

ADDENDUM NO. 1

Issued: October 14, 2016

Project: Joplin Early Childhood Center
 Site Legal Description:
 JOP MISC
 BEG 1360.93' S & 50' E NW
 COR SE E 456.91' N 318.78'
 W 456.91' S 318.78' TO POB

Project No. 16054

Owner: Joplin Schools
 310 West 8th Street
 Joplin, MO 64801

Bidding Documents Issued: September 30, 2016

This Addendum includes these 9 page[s] and the following attachments:

Project Information:

Civil Addendum No. 1 Descriptions	4 pages
Landscape Addendum No 1 Descriptions	2 pages
MEP Addendum No. 1 Descriptions.....	2 pages
Pre-Bid Conference Attendance List	2 pages

Project Manual:

000110 Table of Contents	6 pages
064023 Interior Architectural Woodwork	10 pages
064200 Wood Paneling	4 pages
078413 Penetration Firestopping	4 pages
078446 Fire Resistive Joint Systems	4 pages
079500 Expansion Control	4 pages
087100 Door Hardware – Redline Revisions	2 pages
101400 Signage.....	10 pages
116816 Play Area Equipment	4 pages
123200 Manufactured Wood Casework	8 pages

Drawings:

Architectural Sheets: G000, G101, A101B, A101C, A121B, A141, A201, A202, A205, A311, A361, A362, A363, A365, A435, A622, A623, A624, A625	19 sheets
Structural Sheets: S300.....	1 sheet
Civil Sheets: C100, C102, C103, C104, C105, C106, C107, C109, SV100	9 sheets
Landscape Sheets: L110, L200, L201, L202, L301.....	5 sheets
MEP Sheets: ME202, ME301, M101A, M103C, P203C, E101A, E102B, E103C, E301	9 sheets

PROJECT MANUAL REVISIONS

A1 SECTION 00010 - TABLE OF CONTENTS

A1.1 REPLACE existing Table of Contents with the attached revised Table of Contents dated October 14, 2016.

A2 SECTION 012300 - ALTERNATES

A2.1 INSERT the following sentence after the last sentence of Paragraph 3.1.G.1 of Section 012300 "Alternates."

Refer to Civil Drawings and Specifications for work regarding Alternate 7.

A3 SECTION 034100 – PRECAST STRUCTURAL CONCRETE

A3.1 DELETE Paragraph 1.4.D in Section 034100 "Precast Structural Concrete."

A4 SECTION 042000 – UNIT MASONRY

A4.1 DELETE Paragraphs 1.4.C.2 and 1.4.D.2 in Section 042000 "Unit Masonry."

A4.2 REPLACE Paragraph 2.6.b.10 in Section 042000 "Unit Masonry" with the following:

10. Pattern: 1/2 Running Bond

A5 SECTION 054000 – COLD FORMED METAL FRAMING

A5.1 DELETE Paragraph 1.3.B in Section 054000 "Cold Formed Metal Framing."

A5.2 INSERT new Paragraph 2.2.B into Section 054000 "Cold Formed Metal Framing" as follows:

B. Provide examples of experience on projects of similar size and complexity over the past five years.

A6 SECTION 054400 – COLD FORMED METAL TRUSSES

A6.1 INSERT new Paragraph 1.3.B.3 into Section 054400 "Cold Formed Metal Trusses" as follows:

3. For cold-formed metal trusses indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

A7 SECTION 062013 – EXTERIOR FINISH CARPENTRY

A7.1 REVISE Paragraph 1.1.A.2 in Section 062013 "Exterior Finish Carpentry" to replace the words "*Exterior polyash synthetic trim (062013.XXX)*" with "**Exterior polyash synthetic trim (062013.A04)**".

A7.2 REVISE Paragraph 2.1 in Section 062013 "Exterior Finish Carpentry" to replace the words "*POLYASH SYNTHETIC TRIM (062013.XXX)*" with "**POLYASH SYNTHETIC TRIM (062013.A04)**".

A8 SECTION 062023 – INTERIOR FINISH CARPENTRY

A8.1 REVISE Paragraph 2.3 in Section 062023 "Interior Finish Carpentry" to replace the words "*SHELVING AND CLOTHES RODS (062023.A11)*" with "**SHELVING (062023.A11)**".

A8.2 DELETE Paragraph 2.3.E in Section 062023 "Interior Finish Carpentry."

A8.3 REVISE Paragraph 2.3.F in Section 062023 "Interior Finish Carpentry" to omit the words "*without Rod Support*".

A8.4 DELETE Paragraph 2.3.G, and 2.3.H in Section 062023 "Interior Finish Carpentry."

A8.5 REVISE Paragraph 3.5 in Section 062023 "Interior Finish Carpentry" to omit the words "~~*AND CLOSTHES ROD*~~".

A8.6 DELETE Paragraph 3.5.F in Section 062023 "Interior Finish Carpentry."

A9 SECTION 064023 – INTERIOR ARCHITECTURAL WOODWORK

A9.1 INSERT NEW Section 064023 "Interior Architectural Woodwork" dated October 14, 2016, attached.

A10 SECTION 064200 – WOOD PANELING

A10.1 INSERT NEW Section 064200 "Wood Paneling" dated October 14, 2016, attached.

A11 SECTION 066400 – PLASTIC PANELING

A11.1 REPLACE Paragraph 1.1.A.1 in Section 066400 "Plastic Paneling" with the following:

1. **Plastic sheet paneling (066400.A10) at janitor closet walls.**

A12 SECTION 072100 – THERMAL INSULATION

A12.1 REPLACE Paragraph 1.1.B.1 in Section 072100 "Thermal Insulation" with the following:

1. **Section 033000 "Cast in Place Concrete" for foam-plastic perimeter insulation below grade.**

A12.2 INSERT new Paragraph 2.6, and subsequent subparagraphs below, into Section 072100 "Thermal Insulation" as follows:

2.6 EXTRUDED POLYSTYRENE FOAM-PLASTIC BOARD (072100.A01)

- A. **Refer to Section 033000 "Cast In Place Concrete" for foam-plastic perimeter insulation below grade**

A13 SECTION 074113 – STANDING SEAM METAL ROOFING

A13.1 DELETE Paragraph 1.1.B.1 in Section 074113 "Standing Seam Metal Roofing."

A14 SECTION 074213 – METAL WALL PANELS

A14.1 REPLACE Paragraph 2.2.B.3.a in Section 074216 "Metal Wall Panels" with the following:

- a. **Colors: Up to three colors as selected by Architect from manufacturer's full range.**

A15 SECTION 075213 – MODIFIED BITUMINOUS MEMBRANE ROOFING

A15.1 INSERT new Paragraph 1.1.B.3 into Section 075213 "Modified Bituminous Membrane Roofing" as follows:

3. **Section 012300 "Alternates" for alternates affecting the work of this section.**

A15.2 REVISE Paragraph 2.2.C.2 in Section 075213 "Modified Bituminous Membrane Roofing" to replace the words "~~3 inches~~" with "**4 inches**" and "~~R-value of 17.4~~" with "**R-value of 23.6**"

A15.3 REVISE Paragraph 2.2.C.3 in Section 075213 "Modified Bituminous Membrane Roofing" to replace the words "~~4.5 inches~~" with "**5.5 inches**".

A16 SECTION 075423 – THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

A16.1 REVISE Paragraph 1.3.A.1 in Section 075423 "Thermoplastic Polyolefin (TPO) Roofing" to omit the words "*leak detection system installer*" in the second line of text.

A16.2 REVISE Paragraph 2.5.B.3 in Section 075423 "Thermoplastic Polyolefin (TPO) Roofing" to replace the words "~~4-1/2 inches~~" with "**5-1/2 inches**".

A16.3 REVISE Paragraph 2.5.B.5 in Section 075423 "Thermoplastic Polyolefin (TPO) Roofing" to replace the words "~~3 inches~~" with "**4 inches**" and "~~R-value of 17.4~~" with "**R-value of 23.6**".

A17 SECTION 076200 – SHEET METAL FLASHING AND TRIM

A17.1 DELETE Paragraph 2.7.D in Section 076200 "Sheet Metal Flashing and Trim."

A18 SECTION 078413 – PENETRATION FIRESTOPPING

A18.1 INSERT NEW Section 078413 "Penetration Firestopping" dated October 14, 2016, attached.

A19 SECTION 078446 – FIRE-RESISTIVE JOINT SYSTEMS

A19.1 INSERT NEW Section 078446 "Fire Resistive Joint Systems" dated October 14, 2016, attached.

A20 SECTION 079500 – EXPANSION CONTROL

A20.1 INSERT NEW Section 079500 "Expansion Control" dated October 14, 2016, attached.

A21 SECTION 081113 – HOLLOW METAL DOORS AND FRAMES

A21.1 DELETE Paragraph 1.1.A.1 in Section 081113 "Hollow Metal Doors and Frames."

A21.2 REVISE Paragraph 1.1.A.2 in Section 081113 "Hollow Metal Doors and Frames" to omit the words "*and exterior*" from the text.

A21.3 DELETE Paragraph 1.1.B.3 in Section 081113 "Hollow Metal Doors and Frames."

A21.4 DELETE Article 2.4 in Section 081113 "Hollow Metal Doors and Frames."

A21.5 DELETE Paragraph 2.9.B.6 in Section 081113 "Hollow Metal Doors and Frames."

A22 SECTION 081416 – FLUSH WOOD DOORS

A22.1 REPLACE existing Section 081416 "Flush Wood Doors" with the attached revised Section 081416 dated October 14, 2016.

A23 SECTION 083113 – ACCESS DOORS AND FRAMES

A23.1 DELETE Paragraph 1.1.B.1 in Section 083113 "Access Doors and Frames."

A23.2 REPLACE Paragraph 2.1.C.3.a and 2.1.C.3.b in Section 083113 "Access Doors and Frames" with the following:

- a. Provide 24" x 24" sizes at Room B101 and Room C108.
- b. Provide 12" x 12" sizes at locations where water shut-off valves are installed.

A24 SECTION 084413 – GLAZED ALUMINUM CURTAIN WALLS

A24.1 REVISE Paragraph 2.3.A.5 in Section 084413 "Glazed Aluminum Curtain Walls" to replace the words "~~7-1/2 inches~~" with "**6 inches**".

A24.2 DELETE Paragraph 2.3.B.2.a in Section 084413 "Glazed Aluminum Curtain Walls."

A24.3 INSERT new Paragraph 2.3.E into Section 084413 "Glazed Aluminum Curtain Walls" as follows:

E. At areas indicated to receive butt glazing joints or mitered glazing joints, provide manufacturer's recommended structural sealant to meet specified criteria.

A25 SECTION 087100 – DOOR HARDWARE

A25.1 REVISE Section 087100 "Door Hardware" per the attached Redline Revision to the Hardware Schedule.

A26 SECTION 088000 - GLAZING

A26.1 DELETE Paragraph 2.3.B in Section 088000 "Glazing."

A27 SECTION 092900 – GYPSUM BOARD

A27.1 REPLACE Paragraph 1.1.A.4 in Section 092900 "Gypsum Board" with the following:

4. Acoustical sealant for sound control assemblies (092900.A15).

A27.2 INSERT new Paragraph 1.1.A.5 into Section 092900 "Gypsum Board" as follows:

5. Sound attenuation blankets (092900.A14) with acoustical impaling clips.

A27.3 INSERT new Paragraph 2.1.B into Section 092900 "Gypsum Board" as follows:

B. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

A28 SECTION 096513 – RESILIENT BASE AND ACCESSORIES

A28.1 REVISE Paragraph 2.1.C.2 in Section 096513 "Resilient Base and Accessories" to omit the following text "~~and straight where indicated on the drawings.~~"

A29 SECTION 096813 – TILE CARPETING

A29.1 REVISE Paragraph 2.1.H.1 in Section 096813 "Tile Carpeting" to replace the words "~~Tufted Patterned Tip Shear~~" with "**Patterned Loop**"

A30 SECTION 099600 – HIGH PERFORMANCE COATINGS

A30.1 REVISE Paragraph 2.2.D in Section 099600 "High Performance Coatings" to replace the words "~~PI through PG~~" with "**EP1 through EP8**"

A31 SECTION 101100 – VISUAL DISPLAY SURFACES

A31.1 DELETE Paragraph 2.2.A.8, and subsequent subparagraphs, in Section 101100 "Visual Display Surfaces."

A32 SECTION 101400 - SIGNAGE

A32.1 INSERT NEW Section 101400 "Signage" dated October 14, 2016, attached.

A33 SECTION 102123 – CUBICLE CURTAINS AND TRACK

A33.1 REPLACE Paragraph 2.4.A.3 in Section 102123 "Cubicle Curtains and Track" with the following:

3. Pattern and Color: "Rx 8001 Ocean Mist" by Architex.

A34 SECTION 102800 – TOILET, BATH, AND LAUNDRY ACCESSORIES

A34.1 REVISE Paragraph 2.3.F in Section 102800 "Toilet, Bath, and Laundry Accessories" to replace the words "M" with "MI and FHM".

A34.2 REPLACE Paragraph 2.3.F.5 in Section 102800 "Toilet, Bath, and Laundry Accessories" with the following:

5. Sizes

a. Type MI: 24 inches wide by 36 inches in height.

b. Type FHM: 24 inches wide by 60 inches in height.

A35 SECTION 123200 – MANUFACTURED WOOD CASEWORK

A35.1 INSERT NEW Section 123200 "Manufactured Wood Casework" dated October 14, 2016, attached.

C1 REFER TO CIVIL ADDENDUM NO. 1 ATTACHED

M1 REFER TO MEP ADDENDUM NO. 1 ATTACHED

L1 REFER TO LANDSCAPE ADDENDUM NO. 1 ATTACHED

DRAWINGS REVISIONS

A1 SHEET G000 – COVER SHEET

A1.1 REPLACE previously issued Sheet G000, with attached sheet G000 dated 10.15.2016. (Sheet list revisions).

A2 SHEET G101 – OVERALL CODE FLOOR PLANS

A2.1 REPLACE previously issued Sheet G101, with attached sheet G101 dated 10.15.2016. (Clarify rated wall assembly at room C110, and modify minimum dimension to the north retaining wall).

A3 SHEET A101B – FLOOR PLAN – AREA B

A3.1 REPLACE previously issued Sheet A101B, with attached sheet A101B dated 10.15.2016. (Clarify location for interior building expansion joint covers near door B110a).

A4 SHEET A101C – FLOOR PLAN – AREA C

A4.1 REPLACE previously issued Sheet A101C, with attached sheet A101C dated 10.15.2016. (Clarify wall types and rating at room C110).

A5 SHEET A121B – REFLECTED CEILING PLAN – AREA B

A5.1 REPLACE previously issued Sheet A121B, with attached sheet A121B dated 10.15.2016. (Clarify ceiling cloud quantity to match enlarged ceiling plan F1/A433).

A6 SHEET A141 – OVERALL ROOF PLAN

A6.1 REPLACE previously issued Sheet A141, with attached sheet A141 dated 10.15.2016. (Add details N1 and N6. Delete detail N10).

A7 SHEET A201 – EXTERIOR OVERALL BUILDING ELEVATIONS

A7.1 REPLACE previously issued Sheet A201, with attached sheet A201 dated 10.15.2016. (Clarify exterior material legend. Clarify material notes on the elevations).

A8 SHEET A202 – ENLARGED EXTERIOR BUILDING ELEVATIONS

A8.1 REPLACE previously issued Sheet A202, with attached sheet A202 dated 10.15.2016. (Clarify exterior material legend. Clarify material notes on the elevations).

A9 SHEET A203 – ENLARGED EXTERIOR BUILDING ELEVATIONS

A9.1 REPLACE previously issued Sheet A203, with attached sheet A203 dated 10.15.2016. (Clarify exterior material legend. Clarify material notes on the elevations).

A10 SHEET A311 – WALL TYPES

A10.1 REPLACE previously issued Sheet A311, with attached sheet A311 dated 10.15.2016. (Clarify wall types C2, 13B, and 15B).

A11 SHEET A361 – WALL SECTIONS

A11.1 REPLACE previously issued Sheet A361, with attached sheet A361 dated 10.15.2016. (Clarify details L1, K6, G1, A1, A6, A13).

A12 SHEET A362 – WALL SECTIONS

A12.1 REPLACE previously issued Sheet A362, with attached sheet A362 dated 10.15.2016. (Clarify details L9, L13, and A13).

A13 SHEET A363 – WALL SECTIONS

A13.1 REPLACE previously issued Sheet A363, with attached sheet A363 dated 10.15.2016. (Clarify details P5, P13, K9, K13, A1, D5, A8, and A13).

A14 SHEET A365 – EXTERIOR DETAILS

A14.1 ADD Sheet A364 dated 10.15.2016.

A15 SHEET A435 – LEARNING GARDEN HOUSES – ELARGED PLANS & DETAILS

A15.1 REPLACE previously issued Sheet A435, with attached sheet A435 dated 10.15.2016. (Clarify details A1, and K8).

A16 SHEET A622 – INTERIOR ELEVATIONS

A16.1 REPLACE previously issued Sheet A622, with attached sheet A622 dated 10.15.2016. (Clarify elevations A4, E4, and J13. Keynote clarifications).

A17 SHEET A623 – INTERIOR ELEVATIONS

A17.1 REPLACE previously issued Sheet A623, with attached sheet A623 dated 10.15.2016. (Clarify elevations A6 and J1. Keynote clarifications).

A18 SHEET A624 – INTERIOR ELEVATIONS

A18.1 REPLACE previously issued Sheet A624, with attached sheet A624 dated 10.15.2016. (Clarify elevations A1 and A9. Keynote and dimensional clarifications).

A19 SHEET A625 – INTERIOR ELEVATIONS

A19.1 REPLACE previously issued Sheet A625, with attached sheet A625 dated 10.15.2016. (Clarify elevations A1 and A9. Keynote clarifications).

S1 SHEET S000 – GENERAL NOTES

S1.1 Note A5 changed from “Tornado Shelter” to “High wind area”.

S2 SHEET S002 – SHEAR WALL PLAN

S2.1 Structural shear wall along grid line 21 extended from grid line E to grid line F.

S2.2 Shear wall notation along grid line G between grid line 25 and 26 adjusted to be in line with wall slightly north of grid line G.

S2.3 Shear wall along grid line 24 extent decreased to be from grid line H to grid line J.

S2.4 Shear wall along grid line K extent decreased to be from grid line 24 to grid line 25.

S2.5 Shear wall along grid line 26 extent decreased to be full extent of wall along grid line 26.

S3 S100 – FOUNDATION PLAN

S3.1 Exterior column footing on grid line 10 increased to M5.5 (5'-6"X5'-6"X2'-8" 5-#6 Top \$ Bot EW)

S3.2 Structural foundation schedule M4.0 reinforcement placement added “EW”

S3.3 Structural column schedule C4.4 base plate modified to 3/4X11X11, C5.4 base plate modified to 1X12X12, C5.6 base plate modified to 1X12X12, C9.5.6 base plate modified to 1"X1'-0"X1'-4", CR5.5 base plate information added of 1"X1'-3"X1'-3" and AR-2 information added

S4 S101 – FOUNDATION PLAN

S4.1 Structural foundation schedule M4.0 reinforcement placement added “EW”

S4.2 Structural column schedule C4.4 base plate modified to 3/4X11X11, C5.4 base plate modified to 1X12X12, C5.6 base plate modified to 1X12X12, C9.5.6 base plate modified to 1"X1'-0"X1'-4", CR5.5 base plate information added of 1"X1'-3"X1'-3" and AR-2 information added

S5 S102 – FOUNDATION PLAN

S5.1 Exterior column footings increased to M5.5 (5'-6"X5'-6"X2'-8" 5-#6 Top \$ Bot EW)

S5.2 Structural foundation information added (typical from S100 and S101)

S5.3 Structural column schedule added (typical from S100 and S101)

S6 S200 – FRAMING PLAN

S6.1 Structural column schedule C4.4 base plate modified to 3/4X11X11, C5.4 base plate modified to 1X12X12, C5.6 base plate modified to 1X12X12, C9.5.6 base plate modified to 1"X1'-0"X1'-4", CR5.5 base plate information added of 1"X1'-3"X1'-3" and AR-2 information added

S6.2 Note added to slanted columns at entry to on either side of grid line 4 “attach top of column per A1/S410” and for column on grid line 4 “locate center of top of column beneath W16X26 perpendicular to grid line 4 per N5/S405

S7 S201 – FRAMING PLAN

S7.1 Structural column schedule C4.4 base plate modified to 3/4X11X11, C5.4 base plate modified to 1X12X12, C5.6 base plate modified to 1X12X12, C9.5.6 base plate modified to 1"X1'-0"X1'-4", CR5.5 base plate information added of 1"X1'-3"X1'-3" and AR-2 information added

S7.2 Note added to slanted exterior columns on either side of grid line 10 to “attach top of column per A1/S410” and column along grid line 10 “locate center of top of column beneath W18X40 along grid line 10 per N5/S405

S8 S202 – FRAMING PLAN

S8.1 Note added: “All columns at bus loop canopy attach to steel per N5/S405”

S8.2 Beam diagonal to grid line E and grid line 25 increased to W12X96, southernmost beam parallel to grid line E between grid lines 24 and 26 increased to W12X96, westernmost beam perpendicular to grid line E between grid lines 24 and 25 increased to W12X96, HSS2.5X2.5X1/4 moved south to be in line with southernmost beam

S9 S300 – FOUNDATION SECTIONS

S9.1 DELETE previously issued Sheet S300 and REPLACE with revised Sheet S300, dated 10/14/2016 (New detail J1 and J5)

C1 REFER TO CIVIL ADDENDUM NO. 1 ATTACHED

M1 REFER TO MEP ADDENDUM NO. 1 ATTACHED

L1 REFER TO LANDSCAPE ADDENDUM NO. 1 ATTACHED

END OF ADDENDUM NO. 1

ADDENDUM NO. 1

Issued: October 14, 2016

Project: Joplin Early Childhood, Package No. 1
2810 South McClelland Blvd
Joplin, Missouri 64804

Project No. 50040-16

Owner: Board of Education
Joplin Schools
3901 E. 32nd Street
Joplin, Missouri 64801

Bidding Documents Issued: September 30, 2016

This Addendum is hereby made a part of the Contract Documents to the same extent as if it were originally included therein. Receipt of this Addendum shall be acknowledged on the Proposal Form.

Any Specification Sections and Drawings attached herein shall hereby be made a part of the Contract Documents.

This Addendum includes these 3 page[s] and the following attachments:

Drawings:

Civil: C100, C102, C103, C104, C105, C106, C107, and C109 consisting of 8 pages.

Added Drawings:

Survey: SV100 consisting of 1 page.

GENERAL – BIDDER'S QUESTIONS

G1 QUESTION: Will the general contractor be performing all special inspections / testing?

G1.1 Answer: All special inspections and testing will be handled by the owner.

G2 QUESTION: Will the general contractor be responsible for filling a land disturbance permit and

who will be responsible for the associated filling fee.

G2.1 Answer: The design's team civil engineers will prepare the land disturbance permit documents and will require the general contractor's signatures. The owner will be responsible for the filling fee and executing permit through DNR with engineers help.

G3 QUESTION: On sheet C102 of the civil documents, there is an alternate listed for concrete paving instead of asphalt paving. Which is the base bid and how do you bid the two types of paving?

G3.1 Answer: The concrete paving alternate will be removed from the civil documents. The only bid will be for asphalt paving, plus the alternate asphalt pavement.

G4 QUESTION: Could you print a sheet with only existing grading without the improvements?

G4.1 Answer: Yes, see added sheet SV100 for existing grades.

PROJECT MANUAL REVISIONS

DRAWINGS REVISIONS

C1 SHEET C100 – OVERALL SITE PLAN

C1.1 REVISE the location of gate and fence on the Northeast side of the building.

C2 SHEET C102 – SITE GEOMETRY PLAN

C2.1 REVISE the location of gate and fence on the Northeast side of the building. The concrete paving alternate is removed from the keynote section of the sheet. Notes now only display heavy and standard duty asphalt paving.

C3 SHEET C103 – SITE GRADING PLAN

C3.1 REVISE the location of gate and fence on the Northeast side of the building.

C4 SHEET C104 – STORMWATER PLAN - SITE

C4.1 REVISE the location of gate and fence on the Northeast side of the building.

C5 SHEET C105 – STORMWATER POLLUTION PREVENTION PLAN

C5.1 REVISE the location of gate and fence on the Northeast side of the building.

C6 SHEET C106 – UTILITY PLAN

C6.1 REVISE the location of gate and fence on the Northeast side of the building.

C7 SHEET C107 – DETAILS

C7.1 Detail 14 changed to remove rebar in concrete curb and gutter. Note added to use 4000 psi strength concrete with fiber mesh additives on all curb and gutter. Details 6 and 8 showing the alternate heavy and standard duty concrete paving were removed.

C8 SHEET C109 – ADD ALTERNATES

C8.1 REVISE the location of gate and fence on the Northeast side of the building. Asphalt added to pavement type notes for alternate additional paving.

END OF ADDENDUM NO. 1



JOPLIN EARLY CHILDHOOD CENTER
ADDENDUM #1

SPECIFICATIONS

REPLACE SECTION 116816 – PLAY AREA EQUIPMENT in its entirety. The following items were addressed.

1. PART 1 – General – 1.1
 - a. **ADD** section B
2. PART1 – 1.2.B
 - a. **REVISED** #3
3. PART1 – 1.3.A
 - a. **ADDED** #2
4. PART1 – 1.6.A
 - a. **REMOVE** #1, #2a, #2b
5. PART1 – 1.7.A
 - a. **ADD** #3
6. PART 2 – 2.2
 - a. **REVISE** paragraph B
 - b. **ADD** paragraph G
7. PART 3 – 3.1
 - a. **REVISE** paragraph A
8. PART 3 – 3.2.A
 - a. **REMOVE** #1 and #2

SECTION 321820 – PLAY SURFACE CONSTRUCTION – Modify as follows:

1. PART 2 – 2.2.B
 - a. **REMOVE** paragraph #1 *“Verify the selected primer is compatible with the EPS substrate by obtaining a sample of the EPS and applying the primer at the manufacturer’s required rate. Observe condition after 48 hours and notify the Landscape Architect of any damage or chemical degradation of the EPS.”*
2. PART 2 – 2.2.C.2
 - a. **REMOVE** *“of 5’.”*
 - b. **ADD** new sentence *“Nominal thickness to be as required by the manufacturer for the specified fall height.”*
3. PART 2 – 2.2.D.3
 - a. **REMOVE** *“dark green or mix of greens.”* and **REPLACE** with *“mix of blues.”*
 - b. **REMOVE** paragraph b. *“Secondary color shall be a lighter green or mix of green and yellow.”*
4. PART 3 – 3.11.F.1
 - a. **REMOVE** *“for each color area”* from end of sentence.
5. PART 3 – 3.11.F.2
 - a. **REMOVE** *“each color of”* from sentence.

SECTION 328400 – IRRIGATION SYSTEM – Modify as follows:

1. PART 1 – 1.4.D.7
 - a. **REMOVE** *“Gladstone”* and **REPLACE** with *“Joplin”*
2. PART 1 – 1.6.A.2
 - a. **REMOVE** *“(ALTERNATE)”* from sentence.



ADDENDUM 001

October 14, 2016

3. PART 2 – 2.8.A.1
 - a. **REMOVE** sentence “Refer to plans for pop-up heights for each zone.” and **REPLACE** with “Provide 4” pop-up in turf zones and 12” pop-up in planting bed zones.”
4. PART 3 – 3.5
 - a. **REMOVE** paragraph K “Install emitter line and related equipment as per manufacturer’s recommendations written instructions. Avoid placing emitter line in direct sunlight. Maintain consistent spacing of dripline within planter beds to provide even distribution throughout the area”

SECTION 329300 – LANDSCAPE PLANTINGS – Modify as follows:

1. PART 3 – 3.4.B
 - a. **REVISE** to read “Refer to 3.7 for Excavation and 3.8 for Setting and Backfilling for Plants.”
2. PART 3 – 3.17.K
 - a. **REMOVE** “except for the naturalized turf areas described further under 3.14 – F” from first sentence.

DRAWINGS – The following plan sheets have been modified as follows. Replace entire sheet(s) with provided addenda.

Sheet L110 – PLAY AREA DETAILS

- A. **REVISE** detail #4
- B. **REVISE** detail #5
- C. **REVISE** detail #9
- D. **REVISE** detail #10

Sheet L200 – LANDSCAPE PLAN (BASE BID)

- A. **REVISE** planting plan to accommodate site utilities

Sheet L201 – LANDSCAPE PLAN ALTERNATES

- A. **REVISE** plan view #3 - ALTERNATE #4 –LANDSCAPE ADJUSTMENTS planting plan to accommodate site utilities

Sheet L202 – LANDSCAPE PLAN ALTERNATES

- A. **REVISE** planting plan to accommodate site utilities
- B. **REVISE** planting plan plant number callouts
- C. **ADD** plants at northeast corner of building

Sheet L301 – IRRIGATION PLAN ALTERNATE

- A. **REVISE** irrigation plan and Alternate #6 Note
- B. **ADD** irrigation alternate schedule

Project: Joplin Early Childhood Center
Smith & Boucher Project Numbers 1617200

The information included herein represents mechanical, electrical, and plumbing (MEP) modifications to the Bid Documents dated 09-30-16 and shall be incorporated into the overall information for "ADDENDUM #1" dated 10-14-2016 as issued by the Architect.

PROJECT MANUAL:

1. **Section 221413 - Storm Drainage Piping**
 - REMOVE ENTIRE SECTION FROM PROJECT

DRAWINGS:

1. **ME202 – ROOF PLAN – MECHANICAL AND ELECTRICAL**
A. See full size drawing for revisions to gas piping.
2. **ME301 – SCHEDULES – MECHANICAL AND ELECTRICAL**
A. See full size drawing for revisions Unit Heater Schedule.
3. **M101A – FLOOR PLAN - AREA A - HVAC**
A. See full size drawing for revisions to unit heater UH-1.
4. **M103C – FLOOR PLAN - AREA C - HVAC**
A. See full size drawing for revisions to Multipurpose Room area ductwork.
5. **P203C – FLOOR PLAN - AREA C - PLUMBING**
A. See full size drawing for revisions to domestic water piping and gas piping.
6. **E101A – FLOOR PLAN - AREA A - LIGHTING**
A. See full size drawing for revisions to nurse room, vestibule and exterior canopy lighting.
7. **E102B – FLOOR PLAN - AREA B - LIGHTING**
A. See full size drawing for revisions to reading nook and exterior canopy lighting.
8. **E203C – FLOOR PLAN - AREA C - LIGHTING**
A. See full size drawing for revisions to vestibule and exterior canopy lighting.
9. **E301 – SCHEDULES - ELECTRICAL**
A. See full size drawing for revisions to lighting fixture schedule.

END OF MEP ITEMS FOR "ADDENDUM #1"

Smith & Boucher, Inc.

Addendum #2

October 7, 2015

Page 2

Joplin Early Childhood

Pre-Bid Sign-in

10.13.2016

	Name	Company	Trade	GC	Email
1	Jon Soback	KCI Construction	G.P.	GC or Sub	Jschewk@kciconstruction.com
2	Tyler Dozier	Total coverage Electric	Electric	GC or Sub	TE365@gmail.com
3	Jim Thompson	Gains Ent.	UTILITIES	GC or Sub	contracts@gainsent.com
4	Sara Camerer MBE WBE	AMOR Environmental	Excavating	GC or Sub	saracamerer@yahoo.com
5	EDD PARSONS III	RPBINE	Fire Protection	GC or Sub	rsaine@clinet
6	Trant Bergmann	Dewitt & Assoc.	GC	GC or Sub	Hbergmann@dewitt-associates.com
7	Janeff Sims	Dewitt	GC	GC or Sub	jsims@dewitt-associates.com
8	Jason Flynn	Construction Services Group	GC	GC or Sub	jflynn@construction-services-group.net
9	Traavis Smith	Zions Const.	GC	GC or Sub	traavis.smith@zions.com
10	Laure Livers	CIS Data Services	Telecommunications	GC or Sub	Llivers@cisdatservices.com
11	Georg Fuesy	CIS Data Services	Telecommunications	GC or Sub	gfuesy@cisdatservices.com
12	KEN GREENE	BALES CONST.	Gen'l Cont.	GC or Sub	kgreene@balesconstruction.com
13	Jeremy Pant	Branco Enterprises, Inc.	GC	GC or Sub	estimating@branco.com
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15	Frank Schaffner	RE Smith Const	GC	GC or Sub	frank@rsmithconst.com
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17	Greg DeJAVETTE	TSI Global	IT	GC or Sub	gdejette@tsi-global.com
18	Nick Hamble	Crossland Construction	GC	GC or Sub	nhamble@crossland.com

19	Travis Green	Deloitte	Consultant	GC or Sub	traisgreen@deloitte.com
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Tim Virginia	Dalton-Killinger	GE			

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Joplin Early Childhood Center

Site Legal Description:

JOP MISC BEG 1360.93' S & 50' E NW COR SE E 456.91' N 318.78' W 456.91' S 318.78' TO POB

Project No. 16054

	CURRENT ISSUE DATE	ORIGINAL ISSUE DATE
INTRODUCTORY INFORMATION		
000101	Project Team Directory	09.30.16
000105	Certifications and Seals	09.30.16
000110	Table of Contents	09.30.16
BIDDING REQUIREMENTS		
001100	Invitation to Bid	09.30.16
002100	Information for Bidders	09.30.16
002200	Supplementary Information for Bidders	09.30.16
003132	Geotechnical Data	09.30.16
004200	Proposal Form	09.30.16
004313	Bid Security Form	09.30.16
004513	Bidder's Qualifications	09.30.16
CONTRACTING REQUIREMENTS		
005200	Agreement Form	09.30.16
006113	Performance and Payment Bond	09.30.16
006273	Application and Certification for Payment	09.30.16
006275	Partial Lien Waiver	09.30.16
006276	Bailment Receipt	09.30.16
007200	General Conditions	09.30.16
007300	Supplementary Conditions	09.30.16
008100	Prevailing Wage Determination	09.30.16
008400	Attachments	09.30.16
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012200	Units Prices	09.30.16
012300	Alternates	09.30.16
012500	Substitution Procedures	09.30.16
012600	Contract Modification Procedures	09.30.16
012900	Payment Procedures	09.30.16
013100	Project Management and Coordination	09.30.16
013200	Construction Progress Documentation	09.30.16
013300	Submittal Procedures	09.30.16
014000	Quality Requirements	09.30.16
014200	References	09.30.16
014529	Testing and Laboratory Services	09.30.16
015000	Temporary Facilities and Controls	09.30.16
016000	Product Requirements	09.30.16
017300	Execution	09.30.16
017419	Construction Waste Management & Disposal	09.30.16
017700	Closeout Procedures	09.30.16
017823	Operation and Maintenance Data	09.30.16
017839	Project Record Documents	09.30.16
017900	Demonstration and Training	09.30.16

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DIVISION 2 – EXISTING CONDITIONS		
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DIVISION 3 - CONCRETE		
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034100 Precast Structural Concrete	09.30.16	09.30.16
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042000 Unit Masonry	09.30.16	09.30.16
DIVISION 5 - METALS		
051200 Structural Metal Framing	09.30.16	09.30.16
053100 Steel Decking	09.30.16	09.30.16
054000 Cold-Formed Metal Framing	09.30.16	09.30.16
054400 Cold-Formed Metal Trusses	09.30.16	09.30.16
055000 Metal Fabrications	09.30.16	09.30.16
DIVISION 6 - WOOD AND PLASTICS		
061000 Rough Carpentry	09.30.16	09.30.16
061600 Sheathing	09.30.16	09.30.16
062013 Exterior Finish Carpentry	09.30.16	09.30.16
062023 Interior Finish Carpentry	09.30.16	09.30.16
064200 Wood Paneling	10.14.16	10.14.16
064023 Interior Architectural Woodwork	10.14.16	10.14.16
066400 Plastic Paneling	09.30.16	09.30.16
DIVISION 7 - THERMAL AND MOISTURE PROTECTION		
071113 Bituminous Dampproofing	09.30.16	09.30.16
072100 Thermal Insulation	09.30.16	09.30.16
072500 Weather Barriers	09.30.16	09.30.16
072729 Air Barrier Coatings	09.30.16	09.30.16
074113 Standing Seam Metal Roofing	09.30.16	09.30.16
074213 Formed Metal Wall Panels	09.30.16	09.30.16
075213 Modified Bituminous Membrane Roofing	09.30.16	09.30.16
075423 Thermoplastic Membrane Roofing (TPO)	09.30.16	09.30.16
076200 Sheet Metal Flashing and Trim	09.30.16	09.30.16
078413 Penetration Firestopping	10.14.16	10.14.16
078446 Fire Resistive Joint Systems	10.14.16	10.14.16
079200 Joint Sealants	09.30.16	09.30.16
079500 Expansion Control	10.14.16	10.14.16
DIVISION 8 - DOORS AND WINDOWS		
081113 Hollow Metal Doors and Frames	09.30.16	09.30.16
081416 Flush Wood Doors	09.30.16	09.30.16
083113 Access Doors and Panels	09.30.16	09.30.16
083323 Overhead Coiling Doors	09.30.16	09.30.16
084113 Aluminum Entrances and Storefronts	09.30.16	09.30.16
084413 Glazed Aluminum Curtain Walls	09.30.16	09.30.16
086200 Unit Skylights	09.30.16	09.30.16
087100 Door Hardware	09.30.16	09.30.16
088000 Glazing	09.30.16	09.30.16
088113 Decorative Glass Glazing	09.30.16	09.30.16

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092900	Gypsum Board	09.30.16	09.30.16
093000	Tiling	09.30.16	09.30.16
095113	Acoustical Panel Ceilings	09.30.16	09.30.16
096513	Resilient Base and Accessories	09.30.16	09.30.16
096516	Resilient Sheet Flooring	09.30.16	09.30.16
096519	Resilient Tile Flooring	09.30.16	09.30.16
096813	Tile Carpeting	09.30.16	09.30.16
097200	Wallcoverings	09.30.16	09.30.16
097253	Custom Digital Wall Covering Murals	09.30.16	09.30.16
097723	Fabric-Wrapped Panels	09.30.16	09.30.16
099113	Exterior Painting	09.30.16	09.30.16
099123	Interior Painting	09.30.16	09.30.16
099300	Staining and Transparent Finishing	09.30.16	09.30.16
099600	High-Performance Coatings	09.30.16	09.30.16
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102113	Toilet Compartments	09.30.16	09.30.16
102123	Cubicle Curtains	09.30.16	09.30.16
102600	Wall and Door Protection	09.30.16	09.30.16
102800	Toilet, Bath & Laundry Accessories	09.30.16	09.30.16
104413	Fire Extinguisher Cabinets	09.30.16	09.30.16
104416	Fire Extinguishers	09.30.16	09.30.16
107500	Flagpoles	09.30.16	09.30.16
DIVISION 11 - EQUIPMENT			
116816	Play Area Equipment	09.30.16	09.30.16
DIVISION 12 - FURNISHINGS			
122113	Horizontal Louver Blinds	09.30.16	09.30.16
123200	Manufactured Wood Casework	10.14.16	10.14.16
129300	Site Furnishings	09.30.16	09.30.16
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210500	Common Work Results for Fire Suppression	09.30.16	09.30.16
211313	Wet-Pipe Sprinkler System	09.30.16	09.30.16

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DIVISION 22 - PLUMBING			
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220513	Common Motor Requirements for Plumbing Equipment	09.30.16	09.30.16
220516	Expansion Fittings and Loops for Plumbing Piping	09.30.16	09.30.16
220519	Meters and Gauges for Plumbing Piping	09.30.16	09.30.16
220523	Valves - Plumbing	09.30.16	09.30.16
220529	Hangers and Supports for Plumbing Piping and Equipment	09.30.16	09.30.16
220548	Vibration Controls for Plumbing Piping and Equipment	09.30.16	09.30.16
220553	Identification for Plumbing Piping and Equipment	09.30.16	09.30.16
220719	Plumbing Piping Identification	09.30.16	09.30.16
221116	Domestic Water Piping	09.30.16	09.30.16
221119	Domestic Water Piping Specialties	09.30.16	09.30.16
221316	Sanitary Waste and Vent Piping	09.30.16	09.30.16
221319	Sanitary Waste Piping Specialties	09.30.16	09.30.16
221413	Storm Drainage Piping	09.30.16	09.30.16
223100	Domestic Water Softeners	09.30.16	09.30.16
223400	Fuel-Fired, Domestic-Water Heaters	09.30.16	09.30.16
224000	Plumbing Fixtures	09.30.16	09.30.16
DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING			
230500	Common Work Results for HVAC	09.30.16	09.30.16
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230517	Sleeves and Sleeve Seals for HVAC Piping	09.30.16	09.30.16
230518	Escutcheons for HVAC Piping	09.30.16	09.30.16
230519	Meters & Gages - HVAC	09.30.16	09.30.16
230523	Valves - HVAC	09.30.16	09.30.16
230529	Hangers & Supports – HVAC	09.30.16	09.30.16
230548	Vibration Controls for HVAC Piping and Equipment	09.30.16	09.30.16
230553	HVAC System Identification	09.30.16	09.30.16
230593	Testing, Adjusting, and Balancing for HVAC	09.30.16	09.30.16
230713	Duct Insulation	09.30.16	09.30.16
230716	HVAC Equipment Insulation	09.30.16	09.30.16
230719	HVAC Piping Insulation	09.30.16	09.30.16
230923	Direct Digital Control System for HVAC	09.30.16	09.30.16
231123	Facility Natural-Gas Piping	09.30.16	09.30.16
233113	Metal Ducts	09.30.16	09.30.16
233300	Duct Accessories	09.30.16	09.30.16
233600	Air Terminal Units	09.30.16	09.30.16
233713	Diffusers, Registers, and Grilles	09.30.16	09.30.16
237413	Packaged, Outdoor, Central-Station Air-Handling Units	09.30.16	09.30.16
237413.13	Rooftop Equipment Screens	09.30.16	09.30.16
238239	Unit Heaters	09.30.16	09.30.16

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260500	Common Work Results for Electrical	09.30.16	09.30.16
260519	Low-Voltage Electrical Power Conductors and Cables	09.30.16	09.30.16
260523	Control-Voltage Electrical Power Cables	09.30.16	09.30.16
260526	Grounding and Bonding for Electrical Systems	09.30.16	09.30.16
260529	Hangers and Supports for Electrical Systems	09.30.16	09.30.16
260533	Raceway and Boxes for Electrical Systems	09.30.16	09.30.16
260536	Cable Trays for Electrical Systems	09.30.16	09.30.16
260553	Identification for Electrical Systems	09.30.16	09.30.16
260923	Lighting Control Devices	09.30.16	09.30.16
262200	Low Voltage Transformers	09.30.16	09.30.16
262413	Switchboards	09.30.16	09.30.16
262416	Panelboards	09.30.16	09.30.16
262726	Wiring Devices	09.30.16	09.30.16
262813	Fuses	09.30.16	09.30.16
262816	Enclosed Switches and Circuit Breakers	09.30.16	09.30.16
262913	Enclosed Controllers	09.30.16	09.30.16
262923	Variable-Frequency Motor Controllers	09.30.16	09.30.16
264113	Lightning Protection for Structures	09.30.16	09.30.16
264313	Transient-Voltage Suppression for Low-Voltage Electrical Power Circuits	09.30.16	09.30.16
265119	LED Interior Lighting	09.30.16	09.30.16
265219	Emergency and Exit Lighting	09.30.16	09.30.16
265600	Exterior Lighting	09.30.16	09.30.16
DIVISION 27 – COMMUNICATIONS			
270000	Communications	09.30.16	09.30.16
270100	Fire Stops	09.30.16	09.30.16
270526	Grounding and Bonding for Communications Systems	09.30.16	09.30.16
270800	Commissioning of Communications	09.30.16	09.30.16
270810	Testing Copper UTP Cables	09.30.16	09.30.16
270820	Testing Optical Fiber Cables	09.30.16	09.30.16
271113	Communications Entrance Protection	09.30.16	09.30.16
271116	Communications Cabinets, Racks, Frames, and Enclosures	09.30.16	09.30.16
271119	Communications Termination Blocks and Patch Panels	09.30.16	09.30.16
271123	Communications Cable Management and Ladder Rack	09.30.16	09.30.16
271500	Communications Horizontal Cabling	09.30.16	09.30.16
271513	Communications Copper Horizontal Cabling	09.30.16	09.30.16
271543	Communications Faceplates and Connectors	09.30.16	09.30.16
275123.50	Educational Intercommunications and Program Systems	09.30.16	09.30.16
DIVISION 28 - ELECTRONIC ACCESS CONTROL AND INTRUSION DETECTION			
280500	Common Work Results for Electronic Safety and Security	09.30.16	09.30.16
280513	Conductors and Cables for Electronic Safety and Security	09.30.16	09.30.16
283111	Digital, Addressable Fire-Alarm System	09.30.16	09.30.16
DIVISION 31 - EARTHWORK			
311000	Site Clearing	09.30.16	09.30.16
312000	Earth Moving	09.30.16	09.30.16
312319	Dewatering	09.30.16	09.30.16
312333	Excavation and Trenching	09.30.16	09.30.16
313116	Termite Control	09.30.16	09.30.16
313200	Soil Stabilization	To Be Issued by Addendum	

DIVISION 32 - EXTERIOR IMPROVEMENTS

321123	Aggregate for Base	09.30.16	09.30.16
321216	Asphalt Paving	09.30.16	09.30.16
321313	Concrete Paving	09.30.16	09.30.16
323113	Chain Link Fencing	09.30.16	09.30.16
321820	Play Surface Construction	09.30.16	09.30.16
328400	Irrigation System	09.30.16	09.30.16
329300	Landscape Plantings	09.30.16	09.30.16

DIVISION 33 - UTILITIES

330600	Common Work Results for Utilities	09.30.16	09.30.16
334100	Storm Utility Drainage Piping	09.30.16	09.30.16
334600	Subdrainage	09.30.16	09.30.16

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SECTION 064023 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Interior wood trim (064023.A01).
 - 2. Interior veneered plywood. (064023.A07).
 - 3. Custom plastic laminated clad casework (064023.A16).
 - a. Mailbox Sorter cabinetry and systems.
 - 4. Custom plastic laminated clad countertops and sills. (064023.A18).
 - 5. Solid-surfacing-material for countertops (064023.A19) and sills (064023.A20).
 - 6. Suspended custom ceiling panels (064023.A13)
 - 7. Cable Display System

- B. Related Sections include the following:
 - 1. Section 012300 "Alternates" for alternates effecting work of this Section.
 - 2. Section 061000 "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing woodwork and concealed within other construction before woodwork installation.
 - 3. Section 062023 "Interior Finish Carpentry" for premanufactured wood trim and shelving.
 - 4. Section 066100 "Solid Surface Fabrications" for sinks and display case surrounds.
 - 5. Section 123200 "Manufactured Wood Casework" for premanufactured casework.

- C. Products Installed but not Furnished under this Section:
 - 1. Factory-primed flush wood doors.

1.2 DEFINITIONS

- A. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items unless concealed within other construction before woodwork installation.

- B. Balanced Construction: Where exposed face of a panel is surfaced with high pressure plastic laminate and the opposite (back) surface shall receive a cabinet liner or backer sheet when that surface is not exposed to view. All countertops shall have backer sheets.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated, including hardware, accessories and solid-surfacing material.

- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Show details full size.
 - 2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
 - 3. Show locations and sizes of cutouts and holes for items installed in architectural woodwork.
 - 4. Show dimensioned layouts, elevations, sections and connections for ceiling panel systems.

- C. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.

- D. Samples for Verification:
 - 1. For each species and cut of lumber and wood trim with non-factory-applied finish, with 1/2 of exposed surface finished, 50 sq. in. for lumber and 10 inch long for trim, including railing cap.
 - 2. Veneer-faced panel products with transparent finish, with 1/2 of exposed surface finished, 8 by 10 inches for each species and cut of veneered panel. Include at least one face-veneer seam and finish as specified.
 - 3. Plastic laminate-faced panel products, 8 by 10 inches for each color of plastic laminate panel. Include at two edges with specified edging.
 - 4. Plastic laminates, 8 by 10 inches, for each color, pattern, and surface finish, with one sample applied to core material and specified edge material applied to one edge.
 - 5. Plastic laminate-clad countertop with 3mm PVC edging, sample not less than 8 inches square with edging on one side.

6. Thermoset decorative panels, 8 by 10 inches, for each color, pattern, and surface finish, with edge banding on one edge.
7. Exposed cabinet hardware and accessories, one unit for each type.
8. Solid-surfacing materials, 6 inches square.
9. Cable display system, not less than one sample of each component and 12-inch-long sample of cable.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of product, signed by product manufacturer.
- B. Qualification Data: For Installer.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance of not less than seven years under the current company name.
- B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- C. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of interior architectural woodwork with sequence-matched wood veneers and plastic laminate finishes.
- D. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.
 1. Comply with "Custom" grading requirements, unless specifically specified otherwise.
- E. Fire-Test-Response Characteristics: Where fire-retardant materials or products are indicated, provide materials and products with specified fire-test-response characteristics as determined by testing identical products per test method indicated by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.
- F. Preinstallation Conference: Conduct conference at Project site.
 1. Convene meeting within one week of scheduled start of installation with representatives of the Owner, Contractor, Architect, installer, finisher and painter.
 2. As applicable, review substrate conditions, requirements for related work, installation instructions, seam finishing, painting instructions, storage and handling, and protection measures.
 3. Keep minutes of meeting including responsibilities of various parties.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Project Conditions" Article.
- B. Stack lumber, trim, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
- C. Deliver components in clearly marked containers and packages suitable for shipment of specified products so as to prevent damage during transit.
- D. Store components in secured areas with ambient environmental conditions of 25 to 55 percent relative humidity and temperature not to exceed 80 degrees. Store in dry locations that will avoid damage. Do not stack panels directly on floor and do not subject panels to moisture.
- E. Handle panels and components to avoid racking, twisting, denting, scratching of finished surfaces.
 1. Store infill panels flat and protected from moisture.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
- B. Do not install interior architectural woodwork materials that are wet, moisture damaged, or mold damaged.
 - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.
- C. Field Measurements: Where woodwork is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Locate concealed framing, blocking, and reinforcements that support woodwork by field measurements before being enclosed, and indicate measurements on Shop Drawings.
 - 2. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating woodwork without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.8 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Interior Architectural Woodwork, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Horizontal Surfaces – Ceiling Panels and Counters (not within closed door storage):
 - a. Uniform load of 50 lbf/ ft. applied in any direction.
 - b. Concentrated load of 200 lbf applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
 - 2. Vertical Surfaces:
 - a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
 - b. Infill load and other loads need not be assumed to act concurrently.

2.2 MATERIALS

- A. General: Provide materials that comply with requirements of AWI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Wood Species and Cut for Transparent Finish: White Maple, plain sliced/plain sawn or All-sapwood White Birch plain sliced/plain sawn.
- C. Wood Products: Comply with the following:
 - 1. Hardboard: AHA A135.4.
 - 2. Medium-Density Fiberboard: ANSI A208.2, Grade MD, made with binder containing no urea formaldehyde.
 - 3. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
 - 4. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.

- D. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.
 - 1. Provide PVC or polyester edge banding complying with LMA EDG-1 on components with exposed or semiexposed edges.
- E. Plastic-Laminate-Clad Panels: Particleboard or medium-density fiberboard core, ¾ inch thick, finished with plastic laminate, grade VGS in color as selected by Architect. Each panel shall be self-edged. Back panel face (non-exposed) to receive grade BKL backing sheet.
- F. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.
 - 1. Basis of Design Products: Subject to compliance with requirements, provide products by manufacturers indicated on Material Finish Legend on drawings or comparable product submitted to and accepted by Architect prior to bidding.
 - 2. Colors and Patterns: As indicated Material Finish Legend on Drawings.
- G. Concealed Countertop Bracket – Basis-of-Design Product: Subject to compliance with requirements, provide products by Rakks; EH Inside Wall Mount counter Support Bracket, steel thickness and dimensions shall be sized to support carrying capacity, color shall be as selected by Architect. Carrying capacity shall not be less than 375 lbs. Comparable products will be considered when submitted to and accepted by Architect prior to bidding.
 - 1. Coordinate solid wood blocking requirements for a concealed bracket installation prior to installation of drywall.
- H. Fasteners for Ceiling Panels:
 - 1. Provide 1/4 inch minimum diameter Stainless Steel (Type 304) all-thread rod, washers, and nuts in sizes and configurations required to meet performance requirements in Article 2.1 of this Section as determined by Fabricator and Installer, and in configurations acceptable to Architect.
 - 2. Refer to details on Drawings for additional information.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this Article, acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified.
 - 1. Do not use treated materials that do not comply with requirements of referenced woodworking standard or that are warped, discolored, or otherwise defective.
 - 2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
 - 3. Identify fire-retardant-treated materials with appropriate classification marking of UL, U.S. Testing, Timber Products Inspection, or another testing and inspecting agency acceptable to authorities having jurisdiction.
- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Comply with performance requirements of AWPA C20 (lumber) and AWPA C27 (plywood). Use the following treatment type:
 - 1. Interior Type A: Low-hygroscopic formulation.
 - 2. Kiln-dry materials before and after treatment to levels required for untreated materials.

2.4 INTERIOR WOOD TRIM, MOLDINGS AND WALL CAP – TRANSPARENT (064023.A01)

- A. Hardwood Lumber Trim for Transparent Finish: Comply with AWI, Section 300, Grade “Custom”.
 - 1. Species and Grade: Plain Sliced White Birch or White Maple – Stained to match Architect Sample as indicated on Material Finish Legend.
 - 2. Maximum Moisture Content: 13 percent.
 - 3. Finger Jointing: Not allowed.
 - 4. Gluing for Width: Use for lumber trim wider than 6 inches.
 - 5. Veneered Material: Not allowed.
 - 6. Face Surface: Surfaced (smooth).
 - 7. Matching: Selected for compatible grain and color.
 - 8. Profiles: Refer to Drawings for configurations and profiles required.

2.5 INTERIOR VENEERED PLYWOOD (064023.A07)

- A. Hardwood Veneer Plywood: Manufacturer's stock hardwood plywood panels complying with HPVA HP-1, made without urea-formaldehyde adhesive.
 - 1. AWI Grade: Premium.
 - 2. Face Veneer Species and Cut:

- a. Provide Plain-sliced White Birch or White Maple where indicated on Material Finish Legend.
- 3. Veneer Matching of Veneer Leaves: Bookmatch and end match.
- 4. Veneer Matching within Panel Face: Center-balance match.
- 5. Construction: Finished exposed edge veneer core.
 - a. Basis of Design Product: "ApplePly" by States Industries, Inc. or a comparable product submitted to and accepted by Architect prior to bidding.
- 6. Thickness: 0.75 inch, unless otherwise indicated.
- 7. Panel Size: 48 by 96 inches or greater.
- 8. Glue Bond: Type II (interior).
- 9. Finish: Field finished by others.

2.6 ORNAMENTAL WOODWORK (064023.A13)

- A. Suspended Ornamental Ceiling Panels: Provide custom shop fabricated MDF panel system designed by Fabricator for installations and configurations as indicated on drawings.
 - 1. Panels shall be factory primed and painted per Section 099123 "Interior Painting".
 - 2. Thickness: 1/2 inch minimum.
 - 3. Mounting: Semi-concealed stainless-steel all-thread or stainless-steel cable wire suspension system similar to Drawings or as acceptable to Architect and Owner.
 - 4. Contractor and Fabricator shall coordinate concealed blocking requirements prior to installation and fabrication. All blocking locations and requirements shall be indicated on Shop Drawings. Coordinate, design, and supply connection to roof structure above.

2.7 CUSTOM PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS (064023.A16)

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of architectural plastic-laminate cabinets indicated for construction, finishes, installation, and other requirements.
- B. Cabinet Materials:
 - 1. Exposed Cabinet Materials:
 - a. Plastic Laminate: Grade VGS.
 - b. Unless otherwise indicated, provide specified edge banding on all exposed edges.
 - 2. Semiexposed Cabinet Materials:
 - a. Plastic Laminate: Grade VGS.
 - 1) Provide plastic laminate for semi-exposed surfaces unless otherwise indicated.
 - b. Metal for Steel Drawer Pans: Cold-rolled, steel sheet.
 - c. Unless otherwise indicated, provide specified edge banding on all semi-exposed edges.
 - 3. Concealed Cabinet Materials:
 - a. Plastic Laminate: Grade BKL.
 - 4. Sorting Shelves for Mailbox Sorter: Provide one of the following.
 - a. Plastic Laminate: Grade VGS.
 - b. Metal: Cold-rolled, steel sheet.
- C. Design, Color and Finish:
 - 1. Design: Flush overlay with wire pulls.
 - 2. Plastic-Laminate Colors, Patterns, and Finishes: As indicated by manufacturer's designations on Drawings.
 - 3. Thermoset Decorative Panel Colors, Patterns, and Finishes: As selected by Architect from casework manufacturer's full range.
 - 4. PVC Edgebanding Color: As indicated by manufacturer's designation on Material Finish Legend.
- D. Cabinet Fabrication: Plastic-Laminate-Faced Cabinet Construction: As required by referenced quality standard, but not less than the following:
 - 1. Bottoms and Ends of Cabinets, and Tops of Wall Cabinets and Tall Cabinets: 3/4-inch particleboard, plastic-laminate faced on exposed surfaces, thermoset decorative panels on semi-exposed surfaces.
 - 2. Shelves: 1-inch thick, thermoset decorative panels.
 - 3. Backs of Cabinets: 1/2-inch particleboard, plastic-laminate faced on exposed surfaces, thermoset decorative panels on semi-exposed surfaces.
 - 4. Drawer Fronts: 3/4-inch particleboard, plastic-laminate faced exposed face and balanced backer.
 - 5. Drawer Sides and Backs:
 - a. 1/2-inch solid-wood or veneer-core hardwood plywood, with glued dovetail or multiple-dowel joints.
 - b. 1/2-inch, high density fiberboard, 55 pcf density minimum. All parts glued and mechanically fastened using thermosetting fasteners.
 - c. 1/2-inch, high density melamine composite panels. All parts glued and mechanically fastened using

thermosetting fasteners.

6. Drawer Bottoms: 1/4-inch thermoset decorative panels glued and dadoed into front, back, and sides of drawers. Use 1/2-inch material for drawers more than 24 inches wide.
7. Doors: 3/4-inch particleboard or MDF, plastic-laminate faced.
8. Cabinets Bases: Bases shall be fabricated separate from cabinets (not integral). Fabricate from 3/4-inch exterior grade, preservative treated plywood or preservative-treated 2x4's. Fabricate in a ladder configuration with plywood fronts and back running continuous for the length of the cabinet. Provide ends, and provide additional runners centered in all cabinets greater than 24 inches wide.
9. Filler Strips: Provide as needed to close spaces between cabinets and walls, ceilings, and indicated equipment. Fabricate from same material and with same finish as cabinets.

B. Mailbox Sorter Fabrication: Fabricate mailbox sorter using materials and construction matching the materials, quality, and design of plastic laminate faced cabinet construction specified under this section.

1. Dimensions and layout of shelving shall be as indicated on Drawings.

2.8 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items specified in Division 08 Section "Door Hardware (Scheduled by Describing Products)."

B. Frameless Concealed Hinges (European Type): Provide "Clip top Blumotion" hinges from Blum. Provide two hinges for doors less than 48 inches high, and provide three hinges for doors more than 48 inches high.

1. Location: Provide at all custom casework pieces.

C. Pulls: Solid aluminum or chrome-plated wire pulls, fastened from back with two screws. Provide 2 pulls for drawers more than 24 inches wide.

D. Drawer Slides: BHMA A156.9, Type B05091.

1. Standard Duty (Grades 1, 2, and 3): Side mounted and extending under bottom edge of drawer; full-extension type; zinc-plated steel with polymer rollers.
2. Box Drawer Slides: Grade 1, for drawers not more than 6 inches high and 24 inches wide.
3. File and Flat-File Drawer Slides: Grade 1HD-100, for drawers more than 6 inches high or 24 inches wide.

E. Adjustable Shelf Supports: 2-pin locking plastic shelf rests complying with BHMA A156.9, Type B04013.

1. Adjustable shelf standards and brackets for glass shelves at display cases are specified in Section 088000.

F. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Satin Chromium Plated: Where not otherwise specified, provide BHMA 626 for brass or bronze base; BHMA 652 for steel base.

G. Drawer and Hinged Door Locks: Cylindrical (cam) type, five-pin tumbler, brass with chrome-plated finish, and complying with BHMA A156.11, Grade 1.

1. Provide a minimum of two keys per lock and six master keys.
2. Provide locks where indicated.

H. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

I. Grommets (064023.A22)

1. Laminate Grommet Cap Cover: For cable passage through countertops, 3-inch OD, trim ring and liner shall be matte black, molded-plastic grommets. Cap to receive laminate with slot for wire passage. Basis-of-Design; Doug Mockett "LG3-90."

J. Mailbox Sorter Hardware: Provide manufacturer's standard hardware allowing support of sorting shelves at minimum of 1 inch increments. Hardware shall allow sorting shelves to be movable and located in a fully custom configuration.

2.9 MISCELLANEOUS MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.

- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

2.10 FABRICATION, GENERAL

- A. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
- B. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:
 - 1. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members 3/4 Inch Thick or Less: 1/16 inch.
 - 2. Edges of Rails and Similar Members More Than 3/4 Inch Thick: 1/8 inch.
- C. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 - 1. Notify Architect seven days in advance of the dates and times woodwork fabrication will be complete.
 - 2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements indicated on Shop Drawings before disassembling for shipment.
- D. Shop-cut openings to maximum extent possible to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
 - 1. Seal edges of openings in countertops with a coat of varnish.

2.11 PLASTIC-LAMINATE COUNTERTOPS (064023.A18)

- A. High-Pressure Decorative Laminate Grade: HGS.
- B. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. As indicated by manufacturer's designations.
- C. Grain Direction: Parallel to cabinet fronts and parallel with window frame sill, as applicable.
- D. Edge Treatment:
 - 1. Countertops: 3mm edging, same as specified in Division 12 Section 123200.
- E. Core Material: Medium-density fiberboard made with exterior glue.
- F. Backer Sheet: Provide plastic-laminate backer sheet, Grade BKL, on underside of countertop substrate.

2.12 SOLID-SURFACING-MATERIAL COUNTERTOPS (06423.A19) AND SILLS (064023.A20)

- A. Grade: Premium.
- B. Solid-Surfacing-Material Thickness: 1/2 inch.
- C. Colors, Patterns, and Finishes: Counter tops, splashes, aprons and undercounter panels shall be of the same material and color. Architect may select a separate color for each room. Provide materials and products that result in colors of solid-surfacing material complying with the following requirements:
 - 1. As indicated by manufacturer's designations indicated on Material Finish Legend
- D. Fasteners: Provide non-corrosive fasteners as required for complete installation of components and assemblies. Type and size shall be as required for conditions, materials and superimposed loads involved.
- E. Accessories: Comply with manufacturer's recommendations for hardware, non-corrosive fasteners, adhesives, sealers, fabrication and finishing.
- F. Fabricate in one piece, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written

recommendations for adhesives, sealers, fabrication, and finishing. Thermoforming shall be required at all joints conditions where watertight joints are required.

1. Fabricate with shop-applied edges of materials and configuration indicated.
2. Sinks fabricated from the same solid surfacing materials as the tops.

2.13 CABLE DISPLAY SYSTEM

- A. Hanging Display System: Subject to compliance with requirements, provide the following hanging display system, including all accessories and fasteners, or comparable products from other manufacturers, submitted to and accepted by Architect prior to bidding.
 1. Hanging Display System:
 - a. Basis-of-Design Product: "DIGNITET" BY IKEA Home Furnishings.
 - b. Description: Stainless Steel fasteners and wire rope kit capable of supporting 11 lbs of total linear load.
 - c. Mounting shall be wall mount with concealed fastener type system.
 - d. Hooks: IKEA; "RIKTIG" curtain hook with clip pack of 24 hooks and clips
 - 1) Provide one pack of 24 clips for each continuous display length of up to 5'-0". Lengths beyond 5'-0" shall be provided with additional clips proportionally.
 - e. Cable: Provide manufacturer's standard 1/16-inch diameter, stainless steel air craft cable. Capable of a 11 lbs maximum load carrying capacity.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine all areas and conditions where solid surfacing fabrications will be installed. Notify Architect of any conditions that would adversely affect the installation. Do not proceed with installation until unsatisfactory conditions are corrected.
 1. Commencement of installation is construed as acceptance of the adjacent surfaces and conditions.

3.2 PREPARATION

- A. Before installation, condition woodwork to average prevailing humidity conditions in installation areas.
- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.3 INSTALLATION

- A. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.
- B. Assemble woodwork and complete fabrication at Project site to comply with requirements for fabrication in Part 2, to extent that it was not completed in the shop.
- C. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.
- D. Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- F. Ornamental Woodwork – Ceiling Panels: Install without distortion so panels fit locations properly and are accurately aligned. Adjust hardware to provide level and fixed installation. Refer to delegated design requirements for fastener design and locations.

- C. Custom Casework - General: Install level, plumb, and true; shim as required, using concealed shims. Where manufactured wood casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical.
 - 1. Base Cabinets: Set cabinets straight, level, and plumb. Adjust subtops within 1/16 inch of a single plane. Fasten cabinets to masonry or framing, wood blocking, or reinforcements in walls and partitions with fasteners spaced 24 inches o.c. Bolt adjacent cabinets together with joints flush, tight, and uniform. Align similar adjoining doors and drawers to a tolerance of 1/16 inch.
 - a. Where base cabinets are not installed adjacent to walls, fasten to floor at toe space with fasteners spaced 24 inches o.c. Secure sides of cabinets to floor, where they do not adjoin other cabinets, with not less than two fasteners.
 - 2. Wall Cabinets: Hang cabinets straight, level, and plumb. Adjust fronts and bottoms within 1/16 inch of a single plane. Fasten to hanging strips, masonry, or framing, blocking, or reinforcements in walls or partitions. Align similar adjoining doors to a tolerance of 1/16 inch.
 - a. Fasten through back, near top and bottom, at ends, and not more than 16 inches o.c.
 - b. Use toggle bolts at hollow masonry.
 - c. Use expansion anchors at solid masonry.
 - d. Use No. 10 wafer-head screws sized for 1-inch penetration into wood blocking.
 - e. Use No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish at metal-framed partitions.
 - 3. Install hardware uniformly and precisely. Set hinges snug and flat in mortises unless otherwise indicated. Adjust and align hardware so moving parts operate freely and contact points meet accurately. Allow for final adjustment after installation.
 - 4. Adjust casework and hardware so doors and drawers operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

- D. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop. Set sills in manufacturer's recommended adhesive.
 - 1. Align adjacent solid-surfacing-material sills and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
 - 2. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
 - 3. Caulk space between sill and wall/adjacent construction with sealant specified in Division 07 Section "Joint Sealants."

3.4 SOLID SURFACING FABRICATION

- A. General: Fabricate from 1/2" thick solid polymer material complete with integral under-mount ADA compliant sinks. Each countertop shall receive loose backsplashes and endsplashes. Provide endsplashes at all locations where counter top abuts adjacent wall. Material shall be attached to the countertop deck and wall with color coordinated adhesive sealant on site.
- B. Fabricate components in shop to greatest extent practical to sizes, shapes and configurations indicated. Fabrication shall be in accordance with approved shop drawings and solid polymer manufacturer's requirements.
- C. Form joints between components using manufacturer's standard joint adhesive. Joints shall be inconspicuous in appearance and without voids. Attach a 2" wide reinforcing strip of solid polymer material under each joint.
 - 1. Provide cutouts and holes for plumbing and bath accessories.
- D. Where joints are required within water tables, sand tables, or any fabrication designed to contain fluids or semi-solid materials, joints shall be thermoformed using solid surface manufacturer's written recommendations for a seamless, watertight joint.
- E. Rout and finish component edges to a smooth and uniform finish. Rout all cutouts, then sand all edges smooth. Chamfer edge at sink to countertop connection. Repair or re-fabricate defective and inaccurate work as determined by the Architect.
- F. Edge Treatment: Edge treatment shall be 1 1/2" double-radius edge or bullnose edge, refer to drawings.
- G. Adhesives shall create inconspicuous, non-porous joints with chemical bond.
 - 1. Apply 45 degree chamfer to inside perimeter of sinks to conceal sink to countertop joint.
- H. Finish: All surfaces shall have a uniform matte finish (gloss rating of 5 - 20).

3.5 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean woodwork on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064023

SECTION 064200 - WOOD PANELING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Horizontal Lap Wood paneling (064200.A01)
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing paneling that are concealed within other construction before paneling installation.
 - 2. Section 099123 "Interior Painting" for field painting of horizontal lap wood paneling.

1.2 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that paneling can be installed as indicated.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Shop Drawings: For stile and rail wood paneling.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Show locations and sizes of furring and blocking, including concealed blocking specified in other Sections.
 - 3. For paneling produced from premanufactured sets, show finished panel sizes, set numbers, sequence numbers within sets, and method of cutting panels to produce indicated sizes.
- C. Samples: For each exposed product and for each color and finish specified, in manufacturer's or fabricator's standard size.
- D. Samples for Initial Selection: For each type of exposed finish.
- E. Samples for Verification: For the following:
 - 1. Lumber and Panel Products with Shop-Applied Opaque Finish: 5 inches wide by 12 inches long for lumber and 8 by 10 inches for panels.
 - a. Provide Samples with one-half of exposed surface finished for each finish system.
 - 2. Corner Pieces: 18 inches high by 18 inches wide by 6 inches deep.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and fabricator.
- B. Product Certificates: For each type of product.
- C. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
 - 1. Shop Certification: AWI's Quality Certification Program accredited participant.

- B. Installer Qualifications: Fabricator of products.
- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Build mockups of typical wood paneling as shown on Drawings.
 - 2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver paneling until painting and similar operations that might damage paneling have been completed in installation areas. Store paneling in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install paneling until building is enclosed, wet-work is complete, and HVAC system is operating and will maintain temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.
- B. Field Measurements: Where paneling is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Locate concealed framing, blocking, and reinforcements that support paneling by field measurements before being enclosed/concealed by construction, and indicate measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 PANELING FABRICATORS

- A. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of paneling.

2.2 PANELING, GENERAL

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of stile and rail wood paneling (stile and rail wall surfacing) indicated for construction, finishes, installation, and other requirements.

2.3 WOOD PANELING WITH OPAQUE FINISH

- A. Grade: Custom.
- B. Wood Species: Any closed grain hardwood painted to match Architect Sample as indicated on Material Finish Legend.
- C. Provide fire-retardant treatment of wood paneling as indicated below. Mill pieces before treatment.
 - 1. Basis of Design Treatment: "Flame Stop II" by Flame Stop or a comparable product submitted to and accepted by Architect prior to bidding with the following product characteristics.
 - 2. Treated Wood Surface Flame Spread: 25 max per ASTM E84.
 - 3. Treated Wood Surface Smoke Developed: 25 max per ASTM E84.
- D. Profile: Provide ship-lap style siding with 8 inch exposed siding between horizontal laps.
 - 1. Texture: Smooth painted.

2.4 MATERIALS

- A. Materials, General: Provide materials that comply with requirements of referenced quality standard for each quality grade specified unless otherwise indicated.
- B. Wood Moisture Content: 5 to 10 percent.

2.5 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
 - 1. Use treated materials that comply with requirements of referenced quality standard. Do not use materials that are warped, discolored, or otherwise defective.
 - 2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
 - 3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.
- B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
 - 1. Kiln-dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
 - 2. Mill lumber before treatment and implement procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of paneling.

2.6 INSTALLATION MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls.

2.7 FABRICATION

- A. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.
- B. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

2.8 SHOP FINISHING

- A. General: See Section 099123 "Interior Painting" for field finishing of opaque-finished paneling.
- B. Shop Priming: Shop apply the prime coat including backpriming, if any, for paneling specified to be field finished.
 - 1. See Section 099123 "Interior Painting" for material and application requirements.
- C. Preparation for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing paneling, as applicable to each unit of work.
 - 1. Backpriming: Apply two coats of sealer or primer, compatible with finish coats, to concealed surfaces of paneling.
- D. Opaque Finish: Refer to Section 099123 "Interior Painting"

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installation, condition paneling to humidity conditions in installation areas.

- B. Before installing paneling, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

3.2 INSTALLATION

- A. Grade: Install paneling to comply with quality standard grade of paneling to be installed.
- B. Install paneling level, plumb, true in line, and without distortion. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches. Install with no more than 1/16 inch in 96-inch vertical cup or bow and 1/8 inch in 96-inch horizontal variation from a true plane.
- C. Scribe and cut paneling to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- D. Anchor paneling to supporting substrate with fasteners recommended by manufacturer for substrates.
 - 1. Plug and fill exposed fasteners prior to painting for smooth finished surfaces.
- E. See Section 099123 "Interior Painting" for final finishing of installed paneling.

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective paneling, where possible, to eliminate functional and visual defects. Where not possible to repair, replace paneling. Adjust for uniform appearance.
- B. Clean paneling on exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 064200

SECTION 078413 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Penetrations in fire-resistance-rated walls.
- B. Related Sections:
 - 1. Division 07 Section "Fire-Resistive Joint Systems" for joints in or between fire-resistance-rated construction, at exterior curtain-wall/floor intersections, and in smoke barriers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Schedule: For each penetration firestopping system. Include location and design designation of qualified testing and inspecting agency.
 - 1. Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping condition, submit illustration, with modifications marked, approved by penetration firestopping manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Installer Certificates: From Installer indicating penetration firestopping has been installed in compliance with requirements and manufacturer's written recommendations.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A firm experienced in installing penetration firestopping similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its penetration firestopping products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.
- B. Fire-Test-Response Characteristics: Penetration firestopping shall comply with the following requirements:
 - 1. Penetration firestopping tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
 - 2. Penetration firestopping is identical to those tested per testing standard referenced in "Penetration Firestopping" Article. Provide rated systems complying with the following requirements:
 - a. Penetration firestopping products bear classification marking of qualified testing and inspecting agency.
 - b. Classification markings on penetration firestopping correspond to designations listed by the following:
 - 1) UL in its "Fire Resistance Directory."
- C. Preinstallation Conference: Conduct conference at Project site.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install penetration firestopping when ambient or substrate temperatures are outside limits permitted by penetration firestopping manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.
- B. Install and cure penetration firestopping per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1.6 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping is installed according to specified requirements.

- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Grace Construction Products.
 - 2. Hilti, Inc.
 - 3. Johns Manville.
 - 4. Specified Technologies Inc.
 - 5. 3M Fire Protection Products.
 - 6. Tremco, Inc.; Tremco Fire Protection Systems Group.
 - 7. USG Corporation.

2.2 PENETRATION FIRESTOPPING (078413.A01)

- A. Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
- B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg.
 - 1. Fire-resistance-rated walls include fire walls fire-barrier walls and fire partitions.
 - 2. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
- C. Exposed Penetration Firestopping: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.
- D. VOC Content: Provide penetration firestopping that complies with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Architectural Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- E. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping manufacturer and approved by qualified testing and inspecting agency for firestopping indicated.
 - 1. Permanent forming/damming/backing materials, including the following:
 - a. Slag-wool-fiber or rock-wool-fiber insulation.
 - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
 - c. Fillers for sealants.
 - 2. Substrate primers.
 - 3. Collars.

2.3 FILL MATERIALS

- A. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.
- B. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.
- C. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.
- D. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.
- E. Pillows/Bags: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents, and fire-retardant additives. Where exposed, cover openings with steel-reinforcing wire mesh to protect pillows/bags from being easily removed.

- F. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces, and nonsag formulation for openings in vertical and sloped surfaces, unless indicated firestopping limits use of nonsag grade for both opening conditions.

2.4 MIXING

- A. For those products requiring mixing before application, comply with penetration firestopping manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Clean out openings immediately before installing penetration firestopping to comply with manufacturer's written instructions and with the following requirements:
 - 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping.
 - 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping. Remove loose particles remaining from cleaning operation.
 - 3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent penetration firestopping from contacting adjoining surfaces that will remain exposed on completion of the Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove stains. Remove tape as soon as possible without disturbing firestopping's seal with substrates.

3.3 INSTALLATION

- A. General: Install penetration firestopping to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
 - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of firestopping.
- C. Install fill materials for firestopping by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

- A. Identify penetration firestopping with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of firestopping edge so labels will be visible to anyone seeking to remove penetrating items or firestopping. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:

1. The words "Warning - Penetration Firestopping - Do Not Disturb. Notify Building Management of Any Damage."
2. Contractor's name, address, and phone number.
3. Designation of applicable testing and inspecting agency.
4. Date of installation.
5. Manufacturer's name.
6. Installer's name.

3.5 FIELD QUALITY CONTROL

- A. Firestopping Manufacturer's representative shall perform and inspections of penetration firestopping. Contractor shall notify Architect and manufacturer's representative no later than seven days after penetration firestopping is complete to schedule inspection.
 1. Where deficiencies are found or penetration firestopping is damaged or removed because of testing, repair or replace penetration firestopping to comply with requirements.
 2. Proceed with enclosing penetration firestopping with other construction only after inspection reports are issued and installations comply with requirements.

3.6 CLEANING AND PROTECTION

- A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping is without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping and install new materials to produce systems complying with specified requirements.

END OF SECTION 078413

SECTION 078446 - FIRE-RESISTIVE JOINT SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Joints in or between fire-resistance-rated constructions. (078446.A01)
- B. Related Sections:
 - 1. Division 07 Section "Penetration Firestopping" for penetrations in fire-resistance-rated walls, horizontal assemblies, and smoke barriers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Schedule: For each fire-resistive joint system. Include location and design designation of qualified testing agency.
 - 1. Where Project conditions require modification to a qualified testing agency's illustration for a particular fire-resistive joint system condition, submit illustration, with modifications marked, approved by fire-resistive joint system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for fire-resistive joint systems.

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Installer Certificates: From Installer indicating fire-resistive joint systems have been installed in compliance with requirements and manufacturer's written recommendations.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A firm experienced in installing fire-resistive joint systems similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its fire-resistive joint system products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.
- B. Fire-Test-Response Characteristics: Fire-resistive joint systems shall comply with the following requirements:
 - 1. Fire-resistive joint system tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
 - 2. Fire-resistive joint systems are identical to those tested per testing standard referenced in "Fire-Resistive Joint Systems" Article. Provide rated systems complying with the following requirements:
 - a. Fire-resistive joint system products bear classification marking of qualified testing agency.
 - b. Fire-resistive joint systems correspond to those indicated by reference to designations listed by the following:
 - 1) UL in its "Fire Resistance Directory."
- C. Pre-installation Conference: Conduct conference at Project site.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install fire-resistive joint systems when ambient or substrate temperatures are outside limits permitted by fire-resistive joint system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Install and cure fire-resistive joint systems per manufacturer's written instructions using natural means of ventilation or, where this is inadequate, forced-air circulation.

1.6 COORDINATION

- A. Coordinate construction of joints to ensure that fire-resistive joint systems are installed according to specified requirements.
- B. Coordinate sizing of joints to accommodate fire-resistive joint systems.

PART 2 - PRODUCTS

2.1 FIRE-RESISTIVE JOINT SYSTEMS (078446.A01)

- A. Where required, provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which fire-resistive joint systems are installed. Fire-resistive joint systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.
- B. Joints in or between Fire-Resistance-Rated Construction: Provide fire-resistive joint systems with ratings determined per ASTM E 1966 or UL 2079:
 - 1. Joints include those installed in or between fire-resistance-rated walls floor or floor/ceiling assemblies and roofs or roof/ceiling assemblies.
 - 2. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of construction they will join.
 - 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Grace Construction Products.
 - b. Hilti, Inc.
 - c. Johns Manville.
 - d. Specified Technologies Inc.
 - e. 3M Fire Protection Products.
 - f. Tremco, Inc.; Tremco Fire Protection Systems Group.
 - g. USG Corporation.
- C. Exposed Fire-Resistive Joint Systems: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.
- D. Accessories: Provide components of fire-resistive joint systems, including primers and forming materials, that are needed to install fill materials and to maintain ratings required. Use only components specified by fire-resistive joint system manufacturer and approved by the qualified testing agency for systems indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Clean joints immediately before installing fire-resistive joint systems to comply with fire-resistive joint system manufacturer's written instructions and the following requirements:
 - 1. Remove from surfaces of joint substrates foreign materials that could interfere with adhesion of fill materials.
 - 2. Clean joint substrates to produce clean, sound surfaces capable of developing optimum bond with fill materials. Remove loose particles remaining from cleaning operation.
 - 3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by fire-resistive joint system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent fill materials of fire-resistive joint system from contacting adjoining surfaces that will remain exposed on completion of the Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove stains. Remove tape as soon as possible without disturbing fire-resistive joint system's seal with substrates.

3.3 INSTALLATION

- A. General: Install fire-resistive joint systems to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming materials and other accessories of types required to support fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
 - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of fire-resistive joint system.
- C. Install fill materials for fire-resistive joint systems by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by joints and forming materials as required to achieve fire-resistance ratings indicated.
 - 2. Apply fill materials so they contact and adhere to substrates formed by joints.
 - 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

- A. Identify fire-resistive joint systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of joint edge so labels will be visible to anyone seeking to remove or penetrate joint system. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:
 - 1. The words "Warning - Fire-Resistive Joint System - Do Not Disturb. Notify Building Management of Any Damage."
 - 2. Contractor's name, address, and phone number.
 - 3. Designation of applicable testing agency.
 - 4. Date of installation.
 - 5. Manufacturer's name.
 - 6. Installer's name.

3.5 FIELD QUALITY CONTROL

- A. Inspecting Agency: Fire-Resistive Joint System manufacturer's representative will perform inspections of completed installation of work of this Section. Contractor shall notify Architect and manufacturer's representative not later than seven days after completion of fire-resistive joint system installation to schedule inspection.
- B. Where deficiencies are found or fire-resistive joint systems are damaged or removed due to testing, repair or replace fire-resistive joint systems so they comply with requirements.
- C. Proceed with enclosing fire-resistive joint systems with other construction only after inspection reports are issued and installations comply with requirements.

3.6 CLEANING AND PROTECTING

- A. Clean off excess fill materials adjacent to joints as the Work progresses by methods and with cleaning materials that are approved in writing by fire-resistive joint system manufacturers and that do not damage materials in which joints occur.
- B. Provide final protection and maintain conditions during and after installation that ensure fire-resistive joint systems are without damage or deterioration at time of Substantial Completion. If damage or deterioration occurs despite such protection, cut out and remove damaged or deteriorated fire-resistive joint systems immediately and install new materials to produce fire-resistive joint systems complying with specified requirements.

3.7 FIRE-RESISTIVE JOINT SYSTEM SCHEDULE

- A. Where UL-classified systems are indicated, they refer to system numbers in UL's "Fire Resistance Directory" under product Category XHBN or Category XHDG.
- B. Wall-to-Wall, Fire-Resistive Joint Systems:
 - 1. UL-Classified Systems: WW-S-0000-0999.
 - 2. Assembly Rating: 2 hours.
 - 3. Nominal Joint Width: As indicated.

4. Movement Capabilities: Class II - 25 percent compression or extension.
 5. L-Rating at Ambient: As selected by Contractor to suit project conditions.
- C. Floor-to-Wall, Fire-Resistive Joint Systems:
1. UL-Classified Systems: FW-S-0000-0999.
 1. Assembly Rating: 2 hours.
 2. Nominal Joint Width: As indicated.
 3. Movement Capabilities: Class II - 25 percent compression, extension, or horizontal shear.
 4. L-Rating at Ambient: As selected by Contractor to suit project conditions.
- D. Head-of-Wall, Fire-Resistive Joint Systems:
1. UL-Classified Systems: HW-S-0000-0999.
 2. Assembly Rating: 2 hours.
 3. Nominal Joint Width: As indicated.
 4. Movement Capabilities: Class II - 25 percent compression or extension.
 5. L-Rating at Ambient: As selected by Contractor to suit project conditions.
- E. Perimeter Fire-Resistive Joint Systems:
1. UL-Classified Perimeter Fire-Containment Systems: CW-S-0000-0999.
 2. Integrity Rating: 2 hours.
 3. Insulation Rating: 1 hour.
 5. Linear Opening Width: As indicated.
 4. Movement Capabilities: Class II - 25 percent compression or extension.
 5. L-Rating at Ambient Temperature: As selected by Contractor to suit project conditions.

END OF SECTION 078446

SECTION 079500 - EXPANSION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior expansion control systems.
- B. Related Requirements:
 - 1. Section 078446 "Fire-Resistive Joint Systems" for liquid-applied joint sealants in fire-resistive building joints.
 - 2. Section 079200 "Joint Sealants" for liquid-applied joint sealants and for elastomeric sealants without metal frames.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For each expansion control system specified. Include plans, elevations, sections, details, splices, attachments to other work, and line diagrams showing entire route of each expansion control system. Where expansion control systems change planes, provide isometric or clearly detailed drawing depicting how components interconnect.
- C. Samples for Initial Selection: For each type of expansion control system indicated.
 - 1. Include manufacturer's color charts showing the full range of colors and finishes available for each exposed metal and elastomeric seal material.
- D. Product Schedule: Prepared by or under the supervision of the supplier. Include the following information in tabular form:
 - 1. Manufacturer and model number for each expansion control system.
 - 2. Expansion control system location cross-referenced to Drawings.
 - 3. Nominal joint width.
 - 4. Movement capability.
 - 5. Materials, colors, and finishes.
 - 6. Product options.
 - 7. Fire-resistance ratings.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each fire barrier provided as part of an expansion control system, for tests performed by a qualified testing agency.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. General: Provide expansion control systems of design, basic profile, materials, and operation indicated. Provide units with capability to accommodate variations in adjacent surfaces.
 - 1. Furnish units in longest practicable lengths to minimize field splicing. Install with hairline mitered corners where expansion control systems change direction or abut other materials.
 - 2. Include factory-fabricated closure materials and transition pieces, T-joints, corners, curbs, cross-connections, and other accessories as required to provide continuous expansion control systems.
- B. Coordination: Coordinate installation of exterior wall expansion control systems with roof expansion control systems to ensure that wall transitions are watertight. Roof expansion joint assemblies are specified elsewhere.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: Where indicated, provide expansion control systems with fire barriers identical to those of systems tested for fire resistance per UL 2079 or ASTM E 1966 by a testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Hose Stream Test: Wall-to-wall and wall-to-ceiling systems shall be subjected to hose stream testing.

2.3 INTERIOR EXPANSION CONTROL SYSTEMS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated or a comparable product by one of the following:
 - 1. Balco, Inc.
 - 2. Construction Specialties, Inc.
 - 3. JointMaster/InPro Corporation.
 - 4. MM Systems Corporation.
 - 5. Nystrom, Inc.
 - 6. Watson Bowman Acme Corp.; a BASF Construction Chemicals business.
- B. Source Limitations: Obtain expansion control systems from single source from single manufacturer.
- C. Wall-to-Wall (079500.A06):
 - 1. Basis-of-Design Product: "FWF-200M" by Construction Specialties.
 - 2. Design Criteria:
 - a. Nominal Joint Width: As indicated on Drawings.
 - b. Movement Capability: -25 percent/+25 percent, minimum.
 - c. Type of Movement: Thermal.
 - 3. Type: Flat Seal.
 - a. Metal Retainer: Aluminum.
 - 1) Finish: Manufacturer's standard.
 - b. Seal Material: Aluminum.
 - 1) Color: Clear Anodized finish.

2.4 MATERIALS

- A. Cellular Foam Seals: Extruded, compressible foam designed to function under compression.
- B. Accessories: Manufacturer's standard adhesives, and other accessories compatible with material in contact, as indicated or required for complete installations.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces where expansion control systems will be installed for installation tolerances and other conditions affecting performance of work.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates according to expansion control system manufacturer's written instructions.

3.3 INSTALLATION

- A. Comply with manufacturer's written instructions for storing, handling, and installing expansion control systems and materials unless more stringent requirements are indicated.
- B. Foam Seals: Install with adhesive recommended by manufacturer.
- C. Terminate exposed ends of expansion control systems with field- or factory-fabricated termination devices.

3.4 PROTECTION

- A. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's written instructions.
- B. Protect the installation from damage by work of other Sections. Where necessary due to heavy construction traffic, remove and properly store cover plates or seals and install temporary protection over expansion control systems. Reinstall cover plates or seals prior to Substantial Completion of the Work.

END OF SECTION 079500

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Solid-core doors with plastic laminate-veneer faces.
 - 2. Solid-core doors with wood-veneer faces.
 - 3. Factory finishing flush wood doors.
 - 4. Factory fitting flush wood doors to frames and factory machining for hardware.
- B. Related Requirements:
 - 1. Section 081113 "Hollow Metal Doors and Frames" for hollow metal frames.
 - 2. Section 087100 "Door Hardware" for hardware in flush wood doors.
 - 3. Section 088000 "Glazing" for glass view panels in flush wood doors.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. For each type of door. Include details of core and edge construction and trim for openings. Include factory-finishing specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
 - 1. Dimensions and locations of blocking.
 - 2. Dimensions and locations of mortises and holes for hardware.
 - 3. Dimensions and locations of cutouts.
 - 4. Undercuts.
 - 5. Requirements for veneer matching.
 - 6. Doors to be factory finished and finish requirements.
 - 7. **Fire-protection ratings for fire-rated doors.**
- C. Samples for Initial Selection: For factory-finished doors.
- D. Samples for Verification:
 - 1. Factory finishes applied to actual door face materials, approximately 8 by 10 inches, for each material and finish.
 - 2. Corner sections of doors, approximately 8 by 10 inches, with door faces and edges representing actual materials to be used.
 - a. Provide Samples for each species of veneer and solid lumber required.
 - b. Finish veneer-faced door Samples with same materials proposed for factory-finished doors.
 - 3. Frames for light openings, 6 inches long, for each material, type, and finish required.
 - 4. Plastic laminate, 6 inches square, for each color, texture and pattern selected.

1.4 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.
- B. Certificates: For door manufacturer as set forth in Quality Assurance article.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is a certified participant in AWI's Quality Certification Program.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of referenced standard and manufacturer's written instructions.
- B. Package doors individually to prevent damage to the doors and the factory finish.
- C. Mark each door on top rail with opening number used on Shop Drawings.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install doors until spaces are enclosed and weathertight, wet work in spaces is complete and dry, and HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during remainder of construction period or as recommended by the manufacturer in writing to ensure compliance with wood door warranty.

1.8 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Algoma Hardwoods, Inc.
 - 2. Eggers Industries.
 - 3. Graham Wood Doors; an Assa Abloy Group company.
 - 4. Marshfield Door Systems, Inc.
 - 5. Mohawk Doors; a Masonite company.
 - 6. Oshkosh Door Company.
 - 7. VT Industries, Inc.

