Robert Poole Building #056
Additions and Renovations
April 28, 2016

ADDENDUM NO. 4

This Addendum is issued pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Bid Documents, and previously issued Addenda.

The bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

The Bid Date is: Thursday May 12, 2016 at 4:00 PM.

The following items will become part of the Bid Documents for this project:

1. The Bid Date has been extended to Thursday **May 12, 2016** at 4:00 PM.
2. Please note Cam Construction General Notes dated April 28, 2016, attached.
3. Please note JRS Architects Addendum 3, dated April 27, 2016, attached.

Attachments

Cam Construction General Notes
Revised Bid Form
Sketches A4-SK1, A4-SK2
Security Camera Location Plan
JRS Architects Addendum 3

END OF ADDENDUM NO. 4

Robert Poole Building #056
Additions and Renovations
April 28, 2016

Addendum No. 4

CAM CONSTRUCTION – General Notes and Clarifications

1. Bidders should submit proposals on the revised Bid Form included with this addendum.
2. Bidders are encouraged to submit Value Engineering/Voluntary Alternates with their bids. These will be kept confidential and not shared with other bidders. See Section 4 of the attached revised Bid Form.
3. Bidders note: Robert Poole Renovation drawings dated 1982 are now included with the bid documents on CAM's website (www.cambuilds.com) and on BuildingConnected. These are intended for information and reference only, and do not necessarily reflect the as-built conditions.
4. Building Demolition Bid Package (2A) – revise a portion of Scope Item 2 to read: "…The price shall include leaving the existing 3-story building footings in place and removing the existing foundation walls to the existing grade leaving no less than 4'0" cover below the proposed new finished grade. All walls and footings within Bldg. B and ten (10') ft. outside of Bldg. B will be removed in their entirety. The work of this contractor will also include removing *all* lower level floor slabs. Fill placement will …"
5. Building Demolition Bid Package (2A) – revise Scope Item 6, seventh line to read: "…the new Building B be recycled…".
6. Building Demolition Bid Package (2A) – revise Scope Item 6: delete the word "No" from the end of the paragraph.
7. Selective Demolition Bid Package (2B) - bidders are to include an Allowance of twenty (20) additional dumpsters for the removal and haul-off of miscellaneous trash and debris. Provide a Unit Price for adjustments to this allowance. See the attached revised Bid Form Unit Price UP-15.
8. Earthwork Bid Package (31A) – replace Scope Item 15 with: "Building C Floor Level-L1: excavate to elevation 222' (3' ft. below subgrade) and refill with compacted soils. Existing soils below elevation 222' will not require undercutting. Proof-roll all areas including Level-L0 and Level-L1 prior to fill operations. Re-use of the undercut material will be permissible if determined by the Geotech to be suitable."
9. Earthwork Bid Package (31A) – revise a portion of Scope Item 17 to read: "…and remove the existing foundation walls to the existing grade leaving no less than 4'0" cover below the proposed new finished grade. All walls and footings within Bldg. B and ten (10') ft. outside of Bldg. B will be removed in their entirety. The work of the Building Demolition contractor will also include removing *all* lower level floor slabs. It shall be the responsibility of Bid Package (31A)…"

10. Earthwork Bid Package (31A) – replace Scope Item 18 with: "Include the complete SEC devices and excavation of the geothermal well field as shown on drawing C-1.40 and M503 to 4'6" below proposed new finish grade. The excavated material will be tested for use as backfill. For bid purposes, the contractor shall assume that these soils will not be suitable for structural fill or for reuse as backfill in the geothermal well field but can be used as common borrow in over lot areas. Install and remove all SEC devices including sumps and inlet protection. Coordinate with bid package (22A) Mechanical Trade Package. Backfill of the geothermal field will be performed by Trade Package (22A) up to two (2') ft. of finished grade with satisfactory fill provided by this trade package. RC6 stone will be placed to within one (1') ft. of finished grade in this area by the (31A) contractor."
11. Earthwork Bid Package (31A) – bidders are to include in their Base Bid, an Allowance to remove from site and replace 1,000 c.y. of unsatisfactory soils. Provide Unit Prices for adjustments to this allowance. See attached revised Bid Form Unit Prices UP-13 and UP-14.
12. Earthwork Bid Package (31A) – bidders should note that a portion of the storm sewer piping between inlet I-3 and inlet I-1 lies beneath the geothermal piping. This work should be scheduled accordingly.
13. Earthwork Bid Package (31A) – in addition to the 200' x 12' temporary access roads required in Scope Item 9, bidders are to include in their Base Bid 2,500 c.y. of CR-6 for staging areas and/or temporary roadways. See attached Sketch SK1 dated 4/27/16 for extent and location of proposed temporary roadways and staging areas.
14. Earthwork Bid Package (31A) – bidders are to provide an Alternate price to perform onsite crushing of concrete site improvements scheduled for demolition - including but not limited to sidewalks, curb and gutters, stairs, concrete slope protection, areaways, light wells, and retaining walls and associated footings - and re-use as fill in lieu of hauling this material offsite. The resulting crushed material must satisfy CR-6 gradation and will be used to construct 12" thick staging areas and/or temporary roadways, although excess or re-spreading of this material may be used to satisfy structural fill requirements. For bidding purposes, assume that 2,500 c.y. of RC6 will be available for use from the combined crushing operations of Bid Packages (2A) and (31A). See attached revised Bid Form Alternate No. C-A10.
15. Revision to Spec Section 012300 Alternates. Add the following items:
    X. Alternate No. C-A9: Crush **Building** Demo Material Onsite to CR-6 Gradation for Re-use.
        1. Base Bid: Provide demolition and haul off-site all concrete/masonry demo components from existing 2-story and 3-story building demolition operations.
        2. Alternate: Provide onsite crushing of all concrete/masonry demo material from existing building demolition operations in lieu of hauling offsite, and stockpile for re-use as fill. The resulting material must satisfy CR-6 gradation.

Y. Alternate No. C-A10: Crush **Site** Demo Material to CR-6 Gradation for Re-use.

1. Base Bid: Provide demolition and haul off-site all concrete demo material including but not limited to sidewalks, curb and gutters, stairs, concrete slope protection, areaways, light wells, and retaining walls and associated footings.
2. Alternate: Provide onsite crushing of all concrete site improvement demo material, and re-use as fill in lieu of hauling offsite. The resulting crushed material must satisfy CR-6 gradation, and will be used to construct 12" thick staging areas and/or temporary roadways, although excess or re-spreading of this material may be used to satisfy structural fill requirements. For bidding purposes, assume that 2,500 c.y. of RC6 will be available for use from the combined crushing operations of Bid Packages (2A) and (31A).

16. Revision to Spec Section 012100 Allowances, page 3, paragraph 3.3.B–Allowance No. 2. Change to read: "Include 4,000 sf of repointing…".
17. Fencing Bid Package (32C) - bidders shall include installing and removing a 6' driven-post chain link fence (no barbed wire) and four (4) sets of gates, to be used as a temporary construction fence for the duration of the project. See the attached highlighted Site Plan (C-1.40), Sketch A4-SK2, reflecting the location of temporary fence and gates.
18. Fencing Bid Package (32C) - revision to Hardscape Site Plan L1.01: On north side of site along Berry Street, between (2) brick piers near parking lot entrance, change fencing Note F1 to read "F2" (ornamental).
19. Masonry Restoration Bid Package (4B) – bidders are to include furnishing and installing cast stone where required as part of their work.
20. Masonry Restoration Bid Package (4B) - revise Scope Item 7 Allowance, to read "….allowance of 4,000 sf for repointing…".
21. Metals Package (5A) – bidders are to supply aluminum nosings at all new metal pan stairs for installation under Bid Package (3A).
22. Metals Bid Package (5A) – bidders are to provide a bottom rail member between posts at Typical New Guardrail, Elevation 11/A502.
23. Carpentry Bid Package (6A) – bidders are to include 50,000 sf of floor protection using Ramboard or an equal product.
24. Roofing Bid Package (7C) – bidders are to include removal and replacement of all existing roofing and roof flashing where shown and required in order to obtain a complete roof system warranty.
25. Millwork (6B) and Casework (12B) Bid Package clarifications:
    a) All casework/shelving items identified on the Casework Schedule on Drawing A440 are to be provided by Casework Bid Package (12B) – with the EXCEPTION of the S-shelving scheduled for Media Center 105A, which will be part of Millwork Bid Package (6B).

b) All casework/shelving items identified on the Casework Schedule on Drawing A440 are to be either wood or plastic laminate - depending on their room location.
c) All Laboratory Casework and associated S-Shelving is to be wood with epoxy tops as shown, in accordance with Spec Section-123553.19, at the following rooms: Prep 043, Env Science 044, Stg-Sci 045, Art Studio 046, Stg-Art 047, Chemistry 201A, Stor-Chem 201B, Prep 201C, Biology 202A, Stor-Bio 202B, Physics 220, Prep 220A, Biology 233, Prep 233A, Env Science 301, Physics 321, Stor-Sci 321A, Art Studio 327, Kiln 327A, Art Studio 328, and Stg-Art 328A.
d) All other scheduled Casework and S-shelving is to be plastic laminate with plastic laminate tops as shown, in accordance with Spec. Sections-123216 and 123623.13.
e) Casework Bid Package (12B) is to provide all plastic laminate countertops that are <u>associated</u> with base cabinets. In addition, Casework (12B) shall provide <u>all</u> countertops at the following rooms: Cisco Lab 122, Gateway CR 123, PLTW CR 124, Planning 005, Work 101C, Stg-Sp Ed 104D, Office 153B, Office 154B, Collab 307, and Planning 309.
f) Millwork Bid Package (6B) is to provide all other plastic laminate "free-standing" countertops in accordance with Spec. Section-123623.13, including the following rooms: Security 101B, Guide Recep 102A, Career 102C, Nurse 103B, Corridor 300F/Collab 326.
g) Millwork Bid Package (6B) is to provide all other custom plastic laminate/wood casework and solid surface countertops in accordance with Spec. Sections-123216, 064113, and 123661.16, including the following rooms: Office Recep 002, Clos 002D, Main Office Recep 101A, and Clos 101N.
h) <u>Media Center 105A</u>:
Millwork Bid Package (6B) is to provide all work in Media Center 105A including the reception desk and computer stations per Spec. Sections-123216 and 064113, and S-shelving items in accordance with Spec. Section-115123.
i) Millwork Bid Package (6B) is to provide all miscellaneous architectural wood veneer and trim items as shown on the documents, and per Package (6B) Scope of Work.
j) Bidders are to ignore the countertop designations "LC" and "C". These designations will be removed from the drawings.

26. Selective Demolition/Masonry Restoration/Masonry Clarifications:
    a. Keynotes R6 and R37 on Building Elevations – existing window, door and/or masonry infills shall be carefully removed by Selective Demolition Bid Package (2B). Salvaged brick shall be cleaned of mortar and palletized for use by masonry restoration contractor. Quantity as identified per Notes. Masonry restoration contractor shall clean brick after installation.
    b. Keynote R18 on Building Elevations – the siamese connection to be removed by the Selective Demolition bid package (2B).
    c. Keynote R22 on Building Elevations – existing door and frame to be removed Selective Demolition bid package (2B).

d. Keynote R28 on Building Elevations – this work to be provided by Roof Bid Package 7C.
e. Keynote R36 on Building Elevations – this work to be provided by Selective Demolition bid package (2B).
f. Keynote R39 on Building Elevations – this work to be provided by Masonry Bid Package (4A).
g. Keynote R43 on Building Elevations – the demolition work will be provided by Selective Demolition Bid Package (2B), and Masonry Bid Package (4A) will provide CMU infills and coordinate brick ledges. The Masonry Restoration Bid Package (4B) shall tooth and install salvaged brick in addition to providing work R14.
h. Reference Building Elevations 1 and 2 on A202 – Masonry items marked R39, R44, and R45 in the following areas only, are to be provided by Masonry Bid Package (4A): between column lines A13 to A6 (elevation 1), and between column lines 6 to 2.1 (elevation 2). All other work in these areas to be provided by Masonry Restoration Bid Package (4B) as noted.

27. Plumbing and HVAC Bid Package (22A) – revise Scope Item No. 2 as follows: "The Earthwork Bid Package (32A) will excavate geothermal field and install and remove all SEC devices per drawing C1.40 and M-503 to 4'6" below proposed new finished grades. Excavated material will be stockpiled for re-use as backfill under this Bid Package (22A). Bid Package (22A) will backfill to within two (2') ft. of finished grade. Bid Package (22A) will maintain all devices and remove from site all spoils related to the installation of the geothermal wells, piping and vault. It will be the responsibility of this Trade Package (22A) to excavate geothermal supply and return pipe trenches as well as furnishing and installing select backfill and horizontal pipe tracers."
28. Electrical Bid Package (26A) - Add the following paragraph to Spec. Section 26 0 500-11, General Requirements for Electrical Work - see attached plan for location:

1.23 Construction Camera Surveillance System

Service Summary

1. Includes a Construction Camera Surveillance System to provide remote jobsite monitoring, team collaboration, project documentation, and security capabilities. The 3 Cameras can be accessed from any online device. Users can remotely view live images and video of construction activities. Photo documentation is easily catalogued or shared among team members. Any number of custom time-lapses can be scheduled and viewed anytime.

B. Service Specification
1. The camera system shall be accessible through a web browser (IE, Chrome, etc.) on any online device. Service shall be provided during the entire construction duration of the project as directed by the Construction Manager. Camera access is restricted by secure login requirements. The web interface shall use SSL encryption for data security.
2. The system shall include 4G LTE cellular service to connect the camera to the internet.
3. The camera system shall provide live images upon request to any number of simultaneous users. The system shall also provide live video upon request.

4. The web interface shall include:
    a. Customizable time-lapse scheduling. The system shall be able to capture any number of simultaneous time-lapses. Time-lapses may be watched or downloaded at any time.
    b. Image sharing features, including email sharing and image markup.
    c. The ability to save images locally and to a hosted photo album.
    d. Camera user statistics.
    e. Live weather conditions and historical weather data.
5. An embeddable version of the interface shall be available for use on owner/CM web pages.
6. Camera data such as images and time-lapse videos shall be available for download directly within the web interface. Client and past client logins shall never expire, granting access to this data in perpetuity.
7. At the completion of the project the System Vendor shall produce a time-lapse movie of the project for each camera used. The time-lapse movie shall be prepared based on the Construction Manager's instructions for resolution, duration, date range, time range and audio as part of the service.
8. The supplied camera vendor shall offer free 24/7 customer support.

C. General Hardware Specifications
1. The (3) Fixed Position Cameras shall meet the following specifications:
    a. Minimum of 12 Megapixel HD Resolution.
    b. Digital-Pan-Tilt-Zoom capabilities.
    c. Minimum of 120° horizontal field of view.
2. The (3) cameras shall ship pre-configured for turnkey installation.
3. The camera vendor shall provide all necessary mounting hardware. The Contractor shall provide a pole or secure a nearby structure for mounting the hardware. The cameras will be placed at the locations provided by the Construction Manager. The contractor is responsible for providing power to the cameras.
4. The contractor shall provide a high definition IP cameras which meets the following Requirements:
    a. Polycarbonate thermal plastic alloy enclosure with heater and blower
    b. Built-in 4G LTE cellular modem.
    c. 120VAC or solar power with battery backup.
5. At the conclusion of the project the cameras will become the property of the Construction Manager.

D. Construction Camera Surveillance System Vendors- Subject to compliance with requirements, available vendors offering cameras that may be incorporated into the Work include, but are not limited to the following:
1. Earthlink.
2. OxBlue.
3. Truelook.

SECTION 000300

FORM OF PROPOSAL

ROBERT POOLE BUILDING #056
ADDITIONS AND RENOVATIONS
1300 W. 36th Street
Baltimore, MD 21211

Bid Package #_____

Bid Package Name_____

Bid Date:_____

Contractor:_____

Address: _____

_____

Phone: _____

Email: _____

Owner: Maryland Stadium Authority
351 W. Camden St., Ste 500
Baltimore, Maryland 21201

Architect: JRS Architects, Inc.
2010 Clipper Park Rd, Ste 101
Baltimore, Maryland 21211
P: 410-235-7256

Construction Manager: CAM Construction Co., Inc.
108 W. Timonium Rd, Ste 300
Timonium, Maryland 21093
P: 410-560-2828
F: 410-560-1572

The undersigned, having visited and carefully examined the site and carefully examined the Bid Announcement and the Bid Documents proposes to furnish all labor, specified materials, and specified equipment necessary to construct and properly complete all the work required in strict accordance with the aforesaid documents using only the specified manufacturer's materials the Lump Sum as follows:

1. BASE BID:

_____

(Written in words)

_____**DOLLARS $**_____

ADDITIONAL COST TO PROVIDE A PAYMENT/PERFORMANCE BOND: $_____

(Please provide a bond if able. A bond is strongly encouraged for subcontracts over $250,000.)

AMOUNT OF MBE PARTICIPATION INCLUDED (Goal 30%): $ _____ **(** _____ **%)**
(sub goals: 7% African-American, 4% Asian)

AMOUNT OF AFRICAN-AMERICAN MBE INCLUDED ABOVE: $_____
AMOUNT OF ASIAN MBE INCLUDED ABOVE: $_____
AMOUNT OF OTHER MBE INCLUDED ABOVE: $_____

2. ALTERNATES

Special Instructions: Bidders are required to submit a bid on each Alternate that is associated with the Bid Package for this Proposal, and per Specification Section 012300.

A. Alternate No. C-A1: Chain Link Fence
Add/Deduct _____ Dollars $_____

B. Alternate No. C-A2: Site Amenities
Add/Deduct _____ Dollars $_____

C. Alternate No. C-A3: Unit Pavers
Add/Deduct _____ Dollars $_____

D. Alternate No. C-A4: Seat Blocks
Add/Deduct _____ Dollars $_____

E. Alternate No. C-A5: Sod
Add/Deduct _____ Dollars $_____

F. Alternate No. C-A6: Driveway Aprons
Add/Deduct _____ Dollars $_____

G. Alternate No. C-A7: Site Wall Stencil
Add/Deduct _____ Dollars $_____

H. Alternate No. C-A8: Berry Street Curb
Add/Deduct _____ Dollars $_____

I. Alternate No. A-A1: Resilient Tile Flooring
Add/Deduct _____ Dollars $_____

J. Alternate No. A-A2: Resilient Tile Corridor Flooring
Add/Deduct _____ Dollars $_____

K. Alternate No. A-A3: Ceramic Wall Tile
Add/Deduct _____ Dollars $_____

L. Alternate No. A-A4: Asphalt Shingle Roofing
Add/Deduct _____ Dollars $_____

M. Alternate No. A-A5: Acoustical Panel Ceiling
Add/Deduct _____ Dollars $_____

N. Alternate No. A-A6: Educational Casework
Add/Deduct _____ Dollars $_____

O. Alternate No. A-A7: Canopy at Entry 001A
Add/Deduct _____ Dollars $_____

P. Alternate No. A-A8: Canopy at Entry at Lobby 100H
Add/Deduct _____ Dollars $_____

Q. Alternate No. A-A9: Canopy at Corridor 100G
Add/Deduct _____ Dollars $_____

R. Alternate No. A-A10: Canopies at Receiving 031 and Stair C1-1
Add/Deduct _____ Dollars $_____

S. Alternate No. A-A11: Music Room Ceiling
Add/Deduct _____ Dollars $_____

T. Alternate No. M-A1: Domestic Water Piping
Add/Deduct _____ Dollars $_____

U. Alternate No. M-A2: Above Grade Storm and Sanitary Water Piping
Add/Deduct _____ Dollars $_____

V. Alternate No. M-A3: Below Grade Storm and Sanitary Water Piping
Add/Deduct _____ Dollars $_____

W. Alternate No. E-A1: Aluminum Electric Feeders
Add/Deduct _____ Dollars $_____

X. Alternate No. C-A9: Crush Building Demo Material to RC6 for Re-use
Add/Deduct _____ Dollars $_____

Y. Alternate No. C-A10: Crush Site Demo Material to RC6 for Re-use
Add/Deduct _____ Dollars $_____

3. UNIT PRICES

Special Instructions: Bidders are required to submit a bid on each Unit Price that is associated with the Bid Package for this Proposal, and per Specification Section 012200. Unit Prices are for extra work or credits. Prices as stated shall remain in effect for the duration of this project. The undersigned acknowledges the unit price values as part of this bid proposal and agrees to add or delete items for the unit prices identified when directed to do so by the Owner.

A. Unit Price UP-1: Backfill of existing water conduit. $_____/CuYd

B. Unit Price UP-2: Brick Repointing. $_____/SqFt

C. Unit Price UP-3: Unsatisfactory Soil Excavation Replaced from Offsite $_____/CuYd

D. Unit Price UP-4: Unsatisfactory Soil Excavation Replaced with Onsite $_____/CuYd

E. Unit Price UP-5: Open Excavation Rock with Replacement $_____/CuYd

F. Unit Price UP-6: Trench Excavation Rock with Replacement $_____/CuYd

G. Unit Price UP-7: Open Excavation Rock $_____/CuYd

H. Unit Price UP-8: Trench Excavation Rock $_____/CuYd

I. Unit Price UP-9: Contaminated Soil Excavation with Replacement $_____/CuYd

J. Unit Price UP-10: Restoration of SEC Entrances and Berms $_____/Each

K. Unit Price UP-11: Repair/Replacement of Existing Plaster $_____/SqFt

L. Unit Price UP-12: Deduct for Onsite RC-6 in lieu of Borrow Fill $_____/CuYd

M. Unit Price UP-13: Haul-Off Unsatisfactory Soil from Site and Replace with Onsite $_____/CuYd

N. Unit Price UP-14: Haul-Off Unsatisfactory Soil from Site and Replace with Borrow $_____/CuYd

O. Unit Price UP-15: Cost to Provide Dumpster for Miscellaneous Debris $_____/Each

4. SUBSTITUTIONS / VOLUNTARY ALTERNATES

Where in the base bid systems, processes or manufacturer's brands are referenced, it will be assumed that the proposal is based on those brands, or processes, unless otherwise noted. Alternative bids for items of equal performance will be considered for systems, processes or products of manufacturers other than those specified, if accompanied by catalogs, test reports, brochures, or other descriptive literature and supporting data, sufficient in detail to permit evaluation of the proposed substitution without further reference. Any design changes necessary by the proposed substitution will be the responsibility of the subcontractor.

Proposed Substitution/Alternate: Price Change

_____ $_____.

_____ $_____.

_____ $_____.

_____ $_____.

5. ADDENDA

Receipt of the following Addenda is acknowledged:

Addendum #_____ Dated _____

Addendum #_____ Dated _____

Addendum #_____ Dated _____

Addendum #_____ Dated _____

Addendum #_____ Dated _____

Addendum #_____ Dated _____

Addendum #_____ Dated _____

Addendum #_____ Dated _____

6. WORKFORCE DEVELOPMENT PLAN

1. Acknowledge review and compliance with the Workforce Development Process Guide.
   Yes _____ No _____
2. Total number of Baltimore City residents planned to be hired _____.
3. Total number of worked hours planned for Baltimore City residents _____.

7. PREQUALICATION **

**Any Bidder that has not previously submitted a Subcontractor Pre-Qualification Form, should complete the attached form and return with their Bid Proposal.

8. SIGNATURE

_____ _____

(Authorized Representative Name Printed) (Authorized Representative Signature) (Date)

_____

(Title)

(Legal Name of Company)

_____

(Legal Name of Company)

_____

(Address)

_____

(City) (State) (Zip)

_____

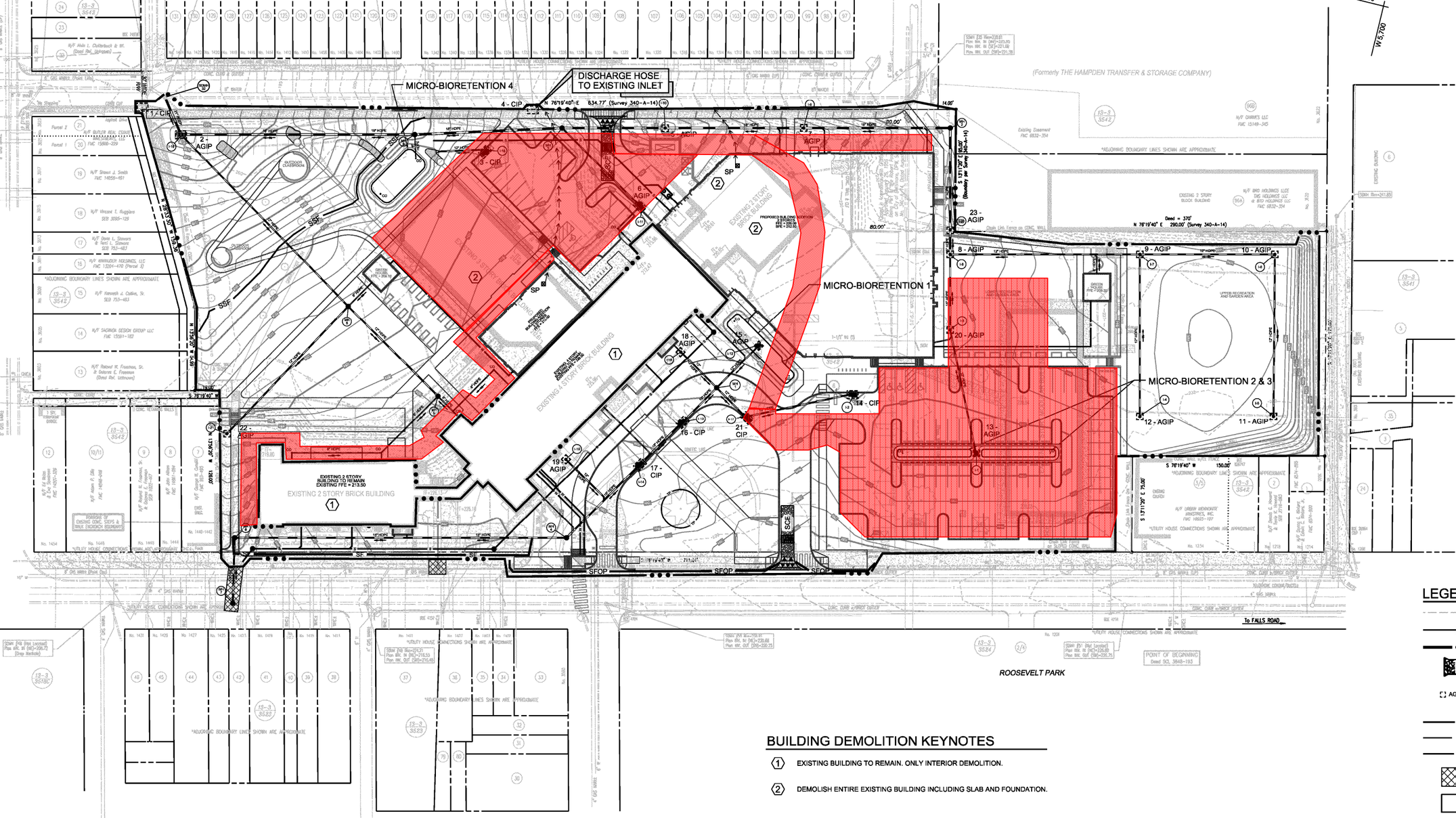
(Telephone) (Fax)

_____

(E-mail address)

Contractor's License Number # _____

We are/I am licensed to do business in the State of Maryland as a:
( ) Corporation ( ) Partnership ( ) Individual ( ) Other



BUILDING DEMOLITION KEYNOTES

1. EXISTING BUILDING TO REMAIN. ONLY INTERIOR DEMOLITION.
2. DEMOLISH ENTIRE EXISTING BUILDING INCLUDING SLAB AND FOUNDATION.

LEGEND:

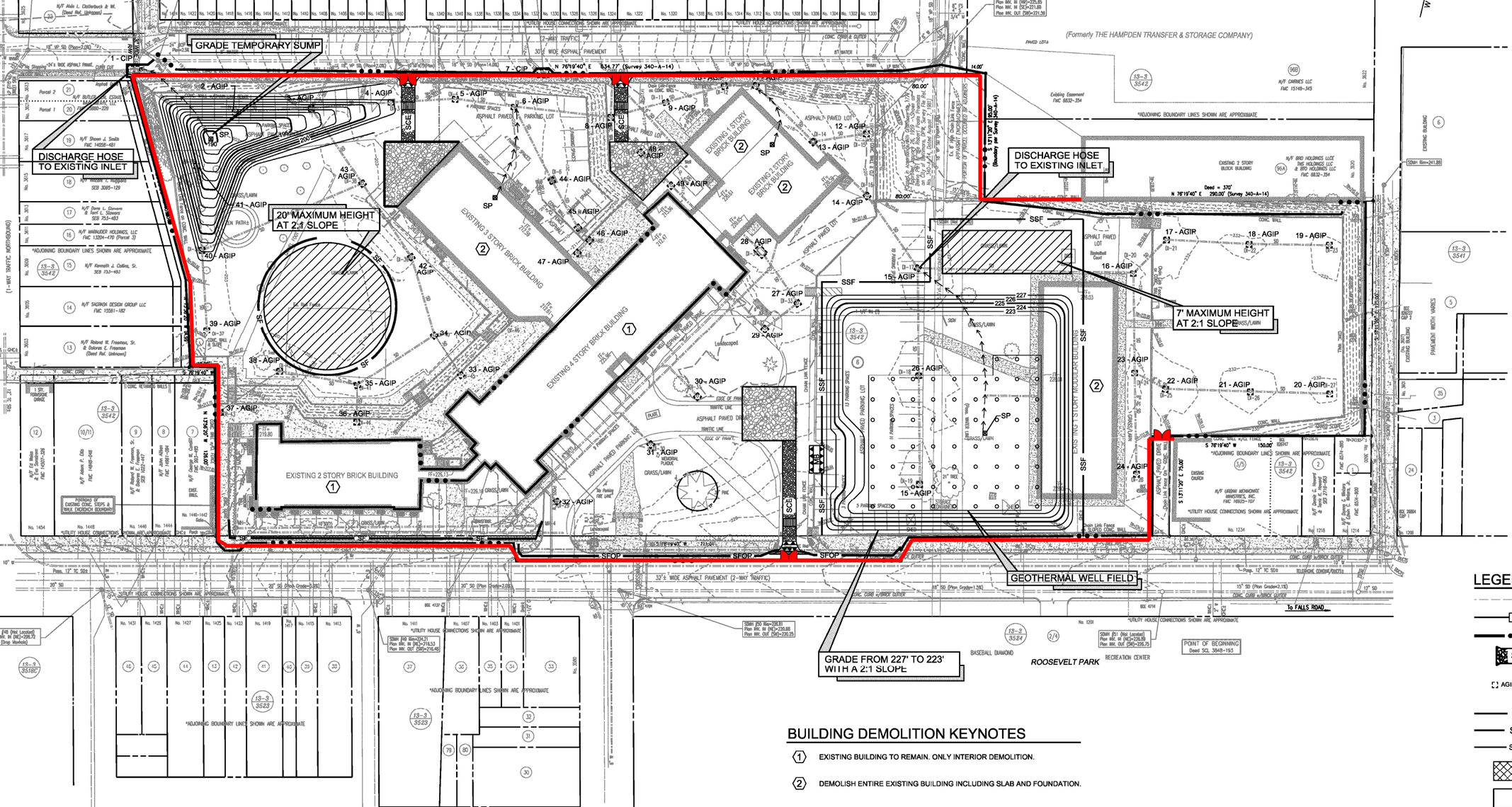
- EXISTING CONTOUR
- CONTOUR
- LIMIT OF DISTURBANCE
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- AGIP / CIP — INLET PROTECTION
- SF — SILT FENCE
- SSF — SUPER SILT FENCE
- SFOP — SILT FENCE ON PAVEMENT
- SAME DAY STABILIZATION
- STAGING AREA
- STOCKPILE AREA
- SP — SUMP PIT
- TEMPORARY DISCHARGE HOSE
- WR — WASH RACK
- GEOTHERMAL WELL
- MB — MOUNTABLE BERM

STONE (12") ON FABRIC FOR HAUL ROAD AND STAGING.

