



TOWN OF WESTFORD
OFFICE OF THE TOWN MANAGER

TOWN HALL
55 Main Street
WESTFORD, MA 01886
(978) 692-5501 FAX (978) 399-2557

ADDENDUM #1 TO THE BID DOCUMENTS

Date: July 15, 2016

**Invitation for Bids
Renovation of Bathrooms at Old Nabnasset School
Located at 170 Plain Street**

A. This Amendment shall be considered part of the bid documents for the above-mentioned project as though it had been issued at the same time and shall be incorporated integrally therewith. Where provisions of the following supplementary data differ from those of the original bid documents, this ADDENDUM shall govern and take precedence. **BIDDERS MUST SIGN THE ADDENDUM AND SUBMIT IT WITH THEIR BIDS.**

B. Bidders are hereby notified that they shall make any necessary adjustments in their estimates as a result of this Addendum. It will be construed that each bidder's proposal is submitted with full knowledge of all modifications and supplemental data specified herein.

Except as described below, the original bid document remains unchanged. The bid documents are modified and/or clarified, as follows:

Item No. 1 Inclusion of Drawing List for Old Nabnasset School

The invitation for bids shall include the Drawing List (eleven pages).

Item No. 2 Emphasis of project completion date and liquidated damages

Section 00 2113 Part 2 "Location and Work to be Done" on page 3 states the project completion date of August 31, 2016. Page 10 states the following in regards to liquidated damages:

"The Bidder further agrees to pay as liquidated damages the sum of **Two Hundred (\$200.00)** dollars for each consecutive calendar day thereafter that the work is not complete as provided in the contract."

--- End of Addendum One ---

**BIDDER MUST ACKNOWLEDGE THIS ADDENDUM BY SIGNING BELOW
AND ATTACHING THE SIGNED ADDENDUM TO THE BID FORM:**

Company Name _____

Contact Person _____

Signature _____

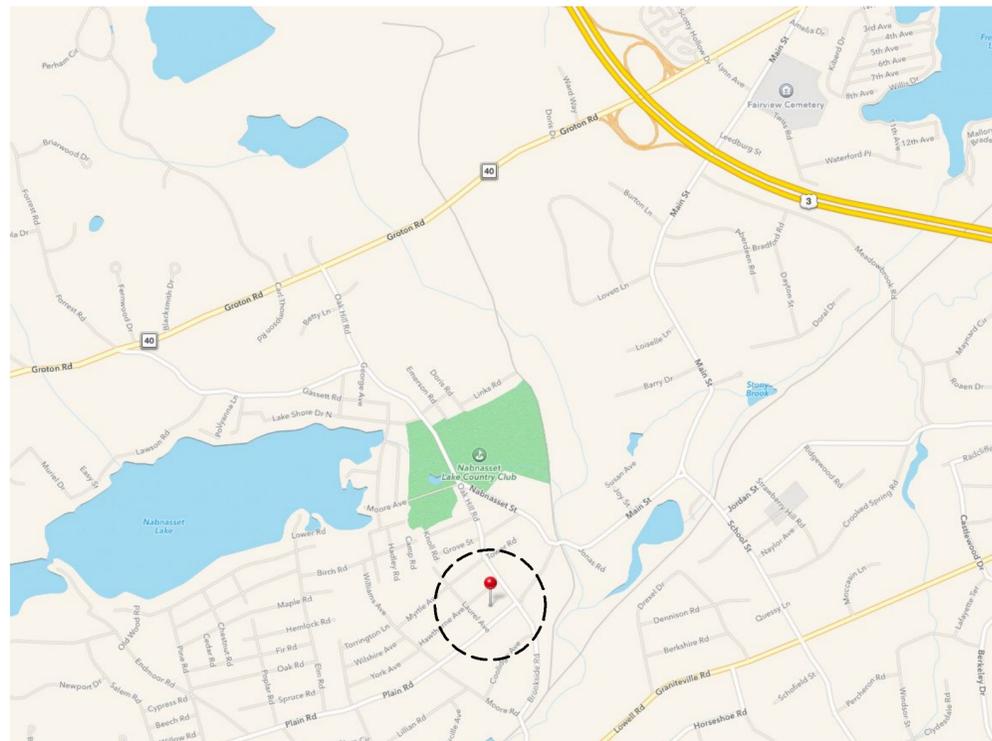
Date _____

Project Summary

This summary of work is intended to assist with an initial understanding of the work. It is not intended to be all inclusive.

Provide demolition and construction including all associated work required to renovate two toilet rooms in the lower level, as shown on these drawings, of the Old Nabnasset School building located at 170 Plain Road, Westford, MA.

Locus Plan



170 Plain Road, Westford, MA

Old Nabnasset School

Toilet Room Renovations

170 Plain Road,
Westford, MA

June 19, 2015

DRAWING LIST

T-1 Title Sheet

ARCHITECTURAL

- A1.0 Demo Plan
- A2.0 Lower Level Floor Plan
- A5.0 Ceiling Plan
- A6.1 Interior Elevations
- A6.2 Interior Elevations
- A6.3 Interior Details

PLUMBING AND MECHANICAL

- M1.0 Legend, Schedules and Notes
- M2.0 Plumbing / Mechanical Demolition & Floor Plans
- M2.1 Plumbing Plan

ELECTRICAL

- E2.1 Electrical Power and Lighting Plan

OWNER/CLIENT

Town of Westford
Jodi Ross, Town Manager

55 Main Street
Westford, MA 01886
Tel: 978-692-5501
Fax: 978-399-2557

ARCHITECT



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ARCHITECTURE

20 Conant Street | 978.750.9062
Danvers, MA 01923 | gienappdesign.com

PLUMBING

JRW
ENGINEERS,
Inc.

40 Town Farm Road
Brookfield, MA 01506
T: 978-857-0305
F: 978-418-0057

Toilet Room Renovations at

THE OLD NABNASSET SCHOOL

T-1

IF THIS SHEET IS NOT 18 X 24 IT IS A REDUCED SCALE PRINT - SCALE ACCORDINGLY



General Demo Notes

1. General Contractor SHALL: Exercise reasonable precaution in the protection of all existing finishes to remain and/or all existing substrates to receive new finish; Schedule and coordinate all trades to eliminate damage to all floor materials once installed; Provide protective coverings for all floor, partition and ceiling finishes to remain in the project area and for all finishes which may be subject to traffic or construction activity in adjacent areas; Provide protective covering for all windows and other glass to remain; Provide impact protection for all interior finishes; Provide minimum 1/8 inch thick tempered hardboard or plywood gang way to protect all flooring materials from breakage, cracking, scratching or other damage from dollies, hand trucks or rolling bins or tool carts used to transport materials to and from project area; Extend protection from building entry(ies) to project area.
2. The Contractor shall protect interior surface of glazing at all times from breakage and scratching of interior window coatings. Any hollows or damaged areas of concrete floor shall be repaired prior to commencement of new construction. The Contractor shall remove from demolished walls or portions of walls all power circuits and switch legs back to first junction box in ceiling space. Remove any millwork or wall-mounted plumbing fixtures from walls indicated to be demolished and not otherwise shown. The Contractor shall maintain a truck or other vehicle for removal of waste materials daily from site. Waste materials shall be transported to such vehicle by covered rubber-tired carts.
3. Remove power devices back to first junction box in ceiling space, typical.
4. Contractor shall be responsible for seeing that each subcontractor cleans up and removes, DAILY, any and all debris generated by construction operations, making ready for all subsequent subcontractors.

DEMOLITION KEY

1. Remove toilet fixture and all associated appurtenances, including supply lines (coordinate with plumbing demo plans).
2. Remove sink and all associated appurtenances (coordinate with plumbing demo plans).
3. Remove/relocate drain lines (coordinate with plumbing demo plans).
4. Remove/relocate cold and hot water supplies (coordinate with plumbing demo plans).
5. Remove/relocate steam pipes (coordinate with plumbing demo plans).
6. Remove/relocate floor drains (coordinate with plumbing demo plans).
7. Remove and discard wall heater and all associated wiring back to an appropriate junction box.
8. Remove and discard all non functioning tele/data wiring and associated appurtenances.
9. Remove and discard suspended ceiling system in its entirety.
10. Remove and discard all existing lighting fixtures.
11. Remove and discard existing ceiling vent fan and all associated appurtenances. Coordinate with Mechanical Plan.

SYMBOL KEY

- Wall Demolition
- Door Demolition
- Smoke Detector
- Exit Sign
- Horn/Strobe
- Emergency Light
- Dashed Areas Indicate Areas for Scope of Work

Sawcut perimeter and remove concrete slab in entire at both toilet rooms. Coordinate with Plumbing plans regarding demolishing of piping.

Protect and remove toilet partition accessories for their reuse (typical). The partitions themselves are to be removed and disposed of.

LIMIT OF WORK INDICATED BY DASHED LINE

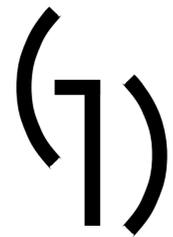
Protect existing water meter to remain.



