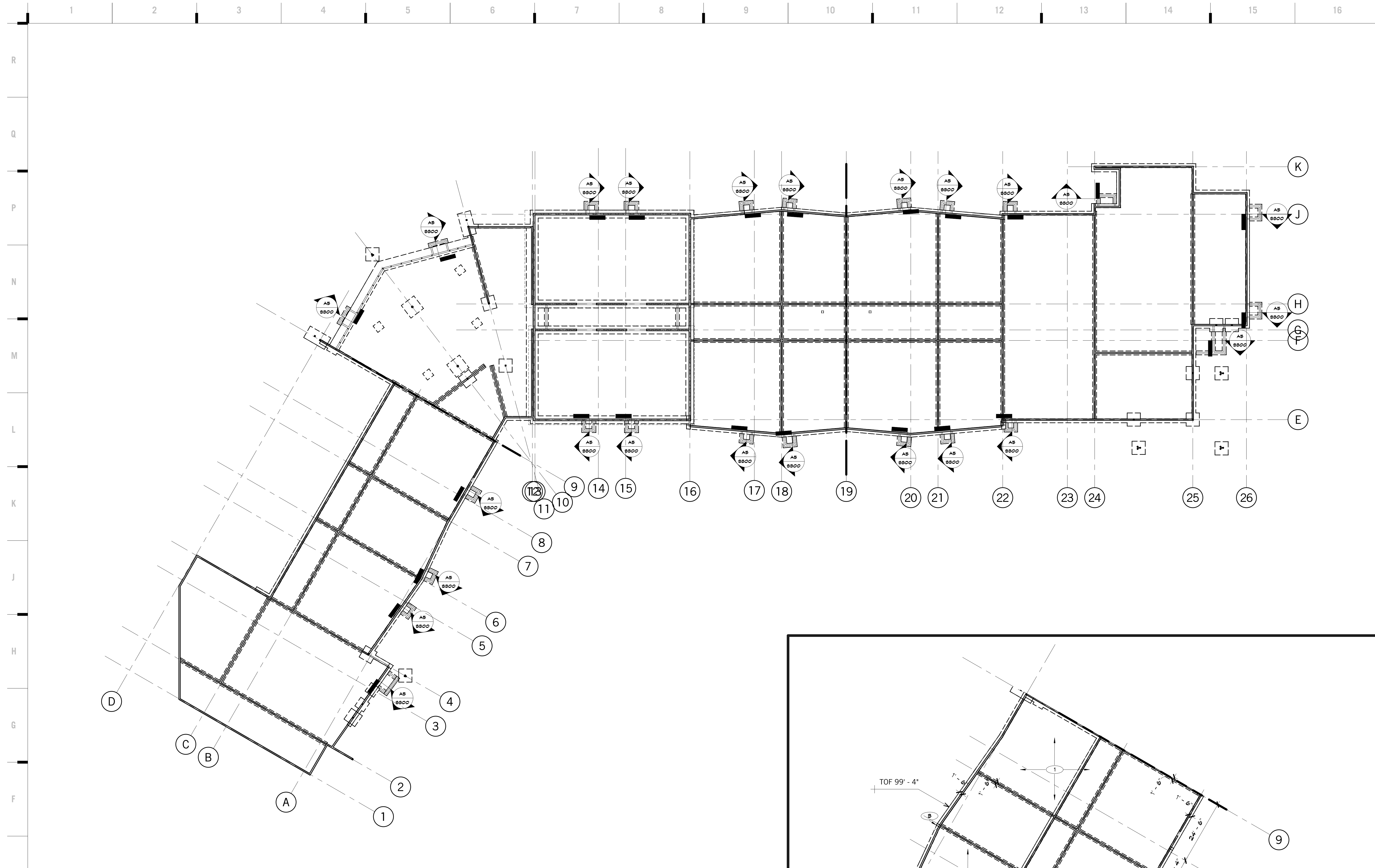
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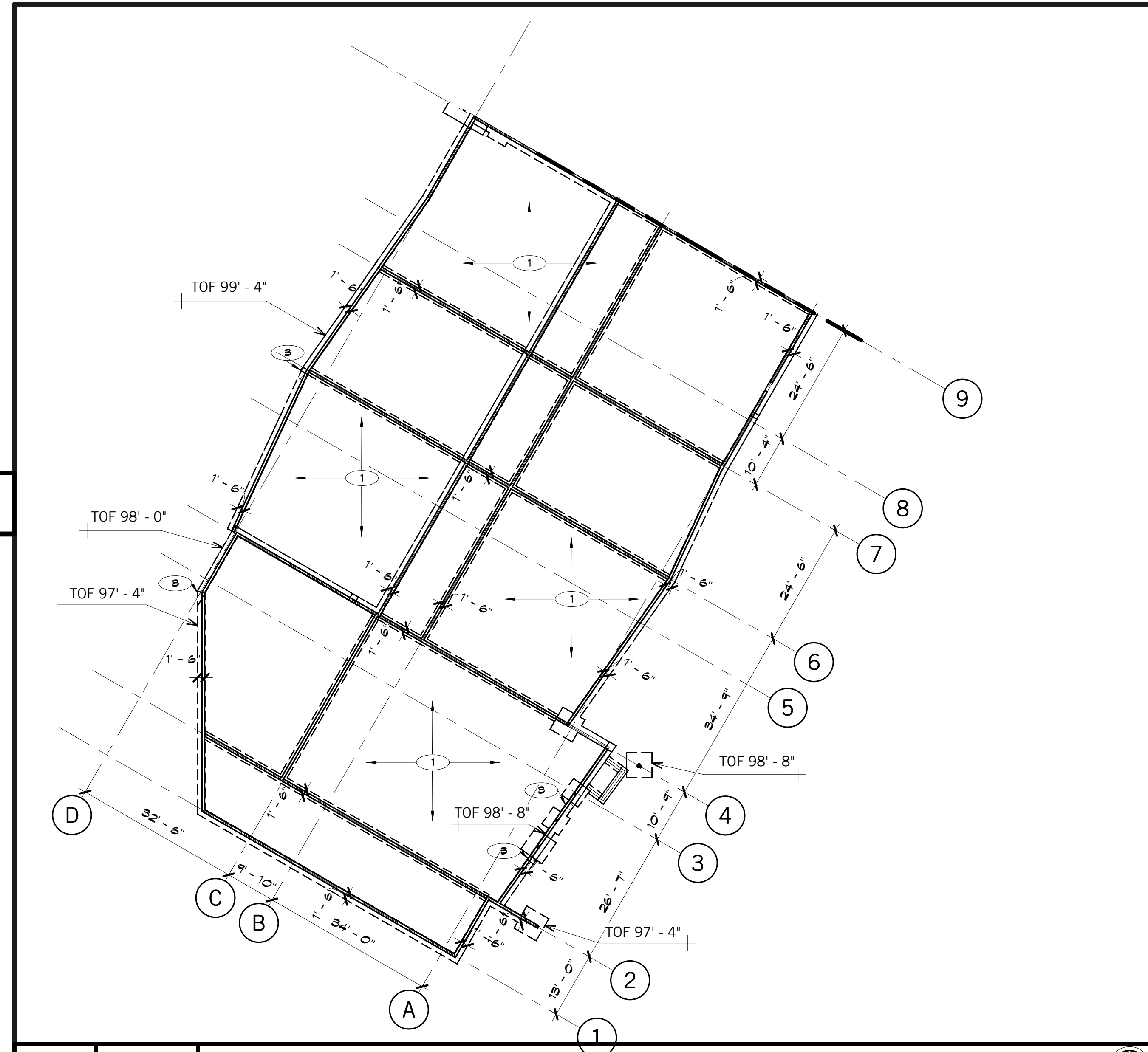
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S410
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E1 Scale Overall Floor Plan - Alternate 1
1/16" = 1'-0" NORTH



A10 Scale Floor Plan Area A - Alternate 2
1/16" = 1'-0" NORTH

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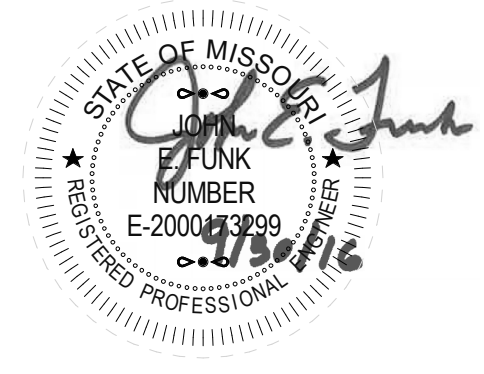
#	Description	Date

PLAN REFERENCE NOTES

- 1 4" CONCRETE SLAB ON GRADE WITH 10 MIL VAPOR RETARDER AND 4" CRUSHED ROCK DRAINAGE FILL PER SPECIFICATION. REINFORCE PER TYPICAL DETAILS. TOP OF CONCRETE ELEVATION 1100'-0" UNO
- 2 8" CMU WALL. REINFORCE WITH 1 #6 VERTICAL AT 16" ON CENTER IN FULLY GROUTED CELLS
- 3 8/4X10"X10" BASE PLATE WITH (4) 5/4"Ø HSA; BASE PLATE FLUSH WITH TOP OF SLAB
- 4 FOOTING STEP PER J1/8800

FOUNDATION NOTES

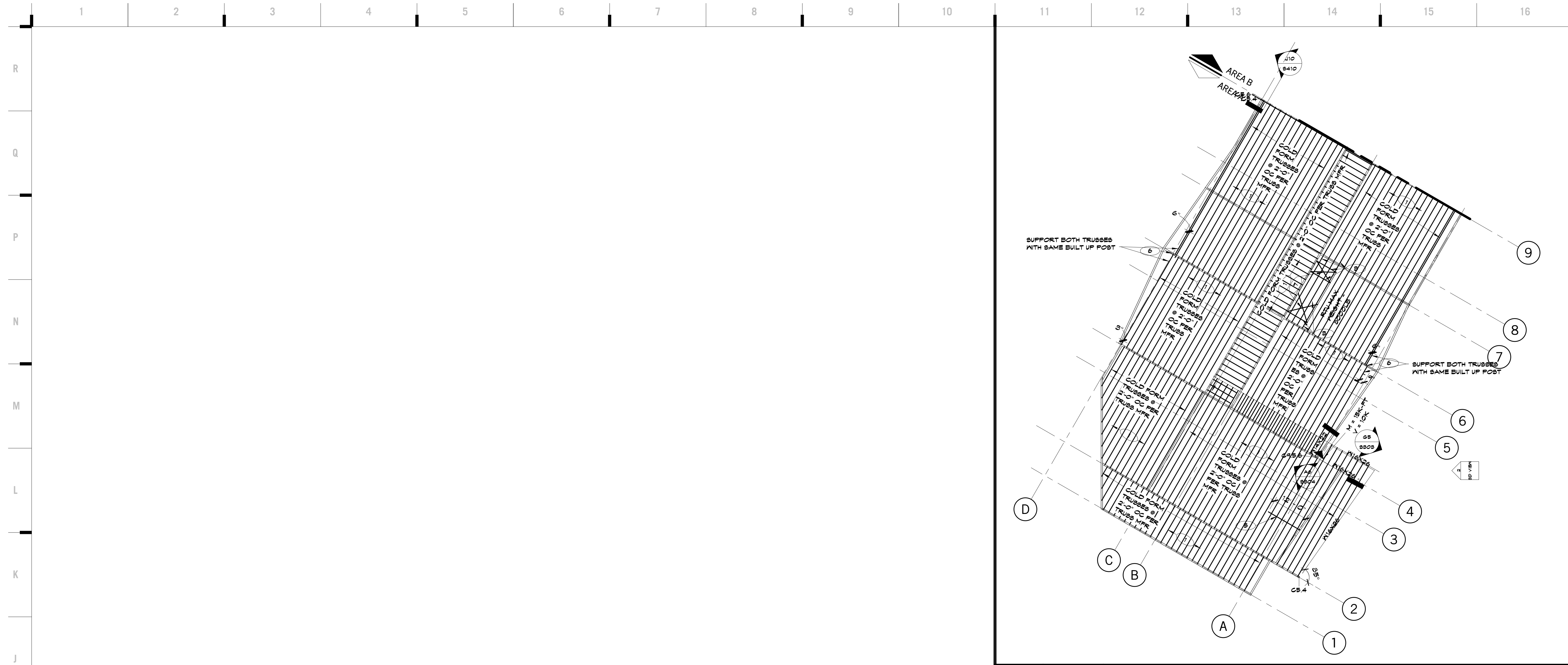
- A TOP OF FOOTING ELEVATION = 98'-4" UNO
- B PROVIDE SLAB BLOCK OUT AT CONTRACTORS OPTION PER A1/8800
- C GRIDS INDICATE CENTER LINE OF METAL STUD
- D ALL GRADE BEAMS ARE CENTERED ON INTERIOR CMU WALLS UNO



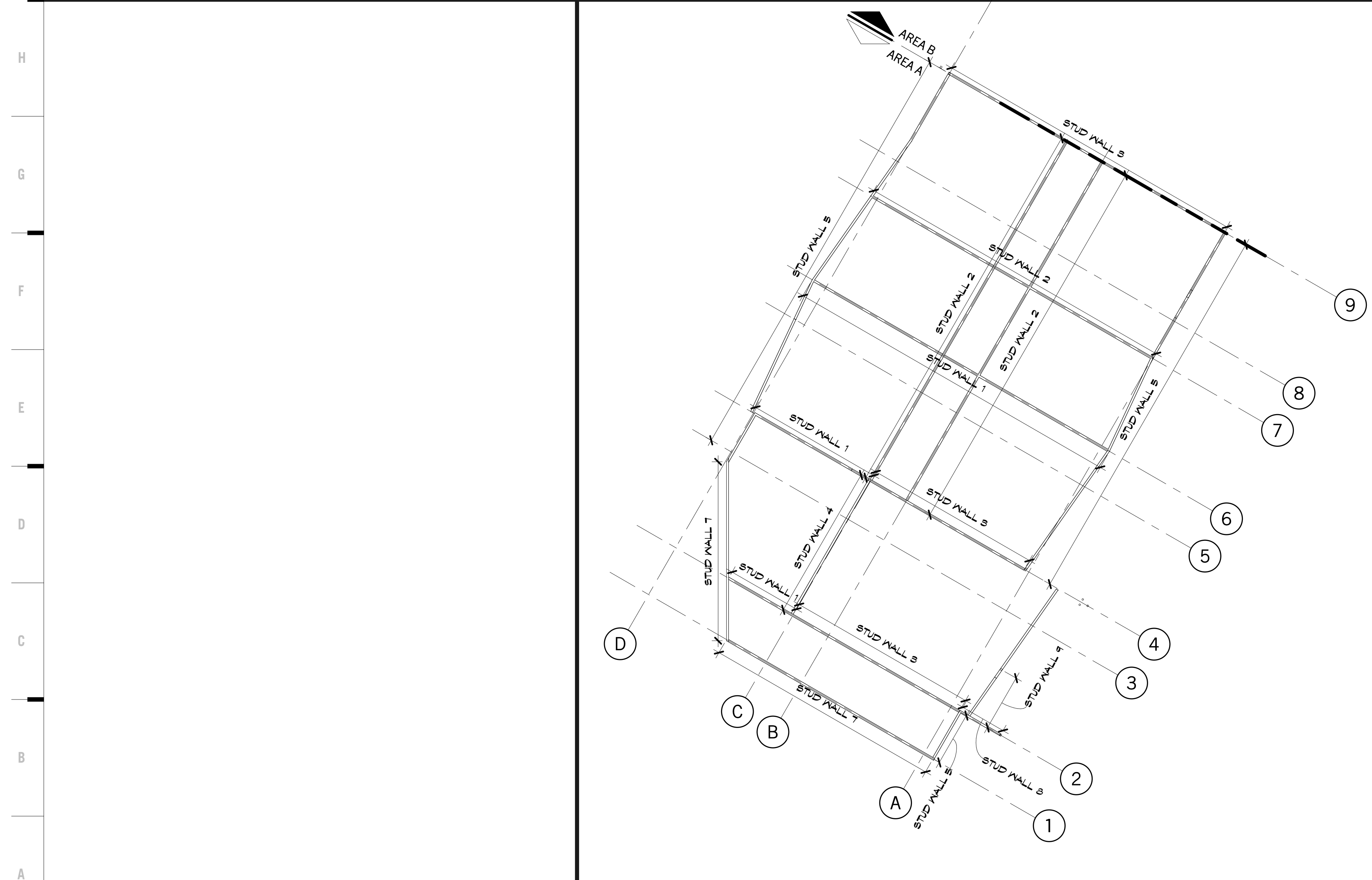
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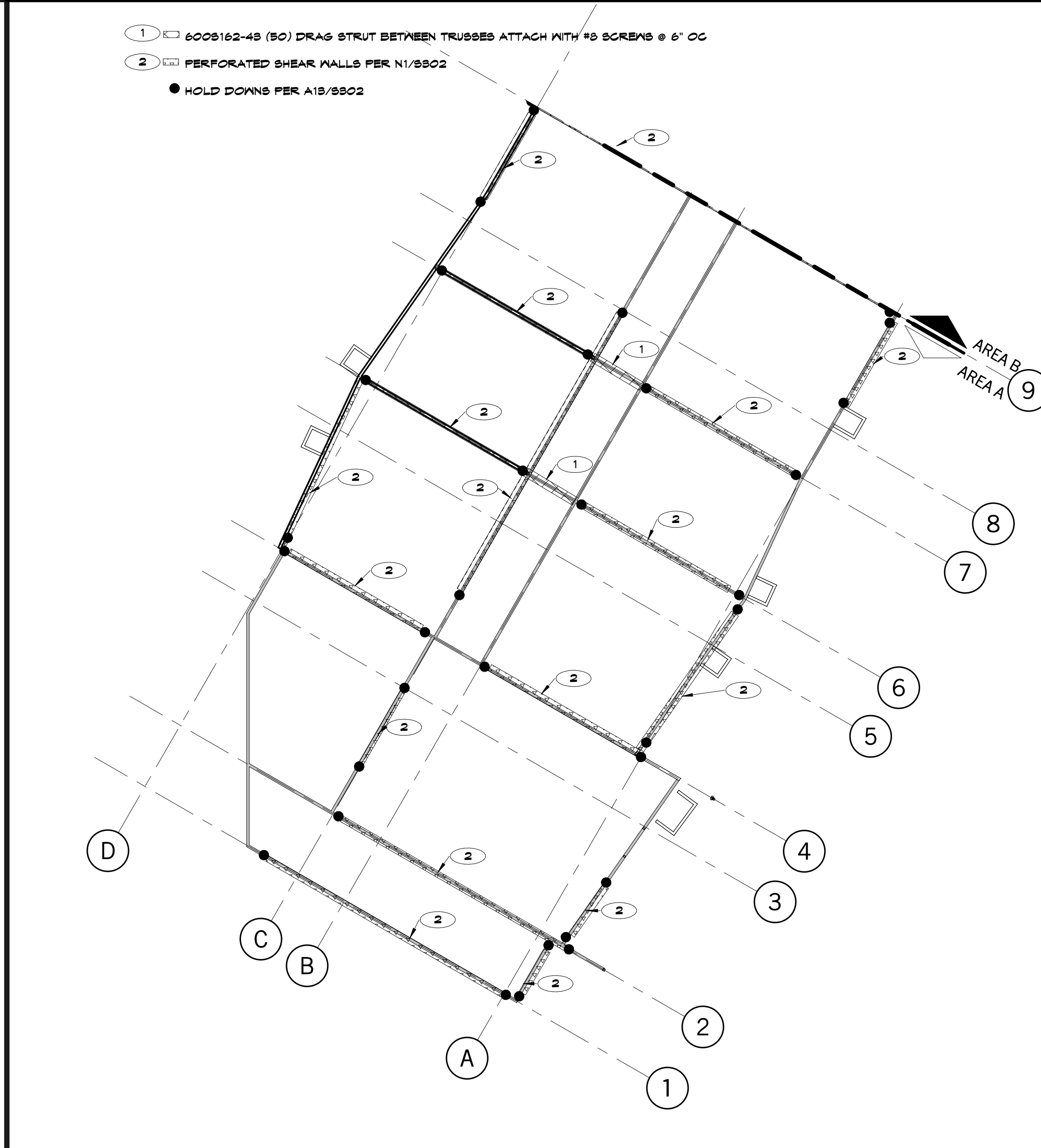
S900
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J11 Scale 1/16" = 1'-0" Level 2 Copy 2



A5 Scale 1/16" = 1'-0" Structural Stud Wall Plan Alternate 2



A11 Scale 1/16" = 1'-0" Shear Wall Plan Alternate 2

SHEET KEYNOTE LEGEND

PLAN REFERENCE NOTES

- 1 METAL DECK 1 1/2" DEEP 22 GAUGE INDE RIB PAINTED METAL ROOF DECK. ATTACH TO SUPPORTING COLD FORMED METAL STUDS OR TRUSSES IN 8x4 PATTERN WITH #12 T&B SCREWS AT SUPPORTS WITH 1 SIDELAP FASTENER PER SPAN TO TRANSFER 400% OF MINIMUM HORIZONTAL DIAPHRAGM SHEAR.
- 2 GIRDER POST (S) 6008168-68 (50)
- 3 GIRDER TRUSS PER TRUSS MANUFACTURER
- 4 12" HOLLOW CORE SLAB WITH 4" COMPOSITE TOPPING SLAB REINFORCED WITH #4 AT 12" ON CENTER EACH WAY
- 5 ATTACH 6008162-84 (50) BLOCKING BETWEEN ROOF SUPPORTING MEMBERS TO METAL DECK WITH #10 SCREWS AT 18" OC
- 6 (2) 6008250-68 POST
- 7 COORDINATE ROOF TRUSS FRAMING WITH MECHANICAL CONTRACTOR AT ROOF TOP UNIT PENETRATION LOCATIONS
- 8 SPANS LOCATION. REFERENCE ARCH FOR LOCATION. REFERENCE N1/8808 FOR TRUSS ATTACHMENT
- 9 ADDITIONAL LOAD FROM SUPPORTED PANELS. REFERENCE ARCH FOR LOCATION. COORDINATE WITH CONTRACTOR FOR WEIGHT OF PANELS AND ATTACHMENT LOCATIONS

FOUNDATION NOTES

- A TOP OF FOOTING ELEVATION = 99'-4" UNO
- B PROVIDE SLAB BLOCK OUT AT CONTRACTORS OPTION PER A1/8800
- C GRIDS INDICATE CENTER LINE OF METAL STUD
- D ALL GRADE BEAMS ARE CENTERED ON INTERIOR CMU WALLS UNO

PLAN REFERENCE NOTES

- 1 4" CONCRETE SLAB ON GRADE WITH 10 MIL VAPOR RETARDER AND 4" CRUSHED ROCK DRAINAGE FILL PER SPECIFICATION. REINFORCE PER TYPICAL DETAILS. TOP OF CONCRETE ELEVATION = 100'-0" UNO
- 2 8" CMU WALL. REINFORCE WITH 1 #6 VERTICAL AT 16" ON CENTER IN FULLY GROUTED CELLS
- 3 3/4"x10"x10" BASE PLATE WITH (4) 3/4"x8 HSA; BASE PLATE FLUSH WITH TOP OF SLAB
- 4 FOOTING STEP PER J1/8800

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Joplin Schools

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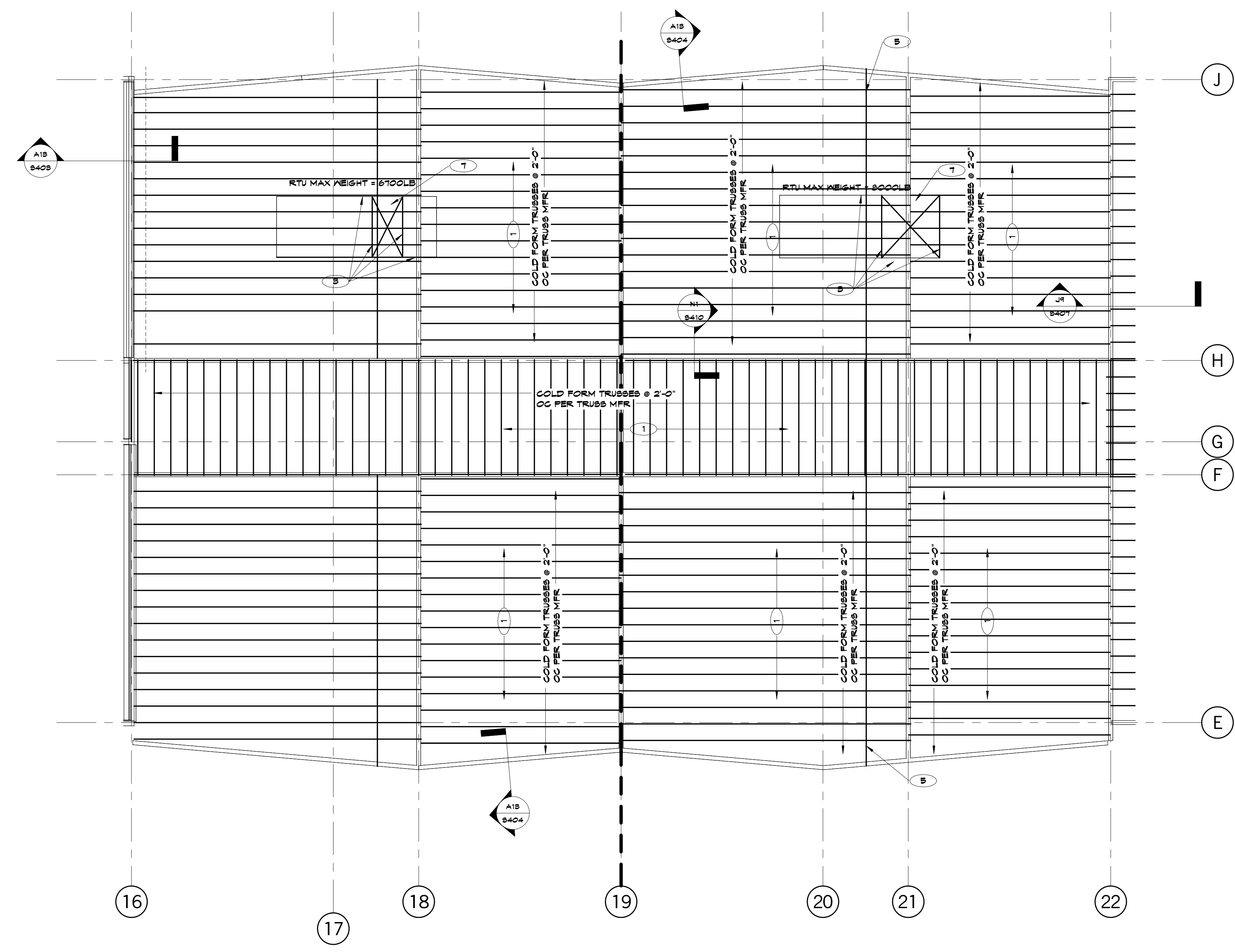
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E-200083299

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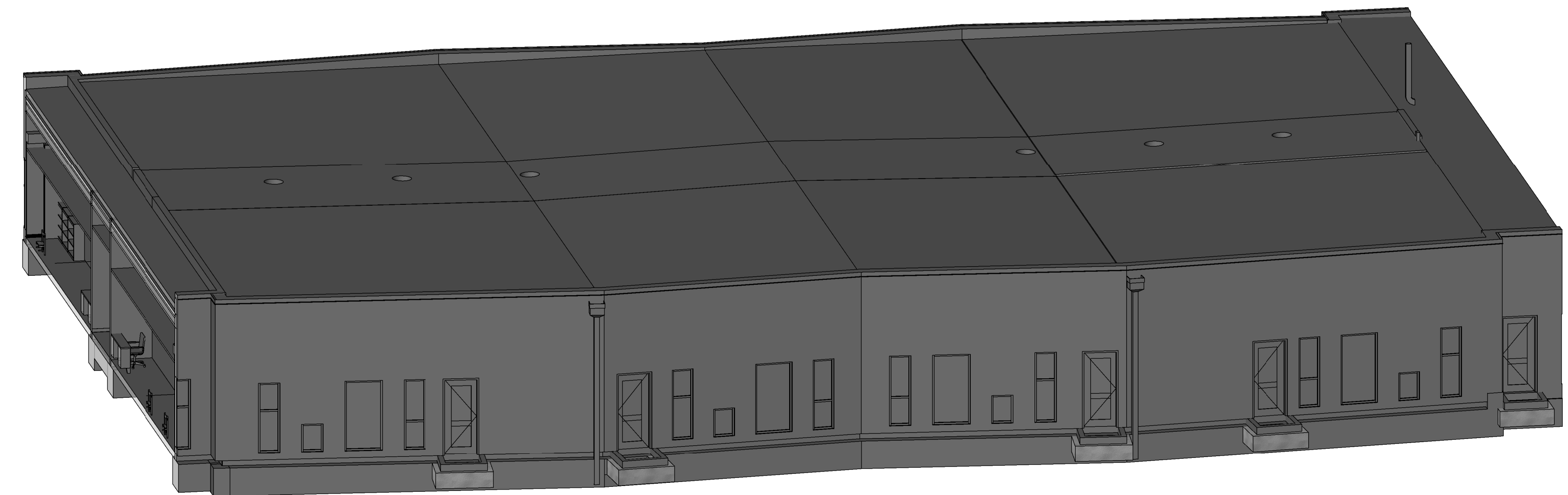
S901
OF



PLAN REFERENCE NOTES

- 1 METAL DECK 1/2" DEEP 22 GAGE WIDE RIB PAINTED METAL ROOF DECK. ATTACH TO SUPPORTING COLD FORMED METAL STUDS OR TRUSSES IN 8x4 PATTERN WITH #12 TEK SCREWS AT SUPPORTS WITH 1 SIDE LAP FASTENER PER SPAN TO TRANSFER 400# OF MINIMUM HORIZONTAL DIAPHRAGM SHEAR
- 2 GIRDER POST (S) 600S160-60 (S0)
- 3 GIRDER TRUSS PER TRUSS MANUFACTURER
- 4 12" HOLLOW CORE SLAB WITH 4" COMPOSITE TOPPING. SLAB REINFORCED WITH #4 AT 12" ON CENTER EACH WAY
- 5 ATTACH 600S160-60 (S0) BLOCKING BETWEEN ROOF SUPPORTING MEMBERS TO METAL DECK WITH #10 SCREWS AT 18" OC
- 6 (2) 600S250-60 POST
- 7 COORDINATE ROOF TRUSS FRAMING WITH MECHANICAL CONTRACTOR AT ROOF TOP UNIT PENETRATION LOCATIONS
- 8 SWING LOCATION. REFERENCE ARCH FOR LOCATION. REFERENCE N9/SB03 FOR TRUSS ATTACHMENT
- 9 ADDITIONAL LOAD FROM SUPPORTED PANELS. REFERENCE ARCH FOR LOCATION. COORDINATE WITH CONTRACTOR FOR HEIGHT OF PANELS AND ATTACHMENT LOCATIONS

H7 Scale Framing Plan - Alternate A
1/8" = 1'-0"



A1 Scale 3D Alternate A

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Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date