SKETCH A4-SK1
4-27-16

"FOR SEDIMENT CONTROL ONLY"

SUBMITTED FOR FINAL MDE APPROVAL



BUILDING DEMOLITION KEYNOTES

1. EXISTING BUILDING TO REMAIN. ONLY INTERIOR DEMOLITION.
2. DEMOLISH ENTIRE EXISTING BUILDING INCLUDING SLAB AND FOUNDATION.

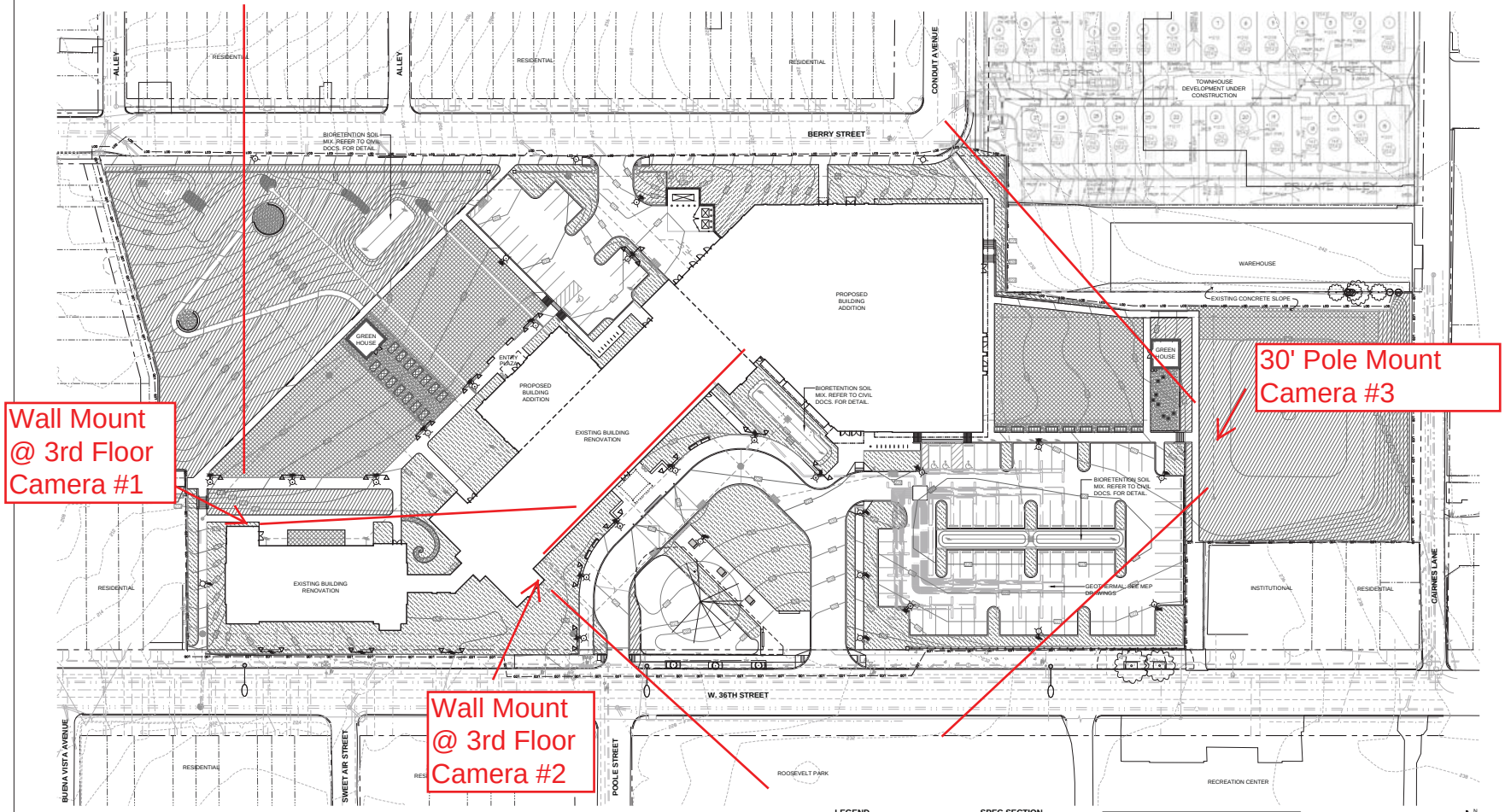
LEGEND:

- EXISTING CONTOUR
- CONTOUR
- LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION
- SILT FENCE
- SUPER SILT FENCE
- SILT FENCE ON PAVEMENT
- SAME DAY STABILIZATION
- STAGING AREA
- STOCKPILE AREA
- SUMP PIT
- TEMPORARY DISCHARGE HOSE
- WASH RACK
- GEOTHERMAL WELL
- MOUNTABLE BERM

TEMPORARY FENCING AND GATES

SKETCH A4-SK2

SUBMITTED FOR



JRS ARCHITECTS
2010 Clipper Park Rd.
Suite 101
Baltimore, MD 21211
410.235.7256

ASSOCIATE ARCHITECT
SCHRADER GROUP ARCHITECTURE LLC
161 LEVERINGTON AVE, SUITE 105
PHILADELPHIA, PA 19127

LANDSCAPE ARCHITECT
MAHAN RYKIEL ASSOCIATES
800 WYMAN PARK DR, SUITE 100
BALTIMORE, MD 21211

CIVIL ENGINEER
STV, INC.
7125 AMBASSADOR RD, SUITE 200
BALTIMORE, MD 21244

STRUCTURAL ENGINEER
ALBRECHT ENGINEERING
3500 BOSTON ST, SUITE 329
BALTIMORE, MD 21224

MEP ENGINEER
BRMJAC ENGINEERING
1800 N. CHARLES ST, SUITE 310
BALTIMORE, MD 21201

FOOD SERVICE
NYIKOS ASSOCIATES
18219A FLOWER HILL WAY
GAITHERSBURG, MD 20879

AVIT CONSULTANT
EDUCATIONAL SYSTEMS PLANNING
49 OLD SOLOMONS ISLAND RD, STE 301
ANNAPOLIS, MD 21401

Baltimore City Public Schools
Additions & Renovations at Robert Poole Building #056
1300 W 36TH ST., BALTIMORE, MD 21211

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: XX
EXPIRATION DATE: XX

No.	DATE	DESCRIPTION

BID ISSUE

PROJECT No.: 152-01
DATE: 03/31/16
SCALE: AS SHOWN
DRAWING NAME
Soil Plan

L1.00

MAHAN RYKIEL ASSOCIATES, INC
The Steeff Silver Building, 800 Wyman Park Drive, Suite 100, Baltimore, MD 21211 410.235.8001

1/6/2016 8:48:54 AM

Additions & Renovations at Robert Poole Building #56
Maryland Stadium Authority
Baltimore City Public Schools
JRS Architects
April 27, 2016

ADDENDUM #3

This Addendum is issued pursuant to the Instructions to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings, and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

The Bidder shall acknowledge receipt of this Addendum in the appropriate space on the Bid Form.

ATTACHMENTS

This Addendum includes the following attached Sheets:

M 701 Calculations – Mechanical, rev 1, 4/27/16
P 010 Site Plan – Plumbing, rev 2, 4/27/16
P 022 Demo Basement Floor Plan B – Plumbing, rev 2, 4/27/16
P111 New Work Basement & First Floor Plan A – Plumbing, rev 2, 4/27/16
P 112 New Work Second & Roof Plan A – Plumbing, rev 2, 4/27/16
P 113 New Work Basement Plan B – Plumbing, rev 3, 4/27/16
P 114 New Work First Floor Plan B – Plumbing, rev 2, 4/27/16
P 115 New Work First Floor Plan C – Plumbing, rev 2, 4/27/16
P 116 New Work Second Floor Plan B – Plumbing, rev 2, 4/27/16
P 400 Enlarged Plans – Plumbing, rev 2, 4/27/16
P 401 Enlarged Plans – Plumbing, rev 2, 4/27/16
P 600 Schedules – Plumbing, rev 2, 4/27/16
P 700 Details – Plumbing, rev 2, 4/27/16
E 213 New Work Basement Plan B – Power, rev 1, 4/27/16
E 219 New Work Third Floor Plan C – Power, rev 1, 4/27/16
E 602 Electrical Panel Schedules, rev 2, 4/27/16
E 608 Electrical Panel Schedules, rev 2, 4/27/16

This Addendum includes the following attached Addendum Drawings:

AAD 3.01 Greenhouse Benches, 4/26/16, revising Sheet A511
AAD 3.02 Picket Guard Rail, 4/26/16, revising Sheet A502
TYAD 3.01 CCTV Revision, 4/26/16, revising Sheet TY 501

This Addendum includes the attached Specification Sections:

13 0123 Greenhouse, dated 4/27/16, reissued with this Addendum
26 3213 Packaged Engine Generator Systems, 4/27/16, reissued with this Addendum

REVISIONS TO DIVISIONS 02 - 16 SPECIFICATION SECTIONS (Not reissued)

Section	Paragraph	Change
07 5423	1.11.C.1	DELETE: “Thirty (30) years”, ADD: “Twenty (20) years”.

Section	Paragraph	Change
11 0000	2.2	DELETE: Paragraph "2.2 Ceramic Kiln – Gas" in its entirety.
05 5000	Part 2	ADD: 2.17 ABRASIVE METAL NOSINGS A. Cast-Metal Units: Cast aluminum, with an integral-abrasive, as-cast finish consisting of aluminum oxide, silicon carbide, or a combination of both. Fabricate units in lengths necessary to accurately fit openings or conditions. 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following: a. Nystrom. 2. Nosings: Cross-hatched units, 2 inches wide with 1/4-inch lip, suitable for casting into concrete on steel pan stairs. B. Provide anchors for embedding units in concrete, either integral or applied to units, as standard with manufacturer. C. Apply bituminous paint to concealed surfaces of cast-metal units
22 1119	Part 2	ADD: "2.12 WATER-HAMMER ARRESTERS D. Water-Hammer Arresters, WHA: 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following: a. AMTROL, Inc. b. Josam Company. c. MIFAB, Inc. d. Precision Plumbing Products, Inc. e. Sioux Chief Manufacturing Company, Inc. f. Smith, Jay R. Mfg. Co.; Division of Smith Industries, Inc. g. Tyler Pipe; Wade Div. h. Watts Drainage Products. i. Zurn Industries, LLC; Plumbing Products Group; Specification Drainage Products. 2. Standard: ASSE 1010 or PDI-WH 201. 3. Type: Copper tube with piston. 4. Size: ASSE 1010, Sizes AA and A through F, or PDI-WH 201, Sizes A through F."
22 1319	2.3..A.8	DELETE: "Acid-resistant enamel", ADD: "Latex based."
22 1319	2.3..B.8	DELETE: "Acid-resistant enamel", ADD: "Latex based."
22 1319	2.3 Floor Drains	DELETE: C in its entirety. ADD: " C. Cast-Iron Floor Sink, FS-1: 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following: a. Josam Company; Josam Div. b. MIFAB, Inc. c. Smith, Jay R. Mfg. Co.; Division of Smith Industries, Inc.

Section	Paragraph	Change
		d. Tyler Pipe; Wade Div. e. Watts Drainage Products Inc. f. Zurn Plumbing Products Group; Specification Drainage Operation; Z-1900. 2. Standard: ASME A112.6.3. 3. Pattern: Floor sink. 4. Body Material: Cast iron with white porcelain enamel finish. 5. Outlet: Bottom. 6. Sediment Bucket: Aluminum. 7. Top or Strainer Material: Cast iron. 8. Top of Body and Strainer Finish: Cast iron with white porcelain enamel finish.. 9. Top Shape: Square. 10. Dimensions of Top or Strainer: 12" x 12" 11. Top Loading Classification: Medium Duty. 12. Trap Material: Cast iron. 13. Trap Pattern: Deep-seal P-trap. 14. Trap Features: Trap-seal primer valve drain connection."
22 1319	2.4	DELETE: "Trench Drains", ADD: "Plastic Channel Drainage System"
22 1319	2.4.A.2.a	DELETE: "Channel Sections: Interlocking…locations indicated." ADD: "Channel Sections: Interlocking-joint, HDPE or PE modular units, with end caps, tees and ells. Include flat, rounded, or inclined bottom, with pre-sloped inverts."
22 1319	2.4.A.2.b.1	DELETE: "Material: Reinforced…from equipment." ADD: "Material: Ductile iron slotted grate – Class B. Cut or leave gaps in grate for discharge from equipment."
22 1423	2.1.B.11	At "Dome Material:" DELETE: "PE", ADD: "Aluminum".
22 4200	2.2	ADD: " C. Sink Faucet, SF-3: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes and outlet with spout and fixture receptor. 1. Available Manufacturers: a. Chicago Faucets. Model 786-E29. b. Delta Commercial Brass. c. Speakman. d. Symmons. e. T &S Brass. 2. Maximum Flow Rate: 0.5 gpm, unless otherwise indicated. 3. Body Material: Cast brass. 4. Finish: Polished chrome plate. 5. Type: Kitchen faucet without spray. 6. Mixing Valve: 2-lever handle. 7. Centers: 8" (203 mm). 8. Mounting: Deck. 9. Handles: Wrist blade, 4" (100 mm). 10. Inlets: NPS 3/8 (DN 10) tubing with NPS 1/2 (DN 15) male adapter.

Section	Paragraph	Change
		11. Spout: Swivel gooseneck. 12. Spout Outlet: Aerator. 13. Operation: Compression, manual.”
22 4200	2.2	ADD: “ D. Sink Faucet, SF-4: Include cold-water indicators; coordinate faucet inlets with supplies and fixture holes and outlet with spout and fixture receptor. 1. Available Manufacturers: a. Chicago Faucets. Model 928-369CP. b. Delta Commercial Brass. c. Speakman. d. Symmons. e. T &S Brass. 2. Maximum Flow Rate: 0.5 gpm, unless otherwise indicated. 3. Body Material: Cast brass. 4. Finish: Polished chrome plate. 5. Type: Gooseneck faucet without spray and with vacuum breaker and serrated nozzle. 6. Mixing Valve: single-lever handle. 7. Centers: Single hole 8. Mounting: Deck. 9. Handles: Lever handle, 2 3/8”. 10. Inlets: NPS 3/8 (DN 10) tubing with NPS 1/2 (DN 15) male adapter. 11. Spout: Swivel gooseneck. 12. Spout Outlet: Serrated nozzle. 13. Operation: Compression, manual. 14. Drain: Strainer basket. 15. Drain: Strainer basket.”
22 4200	2.2	ADD: “ E. Sink Faucet, SF-5: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes and outlet with spout and fixture receptor. 1. Available Manufacturers: a. Chicago Faucets. Model 786-GN2BVBE7CP. b. Delta Commercial Brass. c. Speakman. d. Symmons. e. T &S Brass. 2. Maximum Flow Rate: 0.5 gpm, unless otherwise indicated. 3. Body Material: Cast brass. 4. Finish: Polished chrome plate. 5. Type: Gooseneck faucet without spray and with vacuum breaker and serrated nozzle. 6. Mixing Valve: 2-lever handle. 7. Centers: 8” (203 mm). 8. Mounting: Deck.

Section	Paragraph	Change
		9. Handles: Wrist blade, 4" (100 mm). 10. Inlets: NPS 3/8 (DN 10) tubing with NPS 1/2 (DN 15) male adapter. 11. Spout: Swivel gooseneck. 12. Spout Outlet: Serrated nozzle. 13. Operation: Compression, manual. 14. Drain: Strainer basket.
22 4200	2.12.A	AT "Service Basin MR-1:" DELETE: "Terrazzo, floor mounted", ADD: "Molded Stone, floor mounted."
22 4200	2.14.E.3	AT "Faucet:" DELETE: "SF-4", ADD: "SF-5"
22 4200	2.14	AT paragraphs A through G, "Waste Fittings", ADD: "Provide strainer basket/crumb cup for sink drains."

REVISIONS TO DRAWING SHEETS

Drawing	Location	Change
A 440	Casework Notes	At Note 1, ADD: "Art room casework is as specified in 123553.19 Wood Laboratory Casework."
A 440	Casework Notes	ADD: "5. Designations C2434, LC2434, and similar tags call out countertops. Countertop material is epoxy resin at all Science Rooms and Art Rooms and plastic laminate at all other locations unless noted otherwise."
A 502	11	REVISE Drawing as shown on the attached sketch AAD 3.02.
A 511	1	ADD: Benches as shown on the attached sketch AAD 3.01
A 511	2	ADD Note: "Benches similar to Greenhouse 1".

END OF ADDENDUM 3

SECTION 130123 - GREENHOUSE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes Greenhouse structure and associated equipment.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. LEED Submittals:

1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
2. Product Certificates for Credit MR 5: For products and materials required to comply with requirements for regional materials, certificates indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating distance to Project, cost for each regional material, and fraction by weight that is considered regional.
3. Product Data for Credit EQ 4.1: For adhesives and sealants, documentation including printed statement of VOC content.
4. Product Data for Credit EQ 4.1: For solvent cements and adhesive primers, documentation including printed statement of VOC content.
5. Laboratory Test Reports for Credit EQ 4: For adhesives sealants used inside the weatherproofing system], documentation indicating that products comply with the testing and product requirements of the California Department of Health Services'

"Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Shop Drawings:
   1. Include plans, elevations, sections, and attachment details.
   2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
   3. Include diagrams for power, signal, and control wiring.

D. Delegated-Design Submittal: For structural calculations for greenhouse.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For Greenhouse and equipment to include in operation and maintenance manuals.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect materials during delivery, storage and handling to comply with manufacturer’s directions and as required to prevent damage or deterioration.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design Greenhouse.

B. Structural Performance:
   1. Structural Performance: Except as noted, and as minimum, conform to the requirements and recommendations of both the “ Standard for Design Loads in Greenhouse Structures” and its “ Commentary” published by the National Greenhouse Manufacturers Association, 1998 Edition (NGMA Standards). Aluminum members shall be designed in accordance with the Aluminum Association’s design manual “Specifications for Aluminum Structures.”
   2. Greenhouse shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
      a. Dead Load: Structure and equipment

b. Snow Load: As shown on drawings but not less than 35 pounds per square foot.
c. Wind Load: As shown on drawings but not less than that produced by 115 mph wind.

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Atlas Manufacturing, Inc., Alapaha, GA
2. Lundy Greenhouse Manufacturing, New Madison, OH
3. National Greenhouse Company, Pana IL.
4. Rough Brothers, Inc., Cincinnati, OH
5. The Greenhouse Company of South Carolina, Immo, SC

2.3 SYSTEM DESCRIPTION

A. Greenhouse: Clear span construction free of interior columns.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.4 MATERIALS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Aluminum
1. Extrusions
a. Primary Framing: Alloy 6061-T6 or 6063-HS
b. Secondary Framing: Alloy 6063-T6 or 6063-HS
2. Sheet: Alloy 3003-H14
3. Plates: Alloy 6061-T6 or 6063 – HS

C. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

D. Greenhouse manufacturer’s structural posts (side, gable, partition, end and corner) truss framing, rafters and purlins. All frame members will be visible. Design shall provide for uniform and set pattern, conforming to spacing indicated. Where design requirements can be met through use of manufacturer’s standard components, such components shall be utilized.

E. Connections: Galvanized bolts and prepunched plates with all field connections to be bolted.

F. Anchor Bolts: Provide stainless steel “Hilti” expandable type anchor bolts or epoxy type anchors. Provide complete with nuts and washers.

G. Rafters: Provide rafters extending from eaves to ridges.

H. Roof Purlins: Provide purlins for roof, bolted by means of hot dipped galvanized bolts to top chord. Roof purlins will be set on top of top chord of truss. Vertical framework girts: provide channel girts for sidewalls, gables and partitions if applicable. Prefabricate all purlins and girts for attachment of glazing bars and connecting lugs.

I. Wall Sills: Seat a wall sill on all foundation walls. Sill shall be capable of receiving either side sash of fixed glazing as required.

J. Condensation System: Provide system of integral gutters in roof framing and glazing bars designed to collect condensation and weep moisture to the exterior. Under gutter drip channels shall collect gutter condensate.

K. Glazing Members: Provide glazing bars held in place with stainless steel self-tapping screws. Place glazing bars in the roof of sufficient size and mechanical properties to carry design loads specified. Bars shall be spaced to properly receive glazing. Glazing lite widths will divide the bay length into 3 lites maximum. The glazing length will be from roof purlin to roof purlin or roof purlin to eave/vent header/ridge. Provide shoulders to receive roof glazing and condensation grooves to conduct primary condensation to suitable disposal points. Bars shall extend in one piece from eave to ridge (on slopes without roof vents) and shall be supported by purlins.

L. Gables and Partitions: Glazed gables and partitions with fixed glazing from sill to gable rafter, except at door openings, shall be constructed using extruded aluminum shapes as indicated on the drawings. Partition systems shall be designed and detailed to provide for different movement of greenhouse frames and supports anticipated under specified loading conditions.

2.5 STEEL AND IRON FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.

2.6 FASTENERS

A. Non-load bearing screws and bolts shall be 18-8 stainless steel or 2024-T4 aluminum.

B. All structure fasteners shall be Grade 5, high strength, hot-dipped galvanized bolts.

2.7 GLAZING MATERIALS

A. Tempered clear float: full tempered clear float glass complying with ASTM C 1048, Federal Consumer Product Safety Commission Safety Standard 16 CFR-120C and ANSI Z97 I-1984.

B. Polycarbonate: 8mm thick, extruded twin wall polycarbonate sheets; color: clear with minimum light transmission of 80%.

2.8 SETTING MATERIALS

A. Non-metallic Shrinkage-Resistant Grout: Premixed non-metallic non-corrosive, non-staining product containing selected silica sands, Portland cement, shrinkage compensating agents, plastizing and water reducing agents complying with CE-CRD-C621.

2.9 GREENHOUSE DOORS AND FRAMES

A. Provide heavy duty, tubular frame members fabricated with mechanical joints. Provide 3" thick, wide stile doors. Fabricate doors to facilitate replacement of glazing or panels, without disassembly of stiles and rails. Provide glazing stops, with exterior stops anchored for non-removal. Glaze door lights. Hardware preparation shall specifically allow installation of BHMA standard locksets, incorporating BHMA standard backsets and installation of lock cylinders specified under other sections.

B. Doors hung in jambs with integral weather-strip and stops with 6" x ½" thresholds.

2.10 VENTS

A. Provide sash at each side of ridge, designed to open out in a continuous operation from end to end and with a weather tight hinge and weather tight fit between sash and vent header.
   1. Operation: provide rack and pinion apparatus to open sash with motor and controller.

B. Inlet Opening: louvered inlet shutter.

2.11 HEATING SYSTEM

A. Electric Greenhouse heater, 8.5KW to ensure 45 degree F.

2.12 BENCHES.

A. Provide benches as shown on drawings.

B. Benches will have leg supports from 1 ½" square-galvanized tubing spaced 6'0" maximum. Bench tops of perimeter sides with 1" square 18 gauge cross pieces on 2'-0" centers. Covering will be hot dipped 13 gauge, expanded metal.

C. Stationary Benches: Legs and top support rails inset a minimum of 3" on each side and 6" on the ends.

D. Floor mounted Benches: legs sitting on top of a concrete floor shall have a 4" x 4" x ¼" welded foot plate with an anchor hole to anchor to the floor.

2.13 SHADE CLOTH

A. Provide 50% white exterior manually applied shade cloth sized to fit roof. All edges to be taped and grommeted 3 feet on center.

2.14 CONTROLS

A. Staged thermostatic controls for all equipment including heating system and vents. Controls capable of separate day and night setpoints.

PART 3 - EXECUTION

3.1 EXAMINATION

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

B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance.

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

3.2 ERECTION AND INSTALLATION

A. Comply with Manufacturer’s written instructions for erection and installation.

B. Comply with NECA 1.

3.3 STARTUP SERVICE

A. Perform startup service.
   1. Complete installation and startup checks according to manufacturer's written instructions.

3.4 ADJUSTING

A. Adjust hardware and moving parts to function smoothly, and lubricate as recommended by manufacturer.

3.5 DEMONSTRATION

A. Train Owner's maintenance personnel to adjust, operate, and maintain units.

END OF SECTION 130123

SECTION 26 32 13 - PACKAGED ENGINE GENERATOR SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Packaged engine generator system.
2. Sub-base fuel tank and fittings and accessories
3. Exhaust silencer and fittings.
4. Battery and charger.
5. Remote control panel.
6. Weatherproof enclosure.
7. Generator Docking Station.

B. Related Sections include the following:

1. Division 01 Section “Construction Waste Management”
2. Division 01 Section "LEED Requirements" for additional LEED requirements.

1.3 SUBMITTALS

A. Submit under provisions of Section 260500.

B. Shop Drawings: Indicate electrical characteristics and connection requirements. Show plan and elevation views with overall and interconnection point dimensions, fuel consumption rate curves at various loads, ventilation and combustion air requirements, electrical diagrams including schematic and interconnection diagrams.

C. Product Data: Provide data showing dimensions, weights, ratings, interconnection points and internal wiring diagrams for engine, generator, control panel, battery, battery rack, battery charger, exhaust silencer, vibration isolators.

D. Test Reports: Indicate results of performance testing.

E. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, installation and starting of product.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

G. LEED Submittal:

1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
   a. Include statement indicating costs for each product having recycled content.

2. Product Data for Credit MR 5.1 and Credit MR 5.2: For products regionally manufactured materials and regionally extracted and manufactured materials.
   a. Identify each regionally manufactured material, including its source and cost.
   b. Identify each regionally extracted and manufactured material, including its source and cost.

1.4 OPERATION AND MAINTENANCE DATA

A. Submit under provisions of Section 260500.

B. Operation Data: Include instructions for normal operation.

C. Maintenance Data: Include instructions for routine maintenance requirements, service manuals for engine and day tank, oil sampling and analysis for engine wear and emergency maintenance procedures.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with NFPA 110.

B. Comply with NEC Articles 695, 700, 701, 702 and 705.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum five years experience and with service facilities within 100 miles of the project.

B. Supplier: Authorized distributor of specified manufacturer with minimum three years experience.

1.7 MAINTENANCE MATERIALS

A. Furnish one set of tools required for preventative maintenance of the engine generator system. Package tools in adequately sized metal toolbox.

1.8 EXTRA MATERIALS

A. Provide two of every fuse, indicator lamps used.

B. Provide two of each fuse, oil and air filters.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Kohler Company.

B. Cummins

C. Caterpillar, Inc.

D. MTU.

E. Generac

2.2 PACKAGE ENGINE GENERATOR SYSTEM

A. Level 1 applications are legally required emergency systems (NEC, Article 700.1)

B. Level 2 applications are standby systems (NEC, Article 701.2).

C. Description: NFPA 110, engine generator system to provide source of power for Level 1 and 2 applications.

D. System Capacity: 150 kW, 187.5 kVA at elevation of 500 feet above sea level, standby rating using engine-mounted radiator.

2.3 ENGINE

A. Type: Water-cooled inline or V-type, four stroke cycle, compression ignition Diesel internal combustion engine.

B. Prime Rating: Sufficient to operate under 10 percent overload for one hour in an ambient of 90 degrees Fahrenheit 32 degrees Celsius at elevation of 500 feet.

C. Fuel System: Diesel.

D. Engine Speed: 1800 rpm.

E. Governor: To maintain engine speed within 0.5 percent, steady state and 5 percent no load to full load with recovery to steady state within two seconds following sudden load changes. Equip governor with means for manual operation and adjustment.

F. Safety Devices: Engine shutdown on high water temperature, low oil pressure, over speed, engine over crank and low coolant level. Limits as selected by manufacturer.

G. Engine Starting: DC starting system with positive engagement, number and voltage of starter motors in accordance with manufacturer's instructions. Include remote starting control circuit, with MANUAL-OFF-REMOTE selector switch on engine-generator control panel.

H. Engine Jacket Heater: Thermal circulation type water heater with integral thermostatic control, sized to maintain engine jacket water at 90 degrees Fahrenheit (32 degrees Celsius) and suitable for operation on 208 volts AC.

I. Radiator: Radiator using glycol coolant, with blower type fan, sized to maintain safe engine temperature in ambient temperature of 110 degrees Fahrenheit (43 degrees Celsius). Radiator air flow restriction 0.5 inches of water (1.25 PA) maximum.

J. Engine Accessories: Fuel filter, lube oil filter, intake air filter, lube oil cooler, gear-driven water pump, fuel transfer pump, fuel priming pump. Include fuel pressure gauge, water temperature gauge and lube oil pressure gauge on engine/generator control panel.

K. Mounting: Provide unit with suitable spring-type vibration isolators and mount on structural steel base.

L. Comply with NFPA 37.

2.4 GENERATOR

A. Generator: NEMA MG 1, three phase, four pole, reconnectable brushless synchronous generator with brushless exciter.

B. Rating: 150 kW, 187.5 kVA, at 0.8 power factor, 480Y/277 volts, 60 Hz at 1800 rpm.

C. Insulation: Class H.

D. Temperature Rise: 130 degrees Celsius standby.

E. Enclosure: NEMA MG 1, open drip proof.

F. Voltage Regulation: Include generator-mounted volts per hertz exciter-regulator to match engine and generator characteristics, with voltage regulation plus or minus 1 percent from no load to full load. Include manual controls to adjust voltage drop, (plus or minus 5 percent) and voltage gain.

2.5 ACCESSORIES

A. Skid-Mounted Fuel Tank: Steel tank with fill and vent, minimum capacity 12 hours at full load. 660 gallon steel tank maximum size allowable by NFPA 31

B. Exhaust Silencer: Critical type silencer with muffler companion flanges and flexible stainless steel exhaust fitting sized in accordance with engine manufacturer's instructions.

C. Batteries: Heavy duty, lead-calcium storage batteries. Capacity shall be as recommended by manufacturer for the specified application level. Match battery voltage to starting system. Include necessary cables and clamps. Provide anti-corrosion seals on terminal posts.

D. Battery Tray: Treated for electrolyte resistance, constructed to contain spillage.

E. Battery Charger: Current limiting type designed to float at 2.17 volts per cell and equalize at 2.33 volts per cell. Include overload protection, full wave rectifier, DC voltmeter and ammeter and 120 volts AC fused input. Provide wall-mounted enclosure to meet ANSI/NEMA 250, Type 1 requirements.

F. Flexible Oil Drain Extension: When uncoiled, capable of extending 6 inches beyond pad edge. Provide petcock with flexible oil drain extension.

G. Dual Line Circuit Breakers: NEMA AB 1 molded case circuit breaker on generator output with integral electronic trip unit as specified in Section 262818. Size as indicated on drawings. Include battery-voltage operated shunt trip, connected to open circuit breaker on engine failure. Mount unit in enclosure to meet NEMA 250, Type 1 requirements on generator.