PLAN NORTH



Note: Life/Safety appurtenances to be maintained during and after construction until new walls are constructed



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Old Nabnasset School
Lower Level Toilet Rooms
170 Plain Road
Westford, MA

Revisions	Date

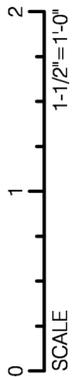
Project: 530.3
Drawn by: JA
Check by: KL
Date: 6/19/15
Scale: 1/4"=1'-0"

**Lower Level
Demo Plan**

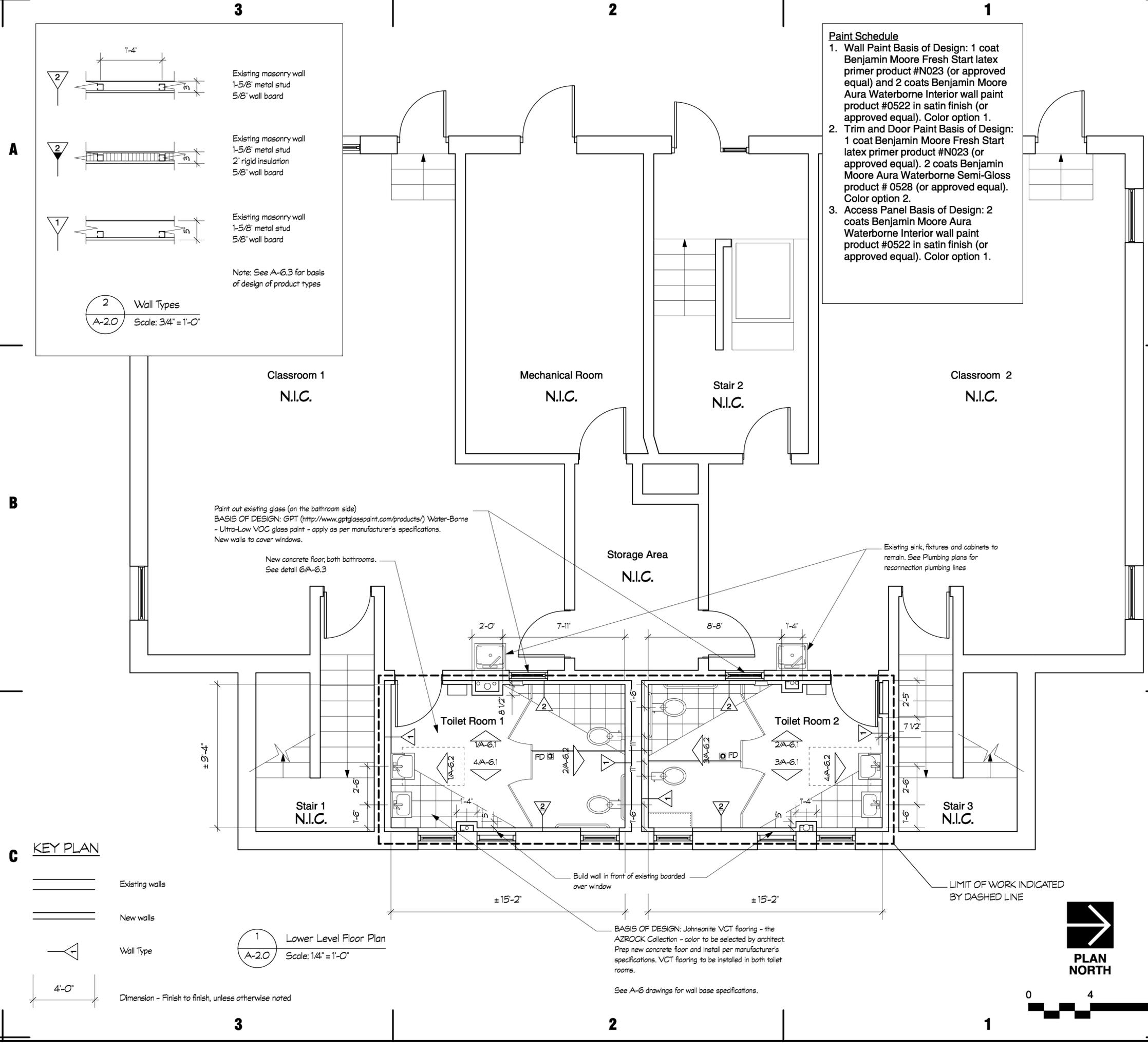
A-1.0

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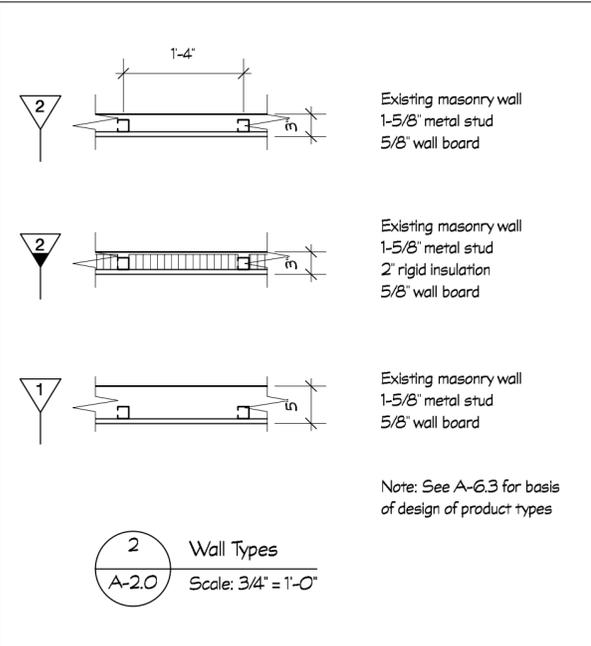


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Paint Schedule

1. Wall Paint Basis of Design: 1 coat Benjamin Moore Fresh Start latex primer product #N023 (or approved equal) and 2 coats Benjamin Moore Aura Waterborne Interior wall paint product #0522 in satin finish (or approved equal). Color option 1.
2. Trim and Door Paint Basis of Design: 1 coat Benjamin Moore Fresh Start latex primer product #N023 (or approved equal). 2 coats Benjamin Moore Aura Waterborne Semi-Gloss product # 0528 (or approved equal). Color option 2.
3. Access Panel Basis of Design: 2 coats Benjamin Moore Aura Waterborne Interior wall paint product #0522 in satin finish (or approved equal). Color option 1.



2 Wall Types
A-2.0 Scale: 3/4" = 1'-0"

Paint out existing glass (on the bathroom side)
BASIS OF DESIGN: GPT (<http://www.gptglasspaint.com/products/>) Water-Borne - Ultra-Low VOC glass paint - apply as per manufacturer's specifications.
New walls to cover windows.

New concrete floor, both bathrooms.
See detail 6/A-6.3

Existing sink, fixtures and cabinets to remain. See Plumbing plans for reconnection plumbing lines

BASIS OF DESIGN: Johnsonite VCT flooring - the AZROCK Collection - color to be selected by architect.
Prep new concrete floor and install per manufacturer's specifications. VCT flooring to be installed in both toilet rooms.

See A-6 drawings for wall base specifications.

KEY PLAN

- Existing walls
- New walls
- Wall Type
- Dimension - Finish to finish, unless otherwise noted

1 Lower Level Floor Plan
A-2.0 Scale: 1/4" = 1'-0"



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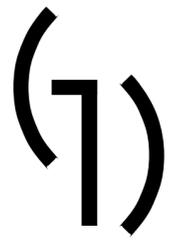
Old Nabnasset School
Lower Level Toilet Rooms
170 Plain Road
Westford, MA

Revisions	Date

Project: 530.3
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Lower Level
Floor Plan

A-2.0



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Westford, MA

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

Lower Level
Ceiling Plan

A-5.0

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SYMBOL KEY

- 2x4 Florescent Light Fixture
- Smoke Detector (reuse existing)
- Horn/Strobe (relocate existing)
- Emergency Light

New Ceiling tiles and Grid:
BASIS OF DESIGN: Armstrong Cirrus ® Second Look
® ceiling tile with 2x2 scoring with Prelude ® suspension system.

Typical at both toilet rooms

Toilet partition overhead brace above toilet partitions.

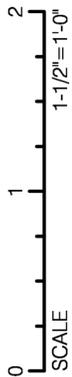
See A-6 drawings for specifications of new toilet partition system.

