

# **REQUEST FOR BIDS BIDS – RENOVATION OF AIRPORT BUSINESS CENTER PUBLIC RESTROOMS**

West Michigan Airport Authority

May 24, 2019

The West Michigan Airport Authority is seeking Bids for Renovation of the Airport Business Center Public Restrooms at the located at 60 Geurink Boulevard, Holland, Michigan 49423.

## **I. SCOPE OF WORK**

The Authority is seeking bids for Restroom Renovations, which will include the following:

### **1. Renovation of Men's Restroom:**

- a. Install of one (1) additional urinal & plumbing
- b. Install of one (1) additional toilet & plumbing
- c. Relocation of one (1) existing urinal & plumbing
- d. Relocation of one (1) existing toilet & plumbing
- e. Install of related privacy barriers & stalls
- f. Any necessary relocation of current fixtures, stalls, and related hardware

### **2. Renovation of Women's Restroom:**

- a. Install of one (1) additional toilet & plumbing
- b. Install of related privacy barriers & stalls
- c. Any necessary relocation of current fixtures, stalls, and related hardware

### **3. Optional**

- a. Install one (1) hand dryer in each restroom

The work is expected to be completed in compliance with drawings provided by the project architect (Attachment A).

The selected contractor is expected to provide their own equipment and materials to complete the necessary work outlined above. The Contractor shall inspect the area for the work to be performed and shall familiarize itself with the area and the work to be performed.

The Contractor's bid for this project, is expected to include the following:

1. Summarized total project cost
2. Summarized cost for each restroom:
  - a. Men's restroom total cost
  - b. Women's restroom total cost
3. Detailed summary of project cost, including a detailed accounting of all of the following:
  - a. Parts
  - b. Labor
  - c. Permits
  - d. Any other related project expenses

The selected Contractor will work closely with the Airport Authority and the Fixed Base Operator(FBO), Tulip City Air Service, in scheduling the project. The selected contractor will be required to provide **4 Day's Notice** before work is to begin so as the proper notices may be issued to pilots, users, and tenants. The Contractor will be required to provide a designated point of contact during this project which will coordinate directly with FBO staff for the duration of the project and will maintain communication with FBO staff while work is being completed.

Prospective bidders must provide an expected timeline for project completion. It is expected that the work will be completed on concurrent days. Special accommodations will be made as necessary and as approved by the Airport Authority. Any scheduling arrangement is subject to the sole approval of the Airport Authority Manager, or his designee.

The Contractor is solely responsible for securing all appropriate permits required for completion of the project and is responsible for adhering to all relevant regulations.

## **II. INDEMNIFICATION**

The Contractor will agree to defend, indemnify, and save harmless the West Michigan Airport Authority, its officers, agents, and employees, from any and all claims and liabilities that may result from the Contractors work. This covenant of indemnification

shall include reasonable attorney's fees and costs incurred by the West Michigan Airport Authority, its officers, agents, and employees in defense of such claim or liability.

### **III. INSURANCE**

The Contractor is to maintain the following insurance:

- a. General liability insurance with bodily injury limits of not less than \$1,000,000.
- b. Automobile Liability insurance with bodily injury limits of not less than \$1,000,000.
- c. Workers Compensation insurance in accordance with statutory requirements and employer's liability insurance with limits of not less than \$100,000 for each occurrence.
- d. Property Damage insurance in an amount of not less than \$1,000,000.
- e. 100% Performance Bond required for work exceeding \$50,000.
- f. The Contractor shall name the West Michigan Airport Authority, its officers, agents, and employees as additional insureds and the insurance coverage for general liability, automobile liability, and property damage shall waive subrogation against the West Michigan Airport Authority, its officers, agents, and employees.

### **IV. QUALIFICATIONS**

Contractors must have demonstrable experience performing work as described above.

### **V. WARRANTY**

The Contractor shall warrant that the Work performed under the Contract conforms to the Contract requirements and is free of any defect in equipment, material, workmanship, furnished or performed by the Contractor or any subcontractor or supplier of the Contractor. This warranty shall continue for a period of one (1) year from the final acceptance of the Work. If the Authority takes possession of any part of the Work before final acceptance, this warranty shall continue for a period one (1) year from the date the Authority takes possession. However, this will not relieve the Contractor from corrective items required by the final acceptance of the Work. The Contractor shall remedy at the Contractor's expense any failure to conform, or any defect. In addition,

the Contractor shall remedy at the Contractor's expense any damage to the Authority's real or personal property when that damage is the result of: (1) The Contractor's failure to conform to contract requirements; or (2) Any defect of equipment, material, workmanship, or design furnished by the Contractor or any subcontractor or supplier of the Contractor. The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for one year from the date of repair or replacement. The Authority will notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage. If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the Authority shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage, at the Contractor's expense, including reasonable attorney's fees and costs incurred to enforce the warranty. This warranty shall not limit the Authority's rights with respect to latent defects, gross mistakes, or fraud.

**VI. MATERIALS TO BE USED**

All materials used must comply with relevant standards.

**VII. CONTRACTOR BID**

Men's Restroom Renovation

Women's Restroom Renovation

Optional Hand Dryers

***Project Total***

Expected Timeline for completion (Days)

Approximate Start Date \_\_\_\_\_

**Bids are due by 5:00 p.m. on Thursday, June 6<sup>th</sup>, 2019;** two (2) sealed hard copies and one PDF (USB) copy must be delivered to the reception desk at the Airport Business Center, 60 Geurink Boulevard. The envelope should be addressed to:

**The West Michigan Airport Authority  
60 Geurink Blvd.  
Holland, MI 49423**

And conspicuously labeled as:

**Airport Business Center Renovations**

And must include the name of the contractor and business address.

#### **VIII. AWARD OF BID**

The contract will be awarded to the lowest, responsible, and qualified bidder.

The West Michigan Airport Authority reserves the right to accept or reject any or all bids, in whole or part, or rebid if it is in the best interest of the Authority. The Authority also retains the right to waive any informalities/irregularities in the bids, as well as the right to split the award or bid between two or more bidders.

Further information can be obtained from Authority Assistant Manager Aaron Thelenwood at [a.thelenwood@wmairportauthority.com](mailto:a.thelenwood@wmairportauthority.com).

**ATTACHMENT A**

# MIDFIELD TERMINAL BUILDING TOILETING MODIFICATIONS WEST MICHIGAN REGIONAL AIRPORT

60 GEURINK BLVD  
HOLLAND, MI 49423

## DRAWING INDEX

GENERAL	TD001	TITLE DRAWING, ABBREVIATIONS, SYMBOLS, ACCESSIBILITY GUIDELINES
ARCHITECTURE	A101	DEMOLITION PLAN, FLOOR PLAN, AND REFLECTED CEILING PLAN
PLUMBING	P101	PLUMBING PLAN

