JOLIET JUNIOR COLLEGE 1901

Addendum No. 3

DATE: September 3, 2015

Joliet Junior College
1215 Houbolt Road
Joliet, IL 60431

TO: Prospective Respondents
SUBJECT: Addendum No. 3
PROJECT NAME: Romeoville Campus Expansion Bid Release 2
JJC PROJECT NO.: B15028

This Addendum forms a part of the Bidding and Contract Documents and modifies the original bidding document as posted on the JJC website. Acknowledge receipt of this addendum in the space provided on the Bid Form. FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.

ADDENDA TO THE PROJECT MANUAL:

1. Section 06 41 16 – PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS
   A. **REPLACE** in its entirety with section attached.

2. Section 07 27 26– FLUID-APPLIED MEMBRANE AIR BARRIERS
   A. **ADD** article 2.3-A-1-a-9 to read "TKProducts; TK-Airmax 2104"
   B. **ADD** article 2.3-A-1-a-10 to read "Prosocco; R Guard Spray Wrap MVP"

3. Section 07 71 29– MANUFACTURED ROOF EXPANSION JOINTS
   A. **ADD** in its entirety per attached **section 07 71 29**.

4. Section 07 95 00–EXPANSION CONTROL
   A. **ADD** in its entirety per attached **section 07 95 00**.

5. Section 08 14 16 – FLUSH WOOD DOORS
   A. **REMOVE** article 1.3-D in its entirety.

6. Section 08 35 16 – FOLDING GRILLES
   A. **REVISE** article 2.2-A to read "Basis-of-Design Product: Subject to compliance with requirements, provide QMI Security Solutions; Q Classic; Side Folding type, or comparable product by one of the following: "
   B. **REVISE** article 2.2-A-5 to read "Dynamic Closures Corporation; Side Folding type."

7. Section 08 41 13 – ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS
   A. **REVISE** article 2.1-B-1-b to read "Clear Anodic Finish."

8. Section 08 41 26 – ALL-GLASS ENTRANCES AND STOREFRONTS
   A. **REVISE** article 2.1-B-1 to include Hafele America as the manufacturer
   B. **ADD** article 2.1-B-1-a to read "Product Contact: Hafele: Ali Azhar, Tel: 800-423-3531 ext 5333, Email: asazhar@hafeleamericas.com"
   C. **REVISE** article 2.1-B-2 to modify the manufacturer name to read "Richelieu"

9. Section 08 71 00 – DOOR HARDWARE
   A. **REVISE** hardware set # 14 to eliminate door number 1102.2
   B. **REVISE** hardware set #15 to add door number 1102.2
   C. **REVISE** hardware set #15 to read "THIS HARDWARE TO BE PROVIDED WITH FIRE RATED ALUMINUM FRAMED STOREFRONT SYSTEM"

10. Section 08 80 00 – GLAZING
   A. **ADD** article 2.1-D to read "Product Contact: Old Castle Glazing: Craig MacGregor, Tel: 847-382-1707, Email: cramacg@aol.com"
   B. **REVISE** article 2.9-I-1 to read "Basis-of-Design Product: Pulp Studio…"
   C. **ADD** article 2.9-I-4 to read "Acceptable Alternate Product: Goldray Industries Ltd.; laminated glass with 0.60 clear interlayer and custom ceramic frit image imprinted on second surface. Contact: Cathie Saroka, 403-236-1333, cathie@goldrayindustries.com"

11. Section 09 30 00 – TILING
   A. **REVISE** article 2.2-A-7 to change the tile size from 18"x18" to 6"x6"
   B. **ADD** article 2.4-B to read:
      "B. Standard Cement Grout: ANSI A118.6.
         1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
            a. Bostik, Inc.
            b. MAPEI Corporation.
            c. TEC; a subsidiary of H.B. Fuller Company."
   C. **REVISE** article 3.5-b to read:
      "b. Grout: Use water-cleanable epoxy grout at toilet rooms. Use standard cement grout at all other wall locations."

12. Section 09 54 26 – LINEAR WOOD CEILINGS
   A. **ADD** article 2.1-A-3 to read "Madrid, Inc."
   B. **ADD** article 2.1-A-3-a to read "Product Contact: Edward Williams, Tel: 312-404-7257, Email: egwms2009@gmail.com"
   C. **REVISE** article 2.1-B-5 as follows: replace the word "backer" with "spacer"
   D. **REVISE** article 2.1-B-6 to read "Assembly Style: Pre-assembled, panelized to 2" width by lengths as indicated on drawings using flat backer to connect"
   E. **REMOVE** article 3.3-D-1 in its entirety

13. Section 09 65 13– RESILIENT BASE AND ACCESSORIES
   A. **REMOVE** article 1.3-A in its entirety
   B. **REVISE** article 1.3-C as follows: revise sample length to be 6 inches instead of 12.
   C. **ADD** article 1.3-D to read "Shop Drawings: Indicating extents of each type of product indicated, including treatment of corner conditions and seam layout."
   D. **REMOVE** article 2.2-A-1-c in its entirety

E. **REVISE** article 2.2-E to read "Outside Corners: Job formed unless specifically indicated as preformed on the drawings"

14. Section 09 65 19 – RESILIENT TILE FLOORING
    A. **DELETE** article 1.3-A in its entirety.

15. Section 09 67 23– RESINOUS FLOORING
    A. **ADD** article 1.3-D to read "Shop Drawings: Indicating extents of each type of product indicated, including treatment of corner conditions, integral base, and seam layout."
    B. **ADD** article 2.3-C-5 to read "Sherwin Williams, General Polymers, FASTOP Ceramic Carpet"
    C. **REVISE** article 3.2-C-1 to read "Integral Cove Base: Height as indicated on drawings."

16. Section 09 68 13– TILE CARPETING
    A. **REMOVE** article 1.3-A in its entirety

17. Section 09 72 00– WALL COVERINGS
    A. **REMOVE** article 1.3-A in its entirety
    B. **REVISE** article 1.3-D as follows: sample size to be 18" long instead of 36"

18. Section 09 91 13 – EXTERIOR PAINTING
    A. **REVISE** article 2.1-D to read "Colors: As indicated on drawings."

19. Section 10 11 00 – VISUAL DISPLAY SURFACES
    A. **REPLACE** in its entirety with section attached.

20. Section 10 14 19 – DIMENSIONAL LETTER SIGNAGE
    A. **REPLACE** in its entirety with section attached.

21. Section 10 14 23 – PANEL SIGNAGE
    A. **REVISE** article 2.3-A-2 to read "…color: Sunburst."
    B. **REVISE** article 2.3-A-3 to read "…color: Steel Blue."

22. Section 10 26 00 – WALL AND DOOR PROTECTION
    A. **REMOVE** article 2.2-A-1 and 2.2-A-2
    B. **REVISE** article 2.3-A-3 to read "Length: Full height of wall to underside of ceiling unless noted otherwise in drawings".

23. Section 10 51 13 – METAL LOCKERS
    A. **ADD** article 2.2-A-6 to read "ASI Storage Solutions; All-Welded Lockers"

24. Section 10 51 16 – WOOD LOCKERS
    A. **ADD** article 1.8-B to read:
    "B. Coordinate sizes and locations of concealed wood support bases.
        1. Requirements are specified in Section 061053 "Miscellaneous Rough Carpentry."

25. Section 10 56 26 – MOBILE STORAGE SHELVING
    A. **REVISE** article 2.5-B-4 to read "Height: 102 inches"

B. **REMOVE** article 2.5-F in its entirety

26. Section 11 53 13 – LABORATORY FUME HOODS
    A. **REVISE** article 2.1-A to read "Basis-of-Design Product: Subject to compliance with requirements, provide Mott Manufacturing Ltd., Pro Series Hood, or comparable product by one of the following:"

27. Section 12 35 53 – LABORATORY CASEWORK
    A. **REVISE** article 1.3-A-1 to read "Tops of cabinets less than 78 inches above the floor are defined as "exposed""
    B. **REVISE** article 2.1 to read "METAL CABINET AND SHELVING MATERIALS"
    C. **REVISE** article 2.4 to read "COUNTERTOP TABLE TOP SINK SHELVING MATERIALS"
    D. **ADD** article 2.5-B-3 to read "AIR MASTER SYSTEMS CORP."
    E. **ADD** article 2.6-A-3 to read "DIVERSIFIED CASEWORK."
    F. **REVISE** article 2.9-B to read "Hinges: Frameless concealed hinges (European type) complying with BHMA A156.9, Type B01602, 170 degrees of opening, self-closing."

28. Section 12 36 23.13– PLASTIC-LAMINATE-CLAD COUNTERTOPS
    A. **REMOVE** article 1.3-A in its entirety
    B. **REVISE** article 1.3-D-1 as follows: sample size to be 4"X6" instead of 8"x10"
    C. **REVISE** article 2.1-H-1 to read "Build up countertop thickness as indicated on drawings at front, back, and ends with additional layers of core material laminated to top."
    D. **REVISE** article 2.3-A as follows: Grommet color should not be black. The color should be selected from the manufacturer's full range.

29. Section 12 36 61 – SIMULATED STONE COUNTERTOPS
    A. **REPLACE** in its entirety with section attached.

30. Section 23 07 19 – 3.5 SCHEDULE
    A. **ADD** "Computer Room Unit Condensate Drains" to the insulation schedule to be insulated with ½" Type B insulation.

31. Section 23 37 00 - 2.3 LAMINAR FLOW DIFFUSERS:
    A. **ADD** "Price" to the list of acceptable manufacturers.

32. Section 23 52 16 – 2.1 BOILERS
    A. **ADD** "Aerco (Benchmark)" to the list of acceptable manufacturers.

33. Section 23 74 11 - Packaged Rooftop Air Conditioning Units
    A. **REPLACE** existing section with **REVISED** section included in this addendum. All revisions have been noted with a bold, vertical line in the left-hand margin.

ADDENDA TO THE DRAWINGS:

1. **Architectural Drawings**

A. All Floor Plan Sheets – Symbols Legend, General Notes, and Referenced Notes:
   1) **REVISE** per attached sketch A111.01
   2) **REVISE** Floor Plan General Referenced Note 20 to read "WALL MOUNTED 24"x72" MIRROR – TA-5A. REFER TO TOILET ACCESSORY SCHEDULE ON A8.01"

B. Sheet A1.03: **REVISE** detail 12 per attached **sketch A103.01**.

C. All Reflected Ceiling Plan Sheets – Symbols Legend, General Notes, RCP Referenced Notes, and Ceiling Types:
   1) **REVISE** per attached replaced sheet A2.11

D. **A1.04, A2.11, A2.23, A9.02**: **REPLACE** sheets in their entirety with those attached.

E. Sheet A2.12: **REVISE** detail 1 per attached **sketch A212.01**.

F. Sheet A3.01: **REVISE** General Roof Plan Notes as follows: The third roof type listed at Concrete Roof Deck should be 'Roof Type C' instead of 'Roof Type B'

G. Sheet A6.03: **REVISE** detail 4 per attached **sketch A603.01**.

H. Sheet A6.04: **REVISE** detail 2 per attached **sketch A604.01**.

I. Sheet A6.07: **REVISE** detail 3 per attached **sketch A607.01**.

J. Sheet A7.01: **REVISE** detail 8 per attached **sketch A701.01**.

K. Sheet A7.02:
   1) **REVISE** detail 8 per attached **sketch A702.01**.
   2) **REVISE** detail 7 per attached **sketch A702.02**.

L. Sheet A7.03: **REVISE** detail 9 per attached **sketch A703.01**.

M. Sheet A7.51: **REVISE** detail 4 per attached **sketch A751.01**.

N. Sheet A7.52: **REVISE** detail 3 per attached **sketch A752.01**.

O. Sheet A7.93:
   1) **REVISE** detail 9 per attached **sketch A793.01**.
   2) **REVISE** detail 7 per attached **sketch A793.02**.

P. All Science Labs Sheets – Lab Casework General Notes:
   1) **ADD** Note 5 to read "FUME HOODS NOTED TO BE 'ADA' IN THE SCHEDULE SHOULD BE FULY ACCESSIBLE WITH FLUSH SILLS, ADA HEIGHTS FOR ALL SWITCHES AND CONTROLS, ADA VALVES AND FITTINGS, AND ACCESSIBLE REACH FOR CUP SINKS"

Q. Sheet A8.12: **REVISE** Lab Equipment Schedule as noted below
   1) **ADD** AC 16 Model No. to read per "MOTT MANUFACTURING – SDP2090W (SIM)"
   2) **ADD** AC 17 Model No. to read per "MOTT MANUFACTURING – REAGENT SHELVING (SIM)"

R. Sheet A8.13: **REVISE** detail 15 per attached **sketch A813.01**.

S. Sheet A8.14: **REVISE** detail 1 note to read "TACK AND DISPLAY STRIP"

T. Sheet A9.04: **REVISE** detail 10 per attached **sketch A904.01**.

U. Sheet A10.02: **REVISE** hardware set for door number 1102.2 to be **15**

V. All Window Elevations Sheets –Note:
   1) **REVISE** Note to read "NOTE: CURTAINWALL AND EXTERIOR STOREFRONT FRAME COLOR TO BE 'COLOR TYPE 1' U.N.O. AS 'COLOR TYPE 2'"

W. All Finish Plan Sheets– Floor Finish Types:
   1) **REVISE** the size of T-1 to be 6"x6" instead of 18" x 18"

2. **Structural Drawings**

A. Drawing S1.31
   1) **ADD** galvanize note to HSS14x8x5/16's along grid 18.
   2) **ADD** SP text to joist tag at all joists with keynote 13.
   3) **MODIFY** deck edge along grid 9 between grids A and C from 8 5/8" to 7 1/2".

B. Drawing S1.32
   1) **ADD** galvanize note to HSS14x8x5/16 along grid 18.
   2) **ADD** SP text to joist tag at all joists with keynote 14 and 15.
   3) **MODIFY** framing between grids Y and BB from joists to wide flange beams.
   4) **ADD** keynote to joist along grid BB

C. Drawing S1.41
   1) Detail 1 - **ADD** SP text to joist tag at all joists with keynote 8.
   2) Detail 2 - **ADD** SP text to joist tag at all joists with keynote 5

D. Drawing S3.01
   1) Detail 2 - **ADD** flare bevel welds from HSS to top of wide flange beam. **MODIFY** weld from edge of bent plate to top of HSS to be 2@12 instead of weld at each joist. **MODIFY** weld from bent plate to joist seat from butt weld to 3/16" fillet weld.
   2) Detail 10 - **ADD** galvanize note to continuous steel plate.
   3) Detail 11 - **ADD** galvanize note to continuous steel plate.
   4) Detail 12 - **ADD** galvanize note to continuous steel plate.

E. Drawing S3.02
   1) Detail 7 - **ADD** galvanize note to continuous steel plate.
   2) Detail 13 - **ADD** galvanize note to continuous channel.

F. Drawing S3.03
   1) Detail 1 - **ADD** galvanize note to continuous channel.
   2) Detail 2 - **ADD** galvanize note to continuous bent plate.
   3) Detail 4 - **ADD** flare bevel welds from HSS to top of wide flange beam. **MODIFY** weld from edge of bent plate to top of HSS to be 2@12 instead of weld at each joist. **MODIFY** weld from bent plate to joist seat from butt weld to 3/16" fillet weld.
   4) Detail 10 - **ADD** flare bevel welds from HSS to top of wide flange beam. **MODIFY** weld from edge of bent plate to top of HSS to be from bent plate to steel roof beam and to be 3" long instead of 2". **ADD** 3" flare bevel weld from top of HSS to bent plate at each beam.

3. **Mechanical Drawings**

A. All ventilation drawings
   1) **MODIFY** all supply diffusers (CD-1) that are currently shown with a 6" duct connection with a CFM greater than 50 CFM shall be modified to an 8" duct connection. All supply diffusers (CD-1) currently shown with a duct connection 8" or larger shall remain as shown.

B. Drawing M1.11

1) **ADD** new return grille (RG-1) for Vestibule 1109. **MODIFY** downstream duct size associated with TAB-107 serving the Office 1003. Refer to M111.01 for more information.

2) **ADD** tags for duct silencers associated with ductwork of RTU-1 and RTU-3. Refer to M111.02 for more information.

3) **MODIFY** supply diffuser to 8" inlet size and **REVISE** supply airflow to 100 CFM for Dry Storage -1016A.

4) **MODIFY** supply diffusers (qty. 6) to 12" inlet size and **REVISE** supply airflow of five diffusers to 470 CFM and one diffuser to 475 CFM in Food Prep -1016.

5) **ADD** new TAB-141, associated ductwork, supply & transfer grilles to serve ELEVATOR CONTROL CLOSET 1113. Refer to M111.03 for more information.

C. Drawing M1.12

1) **ADD** new return grilles (RG-1) for Vestibule 1100. Refer to M112.01 for more information.

2) **REVISE** return airflow of three return grilles to 880 CFM & one return grille to 870 cfm for Corridor which is south of Vestibule 1100.

3) **BALANCE** return airflow damper to 16230 CFM for RTU-3 return bell mouth which is located above ceiling of Student Meeting space 1021.

4) **BALANCE** return airflow damper to 2905 CFM for RTU-2 return Bell Mouth which is located above ceiling of Student Meeting space 1021.

D. Drawing M1.22

1) **ADD** tags for duct silencers which are associated with RTU-2 supply ductwork and Laboratory Exhaust fans (EF-4 & 5) ductwork. **MODIFY** supply duct size for RTU-2. **MODIFY** TAB-224 and associated ductwork to connect with RTU-2. **REVISE** return airflow of linear diffusers located between column lines DD & EE. Refer to M122.01 for more information.

2) **BALANCE** return airflow damper to 11260 CFM for RTU-3 return bell mouth which is located above ceiling of Chem Prep 2010. **MODIFY** RTU-3 return duct size to 44x26 from bell mouth to balancing damper (located above ceiling of Chem Prep 2010).

3) **MODIFY** location of 6x6 transfer duct to above the door in Elect 2108.

E. Drawing M1.32

1) **REVISE** size of RTU-2 and **ADD** new note for RTU-2 on Roof plan - East. Refer to M132.01 for more information.

F. Drawing M2.11

1) **ADD** a note pointing to the branch piping serving RAD-201A, RAD-201B, and RAD-201C stating, "PROVIDE AND INSTALL INSULATED ACCESS PANELS IN THE EXTERIOR OVERHANG TO ALLOW ACCESS TO THE VALVING ASSOCIATED WITH THE RADIATION."

2) **ADD** a note pointing to the western exterior wall of Vestibule 1109 stating, "PROVIDE A 5 SQUARE FOOT OPENING BETWEEN THE PLENUM SPACE OF THE VESTIBULE AND THE EXTERIOR OVERHANG."

G. Drawing M2.11, M2.12, M2.21 and M2.22

1) **ADD** CO2 sensors to the following spaces: Bookstore 1000, Meeting Room 1004, Adjunct Office 1010, Student Meeting 1021, Counselling 1030, Tutoring 1036, Large Testing Room 1043, Classroom 2000, Classroom 2001, Classroom 2002, Classroom 2003, Classroom 2004, Classroom 2005, Classroom 2006, Classroom 2007,

Computer Lab 2013, Computer Lab 2017. Locate the sensor next to the temperature sensor.

H. Drawing M2.21
   1) **REVISE** reference detail note pointing to RTU-3. "REFER TO 8/M4.00 FOR CONDENSATE TRAP DETAIL (BLOW -THROUGH)"

I. Drawing M2.22
   1) **ADD** general note to sheet as follows: "CONTRACTOR SHALL PROVIDE AND INSTALL ALL PIPING REQUIRED TO CONNECT TO FUME HOOD FIXTURE INLET/OUTLET INCLUDING PIPING WITHIN FUME HOOD."
   2) **MODIFY** heating piping and piping accessories associated with TAB-224. Refer to M222.01 for more information.

J. Drawing M2.31
   1) Radiation 102B, 102C, and 102D was incorrectly shown on M2.31 above Common 1101 in addition to being shown on M2.21. These three piece of radiation should only be shown on M2.21. Refer to the architectural plans for appropriate mounting height.

K. Drawing M2.32
   1) Radiation is incorrectly shown on M2.32 above Common - 1101. **REMOVE** the radiation symbol in this location on M2.32. The radiation on that wall above Common – 1101 are correctly shown on M2.21.
   2) **REVISE** 1-1/2" natural gas pipe routing to accommodate the updated location of RTU-2.

L. Drawing M3.00
   1) **ADD** Tags for Boilers BLR-1 & BLR-2 and Pumps P-1 & P-2 which are located in Mechanical 1111.
   2) **ADD** natural gas piping for generator which is located outside of building. Refer to M333.01 for more information.

M. Drawing M4.00
   1) **ADD** a new Condensate Trap Detail (Blow Through), MODIFY Condensate Trap Detail (Draw-Through). Refer to M400.01 for more information.

N. Drawing M4.02
   1) **ADD** detail for RTU-3. Refer to M402.01 for more information.

O. Drawing M4.03
   1) **ADD** detail for Duct Silencers. Refer to M403.01 for more information.

P. Drawing M5.00
   1) **MODIFY** service area portion of the Cabinet Heater Schedule to "LINK 1120" for CAB-11 & CAB-12.
   2) **REVISE** schedule for EF-5. Refer to M500.02 for more information.
   3) **REVISE** Rooftop Air Handling Unit Schedule. Refer to M500.01 for more information.

Q. Drawing M5.01

   1) **MODIFY** served area portion of the Terminal Air Box Schedule to "LINK 1120" for TAB-137.

2) **REVISE** Cooling max airflow to 110 CFM for TAB-226 in Terminal Air Box Schedule.

3) **REVISE** Capacity to 7020 CFH for Gas Pressure Regulator GR-2 in Mechanical Material List.

4) **ADD** new schedule for TAB-141 in Terminal Air Box Schedule. Refer to M501.01 for more information.

R. Drawing M5.02

1) **MODIFY** service area portion of the Ceiling Panel Radiation schedule to "LINK 1120" for RCP-123A, RCP-123B, RCP-123C, RCP-123D, RCP-123E, RCP-123F, RCP-123G, RCP-123H.

2) MODIFY the RADIATION SCHEDULE as follows:

1. ADD the following general notes to the RADIATION SCHEDULE:
    5. PROVIDE MODEL R3F TYPE RADIATORS WITH WELDED ON FALSE BACK WITH IDENTICAL APPEARANCE AS FRONT OF RADIATOR (BY MANUFACTURER).
    6. ALL RADIATORS ARE TO BE PROVIDED AS ONE CONTINUOUS PIECE AS SCHEDULED EXCPET WHERE NOTED OTHERWISE.
    7. RADIATOR SHALL BE MADE UP OF TWO CONTINOUS PIECES OF EQUAL LENGTH CONNECTED BY A CENTER TRIM.
        a. Note 7 is applicable to RAD-103B and RAD-103D
2. MODIFY the unit model numbers as follows: RAD-102D shall be UFLT-4, RAD-106 shall be UFLT-2, RAD-202 shall be UFLT-1.

3) **REVISE** Duct Silencer Schedule. Refer to M502.01 for more information.

S. Drawing M6.00

1) **ADD** one pressure/temperature test plug upstream of P-1 and one pressure/temperature test plug upstream of P-2. Each test plug shall be located on the HWS piping branch serving each pump, downstream of the shut-off valve and upstream of the strainer.

2) **ADD** one pressure/temperature test plug before each boiler (BLR-1 and BLR-2) on the HWR piping directly upstream of the flexible connection. ADD one pressure/temperature test plug after each boiler on the HWS piping directly downstream of the flexible connection.

T. Drawing M7.01

1) **ADD** new details 5/M7.01 – Sustainability on Display, 6/M7.01 – Photovoltaic System Monitoring, and 7/M7.01 – Automatic Transfer Switch Interface. Refer to sketch M701.01 for more information.

U. Drawing M7.02

1) **MODIFY** note on 3/M7.02 Generator Interface detail as follows: "COMMUNICATION LINK BETWEEN ~~LIGHTING~~ GENERATOR CONTROLS GATEWAY & BAS"

4. **Plumbing Drawings**

A. Drawings P1.01 and P3.02

1. **ADD** missing vent piping to floor drains. Refer to sketches P101.01, P302.01 for more information.

B. Drawings P1.11
   1. **MODIFY** location of hose bib located at the exterior wall of Faculty Office 1009. **REMOVE** Hose bib which is located near to column line S & on the exterior wall of Dining 1018. **ADD** flow sensor panel (FSP-1) for secondary roof drain sensor above ceiling of DINING 1018. **SWITCH** primary & secondary roof drain location and **MODIFY** flow sensor location & tags accordingly. Refer to P111.01 for more information.
   2. **MODIFY** the tag for the hose bibb on the exterior wall of RECEIVING 1015 as follows: "~~HB-1~~ HB-3"

C. Drawing P1.12
   1. **ADD** new flow sensor panel (FSP-1) for secondary roof drain sensor above ceiling of LINK 1120. Refer to P112.01 for more information.
   2. **ADD** new hose bib and associated piping at the exterior wall of Financial Aid 1026. **REVISE** location of hose bib and associated piping at the exterior wall of Small Testing Room 1040. Refer to P112.02 for more information.

D. Drawing P1.31
   1. **MODIFY** the tag name for the roof hose bibb located southeast of column lines 8/J as follows: "~~HB-1~~ HB-2"

E. Drawing P3.00, P3.01, P3.02
   1. **ADD** Keynote to JC 1017B, J 1104, & J 2103 as follows:

EXTEND ¾" CW & ¾" HW140 PIPING TO SERVE MV-3. CONNECT ¾" HWC140 TO HW140 PIPING WITHIN 1 FT OF THE MIXING VALVE. PROVIDE MANUAL BALANCING VALVE SET TO 0.5 GPM ON HWC140 BRANCH. EXTEND TW PIPING FROM MIXING VALVE TO BFP-1. DRAIN PIPING FROM BFP SHALL BE ROUTED TO MOP BASIN AND TERMINATE 6" ABOVE RIM. ROUTE TW FROM BFP TO HB-1 FOR FUTURE CONNECTION TO CHEMICAL MIXING STATION (PROVIDED BY OTHERS). MV-3, BFP-1 AND HB-1 SHALL ALL BE LOCATED ON THE WALL ADJACENT TO THE MOP BASIN IN AN ACCESSIBLE LOCATION (5'-0" AFF MAX). COORDINATE EXACT LOCATION WITH FUTURE CHEMICAL MIXING STATION.

   2. **ADD** new hose bib at the north wall and **MODIFY** domestic cold water piping in the chase between W 1105 & M1103 rooms. Refer to P300.01 for more information.
   3. **ADD** new ¾" drain piping for hose bibb which terminates to the mop basin in J 2105. Refer to P301.01 for more information.

F. Drawing P1.21
   1. **ADD** drain for hose bibb located on the roof of Classroom 2004 & Classroom 2000. **ADD** flow sensor panels (FSP-1) for secondary roof drain sensor. Refer to P121.01 for more information.
   2. **MODIFY/SWITCH** primary and secondary roof drain locations for Dining and Multipurpose roof. Refer to P121.02 for more information.

G. Drawing P1.22

a. **ADD** new drain for hose bibb located on roof of Computer lab 2013 and **REVISE** keynotes. ADD shut off valves to CW pipe which serves hoods in Chemistry lab 2012. **ADD** flow sensor panel (FSP-1) for secondary roof drain sensors. Refer to sheet P1.22 for more information.

H. Drawing P1.31
   a. Roof drains are incorrectly shown on this level above DINING 1018. The roof drains above DINING 1018 are correctly shown on P1.21. **REMOVE** them from P1.31.

I. Drawing P1.32
   a. **ADD** the following note pointing to the RD-1(160) located between column line DD and EE: "REFER TO 5/P4.00 FOR ROOF DRAIN DERAIL. (TYP.)"
   b. **RELOCATE** 2/P1.32 ROOF PLAN-EAST-PLUMBING-ALT BID1 FROM P1.32 TO P1.22.

J. Drawing P3.03
   a. **ADD** shut off valves to the CW piping serving the water heaters, water softeners, hose bibb and back flow preventer in Mechanical 1111. **ADD** shut off valves to HW, HWC & HWC140 pipes serving the water heaters. **REVISE** locations of Mixing valve detail reference note & Water Heater detail reference note. Refer to P303.01 for more information.

K. Drawing P4.00
   a. **REVISE** Sump Pump Detail in P4.00 sheet. Refer to P400.01 for more information.

L. Drawing P4.01
   1. MODIFY Emergency Shower Detail 4/P4.01. Shower head shall be supplied from ceiling above and not from the wall. Shower activation arm shall be shown as integral to wall unit, not as a push-pull handle from above. Mount shower head, shower activation handle, and eye/facewash outlet heads in compliance with latest A.D.A and ANSI 117.1 Standards. ESE-1 supply piping shall be 1-1/2" TW.
   2. **MODIFY** Water Softener Detail 5/P4.01 to show type of backflow preventer as BFP-3.
   3. **REMOVE** Detail#9 "CHEMISTRY LAB -TYPICAL CASEWORK PIPE ROUTING" from P4.01 Sheet.

M. Drawing P5.00
   a. **MODIFY** Electrical Requirement to 208V for CP-1 in plumbing material list.

   b. **ADD** Electrical Requirement description for DF-1 in Plumbing material list. Refer to P500.01 for more information.

   c. **MODIFY** plumbing material list description for SK-1. Refer to P500.01 for more information.

   d. **REVISE** plumbing material list description for Sump pump basin (SP-1). Refer to P500.01 for more information

   e. **ADD** WH-2 to the plumbing material list such that the water heater description reads "WH-1 and WH-2".

f. **MODIFY** plumbing Material list description for UR-1 and UR-2. Urinal fixture shall be "ULTRA HIGH EFFICIENCY RATED FOR 0.125 GPF" and only acceptable manufacturer shall be "SLOAN (SU-1000)". ADD "LOW VOLTAGE WIRING FROM TRANSFORMER TO EACH FLUSH VALVE." to flush valve description.

g. **MODIFY** plumbing Material list description for WC-1 and WC-2. Support carrier shall be rated for "500 LBS.". Only acceptable manufacturer for water closet fixture shall be "SLOAN (ST-2050)". ADD "LOW VOLTAGE WIRING FROM TRANSFORMER TO EACH FLUSH VALVE." to flush valve description. For WC-2 only, MODIFY top of seat installation to be 16"-17".

h. **MODIFY** plumbing material list description for MV-5. REMOVE requirement for locking surface mounted cabinet. MV-5 shall be installed above the ceiling.

i. **MODIFY** the first line of the L-1 description as follows:

~~a. LAVATORY - UNDER-COUNTER MOUNTED, WHITE VITREOUS CHINA, 17"x14" RECTANGULAR BOWL, 5-7/8" DEPTH, FRONT OVERFLOW, 2-3/16" DIA STRAINER.~~

5. **Electrical Drawings**

A. Drawing E1.11:
   a. **REMOVE** occupancy sensor in entrance of Women's Toilet 1105.
   b. **MODIFY** F1A luminaires in Storage 1002 to F1B.
   c. **MODIFY** circuit serving lighting in IT 1106 to "EQH-1" and add to Emergency Branch (full shade) fixtures.
   d. **MODIFY** circuit of all interior Life Safety Branch (half shaded) fixtures on sheet to "LSH-2."
   e. **MODIFY** circuit of all Normal Branch fixtures in Bookstore 1000 to "LH1-3."

B. Drawing E1.12:
   a. **MODIFY** circuit of all interior Life Safety Branch (half shaded) fixtures on sheet to "LSH-2."
   b. **MODIFY** circuit serving lighting in IT 1115 to "EQH-1" and add to Emergency Branch (full shade) fixtures.
   c. **MODIFY** note on downlight tagged "F6/20/a" in corridor to read: LUMINAIRE SHALL BE CONTROLLED BY THE DAYLIGHT SENSOR IN SECOND FLOOR CORRIDOR TAGGED 'L/a'. REFER TO SHEET E1.22.

C. Drawing E1.21
   a. **MODIFY** Normal Branch circuit of switched emergency fixture in Classroom 2005 to "LH2-3."
   b. **MODIFY** location of exit sign and area of rescue sign near entrance of Stair 2101.
   c. **MODIFY** exit sign and area of rescue sign symbols to wall mounted type in the west end of the corridor near Stair 2107 entrance.

D. Drawing E1.22
   a. **MODIFY** location of light sensor tagged "L/a" in corridor.
   b. **MODIFY** circuit serving lighting in Electrical 2108 to "EQH-2" and add to Emergency Branch (full shade) fixtures.

c. **MODIFY** exit sign and area of rescue sign symbols to wall mounted type in the east end of the corridor near Stair 2110 entrance.

E. Drawing E2.11:
   a. **MODIFY** keynote #8 to read: COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
   b. **MODIFY** keynote #9 to read: FUTURE MOTORIZED SHADE. ROUTE EMPTY ONE (1) 1" CONDUIT TO SHADE CONTROLLER JUNCTION BOX. ROUTE EMPTY ONE (1) 1" CONDUIT TO ELECTRICAL ROOM 1112. EMPTY CONDUITS SHALL BE PROVIDED WITH PULL STRINGS.
   c. **MODIFY** keynote attached to the junction boxes located in the north and west corner of the room to keynote #9.
   d. **MODIFY** circuit serving Plumbing Sensor Transformer in Men's Toilet 1103 to "EQL-42."

F. Drawing E2.21:
   a. **MODIFY** circuit serving Plumbing Sensor Transformer in Men's Toilet 2102 to "EQL-37."

G. Drawing E2.22:
   a. **ADD** disconnect DS-200 to serve TR-112 in Electrical 2108. MODIFY equipment layout in room so DS-200 is adjacent to TR-112.

H. Drawing E2.30:
   a. **MODIFY** the three (3) PV-COMB so keynote #2 is attached to these equipment.
   b. **MODIFY** keynote #2 to read: SELF-SUPPORT DISCONNECT AND COMBINER BOX WITH STEEL CHANNELS. PRIVE AND PAINT STEEL CHANNELS.

I. Drawing E4.00:
   a. **MODIFY** note attached to the concrete bollard in detail #5 Generator Pad Detail to read: 4" RIGIND GALVANIZED STEEL 48" HIGH BOLLARD (TYPICAL) CONCRETE FILLED WITH ROUNDED TOP. PAINT SAFETY YELLOW. PROVIDE MINIMUM OF FOUR (4) LOCATED IN THE FOUR CORNERS OF THE GENERATOR PAD.

J. Drawing E4.04:
   a. **MODIFY** circuit "LH1-2" on First Floor Corridor Lighting Control Diagram to "LH1-20".

K. Drawing E4.10:
   a. **MODIFY** detail 1/E4.10 and locate GAP-1 in Mechanical 1111, east side of north door of Electrical 1112.
   b. **MODIFY** circuit serving P-1 and P-2. The two pumps should be fed from Panel 'EQH'.

L. Drawing E5.00
   a. **MODIFY** manufacturer of F3 fixture to read: NULITE REGOLO RG6. **ADD** PMC Nelio LED and Seem 6 to manufacturer list.
   b. **MODIFY** F6 louver finish type to clear alzak.
   c. **MODIFY** F6A louver finish type to clear alzak and ballast type to electronic driver.
   d. **MODIFY** manufacturer of F7 to read: SISTEMALUX MOVIT RECTANGULAR.
   e. **MODIFY** F8 lens/louver type to other (see description).

f. **ADD** HE Williams LLMS and Picasso STR-LED-106 to manufacturer list of F13. **REMOVE** Eureka from manufacturer list.
g. **MODIFY** description of F18 to read: TRACK LIGHTING, LINEAR SPREAD (ADD APPROPRIATE ACCESSORY IF NECESSARY), 3000K, HIGH (90+) CRI, COORDINATE FINISH SELECTION WITH ARCHITECT. TRACK LENGTH AND QUANTITY OF HEADS AS SHOWN ON PLANS. PROVIDE SINGLE CIRCUIT TRACK AND ALL ACCESSORIES REQUIRED FOR A COMPLETE SYSTEM. PROVIDE 5 AMP CURRENT LIMITING DEVICE ON EACH TRACK RUN.
h. **MODIFY** lamp model of F18 and F19 to minimum of 1000L and max of 22W. **ADD** Bruck Z25 and Intense MBH to manufacturer list of F18 and F19, and **MODIFY** manufacturer to read: AMERLUX HORNET HIGH POWER.
i. **ADD** Vantage A6INCHOR to manufacturer list of F22.
j. **MODIFY** description of F25A to read: EXTRUDED ALUMINUM REGRESSED LINEAR LED FIXTURE, "FINISHED" EXTRUDED SIDE CEILING TYPE, CONTINUOUS RUNS. COORDINATE EXACT FIXTURE LENTHS WITH ARCHITECTURAL DRAWINGS. PROVIDE A WORKING SAMPLE OF BOTH THE REGRESSED AND FLUSH LENS VERSIONS FOR THE MOCK UP PRIOR TO ORDERING. COORDINATE WITH ARCHITECT.
k. **MODIFY** description of F25A to read: EXTRUDED ALUMINUM REGRESSED LINEAR LED FIXTURE, "FLANGLESS" GYPSUM BOARD CEILING TYPE, CONTINUOUS RUNS. COORDINATE EXACT FIXTURE LENTHS WITH ARCHITECTURAL DRAWINGS. PROVIDE A WORKING SAMPLE OF BOTH THE REGRESSED AND FLUSH LENS VERSIONS FOR THE MOCK UP PRIOR TO ORDERING. COORDINATE WITH ARCHITECT.

M. Drawing E5.01:
a. **MODIFY** Luminaire Schedule note to read: CORRELATED COLOR TEMPERATURE SHALL BE 3500, COLOR RENDERING INDEX (CRI) SHALL BE AT OR ABOVE 80, UNLESS NOTED OTHERWISE.
b. **MODIFY** S8 as follows:
i. DESCRIPTION to read: FLAG POLE ACCENT LUMINARE, DIE-CAST ALUMINMUM HOUSING, 7 DEGREE BEAM ANGLE, WET LOCATION LISTED. LUMINAIRE MOUNTED ABOVE GRADE. COORDINATE FINISH SELECTION WITH OWNER.
ii. DIMENSIONS: 9.6" L x 5.9" W x 8.7" H
iii. LAMP MODEL: 25 WATTS 1,176 LUMENS
iv. MANUFACTURER: **REMOVE** Invue VFS. **ADD** Acclaim Dynaflood SO.

N. Drawing E5.02:
a. **ADD** Square D8903-LG12 to C-BLR Approved Manufacturers in the Contactor Schedule.

O. Drawing E5.10:
a. **MODIFY** circuits LH1-5, LH1-7 and LH2-3 so wire size to use is 2#10 & 1#10 GND IN ¾" C.
b. **MODIFY** Panel 'LH1' short circuit rating to 18,000 SCCR.
c. **MODIFY** circuit "LH1-24" to 20A/1P Spare.
d. **MODIFY** Panel 'LH2' short circuit rating to 14,000 SCCR

P. Drawing E5.11:
a. **MODIFY** circuit breaker size of circuits PL2A-17, PL2A-21 and PL2A-20 to 25A/2P.
b. **MODIFY** Panel 'LSH' short circuit rating to 18,000 SCCR.
c. **MODIFY** circuit "LSH-11" to 20A/1P Spare.

Q. Drawing E5.12:
   a. **MODIFY** circuit "EQL-39" to 20A/1P Spare.
   b. **MODIFY** Panel 'EQH' short circuit rating to 18,000 SCCR.
   c. **REMOVE** three (3) 20A/1P circuit breakers and replace with one (1) 20A/3P circuit breaker. Utilize this circuit breaker to serve P-1. Utilize 3#12 & 1#12 GND. IN ¾" C.
   d. **REMOVE** three (3) 20A/1P circuit breakers and replace with one (1) 20A/3P circuit breaker. Utilize this circuit breaker to serve P-2. Utilize 3#12 & 1#12 GND. IN ¾" C.

R. Drawing E6.00:
   a. **MODIFY** Panel 'PL1C' feeder to 4#2 & 1#6 GND IN 1 ½" C.
   b. **MODIFY** Panel 'PL1D' feeder to 4#1/0 & 1#6 GND IN 1 ¼" C.
   c. **MODIFY** Panel 'PL1E' feeder to 4#1/0 & 1#6 GND IN 1 ¼" C.
   d. **ADD** one (1) 30A/3P and two (2) 100A/3P spare circuit breakers to DP-1 and DP-2.
   e. **ADD** note to DP-1 and DP-2 that says: PROVIDE ADDITIONAL BUS SPACE FOR THREE (3) 100A/3P CIRCUIT BREAKERS, OR REMAINDER OF THE PANELBOARD SECTION (WHICHEVER PROVIDES THE MOST ADDITIONAL MOUNTING SPACE).
   f. **ADD** one (1) 20A/3P, one (1) 30A/3P and two (2) 125A/3P spare circuit breakers to MDP.
   g. **ADD** note to MDP that says: PROVIDE ADDITIONAL BUS SPACE FOR FOUR (4) 125A/3P CIRCUIT BREAKERS, OR REMAINDER OF THE PANELBOARD SECTION (WHICHEVER PROVIDES THE MOST ADDITIONAL MOUNTING SPACE).
   h. **ADD** DS-200 in the primary side of TR-112.
   i. **MODIFY** primary feeders for TR-225 to 3#500 KCM & 1#1/0 GND IN 3" C.
   j. **MODIFY** MDP short circuit rating to 35,000 SCCR.
   k. **ADD** note to MDP saying: 23,223 AVAILABLE FAULT CURRENT. DATE OF CALCULATION: 9/2/15.
   l. **MODIFY** DP-2 short circuit rating to 10,000 SCCR.
   m. **MODIFY** circuits MDP-9 and MDP-10 to spare 20A/3P circuit breakers.

S. Drawing E6.01:
   a. **REMOVE** note attached to ATS-EQ and ATS-LS indicating to route control wiring to equipment ATS-RA.
   b. **MODIFY** ATS-EQ and ATS-LS short circuit rating to 35,000 SCCR.

T. Drawings E1.11, E1.12, E1.21, E1.22, E2.11, E2.12, E2.21, E2.22, E3.11, E3.12, E3.21, E3.22, E4.10:
   a. **ADD** general note to say: COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL DEVICES WITH THE ARCHITECT AND/OR ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.

6. **Fire Protection Drawings**

A. Drawing FP1.10 and FP1.20:
   1) **ADD** the following General Note:
      1. SPRINKLERS INSTALLED IN STAIR 1119, STAIR 1102, VESTIBULE 1100, VESTIBULE 1118, STAIR 2110, and STAIR 2101 AND LOCATED NEAR HEAT SOURCES SHALL BE INSTALLED PER NFPA 13.

B. Drawing FP2.00

1) **MODIFY** the sprinkler type of IT closets to be sidewall. Refer to FP200.01 for more information.

2) **ADD** note on Fire Protection Riser Diagram 1/FP2.00 indicating that FDC-1 shall be installed at 5'-0" above grade.

7. **Technology Drawings**

A. Drawing T6.00:

1. For AV-VPS-2 Projection Screen change from a flush ceiling to a surface wall mount 94" diagonal and change the model to a DaLite Model B # 36461 with 40932 Wall mount brackets.
2. ADD SC-LP1-W Laptop Wall Cabinet, Peter Pepper Products, Integrate series model with Bright White finish.

B. Drawing T1.11

1. ADD (1) C2 information outlet in the Dining room and Multi-purpose Room. See sketch T1.11.01 for additional information,
2. ADD (1) SC-LP1-W Laptop Wall Cabinet in the Dining Room and Multi-purpose Room. This will be furnished by the systems, with the backbox installed by the electrical contractor. Provide 120 volt power receptacle inside backbox. See sketch T1.11.01 for additional information.

CLARIFICATIONS:

1. MASONRY: Mortar screen is not shown in all details where it is required for clarity. Refer to specifications for further requirements.
2. GLASS RAILINGS: Specification information for the glass guardrail is under spec section 05 73 00 Decorative Metal Railings.
3. CURTAINWALL: There are a couple of narrow curtainwall windows at the stair towers that we intend to be braced at the jambs instead of at the head and sill. Refer to sketch A751.01 and A752.01 attached.
4. LAB CASEWORK: In addition to epoxy and stainless steel countertops and sinks, there are epoxy and stainless steel shelves on brackets and standards in the project. The shelving should have the same material requirements for the epoxy and stainless steel countertops already listed in the specifications.
5. LAB FUME HOODS: All fume hoods are to be pre-piped down for utilities.

QUESTIONS SUBMITTED:

Scope and Bidding Requirements

1. It appears the security is for rough in only and I was hoping to find out what access control and video platforms your college uses.
   These are to be determined

2. In reference to this bid release from today for bid package R-05B Structural Steel and Misc. Metals work, is the included schedule and anticipated delivery of structural steel on November 30th, 2015, to be adjusted based on the award date of October 7th to the lowest qualified bidder? Based on that schedule, that is 7 weeks, to detail shop drawings, wait for approval from

architect, and then fabricate, those time frames are not feasible. Could you clarify what steel will be needed in that time frame, or what area? Also, we are at the mercy for joist/deck companies backlog as of right now. As of today all of the local and trusted suppliers, are 5 – 6 weeks to detail, and 4-5 weeks fabrication after approval.
The schedule will be revised once the qualified bidder is approved.

3. There is not a Heated Soak Tank listed on the bid or addendum that I received. Is there any way to get it added to that? ***There is no heated soak tank on the project.***

4. Can the Water Heaters located in Room Mechanical 1111 be vented out the sidewall in the same locations as the Boilers? ***No. The intakes and vents for the water heaters shall be routed to the roof as shown.***

5. Specification section 23 31 00, page 9, 3.2 Ductwork Application Schedule, has the round supply ductwork downstream of the terminal boxes to have 1" Type G rigid insulation liner. Can standard solid liner double wall be used in lieu of the scheduled. ***No. Solid liner double wall cannot be used in lieu of the 1" type G rigid insulation liner. An acceptable alternative to the type G rigid insulation liner is double wall with a perforated liner that completely covers the 1" type A insulation. All perforated inner walls shall have a 25/50 compliant liner between the insulation and the perforated inner wall to prevent contact between fiberglass and air stream.***

6. The glazing scope of work calls out Glass Railings. What is to be included? There are no specs, No glass type called out, No vertical post shown. Is the complete railing system furnished/installed by the glazing contractor? If so need specs and do the shop drawings need to be reviewed by a structural engineer and need stamp? ***The specification information for the glass railings is covered under spec section 05 73 00 Decorative Metal Railings. The Glass and Glazing Contractor will provide and install only the glass portion of this work. The Steel Contractor will provide and install the entire subsystem.***

7. The scope of work calls out the aluminum door hardware is supplied under another trade. I need to qualify that the Fire Rated Aluminum Door Hardware needs to be supplied by the specified door/frame manufacture Safti First to get all warranties. ***Yes the door hardware for the fire rated aluminum storefront system doors will be provided by the fire rated storefront system provider.***

8. All of the storefront elevations that are detailed with the applied exterior trim must be changed to a curtain wall system to meet loads. Storefront system is not designed to have attached materials. ***No. We worked closely with a few manufacturers to ensure that what we are showing is possible with storefront. These will stay exterior storefront.***

9. Pittco is a specified manufacture under the storefront specs and not in the curtain wall specs. I would like to use them and supply a complete package from one supplier. Please check into adding them as an approved manufacture. Curtainwall system will be there 70 Wall. ***No. We received no substitution information and cannot approve the system without evidence that all the different types of curtainwall on the project can be supplied by Pittco.***

10. We are asking to be approved to bid in Section 115313 and 123553 for the Lab Casework. We represent CIF Laboratory Solutions. CIF was installed at Joliet Junior College a few years back in

manufacturers will be used for this work.

11. Who is responsible for the temporary heating fuel? ***Joliet Junior College will install a temporary gas service to the building.***

12. On sheet A3.01 under the general notes there are 3 roof types listed but 2 of them are listed as type B. Are we to assume that the 3rd one listed should be Roof Type C? ***Yes. The third type is to be type C. This is clarified above.***

13. After reviewing the specs there is a rating requirement of A-XIV, is this for only the final bonds? Also our insurance/bonding company has a rating of A XIII; will this be acceptable if awarded? ***All requirements for insurance as detailed in the bid documents must be met.***

14. On drawing P1.02 there is a note that states " all storm piping serving the link is part of alternate bid 1". What does this consist of? Just the branch that the arrow is touching? ***All storm piping upstream of where the arrow is pointing shall be part of Alternate Bid #1. The storm piping downstream of where the arrow is pointing is part of the Base Bid.***

15. We are biding bid package R-09C metal framing, acoustical & drywall work. In our scope listed wood veneer ceiling. Looking at details 2, 5, 7 & 8 at A7.94 I think metal studs and may be ¾" plywood should be by us, but and ½" wood veneer plywood should be in Millwork scope. The wood veneer wall panels excluded from our scope. Please clarify. ***This is correct. The General Trades Contractor is to provide and install the wood veneer plywood***

16. Page 59 of the General Trades Package delineates the responsibilities of the General Trades Safety Coordinator which include:
    a. Auditing activities of the Trade Contractors safety program
    b. Provide weekly written site inspections
    c. Identify SDS data location
    d. Maintain records
    e. Review injury and first aid records
    f. Make frequent inspections of the jobsite and
    g. Investigate all accidents.

