ROCKFORD BOARD OF EDUCATION
INVITATION FOR BID ON SUPPLIES, MATERIALS, EQUIPMENT OR SERVICES
FOR SCHOOL DISTRICT NO. 205
ROCKFORD, ILLINOIS

RFQ No. **16-22 Riverdahl Elementary School Additions**

DATE: **Thursday, January 7, 2016**

RE: **ADDENDUM NO. 1**

To All:

Attached are modifications, clarifications and/or corrections for the Project Manual and are hereby made a part of the contract documents. Please attach this addendum to the Project Manual(s) in your possession. Please note the receipt of this addendum on the bid form. Bidders shall review changes to all portions of this work as changes to one portion may affect the work of another.

There will be another non-mandatory site visit opportunity on Tuesday, January 12, 2016 at 3:00 p.m.

If you plan to hand deliver your IFB submission on the due date, please note you must check in on the 3rd floor prior to coming to the 6th floor. Please allow time for this as late submission will not be accepted.

Refer all questions relative to the business aspect, Instructions to Bidders, Special Conditions, and questions concerning the technical aspect of the documents to the Purchasing Process Manager by email at tamara.pugh@rps205.com.

ROCKFORD BOARD OF EDUCATION

By: Tamara Pugh
Purchasing Process Manager

RAGNAR BENSON CONSTRUCTION
A WILLIAM CHARLES COMPANY

1907 KISHWAUKEE STREET
ROCKFORD, ILLINOIS 61104
PHONE (815) 966-3116

AGENDA (rev)

MANDATORY PRE BID MEETING
Bid No. 16-22
Rockford Public School District #205
Riverdahl Elementary School - Addition

LOCATION: 3520 Kishwaukee Street, Rockford IL 61109

PRE-BID DATE & TIME: Tuesday, January 5, 2016, 3:00 p.m.

A. INTRODUCTION

1. **Meeting Sign-Up Sheet**

2. **Date / Time / Place of Bid Opening – Tuesday, January 19, 2016, 2:00 PM – RPS 205 – 501 7th Street Rockford, IL**
   * RPS Bid Number: 16-22
   * Refer to specifications front end documents for additional information
   Tamara Pugh - RPS Dist. #205 / tamara.pugh@rps205.com

3. **Owner:** Rockford Public School District #205
   a. Tamara Pugh - RPS Dist. #205 - Purchasing / tamara.pugh@rps205.com
   b Kevin Behling, RPS Dist. #205 – Exec. Dir. of Design & Const. / kevin.behling@rps205.com

4. **Architect/Engineer:** CannonDesign
   a. Sanja Residbegovic - sresidbegovic@cannondesign.com

5. **Program Manager:** Ragnar Benson Construction
   a. Craig Elliott, Project Manager
   b. Pre-Bid Opening Statement

B. PROJECT PROCEEDURES

1. Bid Date/Time: **Tuesday, January 19, 2016, 2:00 p.m.**

2. Tax Exempt

3. Bid RFI Procedure – Email Only – All correspondence MUST be sent to Tamara Pugh.
   Last RFI submittal date: Wednesday, January 13, 2016, @ 12:00 PM

   During Bidding Process – Submit all email RFI's to Tamara Pugh, Executive Director of Budget and Purchasing at tamara.pugh@rps205.com

AGENDA

MANDATORY PRE BID MEETING
Bid No. 16-22
Rockford Public School District #205
Riverdahl Elementary School -

B. PROJECT PROCEEDURES *(continued)*

4. Bid Documents – Plan Issue Date Friday, December 11, 2015

5. Bidding Requirements
   a. Deliverables
      1) . Bid Form
      2.) Preliminary Project Schedule

   2. AIA Prequalification Form #A-305

   3. 5% Bid Bond or a Cashier's Check MUST Accompany the Bid
      NOTE: Bid Bond or Cashier's Check made payable to the Owner not Hagney Architect

   4. Performance & Payment Bond

   5. ALL Alternates MUST Bid
      a. Review of Alternates as spelled out in specifications
      b. Alternate #1 – Main Office Renovation
      c. Alternate #2A – 1st Floor Window Replacement
      d. Alternate #2B - Lower level Window Replacement
      e. Alternate #3 – Secondary Door and Sidelight Replacement

6. Addenda Status

7. Faxed/Emailed Bids Will **NOT** Be Accepted

8. Nothing stated at the Pre-Bid meeting or any verbal/email/fax communication from anyone will change the project documents, unless Addendum is issued by CannonDesign. Minutes of the meeting accompanies an addendum.

9. Permits

AGENDA

MANDATORY PRE BID MEETING
Bid No. 16-22
Rockford Public School District #205
Riverdahl Elementary School -

C. PROJECT OVERVIEW

1. Project Scope

a. Approximately – 6,600 SF Gym Addition/Kitchen Remodel
   - Brief review of drawings

b. Selective interior renovations

c. Mechanical system upgrade

d. Electric service upgrade

e. Coordination with ongoing school activities, milestone dates and sequence:

1. Anticipated Board Approval	Tuesday, January 19, 2016
2. Site Mobilization (Spring Break)	March 28, 2016 thru April 1, 2016
3. Window Mock-up	March 28, 2016 thru April 1, 2016
4. Kitchen Remodeling	May 2, 2016 thru August 12, 2016
5. Work to be Completed During Summer	June 6, 2016 thru August 12, 2016
• Site Work: Window Replacement and Toilet Room Renovation	
6. Boiler Replacement	June 6, 2016 thru October 1, 2016
7. Addition completion	December 12, 2016

h. Contractor Parking Requirements *(restrictions)*

j. Staging / Material Storage Requirements

k. Access / Use of Building and/or Site

C. PROJECT OVERVIEW *(continued)*

l. Use of Utilities *(restrictions)*
   No impact upon existing facilities

m. Working on Site *(Site Noise, Safety, Hours Requirements)* – Chain link fencing and orange snow fencing

n. Work under separate projects – Hazardous Material Abatement

AGENDA

MANDATORY PRE BID MEETING
Bid No. 16-22
Rockford Public School District #205
Riverdahl Elementary School -

o. Construction toilet facilities

p. Construction job trailer

q. Temporary construction heating, ventilation, lighting and power

r. Utility hook-up fees paid for by RPS

s. Water, gas, fiber optic and electrical shutdowns

D. PROJECT REQUIREMENTS

1. Meetings - Weekly
2. Testing
3. Close Out – BHFX
4. Criminal History Documentation -Statewide Sex Offender Database & Statewide Child Murder & Violent Offender against Youth Database
5. Inspections
6. Post Award Deliverables: Schedule of Values / Project Schedule / Labor Rate Schedule
7. General Contractor's full-time foreman
8. Submittal exchange for shop drawings, RFIs, ASIs, etc. . .

E. GENERAL QUESTIONS

F. WALK THRU

G. SCHEDULE DATE FOR SECOND WALK THRU

Rockford Public Schools District 205
Riverdahl Elementary School – Addition & Renovation **BID ADDENDUM NO. 1**
3520 Kishwaukee St., Rockford IL 61109
Cannon Design Project No. 004645.05

Date of Addendum: January 07, 2016
Original Date of Contract Documents: Issued for Bid: December 11, 2015

Attn:

Craig Elliott
Ragnar Benson Construction
1907 Kishwaukee Street
Rockford, Illinois 61104

Architects and Engineers

Cannon Design
225 N. Michigan Ave, Suite 1100
Chicago, Illinois 60601

This Addendum amends Drawings and/or Specifications and/or Addenda for the above titled project, as indicated below, and is hereby incorporated into the Contract Documents as part thereof.

Bidders are required to acknowledge receipt of this Addendum in the space provided on the Proposal/Bid Form.

Attachments:

Specifications: 000110, 004100, 087100, 232500

Drawings:

SPECIFICATIONS (PROJECT MANUAL)

1. 000100 – TABLE OF CONTENTS

   A. Page 000100-3, Division 08 – OPENINGS; Add the following section:

      "087100 Door Hardware"

   B. Page 000100-5, Division 28 – ELECTRONIC SAFETY AND SECURITY; Add the following sections:

      "280010 Basic Division 28 Requirements
      281300 Access Control System Extension"

2. 004100 – BID FORM

   A. Section 004100 has been revised and is being issued as an attachment to this Addendum.

3. 012300 – ALTERNATES

   A. Page 012300-2, Article 3.1; Paragraph D has been revised to read as follows:

"D. Alternate No.2B: State the amount to be ADDED TO the Base Bid to replace existing basement windows in the 1951 building, as indicated on the Drawings. Removal of existing window not in contract. Include associated demolition, patching of finishes and window treatment where indicated on Drawings."

B. Page 012300-2, Article 3.1; Paragraph E has been revised to read as follows:

"E. Alternate No.3: State the amount to be ADDED TO the Base Bid to replace existing secondary exterior doors and sidelites where indicated on the Drawings. Removal of existing doors not in contract."

C. Page 012300-2, Article 3.1; Add Paragraph F to read as follows:

"F. Alternate No.4: State the amount to be ADDED TO the Base Bid to install a rooftop unit and all associated piping, ductwork, thermostats and diffusers on Area E roof to serve six rooms along the south side of the gymnasium where indicated on the Drawings."

4. <u>042000 – UNIT MASONRY</u>

A. Page 042000-5, Article 2.4, Paragraph A; Revise Subparagraph 1 to read as follows:

"1. Brick Type 1: Belden Brick; modular, 691-693A, smooth.

B. Page 042000-5, Article 2.4, Paragraph A; Delete Subparagraph 3 in its entirety.

5. <u>076200 – SHEET METAL FLASHING AND TRIM</u>

A. Page 076200-3, Article 2.1, Paragraph A, Subparagraph 2, subparagraph a: Revise subparagraph 1) to read as follows:

"1) Color: As selected by Architect from manufacturer's full range, to be used at the east elevation of the new link addition to the gymnasium."

B. Page 076200-3, Article 2.1, Paragraph A, Subparagraph 2: Revise subparagraph b to read as follows:

"b. Clear Anodic Finish, Coil Coated: AAMA 611, AAM12C22A41, Class I, 0.018 mm or thicker, to be used in the new gymnasium addition."

6. <u>084113 - ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS</u>

A. Page 084113-7, Article 2.8, Subparagraph 2; Revise subparagraph a to read as follows:

"a. Dark Bronze (For use at existing building, replacement storefront, and entry doors.)"

7. 085113 – ALUMINUM WINDOWS

   A. Page 085113-5, Article 2.8; Revise paragraph B to read as follows:

      "B. Color Anodic Finish: AAMA 611, AA-M12C22A42/A44, Class I, 0.018 mm or thicker.

         1. Color: Dark Bronze."

8. 087100 – DOOR HARDWARE

   A. Section 087100 is new and is included as an attachment to this Addendum.

9. 096466 - WOOD ATHLETIC FLOORING

   A. Page 096466-3, Article 2.2, Paragraph A; Revise Subparagraph 1 to read as follows:

      "1. Basis-of-Design Product: Subject to compliance with requirements, provide Aacer Scissorloc II with Air Flow System, or comparable product by one of the following:"

   B. Page 096466-3, Article 2.2, Paragraph A, Subparagraph 1; Revise subparagraph a to read as follows:

      "a. Action Interloc, by Action Floor Systems."

10. 096513 - RESILIENT BASE AND ACCESSORIES

    A. Page 096513-2, Article 2.2; Revise Paragraph D to read as follows:

       "D. Height: 6 inches (152.4 mm)."

11. 230700 – HVAC INSULATION

    A. Page 230700-2, Article 2.1, Paragraph A; Add subparagraph 9 to read as follows:

       "9. Industrial Insulation Group."

    B. Page 230700-6, Article 3.4, Paragraph A; Add subparagraph 5 to read as follows:

       "5. Boiler feed unit."

12. 232500 – HVAC WATER TREATMENT

    A. Section 232500 has been revised in its entirety and is being issued as an attachment to this Addendum.

13. 235100 – BREECHINGS, CHIMNEYS, AND STACKS

A. Page 235100-3; Add Article 2.3 to read as follows:

"2.3 LISTED TYPE B AND BW VENTS

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

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

1. American Metal Products; MASCO Corporation.
2. Hart & Cooley, Inc.
3. Heat-Fab, Inc.
4. Industrial Chimney Company.
5. Metal-Fab, Inc.
6. Schebler Co. (The).
7. Selkirk Inc.; Selkirk Metalbestos and Air Mate.
8. Van-Packer Company, Inc.

C. Description: Double-wall metal vents tested according to UL 441 and rated for 480 deg F (248 deg C) continuously for Type B with neutral or negative flue pressure complying with NFPA 211.

D. Construction: Inner shell and outer jacket separated by at least a 1/4-inch (6-mm) airspace.

E. Inner Shell: ASTM B 209 (ASTM B 209M), Type 3105 aluminum ASTM A 666, Type 430 stainless steel.

F. Outer Jacket: Aluminized steel, stainless steel above roof.

G. Accessories: Tees, elbows, increasers, draft-hood connectors, terminations, adjustable roof flashings, storm collars, support assemblies, thimbles, firestop spacers, and fasteners; fabricated from similar materials and designs as vent-pipe straight sections; all listed for same assembly.

1. Termination: Stack cap designed to exclude minimum 90 percent of rainfall.
2. Termination: Round chimney top designed to exclude minimum 98 percent of rainfall.
3. Termination: Exit cone with drain section incorporated into riser.
4. Termination: Antibackdraft."

14. <u>280010 - BASIC DIVISION 28 REQUIREMENTS</u>

A. Section 280010 is new and is included as an attachment to this Addendum.

15. <u>281300 – ACCESS CONTROL SYSTEM EXTENSION</u>

A. Section 281300 is new and is included as an attachment to this Addendum.

DRAWINGS

1. G0001 – DRAWING INDEX

   A. Removed duplicates from structural list of drawings. (Sheet is not re-issued)

2. G0201 – LEVEL 01 CODE COMPLIANCE

   A. Moved the egress arrow and information to location of egress door on SE corner of gymnasium.

3. DEMOLITION KEYNOTES:

   A. Updated keynote 5A to say: "CAREFULLY CUT AND REMOVE EXISTING PLASTER CEILING STARTING FROM 6" AWAY FROM CURVED PLASTER SOFFIT AT WINDOW. CURVED PLASTER SOFFIT AT WINDOW TO REMAIN. DASHED LINE INDICATES EXTENT."

   B. Updated Keynote 17 to say: "EXISTING EXTERIOR ALUMINUM STOREFRONT SYSTEM ENTRY DOORS, DOOR HARDWARE AND THRESHOLDS TO BE REMOVED BY OTHER FOR DOOR REPLACEMENT (NOT IN CONTRACT). DOOR INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR"

   C. Updated Keynote 18 to say: "EXISTING EXTERIOR DOORS, INCL. FLASHING AND SEALS TO BE REMOVED BY OTHER FOR DOOR REPLACEMENT (NOT IN CONTRACT). DOOR INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR."

4. D0100.DE – LEVEL 00 ARCHITECTURAL DEMOLITION PLAN – AREA D & E

   A. Removed dimension "6'-0 1/2"" from room STORAGE 004.

5. D0201.C– LEVEL 01 ARCHITECTURAL DEMOLITION PLAN – AREA C

   A. Removed keynote tag "4" from north vestibule and two half size classrooms adjacent to room 147.

   B. Added keynote tag "12" to Classroom: Art 149 and Classroom: Music 147.

   C. Removed keynote tag "25 CARPET" from Classroom: Art 149

   D. Removed keynote tag "17" and added keynote tag "18" to exterior door being removed at room Faculty Lounge 128

   E. Added ALTERNATE 4 area and scope to rooms 146, 127, 131, 111, 112

6. D0201.E – LEVEL 01 ARCHITECTURAL DEMOLITION PLAN – AREA E

   A. In room CLASSROOM 110 replace text "VAT" from keynote 25 with "MARMOLEUM".

B. In Main Vestibule 142, removed keynote "6 CURVED PLASTER POCKET AS REQUIRED"

C. In Main Vestibule 142, keynote "3 CARPET" added ",REMOVE DOWN TO TERAZZO FLOOR"

D. Remove keynote "6 PLASTER CEILING INCL. CURVED PLASTER POCKET" from room adjacent to Classroom 120

E. Added ALTERNATE 4 area and scope to rooms 146, 127, 131, 111, 112

7. D0202 – DEMOLITION ELEVATIONS / DETAILS:

A. Detail 1, removed detailing from exterior doors.

B. Detail 7, added keynote "REMOVE PORTION OF EXISTING PARTITION, AS SHOWN, DOWN TO SLAB"

C. Detail 8, changed graphic for column to remain to be solid gray line and light gray fill.

8. D0203.E – ROOF PLAN DEMOLITION PLAN – AREA E

A. Cleaned up the drawing background. Added a note "EXISTING ROOF TO REMAIN"

9. D0601.C– LEVEL 01 HVAC DEMOLITION PLAN – AREA C

A. Drawing M0601C is being re-issued as an attachment to this Addendum

10. D0601.E– LEVEL 01 HVAC DEMOLITION PLAN – AREA E

A. Drawing M0601.E is being re-issued as an attachment to this Addendum

11. D0801.C – LEVEL 01 DEMOLITION PLAN – AREA C

A. Added note "REMOVE EXISTING LUMINAIRES IN THIS AREA" to Electrical 170.

12. Civil Drawings:

A. For clarity, Title block renumbered issuances as **1** ISSUED FOR BID and **2** Addendum 01.

13. C02 – EROSION CONTROL PLAN

A. Drawing C02 is being re-issued as an attachment to this Addendum

14. C05 – LAYOUT PLAN

A. Drawing C05 is being re-issued as an attachment to this Addendum

15. C06 – UTILITY PLAN

A. Drawing C06 is being re-issued as an attachment to this Addendum

16. C07 – GRADING PLAN

    A. Drawing C07 is being re-issued as an attachment to this Addendum

17. S0001 – GENERAL NOTES AND ABBREVIATIONS

    A. Drawing S0001 is being re-issued as an attachment to this Addendum

18. S0101 – LEVEL 01 FOUNDATION PLAN – AREA B

    A. Drawing S0101 is being re-issued as an attachment to this Addendum

19. S0102 – LEVEL 02 FRAMING PLAN – AREA B

    A. Drawing S0102 is being re-issued as an attachment to this Addendum

20. S0302 – TYPICAL FOUNDATION DETAILS

    A. Drawing S0302 is being re-issued as an attachment to this Addendum

21. S0401 – TYPICAL MASONRY DETAILS

    A. Drawing S0401 is being re-issued as an attachment to this Addendum

22. S0501 – TYPICAL STEEL FRAMED DETAILS

    Drawing S0501 is being re-issued as an attachment to this Addendum

23. S0503 – TYPICAL STEEL DECK DETAILS

    Drawing S0503 is being re-issued as an attachment to this Addendum

24. A0052 – TRASH ENCLOSURE

    A. Rotated Detail 5 and Detail 6 to align with callouts on detail 3

    B. Added a note to Trash Enclosure Plan: “4” BOLLARDS. SEE CIVIL SHEET C08 FOR STANDARD BOLLARD DETAILS, TYP.”

25. FLOOR PLAN NOTES

    A. Fixed spelling of word “CURTAIN” in keynote 6A.

26. A0100.DE – LEVEL 00 FLOOR PLAN – AREA D & E

    A. Added elevation tag 4/A0302 outside of Storage room 011 and 012

27. A0101.B – LEVEL 01 FLOOR PLAN – AREA B

    A. Remove keynote 19 and square depicting knox box.

    B. Revised Concrete Stoop sizes at doors

28. A0101.C – LEVEL 01 FLOOR PLAN – AREA C

    A. Replace keynote 24 with keynote 23 in both areas of Kitchen 171.

    B. Correct spelling of word "PROVIDE" and add arrow above kitchen serving line overhead door.

    C. Added Alternate 4 scope

29. A0101.D – LEVEL 01 FLOOR PLAN – AREA D

    A. Added arrow on to keynote 6 to include all windows replacement for classroom 109.

30. A0101.E – LEVEL 01 FLOOR PLAN – AREA E

    A. Added keynote 19 and symbol for knox box

    B. Added Alternate 4 scope

31. A0103.C – ROOF PLAN – AREA C

    A. Cleaned up background. Added note "EXISTING ROOF TO REMAIN"

    B. Added location for second condenser for kitchen equipment and added roof patch areas.

    C. Added alternate outlines

32. A0103.E – ROOF PLAN – AREA E

    A. Cleaned up drawing background

    B. Added note pointing to chimney: "PATCH TOP OF CHIMNEY AFTER HEIGHT REDUCED. REFER TO DETAIL 10/M0701"

    C. Added note "EXISTING ROOF TO REMAIN" to area above main office

    D. Allocated "ALTERNATE 1" for both roof top units and roof patch necessary to area above main office

33. A0201 – ENLARGED TOILET ROOMS

    A. Updated dimensions on all 4 views

34. A0301 – BUILDING ELEVATIONS

    A. General Note 1. Change "A0303" to "A0312"

    B. View 2, North Elevation, Change reference in note regarding dumpster enclosure from "A0852" to "A0052"

    C. View 2, North Elevation, update reference note "SEE WINDOW REPLACEMENT SHEET

A0311" to say: "SEE ENLARGED WINDOW TYPES SHEET A0409 FOR WINDOW REPLACEMENTS"

D. View 1, East Elevation, moved the arrow of note "PREFINISHED MTL GUTTER AND DOWNSPOUT TO MATCH EXISTING SIZE PROFILE COLOR" to point to new gutter in new construction area.

35. A0409 – ENLARGED WINDOW TYPES

A. Drawing A0409 is being re-issued as an attachment to this Addendum

36. A0410 – WINDOW REPLACEMENT DETAILS

A. Drawing A0410 is being re-issued as an attachment to this Addendum

37. A0701.C – LEVEL 01 REFLECTED CEILING PLAN – AREA C

A. Drawing A0701.C is being re-issued as an attachment to this Addendum

38. A0701.E – LEVEL 01 REFLECTED CEILING PLAN – AREA E

A. Drawing A0701.E is being re-issued as an attachment to this Addendum

39. A1003 – DOORS & BORROWED LIGHTS

A. Drawing A1003 is being re-issued as an attachment to this Addendum

40. M0100 – BOILER ROOM DEMO & NEW WORK

A. Drawing M0100 is being re-issued as an attachment to this Addendum

41. M0101.C – LEVEL 01 HVAC DUCTWORK PLAN – AREA C

A. Drawing M0101.C is being re-issued as an attachment to this Addendum

42. M0101.E – LEVEL 01 HVAC DUCTWORK PLAN – AREA E

A. Drawing M0101.E is being re-issued as an attachment to this Addendum

43. M0201.C – LEVEL 01 HVAC PIPING PLAN – AREA C

A. Drawing M0201.C is being re-issued as an attachment to this Addendum

44. M0201.E – LEVEL 01 HVAC PIPING PLAN – AREA E

A. Drawing M0201.E is being re-issued as an attachment to this Addendum

45. M0202.C – ROOF LEVEL - HVAC DUCTWORK & PIPING PLAN – AREA C

A. Drawing M0202.C is being re-issued as an attachment to this Addendum

46. M0202.E – ROOF LEVEL - HVAC DUCTWORK & PIPING PLAN – AREA E

A. Drawing M0202.E is being re-issued as an attachment to this Addendum

47. M0501– SCHEDULES

A. Drawing M0501 is being re-issued as an attachment to this Addendum

48. M0502– SCHEDULES

A. Drawing M0502 is being re-issued as an attachment to this Addendum

49. M0602– FLOW & CONTROL DIAGRAMS

A. Drawing M0602 is being re-issued as an attachment to this Addendum

50. M0604– FLOW, CONTROL, PIPING DIAGRAM

A. Drawing M0604 is being re-issued as an attachment to this Addendum

51. M0701– HVAC DUCTWORK & GENERAL DETAILS

A. Drawing M0701 is being re-issued as an attachment to this Addendum

52. E0201.B – LEVEL 01 POWER AND SYSTEMS PLAN – AREA B

A. Security system changes.

53. E0201.C – LEVEL 01 POWER AND SYSTEMS PLAN – AREA C

A. Security system changes.

54. E0201.D – LEVEL 01 POWER AND SYSTEMS PLAN – AREA D

A. Security system changes.

55. E0201.E – LEVEL 01 POWER AND SYSTEMS PLAN – AREA E

A. Security system changes.

B. Alternate 1 and 2A boundaries fixed.

C. Added keyed note 16, “NEW FIRE ANNUNCIATOR PANEL TO BE INCLUDED IN BASE BID.”

56. E0201.F – LEVEL 01 POWER AND SYSTEMS PLAN – AREA F

A. Security system changes.

57. E0202 – ROOF POWER AND SYSTEMS PLAN

A. Added CU-1 connection.

B. Added RTU-3 connection.

C. Added Alternate 1 boundaries.

58. E0521 – POWER RISER DIAGRAMS

A. Added RTU-2 and RTU-3 to riser.

59. E0621 – POWER SCHEDULES

A. Added CU-2 and RTU-3 to Equipment Connection/Motor Controller Schedule.

60. E0722 – TECHNOLOGY DETAILS

A. Edited notes in Details 1 and 2.

61. E0723 – TECHNOLOGY DETAILS.

A. Added Detail 6, DOOR CONTROL SCHEMATIC BLOCK DIAGRAM, to sheet.

REQUESTS FOR INFORMATION (RFIs)

1. Please see Riverdahl-Bid RFI's Log included within Addendum 01

END OF ADDENDUM NO. 1

TABLE OF CONTENTS - VOLUME 1

000101 Project Title Page
000110 Table of Contents

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

ADVERTISEMENT FOR BID
Invitation to Bid
Statement of No Interest – Bid
Sealed Bid Proposal Label

INSTRUCTIONS, TERMS AND CONDITIONS
AIA Document A701 – 1997 Instructions to Bidders
Supplementary Instructions to Bidders
General Terms and Conditions
Supplementary Conditions
Prevailing Wages
AIA Document A201 – 2007 General Conditions of the Contract for Construction
Addendum Form
Change Order Procedures dated 04.03.13

REQUIRED FORMS
003132 - Subsurface Drilling and Sampling Information
Attachment - Report of Soils Exploration
Required Bid Forms Check List
Section 004100 – Bid Form
Attachment: References
Bid Rigging Certification
Minority and Women Owned Business Concern Representation
Certificate Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion
Certificate Regarding Lobbying
OFAC Compliance
Vendor Conflict of Interest Disclosure Form
Certified Cleared Employee List
Asbestos Notification
Form W-9 Department of the Treasury Internal Revenue Service
Section 004115 – References
Section 006000 – Forms
Regional Office of Education – ROE Called Inspections Form
AIA Document A305 - 1986 Contractor's Qualification Statement
AIA Document A101 - 2007 Standard Form of Agreement between Owner and Contractor
Sample Certificate of Liability Insurance Form

DIVISION 01 – GENERAL REQUIREMENTS

011000 Summary
012300 Alternates
012900 Payment Procedures
Attachment - Payment Application Schedule

Attachment - Change Order Procedures
013100 Project Management and Coordination
013200 Construction Progress Documentation
013233 Photographic Documentation
013300 Submittal Procedures
Attachment – Submittal Identification Sheet
014000 Quality Requirements
014110 Special Inspections and Testing – IBC 2006
Attachment - Statement of Special Instructions - IBC 2009
015000 Temporary Facilities and Controls
016000 Product Requirements
Attachment – Request for Substitution – Equivalent Review
017300 Execution
017329 Cutting and Patching
017700 Closeout Procedures
017823 Operation and Maintenance Data
017839 Project Record Documents
017900 Demonstration and Training

DIVISION 02 – EXISTING CONDITIONS

024119 Selective Structure Demolition

DIVISION 03 – CONCRETE

033000 Cast-In-Place Concrete
035416 Hydraulic Cement Underlayment

DIVISION 04 – MASONRY

042000 Unit Masonry

DIVISION 05 – METALS

051200 Structural Steel Framing
052100 Steel Joist Framing
053100 Steel Decking
054000 Cold-Formed Metal Framing
055000 Metal Fabrications

DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

061053 Miscellaneous Rough Carpentry
061600 Sheathing

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

072100 Thermal Insulation
072726 Fluid Applied Membrane Air Barriers
074243 Composite Wall Panels
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075423 Thermoplastic Polyolefin (TPO) Roofing

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BID FORM

To: Rockford Public School District 205
501 7th Street
Rockford, Illinois 61104

In compliance with your Invitation for Bids, the undersigned,

_____
(Name of firm, partnership or Corporation)

hereby proposes to furnish all labor and materials and perform all general work for the construction of the Riverdahl Elementary School in strict accordance with the Project Manual dated November 3, 2015 and the Drawings mentioned therein, and including any subsequently issued addenda for consideration of the following amount:

Base Bid _____ Dollars ($_____)
(Include 200 CY Allowance for over-excavation and backfill in Base Bid).

ALTERNATES

Refer to Division 01 Section 012300 – Alternates for description of Alternates.

Alternate Bid #1:
Demolish and rebuild main office as indicated on the Drawings. Window replacement in this area is under Alternate 2A below. Alternate amount: $_____.

Alternate Bid #2A:
Replace existing first floor windows in the 1951 building, including main entry curtain wall, as indicated on the Drawings. Removal of existing window is not in contract. Include associated demolition and patching of finishes as shown, and window treatment where indicated on Drawings.
Alternate amount: $_____.

Alternate Bid #2B:
Replace existing basement windows in the 1951 building, as indicated on the Drawings. Removal of existing window not in contract. Include associated demolition, patching of finishes and window treatment where indicated on the Drawings. Alternate amount: $_____.

Alternate Bid #3:
Replace existing secondary exterior doors and sidelites where indicated on the Drawings. Removal of existing doors not in contract.
Alternate amount: $_____.

Alternate Bid #4:
Install a rooftop unit and all associated piping, ductwork, thermostats and diffusers on Area E roof to serve six rooms along the south side of the gymnasium as indicated on the Drawings.
Alternate amount: $_____.

If any of the window alternates 2A, 2B or 3 are accepted, a separate Purchase Order will be issued; therefore separate invoicing will be required.

SCHEDULE OF COMPLETION DATES

1. On Site Mobilization is to occur 3/28/2016.
2. Window Mock Up is to be completed 3/28/2016 – 4/1/2016.
3. Kitchen remodeling to occur 5/2/2016 – 8/12/2016.
4. Work to be completed during Summer 6/6/2016 – 8/12/2016. This includes:

    a. Site Work.
    b. Trash Pad.
    c. Window Replacement.
    d. Electrical/Lighting Upgrades.
    e. Toilet Room Buildout

5. Boiler Replacement to occur 6/6/2016 – 10/1/2016.
6. All additions are to be completed by 12/12/2016.

If written notice of the acceptance of this Bid is mailed, telegraphed, or delivered to the undersigned at any time prior to the date set for the expiration of the Bid Security, the undersigned will, within ten (10) days after the notice, execute and deliver a contract in accordance with the required Form of the Agreement and give Performance and Payment Bond, if so required, in accordance with the Bid as accepted.

The undersigned hereby designates as his office to which such notice of acceptance may be mailed, telegraphed or delivered:

_____

This Bid may be withdrawn at any time prior to the scheduled time for the opening of Bids or any authorized postponement thereof.

Caution: This Bid may be rejected if not accompanied by a guarantee in the specified amount. Any certified check may be held uncollected at risk of Bidders submitting them.

Bids must be submitted in DUPLICATE.

Addendum Receipt: The receipt of the following addenda to the Specifications is acknowledged:

Addendum No. _____ Date _____ Addendum No. _____ Date _____
Addendum No. _____ Date _____ Addendum No. _____ Date _____
Addendum No. _____ Date _____ Addendum No. _____ Date _____

Submittals, as required by the Instructions/Supplementary Instructions to Bidders, shall be completed and delivered to the Architect, by the two (2) or three (3) low bidders, within three working days after the Bid opening.

Dated _____, 2015 _____

Legal name of person, partnership or corporation

(Sign Bid Here) By: _____
Name and Title

Legal Business Address: _____
Street Address

_____
City and State

UNIT PRICES

Should the amount of work required for this project be increased or decreased due to changes in design or conditions at the site, the undersigned agrees that the following unit prices will be the basis for an increase or decrease to the contract amount.

Refer to Division 01 Section 012200 – Unit Prices for description of Unit Prices.

Unit Price No. 1: For cubic yard over-excavation, hauling and backfil according provide a unit price for removal of unsuitable material and replacement with breaker run aggregate. Contractor's unit price shall be in cubic yards, to be measured in the field, and shall include removal and offsite disposal of unsuitable material and import and placement of breaker run aggregate, complete according to Division 31 Section - 312010 "Earthwork for Buildings" $_____/cubic yard.

Unit Price No. 2: Undercut location at footings. Provide unit price for removal or unsuitable soil and replacement with lean concrete in accordance with specification.
$_____/cubic yard.

ALLOWANCES:

The following material cost allowances have been included in the Base Bid and should the following allowance exceed or be less than the cost of selected items, the difference in cost shall be added to, or credited to the Owner's Contract.

Refer to Division 01 Section 012100 – Allowances for description of Allowances.

Allowance No. 1: Include 200 cubic yards of over-excavation, hauling and backfil according provide a unit price for removal of unsuitable material and replacement with breaker run aggregate.

LIST SUBCONTRACTORS/VALUES

1. EARTHWORK_____$_____
2. MASONRY_____$_____
3. ROOFING_____$_____
4. CONTROLS_____$_____
5. FIRE ALARM SYSTEM_____$_____
6. FIRE PROTECTION _____$_____
7. PLUMBING _____$_____
8. HVAC _____$_____
9. ELECTRICAL _____$_____
10. LOW VOLTAGE _____$_____
11. WINDOWS _____$_____

IF BIDDER IS A FIRM OR PARTNERSHIP, COMPLETE THE FOLLOWING:

Name of Members or Partners	Legal Residence
_____	_____

_____ _____

_____ _____

_____ _____

IF BIDDER IS A CORPORATION, COMPLETE THE FOLLOWING:

State of Incorporation: _____

Name and Title	Legal Residence
_____ President	_____
_____ Vice President	_____
_____ Secretary	_____

Bidders References: Each contractor is to submit a list of reference with bid form. See attached document.

DIRECTION FOR MAILING

Envelopes containing Bids, Guarantees, etc., must be sealed, marked and addressed in lower left hand corner as follows:

Bid For:
Riverdahl Elementary School

Address:
Rockford Public School District 205
501 7th Street
Rockford, Illinois 61104

Attention: Cannon Design

BID PROPOSAL CERTIFICATIONS

Firm Name _____

Business Address _____

Telephone Number _____ Date of Bid _____

I. **General Bid Certification**

The bidder certifies that he will furnish, at the prices herein quoted, the materials, equipment and/or services as proposed on this bid.

II. **Non-Collusive Bidding Certifications**: By submission of this bid proposal, the bidder also certifies compliance with the following:

1. Statement of Non-Collusion in Bids and Proposals to Political Subdivision of the State: Every bid or proposal hereafter made to a political subdivision of the state or any public department, agency or official thereof where competitive bidding is required by statute, rule, regulation, or local law, for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement subscribed by the bidder and affirmed by such bidder as true under the penalties of perjury: Non-collusive bidding certification.

   (a) By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:

      (1) The prices in this bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
      (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder to any competitor; and
      (3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

   (b) A bid shall not be considered for award nor shall any award be made where (a)(1), (a)(2) and (a)(3) above have not been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where (a)(1), (a)(2) and (a)(3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting completions.

   The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other

customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning subparagraph one (a).

2. Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a corporate bidder for work of services performed or to be performed or goods sold or not to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in subdivision one of the section, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

Signature (Authorized) _____

Title _____

WAIVER OF IMMUNITY CLAUSE

The bidder hereby agrees to the provisions of the applicable General Municipal Law which requires that upon the refusal of person, when called before a grand Jury to testify concerning any transaction or contract had with the State, any political subdivision thereof, a public authority or with any public department, agency or official of the state or of any political subdivision thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract.

(a) Such person, any firm, partnership, or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with any municipal corporation or any public department, agency or official thereof, for goods, work or services, for a period of five years after such refusal, and

(b) Any and all contracts made with any municipal corporation or any public department, agency or official thereof, since the effective date of this law, by such person, and by any firm, partnership, or corporation of which he is a member, partner, director of officer may be canceled or terminated by the municipal corporation without incurring any penalty or damages on account of such cancellation or termination, but any monies owing by the municipal corporation for goods delivered or work done prior to the cancellation or termination shall be paid.

_____
Individual

_____
Corporation

Date _____ By: _____

AFFIRMATIVE ACTION AGREEMENT

Firm Name: _____

Business Address: _____

Telephone Number: _____

Non-discrimination Clauses:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color or national origin and will take affirmative action to insure that they are afforded equal employment opportunities without discrimination because of race, creed, sex, color or national origin. Such action shall be taken with reference, but not limited to: recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of pay or other forms of compensation, and selection for training or retraining, including apprenticeship and on-the-job training.

2. The Contractor will send to each labor union or representative of workers with which he has or is bound by a collective bargaining or other agreement or understanding, a notice, to be provided by the State Commission for Human Rights, advising such labor union or representative of the Contractor's agreement under clauses (1) through (7) (hereinafter called "non-discrimination clauses"). If the Contractor was directed to do so by the contracting agency as part of the bid or negotiation of this Contract, the Contractor shall request such labor union or representative to furnish him with a written statement that such labor union or representative will not discriminate because of race, creed, sex, color or national origin and that such labor union or representative either will affirmatively cooperate, within the limits of its legal and contractual authority, in the implementation of the policy and provisions of these non-discrimination clauses or that it consents and agrees that recruitment, employment and the terms and conditions of employment under this Contract shall be in accordance with the purposes and provisions of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the Contractor shall promptly notify the State Commission for Human Rights of such failure or refusal.

3. The Contractor will post and keep posted in conspicuous places, available to employees and applicants for employment, notices to be provided by the State Commission for Human Rights setting forth the substance of the provisions of clauses (1) and (2) and such provisions of the State's laws against discrimination as the State Commission for Human Rights shall determine.

4. The Contractor will state, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, sex, color or national origin.

5. The Contractor will comply with the provisions of Sections 291-299 of the Executive Law and the Civil Rights Law, will furnish all information and reports deemed necessary by the State Commission for Human Rights under these non-discrimination clauses and such sections of the Executive Law, and will permit access to his books, records and accounts by the State Commission for Human Rights, the Attorney General and the Industrial Commissioner for the

purposes of investigation to ascertain compliance with these non-discrimination clauses and such sections of the Executive Law and Civil Rights Law.

6. This Contract may be forthwith canceled, terminated or suspended, in whole or in part, by the contracting agency upon the basis of a finding made by the State Commission for Human Rights that the Contractor has not complied with these non-discrimination clauses, and the Contractor may be declared ineligible for future contracts made by or on behalf of the State or a public authority or agency of the state, until he satisfies the State Commission for Human Rights that he has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such finding shall be made by the State Commission for Human Rights after conciliation efforts by the Commission have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Commission, notice thereof has been given to the Contractor and an opportunity has been afforded him to be heard publicly before three members of the Commission. Such sanctions may be imposed and remedies invoked dependently of or in addition to sanctions and remedies otherwise provided by law.

7. The Contractor will include the provisions of clauses (1) through (6) in every subcontract or purchase order in such a manner that such provisions will be binding upon each subcontractor or vendor as to operations to be performed within the State of Illinois. The Contractor will take such action in enforcing such provisions of such subcontract or purchase order as the contracting agency may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor shall promptly so notify the Attorney General, requesting him to intervene and protect the interests of the State of Illinois.

Signature (Authorized) _____

Title _____

END OF BID FORM

SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes commercial door hardware for the following:

1. Swinging doors.
2. Other doors to the extent indicated.

B. Door hardware includes, but is not necessarily limited to, the following:

1. Mechanical door hardware.
2. Electromechanical door hardware.
3. Automatic operators.
4. Cylinders specified for doors in other sections.

C. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.

1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
2. ICC/IBC - International Building Code.
3. NFPA 70 - National Electrical Code.
4. NFPA 80 - Fire Doors and Windows.
5. NFPA 101 - Life Safety Code.
6. NFPA 105 - Installation of Smoke Door Assemblies.
7. UL/ULC and CSA C22.2 – Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
8. State Building Codes, Local Amendments.

D. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series
2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.

B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.

1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."

2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

3. Content: Include the following information:

   a. Type, style, function, size, label, hand, and finish of each door hardware item.
   b. Manufacturer of each item.
   c. Fastenings and other pertinent information.
   d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
   e. Explanation of abbreviations, symbols, and codes contained in schedule.
   f. Mounting locations for door hardware.
   g. Door and frame sizes and materials.
   h. Warranty information for each product.

4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.

C. Shop Drawings: Details of electrified access control hardware indicating the following:

1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

   a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
   b. Complete (risers, point-to-point) access control system block wiring diagrams.
   c. Wiring instructions for each electronic component scheduled herein.

2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.

D. Proof of Certification: Provide copy of manufacturer(s) official certification or accreditation document indicating proof of status as a qualified installer of Windstorm assemblies.

E. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.

F. Informational Submittals:

1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

G. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.

1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.

2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.

E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.

F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:

1. Function of building, purpose of each area and degree of security required.

2. Plans for existing and future key system expansion.
3. Requirements for key control storage and software.
4. Installation of permanent keys, cylinder cores and software.
5. Address and requirements for delivery of keys.

G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.

1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
3. Review sequence of operation narratives for each unique access controlled opening.
4. Review and finalize construction schedule and verify availability of materials.
5. Review the required inspecting, testing, commissioning, and demonstration procedures

H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.

C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.

C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:

1. Structural failures including excessive deflection, cracking, or breakage.
2. Faulty operation of the hardware.
3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
4. Electrical component defects and failures within the systems operation.

C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.

D. Special Warranty Periods:

1. Seven years for heavy duty cylindrical (bored) locks and latches.
2. Five years for exit hardware.
3. Twenty five years for manual surface door closer bodies.
4. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.

B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:

C. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.

D. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.

1. Quantity: Provide the following hinge quantity, unless otherwise indicated:

   a. Two Hinges: For doors with heights up to 60 inches.
   b. Three Hinges: For doors with heights 61 to 90 inches.
   c. Four Hinges: For doors with heights 91 to 120 inches.
   d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.

2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:

   a. Widths up to 3’0”: 4-1/2” standard or heavy weight as specified.
   b. Sizes from 3’1” to 4’0”: 5” standard or heavy weight as specified.

3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

   a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
   b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:

   a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.

5. Acceptable Manufacturers:

   a. Bommer Industries (BO).
   b. Hager Companies (HA).
   c. McKinney Products (MK).

B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a

minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.

1. Acceptable Manufacturers:

   a. McKinney Products (MK).
   b. Pemko Manufacturing (PE).

2.3 POWER TRANSFER DEVICES

A. Electrified Quick Connect Transfer Hinges: Provide electrified transfer hinges with Molex™ standardized plug connectors and sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

   1. Acceptable Manufacturers:

      a. Hager Companies (HA) - ETW-QC (# wires) Option.
      b. McKinney Products (MK) - QC (# wires) Option.

B. Electrified Quick Connect Continuous Geared Transfer Hinges: Provide electrified transfer continuous geared hinges with a 12" removable service panel cutout accessible without de-mounting door from the frame. Furnish with Molex™ standardized plug connectors with sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.

   1. Acceptable Manufacturers:

      a. McKinney Products (MK) - SER-QC (# wires) Option.
      b. Pemko Manufacturing (PE) - SER-QC (# wires) Option.

2.4 CYLINDERS AND KEYING

A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.

B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.

   1. Acceptable Manufacturers:

      a. Sargent Manufacturing (SA).
      b. No Substitution.

C. Cylinders: Original manufacturer cylinders complying with the following:

1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
5. Keyway: Manufacturer's Standard.Match Facility Standard.

D. Key Quantity: Provide the following minimum number of keys:

1. Change Keys per Cylinder: Two (2)
2. Master Keys (per Master Key Level/Group): Five (5).
3. Construction Keys (where required): Ten (10).

E. Construction Keying: Provide construction master keyed cylinders.

F. Key Registration List (Bitting List):

1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
2. Provide transcript list in writing or electronic file as directed by the Owner.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified.

1. Furnish with solid cast levers, standard 2 3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.

2. Locks are to be non-handed and fully field reversible.

3. Extended cycle test: Locks to have been cycle tested in ordinance with ANSI/BHMA 156.2 requirements to 9 million cycles.

4. Acceptable Manufacturers:

a. Sargent Manufacturing (SA) – 10 Line.
b. No Substitution.

2.6 LOCK AND LATCH STRIKES

A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:

1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.

4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.

B. Standards: Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.5.
4. Dustproof Strikes: BHMA A156.16.

2.7 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.

2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.

3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.

4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.

5. Electromechanical Options: Subject to same compliance standards and requirements as mechanical exit devices, electrified devices to be of type and design as specified in hardware sets. Include any specific controllers when conventional power supplies are not sufficient to provide the proper inrush current.

6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.

   a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
   b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.

7. Vertical Rod Exit Devices: Provide and install interior surface and concealed vertical rod exit devices as Less Bottom Rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.

9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.

10. Rail Sizing: Provide exit device rails factory sized for proper door width application.

11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.

B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.

1. Acceptable Manufacturers:

a. Sargent Manufacturing (SA) - 80 Series.
b. No Substitution.

C. Tube Steel Removable Mullions: ANSI/BHMA A156.3 removable steel mullions with malleable-iron top and bottom retainers and a primed paint finish.

1. Provide keyed removable feature where specified in the Hardware Sets.

2. Provide stabilizers and mounting brackets as required.

3. Provide electrical quick connection wiring options as specified in the hardware sets.

4. Acceptable Manufacturers:

a. Sargent Manufacturing (SA) - 980S Series.

2.8 DOOR CLOSERS

A. All door closers specified herein shall meet or exceed the following criteria:

1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.

2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.

3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.

5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.

6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.

7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt and security type fasteners as required for proper installation.

B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.

1. Acceptable Manufacturers:

a. Norton Door Controls (NO) - 7500 Series.
b. No Substitution.

2.9 AUTOMATIC DOOR OPERATORS

A. General: Provide operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.

1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.

B. Electrohydraulic Door Operators: Self-contained low-pressure units with rack and pinion design contained within a cast aluminum housing. Door closing speed controlled by independent hydraulic adjustment valves in the sweep and latch range of the closing cycle. Operator is to provide conventional door closer opening and closing forces unless the power operator motor is activated. Unit is to include an adjustable hydraulic backcheck valve to cushion the door speed if opened violently. Non-handed units for both push and pull side applications.

C. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.

D. Standard: Certified ANSI/BHMA A156.19.

1. Performance Requirements:

a. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
b. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.

E. Configuration: Surface mounted. Door operators to control single swinging and pair of swinging doors.

F. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.

1. On-off switch to control power to be key switch operated.

G. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.

H. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.

I. Activation Devices: Provide activation devices in accordance with ANSI/BHMA A156.19 standard, for condition of exposure indicated and for long term, maintenance free operation under normal traffic load operation. Coordinate activation control with electrified hardware and access control interfaces. Activation switches are standard SPST, with optional DPDT availability.

J. Signage: As required by cited ANSI/BHMA A156.19 standard for the type of operator.

1. Acceptable Manufacturers:

a. Norton Door Controls (NO) - 5600 Series.
b. No Substitution.

2.10 ARCHITECTURAL TRIM

A. Door Protective Trim

1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.

2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1” LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.

3. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:

a. Stainless Steel: 300 grade, 050-inch thick.

4. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.

5. Acceptable Manufacturers:

a. Rockwood Manufacturing (RO).

2.11 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.

1. Acceptable Manufacturers:

a. Hiawatha, Inc. (HI).
b. Rockwood Manufacturing (RO).
c. Trimco (TC).

C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.

1. Acceptable Manufacturers:

a. Rixson Door Controls (RF).
b. Rockwood Manufacturing (RO).
c. Sargent Manufacturing (SA).

2.12 ARCHITECTURAL SEALS

A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.

B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.

1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.

C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.

1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.

D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.

E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.

F. Acceptable Manufacturers:

1. National Guard Products (NG).
2. Pemko Manufacturing (PE).
3. Reese Enterprises, Inc. (RS).

2.13 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.14 FINISHES

A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

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

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.

B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.

1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.

B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:

1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.

D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."

E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.

B. Clean adjacent surfaces soiled by door hardware installation.

C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SCHEDULE

A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

B. Manufacturer’s Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. SA - Sargent
4. HS - HES
5. RO - Rockwood
6. RF - Rixson
7. NO - Norton
8. OT - By Others
9. SU - Securitron
10. 00 - Other

Hardware Schedule

Set: 1.0

2 Continuous Hinge Electric	CFM83SLIHD3 SER12 x LAR	CL	PE
1 Keyed Removable Mullion	L980	PC	SA
2 Exit Device (exit only)	8810	US32D	SA
2 Pull	RM201	US32D	RO
2 Concealed Overhead Stop	1-X36 size accordingly	630	RF
2 Door Closer (Reg)	351 O with 351B plate	EN	SA

1 Threshold	278x224AFGT x length as required		PE
2 Sweep	315CN		PE

Notes: Weatherstripping by Alum Door manufacturer

Set: 1.2

1 Continuous Hinge Electric	CFM83SLIHD3 SER12 x LAR	CL	PE
1 Exit Device (exit only)	8810	US32D	SA
1 Concealed Overhead Stop	1-X36 size accordingly	630	RF
1 Door Closer (Reg)	351 O with 351B plate	EN	SA
1 Threshold	278x224AFGT x length as required		PE
1 Sweep	315CN		PE

Notes: Weatherstripping by Alum Door manufacturer

Set: 1.3

1 Continuous Hinge	CFM83HD3 x Height Required	CL	PE
1 Lockset (storeroom)	10G04 LL	US26D	SA
1 Door Closer	351 CPS	EN	SA
1 Kick Plate	K1050 10" 4BE CSK	US32D	RO
1 Wall Stop	406/409 to suit	US32D	RO
1 Threshold	2009APK Pemkote		PE
1 Gasketing - Smoke Seal	S88BL LAR		PE
1 Sweep	315CN		PE

Set: 1.5

1 Continuous Hinge (AL Doors)	CFM83SLIHD3 x LAR	CL	PE
1 Office Lock	10G05 LL	US26D	SA
1 Door Closer	351 CPS	EN	SA
1 Threshold	278x224AFGT x length as required		PE
1 Sweep	315CN		PE

Notes: Weatherstripping by Alum Door manufacturer

Set: 1.6

1 Continuous Hinge	CFM83HD3 x Height Required	CL	PE
1 Office Lock	10G05 LL	US26D	SA
1 Door Closer	351 CPS	EN	SA
1 Kick Plate	K1050 10" 4BE CSK	US32D	RO
1 Threshold	2009APK Pemkote		PE
1 Gasketing - Smoke Seal	S88BL LAR		PE
1 Sweep	315CN		PE

Notes:

Set: 1.7

2 Continuous Hinge	CFM83HD3 x Height Required	CL	PE
1 Keyed Removable Mullion	L980	PC	SA
2 Exit Device (exit only)	8810	US32D	SA
2 Concealed Overhead Stop	1-X36 size accordingly	630	RF
2 Door Closer (PA)	351 P9	EN	SA
2 Kick Plate	K1050 10" 4BE CSK	US32D	RO
1 Threshold	2009APK Pemkote		PE
1 Gasketing - Smoke Seal	S88BL LAR		PE
2 Sweep	315CN		PE

Notes: Weatherstripping by Alum Door manufacturer

Set: 3.1

3 BB Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Lockset (classroom)	10G37 LL	US26D	SA
1 Door Closer	351 UO	EN	SA
1 Wall Stop	406/409 to suit	US32D	RO
1 Gasketing - Smoke Seal	S88BL LAR		PE

Notes:

Set: 3.2

3 BB Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Lockset (classroom)	10G37 LL	US26D	SA
1 Wall Stop	406/409 to suit	US32D	RO
3 Silencer - Metal Frame	608		RO

Set: 4.0

3 BB Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Lockset (storeroom)	10G04 LL	US26D	SA
1 Door Closer	351 CPS	EN	SA
1 Kick Plate	K1050 10" 4BE CSK	US32D	RO
1 Gasketing - Smoke Seal	S88BL LAR		PE

Set: 5.0

3 BB Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Office Lock	10G05 LL	US26D	SA
1 Door Closer	351 UO	EN	SA
1 Kick Plate	K1050 10" 4BE CSK	US32D	RO
1 Wall Stop	406/409 to suit	US32D	RO
3 Silencer - Metal Frame	608		RO

Set: 5.1

3 BB Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Office Lock	10G05 LL	US26D	SA
1 Wall Stop	406/409 to suit	US32D	RO
3 Silencer - Metal Frame	608		RO

Set: 6.0

3 BB Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Latchset (privacy)	10U65 LL	US26D	SA
1 Wall Stop	406/409 to suit	US32D	RO
3 Silencer - Metal Frame	608		RO

Notes:

Set: 8.1

1 All hardware by door manufacture	OT

Set: 9.0

1 All hardware exisitng to remain	00

Set: E1.0

6 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK
2 Fire Rated Exit Device SVR-LBR (Lever)	12 64 NB8713 ETL	US32D	SA
2 Door Closer (PA)	351 P9	EN	SA
2 Kick Plate	K1050 10" 4BE CSK	US32D	RO
2 Electromagnetic Holder	998 x 996XK Verify Voltage	689	RF
1 Gasketing - Smoke Seal	S88BL LAR		PE
1 Astragal (Meeting Stile)	S771BL x Height		PE

Set: E2.0

1 Automatic Operator (Push Side)	5630	689	NO
1 Actuator (Wall Mount)	505		NO
1 Actuator (Mullion Mount)	503		NO

Notes: Balance of hardware existing to remain. Field verify existing hardware will coordinate with the new Auto Operator.

Set: AC1.0

1 Continuous Hinge	CFM83SLIHD3 x LAR	CL	PE
1 Continuous Hinge Electric	CFM83SLIHD3 SER12 x LAR	CL	PE
1 Keyed Removable Mullion	L980	PC	SA
1 Exit Device (exit only)	8810	US32D	SA
2 Exit Device Rim (NL, RX/LX, EL)	53 55 56 63 8804	US32D	SA
2 Pull	RM201	US32D	RO
2 Concealed Overhead Stop	1-X36 size accordingly	630	RF
2 Door Closer (Reg)	351 O with 351B plate	EN	SA
1 Threshold	278x224AFGT x length as required		PE
2 Sweep	315CN		PE

Notes: Weatherstriping by Alum Door manufacture

Set: AC1.1

1	Continuous Hinge Electric	CFM83SLIHD3 SER12 x LAR	CL	PE
1	Exit Device Rim (NL, RX/LX, EL)	53 55 56 63 8804	US32D	SA
1	Pull	RM201	US32D	RO
1	Concealed Overhead Stop	1-X36 size accordingly	630	RF
1	Door Closer (Reg)	351 O with 351B plate	EN	SA
1	Threshold	278x224AFGT x length as required		PE
1	Sweep	315CN		PE

Notes: Weatherstriping by Alum Door manufacture

Set: AC1.2

1	Continuous Hinge	CFM83SLIHD3 x LAR	CL	PE
1	Continuous Hinge Electric	CFM83SLIHD3 SER12 x LAR	CL	PE
1	Keyed Removable Mullion	L980	PC	SA
1	Exit Device (exit only)	8810	US32D	SA
1	Exit Device Rim (NL, RX/LX, EL)	53 55 56 63 8804	US32D	SA
2	Concealed Overhead Stop	1-X36 size accordingly	630	RF
1	Door Closer (Reg)	351 O with 351B plate	EN	SA
1	Automatic Operator (Push Side)	5630	689	NO
1	Threshold	278x224AFGT x length as required		PE
2	Sweep	315CN		PE
1	ElectroLynx Harness	QC-C006		MK
1	ElectroLynx Harness	QC-C1500P		MK
2	Actuator (Wall Mount)	505		NO
1	Card Reader	Provided by Security Contractor		OT

Notes: Weatherstripping by Alum Door manufacturer

Set: AC2.0

1	Continuous Hinge Electric	CFM83SLIHD3 SER12 x LAR	CL	PE
1	Lockset (storeroom)	10G04 LL	US26D	SA
1	Electric Strike	1006CS	630	HS
1	Door Closer	351 CPS	EN	SA
1	Threshold	2009APK Pemkote		PE
1	Gasketing - Smoke Seal	S88BL LAR		PE
1	Sweep	315CN		PE
1	Card Reader	Provided by Security Contractor		OT

Set: AC2.1

3	BB Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1	Lockset (storeroom)	10G04 LL	US26D	SA
1	Electric Strike	1006CS	630	HS
1	Door Closer	351 UO	EN	SA
3	Silencer - Metal Frame	608		RO
1	ElectroLynx Harness	QC-C1500P		MK
1	Card Reader	Provided by Security Contractor		OT
1	Power Supply	PSM-24		SU

Notes: Card Reader releases Electric Strike for access.
Provide hinges as required.

Set: AC2.2

3 BB Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Lockset (storeroom)	10G04 LL	US26D	SA
1 Electric Strike	1006CS	630	HS
1 Door Closer	351 UO	EN	SA
1 Kick Plate	K1050 10" 4BE CSK	US32D	RO
3 Silencer - Metal Frame	608		RO
1 ElectroLynx Harness	QC-C1500P		MK
1 Card Reader	Provided by Security Contractor		OT
1 Power Supply	PSM-24		SU

Notes: Card Reader releases Electric Strike for access.
Provide hinges as required.

Set: AC2.3

1 Electric Strike	1006CS	630	HS
1 ElectroLynx Harness	QC-C1500P		MK
1 Power Supply	PSM-24		SU

Notes: Balance of hardware existing to remain.

Set: AC3.0

1 Continuous Hinge	CFM83HD3 x Height Required	CL	PE
1 Continuous Hinge Electric	CFM83HD3 SER12 x Height Required)	CL	PE
1 Keyed Removable Mullion	L980	PC	SA
1 Exit Device (exit only)	8810	US32D	SA
1 Exit Device Rim (NL, RX/LX, EL)	53 55 56 63 8804	US32D	SA
2 Pull	RM201	US32D	RO
2 Surface Overhead Stop	9-X36	630	RF
2 Door Closer (PA)	351 P9	EN	SA
2 Kick Plate	K1050 10" 4BE CSK	US32D	RO
1 Gasketing - Smoke Seal	S88BL LAR		PE
1 Astragal (Meeting Stile)	S771BL x Height		PE
1 ElectroLynx Harness	QC-C006		MK
1 ElectroLynx Harness	QC-C1500P		MK

Notes:

END OF SECTION 087100

SECTION 232500 - HVAC WATER TREATMENT

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following HVAC water-treatment systems:

1. Bypass chemical-feed equipment and controls.
2. Chemical treatment test equipment.
3. HVAC water-treatment chemicals.
4. Water filtration units for HVAC makeup water.

1.2 DEFINITIONS

A. EEPROM: Electrically erasable, programmable read-only memory.

B. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.

C. RO: Reverse osmosis.

D. TDS: Total dissolved solids.

E. UV: Ultraviolet.

1.3 PERFORMANCE REQUIREMENTS

A. Water quality for HVAC systems shall minimize corrosion, scale buildup, and biological growth for optimum efficiency of HVAC equipment without creating a hazard to operating personnel or the environment.

B. Base HVAC water treatment on quality of water available at Project site, HVAC system equipment material characteristics and functional performance characteristics, operating personnel capabilities, and requirements and guidelines of authorities having jurisdiction.

C. Steam Boiler and Steam Condensate:

1. Steam Condensate:

a. pH: Maintain a value within 7.8 to 8.4.
b. Total Alkalinity: Maintain a value within 5 to 50 ppm.
c. Chemical Oxygen Demand: Maintain a maximum value of 15 ppm.
d. Soluble Copper: Maintain a maximum value of 0.20 ppm.
e. TDS: Maintain a maximum value of 10 ppm.
f. Ammonia: Maintain a maximum value of 20 ppm.
g. Total Hardness: Maintain a maximum value of 2 ppm.

2. Steam boiler operating at 15 psig (104 kPa) and less shall have the following water qualities:

   a. "OH" Alkalinity: Maintain a value within 200 to 400 ppm.
   b. TDS: Maintain a value within 600 to 3000 ppm.

D. Passivation for Galvanized Steel: For the first 60 days of operation.

1. pH: Maintain a value within 7 to 8.
2. Calcium Carbonate Hardness: Maintain a value within 100 to 300 ppm.
3. Calcium Carbonate Alkalinity: Maintain a value within 100 to 300 ppm.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Division 23 Section "Basic Division 23 Requirements."

1.5 ACTION SUBMITTALS

A. Product Data: Include rated capacities, operating characteristics, furnished specialties, and accessories for the following products:

1. Bypass feeders.
2. Water meters.
3. Inhibitor injection timers.
4. pH controllers.
5. TDS controllers.
6. Biocide feeder timers.
7. Chemical solution tanks.
8. Injection pumps.
9. Ozone generators.
10. UV-irradiation units.
11. Chemical test equipment.
12. Chemical material safety data sheets.
13. Water softeners.
14. RO units.
15. Multimedia filters.
16. Self-cleaning strainers.
17. Bag- or cartridge-type filters.
18. Centrifugal separators.

B. Shop Drawings:

1. Layout Drawings: Pretreatment and chemical treatment equipment showing tanks, maintenance space required, and piping connections to HVAC systems. Include plans, elevations, sections, details, and attachments to other work.

2. Wiring Diagrams: Power and control wiring.

C. Field Quality Control Test Reports.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For sensors, injection pumps, and controllers to include in emergency, operation, and maintenance manuals.

B. Other Informational Submittals:

1. Water-Treatment Program: Written sequence of operation on an annual basis for the application equipment required to achieve water quality defined in the "Performance Requirements" Article above.
2. Water Analysis: Illustrate water quality available at Project site.
3. Passivation Confirmation Report: Verify passivation of galvanized-steel surfaces, and confirm this observation in a letter to Architect.

1.7 QUALITY ASSURANCE

A. HVAC Water-Treatment Service Provider Qualifications: An experienced HVAC water-treatment service provider capable of analyzing water qualities, installing water-treatment equipment, and applying water treatment as specified in this Section.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Coordinate electrical connection requirements with Division 26.

1.8 MAINTENANCE SERVICE

A. Scope of Maintenance Service: Provide chemicals and service program to maintain water conditions required above to inhibit corrosion, scale formation, and biological growth for heating, steam and condensate piping and equipment. Services and chemicals shall be provided for a period of one year from date of Substantial Completion, and shall include the following:

1. Initial water analysis and HVAC water-treatment recommendations.
2. Startup assistance for Contractor to flush the systems, clean with detergents, and initially fill systems with required chemical treatment prior to operation.
3. Periodic field service and consultation.
4. Customer report charts and log sheets.
5. Laboratory technical analysis.
6. Analyses and reports of all chemical items concerning safety and compliance with government regulations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. Ampion Corp.
2. Anderson Chemical Co, Inc.
3. Aqua-Chem, Inc.; Cleaver-Brooks Div.
4. Barclay Chemical Co.; Water Management, Inc.
5. Boland Trane Services.
6. Calgon Corporation.
7. Culligan USA, Industrial Div.
8. GE Betz.
9. GE Osmonics.
10. H-O-H Chemicals, Inc.
11. Metro Group. Inc. (The); Metropolitan Refining Div.
12. ONDEO Nalco Company.
13. Watcon, Inc.
14. MepCo

2.2 AUTOMATIC CHEMICAL-FEED EQUIPMENT

A. Water Meter:

1. AWWA C700, oscillating-piston, magnetic-drive, totalization meter.
2. Body: Bronze.
3. Minimum Working-Pressure Rating: 150 psig (1035 kPa).
4. Maximum Pressure Loss at Design Flow: 3 psig (20 kPa).
5. Registration: Gallons (Liters) or cubic feet (cubic meters).
6. End Connections: Threaded.
7. Controls: Flow-control switch with normally open contacts; rated for maximum 10 A, 250-V ac; and that will close at adjustable increments of total flow.

B. Inhibitor Injection Timers:

1. Microprocessor-based controller with LCD display in NEMA 250, Type 12 enclosure with gasketed and lockable door. Interface for start/stop and status indication at central workstation as described in Division 23 Section "Instrumentation and Control for HVAC."
2. Programmable timers with infinite adjustment over full range, and mounted in cabinet with hand-off-auto switches and status lights.
3. Test switch.
4. Hand-off-auto switch for chemical pump.
5. Illuminated legend to indicate feed when pump is activated.
6. Programmable lockout timer with indicator light. Lockout timer to deactivate the pump and activate alarm circuits.
7. LCD makeup totalizer to measure amount of makeup and bleed-off water from two water meter inputs.

C. pH Controller:

1. Microprocessor-based controller, 1 percent accuracy in a range from zero to 14 units. Incorporate solid-state integrated circuits and digital LCD display in NEMA 250, Type 12 enclosure with gasketed and lockable door. Interface for start/stop and status indication at central workstation as described in Division 23 Section "Instrumentation and Control for HVAC."
2. Digital display and touch pad for input.
3. Sensor probe adaptable to sample stream manifold.
4. High, low, and normal pH indication.
5. High or low pH alarm light, trip points field adjustable; with silence switch.

6. Hand-off-auto switch for acid pump.
7. Internal adjustable hysteresis or deadband.

D. TDS Controller:

1. Microprocessor-based controller, 1 percent accuracy in a range from zero to 5000 micromhos. Incorporate solid-state integrated circuits and digital LCD display in NEMA 250, Type 12 enclosure with gasketed and lockable door. Interface for start/stop and status indication at central workstation as described in Division 23 Section "Instrumentation and Control for HVAC."
2. Digital display and touch pad for input.
3. Sensor probe adaptable to sample stream manifold.
4. High, low, and normal conductance indication.
5. High or low conductance alarm light, trip points field adjustable; with silence switch.
6. Hand-off-auto switch for solenoid bleed-off valve.
7. Bleed-off valve activated indication.
8. Internal adjustable hysteresis or deadband.
9. Bleed Valves:

    a. Cooling Systems: Forged-brass body, globe pattern, general-purpose solenoid with continuous-duty coil, or motorized valve.
    b. Steam Boilers: Motorized ball valve, steel body, and TFE seats and seals.

E. Biocide Feeder Timer:

1. Microprocessor-based controller with digital LCD display in NEMA 250, Type 12 enclosure with gasketed and lockable door. Interface for start/stop and status indication at central workstation as described in Division 23 Section "Instrumentation and Control for HVAC."
2. 24-hour timer with 14-day skip feature to permit activation any hour of day.
3. Precision, solid-state, bleed-off lockout timer and clock-controlled biocide pump timer. Prebleed and bleed lockout timers.
4. Solid-state alternator to enable use of two different formulations.
5. 24-hour display of time of day.
6. 14-day display of day of week.
7. Battery backup so clock is not disturbed by power outages.
8. Hand-off-auto switches for biocide pumps.
9. Biocide A and Biocide B pump running indication.

F. Chemical Solution Tanks:

1. Chemical-resistant reservoirs fabricated from high-density opaque polyethylene with minimum 110 percent containment vessel.
2. Molded cover with recess for mounting pump.
3. Capacity: 30 gal. (114 L).

G. Chemical Solution Injection Pumps:

1. Self-priming, positive-displacement; rated for intended chemical with minimum 25 percent safety factor for design pressure and temperature.
2. Adjustable flow rate.
3. Metal and thermoplastic construction.
4. Built-in relief valve.
5. Fully enclosed, continuous-duty, single-phase motor. Comply with requirements in Division 23 Section "Common Motor Requirements for HVAC Equipment."

H. Chemical Solution Tubing: Polyethylene tubing with compression fittings and joints except ASTM A 269, Type 304, stainless steel for steam boiler injection assemblies.

I. Injection Assembly:

1. Quill: Minimum NPS 1/2 (DN 15) with insertion length sufficient to discharge into at least 25 percent of pipe diameter.
2. Ball Valve: Three-piece, stainless steel as described in "Stainless-Steel Pipes and Fittings" Article below; and selected to fit quill.
3. Packing Gland: Mechanical seal on quill of sufficient length to allow quill removal during system operation.
4. Assembly Pressure/Temperature Rating: Minimum 600 psig (4137 kPa) at 200 deg F (93 deg C).

2.3 STAINLESS-STEEL PIPES AND FITTINGS

A. Stainless-Steel Tubing: Comply with ASTM A 269, Type 316.

B. Stainless-Steel Fittings: Complying with ASTM A 815/A 815M, Type 316, Grade WP-S.

C. Two-Piece, Full-Port, Stainless-Steel Ball Valves: ASTM A 351, Type 316 stainless-steel body; ASTM A 276, Type 316 stainless-steel stem and vented ball, carbon-filled TFE seats, threaded body design with adjustable stem packing, threaded ends, and 250-psig (1725-kPa) SWP and 600-psig (4140-kPa) CWP ratings.

D. Three-Piece, Full-Port, Stainless-Steel Ball Valves: ASTM A 351, Type 316 stainless-steel body; ASTM A 276, Type 316 stainless-steel stem and vented ball, threaded body design with adjustable stem packing, threaded ends, and 150-psig (1035-kPa) SWP and 600-psig (4140-kPa) CWP rating.

2.4 CHEMICAL TREATMENT TEST EQUIPMENT

A. Test Kit: Boiler manufacturer-recommended equipment and chemicals in a wall-mounting cabinet for testing pH, TDS, inhibitor, chloride, alkalinity, and hardness; sulfite and testable polymer tests for high-pressure boilers, and oxidizing biocide test for open cooling systems.

B. Sample Cooler:

1. Tube: Sample.

a. Size: NPS 1/4 (DN 8) tubing.
b. Material: ASTM A 666, Type 316 stainless steel.
c. Pressure Rating: Minimum 2000 psig (13 790 kPa).
d. Temperature Rating: Minimum 850 deg F (454 deg C).

2. Shell: Cooling water.

a. Material: ASTM A 666, Type 304 stainless steel.
b. Pressure Rating: Minimum 250 psig (1725 kPa).
c. Temperature Rating: Minimum 450 deg F (232 deg C).

3. Capacities and Characteristics:

a. Tube: Sample.

1) Flow Rate: 0.25 gpm (0.016 L/s).
2) Entering Temperature: 400 deg F (204 deg C).
3) Leaving Temperature: 88 deg F (31 deg C).
4) Pressure Loss: 6.5 psig (44.8 kPa).

b. Shell: Cooling water.

1) Flow Rate: 3 gpm (0.19 L/s).
2) Entering Temperature: 70 deg F (21 deg C).
3) Pressure Loss: 1.0 psig (6.89 kPa).

C. Corrosion Test-Coupon Assembly: Constructed of corrosive-resistant material, complete with piping, valves, and mild steel and copper coupons. Locate copper coupon downstream from mild steel coupon in the test-coupon assembly.

1. Two-station rack for closed-loop systems.

2.5 CHEMICALS

A. Chemicals shall be as recommended by water-treatment system manufacturer that are compatible with piping system components and connected equipment, and that can attain water quality specified in Part 1 "Performance Requirements" Article.

B. Water Softener Chemicals:

1. Mineral: High-capacity, sulfonated-polystyrene ion-exchange resin that is stable over entire pH range with good resistance to bead fracture from attrition or shock. Resin exchange capacity minimum 30,000 grains/cu. ft. (69 kg/cu. m) of calcium carbonate of resin when regenerated with 15 lb (6.8 kg) of salt.
2. Salt for Brine Tanks: High-purity sodium chloride, free of dirt and foreign material. Rock and granulated forms are not acceptable.

2.6 FILTRATION EQUIPMENT

A. Cartridge-Type Filters:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. Cycron Corporation.
b. Eden Equipment Company.
c. Filter Specialists, Inc.
d. Filtration Systems; division of Mechanical Mfg. Corporation.
e. Hayward Industrial Products, Inc.
f. Krystal Klear Filtration; a div. of Geyer's Mfr. & Design, Inc.
g. Parker Hannifin Corp.; Process Filtration Div.
h. PEP Filters, Inc.
i. Plymouth Products, Inc.
j. RainSoft Div.; Aquion Partners L. P.
k. Rosedale Products, Inc.
l. RPA Process Technologies.
m. Shelco Filters; division of Tinny Corp.

n. USFilter.

2. Description: Floor-mounting housing with filter cartridges for removing particles from water.

a. Housing: Corrosion resistant; designed to separate inlet from outlet and to direct inlet through cartridge-type water filter; with base, feet, or skirt.

1) Pipe Connections NPS 2 (DN 50) and Smaller: Threaded according to ASME B1.20.1.
2) Steel Housing Pipe Connections NPS 2-1/2 (DN 65) and Larger: Steel, Class 150 flanges according to ASME B16.5 or grooved according to AWWA C606.
3) Plastic Housing Pipe Connections NPS 2-1/2 (DN 65) and Larger: 150-psig (1035-kPa) plastic flanges.

b. Cartridge: Replaceable; of shape to fit housing.

3. Capacities and Characteristics: Refer to Drawings.

PART 3 - EXECUTION

3.1 WATER ANALYSIS

A. Perform an analysis of supply water to determine quality of water available at Project site.

3.2 INSTALLATION

A. Install chemical application equipment on concrete bases, level and plumb. Maintain manufacturer's recommended clearances. Arrange units so controls and devices that require servicing are accessible. Anchor chemical tanks and floor-mounting accessories to substrate.

B. Install restraints for equipment and floor-mounting accessories and anchor to building structure. Refer to Division 23 Section "Vibration, Seismic, and Wind Controls for HVAC" for restraints.

C. Install water testing equipment on wall near water chemical application equipment.

D. Install interconnecting control wiring for chemical treatment controls and sensors.

E. Mount sensors and injectors in piping circuits.

F. Install automatic chemical-feed equipment for steam boiler and steam condensate systems and include the following:

1. Install water meter in makeup water supply.
2. Install inhibitor injection pumps and solution tanks with injection timer sensing contacts in water meter.

a. Pumps shall operate for timed interval when contacts close at water meter in makeup water supply connection. Injection pump shall discharge into boiler feedwater tank or feedwater supply connection at boiler.

3. Install test equipment and furnish test-kit to Owner.
4. Install inhibitor injection timer with injection pumps and solution tanks.

    a. Pumps shall operate for timed interval on contact closure at water meter in makeup water supply connection. Injection pump shall discharge into main steam supply header.

3.3 CONNECTIONS

A. Piping installation requirements are specified in other Division 23 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment to allow service and maintenance.

C. Make piping connections between HVAC water-treatment equipment and dissimilar-metal piping with dielectric fittings. Dielectric fittings are specified in Division 23 Section "Common Work Results for HVAC."

D. Install shutoff valves on HVAC water-treatment equipment inlet and outlet. Metal general-duty valves are specified in Division 23 Section "General-Duty Valves for HVAC Piping."

E. Refer to Division 22 Section "Domestic Water Piping Specialties" for backflow preventers required in makeup water connections to potable-water systems.

F. Confirm applicable electrical requirements in Division 26 Sections for connecting electrical equipment.

G. Ground equipment according to Division 26 Section "Grounding and Bonding."

H. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

3.4 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.

B. Perform tests and inspections and prepare test reports.

    1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

C. Tests and Inspections:

    1. Inspect field-assembled components and equipment installation, including piping and electrical connections.
    2. Inspect piping and equipment to determine that systems and equipment have been cleaned, flushed, and filled with water, and are fully operational before introducing chemicals for water-treatment system.

3. Place HVAC water-treatment system into operation and calibrate controls during the preliminary phase of HVAC systems' startup procedures.
4. Do not enclose, cover, or put piping into operation until it is tested and satisfactory test results are achieved.
5. Test for leaks and defects. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
6. Leave uncovered and unconcealed new, altered, extended, and replaced water piping until it has been tested and approved. Expose work that has been covered or concealed before it has been tested and approved.
7. Cap and subject piping to static water pressure of 50 psig (345 kPa) above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow test pressure to stand for four hours. Leaks and loss in test pressure constitute defects.
8. Repair leaks and defects with new materials and retest piping until no leaks exist.

D. Remove and replace malfunctioning units and retest as specified above.

E. Sample boiler water at one-week intervals after boiler startup for a period of five weeks, and prepare test report advising Owner of changes necessary to adhere to Part 1 "Performance Requirements" Article for each required characteristic. Sample boiler water at six-week intervals following the testing noted above to show that automatic chemical-feed systems are maintaining water quality within performance requirements specified in this Section.

