Sampson Construction Co., Inc.
3730 South 14th Street
Lincoln, NE 68502
Phone: (402) 434-5450
FAX: (402) 434-5466

Bid Bulletin #3

PROJECT: Kearney High School, Kearney, Nebraska
Bid Package #3

DATE: October 10, 2014

This Bid Bulletin includes items 2-1 through 2-8. Each item shall be fully incorporated into the Bidding/Contract Documents and have the same force and effect as though originally included. Bidders shall acknowledge receipt of this Bid Bulletin on the bid form. Bidders MUST use the bid form that is included in Bid Bulletin #1 or risk disqualification.

Item 2-1 For Clarification: All rough in Conduit Required for Division 27 is provided and installed under Division 26/Summary of Work 3ZZ Electrical. All cabling and devices for Division 27 is supplied and installed under Summary of Work 3AAA Communications. Refer to the plans and specifications for responsibility.

Item 2-2 Attached is a copy of Addendum #2 from Wilkins, Hinrichs, Stober Architects LLC dated October 10, 2014.

Item 2-3 Subcontractors need to verify their insurance meets the requirements for this project. The certificate of insurance must include additional insureds, a blanket waiver of subrogation for the general liability/workers compensation and $1,000,000 excess liability. Attached is a sample copy of the Acord Certificate of Liability Insurance.

Item 2-4 A performance and payment bond may be required for your scope of work and the dollar amount should be listed under the Alternates on the bid form, but not included in your base bid.

Item 2-5 Contractors must be registered with the State of Nebraska Department of Labor in order to work in Nebraska. If you are awarded a contract for your Summary of Work and you are not already registered with the State of Nebraska, visit http://www.dol.nebraska.gov/index.cfm to register your company.

Item 2-6 The last Bid Bulletin #4 will be issued on Tuesday October 14th. This will include addendum #3 from WHS Architects.

Item 2-7 Bids will be accepted until 2:00 PM Central Time at the Kearney Public Schools, Whittier Learning Resource Center, Office of Finance Director. Bids will be read aloud at 3:00 PM Central Time in the 2nd Floor Staff Development Conference Room.

Bids can be hand delivered or mailed to 310 West 24th Street, Kearney, NE 68847, submitted by FAX to (308) 698-8001 or by e-mail to kpsbid@sampson-construction.com. It is your responsibility to make sure these bids are received prior to 2:00 PM Central Time.

Item 2-8 Attached is the sign in sheet from the prebid meeting held on October 9th 2014.

END OF BID BULLETIN #3

2:00
MEP Group

KEARNEY HIGH SCHOOL

PRE-BID MEETING

SIGN-IN SHEET
BID PACKAGE #03
OCTOBER 9, 2014

PLEASE PRINT

Name	Company	Phone Number
Shad Yarrington	Sargent Drilling	308-872-5125
Matt Trefler	Middleton Electric	308-382-2550
Bruce Mooers	Electronic Systems Inc	402-463-0200
Roger Scheidies	Bamford Inc	308-237-2157
Dave Mohrman	Snell Services Inc	308-532-6870
Kevin McKoy	Blessing	308-237-7988
Dustin Klein	Midlands Mechanical Inc.	308-440-6346
Craig Sup	Kidwell	844-233-5114
David Nock	Kidwell	402-475-9151
Curt Bennett	Electronic Systems	402-463-0200
Michael Evers	Nebraska Fire Sprinkler	308-381-2033
Terri Holtzen	Kearney Crete & Block	308-237-3126
Jerry Onik	Heartland Scenic Studio	402-341-9121
Kurt Cook	BD Const.	308-627-1260
Jon Mosburger	BD Const.	308-627-1149
Scott White	Midlands Contracting, Inc.	(308)-237-7979
Craig Bennett	Miller & Associates	308-234-6456
Travis Mason	" "	" "
Shawn Miller	Electronic Contracting Co.	402-466-8274

KEARNEY HIGH SCHOOL

PRE-BID MEETING

SIGN-IN SHEET
BID PACKAGE #03
OCTOBER 9, 2014

10:00
Div 3- 14

PLEASE PRINT

Name	Company	Phone Number
Nick Killough	Kearney Glass Inc	308-236-9970
Bret King	Kearney Glass Inc.	308 236 9970
KAHN HAKMAN	DOHERTY STEEL	913.557.9200
Jeff Wissing	Heartland Concrete & Cast	402-469-0447
Christy Fitzgerald	Kearney Cntr & Block	308-440-7633
Scott Fraven	Kearney Cntr & Block	308-390-5205
Paul Kucera	Kucera Paint	308 293 1930
Bruce Hunt	Lynn O. Jones & Assoc	402.690-3411
Carson Cobb	Central NE Steel	308-293-0261
FRANCIS KEENE	MIDWEST RESTAURANT SUPPLY	308-384-5780
DON REEVES	TRI-COUNTY GLASS INC	308-237-4855
PAUL SIVNOTT	HOCKENBERGS	402-339-8900
Randy McDonald	General Excavating	(402) 467-1627
Jon Mosbarger	BD Construction	308-627-1149
Kent Cordes	BD Construction	308-627-1260
Paul Lounderville	Midwest Fireplace Co	712-263-6445

3

ADDENDUM #2

KEARNEY PUBLIC SCHOOLS
KEARNEY NEW HIGH SCHOOL
KEARNEY, NEBRASKA
1355

Wilkins Hinrichs Stober Architects, L.L.C.
2908 West 39th Street, Suite A
Kearney, Nebraska 68845
308-237-5787

Date Issued: October 10, 2014

Bid Date: October 23, 2014

TO: All Bid Holders of Record

Acknowledge receipt of this addendum by inserting its number in the space provided on the BID FORM. Failure to do so may subject Bidder to disqualification. This Addendum forms a part of the BIDDING DOCUMENTS and modifies them as follows.

- -

Addendum #2 - #1 **SPECIFICATION SECTION – 01 2100 ALLOWANCES**
Delete specification section "01 2100 – ALLOWANCES" in its entirety.

Addendum #2 - #2 **SPECIFICATION SECTION – 01 7000 - EXECUTION AND CLOSEOUT REQUIREMENTS**
Paragraph 1.7.E: Delete the last sentence from this paragraph regarding the requirements for BIM and 3-Dimensional modeling software for coordination. This is NOT a requirement for this project. Contractors are allowed to use BIM for coordination purposes at their discretion.

Addendum #2 - #3 **SPECIFICATION SECTION – 03 3000 – CAST-IN-PLACE CONCRETE**
Delete Paragraph "2.9 CURING MATERIALS" in its entirety and replace with the following paragraph: "2.9 CURING MATERIAL: For all concrete in areas scheduled to receive a floor covering, cure the concrete with the Concrete Cure and Moisture Vapor and Alkalinity Control Sealer as specified in Section 03 3930."

Addendum #2 - #4 **SPECIFICATION SECTION - 07 5323 - ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM)**
Under 2.2.B.1, change to "Attachment" in lieu of "Base Sheet".

Addendum #2 - #5 **SPECIFICATION SECTION - 11 6833 - TRACK AND FIELD EQUIPMENT**
Add New Section 11 6833 TRACK AND FIELD EQUIPMENT

Addendum #2 - #6 **SPECIFICATION SECTION – 09 5100 – ACOUSTICAL CEILINGS**
Paragraph 2.2.F.9: Add the following acceptable substitute manufacturer "b. Architectural Surfaces, Inc.; Woodgrille I; Custom stain on cherry species".

Addendum #2 - #7 **SPECIFICATION SECTION – 09 6400 – WOOD GYMNASIUM FLOORING**
SubParagraph 2.2.A.3. Add the following sentence: "Random length maple (MFMA-RL) is also acceptable.".
SubParagraph 2.2.A.5. Delete this subparagraph in its entirety.
SubParagraph 2.2.B.2. Add the following sentence: "Square rubber pads, 2"x2"x3/4" are also acceptable.".

Addendum #2 - #8 **SPECIFICATION SECTION – 09 8400 – ACOUSTIC ROOM COMPONENTS**
Paragraph 2.2.B.5: Delete this Paragraph in its entirety.

Addendum #2 - #9 **SPECIFICATION SECTION - 11 4000 - FOOD SERVICE EQUIPMENT**
On Page 11 4000 - 4, under Paragraph 1.5E.1, add the following as an approved installer:
"Servco Equipment Company St. Louis, MO (314/781-3189)"

Addendum #2 - #10 **SPECIFICATION SECTION - 11 4000 - FOOD SERVICE EQUIPMENT**
On Page 11 4000 - 35, under Item 141 Plate Dolly (Three Required) – Alternate No. 12, after the words "CresCor 501-D-EX", add the words "or Sammons Equipment 9601-DE-AS-2727 (951/340-3419)".

Addendum #2 - #11 **SPECIFICATION SECTION – 11 6100 – THEATRICAL RIGGING AND DRAPERY**
Add to section 2.2 APPROVED AUTOMATED (MOTORIZED) RIGGING INSTALLERS
"I. Gopher Stage Lighting, 4141 Cedar Ave. S., Minneapolis, MN 55407
J. PROVISIONALLY, LVH Entertainment Systems, 1600 Maxwell Dr. Suite 5, Hudson, WI 54016. This vendor may submit a bid, but acceptance will be based on a thorough review of bid, contract, bill of materials, and supporting documentation. The Theatrical Consultant will make the final decision, should this bidder submit the low bid."

Addendum #2 - #12 **SPECIFICATION SECTION – 11 6623 – GYMNASIUM EQUIPMENT**
Paragraph 2.1.A: Add the following approved manufacturer: "5. IPI by Bison: www.ipibybison.com.".

Addendum #2 - #13 **SPECIFICATION SECTION - 12 3530 - EDUCATIONAL CASEWORK**
Under 2.2.A.4.c., delete the following: ", interiors of all open cabinets, and underside of wall cabinets."
Under 2.2.D.3., delete the following: ", shelf"
Under 2.2.D., add the following: 4. Edging for open shelves: High-pressure plastic laminate for all edges.
Under 2.2.D., add the following: 5. Edging for shelves behind doors: FlatEdge PVC/ABS to match cabinet interior surface color for all edges.

Addendum #2 - #14 **SPECIFICATION SECTION - 12 3530 - EDUCATIONAL CASEWORK**
Delete 2.3.A.3 in its entirety. All hinges to be five knuckle.
Under 2.3.B.1.a. Finish, change to "ChromeCoat powder finish, High-Polish Chrome" in lieu of "Brushed Stainless Steel".

Addendum #2 - #15 **SPECIFICATION SECTION - 12 3530 - EDUCATIONAL CASEWORK**
Delete 2.4.B.3 in its entirety and replace with the following: **ALL EXPOSED EXTERIOR SURFACES OF CABINETS INCLUDING THE EXPOSED BOTTOM AND INTERIOR EXPOSED SURFACES FOR OPEN SHELVES SHALL HAVE HIGH-PRESSURE PLASTIC LAMINATE. SEE MATERIALS LIST FOR LAMINATE COLORS.**
Under 2.4.D., add the following:
2. High-pressure plastic laminate on all exposed surfaces for open shelves.
3. Pressure fused laminate on all exposed surfaces for shelves behind doors.

Under 2.4.F.1, add the following: **CABINET DOORS TO HAVE HIGH-PRESSURE PLASTIC LAMINATE ON ALL SIDES OF DOOR.**

Addendum #2 - #16 **SPECIFICATION SECTION - 12 3540 - MUSIC CASEWORK**
Under 2.2.A.4.c., delete the following: ", interiors of all open cabinets, and underside of wall cabinets."
Under 2.2.D.3., delete the following: ", shelf"
Under 2.2.D., add the following: 4. Edging for open shelves: High-pressure plastic laminate for all edges.
Under 2.2.D., add the following: 5. Edging for shelves behind doors: FlatEdge PVC/ABS to match cabinet interior surface color for all edges.

Addendum #2 - #17 **SPECIFICATION SECTION - 12 3540 - MUSIC CASEWORK**
Delete 2.3.A.3 in its entirety. All hinges to be five knuckle.
Under 2.3.B.1.a. Finish, change to "ChromeCoat powder finish, High-Polish Chrome" in lieu of "Brushed Stainless Steel".

Addendum #2 - #18 **SPECIFICATION SECTION - 12 3540 - MUSIC CASEWORK**
Delete 2.4.B.3 in its entirety and replace with the following: ALL EXPOSED EXTERIOR SURFACES OF CABINETS INCLUDING THE EXPOSED BOTTOM AND INTERIOR EXPOSED SURFACES FOR OPEN SHELVES SHALL HAVE HIGH-PRESSURE PLASTIC LAMINATE. SEE MATERIALS LIST FOR LAMINATE COLORS.
Under 2.4.D., add the following:
2. High-pressure plastic laminate on all exposed surfaces for open shelves.
3. Pressure fused laminate on all exposed surfaces for shelves behind doors.

Under 2.4.F.1, add the following: CABINET DOORS TO HAVE HIGH-PRESSURE PLASTIC LAMINATE ON ALL SIDES OF DOOR.

Addendum #2 - #19 **SPECIFICATION SECTION - 33 1216 - ASHALT PAVING**
Delete Section 32 1216 in its entirety, and replace with the attached new Section 32 1216 ASPHALT PAVING.

Addendum #2 - #20 **SPECIFICATION SECTION - 33 1816 - RESILIENT TRACK SURFACING**
Add new Section 32 1816 RESILIENT TRACK SURFACING.

Addendum #2 - #21 **SPECIFICATION SECTION - 33 1818 - FIELD TURF AND TRACK/FIELD EVENT RUBBER SURFACING.**
Delete Section 32 1818 in its entirety.

Addendum #2 - #22 **SPECIFICATION SECTION - 33 4600 - SUBDRAINAGE SYSTEM FOR SYNTHETIC TURF**
Add new Section 33 4600 SUBDRAINAGE SYSTEM FOR SYNTHETIC TURF.

Addendum #2 - #23 **SPECIFICATION SECTION - 33 5200 - SYNTHETIC TURF**
Add new Section 32 5200 SYNTHETIC TURF

Addendum #2 - #24 **SHEET C 6.0 – ENLARGED TRACK PLAN / DETAIL**
Replace entire sheet. Includes revised piping and subsurface drainage plan.

Addendum #2 - #25 **SHEET C 6.5 – TRENCH DETAILS**
Replace entire sheet. Includes revised cross sections, aggregate and subsurface drainage details.

Addendum #2 - #26 **SHEET A3.02 – REFLECTED CEILING PLAN – FIRST FLOOR – AREA C**
1/A3.02 – REFLECTED CEILING PLAN – FIRST FLOOR – AREA C: At STORAGE C102S and HEAD END COMMUNICATIONS ROOM C110, delete ceiling finish designation "ES-2" and substitute "ES-1".

Addendum #2 - #27 **SHEET A3.04 – REFLECTED CEILING PLAN – FIRST FLOOR – AREA E & F**
1/A3.04 – REFLECTED CEILING PLAN – FIRST FLOOR – AREA E & F: At BEARCAT TV E100, delete ceiling finish designation "ES-2" and substitute "ES-5".

Addendum #2 - #28 **SHEET A3.05 – REFLECTED CEILING PLAN – FIRST FLOOR – AREA G**
1/A3.05 – REFLECTED CEILING PLAN – FIRST FLOOR – AREA G: At WHEEL ROOM G118 and MATERIAL STORAGE G121S, delete ceiling finish designation "ES-2" and substitute "ES-1".

Addendum #2 - #29 **SHEET A3.06 – REFLECTED CEILING PLAN – FIRST FLOOR – AREA H**
1/A3.06 – REFLECTED CEILING PLAN – FIRST FLOOR – AREA H: At STORAGE H101S, delete ceiling finish designation “ES-2” and substitute “ES-1”.
2/A3.06 – BULKHEAD SECTION: Delete the following dimension: “1’-0” AT SECOND GALLERY” and substitute “1’-0” AT FIRST STEP IN FIRST FLOOR CEILING/SOFFIT”. Delete the following dimension: “11 ½” AT SECOND GALLERY” and substitute “11 ½” AT SECOND STEP IN FIRST FLOOR CEILING/SOFFIT”.

Addendum #2 - #30 **SHEET A3.20 – REFLECTED CEILING PLAN – SECOND FLOOR – AREA L**
Clarification Note: All basketball backstops in Main Competition Gymnasium L109 are to be side folding (to the right).

Addendum #2 - #31 **SHEET A3.24 – REFLECTED CEILING PLAN DETAILS**
2/A3.24 FIXED REFLECTOR: Delete the following phrase from the Title: “(SEE THEATRE DRAWINGS/THEATRE SPECIFICATIONS FOR DETAILED INFORMATION)/(FOR REFERENCE ONLY)” This IS the detail for the fixed reflector and no information regarding the fixed reflector can be found on the theatrical drawings. The Movable Reflector IS in fact drawn and specified with the Theatre drawings/specs.
6 & 7/A3.24 CEILING PLAN DETAIL and UNISTRUT DETAIL: Revise spelling of word “UNISTRUT” and delete all references to “SEE STRUCTURAL”

Addendum #2 - #32 **SHEET M4.2 – MECHANICAL DETAILS**
Delete Drawing in its entirety and substitute M4.2 –MECHANICAL DETAILS.

Addendum #2 - #33 **SHEET M5.4 – MECHANICAL SCHEDULES**
Delete Drawing in its entirety and substitute M5.4 – MECHANICAL SCHEDULES

Addendum #2 - #34 **SHEET M5.5 – MECHANICAL SCHEDULES**
Modify drawing as shown on Attachment No. M5.5-1 to Addendum No. 2

Addendum #2 - #35 **SHEET P0.3 – UNDERGROUND PLUMBING PLAN – AREA C**
Delete Drawing in its entirety and substitute P0.3 – UNDERGROUND PLUMBING PLAN – AREA C.

Addendum #2 - #36 **SHEET P0.4 – UNDERGROUND PLUMBING PLAN – AREA D**
Delete Drawing in its entirety and substitute P0.4 – UNDERGROUND PLUMBING PLAN – AREA D.

Addendum #1 - #37 **SHEET P0.5 – UNDERGROUND PLUMBING PLAN – AREAS E & F**
Delete Drawing in its entirety and substitute P0.5 – UNDERGROUND PLUMBING PLAN – AREAS E 7 F.

Addendum #2 - #38 **SHEET P0.6 – UNDERGROUND PLUMBING PLAN – AREA G**
Delete Drawing in its entirety and substitute P0.6 – UNDERGROUND PLUMBING PLAN – AREA G.

Addendum #2 - #39 **SHEET P0.7 – UNDERGROUND PLUMBING PLAN – AREA H**
Delete Drawing in its entirety and substitute P0.7 – UNDERGROUND PLUMBING PLAN – AREA G.

Addendum #2 - #40 **SHEET P0.9 – UNDERGROUND PLUMBING PLAN – AREA K**
Delete Drawing in its entirety and substitute P0.9 – UNDERGROUND PLUMBING PLAN – AREA K.

Addendum #2 - #41 **SHEET P1.1 – FIRST LEVEL PLUMBING PLAN – AREA A**
Delete Drawing in its entirety and substitute P1.1 – FIRST LEVEL PLUMBING PLAN – AREA A.

Addendum #2 - #42 **SHEET P1.2 – FIRST LEVEL PLUMBING PLAN – AREA AA & B**

Delete Drawing in its entirety and substitute P1.2 – FIRST LEVEL PLUMBING PLAN – AREA AA & B.

Addendum #2 - #43 **SHEET P1.3 – FIRST LEVEL PLUMBING PLAN – AREA C**
Delete Drawing in its entirety and substitute P1.3 – FIRST LEVEL PLUMBING PLAN – AREA C.

Addendum #2 - #44 **SHEET P1.4 – FIRST LEVEL PLUMBING PLAN – AREA D**
Delete Drawing in its entirety and substitute P1.4 – FIRST LEVEL PLUMBING PLAN – AREA D.

Addendum #2 - #45 **SHEET P1.5 – FIRST LEVEL PLUMBING PLAN – AREA E & F**
Delete Drawing in its entirety and substitute P1.5 – FIRST LEVEL PLUMBING PLAN – AREA E & F.

Addendum #2 - #46 **SHEET P1.6 – FIRST LEVEL PLUMBING PLAN – AREA G**
Delete Drawing in its entirety and substitute P1.6 – FIRST LEVEL PLUMBING PLAN – AREA G.

Addendum #2 - #47 **SHEET P1.7 – FIRST LEVEL PLUMBING PLAN – AREA H**
Delete Drawing in its entirety and substitute P1.7 – FIRST LEVEL PLUMBING PLAN – AREA H.

Addendum #2 - #48 **SHEET P1.8 – FIRST LEVEL PLUMBING PLAN – AREA J**
Delete Drawing in its entirety and substitute P1.8 – FIRST LEVEL PLUMBING PLAN – AREA J.

Addendum #2 - #49 **SHEET P1.9 – FIRST LEVEL PLUMBING PLAN – AREA K**
Delete Drawing in its entirety and substitute P1.9 – FIRST LEVEL PLUMBING PLAN – AREA K.

Addendum #2 - #50 **SHEET P1.13 – SECOND LEVEL PLUMBING PLAN – AREA A**
Delete Drawing in its entirety and substitute P1.13 – SECOND LEVEL PLUMBING PLAN – AREA A.

Addendum #2 - #51 **SHEET P1.14 – SECOND LEVEL PLUMBING PLAN – AREA B**
Delete Drawing in its entirety and substitute P1.14 – SECOND LEVEL PLUMBING PLAN – AREA B.

Addendum #2 - #52 **SHEET P1.15 – SECOND LEVEL PLUMBING PLAN – AREA C**
Delete Drawing in its entirety and substitute P1.15 – SECOND LEVEL PLUMBING PLAN – AREA C.

Addendum #2 - #53 **SHEET P1.16 – SECOND LEVEL PLUMBING PLAN – AREA D**
Delete Drawing in its entirety and substitute P1.16 – SECOND LEVEL PLUMBING PLAN – AREA D.

Addendum #2 - #54 **SHEET P1.17 – SECOND LEVEL PLUMBING PLAN – AREAS E & F**
Delete Drawing in its entirety and substitute P1.17 – SECOND LEVEL PLUMBING PLAN – AREAS E & F.

Addendum #2 - #55 **SHEET P1.19 – SECOND LEVEL PLUMBING PLAN – AREA H**
Delete Drawing in its entirety and substitute P1.19 – SECOND LEVEL PLUMBING PLAN – AREA H.

Addendum #2 - #56 **SHEET P1.20 – TECH LEVEL PLUMBING PLAN – AREA J**
Delete Drawing in its entirety and substitute P1.20 – TECH LEVEL PLUMBING PLAN – AREA H.

Addendum #2 - #57 **SHEET P1.21 – SECOND LEVEL PLUMBING PLAN – AREA J**

Delete Drawing in its entirety and substitute P1.21 – SECOND LEVEL PLUMBING PLAN – AREA J.

Addendum #2 - #58 **SHEET P2.1 – PLUMBING LARGE SCALE PLANS**
Delete Drawing in its entirety and substitute P2.1 – PLUMBING LARGE SCALE PLANS.

Addendum #2 - #59 **SHEET P2.2 – PLUMBING LARGE SCALE PLANS**
Delete Drawing in its entirety and substitute P2.2 – PLUMBING LARGE SCALE PLANS.

Addendum #2 - #60 **SHEET P3.1 – PLUMBING DETAILS**
Delete Drawing in its entirety and substitute P3.1 – PLUMBING DETAILS.

SECTION 11 6833

TRACK AND FIELD EQUIPMENT

PART 1 GENERAL

1.1 WORK INCLUDED

A. Provide all equipment and materials, and do all work necessary to furnish and install the athletic equipment, as indicated on the drawings and as specified herein. Athletic equipment shall include, but not be limited to:

1. High School Take Off System with Blanking Lid
2. Cast Aluminum Vault Box Form
3. Aluminum Water Jump Pit Form System
4. Water Jump Pit Cover – Recessed
5. High School 8 Ft. Offset Goal Post (Pair)
6. Discus Ring Form
7. UCS Shot Put Toe Board
8. Super 30 NCAA Hammer/Discus Cage with Ground Sleeves
9. Gill - Finish Line Cameral Pole – Ground Mount

1.2 RELATED WORK

A. Examine contract documents for requirements that affect work of this section. Other specification sections that directly relate to the work of this section include, but are not limited to:

1. Section 31 2000 – Excavation, Bedding, Backfilling and Trenching.
2. Section 32 1216 – Asphalt Paving
3. Section 32 5200 – Synthetic Turf
4. Section 32 1816 – Resilient Track Surfacing
5. Section 03 3000 – Cast-in-Place Concrete

1.3 REFERENCES

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. International Amateur Athletic Association (IAAF)
2. National Collegiate Athletic Association (NCAA)
3. National Federation of State High School Associations (NFHS)
4. American Sports Builders Association (ASBA)
5. Manufacturers Data and Recommended Installation Requirements

1.4 SUBMITTALS

A. Manufacturers Product Data

1. Provide manufacturers product data prior to actual field installation work, for Architects or Owners representatives review.

B. Shop Drawings

1. Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for Architects or Owners representatives review.

1.5 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements.

B. Single Source Responsibility: Provide equipment from single manufacturer

C. Manufacturer's Qualifications: Minimum of 7 consecutive years' experience manufacturing items similar to that specified.

1.6 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately reordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

1.7 WARRANTY

A. Provide 1-year warranty against defects in materials and workmanship, unless otherwise specified.

PART 2 PRODUCTS

2. 1 MANUFACTURERS

A. Basis of Design: USC, Inc. 511 Hoffman Road, Lincolnton, NC 28092, T: 800-526-4856, F: 704-732-9559; Web Address: www.ucsspirit.com for all items except the Finish Line Cameral Pole, which is by GILL Athletics, T: 800-637-3090, Web Address: www.gillathletics.com

B. Substitutions: Requests for substitutions will be in accordance with Section 01 6000

2.2 HIGH SCHOOL TAKE OFF SYSTEM WITH BLANKING LID

A. 519-2300 High School Take-Off System

1. ¼" galvanized rust-resistant Steel Tray,
2. ¼" Galvanized Rust-Resistant Steel understructure topped with ¾" fiber board
3. Stainless Steel Adjustment Bolts
4. Reinforced with 3/8" galvanized steel bars for blanking lid.
5. Overall Dimensions: 3.5" x 10.3" x 48.0"

2.3 CAST ALUMINUM POLE VAULT BOX FORM

A. 725-2596 Vault Box Form fabricated with cast aluminum having the following attributes:

1. Ensures perfect level of the box
2. Includes model 711-1100 Vault Box
3. Powder Coating White
4. Vault Box attaches to Form with included zinc plated hardware

2.4 ALUMINUM WATER JUMP PIT FORM SYSTEM

A. 506-6100 Aluminum Water Jump Pit Form System

1. Three part pour-in-place form for concrete with cover ledge and barrier mounting plates
2. Break formed 1/8" Aluminum**,** TIG welded and reinforced
3. Integral PVC water stop
4. Drain assembly supplied
5. Corners are pre-formed to facilitate squaring of pit
6. Sandblasted and Powder Coated
7. Includes Water Jump Pit Cover Model 506-5420 Recessed for Synthetic Surfacing (To be applied by Surfacing Contractor) or Model 506-5421-Flush
   a. 9 ½ " x 1 ¾" extruded aluminum tongue and groove interlocking connector with a double leg supported aluminum
   b. Framed with 2 ½ " x 1 ½ " x 1/4 " angle custom made for perfect fit to any existing pit and
   c. (4) easy to carry modular panels (3 x 38 ½" and 1 x 15 ¾") supplied with (4) convenient folding handles per panel
   d. (5) Aluminum 4" x 2" x ½" support beams for safety and precise fit
8. 506-5413 Adjustable Water Jump Barrier
   a. Uprights: Stainless Steel Powder Coated Uprights which attach to an anchored Ground Plate.
   b. Beam: 4" x 4" Steel beam with MONDO Polyurethane Track surfacing cover. Guaranteed not to warp.
   c. Fully adjustable: The beam height adjusts easily to accommodate both Women's and Men's Competition heights, using the UCS Counterbalance System. This is a Heavy Duty *Spring Loaded System* that bears the weight of the beam and prevents the beams from dropping and also assists in rising.
9. 506-5419 Water Jump Barrier Seal
   a. 156" x 15" x ¾" Thick Aluminum Panels
   b. Simultaneously adjusts in height when the water jump barrier height is adjusted
   c. Powder Coated Color: White

2.5 WATER JUMP PIT COVER- RECESSED

A. 506-5420 Water Jump Pit Cover Model 506-5420 Recessed

1. 9 ½ " x 1 ¾" extruded aluminum tongue and groove interlocking connector with a double leg supported aluminum
2. Framed with 2 ½ " x 1 ½ " x 1/4 " angle custom made for perfect fit to any existing pit

3. (4) easy to carry modular panels (3 x 38 ½" and 1 x 15 ¾") supplied with (4) convenient folding handles per panel
4. (5) Aluminum 4" x 2" x ½" support beams for safety and precise fit
5. Cover is recessed to accept synthetic surfacing (applied by contractor)

2.6 HIGH SCHOOL 8 FT. OFFSET GOAL POSTS

A. 751-6120 Adjustable Width 8' Offset Football Goal Post

1. Gooseneck support: 6 5/8" schedule 40 Aluminum with 3/8" wall, 8.0 ft offset.
2. Crossbar: 6 5/8" schedule 40 Aluminum with 3/8" wall and Steel Insert
   a. Length: 23'4"
   b. Stainless steel internal membrane support plate
   c. Fully welded end caps
   d. Fully welded rigid upright support structure
3. Uprights: 3 ½" schedule 40 Aluminum pipe
   a. Length: 20.0 ft.
   b. Welded top cap with flag anchors
4. Powder Coat Finish: Yellow (Main Competition Field); White (Practice Field)
5. Installation package consisting of the following components:
   a. Ground Plate: 20" x 20" x ½" Steel
   b. Anchor Bolts
   c. Safety Cover : Marine Plywood ready to accept synthetic surface
6. Accessories:
   a. Directional wind flags. (Red)
   b. Touch-up paint (Powder Coat Specific).
   c. Stainless Steel Fasteners

2.7 DISCUS RING FORM

A. Discus Circle 725-2591

B. Guarantee: 10 Year Guarantee against defective material and craftsmanship

C. Description and Features:

1. Four-piece construction throwing ring
2. 10'x10' x 4" Form maintains ring shape and supports concrete for entire throw platform
3. Features 2 built in drain holes
4. Diameter is 2.50m (8'2")

D. Rule and Standard Compliance:

1. IAAF
2. NCAA
3. USATF
4. NFHS

E. Construction:

1. Ring is made of 2"x 2"x ¼" Aluminum and has been pre-bent and welded to each form base

2. Form Base is made of Aluminum C-Channel 2" x 4" x ¼", and features a diagonal cross-support with flat plate welded in corners and provide masonry fastening hole to keep in place while pouring concrete.

F. Finish: High impact and corrosion resistant powder coating

G. Additional Hardware: Stainless Steel Fasteners

H. Installation:

1. Follow manufacturer's instructions
2. Check local codes

2.8 USC SHOT PUT TOE BOARD

A. Model Number: 716-1640

B. Guarantee: Lifetime Guarantee against Rusting, Splitting, Delaminating or Warping

C. Description and Features:

1. Cast Aluminum
2. 48 ¾ " x 12 ¼" x 4" with exact Radius for the 7' Ring
3. Guaranteed not to warp, split, rust, or delaminate.
4. INSTALLATION FOR FLUSH RINGS ONLY

D. Rule and Standard Compliance: NFHS

E. Finish: White Weather Resistant High Impact Powder Coating.

F. Additional Hardware:

1. Ground sleeves for Bolts
2. Bolts

G. Installation: Follow manufacturer's instructions. Check local codes.

2.9 SUPER 30 NCAA HAMMER/DISCUS CAGE WITH GROUND SLEEVES

A. Part Numbers: 570-3600R

B. Description and Features:

1. Exceeds the Regulations of the NCAA
2. 9.144 m (30') Door Height with two 9.144 m (30') Posts and three 7.34 m (24'1 3/8") posts increases Safety of Athletes, Spectators, and Officials and Exceeds minimum of 6.15 m door Height and 5 m Post Height set forth by the NCAA.
3. When the Implement hits the net, the net absorbs the shock and allows the implement to fall harmlessly to the ground. The Net Stabilizer Arms return the net to the original straight hang position. The net has a "skirt-loose" bottom for maximum protection
4. All Posts feature a rope Storage Cleat and Pulleys to assist in raising and lowering the net

5. Doors have fully welded frame to prevent implement ricochet and increase door stability and net stability. Complete with 2-Wheel Support Braces for ease of movement when opening and closing the doors.
6. Door Posts are Zeneel 4" x ½" Thick and 100 % Rust Resistant and have two support braces each.
7. Door Locking Device
8. Post Position allows for 34.92 Degree sector. Front Post is located 6.08 m (19'11 5/8") from Center of Throwing Ring with rear netting clearance of 3.5 m (11' 5").
9. Double Throwing Ring Configuration Capable (Hammer Ring Behind Discus Ring)
10. Rule and Standard Compliance: NCAA

C. Construction:

1. Posts: The net is supported by Three custom extruded 4" diameter x ¼" Thick aluminum posts - 27' 1 3/8" in overall length. Two additional posts are 30' tall. The posts are installed vertically and slide into and out of the Ground Sleeves for easy Assembly or Takedown for off-season storage. Included are Aluminum Caps for the Ground Sleeves for when cage is not set up.
   a. Door Posts: 4" x ½" Zeneel with Double action Hinges and Aluminum Support Braces (2 per Door Post)
2. Ground Sleeves: Three 36", two 46" aluminum powder coated ground sleeves are finished with a 45-degree base, uprights cut to match 45-degree base locking posts into correct position. Door Post Ground Sleeves are 62" Powder Coated Steel.
3. Net Stabilizer Arms: Extend 30 ½ " from Posts attach to net, Powder Coated Steel
4. Net: Heavy Duty 44 mm Knotless Nylon Netting 804 lb. (365Kg) breaking cord strength. Includes Ropes for raising and lowering.

D. Finish:

1. Mill Finish Posts- Powder Coat Available
2. Powder Coated Ground Sleeves and Net Stabilizer Arms
3. Gunmetal Finish T-Base

E. Additional Hardware: Ships with Ground Sleeve Alignment and Sight Device

F. Installation:

1. Follow manufacturer's instructions
2. Check local codes
3. A Scissor Lift or High Reach Fork Lift may be necessary to install and is recommended

G. Warranty: UCS Guarantees all in-ground products for one year against defective materials and workmanship

1. UCS Cannot guarantee the net against any ripping, tearing, slicing, puncturing, weathering, etc… This is due to the nature of the events and over multiple use and failed throws, the implement is susceptible to causing damage to the net with or without great forces applied. At any time an implement is fully capable for passing through a net. As well, at any time all athletes, spectators, officials, coaches, and any other

persons within the throwing area and event area must be aware of the dangers and caution should be made during use of the cage.

2. UCS recommends the net to be taken down during storms or high wind conditions to alleviate stress on the posts that may cause bending.
3. UCS Recommends that the Cage be taken down during the off-season.

2.10 GILL – FINISH LINE CAMERAL POLE – GROUND MOUNT

A. Part Numbers: E39918

B. Description and Features:

1. Steel Tube
2. Access Frame, Lid, and Anchor Hardware

C. Rule and Standard Compliance: NFHS

D. Construction: 3-1/2” OD Steel Tube with Power Cost Finish Pole (E3991725)

E. Finish:

1. Powder Coat Finish
2. Color: white

F. Additional Hardware:

1. Two (2) Camera offset and U-bolts (E991735)
2. Lid Set with Cutout (F3044)
3. Access Frame (F30410)
4. Anchor Hardware (E3991815)

G. Installation:

1. Follow manufacturer’s instructions
2. Check local codes

PART 3 EXECUTION

3.1 INSTALLATION OF EQUIPMENT

A. All athletic equipment shall be installed as recommended with manufacturer's written directions, and as indicated on the drawings.

END OF SECTION

SECTION 32 1216

ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Hot-mix asphalt paving.
   2. Track aggregate base course
   3. Geotextile filter fabric

B. Related Sections include the following:
   1. Section 33 4600 – Subdrainage System for Synthetic Turf.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Asphaltic Concrete Mix Designs: Submit tentative job-mix formula for each mix, along with representative 80 pound samples of each aggregate, 40 pound sample of mineral filler, and 1 gallon sample of asphalt cement. Asphalt cement content for each type of mix will be determined by the laboratory produced mix design.

C. Asphalt Cement: Submit delivery load tickets.

D. Emulsified Asphalt: Submit delivery load tickets.

E. Test Reports: Density and thickness results shall be submitted by the testing agency to the Contractor and duplicate copies to the Architect-Engineer within ten days after completion of the asphalt pavement.

1.4 QUALITY ASSURANCE

A. Production, transport, and placement of asphaltic concrete mixes shall be in compliance with Section 507 of the 1985 State of Nebraska Department of Roads Standard Specifications for Highway Construction.

B. Testing Services: For the testing agency requirements, See 1.4.A Quality Assurance.

1.5 EXPERIENCE

A. Firm Experience:
   1. The asphaltic track system shall be installed by an experienced Contractor who shall provide a list of five (5) complete asphalt installations within the last 5 years, providing

specific information about the name of the project, contact names, addresses, telephone numbers and year of installation.

PART 2 - PRODUCTS

2.1 ASPHALT MATERIALS

A. Base Aggregate: The track aggregate base course material shall consist of Mineral Aggregate 3-A (Crushed Sand Gravel) complying with the requirements of Section 1010 and Table 1015.04 of the 1985 State of Nebraska Department of Roads Standard Specifications for Highway Construction.

B. Tack Coat: In compliance with Section 1021 of the 1985 State of Nebraska Department of Roads Standard Specifications for Highway Construction.

C. Asphalt Cement: 120-150 Penetration, or AC-5, In compliance with Section 1009 of the 1985 State of Nebraska Department of Roads Standard Specifications for Highway Construction.

2.2 MIXES

A. Asphaltic Concrete Mix Design composition shall be in compliance with Section 1007 of the 1985 State of Nebraska Department of Roads Standard Specifications for Highway Construction. As follows:
   1. Bottom 2-1/2 inches Type B
   2. Top 1-1/2 inches Type C.
   3. Mineral filler shall be Limestone Dust. Soil type mineral filler will not be allowed.
   4. Asphalt Cement content will be determined by the testing laboratory.

B. Acceptance of asphaltic concrete shall be in accordance with Section 1007 of the 1985 State of Nebraska Department of Roads Standard Specifications for Highway Construction.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads. Finished subgrade elevation shall be verified with a survey. Finished grade shall be between design elevation to 0.1' below design elevation prior to placing geotextile fabric.

B. The pavement subgrade preparation required in the Geotechnical Report, on the Drawings and in these Specifications is the absolute minimum allowable. Since heavy equipment must be used during the laydown operations of asphalt paving, the Bidders shall include in their Bids any more stringent compaction requirements deemed necessary by the Asphalt Subcontractor to support the weight of this equipment without rutting, pumping or other subgrade deformation. Failure of asphalt tests blamed upon subgrade or aggregate base course failure will not be tolerated. Also, the subgrade shall be inspected by the Testing Agency immediately prior to installation of geotextile fabric. The Contractor shall proofroll the subgrade before track aggregate base course installation. Any areas of subgrade which show signs of rutting or pumping shall be repaired prior to operations commencing. Asphalt pavement found to be placed over inadequate subgrade shall be removed and replaced at no cost to the Owner.

C. The aggregate must be laid without damaging the soil bed or geotextile liner. It is very important not to create any depressions in the subgrade with heavy equipment. The finished crushed aggregate base supplied must be stable and constructed in layers or lifts. Each layer must be compacted in both directions to attain the specified compaction rate. The base course total thickness shall be in accordance with the details shown on the Drawings.

D. Finished track aggregate base course shall be verified with a survey based on a 15 feet grid over the finished aggregate. Finished grade must be within 3/16 inch from design elevations shown on the Drawings.

3.2 INSTALLATION TOLERANCES

A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:
   1. Base Course: Plus or minus 1/2 inch (13 mm).
   2. Surface Course: Plus 1/4 inch (6 mm), no minus.

B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:
   1. Base Course: 1/4 inch (6 mm).
   2. Surface Course: 1/8 inch (3 mm).

C. Cross Slope: Asphalt track surface cross slope shall not vary from planned cross slope by more than $\pm$ 0.1% with a maximum lateral slope outside to inside of 1% and a maximum slope of 0.1% in any running direction.

3.3 FIELD QUALITY CONTROL

A. Testing Responsibility: Density and thickness testing shall be performed by the testing agency. Tests for smoothness and slopes shall be performed by the Contractor.

B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

D. The Contractor shall closely monitor each lift of asphaltic concrete as it is being placed for thickness, cross-slope, and smoothness. Following placement of the top lift, any “high spots” not meeting the allowable tolerances shall be milled down to within tolerance. In the event of a “low spot”, the entire thickness of the top lift of the affected area shall be removed and replaced to bring the area within the allowable tolerance. Any area that puddles water shall be corrected so that no puddling occurs. “Skin patching” to repair low areas or surface irregularities will not be allowed.

END OF SECTION

SECTION 32 1816

RESILIENT TRACK SURFACING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes the following:

1. Polyurethane base mat track surface with red structural spray.
2. Track surfacing system shall be an IAAF certified track system.

B. Related Sections include the following:

1. Section 31 2001 Earth Moving
2. Section 33 1216 Asphalt Paving

1.3 DEFINITIONS

A. SBR: Styrene-butadiene rubber.

B. EPDM: Ethylene propylene diene monomer (rubber).

C. MDI: Methylene Diphenyle Isocyana

1.4 PERFORMANCE REQUIREMENTS

A. Minimum Performance standard per IAAF:

1.	Thickness	≥13mm
2.	Force Reduction	35 to 50%
3.	Friction	≥47 TRRL Skid Resistance
4.	Modified Vertical Deformation .	6 to 2.5mm
5.	Tensile Strength	≥.4MPa
6.	Elongation at Break	≥40%

1.5 SUBMITTALS

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

B. Shop Drawings: Show the following:
1. Lane lines and event markings.

C. Samples for Initial Selection: For each type of track surface system indicated.
1. Include similar Samples of track surface system and accessories.
2. Three samples 12” x 12” in size, color, texture thickness etc.

D. Qualification Data: Provide current IAAF certificate for track surfacing system.

E. Material Test Reports: For the following, from the United States Sports Surfacing Laboratory Inc. or Architect approved testing agency, indicating compliance with requirements:
   1. Polyurethane track surface.

F. Material Certificates: For each track surface system product, signed by manufacturers.

G. Maintenance Data: For track surface system to include in maintenance manuals.

H. Warranty: Special warranty specified in this Section.

1.5 QUALITY ASSURANCE

A. Specified track system shall be IAAF certified. Provide current IAAF certificate to architect prior to approval.

B. Provide documentation that specified track surfacing system meets IAAF performance specification for synthetic surfaced athletic tracks (outdoor).

C. Track surfacing installation company (if different from manufacturer) shall supply current letter attesting they are an approved installer of the manufacturer track surfacing system specified.

D. Installer Qualifications: An employer of workers trained and approved by manufacturer. Minimum of 10 successful projects of this type in the last 5 years.

E. The manufacturer shall review the asphalt pavement mix design, installation and accept the asphalt base before installing the resilient surfacing. The manufacturer shall immediately notify the Contractor and Architect of any deficiencies in the asphalt pavement mix design upon award of contract.

1.6 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit track surface system installation to be performed according to manufacturer's written instructions and warranty requirements.

1.7 GUARANTEE

A. Special Guarantee: Manufacturer's standard form in which manufacturer agrees to repair or replace components of track surface system that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Surfacing material found to be defective as a result of faulty workmanship and/or material failure such as delamination, bubbling, cracking, loss of integrity or excessive wear.
      b. Deterioration of surface and other materials beyond normal weathering.
   2. Guarantee Period: Five years from date of acceptance.
   3. The guarantee does not cover vandalism, neglect, improper care, improper footwear or acts of God.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection

1. Basis-of-Design Product: The design for each product is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified

2.2 POLYURETHANE RESILIENT SURFACING COURSE

A. BASIS OF DESIGN: Spurtan BS manufactured by Advanced Polymer Technology 109 Conica Lane, Harmony, PA 16073 or BSS 1000 Embedded Durometer synthetic track surfacing system, manufactured by Beynon a division of Tarkett Group. Substitutions: allowed. Submit IAAF certificate, product data and material test reports to demonstrate equivalency to Basis of Design Product to Architect for approval.

1. Polyurethane Primers: urethane based materials compatible with asphalt and track materials.
2. Rubber Base Mat Granules: 1 mm to 3 mm SBR rubber dried to no less than 2.5% moisture and sealed in bags/supersacs. Color shall be black.
3. Polyurethane Base Mat Binding Agent: Methylene Diphenyle Isocyane (MDI) based binder with not more than .005 Toluylene Diphenyle Isocyane (TDI) added.
4. Structural Spray Coating: MDI based single-component, moisture cured 100% solids, pigmented polyurethane. Color shall be red.
5. Structural Spray Rubber: 0.5 mm to 1.5 mm 100% EPDM rubber granules. Color shall be red matching the structural spray coating color.

B. Leveling and Patching Material: Polyurethane-based formulation suitable for exterior use and approved by track surface system manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

A. General: Prepare substrates to receive surfacing products according to track surface system manufacturer's written instructions. Verify that substrates are sound and without high spots, ridges, hole, and depressions.

1. Asphalt to have specified slope.
2. Asphalt to cure minimum of 21 days prior to commencement of Work.
3. Concrete shall have 28 day minimum cure prior to commencement of Work.

B. Asphalt Substrates: Provide clean, sound surface free of foreign material, loose material, and other contaminants incompatible with track surface system.

1. Repair unsatisfactory surfaces and fill holes and depressions.
2. Treat control joints and other nonmoving substrate cracks to prevent telegraphing through track surface system.

3.2 INSTALLATION, GENERAL

A. General: Comply with track surface system manufacturer's written installation instructions. Install track surface system over area and in thickness indicated.

3.3 PRIMING

A. Apply polyurethane primer to entire area to be surfaced.

1. Apply uniformly at a rate of not less than .2 pounds per square yard.
2. Allow minimum of thirty minutes curing time before applying base mat.

3.4 BASE MAT INSTALLATION

A. Base Mat: consist of 20% polyurethane base mat binding agent and 80% EPDM rubber base mat granulate.

B. Prepare mixture in clean, dry mechanical mixer.

C. Apply base mat by mechanically operated screed machine with electrically heated screed.

D. Apply in one layer only at thickness specified.

E. Joint work to be flush with adjacent mat. Joints to have edges primed with base mat prior to laying of adjacent base mat.

3.5 STRUCTURAL SPRAY INSTALLATION

A. Verify the base mat curing is complete.

B. Site mix single component polyurethane with colored EPDM rubber per manufacturer instructions.

C. Spray apply using air spray equipment approved by the structural spray manufacturer.

D. Apply structural spray coating at a rate of 1.8 pounds per square yard (minimum) per coat. Two coats required with a 3.6 pounds per square yard (minimum) total.

3.6 LINE MARKING

A. Measure and mark lines in accordance with National Federation of State High School Associations Current Rules, IAFF, and state rules. Submittal drawing required.

B. Paint: as recommended by manufacturer.

C. Clean the surface of dirt, grease or other objectionable material.

D. Lines shall be sharp and free of overspray.

3.7 PROTECTION

A. Monitor relative humidity conditions and relative curing rates for each step of installation process until curing is complete.

B. Restrict all traffic from surfaces until curing is complete.

C. Protect installed materials from damage due to foot and/or vehicular traffic and deleterious weather.

END OF SECTION

SECTION 32 5200

SYNTHETIC TURF

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this section.

1.2 SUMMARY

A. Furnishing, delivery, installation and warranty of a complete synthetic turf system including field turf, field markings and resilient infill material.

1.3 RELATED SECTIONS

A. Section 31 2010 Earth Moving

B. Section 33 4600 Subdrainage System for Synthetic Turf

1.4 REFERENCES

A. ATSM Standard Test Methods
   1. D1577 – Standard Test Method for Linear Density of Textile Fiber
   2. D5848 – Standard Test Method for Mass Per Unit Area of Pile Yarn Floor Covering
   3. D418 – Standard Test Method for Testing Pile Yarn Floor Covering Construction
   4. D1338 – Standard Test Method for Tuft Bind of Pile Yarn Floor Coverings
   5. D1682 – Standard Method of Test for Breaking Load and Elongation of Textile Fabrics
   6. D5034 – Standard Test Method of Breaking Strength and Elongation of Textile Fabrics (Grab Test)
   7. F1015 – Standard Test Method for Relative Abrasiveness of Synthetic Turf Playing Surfaces
   8. F1551 – Standard Test Methods for Water Permeability
   9. D2859 – Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials
   10. F355 – Standard Test Method for Shock-Absorbing Properties of Playing Surfaces
   11. F1936 – Standard Test Method for Shock-Absorbing Properties of North American Football Field Playing Systems as Measured in the Field
   12. D1557 – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

B. National Federation of High School (NFHS) Rules, as applicable. FIFA Rules of the Game or NCAA Soccer Rules, as applicable.

C. ASBA Sports Fields Contractor Manual

D. STC Suggested Guidelines for the Essential Elements of Synthetic Turf Systems

1.5 SITE EXAMINATION

A. The Contractor shall verify clearing and grubbing operations were adequate prior to repairing subgrade.

B. The Contractor, along with the Engineer, Grading Subcontractor (if applicable) and Synthetic Turf Subcontractor (if applicable), shall attend a joint inspection of the completed sub-base assembly for the purpose of determining the acceptability of that surface prior to installing the synthetic turf product and to confirm actual site dimensions.

C. The inspection shall include a check for planarity. The finished surface shall not vary from a true plane more than 1/4" in 10 feet when measured in any direction. The Contractor shall provide all required tools and materials needed for the planarity check, which may include but not be limited to, a laser level, string line, straight edge and/or other assessment materials. The Contractor shall mark in the field any deviations from grade in excess of those specified above, as well as provide a marked up plan locating the deviations. The Contractor shall correct any deviations to the satisfaction of the Engineer and Synthetic Turf installer.

D. The compaction of aggregate base shall be 95% to Standard Proctor and surface tolerances shall not exceed ¼" over 10 feet.