    Page 60 delineates the responsibilities of the individual trades safety coordinators including requiring a full time safety coordinator for crews of 20 or more and a minimum of 20 hours per week for a safety coordinator for crews of less than 20. Since there will be multiple trades working simultaneously and there will obviously be more than 20 individuals working at any given time, is it the intent that the General Trades Safety Coordinator be a full time representative? ***No, the Safety Coordinator will be responsible for performing a weekly inspection and attending a monthly meeting.***

17. Will the CM take responsibility of compiling the Asset Data Collection submitted by the various trades (other than those under the umbrella of the General Trades Package) as it pertains to maintainable assets (pages 43 through 47 of the General Trades package) or will this be the responsibility of the General Trades contractor? ***The General Trades Contractor will only be responsible for the assets in the General Trades package.***

They list as an approved manufacturer Sherwin Williams on the Epoxy system side but not on the Mortar system….Sherwin Williams provides both….Can Sherwin Williams be used on the Mortar system? ***Sherwin Williams is being added by addendum. See above.***

19. Do you want all the vents for the grease lines in the kitchen to be stainless steel? Or can it be cast iron no-hub? To clarify, the grease line vents all tie directly into the sanitary vents. Where do we make a transition from grease piping to the regular sanitary piping? I have taken off stainless up to the suspended pipe in the ceiling then switched to sanitary, but not sure the vents even need to be SS although the spec says SS vents. ***Grease Vent piping may be standard weight cast iron soil pipe in lieu of stainless steel as contractor's option. Refer to sanitary vent specifications for more information on piping material.***

20. On the T drawings is a square symbol with the letters EP in it. On the symbols list it states this is an emergency phone. This symbol is not on the Information Schedule to receive any cabling. Please clarify? ***Cable requirements for all outlets are shown on the connectivity drawings for each closet on T3.00, Details 4 & 8.***

21. On the T drawings is a triangle symbol with a "W" next to it. On the symbols list it states this is a wall phone. This symbol is not on the Information Schedule to receive any cabling. Please clarify? ***Cable requirements for all outlets are shown on the connectivity drawings for each closet on T3.00, Details 4 & 8.***

22. On the T drawings there is a triangle symbol with a "RI" next to it. On the symbols list is states this is rough in only. It is not on the information schedule to receive any cabling. Is any required or is this to be a blanked off opening? ***Cable requirements for all outlets are shown on the connectivity drawings for each closet on T3.00, Details 4 & 8.***

23. Please provide specifications for the wood veneer ceiling type #6. ***This specification information is contained under Section 064116***

24. Please provide specifications for the add alternate radiant panels and in active ceiling panels at link 1120 connecting new and existing building. Confirm bid package r-09c metal framing/sheathing/acoustical/drywall is to furnish and install both. ***The HVAC Contractor will provide both versions. Refer to 23 82 00 for Radiant Ceiling Panel specifications.***

25. Per the pre-bid meeting, confirm insulation and gypsum is not required on the occupied side of the temporary protection. ***There is no gypsum Board at the occupied side of temporary protection.***

26. Fire Protection, can extended coverage concealer sprinkler heads be used specifically in the large classrooms and lab areas? ***Extended coverage concealed sprinkler heads may be used in large classrooms and lab areas.***

fittings. Can this pipe be grooved and use grooved coupling and fittings? ***Fire protection piping 2" and under shall be threaded and coupled or flanged per the specifications.***

28. Per the general trades scope of work, they are responsible for the Glass Sliding Door hardware, tracks, closing devices, operators and control equipment, and counter balance systems with no mention of glass. Is the glass and glazing work responsible for supply and install of the glass or supply only? ***The Glass and Glazing Contractor is responsible for this glass.***

29. Just wish to clarify a few items for the mobile shelving:

    a. Only one system located in the "book store" on the 1st level
    b. Carriages
        i. 3 back-to-back carriages
        ii. 1 single faced fixed
        iii. 1 single faced mobile
    c. Shelving
        i. height 95" (total 100" with carriage)
        ii. depth 18" each shelf
        iii. width (2) 36" (2) 42" per row
        iv. seven shelves per section

    Confirmed there is only one system in the bookstore. The carriages are not back to back. All carriages are to be mobile. The total height of the system should be 102"(or less) with carriage. Depth of each shelf should be 18" but they are not back to back. It is one, 18" deep shelf, open on both sides, no center stop, per carriage. It should be (3) 42" side shelves and (1) 36" wide shelf per row. Seven shelves per section.

30. The General Trades package indicates that we are responsible for the snow removal. Without knowing how much it is going to snow, it is impossible to provide pricing for this work. Can you assign an allowance to this? ***Assume 12 snow days.***

31. Both the General Trades package and the Metal Framing… package have a "general requirement" for perimeter protection around changes in elevation of 18" or more. Who is responsible for this work? ***The Metal Framing Contractor is responsible for the protection at the perimeter of the roof. The Steel Contractor is responsible for the perimeter protection at the second floor.***

32. General requirement 3 in the General Trades package lists window and door protection. The metal framing… package also lists temp protection. Who is responsible for this work? ***The Metal Framing Contractor is responsible for temporary window and door protection.***

33. The documents provided do not provide contract quantities for the asphalt or curb work to be performed. I am attempting to perform take-offs of the drawings but have realized that the drawings do not contain match lines and content overlaps sheet to sheet, thereby not allowing me to perform accurate take-offs. Can contract quantities be provided and if no could match lines be

Pavement type A 72,317 SF
Pavement type B 76,673 SF and Curb and Gutter 5,751 LF

34. The drawings do not contain a detail for the curb to be installed. If aggregate base is required under the curb sections, how thick does this base need to be? ***The curb will require 4 inches of CA-6 crushed limestone aggregate base course extended 6 inches behind the curb.***

35. Please confirm that no adjustments to subgrade elevations at the locations of curb and asphalt work areas will be included in this scope (i.e., subgrade will be at proper elevation for placement of proper thickness of aggregate subgrade). ***This is correct.***

36. Please confirm that no landscaping restoration is included in this work scope. ***This is correct.***

37. Schedule provided with contract documents indicate (3) time periods that work is to occur on 'Site Entrance and Parking Lots', but nothing indicates what work areas will be available during each mobilization. Please clarify. ***The first period is demolition, fill and curbs. The second period is paving and the third is striping and signage.***

38. Please verify that the only removals included in this work scope are for asphalt pavement and curb removal. ***Demolition is limited to curbs and pavement at tie ins.***

39. Specifications indicate that patching will be required for electrical site work, but the drawings do not indicate any location at which this is to occur. Please clarify. ***Wherever trenches or underground electrical work is cut through graded, planted or landscaped areas, these area shall be restored to the original condition. These areas include, but not limited to, the new underground utility line from 135th Street, underground conduits routed to serve the existing building, etc.***

40. Can asphalt millings meeting CA-6 gradation be used for aggregate subgrade material? ***No***

41. Work scope indicates that parking lot signage is included in this package, but I do not see a sign schedule in the contract documents. In addition, I do not see any signage called out on the contract drawings. Please clarify.
The ultimate location of signs will be determined at a later time. The contractor should account for the following signs;
"Stop" signs and posts 6
"No Parking, Fire Lane" signs and posts 12
ADA signs 8 and posts 4
"Low Emission Vehicle" signs 20 and posts 10

42. The typical asphalt sections provided the thickness of the binder and surface courses but do not indicate what classification of HMA should be used (e.g., N30, N50, N70, N90). Please clarify. ***The HMA shall meet the N50 classification per IDOT specifications.***

any of the additional concrete sitework (e.g., sidewalks, stoops, and concrete pavement). ***Additional Concrete sitework is by others.***

44. Where does the stainless steel Grease waste terminate? ***The stainless steel grease sanitary piping shall be used for all sanitary piping upstream of the grease interceptor.***

45. Where does the stainless steel Grease vent terminate? ***Grease Vent piping may be standard weight cast iron soil pipe in lieu of stainless steel as contractor's option. Refer to sanitary vent specifications for more information on piping material.***

46. Is HB-1 on P1.31 suppose to be HB-2 ? ***Yes, all hose bibbs on P1.31 shall be HB-2 which is a freezeless roof hydrant type.***

47. Drawing T3.00 detail #4 shows running a 6 strand SM Fiber Optic Cable from the new HC-1 to the existing First Floor Command Center. We see note #5 & #6 to reference drawing E0.01 & E4.10. Please issue a drawing showing the Pathway for this fiber and state what this fiber is to be run in (Innerduct using J-Hooks mounted to what? What is the existing ceiling? What is the existing ceiling height?). This information is required so that contractors are able to estimate what needs to be estimated for this task. Please clarify? ***See drawing E4.10 Detail 2, for exact location of existing Fire Alarm panel in the existing academic building. See specifications sections 271300, 270528 and 270543 for installation requirements of the fiber optic cable.***

48. T-drawings, The Keynotes and General Sheet Notes states that all projectors and monitors are by owner. The Equipment Schedule on Drawing T6.00 states that the projectors and monitors are to be furnished. Are all the projectors, monitors, brackets and mounts owner furnished? ***Per Sheet T6.00 all projectors and monitors are owner furnished and contractor installed. All brackets and mounts are contractor furnished and installed.***

49. On Drawings T1.11, T1.12, T1.21 & T1.22 Keynotes 2 & 8 installation of monitors and flat-panels. These Keynotes are located in the hallways and are not part of any block drawings. What are these (i.e. digital signage, kiosks, etc.) and do we provide anything for these locations? ***These are for digital signage, contractor is to furnish and install the bracket and mount, as well as the DS information outlet. The contractor will install the owner furnished monitor.***

50. Drawing T6.00, Equipment Schedule, item PA-S1-C public address loudspeaker. I did not find any on the drawings, so do any exist? ***There are no public address loudspeakers.***

51. Wireless Clock System: If this is an extension of the existing system, is this part of our scope? ***This is an extension of an existing system and is part of the scope.***

52. Wireless Clock System: Are you asking for a second head-end unit or use existing***? Provide a remote transmitter per T4.00, detail 8 and T6.00.***

53. Wireless Clock System: Will the owner acquire the few wireless clocks from the clock vendor? ***No***

54. For the VCT layout, there are many areas that will have "cut" edges (specifically in Level 2 west plan) because it appears the pattern is to line up with the windows. Can the pattern be adjusted slightly to allow all full tiles? ***No. The VCT should be provided as shown on the drawings.***

55. In the "ceramic and porcelain tile work" scope it says to slope floors to drains. All the floor tile is large format 18"x18" tile and sloping to drains will result in Many relief cuts of the tiles. Are the relief cuts acceptable or is a slope not needed? ***The tile is being changed to 6x6 instead of 18x18 to accommodate the slope. Refer to addendum items above.***

56. Is waterproofing/uncoupling membrane to be included under ceramic tile floors? ***No***

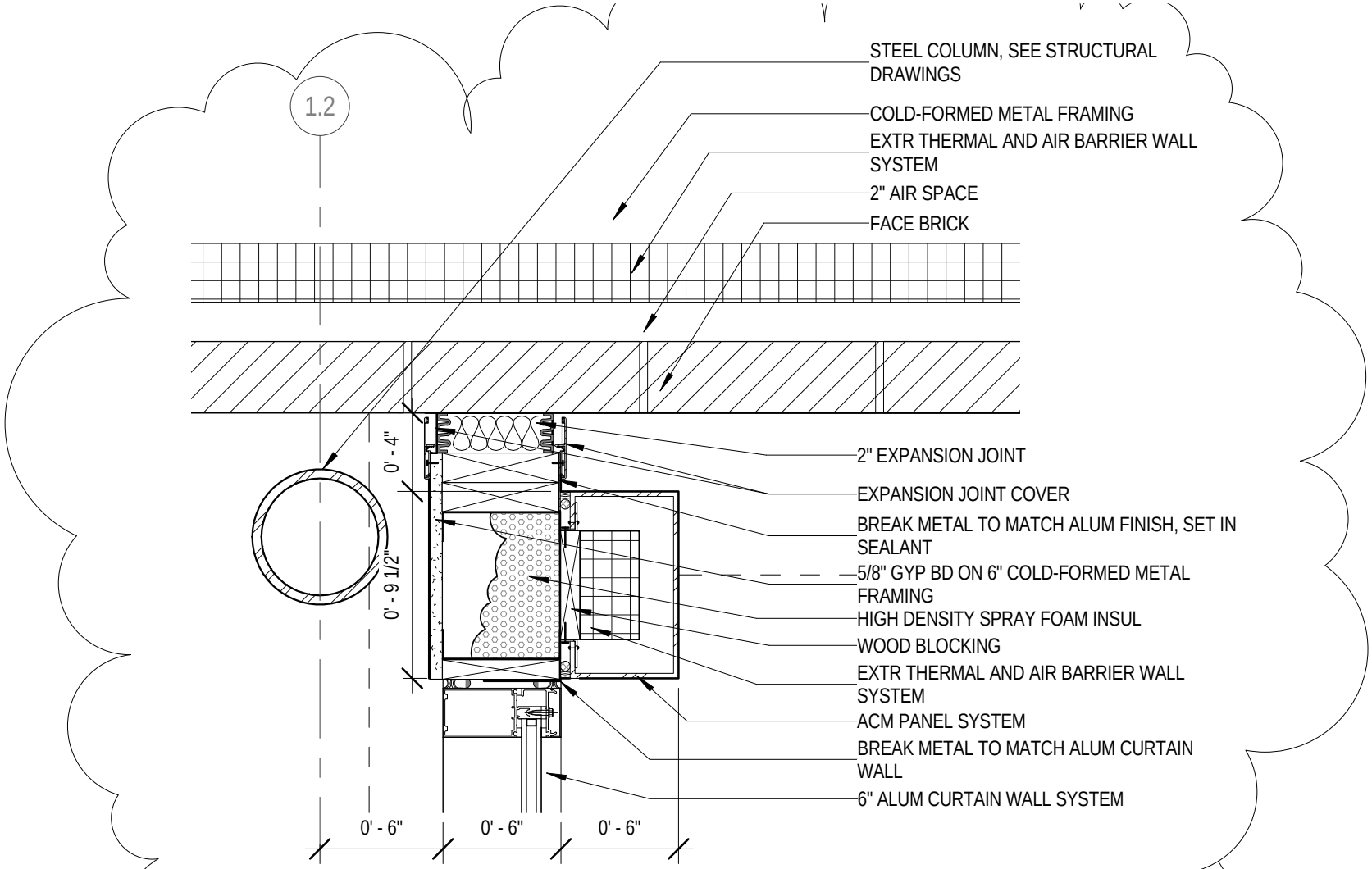
57. In the "ceramic and porcelain tile work" (paragraph c) says to include all wall preparation, including underlayment. Does this mean the ceramic tile contractor is responsible to install the durock/cement board? ***No. The Metal Framing Contractor shall provide and install all durock/cement board.***

End of Addendum #3

Attachments:

1. Drawings:
   A. Architectural: A103.01, A1.04, A111.01, A2.11, A212.01, A2.23, A603.01, A604.01, A607.01, A701.01, A702.01, A703.01, A751.01, A752.01, A793.01, A793.02, A813.01, A9.02, A904.01
   B. Electrical: E211.01, E212.02, E213.03, E221.04, E221.05, E221.06, E222.07, E222.08, E222.09, E230.10, E410.11, E502.12, E510.13, E511.14, E600.15
   C. Fire Protection: FP200.01.
   D. Mechanical: M111.01, M111.02, M111.03, M112.01, M122.01, M132.01, M222.01, M300.01, M400.01, M402.01, M403.01, M500.01, M500.02, M501.01, M502.01, M701.01
   E. Plumbing: P1.22, P101.01, P111.01, P112.01, P112.02, P121.01, P121.02, P300.01, P301.01, P302.01, P303.01, P400.01, P500.01
   F. Technology: T1.11.01

2. Specifications:
   A. 06 41 16 – PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS
   B. 07 71 29– MANUFACTURED ROOF EXPANSION JOINTS
   C. 07 95 00–EXPANSION CONTROL
   D. 10 11 00 – VISUAL DISPLAY SURFACES
   E. 10 14 19 – DIMENSIONAL LETTER SIGNAGE
   F. 12 36 61 – SIMULATED STONE COUNTERTOPS
   G. 23 74 11 – PACKAGED ROOFTOP AIR CONDITIONING UNIT



12 ALT. BID 1 - PLAN DETAIL

1 1/2" = 1'-0"

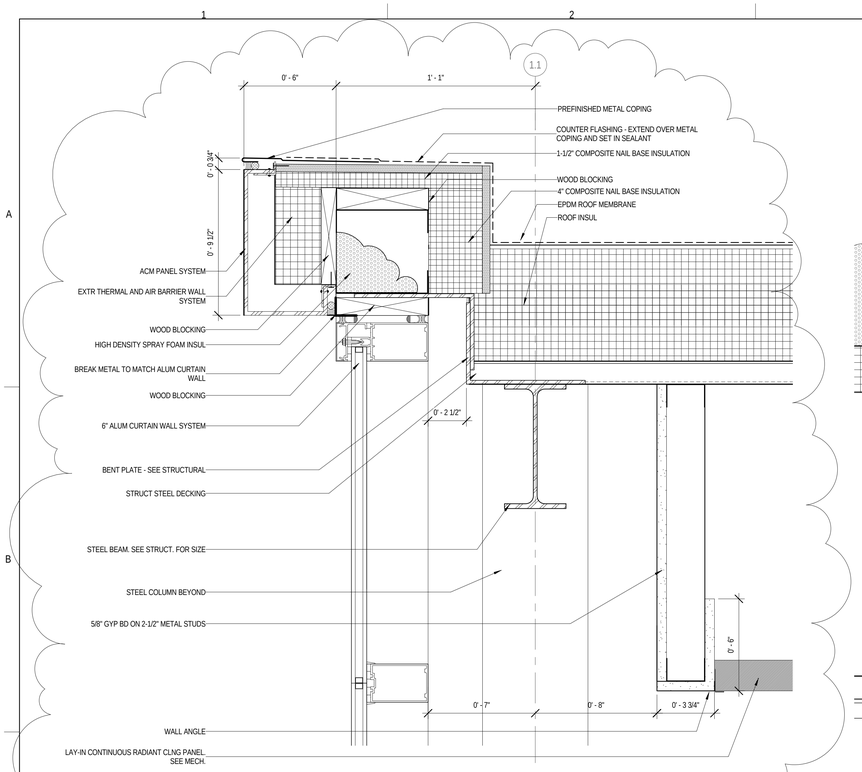
dka

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A1.03

ADDENDUM 3

A103.01



1 ALT BID 1 - ROOF DETAIL
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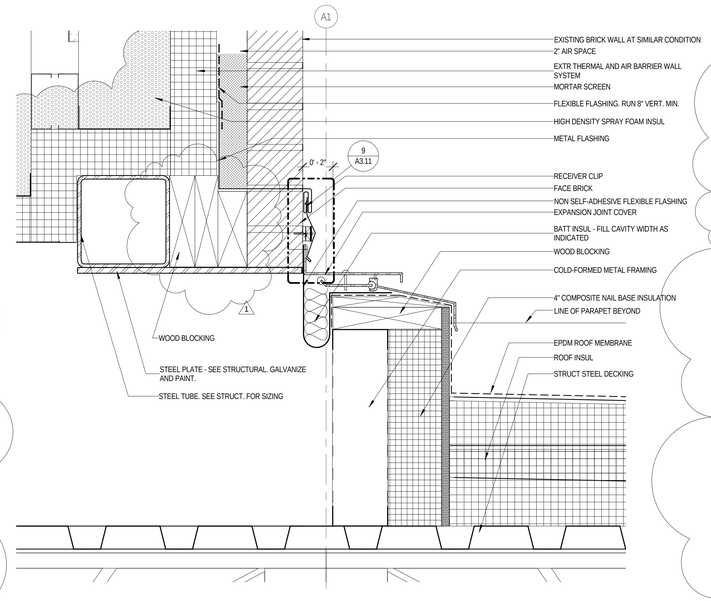
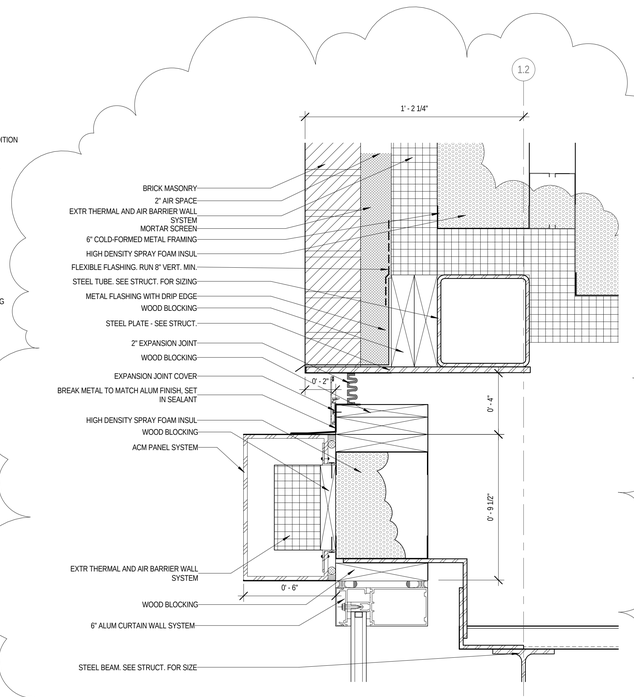


2 ALT. BID 1 - SECTION DETAIL
3" = 1'-0"



3 ALT. BID 1 - SECTION DETAIL
3" = 1'-0"

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ROMEOVILLE CAMPUS EXPANSION
1125 135th ST. ROMEOVILLE, IL 60446
DKA PROJECT NO: 14-005

KEY PLAN:

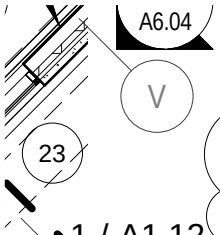
SHEET STATUS: 8/17/15
ISSUED FOR BID
PACKAGE 2

NO:	DESCRIPTION:	DATE:
1	ADDENDUM 3	9-3-15

SHEET TITLE:
ALTERNATE BID #1 - DETAILS

SHEET NUMBER:
A1.04

9/2/2015 10:05:05 AM



FLOOR PLAN REFERENCED NOTES:

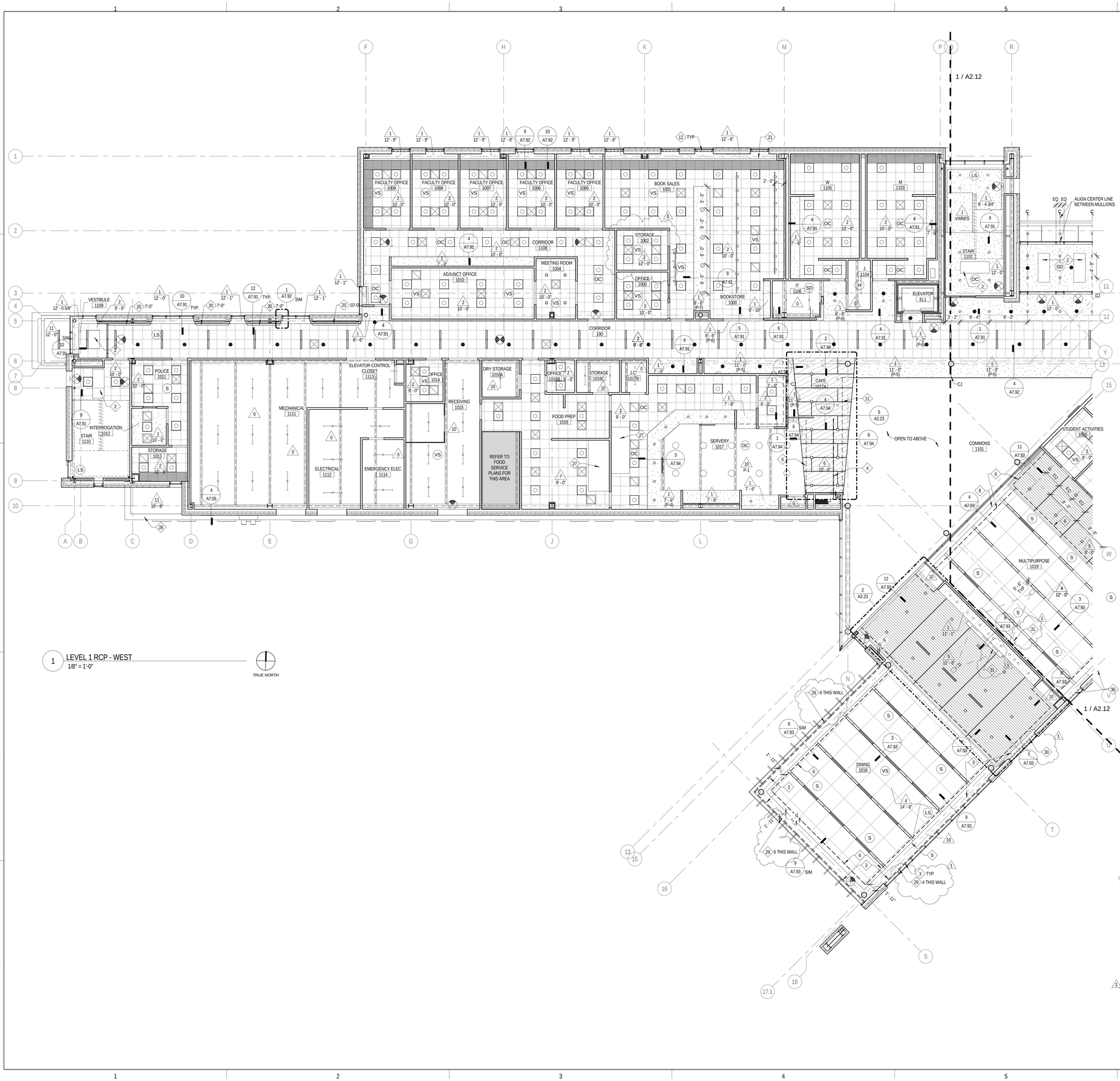
1

1. GLASS GUARDRAIL SYSTEM. REFER TO DETAIL FOR MORE INFORMATION.
2. GYP BD COLUMN ENCLOSURE - PARTITIONS TYPE S2C TYP. REFER TO DIMENSION PLANS FOR OUTSIDE DIMENSIONS.
3. HIGH DENSITY SHELVING SYSTEM. COORDINATE RECESS IN SLAB FOR SUPPORT RAILS. REFER TO STRUCTURAL DRAWINGS.
4. SLIDING GLASS BARN DOOR SYSTEM - REFER TO INTERIOR ELEVATIONS FOR MORE INFORMATION
5. FOOD SERVICE EQUIPMENT. REFER TO FOOD SERVICE DRAWINGS.
6. ALL WALLS THIS ROOM ARE FACED WITH PLYWOOD. REFER TO TECHNOLOGY DWGS FOR MORE INFORMATION.
7. RECESSED GUN CABINET
8. VENDING MACHINES, N.I.C.
9. PLASTIC LAMINATE, 3-HIGH LOCKERS
10. FLAT PANEL MONITOR - O.F.C.I. REFER TO INTERIOR ELEVATIONS FOR LOCATIONS. IF WALL IS NOT ELEVATED, CENTER MONITOR ON WALL AND MOUNT AT 5'-0" A.F.F.
11. RECESSED CABINET UNIT HEATER - REFER TO MECHANICAL DRAWINGS
12. PROVIDE BLOCKING IN WALL FOR OWNER FURNISHED, OWNER INSTALLED EVAC CHAIR. COORDINTAE EXTENTS AND LOCATION WITH ARCHITECT.
13. LEVEL 5 DRYWALL FINISH THIS WALL
14. SECURITY GATE TRACK ABOVE
15. FIRE ALARM ANNUNCIATOR PANEL
16. CODE BLUE STATION - SEE TECHNOLOGY DWGS
17. FIN TUBE RADIATOR BELOW. REFER TO MECHANICAL DRAWINGS.
18. WALL MOUNTED ADA DOOR OPERATOR PUSH PAD
19. RECESSED FIRE EXTINGUISHER CABINET
20. WALL MOUNTED, 24" X 72" MIRROR - TA-5A. REFER TO TOILET ACCESSORY SCHEDULE ON A8.01.
21. PLASTIC LAMINATE, 2-HIGH LOCKERS
22. PROVIDE IN-WALL BLOCKING FOR N.I.C. FIRST AID AND SAFETY EQUIPMENT
23. WALL MOUNTED LAPTOP CABINET - COORDINATE LOCATION WITH ARCHITECT PRIOR TO INSTALLATION
24. WALL MOUNTED GAS SHUT OFF BUTTON - REFER TO MECHANICAL DWGS
25. NOT USED
26. CHAIN LINK FENCE CAGE - EXTEND FENCING 10'-0" A.F.F.
27. +18" AFF IN WALL BLOCKING AND HANDCUFF RING
28. THIS WALL AND DOOR ARE PROVIDED AT BASE BID ONLY. REMOVED AT ALT. BID #1. SEE SHEET A1.03
29. PLATED STEEL COLUMN, SEE STRUCTURAL.
30. COORDINATE LOCATION OF WALL RECESS WITH CEILING TERMINATION - REFER TO RCP
31. METAL, 2-HIGH LOCKERS
32. JOINTS IN STONE SILL ALIGN WITH MULLIONS. REFER TO WALL SECTION FOR MORE INFORMATION.
33. LINE OF SOFFIT BELOW. REFER TO RCP FOR MORE INFORMATION.
34. ALIGN FACE OF COLUMN ENLCOSURE WITH WINDOW JAMB
35. TRANSFORMER, GENERATOR, AND REMOTE REFRIGERATION RACK. REFER TO ELECTRICAL, FOOD SERVICE AND MECHANICAL DRAWINGS

D

E

1



1 LEVEL 1 RCP - WEST
1/8" = 1'-0"

RCP SYMBOLS LEGEND:

NOTE: REFER TO M.E.P.F.P. DRAWINGS FOR ADDITIONAL INFORMATION ON MECHANICAL, ELECTRICAL, AND FIRE PROTECTION SYSTEMS

- CEILING TYPE
- CEILING ELEVATION A.F.F.
- SUSPENDED ACOUSTICAL TILE CEILING
- GYPSUM BOARD CEILING OR SOFFIT
- LINEAR WOOD SLAT CEILING SYSTEM
- WOOD PANEL CEILING
- ROLLER SHADE - MANUAL U.N.O.
- RADIANT CEILING PANELS - REFER TO MECHANICAL DWGS
- TRACK LIGHTING
- RECESSED 2'x2' FLUORESCENT FIXTURE
- SURFACE MOUNT FLUORECENT LIGHT LINEAR FIXTURE
- SURFACE LIGHT MOUNT FIXTURE
- RECESSED DOWN LIGHT
- RECESSED SQUARE DOWN LIGHT
- PENDANT MOUNT LIGHT
- PENDANT LIGHT MOUNT LINEAR FIXTURE
- SPRINKLER HEAD - SHOWN IN SOME LOCATIONS FOR COORDINATION. REFER TO FIRE PROTECTION DRAWINGS FOR MORE INFORMATION
- PENDANT LIGHT HUNG FLUORESCENT STRIP FIXTURE
- RECESSED LIGHT LINEAR FLUORESCENT FIXTURE
- PULL DOWN WALL MOUNTED PROJECTION SCREEN - U.N.O.
- CEILING MOUNTED PROJECTOR - O.F.C.I.
- EXIT SIGN
- SD SMOKE DETECTOR
- A FIRE ALARM DEVICE
- S SPEAKER
- C CLOSED CIRCUIT CAMERA
- OC OCCUPANT SENSOR
- W WIRELESS ACCESS POINT
- LS LIGHT SENSOR
- VS VACANCY SENSOR
- CJ CONTROL JOINT
- RETURN AIR GRILLE
- SUPPLY AIR GRILLE
- LINEAR DIFFUSER - SUPPLY/RETURN

RCP GENERAL NOTES:

1. ALL HEATING, VENTILATION, ELECTRICAL, PLUMBING, AND FIRE PROTECTION ITEMS ARE SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS FOR REFERENCE AND COORDINATION ONLY. REFER TO HEATING, VENTILATION, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR ACTUAL QUANTITIES. IN CASE OF CONFLICT THE ARCHITECTURAL REFLECTED CEILING PLAN SHALL GOVERN LOCATION OF THESE ITEMS.
2. CENTER ALL FIXTURES IN CEILING TILES AND FIELD VERIFY GRID LAYOUT FOR PROPER FIXTURE LOCATION. ALIGN ALL FIXTURES IN BOTH DIRECTIONS OF CEILING TILE. (UNO)
3. CENTER ALL SPRINKLER HEADS IN CEILING TILES.
4. ALL GYP. BD. CEILINGS TO BE PAINTED P-2 UNLESS OTHERWISE NOTED ON PLANS
5. EXTEND FACE OF ALL GYP. BD. SOFFITS AND HEADERS TO FINISHED CEILING ABOVE U.N.O.
6. EXTEND FACE OF ALL GYP. BD. SOFFITS AND HEADERS 6" MIN. BEYOND FINISHED CEILING ABOVE U.N.O.
7. REFER TO A7.91 FOR TYPICAL SAT TO GYP. BD. AND GYP. BD. TO GYP. BD. CEILING TRANSITIONS
8. ALL SPRINKLER HEADS, SPEAKERS, AND GRILLS IN GYP. BD. CEILINGS PAINTED A COLOR OTHER THAN P-2 SHOULD BE PAINTED TO MATCH ADJACENT CEILING COLOR

RCP REFERENCED NOTES:

1. ROLLER SHADES AT THESE WINDOWS ARE BLACKOUT SHADES.
2. CABINET UNIT HEATER - REFER TO MECHANICAL DWGS
3. ROLLER SHADES IN THIS ROOM ARE MOTORIZED
4. RECESSED TRACK FOR RETRACTABLE SECURITY GATE
5. 3/4" DIA. STEEL ROD STRUCTURE SUSPENDED FROM STRUCTURE ABOVE. REFER TO STRUCTURAL DRAWINGS. BOTTOM OF RODS AT +8'-6" A.F.F.
6. HEAVY DASHED LINE INDICATES FACE OF GYP BD BULKHEAD ABOVE
7. JOINT IN ACM CANOPY
8. PROVIDE 2" PERIMETER TRIM - TYP.
9. LEAVE 1/2" JOINT BETWEEN PANELS
10. REMOVE WOOD SLAT TO EXTENTS NECESSARY TO INSTALL LINEAR DIFFUSER
11. DASHED LINE INDICATES PARTITION ABOVE.
12. DASHED LINES INDICATE LOCATION OF MANUAL ROLLER SHADE, TYP
13. PROVIDE 6" PERIMETER TRIM
14. PAINT FACE OF SOFFIT P-7
15. VERIFY HEIGHTS WITH ARCHITECT ON SITE PRIOR TO INSTALLATION - PROVIDE ENOUGH EXCESS CABLE FOR ADJUSTMENTS UP TO 6'-0"
16. PROVIDE 2" PERIMETER TRIM
17. REFER TO INTERIOR ELEVATIONS FOR SPOT ELEVATIONS OF ANGLED CEILINGS
18. PROVIDE WALL ANGLE AT EDGE
19. CAST STONE SOFFIT PANELS. JOINTS BETWEEN PANELS ALIGN WITH MULLIONS. REFER TO SECTION DETAIL FOR MORE INFORMATION.
20. LIGHT FIXTURE. LENGTH INDICATED ON NOTE.
21. GYP CEILING TYPICAL AT TRANSITION BETWEEN RADIANT PANEL AND BULKHEAD. SEE CEILING DETAIL FOR MORE INFORMATION.
22. COORDINATE LOCATION OF WALL RECESS WITH CEILING AS SHOWN
23. PAINT EXPOSED METAL FACE OF SPEAKER GRILLS AND EXPOSED PORTION OF PROJECTOR MOUNT (P-13)
24. FUME HOOD - SHEET METAL ENCLOSURE TO GO UP ABOVE CEILING
25. SCIENCE EQUIPMENT - SEE A8.11 FOR MORE INFORMATION
26. EMERGENCY SAFETY SHOWER. REFER TO SCIENCE LAB SHEETS.
27. REFER TO FOOD SERVICE DRAWINGS FOR HOOD LOCATIONS.
28. EXPOSED GALVANIZED STEEL PLATE. SEE STRUCTURAL. PAINT TO MATCH ADJ. ACM SOFFIT.
29. MOTORIZED SHADES THIS WALL MOUNTED TO STRUCTURE ABOVE. ALIGN SHADE ENDS WITH MULLIONS. REFER TO TAG FOR QUANTITY OF SHADES ON WALL. REFER TO CEILING DETAILS FOR MORE INFORMATION.
30. MOTORIZED SHADE THIS WINDOW MOUNTED TO GYP BD JAMBS. REFER TO CEILING DETAILS FOR MOUNTING HEIGHT.
31. RECESSED MOTORIZED PROJECTION SCREEN. REFER TO TECHNOLOGY SHEETS.

CEILING TYPES:

TYPE	DESCRIPTION
0	EXPOSED METAL STRUCTURE
1	1/2" PAINTED GYP BOARD ON METAL FRAMING
2	2X2 ACOUSTICAL PANEL SYSTEM
3	5/8" PERFORATED PAINTED ACOUSTICAL GYP BOARD ON METAL FRAMING - 12" ACOUSTICAL BATT INSUL ABOVE CEILING
4	4X4 ACOUSTICAL PANEL CEILING SYSTEM
5	WOOD SLAT CEILING
6	WOOD VENEER PANEL CEILING
7	2X2 VINYL FACE GYP BD CEILING
8	ACM SOFFIT SYSTEM COLOR 1 - REFER TO SECTIONS FOR ADDITIONAL INFORMATION
9	NOT USED
10	PAINTED EXPOSED METAL STRUCTURE (P-2)
11	ACM SOFFIT SYSTEM COLOR 2 - REFER TO SECTIONS FOR ADDITIONAL INFORMATION

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JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

1125 135th ST. ROMEOVILLE, IL 60446

DKA PROJECT NO: 14-005

KEY PLAN:

SHEET STATUS: 8/17/15

ISSUED FOR BID PACKAGE 2

NO:	DESCRIPTION:	DATE:
1	ADDENDUM 3	9-3-15

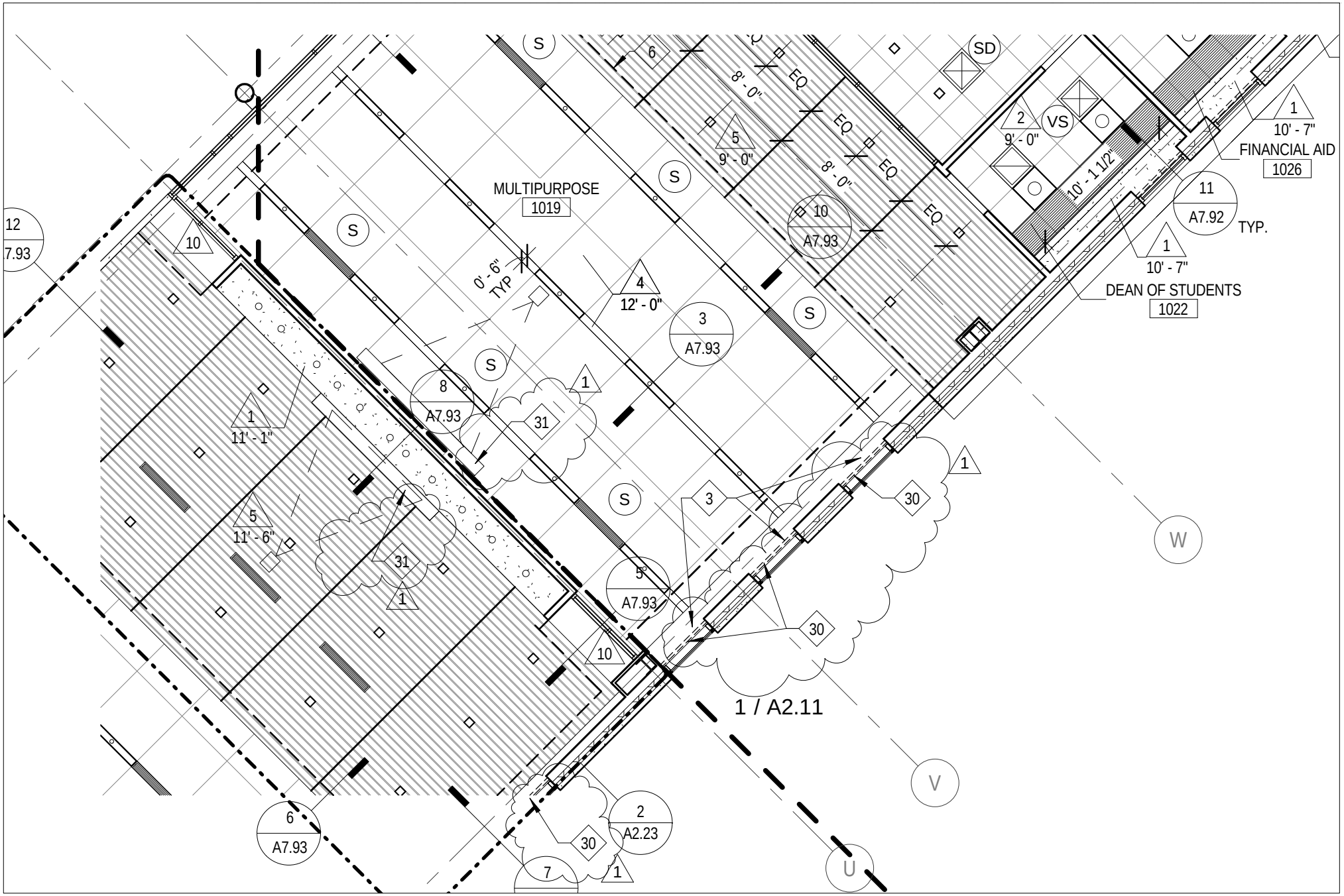
SHEET TITLE:

LEVEL 1 REFLECTED CEILING PLAN - WEST

SHEET NUMBER:

A2.11

9/2/2015 10:37:47 AM

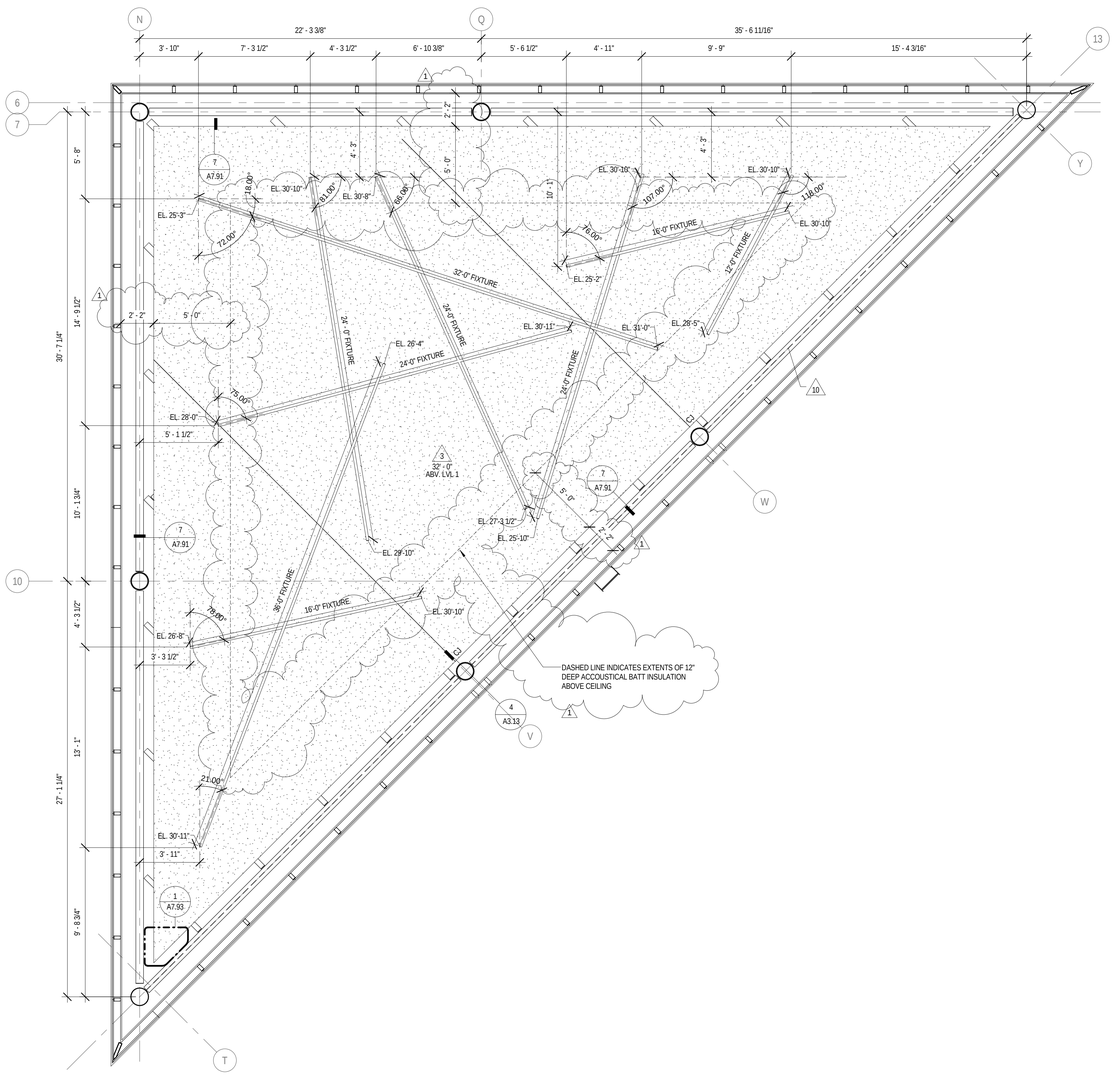


JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

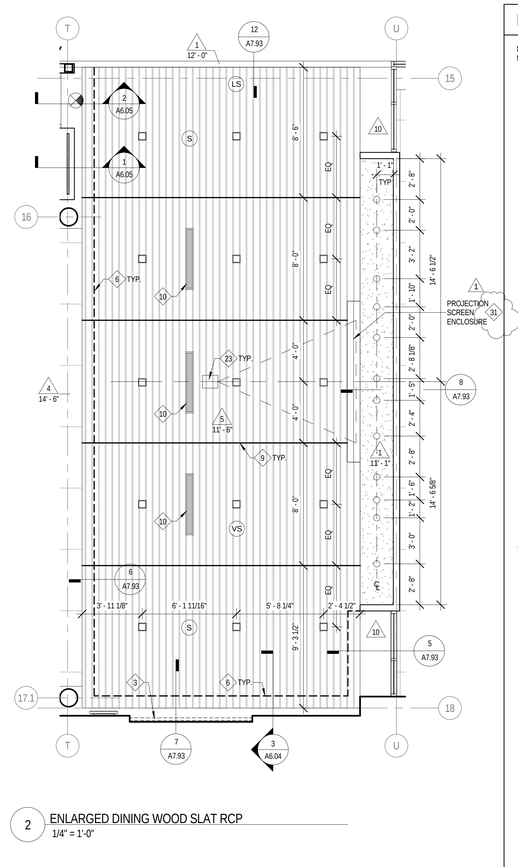
PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A2.12

ADDENDUM 3

A212.01



1 ENLARGED CLERESTORY AND COMMONS RCP
1/4" = 1'-0"



2 ENLARGED DINING WOOD SLAT RCP
1/4" = 1'-0"

RCP SYMBOLS LEGEND:

NOTE: REFER TO M.E.P.F.P. DRAWINGS FOR ADDITIONAL INFORMATION ON MECHANICAL, ELECTRICAL, AND FIRE PROTECTION SYSTEMS

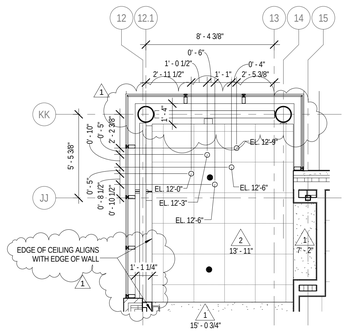
- CEILING TYPE (XX / X'-X")
- CEILING ELEVATION A.F.F.
- SUSPENDED ACOUSTICAL TILE CEILING
- GYPSUM BOARD CEILING OR SOFFIT
- LINEAR WOOD SLAT CEILING SYSTEM
- WOOD PANEL CEILING
- ROLLER SHADE - MANUAL U.N.O.
- RADIANT CEILING PANELS - REFER TO MECHANICAL DWGS
- TRACK LIGHTING
- RECESSED 2'x2' FLUORESCENT FIXTURE
- SURFACE MOUNT FLUORECENT LIGHT LINEAR FIXTURE
- SURFACE LIGHT MOUNT FIXTURE
- RECESSED DOWN LIGHT
- RECESSED SQUARE DOWN LIGHT
- PENDANT MOUNT LIGHT
- PENDANT LIGHT MOUNT LINEAR FIXTURE
- SPRINKLER HEAD - SHOWN IN SOME LOCATIONS FOR COORDINATION. REFER TO FIRE PROTECTION DRAWINGS FOR MORE INFORMATION
- PENDANT LIGHT HUNG FLUORESCENT STRIP FIXTURE
- RECESSED LIGHT LINEAR FLUORESCENT FIXTURE
- PULL DOWN WALL MOUNTED PROJECTION SCREEN - U.N.O.
- CEILING MOUNTED PROJECTOR - O.F.C.I.
- EXIT SIGN
- SD SMOKE DETECTOR
- A FIRE ALARM DEVICE
- S SPEAKER
- C CLOSED CIRCUIT CAMERA
- OC OCCUPANT SENSOR
- W WIRELESS ACCESS POINT
- LS LIGHT SENSOR
- VS VACANCY SENSOR
- CJ CONTROL JOINT
- RETURN AIR GRILLE
- SUPPLY AIR GRILLE
- LINEAR DIFFUSER - SUPPLY/RETURN

RCP GENERAL NOTES:

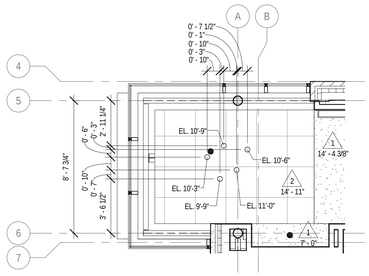
1. ALL HEATING, VENTILATION, ELECTRICAL, PLUMBING, AND FIRE PROTECTION ITEMS ARE SHOWN ON ARCHITECTURAL REFLECTED CEILING PLANS FOR REFERENCE AND COORDINATION ONLY. REFER TO HEATING, VENTILATION, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR ACTUAL QUANTITIES. IN CASE OF CONFLICT THE ARCHITECTURAL REFLECTED CEILING PLAN SHALL GOVERN LOCATION OF THESE ITEMS.
2. CENTER ALL FIXTURES IN CEILING TILES AND FIELD VERIFY GRID LAYOUT FOR PROPER FIXTURE LOCATION. ALIGN ALL FIXTURES IN BOTH DIRECTIONS OF CEILING TILE. (UNO)
3. CENTER ALL SPRINKLER HEADS IN CEILING TILES.
4. ALL GYP. BD. CEILINGS TO BE PAINTED P-2 UNLESS OTHERWISE NOTED ON PLANS
5. EXTEND FACE OF ALL GYP. BD. SOFFITS AND HEADERS TO FINISHED CEILING ABOVE U.N.O.
6. EXTEND FACE OF ALL GYP. BD. SOFFITS AND HEADERS 6" MIN. BEYOND FINISHED CEILING ABOVE U.N.O.
7. REFER TO A7.91 FOR TYPICAL SAT TO GYP. BD. AND GYP. BD. TO GYP. BD. CEILING TRANSITIONS
8. ALL SPRINKLER HEADS, SPEAKERS, AND GRILLS IN GYP. BD. CEILINGS PAINTED A COLOR OTHER THAN P-2 SHOULD BE PAINTED TO MATCH ADJACENT CEILING COLOR

RCP REFERENCED NOTES:

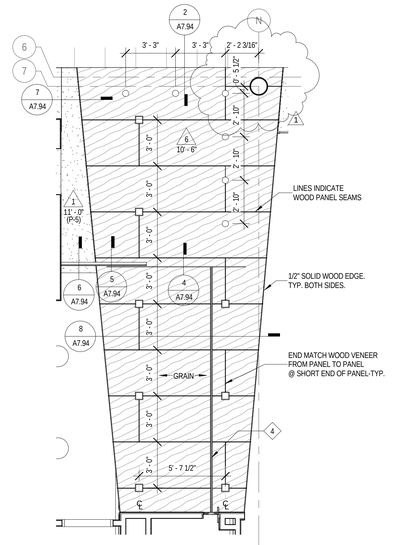
1. ROLLER SHADES AT THESE WINDOWS ARE BLACKOUT SHADES.
2. CABINET UNIT HEATER - REFER TO MECHANICAL DWGS
3. ROLLER SHADES IN THIS ROOM ARE MOTORIZED
4. RECESSED TRACK FOR RETRACTABLE SECURITY GATE
5. 3/4" DIA. STEEL ROD STRUCTURE SUSPENDED FROM STRUCTURE ABOVE. REFER TO STRUCTURAL DRAWINGS, BOTTOM OF RODS AT +8'-6" A.F.F.
6. HEAVY DASHED LINE INDICATES FACE OF GYP BD BULKHEAD ABOVE
7. JOINT IN ACM CANOPY
8. PROVIDE 2" PERIMETER TRIM - TYP.
9. LEAVE 1/2" JOINT BETWEEN PANELS
10. REMOVE WOOD SLAT TO EXTENTS NECESSARY TO INSTALL LINEAR DIFFUSER
11. DASHED LINE INDICATES PARTITION ABOVE
12. DASHED LINES INDICATE LOCATION OF MANUAL ROLLER SHADE, TYP
13. PROVIDE 6" PERIMETER TRIM
14. PAINT FACE OF SOFFIT P-7
15. VERIFY HEIGHTS WITH ARCHITECT ON SITE PRIOR TO INSTALLATION - PROVIDE ENOUGH EXCESS CABLE FOR ADJUSTMENTS UP TO 6'-0"
16. PROVIDE 2" PERIMETER TRIM
17. REFER TO INTERIOR ELEVATIONS FOR SPOT ELEVATIONS OF ANGLED CEILINGS
18. PROVIDE WALL ANGLE AT EDGE
19. CAST STONE SOFFIT PANELS. JOINTS BETWEEN PANELS ALIGN WITH MULLIONS. REFER TO SECTION DETAIL FOR MORE INFORMATION.
20. LIGHT FIXTURE. LENGTH INDICATED ON NOTE.
21. GYP CEILING TYPICAL AT TRANISITION BETWEEN RADIANT PANEL AND BULKHEAD. SEE CEILING DETAIL FOR MORE INFORMATION.
22. COORDINATE LOCATION OF WALL RECESS WITH CEILING AS SHOWN
23. PAINT EXPOSED METAL FACE OF SPEAKER GRILLS AND EXPOSED PORTION OF PROJECTOR MOUNT (P-13)
24. FUME HOOD - SHEET METAL ENCLOSURE TO GO UP ABOVE CEILING
25. SCIENCE EQUIPMENT - SEE A8.11 FOR MORE INFORMATION
26. EMERGENCY SAFETY SHOWER. REFER TO SCIENCE LAB SHEETS.
27. REFER TO FOOD SERVICE DRAWINGS FOR HOOD LOCATIONS
28. EXPOSED GALVANIZED STEEL PLATE. SEE STRUCTURAL PAINT TO MATCH ADJ. ACM SOFFIT
29. MOTORIZED SHADES THIS WALL MOUNTED TO STRUCTURE ABOVE. ALIGN SHADE ENDS WITH MULLIONS. REFER TO TAG FOR QUANTITY OF SHADES ON WALL. REFER TO CEILING DETAILS FOR MORE INFORMATION.
30. MOTORIZED SHADE THIS WINDOW MOUNTED TO GYP BD JAMBS. REFER TO CEILING DETAILS FOR MOUNTING HEIGHT.
31. RECESSED MOTORIZED PROJECTION SCREEN. REFER TO TECHNOLOGY SHEETS.