LIMIT OF WORK INDICATED BY DASHED LINE

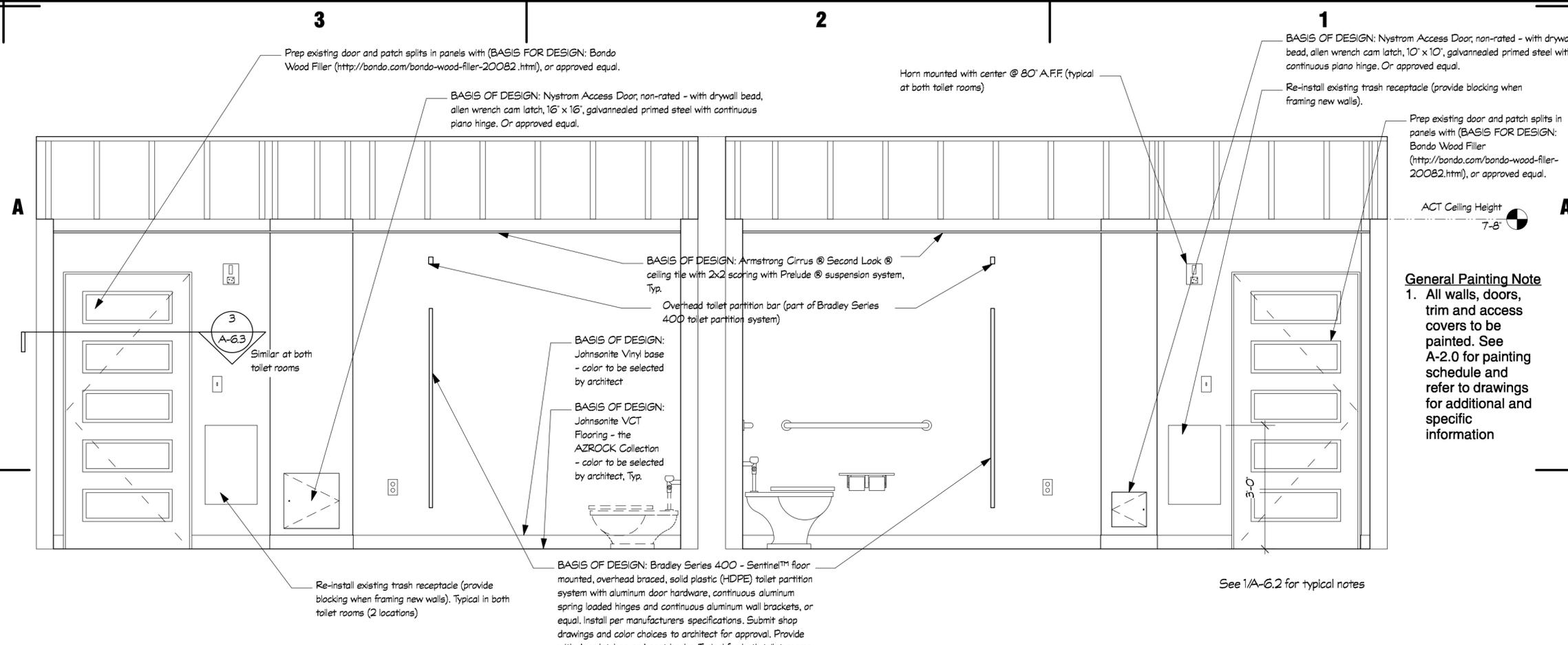


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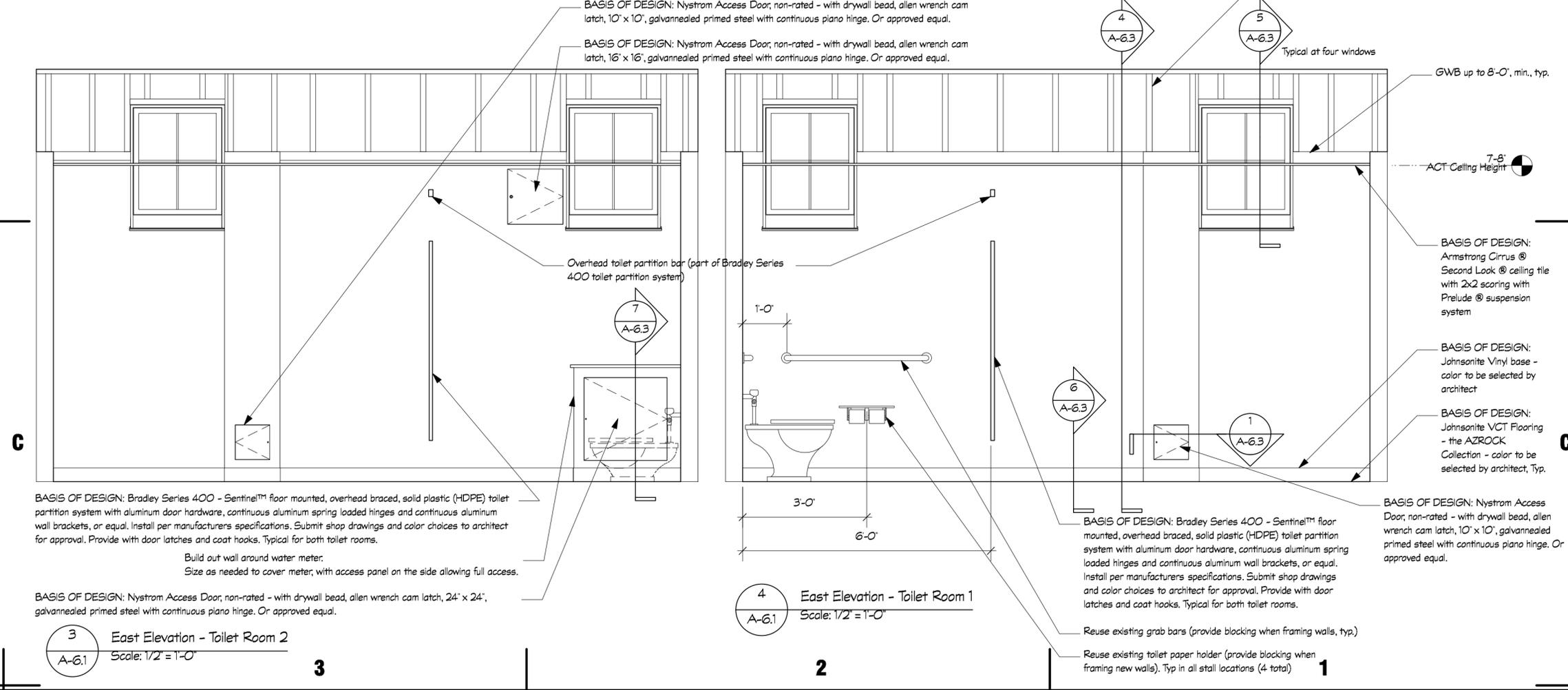


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1 West Elevation - Toilet Room 1
Scale: 1/2" = 1'-0"

2 West Elevation - Toilet Room 2
Scale: 1/2" = 1'-0"



3 East Elevation - Toilet Room 2
Scale: 1/2" = 1'-0"

4 East Elevation - Toilet Room 1
Scale: 1/2" = 1'-0"

General Painting Note
1. All walls, doors, trim and access covers to be painted. See A-2.0 for painting schedule and refer to drawings for additional and specific information

GIENAPP DESIGN ARCHITECTURE
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Old Nabnasset School
Lower Level Toilet Rooms
170 Plain Road
Westford, MA

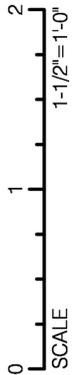
Revisions	Date

Project: 530.3
Drawn by: JA
Check by: KL
Date: 6/19/15
Scale: 1/4" = 1'-0"

Lower Level
Interior Elevations

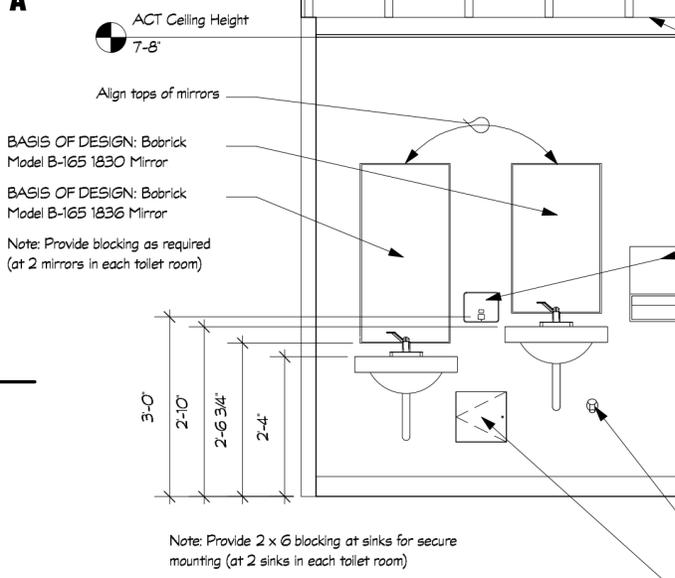
A-6.1

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A



1 South Elevation - Toilet Room 1
A-6.2 Scale: 1/2" = 1'-0"

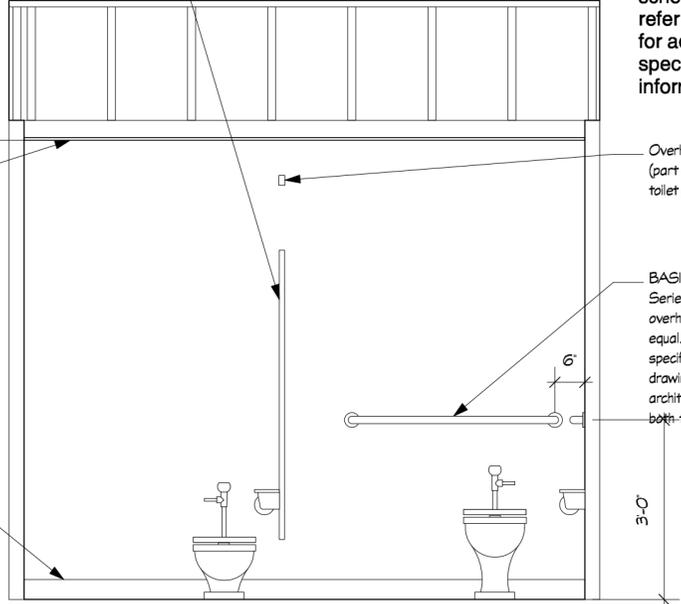
Access panel to access sink control transformer
BASIS OF DESIGN: Nystrom Access Door, non-rated - with drywall bead, allen wrench cam latch, 10' x 10', galvanized primed steel with continuous piano hinge. Or approved equal. Typical at both toilet room sinks.