F. At six-week intervals following Substantial Completion, perform separate water analyses on hydronic systems to show that automatic chemical-feed systems are maintaining water quality within performance requirements specified in this Section. Submit written reports of water analysis advising Owner of changes necessary to adhere to Part 1 "Performance Requirements" Article.

G. Comply with ASTM D 3370 and with the following standards:

1. Silica: ASTM D 859.
2. Steam System: ASTM D 1066.
3. Acidity and Alkalinity: ASTM D 1067.
4. Iron: ASTM D 1068.
5. Water Hardness: ASTM D 1126.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain HVAC water-treatment systems and equipment. Refer to Division 01 Section "Demonstration and Training."

B. Training: Provide a "how-to-use" self-contained breathing apparatus video that details exact operating procedures of equipment.

END OF SECTION 232500

SECTION 280010 - BASIC DIVISION 28 REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes general administrative, material, and procedural requirements for Division 28 installations to expand the requirements specified in Division 01.

1.2 REFERENCES

A. Abbreviations and Acronyms:

1. A/E - Architect / Engineer (designer).
2. AHJ - Authority Having Jurisdiction.
3. ANSI - American National Standards Institute.
4. AWG - American Wire Gauge.
5. BICSI - Building Industry Consulting Service International.
6. BDF - Building Distribution Facility; space within a building that is the nexus of LAN distribution for that particular building.
7. Broadband - Wide bandwidth equipment or systems that can carry signals occupying in the frequency range of 54 to 1002 MHz.
8. Cat – Category; based on numerical value of structured cabling performance.
9. CAT 6 - Category 6 performance as defined by ANSI/TIA/EIA-568-B.2-1.
10. CTS – Certified Technology Specialist.
11. DC - Data Center.
12. EIA - Electronics Industry Alliance.
13. ELFEXT - Equal Level far End Cross Talk.
14. ER - Equipment Room.
15. EOR - Engineer of Record.
16. FOTP - Fiber Optic Test Procedure.
17. ILEC/LEC – Incumbent / Local Exchange Carrier.
18. IT - Information Technology.
19. IDF - Intermediate Distribution Frame.
20. ICC – Intermediate Cross Connect.
21. LOMMF - Laser Optimized Multimode Fiber.
22. LV - Low Voltage Room, Intermediate Distribution Facility; station and backbone cable concentration point on a particular floor for specific use on that same floor.
23. MCC – Main Cross Connect.
24. Main Low Voltage Room - Main Distribution Facility; space within a building that is the main point of LAN distribution for that building or to other buildings.
25. MPOE - Main Point of Entry.
26. MHz – Megahertz.
27. NEXT - Near End Cross Talk.
28. NECA - National Electrical Contractors Association.
29. NEMA - National Electrical Manufacturers Association.
30. OTDR - Optical Time Domain Reflectometer.
31. PSELFEXT - Power Sum Equal Level far End Cross Talk.
32. PSNEXT - Power Sum Near End Cross Talk.

33. PTZ – Pan/Tilt/Zoom.
34. RCDD - Registered Communications Distribution Designer.
35. ScTP - Screened Twisted Pair.
36. SCS - Structured Cabling System.
37. SMF - Single-Mode Fiber.
38. STP – Shielded Twisted Pair.
39. TCIM - Telecommunication Cabling Installation Manual.
40. TDMM - Telecommunications Distribution Methods Manual.
41. Technology Outlet - Voice/data/video/other interface outlet located at workstation.
42. Telecom Spaces - Include all areas where cable or equipment will be placed, including IT resources, Engineering resources, and user stations.
43. TIA - Telecommunications Industry Association.
44. TBB – Telecommunications Bonding Backbone.
45. TDR - Time Domain Reflectometer.
46. TGB - Telecommunications Ground Bus Bar.
47. TR – Telecommunications Room.
48. UTP - Unshielded Twisted Pair cabling.
49. UL - Underwriters Laboratory.
50. UNO - Unless Noted Otherwise.
51. UPS - Uninterruptible Power Supply.

B. Definitions:

1. In addition to those Definitions listed in Division 01, the following list of terms shall be defined as follows:

   a. Connect - To install required patch cords, equipment cords, cross-connect wire, etc. to complete an electrical or optical circuit.
   b. Cabling - A combination of cables, wire, cords, and connecting hardware e.g., cables, conductor terminations, connectors, outlets, patch panels, blocks, and labeling.
   c. Identifier - A unique code assigned to an element of the telecommunications infrastructure that links it to its corresponding record.
   d. Open Cabling - Cabling run horizontally within a pathway supported by J-hooks, D-hooks, etc. that is installed above an accessible ceiling. This installed cabling is considered concealed.
   e. Exposed Cabling – Cabling that is not concealed by an accessible pathway, conduit, etc. Cabling installed open below an exposed structure.
   f. Concealed Cabling – Cabling rendered inaccessible by the structure or finish of the building.
   g. Pathway - Routing of cabling from work area outlet box to telecommunications room. Pathways may consist of conduit, conduit stub, conduit sleeve(s), J-Hooks, etc.
   h. Telecom Cabling/Datacom Cabling – Low voltage extended frequency signal and communications cabling. Category 6 and fiber optic cabling.
   i. System cabling – Low voltage signal and control cabling. System cabling is designated by the manufacturer for a particular system in each specification section.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Substitutions

1. The materials, products and equipment described in the Bidding Documents establish a standard of required functions, dimensions, appearance and quality to be met by any proposed substitution.
2. No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect/Engineer at least ten (10) days prior to the date for receipt of Bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance, test data and warranties, and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment, or other work for incorporation of the substitute shall be included. The burden of proof of the merit of the proposed substituted is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.
3. If the Architect approved any proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. This Addendum shall then be issued to all Bidders.
4. Requests for substitution shall be made only by a Bidder. Requests for substitution received by the Architect from sales representative, vendors, suppliers, etc., are not acceptable.
5. Refer to Division 01 for instructions on substitutions.

B. Permit and Inspections

1. Permits: Obtain and pay for all permits, bonds, licenses, tap-in fees, etc., required by the City, State, or other Authority Having Jurisdiction over the work, as a part of the work of the affected sections.
2. Inspections: Arrange and pay for all inspections required by the above when they become due as part of the work of the sections affected. Conceal no work until approved by these governing authorities. Coordinate inspection period with the AHJ and Engineer through Construction Manager. Present the Engineer with properly signed certificate of final inspection.

C. Coordination:

1. Coordinate all programming components, device designations, and labels to match the final room numbers of the completed project. The room numbers on the Drawings may not be the final room numbers and may be finalized after system components are installed.
2. Coordinate arrangement, mounting, and support of Division 28 equipment.

    a. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
    b. To provide for ease of disconnecting the equipment with minimum interference to other installations.
    c. To allow right of way for piping and conduit installed at required slope.
    d. So connecting raceways, cables, wireways, and pathways will be clear of obstructions and of the working and access space of other equipment.

3. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
4. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed. Access doors and panels are specified in Division 08 Section "Access Doors and Frames."

a. Submit coordination drawings indicating proposed access door locations for review per Division 28 Section "Basic Division 28 Requirements."
b. Ensure access doors are sized to permit complete access for any concealed and/or inaccessible junction boxes, control and monitoring devices, elevator shaft and other items of equipment requiring access, maintenance, and/or operation.

1) Assure access to devices per codes and local Authorities Having Jurisdiction.

5. Wiring and controls associated with equipment shall be furnished, installed and wired in accordance with the manufacturer's recommendations and applicable standards and codes. Provide installation instructions, locating dimensions and wiring diagrams for the other trades. Supervise the installation and start-up and test the equipment unless otherwise specified.
6. Equipment Furnished by Other Divisions: Equipment specified in other divisions and requiring communication and control connectivity shall be erected, aligned, leveled and prepared for operation. Provide required controls and accessories along with installation instructions, diagrams, dimensions and supervision of installation and start-up. Provide the required terminations, accessories and programming furnished under the specifications for the other divisions. Install those controls and accessories not located in the provided equipment. Provide additional electrical controls, accessories, fittings and devices not specified under the equipment but required for a finished, operating job. Make final electrical connections. Participate in the start-up and test services.
7. Coordinate installation of all devices operating in radio frequency ranges with existing and new devices such that interference between systems/devices does not occur and cause system/devices to malfunction or fail. Revise operation of system or replace system as required. Coordinate RF ranges with all equipment provided in other divisions or by Owner.
8. Coordination with local electronic safety and security services:

a. Coordinate connection of telecommunication systems with exterior underground and overhead utilities and services and meet all of their schedules so that the services proceed in a timely and orderly fashion. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
b. Locations and details required by Division 28 for the utility rough-in shall be the responsibility of Division 28.

1.4 SUBMITTAL PROCEDURES

A. General: Provide required submittals in accordance with Division 01 "Submittal Procedures".

B. Definitions:

1. Submittals: A written or graphical expression of the Contractor's interpretation of requirements in the Contract Documents to show how the Contractor intends to fulfill those requirements and identifying deviations from contract.
2. Action Submittals: Required submittal which Engineer reviews and approves or takes other appropriate action to communicate to the Contractor the status if the submittal and subsequent action are required.
3. Other (Information, Closeout, and Maintenance and Material) Submittals: Required submittals which Engineer reviews and may elect to respond. If rejected by Engineer for

not complying with requirements, resubmittal or other action may be required on the part of the Contractor.

4. Layout Drawings: Drawings assembled by the Contractor consisting of to-scale architectural floor plans with room numbers and elevations of the actual facility being constructed or renovated with equipment symbols utilized to represent the size, shape and location of equipment.
5. Riser Drawings: By means of single lines and graphic symbols, drawings assembled by the Contractor depicting devices provided and their functions with connectivity to associated equipment. Locations shall be identified using room numbers.

C. Failure to Submit:

1. Contractor's failure to provide submittals does not alleviate the responsibility to provide the requirements in the Contract Documents as interpreted by the Engineer. Correct Non-compliant items.

D. Applicable Information:

1. All information not applicable to the project shall be crossed out in the submittal. All applicable accessories, option, etc. shall be clearly indicated. Failure to comply shall be grounds for the submittal to be rejected.

1.5 ACTION SUBMITTALS

A. Submit action submittals in groups by specification number. For example, all structured cabling equipment identified within that section number, including cabling, components, faceplates and accessories shall be submitted simultaneously in one package.

1. Equipment submitted from multiple sections under a single cover will not be reviewed.

B. Provide a complete submittal list with dates for submission of documentation to Engineer. Identify any submittals requiring priority processing and review based on equipment lead times or fast track construction. Ensure submittals that contain information that transcends section numbers are submitted simultaneously so that review is not delayed waiting for concurring information. Submit in hard copy and Microsoft Excel format.

C. Each System Submittal shall contain the following minimum information in addition to the information requested in the individual section:

1. Section number and equipment/device type in a bound submission.
2. Table of Contents identifying equipment lists with numbered pages identifying equipment/ device locations within submittal.
3. System Scope of Work narrative.
4. Equipment/device quantities.
5. Equipment/device product information sheets with submission designated, installation information, color/finish options, etc.
6. Program information sheets.
7. Coordination requirements with all trades.
8. Program layout diagrams, riser diagrams, wiring diagrams, rack elevations, seismic requirements, etc. Utilize Architectural, Electrical, and Communication symbology and room numbers to be consistent with Owner's standards.
9. Training outline.

10. Sample testing reports.
11. Deviations from specifications, if any, highlighted with specific explanation and identification requiring Architect/Engineer specific approval.
12. Identify any products that will no longer be available or will be discontinued by the manufacturer prior to the completion of the warranty period.
13. Estimated equipment heat loads and power requirements. List and tabulate equipment specifically required in Data Rooms. Coordinate with Division 27 equipment as applicable.
14. Submit qualifications based on quality assurance requirements.
15. Provide secondary submittal for systems requiring programming and Owner input, review, and approval after Programming meeting, sequence of operations review, etc. Provide all information in spreadsheet format in electronic and hardcopy.
16. Manufacturer required information for base and extended warranties including submission requirements and timeframes.
17. Provide copies of manufacturer's warranty information to Owner that is submitted directly to manufacturer.
18. Identify any additional power requirements, communications connections or alterations needed to support the proposed equipment.

D. Submit the following action submittals as qualified in associated Division 28 Sections:

1. Batteries and Battery Chargers (Submit with associated system).
2. Fire Alarm Systems
3. Security Systems.
4. Wire Guards.

E. Action submittals submitted for other than those listed above or not specifically required in the appropriate Specification Section will not be reviewed or returned.

F. Contractor Certificates:

1. Contractor certification forms may be submitted in accordance with Division 01 Section "Submittal Procedures" in lieu of complete system submittal requirements for the systems.

1.6 INFORMATIONAL SUBMITTALS

A. Coordination Drawings:

1. Prepare coordination drawings in accordance with Division 01 Section "Project Management Coordination ," to a scale of 1/4"=1'-0" or larger; detailing major elements, components, and systems of electrical equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the Work, including (but not necessarily limited to) the following:

a. Indicate the proposed locations of major raceway systems, equipment, and materials. Include the following:

1) Clearances for servicing equipment, including space for equipment disassembly required for periodic maintenance.

2) Exterior wall and foundation penetrations.
3) Wall and floor sleeve penetrations.
4) Floor box and poke-through assembly installations.
5) Equipment connections and support details.
6) Sizes and location of required concrete pads and bases.
7) LAN connections.

2. Submit the following specific coordination drawings and others as defined in other Division 28 Sections:

   a. Access door locations and sizes (for installation by Division 08).
   b. Head-end equipment.

3. Indicate scheduling, sequencing, movement, and positioning of large equipment into the building during construction.
4. Prepare floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.
5. Prepare reflected ceiling plans to coordinate and integrate installations, air outlets and inlets, speakers, wireless access points, communications systems components, sprinklers, and other ceiling-mounted devices.
6. Coordination drawings do not omit the required submission of layout and plan drawings identified in other specification sections for review and approval.
7. Contract Document Drawing copies may be used as base for coordination drawings, then marked to depict actual equipment sizes and other requirements of coordination drawings. Those not marked will be rejected.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data:

1. Prepare and submit operation and maintenance manuals in accordance with Division 01 Section "Project Closeout." In addition to the requirements specified in Division 01, include specific Division 28 Section requirements, and the following information for equipment items:

   a. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of replacement parts.
   b. Manufacturer's printed operating procedures to include start-up, break-in, and routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instructions; and summer and winter operating instructions.
   c. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.
   d. Servicing instructions and lubrication charts and schedules, software release update and patch criteria.
   e. Individual characteristics for trouble shooting sequences for each item of each communications systems.

2. The minimum information that shall be furnished in the maintenance manual shall include the following:

a. Title, table of contents, tabbed sections for each installed system in an organized 3-ring binder labeled with the project name and date.
b. Emergency and warranty contact names and numbers for the contractor and vendor of each installed system.
c. Final submittal copy with catalog cut sheets for every item for which a submittal was provided.
d. Contract modifications and actual equipment and materials installed.
e. Model numbers and serial numbers for all provided equipment.
f. Provide a digital color photo (8-1/2 x 11 minimum) and .TIFF file on DVD-Rom of the following areas:

    1) All head-end equipment (racks) showing model numbers and final connectivity.
    2) All telecom equipment.
    3) All sound and video equipment racks and portable equipment.
    4) Interiors of manholes.

g. On-hand spare parts list and complete parts list for each communication system.
h. Manufacturers' recommended cleaning intervals and special procedures for each communications system device.
i. Calibration and exercise procedures for each communications system device.
j. Approved special construction details that differ from the details shown on Drawings.
k. Testing and troubleshooting procedures unique to special systems. For example:

    1) Water tightness tests for manholes and handholes.

l. Test reports; sign off and acceptance of manufacturer, vendor, etc.
m. Inspection reports.
n. Warranty information for all systems including individual manufacturer product warranties and system extended manufacturer warranty certificate where applicable.
o. Provide an additional engraved spare key for each system with documentation.
p. Required software/programming/information.

    1) Provide system programming design manual with Owner sign-off and associated Meeting minutes.
    2) Provide software documentation and licensing information.

q. Training documentation and DVD's.

3. Drawings:

    a. Major cabling systems (trunk risers), size and location, for both interior and exterior; locations of control devices and distribution boxes.
    b. Major equipment locations (exposed and concealed), dimensioned from prominent building lines.
    c. In slab conduit routings.
    d. Outlet devices with final outlet nomenclature identified at each device.

4. Engage the services of a Land Surveyor or Professional Engineer registered in the state in which the project is located as specified in Division 01 Section "Execution" to record the locations and invert elevations of underground installations.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Extra Material:

1. Provide four (4) keys for every different piece of equipment which is equipped with a lock.

a. Coordinate similar locks/keys for like equipment. Verify with Owner.
b. Stamp keys with system name.

2. Provide all other loose equipment specified/supplied for use with all systems.

1.9 QUALITY ASSURANCE

A. General: Follow the procedures specified in Division 01 Section "Quality Requirements," Source Limitations.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to Authorities Having Jurisdiction and marked for intended use.

C. Obtain similar products through one source from a single manufacturer.

D. Manufacturers of equipment shall be firms regularly engaged in manufacturing factory fabricated systems and equipment whose products have been in satisfactory use in similar service for not less than three (3) years.

E. All equipment shall be provided by an authorized dealer or distributor of the manufacturer to ensure authentic product and warranty will be provided. Provide all necessary documentation at time of delivery.

F. Provide equipment as required by and/or listed in the specifications for a complete and operational system.

G. Testing Agency Qualifications: An agency with the experience and capability to conduct the testing indicated, is acceptable to the equipment manufacturer, the Engineer, and that is acceptable to Authorities Having Jurisdiction.

1. For electrical power equipment and systems, the agency shall be a member company of the International Electrical Testing Association (NETA) or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7.
2. For other than electrical power equipment or where NETA is not a recognized testing agent, the testing agency shall be as defined in the appropriate Division 28 Section.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Comply with Architecture specifications Division 01 Section "Product Requirements."

B. Deliver products to the project site properly identified with names, model numbers, types, grades, compliance labels, and other information needed for identification.

C. Provide all documentation identifying authorized distribution of the products.

1.11 WARRANTY

A. All equipment, software, services, and programming shall be covered by a one (1) year parts and labor warranty from date of acceptance. Acceptance will be provided in writing by Engineer after system is installed, programmed, and tested to the satisfaction of the Owner.

B. All manufacturer product warranties shall be transferable to the Owner upon substantial completion of the project for the full term of the warranty.

C. All warranties shall be standard manufacturer agreements. "Special" project warranties are not acceptable.

D. For all existing systems being expanded or extended, provide an extension of the current maintenance agreement or warranty on all existing components of that system to ensure proper operation and maintenance of that equipment through the completion of the new warranty period.

PART 2 - PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Work and materials shall conform to and be executed, inspected and tested in accordance with the latest edition of the National Electric Code and with the governing rules and regulations of federal, state and local governmental agencies. References to "NEC" within the Division 28 Sections shall be considered synonymous to this electrical code.

B. Other codes and standards which will apply to this installation include the current editions of:

1. ANSI C2 - National Electrical Safety Code.
2. NFPA 70E – Standard for Electrical Safety Requirements for Employee Workspaces.
3. NFPA 99 - Health Care Facilities.
4. NFPA 101 - Life Safety Code.

C. Where governing codes indicate the Drawings and Specifications do not comply with the minimum requirements of applicable codes, be responsible for either notifying the Architect in writing during the bidding period of the revisions required to meet code requirements, or providing an installation which will comply with the code requirements.

D. U.L. Listing

1. All equipment shall bear the Underwriter's Laboratories (UL), or other approved agency, listing label. Acceptable alternates include:

   a. Intertek Testing Service NA, Inc. (ITSNA) (formerly ETL).
   b. Wherein an item of equipment is specified to be U.L. Listed, the entire assembly shall be listed by Underwriters Laboratories, Inc. Any modifications to suit the intent of the Specifications shall be performed in accordance with the National Electrical Code and listed by U.L.

2. Definitions:

a. Listed: Equipment or materials included in a list published by an organization acceptable to the authority having jurisdiction and concerned with product evaluation, that maintain periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets appropriate designated standards or has been tested and found suitable for use in a specified manner.

b. Labeled: Equipment or materials to which has been attached a label, symbol or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicated compliance with appropriate standards or performance in a specified manner.

2.2 SUSTAINABILITY CHARACTERISTICS

A. Priority shall be given to selecting products from the approved manufacturers that are General Regionally Manufactured Materials for compliance with Credit MR 5.1. General Regionally Manufactured Materials are materials that are manufactured within a radius of 500 miles from the Project location. Manufacturing refers to the final assembly of components into the building product that is installed at the Project site.

2.3 MATERIALS

A. Products and the terms materials, equipment, devices, components, assemblies and systems are considered synonymous.

B. All materials, unless otherwise specified, shall be new and be the standard products of the manufacturer. Seconds, rejects, or damaged materials will be rejected.

C. The equipment to be provided under these Specifications shall be essentially the standard commercial grade product of the manufacturer. Where two or more units of the same class of equipment are required, these units shall be products of a single manufacturer.

D. The listing of a manufacturer for certain equipment and systems does not indicate acceptance of a standard or catalogued item of equipment. All equipment and systems shall conform to the Specifications and the requirements listed.

E. All equipment and materials specified shall be products currently in production.

1. If the specified item is not available or is discontinued, a similar product with the same features and functionality shall be provided from the same manufacturer in the newer/upgraded series of product.

   a. Provide information as to the anticipated availability of the provided products at the time of submission and installation. No products shall be provided that will be discontinued within the warranty period of the system.

2. Equipment and/or devices discovered to be discontinued after submission approval will not be accepted and will require resubmittal for an approved replacement.

F. Product Selection for Restricted Space: Drawings indicated maximum dimensions for products including clearances between products and adjacent surfaces and other items. Comply with indicated maximum product dimensions.

1. Assembly Selection: The Drawings indicate sizes, profiles and dimensional requirements of assembly equipment. Equipment having equal performance characteristics and complying with indicated maximum dimensions and profiles may be considered, provided deviations do not change the design concept intended performance, or code/future extension provision clearances. The burden of proof of equality is on the proposer a minimum of 10 days prior to bid.

2.4 SOFTWARE PROTECTION

A. All software supplied with new equipment shall be warranted against leap year program disruption or failure. Refer to Division 01 Section "Warranties and Supplementary Conditions for Requirements."

B. All software supplied with new equipment shall be warranted against Daylight Savings Time program disruption or failure. Refer to Division 01 Section "Warranties and Supplementary Conditions for Requirements."

C. All software shall be the most current release of the latest available software of the equipment provided.

1. BETA software versions will not be accepted.

2.5 LABELS

A. Per Division 26 Section "Electrical Identification".

B. Nameplates: Utilize laminated phenolic resin with white core to enable engraved white lettering 1/4" high. Color shall be identifiable to system type.

C. Tags: Utilize laminated phenolic resin with white core to enable engraved white lettering lettering 1/4" high. Color shall be identifiable to system type. Provide nylon cable tie to secure to device as required.

D. Labels:

1. Utilize adhesive vinyl labels with laser printed, smudge resistant lettering. Size incorporated to affix to device plate or cable as appropriate.
2. Laser engrave faceplates utilizing 1/8" high lettering.

PART 3 - EXECUTION

3.1 EXAMINATION OF FIELD CONDITIONS

A. Verification of Conditions:

1. Examine areas and conditions under which work is to be performed. Verify that site conditions are satisfactory for installation of cable and components.
2. Ensure components and conditions are in compliance with manufacturer's requirements, installation tolerances and other conditions affecting performance.

B. Pre-Installation Testing:

1. Identify conditions detrimental to proper or timely completion.

C. Evaluation and Assessment:

1. Correct unsatisfactory conditions.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General:

1. Review device locations, telecommunication room locations, routings, trunk risers, pathways, details, and special features.
2. Meet with the Owner's telecommunications representatives prior to each of the following installation tasks:

   a. Mounting cabinets and equipment grounds.
   b. Telecommunications room raceway installations.
   c. Pulling cable.
   d. Terminating cable.
   e. Labeling of cable and equipment.
   f. Testing cable.
   g. As-built documentation completion.

B. Installation Guidelines:

1. Install systems and components in accordance with equipment manufacturer's written instructions, in compliance with National Electrical Code, and with recognized industry practices, to ensure that each system complies with requirements and serves intended purposes.
2. Comply with ANSI/NECA 1, Standard for Good Workmanship in Electrical Contracting.
3. Comply with ANSI/NECA/BICSI 568, Standard for Installing Commercial Building Telecommunications Cabling.

C. Protection of In-Place Conditions:

1. Handle components to be re-used carefully to avoid breakage, dents, scoring finishes, and impacts.
2. Take precautions to protect any surfaces already in-place before continuing with work.
3. Protect everything in existing space from dust and debris in an acceptable manner.
4. Notify Engineer, in writing, of any damage to surrounding areas or surfaces already in place.

5. Keep hands clean when handling ceiling tiles to avoid fingerprints and smudges on the finished installation. Use clean cotton gloves for maximum protection. Ceiling tiles should be handled carefully to protect the face and edges of the tile from damage.
6. Old ceiling tiles can remain in the grid system by being moved to one side and then replaced. Avoid scratching or jamming the tiles.
7. Support all existing cabling that is not supported above the ceiling.

D. Rough-In Preparations –

1. General:

   a. Verify final locations for rough-ins with field measurements and with the requirements and dimensions of the actual equipment to be installed and connected.
   b. The Architect shall control the placement of wall and ceiling mounted communications systems devices and outlets. The intent is to aesthetically locate equipment/outlets by providing rough-in hardware, boxes and/or mounting plates, as required, when stud or furring may not be readily available for direct mounting. When drawing details or elevations are not available, consult with Architect's representative for actual placement.
   c. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
   d. Refer to equipment specifications in Divisions 02 through 28 for rough-in requirements.

2. Equipment:

   a. Install to facilitate service, maintenance, and repair or replacement of components of equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
   b. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
   c.

3. Raceways and Cabling:

   a. Coordinate with system maximum cable lengths and address Engineer with conflicts.
   b. Arrange for chases, slots, and openings in other building components during progress of construction, to allow for communications systems installations.
   c. Coordinate cabling installation requirements with installation of all pathways, raceways, outlet boxes, etc. as listed in Division 26 Section "Conduit Rough-In Systems."
   d. Right of Way: Give to piping systems installed at a required slope.

E. Protection of Equipment:

1. Protect all equipment and materials from the elements, dirt and other damage from the time it is removed from the point of storage until final acceptance.

F. Installation Auxiliary Equipment:

1. Provide all scaffolding, rigging, hoisting and services necessary for erection and delivery of equipment and apparatus furnished into the premises. These items shall be removed from the premises when no longer required.

3.3 INSTALLATION

A. Interface with Other Work:

1. Sequence, coordinate, and integrate installations of communications materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
2. Coordinate communications systems, equipment, and materials installation with other building components. Be responsible for any changes in openings and locations necessitated by the equipment installed.
3. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed.

B. Systems Integration:
1. Sequence, coordinate, and integrate the various elements of electrical, and telecommunications, systems, materials, and equipment.

C. General:

1. Install systems, materials, and equipment level and plumb, parallel and perpendicular to other building systems and components.
2. When several devices are wall mounted in the same area, care shall be taken to align them horizontally and vertically.
3. When field cutting hangers or supports with corrosion protection, apply approved sealant to restore corrosion protection.
4. Install systems, materials, and equipment giving right of way priority to systems required to be installed at a specified slope
5. All screws, bolts, nuts, clamps, fittings, or other fastening devices shall be tightened in accordance with manufacturer instructions.
6. Plaster debris and residue shall be thoroughly cleaned and vacuumed from boxes before cables are terminated.
7.

D. Equipment:

1. Install communications systems equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
2. Match room numbers for labels, programming, etc. with existing/final room numbers approved by the Owner's representative upon completion of this project. The room numbers on the Drawings are not necessarily the actual room numbers.
3. Provide cabinets and associated raceway/pathway installations including special wire management auxiliaries.
4. Provide all support devices to mount supplied and installed equipment at the appropriate device height. Conceal furring as required.
5. Install equipment properly to avoid causing mechanical stresses, twisting or misalignment of equipment being exerted by clamps, supports, and cabling.

6. Coordinate branch circuit power connection to equipment as required to support the system being installed. Indicate additional power requirements on wiring diagrams at submittal stage for approval by Engineer.
7. Remove all dirt, dust and construction debris from all system equipment. Touch-up scratched and marred surfaces to match original finishes to the satisfaction of the Owner and Engineer.

E. Raceways and Cabling:

1. Routing:

   a. Pull all cabling to rack or equipment backboard in telecommunication room from outlet boxes shown on Drawings.
   b. Conceal all cabling in the facility except where specifically indicated otherwise. Surface raceway allowed only where specifically shown on Drawings or approved by Engineer.
   c. Install horizontal cabling open in accessible ceiling spaces. Install each cabling system in separate pathway from other cabling systems.
   d. Install all cabling parallel and perpendicular to building lines.
   e. Install cabling tight to building steel. Avoid locating cabling within 12 inches of lay-in ceilings or access panels.
   f. Traverse common system cables along the same pathway. Multiple runs of cabling terminated at roughly the same geographic area shall traverse the same path whenever possible.
   g. Verify all conduits are reamed and bushed prior to pulling cable. Do not pull cable if field manufactured bends reduce the recommended bending radius.
   h. Route cabling to avoid elevator shafts, elevator equipment rooms or any areas that contain or store hazardous materials.
   i. Avoid sources of electromagnetic interface (EMI) for all voice/data/system equipment and cables.

      1) Maintain 5 inch minimum from lighting ballast.
      2) Maintain 4 foot minimum from all transformers.
      3) Maintain 1 foot minimum from electric power conductors.
      4) Distances may be reduced if sufficient EMI isolation is provided and prior approval is given by the Engineer.

   j. Avoid routing cabling in areas subject to excessive environmental conditions.

      1) Refer to Division 26 Section "Conduit Rough-In Systems" for environmental requirements.

2. Supports:

   a. Coordinate cabling installation such that it is not supported from new or existing conduits, piping, ductwork, etc. Cabling shall not lie directly on ceiling or be supported by ceiling tie-wires.
   b. Support vertically routed cabling at each floor. Attach supports such as wire mesh grips as recommended by manufacturer and required by local codes.
   c. Do not support cables by their terminals.

3. Damage Prevention:

a. Provide caution during installation so as to not stress or provide excessive tension on the cable.

1) Pulling tension shall not exceed 25 lbs. on a single cable or bundle.
2) Avoid unnecessary bends and do not exceed a 90 degree bend for any cable.
3) Do not exceed manufactures bend radius requirements.

b. Replace entirely any cable jacket that is cut or scored.
c. Do not employ pulling lubricants as they can degrade cable performance.

4. Terminations:

a. Terminate all horizontal and backbone cabling at each cable end as indicated.
b. Tighten connectors and terminals, including screws and bolts, in accordance with equipment manufacturer's published torque tightening values for equipment connectors. Where manufacturer's torquing requirements are not indicated, tighten connectors and terminals to comply with tightening torques specified in UL Standards 486A and B, and the National Electrical Code.

3.4 PAINTING

A. Provide the prime painting of all equipment and materials furnished under Division 27 Specifications, unless specifically stated otherwise. In general, all equipment except raceways and galvanized boxes that are not provided with a factory-applied final finish shall be delivered to the job site with a shop-applied prime coat of paint. Refer to Division 09 Sections "Interior Painting" and "Exterior Painting."

1. Provide touch-up painting services for any equipment as required and approved by the Engineer.
2. Replace any damaged equipment that cannot be returned to a "Like New" condition/finish.

3.5 CUTTING AND PATCHING

A. General: Perform cutting and patching in accordance with Division 01 Section "Cutting and Patching." In addition to the requirements specified in Division 01, the following requirements apply:

1. Perform cutting, fitting, and patching of equipment and materials required to:

a. Uncover Work to provide for installation of ill-timed Work.
b. Remove and replace defective Work.
c. Remove and replace Work not conforming to requirements of the Contract Documents.
d. Remove samples of installed Work as specified for testing.
e. Install equipment and materials in existing structures.
f. Upon written instructions from the Architect, uncover and restore Work to provide for Architect observation of concealed Work.

2. Cut, remove, and legally dispose of selected equipment, components, and materials as indicated, including but not limited to, removal of electrical items indicated to be removed and items made obsolete by the new Work.
3. Protect the structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
4. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
5. Protection of Installed Work: During cutting and patching operations, protect adjacent installations.
6. Painting:

    a. Refer to Division 01 Section "Definitions and Standards" for definition of experienced "Installer."
    b. Provide paint note to renovation projects where painting is covered by Division 01.
    c. Paint to match existing surfaces if painting is not provided by Division 01 or as indicated.
    d. Patch finished surfaces and building components using new materials specified for the original installation and experienced Installers. Installers' qualifications refer to the materials and methods required for the surface and building components being patched.
    e. Refer to Division 01 Section "Definitions and Standards" for definition of experienced "Installer."

3.6 LABELING

A. Labels shall be applied by the installer at a visible location on all end-user device faceplates per Owner requirements and verbiage shall clearly identify device, use, destination, and location per Division 26 Section "Electrical Identification."

1. Provide engraved faceplates for devices without a designated label location or means of protecting/securing the label.

    a. Colors shall be black on stainless steel faceplates or white on black faceplates.

2. Standard manufacturer device plates shall provide engraved supplementary information as noted above.

B. Engrave label all keys provided to the Owner for system cabinets and devices.

1. Label with system name as required by the Owner.

3.7 PROGRAMMING DESIGN MEETINGS AND MANUAL

A. Meet with Owner’s representative to develop a system programming design to function for the operations needed. Document all meetings for review by the Engineer.

B. Provide sample programming requirements, system features, etc. for review by Owner and coordinate correspondence with other facility representatives that have installed similar systems.

C. Provide a customized Programming Manual identifying the project name/job number and date of installation.

1. Provide all documentation in spreadsheet format on CD-Rom and hardcopy.
2. Provide features utilized and identification.
3. Identify features available per the Specifications and the product not required based on Owner requirements.

    a. Features not identified to the Owner as available and not listed may be required by Owner after initial use and operation of the system is found to be inadequate without such features. It will be required to have the necessary features installed and programmed for use at no additional cost to the Owner.

4. Provide alterations/configurations based on time of day, day of week, holiday, etc.

3.8 LICENSES

A. Provide the necessary licenses for all devices and equipment to operate for the life of the product.

    1. Equipment/devices shall not require licenses to operate with the current or any updated/upgraded software release or version.

3.9 FIELD QUALITY CONTROL

A. Do not cover up or hide from view any communications systems equipment before it has been examined and approved. Any unsatisfactory work or materials shall be removed and corrected immediately.

B. Tests and Inspections:

    1. Submit a detailed test plan for all equipment and cabling prior to start of testing. Test plan shall provide for Owner to witness test.

        a. The following will be witnessed by the Engineer:

            1) As-Built Drawings will be verified with actual installation.
            2) Workmanship of installation of equipment.
            3) All systems are fully programmed and functional, including interconnections with other systems.

        b. Any electrical equipment in vicinity of cabling or devices shall be on and operational during testing, including luminaires, elevators, HVAC units, and wireless devices.

C. Manufacturer's Services:

    1. Where supervision by a manufacturer is specified, follow all instructions, recommended manufacturer and specified field tests, and other recommendations of the manufacturer. The manufacturer shall supervise the installation, connection, start-up, testing, adjustment, instruction of the Owner, and final tests of such equipment or system. Where two or more manufacturer's equipment are interrelated, take responsibility to coordinate their work and provide supervision.

3.10 ADJUSTING

A. Complete all system programming to the satisfaction of the Owner. If after preliminary use of the system or training, the increased understanding of the systems features and capabilities necessitate programming or set-up adjustments, perform these programming updates at no additional cost.

B. Provide software programming changes to match Owner's final room number designations. The room numbers shown on the Drawings are not necessarily he final room numbers and may be subject to change by the Owner.

C. Provide on-site assistance in reprogramming software based system to suit actual occupied conditions during the warranty period. Provide up to three 8 hour visits to the site for this purpose.

3.11 CLOSEOUT ACTIVITIES

A. Upon completion of the work, notify the Architect in writing that each entire system installation has been examined, inspected, tested, calibrated, or adjusted as specified and that it is ready for final inspection. Work to be connected prior to final inspection and also to include all of the work specified for "Manufacturers Services." Include documentation of specified testing and inspection.

B. Training:

1. Have the manufacturer instruct the Owner in the proper operation and maintenance techniques of all equipment, systems, etc., at the time of completion of all work.
2. Provide a training outline for distribution to the Owner for all required training and the necessary personnel required for operation, maintenance, and service (warranty) notification. Include instructors' qualifications.

    a. Training shall be provided in session increments of at maximum eight (8) hours. Minimum of two (2) hours.
    b. Coordinate all training to best service participants based on job description.
    c. Provide several sessions as required to meet participants' schedules, etc. Coordinate dates and times with Owner's representative three (3) months prior to start of training.
    d. Training shall be completed at the Owners facility and all necessary devices, equipment, and training aids shall be provided. Training aids shall include approved maintenance manual.
    e. Provide a refresher training session of at minimum two (2) hours 30 days after original training has been completed.

3. Provide PowerPoint presentation and handouts for all training. Class sizes shall be appropriate for the system to allow hands-on instruction.
4. Record each training session and provide a professionally edited DVD of each training session to be turned over to the Owner.
5. Off-Site Training:

    a. If required by the Specification section, provide factory training for designated Owner personnel at the manufacturer's training facility.
    b. Include all associated costs including transportation, lodging, meals, etc.

C. Software Turnover:

1. All software for system operation including source code for proper operation, reconfiguring and/or reworking of systems in future implementations shall be provided to the Owner by the manufacturer and/or vendor for the Owner's future use.

    a. This shall include any license agreements, associated costs, and fees for turnover of this information.
    b. The provided programming and source code shall become the intellectual property of the Owner.
    c. Supply on CD-ROM and format required by equipment for re-installation and re-programming.

END OF SECTION 280010

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SECTION 281300 – ACCESS CONTROL SYSTEM EXTENSION

PART 1 - GENERAL

1.1 SCOPE OF WORK

A. Base Bid – Provide new Access Control System (ACS) devices, including associated equipment and appurtenances that are compatible with the district's S2 system. The design of the ACS shall include all devices, wiring and equipment required to control access, and deny unauthorized entries within specific areas. Report generation, Photo Identification badges, and annunciation of alarms are existing at the district level. The ACS shall be designed to provide operational flexibility and reliable performance. The ACS shall be modular, allowing for future incremental expansion or modification of inputs, outputs, and remote control stations. Each system shall be complete and ready for operation and provide for a fully integrated access control solution.

1.2 WORK INCLUDES

A. The work includes furnishing all labor, materials, tools, and equipment, and documentation required for a complete and working Security Management System (SMS) as specified in this Section. This scope of work shall cover the requirements for the access control, alarm monitoring (door contacts and motion detectors) and badging system.

B. The SMS specified herein shall be fully compatible and coordinated in seamless operation with the district's S2 system.

C. Base Bid – All equipment (security panel, cards readers, door contacts, REX, etc.) shall operate and function as a single system with existing campus buildings via Owner WAN connectivity for updating user profiles, access rights and recording events. Multiple system data entry steps will not be acceptable to perform events/functions at other buildings.

1.3 REFERENCES

A. Design and operation of the system shall conform to the following referenced codes, regulations, and standards as applicable:

1. National Electrical Code (NEC).
2. American National Standards Institute (ANSI)

   a. Section ANSI C39.1 Requirements for Electrical Analog Indicating Instruments.

3. Underwriters Laboratories (UL):

   a. UL 294 Access Control Systems Units
   b. UL 497B Protectors for Data Communication Circuits.
   c. UL 796 Standard for Printed-Wiring Baords.

4. National Electrical Manufacturers Association (NEMA):

   a. Section 250 Enclosures for Electrical Equipment.

5. Applicable Federal, State, and Local laws, regulations, and codes.
6. CE mark as and where applicable.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Division 28 Section “Basic Division 28 Requirements”.

1.5 ACTION SUBMITTALS

A. Submittals and shall include but not be limited to the following:

1. Model numbers of all provided components.
2. Manufacturers catalog data sheets for all components.
3. Input power requirements for all SMS components.
4. Complete engineered drawings indicating:

a. Manufacturer model numbers and specifications.
b. Dimensions, layouts, installation details.
c. Point-to-point wiring diagrams for all SMS devices.
d. Termination details for all SMS devices.
e. Single-line system architecture drawings representing the entire SMS.
f. Interfaces with all sub-systems.
g. ACS operational test plan
h. Installer’s qualifications.
i. Instructor’s qualifications.
j. ACS components Operation and Maintenance Data.
k. As-Built drawings for ACS.
l. Posted operating instructions for ACS.

1.6 CLOSEOUT SUBMITTALS

A. Manufacturer’s User’s Manuals and Installation Manuals.

B. Course outlines for each of the end user training programs. The course outlines shall include the course duration, and a brief description of the subject matter.

1.7 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

1. Firms regularly engaged in manufacturer of professional quality access control systems, components and accessories, of types, capacities and characteristics required, whose products have been in satisfactory use in similar service for not less than 2 years.

B. Supplier's Qualifications:

1. Engage an experienced product supplier who is a factory-authorized sales and service representative regularly engaged in the design and installation of such systems to oversee the installation, trouble-shoot and make final connections at headend equipment.

2. Supplier shall have represented the product and components being installed for a minimum of 5 years.

C. Installer Qualifications:

1. Prior to installation, submit data of the installer's experience and certified qualifications. Show that the installer who will perform the work has a minimum of 2 years' experience successfully installing ACS of the same type and design as specified herein. Include the names, locations, and points of contact of at least two installations of the same type and design as specified herein where the installer has installed such systems. Indicate the type of each system and certify that each system has performed satisfactorily in the manner intended for a period of not less than 12 months.

D. Instructor's Qualifications:

1. Prior to installation, submit data of the instructor's experience and certified qualifications. Show that the instructor, who will train operating and maintenance personnel, has received a minimum of 24 hours of ACS training from the manufacturer, and 2 years' experience in the installation of ACS of the type specified.

E. Electrical Component Standard: Provide work complying with applicable requirements of NFPA 70 "National Electrical Code."

F. All system and components shall be Underwriters Laboratories listed and labeled.

G. EIA Compliance: Comply with the following Electronics Industries Association Standards:

1. UL Compliance: Comply with requirements of UL.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in factory containers. Store in clean, dry space in original containers. Protect products from fumes and construction traffic. Handle carefully to avoid damage.

PART 2 - PRODUCTS

2.1 PRODUCT -- GENERAL

A. Provide components that are compatible with the districts existing S2 enterprise access control system; ensure a complete integrated ACS consisting of the following major subsystems:

1. Automated Access Control System Hardware and Software – Door Controllers

a. Mercury EP-1501
b. S2 Netdoor Micro Node

2. Communications/Cabling/Wiring – See Access Control Block Diagram on drawings.
3. All access control hardware and software shall be of a single manufacturer including Host system, controller panels, and input and output terminal modules.

B. Network Controllers:

1. The Network Controllers shall be a fully stand-alone processor capable of making all access control decisions without the involvement of the Host Server based on a set of parameters passed to the sub-controller from the host.

    a. The Network Controllers shall support eight (4) or sixteen (8) card readers in addition to either 256 input points or 128 input points and 128 output points. It shall further support up to 12 facility codes per reader, 40 unique holidays, 8 access group and time zone pairs.
    b. Memory Requirements:

        1) Minimum number of cards: By district.

    c. The controller shall require no firmware changes and shall use flash memory modules to provide non-volatile storage of both data and operational code.
    d. Each controller shall be provided with built-in hardware to support hard-wired communications between the controller(s) and readers of up to 4000 feet.
    e. Communications between the controller(s) and the host server shall be via Ethernet TCP/IP at 10Mbps minimum. There shall be an alternate communications path to the host via a secondary IP address such that in the unlikely even the primary IP address/network is down an alternate communications path may be established.
    f. An alarm summary relay shall be built-in to the controller motherboard. The alarm relay shall be activated whenever a connected alarm point transfers to the alarm state and whenever soft alarms become active.
    g. A tamper switch shall be attached to the inner surface of the controller enclosure. The tamper switch shall change state whenever the enclosure door is opened to signal the SMS of the condition. The tamper switch input shall be user programmable to be suppressed, to be recognized as an input point to be process by the alarm queue at the host computer, to printout at an optional printer connected directly to the controller, and to activate the alarm summary relay described above.
    h. The standard AC linear power supply version of the controller shall include a battery module to back-up the controller's applications programs and database for 30 days after the failure of the primary AC power service. The controller database, the time clock, the transaction history, and all operator entered parameters shall be backed-up by the battery.
    i. The controller shall provide built-in LED to indicate whether the controller is properly communicating with the host computer.
    j. Alarm monitoring and Output Control terminal boards. Intelligent alarm monitoring and output control terminal boards shall be plug-in modules to the Network Controllers with the following functionality:

        1) Sixteen two-state alarm input points.
        2) Eight four-state supervised alarm input points.
        3) Eight two-state alarm input points and eight SPDT output relays.
        4) Eight four-state supervised alarm-input points and six SPDT output relays.

2. Signature capture device shall be connectable via a serial port interface communicating at 9600 BPS. Signature capture device shall be able to display the signature at the capture pad as well as on-screen.

2.2 READERS – VERIFICATION DEVICES

A. General:

1. All readers shall be configured with the reader electronics mounted separately, on the "secure" side of the door such that only the reader head/keypad and pilot lights are mounted in the reader housing on the "entry" side of the door.
2. All readers shall support the following technologies:

    a. HID Proximity.

3. All readers shall be in compliance with the following standards:

    a. ISO 14443A.
    b. ISO 14443B.
    c. ISO 15693.
    d. All readers shall be multi-frequency capable.

        1) 125 KHz.

B. HID Proximity - Furnish and install the reader style as shown on the drawings or as called for in this Specification:

1. Proximity Reader:

    a. The reader shall be integrated and contain all reader electronics inside a single polycarbonate enclosure; exterior, vandal proof, weatherproof housing.
    b. The reader shall operate when mounted on a variety of surfaces including metal. Maximum read range degradation when mounted on a metal surface shall be 50-percent.
    c. The reader shall contain an integral color LED and audio tone to indicate if the card has been successfully read.
    d. Mullion Mounted
    e. The reader shall be 6.0" x 1.7" x 1" maximum.
    f. Read range shall be up to 5".
    g. The reader shall be rated for normal operation from -22 to 150 deg. F.
    h. HID Mini Prox. 5365
    i. Access Control Cards are by the district.

2.3 INTEGRATED SYSTEM FUNCTIONAL REQUIREMENTS:

A. Ensure that ACS is fully integrated with physical security and other elements of the existing S2 District security system. Provide specific subsystem consisting of the following:

1. Automated Access Control subsystem: Door Access Control Nodes, and Electronic devices to include Door Contacts, Card Readers, and Request to Exit sensors/modules to control personnel movement through normal access routes in and out of the school.
2. Communications subsystem: Cabling/wiring between elements required to ensure that pertinent data is transferred from point of origin to point where appropriate actions can be taken.
3. Power subsystem: Components required to ensure continuous operation of the entire ACS.

2.4 INTEGRATED SYSTEM PERFORMANCE REQUIREMENTS:

A. The installed and operating ESS shall be integrated into the overall facility to detect intrusion, Control Access, provide Closed Circuit Television (CCTV) surveillance, provide visual verification and shall perform as an entity, as specified below.

1. Fail-Safe Capability

a. Provide fail-safe capability in critical elements of the ACS. This shall include, but not be limited to, capability to monitor communication link integrity and to provide self-test. When diminished functional capabilities are detected, system shall provide annunciation of the fault. Fail-safe alarms shall be annunciated to be clearly distinguishable from other type of alarms.

2. Line Fault Detection

a. Communication links of the ACS shall have an active mode for line fault detection. System shall be either a static, or dynamic system. in a static system, the “no-alarm” condition shall always be represented by the same signal, which will be different than the signal originally transmitted. The dynamic system shall represent “no-alarm” with a signal which continually changes with time.

3. Power Loss Detection

a. Provide capability to detect when a critical component of the system experiences temporary or permanent loss of power and to declare an alarm. Alarm shall be annunciated to clearly identify the component experiencing power loss.

4. Electrical Power

a. Obtain by PoE connection from district provided Ethernet switches powered by emergency electrical distribution system.

2.5 SYSTEM PERFORMANCE REQUIREMENTS:

A. Design system components to operate as described herein within the context of the overall system performance previously described. Perceived inconsistencies between the following component performance specifications and overall system level performance descriptions shall be decided in favor of the former.

1. Modularity

a. Provide components designed for modular increase and decrease of system capability by installation or removal of plug-in modules. Design system components to facilitate modular subassembly and part replacement.

2. Reliability

a. Provide only new components in current manufacturing production, manufactured to meet requirements specified herein, and free from characteristics and defects which affect appearance, or serviceability or render equipment unsuitable for the intended purpose.

3. Environmental Conditions

   a. Interior conditions – Equipment installed in environmentally protected interior areas shall meet performance requirements specified for the following ambient conditions:

      1) Temperature: 32 to 120 degrees F. Components installed in unheated security protected areas shall meet performance requirements for temperatures as low as zero degrees F.
      2) Pressure: Sea level to 15,000 feet above sea level.

   b. Exterior conditions – Components mounted in locations exposed to weather shall be housed in corrosion-resistant enclosures with appropriate environmental protection or be rated for their environment. Component performance shall not degrade because of improper housing.

2.6 ELECTRIC STRIKE

A. Electric strike/lock release provided by hardware manufacturer. Connections by Division 26. Interface door electrical strike release system to local card access control panel at the local doors terminal cabinet serving that area.

2.7 DOOR LATCH NOTIFICATION

A. Provided by door hardware manufacturer and connected by Division 26.

2.8 SECURITY OVERRIDE DEVICE

A. Provided by Door Hardware Manufacturer. Connected by Division 26.

2.9 DOOR CONTACTS

A. Provide, where shown on drawings, UL listed magnetic flush mounted contacts and magnets. Each contact shall be provided with matching magnet. All contacts shall be hermetically sealed for long term 10,000,000 cycle contact. Switch contacts shall be of the reed blade type with rhodium plating eliminating cold-welding; sticking and resistance build-up. All switches shall be 100% factory tested prior to installation. Coordinate with door frame manufacturer.

B. Manufacturer: Bosch ISN-CSM 20-WG Commercial Contacts, or Honeywell 7940.

2.10 REQUEST TO EXIT DEVICES

A. Motion Sensors: Passive infrared type designed for hands-free operation.

   1. Coverage Pattern: Provide adjustable coverage pattern using masking kit. Sensor shall have adjustable aiming of 14 degrees vertically.
   2. Provide a walk test/activation LED indicator.
   3. Relay latch time adjustable to 60 seconds. Provide two (2) Form C contacts rated 1 amp at 30 VDC for resistive loads.

4. Sensors shall be RFI immune in the 26-900 MHz range.

B. REX devices that are part of the electrified hardware will be provided by others. This Contractor shall completely wire (power and control) hardware to the access control system.

C. Manufacturer: Bosch DS150i with trim plate TP160. Provide in color white.

2.11 WIRE AND CABLE

A. Comply with requirements of Section "Wires and Cables" with stranded copper conductors. Size conductors as indicated, but not less than recommended by system manufacturer.

B. Utilize unshielded, twisted pair cable (UTP) installed in conduit system.

C. Furnish and install standard manufacturer's cable assemblies for components, as recommended by the system manufacturer. Include connections for electric door strikes, card reader connections and all required peripheral devices.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with the installer present, for compliance with requirements and other factors affecting the performance of the security access system work.

B. Do not proceed until satisfactory conditions have been corrected.

3.2 INSTALLATION REQUIREMENTS

A. All consoles, terminals, and controllers shall be factory wired before shipment to the job site.

B. Cabinet doors shall open a minimum of 170 degrees to avoid blocking personnel movement. Each door shall be equipped with a cylinder lock, a tamper switch and a piano-type hinge with welded tamperproof pins.

C. Provisions shall be made for field wiring to enter the cabinet via standard knock-outs at the top, bottom and sides of controller cabinets.

D. Each wire shall be identified at both ends with the wire designation corresponding to the wire numbers shown on the wiring diagrams.

E. All exposed wiring within the cabinets, consoles, and terminals shall be formed neatly with wires grouped in bundles using non-metallic, flame-resistant wiring cleats or wire ties.

F. All ferrous metal work shall be painted, in accordance with the manufacturer’s standards.

G. Coordinate installation of door contacts with door/door hardware manufacturer. All wiring shall be concealed within door-frame and fished/routed within building walls, where not accessible with conduits.

3.3 SYSTEM WIRING

A. Provide system and device wiring as recommended by the manufacturer. All wiring shall be concealed. Route system cabling in J-hooks above ceiling or in crawlspace as required. Install in surface raceway in other areas.

3.4 TESTING AND COMMISSIONING

A. The Contractor shall be responsible for testing and commissioning of the installation in accordance with all applicable documents in the Contract set.

1. Testing shall be comprehensive and sufficient to demonstrate compliance with each requirement.
2. Proposed test plan shall be submitted to the Engineer and Owner's representative for approval before commencement of final test.
3. Final tests shall be conducted in the presence of the Engineer and Owner's representative.

3.5 TRAINING AND INSTRUCTION

A. Upon completion of the work, and prior to acceptance of the same by the Owner, the Contractor and major equipment manufacturer's qualified representative shall provide 4 hours of Owner instruction in one-hour sessions. Sessions shall include instruction on the operation and service of all closed circuit television system equipment and controls. This instruction shall be done at the facilities' location and convenience, and in the presence of the Architect/Engineer's representative.

B. Training materials shall consist of the following:

1. Formal course outline and agenda.
2. Operator training student guide for each student.
3. Hands-on practice with on-line equipment.
4. Written examinations.

3.6 WARRANTY

A. All equipment furnished under this contract shall be warranted for a period of twelve (12) months from the date of final Engineer/Owner acceptance of the system.

1. Respond to service requests on-site, if required.
2. Replace or repair defective components as required.

END OF SECTION 281300

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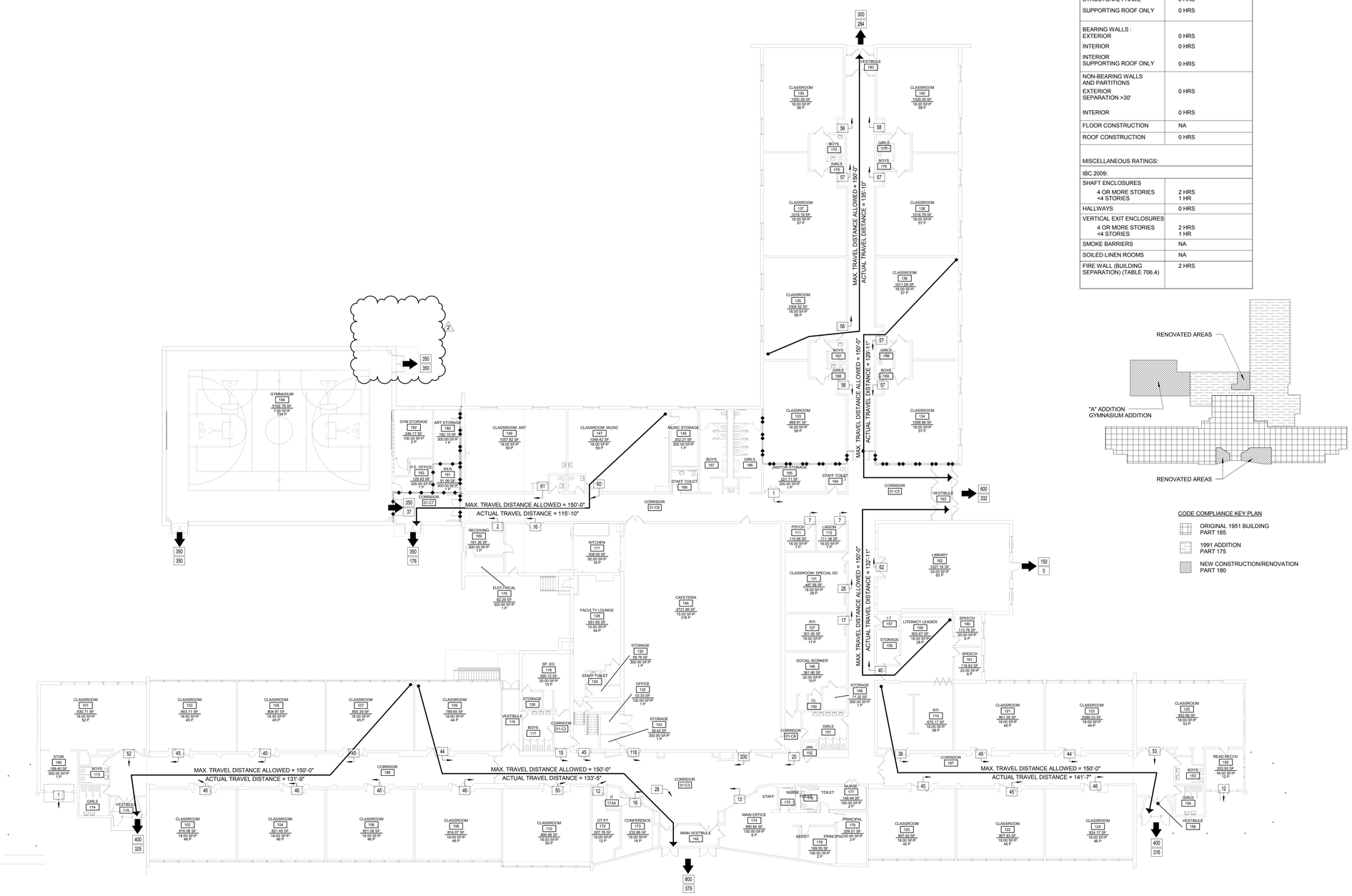

1 LEVEL 01 CODE COMPLIANCE PLAN
1/16" = 1'-0"

GENERAL INFORMATION:

OCCUPANCY:
OCCUPANCY CLASSIFICATION: EDUCATION

CONSTRUCTION CLASSIFICATION:
CONSTRUCTION TYPE: IBC 2009 - TYPE 2B (ADDITION)
PART 175 - TYPE 2 NON-COMBUSTIBLE (SEE KEY PLAN BELOW)
PART 185 - TYPE 2 NON-COMBUSTIBLE (EXISTING BUILDING)

AUTOMATIC SPRINKLER SYSTEM: NO
ADDITION IS LESS THAN 7200 SF THEREFORE THERE IS NO SPRINKLER REQUIREMENT BY ILLINOIS ADMINISTRATIVE CODE 180

ALLOWABLE BUILDING AREA ("A" ADDITION):

ALLOWABLE: 14,500 SF
ACTUAL: 6,631 SF

ALLOWABLE BUILDING HEIGHT ("A" ADDITION):

ALLOWABLE: 55'-0", 2 STORIES
ACTUAL: 27'-8", 1 STORY

FIRE RESISTANCE RATINGS

IBC 2009 - TABLE 601 - TYPE 2B	
ITEM	FIRE RESISTANCE RATING
STRUCTURAL FRAME	0 HRS
SUPPORTING ROOF ONLY	0 HRS
BEARING WALLS : EXTERIOR	0 HRS
INTERIOR	0 HRS
INTERIOR SUPPORTING ROOF ONLY	0 HRS
NON-BEARING WALLS AND PARTITIONS EXTERIOR SEPARATION >30'	0 HRS
INTERIOR	0 HRS
FLOOR CONSTRUCTION	NA
ROOF CONSTRUCTION	0 HRS
MISCELLANEOUS RATINGS:	
IBC 2009:	
SHAFT ENCLOSURES	
4 OR MORE STORIES	2 HRS
<4 STORIES	1 HR
HALLWAYS	0 HRS
VERTICAL EXIT ENCLOSURES	
4 OR MORE STORIES	2 HRS
<4 STORIES	1 HR
SMOKE BARRIERS	NA
SOILED LINEN ROOMS	NA
FIRE WALL (BUILDING SEPARATION) (TABLE 706.4)	2 HRS

LEGEND

1 HOUR FIRE RESISTANCE RATED SEPARATION
2 HOUR FIRE RESISTANCE RATED SEPARATION
TRAVEL DISTANCE
30" X 48" AREA OF RESCUE ASSISTANCE — ARA
NUMBER OF PEOPLE AND DIRECTION OF TRAVEL FOR OCCUPANTS EXITING SPACE — 50
FIRE EXTINGUISHER CABINET — FEC
FIRE EXTINGUISHER — FE
CAPACITY / ACTUAL — EXIT
OCC RATE TYPES
DESIGNED OCCUPANT LOAD = X P/ sf
ROOM NAME / RM NO. / NET FLOOR AREA / OCC RATE / OCC MAX
EGRESS LOCATION TO BE MAINTAINED DURING CONSTRUCTION — *

APPLICABLE CODES, STANDARDS, AND ORDINANCES:

PER ILLINOIS ADMINISTRATIVE CODE 180:

2009 INTERNATIONAL BUILDING CODE (WITH AMENDMENTS)

2009 INTERNATIONAL MECHANICAL CODE (WITH AMENDMENTS)

2004 ILLINOIS PLUMBING CODE

2009 INTERNATIONAL FUEL GAS CODE

2009 INTERNATIONAL ENERGY CONSERVATION CODE

2009 INTERNATIONAL FIRE CODE

ILLINOIS ACCESSIBILITY CODE / 2010 ADAAG

NOTE: ABOVE CODES REFER TO THE NEW ADDITION AND RENOVATION WORK BEING PERFORMED, INCLUDING EGRESS CALCULATIONS, DOOR AND STAIR CAPACITY AND MAXIMUM TRAVEL DISTANCES. THE CHART BELOW INDICATES FURTHER INDORMATION FOR THE ADDITION AS WELL AS THE EXISTING BUILDING.

EGRESS LEGEND

PART 180/ IBC 2009 (ADDITION)
DOOR CAPACITY = .2 INCH/ PERSON
36" DOOR (34" CLEAR) = 170 OCCUPANTS
72" OPENING (70" CLEAR) = 350 OCCUPANTS
0-49 OCC. LOAD = 1 DOOR
5-50 OCC. LOAD = 2 DOORS
3 EXITS REQUIRED FOR OCC. LOAD 501-1000
MAXIMUM TRAVEL DISTANCE = 250'-0" (SPRINKLERED)
COMMON PATH OF TRAVEL = 75'-0"
DEAD END CORRIDOR = 50'-0"
PART 185
DOOR CAPACITY = 100 PERSONS/ 18" OF EXIT WIDTH
36" DOOR = 200 OCCUPANTS
72" OPENING = 400 OCCUPANTS
MAXIMUM TRAVEL DISTANCE = 150'-0" (NON-SPRINKLERED)
PART 175
DOOR CAPACITY = 100 PERSONS/ 22" OF EXIT WIDTH
36" DOOR = 150 OCCUPANTS
72" OPENING = 300 OCCUPANTS
MAXIMUM TRAVEL DISTANCE = 150'-0" (NON-SPRINKLERED)

CODE COMPLIANCE KEY PLAN

ORIGINAL 1951 BUILDING
PART 185

1991 ADDITION
PART 175

NEW CONSTRUCTION/RENOVATION
PART 180

GENERAL NOTES

1. THE FLOOR PLAN BACKGROUND FOR NEW AND EXISTING CONSTRUCTION IS SHOWN IN GRAY HALF-TONE. DESIGNATIONS FOR FIRE RATED PARTITIONS, SMOKE PARTITIONS AND OTHER CODE COMPLIANCE RELATED INFORMATION ARE SHOWN FULL TONE. REFER TO CONTRACT DRAWINGS TO DETERMINE WHICH COMPONENTS ARE NEW AND WHICH ARE EXISTING.
2. THE FIRE AND SMOKE DESIGNATIONS FOR EXISTING CONSTRUCTION ARE SHOWN FOR REFERENCE ONLY AND ARE BASED ON INFORMATION PROVIDED BY OWNER. THIS INFORMATION HAS NOT BEEN INDEPENDENTLY VERIFIED BY CANNON DESIGN.
3. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF EXIT LIGHTS, EMERGENCY LIGHTS, AND FIRE ALARM SYSTEM.
4. REFER TO FIRE PROTECTION DRAWINGS FOR LOCATIONS OF SPRINKLERS AND FIRE PUMP.
5. REFER TO PLUMBING DRAWINGS FOR PLUMBING FIXTURE COUNTS.
6. REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL LOADS.

ROCKFORD PUBLIC SCHOOLS

ROCKFORD PUBLIC SCHOOLS
RIVERDAHL ELEMENTARY SCHOOL - ADDITION & RENOVATION

CANNONDESIGN

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LICENSE NUMBER 184.005683

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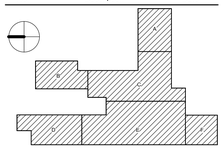
13 Winding Branch Rd
Hawthorn Woods IL 60047
224-717-1999

ARC DESIGN RESOURCES INC.
Civil Consultants
5291 Zenith Parkway
Loves Park IL 61111
(815) 484-4300

No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 01 CODE COMPLIANCE

Project No.: 004645.05 Checked by: Checker

G0201

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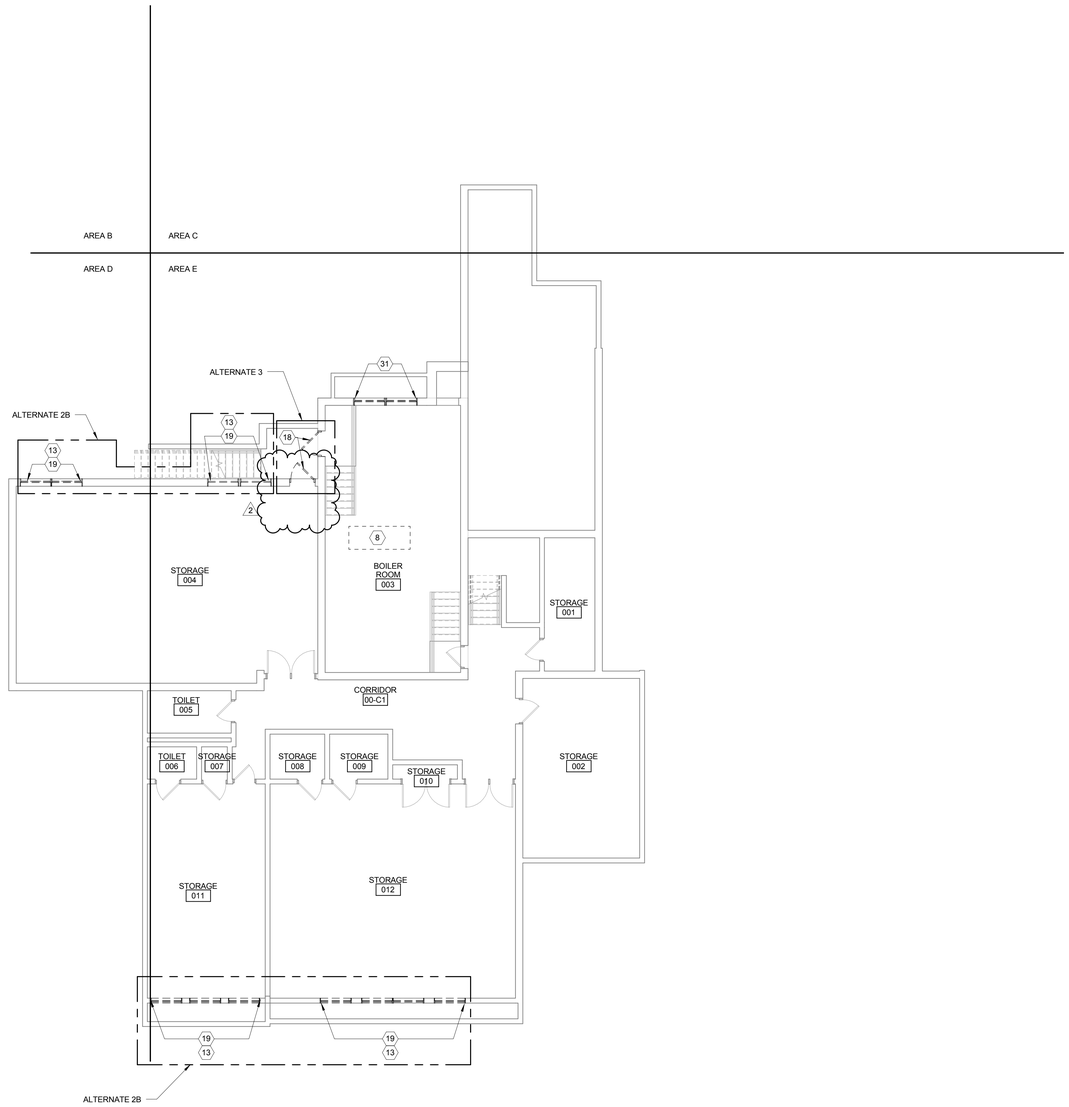

1 LEVEL 00 ARCHITECTURAL DEMOLITION PLAN - AREA D & E

1/8" = 1'-0"

GENERAL DEMOLITION NOTES

1. VERIFY EXISTING FIELD CONDITIONS BEFORE AND AFTER DEMOLITION, REPORT ANY DESCREPANCIES FROM THE DRAWINGS TO THE ARCHITECT.

2. ALL CONTRACTORS ARE RESPONSIBLE FOR REVIEWING ALL CONSTRUCTION DOCUMENTS FOR COORDINATION OF THE WORK AND DESIGN INTENT.

3. PRIOR TO COMMENCEMENT OF WORK, REFER TO THE STRUCTURAL, MEP & FP DRAWINGS FOR WORK TO REMAIN, OR TO BE SALVAGED WITHIN AREAS OF DEMOLITION.

4. CONSTRUCTION IS TO BE PHASED FOR UNINTERRUPTED USE OF THE EXISTING BUILDING. TEMPORARY BARRICADES TO BE ERECTED TO SEPARATE CONSTRUCTION AREAS FROM REMAINDER OF BUILDING. CORRIDOR ACCESS AND EXITS SHALL BE MAINTAINED AT ALL TIMES.

5. ALL EXISTING BUILDING SYSTEMS - HEATING, COOLING, FIRE ALARM, SECURITY, ETC. SHALL REMAIN IN OPERATION AT UNAFFECTED AREA AT ALL TIMES DURING DEMOLITION. COORDINATE ALL SHUT DOWNS WITH THE OWNERS BUILDING ENGINEER.

6. DEMOLITION WORK AS SHOWN ON THE DRAWINGS IS TO INDICATE, IN A GENERAL MANNER, THE REMOVAL OF EXISTING CONSTRUCTION AND IS NOT INTENDED TO BE EXCLUSIVE. PROVIDE ALL DEMOLITION REQUIRED TO ACCOMMODATE OR INSTALL ALL NEW WORK FOR ALL TRADES. VERIFY ALL CONDITIONS AT BUILDING SITE PRIOR TO COMMENCEMENT OF WORK.

7. ABATEMENT WORK IS UNDER SEPARATE CONTRACT. ALL ACM WILL BE REMOVED BY DISTRICT'S ABATEMENT CONTRACTOR. WORK NOTED IN THE DRAWINGS IS FOR CONTRACTORS REFERENCE, TO UNDERSTAND WORK REQUIRED TO PREPARE EXISTING SURFACES FOR NEW WORK. CONTRACTOR TO COORDINATE ACM REMOVAL REQUIREMENTS WITH RPS 205 ABATEMENT CONTRACTOR TO INCLUDE BUT NOT LIMITED TO: FLOORING, CEILING SYSTEMS, PIPE INSULATION, DUCT INSULATION, CAULK AND WINDOW GLAZING.

8. REFER TO THE STRUCTURAL, MEP & FP DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.

9. REFER TO PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS REGARDING DEMOLITION AND ALTERATION PROCEDURES.

10. WALLS & CEILINGS NOTED TO BE REMOVED IN THEIR ENTIRETY SHALL INCLUDE ALL ASSOCIATED HEATING, VENTILATION, ELECTRICAL, TECHNOLOGY, PLUMBING, FIRE PROTECTION, & ARCHITECTURAL ELEMENTS.

11. FLOOR FINISHES NOTED TO BE REMOVED IN THEIR ENTIRETY SHALL INCLUDE ALL FINISH FLOORING UNDERLAYMENT AND ASSOCIATED SUB-FLOORING, DOWN TO STRUCTURE.

12. CARE SHOULD BE TAKEN WHILE DEMOLISHING ITEMS ADJACENT TO WALLS TO REMAIN, FLOOR SLABS AND STRUCTURE, TO LOWER THE EXTENT OF REQUIRED PATCH WORK.

13. WHERE PIPES, CONDUITS, DUCTWORK, ETC. HAVE BEEN REMOVED FROM ANY WALL, FLOOR, CEILING OR ROOF SYSTEM THAT IS TO REMAIN, THE OPENING SHALL BE INFILLED WITH MATERIALS THAT MATCH THE EXISTING ADJACENT CONSTRUCTION AND RESTORED TO MAINTAIN DESIGNATED FIRE OR SMOKE RATING. NEW PENETRATIONS THROUGH EXISTING WALLS, FLOORS OR ROOF SHALL BE FIRE STOPPED.

14. REFER TO UNDERGROUND PLUMBING AND ELECTRICAL DEMOLITION PLANS FOR DEMOLITION AND PATCHING OF CONCRETE FLOOR SLAB.

15. PATCH ALL EXISTING FLOOR AND WALL SURFACES TO REMAIN AS REQUIRED TO RECEIVE NEW FINISHES, AT AREAS OF WORK. CONTRACTOR IS TO COORDINATE FLOOR ELEVATIONS AND PROVIDE SMOOTH AND LEVEL SURFACES TO RECEIVE NEW FINISHES. FLOOR FILL TO BE LIGHTWEIGHT CONCRETE AND/OR FLOOR LEVELING COMPOUNDS APPROPRIATE TO THICKNESS OF INFILL REQUIRED TO LEVEL FLOOR AT REQUIRED FLOOR ELEVATION. TRANSITIONS TO ADJACENT FLOOR SURFACES NOT TO EXCEED A 1:20 SLOPE.

16. REMOVE CONCRETE HOUSEKEEPING PADS AND CURBS AT REMOVED EQUIPMENT. PATCH FLOOR TO MATCH EXISTING.

17. ALL EXISTING DEVICES (I.E. ELECTRICAL, DATA, TELEPHONE ETC.) THAT OCCUR IN WALLS TO BE DEMOLISHED ARE TO BE REMOVED AND TERMINATED ACCORDING TO MEP AND FP DRAWINGS.

18. THE CONTRACTOR SHALL REMOVE EXISTING MATERIALS WHERE INDICATED AND SHALL PREPARE SUBSURFACE FOR NEW FINISH.

19. COORDINATE ALL WORK WITH OWNER.

20. SAW CUT AND REMOVE EXISTING FLOOR SLABS, WALLS TO INSTALL NEW PLUMBING, ELECTRICAL AND MECHANICAL SYSTEMS AS INDICATED IN MEPFP DRAWINGS. PREPARE AREA OF REMOVAL FOR MEPFP INSTALLATIONS AND PATCH AFTER INSTALLATION.

21. ALL EXPOSED MASONRY PATCHES, ON WALLS TO REMAIN, TO BE TOOTHED INTO EXISTING WALLS UNLESS NOTED OTHERWISE.

22. CAREFULLY REMOVE ITEMS MARKED BY THE OWNER AS "OWNER'S" AND RETURN TO OWNER.

23. CONTRACTOR TO VERIFY WITH RPS 205 FOR ANY DEMOLISHED MATERIAL AND EQUIPMENT TO BE SALVAGED.

24. CONTRACTOR TO REMOVE ALL SALVAGED MATERIALS OFF SITE DAILY. NO MATERIAL SHALL BE STORED OUTSIDE DURING NON-WORKING TIMES. ALL DUMPSTERS SHALL BE SECURED AT THE END OF EACH DAY TO PREVENT SCRAPPING. PROHIBITIVE SIGNAGE WILL BE PROVIDED TO CONTRACTOR BY RPS 205. DISTRICT HAS THE RIGHT TO SALVAGE MATERIALS.