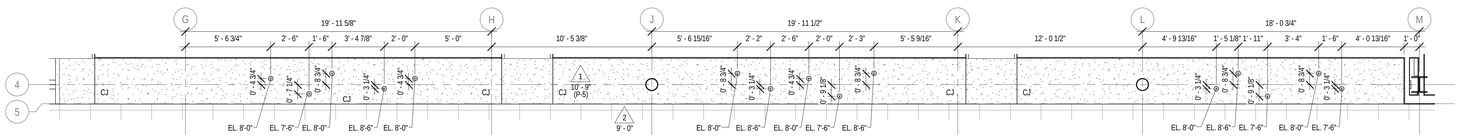
3 ENLARGED RCP
1/4" = 1'-0"



4 ENLARGED RCP
1/4" = 1'-0"



5 ENLARGED CAFE RCP
1/4" = 1'-0"



6 ENLARGED RCP
1/4" = 1'-0"

CEILING TYPES:

TYPE	DESCRIPTION
0	EXPOSED METAL STRUCTURE
1	1/2" PAINTED GYP BOARD ON METAL FRAMING
2	2X2 ACOUSTICAL PANEL SYSTEM
3	5/8" PERFORATED PAINTED ACOUSTICAL GYP BOARD ON METAL FRAMING - 12" ACCOUSTICAL BATT INSUL ABOVE CEILING
4	4X4 ACOUSTICAL PANEL CEILING SYSTEM
5	WOOD SLAT CEILING
6	WOOD VENEER PANEL CEILING
7	2X2 VINYL FACE GYP BD CEILING
8	ACM SOFFIT SYSTEM COLOR 1 - REFER TO SECTIONS FOR ADDITIONAL INFORMATION
9	NOT USED
10	PAINTED EXPOSED METAL STRUCTURE (P-2)
11	ACM SOFFIT SYSTEM COLOR 2 - REFER TO SECTIONS FOR ADDITIONAL INFORMATION

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1215 HOUBOLT RD.
JOLIET, IL 60431
P: 815.280.2212

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

1125 135th ST. ROMEOVILLE, IL 60446

DKA PROJECT NO: 14-005

KEY PLAN:

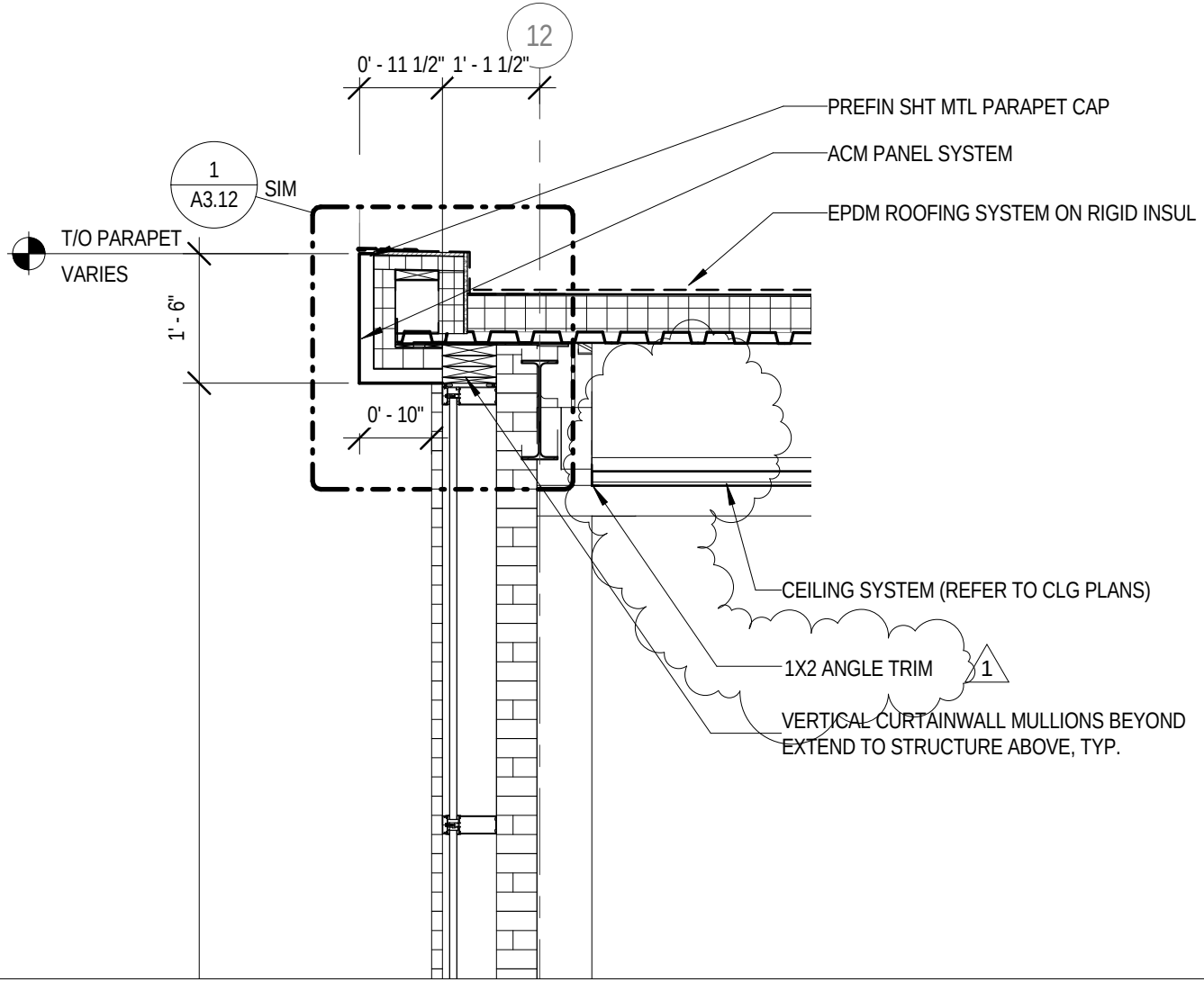
SHEET STATUS: 8/17/15
ISSUED FOR BID PACKAGE 2

NO:	DESCRIPTION:	DATE:
1	ADDENDUM 3	9-3-15

SHEET TITLE:
ENLARGED REFLECTED CEILING PLANS

SHEET NUMBER:
A2.23

9/2/2015 10:45:19 AM



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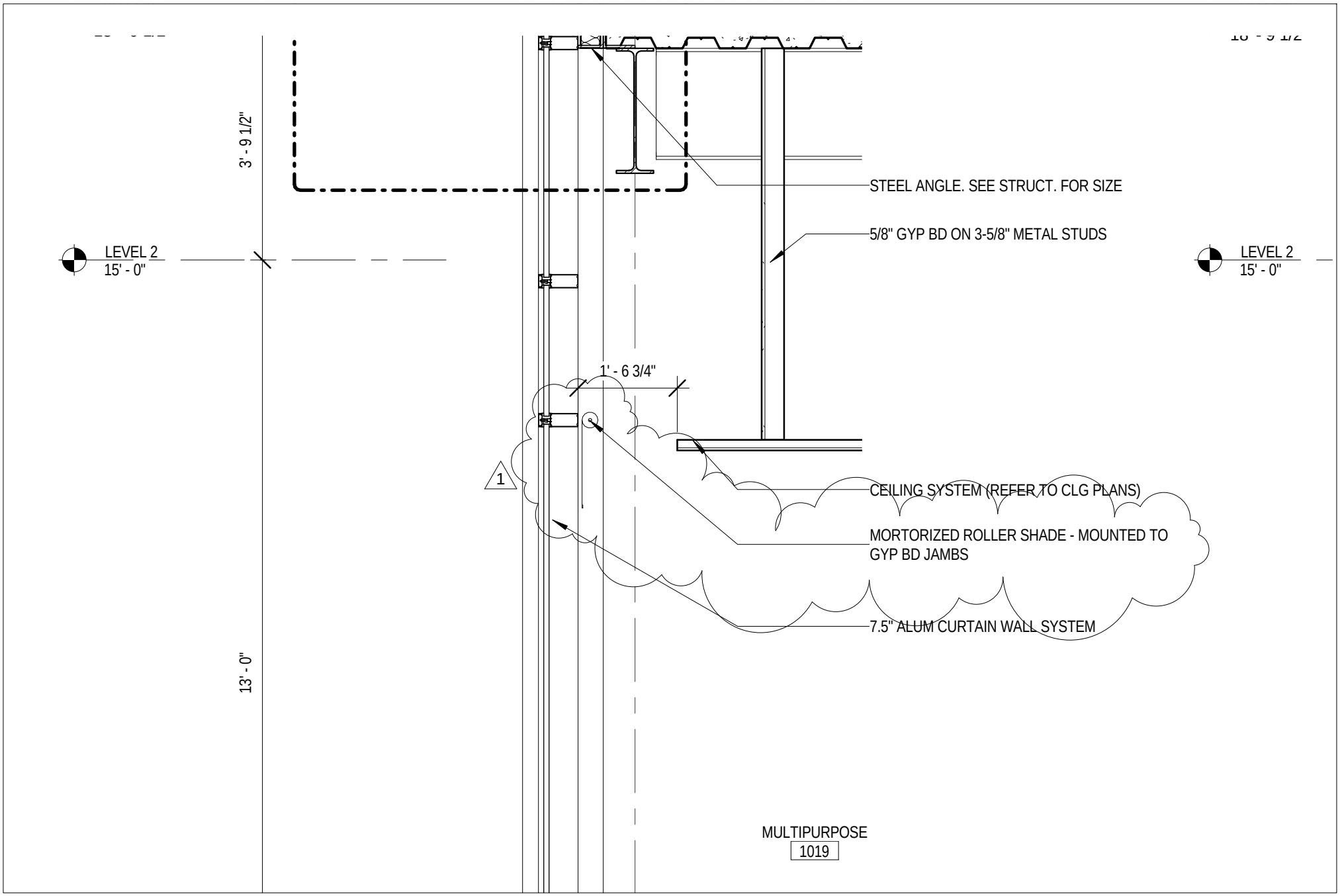
B

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A6.03

ADDENDUM 3

A603.01

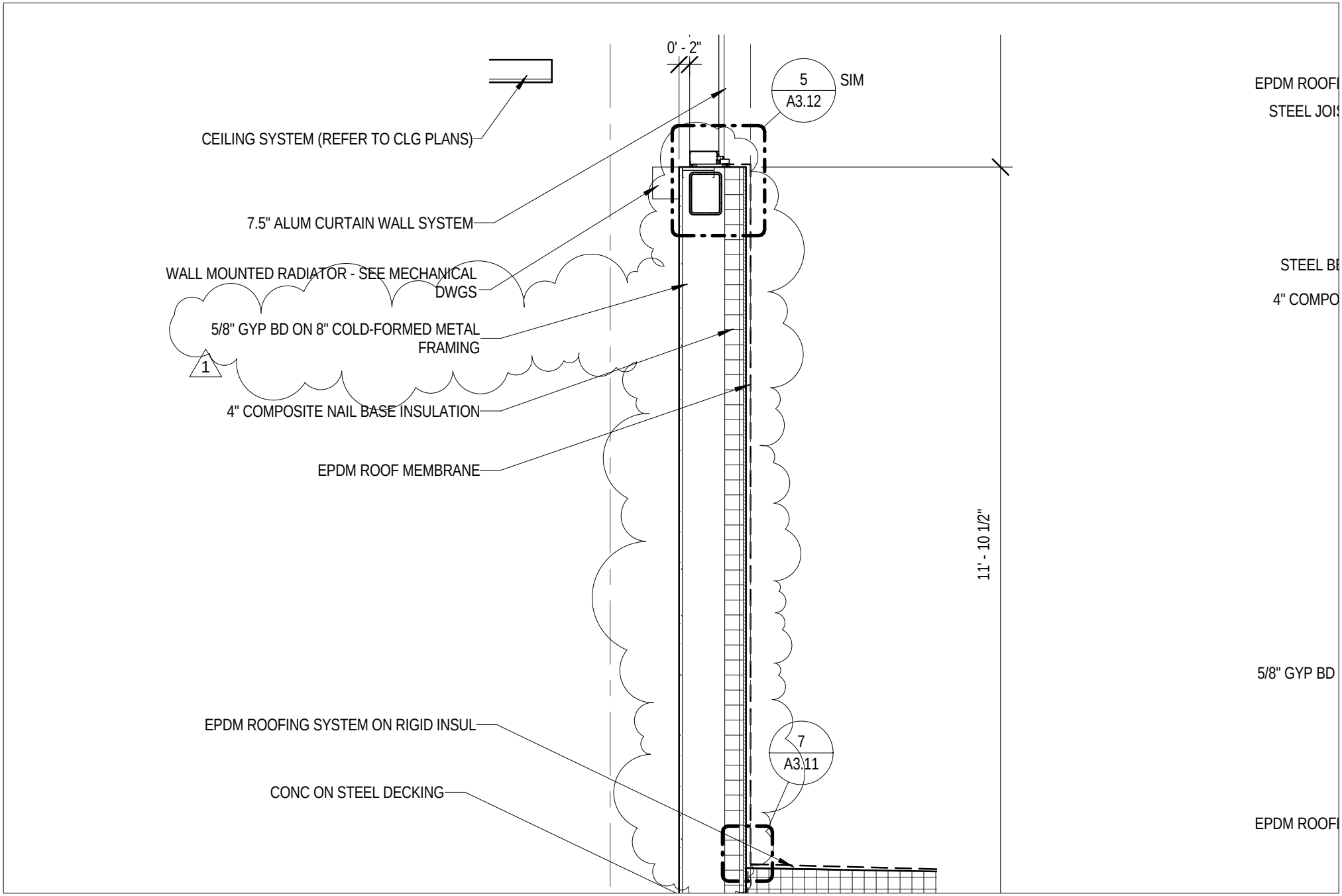


JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A6.04

ADDENDUM 3

A604.01

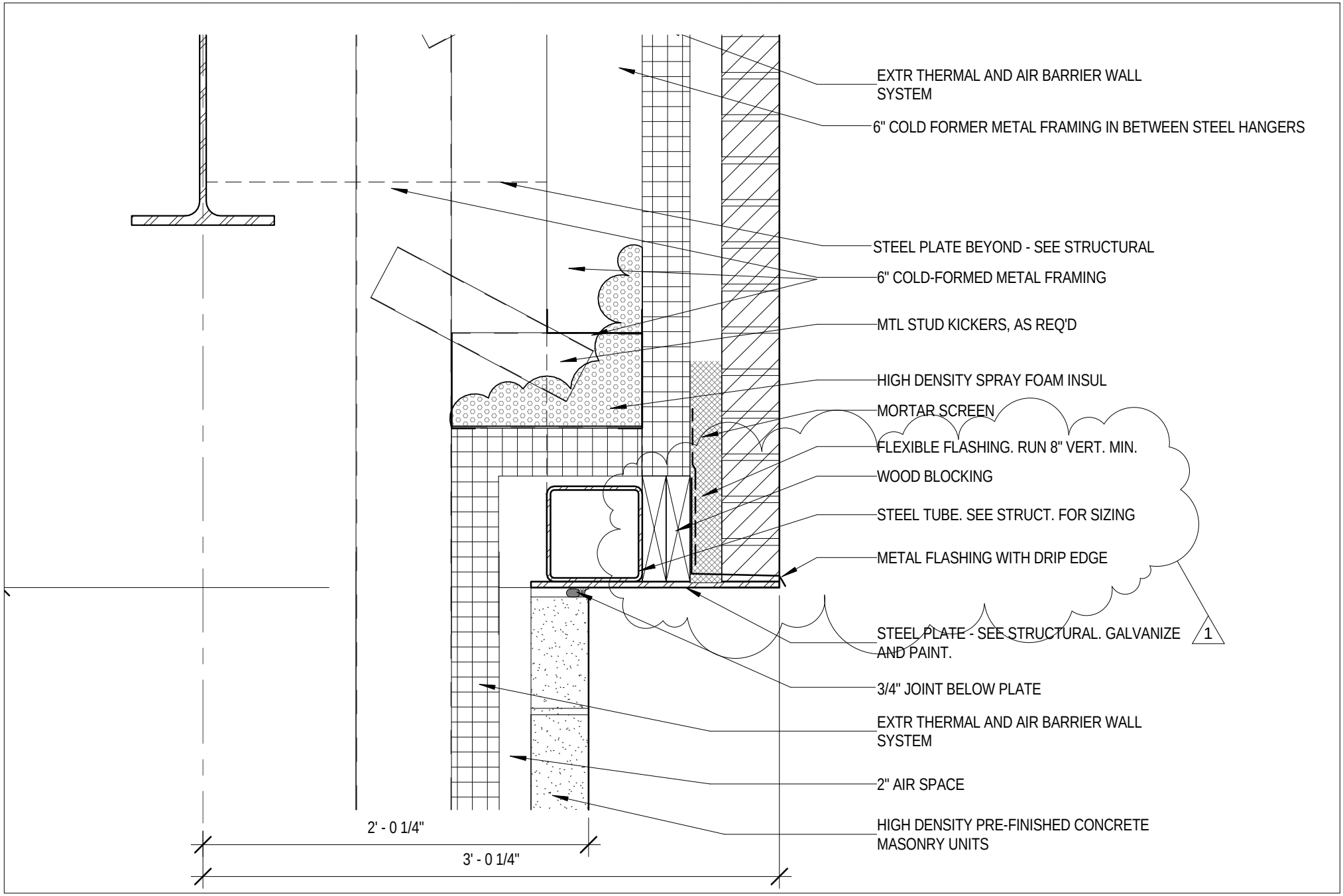


JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A6.07

ADDENDUM 3

A607.01

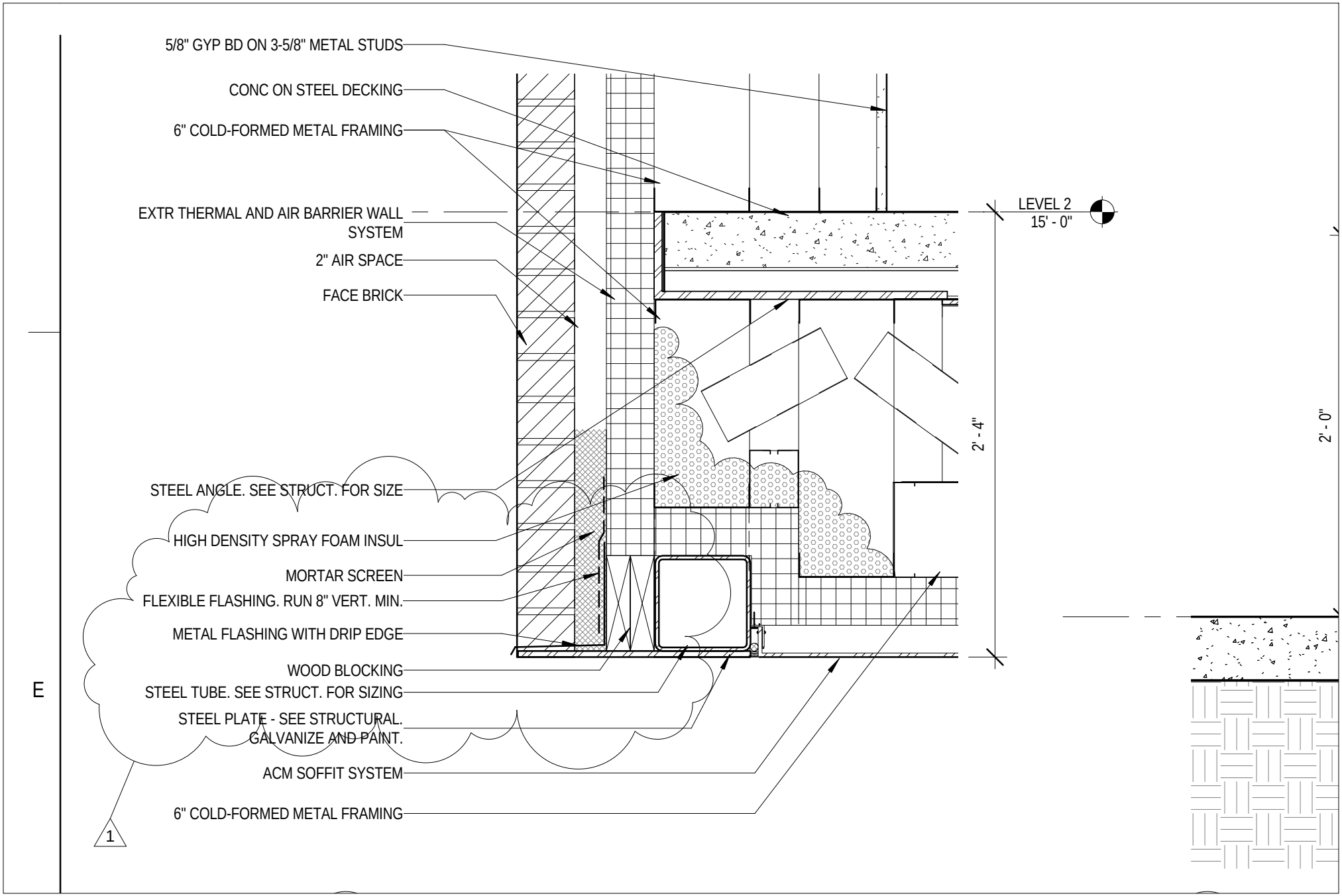


JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	9-3-15
REF SHEET:	A7.01

ADDENDUM 3

A701.01

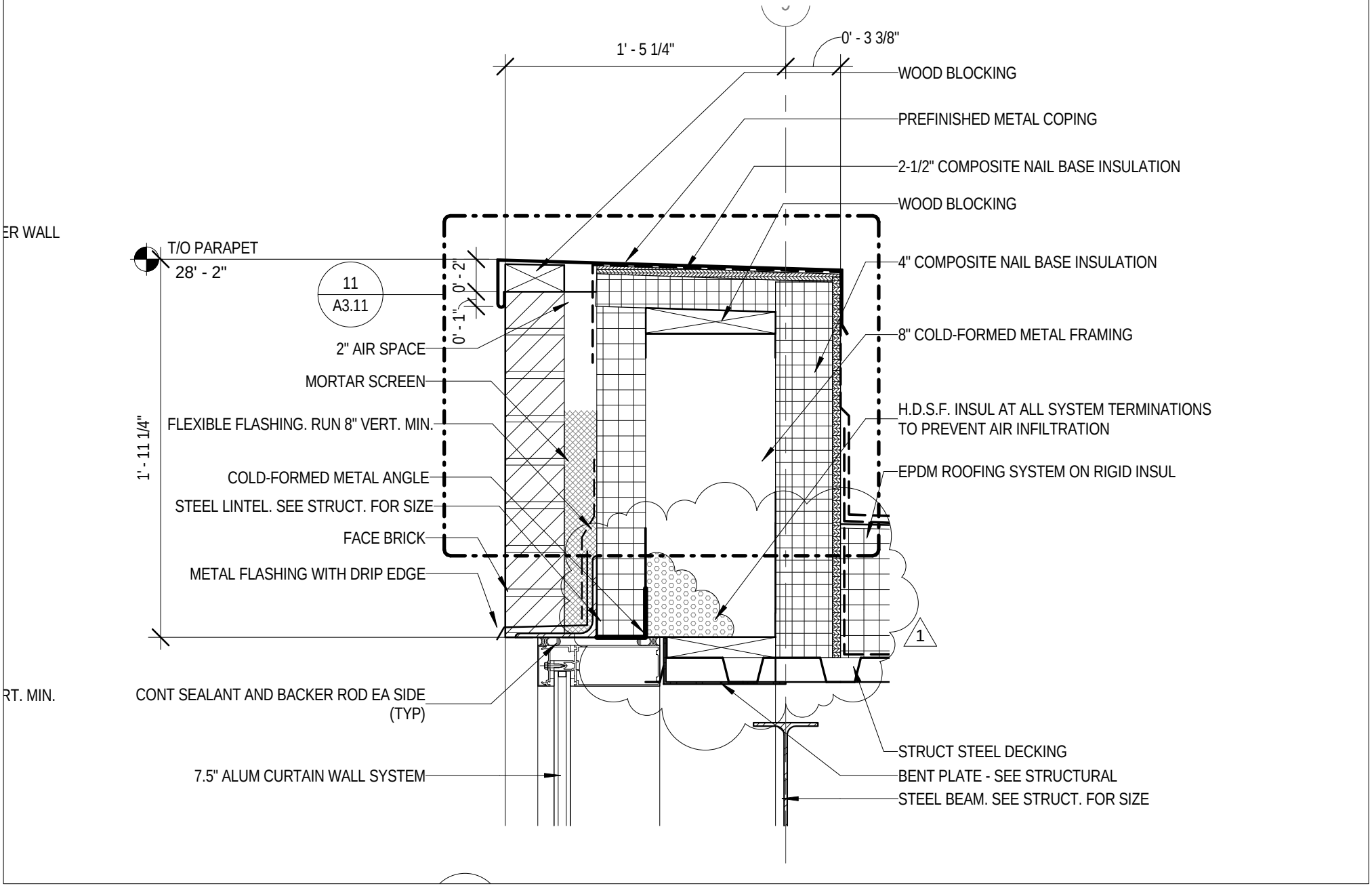


JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	9-3-15
REF SHEET:	A7.02

ADDENDUM 3

A702.01



JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

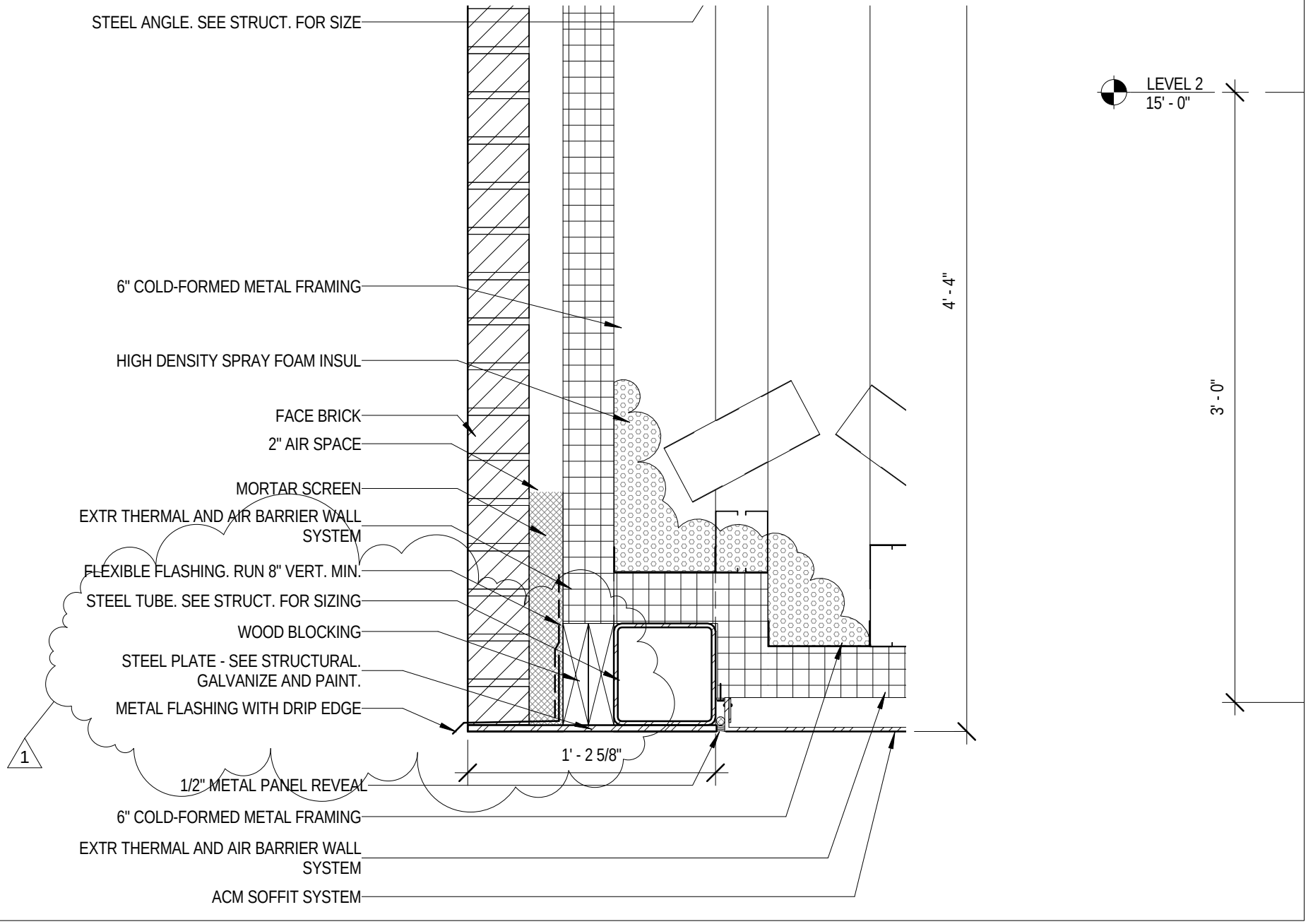
PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A7.02

ADDENDUM 3

A702.02

TEM

OR SIZE
STEEL ANGLE AS



JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A7.03

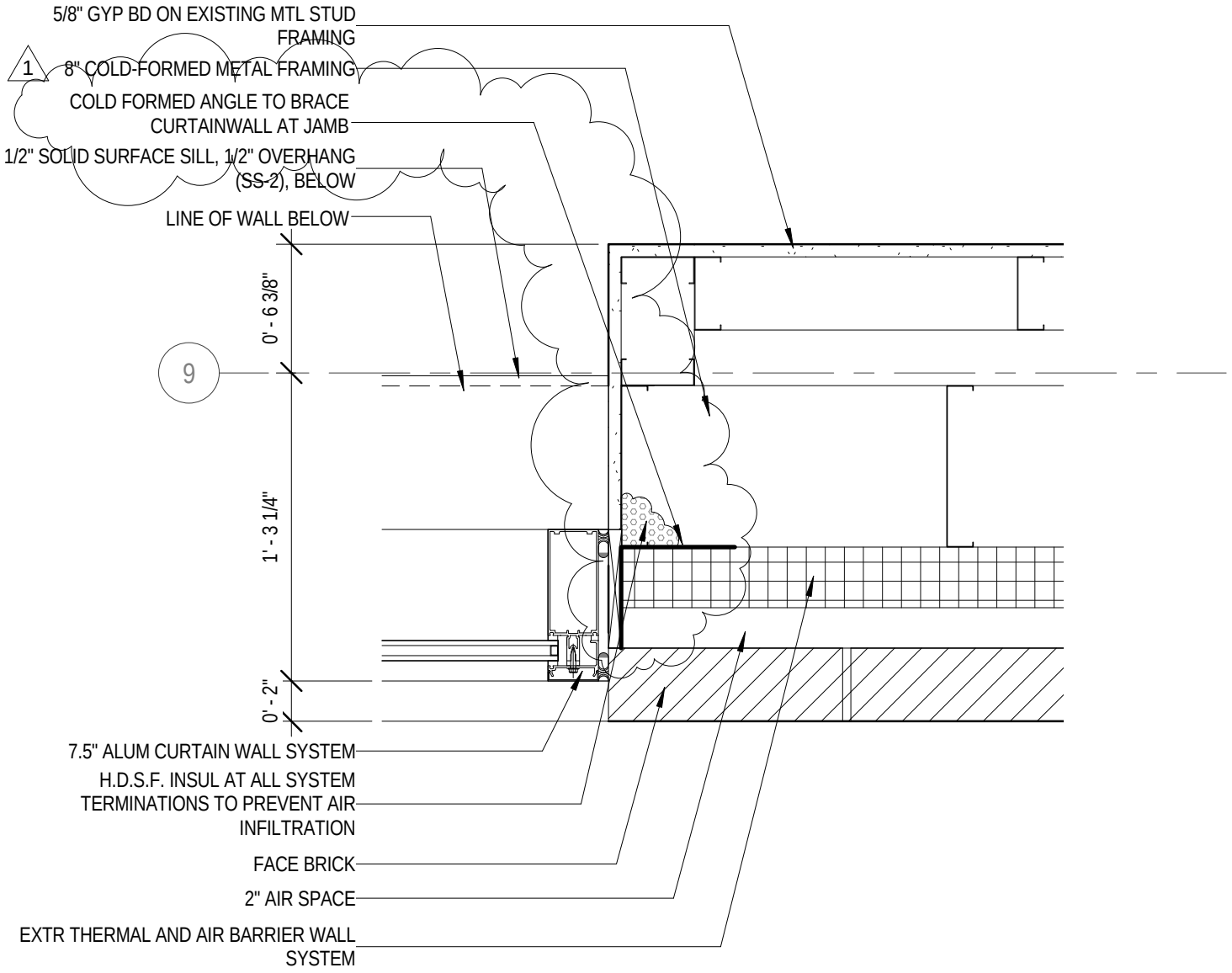
ADDENDUM 3

A703.01

LL BELOW

ESSED STONES BELOW

LING RETURNS AROUND
THE AIR SPACE IN THIS WALL IS
-1/2" WHERE REQUIRED TO
E. REFER TO WALL SECTION
FORMATION ON WHICH STONES
STOP RECESS AS SHOWN IN
TAINWALL FACE.



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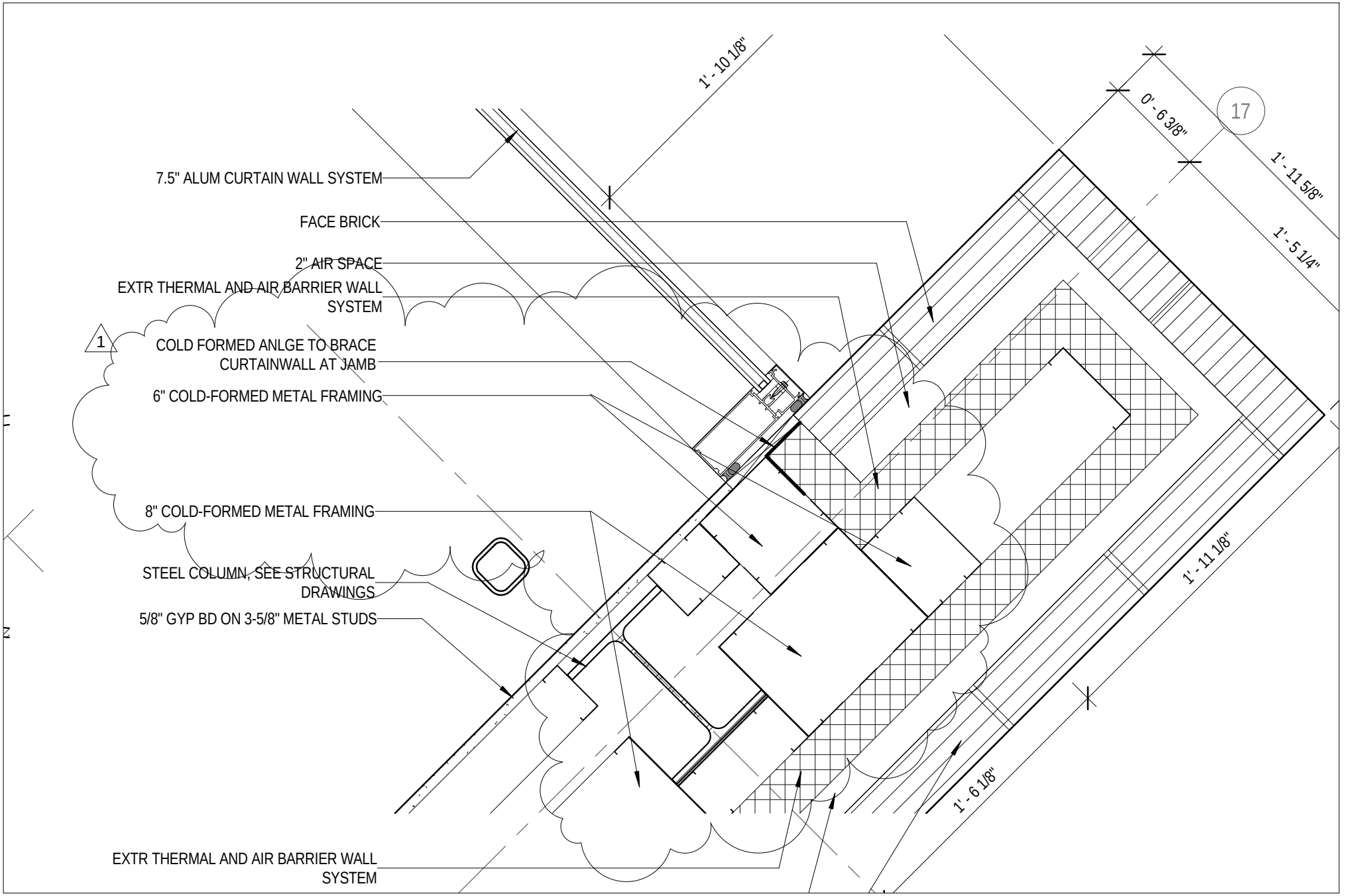
JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A7.51

ADDENDUM 3

A751.01

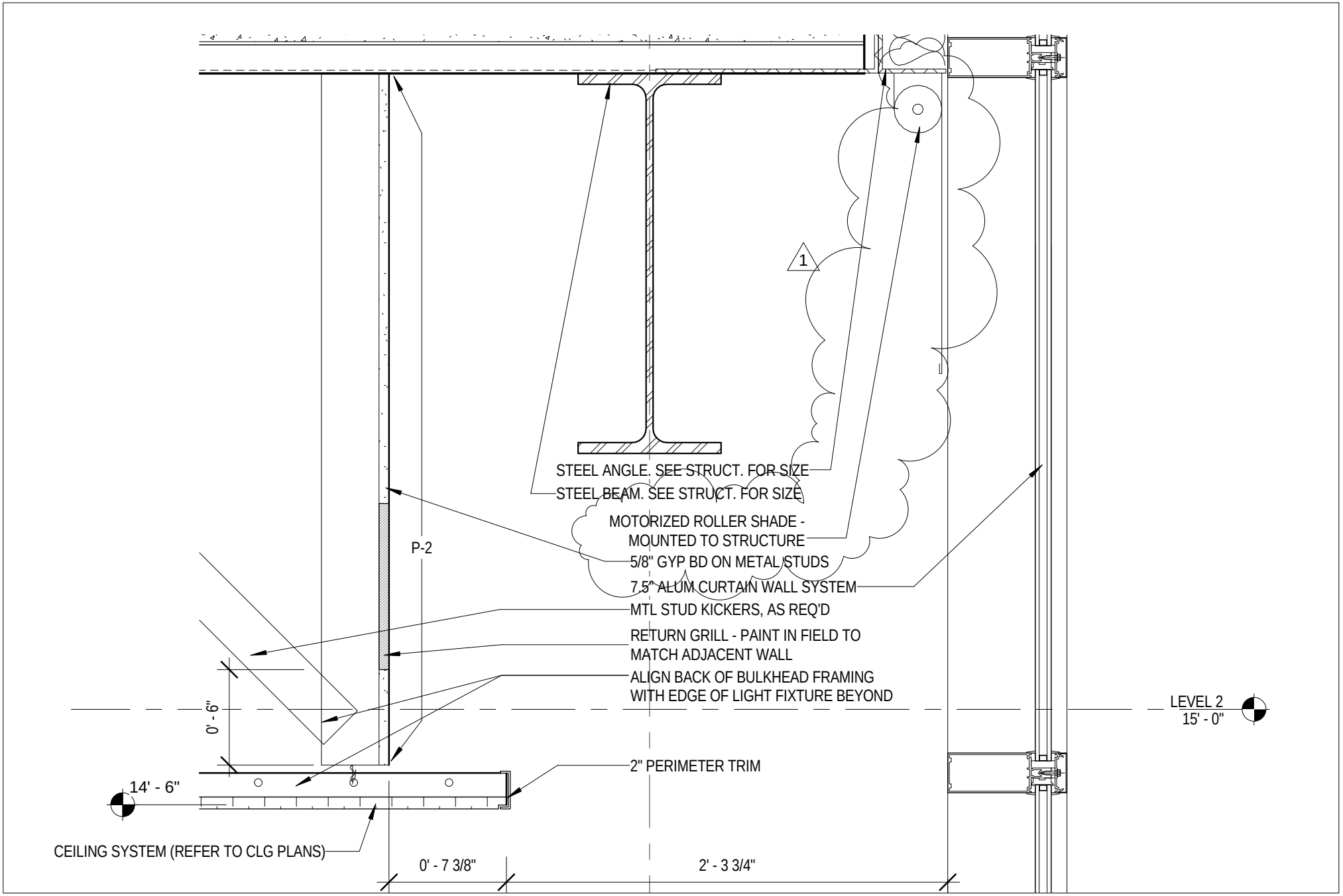


JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	9-3-15
REF SHEET:	A7.52

ADDENDUM 3

A752.01

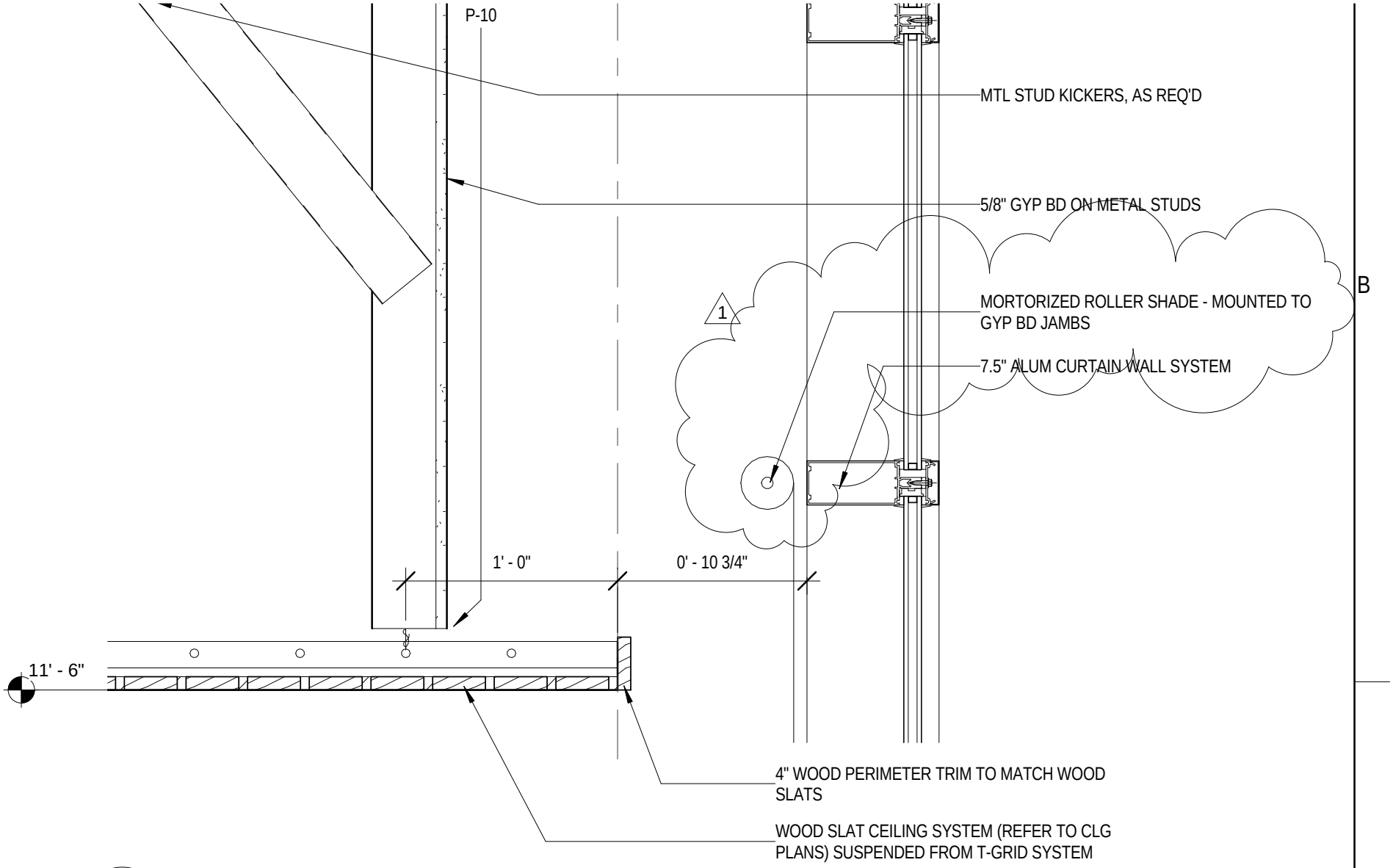


JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	9-3-15
REF SHEET:	A7.93

ADDENDUM 3

A793.01



7 CEILING DETAIL

1 1/2" = 1'-0"