2

BASIS OF DESIGN: Bradley Series 400 - Sentinel™ floor mounted, overhead braced, solid plastic (HDPE) toilet partition system with aluminum door hardware, continuous aluminum spring loaded hinges and continuous aluminum wall brackets, or equal. Install per manufacturers specifications. Submit shop drawings and color choices to architect for approval. Provide with door latches and coat hooks. Typical for both toilet rooms.

BASIS OF DESIGN: Armstrong Cirrus® Second Look® ceiling tile with 2x2 scoring with Prelude® suspension system
GWB up to 8'-0", min., typ.
Reuse existing soap and paper towel dispensers, typ. at both bathrooms. Provide blocking as required.

BASIS OF DESIGN: Johnsonite VCT Flooring - the AZROCK Collection - color to be selected by architect, Typ.



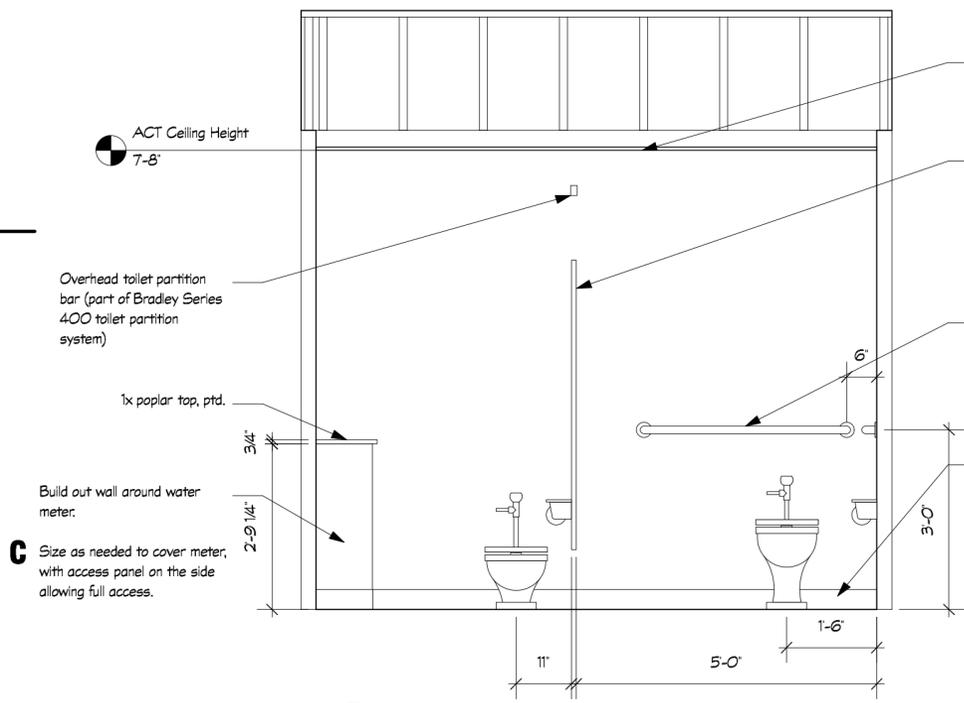
2 North Elevation - Toilet Room 1
A-6.2 Scale: 1/2" = 1'-0"

General Painting Note
1. All walls, doors, trim and access covers to be painted. See A-2.0 for painting schedule and refer to drawings for additional and specific information

Overhead toilet partition bar (part of Bradley Series 400 toilet partition system)

BASIS OF DESIGN: Bradley Series 400 - Sentinel™ overhead toilet partition system, or equal. Install per manufacturers specifications. Submit shop drawings and color choices to architect for approval. Typical for both toilet rooms.

B



3 South Elevation - Toilet Room 2
A-6.2 Scale: 1/2" = 1'-0"

BASIS OF DESIGN: Armstrong Cirrus® Second Look® ceiling tile with 2x2 scoring with Prelude® suspension system

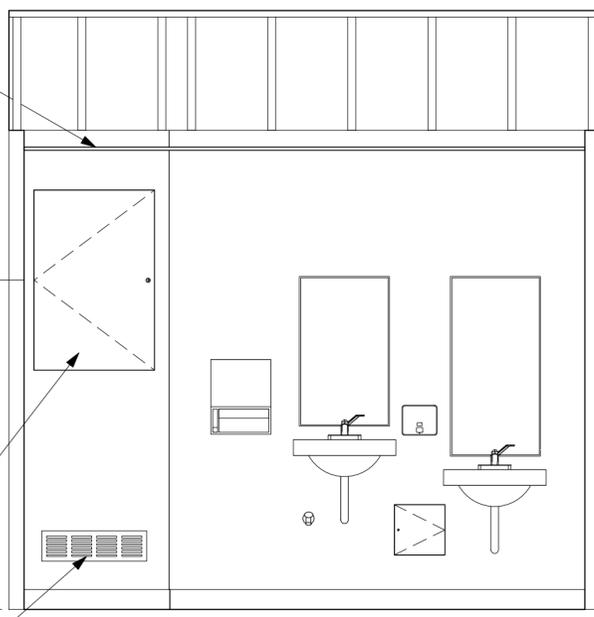
BASIS OF DESIGN: Bradley Series 400 - Sentinel™ floor mounted, overhead braced, solid plastic (HDPE) toilet partition system with aluminum door hardware, continuous aluminum spring loaded hinges and continuous aluminum wall brackets, or equal. Install per manufacturers specifications. Submit shop drawings and color choices to architect for approval. Provide with door latches and coat hooks. Typical for both toilet rooms.

Reuse existing grab bars (provide blocking when framing walls, typ.)

BASIS OF DESIGN: Johnsonite VCT Flooring - the AZROCK Collection - color to be selected by architect, Typ.

BASIS OF DESIGN: Nystrom Access Door, non-rated - with drywall bead, key operated cam latch, 24' x 36', galvanized primed steel with continuous piano hinge. Or approved equal.

BASIS OF DESIGN: Architectural Grille punch louver 21' w x 6' h; 14 GA primed aluminum. Or approved equal. Painted to match wall color



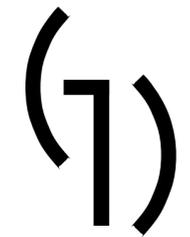
4 North Elevation - Toilet Room 2
A-6.2 Scale: 1/2" = 1'-0"

See 1/A-6.2 for typical notes

A

B

C



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Old Nabnasset School
Lower Level Toilet Rooms
170 Plain Road
Westford, MA

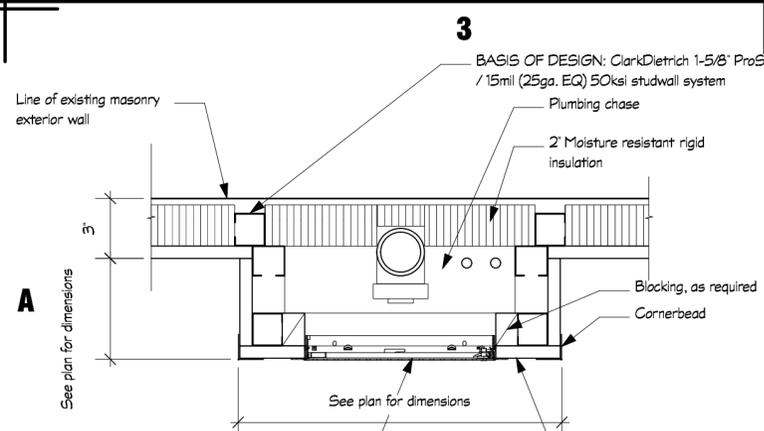
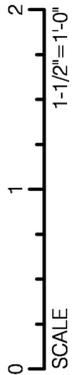
Revisions	Date

Project: 530.3
Drawn by: JA
Check by: KL
Date: 6/19/15
Scale: 1/4" = 1'-0"