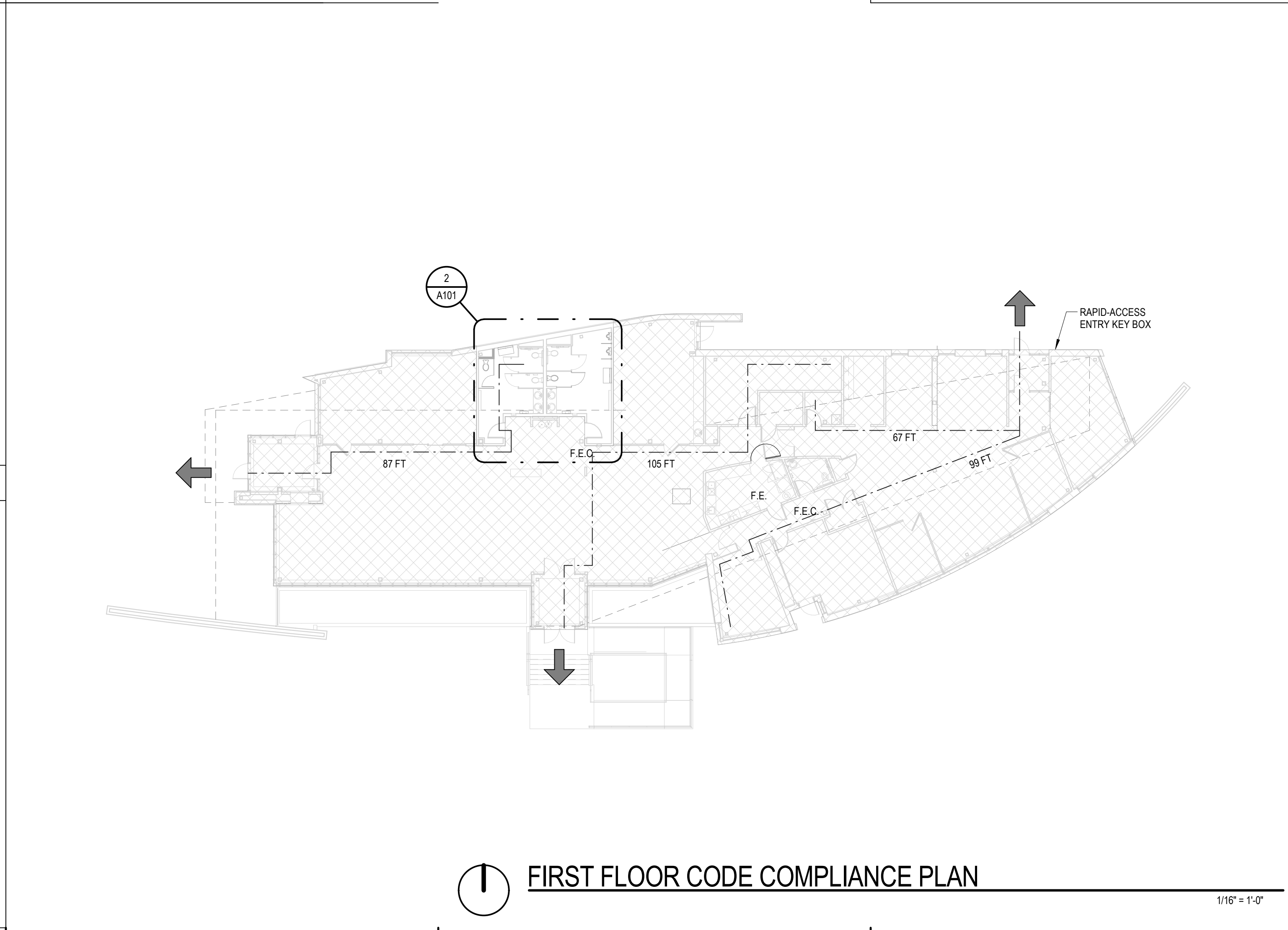
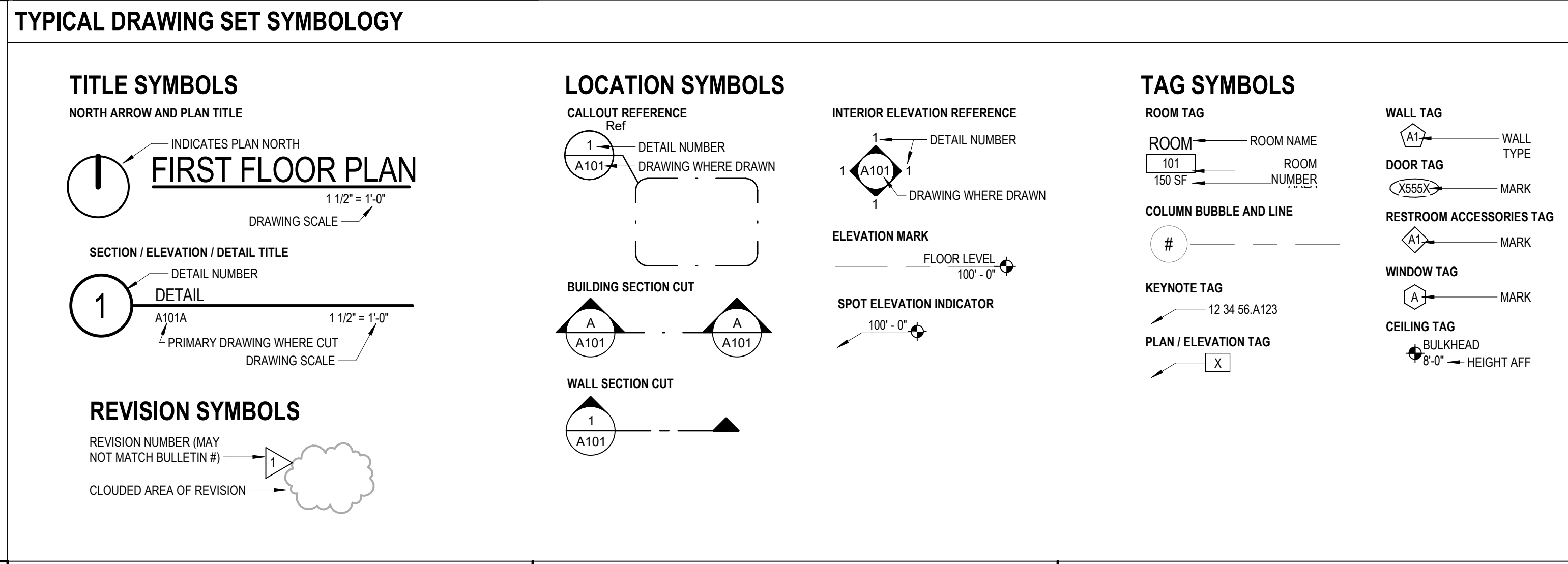
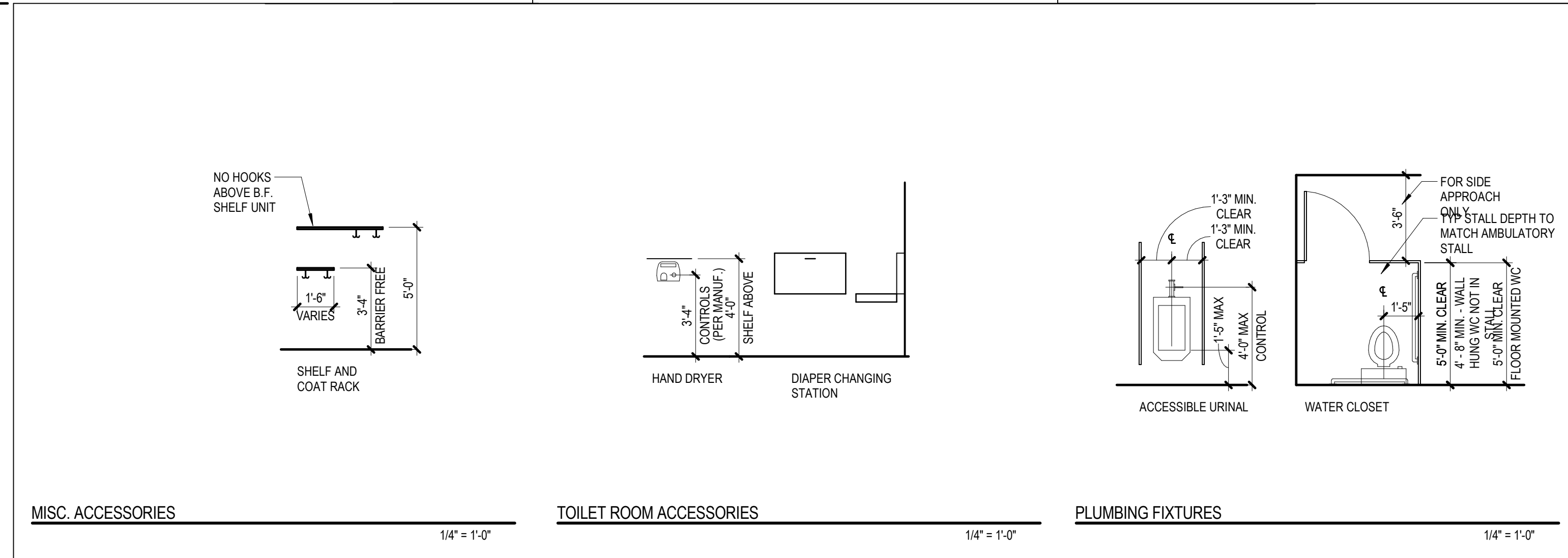
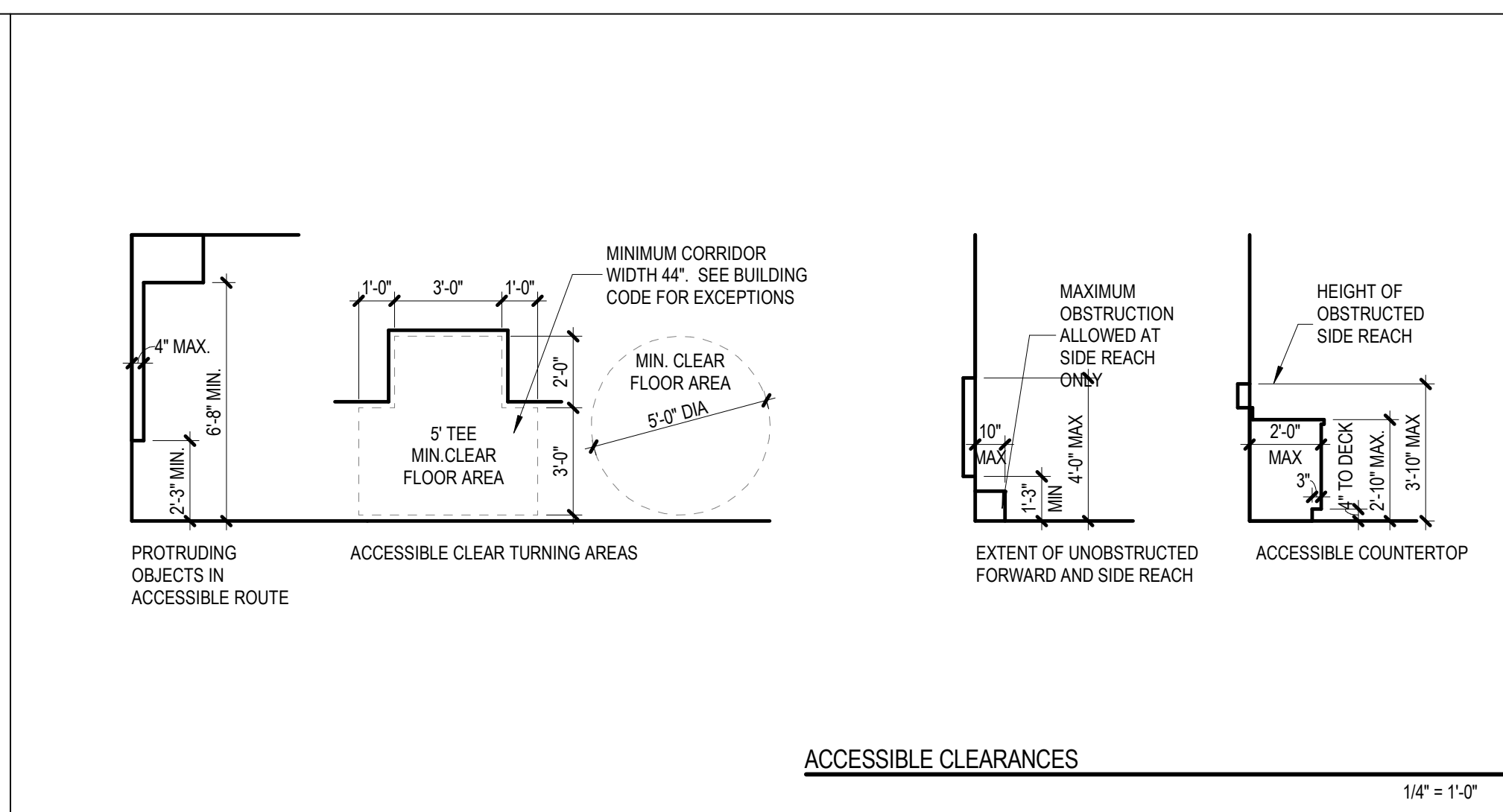
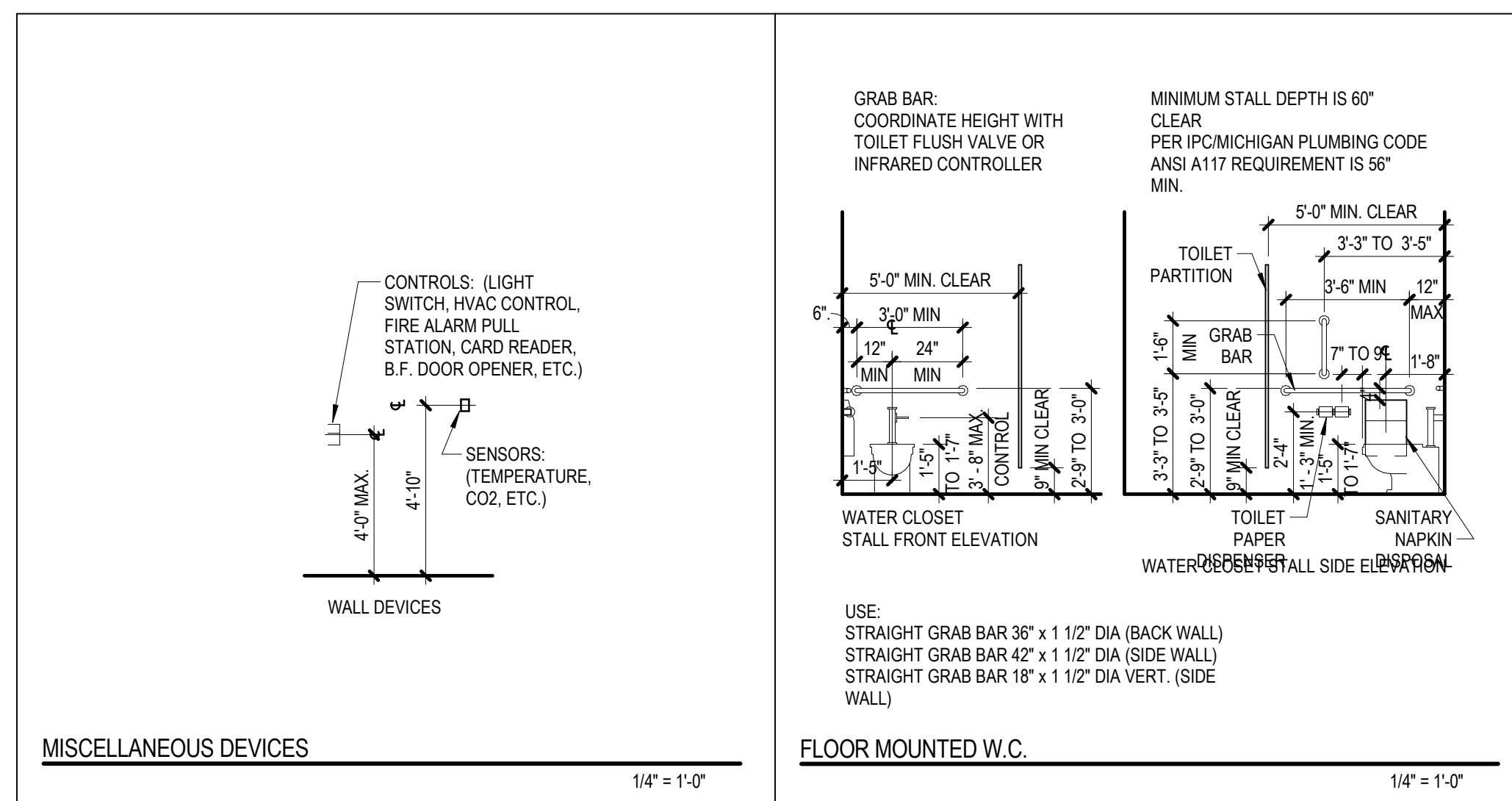
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MIDFIELD TERMINAL BUILDING TOILETING MODIFICATIONS  
WEST MICHIGAN REGIONAL AIRPORT