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P: 8

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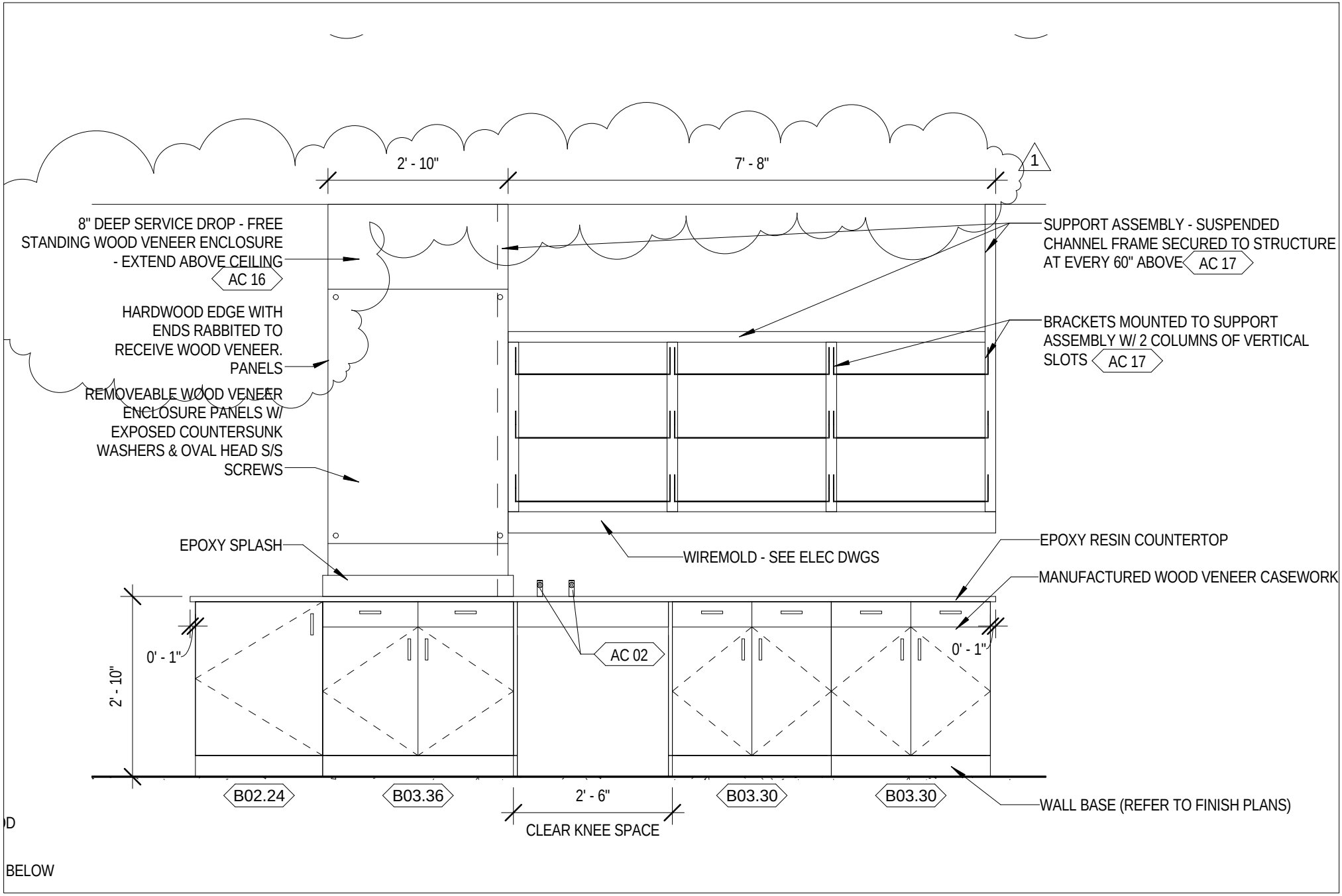
JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	9-3-15
REF SHEET:	A7.93

ADDENDUM 3

A793.02



D

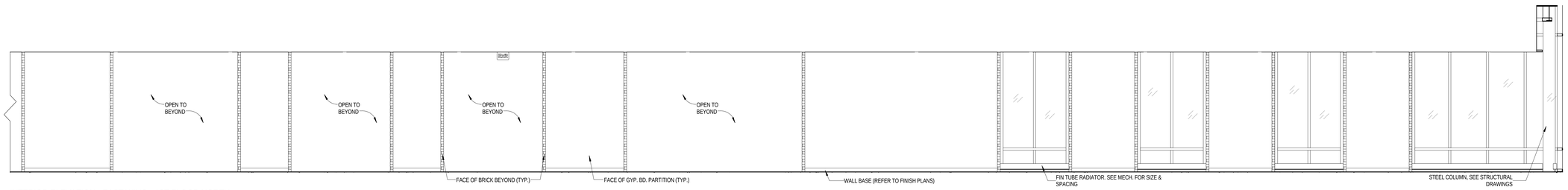
BELOW

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

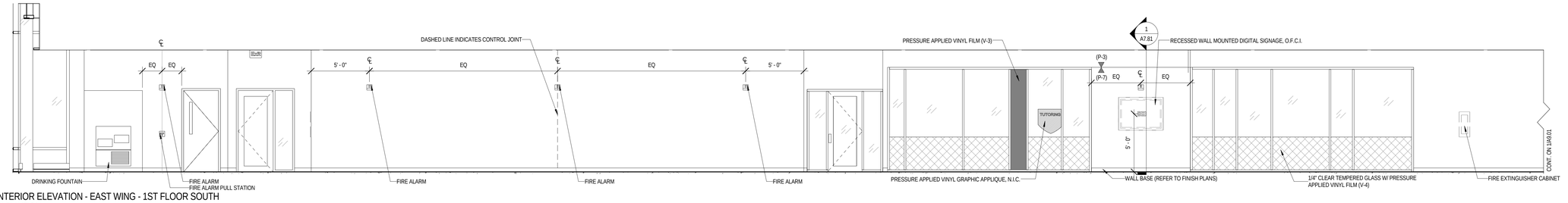
PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A8.13

ADDENDUM 3

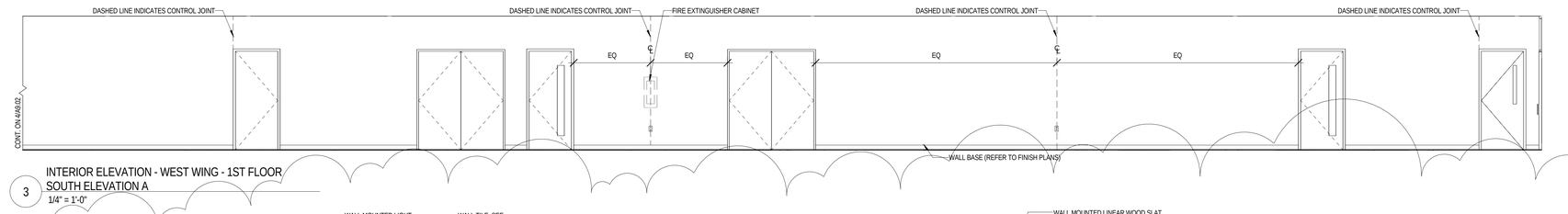
A813.01



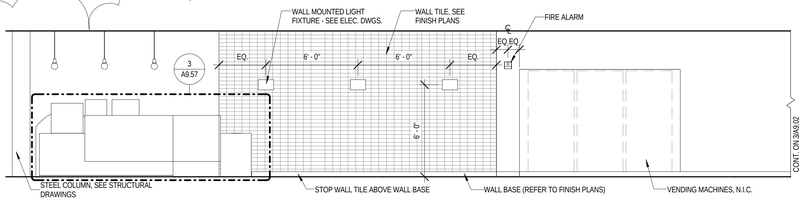
1 INTERIOR ELEVATION - EAST WING - 1ST FLOOR NORTH ELEVATION
1/4" = 1'-0"



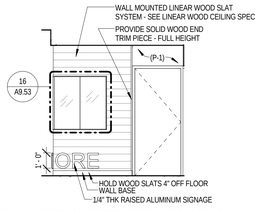
2 INTERIOR ELEVATION - EAST WING - 1ST FLOOR SOUTH ELEVATION
1/4" = 1'-0"



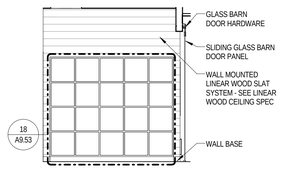
3 INTERIOR ELEVATION - WEST WING - 1ST FLOOR SOUTH ELEVATION A
1/4" = 1'-0"



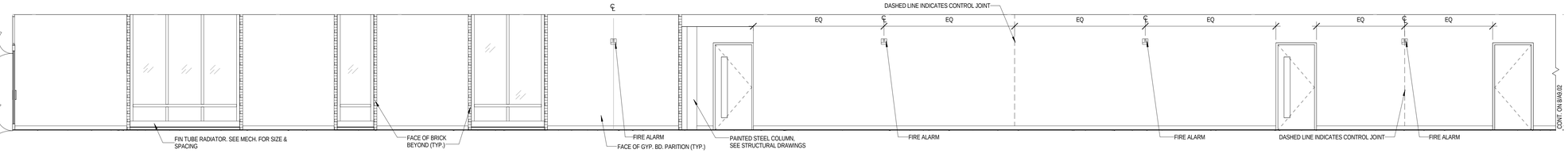
4 INTERIOR ELEVATION - WEST WING - 1ST FLOOR SOUTH ELEVATION B
1/4" = 1'-0"



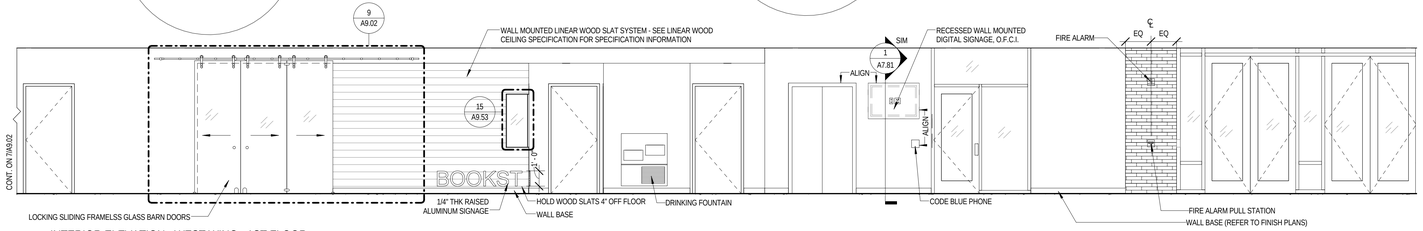
5 INTERIOR ELEVATION - WEST WING - 1ST FLOOR - WEST ELEVATION
1/4" = 1'-0"



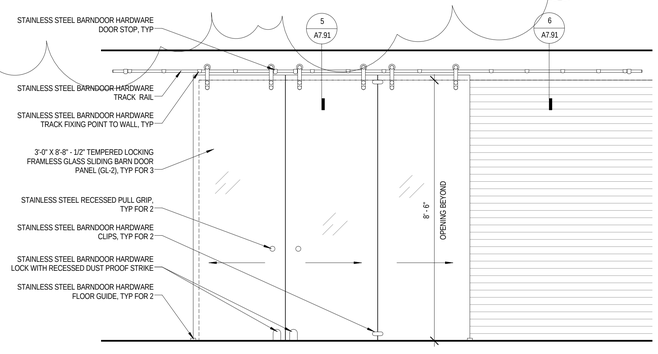
6 INTERIOR ELEVATION - BOOKSTORE 1000 EAST
1/4" = 1'-0"



7 INTERIOR ELEVATION - WEST WING - 1ST FLOOR NORTH ELEVATION A
1/4" = 1'-0"



8 INTERIOR ELEVATION - WEST WING - 1ST FLOOR NORTH ELEVATION B
1/4" = 1'-0"



9 INTERIOR ELEVATION - ENLARGED BOOKSTORE ENTRY
1/2" = 1'-0"

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JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION
1125 135th ST. ROMEOVILLE, IL 60446
DKA PROJECT NO: 14-005

KEY PLAN:

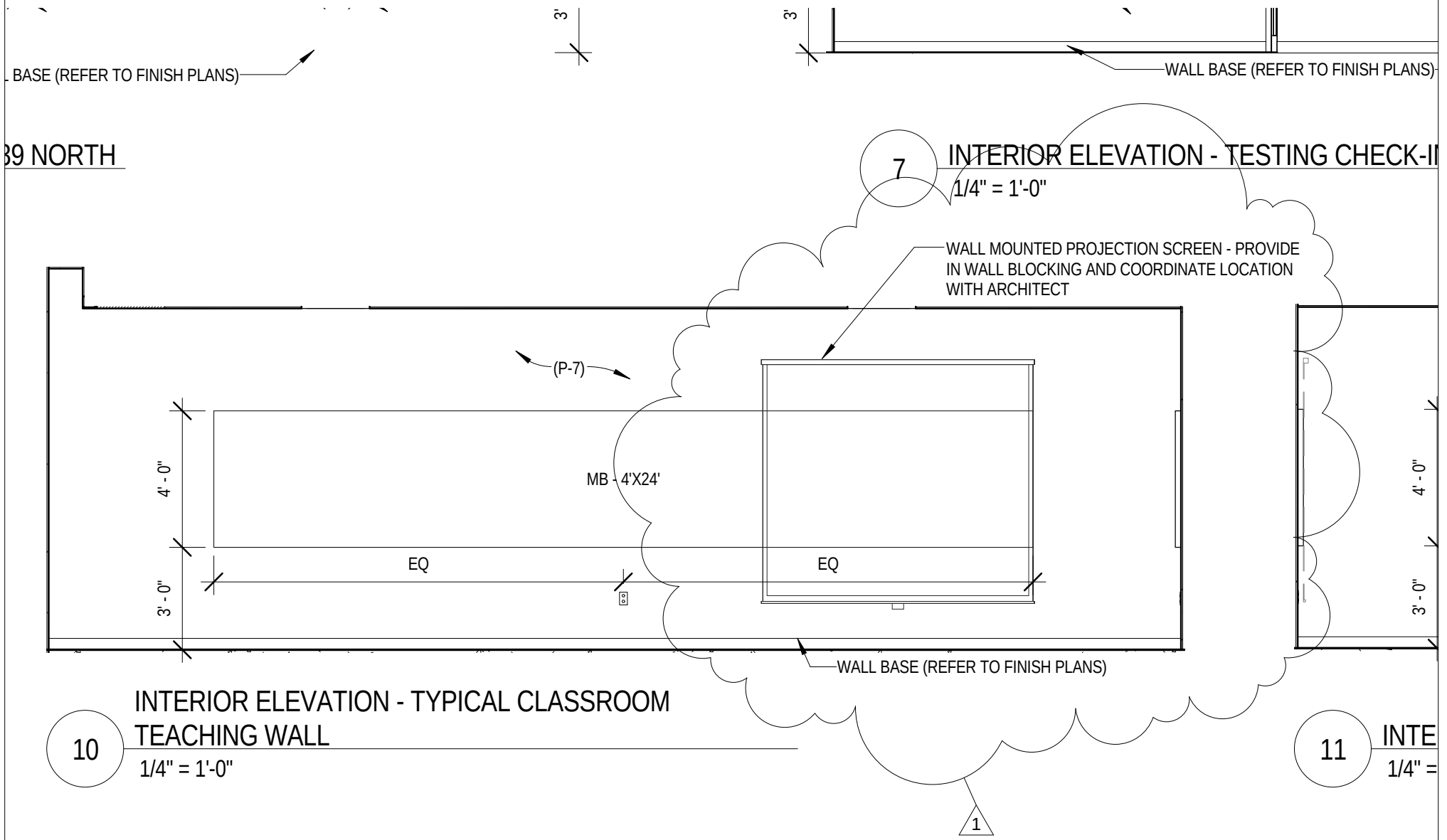
SHEET STATUS: 8/17/15
ISSUED FOR BID
PACKAGE 2

NO:	DESCRIPTION:	DATE:
1	ADDENDUM 3	9-3-15

SHEET TITLE:
INTERIOR ELEVATIONS

SHEET NUMBER:
A9.02

9/2/2015 11:41:46 AM

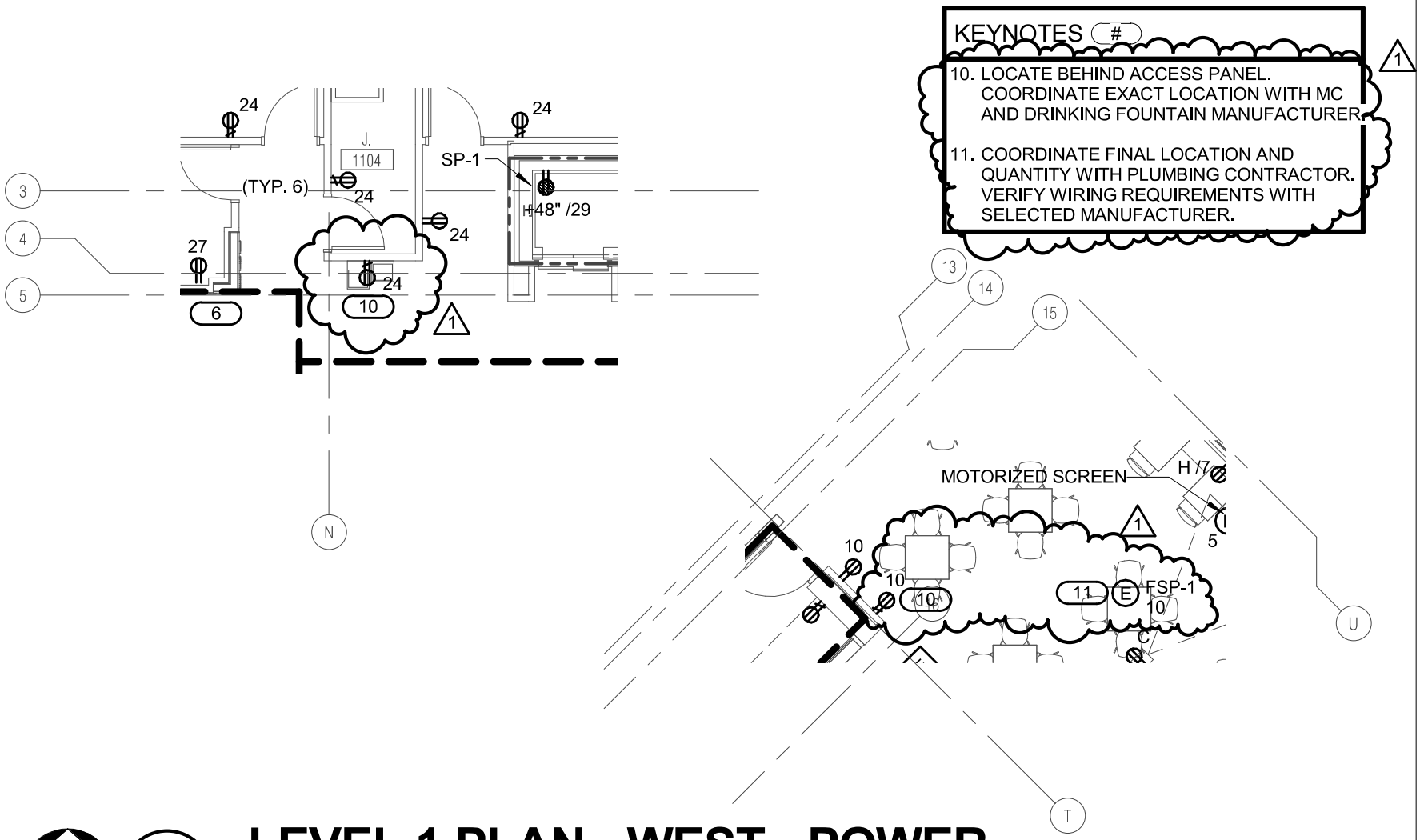


JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: A9.04

ADDENDUM 3

A904.01



LEVEL 1 PLAN - WEST - POWER

1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

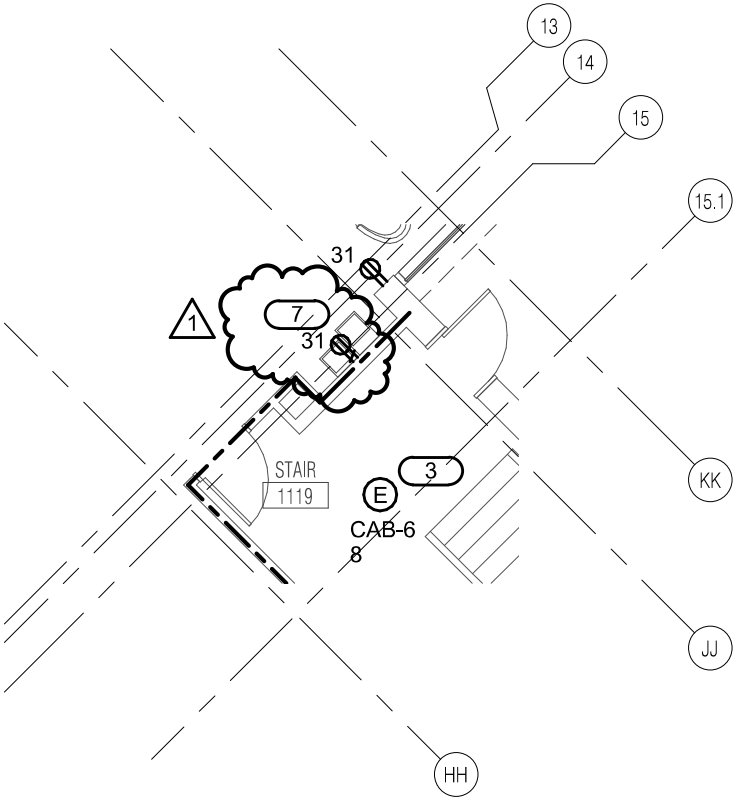
PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.11

ADDENDUM 3

E211.01

KEYNOTES #

7. LOCATE BEHIND ACCESS PANEL. COORDINATE EXACT LOCATION WITH MC AND DRINKING FOUNTAIN MANUFACTURER.



NORTH

1

LEVEL 1 PLAN - EAST - POWER

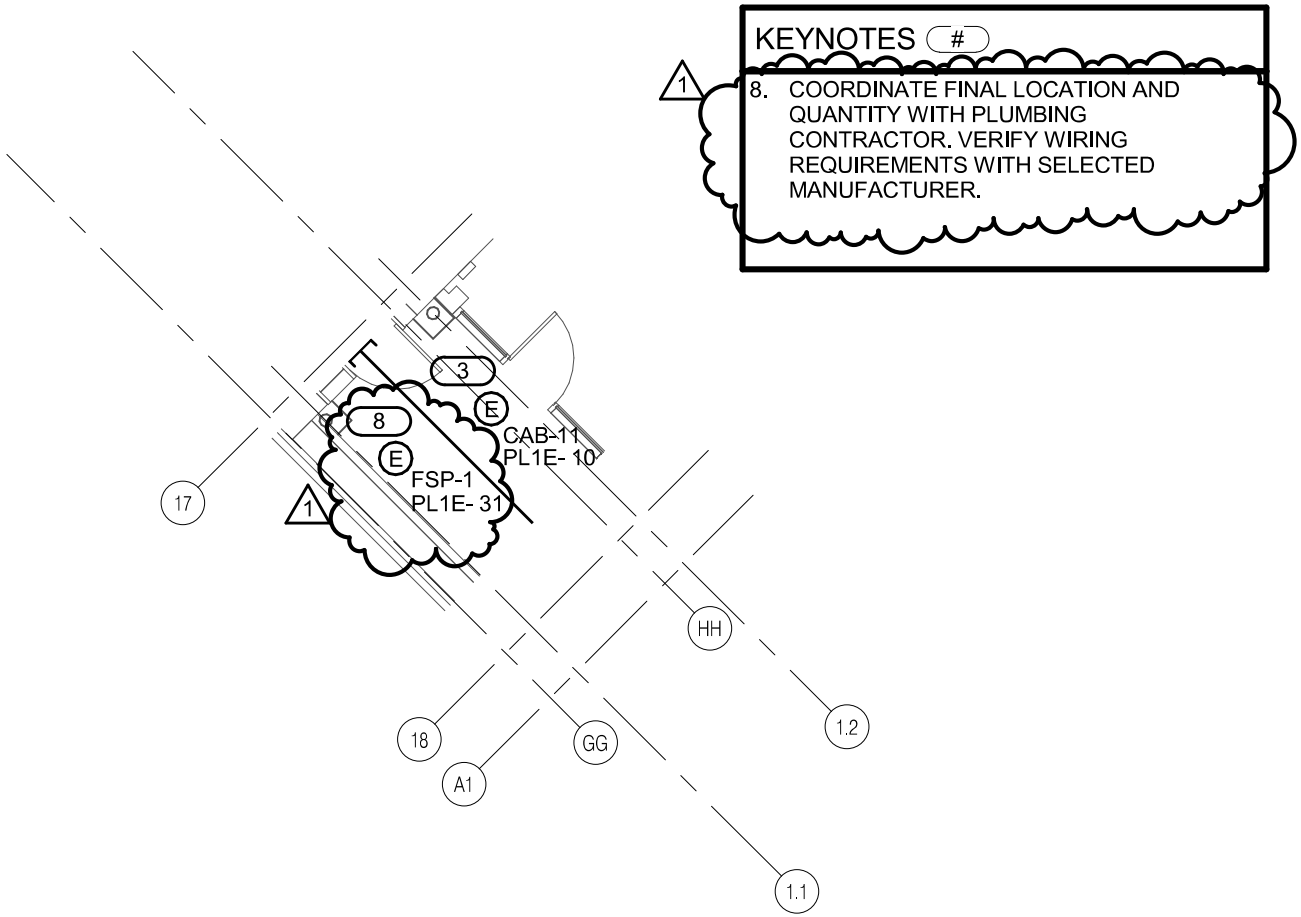
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.12

ADDENDUM 3

E212.02



LEVEL 1 PLAN - ALT. BID 1 - POWER

1 — 1/8" = 1'-0"

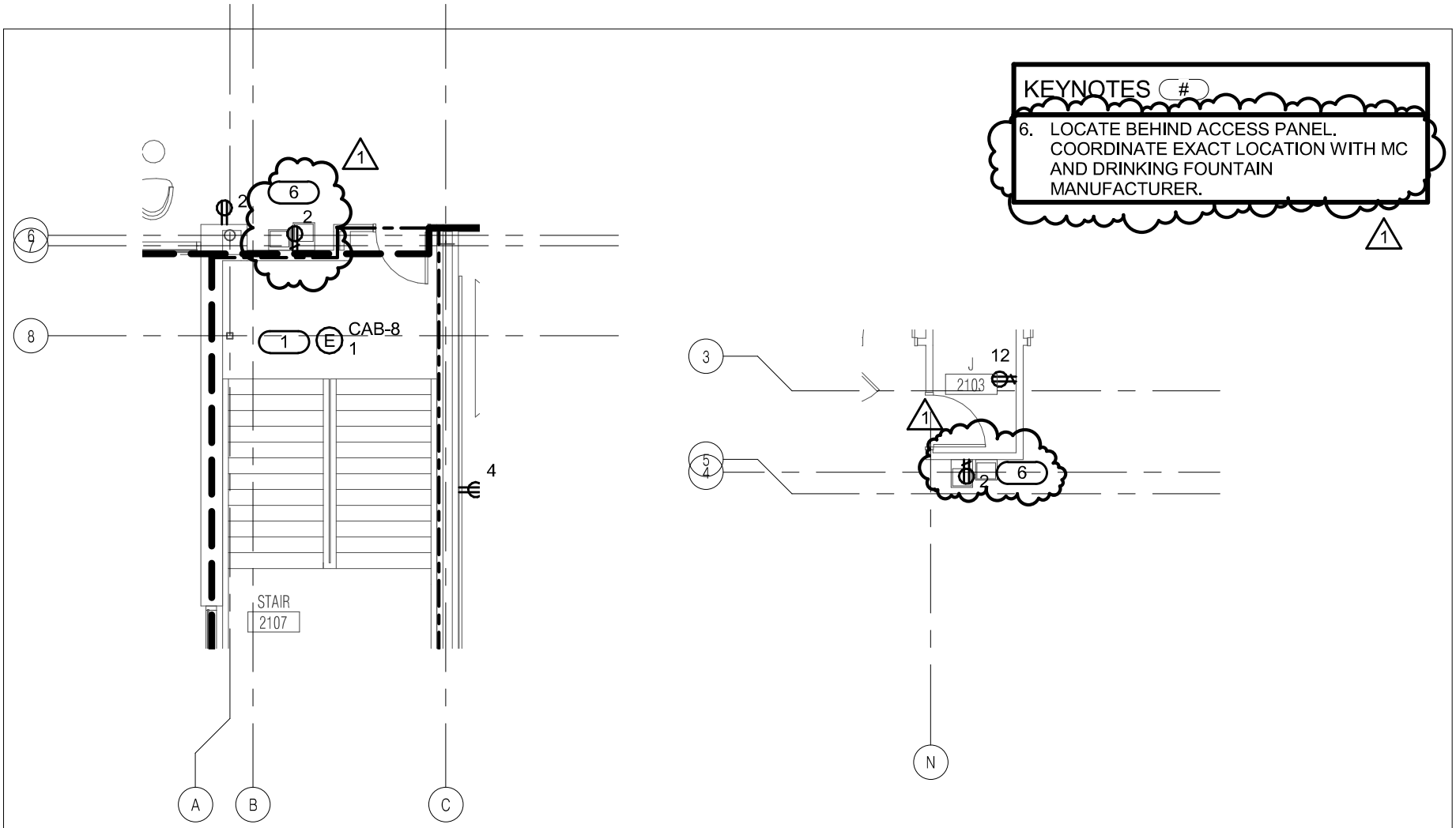
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.12

ADDENDUM 3

E212.03



LEVEL 2 PLAN - WEST - POWER

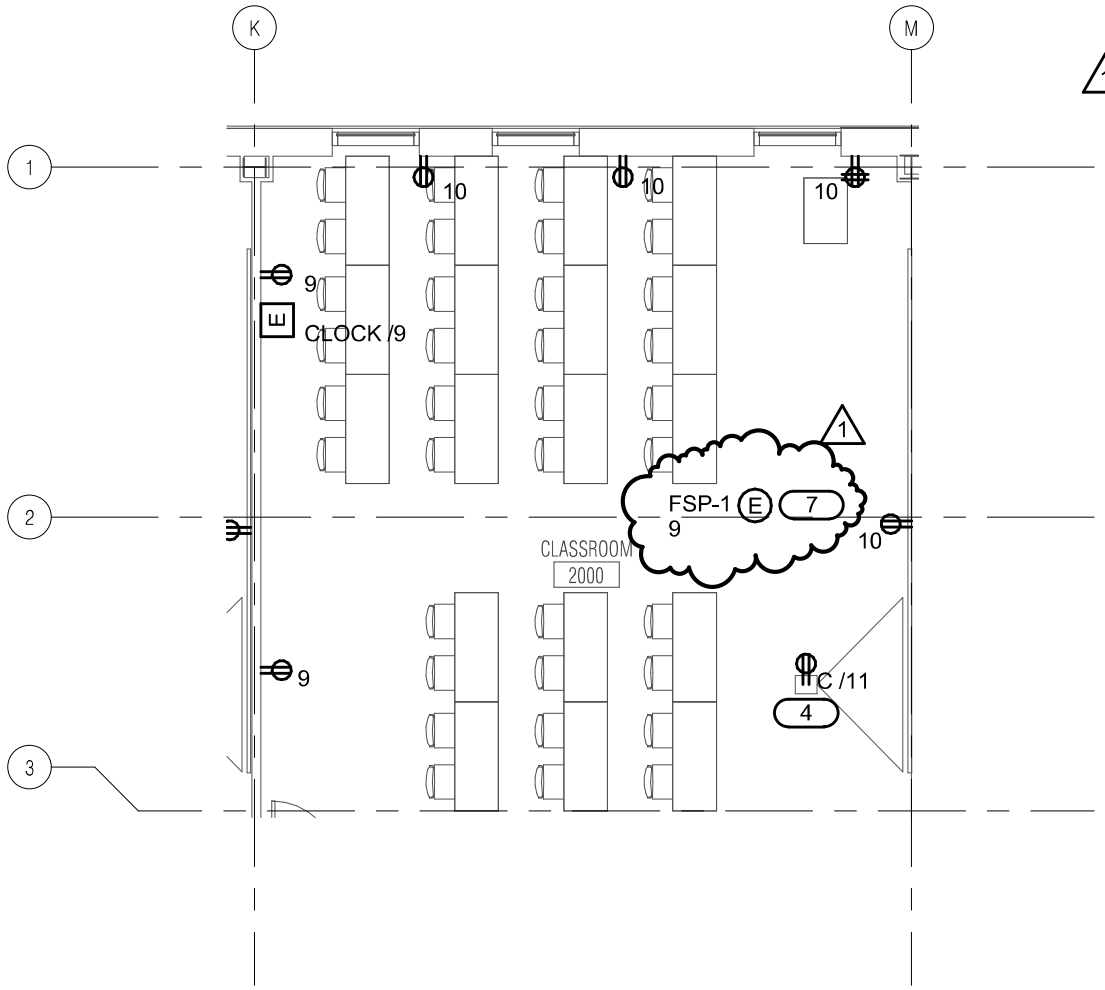
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.21

ADDENDUM 3

E221.04



KEYNOTES #

1

7. COORDINATE FINAL LOCATION AND QUANTITY WITH PLUMBING CONTRACTOR. VERIFY WIRING REQUIREMENTS WITH SELECTED MANUFACTURER.

NORTH

1 LEVEL 2 PLAN - WEST - POWER

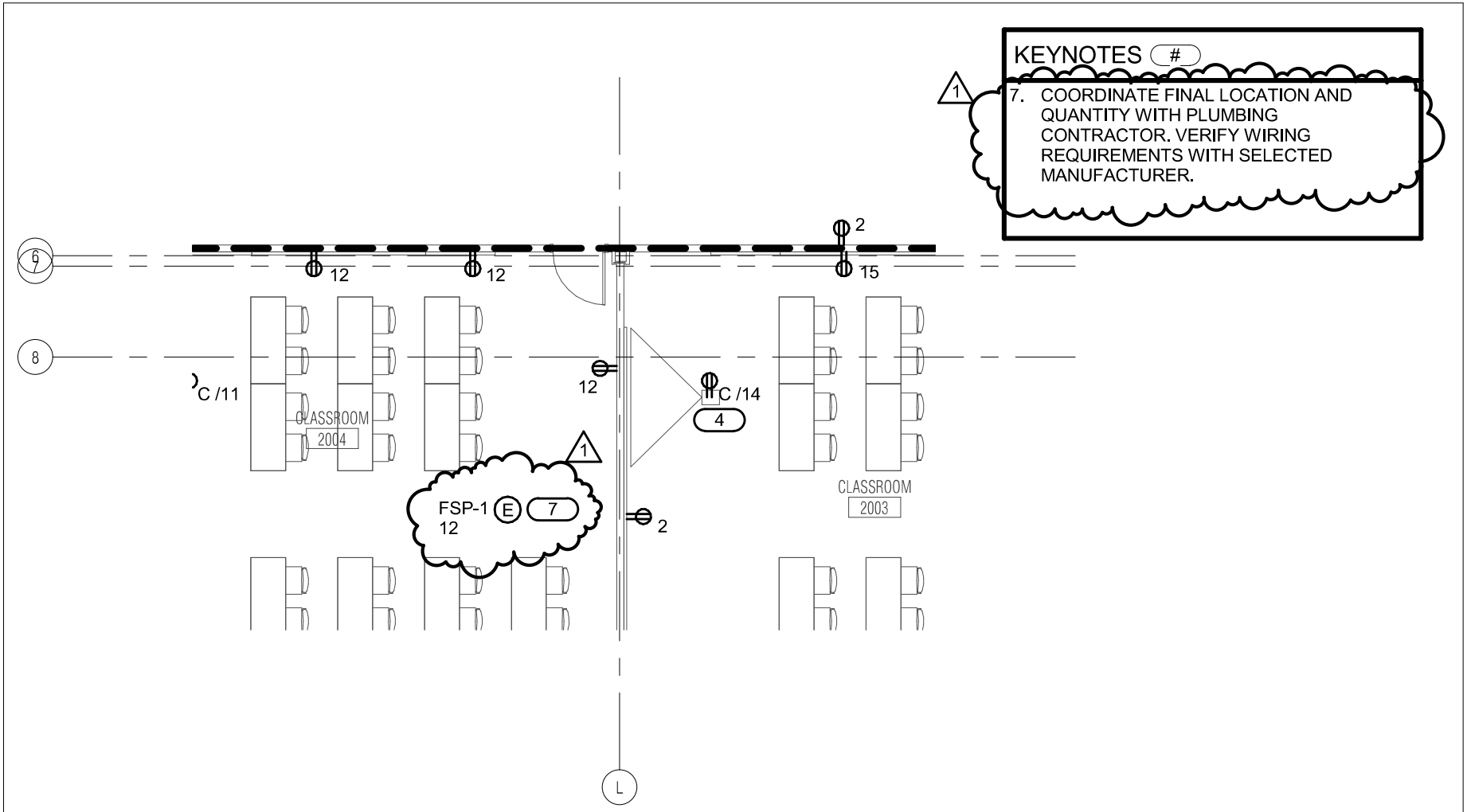
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.21

ADDENDUM 3

E221.05



1 LEVEL 2 PLAN - WEST - POWER

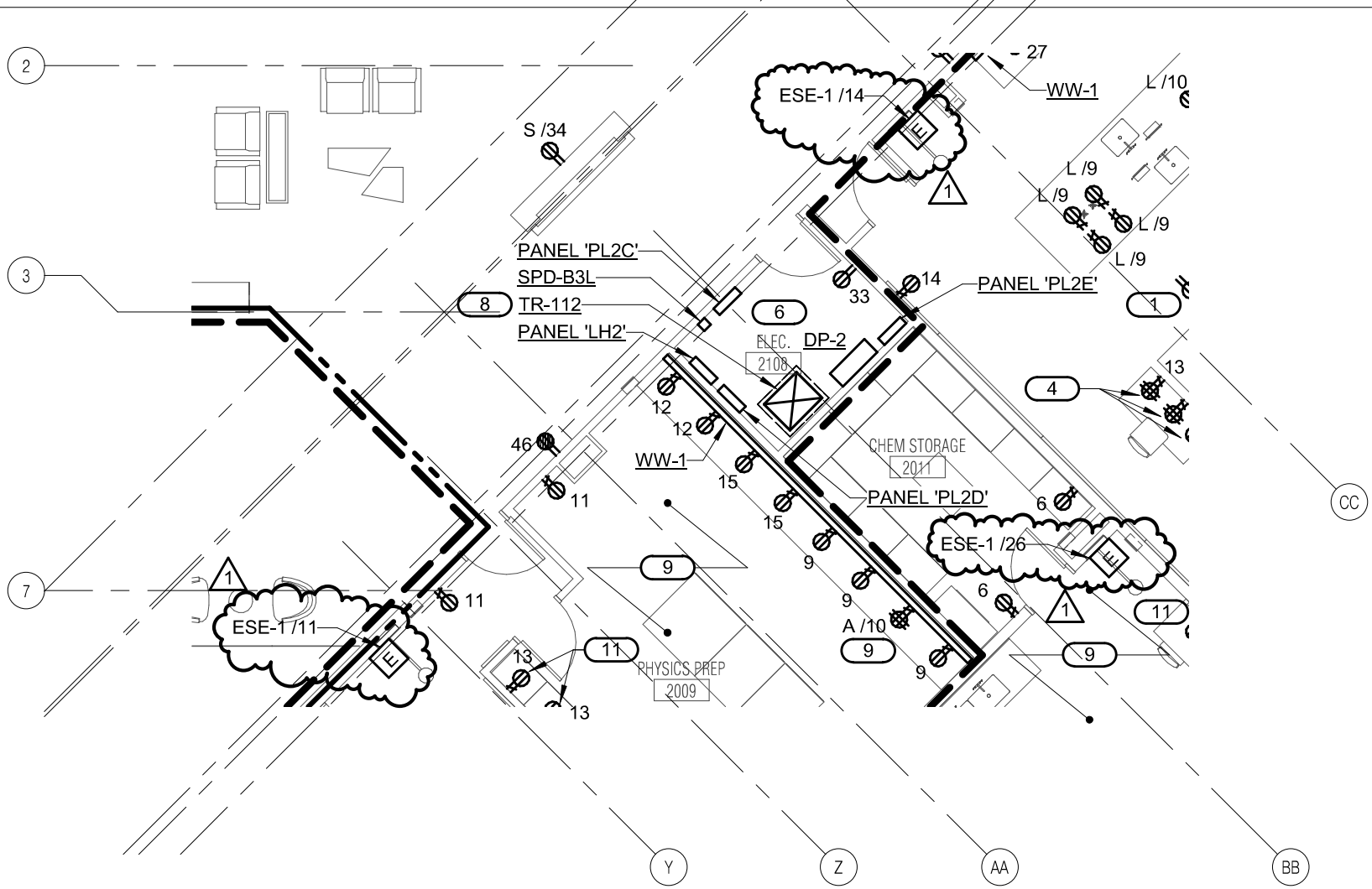
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.21

ADDENDUM 3

E221.06



1 LEVEL 2 PLAN - EAST - POWER

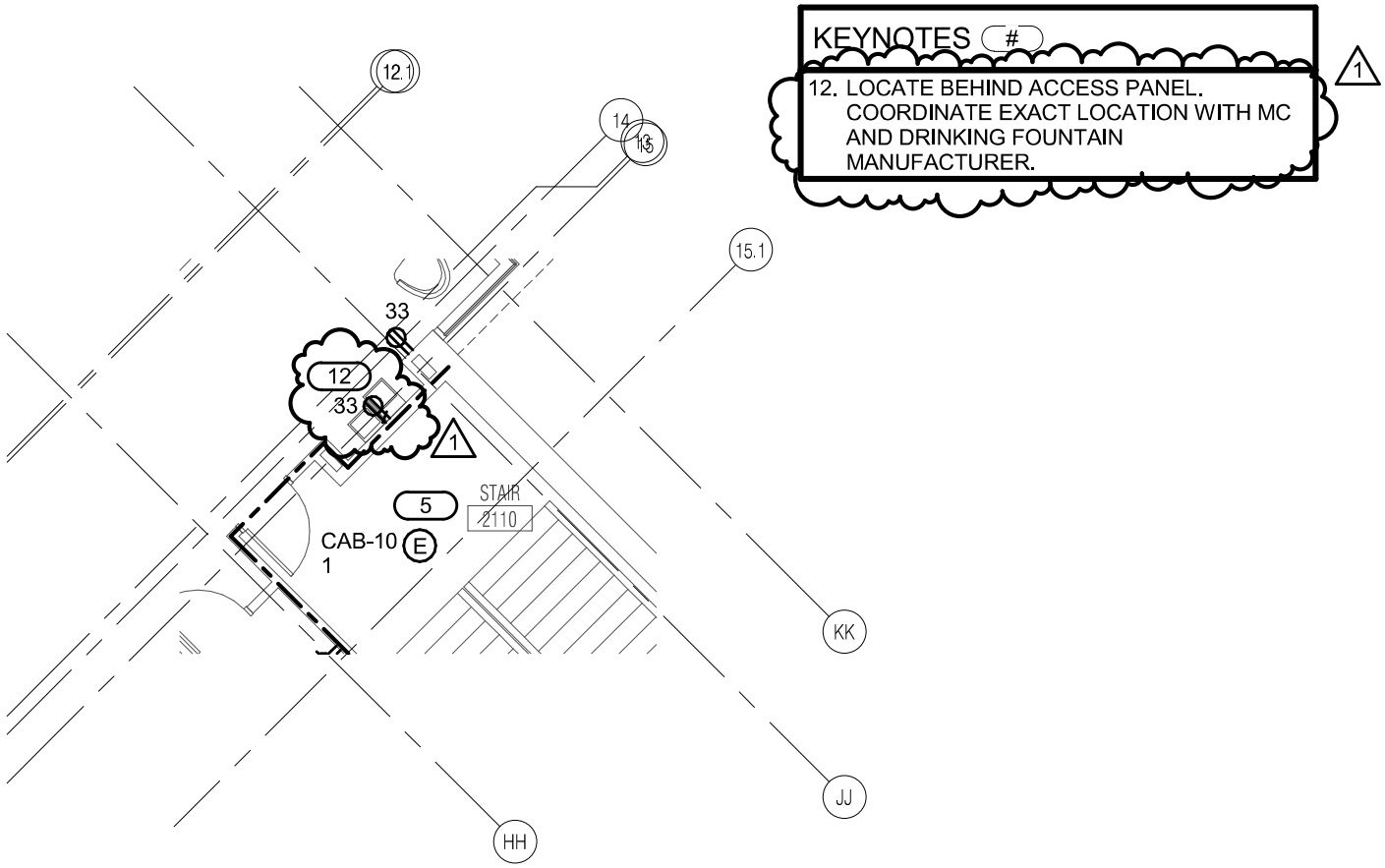
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.22

ADDENDUM 3

E222.07



1 LEVEL 2 PLAN - EAST - POWER

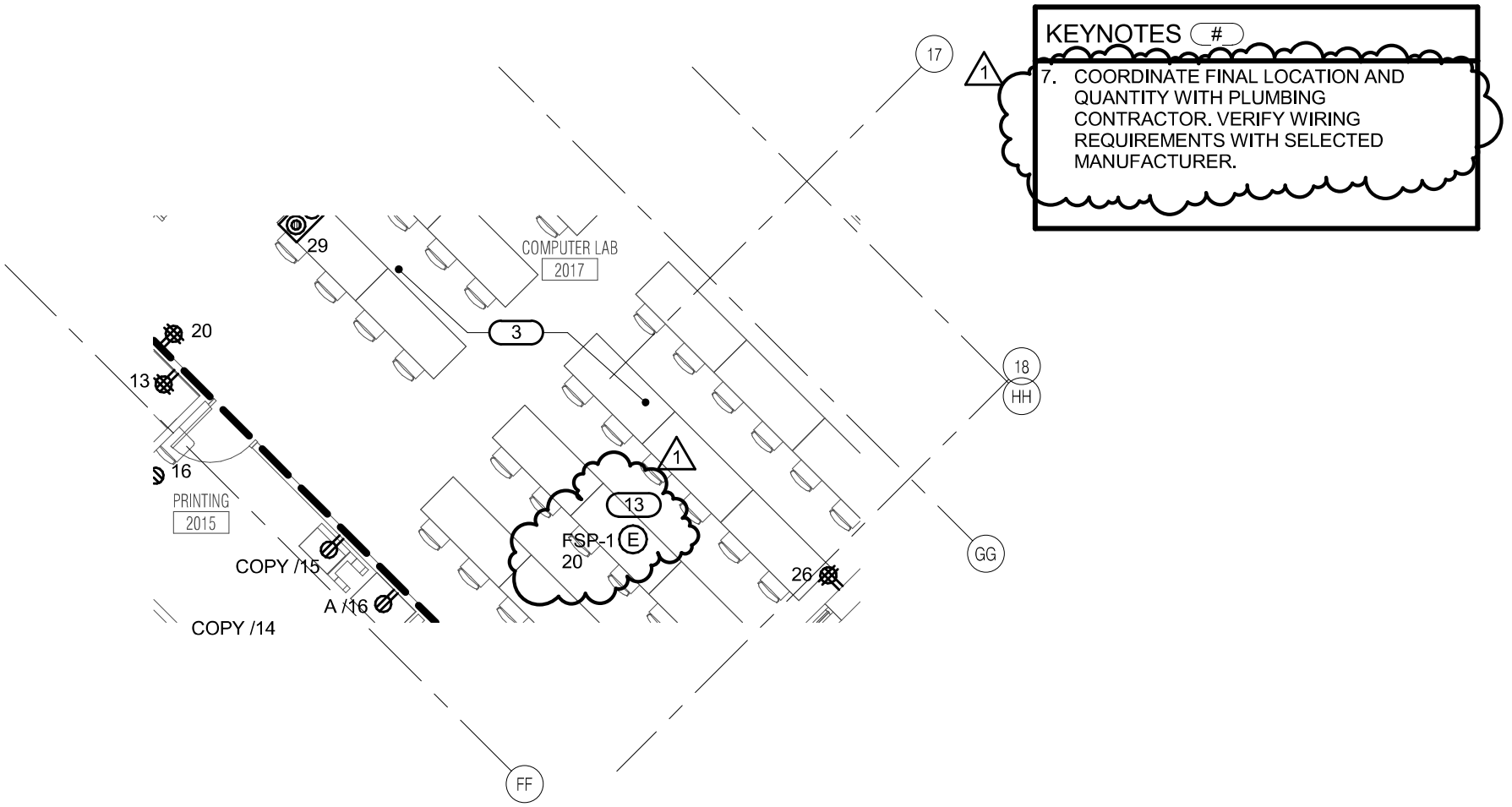
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.22

ADDENDUM 3

E222.08



1 LEVEL 2 PLAN - EAST - POWER

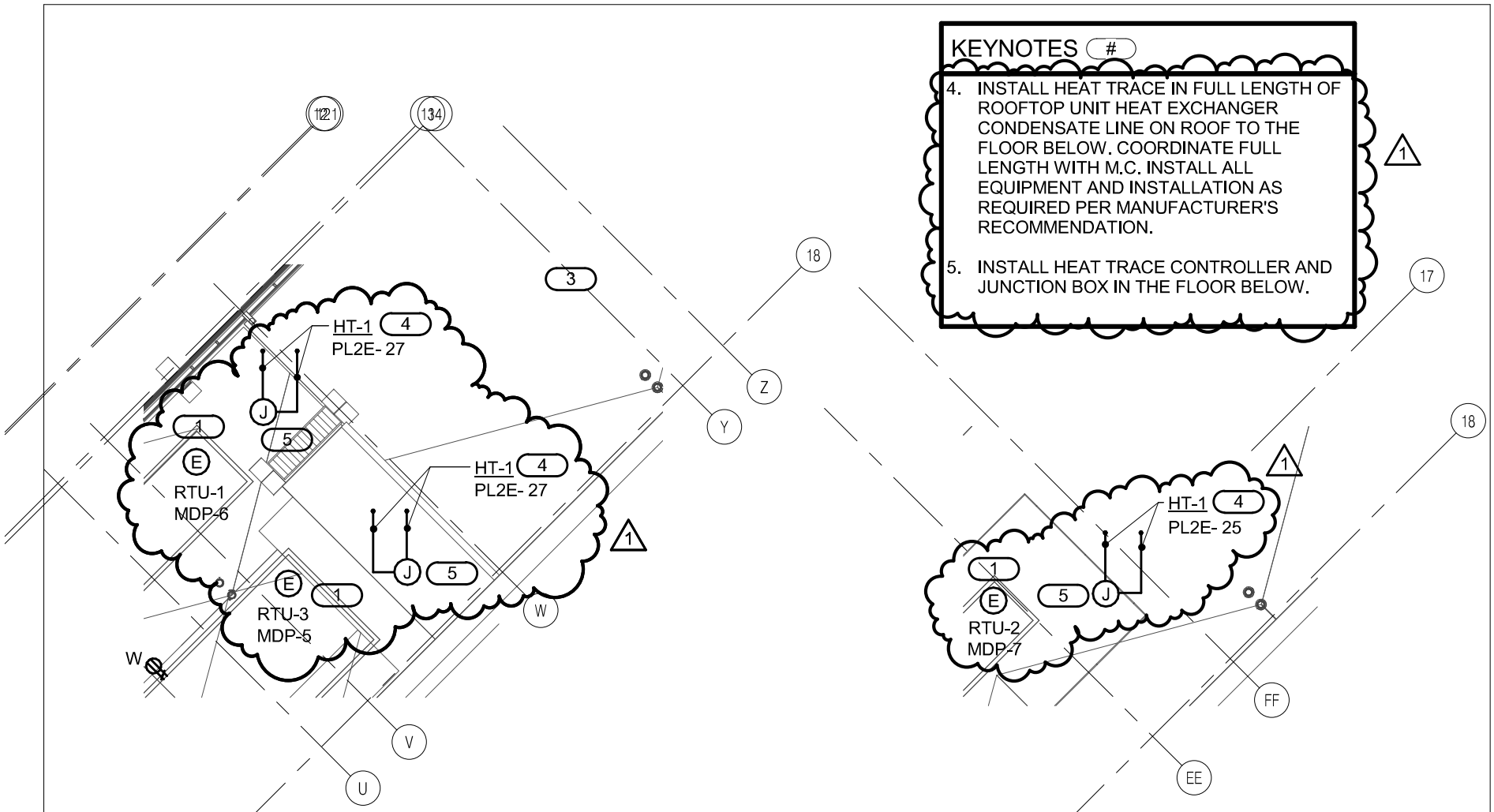
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.22

ADDENDUM 3

E222.09



1 OVERALL ROOF PLAN - ELECTRICAL

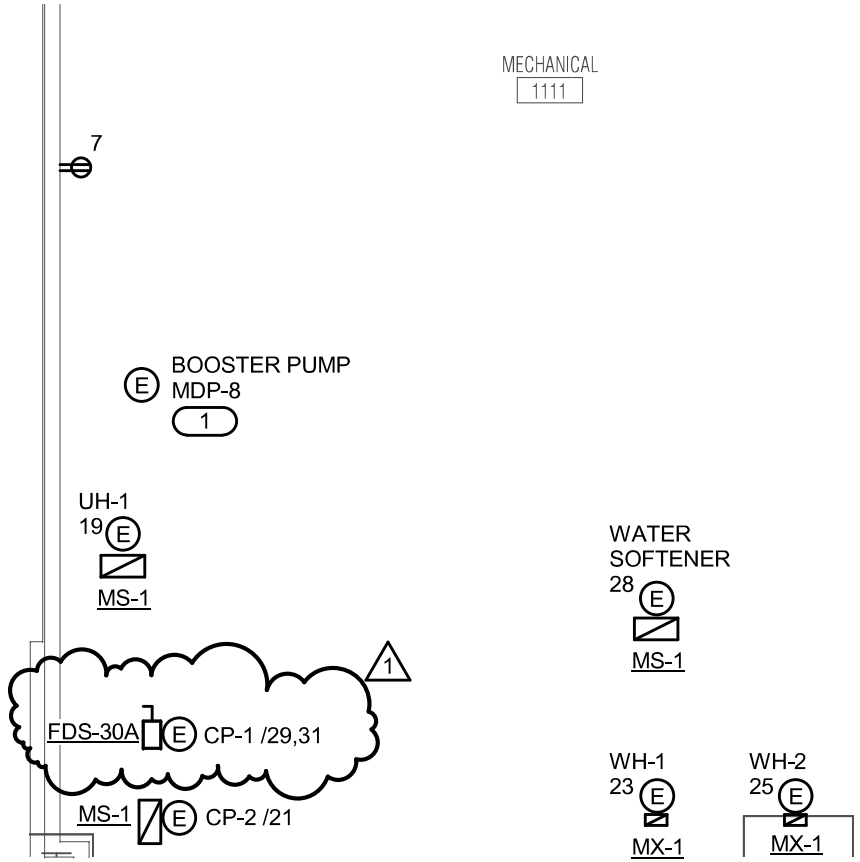
1/16" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E2.30

ADDENDUM 3

E230.10



NORTH

1

ENLARGED PLAN - MECH. 1111- POWER

1/4" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E4.10

ADDENDUM 3

E410.11

DISCONNECT AND STARTER SCHEDULE

NOTE: ALL DISCONNECTS (EXCEPT MANUAL STARTERS) SHALL BE HEAVY DUTY TYPE.