Lower Level
Interior Elevations

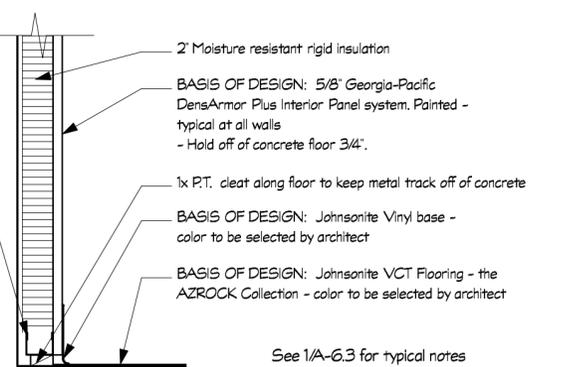
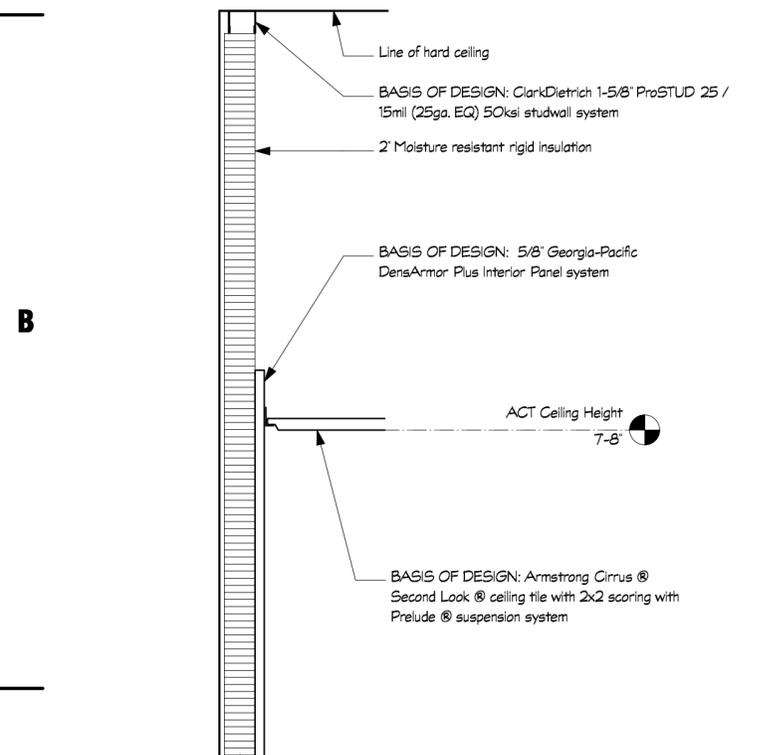
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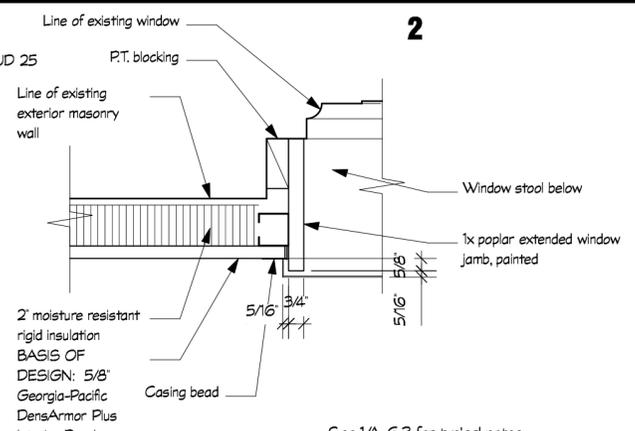


1 Plan Detail at Chase
A-6.3 Scale: 2" = 1'-0"

See plan for dimensions

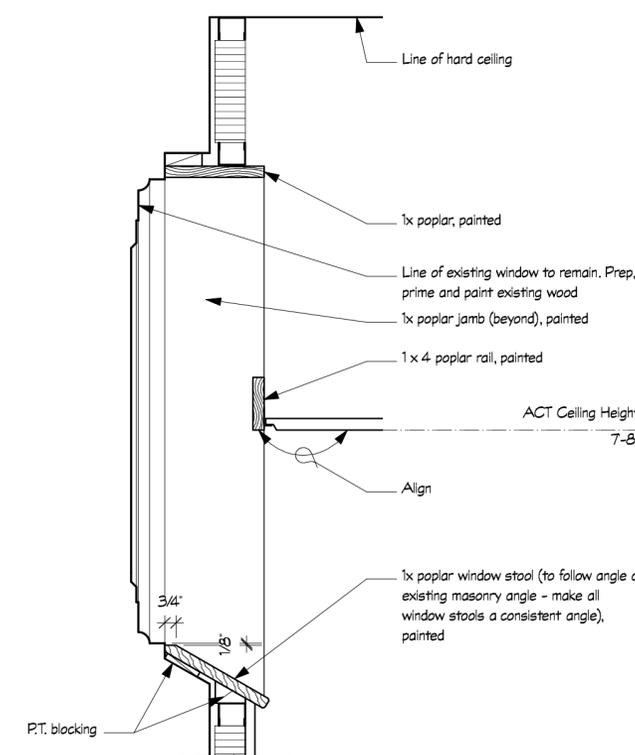


4 Section Detail at Insulated Wall
A-6.3 Scale: 1 1/2" = 1'-0"



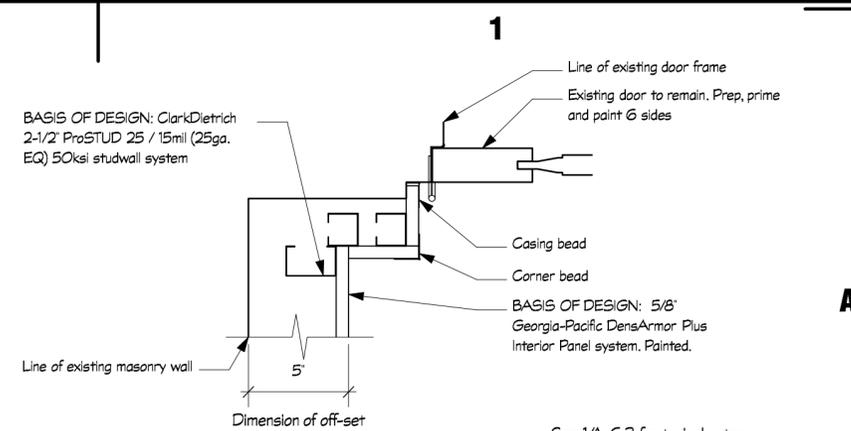
2 Plan Detail at Window Jamb
A-6.3 Scale: 2" = 1'-0"

See 1/A-6.3 for typical notes



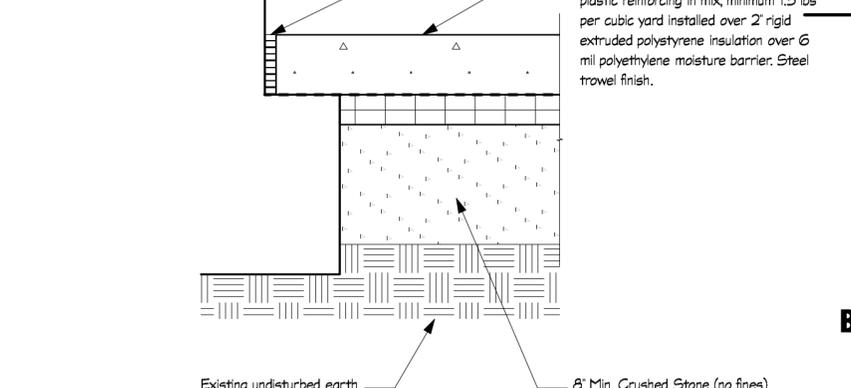
5 Section Detail at Window
A-6.3 Scale: 1 1/2" = 1'-0"

See 4/A-6.3 for typical notes

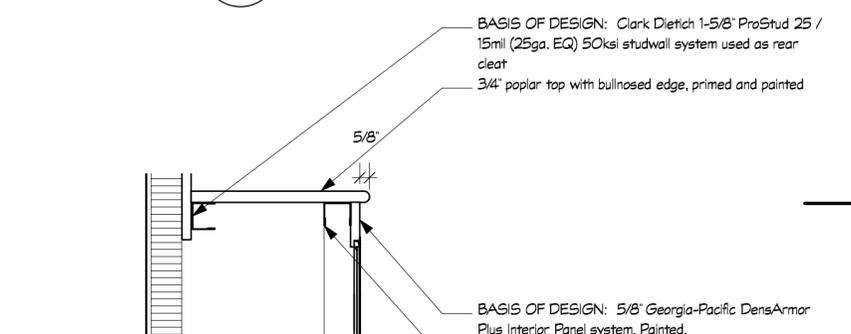


3 Plan Detail at Door
A-6.3 Scale: 2" = 1'-0"

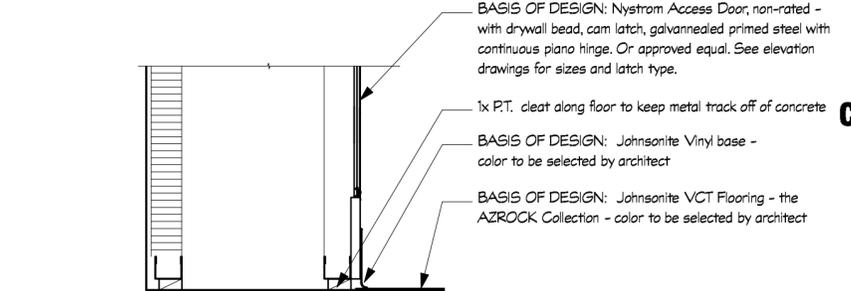
See 1/A-6.3 for typical notes



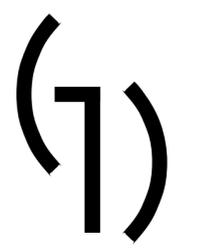
6 Section Detail at new Concrete Slab (at both toilet rooms)
A-6.3 Scale: 1 1/2" = 1'-0"