H. Engine-Generator Control Panel: NEMA 250, Type 1, generator mounted control panel enclosure with engine and generator controls and indicators. Include the following equipment and features:

1. Frequency Meter: 45-65 Hz range, 3.5 inch dial.

2. AC Output Voltmeter: 3.5 inch dial., 2 percent accuracy with phase selector switch.

3. AC Output Ammeter: 3.5 inch dial., 2 percent accuracy with phase selector switch.

4. Output Voltage Adjustment.

5. Push-to-Test Indicator Lamps: One each for low oil pressure, high water temperature, over speed and over crank.

6. Engine Start/Stop Selector Switch.

7. Engine Running Time Meter.

8. Oil Pressure Gauge.

9. Water Temperature Gauge.

10. Low Oil Pressure Pre-alarm - Audio and Visual.

11. High Water Temperature Pre-alarm - Audio and Visual.

12. Leak Detection – Audio and visual.

13. Alarm Relay and Horn with Silence Switch.

14. Auxiliary Relay: 3PDT, operates when engine runs with contact terminals pre-wired to terminal strip.

15. Remote Alarm Contacts: Pre-wire SPDT contacts to terminal strip for remote alarm functions required by NFPA 110.

I. Remote Annunciator Panel: Surface mounted panel with painted finish. Provide audible and visible indicators as required by NFPA 110 and as follows:

1. High battery voltage (alarm).

2. Low battery voltage (alarm).

3. Low fuel (alarm).

4. System ready.

5. Anticipatory high water temperature.

6. Anticipatory low oil pressure.

7. Low coolant temperature.

8. Switch in off position (alarm).

9. Over crank (alarm).

10. Emergency stop (alarm).

11. High water temperature (alarm).

12. Over speed (alarm).

13. Low oil pressure (alarm).

14. Leak detection (alarm).

15. Line power available.

16. Generator power available.

17. Lamp test and horn silence switch.

J. Sound Attenuated Weather Protective Enclosure: Reinforced steel housing allowing access to control panel and service points with lockable doors and panels. Include fixed louvers, fuel tank, battery rack and silencer. The housing shall provide 25 dB of attenuation measured at 7 meters, full load.

K. Vibration Isolators: Spring type with neoprene pads.

2.6 GENERATOR DOCKING STATION

A. Manufacturers

1. Trystar:TSGDS

2. ATI Electrical

3. Approved Equal

B. Enclosure

1. Freestanding, NEMA type 4X, front, side, or bottom accessible for portable cabling.

2. Hinged cover with gasket, pad-lockable hasp.

3. Finish: Stainless Steel, type 304.

C. Bussing

1. Tin-plated copper.

2. Ground and Neutral bus 100% of phase bus size.

D. Input Connectors

1. Cam style, sized as required.

E. Output Connectors

1. Mechanical Lugs, sized as required.

F. Voltage/Phase/Ampacity

1. 480/277V – 3Phase – 4 wire.

2. Ampacity – As indicated on plans.

G. Identification

1. Refer to section 260553.

2. Provide engrave plate with voltage/phase/ampacity, input connector type/size/quantity.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT (LEED)

A. The contractor, subcontractors, and their personnel shall follow the procedures and practices for waste separation, collection and transport as defined in the contractor's "Waste Management Plan" as required by Division 01 Section "Construction Waste Management."

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Mount on vibration isolators.

C. Permanently connect battery charger cables to batteries.

D. Fill fuel tank after completion of all load and acceptance testing, prior to turning over to owner.

E. Clean all fuel system components prior to installation and initial start-up.

F. Contractor shall provide all conduit, wiring and connections to control panel to ATS and remote annunciator as required by manufacturer's requirements and/or recommendations; provide engine start circuit, battery charger circuit, battery heater circuit, engine jacket heater circuit and all control circuits for a complete and operational system.

G. Engine-generator control panel shall be mounted on the generator in a location that allows maintenance personnel to observe them readily without changing position from a logical maintenance work position at the generator.

H. Contractor shall provide control panel for generator with sub-base tank no higher than 6'-0" AFF. If standard control panel is more than 6'-0" AFF, contractor shall provide remote control panel with all required controllers/indicators at a location less than 6'-0" AFF.

I. Utility or City water supply service shall not be used for generator water cooled systems.

3.3 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 260574.

B. Provide full load test utilizing portable test bank, if required, for 4 hours minimum. Simulate power failure including operation of transfer switch, automatic starting cycle, automatic shutdown and return to normal.

C. Record in 20 minute intervals during the first 4 hour test:

1. Kilowatts.

2. Amperes.

3. Voltage.

4. Coolant temperature.

5. Room temperature.

6. Frequency.

7. Oil pressure.

D. Test alarm and shutdown circuits by simulating conditions.

3.4 MAINTENANCE AND SERVICE AGREEMENT

A. Manufacturer shall provide maintenance and service for the engine generator systems for a period of 3 years after the date of final acceptance. Maintenance agreement shall include the following services:

1. Off hours operational test under building/plant load to verify system operation.

2. Check fluid levels.

3. Change oil and filter twice yearly.

3.5 ADJUSTING

A. Adjust operating mechanisms for free mechanical movement. Calibrate motors and instrumentation to the accuracy specified or required for proper operation.

B. Adjust generator output voltage and engine speed.

3.6 CLEANING

A. Clean engine and generator surfaces. Replace oil and fuel filters.

3.7 DEMONSTRATION

A. Provide systems demonstration under provisions of Section 260500. Describe loads connected to emergency and standby system and restrictions for future load additions.

B. Simulate power outage by interrupting normal source and demonstrate that system operates to provide emergency and standby power.

C. Instruction shall be provided by factory trained representative(s) of the system supplier. Allow 4 hours for Owner instruction.

D. The manufacturer shall provide written certification that the engine generator system are complete and operating in accordance with all warranty requirements.

3.8 PERFORMANCE

A. The generator shall be capable of starting and achieving rated voltage and frequency within 10 seconds following the closing of the contact in the cranking circuit.

3.9 WARRANTY

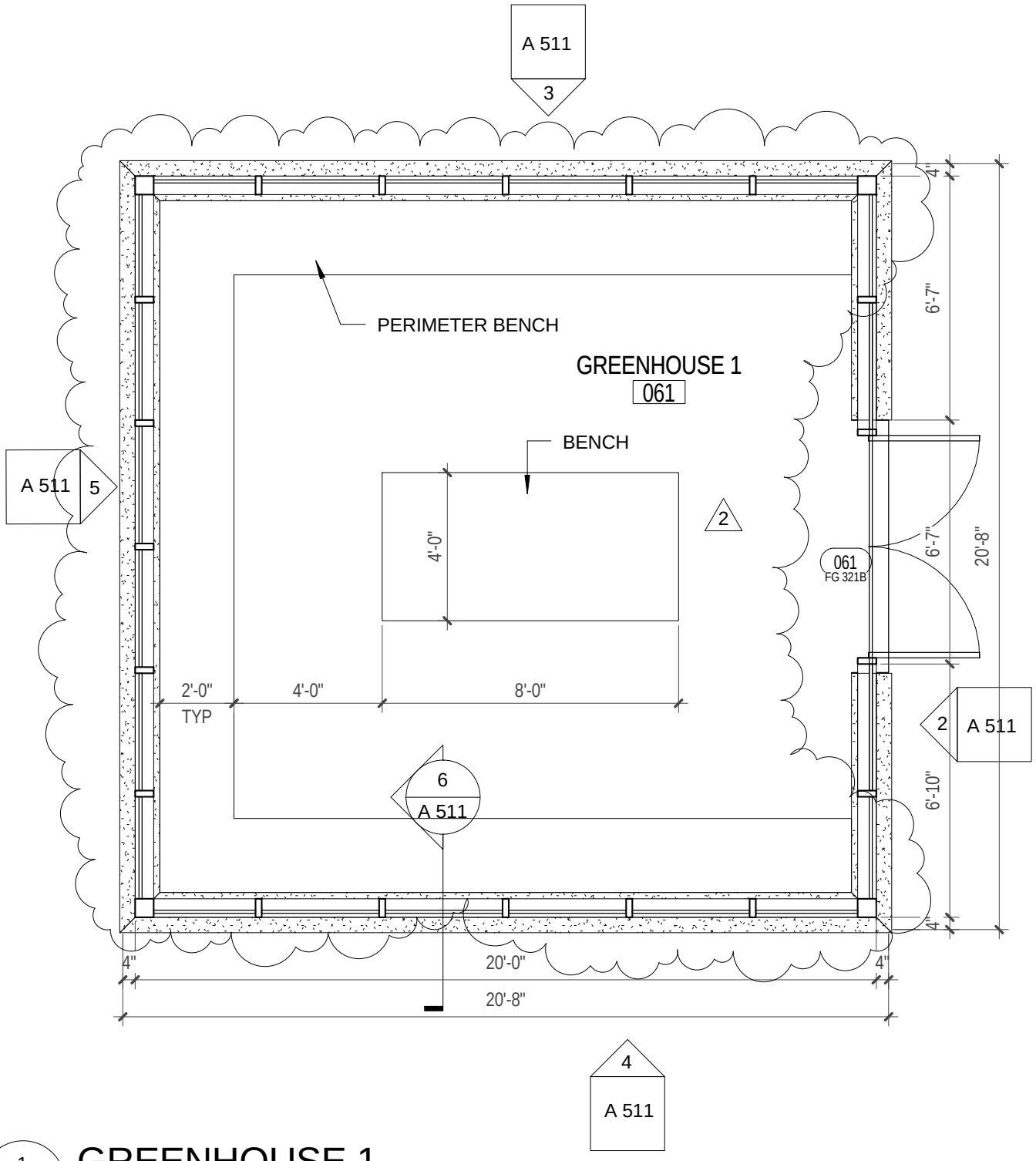
A. Manufacturer shall provide written warranty covering all equipment furnished under this section. Warranty shall cover all defects in materials and/or workmanship for a period of 2 year from date of final acceptance of equipment by the Owner and shall include all costs of parts, labor, travel and living expenses for the manufacturer's service representative. The manufacturer shall respond to all requests for warranty service within 4 hours.

3.10 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site in protective wrappings, containers and other protection that will exclude dent and moisture and prevent damage from construction operations.

B. Accept unit on site on skids. Inspect for damage.

END OF SECTION 26 32 13



1
AAD
3.01

GREENHOUSE 1

SCALE: 1/4" = 1'-0"

JRS ARCHITECTS
2010 Clipper Park Rd.
Suite 101
Baltimore, MD 21211
410.235.7256

GREENHOUSE BENCHES

Baltimore City Public Schools

Additions & Renovations at Robert Poole Building #056

1300 W 36TH ST., BALTIMORE, MD 21211

DATE: 04/26/16

CHANGE TO DRAWING:	REV:
1/A511	2

DRAWING NO.:

AAD 3.01

SCALE: 1/4" = 1'-0"

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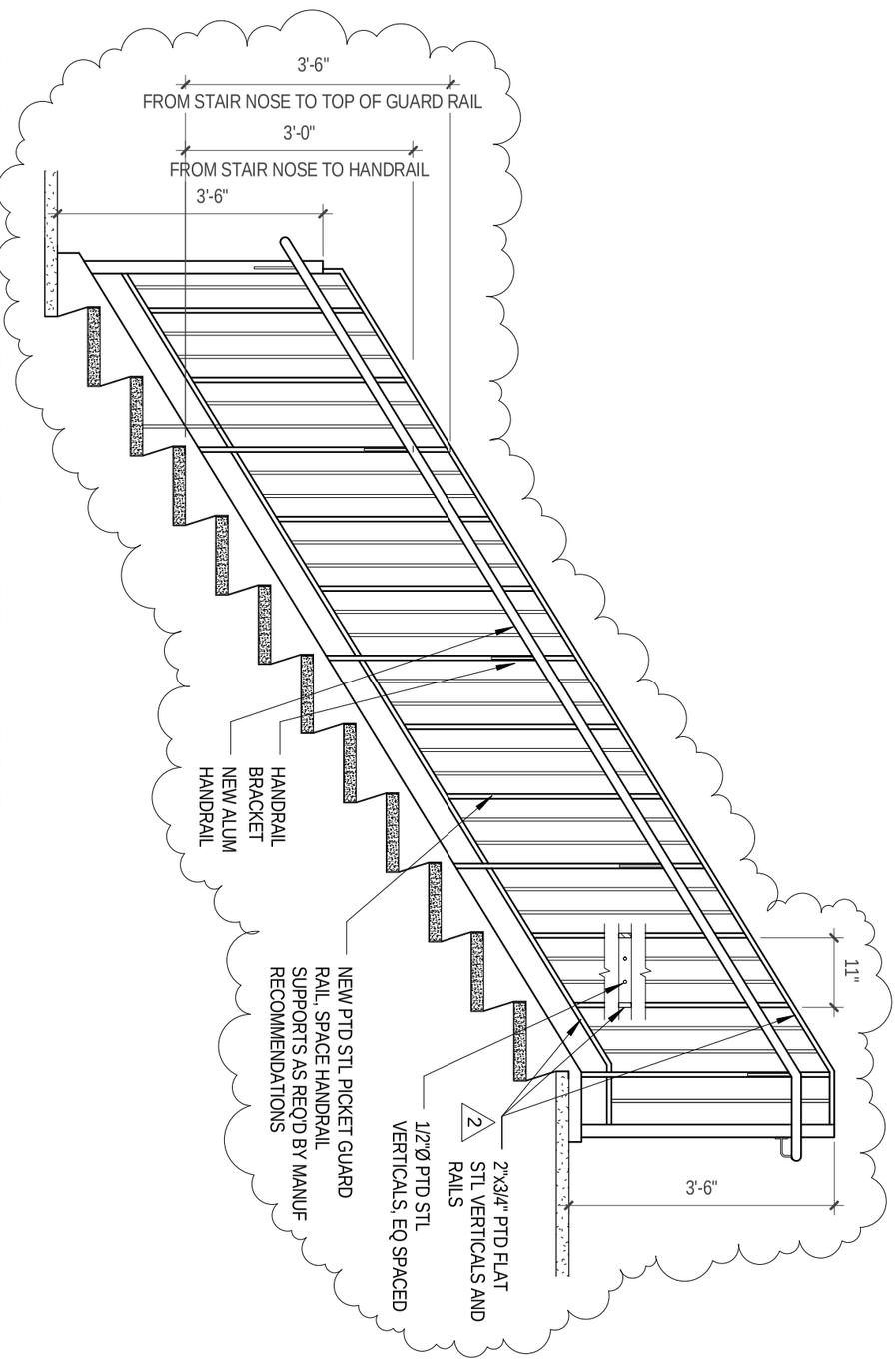
AAD
3.03

ELEVATION - TYP NEW PICKET GUARD RAIL - ADD 3

SCALE: 1/2" = 1'-0"



JRS ARCHITECTS 2010 Clipper Park Rd., Suite 101 Baltimore, MD 21211 ph: 410.235.7256	Baltimore City Public Schools	DATE: 04/26/16 CHANGE TO DRAWING: 11/A 502 REV: 2
PICKET GUARD RAIL	**Additions & Renovations at Robert Poole Building #056** 1300 W 36TH ST., BALTIMORE, MD 21211	DRAWING NO.: AAD 3.03 SCALE: 1/2" = 1'-0"

3

1. PROVIDE AND INSTALL EQUIPMENT AS SHOWN FOR A COMPLETE AND FUNCTIONAL IP VIDEO SURVEILLANCE SYSTEM.
2. CONTRACTOR SHALL PROVIDE VIDEO SURVEILLANCE NVRS, SWITCHES, SOFTWARE AND CAMERAS.
3. CONTRACTOR SHALL INCLUDE CABINETS, PATCH PANELS, POWER STRIPS, CABLES, CONNECTORS, MOUNTS, HOUSINGS AND UPS EQUIPMENT.
4. ALL CABLES SHALL BE CLEARLY LABELED AT EACH END AND INCLUDE THE CABLE LENGTH AND UNIQUE LABEL.
5. ALL CABLES SHALL BE RUN IN CABLE TRAY, J-HOOKS NO MORE THAN 6' APART AND WITHIN EMT CONDUIT.
6. BACKBONE CABLES SHALL BE 50 MICRON OM4 MM FIBER FROM THE TER TO EACH TR.
7. HORIZONTAL CABLES UNDER 90 METERS SHALL BE CAT 6 UTP WITH 15' OF SLACK AT THE CAMERA END AND A TERMINATED MALE RJ-45 .
8. HORIZONTAL CABLES OVER 90 METERS SHALL BE TWO STRANDS OF MM FIBER AND 2 AWG COPPER FOR POWER DISTRIBUTION.
9. PTZ CAMERAS SHALL HAVE A 120V POWER SUPPLY ON EMERGENCY POWER LOCATED ADJACENT TO THE CAMERA LOCATION ON THE INTERIOR OF THE BUILDING.
10. CAMERA FIELD OF VIEW MUST BE VERIFIED AND ADJUSTED IN THE FIELD PRIOR TO INSTALLATION. MAKE ADJUSTMENTS AS NECESSARY TO PROVIDE THE INTENDED CAMERA COVERAGE AREA.
11. THE INSTALLATION SHALL BE COORDINATED WITH THE OWNER, ELECTRICIAN AND LOW VOLTAGE CONTRACTOR.
12. CCTV VIEWSTATIONS SHALL BE CONNECTED TO UPS EQUIPMENT AND OUTLETS ON BACKUP EMERGENCY POWER.
13. PROVIDE COMPLETE SHOP DRAWINGS AND EQUIPMENT SUBMITTALS WHICH CLEARLY IDENTIFY EACH SPECIFIC PIECE OF EQUIPMENT, CABLE ROUTE, EQUIPMENT LOCATION AND SYSTEM INTERCONNECTIONS.
14. PROVIDE COMPLETE AS-BUILT DRAWINGS WHEN THE INSTALLATION IS CONSIDERED COMPLETE. PUNCH LIST ITEMS SHALL HAVE BEEN CORRECTED, TEST RESULTS PROVIDED. AS-BUILTS MUST INCLUDE DEVICE LOCATIONS, EQUIPMENT CONNECTIONS, WIRING DIAGRAMS AND PROGRAMMING INFORMATION. PROVIDE IN HARDCOPY AND AUTOCAD 2010 OR LATER FORMAT.
15. SEE CCTV SPECIFICATION SECTION FOR EQUIPMENT DETAILS.

1 TY501 NOTE 2 REVISION
N.T.S.

JRS ARCHITECTS
2010 Clipper Park Rd.
Suite 101 410.235.7256
Baltimore, MD 21211

CCTV REVISION

Baltimore City Public Schools

Additions & Renovations at Robert Poole Building #056

1300 W 36TH ST., BALTIMORE, MD 21211

DATE: 04/26/16

CHANGE TO DRAWING:	REV:
TY501	3

DRAWING NO.:

TYAD 3.01

SCALE: N.T.S.

COMcheck Software Version 4.0.2.4
Mechanical Compliance Certificate

Project Information

Energy Code:	2012 IECC
Project Title:	Additions & Alterations at Robert Poole
Location:	Baltimore, Maryland
Climate Zone:	4a
Project Type:	Addition

Construction Site:
1300 W 36th St.
Baltimore, MD 21211

Owner/Agent:
Baltimore City Public Schools

Designer/Contractor:
JRS Architects
2010 Clipper Park Rd
Baltimore, MD 21211

Mechanical Systems List

Quantity	System Type & Description
7	SS-1,3,4,5,6,7,8 (Single Zone): Cooling: 1 each - Split System, Capacity = 13 kBtu/h, Air-Cooled Condenser, No Economizer, Economizer exception: None Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: Unspecified
1	SS-2 (Single Zone): Cooling: 1 each - Split System, Capacity = 32 kBtu/h, Air-Cooled Condenser, No Economizer, Economizer exception: None Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: Unspecified
7	GSHP EXHF0087 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 7 kBtu/h, Proposed Efficiency = 3.40 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 8 kBtu/h, Proposed Efficiency = 17.40 EER, Required Efficiency = 13.40 EER Fan System: Unspecified
6	GSHP EXHF0097 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 9 kBtu/h, Proposed Efficiency = 3.80 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 9 kBtu/h, Proposed Efficiency = 16.90 EER, Required Efficiency = 13.40 EER Fan System: Unspecified
7	GSHP EXHF0127 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 11 kBtu/h, Proposed Efficiency = 3.60 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 12 kBtu/h, Proposed Efficiency = 18.80 EER, Required Efficiency = 13.40 EER Fan System: Unspecified
15	GSHP EXHF0157 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 14 kBtu/h, Proposed Efficiency = 3.40 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 15 kBtu/h, Proposed Efficiency = 17.90 EER, Required Efficiency = 13.40 EER

Quantity	System Type & Description
	Fan System: Unspecified
20	GSHP EXHF0187 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 18 kBtu/h, Proposed Efficiency = 3.60 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 19 kBtu/h, Proposed Efficiency = 18.70 EER, Required Efficiency = 13.40 EER Fan System: Unspecified
13	GSHP VSHE0244 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 24 kBtu/h, Proposed Efficiency = 6.44 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 26 kBtu/h, Proposed Efficiency = 18.30 EER, Required Efficiency = 13.40 EER Fan System: Unspecified
6	GSHP VSHE0334 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 31 kBtu/h, Proposed Efficiency = 5.85 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 35 kBtu/h, , Water Economizer Proposed Efficiency = 15.80 EER, Required Efficiency = 13.40 EER Fan System: Unspecified
6	GSHP VSHE0424 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 40 kBtu/h, Proposed Efficiency = 6.70 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 45 kBtu/h, , Water Economizer Proposed Efficiency = 18.60 EER, Required Efficiency = 13.40 EER Fan System: Unspecified
4	GSHP VSHE0604 (Single Zone): Ground Source Heat Pump Heating Mode: Capacity = 62 kBtu/h, Proposed Efficiency = 5.30 COP, Required Efficiency = 3.10 COP Cooling Mode: Capacity = 62 kBtu/h, , Water Economizer Proposed Efficiency = 14.80 EER, Required Efficiency = 13.40 EER Fan System: Unspecified
1	DOAS-1 (Multiple-Zone): Ground Source Heat Pump Heating Mode: Capacity = 187 kBtu/h, No minimum efficiency requirement applies Cooling Mode: Capacity = 202 kBtu/h, No minimum efficiency requirement applies Fan System: DOAU-1 -- Compliance (Brake HP method) : Passes Fans: FAN1 Supply, Multi-Zone VAV, 4545 CFM, 4.0 motor nameplate hp, 4.2 brake hp FAN 2 Exhaust, Multi-Zone VAV, 4545 CFM, 4.0 motor nameplate hp, 3.3 brake hp Pressure Drop Credits: Fully ducted return and/or exhaust air systems, 0.5501 credit Particulate filtration credit: MERV 13 through 15, 0.9902 credit Sound attenuation section, 0.1650 credit Heat recovery device, other than coil runaround loop, 0.7327 credit
1	DOAS-2 (Multiple-Zone): Ground Source Heat Pump Heating Mode: Capacity = 418 kBtu/h, No minimum efficiency requirement applies Cooling Mode: Capacity = 496 kBtu/h, No minimum efficiency requirement applies Fan System: DOAU-2 -- Compliance (Brake HP method) : Passes

Quantity	System Type & Description
	Fans: FAN 1 Supply, Multi-Zone VAV, 11230 CFM, 5.0 motor nameplate hp, 7.8 brake hp FAN 2 Exhaust, Multi-Zone VAV, 11230 CFM, 5.0 motor nameplate hp, 7.2 brake hp Pressure Drop Credits: Fully ducted return and/or exhaust air systems, 1.3592 credit Particulate filtration credit: MERV 13 through 15, 2.4466 credit Sound attenuation section, 0.4078 credit Heat recovery device, other than coil runaround loop, 2.2890 credit
1	DOAS-3 (Multiple-Zone): Ground Source Heat Pump Heating Mode: Capacity = 417 kBtu/h, No minimum efficiency requirement applies Cooling Mode: Capacity = 491 kBtu/h, No minimum efficiency requirement applies Fan System: DOAU-3 -- Compliance (Brake HP method) : Passes Fans: FAN 1 Supply, Multi-Zone VAV, 10725 CFM, 5.0 motor nameplate hp, 7.9 brake hp FAN 2 Exhaust, Multi-Zone VAV, 10725 CFM, 5.0 motor nameplate hp, 7.1 brake hp Pressure Drop Credits: Fully ducted return and/or exhaust air systems, 1.2981 credit Sound attenuation section, 0.3894 credit Particulate filtration credit: MERV 13 through 15, 2.3366 credit Heat recovery device, other than coil runaround loop, 2.2431 credit
1	DOAS-4 (Multiple-Zone): Ground Source Heat Pump Heating Mode: Capacity = 425 kBtu/h, No minimum efficiency requirement applies Cooling Mode: Capacity = 500 kBtu/h, No minimum efficiency requirement applies Fan System: DOAU-4 -- Compliance (Brake HP method) : Passes Fans: FAN 1 Supply, Multi-Zone VAV, 11935 CFM, 7.5 motor nameplate hp, 9.7 brake hp FAN 2 Exhaust, Multi-Zone VAV, 11935 CFM, 5.0 motor nameplate hp, 8.3 brake hp Pressure Drop Credits: Fully ducted return and/or exhaust air systems, 1.4446 credit Particulate filtration credit: MERV 13 through 15, 2.6002 credit Sound attenuation section, 0.4334 credit Heat recovery device, other than coil runaround loop, 2.3691 credit
1	RTU-1 (Multiple-Zone): Ground Source Heat Pump Heating Mode: Capacity = 341 kBtu/h, No minimum efficiency requirement applies Cooling Mode: Capacity = 374 kBtu/h, No minimum efficiency requirement applies Fan System: RTU-1 -- Compliance (Brake HP method) : Passes Fans: FAN 1 Supply, Multi-Zone VAV, 12830 CFM, 7.5 motor nameplate hp, 9.1 brake hp FAN 2 Exhaust, Multi-Zone VAV, 3800 CFM, 2.0 motor nameplate hp, 1.1 brake hp Pressure Drop Credits: Fully ducted return and/or exhaust air systems, 1.5529 credit Particulate filtration credit: MERV 13 through 15, 2.6972 credit Heat recovery device, other than coil runaround loop, 3.5123 credit
1	MAU-1 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 280 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Fan System: MAU -- Compliance (Motor nameplate HP method) : Passes Fans:

Quantity	System Type & Description
	FAN 1 Supply, Single-Zone VAV, 3600 CFM, 1.5 motor nameplate hp
8	UH's (Unknown): Heating: 1 each - Unit Heater, Electric, Capacity = 11 kBtu/h No minimum efficiency requirement applies Fan System: UH -- Compliance (Motor nameplate HP method) : Passes Fans: FAN 1 Supply, Constant Volume, 250 CFM, 0.0 motor nameplate hp
20	CUH's (Unknown): Heating: 1 each - Unit Heater, Electric, Capacity = 7 kBtu/h No minimum efficiency requirement applies Fan System: CUH -- Compliance (Motor nameplate HP method) : Passes Fans: FAN 1 Supply, Constant Volume, 250 CFM, 0.1 motor nameplate hp
4	CUH's 2 (Unknown): Heating: 1 each - Unit Heater, Electric, Capacity = 10 kBtu/h No minimum efficiency requirement applies Fan System: CUH -- Compliance (Motor nameplate HP method) : Passes Fans: FAN 1 Supply, Constant Volume, 250 CFM, 0.1 motor nameplate hp
6	EBB's (Unknown): Heating: 1 each - Unit Heater, Electric, Capacity = 3 kBtu/h No minimum efficiency requirement applies Fan System: None

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2012 IECC requirements in COMcheck Version 4.0.2.4 and to comply with the mandatory requirements listed in the Inspection Checklist.

Mitchell E. Peters, EIT Mechanical Engineer — Signature — 4/27/16

Name - Title — Date

Robert Poole School - Exhaust

Space	Area	Floor	Usage	Floor Area (sq ft)	Exhaust Rate (CFM/sq ft)	Fixtures (#)	Exhaust Rate (CFM/fixture)	Required Exhaust (CFM)	Provided Exhaust (CFM)
Women 052	A	Base	Toilet Room	150		2	50	100	100
Men 050	A	Base	Toilet Room	133		2	50	100	100
JC 051	A	Base	Janitorial	34		1	50	50	50
Art Studio 046	A	Base	Art Classroom	1150	0.70			805	810
Env Sci 044	A	Base	Science Laboratory	1172	1.00			1172	1175
Men 125	A	1st	Toilet Room	125		2	50	100	100
Women 126	A	1st	Toilet Room	126		2	50	100	100
PLTW C8	A	1st	Science Laboratory	1180	1.00			1180	1185
Men 009	B	Base	Toilet Room	183		5	50	250	250
Women 008	B	Base	Toilet Room	250		5	50	250	250
JC 010	B	Base	Janitorial	65		1	50	50	50
Toilet 016	B	Base	Toilet Room	50		1	50	50	50
Toilet/Shower 024	B	Base	Toilet/Shower Room	122		1 / 1	50 / 20	70	100
Toilet 103K	B	1st	Toilet Room	85		1	50	50	90
Toilet 103G	B	1st	Toilet Room	47		1	50	50	90
Toilet 101K	B	1st	Toilet Room	47		1	50	50	60
Toilet/Shower 116	B	1st	Toilet/Shower Room	96		1 / 1	50 / 20	70	100
Toilet 109C	B	1st	Toilet Room	50		1	50	50	75
JC 108	B	1st	Janitorial	34		1	50	50	75
Chemistry 201A	B	2nd	Science Laboratory	1360	1.00			1360	1365
Biology 202A	B	2nd	Science Laboratory	1410	1.00			1410	1465
Classroom 211	B	2nd	Science Laboratory	590	1.00			590	655
Toilet 216	B	2nd	Toilet Room	60		1	50	50	60
Women 215	B	2nd	Toilet Room	215		5	50	250	250
Men 217	B	2nd	Toilet Room	195		5	50	250	250
Science 301	B	3rd	Science Laboratory	1072	1.00			1072	1080
Toilet 317	B	3rd	Toilet Room	60		1	50	50	70
Women 316	B	3rd	Toilet Room	216		5	50	250	250
Men 318	B	3rd	Toilet Room	195		5	50	250	250
Locker 142A	C	1st	Locker/Dressing Room	43	0.25	1	50	61	75
Toilet 142B	C	1st	Toilet Room	48		1	50	50	50
JC/Soap 142D	C	1st	Janitorial	35		1	50	50	50
Team-Men's 154D	C	1st	Sports Locker Room	243	0.50			122	150
Locker/Toilet 154C	C	1st	Toilet/Shower/Locker	109	0.25	1 / 1	50 / 20	97	100
Lockers -Men's 154A	C	1st	Sports Locker Room	622	0.50			311	330
Showers-Men's 154E	C	1st	Shower Room	108		6	20	120	120
Toilet-Men's 154F	C	1st	Toilet Room	104		3	50	150	150
Showers-Women's 153E	C	1st	Shower Room	108		6	20	120	120
Toilet-Women's 153F	C	1st	Toilet Room	105		3	50	150	150
Ref Locker 151	C	1st	Toilet/Locker Room	75	0.25	1	50	69	100
Ref Locker 150	C	1st	Toilet/Locker Room	75	0.25	1	50	69	100
Lockers -Women's 153A	C	1st	Sports Locker Room	619	0.50			310	330
Team-Women's 153D	C	1st	Sports Locker Room	222	0.50			111	150
Locker/Toilet 153C	C	1st	Toilet/Shower/Locker	120	0.25	1 / 1	50 / 20	100	100
Women 143	C	1st	Toilet Room	246		5	50	250	250
Men 144	C	1st	Toilet Room	167		4	50	200	200
JC 145	C	1st	Janitorial	29		1	50	50	50
Physics 220	C	2nd	Science Laboratory	1084	1.00			1084	1195
JC 222	C	2nd	Janitorial	37		1	50	50	75
Toilet 225	C	2nd	Toilet Room	48		1	50	50	100
Biology 233	C	2nd	Science Laboratory	1360	1.00			1360	1360
Physics 321	C	3rd	Science Laboratory	1186	1.00			1186	1190
Toilet 325	C	3rd	Toilet Room	46		1	50	50	75
Art Studio 327	C	3rd	Art Classroom	1026	0.70			718	730
Art Studio 328	C	3rd	Art Classroom	1205	0.70			844	850