2.2 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with WDMA I.S.1-A, "Architectural Wood Flush Doors."
 - 1. Provide labels indicating that doors comply with requirements of grades specified.
- B. WDMA I.S.1-A Performance Grade:
 - 1. Extra Heavy Duty unless otherwise indicated
- C. Particleboard-Core Doors:
 - 1. Particleboard: ANSI A208.1, Grade LD-2, made with binder containing no urea-formaldehyde.
 - 2. Provide doors with structural-composite-lumber cores instead of particleboard cores for doors indicated to receive exit devices.
- D. Structural-Composite-Lumber-Core Doors:
 - 1. Structural Composite Lumber: WDMA I.S.10.
 - a. Screw Withdrawal, Face: 700 lbf.
 - b. Screw Withdrawal, Edge: 400 lbf.
- E. **Fire-Rated Wood Doors: Doors complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.**
 - 1. **Cores: Provide core specified or mineral core as needed to provide fire-protection rating indicated.**

2. **Edge Construction:** Provide edge construction with intumescent seals concealed by outer stile. Comply with specified requirements for exposed edges.
3. **Pairs:** Provide fire-retardant stiles that are listed and labeled for applications indicated without formed-steel edges and astragals. Provide stiles with concealed intumescent seals. Comply with specified requirements for exposed edges.

F. **Smoke- and Draft-Control Door Assemblies:** Listed and labeled for smoke and draft control, based on testing according to UL 1784.

G. **Mineral-Core Doors:**

1. **Core:** Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
2. **Blocking:** Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated and as follows:
 - a. 5-inch top-rail blocking.
 - b. 5-inch bottom-rail blocking, in doors indicated to have protection plates.
 - c. 5-inch midrail blocking, in doors indicated to have armor plates.
 - d. 5-inch midrail blocking, in doors indicated to have exit devices.
3. **Edge Construction:** At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.
 - a. **Screw-Holding Capability:** 550 lbf per WDMA T.M.-10.

2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH

A. Interior Solid-Core Doors (081416.A01):

1. Grade: Premium, with Grade A faces.
2. Species: White Birch (stained to match Architect's Sample).
3. Cut: Plain sliced (flat sliced).
4. Match between Veneer Leaves: Book match.
5. Assembly of Veneer Leaves on Door Faces: Center-balance match.
6. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
7. Exposed Vertical Edges: Applied wood edges of same species as faces and covering edges of crossbands.
8. Core: Particleboard or Structural composite lumber.
9. Construction: Five plies. Faces are bonded to core using a hot press.

2.4 PLASTIC-LAMINATE-FACED DOORS

A. Interior Solid-Core Doors:

1. Grade: Premium.
2. Plastic-Laminate Faces: High-pressure decorative laminates complying with NEMA LD 3, Grade HGS.
3. Colors, Patterns, and Finishes: As indicated on Material Finish Legend.
4. Exposed Vertical and Top Edges: Plastic laminate that matches faces, applied before faces.
5. Core: Particleboard or Structural composite lumber.
6. Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before faces and crossbands are applied. Faces are bonded to core using a hot press.

2.5 LIGHT FRAMES

A. **Metal Frames for Light Openings in Doors:** Manufacturer's standard frame formed of 0.048 inch thick, cold-rolled steel sheet; with baked-enamel- or powder-coated finish.

2.6 FABRICATION

A. **Factory fit doors to suit frame-opening sizes indicated.** Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

B. **Factory machine doors for hardware that is not surface applied.** Locate hardware to comply with DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.

1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.

C. **Openings:** Factory cut and trim openings through doors.

1. **Light Openings:** Trim openings with moldings of material and profile indicated.

2. Glazing: Factory install glazing in doors indicated to be factory finished. Comply with applicable requirements in Section 088000 "Glazing."

2.7 FACTORY FINISHING

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
 1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on bottom edges, edges of cutouts, and mortises.
- B. Factory finish doors that are indicated to receive transparent finish.
- C. Transparent Finish:
 1. Grade: Premium.
 2. Finish: Provide one of the following finishes:
 - a. AWI's "Architectural Woodwork Standards" System 10, UV curable, water based polyurethane.
 - b. WDMA TR-6 catalyzed polyurethane.
 3. Staining: As selected by Architect from manufacturer's full range.
 4. Effect: Semi-filled finish, produced by applying an additional finish coat to partially fill the wood pores.
 5. Sheen: Satin.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs.
 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Section 087100 "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
- C. Factory-Fitted Doors: Align in frames for uniform clearance at each edge.
- D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.3 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 081416

HARDWARE SET 11A

DOOR NUMBER:

C110A

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA	HW HINGE	5BB1HW 4.5 X 4.5	652	IVE
1	EA	STOREROOM LOCK	ND80PD RHO	626	SCH
1	EA	SURFACE CLOSER	4011 DEL	689	LCN
1	EA	ARMOR PLATE	8400 36" X 2" LDW B-CS	630	IVE
1	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	488S-BK	S-BK	ZER

HARDWARE SET 14

DOOR NUMBER:

B110A

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD	628	IVE
1	EA	PANIC HARDWARE	WS-CD-9927-DT	626	VON
1	EA	PANIC HARDWARE	WS-CD-9927-TL-374T-990DT	626	VON
2	EA	MORTISE CYLINDER	20-001	626	SCH
1	EA	MORTISE CYLINDER	20-059	626	SCH
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	WALL STOP	WS406/407CCV	630	IVE
2	EA	FIRE/LIFE WALL MAG	SEM7850	689	LCN
1	EA	GASKETING	488S-BK	S-BK	ZER
1	EA	ASTRAGAL SET	328AA	AA	ZER

HARDWARE SET 14A

DOOR NUMBER:

B110B

EACH TO HAVE:

QTY		DESCRIPTION	CATALOG NUMBER	FINISH	MFR
2	EA	CONT. HINGE	224HD	628	IVE
2	EA	PANIC HARDWARE	WS-LD-9927-L-BE-06	626	VON
2	EA	SURFACE CLOSER	4111 EDA	689	LCN
2	EA	WALL STOP/HOLDER	FS495	626	IVE
2	EA	WALL STOP	WS406/407CCV	630	IVE
1	EA	GASKETING	488S-BK	S-BK	ZER
1	EA	ASTRAGAL SET	328AA	AA	ZER

SECTION 101400 - SIGNAGE

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
 - 1. Plaques (101400.A01)
 - 2. Dimensional Letter Signage and Artwork (101400.A02)
 - a. Flat-cut-out aluminum letters and signage
 - 3. Wayfinding Panel Signage (101400.A03)
 - a. Interior and Exterior Room signage
 - 4. Vinyl Film Signage
 - a. Custom digital printed graphic film signage
 - 1) Interior printed on smooth surfaces (101400.A11 – WG2)
 - 2) Interior transparent printed on glass (101400.A13 – WG3)
- B. Related Sections include the following:
 - 1. Section 015000 "Temporary Facilities and Controls" for temporary Project identification signs and for temporary information and directional signs.
 - 2. Section 067253 "Custom Digital Wall Covering Murals" for custom digital artwork using wallcovering products.
 - 3. Section 099123 "Interior Painting" for custom painting of walls and painting behind vinyl film signage
 - 4. Division 26 Section "Interior Lighting" for illuminated Exit signs.

1.2 DEFINITIONS

- A. ADA-ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines."

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Including but not limited to, the following:
 - 1. Manufacturer's technical product data for each type of product specified. Include data on physical characteristics, durability, fade resistance, flame resistance and manufacturing process.
 - 2. Product data shall show compliance with requirements for fire performance characteristics and physical properties.
- B. Shop Drawings: Show fabrication and installation details for signs.
 - 1. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
 - 2. Provide message list, typestyles, graphic elements, including tactile characters and Braille, and layout for each sign.
 - 3. Include fabrication and installation details and attachments to other work.
 - 4. Include a panel map for each vinyl film sign to coordinate installation.
 - 5. Include elevations, component details, and attachments to other work for dimensional letter signage, wayfinding signage.
 - 6. Indicate materials and profiles of signage fittings, joinery, finishes, fasteners, anchorages, and accessory items.
 - 7. Include field dimensions for vinyl film graphic signage as described in Paragraph 1.3.G.
 - 8. Field Dimensions shall be obtained, reviewed, and accepted by signage manufacturer prior to submittal of shop drawings.

- C. Samples for Initial Selection: Manufacturer's color charts consisting of actual units or sections of units showing the full range of colors available for the following:
 - 1. Aluminum.
 - 2. Vinyl Film Graphic – submit a sample of each wall graphic type in the form of small scale color proofs for each graphic or mural.

- D. Samples for Verification:
 - 1. Submit sample each vinyl wall graphic not less than 4 feet square, on actual material to be used for Project.
 - 2. Sample shall be for Architect's verification purposes of each mural; including color, clarity of image, and artwork.
 - 3. Submit 12 inch long actual samples of each accessory required.
 - 4. Sample from same flitch to be used for the Work, with specified finish applied.
 - 5. Submit full-size samples of wayfinding signage. Quantity and type shall be determined by Architect with intent of one sample per each signage type representative of all types of products indicated.
 - 6. Submit 12 inch x 12 inch sample of plaque representative of all materials and metallic finishes.
 - 7. Custom Digital Vinyl Film Graphic Proofs: Before printing, prepare full-color proofs which include a full-scale sample, as well as a reduced sample of the entire graphic for each mural for the Architect's approval. Approved proof will set the quality standards for graphic and aesthetic effect.
 - a. When vinyl wall graphic is divided into separate sections, provide proof of each section.
 - b. Submit results of adhesion test to Architect and Owner prior to installation.

- E. Sign Schedule: Use same designations indicated on Drawings.

- F. Field Dimensions for Vinyl Film Graphic Design: Provide field dimensions to Architect for graphic design of vinyl film graphics. Include dimensions, locations, and graphic depictions of all disruptions within the field of wall surface indicated to receive vinyl film. Examples of disruptions of wall surface include, but are not limited to: louvers, vents, outlets, switches, fire alarm devices, exit light signage, etc.
 - 1. Elevations and dimensions shall be drawing using a computer aided drafting program and submitted in a legible format.
 - 2. Dimensional Tolerance: 1/8 inch maximum.
 - 3. Dimensions shall be reviewed and accepted by signage manufacturer prior to submittal of shop drawings.

- G. Mockups/Field Samples: Build mockups/field samples to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build mockups/field samples for vinyl film signage and additional signage as requested on design drawings.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups/field sample areas may become part of the completed work if undisturbed at the time of Substantial Completion.
 - a. Contractor shall be held responsible for unsuccessful installations of vinyl graphic film that damage substrate during construction.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator. See below for each signage type
- B. Warranty: Special warranty specified in this Section.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For signs to include in maintenance manuals. Include the following:
 - 1. Methods for maintaining wall covering.
 - 2. Include precautions for use of cleaning materials and methods that could be detrimental to finishes and performance/longevity of wall covering murals.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

- B. Installer Qualifications for vinyl graphic signage: An employer of workers trained and approved by manufacturer with a minimum of five years
- C. Fabricator Qualifications: A firm that employs skilled workers experienced in producing custom-fabricated products similar to those required for this Project and with at least seven years continuous experience under the current company name. Fabricator shall have a record of successful in-service performance, as well as sufficient production capacity to produce required units.
 - 1. Fabricator shall have completed at least seven (7) similar signage projects having similar requirements within the last four (4) years for each signage type.
- D. Source Limitations for Signs: Obtain each sign type indicated from one source from a single manufacturer.
- E. Regulatory Requirements: Comply with applicable provisions in ADA-ABA Accessibility Guidelines.
- F. Fire Performance Characteristics: Provide products with the following surface burning characteristics as determined by testing identical products per ASTM E 84 by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify wall coverings with appropriate markings of applicable testing and inspecting organization.
 - 1. Flame Spread: 5 or less.
 - 2. Smoke Developed: 25 or less.

1.7 PROJECT CONDITIONS

- A. Weather Limitations for Exterior Signage: Proceed with installation only when existing and forecasted weather conditions permit installation of signs in exterior locations to be performed according to manufacturers' written instructions and warranty requirements.
- B. Interior Environmental Limitations: Do not deliver and install vinyl wall graphics until spaces are enclosed and weathertight, wet work in spaces to receive murals is complete and dry, work above ceilings is complete, and temporary or permanent HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
 - 1. Maintain a constant temperature not less than 60 deg F in installation areas for at least 10 days before and 10 days after installation.
- C. Lighting: Do not install vinyl wall graphics until permanent level of lighting is provided on the surfaces to receive murals.
- D. Ventilation: Provide continuous ventilation during installation and for not less than the time recommended by the vinyl wall graphics manufacturer for full drying and curing.
- E. Field Measurements: Verify recess openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Use special care in handling to prevent twisting, warping, nicking, and other damage to signage. Store materials to permit easy access for inspection and identification.
 - 1. Keep aluminum off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect aluminum and packaged materials from corrosion and deterioration.
- B. Store signage in a well-ventilated area, away from uncured concrete and masonry, and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

1.9 COORDINATION

- A. Coordinate placement of anchorage devices with templates for installing signs.
 - 1. For dimensional letters, furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of metal and polymer finishes beyond normal weathering.
 - b. Deterioration of embedded graphic image colors.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 INSTALLERS AND FABRICATORS

- A. General: The Owner reserves the right to accept or reject proposed installers and fabricators for the work described in this Section. The Owner encourages bidders to obtain pre-approval using the qualification form available in Section 004513. All accepted pre-approval requests received before the date indicated in Section 001100 "Invitation to Bid", Paragraph 1.4.A.2 will be included in the Final Addendum.

2.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design sign structure and anchorage of exterior signage type(s) to withstand design loads as indicated on Drawings.
- B. Thermal Movements: For exterior signs, allow for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
- C. Accessibility Standard: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for signs.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 MATERIALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. Provide materials without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with strength and durability properties for each aluminum form required not less than that of alloy and temper designated below.
 - 1. Plate and Sheet: ASTM B 209, Alloy 3003-H14, Alloy 5005-H32 or Alloy 6061-T6.
 - a. Perforated Panels: Subject to compliance with requirements, provide products as indicated on plans by McNichols or a comparable manufacturer submitted to and accepted by Architect.
 - 2. Castings: ASTM B 26/B 26M, of alloy and temper recommended by sign manufacturer for casting process used and for use and finish indicated.
 - 3. Extrusions: ASTM B221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- C. Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).
- D. Photopolymer Sheet: Manufacturer's recommended photopolymer for producing integral non-laminated raised copy.
- E. Polycarbonate Sheet: Of thickness indicated, manufactured by extrusion process, ASTM C 1349, Appendix X1, Type II (coated, mar-resistant, UV-stabilized polycarbonate), coated on both surfaces with abrasion-resistant coating:
 - 1. Impact Resistance: 16 ft-lbf/in. per ASTM D 256, Method A.
 - 2. Tensile Strength: 9000 lbf/sq. in. per ASTM D 638.
 - 3. Flexural Modulus of Elasticity: 340,000 lbf/sq. in. per ASTM D 790.
 - 4. Heat Deflection: 265 deg F at 264 lbf/sq. in. per ASTM D 648.
 - 5. Abrasion Resistance: 1.5 percent maximum haze increase for 100 revolutions of a Taber abraser with a load

of 500 g per ASTM D 1044.

- F. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.
- G. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.
 - 1. Basis of Design Products: Subject to compliance with requirements, provide products by manufacturers indicated on Graphic Design details on drawings or comparable product submitted to and accepted by Architect prior to bidding.
 - 2. Colors and Patterns: As indicated by Graphic Design details on Drawings.

2.4 MATERIALS FOR PLAQUES

- A. Refer to Article 2.2 for potential materials to be incorporated into plaque design. Fabricator shall coordinate with final graphic design by Architect for final artwork.
- B. Plaque Size: Approximately 24 inches by 18 inches.

2.5 MATERIALS FOR VINYL FILM SIGNAGE

- A. Vinyl Film: UV-Resistant vinyl film of nominal thickness indicated, with pressure-sensitive, permanent adhesive on back; die cut to form characters or images as indicated and suitable for exterior applications.

2.6 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Aluminum Finishes
 - 1. Clear Anodic Finish: Manufacturer's standard Class 1 clear anodic coating, 0.018 mm or thicker, over a satin (directionally textured) mechanical finish, complying with AAMA 611.
 - 2. Powder-Coat finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm) Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and backing finish.
 - 3. 2-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
- E. Acrylic Sheet Finishes
 - 1. Colored Coatings for Acrylic Sheet: For copy and background colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and that are UV and water resistant for five years for application intended.

2.7 ACCESSORIES

- A. Mounting Methods: Use double sided vinyl tape and silicone adhesive fabricated from materials that are not corrosive to sign materials and mounting surface.
- B. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.
 - 1. Use concealed fasteners and anchors unless indicated to be exposed.
 - 2. Exposed Metal-Fastener Components, General:

- a. Fabricated from same basic metal and finish of fastened metal unless otherwise indicated.
- b. Fastener Heads: For nonstructural connections, use oval countersunk screws and bolts with tamper-resistant, Allen-head slots unless otherwise indicated.

2.8 FABRICATION

- A. General: Provide manufacturer's standard signs of configurations indicated.
 1. Welded Connections: Comply with AWS standards for recommended practices in shop welding. Provide welds behind finished surfaces without distortion or discoloration of exposed side. Clean exposed welded surfaces of welding flux and dress exposed and contact surfaces.
 2. Mill joints to tight, hairline fit. Form joints exposed to weather to exclude water penetration.
 3. Preassemble signs in the shop to greatest extent possible. Disassemble signs only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation, in location not exposed to view after final assembly.
 4. Conceal fasteners if possible; otherwise, locate fasteners where they will be inconspicuous.
 5. Internally brace signs for stability and for securing fasteners.
 6. Provide rebates, lugs, and brackets necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.
 7. Castings: Fabricate castings free of warp, cracks, blowholes, pits, scale, sand holes, and other defects that impair appearance or strength. Grind, wire brush, sandblast, and buff castings to remove seams, gate marks, casting flash, and other casting marks before finishing
- B. Sign Message Panels: Construct sign-panel surfaces to be smooth and to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch (1.5 mm) measured diagonally from corner to corner.
 1. Increase panel thickness or reinforce with concealed stiffeners or backing materials as needed to product surfaces without distortion, buckles, warp, or other surface deformations.
- C. Post Fabrication: Fabricate posts designed to withstand wind pressure indicated for Project location
 1. Posts: Provide steel post as indicated on drawings with concealed brackets or slots to engage sign panels as designed by manufacturer. Include post caps, fillers, spacers, junction boxes, access panels, reinforcement where required for loading conditions, and related accessories required for complete installation.
 2. Direct Burial: Fabricate posts longer than height of sign to permit direct burial or embedment in concrete foundations or concrete-filled postholes. Additional length of post shall be as required to withstand wind pressure load conditions and as indicated on drawings.
- D. Brackets: Fabricate brackets, fittings, and hardware for bracket-mounted signs to suit sign construction and mounting conditions indicated. Modify manufacturer's standard brackets as required.
 1. Aluminum Brackets: Factory finish brackets with baked-enamel or powder-coat finish to match sign-background color unless otherwise indicated.

2.9 DIMENSIONAL LETTER SIGNAGE AND ARTWORK - FLAT-CUT-OUT ALUMINUM (101400.A02)

- A. General: Fabricate flat-cut-out lettering from aluminum sheet/plate of thickness as indicated on drawings.
 1. Lettering style and heights shall be as indicated.
 2. Lettering shall be pin-mounted and stood off wall 1 inch unless indicated otherwise.
- B. Welding: Use welding method that is appropriate for metal and finish indicated and that develops full strength of members joined. Finish exposed welds and surfaces smooth, flush, and blended to match adjoining surfaces.
- C. Furnish inserts and other anchorage devices to connect masonry work. Coordinate anchorage devices with supporting structure.
 1. Fabricate anchorage devices that are capable of withstanding dead loads of units.
- D. Finishes: Fabricator's option to provide one of the following finishes:
 1. Clear Anodized Finish: As selected by Architect from full range of industry finishes.
 2. Powder-Coat Finish: Manufacturer's standard, in color finish to match that of anodized aluminum.

2.10 WAYFINDING PANEL SIGNAGE – ROOM SIGNAGE (101400.A03)

- A. General: Refer to drawings for signage types and locations.

- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. ASI-Modulex, Inc.
 - 2. Innerface Sign Systems, Inc.
 - 3. Star Signs.
- C. Interior Panel Signs: Provide smooth sign panel surfaces constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally from corner to corner.
- D. Changeable Message Inserts: Fabricate signs to allow insertion of changeable messages in the form of slide-in inserts.
- E. Tactile and Braille Sign: Manufacturer's standard process for producing text and symbols complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1. Text shall be accompanied by Grade 2 Braille. Produce precisely formed characters with square-cut edges free from burrs and cut marks; Braille dots with domed or rounded shape.
 - 1. Raised-Copy Thickness: Not less than 1/32 inch.
- F. Subsurface Copy: Apply minimum 4-mil-thick vinyl copy to back face of clear acrylic sheet forming panel face to produce precisely formed opaque image. Image shall be free of rough edges.
- G. Colored Coatings for Acrylic Sheet: For copy background colors, provide colored coatings, including inks, dyes, and paints, that are recommended by acrylic manufacturers for optimum adherence to acrylic surface and are UV and water resistant for five years for application intended.
 - 1. Color: As selected by Architect from manufacturer's full range.

2.11 VINYL FILM SIGNAGE - INTERIOR TRANSPARENT PRINTED WALL GRAPHIC SIGNAGE OVER GLASS
(101400.A13 – WG3)

- A. Basis of Design Products: Subject to compliance with requirements, provide “Scotchcal Clear View Graphic Film IJ8150” by 3M or a comparable product with the following criteria proposed to and accepted by Architect prior to bidding.
 - 1. Material: Cast vinyl.
 - 2. Color: Optically clear.
 - 3. Thickness: 0.05 mm without adhesive.
 - 4. Graphic Protection Layer: 3M Scotchcal Optically Clear Overlamine 8914.
 - 5. Adhesive type: Manufacturer’s standard releasable pressure sensitive adhesive.
 - 6. Adhesive color: As selected by Architect from manufacturer’s full range.
 - 7. Liner: Transparent synthetic.
 - 8. Chemical Resistance: Resists mild alkalis, mild acids, and salt. Excellent resistance to water.
 - 9. Artwork shall be furnished by the Owner, on disc to manufacturer’s standards.
 - a. Fabricator shall have capability of production using white ink in addition to full Pantone color range.

2.12 VINYL FILM SIGNAGE - INTERIOR PRINTED VINYL WALL GRAPHIC SIGNAGE OVER SMOOTH SURFACES
(101400.A11 – WG3)

- A. Basis of Design Products: Subject to compliance with requirements, provide “ScotchCal Graphic Film IJ3650-10” by 3M or a comparable product with the following criteria proposed to and accepted by Architect prior to bidding.
 - 1. Material: Cast vinyl.
 - 2. Color: White, opaque.
 - 3. Thickness: 0.05 mm without adhesive.
 - 4. Graphic Protection Layer: As selected by Architect and Owner from the following options.
 - a. 3M Scotchcal Overlamine 8520 Matte.
 - 5. Adhesive type: Manufacturer’s standard releasable pressure sensitive adhesive.
 - 6. Adhesive color: As selected by Architect from manufacturer’s full range.
 - 7. Liner: Layflat polyethylene coated paper.
 - 8. Chemical Resistance: Resists mild alkalis, mild acids, and salt. Excellent resistance to water.
 - 9. Applied film shrinkage: 0.4 mm.
 - 10. Artwork shall be furnished by the Owner, on disc to manufacturer’s standards.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Verify that sign-support surfaces are within tolerances to accommodate signs.
- C. Verify that anchor inserts are correctly sized and located to accommodate signs.
- D. Verify that items provided under other sections of Work are sized and located to accommodate signs.
- E. Examine supporting members to ensure that surfaces are at elevations indicated or required to comply with authorities having jurisdiction and are free from dirt and other deleterious matter.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.
- G. Field verify dimensions of all conditions.

3.2 INSTALLATION, GENERAL

- A. Locate signs and accessories where indicated, using mounting methods of types described and complying with manufacturer's written instructions.
 - 1. Install signs level, plumb, and at heights indicated, with sign surfaces free of distortion and other defects in appearance.
 - 2. Interior Wall Signs: Install signs on walls adjacent to latch side of door where applicable. Where not indicated or possible, such as double doors, install signs on nearest adjacent walls. Locate to allow approach within 3 inches of sign without encountering protruding objects or standing within swing of door.
- B. Wall-Mounted Signs Mounted on Glass: Provide opaque sheet matching sign material and finish onto opposite side of glass to conceal back of sign.
- C. Wall-Mounted Signs on Smooth Surfaces: Comply with sign manufacturer's written instructions except where more stringent requirements apply.
 - 1. Silicone-Adhesive Mounting: Attach signs to irregular, porous, or vinyl-covered surfaces. Where signage is located on exterior surfaces, provide exterior rated adhesive as recommended by signage manufacturer for substrate indicated.
- D. Wall-Mounted Signs on Textured Surfaces: Comply with sign manufacturer's written instructions except where more stringent requirements apply. Mount characters using standard fastening methods to comply with manufacturer's written instructions for character form, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish character spacing and to locate holes for fasteners.
 - 1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
 - a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
 - b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.
- E. Vertical Tolerance: Set posts plumb within a tolerance of 1/16 inch in 3 feet (2 mm in 1m)

3.3 INSTALLATION - DIMENSIONAL LETTER SIGNAGE

- A. Dimensional Characters: Mount characters using standard fastening methods to comply with manufacturer's written instructions for character form, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish character spacing and to locate holes for fasteners.
 - 1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

- a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
- b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.
- 2. Projecting Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.
 - a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place spacers on studs, place sign in position, and push until spacers are pinched between sign and substrate, embedding the stud ends in holes. Temporarily support sign in position until adhesive fully sets.
 - b. Thin or Hollow Surfaces: Place spacers on studs, place sign in position with spacers pinched between sign and substrate, and install washers and nuts on stud ends projecting through opposite side of surface, and tighten.
- 3. Back Bar and Brackets: Remove loose debris from substrate surface and install backbar or bracket supports in position so that signage is correctly located and aligned.

3.4 INSTALLATION – VINYL FILM SIGNAGE

A. Field-Applied, Vinyl-Film Signs:

- 1. Preparation
 - a. Acclimatize materials by removing them from packaging in the installation areas not less than 24 hours before installation.
 - b. Follow manufacturer's printed instructions for surface preparation.
 - 1) Prepare substrates to achieve a smooth, dry, clean surface free of flaking, unsound coatings, cracks, and defects.
 - 2) Painted surfaces: Treat areas susceptible to pigment bleeding.
 - 3) Metals: If not factory-primed, clean and apply rust inhibitive zinc primer.
 - 4) Moisture content: maximum of 5 percent on new plaster, concrete, and concrete masonry units when tested with an electronic moisture meter.
 - 5) Adhesion Test: Perform manufacturer's standard non-destructive adhesion test on substrate, prime or repaint all surfaces that fail adhesion test as recommended by manufacturer.
- 2. Installation:
 - a. Align sign Characters in final position before removing release liner. Remove release liner in stages, and apply and firmly press characters into final position. Press from the middle outward to obtain good bond without blisters or fishmouths. Remove carrier film without disturbing applied vinyl film.
 - b. For textured substrates, install using 3M Textured Surface Applicator as recommended or required by manufacturer for best installation practices for a warranted installation.
- 3. Cleaning
 - a. Remove excess adhesive at finished seams, perimeter edges, and adjacent surfaces.

3.5 CLEANING AND PROTECTION

- A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.
- B. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes to components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- C. Remove temporary protective coverings and strippable films as signs are installed.
- D. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions, and touch up minor nicks and abrasions in finish. Maintain signs in a clean conditions during construction and protect from damage until acceptance by Owner.

END OF SECTION 101400

SECTION 116816 – PLAY AREA EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Play area equipment are to be bid as unit price components on the bid form.

1.2 SUMMARY

- A. Section includes product requirements and installation for playground structures.
 - 1. Components include:
 - a. Climbing structure with slide
 - b. Tubular play structure
 - c. Artificial boulders
- B. Related Requirements:
 - 1. Division 03 for Concrete footings
 - 2. Division 07 for Waterproofing and Protection
 - 3. Section 321820 "Play Surfacing" for rubber and synthetic turf play surfaces

1.3 ACTION SUBMITTALS

- A. Product Data: For each component or equipment piece specified.
 - 1. Include installation instructions.
 - 2. Manufacturers color selection

1.4 QUALITY ASSURANCE

- A. Submit manufacturer's statement of qualifications
- B. Submit installer's statement of qualifications

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Reference Division 01 Specifications
- B. Follow Manufacturer's instructions

1.6 FIELD CONDITIONS

- A. Coordinate with the various trades involved in the construction of the play area prior to commencement of installation. Note that the timelines of adjacent construction may preclude a normal sequence of construction.
 - 1. Other trades may include (but are not limited to):

- a. Architectural construction
- b. Structural and non-structural concrete construction

1.7 SHOP DRAWINGS

- A. Provide a compliance shop drawing to illustrate the following:
 - 1. Final location of play equipment and configuration of fall zones.
 - 2. Required fall height for all equipment.
 - 3. Footing and attachment details.

1.8 CERTIFICATION

- A. Prior to Substantial Completion, Play Equipment Contractor shall submit a notarized certification attesting to the following:
 - 1. The installed play equipment has been inspected by a Certified Playground Inspector and all equipment meets or exceeds current safety standards.
 - 2. The installed equipment fall zones have been verified, are free of obstructions and the provided surfacing meets or exceeds the required fall zone cushioning required by the equipment's fall height.

PART 2 - PRODUCTS

2.1 MANUFACTURERS / SUPPLIERS

- A. Berliner Seilfabrik, 48 Brookfield Oaks Drive, Suite D, Greenville, SC 29607, 1.877.837.3676, www.berliner-playequipment.com
- B. BCI Burke Co, 660 Van Dyne Rd., Fond du Lac, WI 54937, 920.921.9220, www.bciburke.com
- C. Substitutions: None

2.2 PRODUCTS

- A. "O'Tannenbaum 2.5" by Berliner Play Equipment.
 - 1. Colors to be selected from manufacturer's full range of colors.
- B. "White Water.03" by Berliner Play Equipment
- C. "Palmetto Saucer" by Berliner Play Equipment
 - 1. Colors to be selected from manufacturer's full range of colors
- D. "NaturePlay Log Tunnel" by BCI Burke
- E. "T-Swing" by BCI Burke
 - 1. Provide two (2) bucket swings
 - 2. Color to be selected from manufacturer's full range of colors.
- F. "NaturePlay NUNP-2347 Preschool Play Structure" by BCI Burke
 - 1. Colors to be selected from manufacturer's full range of colors.
- G. "Orbit.01" by Berliner Play Equipment.

1. Colors to be selected from manufacturer's full range of colors.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates suitability for equipment installation.
- B. Coordinate with responsible entity to perform corrective work.
- C. Commencement of work by installer is acceptance of provided work.

3.2 PREPARATION

- A. Protection: Protect adjacent work from damage by equipment or installers.
 1. Installer shall be responsible for repairing any damage to completed work attributable to work under this specification at no additional cost to the Project.

3.3 INSTALLATION

- A. Install all equipment per manufacturer's instructions.

END OF SECTION 116816

SECTION 123200 - MANUFACTURED WOOD CASEWORK

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Plastic-laminate-faced wood cabinets of stock design (123200.A01).
 - 2. Plastic-laminate countertops (123200.A03).
 - 3. Solid surface countertops (123200.A04).

- B. Related Sections:
 - 1. Section 061000 "Rough Carpentry" for wood blocking for anchoring manufactured wood casework.
 - 2. Section 064023 "Interior Architectural Woodwork" for custom plastic-laminate-clad casework.
 - 3. Section 092116 "Non-Structural Metal Framing" for reinforcements in metal-framed partitions for anchoring manufactured wood casework.
 - 4. Section 096513 "Resilient Base and Accessories" for resilient base applied to manufactured wood casework.

1.2 DEFINITIONS

- A. MDF: Medium-density fiberboard.

- B. Exposed Portions of Cabinets: Surfaces visible when doors and drawers are closed, including bottoms of cabinets more than 48 inches above floor, and surfaces visible in open cabinets.

- C. Semiexposed Portions of Cabinets: Surfaces behind opaque doors, such as interiors of cabinets, shelves, dividers, interiors and sides of drawers, and interior faces of doors. Tops of cases 78 inches or more above floor are defined as semiexposed.

- D. Concealed Portions of Cabinets: Surfaces not usually visible after installation, including sleepers, web frames, dust panels, and ends and backs that are placed directly against walls or other cabinets.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. Show fabrication details, including types and locations of hardware and keying of locks. Show installation details, including field joints and filler panels. Indicate manufacturer's catalog numbers for casework.
 - 1. Indicate types and sizes of cabinets and countertops, in addition to any field joints.
 - 2. Indicate locations and types of service fittings for science casework.
 - 3. Indicate locations of blocking and reinforcements required for installing casework.
 - 4. Include details of utility spaces showing supports for conduits and piping.
 - 5. Include details of exposed conduits, if required, for service fittings.
 - 6. Indicate locations of and clearances from adjacent walls, doors, windows, other building components, and other equipment.

- C. Keying Schedule: Include schematic keying diagram, and index each key set to unique designations that are coordinated with the Contract Documents.

- D. Samples for Initial Selection: For cabinet finishes and for each type of top material indicated.

- E. Samples for Verification: 8-by-10-inch Samples for each type of finish, including top material.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.

- B. Product Test Reports for Countertop Surface Material: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating compliance of laboratory countertop surface materials with requirements specified for chemical and physical resistance.

1.5 CLOSEOUT SUBMITTALS

- A. Warranty: Sample of special warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer with not less than seven years of successful experience, under the current company name, in producing manufactured casework similar to that required for this Project.
- B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- C. Source Limitations: Obtain manufactured wood casework from single source from single manufacturer.
- D. Quality Standard: Unless otherwise indicated, comply with requirements for modular cabinets in AWI's "Architectural Woodwork Quality Standards" for "Custom" grade.
- E. Product Designations: Drawings indicate sizes, configurations, and finish material of manufactured wood casework by referencing designated manufacturer's catalog numbers. Other manufacturers' casework of similar sizes and door and drawer configurations, of same finish material, and complying with the Specifications may be considered. Refer to Division 01 Section "Product Requirements."

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver manufactured wood casework only after painting, utility roughing-in, and similar operations that could damage, soil, or deteriorate casework have been completed in installation areas. If casework must be stored in other than installation areas, store only in areas where environmental conditions meet requirements specified in "Project Conditions" Article.
- B. Deliver solid surface, and quartz countertops only after casework has been completed in installation areas.
- C. Keep finished surfaces covered with polyethylene film or other protective covering during handling and installation.

1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install manufactured wood casework until spaces are enclosed and weathertight, wet work in spaces is complete and dry, work above ceilings is complete, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
- B. Field Measurements: Verify actual dimensions of construction contiguous with manufactured wood casework by field measurements before fabrication.

1.9 COORDINATION

- A. Coordinate layout and installation of framing and reinforcements in walls and partitions for support of manufactured wood casework.
- B. Preinstallation Conference: Conduct conference at Project site.
- C. Keying Conference: Conduct conference at Project site. Incorporate keying conference decisions into final keying requirements.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of manufactured wood casework that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Delamination of components or other failures of glue bond.
 - b. Warping of components.
 - c. Failure of operating hardware.
 - d. Deterioration of finishes.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following, except where specifically specified otherwise:
 - 1. Plastic-Laminate-Faced Manufactured Casework:
 - a. Hamilton Laboratory Solutions
 - b. Case Systems Inc.
 - c. LSI Corporation of America; a Sagas International company.
 - d. Precision Craft.
 - e. Stevens Industries, Inc.
 - f. TMI Systems Design Corporation.

2.2 MATERIALS, GENERAL

- A. Maximum Moisture Content for Lumber: 7 percent for hardwood and 12 percent for softwood.
- B. Softwood Plywood: DOC PS 1.
- C. Particleboard: ANSI A208.1, Grade M-2.
- D. MDF: ANSI A208.2, Grade 130.
- E. Plywood for Countertops: Exterior softwood plywood complying with DOC PS 1, Grade C-C Plugged, touch sanded.
- F. Plastic Laminate: High-pressure decorative laminate complying with NEMA LD 3.
 - 1. Refer to Drawings for laminate selections.
 - a. Comparable products from other manufacturers will be considered which match colors and patterns to Architect's satisfaction (submit samples) and which are submitted to and accepted by Architect prior to bidding.
- G. Solid-Surfacing Material: Homogeneous solid sheets of filled plastic resin complying with ISSFA-2.
 - 1. Basis of Design Products: Subject to compliance with requirements, provide products by manufacturers indicated on Material Finish Legend on drawings or comparable product submitted to and accepted by Architect prior to bidding.
 - 2. Colors and Patterns: As indicated Material Finish Legend on Drawings.
- H. Thermoset Decorative Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.
- I. Edgebanding for Plastic Laminate: Rigid PVC extrusions, through color with satin finish, 3 mm thick at doors and drawer fronts, 1 mm thick elsewhere.
- J. Edgebanding for Thermoset Decorative Panels: PVC or polyester edge banding complying with LMA EDG-1 and matching thermoset decorative panels.
- K. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, suitable for exposed applications.

- L. Sealant for Countertops and Sills: Manufacturer's standard sealant of characteristics indicated below that complies with applicable requirements in Section 07 92 00 "Joint Sealants."
 - 1. Mildew-Resistant Joint Sealant: Mildew resistant, single component, nonsag, neutral curing, silicone.
 - a. Color: As selected by Architect from manufacturer's full range.

2.3 CABINET MATERIALS

- A. Exposed Cabinet Materials:
 - 1. Plastic Laminate: Grade VGS.
 - 2. Unless otherwise indicated, provide specified edge banding on all exposed edges.
- B. Semi-exposed Cabinet Materials:
 - 1. Plastic Laminate: Grade VGS.
 - a. Provide plastic laminate for semi-exposed surfaces unless otherwise indicated.
 - 2. Metal for Steel Drawer Pans: Cold-rolled, steel sheet.
 - 3. Unless otherwise indicated, provide specified edge banding on all semi-exposed edges.
- C. Concealed Cabinet Materials:
 - 1. Plastic Laminate: Grade BKL.

2.4 SPECIALTY CASEWORK

- A. Tall Cabinet with Adjustable Shelves (123200.A09): Premanufactured unit fabricated to sizes indicated. Unit shall be plastic laminate clad and consist of two doors where indicated, and five shelves, one of which is fixed and the other four adjustable.

2.5 DESIGN, COLOR, AND FINISH

- A. Design: Provide manufactured wood casework of the following design:
 - 1. Flush overlay with wire pulls.
- B. Thermoset Decorative Panel Colors, Patterns, and Finishes: As selected by Architect from casework manufacturer's full range.
- C. Plastic-Laminate Colors, Patterns, and Finishes: As indicated on Material Finish Legend.
- D. PVC Edgebanding Color: As indicated on Material Finish Legend.
- E. Edge shall be crescent beveled edge where noted on drawings.

2.6 CABINET FABRICATION

- A. Plastic-Laminate-Faced Cabinet Construction: As required by referenced quality standard, but not less than the following:
 - 1. Bottoms and Ends of Cabinets, and Tops of Wall Cabinets and Tall Cabinets: 3/4-inch particleboard, plastic-laminate faced on exposed surfaces, thermoset decorative panels on semi-exposed surfaces.
 - 2. Shelves: 3/4-inch up to 36 inch spans and 1-inch for spans greater than 36 inches, thermoset decorative panels.
 - 3. Backs of Cabinets: 1/2-inch particleboard, plastic-laminate faced on exposed surfaces, thermoset decorative panels on semi-exposed surfaces.
 - 4. Drawer Fronts: 3/4-inch particleboard, plastic-laminate faced.
 - 5. Drawer Sides and Backs:
 - a. 1/2-inch solid-wood or veneer-core hardwood plywood, with glued dovetail or multiple-dowel joints.
 - b. 1/2-inch, high density fiberboard, 55 pcf density minimum. All parts glued and mechanically fastened using thermosetting fasteners.
 - 6. Drawer Bottoms: 1/4-inch thermoset decorative panels glued and dadoed into front, back, and sides of drawers. Use 1/2-inch material for drawers more than 24 inches wide.
 - 7. Drawer Bodies: Steel drawer pans formed from 0.0359-inch-thick metal, metallic phosphate treated, and finished with manufacturer's standard 2-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat with a minimum dry film thickness of 1 mil for topcoat and 2 mils for system.

8. Doors: 3/4-inch particleboard or MDF, plastic-laminate faced.
 9. Stiles and Rails of Glazed Doors More Than 48 Inches High: 1-1/16-inch- thick, with solid-wood cores.
 10. Cabinets Bases: Bases shall be fabricated separate from cabinets (not integral). Fabricate from 3/4-inch exterior grade, preservative treated plywood or preservative-treated 2x4's. Fabricate in a ladder configuration with plywood fronts and back running continuous for the length of the cabinet. Provide ends, and provide additional runners centered in all cabinets greater than 24 inches wide.
- B. Filler Strips: Provide as needed to close spaces between cabinets and walls, ceilings, and indicated equipment. Fabricate from same material and with same finish as cabinets.

2.7 CASEWORK HARDWARE AND ACCESSORIES

- A. Hardware, General: Unless otherwise indicated, provide manufacturer's standard satin-finish , commercial-quality, heavy-duty hardware.
1. Use threaded metal or plastic inserts with machine screws for fastening to particleboard except where hardware is through-bolted from back side.
- B. Butt Hinges: Chrome-plated, semiconcealed, 5-knuckle hinges complying with BHMA A156.9, Grade 1, with antifriction bearings and hospital tips. Provide 2 hinges for doors less than 48 inches high and 3 hinges for doors more than 48 inches high.
- C. Pulls: Solid aluminum wire pulls, fastened from back with two screws. Provide 2 pulls for drawers more than 24 inches wide.
- D. Door Catches: Zinc-plated, dual, self-aligning, permanent magnet catch. Provide 2 catches on doors more than 48 inches high.
- E. Drawer Slides: BHMA A156.9, Type B05091.
1. Standard Duty (Grades 1, 2, and 3): Side mounted and extending under bottom edge of drawer; full -extension type; zinc-plated steel with polymer rollers.
 2. Box Drawer Slides: Grade 1, for drawers not more than 6 inches high and 24 inches wide.
 3. File and Flat-File Drawer Slides: Grade 1HD-200, for drawers more than 6 inches high or 24 inches wide.
- F. Drawer and Hinged Door Locks: Cylindrical (cam) type, 5-pin tumbler, brass with chrome-plated finish, and complying with BHMA A156.11, Grade 1.
1. Provide a minimum of two keys per lock and six master keys.
 2. Provide locks where indicated.
- G. Adjustable Shelf Supports: 2-pin locking plastic shelf rests complying with BHMA A156.9, Type B04013.
- H. Grommets for Cable Passage through Countertops:
1. Rectangular Cable Passage through Grommet for Countertops: 4 inch by 2 inch molded-plastic grommet with 3-inch long slot for wire passage and matching plastic sleeve. Color as selected by Architect.
 - a. Basis-of-Design Product: Doug Mockett and Company, Inc.; Model RG-Rectangular Grommet Sherlock.

2.8 PLASTIC LAMINATE-CLAD COUNTERTOPS

- A. Countertops, General: Provide smooth, clean exposed tops and edges in uniform plane free of defects. Provide front and end overhang of 1 inch over base cabinets.
- B. Plastic-Laminate Tops: Plastic-laminate sheet, shop bonded to both sides of 1-1/8-inch plywood or particleboard. Sand surfaces to which plastic laminate is to be bonded.
1. Plastic Laminate for Flat Tops: Grade HGS.
 2. Plastic Laminate for Backing: Grade BKL.
 3. Provide 3-mm PVC edging on front edge of top, on top edges of backsplashes and end splashes, and on ends of tops and splashes.
 - a. Provide crescent beveled edge where indicated on Drawings.
 4. Provide separate plastic-laminate-clad, topset, backsplashes and end splashes fitted to top.
 5. Use exterior medium density fiberboard or exterior glue particleboard for countertops containing sinks.

2.9 SOLID-SURFACING-MATERIAL COUNTERTOPS (123200.A04)

- A. Grade: Premium.
- B. Solid-Surfacing-Material Thickness: 1/2 inch.
- C. Colors, Patterns, and Finishes: Counter tops, splashes, aprons and undercounter panels shall be of the same material and color. Architect may select a separate color for each room. Provide materials and products that result in colors of solid-surfacing material complying with the following requirements:
 - 1. As indicated by manufacturer's designations indicated on Material Finish Legend
- D. Fasteners: Provide non-corrosive fasteners as required for complete installation of components and assemblies. Type and size shall be as required for conditions, materials and superimposed loads involved.
- E. Accessories: Comply with manufacturer's recommendations for hardware, non-corrosive fasteners, adhesives, sealers, fabrication and finishing.
- F. Fabricate in one piece, unless otherwise indicated. Comply with solid-surfacing-material manufacturer's written recommendations for adhesives, sealers, fabrication, and finishing.
 - 1. Fabricate with shop-applied edges of materials and configuration indicated.
 - 2. Sinks fabricated from the same solid surfacing materials as the tops.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances, location of framing and reinforcements, and other conditions affecting performance of manufactured wood casework.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 CASEWORK INSTALLATION

- A. Install level, plumb, and true; shim as required, using concealed shims. Where manufactured wood casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical.
- B. Base Cabinets: Set cabinets straight, level, and plumb. Adjust subtops within 1/16 inch of a single plane. Fasten cabinets to masonry or framing, wood blocking, or reinforcements in walls and partitions with fasteners spaced 24 inches o.c. Bolt adjacent cabinets together with joints flush, tight, and uniform. Align similar adjoining doors and drawers to a tolerance of 1/16 inch.
 - 1. Where base cabinets are not installed adjacent to walls, fasten to floor at toe space with fasteners spaced 24 inches o.c. Secure sides of cabinets to floor, where they do not adjoin other cabinets, with not less than two fasteners.
- C. Wall Cabinets: Hang cabinets straight, level, and plumb. Adjust fronts and bottoms within 1/16 inch of a single plane. Fasten to hanging strips, masonry, or framing, blocking, or reinforcements in walls or partitions. Align similar adjoining doors to a tolerance of 1/16 inch.
 - 1. Fasten through back, near top and bottom, at ends, and not more than 16 inches o.c.
 - 2. Use toggle bolts at hollow masonry.
 - 3. Use expansion anchors at solid masonry.
 - 4. Use No. 10 wafer-head screws sized for 1-inch penetration at wood hanging strips.
 - 5. Use No. 10 wafer-head screws sized for 1-inch penetration into wood blocking.
 - 6. Use No. 10 wafer-head sheet metal screws through metal backing or metal framing behind wall finish at metal-framed partitions.
- D. Install hardware uniformly and precisely. Set hinges snug and flat in mortises unless otherwise indicated. Adjust and align hardware so moving parts operate freely and contact points meet accurately. Allow for final adjustment after installation.

- E. Adjust casework and hardware so doors and drawers operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

3.3 INSTALLATION OF TOPS

- A. Field Jointing: Where possible make in the same manner as shop jointing, using dowels, splines, adhesives, and fasteners recommended by manufacturer. Prepare edges to be joined in shop so Project-site processing of top and edge surfaces is not required. Locate field joints where shown on Shop Drawings.
 - 1. Secure field joints in plastic-laminate countertops with concealed clamping devices located within 6 inches of front and back edges and at intervals not exceeding 24 inches. Tighten according to manufacturer's written instructions to exert a constant, heavy-clamping pressure at joints.
- B. Secure tops to cabinets with Z- or L-type fasteners or equivalent, using two or more fasteners at each front, end, and back.
- C. Abut top and edge surfaces in one true plane, with internal supports placed to prevent deflection.
- D. Secure backsplashes and end splashes to walls with adhesive.
- E. Seal junctures of tops, splashes, and walls with mildew-resistant silicone sealant or another permanently elastic sealing compound recommended by countertop material manufacturer.

3.4 INSTALLATION OF SHELVING

- A. Securely fasten shelf standards to masonry, partition framing, wood blocking, or reinforcements in partitions.
 - 1. Fasten shelf standards at ends and not more than 12 inches o.c.
 - 2. Use toggle bolts at hollow masonry.
 - 3. Use expansion anchors at solid masonry.
 - 4. Use self-tapping sheet metal screws in metal framing or metal backing at metal-framed partitions. Do not use wall anchors in gypsum board.
 - 5. Use wood screws sized for 1-inch penetration into wood blocking.
 - 6. Use toggle bolts at plaster on metal lath.
- B. Install shelf standards plumb and at heights to align shelf brackets for level shelves. Space standards not more than 36 inches o.c.
- C. Install shelving level and straight, closely fitted to other work where indicated.

3.5 CLEANING AND PROTECTING

- A. Repair or remove and replace defective work as directed on completion of installation.
- B. Clean finished surfaces, touch up as required, and remove or refinish damaged or soiled areas to match original factory finish, as approved by Architect.
- C. Protection: Provide 6-mil plastic or other suitable water-resistant covering over countertop surfaces. Tape to underside of countertop at a minimum of 48 inches o.c. Remove protection at Substantial Completion.

END OF SECTION 123200

JOPLIN EARLY CHILDHOOD CENTER

Joplin Schools

Joplin, Missouri

100% BID DOCUMENTS



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STATEMENT OF RESPONSIBILITY

I HEREBY STATE THAT THE DRAWINGS INTENDED TO BE AUTHENTICATED BY MY SEAL ARE LIMITED TO THE FOLLOWING DRAWING SHEETS:

6000, 6001, 6101, A101, A101A, A101B, A101C, A121A, A121B, A121C, A125, A141, A201, A202, A203, A301, A311, A332, A333, A361, A362, A363, A364, A421, A422, A423, A432, A433, A434, A435, A501, A504, A601A, A601B, A601C, A602, A611, A621, A622, A623, A624, A625, A661, A681, A682, A801A, A801B, A801C, A812, A813, A901, A902.

I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, ESTIMATES, REPORTS AND OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

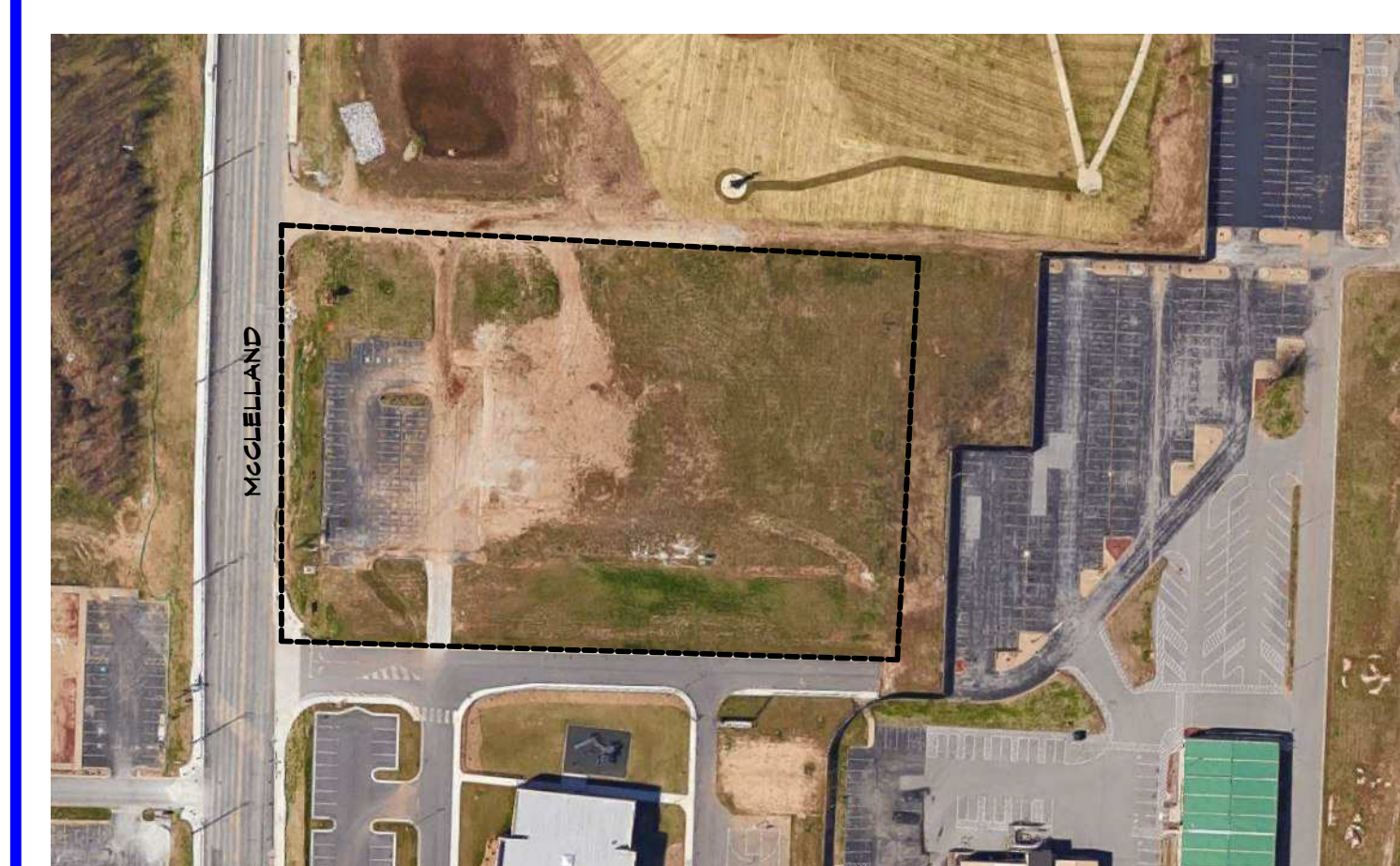
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I HEREBY DISCLAIM ANY RESPONSIBILITY FOR ALL OTHER DRAWINGS, ESTIMATES, REPORTS AND OTHER DOCUMENTS OR INSTRUMENTS RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE ARCHITECTURAL OR ENGINEERING PROJECT OR SURVEY.

VICINITY MAP



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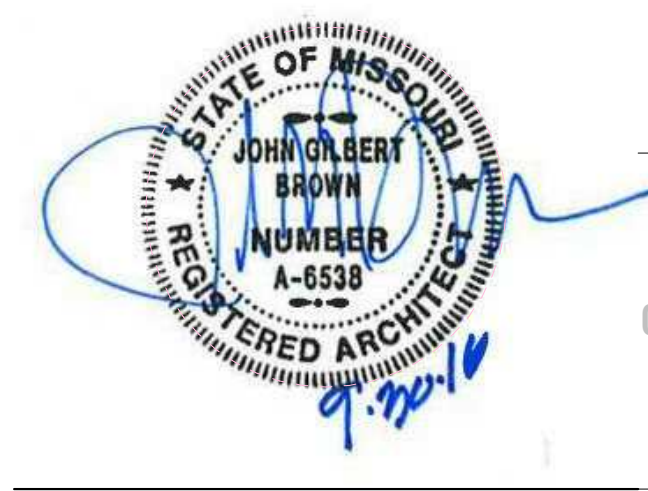
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Joplin Early Childhood Center
Joplin Schools
2810 South McClelland Blvd.
Joplin, MO

REVISIONS:		
#	Description	Date
1	ADDendum 1	10/14/2016



JOB NO: 16054
DRAWN BY: RW
CHECKED BY: NY
DATE: 09.30.2016

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OF

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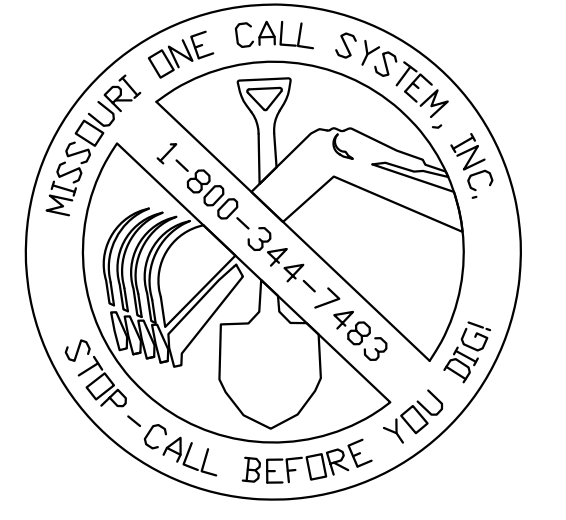


A B C D E F G H J K L M N P Q R

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

SHEET KEYNOTE LEGEND

- CP CONTROL POINT
- ⊕ FND FOUND IRON PIN
- ⊕ SET SET IRON PIN
- △ RWM RIGHT-OF-WAY MARKER
- ⊕ PWP POWER POLE W/ GUY
- ⊕ MH MANHOLE
- ⊕ SCD SEWER CLEANOUT
- ⊕ GCM GAS METER
- ⊕ LP LIGHT POLE
- ⊕ WTR WATER METER
- ⊕ WV WATER VALVE
- ⊕ GV GAS VALVE
- ⊕ FH FIRE HYDRANT
- ⊕ TR TELEPHONE RISER
- ⊕ BUMP BUMPER POST
- ⊕ GI GRATE INLET
- ⊕ ER ELECTRICAL RISER
- ⊕ EM ELECTRICAL METER
- ⊕ TS TRAFFIC SIGNAL BOX
- ⊕ MB MAIL BOX
- ⊕ SL SPOT LIGHT
- ⊕ PP PAY PHONE
- ⊕ TR TREE LINE
- ⊕ BUSH
- P PROPERTY LINE
- SS SANITARY SEWER
- SW STORM SEWER
- TEL TELEPHONE LINE
- UT UNDERGROUND TELEPHONE
- G GAS LINE
- W WATER LINE
- OHE OVERHEAD ELECTRIC LINE
- UE UNDERGROUND ELECTRIC
- F FENCE LINE
- R RETAINING WALL
- LINE LABELS: PLAT 100' P, DEED 100' D, MEASURED 100' M

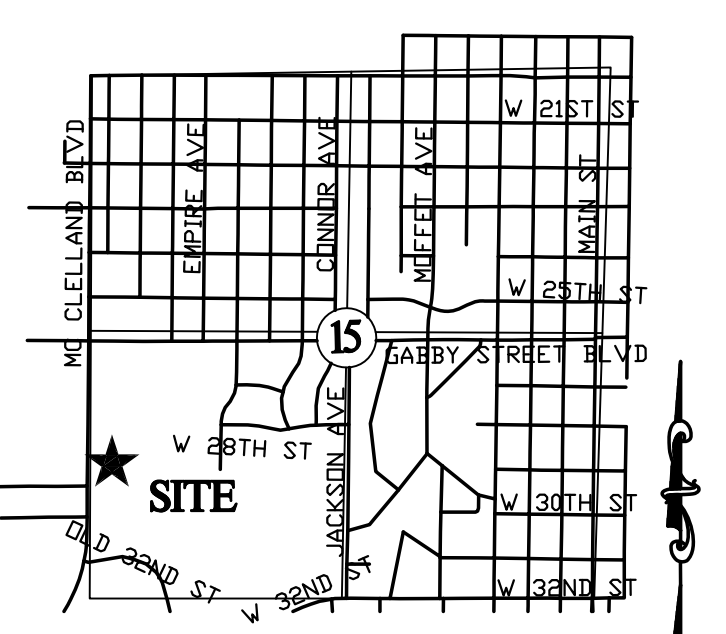
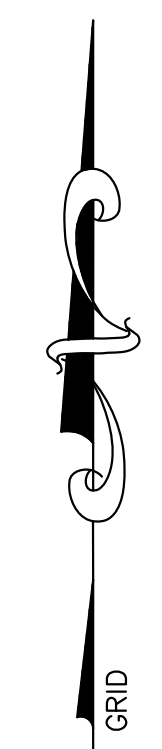


PARKING TOTALS:

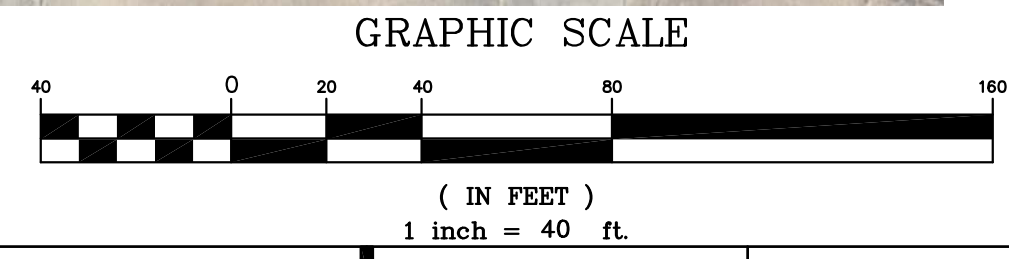
- VISITOR = 19 SPACES
- STAFF = 20 SPACES
- TOTAL = 39 SPACES
- TOTAL HANDICAP = 3 SPACES

CIVIL SHEET INDEX:

NO.	DESCRIPTION
C100	OVERALL SITE PLAN
C101	DEMOLITION PLAN
C102	SITE GEOMETRY PLAN
C103	SITE GRADING PLAN
C104	STORMWATER PLAN - SITE
C105	STORMWATER POLLUTION PREVENTION PLAN
C106	UTILITY PLAN
C107	DETAILS
C108	DETAILS
C109	ADD ALTERNATES



LOCATION SKETCH



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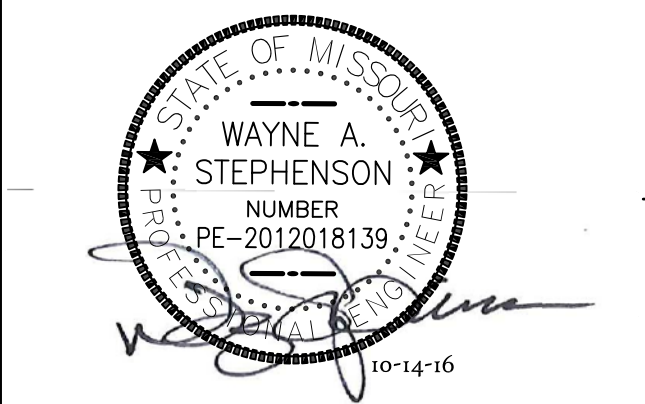
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CONSTRUCTION DOCUMENTS
PKG #1

Joplin Early Childhood Center
Joplin Schools

ANDERSON
ENGINEERING
EMPLOYEE OWNED

REVISIONS:
△ ADDENDUM #1 10/14/2016

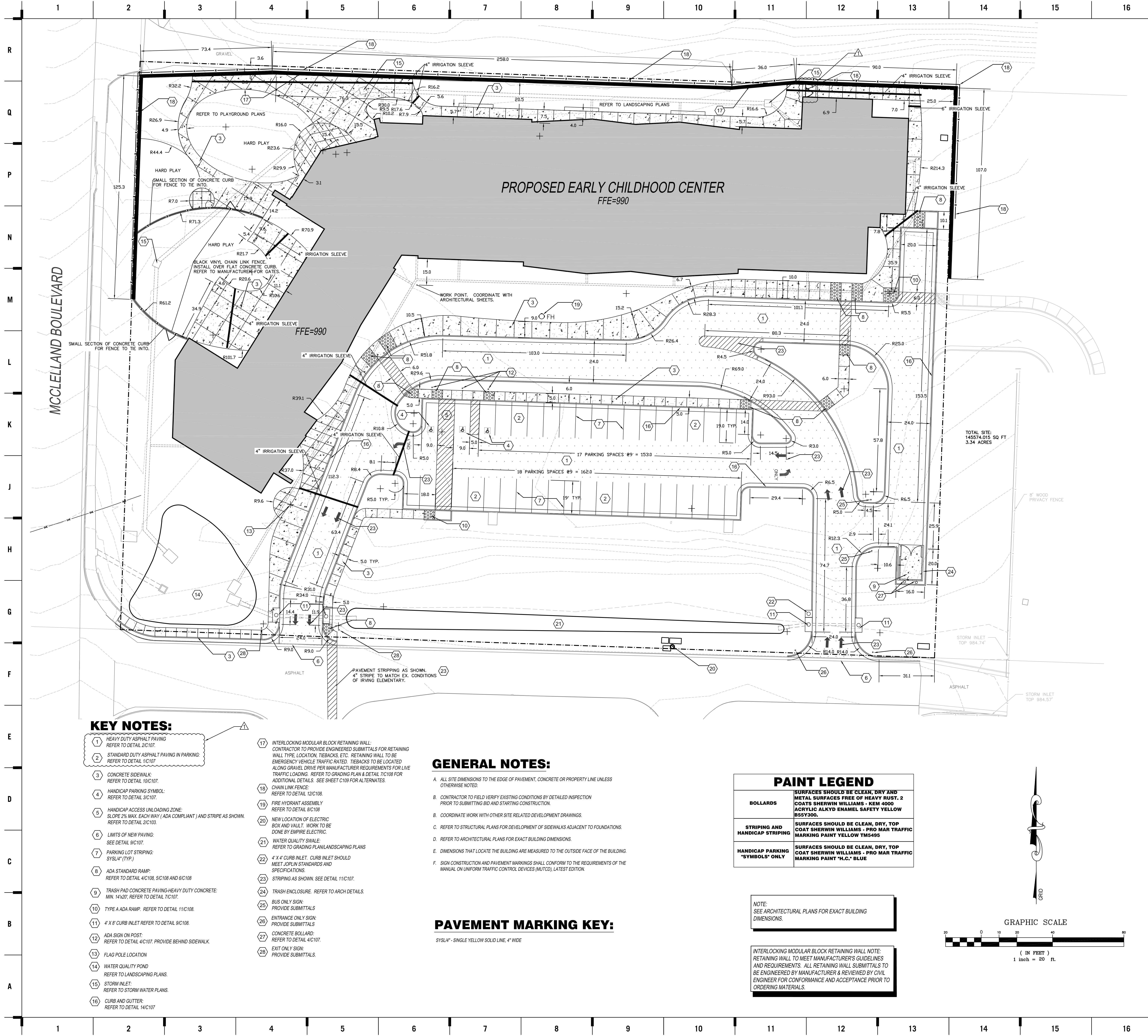


The Designation Engineer and Affiliates is the registered professional engineer responsible for the design and construction of the project. The Engineer and Affiliates shall be held responsible for the design and construction of the project. The Engineer and Affiliates shall be held responsible for the design and construction of the project.

JOB NO: 50040-16
DRAWN BY: JOSHUA OATHOUT, EI
CHECKED BY: WAYNE STEPHENSON, PE
DATE: 10.14.2016

C100
OF

OVERALL SITE PLAN



SHEET KEYNOTE LEGEND

● CP	CONTROL POINT
○ FID	FOUND IRON PIN
○ SET	SET IRON PIN
△ RWM	RIGHT-OF-WAY MARKER
○ P	POWER POLE W/ GUY
○ MH	MANHOLE
○ SCC	SEWER CLEANOUT
○ GM	GAS METER
○ LP	LIGHT POLE
○ S	SIGN
○ WM	WATER METER
○ WV	WATER VALVE
○ GV	GAS VALVE
○ FH	FIRE HYDRANT
○ TR	TELEPHONE RISER
○ B	BUMPER POST
○ GI	GRATE INLET
○ ER	ELECTRICAL RISER
○ EM	ELECTRICAL METER
○ TS	TRAFFIC SIGNAL BOX
○ MB	MAIL BOX
○ SL	SPOT LIGHT
○ PP	PAY PHONE
○ T	TREELINE
○ B	BUSH
○ PL	PROPERTY LINE
○ SS	SANITARY SEWER
○ SW	STORM SEWER
○ TEL	TELEPHONE LINE
○ UT	UNDERGROUND TELEPHONE
○ G	GAS LINE
○ W	WATER LINE
○ OHC	ELECTRIC LINE
○ UE	UNDERGROUND ELECTRIC
○ X	FENCE LINE
○ RW	RETAINING WALL
○ P	PLAT
○ D	DEED
○ M	MEASURED
100'	100' P
100'	100' D
100'	100' M



LEGEND FOR PAVEMENT TYPES

[Pattern]	HEAVY DUTY PAVEMENT
[Pattern]	STANDARD DUTY PAVEMENT
[Pattern]	CONCRETE PAVING

REVISIONS:

ADDENDUM #1	10/14/2016
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- ### KEY NOTES:
- HEAVY DUTY ASPHALT PAVING REFER TO DETAIL 2/C107.
 - STANDARD DUTY ASPHALT PAVING IN PARKING REFER TO DETAIL 1/C107.
 - CONCRETE SIDEWALK REFER TO DETAIL 10/C107.
 - HANDICAP PARKING SYMBOL REFER TO DETAIL 3/C107.
 - HANDICAP ACCESS UNLOADING ZONE: SLOPE 2% MAX. EACH WAY (ADA COMPLIANT) AND STRIPE AS SHOWN. REFER TO DETAIL 2/C103.
 - LIMITS OF NEW PAVING: SEE DETAIL 9/C107.
 - PARKING LOT STRIPING: SYSL4" (TYP.)
 - ADA STANDARD RAMP: REFER TO DETAIL 4/C108, 5/C108 AND 6/C108.
 - TRASH PAD CONCRETE PAVING-HEAVY DUTY CONCRETE: MIN. 14'x20'. REFER TO DETAIL 7/C107.
 - TYPE A ADA RAMP: REFER TO DETAIL 11/C108.
 - 4" X 8" CURB INLET REFER TO DETAIL 9/C108.
 - ADA SIGN ON POST: REFER TO DETAIL 4/C107. PROVIDE BEHIND SIDEWALK.
 - FLAG POLE LOCATION
 - WATER QUALITY POND REFER TO LANDSCAPING PLANS.
 - STORM INLET: REFER TO STORM WATER PLANS.
 - CURB AND CUTTER: REFER TO DETAIL 14/C107.
 - INTERLOCKING MODULAR BLOCK RETAINING WALL: CONTRACTOR TO PROVIDE ENGINEERED SUBMITTALS FOR RETAINING WALL TYPE, LOCATION, TIEBACKS, ETC. RETAINING WALL TO BE EMERGENCY VEHICLE TRAFFIC RATED. TIEBACKS TO BE LOCATED ALONG GRAVEL DRIVE PER MANUFACTURER REQUIREMENTS FOR LIVE TRAFFIC LOADING. REFER TO GRADING PLAN & DETAIL 7/C108 FOR ADDITIONAL DETAILS. SEE SHEET C108 FOR ALTERNATES.
 - CHAIN LINK FENCE: REFER TO DETAIL 12/C108.
 - FIRE HYDRANT ASSEMBLY REFER TO DETAIL 8/C108.
 - NEW LOCATION OF ELECTRIC BOX AND VAULT. WORK TO BE DONE BY EMPIRE ELECTRIC.
 - WATER QUALITY SWALE: REFER TO GRADING PLAN/LANDSCAPING PLANS.
 - 4" X 4" CURB INLET. CURB INLET SHOULD MEET JOPLIN STANDARDS AND SPECIFICATIONS.
 - STRIPING AS SHOWN. SEE DETAIL 11/C107.
 - TRASH ENCLOSURE. REFER TO ARCH DETAILS.
 - BUS ONLY SIGN: PROVIDE SUBMITTALS.
 - ENTRANCE ONLY SIGN: PROVIDE SUBMITTALS.
 - CONCRETE BOLLARD: REFER TO DETAIL 4/C107.
 - EXIT ONLY SIGN: PROVIDE SUBMITTALS.

- ### GENERAL NOTES:
- ALL SITE DIMENSIONS TO THE EDGE OF PAVEMENT, CONCRETE OR PROPERTY LINE UNLESS OTHERWISE NOTED.
 - CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS BY DETAILED INSPECTION PRIOR TO SUBMITTING BID AND STARTING CONSTRUCTION.
 - COORDINATE WORK WITH OTHER SITE RELATED DEVELOPMENT DRAWINGS.
 - REFER TO STRUCTURAL PLANS FOR DEVELOPMENT OF SIDEWALKS ADJACENT TO FOUNDATIONS.
 - REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
 - DIMENSIONS THAT LOCATE THE BUILDING ARE MEASURED TO THE OUTSIDE FACE OF THE BUILDING.
 - SIGN CONSTRUCTION AND PAVEMENT MARKINGS SHALL CONFORM TO THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.

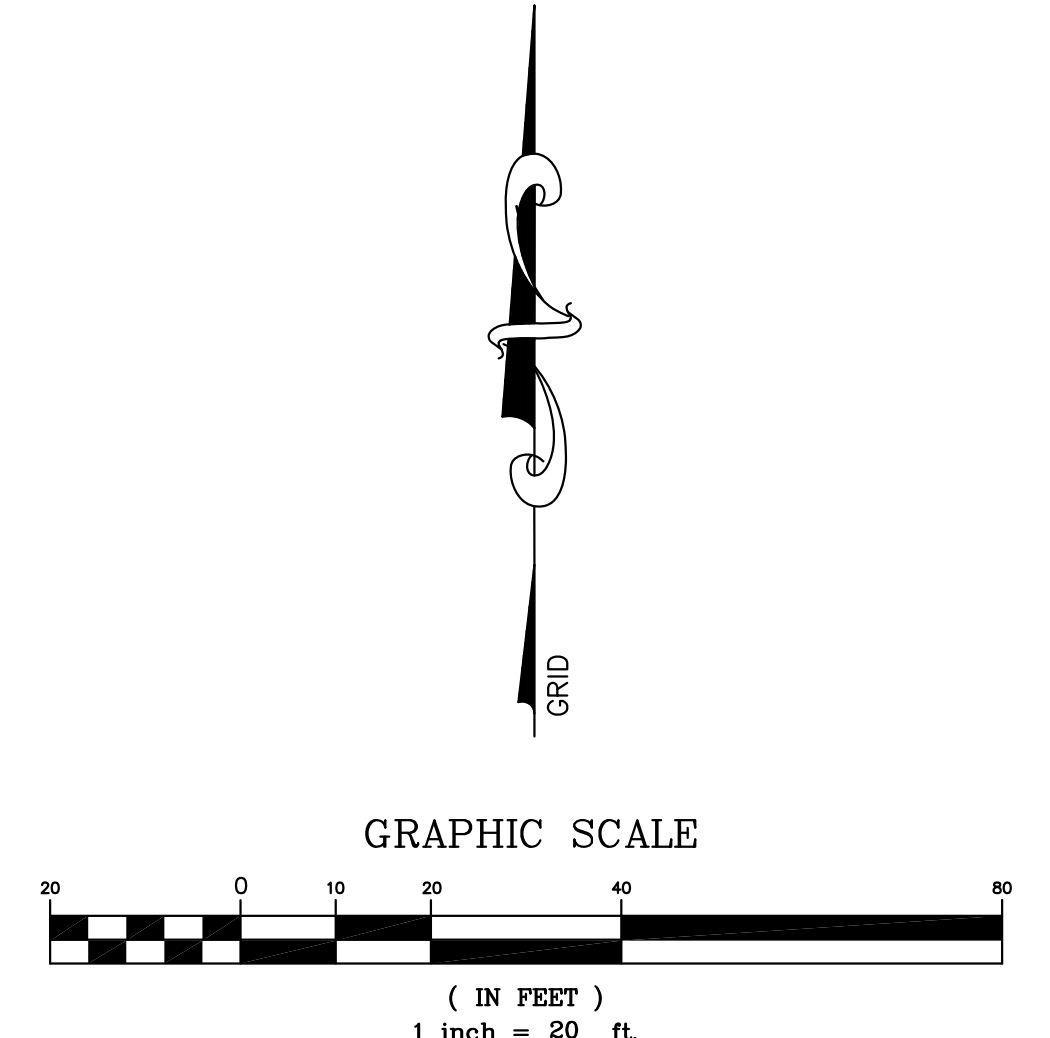
- ### PAVEMENT MARKING KEY:
- YSYL4" - SINGLE YELLOW SOLID LINE, 4" WIDE

PAINT LEGEND

BOLLARDS	SURFACES SHOULD BE CLEAN, DRY AND METAL SURFACES FREE OF HEAVY RUST. 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYL ENAMEL SAFETY YELLOW B55Y300.
STRIPING AND HANDICAP STRIPING	SURFACES SHOULD BE CLEAN, DRY, TOP COAT SHERWIN WILLIAMS - PRO MAR TRAFFIC MARKING PAINT YELLOW TR6595.
HANDICAP PARKING "SYMBOLS" ONLY	SURFACES SHOULD BE CLEAN, DRY, TOP COAT SHERWIN WILLIAMS - PRO MAR TRAFFIC MARKING PAINT "H.C." BLUE.

NOTE: SEE ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.

INTERLOCKING MODULAR BLOCK RETAINING WALL NOTE: RETAINING WALL TO MEET MANUFACTURER'S GUIDELINES AND REQUIREMENTS. ALL RETAINING WALL SUBMITTALS TO BE ENGINEERED BY MANUFACTURER & REVIEWED BY CIVIL ENGINEER FOR CONFORMANCE AND ACCEPTANCE PRIOR TO ORDERING MATERIALS.



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417.782.7399 phone
417.782.7389 fax

Land Studio
Landscape Architect
COA# 200801860
317 SE Main ST
Lee's Summit, MO, 64063
913.371.7933 phone
417.782.7389 fax

Smith & Boucher Engineers
MEP Engineers
EGC-000178
25501 Valley Parkway, Suite 200
Olathe, KS, 66061
913.345.2127 phone
913.345.0617 fax

Anderson Engineering
Geotechnical Engineers
COA# 00062
811 E. 3RD ST
Joplin, MO, 64801
417.782.7399 phone
417.782.7389 fax

CONSTRUCTION DOCUMENTS
PKG #1

ANDERSON ENGINEERING
EMPLOYEE OWNED

Joplin Early Childhood Center
Joplin Schools

REVISIONS:
ADDENDUM #1 10/14/2016

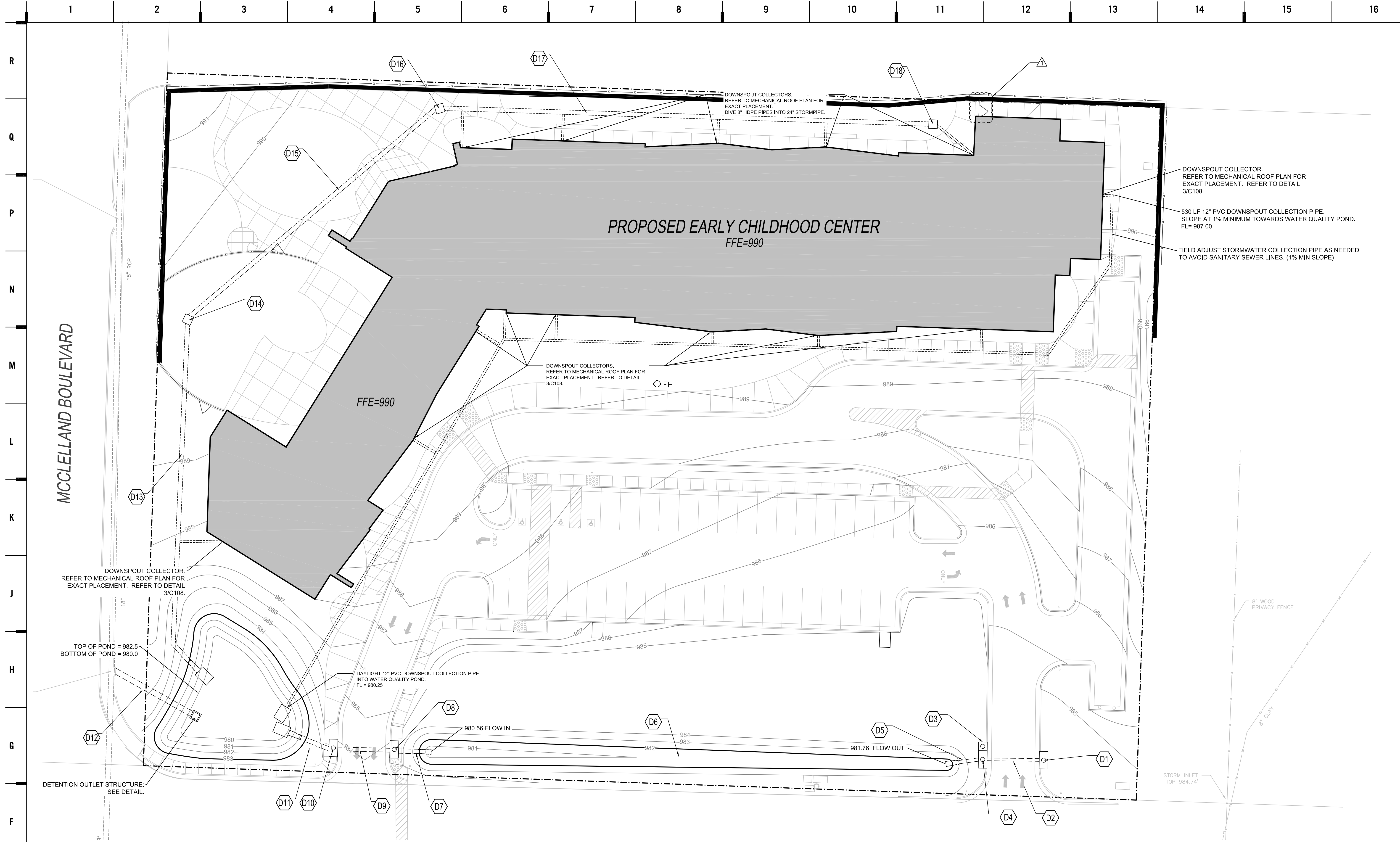
WAYNE A. STEPHENSON
NUMBER
PE-2012018139
10-14-16

JOB NO: 50040-16
DRAWN BY: JOSHUA OATHOUT, EI
CHECKED BY: WAYNE STEPHENSON, PE
DATE: 10.14.2016

G102
OF

SITE GEOMETRY PLAN

Please consider the environment before printing this.



SHEET KEYNOTE LEGEND

- CP CONTROL POINT
- FND IR FOUND IRON PIN
- SET IR SET IRON PIN
- ▲ RWM RIGHT-OF-WAY MARKER
- SWA POWER POLE W/ GUY
- MH MANHOLE
- SCD SEWER CLEANOUT
- GM GAS METER
- LP LIGHT POLE
- ▲ SIGN
- WM WATER METER
- WV WATER VALVE
- GV GAS VALVE
- FH FIRE HYDRANT
- ▲ TR TELEPHONE RISER
- B BUMPER POST
- GR GRATE INLET
- ER ELECTRICAL RISER
- EM ELECTRICAL METER
- TS TRAFFIC SIGNAL BOX
- MB MAIL BOX
- ▲ V SPOT LIGHT
- P PAY PHONE
- T TREELINE
- B BUSH
- PROPERTY LINE
- SANITARY SEWER
- STORM SEWER
- TELEPHONE LINE
- UNDERGROUND TELEPHONE
- GAS LINE
- WATER LINE
- ELECTRIC LINE
- UNDERGROUND ELECTRIC
- FENCE LINE
- RETAINING WALL
- LINE LABELS:

PLAT	100' P
DEED	100' D
MEASURED	100' M

8205 W 108th Terrace
Overland Park, KS 66210
913.451.8885
913.451.0220

220 NW Executive Way
Lee's Summit, MO 64063
816.525.5660
816.525.3028
HOLLISANDMILLER.COM

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CONSTRUCTION DOCUMENTS
PKG #1

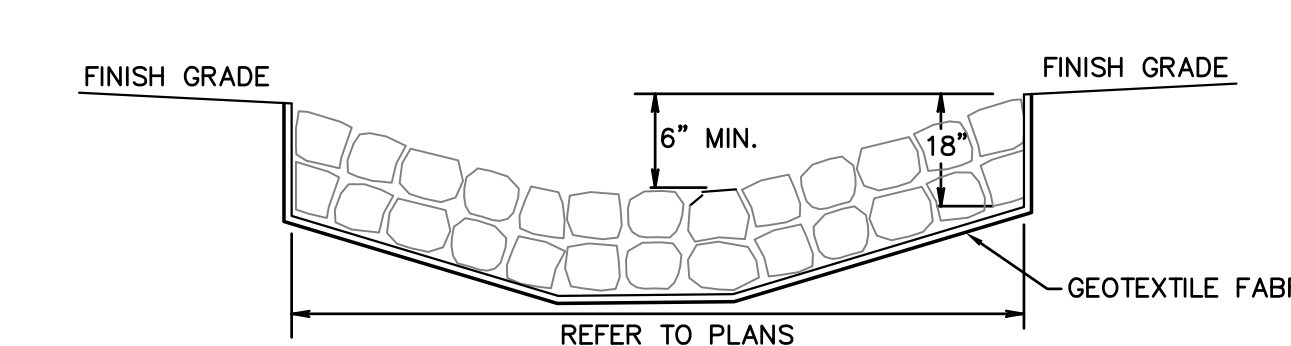


RIP-RAP NOTE:

PLACE RIP-RAP IN ALL PLACES AS INDICATED ON THE PLAN. THE STONE FOR RIP-RAP SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE AS NEARLY AS UNIFORM IN SECTION AS PRACTICAL. THE STONES SHALL BE DENSE, RESISTANT TO THE ACTION OF AIR AND WATER, AND SUITABLE IN ALL ASPECTS FOR THE PURPOSE INTENDED UNLESS OTHERWISE SPECIFIED. RIP-RAP SHALL CONSIST OF MATERIAL WITH A PREDOMINANT ROCK SIZE OF 6", A MAXIMUM ROCK SIZE OF 10", AND A GRADATION SUCH THAT NO MORE THAN 15% WILL BE LESS 3". STONES SHALL BE PLACED A MINIMUM OF 12" BELOW FINISH GRADE. ALL RIP-RAP SHALL BE PLACED OVER GEOTEXTILE FILTER FABRIC.

DRAINAGE STRUCTURE INDEX:

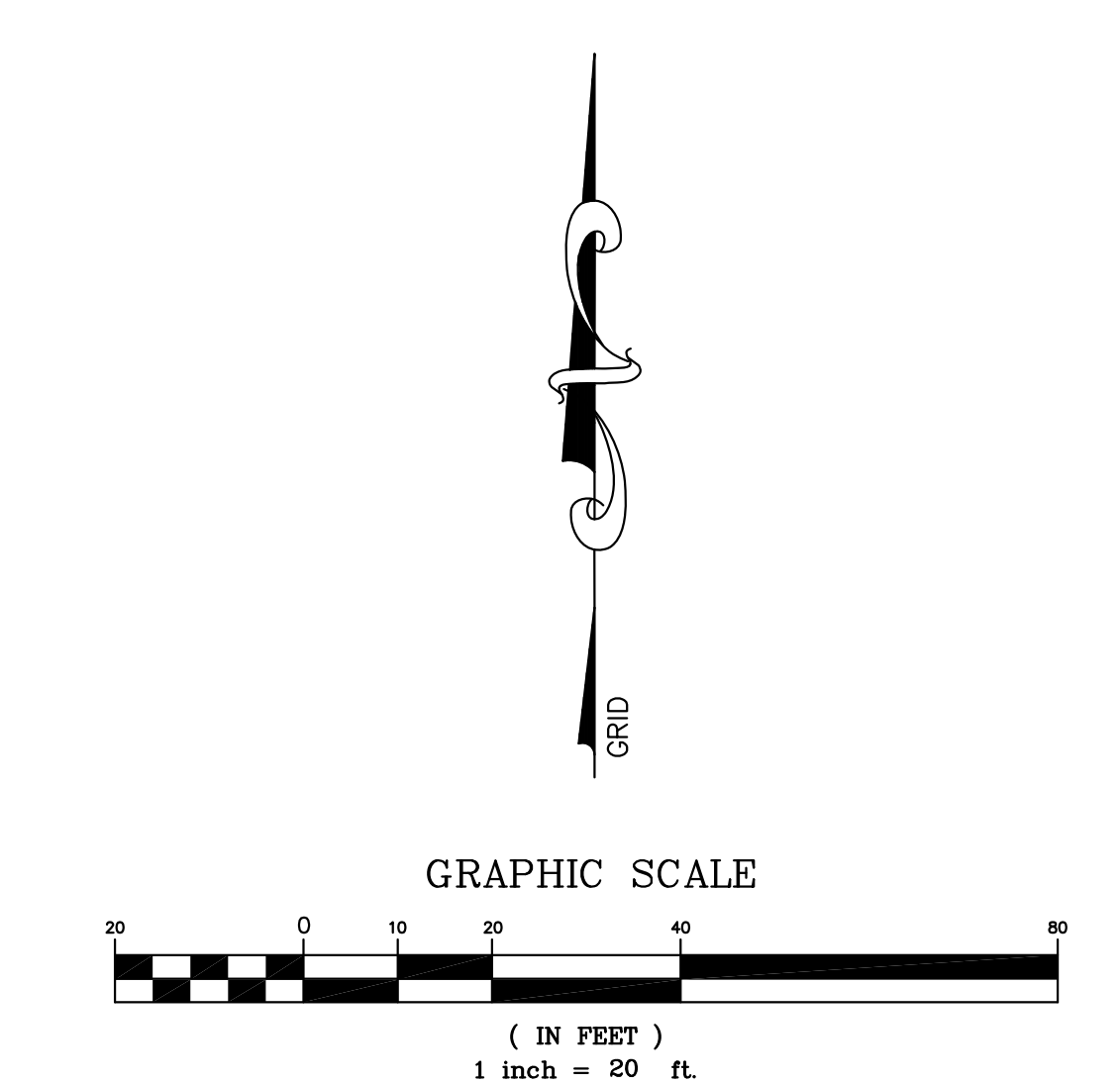
STRUCTURE #	STRUCTURE TYPE	FL IN (FT)	FL OUT (FT)	TOP (FT)	SIZE	LENGTH (FT)	SLOPE (%)
D1	CURB INLET	N/A	981.97	985.8	4' X 8'	N/A	N/A
D2	RCP PIPE	981.97	981.85	984.7	15"	24	0.5
D3	CURB INLET	N/A	984.7	984.7	4' X 4'	N/A	N/A
D4	CURB INLET	981.85	981.83	984.7	4' X 8'	N/A	N/A
D5	HDPE PIPE W/FLARED END SECTION	981.83	981.70	N/A	18"	15	0.5
D6	WATER QUALITY SWALE	981.76	980.56	983	2' DEEP X 5' WIDTH	240	0.5
D7	HDPE PIPE W/FLARED END SECTION	980.56	980.49	N/A	21"	15	0.5
D8	CURB INLET	980.49	980.47	984.5	4' X 8'	N/A	N/A
D9	RCP PIPE	980.47	980.35	N/A	24"	24	0.5
D10	CURB INLET	980.35	980.33	984.5	4' X 8'	N/A	0.5
D11	HDPE PIPE W/FLARED END SECTION	980.33	980.24	N/A	24"	19.5	0.5
D12	RCP PIPE	980.00	979.79	N/A	30"	41	0.51
D13	HDPE PIPE W/FLARED END SECTION	981.05	980.25	N/A	24"	160	0.50
D14	AREA INLET	981.15	981.05	N/A	4' X 4'	N/A	N/A
D15	HDPE PIPE	981.89	981.15	N/A	18"	148	0.5
D16	AREA INLET	981.99	981.89	N/A	4' X 4'	N/A	N/A
D17	HDPE PIPE	983.1	981.99	991	4' X 4'	223	N/A
D18	AREA INLET	N/A	982.37	N/A	4' X 4'	N/A	N/A



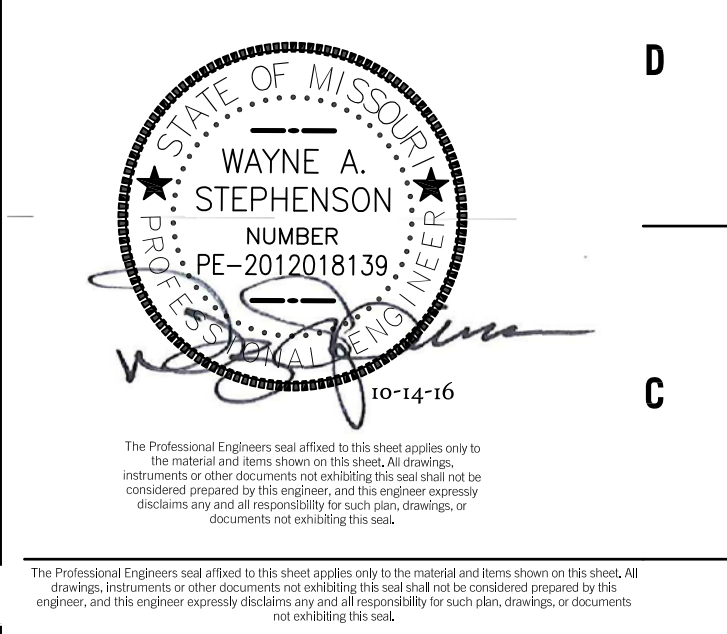
- NOTES:
- HAND PLACE RIP-RAP IN ALL PLACES AS INDICATED ON THE PLAN.
 - THE STONE FOR RIP-RAP SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE AS NEARLY AS UNIFORM, IN SECTION AS PRACTICAL.
 - THE STONES SHALL BE DENSE, RESISTANT TO THE ACTION OF AIR AND WATER, AND SUITABLE IN ALL ASPECTS FOR THE PURPOSE INTENDED UNLESS OTHERWISE SPECIFIED.
 - STONES SHALL BE A MINIMUM OF 6" IN DIAMETER AND PLACED A MINIMUM OF 18" BELOW FINISH GRADE.
 - RIP-RAP PAD SHALL HAVE NO SLOPE FOR THE LENGTH OF THE RIP-RAP PAD.
 - FINISHED GRADE ADJACENT TO THE RIP-RAP PAD SHALL BE A MINIMUM OF 6" ABOVE THE RIP-RAP PAD BOTTOM.