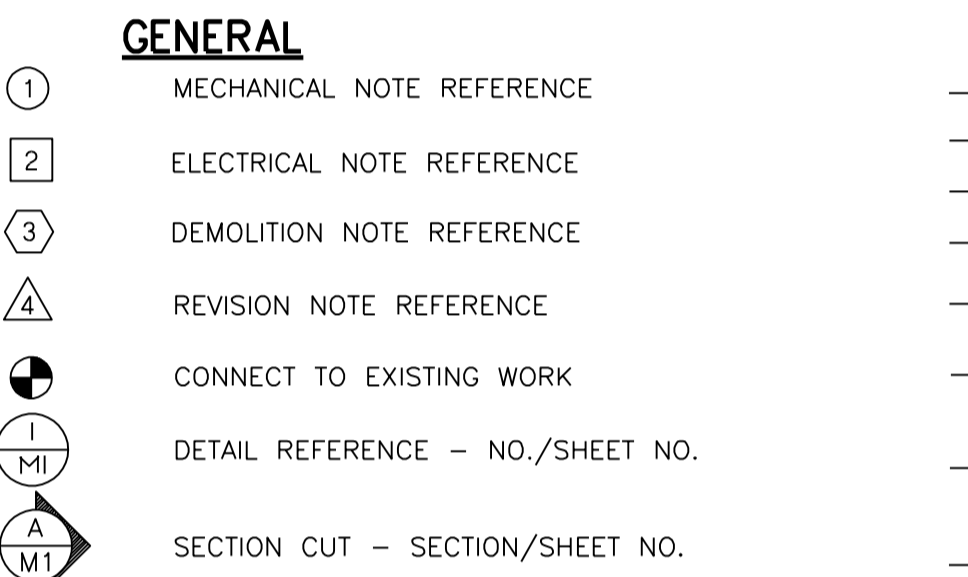
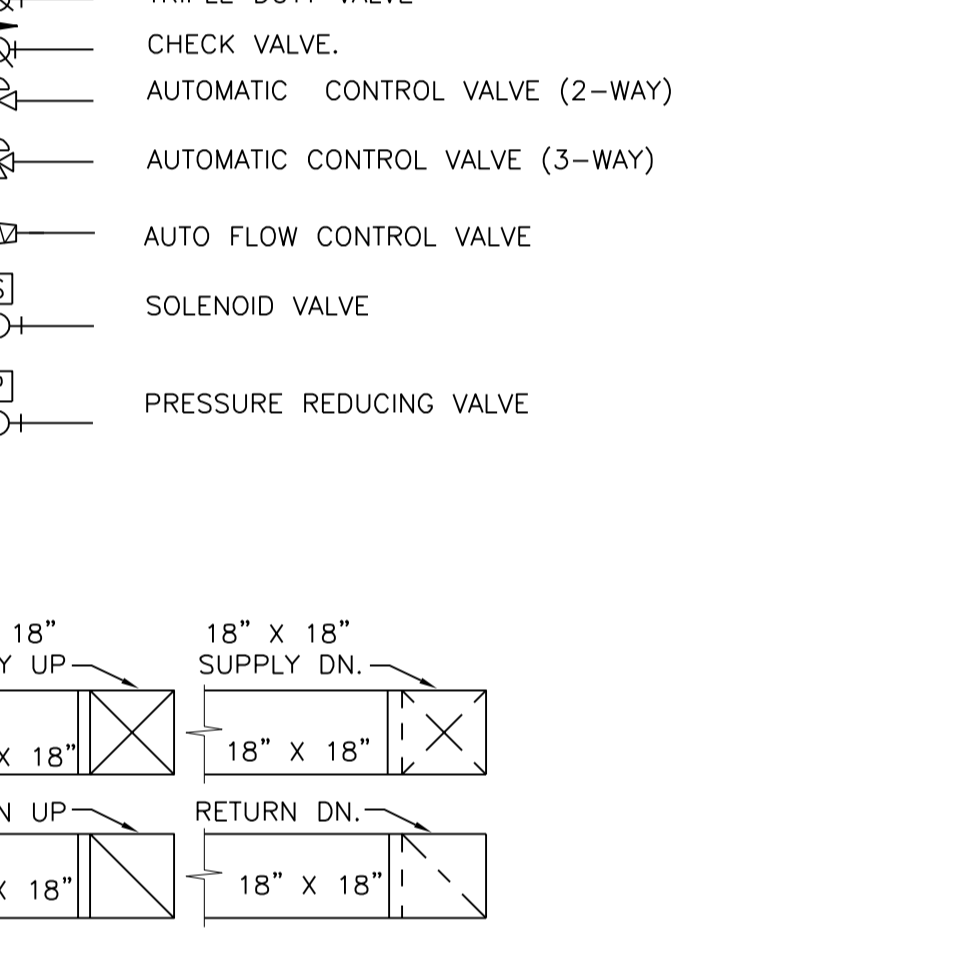
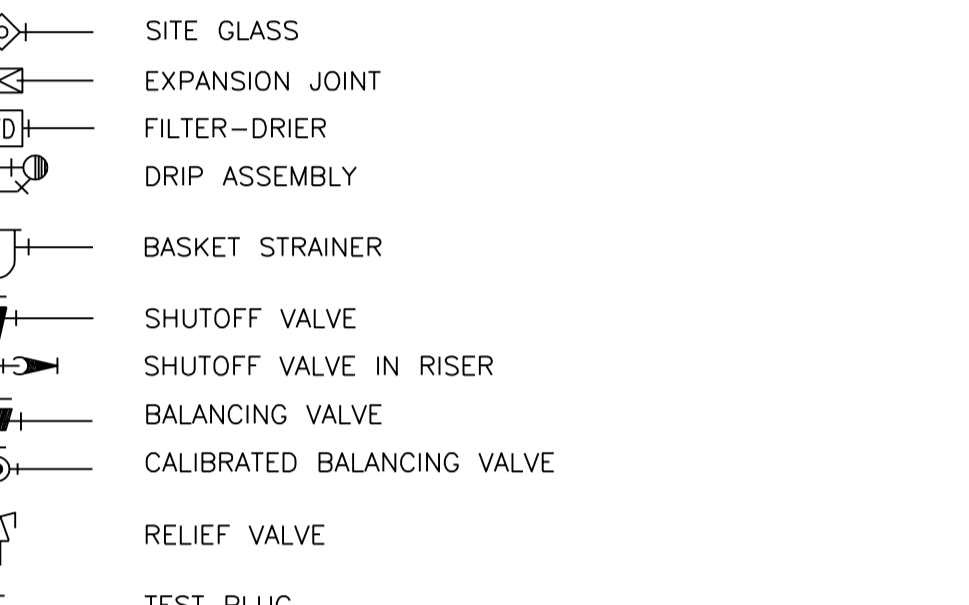
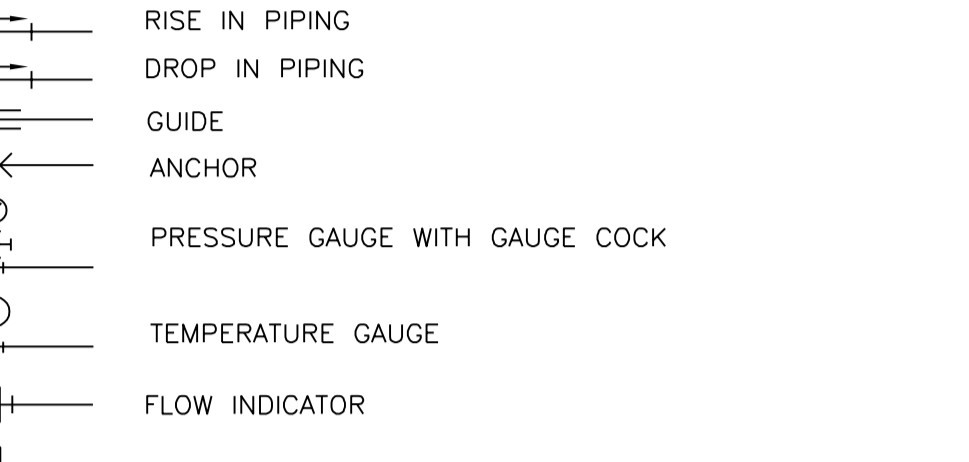
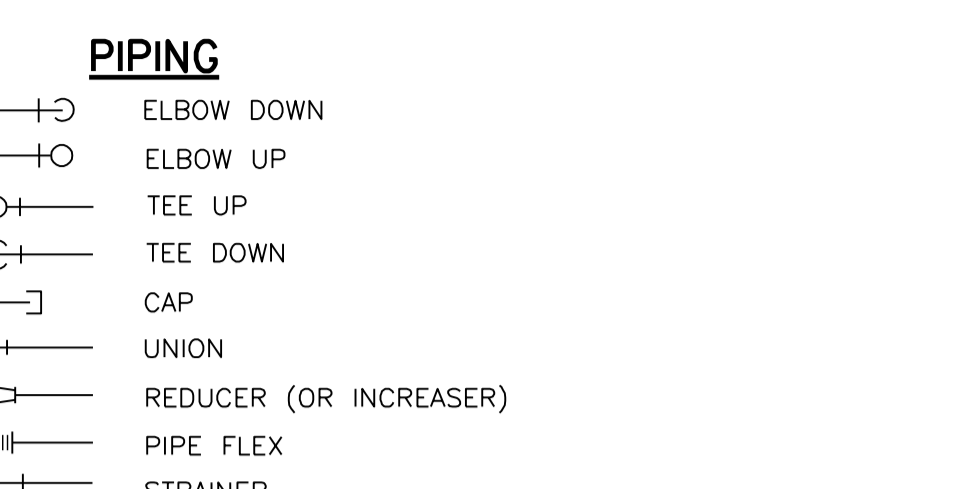
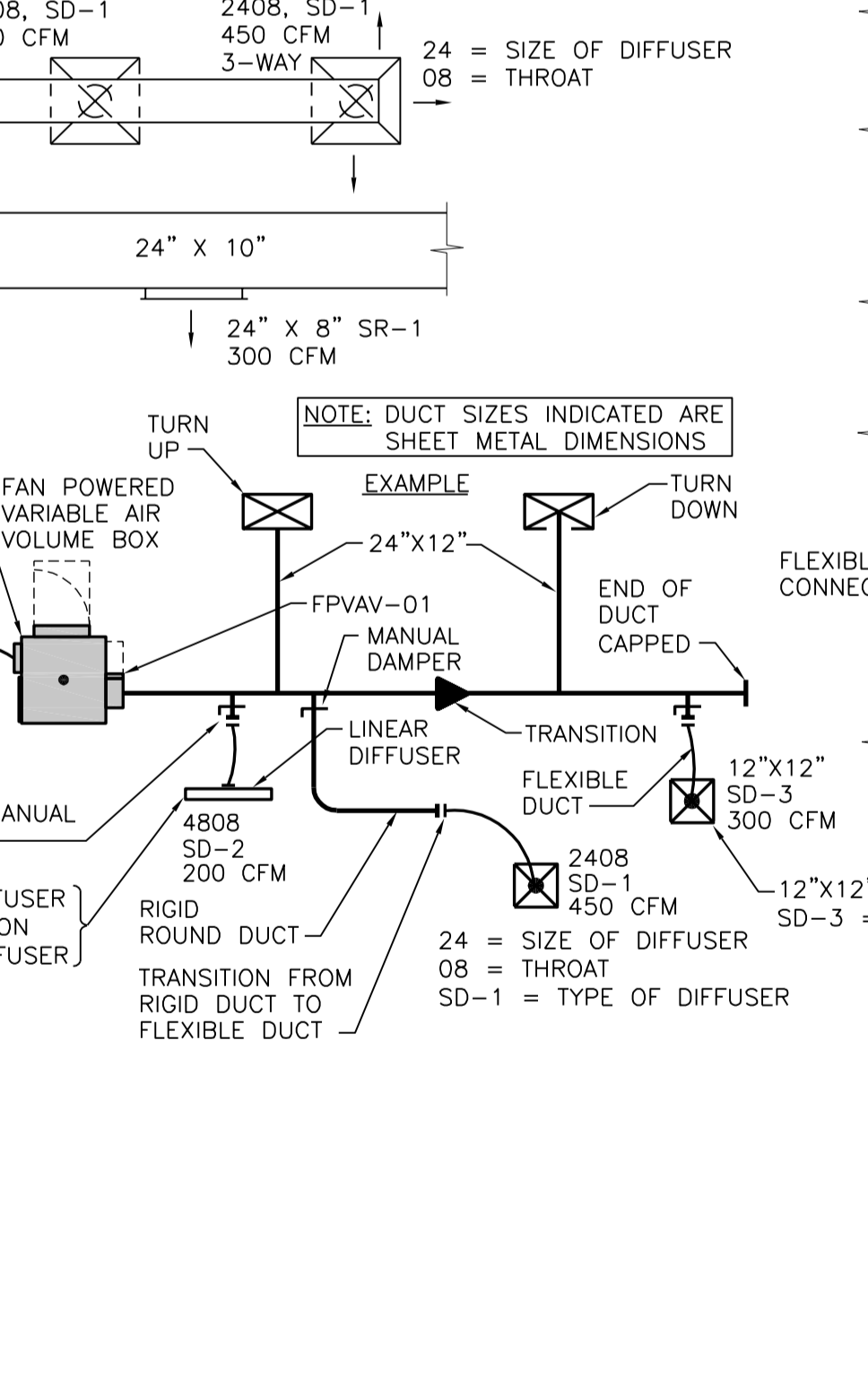
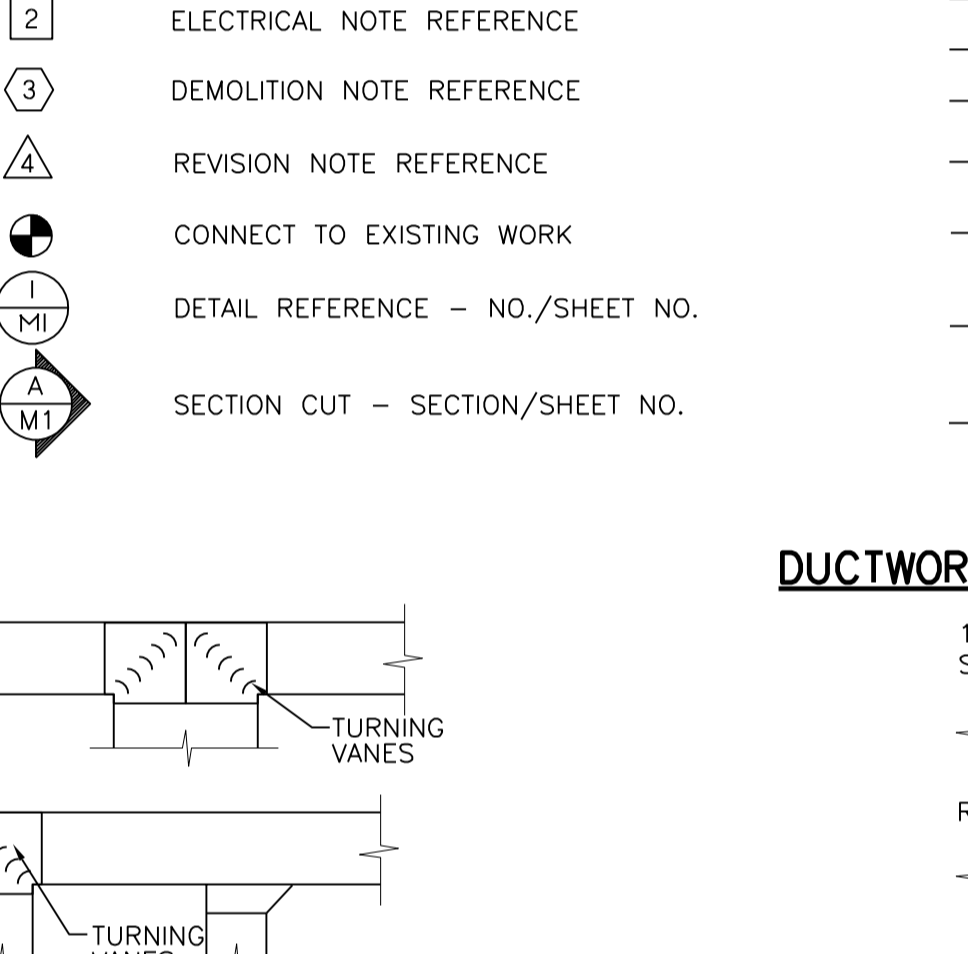
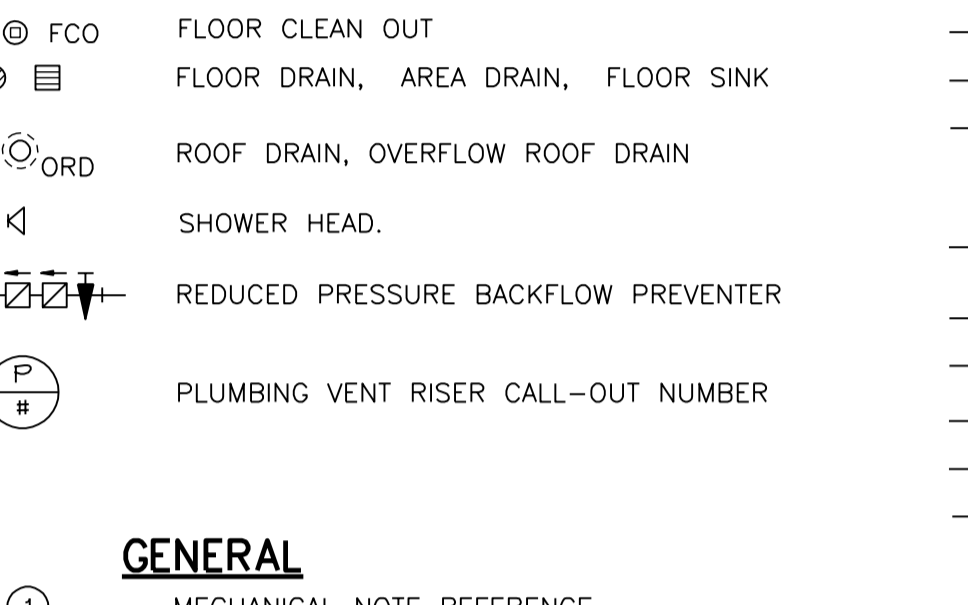
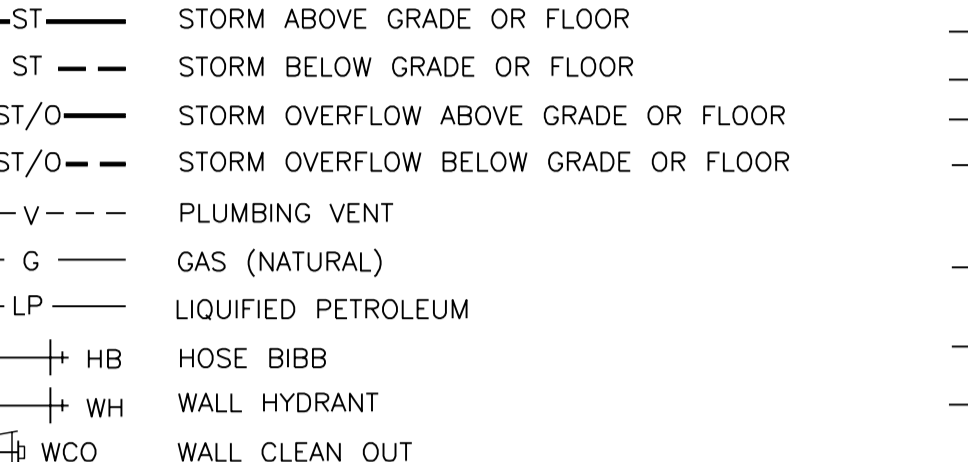
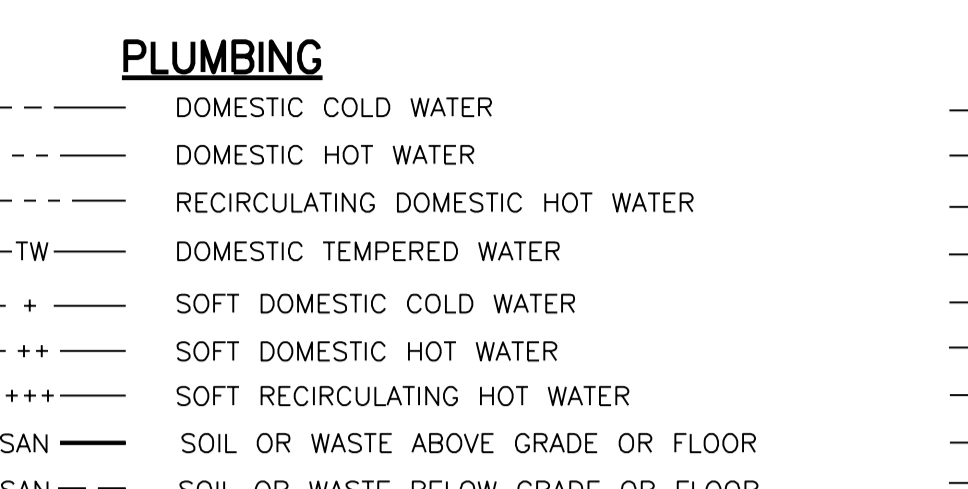
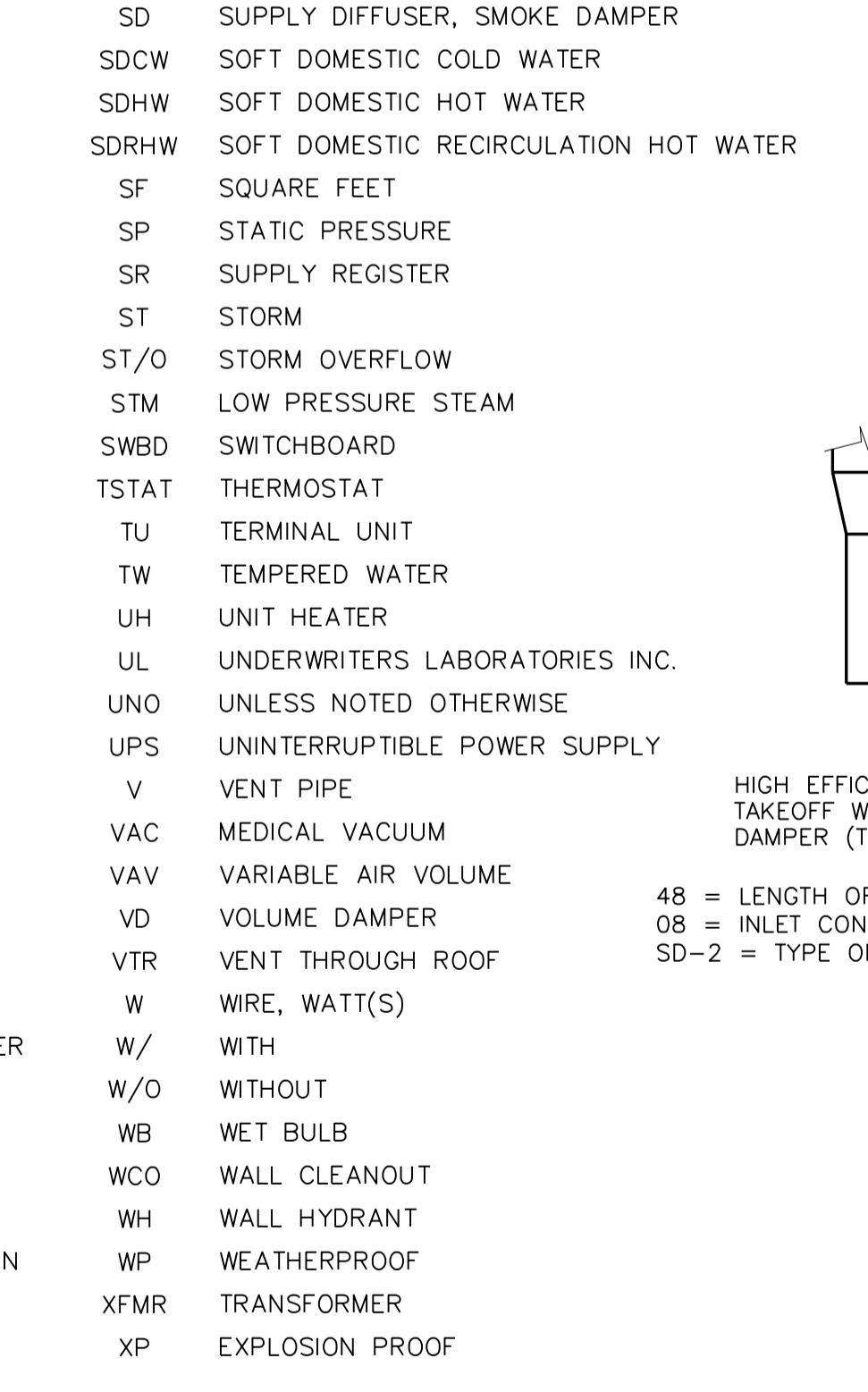
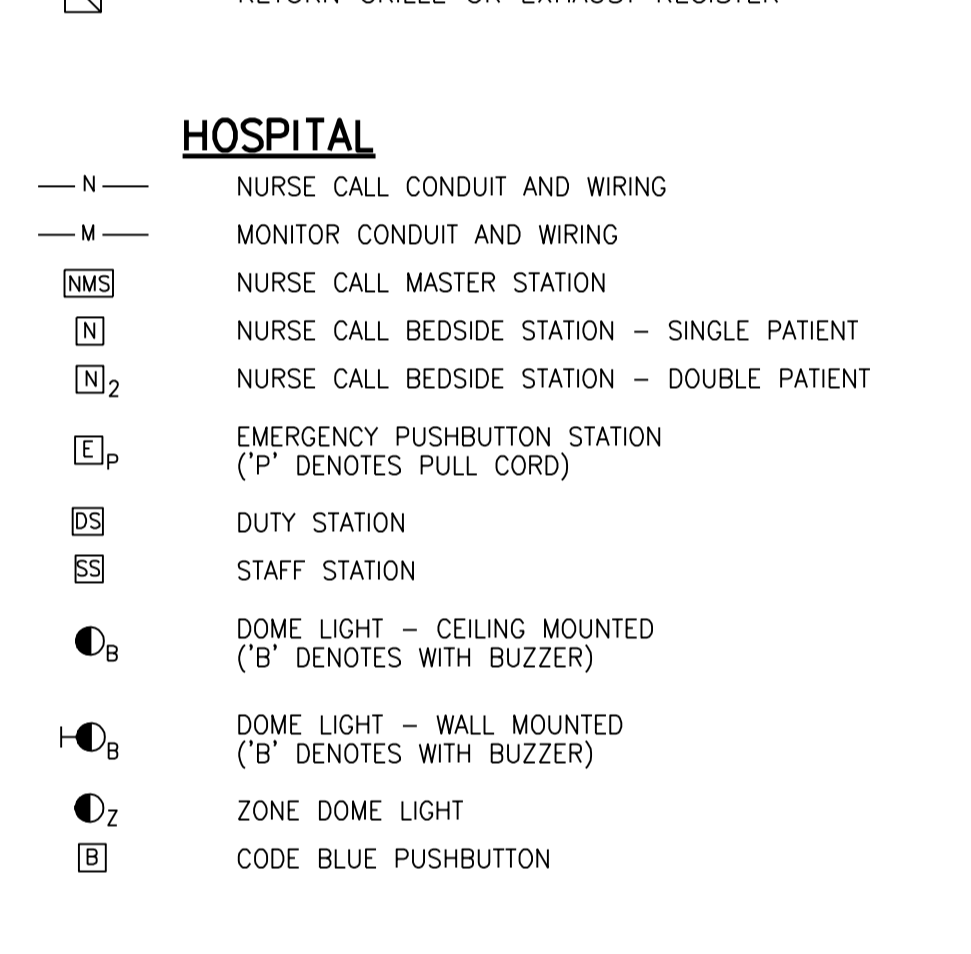
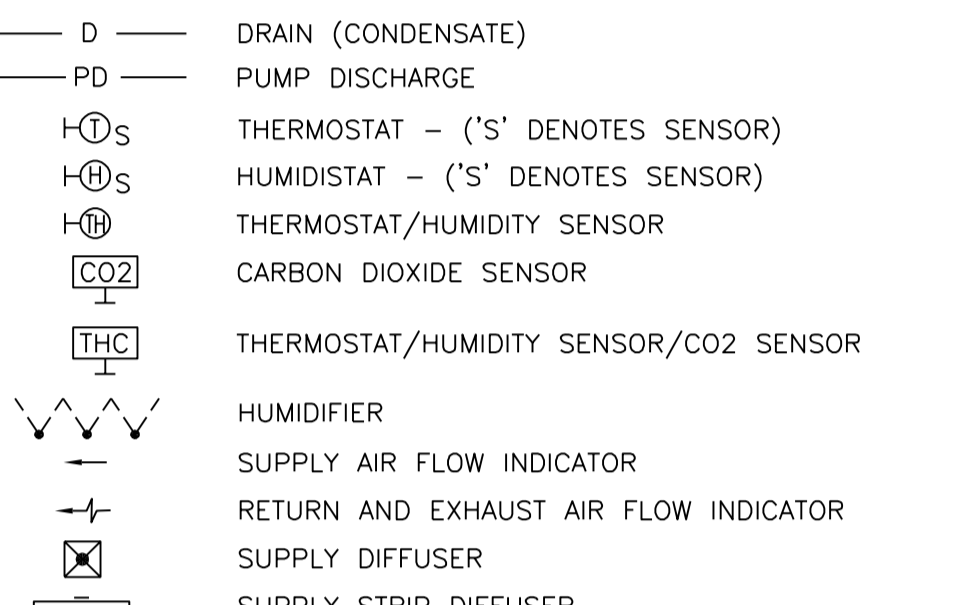
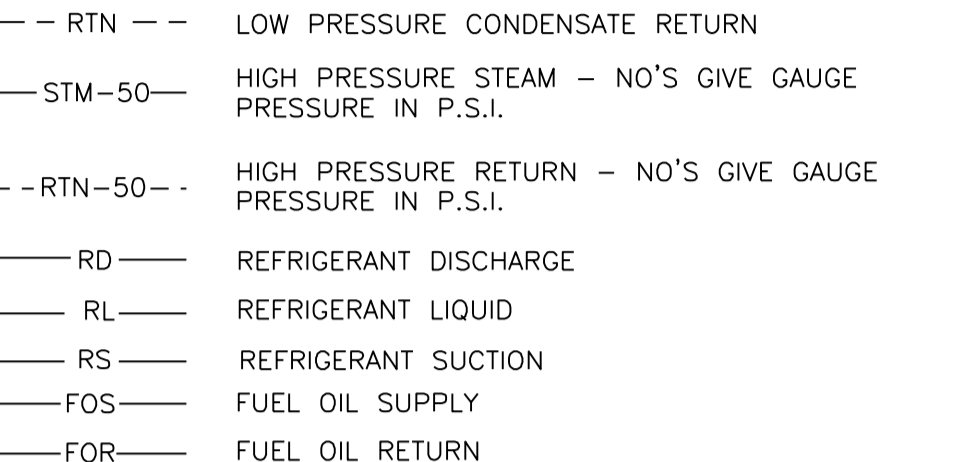
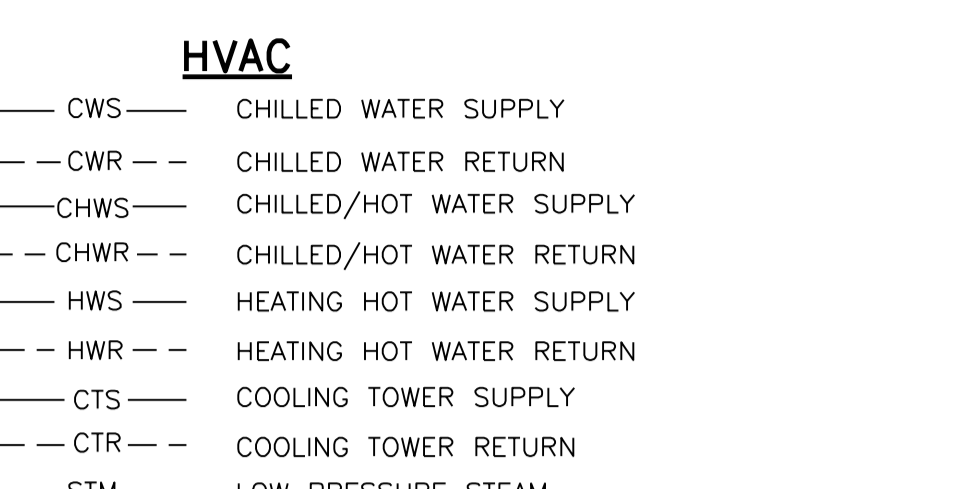
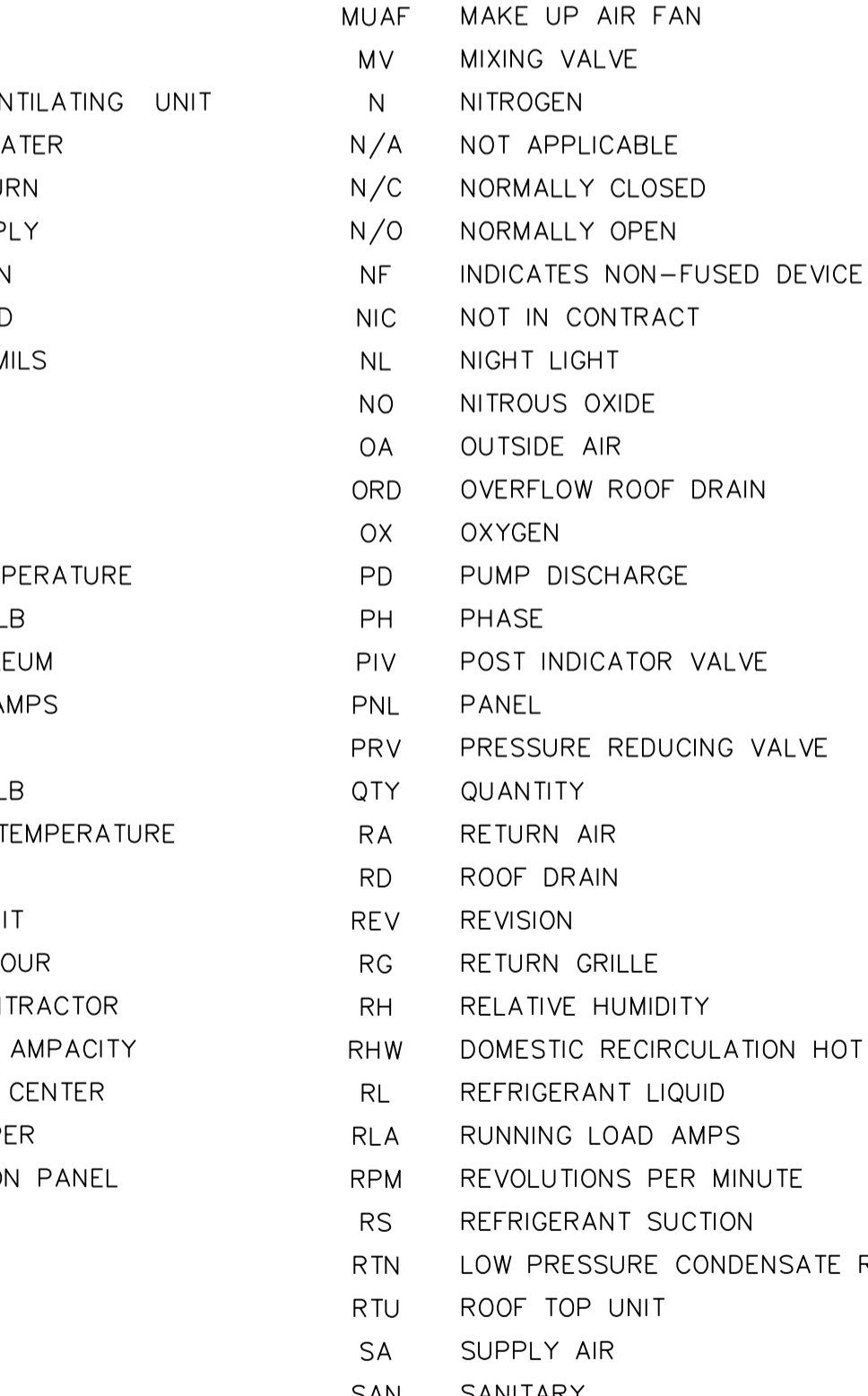
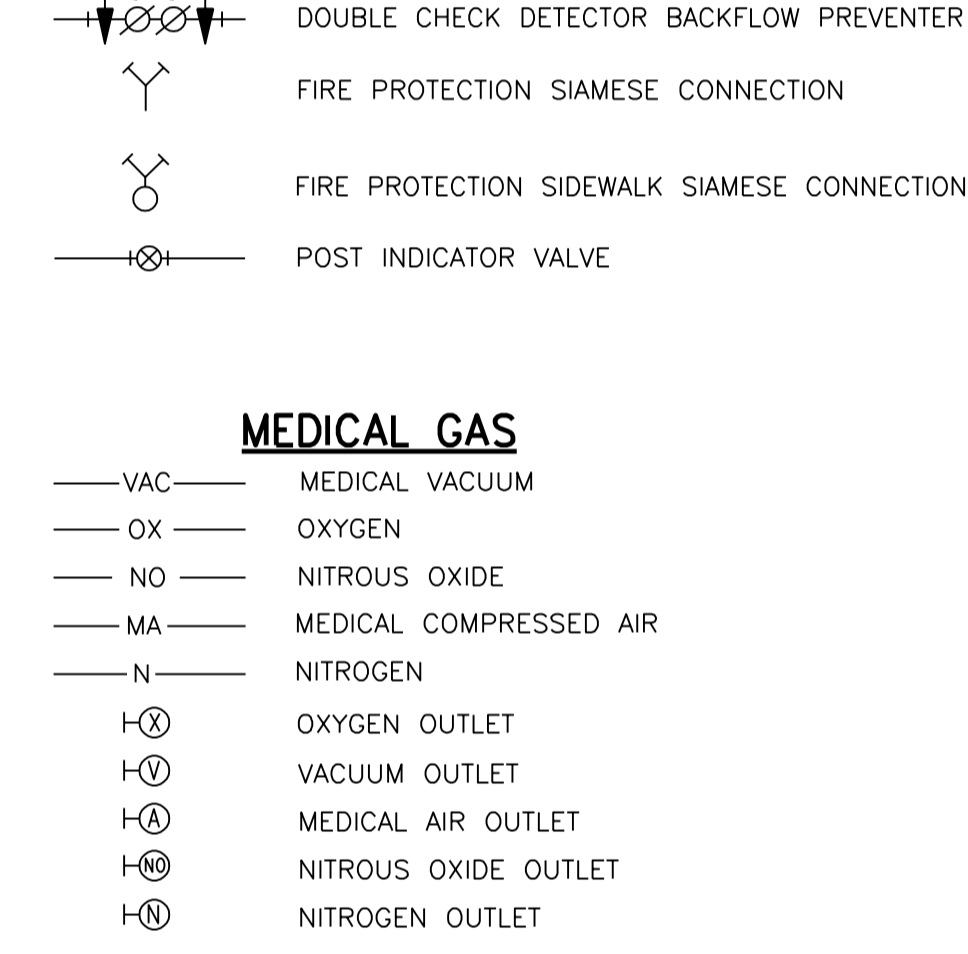
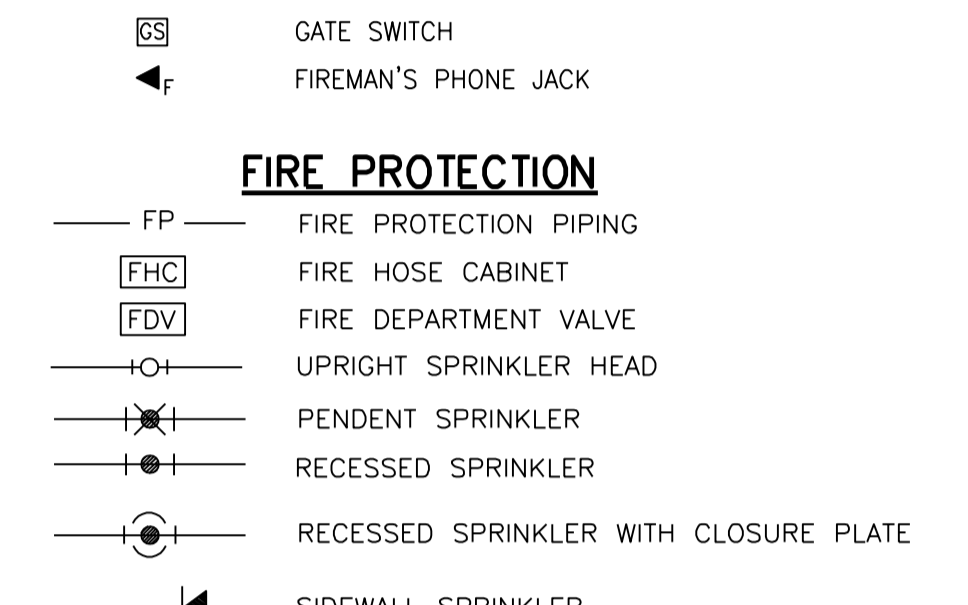
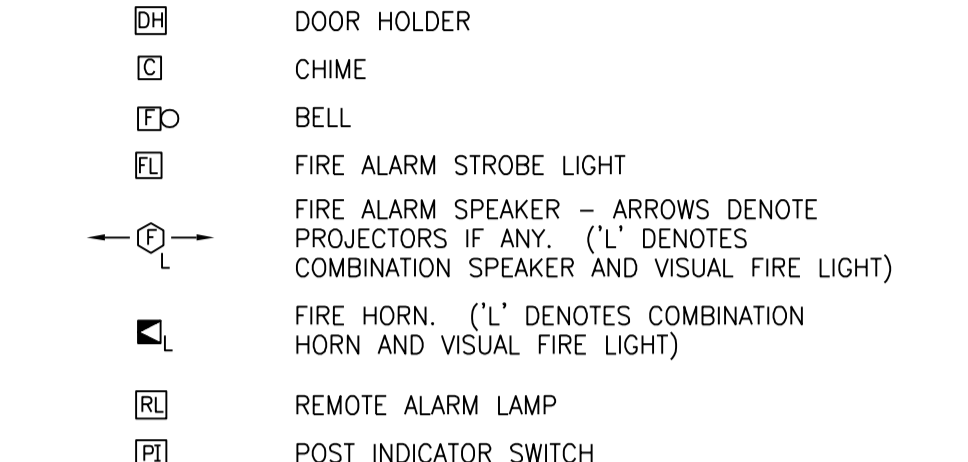
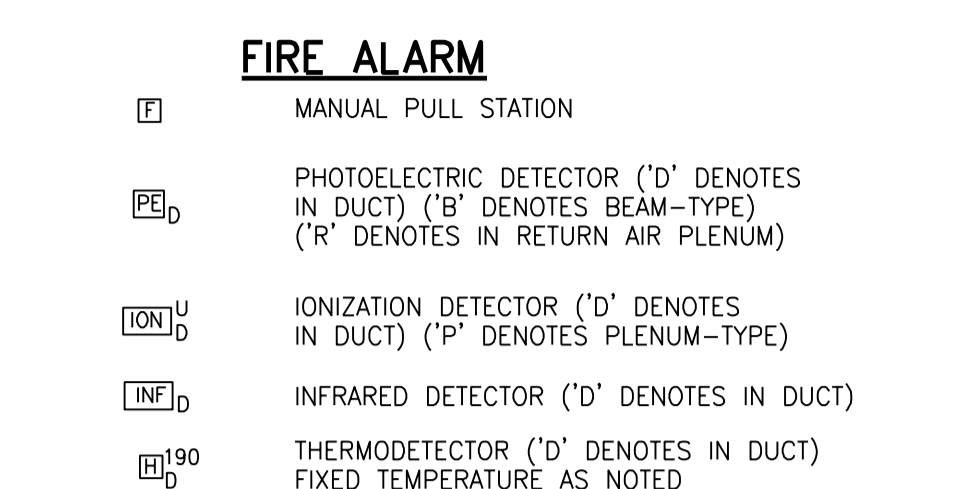
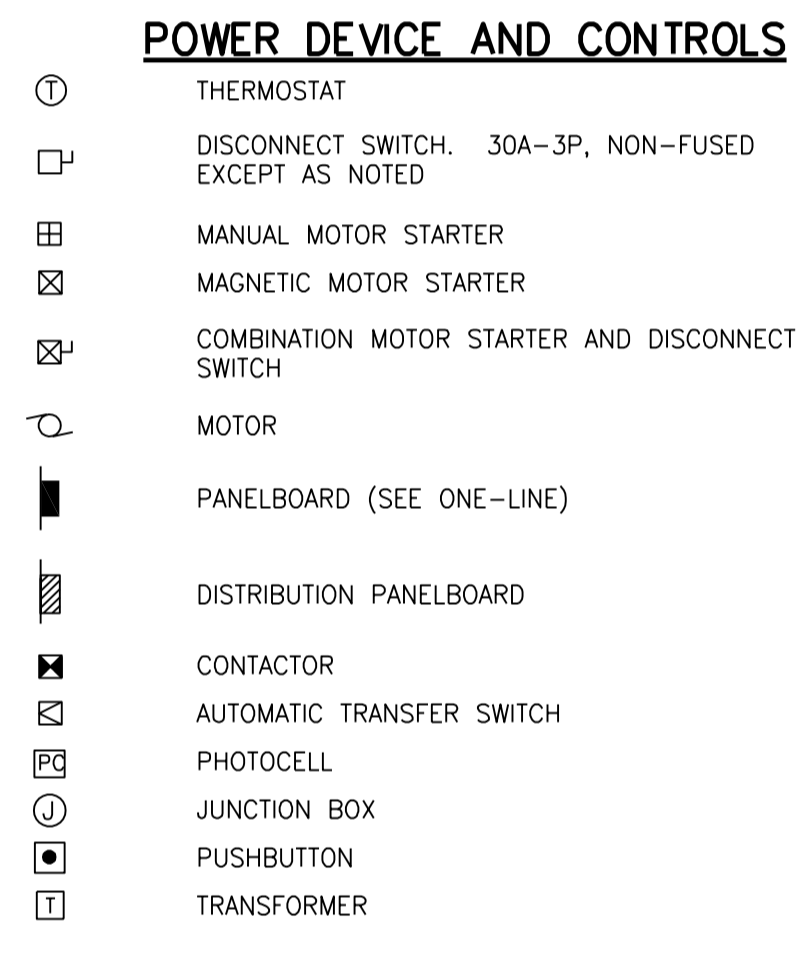
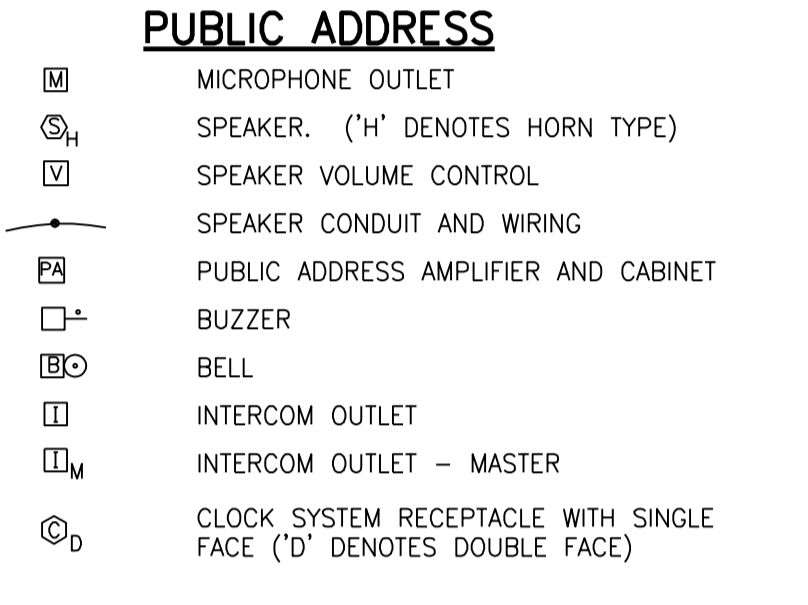
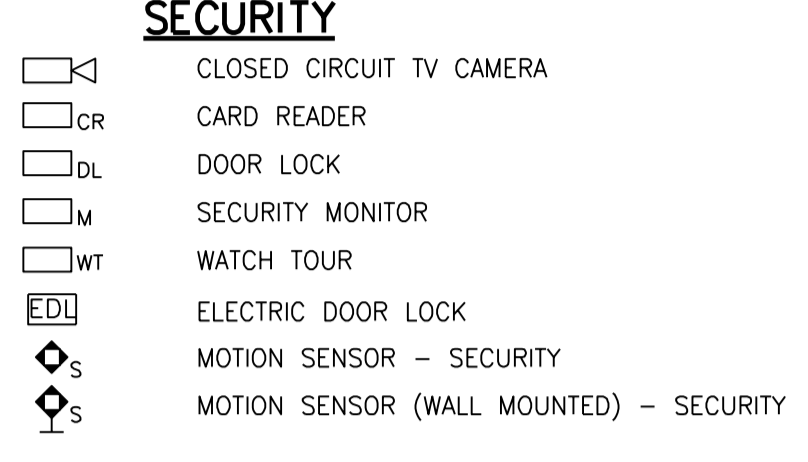
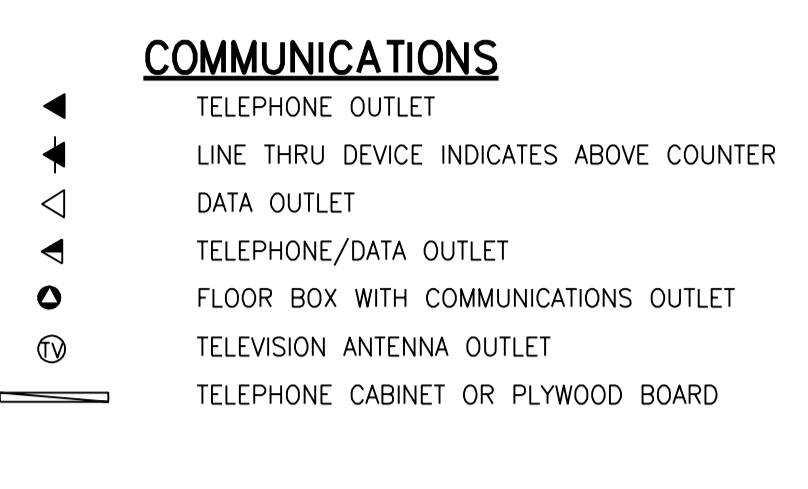
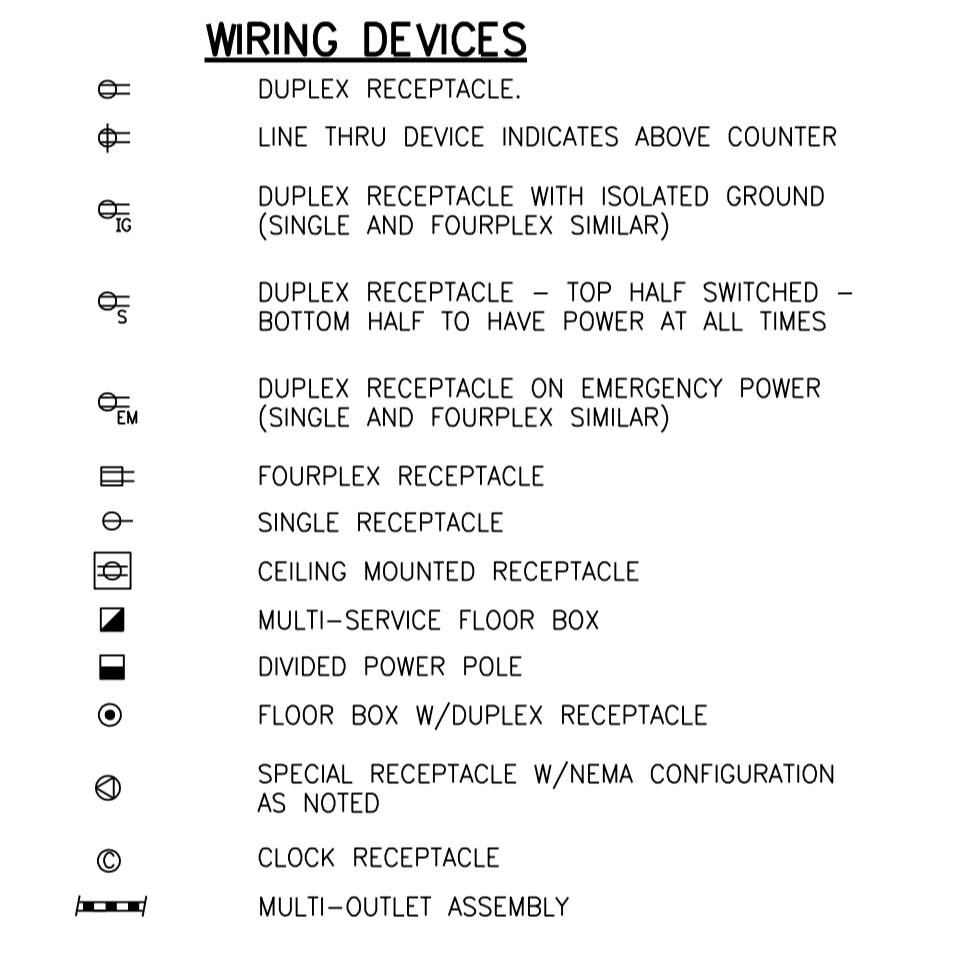
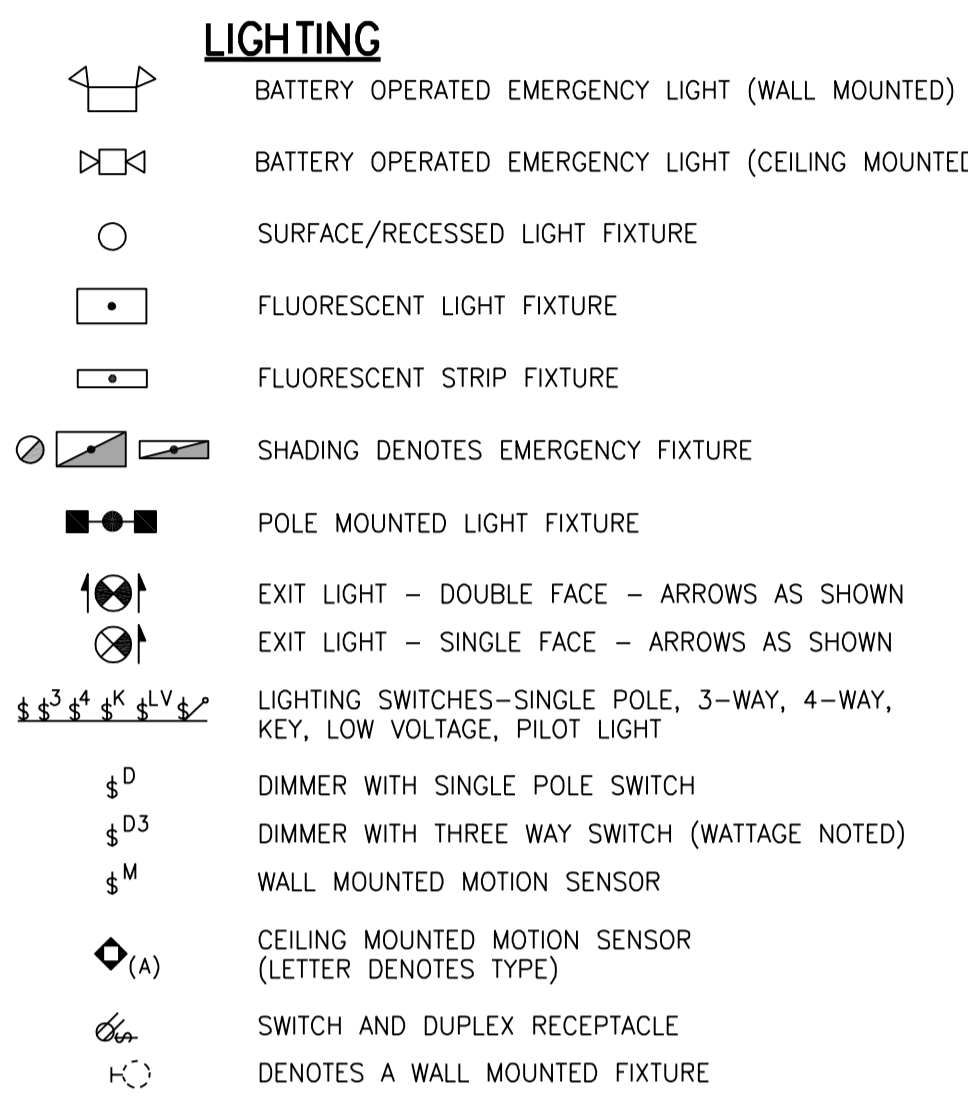
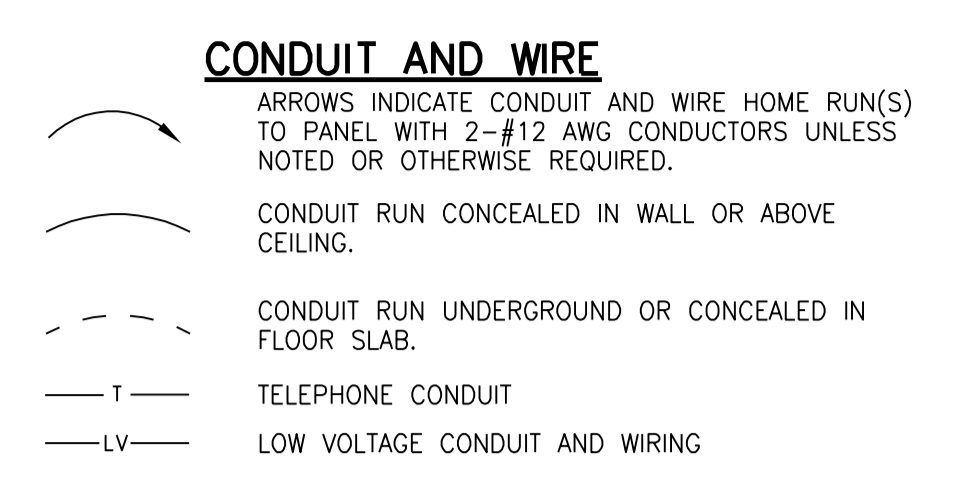
John E. Funk
E-2000173299

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CHECKED BY: DBH
DATE: 09.30.2016

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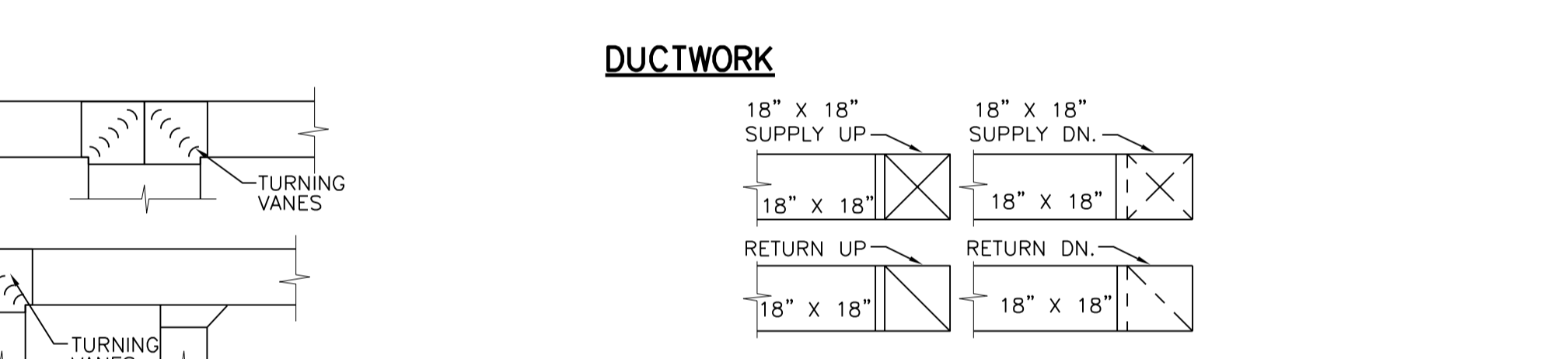
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LAST CORRECTION: 11/22/16
DATE: 11/22/16
DRAWN BY: Charles Bady



MECHANICAL AND ELECTRICAL SYMBOLS AND ABBREVIATIONS

"SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED. REFER TO FLOOR PLANS FOR ALL SYMBOLS AND ABBREVIATIONS."

Table with 3 columns: Symbol, Description, Symbol, Description, Symbol, Description, Symbol, Description. Includes abbreviations like AMP, AIR, AREA DRAIN, ABOVE FINISH CEILING, etc.



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Smith & Boucher Engineers MEP Engineers
Anderson Engineering Geotechnical Engineers
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KENT T. MCCOSH
REGISTERED PROFESSIONAL ENGINEER
MECHANICAL
9/30/16
JOB NO: 16054
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DATE: 09.30.2016
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25501 west valley parkway, suite 200 olathe, ks 66061
ME101
OF
SYMBOLS AND ABBREVIATION - MECHANICAL AND ELECTRICAL

- ELECTRICAL PLAN NOTES:**
- 1 PROPOSED UTILITY COMPANY TRANSFORMER LOCATION. INSTALL CONCRETE PAD PER UTILITY COMPANY STANDARDS. COORDINATE EXACT PRIMARY ELECTRICAL FEEDER REQUIREMENTS AND RESPONSIBILITIES WITH UTILITY COMPANY.
 - 2 SECONDARY ELECTRICAL UTILITY FEEDER. REFER TO ONE LINE DIAGRAM FOR CONDUIT AND CONDUCTOR QUANTITY AND SIZE.
 - 3 PROVIDE (2) EMPTY 4" CONDUITS WITH PULL STRING FROM MDF CLOSET OUT TO DATA SERVICE POINT. COORDINATE EXACT REQUIREMENTS WITH UTILITY.

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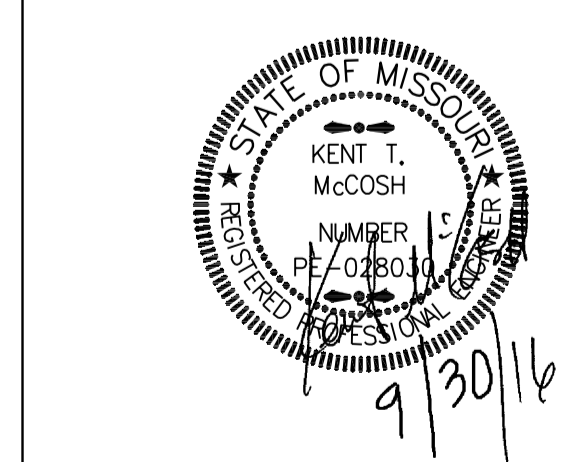
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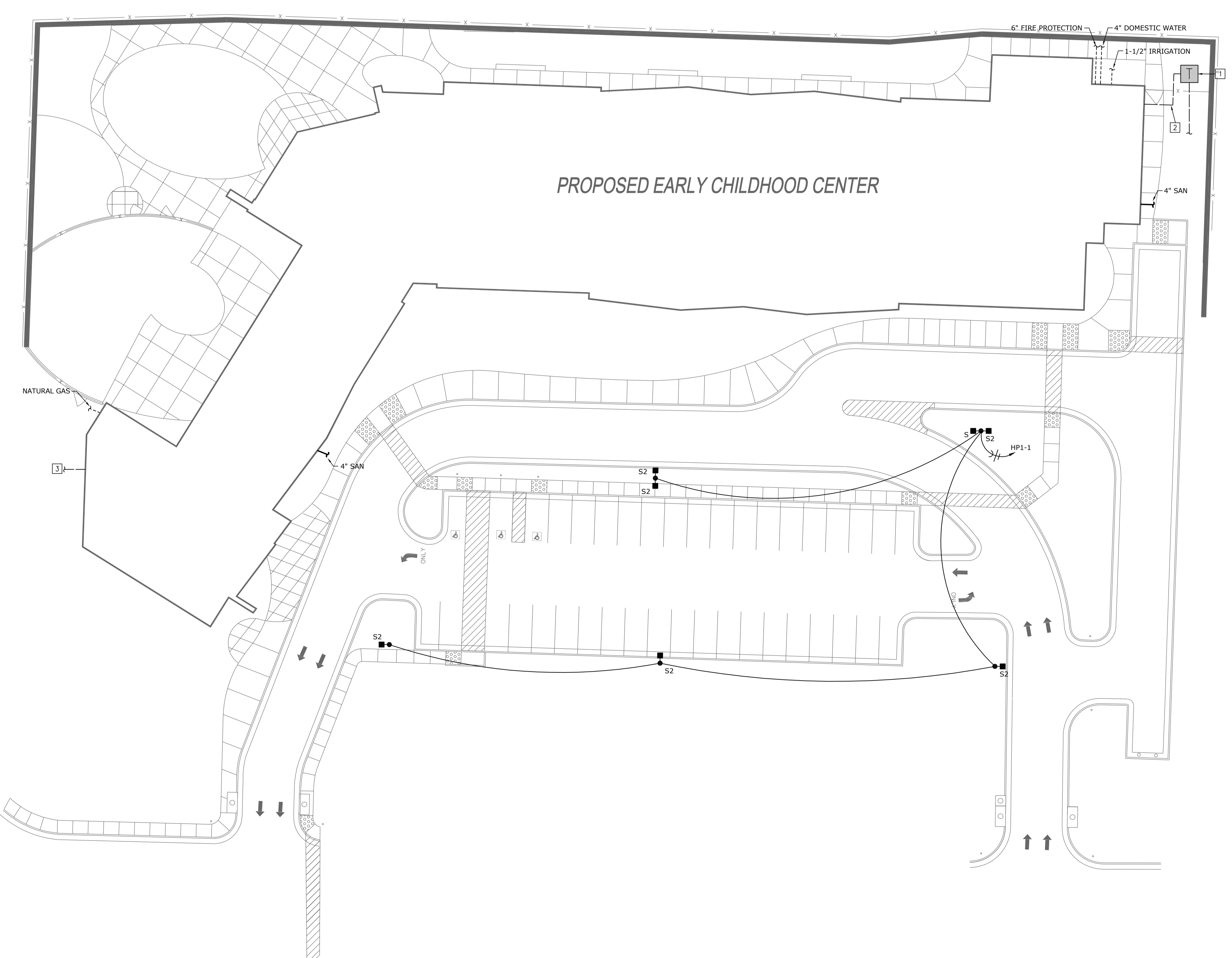


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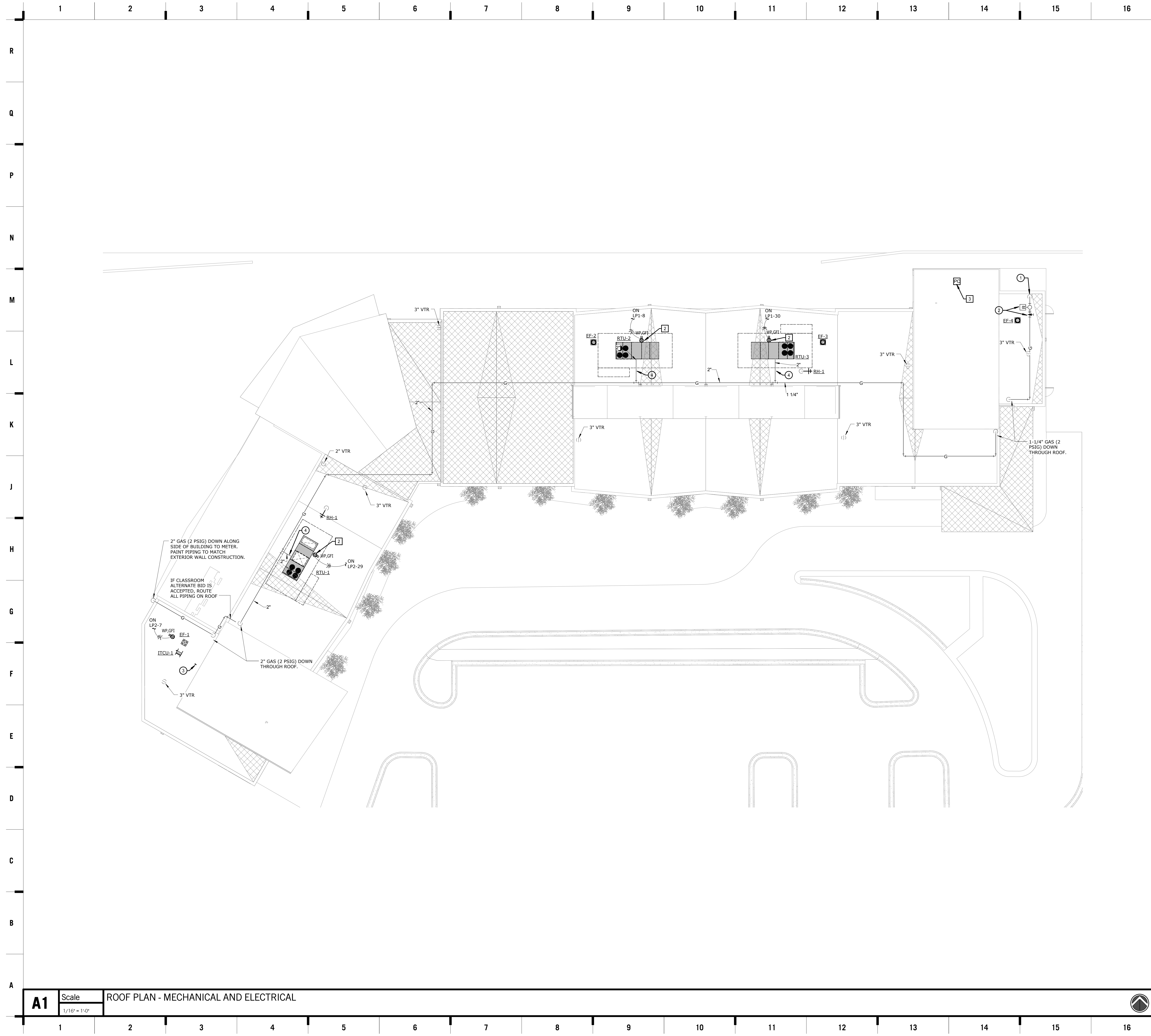


SITE PLAN - MECHANICAL AND ELECTRICAL
SCALE: 1" = 20'-0"

50
30
20
10
0
10 20 30 40
Scale: 1" = 20'-0"

PROJECT NAME: JOPLIN EARLY CHILDHOOD CENTER
DRAWN BY: S&B
LAST CORRECTION BY: DATE
PLOTTED BY: DATE

PROJECT NAME: JOPLIN EARLY CHILDHOOD CENTER
DRAWN BY: S&B
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SHEET KEYNOTE LEGEND

MECHANICAL PLAN NOTES:

- ① 2" GAS DOWN TO WATER HEATERS.
- ② PROVIDE SHUT OFF VALVE AND REGULATOR PRIOR TO ROOF PENETRATION.
- ③ 4" DRYER EXHAUST. TERMINATE PER MANUFACTURER'S RECOMMENDATIONS.
- ④ PROVIDE SHUT OFF VALVE, REGULATOR, AND ACCESSORIES PER ROOFTOP UNIT DETAIL.

ELECTRICAL PLAN NOTES:

- 1 PROVIDE GFCI, WEATHERPROOF RECEPTACLE ON ROOF, MOUNTED WITHIN 25' OF MECHANICAL EQUIPMENT.
- 2 RECEPTACLE PROVIDED WITH ROOFTOP UNIT. CIRCUIT AS SHOWN.
- 3 MOUNT PHOTOCELL AS HIGH AS POSSIBLE ON ROOF IN AN UNSHADED AREA WITH A CLEAR VIEW TO THE NORTH HORIZON.

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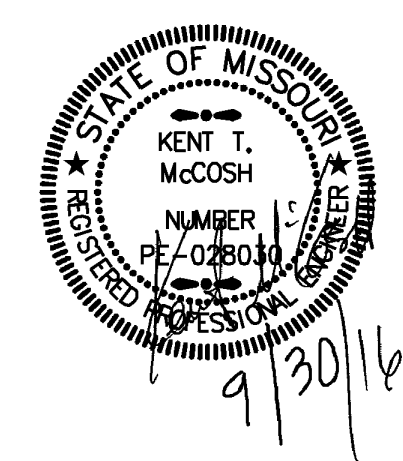
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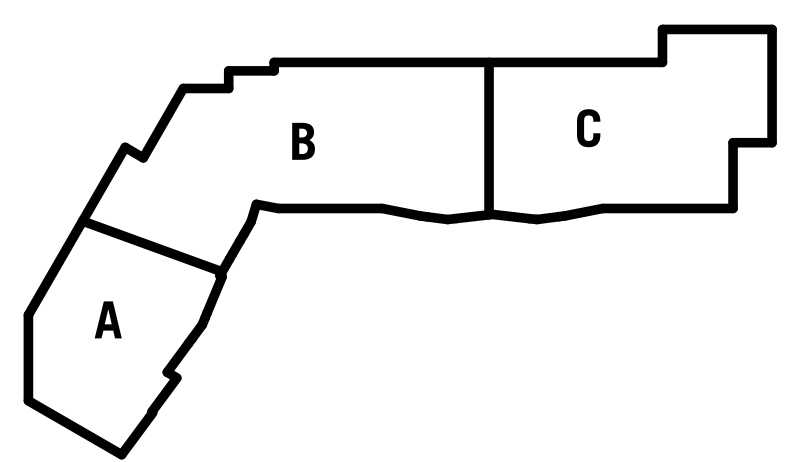
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KEY PLAN



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 CHECKED BY: KTM
 DATE: 09.30.2016

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VARIABLE AIR VOLUME TERMINAL SCHEDULE

Table with 15 columns (FPB1-1 to FPB1-15) and 18 rows (DESIGNATION, MANUFACTURER, MODEL NO., INLET SIZE, UNIT/BOX SIZE, DESIGN CFM, PRIMARY CFM (NOTE 3), FAN CFM, FAN HP, HEATING KW, VOLTS/PHASE, PANEL, WIRE AND CONDUIT, BREAKER, DISCONNECT, REMARKS).

- NOTES: 1. CONTROLS CONTRACTOR TO FURNISH AND INSTALL BMS CONTROL TRANSFORMER PANEL IN ELECTRICAL ROOMS AND WIRE CABLING FOR EACH TERMINAL DEVICE. PROVIDE NUMBER OF BMS TRANSFORMER PANELS AS REQUIRED. CIRCUIT TO SPARE 20A-1P CIRCUIT BREAKER.

VARIABLE AIR VOLUME TERMINAL SCHEDULE

Table with 9 columns (FPB2-1 to FPB2-9) and 18 rows (DESIGNATION, MANUFACTURER, MODEL NO., INLET SIZE, UNIT/BOX SIZE, DESIGN CFM, PRIMARY CFM (NOTE 3), FAN CFM, FAN HP, HEATING KW, VOLTS/PHASE, PANEL, WIRE AND CONDUIT, BREAKER, DISCONNECT, REMARKS).

- NOTES: 1. CONTROLS CONTRACTOR TO FURNISH AND INSTALL BMS CONTROL TRANSFORMER PANEL IN ELECTRICAL ROOMS AND WIRE CABLING FOR EACH TERMINAL DEVICE. PROVIDE NUMBER OF BMS TRANSFORMER PANELS AS REQUIRED. CIRCUIT TO SPARE 20A-1P CIRCUIT BREAKER.

VARIABLE AIR VOLUME TERMINAL SCHEDULE

Table with 12 columns (FPB3-1 to FPB3-12) and 18 rows (DESIGNATION, MANUFACTURER, MODEL NO., INLET SIZE, UNIT/BOX SIZE, DESIGN CFM, PRIMARY CFM (NOTE 3), FAN CFM, FAN HP, HEATING KW, VOLTS/PHASE, PANEL, WIRE AND CONDUIT, BREAKER, DISCONNECT, REMARKS).

- NOTES: 1. CONTROLS CONTRACTOR TO FURNISH AND INSTALL BMS CONTROL TRANSFORMER PANEL IN ELECTRICAL ROOMS AND WIRE CABLING FOR EACH TERMINAL DEVICE. PROVIDE NUMBER OF BMS TRANSFORMER PANELS AS REQUIRED. CIRCUIT TO SPARE 20A-1P CIRCUIT BREAKER.

EXHAUST FAN SCHEDULE

Table with 5 columns (EF-1 to EF-5) and 18 rows (DESIGNATION, FAN TYPE, SERVICE, MANUFACTURER, MODEL, CFM, STATIC PRESSURE, SOUND DATA, FAN RPM, MOTOR HORSEPOWER, VOLTAGE/PHASE, DRIVE, PANEL & CIRCUIT, WIRE & CONDUIT, OVERCURRENT DEVICE, DISCONNECT, STARTER, COMBINATION STARTER, CONTROL, DAMPER TYPE, REFERENCE DRAWING/DETAIL, REMARKS).

- NOTES: 1. PROVIDE REMOTE ON/OFF THERMOSTAT. ENGAGE FAN IF ROOMS WARM ABOVE BSF. DISCHARGE FAN EXHAUST INTO ADJACENT CEILING PLENUM.

PIPE INSULATION SCHEDULE - HVAC

Table with 3 columns (SERVICE, PIPE SIZE, INSULATION) and 4 rows (CONDENSATE DRAIN, REFRIGERANT SUCTION, REFRIGERANT HOT GAS, REFRIGERANT LIQUID).

- NOTES: 1. FOR ALL PIPING 2-1/2" AND LARGER, PROVIDE RIGID FOAM INSERTS AT ALL HANGERS AND SUPPORT LOCATIONS.

IT EQUIPMENT ROOM A/C UNIT SCHEDULE

Table with 2 columns (INDOOR UNIT, ROOF MOUNTED OUTDOOR UNIT) and 18 rows (DESIGNATION, MANUFACTURER, MODEL, CFM, MCA, TOTAL COOLING CAP (BTUH), VOLTAGE/PHASE, PANEL AND CIRCUIT, WIRE AND CONDUIT, OVERCURRENT DEVICE, DISCONNECT, REFERENCE DRAWING/DETAIL, REMARKS).

- NOTES: 1. INDOOR UNIT CIRCUITED THROUGH OUTDOOR UNIT.

GRILLE, REGISTER & DIFFUSER SCHEDULE

Table with 8 columns (PLAN MARK, MANUFACTURER MODEL NUMBER, SERVICE, MOUNT TYPE, VOLUME DAMPER, MATERIAL, COLOR, REMARKS) and 5 rows (SD-1, SD-2, SD-3, RG-1, EG-1).

- NOTE 1: LENGTH X 2 3/8" WIDE. PROVIDE WITH HEAVY DUTY FLOOR FLANGE.

ROOFTOP UNIT SCHEDULE - GAS HEAT

Table with 3 columns (RTU-1, RTU-2, RTU-3) and 18 rows (DESIGNATION, MANUFACTURER, MODEL NO., UNIT TYPE, CAPACITY, UNIT DATA, FILTER, ELEC./CONT., REFERENCE DRAWING/DETAIL, REMARKS).