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410.235.7256

ASSOCIATE ARCHITECT
SCHRADER GROUP ARCHITECTURE LLC
161 LEVERINGTON AVE, SUITE 105
PHILADELPHIA, PA 19127

LANDSCAPE ARCHITECT
MAHAN RYKIEL ASSOCIATES
800 WYMAN PARK DR, SUITE 100
BALTIMORE, MD 21211

CIVIL ENGINEER
STV, INC.
7125 AMBASSADOR RD, SUITE 200
BALTIMORE, MD 21244

STRUCTURAL ENGINEER
ALBRECHT ENGINEERING
3500 BOSTON ST, SUITE 329
BALTIMORE, MD 21224

MEP ENGINEER
BRINJAC ENGINEERING
1800 N. CHARLES ST, SUITE 310
BALTIMORE, MD 21201

FOOD SERVICE
NYIKOS ASSOCIATES
18219A FLOWER HILL WAY
GAITHERSBURG, MD 20879

AV/IT CONSULTANT
EDUCATIONAL SYSTEMS PLANNING
49 OLD SOLOMONS ISLAND RD, SUITE 301
ANNAPOLIS, MD 21401

Baltimore City Public Schools
Additions & Renovations at Robert Poole Building #056
1300 W 36TH ST., BALTIMORE, MD 21211

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 19294
EXPIRATION DATE: 12/14/2016

No.	DATE	DESCRIPTION
1	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01

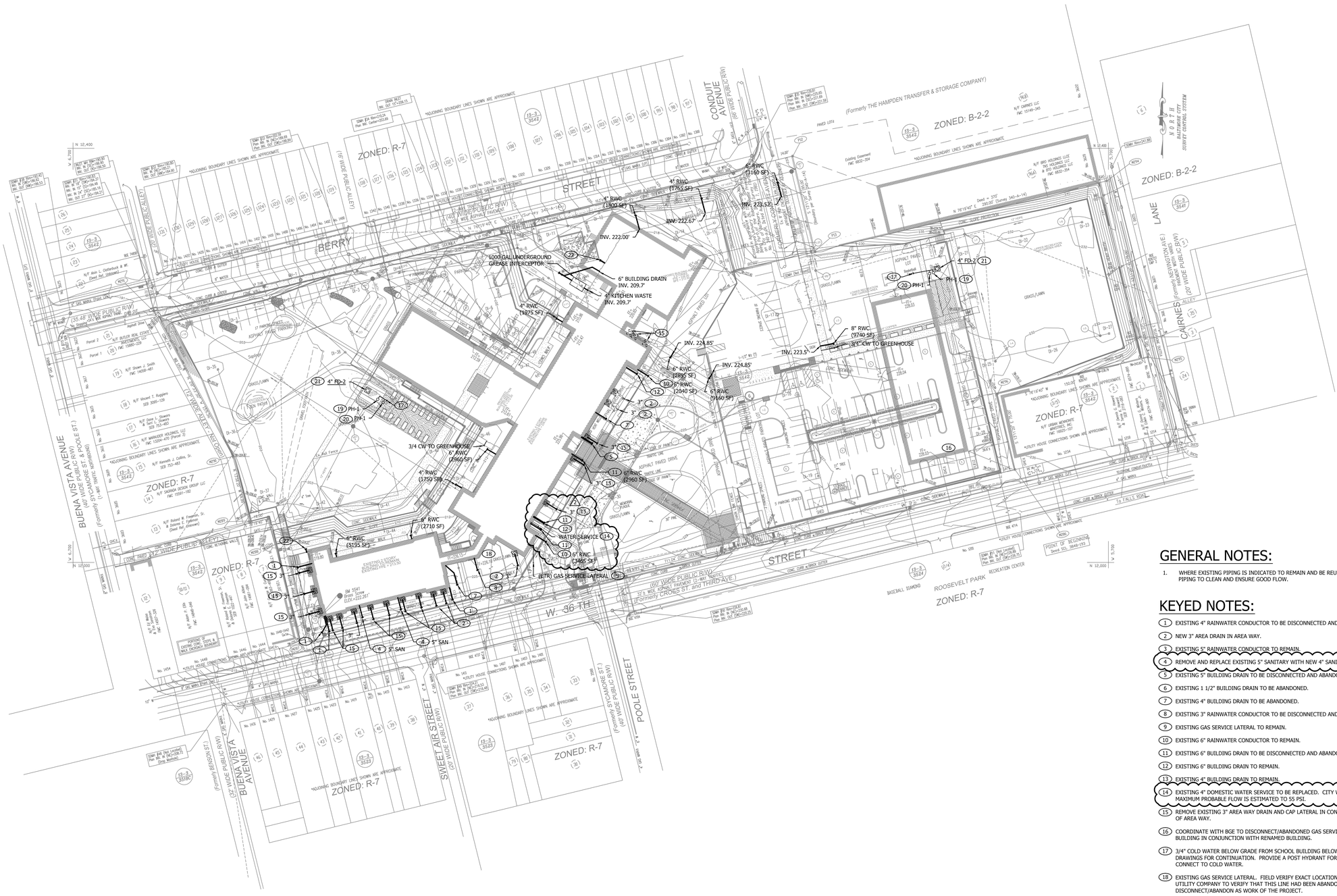
DATE: 03/31/16

SCALE: AS NOTED

DRAWING NAME
CALCULATIONS - MECHANICAL

M 701

4/28/2016 7:08:33 AM



1 P 010 SITE PLAN - PLUMBING
SCALE: 1" = 40'-0"

NOTE:
CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & EXISTING CONDITIONS AT SITE.

GENERAL NOTES:

1. WHERE EXISTING PIPING IS INDICATED TO REMAIN AND BE REUSED, JET OR ROD OUT PIPING TO CLEAN AND ENSURE GOOD FLOW.

KEYED NOTES:

1. EXISTING 4" RAINWATER CONDUCTOR TO BE DISCONNECTED AND ABANDONED.
2. NEW 3" AREA DRAIN IN AREA WAY.
3. EXISTING 5" RAINWATER CONDUCTOR TO REMAIN.
4. REMOVE AND REPLACE EXISTING 5" SANITARY WITH NEW 4" SANITARY. 2
5. EXISTING 5" BUILDING DRAIN TO BE DISCONNECTED AND ABANDONED.
6. EXISTING 1 1/2" BUILDING DRAIN TO BE ABANDONED.
7. EXISTING 4" BUILDING DRAIN TO BE ABANDONED.
8. EXISTING 3" RAINWATER CONDUCTOR TO BE DISCONNECTED AND ABANDONED.
9. EXISTING GAS SERVICE LATERAL TO REMAIN.
10. EXISTING 6" RAINWATER CONDUCTOR TO REMAIN.
11. EXISTING 6" BUILDING DRAIN TO BE DISCONNECTED AND ABANDONED.
12. EXISTING 6" BUILDING DRAIN TO REMAIN.
13. EXISTING 4" BUILDING DRAIN TO REMAIN.
14. EXISTING 4" DOMESTIC WATER SERVICE TO BE REPLACED. CITY WATER PRESSURE AT MAXIMUM PROBABLE FLOW IS ESTIMATED TO 55 PSI. 2
15. REMOVE EXISTING 3" AREA WAY DRAIN AND CAP LATERAL IN CONJUNCTION WITH REMOVAL OF AREA WAY.
16. COORDINATE WITH BGE TO DISCONNECT/ABANDONED GAS SERVICE LATERAL TO MODULAR BUILDING IN CONJUNCTION WITH RENAMED BUILDING.
17. 3/4" COLD WATER BELOW GRADE FROM SCHOOL BUILDING BELOW FROST LINE. SEE CIVIL DRAWINGS FOR CONTINUATION. PROVIDE A POST HYDRANT FOR GREENHOUSE AND CONNECT TO COLD WATER.
18. EXISTING GAS SERVICE LATERAL. FIELD VERIFY EXACT LOCATION. COORDINATE WITH UTILITY COMPANY TO VERIFY THAT THIS LINE HAD BEEN ABANDONED AND IF NOT, TO DISCONNECT/ABANDON AS WORK OF THE PROJECT.
19. POST HYDRANT INSTALLED IN GREENHOUSE AND CONNECTED TO 3/4" COLD WATER. FIELD VERIFY LOCATION.
20. POST HYDRANT INSTALLED OUTSIDE NEXT TO GREENHOUSE AND CONNECTED TO COLD WATER. FIELD VERIFY LOCATION.
21. AREA DRAIN INSTALLED IN GREENHOUSE. CONNECT TO DRAIN LINE SHOWN ON CIVIL DRAWINGS. FIELD VERIFY LOCATION.
22. 4" FOUNDATION DRAIN TO SITE STORM WATER COLLECTION SYSTEM. SEE CIVIL DRAWINGS FOR COORDINATION.

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EXPIRATION DATE: 12/14/2016

No.	DATE	DESCRIPTION
1	04/14/16	ADDENDUM #1
2	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01

DATE: 03/31/16

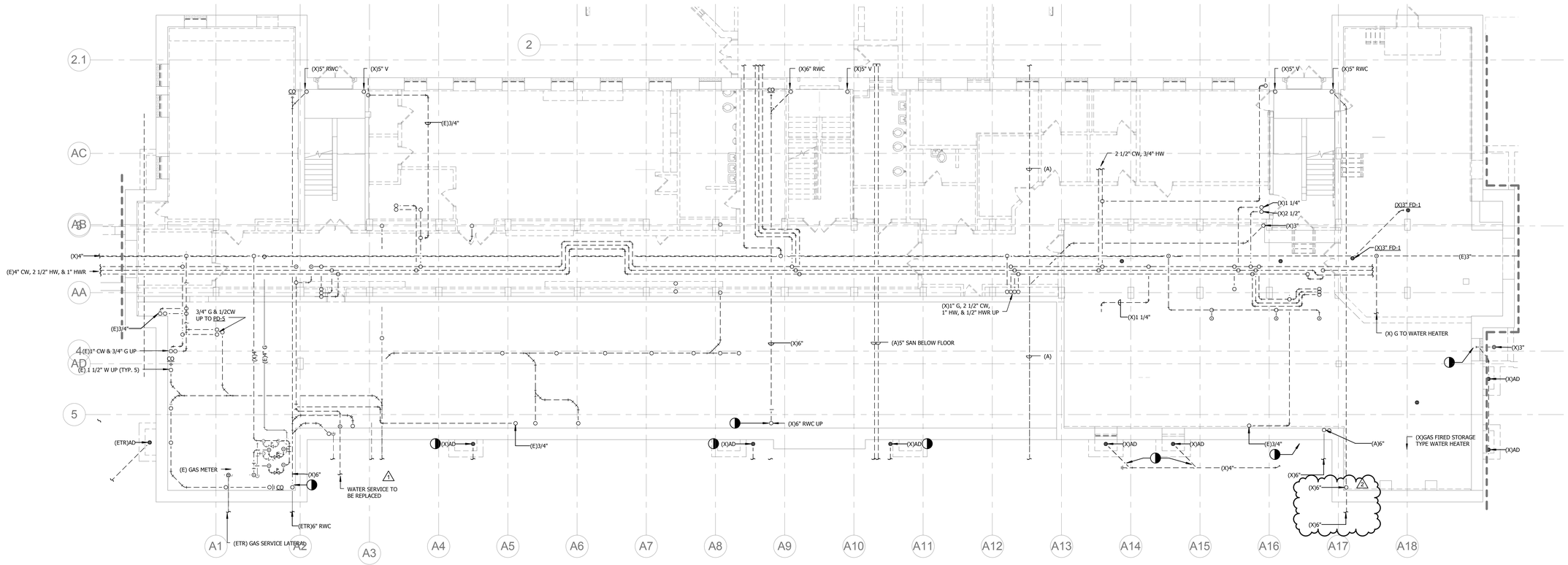
SCALE: AS NOTED

DRAWING NAME
SITE PLAN - PLUMBING

P 010

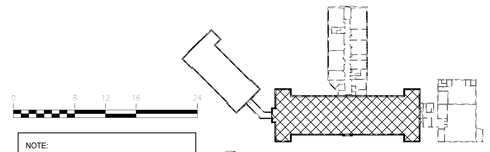
GENERAL NOTES:

1. REMOVE ALL EXISTING PLUMBING SYSTEMS NOT INDICTED TO BE REUSED OR TO BE ABONDONED IN WALL OR BELOW SLAB ON GRADE FLOORS.



1 / P 022 DEMO BASEMENT FLOOR PLAN B - PLUMBING

1/8" = 1'-0"



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1	04/22/16	ADDENDUM #2
2	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01

DATE: 03/31/16

SCALE: AS NOTED

DRAWING NAME
DEMO BASEMENT FLOOR PLAN B - PLUMBING

P 022

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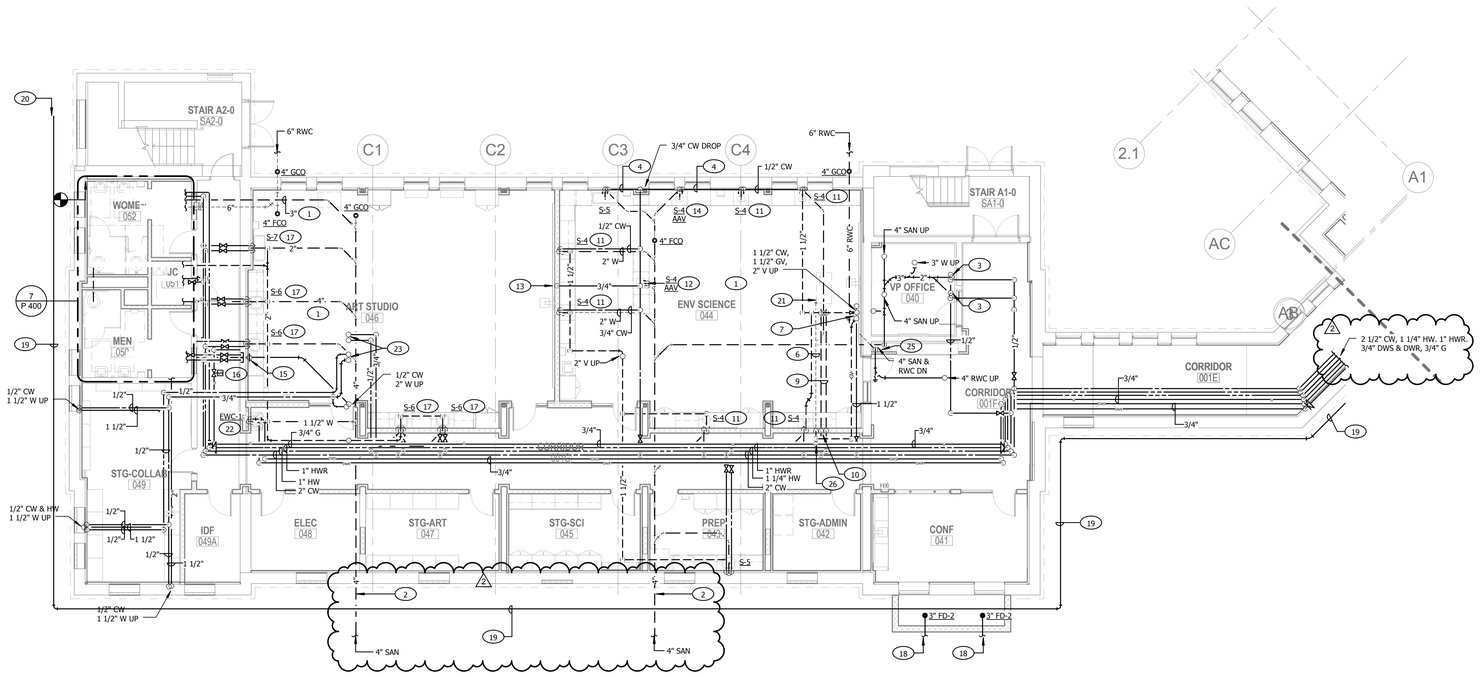
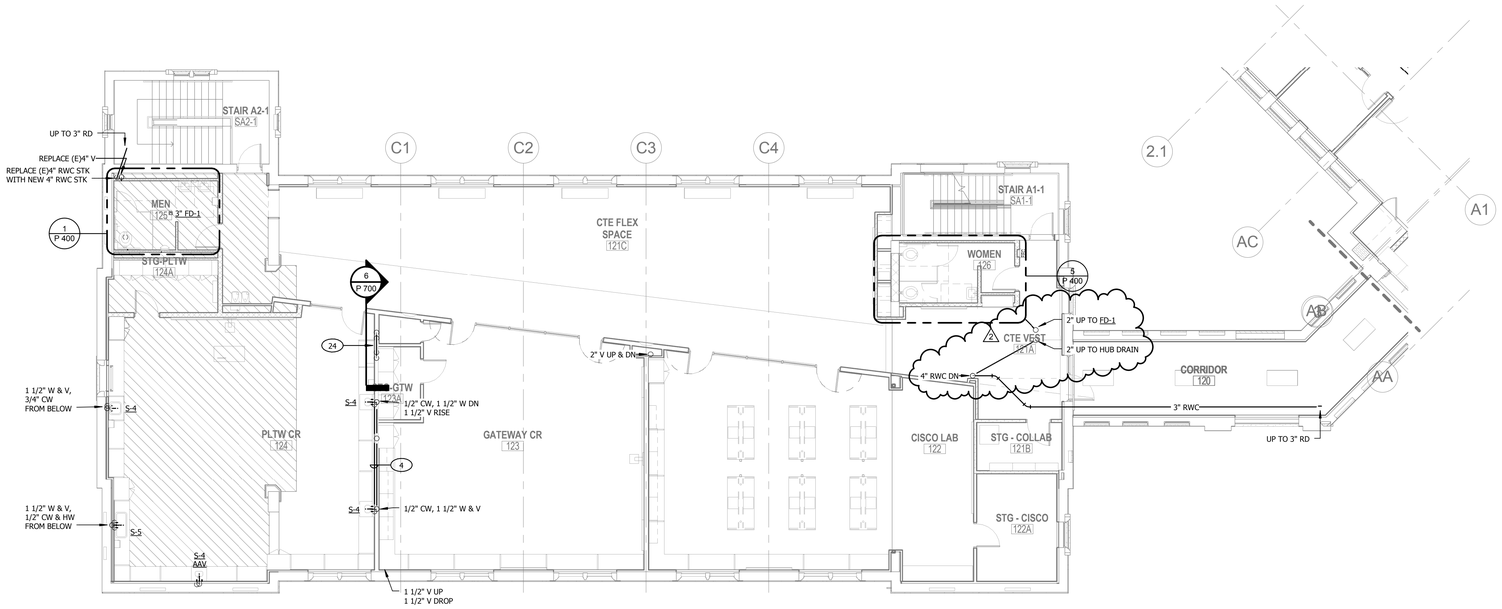


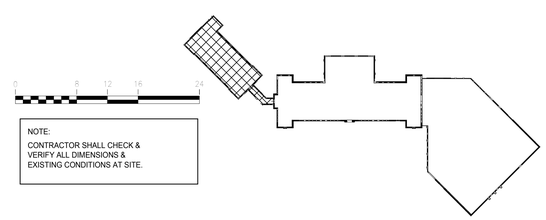
1 / P 111 NEW WORK BASEMENT FLOOR PLAN A - PLUMBING
1/8" = 1'-0"

KEYED NOTES:

1. REPLACE EXISTING UNDER FLOOR SANITARY WITH NEW SANITARY PIPING. FIELD VERIFY EXACT ROUTE.
2. NEW 4" SANITARY TO REPLACE EXISTING 5" SANITARY. FIELD VERIFY EXACT LOCATION.
3. 1/2" HOT WATER, 1 1/2" WASTE UP.
4. 1/2" COLD WATER, 1 1/2" WASTE THOUGH CASEWORK FOR SINKS.
5. 1/2" COLD WATER, 2" WASTE THOUGH CASEWORK FOR SINKS.
6. 1/2" CORRUGATED STAINLESS STEEL GAS IN 3" PVC SLEEVE BELOW FLOOR TO INSTRUCTOR TABLE. SEE DETAIL 6/P 700.
7. 1 1/2" GAS VENT UP FROM 3" PVC SLEEVE.
8. 1 1/2" GAS VENT UP AND DOWN.
9. 1/2" COLD AND HOT WATER BELOW FLOOR TO INSTRUCTOR TABLE.
10. 1/2" COLD AND HOT WATER DOWN. 1/2" CORRUGATED STAINLESS STEEL GAS IN 3" PVC SLEEVE DOWN. SEE DETAIL 6/P 700.
11. 1/2" COLD WATER, 1 1/2" WASTE AND VENT.
12. 1/2" COLD WATER FROM BELOW FLOOR. 1/2" WASTE DOWN.
13. 1/2" COLD WATER DOWN TO BELOW FLOOR TO ISLAND SINK.
14. 1/2" COLD WATER, 1/1 2/" WASTE DOWN.
15. 1/2" COLD AND HOT WATER AND 1/2" GAS AND 1 1/2" WASTE CAPPED ABOVE CEILING FOR FUTURE DEMO TABLE ABOVE.
16. SOLENOID VALVE IN GAS LINE FOR PLTW CR 124. CONNECT TO SHUTOFF SWITCH PROVIDED UNDER DIVISION 26.
17. 1/2" COLD AND HOT WATER DROP, 1 1/2" WASTE AND VENT.
18. 3" RAINWATER FROM AREA WAY TO SITE STORM WATER COLLECTION SYSTEM. SEE CIVIL DRAWINGS FOR CONTINUATION.
19. INSTALL NEW FOUNDATION DRAIN ON EXISTING FOOTER. SEE WALL SECTIONS ON A 401 FOR TYPICAL DETAIL.
20. NEW 4" FOUNDATION DRAIN TO SITE STORM WATER COLLECTION SYSTEM. SEE CIVIL DRAWINGS FOR CONTINUATION.
21. PROVIDE BOX RECESSED IN FLOOR FOR TERMINATION OF WATER, GAS, AND WASTE PIPING FOR FUTURE DEMONSTRATION TABLE. BOX SIMILAR TO A CONVENTION CENTER FLOOR BOX (CCFB) BY LEGRAND. TERMINATE AND CAP PIPING IN BOX. PROVIDE WITH TOP SUITABLE TO RECEIVE FLOOR COVERING.
22. 1/2" DRINKING WATER, 1 1/2" WASTE AND VENT TO WATER COOLER.
23. 3/4" COLD WATER AND 1/2" HOT WATER UP TO SHUT OFF BOX IN PLTW CR 124.
24. 3/4" COLD AND 1/2" HOT WATER SHUT OFF VALVES IN BOX RECESSED IN WALL. SEE DETAIL 6/P 700.
25. FIXED AIR GAP ON RAINWATER STACK FOR AIR CONDITIONING CONDENSATE. SEE DETAIL 10/P 700.
26. PROVIDE SOLENOID VALVE IN GAS LINE TO CLASSROOM FOR EMERGENCY SHUT OFF.



2 / P 111 NEW WORK FIRST FLOOR PLAN A - PLUMBING
1/8" = 1'-0"



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BID ISSUE

PROJECT No.: 152-01

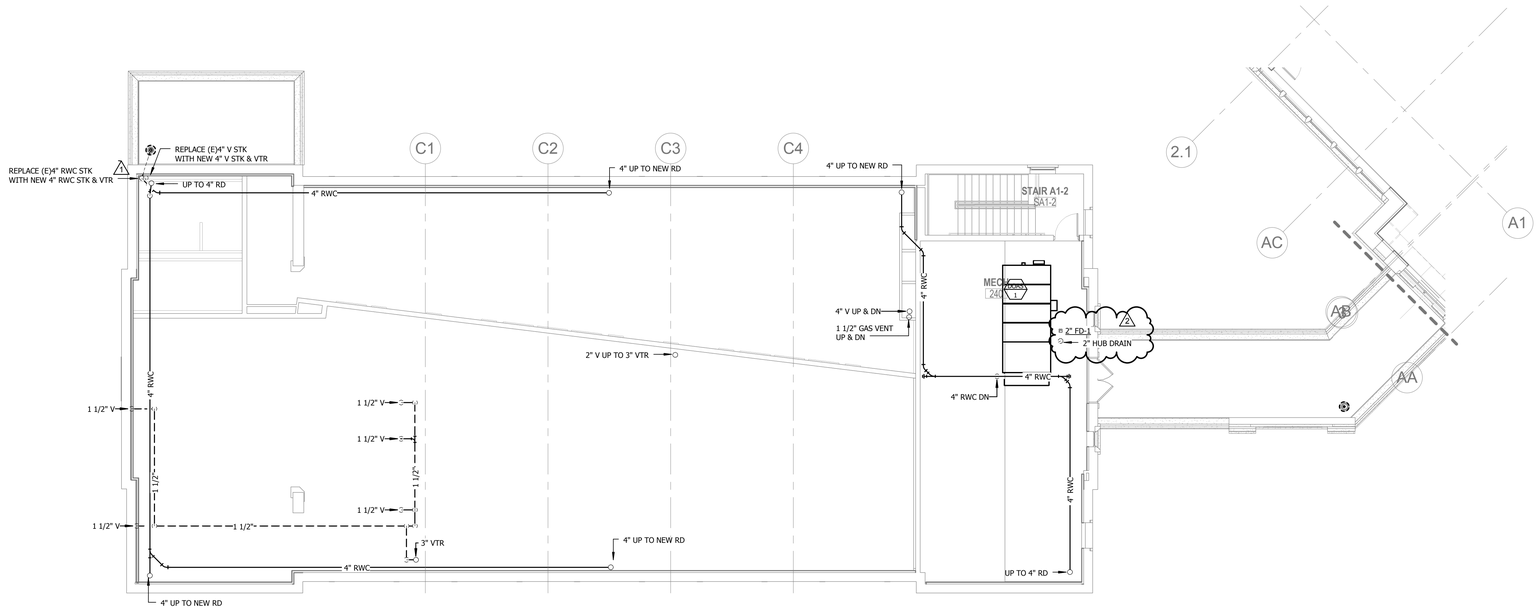
DATE: 03/31/16

SCALE: AS NOTED

DRAWING NAME
NEW WORK BASEMENT & FIRST FLOOR PLAN A - PLUMBING

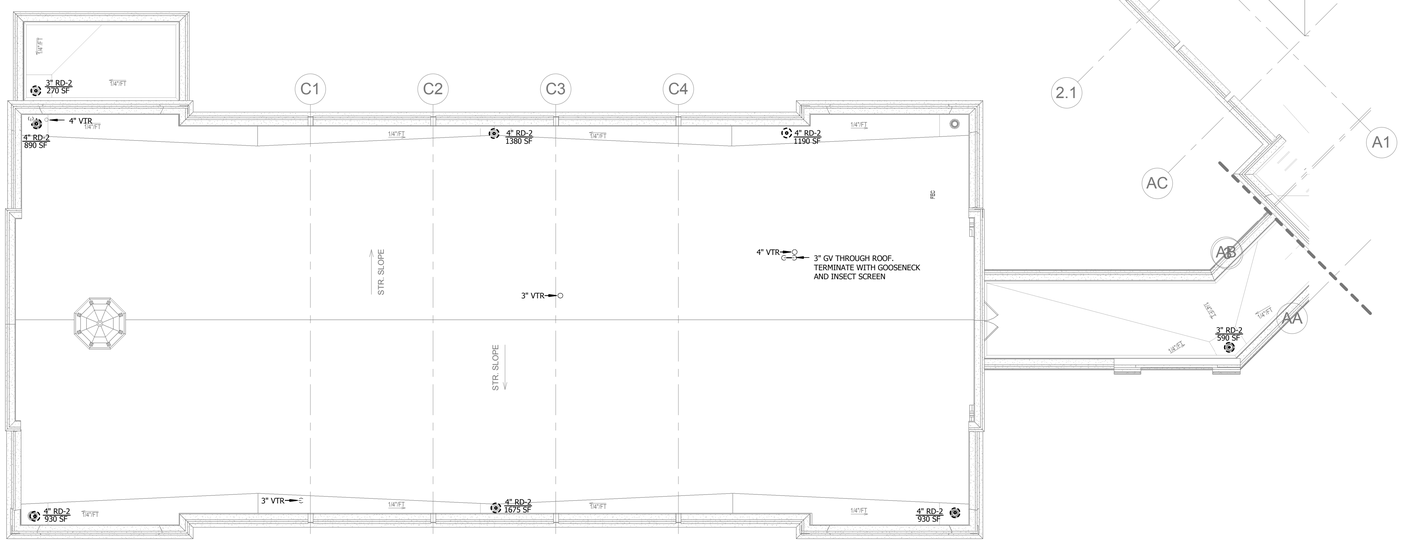
P 111

4/27/2016 3:34:06 PM



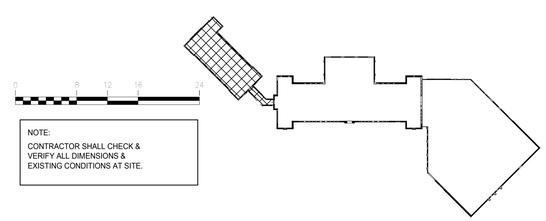
1 / P 112 NEW WORK SECOND FLOOR PLAN A - PLUMBING

1/8" = 1'-0"



2 / P 112 NEW WORK ROOF PLAN A - PLUMBING

1/8" = 1'-0"



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2	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01

DATE: 03/31/16

SCALE: AS NOTED

DRAWING NAME
NEW WORK SECOND & ROOF PLAN A - PLUMBING

P 112

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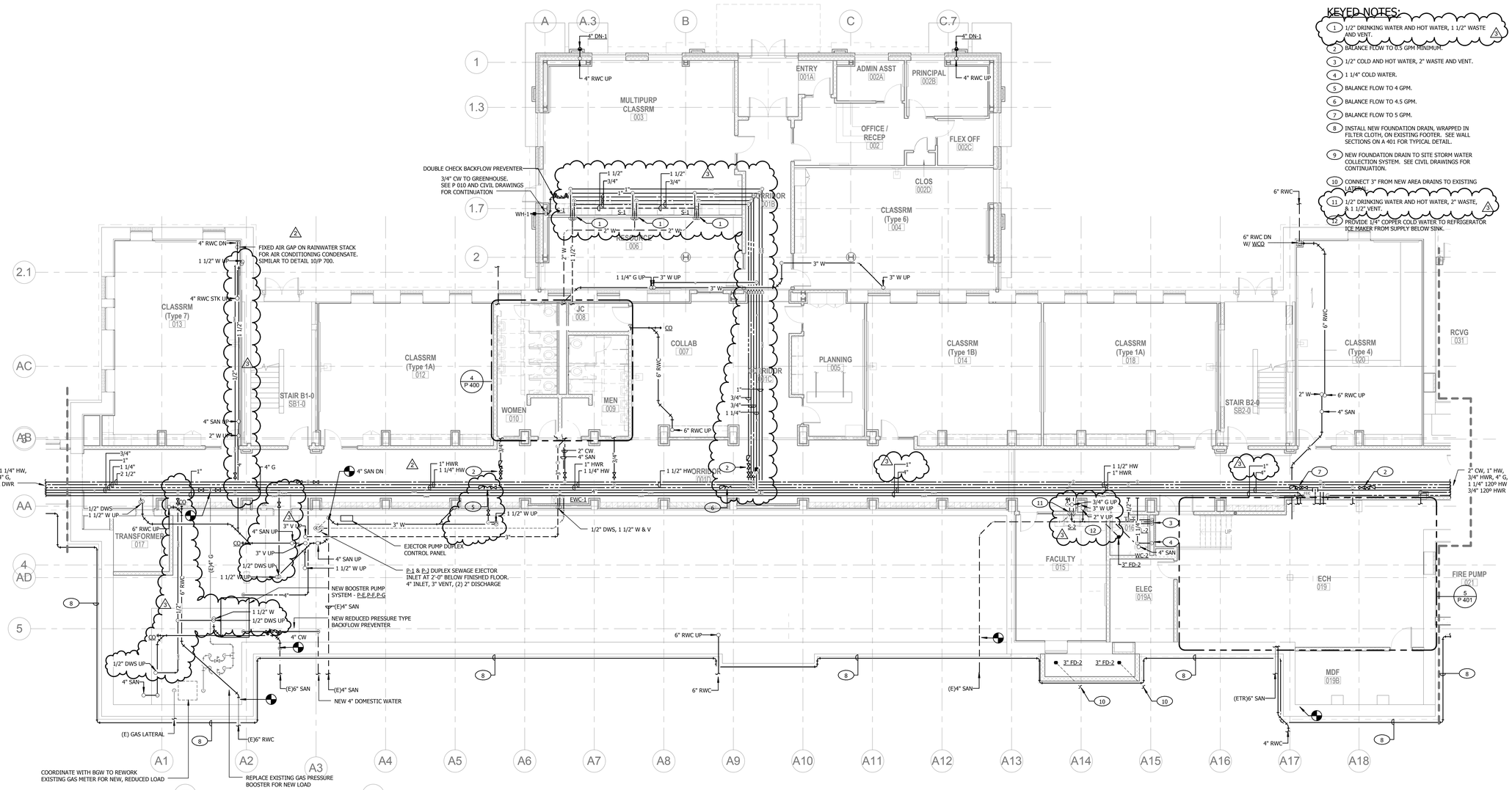
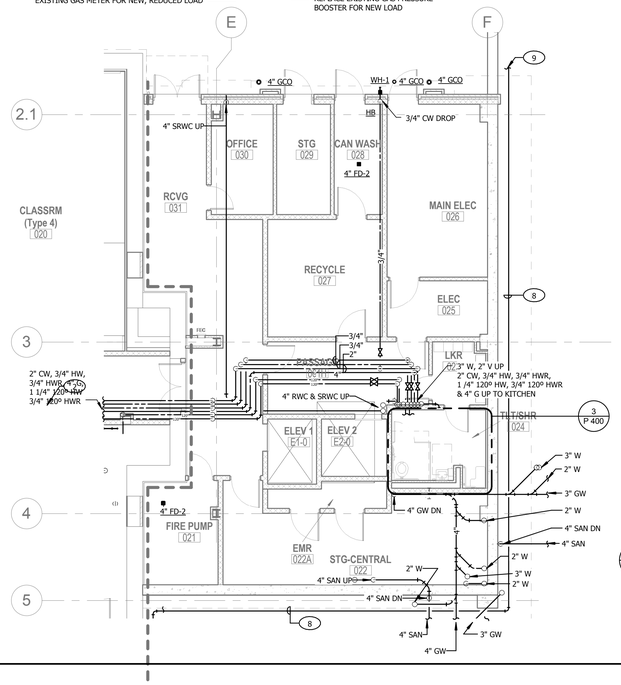


1 P 113 NEW WORK BASEMENT PLAN B - PLUMBING
1/8" = 1'-0"



2 P 113 NEW WORK BASEMENT PLAN C - PLUMBING
1/8" = 1'-0"

NOTE:
CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & EXISTING CONDITIONS AT SITE.