2 RIPRAP PAD DETAIL

C104 SCALE: NOT TO SCALE

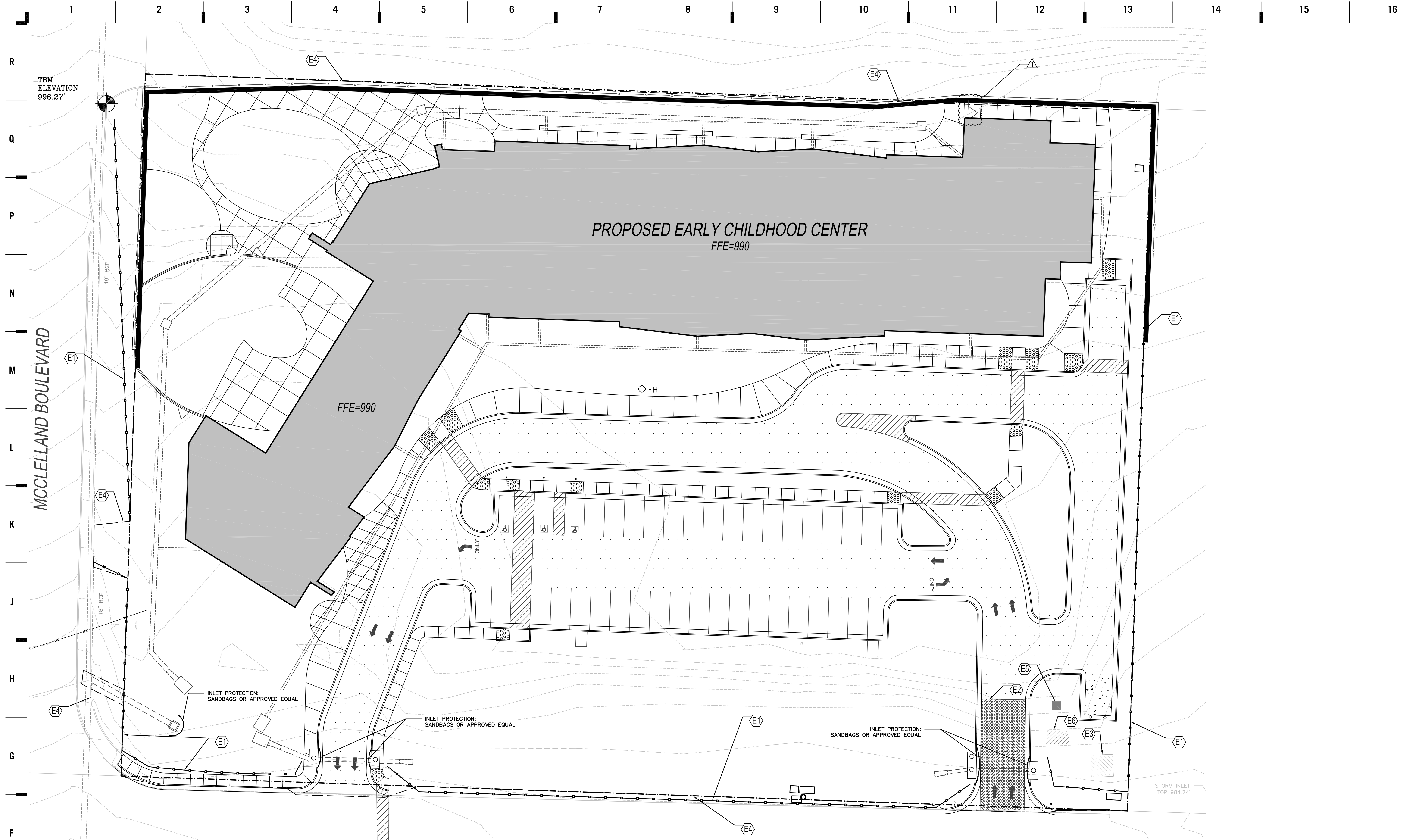


REVISIONS:
▲ ADDENDUM #1 10/14/2016



Joplin Early Childhood Center
Joplin Schools

JOB NO: 50040-16
DRAWN BY: JOSHUA OATHOUT, EI
CHECKED BY: WAYNE STEPHENSON, PE
DATE: 10.14.2016



SHEET KEYNOTE LEGEND

● CP	CONTROL POINT
⦿ FID	FOUND IRON PIN
⦿ SET	SET IRON PIN
△ RWM	RIGHT-OF-WAY MARKER
⦿ SP	POWER POLE W/ GUY
⦿ MH	MANHOLE
⦿ SCO	SEWER CLEANOUT
⦿ GM	GAS METER
⦿ LP	LIGHT POLE
⦿ S	SIGN
⦿ WM	WATER METER
⦿ WV	WATER VALVE
⦿ GV	GAS VALVE
⦿ FH	FIRE HYDRANT
⦿ TR	TELEPHONE RISER
⦿ BP	BUMPER POST
⦿ GI	GRATE INLET
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⦿ EM	ELECTRICAL METER
⦿ TS	TRAFFIC SIGNAL BOX
⦿ MB	MAIL BOX
⦿ SL	SPOT LIGHT
⦿ PP	PAY PHONE
⦿ TL	TREELINE
⦿ B	BUSH
---	PROPERTY LINE
---	SANITARY SEWER
---	STORM SEWER
---	TELEPHONE LINE
---	UNDERGROUND TELEPHONE
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---	UNDERGROUND ELECTRIC
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---	RETAINING WALL
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F: 816.525.3028

HOLLISANDMILLER.COM

Missouri State Architect
Missouri State Certificate of Authority
Contractor License # 00261012
Structural # 200601133

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hollis+millers
architects
relationships • results



DRY DETENTION POND

DRY DETENTION POND TO BE CONSTRUCTED AT COMMENCEMENT OF SITE GRADING TO TEMPORARILY ACT AS SEDIMENT SETTLING POND. POND SHALL BE CLEANED OF SEDIMENT AS NEEDED AND UPON SITE STABILIZATION.

RIP-RAP NOTE:

PLACE RIP-RAP IN ALL PLACES AS INDICATED ON THE PLAN. THE STONE FOR RIP-RAP SHALL CONSIST OF FIELD STONE OR ROUGH UNHEWN QUARRY STONE AS NEARLY AS UNIFORM, IN SECTION AS PRACTICAL. THE STONES SHALL BE DENSE, RESISTANT TO THE ACTION OF AIR AND WATER, AND SUITABLE IN ALL ASPECTS FOR THE PURPOSE INTENDED UNLESS OTHERWISE SPECIFIED. RIP-RAP SHALL CONSIST OF MATERIAL WITH A PREDOMINANT ROCK SIZE OF 6". A MAXIMUM ROCK SIZE OF 10", AND A GRADATION SUCH THAT NO MORE THAN 15% WILL BE LESS 3". STONES SHALL BE PLACED A MINIMUM OF 12" BELOW FINISH GRADE. ALL RIP-RAP SHALL BE PLACED OVER GEOTEXTILE FILTER FABRIC.

EROSION CONTROL

1. RETAIN FLOATABLE WIND BLOWN MATERIALS ON SITE BY STORING ALL TRASH AND BUILDING MATERIAL WASTE IN ENCLOSURES UNTIL PROPER DISPOSAL AT OFF-SITE FACILITIES. CHECK ADJACENT AREAS DAILY AND PICK UP CONSTRUCTION WASTE MATERIALS AND DEBRIS THAT HAVE BLOWN OR WASHED OFF SITE.
2. PERMANENTLY STABILIZE ALL SURFACE AREA WITHIN AND ADJACENT TO THIS SITE THAT IS DISTURBED BY VEHICLES, GRADING AND OTHER CONSTRUCTION FOR THE PROPOSED FACILITY. STABILIZATION IS OBTAINED WHEN THE DISTURBED SURFACE IS COVERED WITH STRUCTURES, PAVING AND OR PERENNIAL VEGETATION HAVING A UNIFORM COVERAGE DENSITY OF AT LEAST 70%. STABILIZATION OF ALL DISTURBED AREA IS REQUIRED BEFORE TERMINATING MAINTENANCE AND REMOVAL OF EROSION CONTROL MEASURES.
3. CONTRACTORS SHALL INSPECT POLLUTION CONTROL MEASURES AT LEAST ONCE EVERY 14 DAYS AND WITHIN 24 HOURS AFTER A STORM EVENT OF 1/2 INCH OR GREATER. DAMAGED MEASURES THAT PROVE TO BE INEFFECTIVE SHALL BE REPLACED WITH MORE EFFECTIVE MEASURES OR ADDITIONAL MEASURES WITHIN SEVEN DAYS. REPEATED FAILURE OF A CONTROL MEASURE REQUIRES INSTALLATION OF A MORE SUITABLE DEVICE TO PREVENT DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE.
4. INSTALLATION OF ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY GOVERNING AUTHORITY. CONTRACTOR TO VERIFY REQUIREMENTS PRIOR TO BEGINNING ANY WORK ON PROJECT SITE.
5. CARE SHALL BE TAKEN TO MINIMIZE THE ENCRoACHMENT OF SEDIMENT INTO ALL STORM DRAIN APPURTENANCES, PUBLIC STREETS AND ONTO PRIVATE PROPERTY UNTIL IMPERVIOUS MATERIAL (ROAD/PARKING AREA SURFACE) IS APPLIED OR UNTIL PROPOSED LANDSCAPE HAS BEEN ESTABLISHED.
6. ALL GRASS AREAS WHERE SLOPES EXCEED 3:1 (H:V) SHALL BE STABILIZED WITH TEMPORARY TURF REINFORCEMENT MATS. INSTALLATION OF TEMPORARY TURF REINFORCEMENT MATS SHALL BE TO MANUFACTURER'S SPECIFICATIONS. CONTRACTOR SHALL CONTACT MANUFACTURER TO COORDINATE PROPER INSTALLATION OF TEMPORARY TURF REINFORCEMENT MATS TO PREVENT SLOPE FAILURES AND EROSION.
7. SEE SWPP BOOKLET FOR ADDITIONAL INSTRUCTIONS.

STAGES OF CONSTRUCTION:

1. CONTRACTOR TO PERFORM DETAILED SITE INSPECTION TO LOCATE ALL EXISTING UTILITIES AND VERIFY ANY POSSIBLE CONFLICTS WITH PROPOSED IMPROVEMENTS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTACT ENGINEER WITH ANY CONFLICTS.
2. INSTALLATION OF EROSION CONTROL MEASURES.
3. INSTALLATION OF ALL STORM WATER DRAINAGE IMPROVEMENTS.
4. FINAL GRADING.
5. PLACEMENT OF FINAL LANDSCAPING ITEMS AND SOIL.
6. REMOVAL OF EROSION CONTROL MEASURES.

CONSTRUCTION DOCUMENTS
PKG #1

Anderson Engineering
EMPLOYEE OWNED

Joplin Early Childhood Center
Joplin Schools

REVISIONS:
ADDENDUM #1 10/14/2016



JOB NO: 50040-16
DRAWN BY: JOSHUA OATHOUT, EI
CHECKED BY: WAYNE STEPHENSON, PE
DATE: 10.14.2016

C105
OF

KEY NOTES:

- * CONTRACTOR TO ENSURE SEDIMENT STAYS ON-SITE. PROVIDE ADDITIONAL MEASURES AS NECESSARY, TO PREVENT OFF-SITE TRACKING AND SEDIMENT DISPOSITION. AS NEEDED TO PREVENT SEDIMENT DISPOSITION.
- * PROVIDE INLET PROTECTION TO IRVING ELEMENTARY INLETS PRIOR TO PLACING OF STONE.
- * (E1) INSTALL 1" COMPOST FILTER SOCKS OR APPROVED EQUAL. SEE DETAIL 1C105.
- (E2) INSTALL TEMPORARY CONSTRUCTION EGRESS. COORDINATE LOCATION WITH CONTRACTOR AND SCHOOL DISTRICT TO PREVENT DAMAGE TO IRVING IMPROVEMENTS. SEE DETAIL 2C105.
- (E3) INSTALL 10'x10' CONCRETE WASHOUT AREA. SEE DETAIL 3C105.
- (E4) LIMITS OF DISTURBED AREA.
- (E5) LOCATION OF PORTA-POTTY.
- (E6) LOCATION OF DUMPSTER.

SITE DESCRIPTION

SITE LOCATION: 2810 SOUTH MCCLELLAND BOULEVARD, JOPLIN, MO
LATITUDE: 37°23'34" **LONGITUDE:** 94°31'53"
ADJACENT PROPERTIES: NORTH-PARK WEST-MCCLELLAND BOULEVARD SOUTH-IRVING ELEMENTARY SCHOOL EAST-ABANDONED PARKING LOT
TOTAL SITE AREA: LIMITS OF SITE = 3.34 AC

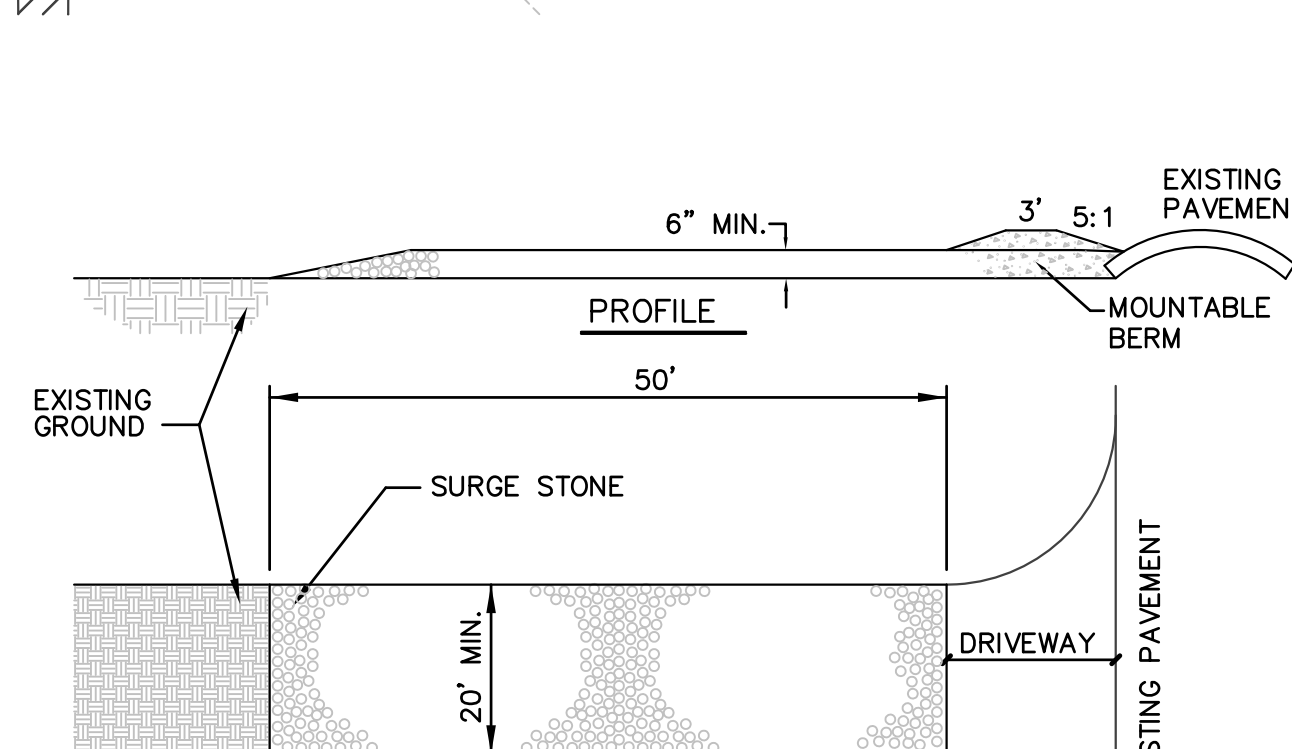
SITE TOPOGRAPHY: THE SITE SLOPES TO THE WEST AND SOUTH AND THE EXISTING AREA IS MOSTLY GRASS WITH ABANDONED PAVEMENT.

POST-CONSTRUCTION CONDITIONS: POST CONSTRUCTION RUNOFF COEFFICIENT: C=0.87 (2.34 AC AT 0.98 AND 1.00 AC AT 0.61)

ENVIRONMENTAL PERMITS (OTHER THAN NPDES, STORMWATER, AND/OR EROSION & SEDIMENT CONTROL): NONE

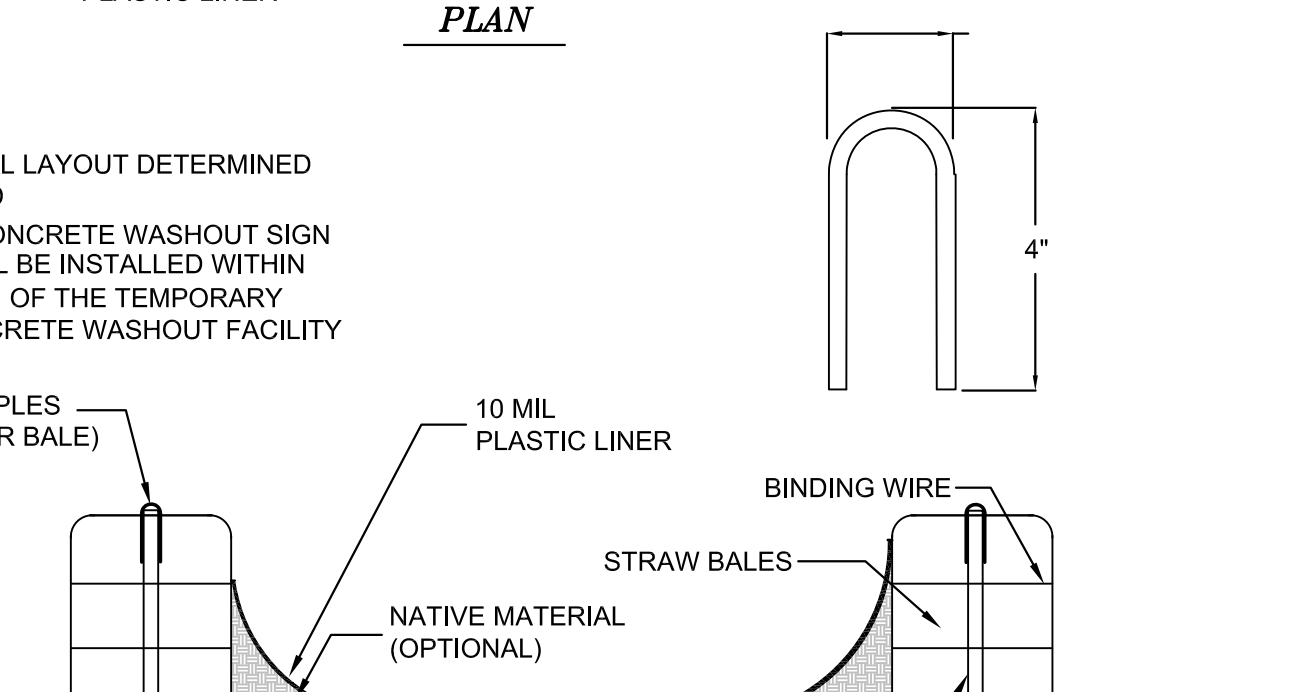
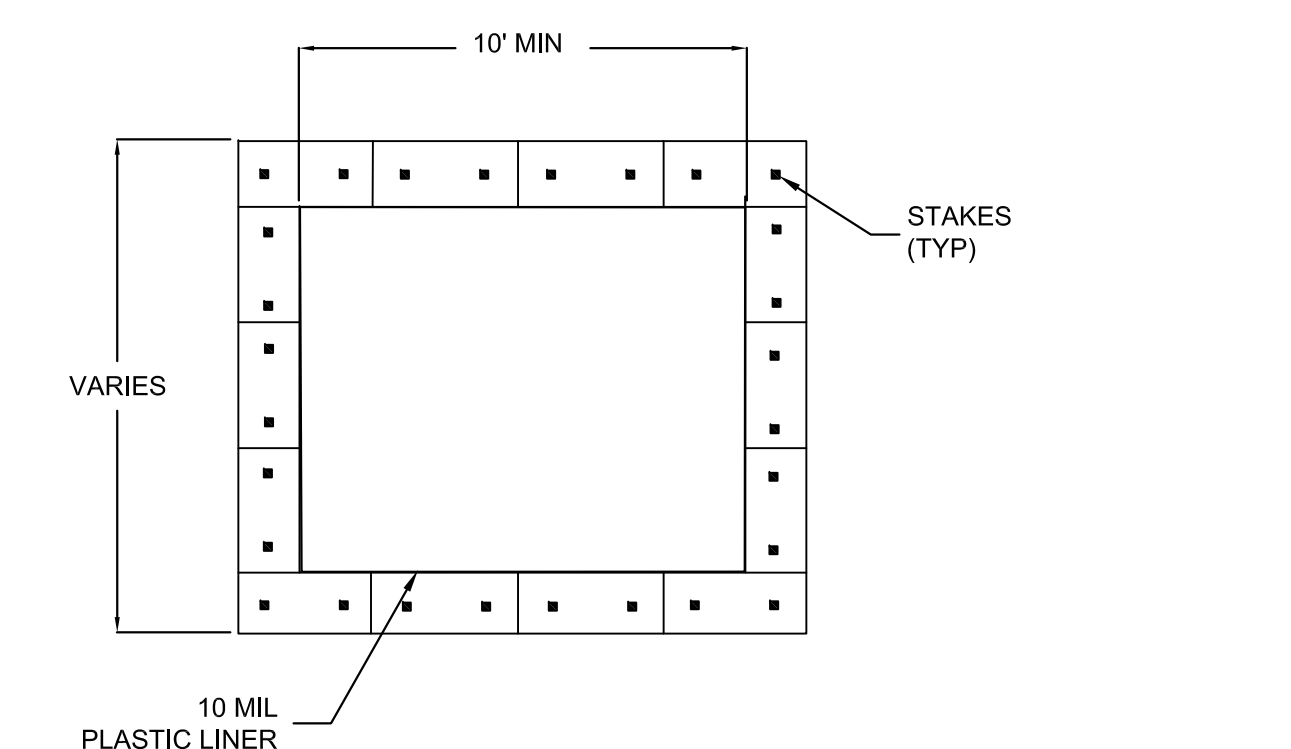
THREATENED AND ENDANGERED SPECIES: THERE ARE NO KNOWN ISSUES RELATED TO THREATENED AND ENDANGERED SPECIES

HISTORICAL PROPERTIES: THERE ARE NO KNOWN ISSUES RELATED TO HISTORICAL PRESERVATION.

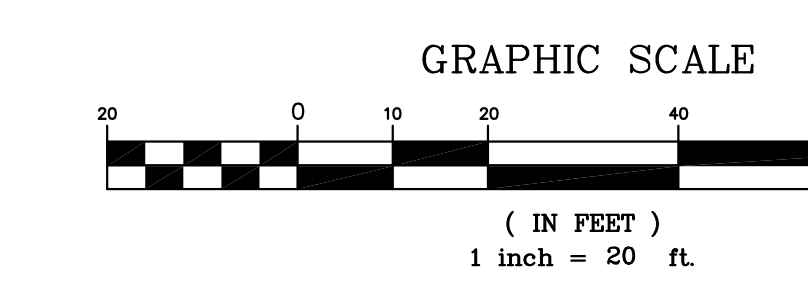


1. STONE SIZE - USE 3-6" STONE, OR EQUAL
2. MIN. LENGTH - 50 FEET
3. MIN. THICKNESS - SIX(6) INCHES
4. WIDTH - TWENTY FIVE (25) FOOT MINIMUM
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE
6. SURFACE WATER - ALL SURFACE WATER FLOWING TOWARD THE CONSTRUCTION EGRESS SHALL BE DIVERTED EITHER BY PIPE OR SWALES TO PREVENT THE WASHOUT OF THE EGRESS.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

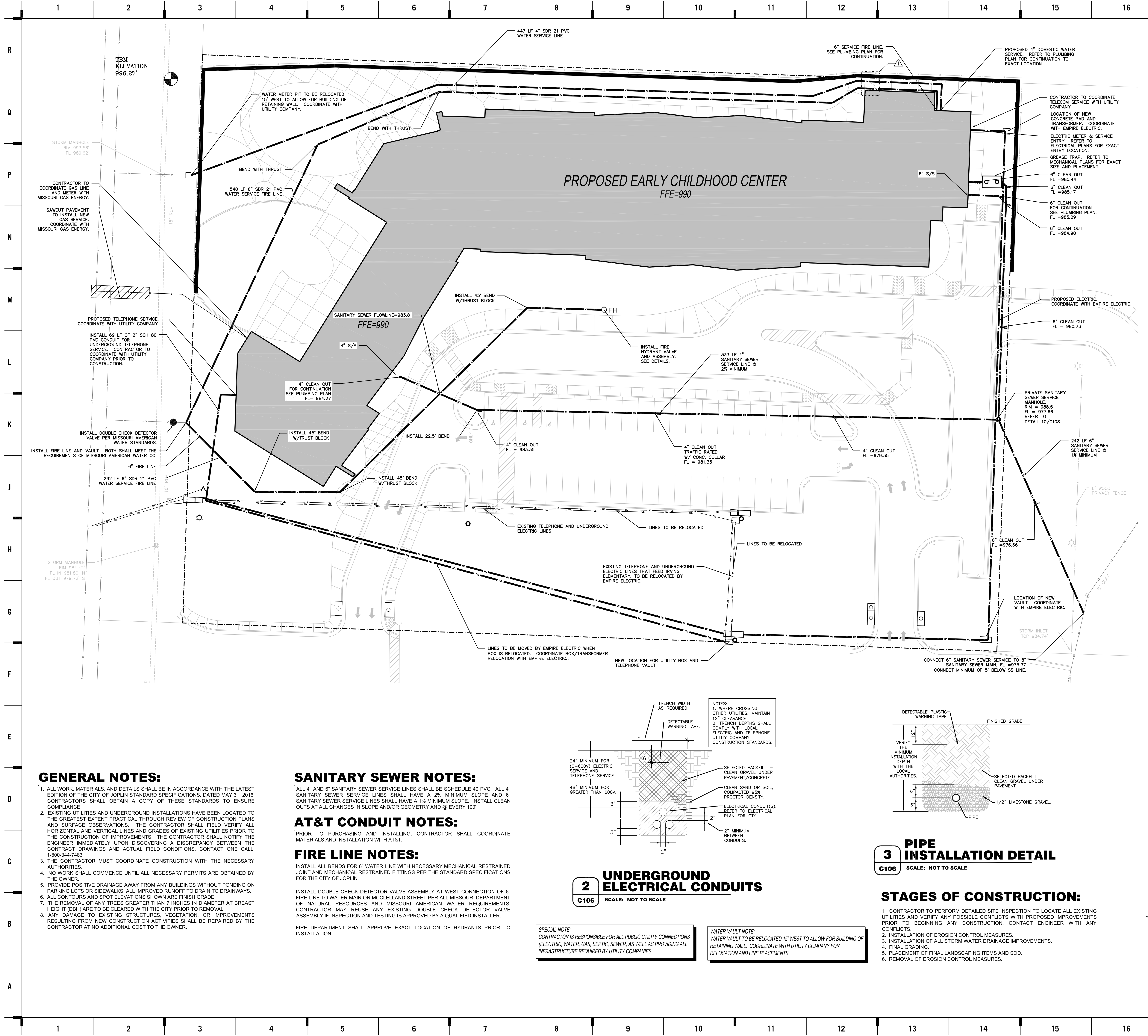
2 CONSTRUCTION EGRESS DETAIL
SCALE: NOT TO SCALE
C105



3 CONCRETE WASHOUT
SCALE: NOT TO SCALE
C105

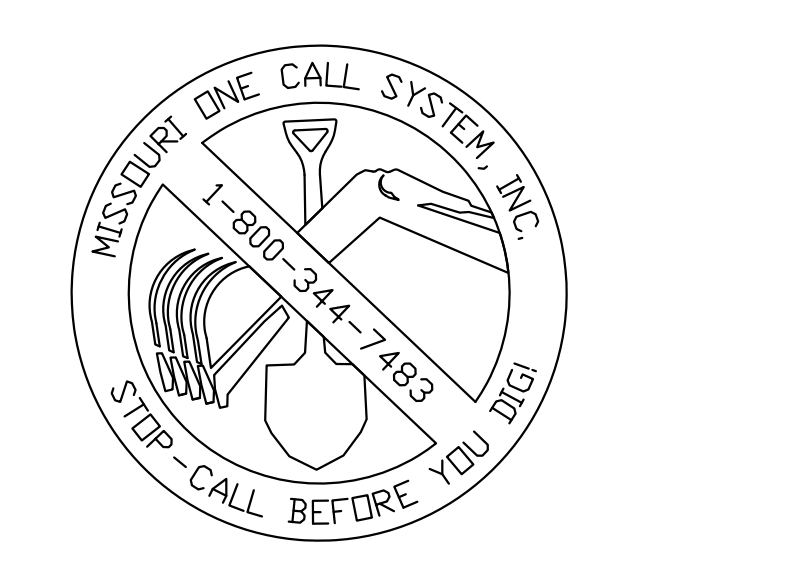


1 COMPOSITE FILTER SOCKS
SCALE: NOT TO SCALE
C105



SHEET KEYNOTE LEGEND

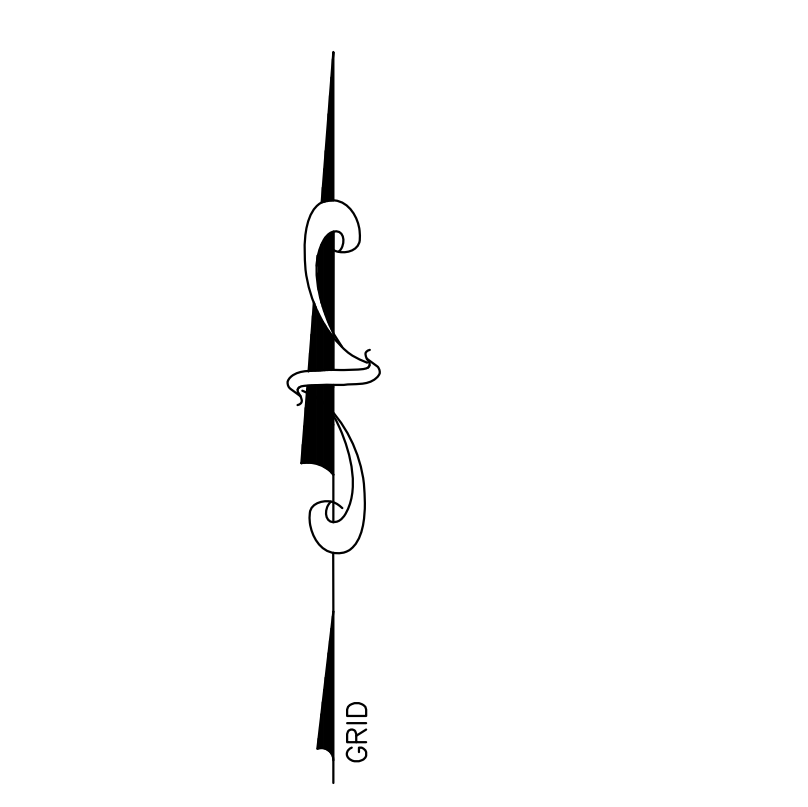
● CP	CONTROL POINT
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○ LP	LIGHT POLE
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○ WV	WATER VALVE
○ GV	GAS VALVE
○ FH	FIRE HYDRANT
△ TR	TELEPHONE RISER
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○	GRATE INLET
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○ TS	TRAFFIC SIGNAL BOX
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○	PAY PHONE
○	TREELINE
○	BUSH
---	PROPERTY LINE
SS	SANITARY SEWER
SW	STORM SEWER
TEL	TELEPHONE LINE
UT	UNDERGROUND TELEPHONE
○	GAS LINE
W	WATER LINE
OHE	ELECTRIC LINE
UE	UNDERGROUND ELECTRIC
---	FENCE LINE
---	RETAINING WALL
---	LINE LABELS



NEW UTILITIES SYMBOLS
(SYMBOLS APPLY ONLY WHEN USED ON DRAWINGS)

WS	WATER SERVICE
SS	SANITARY SEWER SERVICE
UGE	UG ELECTRIC
TEL	UG PHONE
T	UG PHONE (BY PHONE CO.)
OHE	OVERHEAD ELECTRIC
OHT	OVERHEAD PHONE
FO	FIBER OPTIC CABLE
///	SAW CUT
	BORE

REVISIONS:
 △ ADDENDUM #1 10/14/2016



GENERAL NOTES:

- ALL WORK, MATERIALS, AND DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF JOPLIN STANDARD SPECIFICATIONS, DATED MAY 31, 2016. CONTRACTORS SHALL OBTAIN A COPY OF THESE STANDARDS TO ENSURE COMPLIANCE.
- EXISTING UTILITIES AND UNDERGROUND INSTALLATIONS HAVE BEEN LOCATED TO THE GREATEST EXTENT PRACTICAL THROUGH REVIEW OF CONSTRUCTION PLANS AND SURFACE OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LINES AND GRADES OF EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERING A DISCREPANCY BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS. CONTACT ONE CALL: 1-800-344-7483.
- THE CONTRACTOR MUST COORDINATE CONSTRUCTION WITH THE NECESSARY AUTHORITIES.
- NO WORK SHALL COMMENCE UNTIL ALL NECESSARY PERMITS ARE OBTAINED BY THE OWNER.
- PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS WITHOUT PONDING ON PARKING LOTS OR SIDEWALKS. ALL IMPROVED RUNOFF TO DRAIN TO DRAINWAYS.
- ALL CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISH GRADE.
- THE REMOVAL OF ANY TREES GREATER THAN 7 INCHES IN DIAMETER AT BREAST HEIGHT (DBH) ARE TO BE CLEARED WITH THE CITY PRIOR TO REMOVAL.
- ANY DAMAGE TO EXISTING STRUCTURES, VEGETATION, OR IMPROVEMENTS RESULTING FROM NEW CONSTRUCTION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

SANITARY SEWER NOTES:

ALL 4" AND 6" SANITARY SEWER SERVICE LINES SHALL BE SCHEDULE 40 PVC. ALL 4" SANITARY SEWER SERVICE LINES SHALL HAVE A 2% MINIMUM SLOPE AND 6" SANITARY SEWER SERVICE LINES SHALL HAVE A 1% MINIMUM SLOPE. INSTALL CLEAN OUTS AT ALL CHANGES IN SLOPE AND/OR GEOMETRY AND @ EVERY 100'.

AT&T CONDUIT NOTES:

PRIOR TO PURCHASING AND INSTALLING, CONTRACTOR SHALL COORDINATE MATERIALS AND INSTALLATION WITH AT&T.

FIRE LINE NOTES:

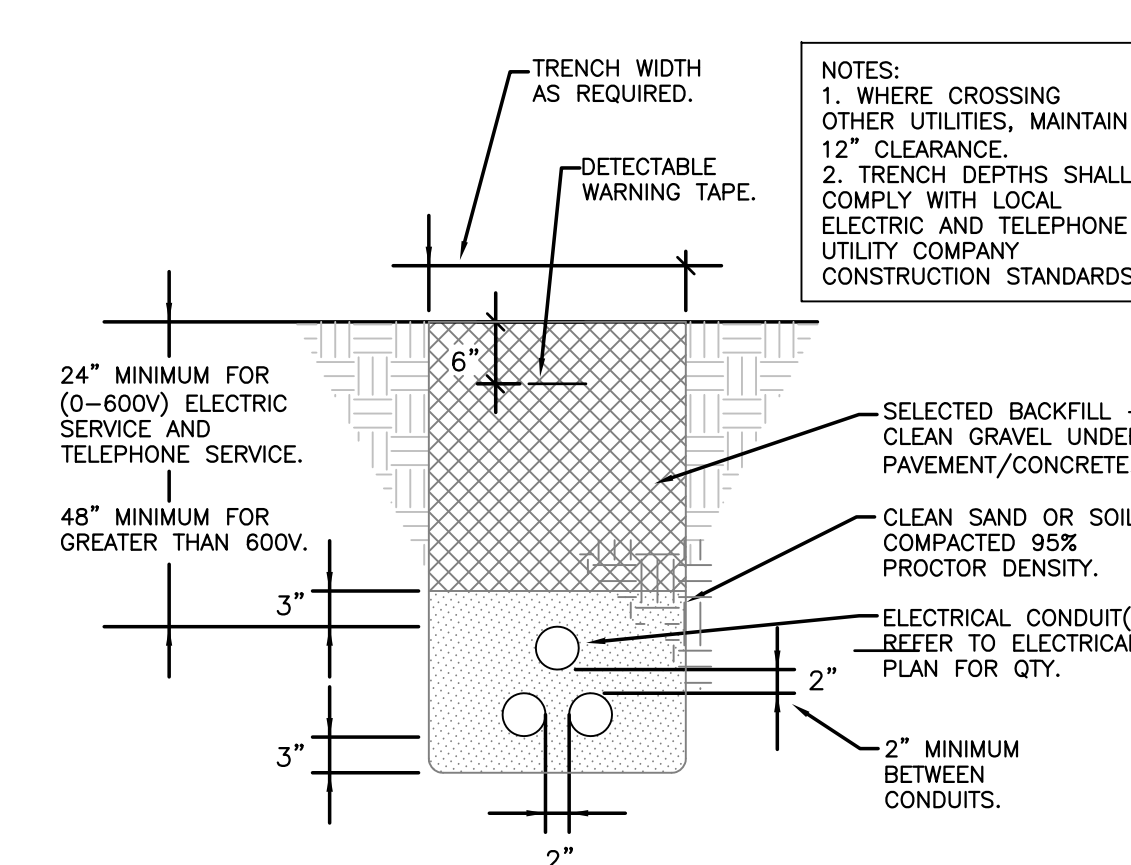
INSTALL ALL BENDS FOR 6" WATER LINE WITH NECESSARY MECHANICAL RESTRAINED JOINT AND MECHANICAL RESTRAINED FITTINGS PER THE STANDARD SPECIFICATIONS FOR THE CITY OF JOPLIN.

INSTALL DOUBLE CHECK DETECTOR VALVE ASSEMBLY AT WEST CONNECTION OF 6" FIRE LINE TO WATER MAIN ON MCCLELLAND STREET PER ALL MISSOURI DEPARTMENT OF NATURAL RESOURCES AND MISSOURI AMERICAN WATER REQUIREMENTS. CONTRACTOR MAY REUSE ANY EXISTING DOUBLE CHECK DETECTOR VALVE ASSEMBLY IF INSPECTION AND TESTING IS APPROVED BY A QUALIFIED INSTALLER.

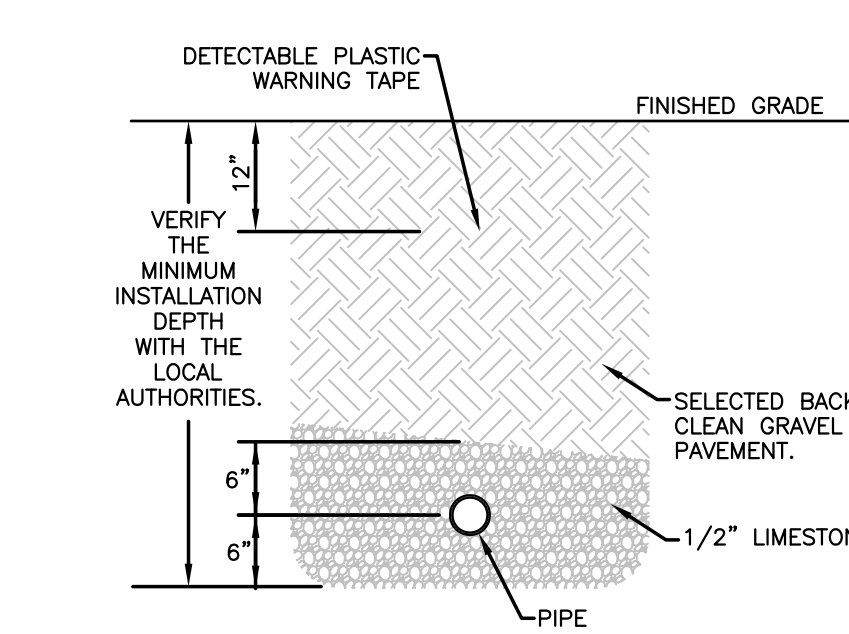
FIRE DEPARTMENT SHALL APPROVE EXACT LOCATION OF HYDRANTS PRIOR TO INSTALLATION.

SPECIAL NOTE:
CONTRACTOR IS RESPONSIBLE FOR ALL PUBLIC UTILITY CONNECTIONS (ELECTRIC, WATER, GAS, SEPTIC, SEWER) AS WELL AS PROVIDING ALL INFRASTRUCTURE REQUIRED BY UTILITY COMPANIES.

WATER VAULT NOTE:
WATER VAULT TO BE RELOCATED 15' WEST TO ALLOW FOR BUILDING OF RETAINING WALL. COORDINATE WITH UTILITY COMPANY FOR RELOCATION AND LINE PLACEMENTS.



2 UNDERGROUND ELECTRICAL CONDUITS
SCALE: NOT TO SCALE



3 PIPE INSTALLATION DETAIL
SCALE: NOT TO SCALE

STAGES OF CONSTRUCTION:

- CONTRACTOR TO PERFORM DETAILED SITE INSPECTION TO LOCATE ALL EXISTING UTILITIES AND VERIFY ANY POSSIBLE CONFLICTS WITH PROPOSED IMPROVEMENTS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTACT ENGINEER WITH ANY CONFLICTS.
- INSTALLATION OF EROSION CONTROL MEASURES.
- INSTALLATION OF ALL STORM WATER DRAINAGE IMPROVEMENTS.
- FINAL GRADING.
- PLACEMENT OF FINAL LANDSCAPING ITEMS AND SOD.
- REMOVAL OF EROSION CONTROL MEASURES.

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417.782.7389 fax

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Landscape Architect
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Smith & Boucher Engineers
MEP Engineers
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417.782.7389 fax

CONSTRUCTION DOCUMENTS
PKG #1

Anderson Engineering
EMPLOYEE OWNED

Joplin Early Childhood Center
Joplin Schools

REVISIONS:
 △ ADDENDUM #1 10/14/2016

Wayne A. Stephenson
Professional Engineer
No. 2012018139
10-14-16

Job No: 50040-16
 Drawn By: JOSHUA OATHOUT, EI
 Checked By: WAYNE STEPHENSON, PE
 Date: 10.14.2016

SHEET KEYNOTE LEGEND

GENERAL NOTES:

- ALL WORK, MATERIALS, AND DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF JOPLIN STANDARD SPECIFICATIONS, DATED SEPTEMBER, 2015, AND REVISED MAY, 2016. CONTRACTORS SHALL OBTAIN A COPY OF THESE STANDARDS TO ENSURE COMPLIANCE.
- EXISTING UTILITIES AND UNDERGROUND INSTALLATIONS HAVE BEEN LOCATED TO THE GREATEST EXTENT PRACTICAL THROUGH REVIEW OF CONSTRUCTION PLANS AND SURFACE OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LINES AND GRADES OF EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERING A DISCREPANCY BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS. CONTACT ONE CALL: 1-800-344-7483.
- THE CONTRACTOR MUST COORDINATE CONSTRUCTION WITH THE NECESSARY AUTHORITIES.
- NO WORK SHALL COMMENCE UNTIL ALL NECESSARY PERMITS ARE OBTAINED BY THE OWNER.
- PROVIDE POSITIVE DRAINAGE AWAY FROM ANY BUILDINGS WITHOUT PONDING ON PARKING LOTS OR SIDEWALKS. ALL IMPROVED RUNOFF TO DRAIN TO DRAINWAYS.
- ALL CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISH GRADE.

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+1 913 451 0220

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+1 816 525 3028

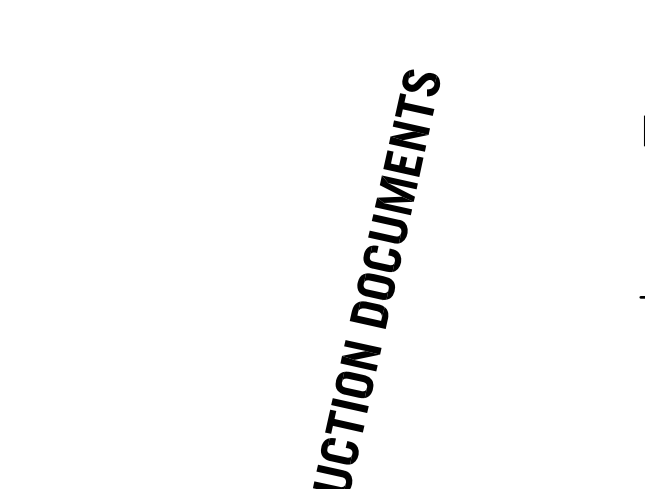
HOLLIS+MILLER.COM

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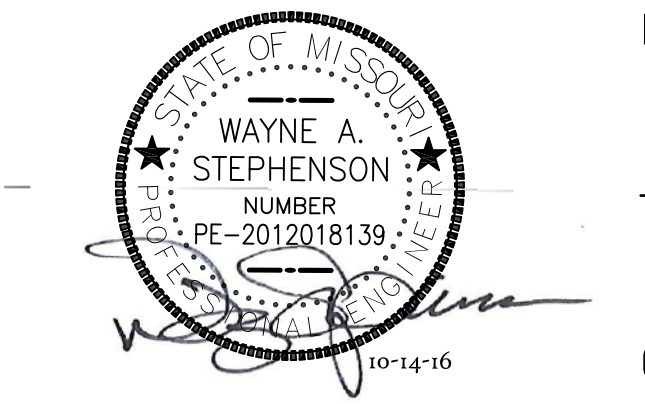


CONSTRUCTION DOCUMENTS
PIG #1

Joplin Early Childhood Center
Joplin Schools

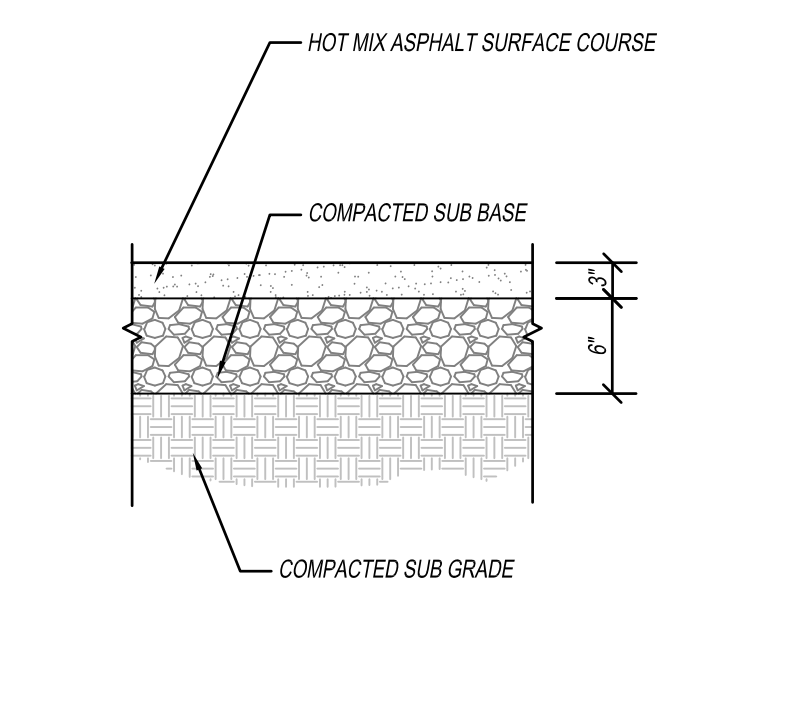


REVISIONS:
ADDENDUM #1 10/14/2016

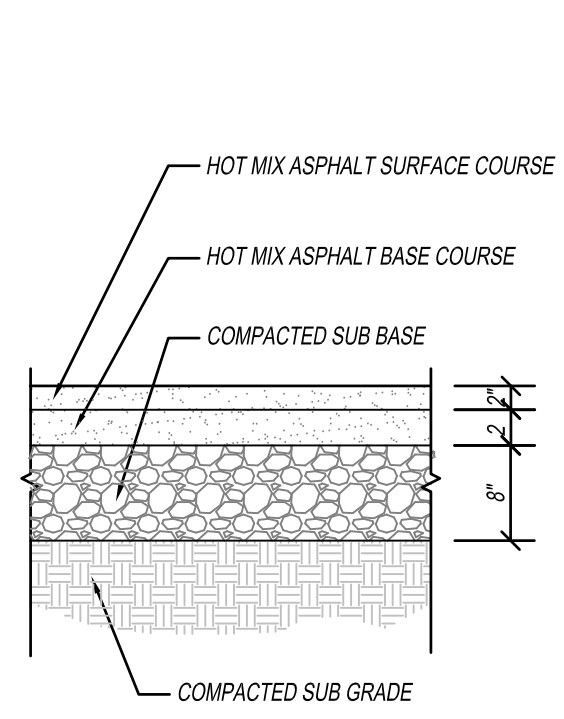


JOB NO: 50040-16
DRAWN BY: JOSHUA DATHOUT, EI
CHECKED BY: WAYNE STEPHENSON, PE
DATE: 10.14.2016

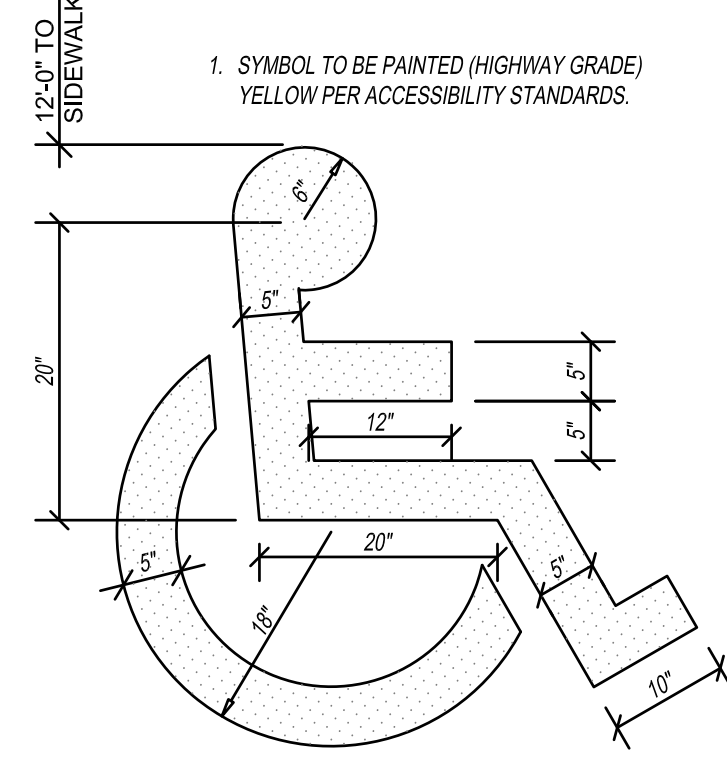
C107



1 STANDARD DUTY ASPHALT PAVING SECTION
C107 SCALE: 3/4" = 1'-0"



2 HEAVY DUTY ASPHALT PAVING SECTION
C107 SCALE: 3/4" = 1'-0"



3 PARKING SYMBOL
C107 SCALE: 3/4" = 1'-0"

6 NOT USED
C107 SCALE: 3/4" = 1'-0"

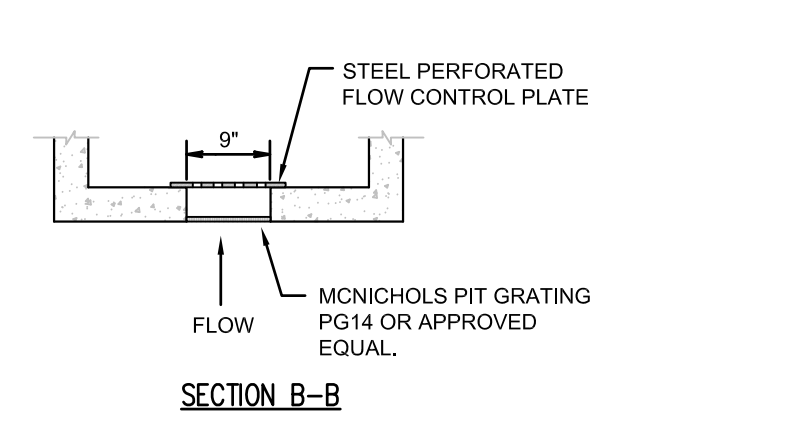
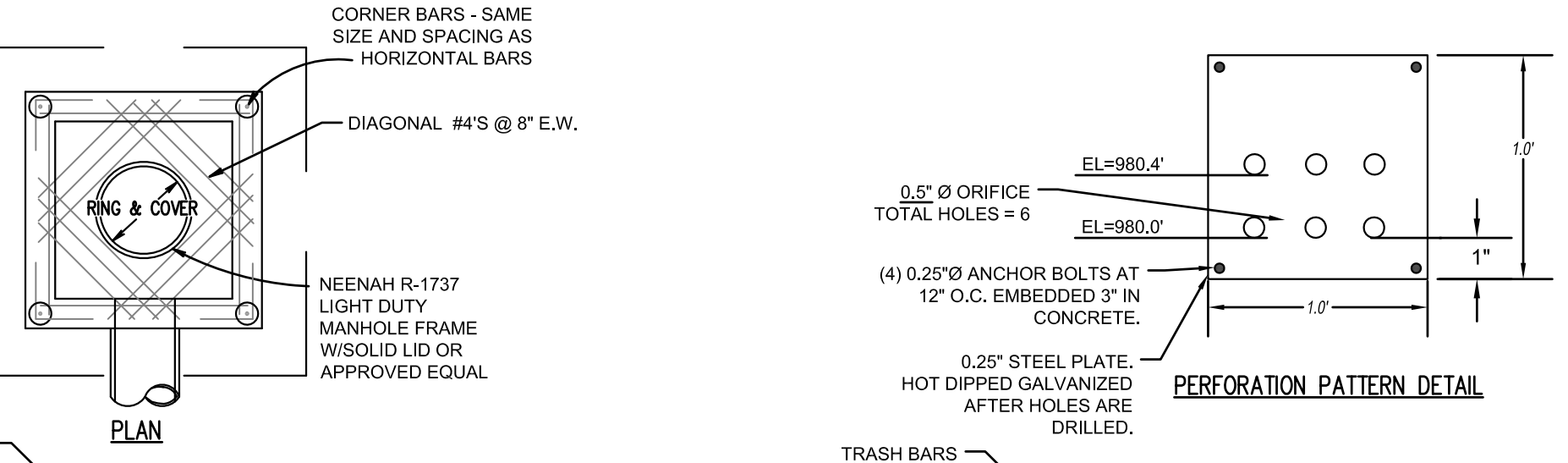
7 TRASH PAD CONCRETE PAVING SECTION
C107 SCALE: 3/4" = 1'-0"

8 NOT USED
C107 SCALE: 3/4" = 1'-0"

9 NEW/EXISTING ASPHALT INTERFACE
C107 SCALE: 1" = 10"

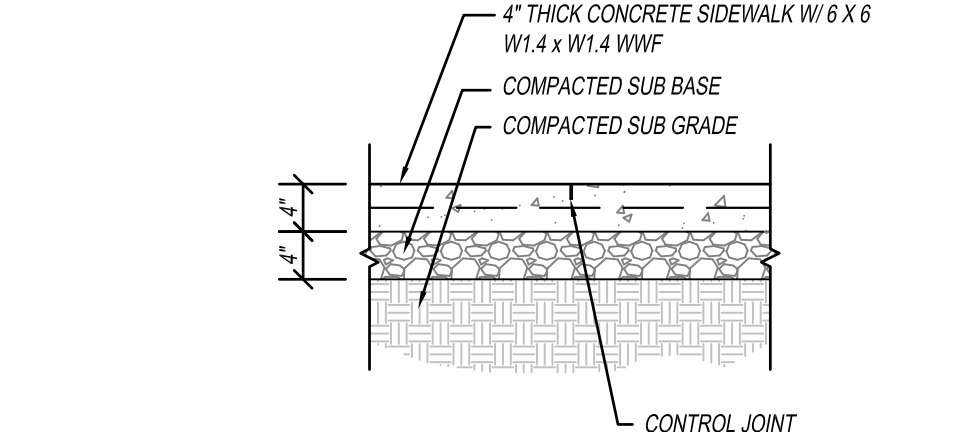
4 STEEL BOLLARD SECTION
C107 SCALE: 3/4" = 1'-0"

5 HANDICAP PARKING SIGN
C107 SCALE: NOT TO SCALE

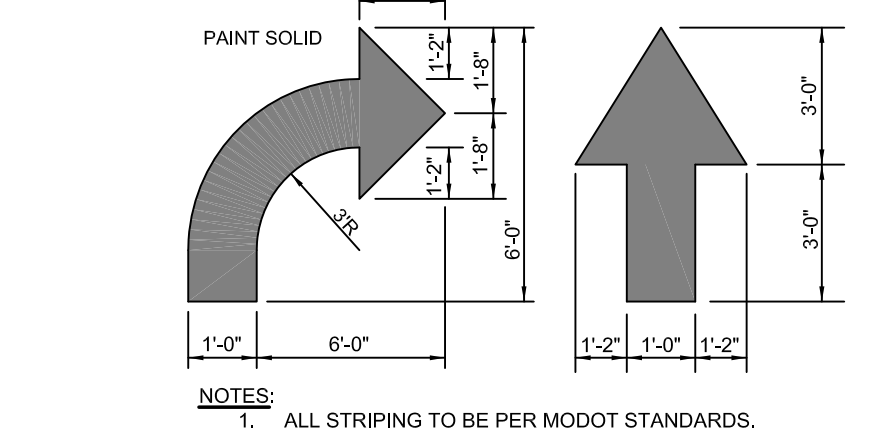


PROVIDE TOOLED CONTROL JOINTS AT 8' O.C. (25% SLAB THICKNESS) AND ISOLATION JOINTS AT 24' O.C. UNLESS OTHERWISE NOTED.

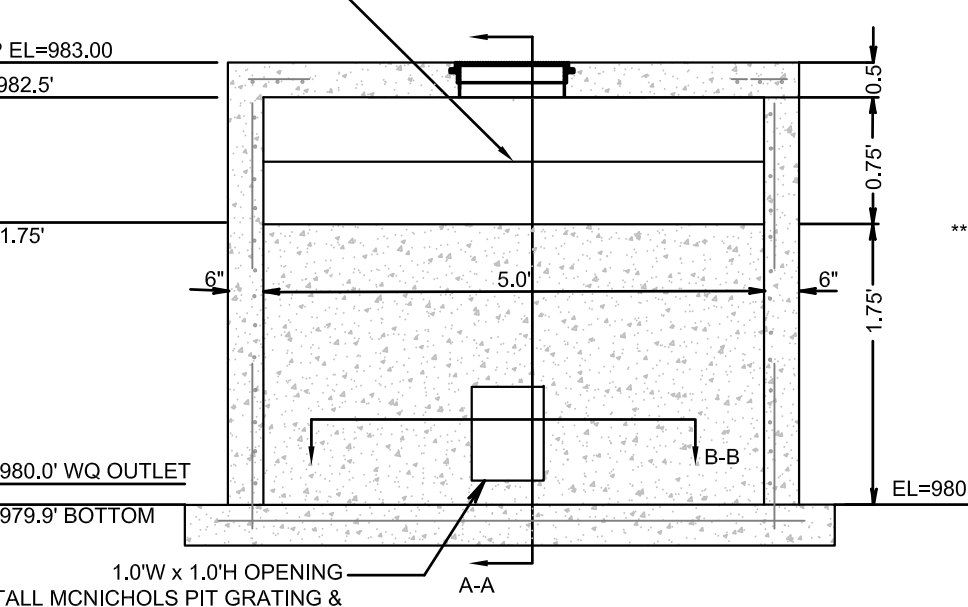
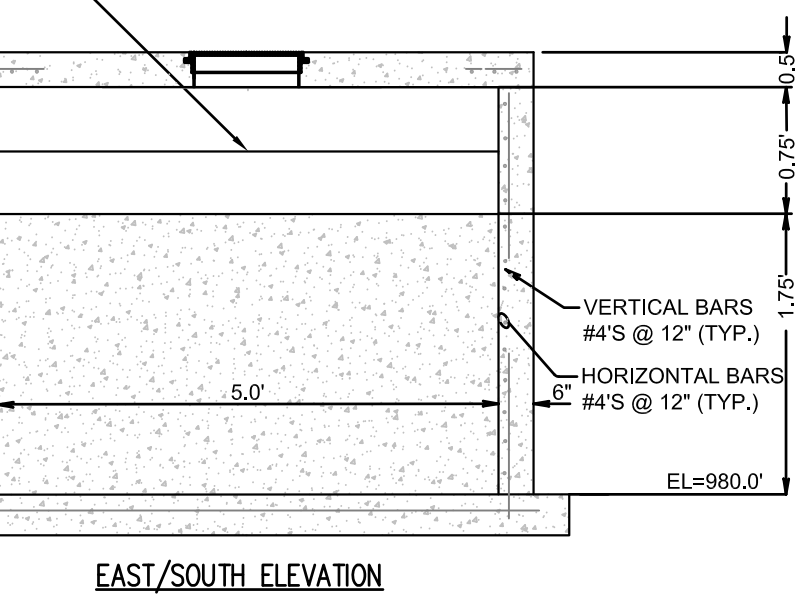
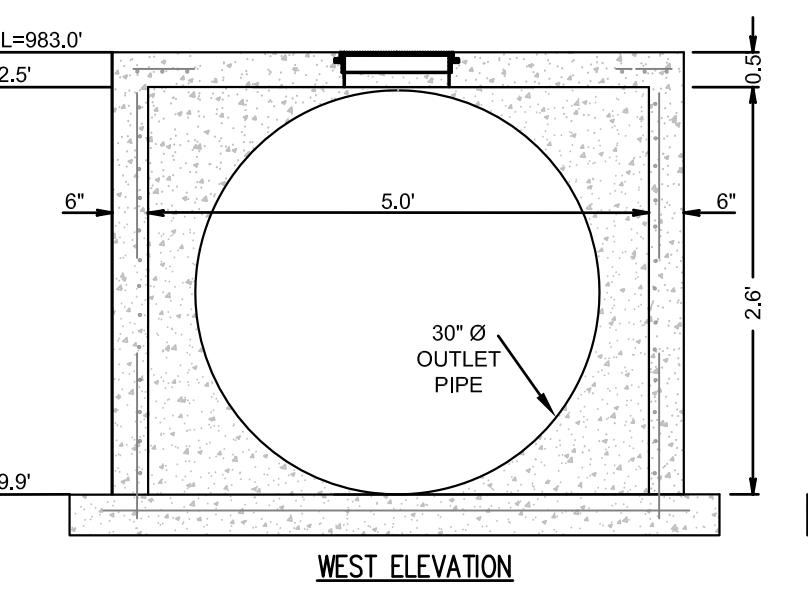
SIDEWALK THROUGH DRIVEWAY SHALL BE MIN. 6" THICK AND SUB BASE SHALL BE MIN. 6".



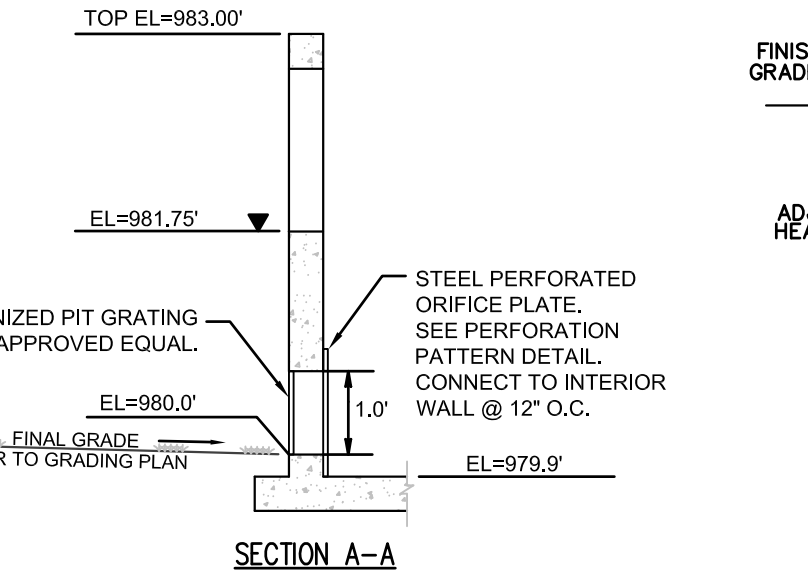
10 CONCRETE SIDEWALK SECTION
C107 SCALE: 3/4" = 1'-0"



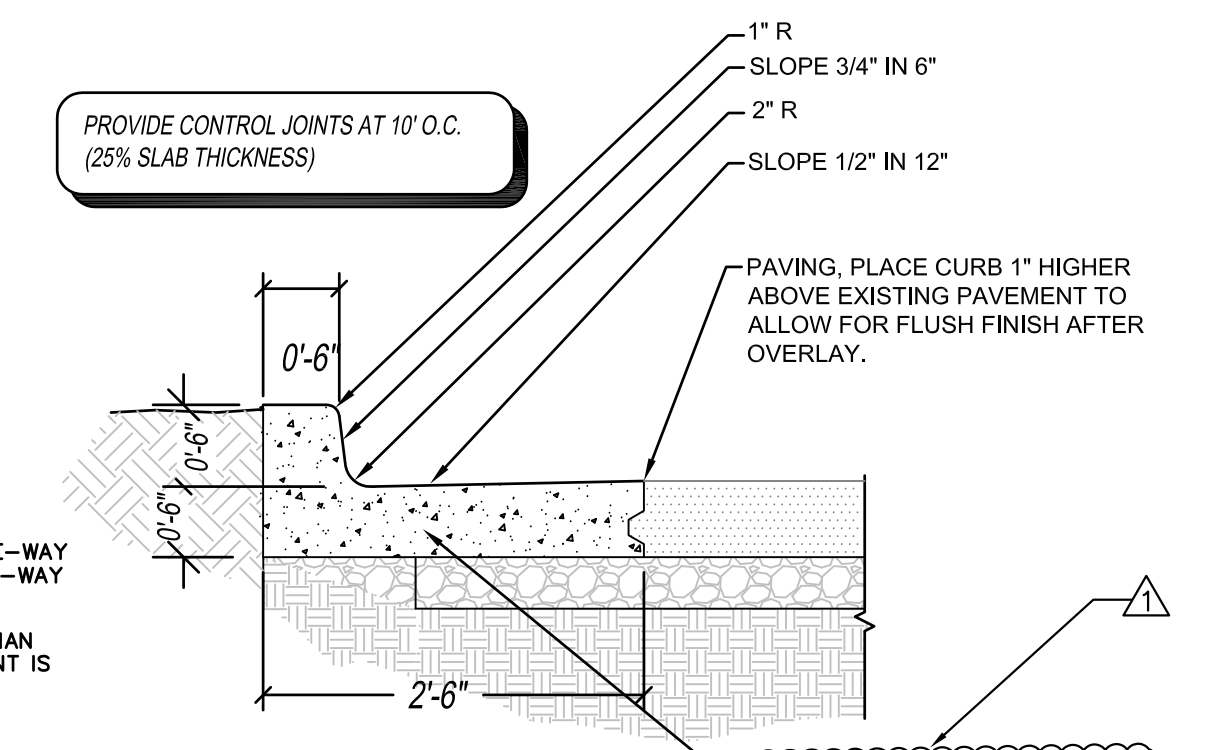
11 DIRECTIONAL ARROW
C107 SCALE: 1" = 10"



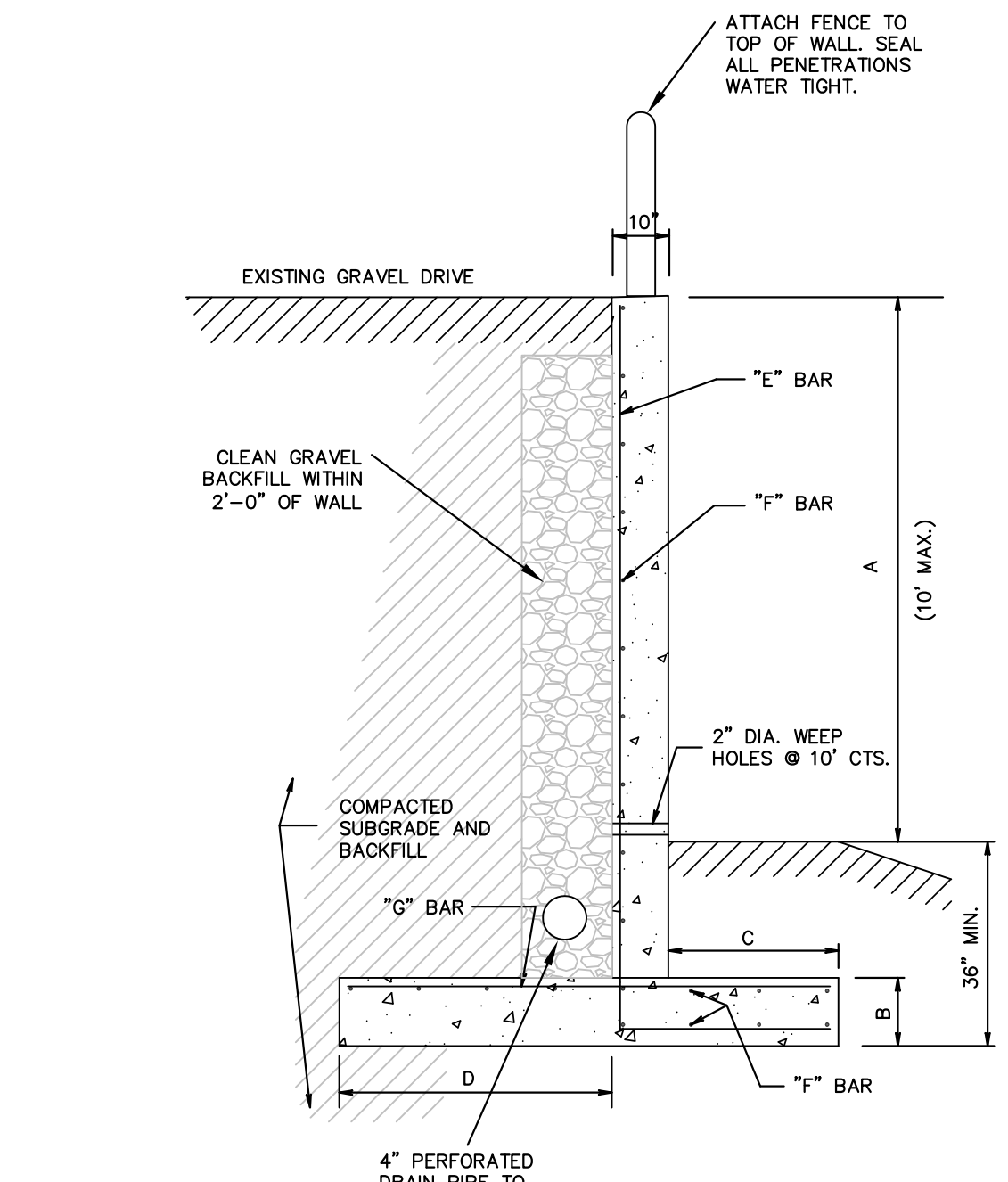
12 WATER QUALITY STRUCTURE
C107 SCALE: NOT TO SCALE



13 SANITARY SEWER CLEAN-OUT
C107 SCALE: NOT TO SCALE



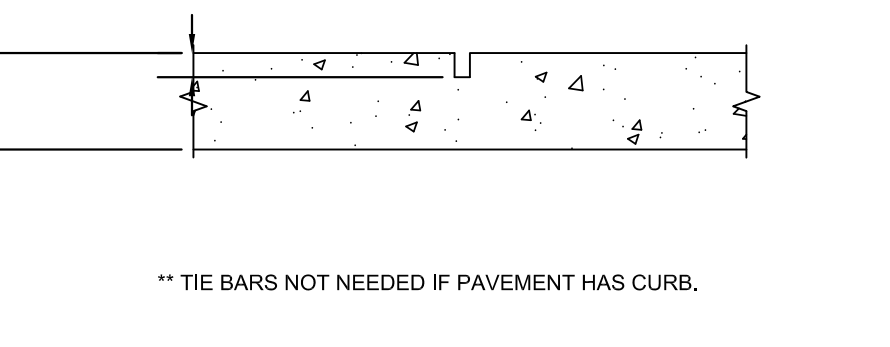
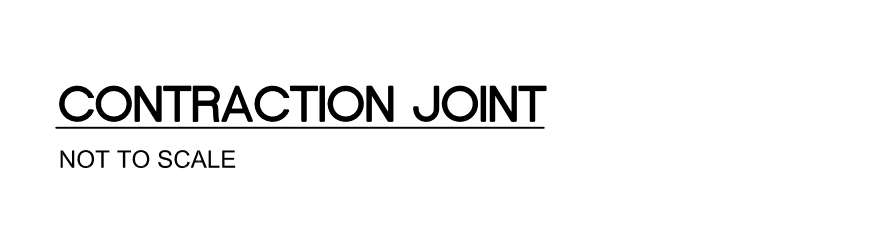
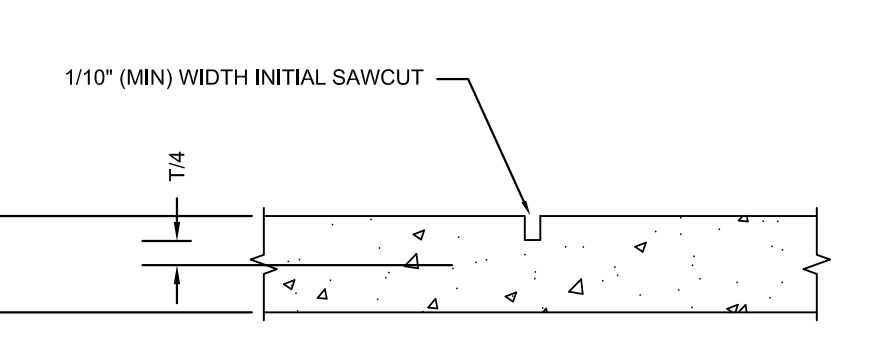
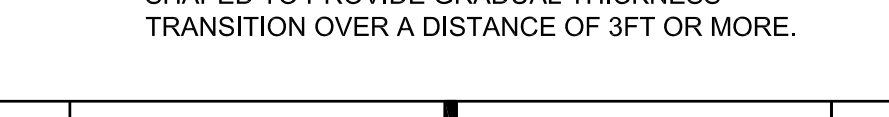
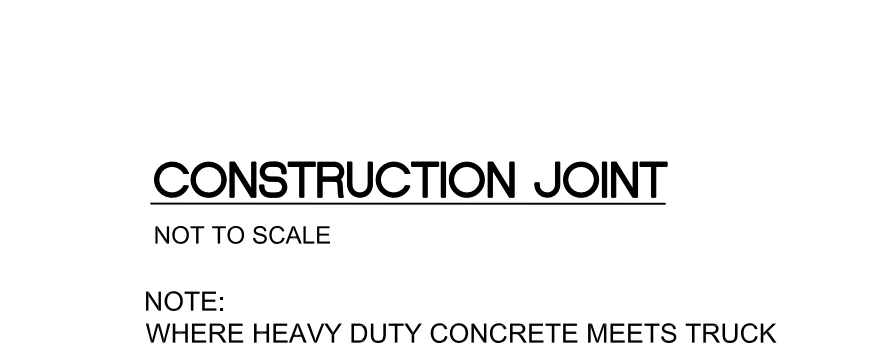
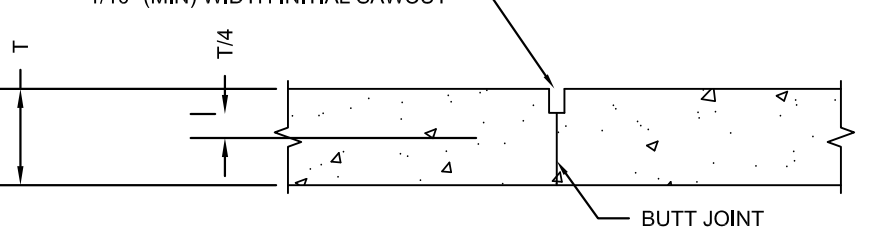
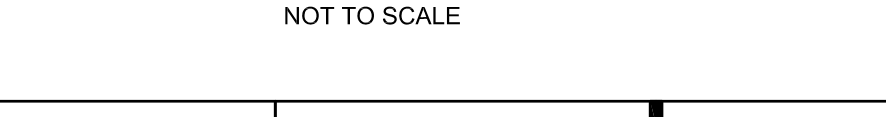
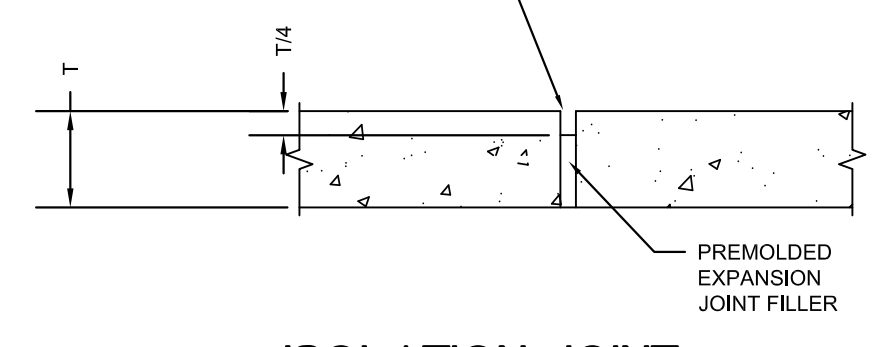
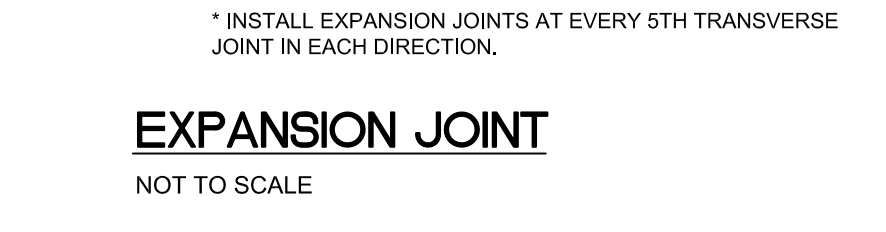
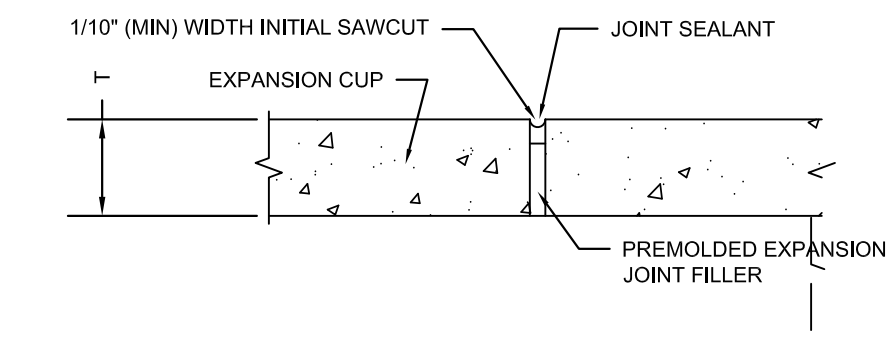
14 CONCRETE CURB AND GUTTER
C107 SCALE: NOT TO SCALE

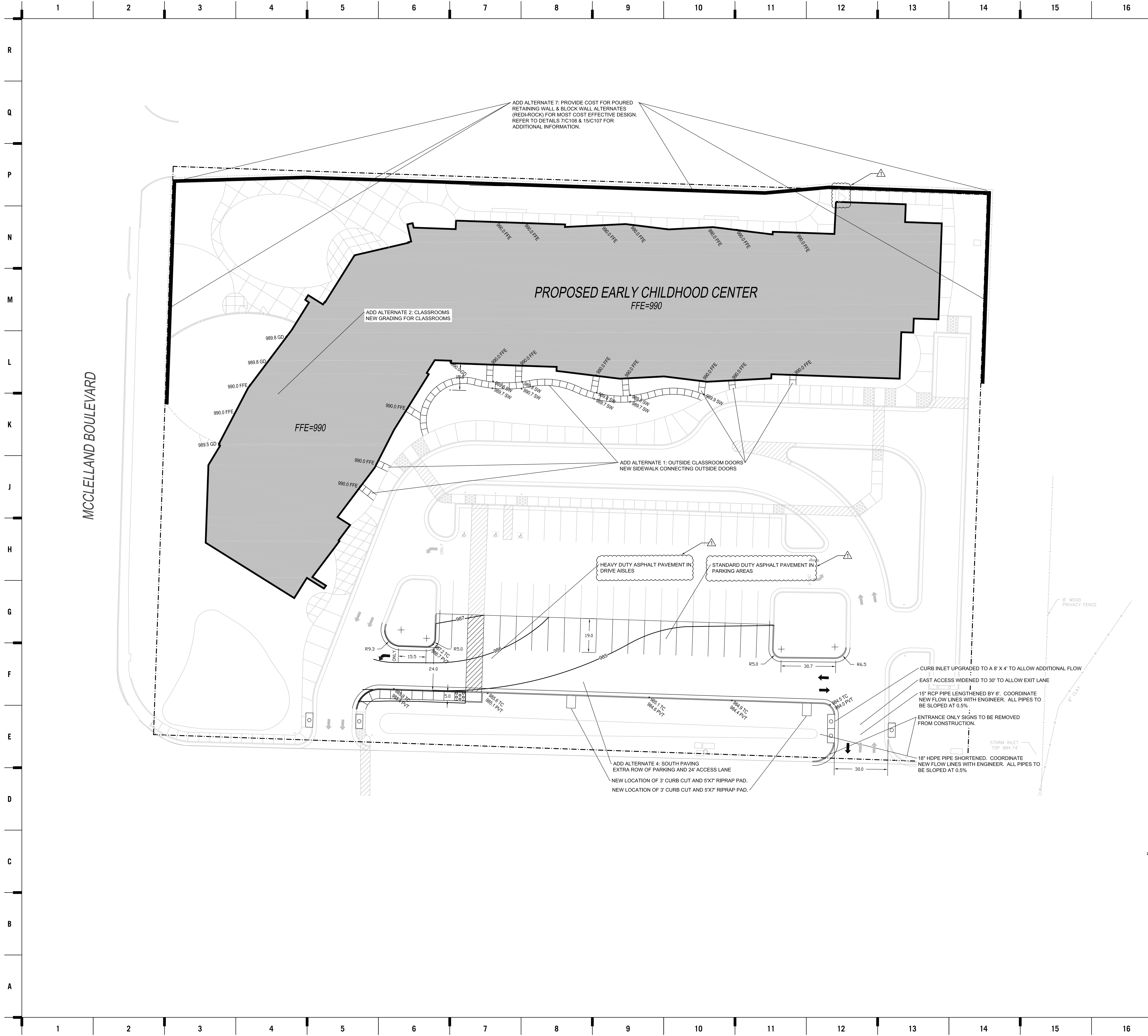


15 ALTERNATE RETAINING WALL
C107 SCALE: NOT TO SCALE

WALL HEIGHT (A)	B	C	D	E	F	G
UP TO 4'	10"	1'-3"	1'-6"	#5 @ 12"	#5 @ 12"	#5 @ 12"
4' TO 6'	10"	1'-8"	2'-0"	#5 @ 12"	#5 @ 12"	#5 @ 12"
6' TO 8'	12"	2'-0"	3'-3"	#5 @ 10"	#5 @ 12"	#5 @ 12"
8' TO 10'	12"	2'-6"	4'-0"	#5 @ 10"	#5 @ 12"	#5 @ 12"

- NOTES:
- RETAINING WALL DETAIL TYP. FOR PARKING LOT WALLS. SEE SITE PLAN FOR ELEVATIONS.
 - LENGTH AND PLACEMENT OF ALL BARS SHALL PROVIDE FOR 1" CLEAR TO FORMED OR FINISHED EDGE OF WALL OR FOOTING AND 3" CLEAR AT BOTTOM OF FOOTING.
 - REFER TO DETAILS FOR NOTES ON HANDRAIL CONSTRUCTION.





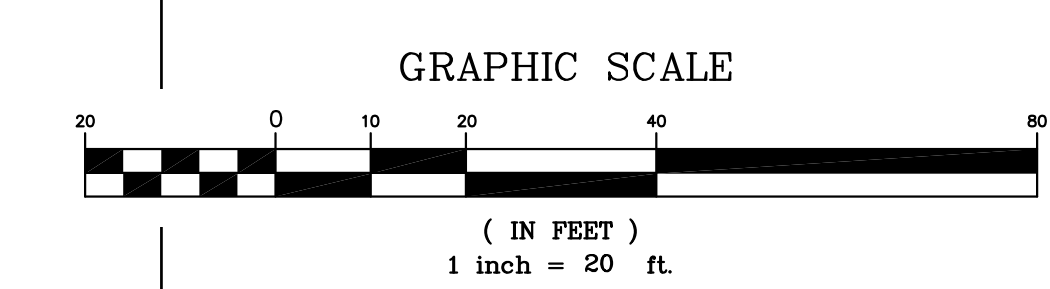
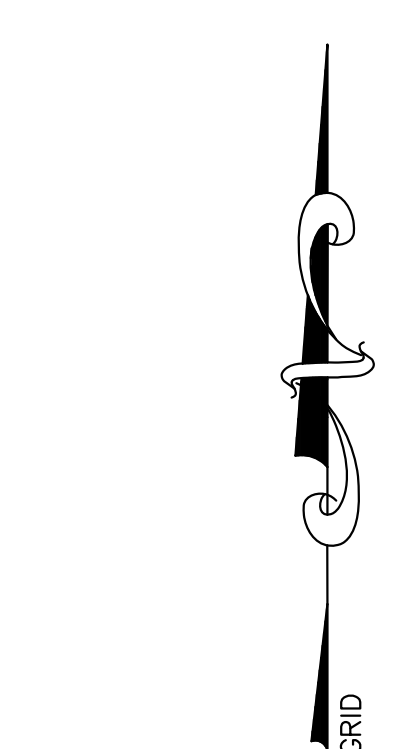
SHEET KEYNOTE LEGEND

- CP CONTROL POINT
- FND FOUND IRON PIN
- SET IRON PIN
- ▲ RWM RIGHT-OF-WAY MARKER
- PWP POWER POLE W/ GUY
- MH MANHOLE
- SCSO SEWER CLEANOUT
- GM GAS METER
- LP LIGHT POLE
- ▲ SIGN
- WATER METER
- WV WATER VALVE
- GV GAS VALVE
- FH FIRE HYDRANT
- ▲ TR TELEPHONE RISER
- BUMPER POST
- GRATE INLET
- ER ELECTRICAL RISER
- EM ELECTRICAL METER
- TS TRAFFIC SIGNAL BOX
- MB MAIL BOX
- ▲ SPOT LIGHT
- ▲ PAY PHONE
- TREELINE
- BUSH
- — — — — PROPERTY LINE
- — — — — SANITARY SEWER
- — — — — STORM SEWER
- — — — — TELEPHONE LINE
- — — — — UNDERGROUND TELEPHONE
- — — — — GAS LINE
- — — — — WATER LINE
- — — — — ELECTRIC LINE
- — — — — UNDERGROUND ELECTRIC
- — — — — FENCE LINE
- — — — — RETAINING WALL
- LINE LABELS: PLAT 100' P, SEED 100' D, MEASURED 100' M



ADD ALTERNATE PARKING TOTALS:

- VISITOR = 19 SPACES
- STAFF = 40 SPACES
- TOTAL = 59 SPACES
- TOTAL HANDICAP = 3 SPACES



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CONSTRUCTION DOCUMENTS
PKG #1

Joplin Early Childhood Center
Joplin Schools

ANDERSON ENGINEERING
EMPLOYEE OWNED

REVISIONS:

▲ ADDENDUM #1	10/14/2016
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STATE OF MISSOURI
WAYNE A. STEPHENSON
NUMBER PE-2012018139
10-14-16

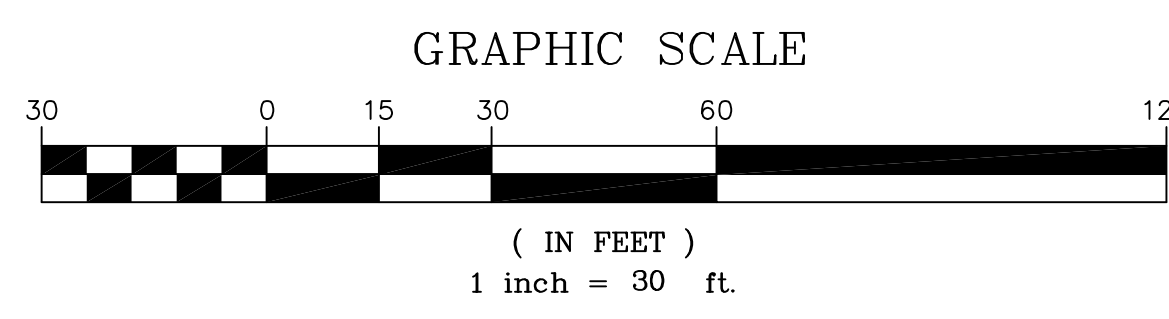
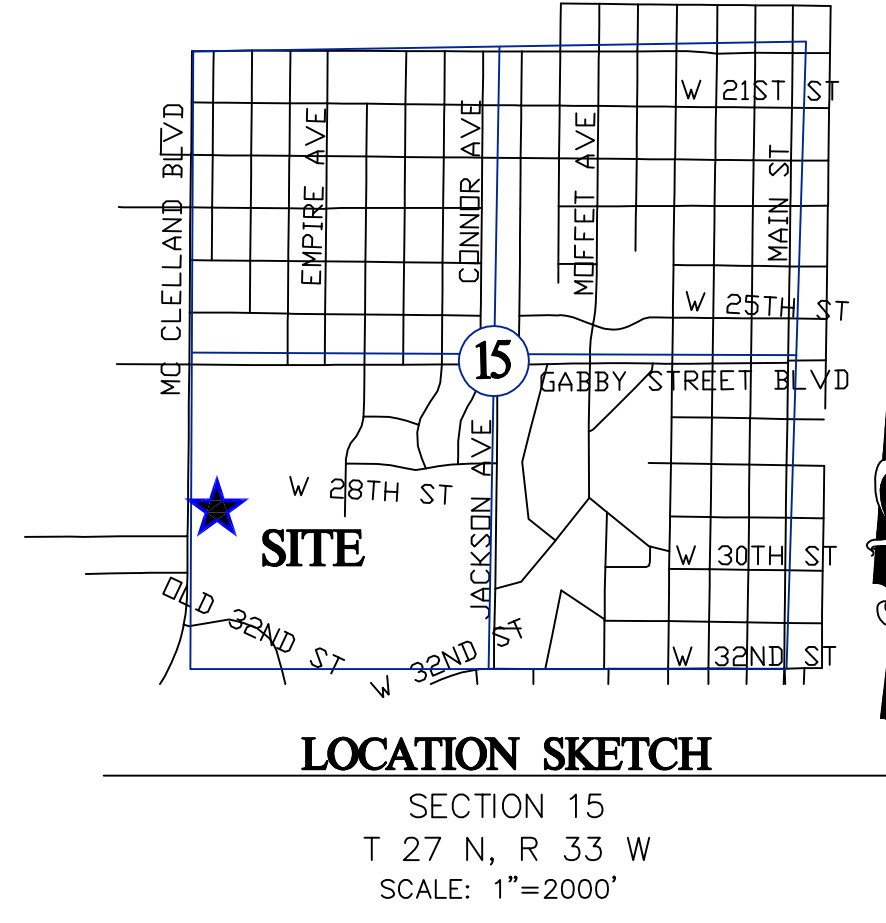
The Professional Engineer and Architect in this seal and signature are authorized to practice in the State of Missouri. The Engineer and Architect are not authorized to practice in any other state or jurisdiction. The Engineer and Architect are not authorized to practice in any other state or jurisdiction. The Engineer and Architect are not authorized to practice in any other state or jurisdiction.