60 GEURINK BLVD  
HOLLAND, MI 49423

### GENERAL ABBREVIATIONS

#	INCHES	HT	HEIGHT
#	NUMBER	HVAC	HEATING / VENTILATION / AIR CONDITIONING
&	AND		
'	FEET		
@	AT	IN	INCH
©	COPYWRITTEN	LG	LONG
°	DEGREES		
Ø	DIAMETER	MECH	MECHANICAL
Δ	DELTA	MFR	MANUFACTURER
L	ANGLE	MIN	MINIMUM
AVC	AIR CONDITIONING	MISC	MISCELLANEOUS
AV	AUDIO VISUAL	MTD	MOUNTED
ACLG	ABOVE CEILING		
ADA	AMERICANS WITH DISABILITIES ACT	NEC	NATIONAL ELECTRIC CODE
AFF	ABOVE FINISHED FLOOR	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
ALT	ALTERNATE	NIC	NOT IN CONTRACT
ARCH	ARCHITECT, ARCHITECTURAL	NTS	NOT TO SCALE
AUTO	AUTOMATIC		
BLDG	BUILDING	OA	OVERALL
		OC	ON CENTER
CF/CI	CONTRACTOR FURNISHED / CONTRACTOR INSTALLED	OF/CI	OWNER FURNISHED, CONTRACTOR INSTALLED
CF/IO	CONTRACTOR FURNISHED / OWNER INSTALLED	OF/IO	OWNER FURNISHED, OWNER INSTALLED
CJ	CONSTRUCTION JOINT	OPP	OPPOSITE
CL	CENTERLINE	PLBG	PLUMBING
CONST	CONSTRUCTION	PRELIM	PRELIMINARY
CONT	CONTINUOUS CONTINUATION	PT	POINT
CTR	CENTER	QTY	QUANTITY
DEG	DEGREES	REQ	REQUIRED, REQUIREMENT
DIA	DIAMETER	REV	REVISE, REVISION
DIAG	DIAGONAL	RM	ROOM
DIM	DIMENSION		
DIST	DISTANCE	SCHED	SCHEDULE
DN	DOWN	SF	SQUARE FEET, SQUARE FOOT
DWS	DRAWING	SIM	SIMILAR
EC	ELECTRICAL CONTRACTOR	SPEC	SPECIFICATION
ENG	ENGINEER	STD	STANDARD
EQ	EQUAL	STR	STRUCTURAL
EQUIP	EQUIPMENT		
ETR	EXISTING TO REMAIN	TBD	TO BE DETERMINED
EX	EXISTING	THK	THICK, THICKNESS
EXR	EXISTING TO REMOVE	TYP	TYPICAL
EXT	EXTERIOR	UL	UNDERWRITERS LABORATORY
		UNO	UNLESS NOTED OTHERWISE
FEE	FINISHED FLOOR ELEVATION		
FF	FOOT, FEET	VERT	VERTICAL
FV	FIELD VERIFY	VOL	VOLUME
GA	GAUGE, GAGE	W	WITH
GD	HEAVY DUTY	WO	WITHOUT
HORIZ	HORIZONTAL	WT	WEIGHT



### CODE SUMMARY

- A. APPLICABLE CODES:**
- BUILDING CODES:
    - MICHIGAN BUILDING CODE 2015
    - MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS, 2015
      - ALTERNATION - LEVEL 1
  - MECHANICAL CODES:
    - MICHIGAN MECHANICAL CODE 2015
    - MICHIGAN PLUMBING CODE 2015
  - ELECTRICAL CODE:
    - MICHIGAN ELECTRICAL CODE 2017 (MICHIGAN ELECTRICAL CODE PART 8, INCORPORATING NATIONAL ELECTRICAL CODE 2017)
- B. EXISTING AND/OR PROPOSED BUILDING DATA: NO CHANGES**
- USE: USE GROUP A-3 - NO CHANGE  
USE GROUP B - NO CHANGE
  - CONSTRUCTION: TYPE VS - NO CHANGE
  - BUILDING AREA: NO CHANGE
    - ALLOWABLE: 9,000 SF
    - ACTUAL (FOOTPRINT): 7,818 SQUARE FEET
  - BUILDING HEIGHT: NO CHANGE
    - ALLOWABLE: 2
    - ACTUAL (W/O BASEMENT): 1
  - FACILITY NOT SPRINKLERED
  - FIRE EXTINGUISHERS REQUIRED
- D. OCCUPANT LOAD FOR EGRESS PURPOSES: NO CHANGE**
- ASSEMBLY: 15 GSF/OCC. (810 SF / 15 GSF/OCC = 54 OCC.)
  - AIRCRAFT ASSEMBLY: MAXIMUM 75 OCCUPANTS (WORST CASE SCENARIO)
  - BUSINESS: 100 GSF/OCC. (4071 SF / 100 GSF/OCC = 41 OCC.)
  - MECHANICAL: 300 GSF/OCC. (326 SF / 300 GSF/OCC = 2 OCC.)
- E. MEANS OF EGRESS REQUIREMENTS: NO CHANGE**
- F. PLUMBING FIXTURE REQUIREMENTS: NO CHANGE TO MINIMUM REQUIRED**
- PLUMBING FIXTURES:
    - REQUIRED: 2
    - 1/25 FOR FIRST 50, REMAINDER 1/50
  - REQUIRED: 2
  - REQUIRED: 2
  - SERVICE SINK: 1
  - MAX TRAVEL DISTANCE TO TOILET ROOMS: 1 STORY, 500 FT.
  - MAX SUBSTITUTION OF U FOR WC IN ANY ONE TOILET ROOM: 50%

### CODE LEGEND

- EGRESS
- DIRECTION OF EGRESS

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**ISSUANCE**  
BIDS AND PERMITS  
05/13/2019

