

CODE INFORMATION

APPLICABLE CODES:

2018 INTERNATIONAL BUILDING CODE EDITION
2018 INTERNATIONAL MECHANICAL CODE EDITION
2018 INTERNATIONAL PLUMBING CODE EDITION
2018 NATIONAL ELECTRICAL CODE
2018 INTERNATIONAL FUEL GAS CODE EDITION
2009 INTERNATIONAL FIRE CODE EDITION
2009 ICC/ANSI.1 ACCESSIBILITY AND USABILITY CODE

PROJECT DESCRIPTION:

CRAIG T.
WATSON, AIA
A LIMITED LIABILITY CORPORATION

ARCHITECTURE
INTERIORS
PLANNING
MANAGEMENT

2525 MAIN STREET, SUITE 107
KANSAS CITY, MISSOURI 64108
tel: 816.456.0530
email: craigtwatson@aol.com

Project 20603

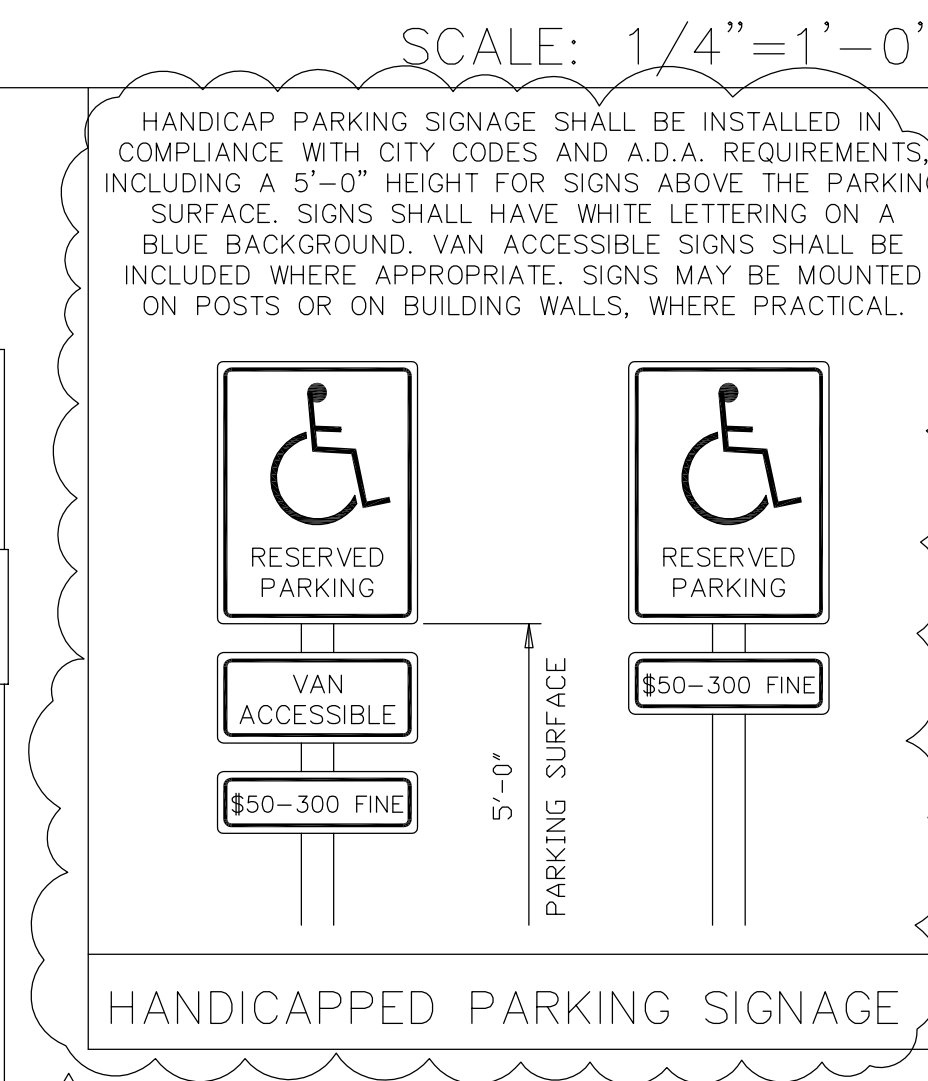
COURAGEOUS HOME CARE, LLC
OFFICE with DAY PROGRAM FACILITY
TENANT FINISH MODIFICATIONS
300 SW Noel Street
Lee's Summit, Missouri 64063



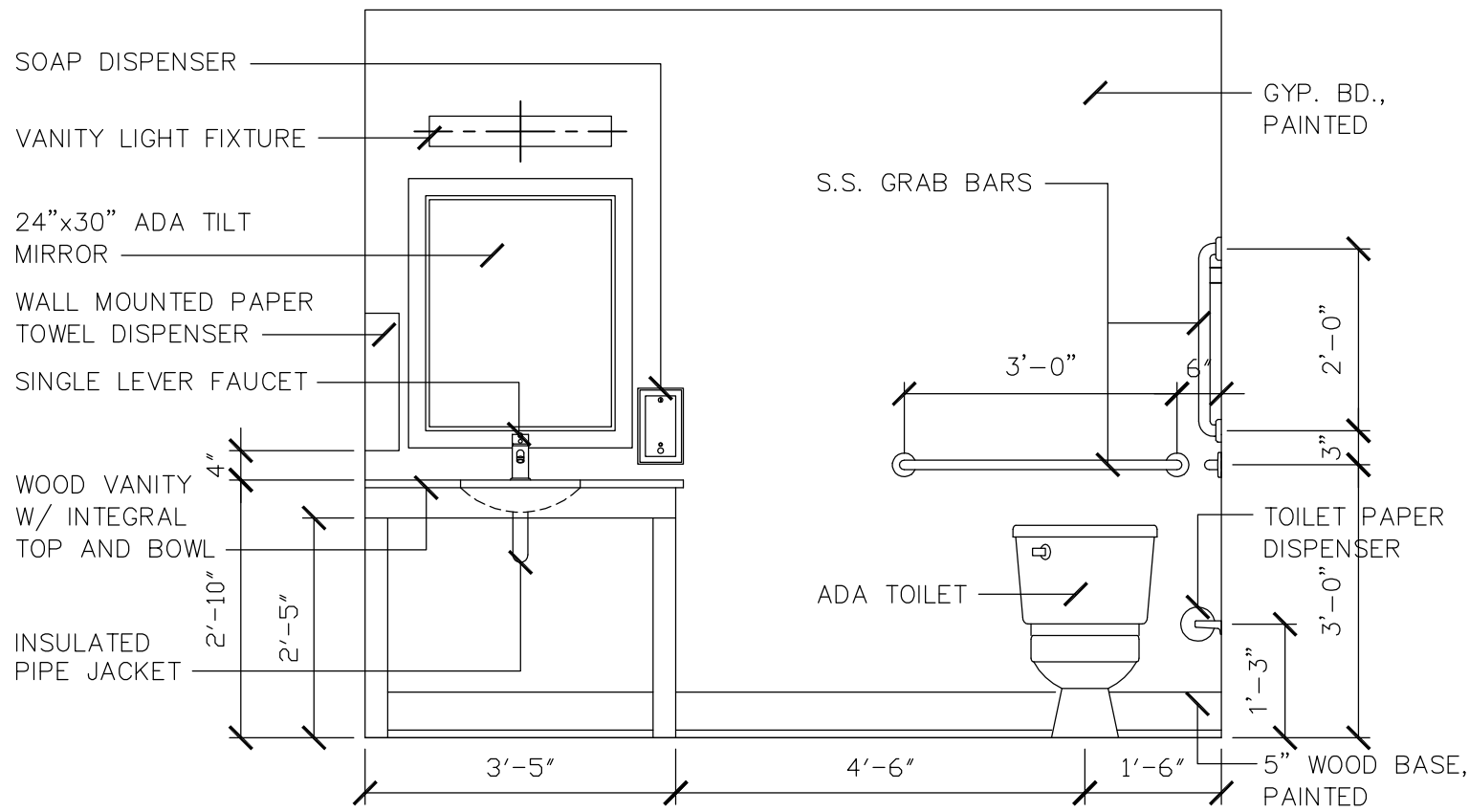
DRAWN BY: CTW		
CHECKED BY: CTW		
APPROVED BY: CTW		
ISSUE		DATE
	Construction Doc.	
	Submittal	6/10/22
1	Revision No. 1 Per	
	City Review	7/27/22
2	Revision No. 2 Per	
	City Review	8/29/22

GENERAL NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND MATERIALS PRIOR TO THE PROCUREMENT, FABRICATION AND/OR PLACING ORDERS FOR ALL MATERIALS USED FOR THE TENANT FINISH MODIFICATIONS.
2. PROVIDE ILLUMINATED EXIT SIGNAGE WITH BATTERY BACKUP AT ALL EXIT DOORS.
3. INSTALL 75 CFM EXHAUST FANS IN ALL TOILET ROOMS.
4. INSTALL PANIC EXIT DEVICES ON ALL EXIT DOORS.
5. PROVIDE 1-1/2" DIA. SOLID WOOD WALL MOUNTED HANDRAIL. ANCHOR TO WOOD BLOCKED AT INTERIOR STAIRS. HANDRAIL SHALL BE MOUNTED 34" ABOVE STAIR RISERS. HANDRAIL SHALL TERMINATE BACK TO WALL AT END OF STAIRS.
6. USE 4,000 PSI CONCRETE FOR FOOTINGS, FDTN. STOOPS AND RAMP.
7. LUMBER SPECIES SHALL BE DOUGLAS FIR, #2 GRADE. GRADE MARKS SHALL COMPLY W/ DOC PS 20.