JOB NO: 50040-16
DRAWN BY: JOSHUA GATHOUT, EI
CHECKED BY: WAYNE A. STEPHENSON, PE
DATE: 10.14.2016

C109

OF

ADD ALTERNATES



NOTES

- 1) BEARING BASED ON GRID NORTH OF THE MISSOURI COORDINATE SYSTEM OF 1983, WEST ZONE.
- 2) TBM IS "CHISELED SQUARE" ON TOP OF CONCRETE CURB AT THE SOUTH END OF RADIUS CURVE, BY THE NORTH PROPERTY LINE, WITH AN ELEVATION OF 996.27 FEET, AS SHOWN.

ZONING DATA

SUBJECT PROPERTY IS ZONED C-0 (NON-RETAIL DISTRICT)

BUILDING HEIGHT AND REGULATIONS
 HEIGHT: NO BUILDING SHALL EXCEED 30 FEET OR 3 STORIES

BUILDING SETBACK LINE
 FRONT: 25'
 SIDE: 7' FOR 1 STORY BUILDINGS AND 10' FOR 2 STORY BUILDINGS
 REAR: 25'

SURVEY DESCRIPTION

A PARCEL OF LAND LYING IN THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 27 NORTH, RANGE 33 WEST, JASPER COUNTY, MISSOURI, BEING THE SAME PARCEL AS DESCRIBED IN THE JASPER COUNTY, MISSOURI RECORDER'S OFFICE IN BOOK 2263, AT PAGE 455, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SECTION 15, TOWNSHIP 27 NORTH, RANGE 33 WEST, JASPER COUNTY, MISSOURI; THENCE ALONG THE WEST SECTION LINE, NORTH 01°59'07" EAST, 1276.46 FEET; THENCE LEAVING SAID WEST SECTION LINE, SOUTH 88°00'49" EAST, 50.01 FEET, TO THE EAST RIGHT-OF-WAY OF MCCLELLAND BOULEVARD SAID POINT ALSO BEING THE POINT OF BEGINNING; THENCE ALONG SAID EAST RIGHT-OF-WAY, NORTH 01°59'04" EAST, 318.78 FEET; THENCE LEAVING SAID EAST RIGHT-OF-WAY, SOUTH 88°00'49" EAST, 456.91 FEET; THENCE SOUTH 01°59'04" WEST, 318.78 FEET; THENCE NORTH 88°00'49" WEST, 456.91 FEET, TO THE POINT OF BEGINNING, ALL LYING IN THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 27 NORTH, RANGE 33 WEST, JASPER COUNTY, MISSOURI, CONTAINING 3.34 ACRES, MORE OR LESS. CONDITIONS AND MONUMENTS ARE AS SHOWN ON ANDERSON ENGINEERING, INC. DRAWING NUMBER JOP-100-4123.

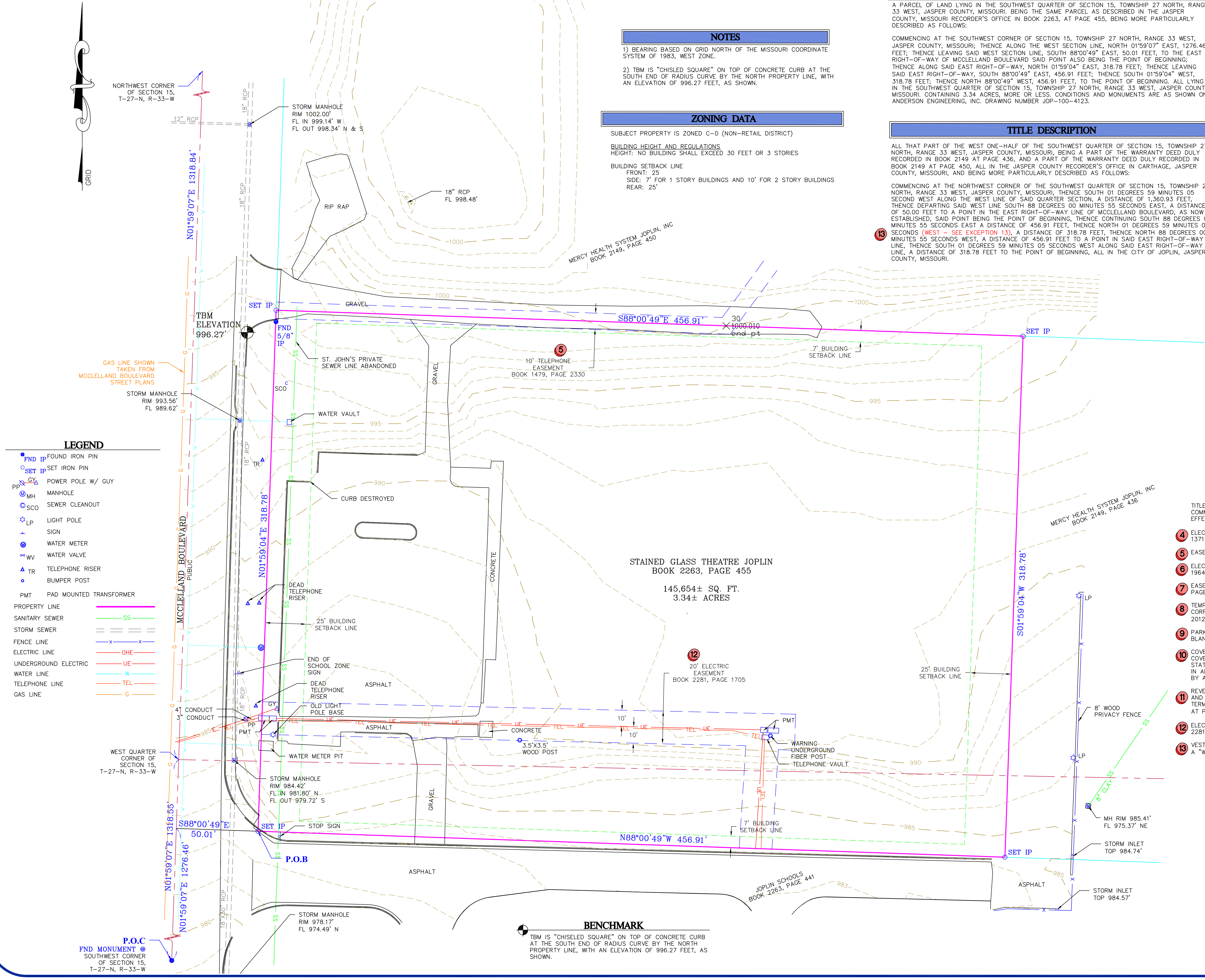
TITLE DESCRIPTION

ALL THAT PART OF THE WEST ONE-HALF OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 27 NORTH, RANGE 33 WEST, JASPER COUNTY, MISSOURI, BEING A PART OF THE WARRANTY DEED DULY RECORDED IN BOOK 2149 AT PAGE 436, AND A PART OF THE WARRANTY DEED DULY RECORDED IN BOOK 2149 AT PAGE 450, ALL IN THE JASPER COUNTY RECORDER'S OFFICE IN CARTHAGE, JASPER COUNTY, MISSOURI, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 27 NORTH, RANGE 33 WEST, JASPER COUNTY, MISSOURI, THENCE SOUTH 01 DEGREES 59 MINUTES 05 SECONDS WEST ALONG THE WEST LINE OF SAID QUARTER SECTION, A DISTANCE OF 1,360.93 FEET, THENCE DEPARTING SAID WEST LINE SOUTH 88 DEGREES 00 MINUTES 55 SECONDS EAST, A DISTANCE OF 50.00 FEET TO A POINT IN THE EAST RIGHT-OF-WAY LINE OF MCCLELLAND BOULEVARD, AS NOW ESTABLISHED, SAID POINT BEING THE POINT OF BEGINNING, THENCE CONTINUING SOUTH 88 DEGREES 00 MINUTES 55 SECONDS EAST A DISTANCE OF 456.91 FEET, THENCE NORTH 01 DEGREES 59 MINUTES 05 SECONDS (WEST - SEE EXCEPTION 13), A DISTANCE OF 318.78 FEET, THENCE NORTH 88 DEGREES 00 MINUTES 55 SECONDS WEST, A DISTANCE OF 456.91 FEET TO A POINT IN SAID EAST RIGHT-OF-WAY LINE, THENCE SOUTH 01 DEGREES 59 MINUTES 05 SECONDS WEST ALONG SAID EAST RIGHT-OF-WAY LINE, A DISTANCE OF 318.78 FEET TO THE POINT OF BEGINNING, ALL IN THE CITY OF JOPLIN, JASPER COUNTY, MISSOURI.

FLOOD NOTE
 BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS IN ZONE X OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 29027C0266E AND IN COMMUNITY PANEL NO. 29027C0267E, WHICH BEARS BOTH COMMUNITY PANELS HAVE AN EFFECTIVE DATE OF NOVEMBER 2, 2012 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE.

UTILITY NOTE
 THIS SURVEY REFLECTS ABOVE GROUND INDICATIONS OF UTILITIES AND INFORMATION AVAILABLE FROM UTILITY COMPANIES. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. LOCATE NO. 161122361



- LEGEND**
- FND IP FOUND IRON PIN
 - SET IP SET IRON PIN
 - PP POWER POLE W/ GUY
 - MH MANHOLE
 - SCD SEWER CLEANOUT
 - LP LIGHT POLE
 - SIGN
 - WATER METER
 - WV WATER VALVE
 - TR TELEPHONE RISER
 - ▲ BUMPER POST
 - PMT PAD MOUNTED TRANSFORMER
 - PROPERTY LINE
 - SS SANITARY SEWER
 - STORM SEWER
 - FENCE LINE
 - OHE ELECTRIC LINE
 - UE UNDERGROUND ELECTRIC
 - W WATER LINE
 - TEL TELEPHONE LINE
 - G GAS LINE

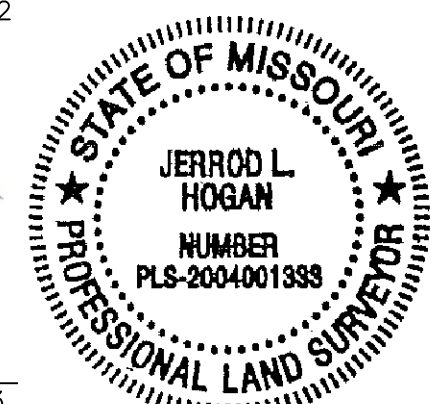
NOTES CORRESPONDING TO SCHEDULE B

- TITLE COMMITMENT PROVIDED BY: WACO TITLE
 COMMITMENT NUMBER: 1602521-124
 EFFECTIVE DATE: MAY 23, 2016, 8:00 AM
- 1) ELECTRIC LINE EASEMENT/RIGHT-OF-WAY GRANTED TO THE EMPIRE DISTRICT ELECTRIC COMPANY, AS SHOWN IN BOOK 1371 PAGE 1823. BLANKET EASEMENT, NOT PLOTABLE.
 - 2) EASEMENT GRANTED TO SOUTHWESTERN BELL TELEPHONE COMPANY AS SHOWN IN BOOK 1479 PAGE 2030. AS SHOWN.
 - 3) ELECTRIC LINE EASEMENT/RIGHT-OF-WAY GRANTED TO THE EMPIRE DISTRICT ELECTRIC COMPANY, AS SHOWN IN BOOK 1964 PAGE 547. BLANKET EASEMENT, NOT PLOTABLE.
 - 4) EASEMENT FOR WATER PIPE TO THE MISSOURI-AMERICAN WATER COMPANY, FILED OCTOBER 31, 2006 IN BOOK 2016 AT PAGE 1432. DOES NOT AFFECT SUBJECT PROPERTY.
 - 5) TEMPORARY CONSTRUCTION EASEMENT AGREEMENT BETWEEN STAINED GLASS THEATRE JOPLIN, A MISSOURI NON-PROFIT CORPORATION, GRANTOR AND JOPLIN SCHOOLS, A MISSOURI MUNICIPAL CORPORATION, GRANTEE, FILED NOVEMBER 13, 2012 IN BOOK 2263 AT PAGE 447. BLANKET EASEMENT, 5 YEAR SPAN FILED 11/13/2012 SET TO END 11/13/17.
 - 6) PARKING LICENSE AGREEMENT, AS SET FORTH IN INSTRUMENT FILED NOVEMBER 13, 2012 IN BOOK 2263 AT PAGE 461. BLANKET EASEMENT, AFFECTS TRACT 2B TO THE WEST.
 - 7) COVENANTS, CONDITIONS, RESTRICTIONS AND EASEMENTS AS SHOWN IN BOOK 2263 PAGE 455, BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW. DOES NOT AFFECT SUBJECT PROPERTY.
 - 8) REVERTER RIGHT THAT IF GRANTEE FAILS TO COMPLETE CONSTRUCTION OF A PERFORMANCE THEATER ON THE PROPERTY AND COMMERCE OPERATION THEREOF ON OR BEFORE THE 5TH ANNIVERSARY OF THE RECORDING OF THE DEED, FULL TERMS AS SET FORTH IN SPECIAL WARRANTY DEED DATED NOVEMBER 9, 2012, FILED NOVEMBER 13, 2012 IN BOOK 2263 AT PAGE 455. BLANKET EASEMENT (PAGE 2, POINT 3), 5 YEAR SPAN FILED 11/13/2012 SET TO END 11/13/17.
 - 9) ELECTRIC LINE EASEMENT/RIGHT-OF-WAY GRANTED TO THE EMPIRE DISTRICT ELECTRIC COMPANY, AS SHOWN IN BOOK 2281 PAGE 1705. AS SHOWN.
 - 10) VESTING DEED FILED IN BOOK 2263 AT PAGE 455 CONTAINS AN ERROR IN THE LEGAL DESCRIPTION. APPEARS TO HAVE A "WEST" OR "EAST" CALL LEFT OUT OF THE LEGAL. EAST PROPERTY BEARING IS MISSING THE WORD WEST, AS SHOWN.

**ACCURACY STANDARD: URBAN
 SURVEYORS DECLARATION**

I, THE UNDERSIGNED, DO HEREBY DECLARE THAT THE BOUNDARY AND TOPOGRAPHIC SURVEY SHOWN HEREON WAS MADE UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE THE INFORMATION IS AS SHOWN AND IN ACCORDANCE WITH THE CURRENT MISSOURI MINIMUM STANDARDS FOR URBAN SURVEYS.

ANDERSON ENGINEERING, INC. L.C. 62
 BY: *[Signature]*



JERRROD L. HOGAN, P.L.S. 200401333
 DATE 5-26-16

DRAWING INFO.	
FIELD BY:	DATE
RW	
SLM	
JLH	
5-23-16	
FIELD BOOK:	
50040-16	
JOB NUMBER:	
50040-16	

HOLLIS AND MILLER ARCHITECTS
 EARLY CHILDHOOD CENTER

**BOUNDARY &
 TOPOGRAPHIC
 SURVEY**

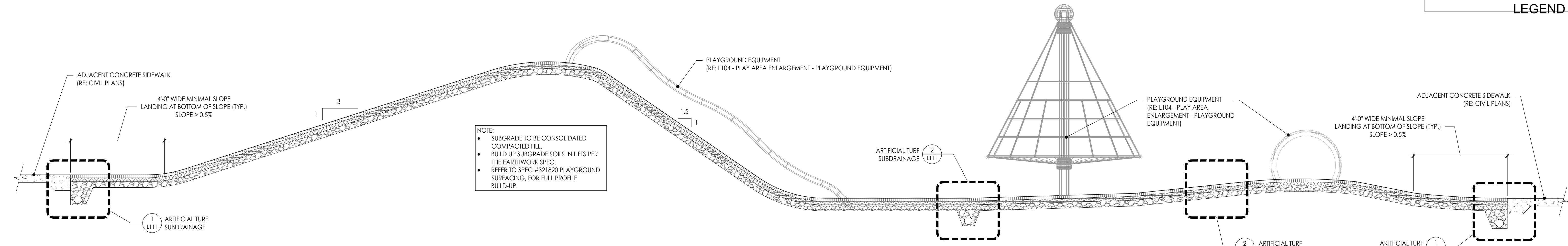
MCCLELLAND BOULEVARD
 JOPLIN, JASPER COUNTY, MISSOURI

DRAWING NO.
JOP-100-4123

SHEET NUMBER
SV100

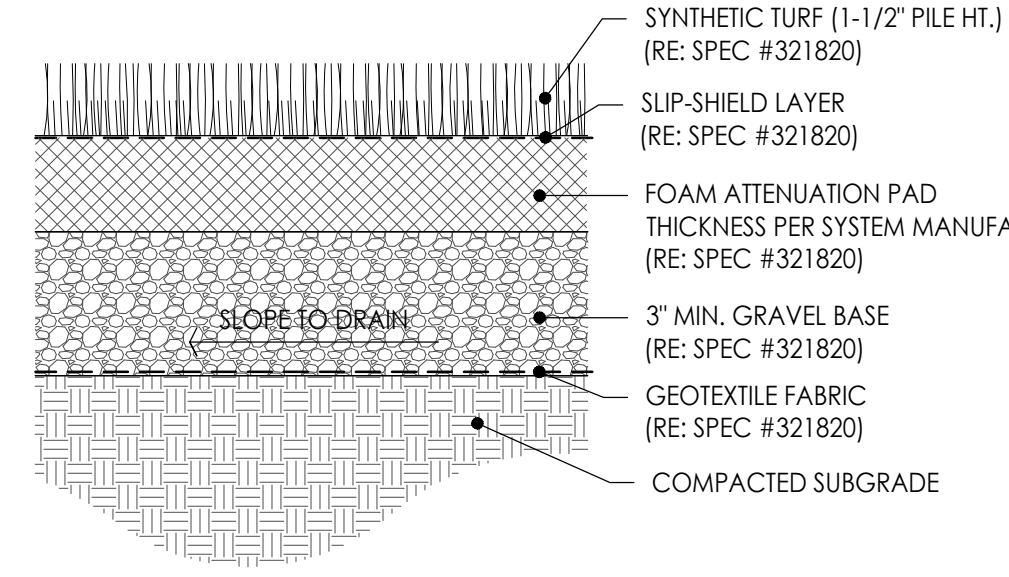
OF 1

SHEET KEYNOTE
LEGEND



1 CHALLENGE PLAYGROUND SECTION
Scale: 1/2" = 1'-0"

SYNTHETIC TURF PRODUCT INFORMATION
 PRODUCT NAME: SYNLAWN PLAYGROUND PREMIUM WITH FALL HEIGHT RATED FOAM PAD
 MANUFACTURER: SYNLAWN®
 2580 ABUTMENT ROAD SE
 DALTON, GEORGIA 30721
 866-SYNLAWN
 WWW.SYNLAWN.COM
 SUBMITTALS: CONTRACTOR TO PROVIDE PRODUCT INFORMATION AND SHOP DRAWINGS FOR COMPLETE SYNLAWN PLAYGROUND PREMIUM TURF SYSTEM. INCLUDE CONNECTION AND TIE-DOWN DETAILS AND WITH VERIFICATION OF THE STANDARD BASE PROFILE. INCLUDE WARRANTY INFORMATION.



2 ARTIFICIAL TURF PROFILE
Scale: 3" = 1'-0"

3 ARTIFICIAL TURF @ CONCRETE EDGE
Scale: 1 1/2" = 1'-0"

4 ARTIFICIAL TURF EDGE @ PLANTING BED
Scale: 1 1/2" = 1'-0"

5 ARTIFICIAL TURF @ FENCE
Scale: 1 1/2" = 1'-0"

6 ARTIFICIAL TURF @ LIMESTONE BLOCK
Scale: 1" = 1'-0"

7 POURED-IN-PLACE RUBBER SURFACING PROFILE
Scale: 3" = 1'-0"

8 RUBBER SURFACE @ CONCRETE EDGE
Scale: 1 1/2" = 1'-0"

9 P.I.P. RUBBER SURFACE @ FENCE
Scale: 1 1/2" = 1'-0"

10 P.I.P. RUBBER SURFACE @ LANDSCAPE CURB
Scale: 1 1/2" = 1'-0"

11 P.I.P. RUBBER SURFACE @ LIMESTONE BLOCK
Scale: 1" = 1'-0"

8205 W 108th Terrace
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Hollis + Miller Architects
Missouri State Certificate of Authority
Architecture # 0000181
Structure # 200001333

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913.371.7934 fax

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MEP Engineers
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Springfield, MO 65807
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417.782.7389 fax

Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date
01	ADDENDUM 001	10.14.2016
...
...



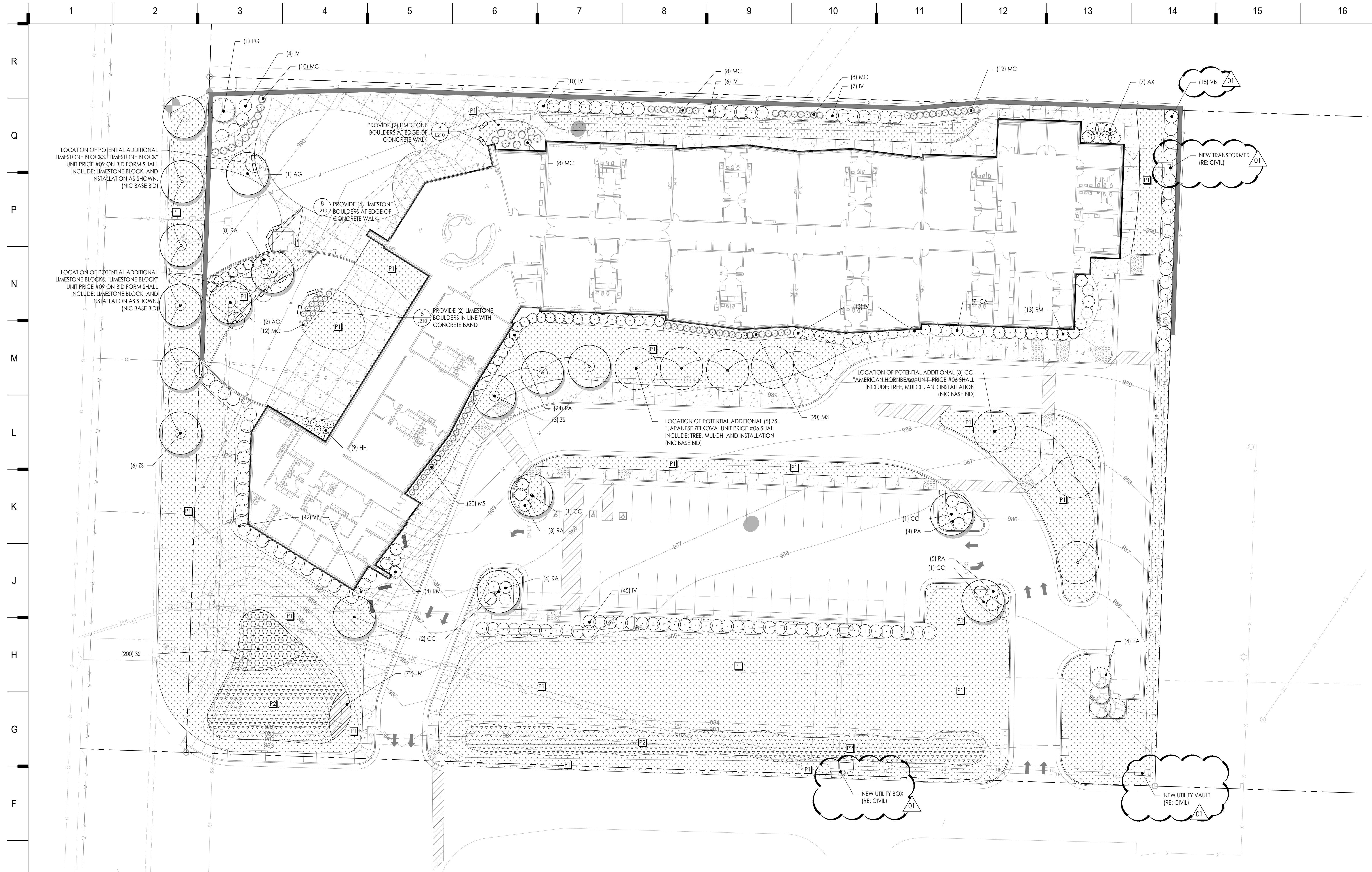
The Professional Architect and Affiliates in this stamp apply only to the caption and items shown on this sheet. All drawings, information or other documents are void unless they are prepared, prepared by the architect, and the architect expressly declares any and all responsibility for such plans, drawings, or documents and including the time.

JOB 1175
NO. BYMRK
CHECKED BY: 09.30.2016



L110

100% BID DOCUMENTS



SHEET KEYNOTE LEGEND

PLANTING SCHEDULE

SYM.	KEY	COMMON NAME BOTANICAL NAME	SIZE & REMARKS
SHADE/STREET TREES			
CC	American Hornbeam	<i>Carpinus caroliniana</i>	2' cal.
ZS	Japanese Zelkova	<i>Zelkova serrata</i>	2' cal.
ORNAMENTAL TREE			
AG	Lacebark Elm	<i>Ulmus parvifolia</i>	1.5' cal.
AR	Robin Hill Serviceberry	<i>Amelanchier x grandiflora</i> 'Robin Hill'	1.5' cal.
SR	Japanese Tree Lilac	<i>Syringa reticulata</i>	1.5' cal.
EVERGREEN TREE			
PA	Columnar Norway Spruce	<i>Picea abies</i> 'Cupressina'	5-6' ht.
PG	Bakeri Blue Spruce	<i>Picea pungens</i> 'Bakeri'	5-6' ht.
EVERGREEN SHRUB			
AX	Azalea		3 gal. @ 48" o.c.
RM	Nova Zembla Rhododendron	<i>Rhododendron x Nova Zembla</i>	3 gal. @ 60" o.c.
DECIDUOUS SHRUB			
CA	Ruby Spice Summersweet	<i>Clethra alnifolia</i> 'Ruby Spice'	3 gal. @ 60" o.c.
IV	Henry's Garnet Sweetspire	<i>Itea virginica</i> 'Henry's Garnet'	3 gal. @ 48" o.c.
RA	Gro-Low Sumac	<i>Rhus aromatica</i> 'Gro-Low'	3 gal. @ 48" o.c.
VB	Mohawk Viburnum	<i>Viburnum x burkwoodii</i> 'Mohawk'	3 gal. @ 60" o.c.
ORNAMENTAL GRASS			
CM	Palm Sedge	<i>Carex muskingumensis</i>	1 gal. @ 24" o.c.
MS	Morning Light Maiden Grass	<i>Miscanthus sinensis</i> 'Morning Light'	1 gal. @ 36" o.c.
MC	Muhly Grass	<i>Muhlenbergia capillaris</i>	1 gal. @ 36" o.c.
PERENNIAL/GROUNDCOVER			
	33%	Baptisia	4" pot @ 18" o.c.
	33%	Coneflower	4" pot @ 18" o.c.
	33%	Blue Flag Iris	4" pot @ 18" o.c.
	HH	Hosta	1 gal. @ 36" o.c.
	LM	Big Blue Linopae	1 gal. @ 18" o.c.
	SS	Autumn Joy Sedum	1 gal. @ 18" o.c.
		Turfgrass	Sod

LANDSCAPE PLAN SCOPE OF WORK

- THIS PLAN PROVIDES LAYOUT, QUANTITY & SIZES OF ALL PLANT MATERIAL TO BE INSTALLED BY THE LANDSCAPE CONTRACTOR. REFER TO SPEC 329500 - LANDSCAPE FOR COMPLETE SCOPE OF WORK, RESPONSIBILITIES, PRODUCTS & EXECUTION OF WORK.
- PLANTING BEDS TO RECEIVE 12" DEPTH TOPSOIL PREP. PRE AND POST-PLANT FERTILIZER APPLICATION. 3" OF MULCH AND EDGES OF BEDS TO BE CULTIVATED.
- TURF AREAS TO RECEIVE 6" TOPSOIL PREP. PRE AND POST-PLANT FERTILIZER APPLICATIONS.

1 PLANTING PLAN - BASE BID

Scale: 1" = 20'



2 SITE TREES

Scale:



3 SITE SHRUBS & GRASSES

Scale:

hollis + miller architects

relationships • results

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Missouri State Certificate of Authority
Architecture # 0200191
Structure # 200011333

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COAR 00062
2045 W. Woodland
Springfield, MO 65807
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417.782.7389 fax

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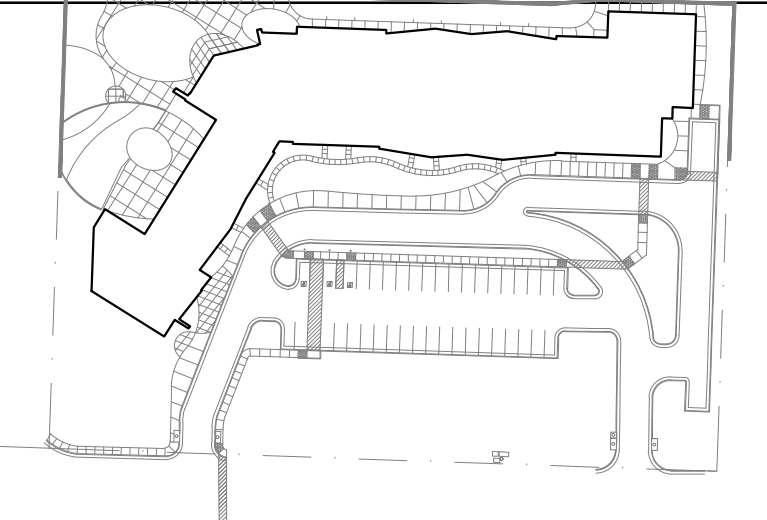
Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date
01	ADDENDUM 001	10.14.2016



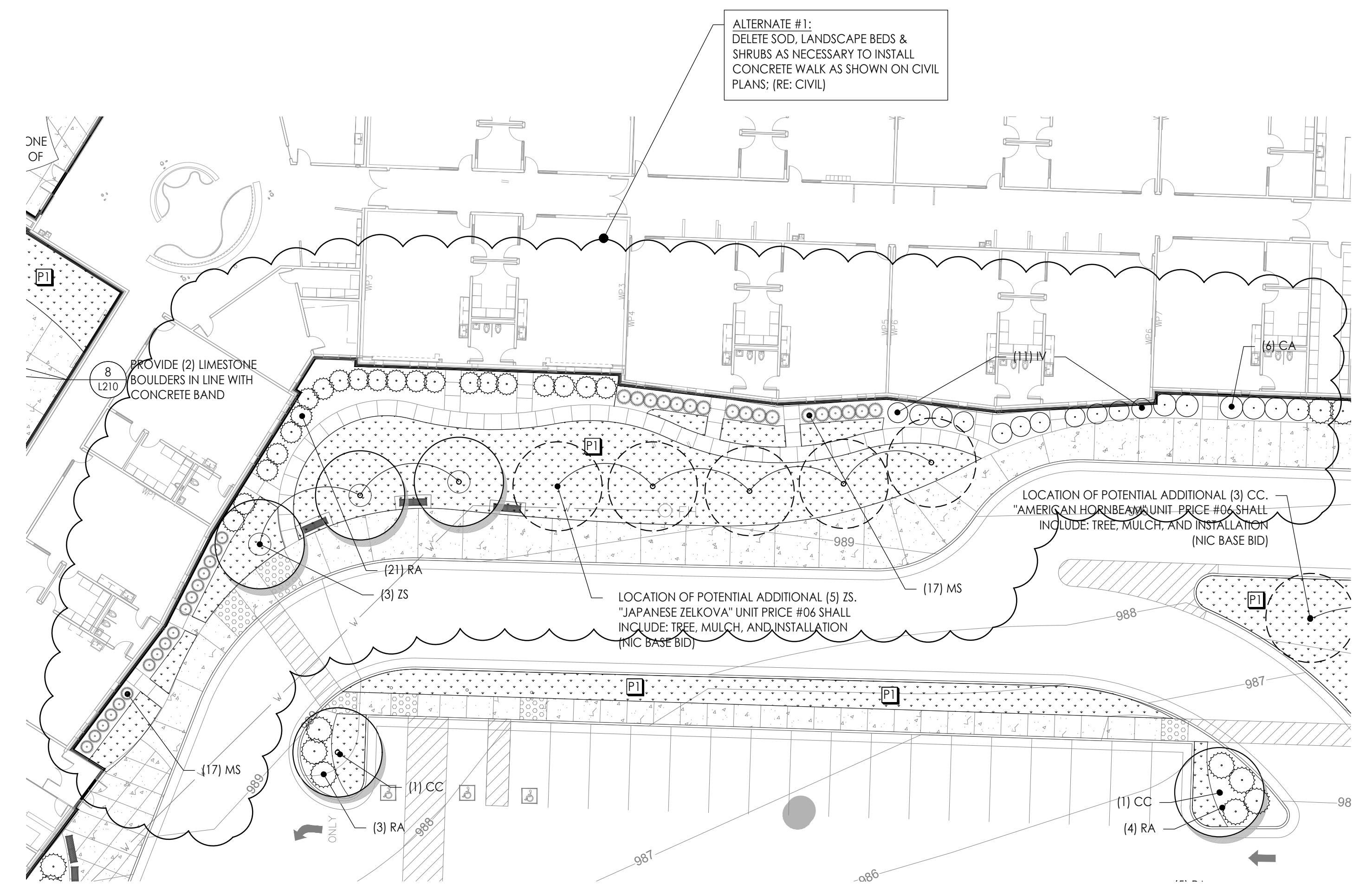
KEY PLAN



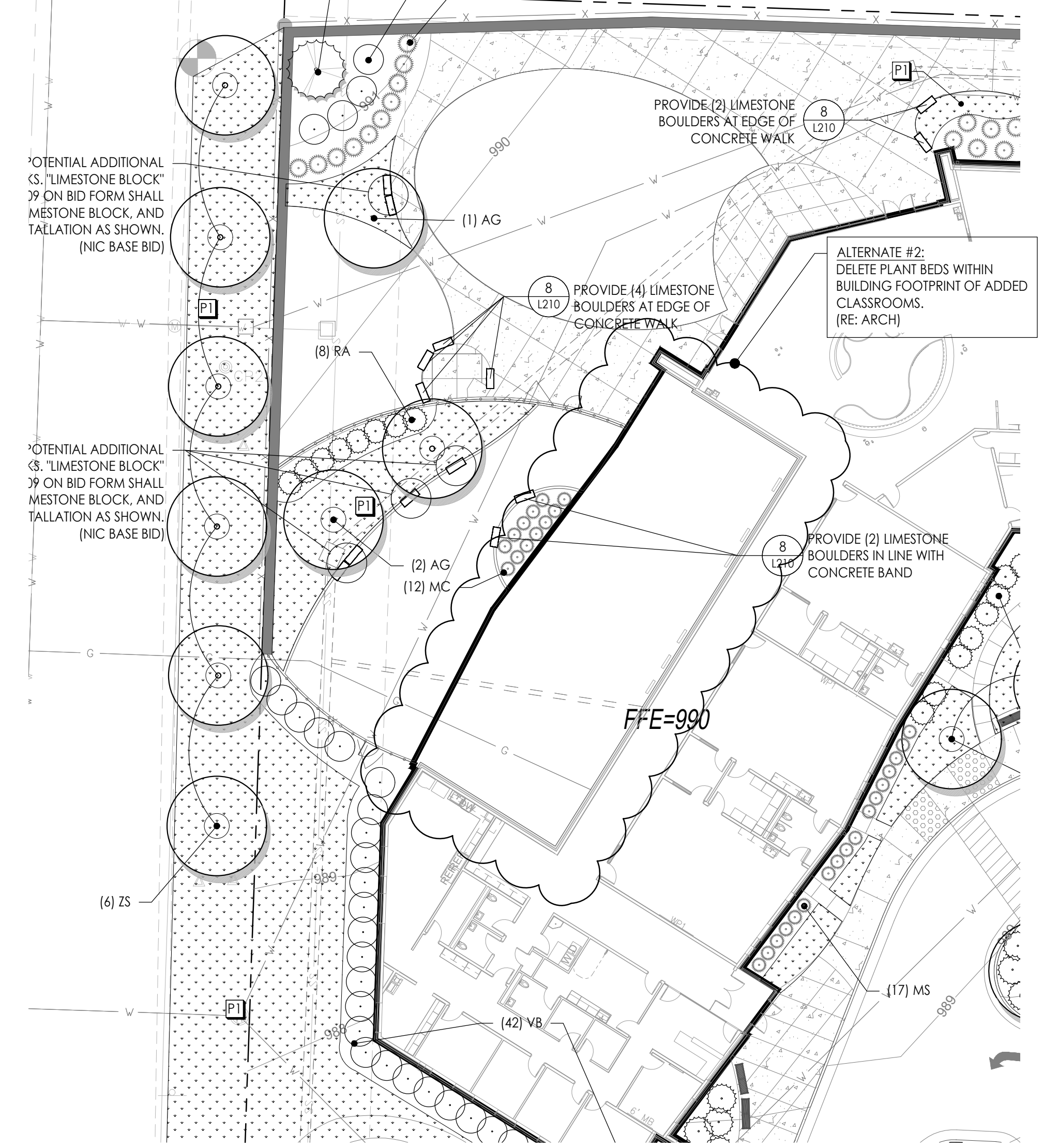
JOB 1175
NO. BY: ARK
CHECKED BGB
BY: 16

L200

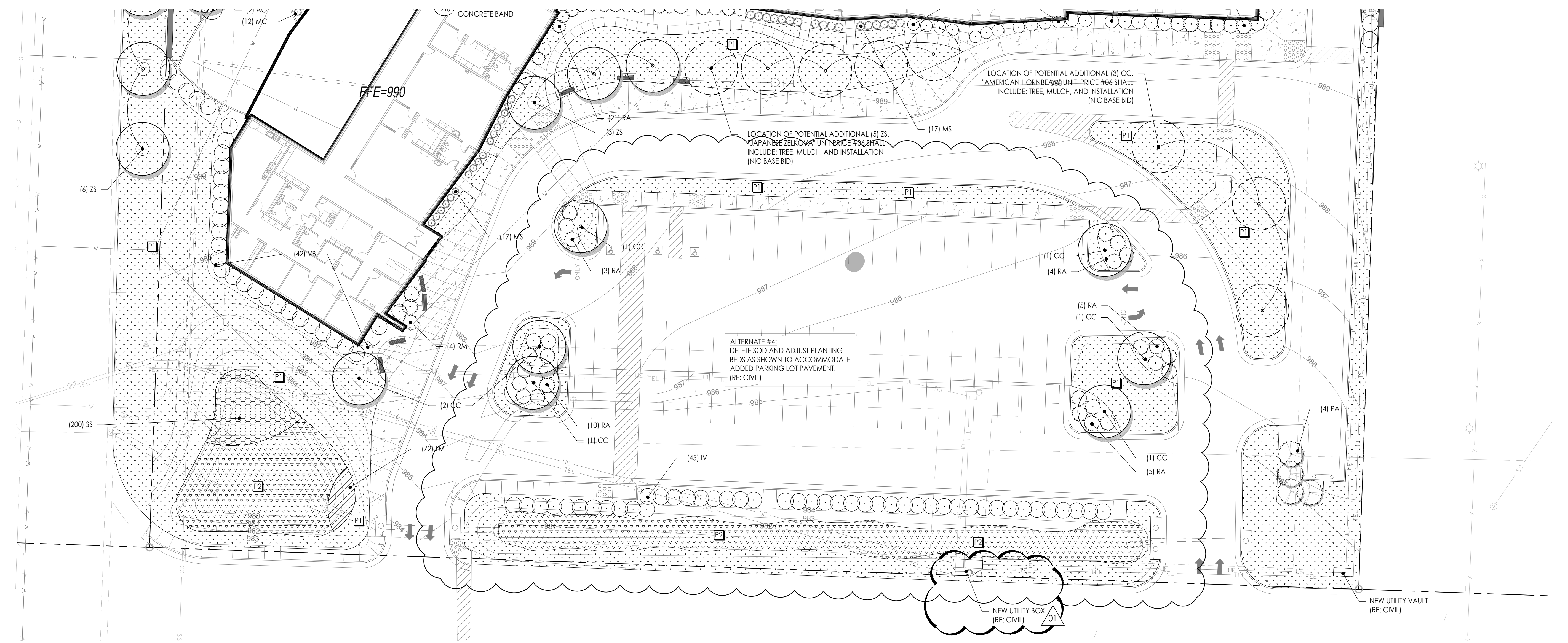
OF



1 ALTERNATE #1 - LANDSCAPE ADJUSTMENTS
Scale: 1" = 20'



2 ALTERNATE #2 - LANDSCAPE ADJUSTMENTS
Scale: 1" = 20'



3 ALTERNATE #4 - LANDSCAPE ADJUSTMENTS
Scale: 1" = 20'

SHEET KEYNOTE LEGEND			
PLANTING SCHEDULE			
SYM.	KEY	COMMON NAME BOTANICAL NAME	SIZE & REMARKS
SHADE/STREET TREES			
CC	American Hornbeam	<i>Carpinus caroliniana</i>	2' cal.
ZS	Japanese Zelkova	<i>Zelkova serrata</i>	2' cal.
ORNAMENTAL TREE			
AG	Loebach Elm	<i>Ulmus parvifolia</i>	1.5' cal.
AR	Robin Hill Serviceberry	<i>Amelanchier x grandiflora</i> Robin Hill	1.5' cal.
SR	Japanese Tree Lilac	<i>Syringa reticulata</i>	1.5' cal.
EVERGREEN TREE			
PA	Columnar Norway Spruce	<i>Picea abies</i> 'Cupressina'	5-6' ht.
PG	Bakeri Blue Spruce	<i>Picea pungens</i> 'Bakeri'	5-6' ht.
EVERGREEN SHRUB			
AX	Azalea		3 gal. @ 48" o.c.
RM	Nova Zembla Rhododendron	<i>Rhododendron</i> x 'Nova Zembla'	3 gal. @ 60" o.c.
DECIDUOUS SHRUB			
CA	Ruby Spice Summersweet	<i>Clethra alnifolia</i> 'Ruby Spice'	3 gal. @ 60" o.c.
IV	Henry's Gamel Sweetspire	<i>Itea virginica</i> 'Henry's Gamel'	3 gal. @ 48" o.c.
RA	Gro-Low Sumac	<i>Rhus aromatica</i> 'Gro-Low'	3 gal. @ 48" o.c.
VB	Mohawk Viburnum	<i>Viburnum</i> x burkwoodii 'Mohawk'	3 gal. @ 60" o.c.
ORNAMENTAL GRASS			
CM	Palm Sedge	<i>Carex muskingumensis</i>	1 gal. @ 24" o.c.
MS	Morning Light Maiden Grass	<i>Miscanthus sinensis</i> 'Morning Light'	1 gal. @ 36" o.c.
MC	Muhly Grass	<i>Muhlenbergia capillaris</i>	1 gal. @ 36" o.c.
PERENNIAL/GROUNDCOVER			
	33%	Baptisia	4" pot @ 18" o.c.
	33%	Coneflower	4" pot @ 18" o.c.
	33%	Blue Flag Iris	4" pot @ 18" o.c.
	HH	Hosta	1 gal. @ 36" o.c.
	LM	Big Blue Liriope	1 gal. @ 18" o.c.
	SS	Autumn Joy Sedum	1 gal. @ 18" o.c.
		Turfgrass	Sod

LANDSCAPE PLAN SCOPE OF WORK

- THIS PLAN PROVIDES LAYOUT, QUANTITY & SIZES OF ALL PLANT MATERIAL TO BE INSTALLED BY THE LANDSCAPE CONTRACTOR. REFER TO SPEC 329300 - LANDSCAPE FOR COMPLETE SCOPE OF WORK, RESPONSIBILITIES, PRODUCTS & EXECUTION OF WORK.
- PLANTING BEDS TO RECEIVE 12" DEPTH TOPSOIL PREP. PRE AND POST-PLANT FERTILIZER APPLICATION. 3" OF MULCH AND EDGES OF BEDS TO BE CULTIVATED.
- TURF AREAS TO RECEIVE 6" TOPSOIL PREP. PRE AND POST-PLANT FERTILIZER APPLICATIONS.

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913.271.6119
4436 STATE LINE ROAD
KANSAAS CITY, KS 66103
913.371.7933

REVISIONS:

#	Description	Date
01	ADDENDUM 001	10.14.2016



Joplin Early Childhood Center
Joplin Schools

JOB NO: 1175
BY: ARK
CHECKED: BGB
BY: 16

L201
OF

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8205 W 108th Terrace
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913.525.3028
HOLLISANDMILLER.COM

Hollis + Miller Architects
Missouri State Certificate of Authority
Architecture #0000181
Structure # 20001333

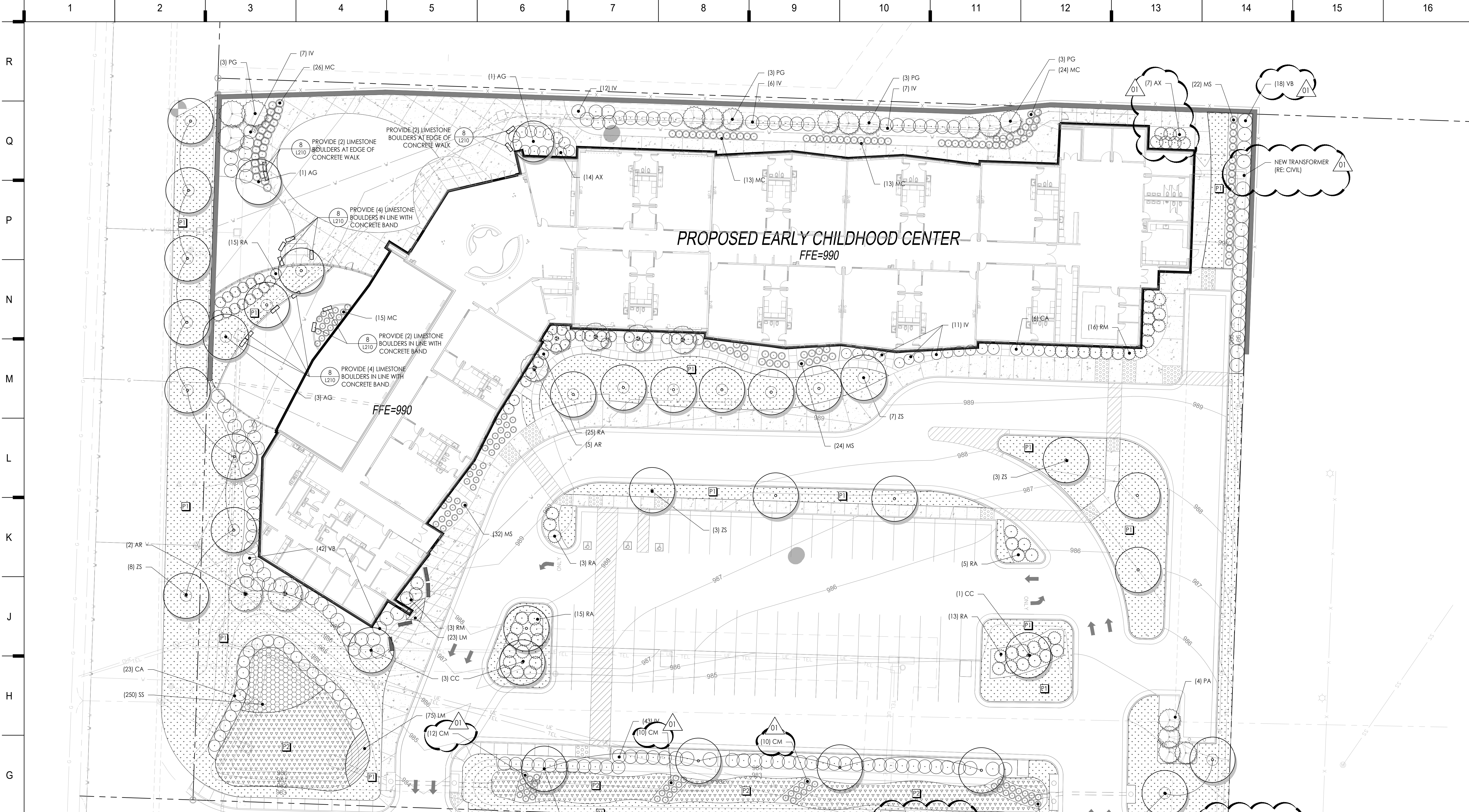
Anderson Engineering
Civil Engineering
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Anderson Engineering
Geotechnical Engineers
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2045 W. Woodland
Springfield, MO 65807
417.782.7399 phone
417.782.7389 fax

100% BID DOCUMENTS



ALTERNATE #6
 FOR ALTERNATE #6, THE FOLLOWING PLAN IS TO REPLACE THE BASE BID PLANTING PLAN. (L200)
 ALTERNATE #6 ALSO TO INCLUDE ADDITIONAL IRRIGATION PER SHEET L301.

SHEET KEYNOTE LEGEND

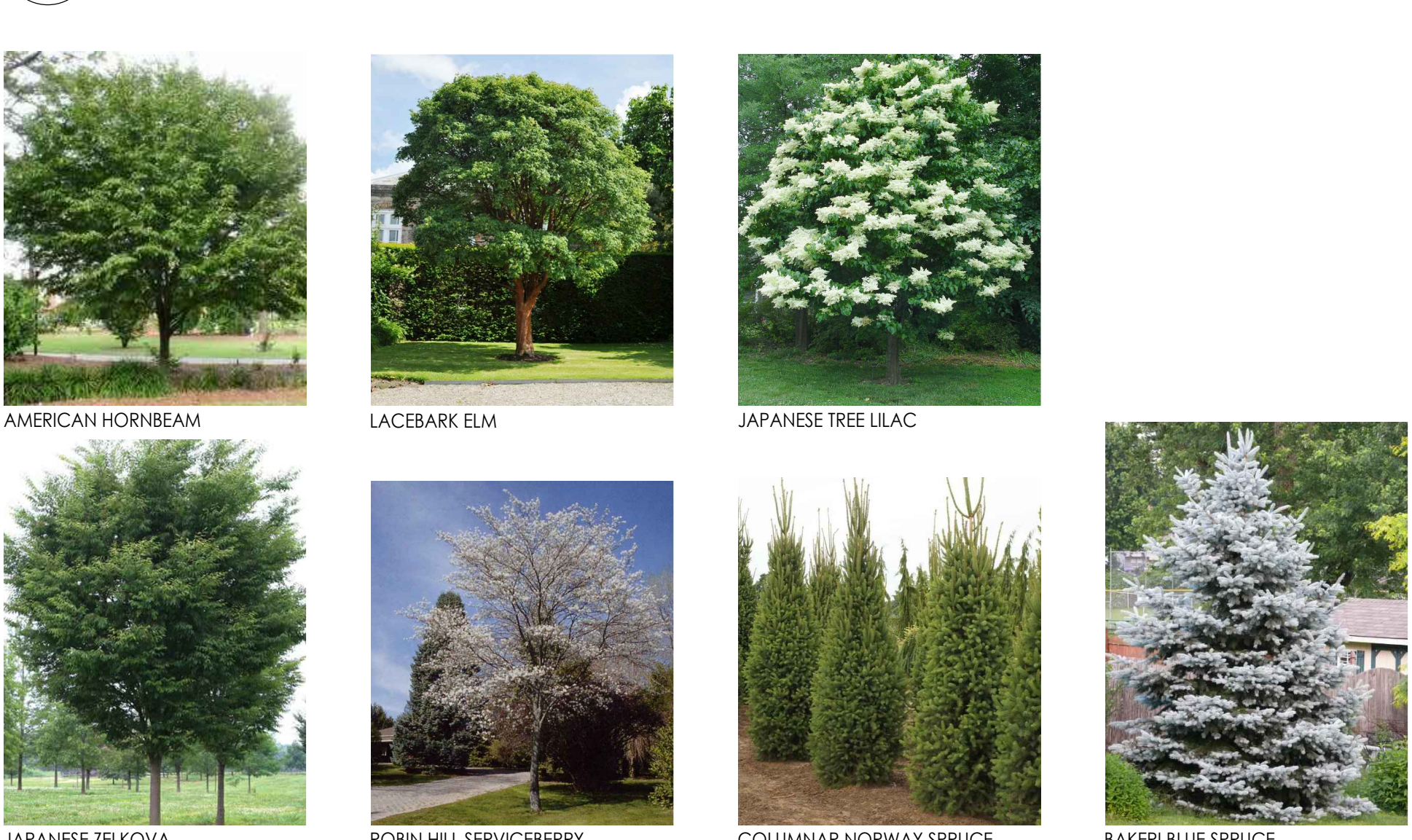
PLANTING SCHEDULE

SYM.	KEY	COMMON NAME BOTANICAL NAME	SIZE & REMARKS
SHADE/STREET TREES			
CC	American Hornbeam	<i>Carpinus caroliniana</i>	2' cal.
ZS	Japanese Zelkova	<i>Zelkova serrata</i>	2' cal.
ORNAMENTAL TREE			
AR	Lacebark Elm	<i>Ulmus parvifolia</i>	1.5' cal.
AG	Robin Hill Serviceberry	<i>Amelanchier x grandiflora</i> 'Robin Hill'	1.5' cal.
SR	Japanese Tree Lilac	<i>Syringa reticulata</i>	1.5' cal.
EVERGREEN TREE			
PA	Columnar Norway Spruce	<i>Picea abies</i> 'Cupressina'	5-6' ht.
PG	Bakeri Blue Spruce	<i>Picea pungens</i> 'Bakeri'	5-6' ht.
EVERGREEN SHRUB			
AX	Azalea		3 gal. @ 48" o.c.
RM	Nova Zembla Rhododendron	<i>Rhododendron</i> x 'Nova Zembla'	3 gal. @ 60" o.c.
DECIDUOUS SHRUB			
CA	Ruby Spice Summersweet	<i>Clethra alnifolia</i> 'Ruby Spice'	3 gal. @ 60" o.c.
IV	Henry's Garnet Sweetspire	<i>Ilex virginica</i> 'Henry's Garnet'	3 gal. @ 48" o.c.
RA	Gro-Low Sumac	<i>Rhus aromatica</i> 'Gro-Low'	3 gal. @ 48" o.c.
VB	Mohawk Viburnum	<i>Viburnum</i> x burkwoodii 'Mohawk'	3 gal. @ 60" o.c.
ORNAMENTAL GRASS			
CM	Palm Sedge	<i>Carex muskingumensis</i>	1 gal. @ 24" o.c.
MS	Morning Light Maiden Grass	<i>Miscanthus sinensis</i> 'Morning Light'	1 gal. @ 36" o.c.
MC	Muhly Grass	<i>Muhlenbergia capillaris</i>	1 gal. @ 36" o.c.
PERENNIAL/GROUNDCOVER			
33%	Baptisia		4" pot @ 18" o.c.
33%	Coneflower		4" pot @ 18" o.c.
33%	Blue Flag Iris		4" pot @ 18" o.c.
HH	Hosta		1 gal. @ 36" o.c.
LM	Big Blue Liriope	<i>Liriope muscari</i> 'Big Blue'	1 gal. @ 18" o.c.
SS	Autumn Joy Sedum	<i>Sedum spectabile</i> 'Autumn Joy'	1 gal. @ 18" o.c.
PI	Turfgrass		Sod

LANDSCAPE PLAN SCOPE OF WORK

- THIS PLAN PROVIDES LAYOUT, QUANTITY & SIZES OF ALL PLANT MATERIAL TO BE INSTALLED BY THE LANDSCAPE CONTRACTOR. REFER TO SPEC 329500 - LANDSCAPE FOR COMPLETE SCOPE OF WORK, RESPONSIBILITIES, PRODUCTS & EXECUTION OF WORK.
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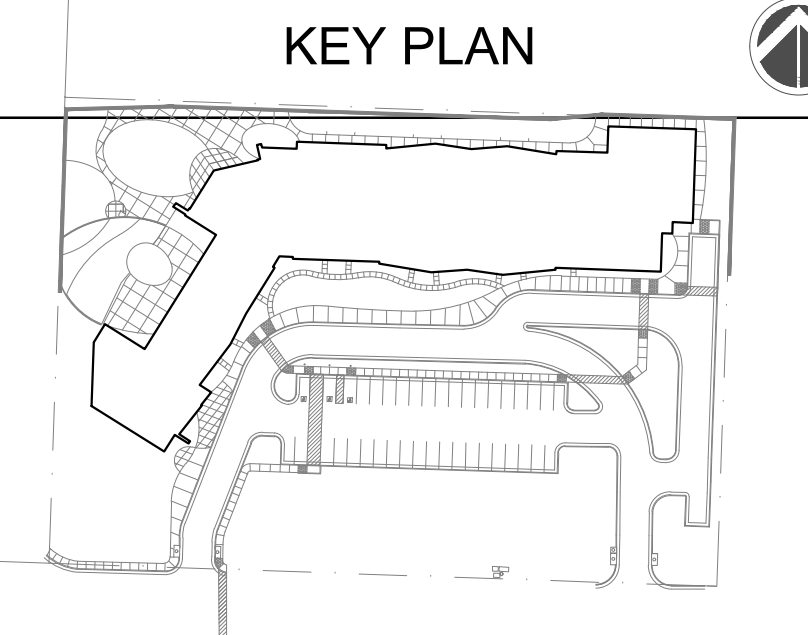
1 ALTERNATE #6 - PLANTING PLAN



2 SITE TREES
Scale: 1" = 20'



3 SITE SHRUBS & GRASSES
Scale: 1" = 20'



architects
hollis + miller
relationships + results

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 hollismiller.com

HMA + Miller Architects
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 Architecture # 0000381
 Structure # 20001333

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 25501 Valley Parkway, Suite 200
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 913.345.2127 phone
 913.345.0617 fax

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 COAR# 00062
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 Springfield, MO 65807
 417.782.7399 phone
 417.782.7389 fax

Joplin Early Childhood Center
 Joplin Schools

100% BID DOCUMENTS

#	Description	Date
01	ADDENDUM 001	10.14.2016

LAND3
 STUDIOS
 317 SE MAIN
 LEE'S SUMMIT, MO 64063
 913.371.7933

STATE OF MISSOURI
 LANDSCAPE ARCHITECT
 9-30-16

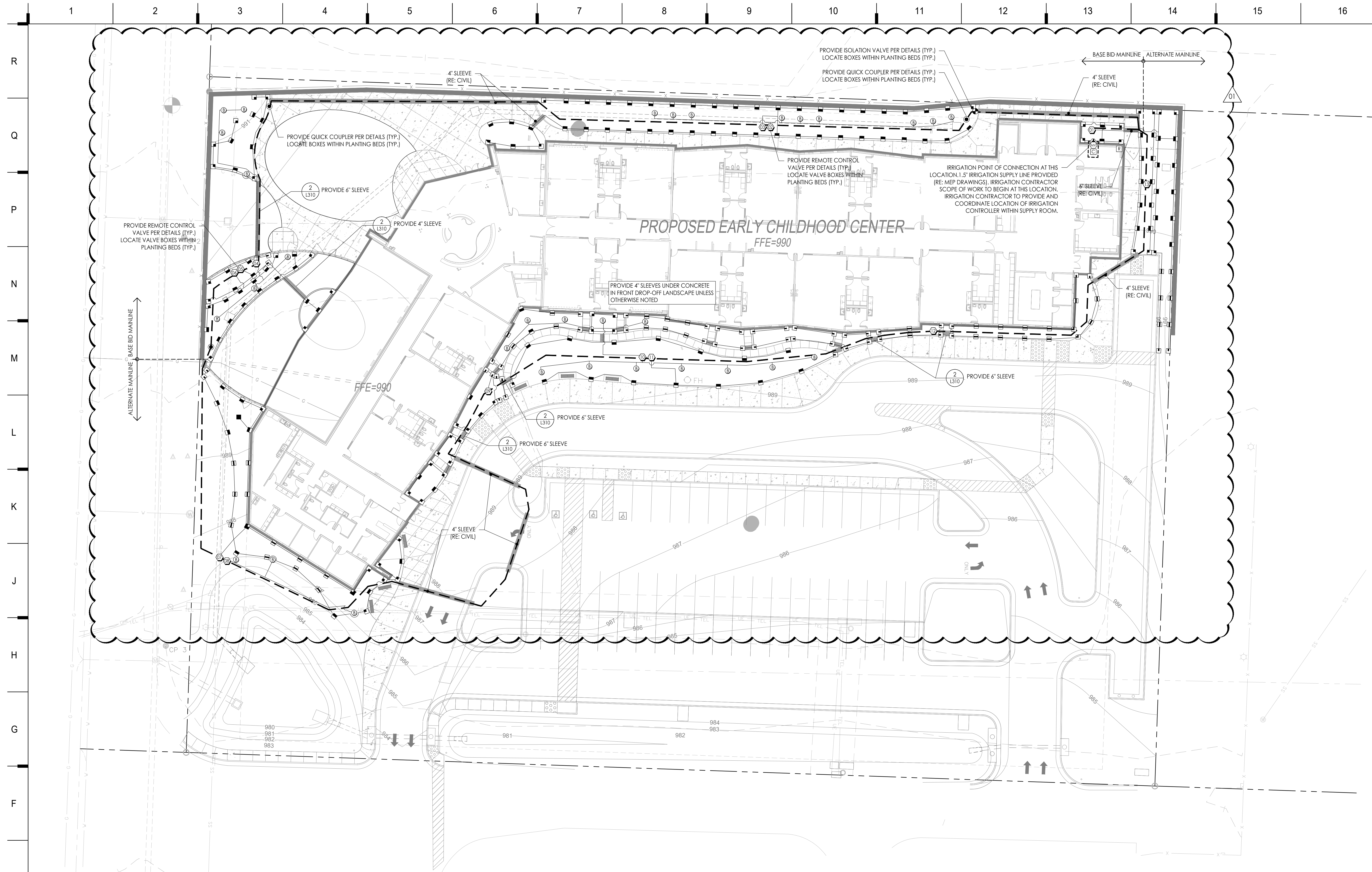
JOB 1175
 NO. BYMRK
 CHECKED BGB
 BY: 09.30.2016

L202

OF

LANDSCAPE PLAN ALTERNATES

Please consider the environment before printing this.



SHEET KEYNOTE LEGEND

ALTERNATE #6

FOR ALTERNATE #6, THE FOLLOWING PLAN IS TO REPLACE THE BASE BID IRRIGATION PLAN (L300) IN ITS ENTIRETY.

SEE L202 - LANDSCAPE PLAN ALTERNATES FOR THE PLANTING PLAN OF ALTERNATE #6

1 ALTERNATE #6 - IRRIGATION PLAN
Scale: 1" = 20'

IRRIGATION LEGEND

SYMBOL	DESCRIPTION	DETAIL
	AUTOMATIC CONTROLLER	RE: DETAIL 1/L310
	RAIN SENSOR	RE: SPEC 328400
	MASTER VALVE	RE: DETAIL 4/L310
	BACKFLOW PREVENTER (N.I.C.)	RE: MEP DRAWINGS
	WATER METER (N.I.C.)	RE: MEP DRAWINGS
	ISOLATION VALVE	RE: DETAIL 6/L310
	QUICK COUPLER	RE: DETAIL 7/L310
	ROOT WATERING TUBES	RE: DETAIL 9/L310

IRRIGATION NOTES

- THIS PLAN PROVIDES LAYOUT AND DISTRIBUTION TYPES FOR A COMPLETE AUTOMATIC IRRIGATION SYSTEM TO BE PROVIDED & INSTALLED BY THE LANDSCAPE CONTRACTOR. REFER TO SPEC 328400 - IRRIGATION SYSTEM FOR COMPLETE SCOPE OF WORK, RESPONSIBILITIES, PRODUCTS AND EXECUTION OF WORK.
 - ALL PLANTING BEDS AND TURF AREAS TO BE POP-UP SPRAY HEADS.
 - THE FINAL LOCATION AND EXACT POSITIONING OF AUTOMATIC CONTROLLERS AND RAIN SENSOR SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
 - 120-VOLT ELECTRICAL POWER SERVICE TO CONTROLLER ROOMS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. SEE ENGINEER'S PLANS AND SPECIFICATIONS FOR MORE INFORMATION REGARDING ELECTRICAL SERVICE. COORDINATE WITH ELECTRICAL.
 - CONTRACTOR SHALL RUN TWO-WIRE PATH IN SAME TRENCH AS IRRIGATION MAINLINE.
 - INSTALL TRACER WIRE (#14 WITH PVC JACKET) ALONG ALL MAINLINE WHERE CONTROL WIRES OR TWO-WIRE PATH IS NOT PRESENT.
 - INSTALL ALL MAINLINES WITH A 1% MINIMUM SLOPE TO MANUAL DRAIN VALVES LOCATED AT LOW POINTS OF MAIN SYSTEM.
 - COORDINATE AND SEQUENCE SLEEVING, PIPE LOCATION, AND MECHANICAL IMPROVEMENTS WITH OTHER TRADES AS NECESSARY.
 - CONTRACTOR RESPONSIBLE FOR ENSURING THE FUNCTIONALITY OF ALL IRRIGATION EQUIPMENT AND ZONES BEFORE WORK WILL BE COMPLETE. ANY DAMAGE TO ADJACENT IRRIGATION EQUIPMENT MUST BE REPAIRED BY THE CONTRACTOR.
- IMPORTANT:**
WINTERIZATION WATER BLOW-OUT PROCESS WARNING - THE IRRIGATION SYSTEM IS DESIGNED TO BE COMPLETELY DRAINED BY THE USE OF AN AIR COMPRESSOR TO PROTECT PIPES FROM BURSTING PRIOR TO FREEZING TEMPERATURES.

IRRIGATION ALTERNATE SCHEDULE

ZONE	HEAD/LINE INFO						FLOW (GPM)	OPERATING PRESSURE (PSI)	VALVE SIZE		
	360°	270°	180°	90°	SS	L/R C					
1	0	0	0	11	6	4	2	0	8.73	30	1"
2	0	0	0	44	3	0	0	0	2.25	30	1"
3	0	0	0	14	3	0	0	0	16.85	30	1.5"
4	0	0	0	11	10	2	0	0	1.75	30	1"
5	0	0	0	12	4	0	0	0	6.85	30	1"
6	0	0	0	12	4	0	0	0	5.20	30	1"
7	1	2	9	7	11	2	0	0	12.27	30	1"
8	0	0	0	14	14	0	0	0	0.75	30	1"
9	0	0	0	6	15	10	18	0	17.39	30	1.5"
10	0	0	0	14	14	0	0	0	3.00	30	1"
11	0	0	0	14	14	0	0	0	7.57	30	1"
12	0	0	0	0	13	16	2	2	13.64	30	1"
13	0	0	0	10	4	0	0	0	4.44	30	1"

HEAD TRAJECTORIES: (L/R) - LEFT/RIGHT CORNER; (SS) - SIDE STRIP; (C) - CORNER



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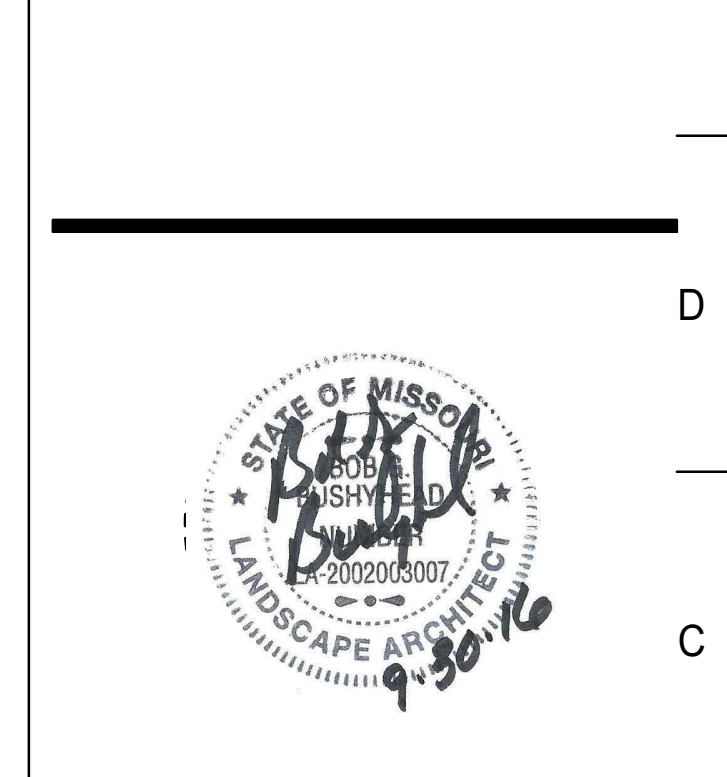
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Joplin Early Childhood Center
Joplin Schools

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REVISIONS:

#	Description	Date
01	ADDENDUM 001	10.14.2016



JOB NO: 1175
BY: ARK
CHECKED: BGB
BY: 16

L301

FIRE PROTECTION ITEMS

ACTIVE FIRE PROTECTION PROVIDED:
 NFPA 1B FIRE SPRINKLER SYSTEM:
 * REQUIRED FOR BUILDING HEIGHT AND AREA INCREASES:
 * PROVIDED THROUGHOUT BUILDING

FIRE ALARM SYSTEM:
 * MANUAL FIRE ALARM SYSTEM NOT REQUIRED WITH SPRINKLERS.
 * SMOKE DETECTORS AT HORIZONTAL ENDS FOR HOLD OPENING
 * AUDIBLE/VISUAL DEVICES PROVIDED THROUGHOUT COMMON SPACES AND IN CLASSROOMS.

PASSIVE FIRE PROTECTION PROVIDED:
 * CONSTRUCTION TYPE II-B, NON-COMBUSTIBLE, NON-PROTECTED
 * TWO-HOUR FIRE WALLS BETWEEN BUILDINGS, 90-MINUTE RATED DOORS,
 * INCIDENTAL USE AREAS-STORAGE:100 SF - SMOKE RESISTANT WALLS
 * CORRIDORS - NOT RATED WITH FIRE SPRINKLERS.

PROJECT INFORMATION

TYPE OF CONSTRUCTION II B
OWNER JOPLIN SCHOOLS
OWNER ADDRESS 810 W. 8TH STREET
 JOPLIN, MO 64802

FIRE DEPARTMENT JOPLIN FIRE DEPARTMENT
ANTICIPATED OCCUPANCY AUGUST 2016

PROJECT CODES

THE FOLLOWING CODES WERE USED FOR THIS PROJECT:

- 2012 "IBC" INTERNATIONAL BUILDING CODE
- 2012 "IMC" INTERNATIONAL MECHANICAL CODE
- 2012 "IFC" INTERNATIONAL FIRE CODE
- 2012 "NEC" NATIONAL ELECTRIC CODE
- 2010 "ADA" AMERICANS WITH DISABILITIES ACT
- "NFPA" NFPA 101 LIFE SAFETY - AS ADOPTED BY CODE AUTHORITY

PROJECT CODE INFORMATION

OCCUPANCY TYPE	II B
TYPE OF CONSTRUCTION	II B
ALLOWABLE BUILDING AREA	14,500
ALLOWABLE AREA INCREASES	9,425
SEPARATION:	48,900
FIRE SPRINKLER:	48,900
TOTAL ALLOWABLE AREA W/INCREASES	61,425
ACTUAL AREA	57,447
ALLOWABLE HEIGHT (# OF STORIES)	2
ACTUAL	1
MIXED USE - AREA SEPARATION	0
OCCUPANCY LOAD	1077
NUMBER OF REQUIRED EXITS	4
PLUMBING REQUIREMENTS	
WATER CLOSETS	11 MEN 11 WOMEN
LAVATORIES	11 MEN 11 WOMEN
URINALS	0 MEN
JANITORS CLOSETS	1
DRINKING FOUNTAINS (ADA COMPLIANT)	1 (5)
CONSTRUCTION TYPE	II B
EXTERIOR BEARING WALLS	0 HOUR
EXTERIOR NON-BEARING WALLS	0 HOUR
INTERIOR BEARING WALLS	0 HOUR
BUILDING SEPARATION	2 N/A HOUR
CORRIDOR WALLS	0 HOUR
PERMANENT PARTITIONS	0 HOUR
STRUCTURAL FRAME	0 HOUR
SHAFT WALLS	1 N/A HOUR
FLOOR-CEILING/FLOOR	0 HOUR
ROOF-CEILING/FLOOR	0 HOUR
EXTERIOR OPENINGS	0 HOUR

OCCUPANT LOAD

BUILDING

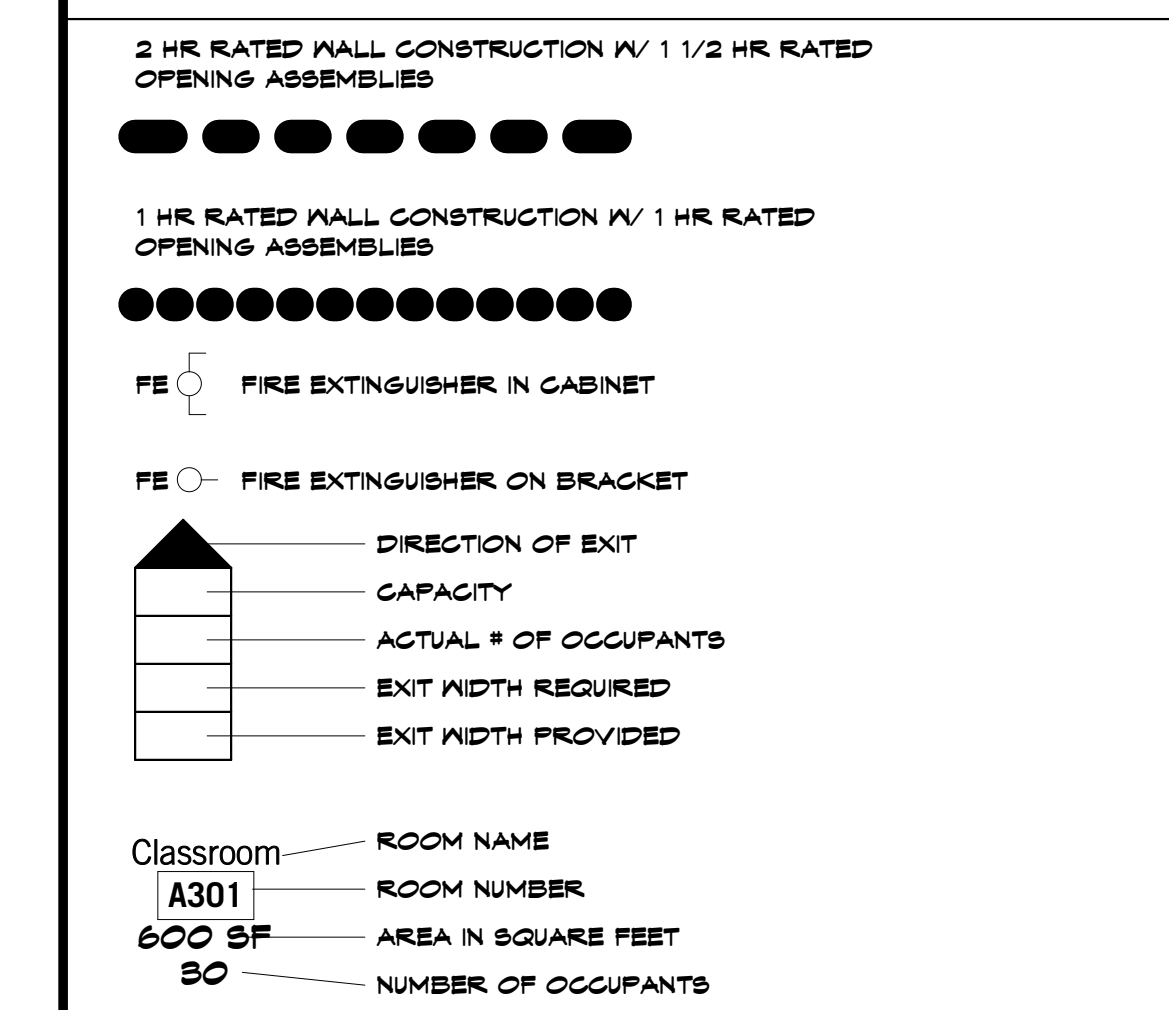
TOTAL EXITS REQUIRED = 4
 TOTAL EXITS PROVIDED = 5
 EGRESS WIDTH REQUIRED = 216 IN
 EGRESS WIDTH PROVIDED = 1,076 IN

EGRESS CALCULATIONS

OCCUPANT LOAD FACTORS:
 CLASSROOMS - 20 SF PER PERSON
 SHOPS AND VOCATIONAL LABS - 50 SF PER PERSON
 GYMNASIUM - 50 SF PER PERSON
 ASSEMBLY, STANDING SPACE (LOBBY AREAS) - 5 SF PER PERSON (NET) WHEN STANDING ROOM ONLY
 ASSEMBLY, CONCENTRATED (WAITING AREAS) - 7 SF PER PERSON (NET) WHEN EQUIPPED WITH TABLES AND CHAIRS
 OFFICES - 1 PERSON PER 100 SF
 CONFERENCE COMMONS - 1 PER 15 SF
 MECHANICAL/STORAGE - 1 PER 500 SF
 KITCHEN, COMMERCIAL - 1 PER 200 SF

TOTAL OCCUPANTS FROM TABLE 1004.2.1 = 1077
 SIMULTANEOUS USE AREAS = 0

CODE LEGEND



ALLOWABLE AREA CALCULATIONS

$$I_p = 100 \left[\frac{F}{P} - 0.25 \right] \frac{K}{50}$$
 (Equation B-2)

where:
 I_p = Area increase due to frontage (percent).
 F = Building perimeter which fronts on a public way or open space having 50 feet open minimum width.
 P = Perimeter of entire building.
 K = Minimum width of public way or open space.

$$I_p = 100 \left[\frac{1080}{1140} - 0.25 \right] \frac{20}{50}$$

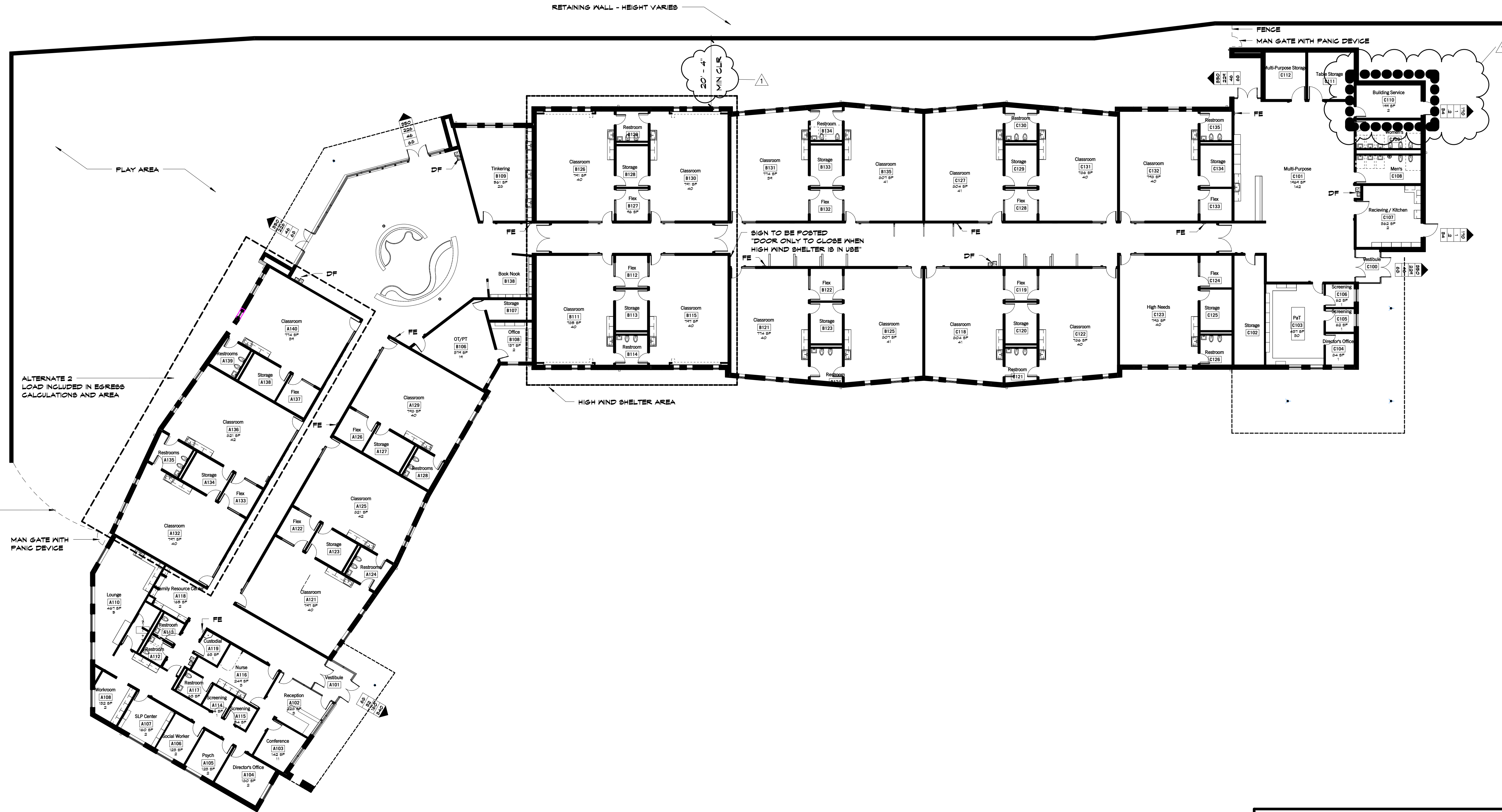
I_p = 65%

505.1 General. The area limited by Table 505 shall be permitted to be increased due to frontage (F) and automatic sprinkler system protection (I_p) in accordance with the following:

$$A_a = A_t \left[\frac{A_{1p}}{100} \right] + \left[\frac{A_{2p}}{100} \right]$$
 (Equation B-1)

where:
 A_a = Allowable area per floor (square feet).
 A_t = Tabular area per floor in accordance with Table 505 (square feet).
 I_p = Area increase due to frontage (percent) as calculated in accordance with Section 505.2.
 A_{1p} = Area increase due to sprinkler protection (percent) as calculated in accordance with Section 505.3.
 A_{2p} = 14,500 × $\left[\frac{14.500 \times 65\%}{100} \right] + \left[\frac{14,500 \times 200\%}{100} \right]$

A_a = 14,500 × 1.425 = 48,900
 A_a = 61,425 SF



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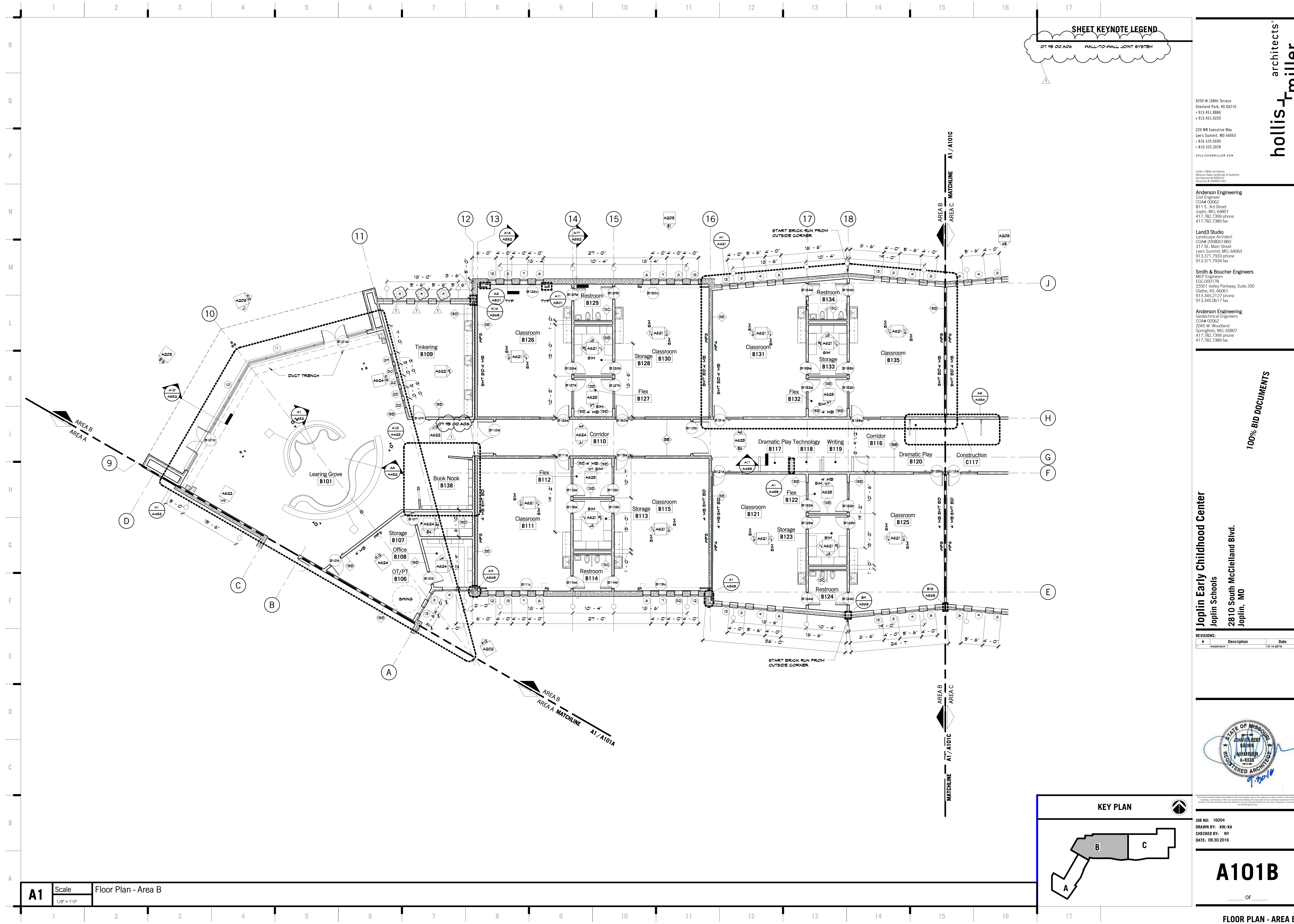
JOHN BERT BROWN
 REGISTERED ARCHITECT
 MISSOURI
 NUMBER A-5538
 9/20/16

JOB NO: 16054
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G101

OF

OVERALL CODE FLOOR PLANS



SHEET KEYNOTE LEGEND
 OT 15 00 A06 MALL-TO-MALL JOINT SYSTEM

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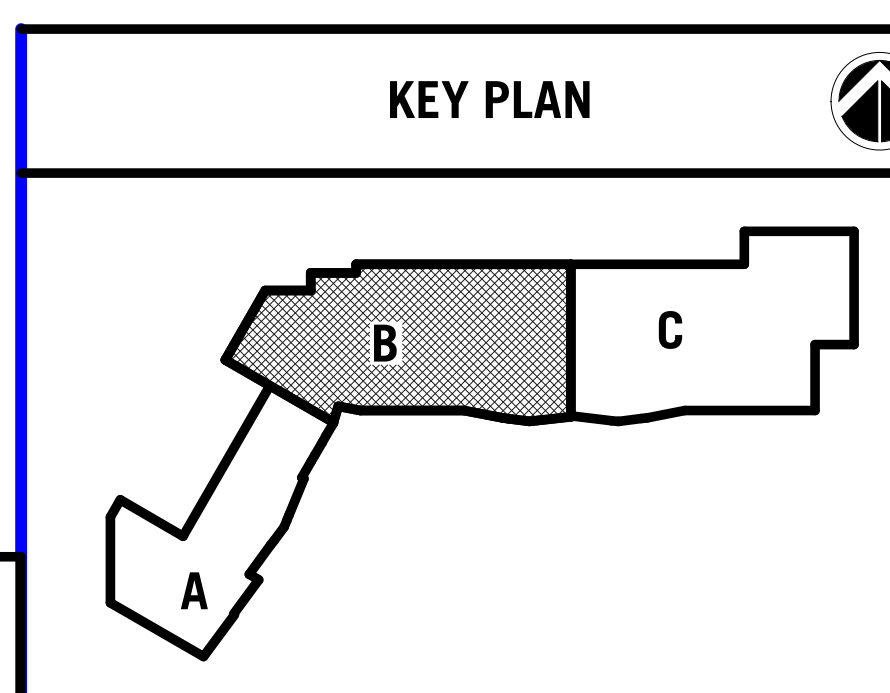


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A101B
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FLOOR PLAN - AREA B



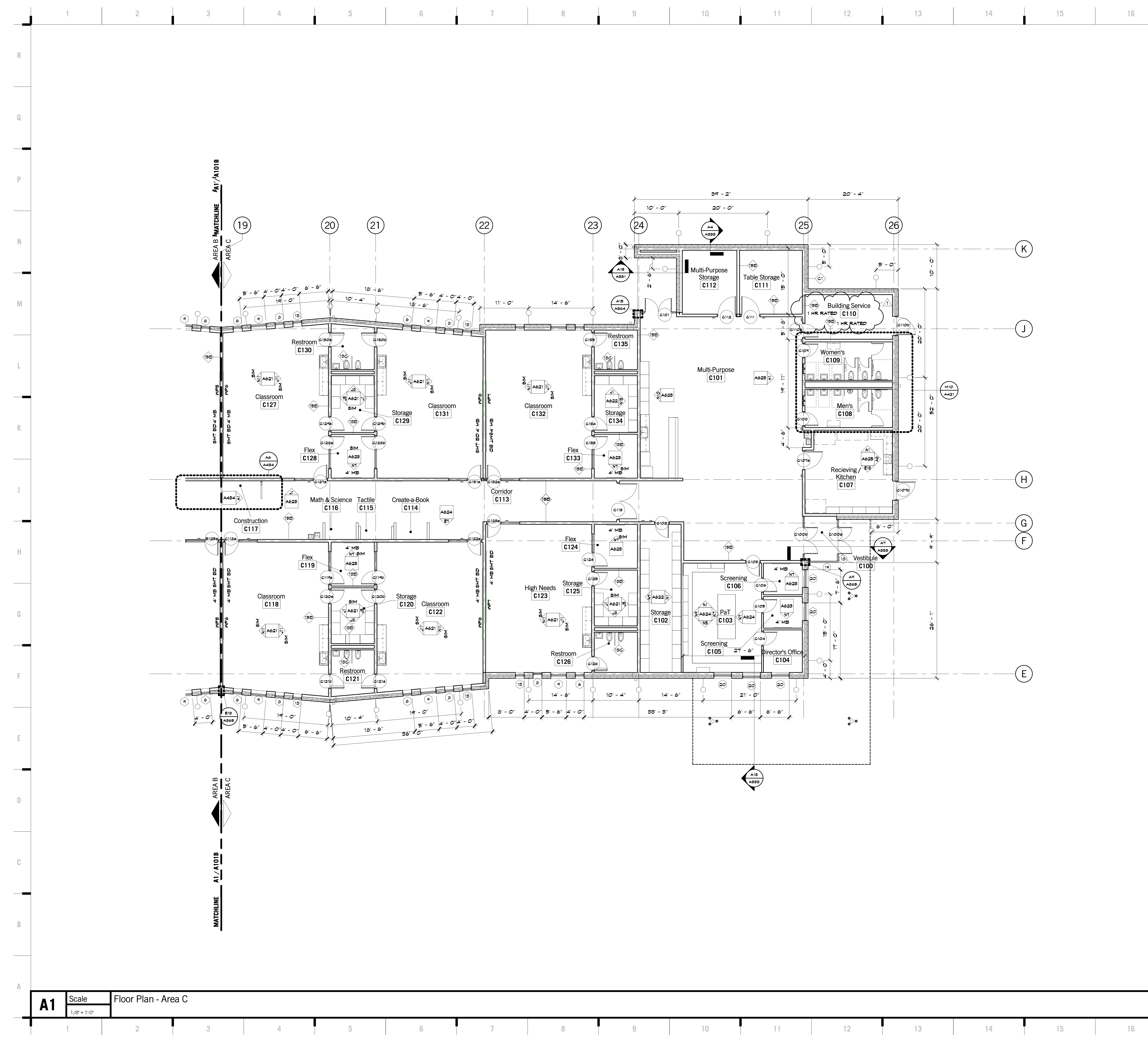
A1 Scale Floor Plan - Area B
 1/8" = 1'-0"

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Please consider the environment before printing this.



