

# WASHINGTON ELEMENTARY SCHOOL BOYS AND GIRLS ROOMS RENOVATION

795 WILDER STREET LOWELL, MA 01851  
PREPARED FOR:

LOWELL PUBLIC SCHOOLS



Lowell  
Public Schools



WASHINGTON ELEMENTARY SCHOOL  
BOYS AND GIRLS ROOMS  
RENOVATION  
795 WILDER STREET  
LOWELL, MA 01851  
PREPARED FOR:  
LOWELL PUBLIC SCHOOLS

## DESIGN TEAM

ARCHITECT: WATERMARK  
175 CABOT STREET  
LOWELL MA 01854

ENGINEER: APEX ENGINEERING  
190 ROUTE US 1.  
FALMOUTH, MAINE 04105

### ARCHITECTURAL SYMBOLS LEGEND

SYMBOLS	MATERIALS	ABBREVIATIONS							
	COLUMN LINE MARKER	CONCRETE	ALT.	ALTERNATE	F.D.	FLOOR DRAIN	R.D.	ROOF DRAIN	
	SECTION MARK	CONCRETE MASONRY UNIT	A.C.T.	ACOUSTIC CEILING TILE	FDN.	FOUNDATION	R.O.	ROUGH OPENING	
	EXTERIOR ELEVATION	BRICK	A.F.F.	ABOVE FINISH FLOOR	FIN.	FINISH	RAD.	RADIUS	
	INTERIOR ELEVATION	STEEL	A.F.G.	ABOVE FINISH GRADE	FLR.	FLOOR	REQ.	REQUIRED	
	INTERIOR ELEVATION	BATT INSULATION	APPROX.	APPROXIMATELY	FLUOR.	FLUORESCENT	RET.	RETAINING	
	INTERIOR ELEVATION	RIGID INSULATION	ATTEN.	ATTENUATION	F.R.	FIRE RATED	RM.	ROOM	
	ELEVATION	PLYWOOD	BLDG.	BUILDING	FT.	FOOT	S.S.	STAINLESS STEEL	
	ROOM # DESIGNATION	EARTH	BOT.	BOTTOM	GA.	GAUGE	S.V.	SHEET VINYL	
	DOOR CALL OUT	CRUSHED STONE	C.B.	CATCH BASIN	GALV.	GALVANIZED	SCHED.	SCHEDULE	
	WINDOW CALL OUT		C.M.U.	CONCRETE MASONRY UNIT	GEN.	GENERAL	SECT.	SECTION	
	DETAIL CALL OUT		C.J.	CONTROL JOINT	GL.	GLASS	SHT.	SHEET	
	PARTITION TYPE		C.O.	CLEAN OUT	GYP.	GYPSPUM	SIM.	SIMILAR	
	KEYNOTES		C.R.	COLD ROLLED	G.W.B.	GYPSPUM WALL BOARD	SPEC.	SPECIFICATION	
	REVISION TAG		CAB.	CABINET	H.M.	HOLLOW METAL	SQ.	SQUARE	
			CEM.	CEMENT	HD.	HEAD	STD.	STANDARD	
			CER.	CERAMIC	HORIZ.	HORIZONTAL	STRUCT.	STRUCTURAL	
			CLG.	CEILING	HT.	HEIGHT	SUSP.	SUSPENDED	
			COL.	COLUMN	ID.	INSIDE DIAMETER	T.O.W.	TOP OF WALL	
			CONCR.	CONCRETE	IN.	INCH	TEL.	TELEPHONE	
			CONST.	CONSTRUCTION	INCAN.	INCANDESCENT	THRU.	THROUGH	
			CONT.	CONTINUOUS	INSUL.	INSULATION	TYP.	TYPICAL	
			DBL.	DOUBLE	INT.	INTERIOR	U.O.N.	UNLESS OTHERWISE NOTED	
			DTL.	DETAIL	JT.	JOINT	V.C.T.	VINYL COMPOSITE TILE	
			DIA.	DIAMETER	LT. WT.	LIGHTWEIGHT	VERT.	VERTICAL	
			DIM.	DIMENSION	M.O.	MASONRY OPENING	V.I.F.	VERIFY IN FIELD	
			DN.	DOWN	MANUF.P.	MANUFACTURING	V.P.	VENEER PLASTER	
			DWG.	DRAWING	MAX.	MAXIMUM	W/	WITH	
			E.J.	EXPANSION JOINT	MECH.	MECHANICAL	W.C.	WATER CLOSET	
			E.W.C.	ELECTRICAL WATER COOLER	MIN.	MINIMUM	W.P.	WATERPROOF	
			EA.	EACH	N.I.A.	NOT IN CONTRACT	W.P.T.	WORK POINT	
			EL.	ELEVATION	N.T.S.	NOT TO SCALE	W.W.F.	WELDED WIRE FABRIC	
			ELECT.	ELECTRICAL	O.C.	ON CENTER	WD.	WOOD	
			EQ.	EQUAL	O.D.	OUTSIDE DIAMETER			
			EQUIP.	EQUIPMENT	PARTN.	PARTITION			
			EXIST.	EXISTING	P.LAM.	PLASTIC LAMINATE			
			EXP.	EXPANSION	PLWD.	PLYWOOD			
			EXT.	EXTERIOR	PORC.	PORCELAIN			
			F.	FACE OF	Q.T.	QUARRY TILE			

### LIST OF DRAWINGS

GENERAL  
G-1 LEGEND, ABBREVIATIONS, NOTES AND CODE REVIEW

### ARCHITECTURAL

**TILING FILED SUB-BID REQUIRED**  
AD-1 DEMOLITION PLANS  
A-1 FLOOR PLANS  
A-2 REFLECTED CEILING PLANS  
A-3 INTERIOR ELEVATIONS  
A-4 SCHEDULES AND DETAILS

### M E P

**PLUMBING FILED SUB-BID REQUIRED**

D-101 PLUMBING MECHANICAL & ELECTRICAL DEMOLITION PLAN  
P-001 PLUMBING, LEGENDS, NOTES AND SPECS.  
P-101 PLUMBING, DRAINAGE WASTE & VENT PLAN.  
P-102 PLUMBING SUPPLY PIPING PLAN  
P-401 PLUMBING ISOMETRICS  
P-601 PLUMBING AND MECHANICAL SCHEDULES.

### M-101 HVAC PLAN

E-001 ELECTRICAL LEGEND  
E-101 ELECTRICAL LIGHTING & POWER PLAN

### CODE REVIEW

CODE REFERENCE: 780 CMR Massachusetts State Building Code 8th edition  
2009 International Building Code (IBC)

Occupancy Classification: Use Group E - Education Section 305  
Construction Type: Type III - B Section 602.3, Table 601

CODE REFERENCE: 521 CMR Massachusetts Accessibility Code

Accessible Restrooms: Female: 2 Full HCWC and 2 Alternate HCWC Provided  
Male: 2 Full HCWC and 2 Alternate HCWC Provided

CODE REFERENCE: 248 CMR Massachusetts Uniform State Plumbing Gas Code  
Occupancy: Elementary School, 269 students, 50% male, 50% female

Fixture Requirements: Section 10.10(18) Table 1

Female Toilets (1 per 30)	Required: 135/30 = 5	Provided: 19
Male Toilets (1 per 60)	Required: 135/60 = 3	Provided: 8
Urinals (1 per 60)	Required: 135/60 = 3	Provided: 14
Lavatories (1 per 60 each)	Required: 135/60 = 3 3 each x 4 = 12	Provided: 16 (4 Person Wash Fountain)

Drinking Fountains (1 per 75):	Required: 269/75 = 4	Provided: 4
Service Sink (1 per floor):	Required: 1	Provided: 2

MARK	DATE	DESCRIPTION
0	3-FEB-16	FOR BIDS

PROJECT NO: 14401-07  
MODEL FILE: G-1.dwg  
DRAWN BY: GFA  
CHKD BY: POB  
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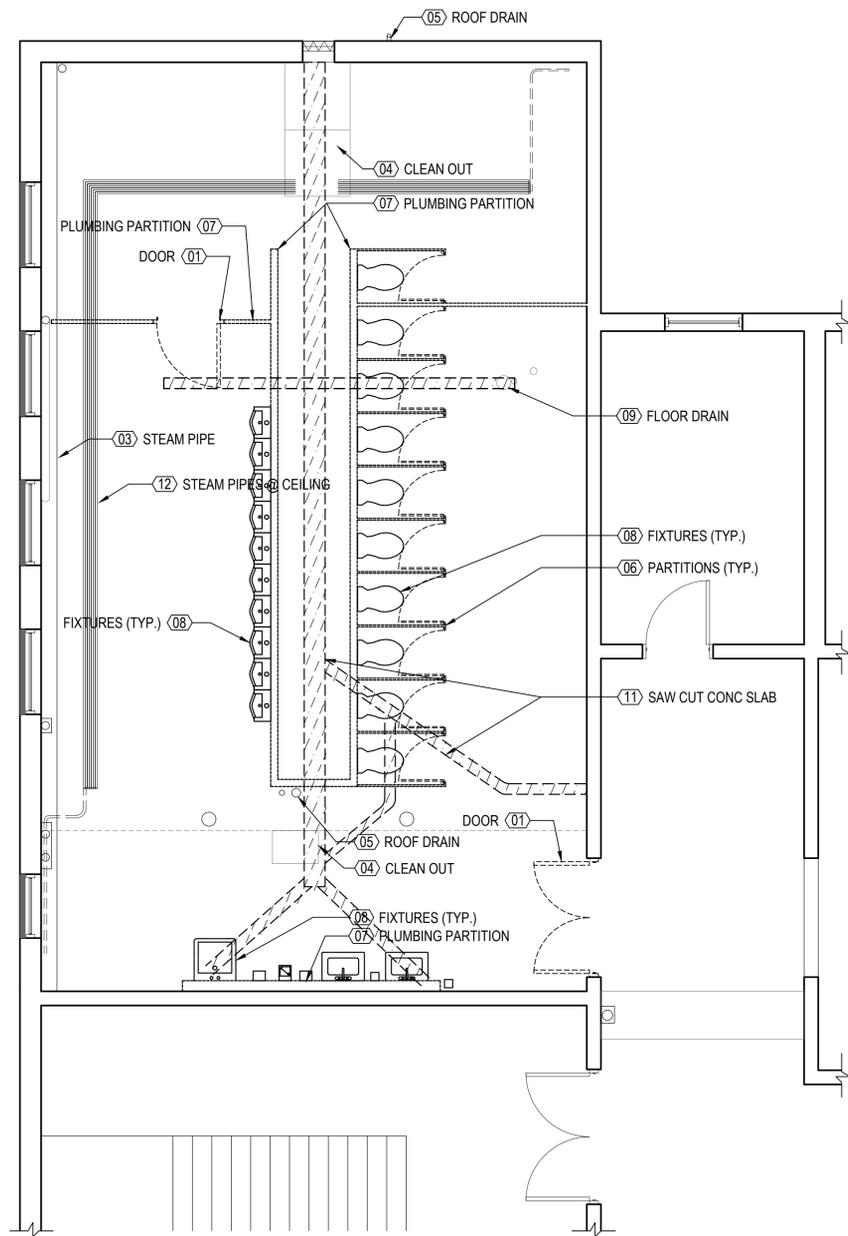
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LEGEND,  
ABBREVIATIONS,  
NOTES AND  
CODE REVIEW

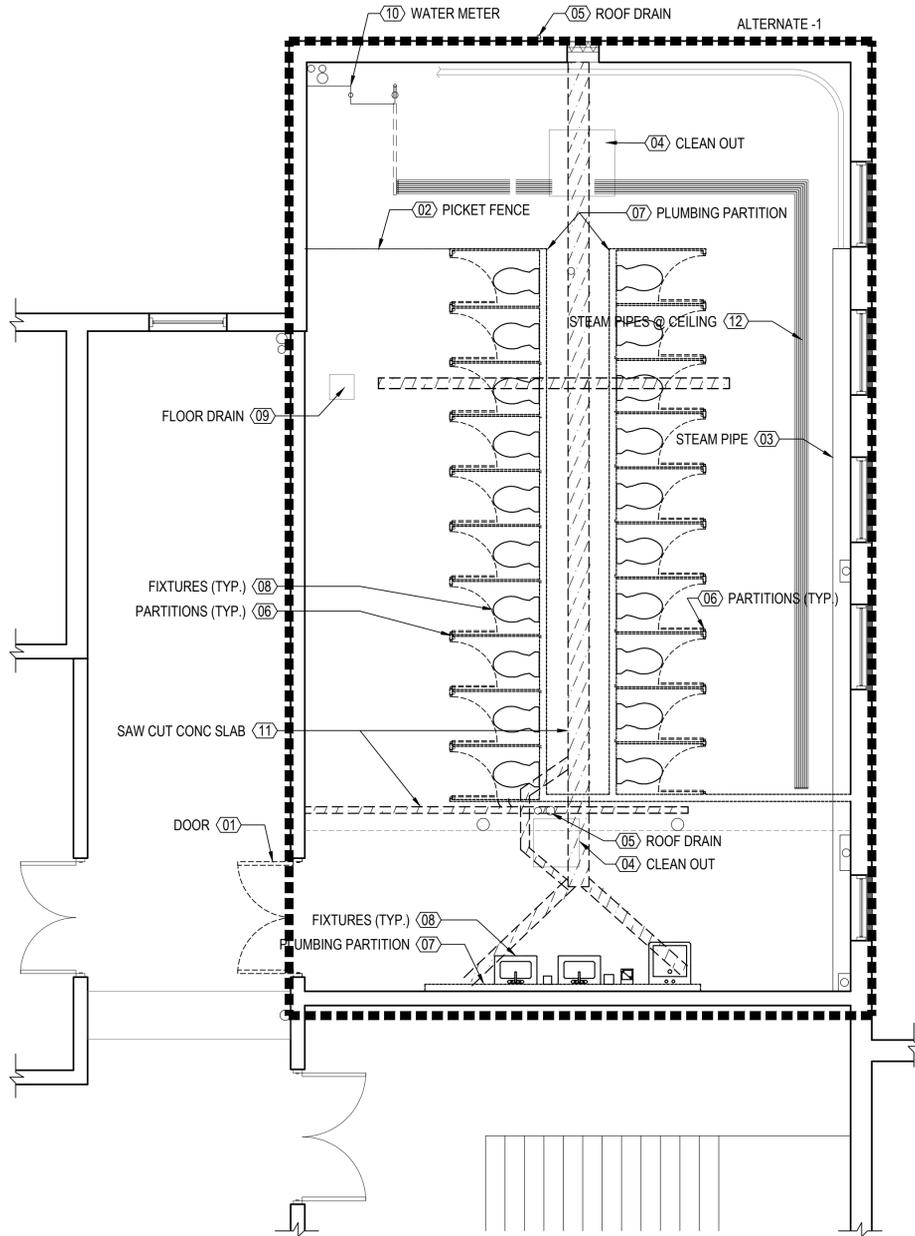
G-1

SHEET 1 OF 15

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1 WEST ROOMS  
1/4" = 1'-0"



2 EAST ROOMS  
1/4" = 1'-0"

**LEGEND:**

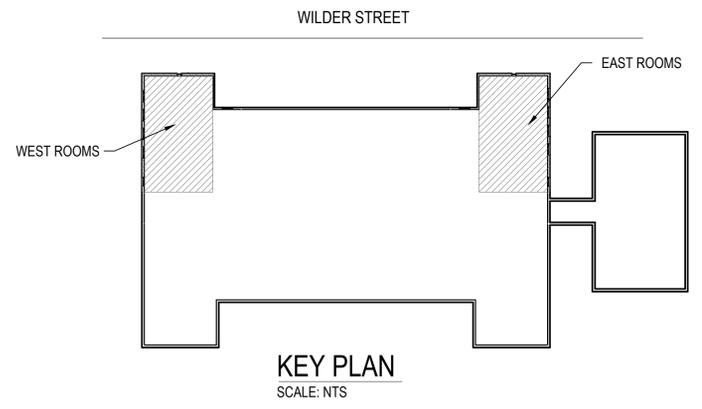
- WALL TO BE DEMOLISHED
- EXISTING WALL TO REMAIN

**GENERAL NOTES:**

1. SEE G-1 FOR ARCHITECTURAL LEGEND AND ABBREVIATIONS.
2. SEE CARDNO ATC "ASBESTOS 3 YEAR RE-INSPECTION REPORT AND UPDATED MANAGEMENT PLAN FOR WASHINGTON ELEMENTARY; PERFORMED SEPTEMBER 25, 2014; FOR ALL ABATEMENT NEEDS. ALL ASBESTOS CONTAINING MATERIAL (ACM) SHALL BE REMOVED PRIOR TO DEMOLITION.
3. ALL WALLS AND FLOORS TO BE PREPPED FOR NEW CONSTRUCTION.
4. ALL STEAM RADIANT PIPING HUNG FROM CEILING TO BE DEMOLISHED AND CAP PIPES.