KEYED NOTES:

1. 1/2" DRINKING WATER AND HOT WATER, 1 1/2" WASTE AND VENT.
2. BALANCE FLOW TO 0.5 GPM MINIMUM.
3. 1/2" COLD AND HOT WATER, 2" WASTE AND VENT.
4. 1 1/4" COLD WATER.
5. BALANCE FLOW TO 4 GPM.
6. BALANCE FLOW TO 4.5 GPM.
7. BALANCE FLOW TO 5 GPM.
8. INSTALL NEW FOUNDATION DRAIN, WRAPPED IN FILTER CLOTH, ON EXISTING FOOTER. SEE WALL SECTIONS ON A 401 FOR TYPICAL DETAIL.
9. NEW FOUNDATION DRAIN TO SITE STORM WATER COLLECTION SYSTEM. SEE CIVIL DRAWINGS FOR CONTINUATION.
10. CONNECT 3" FROM NEW AREA DRAINS TO EXISTING LATERAL.
11. 1/2" DRINKING WATER AND HOT WATER, 2" WASTE, & 1 1/2" VENT.
12. PROVIDE 1/4" COPPER COLD WATER TO REFRIGERATOR ICE MAKER FROM SUPPLY BELOW SINK.

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BID ISSUE

PROJECT No.: 152-01
DATE: 03/31/16
SCALE: AS NOTED

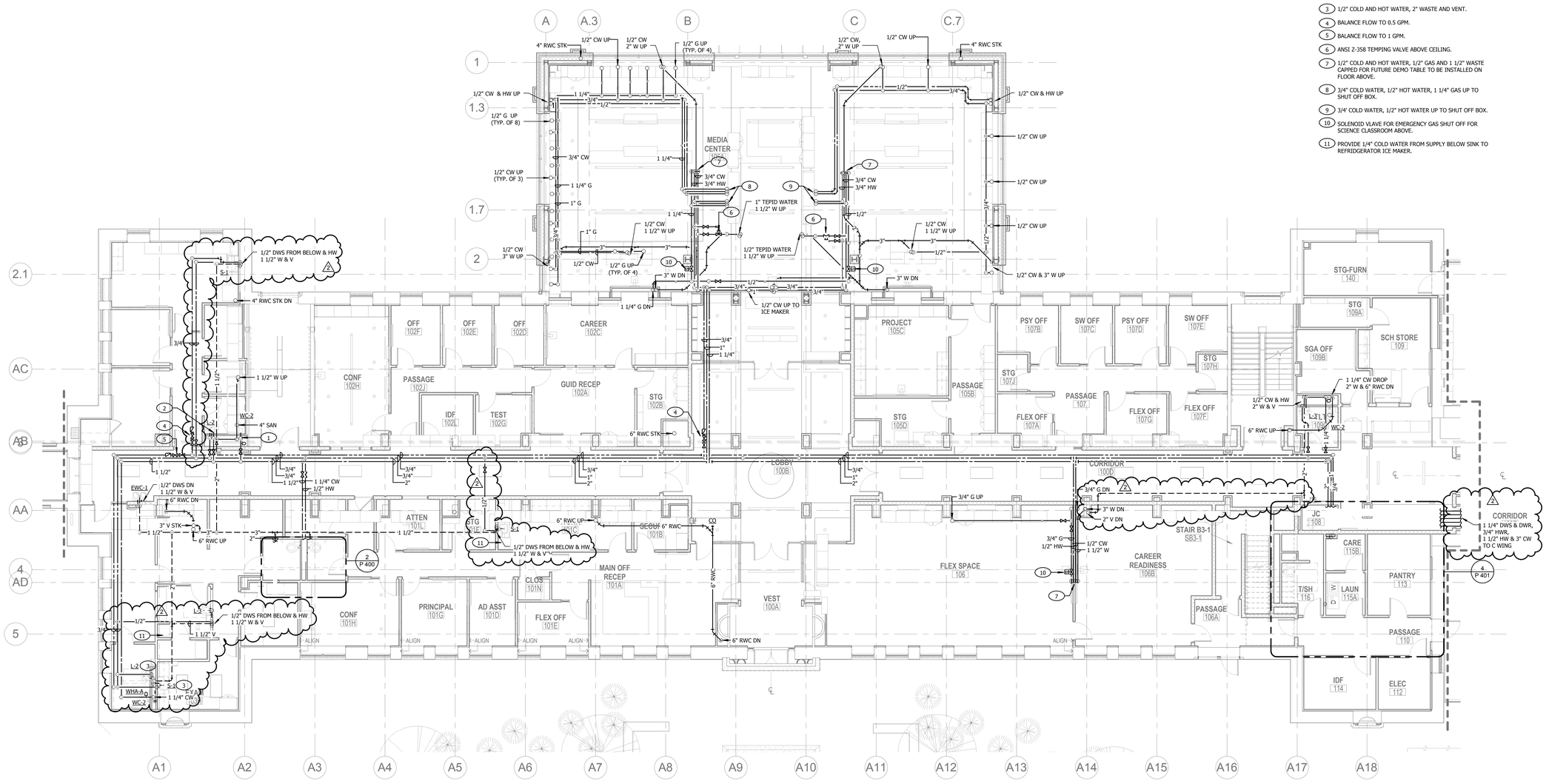
DRAWING NAME
NEW WORK BASEMENT PLAN B - PLUMBING

P 113

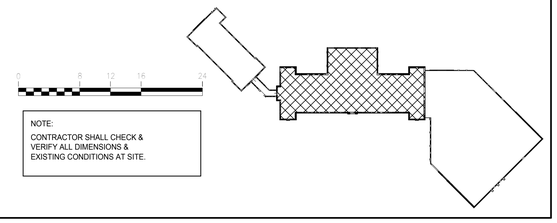
4/27/2016 2:25:28 PM

KEYED NOTES:

1. 2" WASTE DOWN FROM SINK, 1 1/4" COLD WATER DROP TO WATER CLOSET.
2. 1/2" COLD AND HOT WATER DROP, 2" WASTE THROUGH CHASE, 2" VENT RISE.
3. 1/2" COLD AND HOT WATER, 2" WASTE AND VENT.
4. BALANCE FLOW TO 0.5 GPM.
5. BALANCE FLOW TO 1 GPM.
6. ANSI Z-358 TEMPING VALVE ABOVE CEILING.
7. 1/2" COLD AND HOT WATER, 1/2" GAS AND 1 1/2" WASTE CAPPED FOR FUTURE DEMO TABLE TO BE INSTALLED ON FLOOR ABOVE.
8. 3/4" COLD WATER, 1/2" HOT WATER, 1 1/4" GAS UP TO SHUT OFF BOX.
9. 3/4" COLD WATER, 1/2" HOT WATER UP TO SHUT OFF BOX.
10. SOLENOID VLAVE FOR EMERGENCY GAS SHUT OFF FOR SCIENCE CLASSROOM ABOVE.
11. PROVIDE 1/4" COLD WATER FROM SUPPLY BELOW SINK TO REFRIDGERATOR ICE MAKER.



1 P 114 NEW WORK FIRST FLOOR PLAN B - PLUMBING
1/8" = 1'-0"



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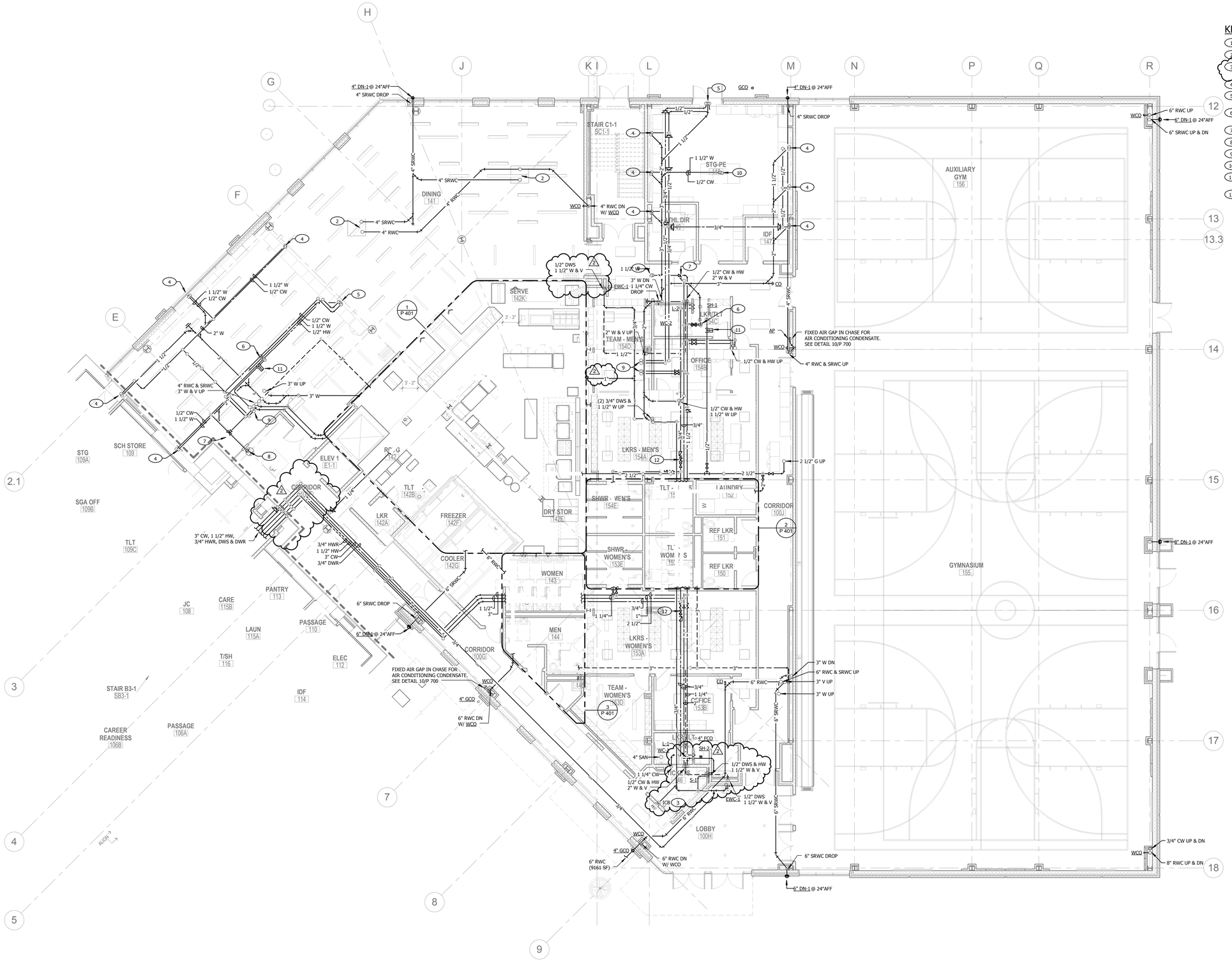
SCALE: AS NOTED
DRAWING NAME
NEW WORK FIRST FLOOR PLAN B - PLUMBING

P 114

4/27/2016 3:34:17 PM



KEYED NOTES:

1. 6" PRIMARY AND SECONDARY RAINWATER CONDUCTOR UP TO RD-1.
2. 4" PRIMARY AND SECONDARY RAINWATER CONDUCTOR UP TO RD-1.
3. 1/2" DRINKING WATER DROP TO ICE MAKER CONNECTION BOX. CONNECT REFRIGERATOR ICE MAKER VIA 5 FEET OF 1/4" COPPER TUBING.
4. 1/2" COLD WATER AND 1 1/2" WASTE UP TO SCIENCE CLASSROOM SINK.
5. 1/2" COLD AND HOT WATER AND 1 1/2" WASTE UP TO SCIENCE CLASSROOM SINK.
6. 1/2" COLD AND HOT WATER AND GAS AND 1 1/2" WASTE CAPPED FOR FUTURE DEMO TABLE IN SCIENCE CLASSROOM ABOVE.
7. ANSI Z-358 TEMPERING VALVE ABOVE CEILING.
8. 1/2" TEPID WATER AND 1 1/2" WASTE UP TO EYEWASH.
9. 3/4" COLD WATER AND 1/2" HOT WATER UP TO SHUT OFF VALVE BOX.
10. 1/2" COLD WATER AND 2" WASTE UP TO SCIENCE CLASSROOM SINK.
11. SOLENOID VALVE IN GAS LINE FOR EMERGENCY SHUT OFF TO SCIENCE CLASSROOM ABOVE.
12. BALANCE FLOW TO 0.5 GPM MINIMUM.

1 / P 115 NEW WORK FIRST FLOOR PLAN C - PLUMBING
1/8" = 1'-0"

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Additions & Renovations at Robert Poole Building #056
1300 W 36TH ST., BALTIMORE, MD 21211

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 19294
EXPIRATION DATE: 12/14/2016

No.	DATE	DESCRIPTION
1	04/14/16	ADDENDUM #1
2	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01
DATE: 03/31/16
SCALE: AS NOTED

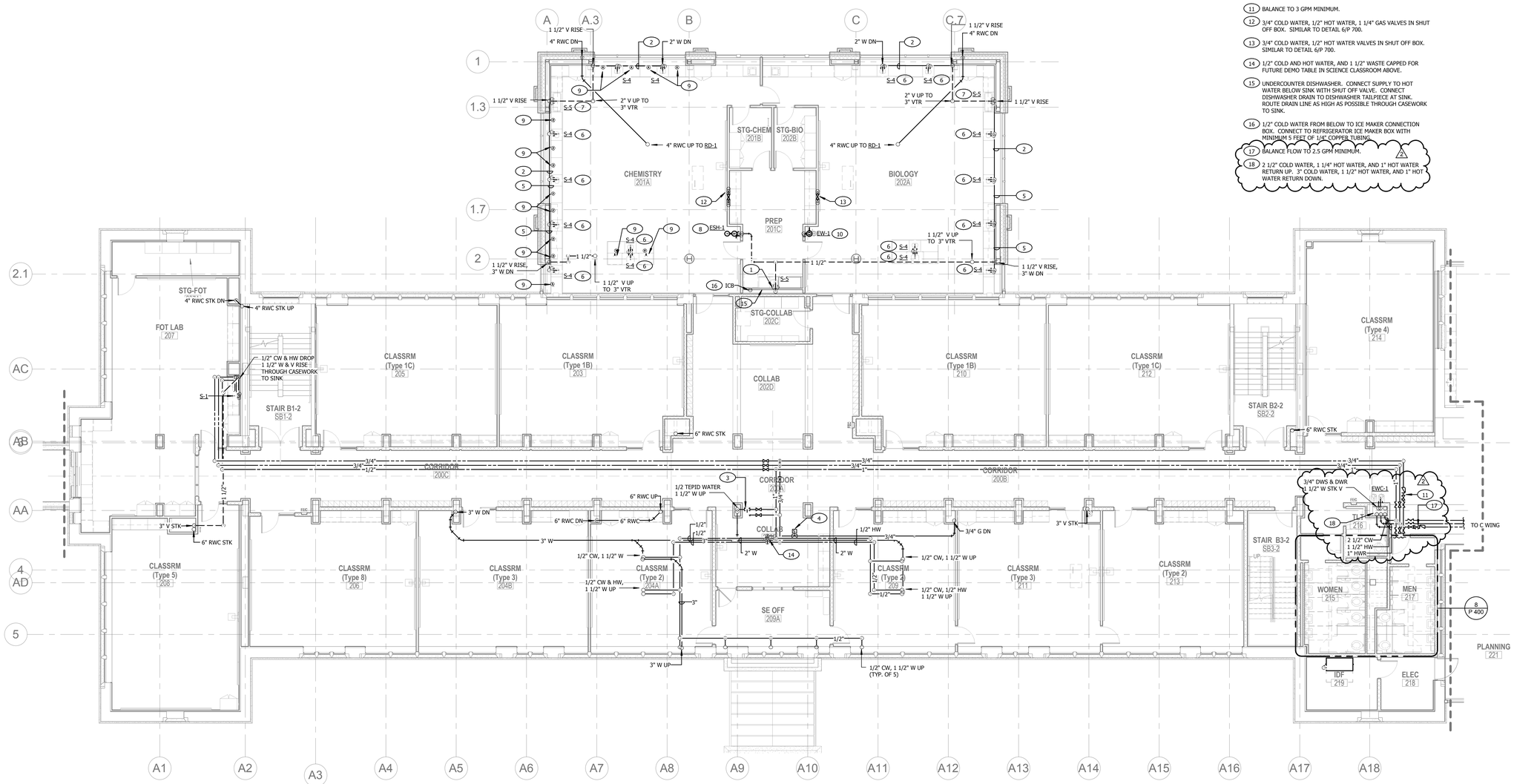
DRAWING NAME
NEW WORK FIRST FLOOR PLAN C - PLUMBING

P 115

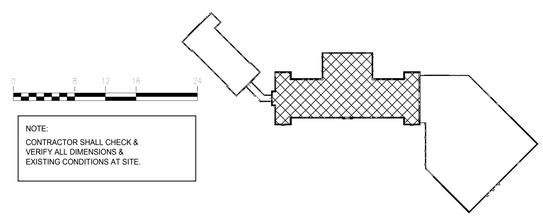
4/27/2016 3:36:15 PM

KEYED NOTES:

1. 1/2" COLD AND HOT WATER, 1 1/2" WASTE AND VENT
2. 1 1/2" WASTE THROUGH CASEWORK.
3. ANSI Z-358 TEMPERING VALVE ABOUT CEILING.
4. SOLENOID VALVE IN GAS LINE FOR EMERGENCY SHUTOFF IN SCIENCE 301.
5. 2" WASTE THROUGH CASEWORK.
6. 1/2" COLD WATER. 1 1/2" WASTE.
7. 1/2" COLD AND HOT WATER, 1 1/2" WASTE.
8. 1" TEPID WATER FROM BELOW, 1 1/2" WASTE DOWN, 1 1/2" VENT RISE.
9. 1/2" GAS TO GAS TURRET.
10. 1/2" TEPID WATER FROM BELOW, 1 1/2" WASTE DOWN, 1 1/2" VENT RISE.
11. BALANCE TO 3 GPM MINIMUM.
12. 3/4" COLD WATER, 1/2" HOT WATER, 1 1/4" GAS VALVES IN SHUT OFF BOX. SIMILAR TO DETAIL 6/P 700.
13. 3/4" COLD WATER, 1/2" HOT WATER VALVES IN SHUT OFF BOX. SIMILAR TO DETAIL 6/P 700.
14. 1/2" COLD AND HOT WATER, AND 1 1/2" WASTE CAPPED FOR FUTURE DEMO TABLE IN SCIENCE CLASSROOM ABOVE.
15. UNDERCOUNTER DISHWASHER. CONNECT SUPPLY TO HOT WATER BELOW SINK WITH SHUT OFF VALVE. CONNECT DISHWASHER DRAIN TO DISHWASHER TAILPIECE AT SINK. ROUTE DRAIN LINE AS HIGH AS POSSIBLE THROUGH CASEWORK TO SINK.
16. 1/2" COLD WATER FROM BELOW TO ICE MAKER CONNECTION BOX. CONNECT TO REFRIGERATOR ICE MAKER BOX WITH MINIMUM 5 FEET OF 1/4" COPPER TUBING.
17. BALANCE FLOW TO 2.5 GPM MINIMUM.
18. 2 1/2" COLD WATER, 1 1/4" HOT WATER, AND 1" HOT WATER RETURN UP. 3" COLD WATER, 1 1/2" HOT WATER, AND 1" HOT WATER RETURN DOWN.



1 / P 116 NEW WORK SECOND FLOOR PLAN B - PLUMBING
1/8" = 1'-0"



NOTE:
CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & EXISTING CONDITIONS AT SITE.

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P 116

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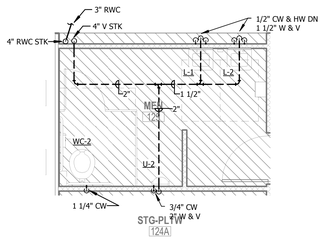
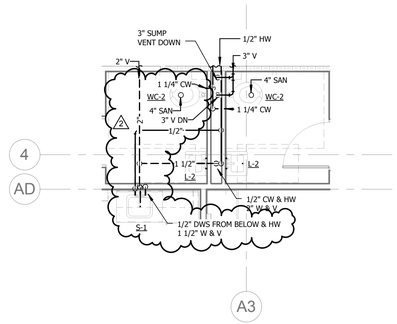
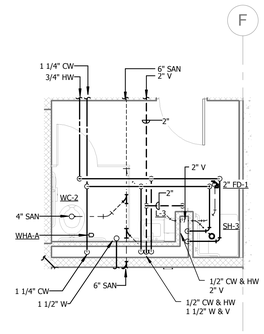


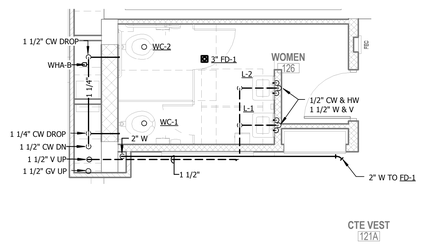
1 P 400 ENLARGED MEN 125
1/4" = 1'-0"



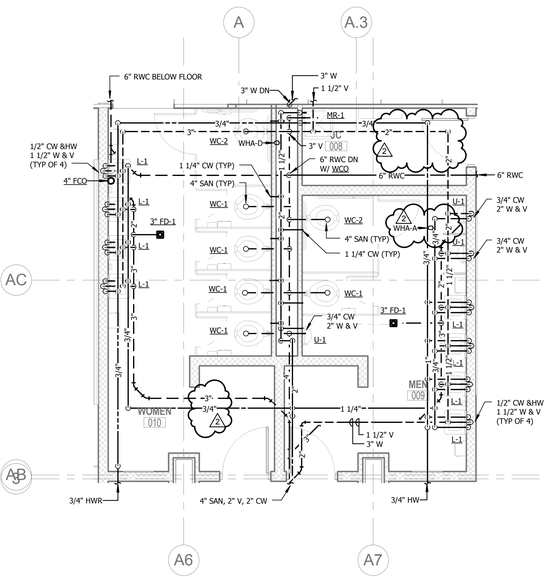
2 P 400 ENLARGED TOILET 103G
1/4" = 1'-0"



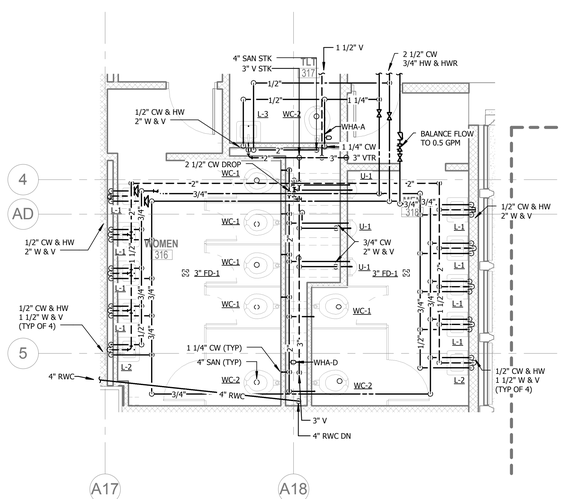
3 P 400 ENLARGED TOILET/SHOWER 042
1/4" = 1'-0"



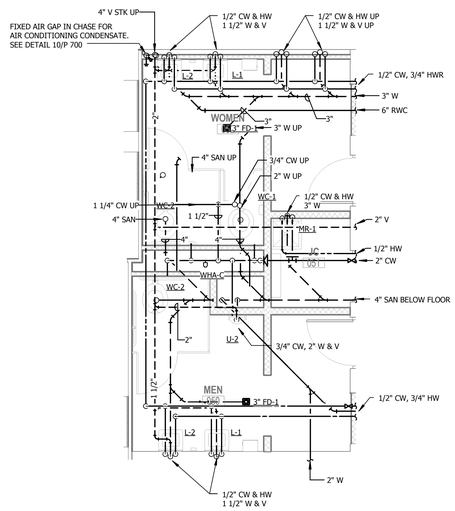
5 P 400 ENLARGED WOMEN 126
1/4" = 1'-0"



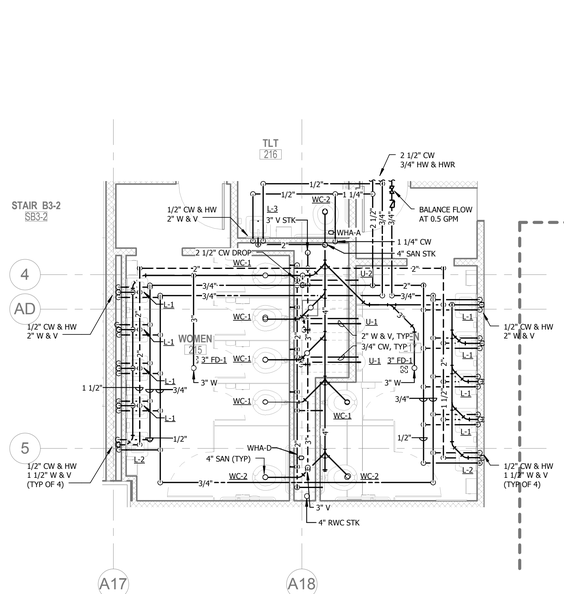
4 P 400 ENLARGED MEN'S 008/WOMEN'S 009
1/4" = 1'-0"



6 P 400 ENLARGED MEN 318/WOMEN 319
1/4" = 1'-0"



7 P 400 ENLARGED MEN'S 060/WOMEN'S 062
1/4" = 1'-0"



8 P 400 ENLARGED MEN 215A/WOMEN215B
1/4" = 1'-0"

1

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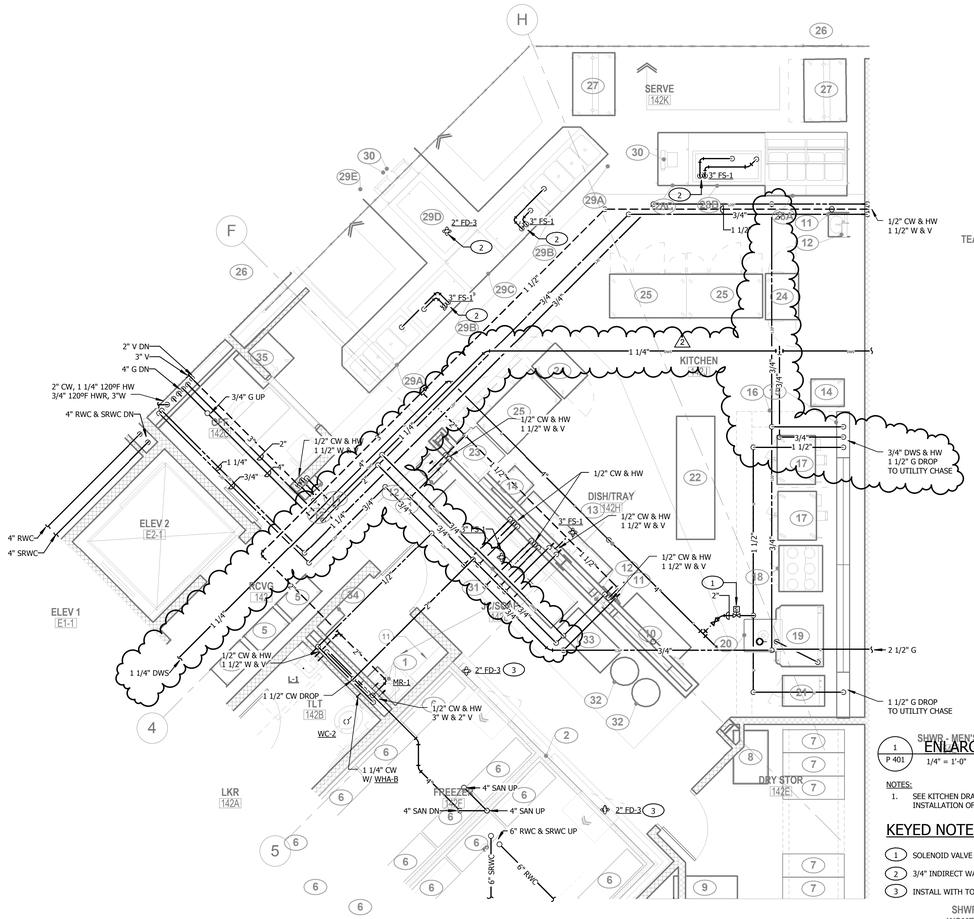
ENLARGED PLANS - PLUMBING

P 400

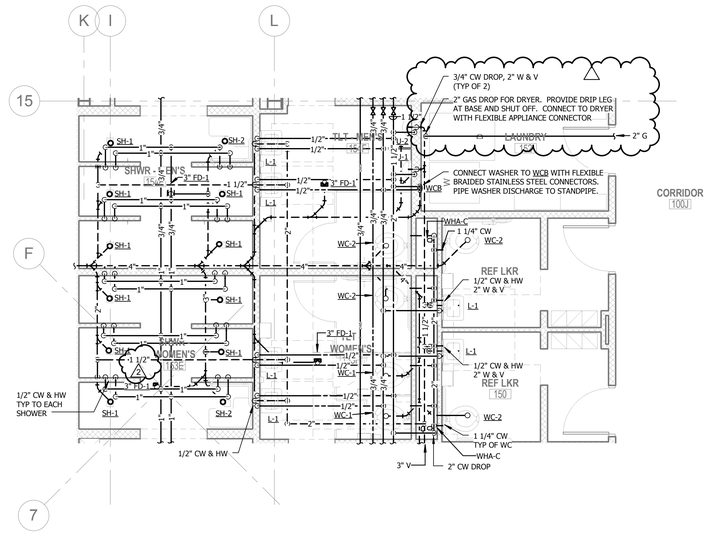


1 P 401 ENLARGED KITCHEN - PLUMBING
1/4" = 1'-0"

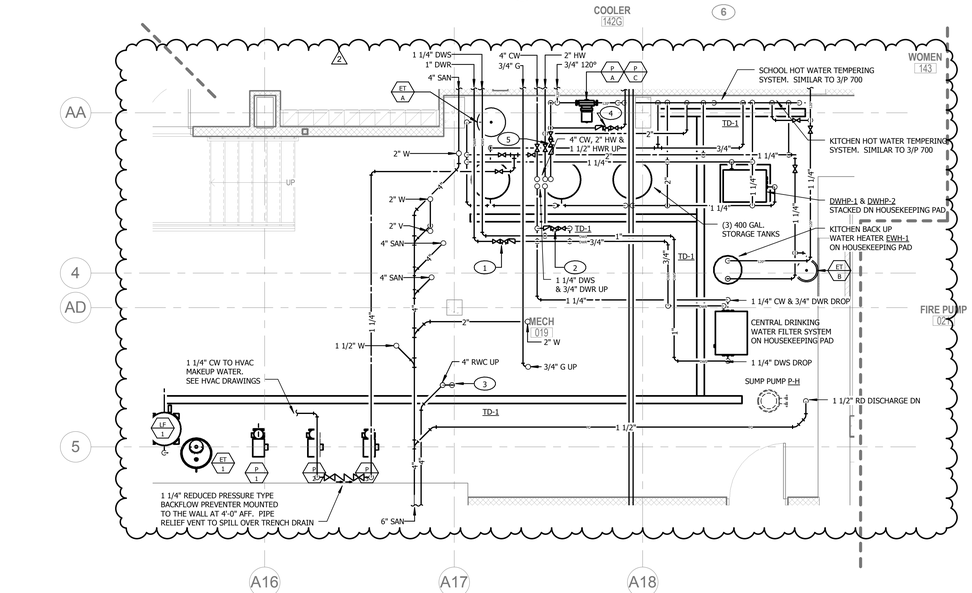
NOTES:
1. SEE KITCHEN DRAWINGS FOR PLUMBING CONTRACTOR RESPONSIBILITIES RELATED TO INSTALLATION OF KITCHEN EQUIPMENT.