E. The Contractor shall have a state registered surveyor conduct an elevation survey of the field area in a 25' grid to determine and verify that subgrade elevations and slopes are within previously specified tolerances. This elevation survey may require further verification of smaller areas within the 25' grid if determined necessary by the Engineer.

F. When any or all corrective procedures have been completed, the finished sub-base surface must be re-inspected, with the same representatives attending as the initial inspection. If required, additional repair and inspections are to be conducted until the subbase surface is deemed acceptable by the Engineer and Synthetic Turf Installer

G. Once the sub-base surface has been deemed acceptable, the Contractor shall submit a written certificate indicating the acceptance of:

1. The sub-base construction finished surface as totally suitable for the application of the selected synthetic turf system, and

2. The sub-base construction as totally suitable for work under this section to proceed with the final installation and fully warrant the athletic surface installation for the period and conditions specified herein.

H. Commencement of work under this section shall constitute acceptance of the work completed under other sections by the Contractor, acceptance of dimensions of the subbase, and hence, no claims for extra work based upon these conditions will be permitted.

1.6 ENVIRONMENTAL CONDITIONS

A. Install synthetic turf surfacing only when ambient air temperature is 35 F or above and the relative humidity is below 35% or as specified by the product manufacturer. Installation will not proceed if rain is imminent.

B. Install product only when prepared base is suitably free of dirt, dust, and petroleum products, is moisture free and sufficiently secured to prevent unwanted pedestrian and vehicular access.

1.7 QUALITY CONTROL

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section. The Turf Manufacturer:

1. Basis of design shall be “GameChanger 3c – 40Z” synthetic turf system as provided by Sporturf™. (800) 562-4492, www.sporturf.com

2. Other manufacturer’s than those listed above:
   a. Matrix ® Turf Fiber and Hellas Construction, Inc. www.hellasconstruction.com
   b. AstroTurf ® www.astroturf.com
   c. Midwest Field Turf, www.midwestfieldturf.com
   d. Sprinturf, www.sprinturf.com
   e. Requests for substitutions will be in accordance with Section 01 6000.
3. Must be experienced in the manufacturing of tall pile synthetic infill grass systems with the same fiber as specified.

4. The synthetic turf installer/manufacturer shall have the experience of at least ten (10) acceptable installations in the United States within the past five (5) years of tufted monofilament grass-like fabric with a rubber granule or rubber granule/sand infill.

5. Source Limitations: Obtain synthetic turf fiber through one source from a single manufacturer and provide fiber manufacturer’s warranty.

6. Manufacturer must be a member in good standing with the STC.

7. Manufacturer must utilize best practices as certified by ISO-9001 and ISO-14001.

8. Manufacturer must have no periods of insolvency over the last 25 years.

B. Installer Qualifications: Company specializing in performing the work of this section.

1. The Synthetic Turf Installer must provide competent workmen skilled in this type of synthetic grass installation. All technicians must have installed tall pile synthetic turf.

2. The designated Supervisory Personnel on the project must be certified, in writing by the Turf Manufacturer, as competent in the installation of this material, including seaming and proper installation of the infill mixture.

3. ASBA Certified Field Builder shall be on site for at least 25% of the installation of the sub-base and synthetic turf.

C. Prior to the beginning of installation, the Synthetic Turf Installer shall inspect the subbase. The installer will accept the sub-base in writing when the general contractor provides test results for compaction, planarity and permeability that are in compliance with the synthetic turf manufacturer's recommendations and as stated herein.

D. The Synthetic Turf Installer shall provide the necessary testing data to the Owner that the finished field meets the required initial shock attenuation, as per ASTM F1936.

E. Remove defective Work, whether the result of poor workmanship, defective products or damage, which has been rejected by the Engineer as unacceptable. Replace defective work in conformance with the Contract Documents.

1.8 SUBMITTALS

A. Submit the following:

1. Submit the exact product name/description as well as the name and location of the manufacturers and suppliers of each component. Manufacturers and suppliers must not be changed after the contract is awarded unless approved by the Owner in writing.

2. Submit two (2) samples, 12"x12" minimum size, illustrating details of finished product as bid, including full cross section of subbase, turf, and infill material.

3. Product Literature: Submit two (2) copies of manufacturer's recommended installation and maintenance information, including any technical criteria for evaluation of the installed product. Descriptions of all equipment recommended for the maintenance and repair of turf product, as well as a list of any activities not recommended relative to the warranty.

4. Submit a 1-lb sample of the selected bid infill material(s).

5. A letter and specification sheet certifying that the products of this section meet or exceed specified requirements.

6. Certified copies of independent (third-party) laboratory reports on ASTM tests as follows:

   a. Pile Height, Face Width & Total Fabric Weight, ASTM D418 or D5848
   b. Primary & Secondary Backing Weights, ASTM D418 or D5848

c. Tuft Bind, ASTM D1335
d. Grab Tear Strength, ASTM D1682 or D5034
e. Verification that product meets Gmax minimums for ASTM F1936 for life of installation.

7. ASTM test submittals may vary by no more than ¼" and 6 oz. of the specified product to bid. Bid winner must show NEW ASTM TESTS with contract submittals.

8. Name and experience of the designated supervisory personnel assigned to this project shall be submitted with the proposal. Changes to this assignment after contract can only be made if approved in writing by the Owner. Include a listing of other on-site personnel and their experience.

9. The Synthetic Turf Installer and Turf Manufacturer shall provide evidence that the turf system does not violate any other manufacturer's patents, patents allowed or patents pending.

10. The Synthetic Turf Installer and the Turf Manufacturer shall provide complete information on its warranty/insurance policy and coverage, as noted in Section 1.08. Provide a complete sample copy of all warranty documentation.

B. Prior to ordering of materials:

1. The Contractor shall submit Shop Drawings indicating:

a. Field Layout.
b. Field Marking Plan and details for Soccer, Men's Lacrosse, and Women's Lacrosse if required.
c. Mid-field emblem layout with color samples.
d. Roll/Seaming Layout.
e. Methods of attachment, field openings and perimeter conditions.

2. The Turf Manufacturer must submit the fiber manufacturer's name, type of fiber and composition of fiber.

3. Shop Drawings: Shop drawings are to be submitted for review by the Engineer prior to manufacture of product and are to contain information regarding locations of seams, anchorage details, goal post/insert details, line and event marking locations and dimensions, turf roll widths and dimensions.

C. Prior to Final Acceptance, the Contractor shall submit to the Owner:

1. Three (3) copies of Maintenance Manuals, which will include all necessary instructions for the proper care and preventative maintenance of the synthetic turf system, including painting and markings. Also address remedial measures for graffiti removal.

2. The turf installer/supplier shall provide on-site maintenance training for the Owner's maintenance personnel on how to maintain the field properly for the amount of time as required to fully demonstrate proper field maintenance.

3. Written verification of a suitable training session for the Owner's maintenance staff on how to maintain the completed installation.

4. Project Record Documents: Record actual locations of seams, drains or other pertinent information.

5. Enter into a contract with the Owner to provide annual operations and maintenance assistance for two (2) years. Provide contract, contact information and schedule first visit. Quarterly each year provide operations and maintenance that includes:

    a. On-site inspection analysis of seams, infill, inlay, edge, and field inserts.
    b. The Contractor shall sweep and groom the field at each quarterly visit.
    c. Synthetic turf report with results of inspection analysis, photos, results of cleaning process, recommendations for future cleaning/maintenance, and Gmax testing results.
    d. The Contractor must execute an annual operations and maintenance assistance contract before substantial completion can be approved.

6. Test Results: Test certifications issued by an independent testing agency that the synthetic surface meets with the requirements of the ASTM tests noted herein are to be submitted.

D. Base Conditions Acceptance: Prior to installation of the synthetic turf system, the Contractor is to submit in writing an acceptance of the compacted base and sub-base system as being acceptable by the turf manufacturer and suitable for the successful installation of the proprietary synthetic turf system.

1.9 WARRANTY

A. The Contractor shall provide a minimum eight (8) year, 3rd party insured warranty policy by the manufacturer, against defects in materials and workmanship. Defects shall include, but not be limited to ultraviolet ray fading, degradation, or excessive wear of fiber, insect damage, rot, mildew and fungus growth.

B. Submit information confirming that a 3rd Party Insurance Policy, non-cancelable, non-prorated, and pre-paid for the entire duration of the warranty is in effect covering this installation, and underwritten by a Best A Rated Insurance Carrier.

C. Warranty shall be for full replacement of any damaged product within the warranty period. Warranty shall be comprehensive and sufficient to replace entire field if necessary.

D. Warranty shall become effective from the date of substantial completion.

E. Warranty shall include Gmax testing on a bi-annual basis demonstrating an initial Gmax not exceeding 125 G's initially and not exceeding 175 G's at any time during the warranty period at the Contractor's expense. Test results shall be submitted to the Engineer within 30 days of each test.

F. The Warranty shall contain no usage limits for warranted field.

G. Submit Manufacturer Warranty and ensure that forms have been completed in Owner's name and registered with Manufacturer.

H. Supply Warranty Insurance Certificate with complete information on contacting the Insurance Carrier should a claim need to be made. Warranty insurance policy shall have the Owner listed as insured.

PART 2 MATERIALS

2.1 SUPPLIER QUALIFICATIONS

A. The Owner has conducted an extensive review of synthetic turf products, including visiting installed sites and review of other agencies' review criteria. Based upon their research, they have established the following criteria for acceptance of a synthetic turf product. No variation from these criteria shall be allowed. The Owner's review is considered final.

B. The Synthetic Turf Installer shall have minimum experience of at least 5 years, actively selling, installing and maintaining in-fill synthetic turf project of similar size.

C. The Respondent must have installed a minimum of 50 full size (50,000 sf or larger) in-filled synthetic turf fields.

D. The Synthetic Turf Installer must provide a list of references based on previous installations.

E. The Respondent must be a member in good standing with the ASBA (Athletic Sports Builders Association) and STC (Synthetic Turf Council).

F. Installation team shall be established, insured installation firm experienced as a premium turf installer with suitable equipment and supervisory personnel, with a minimum of 5 years' experience with 15 foot wide tufted materials.

G. Installation team shall be trained and certified, in writing, by the turf manufacturer, as competent in the installation of the specified material, including seaming and proper installation of the infill mixture.

H. ASBA Certified Field Builder shall be on site for at least 25% of the installation of the sub-base and synthetic turf.

2.2 TURF GROOMER

A. Owner will purchase maintenance groomer/brush outside of this contract. The products will be Synthetic Sports Turf Groomer with Super Duty Blue Brushes (Item 720SDE) and Synthetic Turf Spring Tine Rake (Item STR) both by Greens Groomer Worldwide, Inc., P.O. Box 34151, Indianapolis, Indiana 46234 (Phone: 888/298-8852).

1. Turf manufacturer shall recommend an alternative groomer if the above groomer is not acceptable.

2. From a warranty standpoint, turf manufacturer shall submit a written statement approving the use of this groomer on their turf.

2.3 TURF SYSTEM

A. Turf Fiber:

1. The turf fiber must be tufted to the backing with a minimum tuft bind of 10 pounds.
2. The tufted fiber weight shall be a minimum of 40 ounces per square yard.
3. The turf fiber shall be 100% polyethylene.
4. The turf fiber shall be non-abrasive and a minimum of 100 microns thick.
5. The turf fiber must contain less than 100 ppm of lead in all colors.
6. The turf fibers must be from the same dye lots.
7. The turf fibers must be from a single source.
8. The turf fibers must be guaranteed for a period of Eight Years not to fade or fail (as distinguished from a change in texture) or have a pile height decrease to 50% of pile height as result of UV degradation.
9. The infill must be within ¼" of the tips of the fibers upon completion of the install.
10. The turf fiber must retain a minimum of 75% of its original fibril width after 10,000 cycles on the Lisport Studded Roll Test Machine.
11. The pile fiber shall possess the following characteristics:

Characteristic	Value	Test
Linear Density (Denier)	14,000 Combined	ASTM D 1577
Yarn Thickness	100 Microns (slit); 235Microns (mono)	ASTM D 3218
Tensile Strength	37 N (slit);71 N (mono)	ASTM D 2256
Pile Weight*	40 oz./yd2	ASTM D 5848
Fiber manufacturer must be from the same source		

The above specifications are nominal. *Values are +/- 5%.

12. The pile fabric shall possess the following physical characteristics:

Characteristic	Value	Test
Finished Pile Height*	2" (51mm)	ASTM D 5823
Product Weight (total)*	69 oz./yd2	ASTM D 3218
Primary Backing Weight*	7.4 oz./yd2	ASTM D 2256
Secondary coating Weight**	22 oz./yd2	ASTM D 5848
Fabric Width	15' (4.57m)	ASTM D 5793
Tuft Gauge	1/2"	ASTM D 5793
Grab Tear Strength	200-1b-F	ASTM D 5034
Tuft Bind	>10-1b-F	ASTM D 1335
Infill (Sand)	1 lb Silica Sand	None
Infill (Rubber)	3 lbs. SBR Rubber	None

Except where noted as a minimum, the above specifications are nominal.

* Values are +/- 5%. **All values are +/- 3 oz./yd2.

B. Backing Material

1. Primary Backing:
   a. Primary backing must be a dual layered woven polypropylene material.

b. Primary backing system weight must be a minimum of 7.0 ounces/square yard.

2. Secondary Backing:
   a. Secondary backing system weight must be a minimum of 22 ounces/ square yard.
   b. Secondary backing shall saturate the primary backing and effectively lock the fiber tufts in place to the primary backing.
   c. Secondary backing must be a heat activated polyurethane coating with no vegetable based polyols.
   d. Secondary backing system shall have minimum tuft bind strength of 10 pounds.
   e. Secondary backing must have Drainage Perforations: 3/16" to ¼" diameter at 4 inches or less on center each way. Non-perforated backing is not acceptable.

C. Turf roll seams: to be sewn or glued on site so that no openings larger than the porous backing mat openings are created. Roll width to coincide with tufted-in sports line markings where possible. All turf fabric edges to be securely bound as per the perimeter detail design. Adhesives for joining seams of turf together shall be Nordot 34G, Mapei 2K, Turf Claw, hot melt technology or equivalent. No substitutions.

D. Fabric surface: shall be constructed and installed in minimum widths of 15 feet with no longitudinal or transverse seams, except for inlaid lines with a finish roll assembly. Seams shall be 15'-0" apart. Rolls that do not comply with the proper length or conform to the seaming diagram, as approved prior to installation, shall be rejected from the site. No fitted pieces shall be allowed to true alignment. Parallel seams only are acceptable in the main playing areas. No head seams are acceptable on the sports fields.

E. The entire system shall be resistant to weather, including ultra-violet light and heat degradation; insects, rot, mildew and fungus growth and be non-allergenic and non-toxic.

F. Fiber Colors: Submit samples of the full available color palette for owner approval prior to placing order for turf including at a minimum the below listed colors: (Specified)

1. Color 1: Grass, green in standard color, as selected by the Owner

2. Color 2: White for soccer lines and markings

3. Additional colors as needed.

G. The Mid-field Center Logo shall be provided by the owner in a standard PDF or EPS file to the selected contractor. Contractor shall submit a shop drawing of Logo to include colors and dimensions for approval by the owner prior to ordering. (Specify or Delete)

H. The turf material shall be non-combustible and pass the DIN standard Pill Burn test or ASTM D 2859.

2.3 LINES, MARKINGS AND IN-LAID TURF

A. All line material is to be identical dimensionally and of the same material to that used for the main playing field fiber system.

B. Inlaid material as indicated on the drawings to be identical, except for fiber color, as the main turf field.

C. All lines and markings shall be accurately set and surveyed to within ½" tolerance of the location shown on the drawings and in conformance with specified field marking standards.

D. All lines and markings shall be installed prior to any installation of in-fill material.

2.4 SYNTHETIC GLUE MATERIAL

A. Adhesive products shall be Nordot 34G, Mapei 2K, Turf Claw, hot melt technology or equivalent as approved by the engineer.

B. Any adhesive products required for the installation of a proposed turf system shall be purpose-suited to the system. The material and application methods shall be as recommended by the adhesive manufacturer.

C. Disposal of adhesive containers and unused adhesives as well as any fees resulting from such disposal shall be the responsibility of the Contractor.

2.5 INFILL MATERIAL

A. The synthetic infill material shall consist of a blend of graded, silica sand and treated and mixed ground rubber.

1. Sand: specially-graded, dust-free silica sand shall be placed on the turf in a minimum quantity of 1 pound/ square foot and shall include test results that demonstrate the following minimum properties:
   a. Color – tan
   b. Sand shall be round non-angular in shape
   c. Roundness – 0.6+
   d. Hardness - 0.6-0.8 on the Mohs Scale
   e. Size – 1.00 mm ± 0.15 mm
   f. Density – 90 – 95 lbs/ cu ft.
   g. Dust - < 0.001 %
   h. Angle of Repose - < 30°
   i. Sand shall be heavy metal safe
2. Rubber: Rubber is SBR ambient (styrene butadiene rubber) rubber, color black, 10-18 mesh, that is 99% fiber free and is heavy metal safe. Rubber shall be placed on the turf in a minimum quantity as referenced the table in Section 2.02 in this document and shall be of the following Mesh Size Distribution:

	Mesh Size	% Retained
a.	10	0-15%
b.	12	5-30%
a.	16	40-70%
b.	20	15-35%
c.	30	0-10%
d.	40	0-1%

e. Pan 0-1%

B. The infill materials shall be installed to allow an exposed fiber of not less than ¼ inch after finish brushing and ½ inch after 180 days.

C. Sufficient quantities of the top dressing infill material must be stored on site at the time of installation to be used 180 days after the completion of the installation to mitigate the differential settling of high traffic zones on the field. This fill addition must be carried out by the Contractor within the time specified above.

D. 100% NEW INFILL ONLY. No replacement rubber from other turf permitted.

E. New infill must have point of origin with sieve analysis.

2.6 EXTRA MATERIALS

A. Provide extra turf material of each color provided from the same production run for Owner's repair stock as follows: Each Green Color - 15 foot x 30 foot.

B. Provide extra rubber infill granules in the amount of 2% of the total used on this project. Extra rubber shall be provided in bags.

C. Package extra materials with protective covering for storage and label. Deliver extra materials to the Owner.

PART 3 EXECUTION

3.1 GENERAL

A. Installation of the synthetic turf system is to comply with the manufacturer's recommendations, requirements and the reviewed and approved shop drawings.

B. Perform all work in strict accordance with the Contract Documents and the manufacturer's specifications and instructions. Only those skilled technicians proposed in the bid phase are to be assigned to this project by the Contractor.

C. The designated Supervisor for the Synthetic Turf Installer must be present during any and all construction activity associated with the field installation, including testing, cleanup and training.

D. All products and equipment are to be from sources approved by the authorized turf manufacturer and conform to the specifications.

3.2 PRODUCT DELIVERY, STORAGE & HANDLING

A. Deliver products to site in original containers and wrappers as agreed between the Engineer and Contractor. Inspect products upon delivery for damage.

B. Store products in a location and in a position that protects them from crush damage or any other defects.

C. Handle and store (on and off site) all materials safely to ensure their physical properties are not adversely affected and that they are not subject to vandalism or damage.

D. Rubber and sand infill shall arrive dry and loose. No rubber shall be accepted that is bulked or solid.

E. Adhesives shall arrive in dry, sealed containers.

F. Rubber infill shall arrive in large sacks or bags without tears or loose material about.

3.3 PLUGS AND FITTINGS

A. All permanent field fittings penetrating the turf indicated on the drawings shall be securely sealed to the turf surface so that no infill material is allowed to spill to the substrate.

3.4 TURF INSTALLATION

A. Install synthetic turf system in accordance with the manufacturer's written installation instructions.

B. All inlaid areas shall have full fastenings and no loose areas. At no time can pulling on the section separate the material.

C. Turf shall be attached to the perimeter edge as shown in the construction plans and as per the manufacturer.

D. All seams and inlaid areas shall be brushed thoroughly before infill materials are installed.

E. All terminations shall be as detailed and approved in the shop drawings.

3.5 INFILL INSTALLATION

A. The synthetic turf shall be thoroughly brushed prior to installation of infill materials to remove wrinkles.

B. The infill materials shall be installed in layers, in accordance with the turf manufacturer's installation instructions. Any mix of materials shall be uniform and even in thickness.

C. Turf shall remain free draining at all times before, during and after the infill materials are installed.

3.6 FIELD MARKINGS

A. Sports field lines and event markings as per the Contract Documents shall be accurately positioned and marked in accordance with the current rules of the governing body. All lines shall be straight and true along the length of the marked boundary to within ½" along the length of any such boundary.

B. All markings shall be accurately measured and applied in widths and colors as required by the governing body and selected from the manufacturer's range of standard colors, or not more than one custom color if the manufacturer's standard colors do not meet the Owner's requirements.

3.7 TESTING

A. At the time of substantial completion and bi-annually during the life of the warranty, the Contractor shall perform a series of tests by use of an independent testing agency to evaluate the shock absorption characteristics of the field. The tests shall be performed on a 50 foot grid in both directions using an accelerometer in accordance with ASTM F1936 and ASTM F355. Test the field at a minimum of 12 points and submit the results to the Owner within 30 days of testing. At no point shall any reading exceed 170 Gmax during the life of the warranty. If any point exceeds the maximum deceleration, the Contractor shall make corrections to provide the allowable Gmax deceleration at the Contractor's expense.

3.8 CLEANING AND COMPLETION

A. Protect all installed work from other construction activities as installation progresses.

B. The Contractor shall keep the area clean throughout the construction period and free from the installation process, including track surfaces.

C. Upon completion of the installation, thoroughly clean surfaces and site of all refuse resulting from the installation process, including track surfaces.

D. Any damage to existing fixtures or facilities resulting from the installation of the synthetic turf system shall be repaired to original condition at the Contractor's expense prior to Substantial Completion and commencement of the Warranty Period.

E. A deficiency list will be produced by the Engineer at the conclusion of the project. All installation project deficiencies not in dispute must be remedied by the Contractor prior to the issuance of a certificate of Substantial Completion.

F. Contractor to provide a written acceptance by the Turf Manufacturer that the turf and base system is installed in accordance with their recommendations prior to final completion.

END OF SECTION

SECTION 33 4600

SUBDRAINAGE SYSTEM FOR SYNTHETIC TURF

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 RELATED WORK

A. Section 31 2000: Excavation, Bedding, Backfilling

B. Section 31 2010: Earth Moving

C. Section 32 1816: Resilient Track Surfacing

D. Section 32 5200: Synthetic Turf

E. Section 33 4100: Storm Sewers

1.3 DESCRIPTION OF WORK

A. Furnish all labor, materials, equipment and tools necessary to install a typical subdrainage system for synthetic turf as indicated on the drawings and as specified herein. The installation of all new materials shall be performed in strict accordance with the specification, product manufacturer's instructions, and in accordance with all approved shop drawings. A subdrainage system includes the following:

1. Subgrade preparation.

2. Trenching and removal of trench waste necessary for piping installation.

3. Installation of horizontal pipes, collector pipes, and outfall pipes per contract documents.

4. Backfilling drainage piping.

5. Installation of aggregate drainage course and aggregate surface course per contract documents.

6. Survey verification of aggregate course final elevation and any corrective actions to ensure final elevation is within the tolerances set herein.

1.4 QUALITY ASSURANCE

A. Standards: Install subdrainage system complying with synthetic turf manufacturer's requirements and the plans and specifications.

B. The Contractor, prior to installation of the synthetic turf, shall inspect the aggregate courses for conformance with the drawings and verify that the aggregate course meets or exceeds the requirements of the turf installer. The Owner's Testing Agency shall conduct compaction testing of the subgrade and aggregate courses, to ensure compliance with the specifications and drawings. The Contractor shall survey the subgrade and the aggregate courses to verify conformance with the approved drawings. The Contractor shall be responsible for correcting grade/planarity to conform with the drawings and specifications prior to installation of the synthetic turf.

C. Test Reports: Compaction testing results shall be submitted by the Testing Agency to the Contractor and duplicate copies to the Architect-Engineer within ten days after completion of the subdrainage system.

D. The Contractor shall provide the necessary written certification that the aggregate courses have been tested and meet the standards for infiltration, compaction, and planarity. The Written certification shall also be provided from turf manufacturer accepting the aggregate surface prior to placing synthetic turf.

E. Acceptance of the subdrainage system by the Owner will be based on the compaction testing and survey verification meeting compliance design grade requirements.

1.5 EXPERIENCE

A. Contractor Experience:

1. The Contractor may employ only qualified and experienced Supervisors and Technicians skilled in the installation of the synthetic turf drainage systems.

2. The Contractor must demonstrate its past experience on at least five (5) acceptable preparations of the subdrainage system for the installation of synthetic turf for full size football, soccer or other athletic/recreational fields (minimum of 70,000 square feet) in the United States within the past five years. A completed list of all installations of vertically draining porous aggregate base and drainage systems, contact names, and phone numbers shall be submitted to the Owner for review to demonstrate the Contractor's qualifications.

3. The Contractor's lead foreman must be a current and qualified employee of the Contractor; be skilled in the performance of the assigned duties; have a minimum of three years' experience managing or supervising similar size projects; and have installed the proposed products at least five (5) installations.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials, in sealed unopened containers with manufacturer's labels intact.

B. Aggregate shall be loaded and delivered to site in proper trucks so as to not segregate the product.

C. Aggregate shall be delivered with proper moisture content and must be protected for weather events that will wash out the fines in the product

D. Store materials in protected area at a temperature not to exceed maximum and minimum

temperatures as recommended by manufacturer. Protect products from UV degradation.

1.7 SUBMITTALS

A. The Contractor shall submit the following information for approval prior to the start of base construction.

1. A statement of the origin, composition, gradation, and manufacturer of all aggregate materials to be used in the work, including testing information supporting that the proposed aggregates meet or exceed the technical specifications.

2. Supplier's material certifications for aggregate.

3. Product data sheets on all drainage pipe, fittings, and geotextile fabrics.

1.8 WARRANTY

A. Contractor shall supply an eight (8) year warranty on all labor, workmanship, and materials required to install the subdrainage system as shown on the drawings and stated in the specification.

B. All product warranties by all suppliers or product manufacturers shall be included and provided within the maintenance and operations manual.

PART 2 PRODUCTS

2.1 GEOTEXTILE FILTER FABRIC

A. Non-Woven Fabric: Mirafi 140N or approved equal, unless specified otherwise on plans. To be used as a wrap for perforated pipe, as shown on the plans.

B. Woven Fabric: Mirafi 500X or approved equal, unless specified otherwise on plans. To be used on entirety of field as a separation fabric between subgrade soils and aggregate course, as shown on the plans.

2.2 PIPING

A. Solid Piping and Fittings: High-Density Polyethylene (HDPE) meeting AASHTO M 252 Type S or M 294 Type S, double wall, corrugated exterior with smooth interior, water-tight. Pipe shall be ADS N-12 WT or approved equal.

B. Perforated Piping and Fittings: High-Density Polyethylene (HDPE) meeting AASHTO M 252 Type S or M 294 Type S, corrugated, slot perforations. Pipe shall be ADS Single Wall Highway Pipe or approved equal.

2.3 AGGREGATE DRAINAGE COURSE

A. The drainage course aggregate shall consist of a minimum of four (4) inches of AASHTO No. 57 coarse aggregate (open graded) type material meeting the gradation specifications shown in the table below. The drainage course aggregate must be an open graded aggregate material and free draining, consistent with the vertical draining requirements of the synthetic turf manufacturer.

AASHTO No. 57 Gradation

Sieve Size	Percent Passing	
	Min	Max
1-1/2”	99	100
1”	95	100
1/2”	25	60
No. 4	0	10
No. 8	0	5

B. Drainage aggregate shall be crushed limestone, dolomite, granite or quartzite, or combination thereof which is 100% fragmented.

C. Materials shall be hard, clean, and durable containing no more than one percent clay lumps or shale and no more than three percent soft particles when measured by weight.

D. Permeability: Greater than or equal to 15 inches per hour.

2.4 AGGREGATE SURFACE COURSE

A. The surface course aggregate shall consist of a minimum of two (2) inches of AASHTO No. 8 coarse aggregate (open graded) type material meeting the gradation specifications shown in the table below. The surface course aggregate must be an open graded aggregate material and free draining, consistent with the vertical draining requirements of the synthetic turf manufacturer.

AASHTO No. 8 Gradation

Sieve Size	Percent Passing	
	Min	Max
1/2”	99	100
3/8”	85	100
No. 4	10	30
No. 8	0	10
No 16	0	5

B. Surface aggregate shall be crushed limestone, dolomite, granite or quartzite, or combination thereof which is 100% fragmented.

C. Materials shall be hard, clean, and durable containing no more than one percent clay lumps or shale and no more than three percent soft particles when measured by weight.

D. Permeability: Greater than or equal to 15 inches per hour.

E. The surface course aggregate shall be transitioned in with the drainage course aggregate and vibrated and rolled to provide a uniformly compacted layer.

PART 3 EXECUTION

3.1 MATERIAL TESTING

A. Testing During Construction: To ensure that the quality of aggregate materials remain constant from point of supply to jobsite, the following protocol shall be used by the Contractor:

1. Contractor shall submit a gallon supply of each aggregate that meets the aforementioned properties for testing to ensure compliance by the Owner's testing agency prior to aggregate placement.

2. If anytime during the installation of the aggregate the Contractor or Owner's testing agency observes a change in material and/or quality based on a visual inspection, then the Contractor must stop all operations immediately and contact the Owner/Engineer in order to perform additional testings on the materials in question. Failure to do so is the sole responsibility of the Contractor. The Owner will not be held accountable for any liability if the Contractor does not contact the Owner.

3. Before commencing the placement of synthetic turf on the aggregate, Contractor shall perform a conformance survey by a Licensed Surveyor registered in the State of Nebraska, on a 30-foot grid over the finished aggregate surface of the entire playing field for the Owner's approval.

4. Prior to commencing the aggregate drainage course, confirm that the geotextile has been installed satisfactorily.

5. Protect the geotextile work as installation of the aggregate drainage course is commenced.

6. Do not operate machinery directly over the geotextile fabric. Delivery trucks shall enter the field only from the designated entrance point. Aggregate shall be dumped at the entrance first and spread toward the furthest point of the field. Extreme care must be taken not to disturb the geotextile or subgrade surfaces. Ensure a minimum depth of 4" of aggregate between the geotextile fabric and equipment.

7. The Owner will have an independent testing agent conduct a field infiltration testing per ASTM D3385, Standard Test Method for Infiltration Rate of Soils in Field Using Test Method BSI 7044 Method #4 or another equivalent percolation test to affirm the aggregate water permeability rate exceeds fifteen (15) inches per hour. Testing will be a minimum of four (4) tests, one (1) per quadrant of field.

3.2 TRENCHING

A. The Contractor shall excavate trenches for the subdrainage system piping at the locations, elevations, slopes, and neat lines as shown on the drawings.

B. Care shall be taken to not disturb areas of compacted subgrade which do not need to be disturbed for trench excavation.

C. All excess excavated subgrade soil shall be hauled offsite or stockpiled at a location as designated by the Contractor.

D. Any subgrade which is damaged during trench excavation shall be repaired and recompacted per this specification.

E. Provide minimum 6" horizontal distance between the drain pipe and trench wall on both sides and bottom of trench.

3.3 GEOTEXTILE INSTALLATION

A. Place geotextile promptly according to manufacturer's written instructions. Broom or roll geotextile smooth and free of wrinkles and folds. Overlap longitudinal joints 24 inches and transverse joints 24 inches.

B. Protect geotextile from traffic and other damage and place aggregate the same day. Only place as much geotextile as can be covered with aggregate in the same working day.

3.4 SUBGRADE PREPARATION

A. The subgrade must be sloped as specified on drawings but not less than a minimum slope of 0.5% for consistent base thickness, from the longitudinal center of the field towards the sidelines.

B. The subgrade must be compacted in both directions to attain the specified compaction rate specified in the Geotechnical Report, which is 98% of standard Proctor at a moisture content within 0 to +2% of optimum in accordance with ASTM D1557. Subgrade shall also be proof rolled to check entire field for inadequate compaction requiring correction.

C. The subgrade must be prepared to tolerances of not more than -1/2” to +1/4” from design grade to allow for even drainage. Subgrade shall be inspected and tested by the Owners testing agency prior to covering with geotextile. Written acceptance of subgrade shall be provided to the Contractor (copied to Architect-Engineer) prior to geotextile installation.

D. Repair and reestablish the grades to specified tolerances where completed or partially completed surfaces become saturated, settled, eroded or compromised due to subsequent construction traffic or weather conditions.

3.5 PIPE INSTALLATION

A. Install minimum 6” thick lift of drainage course aggregate in bottom of trench per this specification. Compact well and trim to the elevations and grades shown on the drawings.

B. Install drainage piping of the size, type, elevation, and slope as indicated on the plans.

C. Install pipe section throughout its length to true grades and alignment, and continuous slope in direction of flow.

D. Provide fittings which match pipe size and type as required.

E. Install drainage course aggregate around pipe up to bottom of drainage base layer.

3.6 AGGREGATE DRAINAGE COURSE INSTALLATION

A. The aggregate must be laid without damaging the soil subgrade, geotextile liner, or underlying drain pipes. It is very important not to create any depressions in the subgrade with heavy equipment. The specified aggregate supplied must conform to the recommended specifications, as noted above. The finished crushed aggregate drainage course supplied must be stable and permeable.

B. The drainage course shall be constructed in layers or lifts. Each layer must be compacted

in both directions to attain the specified compaction rate. The drainage course total thickness shall be in accordance with the details shown on the drawings.

C. The drainage course must be sloped a minimum of 0.5% from the center longitudinal axis towards the sidelines or as specified on the Plans.

D. The finish slope of the drainage course shall not vary from the finish grade surface slope.

E. The drainage course must be compacted in both directions to attain the specified compaction rate, which is 95% standard Proctor at a moisture content within 2% of optimum in accordance with ASTM D1557.

3.7 AGGREGATE SURFACE COURSE INSTALLATION

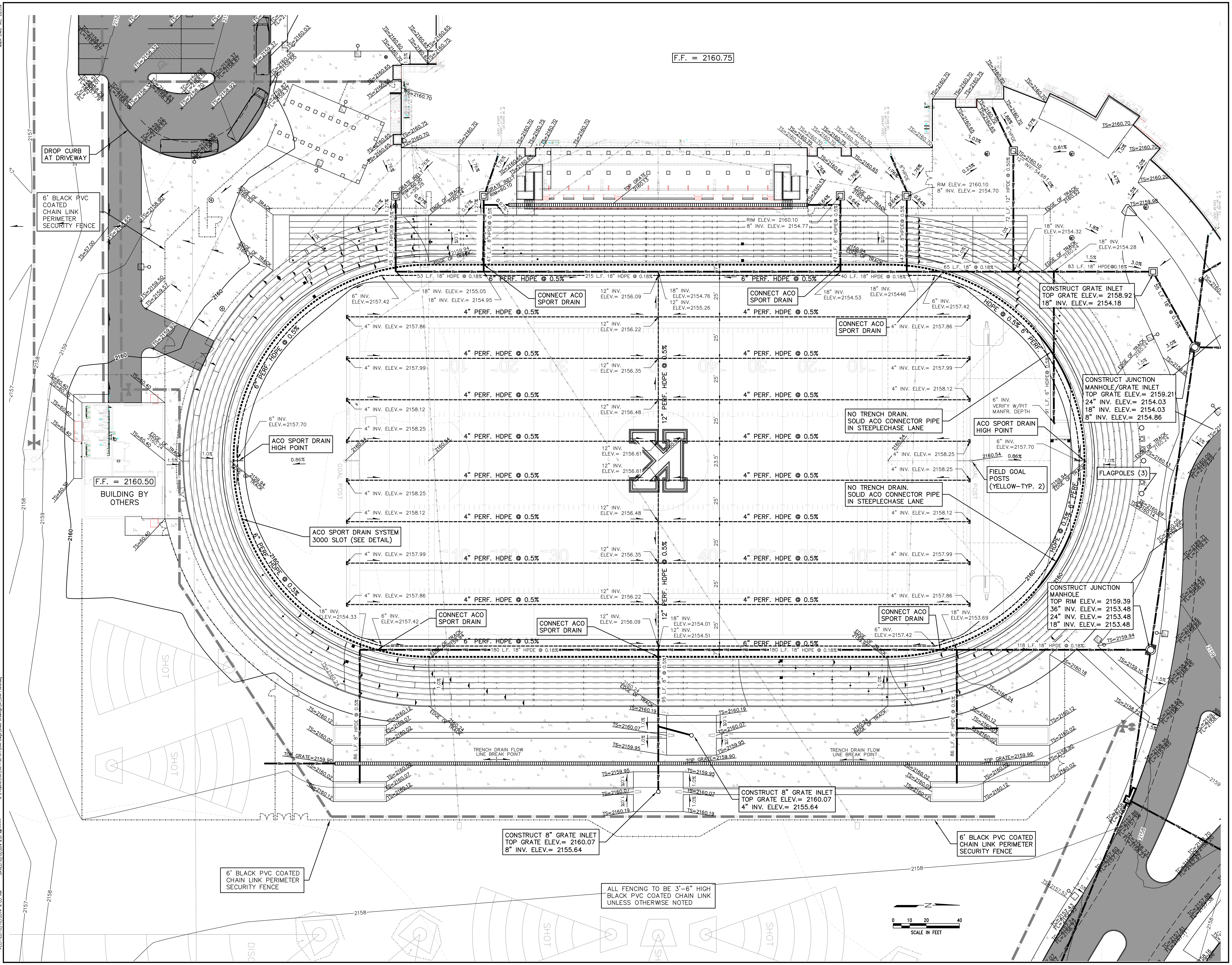
A. The surface course aggregate layer shall be installed at the specified depth shown on the project drawings and details.

B. The surface course material must be sloped 0.5% from the center longitudinal axis towards the sidelines unless otherwise specified.

C. The final surface course must be compacted in both directions to attain the specified compaction rate, which is 95% standard Proctor at a moisture content within 2% of optimum in accordance with ASTM D1557.

D. The final grade of the surface course shall neither vary from the specified grade by more than 1/4" from design grade, nor by more than 1/4" when measured under a 10 ft straightedge, in all directions. Laser guided fine grading is mandatory and shall be performed with laser equipped grading equipment (GPS grading will not be acceptable). This tolerance is required over the entire field. Check the tolerance-to-grade by means of an orbital laser once the aggregate is fine graded and compacted to proper density. Additional testing and inspection required as outlined within this specification.

END OF SECTION



F.F. = 2160.75
DROP CURB AT DRIVEWAY
6' BLACK PVC COATED CHAIN LINK PERIMETER SECURITY FENCE
CONNECT ACO SPORT DRAIN
4" PERF. HDPE @ 0.5%
6" PERF. HDPE @ 0.5%
12" PERF. HDPE @ 0.5%
ACO SPORT DRAIN HIGH POINT
NO TRENCH DRAIN. SOLID ACO CONNECTOR PIPE IN STEEPLECHASE LANE
CONSTRUCT GRATE INLET TOP GRATE ELEV.= 2158.92 18" INV. ELEV.= 2154.18
CONSTRUCT JUNCTION MANHOLE/GRATE INLET TOP GRATE ELEV.= 2159.21 24" INV. ELEV.= 2154.03 18" INV. ELEV.= 2154.03 8" INV. ELEV.= 2154.86
FIELD GOAL POSTS (YELLOW-TYP. 2)
FLAGPOLES (3)
F.F. = 2160.50
BUILDING BY OTHERS
ACO SPORT DRAIN SYSTEM 3000 SLOT (SEE DETAIL)
CONSTRUCT JUNCTION MANHOLE TOP RIM ELEV.= 2159.39 36" INV. ELEV.= 2153.48 24" INV. ELEV.= 2153.48 18" INV. ELEV.= 2153.48
CONSTRUCT 8" GRATE INLET TOP GRATE ELEV.= 2160.07 4" INV. ELEV.= 2155.64
CONSTRUCT 8" GRATE INLET TOP GRATE ELEV.= 2160.07 8" INV. ELEV.= 2155.64
TRENCH DRAIN FLOW LINE BREAK POINT
6' BLACK PVC COATED CHAIN LINK PERIMETER SECURITY FENCE
ALL FENCING TO BE 3'-6" HIGH BLACK PVC COATED CHAIN LINK UNLESS OTHERWISE NOTED
SCALE IN FEET

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McCook, NE (308) 345-3710

KEY PLAN

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

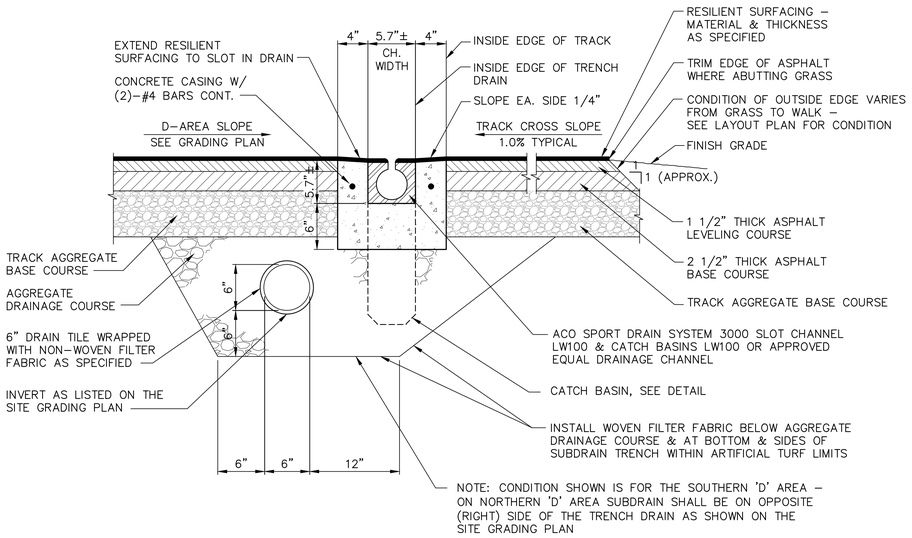
Revision/Issue	Date
Addendum No. 2	10/10/2014

ENLARGED TRACK PLAN/DETAIL

Project Number: 1355
Date: September 30, 2014

Sheet Number:
C6.0

M&A DWG. NO. 28554



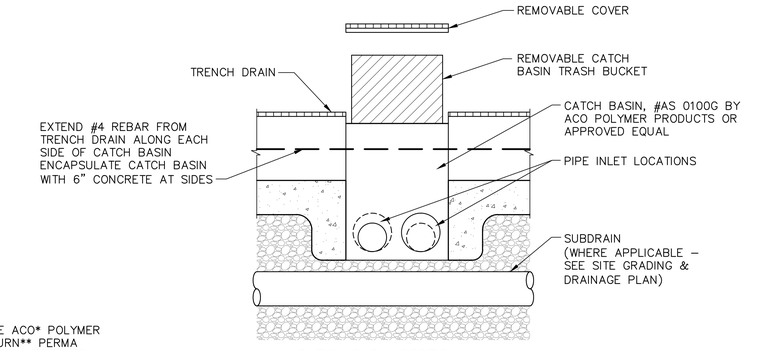
TRACK & TRENCH DRAIN SECTION AT 'D' AREA

NO SCALE

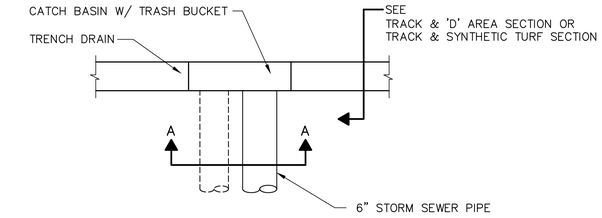
TRACK CATCH BASIN NOTES:

THE TRENCH DRAIN AND CATCH BASIN SYSTEM SHALL BE ACO* POLYMER PRODUCTS, SPORT DRAIN SYSTEM, MODEL #AS 0100G, ZURN** PERMA TRACK SYSTEM WITH PERMA TRENCH CATCH BASINS, MODEL #Z886–ST AND #Z887–6, OR APPROVED EQUAL. THE CONTRACTOR MAY USE A DIFFERENT TRENCH DRAIN SYSTEM WITH THE APPROVAL OF THE ARCHITECT/ENGINEER. IF A DIFFERENT SYSTEM IS USED THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR THE DESIGN OF THE TRENCHES.