**KEYNOTES:**

- 01 DOOR: REMOVE EXISTING DOORS AND DISPOSE OF APPROPRIATELY.
- 02 PICKET FENCE: EXISTING PICKET FENCE TO BE REMOVED AND DISPOSED OF APPROPRIATELY.
- 03 STEAM PIPE: PIPE ENCLOSURE TO BE DEMOLISHED. ACTIVE STEAM PIPE PIPES TO REMAIN.
- 04 CLEAN OUT: FRAME AND COVER TO BE DEMOLISHED. SEE PLUMBING DRAWINGS.
- 05 ROOF DRAIN: EXISTING HORIZONTAL ROOF DRAIN TO REMAIN. CAPPED VERTICAL RISER IN FLOOR TO BE DEMOLISHED AND CAPPED BELOW FLOOR. SEE PLUMBING DRAWINGS.
- 06 PARTITIONS: ALL STALL PARTITIONS TO BE DEMOLISHED AND DISPOSED OF AS WELL AS EXISTING POSTS AT PARTITION WALLS.
- 07 PLUMBING PARTITION: EXISTING PLUMBING PARTITION TO BE DEMOLISHED AND DISPOSED OF APPROPRIATELY.
- 08 FIXTURES: DEMOLISH ALL FIXTURES AND DISPOSE OF APPROPRIATELY.
- 09 FLOOR DRAIN: EXISTING TO BE RELOCATED; SEE PLUMBING DRAWINGS.
- 10 WATER METER: EXISTING WATER METER TO REMAIN; SEE PLUMBING DRAWINGS.
- 11 SAW CUT EXISTING CONCRETE FLOOR SLAB FOR NEW PLUMBING. REFER TO PLUMBING DRAWINGS FOR COORDINATION.
- 12 RADIANT PIPING: DEMOLISH STEAM RADIANT PIPING HUNG FROM EXISTING CEILING AND CAP PIPES.



KEY PLAN  
SCALE: NTS

PLAN NORTH

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



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0	3-FEB-16	FOR BIDS

PROJECT NO: 14401-07  
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SHEET TITLE  
**FIRST FLOOR  
DEMOLITION  
PLAN**

**AD-1**  
SHEET 2 OF 15



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**LEGEND:**

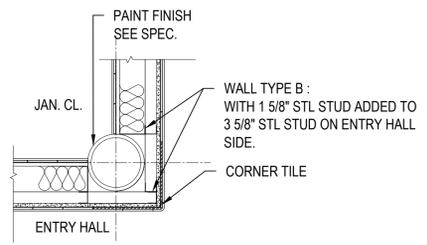
- EXISTING TO REMAIN
- NEW WALL

**GENERAL NOTES:**

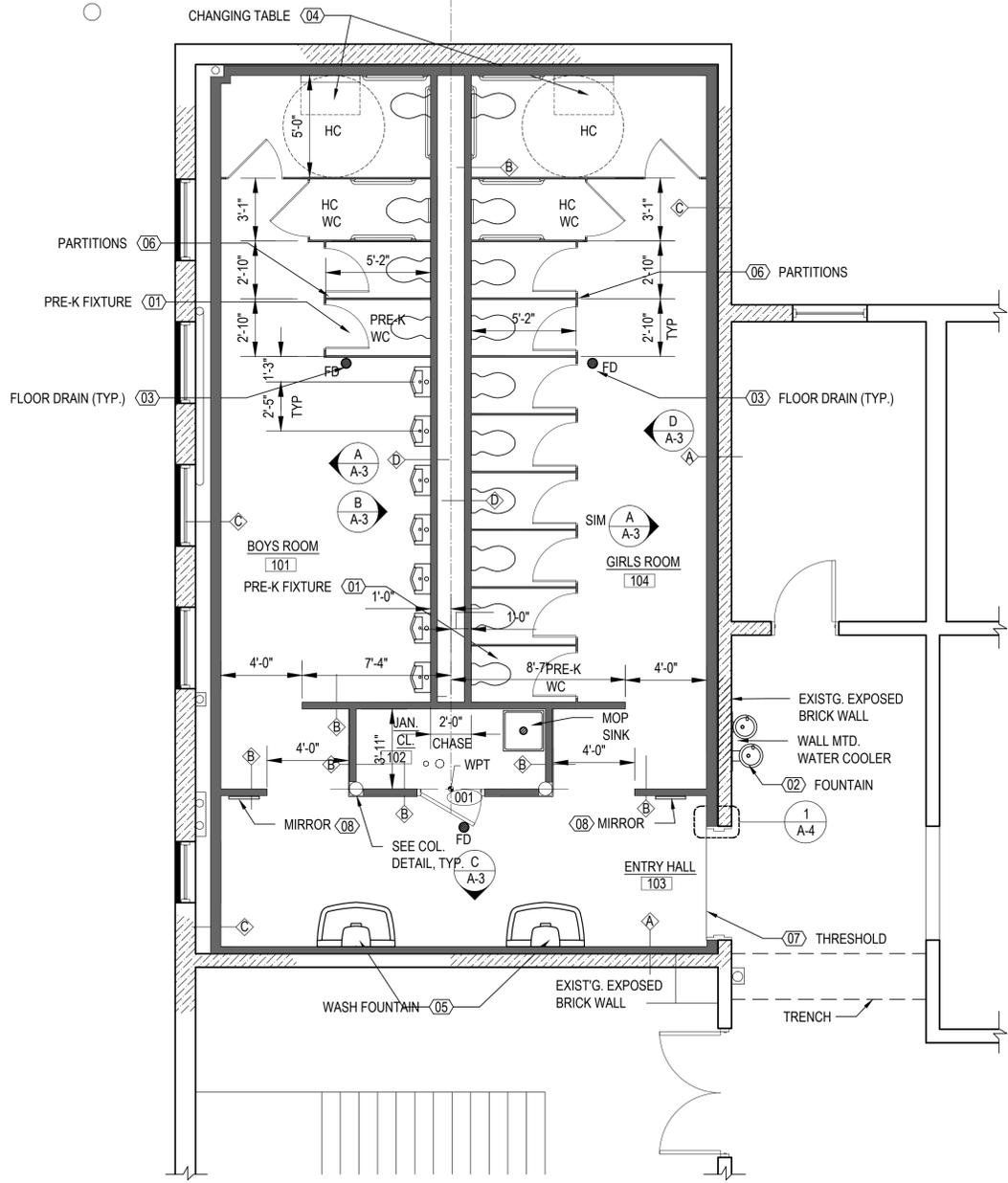
1. SEE G-1 FOR ARCHITECTURAL LEGEND AND ABBREVIATIONS.

**KEYNOTES:**

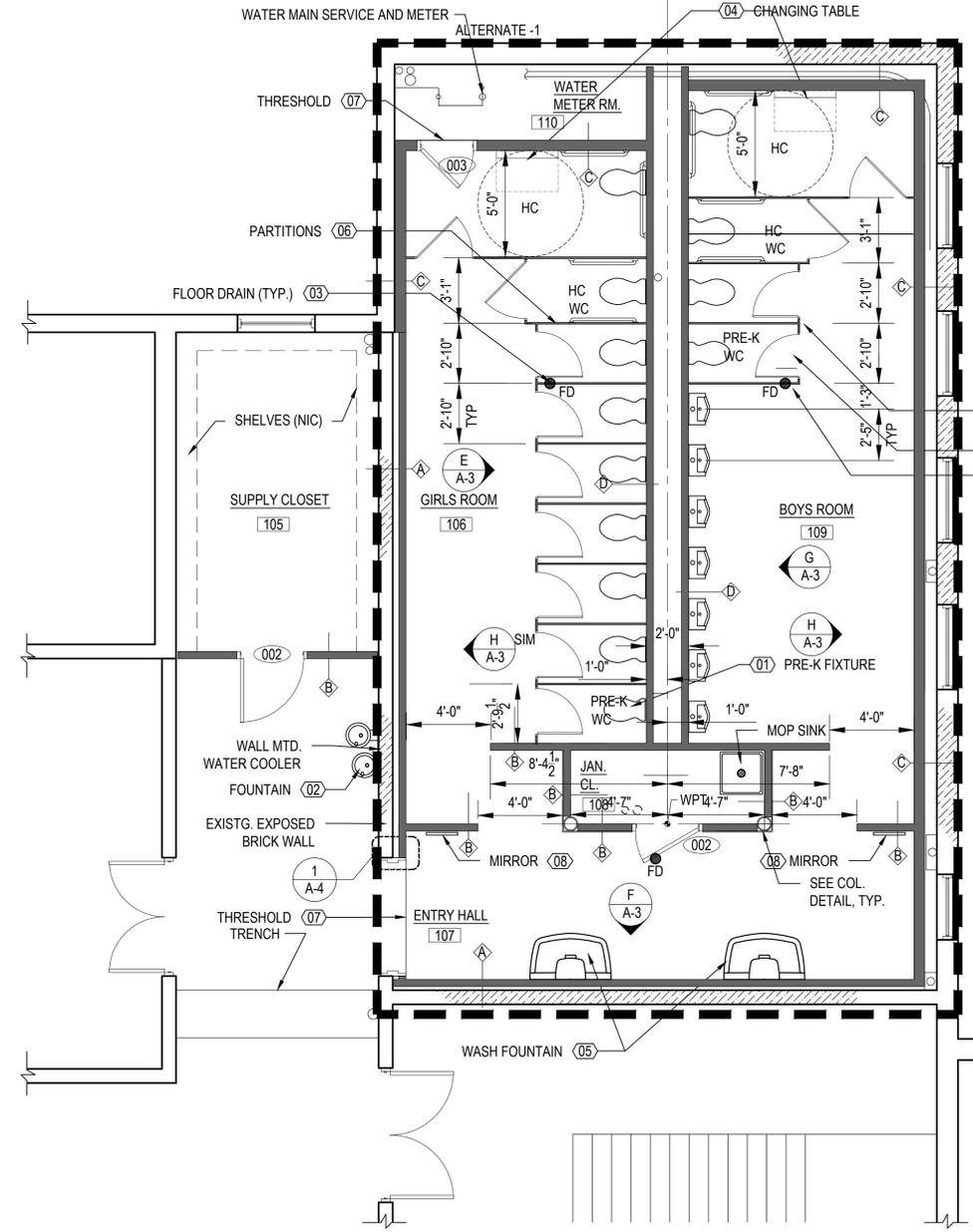
- 01 PRE-KINDERGARTEN FIXTURE: INSTALL PER SPECIFICATION. SEE MOUNTING HEIGHTS A-3.
- 02 FOUNTAIN: INSTALL TWIN HEIGHT DRINKING FOUNTAIN WITH BACKER BOARD AS NEEDED.
- 03 FLOOR DRAIN: FLOOR DRAIN PER PLUMBING DRAWINGS.
- 04 CHANGING TABLES: INSTALL PER SPECIFICATION.
- 05 WASH FOUNTAIN: 42" SEMI CIRCULAR WASH FOUNTAIN.
- 06 PARTITIONS: PER SPECIFICATION.
- 07 THRESHOLD: PER SPECIFICATION. SEE DETAIL 2 / A-4.
- 08 MIRROR: PER SPECIFICATION.



TYPICAL COLUMN DETAIL  
SCALE: 1"=1'-0"

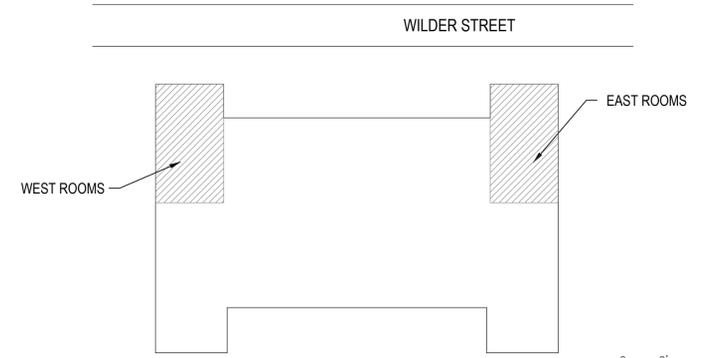


1 WEST ROOMS  
1/4" = 1'-0"

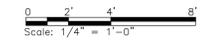


2 EAST ROOMS  
1/4" = 1'-0"

TILING FILED SUB-BID  
REQUIRED



KEY PLAN  
SCALE: NTS



MARK	DATE	FOR BIDS	DESCRIPTION
0	3-FEB-16		

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SHEET TITLE  
FLOOR PLAN

A-1  
SHEET 3 OF 15

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MARK	DATE	DESCRIPTION
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MODEL FILE: A-2.dwg  
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SHEET TITLE  
**REFLECTED  
CEILING PLAN**

**A-2**  
SHEET 4 OF 15

**LEGEND:**

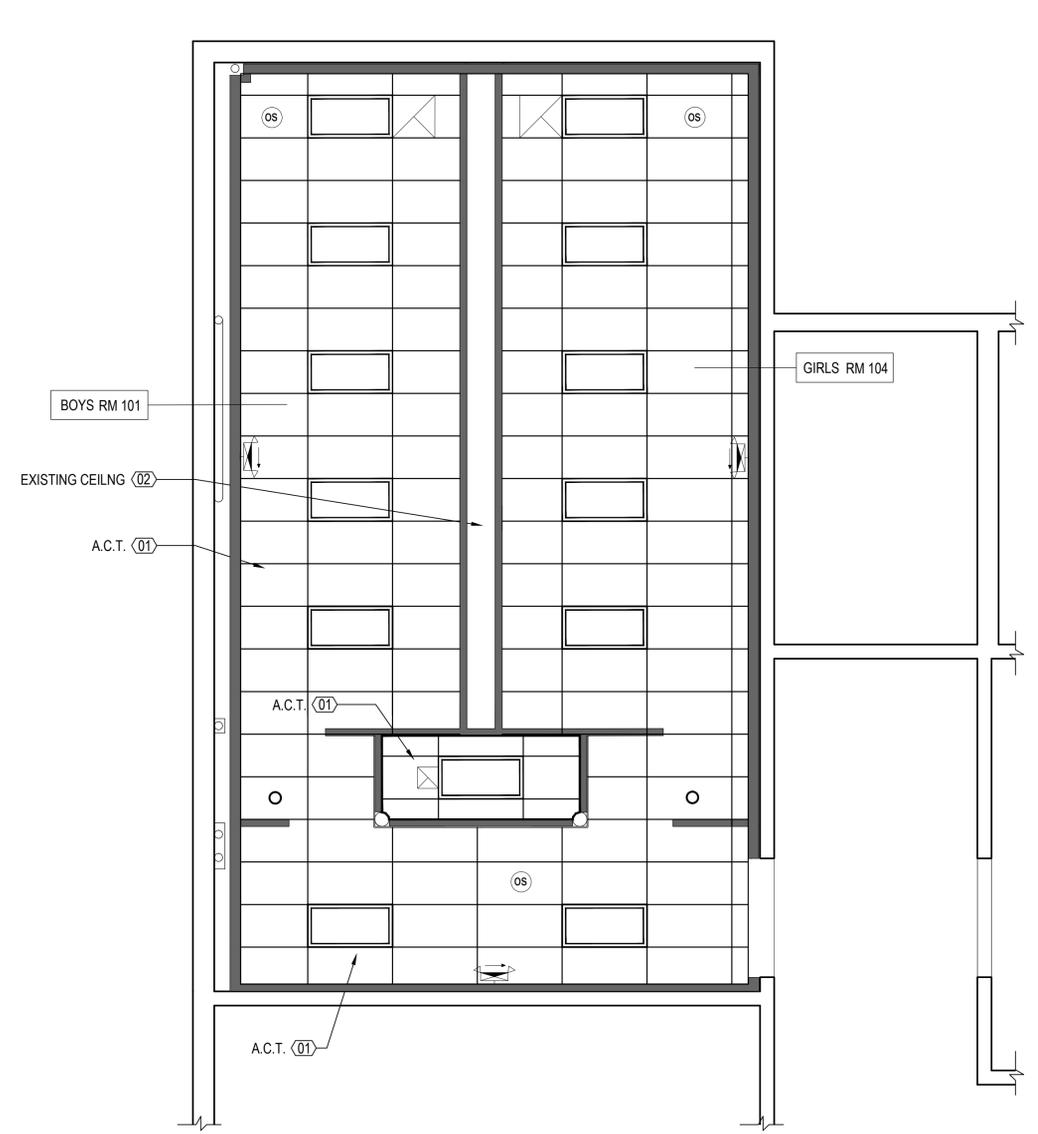
- EXISTING TO REMAIN
- NEW WALL
- 2x4 LAY-IN LIGHT FIXTURE
- PENDENT LIGHT FIXTURE
- RECESSED DOWNLIGHT FIXTURE
- EXIT SIGN / EMERGENCY LIGHT TANDEM
- OCCUPANCY SENSOR
- EXHAUST GRILLE