**REVISIONS**  
NO. DATE DESCRIPTION

FILE NUMBER: 74370005  
PROJECT MANAGER: KB  
PROFESSIONAL: CPA  
DRAWN BY: CPA  
CHECKED BY:

**TITLE DRAWING, ABBREVIATIONS, SYMBOLS, ACCESSIBILITY GUIDELINES**  
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**DEMOLITION PLAN, FLOOR PLAN, AND REFLECTED CEILING PLAN**  
**A101**

**INTERIOR WALL LEGEND**

- ◻ METAL STUD FURRING / FRAMING @ 16" O.C. W/ 5/8" GYPSUM BOARD ONE SIDE. EXTEND ALL WALL COMPONENTS TO UNDERSIDE OF DECK.
- S3C 2 1/2" METAL STUDS
- S3D 3 5/8" METAL STUDS

**PLAN KEYNOTES**

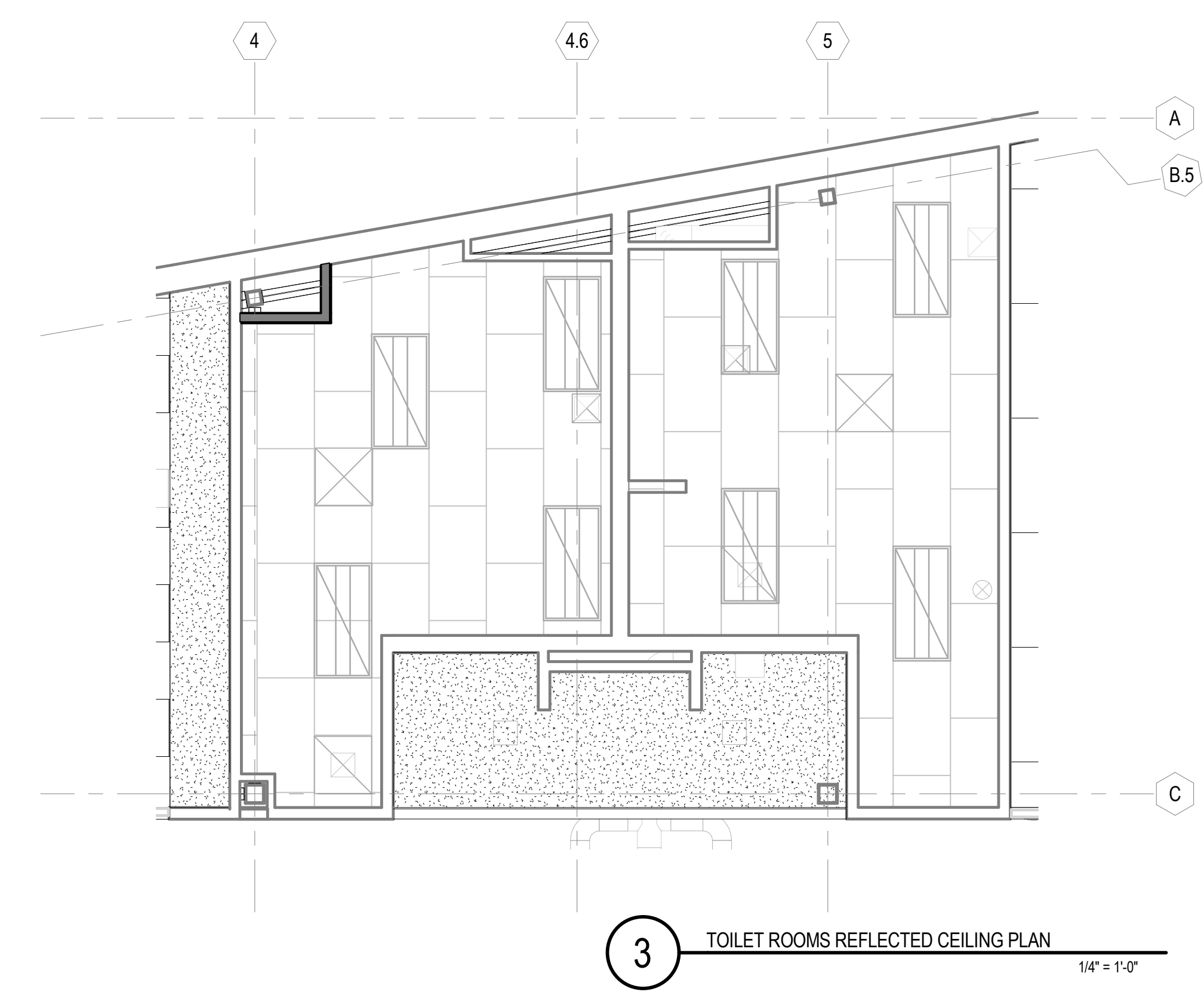
MARK	NOTE
A02	REINSTALL SALVAGED ACCESSORIES AS SHOWN
A03	DEMO, PATCH, AND PAINT AS REQUIRED FOR NEW PLUMBING
A05	PATCH AND INFILL CONCRETE; REPLACE AND MATCH FLOOR TILE TO EXISTING STYLE AND PATTERN
A07	NEW PARTITION TO DECK ABOVE
A08	NEW TOILET STALL TO MATCH EXISTING
A10	NEW URINAL
A11	PATCH WALL AS REQUIRED
A12	NEW TOILET PARTITION/URINAL SCREEN TO MATCH EXISTING

**TOILET ACCESSORIES**

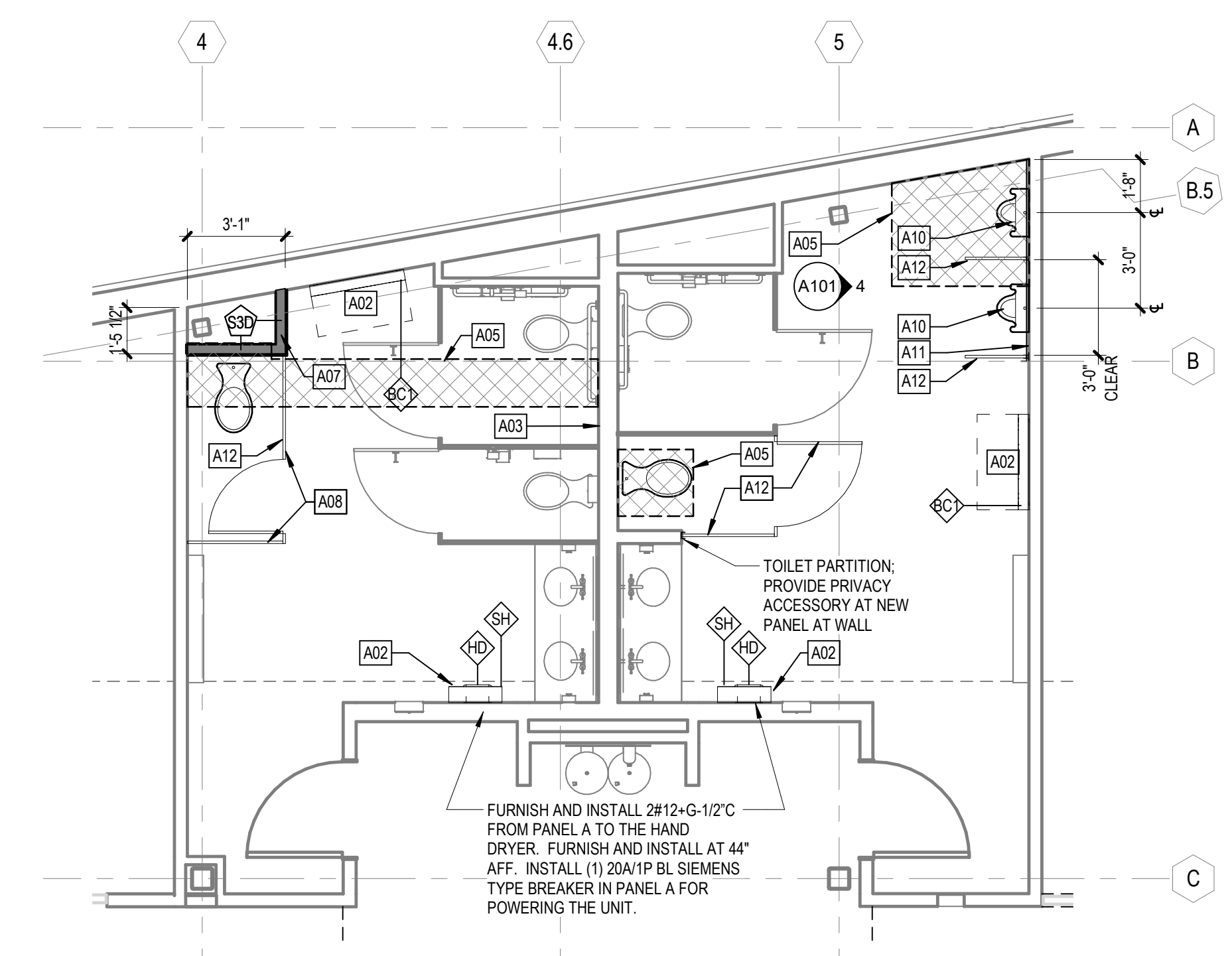
MARK	MODEL	MANUFACTURER	DESCRIPTION
BC1	EXISTING	--	BABY CHANGING STATION - SALVAGE AND REUSE EXISTING
HD	0196-1-93	AMERICAN SPECIALTIES, INC	HAND DRYER; SATIN STAINLESS STEEL
SH	EXISTING	--	EXISTING SHELF; REMOVE IF REQUIRED; SALVAGE AND REINSTALL