7 Section Detail Water Meter Box Out
A-6.3 Scale: 1 1/2" = 1'-0"



7 Section Detail Water Meter Box Out
A-6.3 Scale: 1 1/2" = 1'-0"



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Westford, MA

Revisions	Date

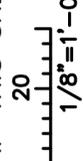
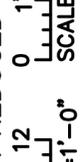
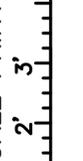
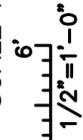
Project: 530.3
Drawn by: JA
Check by: KL
Date: 6/19/15
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**Lower Level
Wall Details**

A-6.3

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LEGEND

	GATE VALVE
	OUTSIDE SCREW & YOKE (OS&Y) VALVE
	BALL VALVE
	PLUG VALVE
	CHECK VALVE
	HOSE BIBB
	WALL HYDRANT OR SILL COCK (SC)
	WATER HAMMER ARRESTOR
	RISE (SINGLE LINE - PLAN VIEW)
	DROP (SINGLE LINE - PLAN VIEW)
	VALVE IN VERTICAL
	BOTTOM TAKEOFF
	TOP TAKEOFF
	PIPE BREAK (SINGLE LINE)
	CLEAN-OUT
	FLOOR CLEAN-OUT
	FLOOR DRAIN
	IN-LINE CENTRIFUGAL FAN
	WATER METER
	DIRECTION OF FLOW IN PIPE
	PITCH PIPE UP IN DIRECTION OF FLOW
	PITCH PIPE DOWN IN DIRECTION OF FLOW
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED
	COLD WATER
	HOT WATER SUPPLY
	SANITARY OR WASTE BELOW GRADE
	SANITARY OR WASTE ABOVE GRADE
	VENT
	GAS

CALL OUT SYMBOLS

	CONNECT NEW TO EXISTING
	SECTION DESIGNATION SHEET NUMBER
	DETAIL DESIGNATION SHEET NUMBER
	EQUIPMENT TYPE TAG NUMBER
	REVISION NUMBER

ELECTRIC UNIT HEATER SCHEDULE

TAG No.	LOCATION	MANUFACTURER	MODEL No.	AIR DATA			HTG CAPACITY KW	ELECTRICAL DATA		REMARKS
				CFM	EAT(°F)	LAT(°F)		V/PH/HZ	FLA	
EUH-1	BATHROOMS	INDEECO	WAI SERIES 933UO4000V	160	65	91	4/3	240/208V 1ø/60HZ	17/14.8	PROVIDE W/ SEMI-RECESSED (D2) MOUNTING CONFIG, 2 STAGE T-STAT, 2 SPEED MOTOR & DISCONNECT

NOTE: COORDINATE FINISH WITH ARCHITECT

EXHAUST FAN SCHEDULE

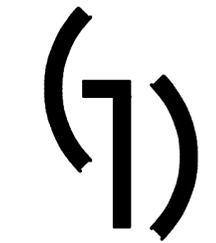
TAG No.	MANUFACTURER & MODEL No.	TYPE	FAN DATA			ELECTRICAL DATA			REMARKS
			CFM	RPM	SP(IN)	VOLTS	PH	POWER	
EF-1	PANASONIC	CEILING	110	953	.1	120	1	11.5 W	OPERATE ON LIGHT SWITCH

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE		FITTINGS	
	MANUFACTURER	MODEL	MANUFACTURER	MODEL
P-1	AMERICAN STANDARD	MADERA MODEL 2855.128 ELONGATED FRONT 1.28 GPF, FLOOR MOUNT, ADA COMPLIANT WATER CLOSET.	AMERICAN STANDARD	MODEL #6047.121-1.28 GPF MANUAL TOP SPUD FLUSH VALVE
P-2	AMERICAN STANDARD	BABY DEVORO MODEL 2282.001 1.28 GPF, FLOOR MOUNT WATER CLOSET.	AMERICAN STANDARD	#5905.100 OPEN FRONT SEAT LESS COVER
P-3	AMERICAN STANDARD	LUCERNE MODEL 0355.027, WALL MOUNT, ADA COMPLIANT LAVATORY.	SLOAN	OPTIMA # ETF-600-LT SENSOR OPERATED FAUCET WITH MIX-135-A MIXING VALVE & ONE TRANSFORMER PER BATHROOM.
			BRASSCRAFT	1/2 TURN BALL STOP & SUPPLIES W/ ESCUCHEONS
			ZURN	1 1/2" CHROME PLATED BRASS GRID STRAINER DRAIN W/ OFFSET TAILPIECE
P-4	AMERICAN STANDARD	REGALYN MODEL 4867.004 WALL MOUNT, ADA COMPLIANT LAVATORY.	SLOAN	OPTIMA # ETF-600-LT SENSOR OPERATED FAUCET WITH MIX-135-A MIXING VALVE & ONE TRANSFORMER PER BATHROOM.
			BRASSCRAFT	1/2 TURN BALL STOP & SUPPLIES W/ ESCUCHEONS
			ZURN	1 1/2" CHROME PLATED BRASS GRID STRAINER DRAIN W/ OFFSET TAILPIECE
HB	WOODFORD	MODEL 24 ANTI-SYPHON HOSE BIBB WITH POLISHED CHROME FINISH & LOOSE T KEY HANDLE		
WH-1	WATTS	SERIES FHB SELF DRAINING WALL HYDRANT		
FD-1	ZURN	MODEL Z-415 FLOOR DRAIN WITH TYPE "B" NICKEL BRONZE STRAINER 2" PIPE, 6" TOP, SEDIMENT BUCKET AND TRAP PRIMER CONNECTION		
TP	PPP, INC	UNDER LAV PR01-500 ULP TRAP PRIMER VALVE		

PLUMBING GENERAL NOTES:

- ALL PIPING SHOWN IS DIAGRAMMATIC ONLY. EXACT LOCATION TO BE DETERMINED IN THE FIELD.
- CONTRACTOR SHALL REVIEW ALL CIVIL, STRUCTURAL, ARCHITECTURAL, HVAC AND FIRE PROTECTION DRAWINGS TO BE FAMILIAR WITH THE DETAILS OF CONSTRUCTION IN ADDITION TO COORDINATING WITH THE OTHER TRADES TO ELIMINATE CONFLICTS PRIOR TO INSTALLATION.
- ALL PIPING IN FINISHED AREAS SHALL BE RUN CONCEALED.
- ALL PIPING SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE.
- RUN WATER PIPING ON THE WARM SIDE OF INSULATION WHEN DROPS ARE REQUIRED ON EXTERIOR WALLS.
- PROVIDE DRAW-OFFS AT ALL LOW POINTS OF THE SYSTEMS. PROVIDE HOSE END VACUUM BREAKER ON ALL LOW POINT DRAW-OFF VALVES.
- PLUMBING CONTRACTOR SHALL FURNISH, MAINTAIN AND INSTALL ALL SCAFFOLDING, HOISTING EQUIPMENT, ETC., NECESSARY FOR THE INSTALLATION OF HIS WORK.
- INSTALL NEW DOMESTIC WATER SERVICE & MAIN TO BOILER ROOM & CONNECT TO EXISTING SYSTEM PRIOR TO DEMOLITION OF EXISTING WATER SERVICE IN ORDER TO ALLOW OPERATION OF CLASSROOM WING DURING UNION BUILDING RENOVATION.



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Lower Level Toilet Rooms
170 Plain Street
Westford, MA.