* ACO POLYMER PRODUCTS TELEPHONE NO. (800) 543–4764
** ZURN PLUMBING PRODUCTS TELEPHONE NO. (716) 665–1132



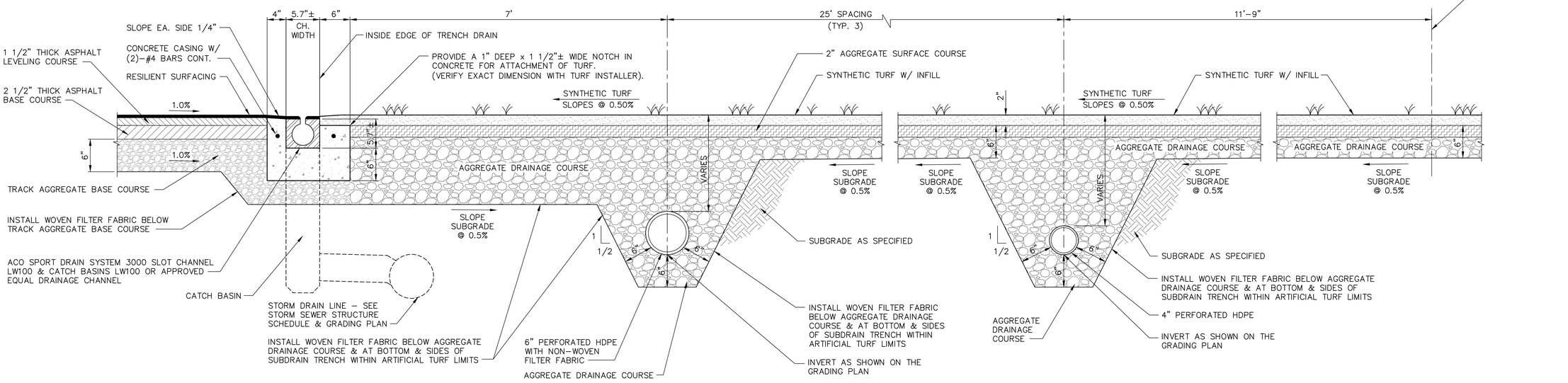
CATCH BASIN SECTION A–A



TRENCH DRAIN PLAN

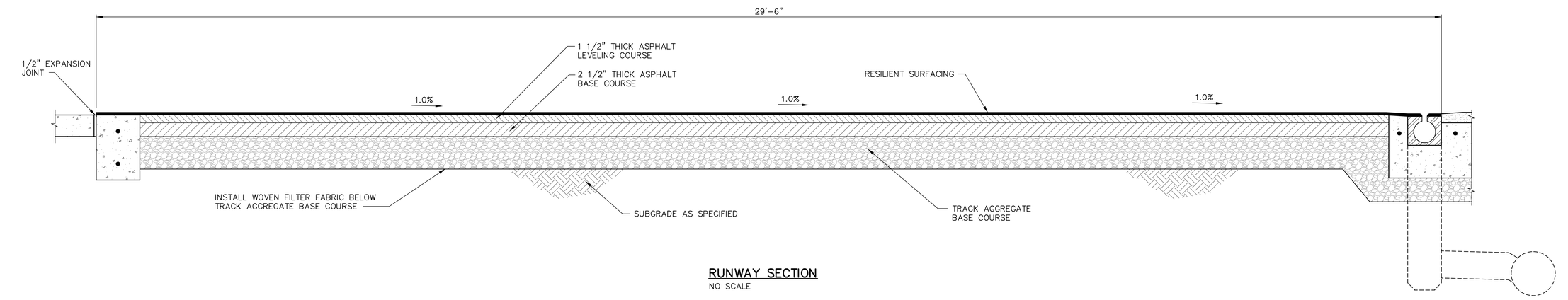
TRACK CATCH BASIN DETAIL

NO SCALE



TRACK SECTION – TRENCH DRAIN & SYNTHETIC TURF

NO SCALE



RUNWAY SECTION

NO SCALE

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PROFESSIONAL CIVIL ENGINEER
9/30/14
REED A. MILLER
E-19...
STATE OF NEBRASKA

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Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue	Date
Addendum No. 2	10/10/2014

TRENCH DETAILS

Project Number: 1355
Date: September 30, 2014

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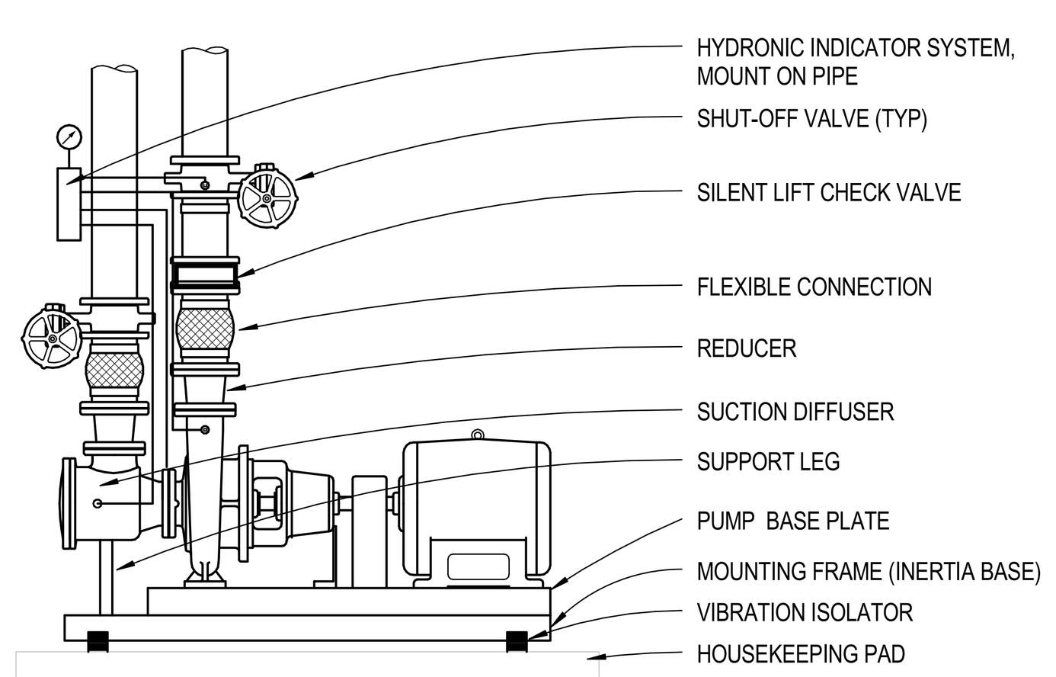
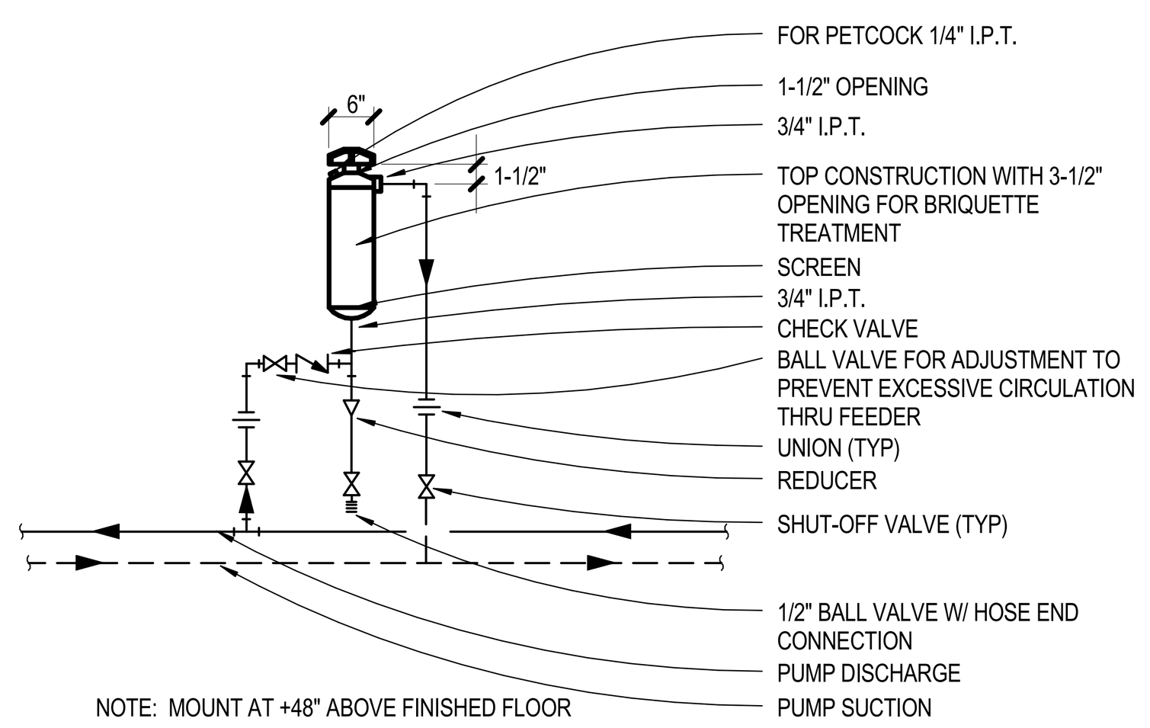
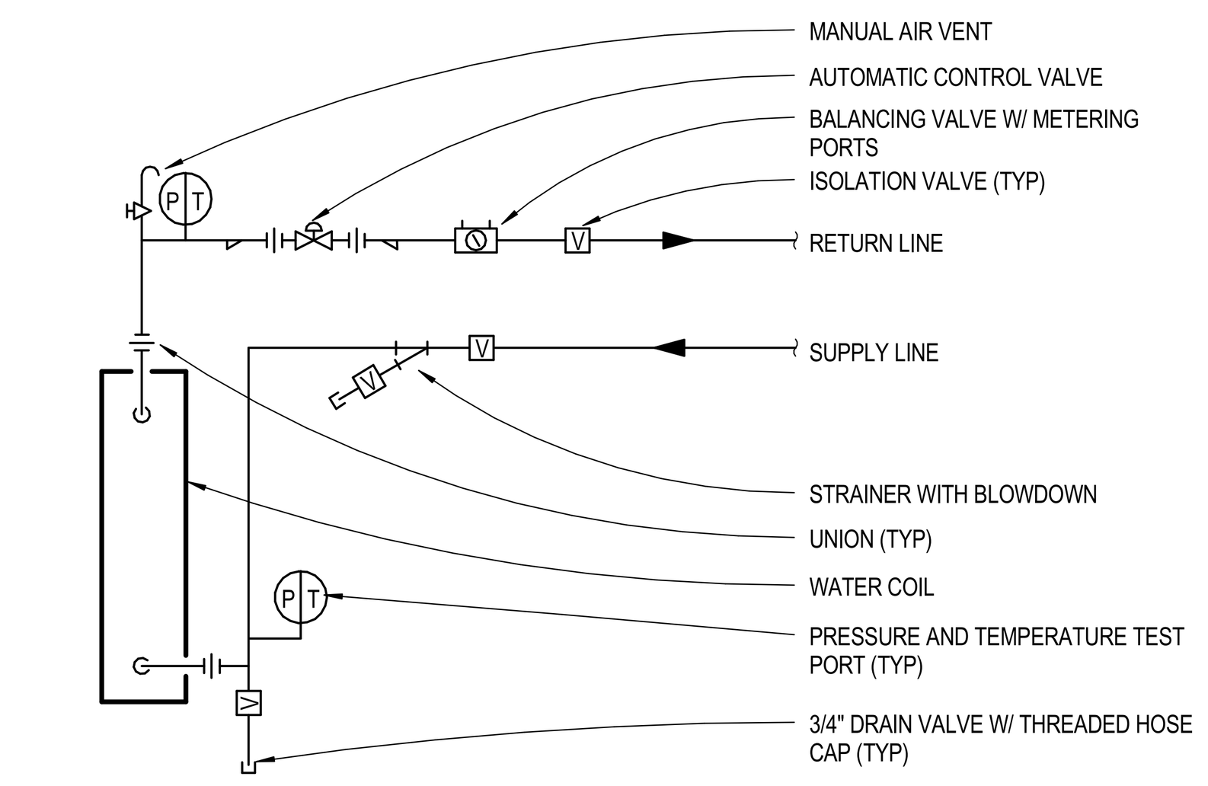
C6.5



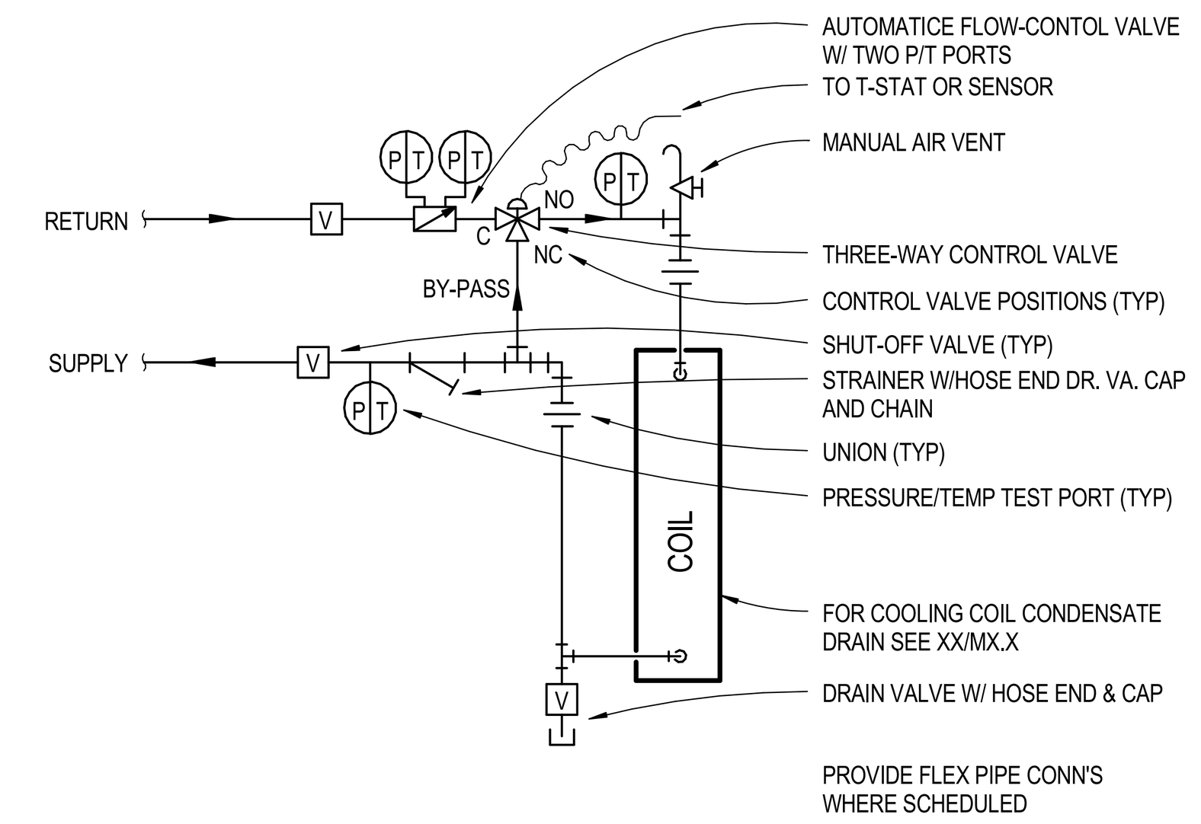
1 M4.2 **END SUCTION PUMP**
NO SCALE



2 M4.2 **CHEMICAL FEEDER**
NO SCALE



3 M4.2 **2-WAY COIL CONNECTION**
NO SCALE



4 M4.2 **3-WAY COIL CONNECTION**
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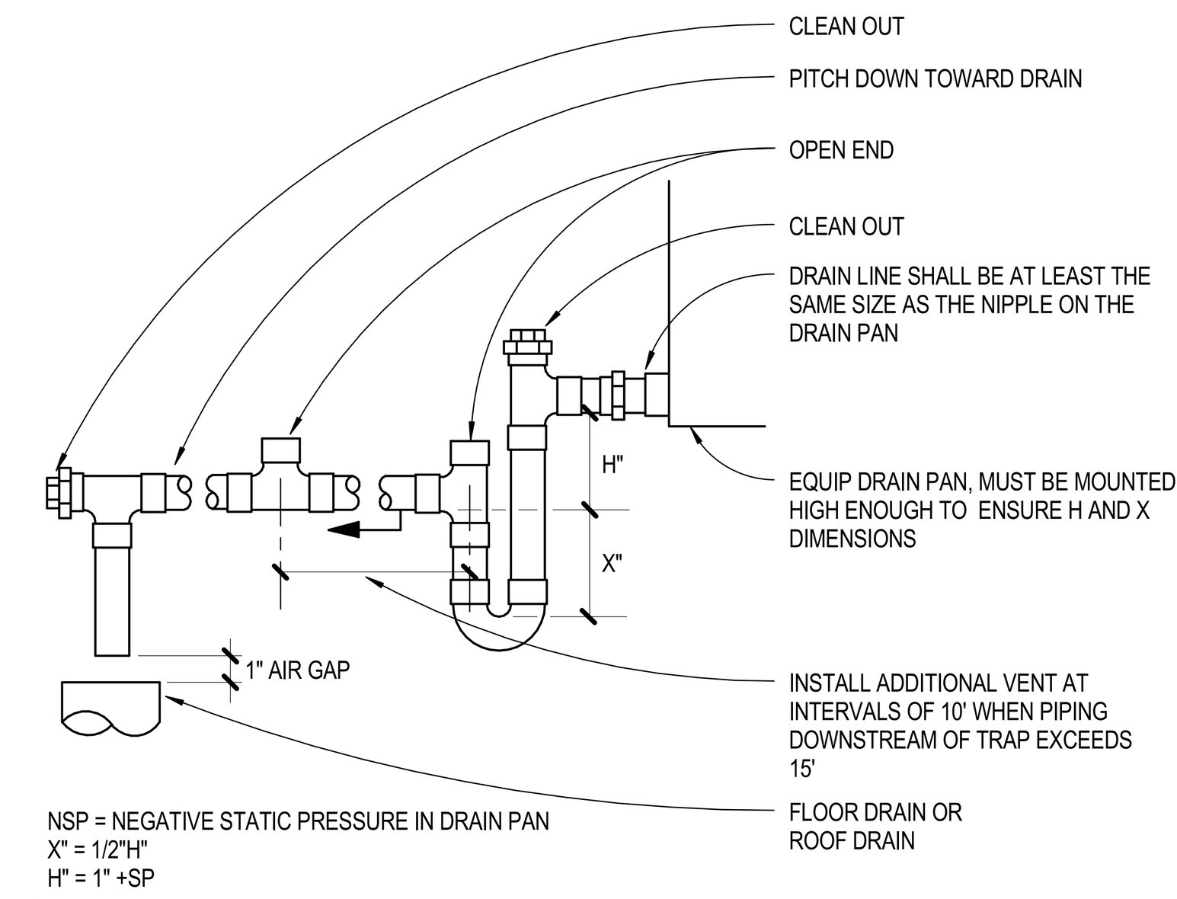
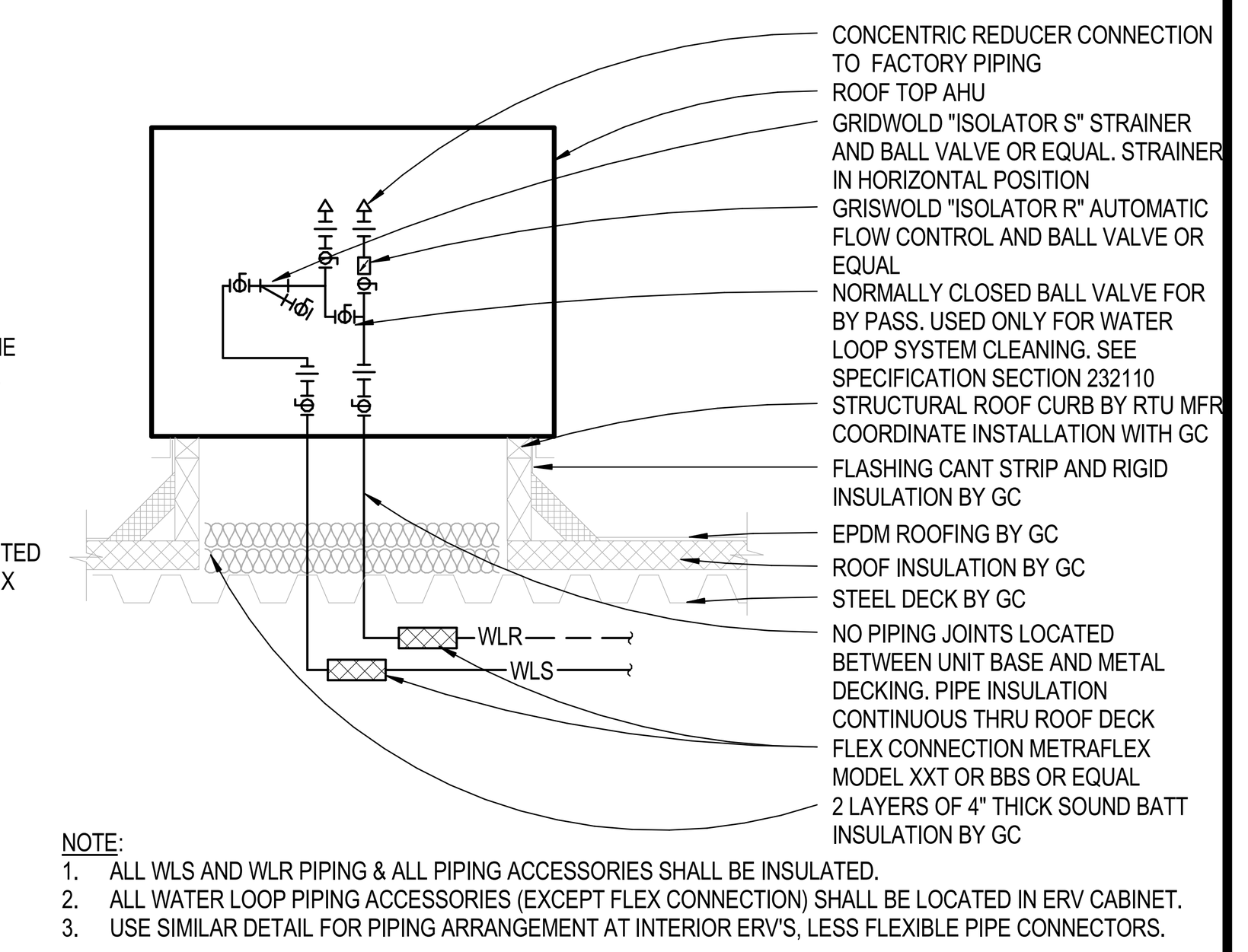
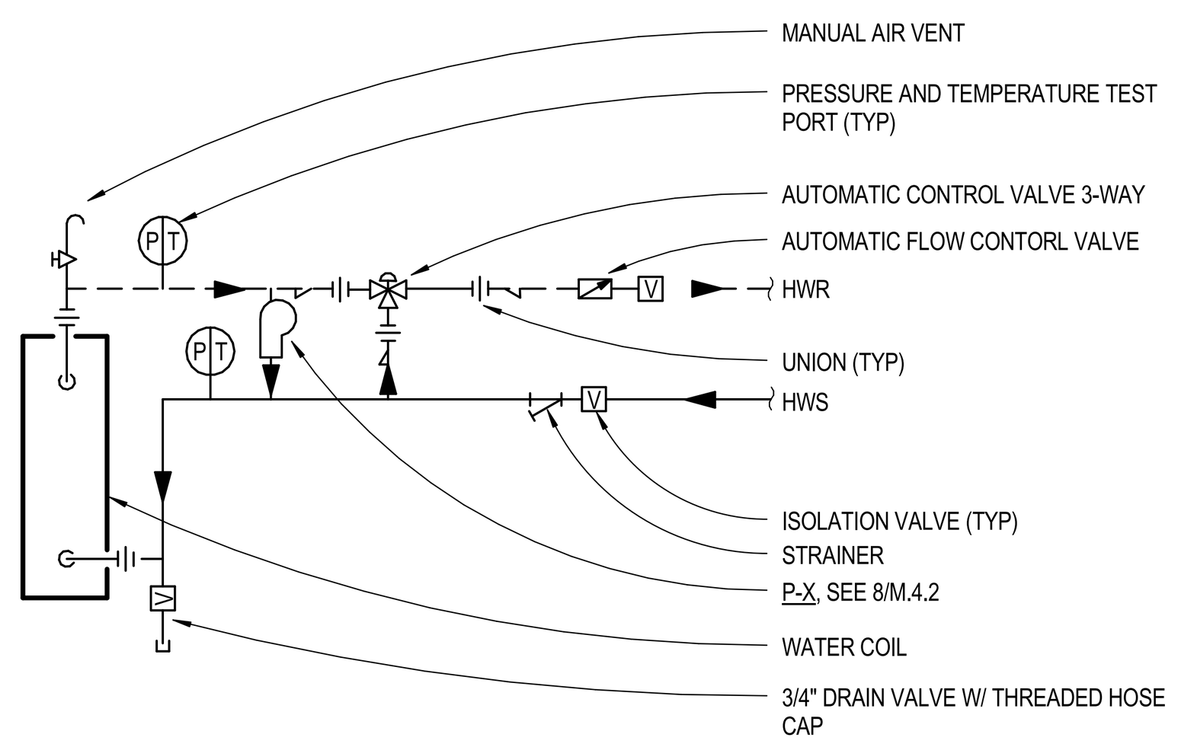


5 M4.2 **CONDENSATE PIPING - NEGATIVE PRESSURE**
NO SCALE

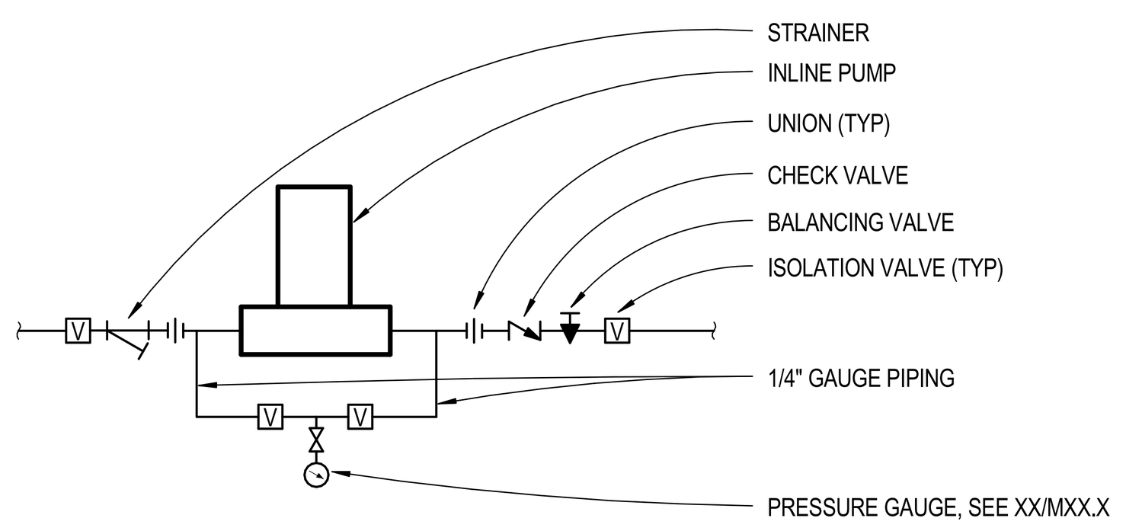


NOTE:
1. ALL WLS AND WLR PIPING & ALL PIPING ACCESSORIES SHALL BE INSULATED.
2. ALL WATER LOOP PIPING ACCESSORIES (EXCEPT FLEX CONNECTION) SHALL BE LOCATED IN ERV CABINET.
3. USE SIMILAR DETAIL FOR PIPING ARRANGEMENT AT INTERIOR ERV'S, LESS FLEXIBLE PIPE CONNECTORS.

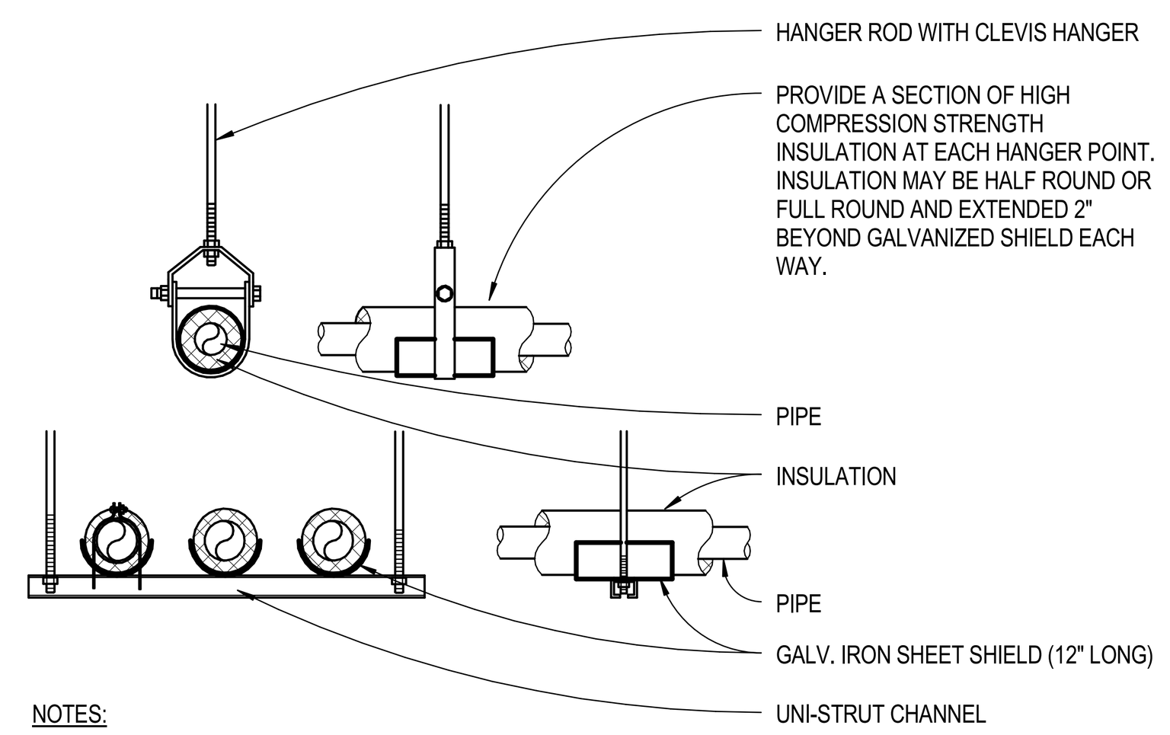
6 M4.2 **ROOFTOP RTU PIPING**
NO SCALE



7 M4.2 **HOT WATER COIL WITH PUMP**
NO SCALE

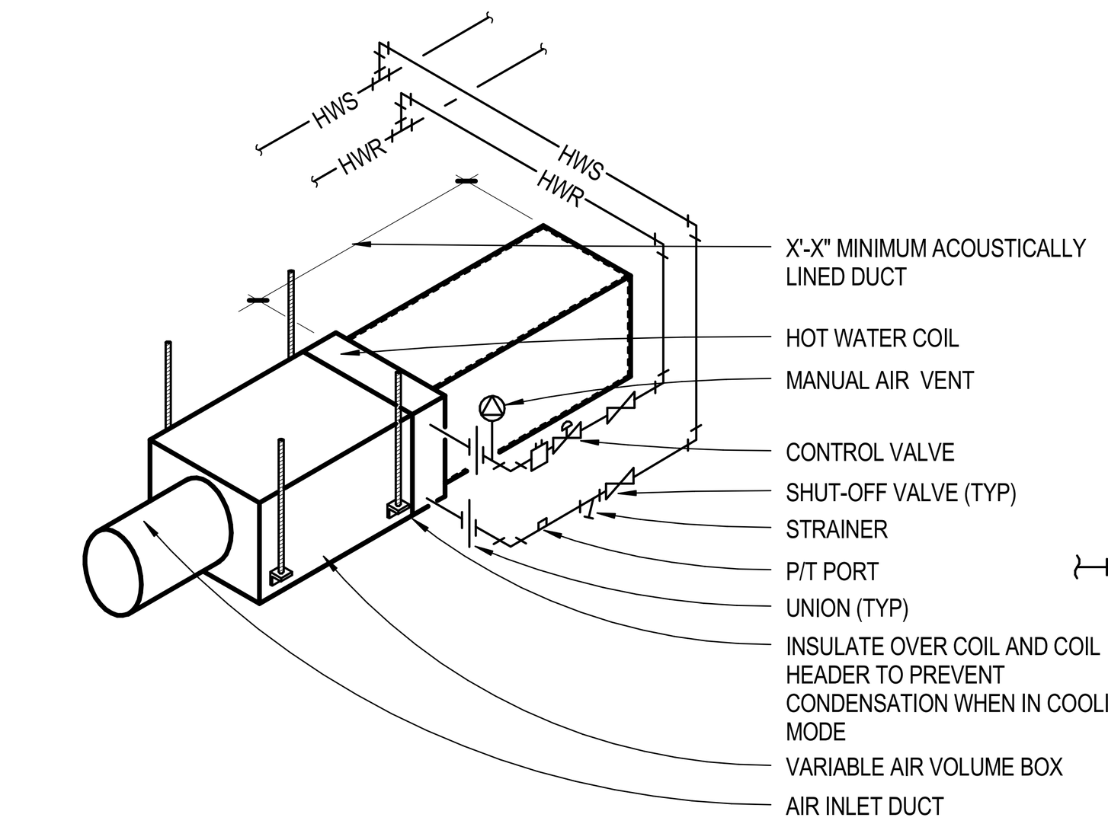


8 M4.2 **INLINE PUMP**
NO SCALE

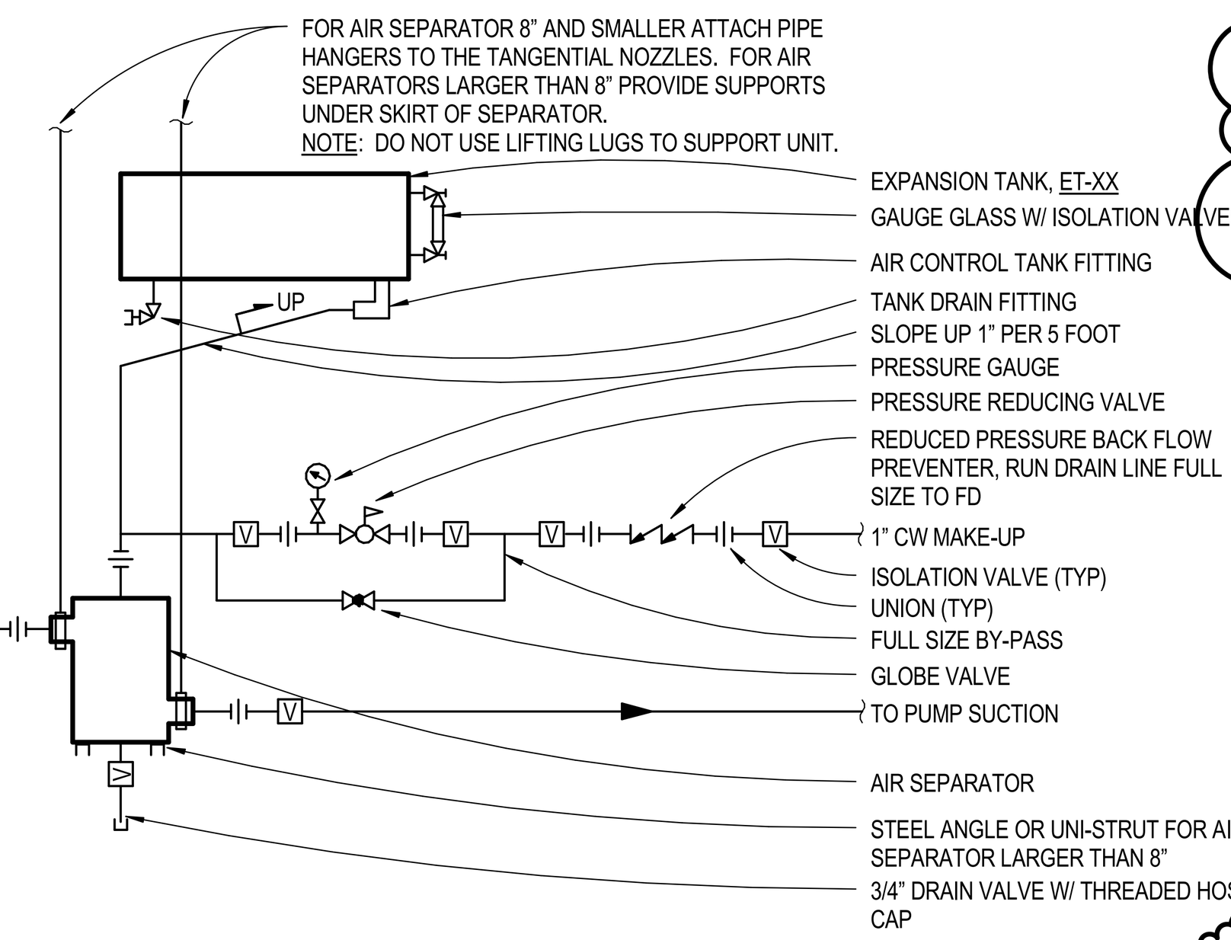


NOTES:
1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CHORD OF JOISTS OR BEAM.
2. PROVIDE COPPER OR PLASTIC COATED HANDERS FOR NON-INSULATED COPPER PIPE.

9 M4.2 **PIPE INSULATION AT HANGERS**
NO SCALE

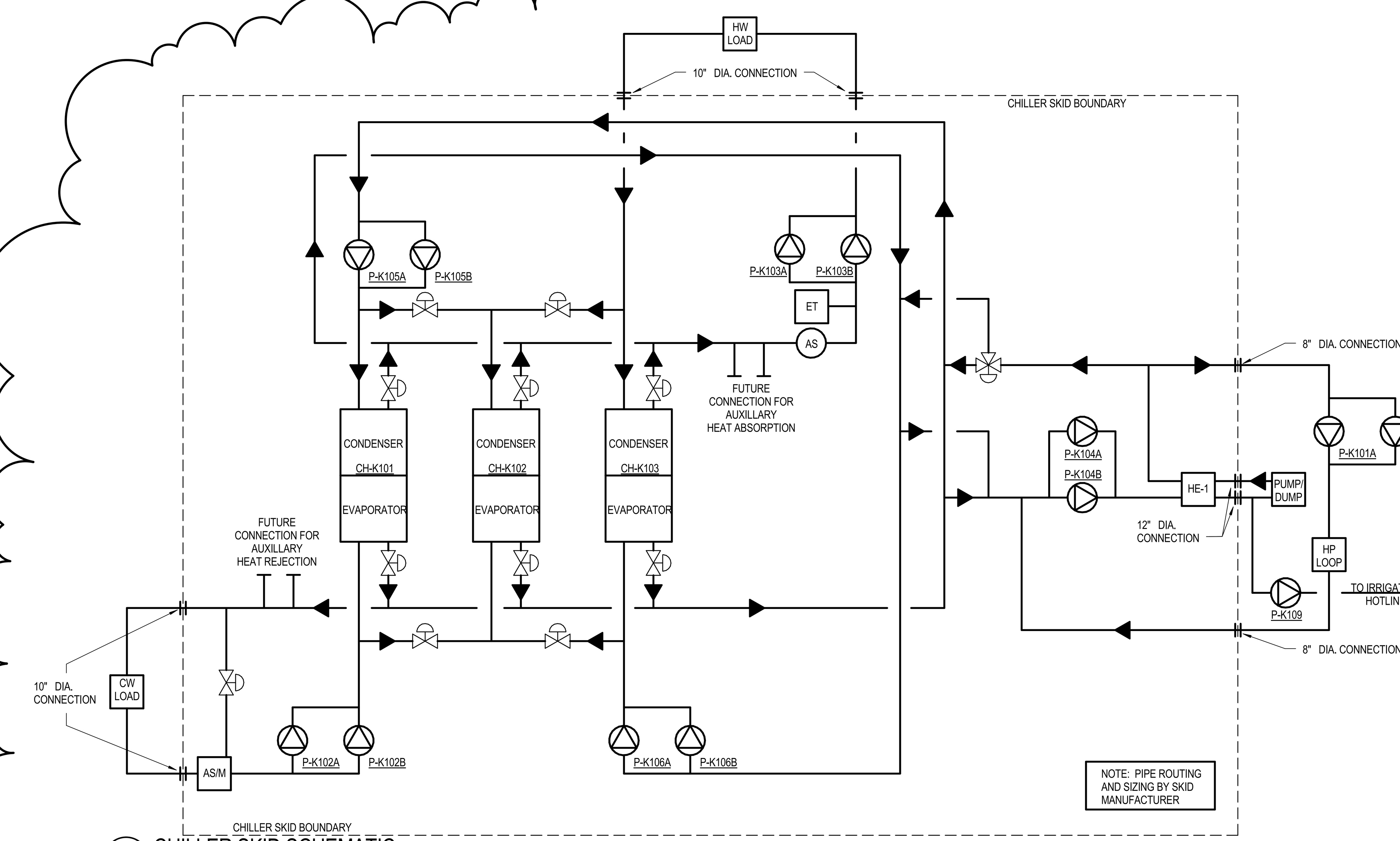


10 M4.2 **VAV REHEAT PIPING**
NO SCALE



11 M4.2 **WATER SYSTEM MAKE-UP & AIR CONTROL PIPING**
NO SCALE

12 M4.2 **NOT USED**
NO SCALE



13 M4.2 **CHILLER SKID SCHEMATIC**
NO SCALE

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9-30-2014

DLR Group
Architecture
Engineering
Planning
Interiors

DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

MECHANICAL DETAILS

ProjectNumber: 1355
Date: September 30, 2014

Sheet Number:
M4.2

DUCTLESS SPLIT SYSTEM - INDOOR UNIT

MARK	LOCATION (ROOM)	SERVES	CALCULATED TOTAL CAPACITY (MBH)	CALCULATED SENSIBLE CAPACITY (MBH)	COIL DATA NOMINAL CAPACITY (TONS)	COIL DATA TOTAL CAPACITY (MBH)	COIL DATA SENSIBLE CAPACITY (MBH)	COIL DATA E.A.T. DB/WB (°F)	FAN DATA AIRFLOW (CFM)	MOTOR DATA MCA	V	PH	MOCP	MOUNTING HEIGHT (BOTT OF UNIT)	COND. DRAIN SIZE (IN)	WEIGHT (LBS.)	BASIS OF DESIGN	NOTES
SSIU-A201	A205	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.4	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-AA101	AA107D	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.0	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-B101	B123	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.1	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-B201	B223	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.5	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-C101-A	C110	HEAD END	21.2	17.8	2.0	21.2	17.8	72.0/60.0	800	3.5	208	1	15	10'-0"	3/4	245	LIEBERT MMD24E	1
SSIU-C101-B	C110	HEAD END	21.2	17.8	2.0	21.2	17.8	72.0/60.0	800	3.5	208	1	15	10'-0"	3/4	245	LIEBERT MMD24E	1
SSIU-C201	C226	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.6	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-D101	D125	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.2	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-D201		COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.7	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-E101	E112	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.3	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-G201	G200	ELEV EQUIP RM	12.0	8.2	1.0	12.0	8.2	72.0/61.0	330	-	208	1	-	10'-0"	3/4	16	DAIKIN FTXN12KEVJU	
SSIU-G202	G202C	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.7	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-H101	H107	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.7	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-H201	H107	COMM	24.0	-	2.0	24.0	-	72.0/61.7	635	16.5	208	1	20	10'-0"	3/4	31	DAIKIN FAQ24PVJU	
SSIU-J101	J108	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.7	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-K101	K103C	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.7	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-L101	L105	ELEV EQUIP RM	12.0	8.2	1.0	12.0	8.2	72.0/61.0	330	-	208	1	-	10'-0"	3/4	16	DAIKIN FTXN12KEVJU	
SSIU-M201	M210C	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.7	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	
SSIU-N101	N106C	COMM	18.0	13.7	1.5	18.0	13.7	72.0/61.7	500	0.4	208	1	15	10'-0"	3/4	31	DAIKIN FAQ18PVJU	

GENERAL NOTES:
A. PROVIDE LOW AMBIENT CONTROLS FOR COOLING BELOW 55 °F OUTDOOR DB TEMPERATURES, DOWN TO (0) °F.
B. MOUNTING HEIGHT SHOWN IS A MINIMUM, TO FACILITATE CONDENSATE DRAINAGE. FINAL HEIGHT MAY BE HIGHER TO ACCOMMODATE CLEARANCES OR FACILITATE ATTACHMENT TO STRUCTURE.
C. PROVIDE UNITS WITH INTEGRAL CONDENSATE PUMP TO LIFT CONDENSATE ABOVE UNIT, AND ALLOW GRAVITY DRAINAGE ABOVE ADJACENT CEILING HEIGHTS.
D. CALCULATED CAPACITY BASED ON PIPING LENGTH SHOWN ON DRAWINGS.

MECH NOTES:
1. PROVIDE AIR DISTRIBUTION PLENUM

ROOF-TOP AIR CONDITIONING UNIT

MARK (RTU-X)	LOCATION	SUPPLY CFM	OUTSIDE AIR CFM	DX (EVAPORATOR) SECTION EAT (oF DB)	EAT (oF WB)	LAT (oF DB)	LAT (oF WB)	TOTAL CAP (MBH)	SENS CAP (MBH)	COIL AREA SF	COIL FACE VEL (FPM)	HOT GAS REHEAT SECTION LAT (oF DB)	LAT (oF WB)	REHEAT COIL CAP (MBH)	HEATING SECTION EAT (oF DB)	LAT (oF DB)	N. GAS INPUT (MBH)	N. GAS OUTPUT (MBH)	UNIT WEIGHT (LB)	FAN DATA SUPPLY HP	TOTAL SP (IN WG)	ELECTRICAL DATA V / PH	MCA	MOCP	MANUFACTURER & MODEL NUMBER	MECH NOTES
RTU-AA101	AA105	1990	1000	85	69.0	54.4	54.4	91.7	66.5	14.00	142	70.0	60.2	33.6	30.0	104.0	200	160	2210	2.3	2.2	460 / 3	15.6	20.0	DAIKIN DPS 007A	1 THRU 11
RTU-AA102	AA104	1990	1000	85	69.0	54.4	54.4	91.7	66.5	14.00	142	70.0	60.2	33.6	30.0	104.0	200	160	2210	2.3	2.2	460 / 3	15.6	20.0	DAIKIN DPS 007A	1 THRU 11
RTU-AA103	AA108	1990	1000	85	69.0	54.4	54.4	91.7	66.5	14.00	142	70.0	60.2	33.6	30.0	104.0	200	160	2210	2.3	2.2	460 / 3	15.6	20.0	DAIKIN DPS 007A	1 THRU 11
RTU-AA104	AA103	1990	1000	85	69.0	54.4	54.4	91.7	66.5	14.00	142	70.0	60.2	33.6	30.0	104.0	200	160	2210	2.3	2.2	460 / 3	15.6	20.0	DAIKIN DPS 007A	1 THRU 11
RTU-H102	H200E	3500	0	80	64.0	55.9	54.3	100.0	90.9	13.50	259									3	1.25	460 / 3	26	30.0	DAIKIN MPSS008B	1 THRU 10

MECHANICAL NOTES:
1. DESIGN TEMPERATURES TO BE USED FOR UNIT SELECTIONS ARE: 95/78 F SUMMER OUTDOOR, 75 F / 50% RH SUMMER INDOOR, -10 F WINTER OUTDOOR, 70 F / 30% RH WINTER INDOOR.
2. EVAPORATOR (DEHUMIDIFYING COIL) MAXIMUM FACE VELOCITY SHALL NOT EXCEED 500 FPM.
3. UNIT SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED, TESTED AND PROVIDED WITH SINGLE POINT POWER, INTEGRAL NON-FUSED DISCONNECT SWITCH, INTEGRAL 115 VOLT GFI SERVICE RECEPTACLE, PHASE AND BROWNOUT PROTECTION.
4. UNIT SHALL INCLUDE " THICK R7 FOAM INSULATED DOUBLE WALL CONSTRUCTION, 2" PLEATED MERV 8 FILTERS, STAINLESS STEEL CONDENSATE DRAIN PAN AND CONDENSER COIL GUARDS.
5. UNIT SHALL BE PROVIDED AS A PACKAGED AIR COOLED DX COOLING WITH R-410A REFRIGERANT; MODULATING SCROLL COMPRESSOR, MODULATING HOT GAS REHEAT, MODULATING CONDENSER FAN HEAD PRESSURE CONTROL, REFRIGERANT SIGHT GLASSES AND 5 YEAR COMPRESSOR PARTS WARRANTY.
6. UNIT SHALL BE PROVIDED WITH SWSI SUPPLY FAN WITH INTEGRAL SPEED CONTROL (ECM OR VFD).
7. PERFORMANCE INCLUDES AN ALLOWANCE OF 0.35 IN WG FOR FILTER LOADING (I.E. LOADED FILTER = CLEAN FILTER + 0.35 IN WG).
8. UNIT SHALL BE PROVIDED WITH A BACNET INTERFACE LINK TO COMMUNICATE WITH BMS CONTROL SYSTEM PROVIDED BY OTHERS.
9. UNIT SHALL BE INSTALLED ON A 16-INCH HIGH INSULATED, SOLID BOTTOM ROOF CURB.
10. PROVIDE CONDENSATE DRAIN PER DETAIL 5/M4.2. ROUTE CONDENSATE TO NEAREST ROOF DRAIN WHERE FEASIBLE.
11. UNIT SHALL INCLUDE NATURAL GAS HEAT WITH A MINIMUM 10:1 TURNDOWN AND MODULATING CAPACITY CONTROL.

DUCTLESS SPLIT SYSTEM - OUTDOOR UNIT

MARK	LOCATION (ROOM)	SERVES	EFFICIENCY AT A.R.I. (SEER)	ELECTRICAL DATA V	PH	MCA	MOCP	WEIGHT (LBS.)	BASIS OF DESIGN	NOTES
SSCU-A201	ROOF A205	SSIU-A201	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-AA101	ROOF AA105	SSIU-AA101	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-B101	ROOF B224M	SSIU-B101	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-B201	ROOF B224M	SSIU-B201	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-C101-A	ROOF C2XX	SSIU-C101	-	208	1	18.4	30	241	LIEBERT PFH027A-HL7	
SSCU-C101-B	ROOF C2XX	SSIU-C101	-	208	1	18.4	30	241	LIEBERT PFH027A-HL7	
SSCU-C201	ROOF	SSIU-C201	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-D101	ROOF D223M	SSIU-D101	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-D201	ROOF D223M	SSIU-D201	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-E101	ROOF E___	SSIU-E101	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-G201	ROOF G200	SSIU-G201	18.0	208	1	7.0	15	66	DAIKIN RKN12KEVJU	
SSCU-G202	ROOF G202C	SSIU-G202	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-H101	ROOF H200E	SSIU-H101	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-H201	ROOF H202E	SSIU-H201	18.6	208	1	16.5	20	150	DAIKIN RZQ24PVJU	
SSCU-J101	ROOF J108	SSIU-J101	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-K101	ROOF K103C	SSIU-K101	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-L101	ROOF L204S	SSIU-L101	18.0	208	1	7.0	15	66	DAIKIN RKN12KEVJU	
SSCU-M201	ROOF M210C	SSIU-M201	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	
SSCU-N101	ROOF N200	SSIU-N101	18.6	208	1	16.5	20	150	DAIKIN RZQ18PVJU	

GENERAL:
A. REFRIGERANT LIQUID AND SUCTION LINES ARE TO BE SIZED AND INSTALLED AS RECOMMENDED BY THE MANUFACTURER'S INSTALLATION GUIDELINES.
B. UNITS MUST MEET ASHRAE 90.1-2007 MINIMUM EFFICIENCIES AND U.S. DEPARTMENT OF ENERGY'S FEDERAL ENERGY MANAGEMENT PROGRAM (FEMP) RECOMMENDATIONS. SCHEDULED EFFICIENCIES ARE AT ARI CONDITIONS.
C. PROVIDE LOW AMBIENT CONTROLS FOR COOLING BELOW 55 °F OUTDOOR DB TEMPERATURES, DOWN TO (0) °F.

LOUVERED PENTHOUSE HOOD SCHEDULE

MARK (LP-X)	SERVES	CFM	MAX PD (IN WG)	INSIDE CURB L (IN)	INSIDE CURB W (IN)	HEIGHT D (IN)	OVERALL LOUVER FREE AREA (SQ. FT.)	FREE AREA FACE VELOCITY (FPM)	BASIS OF DESIGN	MECH NOTES
LP-M201	AHU-M101	11,000	0.1	48	64	31	21.4	514.02	GREENHECK WIH	1,2,3
LP-M202	AHU-M101	11,000	0.1	48	64	31	21.4	514.02	GREENHECK WAH	1,2,3
LP-M203	ERU-M101	8,000	0.1	36	72	27	18	444.44	GREENHECK WIH	1,2,3
LP-M204	ERU-M101	8,000	0.1	36	72	27	18	444.44	GREENHECK WAH	1,2,3
LP-N201	ERU-N101	12,500	0.1	42	86	35	27.21	459.39	GREENHECK WIH	1,2,3

MECHANICAL NOTES:
1. LOUVER SHALL BE PROVIDED WITH BIRDSCREEN.
2. PROVIDE INSULATED 18" HIGH CURB.
3. LOUVER SHALL BE PROVIDED WITH A 115 V NON-OVERLOADING MOTORIZED BACKDRAFT DAMPER.

SOUND ATTENUATOR SCHEDULE

MARK	SERVES	LOCATION	EQUIPMENT TYPE	TOTAL CFM	MAX PRESS DROP (IN)	FACE DIMENSION/ LENGTH (FT)	MIN OPERATING INSERTION LOSS (dBA) 63	125	250	500	1000	2000	4000	BASIS OF DESIGN	MECH NOTES
SA-C201S	HP-C203	SUPPLY AIR	HEAT PUMP		0.3	5	1	10	16	23	23	19	16		
SA-C201R	HP-C203	REUTRN AIR	HEAT PUMP		0.3	4	0	6	12	16	17	13	10		
SA-G201S	VAV-G201	SUPPLY AIR	VAV BOX	2800	0.3	3	7	17	13	4	0	0	0	PRICE CMX36/22E	1
SA-G202S	RTU-G102	SUPPLY AIR	AHU		0.3	11	0	15	7	11	15	14	12		
SA-G202R	RTU-G102	RETURN AIR	AHU		0.3	8	11	3	2	16	19	20	17		
SA-G203S	VAV-G205	SUPPLY AIR	VAV BOX	1960	0.3	5	7	19	21	21	20	13	11	PRICE CMX60/18E	1
SA-H101S	RTU-H101	SUPPLY AIR	AHU		0.3	2	9	13	27	18	13	9	11		
SA-H101R	RTU-H101	RETURN AIR	AHU		0.3	5	0	2	18	16	11	12	12		
SA-L201S	RTU-L101	SUPPLY AIR	AHU	36000	0.3	8	8	14	11	14	15	15	0	PRICE RMX96/WD	1
SA-L201R	RTU-L101	RETURN AIR	AHU	36000	0.3	6	6	2	4	8	14	12	6	PRICE RMX72/YD	1
SA-M201S	RTU-M101	SUPPLY AIR	AHU	12000	0.3	7	4	12	19	26	25	21	14	PRICE CMX48/38F	1
SA-M201R	RTU-M101	RETURN AIR	AHU	12000	0.3	6	3	12	11	12	10	9	2	PRICE ERMX67/XC	1
SA-N201S	ERU-N101	SUPPLY AIR	AHU	29000	0.3	5	0	3	15	12	8	7	0	PRICE R60/7D	1

MECHANICAL NOTES:
1. MECHANICAL CONTRACTOR TO LOCATE SOUND ATTENUATORS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO ASSURE PROPER PERFORMANCE.