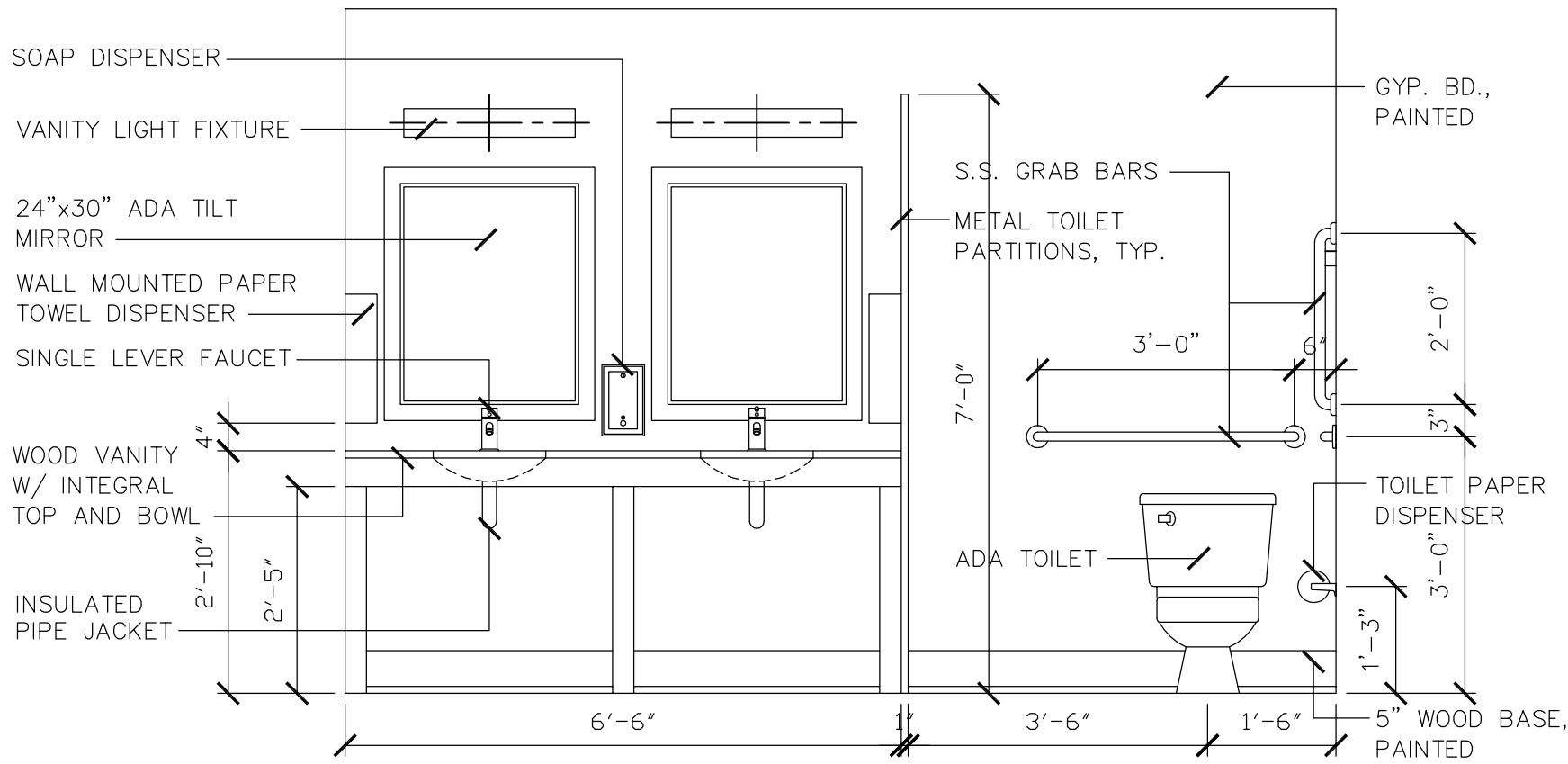
Code Data, Site,
First Floor,
Lower Level &
Basement Plans



TOILET 112

1 TOILET ELEVATION

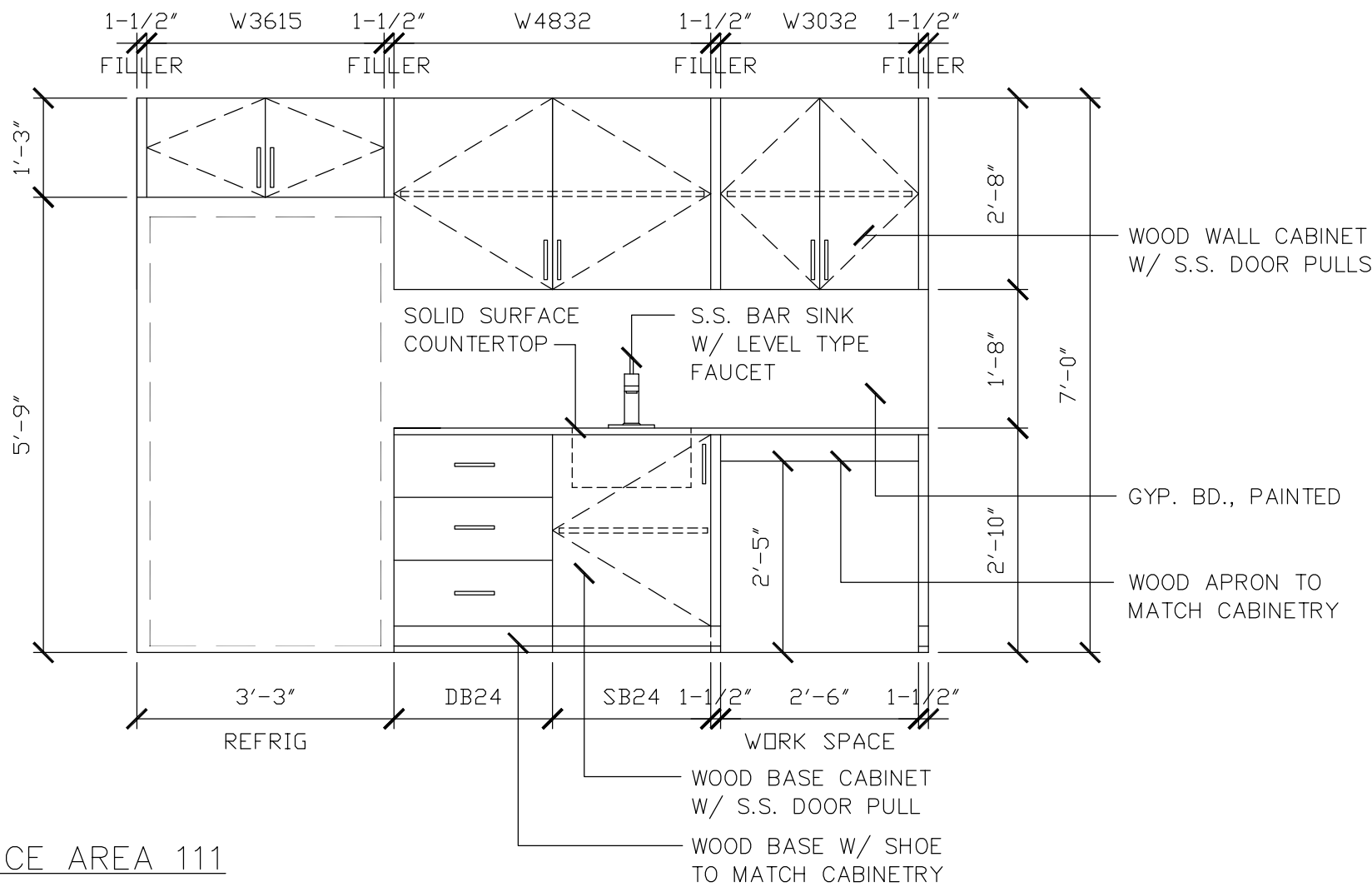
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TOILET 103

2 TOILET ELEVATION

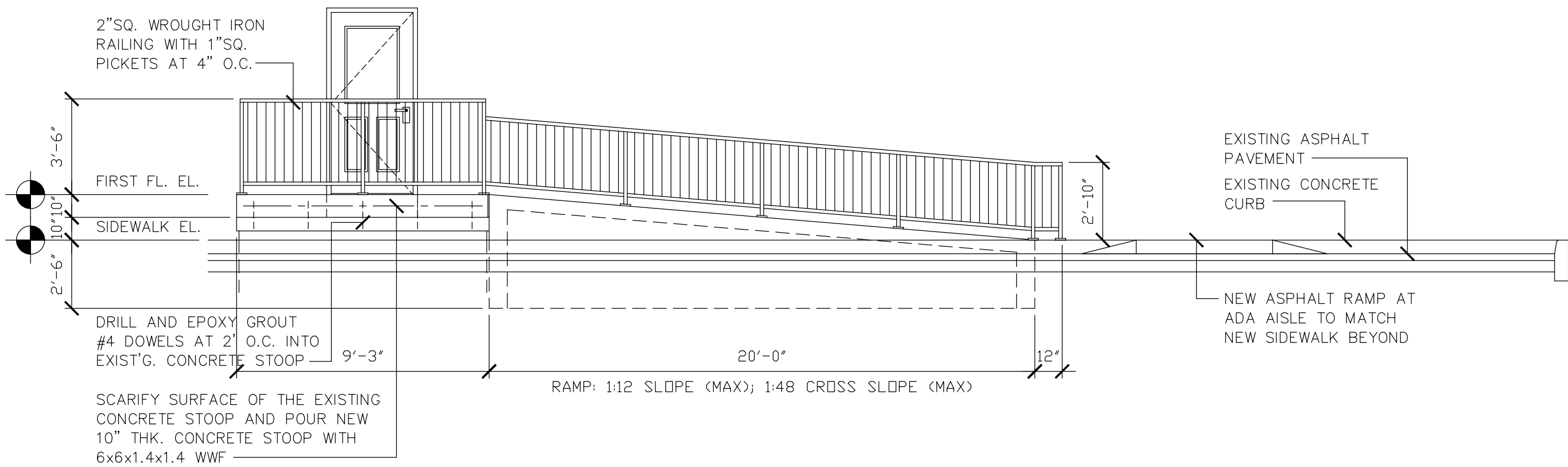
SCALE: 1/2"=1'-0"