DISCONNECT TYPE:
FU - FUSED
NF - NON-FUSED
CB - CIRCUIT BREAKER

STARTER TYPE:
FV - FULL VOLTAGE
YD - WYE - DELTA
RE - REVERSING
TW - 2 SPEED, 2 WINDING
SW - 2 SPEED, 1 WINDING
RV - REDUCED VOLTAGE AUTOXFMR
SS - SOLID STATE
MS - MANUAL STARTER
MX - MANUAL SWITCH
FS - FUSED SWITCH

REMARKS:
SA - STANDARD ACCESSORIES (INCLUDES * ITEMS)
*CT - CONTROL TRANSFORMER, FUSED 120V
*EO - ELECTRONIC OVERLOAD
*HA - HAND-OFF-AUTO IN DOOR
*RP - RED PILOT LIGHT IN DOOR
*TA - TWO CONVERTIBLE AUXILIARY CONTACTS
S/N - INSULATED NEUTRAL ASSEMBLY
PF - PHASE FAILURE RELAY (5 HP OR GREATER)
TO - MELTING THERMAL OVERLOADS
TS - 2 SPEED SELECTOR SWITCH IN DOOR
GP - GREEN (OFF) PILOT LIGHT IN DOOR
FA - 4-CONVERTIBLE AUXILIARY CONTACTS
EI - ELECTRICAL INTERLOCK (2)-N.O. & (2)-N.C.
SS - START-STOP PUSHBUTTON IN DOOR
HL - HANDLE PADLOCK HASP

ITEM	DISCONNECT TYPE & RATING		CIRCUIT VOLTAGE	POLES	STARTER		NEMA ENCLOSURE	REMARKS	APPROVED MANUFACTURERS
	TYPE	RATING			NEMA SIZE	TYPE			
DS-30	NF	30 A	480 V	3			1		SQUARE D 3110 HU361 CUTLER-HAMMER TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HNF
DS-30R	NF	30 A	208 V	3			3R		SQUARE D 3110 HU361RB CUTLER-HAMMER TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HF
DS-60R	NF	60 A	208 V	3			3R		SQUARE D 3110 HU362RB CUTLER-HAMMER TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HF
DS-200	NF	200 A	600 V	3			1		SQUARE D 3110 HU364 CUTLER-HAMMER TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HNF
FDS-30A	FU	30 A	208 V	3			1	S/N, FUSED AT 15 AMPS	SQUARE D 3110 H221N CUTLER-HAMMER TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HF
FDS-30L	FU	30 A	240 V	2			1	S/N LIGHT DUTY	SQUARE D 3130 L221N CUTLER-HAMMER GENERAL ELECTRIC SIEMENS
FDS-60	FU	60 A	480 V	3			1	REFER TO ELECTRICAL ONE LINE DIAGRAM SHEET	SQUARE D 3110 H362 CUTLER-HAMMER TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HF
FDS-100	FU	100 A	480 V	3			1	REFER TO ELECTRICAL ONE LINE DIAGRAM SHEET	SQUARE D 3110 H363 CUTLER-HAMMER TYPE DH GENERAL ELECTRIC TYPE TH SIEMENS TYPE HF
FED-30	FU	30 A	480 V	3			1	ELEVATOR SHUNT TRIP, CT, FUSE PER ELEVATOR MFC RECOMMENDATIONS, EI.	BUSSMANN PS3T48R2 MERSEN ES3T48R2 CUTLER-HAMMER ES1T48R2 LITTELFUSE LPS3T48R2
MS-1		16 A	120 V	1	0	MS	1	RP, TO	SQUARE D 2510 FG1P CUTLER-HAMMER TYPE MS GENERAL ELECTRIC CR101 SIEMENS TYPE SMF
MX-1		30 A	120 V	1	0	MX	1		SQUARE D 2510 KG1 CUTLER-HAMMER TYPE B2 GENERAL ELECTRIC TYPE TC SIEMENS TYPE MMS

1

1

PANEL NAME: PL1A

TYPE: Type 1
MOUNTING: SURFACE
FED FROM: DP-1
SCCR: 22,000
LOCATION: ELECTRICAL 1112

SOLID NEUTRAL
GROUND BUS

CONNECTED 17.5 kVA
MAIN: 100 A/MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
DEMAND: 17.52 kVA

Panel Notes:

	CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.	
	1	Power, *B2	20 A	1	0.8	1.5					1	20 A	Vending, *G	2	
	3	Vending, *G	20 A	1			1.5	1.5			1	20 A	Vending, *G	4	
	5	Power	20 A	1					0.8	0.4	1	20 A	Power	6	
	7	Power	20 A	1	0.6	0.8					1	20 A	Power	8	
	9	Power	20 A	1			0.5	0.6			1	20 A	Power	10	
	11	Lighting, *C	20 A	1					0.02	0.2	1	20 A	CAB-1	12	
	13	CAB-2	20 A	1	0.3	0.2					1	20 A	UH-4	14	
	15	Copier	20 A	1			1.9	0.2			1	20 A	UH-5	16	
	17	UH-2	20 A	1					0.2	0.2	1	20 A	UH-3	18	
	19	UH-1	20 A	1	0.2	0					1	20 A	SPARE	20	1
	21	CP-2 (3/4 HP)	25 A	1			1.6	0.8			1	20 A	Site Charging Station, *C2	22	
	23	WH-1	20 A	1					0.2	0.2	1	20 A	Lighting Contactors	24	
	25	WH-2	20 A	1	0.2	0.5					1	20 A	Site Security Camera, *C2	26	
1	27	Power	20 A	1			0.4	0.8			1	20 A	Water Softener	28	
	29	CP-1 (1 HP)	20 A	2					0.95	0	1	20 A	SPARE	30	
–	31	–	--	–	0.95	0					1	20 A	SPARE	32	
	33	SPARE	20 A	1			0	0			1	20 A	SPARE	34	
	35	SPARE	20 A	1					0	0	1	20 A	SPARE	36	
–	37	SPACE	–	–	0	0					--	--	SPACE	38	--
–	39	SPACE	–	–			0	0			--	--	SPACE	40	--
–	41	SPACE	–	–					0	0	--	--	SPACE	42	--
				Total Load:	6.05 kVA		9.8 kVA		3.17 kVA						
				Total Amps:	54.12		85.37		26.38						

[Key*:] *G = PROVIDE GFCI BREAKER, *C = THRU CONTACTOR

PANEL NAME: PL2E

CONNECTED 22.1 kVA

TYPE: BOLT-ON
MOUNTING: SURFACE
FED FROM: DP-2
SCCR: 10,000
LOCATION: ELEC. 2108

SOLID NEUTRAL
GROUND BUS

MAIN: 100 A/MLO
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
DEMAND: 22.1 kVA

Panel Notes:

	CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.	
	1	Power	20 A	1	0.4	0.8					1	20 A	Power	2	
	3	Power	20 A	1			0.8	0.8			1	20 A	Power	4	
	5	Projector	20 A	1					0.3	0.6	1	20 A	Power	6	
	7	Power	20 A	1	0.8	1					1	20 A	Power	8	
	9	Power	20 A	1			1	1			1	20 A	Power	10	
	11	Power	20 A	1					1	0.4	1	20 A	Power	12	
	13	Power	20 A	1	1.2	1.9					1	20 A	Copier	14	
	15	Copier	20 A	1			1.9	0.8			1	20 A	Power	16	
	17	Power	20 A	1					0.6	0.8	1	20 A	Power	18	
	19	Power, *B2	20 A	1	0.6	0.2					1	20 A	LC-SECOND CORR	20	
	21	EF-4	20 A	2			1.15	1.15			2	20 A	EF-5	22	
–	23	--	–	--					1.15	1.15	--	–	–	24	--
1	25	Heat Trace, *G, *C2	20 A	1	0.4	0					1	20 A	SPARE	26	
	27	Heat Trace, *G, *C2	20 A	1			0.4	0			1	20 A	SPARE	28	
	29	SPARE	20 A	1					0	0	1	20 A	SPARE	30	
	31	SPARE	20 A	1	0	0					1	20 A	SPARE	32	
	33	SPARE	20 A	1			0	0			1	20 A	SPARE	34	
–	35	SPACE	–	--					0	0	--	–	SPACE	36	--
–	37	SPACE	–	--	0	0					--	–	SPACE	38	--
–	39	SPACE	–	--			0	0			--	–	SPACE	40	--
–	41	SPACE	–	--					0	0	--	–	SPACE	42	--
				Total Load:	7.3 kVA		9 kVA		6 kVA						
				Total Amps:	62.5		76.67		50						

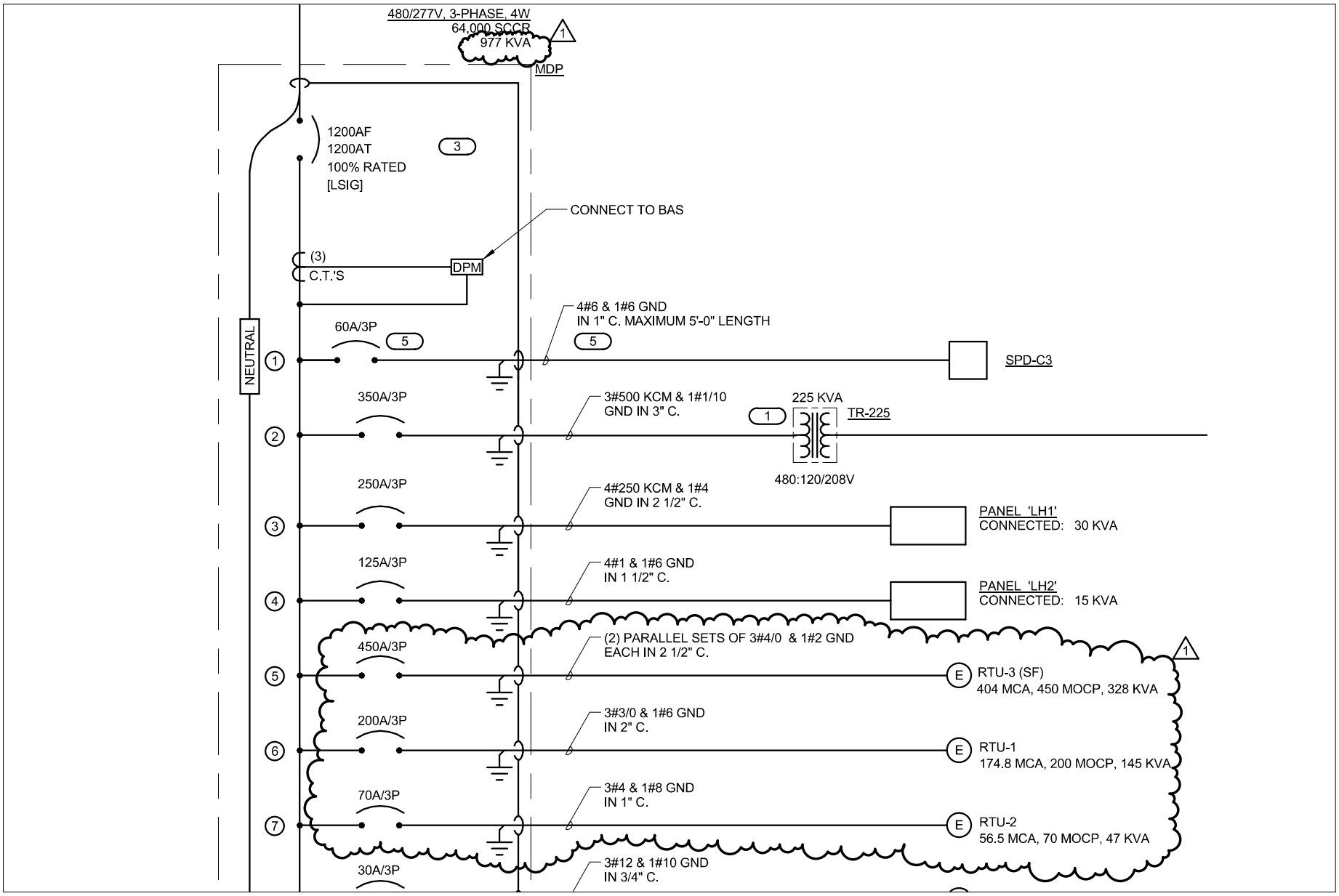
[Key*:] *G=30mA GFI BREAKER

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E5.11

ADDENDUM 3

E511.14



JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 9-3-15
REF SHEET: E6.00

ADDENDUM 3

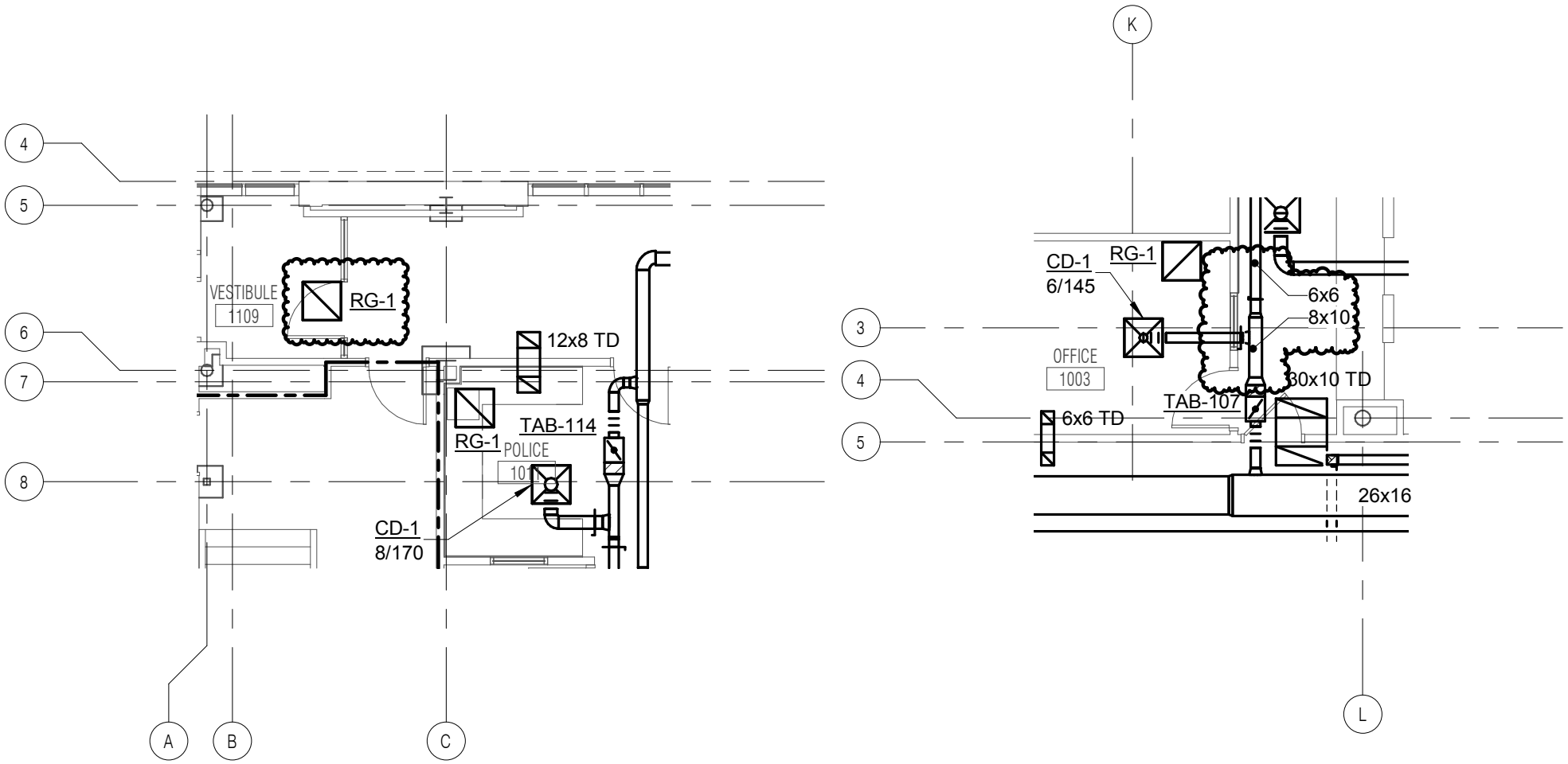
E600.15

FIRE SPRINKLER USAGE SCHEDULE

AREA TYPE (NOTE 1 & 5)	AREA HAZARD	SPRINKLER					MANUFACTURER & MODEL	REMARKS
		SYMBOL (NOTES 3 & 4)	TYPE	RESPONSE	FINISH	TEMPERATURE °F		
AREAS WITHOUT CEILINGS	REFER TO PLANS	SPR-1	UPRIGHT	QUICK	ROUGH BRASS	155	VIKING VK, RELIABLE F1FR, TYCO TY-FRB, VICTAULIC V2704	NOTE 2
MECHANICAL SPACES, TOP OF ELEVATOR SHAFT	REFER TO PLANS	SPR-2	UPRIGHT	QUICK	ROUGH BRASS	175	VIKING VK, RELIABLE F1FR, TYCO TY-FRB, VICTAULIC V2704	NOTE 2
OCCUPIED SPACES WITH CEILINGS	REFER TO PLANS	SPR-3	CONCEALED	QUICK	ROUGH BRASS	155	VIKING VK, RELIABLE G4A, TYCO RFII, VICTAULIC V3802	NOTE 2, 7
BOTTOM OF ELEVATOR PIT, ELECTRICAL ROOMS, IT CLOSETS	REFER TO PLANS	SPR-4	SIDEWALL	QUICK	ROUGH BRASS	175	VIKING VK, RELIABLE F1FR, TYCO TY-FRB, VICTAULIC V2710	NOTE 2, 8
WALK-IN COOLERS	REFER TO PLANS	SPR-5	DRY PENDENT	QUICK	ROUGH BRASS	155	VIKING VK, RELIABLE F3QR, TYCO DS, VICTAULIC V3606	NOTE 2, 6

NOTES:

1. REFER TO FLOOR PLANS FOR ZONING REQUIREMENTS.
2. ALL SPRINKLERS SHALL BE UL LISTED.
3. CONTRACTOR TO VERIFY SPRINKLER REQUIREMENTS BASED ON ACTUAL INSTALLATION, USAGE, ARCHITECTURAL CEILING PLAN AND NFPA 13 REQUIREMENTS.
4. SYMBOL IS PRIMARILY FOR INDENTIFYING SPRINKLERS IN SUBMITTALS. IT MAY OR MAY NOT BE FOUND ELSEWHERE ON THE DRAWINGS. CONTRACTOR TO SUBMIT ALL SPRINKLER TYPES TO BE USED.
5. AREAS ARE GENERAL IN NATURE. CONTRACTOR TO MATCH UNSCHEDULED AREAS TO SIMILAR SPACES.
6. SPRINKLERS SHALL HAVE A 3mm QUICK RESPONSE BULB.
7. COLOR VARIES BY SPRINKLER LOCATION. COORDINATE COLOR OF ALL SPRINKLER COVERS WITH ARCHITECT.
8. NO FIRE PROTECTION PIPING SHALL BE ROUTED IN OR THROUGH ELECTRICAL OR IT ROOMS.



NORTH

1

LEVEL 1 PLAN - WEST - VENTILATION

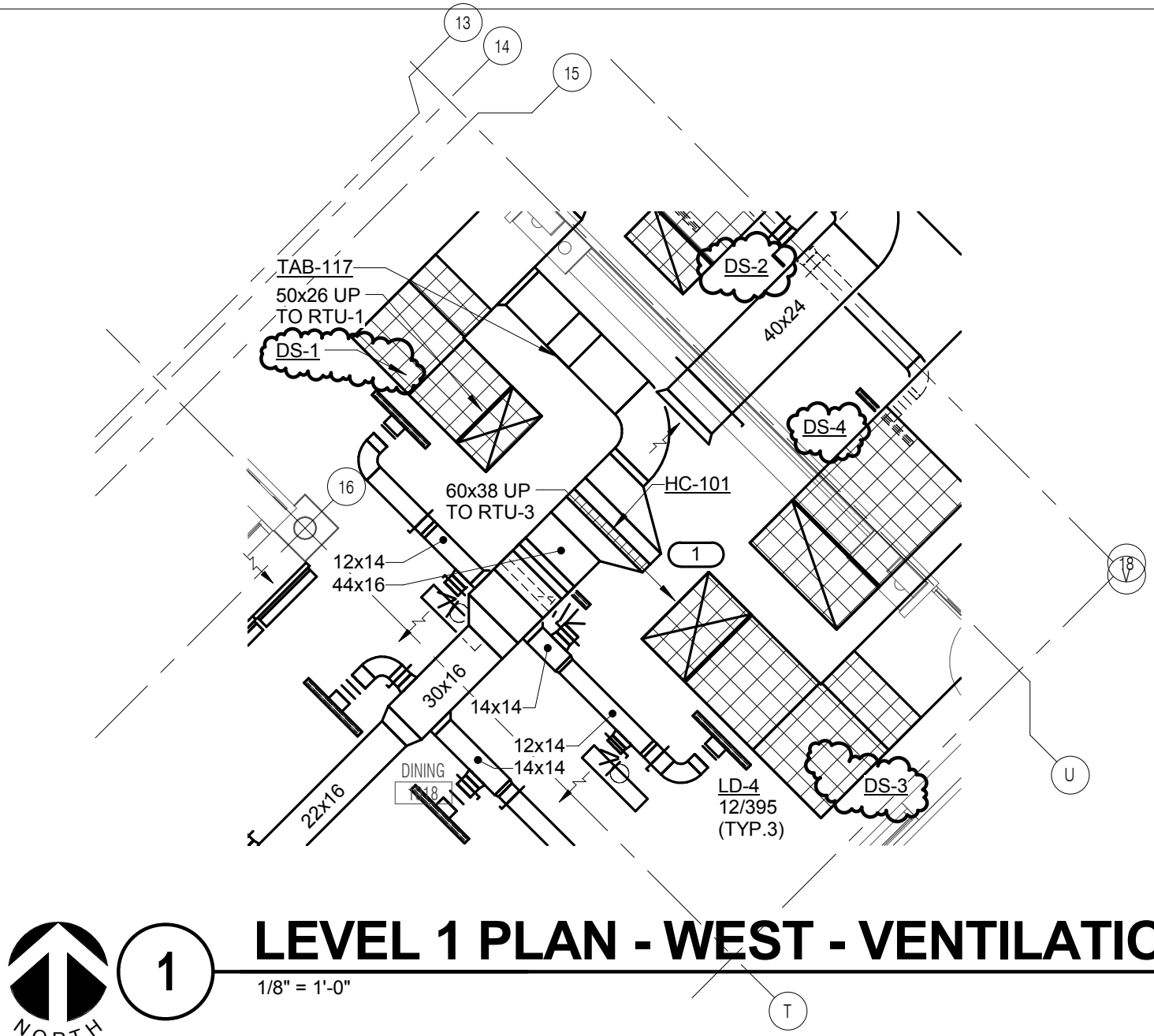
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: M1.11

ADDENDUM 3

M111.01



NORTH

1

LEVEL 1 PLAN - WEST - VENTILATION

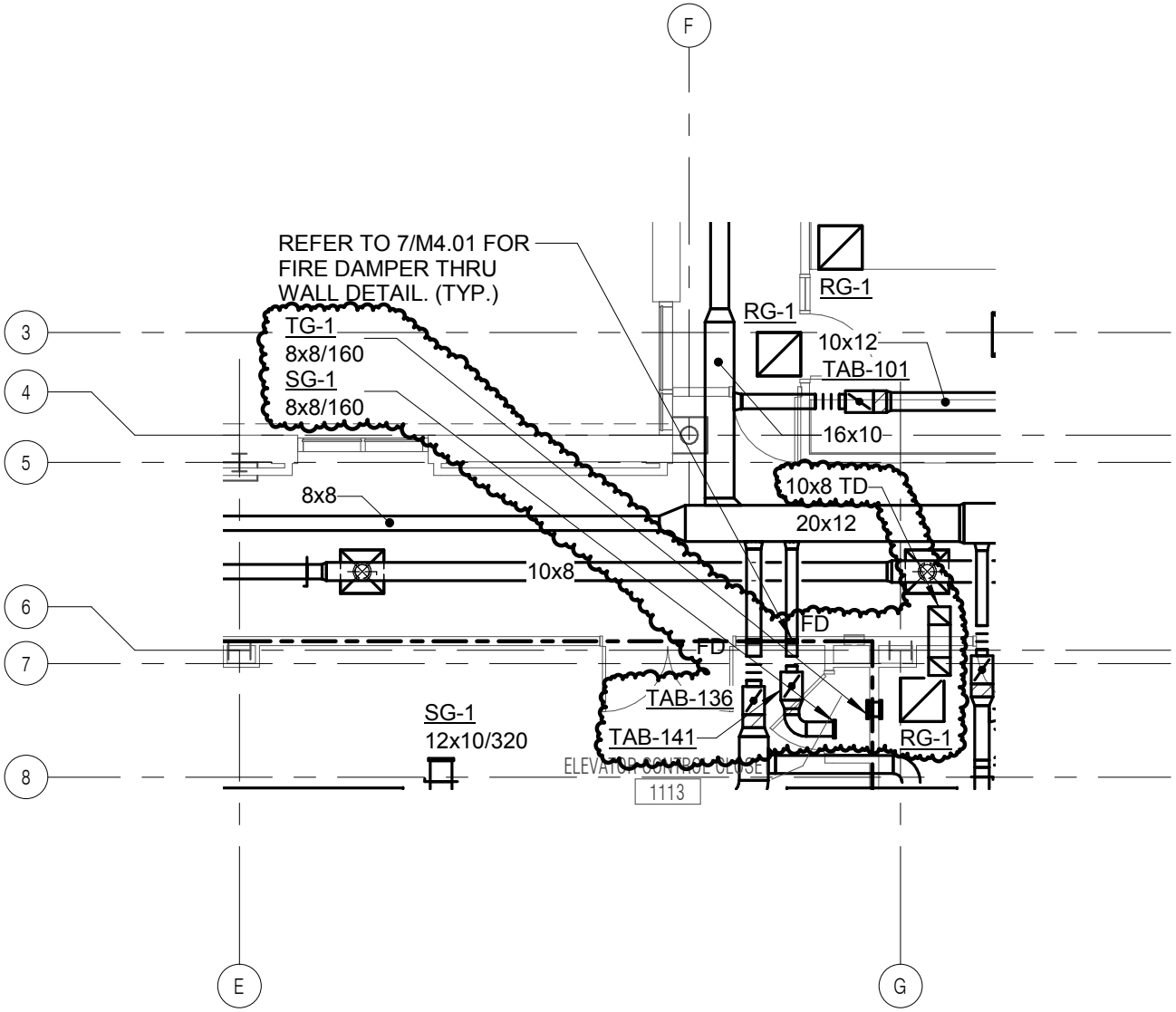
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	09/03/2015
REF SHEET:	M1.11

ADDENDUM 3

M111.02



LEVEL 1 PLAN - WEST - VENTILATION

1/8" = 1'-0"

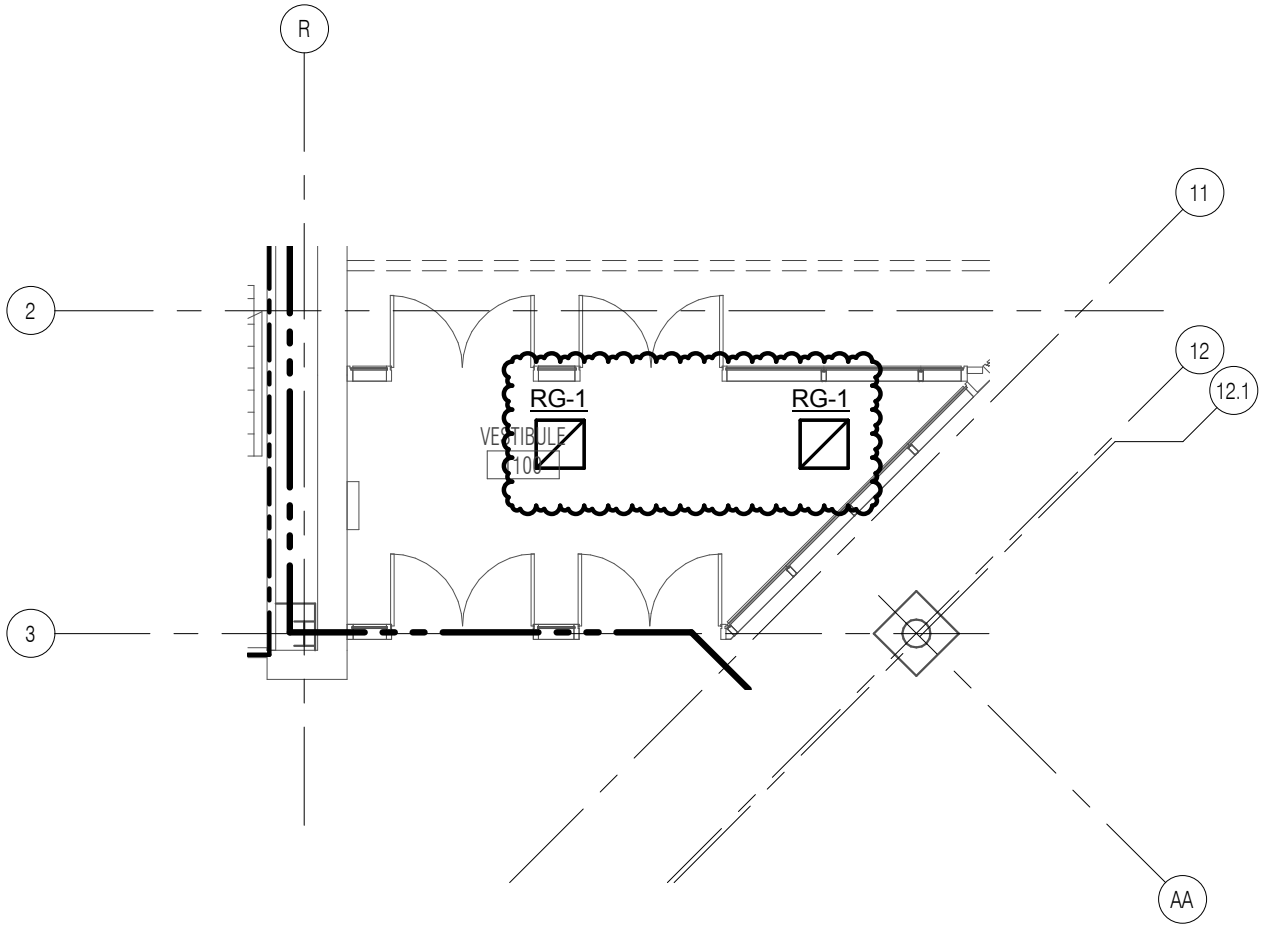
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/15
REF SHEET: M1.11

ADDENDUM 3

M111.03



NORTH

1

LEVEL 1 PLAN - EAST - VENTILATION

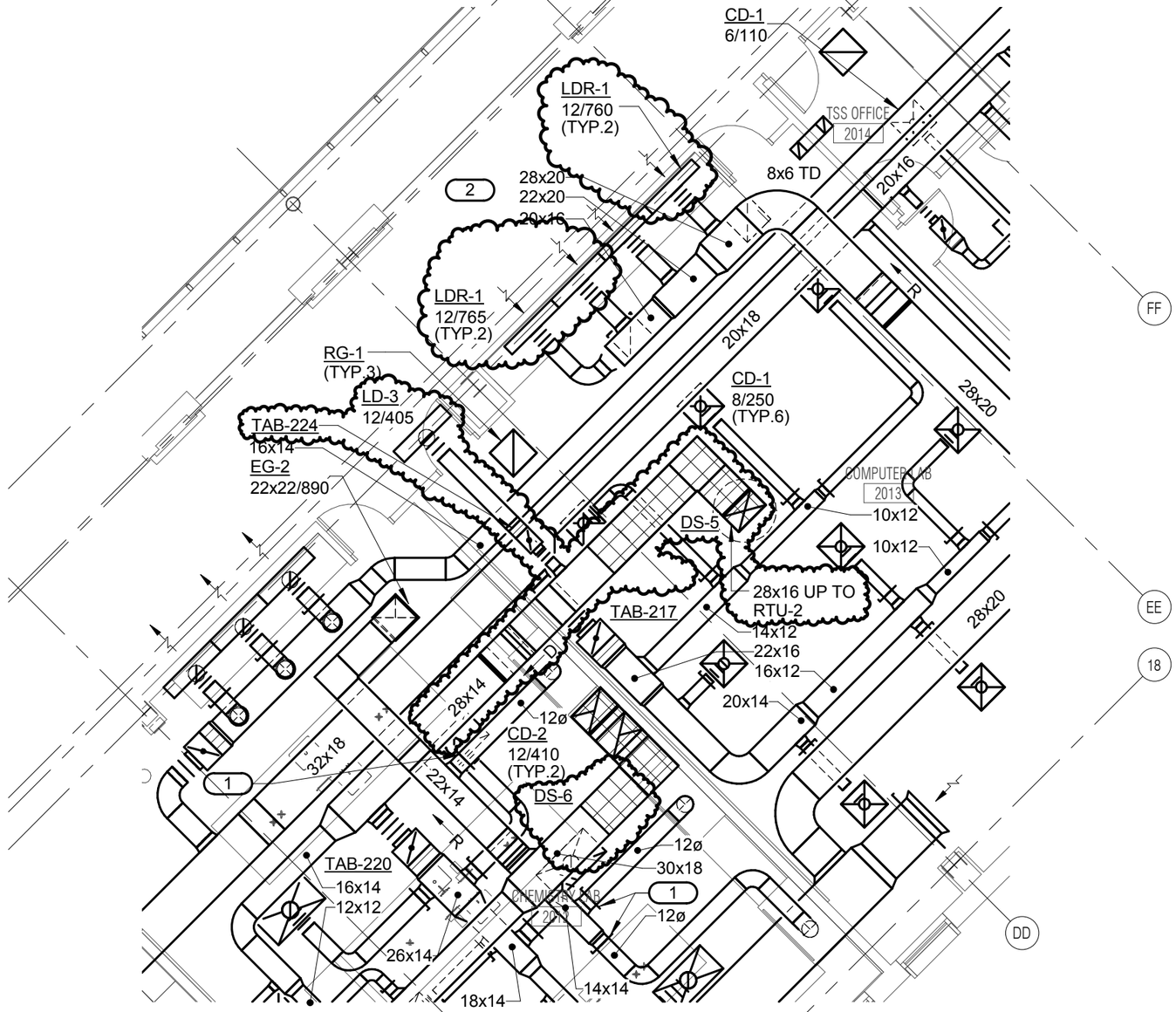
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: M1.12

ADDENDUM 3

M112.01



1 LEVEL 2 PLAN - EAST - VENTILATION

1/8" = 1'-0"

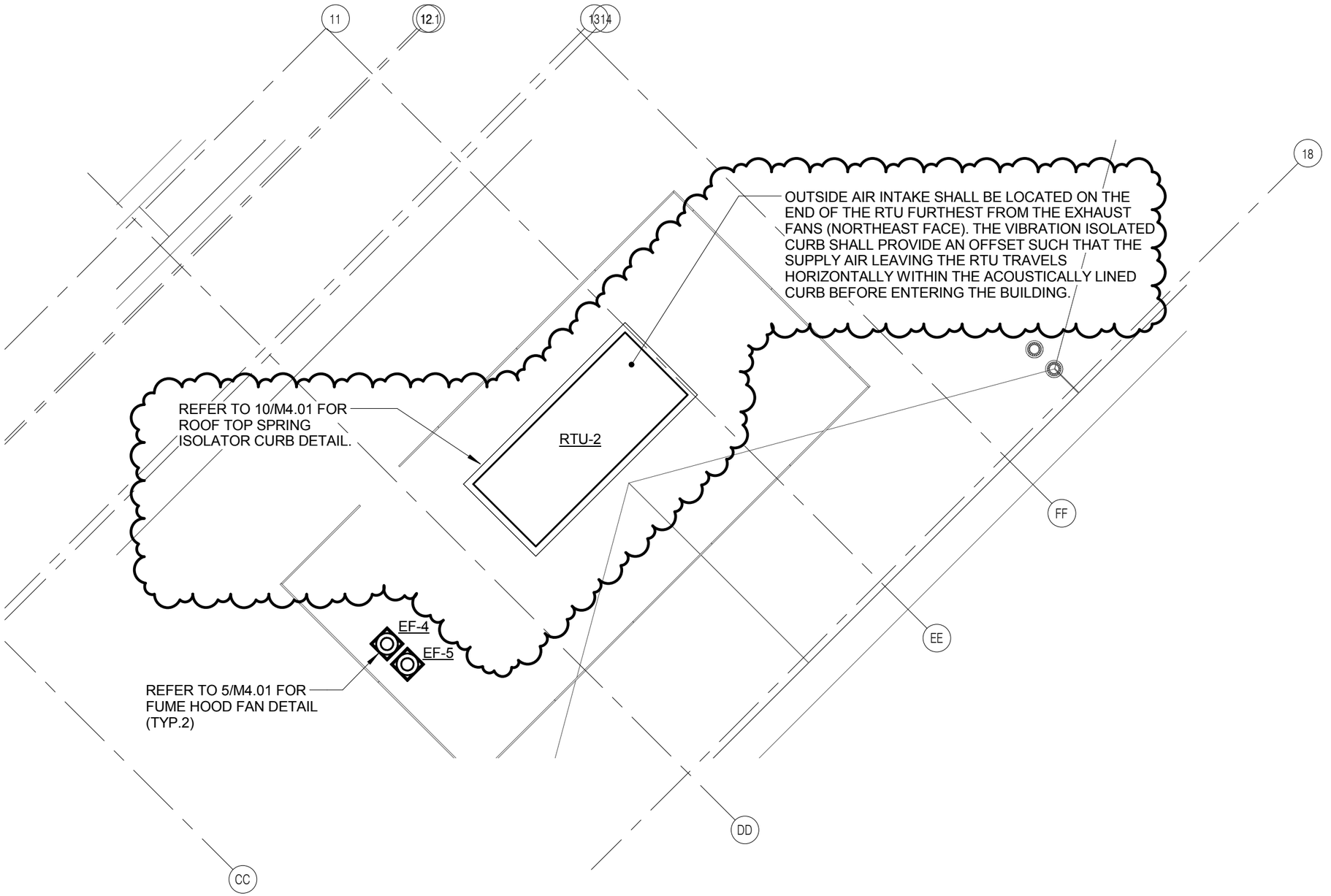
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: M1.22

ADDENDUM 3

M122.01



1 ROOF PLAN - EAST - VENTILATION

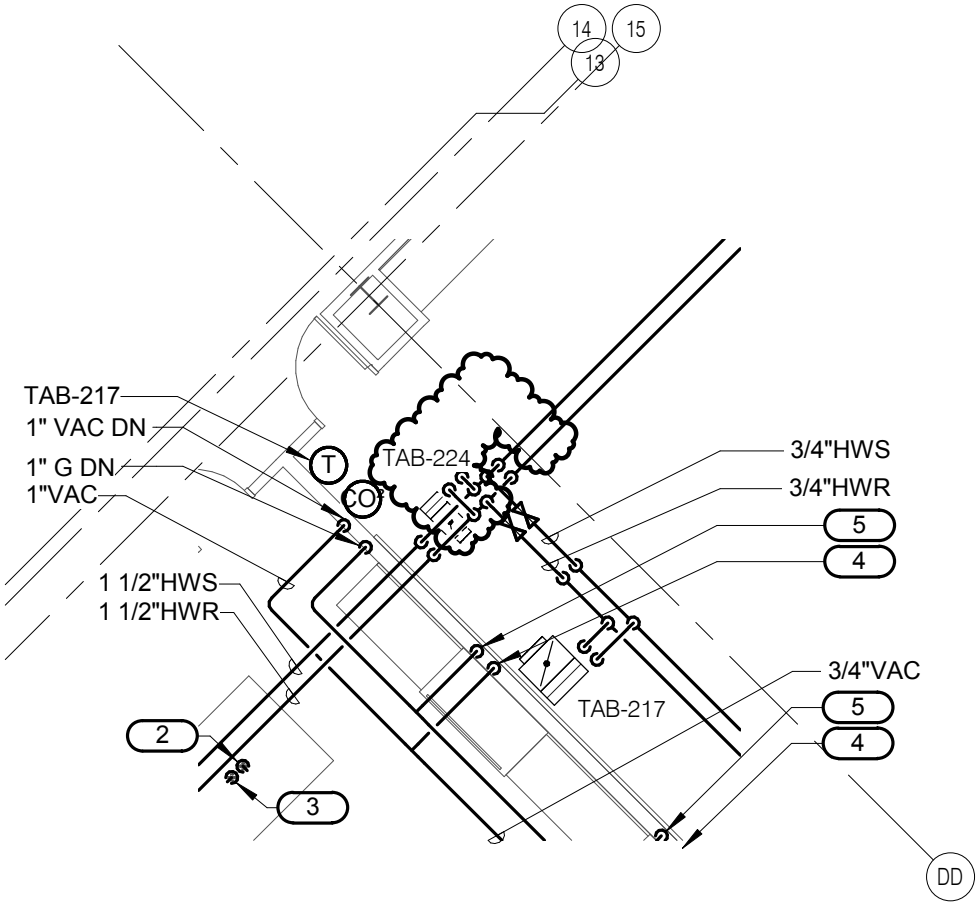
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: M1.32

ADDENDUM 3

M132.01



NORTH

1

LEVEL 2 PLAN - EAST - PIPING

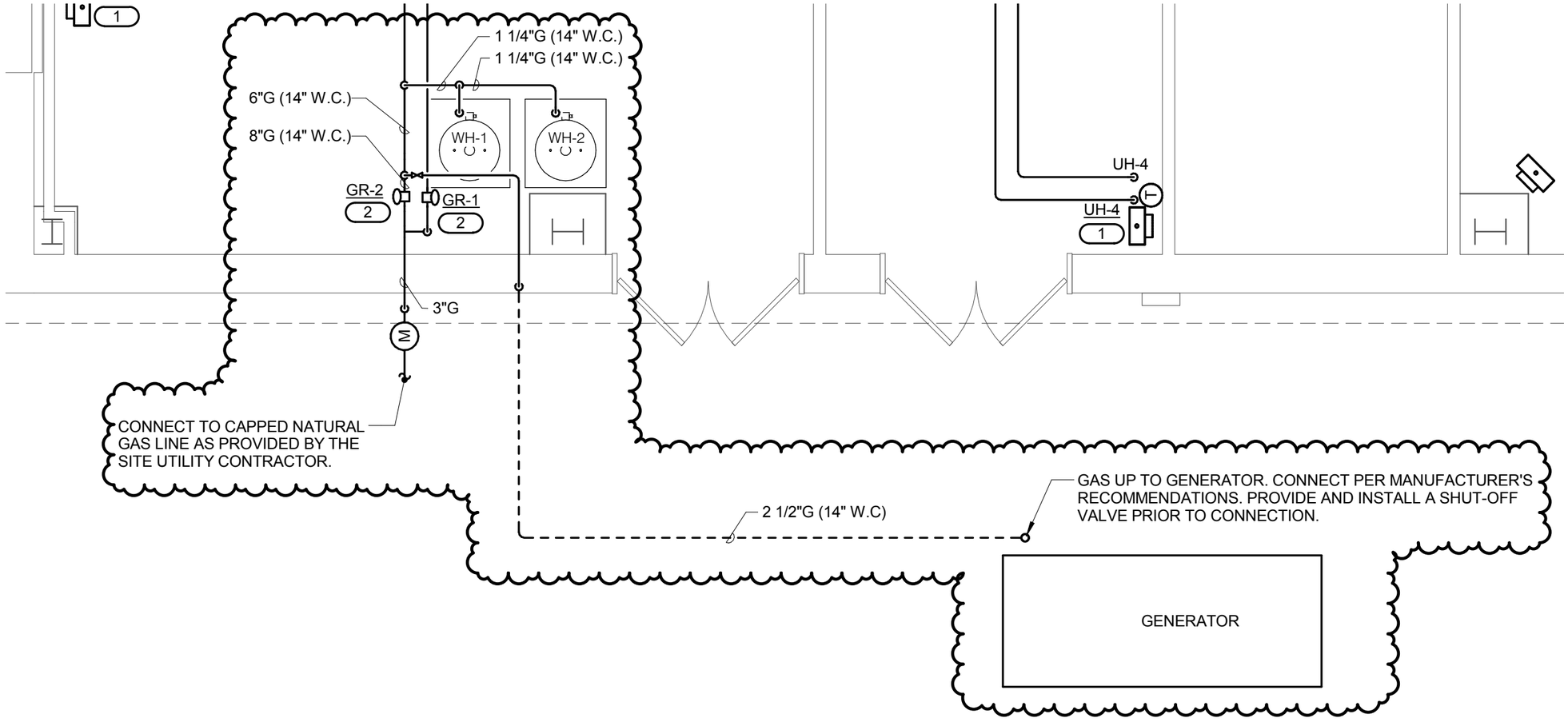
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: M2.22

ADDENDUM 3

M222.01



1 ENLARGED MECHANICAL PLAN - MECHANICAL ROOM

1/4" = 1'-0"