FAN SCHEDULE

MARK	LOCATION	FAN DATA FAN TYPE	WHEEL TYPE	CFM	ESP (IN WG)	FAN RPM	DRIVE TYPE	MOTOR DATA HP/W	V	PH	MAX. SONES	VFD	CONTROL	DETAIL REF.	BASIS OF DESIGN (GREENHECK)	MECH NOTES
																-
EF-A101	A100	ROOF UPBLAST	CENT	5800	0.5	1775	BELT	1	208	3	10.3	YES	CO CONTROL - HONEYWELL E3 CONTROLLER - INTERLOCK WITH MUA		CUBE-300-10	-
EF-A102	A119	ROOF UPBLAST	CENT	3500	1	1230	DIRECT	2	208	1	16.4	NO	LOCAL SWITCH		CUE-180-VG	-
EF-A103	A112	ROOF UPBLAST	CENT	1500	0.375	1284	DIRECT	1/2	120	1	13.2	NO	LOCAL SWITCH		CUE-131-VG	-
EF-B201	B206	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-B202	B206	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-C201	C230	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-C202	C212	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-C203	C212	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-C204	C230	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-C205	C212	ROOF UPBLAST	CENT	770	0.75	1725	BELT	3/4	208	3	68 DB	NO	FUME HOOD SWITCH		VEKTOR-H-10-6	-
EF-C206	C212	ROOF UPBLAST	CENT	770	0.75	1725	BELT	3/4	208	3	72 DB	NO	FUME HOOD SWITCH		VEKTOR-H-10-6	-
EF-C207	C208	ROOF UPBLAST	CENT	3500	1.125	1547	DIRECT	2	208	1	22	NO	LOCAL SWITCH		CUE-161-VG	-
EF-D201	D204	ROOF UPBLAST	CENT	770	0.75	1725	BELT	3/4	208	3	73 DB	NO	FUME HOOD SWITCH		VEKTOR-H-10-6	-
EF-D202	D205	ROOF UPBLAST	CENT	770	0.75	1725	BELT	3/4	208	3	74 DB	NO	FUME HOOD SWITCH		VEKTOR-H-10-6	-
EF-D203	D204	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-D204	D205	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-D205	D204	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-D206	D205	ROOF UPBLAST	CENT	1200	1.875	2136	DIRECT	3/4	208	1	19	NO	LOCAL SWITCH		CUE-141HP-VG	-
EF-E201	E209	CEILING	CENT	375	0.375	1350	DIRECT	150 W	120	1	4.5	NO	LOCAL SWITCH - INTERLOCK LIGHTS		SP-A390	-
EF-G101	H121V	ROOF UPBLAST	CENT	420	0.375	1725	DIRECT	1/6	120	1	7.9	NO	LOCAL SWITCH		CUE-085-VG	-
EF-G102	G122	ROOF UPBLAST	CENT				DIRECT	1/4	120	1		NO	LOCAL SWITCH		CUE-99-VG	-
EF-G103	G118	WALL MOUNT	-	140	-	-	DIRECT	1.4 A	120	1	-	-	INTERLOCK WITH KILN		ENVIROVENT 2	-
EF-H101	H105T	CEILING	CENT	75	0.375	950	DIRECT	100 W	277	1	2.5	NO	LOCAL SWITCH - INTERLOCK LIGHTS		GREENHECK SP-B110	-
EF-H102	H106T	CEILING	CENT	75	0.375	950	DIRECT	100 W	277	1	2.5	NO	LOCAL SWITCH - INTERLOCK LIGHTS		GREENHECK SP-B110	-
EF-J101	J111T	CEILING	CENT	75	0.375	950	DIRECT	100 W	277	1	2.5	NO	LOCAL SWITCH - INTERLOCK LIGHTS		GREENHECK SP-B110	-
EF-J102	J110T	CEILING	CENT	75	0.375	950	DIRECT	100 W	277	1	2.5	NO	LOCAL SWITCH - INTERLOCK LIGHTS		GREENHECK SP-B110	-
EF-K101	K117	ROOF UPBLAST	CENT	1200	0.4	1630	DIRECT	1/4 HP	120	1	11.4	NO	DISHWASHER - INTERLOCK		GREENHECK CUE-101-VG	-
EF-M201	M210	ROOF UPBLAST	CENT	1140	0.4	1570	DIRECT	1/4 HP	120	1	10.9	NO	BAS		GREENHECK CUE-101-VG	-
EF-N101	N116M	CENT. INLINE	CENT	150	0.375	1712	DIRECT	1/6 HP	120	1	5.7	NO	BAS		GREENHECK SQ-70-VG	-
EF-N102	N116M	CENT. INLINE	CENT	125	0.375	1550	DIRECT	1/6 HP	120	1	5.3	NO	BAS		GREENHECK SQ-70-VG	-
KEF-K101	K133	ROOF UPBLAST	CENT	1355	0.9	1309	BELT	1 HP	208	3	12.9	YES	KITCHEN HOOD CONTROLS (KH-K101A & KH-K101B)		CAPTIVE AIRE NCA14HPFA	1,5,8
KEF-K102	K133	ROOF UPBLAST	CENT	1355	0.9	1309	BELT	1 HP	208	3	12.9	YES	KITCHEN HOOD CONTROLS (KH-K101A & KH-K101B)		CAPTIVE AIRE NCA14HPFA	1,5,8
KEF-K103	K133	ROOF UPBLAST	CENT	1355	0.9	1309	BELT	1 HP	208	3	12.9	YES	KITCHEN HOOD CONTROLS (KH-K101A & KH-K101B)		CAPTIVE AIRE NCA14HPFA	1,5,8
KEF-K104	K133	ROOF UPBLAST	CENT	1355	0.9	1309	BELT	1 HP	208	3	12.9	YES	KITCHEN HOOD CONTROLS (KH-K101A & KH-K101B)		CAPTIVE AIRE NCA14HPFA	1,5,8
SF-AA101	AA105	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-A201	B200C	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-B101	B125C	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-B201	B220E	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-C101	C129E	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-C201	C206C	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-C202	C229	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-D101	D128E	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-D201	D209C	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-E101	E112	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-G101	G103	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-G102	H116	CEILING	CENT	140	0.375	-	DIRECT	FRAC	120	1	-	NO	LOCAL THERMOSTAT		ACTIVE THERMAL MANAGEMENT 00-100-02	12
SF-H101	H103C	CEILING	CENT	300	0.375	1232	DIRECT	150 W	120	1	4	NO	LOCAL THERMOSTAT		SP-A390	-
SF-J101	J115S	CEILING	CENT	140	0.375	1050	DIRECT	150 W	120	1	3.5	NO	LOCAL THERMOSTAT		GREENHECK SP-B150	-
SF-L101	L100E	CEILING	CENT	140	0.375	1050	DIRECT	150 W	120	1	3.5	NO	LOCAL THERMOSTAT		GREENHECK SP-B150	-
SF-M201	M202E	CENT. INLINE	CENT	420	0.375	1520	DIRECT	1/6 HP	120	1	7.1	NO	LOCAL THERMOSTAT		GREENHECK SQ-90-VG	-
SF-N101	N104E	CENT. INLINE	CENT	250	0.5	1572	DIRECT	1/6 HP	120	1	7.7	NO	LOCAL THERMOSTAT		GREENHECK SQ-85-VG	-
VF-L101 - VF-L116	L109	DESTRATIFICATION	AXIAL	715	-	1650	DIRECT	46W EACH	120	1	-	NO	MANUFACTURER CONTROLS		AIR PEAR 45-PSP4	13
VF-M101 - VF-M109	M111	DESTRATIFICATION	AXIAL	715	-	1650	DIRECT	46 W EACH	120	1	-	NO	MANUFACTURER CONTROLS		AIR PEAR 45-PSP4	13

ADD #2

MECHANICAL NOTES:
1. PROVIDE VFD
2. PROVIDE PREWIRED UNIT MOUNTED DISCONNECT AND INTEGRAL MOTOR OVERLOAD PROTECTION.
3. ROUTE ELECTRICAL CONNECTION OUT OF EXHAUST STREAM.
4. PROVIDE VIBRATION ISOLATOR KIT, BACKDRAFT DAMPER,FACTORY MOUNTED/PRE-WIRED SPEED CONTROLLER, AND FLEX CONNECTORS.
5. PROVIDE MIN. 18 INCH ROOF CURB AND HINGED BASE-KIT.
6. PROVIDE ALUMINUM BIRDSCREEN.
7. PROVIDE WITH ENVIROLINK OPTION. COORDINATE WITH OWNER FOR KILN COMPATIBILITY.
8. PROVIDE VENTED EXTENSION, GREASE TRAP AND DRAIN.
9. PROVIDE TEFC MOTOR AND NON-SPARKING BLADES
10. PROVIDE SPEED CONTROLLER AS DETAILED IN THE SPECIFICATIONS.
11. INSTALL FAN WITH MOTORIZED DAMPER INSTALLED BELOW ROOF LINE. DAMPER PROVIDED BY T.C. CONTRACTOR.
12 . PROVIDE FAN WITH REMOTE DIGITAL THERMAL SWITCH (ATM PART # 03-101-01), 8 FT OF FLEXIBLE TUBING AND 6" HOT AIR COLLECTOR.
13. PROVIDE WITH SINGLE POINT CONTROLS TO THE ARRAY OF FANS. CONTROL CENTER SHALL BE CONNECTED TO BAS.

HUMIDIFIER - ELECTRIC SCHEDULE

MARK	SERVES	ROOM DESIGN CONDITIONS DB (°F)	RH %	MAXIMUM ABSORPTION DISTANCE (FT)	OUTPUT (LBS/HR)	ELECTRICAL DATA FLA	V	PH	BASIS OF DESIGN	MECH NOTES
H-G101	H117S	72	45	0	9	20	120	1	HUMIDIFIRST MF-10	1
H-H101	H117S	72	45	0	9	20	120	1	HUMIDIFIRST MF-10	1

MECHANICAL NOTES:
1. PROVIDE 6-FOOT 120-VOLT POWER CORD.

UNIT HEATER - ELECTRIC

PLAN MARK	LOCATION	HEATING KW	EAT DB	AIR TEMP RISE	MOTOR DATA HP	V	PH	MCA	CABINET DATA THROW DIRECTION	EXPLOSION PROOF	BASIS OF DESIGN	MECH NOTES
UH-A101	A120S	5.0	60	40	1/125	208	1	35	HORIZONTAL	NO	TRANE UHEC-05	1,2,3
UH-A102	A119	3.0	60	20	1/4	208	1	32.4	HORIZONTAL	YES	TRANE UHXA-03	1,2,3,4

MECHANICAL NOTES:
1. INTERNAL 2 STAGE THERMOSTAT.
2. PROVIDE INTEGRAL MOTOR OVERLOAD PROTECTION.
3. PROVIDE UNIT MOUNTED DISCONNECT SWITCH
4. EXPLOSION PROOF UNIT.

PACKAGED HEAT PUMP UNIT - AIR SOURCE SCHEDULE

MARK	CFM	ESP (IN WG)	COOLING DATA TOTAL CAP (MBH)	SENS CAP (MBH)	EAT DB / WB (°F)	ELEC INPUT (KW)	HEATING DATA SENS CAP (MBH)	EAT DB (°F)	ELEC INPUT (KW)	BACKUP HEAT (KW)	CONDENSER DATA EAT (°F) CLG	HTG	ELECTRICAL DATA V	PH	MCA	BASIS OF DESIGN	MECH NOTES
PTHP-M201	340	0.2	8.768	6.14	80 / 67	0.782	9	70	2.5	-	95	47	208	1	12	ISLANDAIRE EZ4209B9AIF4	1
PTHP-M202	340	0.2	8.768	6.14	80 / 67	0.782	9	70	2.5	-	95	47	208	1	12	ISLANDAIRE EZ4209B9AIF4	1
PTHP-M203	340	0.2	8.768	6.14	80 / 67	0.782	9	70	2.5	-	95	47	208	1	12	ISLANDAIRE EZ4209B9AIF4	1
PTHP-M204	340	0.2	8.768	6.14	80 / 67	0.782	9	70	2.5	-	95	47	208	1	12	ISLANDAIRE EZ4209B9AIF4	1

MECHANICAL NOTES:
GENERAL. PROVIDE UNIT WITH ONE INCH FILTER HOUSING AND DISPOSABLE FILTER.
1. PROVIDE UNIT WITH CONDENSATE REMOVAL KIT, INSULATED WALL SLEEVE WITH OUTDOOR ARCHITECTURAL LOUVER, WIRE REMOTE THERMOSTAT, AND ELECTRICAL SUB BASE KIT WITH CORD AND PLUG.

ROOF HOOD SCHEDULE

MARK	UNIT	SERVES	LOCATION	CFM	DUCTED CONNECTION (Y/N)	MAX PRESS DROP (IN WG)	MAX THROAT VELOCITY	HOOD OVERALL SIZE (IN) (W x L x H)	THROAT SIZE (IN) (W x L)	CURB HT (IN)	WEIGHT (LBS.)	BASIS OF DESIGN	MECH NOTES
LP-N202	ERU-N101	FRESH AIR	AREA N ROOF	12,500	Y	0.1	500	50 x 94 x 35	42 x 86	18	262	GREENHECH WIH	1,2,3,4,5

MECHANICAL NOTES:
1. HOODS TO BE FACTORY PRE-PAINTED. PROVIDE CUSTOM COLOR CHART DURING SHOP DRAWING PHASE.
2. PROVIDE WITH BIRDSCREEN
3. PROVIDE WITH 18" ROOF CURB
4. LOUVER SHALL BE PROVIDED WITH A 115 V NON-OVERLOADING MOTORIZED BACKDRAFT DAMPER.
5. LOUVERED PENTOUSE LOUVER FACE VELOCITY SHALL NOT EXCEED 500 FT/MIN.

DIFFUSER, REGISTER & GRILLE SCHEDULE

MARK	MAX STATIC PD (IN WG)	MAX NC (DECIBELS)	MATERIAL	DAMPER (Y/N)	FRAME TYPE	FINISH	DETAIL REF.	BASIS OF DESIGN	MECH NOTES
D-1	0.08	25	STEEL	N	LAY-IN	WHITE	1/M4.1	TITUS TMS 24"x24"	1
D-2	0.08	25	STEEL	N	SURFACE	WHITE	1/M4.1	TITUS TMS 24"x24"	1
D-3	0.08	25	ALUMINUM	N	LAY-IN	WHITE	1/M4.1	TITUS TMS 24"x24"	1
D-4	0.08	25	ALUMINUM	N	SURFACE	WHITE	1/M4.1	TITUS TMS 24"x24"	1
D-5	0.08	25	STEEL	N	SURFACE	WHITE	-	TITUS 300RL	1
D-6	0.08	25	ALUMINUM	N	SURFACE	WHITE	-	TITUS 300RL	1
D-7	0.08	25	STEEL	Y	SURFACE	WHITE	-	TITUS 300RL	1
D-8	0.08	25	ALUMINUM	Y	SURFACE	WHITE	-	TITUS 300RL	1
D-9	0.08	25	ALUMINUM	Y	SURFACE	WHITE	31/M4.1	TITUS S300	1
D-10	0.08	25	ALUMINUM	Y	SURFACE	WHITE	-	TITUS XC-310	1
D-11	0.08	25	ALUMINUM	Y	SURFACE	WHITE	1/M4.1	TITUS TMR	1
D-12	0.08	25	ALUMINUM	Y	LAY-IN	WHITE	1/M4.1	TITUS VERSA TEC	1
D-13	0.08	25	ALUMINUM	Y	SURFACE	WHITE	1/M4.1	TITUS VERSA TEC	1
D-14	0.08	25	ALUMINUM	Y	LAY-IN	WHITE	1/M4.1	TITUS TBDI-80 (4 FT LENGTH - QTY 4 SLOT - 1 IN SLOTS)	1
D-15	0.08	25	ALUMINUM	Y	LAY-IN	WHITE	1/M4.1	TITUS TBDI-80 (4 FT LENGTH - QTY 4 SLOT - 1-1/2 IN SLOTS)	1
D-16	0.08	25	ALUMINUM	Y	LAY-IN	WHITE	1/M4.1	TITUS TBDI-80 (4 FT LENGTH - QTY 2 SLOT - 1-1/2 IN SLOTS)	1
D-17	0.08	25	STEEL	N	LAY-IN	WHITE	1/M4.1	TITUS TMS 12"x12"	1
D-18	0.08	25	STEEL	N	SURFACE	WHITE	1/M4.1	TITUS TMS 12"x12"	1
D-19	0.08	25	ALUMINUM	N	LAY-IN	WHITE	1/M4.1	TITUS TMS 12"x12"	1
D-20	0.08	25	ALUMINUM	N	SURFACE	WHITE	1/M4.1	TITUS TMS 12"x12"	1
D-21	0.08	25	ALUMINUM	Y	SURFACE	WHITE		TITUS DL	1
D-22	0.08	25	ALUMINUM	N	LAY-IN	WHITE	1/M4.1	TITUS PAS	1
G-1	.08	25	ALUMINUM	N	LAY-IN	WHITE	13/M4.1	TITUS 50F	1
G-2	.08	25	ALUMINUM	N	SURFACE	WHITE	13/M4.1	TITUS 50F	1
G-3	.08	25	STEEL	N	SURFACE	WHITE	-	TITUS 350F	1
G-4	.08	25	ALUMINUM	N	SURFACE	WHITE	-	TITUS 350F	1
G-5	.08	25	STEEL	N	SURFACE	WHITE	13/M4.1	TITUS 30	1
G-6	.08	25	ALUMINUM	N	SURFACE	WHITE	13/M4.1	TITUS 30	1

MECHANICAL NOTES:
1. CONTRACTOR SHALL COORDINATE MOUNTING AND SURFACE CONSTRUCTION PRIOR TO FURNISHING MATERIAL. SEE PLANS FOR LOCATION, NECK SIZE AND CFM

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PROFESSIONAL MECHANICAL ENGINEER E-12412 STATE OF NEBRASKA
9-30-2014

DLR Group
Architecture
Engineering
Planning
Interiors
DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

MECHANICAL SCHEDULES

ProjectNumber: 1355
Date: September 30, 2014

Sheet Number:
M5.4

ADD #2

EXPANSION TANK SCHEDULE

MARK	LOCATION	SERVES	NUMBER OF TANKS	TANK VOLUME (GAL)	ACCEPTANCE VOLUME	OPERATING TEMP (°F)	DETAIL REF.	WEIGHT (EACH)	BASIS OF DESIGN	MECH NOTES
ET-K1	K127	DWH SYSTEM	1	211	137	140	12/P3.1	760	AMTROL ST-452-C	1
ET-K2	K127	HVAC HYDRONIC	1	500	500	100	11/M4.2	1120	TACO PS500	2

MECHANICAL NOTES:
1. PROVIDE 4" CONCRETE HOUSEKEEPING PAD.
2. PROVIDE AS PART OF THE CHILLER SKID.

Attachment No. M5.5-1
to ADDENDUM #2
Dated: 10-10-2014

MECHANICAL SCHEDULES
Kearney Public Schools

M5.5
1355
September 30, 2014

DLR Group
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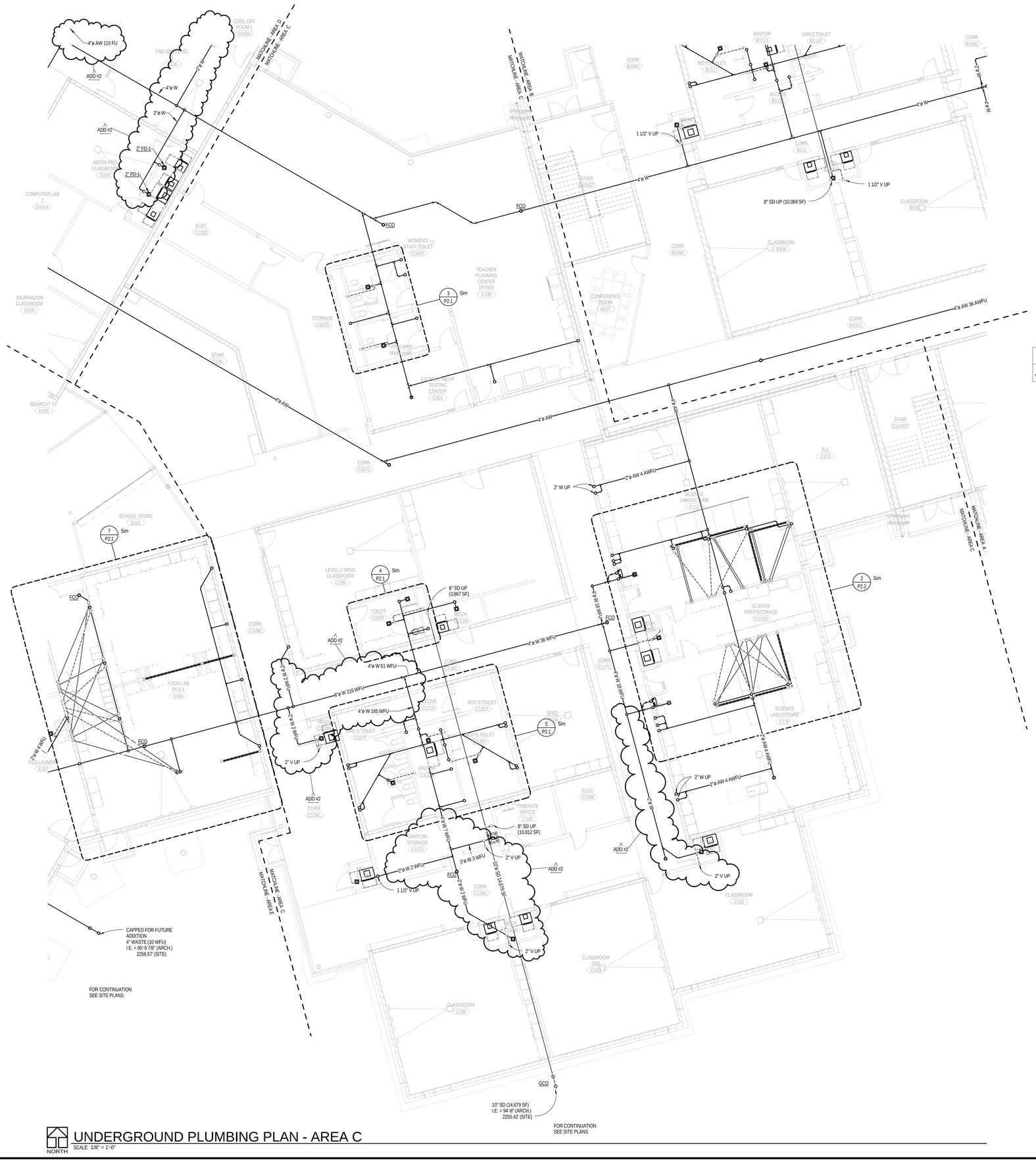

UNDERGROUND PLUMBING PLAN - AREA C

SCALE: 1/8" = 1'-0"

NORTH

PLUMBING GENERAL NOTES

1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.
2. INVERT ELEVATIONS ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'.
3. RUN BRANCH MAINS FULL SIZE THE ENTIRE LENGTH OF THE CHASE AND BRANCH OFF TO FIXTURES WITH SIZES PER THE PLUMBING FIXTURE CONNECTION SCHEDULE.
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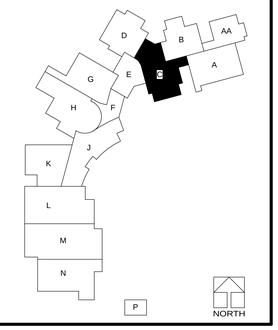
   - B. FOR GAS SERVICE ENTRANCE DETAIL, SEE 2/P3.1
   - C. FOR 2-WAY GRADE CLEANOUT DETAIL, SEE 3/P3.1.
   - D. FOR PVC-CASTIRON TRANSITION DETAIL, SEE 4/P3.1.
   - E. FOR UNDERGROUND PIPE DETAILS, SEE 5 & 6/P3.1.
   - F. FOR ISLAND SINK DETAIL, SEE 8/P3.1.
   - G. FOR ACCESSIBLE LAVATORY OR COUNTER SINK DETAIL, SEE 9/P3.1.
   - H. FOR HOSE REEL ASSEMBLY DETAIL, SEE 10/P3.1.
   - I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   - J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   - K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   - L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   - M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   - N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   - O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   - P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   - Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   - R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   - S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
   - T. FOR POST HYDRANT - ROOF DETAIL, SEE 11/P3.2.
   - U. FOR MASTER GAS SHUTOFF DETAIL, SEE 12/P3.2.
   - V. FOR COFFEE MAKER DETAIL, SEE 13/P3.2.
   - W. FOR GREASE INTERCEPTOR DETAIL, SEE 14/P3.2.
   - X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

Keynote Legend	
Key Value	Keynote Text

KEY PLAN



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STATE OF NEBRASKA
9-30-2014

DLR Group
Architecture
Engineering
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Interiors

DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

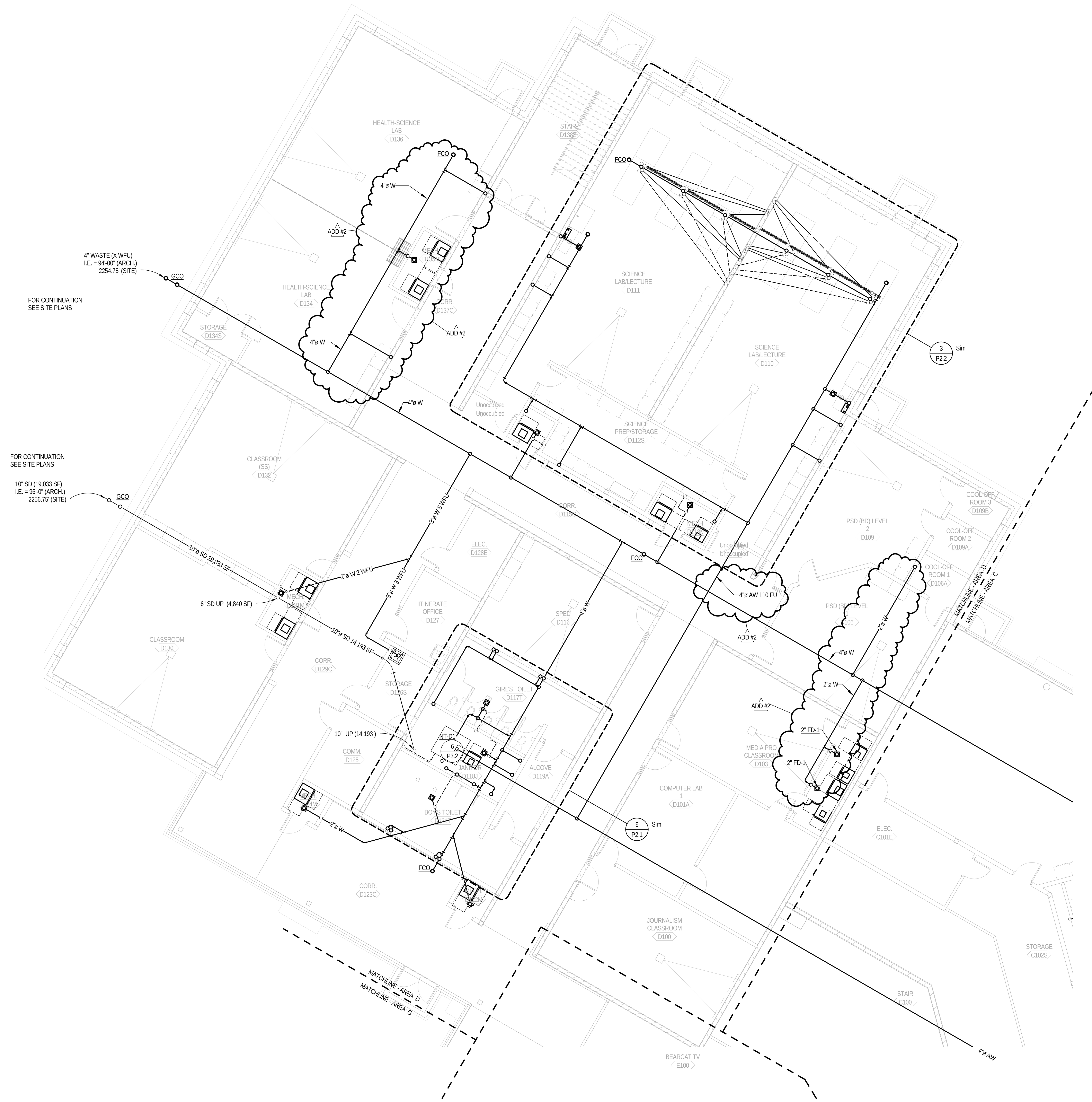
Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

UNDERGROUND PLUMBING PLAN - AREA C

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P0.3



UNDERGROUND PLUMBING PLAN - AREA D
SCALE: 1/8" = 1'-0"
NORTH

PLUMBING GENERAL NOTES
1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.
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   E. FOR UNDERGROUND PIPE DETAILS, SEE 5 & 6/P3.1.
   F. FOR ISLAND SINK DETAIL, SEE 8/P3.1.
   G. FOR ACCESSIBLE LAVATORY OR COUNTER SINK DETAIL, SEE 9/P3.1.
   H. FOR HOSE REEL ASSEMBLY DETAIL, SEE 10/P3.1.
   I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
   T. FOR POST HYDRANT - ROOF DETAIL, SEE 11/P3.2.
   U. FOR MASTER GAS SHUTOFF DETAIL, SEE 12/P3.2.
   V. FOR COFFEE MAKER DETAIL, SEE 13/P3.2.
   W. FOR GREASE INTERCEPTOR DETAIL, SEE 14/P3.2.
   X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

Keynote Legend	
Key Value	Keynote Text

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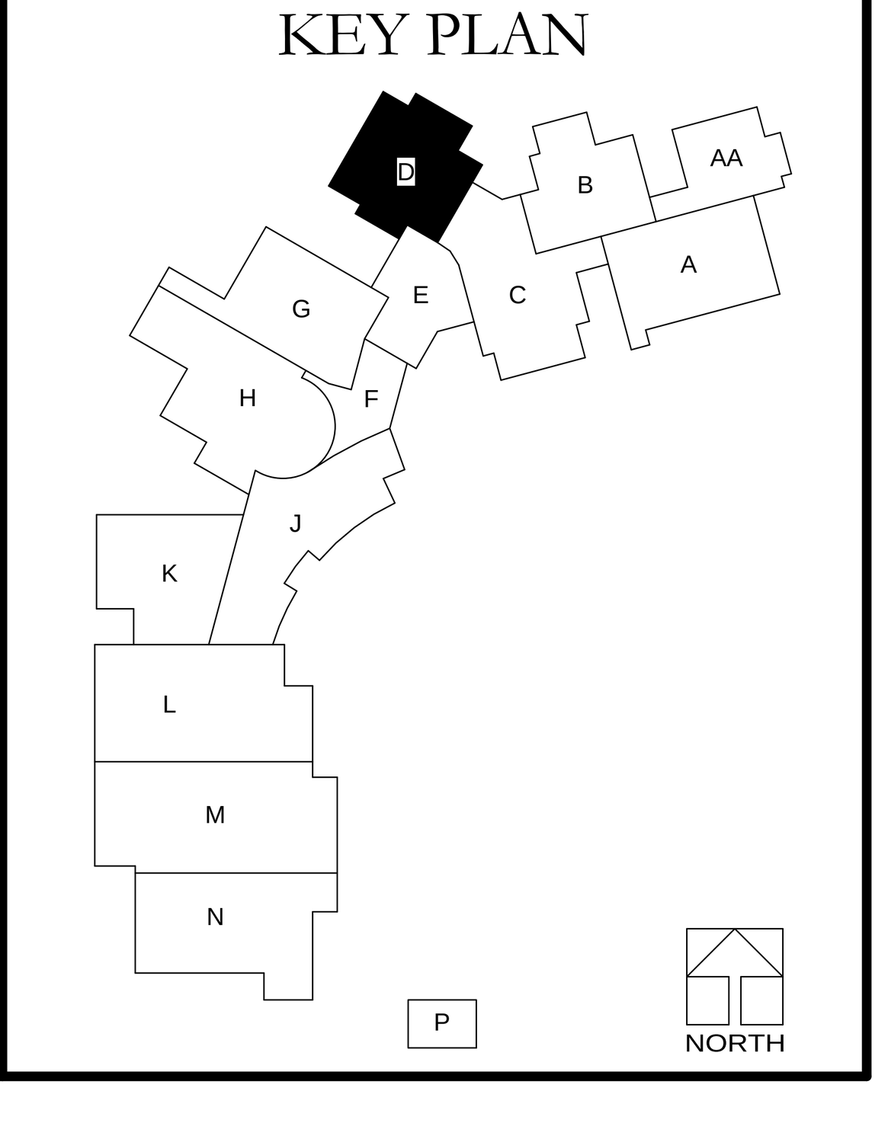
DLR Group Project No: 10-13113-00

KEY PLAN



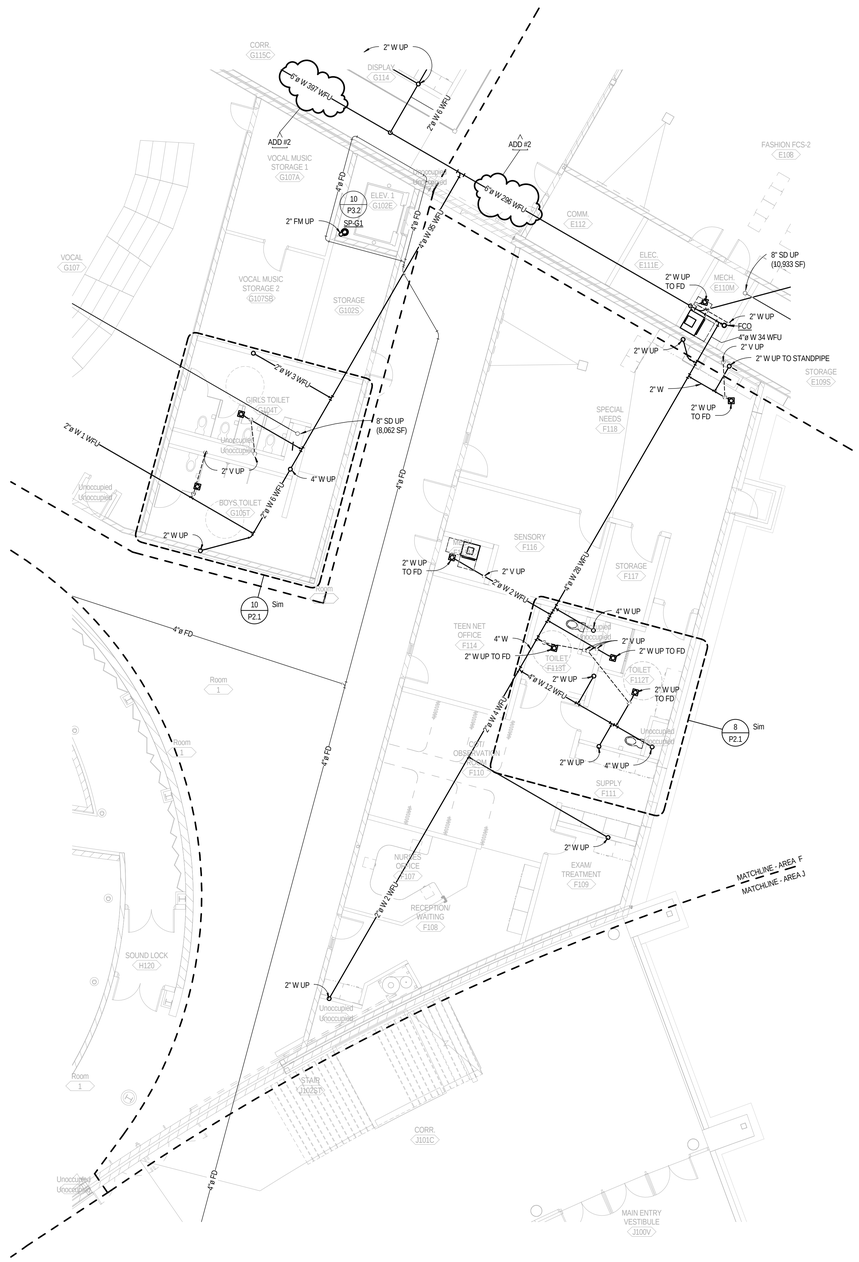
Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

UNDERGROUND PLUMBING PLAN - AREA D

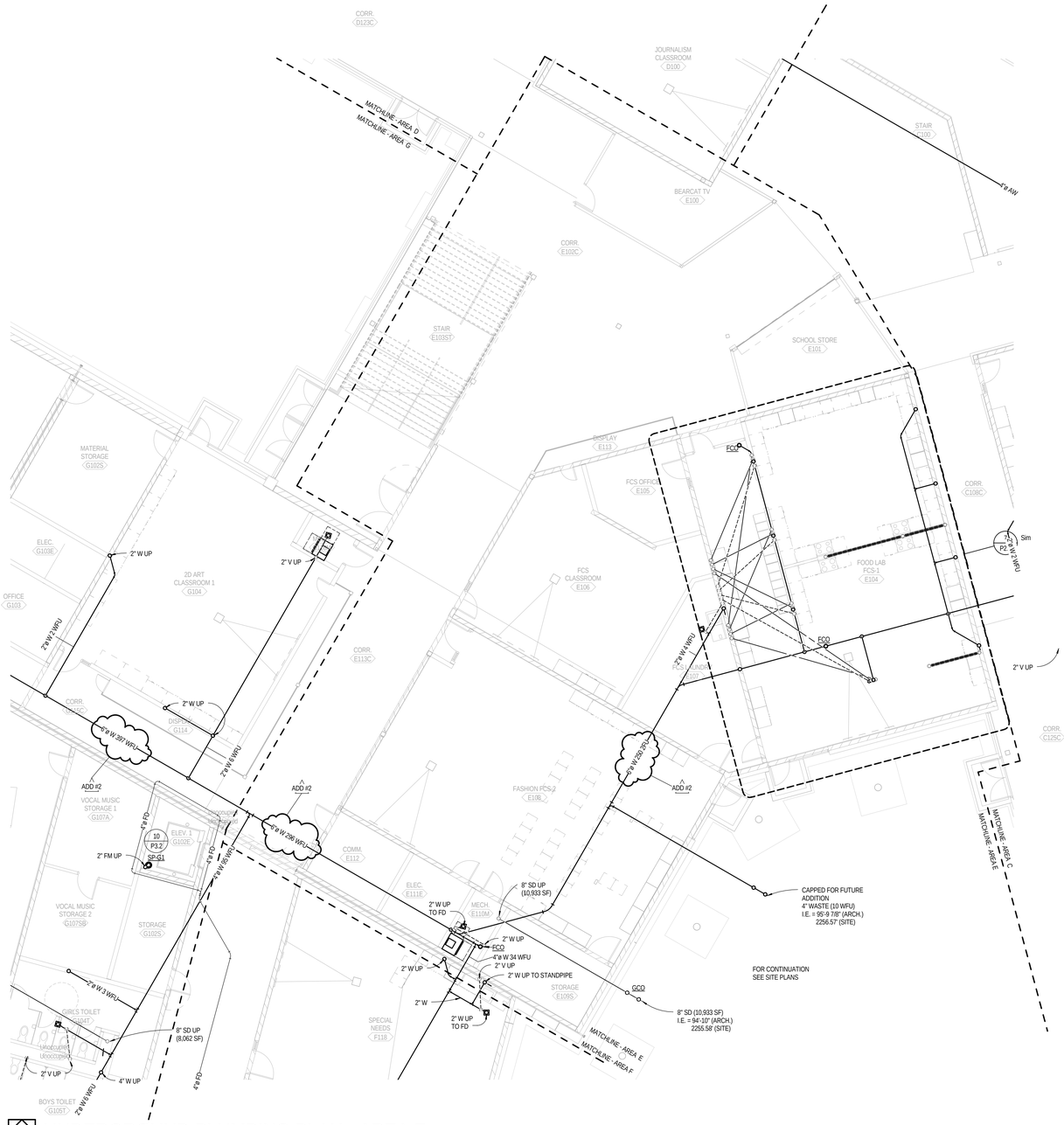
ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:
P0.4



UNDERGROUND PLUMBING PLAN - AREA F

NORTH SCALE: 1/8" = 1'-0"



UNDERGROUND PLUMBING PLAN - AREA E

NORTH SCALE: 1/8" = 1'-0"

Keynote Legend	
Key Value	Keynote Text

PLUMBING GENERAL NOTES

1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.
2. INVERT ELEVATIONS ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'.
3. RUN BRANCH MAINS FULL SIZE THE ENTIRE LENGTH OF THE CHASE AND BRANCH OFF TO FIXTURES WITH SIZES PER THE PLUMBING FIXTURE CONNECTION SCHEDULE.
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   - J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   - K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   - L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   - M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   - N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   - O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   - P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   - Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   - R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
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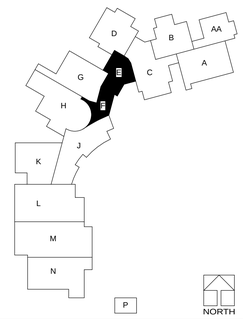
KEY PLAN



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9-30-2014

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Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

UNDERGROUND PLUMBING PLAN - AREAS E & F

ProjectNumber: 1355
Date: September 30, 2014

Sheet Number:
P0.5

PLUMBING GENERAL NOTES

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   - X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

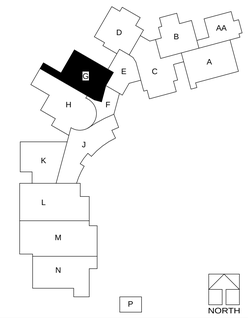
Keynote Legend	
Key Value	Keynote Text

UNDERGROUND PLUMBING PLAN - AREA G

NORTH

SCALE: 1/8" = 1'-0"

KEY PLAN



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9-30-2014

DLR Group
Architecture
Engineering
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Interiors

DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

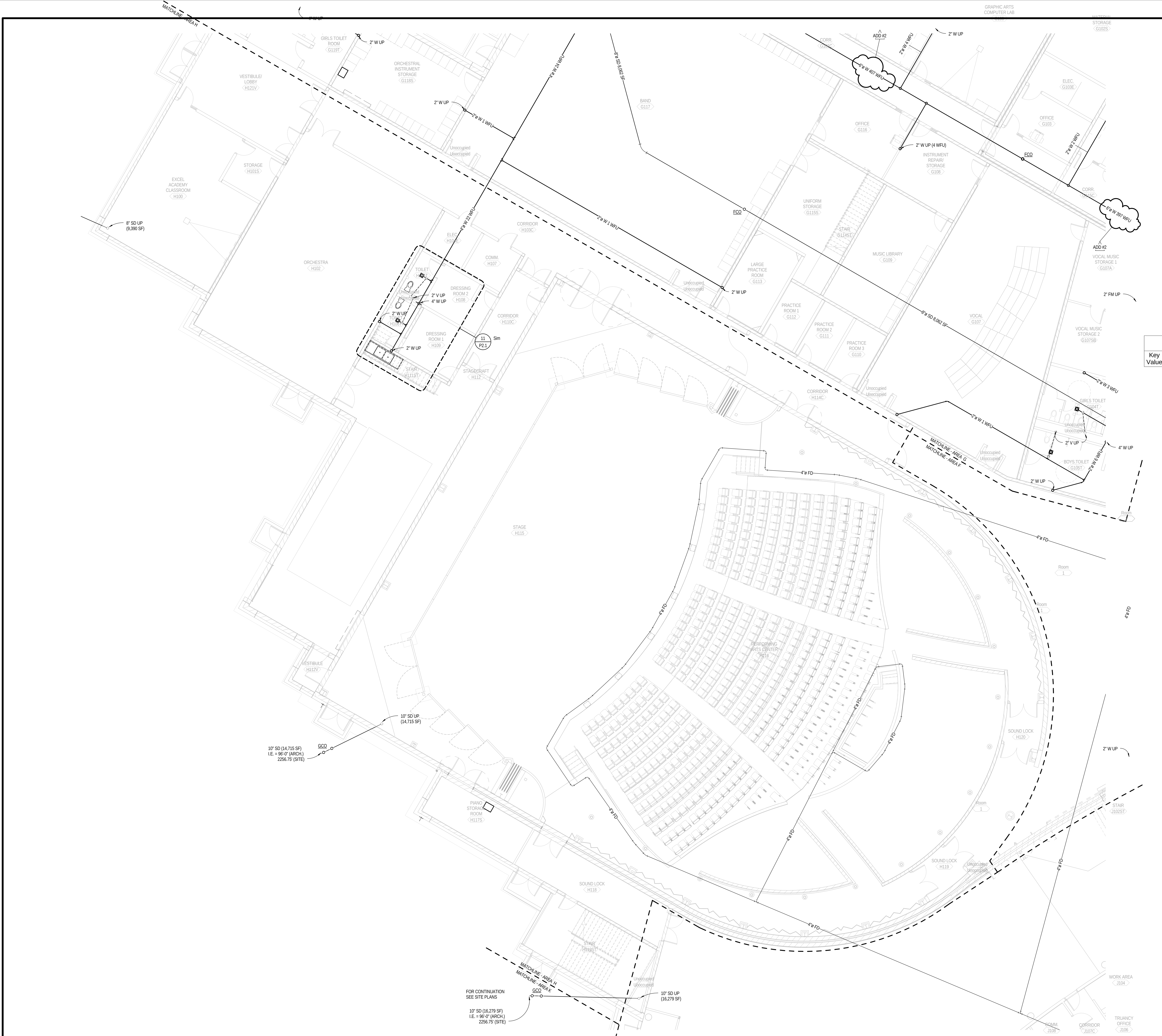
Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

UNDERGROUND PLUMBING PLAN - AREA G

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P0.6



UNDERGROUND PLUMBING PLAN - AREA H

SCALE: 1/8" = 1'-0"

NORTH

PLUMBING GENERAL NOTES

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   - I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   - J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   - K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   - L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   - M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   - N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
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Keynote Legend	
Key Value	Keynote Text

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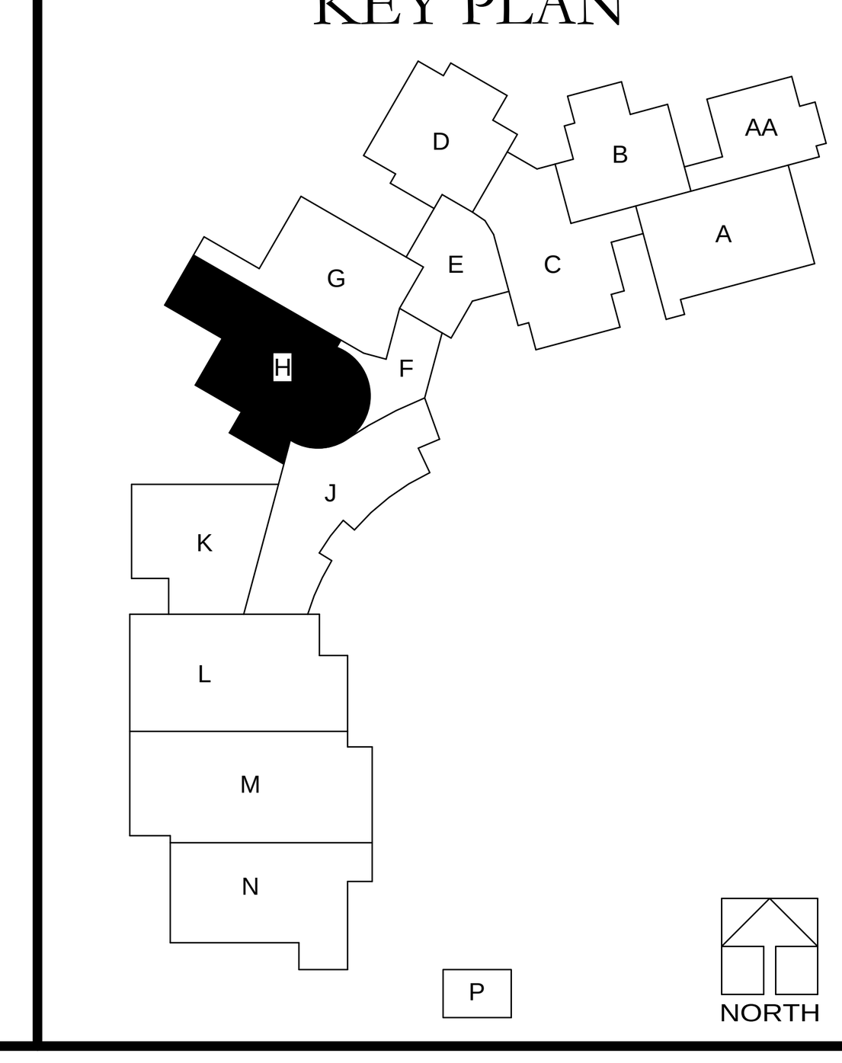

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9-30-2014

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DLR Group Project No: 10-13113-00

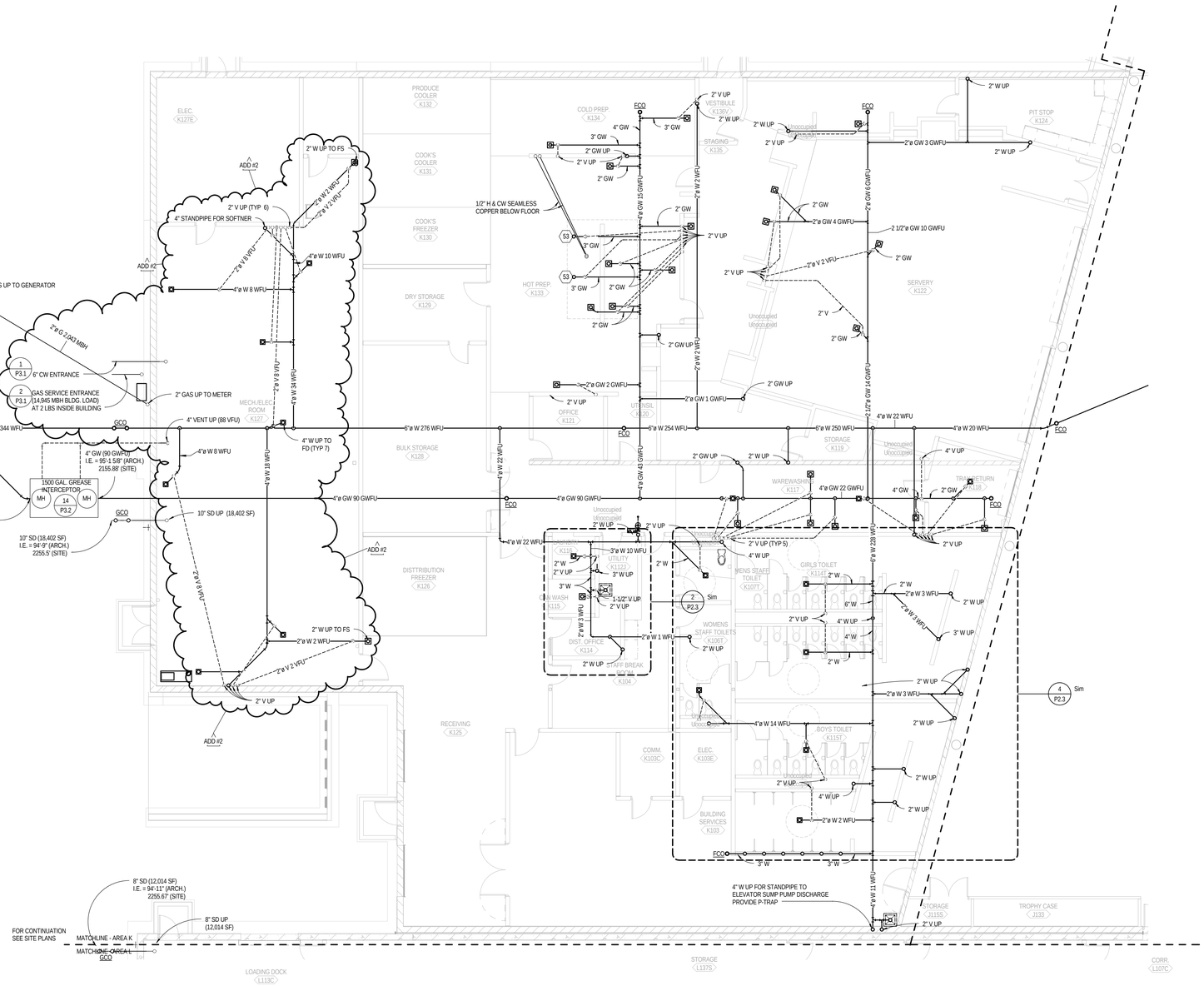
Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