KEYED NOTES:

1. SOLENOID VALVE BY P.C. FOR CONNECTION TO HOOD SUPPRESSION SYSTEM.
2. 3/4" INDIRECT WASTE FROM HOT WELLS/COLD WELLS TO FLOOR SINK WITH AIR GAP.
3. INSTALL WITH TOP OF RIM FLUSH WITH FINISHED FLOOR.



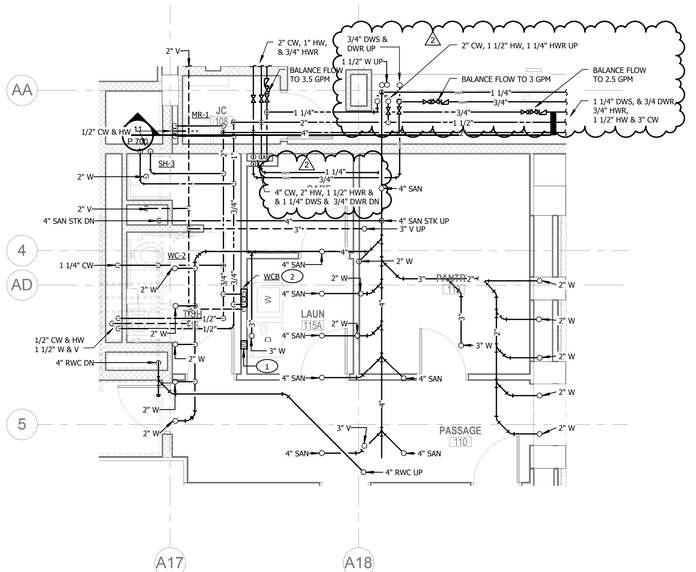
2 P 401 ENLARGED LOCKER ROOM
1/4" = 1'-0"



5 P 401 ENLARGED MECHANICAL ROOM - PLUMBING
1/4" = 1'-0"

KEYED NOTES:

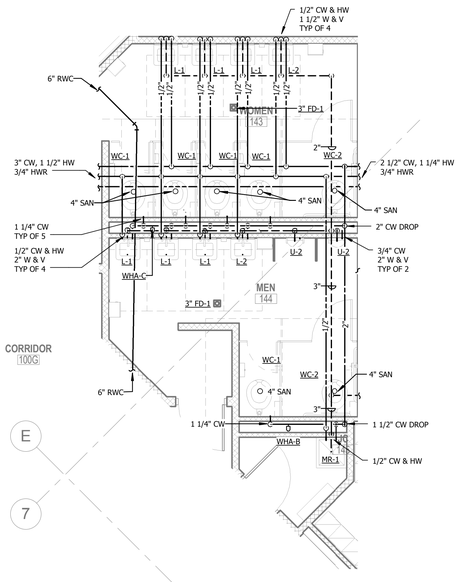
1. BALANCE FLOW TO 3 GPM.
2. BALANCE FLOW TO 3.5 GPM.
3. FIXED AIR GAP FOR AIR CONDITIONING CONDENSATE AT BASE OF STACK. SIMILAR TO DETAIL 10/P 700.
4. BALANCE FLOW TO 5.5 GPM.
5. BALANCE FLOW TO 12.5 GPM.



4 P 401 ENLARGED LAUNDRY - PLUMBING
1/4" = 1'-0"

KEYED NOTES:

1. GAS CONNECTION BOX IN WALL WITH 3/4" GAS FROM BELOW. CONNECT DRYER WITH FLEXIBLE APPLIANCE CONNECTION.
2. 1/2" COLD AND HOT WATER, 2" WASTE AND VENT TO WCB. CONNECT WASHER WITH FLEXIBLE STAINLESS STEEL BRAIDED SUPPLY CONNECTORS.



3 P 401 ENLARGED WOMEN 143/MEN 144
1/4" = 1'-0"

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P 401

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(DWHP) PROPOSED DOMESTIC WATER HEAT PUMP UNIT SCHEDULE

TAG	DOMESTIC LOOP (SUPPLY) WATER						HEAT PUMP LOOP (SOURCE) WATER					HEAT PUMP PERFORMANCE				ELECTRICAL			BASIS OF DESIGN
	FLOW (GPM)	(GPM)	EXTERNAL W.P.D. (FT HD)	E.W.T. (°F)	L.W.T. (°F)	HEAT REJECTION (MBH)	FLOW (GPM)	E.W.T. (°F)	L.W.T. (°F)	W.P.D. (FT)	HEAT ABSORPTION (MBH)	COP	EVAP. SUCTION TEMP (F)	COMPRESSOR TYPE	REF. TYPE	POWER (V/PH/HZ)	RLA (AMPS)	LRA (AMPS)	MANUFACTURER AND MODEL NUMBER
DWHP-1	1.51	90.7	10	40	140	71.1	14	35	25	6	50.5	2.99	26.23	SCROLL	R-134A	480 / 3 / 60	20	125	COLMAC COIL/HPW7LS
DWHP-2	1.51	90.7	10	40	140	71.1	14	35	25	6	50.5	2.99	26.23	SCROLL	R-134A	480 / 3 / 60	20	125	COLMAC COIL/HPW7LS

NOTES: PROVIDE EACH UNIT WITH THE FOLLOWING COMPONENTS:
- VENTED, DOUBLE WALL, STAINLESS STEEL, BRAZED PLATE CONDENSERS (POTABLE WATER).
- SINGLE WALL, STAINLESS STEEL, BRAZED PLATE EVAPORATORS (SOURCE WATER).
- ADJUSTABLE TXV, MOISTURE INDICATING SIGHT GLASS, LIQUID LINE FILTER DRIER.
- BRONZE HOT WATER CIRCULATING PUMP (POTABLE WATER).
- ELECTRONIC TEMPERATURE CONTROL VALVE TO REGULATE FLOW OF DOMESTIC WATER PER THE UNIT DISCHARGE TEMPERATURE.
- SOURCE WATER FLOW SWITCH AND FREEZE STAT.
- AUTOMATIC CONTROLS INCLUDING: HIGH AND LOW PRESSURE CUTOUTS, COMPRESSOR TIME DELAY RELAY, NORMAL RUN AND FAULT INDICATING LIGHTS, PHASE FAILURE RELAY.

PUMP SCHEDULE

SYMBOL	SERVICE	GPM	HEAD (FT.)	TYPE	ELECTRICAL CHARACTERISTICS HP	VOLTS	PHASE	SPEED	SUCTION	DISCHARGE	REMARKS	MANUFACTURER/MODEL NUMBER BASIS OF DESIGN
P-A	BUILDING HOT WATER CIRCULATING	18	18	INLINE	1/3	120	1	1750	1 1/4"	1 1/4"	7 DAY TIME CLOCK AND AQUASTAT	BELL & GOSSETT SERIES HD3
P-B	ELEVATOR SUMP PUMP	25	25	SUBMERSIBLE	1/2	120	1	1750	-	1 1/4"		WEIL SERIES 1400
P-C	KITCHEN RECIRCULATION PUMP	5	17	INLINE	1/6	120	1	1750	3/4"	3/4"	7 DAY TIME CLOCK AND AQUASTAT	BELL & GOSSETT SERIES PR
P-D	ELEVATOR SUMP PUMP	50	18	SUBMERSIBLE	1/2	120	1	1750	-	1 1/4"		WEIL SERIES 1400
P-E	BOOSTER PUMP	70	25	END SUCTION	2	480	3	-	3"	3"	CITY WATER PRESSURE AT MAXIMUM PROBABLE FLOW IS ESTIMATED TO BE 55 PSI	PACKAGED VARIABLE SPEED, MULTIPLEX PUMP SYSTEM
P-F	BOOSTER PUMP	70	25	END SUCTION	2	480	3	-	3"	3"		
P-G	BOOSTER PUMP	70	25	END SUCTION	2	480	3	-	3"	3"		
P-H	SUMP PUMP	25	25	SUBMERSIBLE	1/2	120	1	1750	-	1 1/4"		WEIL SERIES 1400
P-I	DUPLEX SEWAGE EJECTOR	50	17	SUBMERSIBLE	1/2	120	1	1725	4"	2"	WITH NEMA CONTROL PANEL, DISCONNECT ALTERNATOR, ALARMS, LEVEL CONTROLS	ZOELLER PREPACKAGED DUPLEX ELECTOR SYSTEM WITH 36"Dx48" BASIN WITH RAIL SYSTEM, 280 SERIES PUMPS
P-J	DUPLEX SEWAGE EJECTOR	50	17	SUBMERSIBLE	1/2	120	1	1725	4"	2		

EXPANSION TANK SCHEDULE

SYMBOL	SERVICE	TYPE	MIN. ACCEPT VOL (GAL)	SYSTEM (MIN)	TEMPERATURE (MAX)	SYSTEM PRESSURE (PSI)	RELIEF VALVE PRESSURE (PSI)	CONNECT SIZE (IN)
ET-A	DOMESTIC HOT WATER	VERTICAL MOUNTED DIAPHRAGM	52	40	140	66	125	2
ET-B	KITCHEN HOT WATER	HORIZONTAL MOUNTED DIAPHRAGM	5	40	140	66	125	2

DRAINAGE SCHEDULE

SYMBOL	DESCRIPTION	BODY	STRAINER	REMARKS
-	-	-	-	-
CO	CLEAN OUT	Z-1470		
FCO	FLOOR CLEANOUT	Z-1400		
FD-1	FLOOR DRAIN	Z-415	5" DIA, BRONZE	
FD-2	FLOOR DRAIN	Z-550-4	9" DIA CAST IRON	WITH SEDIMENT BUCKET
FD-3	KITCHEN FLOOR DRAIN	Z-415	TYP-1, 5" DIA, BRONZE	INSTALL WITH TOP OF PIN FLUSH WITH FINISHED FLOOR
FS-1	FLOOR SINK	Z-1900	12"x12"	WITH ALUMNINUM BUCKET - PROVIDE 1/2 OR 3/4 GRATE AS REQUIRED
GCO	GRADE CLEANOUT	Z-1406		
WCO	WALL CLEANOUT	ZANB-1468		
RD-1	COMBINATION ROOF DRAIN	Z-1628A	15" ALUMINUM DOME	
RD-2	PRIMARY ROOF DRAIN	Z-100 EARC	15" ALUMINUM DOME	
-	-	-	-	-
TD-1	TRENCH DRAIN	Z-880	CLASS B DUCTILE SLOTTED GRATE	FIELD VERIFY LENGTH OF EACH SECTION

NOTES:
1. UNLESS OTHERWISE NOTED, MODEL NUMBERS SHOWN ARE FOR ZURN INDUSTRIES PRODUCTS AS BASIS OF DESIGN
2. SEE PLANS FOR PIPE SIZES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR FLOOR FINISHES. PROVIDE CLEANOUT SUITABLE FOR FLOOR FINISH SHOWN PER SPECIFICATIONS.
4. PROVIDE FLOOR DRAINS WITH TRAP PROTECTION AS SPECIFIED.
5. PROVIDE BARRIER TYPE TRAP PROTECTION CONFORMING TO ASSE 1072 ON ALL FLOOR DRAIN TYPES.

ELECTRIC WATER HEATER SCHEDULE

FIXTURE	SYSTEM	CAPACITY GALLONS	RECOVERY GPH/GPM @ ° F	ELECTRICAL V	Ø	KW	MANUFACTURER AND MODEL
EWH-1	KITCHEN BACK-UP WATER HEATER	50 GAL	149 GPH @ 100ºF	480	3	43	BRADFORD WHITE 50A-36-3

FIXTURES SCHEDULE

FIXTURE	DESCRIPTION	MANUFACTURER AND MODEL BASIS OF DESIGN	FAUCET/TRIM BASIS OF DESIGN	SUPPORT BASIS OF DESIGN	FLOW RATE/ CONSUMPTION	COLD WATER	HOT WATER	SOIL/ WASTE	VENT	NOTES
EW-1	EMERGENCY EYEWASH	WALL MOUNTED EYE/FACE WASH WITH STAINLESS STEEL RECEPTOR WITH COVER	STAY OPEN, CHROME PLATED BRASS BALL VALVE AND STAINLESS STEEL PUSH FLAG	WALL MOUNTED	3 GPM	1/2"	1/2'	-	-	ANSI Z358.1 COMPLIANT, BARRIER FREE, AND ANSI COMPLIANT TEMPERING VALVE
ESH-1	EMERGENCY COMBINATION FIXTURE	COMBINATION EMERGENCY SHOWER AND EYEWASH UNIT CONSTRUCTED FROM SCHEDULE 40 HOT-DIPPED GALVANIZED STEEL PIPE AND FITTINGS WITH POWDER COATED CAST IRON FLOOR FLANGE. EYE/FACE WASH SIMILAR TO EW-1. SHOWER HEAD OF 10.5" STAINLESS STEEL	STAY OPEN, CHROME PLATED BRASS BALL VALVE AND STAINLESS STEEL PUSH FLAG FOR EYEWASH AND TRIANGULAR PULL ROD FOR SHOWER	FLOOR MOUNTED	20 GPM	1"	3/4"	-	-	ANSI Z358.1 COMPLIANT, BARRIER FREE, AND ANSI COMPLIANT TEMPERING VALVE
EWC-1	BI-LEVEL ELECTRIC WATER COOLER	BI-LEVEL, BARRIER FREE, SURFACE MOUNTED WITH SIDE AND FRONT MOUNTED PUSH BARS, STAINLESS STEEL BASIN AND EXTERIOR PANELS AND FLEXIBLE HOODED BUBBLER, LEAD FREE WATER WAYS	-	FLOOR MOUNTED PLATE CARRIER	-	1/2"	-	1 1/2"	1 1/2"	
ICB	ICE MAKER CONNECTION BOX	20 GUAGE STAINLESS STEEL BOX AND TRIM RING	1/4 TURN STOP	RECESSED	-	1/2"	-	-	-	
L-1	LAVATORY STUDENT/PUBLIC	RECTANGULAR, ENAMELD CAST IRON, FRONT OVERFLOW WITH 8" FAUCET CENTERS, 20"X18 NOM	COMBINATION HOT AND COLD METERING, WDESPREAD, SLOW CLOSING, 5" SPOUT AND VANDALPROOF	FLOOR MOUNTED PLATE CARRIER	0.35 GPM	1/2"	1/2"	1 1/2"	1 1/2"	LAVATORY HOT WATER SUPPLIED FROM CENTRAL TEMPERING STATION SET AT 110°F AND CONFORMING TO ASSE 1070
L-2	ACCESSIBLE LAVATORY (STUDENT/PUBLIC)	ACCESSIBLE HEIGHT, RECTANGULAR, ENAMELD CAST IRON, FRONT OVERFLOW WITH 8" FAUCET CENTERS, 20"X18 NOM	COMBINATION HOT AND COLD METERING, WDESPREAD, SLOW CLOSING, 5" SPOUT AND VANDALPROOF	FLOOR MOUNTED PLATE CARRIER	0.35 GPM	1/2"	1/2"	1 1/2"	1 1/2"	LAVATORY HOT WATER SUPPLIED FROM CENTRAL TEMPERING STATION SET AT 110°F AND CONFORMING TO ASSE 1070
L-3	ACCESSIBLE LAVATORY (STAFF)	ACCESSIBLE HEIGHT, RECTANGULAR, ENAMELD CAST IRON, FRONT OVERFLOW WITH 8" FAUCET CENTERS, 20"X18 NOM	MANUAL FAUCET WITH WRISTBLADE HANDLES, WIDESPREAD, 5" SPOUT	FLOOR MOUNTED PLATE CARRIER	0.35 GPM	1/2"	1/2"	1 1/2"	1 1/2"	LAVATORY HOT WATER SUPPLIED FROM CENTRAL TEMPERING STATION SET AT 110°F AND CONFORMING TO ASSE 1070
MR-1	MOP RECEPTOR	MOLDED STONE ONE PIECE BASIN, 36"X24" FIAT MSB3624	WALL MOUNTED, 8" CENTERS, CROSS HANDLES, VACUUM BREAKER, HOSE THREAD OUTLET, PAIL HOOK AND BRACE CHICAGO 540-LD897WXHLP	FLOOR	2.5 GPM	1/2"	1/2"	2"	1 1/2"	
S-1	SINGLE BOWL SINK	18 GAUGE STAINLESS STEEL, WITH UNDERCOATING WITH REAR CENTER DRAIN OUTLET ELKAY LRAD 221955	COMBINATION HOT AND COLD WITH 8" CENTERS, 120 DEGREE SWING, GOOSENECK SPOUT AND INDEXED LEVER HANDLES CHICAGO 786-E29	SELF RIMMING COUNTER TYPE	0.5 GPM	1/2"	1/2"	1 1/2"	1 1/2"	
S-2	DOUBLE BOWL SINK	18 GAUGE STAINLESS STEEL, WITH UNDERCOATING WITH REAR CENTER DRAIN OUTLET ELKAY LRAD 331955	DECK MOUNTED, COMBINATION HOT AND COLD WITH 8" CENTERS, 120 DEGREE SWING, GOOSENECK SPOUT AND INDEXED LEVER HANDLES CHICAGO 786-E29	SELF RIMMING COUNTER TYPE	0.5 GPM	1/2"	1/2"	1 1/2"	1 1/2"	
S-3	CLASSROOM SINK	18 GAUGE STAINLESS STEEL, WITH UNDERCOATING WITH REAR CENTER DRAIN OUTLET ELKAY LRAD 221955	DECK MOUNTED, COMBINATION HOT AND COLD WITH 8" CENTERS, 120 DEGREE SWING, GOOSENECK SPOUT AND INDEXED LEVER HANDLES CHICAGO 786-E29	SELF RIMMING COUNTER TYPE	0.5 GPM	1/2"	1/2"	1 1/2"	1 1/2"	
S-4	SCIENCE CLASSROOM SINK (STUDENT USE)	EPOXY RESIN SINK FURNISHED WITH SCIENCE CLASSROOM CASEWORK	DECK MOUNTED, COLD WATER ONLY. RIGID GOOSENECK SPOUT WITH VACUUM BREAKER, INDEXED LEVER HANDLES AND VANDAL PROOF SERRATED NOZZLE CHICAGO FAUCET 928-369CP	UNDERMOUNT	0.5 GPM	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE PASTER TRAP ON SINK
S-5	SCIENCE CLASSROOM SINK (TEACHER USE)	EPOXY RESIN SINK FURNISHED WITH SCIENCE CLASSROOM CASEWORK	DECK MOUNTED, COMBINATION HOT AND COLD WITH 8" CENTERS, 120 DEGREE SWING, GOOSENECK SPOUT WITH VACUUM BREAKER, INDEXED LEVER HANDLES AND VANDAL PROOF SERRATED NOZZLE CHICAGO FAUCET 786-GN2BVBE7CP	UNDERMOUNT	0.5 GPM	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE PASTER TRAP ON SINK
S-6	ART ROOM SINK	18 GAUGE STAINLESS STEEL, WITH UNDERCOATING WITH REAR CENTER DRAIN OUTLET ELKAY LRAD 221955	DECK MOUNTED, COMBINATION HOT AND COLD WITH 8" CENTERS, 120 DEGREE SWING, GOOSENECK SPOUT AND INDEXED LEVER HANDLES CHICAGO 786-E29	SELF RIMMING COUNTER TYPE	0.5 GPM	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE SOLIDS INTERCEPTOR BELOW SINK
S-7	CLEANUP SINK	14 GAUGE STAINLESS STEEL, WALL HUNG SINK WITH CENTER DRAIN OUTLET ELKAY EWMA4820C	WALL MOUNTED, COMBINATION HOT AND COLD WITH 8" CENTERS, 120 DEGREE SWING, 5 1/4" GOOSENECK SPOUT AND INDEXED LEVER HANDLES CHICAGO FAUCET 631-GN2AE35VABCP	SELF RIMMING COUNTER TYPE	0.5 GPM	1/2"	1/2"	1 1/2"	1 1/2"	PROVIDE SOLIDS INTERCEPTOR BELOW SINK IN ART ROOMS
SH-1	SHOWER	WALL MOUNTED SHOWER CONSTRUCTED OF 18-GUAGE TYPE 304 STAINLESS STEEL AND PROVIDED WITH A SHROUD EXTENDING TO THE CEILING AND A SOAP DISH	PRESSURE BALANCING SHOWER VALVE WITH LEVER AND CHECKSTOPS AND VANDAL PROOF , FIXED SHOWER HEAD	WALL MOUNTED	1.25 GPM	1/2"	1/2"	2"	1 1/2"	
SH-2	ACESSIBLE SHOWER	WALL MOUNTED SHOWER CONSTRUCTED OF 18-GUAGE TYPE 304 STAINLESS STEEL AND PROVIDED WITH A SHROUD EXTENDING TO THE CEILING AND A SOAP DISH	PRESSURE BALANCING SHOWER VALVE WITH HAND HELD SPRAYER AND STAINLESS STEEL HOSE.	WALL MOUNTED	1.25 GPM	1/2"	1/2"	2"	1 1/2"	SEE ARCHITECTURAL DRAWINGS/SPECIFICATIONS FOR SEAT, GRAB BAR AND SHOWER CURTAIN
SH-3	STAFF SHOWER	WALL MOUNTED SHOWER CONSTRUCTED OF 18-GUAGE TYPE 304 STAINLESS STEEL AND PROVIDED WITH A SHROUD EXTENDING TO THE CEILING AND A SOAP DISH	PRESSURE BALANCING SHOWER VALVE WITH LEVER AND CHECKSTOPS AND BALL JOINT ADJUSTABLE SHOWER HEAD	WALL MOUNTED	1.25 GPM	1/2"	1/2"	2"	1 1/2"	
U-1	WALL HUNG URINAL	VITREOUS CHINA, WALL HUNG, TOP SPUD, WASHDOWN TYPE	MANUAL FLUSH VALVE	FLOOR MOUNTED PLATE TYPE FIXTURE CARRIER	0.125 GPF	3/4"	-	2"	1 1/2"	
U-2	ACCESSIBLE WALL HUNG URINAL	ACCESSIBLE HEIGHT, VITREOUS CHINA, WALL HUNG, TOP SPUD, WASHDOWN TYPE	MANUAL FLUSH VALVE	FLOOR MOUNTED PLATE TYPE FIXTURE CARRIER	0.125 GPF	3/4"	-	2"	1 1/2"	
WC-1	FLOOR MOUNTED WATER CLOSET	VITREOUS CHINA, FLOOR MOUNTED, ELONGATED BOWL, SIPHON JET	MANUAL DUAL FLUSH VALVE	FLOOR MOUNTED	1.6/1.1 GPF	1 1/4"	-	4"	2"	PROVIDE WITH WHITE, ELONGATED, SOLID PLASTIC, OPEN FRONT SEAT, COMPLETE WITH STAINLESS STEEL POSTS AND COMBINATION SELF-SUSTAINING AND CHECK HINGE
WC-2	ACCESSIBLE FLOOR MOUNTED WATER CLOSET	ACCESSIBLE HEIGHT,VITREOUS CHINA, FLOOR MOUNTED, ELONGATED BOWL, SIPHON JET	MANUAL DUAL FLUSH VALVE	FLOOR MOUNTED	1.6/1.1 GPF	1 1/4"	-	4"	2"	PROVIDE WITH WHITE, ELONGATED, SOLID PLASTIC, OPEN FRONT SEAT, COMPLETE WITH STAINLESS STEEL POSTS AND COMBINATION SELF-SUSTAINING AND CHECK HINGE
WCB	WASHING MACHINE CONNECTION BOX	20 GUAGE STAINLESS STEEL BOX AND TRIM RING	1/4 TURN STOPS	RECESSED	-	1/2"	1/2"	2"	1 1/2"	PROVIDE WATER HAMMER ARRESTORS ON OUTLETS
YH-1	YARD HYDRANT	ZURN Z-1396XL	-	-	-	3/4"	-	-	-	-

TYPICAL KITCHEN EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	DRAIN WATER AND VENT DIRECT DRAIN SIZE (IN)	DRAIN WATER AND VENT INDIRECT DRAIN SIZE (IN)	POTABLE WATER COLD WATER SIZE (IN)	POTABLE WATER HOT WATER SIZE (IN)	POTABLE WATER 120ºF HOT WATER SIZE (IN)	NATURAL GAS SIZE	NATURAL GAS MBTUH	REMARKS
1	JANITOR'S SINK (MR-1)	4		1/2	1/2				
2	EVAPORATOR COIL DRAIN		3/4						DISCHARGE TO FLOOR DRAIN WITH AIR GAP
11	HAND SINK	1 1/2		1/2	1/2				
13	PREPARATION TABLE WITH SINKS		2	1/2	1/2				DISCHARGE TO FLOOR DRAIN WITH AIR GAP
15	UTILITY RACEWAY			3/4	3/4		1 1/4"	1360	
20	FLOOR TROUGH	3							
21	CONVECTION STEAMER		1 1/2						PROVIDE PRESSURE REDUCING VALVE ON SUPPLY AS REQUIRED BY MANUFACTURER'S LITERATURE. DISCHARGE DRAIN TO FLOOR TROUGH
28A	HOT/COLD FOOD COUNTER, MOBILE		3/4						DISCHARGE TO FLOOR SINK WITH AIR BREAK
28B	COLD FOOD COUNTER		3/4						DISCHARGE TO FLOOR SINK WITH AIR BREAK
29A	HOT/COLD FOOD COUNTER, MOBILE		3/4						DISCHARGE DRAIN TO FLOOR SINK WITH AIR BREAK
29B	COLD FOOD COUNTER, MOBILE		3/4						DISCHARGE DRAIN TO FLOOR SINK WITH AIR BREAK
29D	COLD FOOD COUNTER		3/4						DISCHARGE TO FLOOR SINK WITH AIR BREAK
31	POT WASHING SINK	(2) 1 1/2	FS	(2) 1/2		(2) 1/2			AIR GAP AT FAUCET. PIPE DRAINS TO DISCHARGE TO FLOOR SINK WITH AIR GAP

NOTES:
1 SEE KITCHEN DRAWINGS FOR PLUMBING CONTRACTOR RESPONSIBILITIES RELATED TO INSTALLATION OF KITCHEN EQUIPMENT.

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LICENSE NO.: 16254
EXPIRATION DATE: 12/14/2018

No.	DATE	DESCRIPTION
1	04/14/16	ADDENDUM #1
2	04/27/16	ADDENDUM #3

BID ISSUE

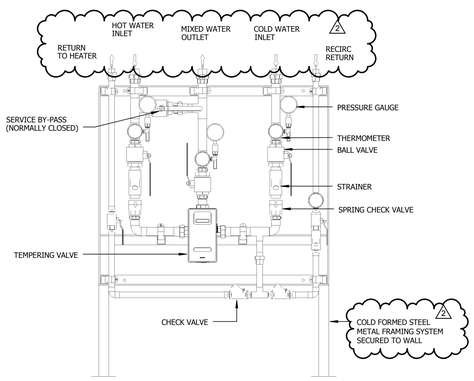
PROJECT No.: 152-01

DATE: 03/31/16

SCALE: AS NOTED

DRAWING NAME
SCHEDULES - PLUMBING

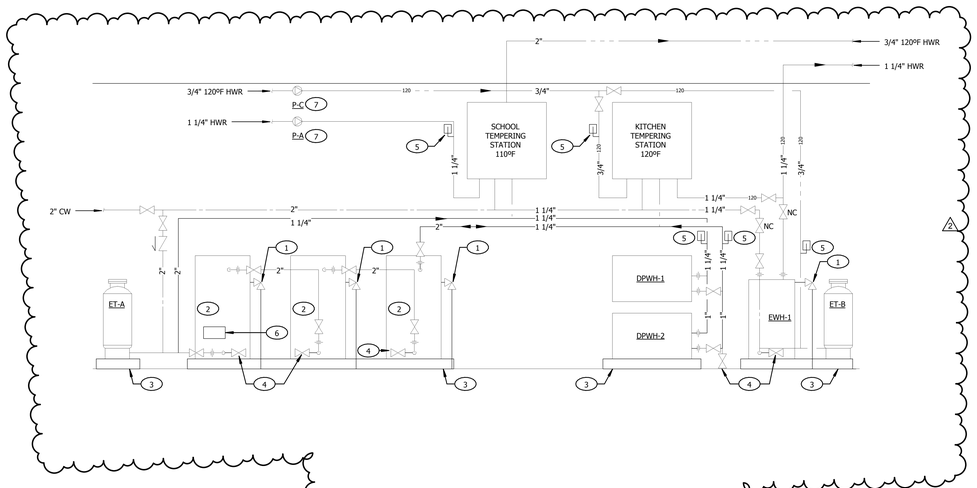
P 600



NOTE:

1. PROVIDE INCREASERS ON PIPE CONNECTIONS TO MATCH SIZES SHOWN ON PLAN.
2. SEE PLANS AND DETAILS FOR PIPE SIZES

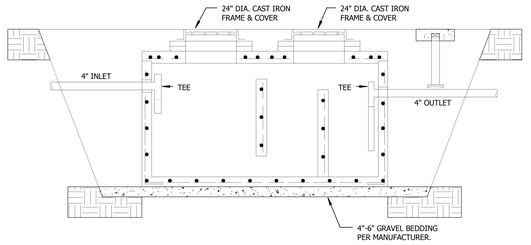
3 / P 700 TEMPERING VALVE DETAIL
NO SCALE



2 / P 700 DOMESTIC WATER HEATER SCHEMATIC DETAIL
NO SCALE

KEYED NOTES:

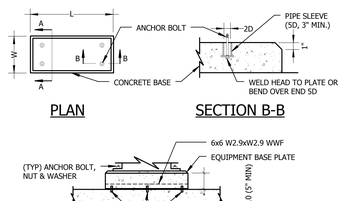
1. ASME TEMPERATURE AND PRESSURE RELIEF VALVE. DISCHARGE OVER TRENCH DRAIN.
2. 400 GALLON STORAGE TANK.
3. HOUSEKEEPING PAD. SEE DETAIL 12/P 700.
4. DRAIN VALVE.
5. THERMOMETER.
6. AQUASTAT SENSOR. DWHP SHALL BE STAGED AND CYCLED TO MAINTAIN TEMPERATURE SETPOINT (ADJUSTABLE) IN TANK.
7. RECIRCULATION PUMP. SEE DETAIL 5/P 700.