**GENERAL NOTES:**

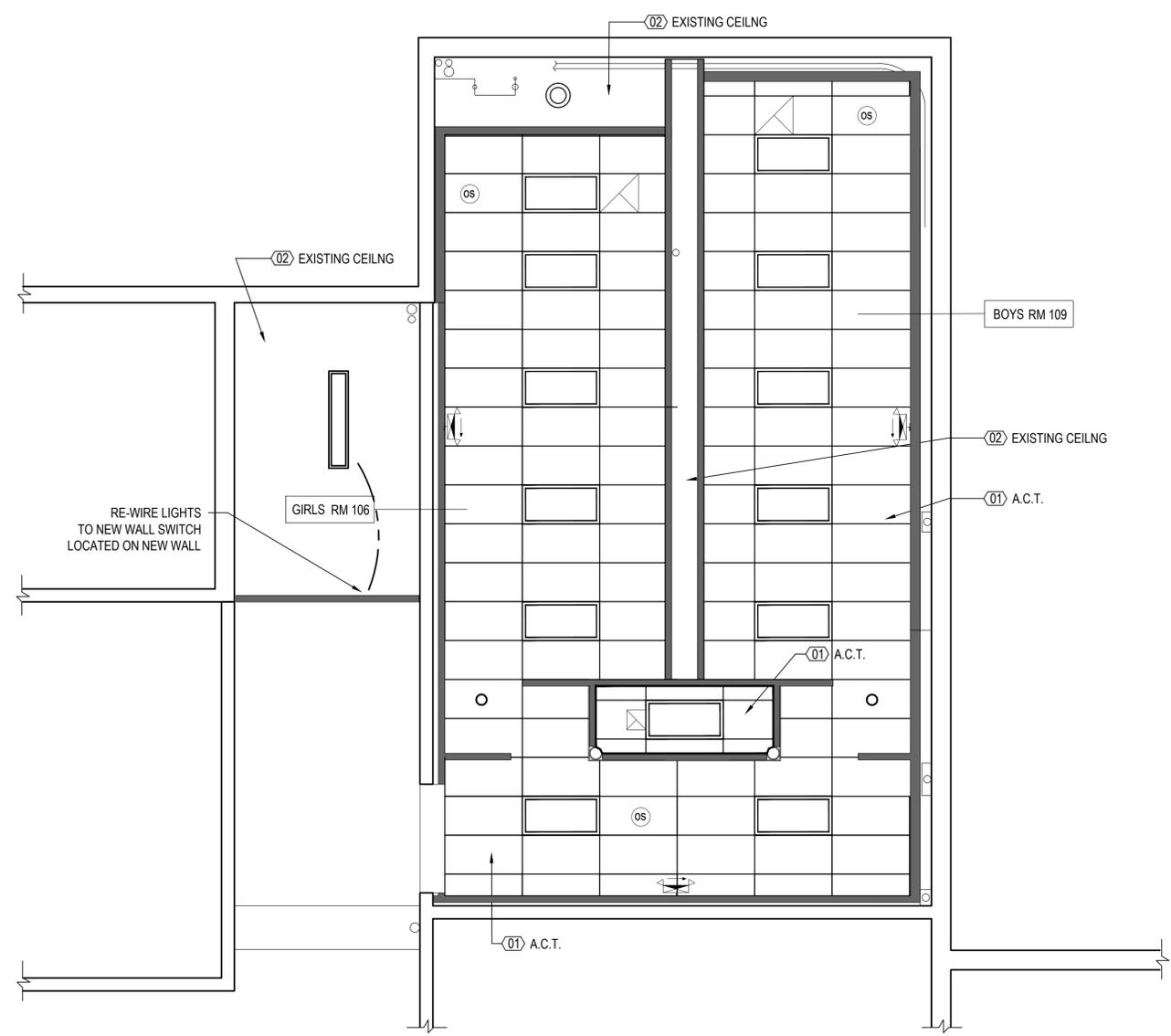
1. SEE SHEET G-1 FOR ARCHITECTURAL LEGEND AND ABBREVIATIONS.

**KEYNOTES:**

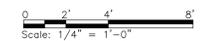
- 01 ACOUSTIC CEILING TILE: SUSPEND ACOUSTIC CEILING TILE FROM EXISTING STRUCTURE.
- 02 EXISTING CEILING: EXISTING CEILING TO REMAIN.



**1 WEST ROOMS**  
1/4" = 1'-0"



**2 EAST ROOMS**  
1/4" = 1'-0"



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CAP TILE : COLOR 1  
 FIELD TILE : COLOR 2  
 BASE TILE : COLOR 1  
 ENTRY HALL ACCENT : COLOR 3 : LIGHT  
 ENTRY HALL ACCENT : COLOR 4 : DARK  
 BOYS ROOMS ACCENT : COLOR 5 : LIGHT  
 BOYS ROOMS ACCENT : COLOR 6 : DARK  
 GIRLS ROOM ACCENT : COLOR 7 : LIGHT  
 GIRLS ROOM ACCENT : COLOR 8 : DARK

CAP TILE 1 (10)  
 ACCENT TILE LIGHT (10)  
 ACCENT TILE DARK (10)  
 FIELD TILE 2 (10)  
 BASE TILE 1 (10)

TYPICAL STALL DESIGN

ENTRY WALL DESIGN

TOP OF WALL TILE  
 EL. 6'-6" A.F.F.

CONTROL JT. (15)

CAP TILE 1 (10)  
 ACCENT TILE LIGHT (10)  
 ACCENT TILE DARK (10)  
 FIELD TILE 2 (10)  
 BASE TILE 1 (10)

6 TILE MODULE IN  
 HEIGHT  
 18 TILE MODULE IN  
 WIDTH

HC.  
 STALL

ENTRY HALL

WALL LENGTH  
 WALL PATTERN ALONG WALL ELEVATION A & H SIMILAR

GENERAL NOTES:

- SEE SHEET G-1 FOR ARCHITECTURAL LEGEND AND ABBREVIATIONS.
- SEE SHEET A-4 FOR MOUNTING HEIGHTS OF FIXTURES.

KEYNOTES: (XX)

- PRE-KINDERGARTEN FIXTURE: INSTALL PER SPECIFICATION. FOR MOUNTING HEIGHT, SEE SHT. A-4
- GRAB BAR: INSTALL ADA ACCESSIBLE GRAB BARS.
- FLOOR DRAIN: FLOOR DRAIN PER PLUMBING DRAWINGS.
- CHANGING TABLE: INSTALL PER SPECIFICATION.
- WASH FOUNTAIN: 42" SEMI CIRCULAR WASH FOUNTAIN.
- PARTITION: SEE SPECIFICATION.
- PAPER TOWEL DISPENSER: PROVIDE PAPER TOWEL DISPENSER PER SPECIFICATION.
- NOT USED
- TOILET PAPER DISPENSER: PROVIDE TOILET PAPER DISPENSER PER SPECIFICATION.
- TILE: CERAMIC WALL TILE ; SEE SPECIFICATION.
- NOT USED
- NOT USED
- ACOUSTIC CEILING TILE: SUSPEND ACOUSTIC CEILING TILE FROM EXISTING STRUCTURE.
- GYPSUM BOARD: MOISTURE RESISTANT GYPSUM WALL BOARD. SEE DRAWING A-4 FOR WALL TYPES.
- CONTROL JOINT: SEE SPECIFICATIONS. CENTERED AS SHOWN. FIELD VERIFY.

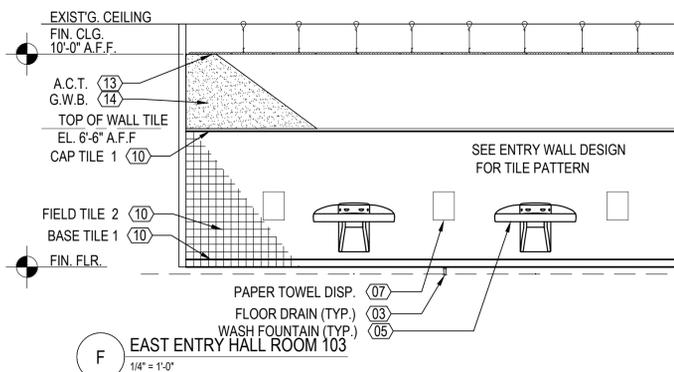
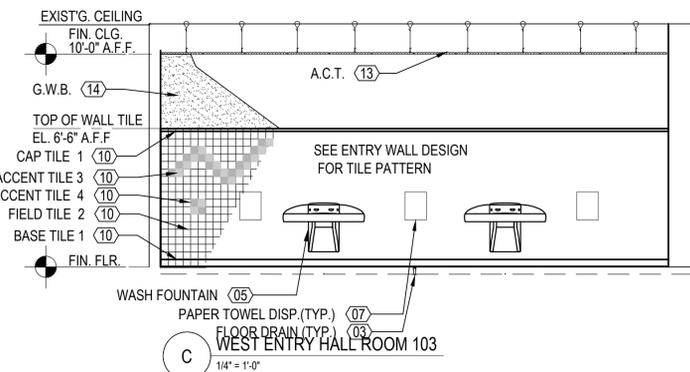
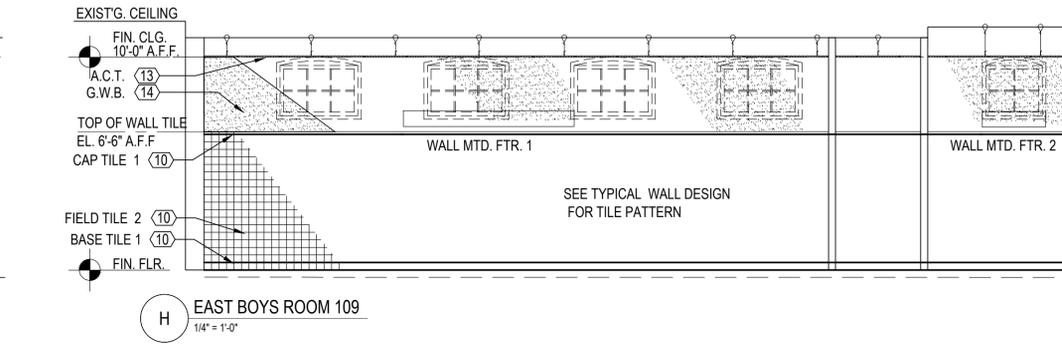
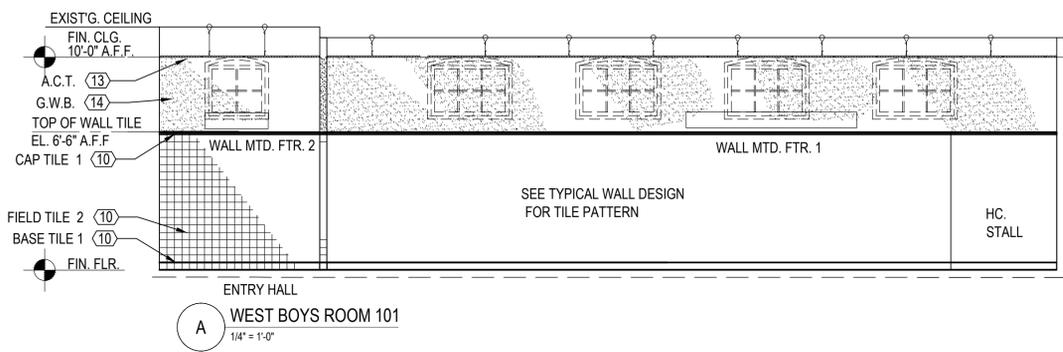
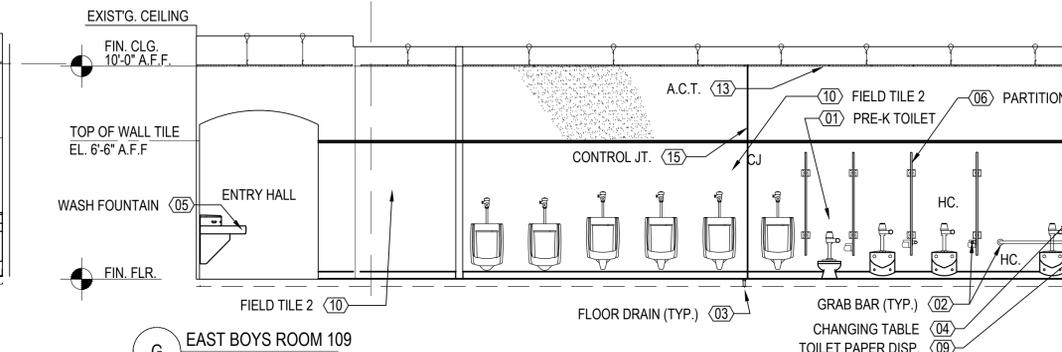
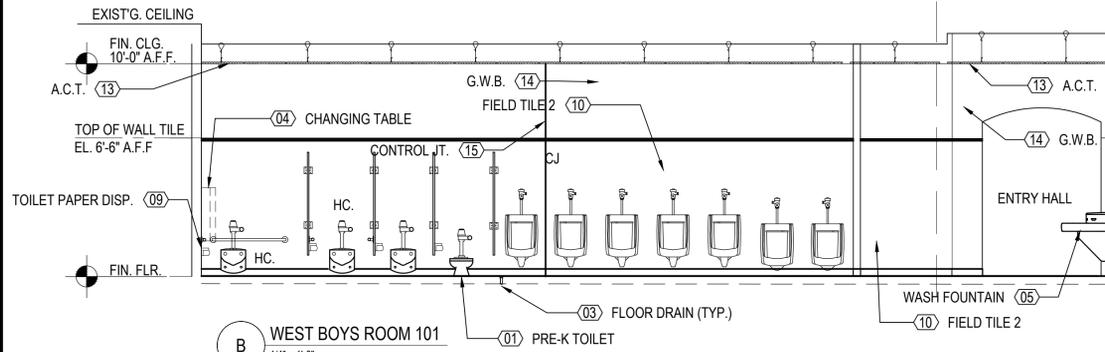
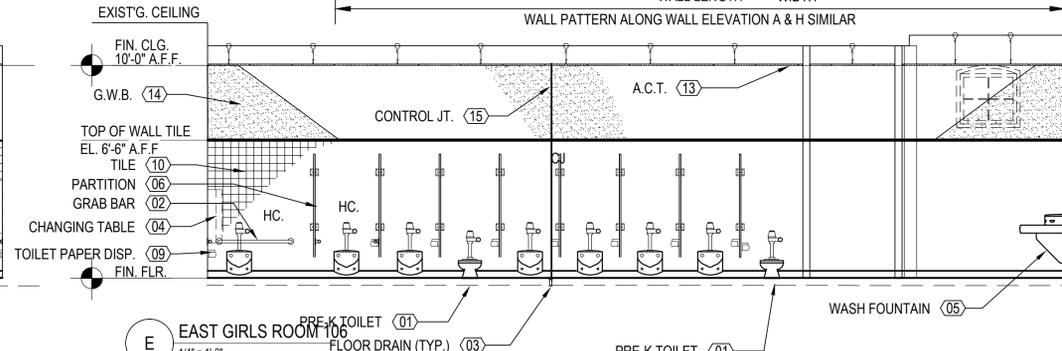
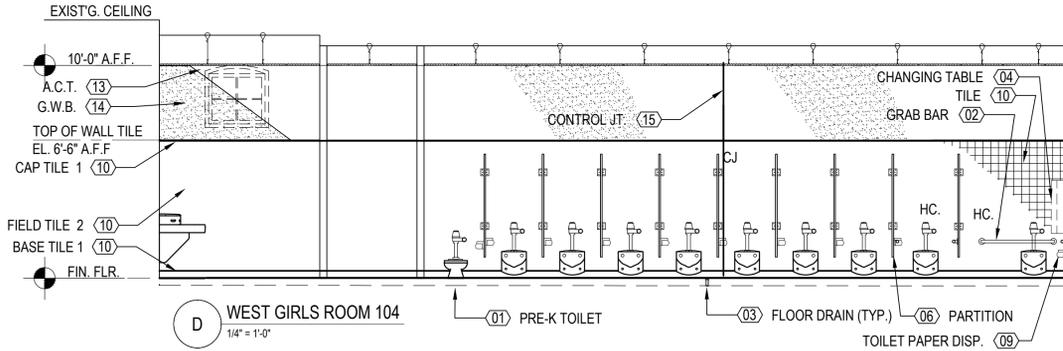


Lowell  
 Public Schools

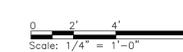
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TILING FILED SUB-BID  
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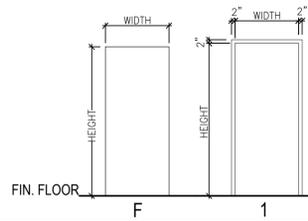
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PROJECT NO: 14401-07  
 MODEL FILE: A3.dwg  
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 CHKD BY: POB  
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SHEET TITLE  
 INTERIOR  
 ELEVATIONS

DOOR AND FRAME TYPES



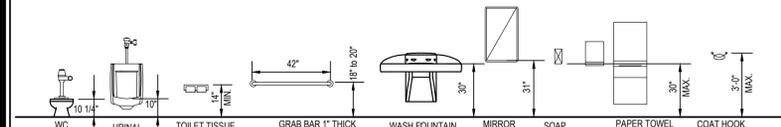
DOOR HARDWARE

- HARDWARE SETS**  
**SET #1**  
 1 1/2 PAIR BALL BEARING BUTT HINGES.  
 LEVER HANDLE CYLINDER BORE LOCKSET  
 3 RUBBER SILENCERS  
 2 KICK PLATES.