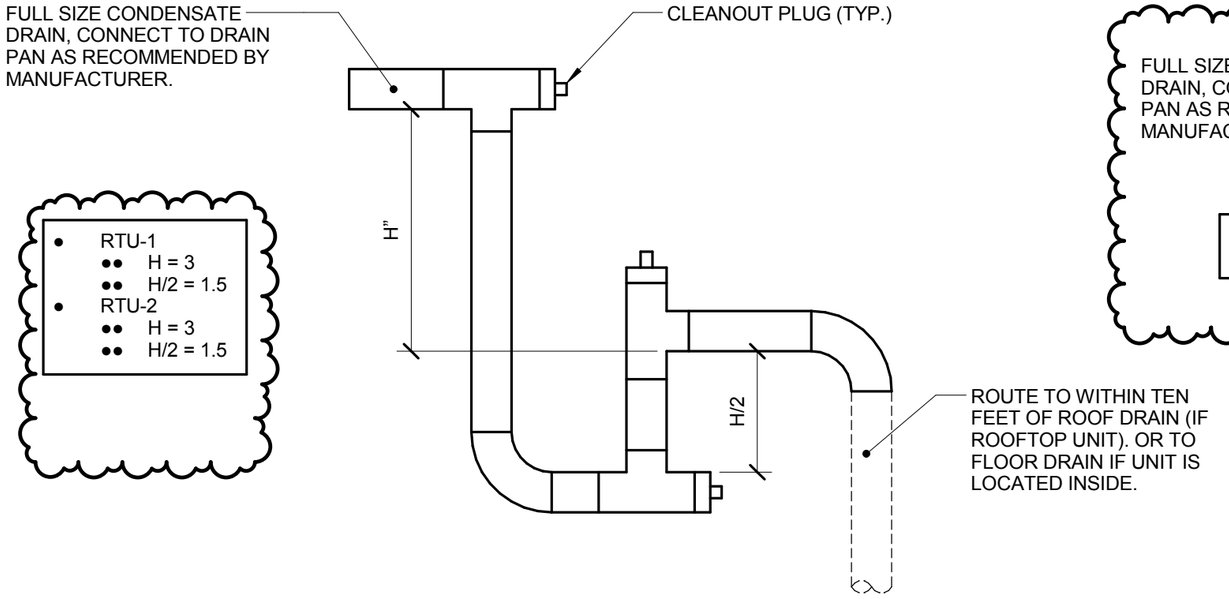
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: M3.00

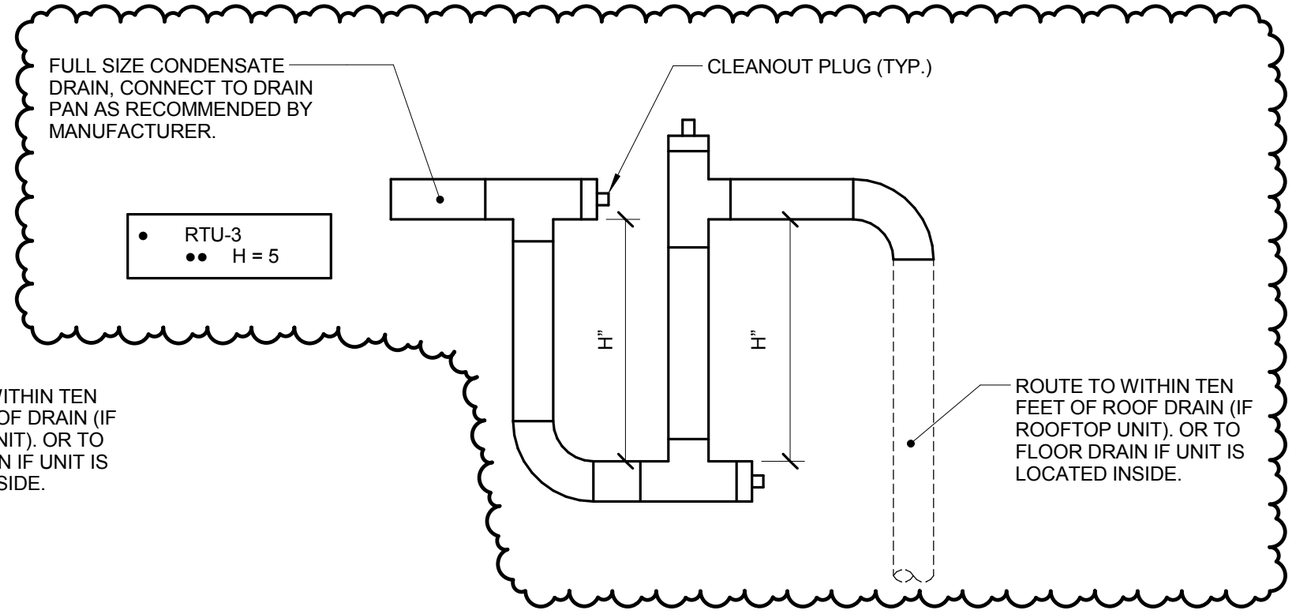
ADDENDUM 3

M300.01



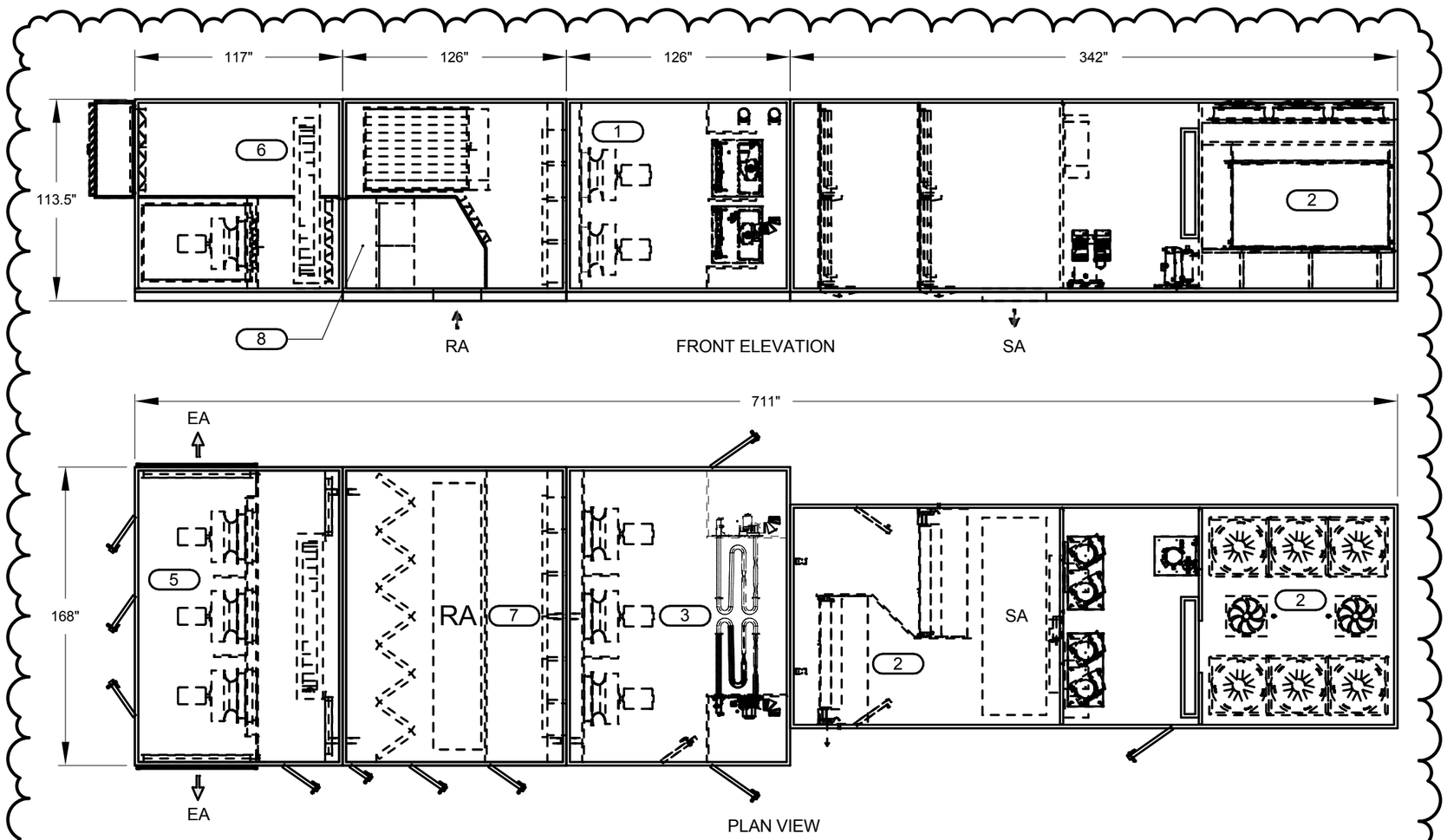
7 CONDENSATE TRAP DETAIL (DRAW-THROUGH)

NO SCALE



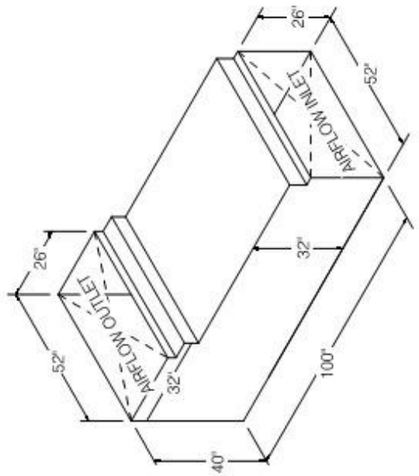
8 CONDENSATE TRAP DETAIL (BLOW-THROUGH)

NO SCALE

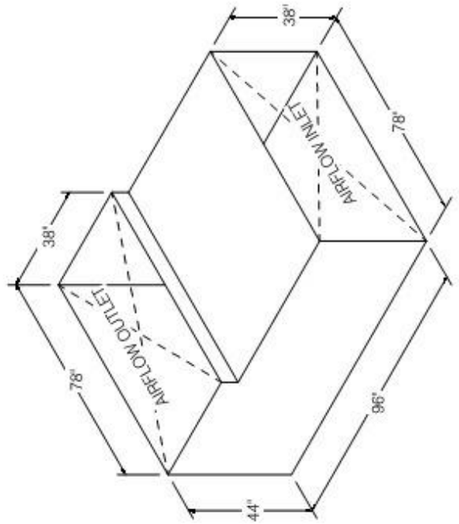


7 RTU 3 DETAIL

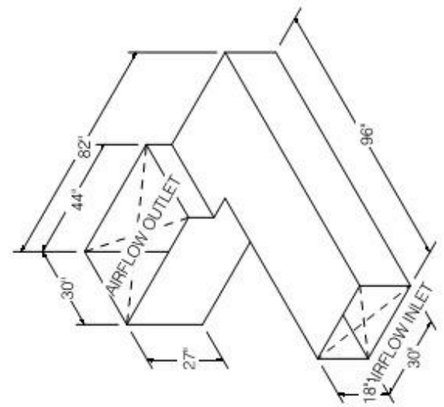
NO SCALE



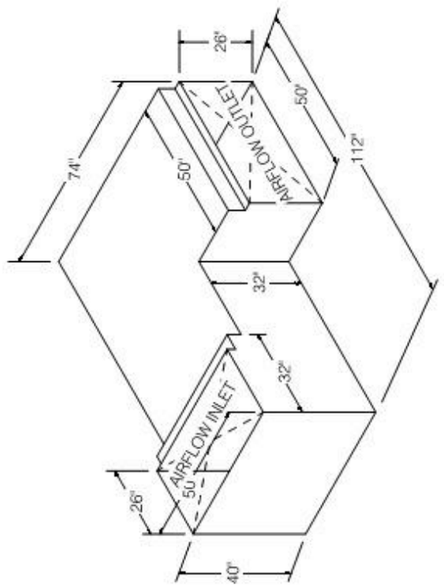
DS-2



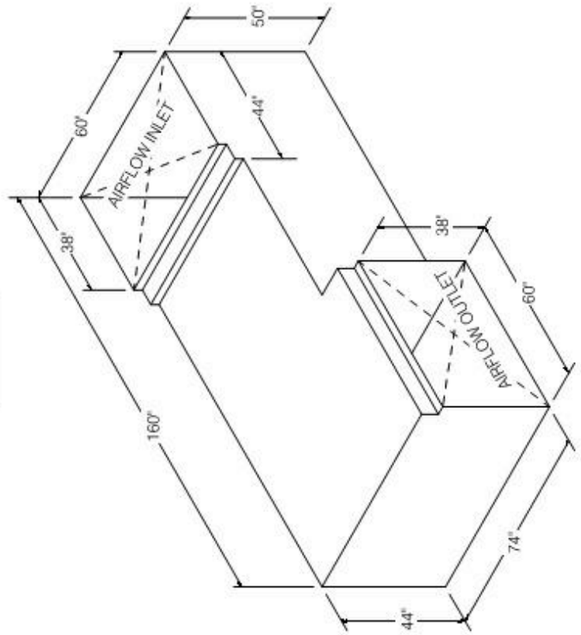
DS-4



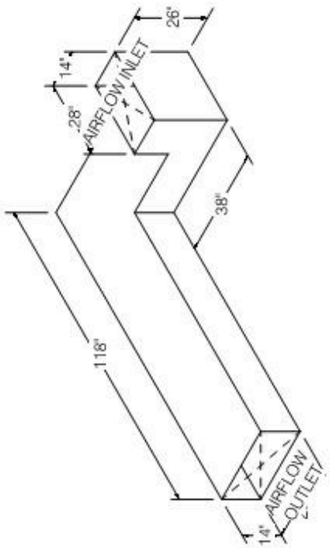
DS-6



DS-1



DS-3



DS-5

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: M4.03

ADDENDUM 3

M403.01

ROOFTOP AIR HANDLING UNIT SCHEDULE

SYMBOL	RTU-1	RTU-2	RTU-3
SERVICE	KITCHEN	CHEMISTRY	CLASS ROOMS
SUPPLY FAN			
CFM	17,325	4,215	41,170
EXTERNAL STATIC PRESSURE	2.1" WC	1.5" WC	3.8" WC
TYPE	AF DWDI	SWSI AF	DD Plenum
FAN RPM (NOTE D)	1,047	1,102	1,931
BHP (NOTE E)	15.24	2.31	(6) @ 13.89
MHP (NOTE E)	20	3	(6) @ 20
RETURN / OUTSIDE / EXHAUST FAN			
CFM	13,555	NA	40,570
EXTERNAL STATIC PRESSURE	1.00		1.60
TYPE	SWSI AF		DD Plenum
FAN RPM (NOTE D)	551		1,948
BHP (NOTE E)	3.61		(3) @ 14.26
MHP (NOTE E)	5		(3) @ 20
MINIMUM OUTSIDE AIR CFM	3125 (NOTE 6)	3,810	13,015
HEATING COIL - GAS			
EAT °F	-10	-10	-10
LAT °F	55	90	55
TOTAL MBH	500.0	600.0	1,075.0
COOLING COIL - DX			
EAT °F DB	82.4	95	76.8
EAT °F WB	68.8	78	65
MAX. LAT °F DB	54.3	55	55
LAT °F WB	53.6	55	54
TOTAL MBH	820.0	345.0	1,355.0
ENTHALPY RECOVERY WHEEL			
SUMMER OA EAT °F DB/WB			95/75
SUMMER RA EAT °F DB/WB			75/63.5
SUMMER LAT °F DB/WB			80.3/67.7
WINTER OA EAT °F DB/WB			-10/-11
WINTER RA EAT °F DB/WB	NA	NA	70/52.8
WINTER LAT °F DB/WB			37.6/33.5
SUMMER EFFECTIVENESS			0.66
WINTER EFFECTIVENESS			0.60
MAX. COMBINED A.P.D. IN. W.C. (SUPPLY/EXHAUST)			0.73/0.73
WHEEL MOTOR			0.50
DISCONNECT BY (NOTE A)			MFR
DISCONNECT TYPE (NOTE B)			VFD
CONTROLLER/STARTER BY (NOTE A)			MFR
CONTROLLER/STARTER TYPE (NOTE C)			VFD
FILTER			
TYPE - PRE	2"-30%	2"-30%	2"-30%
TYPE - FINAL	12"-MERV14	4"- MERV13	12"-MERV13
VELOCITY (FPM)	433.1	156.1	210
A.P.D. IN. W.C. FILTER CLEAN/DIRTY	0.76	0.12	0.1
ROOF CURB (NOTE G)	SAC BY MFR	SAC BY MFR	SAC BY MFR
ELECTRICAL			
VOLT-PHASE	460-3	460-3	460-3
FLA	162	50	395
MCA	175	57	404.00
MOCP AMPS	200	70	450
DISCONNECT BY (NOTE A)	MFR	MFR	MFR
DISCONNECT TYPE (NOTE B)	VFD	VFD	VFD
CONTROLLER/STARTER BY (NOTE A)	MFR	MFR	MFR
CONTROLLER/STARTER TYPE (NOTE C)	VFD	VFD	VFD
MINIMUM SCCR	10 kAIC	10 kAIC	10 kAIC
EER/IEER	9.7/14.7	9.9/17.5	11.3/17.63
MANUFACTURER	DAIKIN	DAIKIN	ANNEX AIR
MODEL NUMBER	RPS074D	DPS028A	ERP
REMARKS	NOTE 1,2,3,4,7	NOTE 1,2,3,5,7	NOTE 1,2,3,4,7

NOTES:

1. LAT LISTED IS AT DISCHARGE OF RTU.
2. PROVIDE SHAFT GROUNDING AS REQUIRED IN THE MOTOR SPECIFICATION 23 05 13.
3. THE CONDENSATE DRAIN ASSOCIATED WITH THE COOLING COIL AND GAS FURNACE SHALL BE HEAT TRACED. COORDINATE WITH THE ELECTRICAL CONTRACTOR.
4. REFER TO M7.00 FOR ASSOCIATED CONTROL DIAGRAMS.
5. REFER TO M7.01 FOR ASSOCIATED CONTROL DIAGRAMS.
6. THE RTU SHALL BE CAPABLE OF ACCOMMODATING THE OA CFM ASSOCIATED WITH THE KITCHEN EXHAUST FANS (6,525 CFM).
7. UNITS SHALL UTILIZE INVERTER COMPRESSOR TECHNOLOGY

FAN SCHEDULE

SYMBOL	SERVICE	CFM	S.P. IN. W.C.	WHEEL DIA. INCHES	FAN RPM (NOTE F)	DRIVE	MAX. AMCA SONES	BACKDRAFT DAMPER	CURB TYPE (NOTE G)	ELECTRICAL						
										BHP (NOTE E)	MHP (NOTE E)	VOLT-PHASE	DISCONNECT		CONTROLLER/STARTER	
													BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)
EF-1	FOOD PREP	3,025	0.75	18.5	1,067	DIRECT	14.8	ELECTRIC	MFR	0.72	2.0	208 - 1	MFR	NF	TCC	FV
EF-2	SERVERY	3,500	0.75	18.5	1,160	DIRECT	15.8	ELECTRIC	MFR	0.92	2.0	208 - 1	MFR	NF	TCC	FV
EF-3	RESTROOM	3,380	0.75	18.5	1,087	DIRECT	13.8	ELECTRIC	MFR	0.82	2.0	208 - 1	MFR	NF	TCC	FV
EF-4	CHEMISTRY LAB	4,215	1.389	24.0	834	BELT	12.9	ELECTRIC	MFR	1.36	1.5	208 - 1	MFR	NF	TCC	FV
EF-5	CHEMISTRY LAB	4,215	1.389	24.0	834	BELT	12.9	ELECTRIC	MFR	1.36	1.5	208 - 1	MFR	NF	TCC	FV

TERMINAL AIR BOX SCHEDULE - SINGLE DUCT REHEAT (FIRST FLOOR)

SYMBOL TAB -	AREA SERVED	CFM			HEATING COIL (NOTES 5 & 6)				MIN. INLET SIZE (IN.)	CONTROL TYPE (NOTE 3)	SENSOR TYPE (NOTE 4)	MANUFACTURER	MODEL	REMARKS
		COOLING MAX.	HEATING MAX.	MIN.	EAT °F	LAT °F	EWT °F	MAX. GPM						
100	CORRIDOR 190	695	695	230	55	95	140	2.9	10	B	1	TITUS	DESV	NOTES 1, 2
101	ADJUNCT OFFICE 1010	610	145	145	55	75	110	1.1	8	A	2	TITUS	DESV	NOTES 1, 2
102	FACULTY OFFICE 1009	205	115	80	55	95	140	0.8	6	B	2	TITUS	DESV	NOTES 1, 2
103	FACULTY OFFICE 1007 & 1008	340	160	80	55	95	140	0.8	6	B	2	TITUS	DESV	NOTES 1, 2
104	FACULTY OFFICE 1005 & 1006	350	150	80	55	95	140	0.8	6	B	2	TITUS	DESV	NOTES 1, 2
105	CORRIDOR 1108	385	225	80	55	95	140	0.8	6	B	1	TITUS	DESV	NOTES 1, 2
133	CORRIDOR LEVEL 1-2 (EAST)	1,695	505	325	55	95	140	1.7	14	B	1	TITUS	DESV	NOTES 1, 2
134	CORRIDOR (EAST)	1,420	900	325	55	95	140	2.1	14	B	1	TITUS	DESV	NOTES 1, 2
135	OFFICE	150	80	80	55	95	140	0.8	6	A	1	TITUS	DESV	NOTES 1, 2
136	MECHANICAL 1111	1,165	585	325	55	95	140	2.5	12	A	1	TITUS	DESV	NOTES 1, 2
137	LINK 1120	2,340	705	145	55	95	140	2.8	16	B	1	TITUS	DESV	NOTES 1, 2
138	IT 1106	50	-	50	55	55	-	-	6	D	1	TITUS	DESV	NOTES 1, 2
139	IT 1115	50	-	50	55	55	-	-	6	D	1	TITUS	DESV	NOTES 1, 2
140	RECEIVING 1015	350	50	50	55	95	140	0.5	6	A	1	TITUS	DESV	NOTES 1, 2
141	ELEVATOR CONTROL CLOSET 1113	160	-	0	55	55	-	-	6	D	1	TITUS	DESV	NOTES 1, 2

NOTES:

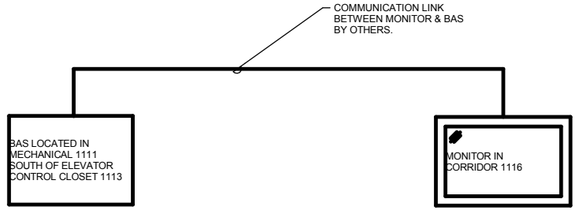
1. NEITHER RADIATED NOR DISCHARGE SOUND LEVELS SHALL EXCEED NC 35 AT 1.5" INLET STATIC PRESSURE WHEN TESTED PER AHRI STANDARD 885-2008 USING 5/8" 20-LB DENSITY MINERAL FIBER CEILING TILE.
2. TOTAL AIR PRESSURE DROP OF TAB AND REHEAT COIL SHALL NOT EXCEED 0.50" WC.
3. SEE SPECIFICATION SECTION 23 09 00 AND 4/M7.03, 5/M7.03, 6/M7.03 & 7/M7.03 FOR DESCRIPTION OF CONTROL TYPES.
4. SENSOR TYPES: 1 - SENSOR ONLY, 2 - SENSOR WITH ADJUSTMENT
5. HEATING COIL IS BASED ON HEATING AIR FLOW. WATER PRESSURE DROP OF REHEAT COILS SHALL NOT EXCEED 5'. PROVIDE REHEAT COILS SEPARATE FROM BOXES IF REQUIRED TO MEET WATER PRESSURE DROP REQUIREMENTS.
6. HEATING COIL SELECTION SHALL BE BASED ON A FIXED LEAVING AIR TEMPERATURE AND VARIABLE FLOW (GPM). PROVIDE FINAL MAXIMUM FLOW RATE (GPM) TO TEST AND BALANCE & TEMPERATURE CONTROLS CONTRACTORS.

DUCT SILENCER SCHEDULE

SYMBOL	SERVICE	FACE DIM. WxH (IN.)	CENTERLINE LENGTH (IN.)	TYPE	CFM	VELOCITY	MAX. S.P. DROP IN. W.C. (NOTE 1)	ACOUSTICAL PERFORMANCE AT +1000 FPM														MANUFACTURER	MODEL	REMARKS
								MINIMUM DYNAMIC INSERTION LOSS IN DB								MAXIMUM ALLOWABLE GENERATED NOISE IN DB RE 10 $^{-12}$ WATTS										
								OCTAVE BAND CENTER FREQUENCY								OCTAVE BAND CENTER FREQUENCY										
								63	125	250	500	1000	2000	4000	8000	63	125	250	500	1000	2000	4000	8000			
DS-1	RTU-1 SUPPLY	50 x 26	144	NOTE 3	18,070	2,002	0.23	12	23	28	38	47	29	23	24	60	51	42	40	42	45	28	31	VIBROACOUSTICS	CUSTOM	NOTE 2, 4
DS-2	RTU-1 RETURN	52 x 26	108	NOTE 3	18,070	1,925	0.15	8	15	30	34	38	28	27	18	57	50	49	47	48	46	39	36	VIBROACOUSTICS	EXRED-XV-FX	NOTE 2, 4
DS-3	RTU-3 SUPPLY	60 x 38	180	NOTE 3	38,125	2,408	0.26	12	29	30	43	49	36	23	21	66	59	50	49	50	53	46	40	VIBROACOUSTICS	CUSTOM	NOTE 2, 4
DS-4	RTU-3 RETURN	78 x 38	102	NOTE 3	38,125	1,852	0.17	8	15	28	32	39	29	26	17	67	58	55	53	53	52	49	45	VIBROACOUSTICS	RED-XV-FX	NOTE 2, 4
DS-5	RTU-2 SUPPLY	28 x 14	168	NOTE 3	3,845	1,412	0.21	12	26	31	49	50	32	23	18	57	41	32	30	32	33	15	21	VIBROACOUSTICS	CUSTOM	NOTE 2, 4
DS-6	EF-4 & 5	30 x 18	144	NOTE 3	4,215	1,124	0.10	14	21	34	30	20	18	16	15	49	33	30	27	37	28	<10	<10	VIBROACOUSTICS	CUSTOM	NOTE 2, 5

NOTES:

1. PRESSURE DROP VALUES LISTED ARE PER ASTM E477-99 TEST PROCEDURE AND DO NOT INCLUDE SYSTEM EFFECTS. MAXIMUM PRESSURE DROP INCLUDING SYSTEM EFFECTS BASED ON LESS THAN IDEAL INLET AND OUTLET FLOW CONDITIONS SHALL BE 0.35.
2. SILENCERS SHALL BE CONSTRUCTED TO OBTAIN A MAXIMUM MECHANICAL BACKGROUND NOISE OF NC50 WITHIN EACH SPACE.
3. REFER TO 3/M4.03 DUCT SILENCER DETAIL FOR MORE INFORMATION REGARDING DUCT SILENCER GEOMETRY AND DIMENSIONS.
4. FIBERGLASS CLOTH SEPARATING MEDIA FROM AIRSTREAM.
5. NO-MEDIA "PACKLESS SILENCER."



5 SUSTAINABILITY ON DISPLAY

NO SCALE

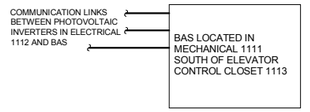
THE CONTRACTOR SHALL OUTPUT THE INFORMATION SHOWN BELOW (REFER #7/M7.02 METER MONITORING FOR MORE INFORMATION) SO THAT IT CAN BE SHOWN ON THE DISPLAYS IN CORRIDOR 1116. COORDINATE LOCATION OF THE MONITORS WITH THE ARCHITECTURAL PLANS. COORDINATE ALL MONITOR GRAPHICS WITH OWNER.

THE FOLLOWING ITEMS SHALL BE DISPLAYED AS REAL-TIME VALUES :

- TOTAL WATER USE (GAL): SUM ALL WATER METERS
- ELECTRICAL: ELECTRICAL UTILITY METER
  - CURRENT (A)
  - VOLTAGE (V)
  - DEMAND (KW)
  - CONSUMPTION (KWH)
- PHOTOVOLTAIC SYSTEM:
  - POWER (KW)
  - KWH TODAY (KWH)
  - TOTAL KWH (KWH)
  - KWH TO UTILITY TODAY (KWH)
  - TOTAL KWH TO UTILITY (KWH)
- TOTAL GAS CONSUMPTION (THERMS): GAS METER
- TOTAL HEATING WATER CONSUMPTION (MBH) BTU METER
- TOTAL ENERGY RECOVERED (MBH)
  - THIS SHALL BE DISPLAYED FOR RTU-3.
  - THE CONTRACTOR SHALL USE THE AIRFLOW AS DETERMINED FROM THE AIRFLOW MEASURING STATION, TEMPERATURE DIFFERENCE ACROSS THE ENERGY RECOVERY DEVICE, AND ENTHALPY DIFFERENCE ACROSS THE ENERGY RECOVERY DEVICE TO DETERMINE THE RECOVERED ENERGY.

THE BAS SHALL DISPLAY THE MONTHLY CONSUMPTION FOR THE ITEMS LISTED BELOW. THE DISPLAY SHALL SHOW THE PREVIOUS 12 MONTH (ADJ.) CONSUMPTION VALUES.

- TOTAL WATER USE (GAL): SUM ALL WATER METERS
- ELECTRICAL: ELECTRICAL UTILITY METER
  - CONSUMPTION (KWH)
- PHOTOVOLTAIC SYSTEM:
  - POWER (KW)
  - TOTAL KWH (KWH)
  - TOTAL KWH TO UTILITY (KWH)
- TOTAL GAS CONSUMPTION (THERMS): GAS METER
- TOTAL HEATING WATER CONSUMPTION (MBH) BTU METER
- TOTAL ENERGY RECOVERED (MBH)



PHOTOVOLTAIC SYSTEM REPORT GENERATION:
DDC FMCS SHALL MONITOR THE FOLLOWING POINTS ON 10 MINUTE (ADJ.) INTERVALS WITHIN A SINGLE TREND. THE TREND SHALL RUN FOR A 14-DAY (ADJ.) DURATION AT WHICH POINT THE NEWEST VALUES SHALL AUTOMATICALLY OVERWRITE THE OLDEST VALUES:

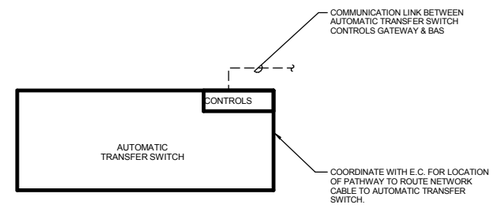
- DATE
- TIME
- POWER [KW]
- KWH TODAY [KWH]
- TOTAL KWH [KWH]
- KWH TO UTILITY TODAY [KWH]
- TOTAL KWH TO UTILITY [KWH]

THIS INFORMATION SHALL BE ACCESSIBLE TO VIEW IN EITHER TABULAR OR GRAPHICAL FORM ON THE FMCS OPERATOR WORKSTATION.

ONCE PER MONTH, THE DDC FMCS SHALL RECORD THE LARGEST KWH TODAYWHICH OCCURRED DURING THAT MONTH. THE DATE AND TIME THAT COINCIDED WITH THAT EVENT SHALL ALSO BE RECORDED. THIS INFORMATION SHALL BE STORED TO A MEMORY LOCATION ON THE FMCS OPERATOR WORKSTATION THAT IS MAINTAINED (NOT AUTOMATICALLY OVERWRITTEN).

6 PHOTOVOLTAIC SYSTEM MONITORING

TYPICAL FOR AHU-1



SEQUENCE OF OPERATION:
THE TCC SHALL PROVIDE AN INTERFACE WITH THE AUTOMATIC TRANSFER SWITCH CONTROL SYSTEM. THE TCC SHALL COORDINATE THE GATEWAY AND DRIVER TYPE WITH THE E.C.

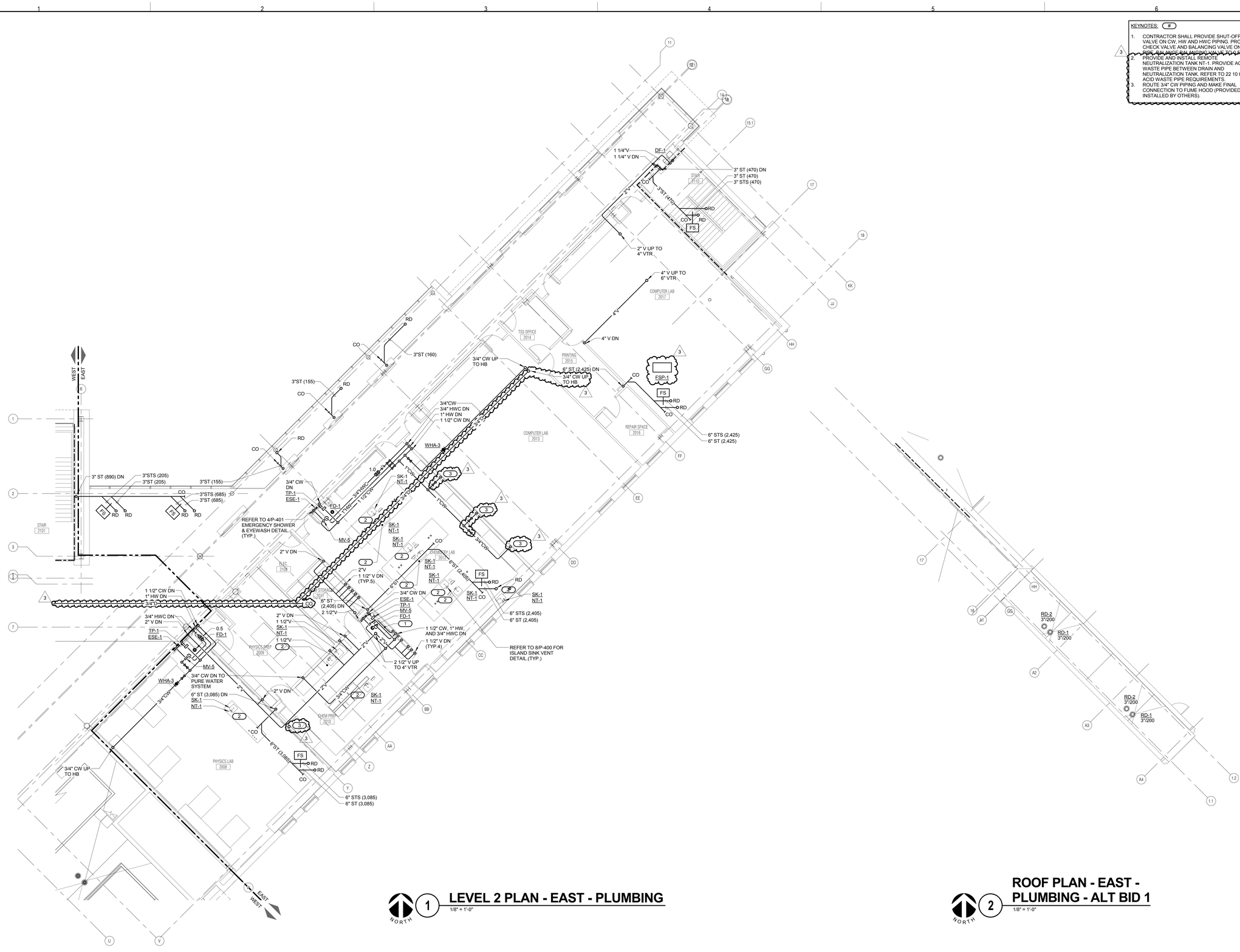
THE INTERFACE SHALL ALLOW THE BAS OPERATOR TO VIEW ALL OF THE ALARMS AND MONITOR POINTS THAT THE AUTOMATIC TRANSFER SWITCH CONTROLLER PROVIDES. COORDINATE WITH THE E.C.

7 AUTOMATIC TRANSFER SWITCH INTERFACE

NO SCALE

KEYNOTES: (#)

1. CONTRACTOR SHALL PROVIDE SHUT-OFF VALVE ON CW, HW AND HWC PIPING. PROVIDE CHECK VALVE AND BALANCING VALVE ON HWC PIPE. REFER TO 22 10 00 FOR PLUMBING PIPE REQUIREMENTS.
2. PROVIDE AND INSTALL REMOTE NEUTRALIZATION TANK NT-1. PROVIDE ACID WASTE PIPE BETWEEN DRAIN AND NEUTRALIZATION TANK. REFER TO 22 10 00 FOR ACID WASTE PIPE REQUIREMENTS.
3. ROUTE 3/4" CW PIPING AND MAKE FINAL CONNECTION TO FUME HOOD (PROVIDED AND INSTALLED BY OTHERS).



1 LEVEL 2 PLAN - EAST - PLUMBING

1/8" = 1'-0"

2 ROOF PLAN - EAST - PLUMBING - ALT BID 1

1/8" = 1'-0"

ARCHITECT OF RECORD
DEMONICA KEMPER ARCHITECTS
125 N. HALSTED STREET, SUITE 301
CHICAGO, IL 60661
P: 312.496.0000

STRUCTURAL AND MEP/FP ENGINEERING
KJWW ENGINEERING CONSULTANTS
1100 WARRENVILLE RD., SUITE 400W
NAPERVILLE, IL 60563
P: 630.527.2320

FOOD SERVICE CONSULTANT
CINI LITTLE INTERNATIONAL,, INC.
200 E. HOWARD AVE., SUITE 212
DES PLAINES, IL 60018
P: 847.298.0088

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

1125 135th ST. ROMEOVILLE, IL 60446

DKA PROJECT NO: 14-005

KEY PLAN:

SHEET STATUS: 8/17/15
ISSUED FOR BID PACKAGE 2

NO:	DESCRIPTION:	DATE:
3	ADDENDUM 3	09/03/15

SHEET TITLE:
LEVEL 2 PLAN - EAST - PLUMBING

SHEET NUMBER:
P1.22

KJWW ENGINEERING CONSULTANTS
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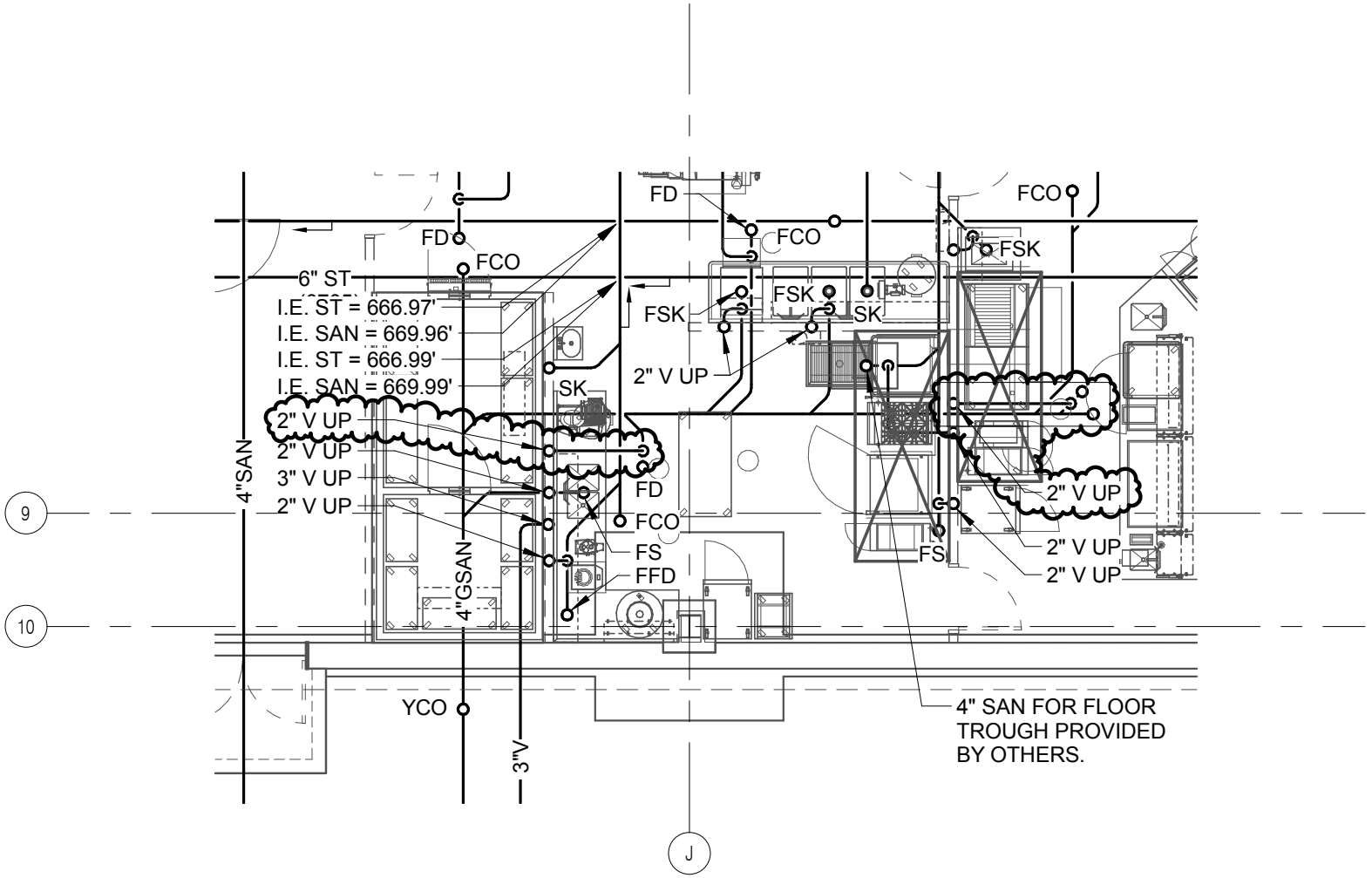
1100 WARRENVILLE ROAD, SUITE 400W
NAPERVILLE, ILLINOIS 60563
630.527.2320 FAX: 630.527.2321
www.kjww.com
PROJECT #: 14.5453.00
Illinois Design Firm Registration #184-006973

REFERENCE SCALE IN INCHES
0 1 2 3



UNDER FLOOR PLAN - WEST - PLUMBING

1/8" = 1'-0"

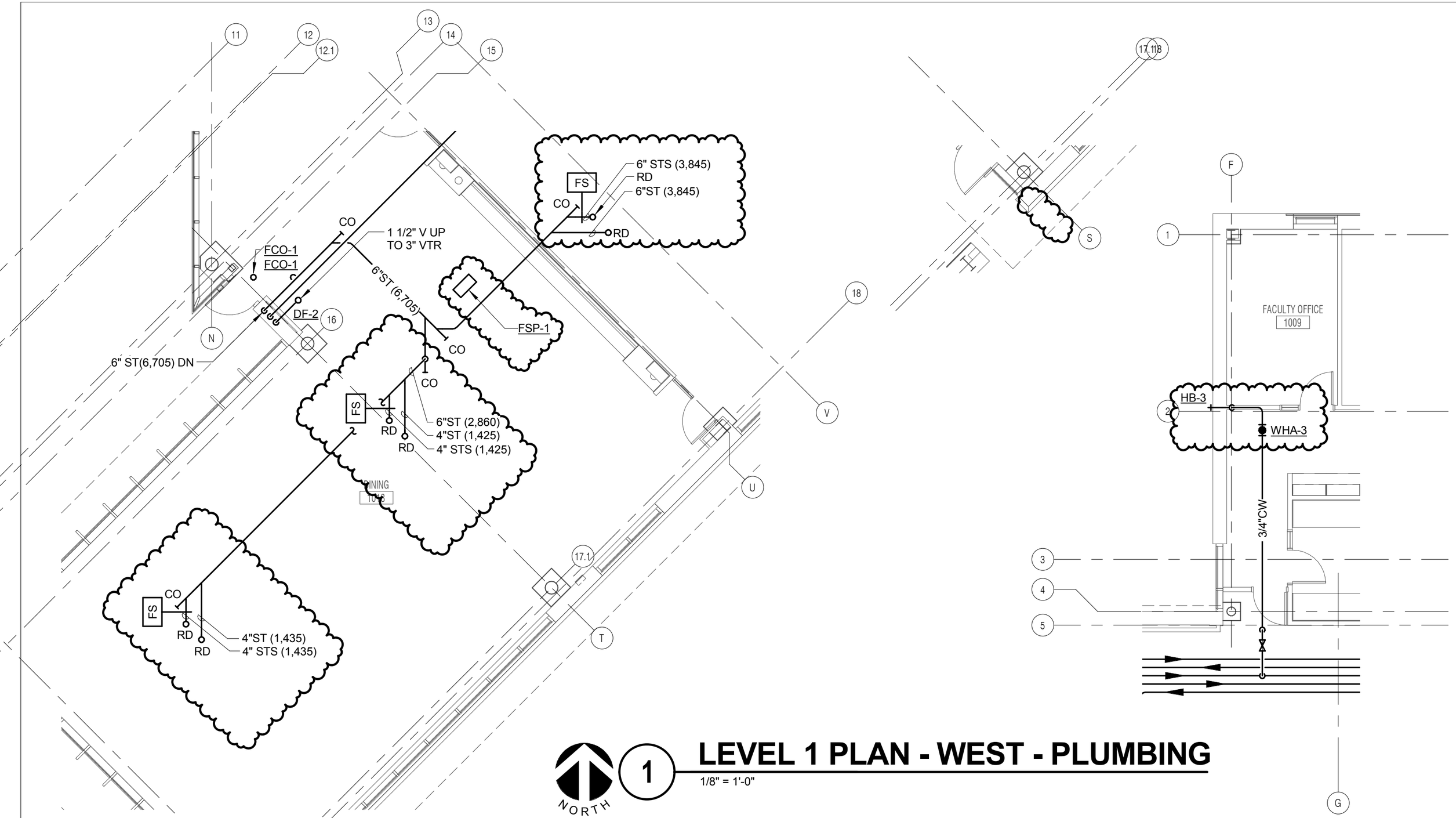
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	09/03/2015
REF SHEET:	P1.01

ADDENDUM 3

P101.01



LEVEL 1 PLAN - WEST - PLUMBING

1 — 1/8" = 1'-0"

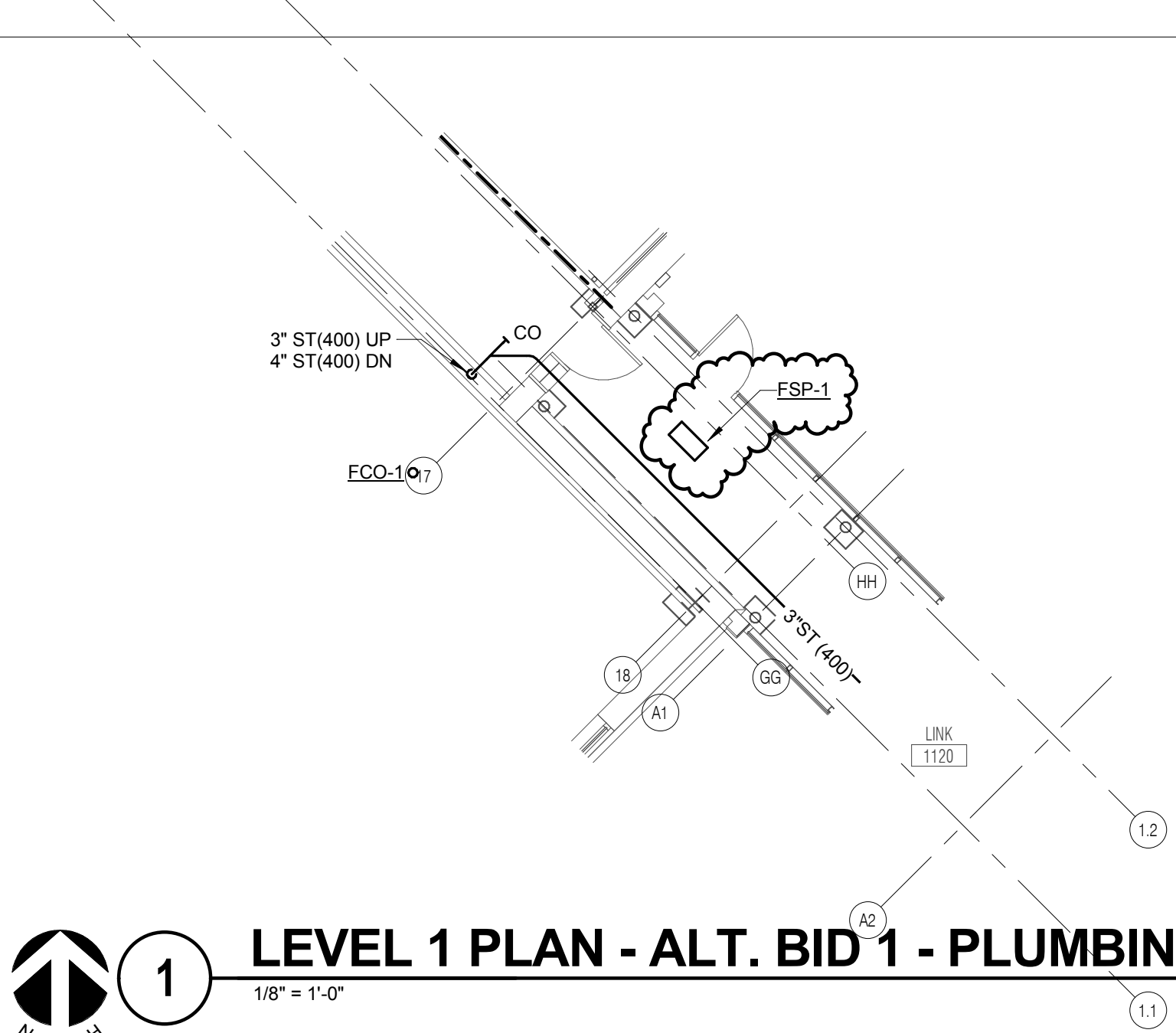
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	09/03/2015
REF SHEET:	P1.11