**DEMOLITION PLAN KEYNOTES**

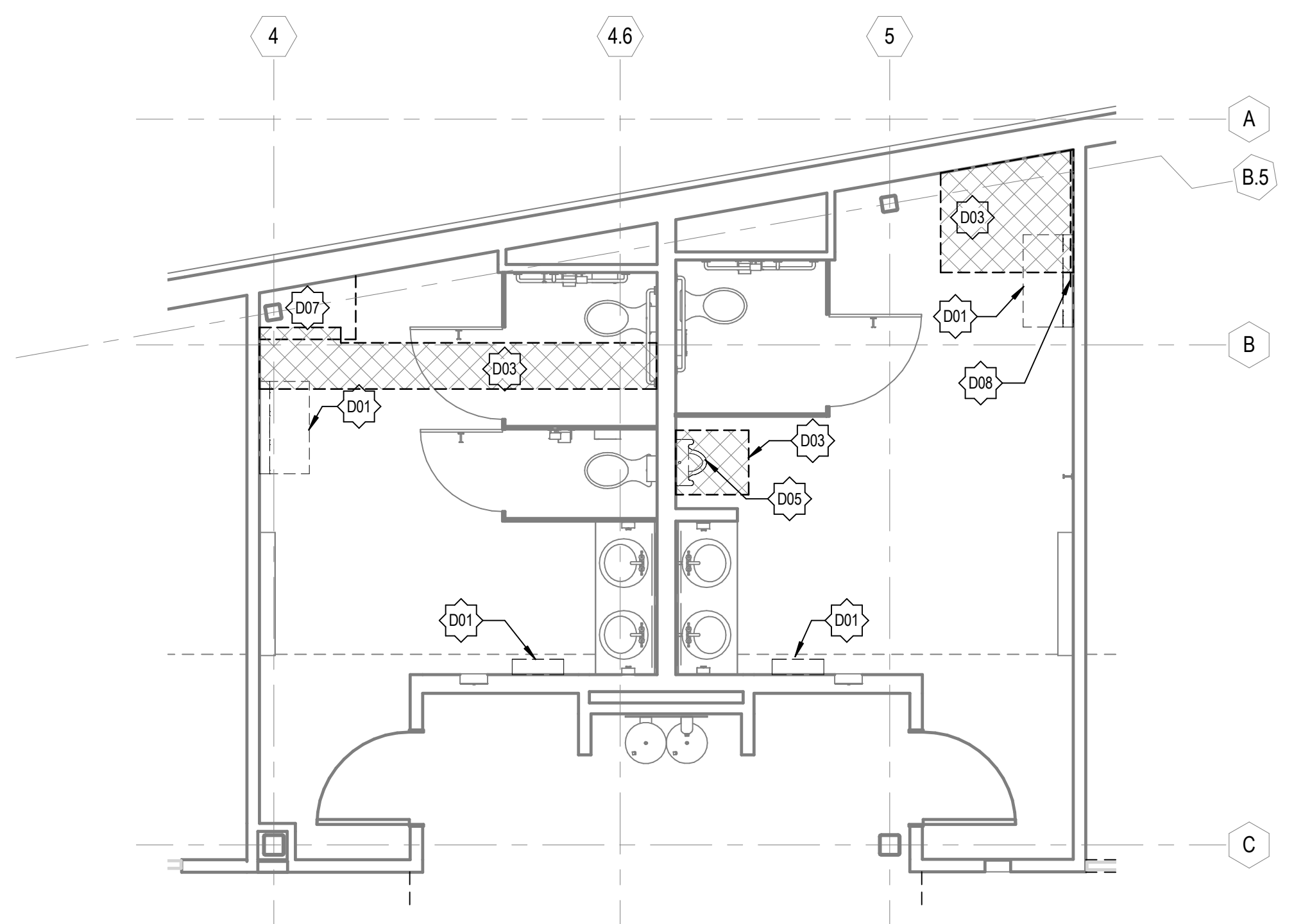
MARK	NOTE
D01	SALVAGE AND REINSTALL ACCESSORIES AS INDICATED
D03	DEMO AND PATCH CONCRETE FLOOR AND FLOOR TILE
D05	REMOVE PLUMBING FIXTURES AND SALVAGE FOR REUSE
D07	REMOVE CEILING AS REQUIRED FOR NEW PARTITIONS
D08	REMOVE WALL FINISHES AND SHEATHING AS REQUIRED FOR NEW PLUMBING



**3 TOILET ROOMS REFLECTED CEILING PLAN**  
1/4" = 1'-0"

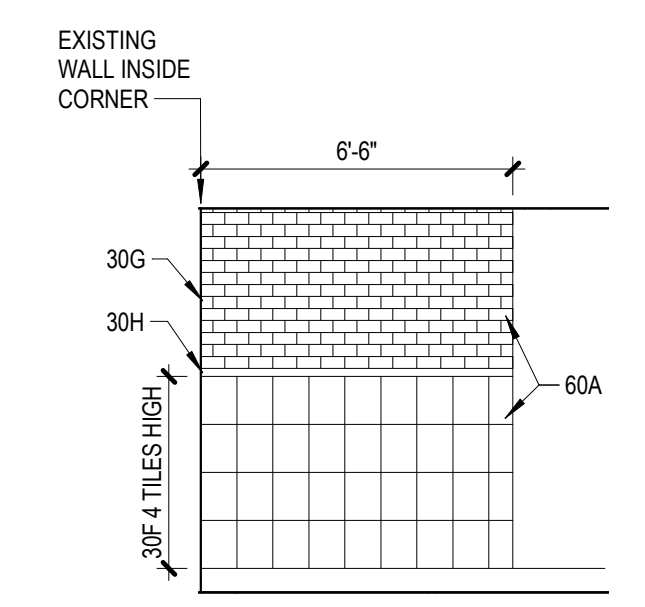


**2 TOILET ROOMS ENLARGED PLAN**  
1/4" = 1'-0"



**1 TOILET ROOMS DEMOLITION PLAN**  
1/4" = 1'-0"

**4 URINAL WALL FINISH ELEVATION**  
1/4" = 1'-0"

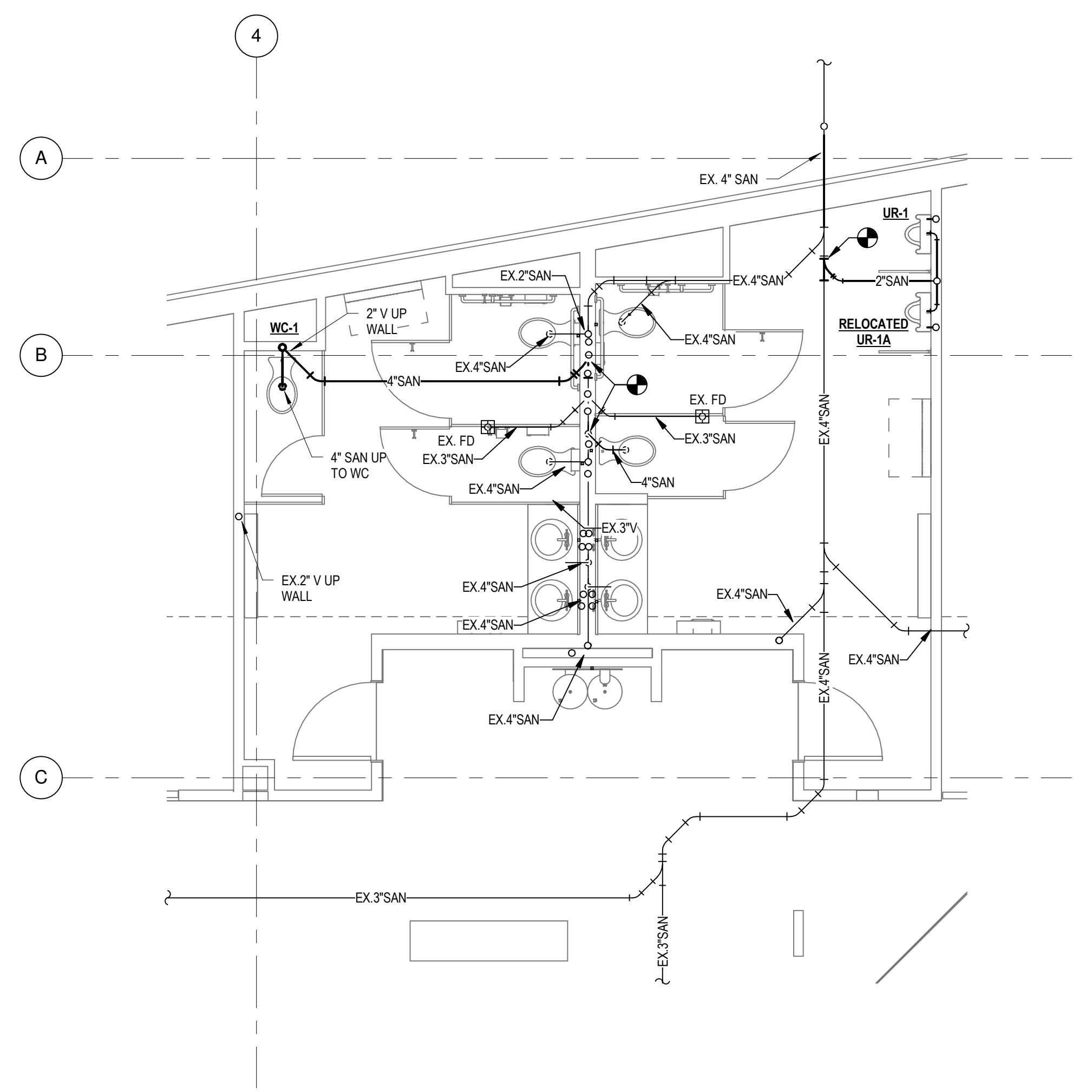


\*\* FINISH MATERIAL LIST PROVIDED AS REFERENCE FROM ORIGINAL DESIGN DOCUMENTS. INDICATED FINISHES SHALL MATCH ACTUAL INSTALLED PRODUCTS.