Revisions	Date

Project: 530.3
Drawn by: JRW
Check by: JRW
Date: 6/19/2015
Scale: As Noted

**Mechanical &
Plumbing
Legend, Schedules &
Notes**

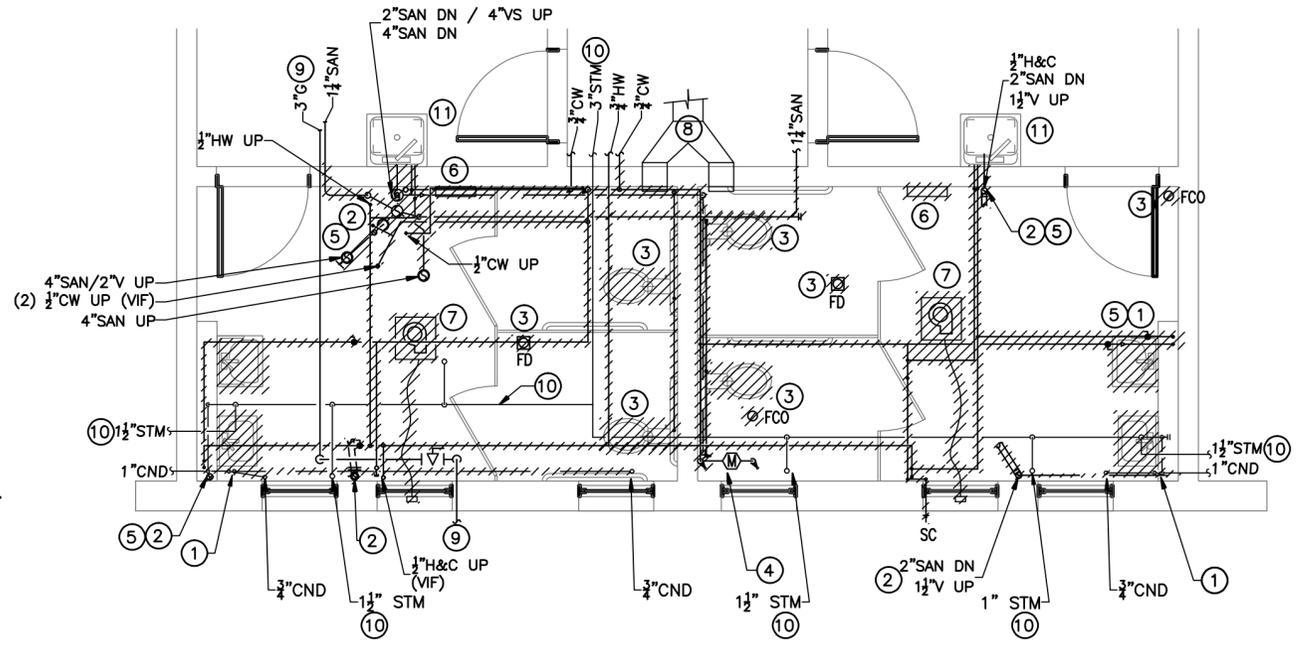
M-1.0

IF THIS SHEET IS NOT 18 X 24 IT IS A REDUCED SCALE PRINT - SCALE ACCORDINGLY

SCALE 1/2"=1'-0"

SCALE 1/4"=1'-0"

SCALE 1/8"=1'-0"

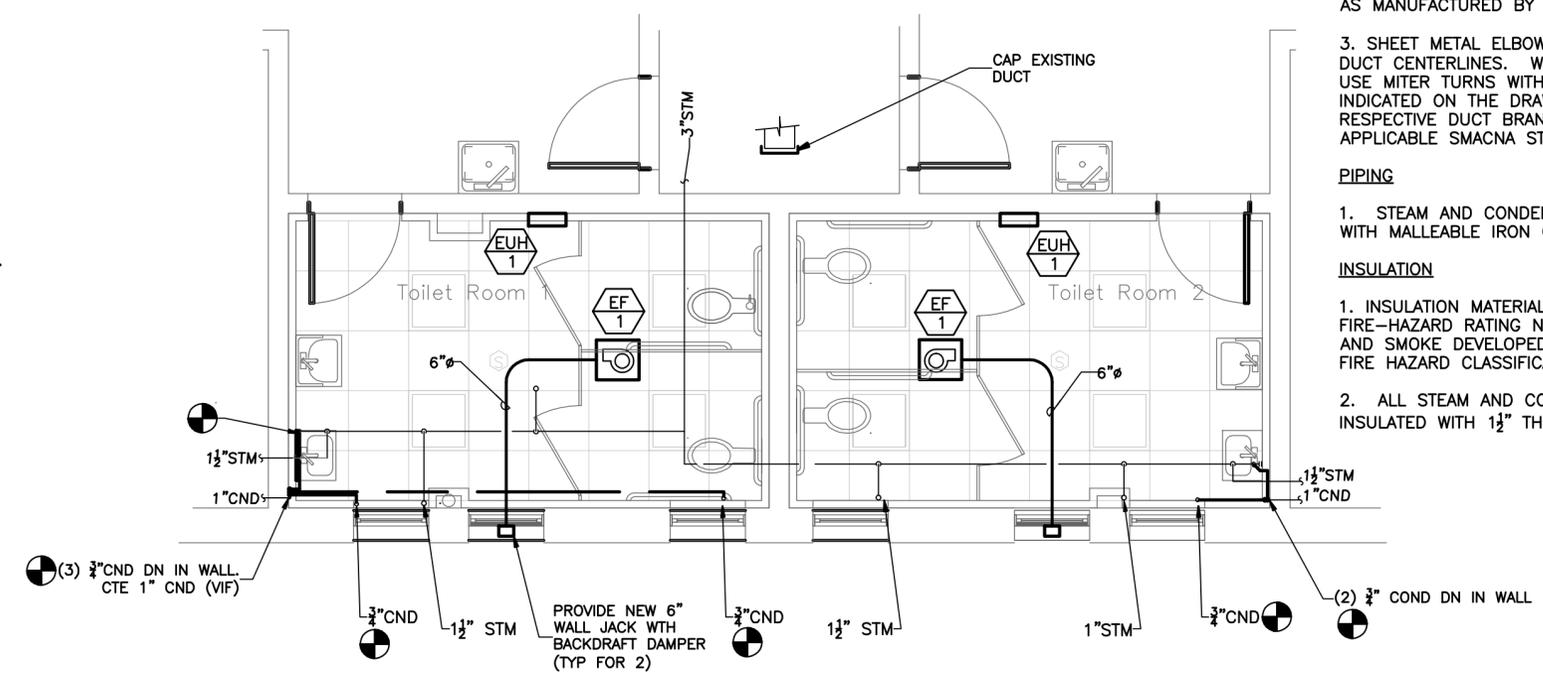


HVAC & PLUMBING DEMOLITION PLAN
SCALE: 1/4"=1'-0"

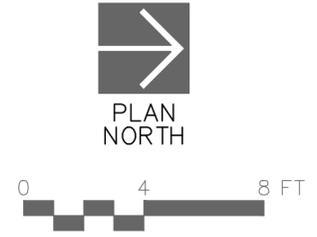
- MECHANICAL DEMO KEY NOTES:**
- REMOVE EXISTING CONDENSATE PIPING FROM THE WALL/FLOOR TO THE CEILING.
 - REMOVE EXISTING WASTE & VENT IN IT'S ENTIRETY FROM FLOOR TO CEILING.
 - REMOVE ALL IN-SLAB PIPING WITHIN THE TWO BATHROOMS.
 - EXISTING WATER METER TO REMAIN.
 - REMOVE ALL EXISTING HOT AND COLD WATER PIPING WITHIN THE SPACE.
 - EXISTING ELECTRIC WALL HEATER TO BE REMOVED
 - EXISTING CEILING EXHAUST FAN, DUCT & WALL JACK TO BE REMOVED
 - EXISTING DUCT TO BE REMOVED. CAP AT CHIMNEY.
 - EXISTING GAS PIPING TO REMAIN
 - EXISTING STEAM PIPING TO REMAIN.
 - EXISTING PLUMBING FIXTURE TO REMAIN. REMOVE EXISTING SUPPLIES, STOPS, TAILPIECES & TRAPS.

HVAC SPECIFICATIONS

- DUCTWORK**
- SHEETMETAL DUCTWORK - ALL NEW DUCTWORK SHALL BE FABRICATED OF GALVANIZED STEEL IN ACCORDANCE WITH THE LATEST EDITION OF THE SMACNA "DUCT MANUAL". ALL DUCTWORK SHALL BE CONSTRUCTED PER "UP TO 2" WG PRESSURE CLASS" AS SCHEDULED IN THE SMACNA "DUCT MANUAL". ALL SHEETMETAL DUCTWORK SHALL BE SEALED PER SMACNA SEAL CLASS "C" FOR ALL DUCTWORK UP TO 2" WG CLASS.
 - ALL JOINTS AND ALL SEAMS OF ALL DUCTWORK SHALL BE SEALED WITH UL LABELED SEALER AS MANUFACTURED BY 3M COMPANY OR UNITED STEEL METAL EQUAL TO 3M EC-900.
 - SHEET METAL ELBOWS SHALL HAVE A RADIUS OF 1 1/2 TIMES THE DUCT WIDTH MEASURED BY DUCT CENTERLINES. WHERE CONDITIONS WILL NOT PERMIT OR WHERE INDICATED ON DRAWINGS USE MITER TURNS WITH DOUBLE WALL TURNING VANES. PROVIDE AIR SPLITTER DAMPERS WHERE INDICATED ON THE DRAWINGS AND WHERE REQUIRED FOR ADJUSTMENT OF AIR DISTRIBUTION TO RESPECTIVE DUCT BRANCHES. SPLITTER DAMPERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE SMACNA STANDARDS.
- PIPING**
- STEAM AND CONDENSATE PIPING SHALL BE SCHEDULE 40 BLACK STEEL MEETING ASTM A-53, WITH MALLEABLE IRON OR STEEL CLASS 250 THREADED FITTINGS.
- INSULATION**
- INSULATION MATERIALS, COATINGS AND OTHER ACCESSORIES SHALL INDIVIDUALLY HAVE A FIRE-HAZARD RATING NOT TO EXCEED 25 FOR FLAME SPREAD AND 50 FOR FUEL CONTRIBUTED AND SMOKE DEVELOPED. RATINGS SHALL BE DETERMINED ACCORDING TO U.L. "TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS," NO. 823 OR NFPA NO. 225 OR ASTM E84.
 - ALL STEAM AND CONDENSATE PIPING WITHIN THE BATHROOMS, NEW OR EXISTING, SHALL BE INSULATED WITH 1 1/2" THICK FIBERGLASS INSULATION WITH ASJ AND A K FACTOR OF 0.27.