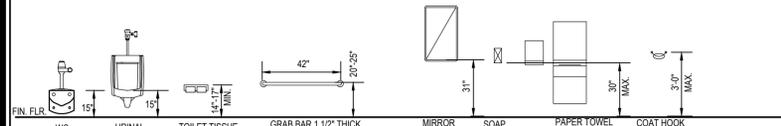
DOOR AND FRAME SCHEDULE

NO.	ROOM NAME	SIZE			DOOR			FRAME			HARDWARE SET NO.	REMARKS
		W	HT	THK	TYPE	MAT'L	FINISH	TYPE	MAT'L	FIN.		
001	JAN. CL.	3'-0"	7'-0"	0'-1 3/4"	F	HM	PT	1	HM	PT	1	1" UNDERCUT
002	JAN. / SUPPLY	3'-0"	7'-0"	0'-1 3/4"	F	HM	PT	1	HM	PT	1	1" UNDERCUT
003	WATER MTR.	2'-6"	7'-0"	0'-1 3/4"	F	HM	PT	1	HM	PT	1	1" UNDERCUT

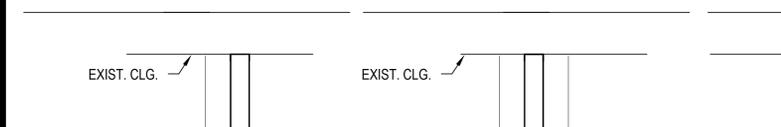
TYPICAL MOUNTING HEIGHTS



PRE-KINDERGARTEN MOUNTING HEIGHTS



KINDERGARTEN-THIRD GRADE MOUNTING HEIGHTS



ROOM FINISH SCHEDULE

No.	NAME	WALLS				FLOOR	BASE	CEILING	NOTES
		NORTH	SOUTH	EAST	WEST				
101	BOYS RM. WEST	CT / PT	CT / PT	CT / PT	CT / PT	F	CB	ACT	
102	JANITORS CL. WEST	CT / PT	CT / PT	CT / PT	CT / PT	F	CB	ACT	INTERIOR - FIELD TILE 4'-0" AFF. ON WALL
103	ENTRY HALL WEST	CT / PT	CT / PT	CT / PT	CT / PT	F	CB	ACT	
104	GIRLS RM. WEST	CT / PT	CT / PT	CT / PT	CT / PT	F	CB	ACT	
105	SUPPLY CL. EAST		PT				VB *	ETR	* BOTH SIDES OF NEW WALL
106	GIRLS RM. EAST	CT / PT	CT / PT	CT / PT	CT / PT	F	CB	ACT	
107	ENTRY HALL EAST	CT / PT	CT / PT	CT / PT	CT / PT	F	CB	ACT	
108	JANITORS CL. EAST	CT / PT	CT / PT	CT / PT	CT / PT	F	CB	ACT	
109	BOYS RM. EAST	CT / PT	CT / PT	CT / PT	CT / PT	F	CB	ACT	
110	METER RM. EAST		PT	PT		ETR	VB *	-	* ON NEW WALLS ONLY

ACT: ACOUSTIC CEILING TILE  
 CT: CERAMIC TILE  
 CB: CERAMIC COVE BASE  
 CEM. BD. CEMENT BOARD  
 F: FLUID APPLIED FLR.  
 GWB: GYPSUM WALL BOARD  
 PT: PAINT  
 VB: VINYL BASE  
 SC: SEALED CONCRETE

NOTE: REFER TO SHT. A-4 FOR PARTITION (WALL) TYPES

GENERAL NOTES:

1. SEE G-1 FOR ARCHITECTURAL LEGEND AND ABBREVIATIONS.

KEYNOTES: XX

- ACOUSTIC CEILING TILE: SUSPENDED ACOUSTIC CEILING TILE FROM EXISTING STRUCTURE.
- GYPSUM BOARD: 5/8" WATER RESISTANT GYPSUM WALL BOARD.
- STEEL STUD: STEEL STUD; SEE WALL TYPE SCHEDULE.
- INSULATION: 6" FIBERGLASS BATT INSULATION.
- VAPOR BARRIER: 10 MIL. POLYETHYLENE SHEET.
- BACKER BOARD: 1/2" TILE BACKER BOARD PER SPECIFICATION.
- TILE: TILE PER SPECIFICATION.
- SOUND BATT: SOUND ATTENUATION BOARD; SEE WALL TYPE SCHEDULE.



Lowell  
Public Schools

**Watermark**  
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WASHINGTON ELEMENTARY SCHOOL  
 BOYS AND GIRLS ROOMS  
 RENOVATION

795 WILDER STREET  
 LOWELL, MA 01851  
 PREPARED FOR:  
 LOWELL PUBLIC SCHOOLS

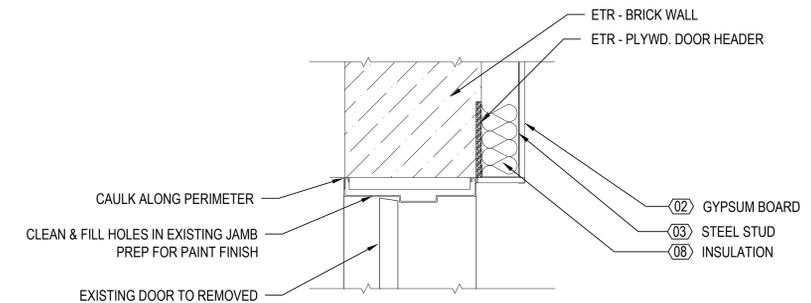
MARK	DATE	FOR BIDS	DESCRIPTION
0	3-FEB-16		

PROJECT NO: 14401-07  
 MODEL FILE: A-4.dwg  
 DRAWN BY: GFA  
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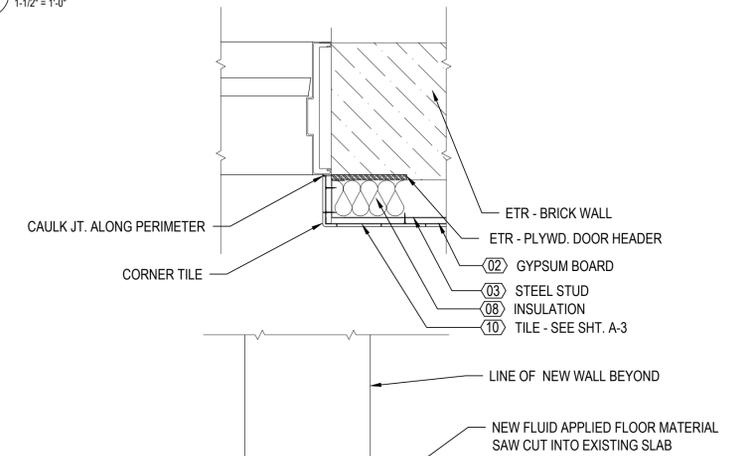
SCHEDULES AND DETAILS

A-4

SHEET 6 OF 15

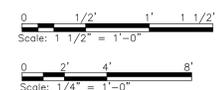


1 DETAIL - DOORWAY HEAD & JAMB  
 1-1/2" = 1'-0"

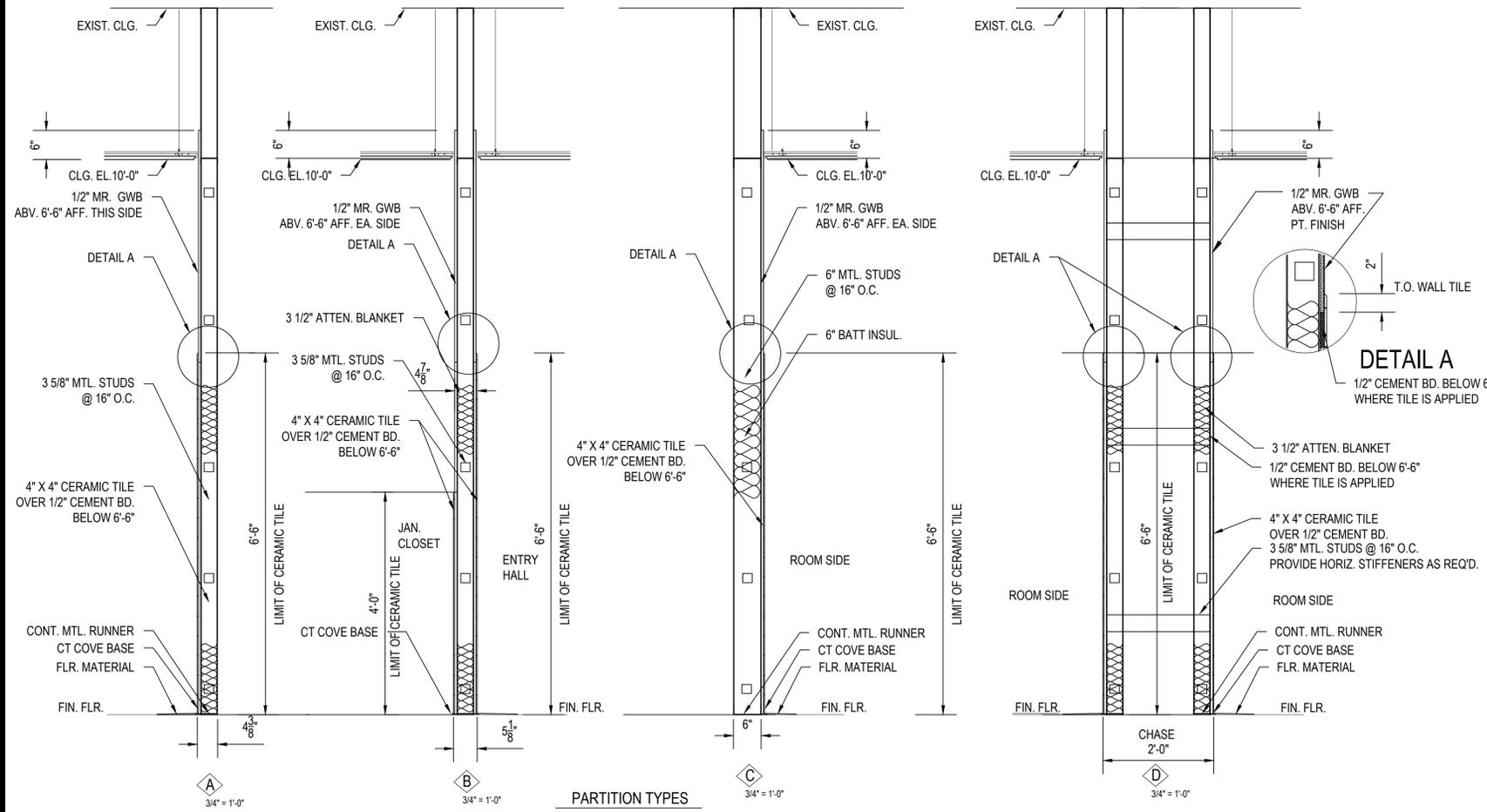


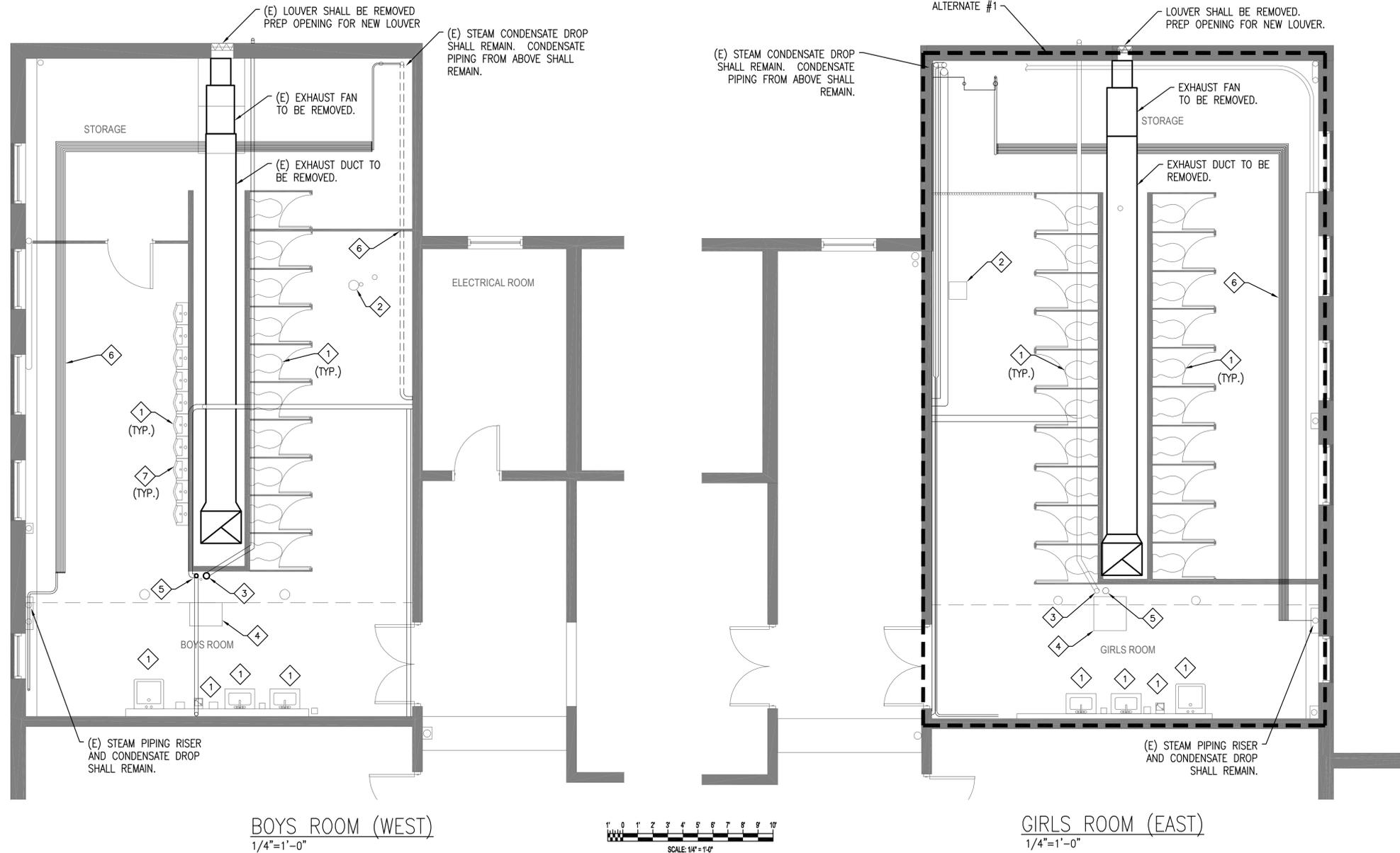
DETAIL - THRESHOLD (@ ENTRY)  
 1-1/2" = 1'-0"

TILING FILED SUB-BID  
 REQUIRED



Plot Date: 4/20/2015 4:52:52 PM File Path: J:\01 Projects\1000\14401-07 Lowell Public Schools Washington Boys & Girls Rooms\11.0 Working Files\5 - Working Files\Drawings\A-4.dwg





- KEYED SHEET NOTES:**
- 1 REMOVE FIXTURE AND ALL ASSOCIATED TRIM AND SUPPORTS. REMOVE SANITARY, VENT AND SUPPLY PIPING TO EXISTING MAINS AND PREPARE FOR CONNECTION OF NEW FIXTURE.
  - 2 REMOVE FLOOR DRAIN TO A POINT BELOW FLOOR AND CAP. PATCH FLOOR TO MATCH EXISTING.
  - 3 REMOVE (E) CAPPED STORM DRAIN RISER TO BELOW FLOOR AND CAP.
  - 4 REMOVE (E) AND CAP OPENINGS. CLEANOUTS DEMOLISH PIT FRAME AND STEEL COVER PREP FOR CONCRETE INFILL.
  - 5 REMOVE (E) STACK AND RELOCATE INTO PLUMBING CHASE.
  - 6 REMOVE (E) STEAM PIPING.
  - 7 URINAL REMOVAL SHALL INCLUDE CUTTING OUT CONCRETE FLOOR.