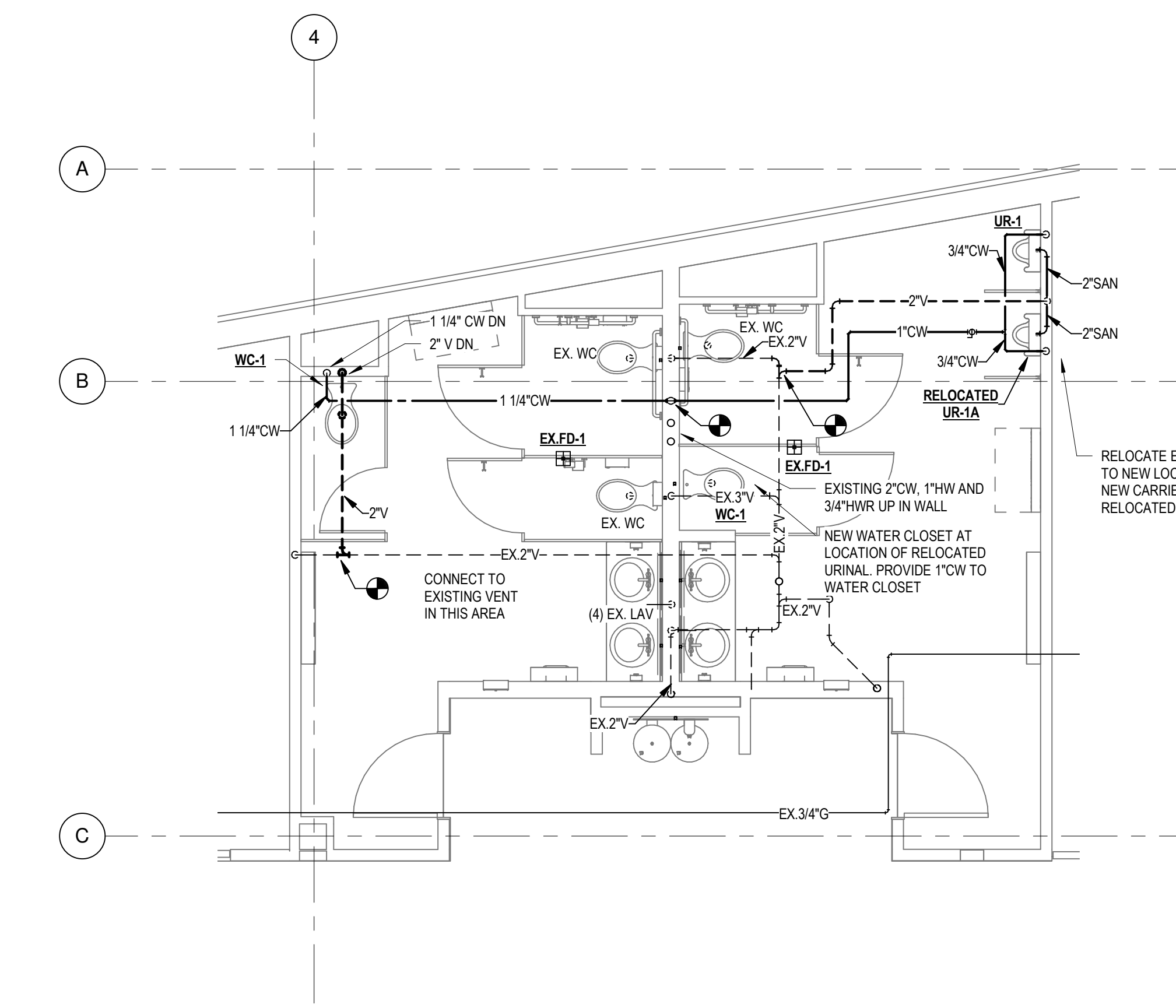
MARK	PRODUCT	MANUFACTURER	STYLE / PATTERN / FINISH	SIZE	COLOR	NOTES
<b>10 FLOORS</b>						
10A	CARPET	INTERFACE	WALK THE PLANK	25CN X 1M	BEECH	INSTALL HERRINGBONE
10B	CARPET	INTERFACE	VERMONT	24" X 24"	QUARTZITE	INSTALL ASHLAR
10C	CARPET	INTERFACE	A PEELING	24" X 24"	PATINA	INSTALL RANDOM
10D	CARPET	INTERFACE	EXPOSED	24" X 24"	IRON WORKS	INSTALL RANDOM
10E	WALK OFF CARPET	INTERFACE	ENTRY LEVEL	24" X 24"	OLIVE	
10F	RESINOUS FLOORING	DUR-A-FLEX	DUR-A-CHIP	--	6593A X-248-203-1MC	
10G	PORCELAIN TILE	FLORIM	GALAXY	12" X 24"	NERO	INSTALL 1/3 OFFSET, 60C
10H	WALK OFF GRATE	--	--	--	TBD	
10J	CONCRETE	--	SEALED	--	CLEAR	
<b>20 BASE</b>						
20A	BASE	JOHNSONITE	REVEAL	4.25"	T44 GATEWAY	
20B	BASE	JOHNSONITE	--	4"	T44 GATEWAY	
20C	PORCELAIN TILE	FLORIM	GALAZY / COVE	6" X 12"	NERO	
20D	STAINLESS STEEL	FRY REGLET	DRMB-50-400	--	--	REMOVE MUD FLANGES
<b>30 WALLS</b>						
30A	PAINT	COLOR TO MATCH SHERWIN WILLIAMS	--	--	6217 TOPSAIL	
30B	PAINT	COLOR TO MATCH SHERWIN WILLIAMS	--	--	2138-50 MISTED GREEN	
30C	PAINT	COLOR TO MATCH SHERWIN WILLIAMS	--	--	6303 GINGERLY	
30D	PAINT	COLOR TO MATCH SHERWIN WILLIAMS	--	--	2848 ROYCROFT PEWTER	
30E	PAINT	COLOR TO MATCH SHERWIN WILLIAMS	--	--	7602 INDIGO BATIK	
30F	CERAMIC TILE	AMERICAN OLEAN	PROFILES	9" X 12"	25 ICE WHITE	STRAIGHT STACK, 60D
30G	CERAMIC TILE	AMERICAN OLEAN	PROFILES	3" X 6"	25 ICE WHITE	BRICK STACK, 60D
30H	METAL GLASS MOSAIC	AMERICAN OLEAN	MORIELLO	58" X 58"	IMONSTONE MM02	ACCENT BAND OF 3 HIGH, 60D
30J	GLASS TILE	LEVEL FORTYTHREE	CUSTOM BLEND	1" X 1"	EQUAL PARTS 266, 273, 379, 383	60A, 60D
30K	HIGH IMPACT WALL PROTECTION	INPRO CORP	STANDARD	4" X 8" X .040	0106 DOVE GREY	
30L	METAL LAMINATE	LAMINART	METAL ART	617-MT ASIX	BRUSHED ALUMINUM	
30M	PAINT	COLOR TO MATCH SHERWIN WILLIAMS	--	--	7066 GREY MATTERS	
<b>40 CEILING</b>						
40A	ACOUSTIC CEILING PANEL	ROCKFON	ALASKA	--	WHITE	SEE REFLECTED CEILING PLANS
40B	PAINT	COLOR TO MATCH SHERWIN WILLIAMS	--	--	2848 ROYCROFT PEWTER	
40C	CANVAS	HUNTER DOUGLAS	TECHSTYLE / CANVAS / TSMWALL	VARIES	TO MATCH SHERWIN WILLIAMS 7067 SILVER STRAND	
<b>50 CASEWORK</b>						
50A	PLASTIC LAMINATE	WILSONART	18 LINEARITY	--	7949 ASIAN NIGHT	
50B	PLASTIC LAMINATE	WILSONART	38 FINE VELVET TEXTURE	--	4943 CLASSIC LINEN	
50C	SOLID SURFACE	H-MACS	GALAXY	--	VENUS T001	
50D	SOLID SURFACE	FORMICA	CLASSICS	--	LUNA SAND	
50E	PLASTIC LAMINATE	FORMICA	S8 MATTE	--	PLATINUM DROPS	
50F	SOLID SURFACE	H-MACS	MATTE	--	S103 CONCRETE GRAY	
<b>60 MISCELLANEOUS</b>						
60A	METAL EDGE PROFILE	SCHLUTER	QUADEC	--	SATIN ANODIZED ALUMINUM	
60B	WINDOW TREATMENTS	DIAPHR	2705	--	P28 OYSTER / CHARCOAL	
60C	GROUT	TEC	ACCUCOLOR	941 RAVEN	--	
60D	GROUT	TEC	ACCUCOLOR	910 BRIGHT WHITE	--	

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**PARTIAL UNDERGROUND TOILET ROOM PLUMBING PLAN**  
1/4" = 1'-0"