OPEN OFFICE AREA 111

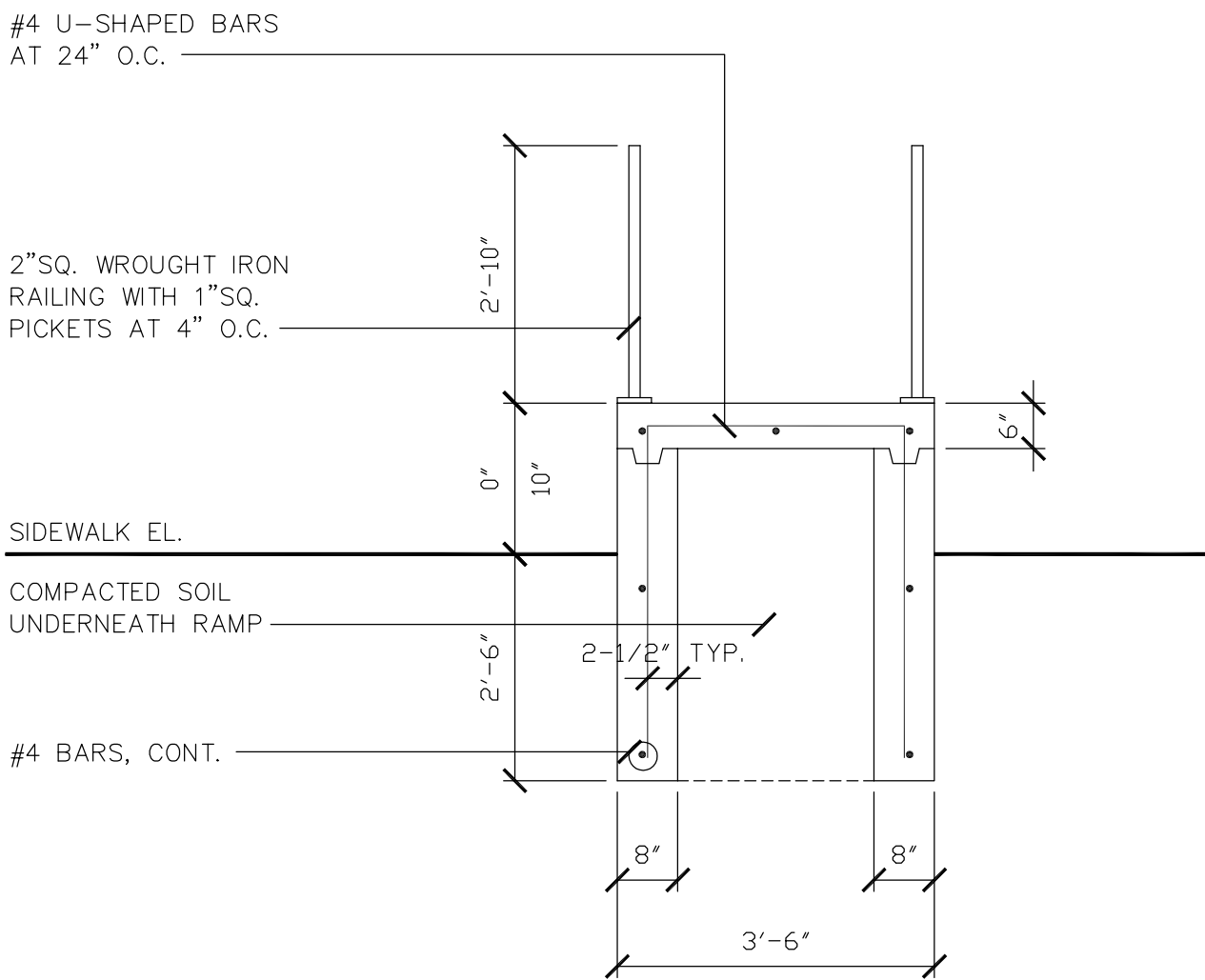
3 CABINET ELEVATION Δ

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



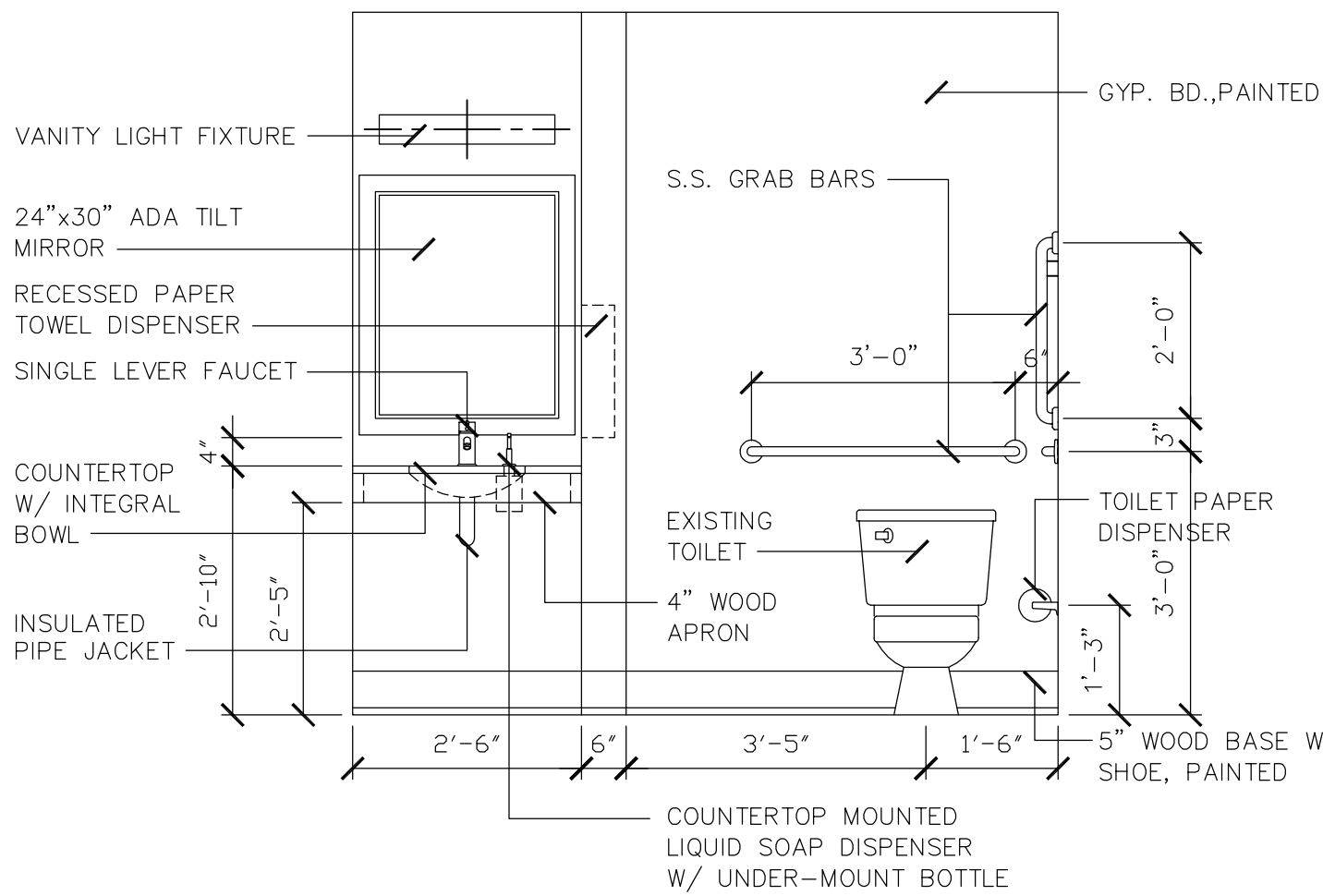
4 ENTRANCE RAMP DETAIL Δ

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



5 SECTION THRU RAMP

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



TOILET 109

1 TOILET ELEVATION Δ

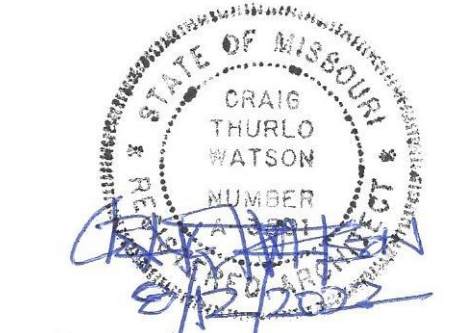
SCALE: 1/2"=1'-0"

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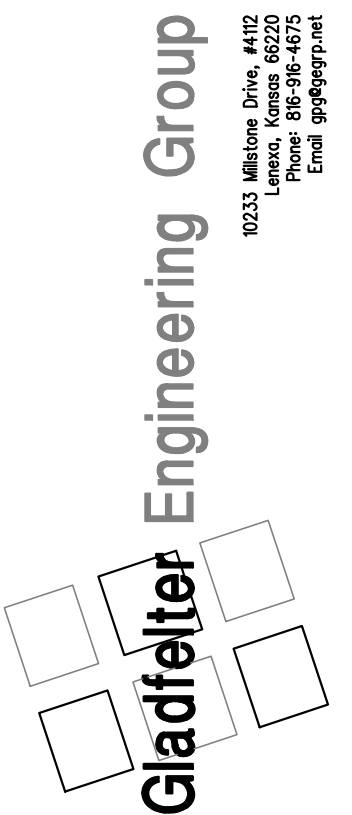
Toilet Elev's,
Entrance Ramp
Section &
Detail

A
200



1. EXISTING LIGHTING AND POWER IN THIS PORTION SHALL REMAIN AS CURRENTLY INSTALLED UNLESS OTHERWISE NOTED.
2. INSTALL NEW GFCI DUPLEX OUTLET. PROVIDE POWER FROM NEAREST 120V CIRCUIT.
3. INSTALL NEW LED PUCK LIGHTS AND SWITCH. CIRCUIT FROM EXISTING LIGHTING CIRCUIT SERVING THIS AREA. POWER EXHAUST FAN FROM SWITCHED LIGHTING CIRCUIT.
4. INSTALL RECEPTACLE AND CIRCUIT FOR REFRIGERATOR AND ANOTHER FOR COUNTER MOUNTED GFCI OUTLETS. EXTEND 120V CIRCUIT BACK TO EXISTING SINGLE POLE, 20A CIRCUIT BREAKER AT NEAREST LOAD CENTER.