25. CONTRACTOR TO COORDINATE CEILING REMOVAL AND INSTALLATION REQUIREMENTS WITH MEP TRADES.

DEMOLITION KEY NOTES

1. REMOVE EXISTING PARTITION IN ITS ENTIRETY INCL. WALL BASE AND ASSOCIATED ARCHITECTURAL / MEPFP ELEMENTS.
2. REMOVE PORTION OF EXISTING PARTITION FOR NEW CONSTRUCTION INCL. WALL BASE AND ASSOCIATED ARCHITECTURAL / MEPFP ELEMENTS
3. REMOVE COMPLETELY ALL EXISTING FLOOR FINISHES AND ADHESIVE, INCLUDING UNDERLAYMENT, DOWN TO SLAB. REMOVE BASE AS REQUIRED.
4. EXISTING VAT FLOORING TO BE REMOVED BY OWNER'S ABATEMENT CONTRACTOR. CONTRACTOR TO COORDINATE REMOVAL WITH ABATEMENT CONTRACTOR.
5. REMOVE EXISTING CEILING IN ITS ENTIRETY, INCLUDING ACT AND GRID WHERE APPLICABLE, GYPSUM BOARD SOFFITS, MECHANICAL DIFFUSERS AND LIGHT FIXTURES, UNLESS OTHERWISE NOTED.
5A. CAREFULLY CUT AND REMOVE EXISTING PLASTER CEILING STARTING FROM 6" AWAY FROM CURVED PLASTER SOFFIT AT WINDOW. CURVED PLASTER SOFFIT AT WINDOW TO REMAIN. DASHED LINE INDICATES EXTENT.
6. REMOVE EXISTING CEILING AS REQUIRED FOR NEW FIXTURE INSTALLATION AND MEP WORK, INCLUDING ACT AND GRID WHERE APPLICABLE, MECHANICAL DIFFUSERS AND LIGHT FIXTURES, UNLESS OTHERWISE NOTED.
7. REMOVE EXISTING DOOR, FRAME, SIDELIGHT (AS INDICATED) AND HARDWARE, INCL THRESHOLDS.
8. SAWCUT EXISTING CONCRETE SLAB - REFER TO UNDERGROUND PLUMBING & ELECTRICAL PLANS FOR DEMOLITION & PATCHING OF EXISTING CONCRETE SLAB ON GRADE.
9. REMOVE EXISTING CASEWORK/MILLWORK IN ITS ENTIRETY (BASE CABINETS, COUNTERTOPS, UPPER CABINETS, SHELVES AND ISLANDS) AND ASSOCIATED PLUMBING/GAS/ELECTRICAL.
10. REMOVE EXISTING PLUMBING FIXTURES (I.E. WC, LAVATORY, DRINKING FOUNTAIN, EYEWASH, SHOWERS, FLOOR DRAINS ETC.)
11. REMOVE EXISTING TOILET ACCESSORIES (I.E. PAPER TOWEL DISPENSER, TOILET PAPER DISPENSER, SOAP DISPENSER, MIRROR, SANITARY DISPENSER, GARBAGE BINS ETC.), SALVAGE AND RETURN TO OWNER.
12. OWNER TO REMOVE EXISTING LOOSE EQUIPMENT/FURNITURE. GC TO COORDINATE WITH DISTRICT.
13. REMOVE EXISTING WINDOW COVERINGS
14. REMOVE EXISTING MARKER BOARD, CHALK BOARD, TACKBOARD AND RETURN TO OWNER
15. ALL EXISTING KITCHEN EQUIPMENT REMOVAL AND ASSOCIATED DEMOLITION WORK, SEE FOODSERVICE EQUIPMENT
16. REMOVE PORTION OF EXTERIOR MASONRY WALL
17. EXISTING EXTERIOR ALUMINUM STOREFRONT SYSTEM ENTRY DOORS, DOOR HARDWARE AND THRESHOLDS TO BE REMOVED BY OTHER FOR DOOR REPLACEMENT (NOT IN CONTRACT). DOOR INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR
18. EXISTING EXTERIOR DOORS, INCL. FLASHING AND SEALS TO BE REMOVED BY OTHER FOR DOOR REPLACEMENT (NOT IN CONTRACT). DOOR INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.
19. EXISTING WINDOWS TO BE REMOVED BY OTHER FOR WINDOW REPLACEMENT (NOT IN CONTRACT). WINDOW INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.
20. REMOVE EXISTING THRESHOLD
21. REMOVE PORTION OF EXISTING WOOD TRIM AS REQUIRED FOR NEW CONSTRUCTION.
22. EXISTING WINDOW AIR CONDITIONING UNIT TO BE REMOVED BY OWNER
23. REMOVE EXISTING ROLLING SHUTTER DOOR, SS. COUNTER AND ASSOCIATED HARDWARE
24. COORDINATE WITH MEP DRAWINGS FOR ADDITIONAL REQUIRED DEMOLITION OF EXISTING KITCHEN
25. REMOVE EXISTING FLOORING AS REQUIRED FOR NEW CONSTRUCTION
26. REMOVE EXISTING PLASTER SOFFIT COMPLETELY
27. REMOVE ENTIRELY LOW HEIGHT GYP BOARD PARTITION
28. REMOVE PAINTED MTL FASCIA ABOVE WINDOWS (SEE 2 AND 3/D0202)
29. REMOVE PAINTED MTL BULKHEAD BELOW WINDOW (SEE 4/D0202)
30. REMOVE EXISTING CONCRETE STOOP
31. EXISTING WINDOW TO BE REMOVED BY OTHERS (NIC). CONTRACTOR INSTALLING THE MECHANICAL LOUVER FRAME AND BLANK-OFF PANEL IS RESPONSIBLE FOR REMOVING THE TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR
32. EXISTING GLASS BLOCK TO BE REMOVED BY OTHERS FOR WINDOW REPLACEMENT (N.I.C). WINDOW INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.

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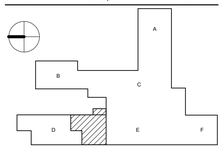
No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 00 ARCHITECTURAL DEMOLITION PLAN - AREA D & E

Project No.: 004645.05 Checked by: Checker

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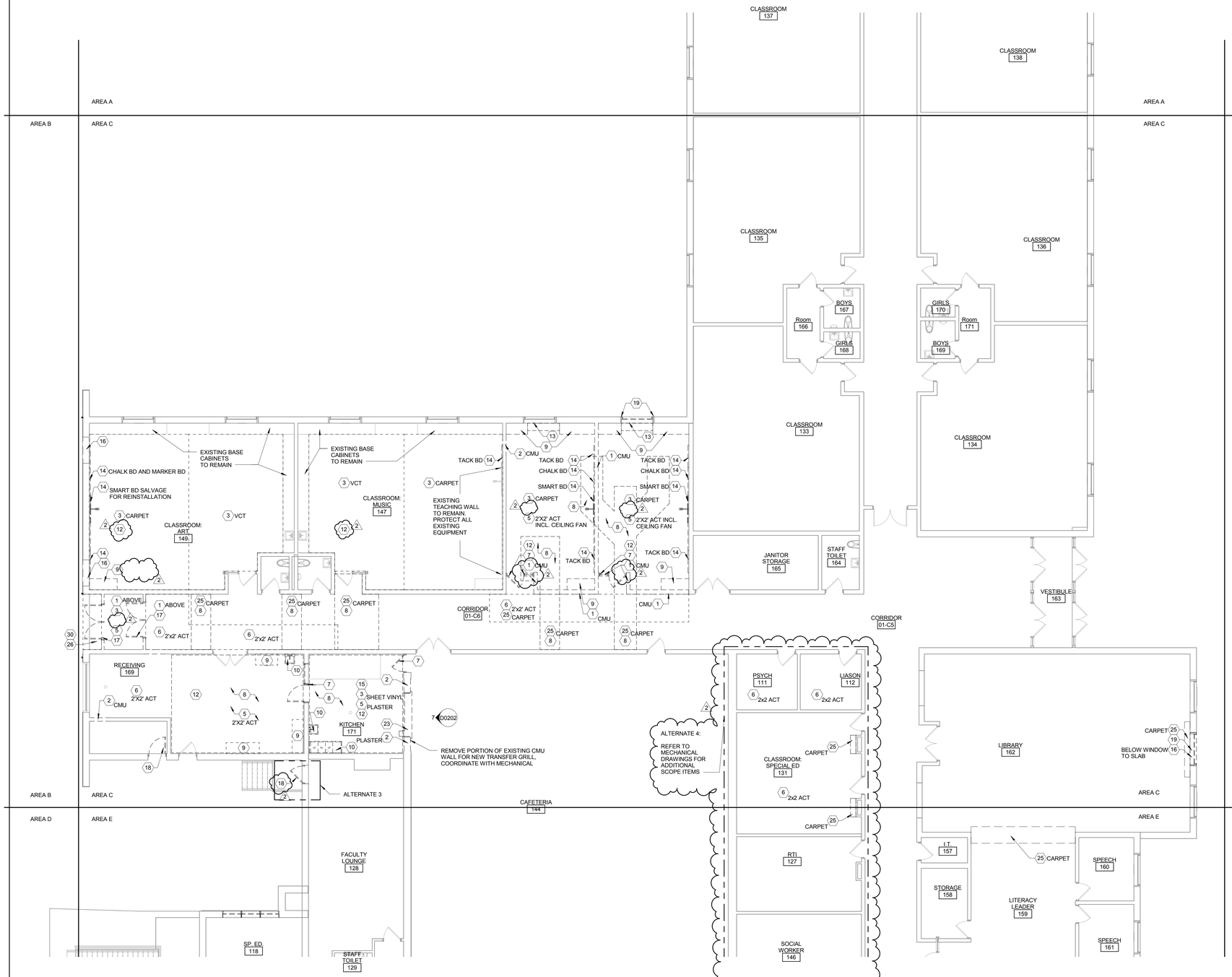

1 LEVEL 01 ARCHITECTURAL DEMOLITION PLAN -AREA C

1/8" = 1'-0"

GENERAL DEMOLITION NOTES

1. VERIFY EXISTING FIELD CONDITIONS BEFORE AND AFTER DEMOLITION, REPORT ANY DESCREPANCIES FROM THE DRAWINGS TO THE ARCHITECT.

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3. PRIOR TO COMMENCEMENT OF WORK, REFER TO THE STRUCTURAL, MEP & FP DRAWINGS FOR WORK TO REMAIN, OR TO BE SALVAGED WITHIN AREAS OF DEMOLITION.

4. CONSTRUCTION IS TO BE PHASED FOR UNINTERRUPTED USE OF THE EXISTING BUILDING. TEMPORARY BARRICADES TO BE ERECTED TO SEPARATE CONSTRUCTION AREAS FROM REMAINDER OF BUILDING. CORRIDOR ACCESS AND EXITS SHALL BE MAINTAINED AT ALL TIMES.

5. ALL EXISTING BUILDING SYSTEMS - HEATING, COOLING, FIRE ALARM, SECURITY, ETC. SHALL REMAIN IN OPERATION AT UNAFFECTED AREA AT ALL TIMES DURING DEMOLITION. COORDINATE ALL SHUT DOWNS WITH THE OWNERS BUILDING ENGINEER.

6. DEMOLITION WORK AS SHOWN ON THE DRAWINGS IS TO INDICATE, IN A GENERAL MANNER, THE REMOVAL OF EXISTING CONSTRUCTION AND IS NOT INTENDED TO BE EXCLUSIVE. PROVIDE ALL DEMOLITION REQUIRED TO ACCOMMODATE OR INSTALL ALL NEW WORK FOR ALL TRADES. VERIFY ALL CONDITIONS AT BUILDING SITE PRIOR TO COMMENCEMENT OF WORK.

7. ABATEMENT WORK IS UNDER SEPARATE CONTRACT. ALL ACM WILL BE REMOVED BY DISTRICT'S ABATEMENT CONTRACTOR. WORK NOTED IN THE DRAWINGS IS FOR CONTRACTORS REFERENCE, TO UNDERSTAND WORK REQUIRED TO PREPARE EXISTING SURFACES FOR NEW WORK. CONTRACTOR TO COORDINATE ACM REMOVAL REQUIREMENTS WITH RPS 205 ABATEMENT CONTRACTOR TO INCLUDE BUT NOT LIMITED TO: FLOORING, CEILING SYSTEMS, PIPE INSULATION, DUCT INSULATION, CAULK AND WINDOW GLAZING.

8. REFER TO THE STRUCTURAL, MEP & FP DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.

9. REFER TO PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS REGARDING DEMOLITION AND ALTERATION PROCEDURES.

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11. FLOOR FINISHES NOTED TO BE REMOVED IN THEIR ENTIRETY SHALL INCLUDE ALL FINISH FLOORING UNDERLAYMENT AND ASSOCIATED SUB-FLOORING, DOWN TO STRUCTURE.

12. CARE SHOULD BE TAKEN WHILE DEMOLISHING ITEMS ADJACENT TO WALLS TO REMAIN, FLOOR SLABS AND STRUCTURE, TO LOWER THE EXTENT OF REQUIRED PATCH WORK.

13. WHERE PIPES, CONDUITS, DUCTWORK, ETC. HAVE BEEN REMOVED FROM ANY WALL, FLOOR, CEILING OR ROOF SYSTEM THAT IS TO REMAIN, THE OPENING SHALL BE INFILLED WITH MATERIALS THAT MATCH THE EXISTING ADJACENT CONSTRUCTION AND RESTORED TO MAINTAIN DESIGNATED FIRE OR SMOKE RATING. NEW PENETRATIONS THROUGH EXISTING WALLS, FLOORS OR ROOF SHALL BE FIRE STOPPED.

14. REFER TO UNDERGROUND PLUMBING AND ELECTRICAL DEMOLITION PLANS FOR DEMOLITION AND PATCHING OF CONCRETE FLOOR SLAB.

15. PATCH ALL EXISTING FLOOR AND WALL SURFACES TO REMAIN AS REQUIRED TO RECEIVE NEW FINISHES, AT AREAS OF WORK. CONTRACTOR IS TO COORDINATE FLOOR ELEVATIONS AND PROVIDE SMOOTH AND LEVEL SURFACES TO RECEIVE NEW FINISHES. FLOOR FILL TO BE LIGHTWEIGHT CONCRETE AND/OR FLOOR LEVELING COMPOUNDS APPROPRIATE TO THICKNESS OF INFILL REQUIRED TO LEVEL FLOOR AT REQUIRED FLOOR ELEVATION. TRANSITIONS TO ADJACENT FLOOR SURFACES NOT TO EXCEED A 1:20 SLOPE.

16. REMOVE CONCRETE HOUSEKEEPING PADS AND CURBS AT REMOVED EQUIPMENT. PATCH FLOOR TO MATCH EXISTING.

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18. THE CONTRACTOR SHALL REMOVE EXISTING MATERIALS WHERE INDICATED AND SHALL PREPARE SUBSURFACE FOR NEW FINISH.

19. COORDINATE ALL WORK WITH OWNER.

20. SAW CUT AND REMOVE EXISTING FLOOR SLABS, WALLS TO INSTALL NEW PLUMBING, ELECTRICAL AND MECHANICAL SYSTEMS AS INDICATED IN MEPFP DRAWINGS. PREPARE AREA OF REMOVAL FOR MEPFP INSTALLATIONS AND PATCH AFTER INSTALLATION.

21. ALL EXPOSED MASONRY PATCHES, ON WALLS TO REMAIN, TO BE TOOTHED INTO EXISTING WALLS UNLESS NOTED OTHERWISE.

22. CAREFULLY REMOVE ITEMS MARKED BY THE OWNER AS "OWNER'S" AND RETURN TO OWNER.

23. CONTRACTOR TO VERIFY WITH RPS 205 FOR ANY DEMOLISHED MATERIAL AND EQUIPMENT TO BE SALVAGED.

24. CONTRACTOR TO REMOVE ALL SALVAGED MATERIALS OFF SITE DAILY. NO MATERIAL SHALL BE STORED OUTSIDE DURING NON-WORKING TIMES. ALL DUMPSTERS SHALL BE SECURED AT THE END OF EACH DAY TO PREVENT SCRAPPING. PROHIBITIVE SIGNAGE WILL BE PROVIDED TO CONTRACTOR BY RPS 205. DISTRICT HAS THE RIGHT TO SALVAGE MATERIALS.

25. CONTRACTOR TO COORDINATE CEILING REMOVAL AND INSTALLATION REQUIREMENTS WITH MEP TRADES.

DEMOLITION KEY NOTES

1. REMOVE EXISTING PARTITION IN ITS ENTIRETY INCL. WALL BASE AND ASSOCIATED ARCHITECTURAL / MEPFP ELEMENTS.
2. REMOVE PORTION OF EXISTING PARTITION FOR NEW CONSTRUCTION INCL. WALL BASE AND ASSOCIATED ARCHITECTURAL / MEPFP ELEMENTS
3. REMOVE COMPLETELY ALL EXISTING FLOOR FINISHES AND ADHESIVE, INCLUDING UNDERLAYMENT, DOWN TO SLAB. REMOVE BASE AS REQUIRED.
4. EXISTING VAT FLOORING TO BE REMOVED BY OWNER'S ABATEMENT CONTRACTOR. CONTRACTOR TO COORDINATE REMOVAL WITH ABATEMENT CONTRACTOR.
5. REMOVE EXISTING CEILING IN ITS ENTIRETY, INCLUDING ACT AND GRID WHERE APPLICABLE, GYPSUM BOARD SOFFITS, MECHANICAL DIFFUSERS AND LIGHT FIXTURES, UNLESS OTHERWISE NOTED.
6A. CAREFULLY CUT AND REMOVE EXISTING PLASTER CEILING STARTING FROM 6" AWAY FROM CURVED PLASTER SOFFIT AT WINDOW. CURVED PLASTER SOFFIT AT WINDOW TO REMAIN. DASHED LINE INDICATES EXTENT.
6. REMOVE EXISTING CEILING AS REQUIRED FOR NEW FIXTURE INSTALLATION AND MEP WORK, INCLUDING ACT AND GRID WHERE APPLICABLE, MECHANICAL DIFFUSERS AND LIGHT FIXTURES, UNLESS OTHERWISE NOTED.
7. REMOVE EXISTING DOOR, FRAME, SIDELIGHT (AS INDICATED) AND HARDWARE, INCL THRESHOLDS.
8. SAWCUT EXISTING CONCRETE SLAB - REFER TO UNDERGROUND PLUMBING & ELECTRICAL PLANS FOR DEMOLITION & PATCHING OF EXISTING CONCRETE SLAB ON GRADE.
9. REMOVE EXISTING CASEWORK/MILLWORK IN ITS ENTIRETY (BASE CABINETS, COUNTERTOPS, UPPER CABINETS, SHELVES AND ISLANDS) AND ASSOCIATED PLUMBING/GAS/ELECTRICAL.
10. REMOVE EXISTING PLUMBING FIXTURES (I.E. WC, LAVATORY, DRINKING FOUNTAIN, EYEWASH, SHOWERS, FLOOR DRAINS ETC.)
11. REMOVE EXISTING TOILET ACCESSORIES (I.E. PAPER TOWEL DISPENSER, TOILET PAPER DISPENSER, SOAP DISPENSER, MIRROR, SANITARY DISPENSER, GARBAGE BINS ETC.), SALVAGE AND RETURN TO OWNER.
12. OWNER TO REMOVE EXISTING LOOSE EQUIPMENT/FURNITURE. GC TO COORDINATE WITH DISTRICT.
13. REMOVE EXISTING WINDOW COVERINGS
14. REMOVE EXISTING MARKER BOARD, CHALK BOARD, TACKBOARD AND RETURN TO OWNER
15. ALL EXISTING KITCHEN EQUIPMENT REMOVAL AND ASSOCIATED DEMOLITION WORK, SEE FOODSERVICE EQUIPMENT
16. REMOVE PORTION OF EXTERIOR MASONRY WALL
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19. EXISTING WINDOWS TO BE REMOVED BY OTHER FOR WINDOW REPLACEMENT (NOT IN CONTRACT). WINDOW INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.
20. REMOVE EXISTING THRESHOLD
21. REMOVE PORTION OF EXISTING WOOD TRIM AS REQUIRED FOR NEW CONSTRUCTION.
22. EXISTING WINDOW AIR CONDITIONING UNIT TO BE REMOVED BY OWNER
23. REMOVE EXISTING ROLLING SHUTTER DOOR, SS. COUNTER AND ASSOCIATED HARDWARE
24. COORDINATE WITH MEP DRAWINGS FOR ADDITIONAL REQUIRED DEMOLITION OF EXISTING KITCHEN
25. REMOVE EXISTING FLOORING AS REQUIRED FOR NEW CONSTRUCTION
26. REMOVE EXISTING PLASTER SOFFIT COMPLETELY
27. REMOVE ENTIRELY LOW HEIGHT GYP BOARD PARTITION
28. REMOVE PAINTED MTL FASCIA ABOVE WINDOWS (SEE 2 AND 3/D0202)
29. REMOVE PAINTED MTL BULKHEAD BELOW WINDOW (SEE 4/D0202)
30. REMOVE EXISTING CONCRETE STOOP
31. EXISTING WINDOW TO BE REMOVED BY OTHERS (NIC). CONTRACTOR INSTALLING THE MECHANICAL LOUVER FRAME AND BLANK-OFF PANEL IS RESPONSIBLE FOR REMOVING THE TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR
32. EXISTING GLASS BLOCK TO BE REMOVED BY OTHERS FOR WINDOW REPLACEMENT (N.I.C). WINDOW INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.

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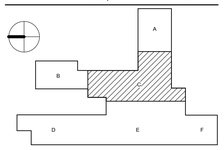
No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 01 ARCHITECTURAL DEMOLITION PLAN - AREA C

Project No.: 004645.05 Checked by: Checker

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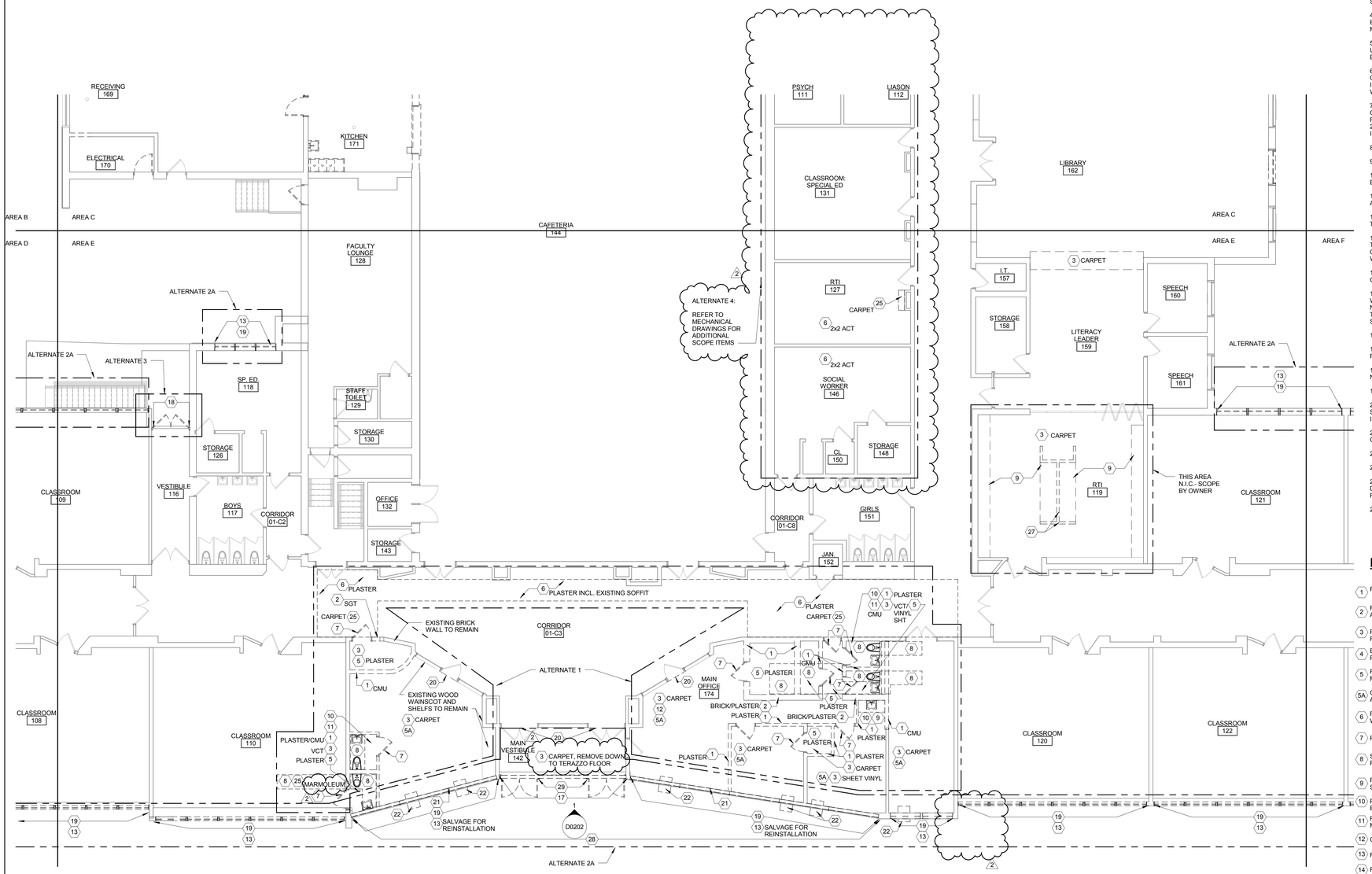

1 LEVEL 01 FLOOR PLAN - AREA E

1/8" = 1'-0"

GENERAL DEMOLITION NOTES

1. VERIFY EXISTING FIELD CONDITIONS BEFORE AND AFTER DEMOLITION, REPORT ANY DESCREPANCIES FROM THE DRAWINGS TO THE ARCHITECT.

2. ALL CONTRACTORS ARE RESPONSIBLE FOR REVIEWING ALL CONSTRUCTION DOCUMENTS FOR COORDINATION OF THE WORK AND DESIGN INTENT.

3. PRIOR TO COMMENCEMENT OF WORK, REFER TO THE STRUCTURAL, MEP & FP DRAWINGS FOR WORK TO REMAIN, OR TO BE SALVAGED WITHIN AREAS OF DEMOLITION.

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6. DEMOLITION WORK AS SHOWN ON THE DRAWINGS IS TO INDICATE, IN A GENERAL MANNER, THE REMOVAL OF EXISTING CONSTRUCTION AND IS NOT INTENDED TO BE EXCLUSIVE. PROVIDE ALL DEMOLITION REQUIRED TO ACCOMMODATE OR INSTALL ALL NEW WORK FOR ALL TRADES. VERIFY ALL CONDITIONS AT BUILDING SITE PRIOR TO COMMENCEMENT OF WORK.

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8. REFER TO THE STRUCTURAL, MEP & FP DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.

9. REFER TO PROJECT MANUAL FOR ADDITIONAL REQUIREMENTS REGARDING DEMOLITION AND ALTERATION PROCEDURES.

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11. FLOOR FINISHES NOTED TO BE REMOVED IN THEIR ENTIRETY SHALL INCLUDE ALL FINISH FLOORING UNDERLAYMENT AND ASSOCIATED SUB-FLOORING, DOWN TO STRUCTURE.

12. CARE SHOULD BE TAKEN WHILE DEMOLISHING ITEMS ADJACENT TO WALLS TO REMAIN, FLOOR SLABS AND STRUCTURE, TO LOWER THE EXTENT OF REQUIRED PATCH WORK.

13. WHERE PIPES, CONDUITS, DUCTWORK, ETC. HAVE BEEN REMOVED FROM ANY WALL, FLOOR, CEILING OR ROOF SYSTEM THAT IS TO REMAIN, THE OPENING SHALL BE INFILLED WITH MATERIALS THAT MATCH THE EXISTING ADJACENT CONSTRUCTION AND RESTORED TO MAINTAIN DESIGNATED FIRE OR SMOKE RATING. NEW PENETRATIONS THROUGH EXISTING WALLS, FLOORS OR ROOF SHALL BE FIRE STOPPED.

14. REFER TO UNDERGROUND PLUMBING AND ELECTRICAL DEMOLITION PLANS FOR DEMOLITION AND PATCHING OF CONCRETE FLOOR SLAB.

15. PATCH ALL EXISTING FLOOR AND WALL SURFACES TO REMAIN AS REQUIRED TO RECEIVE NEW FINISHES, AT AREAS OF WORK. CONTRACTOR IS TO COORDINATE FLOOR ELEVATIONS AND PROVIDE SMOOTH AND LEVEL SURFACES TO RECEIVE NEW FINISHES. FLOOR FILL TO BE LIGHTWEIGHT CONCRETE AND/OR FLOOR LEVELING COMPOUNDS APPROPRIATE TO THICKNESS OF INFILL REQUIRED TO LEVEL FLOOR AT REQUIRED FLOOR ELEVATION. TRANSITIONS TO ADJACENT FLOOR SURFACES NOT TO EXCEED A 1:20 SLOPE.

16. REMOVE CONCRETE HOUSEKEEPING PADS AND CURBS AT REMOVED EQUIPMENT. PATCH FLOOR TO MATCH EXISTING.

17. ALL EXISTING DEVICES (I.E. ELECTRICAL, DATA, TELEPHONE ETC.) THAT OCCUR IN WALLS TO BE DEMOLISHED ARE TO BE REMOVED AND TERMINATED ACCORDING TO MEP AND FP DRAWINGS.

18. THE CONTRACTOR SHALL REMOVE EXISTING MATERIALS WHERE INDICATED AND SHALL PREPARE SUBSURFACE FOR NEW FINISH.

19. COORDINATE ALL WORK WITH OWNER.

20. SAW CUT AND REMOVE EXISTING FLOOR SLABS, WALLS TO INSTALL NEW PLUMBING, ELECTRICAL AND MECHANICAL SYSTEMS AS INDICATED IN MEPFP DRAWINGS. PREPARE AREA OF REMOVAL FOR MEPFP INSTALLATIONS AND PATCH AFTER INSTALLATION.

21. ALL EXPOSED MASONRY PATCHES, ON WALLS TO REMAIN, TO BE TOOTHED INTO EXISTING WALLS UNLESS NOTED OTHERWISE.

22. CAREFULLY REMOVE ITEMS MARKED BY THE OWNER AS "OWNER'S" AND RETURN TO OWNER.

23. CONTRACTOR TO VERIFY WITH RPS 205 FOR ANY DEMOLISHED MATERIAL AND EQUIPMENT TO BE SALVAGED.

24. CONTRACTOR TO REMOVE ALL SALVAGED MATERIALS OFF SITE DAILY. NO MATERIAL SHALL BE STORED OUTSIDE DURING NON-WORKING TIMES. ALL DUMPSTERS SHALL BE SECURED AT THE END OF EACH DAY TO PREVENT SCRAPPING. PROHIBITIVE SIGNAGE WILL BE PROVIDED TO CONTRACTOR BY RPS 205. DISTRICT HAS THE RIGHT TO SALVAGE MATERIALS.

25. CONTRACTOR TO COORDINATE CEILING REMOVAL AND INSTALLATION REQUIREMENTS WITH MEP TRADES.

DEMOLITION KEY NOTES

1. REMOVE EXISTING PARTITION IN ITS ENTIRETY INCL. WALL BASE AND ASSOCIATED ARCHITECTURAL / MEPFP ELEMENTS.
2. REMOVE PORTION OF EXISTING PARTITION FOR NEW CONSTRUCTION INCL. WALL BASE AND ASSOCIATED ARCHITECTURAL / MEPFP ELEMENTS
3. REMOVE COMPLETELY ALL EXISTING FLOOR FINISHES AND ADHESIVE, INCLUDING UNDERLAYMENT, DOWN TO SLAB. REMOVE BASE AS REQUIRED.
4. EXISTING VAT FLOORING TO BE REMOVED BY OWNER'S ABATEMENT CONTRACTOR. CONTRACTOR TO COORDINATE REMOVAL WITH ABATEMENT CONTRACTOR.
5. REMOVE EXISTING CEILING IN ITS ENTIRETY, INCLUDING ACT AND GRID WHERE APPLICABLE, GYPSUM BOARD SOFFITS, MECHANICAL DIFFUSERS AND LIGHT FIXTURES, UNLESS OTHERWISE NOTED.
5A. CAREFULLY CUT AND REMOVE EXISTING PLASTER CEILING STARTING FROM 6" AWAY FROM CURVED PLASTER SOFFIT AT WINDOW. CURVED PLASTER SOFFIT AT WINDOW TO REMAIN. DASHED LINE INDICATES EXTENT.
6. REMOVE EXISTING CEILING AS REQUIRED FOR NEW FIXTURE INSTALLATION AND MEP WORK, INCLUDING ACT AND GRID WHERE APPLICABLE, MECHANICAL DIFFUSERS AND LIGHT FIXTURES, UNLESS OTHERWISE NOTED.
7. REMOVE EXISTING DOOR, FRAME, SIDELIGHT (AS INDICATED) AND HARDWARE, INCL THRESHOLDS.
8. SAWCUT EXISTING CONCRETE SLAB - REFER TO UNDERGROUND PLUMBING & ELECTRICAL PLANS FOR DEMOLITION & PATCHING OF EXISTING CONCRETE SLAB ON GRADE.
9. REMOVE EXISTING CASEWORK/MILLWORK IN ITS ENTIRETY (BASE CABINETS, COUNTERTOPS, UPPER CABINETS, SHELVES AND ISLANDS) AND ASSOCIATED PLUMBING/GAS/ELECTRICAL.
10. REMOVE EXISTING PLUMBING FIXTURES (I.E. WC, LAVATORY, DRINKING FOUNTAIN, EYEWASH, SHOWERS, FLOOR DRAINS ETC.)
11. REMOVE EXISTING TOILET ACCESSORIES (I.E. PAPER TOWEL DISPENSER, TOILET PAPER DISPENSER, SOAP DISPENSER, MIRROR, SANITARY DISPENSER, GARBAGE BINS ETC.), SALVAGE AND RETURN TO OWNER.
12. OWNER TO REMOVE EXISTING LOOSE EQUIPMENT/FURNITURE. GC TO COORDINATE WITH DISTRICT.
13. REMOVE EXISTING WINDOW COVERINGS
14. REMOVE EXISTING MARKER BOARD, CHALK BOARD, TACKBOARD AND RETURN TO OWNER
15. ALL EXISTING KITCHEN EQUIPMENT REMOVAL AND ASSOCIATED DEMOLITION WORK, SEE FOODSERVICE EQUIPMENT
16. REMOVE PORTION OF EXTERIOR MASONRY WALL
17. EXISTING EXTERIOR ALUMINUM STOREFRONT SYSTEM ENTRY DOORS, DOOR HARDWARE AND THRESHOLDS TO BE REMOVED BY OTHER FOR DOOR REPLACEMENT (NOT IN CONTRACT). DOOR INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR
18. EXISTING EXTERIOR DOORS, INCL. FLASHING AND SEALS TO BE REMOVED BY OTHER FOR DOOR REPLACEMENT (NOT IN CONTRACT). DOOR INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.
19. EXISTING WINDOWS TO BE REMOVED BY OTHER FOR WINDOW REPLACEMENT (NOT IN CONTRACT). WINDOW INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.
20. REMOVE EXISTING THRESHOLD
21. REMOVE PORTION OF EXISTING WOOD TRIM AS REQUIRED FOR NEW CONSTRUCTION.
22. EXISTING WINDOW AIR CONDITIONING UNIT TO BE REMOVED BY OWNER
23. REMOVE EXISTING ROLLING SHUTTER DOOR, SS. COUNTER AND ASSOCIATED HARDWARE
24. COORDINATE WITH MEP DRAWINGS FOR ADDITIONAL REQUIRED DEMOLITION OF EXISTING KITCHEN
25. REMOVE EXISTING FLOORING AS REQUIRED FOR NEW CONSTRUCTION
26. REMOVE EXISTING PLASTER SOFFIT COMPLETELY
27. REMOVE ENTIRELY LOW HEIGHT GYP BOARD PARTITION
28. REMOVE PAINTED MTL FASCIA ABOVE WINDOWS (SEE 2 AND 3/D0202)
29. REMOVE PAINTED MTL BULKHEAD BELOW WINDOW (SEE 4/D0202)
30. REMOVE EXISTING CONCRETE STOOP
31. EXISTING WINDOW TO BE REMOVED BY OTHERS (NIC). CONTRACTOR INSTALLING THE MECHANICAL LOUVER FRAME AND BLANK-OFF PANEL IS RESPONSIBLE FOR REMOVING THE TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR
32. EXISTING GLASS BLOCK TO BE REMOVED BY OTHERS FOR WINDOW REPLACEMENT (N.I.C). WINDOW INSTALLER IS RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.

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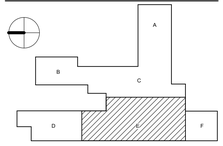
No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 01 ARCHITECTURAL DEMOLITION PLAN - AREA E

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GENERAL DEMOLITION NOTES

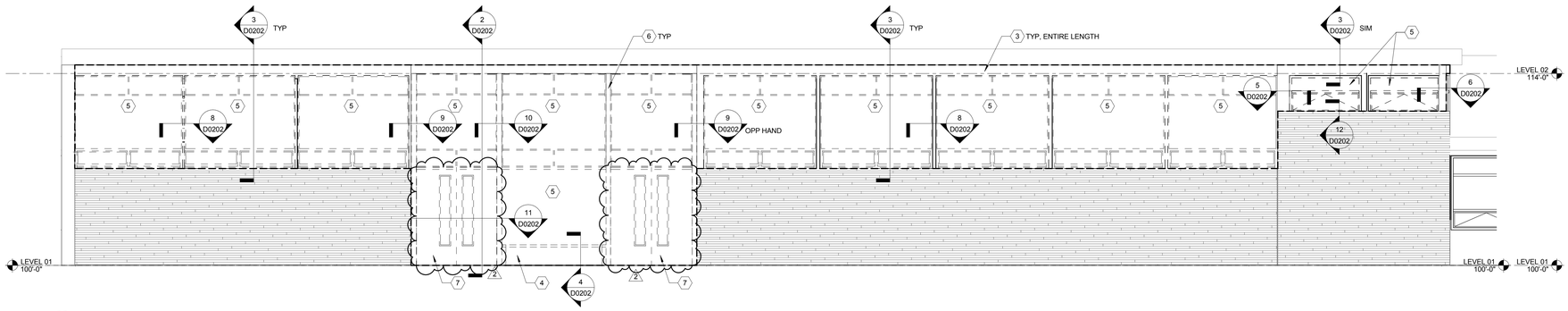
1. PROTECT EXISTING CONSTRUCTION TO REMAIN.

2. EXISTING WINDOWS, DOORS, FRAMES, GLAZING, PAINTED METAL FASCIA AND TRIM, TO BE REMOVED BY OTHERS. CONTRACTOR TO REMOVE TEMPORARY PLYWOOD ENCLOSURE AND RETURN TO ABATEMENT CONTRACTOR.

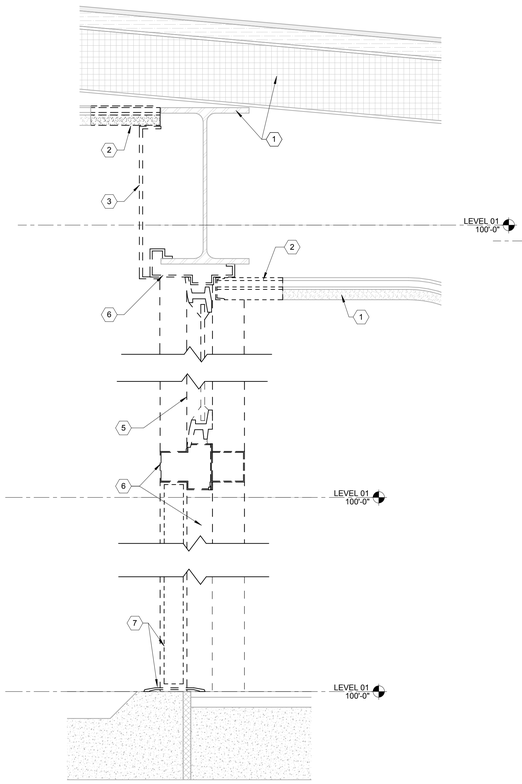
3. ALL WORK THIS SHEET BID UNDER ALTERNATE 2A.

DEMOLITION KEY NOTES

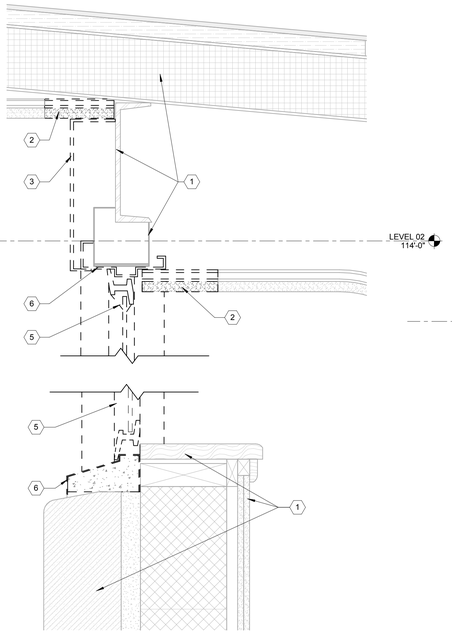
1. EXISTING CONSTRUCTION TO REMAIN.
2. REMOVE EXISTING PLASTER CEILING/SOFFIT AS REQURED FOR NEW CONSTRUCTION
3. REMOVE EXISTING PAINTED METAL FASCIA.
4. REMOVE EXISTING PAINTED METAL BULKHEAD AND ASSOCIATED BLOCKING.
5. REMOVE EXISTING WINDOW ENTIRELY
6. REMOVE EXISTING 16 GA PAINTED METAL DOOR/WINDOW FRAMING
7. REMOVE EXISTING ENTRY DOORS & THRESHOLD
8. REMOVE EXISTING 1/4" GLASS



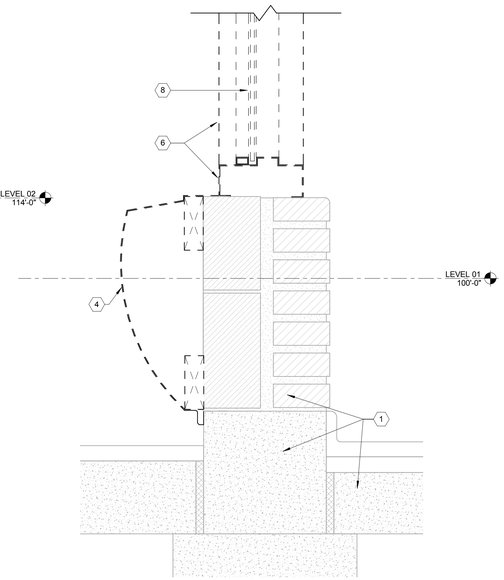
1 ELEVATION - FRONT ENTRY DEMOLITION
1/4" = 1'-0"



2 ENTRY DOOR DEMOLITION
3" = 1'-0"



3 WINDOW DEMOLITION SECTION
3" = 1'-0"



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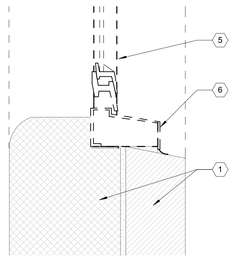
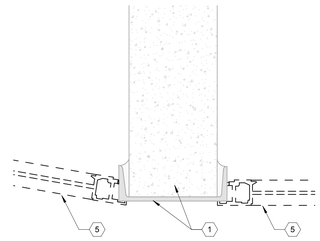
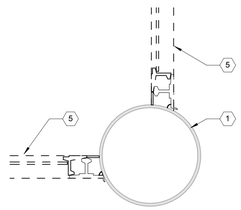


12 WINDOW DEMOLITION SECTION
3" = 1'-0"



5 PLAN DETAIL
3" = 1'-0"



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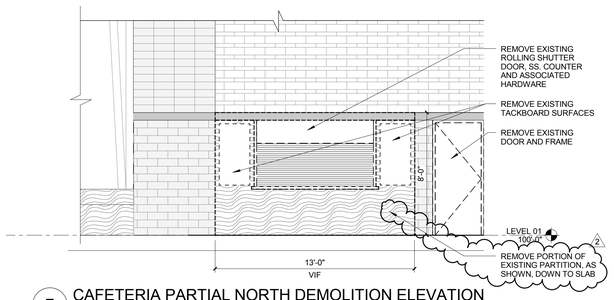
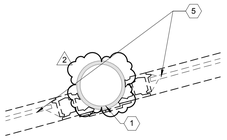
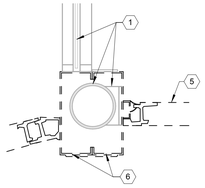
3" = 1'-0"



7 CAFETERIA PARTIAL NORTH DEMOLITION ELEVATION
1/4" = 1'-0"



8 DEMOLITION PLAN DETAIL
3" = 1'-0"



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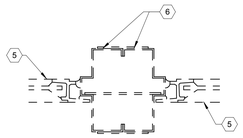
3" = 1'-0"



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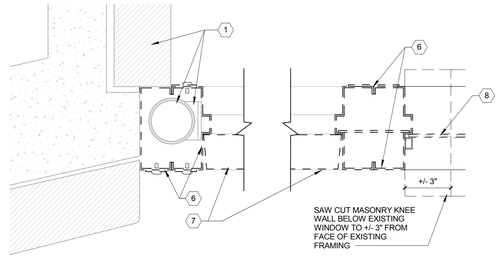
3" = 1'-0"



11 DEMOLITION PLAN DETAIL
3" = 1'-0"

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DEMOLITION ELEVATIONS/DETAILS

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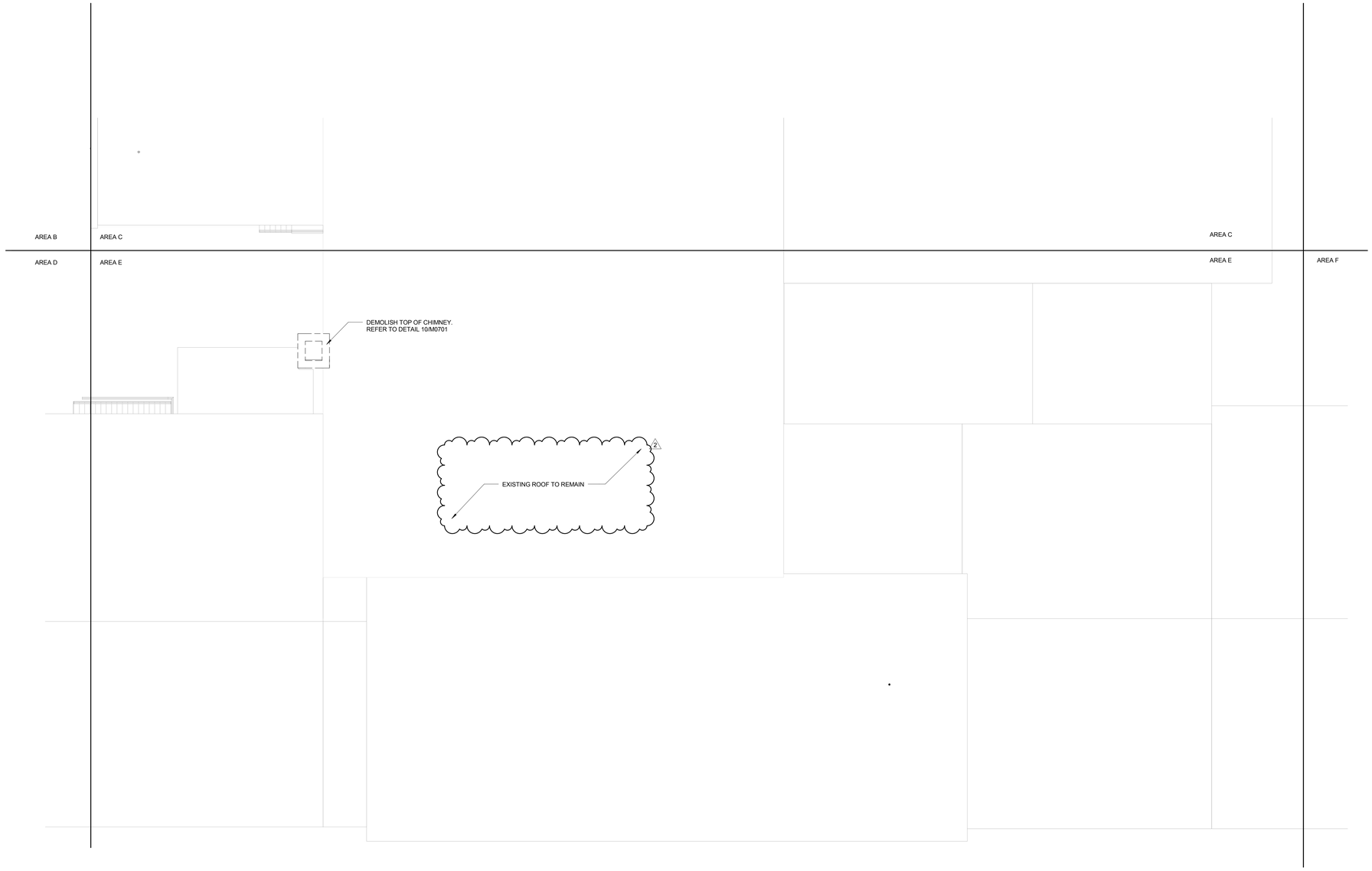

1 AREA E ROOFPLAN DEMO
1/8" = 1'-0"

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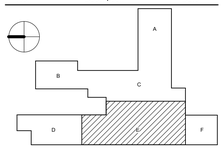

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ROOF PLAN DEMOLITION PLAN - AREA E

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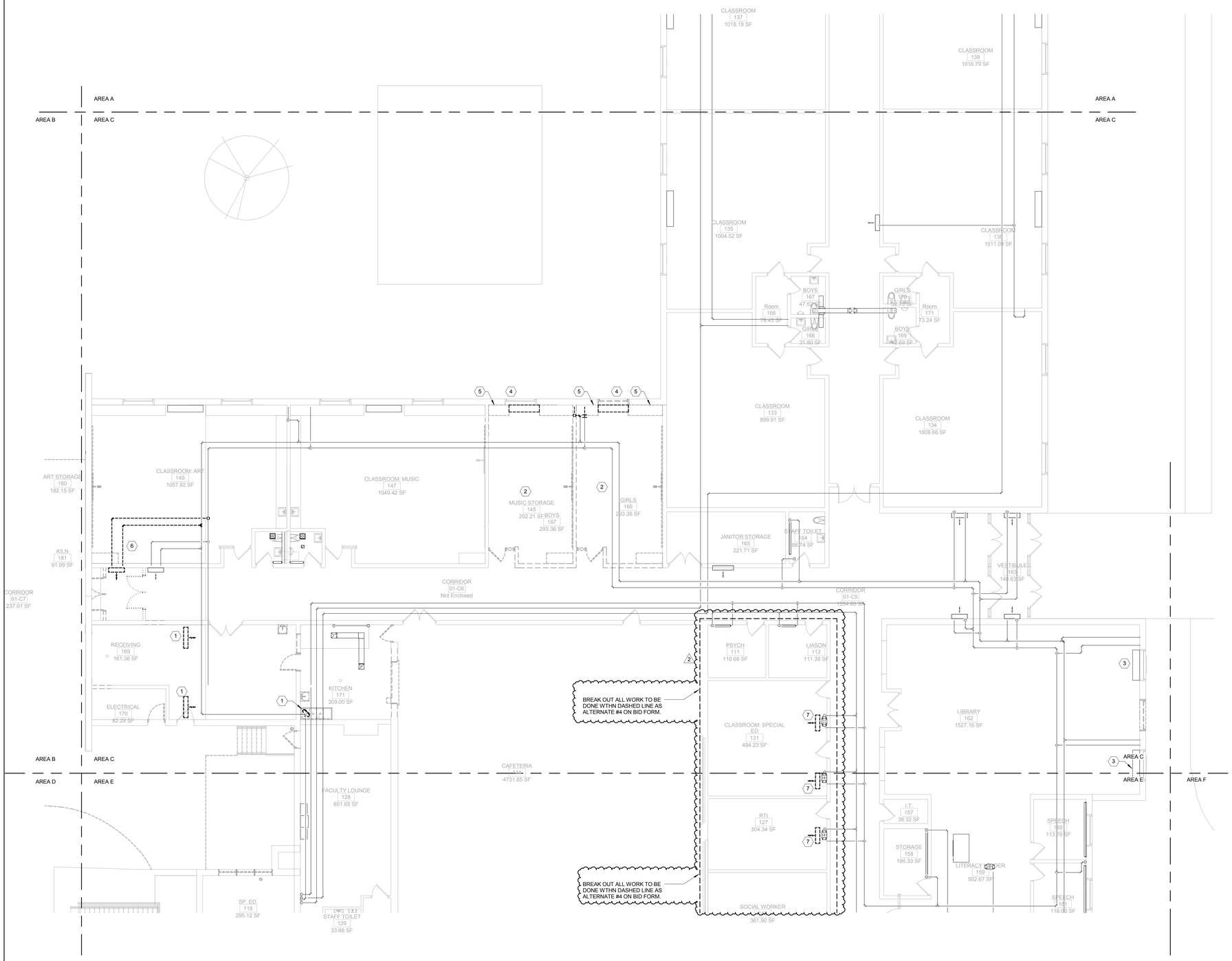

1 LEVEL 01 HVAC DEMOLITION PLAN - AREA C
1/8" = 1'-0"

GENERAL DEMOLITION NOTES:

1.
ANY MECHANICAL EQUIPMENT NOT SHOWN OR NOTED FOR DEMOLITION IS EXPECTED TO REMAIN IN PLACE. PROTECT AND CLEAN ALL MECHANICAL EQUIPMENT, PIPING, DUCTWORK, OR FITTINGS THAT ARE EXISTING TO REMAIN IN AREAS OF WORK, AND REPLACE ANY EQUIPMENT DAMAGED DUE TO CONSTRUCTION ACTIVITIES. PROVIDE WRITTEN REPORT TO OWNER AND ARCHITECT PRIOR TO STARTING WORK DESCRIBING OPERATION STATUS OF ANY MECHANICAL EQUIPMENT THAT IS EXISTING TO REMAIN AT END OF PROJECT WITHIN AREAS OF WORK.

2.
OWNER TO PERFORM ASBESTOS ABATEMENT ACTIVITIES PRIOR TO COMMENCING WORK. REVIEW ENVIRONMENTAL CONSULTANTS' REPORT AND COORDINATE WITH OWNER AND ENVIRONMENTAL CONSULTANTS FOR ANY SUSPECTED ASBESTOS-CONTAINING MATERIAL AND ANY ABATEMENT SCOPE REQUIRED TO COMPLETE WORK SCOPE DESCRIBED IN THESE DRAWINGS. NOTIFY OWNER IN WRITING OF ANY AREAS NEEDING ACM EVALUATION NOT PREVIOUSLY NOTED OR REVIEWED BEFORE STARTING WORK.

3.
CLEAN ENCLOSURES AND PIPING OF ALL RADIATORS AND UNIT VENTILATORS WITHIN AREAS OF WORK AT END OF PROJECT.

4.
BEFORE DISCARDING ANY DEMOLISHED OR REMOVED EQUIPMENT, VERIFY WITH OWNER IF ANY EQUIPMENT OR MATERIALS ARE TO BE SALVAGED. RELOCATE ANY SALVAGED EQUIPMENT TO OWNER'S DESIGNATED OFFSITE STORAGE FACILITY.

5.
FOR ALL HVAC DEMOLITION OCCURING ABOVE EXISTING TO REMAIN CEILINGS, TAKE DOWN AND STORE CEILING TILES FOR RE-INSTALLATION AFTER WORK IS COMPLETE. REPLACE ANY TILES DAMAGED DURING REMOVAL AND RE-INSTALLATION WITH TILES MATCHING EXISTING. COORDINATE WITH ARCHITECTURAL DEMOLITION PLANS TO UNDERSTAND WHICH CEILINGS ARE TO BE DEMOLISHED AND WHICH ARE EXISTING TO REMAIN. IF HVAC DEMOLITION ABOVE EXISITNG TO REMAIN CEILINGS WILL RESULT IN DAMAGE TO OR WILL REQUIRE THE DEMOLITION OF AN EXISTING CEILING GRID, PIPING MAY BE ABANDONED IN PLACE. WHEN ABANDONING PIPING IN PLACE, DISCONNECT TAKEOFF AS CLOSE TO MAIN CONNECTION AS POSSIBLE, CAP AND SEAL PIPING CONNECTED TO THE MAIN. DRAIN AND BLOW OUT ABANDONED PIPING, CAP AND SEAL PIPING AT BOTH ENDS, AND PROVIDE LABEL AT BOTH ENDS AND EVERY 6 FEET STATING "ABANDONED IN PLACE."

KEYED NOTES ⬡ :

1.
DEMOLISH UNIT HEATER IN CEILING SPACE, AND DEMOLISH HWS/R PIPING BACK TO CONNECTIONS TO MAINS. CAP AT MAIN.

2.
REMOVE AND DEMOLISH CEILING FAN IN CLASSROOM. DEMOLISH ELECTRICAL CONNECTION, WALL SWITCH, AND WIRING BETWEEN THE FAN AND SWITCH.

3.
DISCONNECT UNIT VENTILATOR FROM POWER AND COVER WITH RIGID MATERIALS TO PROTECT UNIT DURING DEMOLITION AND NEW WORK PHASES. CLEAN AND RECONNECT TO POWER AT END OF CONSTRUCTION PROJECT.

4.
DEMOLISH UNIT VENTILATOR, LOUVER, AND DUCTWORK TO OUTDOOR AIR INTAKE LOUVER. DISCONNECT FROM HW RADIATION PIPING. DEMOLISH WALL MOUNTED THERMOSTAT AND ALL CONTROL WIRING BETWEEN UNIT VENTILATOR AND THERMOSTAT.

5.
DEMOLISH FINNED TUBE RADIATION BEHIND CABINET. TEMPORARILY CAP PIPING FOR RECONNECTION TO NEW FINNED TUBE RADIATION.

6.
DEMOLISH CABINET UNIT HEATER IN VESTIBULE, AND DEMOLISH PIPING BACK TO POINT OF CONNECTION WITH HW DISTRIBUTION LOOP. CAP AND SEAL TAKEOFFS AT POINT CLOSEST TO MAIN.

2 7.
DEMOLISH UNIT VENTILATOR IN CLASSROOM. DISCONNECT FROM OUTDOOR AIR INTAKE DUCTWORK, AND COORDINATE WITH GENERAL TRADES FOR INFILL OF WALL AT OUTDOOR AIR INTAKE CONNECTION. DISCONNECT HOT WATER PIPING FROM DISTRIBUTION TAKEOFF IN CEILING. ABANDON PIPING IN WALL IN PLACE.

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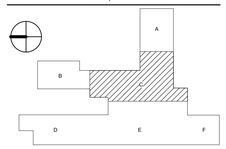

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LEVEL 01 HVAC DEMOLITION PLAN - AREA C

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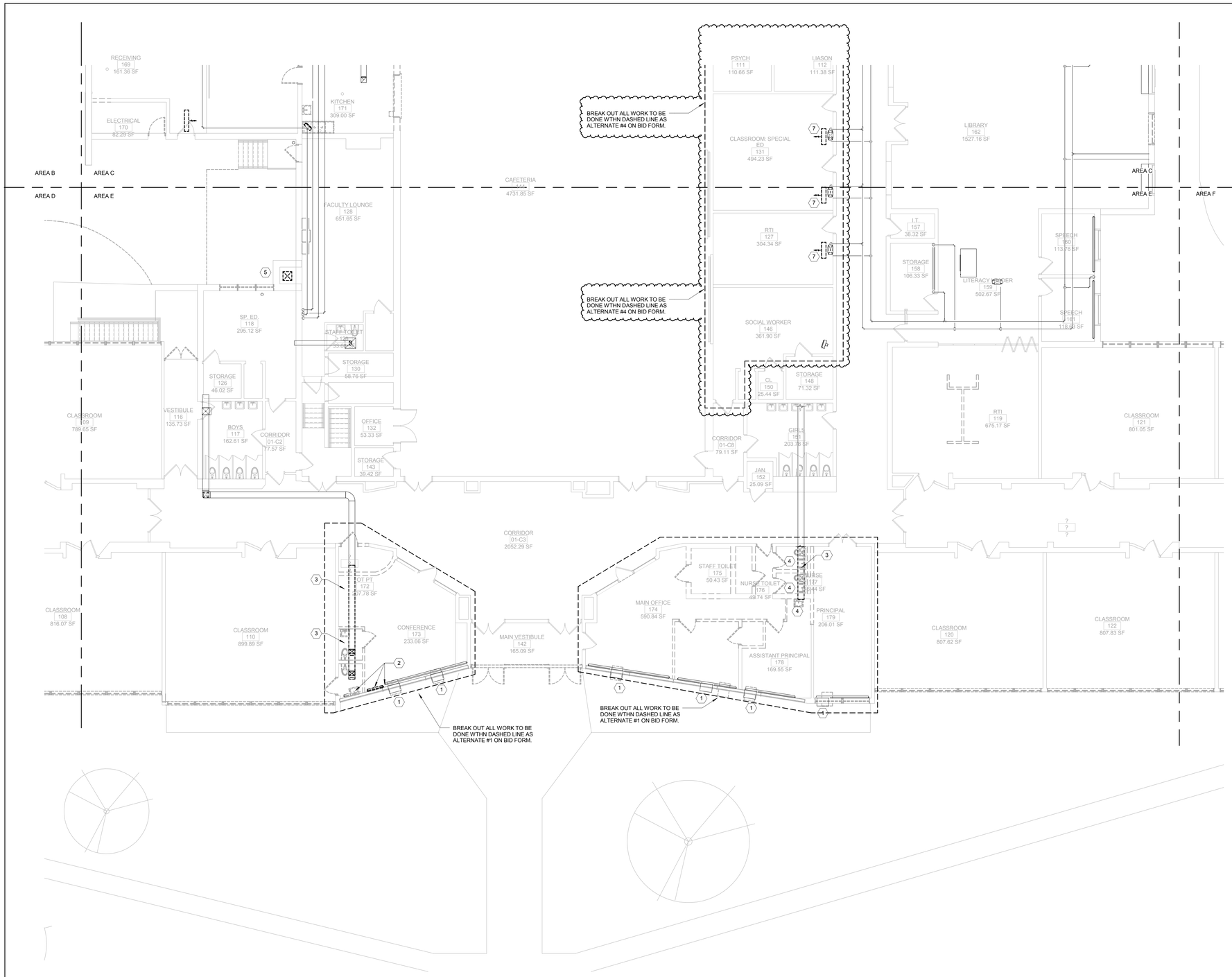

1 LEVEL 01 HVAC DEMOLITION PLAN - AREA E

1/8" = 1'-0"

GENERAL DEMOLITION NOTES:

1.
ANY MECHANICAL EQUIPMENT NOT SHOWN OR NOTED FOR DEMOLITION IS EXPECTED TO REMAIN IN PLACE. PROTECT AND CLEAN ALL MECHANICAL EQUIPMENT, PIPNG, DUCTWORK, OR FITTINGS THAT ARE EXISTING TO REMAIN IN AREAS OF WORK, AND REPLACE ANY EQUIPMENT DAMAGED DUE TO CONSTRUCTION ACTIVITIES. PROVIDE WRITTEN REPORT TO OWNER AND ARCHITECT PRIOR TO STARTING WORK DESCRIBING OPERATION STATUS OF ANY MECHANICAL EQUIPMENT THAT IS EXISTING TO REMAIN AT END OF PROJECT.

2.
OWNER TO PERFORM ASBESTOS ABATEMENT ACTIVITIES PRIOR TO COMMENCING WORK. REVIEW ENVIRONMENTAL CONSULTANTS' REPORT AND COORDINATE WITH OWNER AND ENVIRONMENTAL CONSULTANTS FOR ANY SUSPECTED ASBESTOS-CONTAINING MATERIAL AND ANY ABATEMENT SCOPE REQUIRED TO COMPLETE WORK SCOPE DESCRIBED IN THESE DRAWINGS. NOTIFY OWNER IN WRITING OF ANY AREAS NEEDING ACM EVALUATION NOT PREVIOUSLY NOTED OR REVIEWED BEFORE STARTING WORK.

3.
CLEAN ENCLOSURES AND PIPING OF ALL RADIATORS AND UNIT VENTILATORS WITHIN AREAS OF WORK AT END OF PROJECT.

4.
BEFORE DISCARDING ANY DEMOLISHED OR REMOVED EQUIPMENT, VERIFY WITH OWNER IF ANY EQUIPMENT OR MATERIALS ARE TO BE SALVAGED. RELOCATE ANY SALVAGED EQUIPMENT TO OWNER'S DESIGNATED OFFSITE STORAGE FACILITY.

5.
FOR ALL HVAC DEMOLITION OCCURING ABOVE EXISTING TO REMAIN CEILINGS, TAKE DOWN AND STORE CEILING TILES FOR RE-INSTALLATION AFTER WORK IS COMPLETE. REPLACE ANY TILES DAMAGED DURING REMOVAL AND RE-INSTALLATION WITH TILES MATCHING EXISTING. COORDINATE WITH ARCHITECTURAL DEMOLITION PLANS TO UNDERSTAND WHICH CEILINGS ARE TO BE DEMOLISHED AND WHICH ARE EXISTING TO REMAIN. IF HVAC DEMOLITION ABOVE EXISITNG TO REMAIN CEILINGS WILL RESULT IN DAMAGE TO OR WILL REQUIRE THE DEMOLITION OF AN EXISTING CEILING GRID, PIPING MAY BE ABANDONED IN PLACE. WHEN ABANDONING PIPING IN PLACE, DISCONNECT TAKEOFF AS CLOSE TO MAIN CONNECTION AS POSSIBLE, CAP AND SEAL PIPING CONNECTED TO THE MAIN. DRAIN AND BLOW OUT ABANDONED PIPING, CAP AND SEAL PIPING AT BOTH ENDS, AND PROVIDE LABEL AT BOTH ENDS AND EVERY 6 FEET STATING "ABANDONED IN PLACE."

KEYED NOTES ⬡ :

1.
REMOVE WINDOW AIR CONDITIONERS AND RETURN TO OWNER AT OWNER'S DESIGNATED OFFSITE STORAGE FACILITY.

2.
DEMOLISH FINNED TUBE RADIATION AND ENCLOSURE BACK TO POINT WHERE NEW WALL WILL JOIN EXTERIOR WALL. CAP FOR RECONNECTION TO NEW PIPING. SEE M0201.E FOR NEW WORK SCOPE. VERIFY IN FILED EXTENT OF DEMOLITION REQUIRED TO ACCOMODATE NEW WALL.

3.
DEMOLISH DUCTWORK RUNNING IN CEILING OVER TOILET ROOMS. CAP AND SEAL DUCTWORK AT POINT INDICATED.

4.
DEMOLISH EXISTING DIFFUSERS AND DUCTWORK IN AND ABOVE CEILING AND ON WALL. DEMOLISH DUCTWORK ALL THE WAY TO ROOF MOUNTED FAN. DEMOLISH FAN AND POWER CONNECTION.

5.
DEMOLISH FLUES/BREECHING WITHIN EXISTING CHIMNEY. SALVAGE AND REUSE BRICK CHIMNEY TO HOUSE NEW FLUE DUCTWORK. CHIMNEY HEIGHT IS TO BE LOWERED AND DEMOLISHED TO HEIGHT INDICATED ON NEW WORK AND ARCHITECTURAL PLANS, WITH A NEW CAP AT FLUE TERMINATION.

6.
DISCONNECT UNIT VENTILATOR FROM POWER AND COVER WITH RIGID MATERIALS TO PROTECT UNIT DURING DEMOLITION AND NEW WORK PHASES.

7.
DEMOLISH UNIT VENTILATOR IN CLASSROOM. DISCONNECT FROM OUTDOOR AIR INTAKE DUCTWORK, AND COORDINATE WITH GENERAL TRADES FOR INFILL OF WALL AT OUTDOOR AIR INTAKE CONNECTION. DISCONNECT HOT WATER PIPING FROM DISTRIBUTION TAKEOFF IN CEILING. ABANDON PIPING IN WALL IN PLACE.

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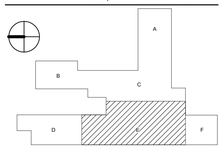

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LEVEL 01 HVAC DEMOLITION PLAN - AREA E

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1 LEVEL 01 DEMOLITION PLAN - AREA C
1/8" = 1'-0"

KEYED NOTES ⬡ :

1.
REMOVE ALL EXISTING DEVICES THIS ROOM UNLESS OTHERWISE NOTED. MAINTAIN CONTINUITY OF CIRCUITS TO AREAS NOT AFFECTED BY THE RENOVATION PROGRAM.

2.
EXISTING HOOD AND RESPECTIVE EQUIPMENT SHALL REMAIN. MECHANICAL AND ALL KITCHEN EQUIPMENT AND RESPECTIVE WIRING DEVICES AND CONNECTIONS SHALL BE ROUTED TO NEW PANEL KP-1.

3.
REMOVE EXISTING PANEL. ALL ACTIVE CIRCUITS SHALL BE TRANSFERRED TO NEW PANEL KP-1.

4.
REMOVE EXISTING LUMINAIRES IN THIS AREA.

5.
EXISITNG LUMINAIRES TO REMAIN IN THIS AREA.

6.
COORDINATE REMOVAL OF SECURITY KEYPAD WITH SCHOOL DISTRICT.

7.
EXISITNG ANSUL FIRE SUPPRESSION SYSTEM SHALL REMAIN. PROVIDE RELOCATION OF EXISITNG DEVICES WITHIN THIS SPACE DUE TO NEW EQUIPMENT LAYOUT.

GENERAL DEMOLITION NOTES:

A. REMOVE ALL ELECTRICAL EQUIPMENT ON OR IN EXISTING WALLS, CEILINGS AND PARTITIONS WHICH ARE TO BE DEMOLISHED. REMOVE ALL EXPOSED PORTIONS OF BRANCH CIRCUIT AND CONTROL VOLTAGE WIRING AND CONDUITS.

B. WHERE EXISTING WALLS ARE TO REMAIN, REMOVE ALL EXPOSED RACEWAYS, SURFACE AND RECESSED OUTLET BOXES, ETC. WHICH ARE NOT TO BE REUSED. WHERE NEW CONDUITS AND OUTLETS ARE TO BE ADDED TO EXISTING WALLS IN FINISHED ROOMS, THEY SHALL BE CONCEALED BY CUTTING AND PATCHING THE WALLS.

C. UTILIZE EXISTING OUTLET BOXES AND RACEWAY SYSTEMS WHEREVER PRACTICAL IN RENOVATION AREAS. WHERE SUCH EXISTING OUTLET BOXES ARE USED, INSTALL NEW WIRING DEVICES, COVERPLATES, AND WIRING. SPECIAL COVERPLATES MAY BE REQUIRED TO SUIT CONDITIONS.

D. REARRANGE EXISTING CONDUITS AND WIRING TO ACCOMMODATE NEW CIRCUIT ARRANGEMENTS INDICATED AND TO MAINTAIN CONTINUITY OF EXISTING CIRCUITS FEEDING DEVICES THAT ARE TO REMAIN.

E. BE RESPONSIBLE TO REMOVE AND REINSTALL EXISTING ELECTRICAL EQUIPMENT TO ACCOMMODATE THE WORK OF OR DISTURBED BY ALL TRADES.

F. STOCKPILE REMOVED LUMINAIRES, POWER AND COMMUNICATION DEVICES ON JOB SITE FOR REUSE UNTIL TIME OR PROJECT CLOSEOUT, THEN REMOVE THOSE FROM SITE THAT THE OWNER DOES NOT WISH TO SALVAGE.

G. EXISTING DEVICE LOCATIONS WERE INDENTIFIED AS COMPLETELY AS POSSIBLE BY A SITE SURVEY AND BY RECORD DOCUMENTS AS AVAILABLE. BE RESPONSIBLE FOR PROPER DEMOLITION AND REWORK OF DEVICES NOT SHOWN ON DRAWINGS TO CONFORM WITH INTENT OF DOCUMENTS.

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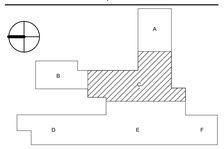

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LEVEL 01 DEMOLITION PLAN - AREA C

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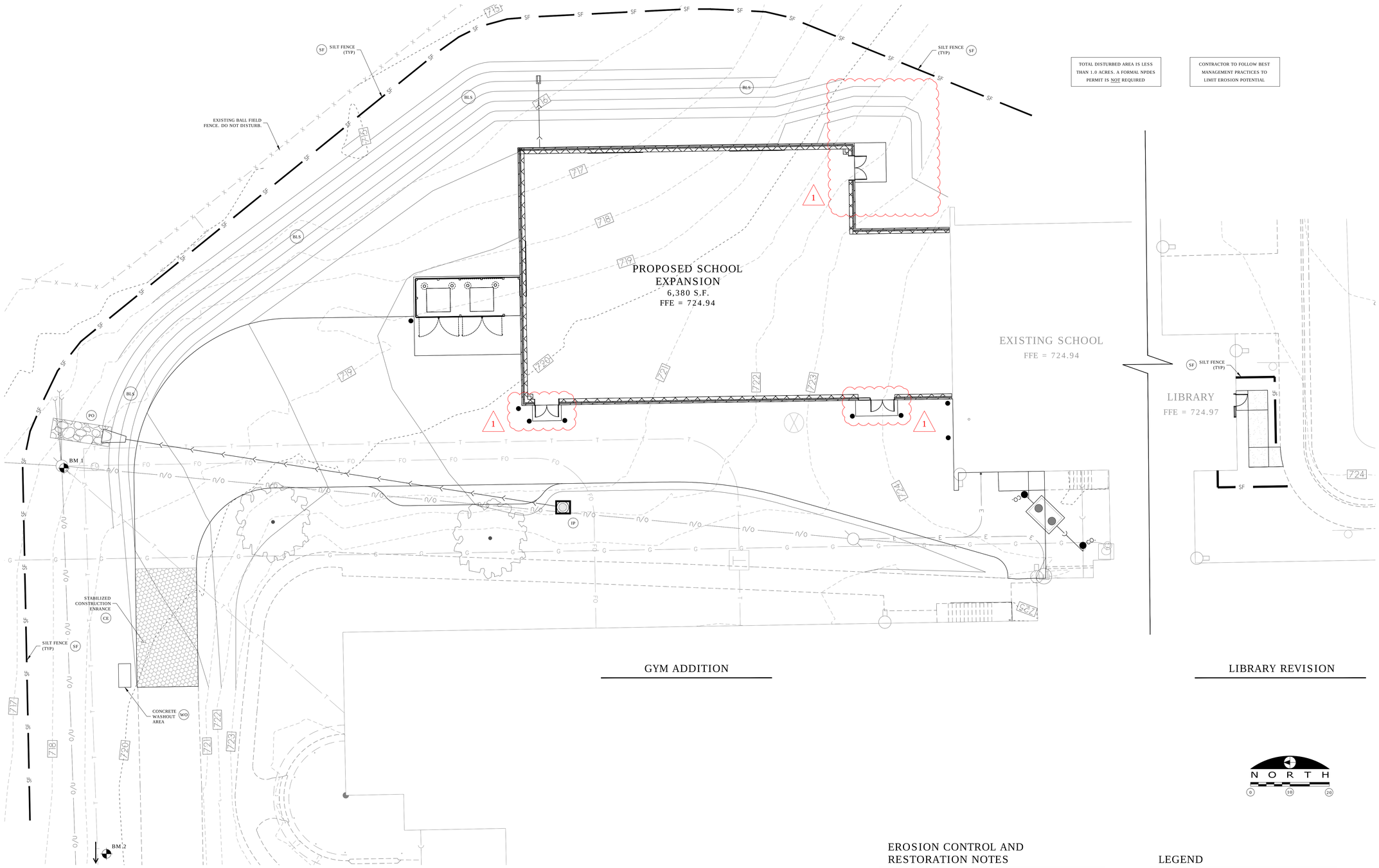

TOTAL DISTURBED AREA IS LESS THAN 1.0 ACRES. A FORMAL NPDES PERMIT IS NOT REQUIRED

CONTRACTOR TO FOLLOW BEST MANAGEMENT PRACTICES TO LIMIT EROSION POTENTIAL

BENCHMARKS

DESCRIPTION	ELEVATION (NAVD 88)
BENCHMARK 1 RAILROAD SPIKE IN NORTH FACE OF UTILITY POLE	719.42
BENCHMARK 2 NORTH BOLT ON FIRE HYDRANT	720.92

EROSION CONTROL AND RESTORATION NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND MODIFYING BMP'S INCLUDING INTERMEDIATE BMP'S AS WARRANTED BY SITE CONDITIONS.
2. GENERAL CONTRACTOR SHALL SELF PERFORM SWPPP INSPECTIONS AND MAINTENANCE OF EROSION CONTROL MEASURES.
3. THE CONTRACTOR MAY PERMANENTLY REMOVE ANY PORTION OF THE PERIMETER SILT FENCE AFTER ESTABLISHMENT OF FINAL GRADE AND/OR FINAL STABILIZATION RENDERS THE RESPECTIVE PORTION OF THE PERIMETER SILT FENCE UPSTREAM OF A DISTURBANCE AND/OR INEFFECTIVE AS A BEST MANAGEMENT PRACTICE.
4. A MINIMUM OF 6" IMPORTED TOPSOIL SHALL BE PLACED OVER ALL DISTURBED AREAS PRIOR TO SEEDING.
5. PERMANENT SEED MIX FOR TURF AREAS SHALL CONFORM TO IDOT STANDARDS AND SPECIFICATIONS FOR CLASS 1 (LAWN MIXTURE).
6. PERMANENT EROSION CONTROL FABRIC NAG SC150 SHALL BE APPLIED TO ALL DISTURBED TURF AREAS ALONG WITH PERMANENT SEEDING. FOLLOW MANUFACTURER SPECIFICATIONS FOR INSTALLATION. CONTRACTOR SHALL NOTE ALL AREAS WHERE NAG SC150 HAS BEEN INSTALLED RELATIVE TO ASBUILT GRADES AND FURNISH THESE BOUNDARIES TO THE CIVIL ENGINEER UPON REQUEST. PERMANENT SEEDING SHOULD BE PLANTED AS SOON AS IT IS PRACTICAL TO ENSURE PROPER GERMINATION.