**PARTIAL FIRST FLOOR TOILET ROOM PLUMBING PLAN**  
1/4" = 1'-0"

ABBREVIATIONS - PLUMBING			
AC	AIR COMPRESSOR	G	GAS
AC	ARCHITECTURAL CONTRACTOR	GLR	GROUND LOOP RETURN
ADA	AMERICANS WITH DISABILITIES ACT	GLS	GROUND LOOP SUPPLY
AVS	ACID VENT STACK	HB	HOSE BIBB
AW	ACID WASTE	HO	HUB OUTLET
B	BOILER	HTP	HEAT PUMP
BV	BALL VALVE	HW	HOT WATER
CB	CATCH BASIN	HWR	HOT WATER RETURN (DOMESTIC)
CB	COMBINATION BALANCE & SHUTOFF VALVE	HYD	HYDRANT
CBS	CAST IRON PIPE	IE	INVERT ELEVATION
CO	CLEANOUT	IW	INDIRECT WASTE
COMP	COMPARTMENT	KVAR	KILOVOLT-AMPERES REACTIVE
CS	CLINICAL SINK	L	LAVATORY
CV	CHECK VALVE	LAV	LAVATORY
CW	COLD WATER	LEED	LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN
D&T	DRIP AND TRAP	LWT	LEAVING WATER TEMPERATURE
DB	DIALYSIS WASTE & SUPPLY BOX	MB	MOP BASIN
DOP	DOMESTIC WATER CIRCULATING PUMP	MCA	MINIMUM CIRCUIT AMPS
DDR	DOMESTIC COLD WATER RETURN	MH	MANHOLE
DN	DISCHARGE NOZZLE	MOP	MAXIMUM OVERCURRENT PROTECTION
DSN	DOWNSPOUT NOZZLE	NG	NATURAL GAS
DW	DISHWASHER	OHD	OVERHEAD DOOR
DWH	DOMESTIC WATER HEATER	ORD	OVERFLOW ROOF DRAIN
ECO	EXTERIOR CLEANOUT	PF	PUMP - FIRE PROTECTION
EWT	ENTERING WATER TEMPERATURE	PP	PUMP - PLUMBING
FC	FLEXIBLE CONNECTION	PSI	POUNDS PER SQUARE INCH
FGO	FLOOR CLEAN OUT	PSIG	POUNDS PER SQUARE INCH GAUGE
FD	FLOOR DRAIN	RD	ROOF DRAIN, ROAD
FS	FLOOR SINK	RID	ROUGH-IN ONLY
FSEC	FOOD EQUIPMENT SERVICE CONTRACTOR	RPP	REDUCED PRESSURE BACKFLOW PREVENTER
		RPM	REVOLUTIONS PER MINUTE
		RR	REST ROOM
		RV	RELIEF VENT
		S	SINK
		SAN	SANITARY
		SCW	SOFT COLD WATER
		SD	STORM DRAIN
		SG	SPECIFIC GRAVITY
		SH	SHOWER
		SK	SINK
		SNS	SANITARY SEWER
		SPHD	SPRINKLER HEAD
		SPNR	SPRINKLER
		SS	SERVICE SINK
		SSK	SERVICE SINK
		ST	STORM
		TD	TRENCH DRAIN
		THERM	100 CUBIC FEET OF NATURAL GAS
		TOW	TOP OF WALL
		UR	URINAL
		V	VENT
		VS	VENT STACK
		VTR	VENT THROUGH ROOF
		W	WASTE
		WCO	WALL CLEANOUT
		WH	WALL HYDRANT
		WHR	WATER HEATER
		WS	WASTE STACK
		ZVB	ZONE VALVE BOX

PLUMBING FIXTURE SCHEDULE						
FIXTURE/TAG	MAKE/MODEL	DESCRIPTION	HW	CW	WASTE	VENT
WATER CLOSET (P-101) STAFF/PUBLIC TOILET WC-1	KOHLER: HIGHLINE K-4005 SLOAN 8111-1.28 NO SUBSTITUTIONS ALLOWED	BOWL: ANSI A112.19.2, FLOOR MOUNTED, SIPHON JET, WHITE, VITREOUS CHINA WITH ELONGATED RIM, 1-1/2 INCH TOP SPUD, BOLT CAPS, TRIM: ANSI A112.18.1, EXPOSED, SENSOR ACTIVATED WITH TRUE MECHANICAL OVERRIDE BUTTON, DIAPHRAGM TYPE, CHROME PLATED, INTEGRAL SCREWDRIVER STOP, ADJUSTABLE TAIL PIECE, VACUUM BREAKER, 1.28 GPF, AND 6 VAC SOLENOID OPERATOR, SLOAN 8186-0.13 SEAT: SOLID WHITE PLASTIC, OPEN FRONT, EXTENDED BACK, NO COVER, STA-TITE FASTENER, BEMIS MODEL 7657.	-	1"	4"	2"
URINAL (P-101) STAFF/PUBLIC URINAL UR-1	KOHLER: BARODON K-4991-ET SLOAN 8186-0.13 NO SUBSTITUTIONS ALLOWED	BOWL: ANSI A112.19.2, WALL HUNG, WHITE, VITREOUS CHINA, 3/4 INCH TOP SPUD AND CONCEALED CARRIER, TRIM: ANSI A112.18.1, EXPOSED, SENSOR ACTIVATED WITH TRUE MECHANICAL OVERRIDE BUTTON, DIAPHRAGM TYPE, CHROME PLATED, INTEGRAL SCREWDRIVER STOP, ADJUSTABLE TAIL PIECE, VACUUM BREAKER, 1.3GPF, AND 6 VAC SOLENOID OPERATOR, SLOAN 8186-0.13 CARRIER: MIFAB MC-31, ASME A112.6.1M-97, STRUCTURAL STEEL UPRIGHTS WITH WELDED STEEL FEET, LUGS FOR FLOOR AND WALL ATTACHMENT, THREADED FIXTURE STUDS FOR FIXTURE HANGER, BEARING STUDS.	-	3/4"	2"	2"
URINAL (P-101) BARRIER FREE WALL HUNG STAFF/PUBLIC URINAL UR-1A	KOHLER: BARODON K-4991-ET SLOAN 8186-0.13 NO SUBSTITUTIONS ALLOWED	BOWL: ANSI A112.19.2, WALL HUNG, WHITE, VITREOUS CHINA, 3/4 INCH TOP SPUD AND CONCEALED CARRIER, TRIM: ANSI A112.18.1, EXPOSED, SENSOR ACTIVATED WITH TRUE MECHANICAL OVERRIDE BUTTON, DIAPHRAGM TYPE, CHROME PLATED, INTEGRAL SCREWDRIVER STOP, ADJUSTABLE TAIL PIECE, VACUUM BREAKER, 1.3GPF, AND 6 VAC SOLENOID OPERATOR, SLOAN 8186-0.13 CARRIER: MIFAB MC-31, ASME A112.6.1M-97, STRUCTURAL STEEL UPRIGHTS WITH WELDED STEEL FEET, LUGS FOR FLOOR AND WALL ATTACHMENT, THREADED FIXTURE STUDS FOR FIXTURE HANGER, BEARING STUDS.	-	3/4"	2"	2"

- SPECIFICATIONS**
- SHOP DRAWING
- COMPLETE SCHEDULE OF EQUIPMENT, ETC., PROPOSED FOR INSTALLATION SHALL BE SUBMITTED FOR APPROVAL BEFORE ORDERS ARE PLACED.
- ATTACHING TO BUILDING CONSTRUCTION
- EQUIPMENT AND PIPING SUPPORTS SHALL BE ATTACHED TO STRUCTURAL MEMBERS (BEAMS, JOISTS, ETC.) RATHER THAN TO FLOOR OR ROOF SLABS.
- PIPE HANGERS
- ADJUSTABLE STEEL CLEVIS HANGERS, NON-METALLIC COATING FOR ELECTROLYTIC PROTECTION WHERE ATTACHMENTS ARE IN DIRECT WITH COPPER. COPPER U-STRAP HANGERS FOR UN-INSULATED PIPE. COMPLY WITH MSS STANDARD PRACTICE SP-98.
- INSULATION
- PIPE INSULATION
- SERVICE-DOMESTIC HOT AND COLD WATER. MATERIAL: 1" MINERAL FIBER WITH FSK JACKET. SEAL JOINTS TO PREVENT CONDENSATION.
  - APPLY INSULATION ONLY AFTER PIPES HAVE BEEN TESTED AND CLEANED.
  - INSTALL INSULATION IN A NEAT WORKMANLIKE MANNER.
  - ALL INSULATION: RATING NOT TO EXCEED 25 FLAME, 50 SMOKE, RATED FOR USE IN RETURN AIR PLENUM.
- PLUMBING
- FURNISHED AND INSTALL EQUIPMENT, SPECIALTIES AND ACCESSORIES TO PROVIDE SYSTEMS AS SHOWN ON DRAWINGS OR HEREUNDER SPECIFIED.
  - FOR PLUMBING FIXTURES, REFER TO EQUIPMENT SCHEDULE ON DRAWINGS.
  - VITREOUS CHINA FIXTURES TO BE CLASS A AND WHITE, UNLESS COLOR IS SPECIFICALLY NOTED. ALL ELSEWHERE TO BE ACID-RESISTING.
  - EXPOSED FIXTURE METAL AND FITTINGS: COORDINATE W/ ARCH.
  - FIXTURES SET PLUMB TO WALL LINES. FASTEN SECURELY IN PLACE.
  - FIXTURES AND TRIM PROTECTED BY CONTRACTOR UNTIL FINAL ACCEPTANCE. CLEAN FIXTURES AND TRIM BEFORE FINAL INSPECTION. CRACKED FIXTURES OR SCRATCHED TRIM REPLACED BY CONTRACTOR BEFORE FINAL ACCEPTANCE.
  - FIXTURES SET, CLEANED AND CONNECTED SO THEY MAY BE USED BY OWNER'S PERSONNEL AT EARLIEST POSSIBLE DATE.
  - FIXTURES AND EQUIPMENT EQUIPPED WITH ANTI-SIPHON DEVICES OR CONSTRUCTED TO ELIMINATE POSSIBILITY OF SIPHONING WASTE MATERIAL INTO WATER SUPPLY.
  - CHROMIUM PLATING TO BE IN ACCORDANCE WITH U.S. GOVERNMENT STANDARDS UNDER LICENSE FROM THE CHROME CORPORATION OF AMERICA. BRASS PLATE STEEL OR CAST IRON AND NICKEL PLATE BRASS OR BRASS PLATING BEFORE CHROMIUM PLATING. SATIN OR POLISHED FINISH AS SPECIFIED. COORDINATE FINAL FINISH WITH ARCHITECT BEFORE ORDERING.
- PIPING
- INSTALL CHROME-PLATED PIPE ESCUTCHEONS ON EXPOSED PIPE @ FLOORS, WALLS, AND CEILINGS.
  - 125# WROUGHT COPPER UNIONS WITH SOLDER JOINT FITTINGS, CRANE 633.
  - FURNISH AND INSTALL SUPPORTS, GUIDES AND ANCHORS REQUIRED FOR PROPER SUPPORT OF PIPES.
  - LAY UNDERGROUND PIPING ONLY ON SOLID UNDISTURBED GROUND. TAMP BOTTOM OF TRENCH. GRADE FOR REQUIRED SLOPE. COVER PIPE WITH SAND.
  - SUPPORT VERTICAL RUNS WITH HANGER ADJACENT TO ELBOW.
  - SUPPORT HORIZONTAL PIPE WITH HOT ROLLED STEEL RODS (ASTM A107), SPACING: 1/2" - 2" PIPE, 8'-0" ON CENTERS WITH 3/8" DIA. ROD, 2 1/2" - 3" PIPE, 12'-0" ON CENTERS WITH 1/2" DIA. ROD.
  - DOMESTIC HOT AND COLD WATER: HARD COPPER TUBE, ASTM B88, TYPE-I WATER TUBE. DRAWN TEMPER WITH COPPER SOLDER, JOINT PRESSURE FITTINGS. JOINING MATERIAL: SOLDER, ASTM B32, ALLOY SN65, SN94, OR E, LEAD FREE. ON DRAWINGS: 1/2" DIA. ABSORBENT OR APPROVED EQUAL.
    - CLEANING & DISINFECTING: PURGE AND DISINFECT POTABLE WATER SYSTEMS AS PRESCRIBED BY AUTHORITIES HAVING JURISDICTION.
    - UNLESS OTHERWISE NOTED, PROVIDE INDIVIDUAL WATER BRANCHES TO FIXTURES AND EQUIPMENT WITH HEAVY DUTY SHOCK ABSORBERS IN LIEU OF AIR CHAMBERS TO ELIMINATE PIPE HAMMER. EXACT SIZE AND LOCATION AS SHOWN ON DRAWINGS.
    - PROVIDE OVERRIM WATER SUPPLY TO FIXTURES AND EQUIPMENT PROVIDE APPROVED VACUUM BREAKERS TO ALL BELOW RIM CONNECTIONS (EXCEPT BILL COCKS).
    - TEST WITH COLD WATER @ 100 PSIG OR 1 1/2 TIMES WORKING PRESSURE, WHICHEVER IS GREATER. MAINTAIN FOR ONE HOUR.
  - ALL VALVES: TWO PIECE ALLOY, BRONZE BODY WITH FULL PORT, CHROME PLATED BALL, TFE SEATS, 600-PSIG MINIMUM CWP RATING. LEVER HANDLE WITH EXTENDED STEM FOR INSULATION.
  - USE DIELECTRIC COUPLINGS WHEN JOINING DISSIMILAR PIPING MATERIALS.
  - SANITARY & VENT PIPING
    - VERTICAL PIPING SHALL BE: STANDARD WEIGHT/HUBLESS CAST SOIL PIPE, CIPSI 301 WITH HUBLESS CAST-IRON COUPLINGS.
    - HORIZONTAL PIPING SHALL BE: PVC PLASTIC PIPE, ASTM D2665, SCHEDULE 40 WITH DRAINAGE PATTERN SOCKET FITTINGS.
 