- NOTES: 1. PROVIDE WITH SINGLE POINT ELECTRICAL CONNECTION.

DUCTWORK SCHEDULE

Table with 5 columns (SERVICE, DUCT SHAPE, CLASSIFICATION, SEAL CLASS, LEAKAGE CLASS, OTHER REQUIREMENTS) and 6 rows (SUPPLY AIR DUCTS CONNECTED TO CONSTANT VOLUME AIR HANDLING UNITS, SUPPLY AIR DUCTS CONNECTED TO TERMINAL BOXES OR FAN COIL UNITS, SUPPLY AIR FROM VAV RTUS TO TERMINAL UNITS, RETURN AIR DUCTWORK INCLUDING RETURN AIR BOOTS, TRANSFER AIR DUCTWORK, EXHAUST DUCTS TO THE INLET OF THE FAN).

- NOTES: 1. SEE DUCTWORK INSULATION SCHEDULE FOR REQUIREMENTS ON DUCT INSULATION.

DUCTWORK INSULATION SCHEDULE

Table with 2 columns (SERVICE, INSULATION) and 4 rows (EXPOSED DUCTWORK AS FOLLOWS: OUTSIDE AIR, MEDIUM PRESSURE SUPPLY AIR (ROUND AND RECTANGULAR), MIXED AIR, RELIEF AIR, CONCEALED DUCTWORK AS FOLLOWS: OUTSIDE AIR, MEDIUM PRESSURE SUPPLY AIR (ROUND AND RECTANGULAR), MIXED AIR, RELIEF AIR, ALL ROUND SUPPLY AIR AND UNLINED BRANCH TAKE-OFFS FOR ROUND DUCTS AND IN-LINE TRANSITIONS).

- NOTES: 1. SEE DUCTWORK SCHEDULE FOR ITEMS THAT ARE TO BE LINED.

UNIT HEATER SCHEDULE - ELECTRIC

Table with 5 columns (DESIGNATION, MOUNTING, MANUFACTURER, MODEL, UNIT DATA, ELEC./CTRL. DATA) and 18 rows (FAN DRIVE, MOTOR HP, HEATER KW, VOLTAGE/PHASE, PANEL & CIRCUIT, WIRE & CONDUIT, OVERCURRENT DEVICE, DISCONNECT, CONTROL, REFERENCE DRAWING/DETAIL, REMARKS).

- NOTES: 1. PROVIDE ALL MOUNTING HARDWARE AS REQUIRED.

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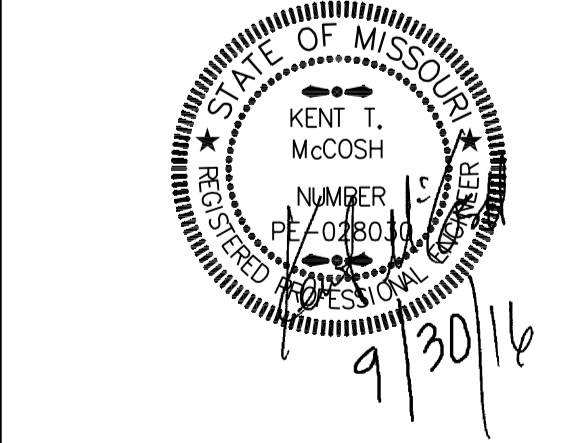
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Joplin Early Childhood Center
Joplin Schools

REVISIONS:



JOB NO: 16054
DRAWN BY: S&B
CHECKED BY: KTM
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SCHEDULES - MECHANICAL AND ELECTRICAL

PLUMBING FIXTURE SCHEDULE

MARK	MANUFACTURER/ MODEL	DESCRIPTION	MANUFACTURER/ MODEL	FITTINGS		PIPING CONNECTION			
				DESCRIPTION	NOTES	CW	HW	SAN	VENT
WC-1	AMERICAN STANDARD AF-WALL WADE CHURCH 9500C	WATER CLOSET: WHITE VITREOUS CHINA, ELONGATED BOWL, EVER CLEAN FINISH WALL MOUNTED, FLUSH VALVE BOWL WITH TOPSPUD AND FLAT BOLT COVERS. 1.28 GALLON SIPHON JET FLUSHING ACTION. CARRIER: PROVIDE CARRIER AS REQUIRED TO SUIT APPLICATION. SEAT: SOLID PLASTIC, OPEN FRONT, WHITE, ELONGATED BOWL, INTEGRAL BUMPERS, EXTERNAL CHECK HINGES WITH STAINLESS STEEL POSTS.	SLOAN 111-128	MANUAL FLUSH VALVE, 1-1/2" TOP SPUD, 1.28 GPF.	5	1"	---	4"	2"
WC-2	AMERICAN STANDARD AF-WALL WADE CHURCH 9500C	ADA COMPLIANT WATER CLOSET: WHITE VITREOUS CHINA, ELONGATED BOWL, EVER CLEAN FINISH WALL MOUNTED, FLUSH VALVE BOWL WITH TOPSPUD AND FLAT BOLT COVERS. 1.28 GALLON SIPHON JET FLUSHING ACTION. CARRIER: PROVIDE CARRIER AS REQUIRED TO SUIT APPLICATION. SEAT: SOLID PLASTIC, OPEN FRONT, WHITE, ELONGATED BOWL, INTEGRAL BUMPERS, EXTERNAL CHECK HINGES WITH STAINLESS STEEL POSTS.	SLOAN 111-128	MANUAL FLUSH VALVE, 1-1/2" TOP SPUD, 1.28 GPF.	5.6	1"	---	4"	2"
WC-3	AMERICAN STANDARD MADERA CHURCH 9500C	CHILD ADA COMPLIANT WATER CLOSET: WHITE VITREOUS CHINA, ELONGATED BOWL, EVER CLEAN FINISH FLOOR MOUNTED, FLUSH VALVE BOWL WITH TOPSPUD AND FLAT BOLT COVERS. 1.28 GALLON SIPHON JET FLUSHING ACTION, (15" HEIGHT W/O SEAT) SEAT: SOLID PLASTIC, OPEN FRONT, WHITE, ELONGATED BOWL, INTEGRAL BUMPERS, EXTERNAL CHECK HINGES WITH STAINLESS STEEL POSTS.	SLOAN 111-128	MANUAL FLUSH VALVE, 1-1/2" TOP SPUD, 1.28 GPF.	5.6	1"	---	4"	2"
U-1	AMERICAN STANDARD 6590-125 JAY R. SMITH	WALL HUNG URINAL, 0.125 GPF, ADA COMPLIANT REFER TO ARCHITECTURAL FOR MOUNTING HEIGHTS PROVIDE CARRIER TO SUITE APPLICATION	SLOAN - ROYAL 186-0125	EXPOSED, LOW CONSUMPTION FLUSH VALVE ASSEMBLY. MANUAL OPERATED, 0.125 GPF, ADA COMPLIANT	1.4	1"	---	2"	2"
L-1	AMERICAN STANDARD LUCERNE	ADA COMPLIANT WALL HUNG LAVATORY: WHITE VITREOUS CHINA, FRONT OVERFLOW	DELTA 21C144	CHROME PLATED BRASS, 4" CENTER SET FAUCET WITH 5 GPM FLOWRATE AND WRIST BLADE HANDLES.	1.2,3,4	1/2"	1/2"	1-1/2"	1-1/4"
L-2	AMERICAN STANDARD LUCERNE	WALL HUNG LAVATORY: WHITE VITREOUS CHINA, FRONT OVERFLOW. MOUNT AT CHILD HEIGHT.	DELTA 21C144	CHROME PLATED BRASS, 4" CENTER SET FAUCET WITH 5 GPM FLOWRATE AND WRIST BLADE HANDLES.	1.2,3,4	1/2"	1/2"	1-1/2"	1-1/4"
L-3	AMERICAN STANDARD LUCERNE	WALL HUNG LAVATORY: WHITE VITREOUS CHINA, FRONT OVERFLOW.	DELTA 21C144	CHROME PLATED BRASS, 4" CENTER SET FAUCET WITH 5 GPM FLOWRATE AND WRIST BLADE HANDLES.	1.2,3,4	1/2"	1/2"	1-1/2"	1-1/4"
S-1	ELKAY LRA222155	ADA COMPLIANT 25" x 21-1/4" x 5-1/2" SELF RIMMING, #18 GAUGE, TYPE 304 STAINLESS STEEL SINK, WITH FAUCET LEDGE, AND OFF CENTERED REAR OUTLET.	CHICAGO FAUCETS 786-E2805-5-GN8A	CAST BRASS BODY, GOOSENECK SPOUT, 0.5 GPM FLOW, CHROME FINISH.	2.3,5	1/2"	1/2"	2"	1-1/2"
S-2	ELKAY LRA222155	ADA COMPLIANT 25" x 21-1/4" x 5-1/2" SELF RIMMING, #18 GAUGE, TYPE 304 STAINLESS STEEL SINK, WITH FAUCET LEDGE. PROVIDE WITH INSINKERATOR DISPOSER	CHICAGO FAUCETS 786-E2805-5-GN8A	CAST BRASS BODY, GOOSENECK SPOUT, 0.5 GPM FLOW, CHROME FINISH.	2.3,5	1/2"	1/2"	2"	1-1/2"
WT-1	---	WATER TABLE BY ARCHITECT	AMERICAN STANDARD 2064.461	SINGLE CONTROL WALL MOUNT FAUCET, INSTALL WITH CW CONNECTION ONLY.	3.5,6	1/2"	---	1-1/2"	---
JS-1	STERN WILLIAMS HL-800	MOP SINK: 24"x24"x12" ONE PIECE MOLDED STONE MOP BASIN WITH DROP EDGE ON FRONT, INTEGRAL STAINLESS STEEL DRAIN BODY WITH CAULKED CONNECTION FOR 3" PIPE. PROVIDE WITH STAINLESS STEEL WALL GUARDS.	ZURN Z843M1	CHROME PLATED BRASS WALL MOUNTED FAUCET WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE BALL BRACE, PAIL HOOK, 3/4" HOSE THREAD SPOUT, METAL LEVER HANDLES.		1/2"	1/2"	3"	1-1/2"
EW-C-1	ELKAY LZSS8 X 2	PROVIDE TWO, ADA COMPLIANT, ELECTRIC WATER COOLERS. FRONT AND SIDE PUSH BUTTONS, LEAD FREE, CAPABLE OF PROVIDING 8 GPM OF 50 DEG WATER AT 90 DEG AMBIENT. MOUNT ONE AT ADA CHILD HEIGHT AND MOUNT THE OTHER AT ADULT ADA HEIGHT.	---	---	2.4,5	1/2"	---	2"	1-1/2"
WB-1	GUY GRAY MMB20	WASHING MACHINE CONNECTION BOX, REVERSIBLE DRAIN, WHITE POWDER COATED STEEL BOX AND FRAME, SINGLE LEVER HAMMER ARRESTOR VALVES.	---	---		1/2"	1/2"	2"	1-1/2"
IMB-1	GUY GRAY BIM875	ICE MAKER CONNECTION BOX, STEEL BOX AND FRAME.	---	---		1/2"	---	---	---
WH-1	WADE 8600	3/4" NON-FREEZE WALL HYDRANT WITH ANTI-SIPHON BACKFLOW PREVENTER.	---	---		3/4"	---	---	---
RH-1	JAY R. SMITH 5906	NON-FREEZE ROOF HYDRANT WITH GALVANIZED CASING AND ADJUSTABLE FLOW WHEEL LOCK HANDLE WITH DECK FLANGE AND UNDER DECK CLAMP.	---	---		3/4"	---	---	---

- NOTES:
 1. PROVIDE CHROME PLATED BRASS TAILPIECE AND GRID DRAIN.
 2. PROVIDE CHROME PLATED BRASS P-TRAP.
 3. PROVIDE LOOSE KEY STOPS AND FLEXIBLE RISERS.
 4. INSULATE EXPOSED TAILPIECE, P-TRAP, AND WATER RISERS. COVER TAILPIECE, P-TRAP, AND ANY EXPOSED WASTE AND VENT PIPING WITH CROME COVER. REFER TO SPECIFICATIONS FOR INSULATION METHODS.
 5. PROVIDE CAULK AROUND FIXTURE CONNECTION TO FLOOR/WALL. COLOR BY ARCHITECT.
 6. PROVIDE PROVIDE WITH 2" DRAIN WITH STRAINER/STOPPER.

DRAIN SCHEDULE		
MARK	MANUFACTURER/ MODEL	DESCRIPTION
FD-1	WADE W-1100G	CAST IRON DRAIN WITH ADJUSTABLE TOP AND 6"X6" STAINLESS STEEL STRAINER WITH VANDAL RESISTANT SCREWS. 2" OUTLET. PROVIDE WITH PROSET TRAP GUARD BY PROVENT SYSTEMS INC.
FD-2	WADE W-2310	CAST IRON MEDIUM DEPTH FLOOR DRAIN WITH FLANGE. 12"X12" SQUARE TOP WITH DUCTILE IRON GRATE. 4" OUTLET. PROVIDE WITH PROSET TRAP GUARD BY PROVENT SYSTEMS INC.
FD-3	WADE W-9110	CAST IRON FLOOR SINK. PROVIDE LESS STRAINER. 8"X8" SQUARE TOP. 3" OUTLET. PROVIDE WITH PROSET TRAP GUARD BY PROVENT SYSTEMS INC.

DOMESTIC WATER HEATER SCHEDULE		
DESIGNATION	DWH-1	DWH-2
UNIT DATA		
MANUFACTURER	RINNAI	RINNAI
MODEL	C199	C199
CAPACITY (GALLONS)	INSTANTANEOUS	INSTANTANEOUS
RECOVERY @ 100F RISE (GPM)	4	4
MIN / MAX FLOW RATE (GPM)	0.26 / 9.8	0.26 / 9.8
OUTLET TEMP. (F)	105	105
INPUT MBH	199	199
VOLTAGE/PHASE	120/1	120/1
ELEC/CONTROL DATA		
PANEL & CIRCUIT	LP1-58	LP1-60
WIRE & CONDUIT	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.
OVERCURRENT DEVICE	20A-1P CB	20A-1P CB
DISCONNECT	CIRCUIT BREAKER	CIRCUIT BREAKER
REFERENCE DRAWING/DETAIL	P203C	P203C
REMARKS	NOTE 1,2	NOTE 1,2
NOTES:	1 REFER TO DETAIL 2 PROVIDE ACID NEUTRALIZATION TANK ON CONDENSATE DRAIN.	

PIPE INSULATION SCHEDULE - PLUMBING		
SERVICE	PIPE SIZE	INSULATION
DOMESTIC COLD WATER	1/2" - 2"	1/2" FIBERGLASS, ASJ (OR 1/2" FLEXIBLE CLOSED CELL ELASTOMERIC)
DOMESTIC HOT WATER	2-1/2" AND LARGER	1" FIBERGLASS, ASJ (OR 1" FLEXIBLE CLOSED CELL ELASTOMERIC)
RECIRCULATING HOT WATER TEMPERED WATER	ALL	1" FIBERGLASS, ASJ (OR 1" FLEXIBLE CLOSED CELL ELASTOMERIC)
EXPOSED FIXTURE WASTETRAP AND DOMESTIC HOT WATER AT HANDICAPPED ACCESSIBLE SINKS AND LAVATORIES	ALL	TRUBRO LAV GUARD MOLDED PROTECTIVE PIPE COVER OVER 1/2" FIBERGLASS INSULATION
NOTES:	1: FOR ALL PIPING 2-1/2" AND LARGER, PROVIDE RIGID FOAM INSERTS AT ALL HANGERS AND SUPPORT LOCATIONS.	

DOMESTIC WATER PUMP SCHEDULE	
DESIGNATION	RHW-1
UNIT DATA	
MANUFACTURER	BELL & GOSSETT
LOCATION	MECH ROM
MODEL NO.	PL-65
SERVICE	DWH-1 & 2
PUMP TYPE	INLINE
GPM	10
PUMP HEAD (FT.)	40
MOTOR HORSEPOWER	0.4 HP
MOTOR RPM	3250
ELEC/CONTROL DATA	
VOLTAGE/PHASE	120/1
PANEL & CIRCUIT	LP1-62
WIRE & CONDUIT	(2)#12,#12G,1/2"C.
OVERCURRENT DEVICE	20A-1P CB
DISCONNECT	NOTE 1
STARTER	NEMA 0
COMBINATION STARTER	N/A
CONTROL	AQUA-STAT
REFERENCE DRAWING/DETAIL	P101
REMARKS	
NOTES:	1: PROVIDE MOTOR RATED TOGGLE SWITCH.

WATER SOFTENER SCHEDULE	
DESIGNATION	WS-1
UNIT DATA	
TYPE	PROGRESSIVE
MANUFACTURER	CULLIGAN
MODEL NO.	HE 1.5 PF 060
TANK SIZE (DIA " x LENGTH") SOFTNER BRINE	14"x47", 18"x38"
NORMAL SYSTEM FLOW (GPM)	25.1
NORMAL P.D. (PSI)	15
MAXIMUM SYSTEM FLOW (GPM)	31.5
MAXIMUM P.D. (PSI)	25
BACKWASH FLOW (GPM)	3.5
OPERATING TEMP. RANGE (%DF)	40-100
INLET PRESSURE RANGE (PSIG)	30-125
VOLTAGE/PHASE	120/1
PANEL & CIRCUIT	LP1-64
WIRE & CONDUIT	(2)#12,#12G,1/2"C.
OVERCURRENT DEVICE	20A1P
DISCONNECT	NOTE 1
REFERENCE DRAWING/DETAIL	P203C
REMARKS	
NOTE:	1: PROVIDE NEMA 5-20R RECEPTACLE FOR UNIT.

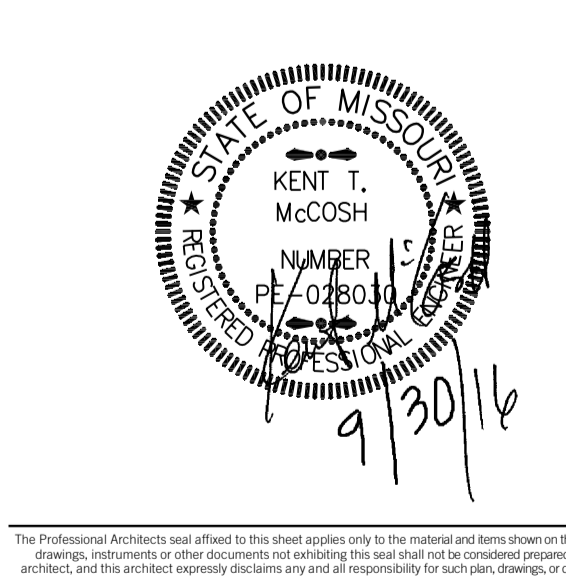
DOMESTIC WATER HEATER SCHEDULE		
DESIGNATION	DWH-1	DWH-2
UNIT DATA		
MANUFACTURER	RINNAI	RINNAI
MODEL	C199	C199
CAPACITY (GALLONS)	INSTANTANEOUS	INSTANTANEOUS
RECOVERY @ 100F RISE (GPM)	4	4
MIN / MAX FLOW RATE (GPM)	0.26 / 9.8	0.26 / 9.8
OUTLET TEMP. (F)	105	105
INPUT MBH	199	199
VOLTAGE/PHASE	120/1	120/1
ELEC/CONTROL DATA		
PANEL & CIRCUIT	LP1-58	LP1-60
WIRE & CONDUIT	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.
OVERCURRENT DEVICE	20A-1P CB	20A-1P CB
DISCONNECT	CIRCUIT BREAKER	CIRCUIT BREAKER
REFERENCE DRAWING/DETAIL	P203C	P203C
REMARKS	NOTE 1,2	NOTE 1,2
NOTES:	1 REFER TO DETAIL 2 PROVIDE ACID NEUTRALIZATION TANK ON CONDENSATE DRAIN.	

DOMESTIC WATER PUMP SCHEDULE	
DESIGNATION	RHW-1
UNIT DATA	
MANUFACTURER	BELL & GOSSETT
LOCATION	MECH ROM
MODEL NO.	PL-65
SERVICE	DWH-1 & 2
PUMP TYPE	INLINE
GPM	10
PUMP HEAD (FT.)	40
MOTOR HORSEPOWER	0.4 HP
MOTOR RPM	3250
ELEC/CONTROL DATA	
VOLTAGE/PHASE	120/1
PANEL & CIRCUIT	LP1-62
WIRE & CONDUIT	(2)#12,#12G,1/2"C.
OVERCURRENT DEVICE	20A-1P CB
DISCONNECT	NOTE 1
STARTER	NEMA 0
COMBINATION STARTER	N/A
CONTROL	AQUA-STAT
REFERENCE DRAWING/DETAIL	P101
REMARKS	
NOTES:	1: PROVIDE MOTOR RATED TOGGLE SWITCH.

WATER SOFTENER SCHEDULE	
DESIGNATION	WS-1
UNIT DATA	
TYPE	PROGRESSIVE
MANUFACTURER	CULLIGAN
MODEL NO.	HE 1.5 PF 060
TANK SIZE (DIA " x LENGTH") SOFTNER BRINE	14"x47", 18"x38"
NORMAL SYSTEM FLOW (GPM)	25.1
NORMAL P.D. (PSI)	15
MAXIMUM SYSTEM FLOW (GPM)	31.5
MAXIMUM P.D. (PSI)	25
BACKWASH FLOW (GPM)	3.5
OPERATING TEMP. RANGE (%DF)	40-100
INLET PRESSURE RANGE (PSIG)	30-125
VOLTAGE/PHASE	120/1
PANEL & CIRCUIT	LP1-64
WIRE & CONDUIT	(2)#12,#12G,1/2"C.
OVERCURRENT DEVICE	20A1P
DISCONNECT	NOTE 1
REFERENCE DRAWING/DETAIL	P203C
REMARKS	
NOTE:	1: PROVIDE NEMA 5-20R RECEPTACLE FOR UNIT.

Joplin Early Childhood Center
Joplin Schools

REVISIONS:



JOB NO: 16054
DRAWN BY: S&B
CHECKED BY: KTM
DATE: 09.30.2016

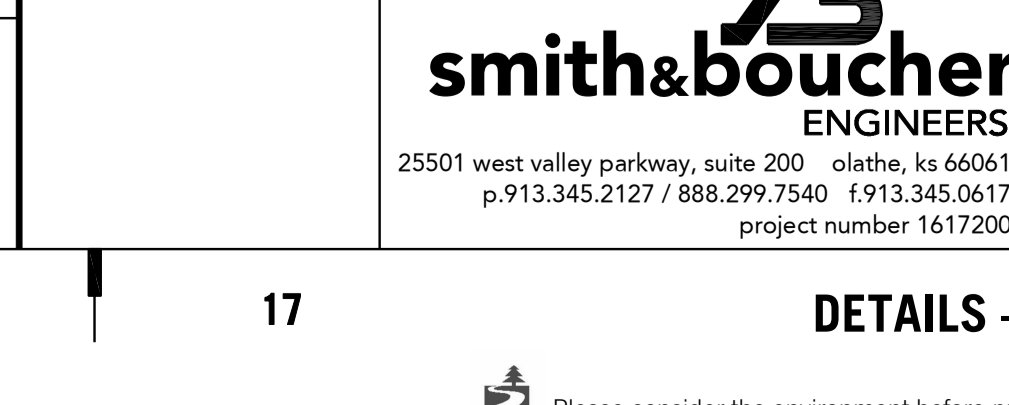
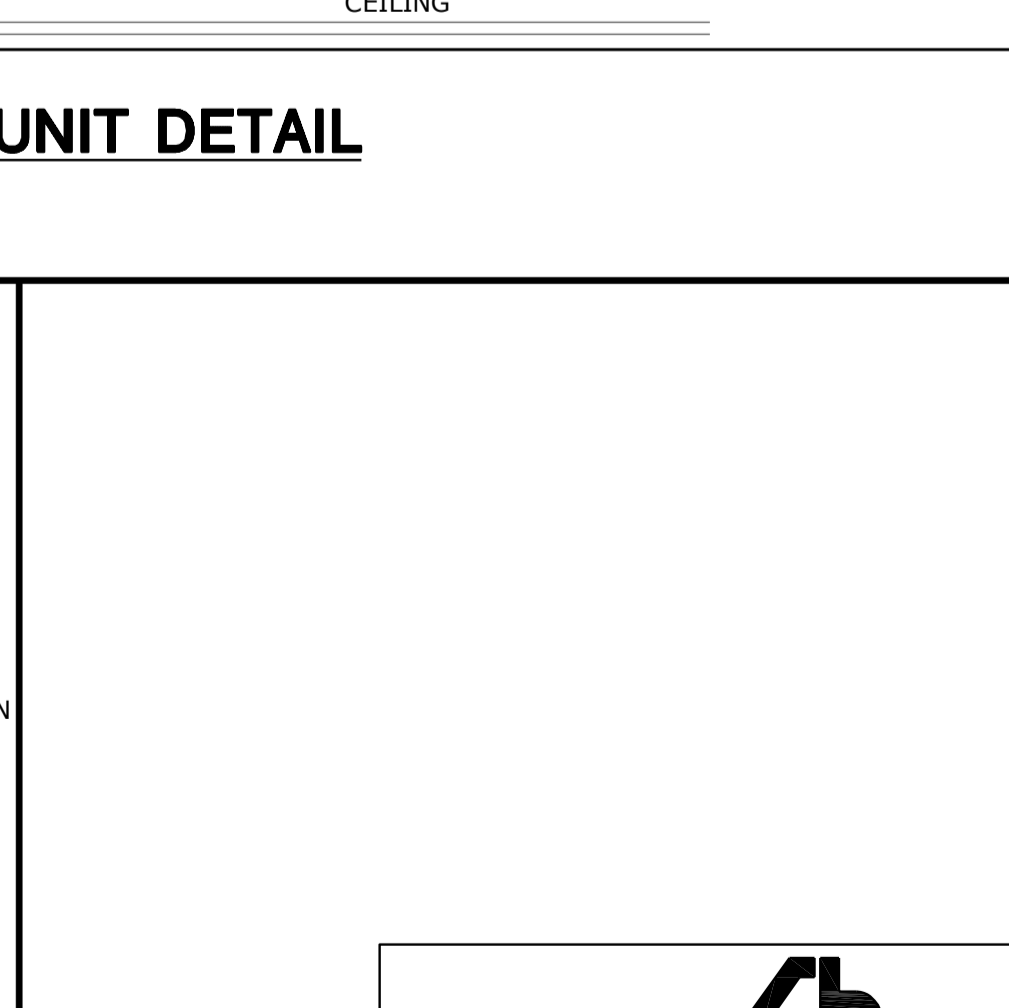
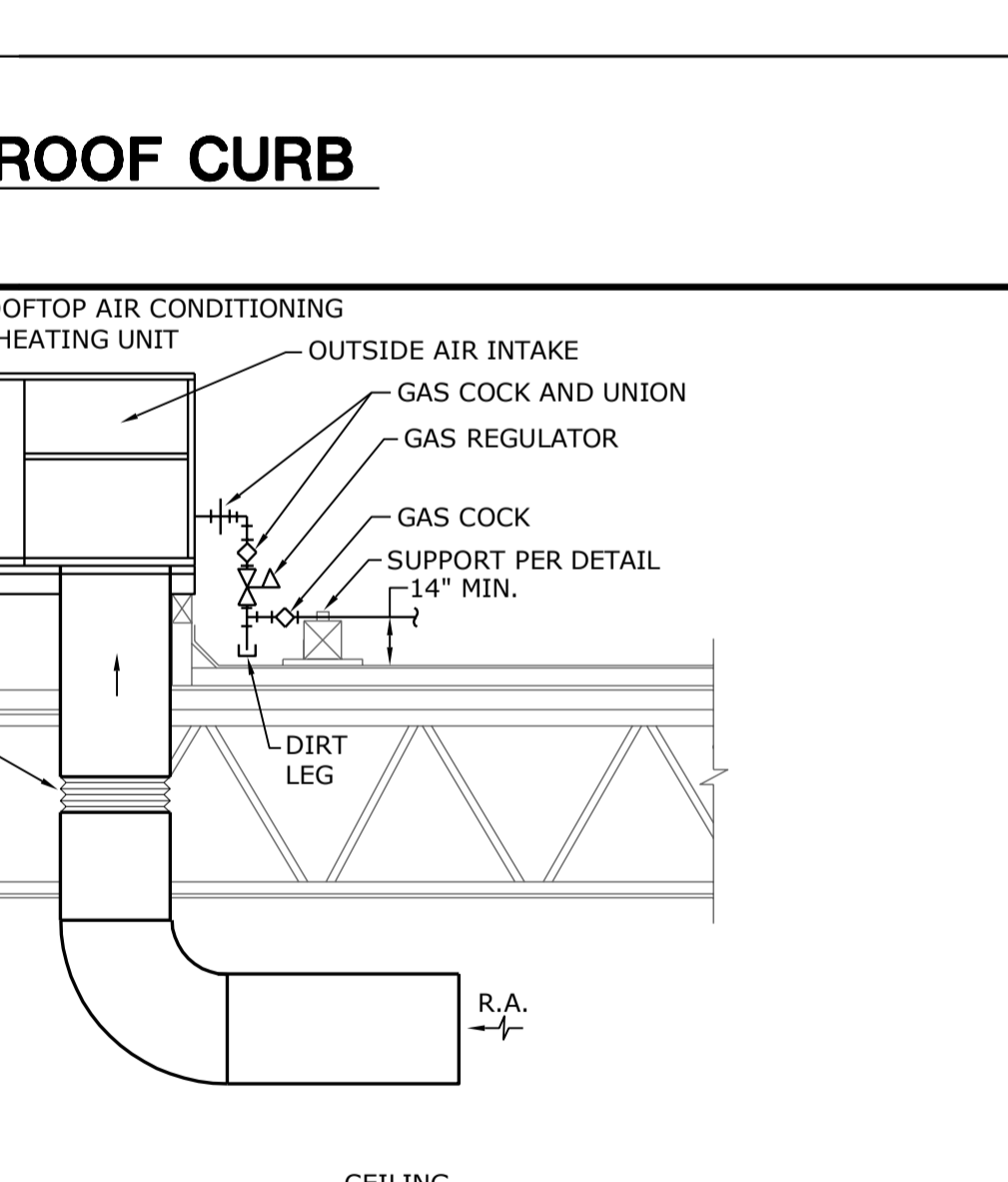
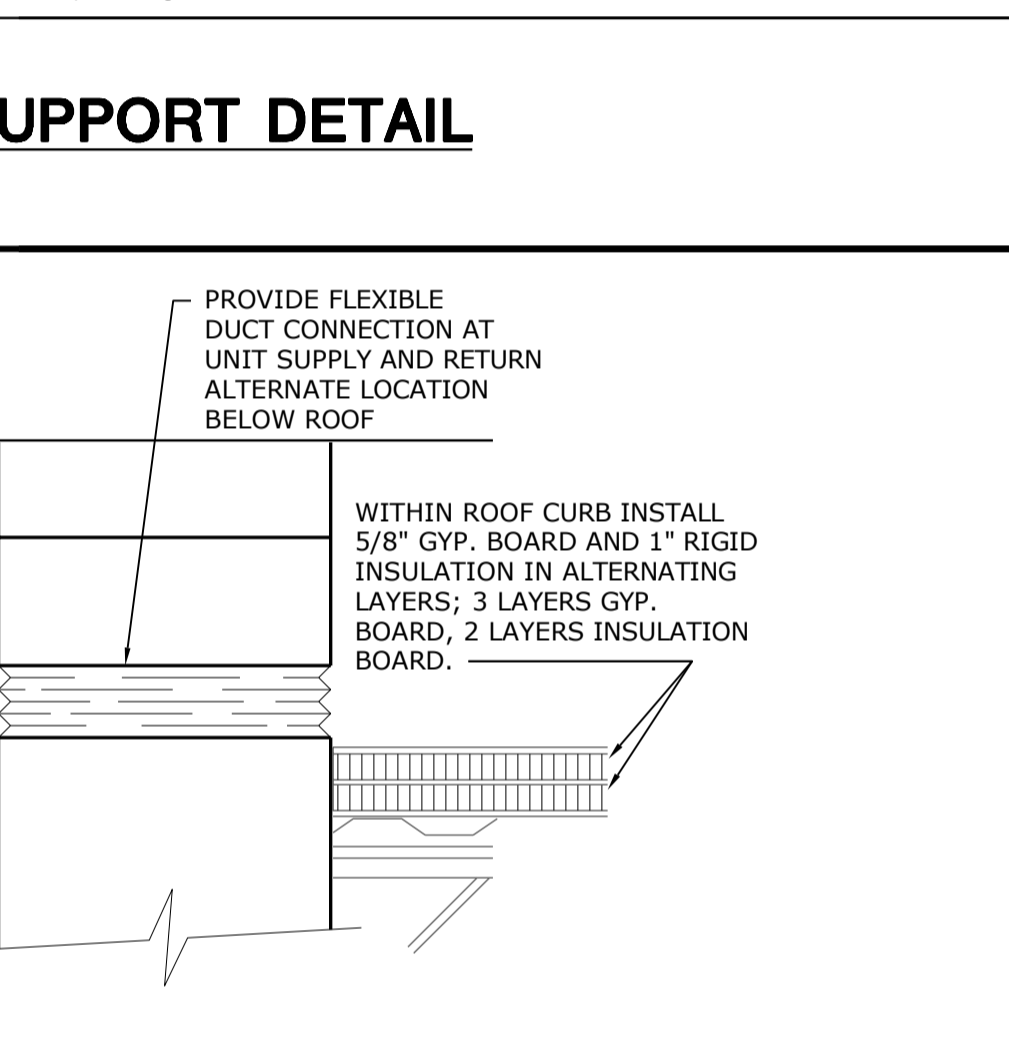
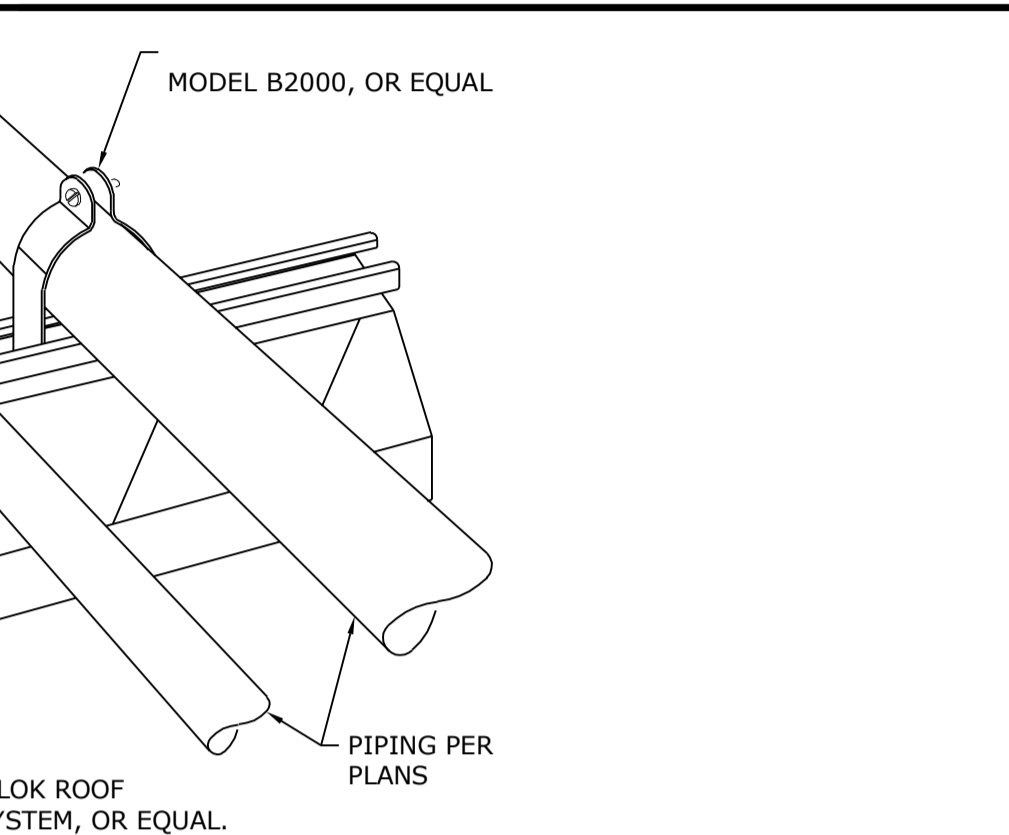
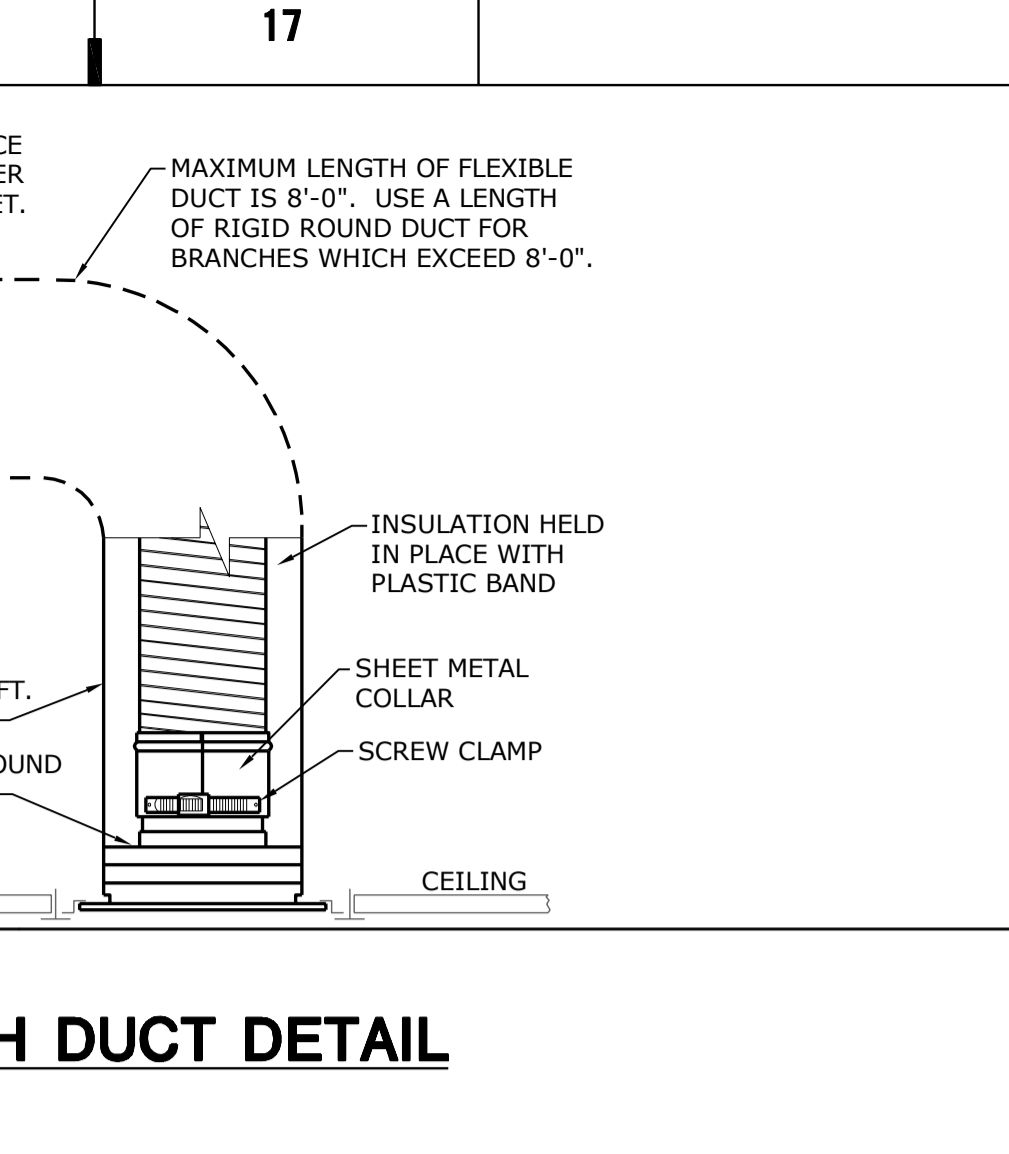
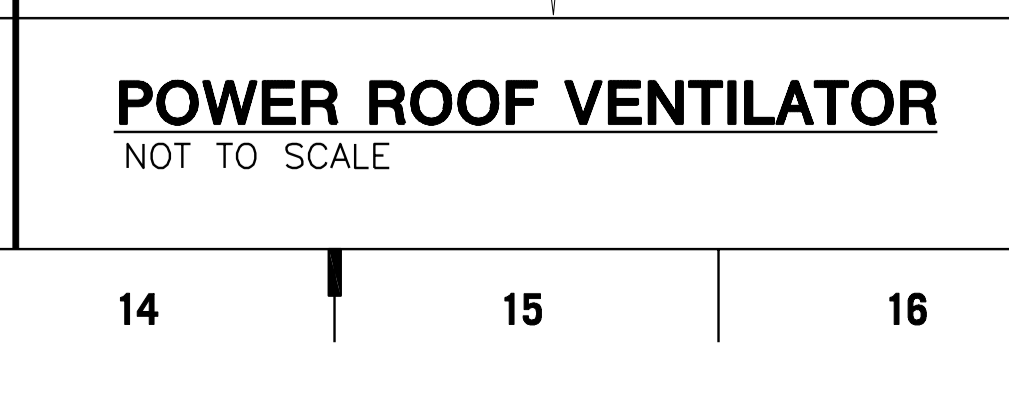
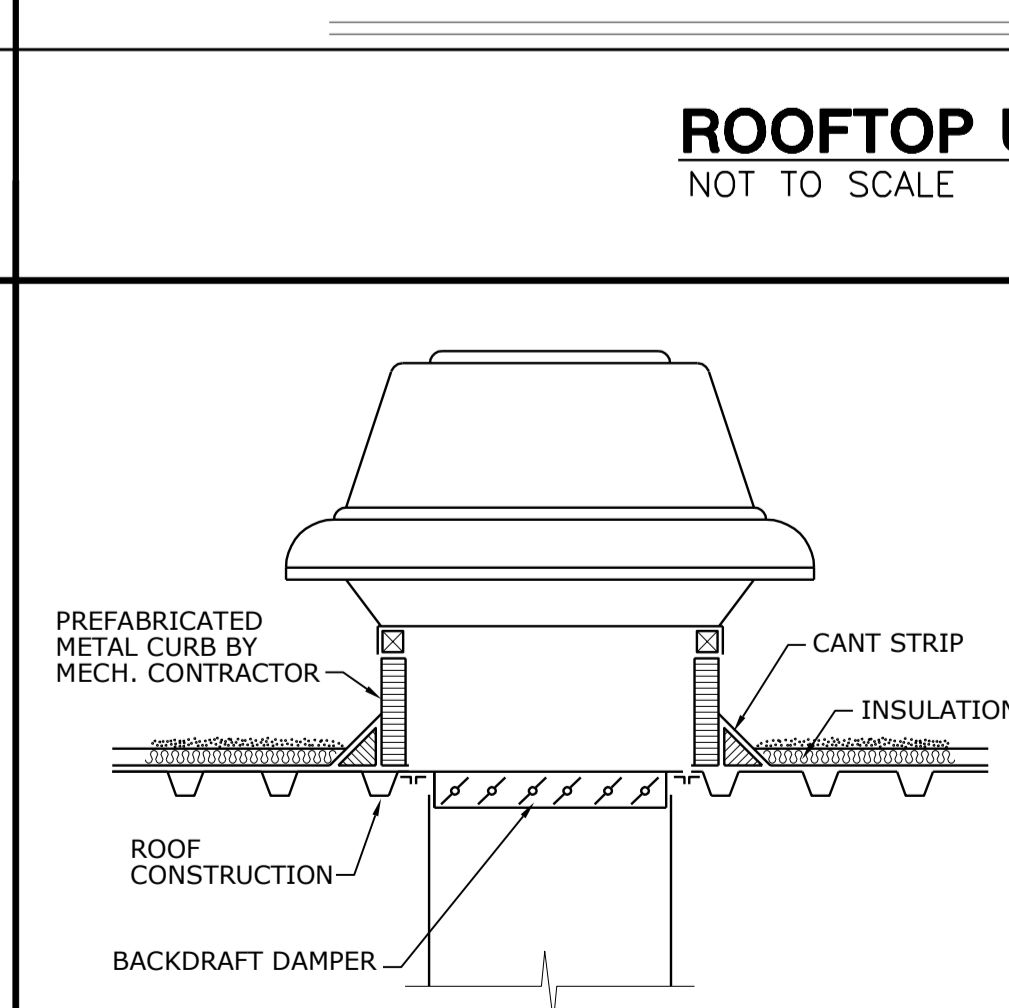
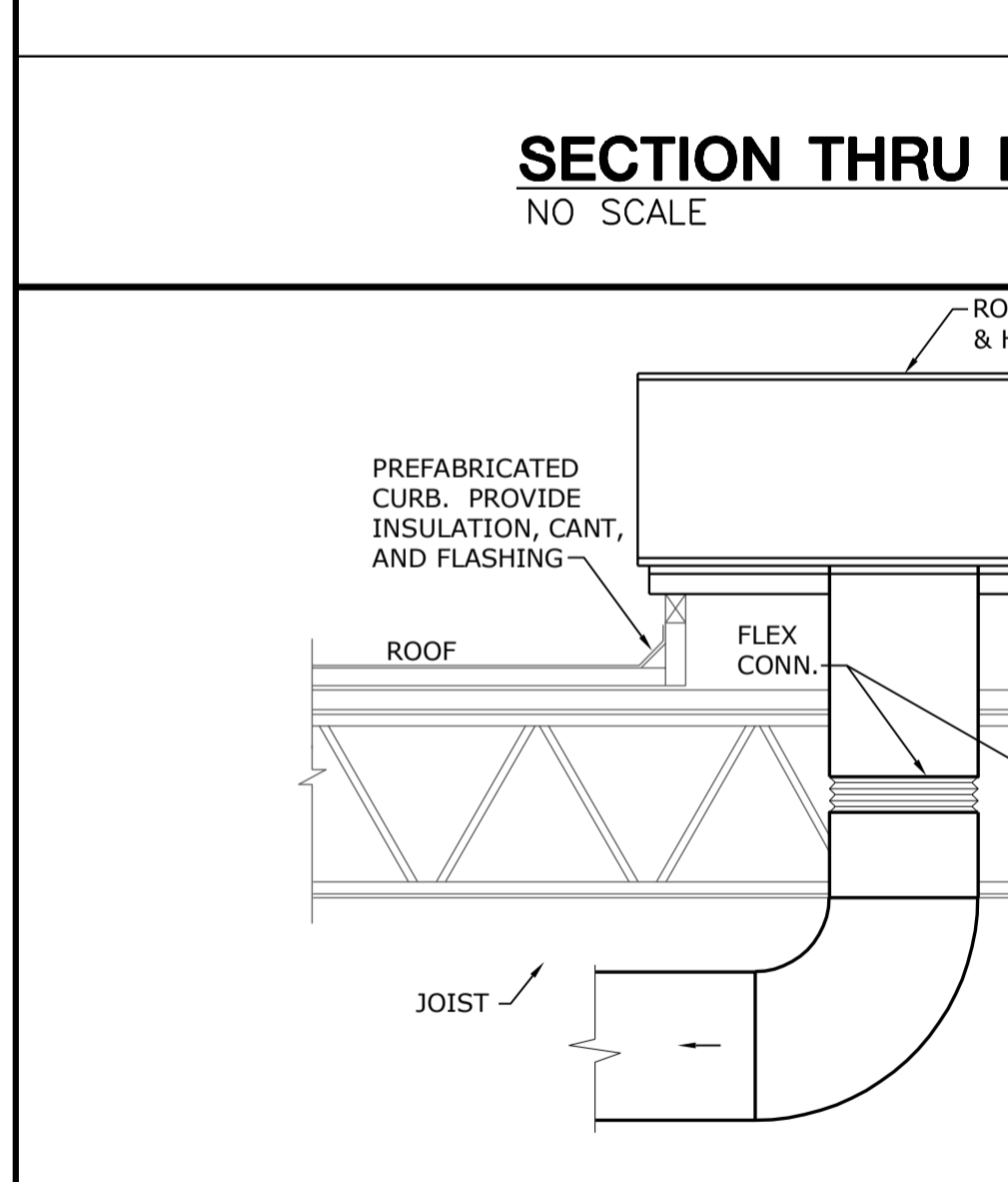
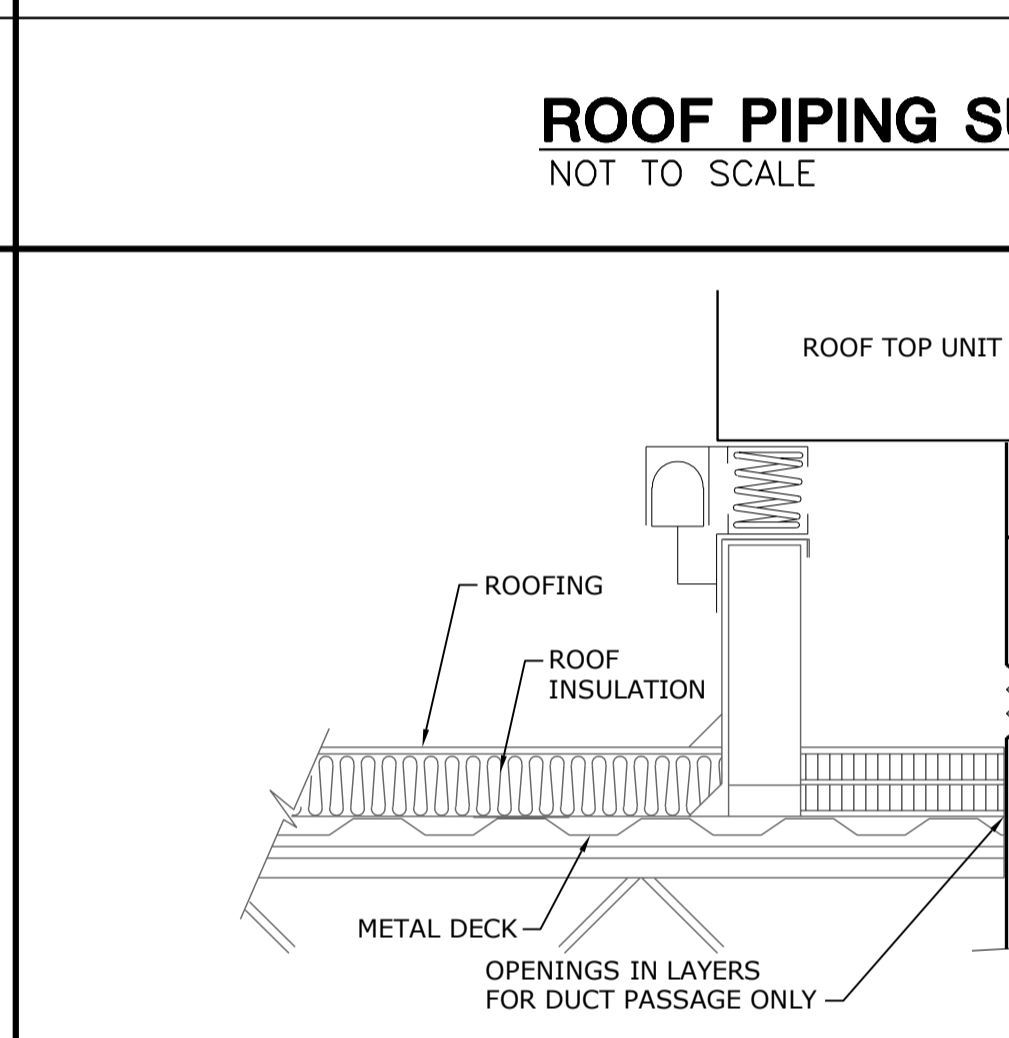
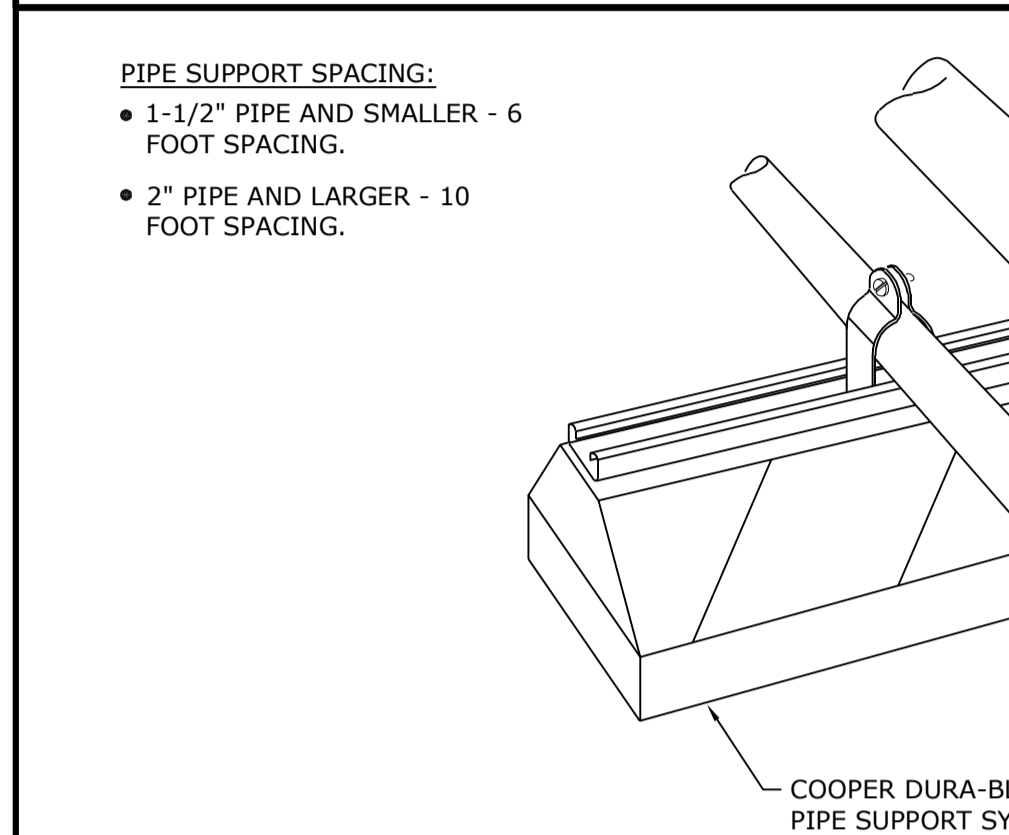
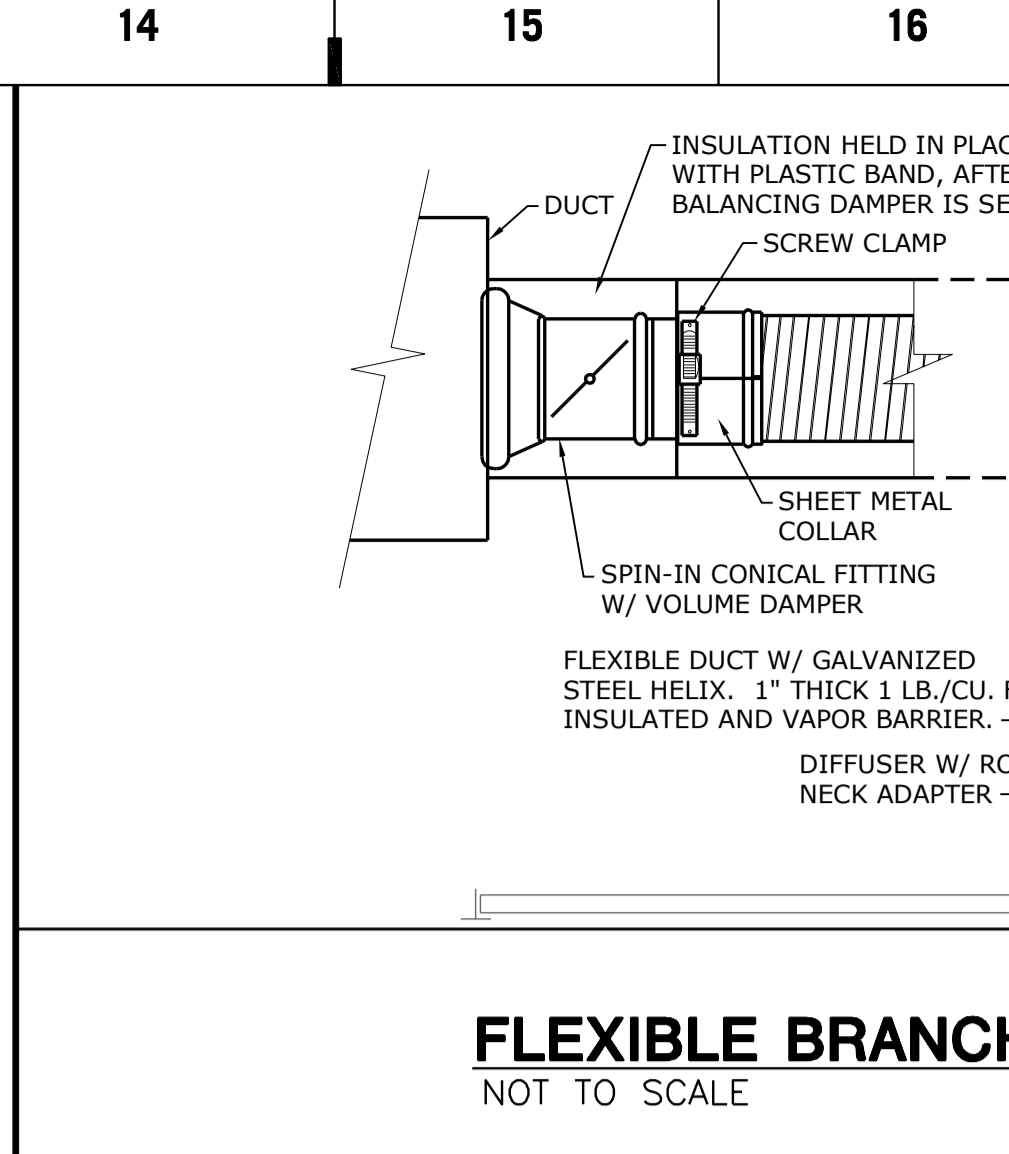
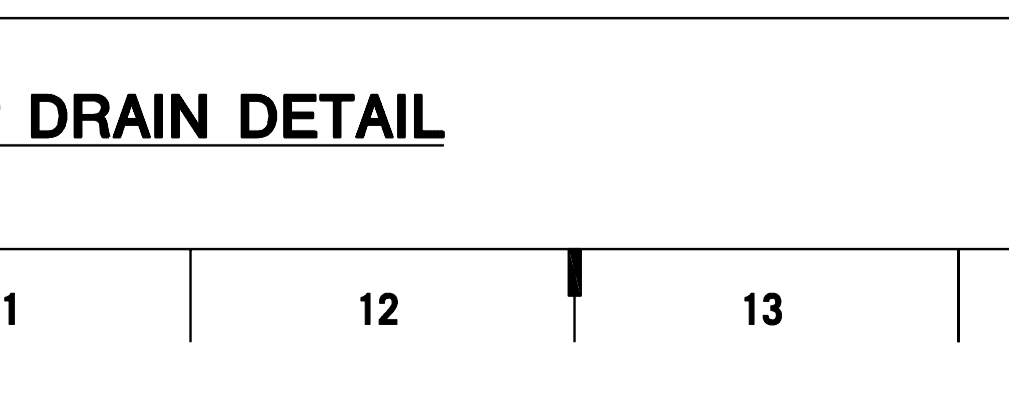
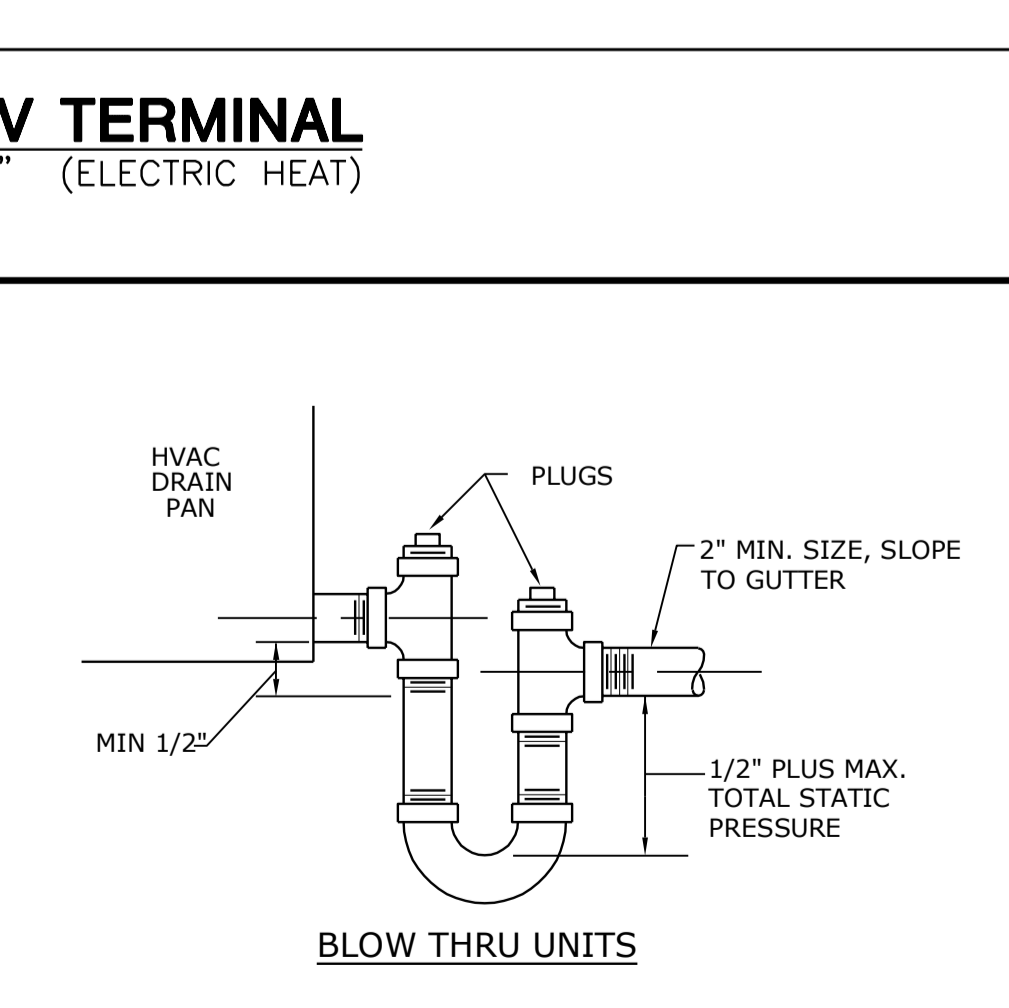
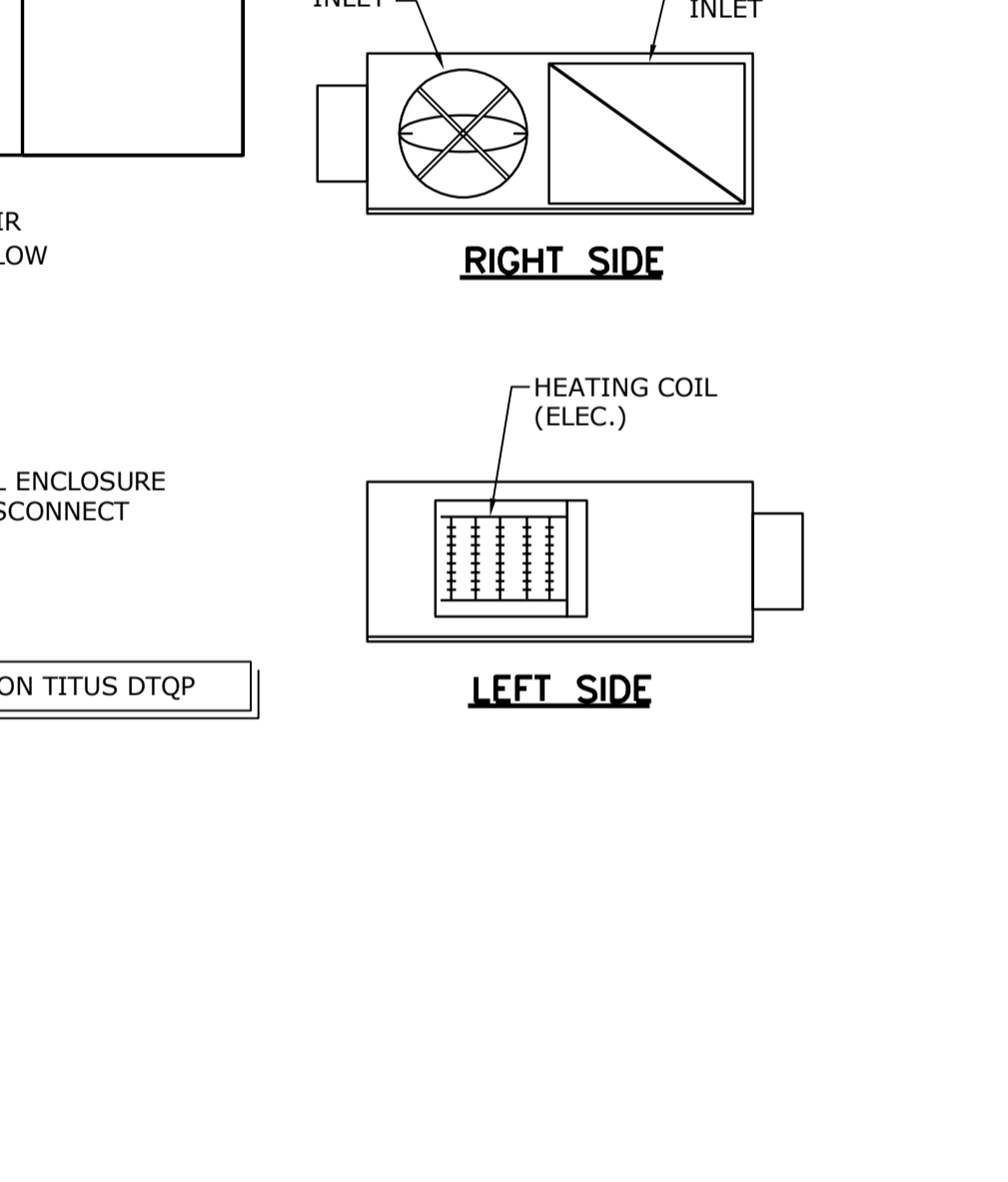
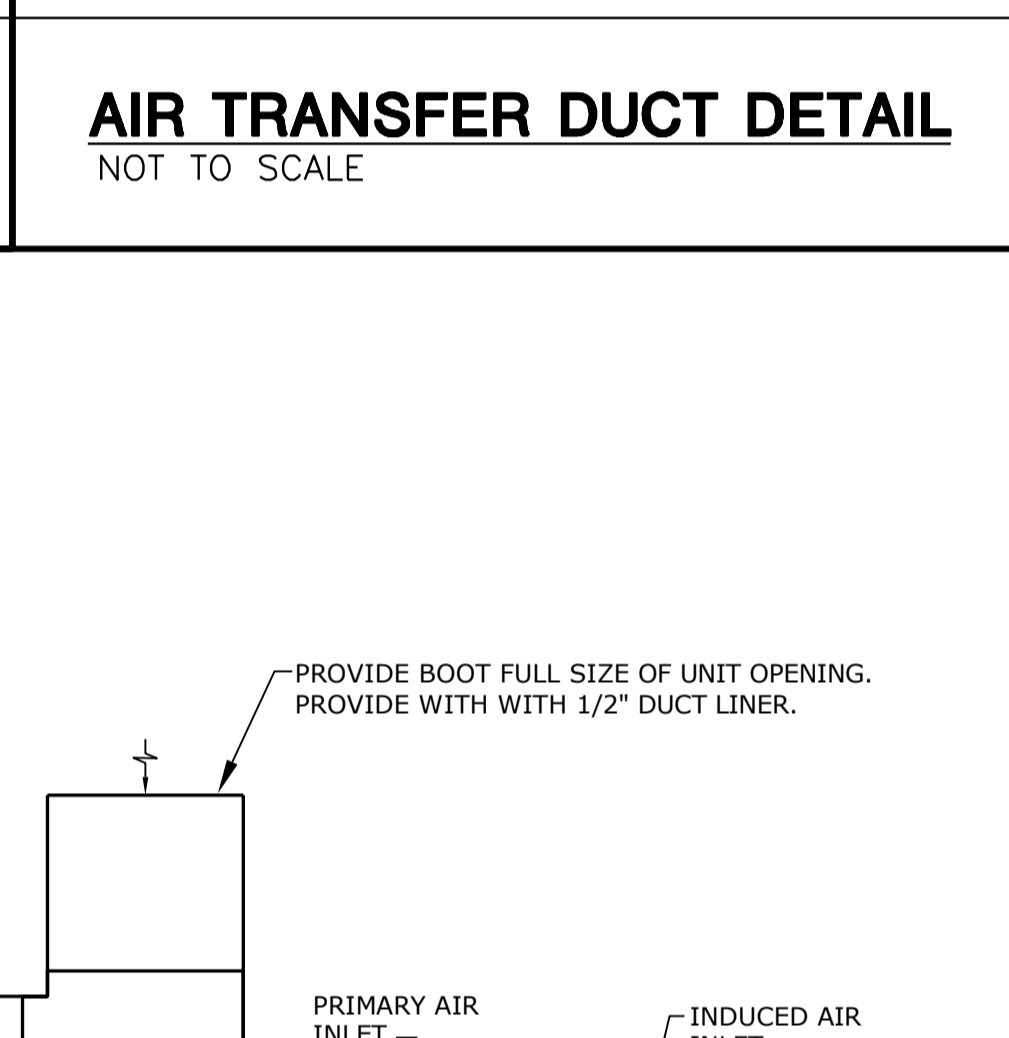
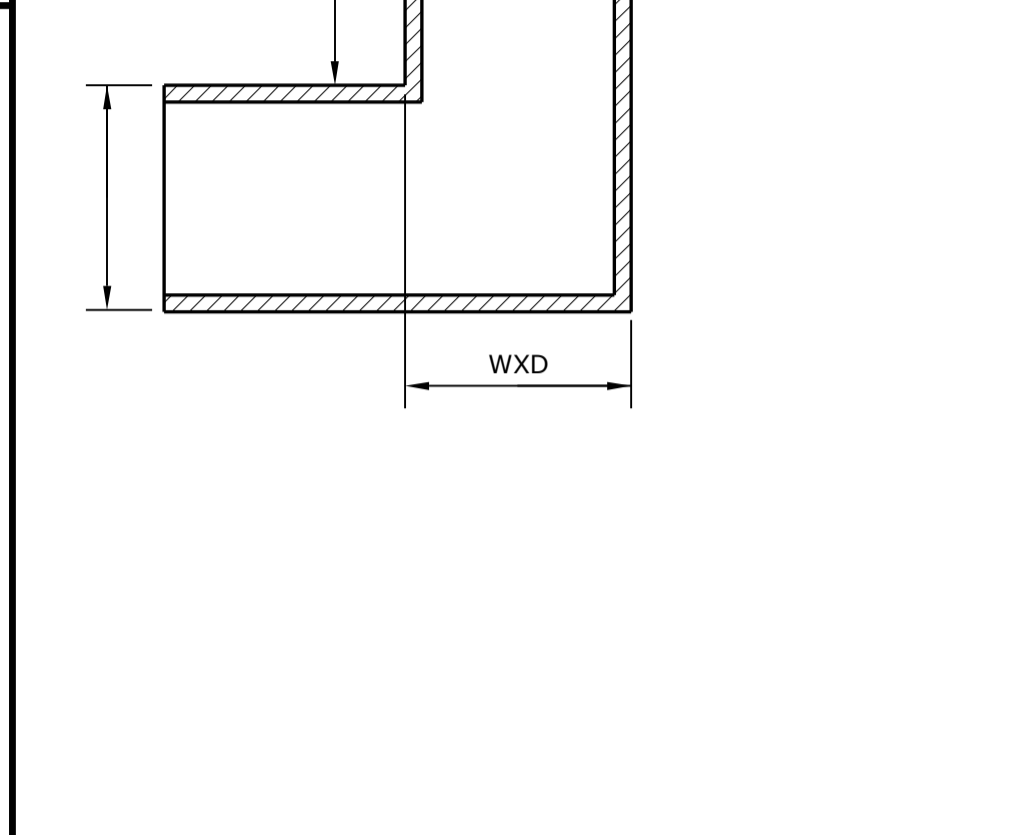
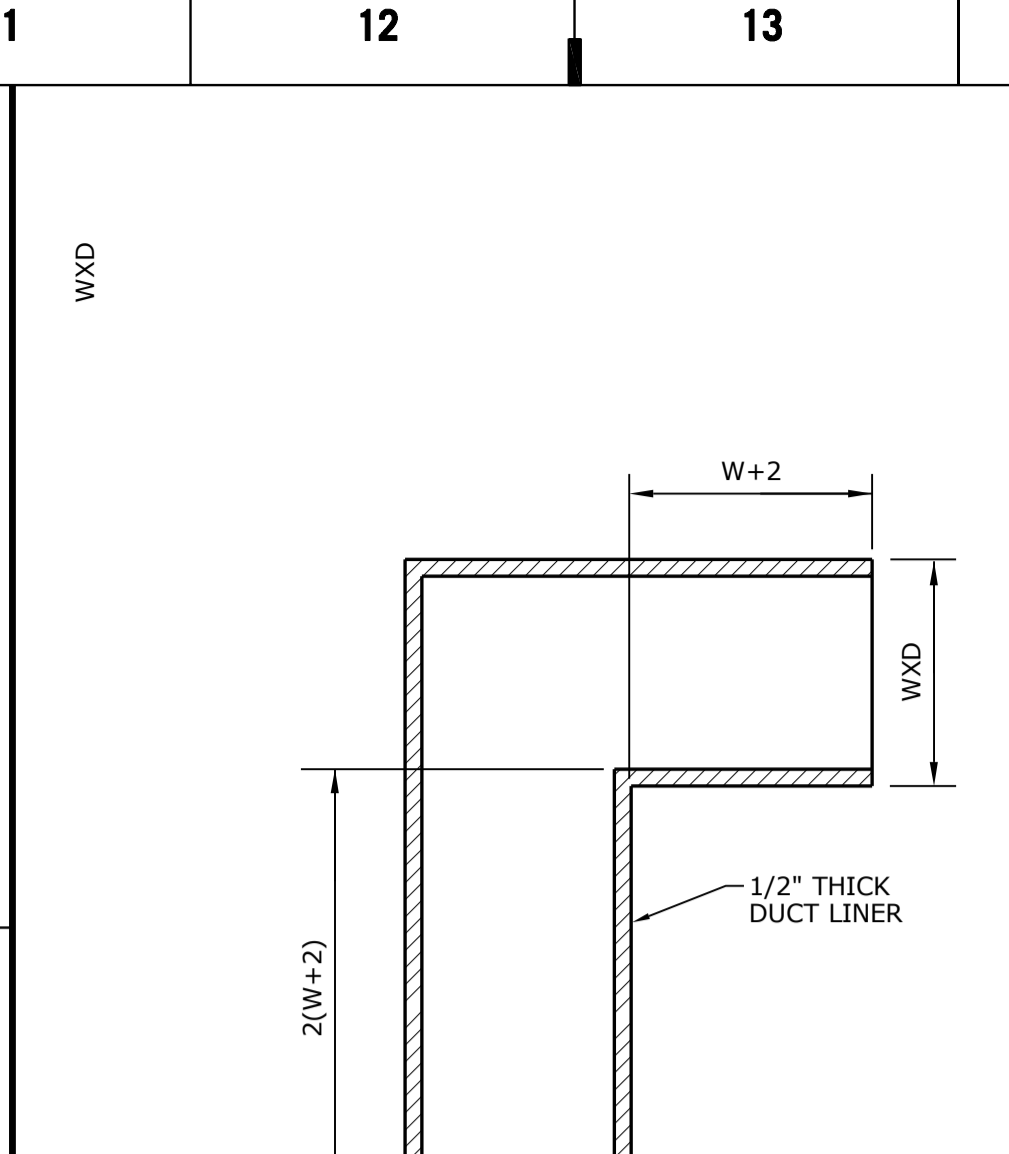
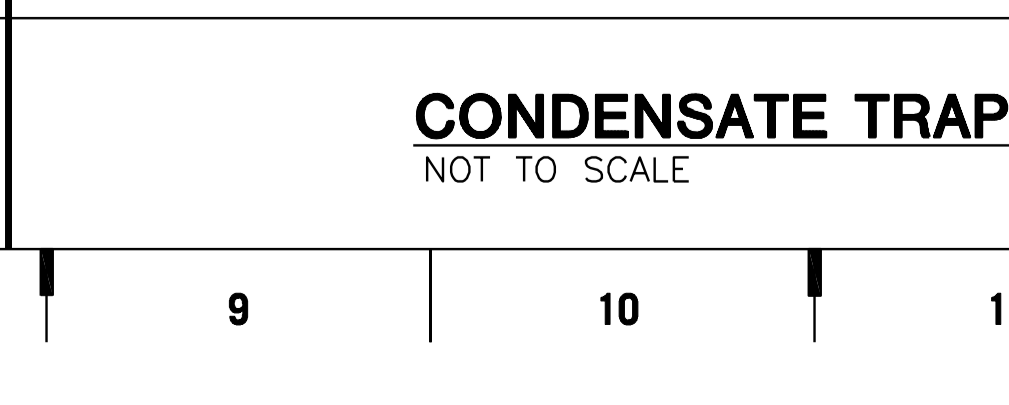
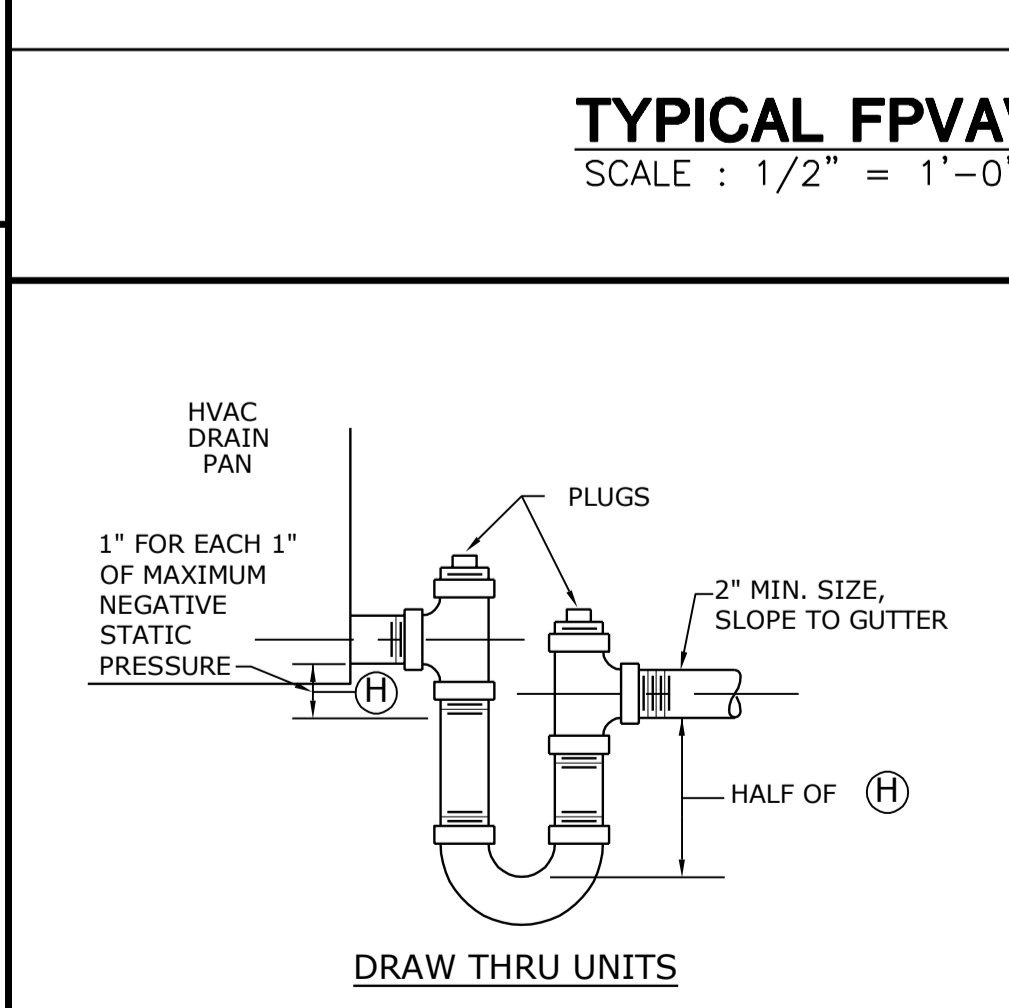
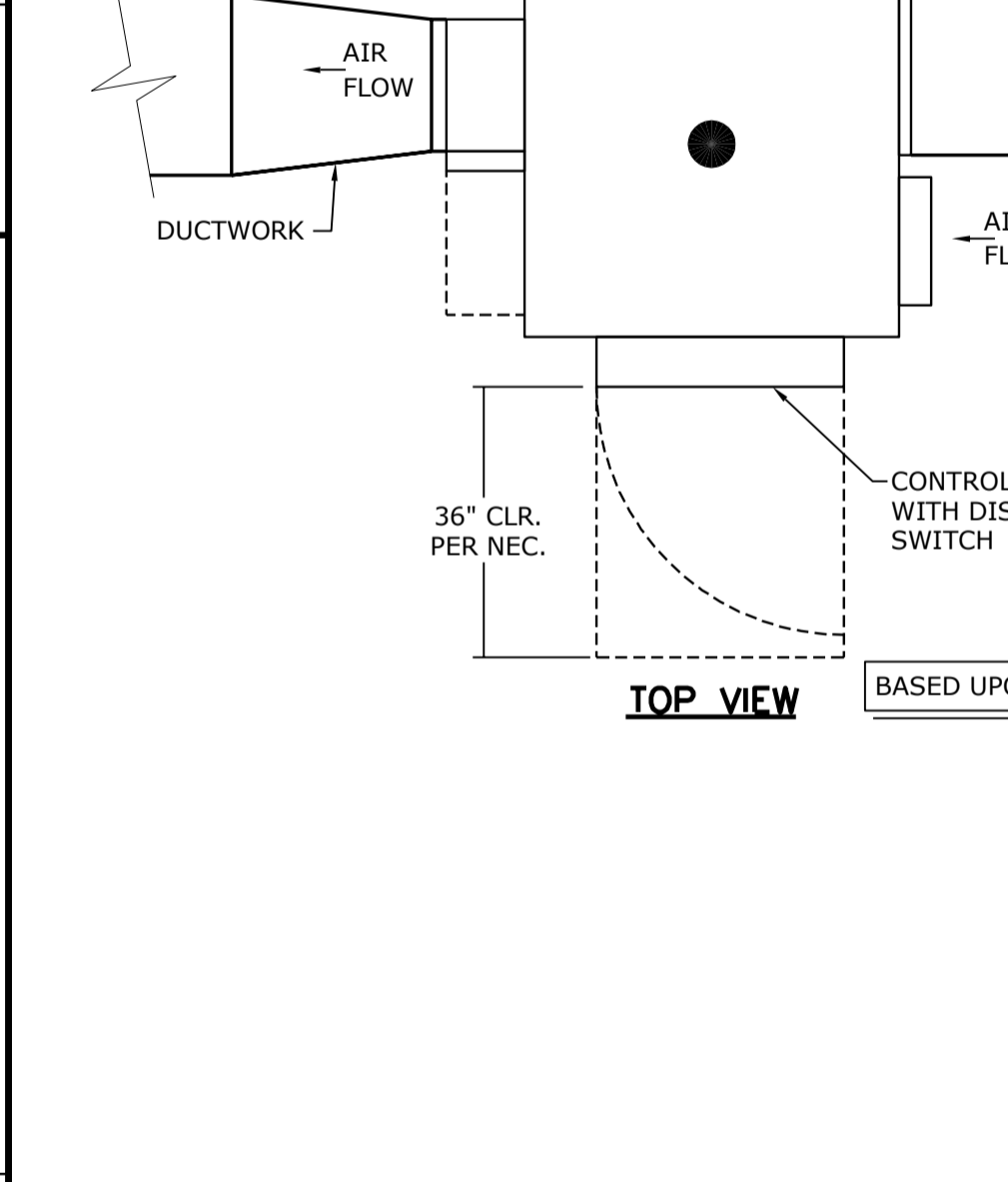
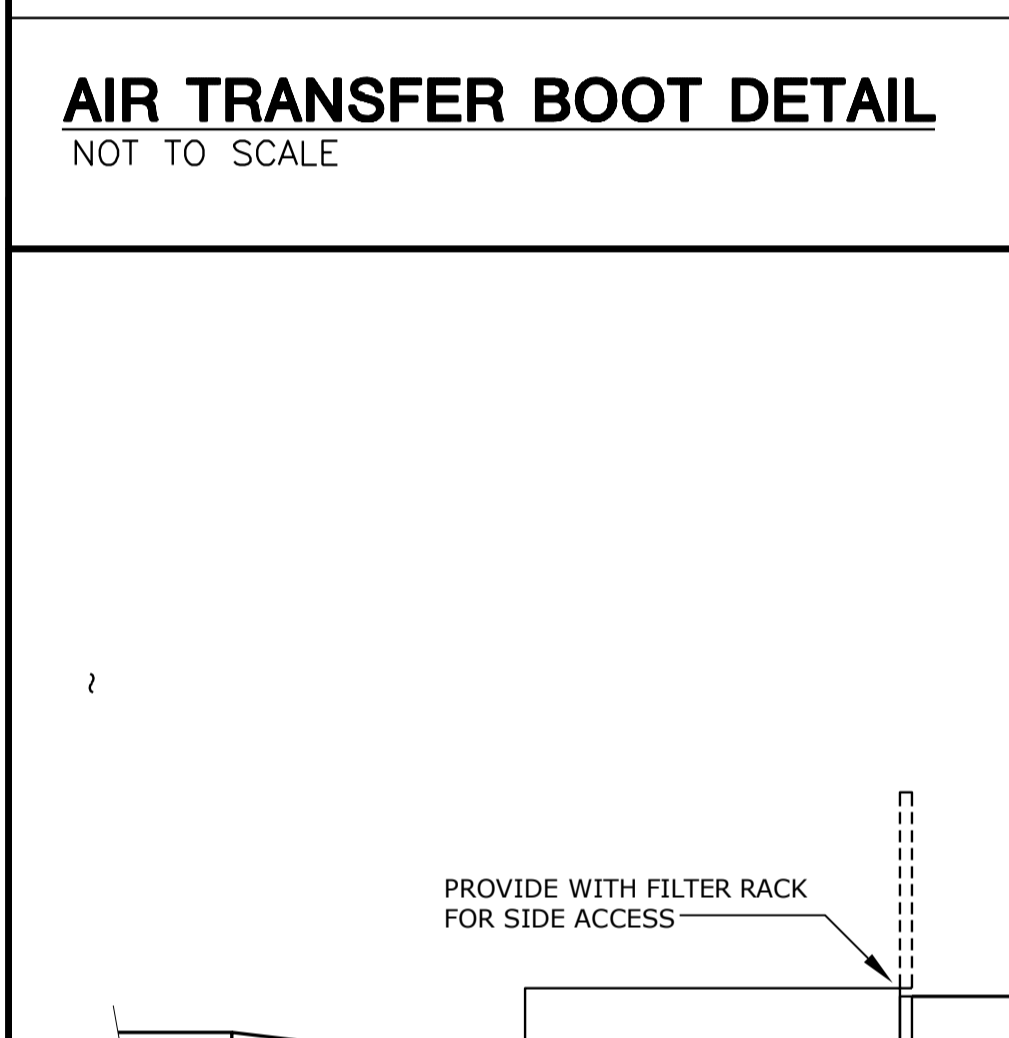
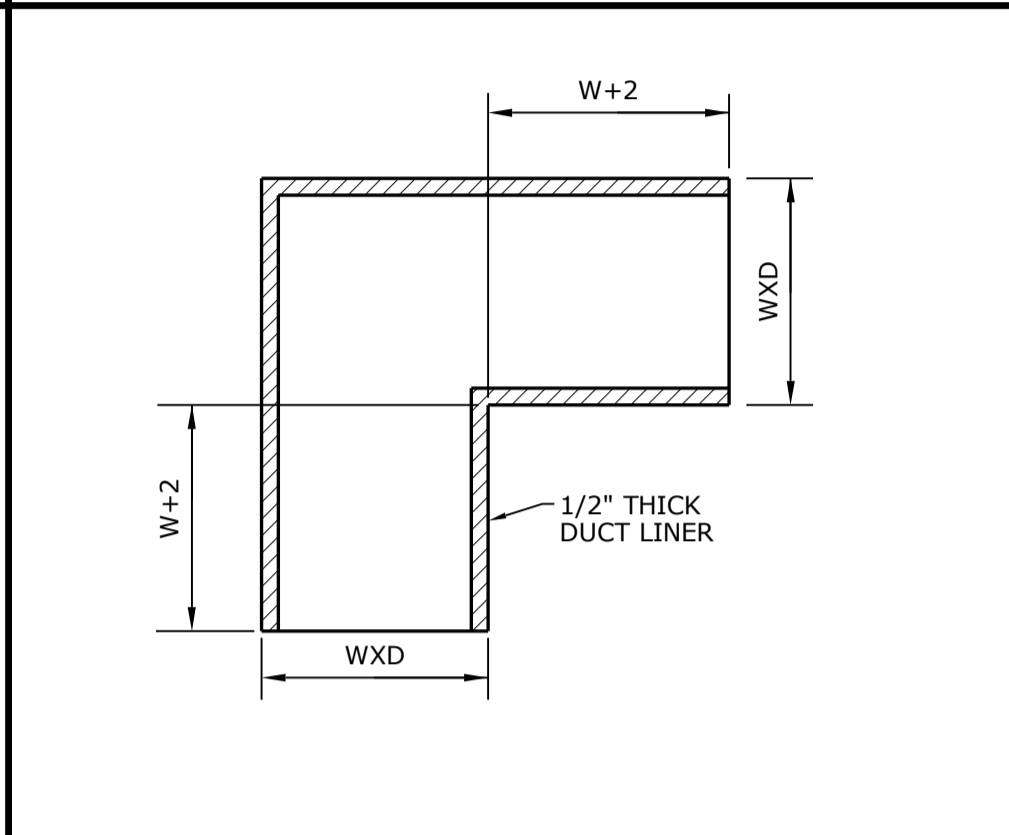
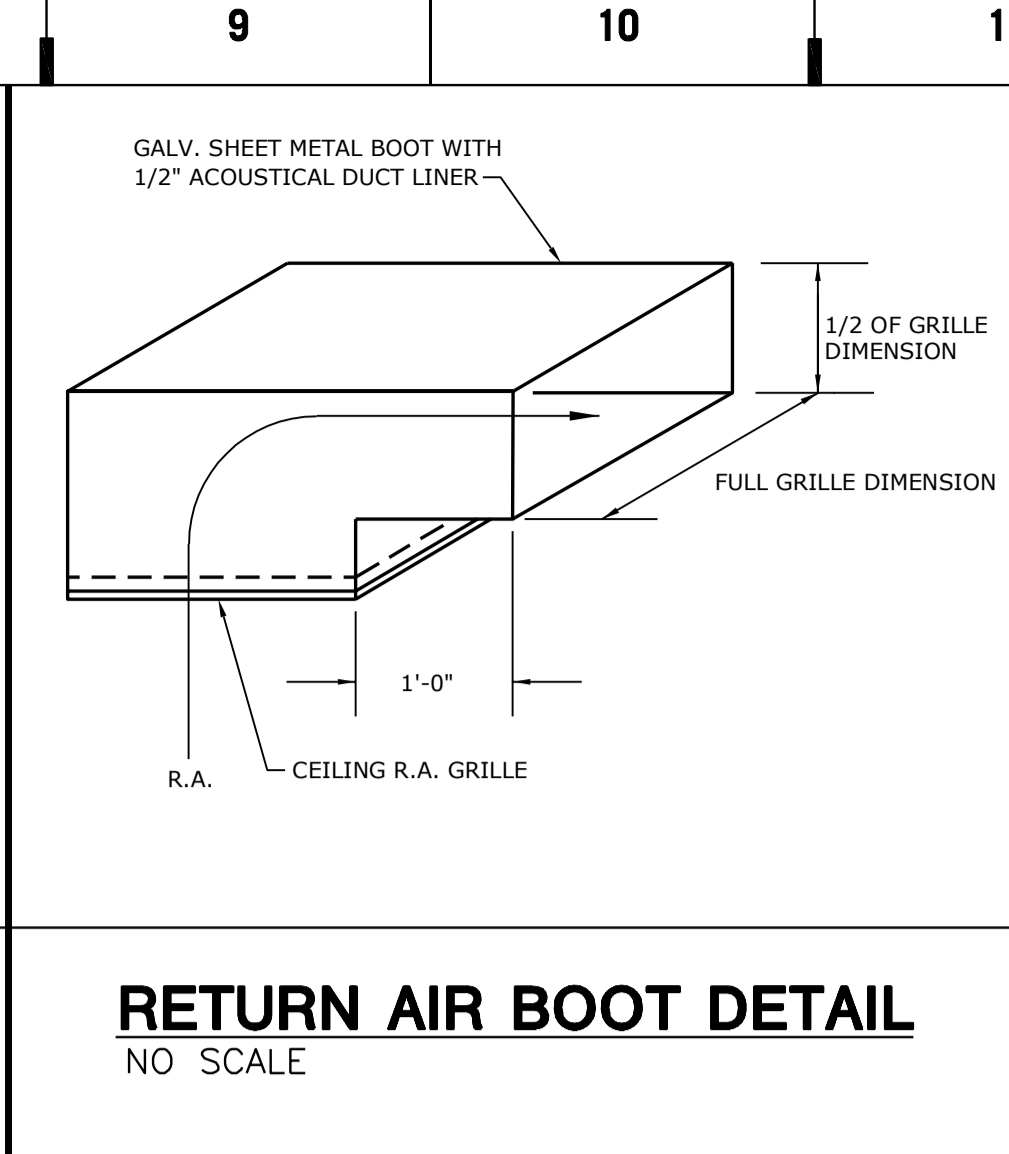
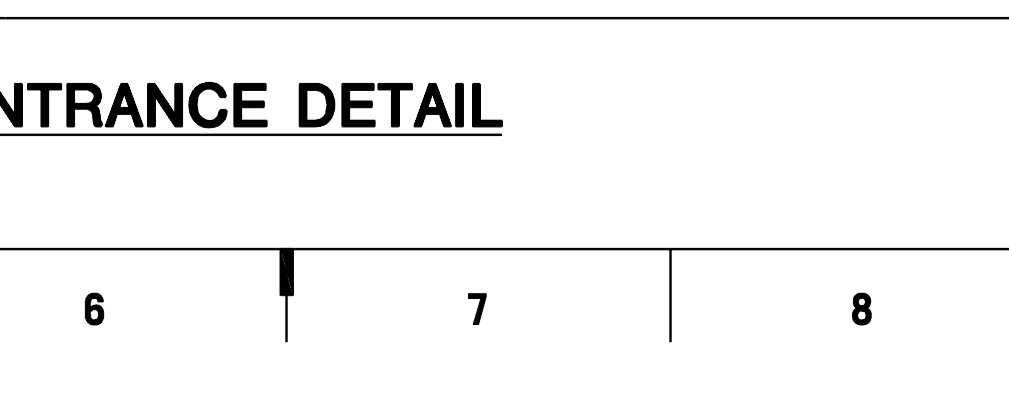
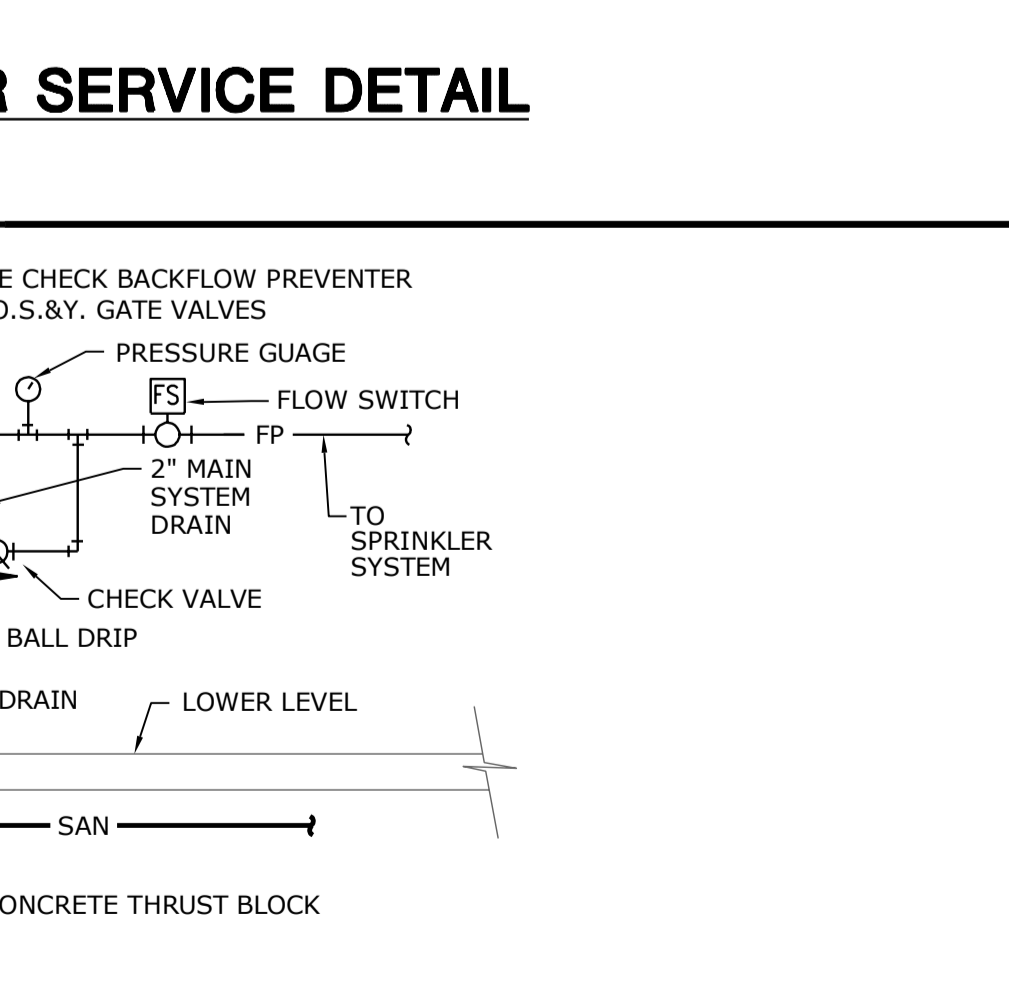
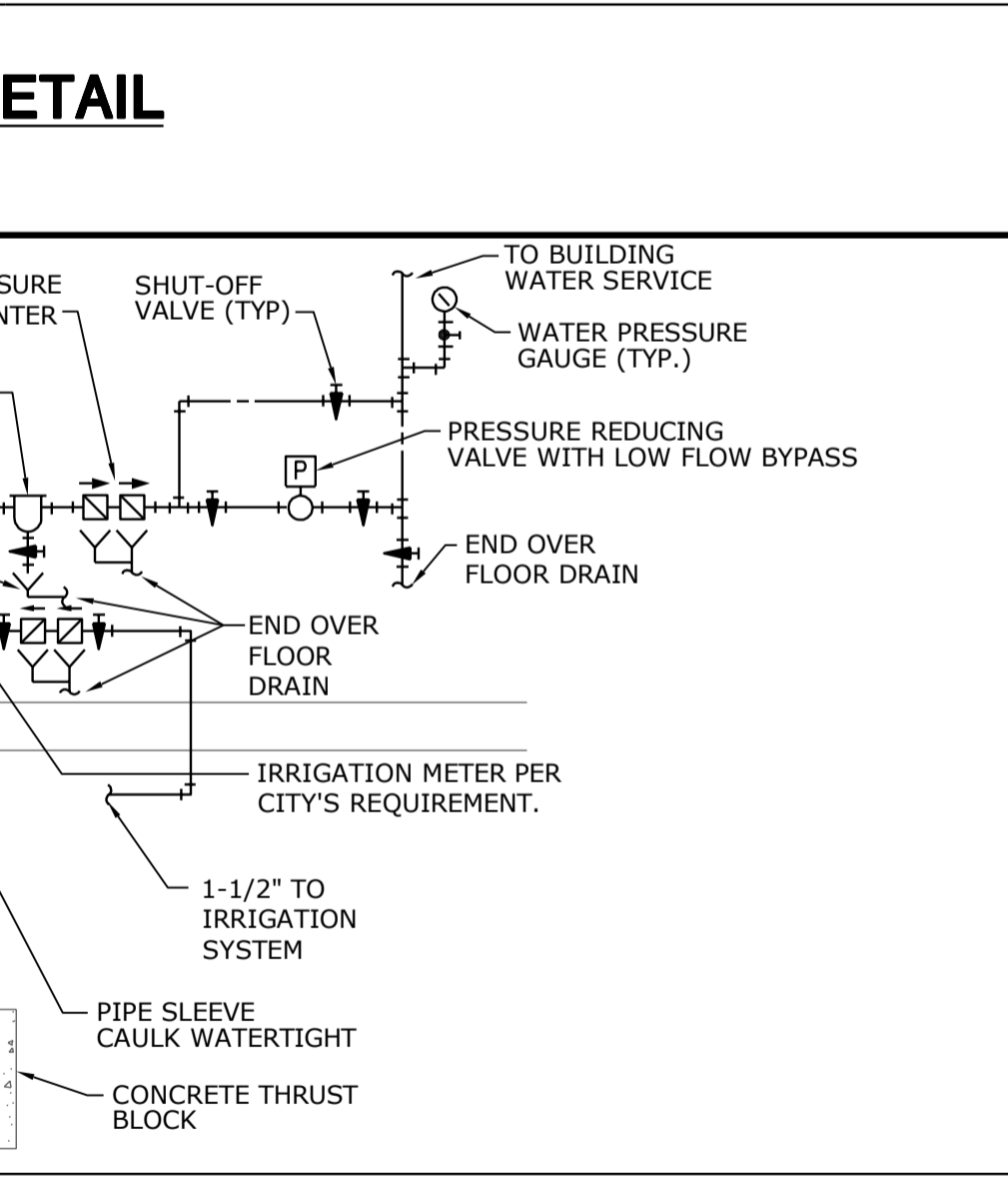
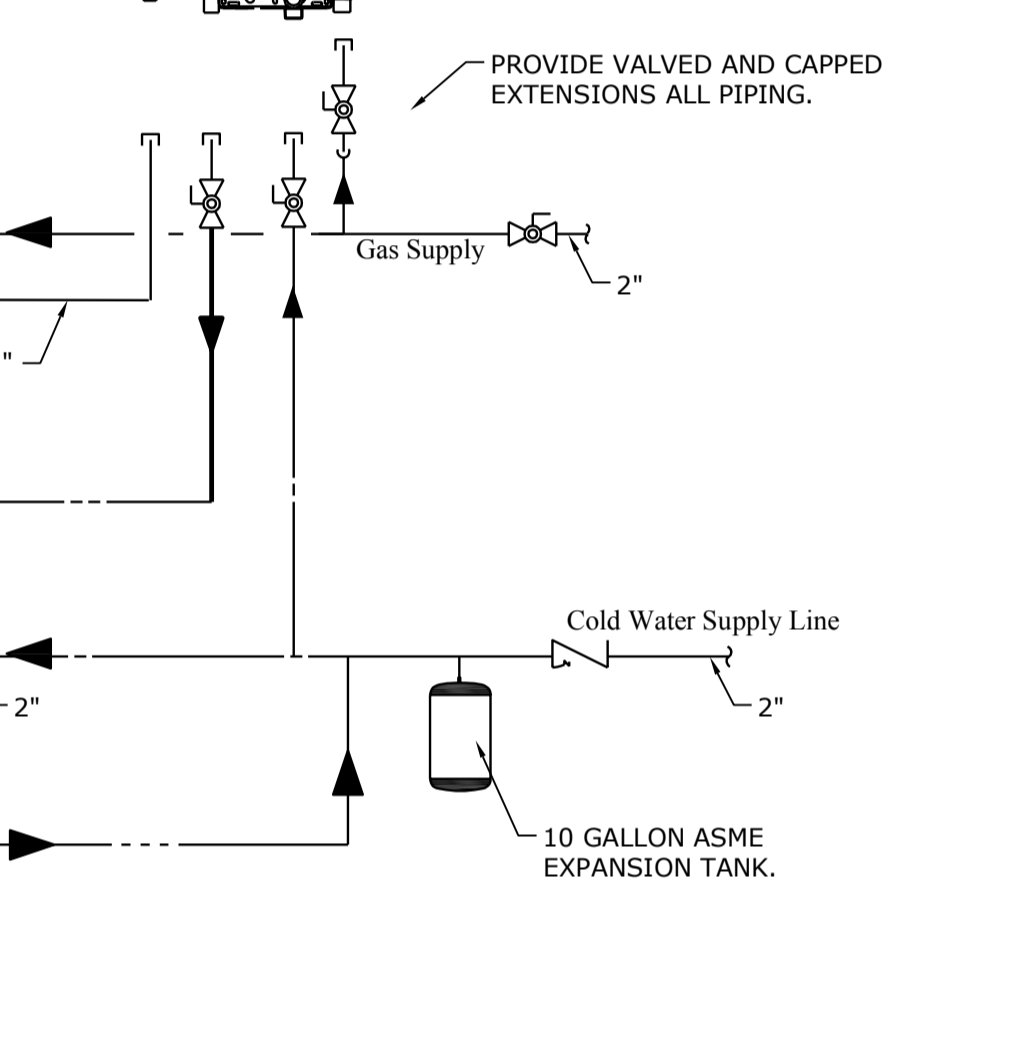
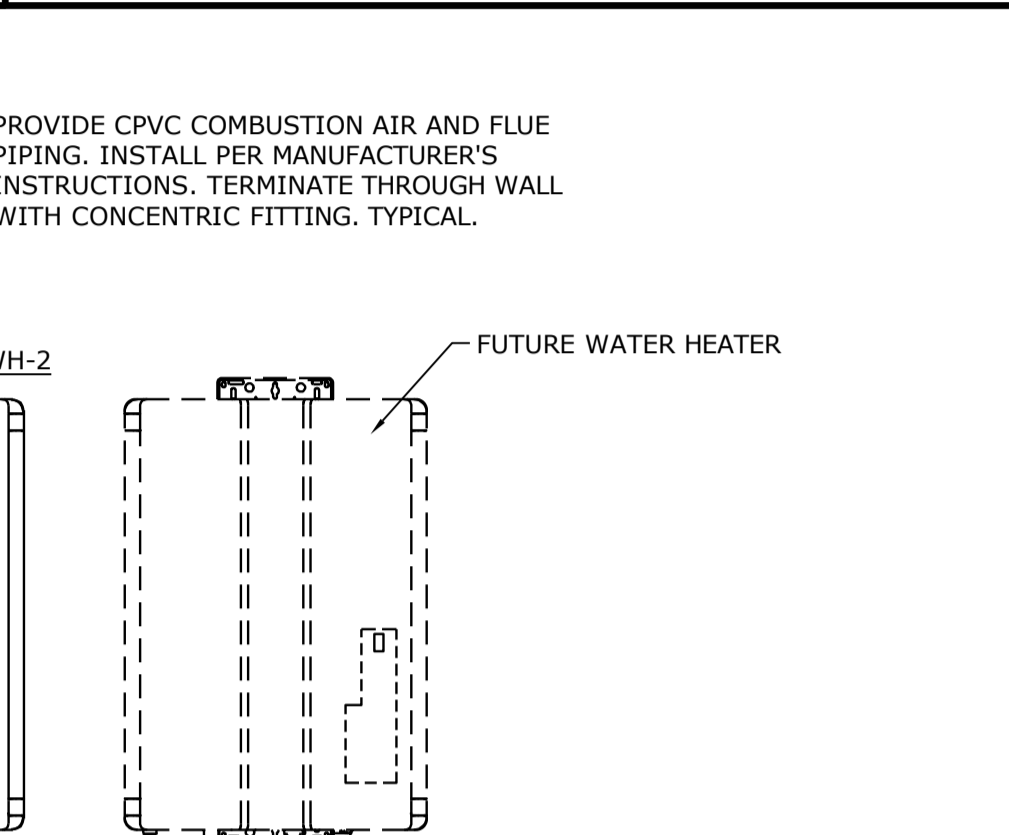
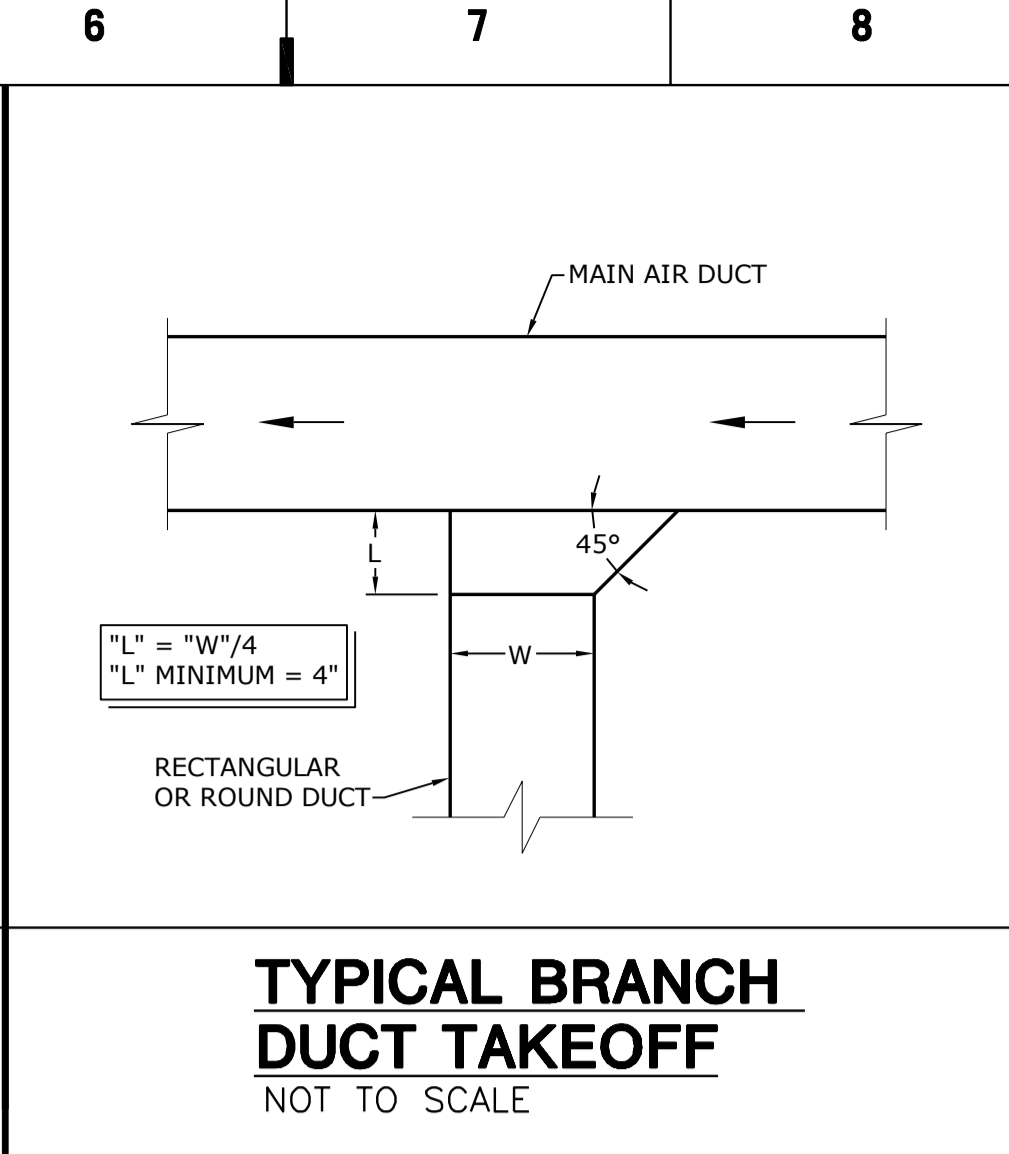
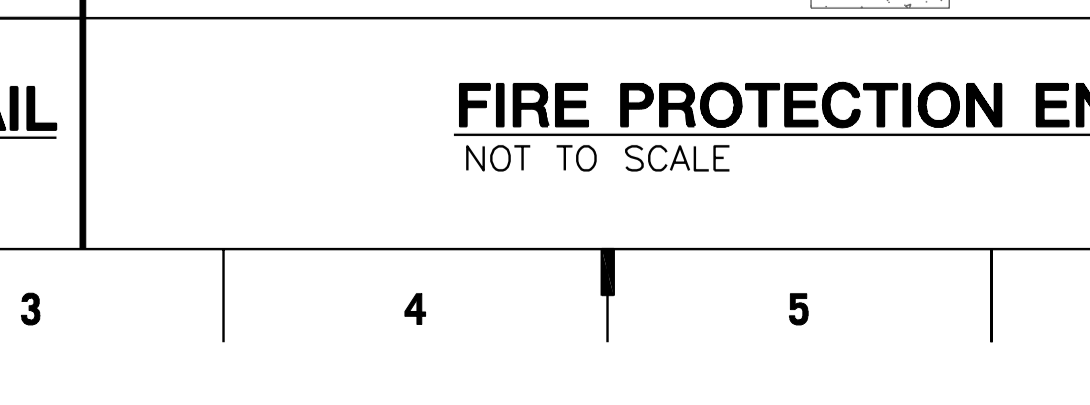
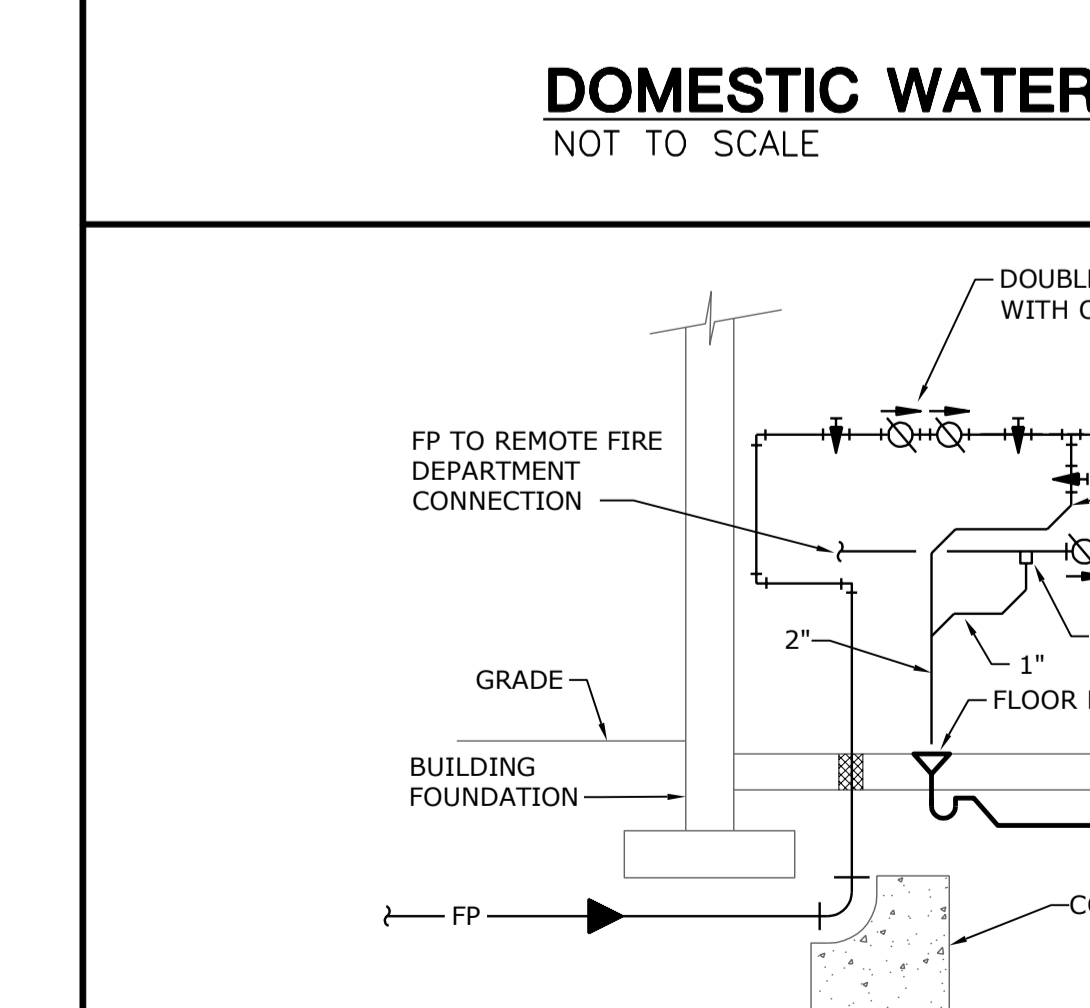
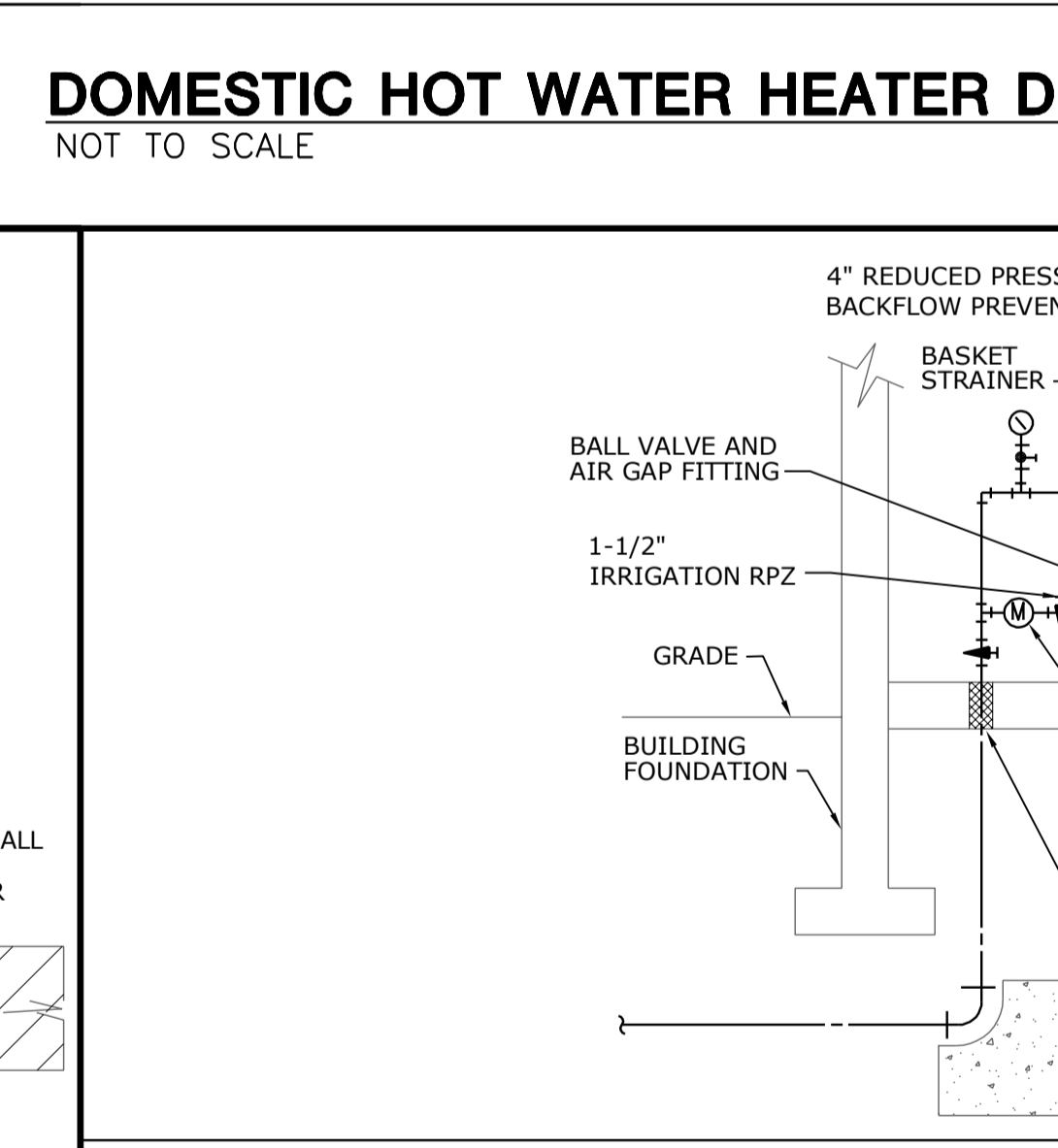
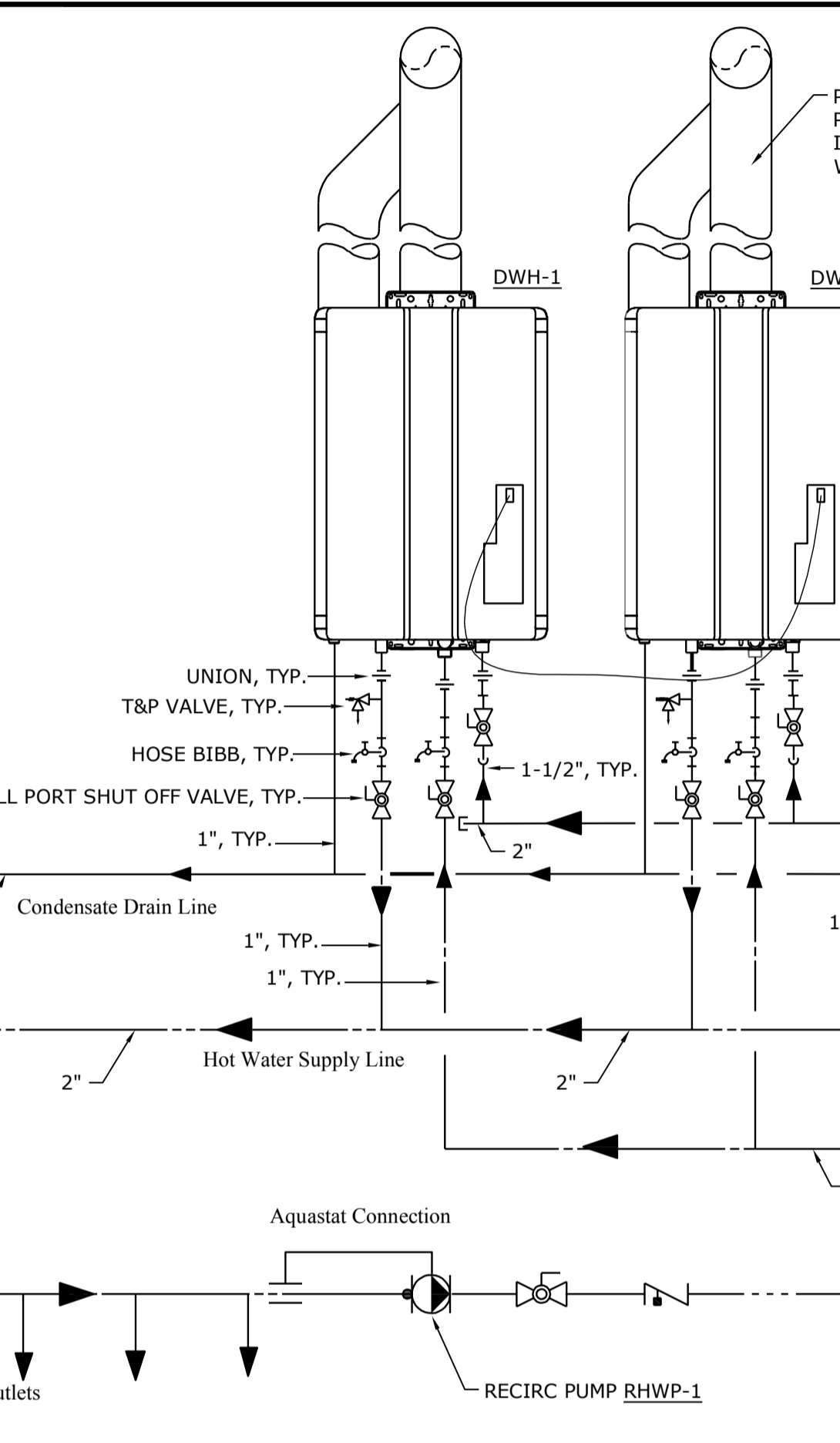
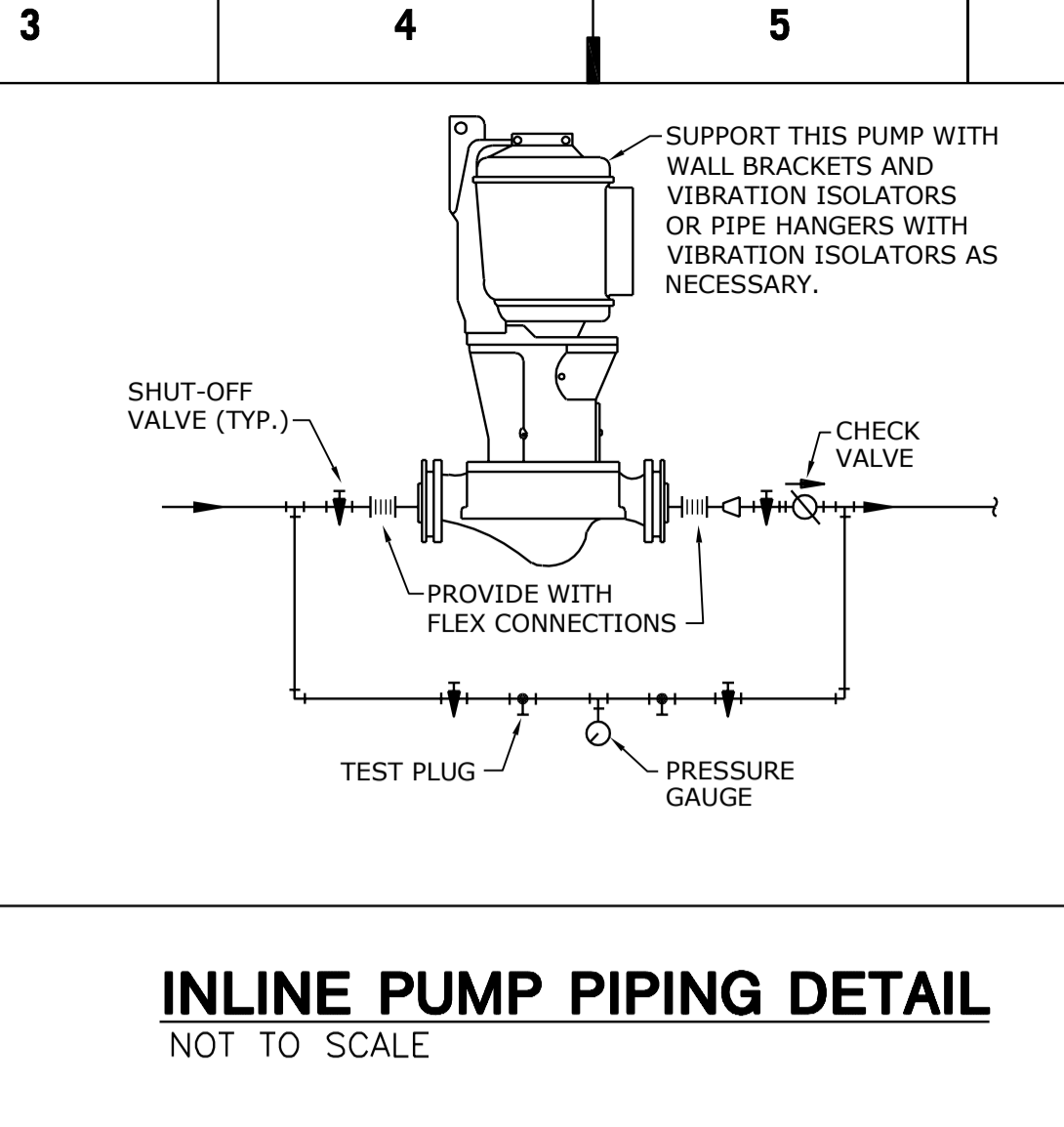
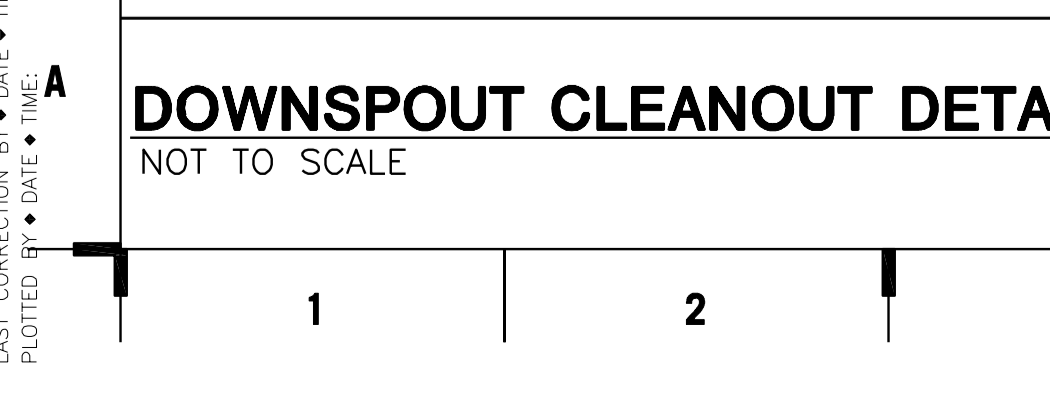
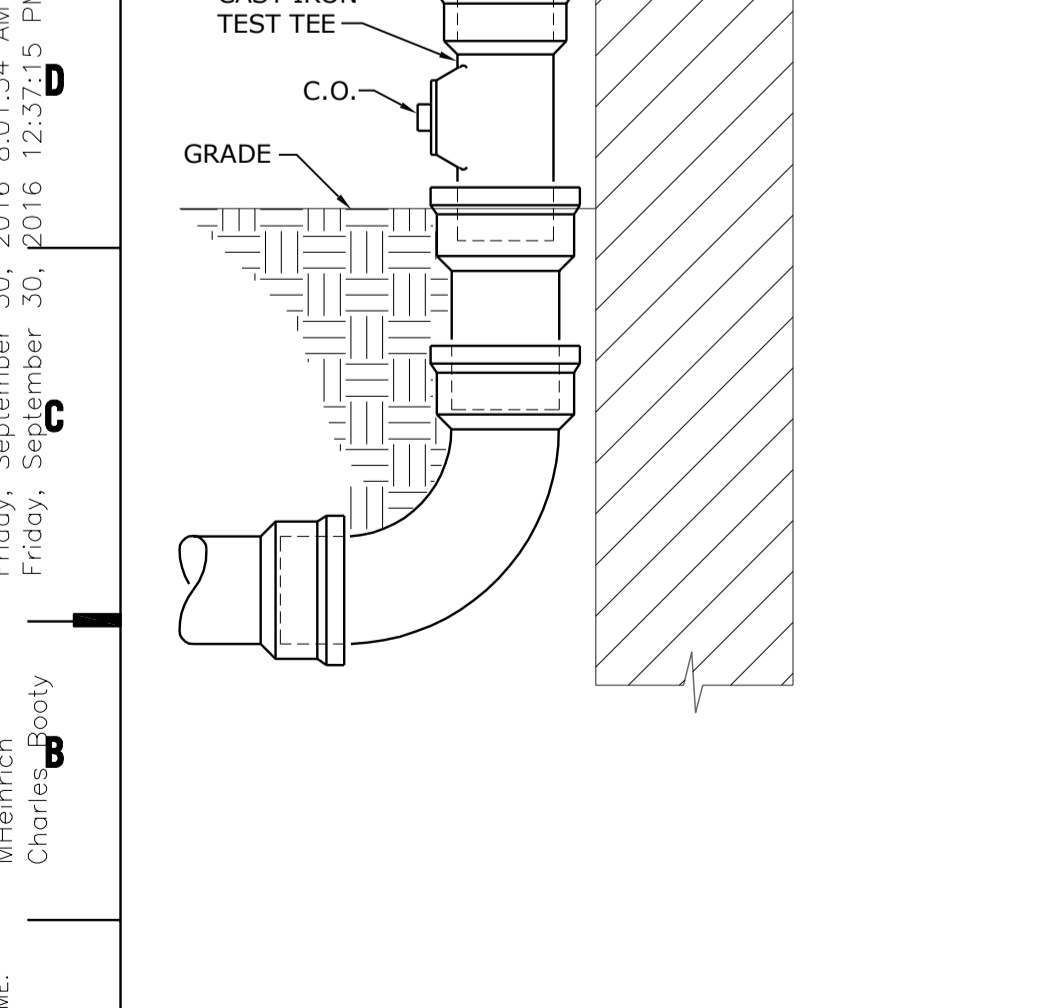
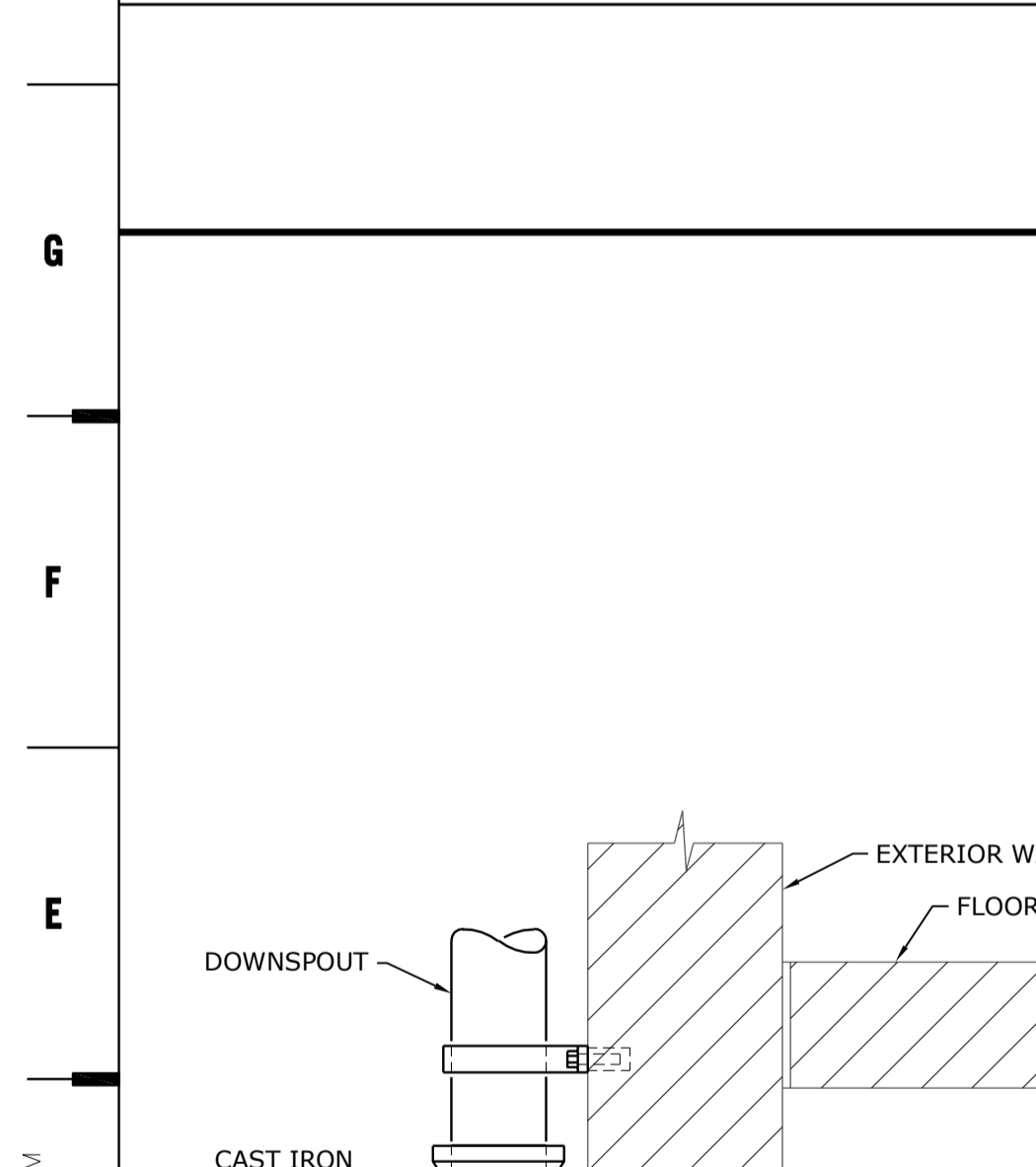
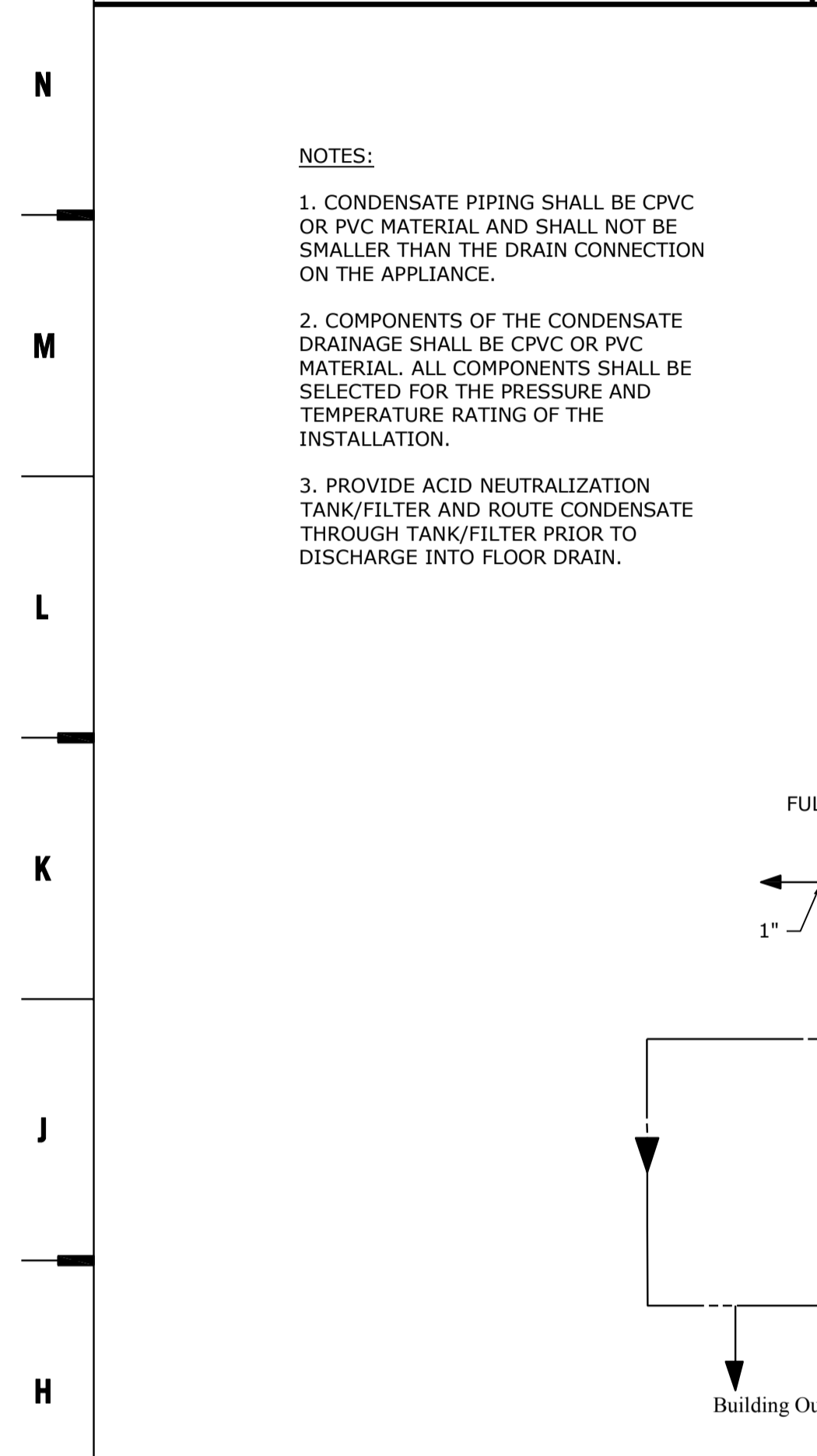
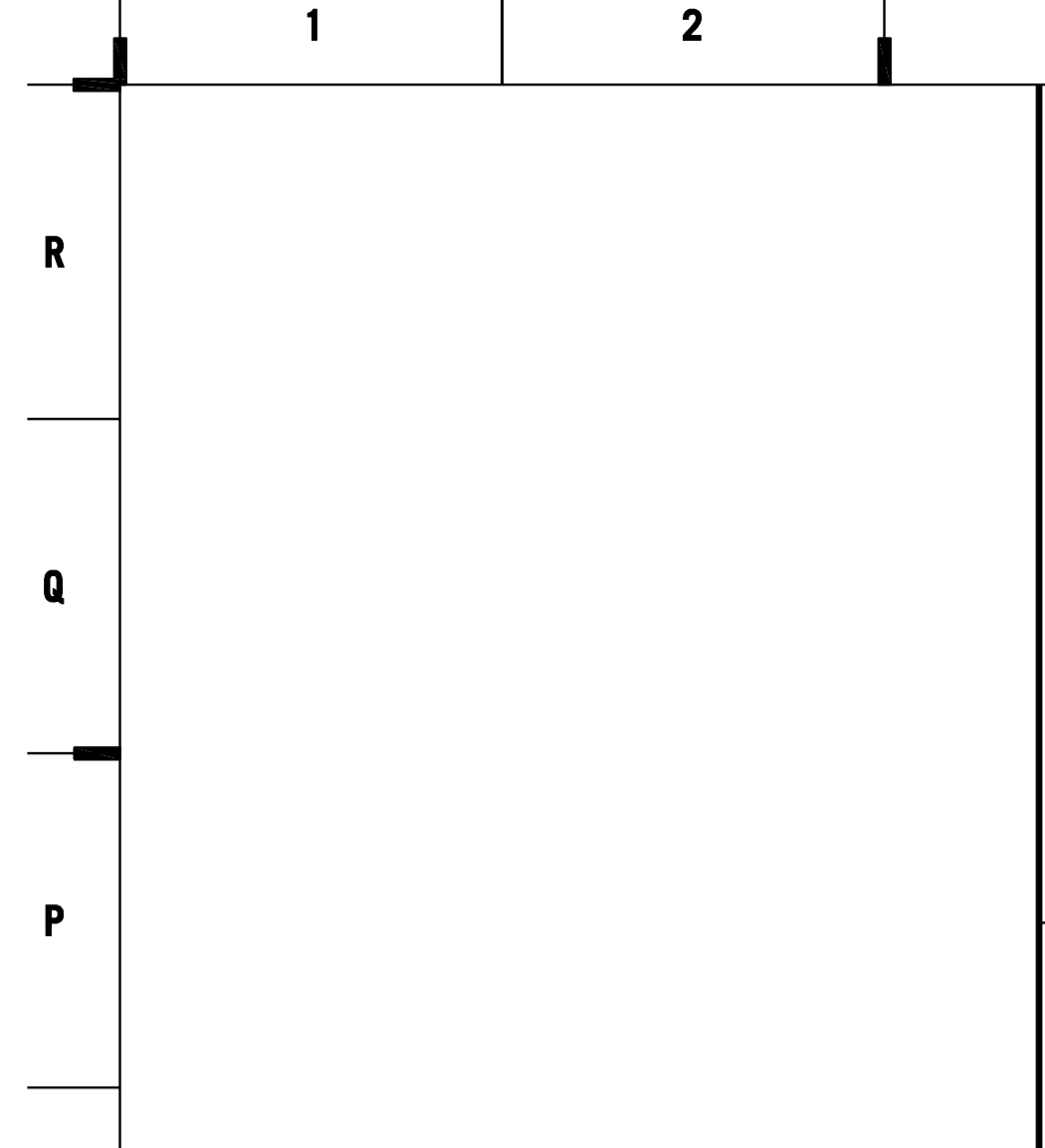