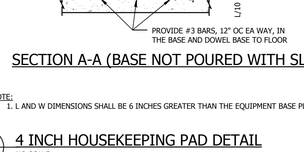
GREASE INTERCEPTOR NOTES:

1. GREASE INTERCEPTOR, FRAMES, AND COVERS SHALL BE RATED FOR H20 LOADING.
2. LABEL CAST IRON COVERS "GREASE INTERCEPTOR".
3. ALL JOINTS AT THE FRAME AND COVER, CONCRETE ADJUSTMENT RINGS AND THE LID OF THE INTERCEPTOR SHALL BE SEALED WITH BUTYL JOINT SEALER.
4. BACKFILL AROUND AND ON TOP OF GREASE INTERCEPTOR WITH EXCAVATED MATERIAL IN TWO FOOT LIFTS AND MECHANICALLY COMPACTED. PLACE BACKFILL UNIFORMLY AROUND TANK.
5. GRADE CLEANOUT OR OUTLET OF TANK SHALL BE SUITABLE AS A SAMPLING PORT.
6. PROVIDE FILL ABOVE TANK LEVELED SUITABLE FOR FINISHED GRADE MATERIAL AS SHOWN ON CIVIL DRAWINGS (I.E. GRASS, ASPHALT).
7. PROVIDE FRP STEPS OR LADDER AT EACH MANHOLE ACCESS.

1 / P 700 1000 GALLON GREASE INTERCEPTOR DETAIL
NO SCALE



PLAN SECTION B-B

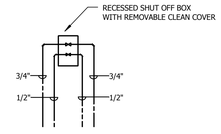


SECTION A-A (BASE NOT POURED WITH SLAB)

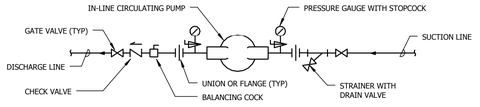
NOTE:

1. L AND W DIMENSIONS SHALL BE 6 INCHES GREATER THAN THE EQUIPMENT BASE PLATE.

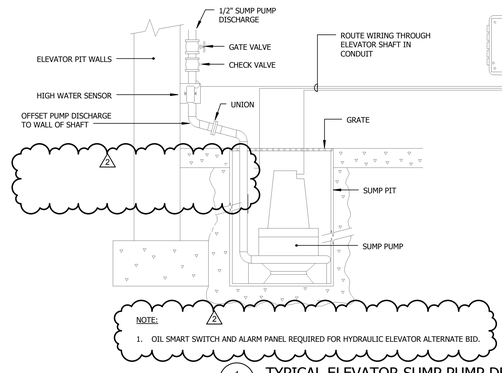
12 / P 700 4 INCH HOUSEKEEPING PAD DETAIL
NO SCALE



6 / P 700 TYPICAL SHUT OFF VALVE BOX
1/4" = 1'-0"



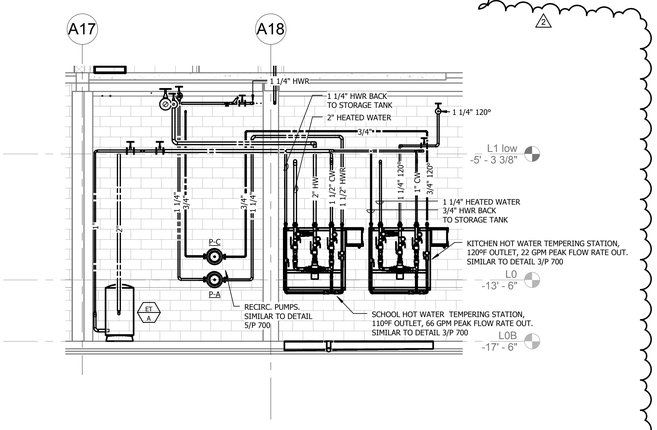
5 / P 700 RECIRCULATING PUMP DETAIL
NO SCALE



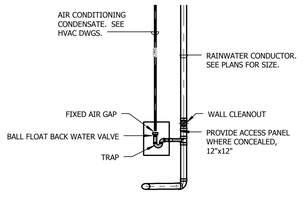
NOTE:

1. OIL SMART SWITCH AND ALARM PANEL REQUIRED FOR HYDRAULIC ELEVATOR ALTERNATE BID.

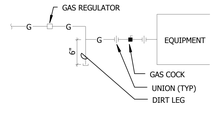
4 / P 700 TYPICAL ELEVATOR SUMP PUMP DETAIL
NO SCALE



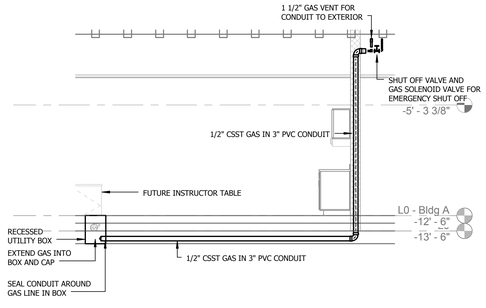
11 / P 700 TEMPERING STATION SECTION
1/4" = 1'-0"



10 / P 700 INDIRECT WASTE DETAIL
NO SCALE



9 / P 700 GAS CONNECTION DETAIL DETAIL
NO SCALE



8 / P 700 GAS DETAIL
1/4" = 1'-0"

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EXPIRATION DATE: 12/14/2016

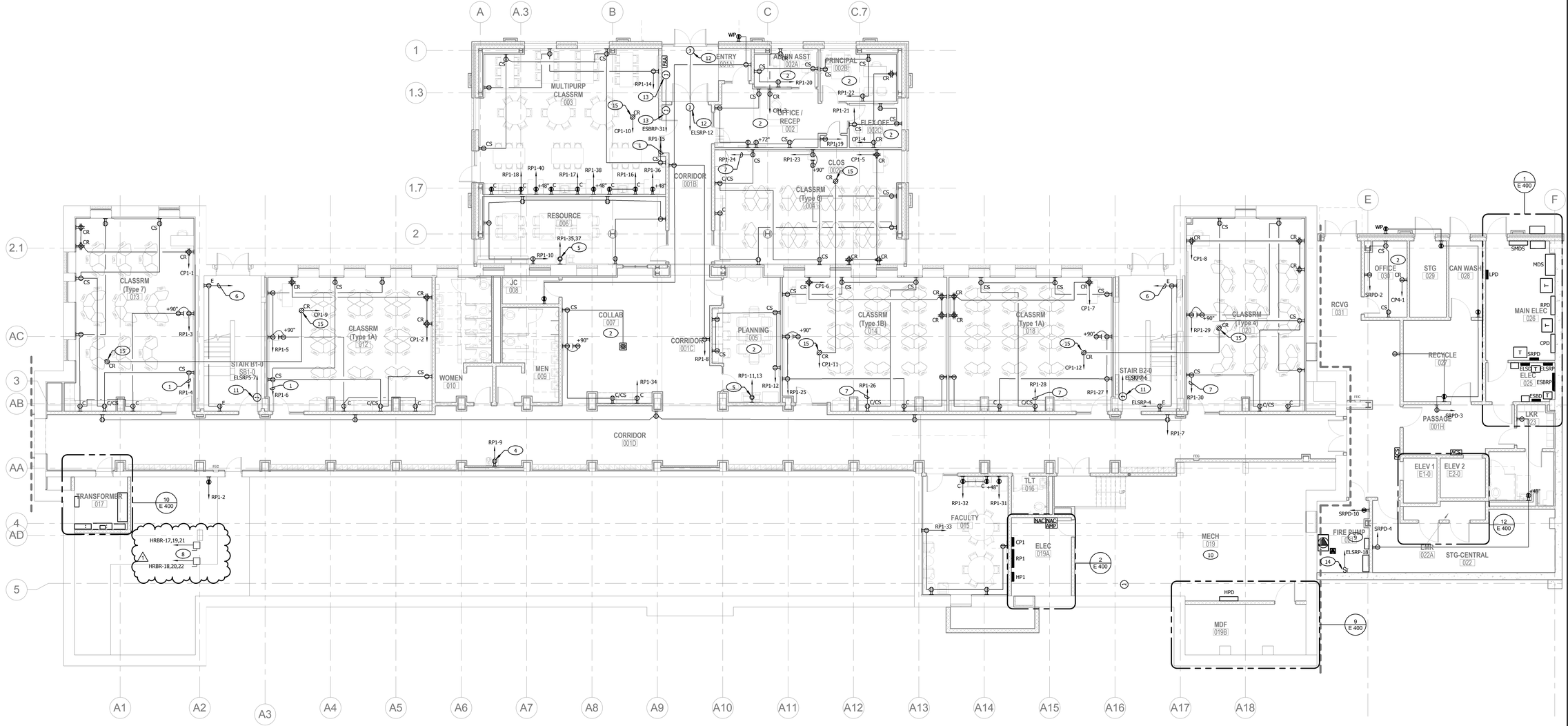
No.	DATE	DESCRIPTION
1	04/14/16	ADDENDUM #1
2	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01
DATE: 03/31/16
SCALE: AS NOTED

DRAWING NAME
DETAILS - PLUMBING

P 700



1 / E 213 NEW WORK BASEMENT FLOOR PLAN B - POWER
1/8" = 1'-0"

GENERAL NOTES:

A. FOR DEVICES BOXES SHOWN AS BEING MOUNTED BACK TO BACK IN A STUD WALL, OFFSET ONE BOX TO BE IN THE ADJACENT STUD SPACE. OUTLET BOXES IN ADJACENT ROOMS SHALL NOT BE INSTALLED SIDE BY SIDE IN THE SAME STUD SPACE.

B. FOR COUNTERTOP RECEPTACLES, CONFIRM REACH DISTANCE FROM EDGE OF COUNTERTOP TO FACE OF DEVICE DOES NOT EXCEED 24". IF DEVICE FACE EXCEEDS 24" REACH LIMIT, PROVIDE BOX EXTENSION TO BRING FACE TO 24" FROM EDGE OF COUNTERTOP.

KEYED NOTES:

1. EXTEND CIRCUIT THROUGH ROOM LIGHTING CONTROLLER IN ROOM 013. REFER TO DRAWING E-501 FOR DETAILS OR CIRCUIT OPERATION AND CONTROL.
2. FOR RECEPTACLES INDICATED AS CONTROLLED/SWITCHED, ROUTE RECEPTACLE CIRCUIT THROUGH ASSOCIATED ROOM LIGHTING CONTROLLER TO PROVIDE OCCUPANCY SENSOR CONTROL OF RECEPTACLES. REFER TO DRAWING E-501 FOR DETAILS OF CIRCUIT OPERATION AND CONTROL.
3. RECEPTACLE FOR COW (COMPUTERS ON WHEELS) CABINET. COORDINATE FINAL LOCATION WITH EQUIPMENT IN THE FIELD.
4. MOUNT RECEPTACLE BEHIND ACCESSIBLE PANEL ON OR ADJACENT TO ELECTRIC WATER COOLER CHILLER UNIT. EXTEND CIRCUIT THROUGH ELECTRICAL ROOM LIGHTING CONTROL UNIT FOR TIMECLOCK CONTROL OF CIRCUIT.
5. PROVIDE NEMA 6-20 RECEPTACLE FOR COPIER. COORDINATE FINAL LOCATION WITH EQUIPMENT IN THE FIELD.
6. REFER TO DRAWING E-214 FOR CONTINUATION OF CIRCUIT.
7. EXTEND CIRCUIT THROUGH ROOM LIGHTING CONTROLLER IN ROOM 020. REFER TO DRAWING E-501 FOR DETAILS OR CIRCUIT OPERATION AND CONTROL.
8. PROVIDE NEW CIRCUITS TO EXISTING GAS BOOSTER DISCONNECTS IN CRAWLSPACE.
9. TERMINATE 3 1/C #8 MI CABLES IN 12"X12"X8" JUNCTION BOX ADJACENT TO NEW FIRE PUMP AND JOCKEY PUMP CONTROLLER. EXTEND 3 #4 & 1 #10 GROUND IN 1-1/4" CONDUIT FROM JUNCTION BOX TO NEW FIRE PUMP CONTROLLER AND MAKE FINAL CONNECTION TO UNIT. EXTEND 3 #10 & 1 #10 GROUND IN 3/4" CONDUIT FROM JUNCTION BOX TO JOCKEY PUMP CONTROLLER.

KEYED NOTES (CONT'D):

10. REFER TO DRAWING E-401 FOR DETAILS OF WORK IN THE MECHANCIAL ROOM.
11. POWER CONNECTION TO DOOR MAGNETIC HOLD OPEN. COORDINATE FINAL LOCATION IN THE FIELD.
12. POWER CONNECTION TO AUTOMATIC DOOR OPERATOR. PROVIDE LOW VOLTAGE CABLES FROM DOOR OPERATOR TO ACTUATORS. COORDINATE ACTUATOR LOCATIONS IN THE FIELD.
13. POWER CONNECTION TO DOOR HARDWARE POWER SUPPLY LOCATED ABOVE ACCESSIBLE CEILING.
14. POWER CONNECTION TO ATTIC SUPPRESSION SYSTEM AIR COMPRESSOR.
15. PROVIDE TWO DUPLEX RECEPTACLES IN CEILING MOUNTED A/V CABINET. COORDINATE FINAL LOCATION WITH EQUIPMENT LOCATION IN THE FIELD.

0 6 12 16 24

NOTE:
CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & EXISTING CONDITIONS AT SITE.

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LICENSE NO.: 19294
EXPIRATION DATE: 12/14/2016

No.	DATE	DESCRIPTION
1	04/27/16	ADDENDUM #3

BID ISSUE

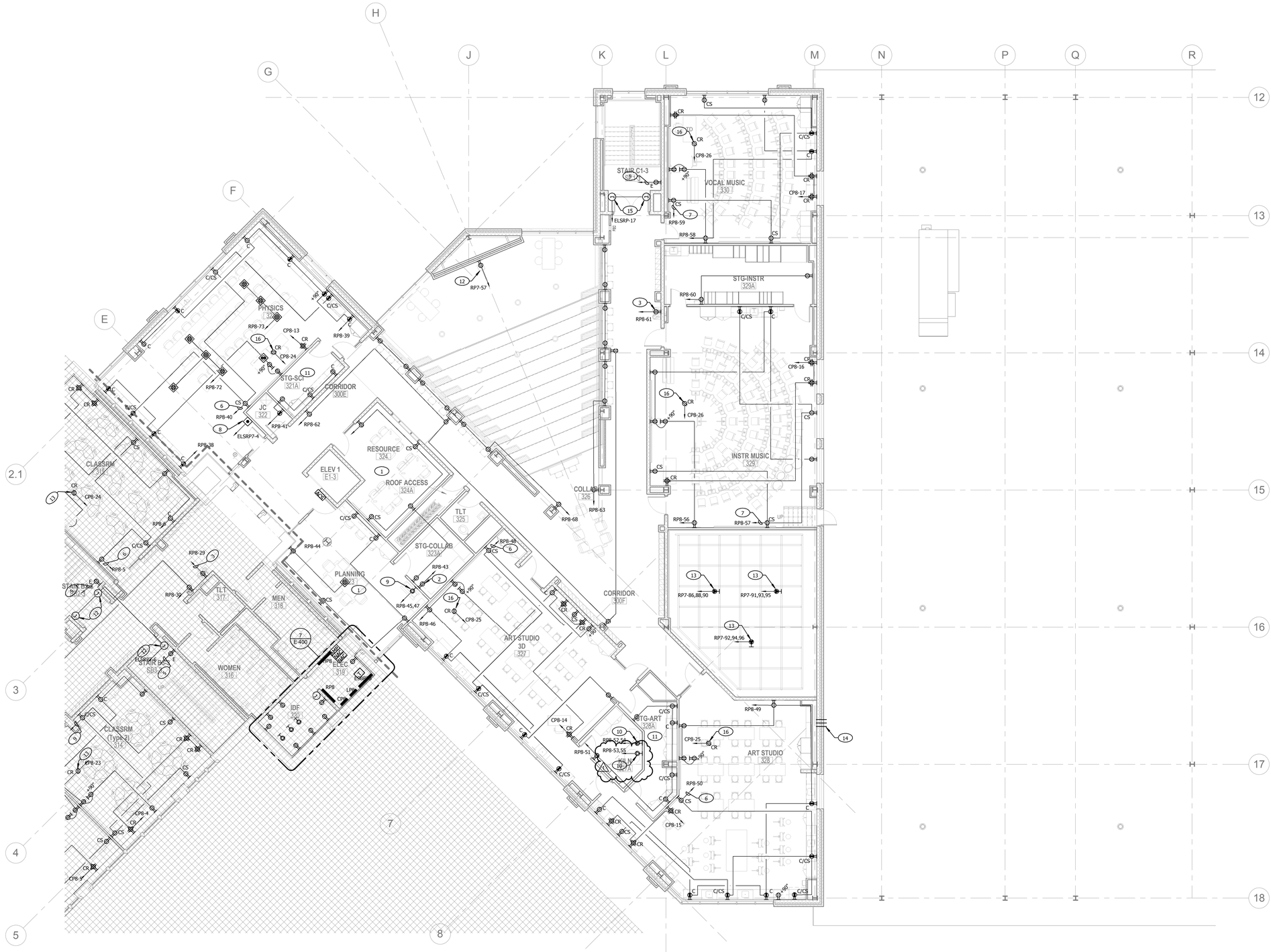
PROJECT No.: 152-01

DATE: 03/31/16

SCALE: AS NOTED

DRAWING NAME:
NEW WORK BASEMENT PLAN B - POWER

E 213



1 / E 219 NEW WORK THIRD FLOOR PLAN C - POWER

1/8" = 1'-0"

GENERAL NOTES:

A. FOR DEVICES BOXES SHOWN AS BEING MOUNTED BACK TO BACK IN A STUD WALL, OFFSET ONE BOX TO BE IN THE ADJACENT STUD SPACE. OUTLET BOXES IN ADJACENT ROOMS SHALL NOT BE INSTALLED SIDE BY SIDE IN THE SAME STUD SPACE

B. FOR COUNTERTOP RECEPTACLES, CONFIRM REACH DISTANCE FROM EDGE OF COUNTERTOP TO FACE OF DEVICE DOES NOT EXCEED 24". IF DEVICE FACE EXCEEDS 24" REACH LIMIT, PROVIDE BOX EXTENSION TO BRING FACE TO 24" FROM EDGE OF COUNTERTOP.

KEYED NOTES:

1. FOR RECEPTACLES INDICATED AS CONTROLLED/SWITCHED, ROUTE RECEPTACLE CIRCUIT THROUGH ASSOCIATED ROOM LIGHTING CONTROLLER TO PROVIDE OCCUPANCY SENSOR CONTROL OF RECEPTACLES. REFER TO DRAWING E-501 FOR DETAILS OF CIRCUIT OPERATION AND CONTROL.
2. RECEPTACLE FOR COW (COMPUTERS ON WHEELS) CABINET. COORDINATE FINAL LOCATION WITH EQUIPMENT IN THE FIELD.
3. MOUNT RECEPTACLE BEHIND ACCESSIBLE PANEL ON OR ADJACENT TO ELECTRIC WATER COOLER CHILLER UNIT. EXTEND CIRCUIT THROUGH ELECTRICAL ROOM LIGHTING CONTROL UNIT FOR TIMECLOCK CONTROL OF CIRCUIT.
4. MOUNT RECEPTACLE IN CASEWORK 2" BELOW COUNTERTOP. TYPICAL FOR DEVICES IN THIS LOCATION.
5. REFER TO DRAWING E-217 FOR CONTINUATION OF CIRCUIT.
6. EXTEND CIRCUIT THROUGH ROOM LIGHTING CONTROLLER IN ROOM 321. REFER TO DRAWING E-501 FOR DETAILS OR CIRCUIT OPERATION AND CONTROL.
7. EXTEND CIRCUIT THROUGH ROOM LIGHTING CONTROLLER IN ROOM 329. REFER TO DRAWING E-501 FOR DETAILS OR CIRCUIT OPERATION AND CONTROL.
8. PROVIDE MUSHROOM TYPE, KEYED RESET (STI 2000 SERIES OR EQUAL) EMERGENCY SHUT-OFF SWITCH FOR CONTROL OF GAS SOLENOID VALVE. PROVIDE FINAL CONNECTION TO VALVE AS NECESSARY. MOUNT AT 48" AFF.
9. PROVIDE NEMA 6-20 RECEPTACLE FOR COPIER. COORDINATE FINAL LOCATION WITH EQUIPMENT IN THE FIELD.
10. PROVIDE NEMA 14-50 RECEPTACLE FOR KILN. COORDINATE FINAL LOCATION WITH EQUIPMENT IN THE FIELD.
11. FOR RECEPTACLES INDICATED AS CONTROLLED/SWITCHED, ROUTE CIRCUIT THROUGH SENSOR RELAY (LUTRON POW-PAK OR APPROVED EQUAL) FOR CONNECTION TO LOCAL OCCUPANCY SENSOR.
12. COORDINATE MOUNTING HEIGHT WITH ASSOCIATED DATA OUTLET AND SUPPLIED EQUIPMENT IN THE FIELD.
13. PROVIDE CEILING MOUNTED L21-20 RECEPTACLE FOR POWER CONNECTION OF STUDIO LIGHTING SYSTEM "SLIM-DIM" MODULES.
14. APPROXIMATE LOCATION FOR CONDUIT STUBS FROM FIRST FLOOR ELECTRICAL ROOM.
15. POWER CONNECTION TO DOOR MAGNETIC HOLD OPEN. COORDINATE FINAL LOCATION IN THE FIELD.
16. PROVIDE TWO DUPLEX RECEPTACLES IN CEILING MOUNTED A/V CABINET. COORDINATE FINAL LOCATION WITH EQUIPMENT LOCATION IN THE FIELD.

NOTE:
CONTRACTOR SHALL CHECK & VERIFY ALL DIMENSIONS & EXISTING CONDITIONS AT SITE.

JRS ARCHITECTS
2010 Clipper Park Rd.
Suite 101
Baltimore, MD 21211
410.235.7256

ASSOCIATE ARCHITECT
SCHRADER GROUP ARCHITECTURE LLC
161 LEVERINGTON AVE, SUITE 105
PHILADELPHIA, PA 19127

LANDSCAPE ARCHITECT
MAHAN RYKIEL ASSOCIATES
800 WAMAN PARK DR, SUITE 100
BALTIMORE, MD 21211

CIVIL ENGINEER
STV, INC.
7125 AMBASSADOR RD, SUITE 200
BALTIMORE, MD 21244

STRUCTURAL ENGINEER
ALBRECHT ENGINEERING
3500 BOSTON ST, SUITE 329
BALTIMORE, MD 21224

MEP ENGINEER
BRINJAC ENGINEERING
1800 N. CHARLES ST, SUITE 310
BALTIMORE, MD 21201

FOOD SERVICE
NYIKOS ASSOCIATES
18219A FLOWER HILL WAY
GAITHERSBURG, MD 20879

AVIT CONSULTANT
EDUCATIONAL SYSTEMS PLANNING
49 OLD SOLOMONS ISLAND RD, SUITE 301
ANNAPOLIS, MD 21401

Baltimore City Public Schools
Additions & Renovations at Robert Poole Building #056
1300 W 36TH ST., BALTIMORE, MD 21211

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LICENSE NO.: 19294
EXPIRATION DATE: 12/14/2016

No.	DATE	DESCRIPTION
1	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01
DATE: 03/31/16
SCALE: AS NOTED
DRAWING NAME: NEW WORK THIRD FLOOR PLAN C - POWER

E 219

4/27/2016 3:18:09 PM

DISTRIBUTION PANEL SCHEDULE

PANEL	PROTECTIVE DEVICE			FEEDER					DESCRIPTION	
MAIN BUS DATA	NO.	CB FRAME (AMPS)	NO. POLES	TRIP (AMPS)	NO. OF SETS	WIRE QTY./SET	CONDUCTOR SIZE (AWG OR KCMIL)	GROUND SIZE PER SET	CONDUIT SIZE PER SET	SERVICE	REMARKS
	1	225	3	150	1	4	1/0	6	2	PANEL 'HP4'	
PANEL DESIGNATION	2	100	3	50	1	4	6	10	1 1/4	PANEL 'HRBR'	VIA XFMR
HPD	3	100	1	15	1	2	10	10	3/4	CUH B0-1	
	4	100	1	15	1	2	12	12	3/4	CUH B0-3	
480Y/277V	5	100	1	15	1	2	12	12	3/4	GSHP CO-1	
3P,4W+GRD.	6	100	1	15	1	2	12	12	3/4	CUH CO-1	
800 AMPS	7	100	1	15	1	2	12	12	3/4	UH CO-1	
	8	100	1	15	1	2	12	12	3/4	UH CO-2	
800A MAIN	9	100	1	15	1	2	12	12	3/4	UH CO-3	
CIRCUIT BKR.	10	100	1	15	1	2	12	12	3/4	UH B0-1	
100% RATED	11	100	3	30	1	4	10	10	3/4	DWHP-1	
	12	100	3	30	1	4	10	10	3/4	DWHP-2	
FED FROM	13	100	3	70	1	4	4	8	1 1/4	EWH-1	STANDBY UNIT
SMDS	14	100	3	20	1	4	10	10	3/4	P-1,P-2,P-3	TRIPLEX PUMP SYSTEM
	15	100	3							SPACE - PFFB	
LOCATION	16	100	3							SPACE - PFFB	
MECH. 019	17	100	3	25	1	4	10	10	3/4	P-1	
	18	100	3	25	1	4	10	10	3/4	P-2	
	19	100	3	25	1	4	10	10	3/4	P-3	
	20	100	3	100	1	4	1	8	2	RTU-1	
	21	225	3	110	1	4	1	6	2	DOAS-2	
	22	225	3	110	1	4	1	6	2	DOAS-3	
MIN. A.I.C.	23	225	3	110	1	4	1	6	2	DOAS-4	
35,000	24	225	3							SPACE - PFFB	

NEC LOAD SUMMARY PANEL **HPD**

LTS.	RECPS.	HVAC	MISC.	KITCH.	TOTAL	
0.1	0.9	425.2	6.3	0.0	89.2	521.7 KVA (CONNECTED)
125%	100%	100%	100%	100%	0%	83% DEMAND FACTOR
0.1	0.9	425.2	6.3	0.0	0.0	432.5 KVA (DEMAND)
						520 AMPS (DEMAND)

NOTES:
RECPS - 100% FIRST 10 KVA, 50% REMAINING (NEC 220.44)
KITCH. - BETWEEN 100% & 65% (NEC 220.56)
NON-COINCIDENTAL - 0% (NEC 220.60)

PANEL DESIGNATION HRBR | BUS AMP 100A | MIN. A.I.C. 10,000 | MAIN BREAKER 100A
LOCATION MECH. 019 | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES:
TOTAL POLES 30

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
1	RECPS.-019	20	1	0.7			2	12	12	3/4	3/4	12	12	3	0.9			2	15	EF-6	2
3	RECP. - HOT WTR. MIX. CNTRL	20	1		0.2		2	12	12	3/4						0.9				----------	4
5	P-A	15	1			0.5	2	12	12	3/4	3/4	12	12	2			1.2	1	20	EF-2	6
7	RECP.-CHEM. FEED SYSTEM	20	1	0.2			2	12	12	3/4	3/4	12	12	3	0.1			2	15	SS-7	8
9	CU-7	15	2		0.9		3	12	12	3/4						0.1				----------	10
11	----------					0.9					3/4	12	12	2			0.1	1	20	RECP.-WATER FILTER UV LGT.	12
13	WATER FILTER CIRC. PUMP	20	1	0.7			2	12	12	3/4	3/4	12	12	2	1.1		1	1	20	RECP.-SUMP PUMP	14
15	SWVARE EJECTOR PUMPS	30	1		2.4		2	10	10	3/4	3/4	12	12	4		0.5		1	20	P-C	16
17	GAS BOOSTER	40	3			2.1	4	8	10	1	1	10	8	4			2.1	3	40	GAS BOOSTER	18
19	----------			2.1											2.1					----------	20
21	----------				2.1											2.1				----------	22
23	SPARE	20	1			0.0											0.0	1	20	SPARE	24
25	SPARE	20	1	0.0											0.0			1	20	SPARE	26
27	SPARE	20	1		0.0											0.0		1	20	SPARE	28
29	SPARE	20	1			0.0											0.0	1	20	SPARE	30
31				0											0						32
33					0											0					34
35						0											0				36
37				0											0						38
39					0											0					40
41						0											0				42
	SIDE TOTAL KW LOAD			4	6	4									4	4	3			SIDE TOTAL KW LOAD	

NEC LOAD SUMMARY PANEL **HRBR**

LTS.	RECPS.	HVAC	MISC.	KITCH.	TOTAL	
0.1	0.9	10.6	6.3	0.0	6.3	24.2 KVA (CONNECTED)
125%	100%	100%	100%	100%	0%	74% DEMAND FACTOR
0.1	0.9	10.6	6.3	0.0	0.0	17.9 KVA (NEMAND)
						50 AMPS (DEMAND)

NOTES:
RECPS - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)
KITCH. - BETWEEN 100% & 65% (NEC 220.56)
NON-COINCIDENTAL - 0% (NEC 220.60)

PANEL DESIGNATION CP1 | BUS AMP 100A | MIN. A.I.C. 10,000 | MAIN BREAKER 100A
LOCATION ELEC. 019A | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES: 200% NEUTRAL
TOTAL POLES 24

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
1	RECPS.-013	20	1	1.1			2	10	10	3/4	3/4	10	10	2	1.1			1	20	RECPS.-012	2
3	RECPS.-002,002A	20	1		0.4		2	10	10	3/4	3/4	10	10	2		0.4		1	20	RECPS.-OO2B,002C	4
5	RECPS.-004	20	1			1.1	2	10	10	3/4	3/4	12	12	2			1.1	1	20	RECPS.-014	6
7	RECPS.-018	20	1	1.1			2	12	12	3/4	3/4	12	12	2	1.1			1	20	RECPS.-020	8
9	RECPS.-A/V-012,013	20	1		0.7		2	10	10	3/4	3/4	10	10	2		0.4		1	20	RECPS.-A/V-003	10
11	RECPS.-A/V-004,014	20	1			0.7	2	10	10	3/4	3/4	12	12	2			0.7	1	20	RECPS.-A/V-018,020	12
13	SPARE	20	1	0.0											0.0			1	20	SPARE	14
15	SPARE	20	1		0.0											0.0		1	20	SPARE	16
17	SPARE	20	1			0.0											0.0	1	20	SPARE	18
19	SPARE	20	1	0.0											0.0			1	20	SPARE	20
21	SPACE - PFFB		1		0.0											0.0		1		SPACE - PFFB	22
23	SPACE - PFFB		1			0.0											0.0	1		SPACE - PFFB	24
25				0											0						26
27					0											0					28
29						0											0				30
31				0											0						32
33					0											0					34
35						0											0				36
37				0											0						38
39					0											0					40
41						0											0				42
	SIDE TOTAL KW LOAD			2	1	2									2	1	2			SIDE TOTAL KW LOAD	