UNDERGROUND PLUMBING PLAN - AREA H

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:
P0.7



UNDERGROUND PLUMBING PLAN - AREA K

SCALE: 1/8" = 1'-0"

NORTH

PLUMBING GENERAL NOTES

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   - P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
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   - R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   - S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
   - T. FOR POST HYDRANT - ROOF DETAIL, SEE 11/P3.2.
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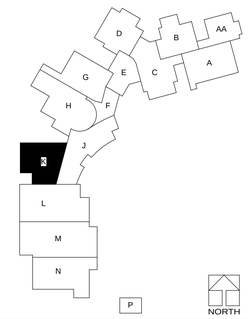
Keynote Legend	
Key Value	Keynote Text

KEY PLAN



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PROFESSIONAL MECHANICAL ENGINEER — Mark D. Hinrichs — E-12412 — STATE OF NEBRASKA

9-30-2014

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DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

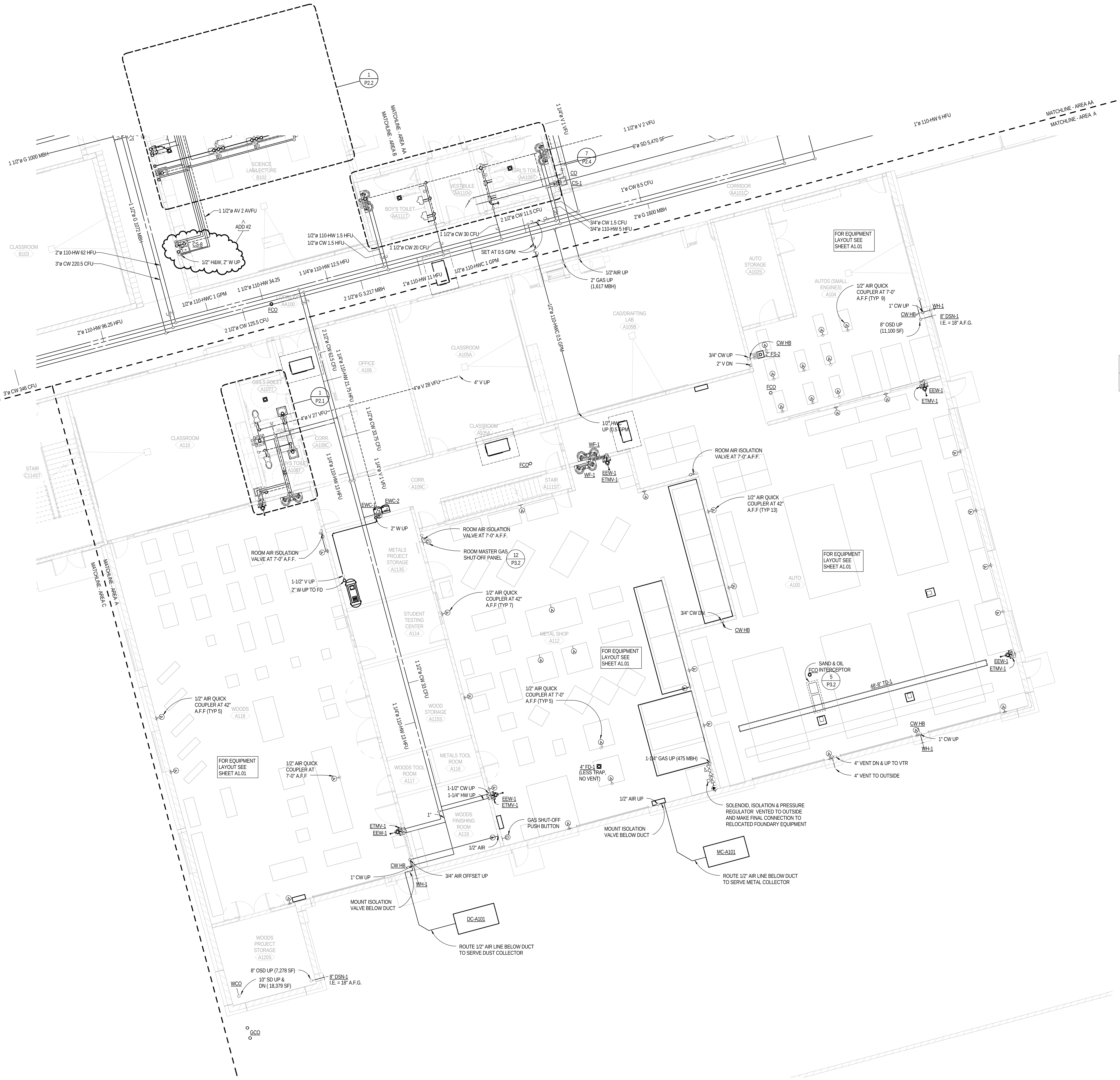
Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

UNDERGROUND PLUMBING PLAN - AREA K

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P0.9



PLUMBING PLAN - FIRST LEVEL - AREA A

NORTH

SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.
2. INVERT ELEVATIONS ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'.
3. RUN BRANCH MAINS FULL SIZE THE ENTIRE LENGTH OF THE CHASE AND BRANCH OFF TO FIXTURES WITH SIZES PER THE PLUMBING FIXTURE CONNECTION SCHEDULE.
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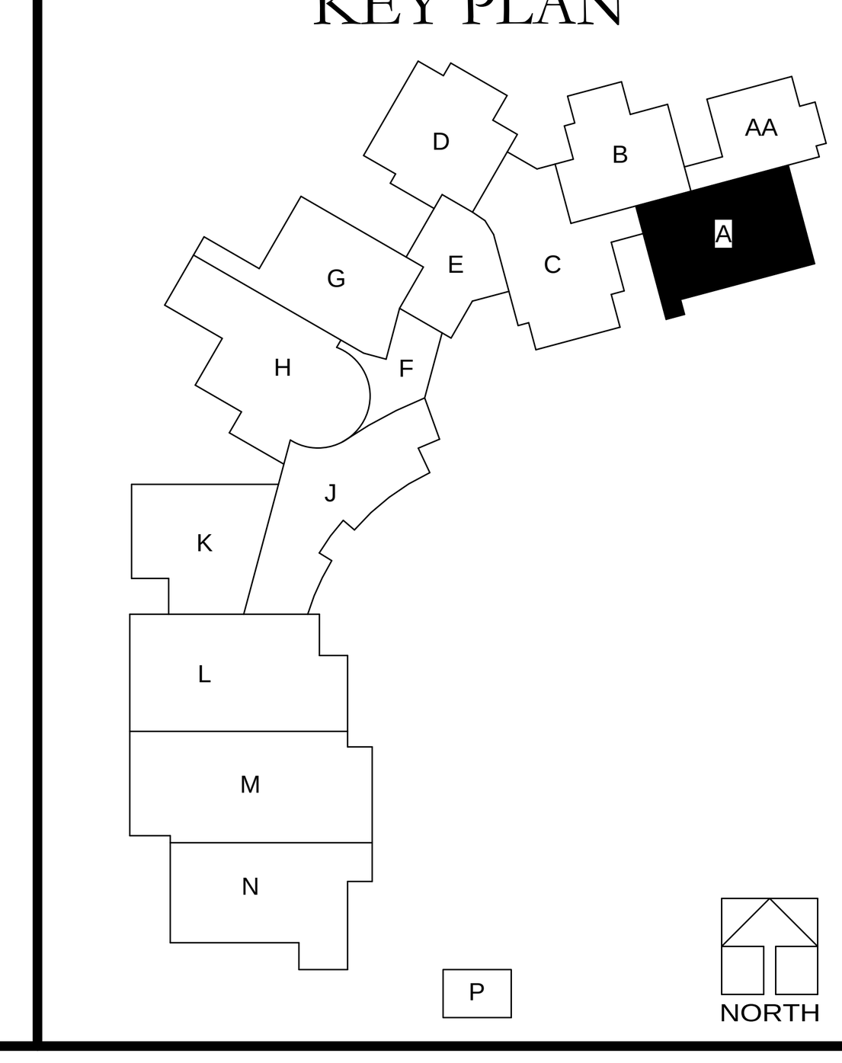
   B. FOR GAS SERVICE ENTRANCE DETAIL, SEE 2/P3.1
   C. FOR 2-WAY GRADE CLEANOUT DETAIL, SEE 3/P3.1.
   D. FOR PVC-CASTIRON TRANSITION DETAIL, SEE 4/P3.1.
   E. FOR UNDERGROUND PIPE DETAILS, SEE 5 & 6/P3.1.
   F. FOR ISLAND SINK DETAIL, SEE 8/P3.1.
   G. FOR ACCESSIBLE LAVATORY OR COUNTER SINK DETAIL, SEE 9/P3.1.
   H. FOR HOSE REEL ASSEMBLY DETAIL, SEE 10/P3.1.
   I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
   T. FOR POST HYDRANT - ROOF DETAIL, SEE 11/P3.2.
   U. FOR MASTER GAS SHUTOFF DETAIL, SEE 12/P3.2.
   V. FOR COFFEE MAKER DETAIL, SEE 13/P3.2.
   W. FOR GREASE INTERCEPTOR DETAIL, SEE 14/P3.2.
   X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

Keynote Legend	
Key Value	Keynote Text

KEY PLAN



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9-30-2014

DLR Group
Architecture
Engineering
Planning
Interiors

DLR Group Project No: 10-13113-00

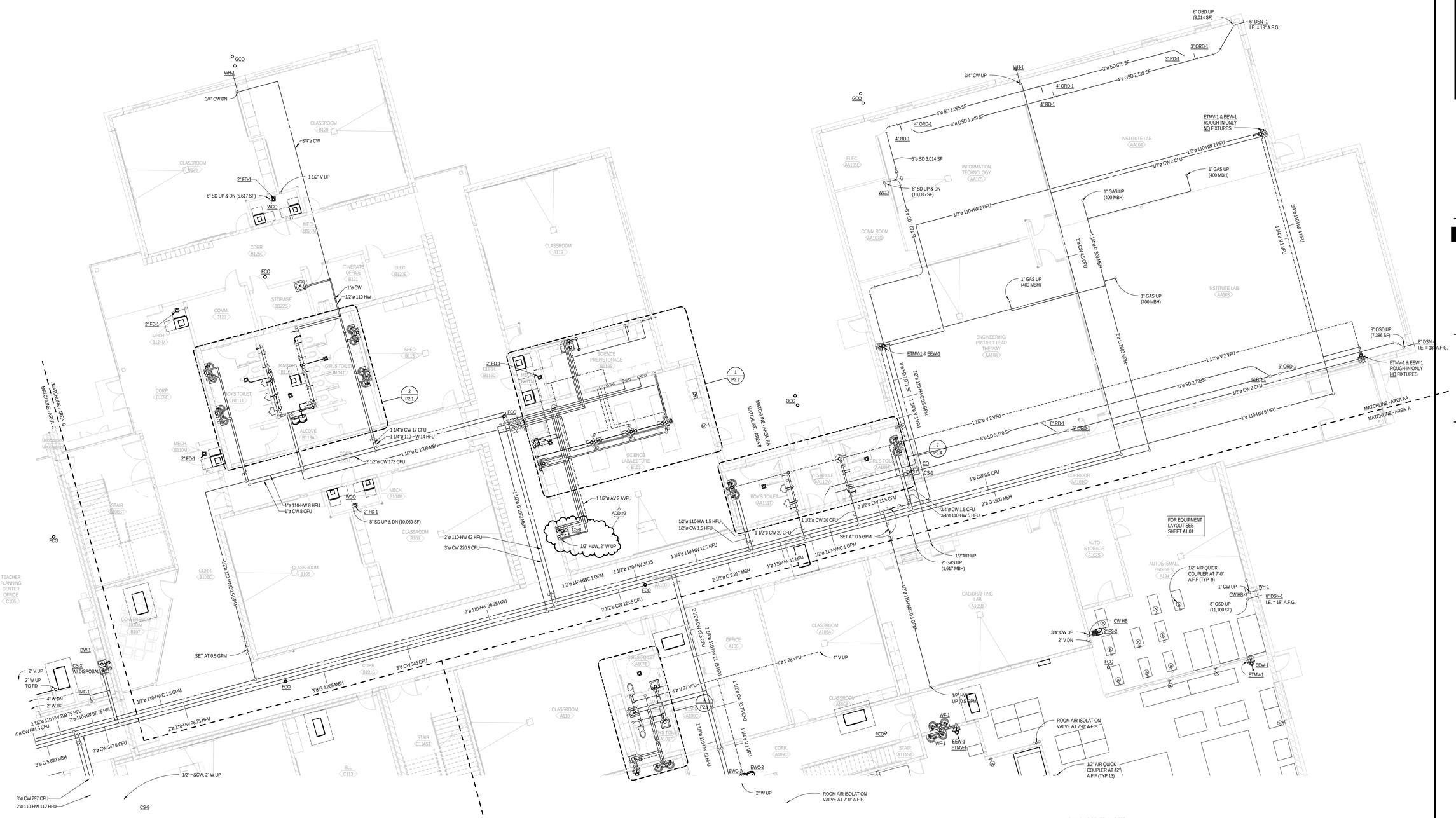
Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREA A

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:
P1.1



PLUMBING PLAN - FIRST LEVEL - AREA AA & B

NORTH

SCALE: 1/8" = 1'-0"

Keynote Legend	
Key Value	Keynote Text

PLUMBING GENERAL NOTES

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   - K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   - L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   - M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   - N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   - O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   - P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
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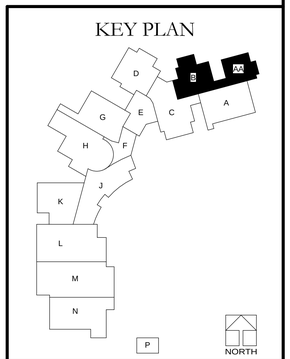
KEY PLAN



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9-30-2014

DLR Group
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DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

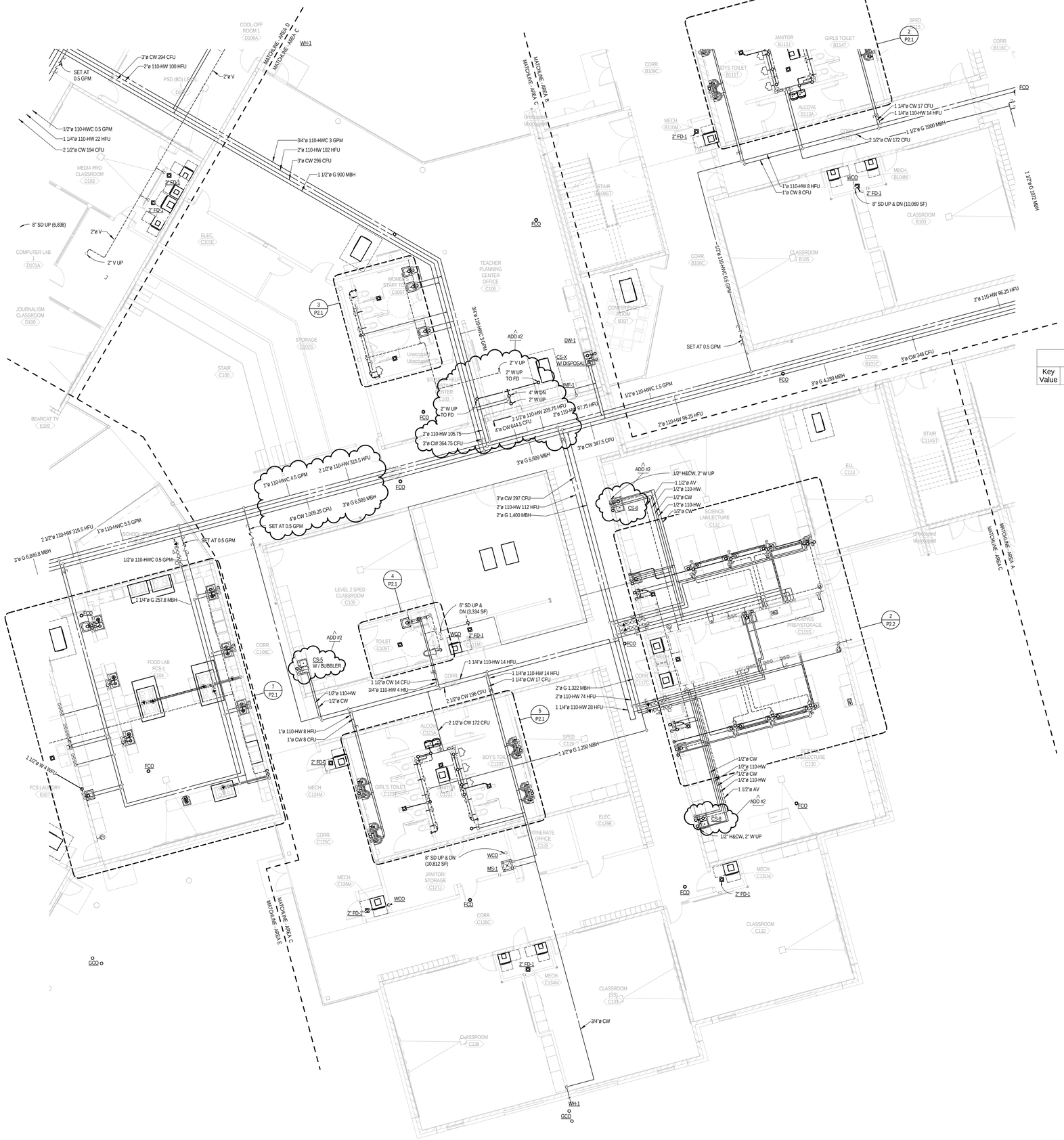
Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREAS AA & B

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.2



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   - X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

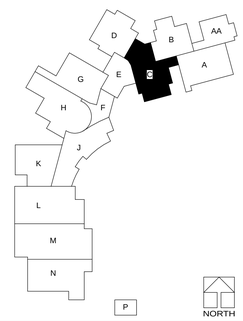
Keynote Legend	
Key Value	Keynote Text

PLUMBING PLAN - FIRST LEVEL - AREA C

SCALE: 1/8" = 1'-0"

NORTH

KEY PLAN



NORTH

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9-30-2014

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DLR Group Project No: 10-13113-00

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Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREA C

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.3

PLUMBING GENERAL NOTES

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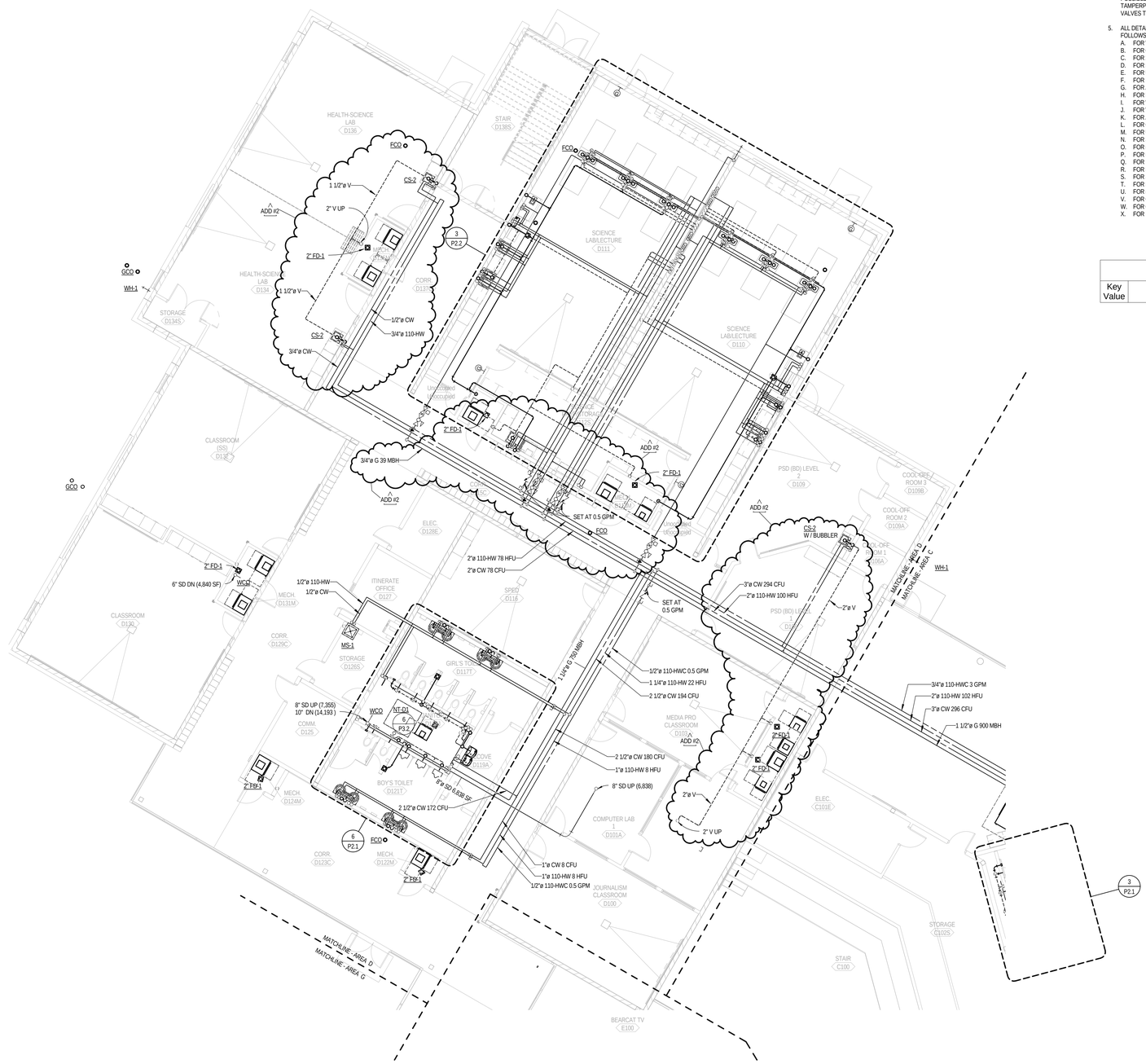
Keynote Legend	
Key Value	Keynote Text

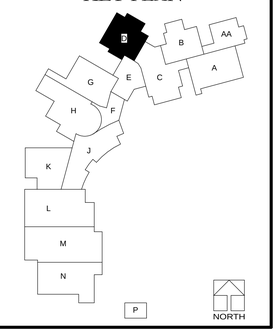


PLUMBING PLAN - FIRST LEVEL - AREA D

NORTH

SCALE: 1/8" = 1'-0"

KEY PLAN



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9-30-2014

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DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

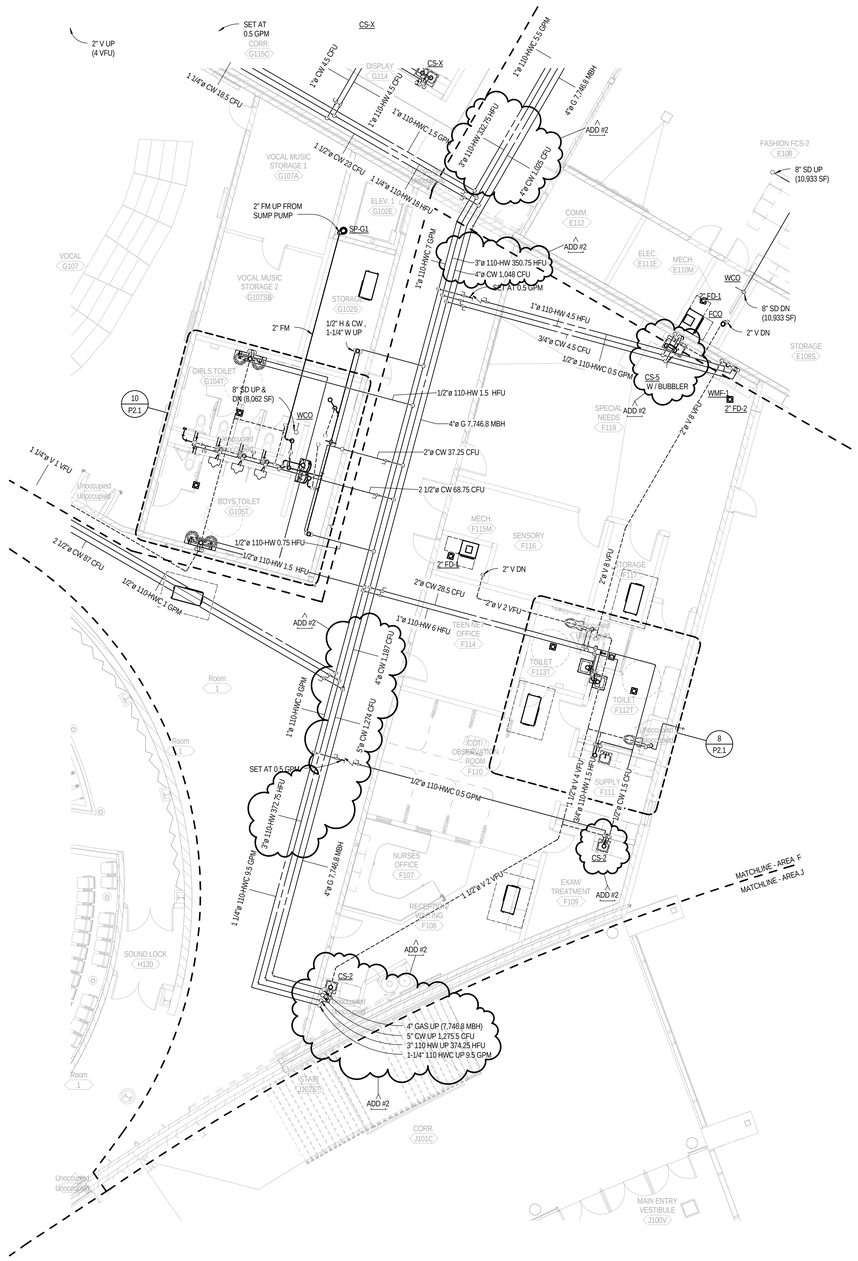
Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREA D

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

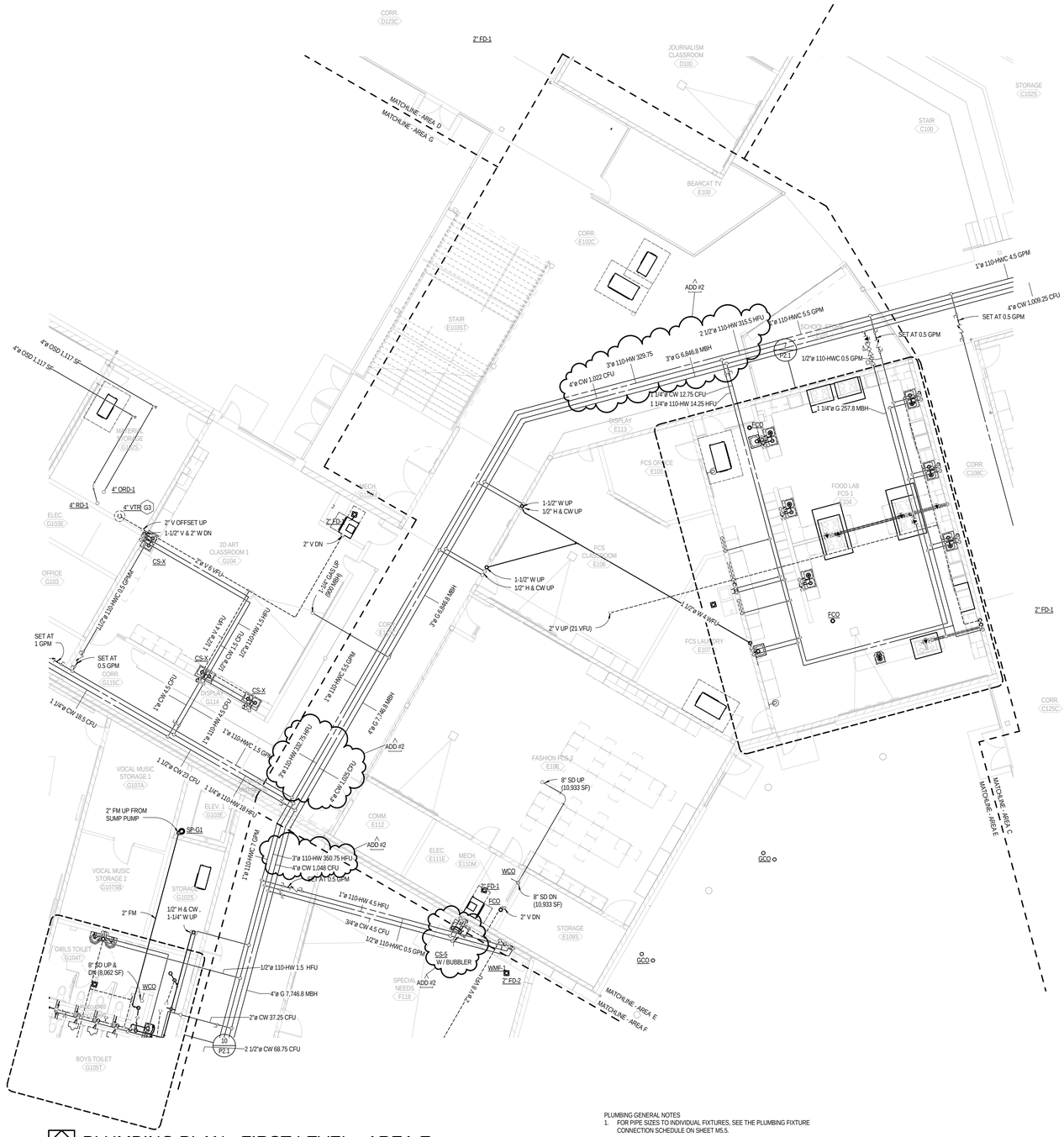
P1.4



PLUMBING PLAN - FIRST LEVEL - AREA F

NORTH

SCALE: 1/8" = 1'-0"



PLUMBING PLAN - FIRST LEVEL - AREA E

NORTH

SCALE: 1/8" = 1'-0"

Keynote Legend	
Key Value	Keynote Text

PLUMBING GENERAL NOTES

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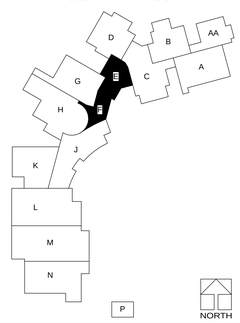

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Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREAS E & F

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.5

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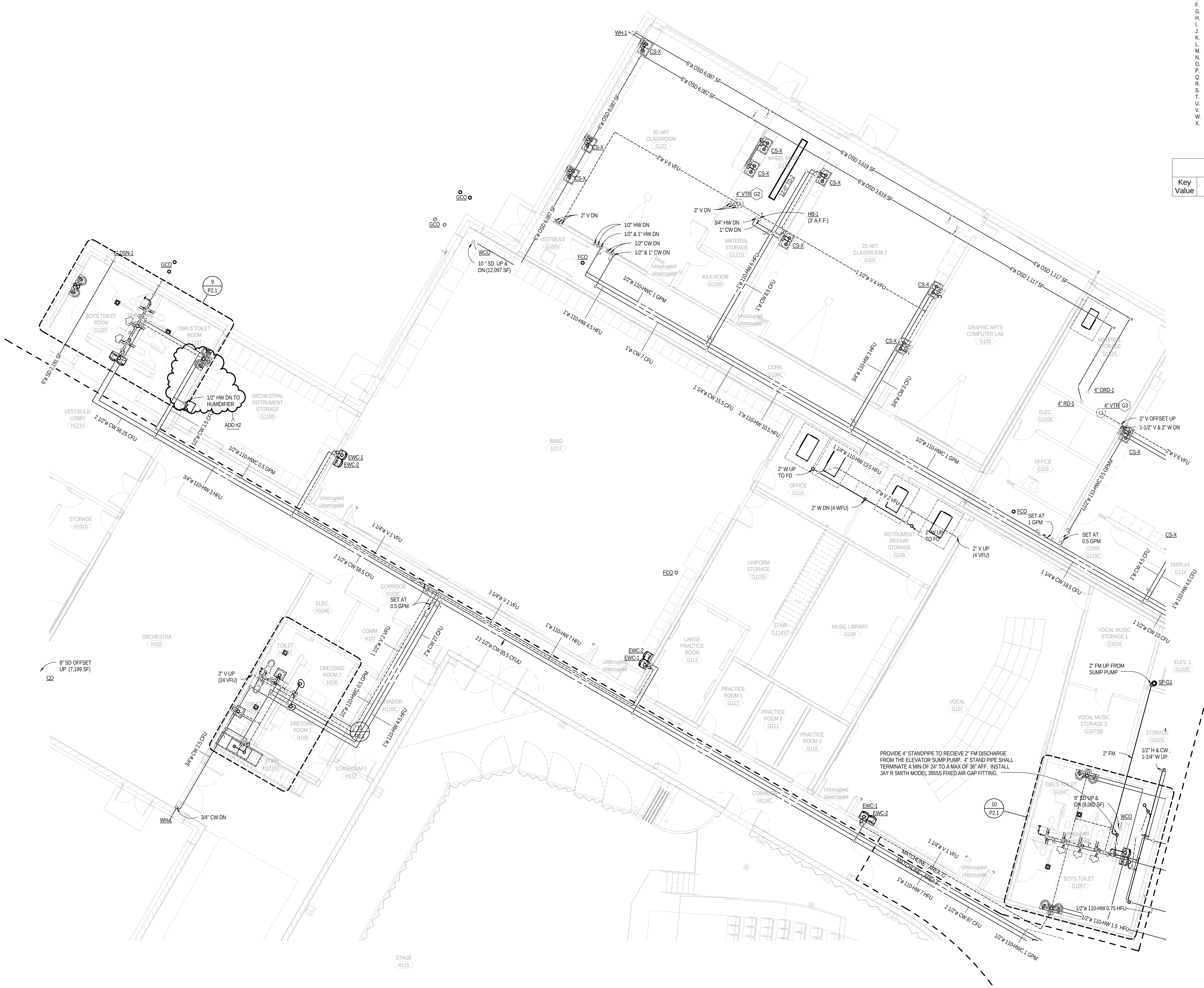
Keynote Legend	
Key Value	Keynote Text

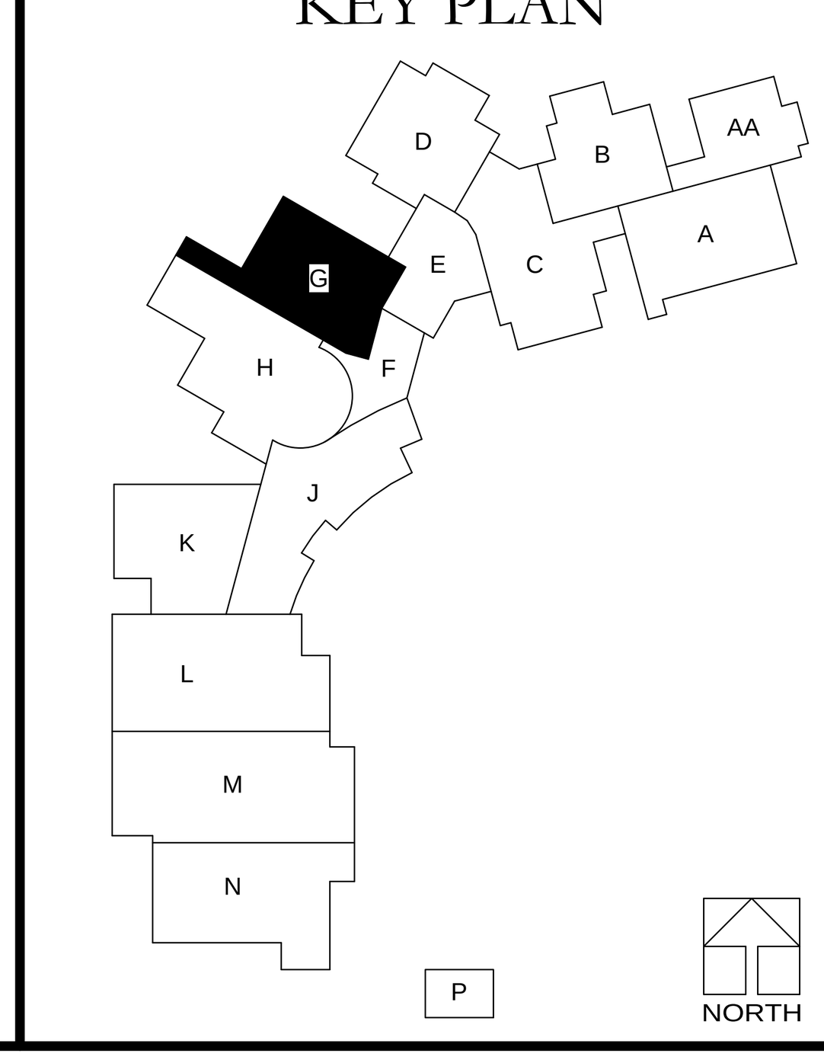


PLUMBING PLAN - FIRST LEVEL - AREA G

SCALE: 1/8" = 1'-0"

NORTH

KEY PLAN



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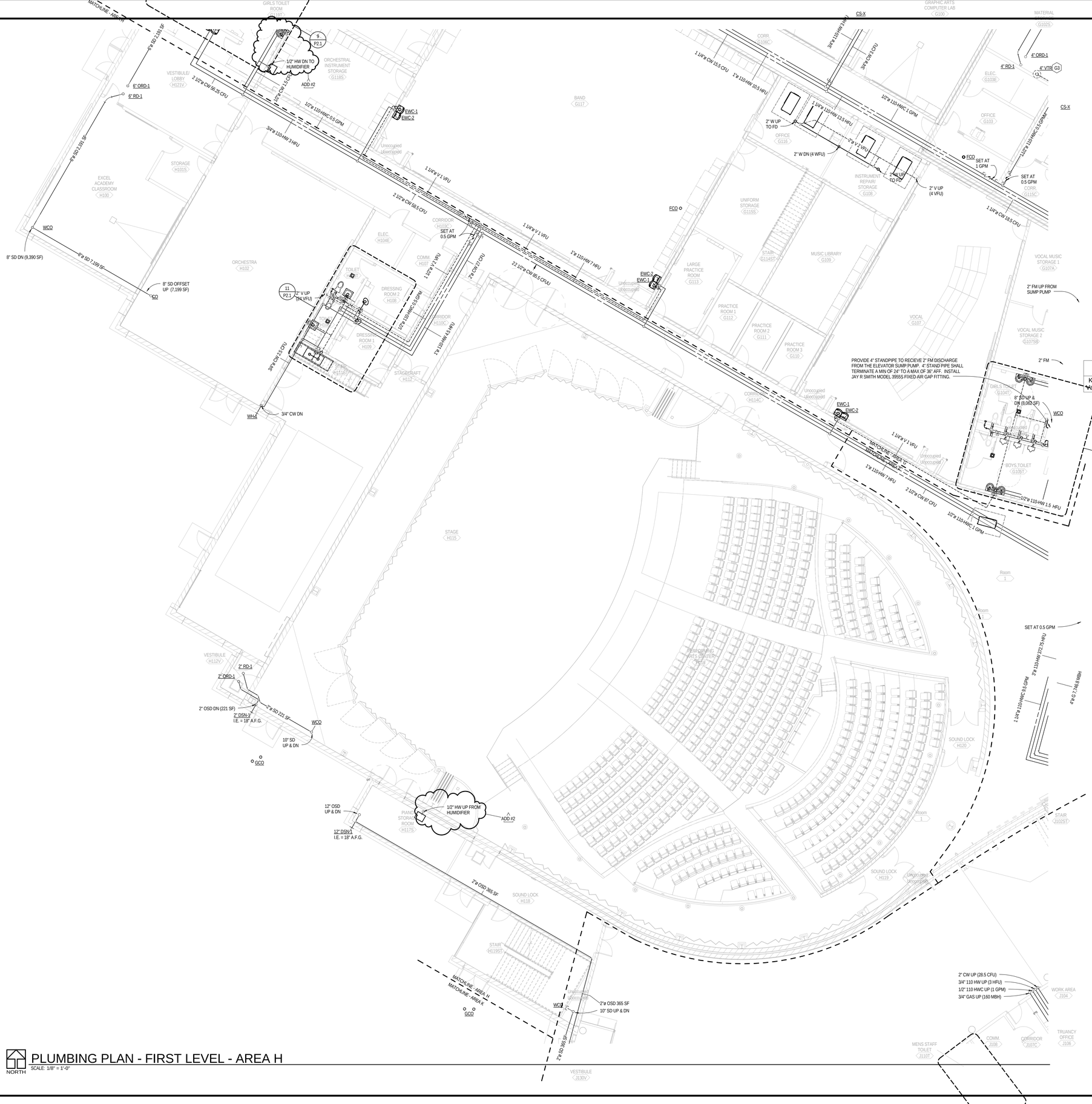
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREA G

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.6



PLUMBING PLAN - FIRST LEVEL - AREA H

SCALE: 1/8" = 1'-0"

Keynote Legend	
Key Value	Keynote Text

PLUMBING GENERAL NOTES

1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.
2. INVERT ELEVATIONS ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'.
3. RUN BRANCH MAINS FULL SIZE THE ENTIRE LENGTH OF THE CHASE AND BRANCH OFF TO FIXTURES WITH SIZES PER THE PLUMBING FIXTURE CONNECTION SCHEDULE.
4. VALVES SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS. IF THIS IS NOT POSSIBLE, ACCESS PANELS SHALL BE PROVIDED. ACCESS PANELS SHALL BE TAMPERPROOF LOCKABLE ACCESS PANELS FOR ACCESS TO ALL PLUMBING VALVES THAT ARE NOT LOCATED OVER AN ACCESSIBLE CEILING.
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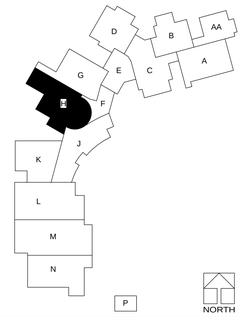
   - B. FOR GAS SERVICE ENTRANCE DETAIL, SEE 2/P3.1
   - C. FOR 2-WAY GRADE CLEANOUT DETAIL, SEE 3/P3.1.
   - D. FOR PVC-CASTIRON TRANSITION DETAIL, SEE 4/P3.1.
   - E. FOR UNDERGROUND PIPE DETAILS, SEE 5 & 6/P3.1.
   - F. FOR ISLAND SINK DETAIL, SEE 8/P3.1.
   - G. FOR ACCESSIBLE LAVATORY OR COUNTER SINK DETAIL, SEE 9/P3.1.
   - H. FOR HOSE REEL ASSEMBLY DETAIL, SEE 10/P3.1.
   - I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   - J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   - K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   - L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   - M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   - N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   - O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   - P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   - Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   - R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   - S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
   - T. FOR POST HYDRANT - ROOF DETAIL, SEE 11/P3.2.
   - U. FOR MASTER GAS SHUTOFF DETAIL, SEE 12/P3.2.
   - V. FOR COFFEE MAKER DETAIL, SEE 13/P3.2.
   - W. FOR GREASE INTERCEPTOR DETAIL, SEE 14/P3.2.
   - X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

KEY PLAN



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9-30-2014

DLR Group
Architecture
Engineering
Planning
Interiors

DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

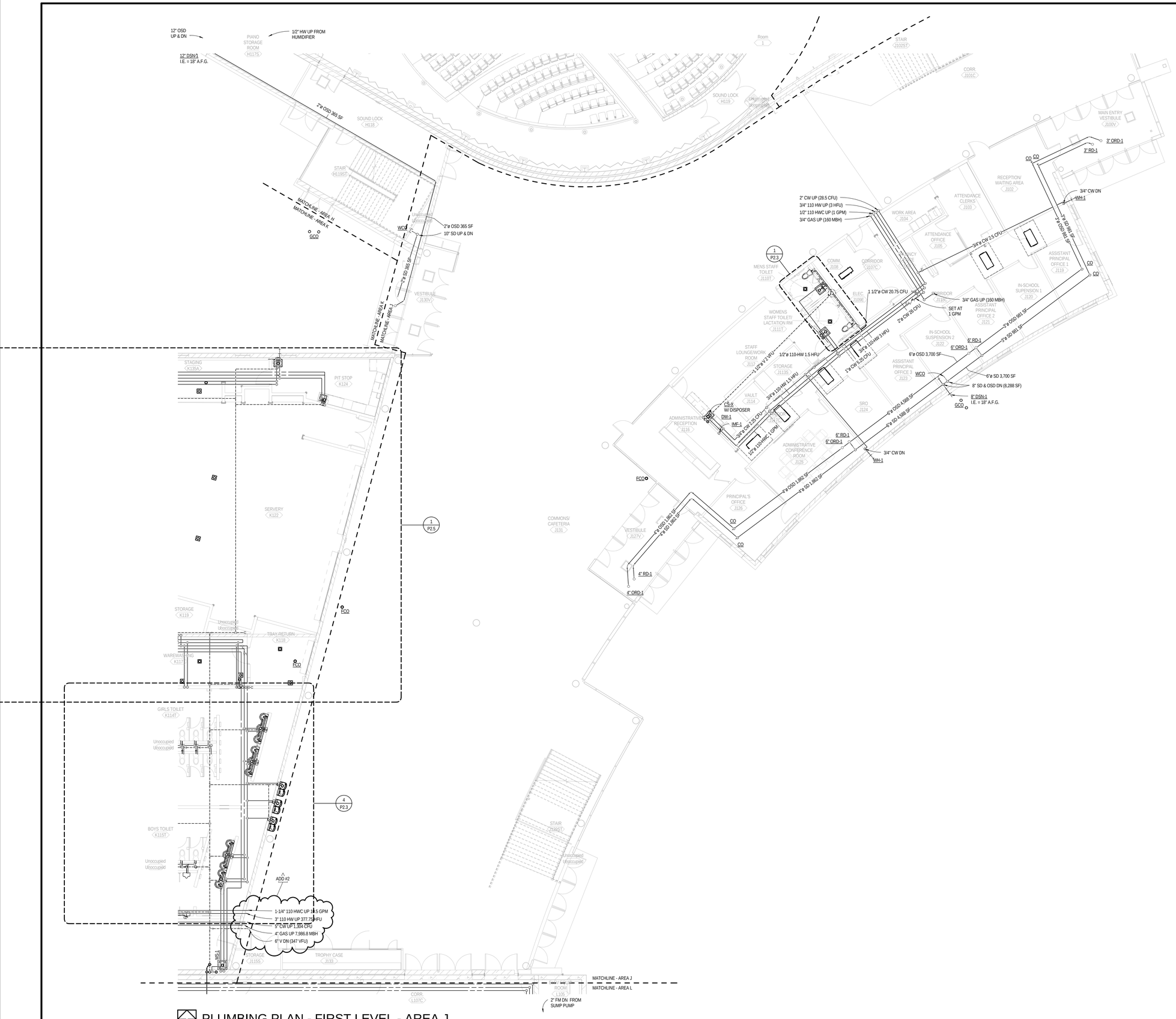
Revision/Issue		Date
ADD #1	Addendum #1	10/7/2014
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREA H

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.7



NORTH

PLUMBING PLAN - FIRST LEVEL - AREA J

SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.
2. INVERT ELEVATIONS ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'.
3. RUN BRANCH MAINS FULL SIZE THE ENTIRE LENGTH OF THE CHASE AND BRANCH OFF TO FIXTURES WITH SIZES PER THE PLUMBING FIXTURE CONNECTION SCHEDULE.
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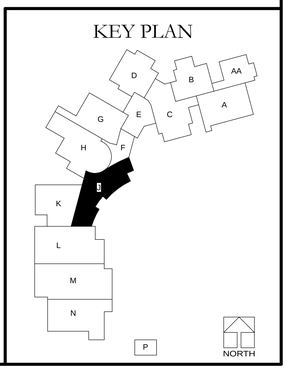
   - I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   - J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   - K. FOR AIR COMPRESSOR DETAIL, SEE 13/P3.2.
   - L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   - M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   - N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   - O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   - P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   - Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   - R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   - S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
   - T. FOR POST HYDRANT – ROOF DETAIL, SEE 11/P3.2.
   - U. FOR MASTER GAS SHUTOFF DETAIL, SEE 12/P3.2.
   - V. FOR COFFEE MAKER DETAIL, SEE 13/P3.2.
   - W. FOR GREASE INTERCEPTOR DETAIL, SEE 14/P3.2.
   - X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

Keynote Legend	
Key Value	Keynote Text

KEY PLAN



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STATE OF NEBRASKA
9-30-2014

DLR Group
Architecture
Engineering
Planning
Interiors

DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

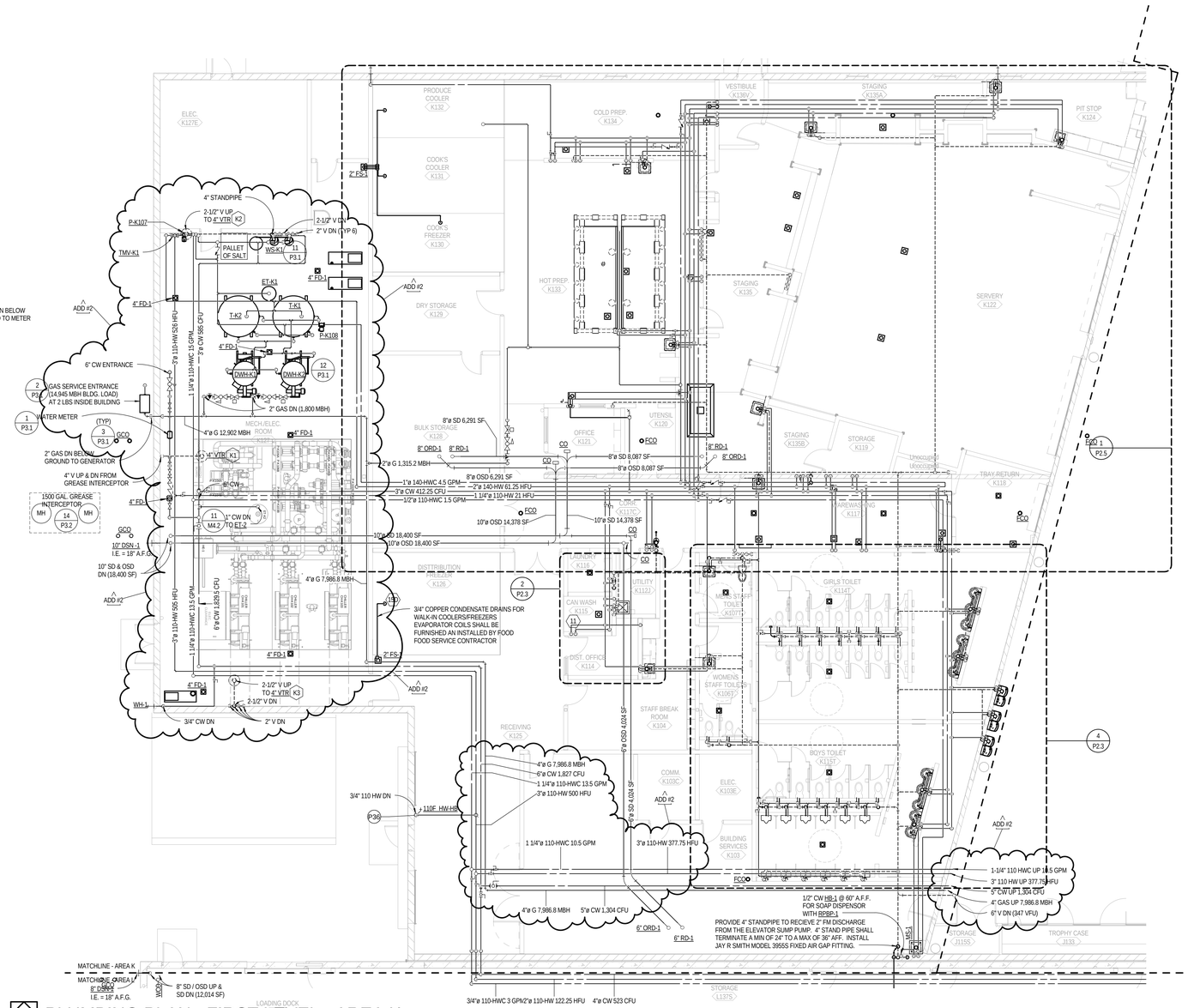
Revision/Issue		Date
ADD #1	Addendum #1	10/7/2014
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREA J

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.8



NORTH

PLUMBING PLAN - FIRST LEVEL - AREA K

SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

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   - K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
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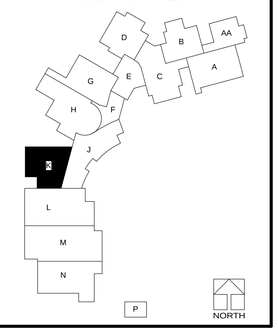
   - X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

Keynote Legend	
Key Value	Keynote Text
P36	HOSE BIBB (110°) AT 18" A.F.F. BY MECHANICAL CONTRACTOR.