**Lowell Public Schools**

**Watermark**  
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WASHINGTON ELEMENTARY SCHOOL  
BOYS AND GIRLS ROOMS  
RENOVATION  
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MARK	DATE	DESCRIPTION
0	3-FEB-16	FOR BIDS

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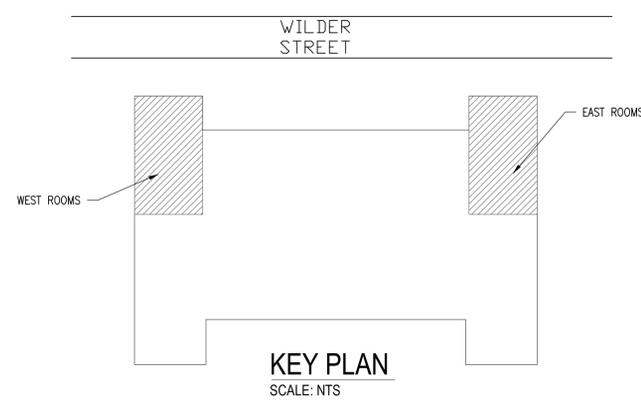
**PLUMBING,  
MECHANICAL  
& ELECTRICAL  
DEMOLITION  
PLAN**

**D-101**

SHEET 7 OF 15

**DEMOLITION NOTES:**

1. DEMOLITION PLANS INDICATE MAJOR EQUIPMENT ONLY THAT IS TO BE DEMOLISHED OR RELOCATED. REFER TO AND COORDINATE WITH THE ARCHITECTURAL DEMOLITION PLANS.
2. BEFORE STARTING DEMOLITION, PROVIDE NECESSARY PROTECTIVE DEVICES WHERE REQUIRED AND IN STRICT ACCORDANCE WITH OSHA REGULATIONS.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE CONDITION OF ALL EXISTING EQUIPMENT. EXACT SIZES OF EXISTING DUCT, PIPING, ETC. BEFORE DEMOLITION WORK IS STARTED. REPORT ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL FIELD CONDITIONS TO ENGINEER PRIOR TO THE COMMENCEMENT OF DEMOLITION WORK.
4. REMOVE THE INDICATED ITEMS AS SHOWN ON THE PLANS. THIS INCLUDES ALL HANGERS, STRAPS, AND RELATED MATERIAL.
5. CAP AND SEAL AIR TIGHT ALL POINTS AT WHICH DUCTWORK IS REMOVED FROM DUCTWORK THAT WILL REMAIN.
6. PATCH OPENINGS IN WALLS TO MAINTAIN THE INTEGRITY OF THE WALL WHERE DUCTWORK OR PIPING HAS BEEN REMOVED.
7. TAKE NECESSARY PRECAUTIONS TO PREVENT DUST AND DIRT FROM MIGRATING TO OCCUPIED AREAS OF THE BUILDING. THIS INCLUDES BLANKING OFF ANY RETURN AIR GRILLES/DUCTS IN THE WORK AREA. PROVIDE TEMPORARY EXHAUST FANS, DUCTED DIRECTLY TO OUTDOORS, TO MAINTAIN NEGATIVE PRESSURE WITHIN THE WORK AREA.
8. KEEP ALL ADJOINING AREAS CLEAN AND FREE OF DEBRIS.
9. ALL DEMOLISHED MATERIALS SHALL BE REMOVED AND DISPOSED OF OFFSITE.
10. REPAIR/REPLACE EXISTING EQUIPMENT/MATERIALS NOT SCHEDULED OR NOTED TO BE DEMOLISHED BUT BECOME DAMAGED DURING THE PROGRESS OF WORK. MAKE ANY AND ALL SUCH REPAIRS, REPLACEMENTS, MODIFICATIONS TO RESTORE THE DAMAGED ITEMS TO THEIR ORIGINAL CONDITIONS AT THE TIME OF DAMAGE, TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO THE OWNER.
11. PRIOR TO ANY DEMOLITION ALL ASBESTOS CONTAINING MATERIAL (ACM) SHALL BE REMOVED BY A LICENSED ASBESTOS REMOVAL CONTRACTOR IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. ALL PIPE INSULATION SHALL BE ASSUMED TO BE ACM.
12. WORK SHALL BE PERFORMED IN ACCORDANCE WITH AHERA AND THE FOLLOWING REPORT: "ASBESTOS 3-YEAR RE-INSPECTION REPORT AND UPDATE MANAGEMENT PLAN, WASHINGTON ELEMENTARY SCHOOL, 795 WILDER STREET, LOWELL, MASSACHUSETTS 01851" PREPARED BY CARDNO ATC SEPTEMBER 25, 2014.
13. DEMOLISH AND REMOVE ELECTRICAL DEVICES AS INDICATED ON ARCHITECTURAL SHEETS.



SUB-BIDS SHALL BE SUBMITTED FOR THE WORK OF THIS SECTION IN ACCORDANCE WITH THE PROVISIONS OF M.G.L. C.149 44A-J. THE TIME AND PLACE FOR SUBMISSION OF SUB-BIDS ARE SET FORTH IN THE ADVERTISEMENT. THE PROCEDURES AND REQUIREMENTS FOR SUBMITTING SUB-BIDS ARE SET FORTH IN THE INSTRUCTIONS TO BIDDERS.

SUB-BIDDERS MUST BE DCAM CERTIFIED IN THE LISTED TRADE AND SHALL INCLUDE A CURRENT DCAM SUB-BIDDER CERTIFICATE OF ELIGIBILITY AND A SIGNED DCAM SUB-BIDDER'S UPDATE STATEMENT WITH THE BID



Lowell Public Schools



WASHINGTON ELEMENTARY SCHOOL BOYS AND GIRLS ROOMS RENOVATION

Table with 2 columns: MARK, DATE, DESCRIPTION

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PLUMBING LEGENDS, NOTES AND SPECS

P-001

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ABBREVIATIONS table with columns for symbol, description, and another symbol/description.

PIPING SYSTEMS table with columns for symbol and description.

MISCELLANEOUS SYMBOLS table with columns for symbol and description.

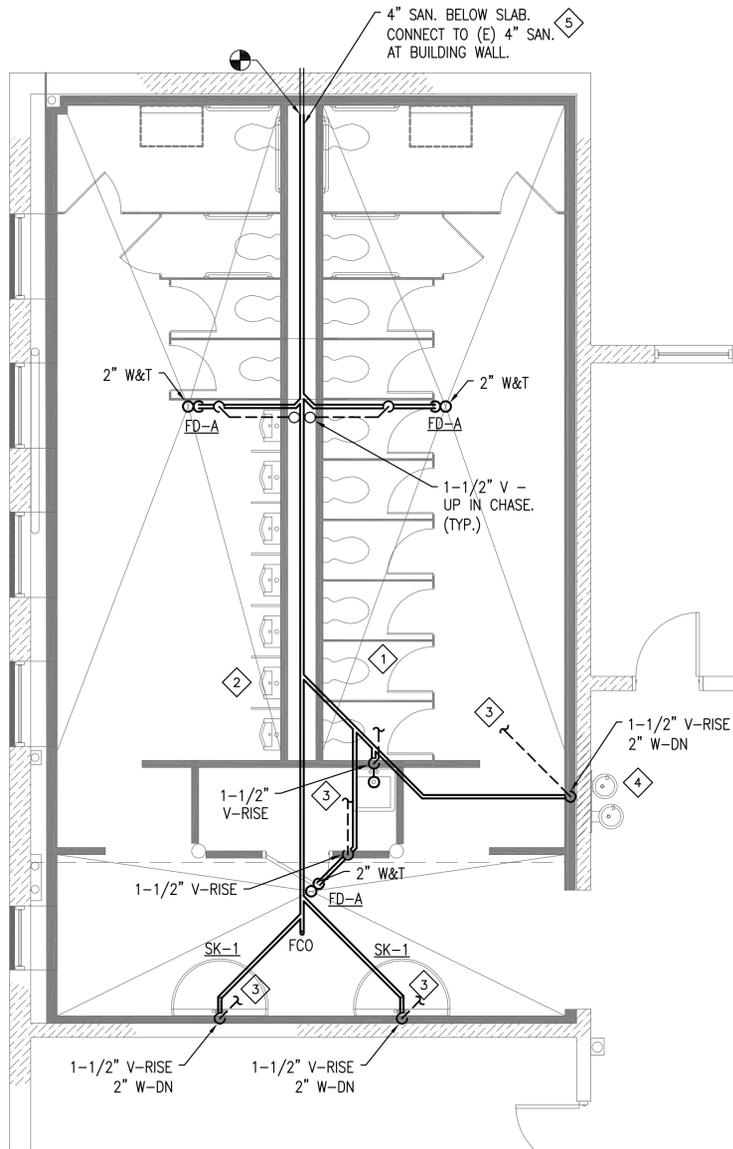
PIPING SYMBOLS table with columns for symbol and description.

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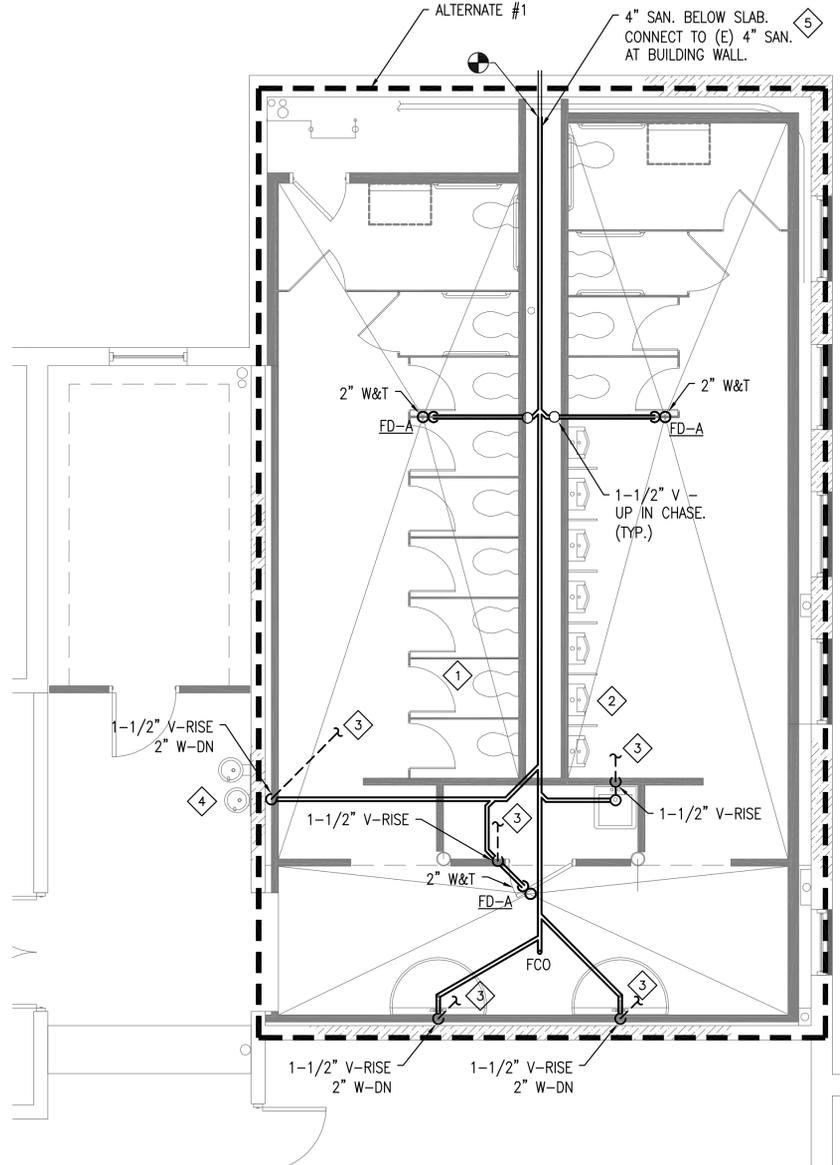
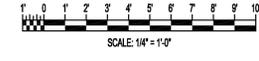
GENERAL PROJECT NOTES

- 1. IT IS THE INTENT OF THESE DRAWINGS TO SHOW COMPLETE AND FUNCTIONAL SYSTEMS THAT ARE IN COMPLIANCE WITH ALL INDUSTRY STANDARDS AND APPLICABLE CODES. ANY DISCREPANCIES SHOULD BE BROUGHT TO THE ENGINEER'S ATTENTION.
2. ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION AND ALL APPLICABLE CODES. ALL WORK SHALL CONFORM TO EQUIPMENT MANUFACTURER'S INSTRUCTIONS AND INDUSTRY STANDARDS.
3. ALL WORKMANSHIP SHALL BE OF THE HIGHEST STANDARDS. INSTALL ALL WORK IN A NEAT, SYSTEMATIC AND ORDERLY ARRANGEMENT. ALL MATERIAL SHALL BE NEW AND OF THE BEST QUALITY AVAILABLE; FREE FROM ALL DEFECTS. THE CONTRACTOR SHALL GUARANTEE THE MATERIALS AND INSTALLATION FOR ONE YEAR FROM THE PROJECT ACCEPTANCE DATE AGAINST ANY DEFECTS DUE TO FAULTY MATERIALS, EQUIPMENT, WORKMANSHIP, OR INSTALLATION. UPON NOTICE OF THE DEFECT, THE CONTRACTOR SHALL REPLACE OR REPAIR THE DEFECTIVE ITEM AT NO ADDITIONAL COST.
4. THE CONTRACTOR SHALL VISIT THE JOB SITE TO VERIFY ALL EXISTING FIELD CONDITIONS, DIMENSIONS AND OBSTRUCTIONS.
5. ALL PIPING AND DUCTWORK IS SHOWN DIAGRAMMATICALLY. PIPING AND SYSTEMS SHALL FOLLOW ARRANGEMENT AS MUCH AS POSSIBLE, HOWEVER, ACTUAL FIELD CONDITIONS SHALL DICTATE. CAREFULLY COORDINATE THE SPACE REQUIREMENTS AND LOCATIONS OF ALL DUCTWORK WITH ALL OTHER TRADES. GIVE PRIORITY TO GRAVITY DRAINAGE PIPING.
6. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLAN FOR EXACT LOCATION OF WALLS, DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
7. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE WORK OF ALL OTHER TRADES. SHOULD ANY DISCREPANCIES BE DISCOVERED IN ANY OF THE BID DOCUMENTS, (INCLUDING ALL OTHER DIVISIONS). THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING ANY FURTHER WITH THE WORK, OTHERWISE THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COST INVOLVED WITH THE CORRECTION OF THE CONSTRUCTION INSTALLATION.
8. ALL EQUIPMENT, PIPING, ETC. SHALL BE SUPPORTED FROM THE BUILDING'S STRUCTURAL FRAME AND MEMBERS. ALL WORK SHALL BE NEW UNLESS OTHERWISE NOTED AS EXISTING.

- 9. THE CONTRACTOR SHALL PERFORM TESTS ON ALL MECHANICAL SYSTEMS AS REQUIRED BY FEDERAL, STATE, AND LOCAL CODES AND REGULATIONS. ALL TESTS SHALL BE WITNESSED AND ACCEPTED BY THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL PROVIDE ALL SERVICES AND MATERIALS REQUIRED BY THE TEST AND CERTIFY IN WRITING THAT ALL WORK HAS PASSED ALL REQUIRED TESTS.
10. WHERE PIPES AND DUCTS PENETRATE WALLS OR FLOOR, THE SPACE BETWEEN THE STRUCTURE AND THE DUCT OR PIPE SHALL BE SEALED AIRTIGHT WITH AN APPROVED MATERIAL. PROVIDE FIRE STOPS AND/OR SEALANT AROUND ALL PENETRATIONS THAT HAVE A FIRE RATING GREATER THAN OR EQUAL TO THE FIRE RATING OF THE WALL, FLOOR OR ENCLOSURE.
11. PROVIDE ACCESS PANELS FOR ALL VALVES, DAMPERS, CLEANOUTS ETC. THAT REQUIRE ACCESS.
12. ALL PIPING SHALL BE CONCEALED IN WALLS OR ABOVE CEILING.
13. GENERAL CONTRACTOR OWNS ALL CUTTING AND PATCHING REQUIRED IN WALLS AND CONCRETE FLOOR.
14. PRIOR TO ANY DEMOLITION ALL ASBESTOS CONTAINING MATERIAL (ACM) SHALL BE REMOVED BY A LICENSED ASBESTOS REMOVAL CONTRACTOR IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. ALL PIPE INSULATION SHALL BE ASSUMED TO BE ACM.
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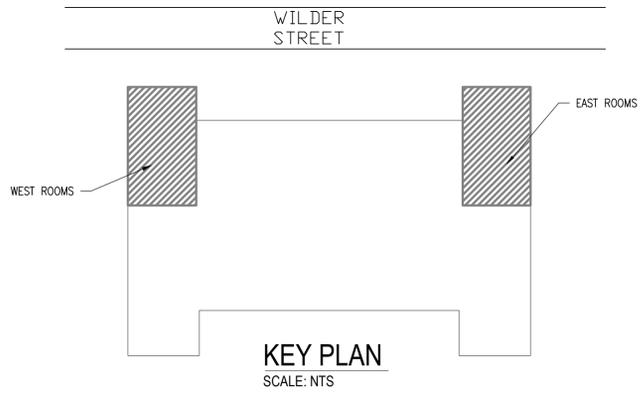


WEST TOILET ROOMS  
1/4"=1'-0"



EAST TOILET ROOMS  
1/4"=1'-0"

- KEYED SHEET NOTES:**
- 1 2" V-RISE AND 4" S. TYP. FOR ALL WC'S. SEE DWV ISOMETRIC ON SHEET P-401 FOR PIPING ARRANGEMENT.
  - 2 2" V-RISE AND 2" S-DIC. CTE 4" SANITARY BELOW SLAB. TYP. FOR ALL URINALS. SEE DWV ISOMETRIC ON SHEET P-401 FOR PIPING ARRANGEMENT.
  - 3 ROUTE NEW VENT PIPING TO EXISTING 4" VTR AND CONNECT. SEE DWV ISOMETRIC ON SHEET P-401 FOR PIPING ARRANGEMENT.
  - 4 INSTALLATION OF WATER COOLER REQUIRES DRILLING THROUGH THE (E) BRICK WALL FOR PIPING PENETRATIONS AND FASTENING HANGER TO (E) BRICK WALL.
  - 5 SNAKE OUT (E) LINE AND VERIFY PIPE INTEGRITY PRIOR TO CONNECTION.