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PROJECT NAME: JOPLIN EARLY CHILDHOOD CENTER
DRAWN BY: S&B
DATE: 09/30/16
LAST CORRECTION BY: CHARLES BOBY
PRINTED BY: CHARLES BOBY
DATE: 09/30/16
TIME: 2:23:55 B PM
PROJECT NUMBER: 1617200 - ME302.dwg
DATE: 09/30/16
TIME: 10:21:53 AM
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Joplin Early Childhood Center
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REVISIONS:

STATE OF MISSOURI
KENT T. MCCOSH
REGISTERED PROFESSIONAL ENGINEER
EXPIRES 12/31/16
9/30/16

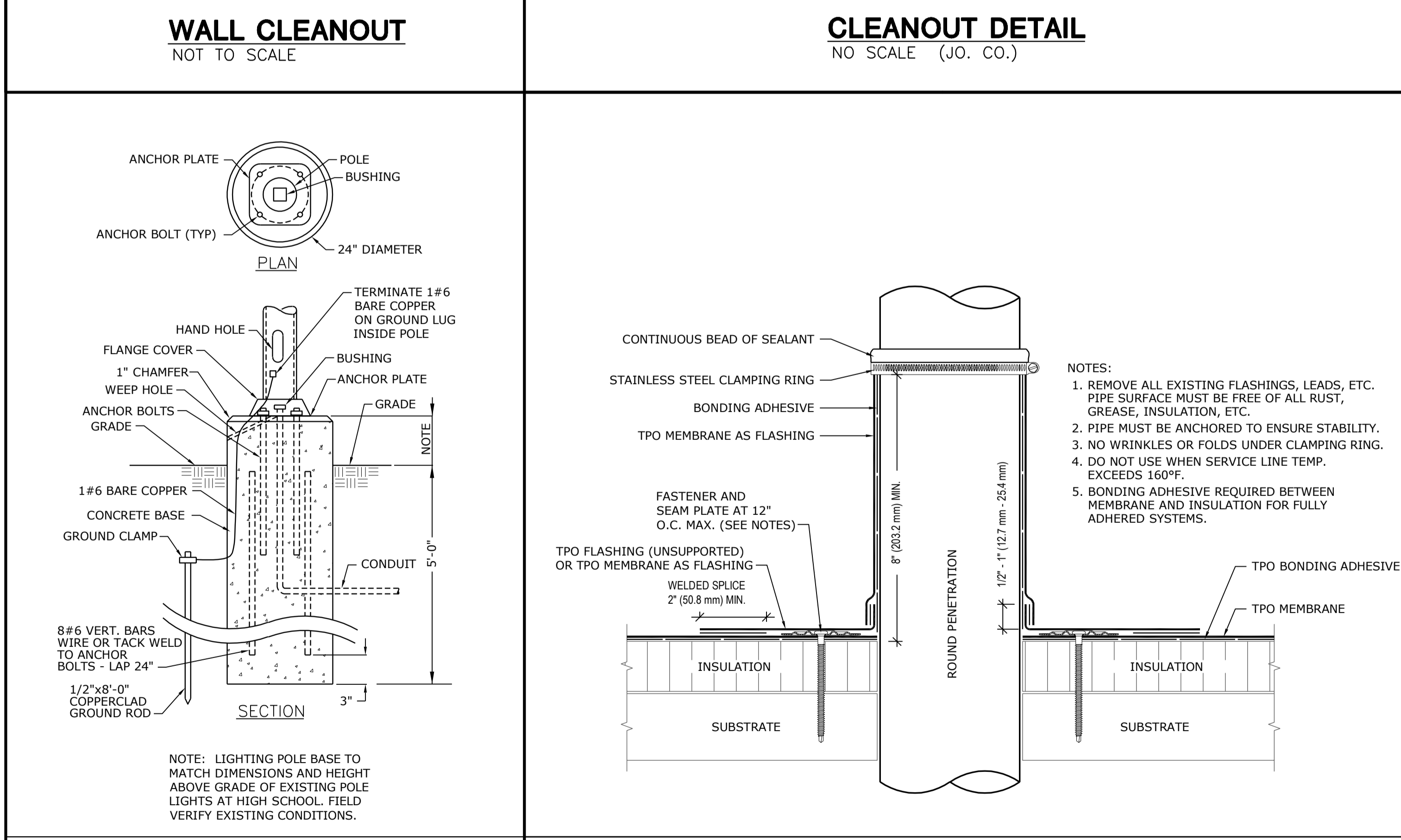
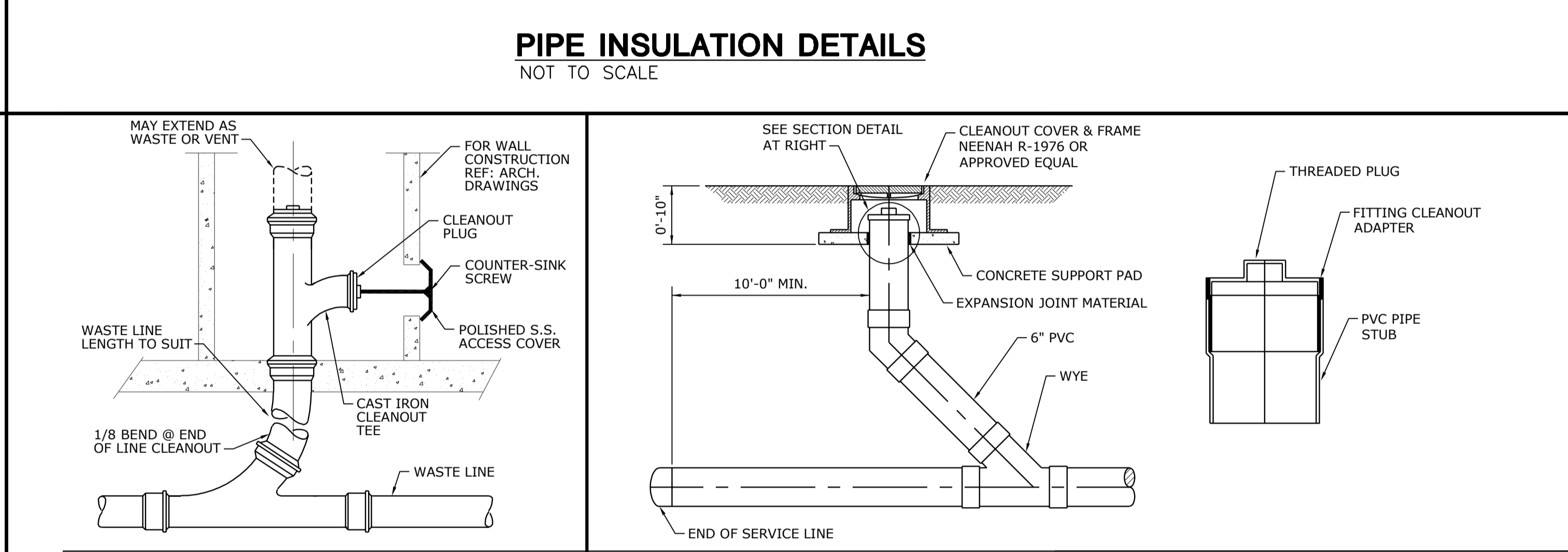
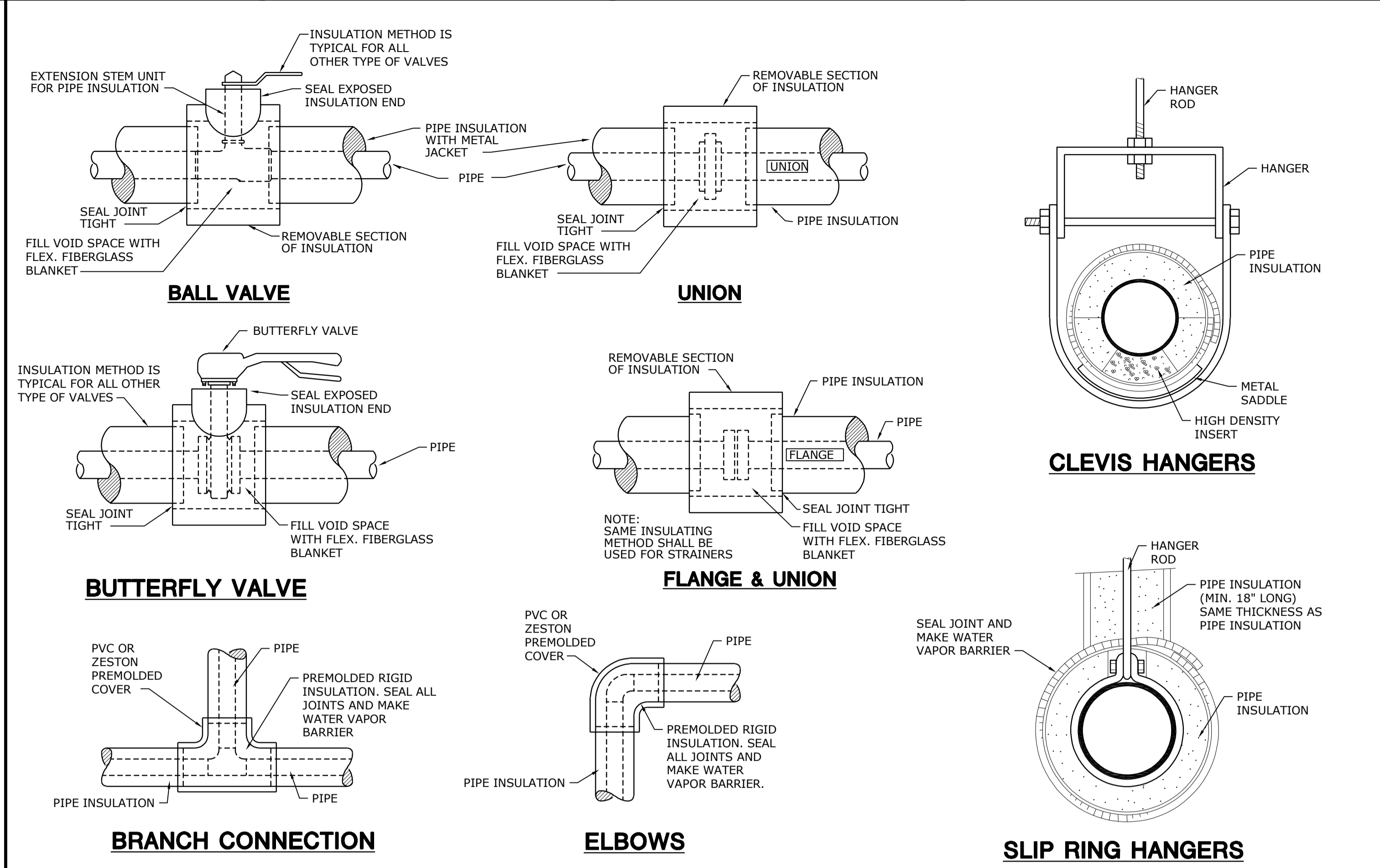
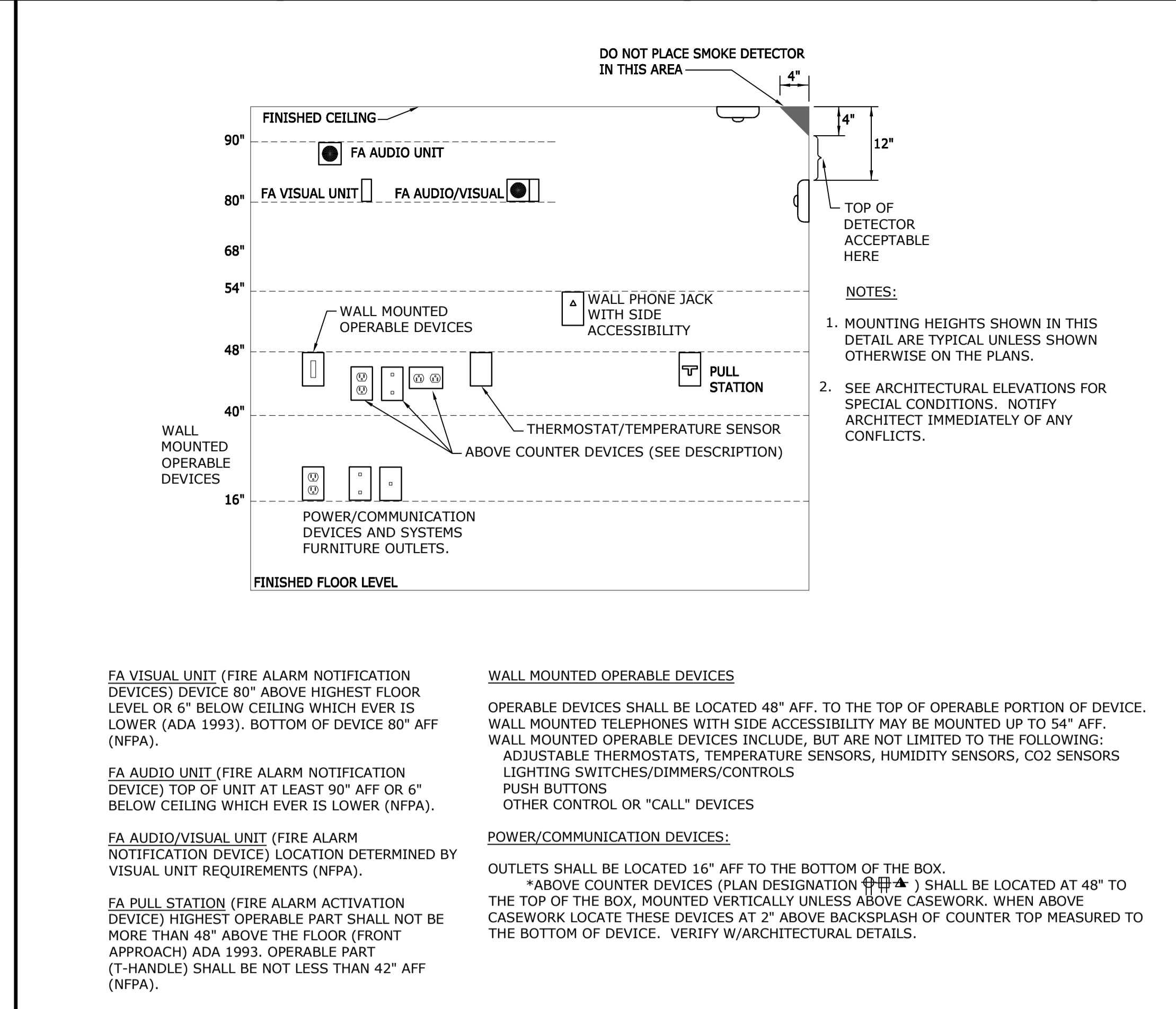
The Professional Engineer's seal affixed to this sheet applies only to the material and work shown on this sheet. All other work shown on this sheet is the responsibility of the contractor. The seal of the Professional Engineer is not to be used for any work not shown on this sheet.

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project number 1617200

ME401
OF

DETAILS - MECHANICAL AND ELECTRICAL



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ME402

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Professional Engineer Seal: State of Missouri, Kent T. McCosh, No. 07801, Expires 12/31/16, dated 9/30/16.

Joplin Early Childhood Center
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DETAILS - MECHANICAL AND ELECTRICAL

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PROJECT NAME: JOPLIN EARLY CHILDHOOD CENTER
PROJECT NO: 1617200 - ME402-449
DATE: 09/30/2016
LAST CORRECTION: Friday, September 30, 2016 1:23:04 PM
DRAWN BY: S&B
CHECKED BY: KTM
DATE: 09/30/2016



SHEET KEYNOTE LEGEND

- GENERAL NOTES:**
- UNLESS OTHERWISE NOTED, RETURN GRILLES SHALL BE RG-1 22"x12" OR RG-1 22"x12" AS SHOWN.
 - SOUND BOOTS ON FAN POWERED BOX INDUCED AIR INLETS SHALL BE FULL SIZE OF UNIT OPENING. REFER TO DETAIL.
- PLAN NOTES:**
- CONNECT TOP HALF OF DIFFUSER TO 36"x6" SUPPLY DUCT FROM UNIT HEATER. BOTTOM HALF OF DIFFUSER SHALL BE LEFT OPEN AS RETURN AIR PATH INTO CEILING PLENUM.
 - 56"x20" SUPPLY FROM RTU, TRANSITION TO UNIT OPENING AS REQUIRED. PROVIDE SMOOTH RADIUS ELBOW AT TRANSITION TO HORIZONTAL.
 - 70"x24" RETURN FROM RTU, TRANSITION TO UNIT OPENING AS REQUIRED. PROVIDE SMOOTH RADIUS ELBOW AT TRANSITION TO HORIZONTAL.
 - 12"x12" EXHAUST UP TO EXHAUST FAN. TRANSITION TO UNIT OPENING AS REQUIRED.
 - 4"Ø DRYER VENT DOWN TO DRYER.
 - 4"Ø DRYER VENT UP THROUGH ROOF.
 - TERMINATE 8"Ø EXHAUST INTO CEILING PLENUM.
 - MAINTAIN 3 SQUARE FEET OF FREE AREA THROUGH CEILING FRAMING FOR RETURN AIR PATH.

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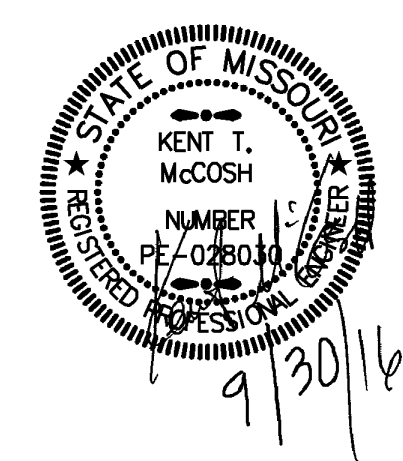
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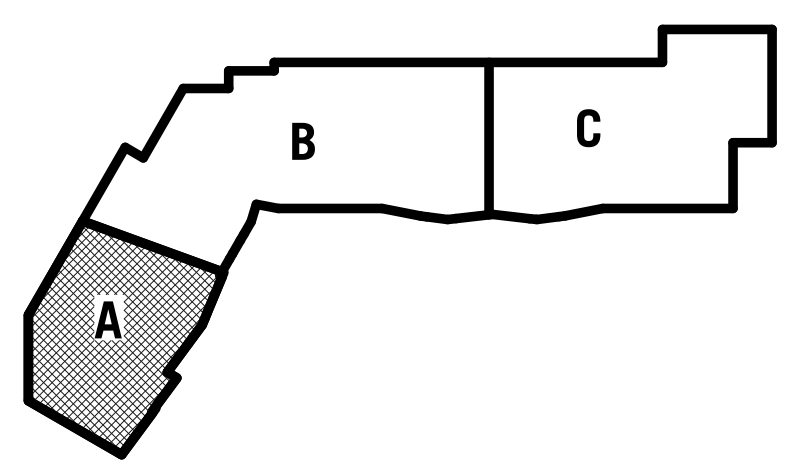
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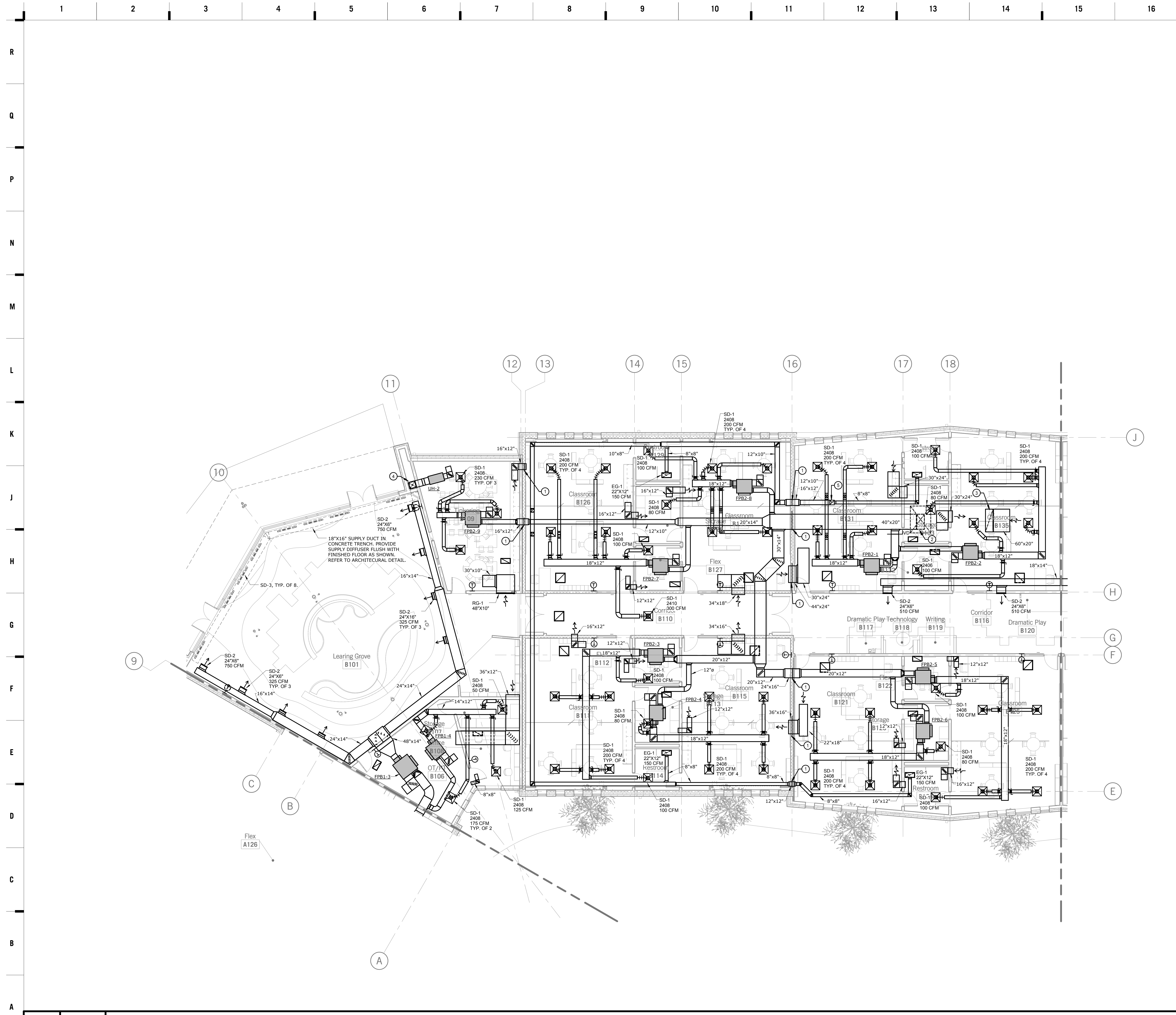
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project number 1617200

KEY PLAN



JOB NO: 16054
DRAWN BY: S&B
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DATE: 09.30.2016

M101A
OF



SHEET KEYNOTE LEGEND

- GENERAL NOTES:**
- UNLESS OTHERWISE NOTED, RETURN GRILLES SHALL BE RG-1 22"x22" OR RG-1 22"x12" AS SHOWN.
 - SOUND BOOTS ON FAN POWERED BOX INDUCED AIR INLETS SHALL BE FULL SIZE OF UNIT OPENING. REFER TO DETAIL.
- PLAN NOTES:**
- PROVIDE GRATING AT DUCT PENETRATION THROUGH STORM SHELTER WALL. REFER TO STRUCTURAL DRAWINGS FOR GRATING DETAILS.
 - 40"x20" SUPPLY FROM RTU, TRANSITION TO UNIT OPENING AS REQUIRED. PROVIDE SMOOTH RADIUS ELBOW AT TRANSITION TO HORIZONTAL.
 - 60"x20" RETURN FROM RTU, TRANSITION TO UNIT OPENING AS REQUIRED. PROVIDE SMOOTH RADIUS ELBOW AT TRANSITION TO HORIZONTAL.
 - 18"x16" SUPPLY DOWN TO IN CHASE TO CONCRETE TRENCH.
 - 12"x12" EXHAUST UP TO EXHAUST FAN. TRANSITION TO UNIT OPENING AS REQUIRED.