SHEET KEYNOTE LEGEND



KEY PLAN

A1 Scale Floor Plan - Area C
1/8" = 1'-0"

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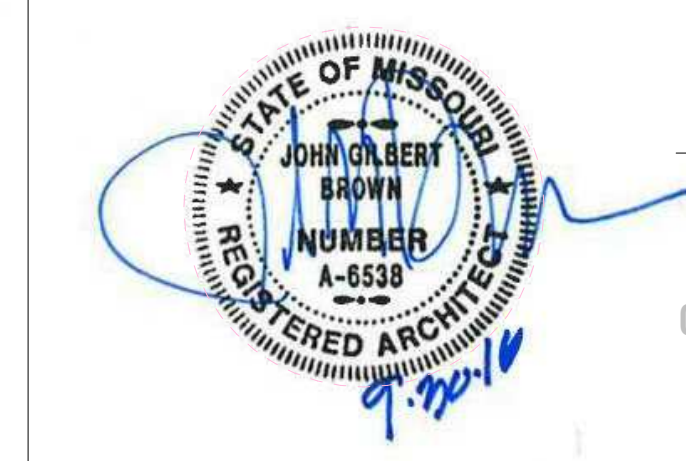
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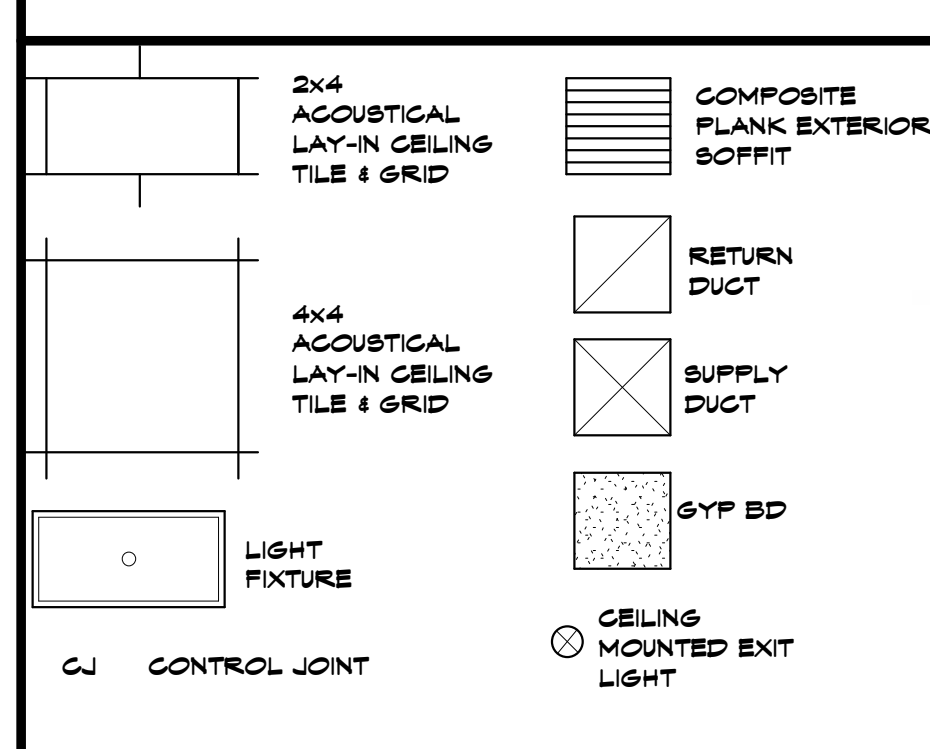
SHEET KEYNOTE LEGEND

OR B1 18.A04 DECORATIVE EDGE TRIM

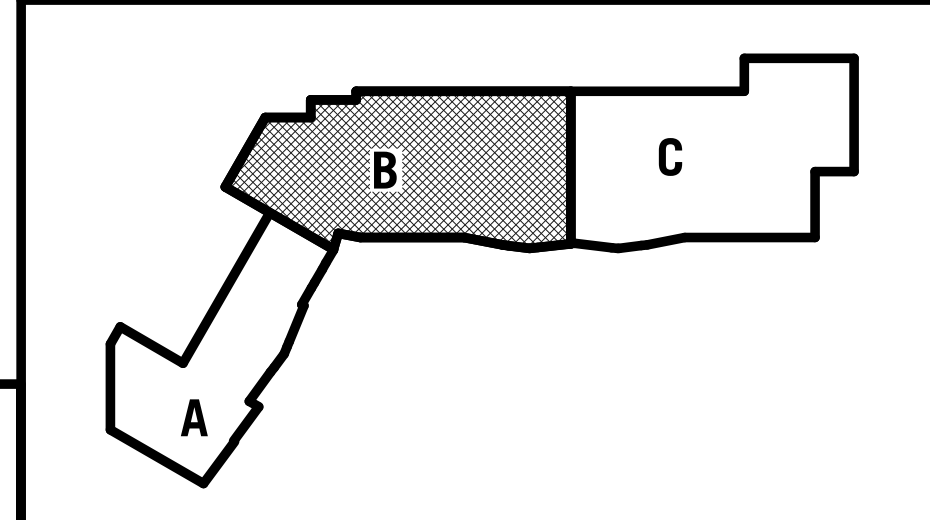
RCP NOTES

1. PAINT ALL GYP ED CEILINGS & SOFFITS.
2. PAINT ALL EXPOSED TO VIEW STRUCTURE, DUCTWORK (INCLUDING INSIDE EXPOSED TO VIEW), GRILLES, DIFFUSERS, PIPING, CONDUIT, ETC. PER ROOM FINISH SCHEDULE.
3. RE: MEP DRAWINGS FOR INFORMATION/DETAILS.
4. ACOUSTICAL CEILING INSTALLER SHALL PLACE HANGER WIRES SUCH THAT A CLEAR AREA IS MAINTAINED TO SERVICE MECHANICAL EQUIPMENT. (PROJECT SPECIFIC).

RCP LEGEND



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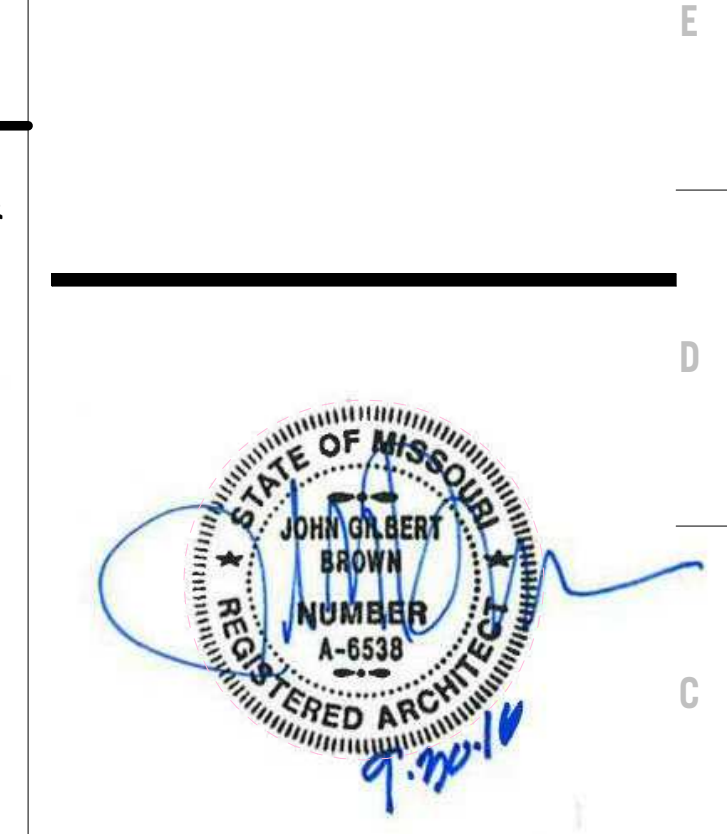
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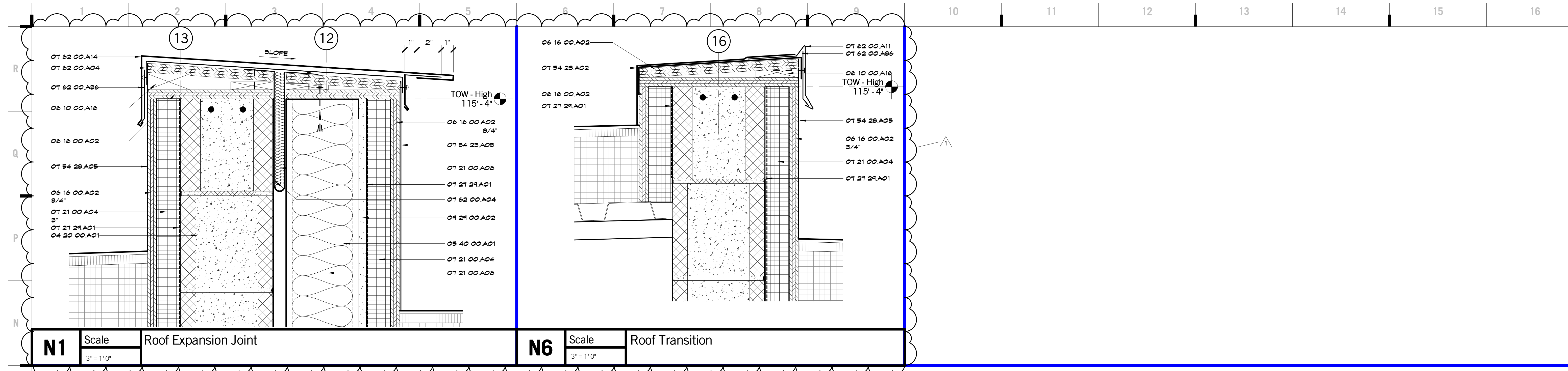


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N1 Scale 3" = 1'-0" Roof Expansion Joint

N6 Scale 3" = 1'-0" Roof Transition

SHEET KEYNOTE LEGEND

- 04 20 00 A01 CONCRETE MASONRY UNITS
- 05 40 00 A01 GOLD-FORMED METAL FRAMING
- 06 10 00 A16 FIRE-RETARDANT TREATED WOOD BLOCKING & NAILERS
- 06 16 00 A02 FIRE-RETARDANT TREATED PLYWOOD
- 07 21 00 A04 POLYISOCYANURATE INSULATION
- 07 21 00 A09 UNFACED GLASS FIBER BLANKET INSULATION
- 07 21 24 A01 VAPOUR RETARDING AIR BARRIER COATING
- 07 41 18 A01 METAL ROOF PANELS
- 07 54 28 A02 MECHANICALLY-FASTENED TPO MEMBRANE ROOFING SYSTEM
- 07 54 28 A08 TAPERED ROOF INSULATION
- 07 54 28 A09 SHEET FLASHING
- 07 62 00 A04 FLEXIBLE MEMBRANE CLOSURE
- 07 62 00 A09 HANGING GUTTERS
- 07 62 00 A07 DOWNSPOUTS
- 07 62 00 A09 SCUFFERS
- 07 62 00 A09 CONDUCTOR HEADS
- 07 62 00 A11 GRAVEL STOP
- 07 62 00 A14 ROOF TO ROOF EXPANSION JOINT COVER
- 07 62 00 A06 GLEAT
- 07 21 00 A02 GYPSUM BOARD - TYPE X

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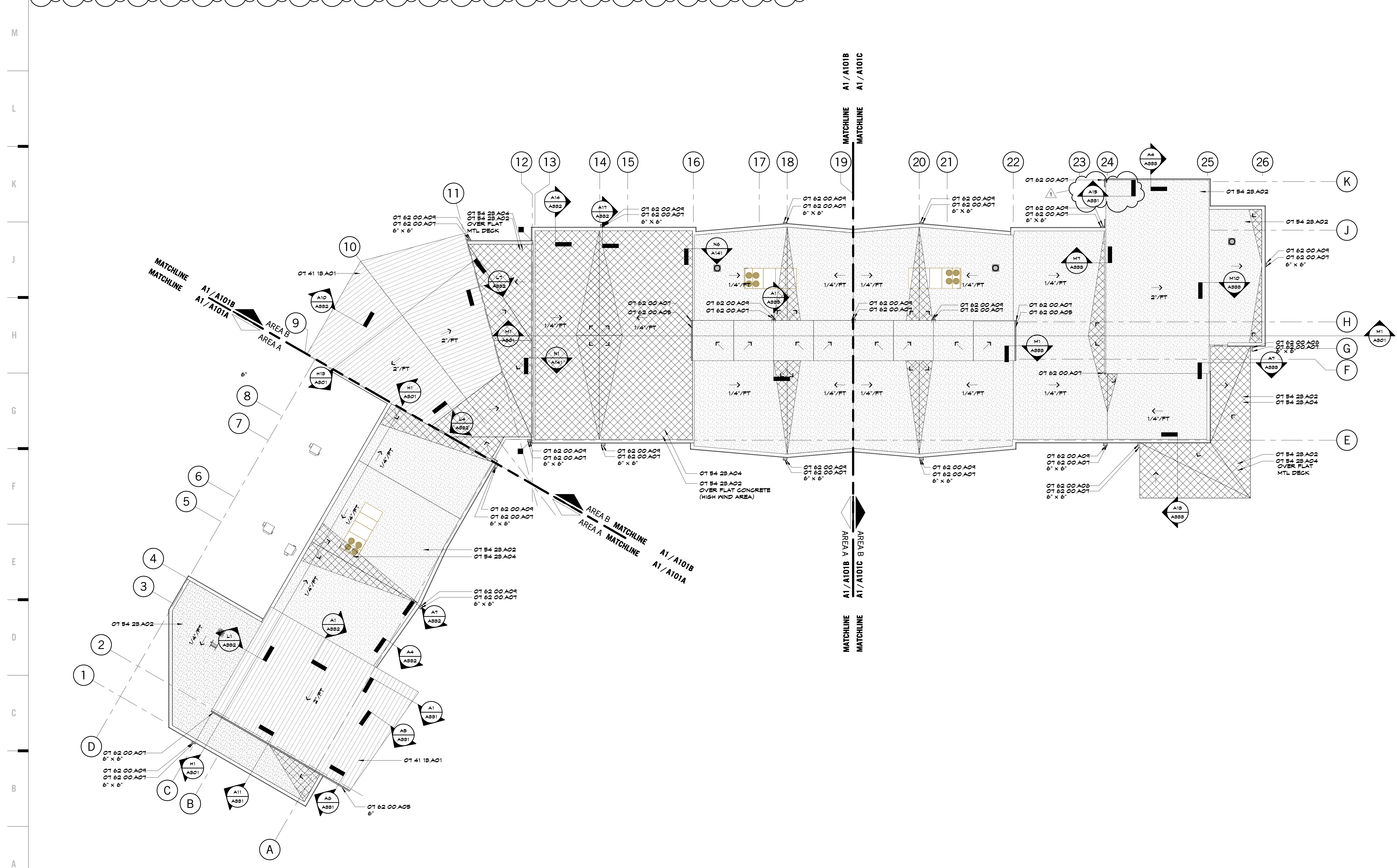
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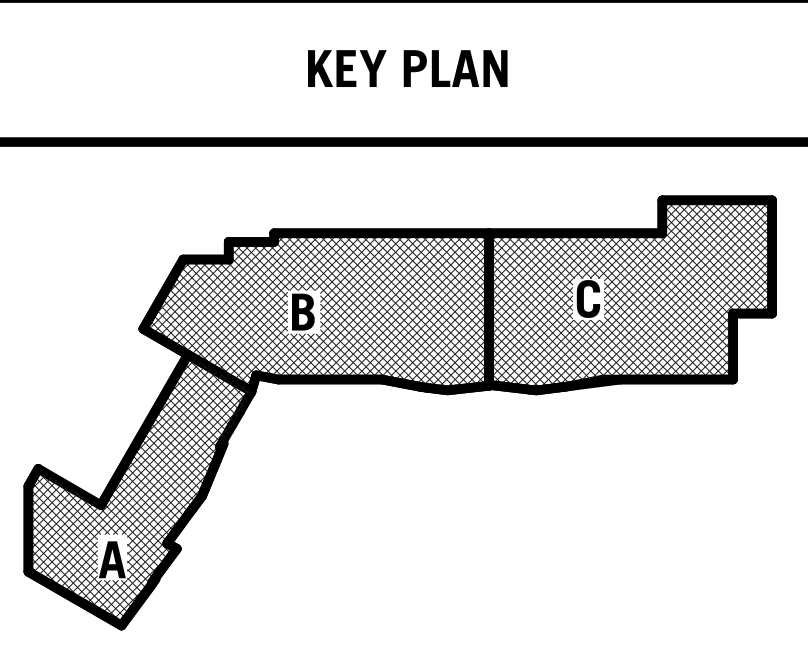
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A141
OF

OVERALL ROOF PLAN

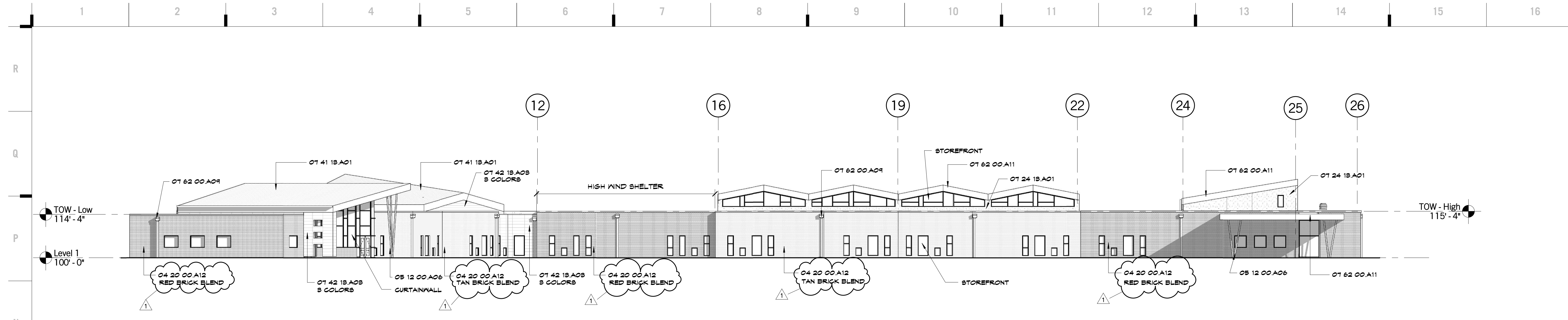


A1 Scale 1/16" = 1'-0" Overall Roof Plan

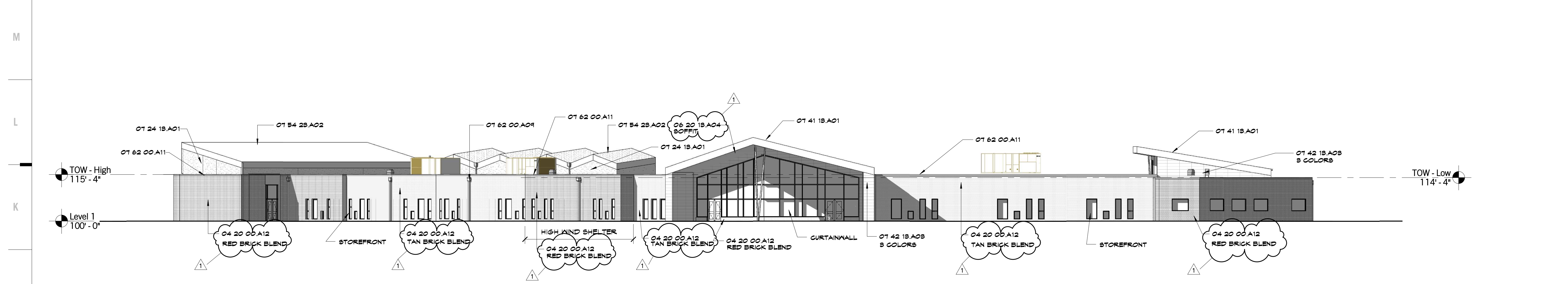


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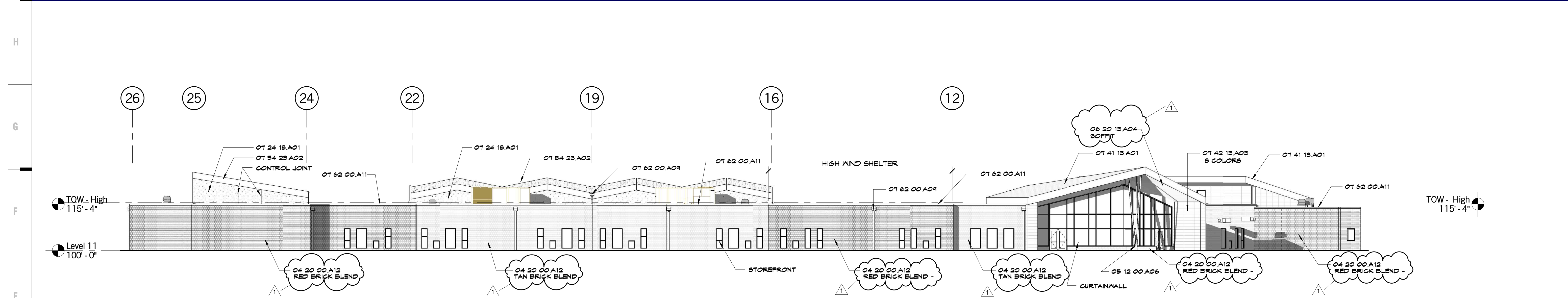
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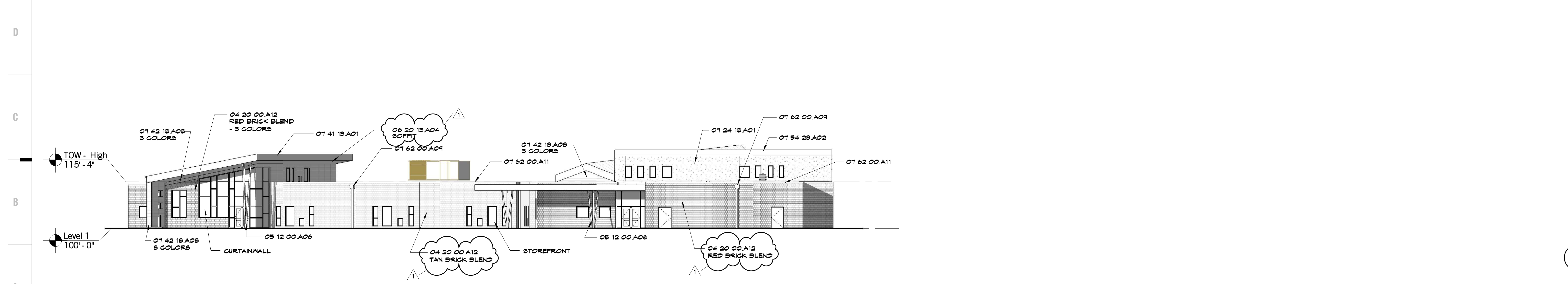
N1 Scale 1/16" = 1'-0" South Elevation



J1 Scale 1/16" = 1'-0" West Elevation



E1 Scale 1/16" = 1'-0" North Elevation



A1 Scale 1/16" = 1'-0" East Elevation

SHEET KEYNOTE LEGEND

- 04 20 00 A12 FACE BRICK
- 05 12 00 A06 GOLD-FORMED HBS
- 06 20 18 A04 POLYASH SYNTHETIC TRIM
- 07 24 18 A01 EXTERIOR INSULATION AND FINISH SYSTEM
- 07 41 18 A01 METAL ROOF PANELS
- 07 42 18 A03 CONCEALED FASTENER METAL WALL PANELS
- 07 54 28 A02 MECHANICALLY-FASTENED TPO MEMBRANE
- 07 62 00 A09 ROOFING SYSTEM
- 07 62 00 A09 CONDUCTOR HEADS
- 07 62 00 A11 GRAVEL STOP

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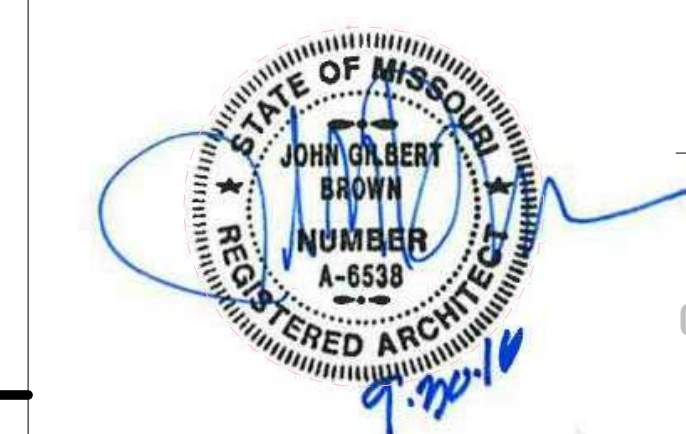
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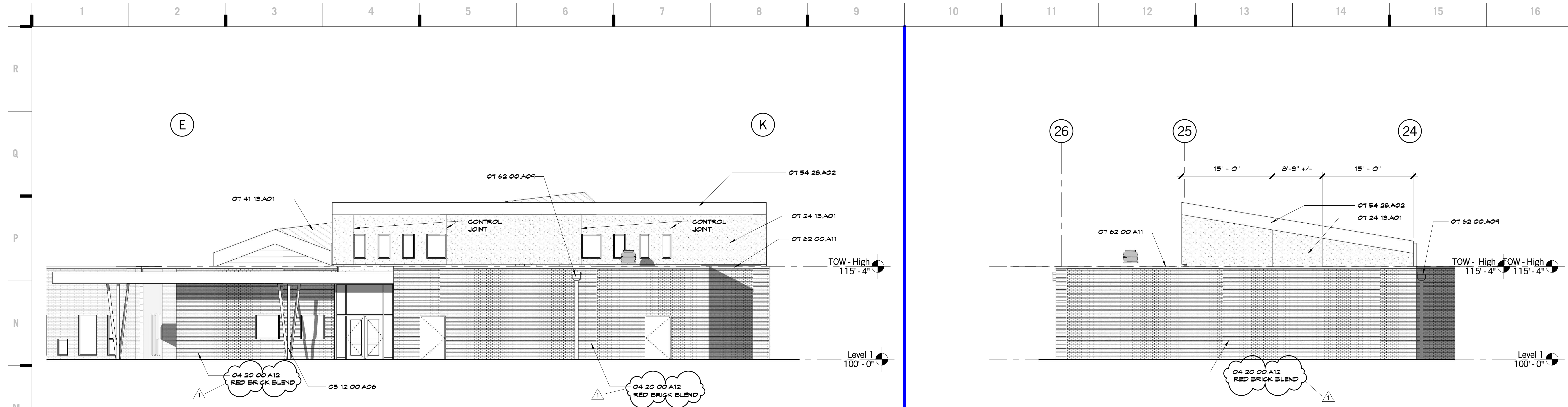
A201

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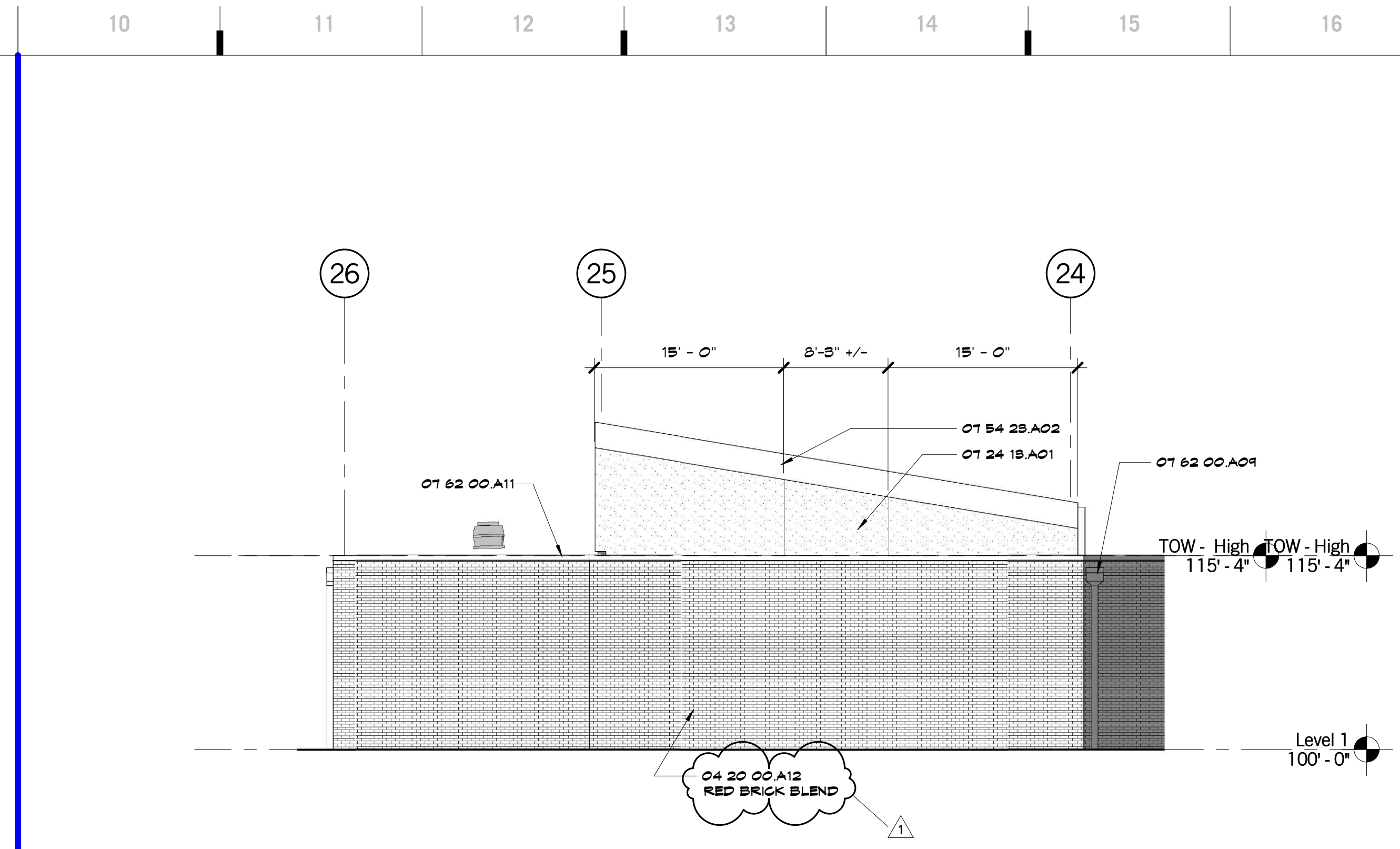
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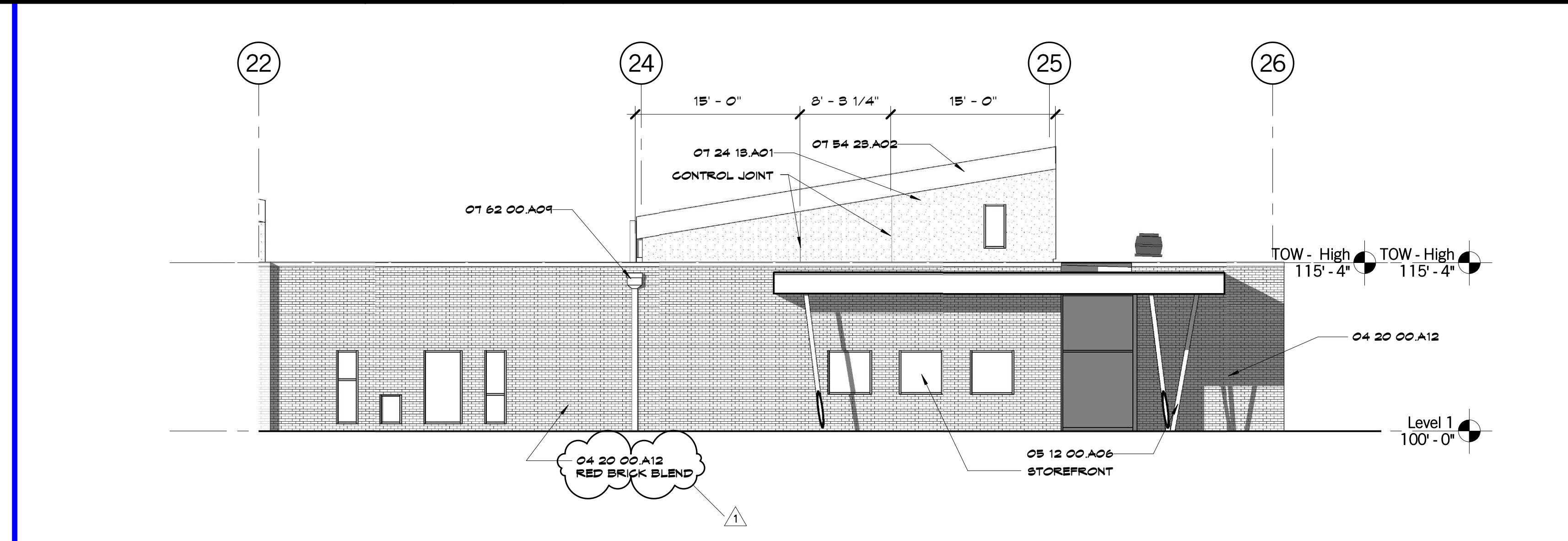
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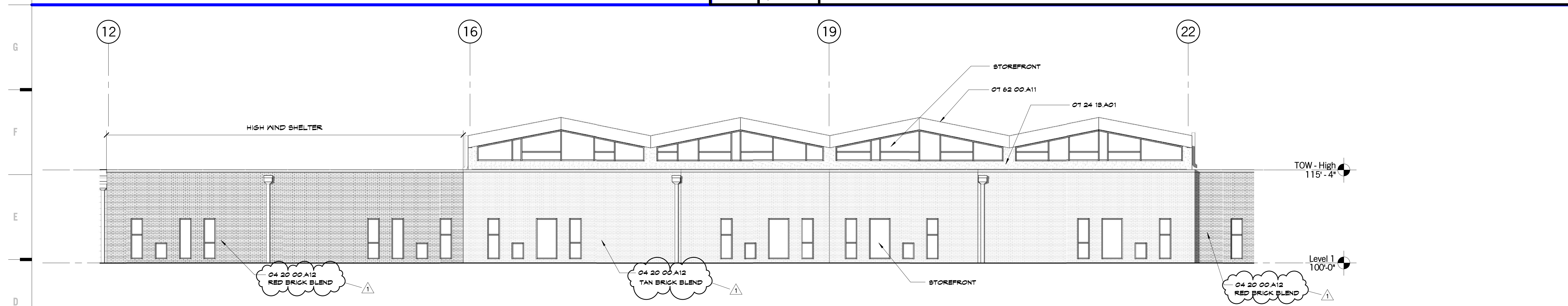
M1 Scale 1/8" = 1'-0" Enlarged Exterior Elevation - Multi-Purpose Entry



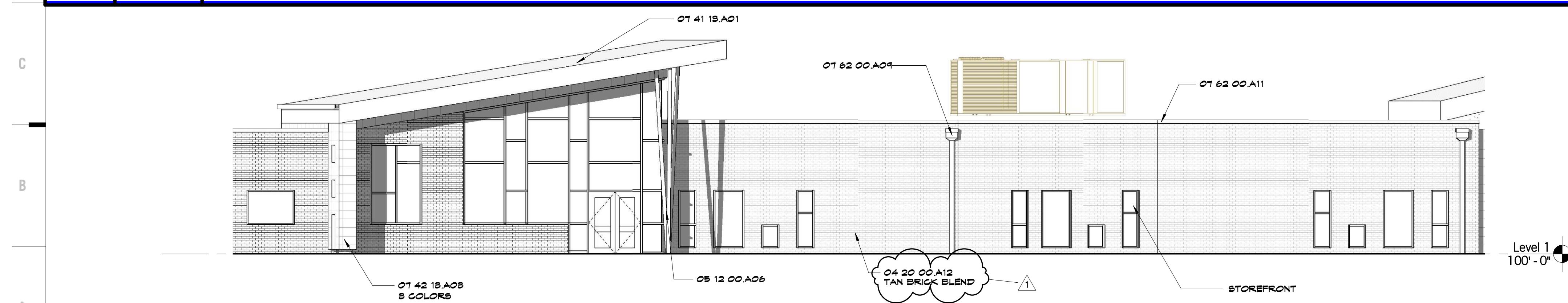
M10 Scale 1/8" = 1'-0" Enlarged Exterior Elevation - Multi-Purpose North



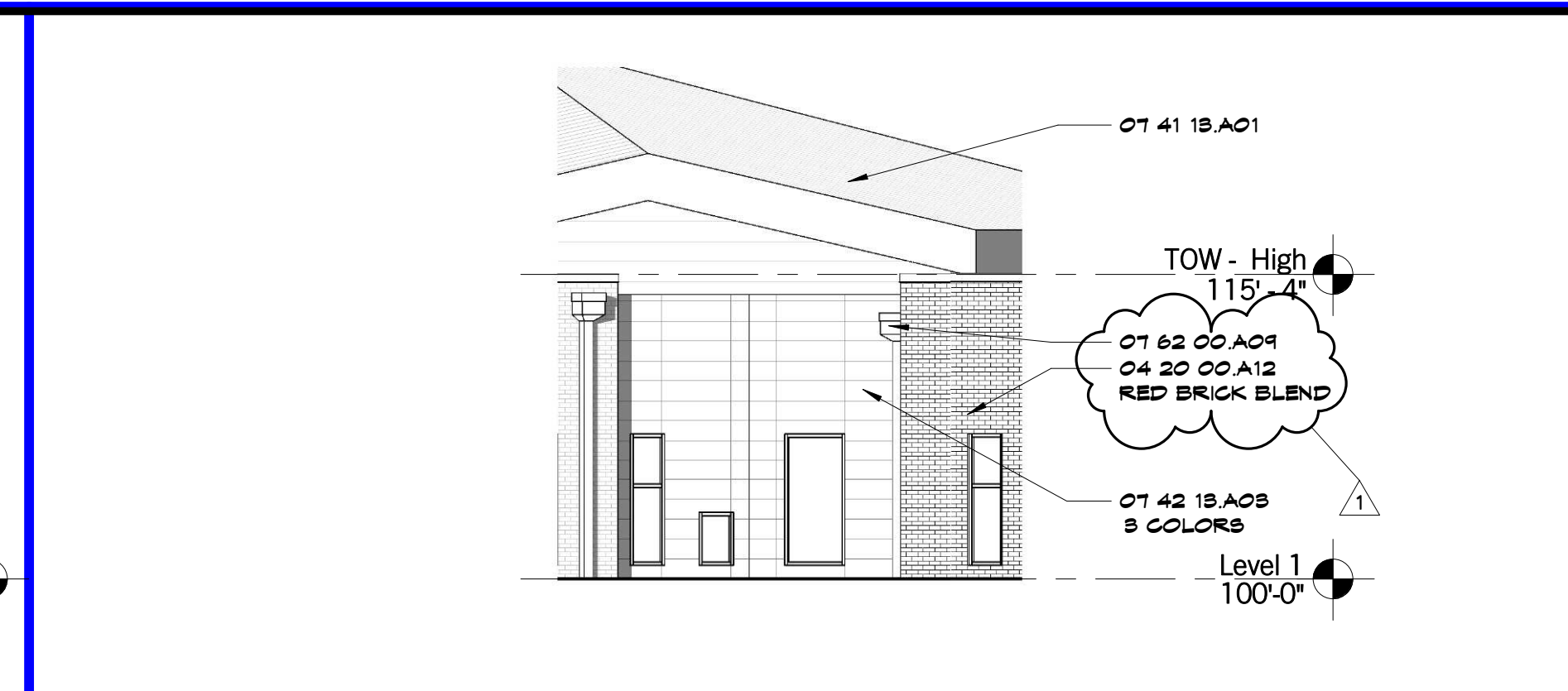
H8 Scale 1/8" = 1'-0" Enlarged Exterior Elevation - Multi-Purpose - South



D1 Scale 1/8" = 1'-0" Enlarged Exterior Elevation South - Classrooms



A1 Scale 1/8" = 1'-0" Enlarged Exterior Elevation South - Entry/ Administration



A12 Scale 1/8" = 1'-0" Enlarged Exterior Elevation South - OP/PT

SHEET KEYNOTE LEGEND

04 20 00 A12	FACE BRICK
05 12 00 A06	GOLD-FORMED HBS
01 24 18 A01	EXTERIOR INSULATION AND FINISH SYSTEM
01 41 18 A01	METAL ROOF PANELS
01 42 18 A03	CONCEALED FASTENER METAL WALL PANELS
01 64 28 A02	MECHANICALLY-FASTENED TPO MEMBRANE ROOFING SYSTEM
01 62 00 A01	CONDUCTOR HEADS
01 62 00 A11	GRAVEL STOP

EXTERIOR ELEVATION LEGEND

[Pattern]	STANDING BEAM METAL ROOF
[Pattern]	EXTERIOR METAL PANEL - SIM TO CENTRIA CS200 - 3 COLORS
[Pattern]	RED BRICK BLEND - SIM TO: 85% CHERRICK BLEND / 15% OLD ROSE VELOUR - CLOUD CERAMICS
[Pattern]	TAN BRICK BLEND - SIM TO: 80% DRIFTWOOD GREY / 20% SAHARA LT. BUFF VELOUR - CLOUD CERAMICS

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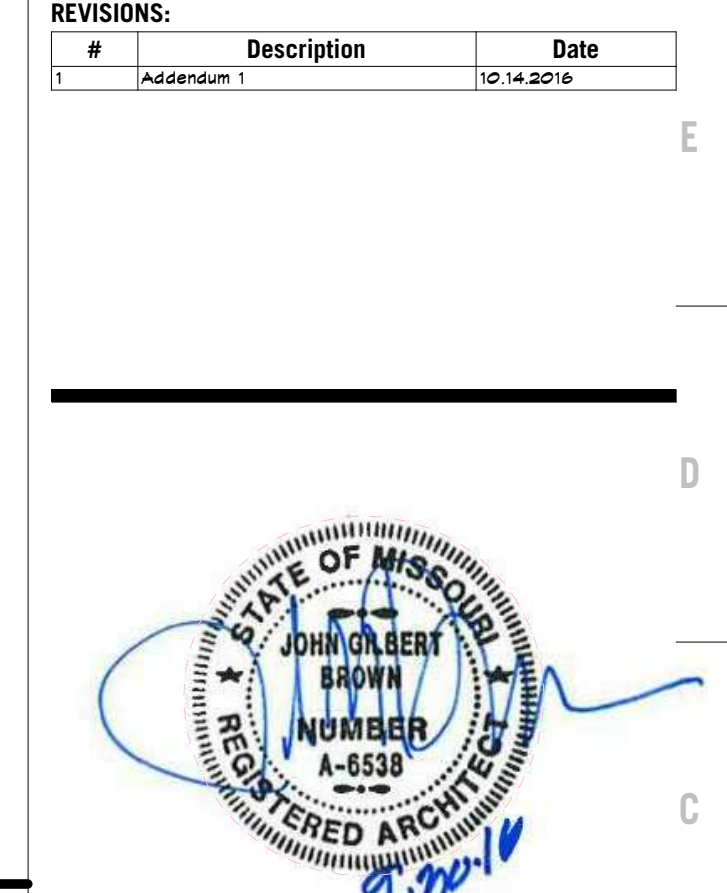
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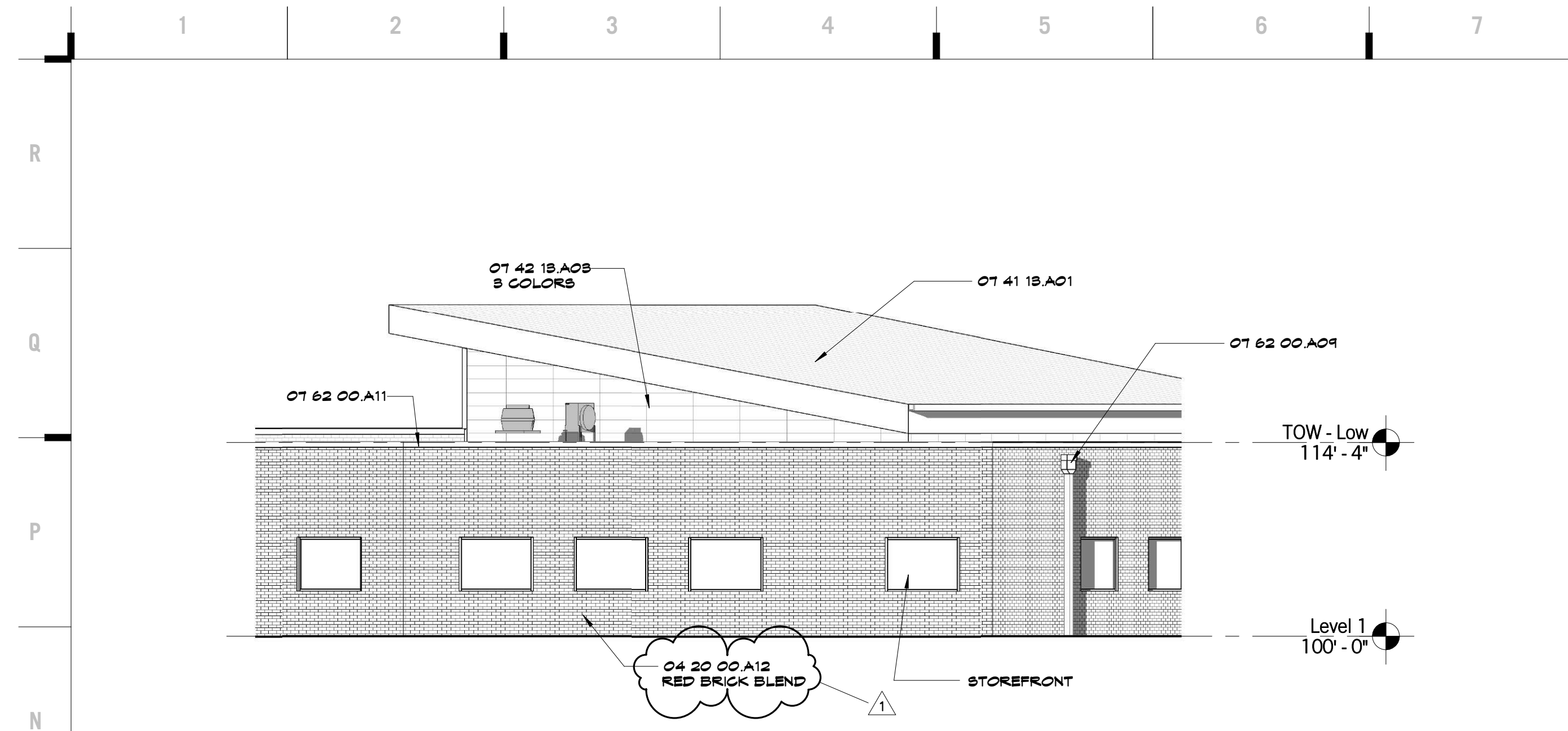
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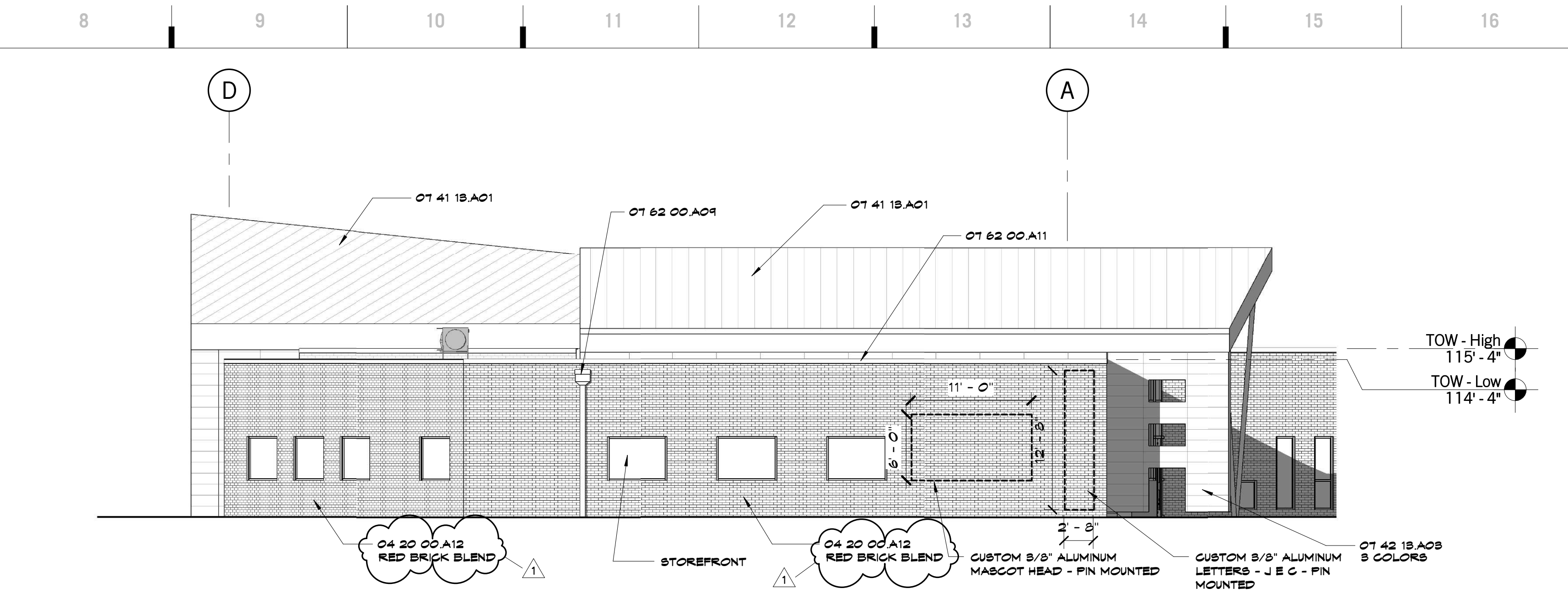


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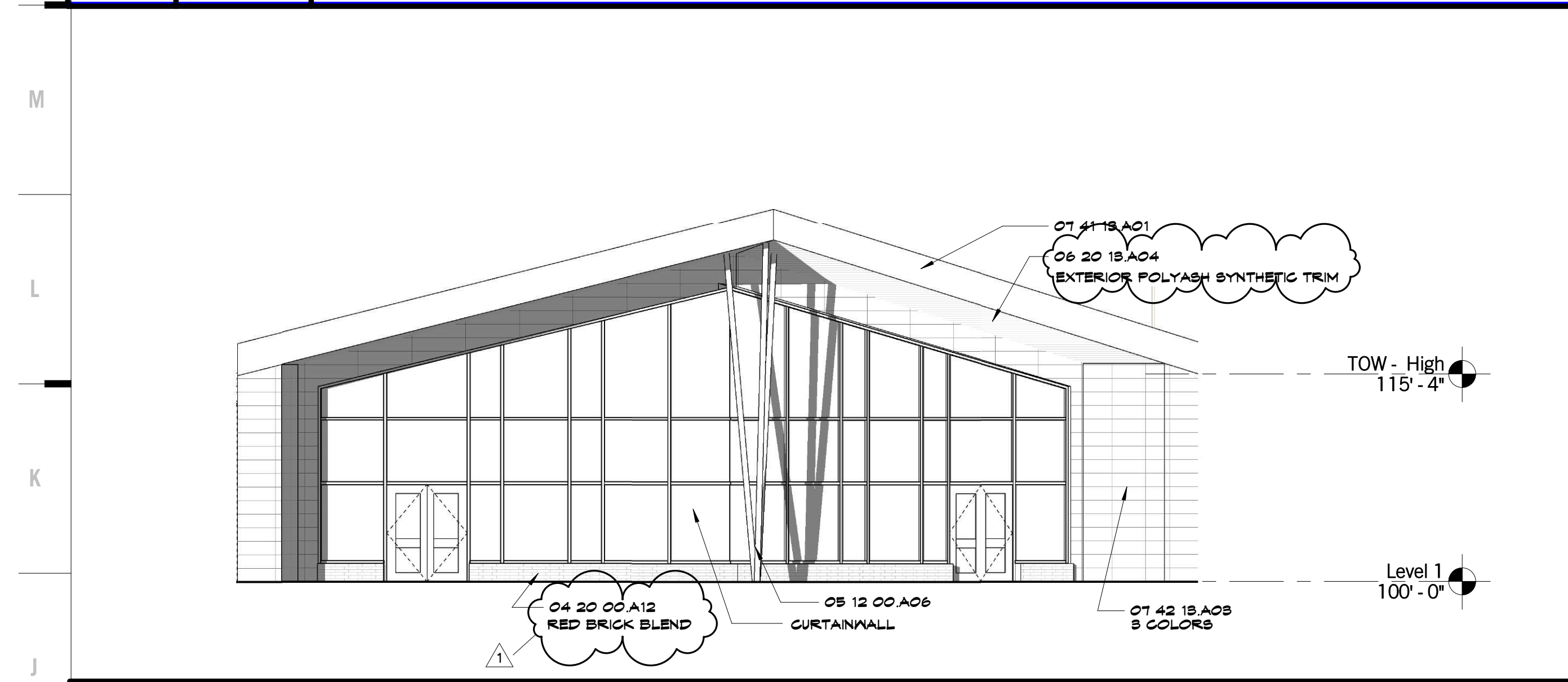
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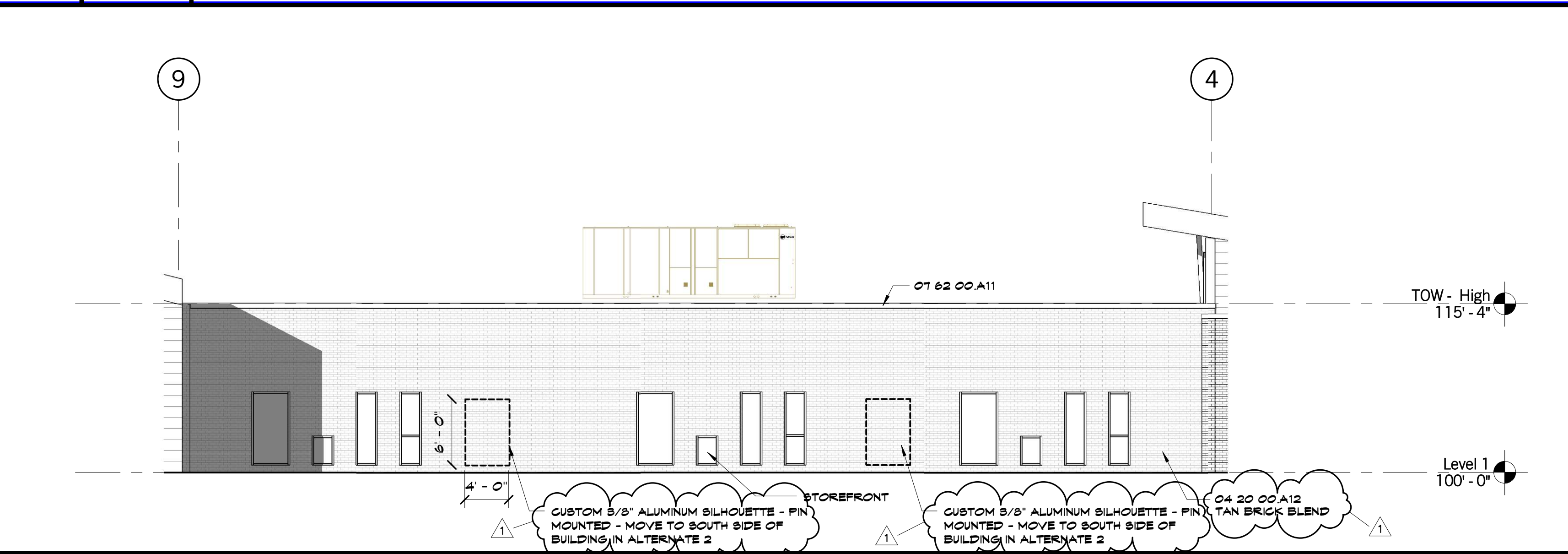
N1 Scale 1/8" = 1'-0" Enlarged Exterior Elevation - Administration West



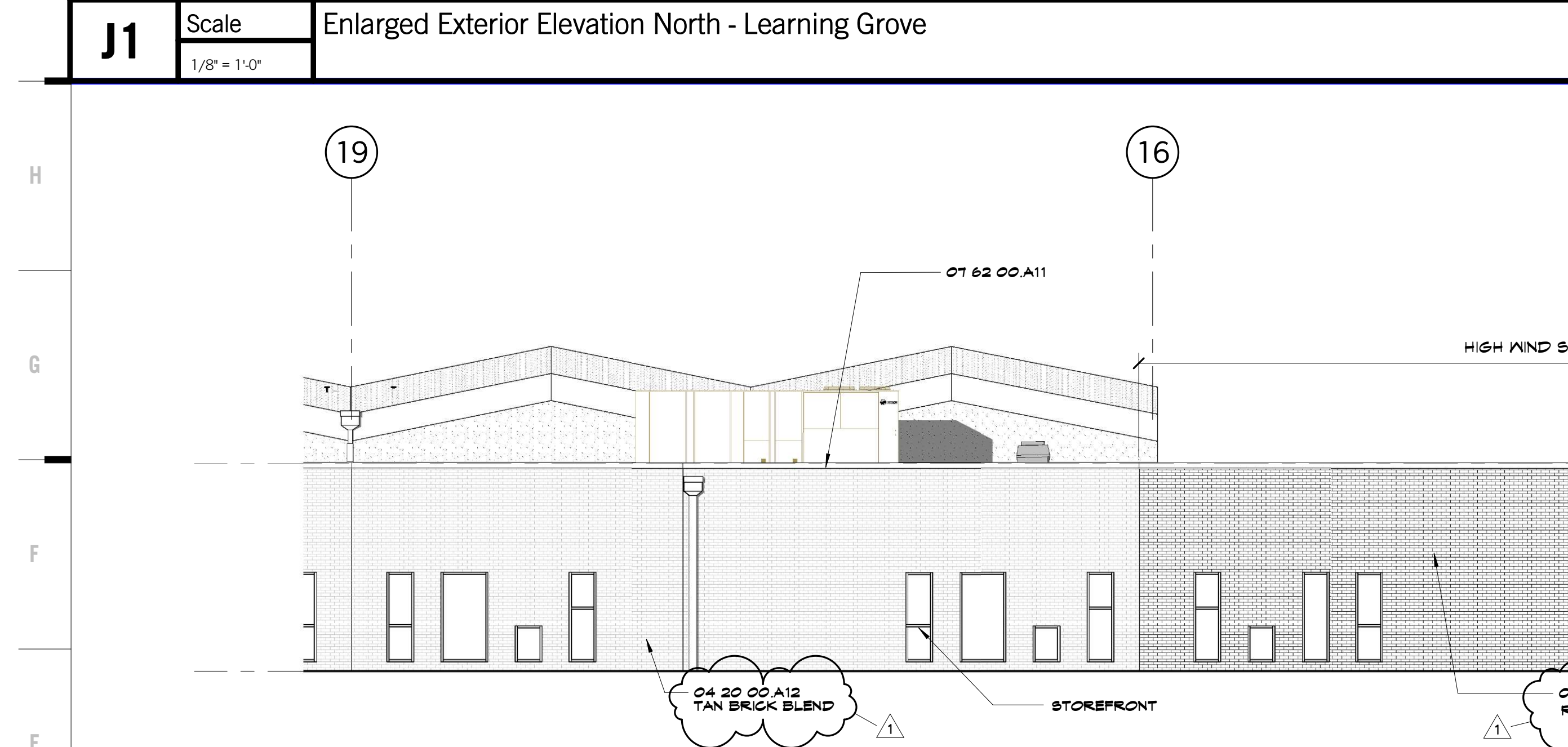
N8 Scale 1/8" = 1'-0" Enlarged Exterior Elevation - Administration - South West



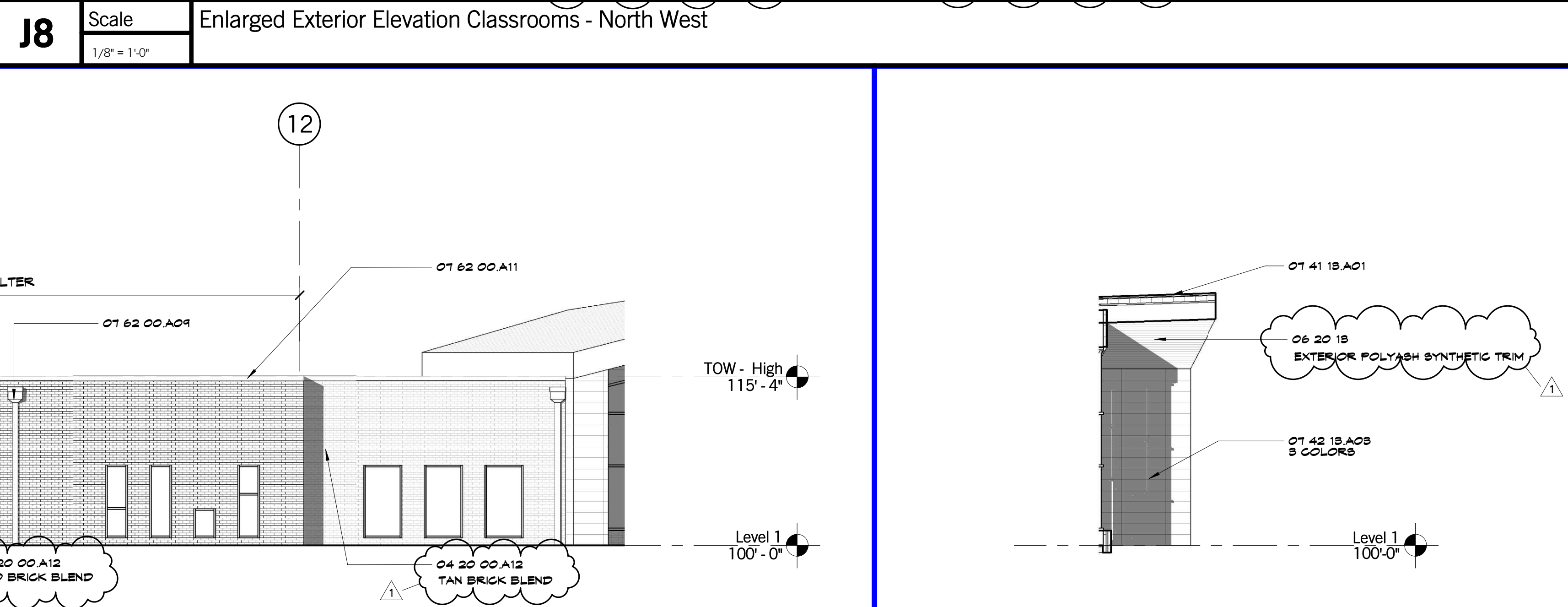
J1 Scale 1/8" = 1'-0" Enlarged Exterior Elevation North - Learning Grove



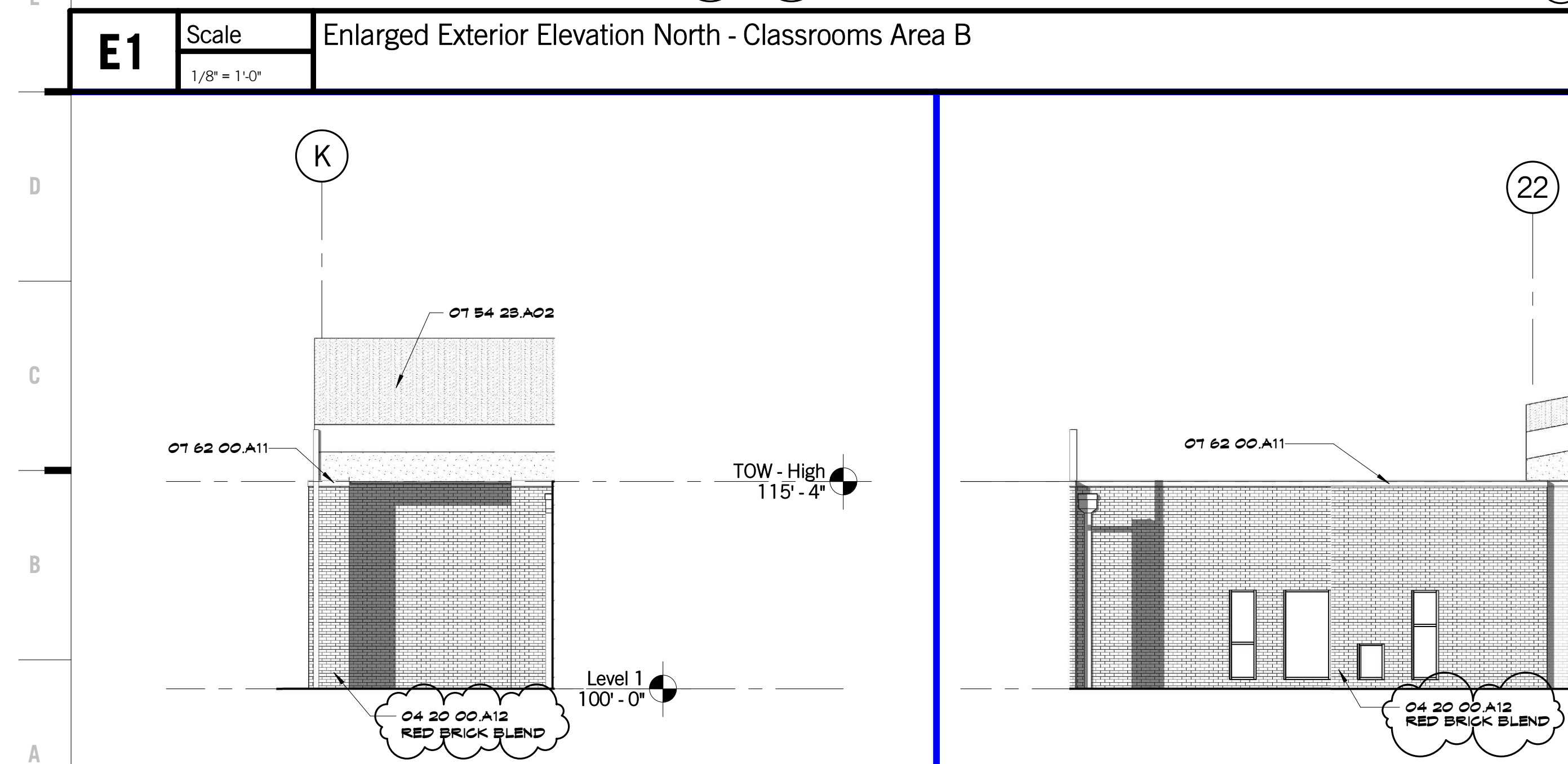
J8 Scale 1/8" = 1'-0" Enlarged Exterior Elevation Classrooms - North West



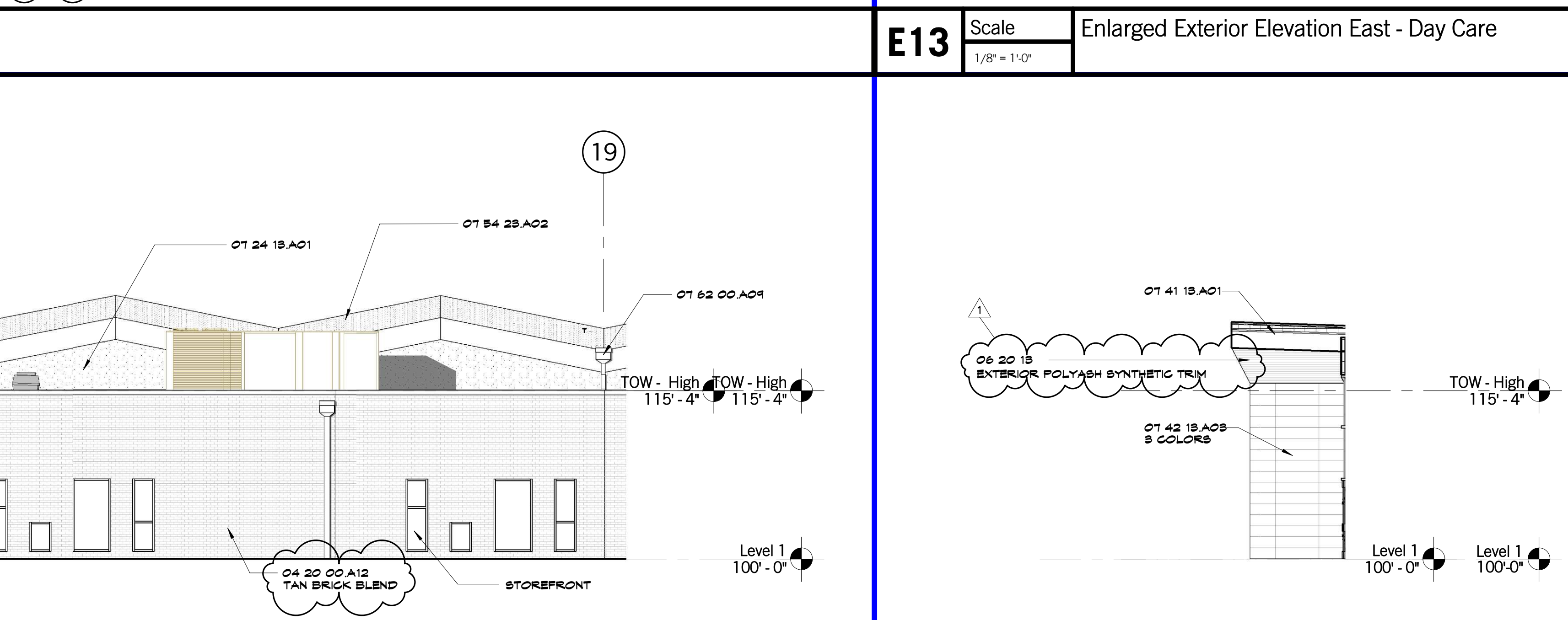
E1 Scale 1/8" = 1'-0" Enlarged Exterior Elevation North - Classrooms Area B



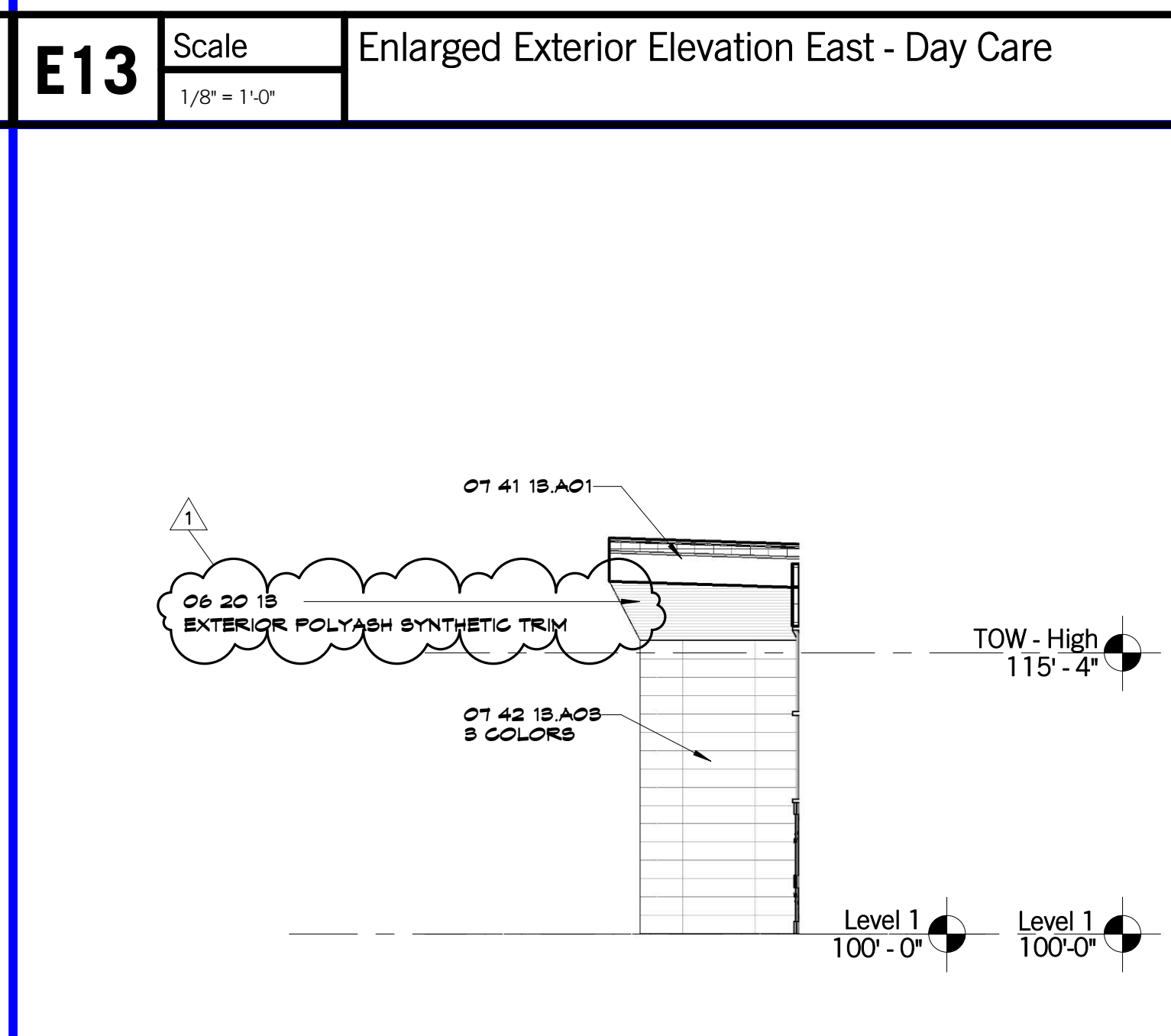
E13 Scale 1/8" = 1'-0" Enlarged Exterior Elevation East - Day Care



A1 Scale 1/8" = 1'-0" Enlarged Exterior Elevation West - Multi - Purpose



A5 Scale 1/8" = 1'-0" Enlarged Exterior Elevation North - Classrooms Area C



A13 Scale 1/8" = 1'-0" Enlarged Exterior Elevation West - Tinkering

SHEET KEYNOTE LEGEND

- 04 20 00 A12 FACE BRICK
- 05 12 00 A06 GOLD-FORMED HSB
- 06 20 18 EXTERIOR FINISH CARPENTRY
- 07 24 18 A04 POLYASH SYNTHETIC TRIM
- 07 41 18 A01 EXTERIOR INSULATION AND FINISH SYSTEM
- 07 42 18 A03 METAL ROOF PANELS
- 07 62 00 A09 CONCEALED FASTENER METAL WALL PANELS
- 07 62 00 A11 MECHANICALLY-FASTENED TPO MEMBRANE ROOFING SYSTEM
- 07 62 00 A09 CONDUCTOR HEADS
- 07 62 00 A11 GRAVEL STOP

EXTERIOR ELEVATION LEGEND

- STANDING BEAM METAL ROOF
- EXTERIOR METAL PANEL - SIM TO CENTRIA CS200 - 3 COLORS
- RED BRICK BLEND - SIM TO: 80% CHERRICK BLEND / 80% OLD ROSE VELLOW - CLOUD CERAMICS
- TAN BRICK BLEND - SIM TO: 80% DRIFTWOOD GREY / 80% SAHARA LT. BUFF VELLOW - CLOUD CERAMICS

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SHEET KEYNOTE LEGEND

04 20 00 A01	CONCRETE MASONRY UNITS
04 20 00 A12	FACE BRICK
04 20 00 A48	CAVITY WALL INSULATION
06 16 00 A01	COLD-FORMED METAL FRAMING
06 16 00 A04	GLASS-MAT GYPSUM WALL SHEATHING
07 21 00 A04	POLYISOCYANURATE INSULATION
07 24 18 A01	EXTERIOR INSULATION AND FINISH SYSTEM
07 21 24 A01	VAPOR RETARDING AIR BARRIER COATING
07 42 18 A09	CONCEALED FASTENER METAL WALL PANELS
07 42 18 A06	METAL SUBFRAMING
08 21 16 A01	NON-STRUCTURAL FRAMING
08 21 17 A09	SOUND ATTENUATION BLANKETS
08 24 00 A02	GYPSUM BOARD - TYPE X

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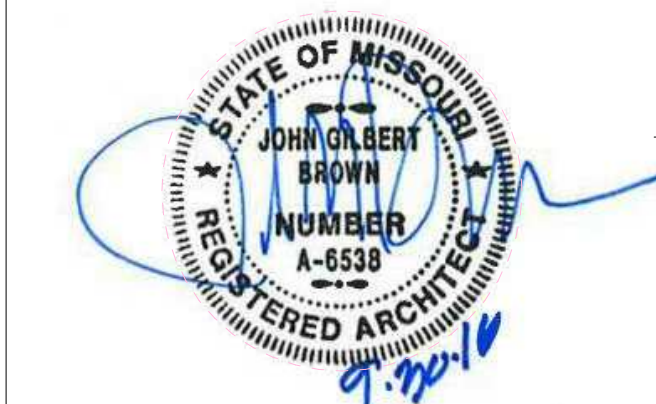
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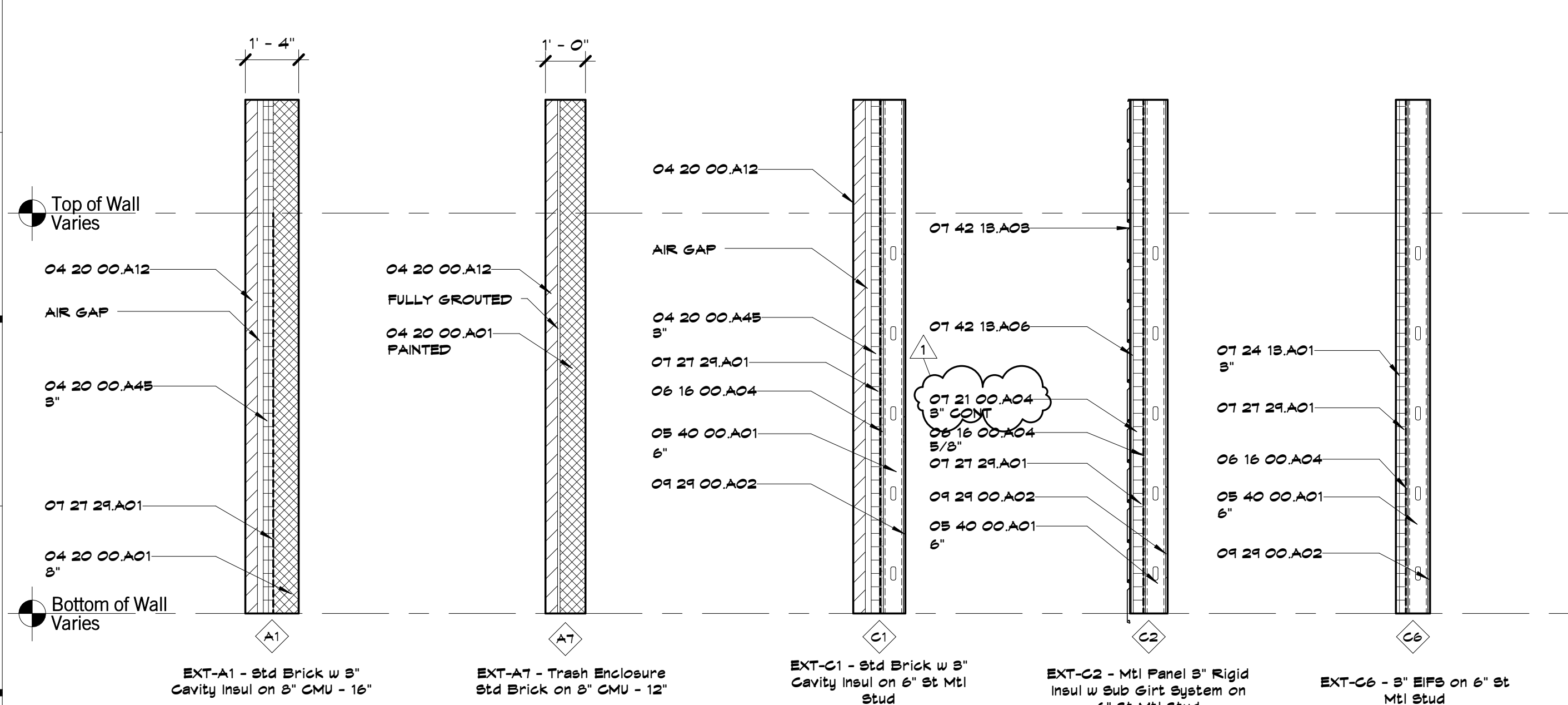
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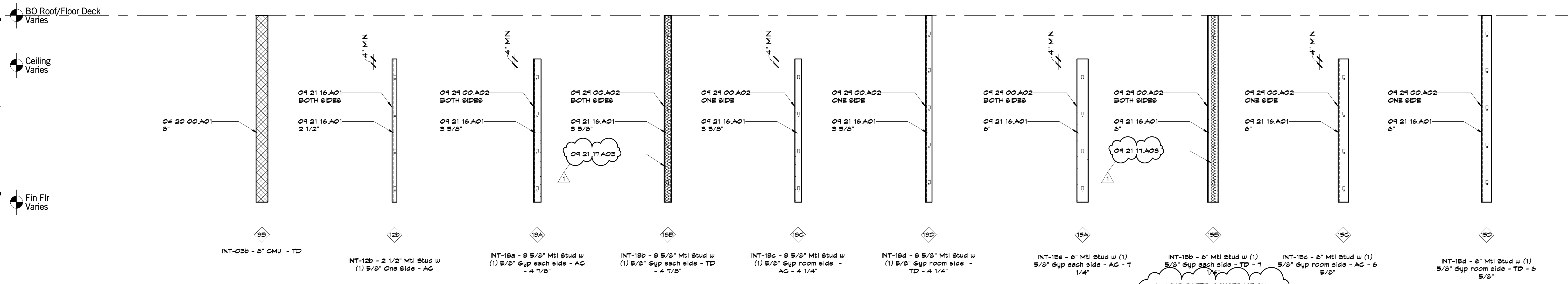
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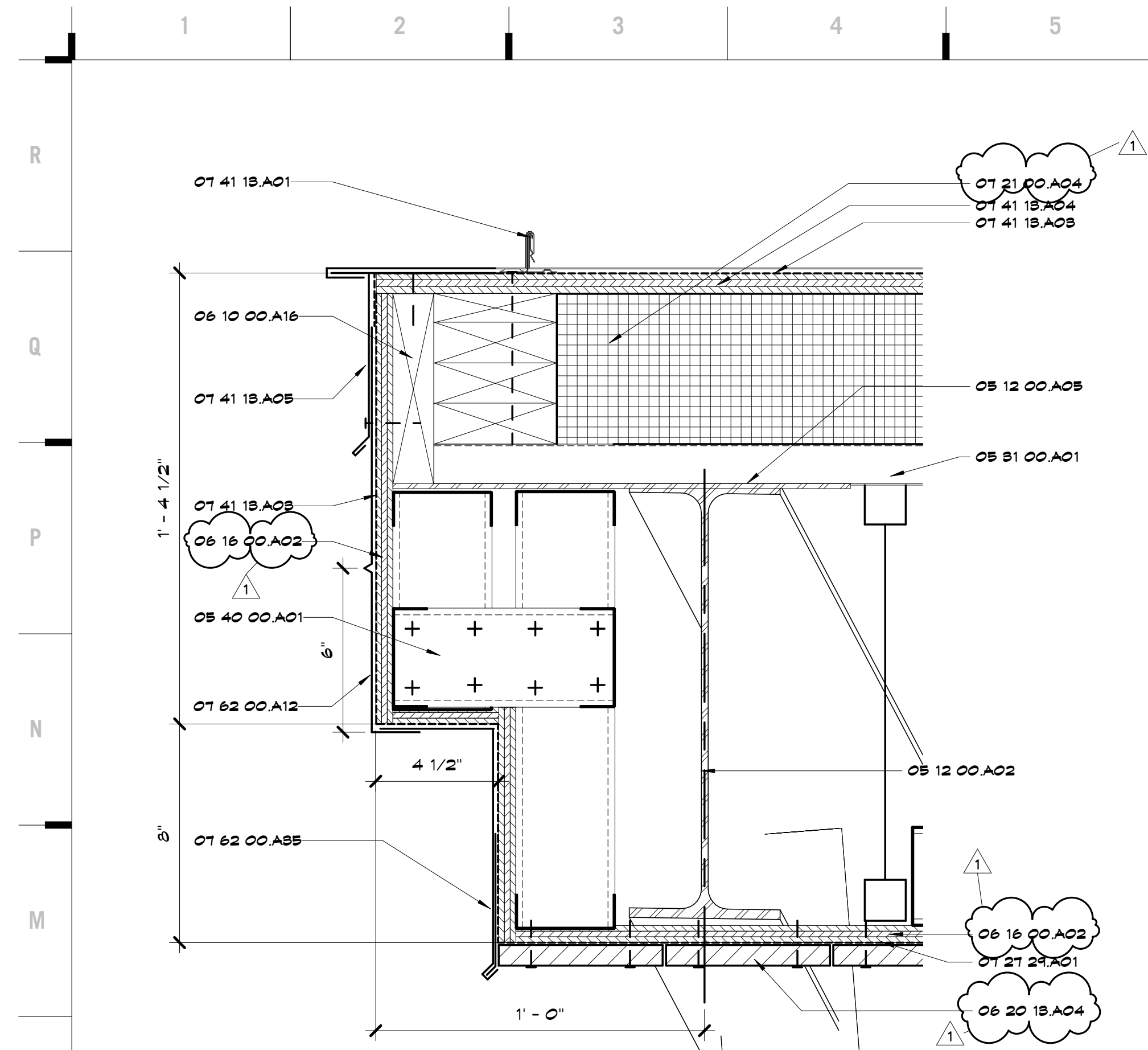