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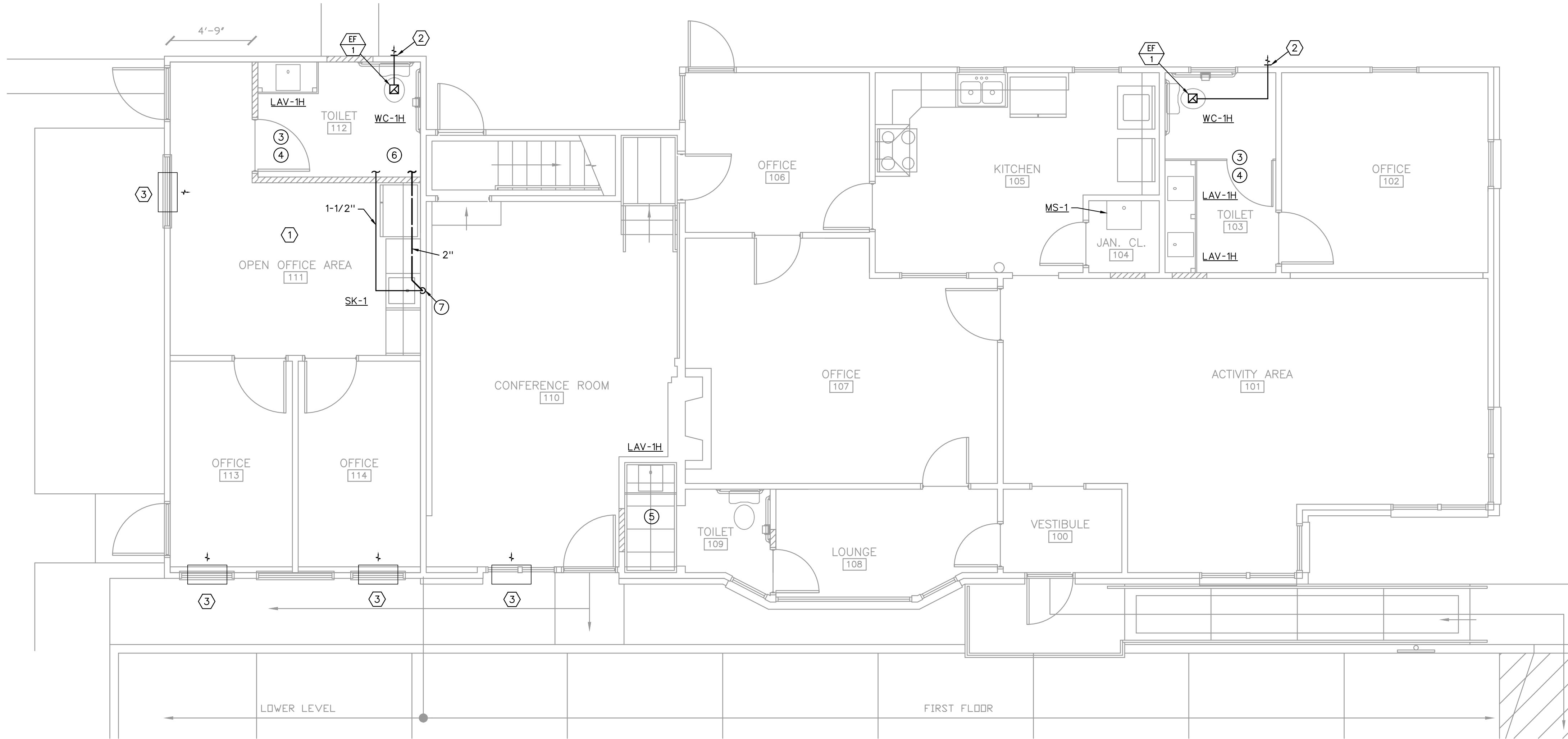


Date:	Issued for:
08/11/22	PERMIT
Project number:	
22-136	
Drawn:	
JEE/SWB/GPG	
Date:	
	2022/08/11
Sheet Number:	

Gladiator Engineering Group assumes design responsibility for this project for only the mechanical, plumbing and electrical disciplines with drawing sheet number beginning with M, P, and E. All other drawings should be considered the work of others. Further, drawings in this project set may contain drawing information, including but not limited to: architectural plans, structural elevations, and other drawings, which are not the work of the mechanical, plumbing and electrical work which is furnished by others, generally indicated by screened or light type. Gladiator Engineering Group assumes no responsibility or liability for any omissions or errors or for any consequences, preparation of drawings, even if made on MPE drawings. Gladiator Engineering Group assumes responsibility only for the design of mechanical, plumbing and electrical disciplines contained herein, generally indicated in bold type.

E200

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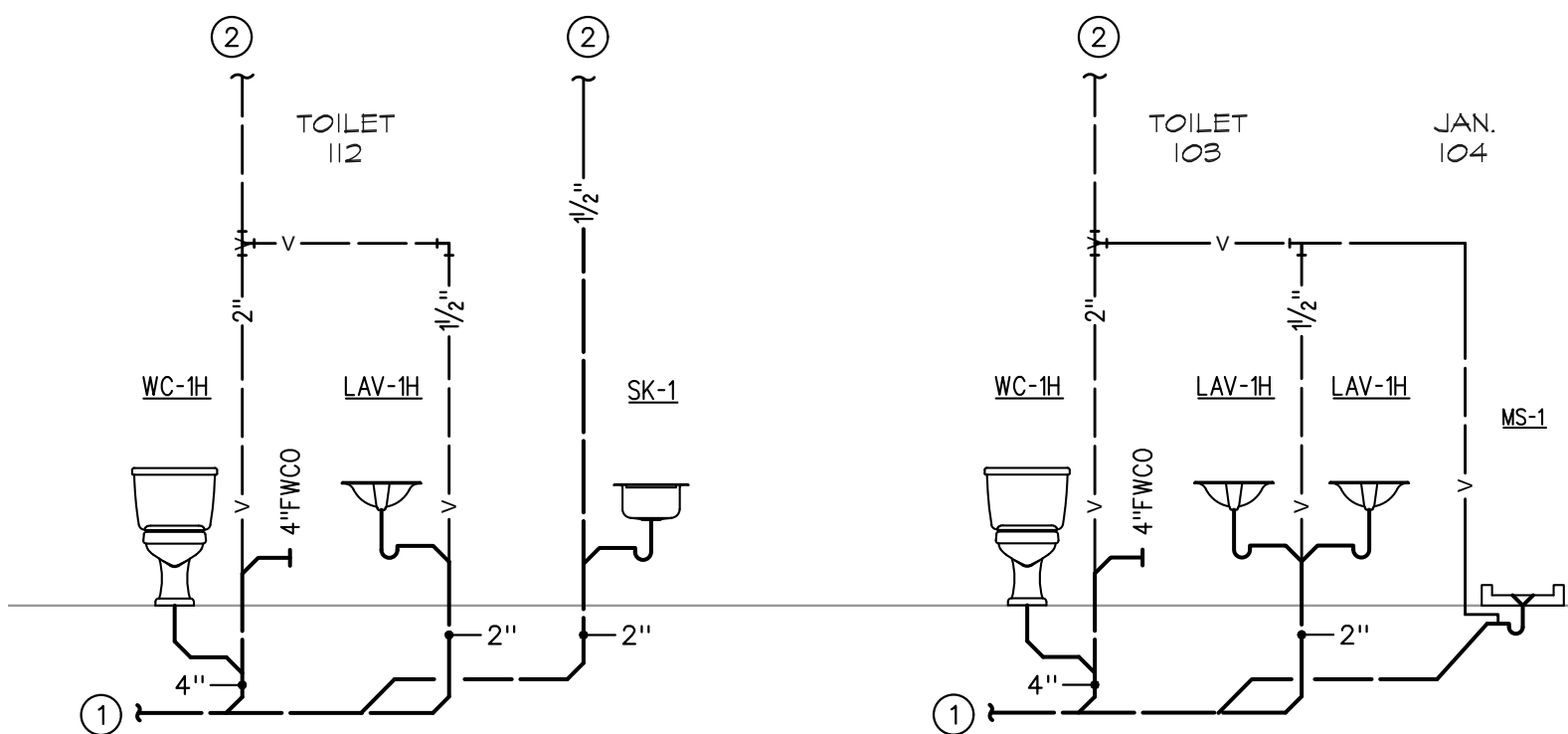
1ST FLOOR & LOWER LEVEL MECHANICAL/PLUMBING FLOOR PLAN

1/8" = 1'-0"