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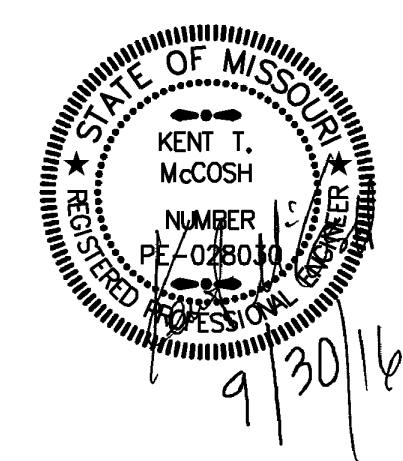
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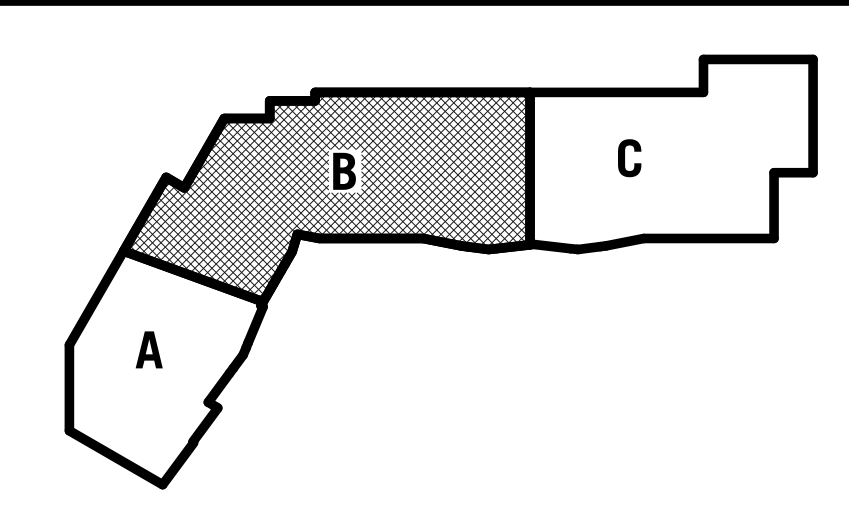
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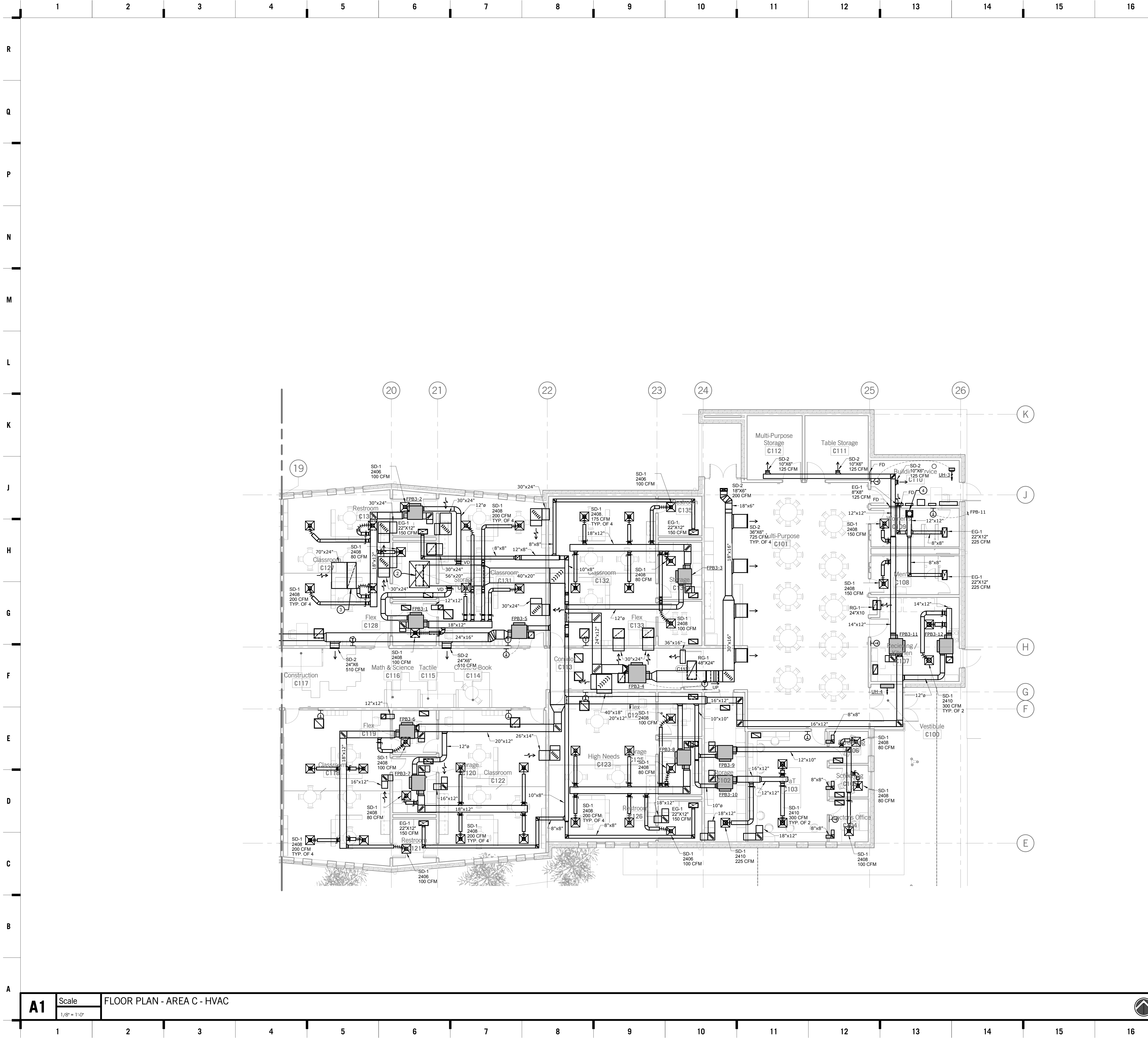
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KEY PLAN



JOB NO: 16054
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DATE: 09.30.2016

M102B
OF



SHEET KEYNOTE LEGEND

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 - 12"x12" EXHAUST UP TO EXHAUST FAN. TRANSITION TO UNIT OPENING AS REQUIRED.

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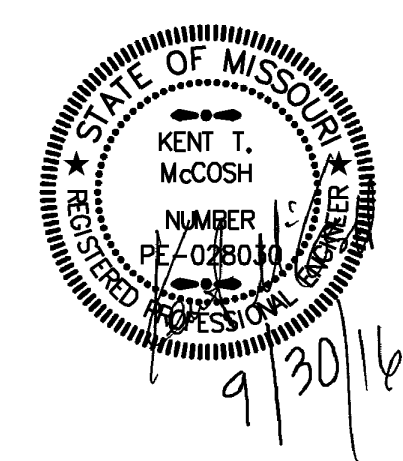
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Joplin Schools

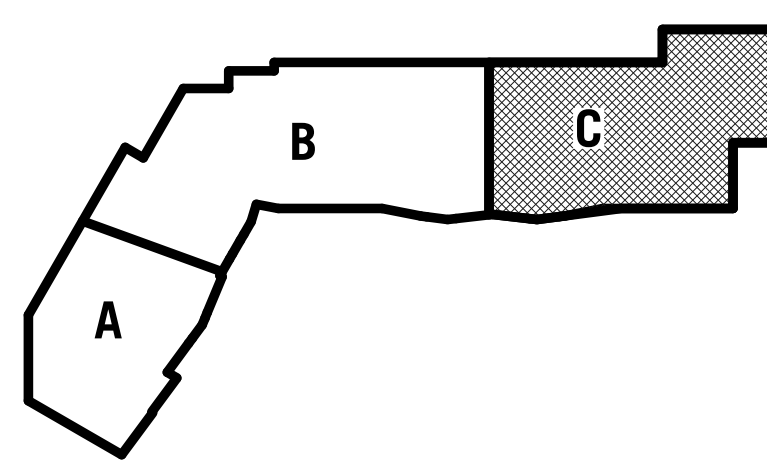
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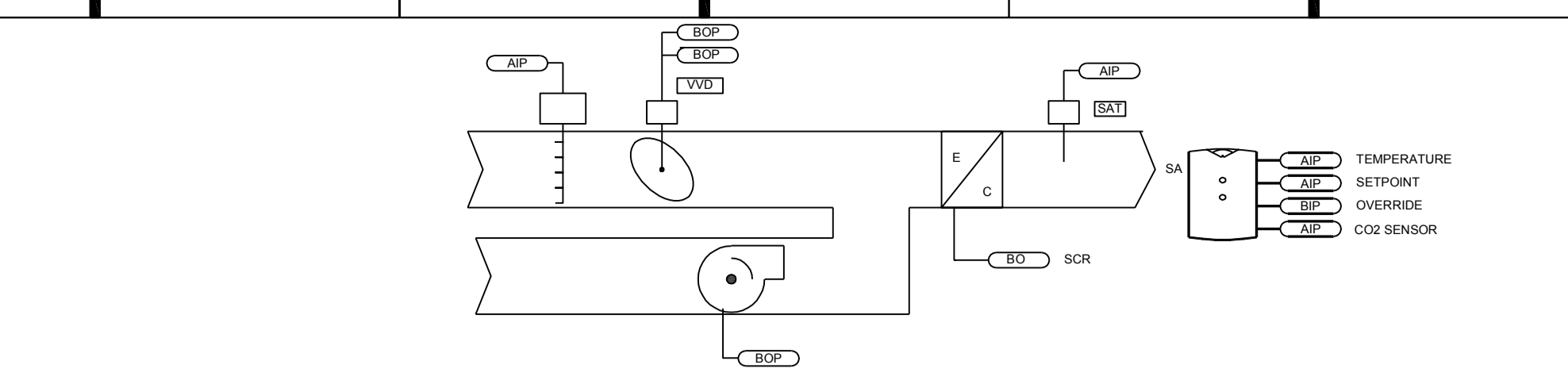
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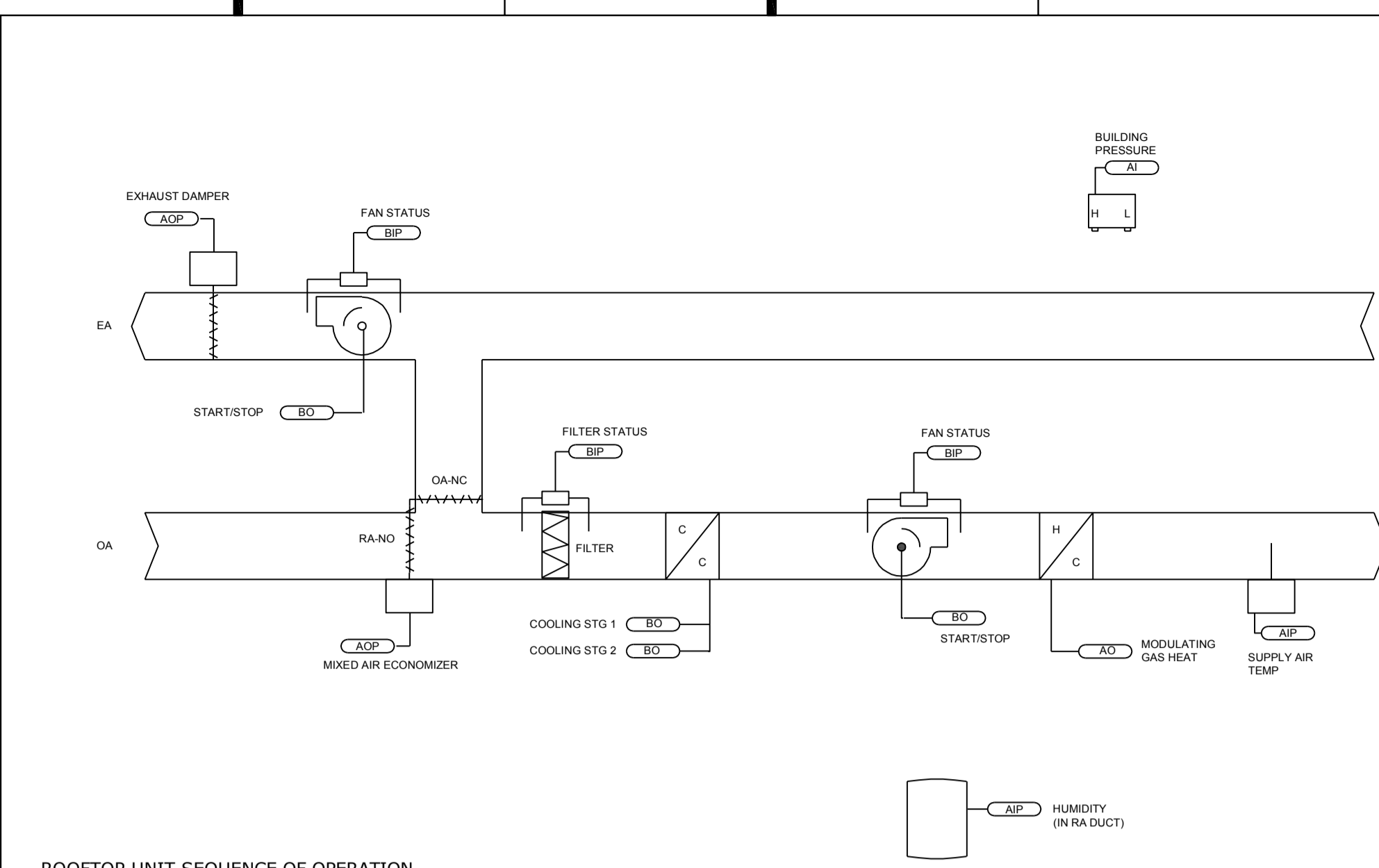
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TERMINAL UNIT SEQUENCE OF OPERATION

- A. THE TERMINAL UNITS SHALL BE CONTROLLED BY A DDC CONTROLLER. THE DDC CONTROLLER AND DAMPER (FPB) MOTOR SHALL BE SUPPLIED BY THE BAS CONTRACTOR AND FURNISHED TO THE TERMINAL UNIT SUPPLIER. THE CONTROL TRANSFORMER, FLOW RINGS AND COSTS ASSOCIATED FOR FACTORY MOUNTING AND CONTINUITY CHECK OF DIRECT DIGITAL CONTROLS SHALL BE PROVIDED BY THE BOX MANUFACTURER. FIELD MOUNTED DDC CONTROLS ARE NOT ACCEPTABLE.
- B. BUILDING AUTOMATION SYSTEM INTERFACE: THE BUILDING AUTOMATION SYSTEM (BAS) WILL SEND THE CONTROLLER OCCUPIED AND UNOCCUPIED COMMANDS. THE BAS MAY ALSO SEND A HEAT/COOL MODE, PRIORITY SHUTDOWN COMMANDS, SPACE TEMPERATURE AND/OR SPACE TEMPERATURE SETPOINT. IF A BAS IS NOT PRESENT, OR COMMUNICATION IS LOST WITH THE BAS, THE CONTROLLER WILL OPERATE USING ITS LOCAL SETPOINTS.
- C. HEAT/COOL MODE: THE HEAT/COOL MODE WILL BE SET BY A COMMUNICATED VALUE OR AUTOMATICALLY BY THE TERMINAL UNIT. IN STANDALONE OR AUTO MODE THE TERMINAL UNIT WILL COMPARE THE PRIMARY AIR TEMPERATURE WITH THE CONFIGURED AUTO CHANGEOVER SETPOINT TO DETERMINE IF THE AIR IS "HOT" OR "COLD". HEATING MODE WILL COMMAND THE TERMINAL UNIT TO HEAT ONLY; IT IMPLIES THE PRIMARY AIR TEMPERATURE IS HOT. COOLING MODE COMMANDS THE TERMINAL UNIT TO COOL ONLY; IT IMPLIES THE PRIMARY AIR TEMPERATURE IS COLD.
- D. HEAT/COOL SETPOINT: THE SPACE TEMPERATURE SETPOINT WILL BE DETERMINED EITHER BY A LOCAL HARDWIRED SETPOINT, THE TERMINAL UNIT DEFAULT SETPOINT OR A COMMUNICATED VALUE. THE TERMINAL UNIT USES THE LOCALLY STORED DEFAULT SETPOINTS WHEN NEITHER A LOCAL HARDWIRED SETPOINT NOR COMMUNICATED SETPOINT IS PRESENT. IF BOTH A HARDWIRED SETPOINT AND COMMUNICATED SETPOINT EXIST, THE TERMINAL UNIT WILL USE THE COMMUNICATED VALUE.
- E. OCCUPANCY/UNOCCUPIED MODE: THE OCCUPANCY/UNOCCUPIED MODE CAN BE COMMUNICATED OR HARDWIRED TO THE TERMINAL UNIT VIA A BINARY INPUT. VALID OCCUPANCY/UNOCCUPIED MODES FOR THE FPB WILL BE:
 - 1. OCCUPIED: NORMAL OPERATING MODE FOR OCCUPIED SPACES OR DAYTIME OPERATION. WHEN THE UNIT IS IN THE OCCUPIED MODE THE TERMINAL UNIT WILL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE OCCUPIED HEATING OR COOLING SETPOINT. APPLICABLE VENTILATION AND AIRFLOW SETPOINTS WILL BE ENFORCED. THE OCCUPIED MODE WILL BE THE DEFAULT MODE OF THE TERMINAL UNIT.
 - 2. UNOCCUPIED: NORMAL OPERATING MODE FOR UNOCCUPIED SPACES OR NIGHTTIME OPERATION. WHEN THE UNIT IS IN UNOCCUPIED MODE THE FPB WILL MAINTAIN THE SPACE TEMPERATURE AT THE STORED UNOCCUPIED HEATING OR COOLING SETPOINT REGARDLESS OF THE PRESENCE OF A HARDWIRED OR COMMUNICATED SETPOINT. WHEN THE SPACE TEMPERATURE EXCEEDS THE ACTIVE UNOCCUPIED SETPOINT THE FPB WILL MODULATE FULLY CLOSED.
 - 3. OCCUPIED BYPASS - MODE USED TO TEMPORARILY PLACE THE UNIT INTO THE OCCUPIED OPERATION. TENANTS WILL BE ABLE TO OVERRIDE THE UNOCCUPIED MODE FROM THE SPACE SENSOR. THE OVERRIDE WILL LAST FOR A MAXIMUM OF 4 HOURS (CONFIGURABLE). THE TENANTS WILL BE ABLE TO CANCEL THE OVERRIDE FROM THE SPACE SENSOR AT ANY TIME. DURING THE OVERRIDE THE UNIT WILL RUN IN OCCUPIED MODE.
- F. COOLING MODE: WHEN THE UNIT IS IN COOLING MODE, THE TERMINAL UNIT WILL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE COOLING SETPOINT BY MODULATING THE AIRFLOW BETWEEN THE ACTIVE COOLING MINIMUM AIRFLOW SETPOINT TO THE MAXIMUM COOLING AIRFLOW SETPOINT. BASED ON THE TERMINAL UNIT OCCUPANCY MODE, THE ACTIVE COOLING SETPOINT WILL BE ONE OF THE FOLLOWING: OCCUPIED COOLING SETPOINT 74°F, UNOCCUPIED COOLING SETPOINT 85°F, OCCUPIED STANDBY COOLING SETPOINT 78°F, OCCUPIED MIN COOLING AIRFLOW SETPOINT - SEE TERMINAL UNIT SCHEDULE, OCCUPIED MAX COOLING AIRFLOW SETPOINT - SEE TERMINAL UNIT SCHEDULE.
 - 1. THE TERMINAL UNIT WILL USE THE MEASURED SPACE TEMPERATURE AND THE ACTIVE COOLING SETPOINT TO DETERMINE THE REQUESTED COOLING CAPACITY OF THE UNIT. THE OUTPUTS WILL BE CONTROLLED BASED ON THE UNIT CONFIGURATION AND THE REQUESTED COOLING CAPACITY.
- G. HEATING MODE: WHEN THE UNIT IS IN HEATING MODE, THE CONTROLLER WILL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE HEATING SETPOINT BY MODULATING THE AIRFLOW BETWEEN THE ACTIVE HEATING MINIMUM AIRFLOW SETPOINT TO THE MAXIMUM HEATING AIRFLOW SETPOINT. BASED ON THE CONTROLLER OCCUPANCY MODE, THE ACTIVE HEATING SETPOINT WILL BE ONE OF THE FOLLOWING: OCCUPIED HEATING SETPOINT 71°F, UNOCCUPIED HEATING SETPOINT 60°F, OCCUPIED STANDBY HEATING SETPOINT 67°F, OCCUPIED MIN HEATING AIRFLOW SETPOINT - SEE FPB SCHEDULE, OCCUPIED MAX HEATING AIRFLOW SETPOINT - SEE FPB SCHEDULE.
 - 1. THE CONTROLLER WILL USE THE MEASURED SPACE TEMPERATURE AND THE ACTIVE HEATING SETPOINT TO DETERMINE THE REQUESTED HEATING CAPACITY OF THE UNIT. THE OUTPUTS WILL BE CONTROLLED BASED ON THE UNIT CONFIGURATION AND THE REQUESTED HEATING CAPACITY.
- H. INTERMITTENT FAN CONTROL: DURING ALL OCCUPIED MODES, AS THE SPACE TEMPERATURE FALLS BELOW THE ACTIVE COOLING SETPOINT, THE FPB WILL MODULATE TO ITS MINIMUM COOLING AIRFLOW SETPOINT. UPON A CONTINUED DROP IN TEMPERATURE AND/OR UNIT AIRFLOW, THE PARALLEL FAN WILL BE ENERGIZED. DURING THE UNOCCUPIED MODE, THE PRIMARY AIR VALVE WILL MODULATE FULLY CLOSED. THE TERMINAL FAN AND HEAT WILL CYCLE AS NEEDED TO MAINTAIN A REDUCED SPACE TEMPERATURE.
- I. REHEAT CONTROL: REHEAT WILL ONLY BE ALLOWED WHEN THE PRIMARY AIR TEMPERATURE IS 5°F BELOW THE CONFIGURED REHEAT ENABLE SETPOINT, (70°F ADJUSTABLE). THE REHEAT WILL BE ENABLED WHEN THE SPACE TEMPERATURE DROPS BELOW THE ACTIVE COOLING SETPOINT AND THE AIRFLOW IS IN THE MINIMUM COOLING AIRFLOW SETPOINT. DURING REHEAT THE FPB WILL OPERATE AT ITS MINIMUM HEATING AIRFLOW SETPOINT AND ENERGIZE THE HEAT AS FOLLOWS:
 - 1. PROPORTIONAL REHEAT: IF THE SPACE TEMPERATURE IS BELOW THE HEATING SETPOINT THE ELECTRIC SCR REHEAT COIL WILL MODULATE AS REQUIRED TO MAINTAIN THE ACTIVE HEATING SETPOINT.
- J. SPACE SENSOR FAILURE: IF THERE IS A FAULT WITH THE OPERATION OF THE ZONE SENSOR, IT WILL FEED BACK TO THE BAS. ZONE SENSOR FAILURE WILL CAUSE THE TERMINAL UNIT TO DRIVE THE DAMPER TO MINIMUM AIR FLOW IF THE TERMINAL UNIT IS IN THE OCCUPIED MODE, OR DRIVE IT CLOSED IF THE TERMINAL UNIT IS IN THE UNOCCUPIED MODE. IF A SERIES FAN IS AVAILABLE, IT WILL BE ENABLED, AND THE REHEAT WILL BE DISABLED. IF A PARALLEL FAN IS AVAILABLE, IT WILL BE DISABLED ALONG WITH THE REHEAT.
- K. SPACE CO2 CONTROL: IN THE EVENT THAT THERE IS NO CALL FOR COOLING AND NO CALL FOR OUTSIDE AIR BY THE CO2 SENSOR, THE MINIMUM CFM SHALL BE RESET TO 0. IF ONE CO2 SENSOR RISES ABOVE ITS SETPOINT, THE RTU WILL INCREASE THE OA SETTING (UP TO DESIGN OUTSIDE SETTING) UNTIL ALL ZONES ARE BELOW SETPOINT..

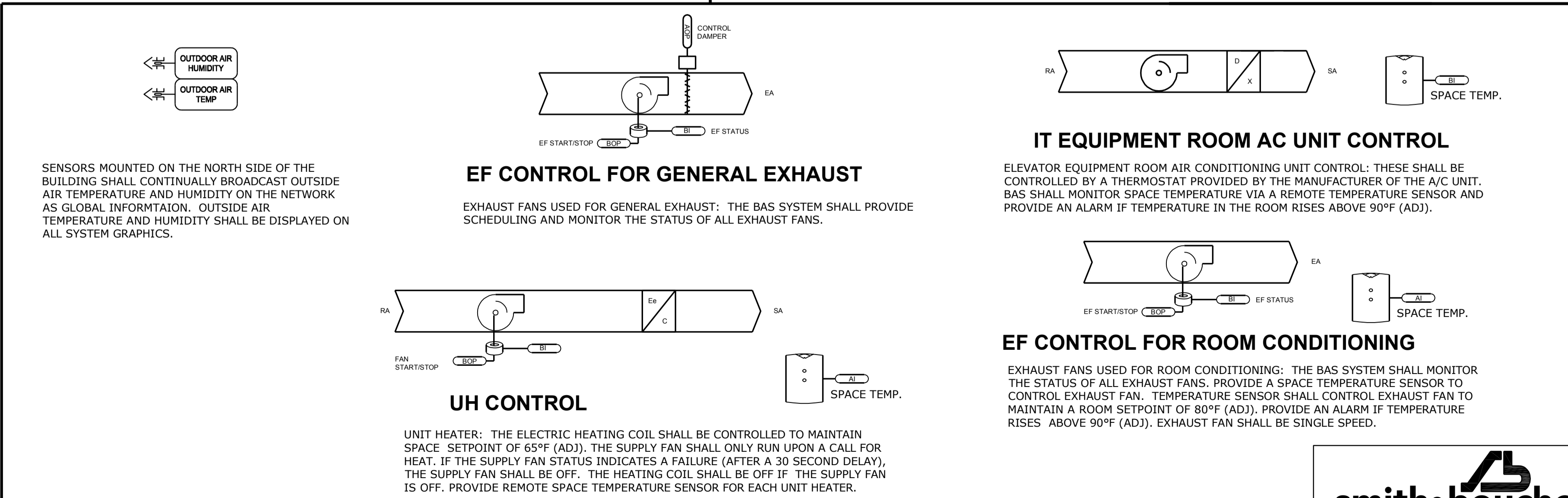
PARALLEL FAN POWERED VAV TERMINAL UNIT CONTROL
NOT TO SCALE



ROOFTOP UNIT SEQUENCE OF OPERATION

- A. OCCUPIED MODE: WHEN THE RTU IS IN THE OCCUPIED MODE, THE BUILDING RELIEF FAN SHALL BE ENABLED, THE RTU SUPPLY FAN SHALL OPERATE CONTINUOUSLY, THE RTU VARIABLE FREQUENCY DRIVE SHALL MODULATE TO MAINTAIN THE DUCT STATIC PRESSURE, AND THE HEATING AND COOLING SHALL BE STAGED TO MAINTAIN THE COOLING DISCHARGE AIR TEMPERATURE.
- B. UNOCCUPIED MODE: WHEN THE RTU IS IN THE UNOCCUPIED MODE, THE BUILDING RELIEF FAN SHALL BE OFF, THE RTU SUPPLY FAN SHALL BE OFF, THE OUTDOOR AIR DAMPER SHALL BE CLOSED AND THE COOLING AND HEATING COILS SHALL BE OFF.
- C. MORNING WARM-UP MODE AND COOL-DOWN MODES: WHEN THE UNIT TRANSITIONS FROM THE UNOCCUPIED MODE TO OCCUPIED MODE, MORNING WARM-UP AND COOL-DOWN ROUTINES SHALL BE ACTIVATED. WHEN THERE IS A CALL FOR HEATING AND THE ZONE TEMPERATURE IS TWO DEGREES OR MORE BELOW SETPOINT, A MORNING WARM-UP SHALL BE INITIATED. DURING MORNING WARM-UP THE FAN SHALL BE TURNED ON, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND THE HEATING SHALL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT. WHEN THE ZONE TEMPERATURE COMES WITHIN TWO DEGREES OF THE HEATING SETPOINT, THE OUTSIDE AIR DAMPER SHALL GO TO THE OCCUPIED MINIMUM VENTILATION POSITION AND THE RTU SHALL OPERATE IN THE OCCUPIED MODE. WHEN THERE IS A CALL FOR COOLING AND THE SPACE TEMPERATURE IS MORE THAN THREE DEGREES F ABOVE THE OCCUPIED COOLING SETPOINT, A MORNING COOL-DOWN SEQUENCE IS INITIATED. THE FAN SHALL BE ON, THE COOLING SHALL BE CONTROLLED TO THE DISCHARGE AIR SETPOINT, AND THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE ZONE TEMPERATURE REACHES THE COOLING SETPOINT, THE RTU SHALL TRANSITION TO THE OCCUPIED MODE.
- D. SUPPLY FAN CONTROL: THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY WHENEVER THE RTU IS IN THE OCCUPIED MODE OR THE WARM-UP/COOL-DOWN MODES. THE SUPPLY FAN SHALL BE OFF WHENEVER THE RTU IS IN THE UNOCCUPIED MODE, OR THE SUPPLY FAN STATUS INDICATES A FAILURE (AFTER A TWO-MINUTE DELAY). THE FAN STATUS FAILURE SHALL REQUIRE A MANUAL RESET.
- E. VARIABLE FREQUENCY DRIVE CONTROL: WHEN THE SUPPLY FAN IS ON, VARIABLE FREQUENCY DRIVE SHALL SLOWLY RAMP (ADJUSTABLE) UP AND MODULATE TO MAINTAIN THE PROPER DISCHARGE DUCT STATIC PRESSURE SETPOINT. DETERMINATION OF THE DISCHARGE DUCT STATIC PRESSURE SETPOINT SHALL BE PER THE DISCHARGE DUCT STATIC PRESSURE SETPOINT SECTION OF THE RTU SYSTEM LEVEL OPERATION SECTION OF THIS SPECIFICATION. THE VARIABLE FREQUENCY DRIVE SHALL RESET TO ITS MINIMUM SPEED IF THE SUPPLY FAN IS OFF OR THE DUCT STATIC PRESSURE SENSOR FAILS.
- F. DISCHARGE DUCT STATIC PRESSURE SETPOINT OPTIMIZATION PER ASHRAE 90.1
 - 1. THE BUILDING AUTOMATION SYSTEM SHALL CONTINUOUSLY MONITOR THE DAMPER POSITION OF ALL VAV TERMINAL UNITS. THE DISCHARGE DUCT STATIC PRESSURE SHALL BE SENSED DIRECTLY AT THE DISCHARGE OF EACH AIR HANDLER. THE SENSOR MUST BE MOUNTED IN A NON-TURBULENT LOCATION.
 - 2. WHEN ANY DAMPER IS MORE THAN 95% (ADJ.) OPEN, THE SUPPLY FAN DISCHARGE DUCT STATIC PRESSURE SETPOINT SHALL BE RESET UPWARD BY 5% (ADJ.) OF THE MAXIMUM SYSTEM STATIC PRESSURE SETPOINT AT A FREQUENCY OF 10 MINUTES (ADJ.) UNTIL NO DAMPER IS MORE THAN 95% OPEN OR THE STATIC PRESSURE SETPOINT HAS RESET UPWARD TO THE SYSTEM MAXIMUM SETTING OR VARIABLE FREQUENCY DRIVE ARE AT THEIR MAXIMUM SETTING.
 - 3. WHEN ALL DAMPERS ARE LESS THAN 85% (ADJ.) OPEN, THE SUPPLY FAN DISCHARGE DUCT STATIC PRESSURE SETPOINT SHALL BE RESET DOWNWARD BY 5% (ADJ.) OF THE MAXIMUM SYSTEM STATIC PRESSURE SETPOINT AT A FREQUENCY OF 10 MINUTES (ADJ.) UNTIL ANY DAMPER IS MORE THAN 85% OPEN OR THE STATIC PRESSURE SETPOINT HAS RESET DOWNWARD TO THE SYSTEM MINIMUM SETTING OR VARIABLE FREQUENCY DRIVE ARE AT THEIR MINIMUM SETTING.
 - 4. THE CONTROL BANDS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES AND ADJUSTMENT FREQUENCIES SHALL BE ADJUSTED TO MAINTAIN MAXIMUM STATIC PRESSURE OPTIMIZATION WITH STABLE SYSTEM CONTROL AND MAXIMUM COMFORT CONTROL.
- G. MINIMUM OUTSIDE AIRFLOW PER ASHRAE STANDARD 62:
 - 1. DURING OCCUPIED MODE THE OUTSIDE AIR DAMPER AND THE RETURN AIR DAMPER SHALL MODULATE TO DELIVER REQUIRED OUTDOOR AIRFLOW TO EACH INDIVIDUAL VAV ZONE AT ALL LOAD CONDITIONS. THE MINIMUM OUTDOOR AIRFLOW SETPOINT SHALL BE DETERMINED USING ASHRAE STANDARD 62, EQUATION 6.1. THE ACTUAL OUTDOOR AIRFLOW SHALL BE SENSED AT THE OUTDOOR AIR INTAKE.
 - 2. THE VENTILATION FRACTION (DESIGN VENTILATION AIRFLOW FOR THE ZONE DIVIDED BY PRIMARY AIRFLOW) SHALL BE CONTINUOUSLY CALCULATED FOR EACH VAV TERMINAL ZONE. CONTINUOUSLY DETERMINE THE MAXIMUM ZONE VENTILATION FRACTION (Z), THE SUM OF THE OUTDOOR AIR REQUIREMENTS FOR ALL VAV TERMINAL ZONES (VON) AND THE TOTAL SUPPLY AIRFLOW (VST). THIS INFORMATION SHALL BE USED IN EQUATION 6.1 OF ASHRAE STANDARD 62 TO CALCULATE THE MINIMUM REQUIRED OUTDOOR AIRFLOW (VOT). THE MINIMUM REQUIRED OUTDOOR AIRFLOW (VOT) SETPOINT SHALL BE REGULARLY RECALCULATED BASED ON THE PREVAILING VAV ZONE CONDITIONS.
 - 3. THE CONTRACTOR SHALL SUBMIT A WRITTEN SEQUENCE OF OPERATION AND SAMPLE PROGRAMMING REQUIRED TO DETERMINE THE MINIMUM REQUIRED OUTDOOR AIRFLOW (VOT) SETPOINT.
 - 4. PRIOR TO FINAL SYSTEM ACCEPTANCE, THE ENGINEER AND OWNER SHALL REQUIRE A TEND LOG OF ACTUAL AIR SYSTEM OPERATION OVER A TYPICAL FORTY-EIGHT HOUR PERIOD. SYSTEM OPERATING CONDITIONS TO BE LOGGED INCLUDE: CRITICAL SPACE VENTILATION FRACTION, SYSTEM SUPPLY AIRFLOW, CALCULATED OUTDOOR AIRFLOW SETPOINT AND ACTUAL MEASURED OUTDOOR AIRFLOW AT 30-MINUTE INTERVALS.
 - 5. CO2 SENSORS SHALL BE INSTALLED TO CONTROL THE FPB BOXES TO PROVIDE OUTSIDE AIR RESET. AS THE CO2 CONCENTRATION INCREASES ABOVE THE CO2 SETPOINT, THE VENTILATION CONTROL MODULE SHALL MODIFY THE MINIMUM OUTDOOR AIR CFM SETPOINT TO INCREASE THE AMOUNT OF FRESH AIR ENTERING THE UNIT. THE SETPOINT SHALL BE ADJUSTED UPWARD UNTIL THE CO2 MAXIMUM RESET VALUE AS SCHEDULED. THE MAXIMUM EFFECTIVE (RESET) SETPOINT VALUE FOR FRESH AIR ENTERING THE UNIT IS LIMITED TO THE OUTSIDE AIRFLOW FOR THE UNIT. AS THE CO2 CONCENTRATION DECREASES, THE EFFECTIVE (RESET) SETPOINT VALUE SHALL BE ADJUSTED DOWNWARD TOWARD THE MINIMUM OUTDOOR AIR CFM SETPOINT. CO2 SENSORS SHALL BE INSTALLED INTEGRAL TO T-STATS.
- H. ECONOMIZER CONTROL: WHEN THE OUTSIDE AIR CONDITIONS ARE SUITABLE FOR FREE COOLING THE OUTDOOR DAMPER AND RETURN DAMPER SHALL MODULATE THE AIRFLOW BETWEEN THE MINIMUM REQUIRED OUTDOOR AIRFLOW SETPOINT AND THE FULL OPEN POSITION TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT THE COOLING DISCHARGE AIR TEMPERATURE SETPOINT.
- I. COOLING CONTROL: THE COOLING SHALL STAGE/MODULATE AS REQUIRED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT THE DISCHARGE COOLING SETPOINT. IF THE ECONOMIZER FUNCTION IS ENABLED AND THE OUTDOOR AIR DAMPER IS NOT FULLY OPENED, THE MECHANICAL COOLING SHALL BE OFF. THE COOLING SHALL BE OFF IF THE SUPPLY FAN IS OFF, THE HEATING IS ENABLED, OR THE DISCHARGE AIR SENSOR HAS FAILED.
- J. HEATING CONTROL: THE GAS HEAT SHALL MODULATE AS REQUIRED TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT THE DISCHARGE COOLING SETPOINT. THE HEATING SHALL BE OFF IF THE SUPPLY FAN IS OFF, THE COOLING IS ENABLED OR THE DISCHARGE AIR SENSOR HAS FAILED.
- K. BUILDING RELIEF FAN CONTROL: DURING OCCUPIED MODE THE BUILDING RELIEF FAN VFD AND RELIEF DAMPER SHALL BE MODULATED TO CONTROL THE BUILDING SPACE PRESSURE SETPOINT.

ROOFTOP UNIT CONTROL SCHEMATIC
NO SCALE



MISCELLANEOUS CONTROLS - SEQUENCE OF OPERATIONS
NOT TO SCALE

OUTDOOR AIR HUMIDITY
OUTDOOR AIR TEMP
CONTROL DAMPER
SPACE TEMP.
EF START/STOP
EF STATUS
FAN START/STOP
SPACE TEMP.
UNIT HEATER: THE ELECTRIC HEATING COIL SHALL BE CONTROLLED TO MAINTAIN SPACE SETPOINT OF 65°F (ADJ.). THE SUPPLY FAN SHALL ONLY RUN UPON A CALL FOR HEAT. IF THE SUPPLY FAN STATUS INDICATES A FAILURE (AFTER A 30 SECOND DELAY), THE SUPPLY FAN SHALL BE OFF. THE HEATING COIL SHALL BE OFF IF THE SUPPLY FAN IS OFF. PROVIDE REMOTE SPACE TEMPERATURE SENSOR FOR EACH UNIT HEATER.

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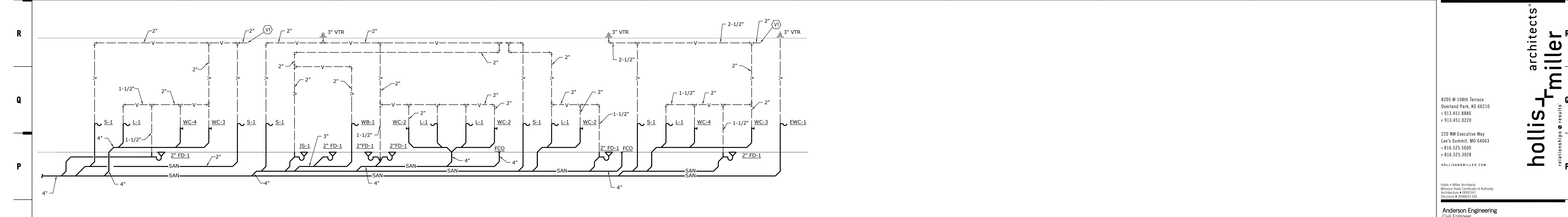
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EXPIRES 12/31/16
9/30/16

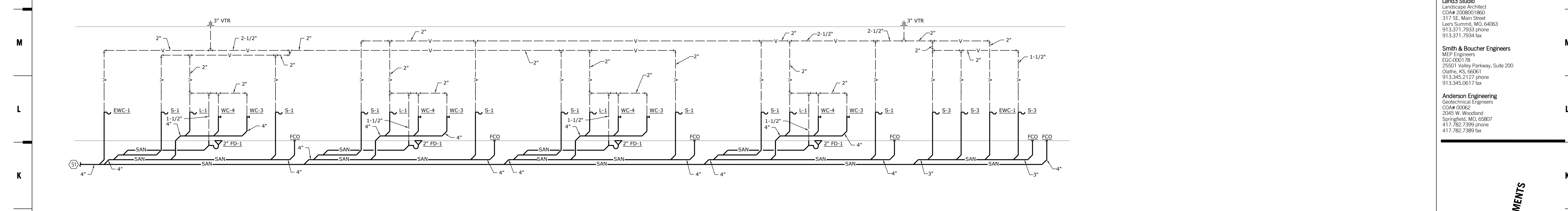
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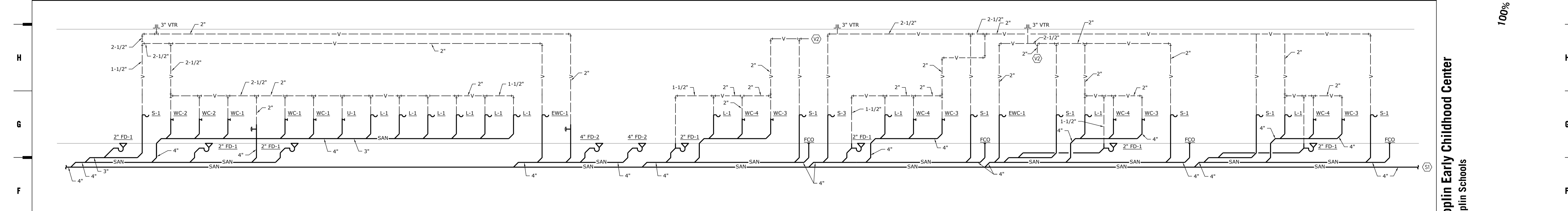
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PROJECT LOCATION: \\\s\proj\1617200_M201.dwg
LAST CORRECTION: 11/17/16
DRAWN BY: Charles Bady
DATE: 09/30/16
CHECKED BY: Charles Bady
DATE: 09/30/16



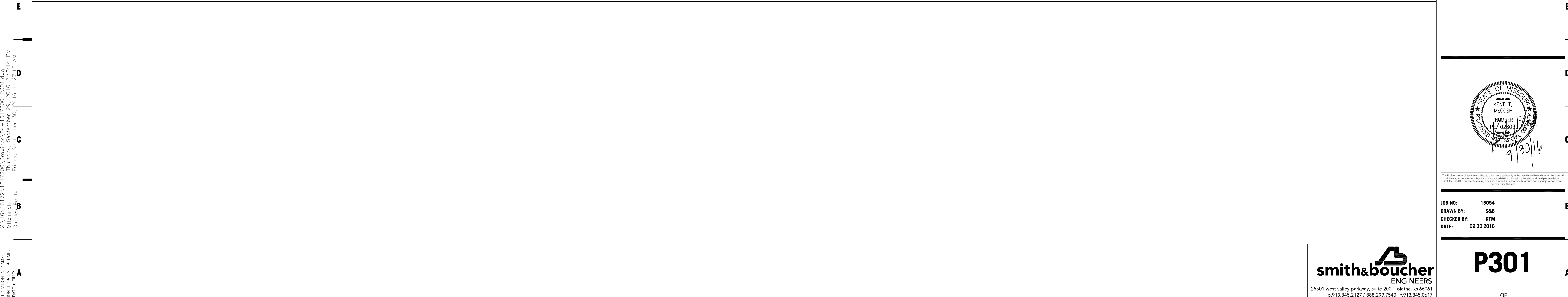
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NO SCALE



AREA B - SAN & VENT RISER DIAGRAM
NO SCALE



AREA C - SAN & VENT RISER DIAGRAM
NO SCALE



PROJECT NAME: JOPLIN EARLY CHILDHOOD CENTER
 LOCATION: 2205 W. WOODLAND SPRINGFIELD, MO. 65807
 DATE: 09/30/16
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 DATE: 09/30/2016

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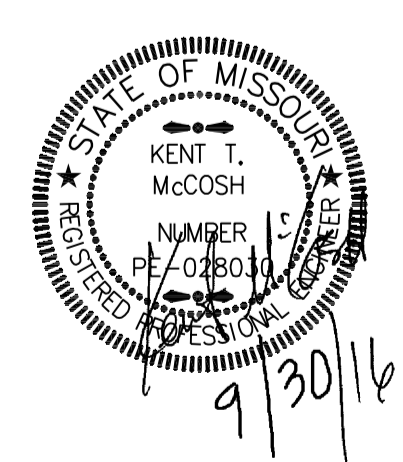
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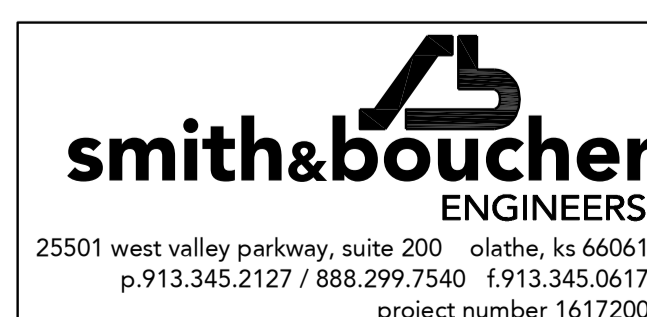
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- PLAN NOTES:
- ① 4" SAN UP TO FLOOR CLEANOUT.
 - ② 2" SAN UP TO FLOOR DRAIN.
 - ③ 1-1/2" VENT UP INTO PLUMBING CHASE/WALL.
 - ④ 4" SAN UP INTO PLUMBING CHASE.
 - ⑤ 2" SAN UP TO SINK.
 - ⑥ 3" SAN UP TO FLOOR CLEANOUT.
 - ⑦ 2" SAN UP TO JANITOR'S SINK.
 - ⑧ 2" SAN UP TO WASHING MACHINE HOOKUP BOX IN WALL.
 - ⑩ PROVIDE FLOOR DRAIN AND ASSOCIATED PIPING PER ALTERNATE BID.

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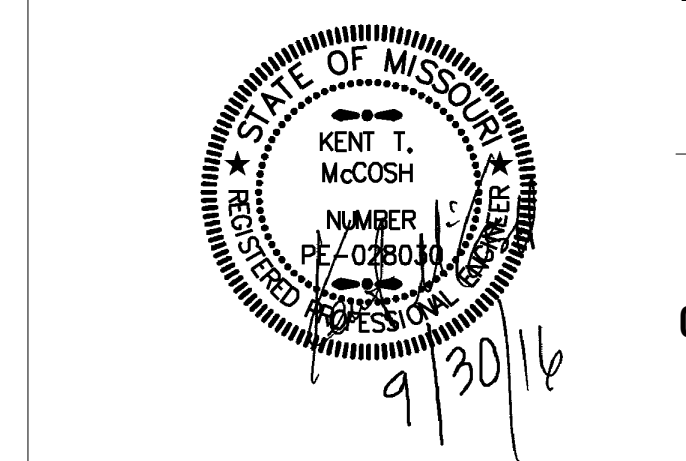
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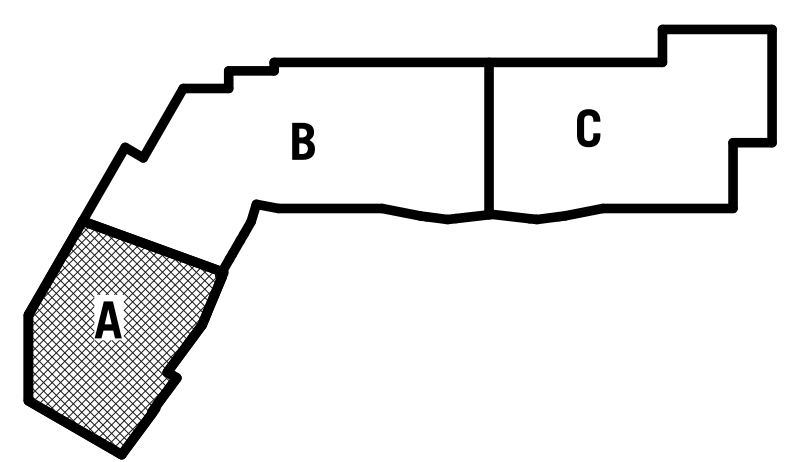
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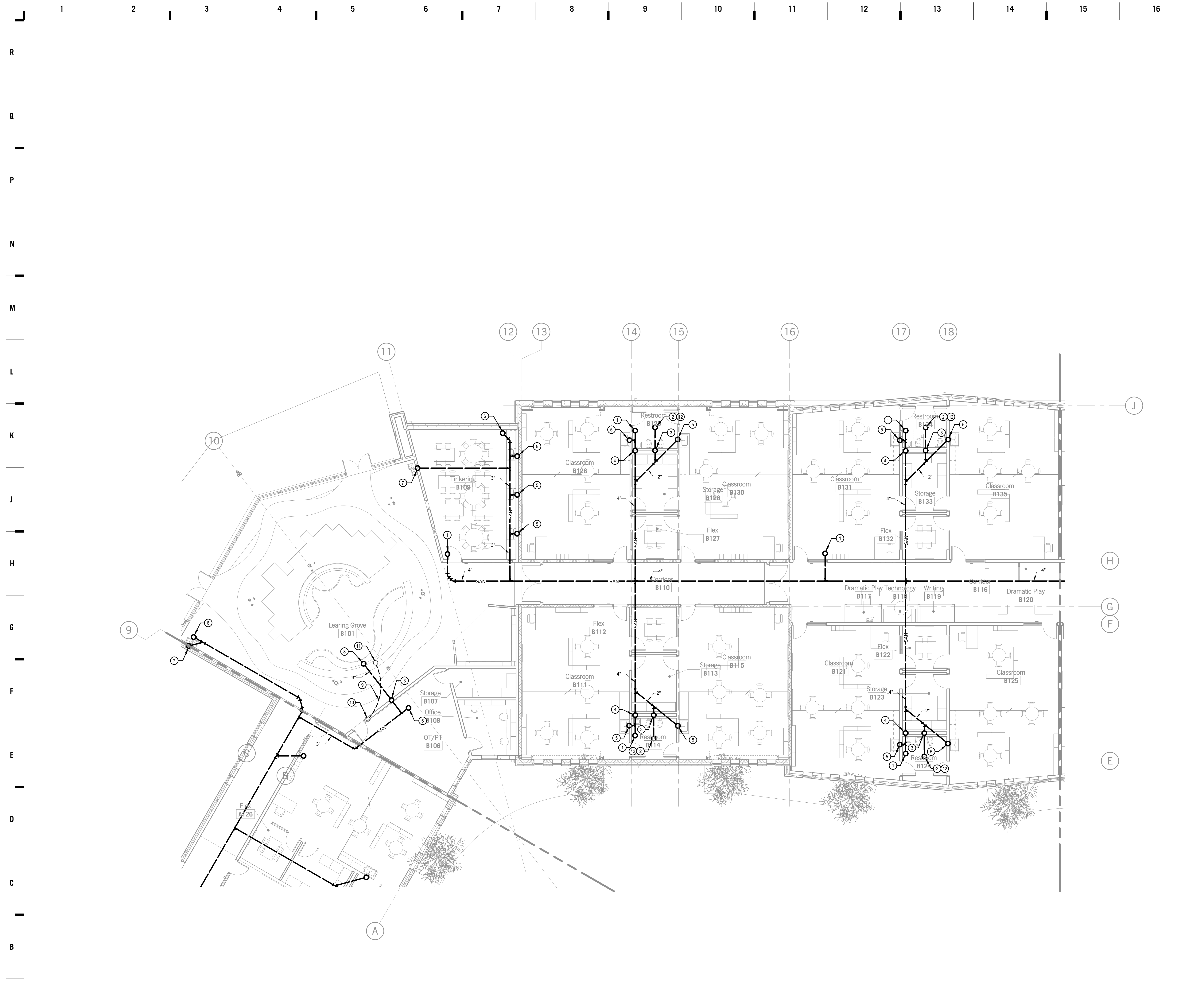
A1 Scale 1/8" = 1'-0" **UNDERSLAB FLOOR PLAN - AREA A - ALTERNATE 2 - PLUMBING**

A7 Scale 1/8" = 1'-0" **UNDERSLAB FLOOR PLAN - AREA A - PLUMBING**

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- PLAN NOTES:**
- ① 4" SAN UP TO FLOOR CLEANOUT.
 - ② 2" SAN UP TO FLOOR DRAIN.
 - ③ 1-1/2" VENT UP INTO PLUMBING CHASE/WALL.
 - ④ 4" SAN UP INTO PLUMBING CHASE.
 - ⑤ 2" SAN UP TO SINK.
 - ⑥ 3" SAN UP TO FLOOR CLEANOUT.
 - ⑦ 2" SAN UP TO DRINKING FOUNTAIN.
 - ⑧ 3" SAN UP TO FLOOR SINK.
 - ⑨ 3/4" CW COPPER TUBING BELOW SLAB.
 - ⑩ 3/4" CW UP IN WALL.
 - ⑪ 3/4" CW UP TO WATER TABLE FAUCETS.
 - ⑫ PROVIDE FLOOR DRAIN AND ASSOCIATED PIPING PER ALTERNATE BID.