F1 Scale 3/8" = 1'-0" Exterior Wall Types

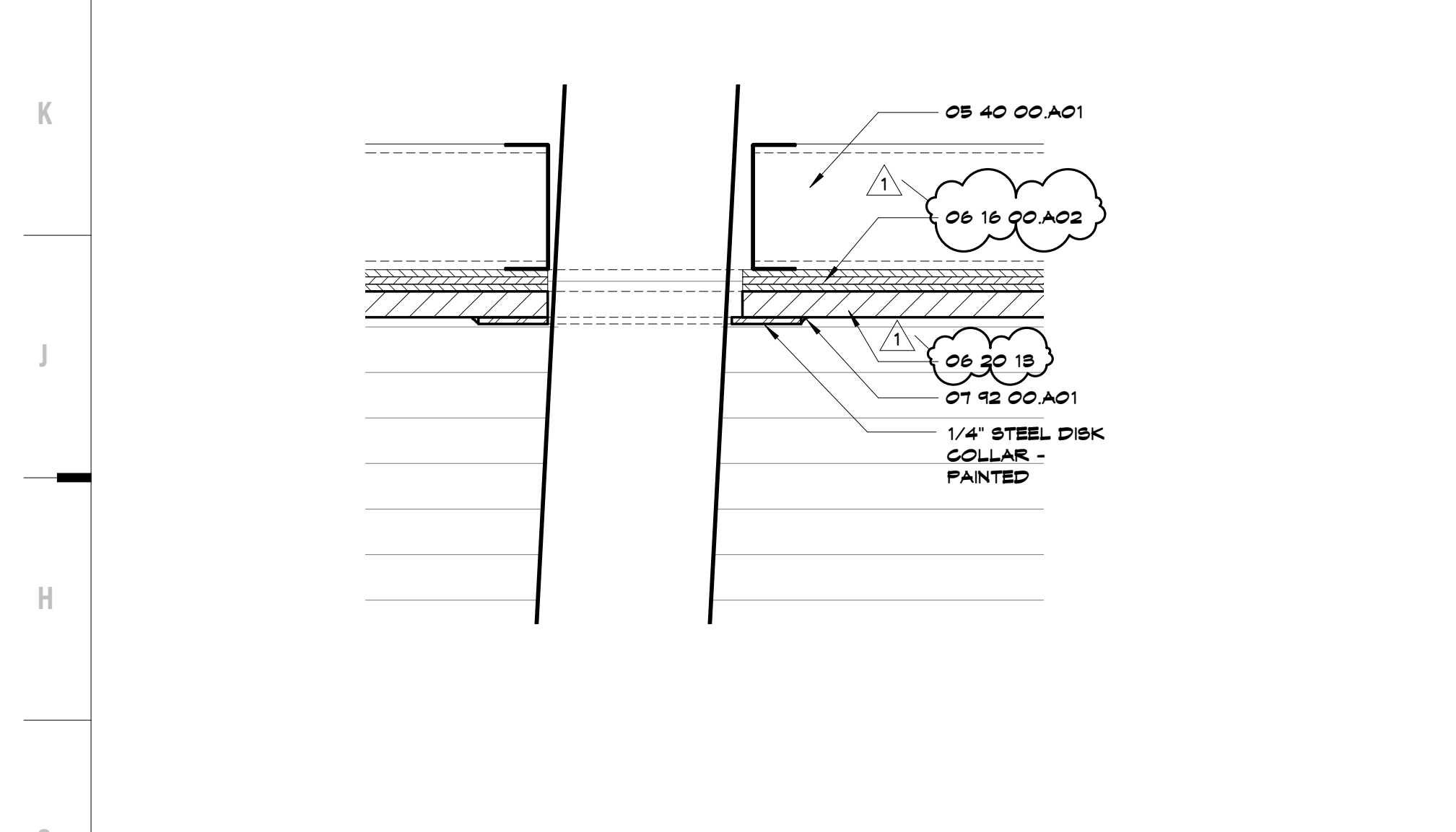


A1 Scale 3/8" = 1'-0" Interior Wall Types

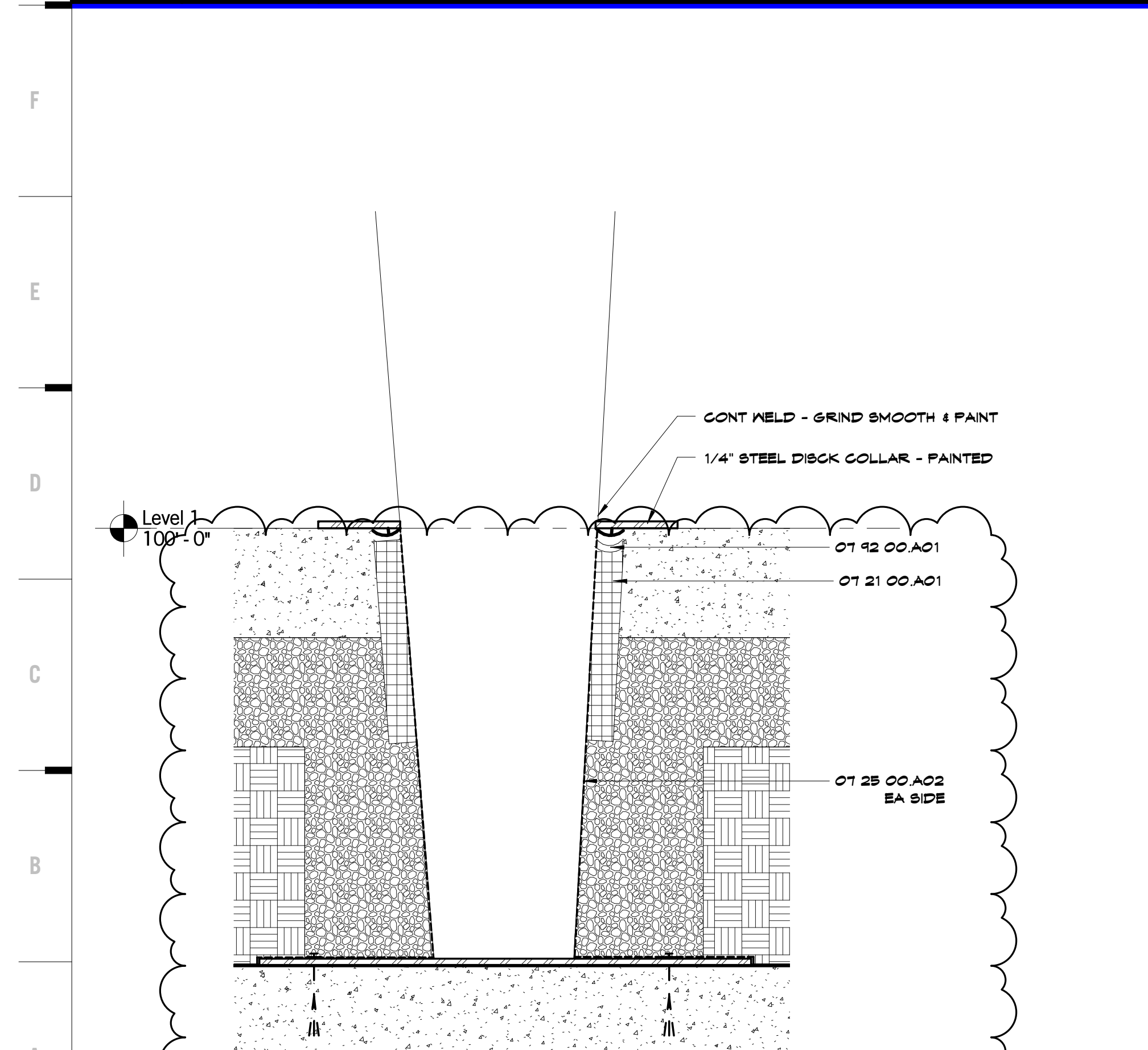
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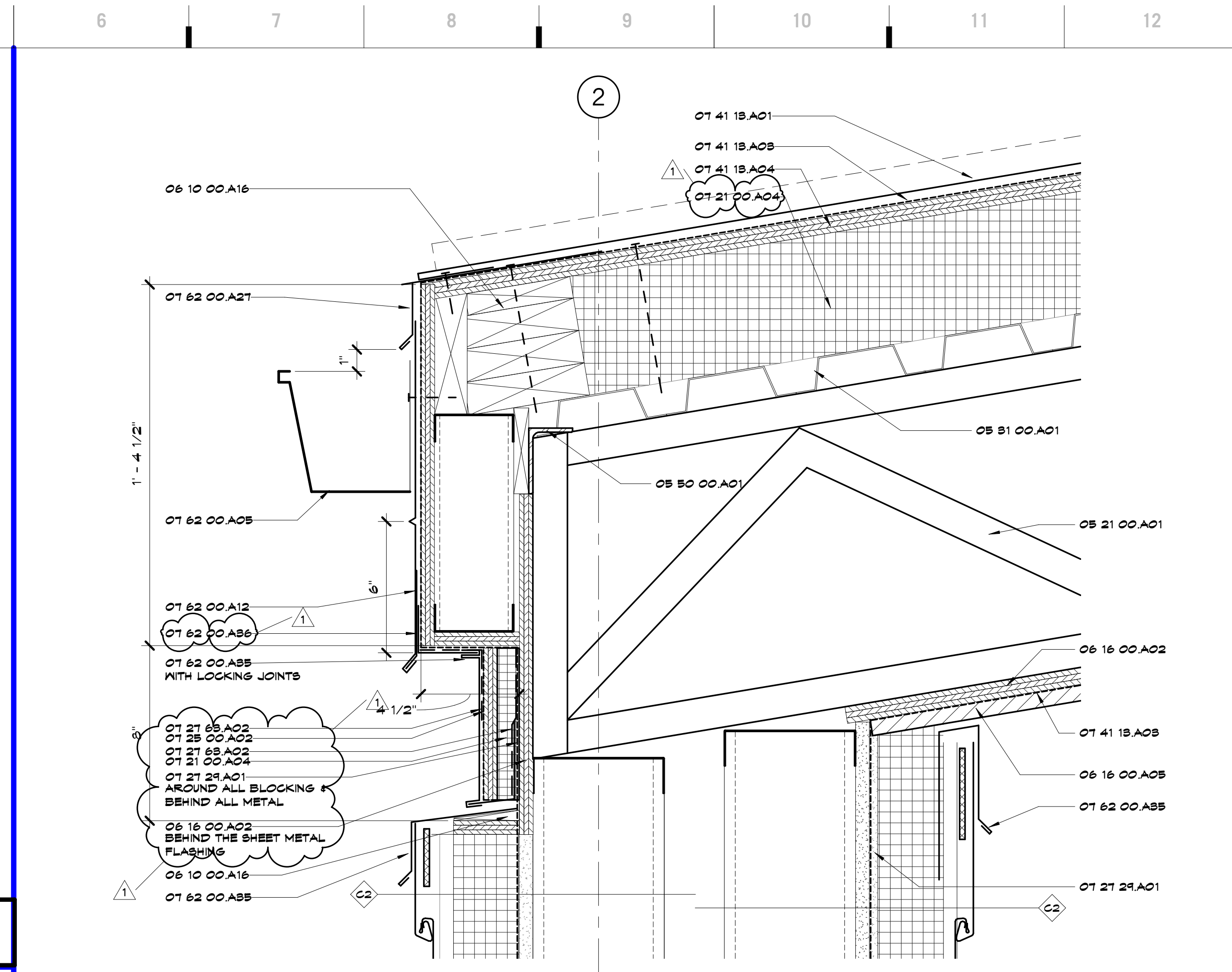
L1 Scale 3" = 1'-0" Wall Section 01 - Callout 3



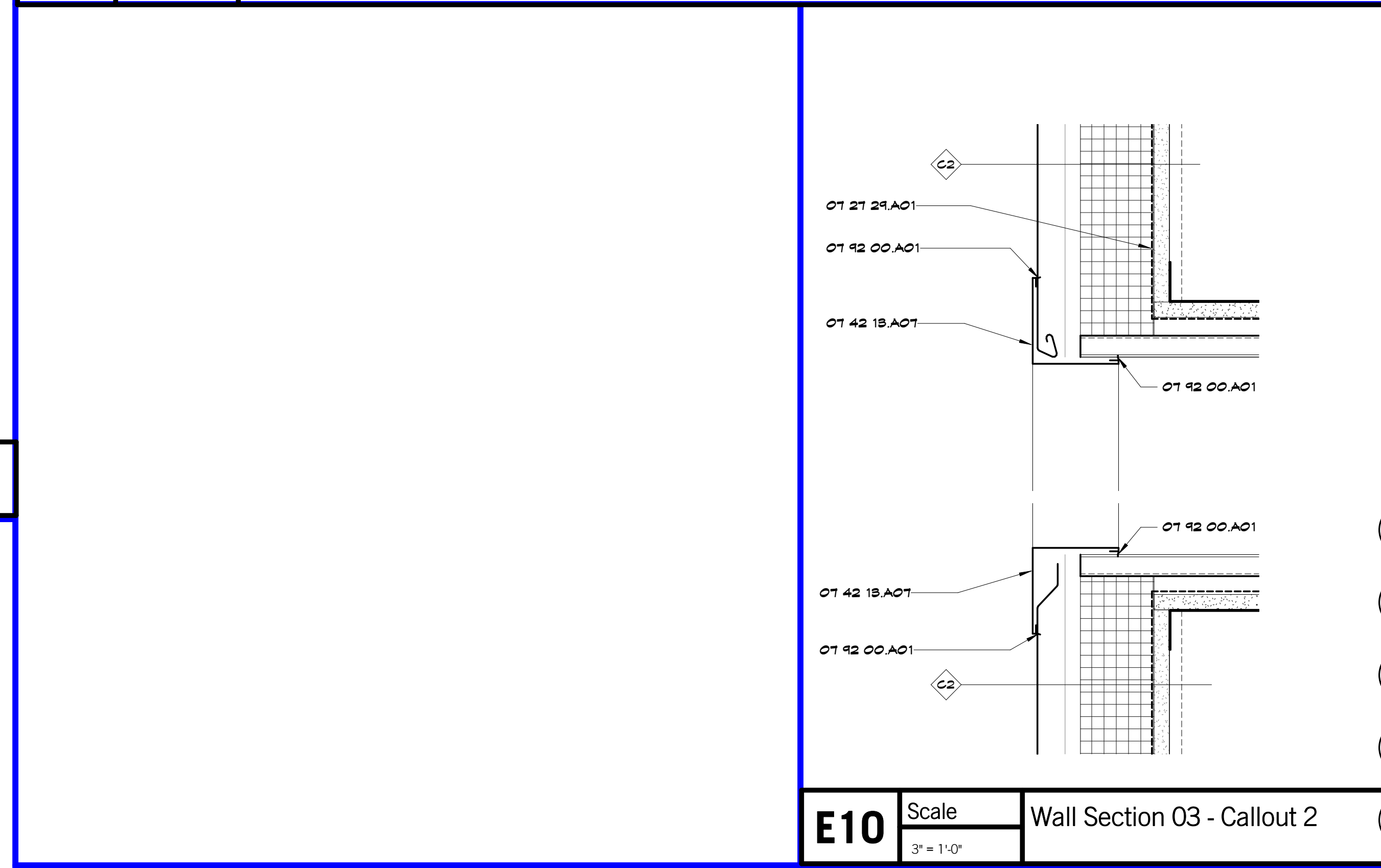
G1 Scale 3" = 1'-0" Wall Section 01 - Callout 2



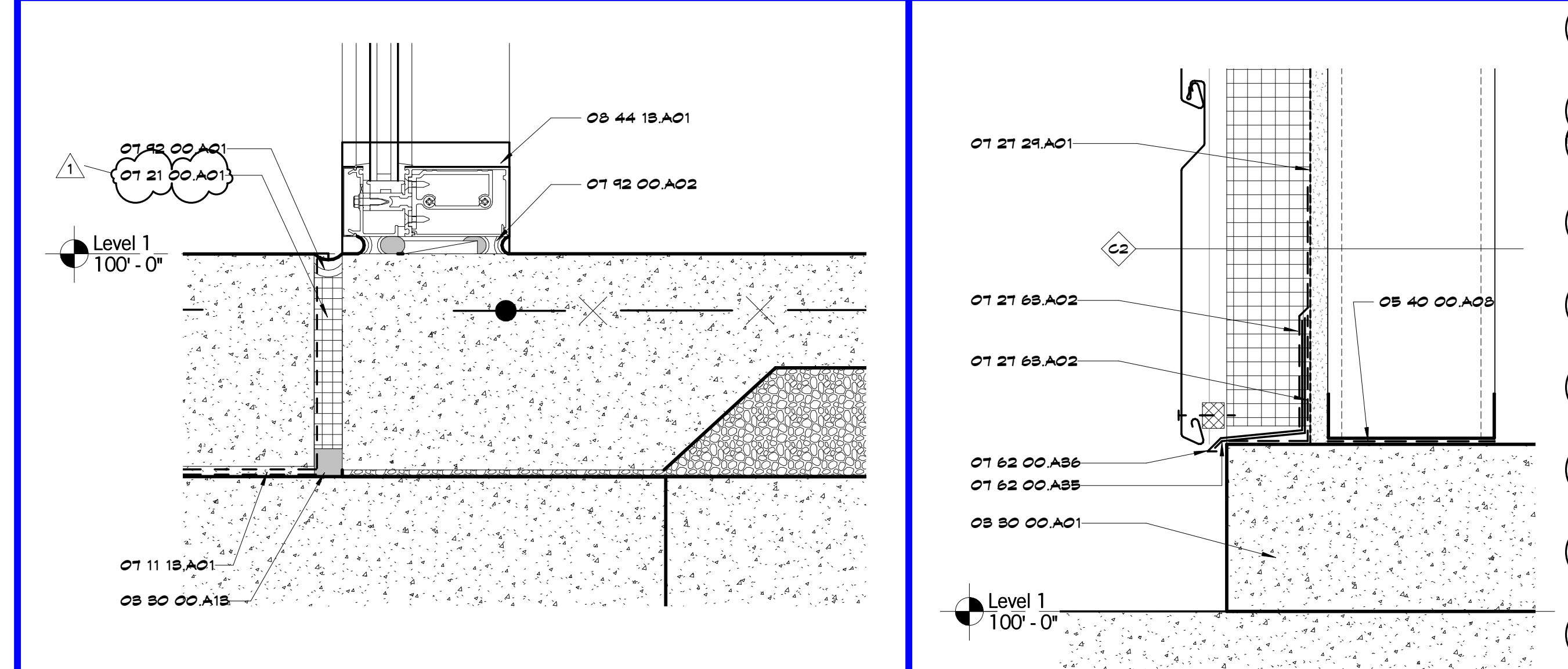
A1 Scale 3" = 1'-0" Wall Section 01 - Callout 1 - TYP Exterior Column Base



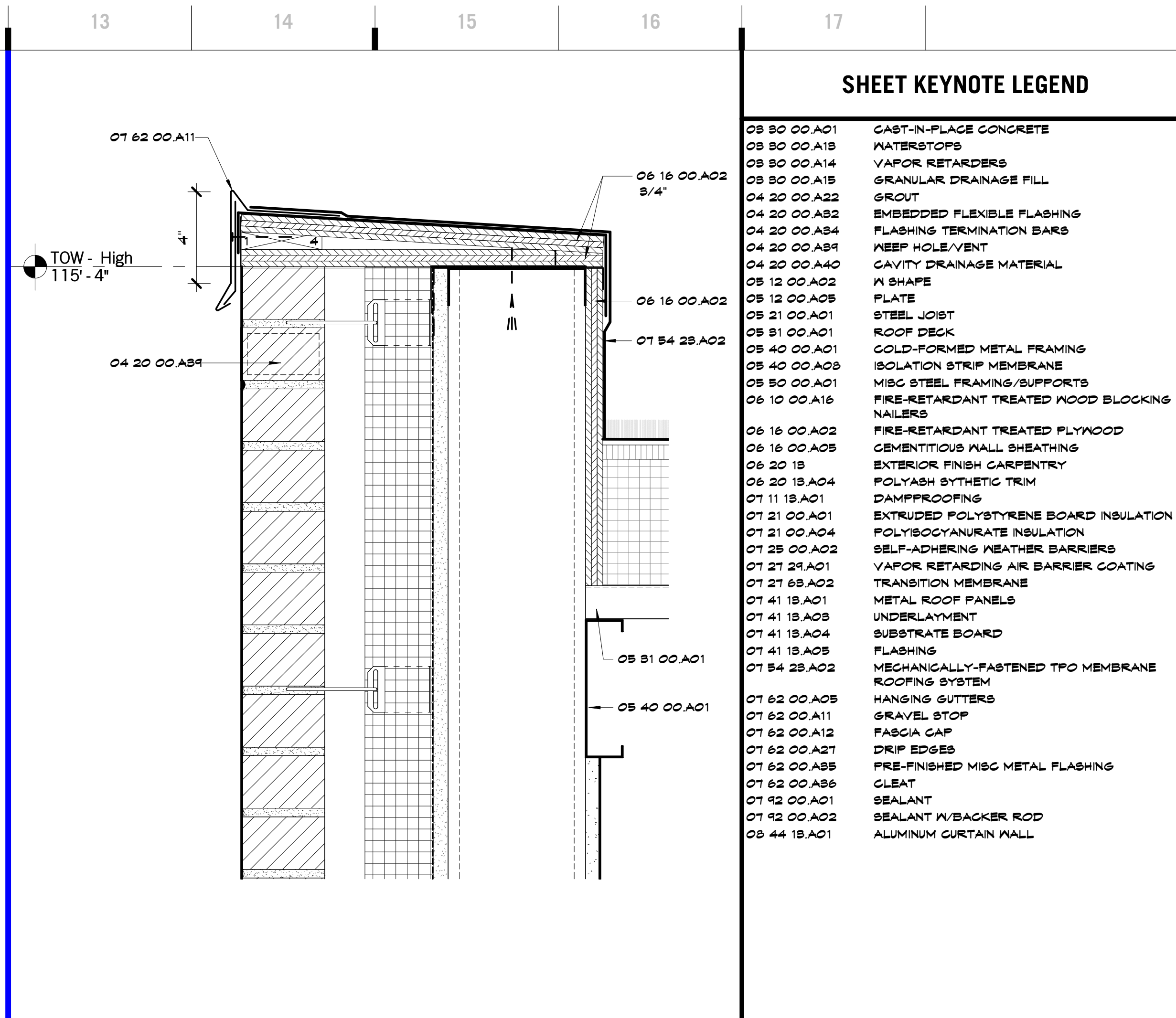
K6 Scale 3" = 1'-0" Wall Section 03 - Callout 1



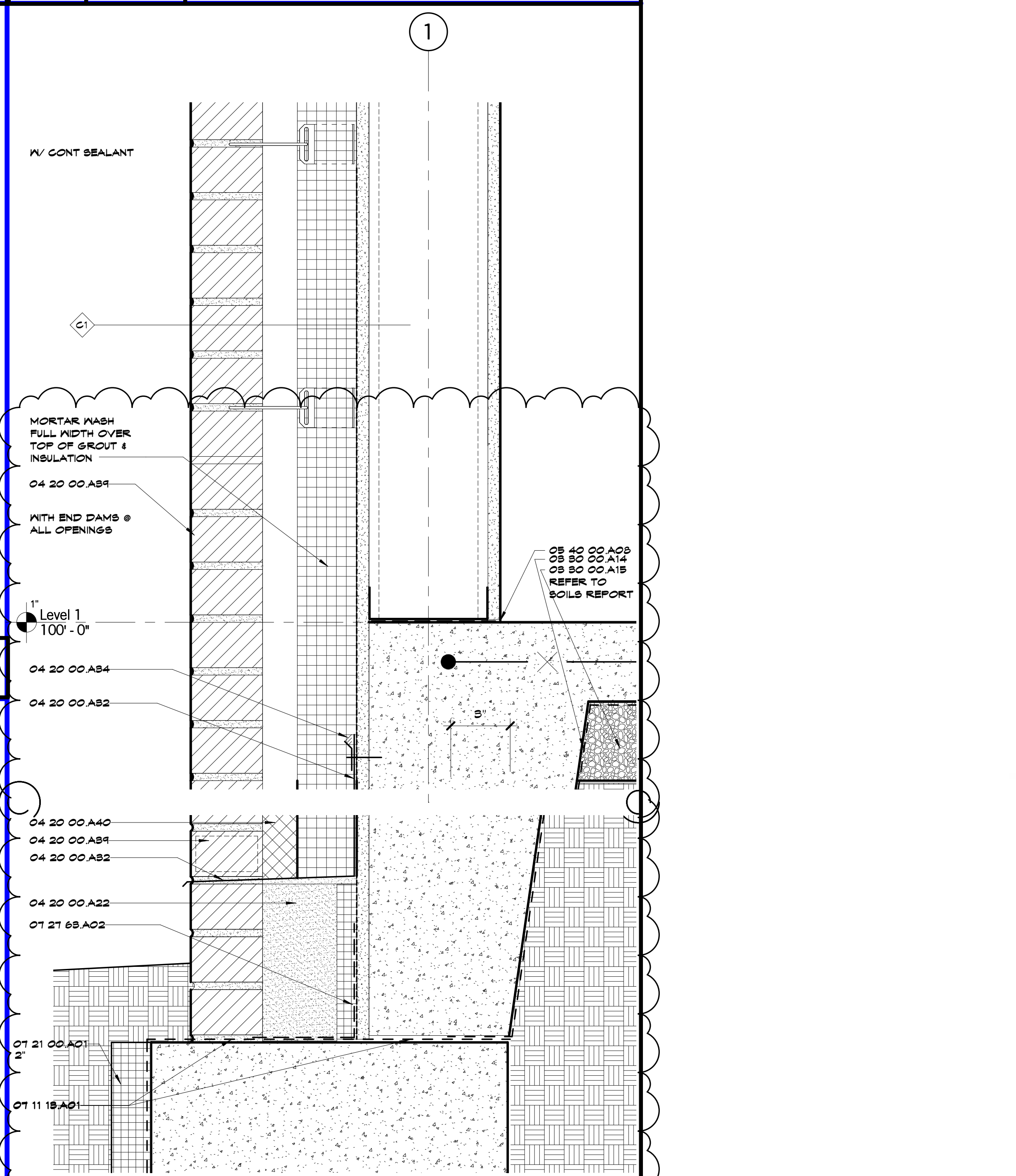
E10 Scale 3" = 1'-0" Wall Section 03 - Callout 2



A6 Scale 3" = 1'-0" Wall Section 02 - Callout 1



K13 Scale 3" = 1'-0" Typical Parapet @ Brick & Mtl Stud



A13 Scale 3" = 1'-0" Wall Section 04 - Callout 4

SHEET KEYNOTE LEGEND

- 08 50 00 A01 CAST-IN-PLACE CONCRETE
- 08 50 00 A18 WATERSTOP
- 08 50 00 A14 VAPOR RETARDERS
- 08 50 00 A15 GRANULAR DRAINAGE FILL
- 04 20 00 A22 GROUT
- 04 20 00 A32 EMBEDDED FLEXIBLE FLASHING
- 04 20 00 A34 FLASHING TERMINATION BAR
- 04 20 00 A54 KEEP HOLE/VENT
- 04 20 00 A40 GAVITY DRAINAGE MATERIAL
- 08 12 00 A02 I/P SHAPE
- 08 12 00 A05 FLATE
- 08 21 00 A01 STEEL JOIST
- 08 10 00 A01 ROOF DECK
- 08 40 00 A01 GOLD-FORMED METAL FRAMING
- 08 40 00 A08 ISOLATION STRIP MEMBRANE
- 08 50 00 A01 MISC STEEL FRAMING/SUPPORTS
- 08 10 00 A16 FIRE-RETARDANT TREATED WOOD BLOCKING & NAILERS
- 06 16 00 A02 FIRE-RETARDANT TREATED PLYWOOD
- 06 16 00 A08 CEMENTITIOUS WALL SHEATHING
- 06 20 18 EXTERIOR FINISH CARPENTRY
- 06 20 18A POLYASH SYNTHETIC TRIM
- 07 11 18 A01 DAMPROOFING
- 07 21 00 A01 EXTRUDED POLYSTYRENE BOARD INSULATION
- 07 21 00 A04 POLYISOCYANURATE INSULATION
- 07 28 00 A02 SELF-ADHERING WEATHER BARRIERS
- 07 21 24 A01 VAPOR RETARDING AIR BARRIER COATINGS
- 07 21 68 A02 TRANSITION MEMBRANE
- 07 41 18 A01 METAL ROOF PANELS
- 07 41 18 A08 UNDERLAYMENT
- 07 41 18 A04 SUBSTRATE BOARD
- 07 41 18 A05 FLASHING
- 07 54 28 A02 MECHANICALLY-FASTENED TPO MEMBRANE
- 07 54 28 A02 ROOFING SYSTEM
- 07 62 00 A08 HANGING SYSTEMS
- 07 62 00 A11 GRAVEL STOP
- 07 62 00 A12 FASCIA CAP
- 07 62 00 A21 Drip Edges
- 07 62 00 A85 PRE-FINISHED MISC METAL FLASHING
- 07 62 00 A86 GLEAT
- 07 62 00 A01 SEALANT
- 07 62 00 A02 SEALANT W/BACKER ROD
- 08 44 18 A01 ALUMINUM CURTAIN WALL

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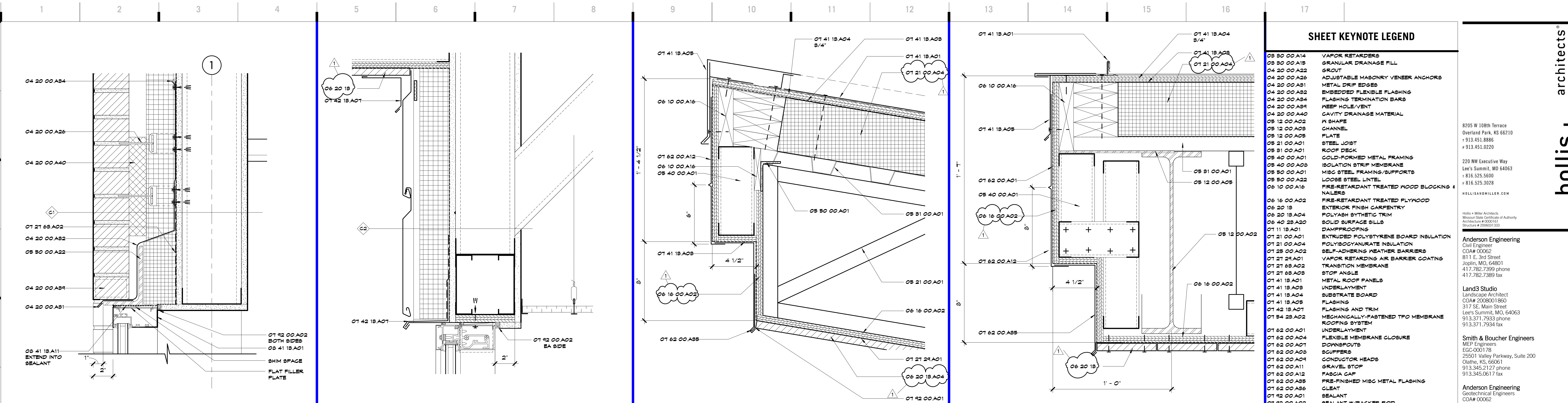
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SHEET KEYNOTE LEGEND

- OS 30 00 A18 VAPOR RETARDERS
- OS 30 00 A18 GRANULAR DRAINAGE FILL
- OS 40 00 A22 GROUT
- OS 40 00 A26 ADJUSTABLE MASONRY VENER ANCHORS
- OS 40 00 A31 METAL DRIP EDGES
- OS 40 00 A32 EMBEDDED FLEXIBLE FLASHING
- OS 40 00 A34 FLASHING TERMINATION BARS
- OS 40 00 A39 KEEP HOLE/VENT
- OS 40 00 A40 GAVITY DRAINAGE MATERIAL
- OS 40 00 A42 IN SHAPE
- OS 40 00 A43 CHANNEL
- OS 40 00 A44 FLATE
- OS 40 00 A45 STEEL JOIST
- OS 40 00 A46 ROOF DECK
- OS 40 00 A47 GOLD-FORMED METAL FRAMING
- OS 40 00 A48 ISOLATION STRIP MEMBRANE
- OS 40 00 A49 MISC STEEL FRAMING/SUPPORTS
- OS 40 00 A50 LOOSE STEEL LINTEL
- OS 40 00 A51 FIRE-RETARDANT TREATED WOOD BLOCKING & NAILERS
- OS 40 00 A52 FIRE-RETARDANT TREATED PLYWOOD
- OS 40 00 A53 EXTERIOR FINISH CARPENTRY
- OS 40 00 A54 POLYASH SYNTHETIC TRIM
- OS 40 00 A55 SOLID SURFACE BILLS
- OS 40 00 A56 DAMPROOFING
- OS 40 00 A57 EXTRUDED POLYSTYRENE BOARD INSULATION
- OS 40 00 A58 POLYISOCYANURATE INSULATION
- OS 40 00 A59 SELF-ADHERING WEATHER BARRIERS
- OS 40 00 A60 VAPOR RETARDING AIR BARRIER COATING
- OS 40 00 A61 TRANSITION MEMBRANE
- OS 40 00 A62 STOP ANGLE
- OS 40 00 A63 METAL ROOF PANELS
- OS 40 00 A64 UNDERLAYMENT
- OS 40 00 A65 SUBSTRATE BOARD
- OS 40 00 A66 FLASHING AND TRIM
- OS 40 00 A67 MECHANICALLY-FASTENED TPO MEMBRANE
- OS 40 00 A68 ROOFING SYSTEM
- OS 40 00 A69 UNDERLAYMENT
- OS 40 00 A70 FLEXIBLE MEMBRANE CLOSURE
- OS 40 00 A71 DOWNSPOUTS
- OS 40 00 A72 SCUPPERS
- OS 40 00 A73 CONDUCTOR HEADS
- OS 40 00 A74 GRAVEL STOP
- OS 40 00 A75 FABICA CAP
- OS 40 00 A76 PRE-FINISHED MISC METAL FLASHING
- OS 40 00 A77 GLEAT
- OS 40 00 A78 SEALANT
- OS 40 00 A79 SEALANT W/BACKER ROD
- OS 40 00 A80 STOREFRONT FRAMING (THERMAL BROKEN)
- OS 40 00 A81 ALUMINUM BUBBLIN
- OS 40 00 A82 JAMB CLOSURE MEMBRANE
- OS 40 00 A83 ALUMINUM CURTAIN WALL
- OS 40 00 A84 JAMB CLOSURE MEMBRANE
- OS 40 00 A85 OS 44 18 A05 OS 44 18 A02 5/4"

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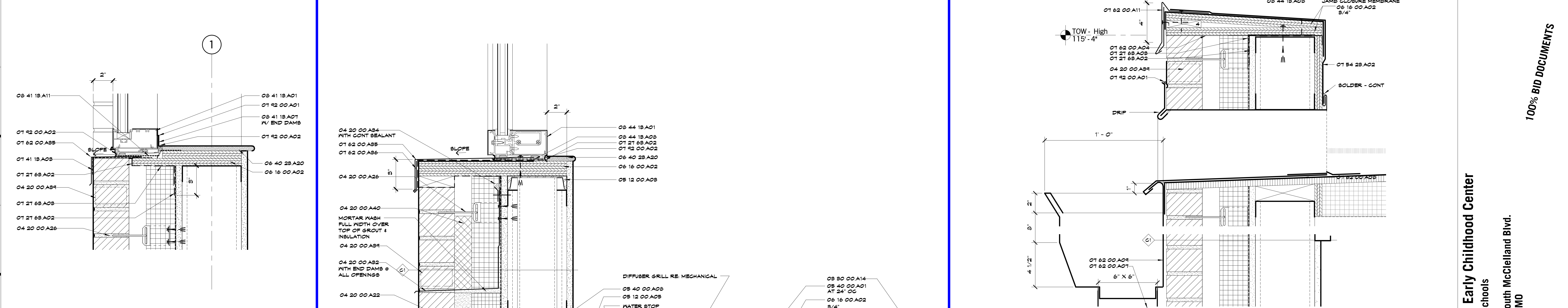
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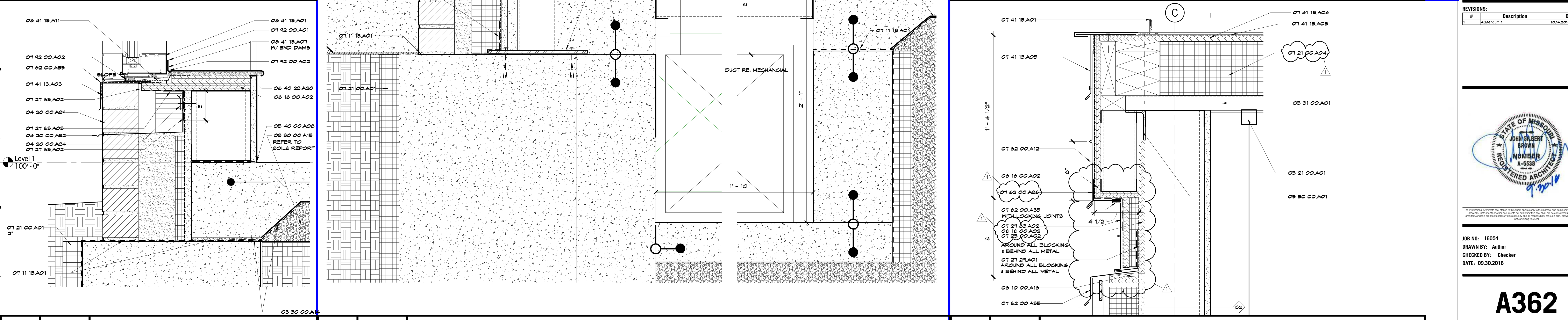
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L1 Scale 3" = 1'-0" Wall Section 04 - Callout 2 **L5** Scale 3" = 1'-0" Wall Section 11 - Callout 2 **L9** Scale 3" = 1'-0" Wall Section 07 - Callout 1 **L13** Scale 3" = 1'-0" Wall Section 11 - Callout 1



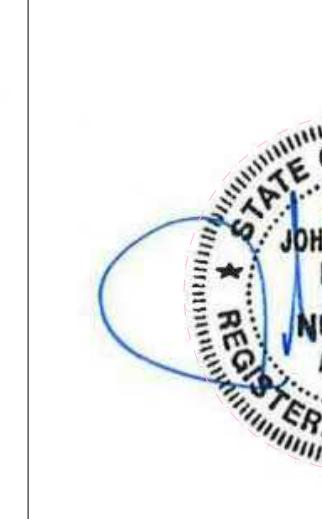
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A1 Scale 3" = 1'-0" Wall Section 08 - Callout 1 **A13** Scale 3" = 1'-0" Wall Section 06 - Callout 1

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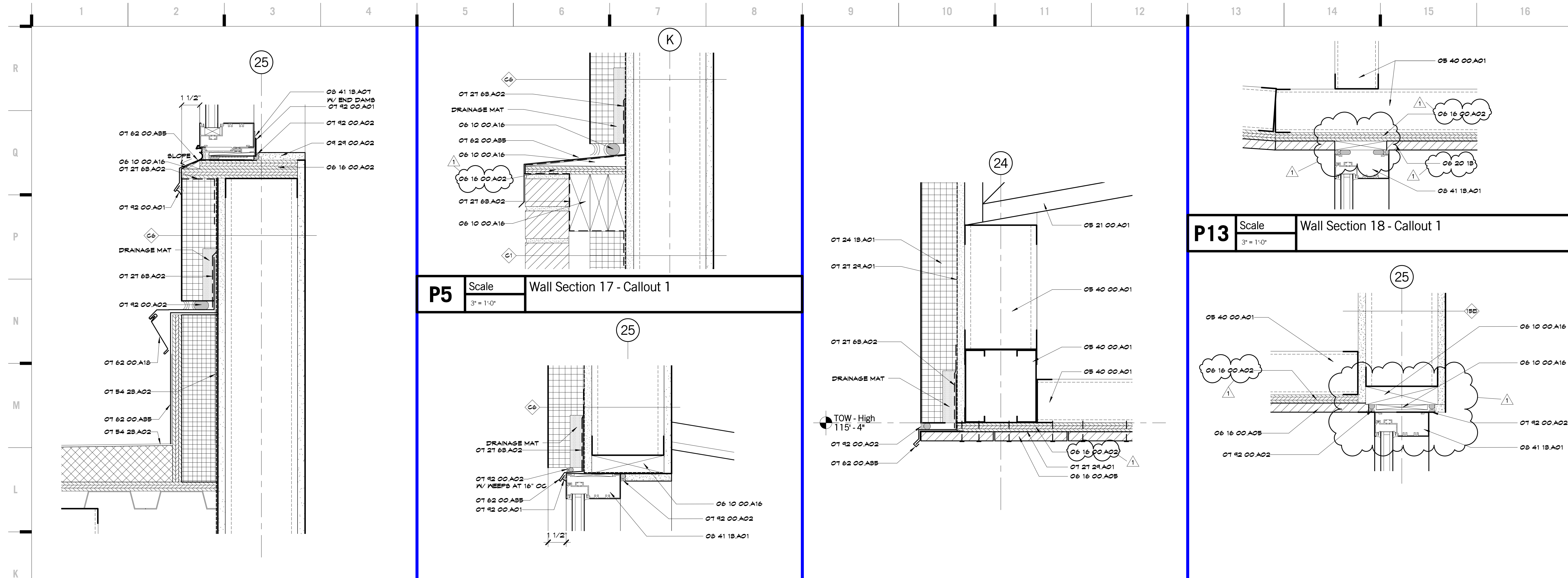
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P5 Scale 3" = 1'-0" Wall Section 17 - Callout 1

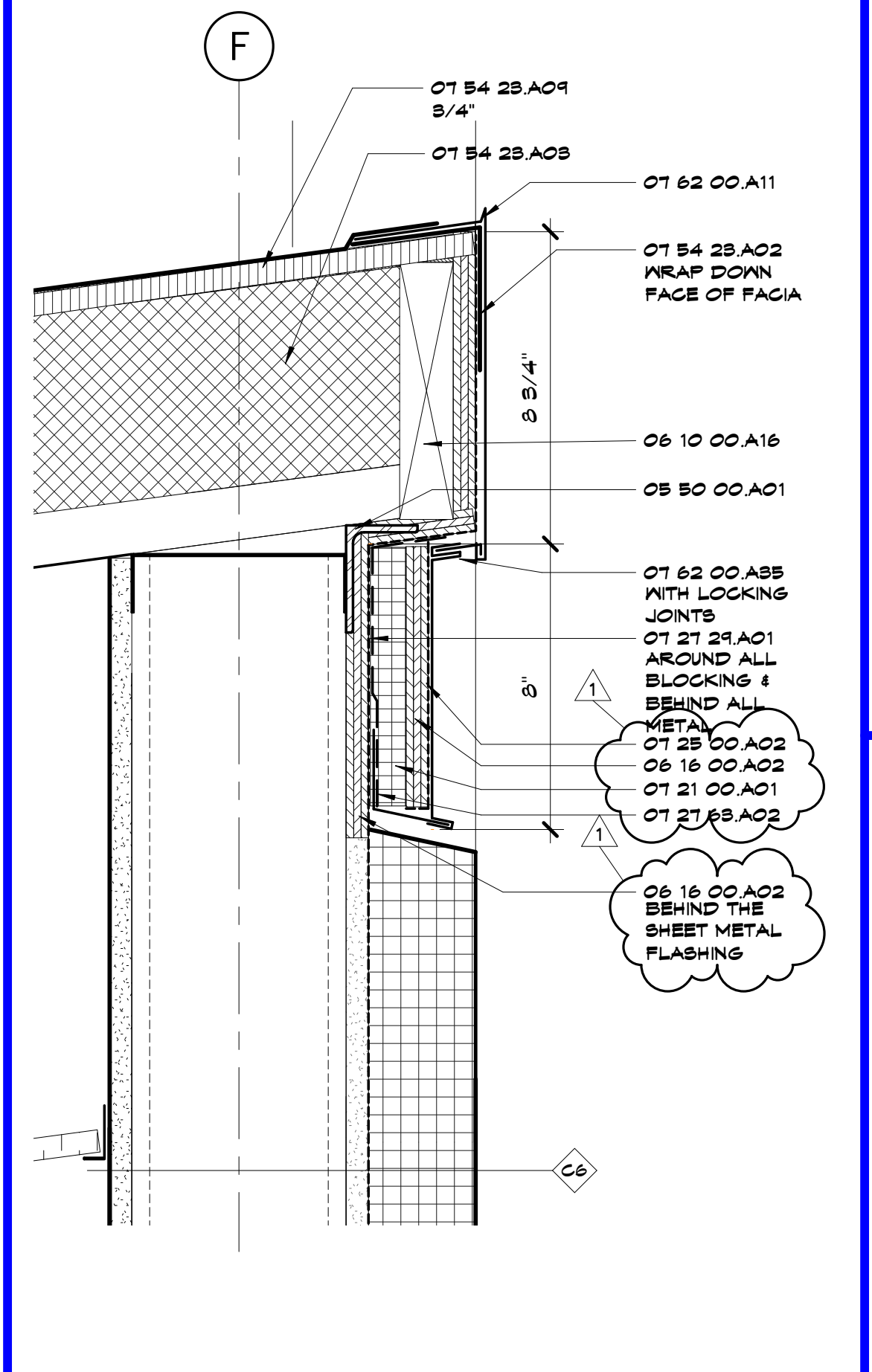
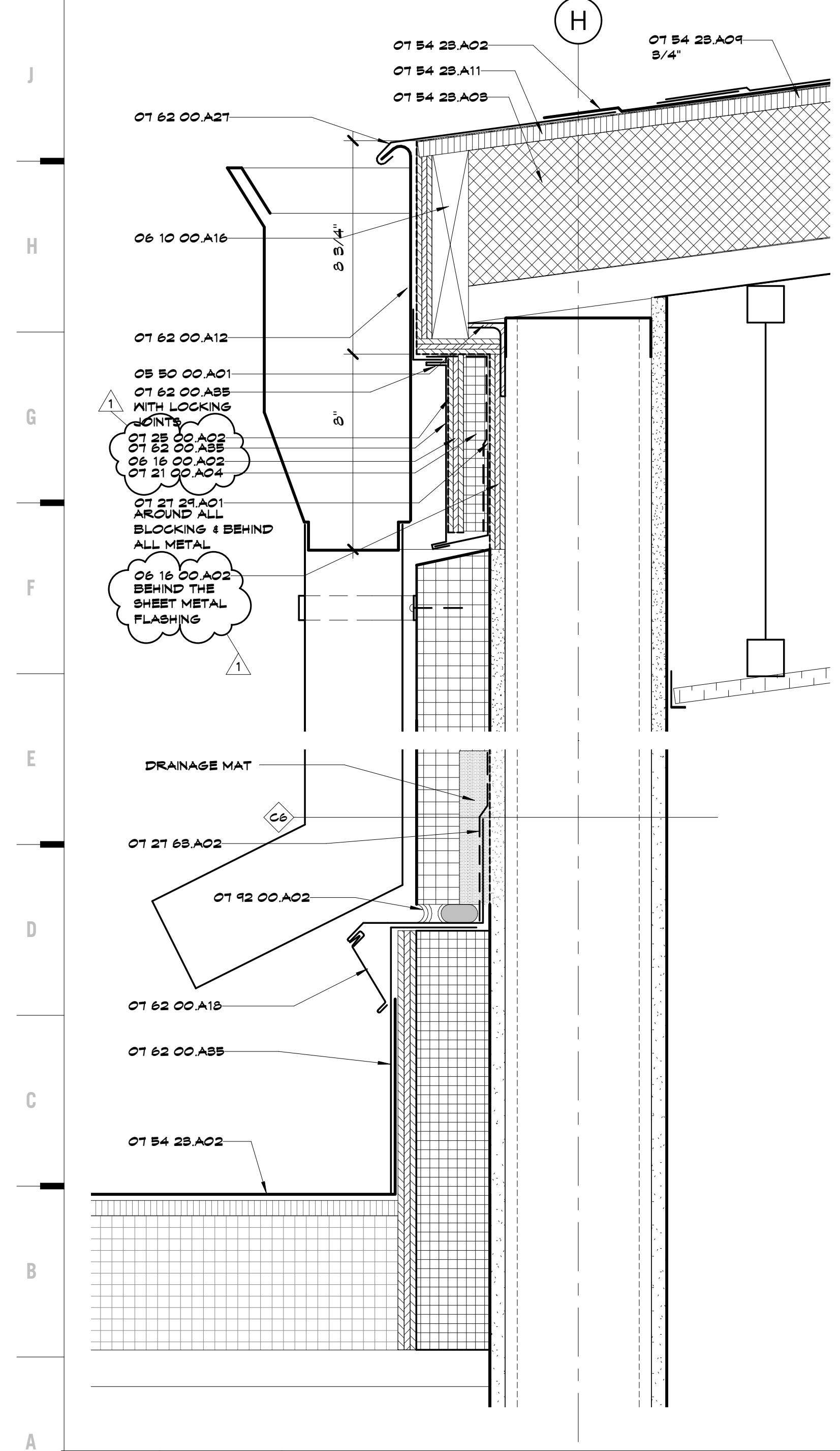
P13 Scale 3" = 1'-0" Wall Section 18 - Callout 1

K1 Scale 3" = 1'-0" Wall Section 18 - Callout 4

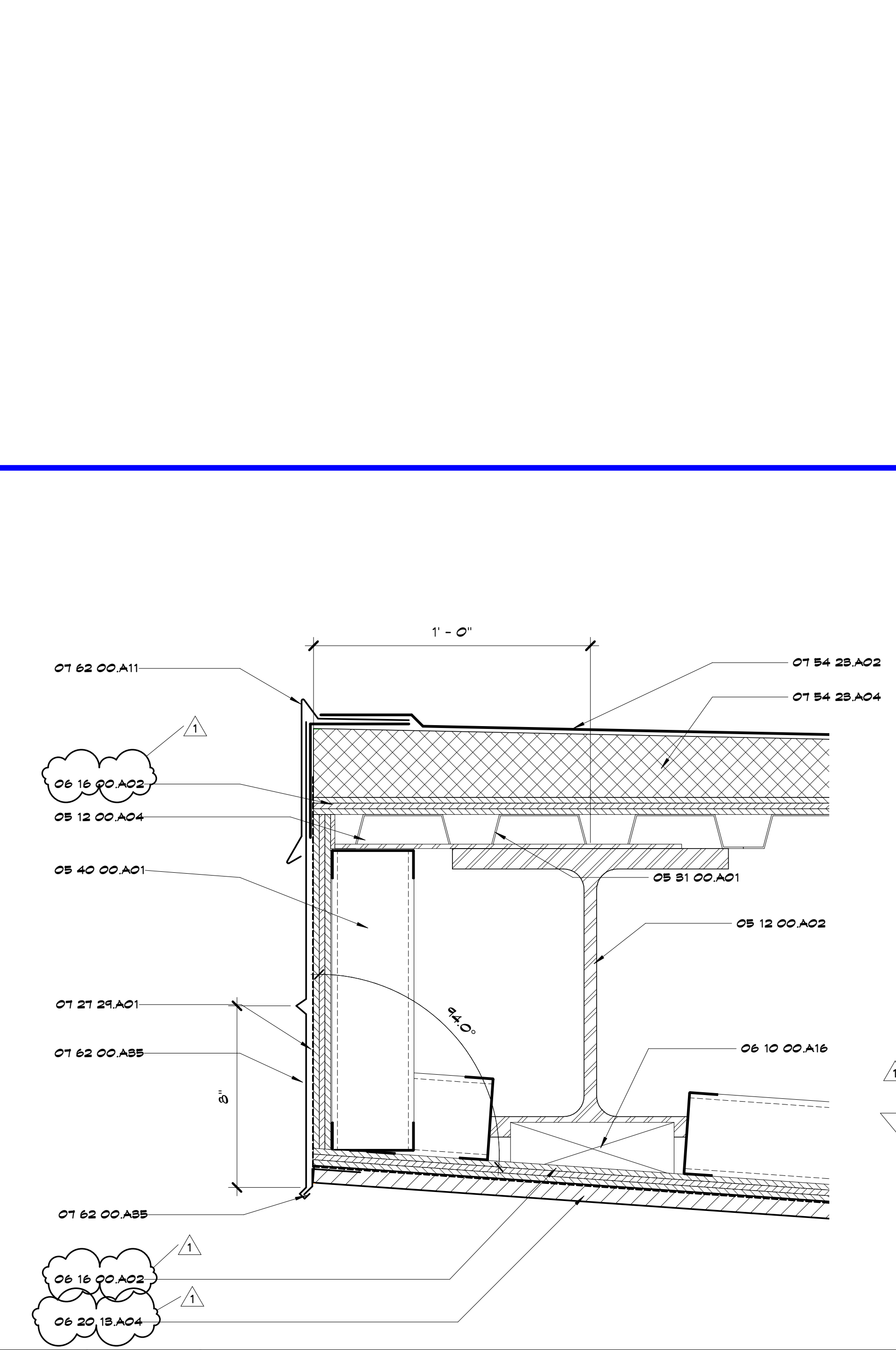
K5 Scale 3" = 1'-0" Wall Section 18 - Callout 3

K9 Scale 3" = 1'-0" Wall Section 22 - Callout 1

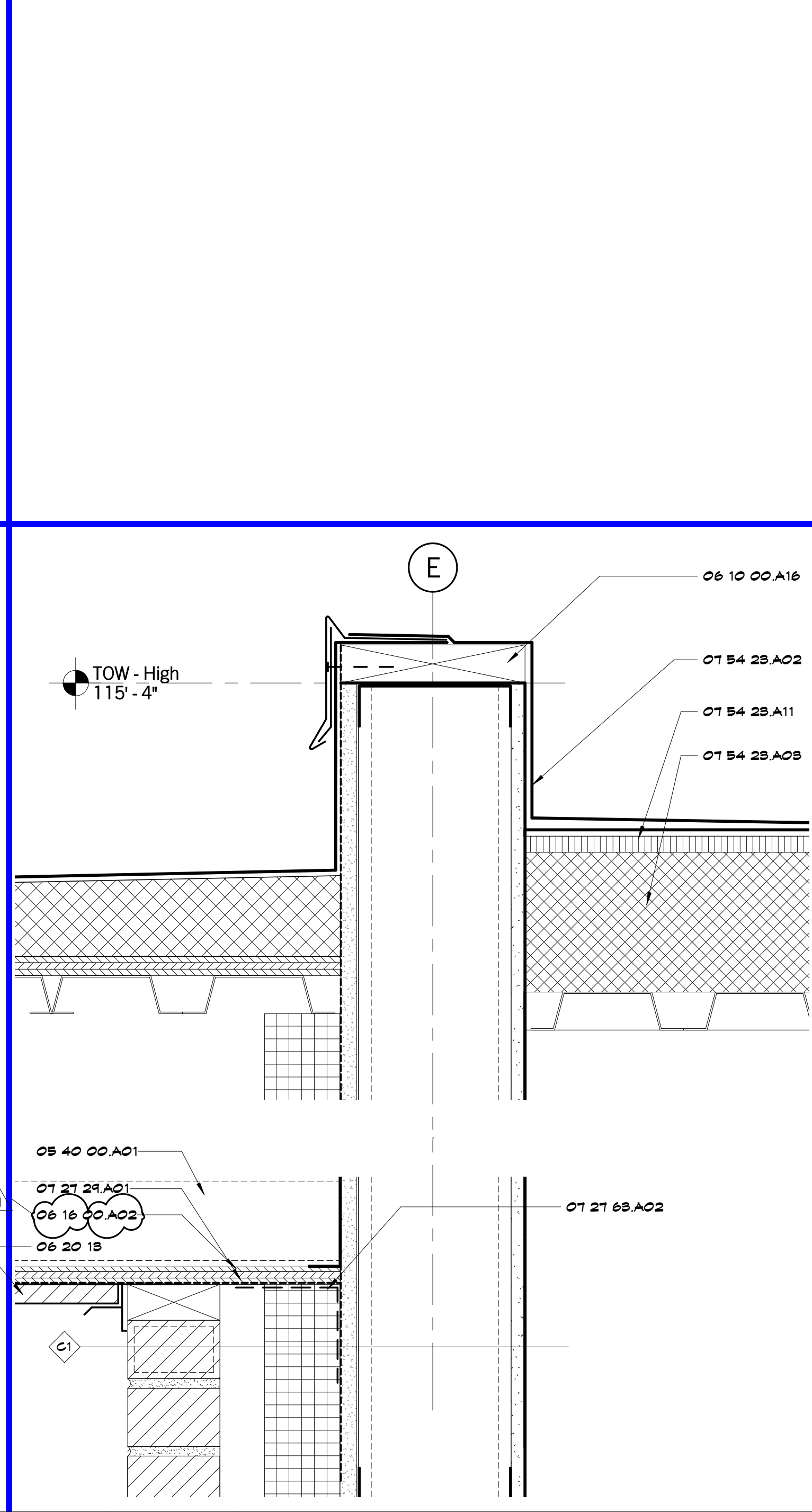
K13 Scale 3" = 1'-0" Wall Section 18 - Callout 2



D5 Scale 3" = 1'-0" Wall Section 15 - Callout 2



A8 Scale 3" = 1'-0" Wall Section 19 - Callout 1



A13 Scale 3" = 1'-0" Wall Section 19 - Callout 2

SHEET KEYNOTE LEGEND

- 05 12 00 A02 ANGLE
- 05 12 00 A04 STEEL JOIST
- 05 21 00 A01 ROOF DECK
- 05 40 00 A01 COLD-FORMED METAL FRAMING
- 05 50 00 A01 MISC STEEL FRAMING/SUPPORTS
- 05 10 00 A16 FIRE-RETARDANT TREATED WOOD BLOCKING & NAILERS
- 06 16 00 A02 FIRE-RETARDANT TREATED PLYWOOD
- 06 16 00 A05 GEMENTIOUS WALL SHEATHING
- 06 20 18 EXTERIOR FINISH CARPENTRY
- 06 20 18 A04 POLYBIM BYTHETIC TRIM
- 01 21 00 A01 EXTRUDED POLYSTYRENE BOARD INSULATION
- 01 21 00 A04 POLYISOCYANURATE INSULATION
- 01 24 18 A01 EXTERIOR INSULATION AND FINISH SYSTEM
- 01 25 00 A02 SELF-ADHERING WEATHER BARRIERS
- 01 21 24 A01 VAPOR RETARDING AIR BARRIER COATING
- 01 21 68 A02 TRANSITION MEMBRANE
- 01 24 28 A02 MECHANICALLY-FASTENED TPO MEMBRANE ROOFING SYSTEM
- 01 24 28 A03 ROOF INSULATION
- 01 24 28 A04 TAPERED ROOF INSULATION
- 01 24 28 A09 SUBSTRATE BOARD
- 01 24 28 A11 COVERBOARD
- 01 24 28 A08 GRAVEL STOP
- 01 62 00 A12 FABRIC GAF
- 01 62 00 A18 COUNTER FLASHING
- 01 62 00 A21 DRIP EDGES
- 01 62 00 A05 FIRE-FINISHED MISC METAL FLASHING
- 01 62 00 A01 SEALANT
- 01 62 00 A02 SEALANT W/BACKER ROD
- 01 41 18 A01 STOREFRONT FRAMING (THERMAL BROKEN)
- 01 41 18 A01 ALUMINUM SUBSILL
- 01 24 00 A02 GYPSUM BOARD - TYPE X

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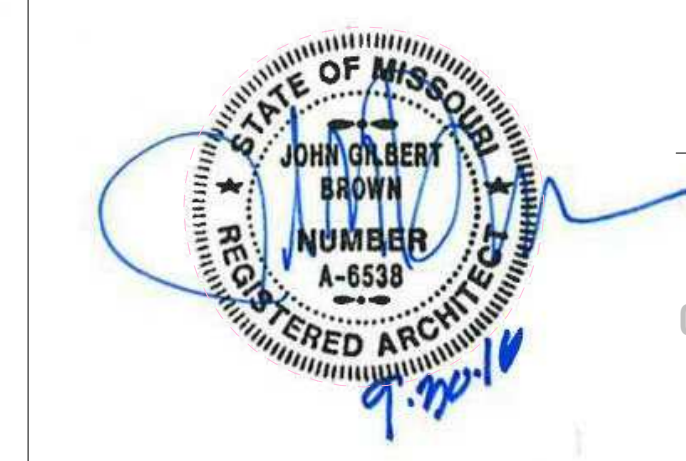
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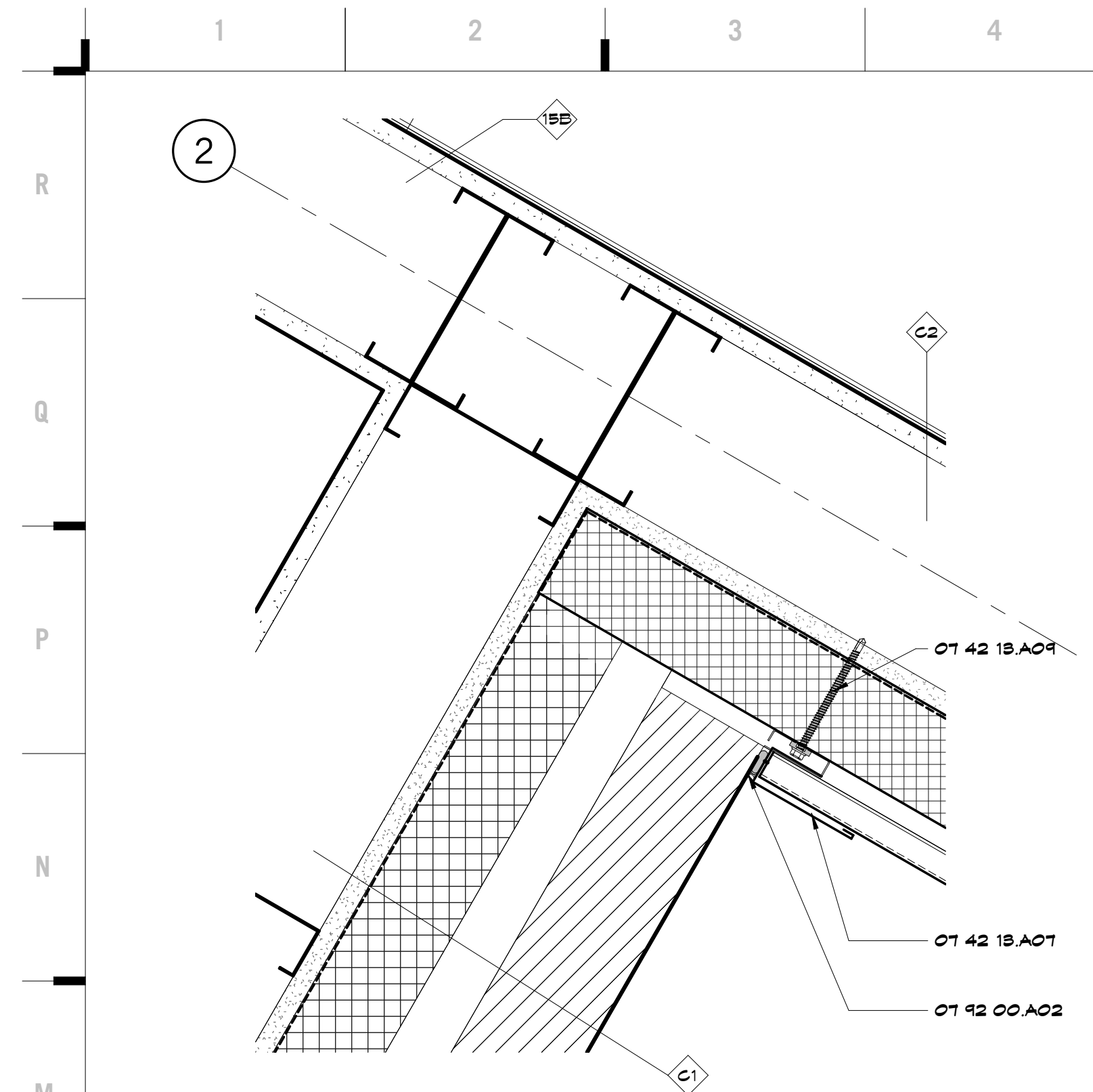
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DATE: 09.30.2016

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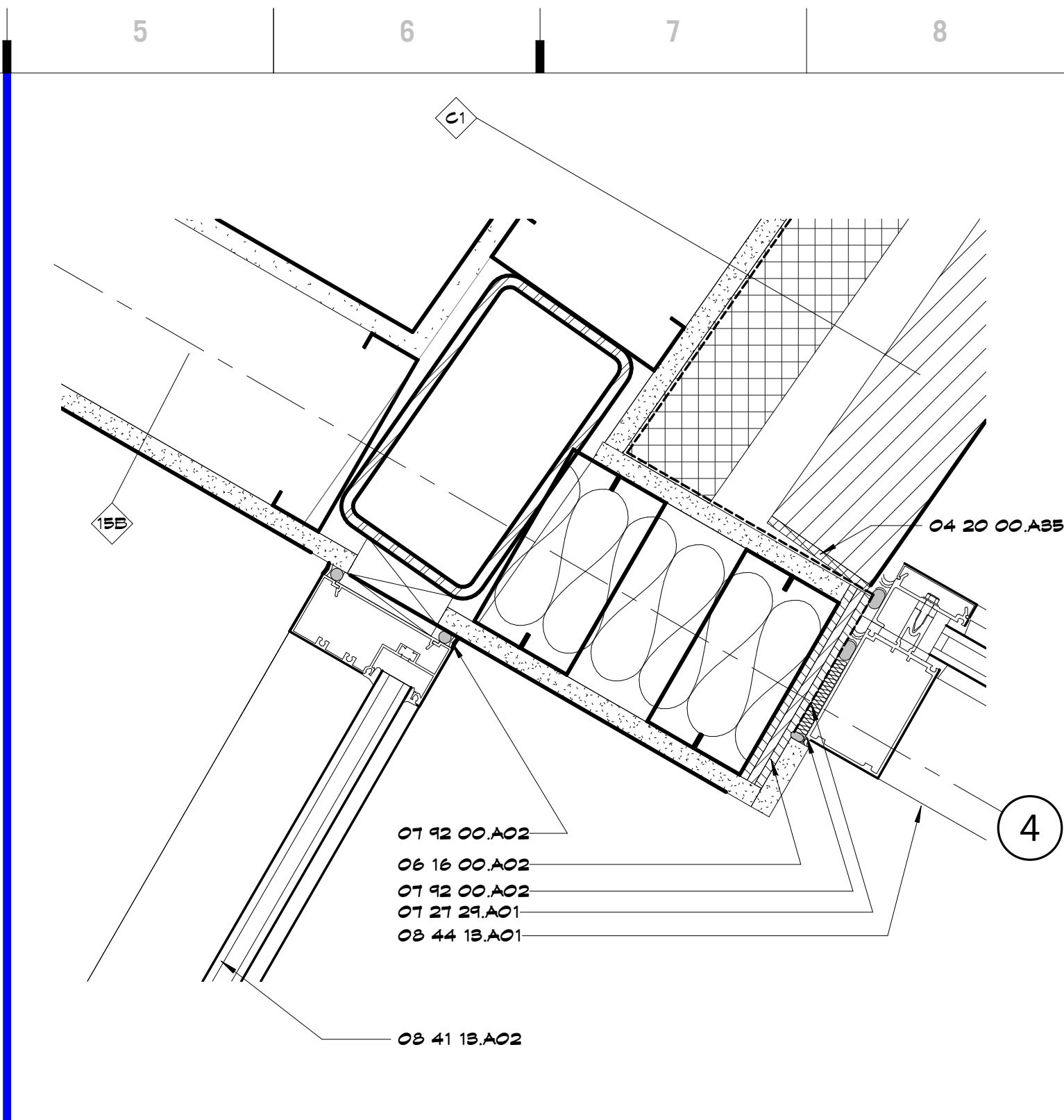
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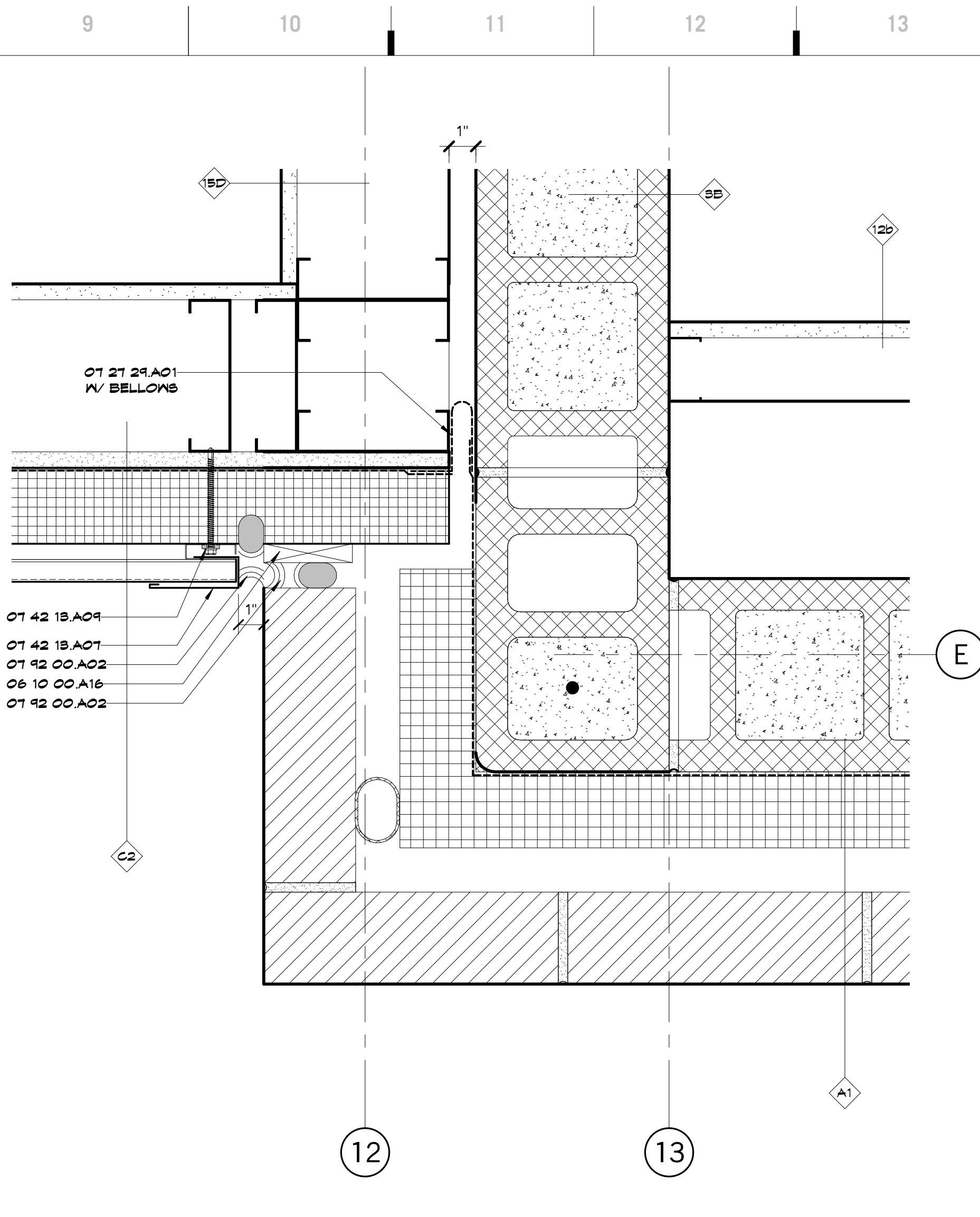
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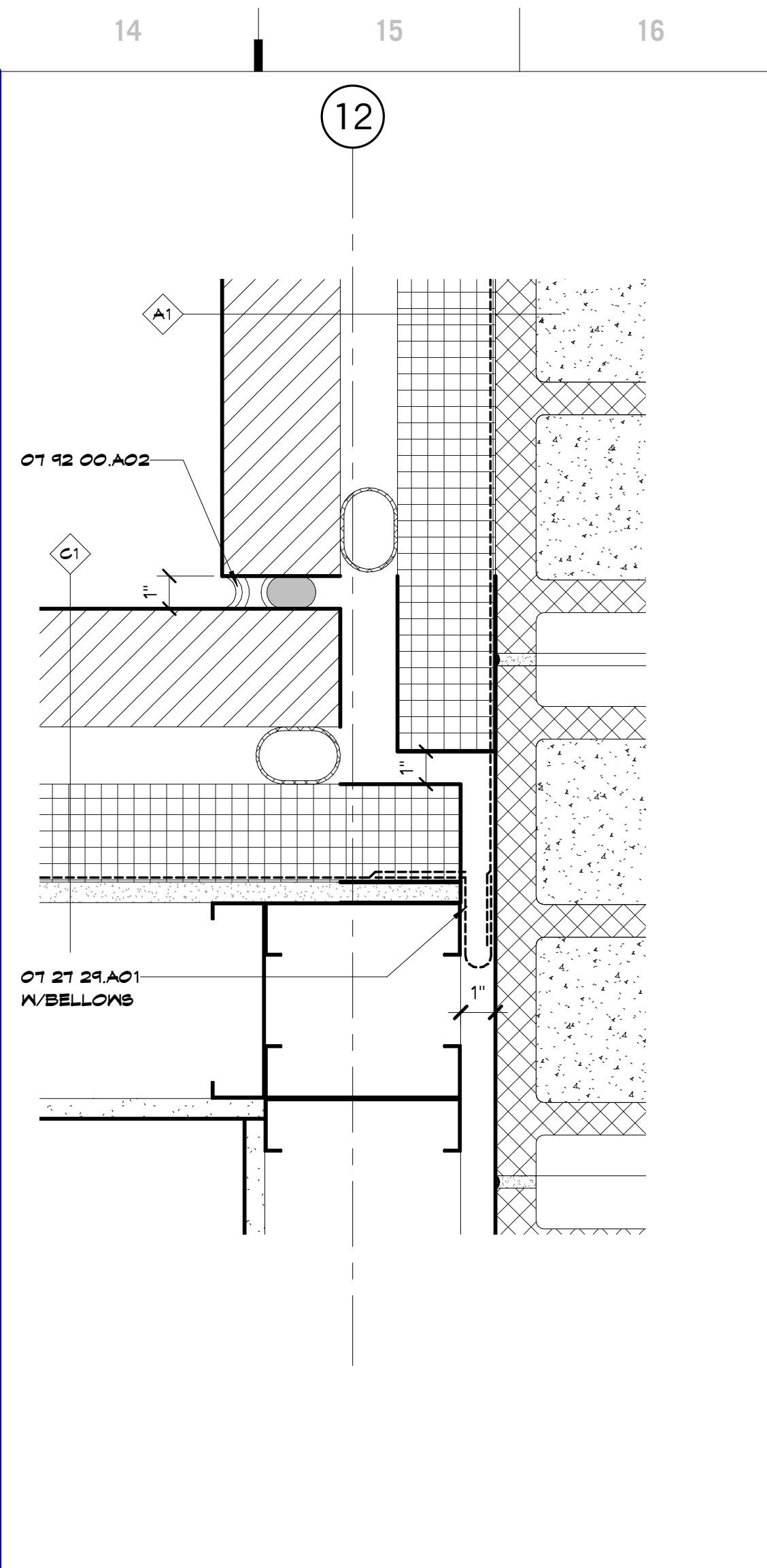
M1 Scale 3" = 1'-0" Plan Detail - Metall Panel at Brick



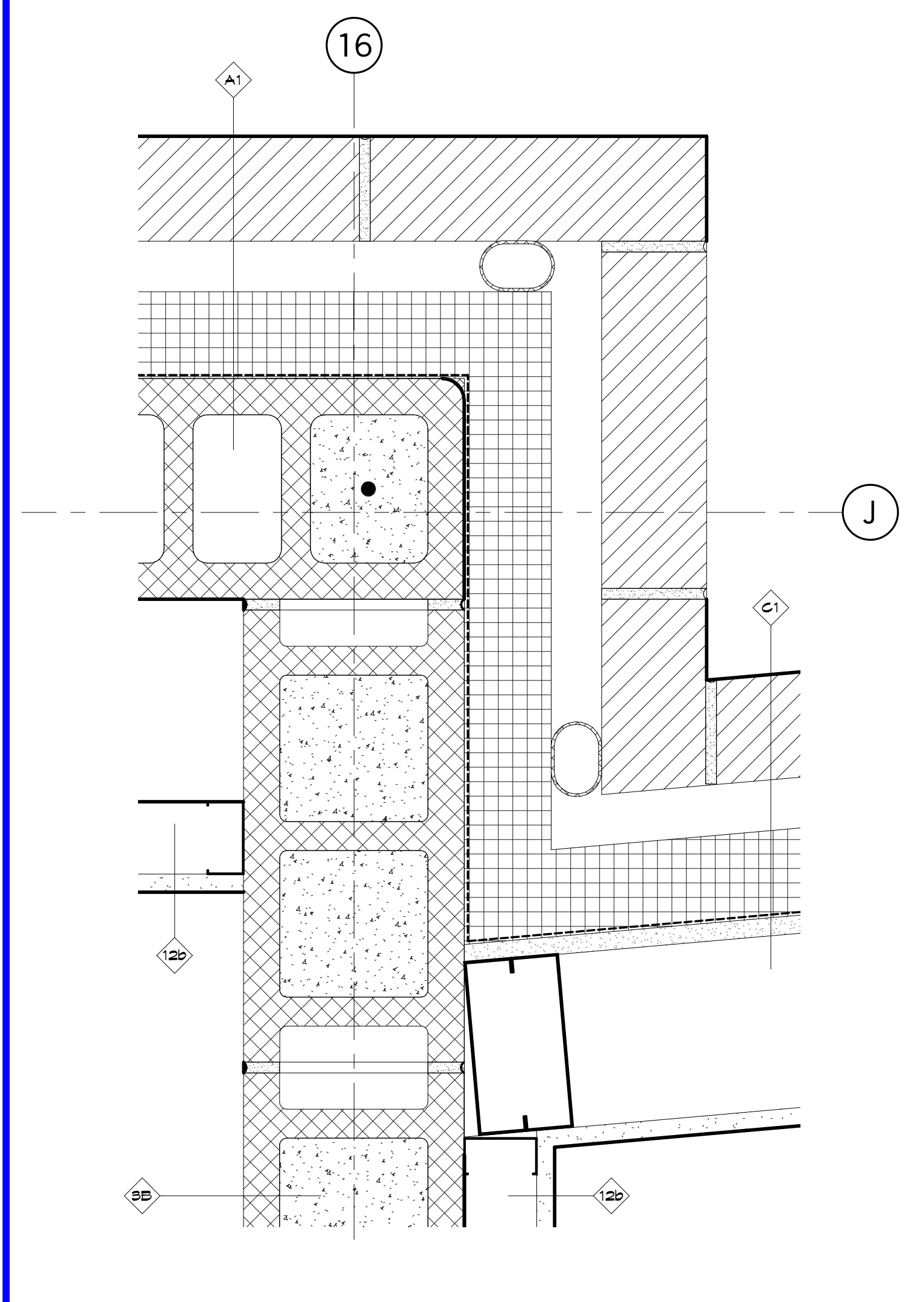
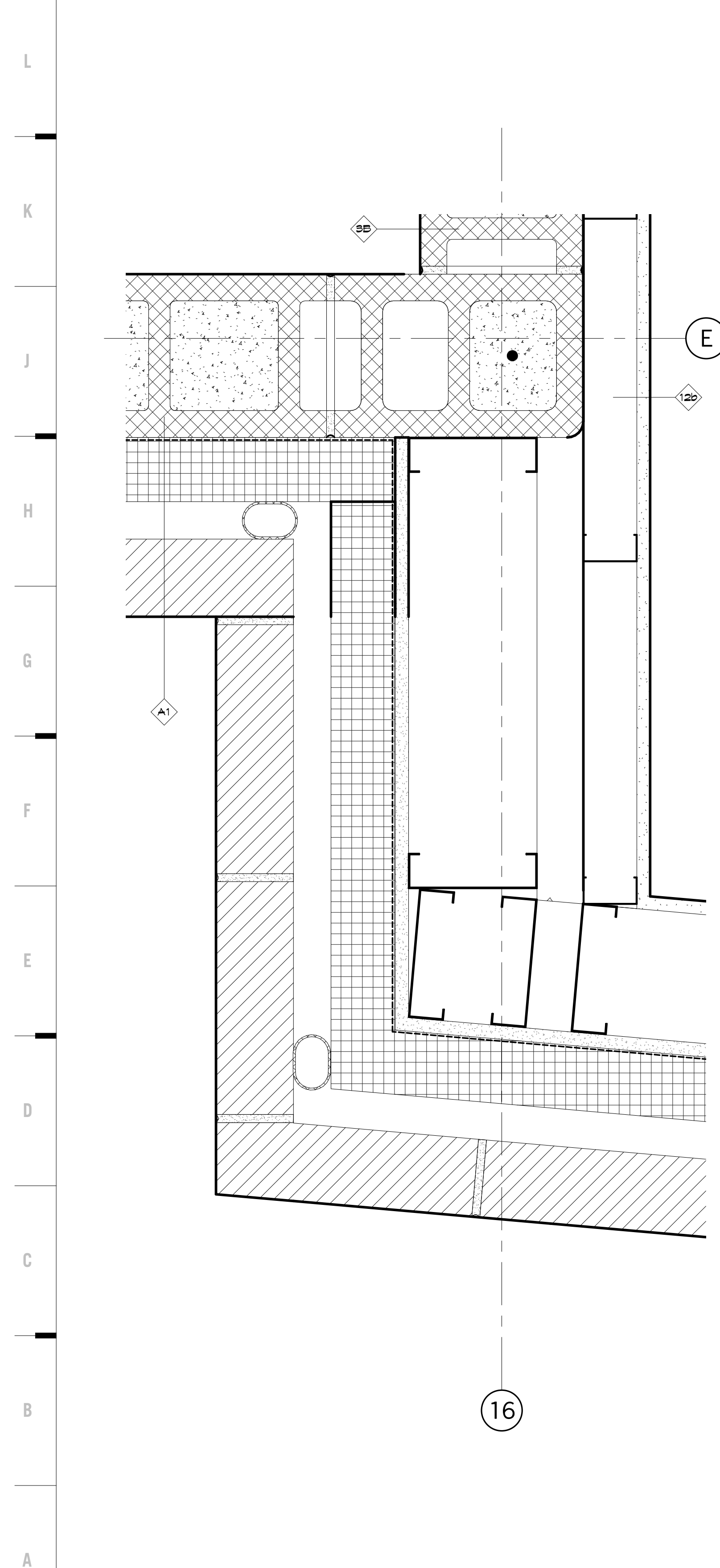
M5 Scale 3" = 1'-0" Detail 10



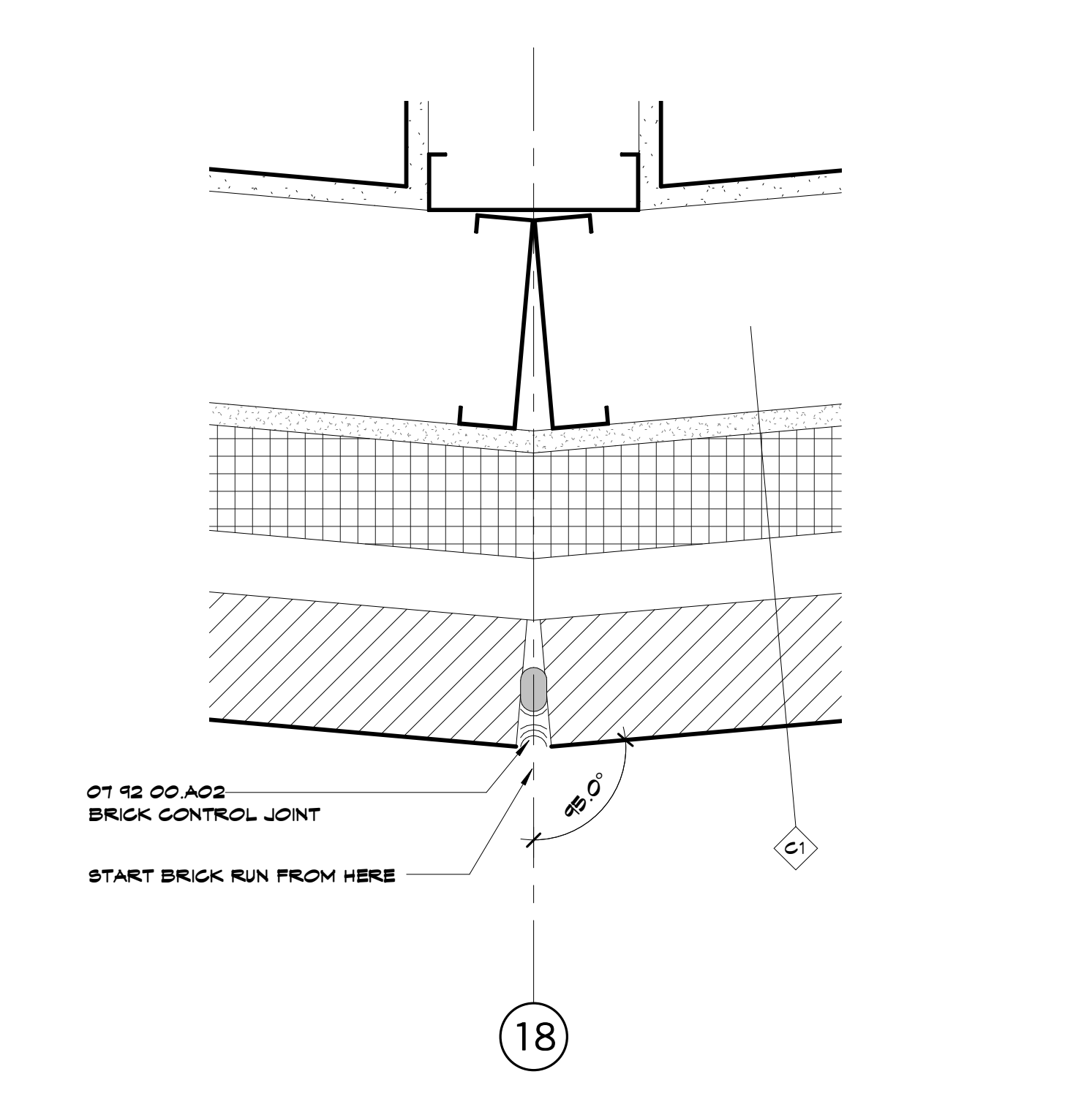
K9 Scale 3" = 1'-0" Plan Detail - Building Expansion Joint at Metal Panel



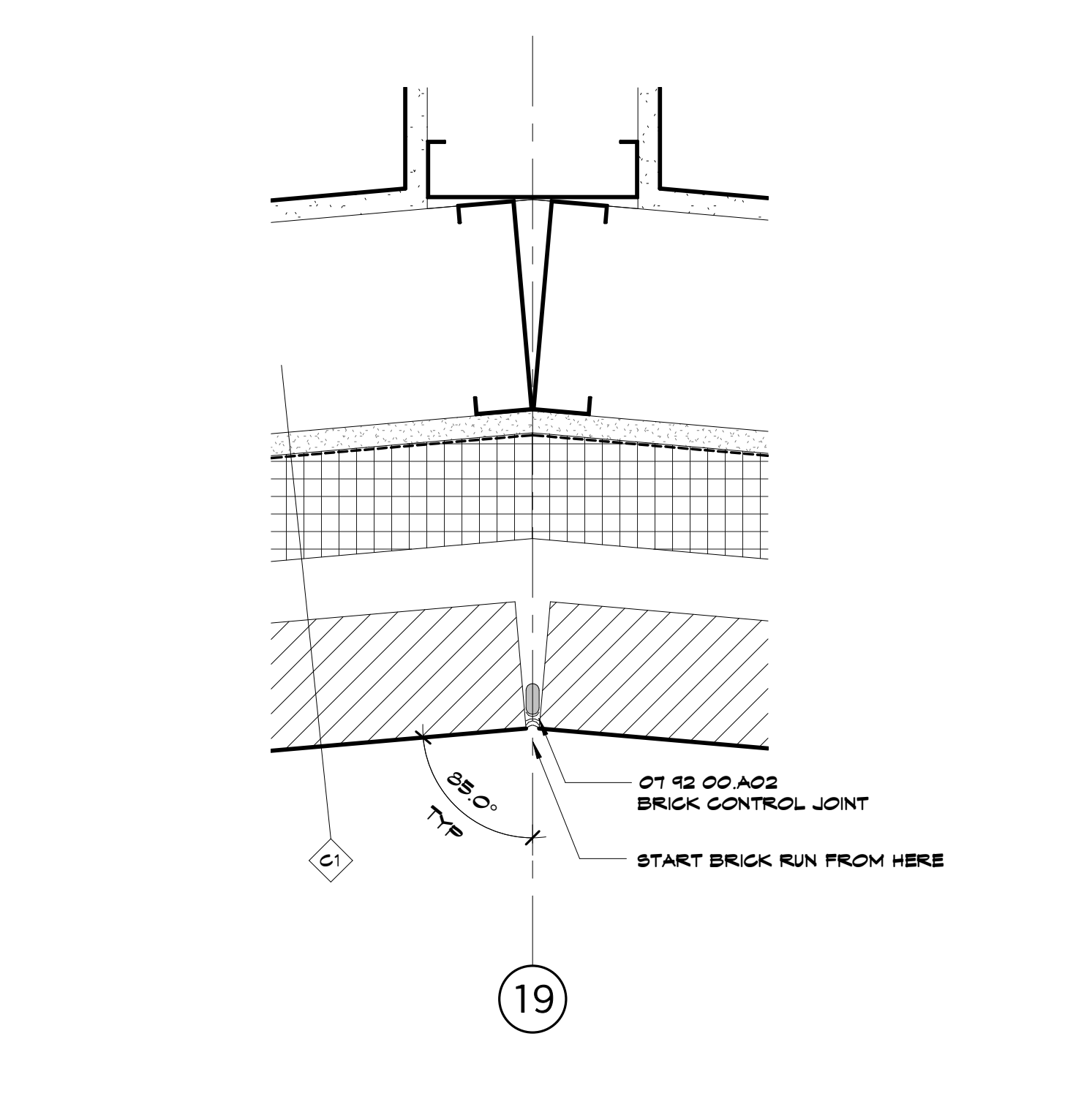
K14 Scale 3" = 1'-0" Plan Detail - Building Expansion Joint at Brick