LEGEND

- PROPOSED STORM SEWER
- EDGE OF PAVEMENT
- PROPOSED STORM SEWER STRUCTURE
- 800 — PROPOSED CONTOUR LINE
- 800 — EXISTING CONTOUR LINE
- CE — TEMPORARY STONE CONSTRUCTION EXIT
- SF — TEMPORARY SILT FENCE
- IP — TEMPORARY INLET PROTECTION PER STRUCTURE TYPE
- BLS — SLOPE PROTECTION BLANKET NAG S150 OR EQUAL ALL DISTURBED AREAS
- PO — PERMANENT PIPE OUTLET STABILIZATION
- WO — CONCRETE WASHOUT

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EROSION CONTROL PLAN

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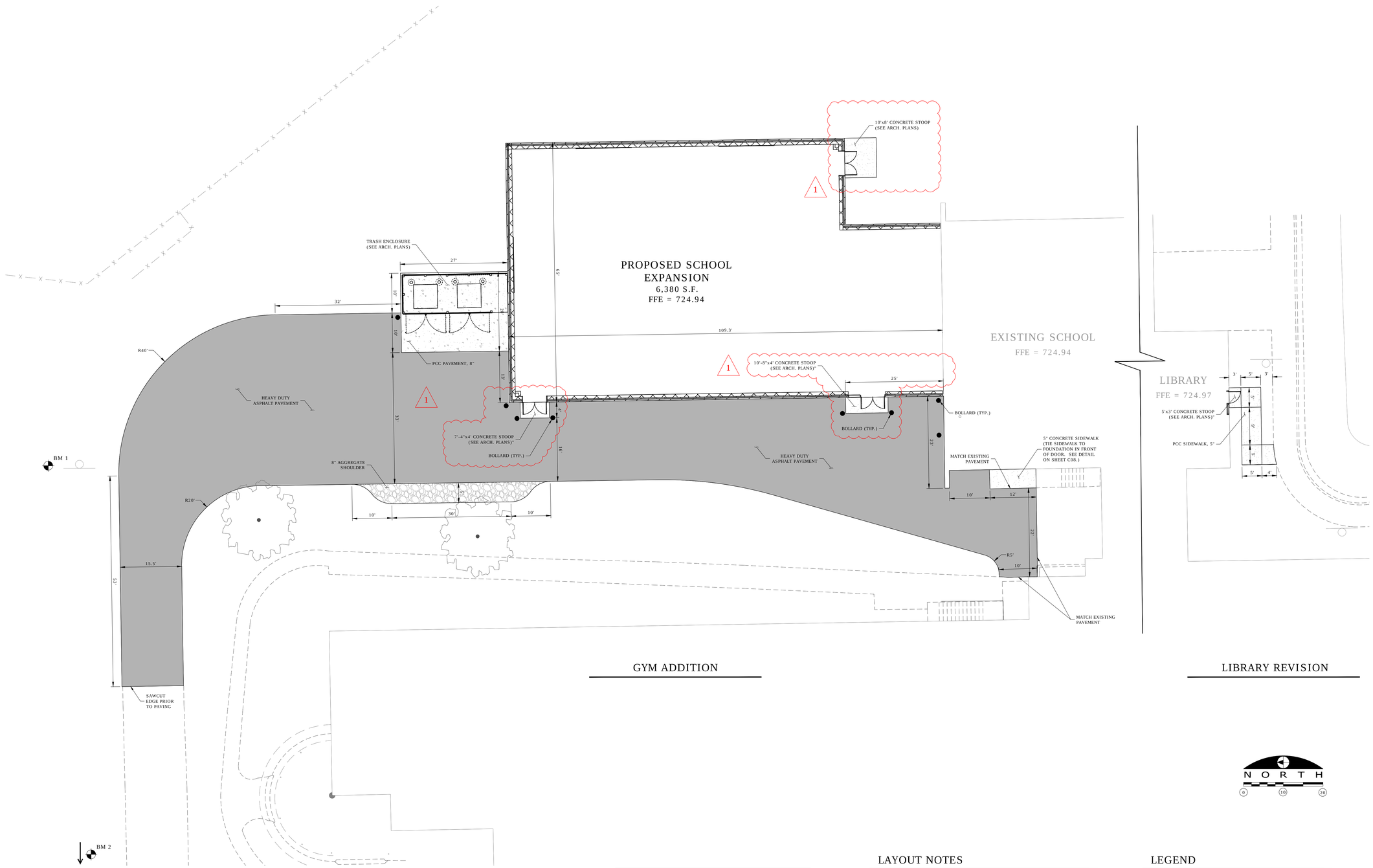

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BENCHMARKS

DESCRIPTION	ELEVATION (NAVD 88)
BENCHMARK 1 RAILROAD SPIKE IN NORTH FACE OF UTILITY POLE	719.42
BENCHMARK 2 NORTH BOLT ON FIRE HYDRANT	720.92

LAYOUT NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATIONS OF THE BENCHMARKS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL ALSO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING PIPE INVERTS, FLOOR ELEVATIONS, OR PAVEMENT WHERE MATCHING INTO EXISTING WORK. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL CONTROL BY REFERENCING SHOWN COORDINATES TO KNOWN PROPERTY LINES. NOTIFY ENGINEER OF DISCREPANCIES IN EITHER VERTICAL OR HORIZONTAL CONTROL PRIOR TO PROCEEDING WITH WORK.
2. REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
3. DIMENSIONS THAT LOCATE THE BUILDING ARE MEASURED TO THE OUTSIDE FACE OF THE BUILDING.
4. SIGN CONSTRUCTION AND PAVEMENT MARKINGS SHALL CONFORM TO THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
5. ALL RADII ARE DIMENSIONED TO THE EDGE OF PAVEMENT.
6. SOME FIELD ADJUSTMENTS MAY BE NECESSARY AT POINTS WHERE PROPOSED PAVEMENT, CURB AND SIDEWALKS MEET EXISTING PAVEMENT, CURB AND SIDEWALKS. REVIEW ANY REQUIRED CHANGES WITH ENGINEER PRIOR TO CONSTRUCTION OF WORK.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARATION, COORDINATION AND OBTAINING APPROVAL OF A TRAFFIC MANAGEMENT PLAN IF CLOSURES OF LANES EXCEED THE CRITERIA ESTABLISHED BY IDOT.

LEGEND

- PROPOSED HEAVY DUTY ASPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CURB AND GUTTER
- EXISTING CONCRETE 2' CURB AND GUTTER
- 23 — NUMBER OF PROPOSED PARKING SPACES PAINTED YELLOW STRIPES
- PROPOSED HANDICAP PARKING SYMBOLS
- PROPOSED PARKING (PAVEMENT MARKING)

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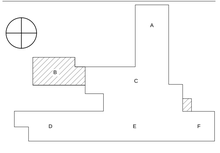

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LAYOUT PLAN

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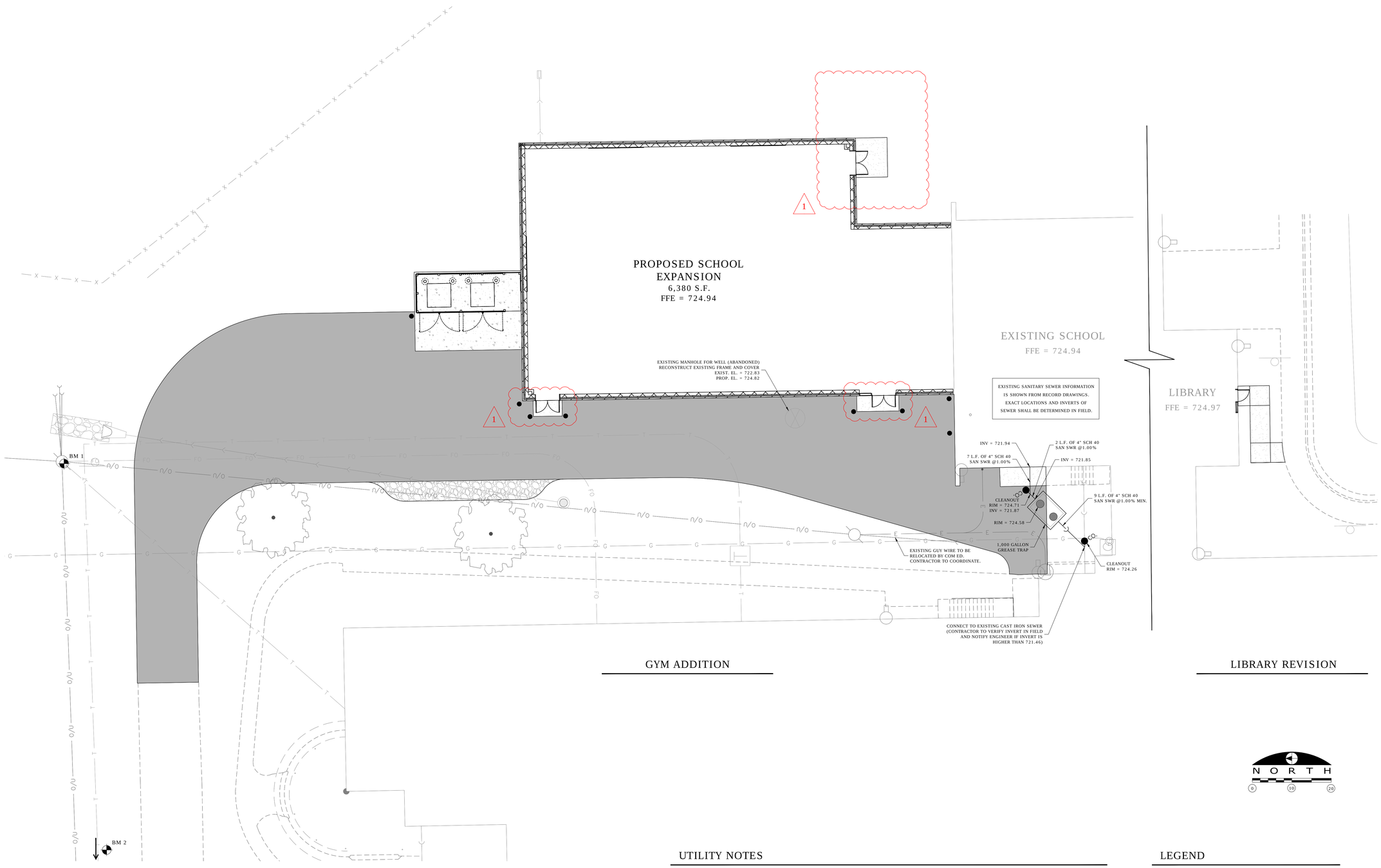

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UTILITY NOTES

1. SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE STATEWIDE SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, SEVENTH EDITION DATED JULY 2014 AND THE LOCAL REQUIREMENTS OF THE ROCK RIVER WATER RECLAMATION DISTRICT AND CITY OF ROCKFORD, ILLINOIS.
2. EXISTING UTILITY INFORMATION IS SHOWN FROM SURVEY WORK, FIELD OBSERVATIONS, AVAILABLE PUBLIC RECORDS AND AS-BUILT DRAWINGS. EXACT LOCATIONS AND ELEVATIONS OF UTILITIES SHALL BE DETERMINED PRIOR TO INSTALLING NEW WORK. EXCAVATE TEST PITS AS REQUIRED.
3. CONTACT ALL PUBLIC AND PRIVATE UTILITY COMPANIES 48 HOURS PRIOR TO ANY EXCAVATION. COST OF REPLACEMENT OR REPAIR OF EXISTING UTILITIES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
4. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATIONS OF THE BENCHMARKS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL ALSO FIELD VERIFY LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES, AND VERIFY FLOOR OR PAVEMENT ELEVATIONS WHERE MATCHING INTO EXISTING WORK. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL CONTROL BY REFERENCING SHOWN COORDINATES TO KNOWN PROPERTY LINES. NOTIFY ENGINEER OF DISCREPANCIES IN EITHER VERTICAL CONTROL PRIOR TO PROCEEDING WITH WORK.
5. REFER TO BUILDING PLANS FOR EXACT LOCATIONS OF NEW UTILITY ENTRIES.
6. CONTRACTOR SHALL SET ALL CLEANOUT, CASTINGS, AND VALVE BOXES TO FINISHED GRADE.
7. ALL TRENCHES WITHIN PAVED AREAS AND A MINIMUM OF 2 FEET BEYOND ALL CURB LINES SHALL BE BACKFILLED WITH AN APPROVED GRANULAR MATERIAL, COMPACTED TO A MINIMUM OF 98% WITHIN 12" OF PAVEMENT.
8. SANITARY SEWER SERVICES SHALL BE 6" OR 8" PVC SCHEDULE 40 WITH SOLVENT WELDED JOINTS. ALL SERVICES SHALL BE SLOPED FROM THE MAIN AT 1% MINIMUM UNLESS OTHERWISE NOTED.
9. CONTRACTOR SHALL APPLY FOR I/C PERMIT AND SAMPLING MANHOLE PERMIT DIRECTLY TO RRWRD. ARC DESIGN RESOURCES CAN SUPPLY DOCUMENTATION OF PROPOSED FLOWS. PROPOSED FLOWS ARE LESS THAN 1500 GPD.
10. IN ORDER TO EXPEDITE THE PERMIT FEES NEEDED FOR CONSTRUCTION, THIS PROJECT REQUIRES THE CONTRACTOR TO FRONT PERMIT FEES AND THEN APPLY FOR REIMBURSEMENT AS DIRECT EXPENSES AS FOLLOWS: CONTRACTOR SHALL ARRANGE FOR PAYMENT OF SANITARY SEWER REVIEW AND PLANT BUY-IN FEES FROM INDUSTRIAL COMMERCIAL SUBMITTAL. CONTRACTOR SHALL SUBMIT INVOICES FOR DIRECT REIMBURSEMENT BASED ON RECEIPTS RECEIVED FROM THESE AGENCIES. CONTRACTOR SHALL PLAN FOR SHORT TERM CARRYING COSTS FOR THESE ITEMS, BUT DO NOT HAVE TO INCLUDE THE PERMIT FEES IN THEIR BID, SINCE THEY WILL BE REIMBURSED.
11. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND WORK AROUND ANY UTILITIES NOT SCHEDULED TO BE RELOCATED.

LEGEND

- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- EXISTING GAS MAIN
- EXISTING UNDERGROUND ELECTRIC SERVICE
- EXISTING TELEPHONE SERVICE
- EXISTING OVERHEAD UTILITY LINES
- EXISTING FIRE HYDRANT ASSEMBLY
- EXISTING WATER MANHOLE
- EXISTING MANHOLE OR CATCH BASIN
- PROPOSED SANITARY MANHOLE
- CO. PROPOSED SANITARY CLEANOUT
- EXISTING SANITARY MANHOLE
- EXISTING UTILITY POLE

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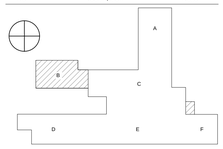

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UTILITY PLAN

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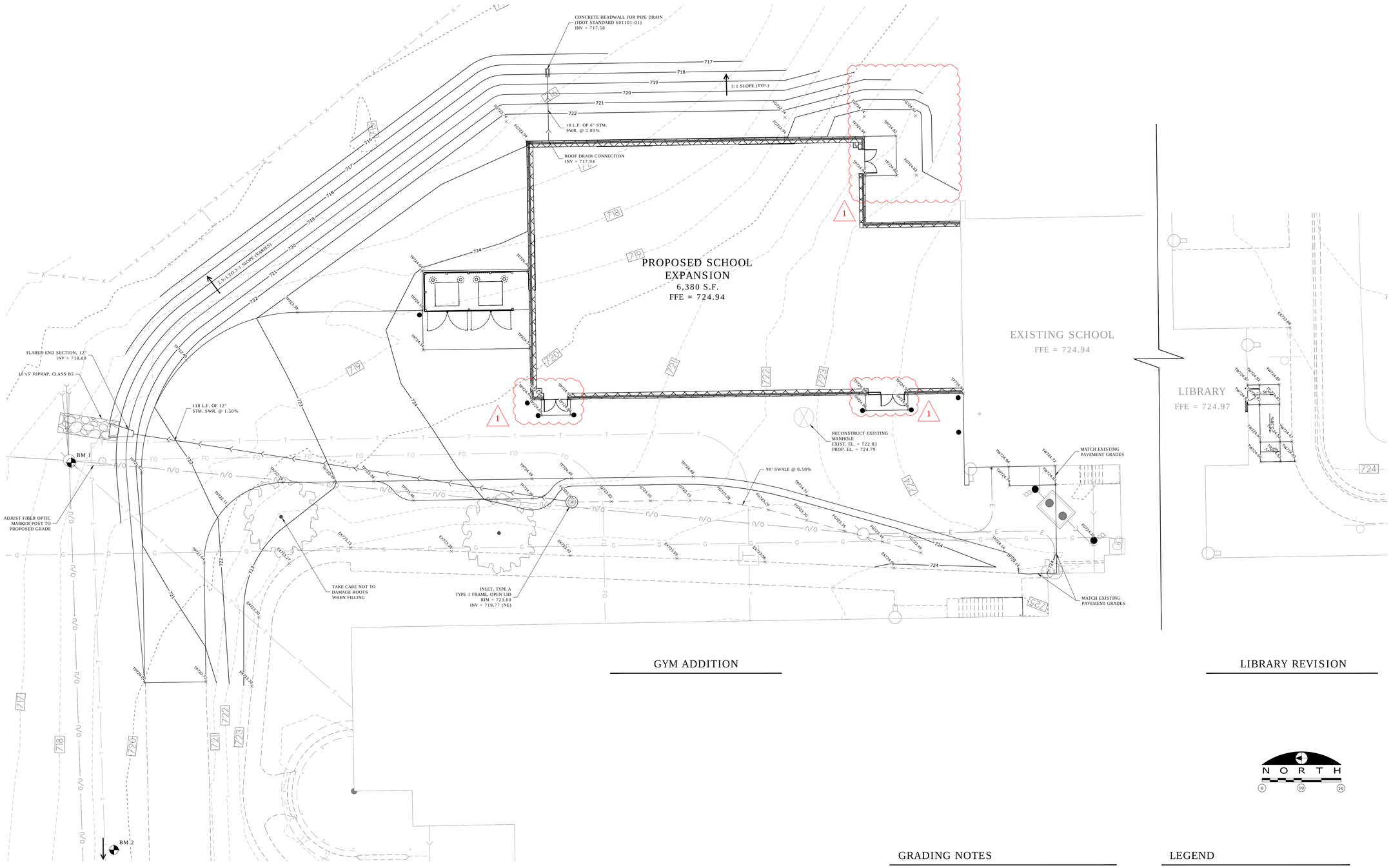

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BENCHMARK 2 NORTH BOLT ON FIRE HYDRANT	720.92

GRADING NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY THE ELEVATIONS OF THE BENCHMARKS PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL ALSO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING PIPE INVERTS, FLOOR ELEVATIONS OR PAVEMENT WHERE MATCHING INTO EXISTING WORK. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL OR VERTICAL CONTROL BY REFERENCING SHOWN COORDINATES OR ELEVATIONS TO HORIZONTAL OR VERTICAL CONTROL POINTS PRIOR TO PROCEEDING WITH WORK.
2. ALL UNSURFACED AREAS ARE TO RECEIVE FOUR INCHES OF TOPSOIL AND SEEDED AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
3. ALL STORM SEWER PIPE IS TO BE REINFORCED CONCRETE CULVERT PIPE CLASS IV IF SPECIFICALLY NOTED. WHERE NOT LISTED, ACCEPTABLE MATERIALS CAN BE RCP, PVC SDR 35, HDPE DOUBLE WALL (ADS N-12), OR PVC SCHEDULE 40 MAY BE USED AT THE CONTRACTOR'S DISCRETION.
4. THE MAXIMUM SLOPE RATIO ON CUT/FILL SLOPES IS 3 HORIZONTAL TO 1 VERTICAL.
5. PROPERTY CORNERS SHALL BE CAREFULLY PROTECTED UNTIL THEY HAVE BEEN REFERENCED BY A PROFESSIONAL LAND SURVEYOR. PROPERTY MONUMENTS DISTURBED BY THE CONTRACTOR'S OPERATION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
6. CONTRACTOR SHALL SET ALL CLEANOUT, MANHOLE AND INLET CASTINGS, AND VALVE BOXES TO FINISHED GRADE.
7. ALL PROPOSED PAVED AREAS SHALL BE STRIPPED OF ALL TOPSOIL AND UNSUITABLE MATERIAL AND EXCAVATED OR FILLED TO WITHIN 0.10 FEET OF DESIGN SUBGRADE.
8. THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE AT THE CONCLUSION OF EACH WORKING DAY.

LEGEND

- PROPOSED STORM SEWER
- PROPOSED STORM SEWER STRUCTURE
- 800 — PROPOSED CONTOUR LINE
- 800 — EXISTING CONTOUR LINE
- GRADE BREAKLINE
- RIPRAP
- X TW.00 — TOP OF WALK ELEVATION
- X TP.00 — TOP OF PAVEMENT ELEVATION
- X FG.00 — FINISHED GRADE ELEVATION
- X EX.00 — EXISTING GRADE ELEVATION

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Drawing Title:

GRADING PLAN

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C07

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ABBREVIATIONS

ADDL	ADDITIONAL
ADJ	ADJACENT
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
B PL	BASE PLATE
B/	BOTTOM OF
BFR	BLENDED FIBER REINFORCING
BLDG	BUILDING
BLKG	BLOCK (ING)
BOT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECT (ION)
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS OR CONTINUE
CS	COLUMN STRIP
CU YD	CUBIC YARD
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DWG	DRAWING
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
ES	EACH SIDE
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FDTN	FOUNDATION
FLR	FLOOR
FP	FULL PENETRATION
FS	FAR SIDE
FT	FOOT/FEET
FTG	FOOTING
GA	GAGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
HORIZ	HORIZONTAL
HP	HIGH POINT
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
ID	INSIDE DIAMETER
IF	INSIDE FACE
INFO	INFORMATION
INSUL	INSULATED (ION)
INV	INVERT
JT	JOINT
k	KIPS
L	ANGLE
LBS	POUNDS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LTWT	LIGHT WEIGHT
LW	LONG WAY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL ELECTRICAL & PLUMBING
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MS	MIDDLE STRIP
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
PC	PILE CAP
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PEN	PENETRATION
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST TENSION
QTY	QUANTITY
R	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCE (D) (ING)
REQD	REQUIRED
REV	REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SECT	SECTION
SIM	SIMILAR
SJ	SEISMIC JOINT
SOG	SLAB-ON-GRADE
SPEC	SPECIFICATIONS
SQ	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUCT	STRUCTURAL
SW	SHORT WAY
SYMM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
THK	THICK (NESS)
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WIDE FLANGE SECTION
W/	WITH
W/O	WITHOUT
WD	WOOD
WP	WORK POINT
WT	TEE SECTION
WWF	WELDED WIRE FABRIC

FOUNDATION NOTES

F1
REFER TO DIVISION 31 SPECIFICATION SECTIONS FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

F2
NOTE REQUIREMENTS ON PLANS AND IN SPECIFICATIONS FOR UNDERPINNING AND PROTECTION OF EXISTING STRUCTURES. DO NOT UNDERMINE EXISTING CONSTRUCTION.

F3
BEAR FOOTINGS ON UNDISTURBED SOILS OR ENGINEERED FILL HAVING A MINIMUM NET ALLOWABLE BEARING CAPACITY OF 3000 POUNDS PER SQUARE FOOT. EXTEND EXTERIOR CONSTRUCTION DOWN A MINIMUM OF 48" BELOW EXTERIOR GRADE. ELEVATIONS GIVEN ARE MINIMUM DEPTHS.

F4
THE FOUNDATIONS HAVE BEEN DESIGNED TO THE REQUIREMENTS SET FORTH IN THE GEOTECHNICAL REPORT PREPARED BY _____ DATED _____PROJECT NUMBER _____.

F5
THE SUBSURFACE CONDITIONS DESCRIBED IN THE GEOTECHNICAL REPORT REPRESENT CONDITIONS ONLY AT THOSE SPECIFIC LOCATIONS AT THE PARTICULAR TIME THEY WERE MADE. SUBSURFACE CONDITIONS DESCRIBED ON THE DRAWINGS SHOULD BE CONSIDERED APPROXIMATE.

F6
REMOVE ORGANIC AND UNSUITABLE MATERIAL, AS DETERMINED BY THE OWNERS GEOTECHNICAL CONSULTANT, PRIOR TO PLACING FILL AND REPLACE W/ ENGINEERED FILL. PLACE FILL IN HORIZONTAL LAYERS WITHIN +/- 2 PERCENT OF OPTIMUM MOISTURE CONTENT. USE FILL LAYER THICKNESS APPROPRIATE FOR THE DEGREE OF FILL COHESIVENESS AND COMPACTION ENERGY IMPARTED TO THE LIFT. COMPACT TO SPECIFIED DENSITY REQUIREMENTS. IF ACCEPTABLE TO THE OWNER'S GEOTECHNICAL CONSULTANT, ON-SITE MATERIALS THAT MEET PROJECT SPECIFICATIONS MAY BE USED FOR ENGINEERED FILL IF MAINTAINED AT OPTIMUM MOISTURE CONTENT AND COMPACTED TO THE ABOVE CRITERIA. SELECT BORROW MATERIALS WILL BE REQUIRED WHEN ON-SITE MATERIALS ARE UNSUITABLE OR CANNOT BE COMPACTED TO THE CRITERIA STATED ABOVE.

F7
EXCAVATION TO SUITABLE BEARING SUBGRADES MAY PROCEED BY CONVENTIONAL METHODS TO WITHIN 2.5 FEET OF THE PROPOSED FINAL SUBGRADES. PERFORM EXCAVATION TO FINAL SUBGRADE USING A BACKHOE EQUIPPED WITH A SMOOTH BLADE TO MINIMIZE DISTURBANCE OF THE BEARING SUBGRADE. FINISH FOOTING EXCAVATIONS BY HAND.

F8
DO NOT EXTEND THE GENERAL EXCAVATION ACROSS THE SITE DEEPER THAN 1'-0" BELOW THE SLAB-ON-GRADE SUBGRADE ELEVATION. PERFORM THE EXCAVATIONS FOR PILE CAPS, DRILLED PIER CAPS, GRADE BEAMS, SPREAD FOOTINGS, MATS, PITS, ETC ON AN INDIVIDUAL, LOCALIZED BASIS DOWN FROM THE SLAB-ON-GRADE SUBGRADE ELEVATION.

F9
PROVIDE POSITIVE PROTECTION FOR EXCAVATION SLOPES AGAINST INSTABILITY AND DETERIORATION DUE TO RAIN, WIND, SNOW OR ICE.

F10
RETAIN THE PERIMETER OF THE GENERAL EXCAVATION WITH A SOIL RETENTION SYSTEM AS NECESSARY. THE DESIGN, INSTALLATION, MAINTENANCE AND REMOVAL OF THE SYSTEM IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE APPROPRIATE MEASURES AND PRECAUTIONS NECESSARY TO MINIMIZE SETTLEMENT OF EXISTING OR NEW CONSTRUCTION INSIDE OR OUTSIDE OF THE PROJECT LIMITS. REPAIR DAMAGE TO NEW OR EXISTING CONSTRUCTION INSIDE OR OUTSIDE PROJECT LIMITS CAUSED BY CONSTRUCTION TECHNIQUES OR MOVEMENTS OF THE SOIL RETENTION SYSTEM.

F11
THE EXPOSED SUBGRADE SOILS MAY BE SENSITIVE TO DISTURBANCE AND STRENGTH DEGRADATION WHEN HIGH MOISTURE CONTENTS ARE PRESENT. MINIMIZE CONSTRUCTION TRAFFIC OVER EXPOSED SUBGRADES. DO NOT POND WATER ON THE SUBGRADES. CONTROL SURFACE AND GROUND WATER BY PROPER SITE GRADING, PERIMETER CUTOFF TRENCHES, AND SUMP AND PUMP METHODS OF DEWATERING. CONSTRUCT CUTOFF TRENCHES AND SUMPS OUTSIDE THE INFLUENCE OF PROPOSED FOUNDATIONS.

F12
THE OWNER'S GEOTECHNICAL CONSULTANT MUST REVIEW AND APPROVE FINISHED EXCAVATIONS AND BEARING SUBGRADES BEFORE PLACING CONCRETE. PROVIDE ADDITIONAL EXCAVATION AS NECESSARY TO ACHIEVE THE REQUIRED BEARING CAPACITY.

F13
USE SIDE FORMS FOR FOOTINGS AND GRADE BEAMS. CLEAN REINFORCEMENT IMMEDIATELY PRIOR TO PLACING CONCRETE.

F14
DO NOT PLACE CONCRETE IN AN EXCAVATION CONTAINING FREE WATER, FROST, ICE OR FROZEN GROUND. PROVIDE NECESSARY MEASURES TO PREVENT FROST OR ICE FROM PENETRATING FOOTING OR SLAB SUBGRADE, BOTH BEFORE AND AFTER CONCRETE PLACEMENT AND UNTIL SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.

F15
PLACE THE CONCRETE FOR EACH FOOTING IN ONE CONTINUOUS POUR. LIMIT BASEMENT WALL POUR LENGTHS TO 65 FEET.

F16
PLACE BACKFILL AGAINST FOUNDATION WALLS TO MAINTAIN A FILL LEVEL WITHIN 1'-0" OR LESS ON OPPOSITE SIDES OF THE WALL. BRACE FOUNDATION WALLS AND GRADE BEAMS DURING THE OPERATION OF BACKFILLING AND COMPACTION. LEAVE BRACING IN POSITION UNTIL PERMANENT RESTRAINTS BECOME EFFECTIVE.

F17
DO NOT BACKFILL AGAINST BASEMENT FOUNDATION WALLS UNTIL THE SLABS AT THE TOP AND BOTTOM OF THE WALL HAVE BEEN PLACED AND THE CONCRETE HAS ATTAINED FULL DESIGN STRENGTH. FOR MULTI-LEVEL WALLS, DO NOT BACKFILL ABOVE THE HIGHEST FLOOR LEVEL TO HAVE ATTAINED DESIGN STRENGTH.

STRUCTURAL CONCRETE NOTES

C1
REFER TO DIVISION 03 SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

C2
A QUALITY CONTROL PROGRAM OF FIELD TESTING AND INSPECTION WILL BE PERFORMED ON STRUCTURAL CONCRETE WORK IN ACCORDANCE WITH THE SPECIFICATIONS. SCHEDULE WORK AND PROVIDE ACCESS TO ALLOW THE TESTING REQUIREMENTS TO BE COMPLETED. PROVIDE ADEQUATE NOTICE TO ALLOW THE OWNER'S TESTING AGENCY TO REVIEW PLACEMENT OF REINFORCEMENT PRIOR TO PLACING CONCRETE.

C3
SUBMIT ENGINEERED CONCRETE MIX DESIGNS, INCLUDING REQUIRED BACKUP DATA, FOR EACH TYPE OF CONCRETE PROPOSED FOR USE TO THE ARCHITECT/ ENGINEER FOR REVIEW. ALLOW ADEQUATE TIME FOR REVIEW PRIOR TO PERFORMING CONCRETE WORK.

C4
DETAIL, FABRICATE, LABEL, SUPPORT AND PLACE CONCRETE REINFORCEMENT IN ACCORDANCE WITH ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", LATEST EDITIONS.

C5
SUBMIT DETAILED SHOP DRAWINGS INDICATING REINFORCEMENT SIZE, SPACING AND PLACEMENT TO THE ARCHITECT/ENGINEER FOR REVIEW PRIOR TO FABRICATION. INCLUDE DETAILS AND LOCATIONS OF CURBS, CONSTRUCTION JOINTS, SLAB DEPRESSIONS, SLEEVES, OPENINGS, ETC.

C6
SAWCUT SLABS ON GRADE IN THE PATTERN SHOWN ON PLAN. START SAWCUTTING AS SOON AS THE SAW WILL NOT RAVEL EDGES OR DISLODGE AGGREGATE, BUT IN NO CASE MORE THAN 12 HOURS AFTER THE SLAB IS PLACED.

C7
COORDINATE LOCATION OF CONSTRUCTION JOINTS WITH ENGINEER PRIOR TO COMMENCEMENT OF CONCRETE WORK.

C8
CLEAN AND MOISTEN CONSTRUCTION JOINTS IMMEDIATELY PRIOR TO PLACING FRESH CONCRETE.

C9
COORDINATE THE LOCATION OF INSERTS, EMBEDDED PLATES, ANCHORS, REGLETS AND SIMILAR ITEMS REQUIRED BY OTHER TRADES TO BE PLACED IN CONCRETE. MAINTAIN CORRECT LOCATION OF REINFORCING BARS WHEN PLACING THESE ITEMS.

C10
UNLESS NOTED OTHERWISE, PROVIDE DOWELS TO MATCH MAIN REINFORCEMENT SIZE AND SPACING. PROVIDE TENSION LAP SPLICE UNLESS NOTED OTHERWISE.

C11
DO NOT USE CALCIUM CHLORIDE IN CONCRETE.

C12
REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR CURBS, PADS, DEPRESSIONS, WALLS/SLAB OPENINGS, SPECIAL FLOOR FINISHES, ETC.

C13
PROVIDE EPOXY COATED REINFORCING BARS IN THE TOP LAYER OF REINFORCING IN PARKING DECKS AND TRUCK DOCKS.

C14
PROVIDE AIR-ENTRAINING IN CONCRETE AS SET FORTH IN THE SPECIFICATIONS.

C15
PROVIDE ONLY THOSE OPENINGS INDICATED ON THE REVIEWED SHOP DRAWINGS.

C16
REFER TO ACI 318, CHAPTER 7.7 FOR MINIMUM CONCRETE COVER REQUIREMENTS, UNO.

C17
REFER TO ACI 305 FOR REQUIREMENTS FOR PLACING CONCRETE IN HOT WEATHER AND TO ACI 306 FOR REQUIREMENTS FOR PLACING CONCRETE IN COLD WEATHER.

C18
ON STEEL FRAMED FLOORS, PROVIDE ADDITIONAL CONCRETE AS NECESSARY TO FINISH THE FLOORS TO WITHIN SPECIFIED TOLERANCES WHILE ACCOUNTING FOR STEEL DECK AND STEEL BEAM DEFLECTIONS. ALLOW FOR AN AVERAGE OF AT LEAST 1/2 INCH OF ADDITIONAL CONCRETE FOR EACH FLOOR.

C19
WHERE FIBER REINFORCEMENT IS SPECIFIED, A REPRESENTATIVE FROM THE FIBER MANUFACTURER SHALL ADVISE ON SPECIAL PLACING AND FINISHING TECHNIQUES.

C20
PROVIDE ONLY CONCRETE AND REINFORCING MATERIALS OF THE TYPES AND GRADES LISTED IN THE TABLE BELOW, UNLESS NOTED OTHERWISE.

CONCRETE	F'C (PSI)	UNIT WEIGHT (PCF)
FOOTINGS	3000	150
FOUNDATION WALLS	4000	150
SLABS-ON-GRADE	3000	150
ALL OTHER CONCRETE	4000	150

REINFORCING	GRADE
TYPICAL BARS	ASTM A-615, GRADE 60
WELDED BARS	ASTM A-706, GRADE 60
WELDED WIRE FABRIC	ASTM A-185
BLENDED FIBER REINFORCEMENT	ASTM C-1116 TYPE I AND II FOR POLYPROPYLENE FIBERS ASTM A-820 TYPE I FOR STEEL FIBERS.

STRUCTURAL MASONRY NOTES

CM1
REFER TO DIVISION 04 SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

CM2
COMPLY WITH THE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", (ACI 530) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1), LATEST EDITIONS.

CM3
PROVIDE A CONCRETE MASONRY SYSTEM WITH A MINIMUM NET AREA COMPRESSIVE STRENGTH (fm) OF 1500 PSI AT 28 DAYS.

CM4
PROVIDE MASONRY MATERIALS OF THE TYPE AND STRENGTH SPECIFIED BELOW:

HOLLOW CONCRETE MASONRY UNITS: CONFORM TO ASTM C90, GRADE N TYPE 1. PROVIDE UNITS WITH A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 1900 PSI.

SOLID BRICK MASONRY UNITS WITH MINIMUM NET AREA COMPRESSIVE STRENGTH OF 5500 PSI.

PROVIDE GROUT FOR REINFORCED MASONRY IN ACCORDANCE WITH ASTM C476 WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.

PROVIDE TYPE S MORTAR FOR REINFORCED MASONRY IN ACCORDANCE WITH ASTM C270.

CM5
PROVIDE REINFORCING BARS CONFORMING TO ASTM A615, GRADE 60. PROVIDE CONTINUOUS 9 GAUGE TRUSS TYPE HORIZONTAL JOINT REINFORCEMENT AT 16" VERTICAL SPACING TYPICALLY AND 8" VERTICAL SPACING IN PARAPETS.

CM6
USE PREFABRICATED "L" AND "T" HORIZONTAL JOINT REINFORCEMENT AT WALL INTERSECTIONS.

CM7
PROTECT CONCRETE MASONRY UNITS FROM ABSORBING MOISTURE AND WATER WHILE AT THE PLANT, DURING SHIPMENT, AND AT THE SITE DURING CONSTRUCTION

CM8
LAY MASONRY UNITS WITH FULL MORTAR COVERAGE AT HEAD AND BED JOINTS OF FACE SHELLS AND AT WEBS ADJACENT TO CELLS FILLED WITH GROUT, IN THE STARTING COURSE ON FOOTINGS, SOLID FOUNDATION WALLS, AND PIERS, PILASTERS AND COLUMNS.

CM9
ALIGN VERTICAL CELLS TO BE FILLED WITH GROUT TO PROVIDE A CONTINUOUS, UNOBSTRUCTED OPENING OF THE DIMENSIONS SHOWN ON THE DRAWINGS. PROVIDE A MINIMUM CLEAR OPENING AS SPECIFIED IN CELLS THAT CONTAIN REINFORCEMENT. USE CLEAN OUT HOLES WHERE NECESSARY TO OBTAIN UNOBSTRUCTED VERTICAL CELLS.

CM10
GROUT SOLID CELLS CONTAINING REINFORCING BARS, ANCHOR RODS OR HARDWARE. CONSOLIDATE GROUT IN PLACE BY VIBRATION TO INSURE COMPLETE FILLING OF THE CELLS. LIMIT HEIGHT OF GROUT PLACEMENTS TO FOUR (4) FOOT LIFTS UNLESS SPECIFIC HIGH LIFT GROUTING PROCEDURES ARE FOLLOWED.

CM11
PROVIDE ADEQUATE TEMPORARY BRACING DURING CONSTRUCTION TO WITHSTAND LATERAL LOADS AND THE PRESSURES OF THE FLUID GROUT.

CM12
TAKE NECESSARY PRECAUTIONS FOR MIXING AND PLACING MORTAR AND GROUT IN EITHER HOT OR COLD WEATHER, AS SET FORTH IN THE ACI "MASONRY STRUCTURE BUILDING CODE COMMENTARY".

CM13
PLACE POINTS OF BEARING ON TWO (2) COURSES OF HOLLOW MASONRY GROUTED SOLID OR TWO COURSES OF SOLID MASONRY.

CM14
SUPPORT SLABS AND PORTIONS OF WALLS REMAINING ABOVE NEW OPENINGS UNTIL PERMANENT SUPPORT SYSTEMS ARE INSTALLED AND HAVE BECOME EFFECTIVE.

CM15
USE MASONRY SAWS TO CUT AND FIT MASONRY, INCLUDING THAT PORTION REQUIRED TO ACCOMMODATE THE WORK OF OTHER TRADES.

CM16
BUILD CHASES INTO WALL, DO NOT CUT IN. PLUMB CHASES AND PROVIDE ONE (1) FULL MASONRY UNIT LENGTH FROM JAMBS OF OPENINGS. DO NOT CONSTRUCT CHASES OTHER THAN THOSE SHOWN ON THE DRAWINGS WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.

CM17
TOOTH AND PATCH IN NEW MASONRY THAT INTERFACES WITH EXISTING MASONRY CONSTRUCTION. TOOTH EVERY OTHER COURSE AND PROVIDE A MINIMUM DEPTH OF THE TOOTH EQUAL TO 1/2 THE LENGTH OF THE NEW OR EXISTING MATERIAL, WHICHEVER IS LONGER.

CM18
INSTALL ANCHORS, WALL PLUGS, ACCESSORIES AND OTHER ITEMS THAT ARE REQUIRED TO BE BUILT INTO THE WORK AS THE MASONRY WORK PROGRESSES. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.

CM19
PROVIDE A MINIMUM OF ONE #5 BAR AROUND OPENINGS IN MASONRY CONSTRUCTION. EXTEND HORIZONTAL BARS A MINIMUM OF 24 INCHES BEYOND THE CORNER OF THE OPENING. EXTEND VERTICAL BARS TO THE TOP AND BOTTOM OF THE WALL.

CM20
BRACE THE TOPS OF WALLS TO THE STRUCTURE FOR LATERAL STABILITY.

2 CM21
ALL NEW MASONRY OPENINGS REQUIRE A LINTEL. SEE LINTEL SCHEDULE FOR CRITERIA AND SIZING.

STEEL JOIST NOTES

SJ1
REFER TO DIVISION 05 SPECIFICATION SECTION - STEEL JOISTS - FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

SJ2
A QUALITY CONTROL PROGRAM OF FIELD TESTING AND INSPECTION WILL BE PERFORMED ON STEEL JOIST ERECTION AND CONNECTIONS IN ACCORDANCE WITH THE SPECIFICATIONS. SCHEDULE WORK AND PROVIDE ACCESS TO ALLOW TESTING REQUIREMENTS TO BE COMPLETED. DO NOT ERECT DAMAGED JOISTS.

SJ3
STEEL JOISTS INCLUDE PROPRIETARY JOISTS (K-SERIES, LH-SERIES AND DLH-SERIES) MANUFACTURED TO CONFORM TO CRITERIA OF THE STEEL JOIST INSTITUTE "STANDARD SPECIFICATIONS", LATEST EDITION. DESIGN STEEL JOISTS FOR THE REQUIRED DEPTHS, SPANS, AND LOADINGS INDICATED ON THE DRAWINGS. DESIGN EXTENDED ENDS FOR SAME UNIFORM LOAD CAPACITY AS THE MAIN SPAN, UNLESS NOTED. POINT LOADS ARE IN ADDITION TO UNIFORM LOAD CAPACITY REQUIRED BY JOIST DESIGNATION.

SJ4
DESIGN JOISTS AT ROOF LEVELS FOR AN EQUIVALENT NET UPLIFT FORCE EQUAL TO __ POUNDS PER SQUARE FOOT UNLESS NOTED OTHERWISE ON PLANS.

SJ5
SUBMIT DETAILED AND CHECKED SHOP DRAWINGS INDICATING INFORMATION NECESSARY FOR FABRICATION AND ERECTION OF JOISTS, ANCHORAGES, BRIDGING AND ACCESSORIES. SUBMIT ENGINEERING DESIGN CALCULATIONS FOR JOISTS DESIGNATED AS "SP" JOISTS.

SJ6
PROVIDE CONTINUOUS BRIDGING FASTENED DIRECTLY TO EACH JOIST (HORIZONTAL BRIDGING FOR K-SERIES JOISTS, DIAGONAL BRIDGING FOR LH-SERIES AND DLH-SERIES JOISTS) IN ACCORDANCE WITH STEEL JOIST INSTITUTE RECOMMENDATIONS.

SJ7
USE DOUBLE ANGLES FOR CHORD MEMBERS. ROUND BOTTOM CHORDS ARE NOT ACCEPTABLE.

SJ8
THE MINIMUM THICKNESS FOR CHORD MEMBERS, WEB MEMBERS AND BRIDGING IS 7/64 INCH. SPLICE INDIVIDUAL CHORD MEMBERS IN ALTERNATE PANELS. FIELD SPLICES ARE UNACCEPTABLE WITHOUT PRIOR REVIEW AND ACCEPTANCE BY THE ARCHITECT/ENGINEER.

SJ9
HANG LOADS FROM STEEL JOISTS ONLY AT INTERSECTING POINTS OF WEB AND CHORD MEMBERS. SUSPEND LOADS ONLY WITH ACCEPTABLE JOIST HANGER DEVICES. DO NOT HANG LOADS GREATER THAN THE LOADS NOTED ON THE DRAWINGS.

SJ10
COMPLY WITH OSHA STANDARD 29 CFR PART 1926 SUBPART R FOR ERECTION OF STEEL JOISTS.

STRUCTURAL STEEL NOTES

S1
REFER TO DIVISION 05 SPECIFICATION SECTION - STRUCTURAL STEEL - FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

S2
A QUALITY CONTROL PROGRAM OF SHOP AND FIELD TESTING AND INSPECTION WILL BE PERFORMED ON STRUCTURAL STEEL FABRICATION, ERECTION, AND CONNECTIONS IN ACCORDANCE WITH THE SPECIFICATIONS. SCHEDULE WORK AND PROVIDE ACCESS TO ALLOW THE TESTING REQUIREMENTS TO BE COMPLETED.

S3
DETAIL, FABRICATE AND ERECT STRUCTURAL STEEL IN CONFORMANCE WITH THE AISC SPECIFICATIONS AND CODES, LATEST EDITIONS.

S4
PERFORM WELDING USING CERTIFIED WELDERS AND IN ACCORDANCE WITH THE AWS "STRUCTURAL WELDING CODE - STEEL", LATEST EDITION. COMPLY WITH AISC SPECIFICATION FOR MINIMUM FILLET WELD SIZES, BUT DO NOT USE LESS THAN A 3/16 INCH FILLET UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.

S5
SUBMIT ENGINEERED AND CHECKED SHOP DRAWINGS TO THE ARCHITECT/ ENGINEER FOR REVIEW. SHOW SHOP FABRICATION DETAILS, FIELD ASSEMBLY DETAILS, AND ERECTION DIAGRAMS FOR STRUCTURAL STEEL. SCHEDULE SUBMISSIONS TO ALLOW ADEQUATE TIME FOR REVIEW PRIOR TO FABRICATION.

S6
THE CONNECTION DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL AND DO NOT INDICATE THE REQUIRED COMPONENT SIZES, WELD SIZES OR DIMENSIONS UNLESS SPECIFICALLY NOTED. FINAL DESIGN AND DETAILING IS THE RESPONSIBILITY OF THE FABRICATOR. PERFORM DESIGN USING INDUSTRY STANDARDS AND CRITERIA SET FORTH IN THE CONTRACT DOCUMENTS. SUBMIT DESIGN CALCULATIONS PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF _____.

S7
DESIGN MOMENT CONNECTIONS TO DEVELOP THE FULL FACTORED ELASTIC MOMENT CAPACITY OF THE BEAM UNLESS OTHER CRITERIA ARE NOTED ON THE DRAWINGS.

S8
DESIGN SIMPLE SHEAR CONNECTIONS CAPABLE OF END ROTATION UTILIZING HIGH STRENGTH BOLTS IN BEARING.

S9
USE BOLTED JOINTS IN FIELD CONNECTIONS WHENEVER POSSIBLE, UNLESS WELDED JOINTS ARE DETAILED.

S10
BOLTS OF DIFFERING STEEL GRADES (A325, A490, ETC) MUST VARY IN BOLT DIAMETER BY AT LEAST 1/4 INCH.

S11
PROVIDE A MINIMUM OF TWO (2) BOLTS AT EACH FAYING SURFACE.

S12
DETAIL BEAMS FRAMING INTO CONCRETE WALLS, BEAMS OR COLUMNS TO ALLOW FOR HORIZONTAL FIELD TOLERANCES AND THERMAL MOVEMENT. PROVIDE CONNECTION DETAILS REQUIRED BY THE SPECIFIC CONSTRUCTION SEQUENCES.

S13
PROVIDE SUITABLE BEARING PLATES AND ANCHOR RODS FOR BEAMS, JOISTS, OR GIRDERS WHICH BEAR ON WALLS. LOCATE ITEMS USING TEMPLATES OR SIMILAR METHODS. SET PLATES IN FULL BEDS OF NON-SHRINK GROUT. COMPLETELY FILL BEAM AND COLUMN POCKETS WITH CONCRETE PRIOR TO CASTING CONCRETE ABOVE.

S14
FABRICATE BEAMS, TRUSSES AND OPEN WEB STEEL JOISTS WITH THE NATURAL CAMBER UP. PROVIDE ADDITIONAL CAMBER SHOWN ON THE DRAWINGS.

S15
THE USE OF BLEED THROUGH MARKERS IS PROHIBITED ON STEEL THAT WILL BE EXPOSED TO VIEW IN THE FINISHED WORK.

S16
AFTER FABRICATION, CLEAN STEEL OF RUST, LOOSE MILL SCALE, DIRT, OIL, GREASE OR OTHER FOREIGN MATERIALS.

S17
REFER TO THE ARCHITECTURAL DRAWINGS FOR THE REQUIRED FIRE RATINGS AND UL ASSEMBLY NUMBERS.

S18
DO NOT FIELD CUT STRUCTURAL STEEL UNLESS REVIEWED AND APPROVED BY THE ARCHITECT/ENGINEER IN WRITING. CLEARLY INDICATE STEEL MEMBER OPENINGS REQUIRED ON THE SHOP DRAWINGS. ALL COSTS FOR PROVIDING PENETRATIONS IN THE FIELD, INCLUDING MEMBER REINFORCING, IS THE RESPONSIBILITY OF THE CONTRACTOR.

S19
ERECTION PROCEDURES, SEQUENCES AND COORDINATION OF WORK WITH OTHER TRADES IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE ADDITIONAL STEEL REQUIRED FOR ERECTION PURPOSES AT NO COST TO THE OWNER. REMOVE THIS ADDITIONAL STEEL UNLESS DIRECTED OTHERWISE BY THE OWNER IN WRITING.

S20
PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED FOR THE SAFETY, STABILITY AND ALIGNMENT OF THE STRUCTURE. LEAVE TEMPORARY BRACING IN PLACE UNTIL THE PERMANENT STRUCTURAL LATERAL LOAD RESISTING SYSTEM IS COMPLETE, INCLUDING FLOOR AND ROOF DIAPHRAGMS. PERFORM FINAL BOLTING AND WELDING ONLY ON THOSE PORTIONS OF THE STRUCTURE THAT HAVE BEEN ALIGNED AND PLUMBED WITHIN THE SPECIFIED TOLERANCES.

S21
GROUT COLUMN BASE PLATES AFTER BUILDING FRAME HAS BEEN ALIGNED AND PLUMBED, AND PRIOR TO PLACEMENT OF CONCRETE FLOOR SYSTEMS (CIP CONCRETE SLABS, SLABS ON STEEL DECK, PRECAST, ETC). GROUT BEAM BEARING PLATES AFTER BEAM ALIGNMENT AND PRIOR TO PLACEMENT OF FLOOR SYSTEMS.

S22
EVENLY SPACE BEAMS IN BAY, UNO.

S23
PROVIDE NEW MATERIAL CONFORMING TO THE FOLLOWING REQUIREMENTS FOR STRUCTURAL STEEL:

MEMBER	GRADE
WIDE FLANGE SHAPES, WT SECTIONS	ASTM A992
CHANNELS AND ANGLES	ASTM A36
PIPE	ASTM A53 GRADE B
HOLLOW STRUCTURAL SECTIONS (RECTANGULAR AND ROUND)	ASTM A500 GRADE B
BASE PLATES	ASTM A36 UNO
ALL OTHER STEEL MEMBERS	ASTM A36 UNO
HIGH STRENGTH BOLTS, NUTS AND WASHERS	ASTM A-325 OR A-490 (MIN. 3/4" DIAMETER)
ANCHOR RODS	ASTM F1554 GRADE 55 UNO
STEEL SHAPE WELDING ELECTRODE	E70XX

STRUCTURAL STEEL DECK NOTES

SD1
REFER TO DIVISION 05 SPECIFICATION SECTION - STEEL DECKING - FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

SD2
FABRICATE STEEL DECKING FROM STEEL TYPE ASTM A653, STRUCTURAL QUALITY HAVING A MINIMUM YIELD STRENGTH OF 33,000 PSI. COMPLY WITH STEEL DECK INSTITUTE SPECIFICATIONS FOR DESIGN, DETAILING, FABRICATION AND ERECTION OF STEEL DECK. USE STRUCTURAL STEEL DECK WITH A MINIMUM THICKNESS OF AT LEAST 20 GAGE, UNLESS NOTED OTHERWISE.

SD3
SUBMIT ENGINEERED AND CHECKED SHOP DRAWINGS INDICATING LOCATION, GAGE AND SIZE OF EACH PIECE OF DECKING. CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING, SIDE LAP CONNECTION DETAILS, LOCATION OF SHORING AND SUPPLEMENTARY SUPPORT STEEL AS REQUIRED.

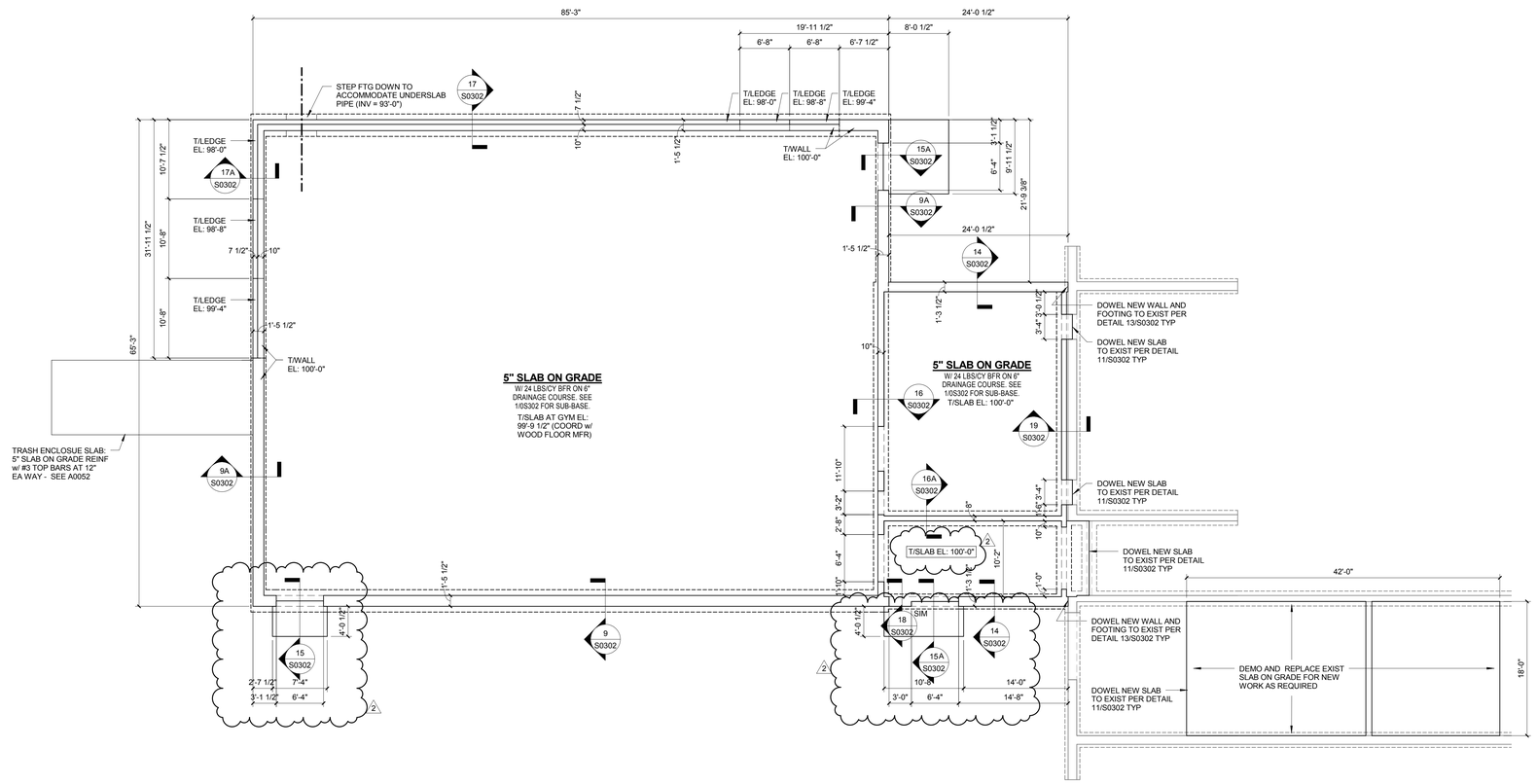
SD4
PROVIDE COMPOSITE STEEL DECK WITH WIDE RIBS SUITABLE FOR SHEAR STUD PLACEMENT.

SD5
SUBMIT SHOP DRAWINGS INDICATING EXACT LAYOUT OF STUDS FOR EACH BEAM SIZE, NUMBER OF STUDS, SPAN AND DECK LAYOUT.

SD6
WELD SHEAR STUDS THROUGH STEEL DECK BY PRE-QUALIFIED METHODS.

SD7
WELD DECKING TO STRUCTURAL STEEL BY CERTIFIED WELDERS USING PRE-QUALIFIED PROCEDURES. ESTABLISH A WELDING PROCEDURE FOR THE PUDDLE WELD OF STEEL DECKING TO THE STRUCTURAL STEEL FOR THE PARTICULAR GAGES USED. PRIOR TO THE START OF ERECTION OF THE STEEL DECK, QUALIFY EACH WELDER USING THIS PROCEDURE AS WITNESSED BY THE OWNER'S TESTING LABORATORY. USE STEEL DECK WELDING ELECTRODE OF GRADE E60XX MIN.

SD8
USE MECHANICAL FAST



1 FOUNDATION PLAN
1/8" = 1'-0"

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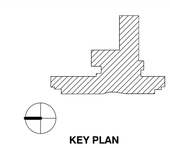
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015



KEY PLAN

Drawing Title:

LEVEL 01 FOUNDATION PLAN - AREA B

Project No.: 004645.06 Checked by:

S0101

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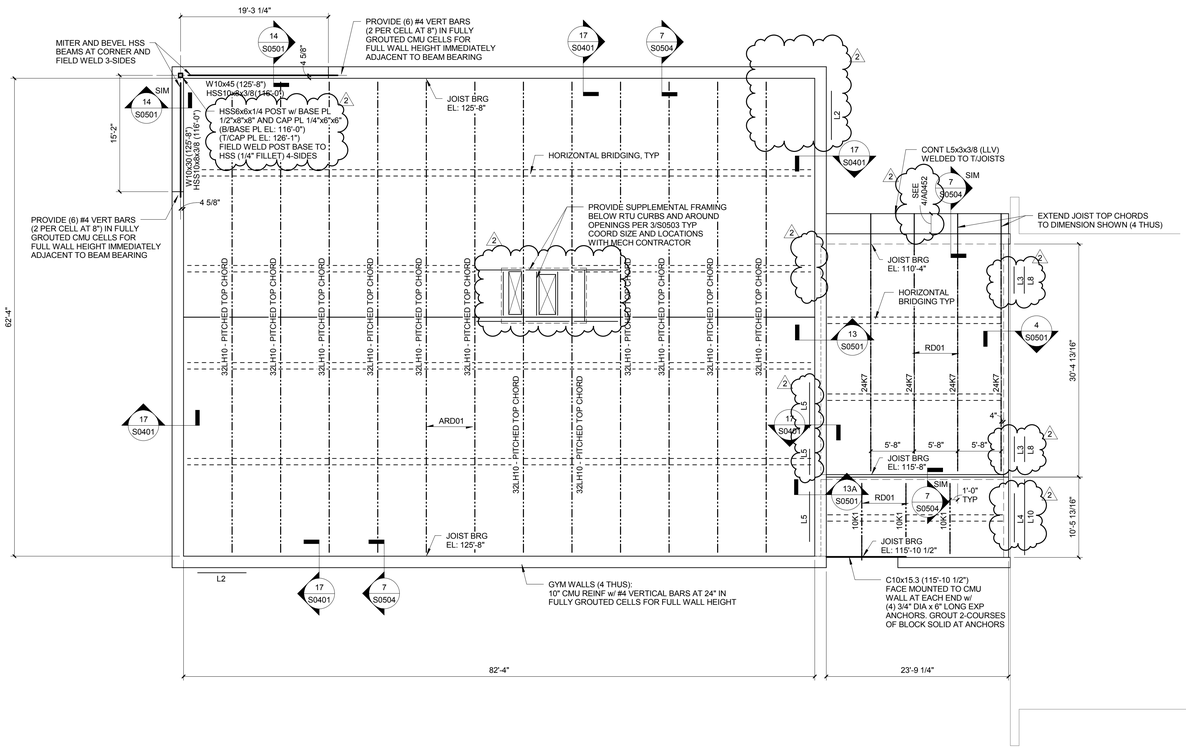

1 ROOF FRAMING PLAN

1/8" = 1'-0"

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING S0001.
2. _RDO_ INDICATES SPAN DIRECTION OF METAL ROOF DECK. SEE SCHEDULE ON S0503 FOR DECK REQUIREMENTS.
3. ALL NEW ROOF OPENINGS 12"x12" AND LARGER REQUIRE SUPPLEMENTAL FRAMING PER 3/S0503. SET EDGE OF DECK AT 4" UNLESS NOTED OTHERWISE. SEE MECHANICAL AND ARCHITECTURAL DRAWINGS FOR LOCATIONS AND SIZES.
4. -x- INDICATES DIMENSIONS TO BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.
5. _LX_ INDICATES LINTEL AT MASONRY BEARING WALL. SEE S0401 FOR SCHEDULE.

2

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No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015

KEY PLAN

Drawing Title:

LEVEL 02 FRAMING PLAN - AREA B

Project No.: 004645.06 Checked by:

S0102

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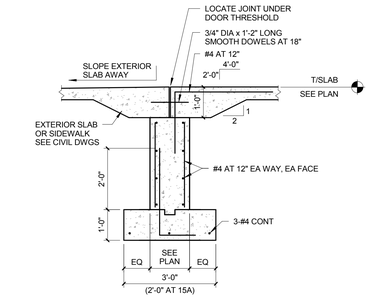
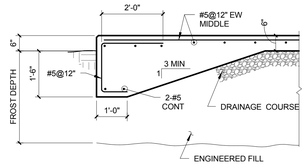
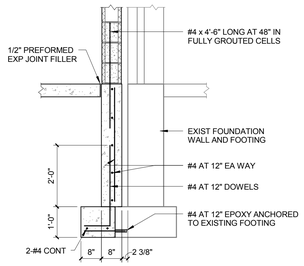


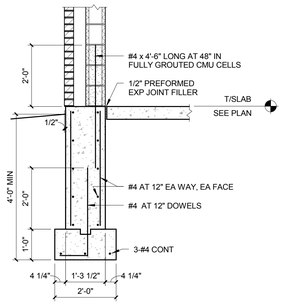
15 / 15A TYPICAL FOUNDATION AT EXT DOOR
1/2" = 1'-0"



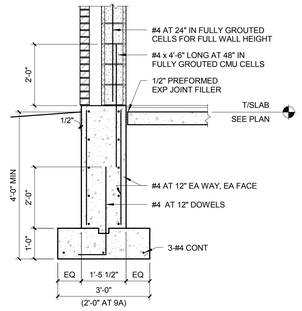
5 TYPICAL SITE PAD DETAIL
1/2" = 1'-0"



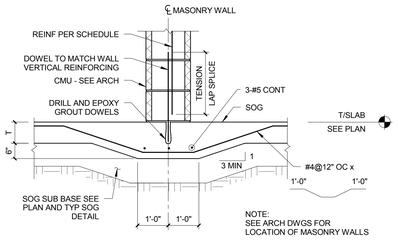
19 FOUNDATION SECTION
1/2" = 1'-0"



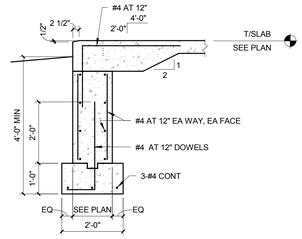
14 TYPICAL SECTION AT WALL
1/2" = 1'-0"



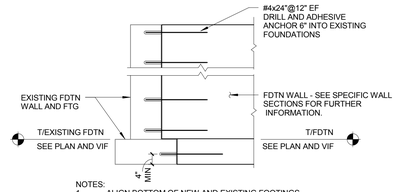
9 / 9A TYPICAL SECTION AT GYM WALL
1/2" = 1'-0"



4 TYPICAL THICKENED SLAB UNDER NON-BEARING MASONRY WALLS
1/2" = 1'-0"

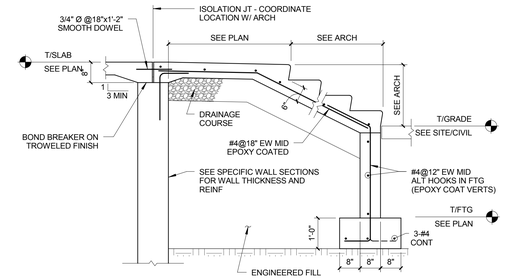


18 TYPICAL FOUNDATION AT WINDOW
1/2" = 1'-0"

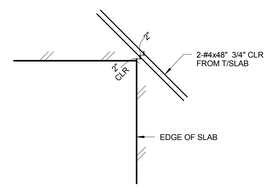


NOTES:
1. ALIGN BOTTOM OF NEW AND EXISTING FOOTINGS. STEP FOOTING AND WALL AS REQUIRED PER TYPICAL DETAILS.
2. EXTEND NEW FOUNDATIONS DOWN TO THE MINIMUM DEPTH.

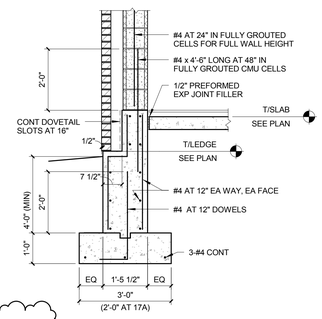
13 TYPICAL FOUNDATION WALL AT EXISTING
1/2" = 1'-0"



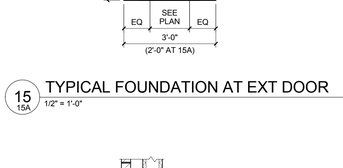
8 TYPICAL EXTERIOR STAIR DETAIL
1/2" = 1'-0"



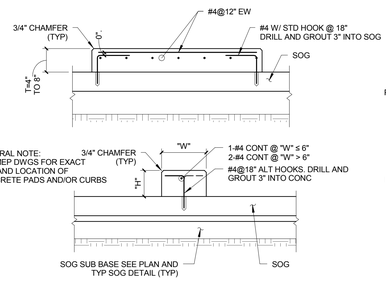
3 ADDITIONAL REINFORCING AT CORNERS IN SLAB-ON-GRADE
1/2" = 1'-0"



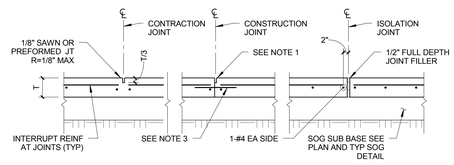
2
17 / 17A TYPICAL SECTION AT WALL w/ LEDGE
1/2" = 1'-0"



12 SLAB ON GRADE TRENCH INFILL
1/2" = 1'-0"

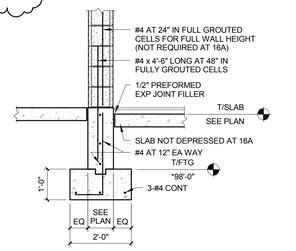


7 TYPICAL CONCRETE CURB AND HOUSEKEEPING PAD DETAIL
1/2" = 1'-0"



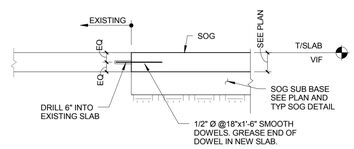
NOTES:
1. LOCATE CONSTRUCTION JOINTS AT CONTRACTION JOINT LOCATIONS SHOWN ON PLAN. MATCH CONTRACTION JOINT PROFILE.
2. MAXIMUM SPACING BETWEEN CONTRACTION JOINTS = ____ SEE PLAN FOR LOCATIONS.
3. 3/4" x 1'-4" SMOOTH DOWEL AT 18 INCHES ON CENTER. SET AT T/2 BELOW TOP OF SLAB. GREASE ONE END.
4. DO NOT PLACE DOWELS WITHIN 12" OF A SLAB CORNER.

2 TYPICAL SLAB ON GRADE JOINTS
1/2" = 1'-0"

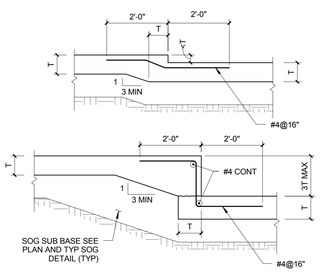


* FOOTING DEPTH SHALL BE LOWERED OR STEPPED TO MATCH THE ELEVATION OF EXISTING FOOTINGS WHERE NEW WALL IS IMMEDIATELY ADJACENT TO OR ABBUTS AN EXISTING WALL.

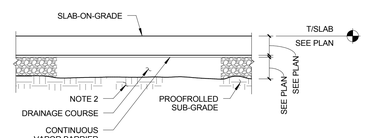
16 / 16A SECTION AT INTERIOR BRG WALL
1/2" = 1'-0"



11 SLAB ON GRADE JOINT AT EXISTING SLABS
1/2" = 1'-0"



6 TYPICAL SLAB ON GRADE DEPRESSIONS
1/2" = 1'-0"



NOTES:
1. PROVIDE CONTINUOUS PROTECTION AGAINST WATER INFILTRATION PRIOR TO INSTALLATION OF VAPOR BARRIER AND POROUS SUB BASE. MAINTAIN VAPOR BARRIER AND SUB BASE IN DRY CONDITION UNTIL BUILDING IS OCCUPIED.
2. PROVIDE ENGINEERED FILL IN AREAS THAT DO NOT STABILIZE UNDER PROOFROLLING.

1 TYPICAL SLAB ON GRADE
1/2" = 1'-0"

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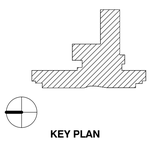

KEY PLAN

Drawing Title:

TYPICAL FOUNDATION DETAILS

Project No.: 004645.06 Checked by: Checker

S0302

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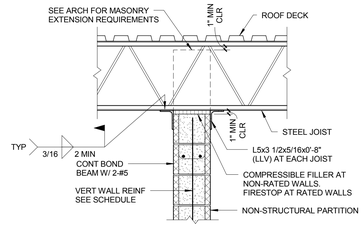
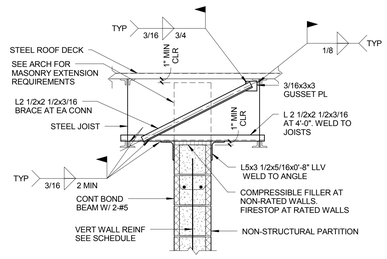


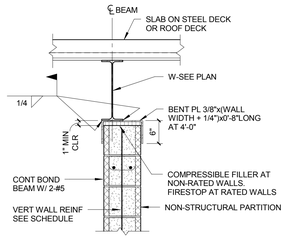
PARTITION PARALLEL TO DECK SPAN



PARTITION PERPENDICULAR TO DECK SPAN

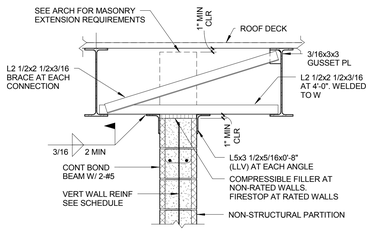
16 NON-STRUCTURAL PARTITION BRACE AT ROOF DECKS WITH STEEL JOISTS

3/4" = 1'-0"

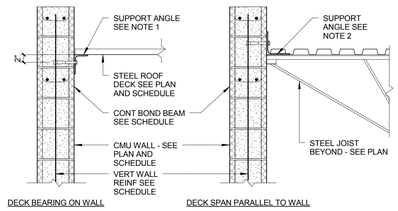


15 NON-STRUCTURAL PARTITION BRACE AT PARALLEL STEEL BEAMS

3/4" = 1'-0"



PARTITION PERPENDICULAR TO DECK SPAN



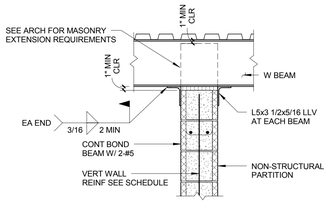
DECK BEARING ON WALL

DECK SPAN PARALLEL TO WALL

NOTES:
1. L6x4x3/8 LLV x CONT WITH 3/4" Ø EXP ANCHORS AT 24".
2. L6x6x3/8 WITH 3/4" Ø EXP ANCHORS AT 24".
3. CONNECT DECK TO SUPPORT ANGLE PER DECK SCHEDULE.

17 TYPICAL ROOF DECK SUPPORT AT CMU WALL

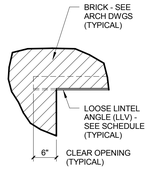
3/4" = 1'-0"



PARTITION PARALLEL TO DECK SPAN

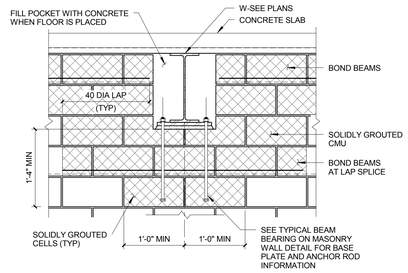
14 NON-STRUCTURAL PARTITON BRACE AT ROOF DECKS WITH STEEL BEAMS

3/4" = 1'-0"



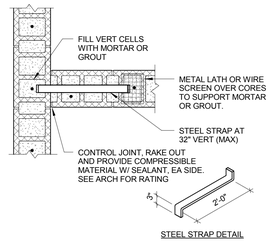
13 TYPICAL BRICK LOOSE LINTEL BEARING DETAIL

3/4" = 1'-0"



12 TYPICAL BOND BEAM INTERRUPTION AT STEEL BEAM

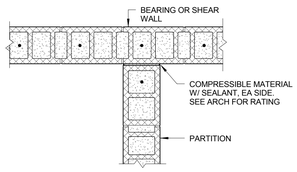
3/4" = 1'-0"



STEEL STRAP DETAIL

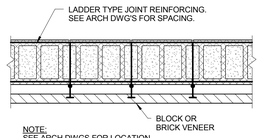
11 TYPICAL INTERSECTION OF STRUCTURAL MASONRY SHEAR WALLS

3/4" = 1'-0"



10 TYPICAL JOINT AT MASONRY PARTITIONS ABUTTING BEARING OR SHEAR WALLS

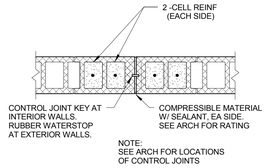
3/4" = 1'-0"



NOTE:
SEE ARCH DWGS FOR LOCATION OF ADJUSTABLE WALL TIES AND ADDITIONAL HORIZONTAL REINF FOR SPLIT FACE BLOCK.