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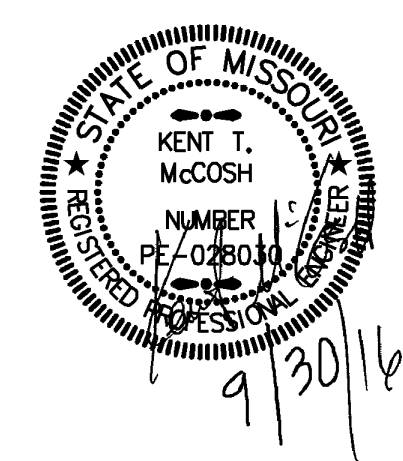
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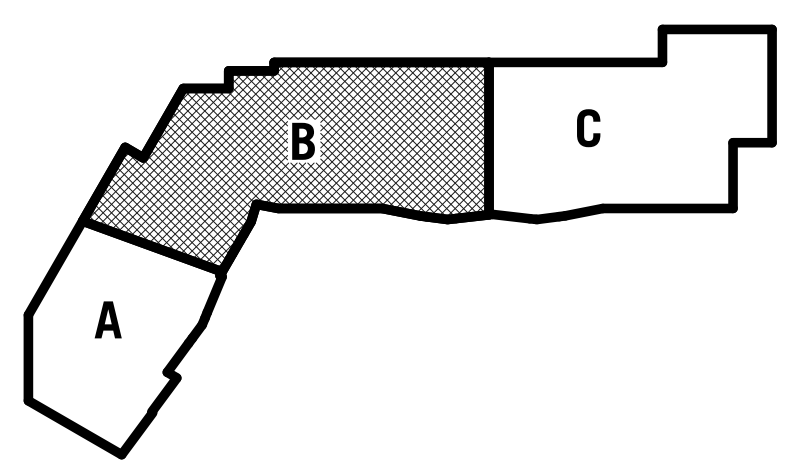
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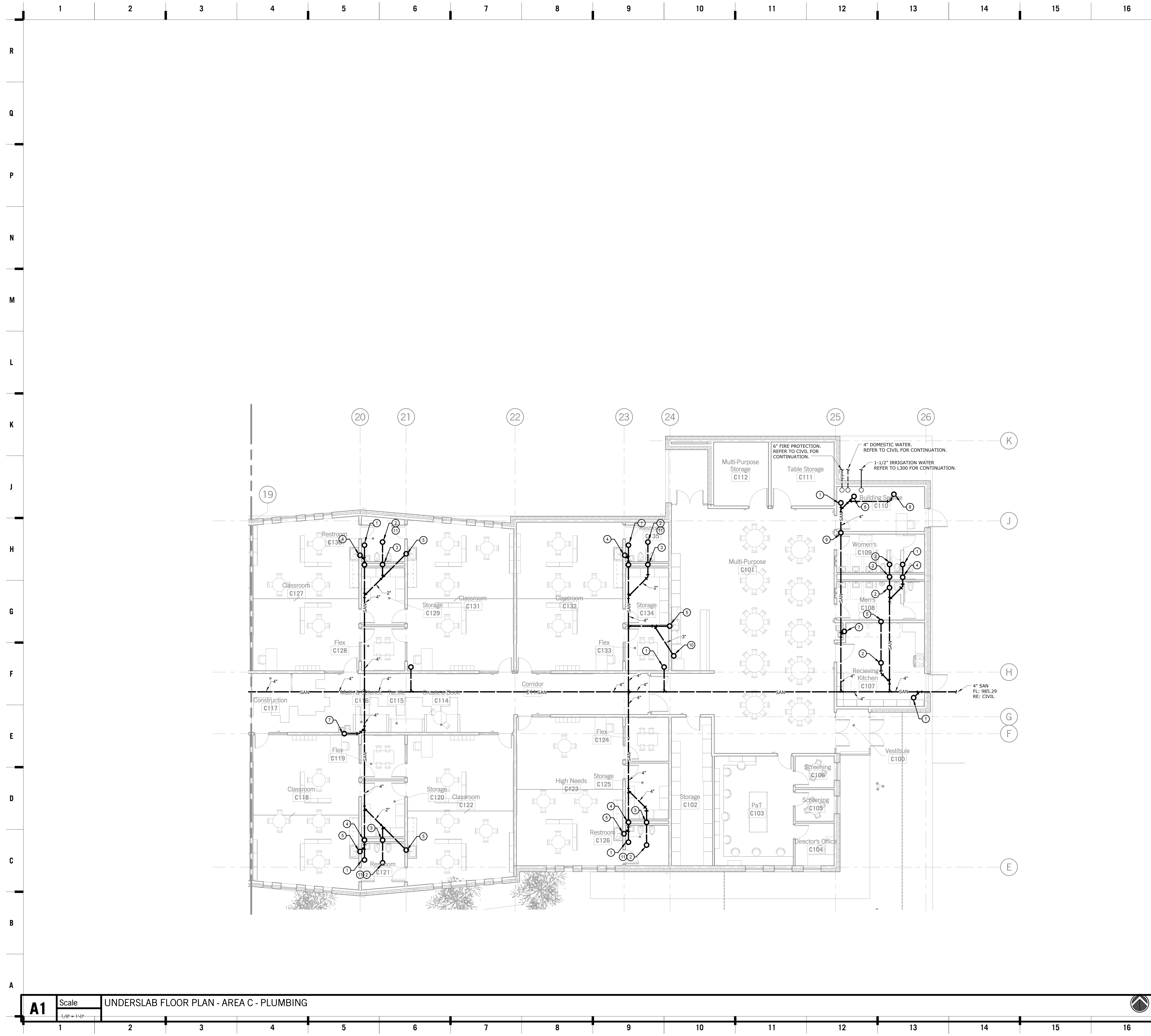
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- PLAN NOTES:
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 - ④ 4" SAN UP INTO PLUMBING CHASE.
 - ⑤ 2" SAN UP TO SINK.
 - ⑥ 3" SAN UP TO FLOOR CLEANOUT.
 - ⑦ 2" SAN UP TO DRINKING FOUNTAIN.
 - ⑧ 4" SAN UP TO FLOOR DRAIN.
 - ⑨ 2" VENT UP IN WALL.
 - ⑩ 3" SAN UP TO FLOOR DRAIN.
 - ⑪ PROVIDE FLOOR DRAIN AND ASSOCIATED PIPING PER ALTERNATE BID.

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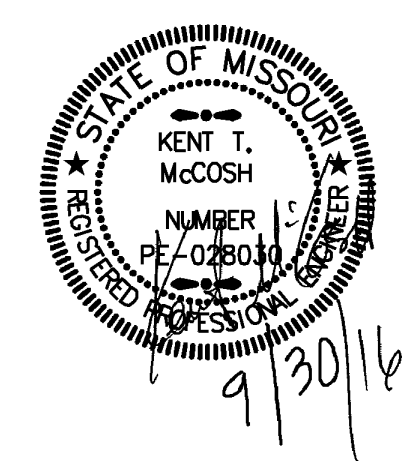
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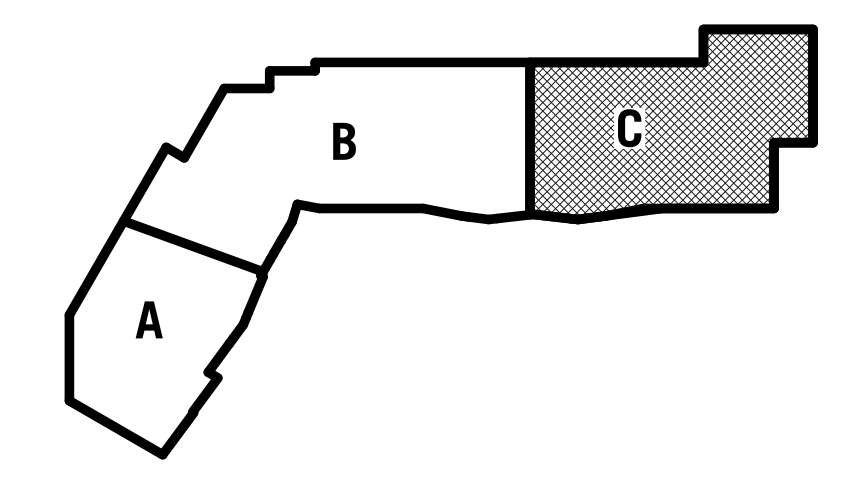
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- PLAN NOTES:**
- ① 1-1/2" CW DOWN TO PLUMBING CHASE.
 - ② 2" VENT DOWN TO PLUMBING CHASE.
 - ③ 1/2" HW DOWN TO LAVATORY.
 - ④ 1-1/4" CW DOWN TO PLUMBING CHASE.
 - ⑤ 1/2" HW DOWN TO PLUMBING CHASE.
 - ⑥ 3/4" HW DOWN IN PLUMBING CHASE.
 - ⑦ 2" (2 PSIG) GAS FROM ROOF.
 - ⑧ 3/4" CW UP TO ROOF HYDRANT.

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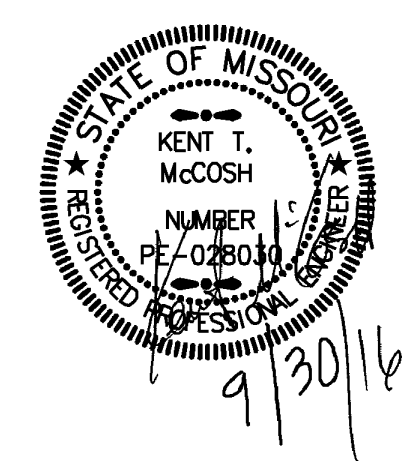
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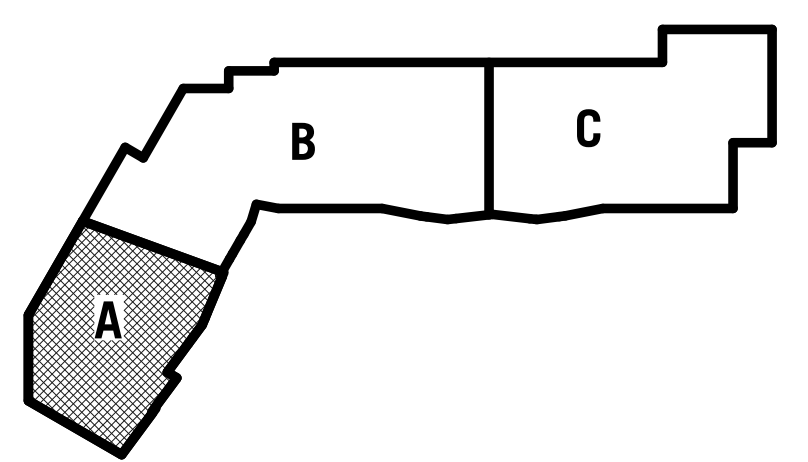
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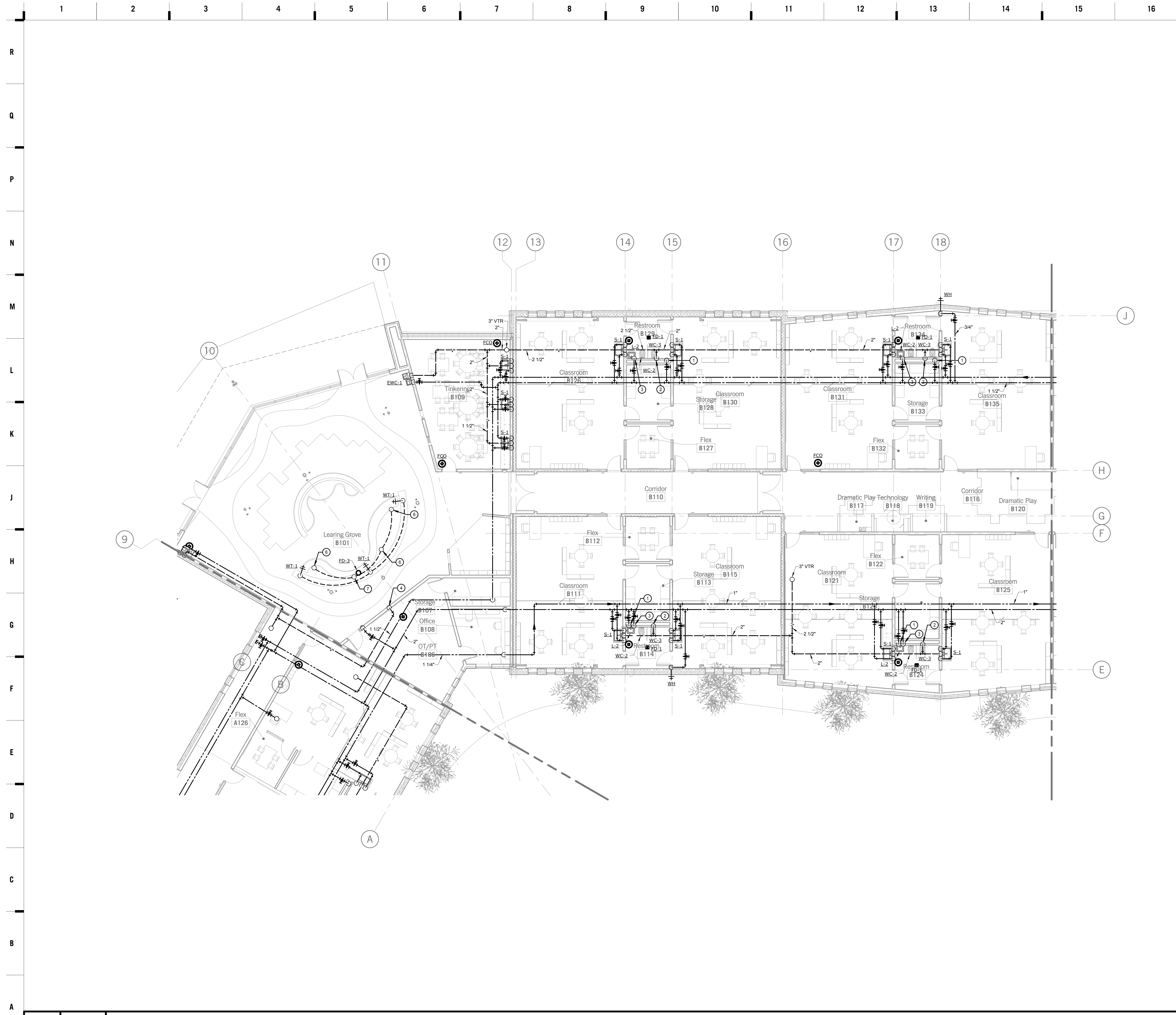
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 - ② 2" VENT DOWN TO PLUMBING CHASE.
 - ③ 1/2" HW DOWN TO LAVATORY.
 - ④ 1-1/2" VENT DOWN IN WALL.
 - ⑤ 3/4" CW DOWN IN WALL TO BELOW SLAB.
 - ⑥ PROVIDE 1-1/2" DRAINS AT WATER TABLE. CONNECT (3) DRAINS INTO COMMON 1-1/2" DRAIN AT TERMINATE INDIRECTLY OVER FD-3.
 - ⑦ 3/4" CW FROM BELOW SLAB. ROUTE BELOW WATER TABLE AND CONNECT TO EACH WT-1 WITH 1/2" CW.

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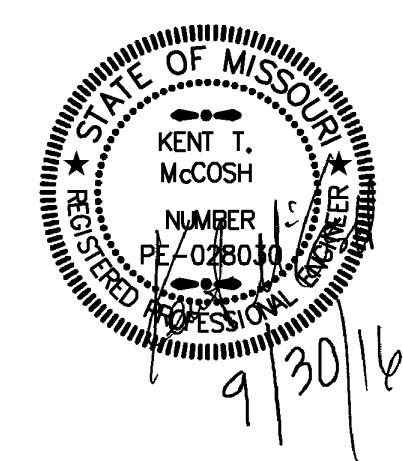
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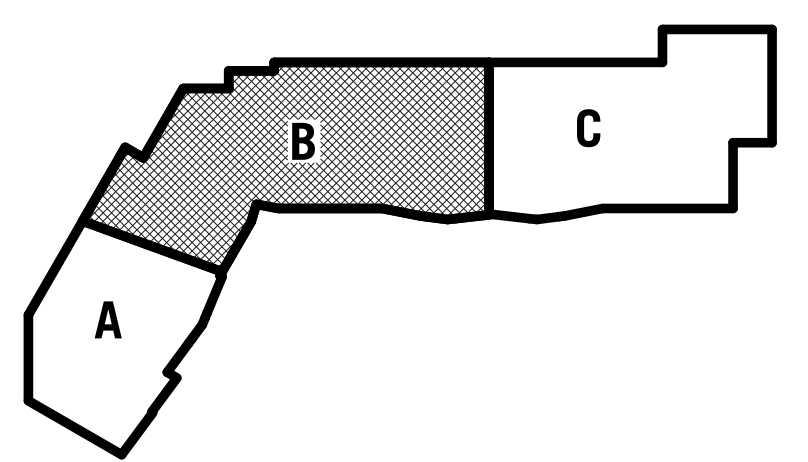
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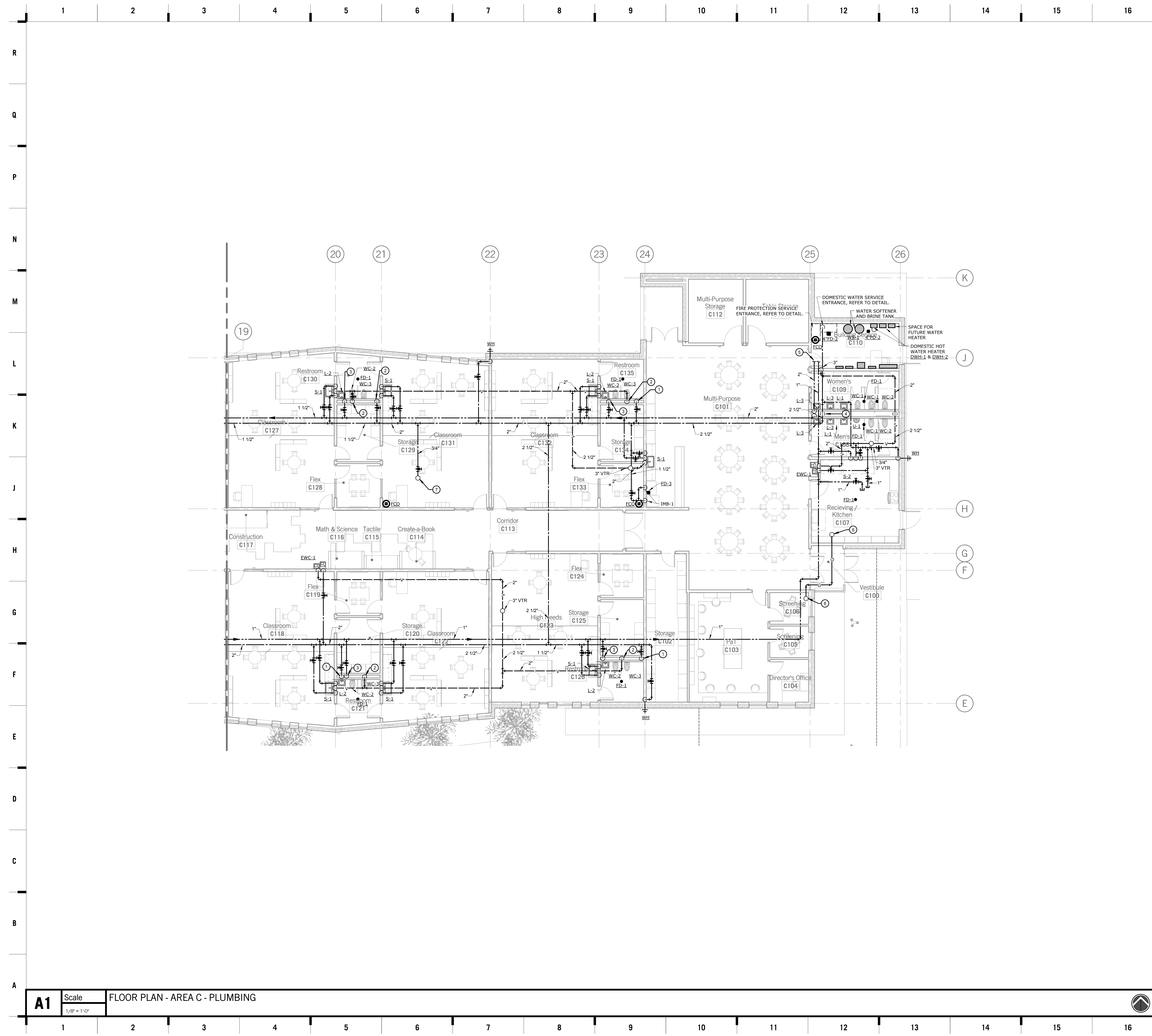
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P202B
 OF

A1 Scale FLOOR PLAN - AREA B - PLUMBING
 1/8" = 1'-0"



SHEET KEYNOTE LEGEND

- PLAN NOTES:**
- ① 1-1/2" CW DOWN TO PLUMBING CHASE.
 - ② 2" VENT DOWN TO PLUMBING CHASE.
 - ③ 1/2" HW DOWN TO LAVATORY.
 - ④ 2" CW, 2" HW, 2-1/2" VENT DOWN INTO CHASE. 2" HW UP FROM CHASE. PROVIDE WITH SHUT OFF VALVES ACCESSIBLE FROM CEILING.
 - ⑤ REFER TO WATER HEATER DETAIL.
 - ⑥ 1-1/4" GAS (2 PSIG) FROM ROOF.
 - ⑦ 3/4" CW UP TO ROOF HYDRANT.

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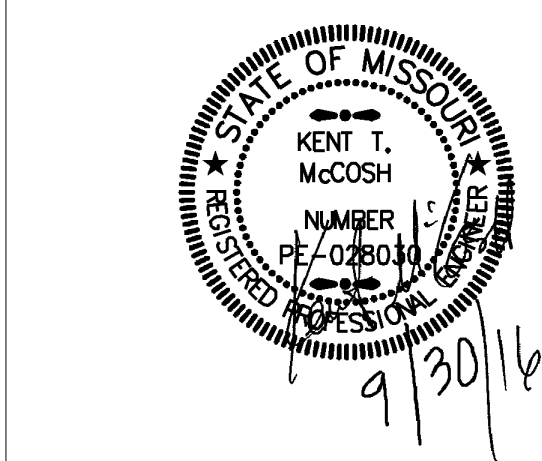
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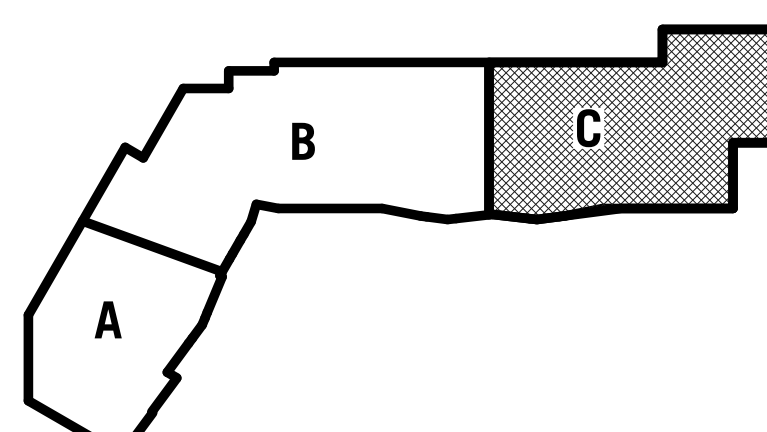
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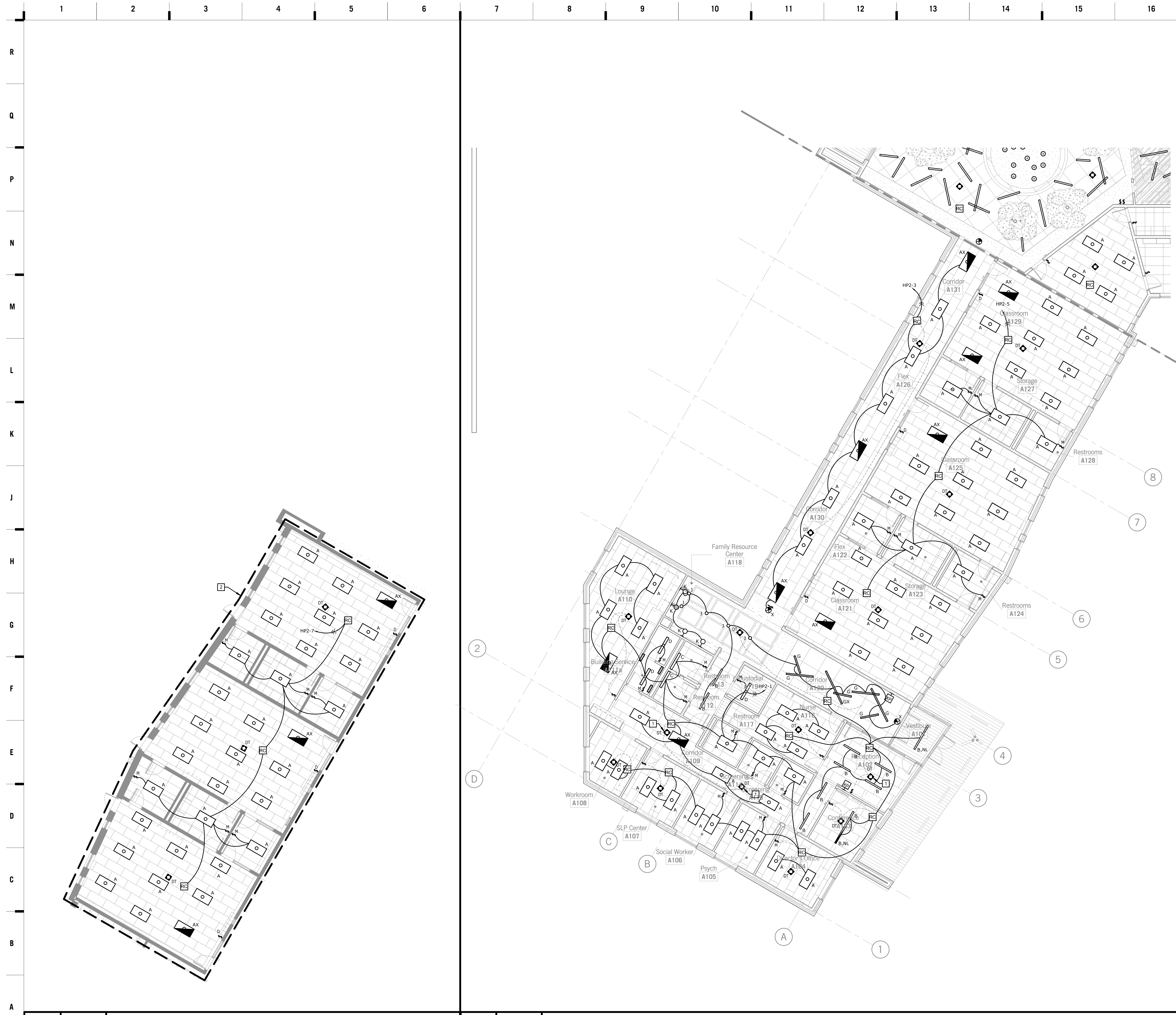
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KEY PLAN



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P203C
OF



SHEET KEYNOTE LEGEND

- GENERAL NOTES:**
1. CIRCUIT ALL EMERGENCY FIXTURES AND EXIT SIGNS WITH AN UNSWITCHED HOT CONDUCTOR FOR PROPER OPERATION.
 2. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL WALL MOUNTED AND PENDANT MOUNTED FIXTURES.
 3. CIRCUIT ALL EXTERIOR BUILDING MOUNTED LIGHTS WITH # 10 MINIMUM CONDUCTORS. PROVIDE SEALANT AS REQUIRED BETWEEN BACK BOX, MOUNTING PLATE, AND WALL SURFACE TO MAINTAIN A WEATHERPROOF INSTALLATION.
 4. REFER TO TYPICAL CLASSROOM LIGHTING DETAILS FOR CIRCUITING WITHIN CLASSROOMS.
- ELECTRICAL PLAN NOTES:**
- 1 IF EITHER OCCUPANCY SENSOR IN THIS AREA DETECTS MOTION, ALL LIGHTING IS TO COME ON.
 - 2 ALL WORK IN THIS AREA IS TO BE PART OF ALTERNATE 2.

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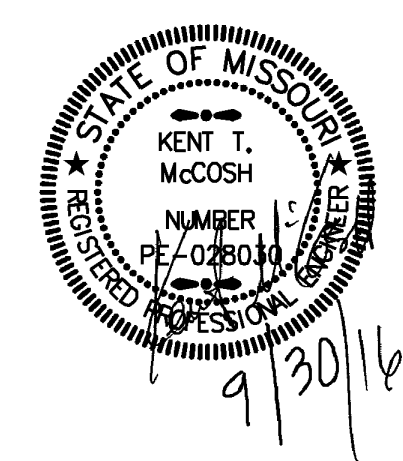
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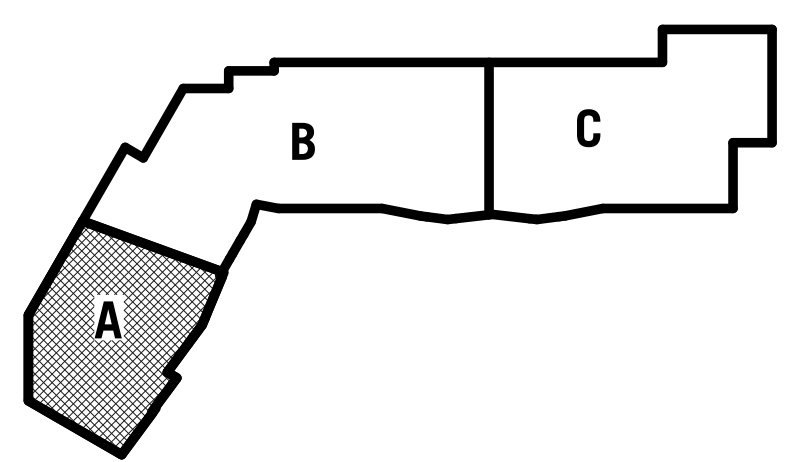
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KEY PLAN

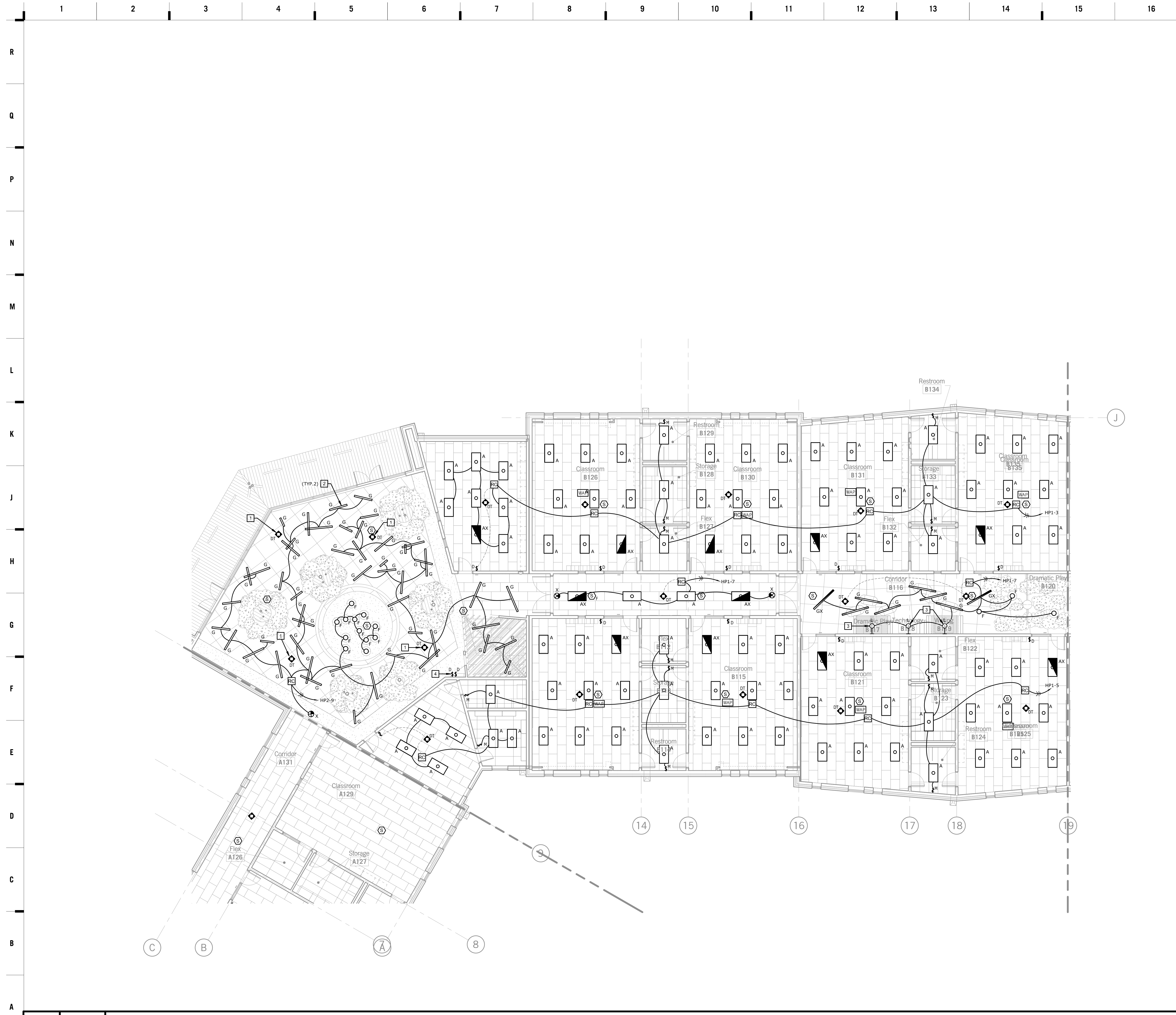


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E101A
OF

A1 Scale 1/8" = 1'-0" FLOOR PLAN - AREA A - ALTERNATE 2 - LIGHTING

A7 Scale 1/8" = 1'-0" FLOOR PLAN - AREA A - LIGHTING



SHEET KEYNOTE LEGEND

GENERAL NOTES:

1. REFER TO SHEET E101A FOR ADDITIONAL GENERAL NOTES.

ELECTRICAL PLAN NOTES:

- 1 IF EITHER OCCUPANCY SENSOR IN THIS AREA DETECTS MOTION, ALL LIGHTING IS TO COME ON.
- 2 COORDINATE MOUNTING OF PENDANT FIXTURES WITH ARCHITECTURAL ELEMENTS WITHIN LEARNING GROVE.
- 3 FINAL LOCATIONS OF WALL MOUNTED PENDANT FIXTURES AT LEARNING GARDEN HOUSES TO BE DETERMINED BY ARCHITECT. COORDINATE INSTALLATION WITH ARCHITECT.
- 4 DIMMING SWITCHES AND SCENE CONTROLLER FOR LEARNING GROVE TYPE F AND TYPE G FIXTURES TO BE DIMMED SEPARATELY. COORDINATE PROGRAMMING WITH OWNER.

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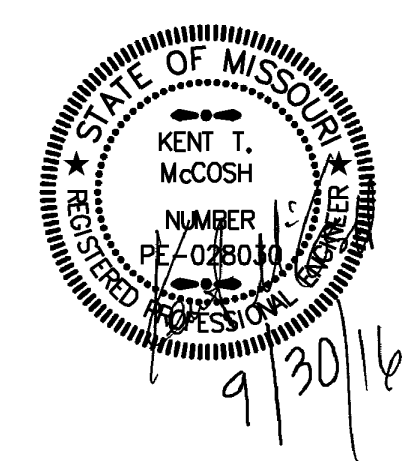
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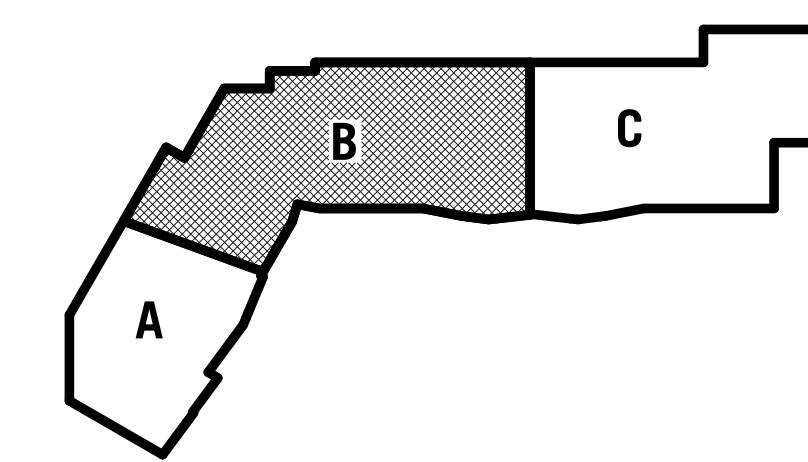
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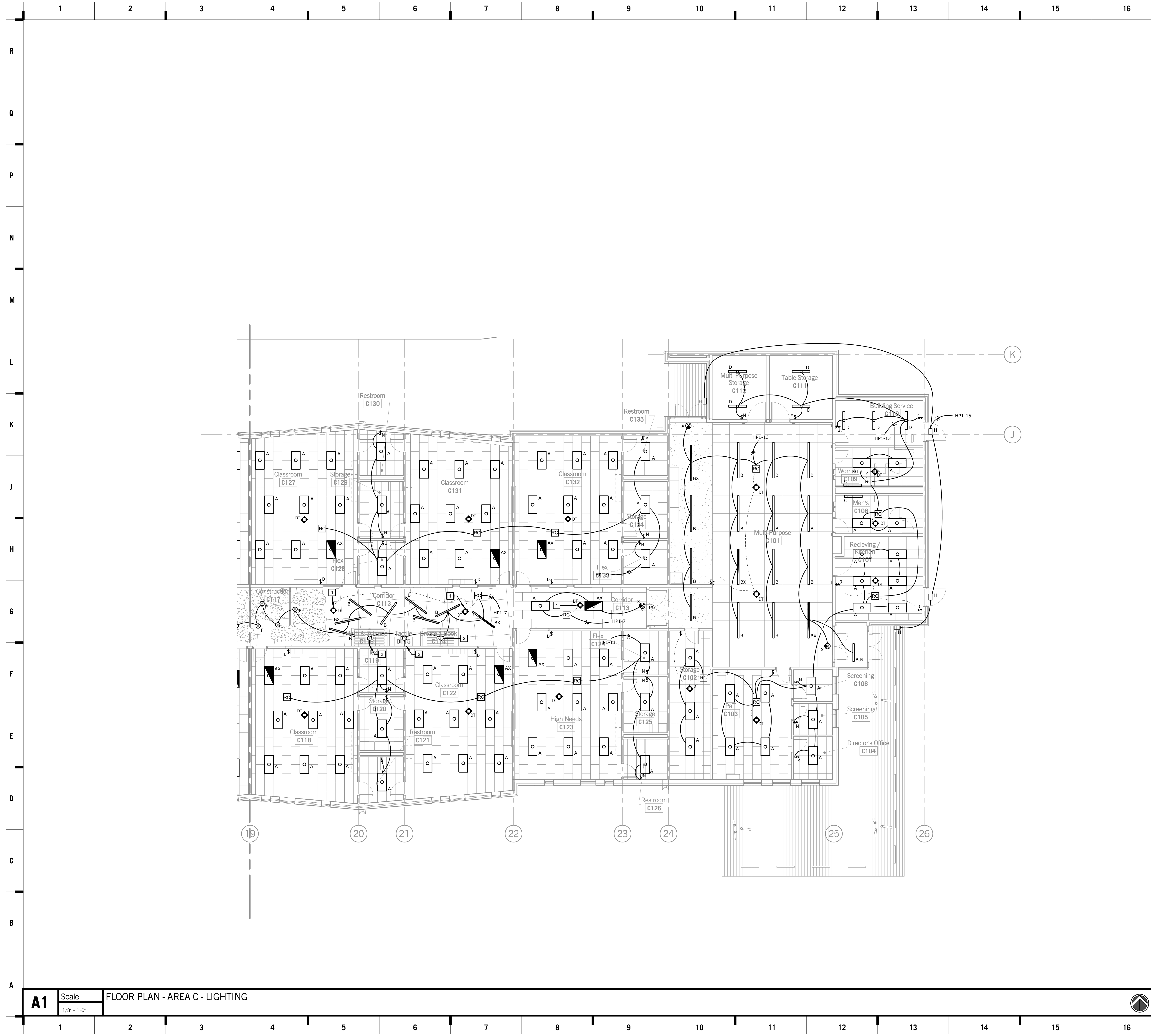
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E102B

OF



SHEET KEYNOTE LEGEND

- GENERAL NOTES:**
- REFER TO SHEET E101A FOR ADDITIONAL GENERAL NOTES.
- ELECTRICAL PLAN NOTES:**
- IF EITHER OCCUPANCY SENSOR IN THIS AREA DETECTS MOTION, ALL LIGHTING IS TO COME ON.
 - FINAL LOCATIONS OF WALL MOUNTED PENDANT FIXTURES AT LEARNING GARDEN HOUSES TO BE DETERMINED BY ARCHITECT. COORDINATE INSTALLATION WITH ARCHITECT.

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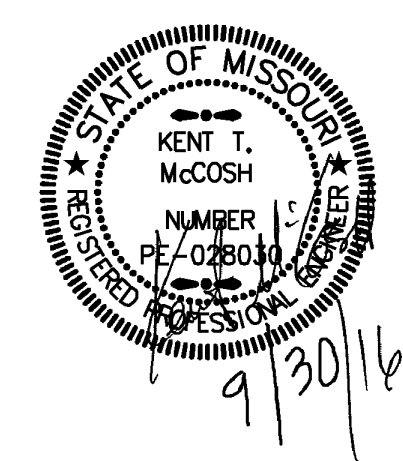
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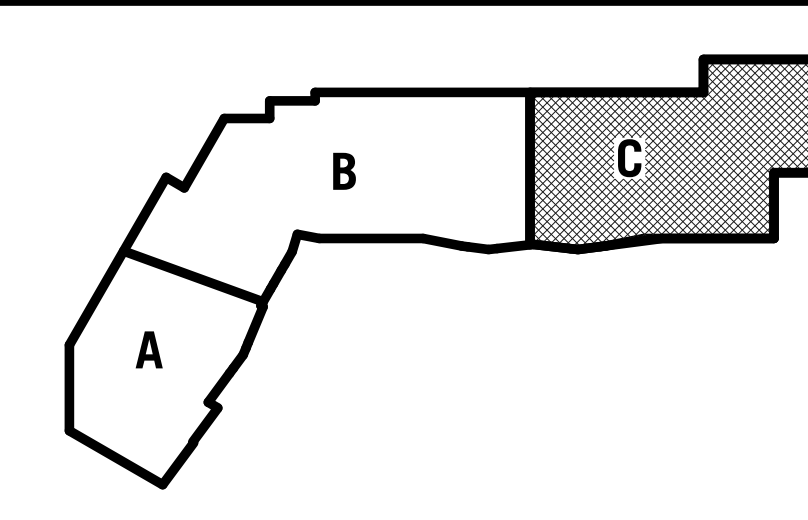
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KEY PLAN



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E103C
OF

A1 Scale FLOOR PLAN - AREA C - LIGHTING
1/8" = 1'-0"



SHEET KEYNOTE LEGEND

- GENERAL NOTES:**
- REFER TO MECHANICAL SCHEDULES ON ME SHEETS FOR CIRCUITING INFORMATION OF MECHANICAL EQUIPMENT.
 - ALL WALL MOUNTED ELECTRICAL DEVICES ARE TO BE INSTALLED IN AN ORDERLY FASHION. DEVICES IN CLOSE PROXIMITY AND AT DIFFERENT HEIGHTS ARE TO BE STACKED VERTICALLY. DEVICES AT THE SAME HEIGHT SHOULD BE INSTALLED GANGED TOGETHER OR AS CLOSE AS REASONABLY EXPECTED. DEVICE ROUGH IN IS TO BE APPROVED BY ARCHITECT/ENGINEER PRIOR TO DRYWALLING.
 - TELECOM BOVES ARE TO HAVE TWO DROPS UNLESS NOTED OTHERWISE. PROVIDE 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING.
 - PROVIDE SLEEVES AS REQUIRED THROUGH WALLS THAT EXTEND TO STRUCTURE FOR COMMUNICATION CABLING PATHWAYS. FIRE STOP SLEEVES AS REQUIRED WHEN INSTALLED IN RATED WALLS.
 - PROVIDE DEDICATED 120V CIRCUIT TO EACH BMS PANEL AS REQUIRED. CIRCUIT FROM SPARE 20A SINGLE POLE BREAKERS.
 - PROVIDE SINGLE DATA OUTLET IN BOX ABOVE ACCESSIBLE CEILING AT ALL WIRELESS ACCESS POINT LOCATIONS. MARK TILES TO INDICATE WHERE WARPS ARE INSTALLED. COORDINATE WITH OWNER.
 - ALL SPEAKERS DENOTED WITH AN 'F' ARE DUAL TAP SPEAKERS WITH FIRE ALARM INPUT ON PRIMARY TAP. RE: SPECIFICATIONS.

- ELECTRICAL PLAN NOTES:**
- POWER AND DATA FOR SMART BOARD. RE: ARCHITECTURAL DRAWINGS FOR EXACT ELEVATION AND MOUNTING LOCATIONS.
 - 4X12 CABLE TRAY. COORDINATE INSTALLATION WITH OTHER TRADES ABOVE CORRIDOR CEILING.
 - DEDICATED RECEPTACLE FOR DRINKING FOUNTAIN. COORDINATE ROUGH IN ELEVATION AND LOCATION TO BE CONCEALED WITHIN FIXTURE HOUSING.
 - PROVIDE FLOOR BOX WITH DUPLEX RECEPTACLE, (2) DATA OUTLETS, AND BLANK GANG WITH EMPTY 1-1/2" CONDUIT TO WALL BOX.
 - PROVIDE WIREMOLD EFSB4 WALL BOX FOR TV/MONITOR. PROVIDE WITH DUPLEX RECEPTACLE, (2) DATA OUTLETS, AND BLANK GANG WITH EMPTY 1-1/2" CONDUIT TO ABOVE ACCESSIBLE CEILING. PROVIDE WITH BUSHINGS ON CONDUIT ENDS.
 - DEDICATED RECEPTACLE FOR REFRIGERATOR.
 - DEDICATED RECEPTACLE FOR VENDING MACHINE.
 - DEDICATED RECEPTACLE FOR DISHWASHER.
 - DEDICATED RECEPTACLE FOR UNDER-COUNTER REFRIGERATOR.
 - NEMA 14-30R FOR CLOTHES DRYER. CIRCUIT WITH (3)#10, #10G, 3/4" C.
 - DEDICATED CIRCUIT FOR WASHING MACHINE. COORDINATE EXACT ELEVATION AND MOUNTING LOCATION WITH APPLIANCE.
 - PROVIDE 8'X8' PLYWOOD BACKBOARD FOR MDF. PAINT WITH 2 COATS WHITE FIRE RETARDANT PAINT.
 - PROVIDE WIREMOLD EFSB4 WALL BOX FOR TV/MONITOR. PROVIDE WITH DUPLEX RECEPTACLE, (2) DATA OUTLETS, AND BLANK GANG WITH EMPTY 1-1/2" CONDUIT TO ABOVE ACCESSIBLE CEILING. PROVIDE WITH BUSHINGS ON CONDUIT ENDS.
 - ADA DOOR OPERATOR. PROVIDE JUNCTION BOXES AS INDICATED FOR PUSH BUTTONS. PROVIDE POWER AS REQUIRED FOR DOOR SYSTEM. COORDINATE LOCATIONS AND MOUNTING WITH ARCHITECT.
 - KEYPAD TO TEMPORARY DISARM EXTERIOR DOOR. COORDINATE WITH DOOR HARDWARE PROVIDER. PROVIDE ALL CONNECTIONS AS REQUIRED.
 - PUSH BUTTON FOR DOOR ENTRY REQUEST. COORDINATE MOUNTING WITH ARCHITECT. COORDINATE REQUIREMENTS WITH DOOR HARDWARE PROVIDER.
 - JUNCTION BOX FOR EXTERIOR DOOR RELEASE. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE PROVIDER.
 - PROVIDE POWER CONNECTION FOR SECURED DOOR SYSTEM AS REQUIRED. COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE PROVIDER.
 - PROVIDE NEMA 14-30R RECEPTACLE FOR UPS. CIRCUIT WITH (3)#10, #10G, 1/2" C.
 - ALL WORK IN THIS AREA TO BE PART OF ALTERNATE 2.

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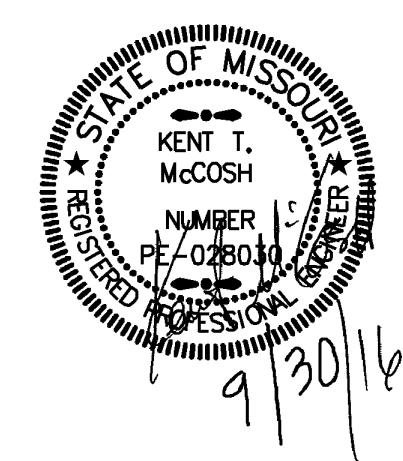
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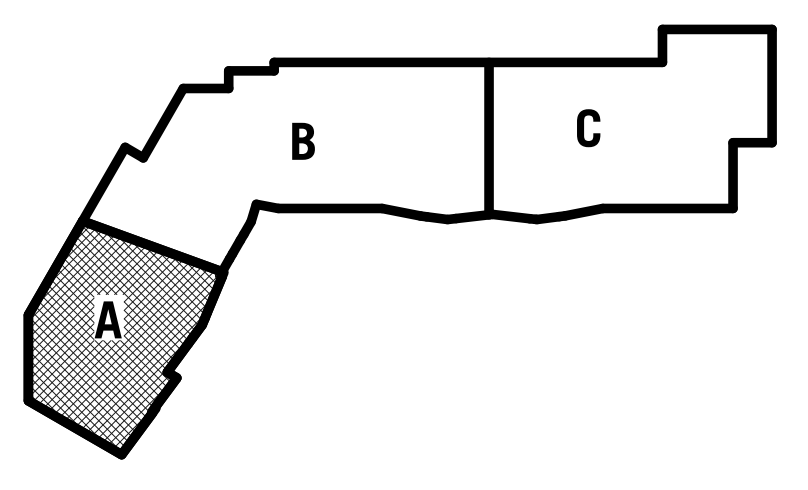
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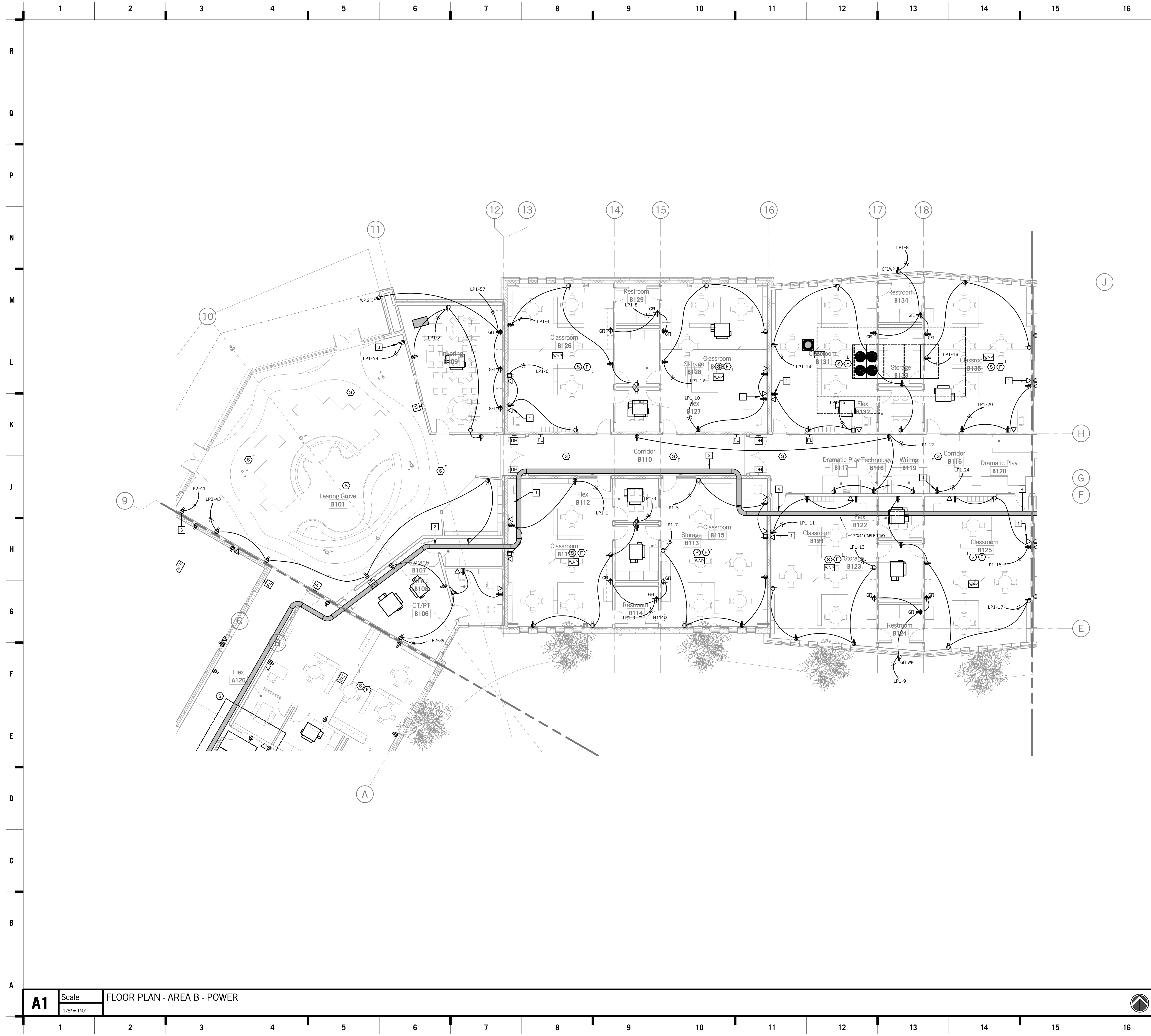
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E201A
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SHEET KEYNOTE LEGEND

GENERAL NOTES:

1. REFER TO SHEET E201A FOR ADDITIONAL GENERAL NOTES.

ELECTRICAL PLAN NOTES:

- 1 POWER AND DATA FOR SMART BOARD, RE: ARCHITECTURAL DRAWINGS FOR EXACT ELEVATION AND MOUNTING LOCATIONS.
- 2 4X12 CABLE TRAY. COORDINATE INSTALLATION WITH OTHER TRADES ABOVE CORRIDOR CEILING.
- 3 DEDICATED RECEPTACLE FOR DRINKING FOUNTAIN. COORDINATE ROUGH-IN ELEVATION AND LOCATION TO BE CONCEALED WITHIN FIXTURE HOUSING.
- 4 DEDUCT ALTERNATE A: REROUTE CABLE TRAY TO BE ABOVE PLAY AREA CEILINGS.