NEC LOAD SUMMARY PANEL **CP1**

LTS.	RECPS.	HVAC	MISC.	KITCH.	TOTAL	
0.0	9.7	0.0	0.0	0.0	0.0	9.7 KVA (CONNECTED)
125%	100%	100%	100%	100%	0%	100% DEMAND FACTOR
0.0	9.7	0.0	0.0	0.0	0.0	9.7 KVA (DEMAND)
						27 AMPS (DEMAND)

NOTES:
RECPS - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)
KITCH. - BETWEEN 100% & 65% (NEC 220.56)
NON-COINCIDENTAL - 0% (NEC 220.60)

PANEL DESIGNATION RP1 (SECTION 1) | BUS AMP 225A | MIN. A.I.C. 10,000 | MAIN BREAKER 150A
LOCATION ELEC 019A | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES: *-PROVIDE GFCI CIRCUIT BREAKER
TOTAL POLES 42

0 | 0 | 0 SECTION 2 TOTAL KW LOAD

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
1	RECPS.-019A	20	1	0.2			2	10	10	3/4	3/4	10	10	2	0.2			1	20	RECPS.-CRAWLSPACE	2
3	RECPS.-013	20	1		1.1		2	10	10	3/4	3/4	10	10	2		0.7		1	20	RECPS.-013 (CONTROLLED)	4
5	RECPS.-012	20	1			1.1	2	10	10	3/4	3/4	10	10	2			0.7	1	20	RECPS.-012 (CONTROLLED)	6
7	RECPS.-CORRIDOR	20	1	0.9			2	10	10	3/4	3/4	10	10	2	0.7			1	20	RECPS.-CORRIDOR	8
9	ELECTRIC WATER COOLER-*	20	1		0.5		2	10	10	3/4	3/4	10	10	2		1.1		1	20	RECPS.-006	10
11	RECP.-COPIER 005	20	2			0.8	3	12	12	3/4	3/4	10	10	2			0.7	1	20	RECPS.-005	12
13	----------			0.8							3/4	10	10	2	0.5			1	20	RECPS.-003	14
15	RECPS.-003 (CONTROLLED)	20	1		0.7		2	10	10	3/4	3/4	10	10	2		0.4		1	20	RECPS.-003	16
17	RECPS.-003	20	1			0.4	2	10	10	3/4	3/4	10	10	2			0.4	1	20	RECPS.-003	18
19	RECPS.-002,002D	20	1	0.9			2	10	10	3/4	3/4	10	10	2	0.5			1	20	RECPS.-002A	20
21	RECPS.-002C	20	1		0.5		2	10	10	3/4	3/4	10	10	2		0.5		1	20	RECPS.-002B	22
23	RECPS.-004	20	1			0.9	2	10	10	3/4	3/4	10	10	2			0.7	1	20	RECPS.-004 (CONTROLLED)	24
25	RECPS.-014	20	1	0.7			2	12	12	3/4	3/4	12	12	2	0.7			1	20	RECPS.-014 (CONTROLLED)	26
27	RECPS.-018	20	1		0.7		2	12	12	3/4	3/4	12	12	2		0.7		1	20	RECPS.-018 (CONTROLLED)	28
29	RECPS.-020	20	1			0.9	2	12	12	3/4	3/4	12	12	2			0.7	1	20	RECPS.-020 (CONTROLLED)	30
31	RECP.-REFRIGERATOR 015	20	1	1.0			2	12	12	3/4	3/4	12	12	2	0.4			1	20	RECPS.-015	32
33	RECPS.-015	20	1		0.7		2	12	12	3/4	3/4	12	12	2		0.9		1	20	RECPS.-007	34
35	RECP.-COPIER 005	20	2			0.8	3	12	12	3/4	3/4	10	10	2			1.0	1	20	RECP.-REFRIGERATOR 003	36
37	----------			0.8							3/4	10	10	2	1.0			1	20	RECP.-REFRIGERATOR 003	38
39	SPARE	20	1		0.0						3/4	10	10	2		1.0		1	20	RECP.-REFRIGERATOR 003	40
41	SPARE	30	1			0.0											0.0	1	20	SPARE	42
	SIDE TOTAL KW LOAD			5	4	5									4	5	4			SIDE TOTAL KW LOAD	

PANEL DESIGNATION RP1 (SECTION 2) | BUS AMP 225A | MIN. A.I.C. 10,000 | MAIN BREAKER MLO
LOCATION ELEC 019A | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES:
TOTAL POLES 18

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
43	SPARE	20	1	0.0											0.0			1	20	SPARE	44
45	SPARE	20	1		0.0											0.0		1	20	SPARE	46
47	SPARE	20	1			0.0											0.0	1	20	SPARE	48
49	SPARE	20	1	0.0											0.0			1	20	SPARE	50
51	SPARE	20	1		0.0											0.0		1	20	SPARE	52
53	SPARE	20	1			0.0											0.0	1	20	SPARE	54
55	SPACE - PFFB		1	0.0											0.0			1		SPACE - PFFB	56
57	SPACE - PFFB		1		0.0											0.0		1		SPACE - PFFB	58
59	SPACE - PFFB		1			0.0											0.0	1		SPACE - PFFB	60
61				0											0						62
63					0											0					64
65						0											0				66
67				0											0						68
69					0											0					70
71						0											0				72
73				0											0						74
75					0											0					76
77						0											0				78
79				0											0						80
81					0											0					82
83						0											0				84
	SIDE TOTAL KW LOAD			0	0	0									0	0	0			SIDE TOTAL KW LOAD	

NEC LOAD SUMMARY PANEL **RP1**

LTS.	RECPS.	HVAC	MISC.	KITCH.	TOTAL	
0.0	20.3	0.0	2.0	4.0	1.5	27.8 KVA (CONNECTED)
125%	75%	100%	100%	80%	0%	73% DEMAND FACTOR
0.0	15.2	0.0	2.0	3.2	0.0	20.4 KVA (DEMAND)
						57 AMPS (DEMAND)

NOTES:
RECPS - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)
KITCH. - BETWEEN 100% & 65% (NEC 220.56)
NON-COINCIDENTAL - 0% (NEC 220.60)

PANEL DESIGNATION HP1 | BUS AMP 100A | MIN. A.I.C. 14,000 | MAIN BREAKER 100A
LOCATION ELEC. 019A | PHASE 3 | WIRE 4 | VOLTAGE 480Y/277
MOUNTING SURFACE | NOTES:
TOTAL POLES 30

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
1	GSHP B0-1	15	1	2.9			2	12	12	3/4	3/4	12	12	2	2.9			1	15	GSHP B0-2	2
3	GSHP B0-3	15	3		1.2		4	12	12	3/4	3/4	12	12	2		1.8		1	15	GSHP B0-4	4
5	----------					1.2					3/4	12	12	2			0.9	1	15	GSHP B0-5	6
7	----------			1.2							3/4	12	12	2	1.8			1	15	GSHP B0-6	8
9	GSHP B0-7	15	1		2.4		2	12	12	3/4	3/4	12	12	2		2.4		1	15	GSHP B0-8	10
11	GSHP B0-9	15	1			0.9	2	12	12	3/4	3/4	12	12	2			2.9	1	15	GSHP B0-10	12
13	GSHP B0-11	15	1	2.5			2	12	12	3/4	3/4	12	12	2	0.9			1	15	GSHP B0-12	14
15	CUH B0-2	15	1		2.0		2	12	12	3/4						0.0		1	15	SPARE	16
17	SPARE	15	1			0.0	2	12	12	3/4							0.0	1	15	SPARE	18
19	SPACE - PFFB		1	0.0											0.0			1		SPACE - PFFB	20
21	SPACE - PFFB		1		0.0											0.0		1		SPACE - PFFB	22
23	SPACE - PFFB		1			0.0											0.0	1		SPACE - PFFB	24
25	SPACE - PFFB		1	0.0											0.0			1		SPACE - PFFB	26
27	SPACE - PFFB		1		0.0											0.0		1		SPACE - PFFB	28
29	SPACE - PFFB		1			0.0											0.0	1		SPACE - PFFB	30
31				0											0						32
33					0											0					34
35						0											0				36
37				0											0						38
39					0											0					40
41						0											0				42
	SIDE TOTAL KW LOAD			7	6	2									6	4	4			SIDE TOTAL KW LOAD	

NEC LOAD SUMMARY PANEL **HP1**

LTS.	RECPS.	HVAC	MISC.	KITCH.	TOTAL	
0.0	0.0	27.9	0.0	0.0	0.0	27.9 KVA (CONNECTED)
125%	100%	100%	100%	100%	0%	100% DEMAND FACTOR
0.0	0.0	27.9	0.0	0.0	0.0	27.9 KVA (DEMAND)
						34 AMPS (DEMAND)

NOTES:
RECPS - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)
KITCH. - BETWEEN 100% & 65% (NEC 220.56)
NON-COINCIDENTAL - 0% (NEC 220.60)

PANEL SCHEDULES

HPD
CP1
RP1-2
HRBR
RP1-1
HP1

JRS ARCHITECTS
2010 Clipper Park Rd.
Suite 101
Baltimore, MD 21211
410.235.7256

ASSOCIATE ARCHITECT
SCHRADER GROUP ARCHITECTURE LLC
161 LEVERINGTON AVE, SUITE 105
PHILADELPHIA, PA 19127

LANDSCAPE ARCHITECT
MAHAN RYKIEL ASSOCIATES
800 WYMAN PARK DR, SUITE 100
BALTIMORE, MD 21211

CIVIL ENGINEER
STV, INC.
7125 AMBASSADOR RD, SUITE 200
BALTIMORE, MD 21244

STRUCTURAL ENGINEER
ALBRECHT ENGINEERING
3500 BOSTON ST, SUITE 329
BALTIMORE, MD 21224

MEP ENGINEER
BRINJAC ENGINEERING
1800 N. CHARLES ST, SUITE 310
BALTIMORE, MD 21201

FOOD SERVICE
NYIKOS ASSOCIATES
18219A FLOWER HILL WAY
GAITHERSBURG, MD 20879

AVIT CONSULTANT
EDUCATIONAL SYSTEMS PLANNING
49 OLD SOLOMONS ISLAND RD, SUITE 301
ANNAPOLIS, MD 21401

Baltimore City Public Schools
Additions & Renovations at Robert Poole Building #056
1300 W 36TH ST., BALTIMORE, MD 21211

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 19256
EXPIRATION DATE: 12/14/2016

No.	DATE	DESCRIPTION
1	04/22/16	ADDENDUM #2
2	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01
DATE: 03/31/16
SCALE: AS NOTED

DRAWING NAME
ELECTRICAL PANEL SCHEDULES

E 602

PANEL DESIGNATION CP8 | BUS AMP 225A | MIN. A.I.C. 10,000 | MAIN BREAKER 150A
LOCATION ELEC. 319 | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES: 200% NEUTRAL
TOTAL POLES 42

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
1	RECPS.-313	20	1	1.1			2	10	10	3/4	3/4	12	12	2	1.1			1	20	RECPS.-315	2
3	RECPS.-311	20	1		1.1		2	12	12	3/4	3/4	12	12	2		1.1		1	20	RECPS.-314	4
5	RECPS.-312	20	1			1.1	2	12	12	3/4	3/4	10	10	2			1.1	1	20	RECPS.-303	6
7	RECPS.-305	20	1	1.1			2	10	10	3/4	3/4	10	10	2	1.1			1	20	RECPS.-302	8
9	RECPS.-304	20	1		1.1		2	10	10	3/4	3/4	10	10	2		1.1		1	20	RECPS.-306	10
11	RECPS.-301A	20	1			1.1	2	10	10	3/4	3/4	12	12	2			0.4	1	20	RECPS.-301	12
13	RECPS.-321	20	1	0.4			2	12	12	3/4	3/4	12	12	2	1.1			1	20	RECPS.-327	14
15	RECPS.-328	20	1		1.1		2	12	12	3/4	3/4	10	10	2		1.1		1	20	RECPS.-329	16
17	RECPS.-330	20	1			1.1	2	10	10	3/4	3/4	12	12	2			0.7	1	20	RECPS.-A/V-311,313	18
19	RECPS.-A/V-301A,302	20	1	0.7			2	10	10	3/4	3/4	10	10	2	0.4			1	20	RECPS.-A/V-304	20
21	RECPS.-A/V-305,306	20	1		0.7		2	10	10	3/4	3/4	10	10	2		0.7		1	20	RECPS.-A/V-301,303	22
23	RECPS.-A/V-312,314	20	1			0.7	2	12	12	3/4	3/4	12	12	2			0.7	1	20	RECPS.-A/V-315,321	24
25	RECPS.-A/V-327,328	20	1	0.7			2	12	12	3/4	3/4	12	12	2	0.7			1	20	RECPS.-A/V-329,330	26
27	SPARE	20	1		0.0											0.0		1	20	SPARE	28
29	SPARE	20	1			0.0											0.0	1	20	SPARE	30
31	SPARE	20	1	0.0											0.0			1	20	SPARE	32
33	SPARE	20	1		0.0											0.0		1	20	SPARE	34
35	SPARE	20	1			0.0											0.0	1	20	SPARE	36
37	SPARE	20	1	0.0											0.0			1	20	SPARE	38
39	SPARE	20	1		0.0											0.0		1	20	SPARE	40
41	SPARE	20	1			0.0											0.0	1	20	SPARE	42
	SIDE TOTAL KW LOAD			4	4	4									4	4	3			SIDE TOTAL KW LOAD	

NEC LOAD SUMMARY PANEL **CP8**

NOTES:	LTS.	RECPS.	HVAC	MISC.	KITCH.		TOTAL	
	0.0	23.0	0.0	0.0	0.0	0.0	23.0	KVA (CONNECTED)
RECPS - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)	125%	72%	100%	100%	100%	0%	72%	DEMAND FACTOR
KITCH. - BETWEEN 100% & 65% (NEC 220.56)	0.0	16.5	0.0	0.0	0.0	0.0	16.5	KVA (DEMAND)
NON-COINCIDENTAL - 0% (NEC 220.60)							**46**	AMPS (DEMAND)

PANEL DESIGNATION LP8 | BUS AMP 225A | MIN. A.I.C. 14,000 | MAIN BREAKER 125A
LOCATION ELEC. 319 | PHASE 3 | WIRE 4 | VOLTAGE 480Y/277
MOUNTING SURFACE | NOTES:
TOTAL POLES 42

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
1	LIGHTS - SECOND FLR. CORR.	20	1	0.7			2	10	10	3/4	3/4	10	10	2	3.6			1	20	LIGHTS - SECOND FLR.	2
3	LIGHTS - SECOND FLR.	20	1		3.8		2	10	10	3/4	3/4	10	10	2		2.4		1	20	LIGHTS - SECOND FLR.	4
5	LIGHTS - SECOND FLR.	20	1			2.4	2	10	10	3/4	3/4	10	10	2			0.5	1	20	LIGHTS - SECOND FLR. CORR.	6
7	LIGHTS - SECOND FLR.	20	1	2.2			2	10	10	3/4	3/4	10	10	2	2.7			1	20	LIGHTS - SECOND FLR.	8
9	LIGHTS - SECOND FLR.	20	1		1.5		2	10	10	3/4	3/4	10	10	2		1.1		1	20	LIGHTS - THIRD FLR. CORR.	10
11	LIGHTS - THIRD FLR.	20	1			2.7	2	10	10	3/4	3/4	10	10	2			2.5	1	20	LIGHTS - THIRD FLR.	12
13	LIGHTS - THIRD FLR.	20	1	2.3			2	10	10	3/4	3/4	10	10	2	2.2			1	20	LIGHTS - THIRD FLR.	14
15	LIGHTS - THIRD FLR. CORR.	20	1		0.4		2	10	10	3/4	3/4	10	10	2		2.5		1	20	LIGHTS - THIRD FLR.	16
17	LIGHTS - THIRD FLR.	20	1			2.1	2	10	10	3/4	3/4	10	10	2			1.9	1	20	LIGHTS - THIRD FLR.	18
19	LIGHTS - EXTERIOR - CUPOLA	20	1	0.6			2	10	10	3/4								0.0		1	20	SPARE	20
21	SPARE	20	1		0.0													0.0		1	20	SPARE	22
23	SPARE	20	1			0.0													0.0	1	20	SPARE	24
25	SPARE	20	1	0.0														0.0		1	20	SPARE	26
27	SPARE	20	1		0.0														0.0	1	20	SPARE	28
29	SPARE	20	1			0.0												0.0		1	20	SPARE	30
31	SPACE - PFFB		1	0.0														0.0		1		SPACE - PFFB	32
33	SPACE - PFFB		1		0.0														0.0	1		SPACE - PFFB	34
35	SPACE - PFFB		1			0.0													0.0	1		SPACE - PFFB	36
37	SPACE - PFFB		1	0.0														0.0		1		SPACE - PFFB	38
39	SPACE - PFFB		1		0.0														0.0	1		SPACE - PFFB	40
41	SPACE - PFFB		1			0.0													0.0	1		SPACE - PFFB	42
	SIDE TOTAL KW LOAD			6	6	7												8	6	5		SIDE TOTAL KW LOAD	

NEC LOAD SUMMARY PANEL **LP8**

NOTES:	LTS.	RECPS.	HVAC	MISC.	KITCH.		TOTAL	
	37.9	0.0	0.0	0.0	0.0	0.0	37.9	KVA (CONNECTED)
RECPS - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)	125%	100%	100%	100%	100%	0%	125%	DEMAND FACTOR
KITCH. - BETWEEN 100% & 65% (NEC 220.56)	47.4	0.0	0.0	0.0	0.0	0.0	47.4	KVA (DEMAND)
NON-COINCIDENTAL - 0% (NEC 220.60)							**57**	AMPS (DEMAND)

PANEL DESIGNATION RP8 (SECTION 1) | BUS AMP 225A | MIN. A.I.C. 10,000 | MAIN BREAKER 225A
LOCATION ELEC. 319 | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES: *-PROVIDE GFCI CIRCUIT BREAKER
TOTAL POLES 42

10 | 9 | 11 SECTION 2 TOTAL KW LOAD

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
1	RECPS.-313 (CONTROLLED)	20	1	0.7			2	12	12	3/4	3/4	12	12	2	1.1			1	20	RECPS.-313	2
3	RECPS.-311 (CONTROLLED)	20	1		0.7		2	12	12	3/4	3/4	12	12	2		1.1		1	20	RECPS.-311	4
5	RECPS.-315 (CONTROLLED)	20	1			0.9	2	12	12	3/4	3/4	12	12	2			0.9	1	20	RECPS.-315	6
7	RECPS.-314 (CONTROLLED)	20	1	0.7			2	12	12	3/4	3/4	12	12	2	1.1			1	20	RECPS.-314	8
9	RECPS.-312 (CONTROLLED)	20	1		0.7		2	12	12	3/4	3/4	12	12	2		1.3		1	20	RECPS.-312	10
11	RECPS.-303 (CONTROLLED)	20	1			0.7	2	10	10	3/4	3/4	10	10	2			1.3	1	20	RECPS.-303	12
13	RECPS.-305 (CONTROLLED)	20	1	0.7			2	10	10	3/4	3/4	10	10	2	1.3			1	20	RECPS.-305	14
15	RECPS.-302 (CONTROLLED)	20	1		0.7		2	10	10	3/4	3/4	10	10	2		1.1		1	20	RECPS.-302	16
17	RECPS.-304 (CONTROLLED)	20	1			0.7	2	10	10	3/4	3/4	10	10	2			1.1	1	20	RECPS.-304	18
19	RECPS.-309	20	1	0.9			2	8	8	3/4	3/4	8	8	2	0.9			1	20	RECPS.-307, 309A	20
21	RECPS.-ROOF	20	1		0.4		2	10	10	3/4	3/4	8	8	2		0.9		1	20	RECPS.-307	22
23	RECPS.-308	20	1			0.7	2	12	12	3/4	3/4	10	10	3			0.5	2	20	RECP.-COPIER 309A	24
25	RECP.-C.O.W. 310	20	1	0.2			2	12	12	3/4						0.5				----------	26
27	RECPS.-306	20	1		0.9		2	8	8	3/4	3/4	8	8	2		0.7		1	20	RECPS.-306 (CONTROLLED)	28
29	ELECTRIC WATER COOLER-*	20	1			0.5	2	10	10	3/4	3/4	10	10	2			0.9	1	20	RECPS.-CORRIDOR	30
31	RECPS.-301A	20	1	1.1			2	10	10	3/4	3/4	10	10	2	0.7			1	20	RECPS.-301A (CONTROLLED)	32
33	RECPS.-301	20	1		0.7		2	10	10	3/4	3/4	10	10	2		0.7		1	20	RECPS.-301	34
35	RECPS.-301	20	1			1.3	2	10	10	3/4	3/4	10	10	2			0.7	1	20	RECPS.-301	36
37	RECPS.-301 (CONTROLLED)	20	1	0.9			2	10	10	3/4	3/4	12	12	2	1.1			1	20	RECPS.-321	38
39	RECPS.-321	20	1		0.9		2	12	12	3/4	3/4	12	12	2		0.7		1	20	RECPS.-321 (CONTROLLED)	40
41	RECPS.-322	20	1			0.7	2	12	12	3/4	3/4	12	12	2			0.9	1	20	RECPS.-323A, 324	42
	SIDE TOTAL KW LOAD			5	5	6									7	6	6			SIDE TOTAL KW LOAD	

PANEL DESIGNATION RP8 (SECTION 2) | BUS AMP 225A | MIN. A.I.C. 10,000 | MAIN BREAKER MLO
LOCATION ELEC. 319 | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES:
TOTAL POLES 42

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
43	RECP.-C.O.W. 323A	20	1	0.2			2	12	12	3/4	3/4	12	12	2	0.9			1	20	RECPS.-323	44
45	RECP.-COPIER 323	20	2		0.5		3	12	12	3/4	3/4	12	12	2		1.3		1	20	RECPS.-327	46
47	----------					0.5					3/4	12	12	2			0.7	1	20	RECPS.-327 (CONTROLLED)	48
49	RECPS.-328	20	1	1.4			2	10	10	3/4	3/4	10	10	2	0.9			1	20	RECPS.-328 (CONTROLLED)	50
51	RECPS.-324 (CONTROLLED)	20	1		1.1		2	12	12	3/4	1	6	3			4.0		2	50	RECP.-KILN 327A	52
53	RECP.-KILN 327A	50	2			4.0	3	6	10	1							4.0			----------	54
55	----------			4.0							3/4	10	10	2	1.1			1	20	RECPS.-329	56
57	RECPS.-329 (CONTROLLED)	20	1		0.7		2	10	10	3/4	3/4	10	10	2		0.9		1	20	RECPS.-330	58
59	RECPS.-330 (CONTROLLED)	20	1			0.7	2	10	10	3/4	3/4	10	10	2			0.4	1	20	RECPS.-329A	60
61	ELECTRIC WATER COOLER-*	20	1	0.5			2	10	10	3/4	3/4	10	10	2	0.7			1	20	RECPS.-CORRIDOR	62
63	RECPS.-326	20	1		0.5		2	12	12	3/4	3/4	12	12	2		0.4		1	20	RECPS.-ROOF	64
65	RECPS.-ROOF	20	1			0.4	2	12	12	3/4	3/4	12	12	2			0.7	1	15	EF-4 - KILN	66
67	RECP.-319	20	1	0.2			2	12	12	3/4	3/4	12	12	2	1.1			1	20	RECPS.-326	68
69	WATER METER ANTENNAE	20	1		0.2		2	10	10	3/4	3/4	12	12	2		1.1		1	20	RECPS.-(FLOORBOXES) 301	70
71	RECPS.-(FLOORBOXES) 301	20	1			1.1	2	12	12	3/4	3/4	12	12	2			1.4	1	20	RECPS.-(FLOORBOXES) 321	72
73	RECPS.-(FLOORBOXES) 321	20	1	1.1			2	12	12	3/4	3/4	10	10	2	0.4			1	20	TRACK LIGHTS 327	74
75	TRACK LIGHTS 328	20	1		0.7		2	10	10	3/4								0.0		1	20	SPARE	76
77	SPARE	20	1			0.0													0.0	1	20	SPARE	78
79	SPARE	20	1	0.0														0.0		1	20	SPARE	80
81	SPARE	20	1		0.0														0.0	1	20	SPARE	82
83	SPARE	20	1			0.0																	
	SIDE TOTAL KW LOAD			7	4	7												5	8	7		SIDE TOTAL KW LOAD	

NEC LOAD SUMMARY PANEL **RP8**

NOTES:	LTS.	RECPS.	HVAC	MISC.	KITCH.		TOTAL	
	1.1	51.8	0.7	18.2	0.0	1.0	72.8	KVA (CONNECTED)
RECPS - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)	125%	60%	100%	100%	100%	0%	70%	DEMAND FACTOR
KITCH. - BETWEEN 100% & 65% (NEC 220.56)	1.4	30.9	0.7	18.2	0.0	0.0	51.2	KVA (DEMAND)
NON-COINCIDENTAL - 0% (NEC 220.60)							**142**	AMPS (DEMAND)

PANEL DESIGNATION ESBRP8 (SECTION 1) | BUS AMP 225A | MIN. A.I.C. 10,000 | MAIN BREAKER 150A
LOCATION ELEC. 319 | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES:
TOTAL POLES 42

0 | 0 | 0 SECTION 2 TOTAL KW LOAD

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
1	RECP.-219 (IDF)	30	1	2.9			2	10	10	3/4	3/4	10	10	2	2.9			1	30	RECP.-219 (IDF)	2
3	RECP.-219 (IDF)	30	1		2.9		2	10	10	3/4	3/4	12	12	2		0.5		1	20	RECPS.-219 (IDF)	4
5	RECPS.-219 (IDF)	20	1			0.5	2	12	12	3/4	3/4	12	12	2			0.2	1	20	ACCESS CONTROL 219	6
7	SECURITY 219	20	1	0.2			2	12	12	3/4	3/4	10	10	2	2.9			1	30	RECP.-320 (IDF)	8
9	RECP.-320 (IDF)	30	1		2.9		2	10	10	3/4	3/4	10	10	2		2.9		1	30	RECP.-320 (IDF)	10
11	RECPS.-320 (IDF)	20	1			0.5	2	12	12	3/4	3/4	12	12	2			0.5	1	20	RECPS.-320 (IDF)	12
13	ACCESS CONTROL 320	20	1	0.2			2	12	12	3/4	3/4	12	12	2	0.2			1	20	SECURITY 320	14
15	SS-5	15	2		0.1		3	12	12	3/4	3/4	12	12	3		0.1		2	15	SS-6	16
17	----------					0.1											0.1			----------	18
19	CU-3	15	2	0.9			3	10	10	3/4	3/4	10	10	3	0.9			2	15	CU-4	20
21	----------				0.9											0.9				----------	22
23	CU-5	15	2			0.9	3	10	10	3/4	3/4	10	10	3			0.9	2	15	CU-6	24
25	----------			0.9											0.9					----------	26
27	CU-8	15	2		0.9		3	10	10	3/4											
29	----------					0.9															
31	MAU-1/EF-1	25	3	2.4			4	10	10	3/4					0.0						
33	----------				2.4											0.0		1	20	SPARE	34
35	----------					2.4											0.0	1	20	SPARE	36
37	KITCHEN COOLER	20	3	0.9			4	10	10	3/4	3/4	8	8	4	2.5			3	30	KITCHEN FREEZER	38
39	----------				0.9										2.5					----------	40
41	----------					0.9											2.5			----------	42
	SIDE TOTAL KW LOAD			8	11	6									10	7	4			SIDE TOTAL KW LOAD	

PANEL DESIGNATION ESBRP8 (SECTION 2) | BUS AMP 225A | MIN. A.I.C. 10,000 | MAIN BREAKER MLO
LOCATION ELEC. 319 | PHASE 3 | WIRE 4 | VOLTAGE 208Y/120
MOUNTING SURFACE | NOTES:
TOTAL POLES 18

CKT NO	DESCRIPTION	BREAKER AMP	POLES	LOAD (KW) A	B	C	WIRE NO	SIZE	GND. SIZE	COND SIZE	COND SIZE	GND. SIZE	WIRE SIZE	NO	LOAD (KW) A	B	C	BREAKER POLES	AMP	DESCRIPTION	CKT NO
43	SPARE	20	1	0.0											0.0			1	20	SPARE	44
45	SPARE	20	1		0.0											0.0		1	20	SPARE	46
47	SPACE - PFFB		1			0.0											0.0	1		SPACE - PFFB	48
49	SPACE - PFFB		1	0.0											0.0			1		SPACE - PFFB	50
51	SPACE - PFFB		1		0.0											0.0		1		SPACE - PFFB	52
53	SPACE - PFFB		1			0.0											0.0	1		SPACE - PFFB	54
55	SPACE - PFFB		1	0.0											0.0			1		SPACE - PFFB	56
57	SPACE - PFFB		1		0.0											0.0		1		SPACE - PFFB	58
59	SPACE - PFFB		1			0.0											0.0	1		SPACE - PFFB	60
61				0											0						62
63					0											0					64
65						0											0				66
67				0											0						68
69					0											0					70
71						0											0				72
73				0											0						74
75					0											0					76
77						0											0				78
79				0											0						80
81					0											0					82
83						0											0				84
	SIDE TOTAL KW LOAD			0	0	0									0	0	0			SIDE TOTAL KW LOAD	

NEC LOAD SUMMARY PANEL **ESBRP8**

NOTES:	LTS.	RECPS.	HVAC	MISC.	KITCH.		TOTAL	
	0.0	19.4	24.6	0.8	2.7	0.0	47.5	KVA (CONNECTED)
RECPS - 100% FIRST 10 kVA, 50% REMAINING (NEC 220.44)	125%	76%	100%	100%	100%	0%	90%	DEMAND FACTOR
KITCH. - BETWEEN 100% & 65% (NEC 220.56)	0.0	14.7	24.6	0.8	2.7	0.0	42.8	KVA (DEMAND)
NON-COINCIDENTAL - 0% (NEC 220.60)							**119**	AMPS (DEMAND)

PANEL SCHEDULES

CP8
RP8-1
ESBRP8-1
LP8
RP8-2
ESBRP8-2

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2010 Clipper Park Rd.
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410.235.7256

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SCHRADER GROUP ARCHITECTURE LLC
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MAHAN RYKIEL ASSOCIATES
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CIVIL ENGINEER
STV, INC.
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STRUCTURAL ENGINEER
ALBRECHT ENGINEERING
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MEP ENGINEER
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GAITHERSBURG, MD 20879

AVIT CONSULTANT
EDUCATIONAL SYSTEMS PLANNING
49 OLD SOLOMONS ISLAND RD, SUITE 301
ANNAPOLIS, MD 21401

Baltimore City Public Schools
Additions & Renovations at Robert Poole Building #056

1300 W 36TH ST., BALTIMORE, MD 21211

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 19294
EXPIRATION DATE: 12/14/2016

No.	DATE	DESCRIPTION
1	04/22/16	ADDENDUM #2
2	04/27/16	ADDENDUM #3

BID ISSUE

PROJECT No.: 152-01
DATE: 03/31/16
SCALE: AS NOTED

DRAWING NAME
ELECTRICAL PANEL SCHEDULES

E 608