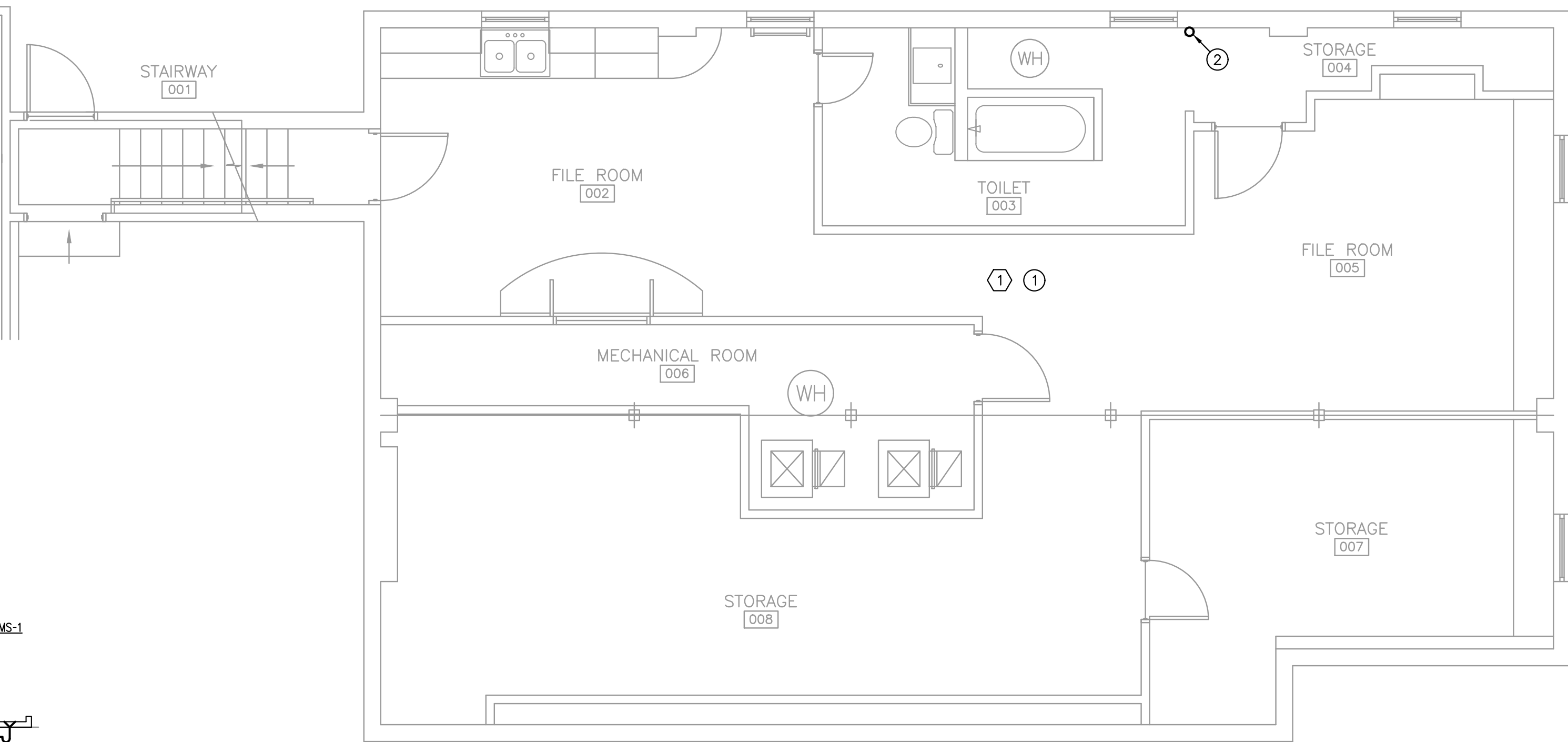
RISER DIAGRAM NOTES

- SEE THE PLUMBING PLAN FOR CONTINUATION.
- CONNECT 2" V TO NEAREST PLUMBING VENT 2" OR LARGER.



PLUMBING RISER DIAGRAMS

NO SCALE



BASEMENT MECHANICAL/PLUMBING FLOOR PLAN

1/8" = 1'-0"



MECHANICAL PLAN NOTES

- NO HVAC WORK ON THIS FLOOR UNLESS OTHERWISE NOTED.
- WEATHERPROOF WALL EXHAUST GRILLE.
- EXISTING THRU-WALL HEAT-PUMP HVAC UNIT. ADJUST MINIMUM OA TO BE SUPPLIED TO SPACE PER OA CALCULATION ON SHEET MP300. CONFIRM UNITS ARE IN WORKING ORDER ON BOTH COOLING AND HEATING CYCLES.

PLUMBING PLAN NOTES

- NO PLUMBING WORK ON THIS FLOOR UNLESS OTHERWISE NOTED.
- EXISTING 4" SANITARY RISER. REPLACE CAST IRON PIPING WITH PVC DWV PIPING.
- EXTEND NEW WASTE/SAN PIPING TO EXISTING 4" SAN PIPING IN VICINITY. SEE PLUMBING RISER ON THIS SHEET.
- EXTEND 3/4" CW AND HW PIPING IN THE VICINITY. SEE "PLUMBING RUNOUT SCHEDULE" ON SHEET MP300 FOR SIZES NEEDED AT EACH FIXTURE.
- PROVIDE NEW ACCESSIBLE LAVATORY AND FAUCET. EXISTING WATER CLOSET SHALL REMAIN.
- SEE "PLUMBING RISER DIAGRAM" ON THIS SHEET FOR CONTINUATION OF PIPING.
- 2" W DOWN, 1-1/2" V UP TO ABOVE CEILING. EXTEND 1/2" CW AND HW FROM EXISTING CW AND HW IN THE VICINITY.

MECHANICAL GENERAL NOTES

- EXISTING HVAC SYSTEMS SHALL REMAIN TO SERVE THIS FACILITY UNLESS OTHERWISE NOTED. CONTRACTOR SHALL INSPECT ALL SYSTEMS AND COMPONENTS TO MAKE SURE THEY ARE OPERATIONAL AND IN COMPLIANCE WITH THE APPROPRIATE CODES. MAKE REPAIRS AS REQUIRED.

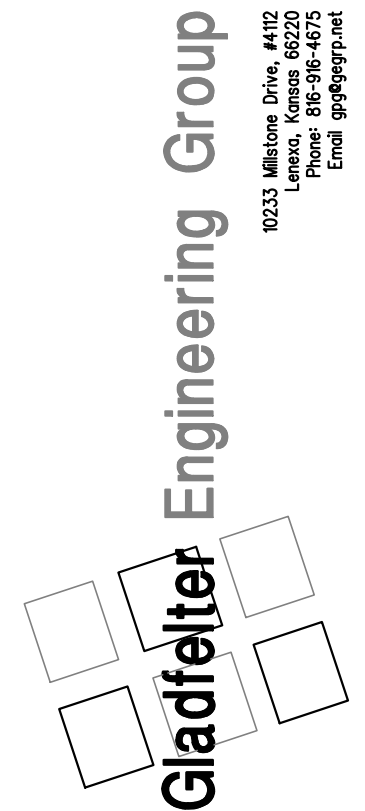
PLUMBING GENERAL NOTES

- ALL FIXTURES USED SPECIFICALLY FOR HANDWASHING PURPOSES (LAVATORIES, HAND SINKS, ETC.) SHALL BE PROVIDED WITH A TEMPERING VALVE TO TEMPER THE HOT WATER TO THE FIXTURE (MAXIMUM OF 105-DEGREES F).
- SEE "PLUMBING RISER DIAGRAMS", THIS SHEET, FOR PIPING NOT SHOWN ON THE PLANS.

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OUTSIDE AIR SUMMARY (SINGLE ZONE SYSTEMS) (NOTES 2 & 3)												
SYSTEM	SPACE	AREA (SQUARE FEET)	CALCULATED OCCUPANT TOTAL (Pz)	VENTILATION RATE (CFM/PERS) (Rp)	AREA OUTDOOR AIRFLOW IN BREATHING ZONE (Ra) CFM/Sf	SPACE OUTDOOR AIRFLOW IN BREATHING ZONE Vbz=RpPz+Raaz CFM	ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez) COOLING/HEATING (NOTE 1)	ZONE OUTDOOR AIRFLOW (Voz=Vbz/Ez) COOLING	ZONE OUTDOOR AIRFLOW (Voz=Vbz/Ez) HEATING	ZONE OUTDOOR AIR SETPOINT (CFM)	EXHAUST REQUIRED (CFM) (NOTE 5)	REMARKS
EXIST FURN.	OFFICE 106	394	2	5	0.06	33.64	1.0/0.8	33.64	42.05	43		
	OFFICE 107	950	5	5	0.06	82.54	1.0/0.8	82.54	103.18	104		
	OFFICE 102	555	3	5	0.06	48.30	1.0/0.8	48.30	60.38	61		
	LOUNGE 108	302	16	5	0.06	98.12	1.0/0.8	98.12	122.65	123		
	VESTIBULE 100	133	0	0	0.06	7.98	1.0/0.8	7.98	9.98	10		
	KITCHEN/BREAK ROOM 105	634	32	5	0.06	198.04	1.0/0.8	198.04	247.55	248		
	TOILET 103	298									70	NOTE 4/5
	TOILET 109	111									70	NOTE 4/5
	TOTAL	3,386	58							589	70	
THRU WALL UNIT	CONFERENCE ROOM 110	1,348	68	5	0.06	420.88	1.0/0.8	420.88	526.10	527		NOTE 6
THRU WALL UNIT	OFFICE 113	338	2	5	0.06	30.28	1.0/0.8	30.28	37.85	38		NOTE 6
THRU WALL UNIT	OFFICE 114	338	2	5	0.06	30.28	1.0/0.8	30.28	37.85	38		NOTE 6
THRU WALL UNIT	OPEN OFFICE AREA 111	716	4	5	0.06	62.96	1.0/0.8	62.96	78.70	79		
	TOILET 112	252									70	
	TOTAL	968	4							79	70	NOTE 6

1. ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez) DETERMINED FROM TABLE 403.3.1.2 AND IS BASED ON AIR DISTRIBUTION CONFIGURATION IN ACCORDANCE WITH THE 2018 IMC.
2. CALCULATION DONE IN ACCORDANCE WITH 2018 IMC, CHAPTER 4.
3. VENTILATION AIR PROVIDED BY DIRECT CONNECTION TO THE OUTDOORS IN ACCORDANCE WITH SECTION 401, 2018 IMC.
4. BATHROOM MINIMUM EXHAUST AIR PROVIDED AT MINIMUM 70 CFM PER FIXTURE IN ACCORDANCE WITH CHAPTER 4, 2018 IMC.
5. SPACE EXHAUST REQUIRED AT THE INDICATED RATE.
6. ADJUST VENT SETTING ON THRU-WALL UNIT TO THE OPEN POSITION.