KEY PLAN



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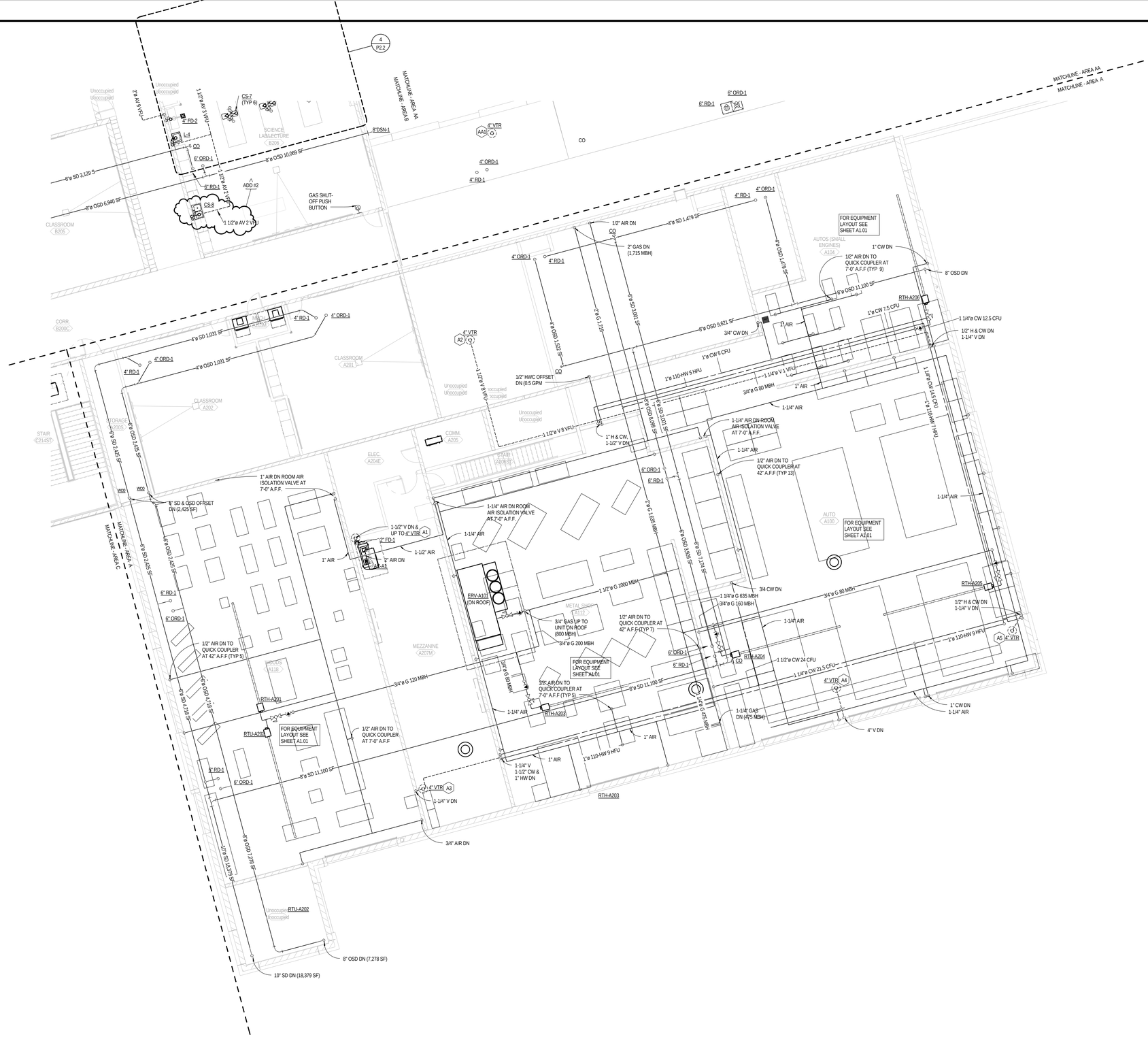
Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - FIRST LEVEL - AREA K

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:
P1.9



PLUMBING PLAN - SECOND LEVEL - AREA A

NORTH

SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

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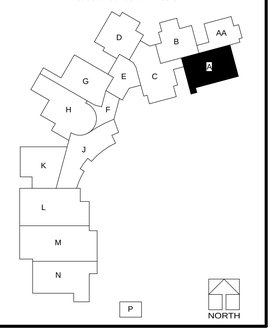
Keynote Legend	
Key Value	Keynote Text

KEY PLAN



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DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

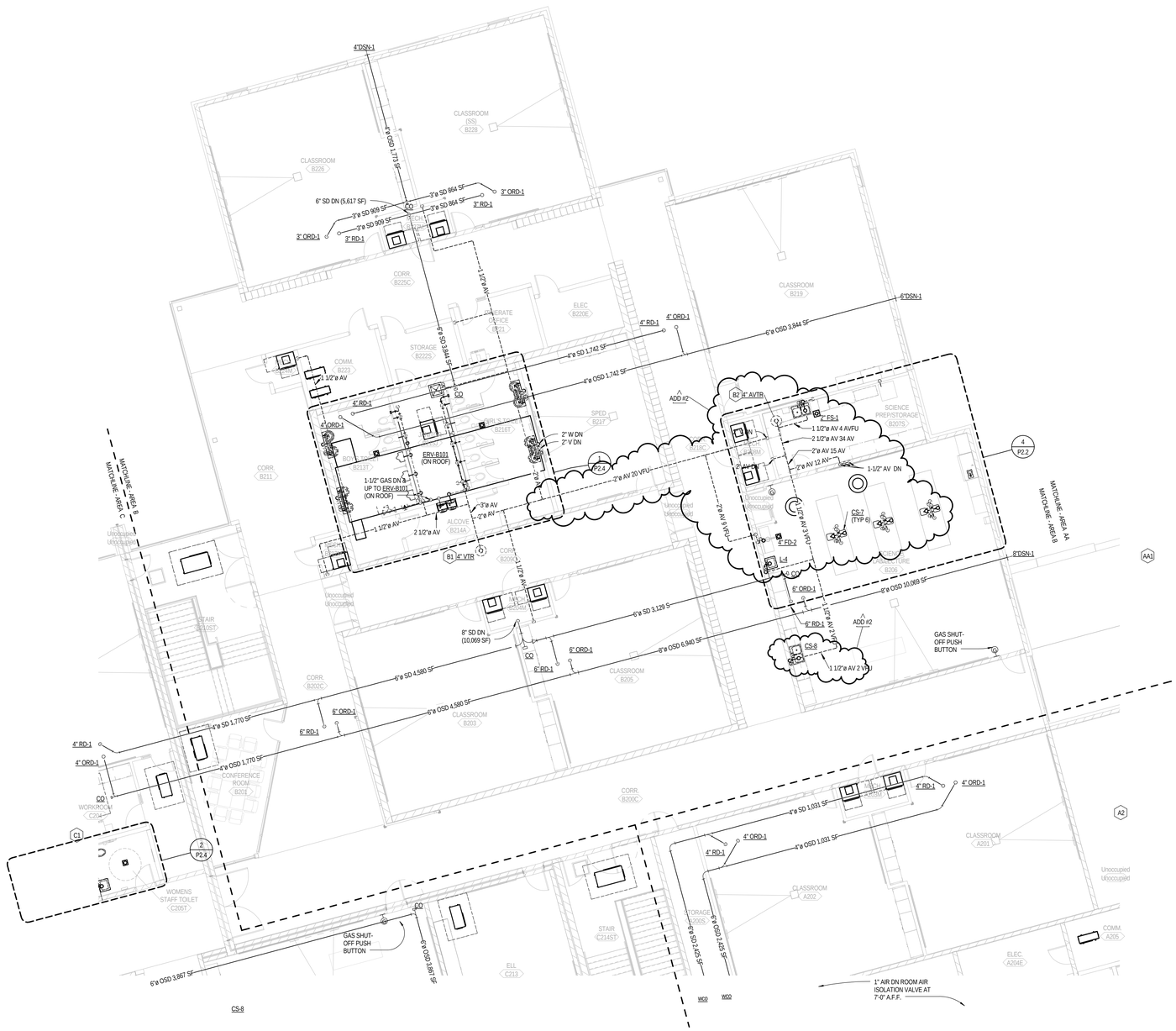
Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - SECOND LEVEL - AREA A

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.13



PLUMBING PLAN - SECOND LEVEL - AREA B

NORTH

SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

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Keynote Legend	
Key Value	Keynote Text

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DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

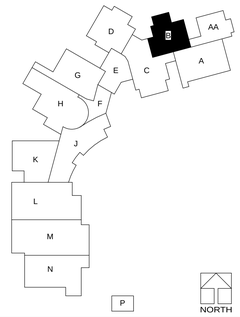
PLUMBING PLAN - SECOND LEVEL - AREA B

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.14

KEY PLAN



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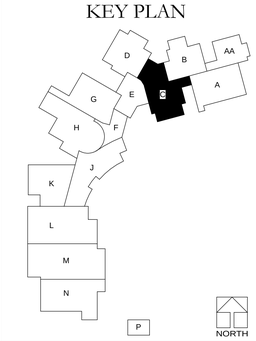
Keynote Legend	
Key Value	Keynote Text

PLUMBING PLAN - SECOND LEVEL - AREA C

NORTH

SCALE: 1/8" = 1'-0"

KEY PLAN



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PROFESSIONAL MECHANICAL ENGINEER — E-12412 — STATE OF NEBRASKA — 9-30-2014

DLR Group
Architecture
Engineering
Planning
Interiors

DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue	Date
ADD #2 Addendum #2	10/10/2014

PLUMBING PLAN - SECOND LEVEL - AREA C

ProjectNumber: 1355
Date: September 30, 2014

Sheet Number:

P1.15

PLUMBING GENERAL NOTES

1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.

2. INVERT ELEVATIONS ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'.

3. RUN BRANCH MAINS FULL SIZE THE ENTIRE LENGTH OF THE CHASE AND BRANCH OFF TO FIXTURES WITH SIZES PER THE PLUMBING FIXTURE CONNECTION SCHEDULE.

4. VALVES SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS. IF THIS IS NOT POSSIBLE, ACCESS PANELS SHALL BE PROVIDED. ACCESS PANELS SHALL BE TAMPERPROOF LOCKABLE ACCESS PANELS FOR ACCESS TO ALL PLUMBING VALVES THAT ARE NOT LOCATED OVER AN ACCESSIBLE CEILING.

5. ALL DETAILS FOR ITEMS SHOWN ON THIS SHEET ARE REFERRED TO AS FOLLOWS:
   A. FOR WATER METER ENTRANCE DETAIL, SEE 1/P3.1
   B. FOR GAS SERVICE ENTRANCE DETAIL, SEE 2/P3.1
   C. FOR 2-WAY GRADE CLEANOUT DETAIL, SEE 3/P3.1.
   D. FOR PVC-CASTIRON TRANSITION DETAIL, SEE 4/P3.1.
   E. FOR UNDERGROUND PIPE DETAILS, SEE 5 & 6/P3.1.
   F. FOR ISLAND SINK DETAIL, SEE 8/P3.1.
   G. FOR ACCESSIBLE LAVATORY OR COUNTER SINK DETAIL, SEE 9/P3.1.
   H. FOR HOSE REEL ASSEMBLY DETAIL, SEE 10/P3.1.
   I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
   T. FOR POST HYDRANT - ROOF DETAIL, SEE 11/P3.2.
   U. FOR MASTER GAS SHUTOFF DETAIL, SEE 12/P3.2.
   V. FOR COFFEE MAKER DETAIL, SEE 13/P3.2.
   W. FOR GREASE INTERCEPTOR DETAIL, SEE 14/P3.2.
   X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

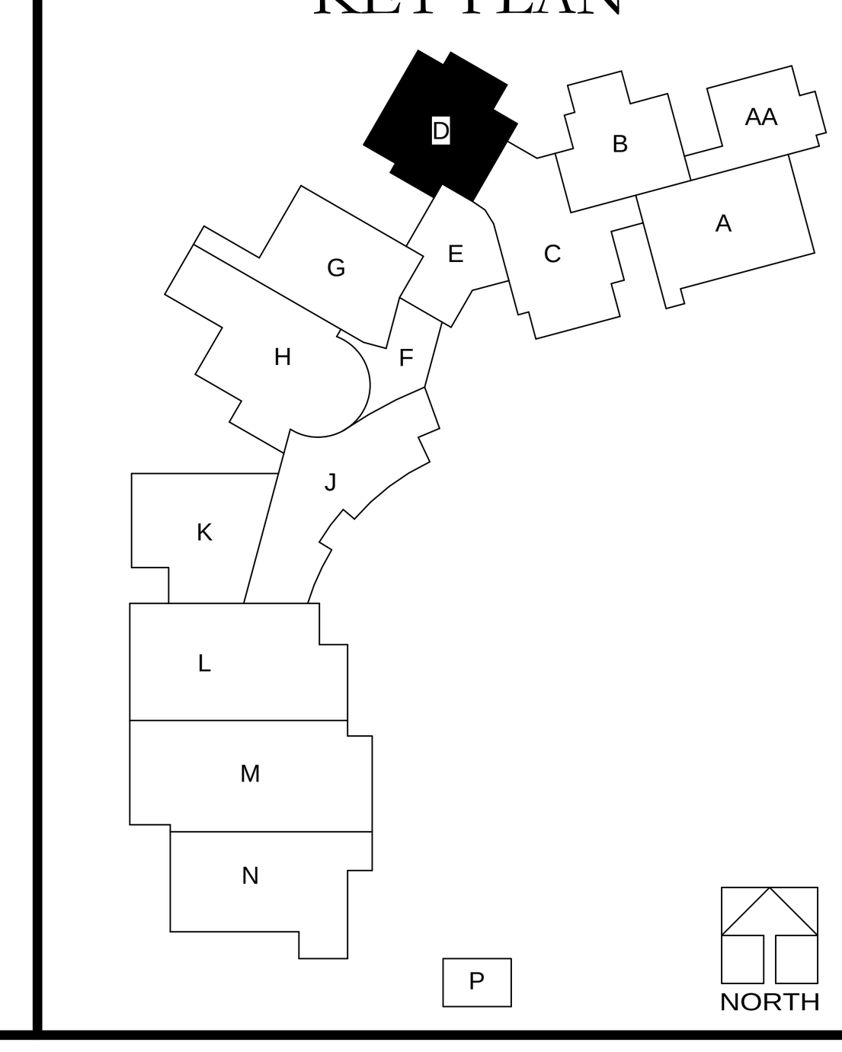
Keynote Legend	
Key Value	Keynote Text

PLUMBING PLAN - SECOND LEVEL - AREA D

SCALE: 1/8" = 1'-0"

NORTH

KEY PLAN



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9-30-2014

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DLR Group Project No: 10-13113-00

Kearney Public Schools
New Kearney High School
Kearney, Nebraska

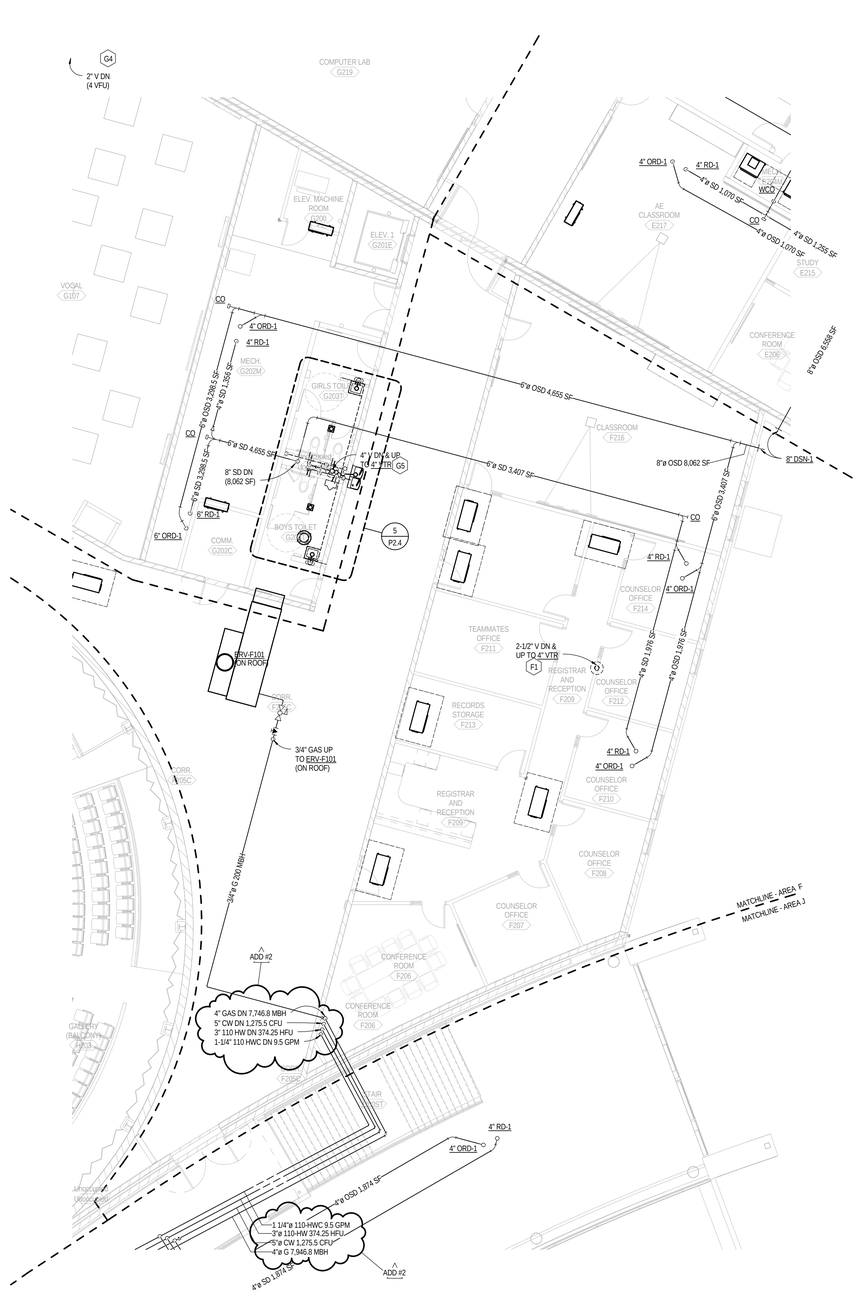
Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - SECOND LEVEL - AREA D

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.16



PLUMBING PLAN - SECOND LEVEL - AREA F

NORTH SCALE: 1/8" = 1'-0"

PLUMBING PLAN - SECOND LEVEL - AREA E

NORTH SCALE: 1/8" = 1'-0"

Keynote Legend	
Key Value	Keynote Text

PLUMBING GENERAL NOTES

1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.
2. INVERT ELEVATIONS ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'.
3. RUN BRANCH MAINS FULL SIZE THE ENTIRE LENGTH OF THE CHASE AND BRANCH OFF TO FIXTURES WITH SIZES PER THE PLUMBING FIXTURE CONNECTION SCHEDULE.
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   - D. FOR PVC-CASTIRON TRANSITION DETAIL, SEE 4/P3.1.
   - E. FOR UNDERGROUND PIPE DETAILS, SEE 5 & 6/P3.1.
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   - G. FOR ACCESSIBLE LAVATORY OR COUNTER SINK DETAIL, SEE 9/P3.1.
   - H. FOR HOSE REEL ASSEMBLY DETAIL, SEE 10/P3.1.
   - I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   - J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   - K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   - L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   - M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   - N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   - O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   - P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   - Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
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   - T. FOR POST HYDRANT - ROOF DETAIL, SEE 11/P3.2.
   - U. FOR MASTER GAS SHUTOFF DETAIL, SEE 12/P3.2.
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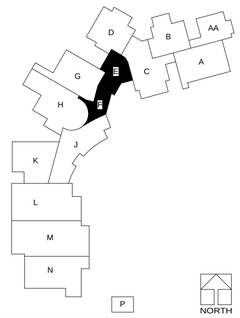
KEY PLAN



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9-30-2014

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Architecture
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DLR Group Project No: 10-13113-00

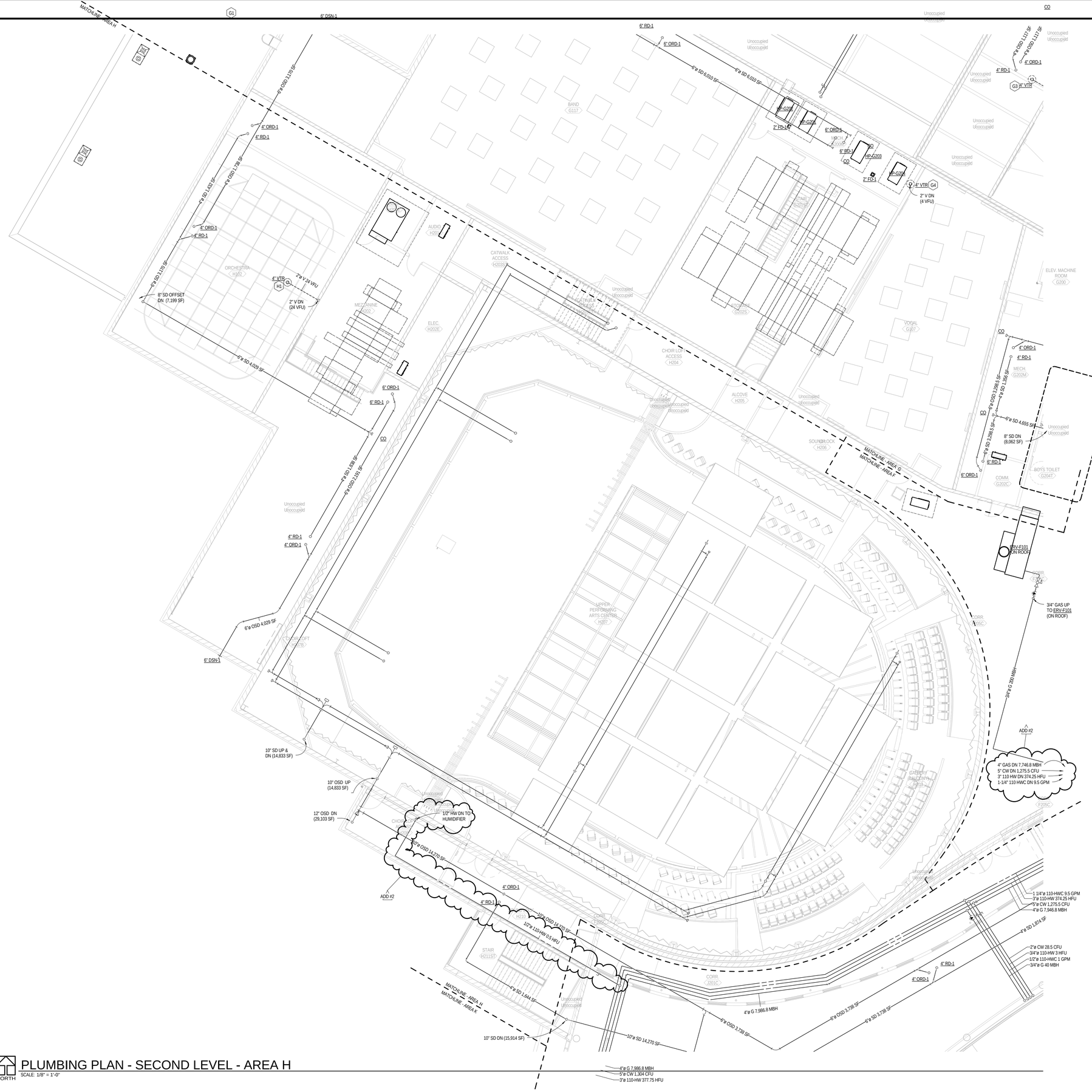
Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - SECOND LEVEL - AREAS E & F

ProjectNumber: 1355
Date: September 30, 2014

Sheet Number:
P1.17



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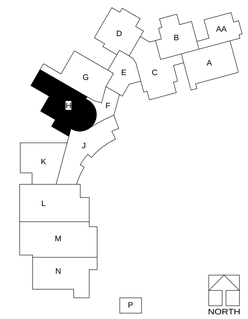
   - X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.

Keynote Legend	
Key Value	Keynote Text

PLUMBING PLAN - SECOND LEVEL - AREA H

NORTH SCALE: 1/8" = 1'-0"

KEY PLAN



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PROFESSIONAL MECHANICAL ENGINEER — E-12412 — STATE OF NEBRASKA — 9-30-2014

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Kearney, Nebraska

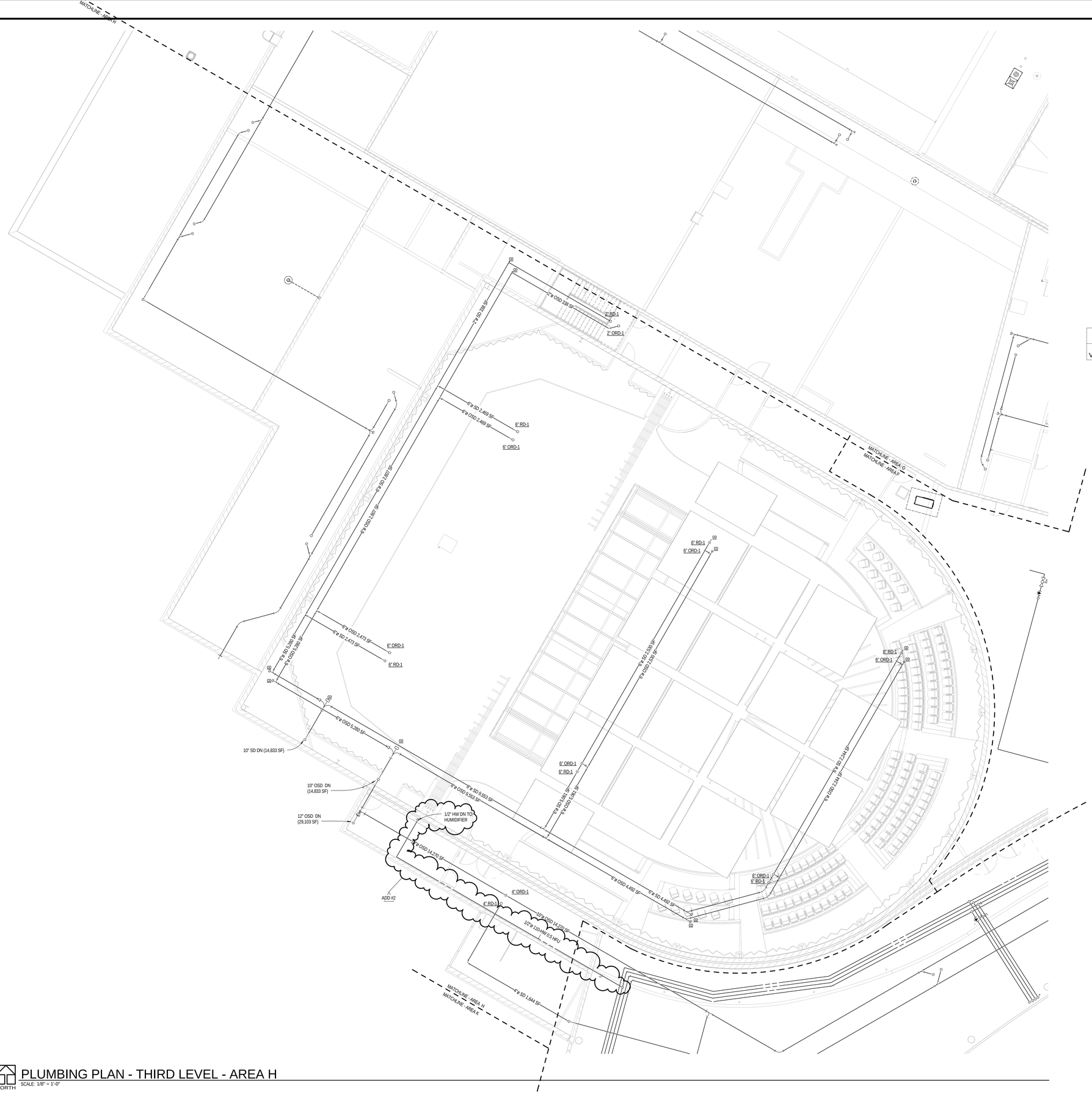
Revision/Issue	Date
ADD #2 Addendum #2	10/10/2014

PLUMBING PLAN - SECOND LEVEL - AREA H

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.19



PLUMBING PLAN - THIRD LEVEL - AREA H

NORTH

SCALE: 1/8" = 1'-0"

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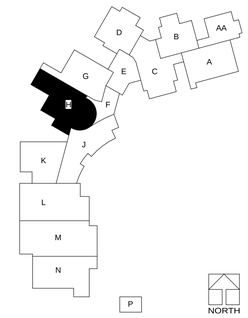
Keynote Legend	
Key Value	Keynote Text

KEY PLAN



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9-30-2014

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Kearney Public Schools
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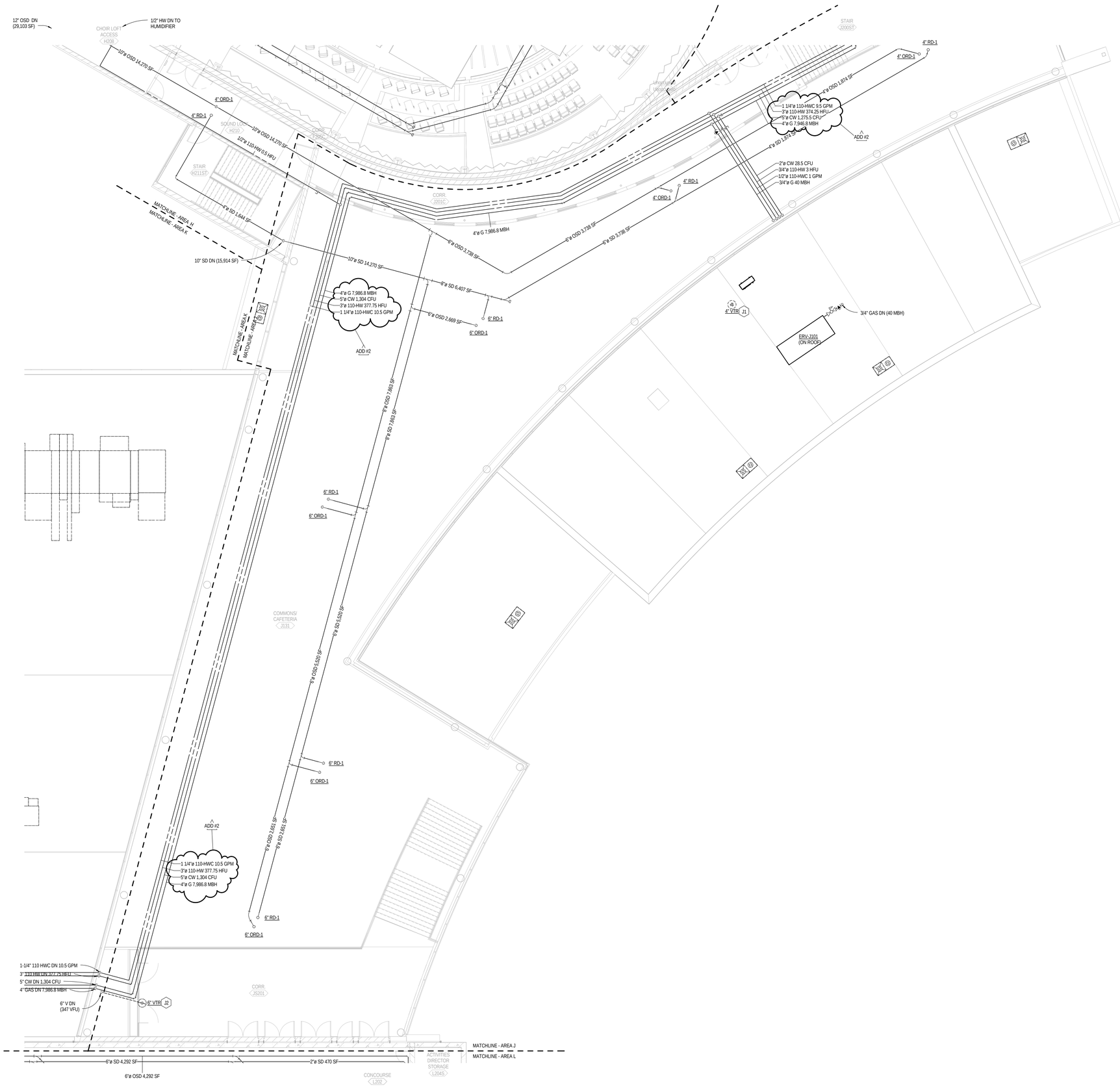
Revision/Issue		Date
ADD #2	Addendum #2	10/10/2014

PLUMBING PLAN - TECH LEVEL - AREA H

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.20



PLUMBING PLAN - SECOND LEVEL - AREA J

SCALE: 1/8" = 1'-0"

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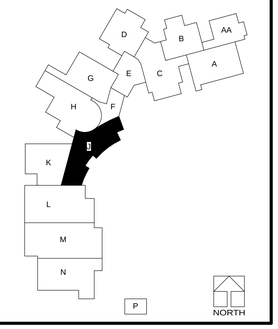
Keynote Legend	
Key Value	Keynote Text

KEY PLAN



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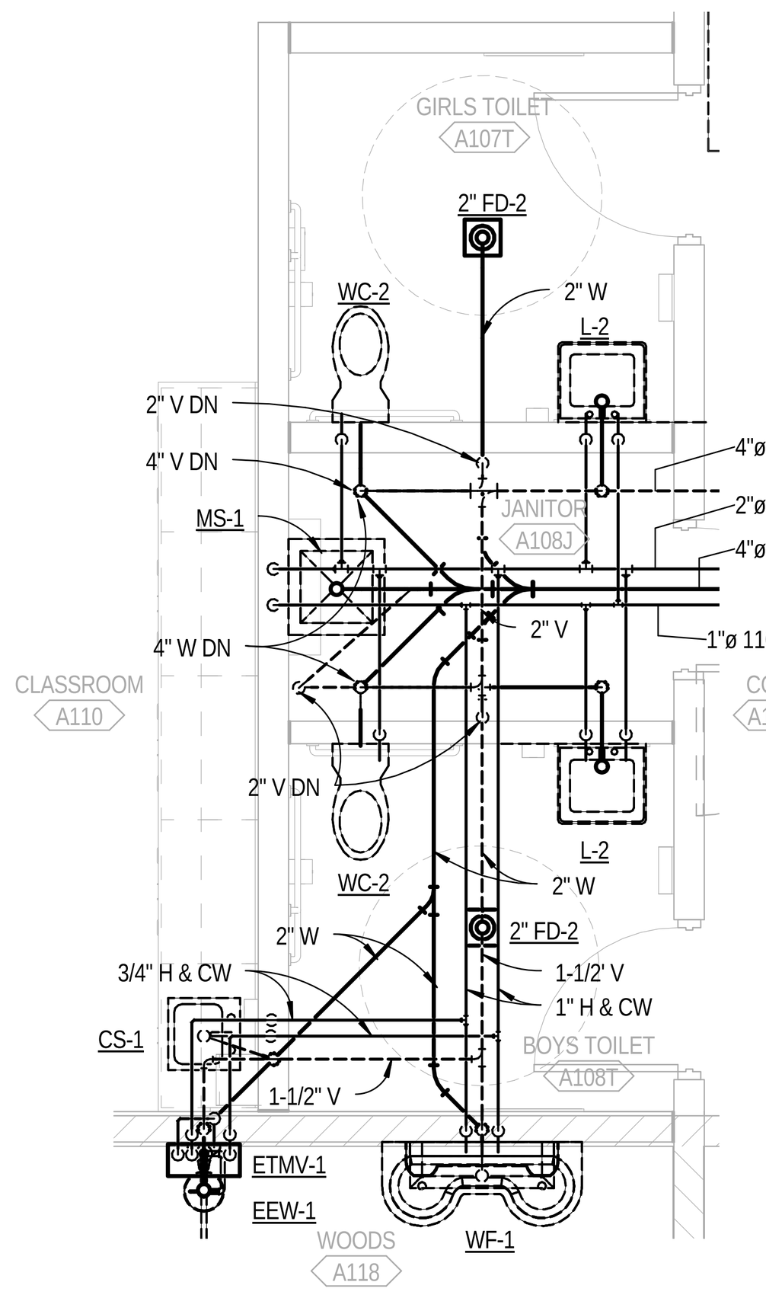
PLUMBING PLAN - SECOND LEVEL - AREA J

ProjectNumber: **1355**
Date: **September 30, 2014**

Sheet Number:

P1.21



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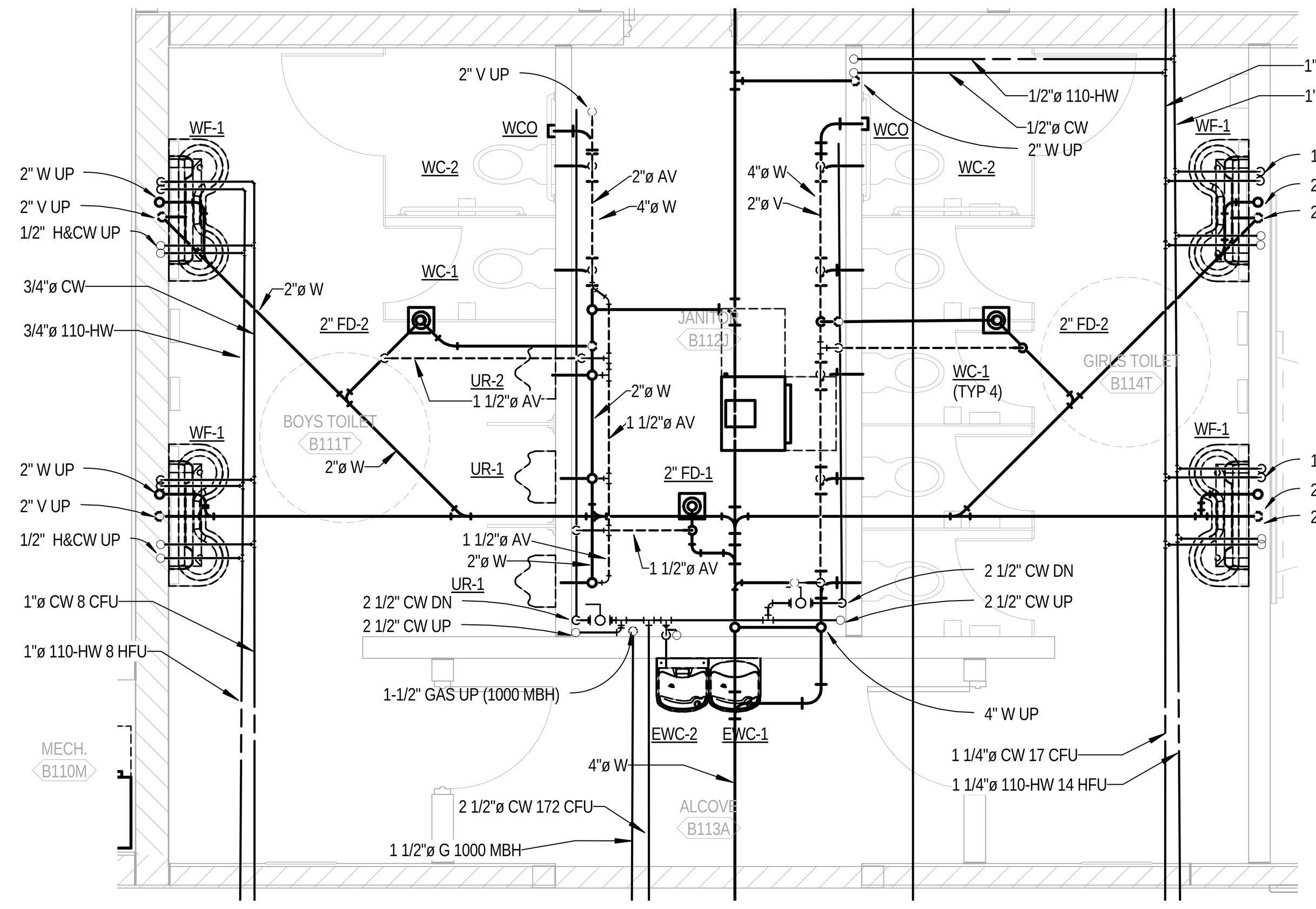
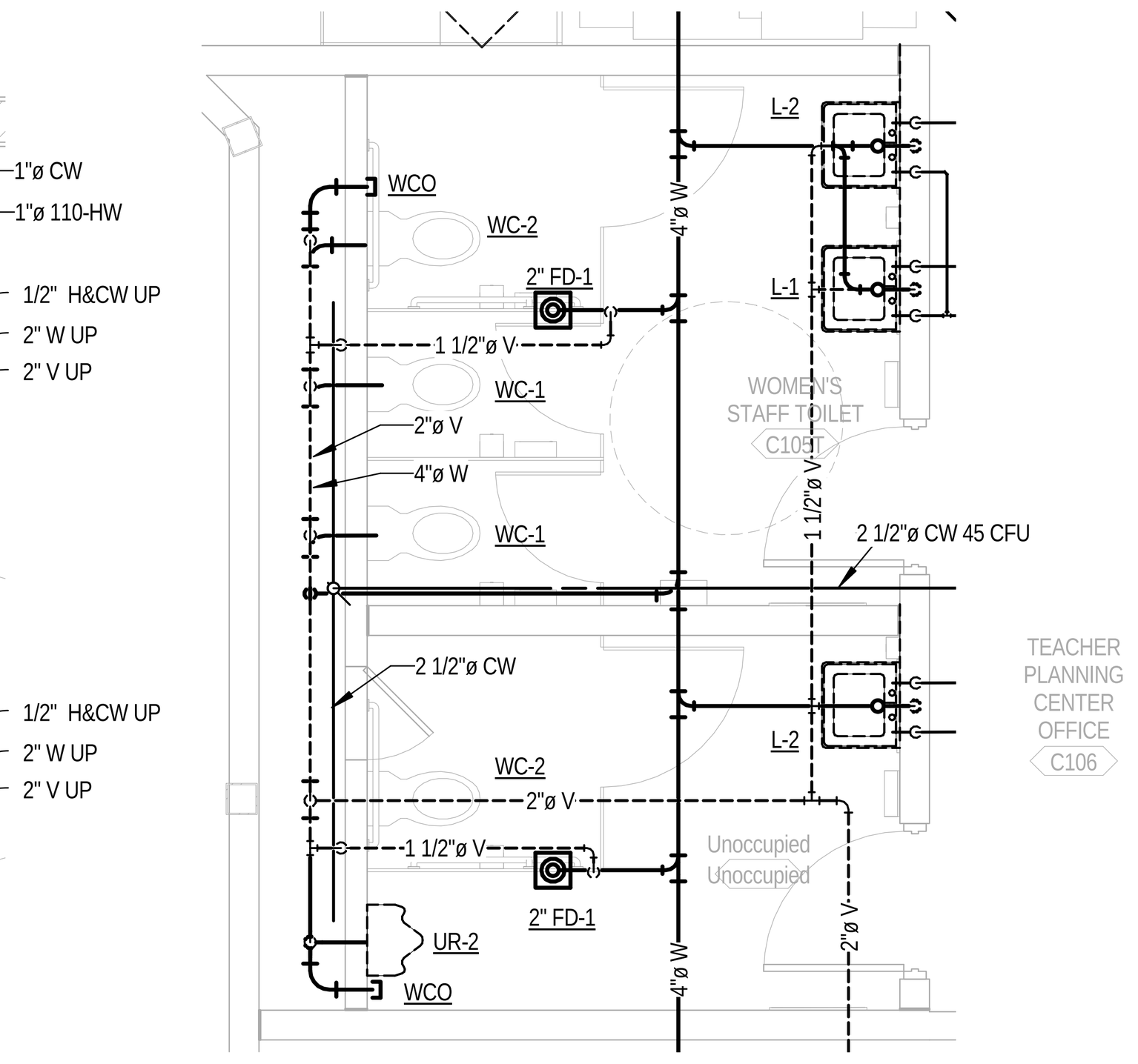
SCALE: 1/4" = 1'-0"