1-1/2" & 2" PIPE	1-NCH MAX. SPACING	3/8-INCH ROD
3" PIPE	60-INCH MAX. SPACING	1/2-INCH ROD
4" & 5" PIPE	60-INCH MAX. SPACING	5/8-INCH ROD
- RUN LOCAL HORIZONTAL DRAINAGE PIPING AT GRADE A MINIMUM OF 1/8"FT. MAKE CHANGES IN DIRECTION OF DRAINING PIPING WITH APPROPRIATE USE OF 45 DEGREE WYES, LONG SWEEP QUARTER, SIXTH, EIGHTH OR SIXTEENTH BENDS, EXCEPT THAT WHERE SPACE CONDITIONS REQUIRE, SHORT TURN SANITARY TEES MAY BE USED ON VERTICAL LINES. SLIP JOINTS: PERMITTED ONLY ON FIXTURE TRAP INLETS OR ELBOWS CONNECTING TO FIXTURE TAILPIECES. UNIONS NOT PERMITTED ON SEWER SIDE OF TRAPS. USE TUCKER OR HUB END FITTINGS.
  - ANY SOIL, WASTE OR VENTS PASSING THRU ROOF SHALL BE MINIMUM 3" IN SIZE. LOCATED AT LEAST 18" FROM PARAPETS, ROOF DRAINS, BUILDHEAD WALLS, TO ALLOW FOR FLASHING. FLASH WITH #4 SHEET LEAD WITH SQUARE BASE EXTENDING MINIMUM 7" OUT FROM PIPE AND TURN TOP OVER DOWN INTO PIPE.
  - RUN VENT PIPING WITH LONG TURN ELBOWS AT CHANGES IN DIRECTION, GRADE TO DRAIN OUT CONDENSATION AND CONNECT AT BASE TO PREVENT ACCUMULATION OF RUST. WHERE POSSIBLE, MAKE VENT STACK AND DRY SOIL AND WASTE STACK EXTENSION OFFSETS AT ANGLE OF 45 DEGREES.
  - RUN PIPING FREE OF TRAPS WHEREVER POSSIBLE AND GRADE AND VALVE FOR COMPLETE CONTROL AND DRAINAGE OF SYSTEM WITH DRAIN COCKS AT LOW POINTS, AT BASE OF VALVED RISERS AND WHERE INDICATED.
- INSTALL CHROME-PLATED BRASS PIPE WITH CHROME-PLATED THREADED CAST BRASS FITTINGS FOR EXPOSED PIPE AT PLUMBING FIXTURES.
  - MAKE CONNECTIONS TO EQUIPMENT WITH FLANGES OR UNIONS AND WITH THREADED ADAPTORS USED FOR SWING CONNECTIONS.

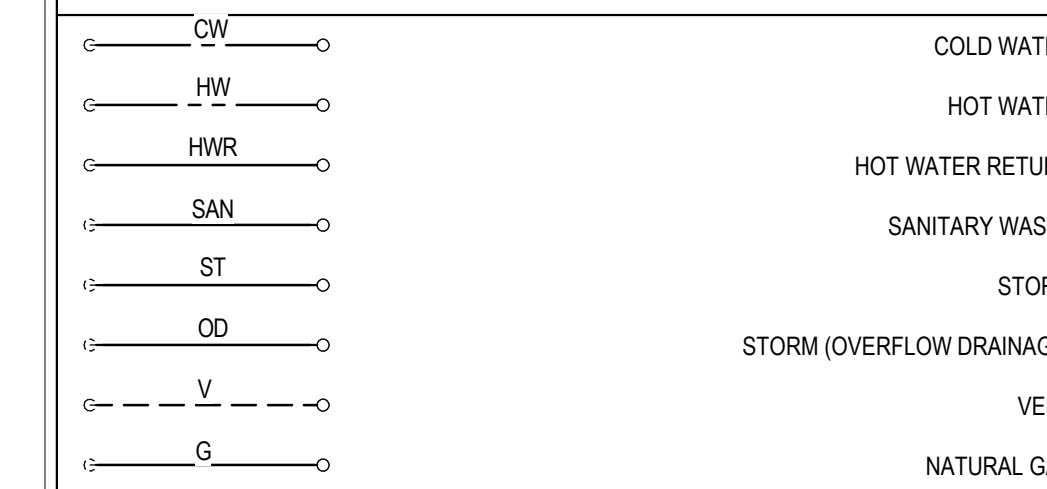
**PLUMBING GENERAL NOTES**

- COORDINATE ROUTING OF PIPING WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO AVOID CONFLICTS.
- COMPLY WITH ALL APPLICABLE LOCAL AND STATE CODES.
- ALL PLUMBING WORK SHALL MEET MICHIGAN PLUMBING CODE 2015 REQUIREMENTS AS A MINIMUM UNLESS EXCEEDED BY PROJECT CONSTRUCTION DOCUMENTS. THE OWNER EXPECTS THE HIGHEST LEVEL OF WORKMANSHIP AND QUALITY STANDARDS.
- PROVIDE SHUTOFF VALVES AT ALL FIXTURES AND EQUIPMENT.
- COORDINATE HANGING AND SUPPORT OF PIPING WITH STRUCTURAL.
- PROVIDE PIPE SLEEVES WHERE PIPES PENETRATE WALLS.
- PROVIDE PIPE SLEEVES WHERE PIPES RUN BELOW FOOTING.
- INSTALL PIPING IN AN ORGANIZED MANNER. DO NOT ROUTE IN FRONT OF WINDOWS.
- THE INSTALLATION OF ALL PIPING SHALL BE CLOSELY COORDINATED WITH NEW SHEET METAL, HVAC PIPING, ELECTRICAL, AND STRUCTURAL CONDITIONS. NOT ALL REQUIRED OFFSETS AND FITTINGS ARE INDICATED, BUT SHALL BE PROVIDED. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR CLEARANCES. THE LOCATION OF SANITARY, STORM AND VENT LINES SHALL TAKE PRECEDENCE OVER HVAC AND FIRE PROTECTION PIPING AND ELECTRICAL CONDUIT AND CABLE TRAY.
- PROVIDE WATER HAMMER ARRESTORS PER PDV 1M-201 AND UP STREAM OF ALL AUTOMATIC AND FAST CLOSING VALVES INCLUDING BUT NOT LIMITED TO SOLENOID VALVES.
- PIPE MATERIAL TO MATCH EXISTING PIPING FOR DCW, SAN, AND VENT.

**PLUMBING SYMBOLS**



**PLUMBING SYMBOLOGY**



MIDFIELD TERMINAL BUILDING TOILETING MODIFICATIONS  
**WEST MICHIGAN REGIONAL AIRPORT**  
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 HOLLAND, MI 49423

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FILE NUMBER: 74370005  
 PROJECT MANAGER: KB  
 PROFESSIONAL: KJM  
 DRAWN BY: RCG  
 CHECKED BY: KJM

**ISSUANCE**  
 BIDS AND PERMITS  
 05/13/2019

**REVISIONS**  
 NO. DATE DESCRIPTION

**PLUMBING PLAN**  
**P101**

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