WATER HAMMER ARRESTOR SCHEDULE					
MARK NO.	MANUFACTURER	MODEL NO.	PDI UNIT RATING	FIXTURE UNIT CAPACITY	REMARKS
[AA]	SIoux CHIEF	660 SERIES	AA	4 (SINGLE FIXT)	X
[A]	SIoux CHIEF	652	A	1 - 11	X
[B]	SIoux CHIEF	653	B	12 - 32	X
[C]	SIoux CHIEF	654	C	33 - 60	X
[D]	SIoux CHIEF	655	D	61 - 113	X
[X]	X	X	X	X	X

NOTES:
1. INSTALL IN AN ACCESSIBLE LOCATION IN ACCORDANCE WITH THE PLUMBING CODE.

FAN SCHEDULE														
MARK NO.	MANUFACTURER	MODEL NO.	CFM	ESP IN W.G.	TYPE	FAN SIZE	RPM	DRIVE	ACCESSORIES	ELECTRICAL				REMARKS
										VOLT	ø	HZ	HP/W	
1	COOK	GC-144	100	0.25	CEILING	-	1100	D	X	120	1	60	98W	1

NOTES:
1. PROVIDE CEILING FANS WITH CEILING GRILLE, DISCONNECT SWITCH, HANGER HARDWARE, BACKDRAFT DAMPER, UNIT MOUNTED VARIABLE SPEED SWITCH, WALL OR ROOF CAP, FLEX CONNECTOR, SWITCH WITH LIGHTS.
2. PROVIDE ROOF FANS WITH DISCONNECT SWITCH, ROOF CURB, BACKDRAFT DAMPER, FLEX CONNECTOR, TIME CLOCK CONTROL..
3. PROVIDE INLINE FANS WITH DISCONNECT SWITCH, HANGER HARDWARE, BACKDRAFT DAMPER, WALL MOUNTED VARIABLE SPEED SWITCH, WALL OR ROOF CAP, FLEX CONNECTORS.
4. PROVIDE SIDEWALL PROPELLER FANS WITH DISCONNECT SWITCH, OSHA GUARDS, DAMPER GUARDS, EXTEND LUBE LINES AND MOTORIZED DAMPER WITH END SWITCH (END SWITCH TO BE PROVEN BEFORE FAN IS ENABLED).

PLUMBING FIXTURE SCHEDULE

- A. INSTALL PLUMBING FIXTURES AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. VERIFY ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S DRAWINGS AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE WATER-CONSERVING FIXTURES AND APPURTENANCES IF/AS REQUIRED BY LOCAL AUTHORITIES. CONFIRM ALL LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS AND/OR SPECIFICATIONS. CAULK FIXTURES TO WALLS/FLOORS. SET COUNTER MOUNTED SINKS AND LAVATORIES IN A BED OF CAULK. THE SPECIFIED PLUMBING FIXTURES, OR APPROVED EQUALS, SHALL BE USED UNLESS OTHERWISE NOTED OR INDICATED.
- B. WATER CLOSET (WC-1H), TOTO #CSG744SL.01, FLOOR-MOUNTED, CONSTRUCTED OF VITREOUS CHINA, MEETING ANSI A-117.1 AND ADA BARRIER-FREE REQUIREMENTS, 17" HIGH, 1.6-GALLON FLUSH, CLOSE-COUPLED TANK DESIGN WITH ELONGATED BOWL AND SIPHON JET ACTION. TANK SHALL BE VITREOUS CHINA WITH COVER, 3/8" FLEXIBLE RISER WITH LOOSE KEY ANGLE STOP VALVE, CHROME-PLATED BRASS TRIP LEVER AND MANUFACTURER'S BOLT CAPS. PROVIDE BENKE #527 WHITE ELONGATED OPEN FRONT SEAT LESS COVER, PERMA BUMPER.
- C. LAVATORY (LAV-1H), PROVIDE COUNTER MOUNTED ACCESSIBLE LAVATORY OF A TYPE SELECTED BY THE OWNER. PROVIDE 3/8-INCH FLEXIBLE RISER W/ANGLE SUPPLIES WITH LOOSE KEY STOPS, 1-1/4-INCH INLET 1-1/2-INCH OUTLET CHROME PLATED CAST BRASS "P" TRAP W/CLEANOUT 1-1/2-INCH OUTLET CHROME PLATED CAST BRASS "P" TRAP W/CLEANOUT HEAVY DUTY SINGLE LEVER FAUCET, 4-INCH CENTERS, VANDAL-RESISTANT 2.2 GPM AERATOR, PERFORATED OFFSET GRID DRAIN (W/ 1-1/4" TAILPIECE) MAINTAIN CLEARANCES UNDER LAVATORY AS REQUIRED BY ADA REGULATIONS. INSULATE WASTE AND HOT WATER SUPPLY UNDER LAVATORY WITH UNDERSINK PROTECTIVE PIPE COVER, MOLDED, ANTIMICROBIAL, WITH FLUSH REUSABLE FASTENERS, TRUEBRO LAV GUARD.
- D. MOP SINK (MS-1), STERN WILLIAMS #SB-900, CONSTRUCTED OF TERRAZZO, 32" SQUARE BY 12" HIGH (COORDINATE SIZE WITH ARCHITECTURAL PLANS), CHROME-PLATED CAST BRASS DRAIN (CAST INTEGRAL) WITH STAINLESS STEEL CAP. PROVIDE WITH DELTA #28T2383 FAUCET WITH VACUUM BREAKER, LEVER HANDLES, 3/4" HOSE THREAD SPOUT WITH 48" LONG HOSE, WALL SUPPORT, INTEGRAL STOPS AND ROUGH CHROME-PLATED FINISH..
- E. SINK (SK-1), JUST #SL-2217-A-GR, SINGLE COMPARTMENT, 18 GAUGE TYPE 304 STAINLESS STEEL, SELF RIMMING, UNDERSIDE FULLY UNDERCOATED WITH SOUND DAMPENING MATERIAL, 3 HOLE PUNCH, NOMINAL DIMENSIONS OF 22"x17"x7-1/2" DEEP. PROVIDE WITH DELTA COMMERCIAL #27T2934 HEAVY DUTY DECKMOUNT SINK FAUCET, 6" RIGID/SWIVEL GOOSENECK SPOUT, 8" CENTERS, 2.0 GPM VANDAL-RESISTANT AERATOR, BASKET STRAINER DRAIN, 1-1/2" TAILPIECE, 3/8-INCH FLEXIBLE RISER W/ANGLE SUPPLIES WITH LOOSE KEY STOPS, 1-1/2-INCH INLET 2-INCH OUTLET CHROME PLATED CAST BRASS "P" TRAP W/CLEANOUT PLUG, ESCUTCHEON W/SET SCREW AND 4" VANDAL-RESISTANT WRIST BLADE HANDLES.
- F. FINISHED FLOOR CLEANOUTS: (FFCO) WADE #6000-1-2-S CAST IRON FLOOR CLEANOUT WITH FLANGE, PLASTIC TAPERED PLUG AND SQUARE NICKEL BRONZE ADJUSTABLE TOP. PROVIDE WITH CARPET CLEANOUT MARKER WHEN CLEANOUT IS LOCATED BELOW CARPET. COORDINATE WITH ARCHITECTURAL PLANS.
- G. FINISHED WALL CLEANOUTS: (FWCO) WADE #8560, W/ 8304-85-6 CAST IRON CLEANOUT TEE WITH BRASS PLUG AND 6" ROUND STAINLESS STEEL ACCESS COVER. J.R. SMITH FIGURE 4530. PROVIDE DUCO CAST IRON WALL CLEANOUT TEE WITH COUNTERSUNK PLUG. DELETE COVER PLATE IF CLEANOUT IS IN EXPOSED LOCATION.
- H. ALL FIXTURES USED SPECIFICALLY FOR HANDWASHING PURPOSES (LAVATORIES, HAND SINKS, ETC.) SHALL BE PROVIDED WITH A TEMPERING VALVE TO TEMPER THE HOT WATER TO THE FIXTURE (MAXIMUM OF 105-DEGREES F).