ADDENDUM 3

P111.01



1 LEVEL 1 PLAN - ALT. BID 1 - PLUMBING

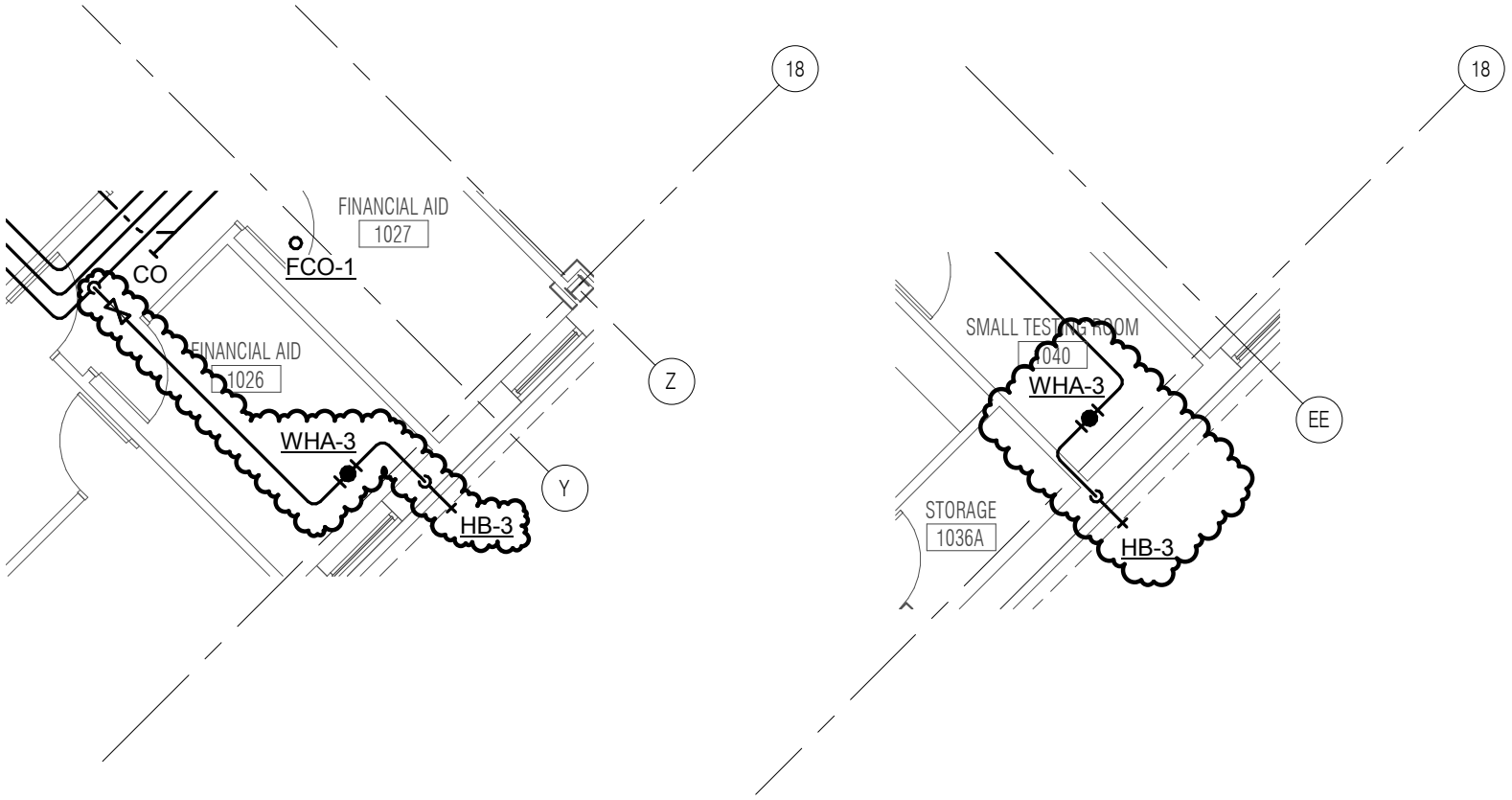
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	09/03/2015
REF SHEET:	P1.12

ADDENDUM 3

P112.01



NORTH

1

LEVEL 1 PLAN - EAST - PLUMBING

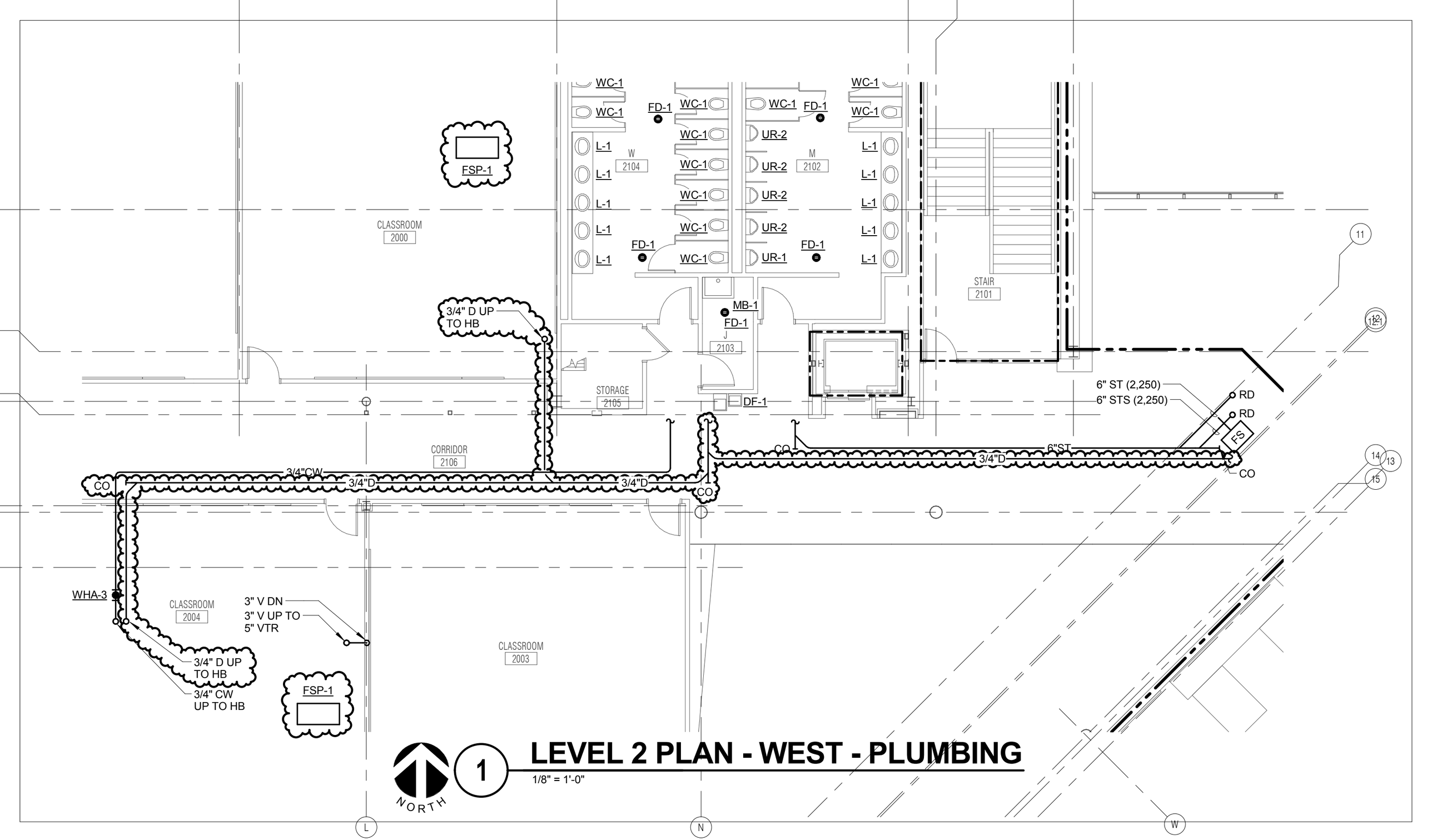
1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: P1.12

ADDENDUM 3

P112.02



LEVEL 2 PLAN - WEST - PLUMBING

1 — 1/8" = 1'-0"

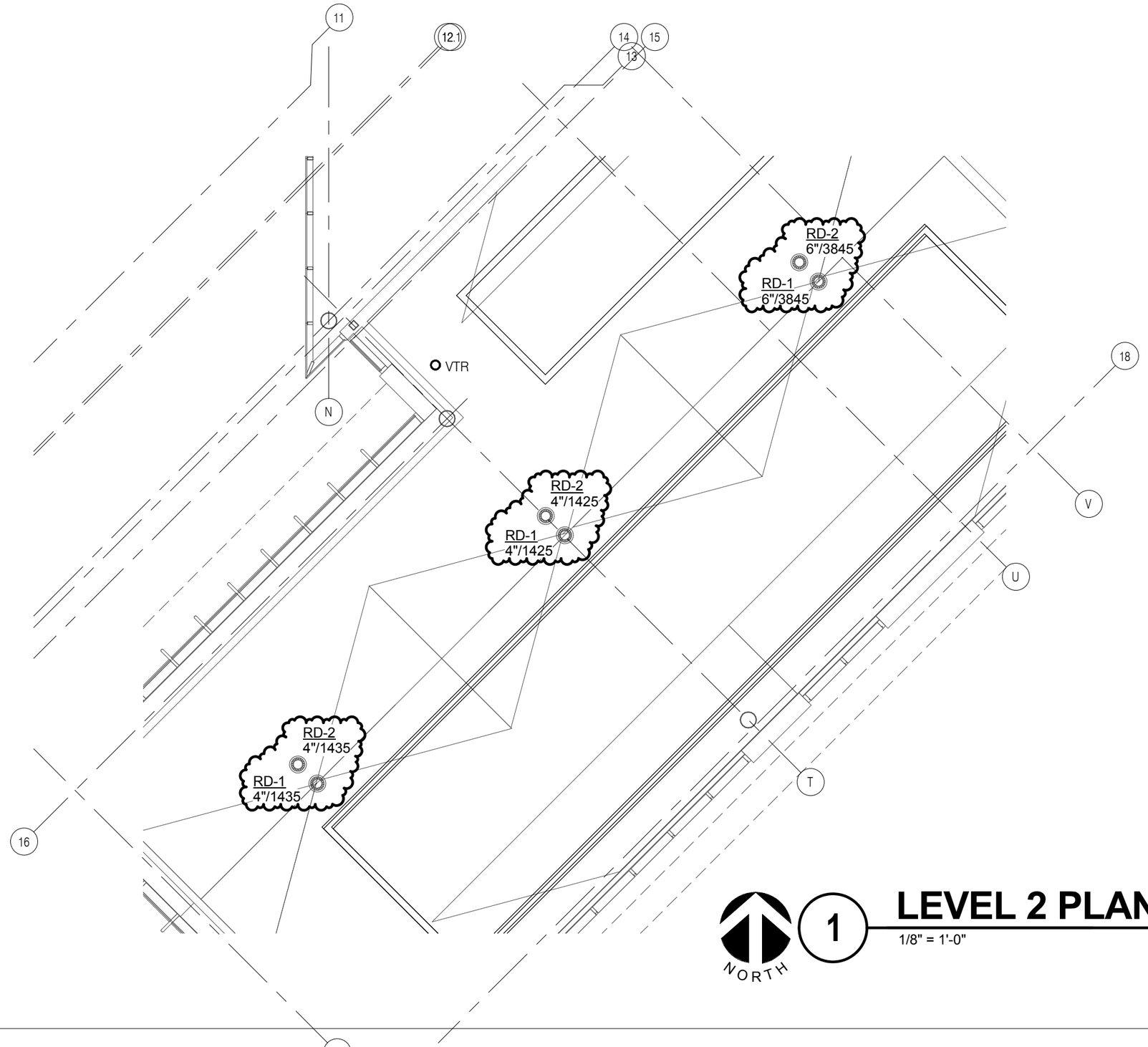
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	09/03/2015
REF SHEET:	P1.21

ADDENDUM 3

P121.01



LEVEL 2 PLAN - WEST - PLUMBING

1/8" = 1'-0"

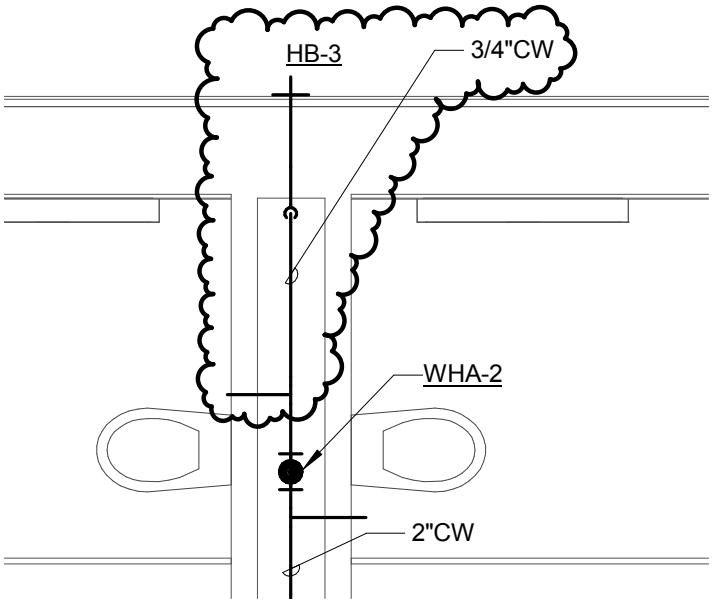
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT:	14-005
DATE:	09/03/2015
REF SHEET:	P1.21

ADDENDUM 3

P121.02



ENLARGED PLUMBING PLAN - M 1103, W 1105 - DOMESTIC

1

3/8" = 1'-0"

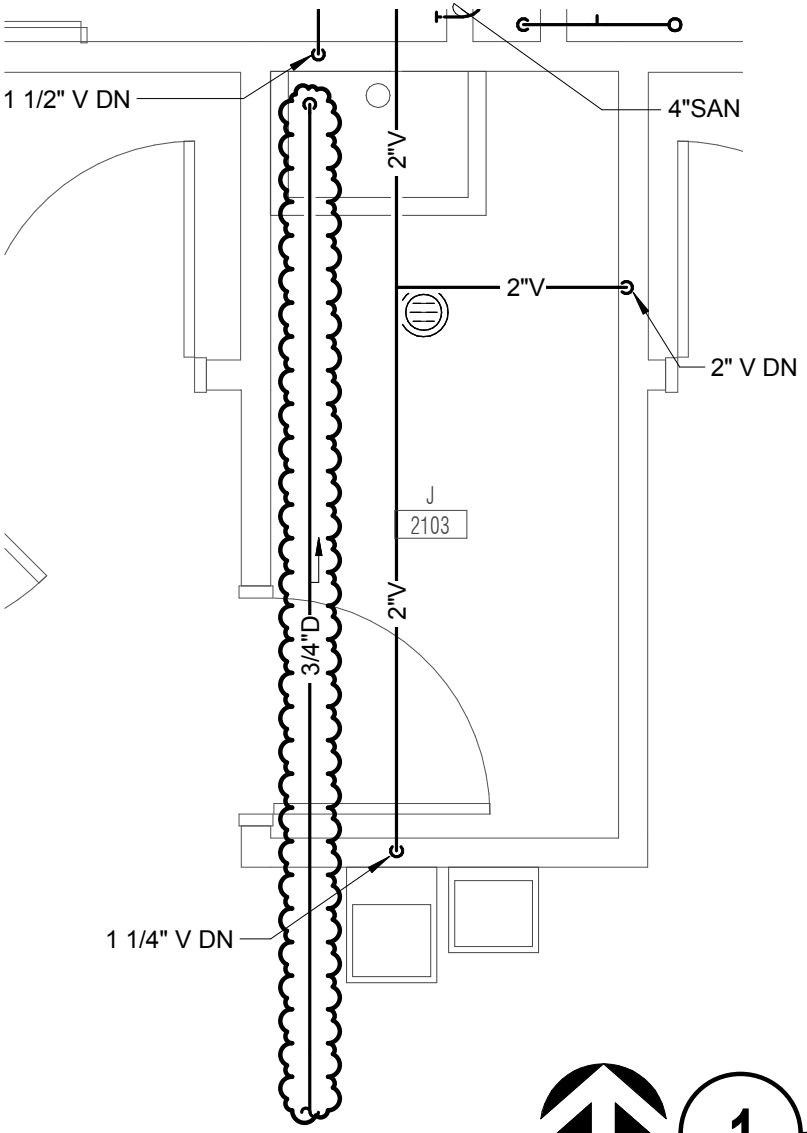
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: P3.00

ADDENDUM 3

P300.01



ENLARGED PLUMBING PLAN - M 2102, W 2104 - SAN/VENT

NORTH

1

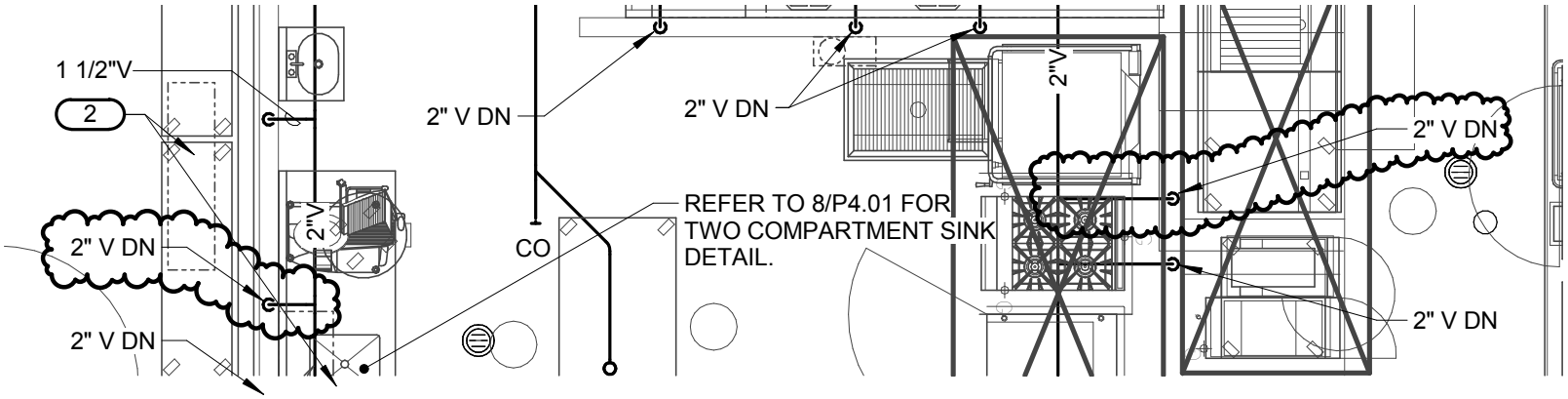
3/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: P3.01

ADDENDUM 3

P301.01



ENLARGED PLUMBING PLAN - FOOD PREP/SERVERY - SAN/VENT

1

1/4" = 1'-0"

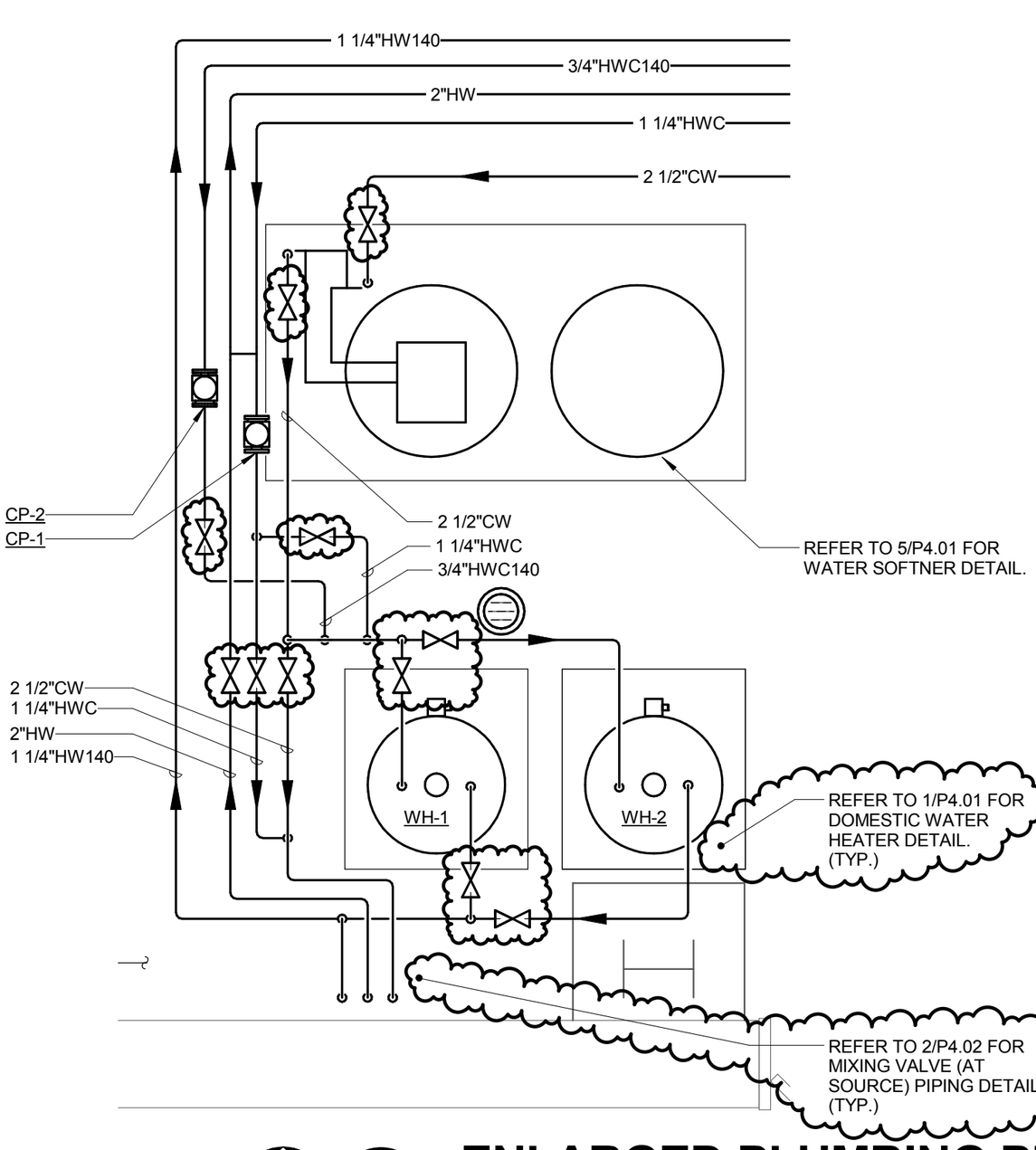
NORTH

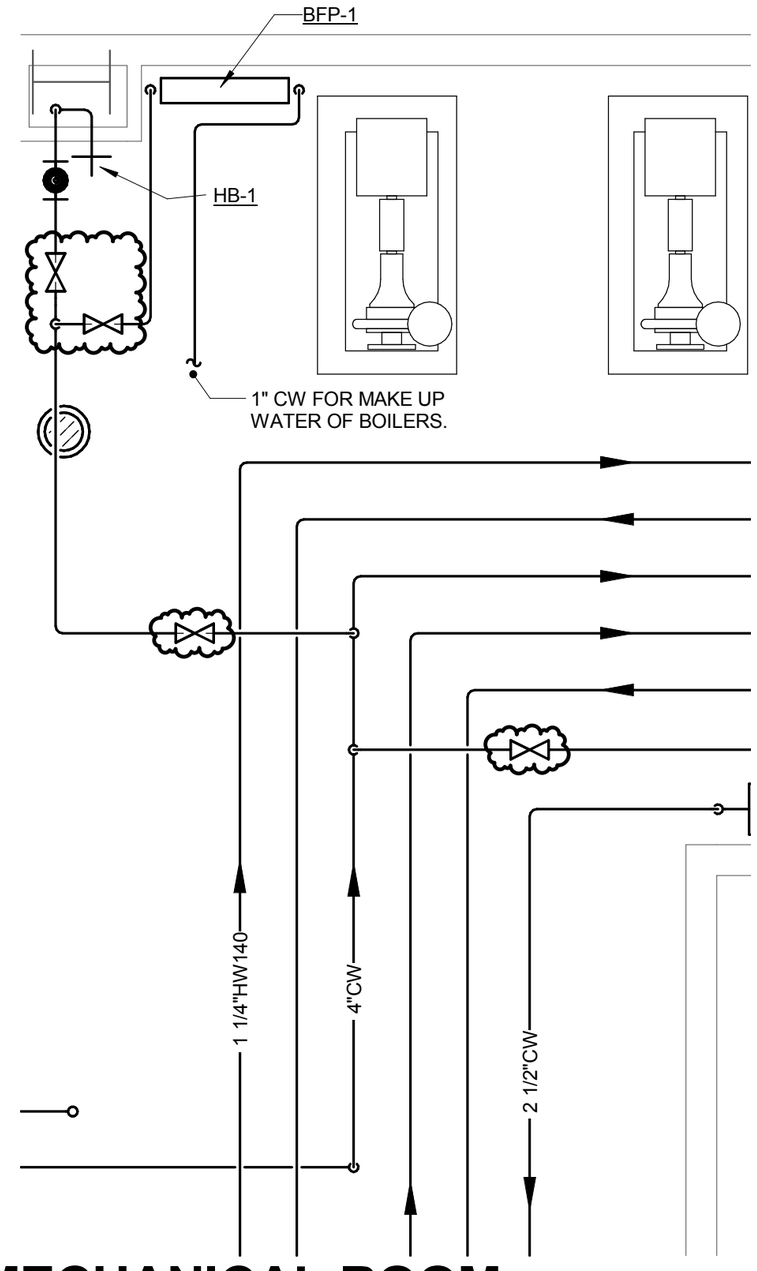
JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: P3.02

ADDENDUM 3

P302.01





1 ENLARGED PLUMBING PLAN - MECHANICAL ROOM

1/2" = 1'-0"

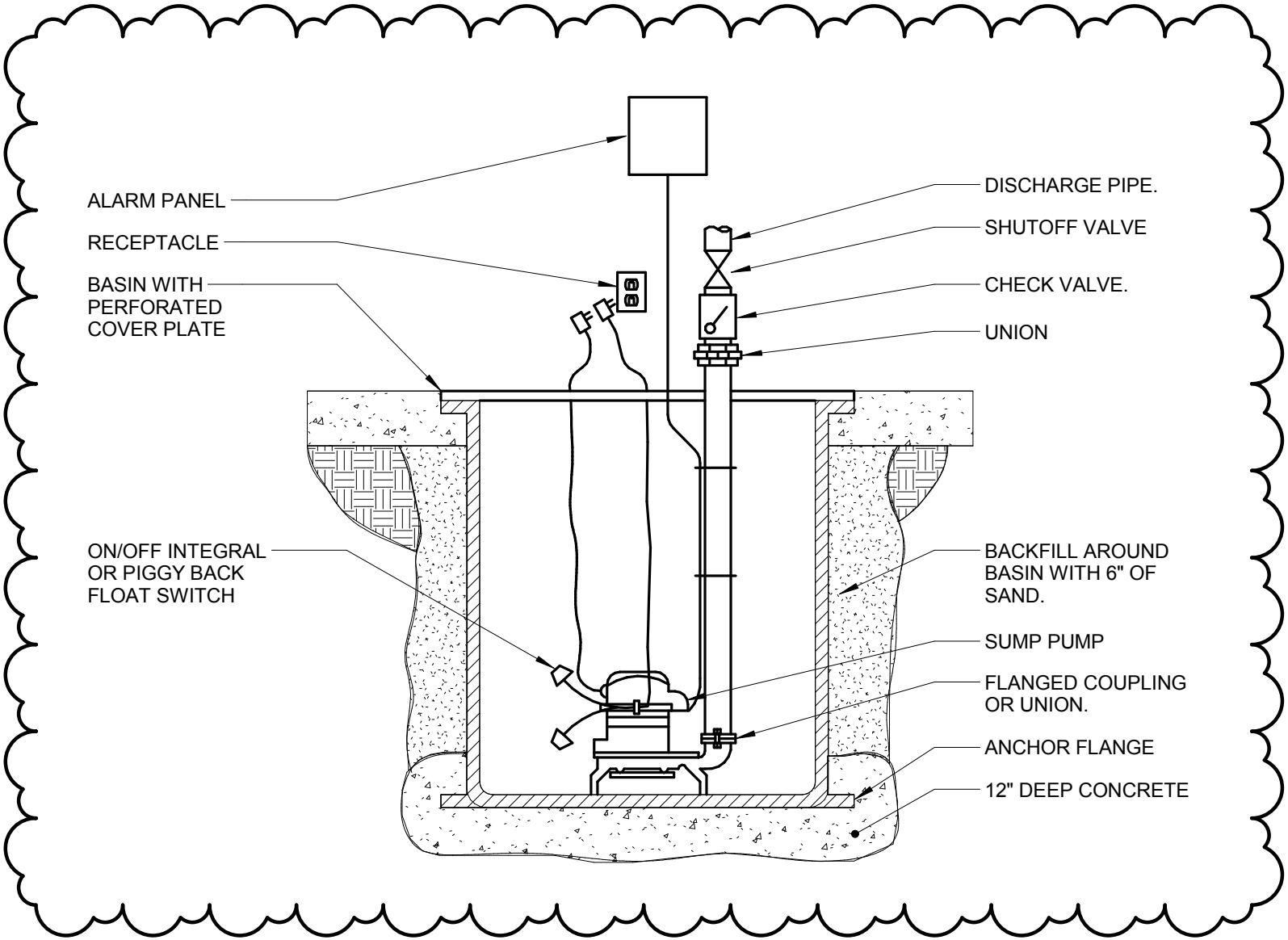
NORTH

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: P3.03

ADDENDUM 3

P303.01



3 SUMP PUMP DETAIL

NO SCALE

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/2015
REF SHEET: P4.00

ADDENDUM 3

P400.01

DF-1

DRINKING FOUNTAIN- WALL HUNG, BI-LEVEL STAINLESS STEEL ROUND BASIN, PERFORATED DRAIN, STREAM PROJECTOR WITH PROTECTIVE HOOD, PUSH BUTTON OPERATING CONTROL ON FRONT, BUILT-IN FLOW REGULATOR, BOTTLE FILLER, DRAIN AND TRAP ASSEMBLY, ADA COMPLIANT, UNIT SHALL CONFORM TO ANSI A117.1-1986. WATER SYSTEM SHALL BE OF LEAD FREE CONSTRUCTION.

BOTTLE FILLING STATION - RECESSED MOUNTED INTEGRAL TO WATER COOLER, STAINLESS STEEL CONSTRUCTION AND FINISH, SENSOR OPERATED WITH AUTOMATIC SHUTOFF, REPLACEABLE LEAD-CHLORINE-TASTE-ODOR WATER FILTER, BOTTLE COUNTER, ADJUSTABLE THERMOSTAT, FILTER REPLACEMENT INDICATOR.

ELECTRICAL REQUIREMENTS: 120V - 1PH, ELECTRICAL OUTLET, THREE (3) CONDUCTOR GROUNDED. LOCATE THE OUTLET WITHIN SAFE REACH OF POWER CORD. COORDINATE LOCATION WITH THE ELECTRICAL CONTRACTOR.

ACCEPTABLE MANUFACURERS: ELKAY (LZWS-EDFPBM117K), HALSEY TAYLOR (OVL-II-SEBP-FR), HAWS (1011MS)

ORIFICE SHALL BE AT 36" (MAXIMUM) ABOVE FINISHED FLOOR. BOTTOM OF APRON SHALL BE AT 27" ABOVE FINISHED FLOOR IN COMPLIANCE WITH ADA SECTIONS 4.4 AND 4.15.

SK-1

SINK AND TRIM PROVIDED BY OTHERS.

PROVIDE AND INSTALL ACID WASTE PIPING FROM SINK TO NEUTRALIZATION BASIN. COORDINATE WITH THE ARCHITECTURAL PLANS FOR MORE INFORMATION ON THE SINK AND TRIM.

ACCESSORIES: QUARTER-TURN 3/8" CHROME-PLATED HEAVY BRASS ANGLE SUPPLIES WITH LOOSE KEY STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES.

SP-1

SUMP PUMP - SIMPLEX SUBMERSIBLE, SINGLE-STAGE, CENTRIFUGAL, END-SUCTION PUMP, STAINLESS STEEL FASTENERS, GUARDS AND HANDLES, UL LISTED.

CASING: CAST IRON, INTEGRAL SUPPORT FEET, MINIMUM 1 1/4" VERTICAL DISCHARGE.
IMPELLER: CAST IRON STATICALLY AND DYNAMICALLY BALANCED, SEMIOPEN NONCLOG DESIGN, KEYED AND SECURED TO SHAFT, PASSES 1/2" SOLIDS MINIMUM.
SHAFT: STEEL OR STAINLESS STEEL WITH FACTORY SEALED, GREASE-LUBRICATED SLEEVE OR BALL BEARINGS, CARBON AND CERAMIC SEAL.
MOTOR: 1/2 HP MAX., 115 VOLTS, 1 PHASE, 1750 RPM, OIL OR AIR-FILLED, HERMETICALLY SEALED WITH AUTO THERMAL OVERLOAD PROTECTION, THREE CONDUCTOR WATERPROOF POWER CABLE OF SUFFICIENT LENGTH WITH GROUNDING PLUG.

CAPACITY: 50 GPM, 17.5 FEET OF HEAD.

CONTROLS - INTEGRAL FLOAT SWITCH OR PIGGY-BACK FLOAT/DIAPHRAM SWITCH. FLOATS SHALL BE MERCURY-FREE.

ALARM - HIGH WATER ALARM, NEMA 4X ENCLOSURE, MERCURY-FREE FLOAT SWITCH, WATER PROOF CABLE OF SUFFICIENT LENGTH, HORN, STROBE, SILENCING BUTTON, DRY CONTACTS, 6 FOOT POWER CORD, UL LISTED.

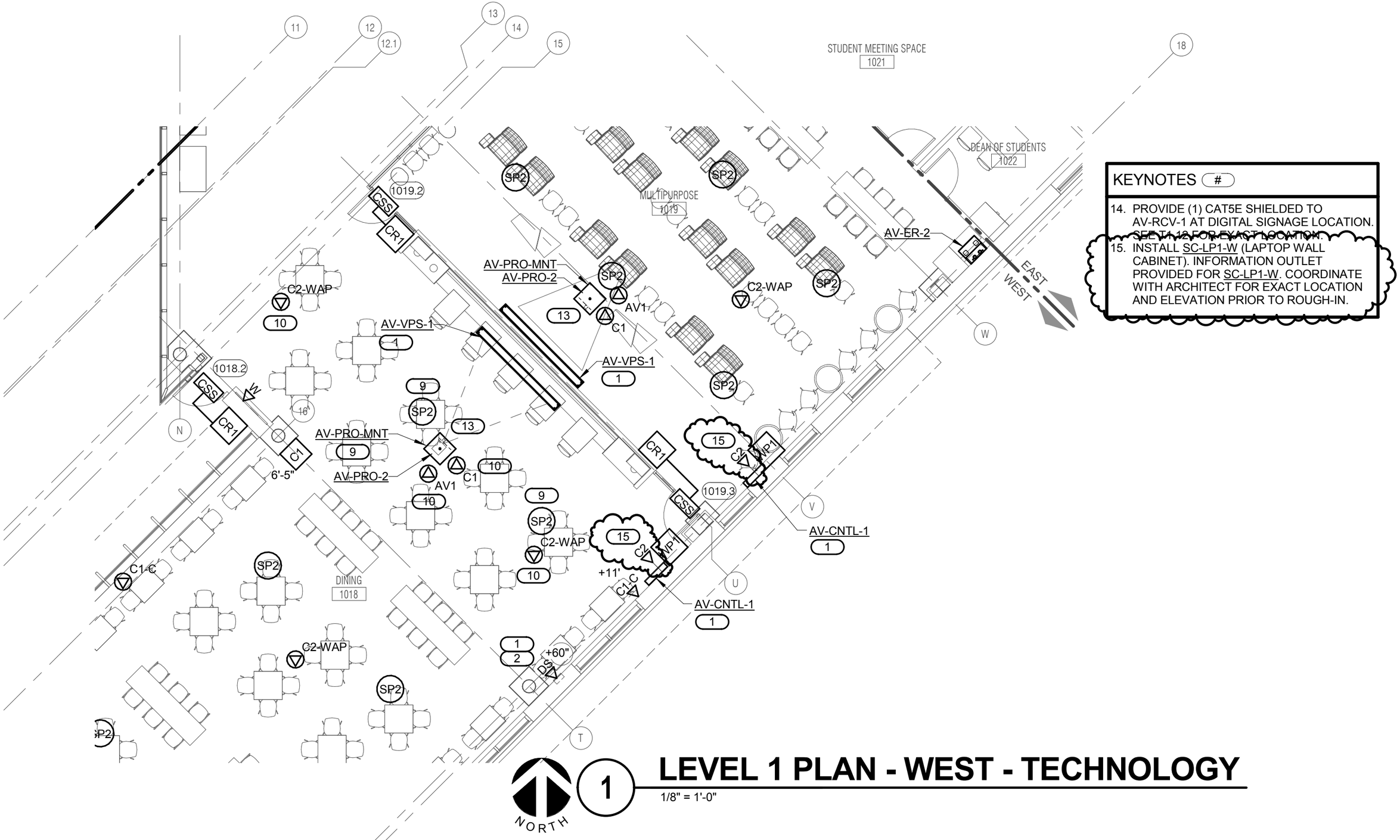
ELECTRICAL REQUIREMENTS - 115V RECEPTACLE

BASIN - FIBERGLASS CONSTRUCTION, 24" DIAMETER x 40" DEEP, ANCHOR FLANGE, CAST IRON OR STEEL PERFORATED COVER WITH OPENINGS FOR PUMP ACCESS, 2-1/2" DISCHARGE PIPE FLANGE(S), CONTROL AND POWER CORDS, INSPECTION PORT.

ACCEPTABLE MANUFACTURERS: PUMP - ZOELLER (137), BARNES (BP), GOULDS (WE), LIBERTY (280 SERIES), STA-RITE (EC), STANCOR (SE), WEIL (1409)

ALARM - WEIL (8341), ZOELLER (A-PAK), HYDROMATIC (Q-ALERT), SAME AS PUMP MANUFACTURER.

BASIN- AK INDUSTRIES, FIBER BASIN INC., SAME AS PUMP MANUFACTURER



KEYNOTES (#)

14. PROVIDE (1) CAT5E SHIELDED TO AV-RCV-1 AT DIGITAL SIGNAGE LOCATION. SEE T1.12 FOR EXACT LOCATION.
15. INSTALL SC-LP1-W (LAPTOP WALL CABINET). INFORMATION OUTLET PROVIDED FOR SC-LP1-W. COORDINATE WITH ARCHITECT FOR EXACT LOCATION AND ELEVATION PRIOR TO ROUGH-IN.

1 LEVEL 1 PLAN - WEST - TECHNOLOGY

1/8" = 1'-0"

JOLIET JUNIOR COLLEGE
ROMEOVILLE CAMPUS EXPANSION

PROJECT: 14-005
DATE: 09/03/15
REF SHEET: T1.11

ADDENDUM 3

T1.11.01

SECTION 06 41 16 - PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

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.

1.2 SUMMARY

A. Section Includes:

1. Plastic-laminate-faced architectural cabinets.
2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets unless concealed within other construction before cabinet installation.

B. Related Requirements:

1. Section 06 10 00 53 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips required for installing cabinets and concealed within other construction before cabinet installation.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product, including cabinet hardware and accessories.

B. LEED Submittals:

1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
2. Product Certificates for Credit MR 5: For products and materials required to comply with requirements for regionally manufactured materials. Include statement indicating cost for each regionally manufactured material.

a. Include statement indicating location of manufacturer and distance to Project for each regionally manufactured material.

3. Certificates for Credit MR 7: Chain-of-custody certificates indicating that products specified to be made from certified wood comply with forest certification and chain-of-custody requirements. Include statement indicating cost for each certified wood product.
4. Product Data for Credit IEQ 4.4: For adhesives and composite wood products, documentation indicating that products contain no urea formaldehyde.

C. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-

scale details, attachment devices, and other components.

1. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
2. Show locations and sizes of cutouts and holes for electrical switches and outlets and other items installed in architectural plastic-laminate cabinets.

D. Samples for Verification:

1. Plastic laminates, 8 by 10 inches, for each type, color, pattern, and surface finish.
2. Wood-grain plastic laminates, 8 by 10 inches, for each type, pattern and surface finish.
3. Thermoset decorative panels, 8 by 10 inches, for each color, pattern, and surface finish.

1.4 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.

B. Installer Qualifications: Fabricator of products.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver cabinets until painting and similar operations that could damage woodwork have been completed in installation areas. If cabinets must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.6 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F and relative humidity between 25 and 55percent during the remainder of the construction period.

B. Field Measurements: Where cabinets are 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 cabinets by field measurements before being enclosed, and indicate measurements on Shop Drawings.

C. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.7 COORDINATION

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

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

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.

1. The Contract Documents contain selections chosen from options in the quality standard and additional requirements beyond those of the quality standard. Comply with those selections and requirements in addition to the quality standard.

B. Grade: Premium.

C. Regional Materials: Plastic-laminate cabinets shall be manufactured within 500 miles of Project site.

D. Certified Wood: Plastic-laminate cabinets shall be made from wood products certified as "FSC Pure" or "FSC Mixed Credit" according to FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and FSC STD-40-004, "FSC Standard for Chain of Custody Certification."

E. Type of Construction: Frameless.

F. Cabinet, Door, and Drawer Front Interface Style: Flush overlay.

G. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by woodwork quality standard.

1. Types:

a. PL-1: Formica; 7012-58 Amber Maple.
b. PL-2: Nevamar; VA6001T Calm Distinction.
c. PL-3: Arborite; P-260 CA Tatami Sabi.
d. PL-4: Formica; 459-58 Brite White.

H. Laminate Cladding for Exposed Surfaces:

1. Horizontal Surfaces: Grade HGS.
2. Postformed Surfaces: Grade HGP.
3. Vertical Surfaces: Grade HGS.
4. Edges: Grade VGS.
5. Pattern Direction: As indicated.

I. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: Thermoset decorative panels.

a. Edges of Plastic-Laminate Shelves: PVC edge banding, 0.12 inch thick, matching laminate in color, pattern, and finish.
b. Edges of Thermoset Decorative Panel Shelves: PVC or polyester edge banding.
c. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.

2. Drawer Sides and Backs: Thermoset decorative panels with PVC or polyester edge banding.
3. Drawer Bottoms: Thermoset decorative panels.

J. Dust Panels: 1/4-inch plywood or tempered hardboard above compartments and drawers unless located directly under tops.

K. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

L. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.

1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners or glued dovetail joints.

2.2 WOOD MATERIALS

A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Wood Moisture Content: 5 to 10 percent.

B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.

1. Medium-Density Fiberboard: ANSI A208.2, Grade 130 , made with binder containing no urea formaldehyde.
2. Particleboard: ANSI A208.1, Grade M-2 Grade M-2, made with binder containing no urea formaldehyde.
3. Softwood Plywood: DOC PS 1, medium-density overlay.
4. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.
5. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.3 FINISHED WOOD VENEER PANELS AND SOLID WOOD TRIM

A. Type WDP: Wood Veneer Panels; plain sliced white maple, grade A, book match unless noted otherwise, with clear transparent finish.

B. Type WD: Solid Wood Trim; plain sliced white maple, grade A, with clear transparent finish.

2.4 MISCELLANEOUS PANELS

A. Type GS Back-Painted Glazing Panel: Skyline Design; Vitracolor 2014-06, 1/4 inch tempered glazing. Contact: Suzanne DeBauge, 773-278-4754.

B. Perforated Plastic Laminate Panel: Panel with 1/4 inch diameter holes at 1 inch spacing; straight row pattern. See Drawings for panel configuration.

C. Decorative Plastic Panel: 3Form; Chroma, color Pond, no diffusion, 1/2 inch thick.

D. Embossed MDF Panel: 3Form; Profile Ray, 3/4 inch; color: Crystal White factory finish. Contact: Nicole Miller, 312-339-0799.

2.5 PLASTIC LAMINATE SLAT WALL

A. Particle Board or MDF with NEMA 3 plastic laminate surface; Formaldehyde free. System to consist of the following:

1. Plastic Laminate: White color.
2. Size: 4'x8' - 3" o/c grooves.
3. Groove Treatment: Aluminum inserts,factory installed 1/2 by 7/8 inches; Mill finish.

2.6 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 08 71 11 "Door Hardware (Descriptive Specification)."

B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 135 degrees of opening.

C. Back-Mounted Pulls: BHMA A156.9, B02011.

D. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter. Satin aluminum finish.

1. Install at all pull locations unless noted otherwise (see Credenza handle pull.)

E. Credenza Handle Pull: Hafele; 110.24.001. Contact: Ali Azhar. asazhar@hafeleamericas.com

F. Catches: Push-in magnetic catches, BHMA A156.9, B03131.

G. Shelf Rests: BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip.

H. Drawer Slides: BHMA A156.9.

1. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-overtravel-extension type; zinc-plated-steel ball-bearing slides.
2. For drawers more than 3 inches high but not more than 6 inches high and not more than 24 inches wide, provide Grade 1HD-100.
3. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-200.
4. For computer keyboard shelves, provide Grade 1HD-100.

I. Door Locks: BHMA A156.11, E07121.

J. Drawer Locks: BHMA A156.11, E07041.

K. Surface-Mounted Countertop Support Brackets:

1. Manufacturer/Supplier:

a. www.supportbrackets.com
b. Federal Brace; Arrowood Countertop brackets.
c. Hafele; Work Surface brackets.

2. Sizes:

a. For 18 inch deep counters: 8 by 12 inches.
b. For 24 inch deep counters: 15 by 21 inches.
c. For 30 inch deep counters: 24 by 24 inches.

L. Surface-Mounted Standards & Brackets: Heavy duty, with adjustable 18" deep shelving, color: white.

M. Tempered Float Glass for Display Case Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, with exposed edges seamed before tempering, 1/4 inch thick unless otherwise indicated.

N. Display Case Door Hinges: C.R. Laurence Co.; CRL Chrome Surface Mount Cabinet Pivot Hinges, FA50SC, satin chrome.

O. Perforated Steel Shelving: McNichols; Perf-Panl 1814962048, 20ga type 304 stainless steel, 5% open area; mill finish.

P. Thumb Screw / Flange Nut: McMaster-Carr; Plastic Rosette Head Thumb screw, 1-1/2 inch diameter by 1 inch length, with coordinating flange nut screw as receiver.

Q. Stainless Steel Angle: 1 by 1-1/4 inch and 1 by 1-1/2 inch; no.3 finish.

R. Metal Reveal: 1/4 by 3/4 inches, aluminum.

S. Piano Hinge: Length as indicated on Drawings; brass finish.

T. Corner Guard for Condiment Carts: 3/4 by 3/4 inch adhesive-mounted plastic corner guard; color: white.

U. Steel Post Legs: Stainless steel; 1 inch diameter by 6 inch length.

V. Steel Post Supports: Stainless steel; 1 inch diameter by 12 inch length; countertop mounted, countertop supporting.

W. Casters: Top and sidemount heavy duty caster with polyurethane wheels; 4 inch overall height.

X. Hanging File Rails: Metal, for front-to-back layout.

Y. Tackable Panel: Homasote; 440 SoundBarrier, 1/2 inch thick.

Z. Trash Hole Grommet: Doug Mockett; TM2B, type 304 stainless steel; 8 inch diameter by 2 inch deep grommet.

AA. Credit Card Machine Platform: Swivel Stands; POS Stand Open Hole Flip Up, Verifone MX925, OH-2481-MX925. Contact: 800-225-7467, www.swivelstands.com

BB. Pivoting/Sliding Door Hardware for concealed door at Servery Gate: Hafele; HAWA Concepta 50, 408.30.002; with Hafele 112.83.000 door pull. Contact: Ali Azhar, asazhar@hafeleamericas.com

CC. Vinyl Coated Foam Bench: Custom shape as shown on Drawings.

1. Manufacturers:

a. Basis-of-Design: Tenjam, www.tenjam.com, contact: Rae Radovich with Anu Source, 708-218-1861, rae@anusource.com
b. Trendway, www.trendway.com/feek, contact: Laura Schlueter, 269-377-6537, LSchlueter@Trendway.com
c. Foamtek System, www.foamteksystem.com, contact: Beatrice, +39 0571 920098, Beatrice@foamteksystem.com

2. Product Specifications:

a. Fully coated top sides, and bottom.
b. Seamless and waterproof finish without vent holes.
c. Color(s) to match architect'ssample.
d. CertiPUR-US Certified Foam substrate.
e. Passes fire testing as detailed in California Technical Bulletin 117-2013.
f. Compliant with Consumer Product Safety Improvement Act, Section 101: Total Lead in Substrates. Total lead content shall not exceed 0.01% by weight or 100 ppm.
g. ASTM4833-07 Puncture Resistance Test. All products must have a coating thickness necessary to achieve a minimum result of 40 lbs.

DD. Upholstery-wrapped Foam: 3 inch thick; fire retardant, combustion modified, high resiliency, high density.

EE. Fabrics:

1. Type F-1, tackable fabric: Carnegie; Vibration 5280, color: 20. Contact: Jessica Biesterfeld, 312-802-0643, jbiesterfeld@carnegiefabrics.com
2. Type F-2, banquette fabric: Architex; Dublin, color: Carbon. Contact: Richard Atlas, 847-205-1333, richardatlas@architex-ljh.com

FF. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated, unless other finish is specified.

1. Satin Stainless Steel: BHMA 630.

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

2.7 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 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 and at floors.

C. Adhesives: Do not use adhesives that contain urea formaldehyde.

D. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.

1. Adhesive for Bonding Edges: Hot-melt adhesive or adhesive specified above for faces.

2.8 FABRICATION

A. Fabricate cabinets to dimensions, profiles, and details indicated.

B. 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. 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 before disassembling for shipment.

C. Shop-cut openings to maximum extent possible to receive hardware, appliances, 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.

PART 3 - EXECUTION

3.1 PREPARATION

A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.

B. Before installing cabinets, examine shop-fabricated work for completion and complete work as required.

3.2 INSTALLATION

A. Grade: Install cabinets to comply with same grade as item to be installed.

B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.

C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.

D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork.

1. Use filler matching finish of items being installed.

F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

1. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
2. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch penetration into wood framing, blocking, or hanging strips.