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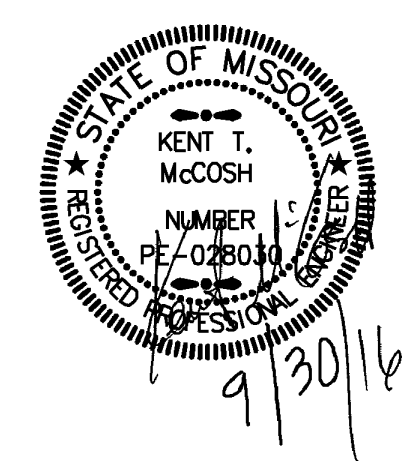
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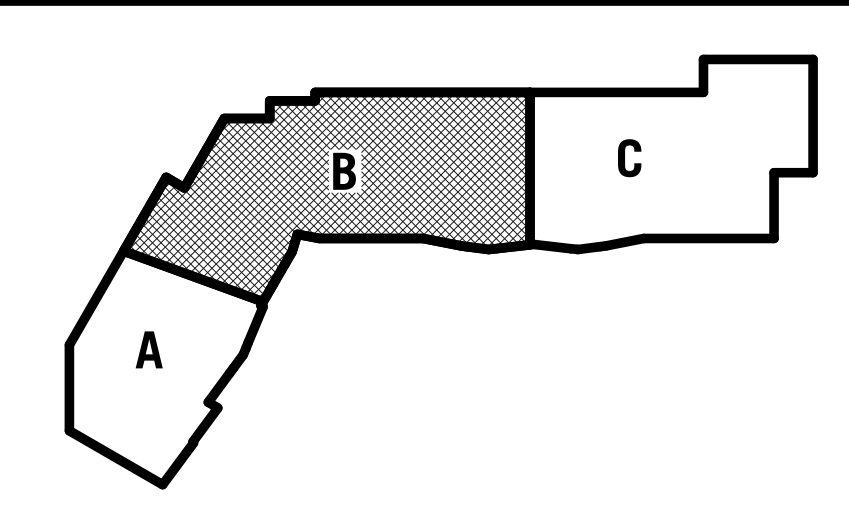
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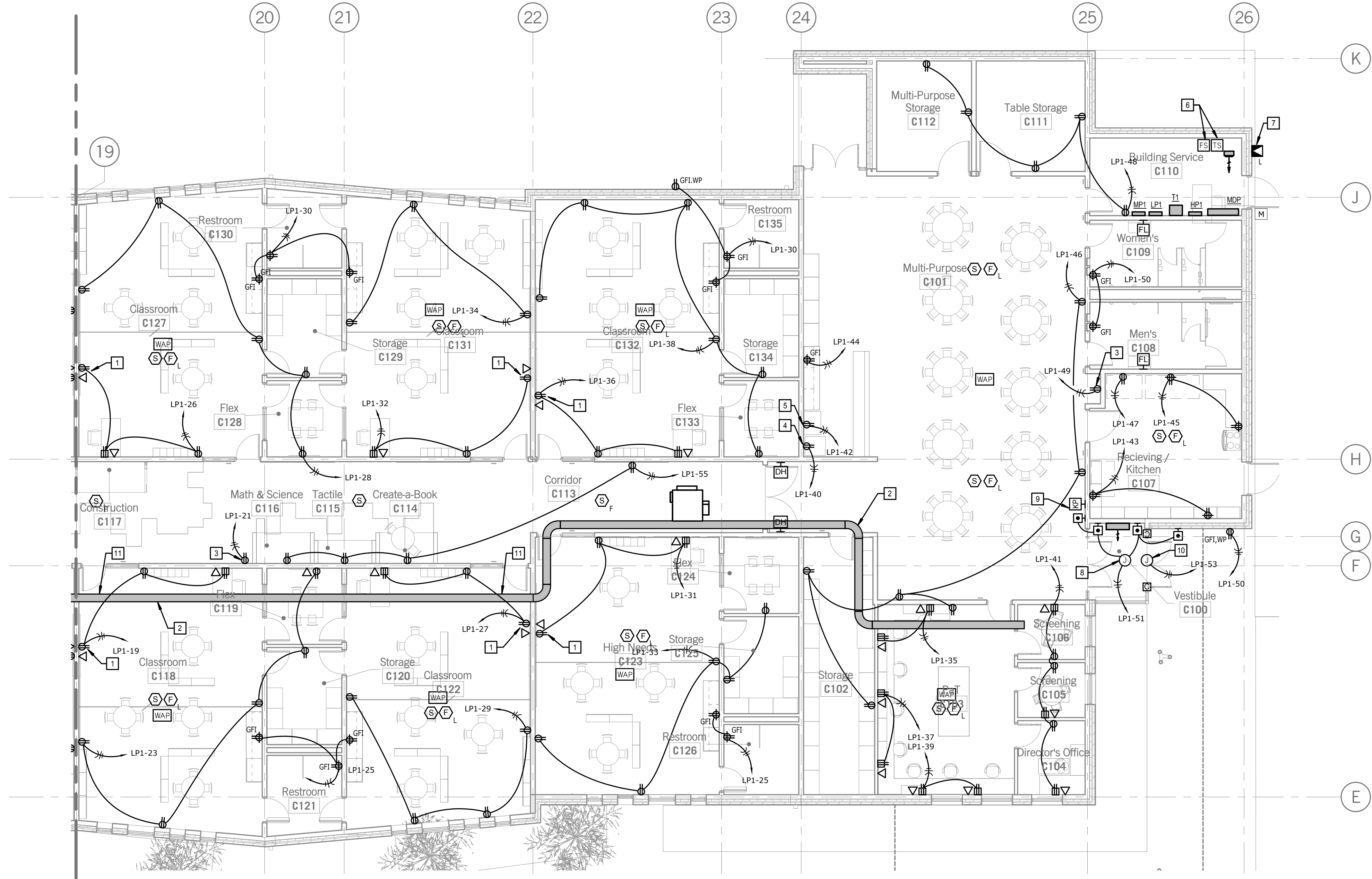
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OF



SHEET KEYNOTE LEGEND

- GENERAL NOTES:**
1. REFER TO SHEET E201A FOR ADDITIONAL GENERAL NOTES.
- ELECTRICAL PLAN NOTES:**
- 1 POWER AND DATA FOR SMART BOARD, RE: ARCHITECTURAL DRAWINGS FOR EXACT ELEVATION AND MOUNTING LOCATIONS.
 - 2 4X12 CABLE TRAY, COORDINATE INSTALLATION WITH OTHER TRADES ABOVE CORRIDOR CEILING.
 - 3 DEDICATED RECEPTACLE FOR DRINKING FOUNTAIN, COORDINATE ROUGH IN ELEVATION AND LOCATION TO BE CONCEALED WITHIN FIXTURE HOUSING.
 - 4 DEDICATED RECEPTACLE FOR REFRIGERATOR.
 - 5 DEDICATED RECEPTACLE FOR ICE MAKER.
 - 6 FURNISH AND INSTALL FLOW AND TAMPER SWITCHES FOR FIRE SPRINKLER ENTRANCE, COORDINATE LOCATION WITH FIRE PROTECTION CONTRACTOR, CONNECT TO FIRE ALARM SYSTEM AS REQUIRED.
 - 7 INSTALL WEATHERPROOF FIRE ALARM HORN STROBE ABOVE FIRE DEPARTMENT CONNECTION.
 - 8 ADA DOOR OPERATOR, PROVIDE JUNCTION BOXES AS INDICATED FOR PUSH BUTTONS, PROVIDE POWER AS REQUIRED FOR DOOR SYSTEM, COORDINATE LOCATIONS AND MOUNTING WITH ARCHITECT.
 - 9 KEYPAD TO TEMPORARY DISARM EXTERIOR DOOR, COORDINATE WITH DOOR HARDWARE PROVIDER, PROVIDE ALL CONNECTIONS AS REQUIRED.
 - 10 PROVIDE POWER CONNECTION FOR SECURED DOOR SYSTEM AS REQUIRED, COORDINATE EXACT REQUIREMENTS WITH DOOR HARDWARE PROVIDER.
 - 11 DEDUCT ALTERNATE A: REROUTE CABLE TRAY TO BE ABOVE PLAY AREA CEILING.

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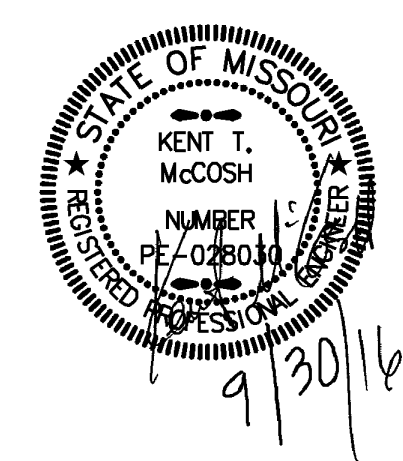
Anderson Engineering
Geotechnical Engineers
CO# 00062
2045 W. Woodland
Springfield, MO, 65807
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Joplin Early Childhood Center
Joplin Schools

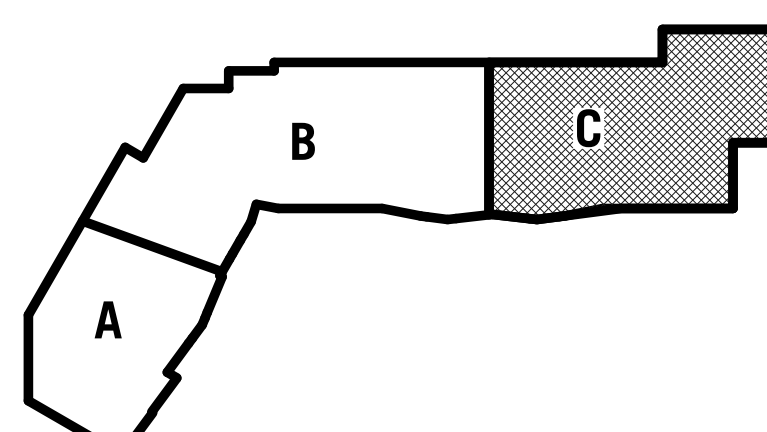
REVISIONS:

#	Description	Date

smith&boucher
ENGINEERS
25501 west valley parkway, suite 200 olathe, ks 66061
phone 913.345.2127 fax 913.345.0617
project number 1617200



KEY PLAN



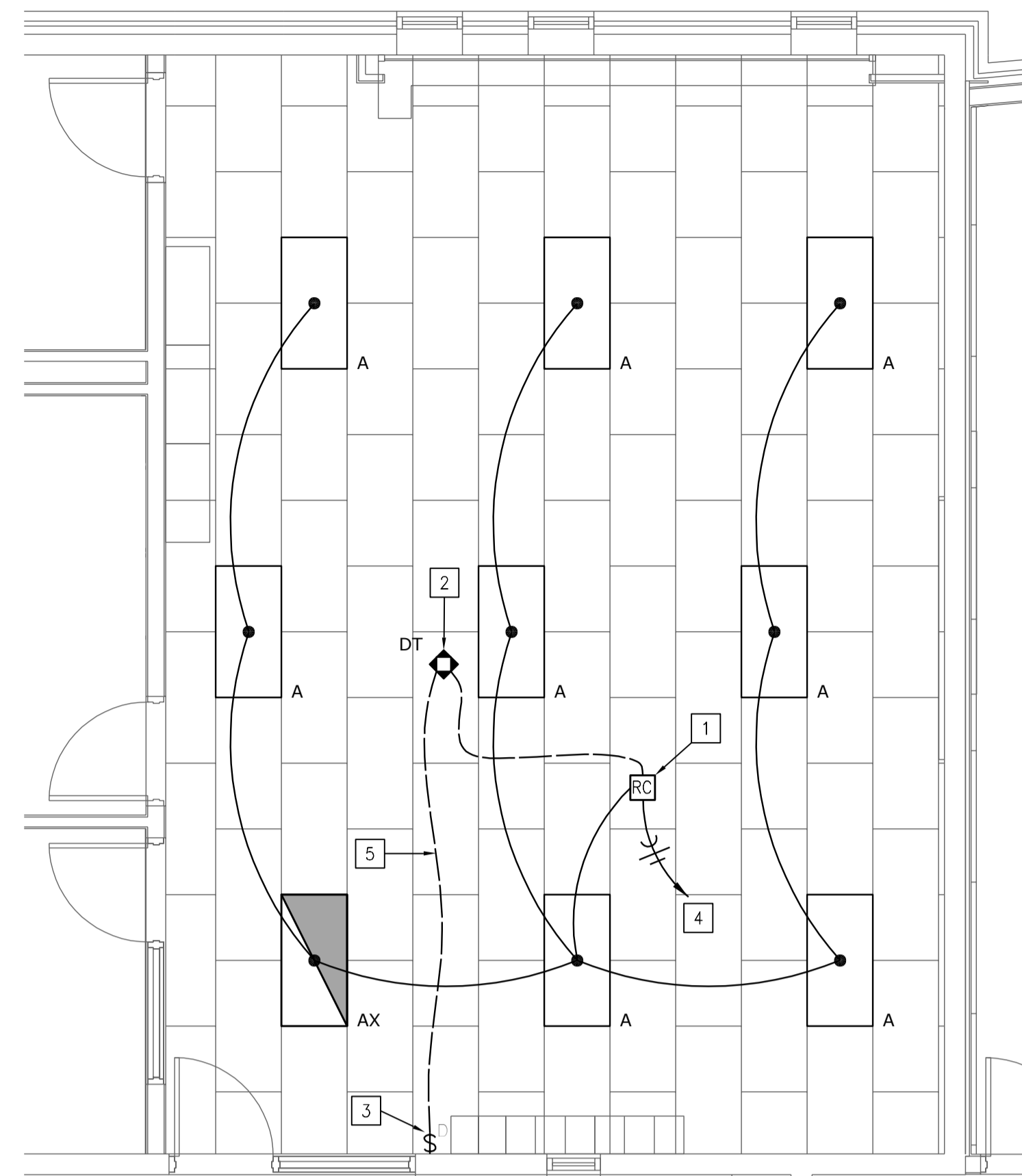
JOB NO: 16054
DRAWN BY: S&B
CHECKED BY: KTM
DATE: 09.30.2016

E203C

hollis + miller architects
relationships & results

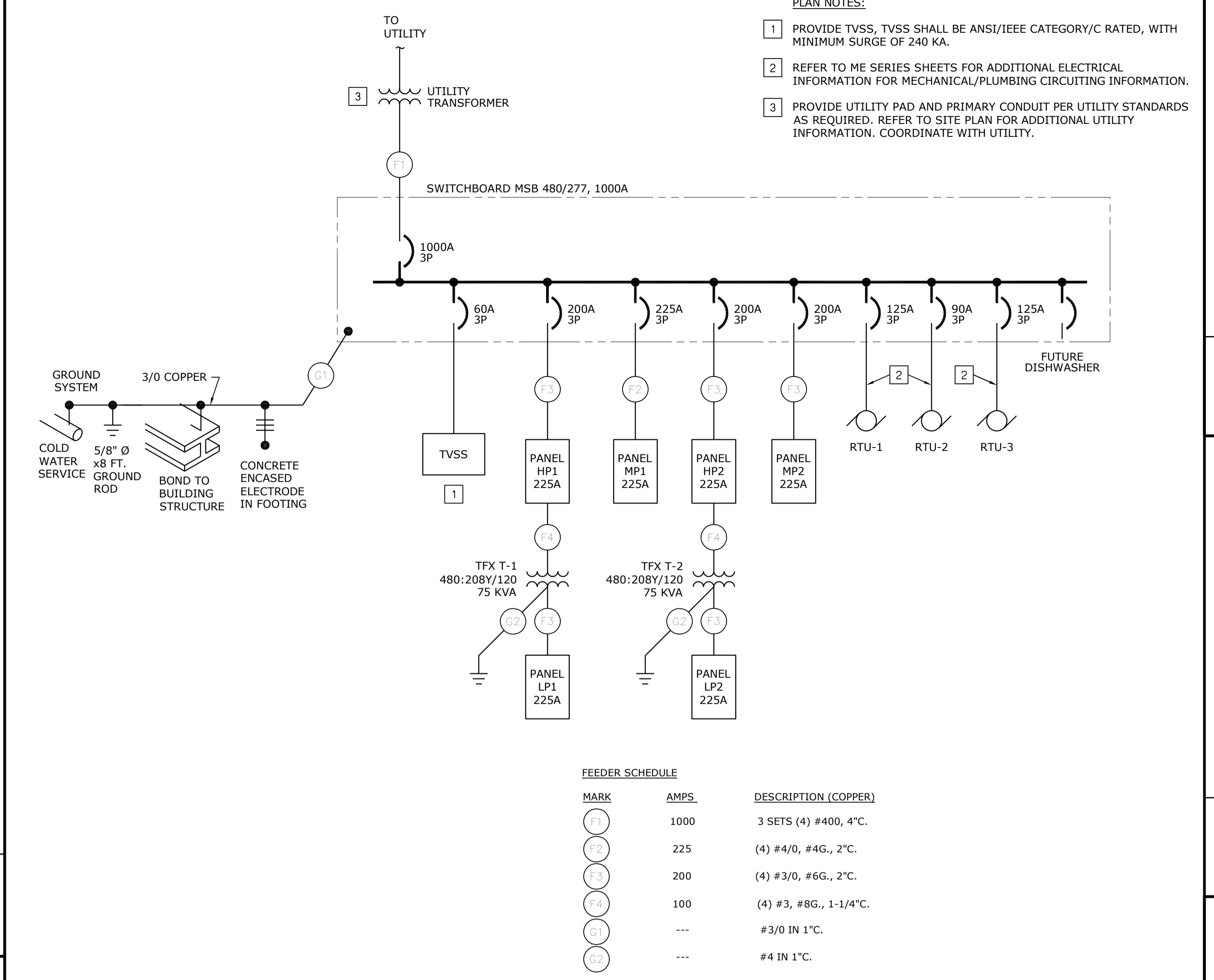
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TYPICAL CLASSROOM - LIGHTING CONTROL
SCALE : 1/4" = 1'-0"

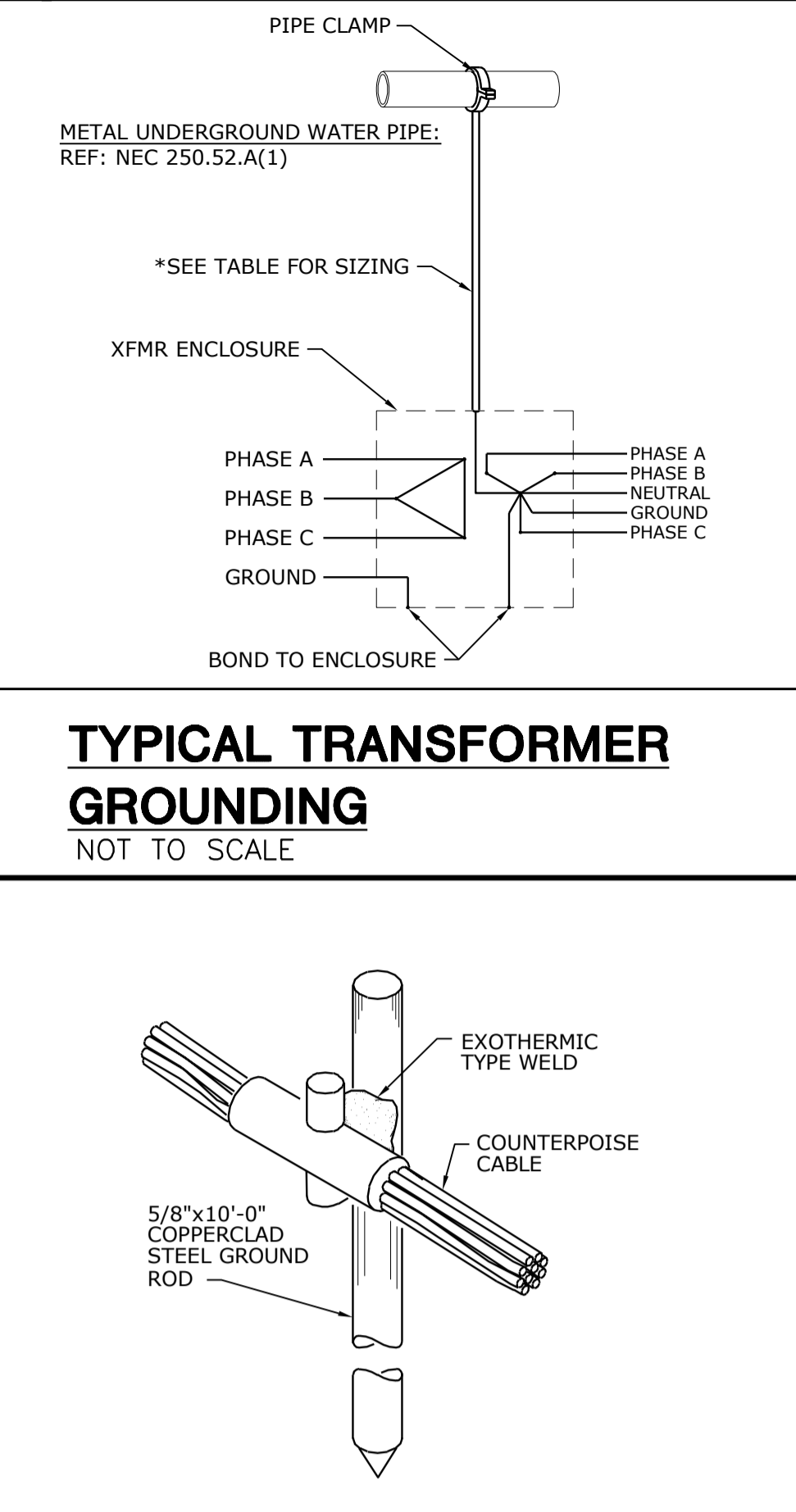
- GENERAL NOTES:**
- REFER TO LIGHTING CONTROL DETAIL FOR CONNECTION INFORMATION FOR LIGHTING CONTROL DEVICES.
 - PROVIDE ALL EQUIPMENT NEEDED FOR A COMPLETE WORKING DAY LIGHT HARVESTING CONTROLS SYSTEM.
- PLAN NOTES:**
- ROOM CONTROLLER, 0-10V DIMMING, WATTSTOPPER MODEL LMRC-212 OR APPROVED EQUAL. PROVIDE CONTROL OF FIXTURES AS SHOWN. MOUNT ABOVE ACCESSIBLE CEILING AS REQUIRED.
 - CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR (VACANCY SENSOR), WATTSTOPPER MODEL LMDC-100 OR APPROVED EQUAL. PROVIDE AUTOMATIC OFF ONLY, OCCUPANT MUST MANUALLY TURN FIXTURES ON VIA SWITCH AS SHOWN.
 - 1-BUTTON DIMMING WALL SWITCH, WATTSTOPPER MODEL LMDM-101 OR APPROVED EQUAL.
 - 277V CIRCUIT AS INDICATED ON DRAWINGS.
 - CAT 5 CABLE TYPICAL ALL DASHED LINES THIS PLAN. REFER TO MANUFACTURERS CONNECTION DIAGRAMS FOR ALL CONNECTIONS REQUIRED.



FEEDER SCHEDULE

MARK	AMPS	DESCRIPTION (COPPER)
①	1000	3 SETS (4) #400, 4"C.
②	225	(4) #4/0, #4G., 2"C.
③	200	(4) #3/0, #6G., 2"C.
④	100	(4) #3, #8G., 1-1/4"C.
⑤	---	#3/0 IN 1"C.
⑥	---	#4 IN 1"C.

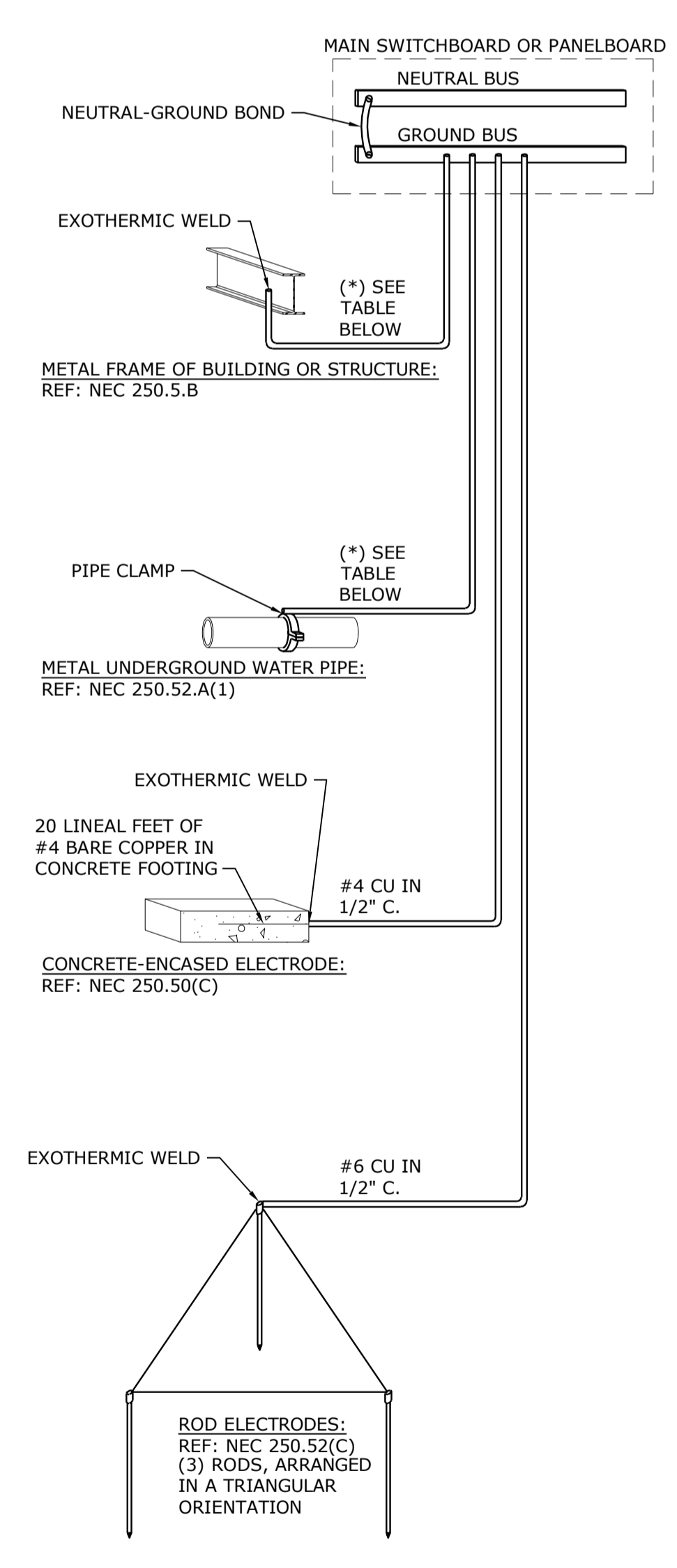
ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE



TYPICAL TRANSFORMER GROUNDING
NOT TO SCALE



TYPICAL GROUND ROD CONNECTION
NOT TO SCALE



TELECOMMUNICATIONS MAIN GROUNDING BUS BAR DETAIL
NOT TO SCALE

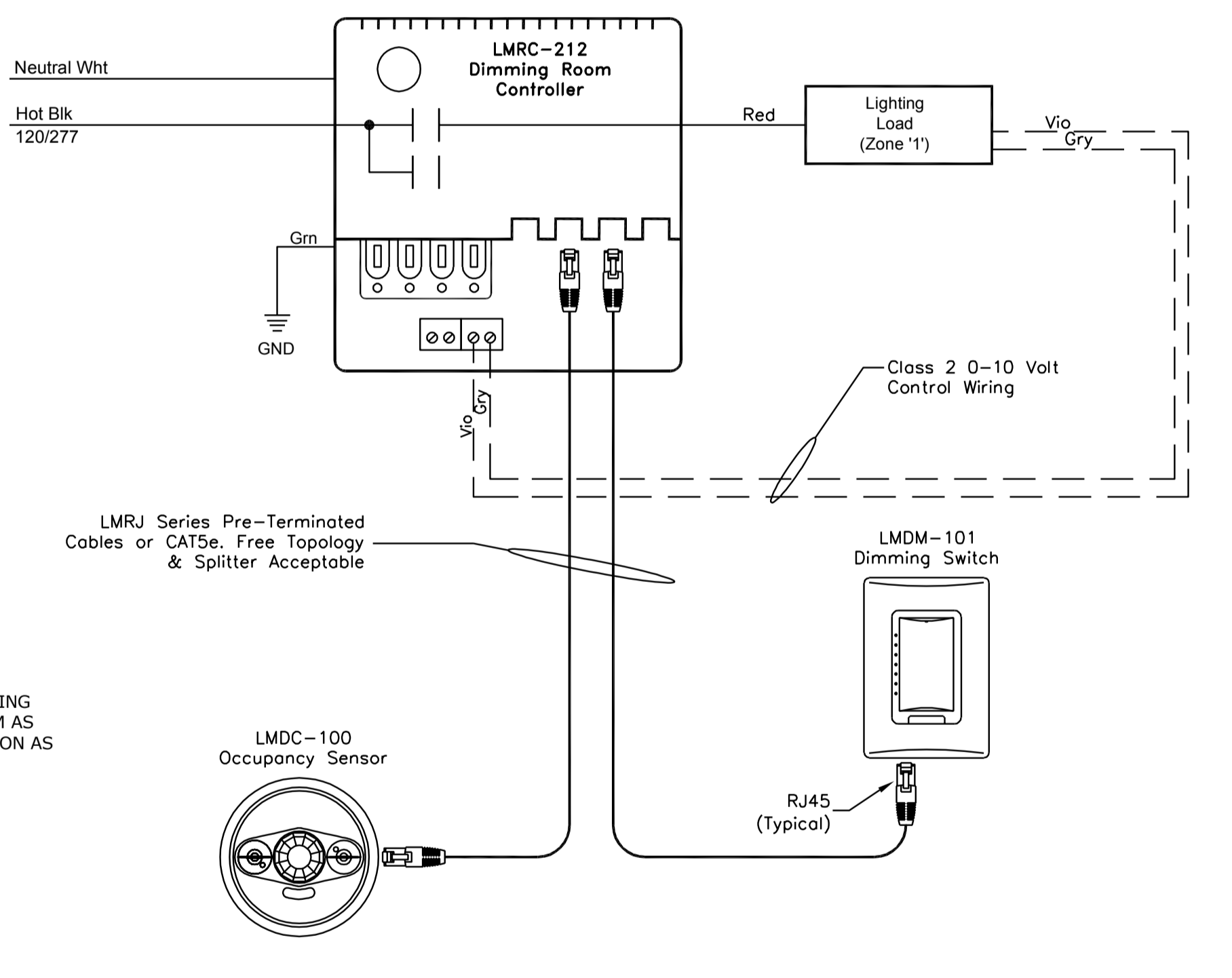
LINE VOLTAGE OCCUPANCY SENSOR WIRING DIAGRAM
NOT TO SCALE

SEQUENCE OF OPERATION

- LIGHT FIXTURES ARE MANUAL ON/OFF WITH OCCUPANCY SENSOR TO TURN OFF LIGHTS AFTER AN ADJUSTABLE VACANCY TIME PERIOD.
- CONTROL LOCATION AT ENTRY ALLOWS ON/OFF AND DIMMING CONTROL OF LIGHTING.

GENERAL NOTES:

- BASIS OF DESIGN IS WATTSTOPPER DIGITAL LIGHTING MANAGEMENT SERIES. PROVIDE COMPLETE SYSTEM AS REQUIRED TO MEET LIGHTING CONTROL DESCRIPTION AS INDICATED FOR BASIS OF DESIGN OR ALTERNATE MANUFACTURER.



TYPICAL CLASSROOM - LIGHTING CONTROL EQUIPMENT LEGEND
NOT TO SCALE

SYMBOL	FUNCTION	MOUNTING	SETTING(TYPICAL)	WATT STOPPER MODEL #	NOTES
DT	MOTION SENSOR	CEILING	ON: AUTOMATIC OFF: 30 MINUTE DELAY	WATTSTOPPER LMDC-100	NOTE 1
\$ _M	MOTION SENSOR	WALL SWITCH	ON: MANUAL OFF: 15 MINUTE DELAY	WATTSTOPPER PW-100	NOTE 3
\$	OVERRIDE SWITCH	WALL SWITCH	----	RE: SPECS	NOTE 2
RC	ROOM CONTROLLER	----	----	WATTSTOPPER LMRC	NOTE 4

GENERAL NOTES: THE MANUFACTURERS AND MODELS LISTED ARE THE BASIS OF DESIGN, ALL PRODUCT SUBSTITUTIONS SUBMITTED MUST BE APPROVED AS EQUAL. REFER TO DRAWINGS FOR QUANTITIES.

NOTE 1: PROVIDE "B" SERIES POWER PACKS AS REQUIRED IN EACH SPACE. PROVIDE 8'-0" OF EXCESS CONTROL WIRING, COILED AND TIED, BETWEEN CEILING MOUNTED OCCUPANCY SENSORS AND CORRESPONDING POWER PACKS AT EACH SENSOR LOCATION.

NOTE 2: LINE VOLTAGE LOCAL OVERRIDE SWITCH FOR MOTION SENSORS, REFER TO OCCUPANCY SENSOR WIRING DIAGRAM FOR CIRCUITING/LOCATION OF SWITCH. OVERRIDE SWITCH TO TURN OFF LIGHTS ONLY, NOT OCCUPANCY SENSOR.

NOTE 3: PASSIVE INFRARED-SINGLE RELAY WALL MOUNT-LINE VOLTAGE.

NOTE 4: LOCATE DEVICE ABOVE ACCESSIBLE CEILING, LOCATIONS SHOWN ON DRAWINGS ARE SCHEMATIC.

TYPE	DESCRIPTION	MOUNTING	LAMP	VOLTS	MANUFACTURER	V-A
A	2 1/2" ARCHITECTURAL RECESSED LED TROFFER. STEEL HOUSING, OPTICAL ACRYLIC LENS, INTEGRAL DRIVER. (X) PROVIDE WITH 90 MINUTE EM DRIVER, 1400 LUMENS.	RECESSED	LED 3500K	277	CREE ZR SERIES WILLIAMS LT SERIES OR APPROVED EQUAL	44
B	4" LINEAR LED PENDANT. EXTRUDED ALUMINUM HOUSING, FLUSH FROSTED ACRYLIC LENS, INTEGRAL DRIVER.	PENDANT AIRCRAFT CABLE	LED 3500K	277	FOCAL POINT SEEM4 FINELITE HP4 SERIES OR APPROVED EQUAL	11 PER FT
C	4" LINEAR LED WALL MOUNT. EXTRUDED ALUMINUM HOUSING, SQUARE ACRYLIC LENS, INTEGRAL DRIVER.	SURFACE	LED 3500K	277	BARTCO BSS210 OR APPROVED EQUAL	32
D	4" LENSED LED STRIP LIGHT. STEEL HOUSING, SEMI-FROST ACRYLIC LENS.	SURFACE	LED 3500K 3000 LUMENS	277	COOPER METALUX 4SNLED PHILIPS LF SERIES	25
F	4" DIAMETER GLASS GLOBE PENDANT. PROVIDE CABLE LENGTH AS REQUIRED TO MOUNT AT ELEVATION INDICATED BY ARCHITECT.	PENDANT AIRCRAFT CABLE	GY6.35 BASE XENON	120	LBL LIGHTING BULLE OR APPROVED EQUAL	35
G	1" WIDTH LINEAR LED. SUSPENSION MOUNT. ALUMINUM HOUSING, ACRYLIC LENS, REMOTE DRIVER. REFER TO ARCHITECTURAL DRAWINGS FOR INDIVIDUAL LENGTHS	PENDANT	LED 3500K 235 LUM/FT	277	EDGE LIGHTING CIRUSS CHANNEL OR APPROVED EQUAL	5 PER FT
H	EXTERIOR LED WALL PACK, ALUMINUM HOUSING. TAMPER RESISTANT, TYPE 4 DISTRIBUTION, EMERGENCY COLD WEATHER POWER PACK, COLOR BY ARCHITECT.	WALL	LED 4000K 3000 LUMENS	277	MCGRAW-EDISON IST SERIES GARDCO WRM SERIES OR APPROVED EQUAL	54
J	3.5" APERTURE RECESSED DOWNLIGHT. ALUMINUM HOUSING, BOROSILICATE GLASS LENS, ALUMINUM HEAT SINK, INTEGRAL DRIVER.	RECESSED	LED 3500K 1445 LUMENS	277	WAC LIGHTING TESLA SERIES FOCAL POINT ID 3.5 SERIES OR APPROVED EQUAL	22
K	LED WALL SCONCE. FROSTED ACRYLIC SHADE, 2-1/2" DIAMETER, ALUMINUM BRACKET, INTEGRAL DRIVER.	WALL	LED 3000K 200 LUMENS	120	SONNEMAN 2210 SERIES OR APPROVED EQUAL	3
L	DECORATIVE PENDANT. SILICONE SOCKET, POLYMER CABLE. PROVIDE WITH ARCHPELAGO LIGHTING LED CLEAR GLOBE BULB. REFER TO ARCH FOR MOUNTING.	ARM MOUNTED PENDANT	LED 3500K 500 LUMENS	120	Y LIGHTING E27 SERIES OR APPROVED EQUAL	5
S	LED SITE LIGHTING. ALUMINUM HOUSING, INTEGRAL DRIVER, TYPE IV DISTRIBUTION. FINISH COLOR BY ARCHITECT. 600mA DRIVE CURRENT. PROVIDE WITH 25 ROUND STEEL POLES. SAME AS ABOVE BUT TYPE II DISTRIBUTION.	POLE	LED 4000K 20,000 LUMENS	277	COOPER GLEON SERIES KIM ALT SERIES OR APPROVED EQUAL	193
X	EXIT SIGN. POLYCARBONATE HOUSING, CHEVRONS PER PLANS, RED LED LETTERING, NI-CAD BATTERY.	VARIOUS WALL OR CEILING	LED	277	SURE LITES LPX7 SERIES DUAL LITE LX SERIES	--

NO.	DESCRIPTION	PANEL	LOAD CIRCUITS	CONTROL CIRCUIT	# POLES	OPERATION	REMARKS
LC-1	EXTERIOR LIGHTING	HP1	1,15	HP1-15	4	NOTE 2	NOTE 1

- NOTES:**
- PROVIDE INTERMATIC ET8000 SERIES ELECTRONIC TIME CLOCK OR EQUAL.
 - PHOTOCYCLONOMIC TIME CLOCK ON/OFF BASED ON SUNSETS/SUNRISE AND OWNER INPUT.

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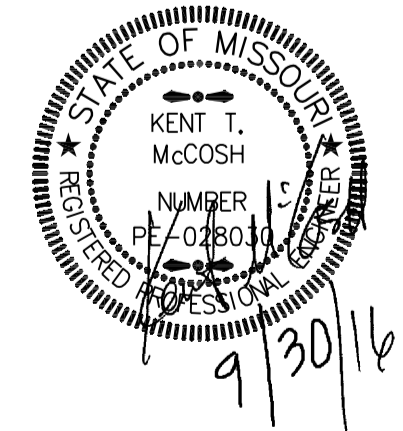
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Joplin Early Childhood Center
Joplin Schools

REVISIONS:



JOB NO: 16054
DRAWN BY: S&B
CHECKED BY: KTM
DATE: 09.30.2016

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project number 1617200

E301

PROJECT NAME: Joplin Early Childhood Center
DRAWN BY: S&B
CHECKED BY: KTM
DATE: 09.30.2016
PLotted BY: DATE: TIME
Auton 11/12/16 12:45:44 PM
Friday, September 30, 2016 12:45:44 PM

PANEL MP2									
MAIN BUS AMPS: 225 A		AIC: 22,000 A		EQUIPMENT GROUND BUS					
MAIN BREAKER: 200 A		SECTIONS: 1-42 SPACE							
VOLTAGE: 480Y/277 V		MOUNTING: SURFACE							
PHASES/WIRES: 3 PH / 4 W		LOCATION:							
CIRCUIT DESCRIPTION	POLES	AMPS	CKT NO	CKT NO	AMPS	POLES	CIRCUIT DESCRIPTION	POLES	AMPS
FPB1-1	3	15	1	2	20	1	FPB1-4	3	15
			3	4	20	1	FPB1-5	3	15
			5	6	20	1	FPB1-6	3	15
FPB1-2	3	20	7	8	20	1	FPB1-7	3	20
			9	10	20	1	FPB1-8	3	20
			11	12	20	1	FPB1-9	3	20
FPB1-3	3	30	13	14	20	1	FPB1-10	3	30
			15	16	20	1	FPB1-11	3	30
			17	18	25	1	FPB1-12	3	30
			19	20	25	1	FPB1-13	3	30
FPB1-5	3	15	21	22	25	1	FPB1-14	3	15
			23	24	20	1	FPB1-15	3	15
			25	26	20	1	UH-1	1	20
UH-2	3	20	27	28	20	1	UH-2	1	20
			29	30	20	1	UH-3	1	20
			31	32	20	1	UH-4	1	20
PREPARED SPACE			33	34	20	1	UH-5	1	20
PREPARED SPACE			35	36	20	1	UH-6	1	20
PREPARED SPACE			37	38	20	1	UH-7	1	20
PREPARED SPACE			39	40	20	1	UH-8	1	20
PREPARED SPACE			41	42	20	1	UH-9	1	20

PANEL LP2									
MAIN BUS AMPS: 225 A		AIC: 18,000 A		EQUIPMENT GROUND BUS					
MAIN BREAKER: 200 A		SECTIONS: 2-42 SPACE							
VOLTAGE: 208Y/120 V		MOUNTING: SURFACE							
PHASES/WIRES: 3 PH / 4 W		LOCATION:							
CIRCUIT DESCRIPTION	POLES	AMPS	CKT NO	CKT NO	AMPS	POLES	CIRCUIT DESCRIPTION	POLES	AMPS
DRYER	30	2	1	2	20	1	WENDING MACHINE	30	2
			3	4	20	1	WENDING MACHINE	30	2
WASHING MACHINE	20	1	5	6	20	1	REFRIGERATOR	20	1
GFI RECEPT	20	1	7	8	20	1	REFRIGERATOR	20	1
OFFICE RECEPT	20	1	9	10	20	1	DISHWASHER	20	1
UNDERCOUNTER FRIDGE	20	1	11	12	20	1	LOUNGE RECEPT	20	1
SCREENING RECEPT	20	1	13	14	20	1	MDF RECEPT	20	1
DIRECTOR RECEPT	20	1	15	16	20	1	MDF RECEPT	20	1
RECEPTION/NURSE RECEPT	20	1	17	18	20	1	LOUNGE COUNTER RECEPT	20	1
CONFERENCE RECEPT	20	1	19	20	20	1	WORKROOM RECEPT	20	1
NURSE COUNTER RECEPT	20	1	21	22	20	1	WORKROOM RECEPT	20	1
CORRIDOR RECEPT	20	1	23	24	20	1	WORKROOM RECEPT	20	1
CLASS A121 RECEPT	20	1	25	26	20	1	ADMIN COUNTER RECEPT	20	1
CLASS A121 RECEPT	20	1	27	28	20	1	SLP RECEPT	20	1
A EAST CLASS GFI RECEPT	20	1	29	30	20	1	SLP RECEPT	20	1
CLASS A125 RECEPT	20	1	31	32	20	1	CLASS A132 RECEPT	20	1
CLASS A125 RECEPT	20	1	33	34	20	1	CLASS A132 RECEPT	20	1
CLASS A129 RECEPT	20	1	35	36	20	1	A WEST CLASS GFI RECEPT	20	1
CLASS A129 RECEPT	20	1	37	38	20	1	CLASS A136 RECEPT	20	1
OT/PT RECEPT	20	1	39	40	20	1	CLASS A136 RECEPT	20	1
DRINKING FOUNTAIN	20	1	41	42	20	1	CLASS A140 RECEPT	20	1
LEARNING GROVE RECEPT	20	1	43	44	20	1	CLASS A140 RECEPT	20	1
FAMILY RESOURCE MONITOR	20	1	45	46	20	1	SECURED DOOR	20	1
UPS	30	2	47	48	20	1	ADA DOOR OPERATOR	20	1
			49	50	25	2	ITCU-1 / ITAC-1	20	1
SPARE	20	1	51	52	20	1	EF-1	20	1
SPARE	20	1	53	54	20	1	EF-1	20	1
SPARE	20	1	55	56	20	1	EF-5	20	1
SPARE	20	1	57	58			PREPARED SPACE	20	1
SPARE	20	1	59	60			PREPARED SPACE	20	1
SPARE	20	1	61	62			PREPARED SPACE	20	1
SPARE	20	1	63	64			PREPARED SPACE	20	1
SPARE	20	1	65	66			PREPARED SPACE	20	1
SPARE	20	1	67	68			PREPARED SPACE	20	1
SPARE	20	1	69	70			PREPARED SPACE	20	1
SPARE	20	1	71	72			PREPARED SPACE	20	1
SPARE	20	1	73	74			PREPARED SPACE	20	1
SPARE	20	1	75	76			PREPARED SPACE	20	1
SPARE	20	1	77	78			PREPARED SPACE	20	1
SPARE	20	1	79	80			PREPARED SPACE	20	1
SPARE	20	1	81	82			PREPARED SPACE	20	1
SPARE	20	1	83	84			PREPARED SPACE	20	1

PANEL MP1									
MAIN BUS AMPS: 225 A		AIC: 22,000 A		EQUIPMENT GROUND BUS					
MAIN BREAKER: N/A		SECTIONS: 1-42 SPACE							
VOLTAGE: 480Y/277 V		MOUNTING: SURFACE							
PHASES/WIRES: 3 PH / 4 W		LOCATION:							
CIRCUIT DESCRIPTION	POLES	AMPS	CKT NO	CKT NO	AMPS	POLES	CIRCUIT DESCRIPTION	POLES	AMPS
FPB2-7	3	15	1	2	25	1	FPB2-1	3	15
			3	4	25	1	FPB2-2	3	15
			5	6	25	1	FPB2-3	3	15
FPB3-4	3	30	7	8	25	1	FPB2-4	3	30
			9	10	25	1	FPB2-5	3	30
			11	12	25	1	FPB2-6	3	30
FPB3-5	3	25	13	14	25	1	FPB2-8	3	25
			15	16	20	1	FPB2-9	3	25
			17	18	25	1	FPB3-1	3	25
			19	20	25	1	FPB3-2	3	25
FPB3-8	3	15	21	22	25	1	FPB3-3	3	15
			23	24	25	1	FPB3-4	3	15
			25	26	25	1	FPB3-5	3	15
UH-3	1	20	27	28	20	1	FPB3-6	1	20
UH-4	1	20	29	30	20	1	FPB3-7	1	20
PREPARED SPACE			31	32	20	1	FPB3-8	1	20
PREPARED SPACE			33	34	20	1	FPB3-9	1	20
PREPARED SPACE			35	36	20	1	FPB3-10	1	20
PREPARED SPACE			37	38	20	1	FPB3-11	1	20
PREPARED SPACE			39	40	20	1	FPB3-12	1	20
PREPARED SPACE			41	42	20	1	SPARE	1	20

PANEL LP1									
MAIN BUS AMPS: 225 A		AIC: 18,000 A		EQUIPMENT GROUND BUS					
MAIN BREAKER: 200 A		SECTIONS: 2-42 SPACE							
VOLTAGE: 208Y/120 V		MOUNTING: SURFACE							
PHASES/WIRES: 3 PH / 4 W		LOCATION:							
CIRCUIT DESCRIPTION	POLES	AMPS	CKT NO	CKT NO	AMPS	POLES	CIRCUIT DESCRIPTION	POLES	AMPS
CLASS B112 RECEPT	1	20	1	2	20	1	TINKERING B109 RECEPT	1	20
CLASS B112 RECEPT	1	20	3	4	20	1	CLASS B138 RECEPT	1	20
CLASS B115 RECEPT	1	20	5	6	20	1	CLASS B138 RECEPT	1	20
CLASS B115 RECEPT	1	20	7	8	20	1	B NORTH CLASS GFI RECEPT	1	20
B SOUTH CLASS GFI RECEPT	1	20	9	10	20	1	CLASS B128 RECEPT	1	20
CLASS B121 RECEPT	1	20	11	12	20	1	CLASS B128 RECEPT	1	20
CLASS B121 RECEPT	1	20	13	14	20	1	CLASS B131 RECEPT	1	20
CLASS B125 RECEPT	1	20	15	16	20	1	CLASS B131 RECEPT	1	20
CLASS B125 RECEPT	1	20	17	18	20	1	CLASS B135 RECEPT	1	20
CLASS C118 RECEPT	1	20	19	20	20	1	CLASS B135 RECEPT	1	20
DRINKING FOUNTAIN	1	20	21	22	20	1	B CORRIDOR RECEPT	1	20
CLASS C118 RECEPT	1	20	23	24	20	1	DRINKING FOUNTAIN	1	20
C SOUTH CLASS GFI RECEPT	1	20	25	26	20	1	CLASS C137 RECEPT	1	20
CLASS C122 RECEPT	1	20	27	28	20	1	CLASS C137 RECEPT	1	20
CLASS C122 RECEPT	1	20	29	30	20	1	C NORTH CLASS RECEPT	1	20
CLASS C123 RECEPT	1	20	31	32	20	1	CLASS C131 RECEPT	1	20
CLASS C123 RECEPT	1	20	33	34	20	1	CLASS C131 RECEPT	1	20
PAT RECEPT	1	20	35	36	20	1	CLASS C132 RECEPT	1	20
PAT RECEPT	1	20	37	38	20	1	CLASS C132 RECEPT	1	20
PAT RECEPT	1	20	39	40	20	1	REFRIGERATOR	1	20
SCREENING RECEPT	1	20	41	42	20	1	ICE MAKER	1	20
KITCHEN RECEPT	1	20	43	44	20	1	MULTIPURPOSE COUNTER REC	1	20
KITCHEN RECEPT	1	20	45	46	20	1	MULTIPURPOSE RECEPT	1	20
REFRIGERATOR	1	20	47	48	20	1	STORAGE RECEPT	1	20
DRINKING FOUNTAIN	1	20	49	50	20	1	RESTROOM GFI RECEPT	1	20
ADA DOOR OPERATOR	1	20	51	52	20	1	EF-2	1	20
SECURED DOORS	1	20	53	54	20	1	EF-3	1	20
C CORRIDOR RECEPT	1	20	55	56	20	1	EF-4	1	20
TINKER ROOM GFI RECEPT	1	20	57	58	20	1	DWH-1	1	20
DRINKING FOUNTAIN	1	20	59	60	20	1	DWH-2	1	20
SPARE	1	20	61	62	20	1	RHWP-1	1	20
SPARE	1	20	63	64	20	1	WS-1	1	20
SPARE	1	20	65	66			PREPARED SPACE	1	20
SPARE	1	20	67	68			PREPARED SPACE	1	20
SPARE	1	20	69	70			PREPARED SPACE	1	20
SPARE	1	20	71	72			PREPARED SPACE	1	20
SPARE	1	20	73	74			PREPARED SPACE	1	20
SPARE	1	20	75	76			PREPARED SPACE	1	20
SPARE	1	20	77	78			PREPARED SPACE	1	20
SPARE	1	20	79	80			PREPARED SPACE	1	20
SPARE	1	20	81	82			PREPARED SPACE	1	20
SPARE	1	20	83	84			PREPARED SPACE	1	20

PANEL HP1									
MAIN BUS AMPS: 225 A		AIC: 22,000 A		EQUIPMENT GROUND BUS					
MAIN BREAKER: N/A		SECTIONS: 1-42 SPACE							
VOLTAGE: 480Y/277 V		MOUNTING: SURFACE							
PHASES/WIRES: 3 PH / 4 W		LOCATION:							
CIRCUIT DESCRIPTION	POLES	AMPS	CKT NO	CKT NO	AMPS	POLES	CIRCUIT DESCRIPTION	POLES	AMPS
PARKING LOT LIGHTING	1	20	1	2	100	3	PANEL LP1 THROUGH T-1	1	20
B NORTH CLASSROOM LTG	1	20	3	4					
B SOUTH CLASSROOM LTG	1	20	5	6					
CORRIDOR LIGHTING	1	20	7	8			PREPARED SPACE	1	20
C NORTH CLASSROOM LTG	1	20	9	10			PREPARED SPACE	1	20
C SOUTH CLASSROOM LTG	1	20	11	12			PREPARED SPACE	1	20
MULTIPURPOSE/EAST LTG	1	20	13	14			PREPARED SPACE	1	20
EXTERIOR BLDG MOUNT LTG	1	20	15	16			PREPARED SPACE	1	20
SPARE	1	20	17	18			PREPARED SPACE	1	20
SPARE	1	20	19	20			PREPARED SPACE	1	20
SPARE	1	20	21	22			PREPARED SPACE	1	20
SPARE	1	20	23	24			PREPARED SPACE	1	20
SPARE	1	20	25	26			PREPARED SPACE	1	20
SPARE	1	20	27	28			PREPARED SPACE	1	20
SPARE	1	20	29	30			PREPARED SPACE	1	20
SPARE	1	20	31	32			PREPARED SPACE	1	20
SPARE	1	20	33	34			PREPARED SPACE	1	20
SPARE	1	20	35	36			PREPARED SPACE	1	20
SPARE	1	20	37	38			PREPARED SPACE	1	20
SPARE	1	20	39	40			PREPARED SPACE	1	20
SPARE	1	20	41	42			PREPARED SPACE	1	20