WASHINGTON ELEMENTARY SCHOOL  
BOYS AND GIRLS ROOMS  
RENOVATION  
795 WILDER STREET  
LOWELL, MA 01851  
PREPARED FOR:  
LOWELL PUBLIC SCHOOLS

MARK	DATE	DESCRIPTION
0	3-FEB-16	FOR BIDS

PROJECT NO: 14401-07  
MODEL FILE:  
DRAWN BY: CR  
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**PLUMBING  
DRAINAGE,  
WASTE &  
VENT PLAN**

**P-101**  
SHEET 9 OF 15

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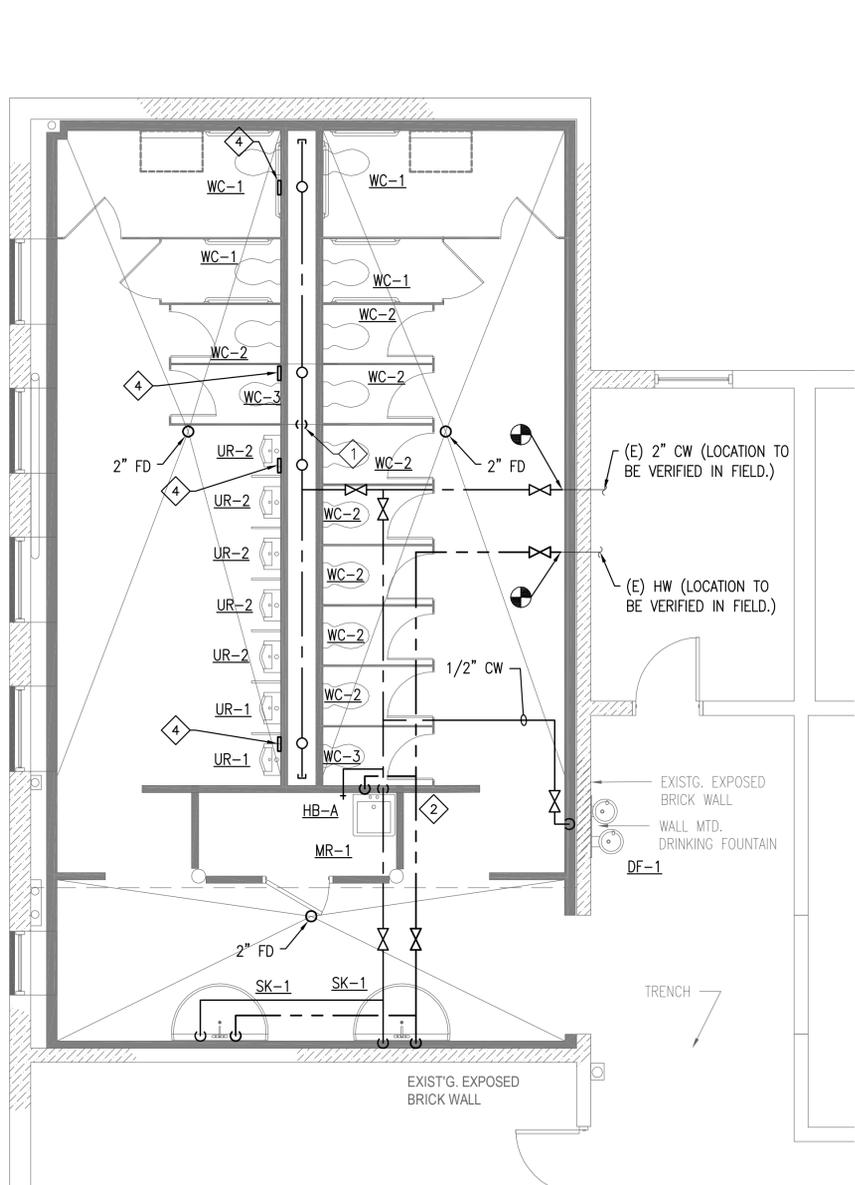
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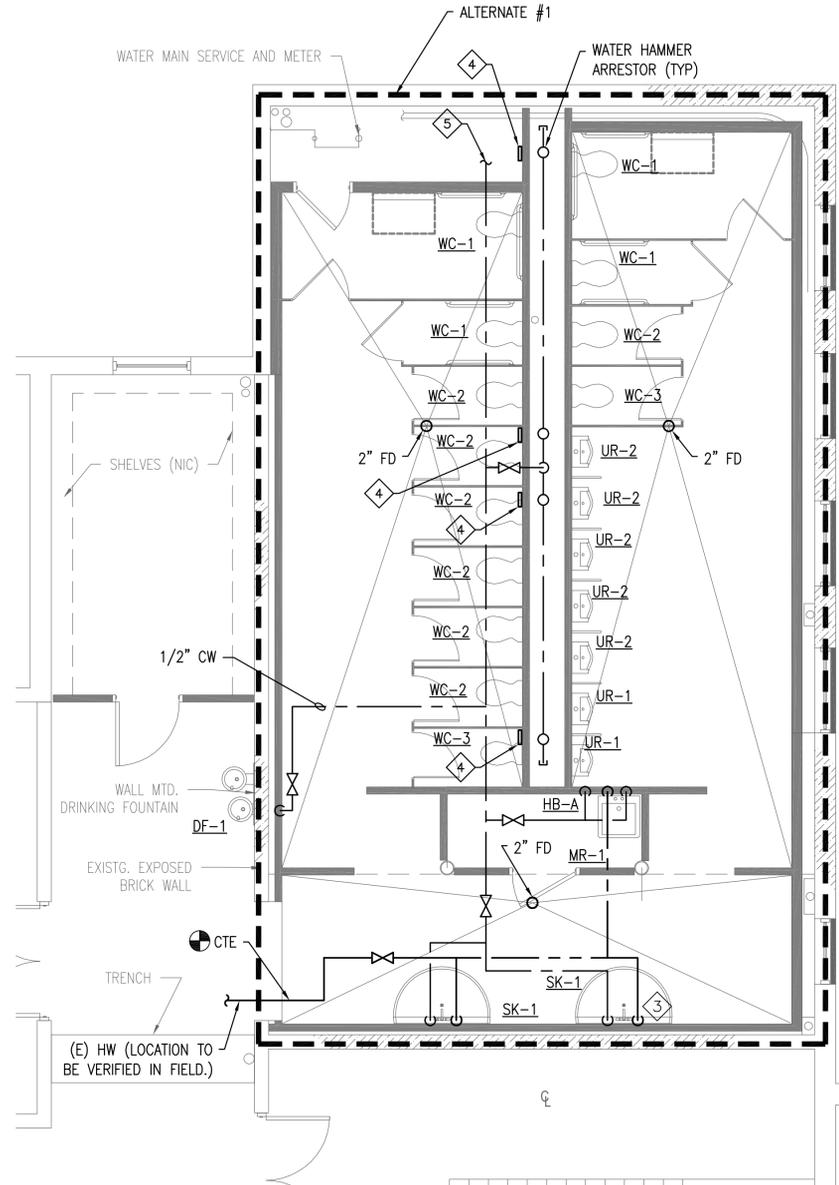
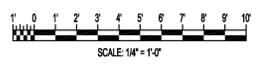
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**KEYED SHEET NOTES:**

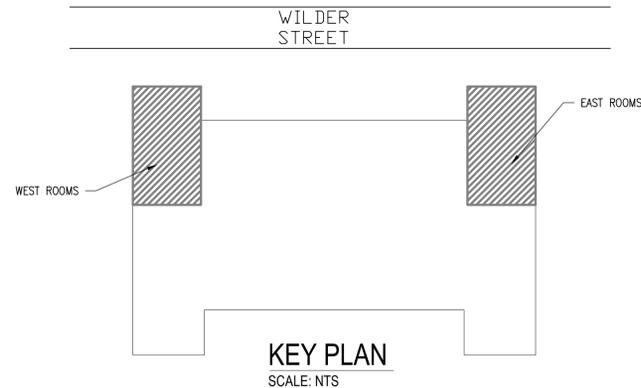
- 1 2" CW DROP AND ROUTE FULL-SIZE IN CHASE. ROUTE 1" CW TO EACH WC. ROUTE 3/4" TO EACH UR. ROUTE 1/2" CW TO TRAP PRIMER VALVE. ROUTE 1/2" TP TO EACH FLOOR DRAIN. PROVIDE A WATER HAMMER ARRESTOR WITH SHUT-OFF VALVE AS SHOWN IN THE SUPPLY PIPING ISOMETRIC ON SHEET P-401.
- 2 1/2" CW AND 1/2" HW-DIW.
- 3 CONNECT TO EXISTING SUPPLY PIPING IN WALL.
- 4 PROVIDE 8"x8" ACCESS DOOR WITH LOCKABLE COVER FOR ACCESS TO WATER HAMMER ARRESTOR AND/OR TRAP PRIMER.
- 5 NEW 2" CW PIPING FROM WATER ENTRANCE.



WEST TOILET ROOMS  
1/4"=1'-0"



EAST TOILET ROOMS  
1/4"=1'-0"



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**PLUMBING  
SUPPLY  
PIPING PLAN**

**P-102**

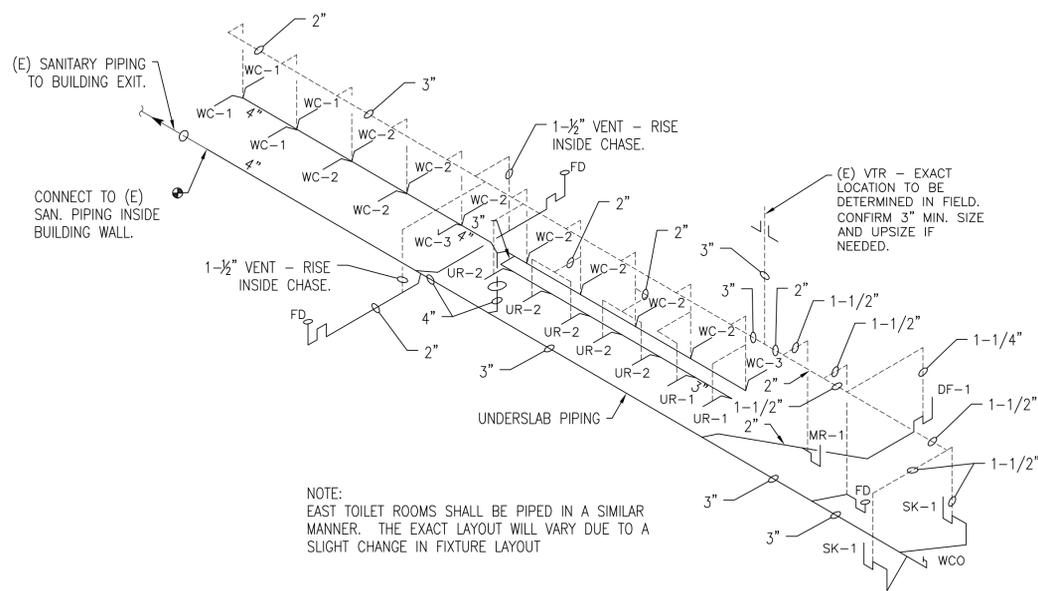
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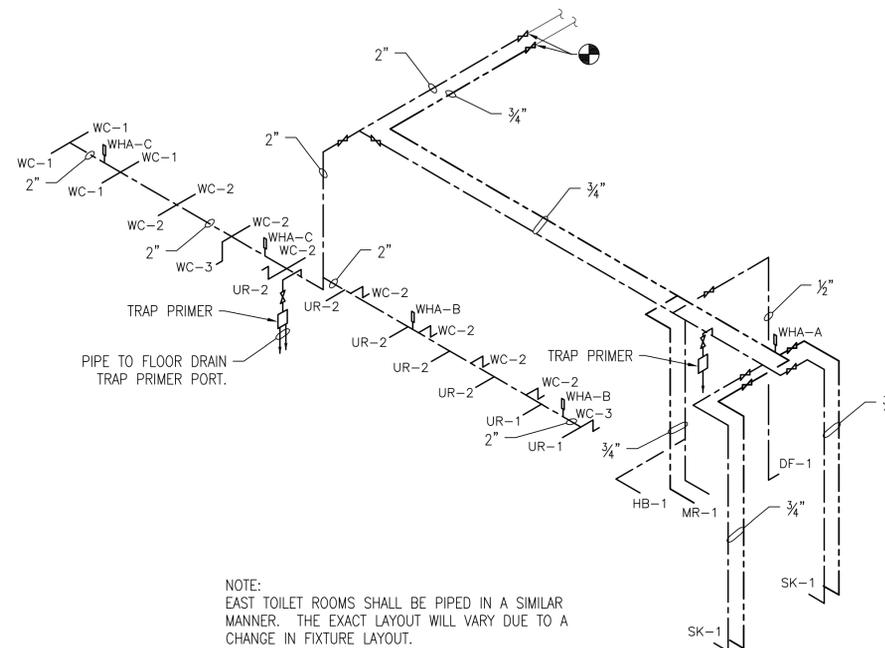
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WEST TOILET ROOMS – DWV ISOMETRIC  
NOT TO SCALE



WEST TOILET ROOMS – SUPPLY PIPING ISOMETRIC  
NOT TO SCALE

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PLUMBING  
ISOMETRICS

P-401

**PLUMBING FIXTURE SCHEDULE**

TAG	DESCRIPTION	PIPING				FIXTURE	MATERIAL	COLOR	MOUNTING	FLUSH VALVE OR FAUCET SET	SEAT	SUPPLIES AND STOPS	P-TRAP	STRAINER	CARRIER	ACCESSORIES/ REMARKS
		WASTE	VENT	HOT	COLD											
WC-1	WALL MOUNTED WATER CLOSET - ADA	4"	2"	-	1"	AMERICAN STANDARD "AFWALL" 3351.101	VITREOUS CHINA	WHITE	WALL	SLOAN #8111-1.28	CHURCH 9500SS	MCGUIRE	N/A	N/A	ZURN #1203 & #1204	HORIZONTAL (ZURN 1203) OR VERTICAL (ZURN 1204) CARRIER SHALL BE USED AS REQUIRED.
WC-2	WALL MOUNTED WATER CLOSET	4"	2"	-	1"	AMERICAN STANDARD "AFWALL" 3351.101	VITREOUS CHINA	WHITE	WALL	SLOAN #8111-1.28	CHURCH 9500SS	MCGUIRE	N/A	N/A	ZURN #1203 & #1204	HORIZONTAL (ZURN 1203) OR VERTICAL (ZURN 1204) CARRIER SHALL BE USED AS REQUIRED.
WC-3	FLOOR MOUNTED CHILD SIZE WATER CLOSET	4"	2"	-	1"	AMERICAN STANDARD "BABY DEVORO" 2282.001	VITREOUS CHINA	WHITE	FLOOR	SLOAN #8111-1.28		MCGUIRE	N/A	N/A	N/A	
UR-1	WALL MOUNTED URINAL - ADA	2"	2"	-	3/4"	SLOAN #WEUS-1000.1401-0.125 "ECOS"	VITREOUS CHINA	WHITE	WALL	WITH FIXTURE	N/A	MCGUIRE	N/A	N/A	-	
UR-2	WALL MOUNTED URINAL	2"	2"	-	3/4"	SLOAN #WEUS-1000.1401-0.125 "ECOS"	VITREOUS CHINA	WHITE	WALL	WITH FIXTURE	N/A	MCGUIRE	N/A	N/A	-	
SK-1	WASH FOUNTAIN	2"	2"	3/4"	3/4"	BRADLEY #MF2949	SOLID SURFACE	BY ARCHITECT	FLOOR	WITH FIXTURE	N/A	N/A	-	-	-	PROVIDE JUVENILE HEIGHT PEDESTAL, LIQUID SOAP DISPENSER OPTION, BATTERY HANDS-FREE INFRARED SENSOR FAUCETS AND THERMOSTATIC MIXING VALVE ASSEMBLY.
MR-1	MOP RECEPTOR	3"	2"	3/4"	3/4"	FIAT #MSBID2424, 24"x24"x12"D	"MOLDED STONE"	BY ARCHITECT	FLOOR	CHICAGO #445-897SRCXKCP	N/A	N/A	-	-	N/A	PROVIDE WALL GUARDS, MOP HANGER, AND HOSE BRACKET
DF-1	ELECTRIC WATER COOLER	1-1/2"	1-1/2"	-	1/2"	ELKAY BI-LEVEL WALL MOUNT MODEL EZOSTL8	STAINLESS STEEL	-	WALL	N/A	N/A	N/A	-	N/A	PROVIDED WITH UNIT	

NOTES:

**STEAM FINNED TUBE RADIATION SCHEDULE**

TAG	LOCATION	FINNED LENGTH (FT)	ENCLOSURE TYPE	MOUNTING	MIN. CAPACITY (BTUH)	FINNED ELEMENT		STEAM TRAP	BASIS OF DESIGN	NOTES
						ENT. STEAM PRESSURE (PSI)	FLOW (LBS/HR)			
FT-1	AS SHOWN	8	DOUBLE SLOPE TOP	WALL MOUNT 6' AFF	10,000	2	10	NOTE 1	STERLING VERSALINE	
FT-2	AS SHOWN	4	DOUBLE SLOPE TOP	WALL MOUNT 6' AFF	6,000	2	6	NOTE 1	STERLING VERSALINE	
FT-3	AS SHOWN	3	DOUBLE SLOPE TOP	WALL MOUNT 6' AFF	4,000	2	4	NOTE 1	STERLING VERSALINE	

NOTES: 1. PROVIDE THERMOSTATIC STEAM TRAP AT EACH FINNED TUBE ELEMENT.