3.3 ADJUSTING AND CLEANING

A. Repair damaged and defective cabinets, 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 cabinets on exposed and semiexposed surfaces.

END OF SECTION 06 41 16

SECTION 07 71 29 - MANUFACTURED ROOF EXPANSION JOINTS

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.

1.2 SUMMARY

A. Section Includes:

1. Aluminum roof expansion joints.

B. Related Requirements:

1. Section 06 10 00 "Rough Carpentry" for wooden curbs or cants for mounting roof expansion joints.

1.3 ACTION SUBMITTALS

A. Shop Drawings: For roof expansion joints.

1. Include plans, elevations, sections, and attachment details.
2. Include details of splices, intersections, transitions, fittings, method of field assembly, and location and size of each field splice.
3. Provide isometric drawings of intersections, terminations, and changes in joint direction or planes, depicting how components interconnect with each other and adjacent construction to allow movement and achieve waterproof continuity.

1.4 WARRANTY

A. Special Warranty: Manufacturer and Installer agree to repair or replace roof expansion joints and components that leak, deteriorate beyond normal weathering, or otherwise fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Roof expansion joints shall withstand exposure to weather, remain watertight, and resist the movements indicated without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint seals, failure of connections, and other detrimental effects.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 ALUMINUM ROOF EXPANSION JOINTS

A. Aluminum Roof Expansion Joint : Manufactured, continuous, waterproof, joint-cover assembly; consisting of a formed or extruded metal cover secured to extruded aluminum frames, with water-resistant gasketing between cover and frames, and with provision for securing assembly to substrate and sealing assembly to roofing membrane or flashing. Provide each size and type indicated, factory-fabricated units for corner and joint intersections and horizontal and vertical transitions including those to other building expansion joints, splicing units, adhesives, and other components as recommended by roof-expansion-joint manufacturer for complete installation. Fabricate each assembly specifically for installation configuration indicated on Drawings.

1. Basis-of-Design Product: Subject to compliance with requirements, provide Balco, Inc.; LPRE-2, or comparable product by one of the following:

   a. Architectural Art Manufacturing Inc.; a division of Pittcon Architectural Metals, LLC.
   b. C/S Group.
   c. InPro Corporation.
   d. MM Systems Corporation.
   e. Nystrom Building Products.
   f. Watson Bowman Acme Corp.

2. Frame Members: Extruded aluminum configured for sloped cants as indicated; with exposed finish matching cover.
3. Cover: Extruded aluminum ; thickness as recommended by manufacturer.

   a. Aluminum Finish: Clear anodic.

4. Secondary Seal: Continuous, waterproof membrane within joint and attached to substrate on sides of joint below the cover.

   a. Drain-Tube Assemblies: Equip secondary seal with drain tubes and seals to direct collected moisture to exterior-wall expansion joint cover.
   b. Thermal Insulation: Fill space above secondary seal with mineral-fiber blanket insulation; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84.

2.3 MATERIALS

A. Aluminum: ASTM B 209 for sheet and plate, ASTM B 221 for extrusions; alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.

1. Apply manufacturer's standard protective coating on aluminum surfaces to be

placed in contact with cementitious or preservative-treated wood materials.

2. Class II, Clear Anodic Finish: Architectural Class II, clear coating 0.010 mm or thicker, complying with AAMA 611.

B. EPDM Membrane: ASTM D 4637, Type standard with manufacturer for application.

C. Silicone Extrusions: ASTM D 2000, UV stabilized, and that does not propagate flame.

D. Adhesives: As recommended by roof-expansion-joint manufacturer and with a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

E. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to withstand design loads.

1. Exposed Fasteners: Gasketed. Use screws with hex washer heads matching color of material being fastened.

F. Mineral-Fiber Blanket: ASTM C 665.

G. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

B. Examine roof-joint openings, inside surfaces of parapets, and expansion-control joint systems that interface with roof expansion joints, for suitable conditions where roof expansion joints will be installed.

C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Comply with manufacturer's written instructions for handling and installing roof expansion joints.

1. Anchor roof expansion joints securely in place, with provisions for required movement. Use fasteners, protective coatings, sealants, and miscellaneous items as required to complete roof expansion joints.
2. Install roof expansion joints true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
3. Provide for linear thermal expansion of roof expansion joint materials.
4. Provide uniform profile of roof expansion joint throughout its length; do not stretch or squeeze membranes.
5. Provide uniform, neat seams.

6. Install roof expansion joints to fit substrates and to result in watertight performance.
7. Torch cutting of roof expansion joints is not permitted.
8. Do not use graphite pencils to mark aluminum surfaces.

B. Directional Changes and Other Expansion-Control Joint Systems: Coordinate installation of roof expansion joints with other expansion-control joint systems to result in watertight performance. Install factory-fabricated units at directional changes and at transitions between roof expansion joints and exterior expansion-control joint systems specified in Section 07 95 00 "Expansion Control" to provide continuous, uninterrupted, and watertight joints.

C. Splices: Splice roof expansion joints with materials provided by roof-expansion-joint manufacturer for this purpose, to provide continuous, uninterrupted, and waterproof joints.

1. Install waterproof splices and prefabricated end dams to prevent leakage of secondary-seal membrane.

D. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.

3.3 PROTECTION

A. Protect roof expansion joints from foot traffic, displacement, or other damage.

B. Remove and replace roof expansion joints and components that become damaged by moisture or otherwise.

END OF SECTION 07 71 29

SECTION 07 95 00 - EXPANSION CONTROL

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.

1.2 SUMMARY

A. Section Includes:

1. Exterior wall expansion control systems.

B. Related Requirements:

1. Section 07 71 29 "Manufactured Roof Expansion Joints" for factory-fabricated roof expansion control.

1.3 ACTION SUBMITTALS

A. Shop Drawings: For each expansion control system specified. Include plans, elevations, sections, details, splices, blockout requirement, 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.

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 WALL EXPANSION CONTROL SYSTEMS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Balco Inc.; FCVS-2 with WD-1 mounted wall cover, or a comparable product by one of the following:

1. Architectural Art Mfg., Inc.; Division of Pittcon Industries.
2. Construction Specialties, Inc.
3. MM Systems Corporation.
4. Nystrom, Inc.
5. 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 :

1. Type: Cover plate.

a. Metal: Aluminum.

1) Finish: Mill Clear anodic, Class II.

2. Type: Flat seal.

a. Metal: Aluminum.
b. Seal Material: Manufacturer's standard.

1) Color: As selected by Architect from manufacturer's full range.

c. Pantograph Mechanism: Manufacturer's standard pantographic wind-load support mechanism with stainless-steel fasteners.

2.3 ACCESSORIES

A. Moisture Barriers: Manufacturer's standard moisture barrier consisting of a continuous, waterproof membrane within joint and attached to substrate on sides of joint below the primary cover.

1. Drain-Tube Assemblies: Equip moisture barrier with drain tubes and seals to direct collected moisture to exterior-wall expansion control system.

2.4 MATERIALS

A. Aluminum: ASTM B 221, Alloy 6063-T5 for extrusions; ASTM B 209, Alloy 6061-T6 for sheet and plate.

1. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious materials.

B. Elastomeric Concrete: Modified epoxy or polyurethane extended into a prepackaged aggregate blend, specifically designed for bonding to concrete substrates.

C. Moisture Barrier: Flexible elastomeric material, EPDM, minimum 45 mils thick.

D. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

E. Accessories: Manufacturer's standard anchors, clips, fasteners, set screws, spacers, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.5 GENERAL FINISH REQUIREMENTS

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: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.6 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.

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.

B. Coordinate and furnish anchorages, setting drawings, and instructions for installing expansion control systems. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of expansion control systems.

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. Metal Frames: Perform cutting, drilling, and fitting required to install expansion control systems.

1. Install in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.
2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation. Notify Architect where discrepancies occur that will affect proper expansion control system installation and performance.
3. Cut and fit ends to accommodate thermal expansion and contraction of metal without buckling of frames.
4. Repair or grout blockout as required for continuous frame support using nonmetallic, shrinkage-resistant grout.
5. Install frames in continuous contact with adjacent surfaces.

    a. Shimming is not permitted.

6. Locate anchors at interval recommended by manufacturer, but not less than 3 inches from each end and not more than 24 inches o.c.

C. Seals in Metal Frames: Install elastomeric seals and membranes in frames to comply with manufacturer's written instructions. Install with minimum number of end joints.

1. Provide in continuous lengths for straight sections.
2. Seal transitions according to manufacturer's written instructions. Vulcanize or heat-weld field-spliced joints as recommended by manufacturer.
3. Installation: Mechanically lock seals into frames or adhere to frames with adhesive or pressure-sensitive tape as recommended by manufacturer.

D. Terminate exposed ends of expansion control systems with field- or factory-fabricated termination devices.

E. Moisture Barrier: Provide at all exterior joints and where indicated on Drawings. Provide drainage fittings at a maximum of 50 feet or where indicated on Drawings.

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 07 95 00

SECTION 10 11 00 - VISUAL DISPLAY SURFACES

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.

1.2 SUMMARY

A. Section Includes:

1. Markerboards.
2. Tackboards.
3. Visual display rails.

1.3 DEFINITIONS

A. Tackboard: Framed or unframed, tackable, visual display board assembly.

B. Visual Display Board Assembly: Visual display surface that is factory fabricated into composite panel form, either with or without a perimeter frame; includes chalkboards, markerboards, and tackboards.

C. Visual Display Surface: Surfaces that are used to convey information visually, including surfaces of chalkboards, markerboards, tackboards, and surfacing materials that are not fabricated into composite panel form but are applied directly to walls.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for visual display surfaces.

B. LEED Submittals:

1. Product Data for Credit IEQ 4.1: For adhesives, documentation including printed statement of VOC content.
2. Product Data for Credit IEQ 4.4: For composite wood products, documentation indicating that the product contains no urea formaldehyde.

C. Shop Drawings: For visual display surfaces. Include plans, elevations, sections, details, and attachments to other work.

1. Show locations of panel joints.
2. Include sections of typical trim members.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For visual display surfaces to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain visual display surfaces from single source from single manufacturer.

B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 50 or less.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver factory-built visual display surfaces, including factory-applied trim where indicated, completely assembled in one piece without joints, where possible. If dimensions exceed maximum manufactured panel size, provide two or more pieces of equal length as acceptable to Architect. When overall dimensions require delivery in separate units, prefit components at the factory, disassemble for delivery, and make final joints at the site.

B. Store visual display surfaces vertically with packing materials between each unit.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install visual display surfaces 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 visual display surfaces by field measurements before fabrication.

1. Allow for trimming and fitting where taking field measurements before fabrication might delay the Work.

1.9 WARRANTY

A. Special Warranty for Porcelain-Enamel Face Sheets: Manufacturer's standard form in which manufacturer agrees to repair or replace porcelain-enamel face sheets that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Surfaces lose original writing and erasing qualities.
b. Surfaces exhibit crazing, cracking, or flaking.

2. Warranty Period: 50 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Porcelain-Enamel Face Sheet: Manufacturer's standard steel sheet with porcelain-enamel coating fused to steel; uncoated thickness indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Claridge Products and Equipment, Inc.
b. PolyVision Corporation; a Steelcase company.

2. Matte Finish: Low reflective; chalk wipes clean with dry cloth or standard eraser.
3. Gloss Finish: Gloss as indicated; dry-erase markers wipe clean with dry cloth or standard eraser.

B. Plastic-Impregnated Cork Sheet: Seamless, homogeneous, self-sealing sheet consisting of granulated cork, linseed oil, resin binders, and dry pigments that are mixed and calendared onto fabric backing; with washable vinyl finish and integral color throughout.

C. Hardboard: ANSI A135.4, tempered.

D. Particleboard: ANSI A208.1, Grade M-1, made with binder containing no urea formaldehyde.

E. Fiberboard: ASTM C 208.

F. Extruded Aluminum: ASTM B 221, Alloy 6063.

2.2 MARKERBOARD ASSEMBLIES

A. Porcelain-Enamel Markerboards: Balanced, high-pressure, factory-laminated markerboard assembly of three-ply construction consisting of backing sheet, core material, and 0.021-inch- thick, porcelain-enamel face sheet with high -gloss finish.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. AARCO Products, Inc.
b. ADP Lemco, Inc.
c. Aywon.
d. Bangor Cork Company, Inc.
e. Best-Rite Manufacturing.

f. Claridge Products and Equipment, Inc.
g. Ghent Manufacturing, Inc.
h. Marsh Industries, Inc.; Visual Products Group.
i. Platinum Visual Systems; a division of ABC School Equipment, Inc.
j. PolyVision Corporation; a Steelcase company.
k. Tri-Best Visual Display Products.

2. Manufacturer's Standard Core: Minimum 1/4 inch thick, with manufacturer's standard moisture-barrier backing.
3. Laminating Adhesive: Manufacturer's standard, moisture-resistant thermoplastic type.

2.3 TACKBOARD ASSEMBLIES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AARCO Products, Inc.
2. ADP Lemco, Inc.
3. Aywon.
4. Bangor Cork Company, Inc.
5. Best-Rite Manufacturing.
6. Claridge Products and Equipment, Inc.
7. Ghent Manufacturing, Inc.
8. Marsh Industries, Inc.; Visual Products Group.
9. Platinum Visual Systems; a division of ABC School Equipment, Inc.
10. PolyVision Corporation; a Steelcase company.
11. Tri-Best Visual Display Products.

B. Plastic-Impregnated-Cork Tackboard : 1/4-inch- thick, plastic-impregnated cork sheet factory laminated to 1/4-inch- thick hardboard or particleboard backing.

2.4 VISUAL DISPLAY RAILS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. AARCO Products, Inc.
2. Bangor Cork Company, Inc.
3. Best-Rite Manufacturing.
4. Basis-of-Design: Claridge Products and Equipment, Inc.; 94 Combination Map Rail and Clip Strip.
5. Ghent Manufacturing, Inc.
6. Marsh Industries, Inc.; Visual Products Group.
7. Platinum Visual Systems; a division of ABC School Equipment, Inc.
8. PolyVision Corporation; a Steelcase company.
9. Tri-Best Visual Display Products.

2.5 MARKERBOARD AND TACKBOARD ACCESSORIES

A. Aluminum Frames and Trim: Fabricated from not less than 0.062-inch- thick, extruded aluminum; standard size and shape.

1. Factory-Applied Trim: Manufacturer's standard.

B. Chalktray: Manufacturer's standard, continuous, unless noted otherwise in Visual Display Surface Schedule.

1. Solid Type: Extruded aluminum with ribbed section and smoothly curved exposed ends.

2.6 FABRICATION

A. Porcelain-Enamel Visual Display Assemblies: Laminate porcelain-enamel face sheet and backing sheet to core material under heat and pressure with manufacturer's standard flexible, waterproof adhesive.

B. Visual Display Boards: Factory assemble visual display boards unless otherwise indicated.

1. Where factory-applied trim is indicated, trim shall be assembled and attached to visual display boards at manufacturer's factory before shipment.

C. Factory-Assembled Visual Display Units: Coordinate factory-assembled units with trim and accessories indicated. Join parts with a neat, precision fit.

1. Make joints only where total length exceeds maximum manufactured length. Fabricate with minimum number of joints, as indicated on approved Shop Drawings.
2. Provide manufacturer's standard vertical-joint spline H-trim system between abutting sections of markerboards.
3. Where size of visual display boards or other conditions require support in addition to normal trim, provide structural supports or modify trim as indicated or as selected by Architect from manufacturer's standard structural support accessories to suit conditions indicated.

D. Aluminum Frames and Trim: Fabricate units straight and of single lengths, keeping joints to a minimum. Miter corners to a neat, hairline closure.

1. Where factory-applied trim is indicated, trim shall be assembled and attached to visual display units at manufacturer's factory before shipment.

2.7 GENERAL FINISH REQUIREMENTS

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: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.8 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.

2.9 VISUAL DISPLAY SURFACE SCHEDULE

A. Visual Display Board (MB X and MMB X, where X is height by length in feet): Factory assembled.

1. Markerboard: Porcelain-enamel markerboard assembly.

a. Color: White.

2. Corners: Square.
3. Width: As indicated on Drawings.
4. Height: As indicated on Drawings.
5. Mounting: Wall.
6. Mounting Height: 36 inches above finished floor.
7. Enamel Face Sheet:

a. Provide gloss finish unless noted otherwise.
b. Provide matte finish at display boards noted as 'MMB'.

8. Factory -Applied Aluminum Trim: Manufacturer's standard with clear anodic finish.
9. Accessories:

a. Chalktray: Solid type.

B. Tackboard (TB-X, where X is height by length in feet): Factoryassembled.

1. Tack Surface: Plastic-impregnated-cork tackboard assembly <Insert designation>.
2. Corners: Square.
3. Width: As indicated on Drawings.
4. Height: As indicated on Drawings 48 inches.
5. Mounting: Wall.
6. Mounting Height: 36 inches above finished floor.
7. Edges: Concealed by trim.

a. Factory -Applied Aluminum Trim: Manufacturer's standard style, with clear anodic finish.

C. Visual Display Rail : Factory assembled.

1. Tack Surface: Plastic-impregnated-cork tackboard assembly .
2. Size: Roughly 3 inches high by length indicated on Drawings.
3. Edges: Extruded-aluminum trim.
4. Ends: Aluminum.
5. Aluminum Finish: Clear anodic finish.
6. Provide with factory installed clips at 6 inches maximum on center.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances, surface conditions of wall, and other conditions affecting performance of the Work.

B. Examine walls and partitions for proper preparation and backing for visual display surfaces.

C. Examine walls and partitions for suitable framing depth where sliding visual display units will be installed.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Comply with manufacturer's written instructions for surface preparation.

B. Clean substrates of substances that could impair the performance of and affect the smooth, finished surfaces of visual display boards, including dirt, mold, and mildew.

C. Prepare surfaces to achieve a smooth, dry, clean surface free of flaking, unsound coatings, cracks, defects, projections, depressions, and substances that will impair bond between visual display surfaces and wall surfaces.

3.3 INSTALLATION, GENERAL

A. General: Install visual display surfaces in locations and at mounting heights indicated on Drawings, or if not indicated, at heights indicated below. Keep perimeter lines straight, level, and plumb. Provide grounds, clips, backing materials, adhesives, brackets, anchors, trim, and accessories necessary for complete installation.

3.4 INSTALLATION OF FACTORY-FABRICATED VISUAL DISPLAY BOARDS AND ASSEMBLIES

A. Visual Display Boards: Attach concealed clips, hangers, and grounds to wall surfaces and to visual display boards with fasteners at not more than 16 inches o.c. Secure both top and bottom of boards to walls.

3.5 INSTALLATION OF VISUAL DISPLAY RAILS

A. Display Rails: Install rails in locations and at mounting heights indicated on Drawings. Attach to wall surface with fasteners at not more than 16 inches o.c.

3.6 CLEANING AND PROTECTION

A. Clean visual display surfaces according to manufacturer's written instructions. Attach one cleaning label to visual display surface in each room.

B. Touch up factory-applied finishes to restore damaged or soiled areas.

C. Cover and protect visual display surfaces after installation and cleaning.

END OF SECTION 10 11 00

SECTION 10 14 19 - DIMENSIONAL LETTER SIGNAGE

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.

1.2 SUMMARY

A. Section Includes:

1. Fabricated channel dimensional characters.
2. Molded-plastic dimensional characters.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. LEED Submittals:

1. Product Data for Credit IEQ 4.1: For adhesives, documentation including printed statement of VOC content.

C. Shop Drawings: For dimensional letter signs.

1. Include fabrication and installation details and attachments to other work.
2. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
3. Show message list, typestyles, graphic elements, and layout for each sign at least half size.

D. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.

1. Include representative Samples of available typestyles and graphic symbols.

E. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

1. Dimensional Characters: Half-size Sample of dimensional character.
2. Exposed Accessories: Half-size Sample of each accessory type.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For signs to include in maintenance manuals.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.

1.6 FIELD CONDITIONS

A. Field Measurements: Verify locations of electrical service embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

1.7 WARRANTY

A. Special Warranty: 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 finishes beyond normal weathering.
b. Separation or delamination of sheet materials and components.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 DIMENSIONAL LETTER SIGNS, GENERAL

A. Regional Materials: Dimensional letter signs shall be manufactured within 500 miles of Project site.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design sign structure and anchorage of dimensional character sign type(s) to withstand design loads as indicated on Drawings.

B. Thermal Movements: For exterior fabricated channel dimensional characters, allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.3 DIMENSIONAL CHARACTERS

A. Fabricated Channel Characters : Metal face and side returns, formed free from warp and distortion; with uniform faces, sharp corners, and precisely formed lines and profiles; internally braced for stability and for securing fasteners; and as follows.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. ACE Sign Systems, Inc.
    b. ASI Sign Systems, Inc.
    c. Diskey Sign Company.
    d. Gemini Incorporated.
    e. Metallic Arts.

2. Character Material: Sheet or plate aluminum .
3. Material Thickness: Manufacturer's standard for size and design of character.
4. Character Height: As indicated.
5. Character Depth: 2 inches.
6. Finishes:

    a. Integral Aluminum Finish: Clear anodized .

7. Mounting: Projecting studs.

    a. Hold characters at manufacturer's recommended distance from wall surface.

8. Typeface: To be selected by Architect.

B. Molded-Plastic Characters : Injection molded characters having uniform faces and profiles, and as follows:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. ACE Sign Systems, Inc.
    b. ASI Sign Systems, Inc.
    c. Diskey Sign Company.
    d. Gemini Incorporated.
    e. Metallic Arts.

2. Color: Manufacturer's standard integral color process, in color White.
3. Typeface: To be determined by Architect.

2.4 DIMENSIONAL CHARACTER MATERIALS

A. Aluminum Castings: ASTM B 26/B 26M, alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.

B. Aluminum Sheet and Plate: ASTM B 209, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

C. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.

D. 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.

2.5 ACCESSORIES

A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signage, noncorrosive and compatible with each material joined, and complying with the following:

1. Use concealed fasteners and anchors unless indicated to be exposed.
2. For exterior exposure, furnish stainless-steel devices unless otherwise indicated.
3. 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 flathead screws and bolts with tamper-resistant Allen-head slots unless otherwise indicated.

4. Sign Mounting Fasteners:

    a. Projecting Studs: Threaded studs with sleeve spacer, welded or brazed to back of sign material, screwed into back of sign assembly, or screwed into tapped lugs cast integrally into back of cast sign material, unless otherwise indicated.

B. Adhesives: As recommended by sign manufacturer and with a VOC content of 70 g/L or less for adhesives used inside the weatherproofing system and applied on-site when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Two-Face Tape: Manufacturer's standard high-bond, foam-core tape, 0.045 inch thick, with adhesive on both sides.

D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.6 FABRICATION

A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.

1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.
2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Comply with AWS for recommended practices in welding and brazing. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed connections of flux, and dress exposed and contact surfaces.
4. Conceal connections if possible; otherwise, locate connections where they are 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.

2.7 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Organic, Anodic, and Chemically Produced Finishes: Apply to formed metal after fabrication but before applying contrasting polished finishes on raised features unless otherwise indicated.

2.8 ALUMINUM FINISHES

A. Clear Anodic Finish: AAMA 611, Class I, 0.018 mm or thicker.

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 signage work.

B. Verify that sign-support surfaces are within tolerances to accommodate signs without gaps or irregularities between backs of signs and support surfaces unless otherwise indicated.

C. Verify that electrical service is correctly sized and located to accommodate signs.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install signs using mounting methods indicated and according to manufacturer's written instructions.

1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
2. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.

3. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

B. Mounting Methods:

1. 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.

2. 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. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.
4. Two-Face Tape: Clean bond-breaking materials from substrate surface and remove loose debris. Apply tape strips symmetrically to back of sign and of suitable quantity to support weight of sign without slippage. Keep strips away from edges to prevent visibility at sign edges. Place sign in position, and push to engage tape adhesive.

3.3 ADJUSTING AND CLEANING

A. Remove and replace damaged or deformed characters and signs that do not comply with specified requirements. Replace characters with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.

B. Remove temporary protective coverings and strippable films as signs are installed.

C. 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 condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 10 14 19

SECTION 12 36 61 - SIMULATED STONE COUNTERTOPS

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.

1.2 SUMMARY

A. Section Includes:

1. Solid-surface-material countertops and backsplashes.
2. Prefabricated lavatory decks.

1.3 ACTION SUBMITTALS

A. LEED Submittals:

1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
2. Product Data for Credit IEQ 4.4: For adhesives and composite wood products, documentation indicating that product contains no urea formaldehyde.

B. Shop Drawings: For countertops. Show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures.

C. Samples for Verification: For the following products:

1. Countertop material, 6 inches square.

1.4 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions of countertops by field measurements before countertop fabrication is complete.

1.5 COORDINATION

A. Coordinate locations of utilities that will penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 SOLID-SURFACE-MATERIAL COUNTERTOPS

A. Configuration: Provide countertops with the following front and backsplash style:

1. Front: Straight, slightly eased at top .
2. Backsplash: Straight, slightly eased at corner .
3. Endsplash: Matching backsplash.

B. Countertops:

1. 1/2-inch- thick at solid surface material with front edge built up with same material.
2. 20mm thick at engineered stone material.
3. 1 inch thick at Paperstone products.

C. Backsplashes:

1. 1/2-inch- thick at solid surface material.
2. 20mm thick at engineered stone material.
3. 1 inch thick at Paperstone products.

D. Fabrication: Fabricate tops in one piece with shop-applied edges and backsplashes unless otherwise indicated. Comply with solid-surface-material manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.

1. Fabricate with loose backsplashes for field assembly.

2.2 COUNTERTOP MATERIALS

A. Particleboard: ANSI A208.1, , made with binder containing no urea formaldehyde.

1. Recycled Content: Not less than 25 percent preconsumer or postconsumer recycled content.

B. Adhesives: Adhesives shall not contain urea formaldehyde.

C. Solid Surface Material: Homogeneous solid sheets of filled plastic resin complying with ANSI SS1.

1. Type ES-1: Wilsonart; Lyra Q2001.
2. Type ES-2: Zodiaq; Storm Grey.
3. Type SS-1: Krion; 0102 Clear Nature.
4. Type SS-2: Meganite; Bright White 001.
5. Type SS-3: Paperstone; 1" thickness, Slate.
6. Type SS-4: Meganite; 810 Raven Boulder.

D. Product Contacts:

1. Krion: Lisa Maloney, 312-618-1317, lmaloney@porcelanosa-usa.com
2. Paperstone: Joel Bluhm, 800-383-9784, jbluhm@nsssurfaces.com
3. Meganite/Zodiaq: Brittney Stahl, 312-443-5976, brittneystahl@aetnaplywood.com
4. Wilsonart: Kathy Walker, 630-487-1642, walkerk3@wilsonart.com

2.3 PREFABRICATED LAVATORY DECK

A. Product: Bradley Corp.; OmniDeck LD-3010 in TerreonRE, color Charcoal Grey; with SL-TR1 undermountbowls, color Designer White; with standard stainless steel surface mount brackets.
   1. Provide number of bowls as shown on Drawings.
   2. Provide with single-station trap covers at each bowl.
   3. Seam units that exceed 120 inches in total length.
   4. Provide with 5 inch front apron and 2 inch backsplash and sidesplashes.
   5. Provide with strainers. Refer to Plumbing Drawings for associated faucet, drain, and trim.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install countertops level to a tolerance of 1/8 inch in 8 feet.

B. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Pre-drill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

   1. Install backsplashes and endsplashes to comply with manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.
   2. Seal edges of cutouts in particleboard subtops by saturating with varnish.

END OF SECTION 12 36 61

SECTION 23 74 11 - PACKAGED ROOFTOP AIR CONDITIONING UNITS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Packaged Rooftop Unit.
B. Unit Controls.
C. Roof Mounting Frame and Base.

1.2 QUALITY ASSURANCE

A. All insulation inside the unit and in the air stream must comply with the requirement of NFPA 90A (maximum flame spread of 25 and maximum smoke developed of 50).

B. All units must be UL or ETL listed and must contain UL labeled components.

C. Fans shall be tested and rated in cabinet in accordance with AMCA Standard 210. All fan assemblies shall be dynamically balanced in cabinet at final assembly.

D. Conform to ASHRAE 90.1.

E. All air handling and distribution equipment mounted outdoors shall be designed to prevent rain intrusion into the airstream when tested at design airflow and with no airflow, using the rain test apparatus described in Section 58 of UL 1995.

1.3 REFERENCES

A. ARI 210 - Unitary Air Conditioning Equipment.

B. ARI 240 - Air Source Unitary Heat Pump Equipment.

C. ARI 270 - Sound Rating of Outdoor Unitary Equipment.

D. ASHRAE 37 - Methods of Testing for Rating Unitary Air Conditioning and Heat Pump Equipment.

E. ANSI/ASHRAE/IES Standard 90.1 (latest published edition) - Energy Standard for Buildings Except Low-Rise Residential Buildings.

F. NFPA 70 - National Electrical Code.

G. NFPA 90A - Installation of Air Conditioning and Ventilating System.

H. UL - Underwriters' Laboratory.

I. USGBC - Leadership in Energy and Environmental Design (LEED) Rating System.

1.4 SUBMITTALS

A. Submit shop drawings and product data under provisions of Section 23 05 00.

B. Indicate electrical service and duct connections on shop drawings or product data.

C. Submit manufacturer's installation instructions.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect units from physical damage by storing off site until roof mounting frames are in place, ready for immediate installation of units.

1.6 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data.

B. Include manufacturer's descriptive literature, installation instructions, maintenance and repair data, and parts listing.

1.7 WARRANTY

A. Provide five (5) year manufacturer’s warranty for compressors.

B. Provide five (5) year manufacturer’s warranty for heat exchanger.

C. Provide five (5) year manufacturer’s warranty for controls and electrical components (thermostats, VFD, etc.).

1.8 MAINTENANCE SERVICE

A. Furnish complete service and maintenance of packaged roof top units for one year from Date of Substantial Completion.

B. Provide maintenance service with a two month interval as maximum time period between calls. Provide 24-hour emergency service on breakdowns and malfunctions.

C. Include maintenance items as outlined in manufacturer's operating and maintenance data, including minimum of six filter replacements, minimum of one fan belt replacement, and controls check-out, adjustments, and recalibrations.

D. Submit copy of service call work order or report, and include description of work performed.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Daikin.
B. Annexair Inc.
C. York Series 100.
D. Trane Intellipak I.
E. Carrier Model 48P.
F. Engineered Air.

2.2 MANUFACTURED UNITS

A. Provide roof-mounted units having gas burner, and electric refrigeration.

B. Unit shall be self-contained, packaged, factory assembled, pre-wired and tested, consisting of cabinet and frame, supply fan, exhaust fan, heat exchanger and burner, controls, air filters, refrigerant cooling coil and compressor, condenser coil, condenser fan, and a full refrigerant charge.

C. Unit shall be furnished with non-fused disconnect switch, short fuse protection of all internal electrical components, and all necessary motor starters, contactors, and over-current protection.

2.3 FABRICATION (RTU-1)

A. Unit cabinet shall be designed to operate at total static pressures up to 6.5 inches w.g.

B. Unit shall have heavy gauge solid galvanized steel double wall liners provided throughout, allowing no exposed insulation within the air stream. All cabinet insulation, except floor panels, shall be a nominal 2" thick, 1 ½ lb. density, R6.5, glass fiber. Floor panels shall include 1" thick, 3 lb. density, R4.2, glass fiber insulation.

C. Exterior surfaces shall be constructed of pre-painted galvanized steel for aesthetics and long term durability. Paint finish to include a base primer with a high quality, polyester resin topcoat of a neutral beige color. Finished surface to withstand a minimum 750-hour salt spray test in accordance with ASTM B117 standard for salt spray resistance.

D. Service doors shall be provided on both sides of each section in order to provide user access to all unit components. Service doors shall be constructed of heavy gauge galvanized steel with galvanized steel interior liners. All service doors shall be mounted on multiple, stainless steel hinges and shall be secured by a stainless steel latch system that is operated by a single handle. The latch system shall feature a staggered engagement for ease of operation and a safety catch shall protect the user from injury in case a positive pressure door is opened while the fan is operating. Removable panels, or doors secured by multiple, mechanical fasteners are not acceptable.

E. The unit base frame shall be constructed of 13 gauge pre-painted galvanized steel.

F. The unit base shall overhang the roof curb for positive water runoff and shall have a formed recess that seats on the roof curb gasket to provide a positive, weathertight seal. Lifting brackets shall be provided on the unit base with lifting holes to accept cable or chain hooks.

2.4 FABRICATION (RTU-2)

A. Panel construction shall be double-wall construction for all panels. All floor panels shall have a solid galvanized steel inner liner on the air stream side of the unit to protect insulation during service and maintenance. Insulation shall be a minimum of 2" thick with an R-value of 13.0, and shall be 2 part injected foam. Panel design shall include no exposed insulation edges. Unit cabinet shall be designed to operate at total static pressures up to 5.0 inches w.g.

B. Exterior surfaces shall be constructed of pre-painted galvanized steel for aesthetics and long term durability. Paint finish to include a base primer with a high quality, polyester resin topcoat of a neutral beige color. Finished panel surfaces to withstand a minimum 750-hour salt spray test in accordance with ASTM B117 standard for salt spray resistance.

C. Service doors shall be provided on the fan section, filter section, control panel section, and heating vestibule in order to provide user access to unit components. All service access doors shall be mounted on multiple, stainless steel hinges and shall be secured by a latch system. Removable service panels secured by multiple mechanical fasteners are not acceptable.

D. The unit base shall overhang the roof curb for positive water runoff and shall seat on the

roof curb gasket to provide a positive, weathertight seal. Lifting brackets shall be provided on the unit base to accept cable or chain hooks for rigging the equipment.

2.5 FABRICATION (RTU-3)

A. The unit housing shall be constructed from a frame, base and panel assembly. Unit shall be completely factory assembled and shipped modular as shown on drawings. The frame shall consist of robust die cast corners and extruded aluminum profiles welded together for reinforcement. The base structure shall be fully welded with formed heavy gauge galvanized steel. Double lined heavy duty galvanized steel, G-90 floor insulated with R12 foam shall be mechanically fastened to the base structure which shall consist of an anti-vibration gasket to diminish the metal to metal contact. Base structure shall have galvanized integral lifting lugs which can be removed once the unit is installed. All roof and wall panels shall be made from G-90 galvanized steel, minimum 18-gauge exterior and 20 gauge interior.

B. All panels and access doors shall be double wall construction with (R-12) two-inch thick minimum foam insulation. Panels shall be fastened from the interior and gasketed along the frame to reduce thermal transmission. Fixed panels shall be removable without affecting the housing integrity. Access doors shall be provided to all major components to facilitate quick and easy access. Fan access door(s) shall have Ventlock type latches and threaded insert fastening handles for all remaining doors.

C. If access doors do not open against unit operating pressure, provide safety latches that allow access doors to partially open after first handle movement and fully open after second handle movement. Removable panels provided for equipment pull out for coil(s), heat exchanger(s) and fan intake section(s) shall have key tooled threaded insert fasteners. Hinges shall be aluminum butt hinges designed to open 180 degrees. Access doors shall be sealed with a full “U-Shaped” gasket for superior air tightness along the door edge. Bulb type gaskets shall not be acceptable since they do not return to their original form once compressed.

D. The airflow separation wall between the outside air intake and exhaust air outlet shall be a one inch double wall insulated with R-4.3 when temperature is below 35° F. Floor openings shall be covered with 1” fiberglass safety walk on gratings. All roof and side wall seams shall be positively sealed to prevent water and air leakage. Outdoor units shall have a rain gutter above each access door and a watertight roof shall be provided with a white TPO UV-reflective membrane. Outdoor units shall have the entire exterior finished with (2) two coats of acrylic urethane. Paint shall pass ASTM B117 2000-hour salt fog resistance test and ASTM D4585 2000-hour moisture condensation resistance test.

2.6 ROOF CURB

A. A vibration isolation curb sized for the unit shall be provided by the unit manufacturer. The curb interstitial space between the bottom of the unit and the roof below shall act as a supply/return plenum and a divider shall be capable of being located anywhere along the curb between the supply and return unit connections so separate the supply and return plenums. Coordinate the divider location with the installing contractor.

2.7 FANS/MOTORS

A. All fan assemblies shall be statically and dynamically balanced at the factory, including a final trim balance, prior to shipment. All fan assemblies shall employ solid steel fan shafts. Heavy-duty pillow block type, self-aligning, grease lubricated ball bearings shall be used. Bearings shall be sized to provide an L-50 life at 200,000 hours. The entire fan assembly shall be isolated from the fan bulkhead and mounted on rubber-in-shear

isolators.

B. Fan motors shall be heavy-duty 1800 rpm premium efficiency. Fan motors to have grease lubricated ball bearings. Motors shall be mounted on an adjustable base that provides for proper alignment and belt tension adjustment.

C. Motor shall be Open Dripproof.

D. Airfoil supply fans.

1. Supply fan type shall be airfoil centrifugal fan. All fans shall be mounted using shafts and hubs with mating keyways. Fans shall be Class II type and fabricated from heavy-gauge aluminum. Fan blades shall be continuously welded to the back plate and end rim. Forward curved wheels are not acceptable.

E. Airfoil return and exhaust fans.

1. An airfoil centrifugal fan shall be provided. The fan shall be Class II construction. The fan wheel shall be Class II construction and fabricated from heavy-gauge aluminum with fan blades continuously welded to the back plate and end rim. The fan shall be mounted using shafts and hubs with mating keyways.

2.8 VARIABLE AIR VOLUME CONTROL

A. Separate electronic variable frequency drives shall be provided for each fan. Drives shall be independent. Drives shall be cooled by the filtered mixed air stream. The completed unit assembly shall be listed by a recognized safety agency, such as ETL. Drives are to be accessible through a hinged door assembly complete with a single handle latch mechanism. Mounting arrangements that expose drives to high temperature, unfiltered ambient air are not acceptable. The unit manufacturer shall install all power and control wiring.

B. The drive output shall be controlled by the factory installed main unit control system and drive status and operating speed shall be monitored and displayed at the main unit control panel. The supply and return/exhaust fan drive outputs shall be independently controlled in order to provide the control needed to maintain building pressure control. Supply and return/exhaust air fan drives that are slaved off a common control output are not acceptable.

C. All drives shall be factory run tested prior to unit shipment.

2.9 BURNER

A. A natural gas fired furnace shall be installed in the unit heat section. The heat exchanger shall include a type 321 stainless steel cylindrical primary combustion chamber, a type 321 stainless steel header, 321 stainless steel steel secondary tubes and type 321 stainless steel turbulators. Carbon or aluminized steel heat exchanger surfaces are not acceptable. The heat exchanger shall have a condensate drain. Clean out of the primary heat exchanger and secondary tubes shall be accomplished without removing casing panels or passing soot through the supply air passages. The furnace section shall be positioned downstream of the supply air fan.

B. The furnace shall be supplied with a forced draft burner capable of continuous modulation between 5% and 100% of rated capacity (RTU-1, 20:1 turndown; RTU-2, 10:1 turndown, RTU-3, 40:1 turndown), without steps, and shall operate efficiently at all firing rates. The burner shall have proven open damper low-high-low prepurge cycle, and

proven low fire start. The combustion air control damper shall be in the closed position during the off cycle to reduce losses. Burners with turndown than less than 20:1 capability are not acceptable.

C. The burner shall be specifically designed to burn natural gas and shall include a microprocessor based flame safeguard control, combustion air proving switch, pre-purge timer and spark ignition. The gas train shall include redundant gas valves, shutoff cock, pilot gas valve, pilot pressure regulator, and pilot cock.

2.10 EVAPORATOR COIL

A. The coil section shall be complete with factory piped cooling coil and sloped drain pan. Hinged access doors on both sides of the section shall provide convenient access to the cooling coil and drain pan for inspection and cleaning.

B. Direct expansion (DX) cooling coils shall be fabricated of seamless 1/2" diameter high efficiency copper tubing that is mechanically expanded into high efficiency aluminum plate fins. Coils shall be a multi-row, staggered tube design. All units shall have two independent refrigerant circuits and shall use an interlaced coil circuiting that keeps the full coil face active at all load conditions.

C. All coils shall be factory leak tested with high pressure air under water.

D. A stainless steel, positively sloped drain pan shall be provided with the cooling coil. The drain pan shall extend beyond the leaving side of the coil and underneath the cooling coil connections. The drain pan shall have a minimum slope of 1/8" per foot to provide positive draining. The drain pan shall be connected to a threaded drain connection extending through the unit base. Units with stacked cooling coils shall be provided with a secondary drain pan piped to the primary drain pan.

2.11 CONDENSING SECTION

A. Air Cooled Condenser

1. Units shall have at least one condenser fan controlled to maintain positive head pressure. An ambient thermostat shall prevent the refrigeration system from operating below 45º F ambient. .

2. Units shall have at least one condenser fan controlled to maintain positive head pressure. An ambient thermostat shall prevent the refrigeration system from operating below 45º F ambient. SpeedTrol™ condenser fan speed control shall be added to the last fan off on each refrigeration circuit to provide cooling operation to ambient temperatures down to 0° F. Fan speed control shall be field adjustable..

3. The condensing section shall be open on the sides and bottom to provide access and to allow airflow through the coils. Condenser coils shall be multi-row and fabricated from cast aluminum micro-channel coils. Each condenser coil shall be factory leak tested with high-pressure air under water. Coils are to be recessed so that the cabinet provides built in hail protection.

4. Condenser fans shall be direct drive, propeller type designed for low tip speed, vertical air discharge, and include service guards. Fan blades shall be constructed of steel and riveted to a steel center hub. Condenser fan motors shall be heavy-duty, inherently protected, three-phase, non-reversing type with permanently lubricated ball bearing and integral rain shield.

B. Scroll Compressors

1. All units shall have a combination of inverter and constant speed compressors.

2. Each compressor shall be complete with gauge ports, crankcase heater, sight-glass, anti-slug protection, motor overload protection and a time delay to prevent short cycling and simultaneous starting of compressors following a power failure.

3. Compressors shall be isolated with resilient rubber isolators to decrease noise transmission.

C. Refrigeration Circuit

1. Each unit shall have two independent refrigeration circuits. Each circuit shall be complete with low pressure control, pumpdown switch, liquid line solenoid valve, filter drier, liquid moisture indicator/sight-glass, thermal expansion valve, liquid line charging valve with a 3/8" charging port, a manual reset high pressure safety switch. The thermal expansion valve shall be capable of modulation from 100% to 25% of its rated capacity. Sight-glasses shall be accessible for viewing without disrupting unit operation. Each circuit shall be dehydrated and leak tested. Unit shall have discharge and suction line shutoff valves.

2. Each circuit shall be dehydrated and factory charged with 410-A Refrigerant and oil. Refrigeration capacity control shall be accomplished by staging of the unit's multiple compressors. All compressor capacity control staging shall be controlled by the factory installed main unit control system.

2.12 MIXING SECTION

A. Unit shall be provided with an outdoor air economizer section (excluding RTU-2 which is a 100% OA unit). The 0 to 100% outside air economizer section shall include outdoor, return, and exhaust air dampers. Outdoor air shall enter from both sides of the economizer section through horizontal, louvered intake panels complete with rain lip and bird screen. The floor of the outdoor air intakes shall provide for water drainage. The economizer section shall allow return air to enter from the bottom of the unit. The outside and return air dampers shall be sized to handle 100% of the supply air volume. The dampers shall be opposed sets of parallel blades, arranged vertically to converge the return air and outdoor air streams in multiple, circular mixing patterns.

B. Dampers and damper actuators shall meet the requirements of section 23 09 00.

C. A barometric exhaust damper shall be provided. A bird screen shall be provided to prevent infiltration of foreign materials. Exhaust damper blades shall be lined with urethane gasketing on contact edges.

D. A barometric exhaust damper shall be provided to exhaust air out of the back of the unit. An electric actuator shall provide positive closure of the exhaust damper. A bird screen shall be provided to prevent infiltration of foreign materials. Exhaust damper blades shall be lined with urethane gasketing on contact edges.

E. Control of the outdoor or return dampers shall be by a factory installed actuator. Damper actuator shall be of the modulating, spring return type. If outdoor air is suitable for "free" cooling, the outdoor air dampers shall modulate in response to the unit's temperature control system. A comparative enthalpy control shall be provided to sense and compare enthalpy in both the outdoor and return air streams to determine if outdoor air is suitable for "free" cooling.

2.13 FILTERS

A. Unit shall be provided with a draw-through filter section. The filter section shall be supplied complete with the filter rack as an integral part of the unit. The draw-through filter section shall be provided with cartridge filters.

B. 12" deep 90-95% efficient, UL Std. 900, Class 1, cartridge filters shall be provided. 2" panel, 30% efficient MERV 8 pre-filters shall be included. Cartridge filters shall consist of filter media permanently attached to a metal frame and shall slide into a gasketed, extruded aluminum rack contained within the unit. The filter rack shall have secondary gasketed, hinged end panels to insure proper sealing. Filters shall be accessible from both sides of the filter section.

2.14 ELECTRICAL

A. Provide with single point power connection, disconnect, transformer, and convenience outlet. All units must be so constructed that when the electrical section access panel is opened, all electrical power to the unit (with the exception of the 120 volt duplex convenience outlet) is disconnected by means of a single disconnect.

B. All wiring must be labeled, numbered, and terminate in "spade clips". All terminal strips must be keyed to the wiring numbers. Each control device must be permanently labeled to indicate its function.

C. Wiring diagrams for all circuits must be permanently affixed to the inside of the electrical section access panel. The markings of terminal strips and wiring must agree with the numbering on the wiring diagrams.

D. All units shall include a transformer for controls and convenience outlet.

E. Only one power cable connection to the unit shall be necessary.

2.15 OPERATING CONTROLS - VARIABLE VOLUME UNITS

A. Install standalone control module providing communication between unit controls and DDC temperature control system. Control module shall be compatible with temperature control system specified in Section 23 09 00. Control module shall be capable of completing the sequence of operations as described on the drawings.

2.16 ROOFTOP VIBRATION ISOLATION CURB

A. Maximum height 36"

B. 2" spring deflection available.

C. Provided with 2" x 4" wood nailing strips and a 9" continuous rubber counter flashing. Counter flashing insures water tight seal.

D. Prime G-90 galvanized steel 14 to 18 gauge.

E. Fully welded and mitered corners.

F. Base flange attachments for securing equipment mounting supports to the building structure.

G. Acoustically non-conductive material minimizes sound transitions.

H. Vertical limit stops eliminates excess movement.

I. Reinforced with internal bulkheads.

J. The curb shall have insulated supply and return chambers that provide an offset between the supply and return openings on the rooftop unit and where the supply and return openings penetrate the roof.

K. Acceptable Manufacturers: ThyCurb, Vibration Elimination Company, Mason Industries, Inc.

2.17 ENERGY RECOVERY WHEEL

A. Enthalpy Wheel:

1. Wheel shall provide both sensible and latent heat recovery. Sensible and latent effectiveness shall meet or exceed scheduled values.

2. The matrix shall be a minimum of 8'' thick to achieve optimal performance and be constructed from a corrugated aluminum alloy. The corrugation shall be uniform to obtain minimum pressure drops through the wheel. Wheels with varying flute sizes are not acceptable. Wheels with non-metallic matrices will not be considered for this application.

The media shall be specifically treated and coated with Silica Gel desiccant to assist and enhance latent heat transfer. Any other types of desiccants, including 3A or 4A Molecular Sieves will not be considered for HVAC applications. A heavy duty wheel hub will contain the bearings in a closed compartment for wheel sizes up to 96" diameter. These shall be maintenance free while larger sizes require periodic lubrication. In addition, segmented wheel shall be provided on diameter sizes above 96".

3. Energy recovery effectiveness values shall be certified with ASHRAE 84 and be AHRI certified to Standard 1060 and bear the AHRI Certification symbol for AHRI Air-to-Air Energy Recovery Ventilation Equipment Certification program based on AHRI 1060.

4. The seal shall made from a dual band ultra-high molecular weight polyethylene and be self-lubricating, wear resistant, and air tight against prolonged use. Seals shall be full contact compression type, on both sides of the wheel to ensure minimal leakage. Specially designed stainless steel clips are used to position the seal across the face of the wheel. Any seal that is non-contact is not to be considered a seal and will not acceptable. Labyrinth type seals do not operate properly under different air stream pressures therefore shall not be acceptable in any circumstances.

5. Drive system shall be operated by a fractional horsepower motor (maximum 1 HP), reducing gear-box, pulley and V-belt. Belts shall be made of multi-link high-tech urethane/polyester composite. An access panel shall be provided for maintenance on the drive system.

6. A double purge sector (2 x 5º) shall be factory installed to reduce cross contamination to under 0.04%.

7. Frost control prevention shall be provided by the unit manufacturer and accounted for if outdoor air temperatures are below 10°F at equal airflows and

return relative humidity below 30%. Frost control shall be accomplished by a variable speed drive and controlling the leaving air condition of the exhaust air. Other methods of frost control will not be considered for this application. Wheel speed shall not rotate faster than 20 RPM. Any rotational speed above 20 RPM will be unacceptable since this will reduce the efficiency of the purge section.

B. Media Cleaning:

1. Media cleaning shall be accomplished with any of the following methods: compressed air, low pressure steam, hot water or light detergent without degrading the latent recovery. Enthalpy wheel shall be self-cleaning by two counter flow airstreams.

C. Dampers:

1. Provide dampers as needed to allow for 100% airflow bypass around the wheel to allow for economizer.

2. Refer to drawings for size and location.

3. Provided by unit manufacturer. Refer to Section 23 09 00 for requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that roof is ready to receive work and opening dimensions are as indicated on shop drawings and illustrated by the manufacturer.

B. Verify that proper power supply is available.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Mount units on factory built roof mounting frame providing watertight enclosure to protect ductwork and utility services. Install roof mounting frame level.

C. All field wiring shall be in accordance with the National Electrical Code.

D. P-traps must be provided for all drain pans.

E. Comb all coils to repair bent fins.

F. Install on vibration isolation as scheduled on drawings.

3.3 MANUFACTURER'S FIELD SERVICES

A. Provide initial start-up and shutdown during first year of operation, including routine servicing and check-out.

END OF SECTION 23 71 11