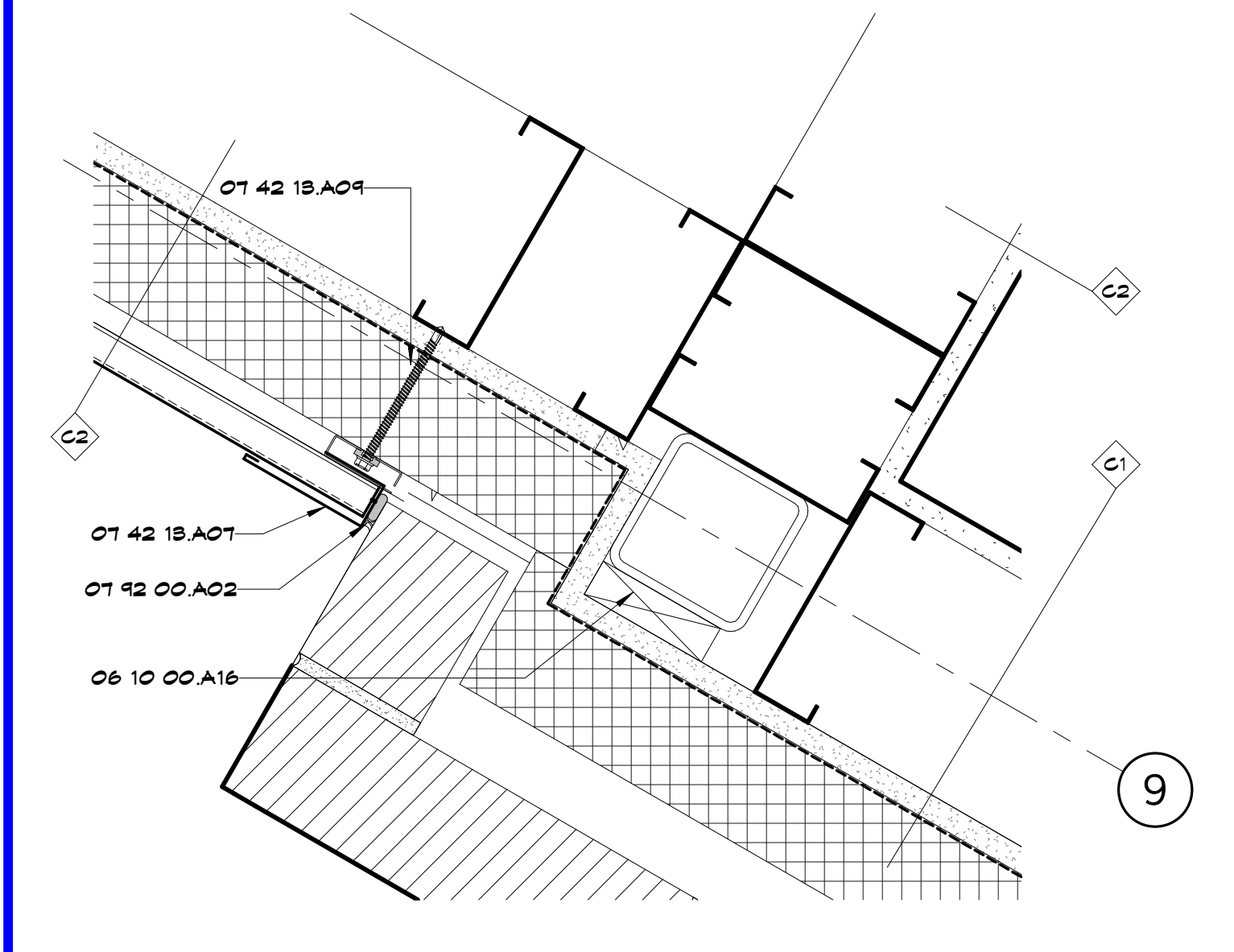
E5 Scale 3" = 1'-0" Plan Detail - Outside Brick Corner 02



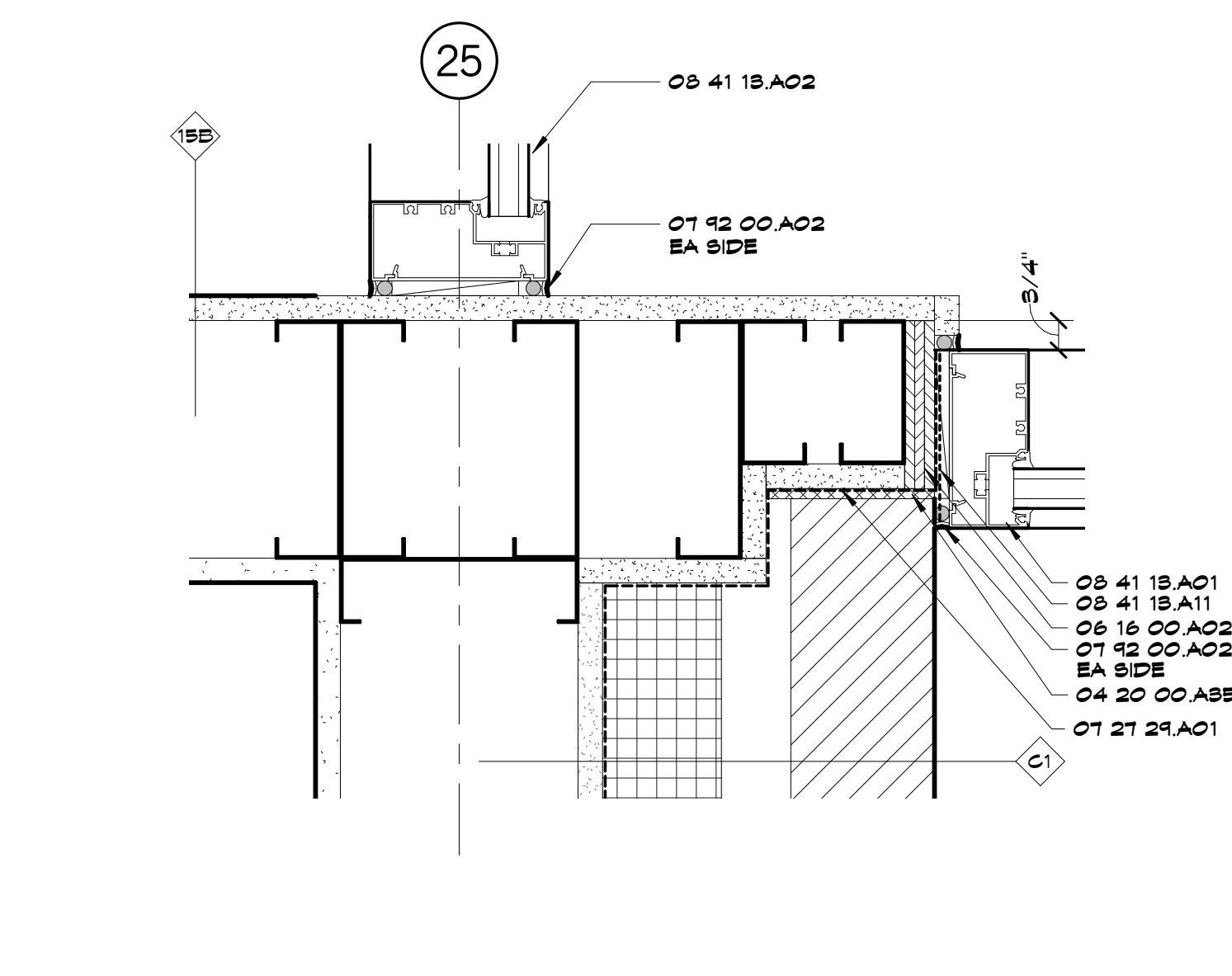
E9 Scale 3" = 1'-0" Plan Detail - TYP Masonry Control Expansion Joint at Wall Bend 01



E13 Scale 3" = 1'-0" Plan Detail - TYP Masonry Control Expansion Joint at Wall Bend 02



A5 Scale 3" = 1'-0" Plan Detail - Outside Brick Corner at Metal Panel 01



A9 Scale 3" = 1'-0" Alum Jamb at End of Brick Run

A1 Scale 3" = 1'-0" Plan Detail - Outside Brick Corner 01

SHEET KEYNOTE LEGEND

- 04 20 00.A05 COMPRESSIBLE FILLERS
- 06 10 00.A16 FIRE-RETARDANT TREATED WOOD BLOCKING & NAILERS
- 06 16 00.A02 FIRE-RETARDANT TREATED PLYWOOD
- 01 21 24.A01 VAPOR RETARDING AIR BARRIER COATING
- 01 42 18.A01 FLASHING AND TRIM
- 01 42 18.A01 RANGREEN FURING SYSTEM
- 01 42 00.A02 SEALANT W/BACKER ROD
- 06 41 18.A02 STOREFRONT FRAMING (NON-THERMAL BROKEN)
- 06 41 18.A01 JAMB CLOSURE MEMBRANE
- 06 44 18.A01 ALUMINUM CURTAIN WALL

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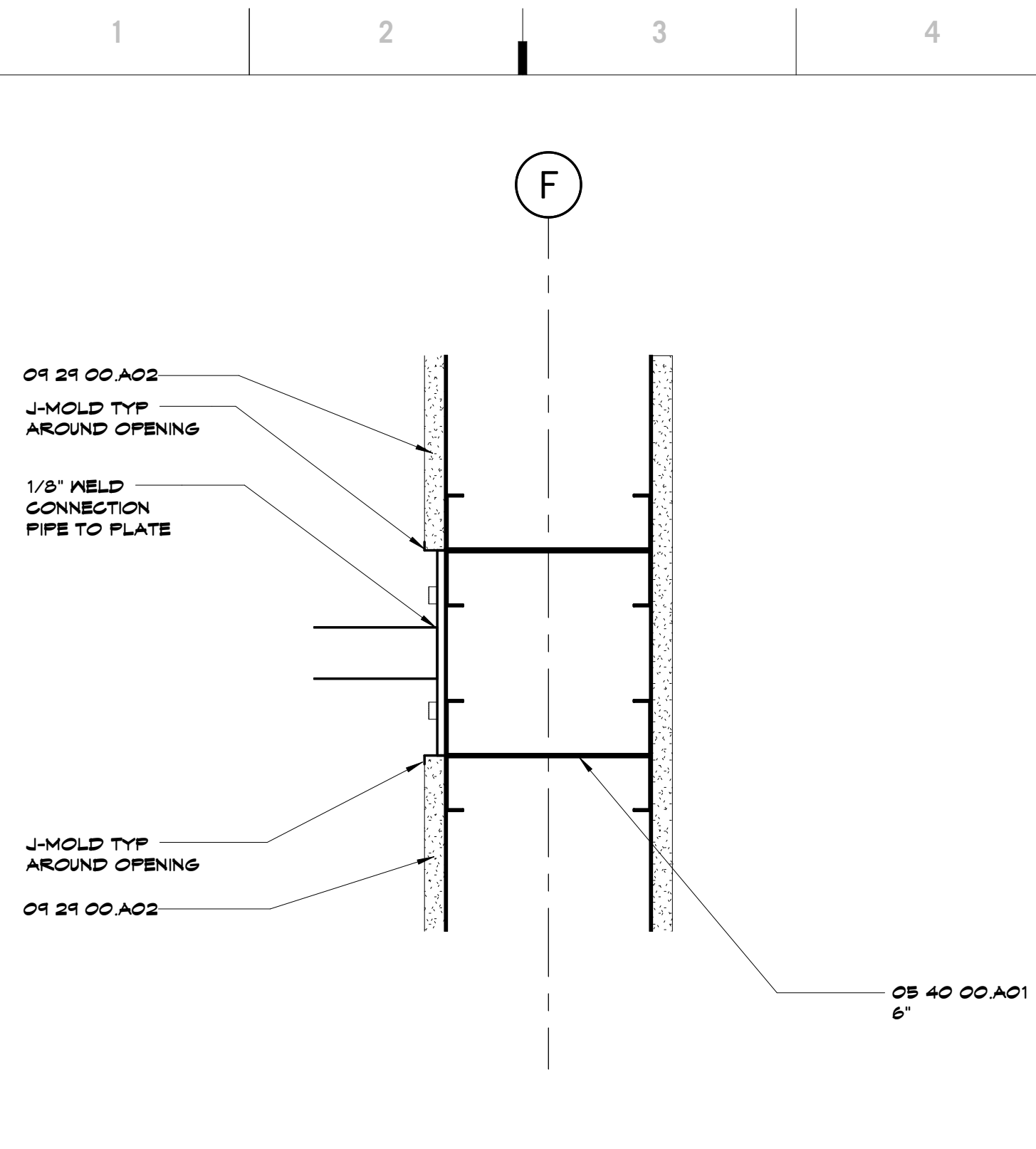
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CHECKED BY: Checker
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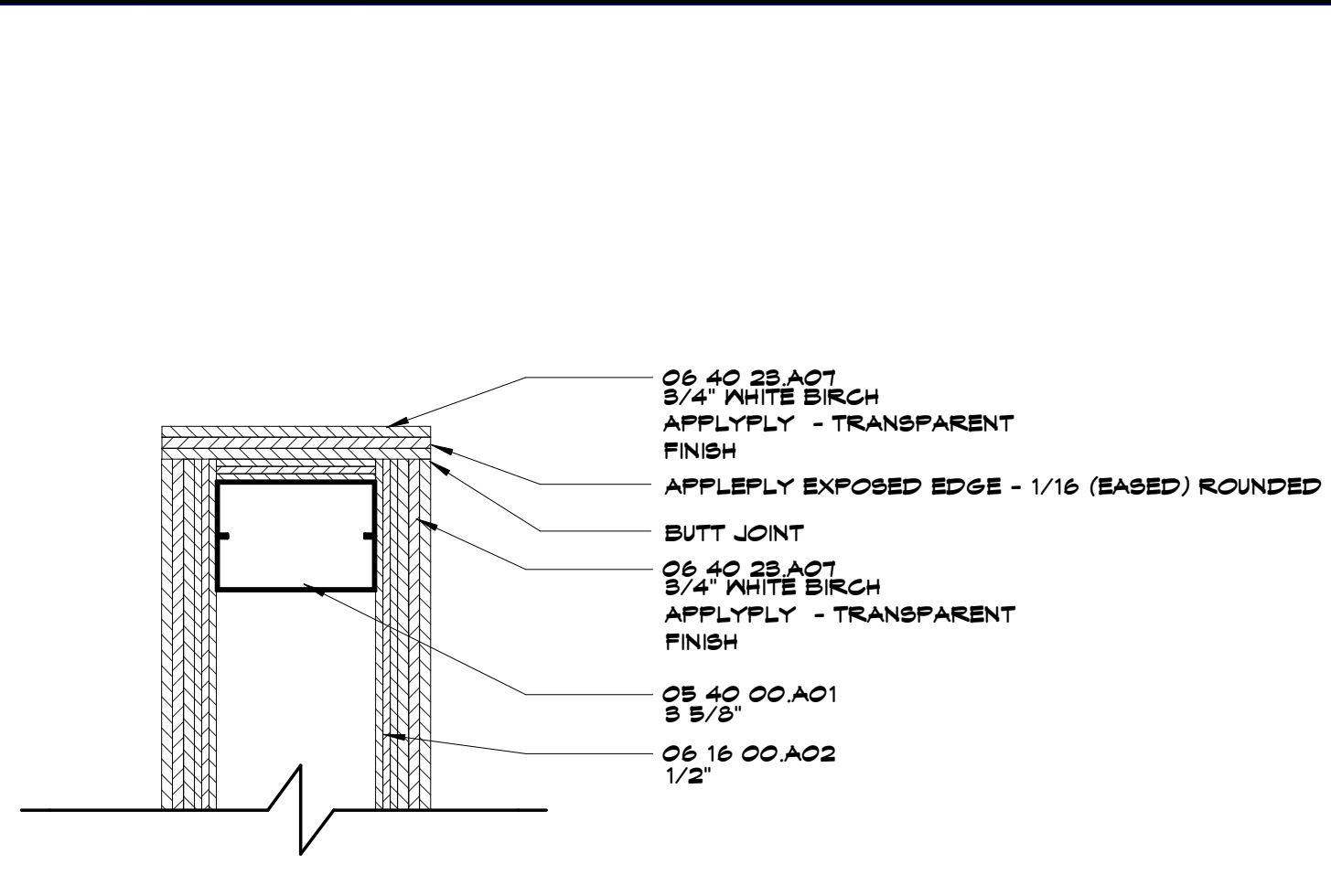
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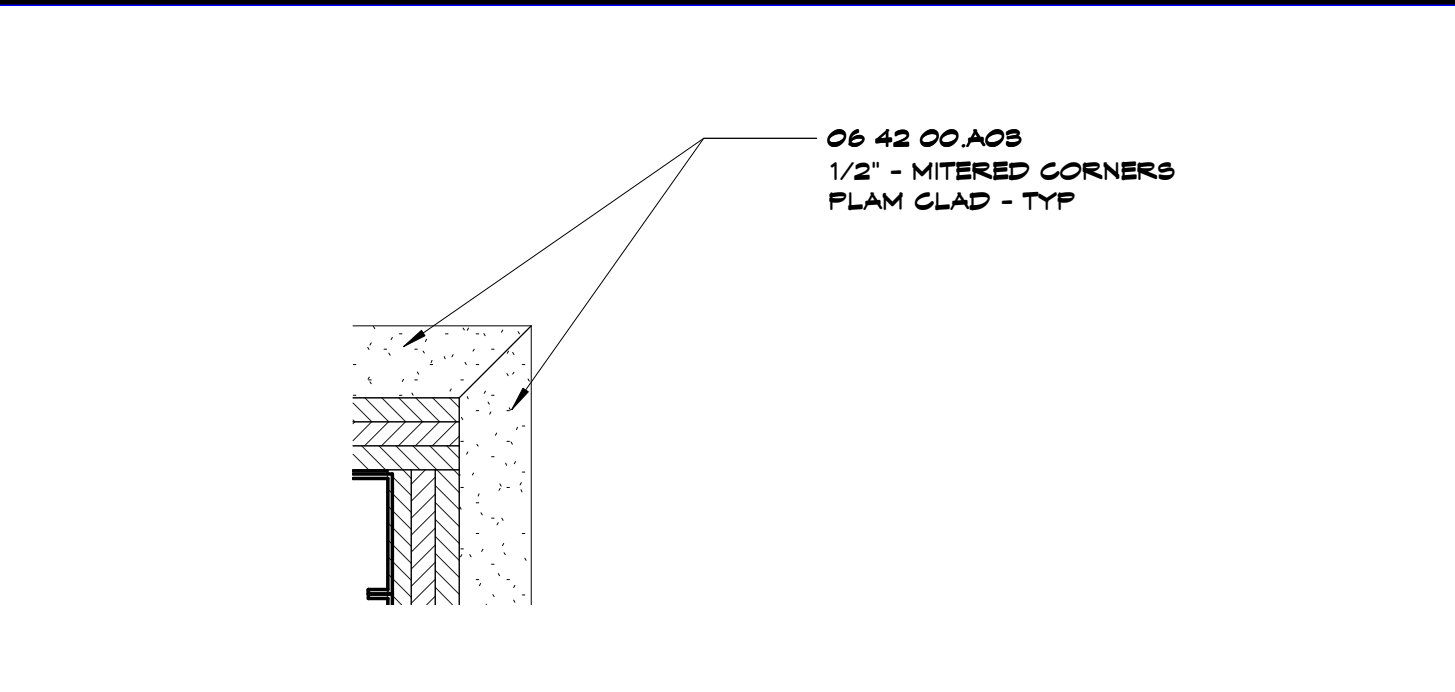
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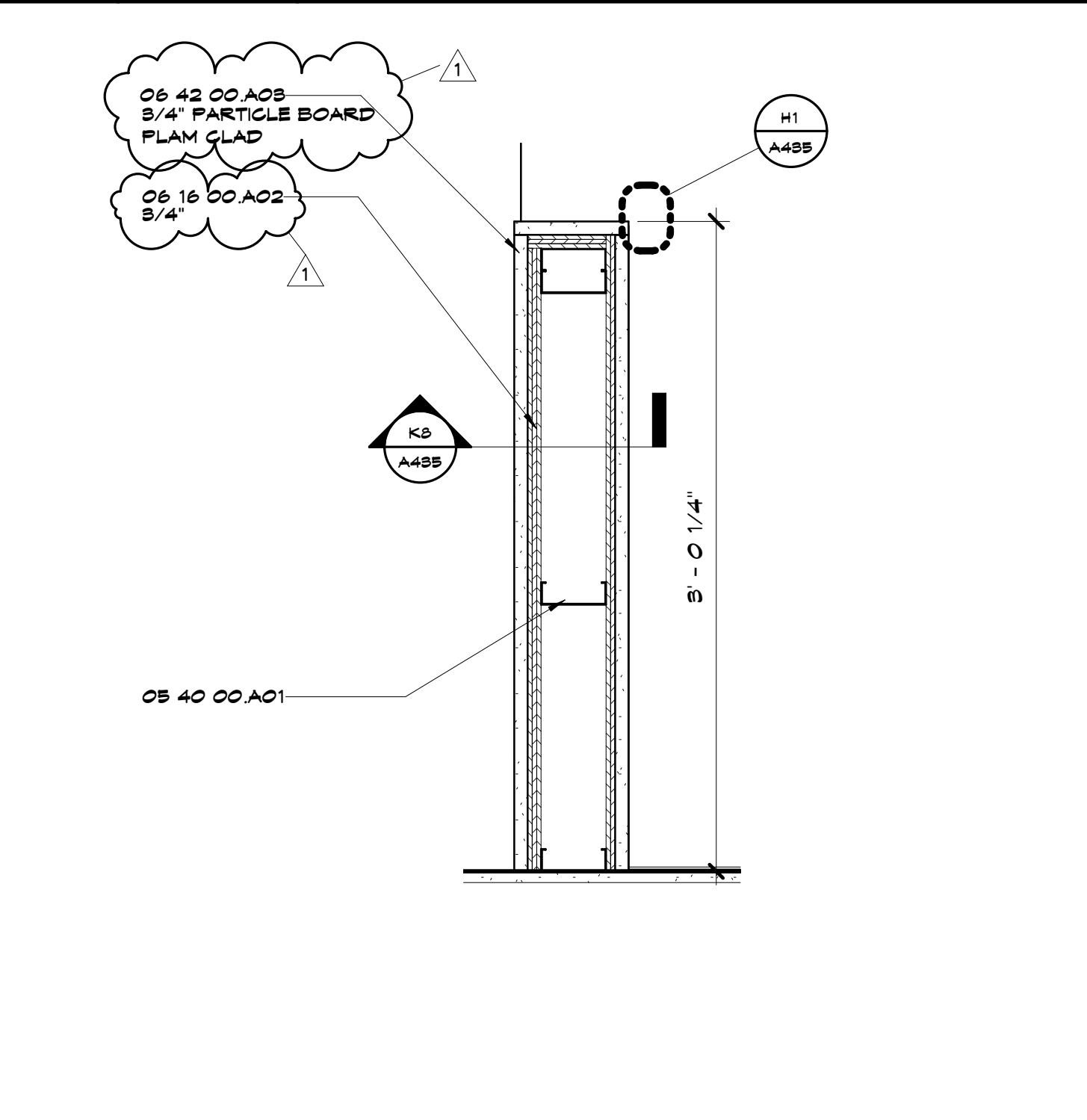
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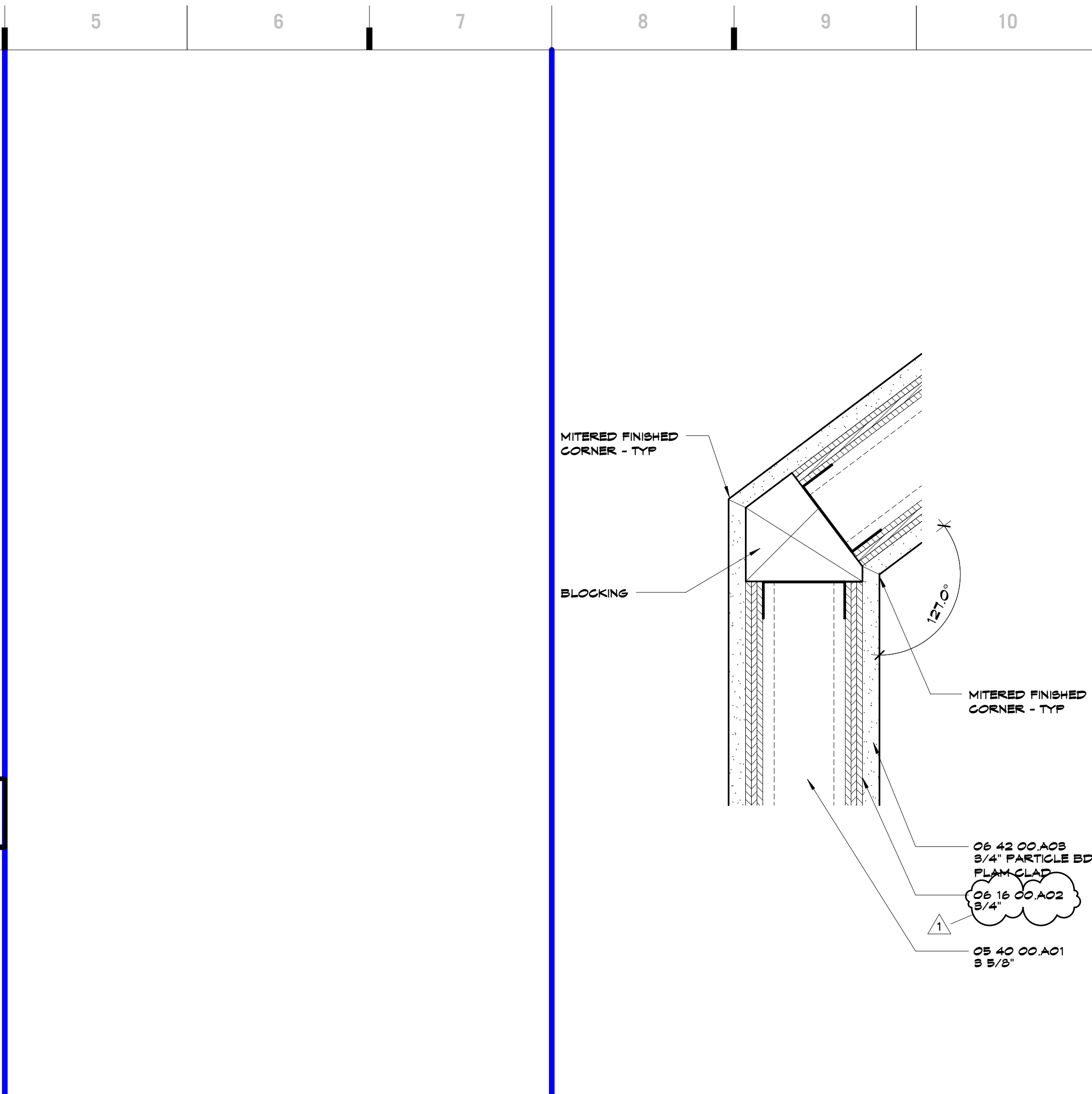
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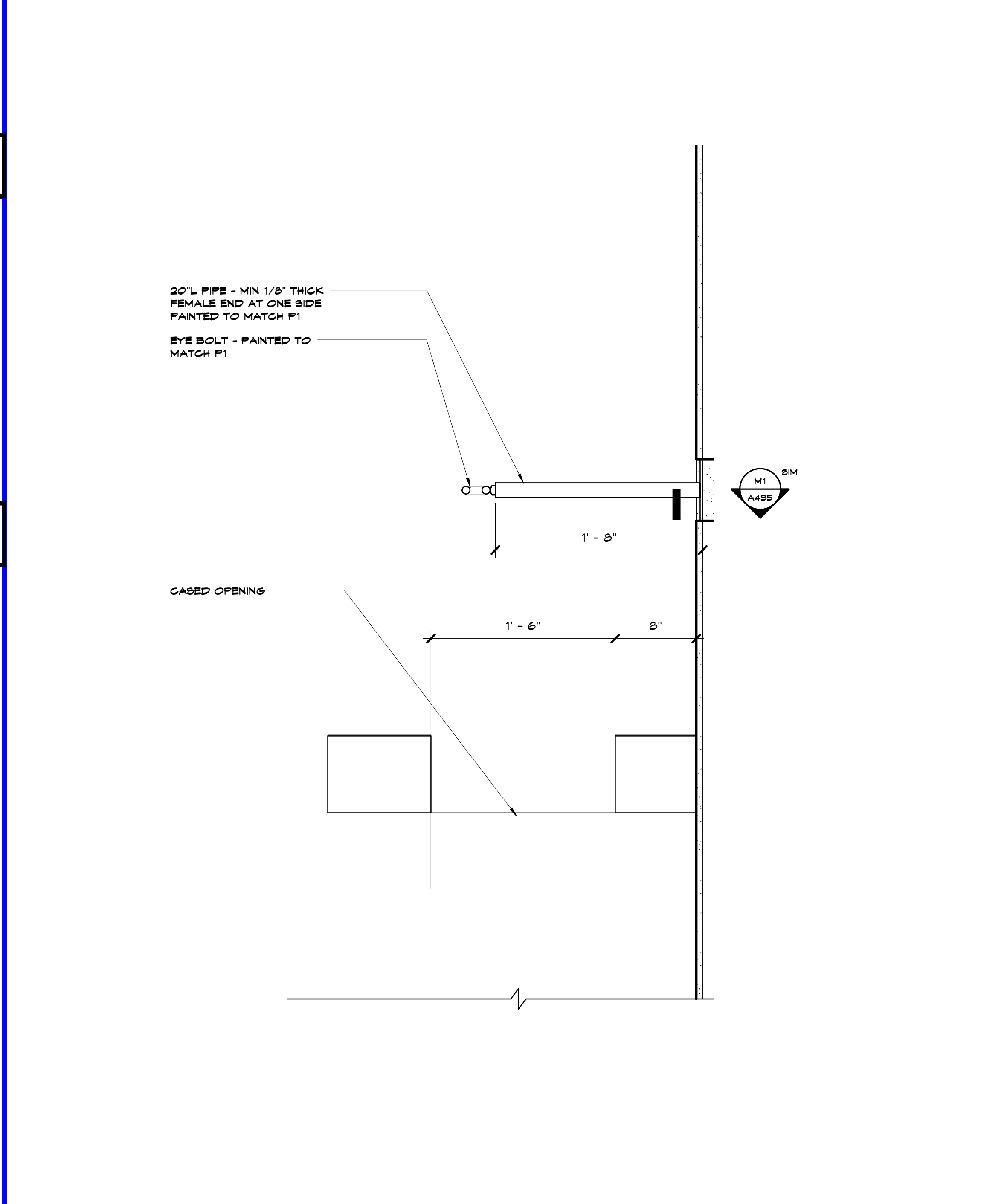
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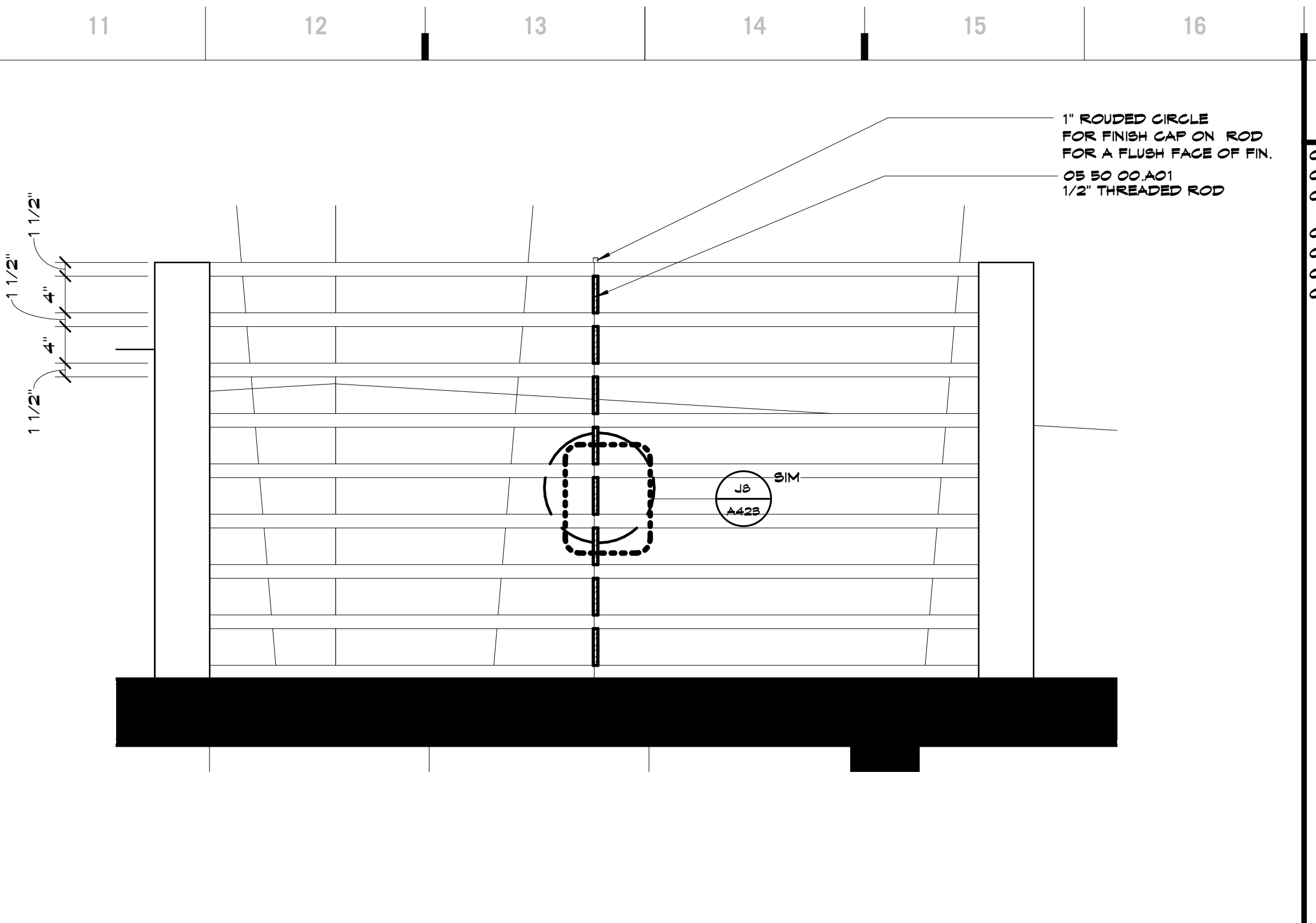
A1 Scale 1 1/2\"/>



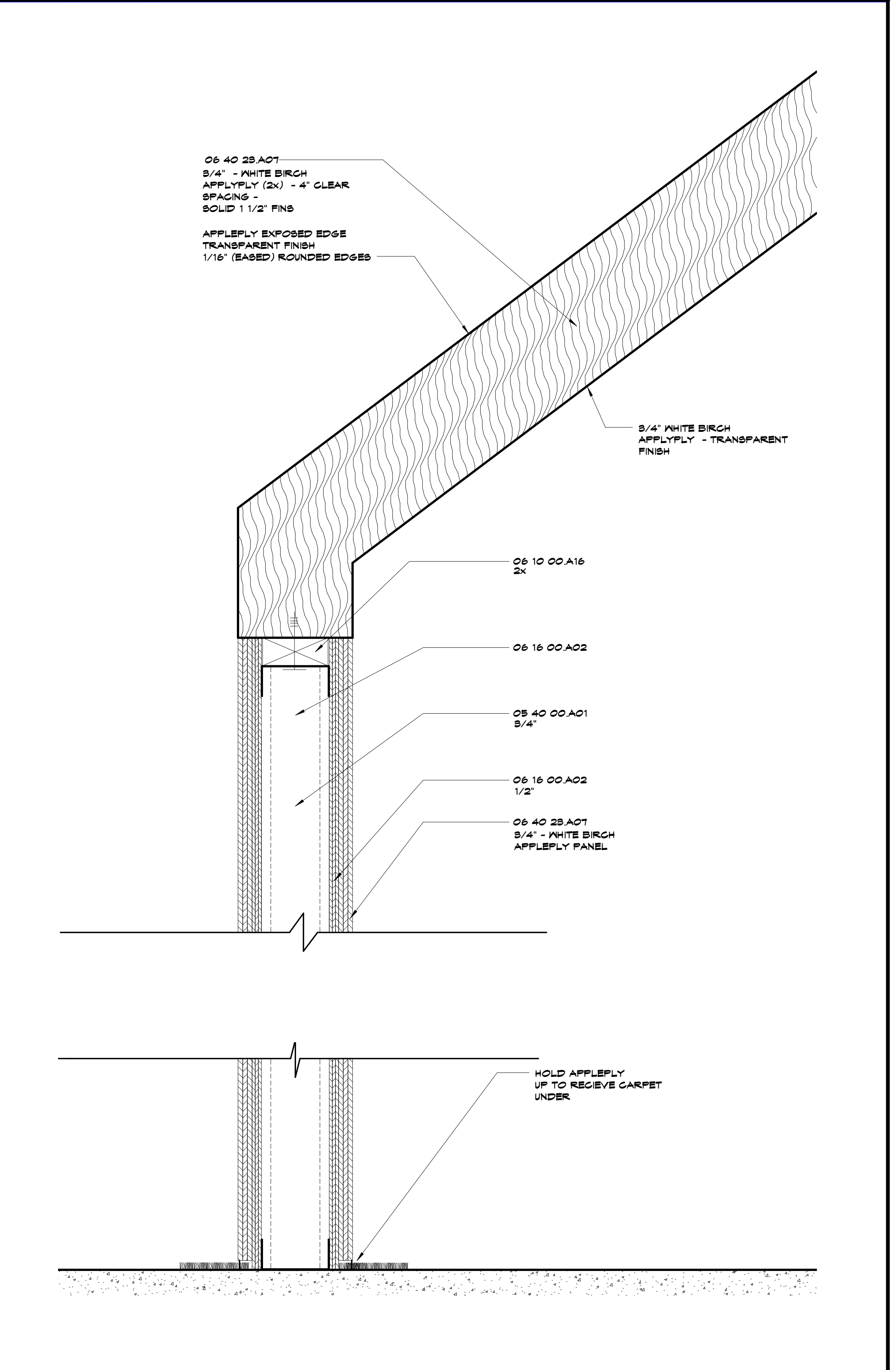
K8 Scale 3\"/>



A5 Scale 1 1/2\"/>



M11 Scale 1\"/>



A11 Scale 3\"/>

SHEET KEYNOTE LEGEND

06 40 00 A01	COLD-FORMED METAL FRAMING
06 50 00 A01	WISC STEEL FRAMING/SUPPORTS
06 10 00 A16	FIRE-RETARDANT TREATED WOOD BLOCKING & NAILERS
06 16 00 A02	FIRE-RETARDANT TREATED PLYWOOD
06 40 25 A01	VENERED PANELS
06 42 00 A03	PLASTIC LAMINATE GLAD PANELING
04 24 00 A02	GYPSUM BOARD - TYPE X

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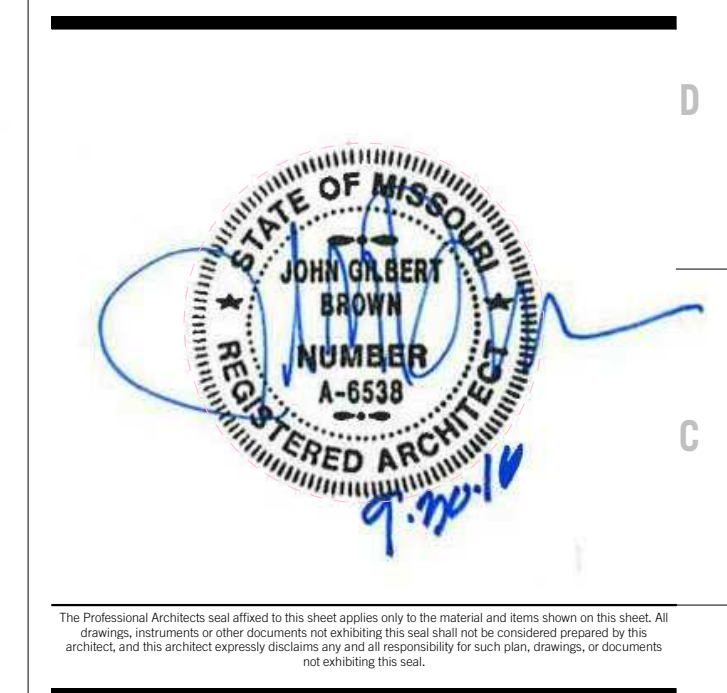
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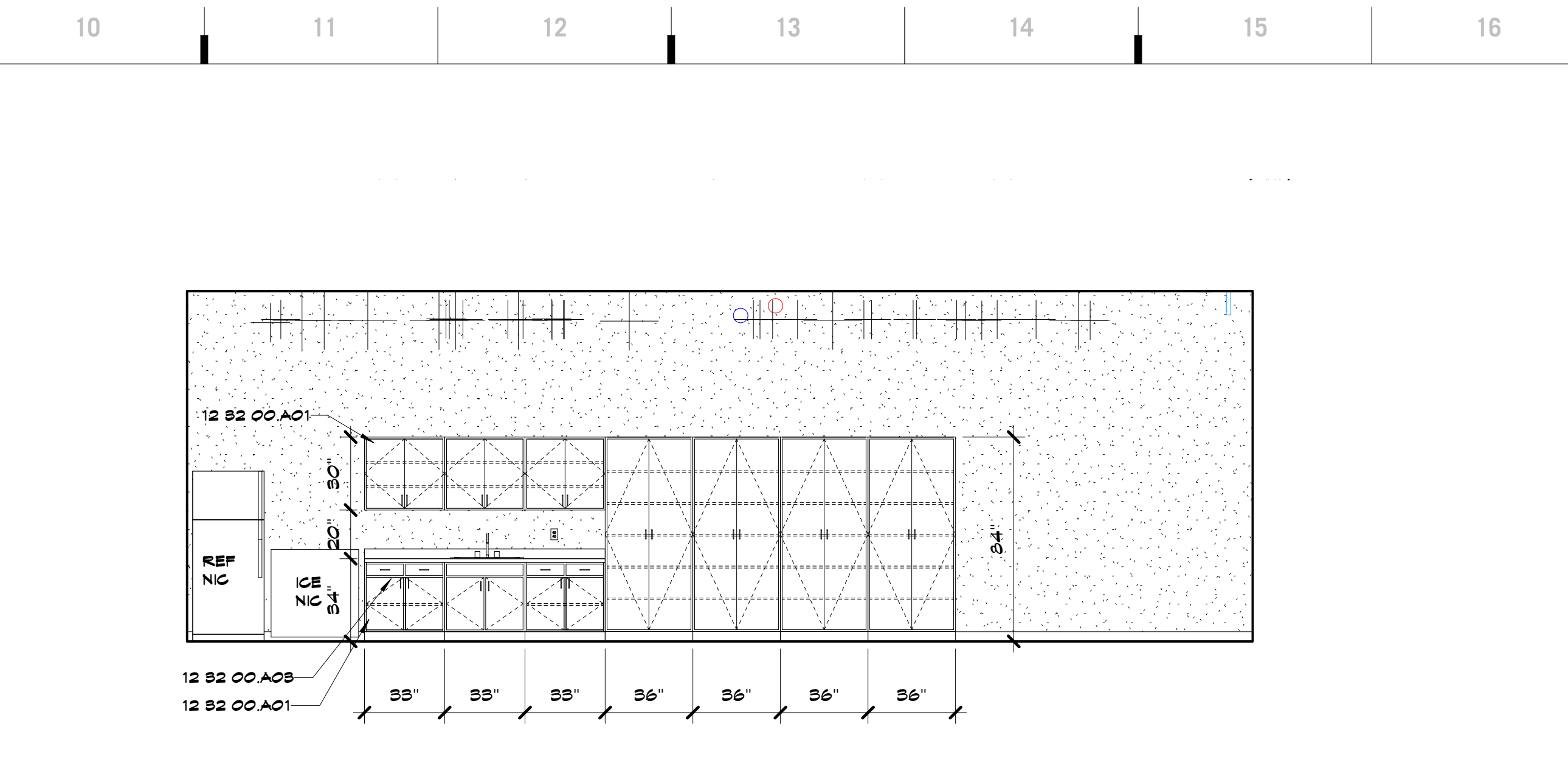
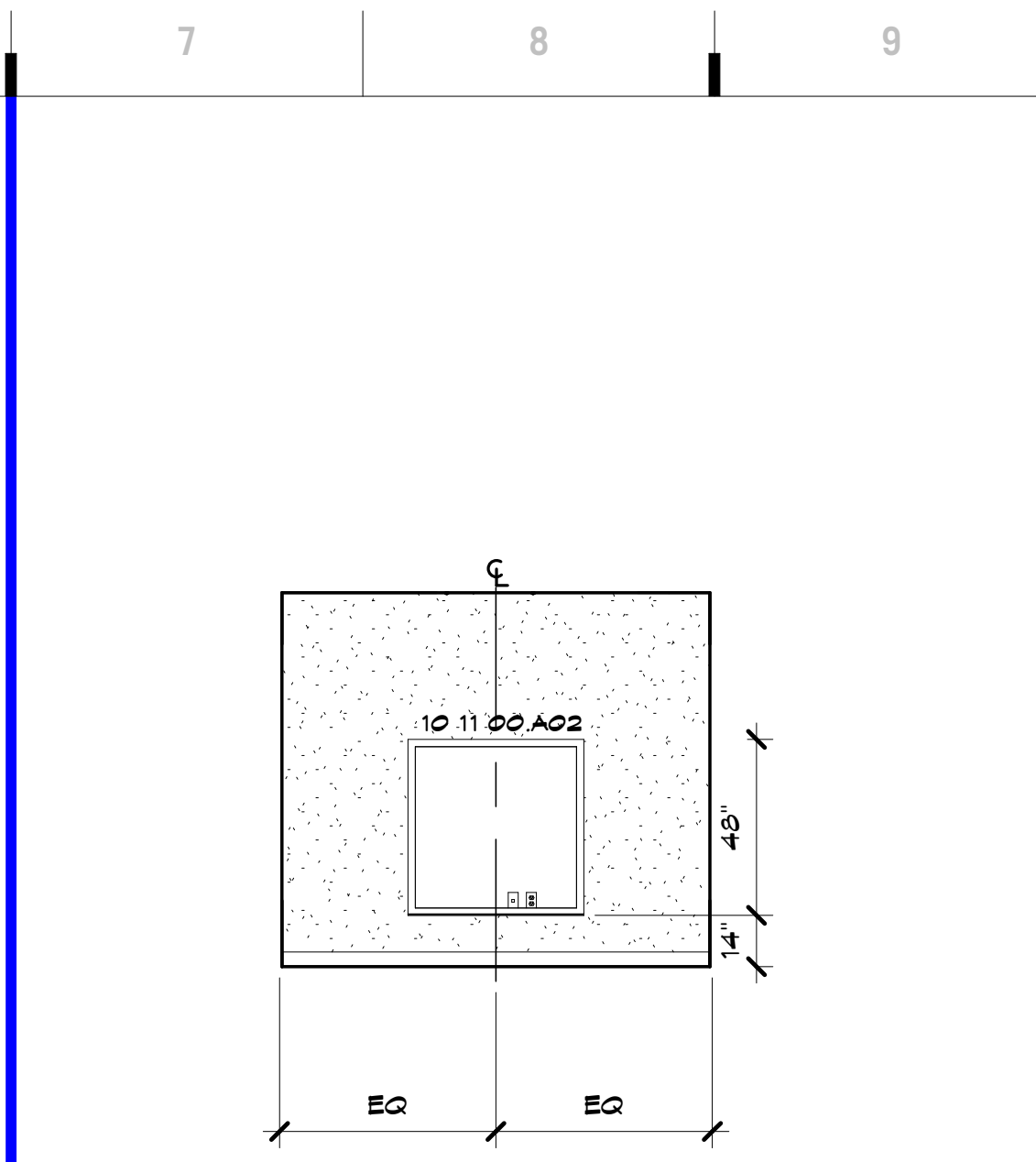
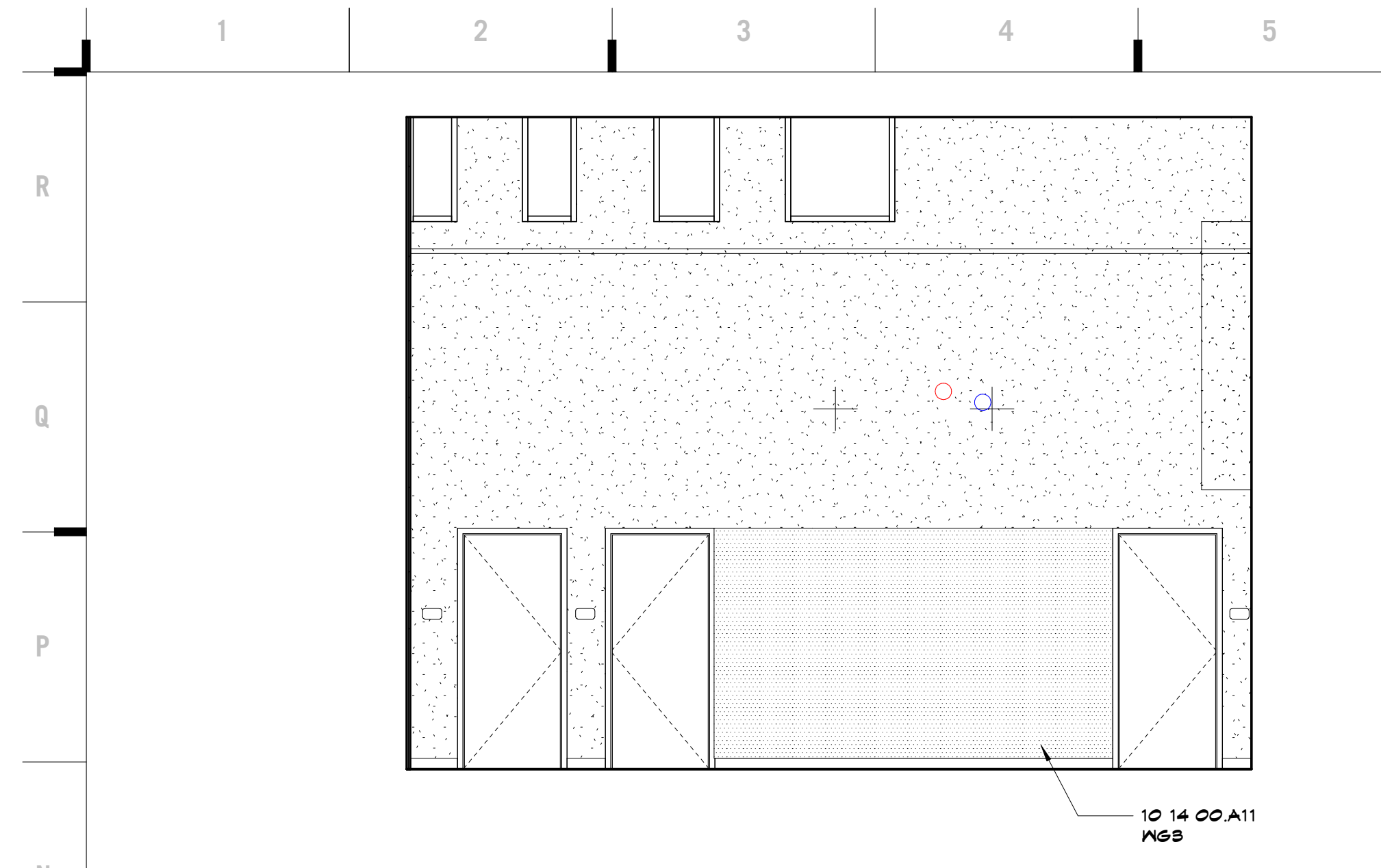
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SHEET KEYNOTE LEGEND

06 40 2B	INTERIOR ARCHITECTURAL WOODPAK
08 40 2B A02	ORNAMENTAL TRIM - OPAQUE
09 11 2B A01	FABRIC-WRAPPED PANELS
10 11 00 A02	MARKERBOARDS
10 14 00 A03	PANEL SIGNS
10 14 00 A11	INTERIOR VINYL GRAPHIC (SMOOTH SUBSTRATE)
10 14 00 A18	INTERIOR VINYL GRAPHIC (GLASS SUBSTRATE)
12 32 00 A01	PLASTIC LAMINATE FACED CABINETS
12 32 00 A03	PLASTIC LAMINATE COUNTERTOPS

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HOLLOW METAL FRAME PAINT COLORS

- 1 PAINT TO MATCH ICI PAINTS BELLA ROBA #10RR 19/219
- 2 PAINT TO MATCH ICI PAINTS CELEBRATION #2BYR 34/478
- 3 PAINT TO MATCH ICI PAINTS CAROTENE #9TYR 44/642
- 4 PAINT TO MATCH ICI PAINTS DANDELION #3TYT 64/689
- 5 PAINT TO MATCH ICI PAINTS KIVI FUN #803Y 40/581
- 6 PAINT TO MATCH ICI PAINTS INDIAN BEAD #70B6 31/882
- 7 PAINT TO MATCH MARINE BLUE #8066 32/846

CASEWORK NOTES

1. ALL EXPOSED SURFACES TO RECEIVE PLASTIC LAMINATES.
2. PROVIDE 4" BACKSPLASH UNO.
3. PROVIDE 1" OVERHANGS AT ALL COUNTERTOPS UNO.
4. DIMENSIONS SHOWN ON FLOOR PLANS ARE TO FACE OF STUD OR MAB BLOCK. FIELD VERIFY ALL DIMENSIONS TO FACE OF FINISH PRIOR TO CONSTRUCTION.
5. CASEWORK CONTRACTOR TO COORDINATE WITH PLUMBING CONTRACTOR ON PIPING LOCATIONS.
6. ALL BASE CABINETS ARE 24" DP UNO.
7. ALL UPPER CABINETS ARE 16" DP UNO.
8. ALL TALL STORAGE CABINETS ARE 24" DP UNO.

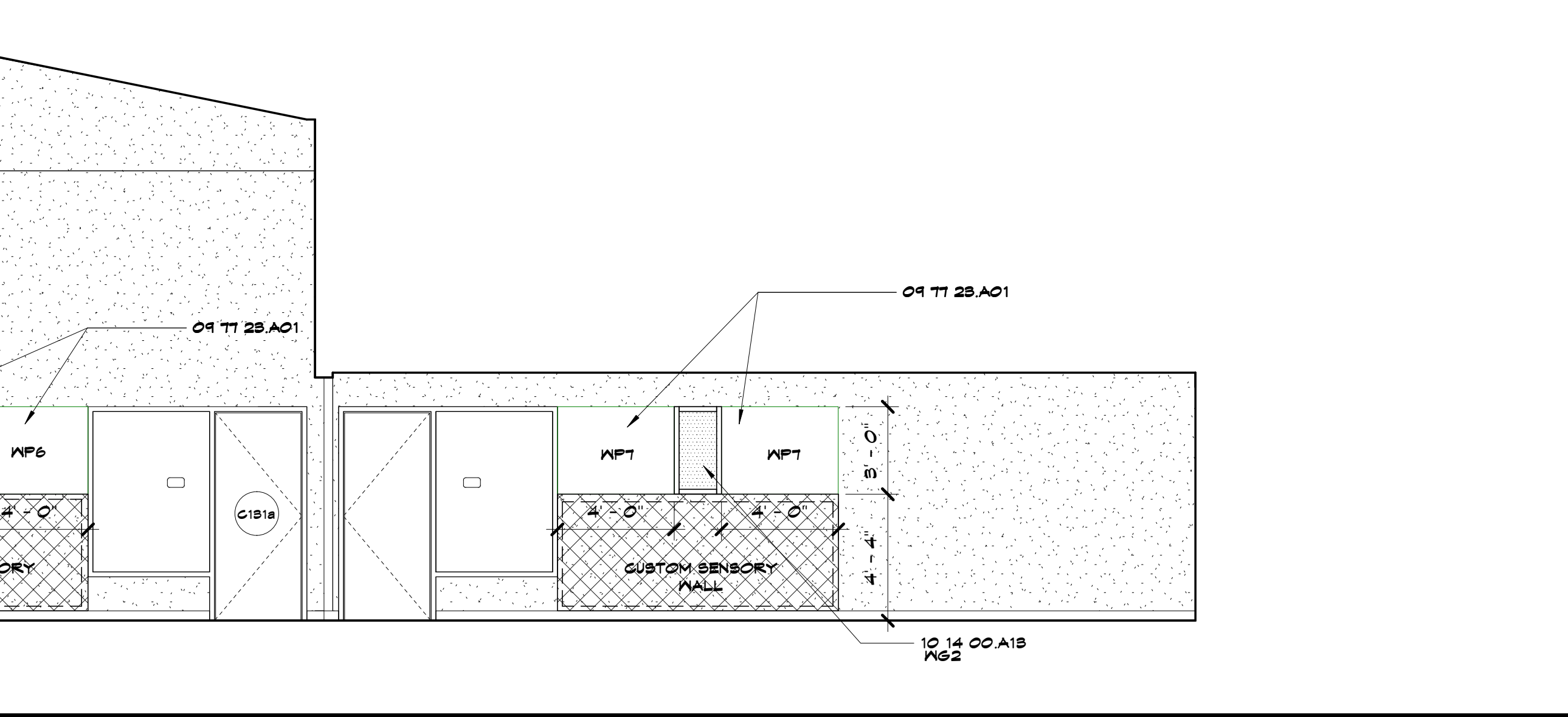
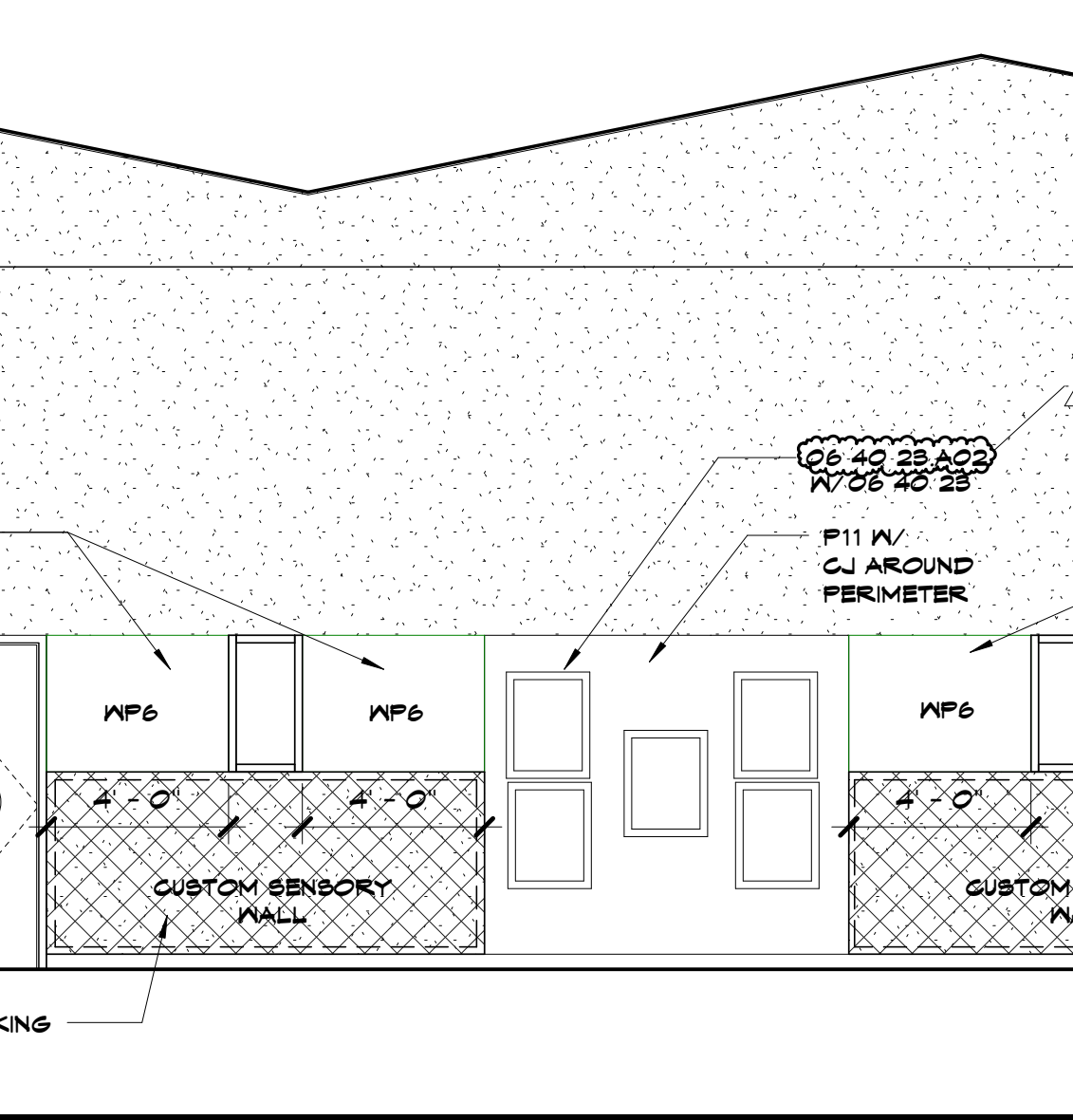
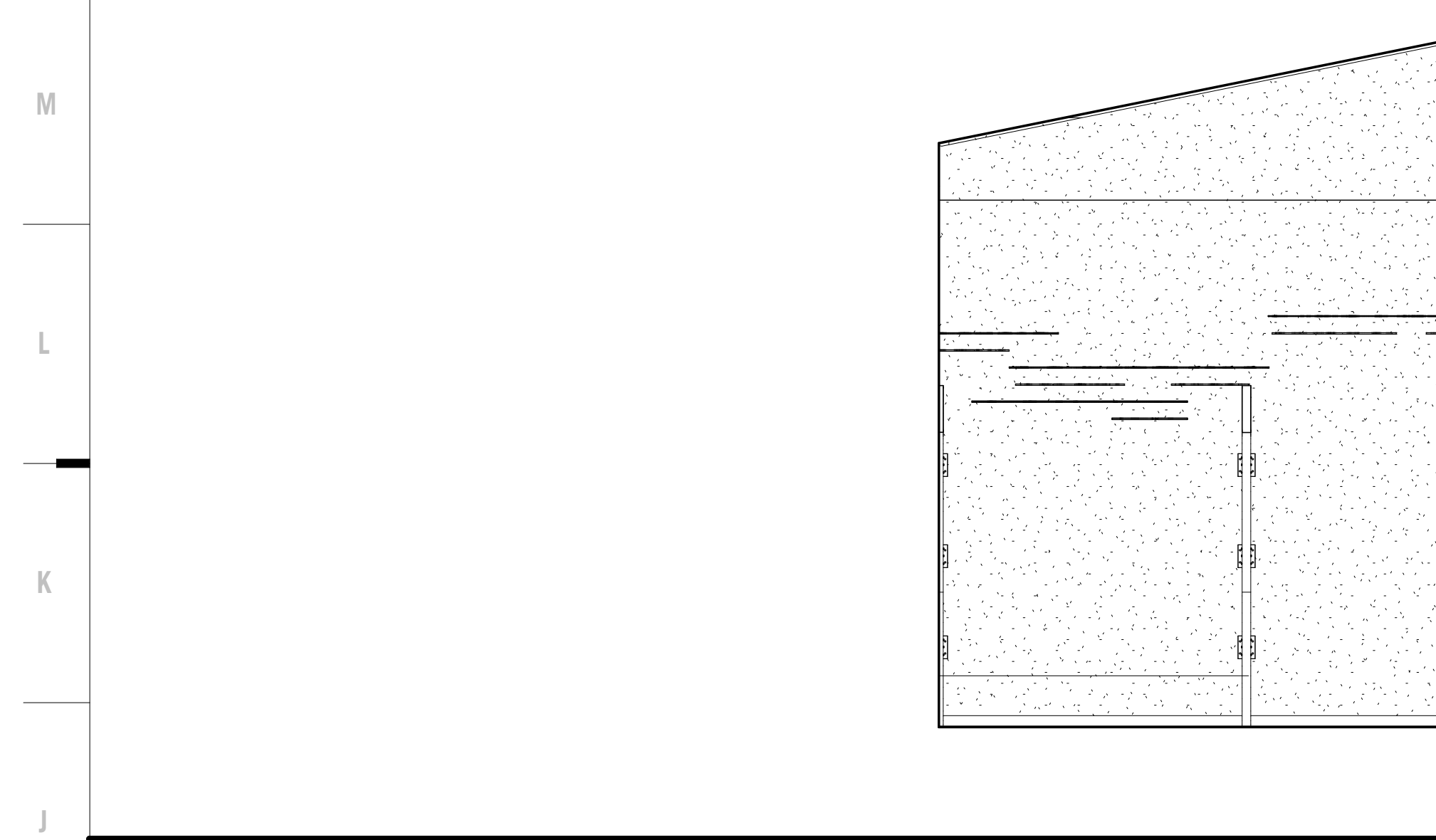
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DATE: 09.30.2016

INTERIOR ELEVATIONS

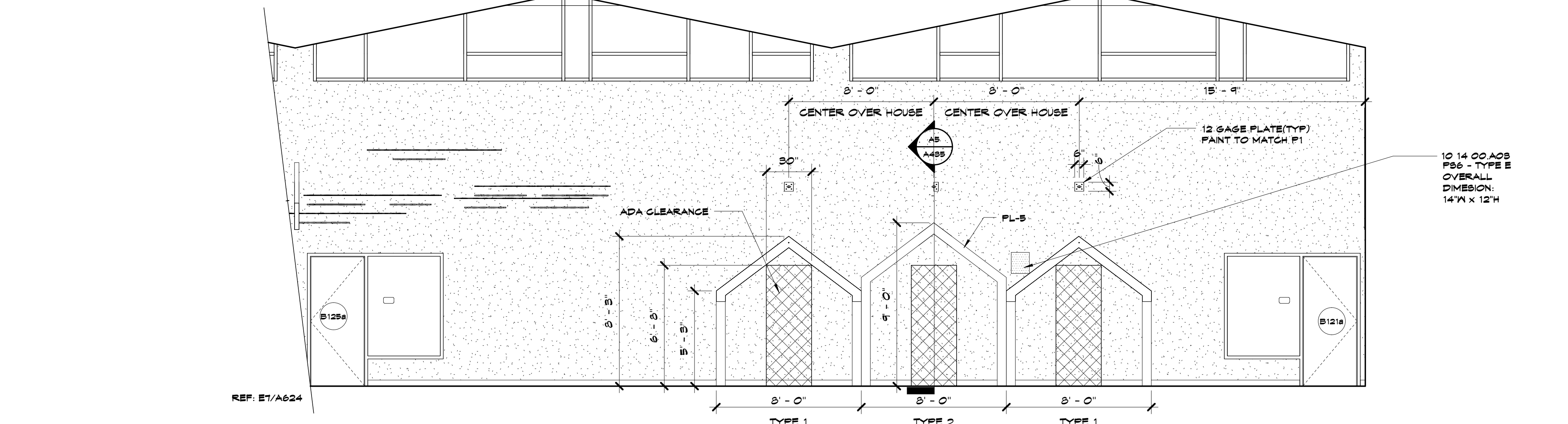
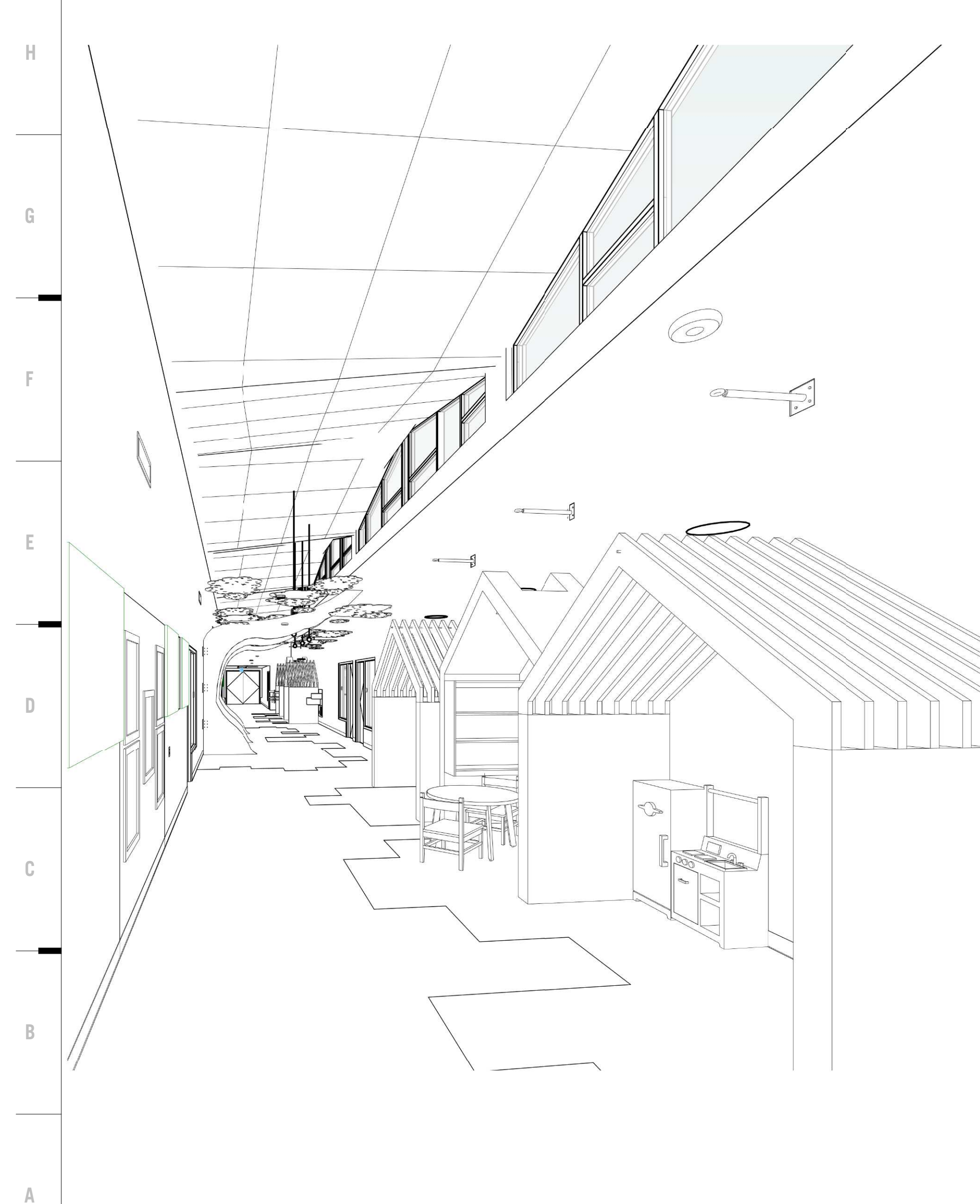
H1 Scale 1/4" = 1'-0" Interior Elevation - C101 Multi Purpose - E

N7 Scale 1/4" = 1'-0" TYP Flex Teaching Wall

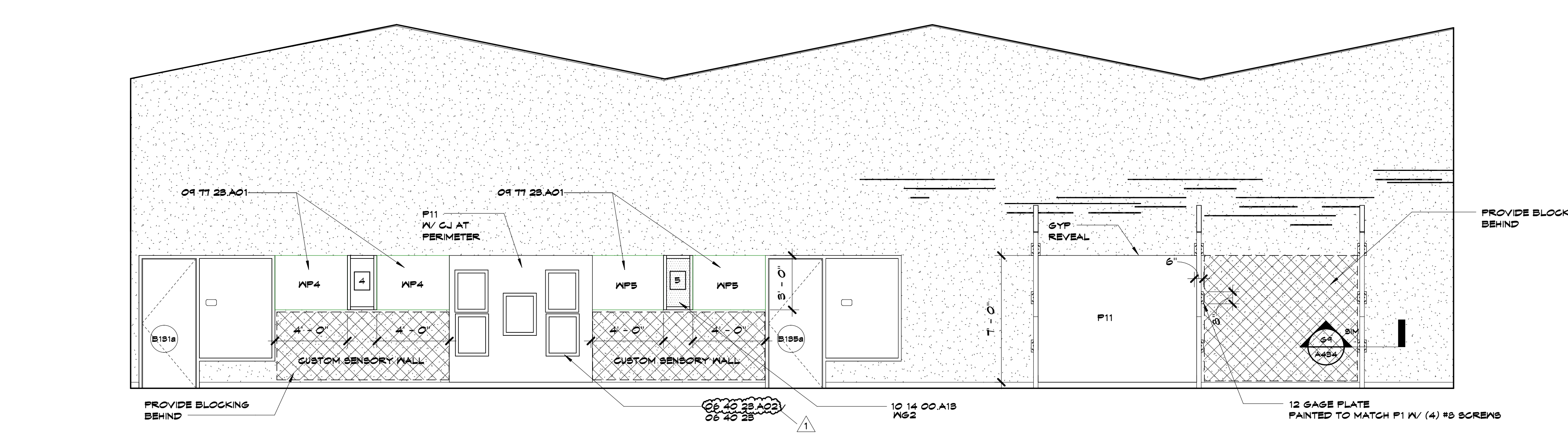
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J1 Scale 1/4" = 1'-0" Interior Elevation - C113 Corridor - N



E6 Scale 1/4" = 1'-0" Interior Elevation - B147 Corridor - S



A1 Scale Learning Garden - For Reference Only

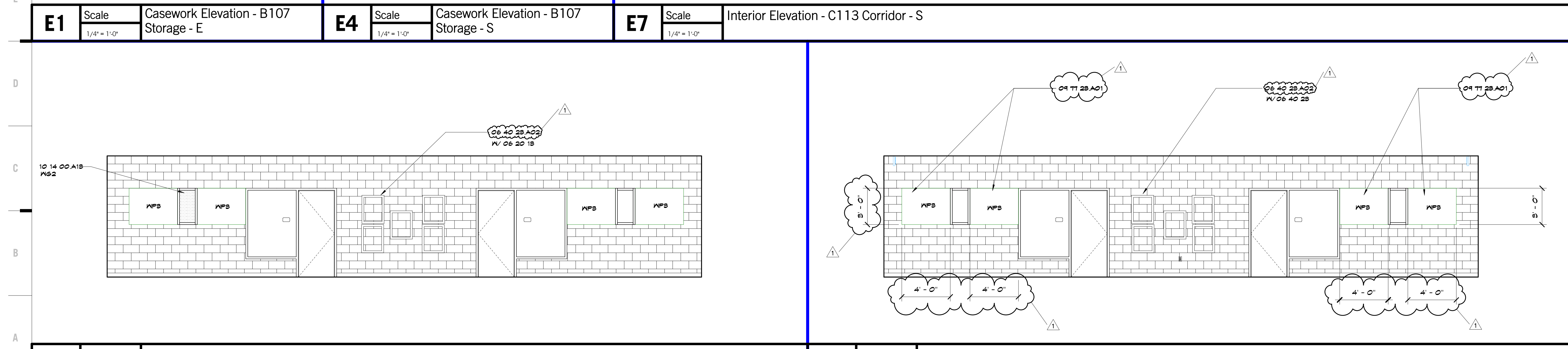
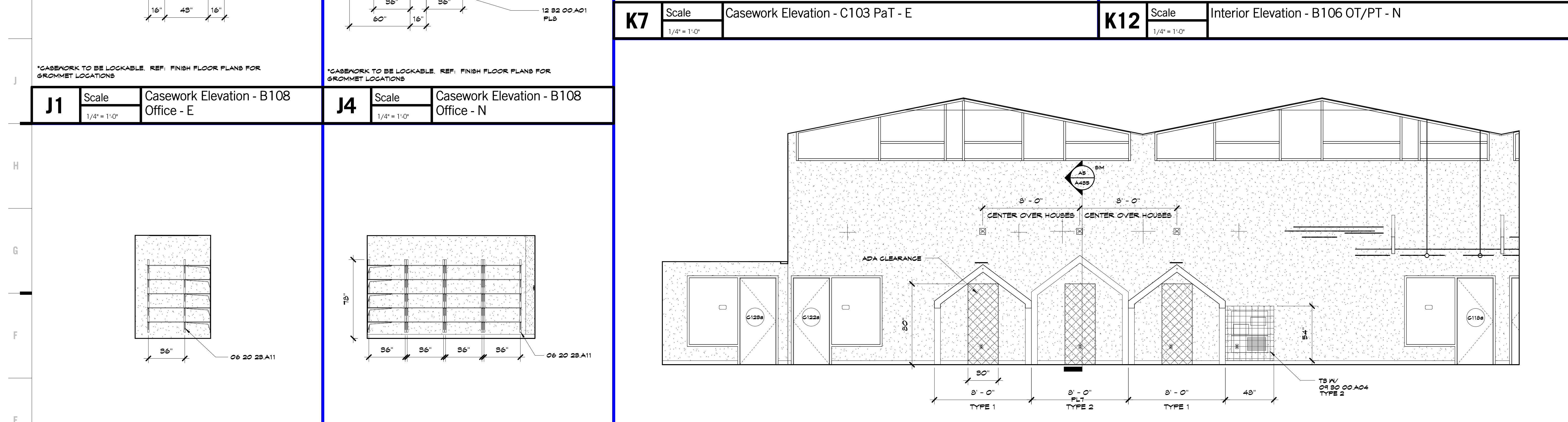
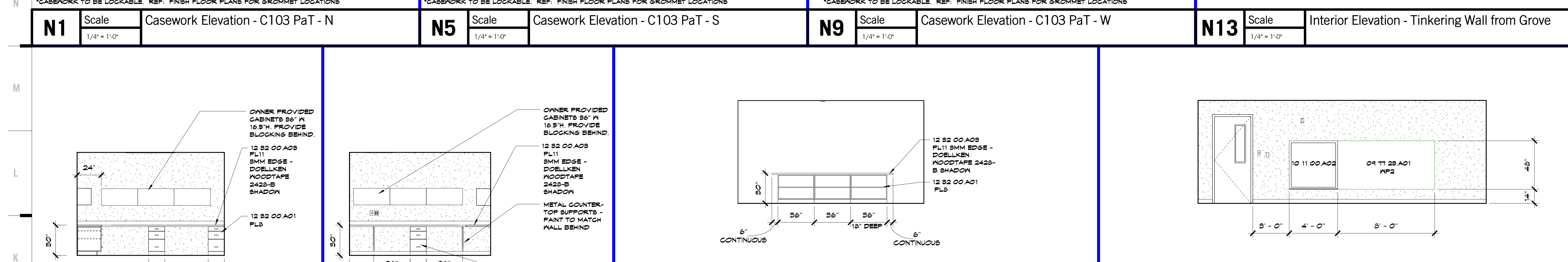
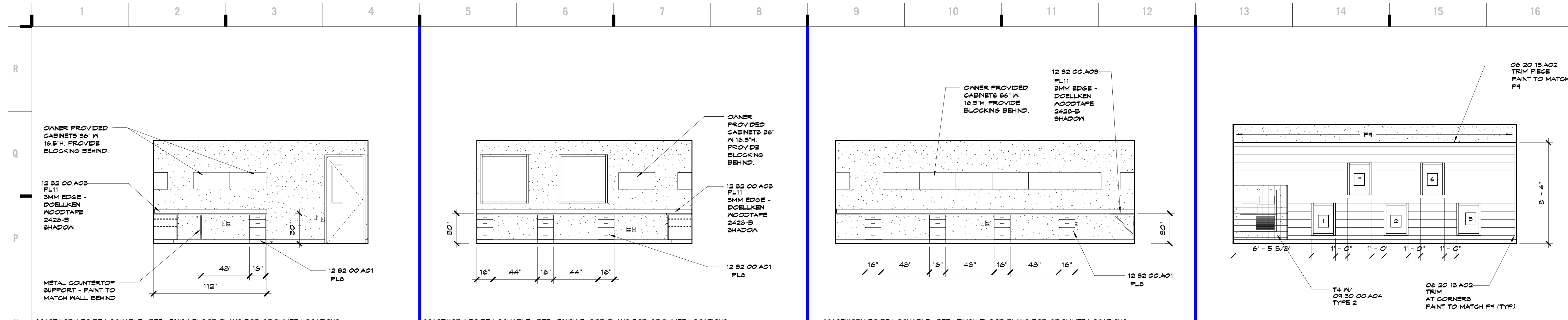
A6 Scale 1/4" = 1'-0" Interior Elevation - B147 Corridor - N

A623

OF

INTERIOR ELEVATIONS

Please consider the environment before printing this.



SHEET KEYNOTE LEGEND

06 20 18	EXTERIOR FINISH CARPENTRY
06 20 18A02	WOOD TRIM - OFAQUE
06 20 28A11	SHELVING
06 40 28	INTERIOR ARCHITECTURAL WOODWORK
06 40 28A02	ORNAMENTAL TRIM - OFAQUE
06 80 00A04	METAL EDGE STRIPS
04 TT 28A01	FABRIC-WRAPPED PANELS
10 11 00A02	MARKERBOARDS
10 14 00A18	INTERIOR VINYL GRAPHICS (GLASS SUBSTRATE)
12 82 00A01	PLASTIC LAMINATE FACED CABINETS
12 82 00A08	PLASTIC LAMINATE COUNTERTOPS

ID	MATERIAL
EP1	PAINT SEMI-GLOSS, SATIN SERENADE #10RR 26/248
EP2	PAINT SEMI-GLOSS, SATIN SERENADE #10RR 26/248
EP3	PAINT SEMI-GLOSS, FRESH SALMON #28YR 45/364
EP4	PAINT SEMI-GLOSS, EGYPTIAN SUN #04Y 51/588
EP5	PAINT SEMI-GLOSS, SUN RAYS #29Y 66/587
EP6	PAINT SEMI-GLOSS, SHEET LEAF #32GY 51/482
EP7	PAINT SEMI-GLOSS, SOUTH BEAS #31GG 51/241
EP8	PAINT SEMI-GLOSS, BEHIDE THE OCEAN #10BG 40/284
F1	PAINT EGGSHELL, SATIN ANEM GRAY
F2	PAINT EGGSHELL, SATIN SERENADE #10RR 26/248
F3	PAINT EGGSHELL, FRESH SALMON #28YR 45/364
F4	PAINT EGGSHELL, EGYPTIAN SUN #04Y 51/588
F5	PAINT EGGSHELL, SUN RAYS #29Y 66/587
F6	PAINT EGGSHELL, SHEET LEAF #32GY 51/482
F7	PAINT EGGSHELL, SOUTH BEAS #31GG 51/241
F8	PAINT EGGSHELL, BEHIDE THE OCEAN #10BG 40/284
F9	PAINT FLAT, SN TOG EXTRA WHITE
F10	PAINT EGGSHELL, SN 648B EBBDIE
F11	PAINT EGGSHELL, CHALKBOARD PAINT 808 - BLACK
FL1	PLASTIC LAMINATE, SATIN SERENADE 24211
FL2	PLASTIC LAMINATE, FRESH SALMON 24211
FL3	PLASTIC LAMINATE, EGYPTIAN SUN 24211
FL4	PLASTIC LAMINATE, SUN RAYS 24211
FL5	PLASTIC LAMINATE, SHEET LEAF 24211
FL6	PLASTIC LAMINATE, SOUTH BEAS 24211
FL7	PLASTIC LAMINATE, BEHIDE THE OCEAN 24211
FL8	PLASTIC LAMINATE, D96-60 SHADOW
FL9	PLASTIC LAMINATE, 4442-88 CRISP LINEN
FL10	PLASTIC LAMINATE, 191K-12 UPTOWN PALMUT
FL11	PLASTIC LAMINATE, 4444-88 CASUAL LINEN
FL12	PLASTIC LAMINATE, 4448-88 CLASSIC LINEN
FL13	PLASTIC LAMINATE, 821K-28 PHANTOM PEARL
S01	SOLID SURFACE, M108 FIRENZE
S02	SOLID SURFACE, 8209CM MOON SEYSER
T1	GLAZED CERAMIC WALL TILE - BRIGHT & MATTE PROFILES COLOR: DESIGNER WHITE 6001 8"X8"
T2	1"X1" GLASS WALL TILE, CUSTOM BLEND: 50% G08B, 20% G08T, 15% G10T, 15% G08A
T3	1"X1" GLASS WALL TILE, CUSTOM BLEND: 50% G014, 20% G018, 15% G022, 15% G028
T4	1"X1" GLASS WALL TILE, CUSTOM BLEND: 50% G004, 20% G010, 15% G001, 15% G062
AG1	WALL COVERING - TWINKLE BR42 - 002
AG2	WALL COVERING - DI-NOC ARCHITECTURAL FINISHES - PURE COLOR - PB-1486
AG3	WALL GRAPHIC/VINYL -
AP1	FABRIC WRAPPED PANEL, 642T METEOR, #T84
AP2	FABRIC WRAPPED PANEL, 642T METEOR, #T11
AP3	FABRIC WRAPPED PANEL, 642T METEOR, #T21
AP4	FABRIC WRAPPED PANEL, 642T METEOR, #T20
AP5	FABRIC WRAPPED PANEL, 642T METEOR, #T1
AP6	FABRIC WRAPPED PANEL, 642T METEOR, #T1
AP7	FABRIC WRAPPED PANEL, 642T METEOR, #T1
AP8	BOARD FINISHES - 8" HORIZONTAL SLATS - PAINTED TO MATCH FFS 1181-2 EMBELLISHMENT

HOLLOW METAL FRAME PAINT COLORS

1	PAINT TO MATCH ICI PAINTS BELLA ROBA #10RR 14/214
2	PAINT TO MATCH ICI PAINTS CELEBRATION #28YR 34/478
3	PAINT TO MATCH ICI PAINTS CAROTENE #9TYR 44/642
4	PAINT TO MATCH ICI PAINTS DANDELION #3TY 64/688
5	PAINT TO MATCH ICI PAINTS KINI FUN #80GY 40/581
6	PAINT TO MATCH ICI PAINTS INDIAN BEAD #10BG 51/282
7	PAINT TO MATCH MARINE BLUE #88GG 32/346

- ### CASEWORK NOTES
- ALL EXPOSED SURFACES TO RECEIVE PLASTIC LAMINATES.
 - PROVIDE 4" BACKSPLASH UNO.
 - PROVIDE 1" OVERHANGS AT ALL COUNTERTOPS UNO.
 - DIMENSIONS SHOWN ON FLOOR PLANS ARE TO FACE OF STUD OR MAB BLOCK. FIELD VERIFY ALL DIMENSIONS TO FACE OF FINISH PRIOR TO CONSTRUCTION.
 - CASEWORK CONTRACTOR TO COORDINATE WITH PLUMBING CONTRACTOR ON PIPING LOCATIONS.
 - ALL BASE CABINETS ARE 24" DP UNO.
 - ALL UPPER CABINETS ARE 16" DP UNO.
 - ALL TALL STORAGE CABINETS ARE 24" DP UNO.

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relationships @ results

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Joplin Early Childhood Center
Joplin Schools
2810 South McClelland Blvd.
Joplin, MO

100% BID DOCUMENTS

REVISIONS:

#	Description	Date
1	Addendum 1	10/14/2016

STATE OF MISSOURI
JOHN BERT BROWN
NUMBER A-5538
REGISTERED ARCHITECT

10/14/2016 8:38:39 AM

JOB NO: 16054
DRAWN BY: AH
CHECKED BY: NY
DATE: 09.30.2016

A624

OF

INTERIOR ELEVATIONS

Please consider the environment before printing this.

SHEET KEYNOTE LEGEND

06 40 28	INTERIOR ARCHITECTURAL WOODWORK
06 40 28 A02	ORNAMENTAL TRIM - OREGON
09 TT 28 A01	FABRIC-WRAPPED PANELS
12 B2 00 A01	PLASTIC LAMINATE FACED CABINETS
12 B2 00 A03	PLASTIC LAMINATE COUNTERTOPS
12 B2 00 A04	TALL CABINET WITH ADJUSTABLE SHELVES

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Joplin, MO

REVISIONS:

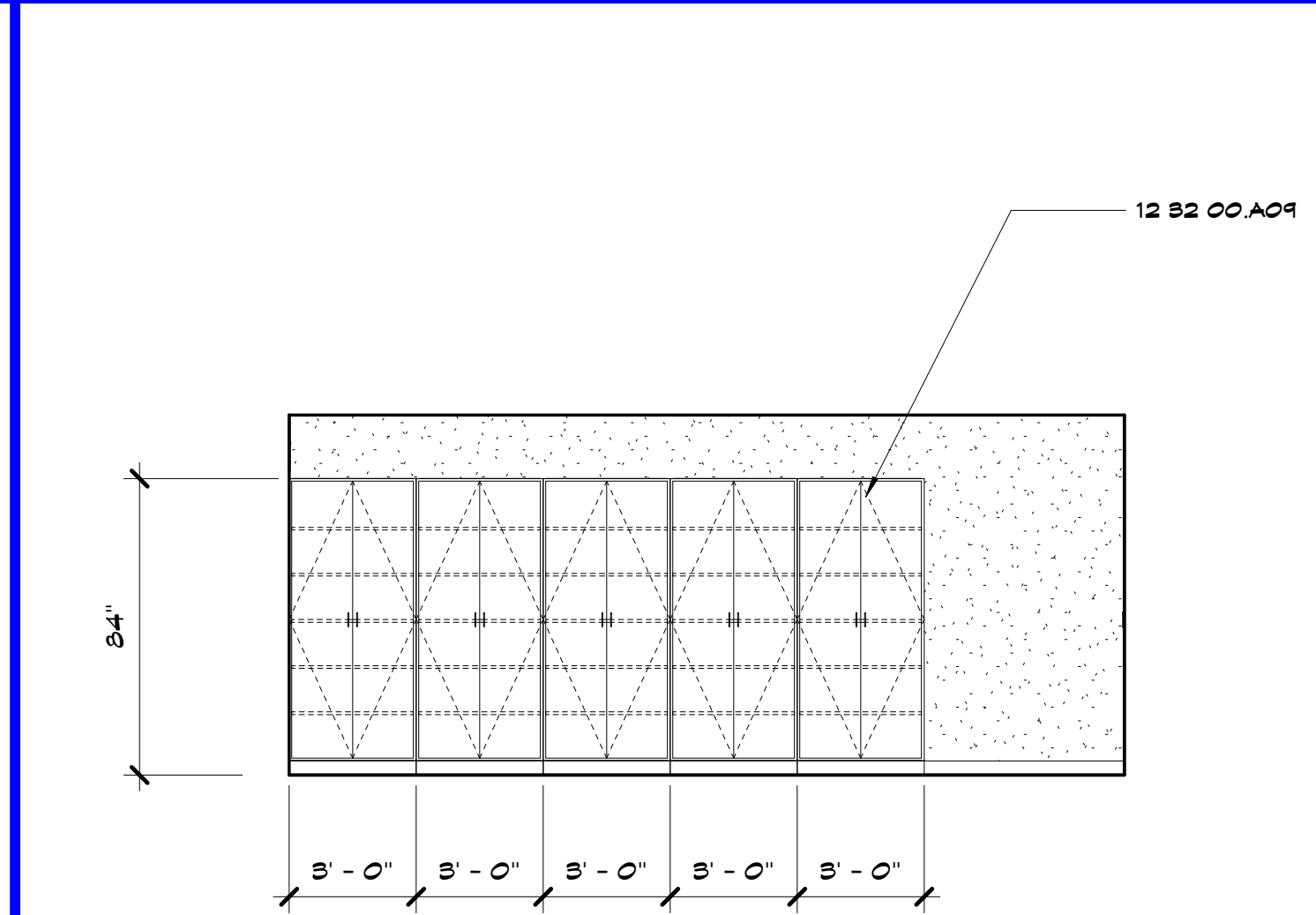
#	Description	Date
1	Addendum 1	10/14/2016

CASEWORK NOTES

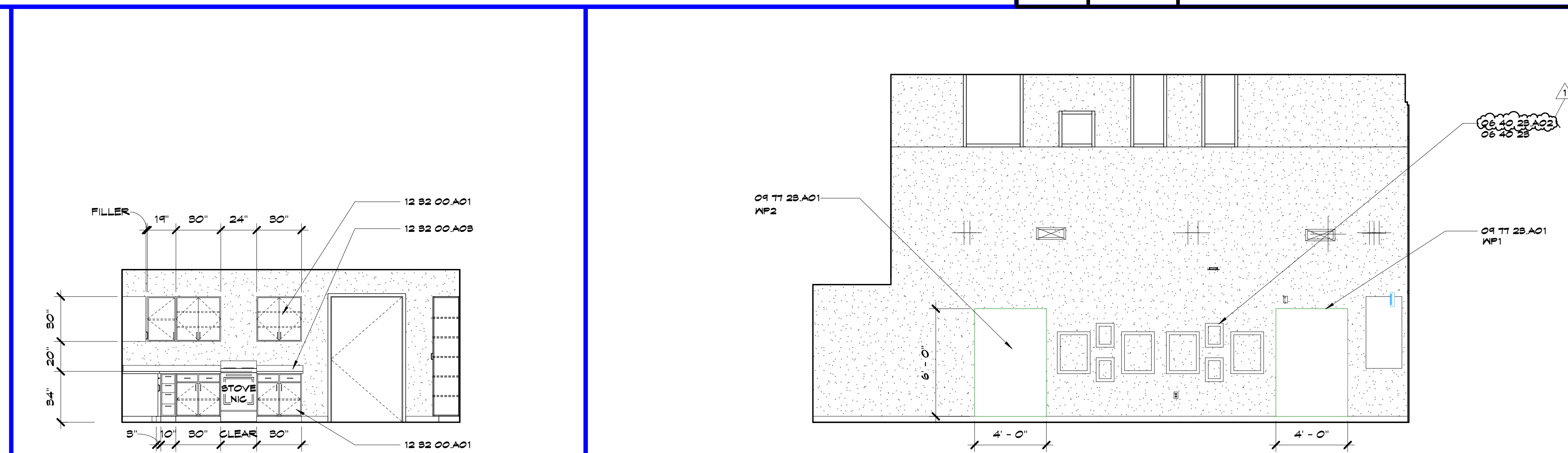
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- ALL BASE CABINETS ARE 24" DP UNO.
- ALL UPPER CABINETS ARE 16" DP UNO.
- ALL TALL STORAGE CABINETS ARE 24" DP UNO.