9 TYPICAL JOINT REINFORCING AT VENEER WALLS

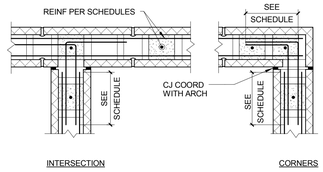
3/4" = 1'-0"



NOTE:
SEE ARCH FOR LOCATIONS OF CONTROL JOINTS

8 TYPICAL MASONRY CONTROL JOINT DETAIL

3/4" = 1'-0"

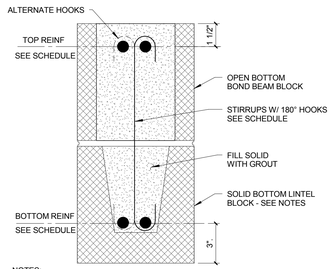


INTERSECTION

CORNERS

7 TYPICAL STRUCTURAL BOND BEAM

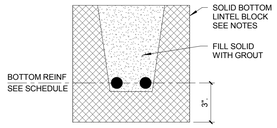
3/4" = 1'-0"



NOTES:
1. WEB KNOCKOUT OR BOND BEAM UNITS NOT PERMITTED.
2. 16" DEPTH INDICATED. ADD ADDITIONAL OPEN BOTTOM BLOCKS AS NECESSARY TO ACHIEVE SCHEDULED DEPTH.

6 TYPICAL MULTIPLE BLOCK CMU LINTEL REINFORCING DETAIL

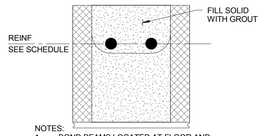
3" = 1'-0"



NOTE:
1. WEB KNOCKOUT UNITS NOT PERMITTED.

5 TYPICAL SINGLE BLOCK CMU LINTEL REINFORCING DETAIL

3" = 1'-0"



NOTES:
1. BOND BEAMS LOCATED AT FLOOR AND ROOF LEVELS TO HAVE REINFORCING CONTINUOUS THROUGH CONTROL JOINTS.
2. INTERMEDIATE BOND BEAMS TO HAVE HORIZONTAL REINFORCING DISCONTINUOUS AT CONTROL JOINTS.

4 TYPICAL BOND BEAM REINFORCING DETAIL

3" = 1'-0"

STRUCTURAL REINFORCED CMU LINTEL SCHEDULE

(ARCHING ACTION PRESENT)

LINTEL DESIGNATION	BLOCK SIZE	LINTEL DEPTH	REINFORCING			LOOSE BRICK ANGLE SEE ARCH SECTION
			BOTTOM	TOP	STIRRUPS	
L1	8"	8"	2-#4			GALV L4x4x3/8
L1A	8"	16"	2-#4	2-#4	#3 AT 16"	GALV L6x4x3/8 (LLV)
L2	10"	16"	2-#4	2-#4	#3 AT 16"	GALV L4x4x3/8
L3	8"	8"	2-#4			
L4	8"	16"	2-#4	2-#4	#3 AT 16"	
L5	10"	16"	2-#4	2-#4	#3 AT 16"	

STEEL LINTEL SCHEDULE

(ARCHING ACTION PRESENT)

LINTEL DESIGNATION	WALL CONFIGUARTION	LINTEL MEMBER(S)
L6	8" CMU	W8x28 (T/STEEL EL: 110'-4")
L7	8" CMU, 4" BRICK	SEE SECTION 16/S0511
L8	EXIST 8" CMU, 4" BRICK	(2) GALV L4x3 1/2x5/16 (LLV), GALV L4x4x5/16
L9	EXIST 8" CMU, 4" BRICK	(2) GALV L5x3 1/2x5/16 (LLV), GALV L6x4x5/16
L10	EXIST 8" CMU, 4" BRICK	W8x28 w/ CONT 5/16" WELDED BOTTOM PL

ALL MASONRY OPENINGS SHALL BE SUPPORTED BY A LINTEL. IF NO LINTEL (AS DESIGNATED ABOVE) IS SHOWN ON THE ROOF FRAMING PLAN, PROVIDE LINTELS IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

MAX OPENING	WALL TYPE	LINTEL DEPTH	REINFORCING		
			BOTTOM	TOP	STIRRUPS
4'-0"	6" CMU	8"	1-#4		
8'-0"	6" CMU	16"	1-#4	1-#4	#3 AT 16"
4'-0"	8" CMU	8"	1-#4		
8'-0"	8" CMU	16"	1-#4	1-#4	#3 AT 16"
4'-0"	10" CMU	8"	1-#4		
8'-0"	10" CMU	16"	1-#4	1-#4	#3 AT 16"
	WALL CONFIGUARTION		LINTEL MEMBER(S)		
6'-4"	EXIST 8" CMU, 4" BRICK		(2) GALV L5x3 1/2x5/16 (LLV), GALV L6x4x5/16		
14'-4"	EXIST 8" CMU, 4" BRICK		W8x31 w/ CONT 5/16" GALV BOTTOM PL		
6'-4"	EXIST 10" CMU, 4" BRICK		(2) GALV L7x4x3/8 (LLV), GALV L6x4x5/16		
12'-4"	EXIST 10" CMU, 4" BRICK		W8x31 w/ CONT 5/16" GALV BOTTOM PL		

3 LINTEL SCHEDULE

3/4" = 1'-0"

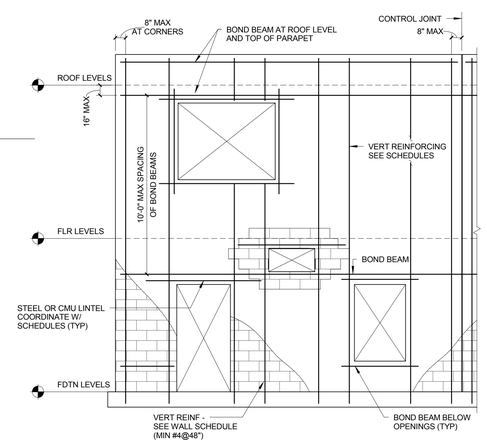
REINFORCED MASONRY LAP SPLICES (f'm = 1500 PSI and 2000 PSI)

REINFORCING SIZE	SPLICE LENGTH
#3	18
#4	24
#5	30
#6	36
#7	42
#8	48
#9	54

NOTES:
1. LENGTH GIVEN IN INCHES.
2. FOR EPOXY BARS MULTIPLY SPLICE LENGTH BY 1.5

2 TYPICAL MASONRY LAP SPLICE SCHEDULE

3/4" = 1'-0"



1 MINIMUM MASONRY WALL REINFORCEMENT

1/4" = 1'-0"

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No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015

KEY PLAN

Drawing Title:

TYPICAL MASONRY DETAILS

Project No.: 004645.06 Checked by: Checker

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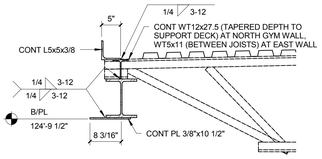
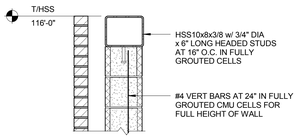
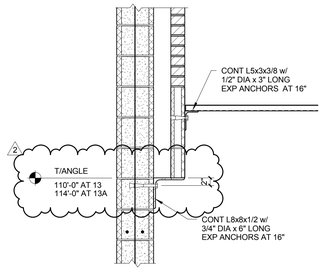
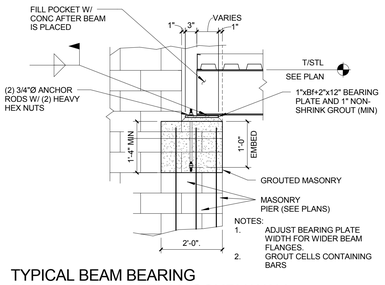




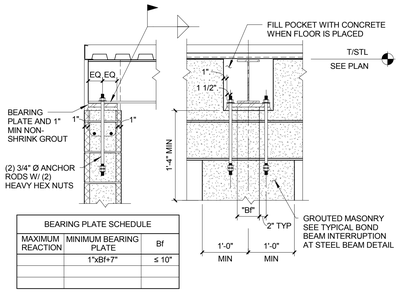
14 SECTION AT GYM WINDOW
3/4" = 1'-0"



13 SECTION
13A 3/4" = 1'-0"

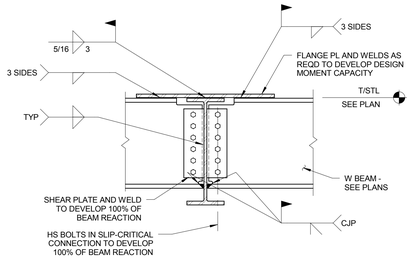


TYPICAL BEAM BEARING
PLATE AT PARALLEL MASONRY WALL
12 3/4" = 1'-0"

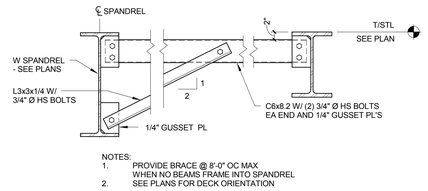


BEARING PLATE SCHEDULE		
MAXIMUM REACTION	MINIMUM BEARING PLATE	Bf
	1"xBf+7"	≤ 10"

TYPICAL BEAM BEARING
PLATE AT MASONRY WALL
11 3/4" = 1'-0"

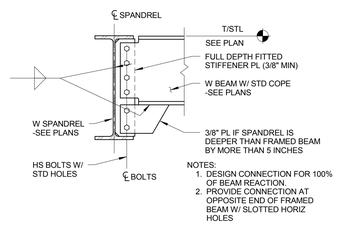


TYPICAL BEAM TO
BEAM MOMENT CONNECTION
9 3/4" = 1'-0"



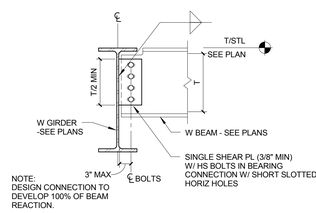
NOTES:
1. PROVIDE BRACE @ 8'-0" OC MAX WHEN NO BEAMS FRAME INTO SPANDREL
2. SEE PLANS FOR DECK ORIENTATION

TYPICAL SPANDREL BEAM BRACE
8 3/4" = 1'-0"



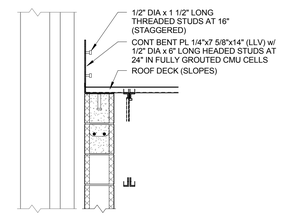
NOTES:
1. DESIGN CONNECTION FOR 100% OF BEAM REACTION.
2. PROVIDE CONNECTION AT OPPOSITE END OF FRAMED BEAM W/ SLOTTED HORIZ HOLES

TYPICAL FRAMED
BEAM TO SPANDREL CONNECTION
7 3/4" = 1'-0"

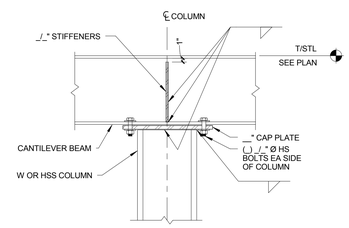


NOTE:
DESIGN CONNECTION TO DEVELOP 100% OF BEAM REACTION.

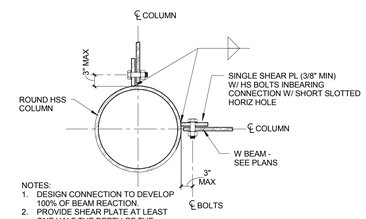
ALTERNATE
FRAMED BEAM CONNECTION
6 3/4" = 1'-0"



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

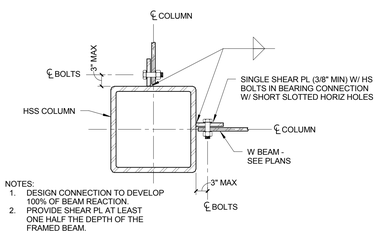


CONTINUOUS BEAM
OVER TOP OF COLUMN DETAIL
3 3/4" = 1'-0"



NOTES:
1. DESIGN CONNECTION TO DEVELOP 100% OF BEAM REACTION.
2. PROVIDE SHEAR PLATE AT LEAST ONE HALF THE DEPTH OF THE FRAMED BEAM.

TYPICAL FRAMED BEAM
TO ROUND HSS COLUMN CONNECTION
2 3/4" = 1'-0"



NOTES:
1. DESIGN CONNECTION TO DEVELOP 100% OF BEAM REACTION.
2. PROVIDE SHEAR PL AT LEAST ONE HALF THE DEPTH OF THE FRAMED BEAM.

TYPICAL
FRAMED BEAM TO HSS COLUMN
CONNECTION - HSS FACE DIM <8"
1 3/4" = 1'-0"

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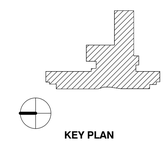

KEY PLAN

Drawing Title:

TYPICAL STEEL FRAMED DETAILS

Project No.: 004645.06 Checked by: Checker

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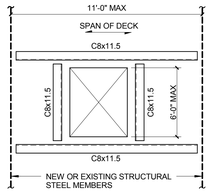


NOTES:
1. COORDINATE EXACT SIZE AND LOCATION OF OPENINGS W/ ARCH AND MEP REQUIREMENTS.
2. GROUPS OF CLOSELY SPACED OPENINGS ARE TO BE FRAMED AS A SINGLE LARGE OPENING.

2

3 TYPICAL SUPPLEMENTAL FRAMING AT ROOF OPENINGS

3/4" = 1'-0"

STEEL ROOF DECK SCHEDULE							
	MINIMUM STEEL DECK PROPERTIES						
MARK	DECK TYPE	GAGE	I in4	Sp in³	Sn in³	GALV	REMARKS
ARD01	1 1/2" Type BA	18	0.292	0.318	0.327	G90	
RD01	1 1/2" Type B	18	0.292	0.318	0.327	G90	

ROOF DECK NOTES:
1. SEE PLANS FOR LOCATION OF DECK MARKS.
2 PERIMETER FASTENING TO BE EQUAL TO SUPPORT FASTENING ALL AROUND.

STEEL ROOF DECK LEGEND

ROOF DECK MARK — RD0_

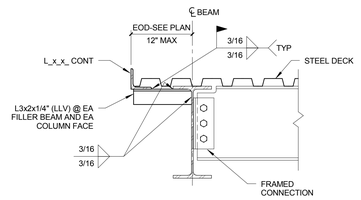
XX/Y"#

FASTENER PATTERN (5/8" DIA PUDDLE WELD OR MECHANICAL EQUIVALENT)

NUMBER OF #10 SELF DRILLING SIDELAP FASTENERS PER SPAN

2 ROOF DECK SCHEDULE AND NOTES

3/4" = 1'-0"



1 TYPICAL EDGE OF ROOF DECK DETAIL

1" = 1'-0"

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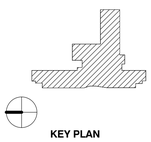

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TYPICAL STEEL DECK DETAILS

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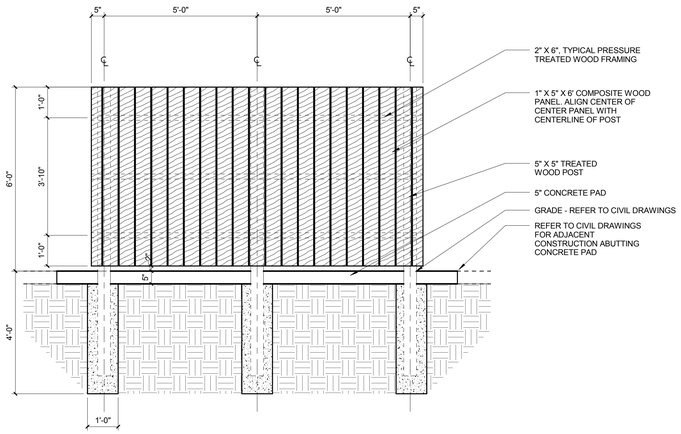
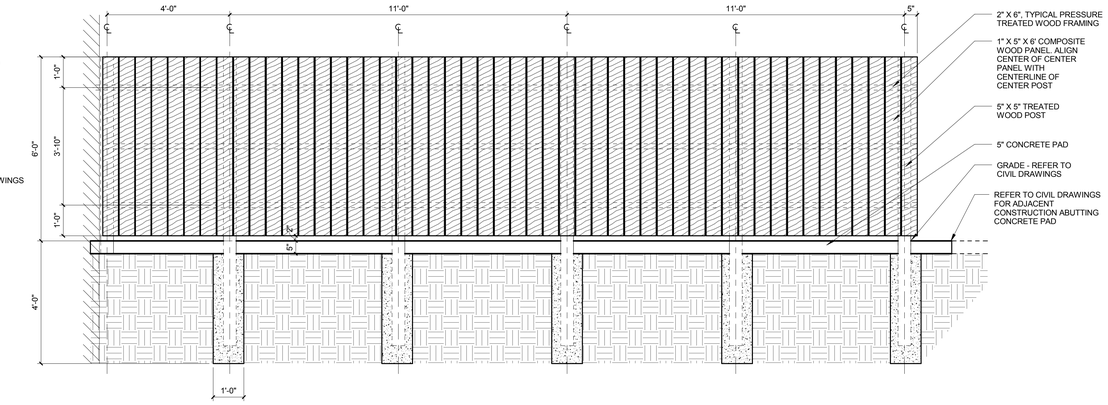
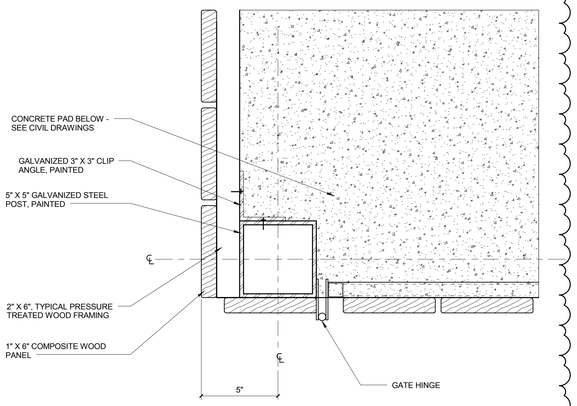


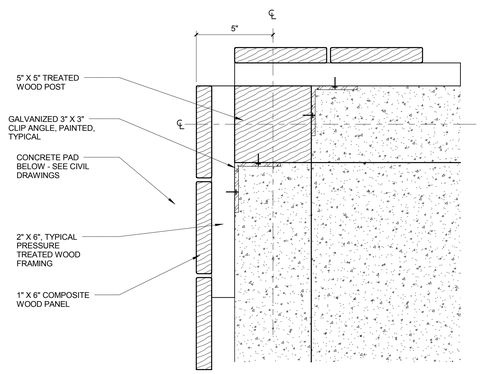
4 A0052_TRASH ENCLOSURE SIDE ELEVATION
1/2" = 1'-0"



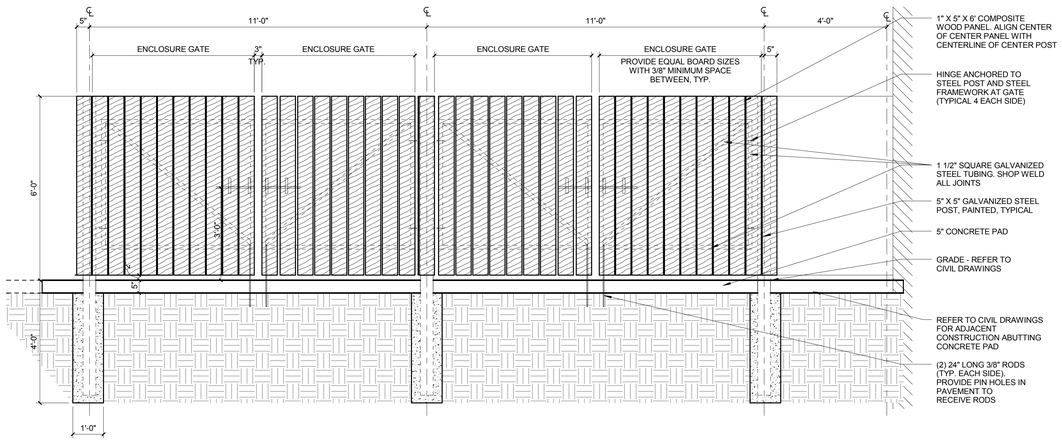
1 TRASH ENCLOSURE - REAR ELEVATION
1/2" = 1'-0"



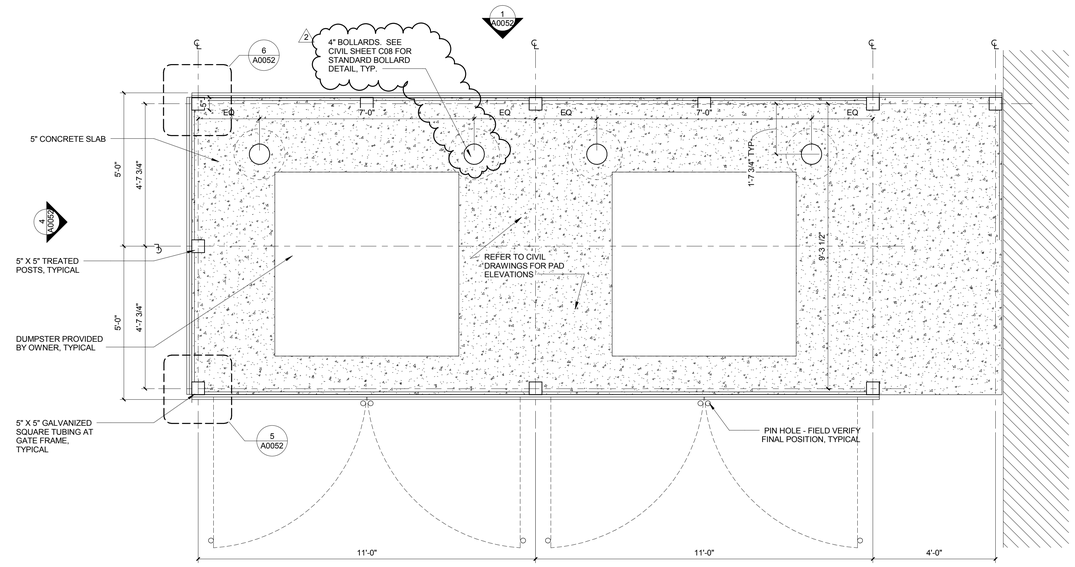
5 TRASH ENCLOSURE - GATE DETAIL
3" = 1'-0"



6 TRASH ENCLOSURE - CORNER DETAIL
3" = 1'-0"



2 TRASH ENCLOSURE - FRONT ELEVATION
1/2" = 1'-0"



3 TRASH ENCLOSURE - PLAN
1/2" = 1'-0"

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Drawing Title:

TRASH ENCLOSURE

Project No.: 004645.05 Checked by: Checker

A0052

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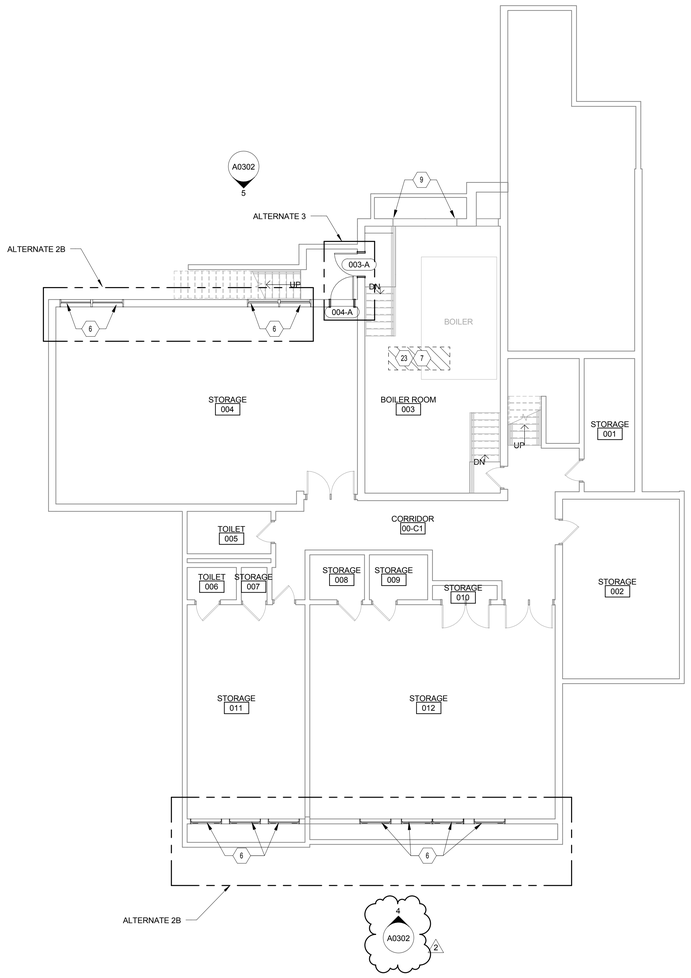

1 LEVEL 00 FLOOR PLAN - AREA D & E
1/8" = 1'-0"

GENERAL FLOOR PLAN NOTES

1. REFER TO SHEET A0001 FOR LIST OF TYPICAL ABBREVIATIONS AND TYPICAL ARCHITECTURAL GRAPHIC LEGENDS AND SYMBOLS.
2. REFER TO SHEET A0002 FOR TYPICAL MOUNTING HEIGHTS.
3. DIMENSIONS ARE FROM FACE OF WALL UNLESS NOTED OTHERWISE.
4. OPENING DIMENSIONS ARE FROM FACE OF WALL TO OUTSIDE OF FRAME.
5. PATCH TO MATCH EXISTING PER SPEC 01 3520 ALTERATION PROJECT PROCEDURES.
6. IF OPENING IS NOT DIMENSIONED, OUTSIDE FACE OF FRAME TO BE 4" FROM ADJACENT PARTITION.
7. PROVIDE BLOCKING AT WALL HUNG ACCESSORIES, EQUIPMENT AND CASEWORK.
8. PATCH EXISTING CEILING, FLOOR AND WALL SURFACES, TO REMAIN, AS REQUIRED - PROVIDE SMOOTH AND LEVEL SURFACES TO RECEIVE NEW FINISHES.
9. PREPARE SUBSURFACE AS REQUIRED FOR NEW FLOORING FINISH.
10. ALL NEW CMU PARTITIONS TO BE TOOTH-IN TO EXISTING

FLOOR PLAN NOTES

1. INFILL WALL TO MATCH ADJACENT WALL CONSTRUCTION (TOOTH-IN)
2. PATCH WALL TO MATCH ADJACENT WALL CONSTRUCTION WHERE WALL REMOVED (TOOTH-IN)
3. PATCH WALL TO MATCH ADJACENT WALL CONSTRUCTION WHERE DOOR / WINDOW REMOVED (TOOTH-IN)
4. SMARTBOARD, REINSTALL SALVAGED
5. BUILDING EXPANSION JOINT WITH CONTINUOUS EXPANSION JOINT COVER AT WALL/CEILING
6. ALUMINUM REPLACEMENT WINDOW - WINDOW INSTALLER RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR. 2
6A. ALUMINUM CURTAIN WALL REPLACEMENT - WINDOW INSTALLER RESPONSIBLE FOR REMOVING TEMPORARY ENCLOSURE AND RETURNING IT TO ABATEMENT CONTRACTOR.
7. PATCH FLOOR FINISH TO MATCH EXISTING ADJACENT
8. PATCH AND PAINT WALL TO MATCH EXISTING ADJACENT AS REQUIRED
9. NEW ARCHITECTURAL LOUVER IN EXISTING OPENING WITH BLANK-OFF PANELS. COORDINATE WITH MECHANICAL.
10. NEW ALUMINUM STOREFRONT WITH ENTRY DOOR IN EXISTING OPENING
11. PATCH WALL TO MATCH ADJACENT WALL CONSTRUCTION WHERE BASE CABINETS WERE REMOVED
12. VOLLEYBALL INSERT (TYP. 2)
13. MOTORIZED, FORWARD FOLD, HEIGHT ADJUSTABLE BACKSTOP (TYP. 4)
14. FIRE EXTINGUISHER CABINET - RECESSED
15. FIRE EXTINGUISHER - TYPE K
16. PROVIDE NEW CONCRETE STOOP WITH ARA AT EXIT DOORS
17. WALL MOUNTED STEEL ROOF ACCESS LADDER - PAINTED
18. ALL NEW EXTERIOR FACE BRICK AT ADDITION TO RECEIVE ANTI-GRAFFITI COATING, FULL HEIGHT
19. KNOX BOX - RECESSED
20. REFER TO DEMOLITION SHEETS FOR DEMOLITION AND PATCHING ASSOCIATED WITH BOILER INSTALLATION - COORDINATE WITH MECHANICAL
21. PATCH WALL TO MATCH EXISTING ADJACENT AS REQUIRED WHERE HVAC EQUIPMENT DEMOLISHED - COORDINATE WITH MECHANICAL
22. PATCH WALL AFTER CASEWORK/COUNTER REMOVAL
23. SHADED REGION INDICATES AREA OF CONCRETE PATCH AFTER UNDERFLOOR PIPING INSTALLATION, COORDINATE WITH PLUMBING DRAWINGS
24. PATCH WOOD TRIM AS REQUIRED FOR NEW CONSTRUCTION, MATCH EXISTING ADJACENT.

EQUIPMENT LEGEND

6' MB	CONTRACTOR SERIES MARKERBOARD 4'-0" HIGH
8' TB	CONTRACTOR SERIES TACKBOARD 4'-0" HIGH
TS	TACK STRIP 1" HIGH, LENGTH PER ELEVATION
IWB	INTERACTIVE WHITE BOARD, OWNER PROVIDED AND CONTRACTOR INSTALLED. SEE TECHNOLOGY DRAWINGS.

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RIVERDAHL ELEMENTARY SCHOOL - ADDITION & RENOVATION

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224-717-1999

ARC DESIGN RESOURCES INC.
Civil Consultants
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Loves Park IL 61111
(815) 484-4300

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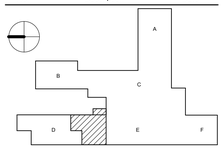

Drawing Title:

LEVEL 00 FLOOR PLAN - AREA D & E

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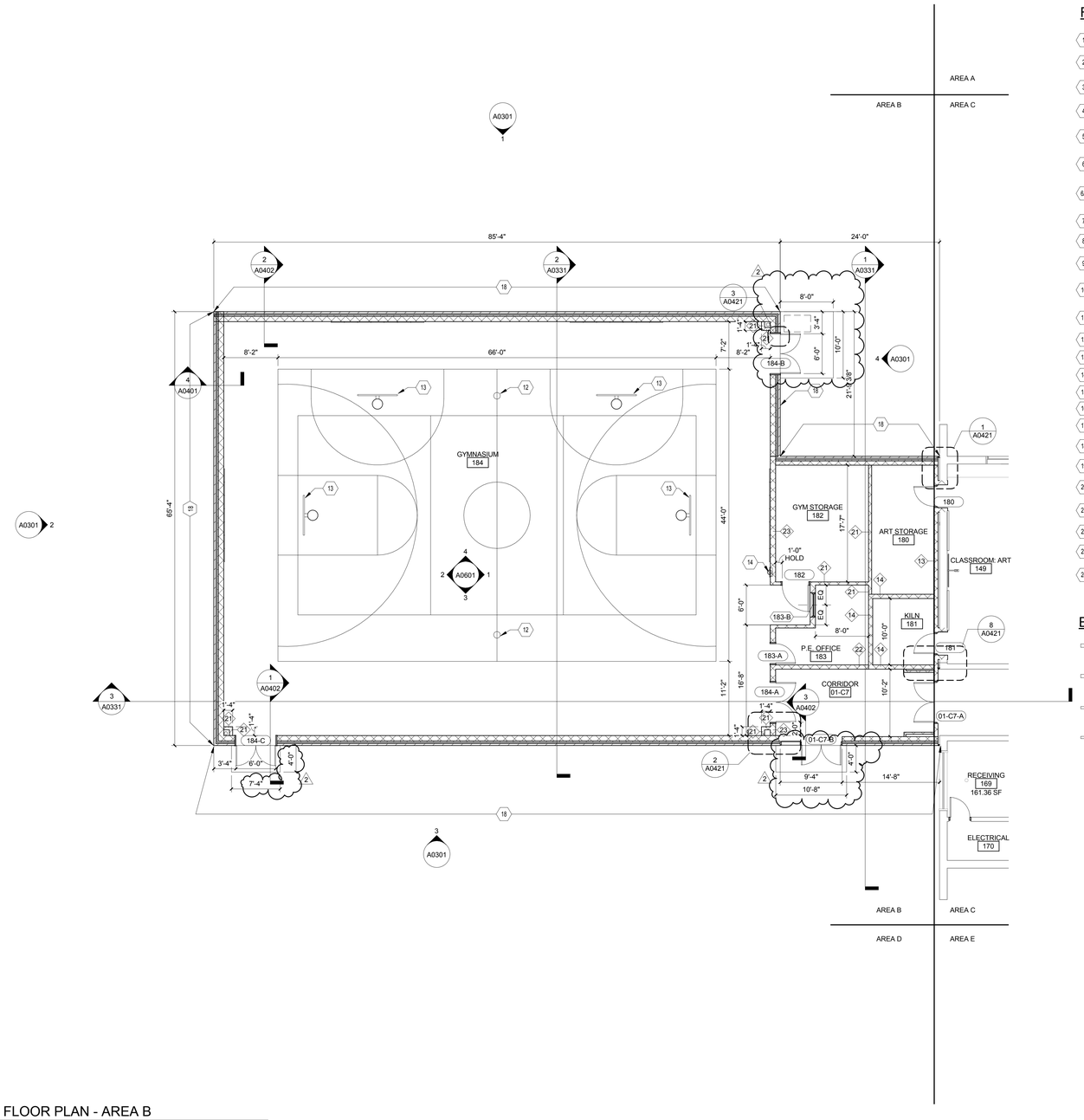

1 LEVEL 01 FLOOR PLAN - AREA B
1/8" = 1'-0"

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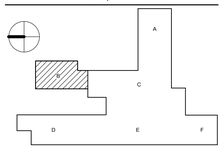

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LEVEL 01 FLOOR PLAN - AREA B

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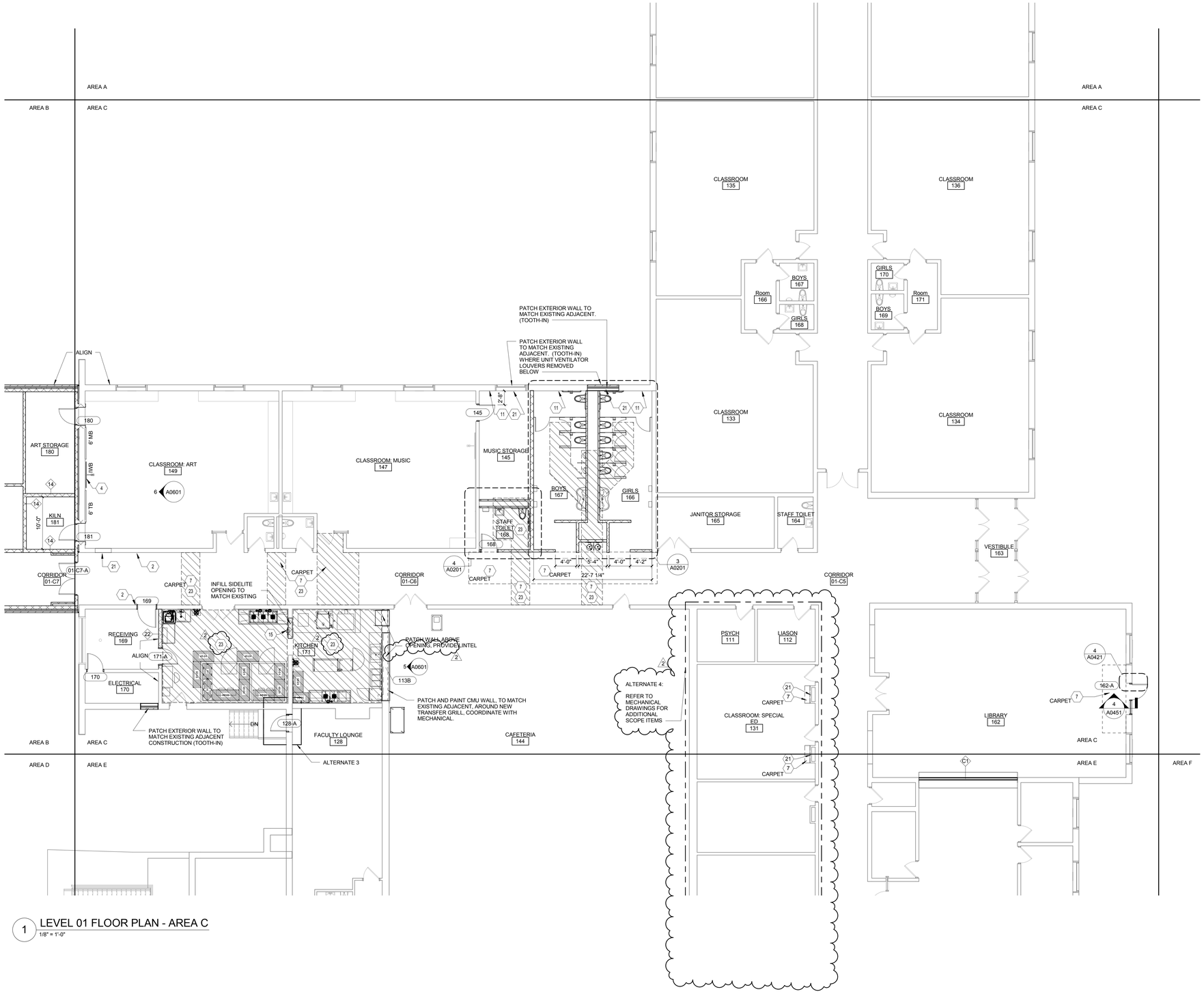

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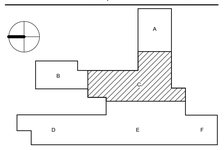

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LEVEL 01 FLOOR PLAN - AREA C

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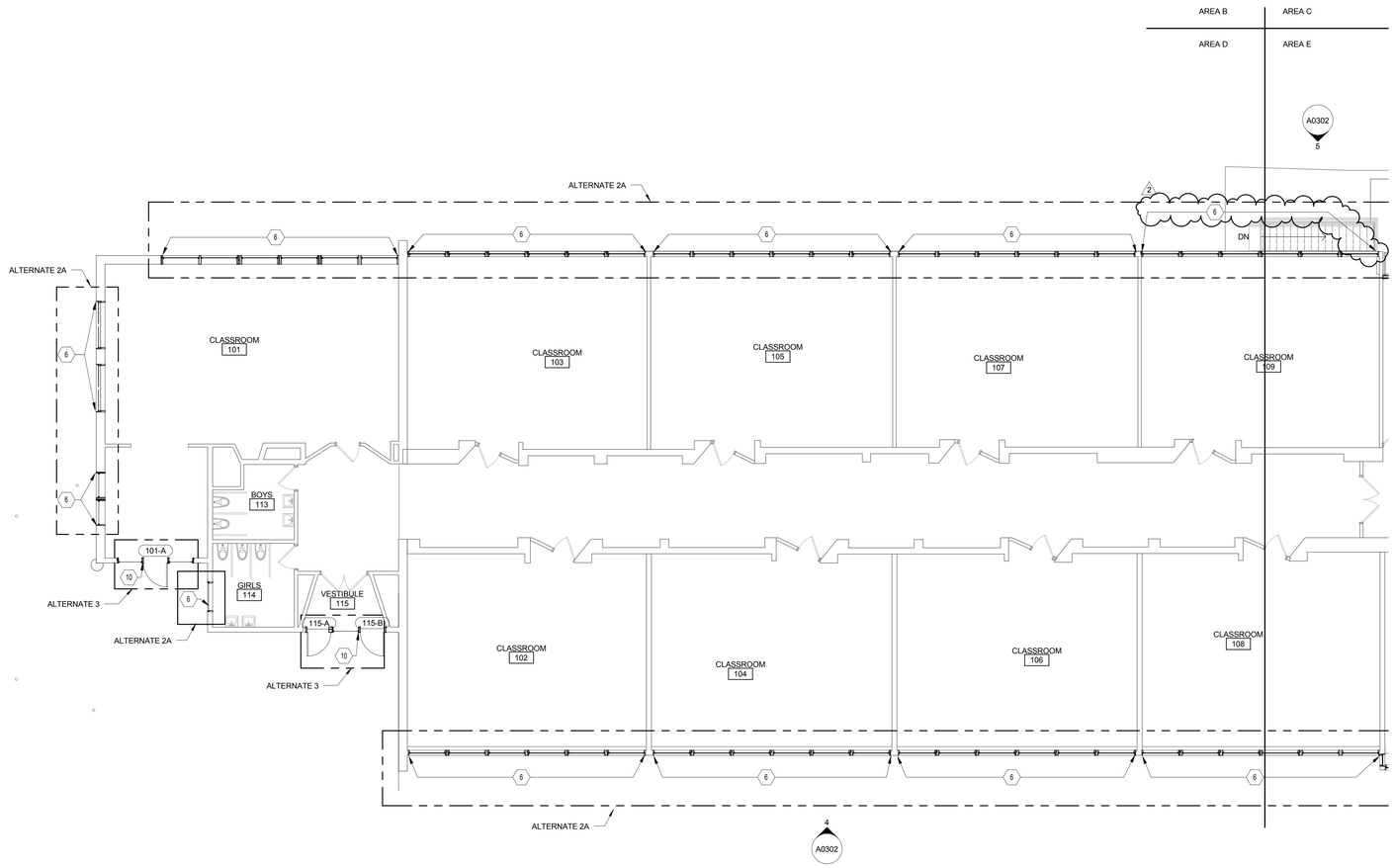

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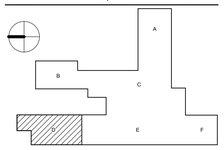

Drawing Title:

LEVEL 01 FLOOR PLAN - AREA D

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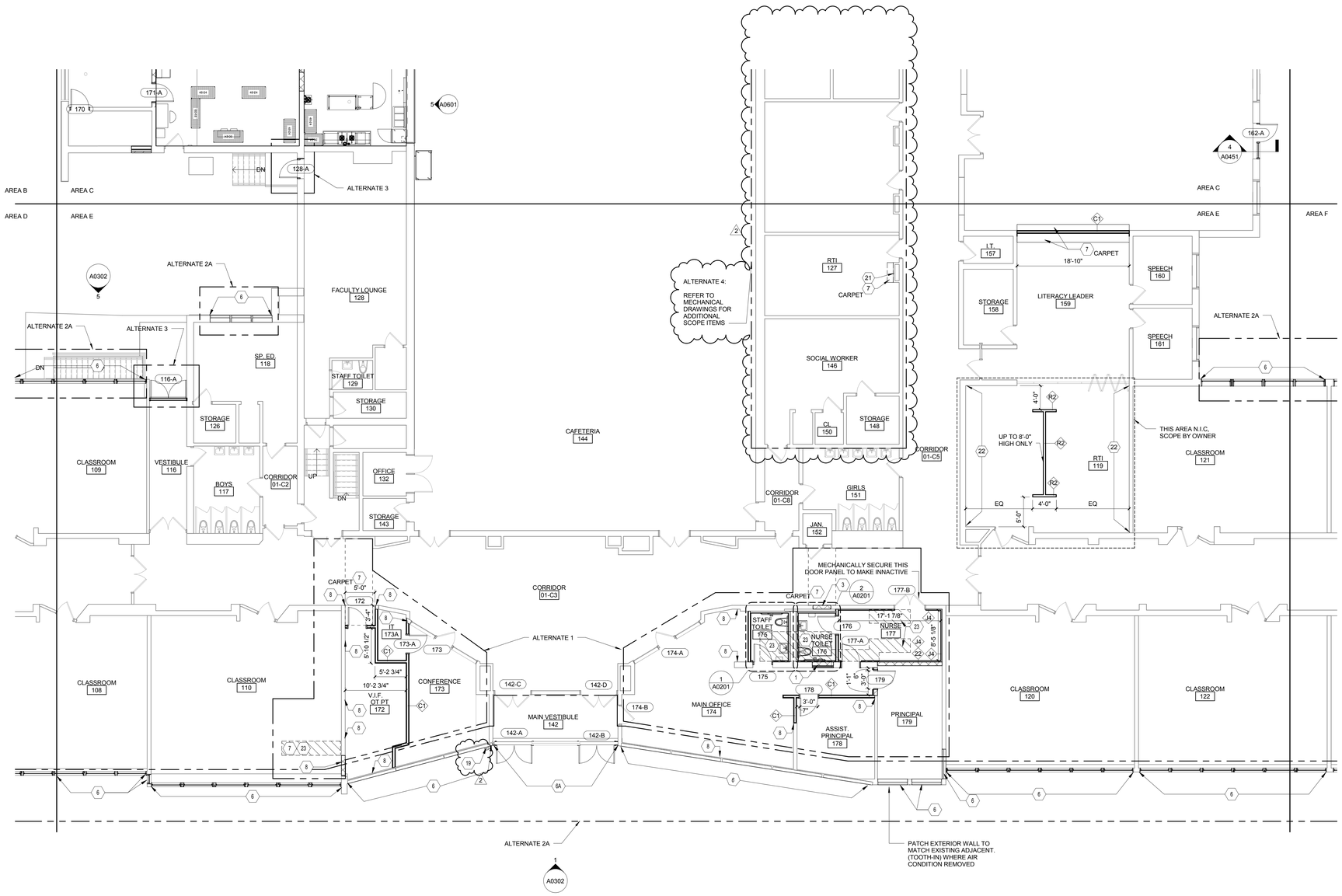

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14. FIRE EXTINGUISHER CABINET - RECESSED
15. FIRE EXTINGUISHER - TYPE K
16. PROVIDE NEW CONCRETE STOOP WITH ARA AT EXIT DOORS
17. WALL MOUNTED STEEL ROOF ACCESS LADDER - PAINTED
18. ALL NEW EXTERIOR FACE BRICK AT ADDITION TO RECEIVE ANTI-GRAFFITI COATING, FULL HEIGHT
19. KNOX BOX - RECESSED
20. REFER TO DEMOLITION SHEETS FOR DEMOLITION AND PATCHING ASSOCIATED WITH BOILER INSTALLATION - COORDINATE WITH MECHANICAL
21. PATCH WALL TO MATCH EXISTING ADJACENT AS REQUIRED WHERE HVAC EQUIPMENT DEMOLISHED - COORDINATE WITH MECHANICAL
22. PATCH WALL AFTER CASEWORK/COUNTER REMOVAL
23. SHADED REGION INDICATES AREA OF CONCRETE PATCH AFTER UNDERFLOOR PIPING INSTALLATION, COORDINATE WITH PLUMBING DRAWINGS
24. PATCH WOOD TRIM AS REQUIRED FOR NEW CONSTRUCTION, MATCH EXISTING ADJACENT.

EQUIPMENT LEGEND

6' MB	CONTRACTOR SERIES MARKERBOARD 4'-0" HIGH
8' TB	CONTRACTOR SERIES TACKBOARD 4'-0" HIGH
TS	TACK STRIP 1" HIGH, LENGTH PER ELEVATION
IWB	INTERACTIVE WHITE BOARD. OWNER PROVIDED AND CONTRACTOR INSTALLED. SEE TECHNOLOGY DRAWINGS.

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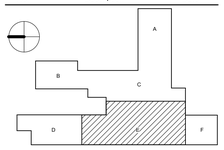
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 01 FLOOR PLAN - AREA E

Project No.: 004645.05 Checked by: Checker

A0101.E

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GENERAL ROOF PLAN NOTES

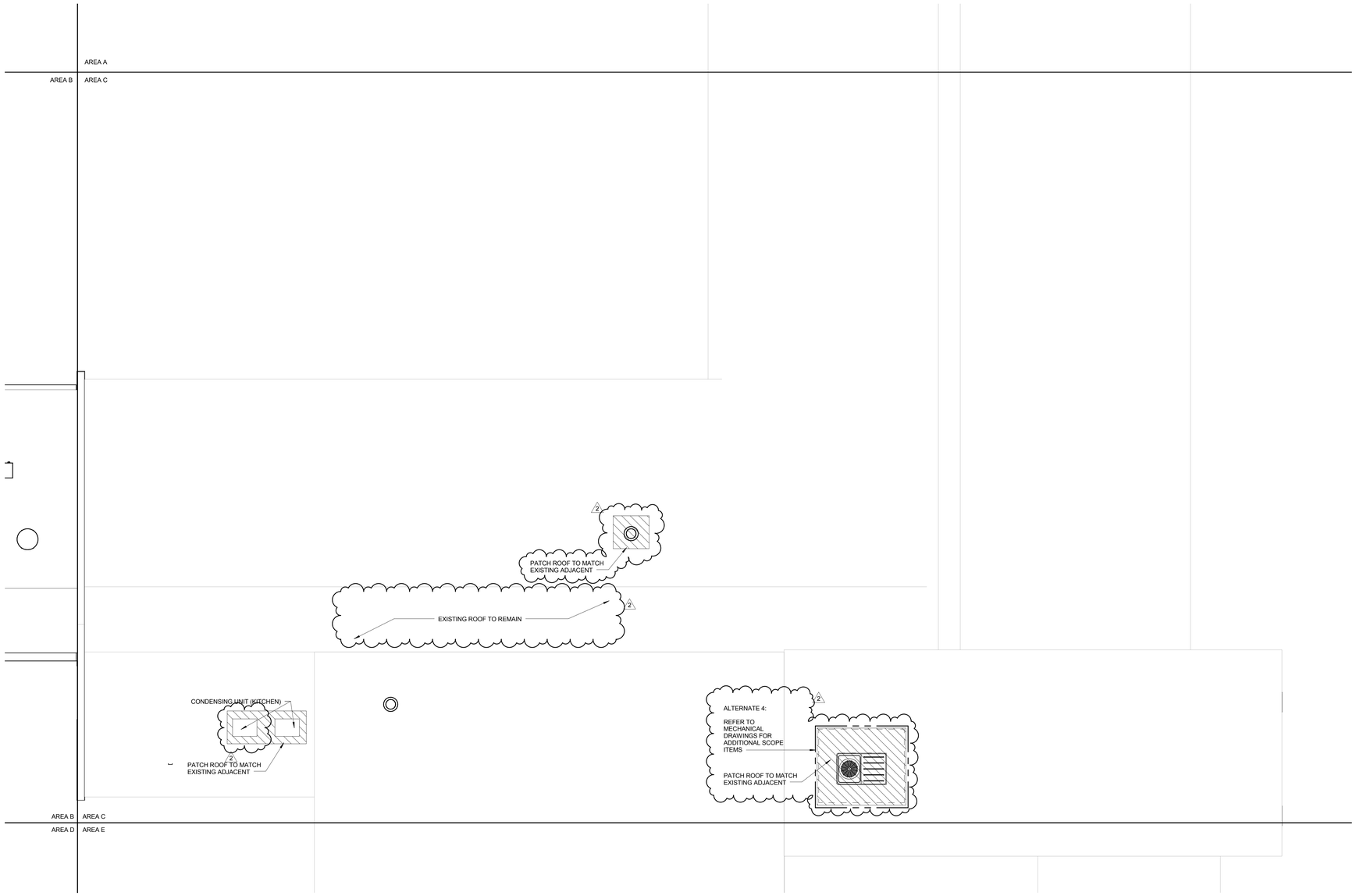
1. TAPERED INSULATION TO BE 1/4" PER FOOT MINIMUM UNLESS NOTED OTHERWISE. PROVIDE TAPERED INSULATION SADDLES AS REQUIRED FOR POSITIVE DRAINAGE.

2. REMOVAL OF EXISTING ROOFING SYSTEMS FOR ROOF PENETRATIONS IS INTENDED TO INCLUDE EXISTING FLASHINGS, SEALANTS, AND OTHER ASSOCIATED SYSTEM ACCESSORIES.

3. PATCH AND FLASH EXISTING AND NEW ROOF SYSTEM AS REQUIRED FOR ROOF PENETRATION AND ROOF MOUNTED EQUIPMENT. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING FOR ROOF PENETRATIONS.

4. ALL ROOFING INSTALLATIONS TO COMPLY WITH NRCA AND SMACNA STANDARDS.

5. REFER TO MECHANICAL DRAWINGS FOR NEW ROOF EQUIPMENT ON EXISTING AREA A ROOF.



1 ROOF PLAN - AREA C
1/8" = 1'-0"

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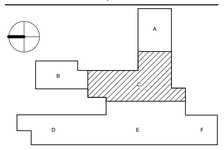

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ROOF PLAN - AREA C

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GENERAL ROOF PLAN NOTES

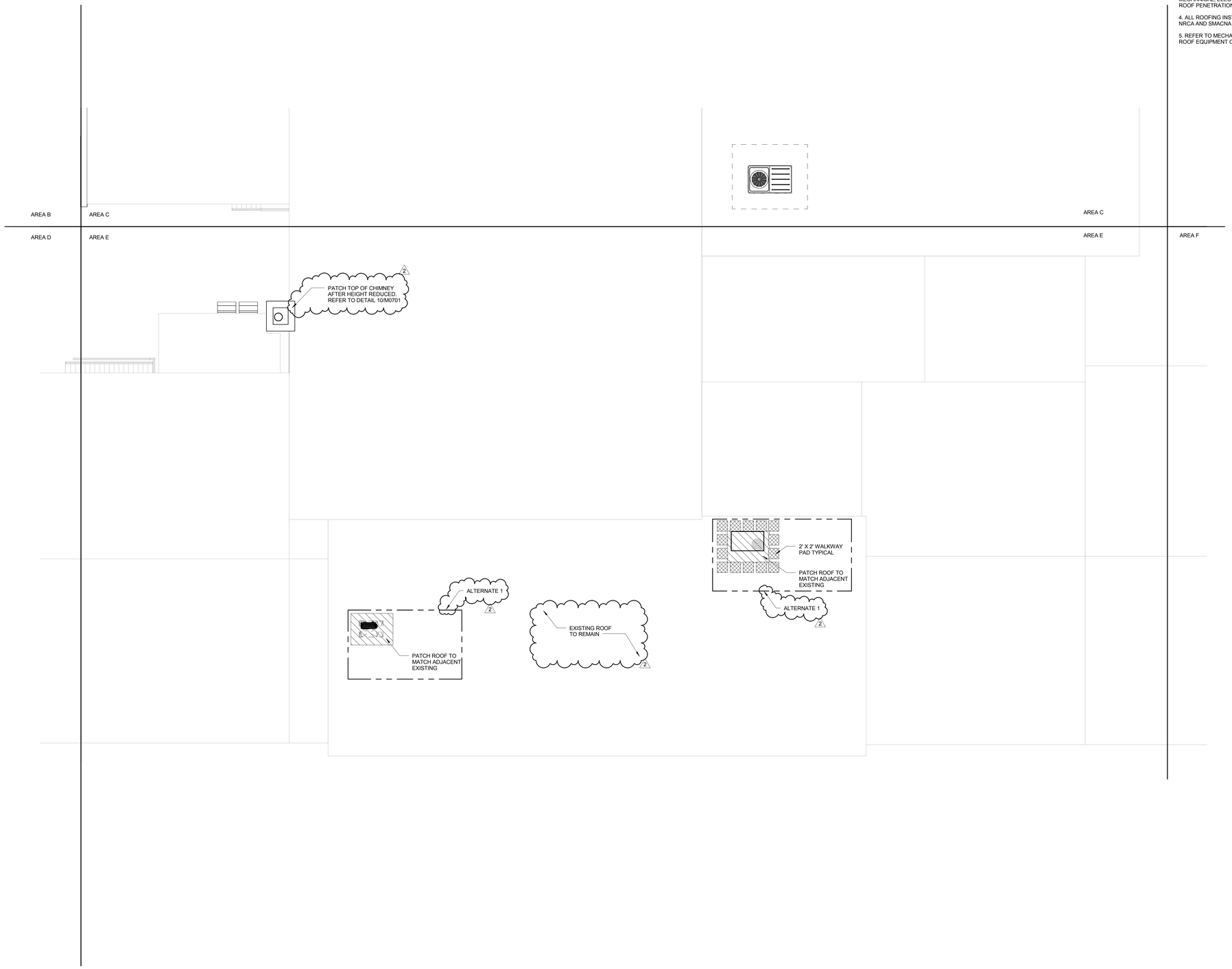
1. TAPERED INSULATION TO BE 1/4" PER FOOT MINIMUM UNLESS NOTED OTHERWISE. PROVIDE TAPERED INSULATION SADDLES AS REQUIRED FOR POSITIVE DRAINAGE.

2. REMOVAL OF EXISTING ROOFING SYSTEMS FOR ROOF PENETRATIONS IS INTENDED TO INCLUDE EXISTING FLASHINGS, SEALANTS, AND OTHER ASSOCIATED SYSTEM ACCESSORIES.

3. PATCH AND FLASH EXISTING AND NEW ROOF SYSTEM AS REQUIRED FOR ROOF PENETRATION AND ROOF MOUNTED EQUIPMENT. REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING FOR ROOF PENETRATIONS.

4. ALL ROOFING INSTALLATIONS TO COMPLY WITH NRCA AND SMACNA STANDARDS.

5. REFER TO MECHANICAL DRAWINGS FOR NEW ROOF EQUIPMENT ON EXISTING AREA A ROOF.



1 LEVEL 01 FLOOR PLAN
1/8" = 1'-0"

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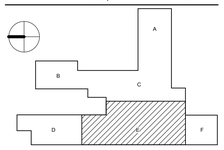

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ROOF PLAN - AREA E

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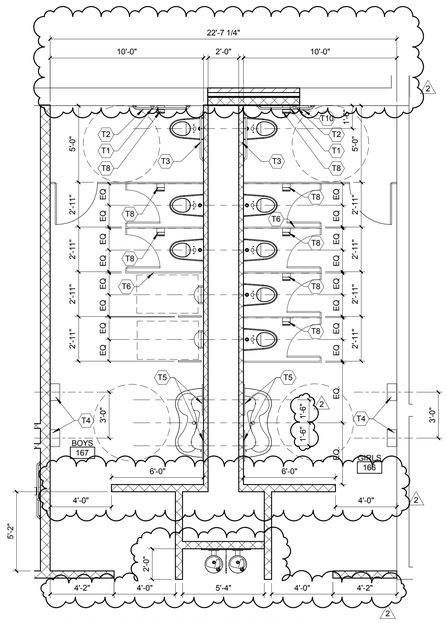
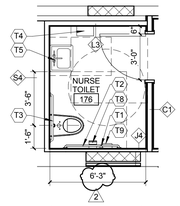
TOILET ACCESSORIES

SYMBOL	ITEM	MANUFACTURER	MODEL #	MOUNTING
T1	18" GRAB BAR	BOBRICK OR OWNER APPROVED EQUAL	TBD	SURFACE MOUNT
T2	42" GRAB BAR	BOBRICK OR OWNER APPROVED EQUAL	B-6881 SATIN FINISH	SURFACE MOUNT
T3	36" GRAB BAR	BOBRICK OR OWNER APPROVED EQUAL	B-6806 SATIN FINISH	SURFACE MOUNT
T4	HAND DRYER	AMERICAN SPECIALTIES INC	0165	SURFACE MOUNT
T5	MIRROR	BOBRICK OR OWNER APPROVED EQUAL	B-290 2436	SURFACE MOUNT 3'-4" AFF
T6	TOILET PARTITION	SEE SPEC	SEE SPEC	FLOOR MOUNT
T7	PAPER TOWEL DISPENSER	BOBRICK OR OWNER APPROVED EQUAL	-	SURFACE MOUNT
T8	TOILET PAPER DISPENSER	BOBRICK OR OWNER APPROVED EQUAL	-	SURFACE MOUNT
T9	SANITARY NAPKIN VENDOR	BOBRICK OR OWNER APPROVED EQUAL	B-3706 25	SEMI-RECESSED
T10	SANITARY NAPKIN DISPOSAL	BOBRICK OR OWNER APPROVED EQUAL	TBD	PARTITION MOUNTED

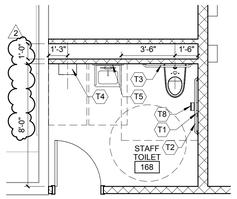
NOTE: REINFORCE GWB PARTITIONS AT WALL MOUNTED TOILET ACCESSORIES WITH IN-WALL BLOCKING.



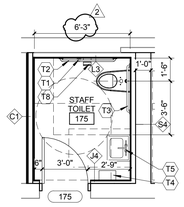
3 BOYS AND GIRLS TOILET ROOMS
1/4" = 1'-0"



2 DEDICATED NURSE TOILET ROOM
1/4" = 1'-0"



4 STAFF TOILET ROOM
1/4" = 1'-0"



1 MAIN OFFICE STAFF TOILET ROOM
1/4" = 1'-0"

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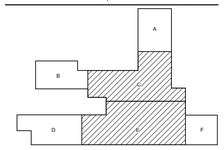

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ENLARGED TOILET ROOMS

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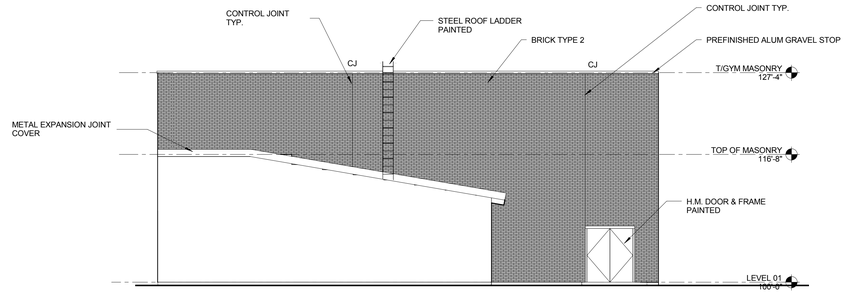
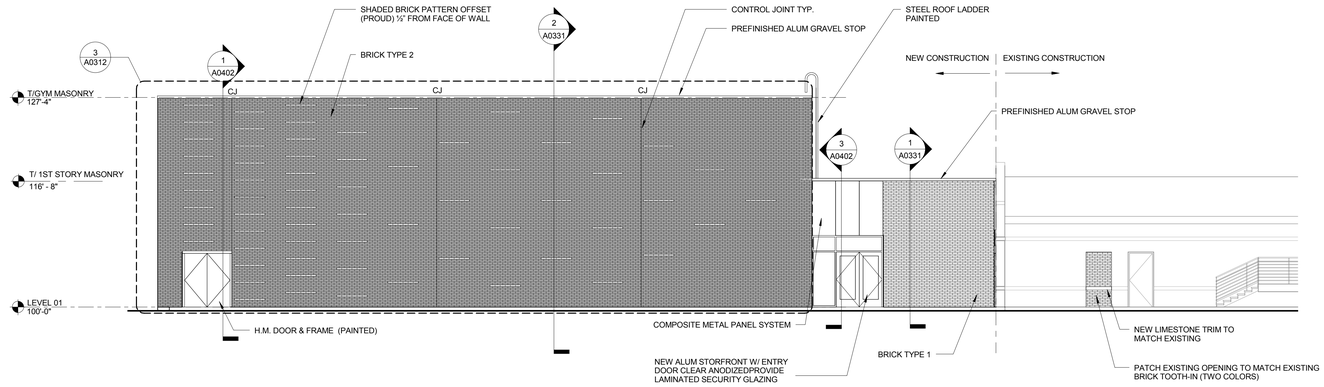


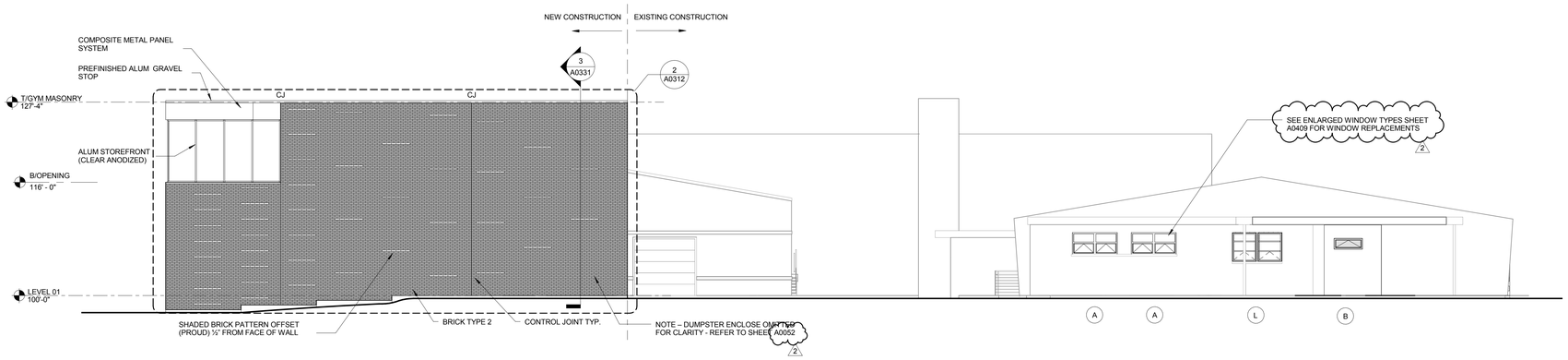
4 GYM SOUTH ELEVATION
1/8" = 1'-0"

GENERAL NOTES

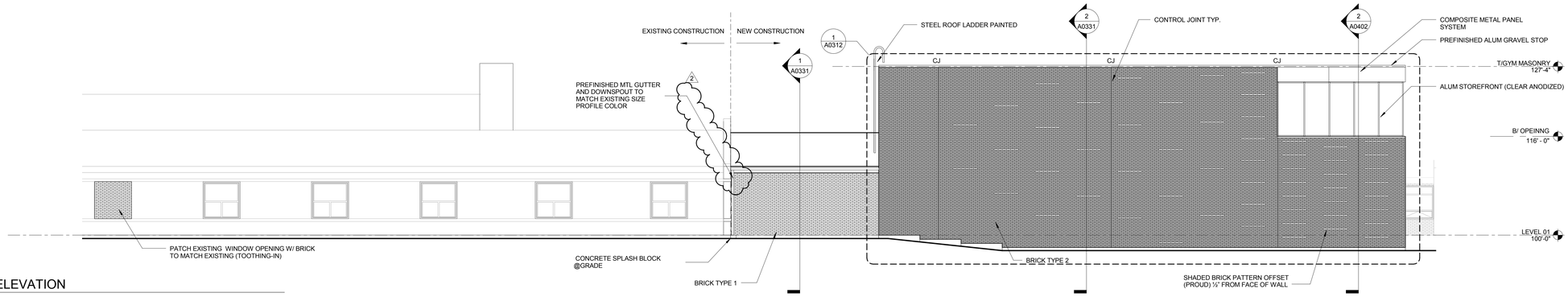
1. SEE A0312 FOR BRICK PATTER DESIGN AND DIMENSIONS
2. ALL NEW BRICK TO RECEIVE ANTI GRAFFITI COATING
3. REFER TO SHEET A0409 FOR WINDOW REPLACEMENT SCHEDULE



3 WEST ELEVATION
1/8" = 1'-0"



2 NORTH ELEVATION
1/8" = 1'-0"



1 EAST ELEVATION
1/8" = 1'-0"

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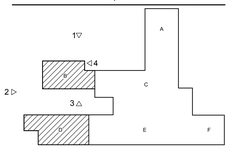

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BUILDING ELEVATIONS

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A0301

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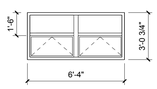
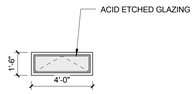
EXTERIOR REPLACEMENT WINDOW LEGEND (EFCO 510i 2-7/16" DEEP B.O.D)



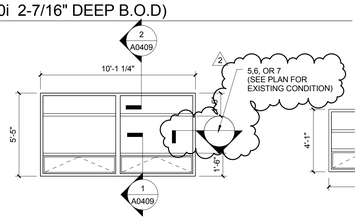
WINDOW REPLACEMENT TYPE A

ALTERNATE 2A



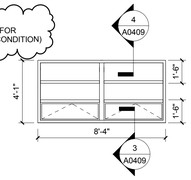
WINDOW REPLACEMENT TYPE B

ALTERNATE 2A



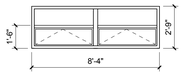
WINDOW REPLACEMENT TYPE C

ALTERNATE 2A



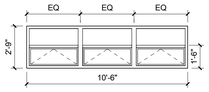
WINDOW REPLACEMENT TYPE D

ALTERNATE 2B



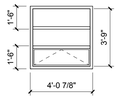
WINDOW REPLACEMENT TYPE E

ALTERNATE 2B



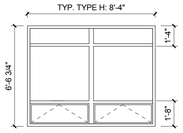
WINDOW REPLACEMENT TYPE F

ALTERNATE 2A



WINDOW REPLACEMENT TYPE G

ALTERNATE 2B

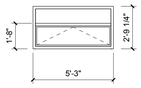


WINDOW REPLACEMENT TYPE H (FRONT ENTRY)

ALTERNATE 2A

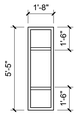
NOTE:
ALL REPLACEMENT WINDOWS TO BE
DARK BRONZE ANODIZED

GLAZING WIDTH BY TYPE, V.I.F.:
H: 8' 4"
H1: 8' 1 1/2"
H2: 8' 3"
H3: 8' 5 1/2"
H4: 8' 5"
H5: 8' 0"



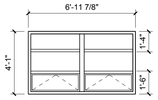
WINDOW REPLACEMENT TYPE J

ALTERNATE 2A



WINDOW REPLACEMENT TYPE K

ALTERNATE 2A



WINDOW REPLACEMENT TYPE L

ALTERNATE 2A

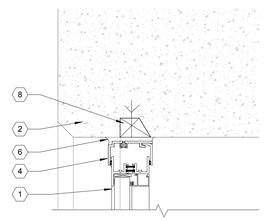
GENERAL WINDOW REPLACEMENT NOTES

2

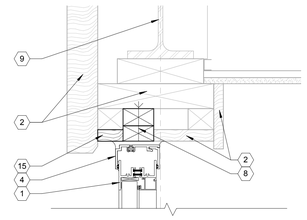
1. PROTECT EXISTING CONTRUCTION TO REMAIN
2. EXISTING WINDOW REMOVED BY OTHERS. CONTRACTOR TO REMOVE TEMPORARY PLYWOOD ENCLOSURE AND RETURN TO ABATEMENT CONTRACTOR.
3. PATCH/REPAIR EXISTING CONSTRUCTION DAMAGED BY WINDOW INSTALLATION TO MATCH EXISTING.
4. PROVIDE NEW EXTRUDED ALUMINUM TRIM PIECES BY WINDOW MANUFACTURER AS REQUIRED TO ENCLOSE & FINISH VOIDS BETWEEN NEW WINDOW & EXISTING WORK TO REMAIN.
5. WINDOW FRAMES, CURTAIN WALL, & TRIM TO HAVE DARK BRONZE ANODIZED FINISH.
6. GLAZING TO BE LOW-E, INSULATED UNITS (U.N.O.)
7. PROMPTLY REPORT ANY DAMAGED OR ROTTED EXISTING CONDITIONS PRIOR TO REMOVAL/REPAIR/REPLACEMENT.
8. SEE SHEET A0409 FOR ENLARGED WINDOW REPLACEMENT TYPES
9. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
10. HORIZONTAL MULLIONS OF WINDOWS AND ADJACENT CURTAIN WALL TO ALIGN
11. CURTAIN WALL AND WINDOWS TO BE BY THE SAME MANUFACTURER
12. ALL WORK ON THIS SHEET IS UNDER ALTERNATE BID. SEE PLANS FOR ALTERNATE NUMBERS..