**AIR DEVICE SCHEDULE**

TAG	CFM	NECK SIZE	TYPE	PRESSURE DROP (IN. W.G.)	MAX N.C.	BASIS OF DESIGN	NOTES
E-1	600-800	24"x24"	CEILING GRILLE	0.01	30	PRICE MODEL 60	PROVIDE WHITE COLOR AND FRAME TO MATCH CEILING.
E-2	50	8"x8"	CEILING GRILLE	0.01	30	PRICE MODEL 60	PROVIDE WHITE COLOR AND FRAME TO MATCH CEILING.

NOTES:

**FAN SCHEDULE**

TAG	LOCATION	SERVICE	TYPE	AIRFLOW CFM	S.P. (IN. W.G.)	WHEEL DIAMETER (INCHES)	RPM	ELECTRICAL DATA				BASIS OF DESIGN	NOTES
								BHP	MOTOR HP	VOLTS/PH	VFD		
EF-1	WEST TOILET RM	EXHAUST	CENTRIF. INLINE	1,600	0.50	13.125	1725	0.45	0.50	120/1	NO	GREENHECK SQ-120-A	
EF-2	EAST TOILET RM	EXHAUST	CENTRIF. INLINE	1,500	0.50	13.125	1725	0.45	0.50	120/1	NO	GREENHECK SQ-120-A	

NOTES:

**DRAIN SCHEDULE**

TAG	APPLICATION	DESCRIPTION	BASIS OF DESIGN	TRAP PRIMER	NOTES
FD-A	FINISHED PUBLIC SPACES	FLOOR DRAIN, GALVANIZED CAST IRON BODY, ADJUSTABLE NICKEL BRONZE STRAINER, 3/4" TRAP PRIMER CONNECTION	ZURN Z-415B	PRECISION PLUMBING PRODUCTS #PR-500	1,2

NOTES: 1. FOR SLAB ON GRADE APPLICATIONS, USE CAULK OUTLET. 2. TRAP PRIMER PIPING TO BE INSTALLED BELOW SLAB, SLOPED TO DRAIN. PROVIDE A P-TRAP WITH 1/2" PRIMER TAP WHEN FLOOR DRAIN PRIMER PORT IS BURIED WITHIN THE SLAB. PLUG UNUSED TRAP PRIMER PORT.

**LOUVER SCHEDULE**

TAG	LOCATION	SERVICE	VELOCITY (FPM)	AIRFLOW (CFM)	PRESSURE DROP (IN. W.G.)	SIZE WxH (INCHES)	BASIS OF DESIGN	NOTES
L-1	WEST TOILET ROOMS	EXHAUST	1,250	1600	0.20	23x18	RUSKIN ELF6375DX	EXISTING MASONRY R.O. IS 23.5x18"
L-2	EAST TOILET ROOMS	EXHAUST	1,250	1600	0.20	23x18	RUSKIN ELF6375DX	EXISTING MASONRY R.O. IS 23.5x18"

NOTES:

**PLUMBING SPECIALTIES SCHEDULE**

TAG	APPLICATION	DESCRIPTION	BASIS OF DESIGN	NOTES
HB-A	HOSE BIBB	INTEGRAL VACUUM BREAKER, LOOSE KEY, ROUGH CHROME FINISH, 3/4" CONNECTION.	CHICAGO FAUCETS #998	-

NOTES:

**WATER HAMMER ARRESTOR SCHEDULE**

TYPE	FIXTURE UNIT RATING	BASIS OF DESIGN
WHA-A	1-10	ZURN Z1700 SERIES #100
WHA-B	12-32	ZURN Z1700 SERIES #200
WHA-C	33-60	ZURN Z1700 SERIES #300
WHA-D	61-113	ZURN Z1700 SERIES #400
WHA-E	114-154	ZURN Z1700 SERIES #500
WHA-F	155-330	ZURN Z1700 SERIES #600

SUB-BIDS SHALL BE SUBMITTED FOR THE WORK OF THIS SECTION IN ACCORDANCE WITH THE PROVISIONS OF M.G.L. C.149 44A-J. THE TIME AND PLACE FOR SUBMISSION OF SUB-BIDS ARE SET FORTH IN THE ADVERTISEMENT. THE PROCEDURES AND REQUIREMENTS FOR SUBMITTING SUB-BIDS ARE SET FORTH IN THE INSTRUCTIONS TO BIDDERS. SUB-BIDDERS MUST BE DCAM CERTIFIED IN THE LISTED TRADE AND SHALL INCLUDE A CURRENT DCAM SUB-BIDDER CERTIFICATE OF ELIGIBILITY AND A SIGNED DCAM SUB-BIDDER'S UPDATE STATEMENT WITH THE BID



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**WASHINGTON ELEMENTARY SCHOOL  
 BOYS AND GIRLS ROOMS  
 RENOVATION**

MARK	DATE	DESCRIPTION
0	3-FEB-16	FOR BIDS

PROJECT NO: 14401-07  
 MODEL FILE:  
 DRAWN BY: CR  
 CHKD BY: TAC  
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**PLUMBING AND MECHANICAL SCHEDULES**

**P-601**



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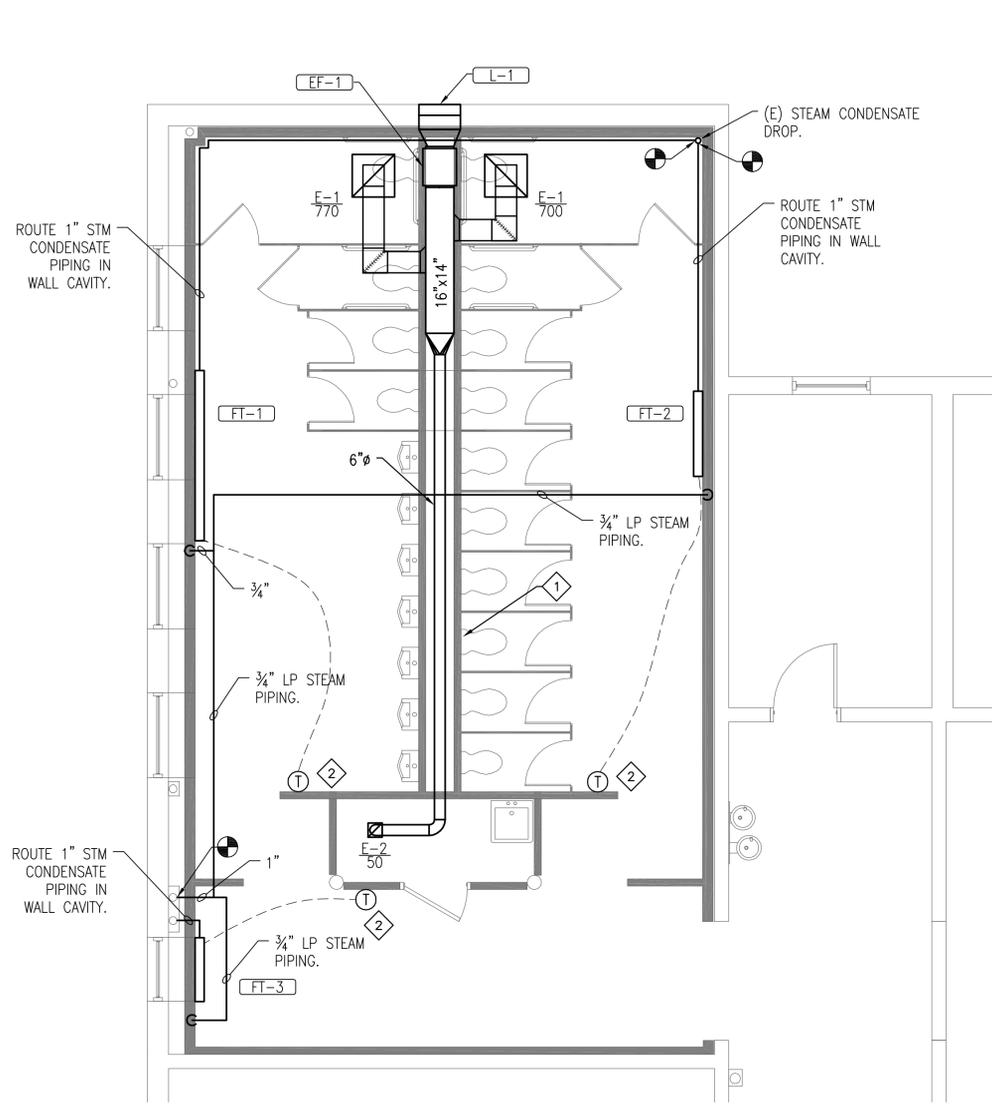
WASHINGTON ELEMENTARY SCHOOL  
BOYS AND GIRLS ROOMS  
RENOVATION  
795 WILDER STREET  
LOWELL, MA 01851  
PREPARED FOR:  
LOWELL PUBLIC SCHOOLS

**KEYED SHEET NOTES:**

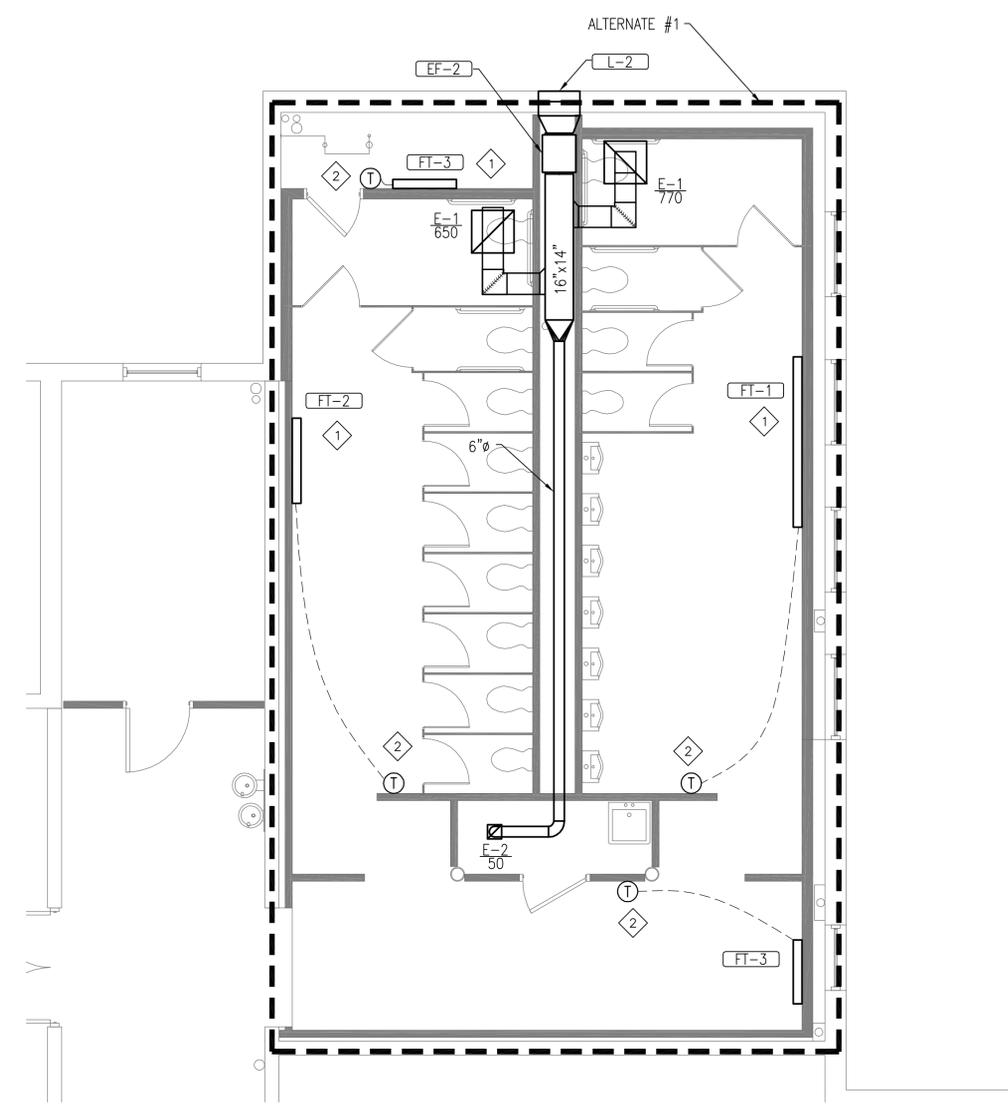
- 1 FEED FINNED TUBE RADIATION FROM EXISTING STEAM & STEAM CONDENSATE PIPING. SEE WEST TOILET ROOM LAYOUT (SIMILAR).
- 2 PROVIDE 2-WAY CONTROL VALVES ON EACH SECTION OF FINNED-TUBE RADIATION. PROVIDE STAND-ALONE THERMOSTATS TO CONTROL EACH VALVE. PROVIDE A ROOM TEMPERATURE SENSOR NEXT TO EACH THERMOSTAT FOR REMOTE MONITORING BY THE BMS. BMS TIE-IN WILL BE BY OTHERS.

**MECHANICAL NOTES:**

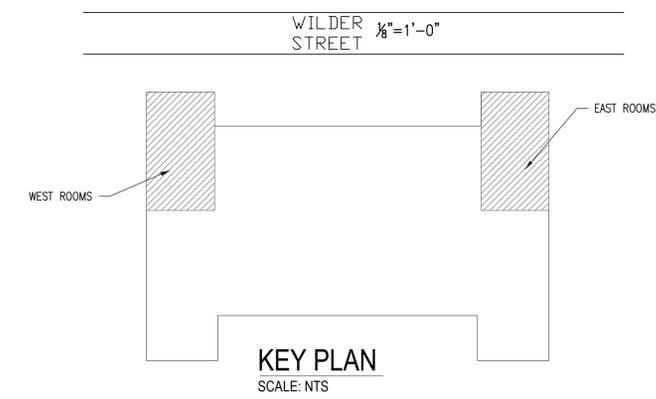
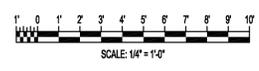
- 1. STEAM PIPING SHALL BE SCHEDULE 40 ELECTRIC RESISTANCE WELDED STEEL PIPE.
- 2. STEAM CONDENSATE PIPING SHALL BE SCHEDULE 80 ELECTRIC RESISTANCE WELDED STEEL PIPE.
- 3. FITTINGS SHALL BE CAST STEEL, THREADED, CLASS 125.
- 4. INSTALL STEAM SUPPLY PIPING AT A 0.2% SLOPE IN THE DIRECTION OF STEAM FLOW.
- 5. INSTALL STEAM CONDENSATE PIPING AT A 0.4% SLOPE IN THE DIRECTION OF CONDENSATE FLOW.
- 4. INSULATE STEAM AND STEAM CONDENSATE PIPING WITH 2" FIBERGLASS PIPE INSULATION. TAPE ALL JOINTS WILL FSK TAPE.
- 5. MOUNT FINNED-TUBE AT 6' AFF TO BOTTOM.
- 6. PROVIDE A 24/7 PROGRAMMABLE TIME CLOCK TO CONTROL EF-1 AND EF-2. 120VAC PELTEC 600 SERIES OR APPROVED.