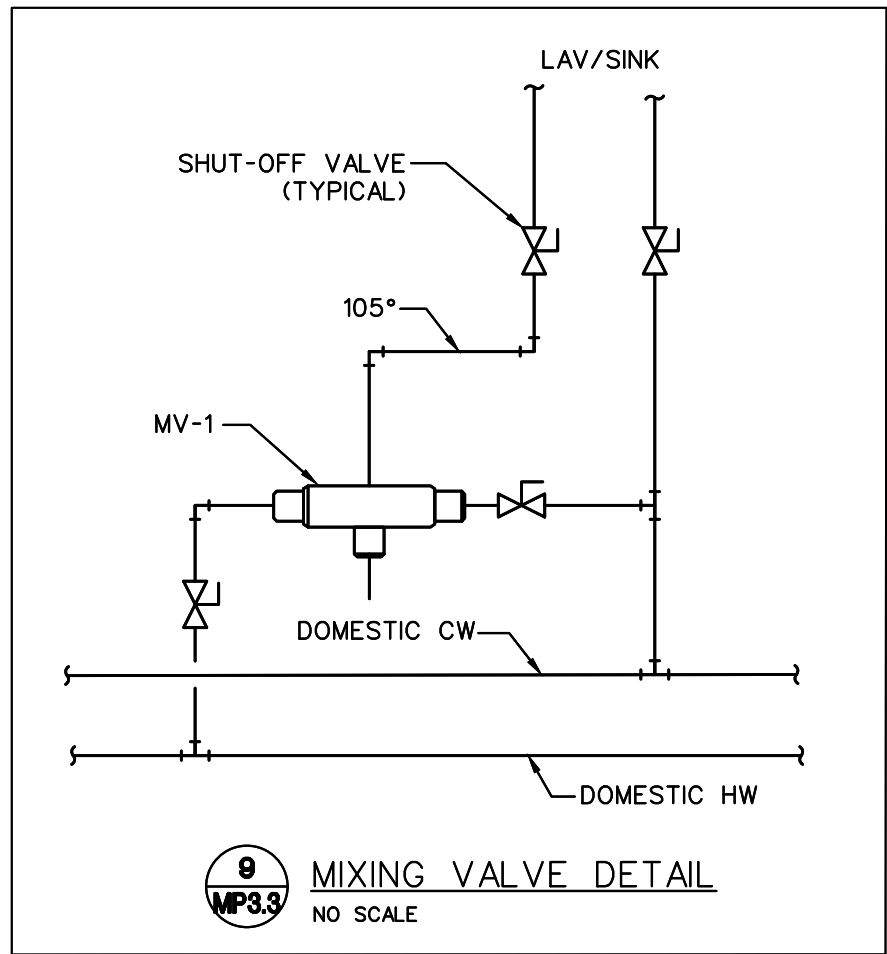
PLUMBING SYMBOLS

————	EXISTING TO REMAIN.
————	NEW PIPING WORK.
-----	DOMESTIC COLD WATER (CW).
-----	DOMESTIC HOT WATER (HW).
-----	HOT WATER RECIRCULATION (HWR).
—V—	PLUMBING VENT ABOVE FLOOR (V).
—SAN—	SANITARY WASTE ABOVE FLOOR (W).
— — —	SANITARY WASTE BELOW FLOOR (W).
—NG—	GAS (NATURAL) (NG).
—+—	ELBOW DOWN.
—+—	ELBOW UP.
—+—	TEE DOWN.
—+—	TEE UP.
—+—	CAP.
—+—	PIPE UNION.
—+—	1/4 TURN SHUT-OFF VALVE.
—+—	CHECK VALVE.
—+—	PUMP
VTR	VENT THRU ROOF (VTR).
ETR	EXISTING TO REMAIN.
○	PLAN NOTE DESIGNATION.
△	PLAN REVISION DESIGNATION.
●	CONNECT TO EXISTING.
⬡	PLUMBING EQUIPMENT DESIGNATION - TOP PORTION IS EQUIPMENT (HW, RTU, ETC.), BOTTOM PORTION IS NO. OR LETTER (SEE APPROPRIATE SCHEDULE).

FIXTURE BRANCH SCHEDULE

FIXTURE	WASTE	VENT	COLD	HOT
Water Closet (ft)	4"	2"	1/2"	----
Water Closet (fv)	4"	2"	1"	----
Urinal	2"	1 1/2"	3/4"	----
Lavatory	1 1/2"	1 1/2"	1/2"	1/2"
Sink	2"	1 1/2"	1/2"	1/2"
Triple Sink	2"	1 1/2"	(2) 1/2"	(2) 1/2"
Shower, Tub	2"	1 1/2"	1/2"	1/2"
Water Fountain	1 1/2"	1 1/2"	1/2"	----
Janitor Sink (fir)	3"	2"	3/4"	3/4"
Janitor Sink (wall)	2"	1 1/2"	1/2"	1/2"
Floor Drain	2"	1 1/2"	----	----
Floor Sink	3"	2"	----	----
Eqpt Floor Drain	3"	2"	----	----
Hub Drain	2"	1 1/2"	----	----
Dishwasher	2"	1 1/2"	----	1/2"
Washer Box	2"	1 1/2"	1/2"	1/2"
Ice Maker	----	----	1/2"	----
FPWH, HB	----	----	3/4"	----

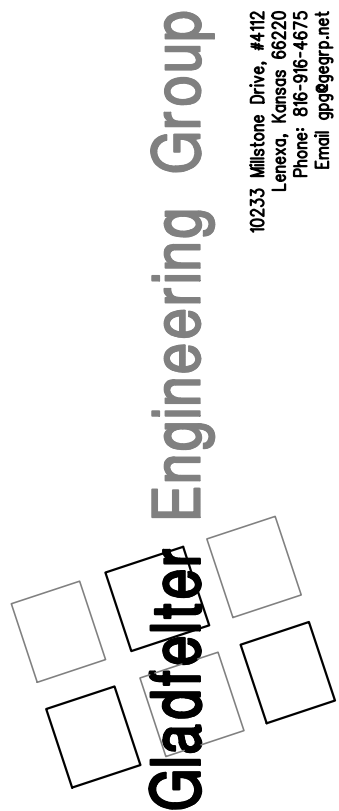
1. Minimum waste or vent size below slab on grade shall be 2".
2. Size as shown on drawings and diagrams, but not less than listed.



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MECHANICAL/PLUMBING SPECIFICATION

- A.

INSTALLATION SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL MECHANICAL AND PLUMBING CODES, NFPA 90A AND 101 AND ALL STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS.

B.

PLANS AND SPECIFICATIONS SHALL TAKE PRECEDENCE OVER THE CODE WHERE CODE REQUIREMENTS ARE EXCEEDED.

C.

DRAWINGS ARE DIAGRAMATIC AND ARE INTENDED TO INDICATE THE GENERAL DESIGN CONCEPT. THEY DO NOT NECESSARILY INDICATE EACH AND EVERY FITTING OR FEATURE. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT.

D.

REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DIMENSIONS. DO NOT SCALE MECHANICAL DRAWINGS. CONFORM TO ARCHITECTURAL AND STRUCTURAL REQUIREMENTS FOR EXACT PLACEMENT AND LOCATION OF EQUIPMENT AND FOR REQUIRED STRUCTURAL SUPPORT, BRACING AND REINFORCEMENT.

E.

REFER TO STRUCTURAL DRAWINGS FOR SPECIFIC REQUIREMENTS CONCERNING STRUCTURAL SUPPORTS AND MOUNTINGS FOR MECHANICAL EQUIPMENT AND SUPPLEMENTAL STEEL.

F.

ALL MECHANICAL AND PLUMBING EQUIPMENT SHALL BE INSTALLED TO PROVIDE MANUFACTURER'S RECOMMENDED OPERATING AND SERVICE CLEARANCES FOR ALL EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS AND DIFFERING CLEARANCE REQUIREMENTS OF ACTUAL EQUIPMENT FURNISHED.

G.

VERIFY ALL EQUIPMENT TO BE INSTALLED (WHETHER FURNISHED BY THIS CONTRACTOR OR BY OTHERS), CONFIRM WITH VENDOR CONNECTION SIZES, TYPES AND LOCATION AND PROVIDE MATCHING PIPING CONNECTIONS, SIZES AND TYPES AFTER EQUIPMENT PROCUREMENT. PROVIDE ALL FITTINGS AND ACCESSORIES FOR A COMPLETE CODE COMPLIANT WORKING INSTALLATION.

H.

COORDINATE EXACT LOCATIONS AND ORIENTATION OF EQUIPMENT WITH ARCHITECTURAL AND STRUCTURAL REQUIREMENTS.

I.

CAULK AND SEAL ALL PIPING PENETRATIONS OF EXTERIOR WALLS.

J.

ABOVE GROUND WASTE AND VENT PIPING SHALL BE SCHEDULE 40 PVC WITH SOLVENT CEMENT JOINTS. PROTECT ALL EXPOSED PVC PIPING WITH UV PROTECTIVE COATING.

K.

ABOVE GROUND WATER PIPING SHALL BE TYPE 'L' HARD COPPER WITH LEAD FREE SOLDER JOINTS OR CROSS-LINKED POLYETHYLENE (PEX) PLASTIC TUBING.

L.

SERVICE VALVES FOR WATER PIPING SYSTEMS UP THRU 2" SHALL BE 1/4 TURN, 150 LB. LEAD FREE BRASS BALL VALVES WITH BRONZE CHROME PLATED BALL AND TFE SEATS, NIBCO S-585-70 (SOLDER) OR PXC400-LF (PEX) CONNECTION.

M.

COLD CONDENSATE PIPING AND TRAPS SHALL BE PVC. TRAP CONDENSATE FULL SIZE OF UNIT DISCHARGE AND TERMINATE AS SHOWN.

N.

WHERE CHILLED CONDENSATE FROM INDOOR UNITS CANNOT BE POSITIVELY DRAINED, PROVIDE CONDENSATE PUMP ACCESSORY WITH THE EQUIPMENT.

O.

NATURAL GAS PIPING (ABOVE GROUND) SHALL BE SCHEDULE 40 BLACK STEEL WITH THREADED JOINTS. CONNECT USING JOINT COMPOUND SUITABLE FOR NATURAL GAS PIPING. ALL EXPOSED BLACK STEEL NATURAL GAS PIPING SHALL BE PROTECTED WITH A RUST INHIBITING COATING IN ACCORDANCE WITH THE PLUMBING CODE.

P.

GAS SERVICE VALVES TO BE LUBRICATED PLUG COCKS, ROCKWELL 142 OR 143. CONNECTIONS TO EQUIPMENT SHALL HAVE SERVICE VALVES, 6" MINIMUM DIRT LEG AND UNION OR AT CONTRACTOR OPTION, UL LISTED APPLIANCE FLEXIBLE CONNECTORS MAY BE USED.

Q.

COPPER DOMESTIC WATER PIPING SHALL BE INSULATED WITH 1" FIBERGLASS WITH ALL SERVICE JACKET OR COMPARABLE UNICELLULAR INSULATION WITH SMOKE/FLAME RATING OF 25/50. INSULATION IS NOT REQUIRED FOR PEX PIPING.

R.