WINDOW REPLACEMENT KEY NOTES

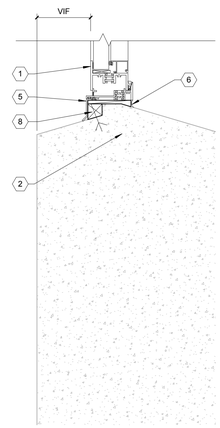
1. ALUMINUM WINDOW SYSTEM WITH 1" INSULATED LOW-E GLAZING. SEE ELEVATIONS FOR OPERABLE UNITS
2. EXISTING CONSTRUCTION TO REMAIN
3. ALUMINUM CURTAIN WALL WITH 1" INSULATED LOW-E GLAZING (2 1/2 X 7 1/2")
4. ALUMINUM SUBFRAME AT HEAD & JAMB SET IN BED OF SEALANT
5. ALUMINUM SUBSILL SET IN A BED OF SEALANT WITH SILL EXTENSION AS SHOWN
6. BACKER ROD AND SEALANT
7. ALUMINUM ENTRY DOOR (PROVIDE DOOR FRAME ADAPTOR AT CURTAIN WALL)
8. TREATED WOOD BLOCKING/SHIM AS REQUIRED
9. EXISTING STEEL STRUCTURE TO REMAIN
10. .125 ALUMINUM CLOSURE BY CURTAIN WALL MANUFACTURER
11. .063 ALUMINUM CLOSURE BY WINDOW MANUFACTURER
12. SPRAY FOAM INSULATION
13. PATCH EXISTING PLASTER CEILING / EXTERIOR SOFFIT TO MATCH EXISTING AFTER WINDOW / CURTAIN WALL INSTALLATION
14. PATCH EXISTING WOOD FILLER BOARD / SOFFIT TO MATCH EXISTING AFTER WINDOW INSTALLATION
15. TOUCH UP PAINT ON WOOD SOFFIT TRIM OR REPLACE AS REQUIRED AFTER INSTALLATION OF NEW BLOCKING FOR SUBFRAME ATTACHMENT



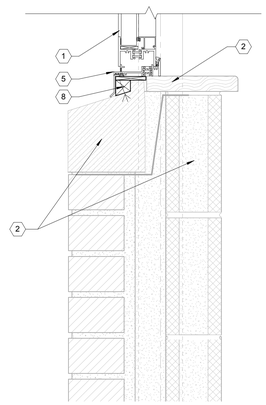
4 WINDOW REPLACEMENT BASEMENT_HEAD
3" = 1'-0"



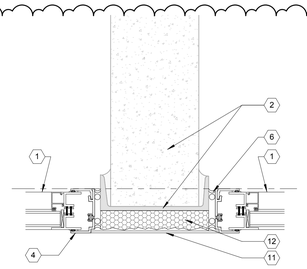
2 WINDOW REPLACEMENT TYPE C_HEAD
3" = 1'-0"



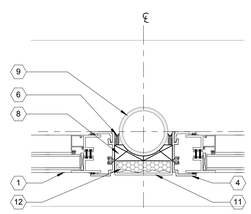
3 WINDOW REPLACEMENT BASEMENT_SILL
3" = 1'-0"



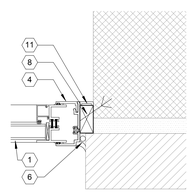
1 WINDOW REPLACEMENT TYPE C_SILL
3" = 1'-0"



7 PLAN DETAIL - PARTITION JAMB TYP.
3" = 1'-0"



6 PLAN DETAIL - COLUMN MULLION TYP.
3" = 1'-0"



5 PLAN DETAIL - MASONRY JAMB TYP.
3" = 1'-0"

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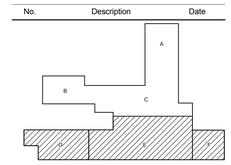
No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

ENLARGED WINDOW TYPES

Project No.: 004645.05 Checked by: Checker

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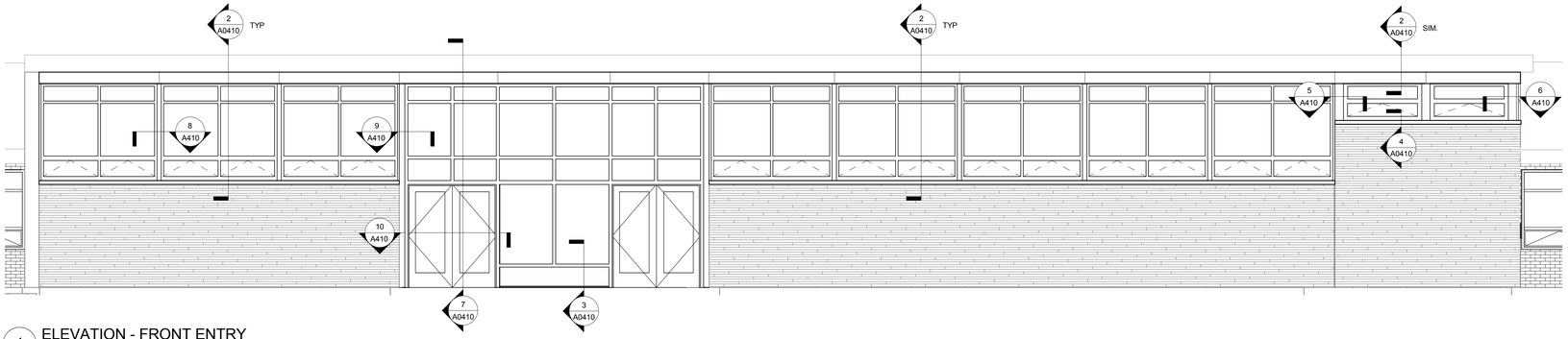


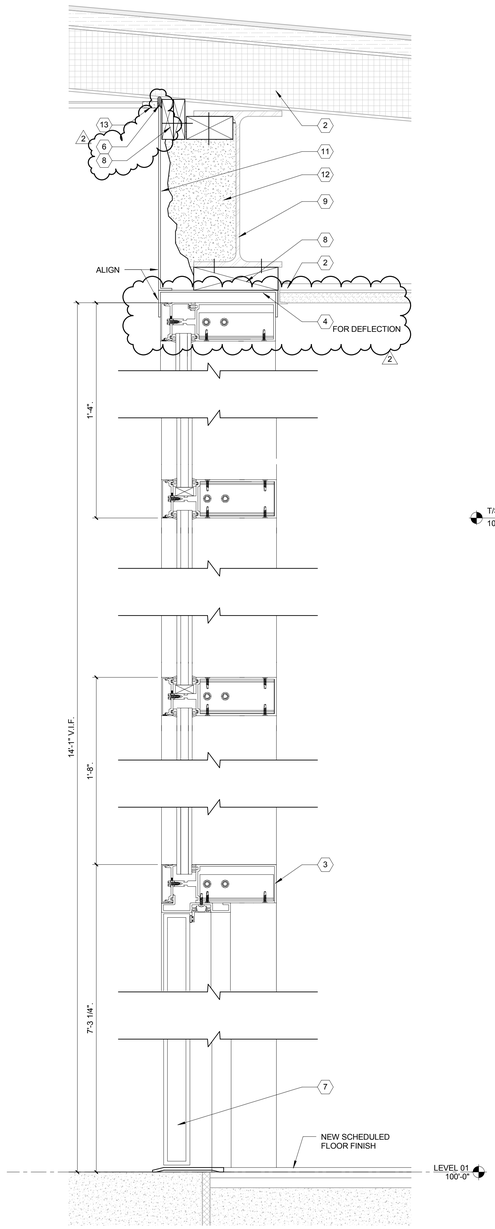
1 ELEVATION - FRONT ENTRY
1/4" = 1'-0"

GENERAL WINDOW REPLACEMENT NOTES

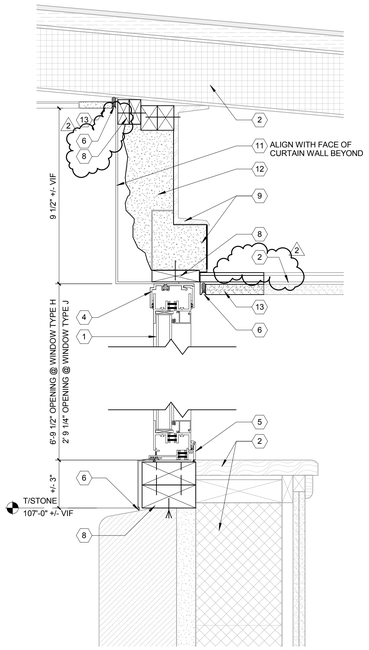
1. PROTECT EXISTING CONTRUCTION TO REMAIN
2. EXISTING WINDOW REMOVED BY OTHERS. CONTRACTOR TO REMOVE TEMPORARY PLYWOOD ENCLOSURE AND RETURN TO ABATEMENT CONTRACTOR.
3. PATCH/REPAIR EXISTING CONSTRUCTION DAMAGED BY WINDOW INSTALLATION TO MATCH EXISTING.
4. PROVIDE NEW EXTRUDED ALUMINUM TRIM PIECES BY WINDOW MANUFACTURER AS REQUIRED TO ENCLOSE & FINISH VOIDS BETWEEN NEW WINDOW & EXISTING WORK TO REMAIN.
5. WINDOW FRAMES, CURTAIN WALL, & TRIM TO HAVE DARK BRONZE ANODIZED FINISH.
6. GLAZING TO BE LOW-E, INSULATED UNITS (U.N.O.)
7. PROMPTLY REPORT ANY DAMAGED OR ROTTED EXISTING CONDITIONS PRIOR TO REMOVAL/REPAIR/REPLACEMENT.
8. SEE SHEET A0409 FOR ENLARGED WINDOW REPLACEMENT TYPES
9. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
10. HORIZONTAL MULLIONS OF WINDOWS AND ADJACENT CURTAIN WALL TO ALIGN
11. CURTAIN WALL AND WINDOWS TO BE BY THE SAME MANUFACTURER
12. ALL WORK ON THIS SHEET IS UNDER ALTERNATE BID. SEE PLANS FOR ALTERNATE NUMBERS.

WINDOW REPLACEMENT KEY NOTES

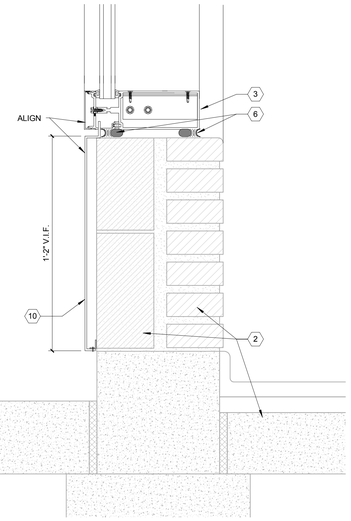
1. ALUMINUM WINDOW SYSTEM WITH 1" INSULATED LOW-E GLAZING. SEE ELEVATIONS FOR OPERABLE UNITS
2. EXISTING CONSTRUCTION TO REMAIN
3. ALUMINUM CURTAIN WALL WITH 1" INSULATED LOW-E GLAZING (2 1/2 X 7 1/2")
4. ALUMINUM SUBFRAME AT HEAD & JAMB SET IN BED OF SEALANT
5. ALUMINUM SUBSILL SET IN A BED OF SEALANT WITH SILL EXTENSION AS SHOWN
6. BACKER ROD AND SEALANT
7. ALUMINUM ENTRY DOOR (PROVIDE DOOR FRAME ADAPTOR AT CURTAIN WALL)
8. TREATED WOOD BLOCKING/SHIM AS REQUIRED
9. EXISTING STEEL STRUCTURE TO REMAIN
10. .125 ALUMINUM CLOSURE BY CURTAIN WALL MANUFACTURER
11. .063 ALUMINUM CLOSURE BY WINDOW MANUFACTURER
12. SPRAY FOAM INSULATION
13. PATCH EXISTING PLASTER CEILING / EXTERIOR SOFFIT TO MATCH EXISTING AFTER WINDOW / CURTAIN WALL INSTALLATION
14. PATCH EXISTING WOOD FILLER BOARD / SOFFIT TO MATCH EXISTING AFTER WINDOW INSTALLATION
15. TOUCH UP PAINT ON WOOD SOFFIT TRIM OR REPLACE AS REQUIRED AFTER INSTALLATION OF NEW BLOCKING FOR SUBFRAME ATTACHMENT



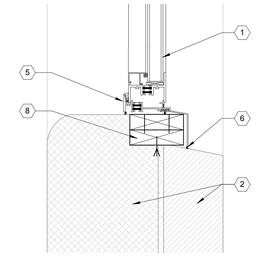
7 CURTAIN WALL REPLACEMENT DETAIL
3" = 1'-0"



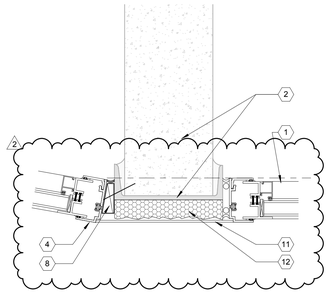
2 WINDOW REPLACEMENT DETAIL
3" = 1'-0"



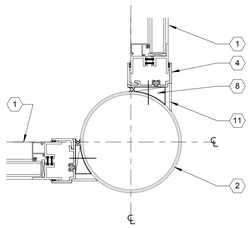
3 WINDOW REPLACEMENT - ENTRY GLASS
3" = 1'-0"



4 WINDOW REPLACEMENT TYPE J SILL
3" = 1'-0"



5 PLAN DETAIL
3" = 1'-0"



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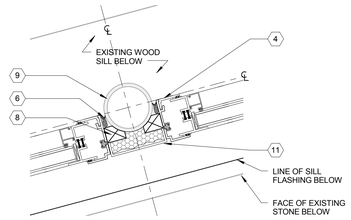
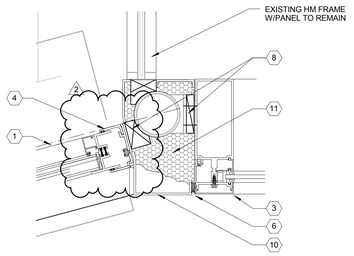
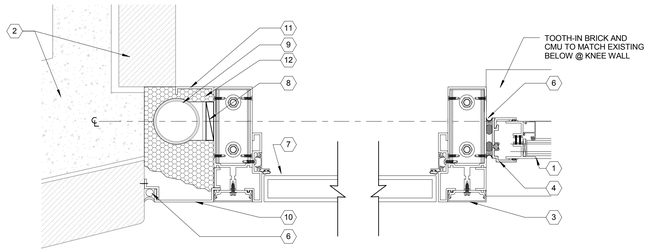
3" = 1'-0"



8 WINDOW REPLACEMENT PLAN DETAIL
3" = 1'-0"



9 WINDOW REPLACEMENT PLAN DETAIL
3" = 1'-0"



10 WINDOW REPLACEMENT PLAN DETAIL
3" = 1'-0"

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WINDOW REPLACEMENT DETAILS

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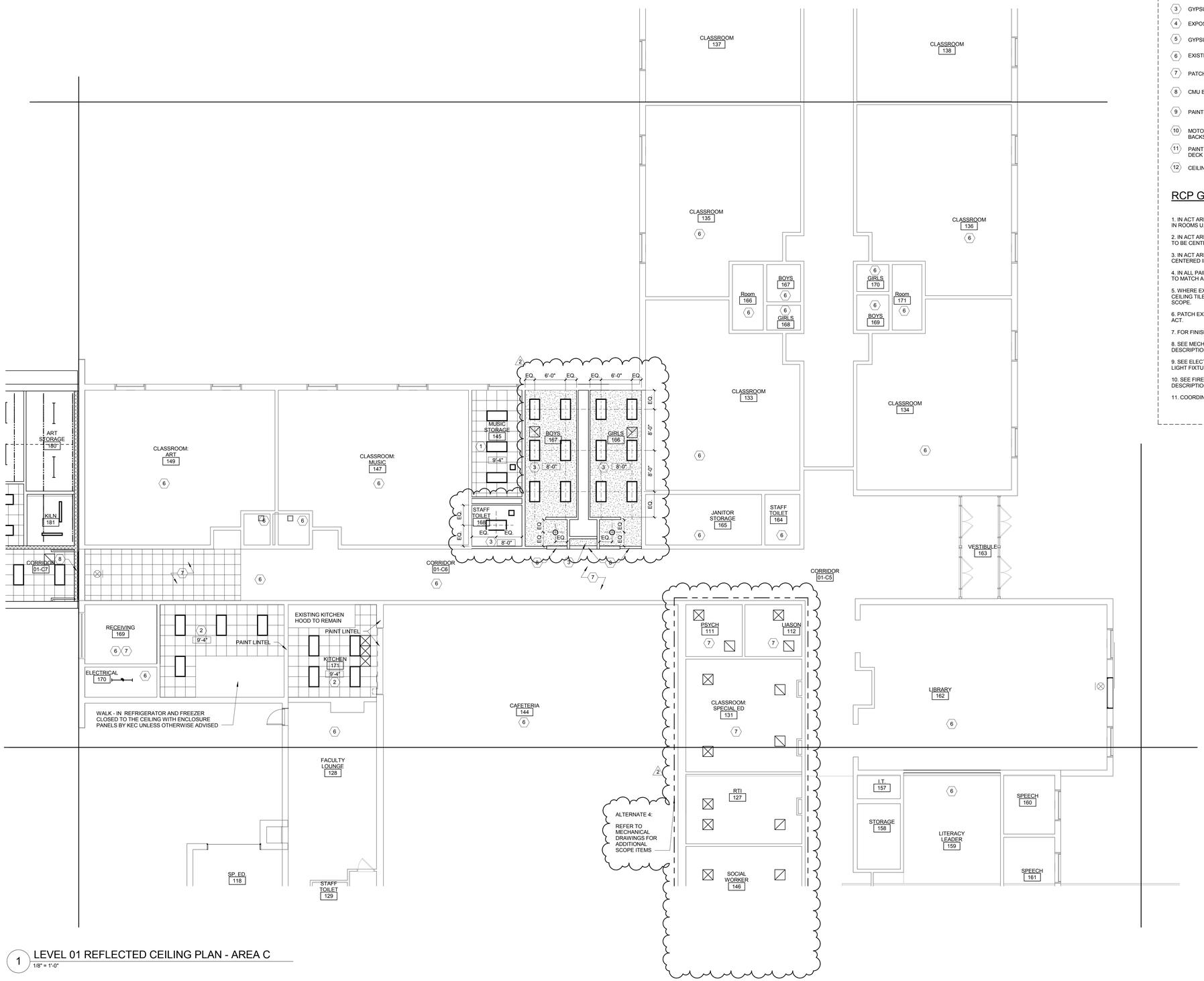

1 LEVEL 01 REFLECTED CEILING PLAN - AREA C
1/8" = 1'-0"

RCP KEYNOTES

1. 2' x 2' ACT
2. 2' x 2' ACT KITCHEN
3. GYPSUM BOARD CEILING, PAINTED
4. EXPOSED STRUCTURE, PAINTED
5. GYPSUM BOARD BULKHEAD
6. EXISTING CEILING TO REMAIN
7. PATCH CEILING TO MATCH EXISTING ADJACENT
8. CMU BOND BEAM, PAINTED
9. PAINTED LINTEL
10. MOTORIZED, FORWARD FOLD, HEIGHT ADJUSTABLE BACKSTOP (TYP. 4)
11. PAINT EXPOSED STRUCTURE, INCLUDING ACOUSTICAL DECK
12. CEILING EXPANSION JOINT COVER BY BALCO ACWC-2

RCP GENERAL NOTES

1. IN ACT AREAS, ALL CEILING GRIDS TO BE CENTERED IN ROOMS U.N.O.
2. IN ACT AREAS, ALL LIGHT FIXTURES AND DIFFUSERS TO BE CENTERED IN THE TILE U.N.O.
3. IN ACT AREAS ALL SPRINKLER HEADS TO BE CENTERED IN THE TILE U.N.O.
4. IN ALL PAINTED CMU WALLS, LINTEL TO BE PAINTED TO MATCH ADJACENT WALL
5. WHERE EXISTING CEILING TO REMAIN, REPLACE CEILING TILE TO MATCH EXISTING AS NEEDED AT MEP SCOPE.
6. PATCH EXISTING CEILING TO REMAIN WITH SALVAGED ACT.
7. FOR FINISH LEGEND, SEE SHEET A1200.
8. SEE MECHANICAL DRAWINGS FOR DIFFUSER DESCRIPTIONS.
9. SEE ELECTRICAL/ TECHNOLOGY DRAWINGS FOR LIGHT FIXTURE AND SPEAKER INFORMATION.
10. SEE FIRE PROTECTION DRAWINGS FOR SPRINKLER DESCRIPTIONS.
11. COORDINATE ACT WITH RADIANT CEILING PANELS

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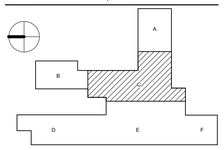
No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 01 REFLECTED CEILING PLAN - AREA C

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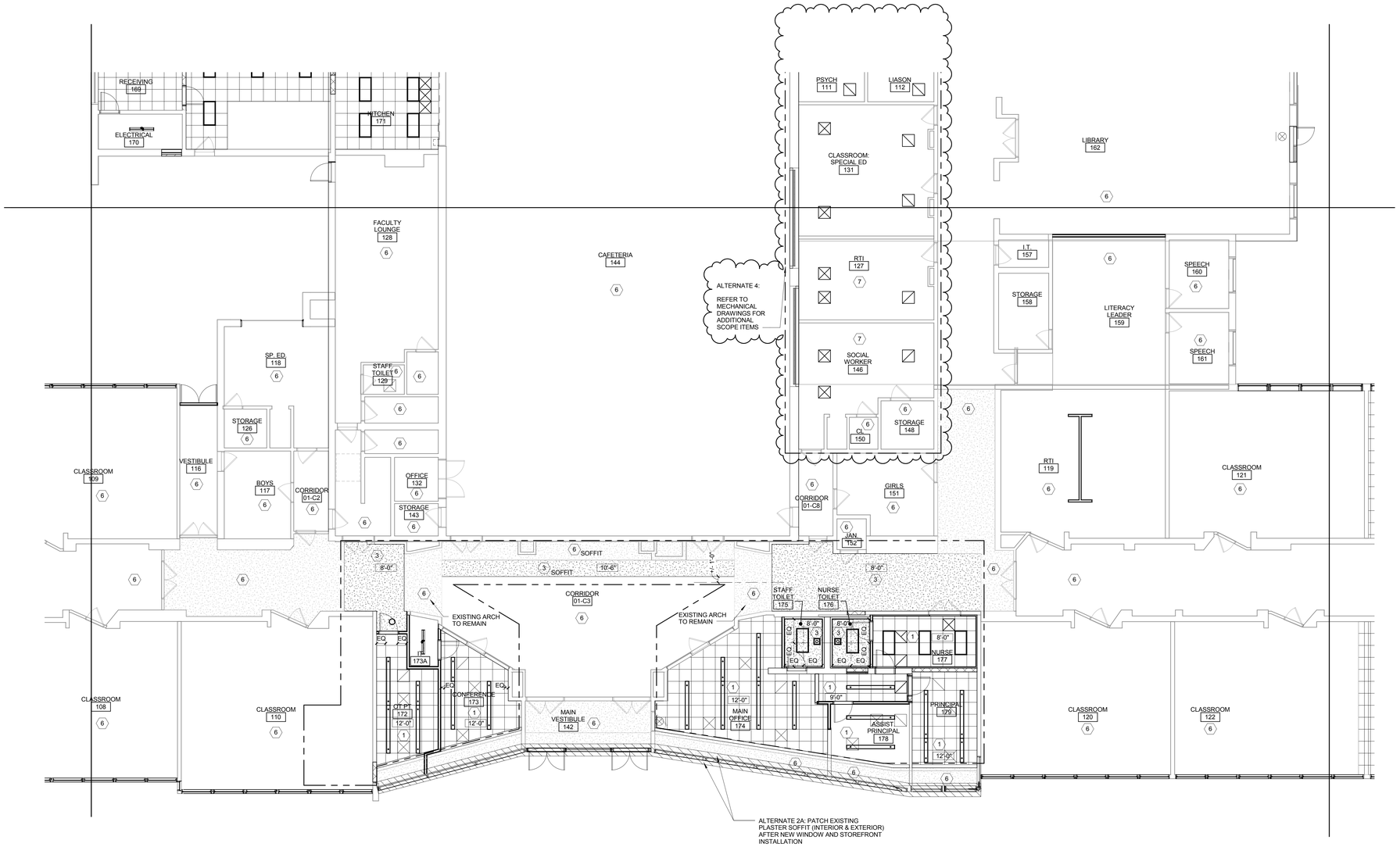

1 LEVEL 01 REFLECTED CEILING PLAN - AREA E
1/8" = 1'-0"

RCP KEYNOTES

1. 2' x 2' ACT
2. 2' x 2' ACT KITCHEN
3. GYPSUM BOARD CEILING, PAINTED
4. EXPOSED STRUCTURE, PAINTED
5. GYPSUM BOARD BULKHEAD
6. EXISTING CEILING TO REMAIN
7. PATCH CEILING TO MATCH EXISTING ADJACENT
8. CMU BOND BEAM, PAINTED
9. PAINTED LINTEL
10. MOTORIZED, FORWARD FOLD, HEIGHT ADJUSTABLE BACKSTOP (TYP. 4)
11. PAINT EXPOSED STRUCTURE, INCLUDING ACOUSTICAL DECK
12. CEILING EXPANSION JOINT COVER BY BALCO ACWC-2

RCP GENERAL NOTES

1. IN ACT AREAS, ALL CEILING GRIDS TO BE CENTERED IN ROOMS U.N.O.
2. IN ACT AREAS, ALL LIGHT FIXTURES AND DIFFUSERS TO BE CENTERED IN THE TILE U.N.O.
3. IN ACT AREAS ALL SPRINKLER HEADS TO BE CENTERED IN THE TILE U.N.O.
4. IN ALL PAINTED CMU WALLS, LINTEL TO BE PAINTED TO MATCH ADJACENT WALL
5. WHERE EXISTING CEILING TO REMAIN, REPLACE CEILING TILE TO MATCH EXISTING AS NEEDED AT MEP SCOPE.
6. PATCH EXISTING CEILING TO REMAIN WITH SALVAGED ACT.
7. FOR FINISH LEGEND, SEE SHEET A1200.
8. SEE MECHANICAL DRAWINGS FOR DIFFUSER DESCRIPTIONS.
9. SEE ELECTRICAL/ TECHNOLOGY DRAWINGS FOR LIGHT FIXTURE AND SPEAKER INFORMATION.
10. SEE FIRE PROTECTION DRAWINGS FOR SPRINKLER DESCRIPTIONS.
11. COORDINATE ACT WITH RADIANT CEILING PANELS

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LEVEL 01 REFLECTED CEILING PLAN - AREA E

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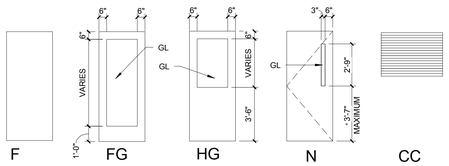
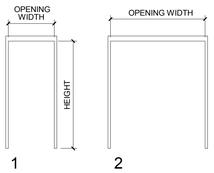


DOOR TYPES



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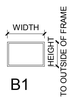
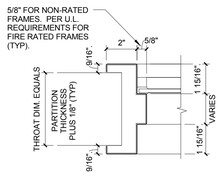


BORROWED LIGHT FRAME TYPES



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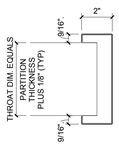

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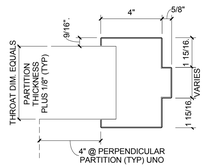

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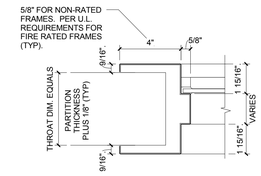

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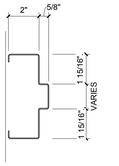

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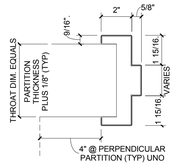

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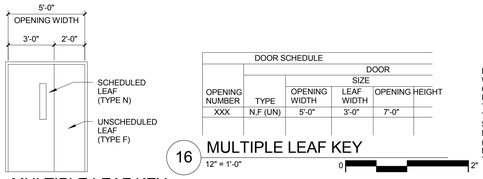

16 MULTIPLE LEAF KEY

MULTIPLE LEAF KEY

DOOR SCHEDULE				
OPENING NUMBER	DOOR			
	TYPE	SIZE		
		OPENING WIDTH	LEAF WIDTH	OPENING HEIGHT
XXX	N.F (UN)	5'-0"	3'-0"	7'-0"

NOTE:
WHEN MULTIPLE LEAVES OCCUPY A SINGLE DOOR OPENING, EACH LEAF IS LISTED IN THE SCHEDULE UNDER THE HEADING 'DOOR TYPE'- EXAMPLE: N.F (UN). THE WIDTH OF THE FIRST LEAF IS SCHEDULED UNDER THE HEADING 'LEAF WIDTH'. THE WIDTH OF THE SECOND LEAF EQUALS THE DOOR OPENING WIDTH MINUS THE WIDTH OF THE SCHEDULED DOOR LEAF (AND CENTER MULLION IF APPLICABLE). FOR UNEQUAL PAIRS, THE SYMBOL (UN) APPEARS AFTER THE DOOR TYPE.

DOOR SCHEDULE

OPENING NUMBER	DOOR SIZE TYPE	DOOR SIZE OPENING WIDTH	DOOR SIZE LEAF WIDTH	DOOR SIZE OPENING HEIGHT	DOOR THK	DOOR MATL	DOOR GLASS	FRAME TYPE	FRAME MATL	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	FRAME DETAILS GLASS	FIRE RATING (MIN.)	HDW SET	REMARKS
01-C7-A	N (PR)	6'-0"	3'-0"	7'-0"	1 3/4"	WD	G2	1	HM	2/A1003	1/A0801	-	-	90	E1.0	14
01-C7-B	FG,FG	6'-0"	3'-0"	7'-2"	1 3/4"	ALUM	G4	SEE ELEV	ALUM	8/A0452	2/A4210	-	G4	-	AC1.0	7, 13
003-A	F	3'-0"		7'-0"	1 3/4"	HM	-	1	HM	3/A1003	3/A1003	-	-	-	AC2.0	7, 10
004-A	F	3'-0"		7'-0"	1 3/4"	HM	-	1	HM	3/A1003	3/A1003	-	-	-	1.3	7
101-A	FG	3'-2"		7'-2"	1 3/4"	ALUM	G3	SEE ELEV	ALUM	-	-	-	G3	-	1.5	7
113B	CC	13'-0"		5'-5 1/8"		ALUM	-	-	ST	-	-	-	-	-	8.1	11
115-A	FG	3'-2"		7'-2"	1 3/4"	ALUM	G3	SEE ELEV	ALUM	-	-	-	G3	-	AC1.1	7, 13
115-B	FG	3'-2"		7'-2"	1 3/4"	ALUM	G3	SEE ELEV	ALUM	-	-	-	G3	-	1.2	7
116-A	FG	6'-0"	3'-0"	7'-0"	1 3/4"	ALUM	G3	SEE ELEV	ALUM	-		-	G3	-	AC1.0	7, 13
128-A	F	3'-0"		7'-0"	1 3/4"	HM	-	1	HM	3/A1003	3/A1003	-	-	-	1.6	7
142-A	FG,FG	6'-0"	3'-0"	7'-0"	1 3/4"	ALUM	G4	SEE ELEV	ALUM	7/A0410	10/A0410	-	G4	-	AC1.2	7, 8, 10, 12
142-B	FG,FG	6'-0"	3'-0"	7'-0"	1 3/4"	ALUM	G4	SEE ELEV	ALUM	7/A0410	10/A0410	-	G4	-	1.0	7, 12
142-C	FG,FG	6'-0"	3'-0"	6'-10"	1 3/4"	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	-	EXIST	EXIST	E2.0	9
142-D	FG,FG	6'-0"	3'-0"	6'-10"	1 3/4"	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	-	EXIST	EXIST	9.0	7
145	F	3'-0"		7'-0"	1 3/4"	WD	-	1	HM	2/A1003	1/A1003	-	-	-	3.2	
155-A	FG	3'-2"		7'-2"	1 3/4"	ALUM	G3	1	ALUM	-	-	-	G3	-	1.5	7
156-A	FG	3'-2"		7'-2"	1 3/4"	ALUM	G3	SEE ELEV	ALUM	-	-	-	G3	-	AC1.1	7, 13
156-B	FG	3'-2"		7'-2"	1 3/4"	ALUM	G3	SEE ELEV	ALUM	-		-	G3	-	1.2	7
162-A	FG	3'-0"		7'-2"	1 3/4"	ALUM	G3	SEE ELEV	ALUM	-	4/A0421	4/A0451	G3	-	1.2	7
168	F	3'-0"		7'-0"	1 3/4"	WD	-	1	HM	2/A1003	1/A1003	-		20	5.0	15
169	F	3'-6"		7'-0"	1 3/4"	HM	-	1	HM	2/A1003	1/A1003	-	-	20	AC2.1	13
170	F	3'-0"		7'-0"	1 3/4"	HM	-	1	HM	2/A1003	1/A1003	-	-	-	AC2.1	10
171-A	N	3'-0"		7'-0"	1 3/4"	WD	G2	1	HM	2/A1003	1/A1003	-	-	-	AC2.3	3, 13
172	N	3'-0"		7'-0"	1 3/4"	WD	G1	1	HM	2/A1003	1/A1003	-	-	20	AC2.1	13
173	F	3'-0"		7'-0"	1 3/4"	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	-	EXIST	EXIST	AC2.3	13
173-A	F	3'-0"		7'-0"	1 3/4"	WD	-	1	HM	2/A1003	1/A1003	-	-	-	4.0	10
174-A	F	3'-0"		7'-0"	1 3/4"	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	-	EXIST	EXIST	AC2.3	13
175	F	3'-0"		7'-0"	1 3/4"	WD	-	1	HM	2/A1003	1/A1003	-	-	-	6.0	
176	F	3'-0"		7'-0"	1 3/4"	WD	-	1	HM	2/A1003	1/A1003	-	-	-	6.0	
177-A	N	3'-0"		7'-0"	1 3/4"	WD	G1	1	HM	2/A1003	1/A1003	-	-	-	3.2	
177-B	F,F	5'-0"	2'-6"	7'-0"	1 3/4"	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	-	EXIST	EXIST	9.0	6
178	N	3'-0"		7'-0"	1 3/4"	WD	G1	1	HM	2/A1003	1/A1003	-	-	-	5.1	
179	N	3'-0"		7'-0"	1 3/4"	WD	G1	1	HM	2/A1003	1/A1003	-	-	-	5.1	
180	F	3'-0"		7'-0"	1 3/4"	WD	-	1	HM	2/A1003	1/A1003	-	-	90	3.1	
181	F	3'-0"		7'-0"	1 3/4"	WD	-	1	HM	2/A1003	1/A1003	-	-	90	3.1	
182	F	4'-0"		7'-0"	1 3/4"	WD	-	1	HM	2/A1003	1/A1003	-	-	-	3.1	
183-A	HG	3'-0"		7'-0"	1 3/4"	WD	G1	3	HM	2/A1003	1/A1003			-	AC2.1	13
184-A	N,N	6'-0"	3'-0"	7'-0"	1 3/4"	WD	G1	1	HM	2/A1003	1/A1003	-	-	20	AC3.0	13
184-B	F,F	6'-0"	3'-0"	7'-0"	1 3/4"	HM	-	1	HM	1A/A0452	3/A0421	1/A0452	-	-	1.7	7
184-C	F,F	6'-0"	3'-0"	7'-0"	1 3/4"	HM	-	1	HM	1A/A0452	3/A0421	1/A0452	-	-	1.7	7
Grand total: 40																

BORROWED_LIGHT_SCHEDULE

OPENING NUMBER	FRAME TYPE	FRAME MATL	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	FRAME DETAILS GLASS	FIRE RATING (MIN.)	REMARKS
183-B	B1	HM	5/A01003	6/A1003	6/A1003	G1	-	
Grand total: 1								

GENERAL NOTES - OPENING

1. SAFETY GLAZING MUST COMPLY WITH LABELING AS PER IBC 2003, 2406.2 (TYPICAL).

2. SYLES & RAIL SIZES ON WOOD DOORS MIGHT VARY TO THE STANDARD OF EACH MANUFACTURER.

3. FRAME EXTENSIONS ADJUSTING TO WALL DEPTH ARE TYPICAL - REFER TO DOOR DETAILS.

4. FOR HARDWARE GROUP SPECIFICATIONS REFER TO THE PROJECT MANUAL UNDER DOOR HARDWARE SPECS.

5. DIMENSION ARE NOMINAL - MANUFACTURER PROVING THE DOORS TO DETERMINE THE ROUGH OPENINGS.
EXCEPT THE OPENING IN CONCRETE WALLS THAT HAVE BEEN ALREADY SPECIFIED.

6. THICKNESS OF GLAZING WITHIN DOORS BY DOOR MANUFACTURER STANDARDS.

7. GLAZING AS NOTED ON DOOR ELEVATIONS.

8. DOORS TO OPERATE AS SHOWN ON THE EXTERIOR BUILDING ELEVATIONS, ENLARGED UNIT PLANS & OVERALL PLANS.

9. TEMPERED GLAZING WHERE REQUIRED BY CODE (TYPICAL).

10. GENERAL CONTRACTOR TO COORDINATE ALL TRADES INVOLVED.

11. ELECTRICAL DEVICES SUCH AS MAG LOCKS, CARD READERS, AND ALARM SYSTEMS BEING PART OF THE DOOR FUNCTION ARE INCLUDED AS PART OF THE ELECTRICAL PLANS AND THE HARDWARE GROUPS.

GLAZING

G1 1/4" CLEAR TEMPERED GLASS (SAFETY RATED)

G2 FIRE RESISTIVE GLAZING (SAFETY RATED)

G3 1" INSULATED GLASS UNIT (SAFETY RATED)

G4 1" INSULATED LAMINATED GLASS UNIT (SECURITY GLAZING)

REMARKS

1. NEW OPENING IN EXISTING MASONRY PARTITION

2. NOT USED

3. PROVIDE 4'-0" H STAINLESS STEEL KICKPLATE ON KITCHEN SIDE, PER SPEC

4. DOOR AND FRAME TO BE PAINTED TO MATCH ADJACENT WALL - REFER TO FINISH PLANS

5. NEW DOOR AND FRAME IN EXISTING MASONRY OPENING - VERIFY SIZE OF EXISTING OPENING

6. ACOUSTICAL SOUND SEALS

7. EXTERIOR DOOR

8. ACCESSIBLE ENTRY WITH PUSH PLATE AND DOOR OPERATOR

9. SECURITY ACCESS DOOR

10. CARD READER - REFER TO DETAILS 1 & 2 ON E0741 FOR PROVISIONS

11. COILING COUNTER SHUTTER

12. SECURITY GLAZING

13. DOOR AND FRAME TO BE PREPPED FOR FUTURE CARD READER LOCATED ON FRAME - REFER TO ELECTRICAL FOR PROVISIONS

14. MAGNETIC HOLD OPENS

15. PROVIDE 3/4" DOOR UNDERCUT

16. MECHANICALLY SECURE DOOR PANE TO MAKE INNACTIVE. SEE SHEET A0101.E FOR LOCATION.

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No.	Description	Date
2	ADDENDUM 01	01/07/2016
1	ISSUED FOR BID	12/11/2015

Drawing Title:

DOORS & BORROWED LIGHTS

Project No.: 004645.05 Checked by: Checker

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GENERAL NEW DUCTWORK NOTES

1.
ALL EXHAUST DUCTWORK SERVING DOMESTIC WATER HEATERS IN BOILER ROOM IS TO REMAIN TO AS GREAT AN EXTENT AS POSSIBLE. REPAIR ANY DAMAGE CAUSED BY RENOVATION ACTIVITIES AND EXTEND TO NEW EXHAUST FLUES.

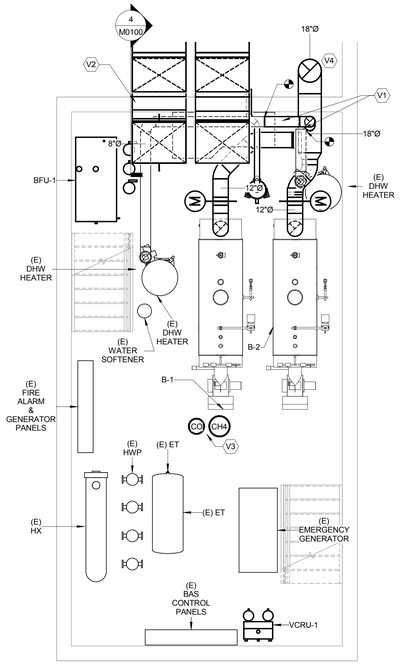
KEYED NEW DUCTWORK NOTES (V#) :

V1.
CONNECT EXISTING DHW HEATER EXHAUST DUCTS TO NEW FLUE BEFORE FLUE ENTERS CHIMNEY.

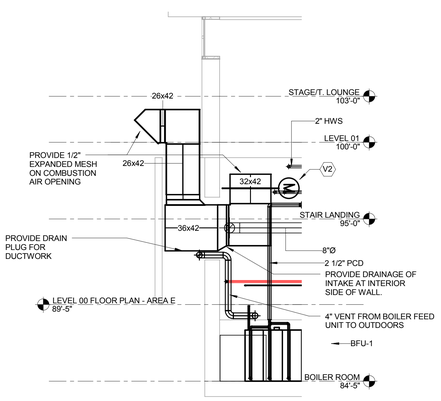
V2.
PROVIDE NEW MOTORIZED CONTROL DAMPER ON DUCTWORK. TIE DAMPER OPERATION TO BOILER OPERATION TO OPEN WHENEVER ONE OR MORE FUEL BURNING DEVICE(S) ARE OPERATING.

V3.
PROVIDE NEW CARBON MONOXIDE AND METHANE SENSORS ON CEILING. PROVIDE SUFFICIENT NUMBER OF SENSORS SO ALL FUEL BURNING APPLIANCES ARE WITHIN 20'0" OF SENSOR(S). SENSORS TO BE HARDWIRED TO BAS, GAS SHUTOFF, ELECTRICAL, AND FIRE ALARM SYSTEMS.

V4.
NEW EXHAUST FLUE UP TO ROOF IN EXISITNG TO REMAIN CHIMNEY.



3 BOILER ROOM HVAC NEW WORK - DUCTWORK
1/4" = 1'-0"



4 COMBUSTION INTAKE DUCT SECTION (TYP OF 2)
1/4" = 1'-0"

GENERAL NEW PIPING WORK NOTES

1.
FLUSH AND CLEAN STEAM PIPING SYSTEM AT END OF PROJECT TO REMOVE BUILDUP AND SCALING.

2.
CLEAN ALL PIPING AND EQUIPMENT WITHIN BOILER ROOM AT END OF PROJECT.

3.
KEEP AS MUCH EXISTING STEAM SUPPLY AND CONDENSATE RETURN PIPING AS POSSIBLE. RECONNECT TO EXISTING PIPING AT POINTS INDICATED, AND RE-INSULATE ALL EXPOSED HW, STEAM, AND CONDENSATE RETURN PIPING IN BOILER ROOM.

4.
BOILER FEED AND VACUUM CONDENSATE UNIT PUMPS ARE INTEGRATED WITH UNITS.

5.
SOME HWS/R, DCW, DHW, DHWR PIPING THAT IS NOT TO BE AFFECTED BY WORK IN BOILER ROOM IS NOT SHOWN FOR CLARITY OF THE NEW WORK.

6.
FOR ALL CONNECTIONS TO NEW STEAM HEADER, PROVIDE A NEW SHUTOFF VALVE IN ACCORDANCE TO SPECIFICATION.

KEYED NEW PIPING WORK NOTES (P#) :

P1.
ROUTE MAKEUP WATER PIPING UP TO OVERHEAD SPACE TO MAINTAIN A CLEAR ACCESS PATH TO ELECTRICAL SWITCHGEAR, DHW HEATER, AND EXHAUST DAMPERS.

P2.
ROUTE NEW PUMPED CONDENSATE RETURN PIPING TO NEW BOILER FEED UNIT AS TIGHT TO CEILING AS POSSIBLE.

P3.
EXTEND NEW BOILER MAKEUP WATER PIPING FROM DOWNSTREAM OF RPZ ON DCW LINE TO NEW BOILER FEED UNIT LOCATED UNDER PLATFORM.

P4.
PROVIDE EMERGENCY GAS SHUTOFF BUTTON TIED TO MAIN BOILER ROOM SHUTOFF SYSTEM. MOUNT SHUTOFF BUTTON NEXT TO DOOR ABOVE LIGHT SWITCH. GAS SHUTOFF BUTTON SHALL BE PROVIDED BY SAME MANUFACTURER GAS SYSTEM CONTROL PANEL NOTED IN P5.

P5.
PROVIDE BOILER ROOM GAS SYSTEM CONTROL BOX AND MOUNT NEXT TO DOOR. SYSTEM SHALL BE AMERICAN GAS SAFETY MERLIN GSP2 WITH ACCESSORIES OR APPROVED EQUAL.

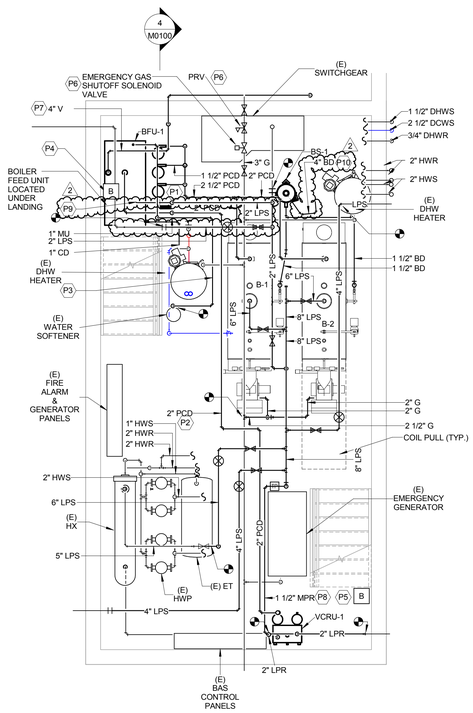
P6.
PROVIDE NEW LINE PRESSURE REGULATOR, AUTOMATIC SOLENOID SHUTOFF VALVE, AND MANUAL SHUTOFF VALVE ON EXISTING INCOMING GAS SERVICE LINE UPSTREAM OF ANY EQUIPMENT TAKEOFFS. EXTEND VENT PIPING FROM REGULATOR AND VALVES TO OUTDOORS NEXT TO EXISTING VENT PIPING AND TERMINATE AT LEAST 10' 0" ABOVE NEAREST OUTDOOR AIR INTAKE OR OPERABLE WINDOW.

P7.
ROUTE NEW BOILER FEED UNIT VENT PIPING TO OUTSIDE NEXT TO EXISTING TO REMAIN VENT PIPING MOUNTED TO CHIMNEY, TERMINATING AT LEAST 10'0" ABOVE NEAREST OUTDOOR AIR INTAKE OR OPERABLE WINDOW.

P8.
ROUTE STEAM HEADER DRAIN LEG THROUGH STEAM TRAP AND TO VACUUM CONDENSATE RECEIVER INLET PIPING.

2 P9.
EXTEND PIPING FROM STEAM HEADER AND CONNECT TO BOILER FEED UNIT PREHEATER COIL VALVE AND CONNECTION.

P10.
ROUTE BLOWDOWN DRAIN PIPING TO FLOOR DRAIN DOWNSTREAM OF AFTERCOOLER.



2 BOILER ROOM HVAC NEW WORK - PIPING
1/4" = 1'-0"

GENERAL DEMOLITION NOTES

1.
ANY MECHANICAL EQUIPMENT NOT SHOWN OR NOTED FOR DEMOLITION IS EXPECTED TO REMAIN IN PLACE. PROTECT AND CLEAN ALL MECHANICAL EQUIPMENT, PIPING, DUCTWORK, OR FITTINGS THAT ARE EXISTING TO REMAIN IN AREAS OF WORK, AND REPLACE ANY EQUIPMENT DAMAGED DUE TO CONSTRUCTION ACTIVITIES. PROVIDE WRITTEN REPORT TO OWNER AND ARCHITECT PRIOR TO STARTING WORK DESCRIBING OPERATION STATUS OF ANY MECHANICAL EQUIPMENT THAT IS EXISTING TO REMAIN AT END OF PROJECT.

2.
OWNER TO PERFORM ASBESTOS ABATEMENT ACTIVITIES PRIOR TO COMMENCING WORK. COORDINATE WITH OWNER AND ENVIRONMENTAL CONSULTANTS FOR ANY SUSPECTED ASBESTOS-CONTAINING MATERIAL AND ANY ABATEMENT SCOPE REQUIRED TO COMPLETE WORK SCOPE DESCRIBED IN THESE DRAWINGS. NOTIFY OWNER IN WRITING OF ANY AREAS NEEDING ACM EVALUATION NOT PREVIOUSLY NOTED OR REVIEWED BEFORE STARTING WORK.

3.
BOILER AND VACUUM CONDENSATE RETURN UNIT TO BE DEMOLISHED. FULL EXTENT OF PIPING DEMOLITION REQUIRED TO REMOVE BOILER AND INSTALL NEW EQUIPMENT MAY NOT BE SHOWN. REMOVE AND REINSTALL PIPING, EQUIPMENT, AND STRUCTURES AS REQUIRED TO ACCOMMODATE REPLACEMENT OF BOILER AND CONDENSATE RETURN UNIT AND INSTALLATION OF NEW BOILER FEED UNIT.

4.
REMOVE ALL INSULATION ON HW, STEAM, AND CONDENSATE RETURN PIPING AND HEAT EXCHANGER WITHIN BOILER ROOM AND RE-INSULATE IN ACCORDANCE WITH SPECIFICATION. VISUALLY INSPECT ALL PIPING AND EQUIPMENT WHEN INSULATION IS REMOVED, AND PROVIDE WRITTEN NOTICE TO ARCHITECT WHEN ALL INSULATION IS REMOVED. CONTRACTOR AND ENGINEER TO DEVELOP A DEFICIENCIES LIST TO PROVIDE TO OWNER OF ANY PIPING THAT MAY REQUIRE REPLACEMENT.

5.
BEFORE DISCARDING ANY DEMOLISHED OR REMOVED EQUIPMENT, VERIFY WITH OWNER IF ANY EQUIPMENT OR MATERIALS ARE TO BE SALVAGED. RELOCATE ANY SALVAGED EQUIPMENT TO OWNER'S DESIGNATED OFFSITE STORAGE FACILITY.

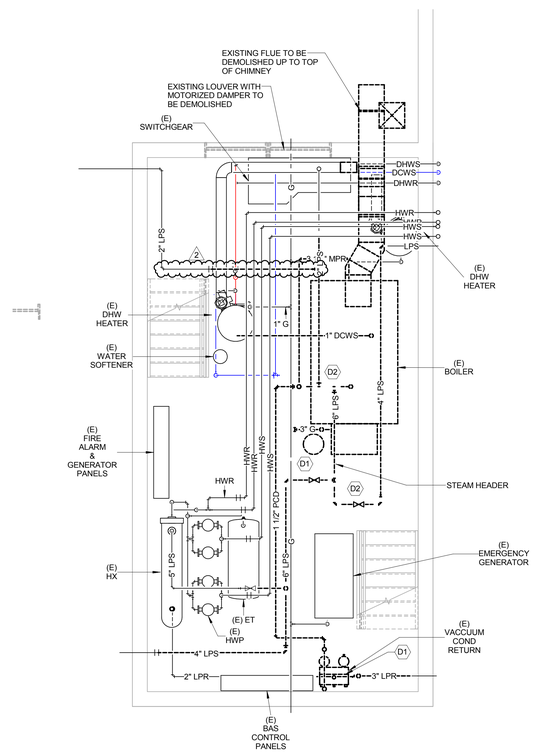
6.
REMOVE EXISTING CARBON MONOXIDE (CO) SENSORS WITHIN BOILER ROOM AND ALL CONDUIT, HOUSINGS, AND MOUNTING BOXES IN ANTICIPATION FOR NEW CO SENSOR SYSTEM.

7.
BOILER IS TO BE REMOVED FROM BUILDING VIA EXISTING DOORWAYS AND EXIT PATHS. THE CREATION OF NEW OPENINGS IN WALLS, FLOORS, OR ROOFS IS NOT ANTICIPATED.

KEYED DEMOLITION NOTES ⬡ :

D1.
CHEMICAL TREATMENT SYSTEM TO BE REMOVED. CONTACT CONTRACTED CHEMICAL FEED VENDOR PRIOR TO DEMOLITION TO HAVE CHEMICAL FEED VENDOR REMOVE CHEMICAL AND EQUIPMENT ENSURE NO LEASED EQUIPMENT IS DEMOLISHED WITHOUT PRIOR WRITTEN CONSENT OF EQUIPMENT OWNER. DISCONNECT TUBING FROM VACUUM CONDENSATE RETURN PIPING ABOVE VACUUM RECEIVER, AND CAP AND SEAL TAP ON PIPING.

D2.
DISCONNECT STEAM MAIN FROM STEAM HEADER AND CAP STEAM PIPING FOR RECONNECTION.



1 BASEMENT BOILER ROOM HVAC & PIPING DEMOLITION
1/4" = 1'-0"

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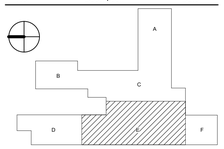
2	ADDENDUM #1	01/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

BOILER ROOM DEMO & NEW WORK

Project No.: 004645.05 Checked by: KH / ~~GP~~

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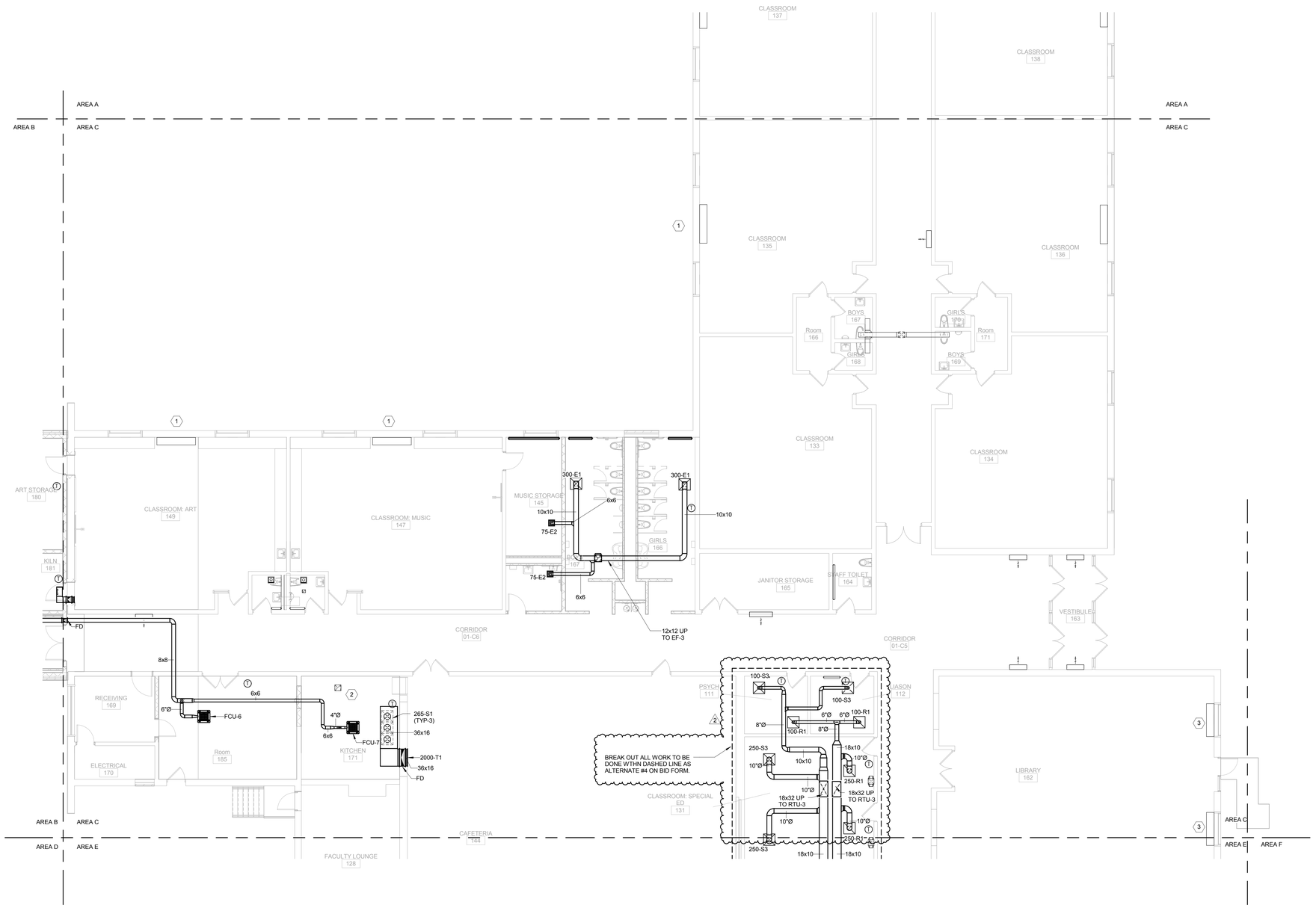

1 LEVEL 01 HVAC DUCTWORK PLAN - AREA C

1/8" = 1'-0"

GENERAL NOTES:

1.
SHOWN SUPPLY/RETURN DIFFUSER LOCATIONS IN PSYCH 111, LIASION 112, CLASSROOM-SPECIAL ED 104, RTI 127, AND SOCIAL WORKER 146 ARE APPROXIMATE. COORDINATE FINAL LOCATION OF NEW CEILING MOUNTED DIFFUSERS AND GRILLES TO AVOID CONFLICTS WITH EXISTING TO REMAIN LIGHTS, CEILING-MOUNTED EQUIPMENT, AND DEVICES.

2.
WHERE NEW DUCTWORK OR EQUIPMENT IS TO BE INSTALLED IN AND ABOVE EXISTING TO REMAIN CEILINGS, MECHANICAL CONTRACTOR IS TO TAKE CARE TO REMOVE CEILING TILES REQUIRED TO COMPLETE WORK, AND RE-INSTALL TILES AT END OF THE PROJECT, REPLACING ANY TILES THAT ARE DAMAGED DURING THE REMOVAL, STORAGE, OR RE-INSTALLATION. CONSULT ARCHITECTURAL DRAWINGS AND GENERAL CONTRACTOR TO DETERMINE WHICH CEILING GRIDS ARE TO BE REMOVED AND REPLACED, AND WHICH ARE TO REMAIN IN PLACE.

KEYED NOTES ⬡ :

1.
CLEAN UNIT VENTILATOR OUTDOOR AIR INTAKE LOUVER AT END OF PROJECT.

2.
KITCHEN EXHAUST HOOD IS EXISTING TO REMAIN. CLEAN OUT EXISTING TO REMAIN KITCHEN EXHAUST DUCTWORK AND REMOVE ALL GREASE AND BUILDUP BETWEEN HOOD AND FAN OUTLET.

3.
DISCONNECT UNIT VENTILATOR FROM POWER AND COVER WITH RIGID MATERIALS TO PROTECT UNIT DURING DEMOLITION AND NEW WORK PHASES.

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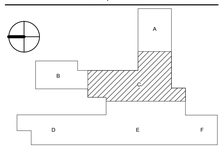

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LEVEL 01 HVAC DUCTWORK PLAN - AREA C

Project No.: 004645.05 Checked by: KH / GP

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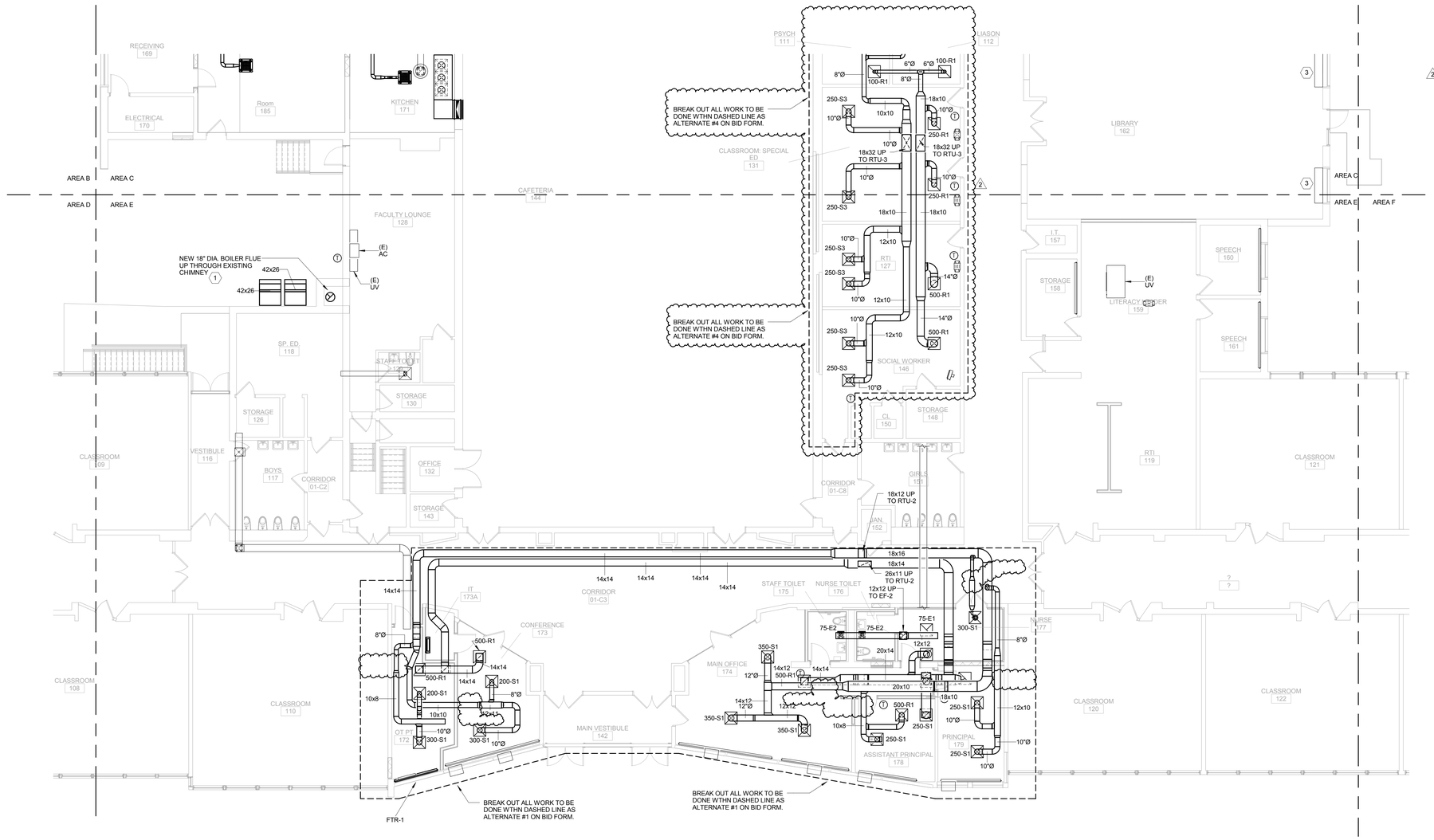

1 LEVEL 01 HVAC DUCTWORK PLAN - AREA E
1/8" = 1'-0"

GENERAL NOTES:

1.
SHOWN SUPPLY/RETURN DIFFUSER LOCATIONS IN PSYCH 111, LIASION 112, CLASSROOM-SPECIAL ED 104, RTI 127, AND SOCIAL WORKER 146 ARE APPROXIMATE. COORDINATE FINAL LOCATION OF NEW CEILING MOUNTED DIFFUSERS AND GRILLES TO AVOID CONFLICTS WITH EXISTING TO REMAIN LIGHTS, CEILING-MOUNTED EQUIPMENT, AND DEVICES.

2.
WHERE NEW DUCTWORK OR EQUIPMENT IS TO BE INSTALLED IN AND ABOVE EXISTING TO REMAIN CEILINGS, MECHANICAL CONTRACTOR IS TO TAKE CARE TO REMOVE CEILING TILES REQUIRED TO COMPLETE WORK, AND RE-INSTALL TILES AT END OF THE PROJECT, REPLACING ANY TILES THAT ARE DAMAGED DURING THE REMOVAL, STORAGE, OR RE-INSTALLATION. CONSULT ARCHITECTURAL DRAWINGS AND GENERAL CONTRACTOR TO DETERMINE WHICH CEILING GRIDS ARE TO BE REMOVED AND REPLACED, AND WHICH ARE TO REMAIN IN PLACE.

KEYED NOTES ⬡ :

1.
PROVIDE NEW FLUE INSIDE EXISTING CHIMNEY.

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2	ADDENDUM #1	01/07/2016
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Drawing Title:

LEVEL 01 HVAC DUCTWORK PLAN - AREA E

Project No.: 004645.05 Checked by: KH / ~~GP~~

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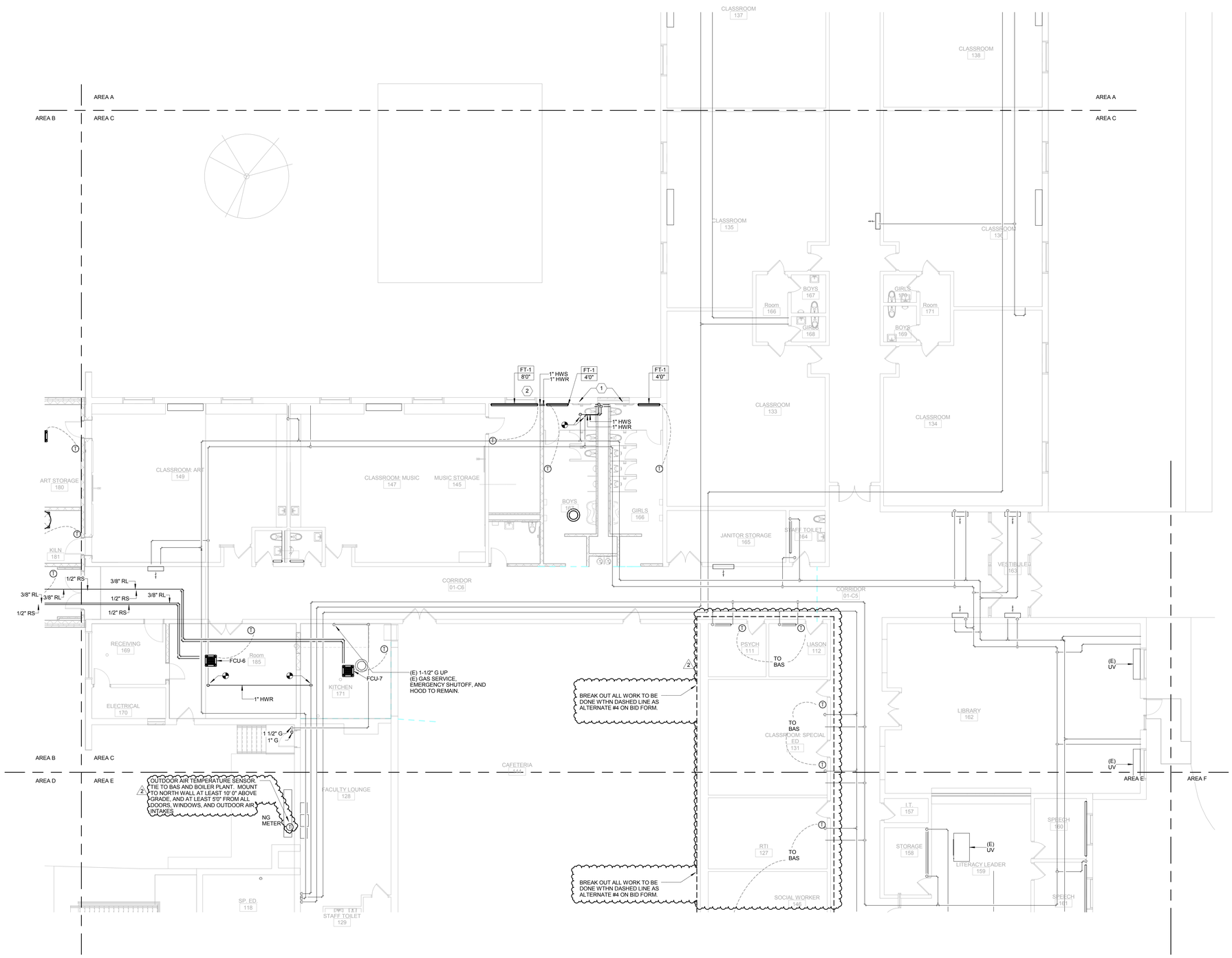

1 LEVEL 01 HVAC PIPING PLAN - AREA C

1/8" = 1'-0"

GENERAL NOTES :

1.
CONFIRM ALL REFRIGERANT LINE SIZES FOR VRF SYSTEMS PRIOR TO ORDERING, USING MANUFACTURER'S RECOMMENDED SIZING AND LENGTHS. PROVIDE ALL FITTINGS, TRIM, AND EQUIPMENT REQUIRED TO INSTALL A COMPLETE SYSTEM.

2.
FOR VRF SYSTEMS, PROVIDE A MANUFACTURER DEVELOPED LAYOUT AS PART OF SUBMITTAL TO ENSURE ALL PIPING, FITTINGS AND EQUIPMENT IS ACCOUNTED FOR.

KEYED NOTES ⬡ :

1.
PROVIDE NEW CONTROL VALVE FOR NEW FINNED TUBE RADIATION AND CONNECT TO HWS/R PIPING ALONG WALL. PROVIDE NEW FLAT-PLATE THERMOSTAT CONTROLLED THROUGH BAS.

2.
PROVIDE A LOCAL ONLY, THEMOSTATICALLY-CONTROLLED HOT WATER VALVE ON FINNED TUBE RADIATION IN MUSIC STORAGE ROOM. VALVE SHALL BE DANFOSS 013G4030.

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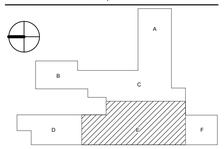

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LEVEL 01 HVAC PIPING PLAN - AREA C

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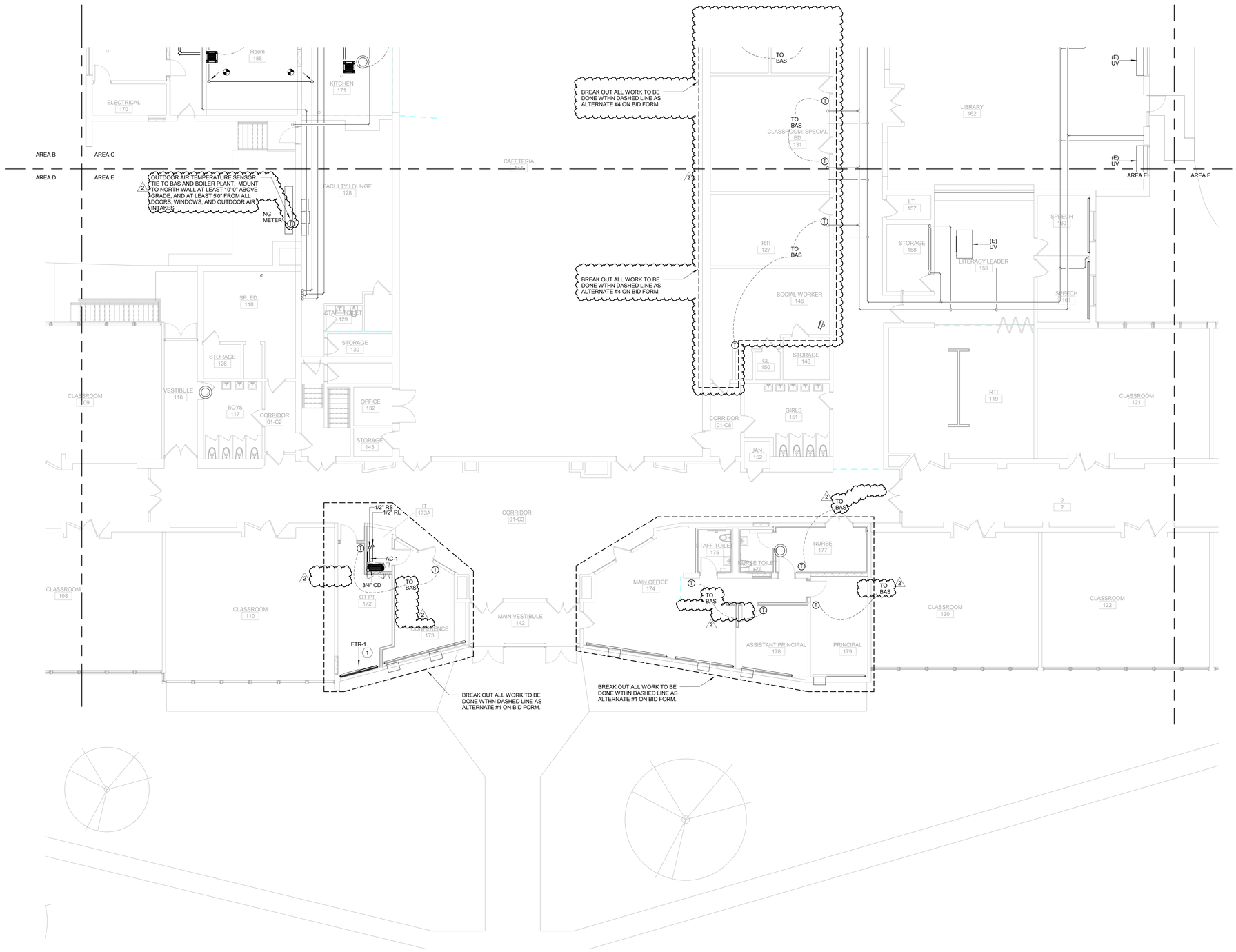

1 LEVEL 01 HVAC PIPING PLAN - AREA E
1/8" = 1'-0"

GENERAL NOTES

1.
CONFIRM ALL REFRIGERANT LINE SIZES FOR VRF AND SPLIT-AC SYSTEMS PRIOR TO ORDERING, USING MANUFACTURER'S RECOMMENDED SIZING AND LENGTHS. PROVIDE ALL FITTINGS, TRIM, AND EQUIPMENT REQUIRED TO INSTALL A COMPLETE SYSTEM.

KEYED NOTES ⬡ :

1.
CONNECT NEW FINNED TUBE RADIATOR TO HOT WATER PIPING. PROVIDE NEW CONTROL VALVE, AND CONNECT TO NEW THERMOSTAT IN SPACE.

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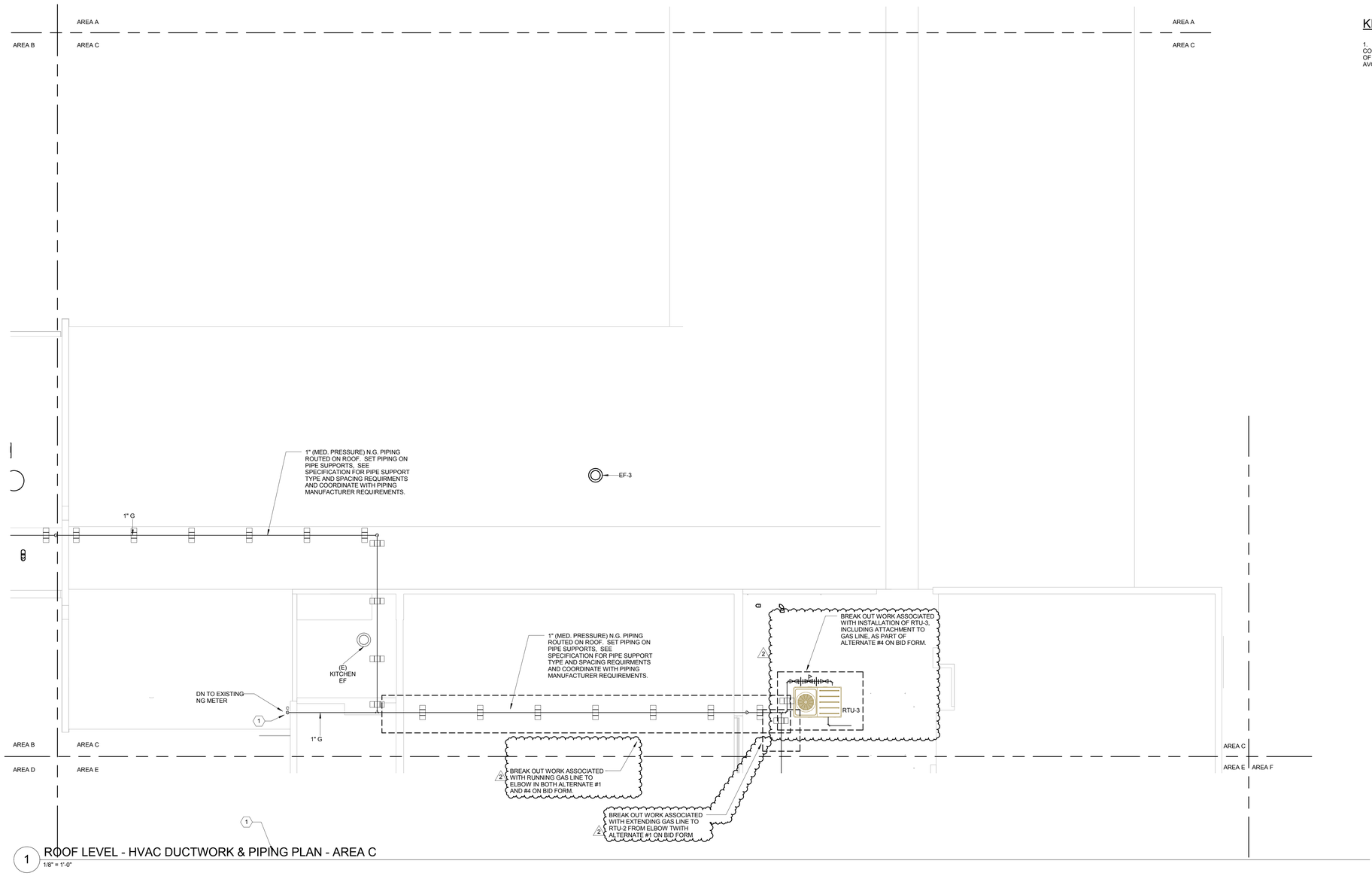

1 ROOF LEVEL - HVAC DUCTWORK & PIPING PLAN - AREA C
1/8" = 1'-0"

GENERAL NOTES:

1.
MOUNT ALL ROOFTOP EQUIPMENT AND PIPING AT LEAST 10'0" FROM ALL ROOF EDGES AND CHANGES IN ELEVATION.

2.
MOUNT ALL NEW EXHAUST OUTLETS AND FANS AT LEAST 15'0" FROM ALL OUTDOOR AIR INTAKES AND NATURAL GAS PIPING VALVES.

3.
FOR EQUIPMENT MOUNTED ON SLOPED ROOFS, PROVIDE ADAPTOR ROOF CURB SO NEW EQUIPMENT IS MOUNTED LEVEL.

KEYED NOTES ⬡ :

1.
CONNECT NEW NATURAL GAS PIPE TO GAS SERVICE MAIN DOWNSTREAM OF EXISTING METER. ROUTE PIPING VERTICALLY DOWN FACE OF WALL, AVOIDING ALL NEW AND EXISTING OPENINGS.