NEW WORK HVAC PLAN
SCALE: 1/4"=1'-0"



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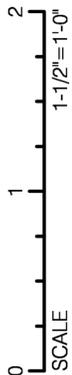
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**Mechanical & Plumbing
Lower Level
Toilet Room
Floor Plans**

M-2.0

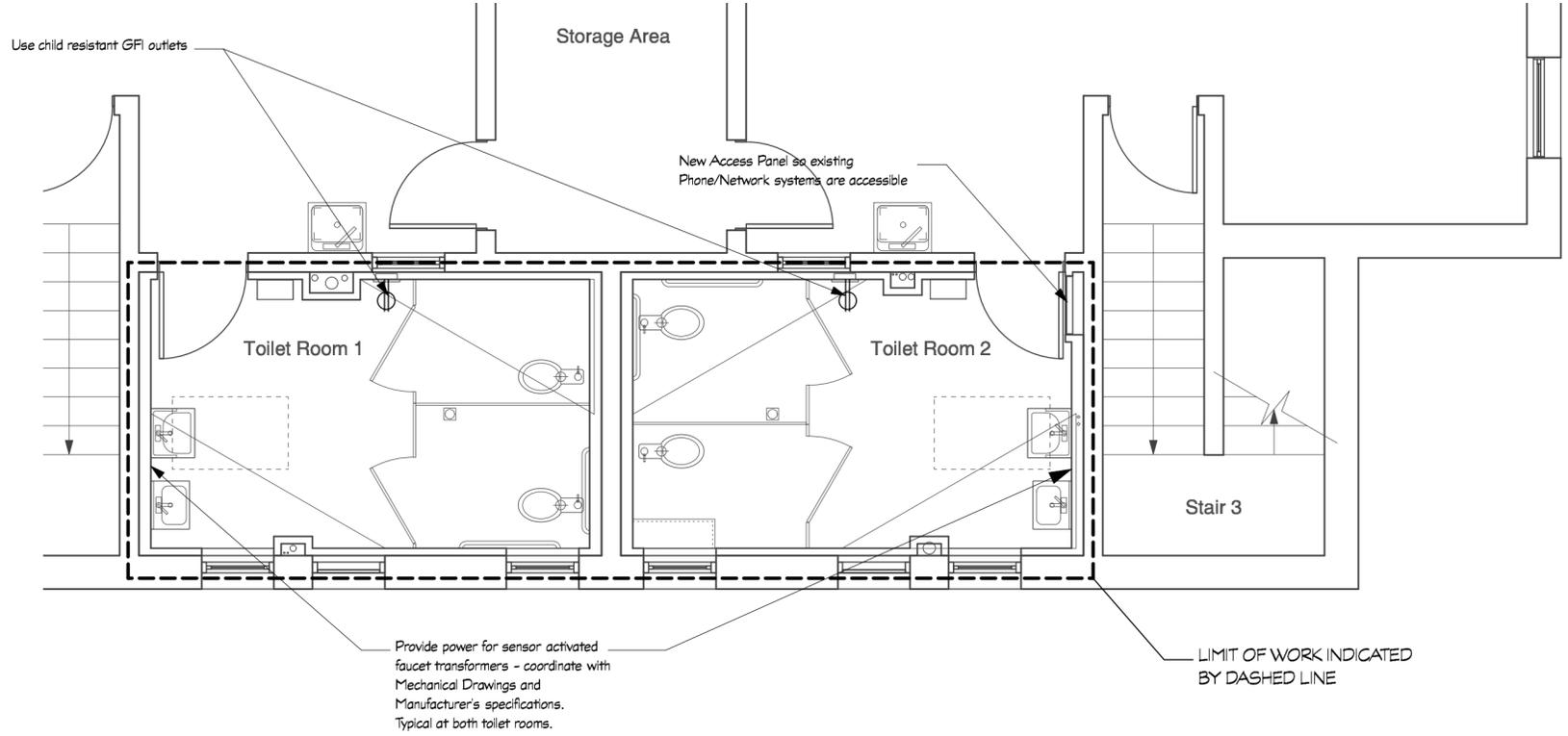
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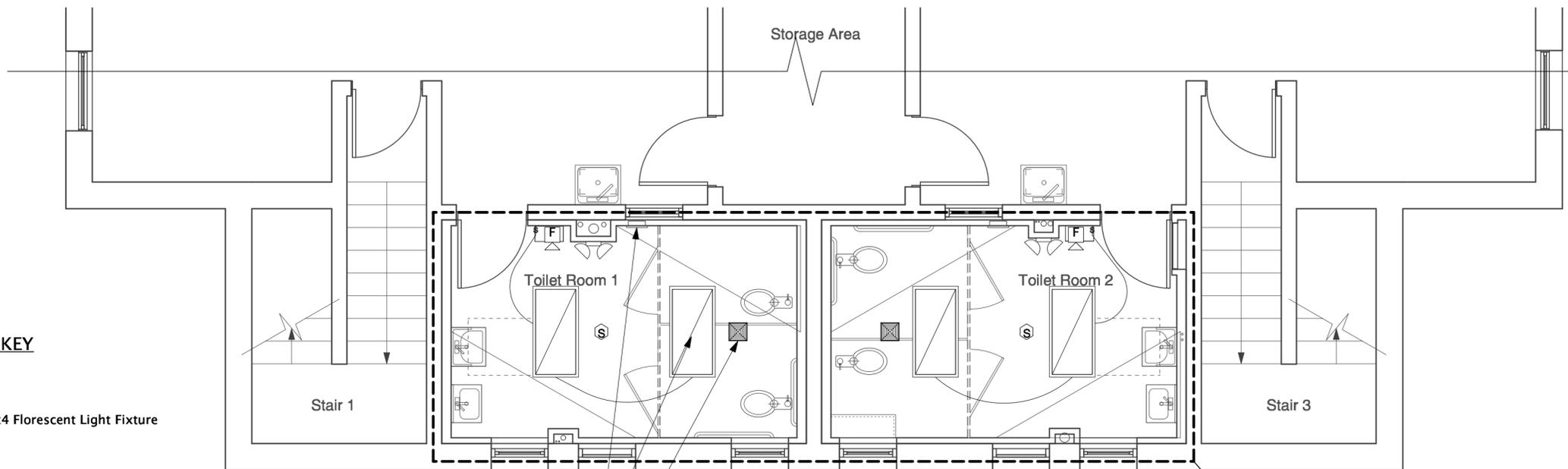
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Electrical General Notes

1. Electrical contractor to meet with architect to review layout prior to doing any wiring.
2. All conduit shall be 1/2" minimum with copper conductors installed. Aluminum conductors will not be allowed.
3. Install all systems to allow removal of ceiling tiles in order to gain easy and full access to above ceiling systems.
4. The electrical installation shall meet the standards prescribed by the National Electrical Code and all local amendments, all applicable National Fire Protection Association (NFPA) codes, the Americans With Disabilities Act (ADA), and local and state building codes. Construction shall in general be in accordance with standards and requirements of utilities and authorities having jurisdiction.
5. All bussing and wiring shall be copper.
6. For each equipment connection, determine and provide the device, outlet or junction box required to connect the equipment. Verify exact locations with architect/ owner prior to installations.
7. Verify electrical requirements if any for any equipment or appliances shown on plans prior to commencement of work. Provide isolated ground wires as required by equipment manufacturers.
8. Electrical and power panels are located in public areas of building-verify exact location. Contractor shall verify that existing panels and feeders serving toilet rooms are adequate for new lighting and power loads shown.
9. All power devices, light switches, outlets, power poles, and communication cover plates as applicable shall be white.
10. Center all receptacles 18" a.f.f. and switches 48" a.f.f. unless noted otherwise on plan.
11. Contractor shall provide temporary power and lighting if and as needed for the use of all trades.
12. The scope of the electrical work includes furnishing and installing all electrical work for a complete installation.
13. All devices within the toilet room shall be ground fault and child resistant.



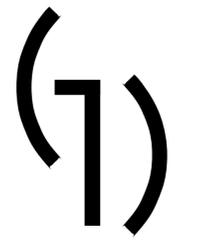
1 Lower Level Power Plan
E-2.1 Scale: 1/4" = 1'-0"



2 Lower Level Lighting Plan
E-2.1 Scale: 1/4" = 1'-0"

SYMBOL KEY

- 2x4 Florescent Light Fixture
- Smoke Detector (reuse existing)
- Horn/Strobe (relocate existing)
- Emergency Light
Basis of Design:
Lithonia ELM2 LED M12 LED
Emergency Light w/ Ni-Cad Battery
purchased online from Global Industrial
(http://www.globalindustrial.com/p/electrical/lighting-and-exit-signs/emergency/led-emergency-light-w-ni-cad-battery?infoParam_campaignId=T9F&gclid=CPDZsf_2o8YCFdgHgQo_dLE4AAw) - or equal



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Lower Level
Power/Lighting Plan

E-2.1