JOB NO: 16054
DRAWN BY: AH
CHECKED BY: NY
DATE: 09.30.2016

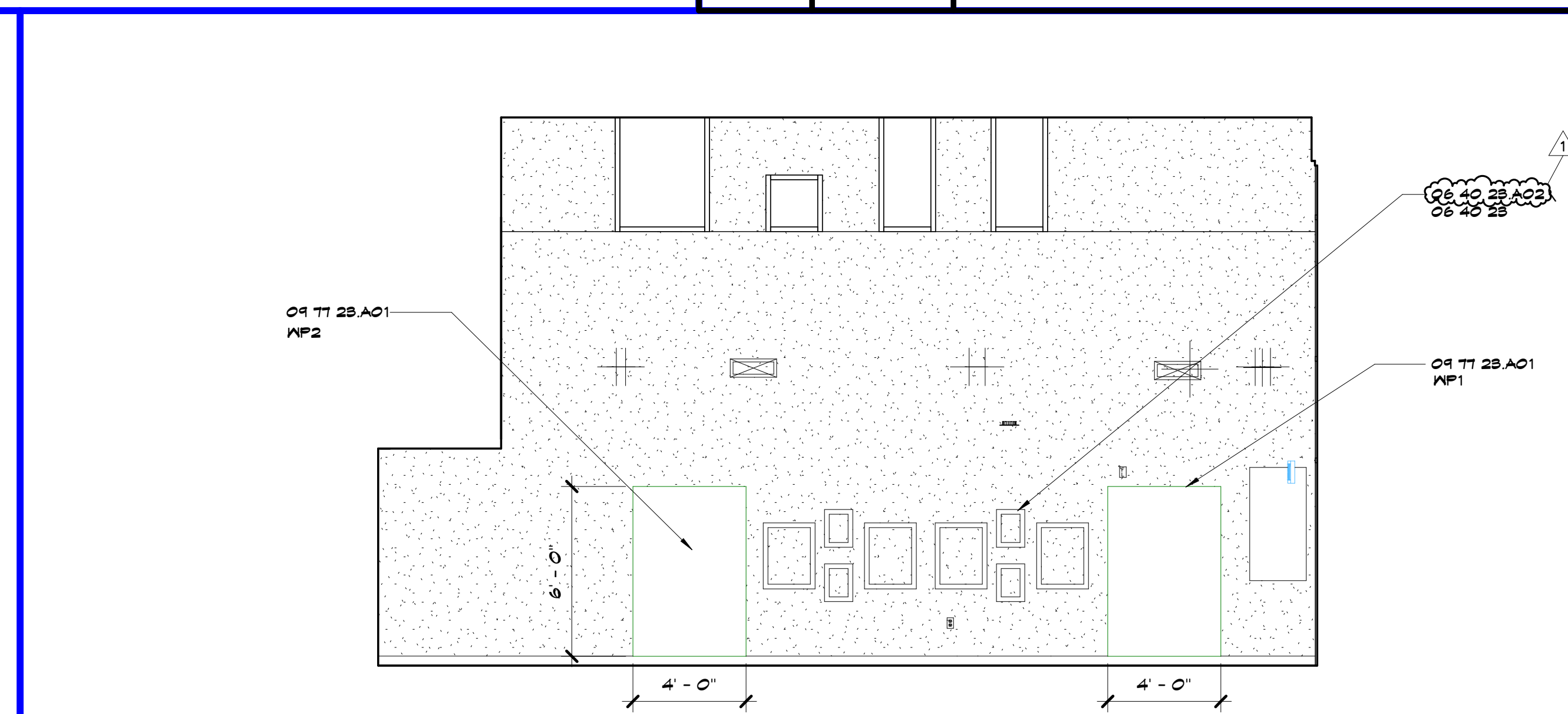
ID	MATERIAL
EP1	PAINT SEMI-GLOSS, SATIN SERENADE #10RR 26/248
EP2	PAINT SEMI-GLOSS, SATIN SERENADE #10RR 26/248
EP3	PAINT SEMI-GLOSS, FRESH SALMON #2BYR 45/364
EP4	PAINT SEMI-GLOSS, EGYPTIAN SUN #04YY 51/503
EP5	PAINT SEMI-GLOSS, SUN RAYS #2RY 66/537
EP6	PAINT SEMI-GLOSS, SNEET LEAF #32GY 51/482
EP7	PAINT SEMI-GLOSS, SOUTH BEAS #3TG 51/241
EP8	PAINT SEMI-GLOSS, BESIDE THE OCEAN #10BG 40/284
EP9	PAINT SEMI-GLOSS, SATIN SERENADE #10RR 26/248
F1	PAINT EGG SHELL, SATIN SERENADE #10RR 26/248
F2	PAINT EGG SHELL, FRESH SALMON #2BYR 45/364
F3	PAINT EGG SHELL, EGYPTIAN SUN #04YY 51/503
F4	PAINT EGG SHELL, SUN RAYS #2RY 66/537
F5	PAINT EGG SHELL, SNEET LEAF #32GY 51/482
F6	PAINT EGG SHELL, SOUTH BEAS #3TG 51/241
F7	PAINT EGG SHELL, BESIDE THE OCEAN #10BG 40/284
F8	PAINT FLAT, BN 1006 EXTRA WHITE
F9	PAINT EGG SHELL, BN 6498 EBBTIDE
F10	PAINT EGG SHELL, CHALKBOARD PAINT 809 - BLACK
FL1	PLASTIC LAMINATE, SATIN SERENADE Z42T1
FL2	PLASTIC LAMINATE, FRESH SALMON Z42T1
FL3	PLASTIC LAMINATE, EGYPTIAN SUN Z42T1
FL4	PLASTIC LAMINATE, SUN RAYS Z42T1
FL5	PLASTIC LAMINATE, SNEET LEAF Z42T1
FL6	PLASTIC LAMINATE, SOUTH BEAS Z42T1
FL7	PLASTIC LAMINATE, BESIDE THE OCEAN Z42T1
FL8	PLASTIC LAMINATE, D96-60 SHADOW
FL9	PLASTIC LAMINATE - 4442-89 CRISP LINEN
FL10	PLASTIC LAMINATE, 7911K-12 UPTOWN WALNUT
FL11	PLASTIC LAMINATE, 4444-89 CASUAL LINEN
FL12	PLASTIC LAMINATE, 4448-89 CLASSIC LINEN
FL13	PLASTIC LAMINATE, 8211K-28 PHANTOM PEARL
SB1	SOLID SURFACE, M109 FIRENZE
SB2	SOLID SURFACE, 4209CM MOON GREYER
T1	GLAZED CERAMIC WALL TILE - BRIGHT & MATTE PROFILES COLOR - DESIGNER WHITE 6001 8"x8"
T2	1"x1" GLASS WALL TILE, CUSTOM BLEND: 50% 60B9, 20% 60B7, 15% 6107, 15% 60B4
T3	1"x1" GLASS WALL TILE, CUSTOM BLEND: 50% 6014, 20% 6016, 15% 6022, 15% 6020
T4	1"x1" GLASS WALL TILE, CUSTOM BLEND: 50% 6004, 20% 6010, 15% 6001, 15% 6062
AG1	WALL COVERING - TWINKLE 898642 - 602
AG2	WALL COVERING - DANCING ARCHITECTURAL FINISHES - PURE COLOR - PB-1456
AG3	WALL GRAPHIC/VINYL -
AP1	FABRIC WRAPPED PANEL, 642T METEOR, NT54
AP2	FABRIC WRAPPED PANEL, 642T METEOR, NT14
AP3	FABRIC WRAPPED PANEL, 642T METEOR, NT21
AP4	FABRIC WRAPPED PANEL, 642T METEOR, NT20
AP5	FABRIC WRAPPED PANEL, 642T METEOR, T81
AP6	FABRIC WRAPPED PANEL, 642T METEOR, T87
AP7	FABRIC WRAPPED PANEL, 642T METEOR, T84
AP8	BOARD PANELING - 8" HORIZONTAL SLATS - PAINTED TO MATCH FPS 1151-2 EMBELLISHMENT



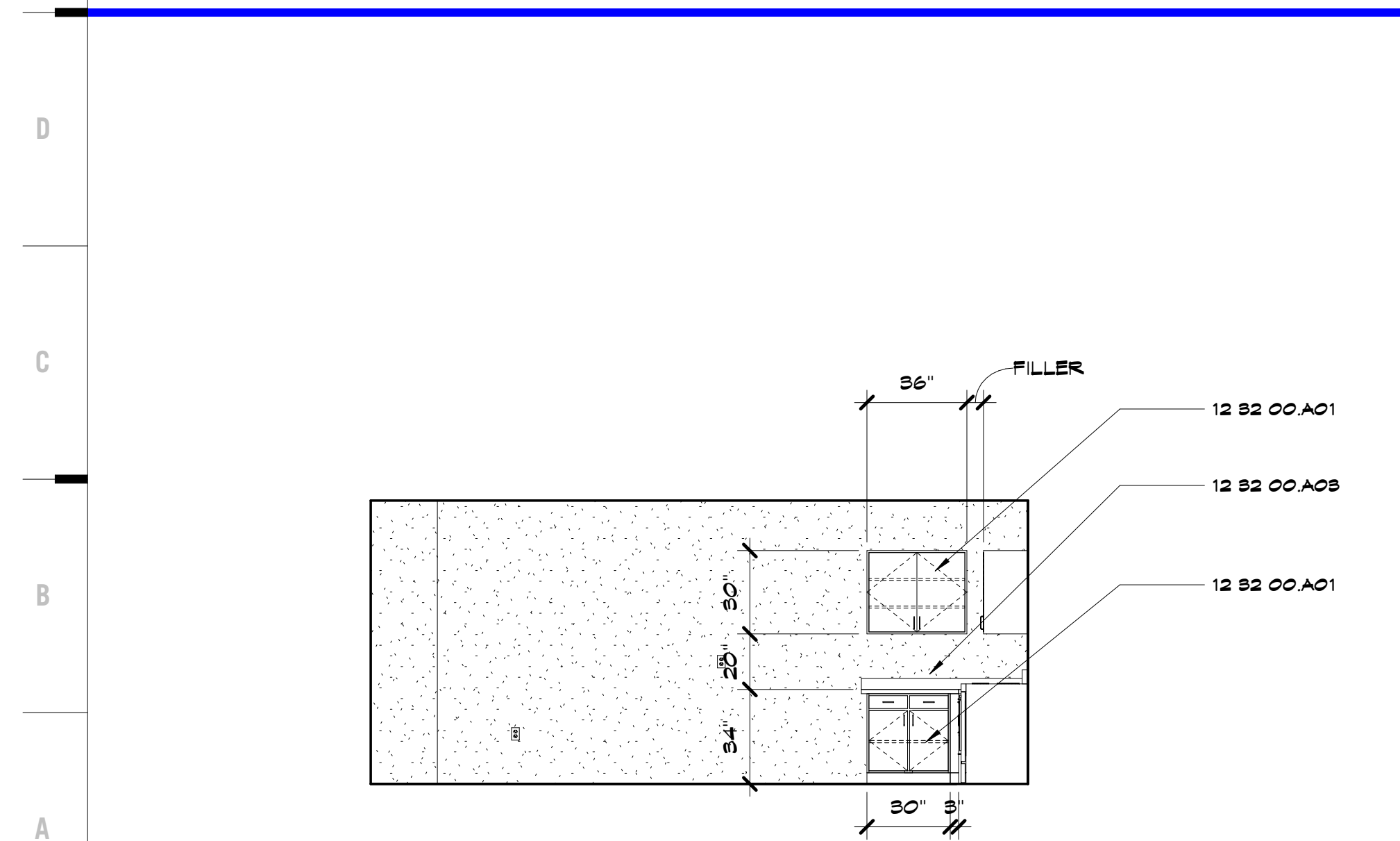
E13 Scale 1/4" = 1'-0" Casework Elevation - C107 Recieving/Kitchen - S



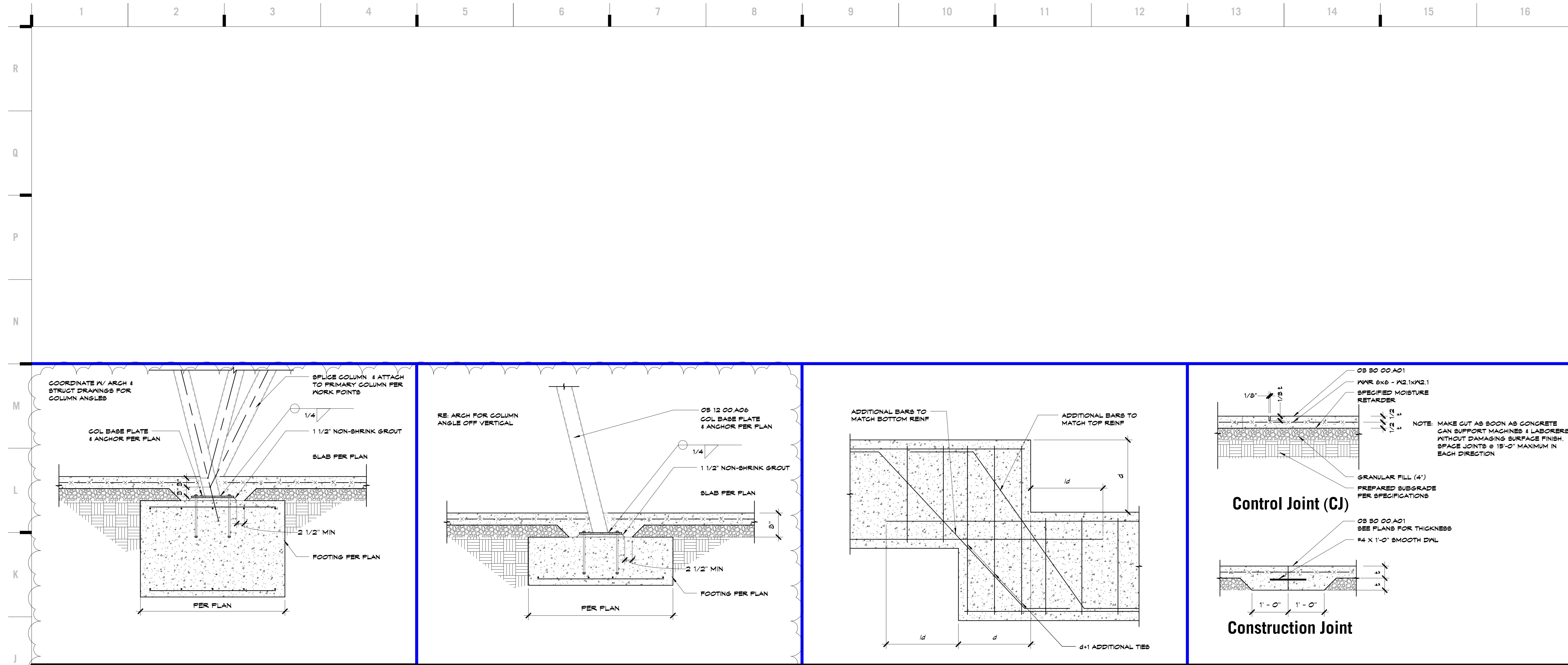
A6 Scale 1/4" = 1'-0" Casework Elevation - C107 Recieving/Kitchen - E



A10 Scale 1/4" = 1'-0" Interior Elevation - A130 Corridor - N



A1 Scale 1/4" = 1'-0" Casework Elevation - C107 Recieving/Kitchen - N



SHEET KEYNOTE LEGEND

- 08 50 00 A01 CAST-IN-PLACE CONCRETE
- 08 50 00 A06 REINFORCING BARS
- 04 20 00 A01 CONCRETE MASONRY UNITS
- 08 12 00 A01 GOLD-FORMED HBS
- 01 21 00 A01 EXTRUDED POLYSTYRENE BOARD INSULATION

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Joplin Early Childhood Center
Joplin Schools

#	Description	Date
1	As shown	10/14/2016

Professional Engineer Seal for John E. Funk, No. E-20080399, State of Missouri.

John E. Funk
E-20080399

Job No: 16054
Drawn By: SAH
Checked By: DBH
Date: 09.30.2016

S300

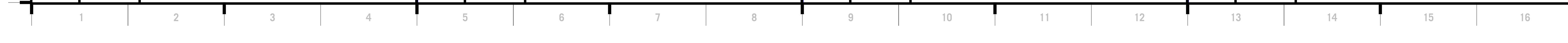
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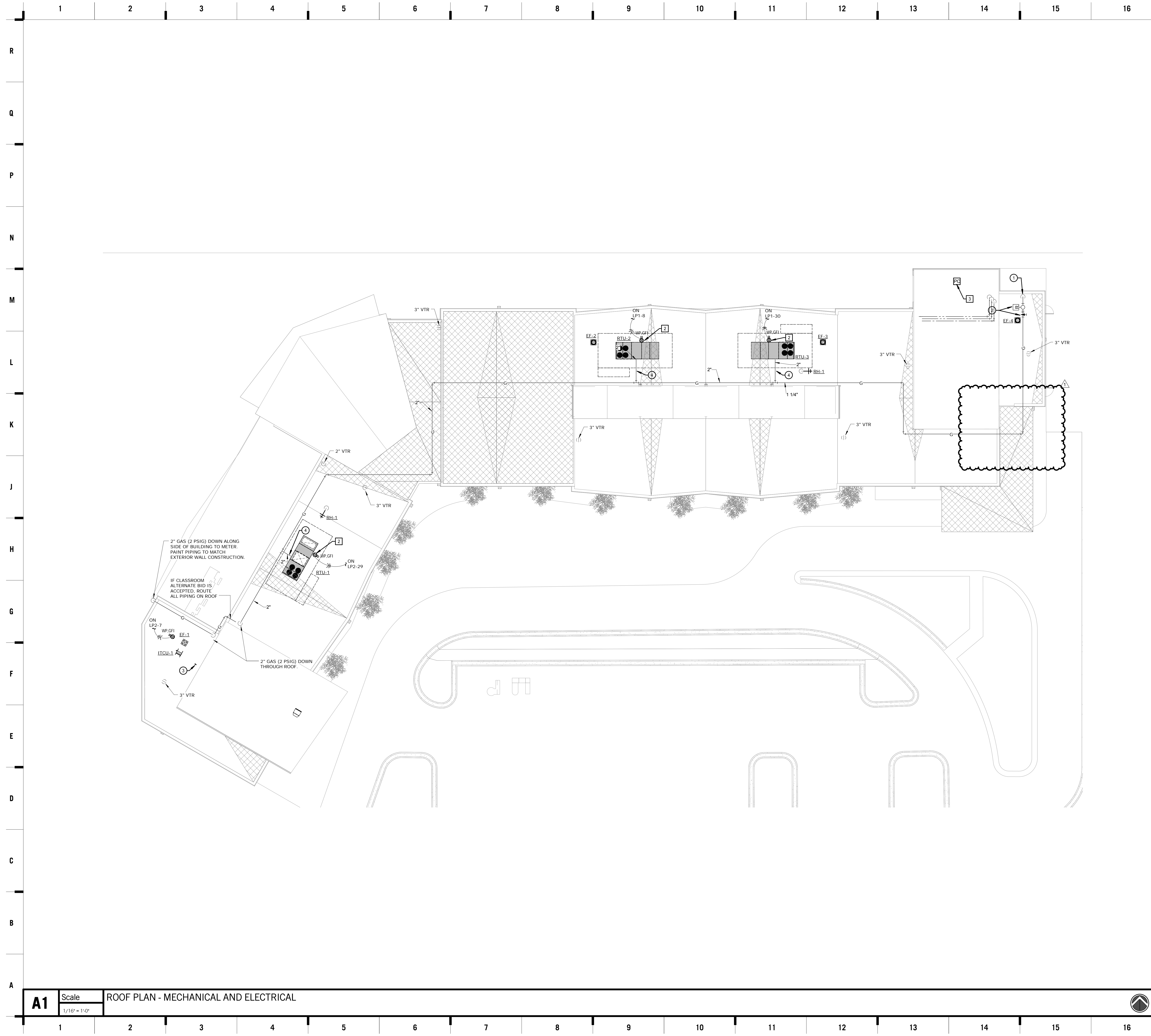
FOUNDATION SECTIONS

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relationships & results

A1 Scale 3/4" = 1'-0" Typical Slab Blockout Details
A5 Scale 3/4" = 1'-0" Typical Concrete Stoop
A9 Scale 3/4" = 1'-0" Typical Interior Steel Column Footing
A13 Scale 1 1/2" = 1'-0" Typical Anchor Rod





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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Structural # 1320001331

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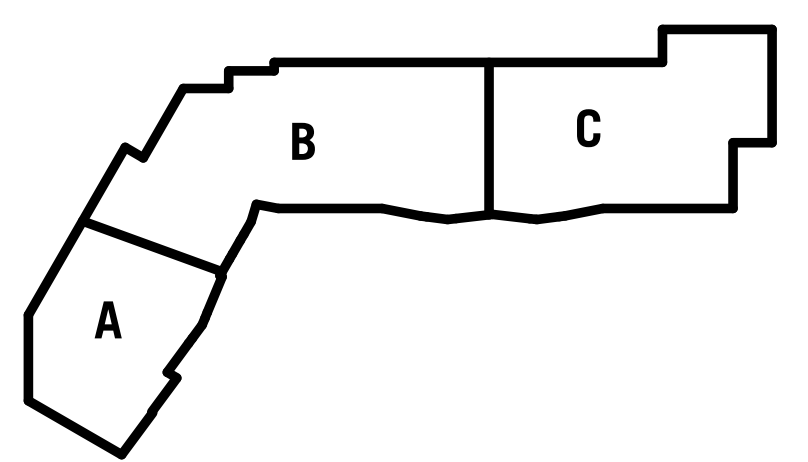
Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date
1	Addendum #1	10-14-16

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

ME202
OF

A1 Scale ROOF PLAN - MECHANICAL AND ELECTRICAL
1/16" = 1'-0"

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relationships & results

100% BID DOCUMENTS

10/14/2016 12:26:38 PM

VARIABLE AIR VOLUME TERMINAL SCHEDULE

DESIGNATION	FPB1-1	FPB1-2	FPB1-3	FPB1-4	FPB1-5	FPB1-6	FPB1-7	FPB1-8	FPB1-9	FPB1-10	FPB1-11	FPB1-12	FPB1-13	FPB1-14	FPB1-15
MANUFACTURER	TITUS														
MODEL NO.	DTQP														
INLET SIZE	10	10	16	8	12	8	8	8	8	8	10	10	10	10	10
UNIT/BOX SIZE	4	4	6	3	4	3	3	3	3	3	4	4	4	4	4
DESIGN CFM	1000	1180	3450	525	1380	680	300	720	300	225	700	600	880	1000	1080
PRIMARY CFM (NOTE 3)	250	295	865	135	345	170	75	180	75	60	175	150	220	250	270
FAN CFM	1000	1180	1725	265	690	340	150	360	150	115	350	300	440	500	540
FAN HP	1/3	1/3	3/4	1/4	1/3	1/4	1/4	1/4	1/4	1/4	1/4	1/3	1/4	1/3	1/3
HEATING KW	8.5	10.0	20.0	3.0	8.0	4.0	2.0	4.0	2.0	4.0	6.0	6.0	8.0	6.0	6.0
VOLTS/PHASE	480/3	480/3	480/3	277/1	480/3	277/1	277/1	277/1	277/1	277/1	277/1	277/1	277/1	277/1	277/1
PANEL	MP2-1/3/5	MP2-7/9/11	MP2-13/15/17	MP2-2	MP2-19/21/23	MP2-4	MP2-6	MP2-8	MP2-10	MP2-12	MP2-14	MP2-16	MP2-18	MP2-20	MP2-22
WIRE AND CONDUIT	(4)#12,#12,1/2"C.	(4)#12,#12,1/2"C.	(4)#10,#10G,3/4"C.	(2)#12,#12G,1/2"C.	(4)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.
BREAKER	15A-3P CB	20A-3P CB	30A-3P CB	20A-1P CB	15A-3P CB	20A-1P CB	20A-1P CB	20A-1P CB	20A-1P CB	20A-1P CB	20A-1P CB	25A-1P CB	25A-1P CB	25A-1P CB	25A-1P CB
DISCONNECT	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2
REMARKS	NOTE 1	NOTE 1	NOTE 1,4	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1

- NOTES:
 1. 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.
 2. CONTRACTOR TO FURNISH AND INSTALL MOTOR RATED TOGGLE SWITCH ADJACENT TO UNIT FOR UNIT DISCONNECTING MEANS.
 3. MINIMUM CFM SETTING CONTROLLED BY ROOM COMBO TEMPCO2 SENSOR. OUTSIDE AIR MINIMUM REQUIREMENTS PROVIDED THROUGH RTU AND CONTROL SYSTEM WITH DEMAND CONTROL VENTILATION METHOD.
 4. CONTRACTOR TO FURNISH AND INSTALL DUCT SMOKE DETECTOR IN RETURN AIR INLET.

VARIABLE AIR VOLUME TERMINAL SCHEDULE

DESIGNATION	FPB2-1	FPB2-2	FPB2-3	FPB2-4	FPB2-5	FPB2-6	FPB2-7	FPB2-8	FPB2-9
MANUFACTURER	TITUS								
MODEL NO.	DTQP								
INLET SIZE	10	10	10	10	10	10	10	10	10
UNIT/BOX SIZE	4	4	4	4	4	4	4	4	4
DESIGN CFM	800	1080	1000	880	980	1200	880	890	890
PRIMARY CFM (NOTE 3)	200	270	250	220	250	220	300	245	175
FAN CFM	400	540	500	440	500	440	600	490	345
FAN HP	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3
HEATING KW	5.0	6.0	6.0	5.0	5.0	5.0	7.0	6.0	4.0
VOLTS/PHASE	277/1	277/1	277/1	277/1	277/1	277/1	480/3	277/1	277/1
PANEL	MP1-2	MP1-4	MP1-6	MP1-8	MP1-10	MP1-12	MP1-13/5	MP1-14	MP1-16
WIRE AND CONDUIT	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(4)#12,#12G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#12,#12G,1/2"C.
BREAKER	25A-1P CB	25A-1P CB	25A-1P CB	25A-1P CB	25A-1P CB	25A-1P CB	15A-3P CB	25A-1P CB	20A-1P CB
DISCONNECT	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2
REMARKS	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1,4	NOTE 1,4	NOTE 1

- NOTES:
 1. 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.
 2. CONTRACTOR TO FURNISH AND INSTALL MOTOR RATED TOGGLE SWITCH ADJACENT TO UNIT FOR UNIT DISCONNECTING MEANS.
 3. MINIMUM CFM SETTING CONTROLLED BY ROOM COMBO TEMPCO2 SENSOR. OUTSIDE AIR MINIMUM REQUIREMENTS PROVIDED THROUGH RTU AND CONTROL SYSTEM WITH DEMAND CONTROL VENTILATION METHOD.
 4. CONTRACTOR TO FURNISH AND INSTALL DUCT SMOKE DETECTOR IN RETURN AIR INLET.

VARIABLE AIR VOLUME TERMINAL SCHEDULE

DESIGNATION	FPB3-1	FPB3-2	FPB3-3	FPB3-4	FPB3-5	FPB3-6	FPB3-7	FPB3-8	FPB3-9	FPB3-10	FPB3-11	FPB3-12
MANUFACTURER	TITUS											
MODEL NO.	DTQP											
INLET SIZE	10	10	10	16	14	10	10	10	8	10	8	8
UNIT/BOX SIZE	4	4	4	6	5	4	4	4	3	4	3	3
DESIGN CFM	800	1080	980	3100	2040	1000	880	1080	260	825	675	600
PRIMARY CFM (NOTE 3)	200	270	245	775	510	250	220	270	65	210	170	150
FAN CFM	400	540	490	1550	1020	500	440	540	130	415	340	300
FAN HP	1/3	1/3	1/3	3/4	1/3	1/3	1/3	1/3	1/4	1/3	1/4	1/4
HEATING KW	5.0	6.0	6.0	18.0	14.0	6.0	6.0	7.0	2.0	5.0	4.0	4.0
VOLTS/PHASE	277/1	277/1	277/1	480/3	480/3	277/1	277/1	480/3	277/1	277/1	277/1	277/1
PANEL	MP1-18	MP1-20	MP1-22	MP1-7/9/11	MP1-13/15/17	MP1-24	MP1-26	MP1-19/21/23	MP1-28	MP1-30	MP1-32	MP1-34
WIRE AND CONDUIT	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(4)#12,#12G,3/4"C.	(4)#12,#12G,3/4"C.	(2)#10,#10G,1/2"C.	(2)#10,#10G,1/2"C.	(4)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#10,#10G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.
BREAKER	25A-1P CB	25A-1P CB	25A-1P CB	30A-3P CB	25A-3P CB	25A-1P CB	25A-1P CB	15A-3P CB	20A-1P CB	25A-1P CB	20A-1P CB	20A-1P CB
DISCONNECT	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 2
REMARKS	NOTE 1	NOTE 1	NOTE 1	NOTE 1,4	NOTE 1,4	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1	NOTE 1

- NOTES:
 1. 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.
 2. CONTRACTOR TO FURNISH AND INSTALL MOTOR RATED TOGGLE SWITCH ADJACENT TO UNIT FOR UNIT DISCONNECTING MEANS.
 3. MINIMUM CFM SETTING CONTROLLED BY ROOM COMBO TEMPCO2 SENSOR. OUTSIDE AIR MINIMUM REQUIREMENTS PROVIDED THROUGH RTU AND CONTROL SYSTEM WITH DEMAND CONTROL VENTILATION METHOD.
 4. CONTRACTOR TO FURNISH AND INSTALL DUCT SMOKE DETECTOR IN RETURN AIR INLET.

EXHAUST FAN SCHEDULE

DESIGNATION	EF-1	EF-2	EF-3	EF-4	EF-5
FAN TYPE	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL
SERVICE	GENERAL EXHAUST	GENERAL EXHAUST	GENERAL EXHAUST	GENERAL EXHAUST	BLDG SVCS A111
MANUFACTURER	COOK	COOK	COOK	COOK	COOK
MODEL	120C17DEC	100C17DEC	100C17DEC	100C17DEC	GC-162
CFM	900	600	600	575	150
STATIC PRESSURE	0.50	0.50	0.50	0.50	0.25
SOUND DATA	NA	NA	NA	NA	<3.5 SONES
FAN RPM	1555	1555	1555	1555	1200
MOTOR HORSEPOWER	1/2	1/4	1/4	1/4	98 (WATTS)
VOLTS/PHASE	120/1	120/1	120/1	120/1	120/1
DRIVE	DIRECT	DIRECT	DIRECT	DIRECT	DIRECT
PANEL & CIRCUIT	LP2-54	LP1-52	LP1-54	LP1-56	LP2-58
WIRE & CONDUIT	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.	(2)#12,#12G,1/2"C.
OVERCURRENT DEVICE	20A-1P CB	20A-1P CB	20A-1P CB	20A-1P CB	20A-1P CB
DISCONNECT	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL
STARTER	-	-	-	-	-
COMBINATION STARTER	-	-	-	-	-
CONTROL	NOTE 2	NOTE 2	NOTE 2	NOTE 2	NOTE 1
DAMPEN TYPE	BACKDRAFT	BACKDRAFT	BACKDRAFT	BACKDRAFT	BACKDRAFT

- NOTES:
 1. PROVIDE REMOTE ON/RSE THERMOSTAT. ENGAGE FAN IF ROOMS WARM ABOVE 85F. DISCHARGE FAN EXHAUST INTO ADJACENT CEILING PLENUM.
 2. PROVIDE INTERFACE WITH BAS FOR SCHEDULING. PROVIDE WITH VARIABLE FAN SPEED CONTROLLER.

PIPE INSULATION SCHEDULE - HVAC

SERVICE	PIPE SIZE	INSULATION	NOTES
CONDENSATE DRAIN	1/2" - 1-1/2"	1/2" FIBERGLASS, ASJ	1,2,3,4,5
REFRIGERANT SUCTION	2" AND LARGER	1" FIBERGLASS, ASJ	
REFRIGERANT HOT GAS			
REFRIGERANT LIQUID		1/2" FLEXIBLE CLOSED CELL ELASTOMERIC	

- NOTES:
 1. FOR ALL PIPING 2-1/2" AND LARGER, PROVIDE RIGID FOAM INSERTS AT ALL HANGERS AND SUPPORT LOCATIONS.
 2. ELBOW AND FITTING INSULATION SHALL BE OF SAME THICKNESS AS ADJACENT STRAIGHT PIPE INSULATION.
 3. FITTING INSULATION TO HAVE ASJ OR SUPPLEMENTAL VAPOR BARRIER SEALED TO ADJACENT PIPE INSULATION.
 4. PROVIDE PVC JACKET ON ALL FITTINGS AND ELBOWS IN EXPOSED AREAS.

IT EQUIPMENT ROOM A/C UNIT SCHEDULE

INDOOR UNIT	
DESIGNATION	ITAC-1
MANUFACTURER	MITSUBISHI
MODEL	PKA-A24K46
CFM	705
MCA	1
TOTAL COOLING CAP (BTUH)	24,000
VOLTS/PHASE	208/1
PANEL AND CIRCUIT	NOTE 1
WIRE AND CONDUIT	(2)#12,#12G,1/2"C.
OVERCURRENT DEVICE	NOTE 1
DISCONNECT	NOTE 1

ROOF MOUNTED OUTDOOR UNIT	
DESIGNATION	ITCU-1
MANUFACTURER	MITSUBISHI
MODEL NO.	PUY-A24NH46
AMBIENT AIR TEMP (DEG F.)	96
MCA	18
VOLTS/PHASE	208/1
PANEL AND CIRCUIT	LP2-50/52
WIRE AND CONDUIT	(2)#10,#10G,1/2"C.
OVERCURRENT DEVICE	25A/2P
DISCONNECT	30A/2P NF, NEMA 3R

- NOTES:
 1. INDOOR UNIT CIRCUITED THROUGH OUTDOOR UNIT.
 2. PROVIDE UNIT WITH DIGITAL WALL THERMOSTAT
 3. PROVIDE WITH LOW AMBIENT WIND BAFFLE KIT.

GRILLE, REGISTER & DIFFUSER SCHEDULE

PLAN MARK	MANUFACTURER MODEL NUMBER	SERVICE	MOUNT TYPE	VOLUME DAMPER	MATERIAL	COLOR	REMARKS
SD-1	TITUS OMNI	SUPPLY	LAY-IN CEILING	NO	STEEL	WHITE	-
SD-2	TITUS 272RL	SUPPLY	SURFACE	YES	STEEL	WHITE	-
SD-3	TITUS CT-PP-3	SUPPLY	SURFACE	YES AG-35	ALUMINUM	ANODIZED	NOTE 1
RG-1	TITUS 300RL	RETURN	LAY-IN Q/L SURFACE	NO	STEEL	WHITE	-
EG-1	TITUS 4FL	EXHAUST	LAY-IN CEILING	YES	STEEL	WHITE	-

- NOTE 1: 4" LENGTH X 2.5" WIDE. PROVIDE WITH HEAVY DUTY FLOOR FLANGE.

ROOFTOP UNIT SCHEDULE - GAS HEAT

DESIGNATION	RTU-1	RTU-2	RTU-3
MANUFACTURER	TRANE		
MODEL NO.	YCD480		
UNIT TYPE	VAV		
CFM	14020	6510	13220
TOTAL COOLING CAPACITY (MBH)	441.50	307.49	436.09
SENSIBLE COOLING CAPACITY (MBH)	362.52	237.18	350.64
UNIT ENT. AIR (DBWB)	77.8 / 64.2	79.3 / 65.2	77.7 / 64.1
UNIT LVG. AIR (DBWB)	56.84/54.62	56.34/54.04	56.13/53.93
MINIMUM I.E.E.R.	14.7	13.6	14.7
HEATING INPUT (MBH) - MODULATING BURNER	350	350	350
HEATING OUTPUT (MBH) - MODULATING BURNER	280	280	280
DESIGN OA CONDITIONS - COOLING (DBWB)	96 / 75	96 / 75	96 / 75
DESIGN OA CONDITIONS - HEATING (DB)	0	0	0
AMBIENT ROOF TEMPERATURE (DB)	105	105	105
OUTSIDE AIR CFM	2400	2170	2500
EXTERNAL S.P. (IN, W.G.)	2	2	2
SUPPLY FAN MOTOR HP	15	10	15
NO. OF COMPRESSORS	3	3	3
STAGES OF COOLING	5	5	5
POWERED RELIEF	POWERED	POWERED	POWERED
HOT GAS REHEAT COIL	NO	NO	NO
ECONOMIZER OPERATION	YES	YES	YES
TYPE	2" PLEATED	2" PLEATED	2" PLEATED
MIN. SQ. FT. AREA	N/A	N/A	N/A
PANEL & CIRCUIT	MSB	MSB	MSB
MINIMUM CIRCUIT AMPACITY	102.95	78.60	102.95
WIRE & CONDUIT	(3)#1.#6G,1-1/2"C.	(3)#3.#6G,1-1/4"C.	(3)#1.#6G,1-1/2"C.
VOLTS/PHASE	480/3	480/3	480/3
OVERCURRENT DEVICE	3P/125A	3P/90A	3P/125A
DISCONNECT	PROVIDE WITH VFD	PROVIDE WITH VFD	PROVIDE WITH VFD
CONTROL SEQUENCE	BAS/DRAWINGS	BAS/DRAWINGS	BAS/DRAWINGS
REFERENCE DRAWING/DETAIL	ME202 / M201	ME202 / M202	ME202 / M203
REMARKS	NOTE 1,2,3	NOTE 1,2,3	NOTE 1,2,3

- NOTES:
 1. PROVIDE WITH SINGLE POINT ELECTRICAL CONNECTION.
 2. FURNISH AND INSTALL SMOKE DETECTOR IN RETURN AIR INLET AND DOWN STREAM OF SUPPLY FAN FOR UNIT SHUT DOWN. CONNECT TO UNIT CONTROL PANEL AND
 3. PROVIDE UNIT WITH UNPOWERED GFI WEATHERPROOF RECEPTACLE. ELECTRICAL CONTRACTOR TO FIELD WIRE PER PLANS.
 4. PROVIDE UNIT WITH 2" SPRING ISOLATED ROOF CURB. PROVIDE CURB HEIGHT AS REQUIRED TO MAINTAIN 12" CLEAR ABOVE ROOFING MEMBRANE.
 5. PROVIDE ALTERNATING LAYERS OF RIGID INSULATION AND GYP. BOARD PER RTU DETAIL.

DUCTWORK SCHEDULE

SERVICE	DUCT SHAPE	SMACNA REQUIREMENTS			OTHER REQUIREMENTS
		CLASSIFICATION	SEAL CLASS	LEAKAGE CLASS	
SUPPLY AIR DUCTS CONNECTED TO CONSTANT VOLUME AIR HANDLING UNITS	RECTANGULAR	2" WG POSITIVE	B	12	1/2", 3LB DENSITY LINER
SUPPLY DUCTS CONNECTED TO TERMINAL BOXES OR FAN COIL UNITS	RECTANGULAR	4" WG POSITIVE	A	3	INSULATED - SEE SCHEDULE
SUPPLY AIR FROM VAV RTUS TO TERMINAL UNITS	ROUND	10" WG POSITIVE SPIRAL SEAM	A	3	INSULATED - SEE SCHEDULE



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:**
- 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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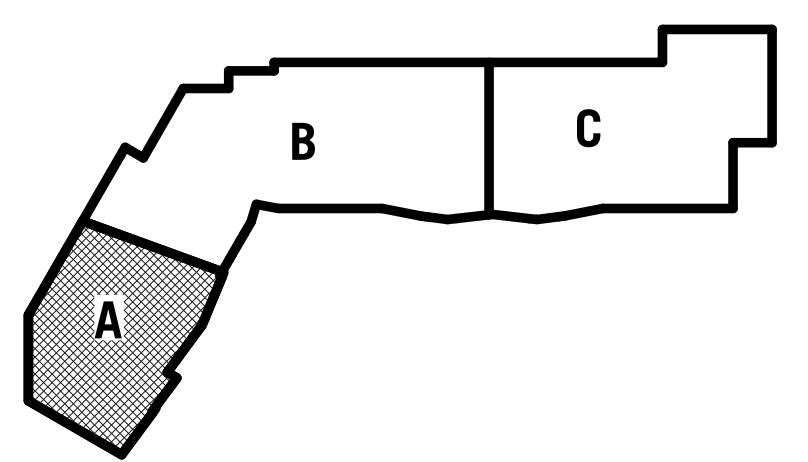
Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date
1	Anderson #1	10-14-16

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KEY PLAN



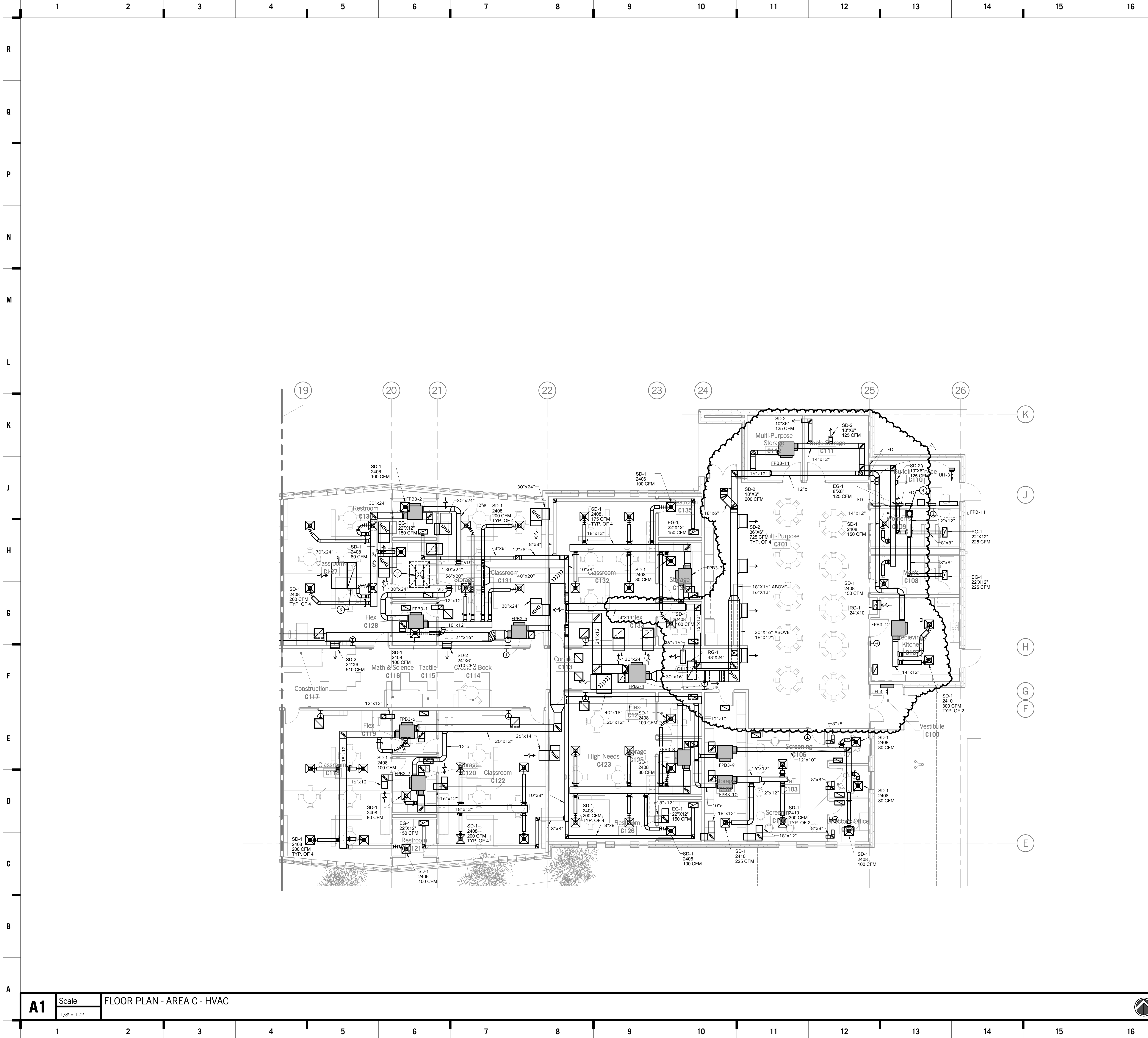
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M101A

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

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

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SHEET KEYNOTE LEGEND

- GENERAL NOTES:**
- UNLESS OTHERWISE NOTED, RETURN GRILLES SHALL BE RG-1 22"x22" OR RG-1 22"x12" AS SHOWN.
 - SOUND BOOTHS 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.

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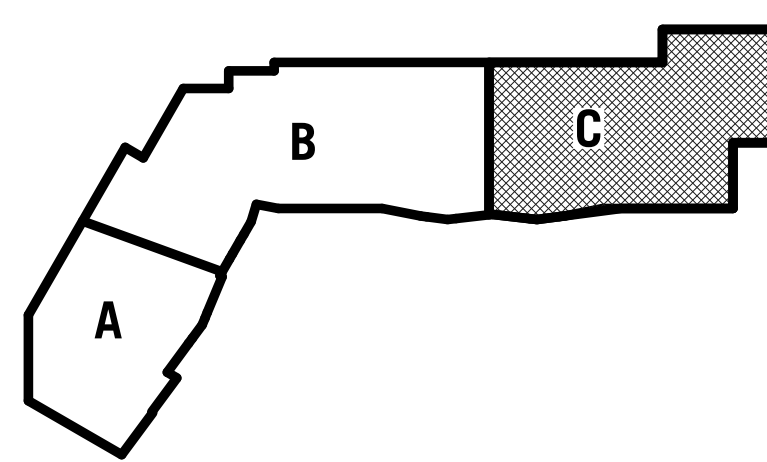
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Joplin Schools**

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#	Description	Date
1	As shown	10-14-16

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KEY PLAN



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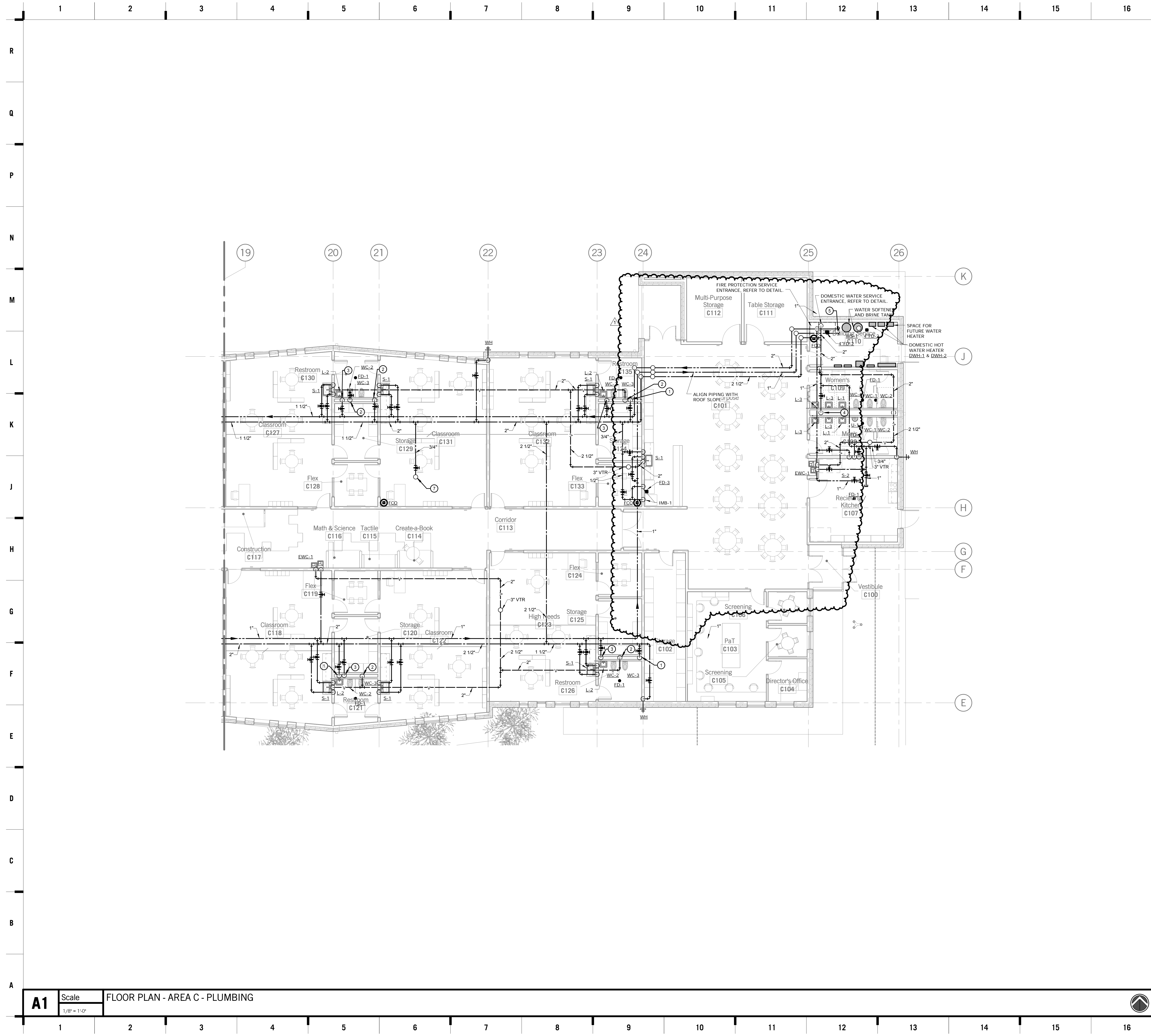
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M103C

FLOOR PLAN - AREA C - HVAC

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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, 3/4" HW, 2-1/2" VENT DOWN INTO CHASE. PROVIDE WITH SHUT OFF VALVES ACCESSIBLE FROM CEILING.
 - ⑤ REFER TO WATER HEATER DETAIL.
 - ⑥ NOT USED.
 - ⑦ 3/4" CW UP TO ROOF HYDRANT.

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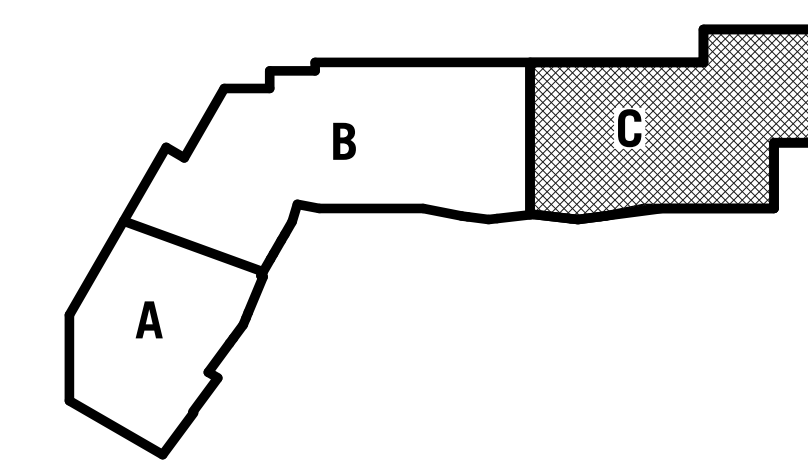
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1	Addendum #1	10-14-16

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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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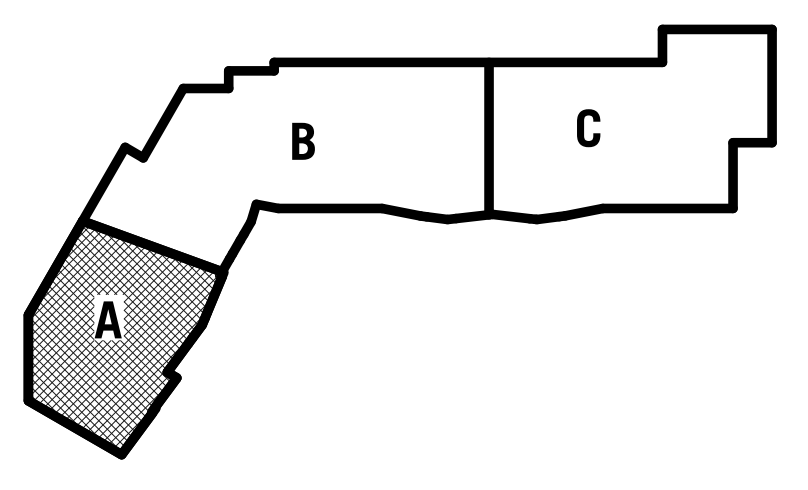
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KEY PLAN



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E101A

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:**
- 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.
 - COORDINATE MOUNTING OF PENDANT FIXTURES WITH ARCHITECTURAL ELEMENTS WITHIN LEARNING GROVE.
 - FINAL LOCATIONS OF WALL MOUNTED PENDANT FIXTURES AT LEARNING GARDEN HOUSES TO BE DETERMINED BY ARCHITECT. COORDINATE INSTALLATION WITH ARCHITECT.
 - DIMMING SWITCHES AND SCENE CONTROLLER FOR LEARNING GROVE TYPE F AND TYPE G FIXTURES TO BE DIMMED SEPARATELY. COORDINATE PROGRAMMING WITH OWNER.
 - READING NOOK DIMMER, TYPE F AND TYPE G FIXTURES TO BE CONTROLLED SEPARATELY.

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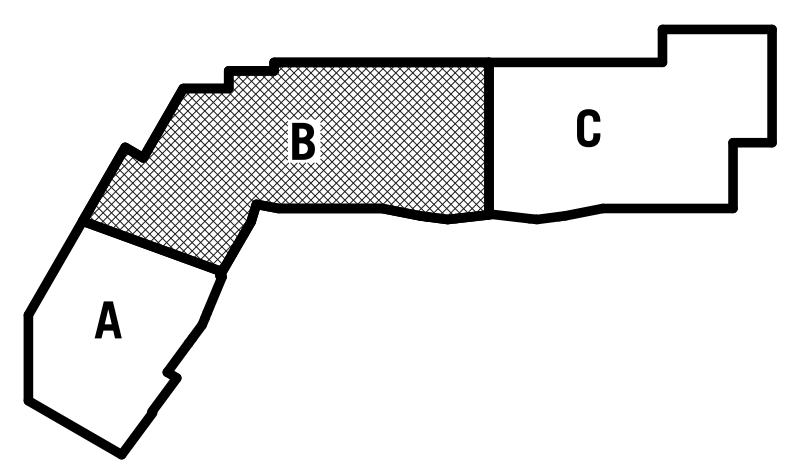
Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date
1	As shown	10-14-16

smith&boucher
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project number 1617200

KEY PLAN



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

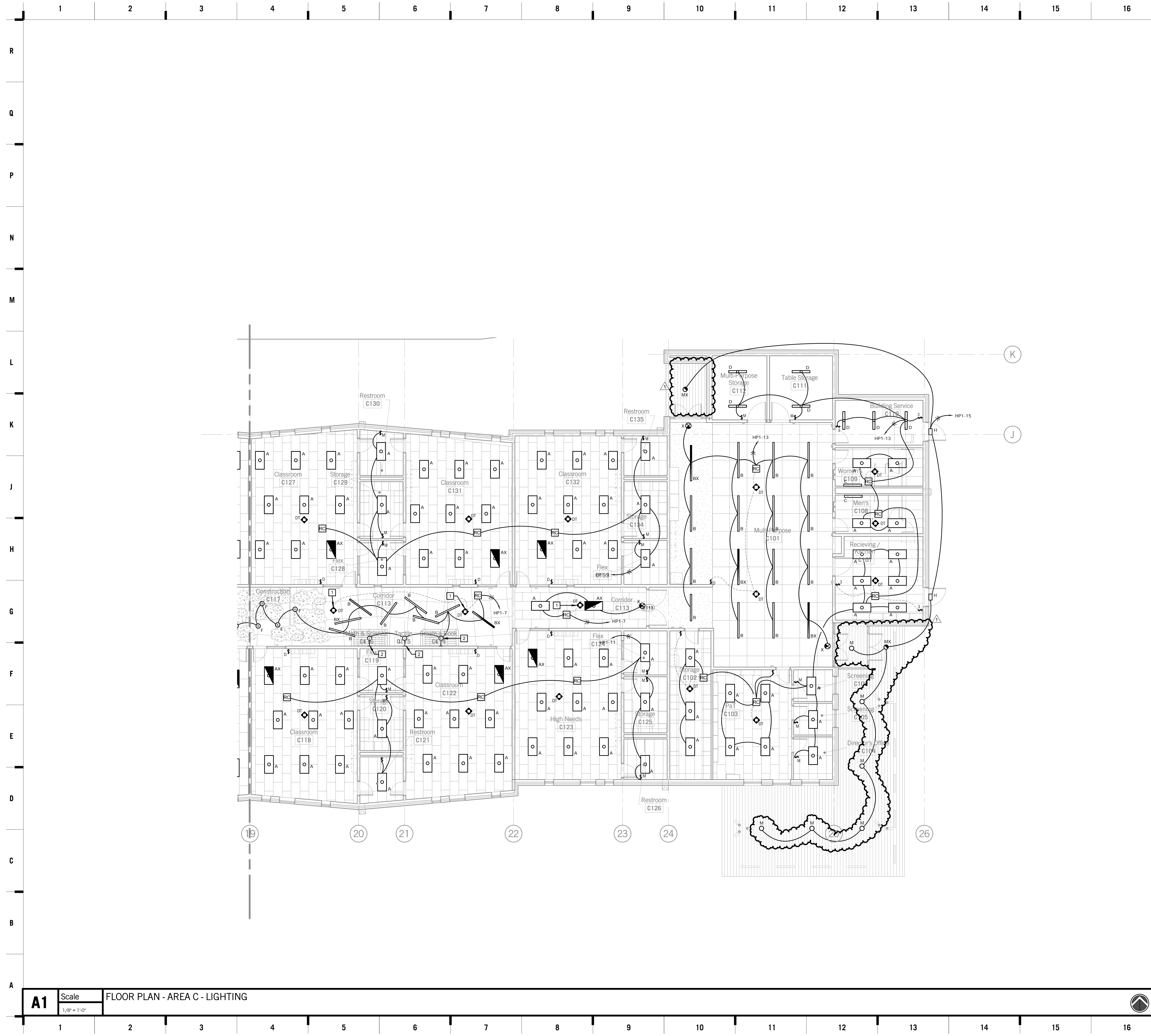
E102B

OF

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

100% BID DOCUMENTS

hollis + miller architects
relationships & results



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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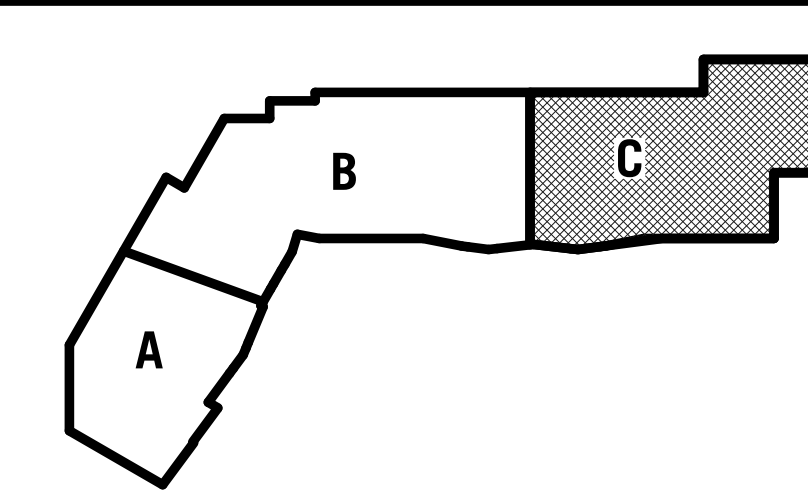
Joplin Early Childhood Center
Joplin Schools

REVISIONS:

#	Description	Date
1	Addendum #1	10-14-16

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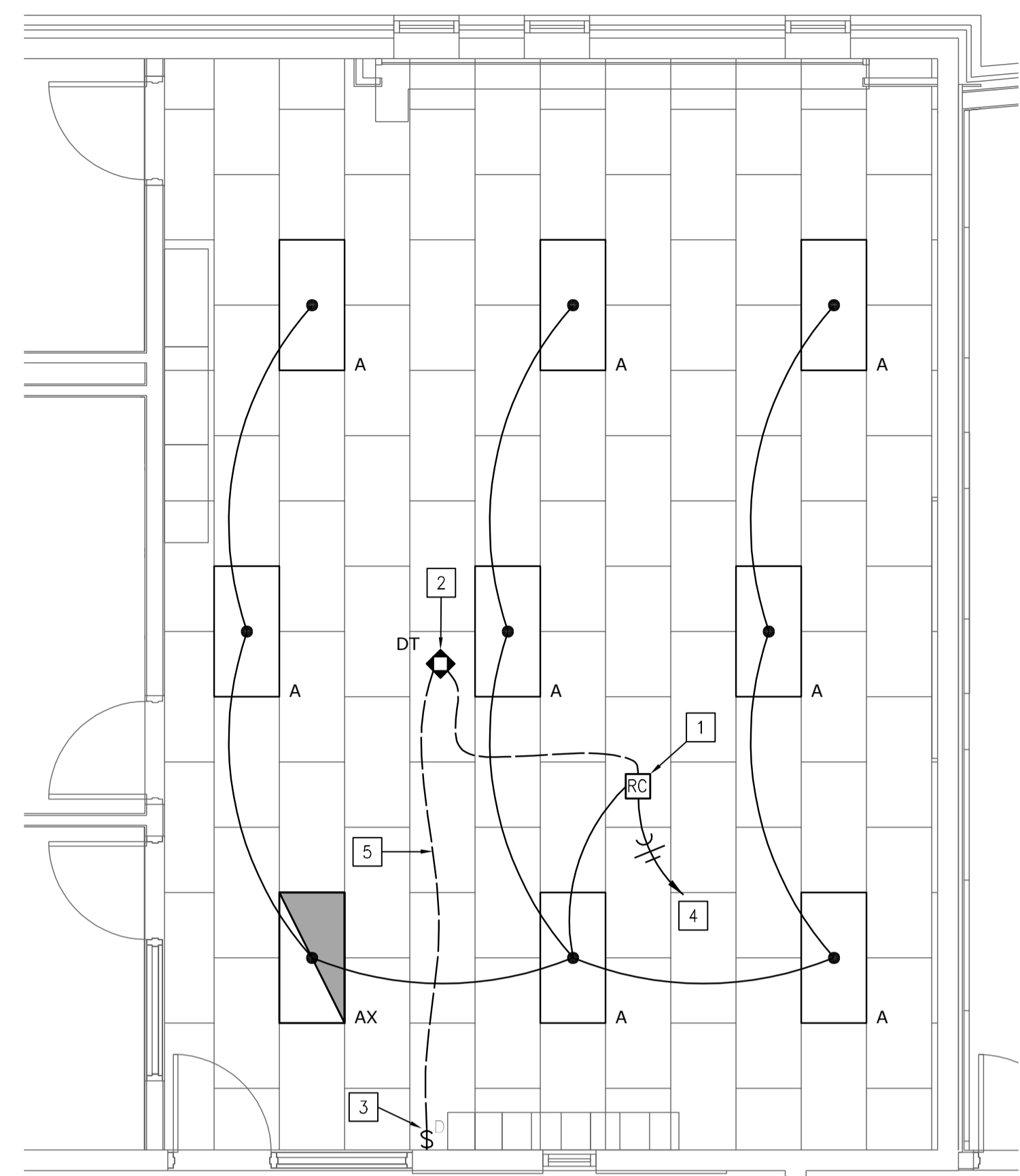
KEY PLAN



JOB NO: 16054
DRAWN BY: S&B
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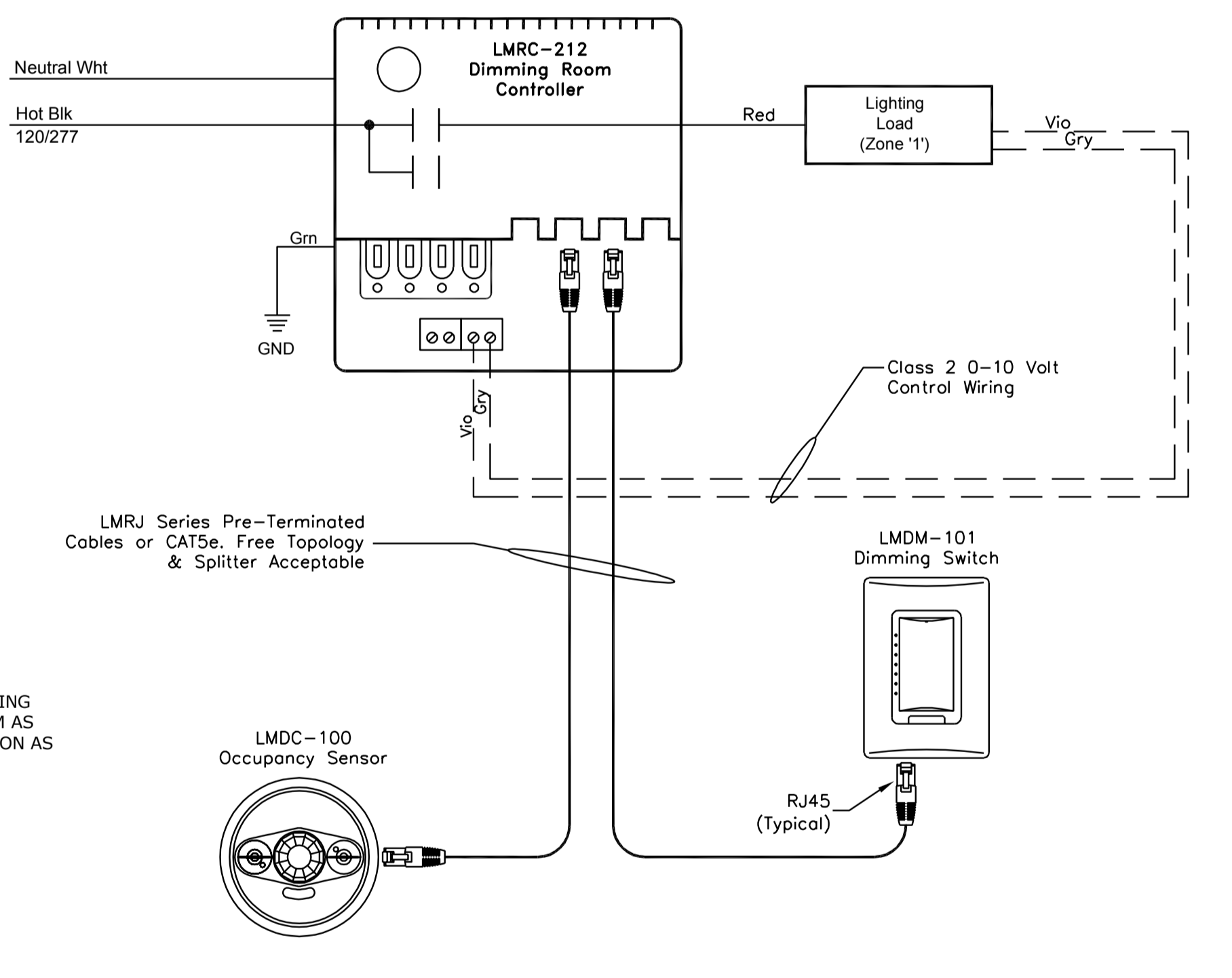
E103C

OF



- 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.

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



- 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.

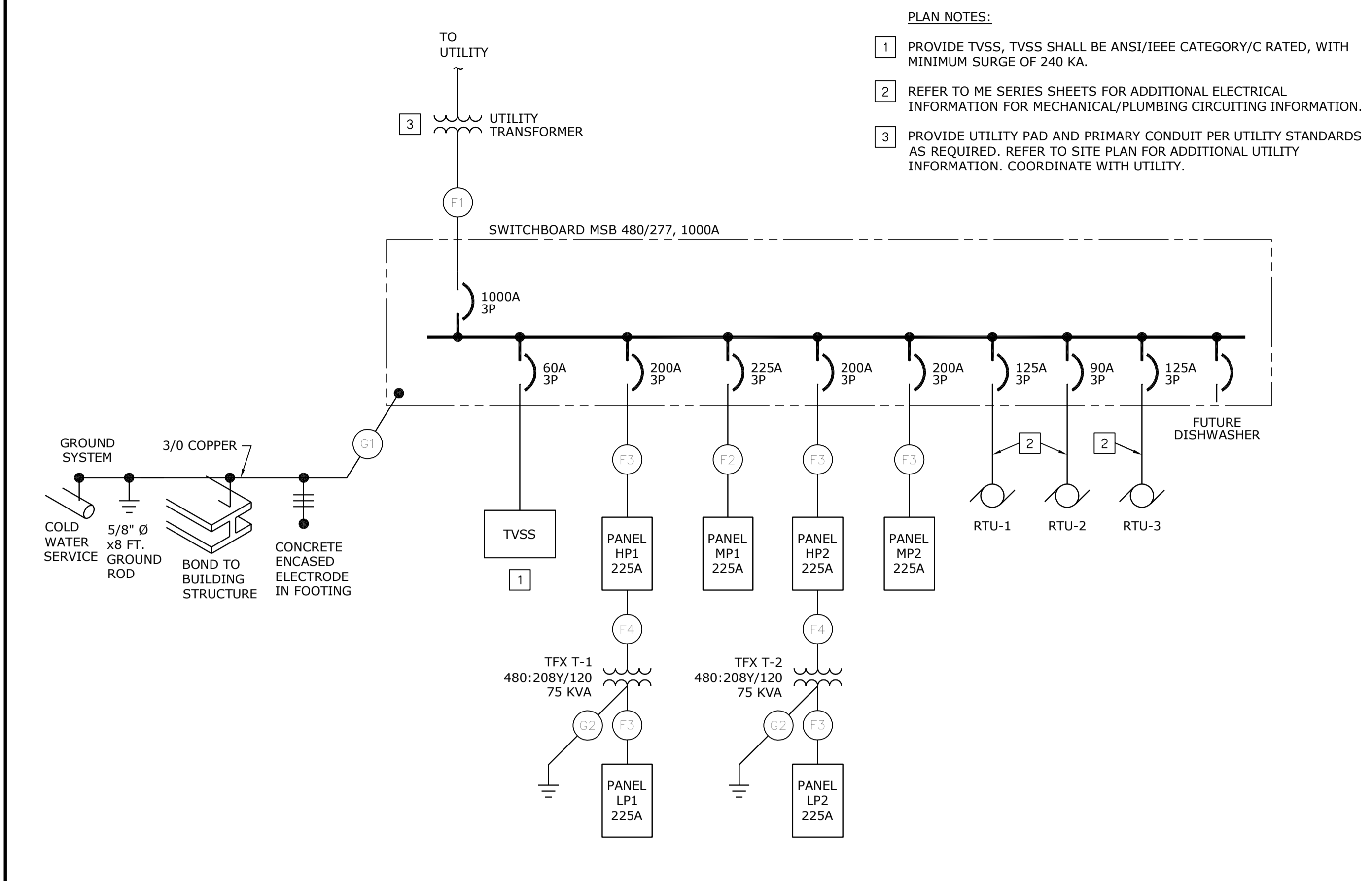
SYMBOL	FUNCTION	MOUNTING	SETTING(TYPICAL)	WATT STOPPER MODEL #	NOTES
DT	MOTION SENSOR	CEILING	ON: AUTOMATIC OFF: 30 MINUTE DELAY	WATTSTOPPER LMDC-100	NOTE 1
S _M	MOTION SENSOR	WALL SWITCH	ON: MANUAL OFF: 15 MINUTE DELAY	WATTSTOPPER PW-100	NOTE 3
S	OVERRIDE SWITCH	WALL SWITCH	---	RE: SPECS	NOTE 2
RC	ROOM 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'x4' ARCHITECTURAL RECESSED LED TROFFER, STEEL HOUSING, OPTICAL ACRYLIC LENS, INTEGRAL DRIVER. (X) PROVIDE WITH 90 MINUTE FM DRIVER, 1900 LUMENS	RECESSED	LED 3500K	277	CREE ZR SERIES WILLIAMS LT SERIES OR APPROVED EQUAL	44
B	LINEAR LED PENDANT, EXTRUDED ALUMINUM HOUSING, FLUSH FROSTED ACRYLIC LENS, 275 LUMENS UP, 625 LUMENS DOWN, INTEGRAL DRIVER	PENDANT	LED 3500K	277	FOCAL POINT SEEM4 FINELITE HP4 SERIES OR APPROVED EQUAL	11 PER FT
C	1" WIDTH LINEAR LED, SUSPENSION MOUNT, ALUMINUM HOUSING, SQUARE ACRYLIC LENS, INTEGRAL DRIVER	SURFACE	LED 3500K	277	BARTCO BSS210 OR APPROVED EQUAL	34
C1	SAME AS TYPE C BUT 2'-0" LENGTH.	SURFACE	LED 3500K	277	BARTCO BSS210 OR APPROVED EQUAL	17
D	4" LENSED LED STRIP LIGHT, STEEL HOUSING, SEMI FROST ACRYLIC LENS.	SURFACE	LED 3500K 3000 LUMENS	277	COOPER METALUX ASNLED PHILIPS LF SERIES	25
F	4" DIAMETER GLASS GLOBE PENDANT, PROVIDE CABLE LENGTH AS REQUIRED TO MOUNT AT ELEVATION INDICATED BY ARCHITECT.	PENDANT	G16 35 BASE XENON	120	LBL LIGHTING BULLIE 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 GARDOO 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 ARCHITRAGO 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
M	6" RECESSED LED DOWNLIGHT, ALUMINUM HOUSING AND HEAT SINK, ALUMINUM REFLECTOR, INTEGRAL DRIVER. (X) PROVIDE WITH 90MIN BATTERY BACKUP	RECESSED	LED 3500K 2000 LUMENS	277	PORTFOLIO LD6 SERIES PRESCOLITE LP6 SERIES PHILIPS RR SERIES OR APPROVED EQUAL	32
N	4" SQUARE LED WALL PACK, ALUMINUM HOUSING, TAMPER RESISTANT, TYPE IV DISTRIBUTION, FINISH COLOR BY ARCHITECT, 600mA DRIVE CURRENT. PROVIDE WITH 25' ROUND STEEL POLES. SAME AS ABOVE BUT TYPE II DISTRIBUTION.	WALL	LED 4000K 20,000 LUMENS	277	COOPER METALUX ASNLED PHILIPS LF SERIES OR APPROVED EQUAL	62
X	EXIT SIGN, POLYCARBONATE HOUSING, CHEVRONS PER PLANS, RED LED LETTERING, Ni-CAD BATTERY.	VARIOUS WALL OR CEILING	LED	277	SURE LITES LPV7 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.
 - PHOTOCELL/ASTRONOMIC TIME CLOCK ON/OFF BASED ON SUNSET/SUNRISE AND OWNER INPUT.

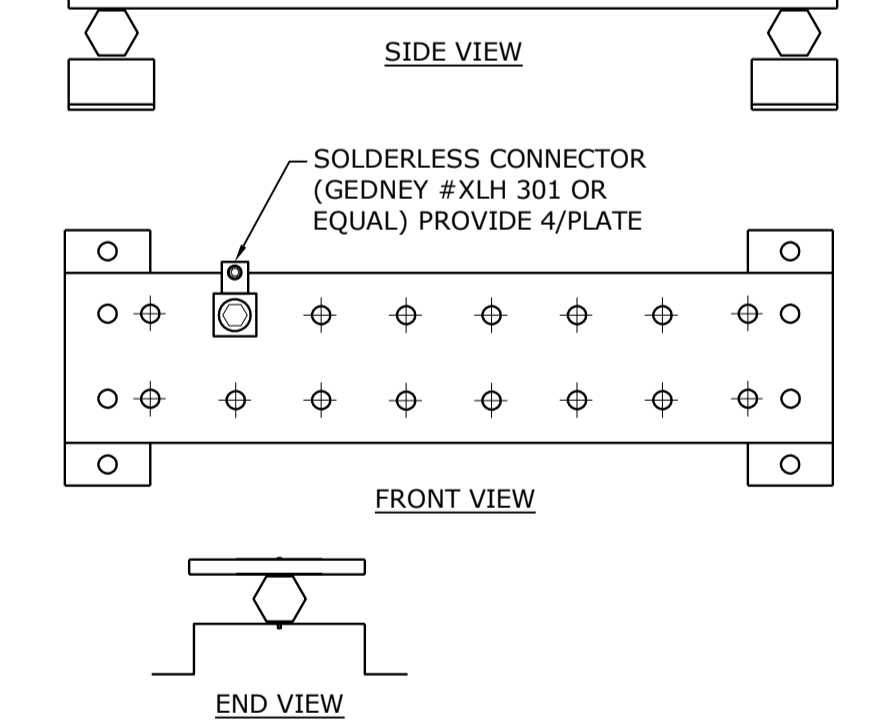


- PLAN NOTES:**
- PROVIDE TVSS, TVSS SHALL BE ANSI/IEEE CATEGORY/C RATED, WITH MINIMUM SURGE OF 240 KA.
 - REFER TO ME SERIES SHEETS FOR ADDITIONAL ELECTRICAL INFORMATION FOR MECHANICAL/PLUMBING CIRCUITING INFORMATION.
 - PROVIDE UTILITY PAD AND PRIMARY CONDUIT PER UTILITY STANDARDS AS REQUIRED. REFER TO SITE PLAN FOR ADDITIONAL UTILITY INFORMATION. COORDINATE WITH UTILITY.

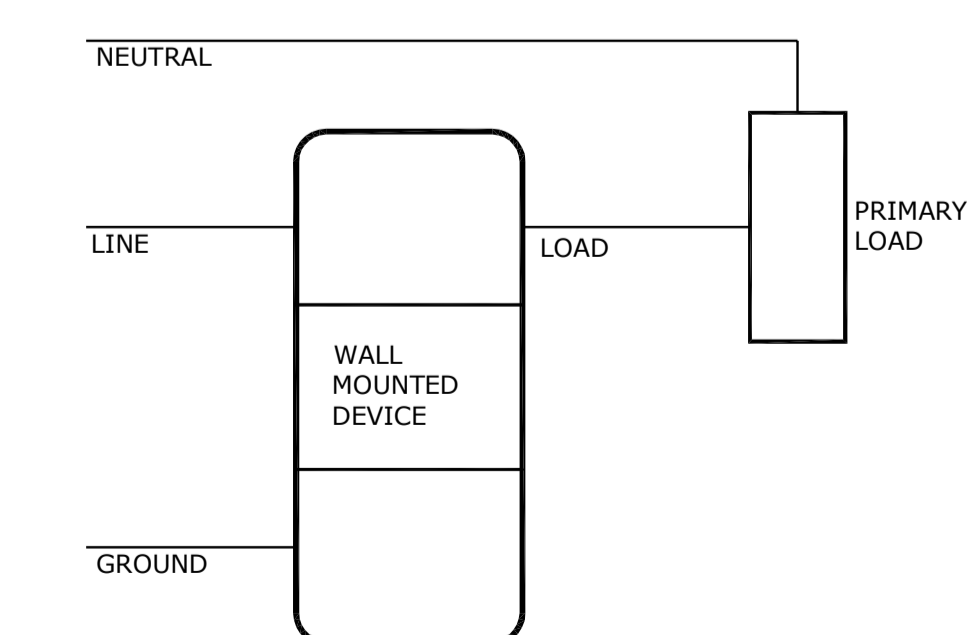
MARK	AMPS	DESCRIPTION (COPPER)
1	1000	3 SETS (4) #400, 4"C.
2	225	(4) #4/0, #4G, 2"C.
3	200	(4) #3/0, #6G, 2"C.
4	100	(4) #3, #8G, 1-1/4"C.
5	---	#3/0 IN 1"C.
6	---	#4 IN 1"C.

ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE

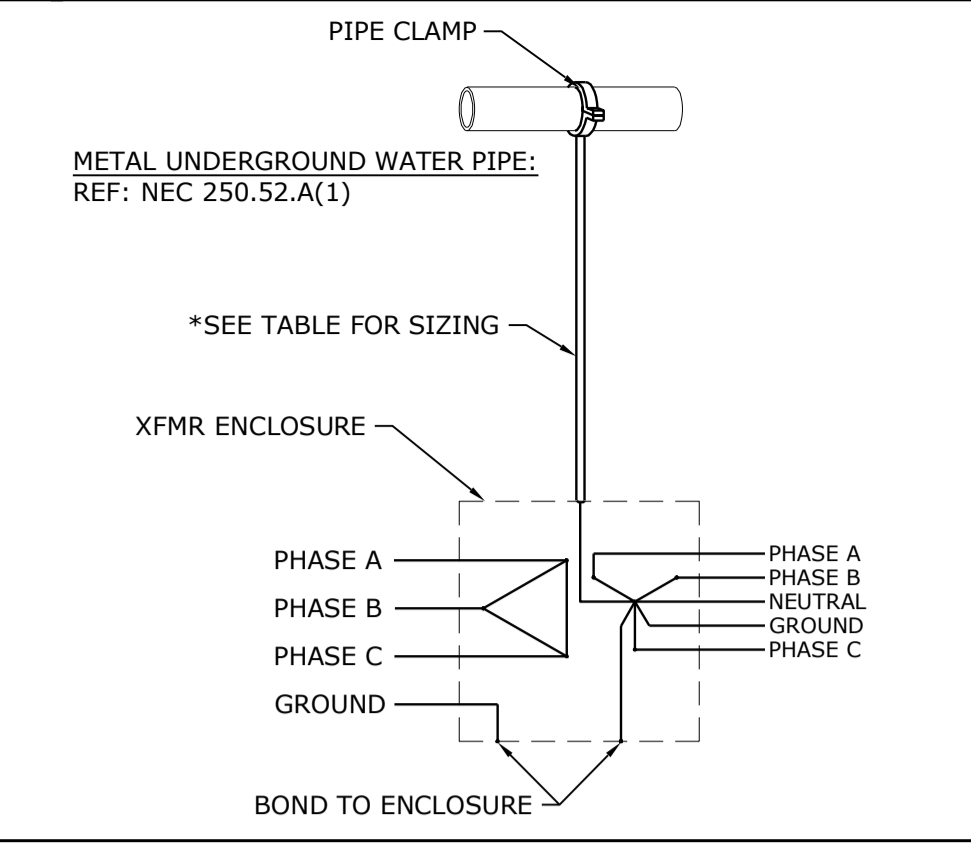
GROUND BUS ASSEMBLY:
1/4" X 4" X 18" COPPER GROUND BAR WITH 7/16" DIAMETER HOLES ON 2" CENTERS.
1-3/8" STAND-OFF INSULATORS WITH 3/8" 16 HARDWARE.
GALVANIZED MOUNTING BRACKETS, 14 GAUGE.
GROUND BUS ASSEMBLY AS MANUFACTURED BY EMI OR EQUAL.
PROVIDE #6 CU IN 1/2" C. BONDED TO MAIN BUILDING ELECTRICAL SERVICE ENTRANCE GROUNDING SYSTEM.



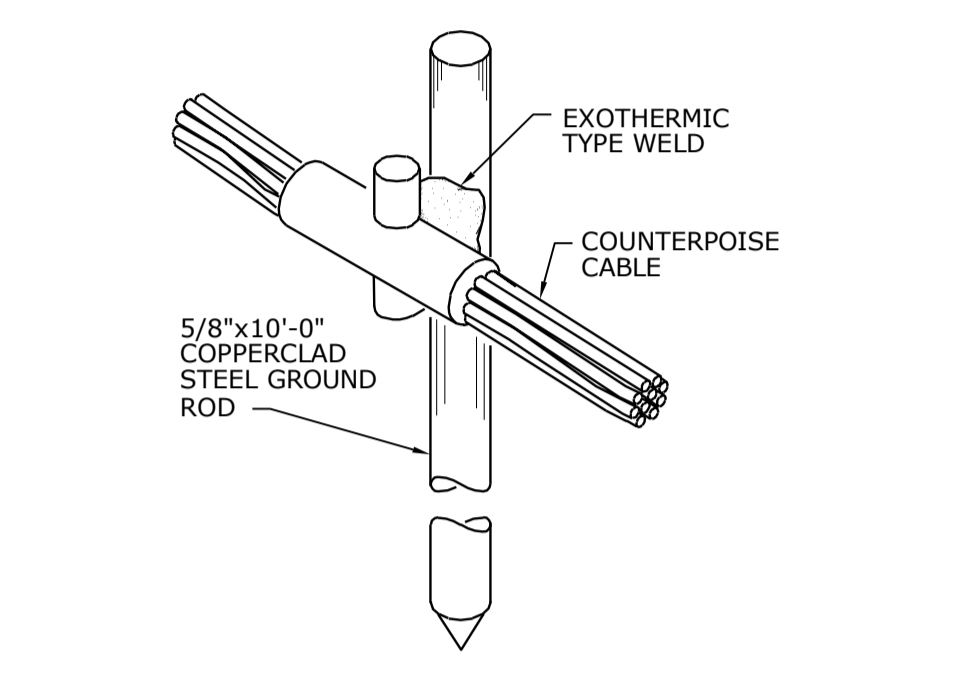
TELECOMMUNICATIONS MAIN GROUNDING BUS BAR DETAIL
NOT TO SCALE



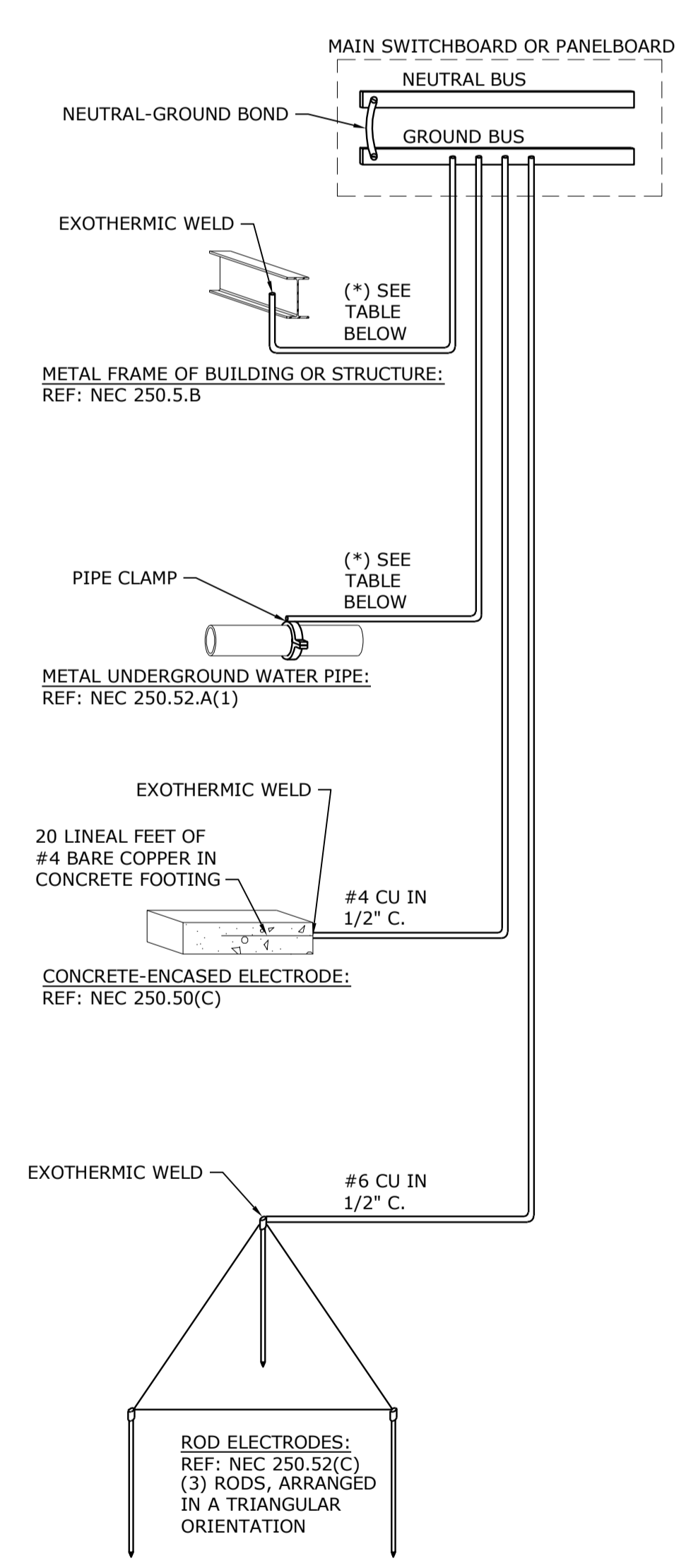
LINE VOLTAGE OCCUPANCY SENSOR WIRING DIAGRAM
NOT TO SCALE



TYPICAL TRANSFORMER GROUNDING
NOT TO SCALE



TYPICAL GROUND ROD CONNECTION
NOT TO SCALE



SERVICE GROUNDING DIAGRAM
NOT TO SCALE

SERVICE SIZE	(*)
400 AMPS OR LESS	#1/0 CU IN 3/4" C.
600 OR 800 AMPS	#2/0 CU IN 3/4" C.
1,000 AMPS OR MORE	#3/0 CU IN 1" C.

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