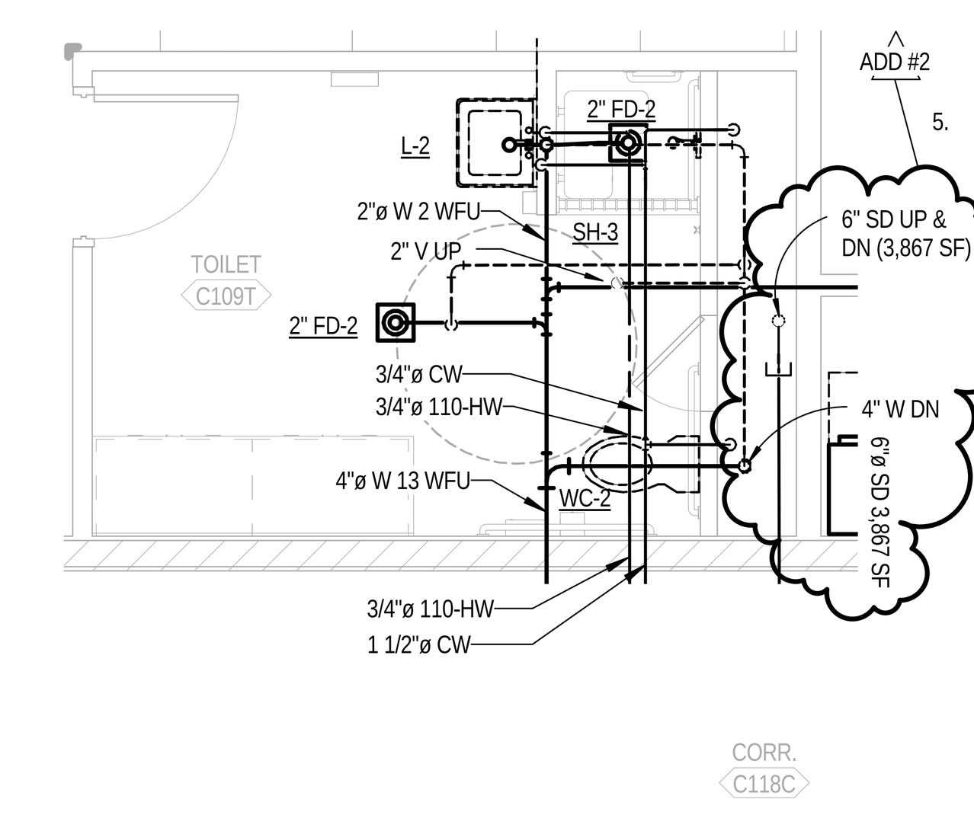


2 P2.1 LARGE SCALE B111T, B113A & B114T
SCALE: 1/4" = 1'-0"

CORR.
B111



3 P2.1 LARGE SCALE C104T & C105T
SCALE: 1/4" = 1'-0"



4 P2.1 LARGE SCALE C109
SCALE: 1/4" = 1'-0"

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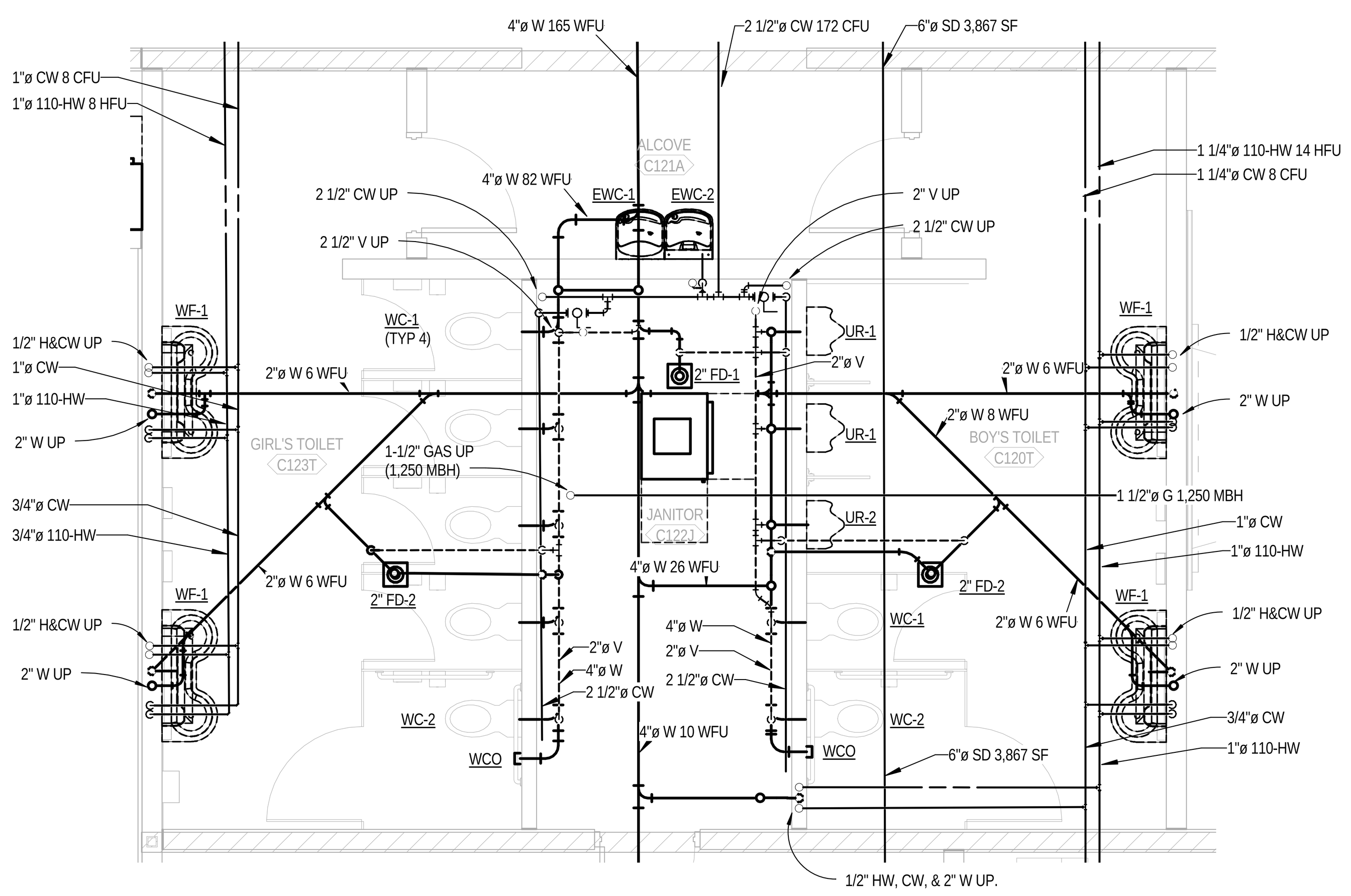
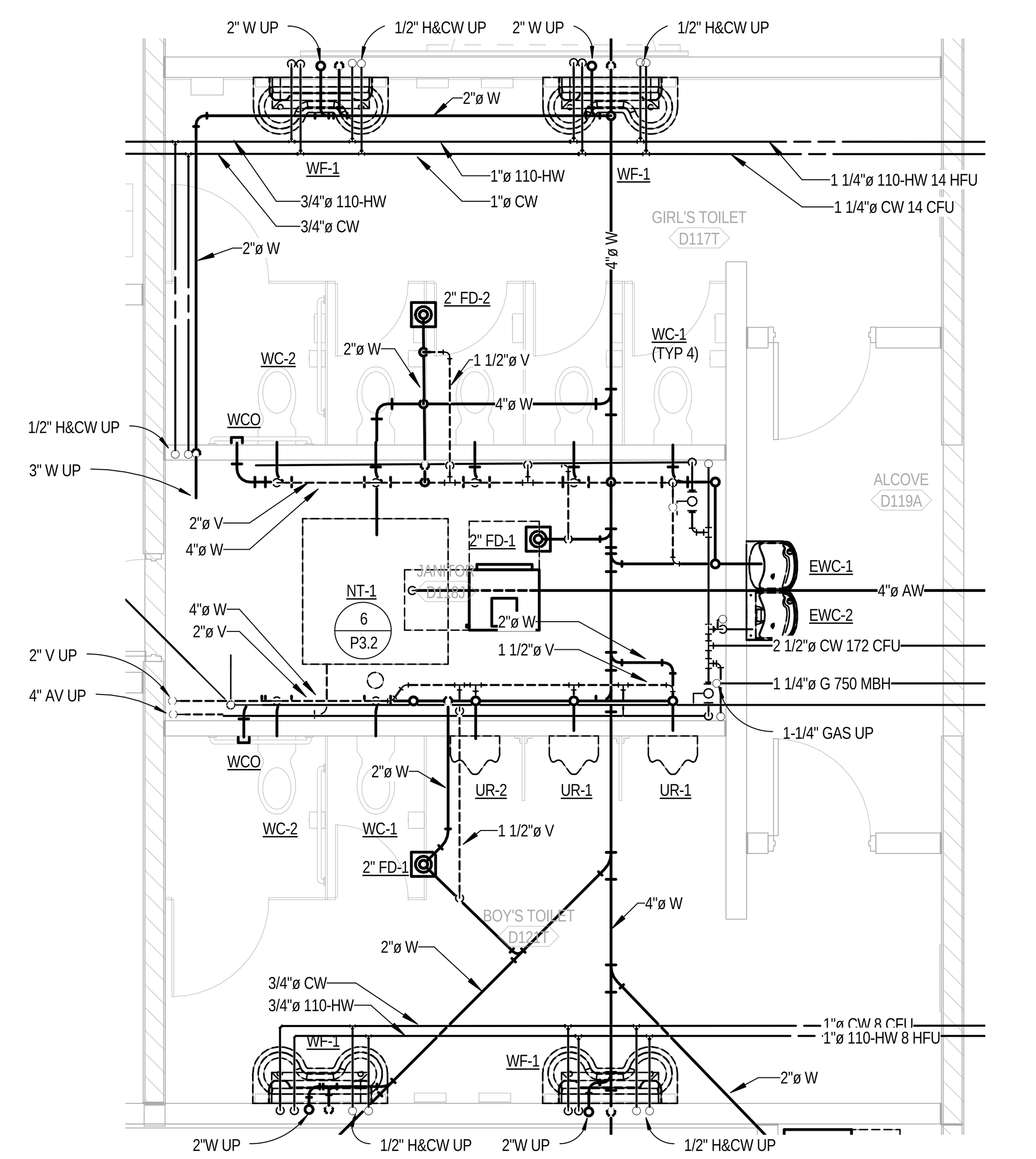
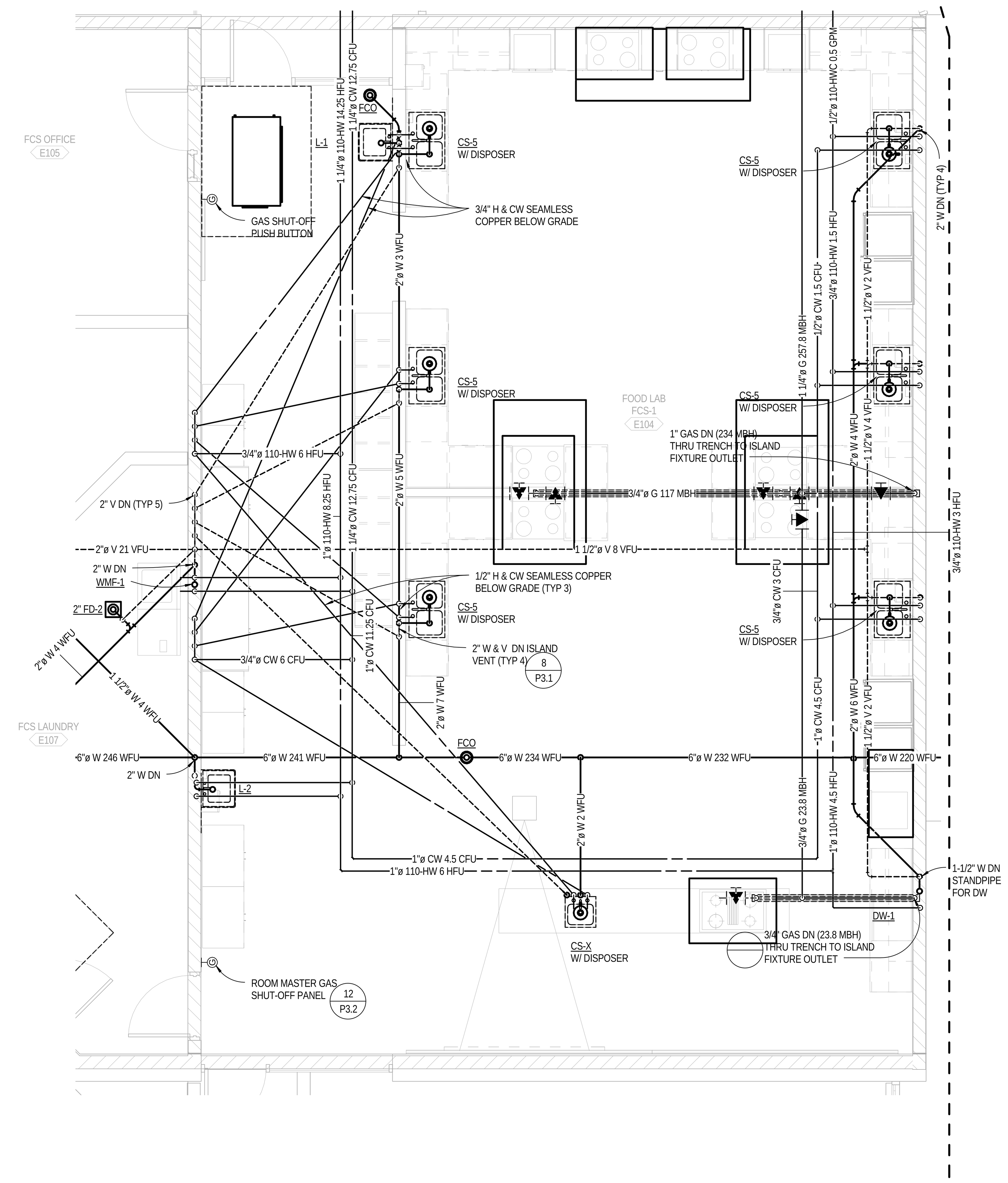
   N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
   T. FOR POST HYDRANT - ROOF DETAIL, SEE 11/P3.2.
   U. FOR MASTER GAS SHUTOFF DETAIL, SEE 12/P3.2.
   V. FOR COFFEE MAKER DETAIL, SEE 13/P3.2.
   W. FOR GREASE INTERCEPTOR DETAIL, SEE 14/P3.2.
   X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.



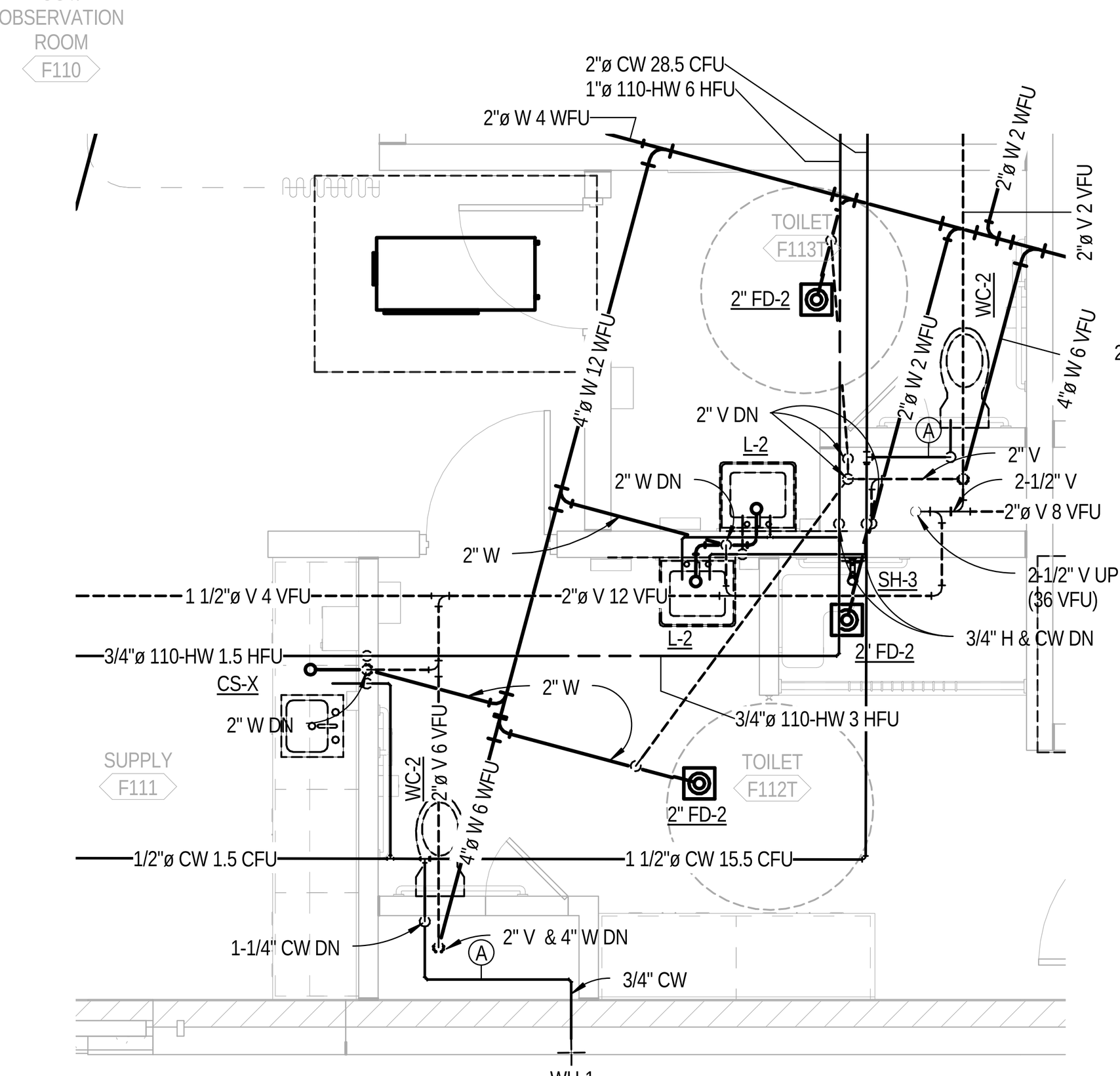
5 P2.1 LARGE SCALE C120T, C121A, C122J & C123T
SCALE: 1/4" = 1'-0"



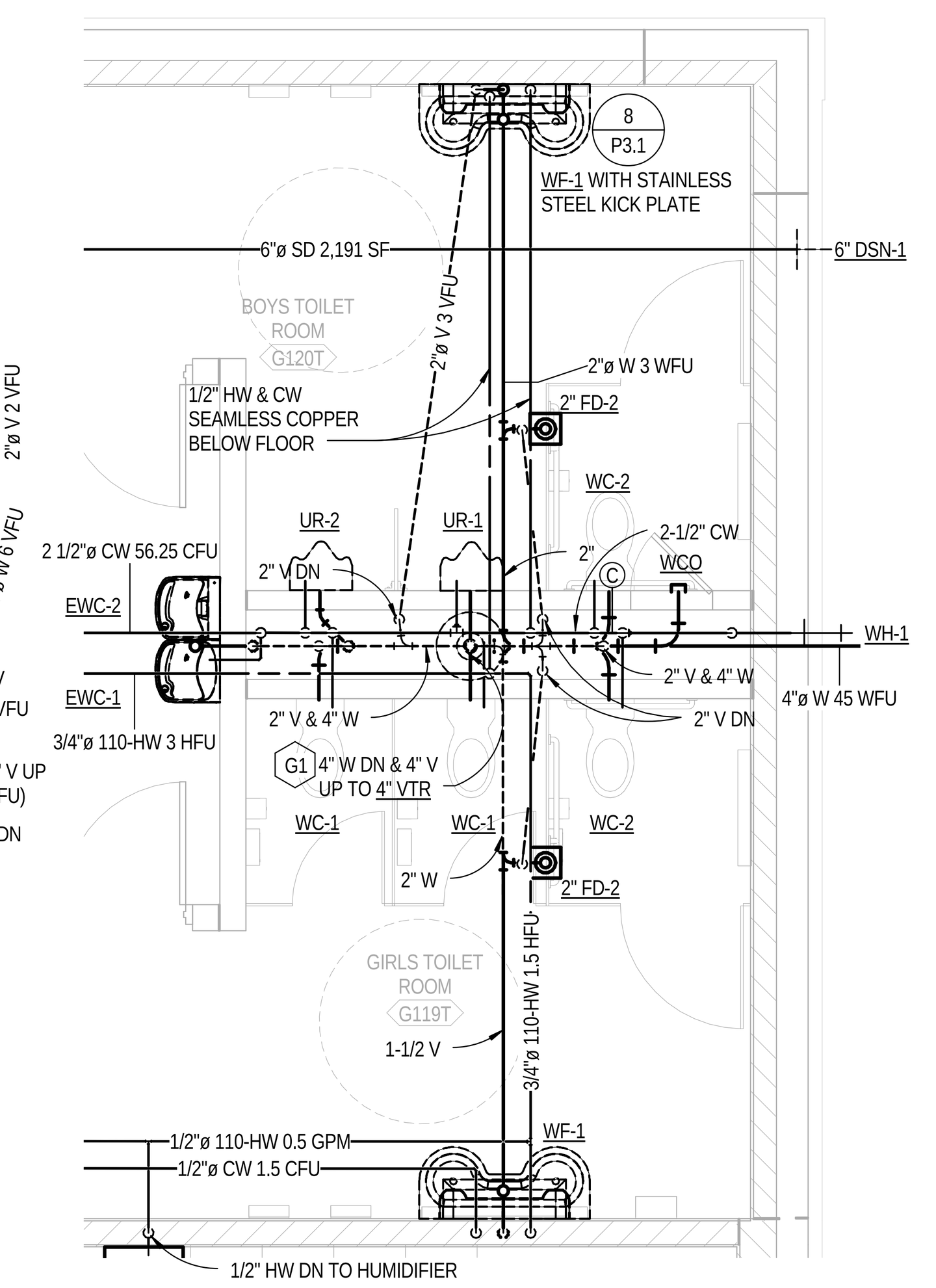
6 P2.1 LARGE SCALE D117T, D118J, D119A & D121T
SCALE: 1/4" = 1'-0"



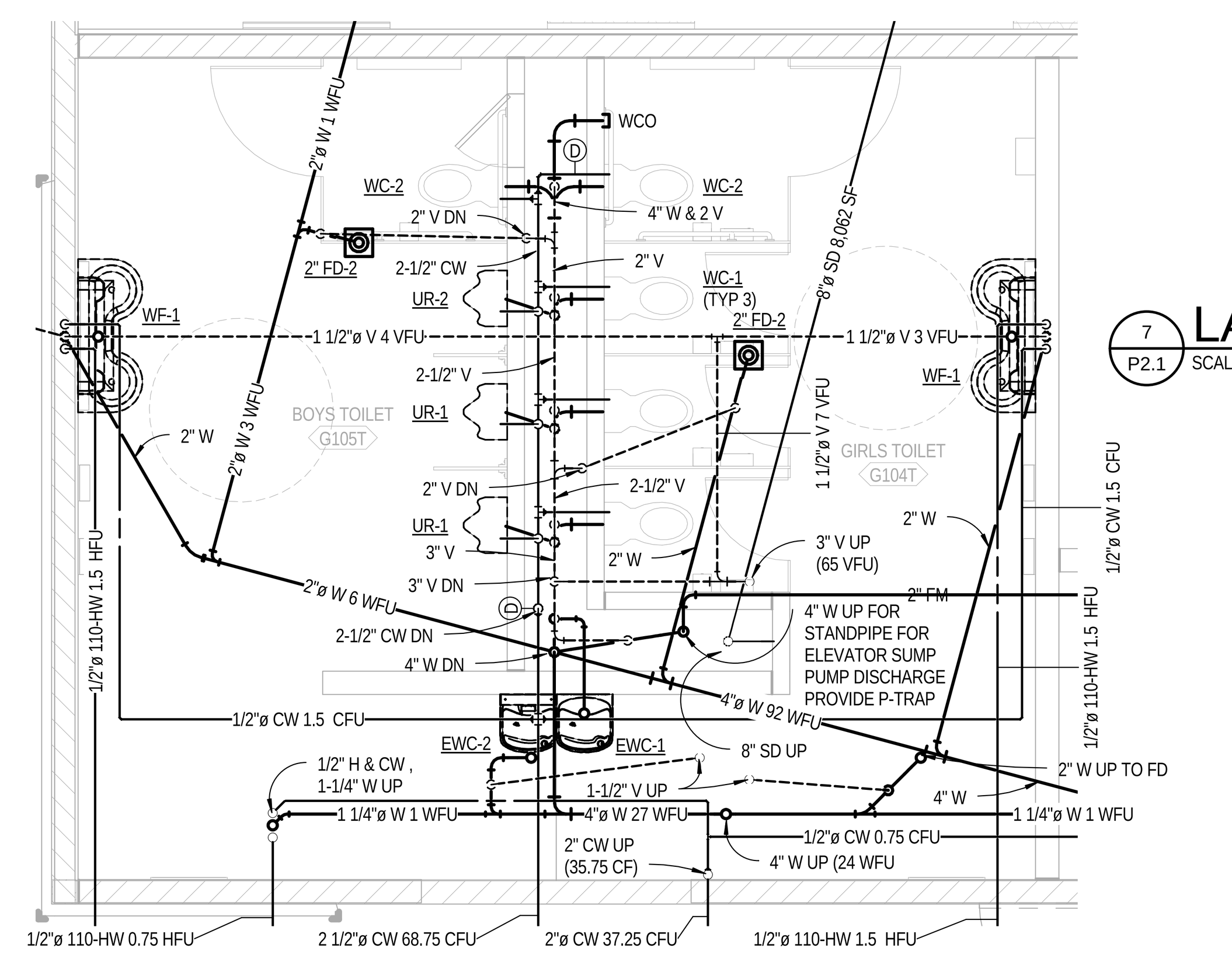
7 P2.1 LARGE SCALE E104
SCALE: 1/4" = 1'-0"



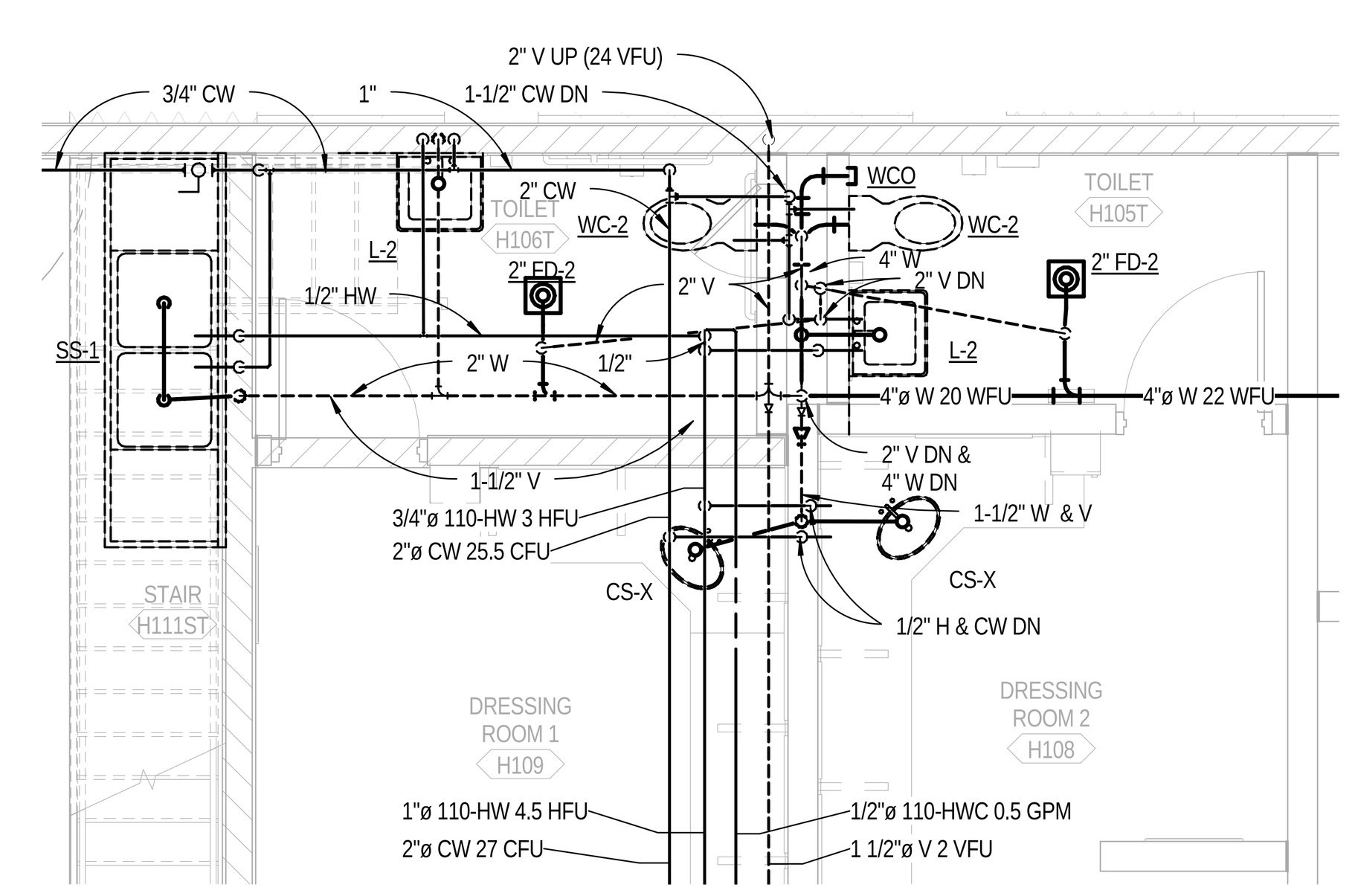
8 P2.1 LARGE SCALE F111, F112T & F113T
SCALE: 1/4" = 1'-0"



9 P2.1 LARGE SCALE G119T & G120T
SCALE: 1/4" = 1'-0"



10 P2.1 LARGE SCALE G104T & G105T
SCALE: 1/4" = 1'-0"



11 P2.1 LARGE SCALE H105T, H106T, H108 & H109
SCALE: 1/4" = 1'-0"

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Kearney Public Schools
New Kearney High School
Kearney, Nebraska

Revision/Issue		Date
ADD #1	Addendum #1	10/7/2014

PLUMBING LARGE SCALE PLANS

ProjectNumber: 1355
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P2.1

PLUMBING GENERAL NOTES

1. FOR PIPE SIZES TO INDIVIDUAL FIXTURES, SEE THE PLUMBING FIXTURE CONNECTION SCHEDULE ON SHEET M5.5.

2. INVERT ELEVATIONS ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'.

3. RUN BRANCH MAINS FULL SIZE THE ENTIRE LENGTH OF THE CHASE AND BRANCH OFF TO FIXTURES WITH SIZES PER THE PLUMBING FIXTURE CONNECTION SCHEDULE.

4. VALVES SHALL BE LOCATED ABOVE ACCESSIBLE CEILINGS. IF THIS IS NOT POSSIBLE, ACCESS PANELS SHALL BE PROVIDED. ACCESS PANELS SHALL BE TAMPERPROOF LOCKABLE ACCESS PANELS FOR ACCESS TO ALL PLUMBING VALVES THAT ARE NOT LOCATED OVER AN ACCESSIBLE CEILING.

5. ALL DETAILS FOR ITEMS SHOWN ON THIS SHEET ARE REFERRED TO AS FOLLOWS:
   - A. FOR WATER METER ENTRANCE DETAIL, SEE 1/P3.1
   - B. FOR GAS SERVICE ENTRANCE DETAIL, SEE 2/P3.1
   - C. FOR 2-WAY GRADE CLEANOUT DETAIL, SEE 3/P3.1.
   - D. FOR PVC-CASTIRON TRANSITION DETAIL, SEE 4/P3.1.
   - E. FOR UNDERGROUND PIPE DETAILS, SEE 5 & 6/P3.1.
   - F. FOR ISLAND SINK DETAIL, SEE 8/P3.1.
   - G. FOR ACCESSIBLE LAVATORY OR COUNTER SINK DETAIL, SEE 9/P3.1.
   - H. FOR HOSE REEL ASSEMBLY DETAIL, SEE 10/P3.1.
   - I. FOR WATER SOFTENER DUAL TANK DETAIL, SEE 11/P3.1.
   - J. FOR WATER HEATER WITH STORAGE TANKS DETAIL, SEE 12/P3.1.
   - K. FOR AIR COMPRESSOR DETAIL, SEE 1/P3.2.
   - L. FOR COMPRESSED AIR OUTLET DETAILS, SEE 2 &3/P3.2.
   - M. FOR UNDER COUNTER RESIDENTIAL TYPE DISHWASHER DETAIL, SEE 4/P3.2.
   - N. FOR SAND & OIL INTERCEPTOR DETAIL, SEE 5/P3.2.
   - O. FOR NUTRALIZATION TANK DETAIL, SEE 6/P3.2.
   - P. FOR DISHWASHER BOOSTER DETAIL, SEE 7/P3.2.
   - Q. FOR ICE MACHINE – UNDER COUNTER DETAIL, SEE 8/P3.2.
   - R. FOR EMERGENCY SHOWER/EYEWASH DETAIL, SEE 9/P3.2.
   - S. FOR SUMP PUMP DETAIL, SEE 10/P3.2.
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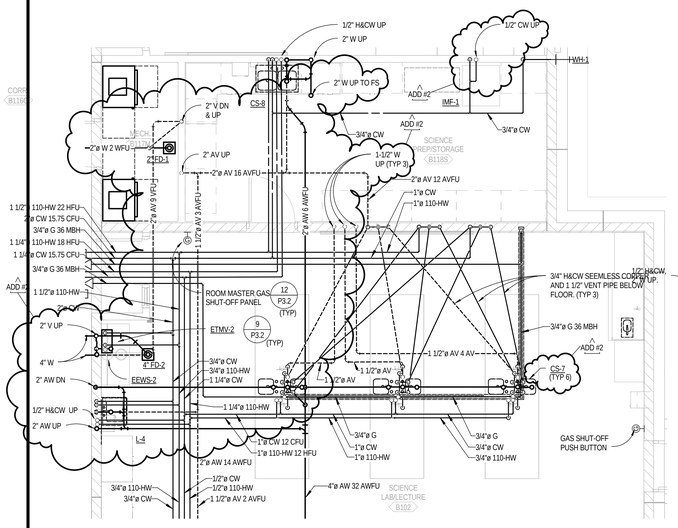
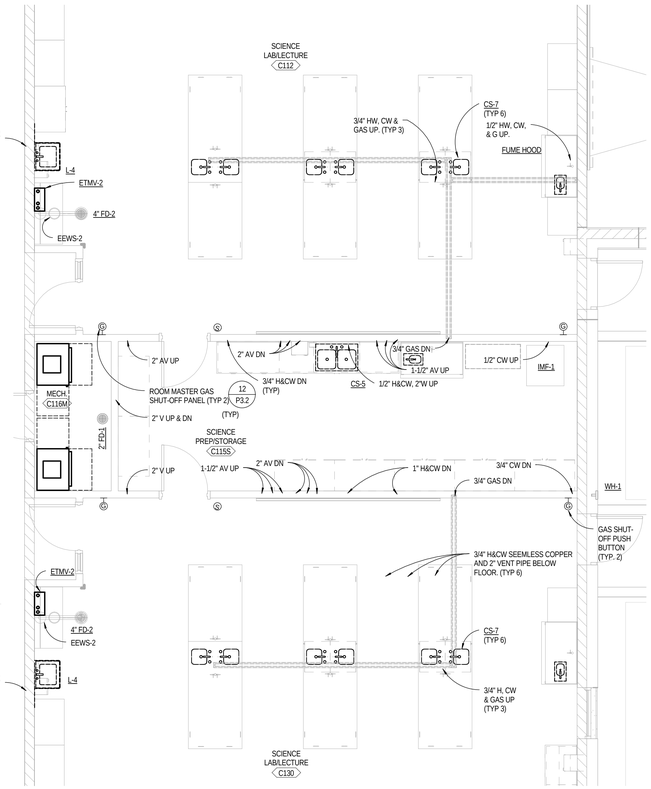
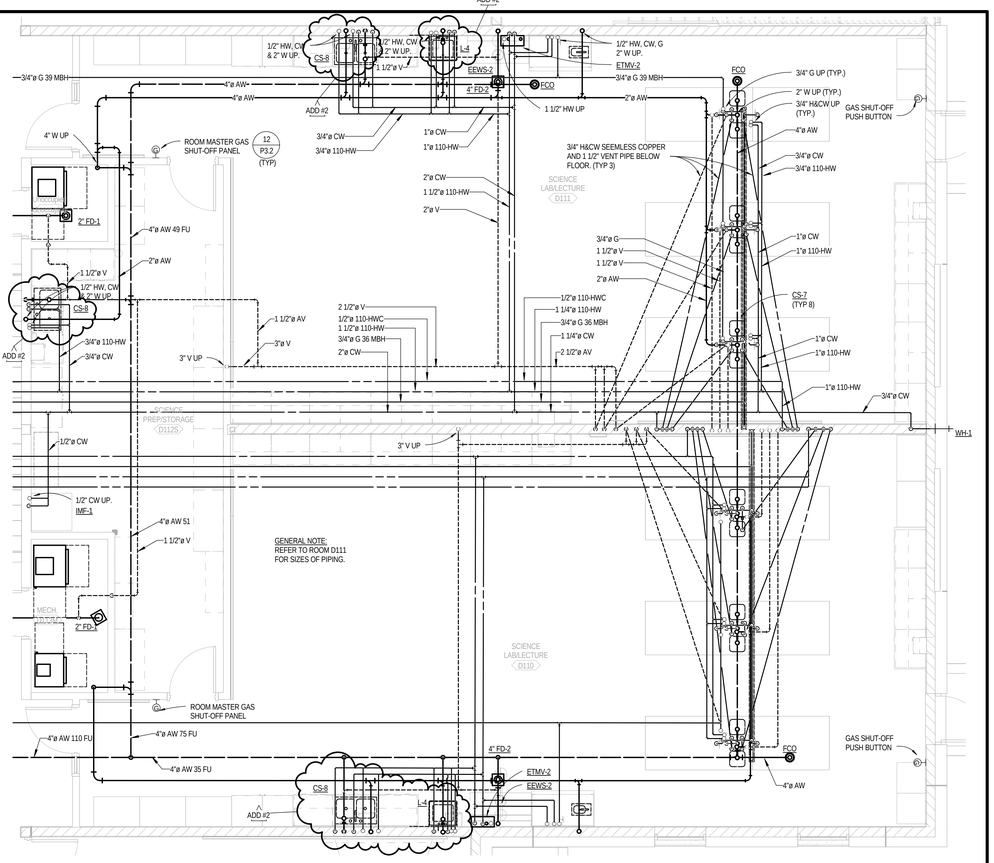
   - W. FOR GREASE INTERCEPTOR DETAIL, SEE 14/P3.2.
   - X. FOR INLINE PUMP DETAIL, SEE 8/M4.2.



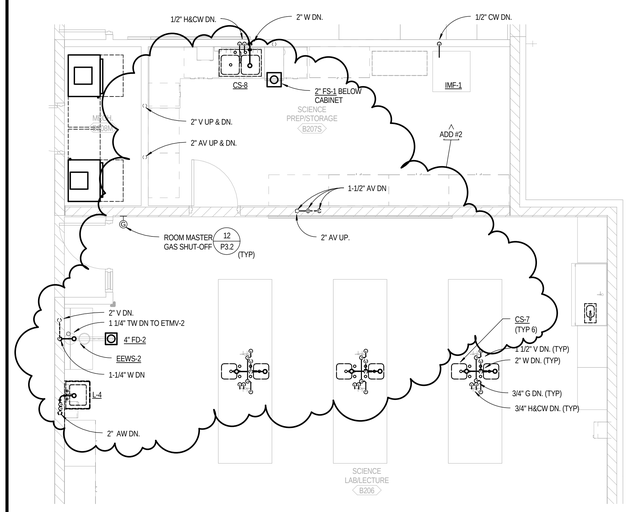
1 P2.2 LARGE SCALE B102, B118S & B117M
SCALE: 1/4" = 1'-0"



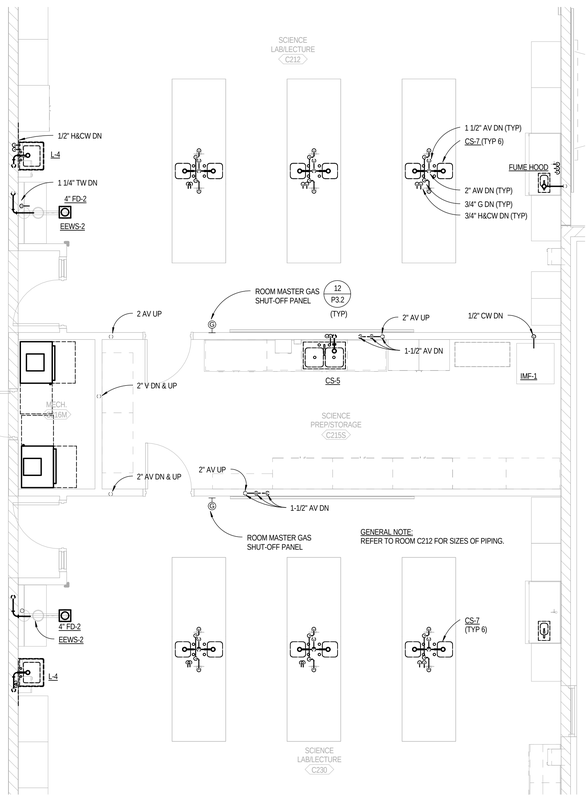
2 P2.2 LARGE SCALE C112, C115S, C116M & C130
SCALE: 1/4" = 1'-0"



3 P2.2 LARGE SCALE D110, D111 & D112S
SCALE: 1/4" = 1'-0"



4 P2.2 LARGE SCALE B206 & B207S
SCALE: 1/4" = 1'-0"



5 P2.2 LARGE SCALE C212, C215S & C230
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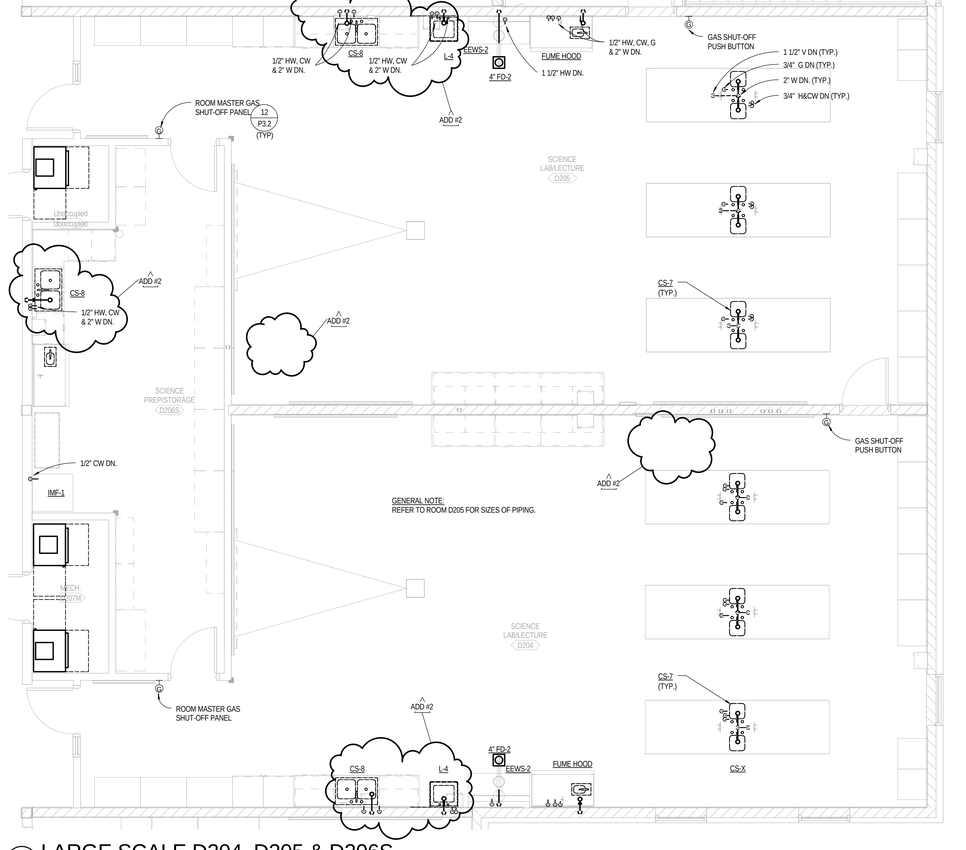

6 P2.2 LARGE SCALE D204, D205 & D206S
SCALE: 1/4" = 1'-0"

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Revision/Issue		Date
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ADD #2	Addendum #2	10/10/2014

PLUMBING LARGE SCALE PLANS

ProjectNumber: 1355
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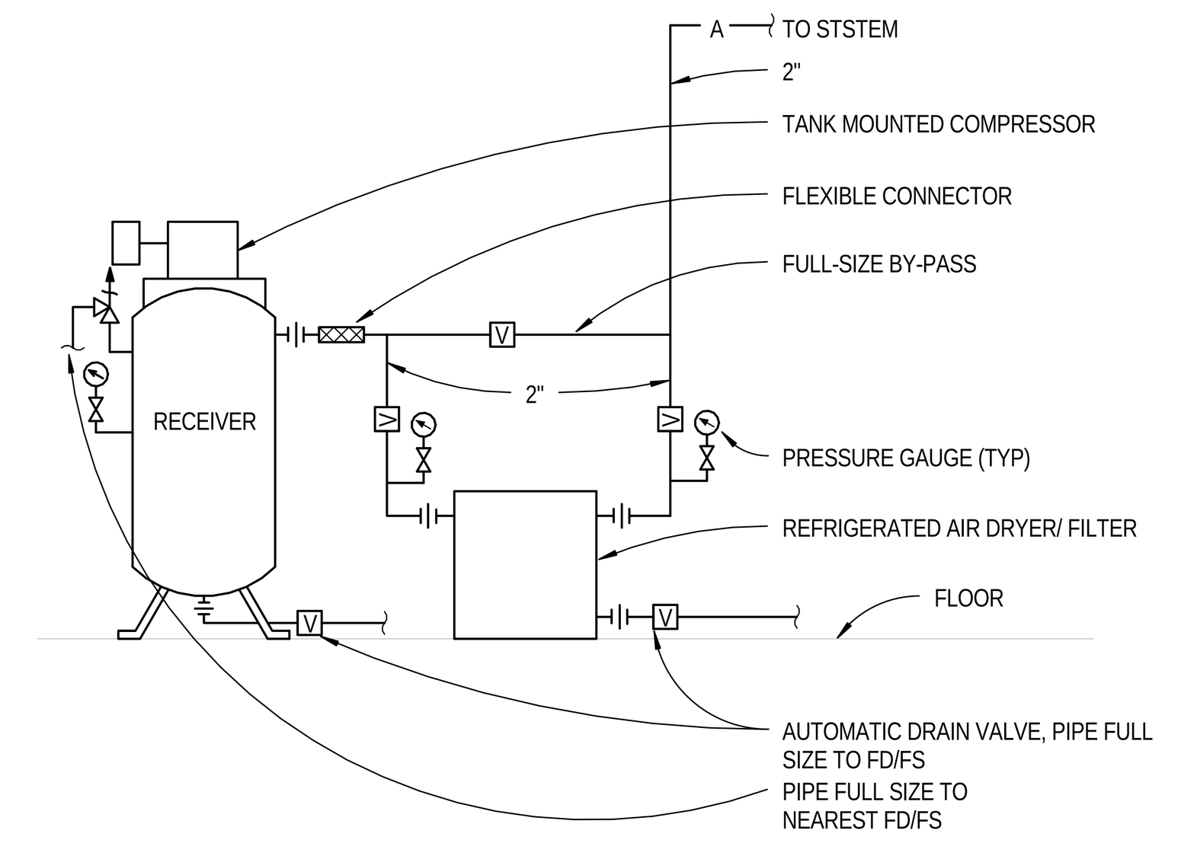
P2.2



1 P3.2 AIR COMPRESSOR
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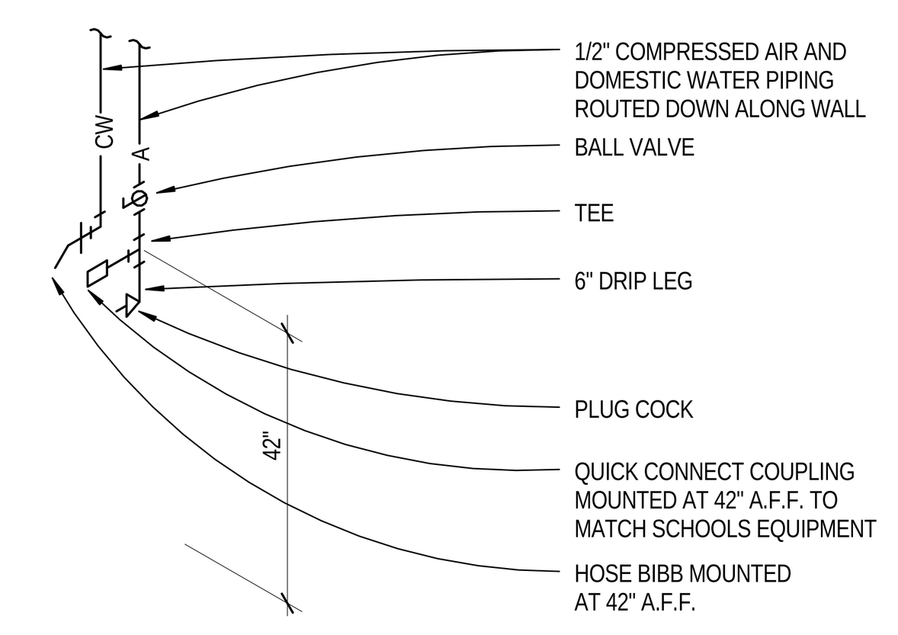
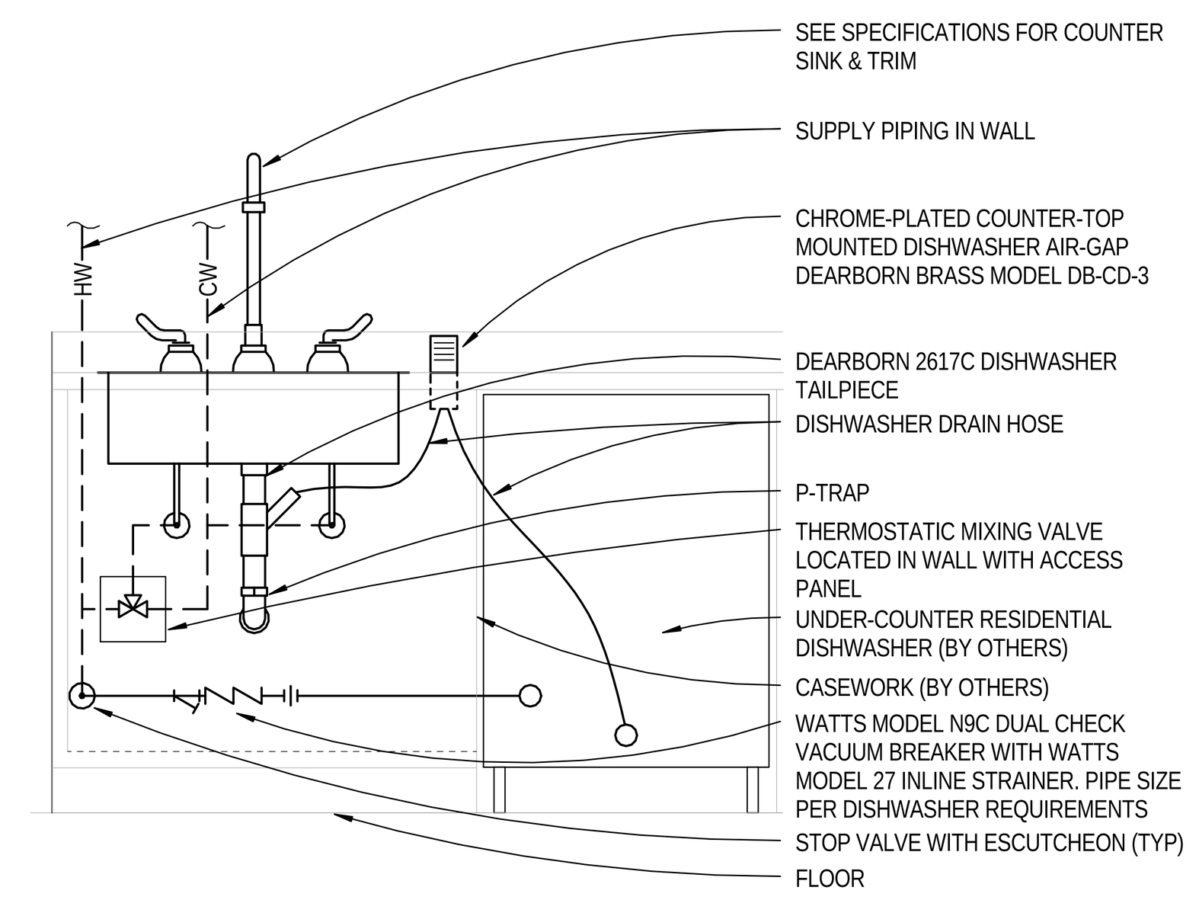