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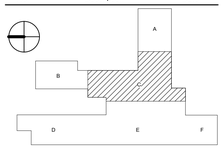

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ROOF LEVEL - HVAC DUCTWORK & PIPING PLAN - AREA C

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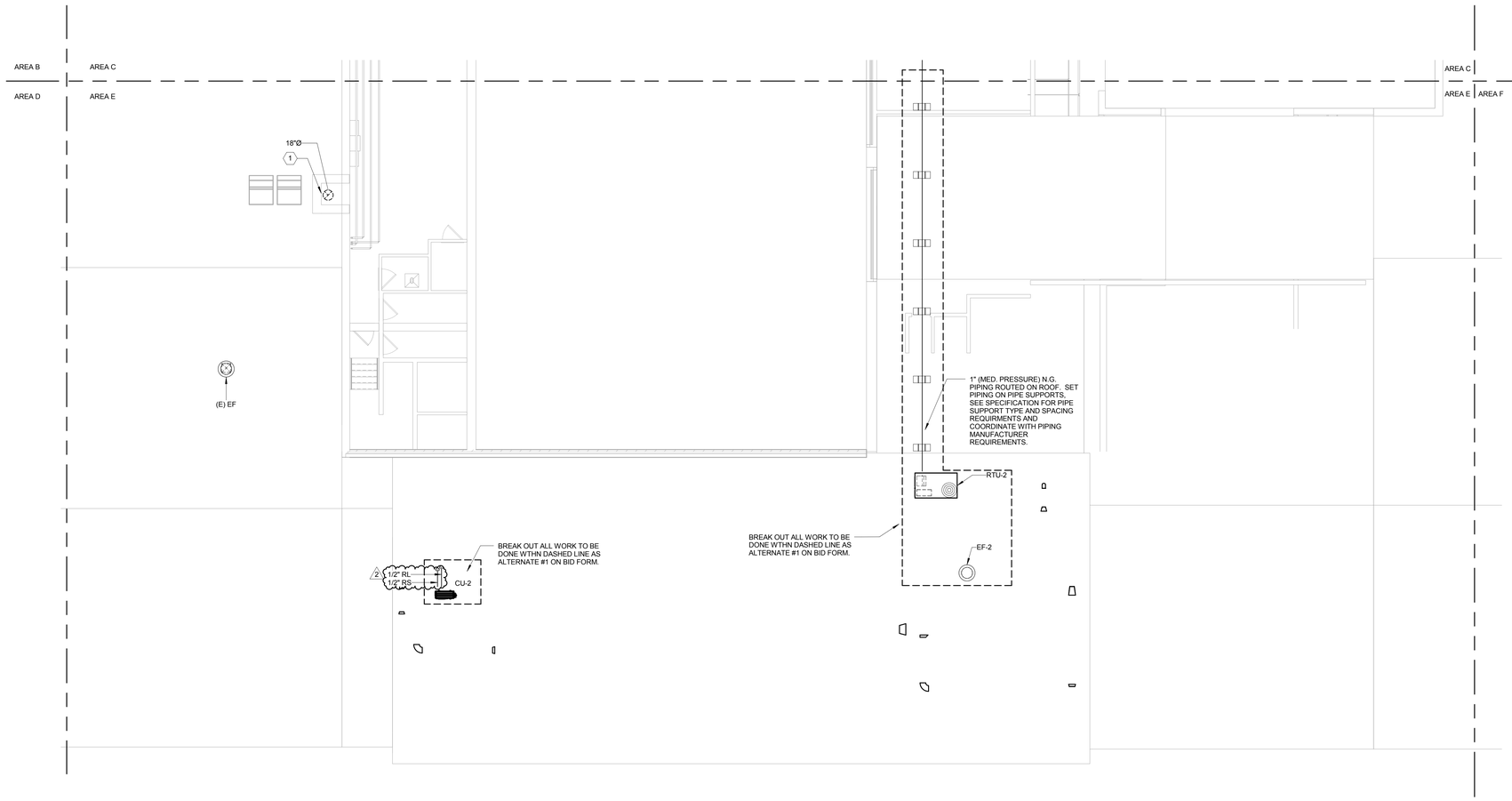

1 ROOF LEVEL - HVAC DUCTWORK & PIPING PLAN - AREA E
1/8" = 1'-0"

GENERAL NOTES:

1.
MOUNT ALL ROOFTOP EQUIPMENT AT LEAST 10'0" FROM ALL ROOF EDGES AND CHANGES IN ELEVATION.

2.
MOUNT ALL NEW EXHAUST OUTLETS AND FANS AT LEAST 15'0" FROM ALL OUTDOOR AIR INTAKES.

3.
FOR EQUIPMENT MOUNTED ON SLOPED ROOFS, PROVIDE ADAPTOR ROOF CURB SO NEW EQUIPMENT IS MOUNTED LEVEL.

2 4.
CONFIRM ALL REFRIGERANT LINE SIZES PRIOR TO ORDERING, USING MANUFACTURER'S RECOMMENDED SIZING AND LENGTHS. PROVIDE ALL FITTINGS, TRIM, AND EQUIPMENT REQUIRED TO INSTALL A COMPLETE SYSTEM.

KEYED NOTES ⬡ :

1.
COORDINATE WITH GENERAL AND OTHER TRADES TO LOWER EXISTING CHIMNEY HEIGHT TO AT LEAST 8'-0" ABOVE ALL ROOF LEVELS WITHIN A 15'-0" RADIUS OF CHIMNEY. EXTEND FLUE UP BEYOND TOP OF CHIMNEY. TERMINATE FLUE AND CAP TOP OF CHIMNEY IN ACCORDANCE WITH DETAILS SHEET M0701.

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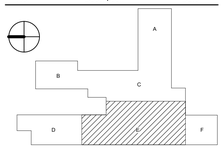

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PACKAGED BLOWDOWN SEPARATOR TANK SCHEDULE

TAG	LOCATION	SERVICE	MANUFACTURER	TANK DATA							AFTERCOOLER DATA				REMARKS
				MODEL	TANK DIAMETER, INCHES	TANK HEIGHT, INCHES	INLET SIZE, INCHES	VENT SIZE, INCHES	DRAIN SIZE, INCHES	OPERATING WEIGHT, LBS	MODEL	TYPE	DRAIN SIZE, INCHES	WATER INLET, INCHES	
RES. BDS-1	BOILER ROOM	STB-1, STB-2	HURST BOILER & WELDING CO.	1434A	14	34	1.5	4	4	275	TR-4	AUTO	4	1.25	1 - 3

1 . PROVIDED WITH 24-INCH HIGH SUPPORTING LEGS
2 . PROVIDED COOLING WATER CONTROL WATER CONTROL ASSEMBLY FOR FIELD PIPING AND INSTALLATION
3 . INSTALL UNIT ON 4-INCH THICK CONCRETE HOUSEKEEPING PAD

DIFFUSER - REGISTER - GRILLE SCHEDULE

TAG	SERVICE	TYPE	NECK SIZE	LINEAR FEET	# OF SLOTS/ SLOT WIDTH	DAMPER	MATERIAL/ FINISH	MANUFACTURER AND MODEL	REMARKS
S1	SUPPLY	SURFACE	6	4	1	N	B	TITUS FL-20-JT	1, 2 3
S2	SUPPLY	LAY-IN	8			N	A	TITUS OMNI	1, 2, 3
S3	SUPPLY								
R1	RETURN	LAY-IN	SEE PLAN			N	A	TITUS PAR	1, 2, 3
R2	RETURN								
R3	RETURN								
E1	EXHAUST	LAY-IN	SEE PLAN			N	A	TITUS PAR	1, 2, 3

NOTES: 1. COORDINATE EXACT DIFFUSER LOCATIONS WITH ARCHITECTURAL FLOOR PLANS AND REFLECTIVE CEILING PLANS.

2. PROVIDE APPROPRIATE FRAME, BORDER OR FLANGE FOR PROPER MOUNTING AS RECOMMENDED BY THE MANUFACTURER. REFER TO THE ARCHITECTURAL DRAWINGS FOR SURFACES IN WHICH DIFFUSERS, REGISTERS AND GRILLES ARE LOCATED.

3. MATERIAL/FINISH KEY
   A. STEEL WITH STANDARD FACTORY WHITE ENAMEL FINISH.
   B. ALUMINUM WITH STANDARD FACTORY WHITE ENAMEL FINISH.
   C. NATURAL ALUMINUM.
   D. POLISHED STAINLESS STEEL.

ROOFTOP HVAC UNIT SCHEDULE (GAS HEATING)

TAG	LOCATION	NOM. TONS.	O.A. CFM	SUPPLY FAN TOTAL CFM	BHP	HP	RPM	TSP IN. W.C.	ESP IN. W.C.	COOLING SECTION COOLING CFM	TOTAL MBH	SENSIBLE MBH	EAT *F DB/WB	LAT *F DB/WB	HEATING SECTION CFM	INPUT MBH	OUTPUT MBH	EAT DEG F	LAT DEG F	STAGES	CONDENSING SECTION REFRIGERANT TYPE	NO. CIRCUITS	NO. OF COMPRESSORS	EFFICIENCY PARAMETERS EER	IEER	ELECTRICAL DATA MCA	MOCP	VOLT	PH	HZ	UNIT WT. (LBS)	MANUFACTURER AND MODEL	REMARKS
RTU-1	AREA C ROOF	17.5	1700	7000	5.04	7.5	990	1.36	1.2	7000	224	169	81/67	59/58	7000	310	251	47	80	2	R-410a	1	2	10.8	12.7	89	100	208	3	60	2500	CARRIER 48TCEE20A3A5-0A0G0	1,2,3,4,5,6
2 RTU-2	AREA E ROOF	10	760	3300	1.6	2	1317	1.5	1	3300	105	83	78/65	57/55	1900	250	200	45	100	3	R-410a	2	2	11.3	13.5	50	60	208	3	60	1300	TRANE YSC120	1,3,4,5,6
RTU-3	AREA C ROOF	4	400	1500	0.7	2	995	1.5	1	1500	45	35	78/65	59/55	900	80	64	45	85	3	R-410a	1	1	10.8		30	40	208	3	60	800	TRANE YHC047	1,3,4,5,6

REMARKS
1. MOUNT UNIT ON 24" HIGH INSULATED VIBRATION ISOLATION ROOF CURB (BASIS OF DESIGN: THYCURB TC-1) AND PROVIDE DRAINAGE OF CURB.
2. PROVIDE SECTION AND CONTROLS FOR HUMIDITY CONTROL OF SUPPLY AIR IN THREE MODES: NORMAL COOLING MODE, SUB-COOLING MODE, AND HOT GAS REHEAT. INCLUDE WALL MOUNTED HUMIDISTAT
3. PROVIDE WITH HAILGUARDS ON ALL CONDENSER FANS.
4. PROVIDE WITH NEMA 3R DISCONNECT.
5. PROVIDE WITH ECONOMIZER CONTROL OPTION. PROVIDE 0-100% MODULATING POWER EXHAUST / ECONOMIZER CONTROL PACKAGE.
6. UNIT IS A SINGLE-ZONE VAIRABLE AIR VOLUME RTU WITH A CONSTANT DISCHARGE AIR TEMPERATURE AND VARYING AIRFLOW. PROVIDE WITH A SOFT-START PACKAGE ON FANS TO MINIMIZE SHOCKS TO DUCTWORK.

SOUND ATTENUATOR SCHEDULE

TAG	SYSTEM	TYPE	QTY/NOMINAL SIZE W x H x L	TOTAL CFM	MAX FACE VELOCITY FPM	MAX APD WG	MINIMUM DYN. INSERTION LOSS OCTAVE BAND/HERTZ 1	2	3	4	5	6	7	8	MANUFACTURER	MODEL	REMARKS
							65	125	250	500	1K	2K	4K	8K			
SA-S1	RTU-1 SUPPLY AIR	RECT. FILM-LINED	1 / 62 x 26 x 36	7000	625	0.15	4	6	12	17	24	24	18	10	PRICE	RLT 36 / 2D	
SA-R1	RTU-1 RETURN AIR	RECT. FILM-LINED	1 / 68 x 20 x 36	7000	741	0.15	5	8	9	13	14	12	10	6	PRICE	RMT 36 / VE	

FAN SCHEDULE

TAG	LOCATION	SERVICE	CFM	S.P. IN WC	FAN DATA FAN TYPE	DRIVE	MOTOR DATA BHP	HP	VOLT	PH	HZ	MAUNFACTURER	MODEL	REMARKS
EF-1	AREA B	KILN EXHAUST	300	0.6	CENTRIFUGAL	DIRECT	0.07	1/4	115	1	60	GREENHECK	G-98-VG	1,2,3,4
EF-2	AREA C	TOILET EXHAUST	180	0.45	CENTRIFUGAL	DIRECT	0.04	1/4	115	1	60	GREENHECK	G-097-VG	1,2,3,4
EF-3	AREA C	TOILET EXHAUST	750	1.0	CENTRIFUGAL	DIRECT	0.26	1/3	115	1	60	GREENHECK	G-103-A	1,2,3,4

REMARKS
1. PROVIDE MANUFACTURER'S STANDARD INSULATED ROOF CURB.
2. PROVIDE WITH MOTOR STARTER AND DISCONNECT IN NEMA 3R ENCLOSURE.
3. PROVIDE WITH STANDARD VIBRATION ISOLATION AND MOTORIZED DAMPER.
4. CONNECT MOTOR AND STARTER TO BAS VIA LONWORKS.

FIN TUBE RADIATION SCHEDULE

TAG	ELEMENT CONFIGURATION TIERS	ARRANGEMENT	ELEMENT TUBE LENGTH	MIN. BTUH PER LINEAR FT.	TUBE SIZE	FIN SIZE W x H [IN]	FINS PER LINEAR FT.	AVERAGE WATER TEMP. [DEG F]	FLUID	TOTAL GPM	ENCLOSURE TYPE	ENCLOSURE LENGTH	ENCLOSURE DEPTH	ENCLOSURE HEIGHT	BASIS OF DESIGN MANUFACTURER	MODEL	REMARKS
FT-1	2	WALL-MOUNT	SEE PLANS	870	3/4"	2-1/2" x 2-3/4"	60	160	HW	1.8	WALL HUNG - SLIM	-	3-9/16"	16"	STERLING	JVK-S14K R02	1

REMARKS:
1 HEATING ELEMENT TO BE STEEL.
2
3

STEAM BOILER

TAG	LOCATION	OPERATING PRESSURE [PSI]	FIRING INPUT. MBH	GROSS OUTPUT MBH	MAX OPERATING PRESSURE [PSI]	STEAM OUTPUT [LBS / HR]	BOILER HP	WATER VOLUME [GAL]	FIRESIDE HEATING SURFACE SQ FT	FURNACE VOLUME [CU. FT]	MIN/MAX NATURAL GAS INPUT PRESSURE (IN W.C.)	BURNER DATA HP	MODULATION	TYPE	VOLT	PH	HZ	MANUFACTURER	MODEL		CONTROL DATA VOLT	PH	HZ	OPERATING WEIGHT LBS	MANUFACTURER	MODEL	REMARKS
B-1	BOILER RM	5	3780	3013	15	3105	90	360	234	24	5" / 15"	3	FULL	HIGH EFF. / LOW Nox	240	3	60	RIELLO	RS/E		208	3	60	8300	HURST	SLPX-90-15-R	1,2,3,4
B-2	BOILER RM	5	3780	3013	15	3105	90	360	234	24	5" / 15"	3	FULL	HIGH EFF. / LOW Nox	240	3	60	RIELLO	RS/E		208	3	60	8300	HURST	SLPX-90-15-R	1,2,3,4

REMARKS
.1 PROVIDE WITH MANUFACTURER-MOUNTED CONTROLLER TO TIE INTO BAS, AND PROVIDE CONTROLS IN ACCORDANCE WITH SYSTEM ON M0603.
2. PROVIDE WITH MANUFACTURER'S INTEGRATED GAS TRAIN, SHUTOFF, AND TRIM.
3. PROVIDE WITH MANUFACTURER'S STANDARD CONTROLLER AND PLANT CONTROLLOGIC.
4. PROVIDE WITH DISCONNECT AND FAN MOTOR STARTER.

BOILER FEED UNIT / VACUUM CONDENSATE RETUN UNIT

TAG	LOCATION	SERVICE	TYPE	CAPACITY (EDR)	RECEIVER MATERIAL	VOLUME (GAL.)	INLET (IN.)	WATER PUMP QUANTITY	MOUNTING	GPM	DISCHARGE PRESS. (PSI)	MOTOR RPM	HP	PHASE	VOLT	AIR PUMP QUANTITY	MOUNTING	CFM	AIR REMOVAL (INCHES HG)	MOTOR RPM	HP	PHASE	VOLT	MANUFACTURER	MODEL	NOTES
BFU-1	BOILER ROOM	B-1, 2	CENTRIFUGAL	25000	CARBON STEEL	365	5	3	VERTICAL	15 EACH	30	3500	0.75	3	240	--	--	--	--	--	--	--	--	MEPCO	AWPCRVT2540	1,2,3,4,5,6,7,8,9
VCRU-1	BOILER ROOM	B-1, 2	POSITIVE DISPLACEMENT	25000	CAST IRON	45	3	2	VERTICAL	38	20	3500	0.75	3	240	2	HORIZONTAL	23 EACH	15	3450	2	3	240	MEPCO	LRVD252320	1,2,3,4,5,6,7,8,9

REMARKS
1. PROVIDE WITH MOTOR STARTERS AND DISCONNECTS IN NEMA ENCLOSURES RATED FOR INDOOR MOISTURE-PROOF INSTALLATIONS.
2. PROVIDE AUXILIARY HIGH WATER AND LOW WATER ALARMS
3. PROVIDE UNIT COMPLETE WITH FLOAT SWITCHES
4. MOTORS: T.E.F.C. TYPE
5. CONTROL PANEL: FURNISH COMBINATION FUSED STARTERS WITH FUSED CONTROL TRANSFORMER, SEE SPECIFICATION FOR ALL REQUIRED COMPONENTS
6. PROVIDE REQUIRED PIPING ACCESSORIES AS REQUIRED FOR FUNCTIONING COMPLETE SYSTEM AND RECOMMENDED BY UNIT MANUFACTURER.
7. ALL RECEIVERS AND HOLDING TANKS ARE TO BE INSULATED PER SPECIFICATION.
8. PROVIDE WITH WATER MAKEUP TRIM, TO INCLUDE BACKFLOW PREVENTER, AIR GAP, AIR BREAK AS REQUIRED BY CODE.
2 9. PROVIDE RECEIVER WITH STEAM PIPE PREHEAT COIL, INTEGRATED CONTROL STEAM CONTROL VALVE, AND CONTROLS LANGUAGE TO MAINTAIN CONSTANT BOILER MAKEUP WATER TEMPERATURE. MAKEUP EQUIPMENT TO BE SHIPPED LOOSE TO ALLOW FOR ACCOMMODATING IN INSTALLATION LOCATION.

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ENERGY RECOVERY VENTILATOR UNIT

TAG	LOCATION	AREA SERVED	CFM	SUPPLY FAN ESP (IN. WC)	SUPPLY FAN TYPE	RETURN / EXHAUST FAN GROSS CFM	RETURN / EXHAUST FAN ESP [IN. WC]	RETURN / EXHAUST FAN TYPE	ENERGY RECOVERY WHEEL OUTDOOR AIR CONDITIONS SUPPLY (CFM)	OUTDOOR AIR CONDITIONS SUMMER EAT(DB)	OUTDOOR AIR CONDITIONS SUMMER EAT(WB)	OUTDOOR AIR CONDITIONS WINTER EAT(DB)	RETURN AIR CONDITIONS SUMMER EAT(DB)	RETURN AIR CONDITIONS SUMMER EAT(WB)	RETURN AIR CONDITIONS WINTER EAT(DB)	EXHAUST AIR CONDITIONS EXHAUST [CFM]	EXHAUST AIR CONDITIONS SUMMER LAT DB	EXHAUST AIR CONDITIONS SUMMER LAT WB	EXHAUST AIR CONDITIONS WINTER LAT	EXHAUST AIR CONDITIONS WINTER RH [%]	SA CONDITIONS SUMMER LAT(DB)	SA CONDITIONS SUMMER LAT(WB)	SA CONDITIONS WINTER LAT(DB)	EFFECTIVENESS (%)	ELECTRICAL DATA V	ELECTRICAL DATA PH	ELECTRICAL DATA FLA	ELECTRICAL DATA TOTAL UNIT FLA	ELECTRICAL DATA UNIT MOCP	FILTER	UNIT WEIGHT LBS	MANUFACTURER AND MODEL	REMARKS
ERV-1	AREA B CORRIDOR	AREA B	225	0.5	PSC	222	0.4	PSC	225	91	78	-10	75	62	70	225	88	74	10	100	77.0	67	50	65.0%	120	1	60	1	15	MERV-7	45	NU-AIR ES210	1,2,3

REMARKS
1. PROVIDE WITH INTEGRAL CONTROLLER LOGIC FOR AUTOMATIC DEFROST, ECONOMIZER, AND RECIRCULATION MODES.
2. PROVIDE WITH MOTOR STARTER AND DISCONNECT.
3. PROVIDE WITH INTEGRATED CONDENSATE PUMP AND CONDENSATE PAN

VARIABLE-REFRIGERANT FLOW SYSTEM

INDOOR UNIT

TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	CFM	OUTDOOR AIR [CFM]	REFRIGERANT	COOLING REQ TOTAL COOLING	COOLING TOTAL CAP [MBH]	COOLING SENS. CAP. [MBH]	COOLING EAT [DEG F]	COOLING LAT [DEG F]	HEATING REQ CAP. [MBH]	HEATING UNIT CAP.	UNIT ELECTRICAL DATA MCA	UNIT ELECTRICAL DATA MOCP	UNIT ELECTRICAL DATA VOLT	UNIT ELECTRICAL DATA PH	UNIT ELECTRICAL DATA HZ	WEIGHT [LBS]	REMARKS
FCU-1	PE OFFICE 183	LENNOX VRF	V22A015	370	60	R-410a	12	13.9	10.4	74/65	55/54	12	9.3	0.3	15	208	1	60	40	1,2,3,4,5,6,7
FCU-2	ART STORAGE 180	LENNOX VRF	V22A015	370	60	R-410a	12	13.9	10.4	74/65	55/54	12	9.3	0.3	15	208	1	60	40	1,2,3,4,5,6,7
FCU-3	GYM STORAGE 182	LENNOX VRF	VWMA007	300	0	R-410a	3	6.9	5.2	74/65	55/54	3	4.5	0.2	15	208	1	60	29	1,2,3,4,5,6,7
FCU-4	KILN 181	LENNOX VRF	VWMA015	445	0	R-410a	0	13.9	10.4	74/65	55/54	10	9.3	0.3	15	208	1	60	33	1,2,3,4,5,6,7
FCU-5	CORRIDOR 01-C7	LENNOX VRF	V22A015	370	60	R-410a	12	13.9	10.4	74/65	55/54	15	9.3	0.3	15	208	1	60	40	1,2,3,4,5,6,7
FCU-6	ROOM 186	LENNOX VRF	V22A015	370	20	R-410a	12	13.9	10.4	74/65	55/54	15	9.3	0.3	15	208	1	60	40	1,2,3,4,5,6,7
FCU-7	KITCHEN	LENNOX VRF	V22A015	370	25	R-410a	12	13.9	10.4	74/65	55/54	15	9.3	0.3	15	208	1	60	40	1,2,3,4,5,6,7

OUTDOOR UNIT

TAG	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	CONDENSER VOLT	CONDENSER PH	CONDENSER HZ	CONDENSER MCA / MCOP	BTUH COOLING SENS.	BTUH COOLING TOTAL	WEIGHT [LBS]	NOTES
CU-1	LENNOX VRF	VPA096H4M	208	1	60	36.1 / 60	91	75	635	1,3,4,7

REMARKS

1. PROVIDE MANUFACTURER-SPECIFIC LAYOUT AND REFRIGERANT PIPING SCHEMATIC TO SERVE SPACES, SIZED PER MANUFACTURER'S RECOMMENDATION.
2. PROVIDE WIRED THERMOSTAT IN EACH SPACE ON WALL.
3. PROVIDE WITH AIR FLOW SAFETY SWITCH AND HIGH LIMIT CONTROL.
4. PROVIDE WITH LOCAL DISCONNECT AND MOTOR STARTER.
5. PROVIDE WITH SMOKE DETECTOR AND ALARM TO BAS.
6. PROVIDE WITH INTEGRAL CONDENSATE PUMP AND ROUTE TO NEAREST FLOOR DRAIN.
7. SYSTEM TO HAVE HEAT RECOVERY OPTION. PROVIDE MANUFACTURER-SPECIFIC PIPING SWITCHOVER BOX BETWEEN INDOOR AND OUTDOOR UNITS.

SPLIT SYSTEM AIR CONDITIONING SCHEDULE (ELECTRIC HEAT)

INDOOR UNIT

TAG	LOCATION	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	CFM	OSA CFM	ESP IN.W.C.	REFRIGERANT	FAN MCA	FAN HP	FAN VOLT	FAN PH	FAN HZ	WEIGHT [LBS]
AC-1	IT CLOSET	MITSUBISHI	PKA-A12 HAL	425	0	0	R-410a	1	0.05	208	1	60	

OUTDOOR UNIT

TAG	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN MODEL	CONDENSER VOLT	CONDENSER PH	CONDENSER HZ	CONDENSER MCA / MCOP	BTUH COOLING SENS.	BTUH COOLING TOTAL	WEIGHT [LBS]	NOTES
CU-2	MITSUBISHI	PUY-A12NHA3	208	1	60	13 / 15		12	100	1,2,3,4,5,6

REMARKS

1. PROVIDE REFRIGERANT PIPING SIZED PER MANUFACTURER'S RECOMMENDATION.
2. PROVIDE THERMOSTAT CONTROL IN SPACE.
3. PROVIDE WITH AIR FLOW SAFETY SWITCH AND HIGH LIMIT CONTROL.
4. PROVIDE WITH LOCAL DISCONNECT AND MOTOR STARTER.
5. PROVIDE WITH SMOKE DETECTOR AND ALARM TO BAS.
6. PROVIDE WITH INTEGRAL CONDENSATE PUMP AND ROUTE TO NEAREST FLOOR DRAIN.

VARIABLE AIR VOLUME TERMINAL UNIT - ELECTRIC COIL

TAG	LOCATION	MAX. CFM	MIN CFM	DUCT SIZES INLET	BOX AIR P.D. INCH W.C.	TOTAL UNIT AIR P.D. INCH W.C.	ELECTRIC COIL EAT [DEG F]	ELECTRIC COIL LAT [DEG F]	ELECTRIC COIL KW	ELECTRIC COIL V/PH/HZ	ELECTRIC COIL STAGES	MANUFACTURER AND MODEL	REMARKS
2													
VAV-1	NOT USED												
VAV-2	NOT USED												
VAV-3	NOT USED												
VAV-4	NOT USED												
VAV-5	NOT USED												
VAV-6	NOT USED												

REMARKS
1. PROVIDE WITH MANUFACTURER'S LONWORKS CONTROLLER AND TIE INTO LONWORKS-BASED BAS.

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No.	Description	Date
2	ADDENDUM #1	01/07/2016
1	ISSUED FOR BID	12/11/2015

Drawing Title:

SCHEDULES

Project No.: 004645.05 Checked by: Checker

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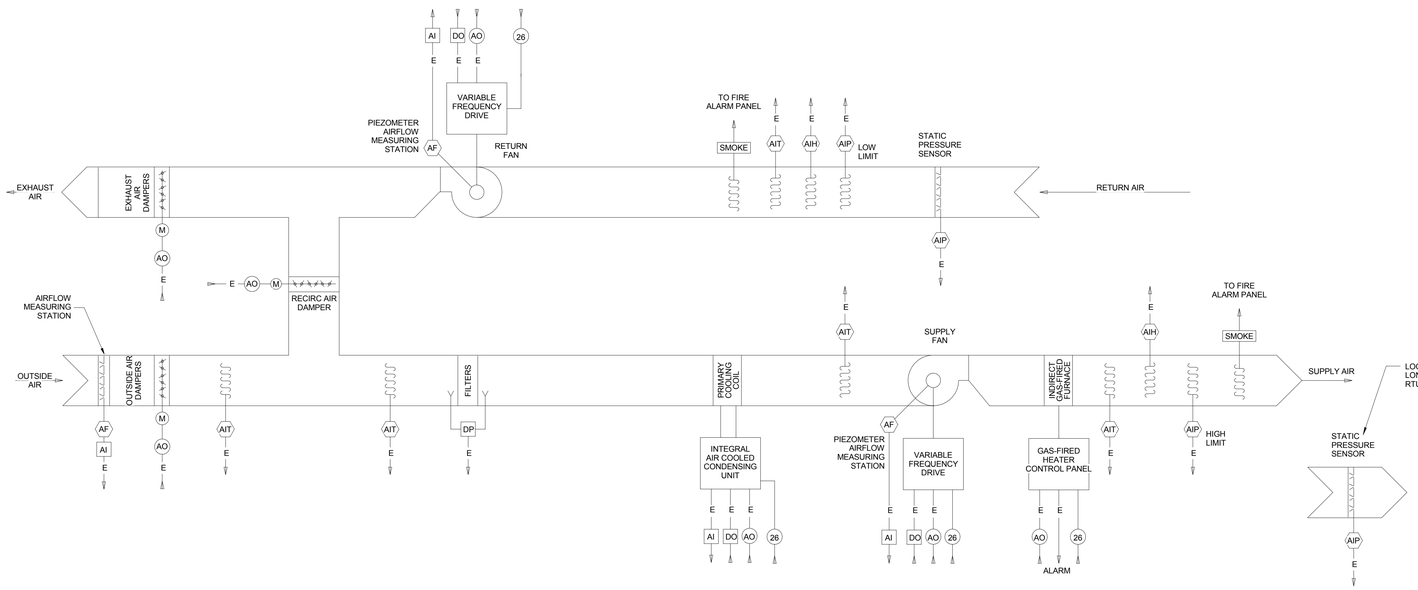


1 ROOFTOP UNIT CONTROL DIAGRAM AND SEQUENCE
NTS

RTU CONTROL SEQUENCE

1.
ALL ROOFTOP UNITS ARE TO COME WITH LONWORKS CARDS TO TIE INTO NEW LON TRUNK.

2.
ALL NEW EQUIPMENT AND CONTROLS ARE TO BE INSTALLED COMPLIANT WITH IECC-2009.

3.
ALL NEW THERMOSTATS IN THE SPACE ARE TO HAVE A DEADBAND OF 5 DEGREES FARENHEIT BETWEEN HEATING AND COOLING MODES. PROVIDE FLAT-PLATE THERMOSTATS TO BE CONTROLLED THROUGH BAS.

RTU-1 (2) (3) (SINGLE ZONE VAV ROOFTOP UNIT WITH DX COOLING AND NATURAL GAS HEAT)

1.
UNITS ARE TO COME WITH FACTORY-MOUNTED CONTROLS AND TIE INTO BAS, PROVIDING FAN STATUS, SUPPLY AIR TEMPERATURE, HEATING AND COOLING COIL OPERATION AND RUNTIME, SPACE TEMPERATURE AND CO2 LEVEL TRENDING.

2.
SUPPLY FANS ARE TO OPERATE ON A TIME OF DAY SCHEDULE, CONTROLLED THROUGH THE BAS. DURING OCCUPIED MODE, OUTDOOR AIR DAMPERS ARE TO OPEN TO PROVIDE VENTILATION AIR TO THE SPACE. DURING UNOCCUPIED MODE, OUTDOOR AIR DAMPERS ARE TO REMAIN CLOSED AND THE UNIT IS TO RECIRCULATE AIR TO MEET THE UNOCCUPIED MODE SETBACK TEMPERATURE (SET THROUGH BAS).

3.
FOR SINGLE-ZONE UNIT: FAN SPEED IS TO BE CONTROLLED BY DIFFERENCE BETWEEN SPACE SETPOINT AND SPACE TEMPERATURE.

4.
MODULATING OUTDOOR AIR MOTORIZED DAMPERS ON UNIT ARE TO OPEN TO MINIMUM OA SETPOINT AT START OF OCCUPIED MODE, THEN BE CONTROLLED BY CO2 SENSORS IN SPACE. AT ALL TIMES DURING OCCUPIED MODE, THE OUTDOOR AIR IS TO BE NO LESS THAN 30% OF TOTAL SUPPLY AIRFLOW.

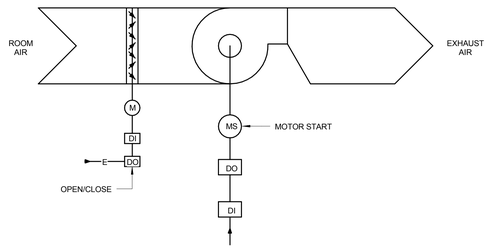
5.
2 SYSTEM TO MAINTAIN DISCHARGE AIR TEMPERATURE AS CALLED OUT ON SCHEDULE AND DETERMINED BY SEASON (HEATING OR COOLING) AND MODULATE FAN SPEED TO MAINTAIN SPACE TEMPERATURES.

6.
UNIT IS TO COME WITH ENTHALPY ECONOMIZER MODE DURING PERIODS WHEN OUTDOOR AIR CONDITIONS ALLOW.

7.
UNIT IS TO COME WITH HOT GAS REHEAT OPTION TO PROVIDE HUMIDITY CONTROL. UNIT IS TO COME WITH MANUFACTURER-PROVIDED AND FACTORY-MOUNTED HUMIDITY SENSORS IN OUTDOOR AIR AND SUPPLY AIRSTREAMS TO ALLOW FOR THIS SYSTEM OPERATION.

8.
UNIT IS TO HAVE A DUCT SMOKE DETECTOR IN THE RETURN AND SUPPLY DUCTWORK TIED INTO BUILDING FIRE ALARM AND CAPABLE OF SHUTTING OFF UNITS IN CASE OF ALARM.

2 9.
RTU-2 & RTU-3 ARE TO SERVE MULTIPLE ZONES. EACH ZONE IS TO COME WITH A WALL-MOUNTED, FLAT-PLAT TEMPERATURE SENSOR TIED TO BAS. BAS TO AVERAGE SPACE TEMPERATURES OF AREAS SERVED BY UNIT AND SEND A CONTROL SIGNAL TO ITS RESPECTIVE ROOFTOP UNIT TO DICTATE FAN SPEED AND DISCHARGE AIR TEMPERATURE. IF ONE ZONE GOES OUTSIDE OF TEMPERATURE RANGE, ROOFTOP UNIT OUTPUT TEMPERATURE AND FAN SPEED TO INDEX TO THE ZONE TEMPERATURE OUTSIDE OF THE RANGE UNTIL THAT ZONE IS BACK INTO RANGE FOR 3 MINUTES (ADJ), THEN CONTROL IS TO REVERT TO AVERAGE OF ZONE TEMPERATURES.



2 EXHAUST FANS
NTS

GENERAL NOTES FOR ALL EXHAUST FANS

1.
WHEN FAN IS NOT ENERGIZED, MOTORIZED DAMPER TO BE CLOSED. UPON CALL FOR OPERATION, MOTORIZED DAMPER TO OPEN. UPON PROVING OF DAMPER OPENING, FAN TO ENERGIZE.

2.
ON FAN SHUTDOWN, FAN IS TO TURN OFF, THEN MOTORIZED DAMPER TO CLOSE.

3.
IF ON A CALL TO START OPERATING THE FAN DOES NOT PROVE OPERATION, AN ALARM IS TO BE SENT TO THE OPERATOR'S STATION OF THE BAS.

4.
PROVIDE FAN STATUS TO THE BAS FOR ALL FANS COVERED IN THIS PROJECT EXCEPT KILN EXHAUST FAN EF-2.

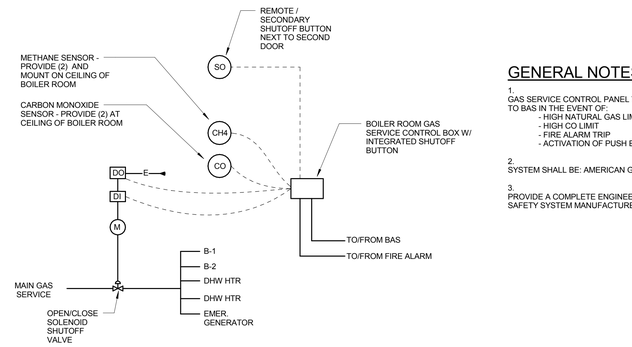
5.
SEE INSTALLATION DETAILS ON M0701 & M0702 FOR THE DIFFERENT TYPE OF FANS.

EF-2, EF-3

1.
WHEN THE BUILDING IS IN OCCUPIED OR UNOCCUPIED OVERRIDE MODE, THE FAN IS TO TURN ON AND OPERATE CONTINUOUSLY.

EF-1 (KILN ROOM EXHAUST FAN)

1.
EXHAUST FAN IS TO BE TIED TO KILN OPERATION. WHEN KILN IS ENERGIZED, THE EXHAUST FAN IS TO TURN ON AND RUN CONTINUOUSLY. WHEN THE KILN TURNS OFF, THE FAN IS TO CONTINUE TO RUN FOR 30 MINUTES (ADJ), AND THEN TURN OFF.



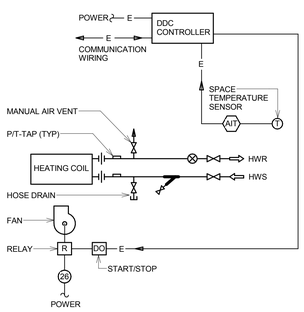
GENERAL NOTES

1.
GAS SERVICE CONTROL PANEL TO CLOSE SOLENOID SHUTOFF VALVE AND SEND AN ALARM TO BAS IN THE EVENT OF:
- HIGH NATURAL GAS LIMITS
- HIGH CO LIMIT
- FIRE ALARM TRIP
- ACTIVATION OF PUSH BUTTON SHUTOFF SWITCH

2.
SYSTEM SHALL BE: AMERICAN GAS SAFETY MERLIN GSP2 W/ ACCESSORIES.

3.
PROVIDE A COMPLETE ENGINEERED SYSTEM WITH ALL ACCESSORIES PROVIDE BY GAS SAFETY SYSTEM MANUFACTURER.

3 GAS SERVICE SHUTOFF
NTS



CABINET UNIT HEATER SEQUENCE OF OPERATIONS

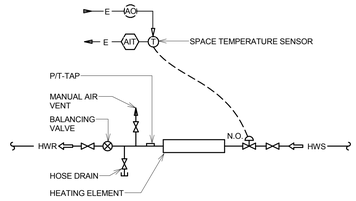
1. CABINET UNIT HEATERS ARE TO COME WITH A FIELD-ADJUSTABLE BALANCING VALVE (CIRCUIT SETTER).

2. AT THE START OF HEATING MODE, THE FAN IS TO TURN ON, AND START AND STOP IN ORDER TO MAINTAIN SPACE TEMPERATURE.

3. IF THE ROOM TEMPERATURE EXCEEDS THE SETPOINT BY 3 DEGREES (ADJ), THE FAN IS TO STOP.

4.
DURING UNOCCUPIED MODE THE FAN WILL ALTERNATE ON AND OFF TO MAINTAIN THE UNOCCUPIED MODE TEMPERATURE SETPOINT, AS SET THROUGH THE BAS.

4 CABINET HEATER / UNIT HEATER
NTS



SEQUENCE OF OPERATIONS FOR HOT WATER FINNED TUBE RADIATORS AND RADIANT HEATING PANELS

1. CONTROL VALVES SHALL BE NORMALLY CLOSED, AND SHALL BE ACTIVATED WHEN BUILDING ENTERS HEATING MODE.

2. AT THE START OF HEATING MODE, THE FINNED-TUBE RADIATOR CONTROL VALVE SHALL OPEN. IF THE HEATING DEMAND IS MET WITHIN 5 MINUTES (ADJ) THE CONTROL VALVE ON THE FINNED TUBE RADIATOR SHALL START TO CLOSE IN 20% STEPS EVERY 5 MINUTES (ADJ) UNTIL THE TEMPERATURE SETPOINT CANNOT BE MAINTAINED. THEN THE VALVE SHALL RE-OPEN TO THE NEXT HIGHEST STEP TO MAINTAIN TEMPERATURE SETPOINT.

3. IF THE ROOM TEMPERATURE EXCEEDS THE SETPOINT BY 3 DEGREES (ADJ), THE HOT WATER CONTROL VALVE SHALL START TO CLOSE ONCE AGAIN UNTIL THE SETPOINT IS MAINTAINED FOR 5 MINUTES (ADJ).

5 FINNED TUBE RADIATION CONTROL
NTS

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2	ADDENDUM #1	01/07/2016
1	ISSUED FOR BID	12/11/2015

Drawing Title:
FLOW & CONTROL DIAGRAMS

Project No.: 004645.05 Checked by: KH / ~~GP~~

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STEAM BOILER SYSTEM CONTROLS DESCRIPTION

HEATING SYSTEM GENERAL NOTES

1.
THERMOMETERS AND PRESSURE AND TEMPERATURE PLUGS ARE TO BE PROVIDED BY THE MC AT EACH TEMPERATURE SENSOR. PRESSURE AND TEMPERATURE PLUGS ARE TO BE PROVIDED BY THE MC AT UPSTREAM AND DOWNSTREAM OF EACH FLOW METER.

2.
THE SCHOOL'S HEATING SYSTEM CONSISTS OF A STEAM BOILER PLANT, SERVING PARTS OF THE EXISTING BUILDING AND A STEAM-TO-HOT WATER HEAT EXCHANGER IN THE BOILER ROOM WITH FOUR PUMPS SERVING TWO ADDITIONAL LOOPS.

3.
CONTRACTOR IS TO REVIEW AND CONFIRM THE EXISTING CONTROL SCHEME AND SEQUENCE OF OPERATION FOR THE HEAT EXCHANGER AND HOT WATER SYSTEMS, AND PROVIDE WRITTEN CONFIRMATION THAT THE THIS OPERATION IS MAINTAINED AT THE END OF THE PROJECT. THE ONLY CHANGE TO THE HOT WATER SEQUENCE OF OPERATION IS TO ADD LOW-AMBIENT UNOCCUPIED MODE SEQUENCE DESCRIBED IN STEP 8 OF BOILER SEQUENCE OF OPERATION (SEE COLUMN TO THE LEFT) TO HOT WATER SYSTEM.

4.
UPON LOSS OF SIGNAL, POINTS SHALL DEFAULT TO LAST KNOWN POSITION.

STEAM BOILERS

1.
BOILER MANUFACTURER IS TO PROVIDE A MASTER BOILER SEQUENCING PANEL TO CONTROL BOILER FIRING RATE TO MAXIMIZE BOILER EFFICIENCY THROUGHOUT THE LOAD RANGE, PROVIDE EQUAL RUNTIME ACROSS BOILERS, AND INTERNALLY CONTROL BOILER PLANT OPERATIONAL SEQUENCE. BOILER MANUFACTURER TO PROVIDE A LONWORKS CONTROLS CARD ON MASTER BOILER SEQUENCING PANEL TO CONNECT WITH SCHOOL'S CENTRAL LONWORKS TRUNK AND BAS.

2.
EACH BOILER WILL BE EQUIPPED WITH AN INTEGRAL SOLID STATE LONWORKS CARD THAT WILL ALLOW THE ECC TO TRANSMIT TO THE FRONT END OPERATORS WORK STATION SUCH DATA AS IS APPLICABLE TO THE MANAGEMENT OF EACH BOILER. (THE SELECTION OF AVAILABLE POINTS TO BE MADE BY THE OWNER AND DESIGN ENGINEER). ALL OPERATING, EFFICIENCY AND SAFETY DATA, INCLUDING A POINT INDICATING WHEN A BOILER IS MANUALLY LOCKED OUT OF THE SEQUENCE. EACH SIGNAL SHALL BE TRANSMITTED FROM EACH BOILER TO THE BOILER CONTROL CENTER VIA ITS MOBUS PROTOCOL AND THEN TRANSMITTED TO THE OPERATORS WORK STATION OVER A LOWORKS PROTOCOL. ONLY THE MAJOR DATA POINTS SHALL BE CONTINUOUSLY DISPLAYED ON THE GRAPHIC WHILE A SEPARATE ADDRESS FOR EACH BOILER SHALL ALLOW THE OPERATOR TO HAVE ACCESS TO ALL MAINTENANCE AND SAFETY ADDRESSES.

4.
BOILER CONTROL PANEL PROVIDED AND COMMISSIONED BY BOILER MANUFACTURER, INSTALLED AND WIRED BY THE MECHANICAL CONTRACTOR INCLUDING ALL SENSORS.

5.
THE STEAM PRESSURE SHALL BE RESET BY OUTDOOR AIR TEMPERATURE. SEE RESET SCHEDULE ON THIS PAGE. RESET SCHEDULE SHALL BE ADJUSTABLE BY THE BOILER WIZARD BOILER CONTROL PANEL.

6.
BOILERS SHALL BE LEAD-LAG AND THE LEAD BOILER SHALL BE ALTERNATED WEEKLY, ADJUSTABLE BY THE BOILER WIZARD CONTROL PANEL. LEAD-LAG SCHEDULE SHALL BE ENABLED/DISABLED BY OUTDOOR AIR TEMPERATURE SENSOR PROVIDED WITH BOILER WIZARD CONTROL PANEL.

7.
ON A CALL FOR HEAT THE COMBUSTION AIR DAMPER SHALL BE PROVEN OPEN PRIOR TO STARTING THE BOILER.

8.
THE BOILER WIZARD SYSTEM SHALL ENABLE AND DISABLE THE BOILERS.

9.
MANUAL EMERGENCY FUEL BURNER SWITCH LOCATED AT EACH BOILER ROOM EXIT DOOR SHALL SHUT OFF ALL BURNERS, INCLUDING DOMESTIC WATER HEATER IN BOIILER ROOM WHEN ACTIVATED. ONE (1) SWITCH IS REQUIRED AT EACH BOILER ROOM EXIT DOOR.

10.
INPUT/OUTPUT SCHEDULE (MINIMUM POINTS REQUIRED):
- STEAM HEADER PRESSURE; FOR EACH BOILER: STEAM PRESSURE DOWNSTREAM OF BOILER; STEAM BOILER STATUS; STEAM BOILER START/STOP; STEAM BOILER ALARM; STEAM BOILER PRESSURE SET POINT; COMBUSTION AIR DAMPER STATUS; GRAPHIC DISPLAY.

BOILER FEEDWATER SYSTEM

1.
THE BOILER FEEDWATER SYSTEM SHALL OPERATE ON ITS OWN CONTROLS.

2. INPUT/OUTPUT SCHEDULE (MINIMUM POINTS REQUIRED):
- FEEDWATER SUPPLY TEMPERATURE; BOILER FEEDWATER SYSTEM STATUS; BOILER FEEDWATER SYSTEM START/STOP; BOILERFEEDWATER SYSTEM ALARM; BOILER FEEDWATER SYSTEM LOW WATER ALARM; PUMP STATUS (EACH); PUMP ALARM (EACH); FEEDWATER TANK STORAGE WATER TEMPERATURE; GRAPHIC DISPLAY.

SEQUENCE OF OPERATIONS

1.
BOILERS SHALL BE ON AN ANNUAL HEATING SCHEDULE, WITH BOILERS CONTINUOUSLY AVAILABLE FROM OCTOBER 1 THROUGH APRIL 30 OF EVERY SCHOOL YEAR, AND DURING OTHER TIMES OF YEAR AS NEEDED. THE STEAM BOILERS SHALL BE INITIATED FROM THE BOILER WIZARD BOILER CONTROL PANEL. BOILER WIZARD PANEL SHALL ENABLE/DISABLE POINT ON THE CONTROL GRAPHIC DISPLAY. IN THE EVENT BOILER FEEDWATER PUMP FLOW IS LOST DUE TO PUMP MALFUNCTION THE BOILER(S) SHALL BE SHUT DOWN.

2.
ALL BOILERS ARE AVAILABLE FOR SERVICE AT ALL TIMES FOR ALL NORMAL OPERATION. ANY BOILER MAY BE TAKEN OUT OF SERVICE THROUGH THE LOCAL/REMOTE SWITCH ON EACH BOILER/BURNER TO SELECT BURNER ENABLE/DISABLE (NOT MODULATION) FROM EITHER INTERNAL BOILER CONTROLS OR (NOT OF) BOILER WIZARD SYSTEM VIA MODBUS.

3.
LOW WATER CUTOFF AND PUMP CONTROL: OPERATE FEEDWATER PUMP(S) CYCLE FEED WATER PUMP(S) FOR MAKEUP WATER CONTROL.

4.
SEQUENCE OF OPERATION: ELECTRIC, FACTORY-FABRICATED AND FACTORY-INSTALLED PANEL TO CONTROL BURNER FIRING RATE TO MAINTAIN A CONSTANT STEAM PRESSURE. MAINTAIN PRESSURE SET POINT PLUS OR MINUS 0.25 PERCENT.

5.
BURNER OPERATING CONTROLS: TO MAINTAIN SAFE OPERATING CONDITIONS, BURNER SAFETY CONTROL LIMIT BURNER OPERATION. HIGH CUTOFF: MANUAL RESET STOPS BURNER IF OPERATING CONDITIONS RISE ABOVE MAXIMUM BOILER DESIGN PRESSURE. LOW-WATER CUTOFF SWITCH (UL, CSD-1) FLOAT TYPE WITH SNAP OPERATION SHALL PREVENT BURNER OPERATION ON LOW WATER. LOW CUTOFF SWITCH SHALL BE MANUAL RESET TYPE. AUDIBLE ALARM: FACTORY MOUNTED ON CONTROL PANEL WITH SILENCE SWITCH SHALL SOUND ALARM FOR ABOVE CONDITIONS.

6.
COMMON ALARM OUTPUT TO SIGNAL THE BOILER WIZARD SYSTEM VIA MODBUS WHEN ANY SAFETY OR CONDITION SHUTS DOWN THE BOILER.

7.
COLD-START-ENABLE CONTROL WITH MINIMUM TEMPERATURE STANDBY-OPERATE THE SWITCH.

8.
WHEN THE OUTDOOR AIR TEMPERATURE IS BELOW 25 DEG F (ADJ) AND THE SCHOOL IS IN UNOCCUPIED MODE, ALL FIELD UNIT CONTROL VALVES ARE TO OPEN AND SECONDARY LOOP PUMPS HWP-3 & 4 ARE TO TURN ON TO 50% (ADJ) FLOW AND CIRCULATE WATER CONTINUOUSLY. STEAM BOILER IS TO OPERATE AT 2 PSI SUPPLY PRESSURE, AND HEAT EXCHANGER STEAM VALVE(S) ARE TO MODULATE FIRING TO MAINTAIN A 120 DEG (ADJ.) HW SUPPLY TEMPERATURE. IF ANY SPACE FALLS 5 DEG F (ADJ.) BELOW UNOCCUPIED MODE SETPOINT WHEN BOILER AND PUMP PLANT IS OPERATING IN THIS MODE AND THE EQUIPMENT UNOCCUPIED MODE OPERATION IS ENGAGED, BOILER TO INCREASE STEAM PRESSURE IN 0.5 PSI (ADJ) INCREMENTS UNTIL LOWEST ROOM TEMPERATURE SETPOINT IS MAINTAINED OR MAXIMUM SYSTEM PRESSURE IS ACHEIVED. HWS TEMPERATURE IS THEN TO SET AT THIS TEMPERATURE POINT UNTIL EITHER THE BUILDING ENTERS OCCUPIED MODE WARM-UP OR A SPACE FALLS BELOW UNOCCUPIED MODE SETPOINT AGAIN, THEN THE BOILER PLANT IS TO REPEAT THIS STEP.

BOILER FEEDWATER SYSTEM

1.
BOILER WATER-LEVEL CONTROL STARTS AND STOPS PUMP TO MAINTAIN BOILER WATER-LEVEL SET POINT.

2.
PUMP FAILURE, INDICATION ENABLED VIA DISCHARGE PIPING FLOW SWITCH.

3.
PUMP SHUT DOWN ON LOW WATER TANK LEVEL CONDITION.

4.
VISUAL INDICATION OF PUMP ON AND OFF STATUS.

5.
VISUAL AND AUDIBLE ALARM INDICATION OF PUMP FAILURE.

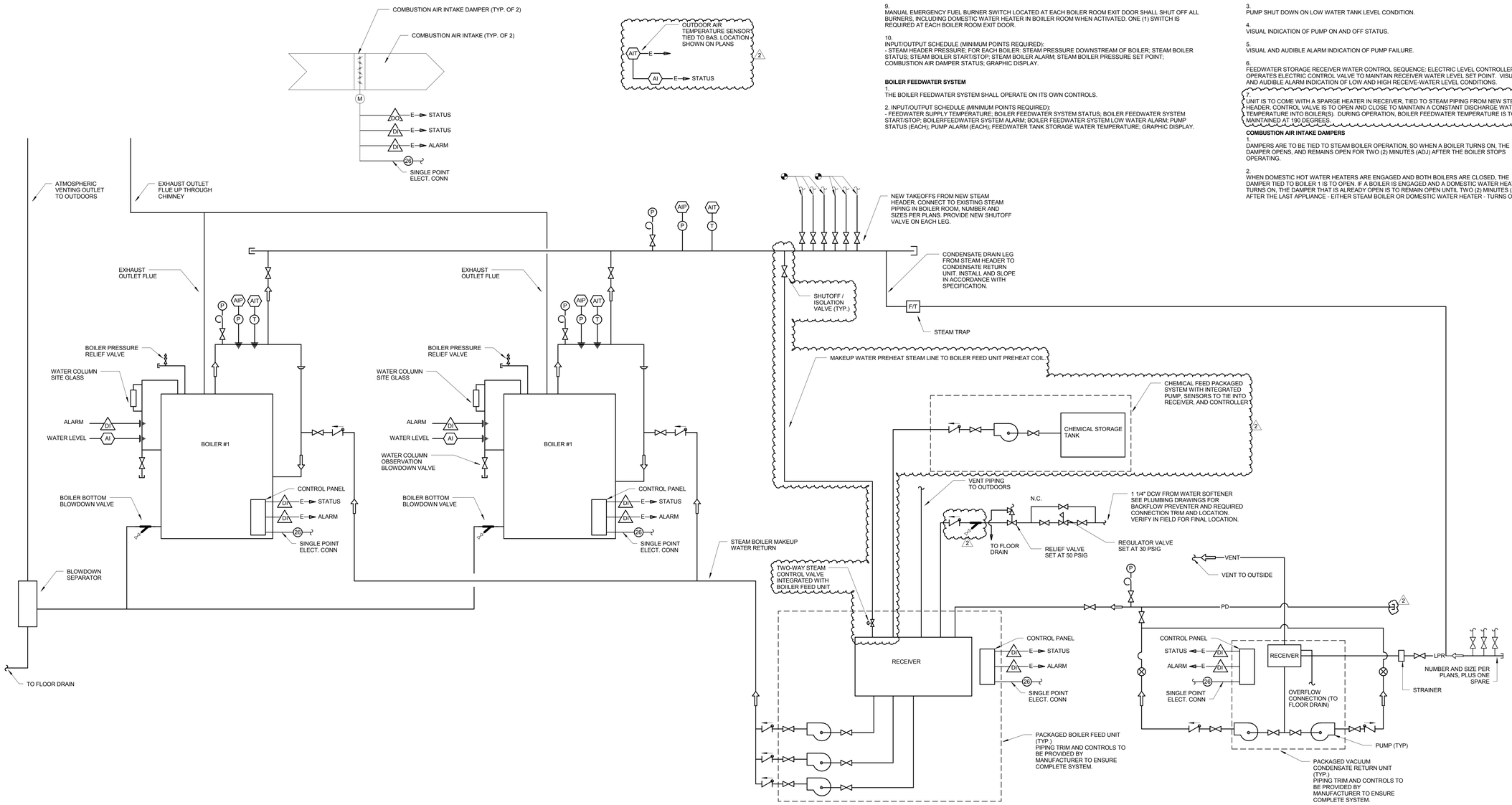
6.
FEEDWATER STORAGE RECEIVER WATER CONTROL SEQUENCE: ELECTRIC LEVEL CONTROLLER OPERATES ELECTRIC CONTROL VALVE TO MAINTAIN RECEIVER WATER LEVEL SET POINT. VISUAL AND AUDIBLE ALARM INDICATION OF LOW AND HIGH RECEIVE-WATER LEVEL CONDITIONS.

7.
UNIT IS TO COME WITH A SPARGE HEATER IN RECEIVER, TIED TO STEAM PIPING FROM NEW STEAM HEADER. CONTROL VALVE IS TO OPEN AND CLOSE TO MAINTAIN A CONSTANT DISCHARGE WATER TEMPERATURE INTO BOILER(S). DURING OPERATION, BOILER FEEDWATER TEMPERATURE IS TO BE MAINTAINED AT 180 DEGREES. 2

COMBUSTION AIR INTAKE DAMPERS

1.
DAMPERS ARE TO BE TIED TO STEAM BOILER OPERATION, SO WHEN A BOILER TURNS ON, THE DAMPER OPENS, AND REMAINS OPEN FOR TWO (2) MINUTES (ADJ) AFTER THE BOILER STOPS OPERATING.

2.
WHEN DOMESTIC HOT WATER HEATERS ARE ENGAGED AND BOTH BOILERS ARE CLOSED, THE DAMPER TIED TO BOILER 1 IS TO OPEN. IF A BOILER IS ENGAGED AND A DOMESTIC WATER HEATER TURNS ON, THE DAMPER THAT IS ALREADY OPEN IS TO REMAIN OPEN UNTIL TWO (2) MINUTES (ADJ) AFTER THE LAST APPLIANCE - EITHER STEAM BOILER OR DOMESTIC WATER HEATER - TURNS OFF.



1 STEAM BOILER SYSTEM FLOW, CONTROL AND PIPING DIAGRAM

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No.	Description	Date
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Drawing Title:

FLOW, CONTROL, PIPING DIAGRAM

Project No.: 004645.05 Checked by: KH / GP

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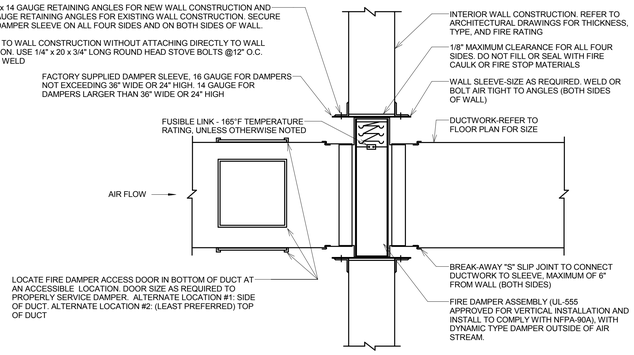


NOTES:

1. FOLLOW THIS DETAIL, UNLESS THE DAMPER MANUFACTURER'S INSTALLATION DETAILS AND INSTRUCTIONS (AS TESTED AND APPROVED BY UL) OR THE PROJECT SPECIFICATION IS MORE STRINGENT.

2. LABEL THE ACCESS DOORS: "FIRE DAMPER ACCESS".

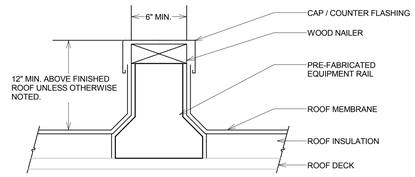
3. WHERE ACCESS DOORS ARE INSTALLED ON THE SIDE OF A DUCT, PROVIDE A LABEL OR SIGN AT THE BOTTOM OF THE DUCT WITH AN ARROW AND "FIRE/SMOKE DAMPER ACCESS DOOR" TEXT POINTING TO THE ACCESS DOOR. WHERE ACCESS DOORS ARE INSTALLED ON THE TOP OF THE DUCT, PROVIDE A LABEL OR SIGN AT THE BOTTOM OF THE DUCT WITH "FIRE/SMOKE DAMPER ACCESS DOOR ON TOP OF DUCT."

4. SEQUENCE OF OPERATION:

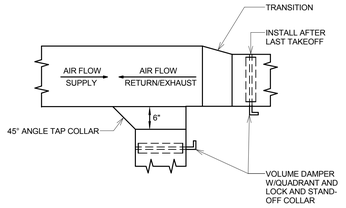
A. FIRE DAMPER MODE: HIGH TEMPERATURE MELTS FUSIBLE LINK, CLOSING FIRE DAMPER.

5. REFER TO FIRE DAMPER SCHEDULE FOR FURTHER INFORMATION.

11 FIRE DAMPER
NTS



7 ROOF MOUNTED EQUIPMENT/ DUCT/ PIPE SUPPORT RAIL
NTS



5 DUCT TAKE-OFF
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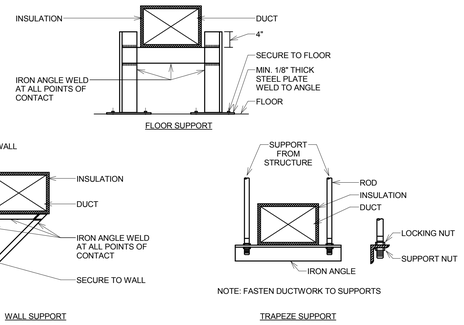
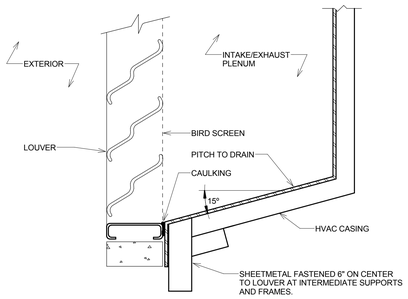
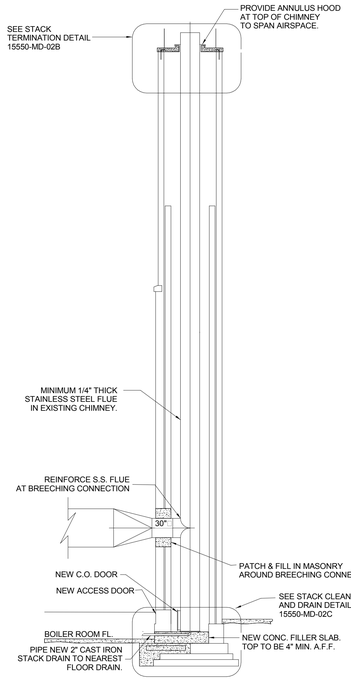


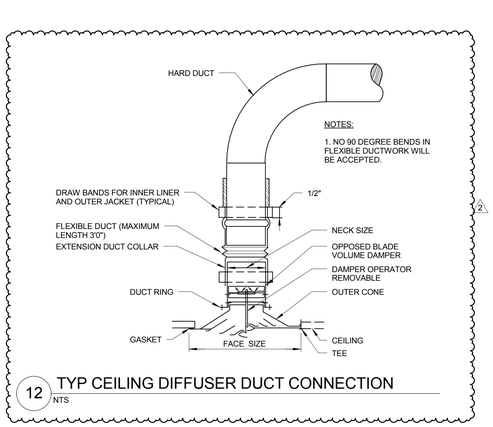
6 DUCTWORK SUPPORT DETAIL
NTS



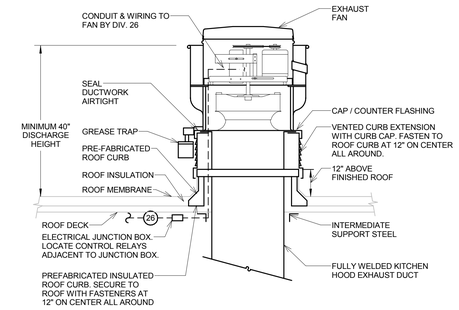
4 INTAKE/EXHAUST PLENUM TO LOUVER CONNECTION
NTS



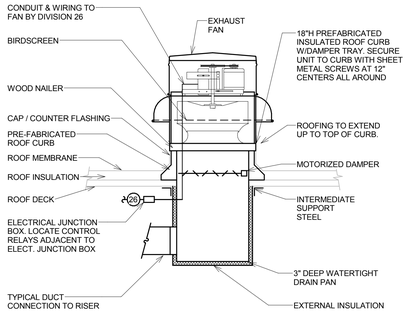
9 CHIMNEY STACK DETAIL - EXISITNG CHIMNEY
NTS



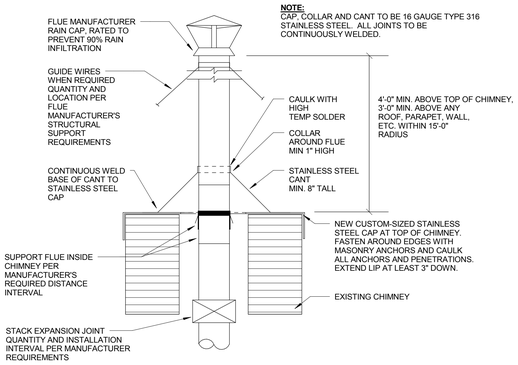
12 TYP CEILING DIFFUSER DUCT CONNECTION
NTS



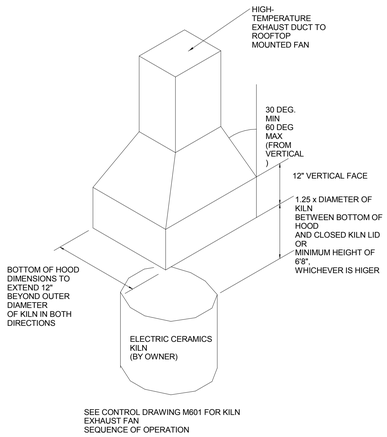
3 KITCHEN EXHAUST FAN
NTS



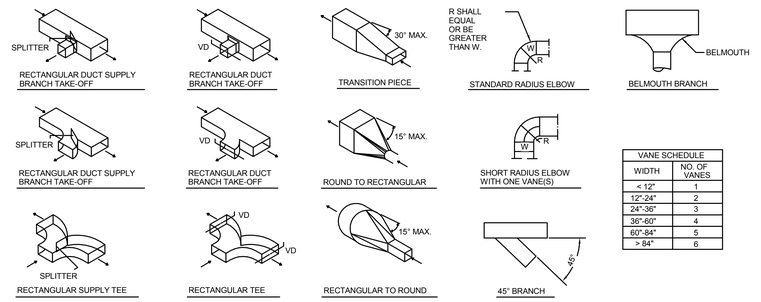
2 ROOF EXHAUST FAN
NTS



10 BOILER STACK AT ROOF
NTS



8 KILN HOOD
NTS



VANE SCHEDULE	
WIDTH	NO. OF VANES
< 12"	1
12"-24"	2
24"-36"	3
36"-60"	4
60"-84"	5
> 84"	6

NOTES:

1. PROVIDE STANDARD RADIUS ELBOWS WHEN POSSIBLE - SHORT RADIUS WHERE REQUIRED.
2. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED, & FASTENED AS RECOMMENDED BY SMACNA. NO SQUARE OR RECTANGULAR HEEL ELBOWS SHALL BE ALLOWED, WITHOUT TURNING VANES.
3. NO SPIN-IN CONNECTIONS SHALL BE ALLOWED.
4. FOR RADIUS ELBOWS, IF R IS LESS THAN W, THEN FULL ARC TURNING VANE(S) SHALL BE PROVIDED, SEE THE VANE SCHEDULE. THE INSIDE BEND MAY BE SQUARE FOR W > 12".
5.

1 SUPPLY, RETURN AND EXHAUST DUCTWORK DETAIL
NTS

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No.	Description	Date
2	ADDENDUM #1	01/07/2016
1	ISSUED FOR BID	12/11/2015

Drawing Title:

HVAC DUCTWORK & GENERAL DETAILS

Project No.: 004645.05 Checked by: KH / GP

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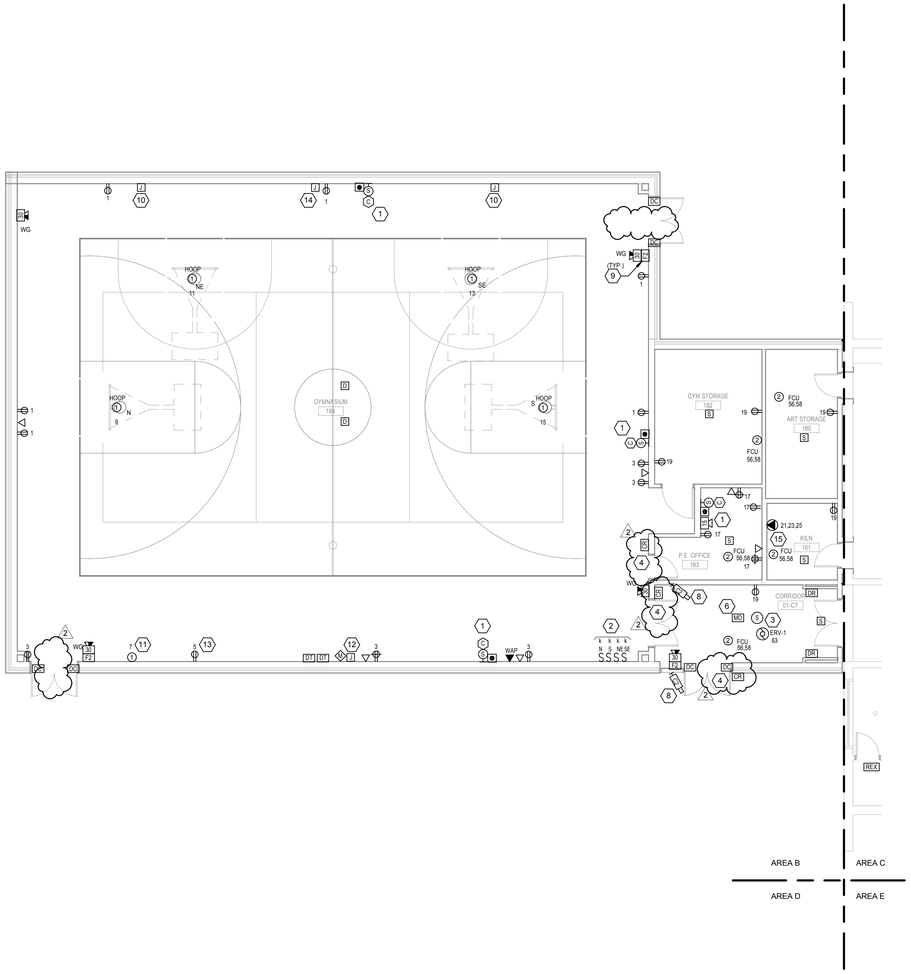

1 LEVEL 01 POWER AND SYSTEMS PLAN - AREA B
1/8" = 1'-0"

KEYED NOTES :

1.
INTERCOM SPEAKER, CALL SWITCH, AND CLOCK SHALL BE PROVIDED BY RPS. PROVIDE CATEGORY 6 CABLE AND BACKBOXES AT ALL THREE LOCATIONS. CONTRACTOR SHALL TEST AND TERMINATE CABLE. EACH LOCATION SHALL BE A SEPERATE HOMERUN TO THE DESIGNATED IDF ROOM.

2.
KEY OPERATED SWITCHES FOR MOTORIZED BACKSTOPS. ENGRAVE COVERPLATES WITH N, S, NE, AND SE BACKSTOP LETTERING. PROVIDE ALL CONTROL WIRING AND INTERFACE WITH BACKSTOP MOTORS AS REQUIRED.

3.
FUTURE SPEAKER LOCATION. EACH SPEAKER LOCATION SHALL CONSIST OF 20'-0" CATEGORY 6 CABLE COIL. HOMERUN TO LAN ROOM. CONFIRM EXACT LOCATION WITH RPS PRIOR TO ROUGH-IN.

4.
PROVIDE 1/2" CONDUIT STUBBED INTO DOOR FRAME FOR FUTURE CARD READER AND SECURITY WIRING. EXTEND CONDUIT TO ACCESSIBLE CEILING LOCATION THROUGH PARTITION TO ELECTRICAL LOCK LOCATION.

5.
NOT USED.

6.
PROVIDE 22/4 CABLE HOMERUN BACK TO MDF ROOM FOR MOTION DETECTOR. COIL 10'-0" OF CABLE AT THE FUTURE SECURITY PANEL LOCATION.

7.
NOT USED.

8.
PROVIDE BACKBOX AND CATEGORY 6 CABLE AT SECURITY CAMERA LOCATION. EQUIPMENT SHALL BE PROVIDED BY RPS.

9.
ALL MANUAL PULL STATIONS SHALL BE PROVIDED WITH STOPPER II COVER WITH SOUNDER.

10
VERIFY LOCATIONS OF UNDERFLOOR FANS. PROVIDE 2#18 AWG AT EACH FAN FROM HUMIDISTAT CONTROL PANEL.

11
PROVIDE 120V CONNECTION TO DEHUMIDIFICATION UNDER FLOOR SYSTEM. CONTROL PANEL SHALL BE LOCATED RIGHT ABOVE THE FLOOR WITH METAL BLANK COVER. PROVIDE 2#18 AWG WIRE TO HUMIDISTAT BELOW FLOOR. PROVIDE 2#18 AWG WIRES TO THE TWO EXHAUST FANS. PROVIDE ALL WIRING AND TERMINATIONS PER MANUFACTURERS INSTRUCTIONS.

12
PROVIDE 1-INCH STUB-UP FOR SCOREBOARD CONTROL WIRING. CONFIRM EXACT LOCATIONS WITH RPS.

13.
PROVIDE RECEPTACLE FOR SCOREBOARD. CONFIRM EXACT LOCATION WITH RPS.

14.
SCOREBOARD LOCATION. PROVIDE 1"C TO DESIGNATED SCORERS TABLE LOCATION. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF WIRING DEVICES PRIOR TO ROUGH-IN.

15.
PROVIDE NEMA 15-50 RECEPTACLE FOR KILN EQUIPMENT. PROVIDE 4#6, 1#10G IN 1-1/4" C. CONNECT TO PANEL 1LNLC1, 50A-3P CIRCUIT BREAKER. PROVIDE 50A-3P CIRCUIT BREAKER AT PANEL.

BRANCH CIRCUIT NOTES :

1. EXTEND BRANCH CIRCUITS IN THIS AREA TO THE FOLLOWING BRANCH PANELBOARDS, UNLESS OTHERWISE NOTED:

120 / 208V PANELBOARDS
1LNLC1 - NORMAL POWER (ELEC 170)
EM - LIFE SAFETY POWER. UTILIZE EXISTING SPACES. PROVIDE NEW 20A-1P CIRCUIT BREAKERS AT PANEL.

2. ALL SECURITY LOCATIONS ARE SERVED FROM I.T. 157. REFER TO E0201.C FOR LOCATION.

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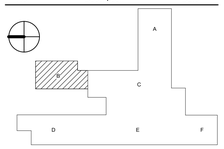
No.	Description	Date
2	ADDENDUM 01	1/07/2016
1	ISSUED FOR BID	12/11/2015



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LEVEL 01 POWER AND SYSTEMS PLAN - AREA B

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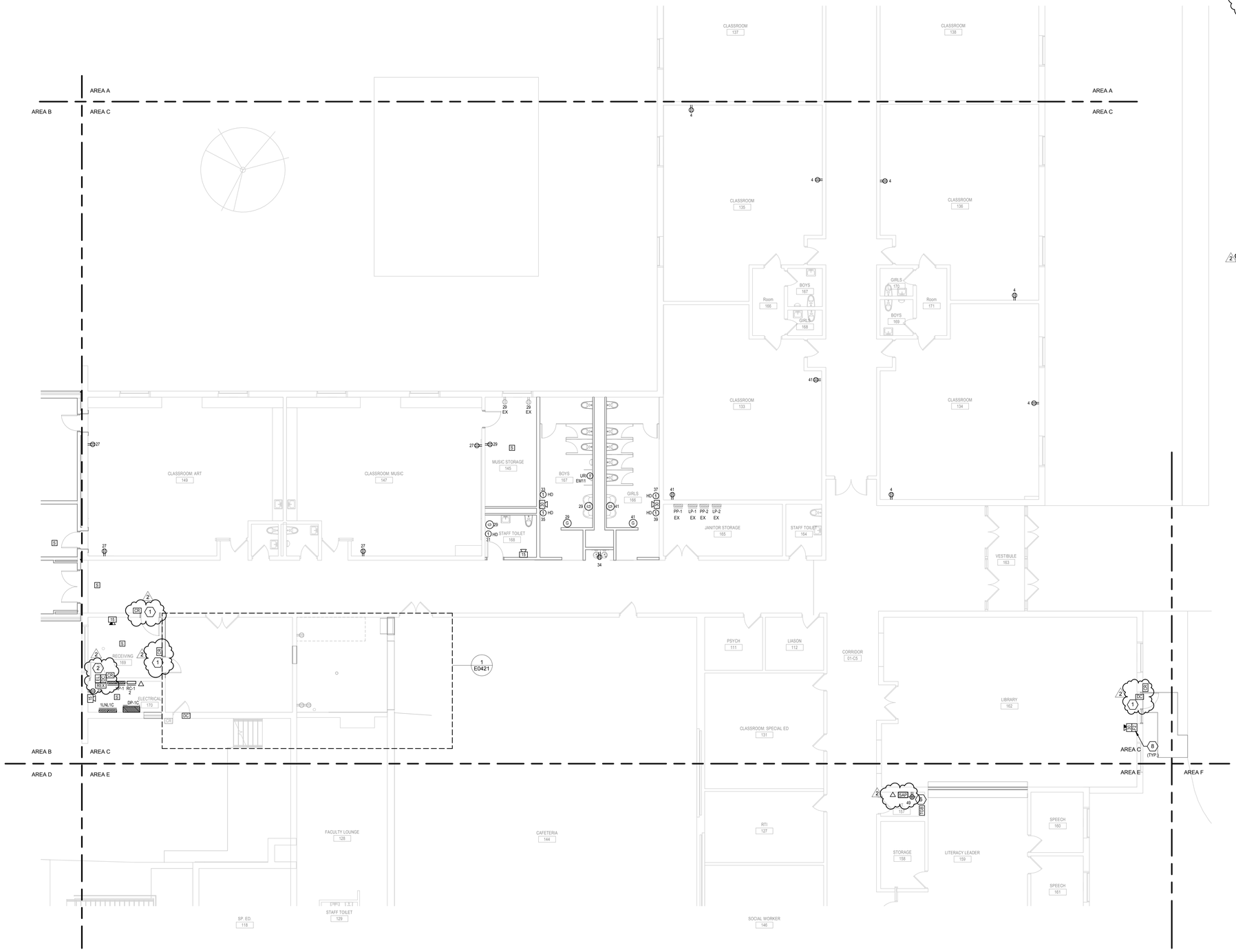

1 LEVEL 01 POWER AND SYSTEMS PLAN - AREA C
1/8" = 1'-0"

KEYED NOTES ⬡:

1.
PROVIDE 1/2" CONDUIT STUBBED INTO DOOR FRAME FOR FUTURE CARD READER AND SECURITY WIRING. EXTEND CONDUIT TO ACCESSIBLE CEILING LOCATION THROUGH PARTITION TO ELECTRICAL LOCK LOCATION.