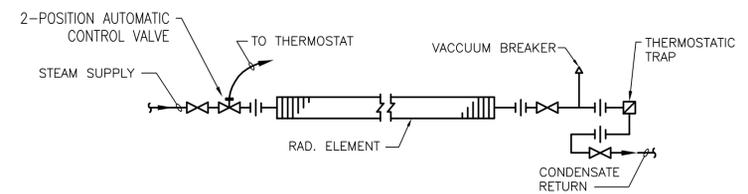
WEST TOILET ROOMS  
1/4"=1'-0"



EAST TOILET ROOMS  
1/4"=1'-0"



KEY PLAN  
SCALE: NTS



STEAM FIN TUBE PIPING DETAIL  
NOT TO SCALE



MARK	DATE	DESCRIPTION
0	3-FEB-16	FOR RDS

PROJECT NO: 14401-07  
 MODEL FILE:  
 DRAWN BY: CR  
 CHKD BY: TAC  
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HVAC PLAN

M-101

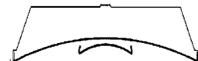
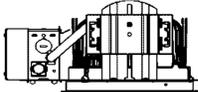
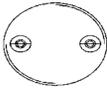
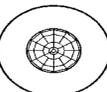
**LEGEND:**

-  PANEL BOARD NORMAL POWER
-  2'X4' LED RECESSED FIXTURE
- 
-  PENDANT MOUNTED FIXTURE
-  WALL SWITCH AT 48" AFF (UNLESS OTHERWISE NOTED)  
SUBSCRIPTS INDICATE THE FOLLOWING:  
(NONE) SINGLE POLE  
a (LOWER CASE LETTER) SWITCHING PATTERN  
OS OCCUPANCY SENSOR  
T TIMER, ELECTRONIC
-  CEILING MOUNTED OCCUPANCY SENSOR  
SUBSCRIPTS INDICATE THE FOLLOWING:  
a (LOWER CASE LETTER) SWITCHING PATTERN  
US ULTRASONIC  
PIR PASSIVE INFRARED
-  DUPLEX RECEPTACLE AT 18" AFF OR GRADE, UON.  
SUBSCRIPTS INDICATE THE FOLLOWING:  
GF GROUND FAULT CIRCUIT INTERRUPTER
-  TANDEM EMERGENCY LIGHT WITH BATTERY BACKUP & EXIT SIGN  
ARROW INDICATES CHEVRON DIRECTION

**LINE TYPES**

-  EXISTING
-  NEW

**LIGHTING & CONTROLS SCHEDULE**

TYPE	DESCRIPTION	MANUFACTURER	MODEL	LAMPS	FIXTURE WATTS	IMAGE	MOUNTING	NOTES
L1	2'X4' LED RECESSED FIXTURE WITH STEEL HOUSING AND FROSTED LENS	LITHONIA	2ALL4-30L-LP835	LED	25		RECESSED-CEILING	5-YEAR WARRANTY
L2	LED RECESSED DOWNLIGHT RUGGED, ONE-PIECE, DIECAST HOUSING WITH WHITE INTERIOR DOME REFLECTOR. WITH 6" OPENING	LITHONIA	DOM6 LED-600L-35K-120-D06-	LED	16		RECESSED-CEILING	5-YEAR WARRANTY
F1	UTILITY VAPOR TIGHT LIGHT WITH HEAVY DUTY ALUMINUM GUARD, GLASS GLOBE AND UL WET LISTED	LITHONIA	VP42LM6	CFL	42		PENDANT MOUNT	2-YEAR WARRANTY
LE1	LED EXIT SIGN WITH TWIN LED LAMPS	LITHONIA	LHQM-LED-R	LED	3		WALL MOUNT	5-YEAR WARRANTY
OS,US	CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR. 360 DEGREE COVERAGE, UL LISTED, LOW VOLTAGE	WATTSTOPPER	UT-300-2	-	-		CEILING	PROVIDE POWER PACK AS REQUIRED.
OS, PIR	CEILING MOUNTED PASSIVE INFRARED OCCUPANCY SENSOR. 360 DEGREE COVERAGE, UL LISTED, LOW VOLTAGE	WATTSTOPPER	CI-200	-	-		CEILING	PROVIDE POWER PACK AS REQUIRED.
S	INDUSTRIAL GRADE TOGGLE SWITCH	LEVITON	1222-2T	-	-		RECESSED WALL	20A RATED, 120/277VAC RATED, SELF GROUNDING
ST	ELECTRONIC TIMER SWITCH, LINE VOLTAGE	INTERMATIC	EI400C	-	-		RECESSED WALL	

- NOTES:**
- THE PRODUCTS LISTED ABOVE ARE REPRESENTATIVE OF THE DESIRED LUMINAIRE TYPE AND LIGHT DISTRIBUTION. ALTERNATIVE DEVICES MAY BE ACCEPTABLE IF SUBMITTED WITH CUTSHEETS AND PHOTOMETRIC DATA DEMONSTRATING THEIR EQUIVALENCE.
  - ALL LED LUMINAIRES SHALL BE LM-79 AND LM-80 TESTED WITH MINIMUM 50K HOUR RATED LIFE.

**GENERAL ELECTRICAL NOTES**

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES, AND THE 2014 NATIONAL ELECTRIC CODE (NEC) BY ELECTRICIANS LICENSED BY THE STATE IN WHICH THE WORK IS PERFORMED.
- THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE CONTRACT DOCUMENTS. ALL DRAWINGS OF ANY PARTICULAR TRADE SHALL BE USED IN CONJUNCTION WITH DRAWINGS OF ALL OTHER TRADES TO COORDINATE ALL CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED WORK. ANY PROPOSED CHANGES, VARIATIONS OR SUBSTITUTIONS MUST BE REVIEWED AND ACCEPTED BY THE ENGINEER PRIOR TO IMPLEMENTATION.
- ALL DRAWINGS ARE INTENDED TO SHOW THE GENERAL ARRANGEMENT, DESIGN INTENT, AND EXTENT OF THE WORK. THEY SHALL BE CONSIDERED PARTLY DIAGRAMMATIC. THEY ARE NOT INTENDED TO BE SCALED FOR ROUGHING-IN MEASUREMENTS OR TO SERVE AS SHOP DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS (AS BUILT OR OTHERWISE) BEFORE COMMENCING FABRICATION, AND/OR ORDERING MATERIALS.
- THE ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PRIOR TO INSTALLING ANY CONDUIT AND/OR CABLE. IF ELECTRICAL REQUIREMENTS DIFFER FROM THOSE INDICATED, OR IF ADDITIONAL EQUIPMENT IS REQUIRED BY CODE, INFORM THE ENGINEER.
- WIRING FOR ALL SINGLE PHASE CIRCUITS, 20A OR SMALLER SHALL BE A MINIMUM OF 2#12 & 1#12G-3/4", FOR CIRCUIT LENGTHS UNDER 100 FEET, UON. WHERE LONGER CIRCUIT LENGTHS ARE REQUIRED, ENSURE LESS THAN 3% VOLTAGE DROP UNDER FULL LOAD. THE SHARING OF NEUTRAL CONDUCTORS IS NOT ALLOWED.
- MOUNTING HEIGHTS GIVEN FOR ALL WIRING DEVICES (WALL SWITCHES, RECEPTACLES, ETC.), FIRE ALARM DEVICES, TELEPHONE EQUIPMENT, SPEAKERS AND LIGHT FIXTURES ARE TO THE CENTERLINE OF THE JUNCTION BOX USED TO MOUNT THE DEVICE, UNLESS OTHERWISE NOTED.
- PROTECT ALL EXISTING FINISHES WHICH ARE TO REMAIN.
- CIRCUIT WIRING INDICATED ON DRAWINGS IS SCHEMATIC IN NATURE AND SHALL NOT BE CONSIDERED TO BE POINT-TO-POINT, UNLESS OTHERWISE INDICATED.
- COORDINATE FINAL LOCATIONS OF CEILING LIGHT FIXTURES AND OTHER EQUIPMENT WITH REFLECTED CEILING PLANS AND ALL OTHER TRADE DRAWINGS PRIOR TO INSTALLATION.
- UON ALL CONDUITS SHALL BE EMT AND ALL WIRING SHALL BE CONCEALED IN WALLS OR ABOVE CEILINGS.
- EXIT SIGNS SHALL BE CONNECTED TO BRANCH CIRCUITS AHEAD OF ALL SWITCHING.
- OCCUPANCY SENSORS SHALL BE SET FOR 30 MIN UON.
- PROVIDE GROUNDING CONDUCTORS IN ALL BRANCH CIRCUIT RACEWAYS.



**Lowell Public Schools**



WASHINGTON ELEMENTARY SCHOOL  
BOYS AND GIRLS ROOMS  
RENOVATION  
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LOWELL, MA 01851  
PREPARED FOR:  
LOWELL PUBLIC SCHOOLS

MARK	DATE	FOR BIDS	DESCRIPTION
0	3-FEB-16		

PROJECT NO: 14401-07  
MODEL FILE:  
DRAWN BY: ACY  
CHKD BY:  
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SHEET TITLE

**ELECTRICAL LEGEND**

**E-001**

KEY NOTE:

- ① PROVIDE A 20A BREAKER FOR EACH NEW CKT INDICATED ON THIS SHEET.
- ② PROVIDE A INTERMATIC T7000B SERIES 40A 7-DAY MECHANICAL TIME SWITCH FOR FAN OPERATION, OR EQUIVALENT.
- ③ MTD ABOVE CLG.

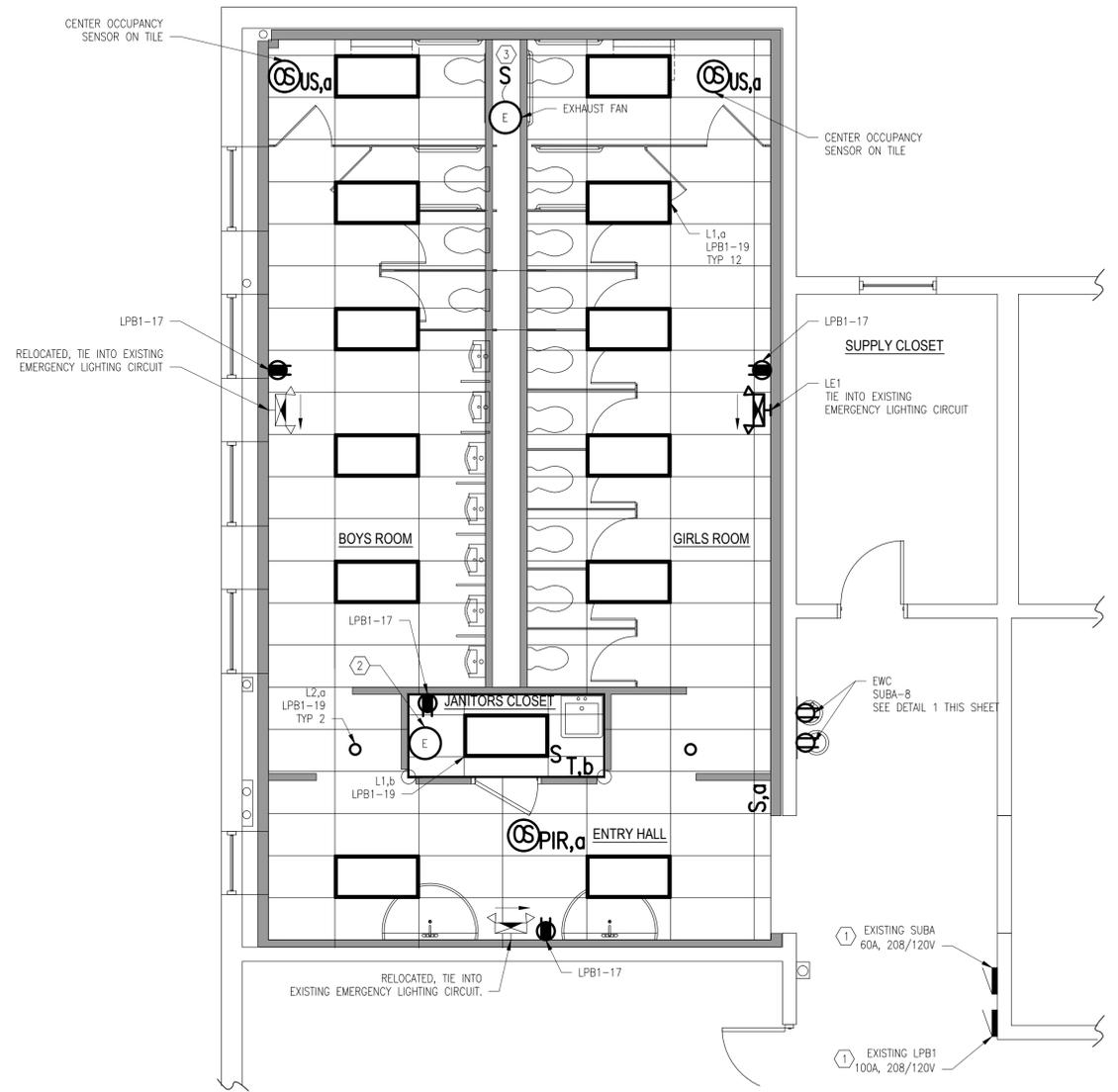


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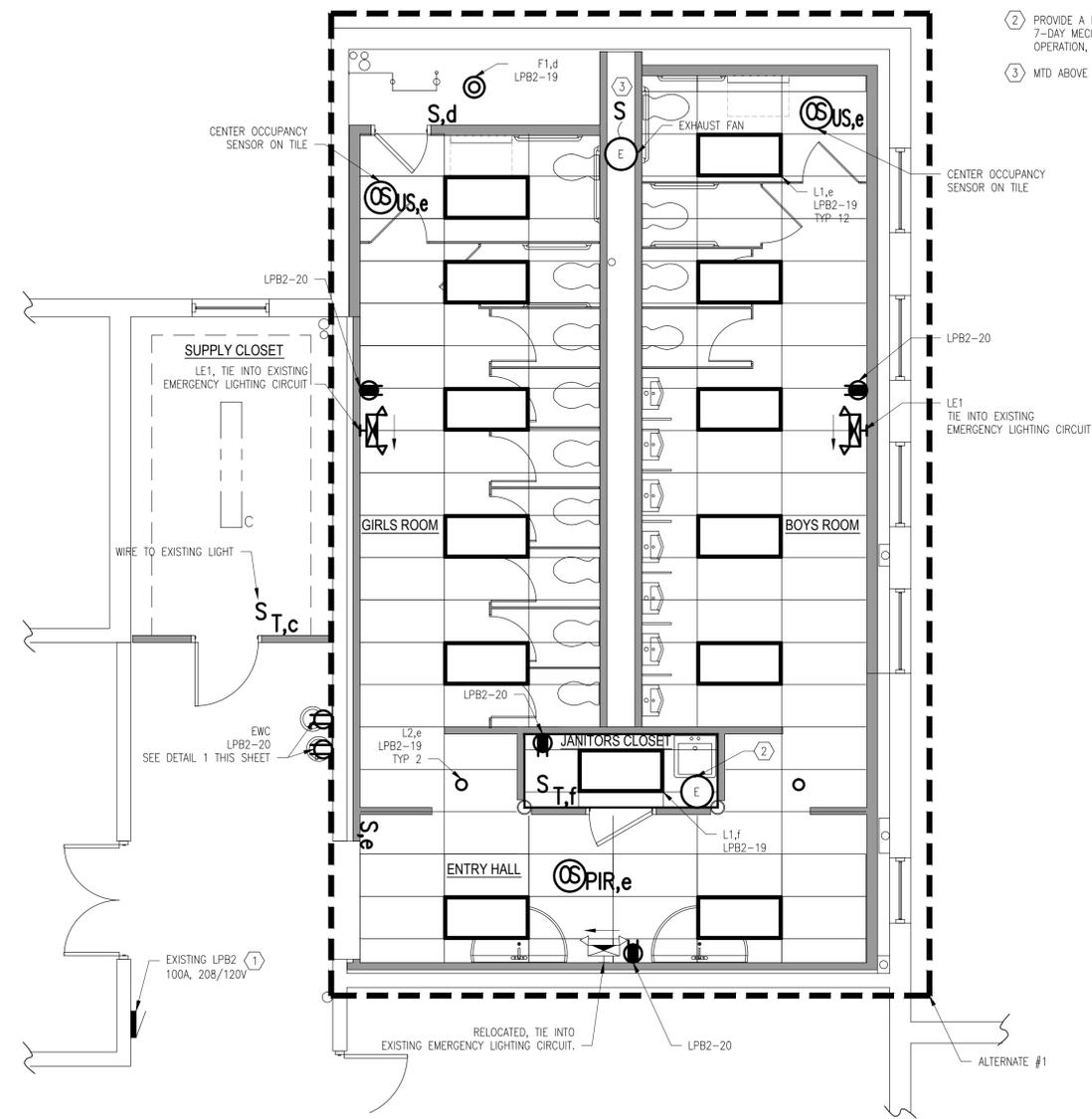
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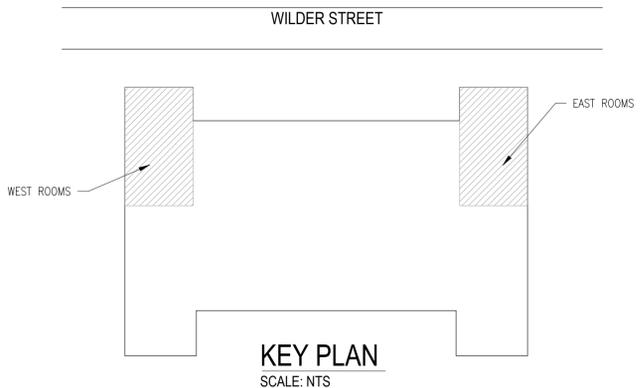
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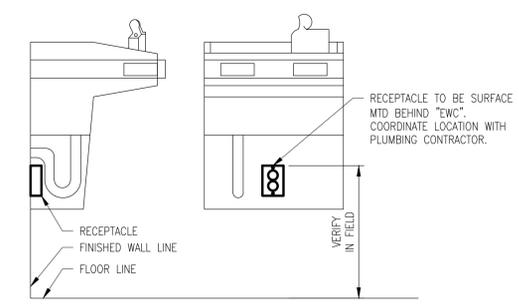
WEST ROOMS



EAST ROOMS



KEY PLAN  
SCALE: NTS



1 ELECTRIC WATER COOLER DETAIL

MARK	DATE	DESCRIPTION
00	3-FEB-16	FOR BIDS

PROJECT NO: 14401-07  
MODEL FILE:  
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SHEET TITLE

**ELECTRICAL  
LIGHTING &  
POWER PLAN**

**E-101**  
SHEET 15 OF 15