3 P3.2 COMP AIR OUTLET & HOSE BIBB
NO SCALE



4 P3.2 UNDER COUNTER RES. TYPE DW
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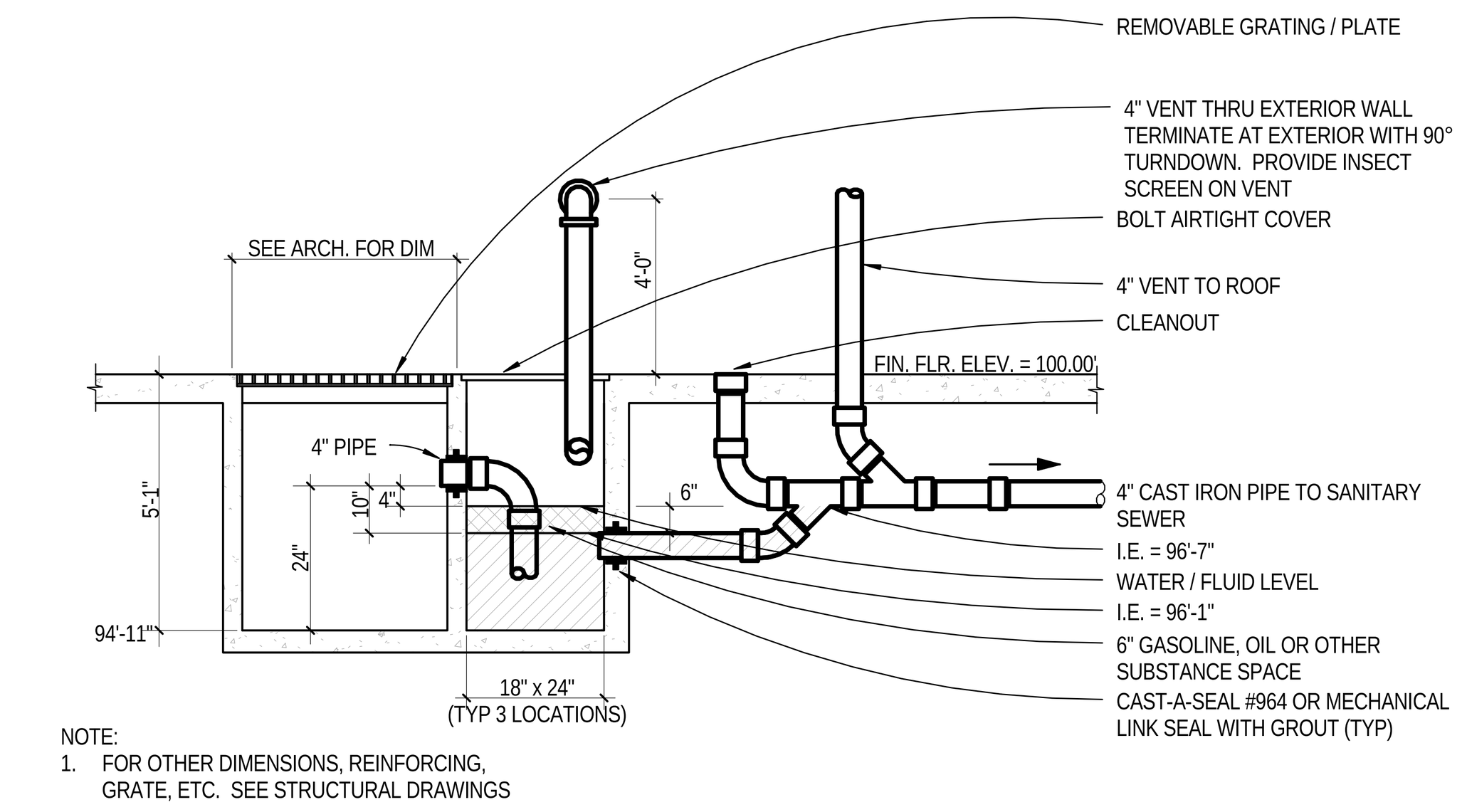

5 P3.2 SAND & OIL INTERCEPTOR
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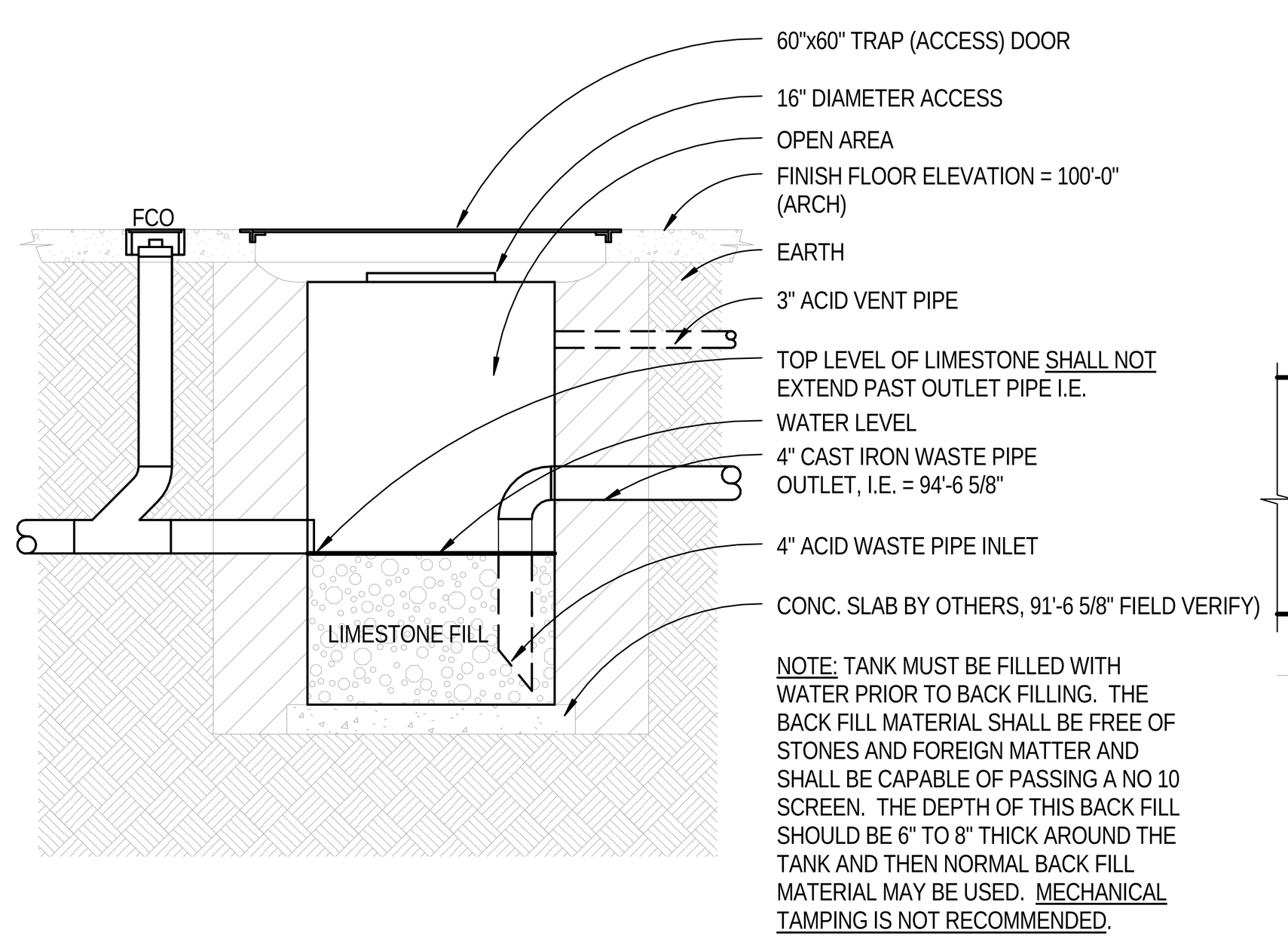

6 P3.2 ACID NEUTRALIZATION TANK
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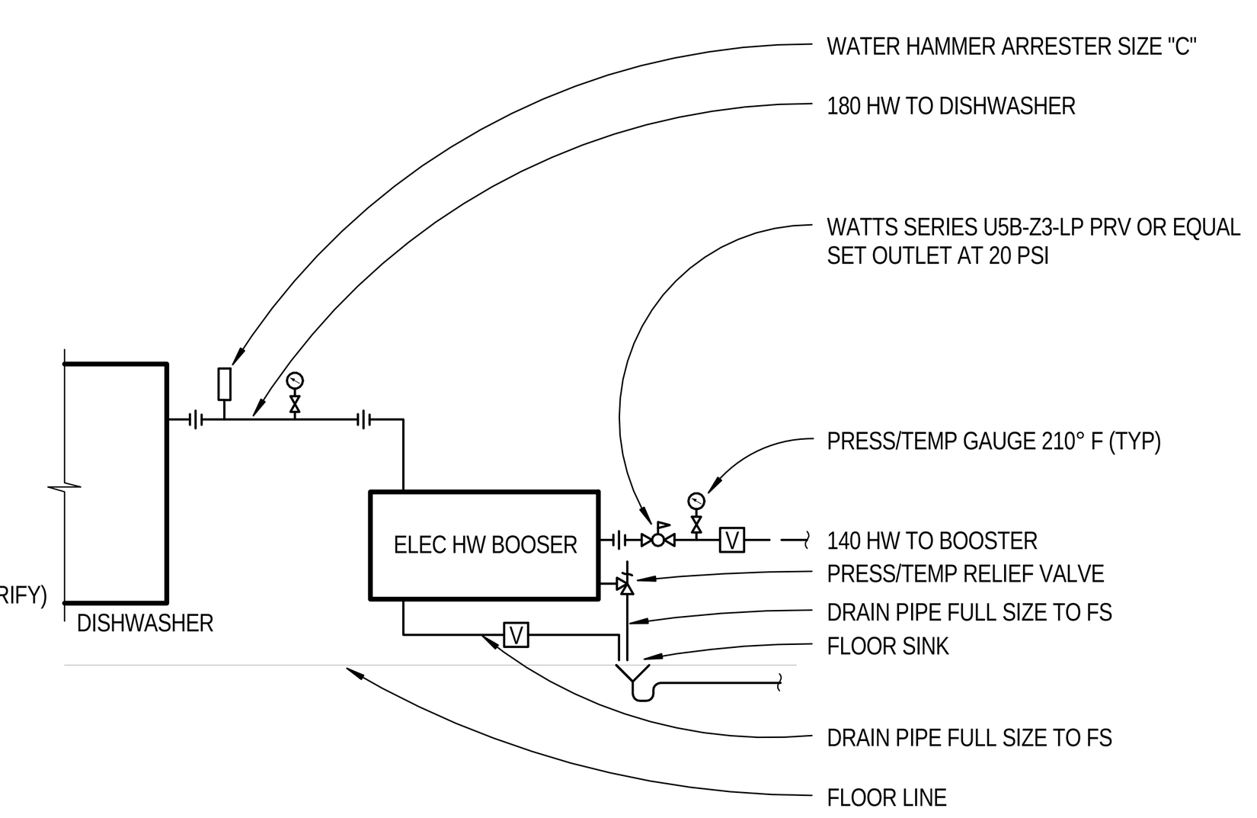

7 P3.2 DISHWASHER BOOSTER HEATER
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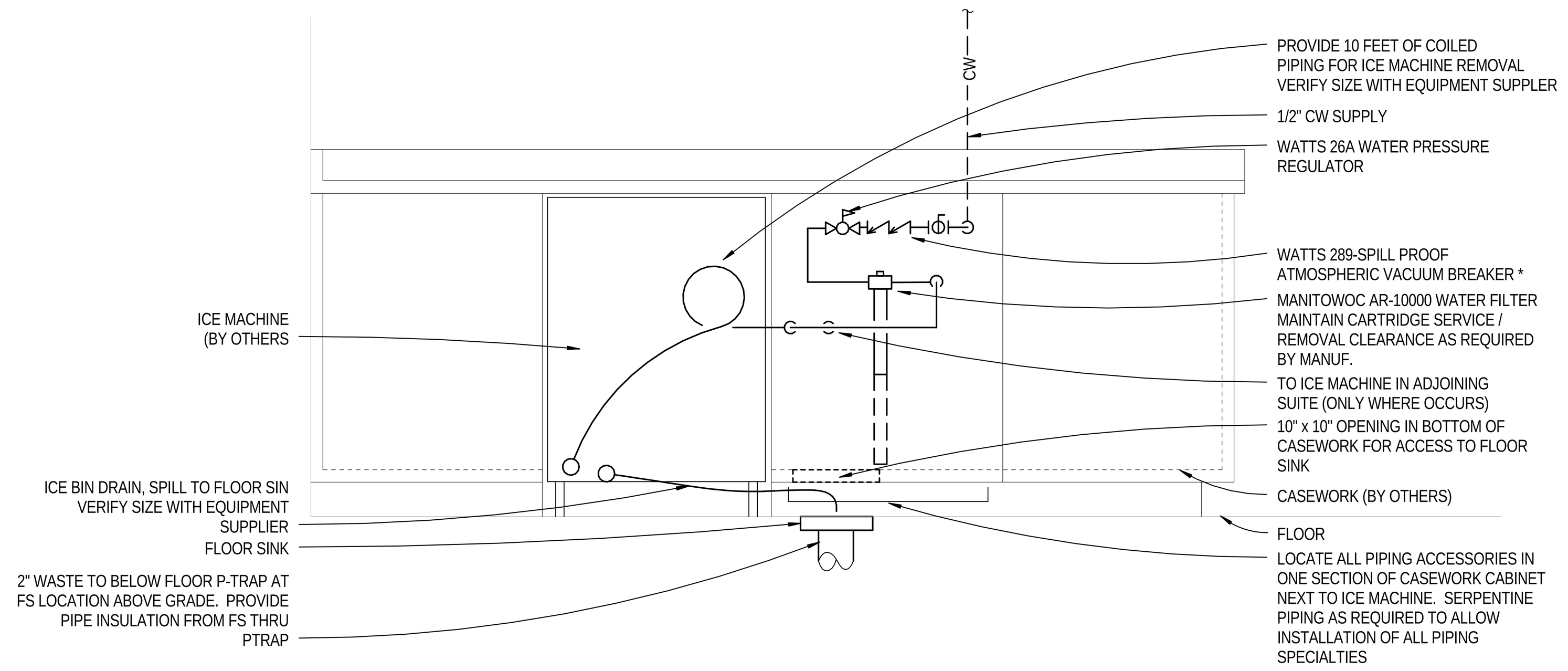

8 P3.2 ICE MACHINE - UNDER COUNTER
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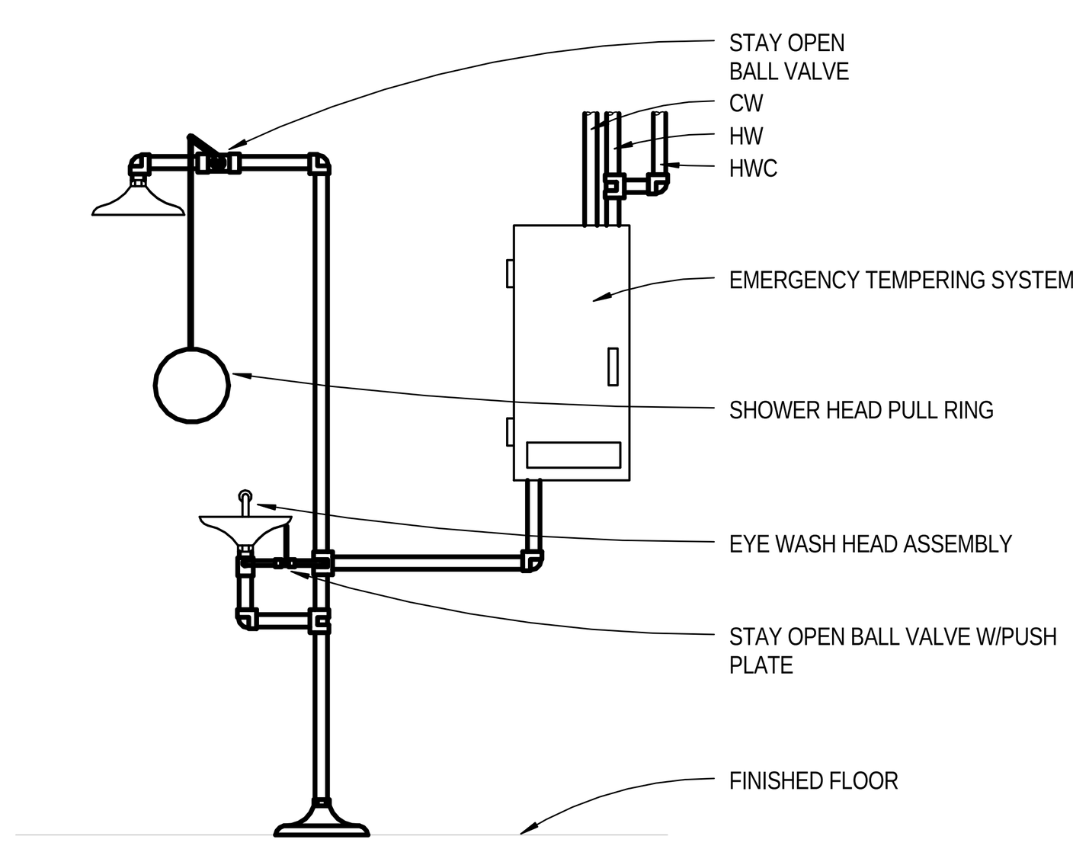

9 P3.2 EMERGENCY SHOWER/EYEWASH
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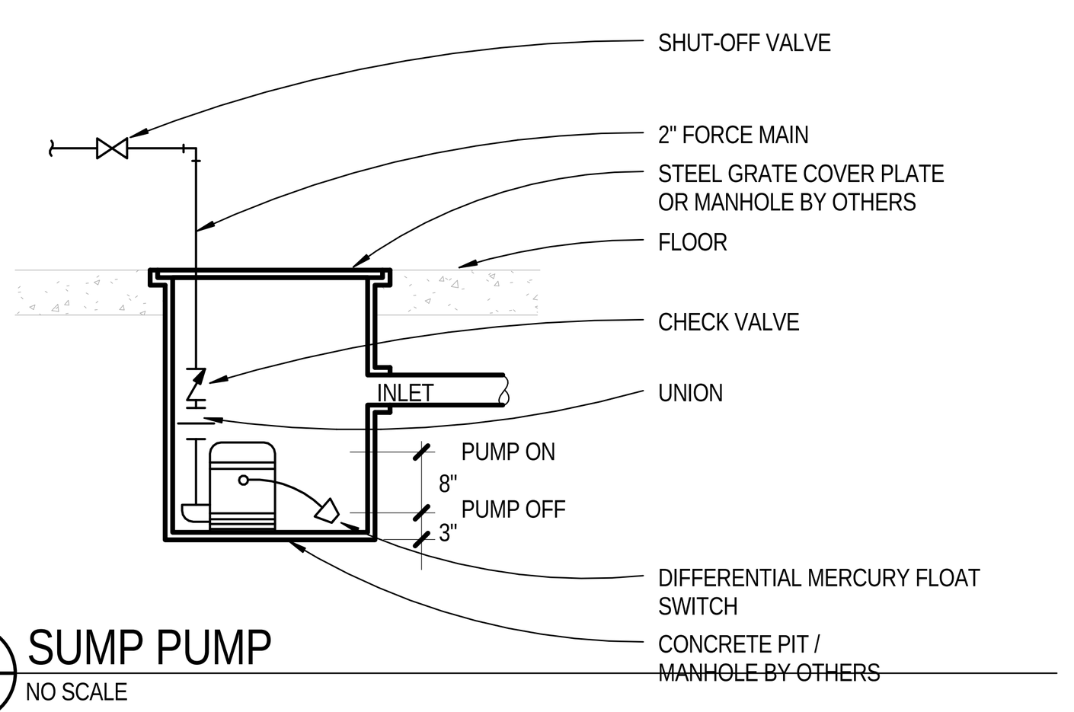

10 P3.2 SUMP PUMP
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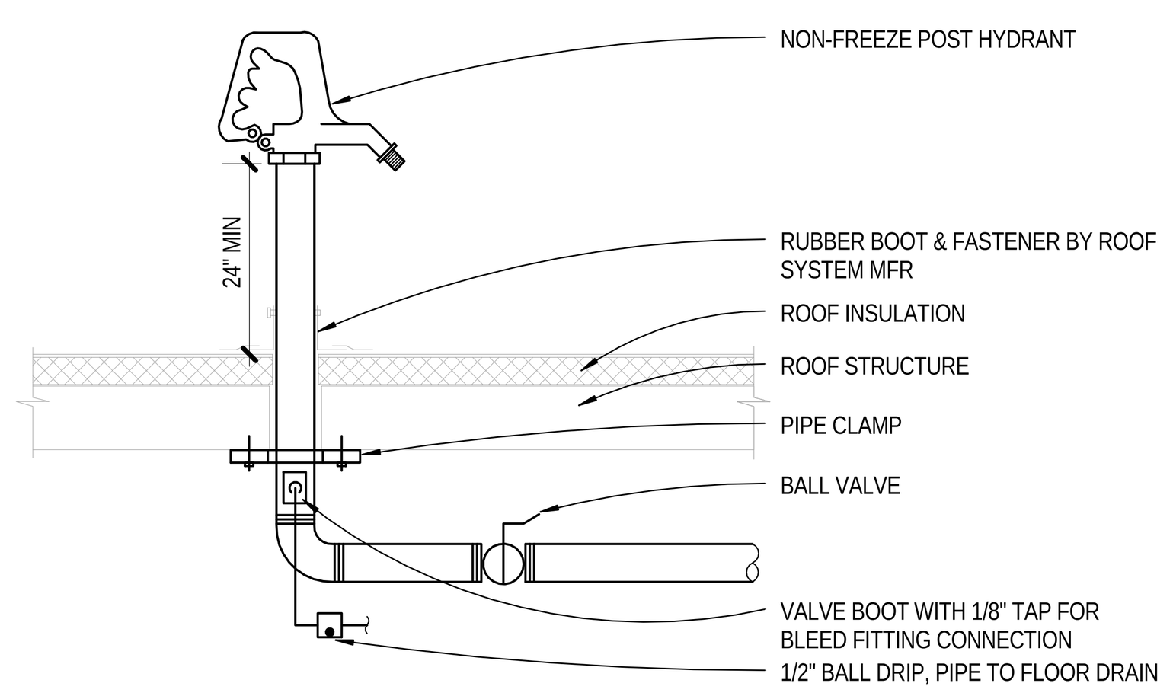

11 P3.2 POST HYDRANT ROOF
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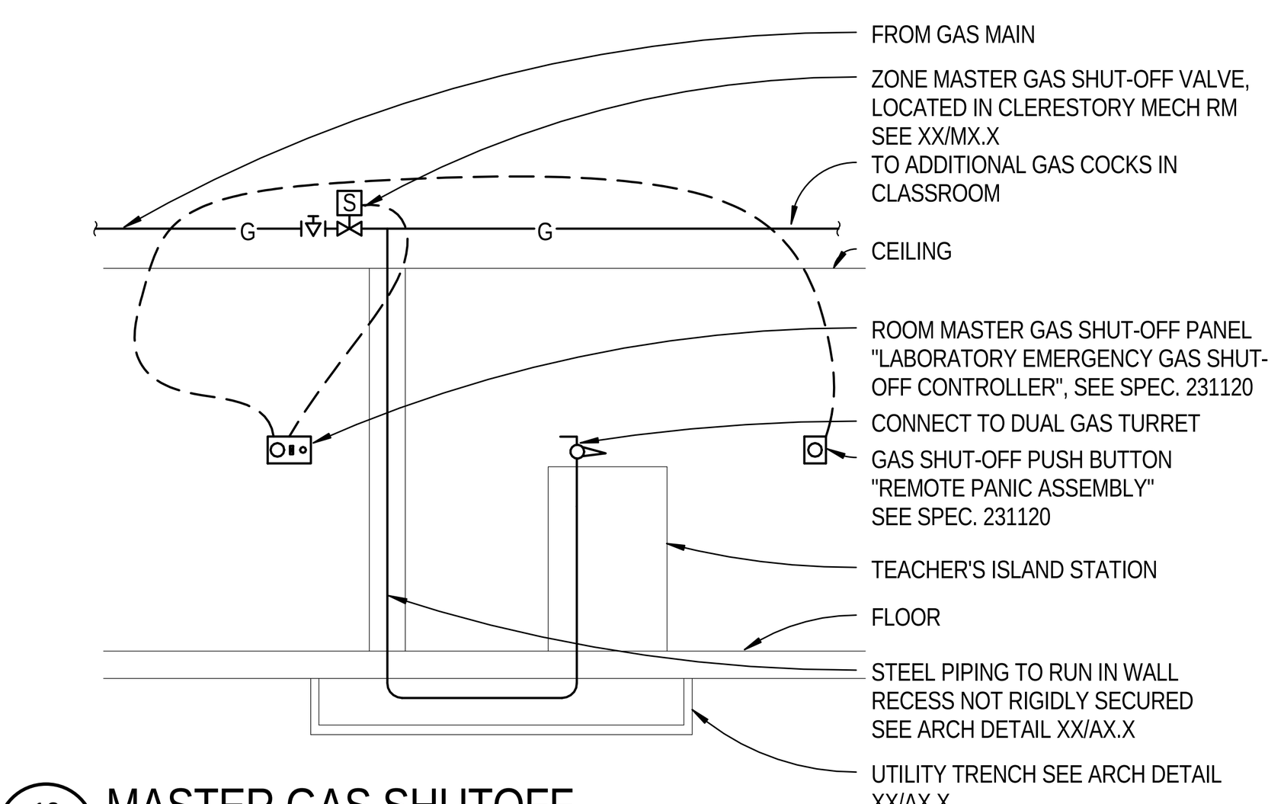

12 P3.2 MASTER GAS SHUTOFF
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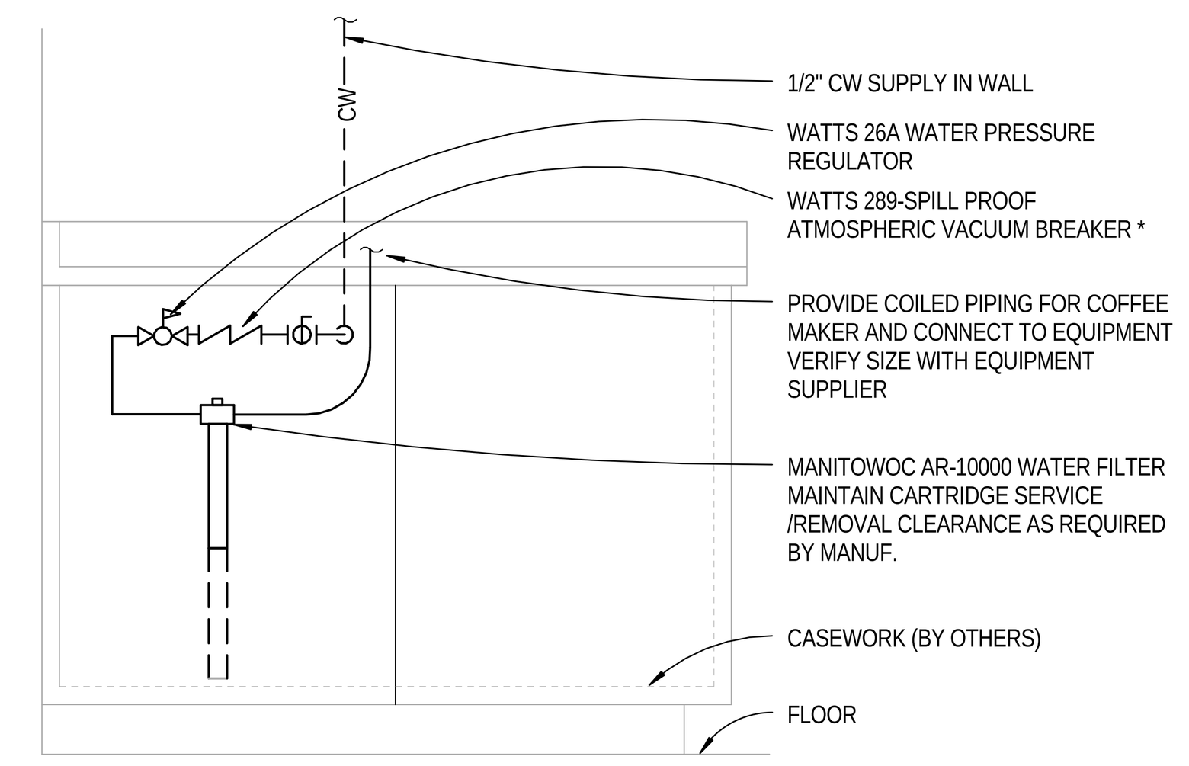

13 P3.2 COFFEE MAKER
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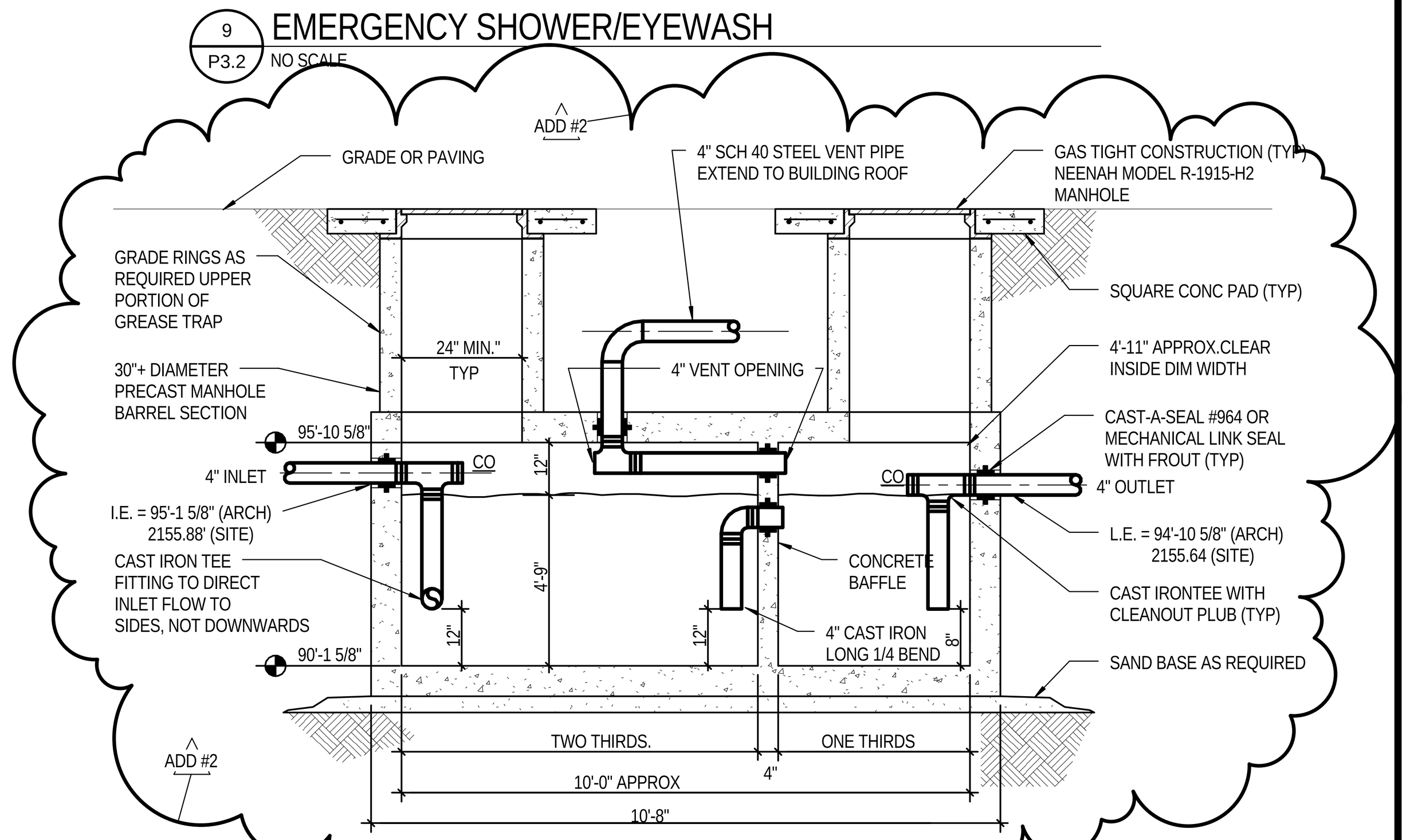

14 P3.2 EXTERIOR GREASE INTERCEPTOR (1500 GAL.)
NO SCALE

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Revision/Issue		Date
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ADD #2	Addendum #2	10/10/2014

PLUMBING DETAILS

ProjectNumber: 1355
Date: September 30, 2014

Sheet Number:
P3.2

CONTROL CIRCUITS

KEY

CONTROL STATIONS/CONNECTORS

- E — 5–BUTTON HOUSELIGHT ENTRY STATION W/LOCKING COVER PLATE
- WE — WORKLIGHT ENTRY STATION
- W2 — 2–BUTTON WORKLIGHT ENTRY STATION
- SM — RECEPTACLE(S) FOR PORTABLE STAGE MANAGERS PANEL
- DMXB — DMXB OUT RECEPTACLE
- HOUSE/ WORK-LIGHT LCD — MULTI–FUNCTION LCD LIGHTING CONTROL STATION
- M — MULTI–FUNCTION THEATRICAL CONTROL STATION W/HOUSE/ WORKLIGHT ENTRY STATION AND LIGHTING NETWORK & 120V/20A RECEPTACLES

NOTE:

THIS RISER DIAGRAM IS PROVIDED AS A MODEL TO ILLUSTRATE THE RELATIONSHIPS BETWEEN FEATURES IN THE THEATRICAL (SPECIALTY) LIGHTING SYSTEM FOR THIS PROJECT. TO PROVIDE THIS ILLUSTRATION THE DIAGRAM IS BASED UPON ONE OF THE APPROVED MANUFACTURERS' SYSTEMS. EACH MANUFACTURER HAS ITS OWN PARTICULAR APPROACH TO THE INTERRELATIONSHIP BETWEEN FEATURES.

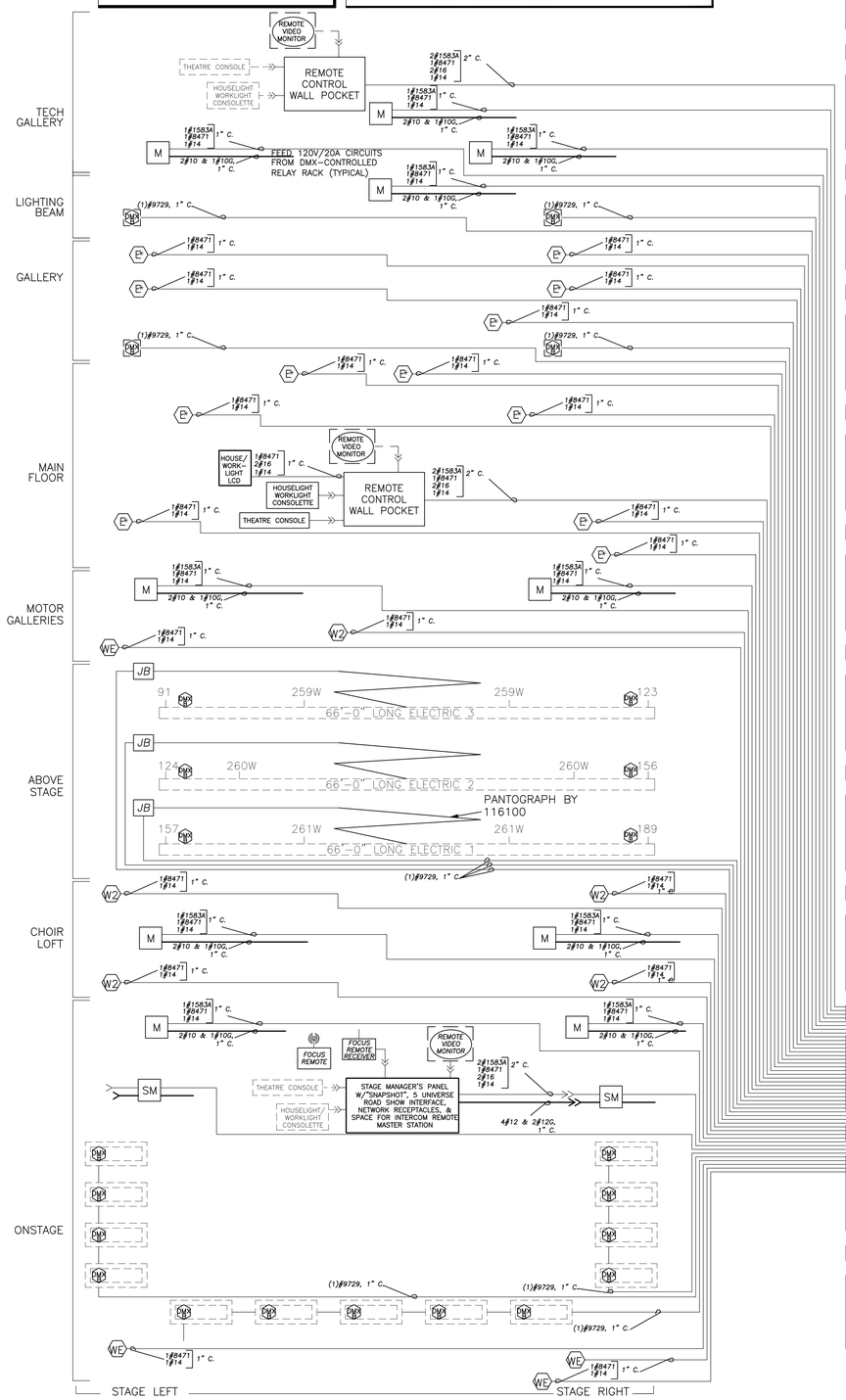
BECAUSE THE RISER DIAGRAM IS JUST AN ILLUSTRATION, THE CONTRACTOR, ELECTRICAL EQUIPMENT SUPPLIER, AND THE THEATRICAL (SPECIALTY) LIGHTING SYSTEM MANUFACTURER ARE REQUIRED TO PROVIDE ANY TIME OR MATERIALS NEEDED TO COMPLY WITH THE FINAL RISER DIAGRAM SUBMITTED AS PART OF THE SHOP DRAWINGS, THAT MEET THE FUNCTIONAL CRITERIA.

THE OWNER, ARCHITECT, ELECTRICAL ENGINEER, AND THE THEATRICAL CONSULTANT ARE NOT RESPONSIBLE FOR ANY MODIFICATIONS OR COORDINATION REQUIRED TO COMPLY WITH FINAL RISER DIAGRAM AS PRESENTED IN THE SHOP DRAWINGS FOR THE SELECTED THEATRICAL (SPECIALITY) LIGHTING SYSTEM.

NOTE:

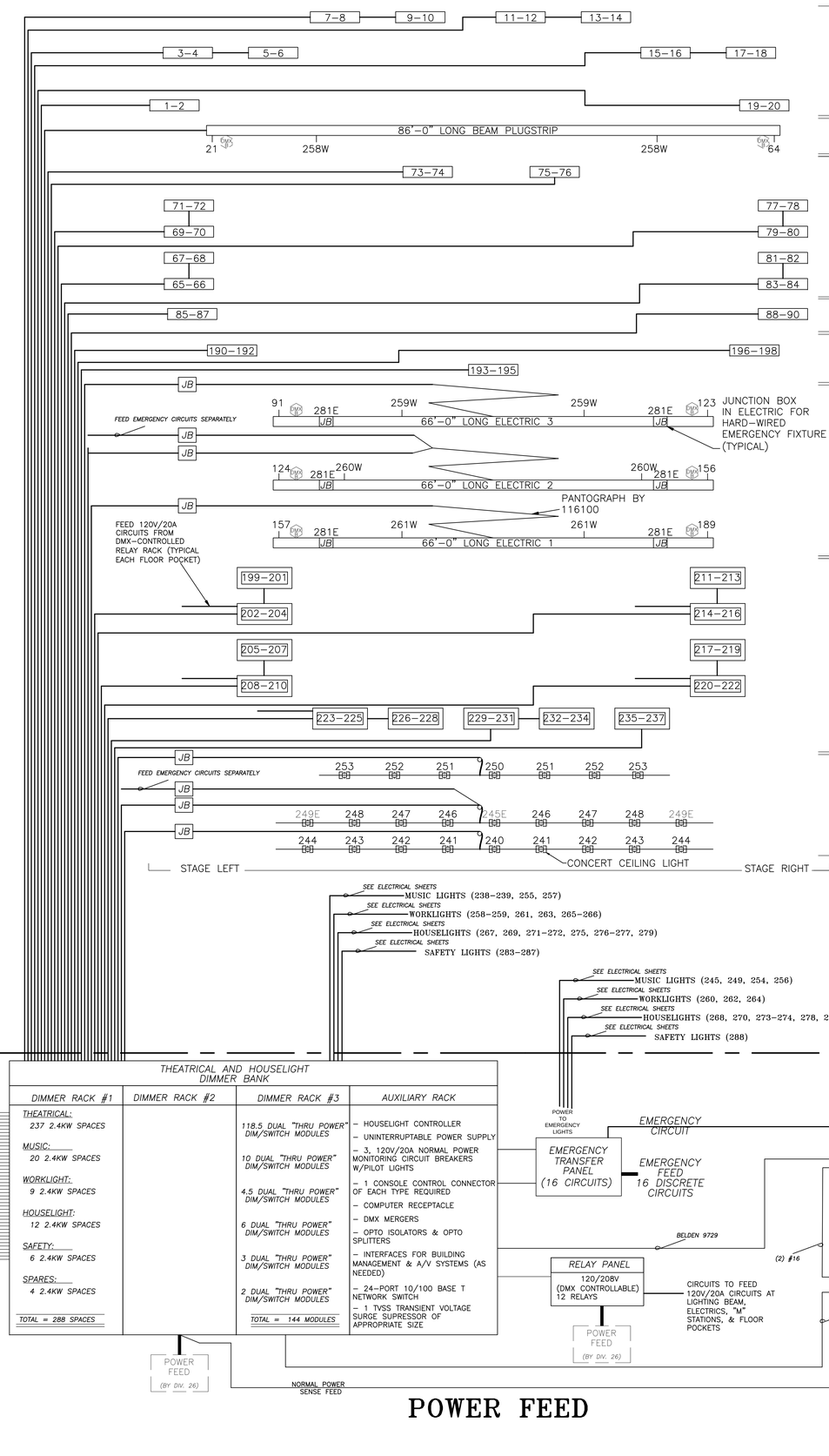
THE OWNER, ARCHITECT, ELECTRICAL ENGINEER, AND THE THEATRICAL CONSULTANT HAVE PLANNED THE THEATRICAL (SPECIALTY) LIGHTING SYSTEM FOR THIS PROJECT TO TAKE ADVANTAGE OF NEW FEATURES BEING DEVELOPED BY THE APPROVED MANUFACTURERS' SYSTEMS. IN ORDER TO MEET THE SPECIFIED FUNCTIONAL CRITERIA, EACH MANUFACTURER IS RESPONSIBLE FOR THE FINAL ENGINEERING OF THESE FEATURES. THE FINAL SHOP DRAWING RISER DIAGRAM SHALL ILLUSTRATE THE WIRE, CONDUIT, AND RELATIONSHIP FOR THE SPECIFIED FEATURES INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

REFER TO SECTION 260961



1 TL–1 DIMMING – RISER DIAGRAM
SCALE:NOT TO SCALE

LOAD CIRCUITS



THEATRICAL AND HOUSELIGHT DIMMER BANK

DIMMER RACK #1	DIMMER RACK #2	DIMMER RACK #3	AUXILIARY RACK
THEATRICAL: 237 2.4KW SPACES		118.5 DUAL "THRU POWER" DIM/SWITCH MODULES	– HOUSELIGHT CONTROLLER
MUSIC: 20 2.4KW SPACES		10 DUAL "THRU POWER" DIM/SWITCH MODULES	– UNINTERRUPTABLE POWER SUPPLY
WORKLIGHT: 9 2.4KW SPACES		4.5 DUAL "THRU POWER" DIM/SWITCH MODULES	– 3, 120V/20A NORMAL POWER MONITORING CIRCUIT BREAKERS W/PILOT LIGHTS
HOUSELIGHT: 12 2.4KW SPACES		6 DUAL "THRU POWER" DIM/SWITCH MODULES	– 1 CONSOLE CONTROL CONNECTOR OF EACH TYPE REQUIRED
SAFETY: 6 2.4KW SPACES		3 DUAL "THRU POWER" DIM/SWITCH MODULES	– COMPUTER RECEPTACLE
SPARES: 4 2.4KW SPACES		2 DUAL "THRU POWER" DIM/SWITCH MODULES	– DMX MERGERS
TOTAL = 288 SPACES		TOTAL = 144 MODULES	– OPTO ISOLATORS & OPTO SPLITTERS
			– INTERFACES FOR BUILDING MANAGEMENT & A/V SYSTEMS (AS NEEDED)
			– 24–PORT 10/100 BASE T NETWORK SWITCH
			– 1 TVSS TRANSIENT VOLTAGE SURGE SUPRESSOR OF APPROPRIATE SIZE

POWER FEED (BY DIV. 26)

NORMAL POWER SENSE FEED

POWER TO EMERGENCY LIGHTS

EMERGENCY TRANSFER PANEL (16 CIRCUITS)

EMERGENCY CIRCUIT

EMERGENCY FEED 16 DISCRETE CIRCUITS

DMX TO EMERGENCY LIGHTS

DMX EMERGENCY BYPASS

BELDEN 9729(S) 32 FIXTURES MAX EACH RUN 1500 FEET MAX EACH RUN TERMINATOR AT END OF RUN

BELDEN 9729

(2) #16

EMERGENCY BYPASS DETECTION

(2) #16

RELAY PANEL 120/208V (DMX CONTROLLABLE) 12 RELAYS

CIRCUITS TO FEED 120V/20A CIRCUITS AT LIGHTING BEAM, ELECTRICS, "M" STATIONS, & FLOOR POCKETS

POWER FEED (BY DIV. 26)

POWER FEED

KEY

LOAD CIRCUIT PLUGSTRIPS & RECEPTACLE BOXES

- ____ FEET LONG PLUGSTRIP W/20AMP 2P&G CONNECTORS
- ____ FEET LONG MULTI–CONDUCTOR CABLE
- JB — LARGE JUNCTION BOX
- XX–XX — PLUGBOX W/20 AMP 2P&G CONNECTORS
- XXX–XXX — FLOOR POCKET W/20 AMP 2P&G CONNECTORS
- 120V/20A NORMAL POWER RECEPTACLE FED FROM DMX–CONTROLLED RELAY RACK

GENERAL NOTES

1. PROVIDE SEPARATE NEUTRAL WIRE FOR EACH DIMMED CIRCUIT. PROVIDE MIN. ONE (1) EQUIPMENT GROUND CONDUCTOR (SAME SIZE AS PHASE WIRE) IN EACH CONDUIT. PROVIDE ADDITIONAL GROUNDS AS REQUIRED.
2. EACH 2.4KW THEATRICAL LIGHTING CIRCUIT IS PROTECTED BY A 20–AMP DEVICE WITH A TYPICAL LOAD OF 2000–WATTS
3. WIRE DESIGNATIONS FOR CONTROL WIRING:
   - A: AS SHOWN
   - B: 1,BELDEN #8471 & 1#14 awg STRANDED – HOUSE/WORKLIGHT ENTRY (E & WE) STATIONS
   - C: BELDEN #8471, 2#16, & 1#14 STRANDED – LCD
   - D: BELDEN #1583A – THEATRICAL CONTROL CONSOLE CONTROL AND OVERTEMP (IF REQUIRED)
   - E: BELDEN #1583A– COLOR REMOTE MONITOR
   - F: #16 STRANDED – ANALOG CONTROL STATIONS (IF REQ'D)
   - G: 1,BELDEN #1583A REMOTE RACK MONITORING
   - H: 1,BELDEN #1583A DISTRIBUTED DMX
   - I: 1,BELDEN #225366 – FIBER BACKBONE (IF REQUIRED – CHECK DISTANCE BETWEEN DROPS & SWITCH. 100 METERS MAX)
4. REFER TO DWG. TL–5 FOR DIMMER SCHEDULE AND ELECTRICAL INSTALLATION NOTES.
5. REFER TO "TL" DRAWINGS FOR INSTALLATION DETAILS AND INSTALLATION NOTES FOR LOAD AND CONTROL RECEPTACLES.
6. SEE ELECTRICAL LIGHTING PLAN DRAWINGS FOR HOUSELIGHT AND WORKLIGHT CIRCUITS.
7. CONFIRM ALL FEED REQUIREMENTS WITH MANUFACTURER
8. NOTE DISTANCE LIMITATIONS OF NETWORK/CONTROL WIRING. ALTHOUGH WIRING HOME RUNS ARE SHOWN ON THIS DRAWING, ACTUAL INSTALLATION *MUST* CONFORM TO MANUFACTURER'S AND INDUSTRY NETWORK STANDARDS.
9. SEE "E" SERIES DRAWINGS FOR WIRE AND CONDUIT SIZES FOR THEATRICAL LOAD DEVICES.
10. NOTE REQUIREMENT FOR EMERGENCY CIRCUITS IN SECOND ELECTRIC AND CENTER CONCERT CEILING TO BE FED FROM CONDUIT AND JUNCTION BOXES SEPARATE FROM NORMAL CIRCUITS.

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Revision/Issue	Date
Addendum No. 2	10/10/2014

Sheet Title
THEATRICAL DIMMING ONE LINE RISER DIAGRAM

Project Number: 1355
Date: September 30, 2014

Sheet Number:

TL-1