2.
PROVIDE 1/2" CONDUIT STUBBED INTO DOOR FRAME FOR OWNER PROVIDED SECURITY WIRING. EXTEND CONDUIT TO ACCESSIBLE CEILING LOCATION THROUGH PARTITION TO ELECTRIC LOCK LOCATION.

3.
NOT USED.

4.
PROVIDE BACKBOX AND CATEGORY 6 CABLE AT SECURITY CAMERA LOCATION. EQUIPMENT SHALL BE PROVIDED BY RPS.

5.
PROVIDE 22/4 CABLE HOMERUN BACK TO MDF ROOM FOR MOTION DETECTOR. COIL 10'-0" OF CABLE AT THE FUTURE SECURITY PANEL LOCATION.

6.
INTERCOM SPEAKER, CALL SWITCH, AND CLOCK SHALL BE PROVIDED BY RPS. PROVIDE CATEGORY 6 CABLE AND BACKBOXES AT ALL THREE LOCATIONS. CONTRACTOR SHALL TEST AND TERMINATE CABLE. EACH LOCATION SHALL BE A SEPERATE HOMERUN TO THE DESIGNATED IDF ROOM.

7.
FUTURE SPEAKER LOCATION. EACH SPEAKER LOCATION SHALL CONSIST OF 20'-0" CATEGORY 6 CABLE COIL. HOMERUN TO LAN ROOM. CONFIRM EXACT LOCATION WITH RPS PRIOR TO ROUGH-IN.

8.
ALL MANUAL PULL STATIONS SHALL BE PROVIDED WITH STOPPER II COVER WITH SOUNDER.

BRANCH CIRCUIT NOTES ◇:

1. EXTEND BRANCH CIRCUITS IN THIS AREA TO THE FOLLOWING BRANCH PANELBOARDS, UNLESS OTHERWISE NOTED:

120 / 208V PANELBOARDS
1LNLC1 - NORMAL POWER
EM - LIFE SAFETY POWER. UTILIZE EXISTING SPACES. PROVIDE NEW 20A-1P CIRCUIT BREAKERS AT PANEL.

2. ALL SECURITY LOCATIONS ARE SERVED FROM I.T. 157.

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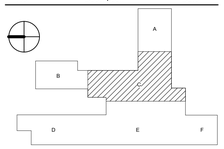
1	ISSUED FOR BID	12/11/2015



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LEVEL 01 POWER AND SYSTEMS PLAN - AREA C

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KEYED NOTES ⬡ :

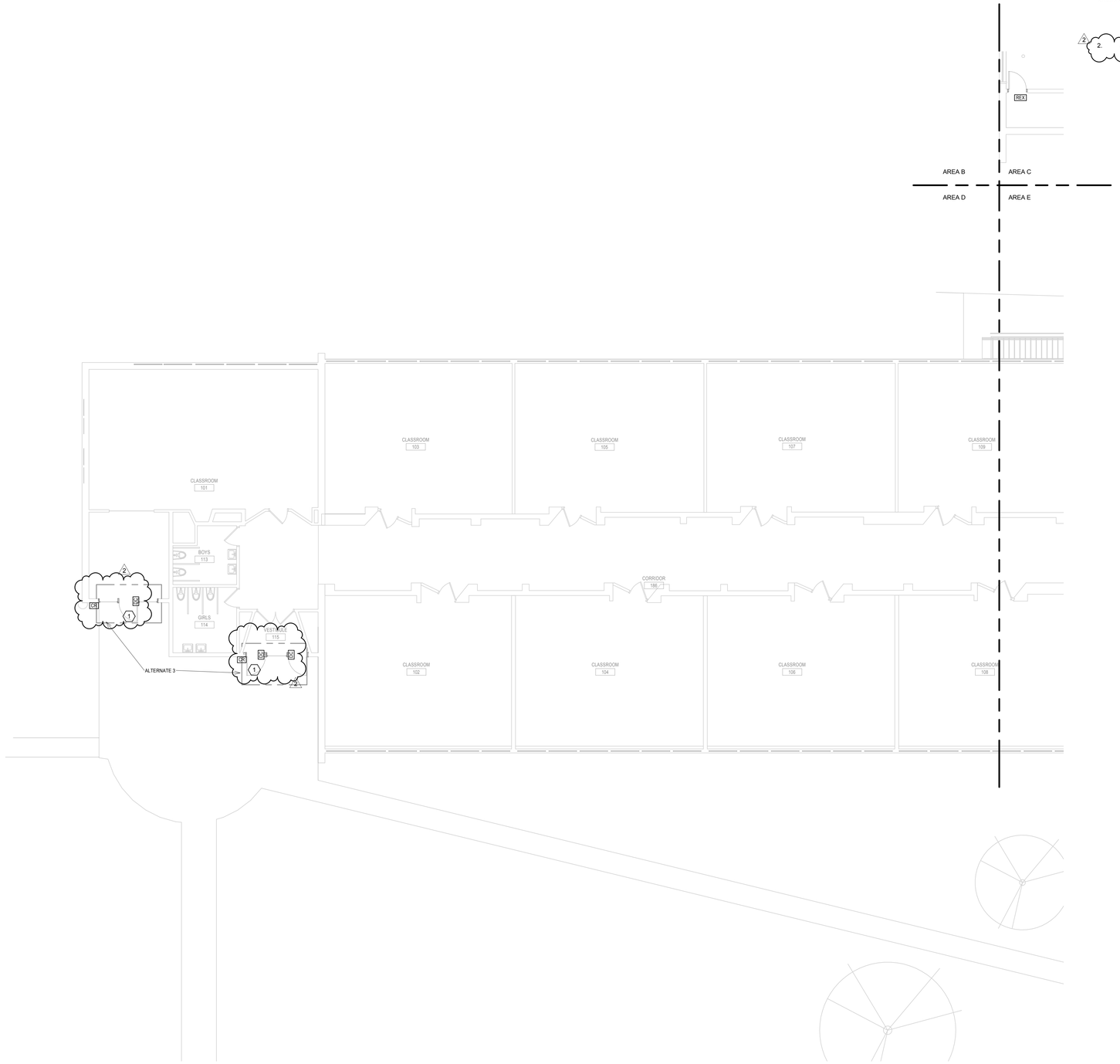
2 PROVIDE 1/2" CONDUIT STUBBED INTO DOOR FRAME FOR FUTURE CARD READER AND SECURITY WIRING. EXTEND CONDUIT TO ACCESSIBLE CEILING LOCATION THROUGH PARTITION TO ELECTRICAL LOCK LOCATION.

BRANCH CIRCUIT NOTES ◇ :

1. EXTEND BRANCH CIRCUITS IN THIS AREA TO THE FOLLOWING BRANCH PANELBOARDS, UNLESS OTHERWISE NOTED:

120 / 208V PANELBOARDS
1LNLC1 - NORMAL POWER (ELEC 170)
EM - LIFE SAFETY POWER. UTILIZE EXISTING SPACES. PROVIDE NEW 20A-1P CIRCUIT BREAKERS AT PANEL

2 2. ALL SECURITY LOCATIONS ARE SERVED FROM I.T. 157. REFER TO E0201.C FOR LOCATION.



1 LEVEL 01 POWER AND SYSTEMS PLAN - AREA D 2 2
1/8" = 1'-0"

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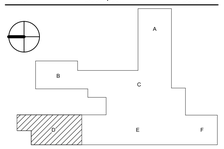
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 01 POWER AND SYSTEMS PLAN - AREA D

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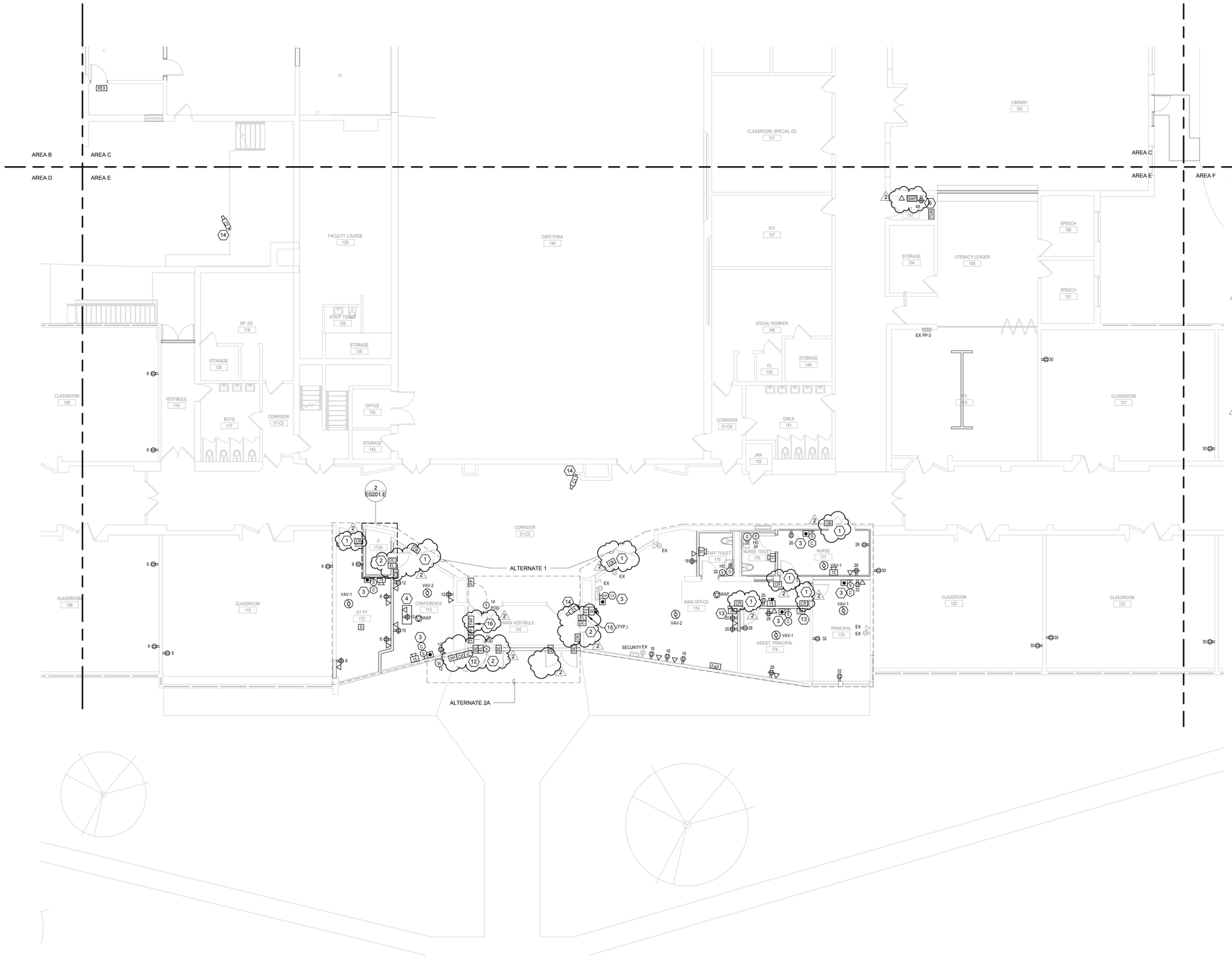


1 LEVEL 01 POWER AND SYSTEMS PLAN - AREA E
1/8" = 1'-0"

KEYED NOTES :

1.
PROVIDE 1/2" CONDUIT STUBBED INTO DOOR FRAME FOR FUTURE CARD READER AND SECURITY WIRING. EXTEND CONDUIT TO ACCESSIBLE CEILING LOCATION THROUGH PARTITION TO ELECTRICAL LOCK LOCATION.

2.
PROVIDE 1/2" CONDUIT STUBBED INTO DOOR FRAME FOR OWNER PROVIDED SECURITY WIRING. EXTEND CONDUIT TO ACCESSIBLE CEILING LOCATION THROUGH PARTITION TO ELECTRIC LOCK LOCATION.

3.
INTERCOM SPEAKER, CALL SWITCH, AND CLOCK SHALL BE PROVIDED BY RPS. PROVIDE CATEGORY 6 CABLE AND BACKBOXES AT ALL THREE LOCATIONS. CONTRACTOR SHALL TEST AND TERMINATE CABLE. EACH LOCATION SHALL BE A SEPERATE HOMERUN TO THE DESIGNATED IDF ROOM.

4.
WIRING DEVICES FOR SMARTBOARD. CONFIRM EXACT LOCATION WITH RPS.

5.
NOT USED.

6.
NEW TGB. BOND TO MAIN GROUND BAR IN EXISTING MDF WITH 500KCMIL CONDUCTOR. PROVIDE CONDUIT AS REQUIRED.

7.
TWO (2) 4" EZ PATH INTO TELECOM ROOM @ 9'-0" OR ABOVE DROP CEILING.

8.
PROVIDE (1) 2" CONDUIT FROM EXISTING NETPOP IN THE EXISTING MDF FOR FIBER.

9.
3/4" FIRE RETARDANT PAINTED PLYWOOD. 4'X8' SHEETS OF PLYWOOD SHALL BE MOUNTED VERTICALLY WITH THE BOTTOM AT 6" A.F.F.

10.
NEW 12"X12" LADDER TRAY MOUNTED ABOVE THE RACK.

11.
NOT USED.

12.
RELOCATE EXISTING AIPHONE CALL STATION BASED ON VESTIBULE WORK. PROVIDE ALL WIRING AND CONDUIT. FINAL TERMINATIONS BY RPS.

13.
MASTER STATION FOR AIPHONE DOOR ENTRY SYSTEM. PROVIDE FEEDER AND CABLING AT ALL NEW LOCATIONS AS REQUIRED. INTERFACE WITH EXTERIOR DOOR ENTRY STATION AND DOOR RELEASE AT OFFICE SUITE DOOR. EQUIPMENT IS FURNISHED BY RPS. FINAL TERMINATIONS BY RPS. VERIFY LOCATIONS OF MASTER STATIONS WITH RPS.

14.
PROVIDE BACKBOX AND CATEGORY 6 CABLE AT SECURITY CAMERA LOCATION. EQUIPMENT SHALL BE PROVIDED BY RPS.

15.
ALL MANUAL PULL STATIONS SHALL BE PROVIDED WITH STOPPER II COVER WITH SOUNDER.

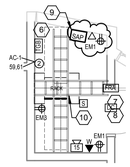
16.
NEW FIRE ANNUNCIATOR PANEL TO BE INCLUDED IN BASE BID.

BRANCH CIRCUIT NOTES :

1. EXTEND BRANCH CIRCUITS IN THIS AREA TO THE FOLLOWING BRANCH PANELBOARDS, UNLESS OTHERWISE NOTED:

120 / 208V PANELBOARDS
1LNLC1 - NORMAL POWER (ELEC 170)
EM - LIFE SAFETY POWER. UTILIZE EXISTING SPACES. PROVIDE NEW 20A-1P CIRCUIT BREAKERS AT PANEL.

2. ALL SECURITY LOCATIONS ARE SERVED FROM I.T. 173A.



2 ENLARGED IDF ROOM
1/4" = 1'-0"

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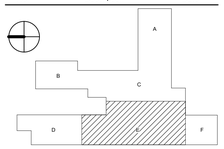
224-717-1999

ARC DESIGN RESOURCES INC.
Civil Consultants
5291 Zenith Parkway
Loves Park IL 61111
(815) 484-4300

No.	Description	Date
2	ADDENDUM 01	1/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 01 POWER AND SYSTEMS PLAN - AREA E

Project No.: 004645.05 Checked by: JE

E0201.E

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KEYED NOTES ⬡ :

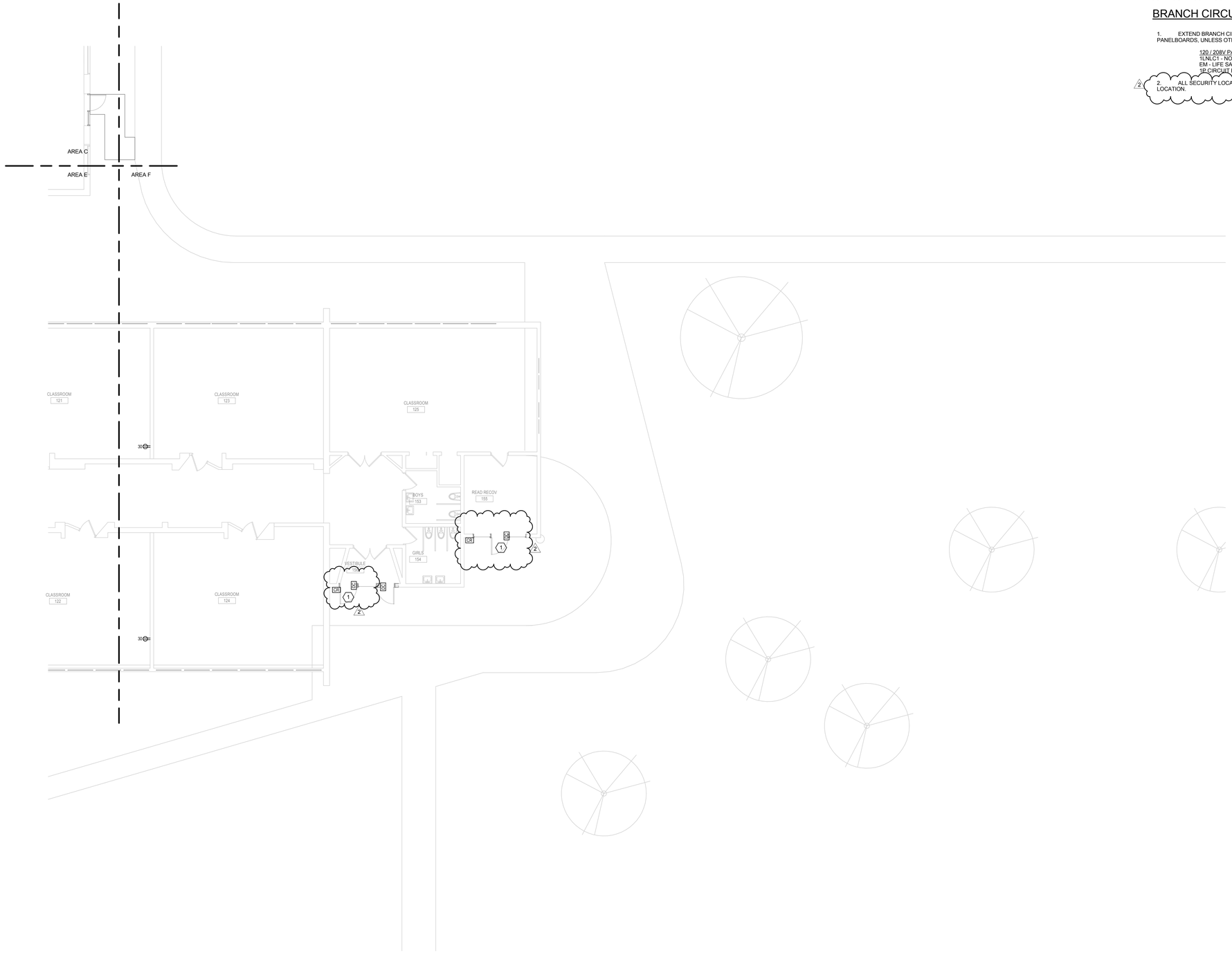
1. PROVIDE 1/2" CONDUIT STUBBED INTO DOOR FRAME FOR FUTURE CARD READER AND SECURITY WIRING. EXTEND CONDUIT TO ACCESSIBLE CEILING LOCATION THROUGH PARTITION TO ELECTRICAL LOCK LOCATION.

BRANCH CIRCUIT NOTES ◇ :

1. EXTEND BRANCH CIRCUITS IN THIS AREA TO THE FOLLOWING BRANCH PANELBOARDS, UNLESS OTHERWISE NOTED:

120 / 208V PANELBOARDS
1LNLC1 - NORMAL POWER (ELEC 170)
EM - LIFE SAFETY POWER , UTILIZE EXISTING SPACES. PROVIDE NEW 20A-1P CIRCUIT BREAKERS AT PANEL.

2. ALL SECURITY LOCATIONS ARE SERVED FROM I.T. 173A. REFER TO E0201.E FOR LOCATION.



1 LEVEL 01POWER AND SYSTEMS PLAN - AREA F 2 2
1/8" = 1'-0"

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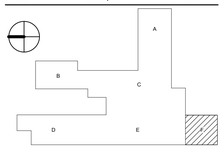
No.	Description	Date
2	ADDENDUM 01	1/07/2016
1	ISSUED FOR BID	12/11/2015



Drawing Title:

LEVEL 01 POWER AND SYSTEMS PLAN - AREA F

Project No.: 004645.05 Checked by: JE

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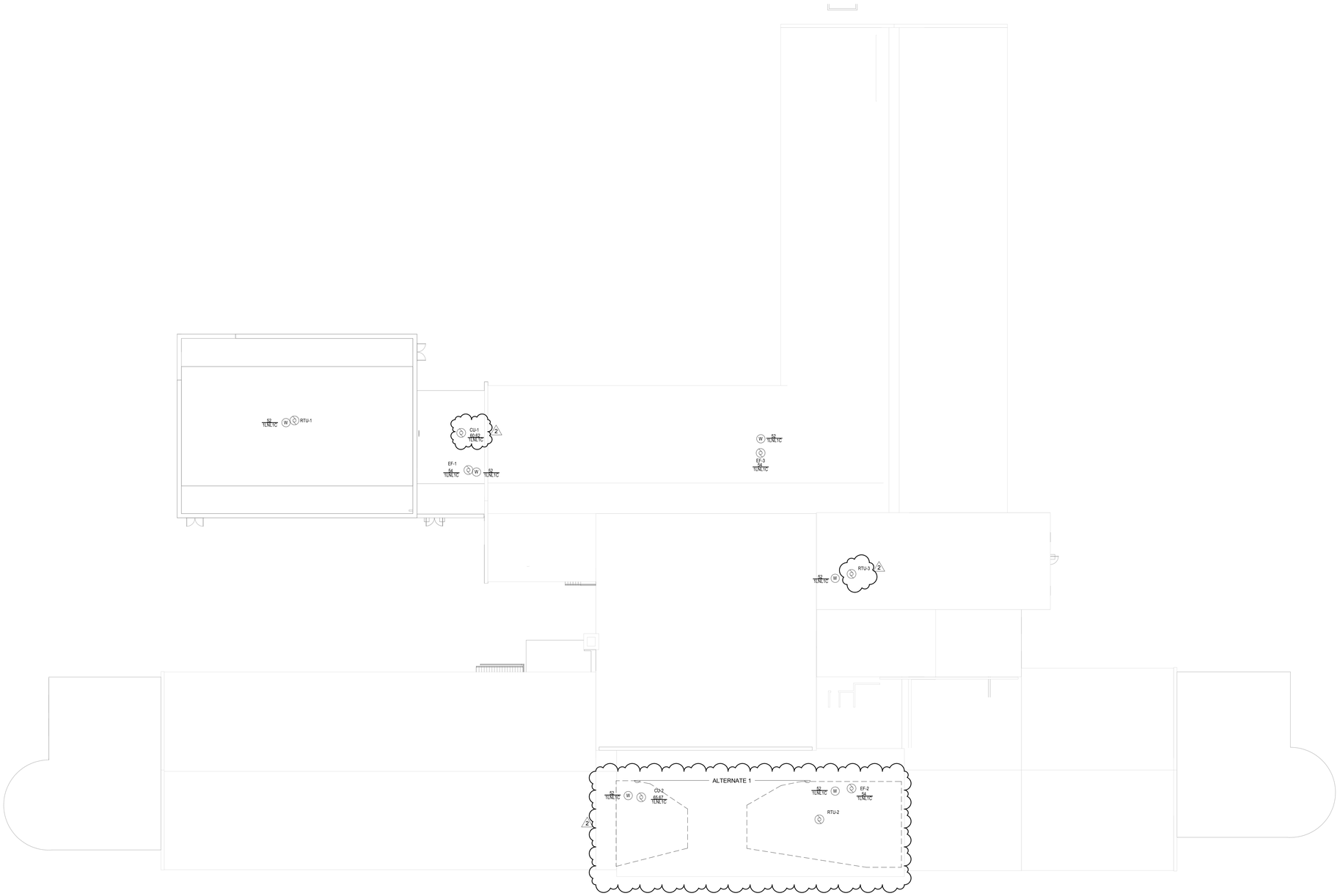

1 ROOF POWER AND SYSTEMS PLAN
1/16" = 1'-0"

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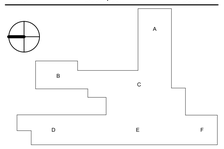

Drawing Title:

ROOF POWER AND SYSTEMS PLAN

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E0202

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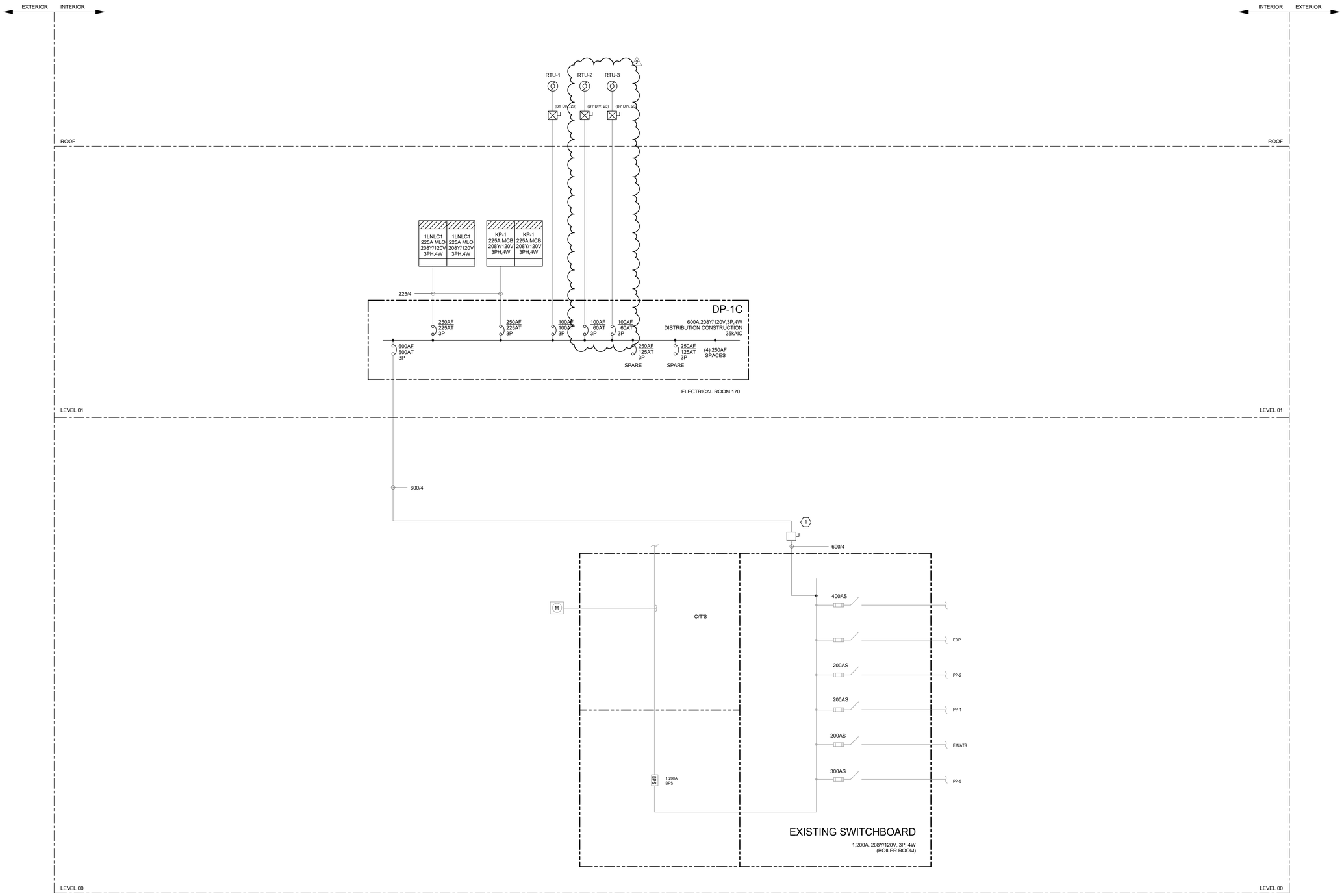
KEYED NOTES ⬡ :

1.
TAP BUS OF EXISTING SWITCHBOARD AND PROVIDE A NEW 600A DISCONNECT SWITCH ADJACENT TO THE SWITCHBOARD.



1 POWER RISER DIAGRAM

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2	ADDENDUM 01	1/07/2016
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POWER RISER DIAGRAMS

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EQUIPMENT CONNECTION / MOTOR CONTROLLER SCHEDULE

EQUIPMENT DESIGNATION	EQUIPMENT / MOTOR DATA: DESCRIPTION	HP	KW	FLA	NORMAL POWER	EMERGENCY POWER	VOLTAGE	PHASE	CONTROLLER DATA: MOUNTING: PACKAGED	SEPERATE	MCC	TYPE	NEMA SIZE	OVERCURRENT PROTECTIVE DEVICE: MCP	FUSE	RATING	SINGLE PHASE PROTECTION	NEMA ENCLOSURE	WEIGHT (LBS)	LOCATION
AC-1	AIR CONDITIONING UNIT	1/20			X		208	1	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
B-1	BOILER	3			X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
B-2	BOILER	3			X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
BFU-1	BOILER FEED UNIT	2.5			X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
CU-1	CONDENSING UNIT			35 MCA	X		208	1	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
CU-2	CONDENSING UNIT			13 MCA	X		208	1	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
EF-1	EXHUAST FAN	1/4			X		120	1	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
EF-2	EXHUAST FAN	1/4			X		120	1	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
EF-3	EXHUAST FAN	1/4			X		120	1	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
ERV-1	ENERGY RECOVERY VENTILATOR			1	X		120	1	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
FCU	FAN COIL UNIT			1 MCA	X		208	1	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
RTU-1	ROOF TOP UNIT			89 MCA	X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
RTU-2	ROOF TOP UNIT			50 MCA	X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
RTU-3	ROOF TOP UNIT			30 MCA	X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
VAV-1	VAV BOX		2		X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
VAV-2	VAV BOX		5		X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-
VCRU-1	VACUUM CONDENSATE RETURN UNIT	3.5			X		208	3	PROVIDED BY DIVISION 23	-	-	-	-	-	-	-	-	-	-	-

EQUIPMENT DESIGNATION	LOCAL DISCONNECT SWITCH: OVERCURRENT PROTECTION DEVICE: MCP	FUSE	RATING	NEMA ENCLOSURE	WEIGHT (LBS)	LOCATION	SOURCE PROTECTIVE DEVICE: TYPE: MCP	FUSE	BREAKER	POLE AMPS	PANELBOARD OR MCC	WIRING: PHASE: QUANTITY	SIZE	NEUTRAL: QUANTITY	SIZE	GROUND: QUANTITY	SIZE	CONDUIT: QUANTITY	SIZE	CONNECTION TYPE	REMARKS
AC-1	-	-	-	-	-	-	-	-	X	20		2	#12	1	#12	1	#12	1	3/4"		
B-1	-	-	-	-	-	-	-	-	X	20		3	#12	-	-	1	#12	1	3/4"		
B-2	-	-	-	-	-	-	-	-	X	20		3	#12	-	-	1	#12	1	3/4"		
BFU-1	-	-	-	-	-	-	-	-	X	20		3	#12	1	#12	1	#12	1	3/4"		
CU-1	-	-	-	-	-	-	-	-	X	30		2	#10	1	#10	1	#10	1	1 1/4"		
CU-2	-	-	-	-	-	-	-	-	X	20		2	#12	1	#12	1	#12	1	3/4"		
EF-1	-	-	-	-	-	-	-	-	X	20		1	#12	1	#12	1	#12	1	3/4"		
EF-2	-	-	-	-	-	-	-	-	X	20		1	#12	1	#12	1	#12	1	3/4"		
EF-3	-	-	-	-	-	-	-	-	X	20		1	#12	1	#12	1	#12	1	3/4"		
ERV-1	-	-	-	-	-	-	-	-	X	20		1	#12	1	#12	1	#12	1	3/4"		
FCU	-	-	-	-	-	-	-	-	X	20		2	#12	1	#12	1	#12	1	3/4"		
RTU-1	-	-	-	-	-	-	-	-	X	100		3	#1	-	-	1	#8	1	1 1/2"		
RTU-2	-	-	-	-	-	-	-	-	X	60		3	#4	1	#8	1	#10	1	1 1/4"		
RTU-3	-	-	-	-	-	-	-	-	X	40		3	#8	1	#8	1	#10	1	3/4"		
VAV-1	-	-	-	-	-	-	-	-	X	20		1	#12	1	#12	1	#12	1	3/4"		
VAV-2	-	-	-	-	-	-	-	-	X	20		1	#12	1	#12	1	#12	1	3/4"		
VCRU-1	-	-	-	-	-	-	-	-	X	30		3	#10	1	#12	1	#10	1	3/4"		

CONTROLLER TYPE:

AL AC ROSS THE LINE H-O-A
ALC ACROSS THE LINE COMBINATION DISCONNECT H-O-A
ALO ACROSS THE LINE COMBINATION DISCONNECT O-H
RV REDUCED VOLTAGE
RVC REDUCED VOLTAGE COMBINATION DISCONNECT
2S TWO SPEED
VSD VARIABLE SPEED DRIVE
TS FRACTIONAL HP MANUAL STARTER

*MINIMUM MOTOR CIRCUIT PROTECTOR (MCP) FRAME SIZE SHALL BE BASED ON LISTED POLE AMPS

GENERAL NOTES:

A. FINAL CONNECTIONS TO ALL EQUIPMENT SHALL BE MADE BY DIVISION 26 INTERCONNECT ALL ASSOCIATED EQUIPMENT ELECTRICAL DEVICES.

B. VERIFY ALL RECEPTACLE TYPES AND BRANCH WIRING WITH EQUIPMENT SUPPLIER FOR COORDINATION OF EQUIPMENT PLUGS AND WIRING PRIOR TO INSTALLATION

CONNECTION TYPE:

CP CONTROL PANEL - MAKE DIRECT CONNECTION
DR STANDARD NEMA 5-20R DUPLEX RECEPTACLE
JB JUNCTION BOX
DC DIRECT CONNECTION TO EQUIPMENT
RC RECEPTACLE TO MATCH EQUIPMENT PLUG

LOCATION

NU NEAR UNIT
OU ON UNIT
PCU PACKAGE CONTROL UNIT
MCC MOTOR CONTROL CENTER

REMARKS:

1. LOAD UNCONFIRMED AT THE TIME OF DESIGN.
2. CIRCUIT TO PANELBOARD INDICATED ON SCHEDULE THROUGH LOCAL SEPERATELY ENCLOSED FLUSH CIRCUIT BREAKER.
3. CIRCUIT THROUGH SHUNT TRIP BREAKER
4.

FEEDER DESIGNATIONS - COPPER CONDUCTOR

FEEDER ID	AMPS	PHASE WIRES (AWG)	NEUTRAL WIRES (AWG)	GND (AWG)	MIN. CONDUIT SIZE	FEEDER ID	AMPS	PHASE WIRES (AWG)	NEUTRAL WIRES (AWG)	GND (AWG)	MIN. CONDUIT SIZE
30/3	30	(3)#10		#10	3/4	400/3	400	(6)#3/0		(2)#2	(2)2
30/4	30	(3)#10	(1)#10	#10	3/4	400/4	400	(6)#3/0	(2)#3/0	(2)#2	(2)2-1/2
30/5	30	(3)#10	(1)#6	#10	3/4	400/5	400	(6)#3/0	(4)#3/0	(2)#2	(2)2-1/2
40/3	40	(3)#8		#10	3/4	500/3	500	(6)250KCMIL		(2)#2	(2)2-1/2
40/4	40	(3)#8	(1)#8	#10	1	500/4	500	(6)250KCMIL	(2)250KCMIL	(2)#2	(2)3
40/5	40	(3)#8	(1)#2	#10	1	500/5	500	(6)250KCMIL	(4)250KCMIL	(2)#2	(2)3
50/3	50	(3)#6		#10	1	600/3	600	(6)350KCMIL		(2)#1	(2)3
50/4	50	(3)#6	(1)#6	#10	1	600/4	600	(6)350KCMIL	(2)350KCMIL	(2)#1	(2)3
50/5	50	(3)#6	(1)#2	#10	1-1/4	600/5	600	(6)350KCMIL	(4)350KCMIL	(2)#1	(2)3-1/2
60/3	60	(3)#4		#10	1-1/4	700/3	700	(6)500KCMIL		(2)#1/0	(2)3
60/4	60	(3)#4	(1)#4	#10	1-1/4	700/4	700	(6)500KCMIL	(2)500KCMIL	(2)#1/0	(2)3-1/2
60/5	60	(3)#4	(1)1/0	#10	1-1/4	700/5	700	(6)500KCMIL	(4)500KCMIL	(2)#1/0	(2)4
70/3	70	(3)#4		#8	1-1/4	800/3	800	(9)300KCMIL		(3)#1/0	(3)2-1/2
70/4	70	(3)#4	(1)#4	#8	1-1/4	800/4	800	(9)300KCMIL	(3)300KCMIL	(3)#1/0	(3)3
70/5	70	(3)#4	(1)#1/0	#8	1-1/4	800/5	800	(9)300KCMIL	(6)300KCMIL	(3)#1/0	(3)3
90/3	90	(3)#2		#8	1-1/4	1000/3	1000	(9)400KCMIL		(3)#2/0	(3)3
90/4	90	(3)#2	(1)#2	#8	1-1/2	1000/4	1000	(9)400KCMIL	(3)400KCMIL	(3)#2/0	(3)3
90/5	90	(3)#2	(1)#3/0	#8	1-1/2	1000/5	1000	(9)400KCMIL	(6)400KCMIL	(3)#2/0	(3)3-1/2
100/3	100	(3)#1		#8	1-1/2	1200/3	1200	(12)350KCMIL		(4)#3/0	(4)3
100/4	100	(3)#1	(1)#1	#8	1-1/2	1200/4	1200	(12)350KCMIL	(4)350KCMIL	(4)#3/0	(4)3
100/5	100	(3)#1	(1)#3/0	#8	2	1200/5	1200	(12)350KCMIL	(8)350KCMIL	(4)#3/0	(3)3-1/2
125/3	125	(3)#1		#6	1-1/2	1500/3	1500	(12)500KCMIL		(4)#4/0	(4)3
125/4	125	(3)#1	(1)#1	#6	1-1/2	1500/4	1500	(12)500KCMIL	(4)500KCMIL	(4)#4/0	(4)3-1/2
125/5	125	(3)#1	(1)250KCMIL	#6	2	1500/5	1500	(12)500KCMIL	(8)500KCMIL	(4)#4/0	(4)4
150/3	150	(3)#1/0		#6	1-1/2	1600/3	1600	(15)400KCMIL		(5)#4/0	(5)3
150/4	150	(3)#1/0	(1)#1/0	#6	2	1600/4	1600	(15)400KCMIL	(5)400KCMIL	(5)#4/0	(5)3-1/2
150/5	150	(3)#1/0	(2)#1/0	#6	2	1600/5	1600	(15)400KCMIL	(10)400KCMIL	(5)#4/0	(5)3-1/2
175/3	175	(3)#2/0		#6	2	2000/3	2000	(18)400KCMIL		(6)250KCMIL	(6)3
175/4	175	(3)#2/0	(1)#2/0	#6	2	2000/4	2000	(18)400KCMIL	(6)400KCMIL	(6)250KCMIL	(6)3-1/2
175/5	175	(3)#2/0	(2)#2/0	#6	2-1/2	2000/5	2000	(18)400KCMIL	(12)400KCMIL	(6)250KCMIL	(6)3-1/2
200/3	200	(3)#3/0		#6	2	2500/3	2500	(24)400KCMIL		(8)350KCMIL	(8)3
200/4	200	(3)#3/0	(1)#3/0	#6	2	2500/4	2500	(24)400KCMIL	(8)400KCMIL	(8)350KCMIL	(8)3-1/2
200/5	200	(3)#3/0	(2)#3/0	#6	2-1/2	2500/5	2500	(24)400KCMIL	(16)400KCMIL	(8)350KCMIL	(8)3-1/2
225/3	225	(3)#4/0		#4	2	3000/3	3000	(24)500KCMIL		(8)400KCMIL	(8)3-1/2
225/4	225	(3)#4/0	(1)#4/0	#4	2-1/2	3000/4	3000	(24)500KCMIL	(8)500KCMIL	(8)400KCMIL	(8)3-1/2
225/5	225	(3)#4/0	(2)#4/0	#4	3	3000/5	3000	(24)500KCMIL	(16)500KCMIL	(8)400KCMIL	(8)4
250/3	250	(3)250KCMIL		#4	2-1/2	3200/3	3200	(27)500KCMIL		(9)500KCMIL	(9)3-1/2
250/4	250	(3)250KCMIL	(1)250KCMIL	#4	3	3200/4	3200	(27)500KCMIL	(9)500KCMIL	(9)500KCMIL	(9)4
250/5	250	(3)250KCMIL	(2)250KCMIL	#4	3	3200/5	3200	(27)500KCMIL	(18)500KCMIL	(9)500KCMIL	(9)4
300/3	300	(3)350KCMIL		#4	3	4000/3	4000	(33)500KCMIL		(11)500KCMIL	(11)3-1/2
300/4	300	(3)350KCMIL	(1)350KCMIL	#4	3	4000/4	4000	(33)500KCMIL	(11)500KCMIL	(11)500KCMIL	(11)4
300/5	300	(3)350KCMIL	(2)350KCMIL	#4	3-1/2	4000/5	4000	(33)500KCMIL	(22)500KCMIL	(11)500KCMIL	(11)4
350/3	350	(3)500KCMIL		#2	3						
350/4	350	(3)500KCMIL	(1)500KCMIL	#2	3-1/2						
350/5	350	(3)500KCMIL	(2)500KCMIL	#2	4						

CONDUIT METRIC CONVERSIONS:

INCHES	MM
1/2	16
3/4	21
1	27
1-1/4	32
1-1/2	41
2	53
2-1/2	63
3	78
4	103
5	129
6	155

CONDUCTOR METRIC CO VERSIONS:

AWG	SQMM
10	5.26
8	8.38
6	13.3
4	21
2	34
1	42
1/0	54
2/0	67
3/0	85
4/0	107
250	127
300	152
350	178
400	203
500	254

SECONDARY DERIVED SYSTEM GROUNDING ELECTRODE CONDUCTOR (GEC):

TAG	CONDUCTOR (AWG)	MIN. CONDUIT SIZE (IN)
A	(1)8	1/2
B	(1)6	1/2
C	(1)2	1/2
D	(1)1/0	3/4
E	(1)2/0	1
F	(1)3/0	1
G	(1)250KCMIL	1-1/4
H	(1)400KCMIL	1-1/4
I	(1)500KCMIL	1-1/2

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No.	Description	Date
2	ADDENDUM 01	1/07/2016
1	ISSUED FOR BID	12/11/2015

Drawing Title:

POWER SCHEDULES

Project No.: 004645.05 Checked by: JE

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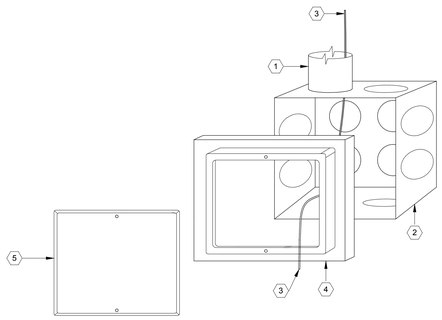


KEYED NOTES :

1.
CONDUIT STUBBED INTO [**ACCESSIBLE CEILING SPACE**].

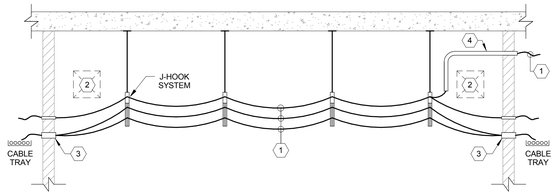
2.
4 -1/16" X 4-11/16" SQUARE BACK BOX/ 3-1/2" DEEP.

3.
NYLON PULL CORD TO CONDUIT TERMINATION ENDPOINT.

4.
DOUBLE GANG ADAPTER RING FLUSH TO WALL FINISH.

5.
DOUBLE GANG BLANK COVERPLATE.

9 TELECOMMUNICATIONS TWO-GANG ROUGH IN



KEYED NOTES :

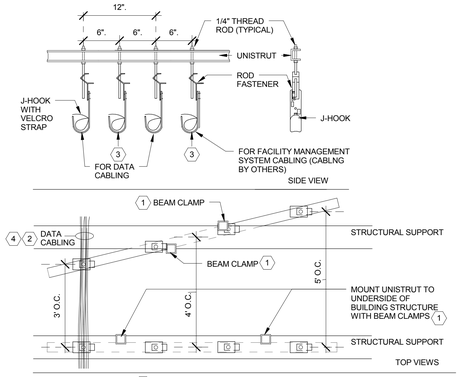
1.
DATA COMMUNICATIONS CABLE WITH MAXIMUM 3" TO 5" SAG BUNDLED SEPARATELY FROM OTHER SYSTEMS.

2.
POTENTIAL OBSTRUCTIONS.

3.
CONDUIT SLEEVE OR FIRE RATED ASSEMBLY. ASSURE THERE ARE NO OBSTRUCTIONS FOR COMMUNICATIONS CABLING.

4.
REROUTE COMMUNICATIONS CABLING THROUGH CONDUIT AROUND OBSTRUCTIONS.

6 J-HOOK CABLE SUPPORT INSTALLATION



KEYED NOTES :

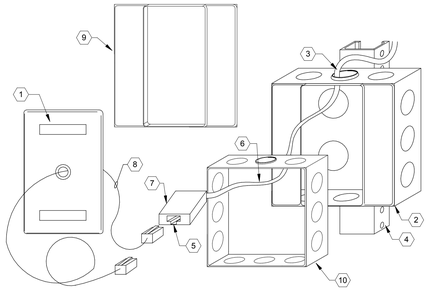
1.
MOUNT UNISTRUT TO STRUCTURAL BEAM OR MOUNT WITH 1/4" THREADED ROD TO CONCRETE DECK OR OTHER STRUCTURE. MAINTAIN 3', 4', 5' DISTANCES ALTERNATING AT EACH LOCATION.

2.
INSTALL DATA CABLING IN J-HOOKS, MAXIMUM OF 30 DATA CABLES IN A J-HOOK.

3.
PROVIDE ADDITIONAL J-HOOKS AS REQUIRED. MINIMUM OF ONE SPARE IN ALL LOCATIONS.

4.
PROVIDE A PULL STRING FOR EACH PATHWAY OF J-HOOKS TO THE TERMINATION LOCATION. INSTALL PULL STRING ON TOP OF BUNDLE AT COMPLETION OF CABLE INSTALLATION.

3 J-HOOK MOUNTING ASSEMBLY



KEYED NOTES :

1.
SINGLE GANG STAINLESS STEEL COVERPLATE WITH 5/8" HOLE, GROMMET, AND MOUNTING HARDWARE.

2.
4 11/16" X 4 11/16" SQUARE OUTLET BOX, WITH SINGLE GANG ADAPTER RING MOUNTED ABOVE CEILING.

3.
GROMMET ON OPENINGS TO PROTECT CABLING.

4.
MOUNT BOX SECURELY TO STRUCTURE OR UNISTRUT.

5.
MODULAR JACK 110 TO RJ45 WITH ICONS, UNIVERAL WIRING PATTERN NON-KEYED, EIGHT POSITION (4-PAIR).

6.
TWISTED PAIR TYPE 4 PAIR, HORIZONTAL CABLE.

7.
INSTALL MODULAR JACK INTO BISCUIT JACK AND MOUNT TO INTERIOR OF BACKBOX.

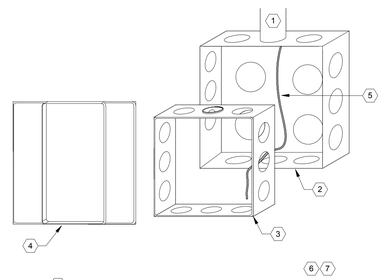
8.
PROVIDE PLENUM RATED, 15' PATCH CORD. ROUTE THROUGH FACEPLATE HOLE. COIL ON EXTERIOR OF FACEPLATE TO REACH FINAL LOCATION OF WAP.

9.
SINGLE GANG ADAPTER.

10.
4-11/16" X 4-11/16" X 1-1/2" DEEP SQUARE OUTLET BOX EXTENSION RING.

11.
COORDINATE WITH SPECIFIC BACKBOX DEVICE SYMBOLS AS SHOWN ON DRAWINGS TO DETERMINE ROUGH-IN REQUIREMENTS AND LOCATIONS.

8 TELECOMMUNICATIONS OUTLET 'WAP' 11



KEYED NOTES :

1.
CONDUIT STUB TO ACCESSIBLE CEILING. PROVIDE DIAMETER AS LISTED IN TELECOMMUNICATIONS OUTLET SCHEDULE. **[EDITORS NOTE: CONDUIT TERMINATION. DELETE TELECOM OUTLET SCHEDULE REFERENCE IF ROUGH-IN ONLY].**

2.
4-11/16" X 4-11/16" SQUARE BOX, 2-1/8" DEEP.

3.
4-11/16" X 4-11/16" X 1-1/2" DEEP SQUARE BOX EXTENSION.

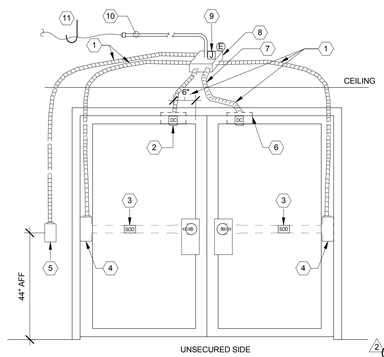
4.
SINGLE GANG ADAPTER FLUSH TO WALL FINISH.

5.
NYLON PULL CORD TO FAR END CONDUIT TERMINATION POINT.

6.
REFER TO SYMBOL LIST FOR OUTLET BOX MOUNTING HEIGHT.

7.
REFER TO TELECOMMUNICATIONS OUTLET SCHEDULE SUBSCRIPT FOR DEVICE PLATE, CABLING AND JACK REQUIREMENTS. **[EDITORS NOTE: DELETE NOTE IF ROUGH-IN ONLY].**

5 TELECOMMUNICATIONS SINGLE GANG ROUGH-IN



NOTE:
COORDINATE WORK WITH DIVISION 8 AND DIVISION 28

KEYED NOTES :

1. 2 1-1/2" FLEXIBLE CONDUIT WITH PULL STRING

2. HOLE (CENTERED IN BOX)

3. SECURITY OVERRIDE DEVICE LOCATED IN PANIC BAR. (PROVIDED BY DIV. 8, CONNECTED BY DIV. 26.)

4. 1-GANG HINGE MORTAR GUARD BOX WELDED TO FRAME AT HEIGHT OF ELECTRIC POWER TRANSFER HINGE. HINGE BY DOOR HARDWARE INSTALLER.

5. CARD READER 2-GANG JUNCTION BOX. LOCATED ON UNSECURED SIDE OF DOOR AS SHOWN ON DRAWINGS. COORDINATE INSTALLATION OF MULLION MOUNTED DEVICE WITH DIVISION 8 AS SHOWN ON FLOOR PLANS.

6. MORTAR GUARD BOX FOR FLUSH MAGNETIC DOOR CONTACT.

7. ROUTE THROUGH ALUMINUM FRAME AT STOREFRONT/CURTAIN WALL LOCATIONS AS REQUIRED

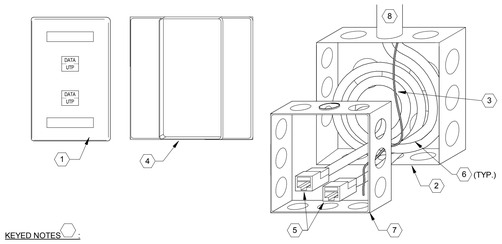
8. MOUNT DEVICES ON SECURE SIDE OF DOOR

9. ENCLOSURE SHALL CONTAIN READER INTERFACE MODULE AND POWER SUPPLY FOR DOOR DEVICES.

2 10. BUSHED 1"C TO NEAREST ACCESSIBLE CEILING WITH PULL STRING.

11. SECURE J-HOOK TO STRUCTURE. SUPPORT CABLING IN J-HOOKS ABOVE SUSPENDED CEILING TO NETWORK CONTROLLER.

2 281300.15 - DOUBLE DOOR WITH CARD READER



KEYED NOTES :

1.
2 PORT, SINGLE GANG COVERPLATE WITH LABELS AND MOUNTING HARDWARE. PROVIDE BLANK INSERTS FOR ALL UNUSED PORTS.

2.
4-11/16" X 4-11/16" SQUARE OUTLET BOX, WITH SINGLE GANG ADAPTER RING.

3.
NYLON PULL CORD TO FAR END CONDUIT TERMINATION POINT.

4.
SINGLE GANG ADAPTER.

5.
MODULAR JACK 110 TO RJ45 WITH ICONS, UNIVERSAL WIRING PATTERN, NON KEYED, EIGHT POSITION (4 PAIR).

6.
TWISTED PAIR TYPE 4 PAIR, HORIZONTAL CABLE, FROM LOCAL TELECOMMUNICATIONS ROOM, WITH SERVICE LOOP.

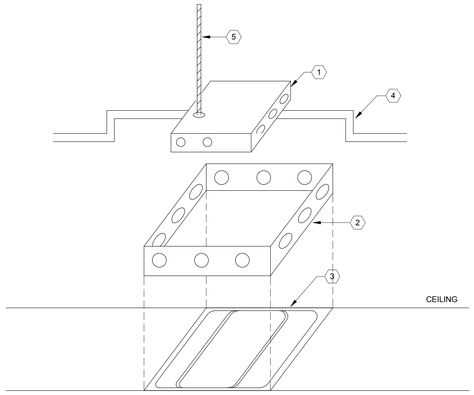
7.
4-11/16" X 4-11/16" X 1-1/2" DEEP SQUARE OUTLET BOX EXTENSION RING.

8.
CONDUIT STUB TO ACCESSIBLE CEILING SPACE.

9.
COORDINATE WITH SPECIFIC BACKBOX DEVICE SYMBOLS AS SHOWN ON DRAWINGS TO DETERMINE ROUGH-IN REQUIREMENTS AND LOCATIONS.

7 TELECOMMUNICATIONS OUTLET 'D2'

SYMBOL = ▽ 9



KEYED NOTES :

1.
4-11/16" X 4-11/16" X 2-1/8" DEEP SQUARE OUTLET BOX.

2.
4-11/16" X 4-11/16" X 1-1/2" DEEP SQUARE OUTLET BOX EXTENSION RING

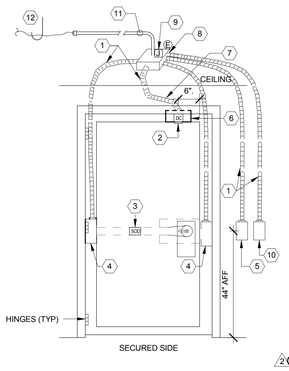
3.
SINGLE GANG ADAPTER.

4.
CEILING TILE SUPPORT BRACKET.

5.
INSTALL THREADED ROD TO SUPPORT BOX FROM DECK IN LIEU OF TILE BRACKET WHERE REQUIRED.

SYMBOL = ▽

4 TELECOMMUNICATIONS ROUGH-IN OUTLET AT CEILING



NOTE:
COORDINATE WORK WITH DIVISION 8 AND DIVISION 28

KEYED NOTES :

1. 2 1-1/2" FLEXIBLE CONDUIT WITH PULL STRING

2. HOLE (CENTERED IN BOX).

3. SECURITY OVERRIDE DEVICE LOCATED IN PANIC BAR. (PROVIDED BY DIV. 8, CONNECTED BY DIV. 26.)

4. 1-GANG HINGE MORTAR GUARD BOX WELDED TO FRAME AT HEIGHT OF ELECTRIC POWER TRANSFER HINGE.

5. CARD READER 2-GANG JUNCTION BOX. LOCATED ON EXTERIOR SIDE OF DOOR AS SHOWN ON DRAWINGS. CUT AND MOUNT CARD READER FLUSH IN EXTERIOR WALL. COORDINATE INSTALLATION OF MULLION MOUNTED DEVICE WITH DIVISION 8 AS SHOWN ON FLOOR PLANS.

6. MORTAR GUARD BOX FOR FLUSH MAGNETIC DOOR CONTACT BY DIV. 26. 3/4" HOLE IN DOOR FRAME AND TOP OF DOOR BUCK BY DIVISION 8.

7. ROUTE THROUGH ALUMINUM FRAME AT STOREFRONT/CURTAIN WALL LOCATIONS AS REQUIRED.

8. MOUNT DEVICES ON SECURE SIDE OF DOOR.

9. ENCLOSURE SHALL CONTAIN READER INTERFACE MODULE AND POWER SUPPLY FOR DOOR DEVICES.

10. INTERCOM 2-GANG JUNCTION BOX LOCATED ON EXTERIOR SIDE OF DOOR AS SHOWN ON DRAWINGS. CUT AND MOUNT INTERCOM FLUSH IN EXTERIOR WALL. PATCH BRICK AS REQUIRED.

2 11. BUSHED 3/4"C TO NEAREST ACCESSIBLE CEILING WITH PULL STRING.

12. SECURE J-HOOK TO STRUCTURE. SUPPORT CABLING IN J-HOOKS ABOVE SUSPENDED CEILING TO NETWORK CONTROLLER.

1 281300.13 - SINGLE DOOR WITH CARD READER AND INTERCOM

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No.	Description	Date
2	ADDENDUM 01	1/07/2016
1	ISSUED FOR BID	12/11/2015

Drawing Title:

TECHNOLOGY DETAILS

Project No.: 004645.05 Checked by: JE

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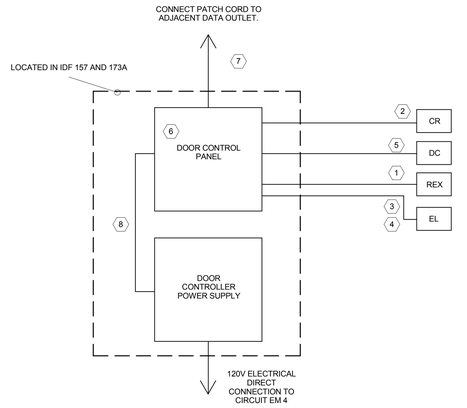


KEYED NOTES :

1. 2-CONDUCTOR 22 AWG
2. 6-CONDUCTIOR 18 AWG
3. 2-CONDUCTOR 18AWG
4. PROVIDED BY OTHERS
5. 2-CONDUCTOR 18AWG
6. CONNECT TO THE FIRE ALARM SYSTEM.
7. CATEGORY 6 PATCH CORD.
8. 2-CONDUCTOR 14AWG

KEYED NOTES :

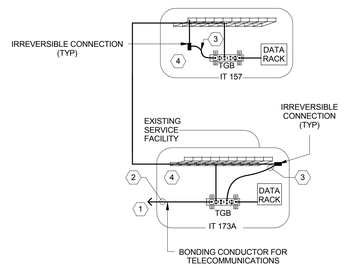
A. EC/TC SHALL COORDINATE THE INSTALLATION OF EQUIPMENT WITH RPS SECURITY GROUP.

B. CONTRACTOR WILL PROVIDE SECURITY EQUIPMENT.

C. CONDUIT ROUGH-IN SHALL BE BY THE ELECTRICAL CONTRACTOR.

6 DOOR CONTROL SCHEMATIC BLOCK DIAGRAM

1/8" = 1'-0"



KEYED NOTES :

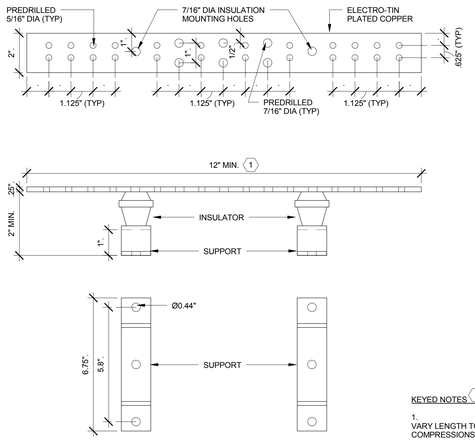
1.
ROUTE TELECOMMUNICATIONS BONDING CONDUCTOR (TBC) FROM TELECOMMUNICATIONS MAIN GROUND BAR (TMBG) AND BOND TO GROUNDING ELECTRODE AT ELECTRICAL SERVICE ENTRANCE (MAIN DP EQUIPMENT GROUND BUS). IF MAIN DP EQUIPMENT GROUND BUS IS INACCESSIBLE, BOND TBC TO GROUNDING ELECTRODE UPSTREAM FROM WATER SERVICE GROUND BOND AND SUPPLEMENTAL GROUND RING/ROD INSTALLATIONS.

2.
MINIMUM CONDUCTOR SIZE SHALL BE LARGER DIAMETER THAN LONGEST TELECOMMUNICATIONS BONDING BACKBONE (TBB) SIZE.

3.
MINIMUM CONDUCTOR SIZE SHALL BE ONE GAGE SMALLER IN DIAMETER THAN ASSOCIATED TBB.

4.
PROVIDE BONDING CONNECTION TO ALL EQUIPMENT PANELS, RACKS, BACKBOARDS, SLEEVES, CABLE TRAY/RUNWAY, STATIC DISAPATIVE FLOORING AND PANELBOARDS LOCATED IN ROOM.

5 TELECOMMUNICATIONS BONDING



KEYED NOTES :

1.
VARY LENGTH TO MEET APPLICATION REQUIREMENTS OF LISTED COMPRESSIONS TWO-HOLE LUGS.

4 TELECOMMUNICATIONS GROUNDING BUSBAR (TGB)

KEYED NOTES :

1.
FIBER OPTIC 12 PORT PATCH PANEL.

2.
6 STRAND MULTIMODE CABLE FROM EXISTING BASEMENT MDF.

3.
SPACE RESERVED FOR OWNER PROVIDED NETWORK ELECTRONICS SWITCH.

4.
HORIZONTAL WIRE MANAGERS (2RU).

5.
48-PORT PATCH PANEL (2RU).

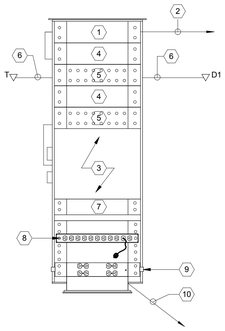
6.
CABLING TO DATA/TELEPHONE OUTLETS.

7.
OWNER PROVIDED UPS.

8.
PLUGSTRIP HORIZONTAL.

9.
ELECTRICAL CONNECTION.

10.
GROUNDING BAR KIT AND GROUNDING CONDUCTOR ROUTED TO AND BONDED TO PANELBOARD FOR TELECOMMUNICATIONS EQUIPMENT'S ACEG BUS, (WHEN SO EQUIPPED), OR PANELBOARD ENCLOSURE.



3 IDF RISER DIAGRAM

CONDUIT CAPACITY CHART FOR TELECOMMUNICATIONS

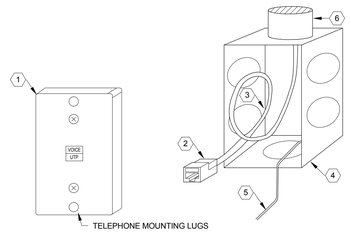
CONDUIT		CABLE OUTSIDE DIAMETER in (mm) / CABLE TYPE *							
INSIDE DIAMETER (mm)	TRADE SIZE	.13 (3.3)	.18 (4.6)	.22 (5.6)	.24 (6.1) CAT 5e CAT 6	.29 (7.4) CAT 6+ CAT 6e	.31 (7.9) CAT 6A STP	.37 (9.4)	.53 (13.5)
21	3/4	6	5	4	3	2	2	1	0
27	1	8	8	7	6	3	3	2	1
35	1-1/4	16	14	12	10	6	4	3	1
41	1-1/2	20	18	16	15	7	6	4	2
53	2	30	26	22	20	14	12	7	4
63	2-1/2	45	40	36	30	17	14	12	6
78	3	70	60	50	40	20	20	17	7
91	3-1/2	-	-	-	-	-	-	22	12
103	4	-	-	-	-	-	-	30	14

NOTES:

* CABLE TYPE SHOWN IS FOR TYPICAL CABLES AND VARIES FROM MANUFACTURER. VERIFY CABLE OUTSIDE DIAMETER OF ACTUAL MANUFACTURER UTILIZED PRIOR TO ROUGH-IN.

UTILIZE ACTUAL FILL RATES PER NEC IF CABLES OF MULTIPLE DIAMETERS ARE UTILIZED IN A SINGLE CONDUIT.

2 CONDUIT CAPACITY CHART



KEYED NOTES :

1.
SINGLE GANG STAINLESS STEEL COVERPLATE WITH TELEPHONE WALL-MOUNTING LUGS. VERIFY COMPATIBILITY WITH TELEPHONE MANUFACTURER PRIOR TO PURCHASE.

2.
MODULAR JACK, 110 TO RJ45, UNIVERSAL WIRING PATTERN NON KEYED, EIGHT POSITION (4 PAIR).

3.
TWISTED PAIR TYPE 4 PAIR, HORIZONTAL CABLE FROM LOCAL TELECOMMUNICATIONS ROOM, WITH SERVICE LOOP.

4.
SINGLE GANG COMMUNICATIONS OUTLET BOX WITH SINGLE GANG MOUNTING BRACKET.

5.
NYLON PULL CORD TO TELECOMMUNICATIONS ROOM.

6.
CONDUIT STUB INTO ACCESSIBLE CEILING SPACE.

7.
COORDINATE WITH SPECIFIC BACKBOX DEVICE SYMBOLS AS SHOWN ON DRAWINGS TO DETERMINE ROUGH-IN REQUIREMENTS AND LOCATIONS.

1 TELEPHONE OUTLET 'W'

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No.	Description	Date
2	ADDENDUM 01	1/07/2016
1	ISSUED FOR BID	12/11/2015

Drawing Title:

TECHNOLOGY DETAILS

Project No.: 004645.05 Checked by: JE

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ROCKFORD PUBLIC SCHOOLS
16-22 Riverdahl Elementary School Additions
Pre-Bid Meeting Sign-In Sheet
Tuesday, January 5, 2016 at 3:00 p.m.

ROCKFORD PUBLIC SCHOOLS
WORLD-CLASS EDUCATION FOR ALL CHILDREN

PRE-BID MEETING SIGN-IN SHEET

IFB # 16-22 Riverdahl Elementary School Additions

Tuesday, January 5, 2016 3:00 pm (CST)

	Printed Name	Company Name	Company Address	Telephone	E-mail
1	WARREN HAUSER	BENCHMARK FLOORING	8197 - COMMERCE DR.	815-985-9844	NA
2	CHRIS Reyenga	Rockford Structures	10545 N. 2nd ST.	815-633-6161	creyenga@Rockfordstructures.com
3	NIK MAFFIOLI	WILSON ELECTRIC CO	113. South MADISON St.	815-847-6267	NIKM@WILSONELECTRICCO.COM
4	Jordan McDaniel	Schmeling Construction	315 Harrison Ave	815-399-7800	jordanm@schmelingconstruction.com
5	Anthony Scandroli	SCANDROLI	855 N. MADISON St. 61107	815 962-4037	anthony.scandroli@scandroliconstruction.COM
6	Mike Johnson	Cord Construction	1322 E. State St. Rockford 61104	815-965-6630	johnson@cordconstruction.com
7	Mike Vlasnik	Special Power	1226 18th Ave Rockford 61104	815-962-1210	mike@specialpower.com
8	Scott Sibley	Sjostrom + Sons	1129 Harrison Ave Rockfd	815-378-4244	ssibley@sjostromconstruction.com

ROCKFORD PUBLIC SCHOOLS
16-22 Riverdahl Elementary School Additions
Pre-Bid Meeting Sign-In Sheet
Tuesday, January 5, 2016 at 3:00 p.m.

	Printed Name	Company Name	Company Address	Telephone	E-mail
9	Jeannette Sheehan	Larson & Larson Builders, Inc.	5612 Industrial Ave Loves Park, IL 61111	815-633-1773	jeannette@LnBuilders.net
10	SANJA RESIDBEGOVIC	CANNON DESIGN	225 N MICHIGAN AVE. Su. 1100 CHICAGO IL 60601	312.960.8371	sresidbegovic@cannondesign.com
11	Paul Nelson	Nelson Carlson Mechanical	1417 22nd St. Rockford IL 61108	815-398-1910	PNelson@NelsonPipingCo.com
12	JIM FRIKMAN	STENSTROM	2420 20th St ROCKFORD, ILL 61109	815-398-2420	jimf@stenstrom.com
13	Michael Slagel	Visserity Construction	175 Benchmark Industrial Dr Streator, IL 61364	815-673-5511	mslagel@visserity.com
14	JOHN MONCZAK	CONTEMPORARY HAMMER WORKS	750 N. MADISON	815-540-1406	INFO@CHWCONTRACTORS.COM
15	CRAIG ELLIOTT	RAUNER BOSS RPB-205	WISHMANNOS OPS CENTER	847-727-7788	CRAIG.ELLIOTT@RBIC.COM
16					
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RFI Report - All

PROJECT: Rockford Public School District 205
MANAGER: Jessica Figenholtz
PREPARED BY: Terry Domdey
DATE: 1/7/2016

CANNONDESIGN

ID	Subject	Status	From	Received	Due Date	Total Days	Closed Date	Question	Answer
1109	Riverdahl-Convection Oven	Closed	Tamara Pugh	###### ##	1/6/2016	9	1/7/2016	Please review and respond. Refer to spec section 114000-20. Confirm the model number for item #31 convection oven, on the kitchen equipment list. The model listed is not accurate, SLGL/12SC. Mike Johnson Assistant Project Manager/Estimator LEED Green Associate Cord Construction Company 1322 East State Street Rockford, IL 61104 Phone 815-965-6630 x128	S2O reviewed the RFI see answer below: The model number should be SLGS/12SC in lieu of SLGL/12SC. GC to verify that is matches the existing unit and can be double stacked.

ID	Subject	Status	From	Received	Due Date	Total Days	Closed Date	Question	Answer
1110	Riverdahl-Miscellaneous	Closed	Tamara Pugh	###### ##	1/7/2016	8	1/7/2016	I’ve reviewed the Riverdahl Elementary School drawings and have the following questions: What are the elevations for the HHS 6 x 6 x ¼ post on the NE corner of the gym? Can you provide the required base plate/anchor bolt detail for the post? Please provide thickness for HHS, angle, and tube at the trash enclosure. (Sheet A0052) Are bollards required in the trash enclosure? If so, please provide size required. Is there a lintel schedule? Spec section 055000 Metal Fabrications notes that the ladder and safety cage are to be galvanized. The architectural drawings note that the ladder is painted. Which is correct? Thank you, Charlotte Mohns Project Manager Custom Iron Works Inc. 540 Eastern Ave. South Beloit, IL 61080	See Answers Below: 1. What are the elevations for the HHS 6 x 6 x ¼ post on the NE corner of the gym? See Addendum 01 2. Can you provide the required base plate/anchor bolt detail for the post? See Addendum 01 3. Please provide thickness for HHS, angle, and tube at the trash enclosure. (Sheet A0052) HSS = 1/4", angle = 1/4", 1 1/2" tubing = 3/16" 4. Are bollards required in the trash enclosure? If so, please provide size required. Yes, bollards are required to protect the fencing from trash bins. Please see Addendum 01 sheet A0052 for bollard size. 5. Is there a lintel schedule? Yes - 3/S0401 6. Spec section 055000 Metal Fabrications notes that the ladder and safety cage are to be galvanized. The architectural drawings note that the ladder is painted. Which is correct? The galvanized ladder and safety cage are to be painted. See specifications Section 055000 - METAL FABRICATION in the IFB documents.
1111	Riverdahl-Joist Bearing	Closed	Tamara Pugh	###### ##	1/7/2016	8	1/7/2016	Could the architect please provide a joist bearing detail for elev. 115’-8”? (Reference sheet S0102) Thank you, Charlotte Mohns Project Manager Custom Iron Works Inc. 540 Eastern Ave. South Beloit, IL 61080	See Detail 7/S0504 in IFB documents for Typical Joist Bearing on CMU wall

ID	Subject	Status	From	Received	Due Date	Total Days	Closed Date	Question	Answer
1112	Riverdahl-Sub Req TK Air Max 2102	Closed	Stacie Scott	1/4/2016	1/11/2016	4	1/7/2016	Good morning. The following pages is a submittal of TK-AirMax 2102 Non-Permeable fluid applied air/vapor barrier for the Riverdahl Elementary School. The AirMax product has been ABAA Evaluated and met or exceeded the critical ASTM tests. The AirMax 2102 NP is a solvent base formulation that can be applied to Zero degree F. This will allow the project to move ahead in cold weather without having to pay for tenting and propane costs. The AirMax 2102 has an industry leading 12 month U.V. resistance. TK Products has an ABAA Certified product specialist on staff for technical and training questions. Please contact Jim Libke @ 612-868-3277 or jlibke@tkproduct.com with any questions that you may have. Thanks, Lyn Heiland 2970 Chaska Boulevard Chaska, MN 55318 P: (952) 233-2728 F; (952) 233-2712	Please refer to Specification section 016000 - Product Requirements Comparison for procedure for product substitution requests.

ID	Subject	Status	From	Received	Due Date	Total Days	Closed Date	Question	Answer
1113	Riverdahl-TK Air Max 2103 NP	Closed	Stacie Scott	1/4/2016	1/11/2016	4	1/7/2016	This is a second TK-AirMax non-perm substitution, but in a water base formulation. The following pages is a submittal of TK-AirMax 2103 Non-Permeable fluid applied air/vapor barrier for the Riverdahl Elementary School. The AirMax product has been ABAA Evaluated and met or exceeded the critical ASTM tests. The AirMax 2103 NP is a water base formulation. The AirMax 2103 has an industry leading 12 month U.V. resistance. TK Products has an ABAA Certified product specialist on staff for technical and training questions. Please contact Jim Libke @ 612-868-3277 or jlibke@tkproduct.com with any questions that you may have. Thanks, Lyn Heiland 2970 Chaska Boulevard Chaska, MN 55318 P: (952) 233-2728	Please refer to Specification section 016000 - Product Requirements Comparison for procedure for product substitution requests.
1114	Riverdahl-Sub Req Scissor Loc Air Flow	Closed	Stacie Scott	1/5/2016	1/12/2016	3	1/7/2016	see attachment	See Addendum 01 for Specification