PLUMBING FIXTURES AND EQUIPMENT PROVIDED BY OTHERS. PROVIDE ALL REQUIRED TRIM AND ACCESSORIES FOR A COMPLETE WORKING AND CODE COMPLIANT INSTALLATION. PROVIDE STOP VALVES AND WATER HAMMER ARRESTORS, SIZED AS INDICATED OR PER MANUFACTURER FOR EACH FIXTURE OR EACH GROUP OF FIXTURES. REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATION OF THE FIXTURES.

S.

MEET ALL REQUIREMENTS OF THE ADA FOR ALL FIXTURES REQUIRED TO BE HANDICAP ACCESSIBLE. INSULATE PIPING BENEATH HANDICAP FIXTURES PER ADA, HANDI-LAV-GARD SYSTEM OR EQUIVALENT.

T.

ALL FIXTURES AND EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS AND PER LISTINGS.

U.

IN GENERAL AND EXCEPT AS OTHERWISE NOTED, PIPING SHALL BE INSTALLED PARALLEL TO COLUMN AND BUILDING WALL LINES. THEY SHALL BE CONCEALED ABOVE CEILINGS, IN CHASES OR WALL CONSTRUCTION WHERE POSSIBLE.

V.

SUPPORT ALL PIPING SYSTEMS IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS AND INDUSTRY STANDARDS TO PREVENT SAGS AND DIPS.

W.

ALL WATER BEARING PIPING SHALL BE SLOPED FOR DRAINAGE WITH BALL DRAIN VALVES AT LOW POINTS. COORDINATE SYSTEM DRAINAGE FOR WINTERIZATION WITH OWNER'S UTILITIES CONTRACTOR.

X.

PROVIDE ACCESS PANELS TO PROVIDE ACCESS TO INACCESSIBLE VALVES THAT REQUIRE ADJUSTMENT OR REPLACEMENT.

Y.

DRAINAGE PIPING SHALL BE SLOPED IN ACCORDANCE WITH CODE, BUT NOT LESS THAN 1/8" PER FOOT FOR 3" AND LARGER PIPING AND 1/4" PER FOOT FOR 2-1/2" AND SMALLER PIPING. CONNECTION TO UTILITIES PROVIDED SHALL BE COORDINATED WITH OWNER'S UTILITY CONTRACTOR..

Z.

PROVIDE DIELECTRIC UNIONS AT ALL CONNECTIONS BETWEEN DISSIMILAR METALS.

AA.

SUPPORT ALL SUSPENDED PIPING INDEPENDANTLY, DIRECTLY FROM STRUCTURAL MEMBERS, NOT METAL DECK.

BB.

DUCTWORK FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS.

CC.

ALL DUCTWORK SHALL BE SHEET METAL, CONSTRUCTED TO SMACNA STANDARDS, MINIMUM OF 2" WG PRESSURE CLASS AND SEAL CLASS 'C' MINIMUM. ALL LONGITUDINAL AND TRANSVERSE JOINTS TO BE SEALED, EXCEPT AS OTHERWISE NOTED. ROUND AND FLEX DUCT CONNECTIONS SHALL BE MADE WITH SPIN COLLARS WITH EXTRACTORS AND VOLUME DAMPERS.
- DD.

DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.

EE.

ALL DUCTWORK EXPOSED ON THE ROOF SHALL BE INSULATED AND ENCLOSED IN A WATERPROOF COVERING MATERIAL. GREASE DUCT INSULATION SHALL BE SUITABLE FOR HIGH TEMPERATURE USE.

FF.

PROVIDE FLEXIBLE CONNECTORS AT ALL DUCTWORK CONNECTIONS TO ROTATING EQUIPMENT. CONNECTORS EXPOSED TO SUNLIGHT SHALL BE MADE OF UV RESISTANT MATERIAL.

GG.

DUCT SMOKE DETECTORS TO BE FURNISHED BY THE HVAC CONTRACTOR. SEE ELECTRICAL FOR INTEGRATION OF ALL SMOKE DETECTION AND SHUTDOWN OF EQUIPMENT WITH FIRE ALARM SYSTEM IF PROVIDED. ALL EQUIPMENT IN EXCESS OF 2000 CFM SHALL BE EQUIPPED WITH SMOKE DETECTORS IN THE RETURN AIR STREAM. WHERE DUCT MOUNTED DETECTORS ARE SHOWN OR REQUIRED, USE DUCT INSERTION TUBE TYPE DETECTORS IN DUCTED APPLICATIONS. IF FIRE ALARM SYSTEM IS INSTALLED, COORDINATE TYPE WITH THE FIRE ALARM CONTRACTOR. IF A FIRE ALARM SYSTEM IS NOT PROVIDED, PROVIDE AND INSTALL A STROBE/HORN TO NOTIFY OCCUPANTS OF THE SENSING ON SMOKE AT A SMOKE DETECTOR.

HH.

ALL POWER WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. DISCONNECT SWITCHES SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR, EXCEPT WHERE SPECIFICALLY INDICATED TO BE FURNISHED BY THE MECHANICAL CONTRACTOR. COORDINATE REQUIRED POWER FOR EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.

II.

ALL CONTROL DEVICES AND INTERLOCK WIRING SHALL THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. CONTRACTOR SHALL FURNISH LOCKING GUARDS FOR DEVICES WHERE INDICATED AND WHERE REQUIRED TO PROTECT THEM FROM PHYSICAL DAMAGE. PROVIDE INSULATED SUBBASES WHERE SENSORS ARE INSTALLED ON 'COLD' OR EXTERIOR WALLS. MOUNT CONTROL DEVICES SUCH AS THERMOSTATS AND SENSORS AT 46" AFF.

JJ.

CONTRACTOR SHALL BE RESPONSIBLE FOR EQUIPMENT HANDLING AND TRANSPORT FOR ITEMS HE FURNISHES AND/OR INSTALLS. HE SHALL BE RESPONSIBLE FOR PROVIDING FOR ACCESS INTO SPACES WHERE WORK IS TO OCCUR.

KK.

CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES ASSOCIATED WITH CONSTRUCTION ACTIVITY. HE SHALL RESTORE REPAIRED OR REMODELED AREAS TO EXISTING CONDITIONS AND NEW CONSTRUCTION AREAS TO NEW CONDITION. ALL REPAIRS SHALL BE IN ACCORDANCE WITH THE APPLICABLE ARCHITECTURAL AND STRUCTURAL PROVISIONS. TO THE GREATEST EXTENT POSSIBLE, EXISTING BUILDING MATERIALS SHALL NOT BE DISTURBED.

LL.

TEST AND CLEAN PIPING SYSTEMS PER INDUSTRY STANDARDS. PRESSURE TEST OF PRESSURE PIPING SHALL BE AT 1-1/2 TIMES THE ANTICIPATED OPERATING PRESSURE, BUT NOT LESS THAN 50 PSIG FOR 2 HOURS. NON-PRESSURIZED SYSTEMS SHALL BE TESTED WITH 10' WATER COLUMN ABOVE NORMAL OPERATING CONDITIONS OR 5 PSI FOR 2 HOURS. THERE SHALL BE NO MEASURABLE DROP DURING THE TEST PERIOD.

MM.

TEST AND BALANCE ALL SYSTEMS PER NEBB STANDARDS. SUBMIT BALANCE REPORTS TO ARCHITECT FOR APPROVAL.
- ELECTRICAL GENERAL NOTES
- A)

CONTRACTOR SHALL COORDINATE INSTALLATION REQUIREMENTS AND SCHEDULING OF ALL WORK WITH ARCHITECT AND GENERAL CONTRACTOR.

B)

INSTALLATION SHALL COMPLY WITH LATEST EDITION OF N.E.C. AND LOCAL AUTHORITY HAVING JURISDICTION.

C)

CONTRACTOR SHALL BE LICENSED TO PERFORM WORK IN MUNICIPALITY WHERE PROJECT IS LOCATED.

D)

ALL WIRING SHALL BE INSTALLED IN CONDUIT. EMT CONDUIT WITH SET SCREW FITTINGS MAY BE UTILIZED WHERE PERMITTED BY CODE. MINIMUM CONDUIT SIZE SHALL BE 1/2".

E)

ALL WIRING SHALL BE COPPER WITH 600 VOLT INSULATION AND COLOR CODED, UNLESS NOTED OTHERWISE.

F)

ALUMINUM WIRING SHALL ONLY BE USED FOR FEEDERS FROM TRANSFORMER TO METER CENTER. ALUMINUM CONDUCTORS SHALL BE ALCAN STABILOY AA-8030 SERIES, 600 VOLT INSULATION.

G)

CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMIT AND INSPECTION FEES.

H)

MC CABLE MAY BE INSTALLED WHERE PERMITTED BY CODE. CONDUCTORS SHALL BE MINIMUM #12 GAUGE AND COPPER.

I)

INSTALL BLANK COVER PLATE ON ALL PULL BOXES AND JUNCTION BOXES.

J)

TYPEWRITTEN PANELBOARD DIRECTORY SHALL BE PROVIDED FOR PANELBOARD AND CORRECTLY FILLED OUT.

K)

CONTRACTOR SHALL COORDINATE INSTALLATION OF ELECTRICAL WORK WITH ALL OTHER TRADES INVOLVED WITH CONSTRUCTION OF PROJECT.

L)

ALL WIRING DEVICES SHALL BE RATED 20 AMP, OR AS NOTED ON DRAWINGS. COORDINATE LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.

M)

CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING OF ALL CONDUITS TO NEW EQUIPMENT.

N)

FURNISH MATERIALS AND LABOR FOR A COMPLETE AND OPERATIONAL ELECTRICAL INSTALLATION.

O)

MATERIAL AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE 'UL' LABELS AS REQUIRED.

P)

CONTRACTOR SHALL COORDINATE INSTALLATION OF EQUIPMENT FURNISHED BY OTHERS.

Q)

PANELBOARD, TRANSFORMERS, MAIN DISTRIBUTION PANEL AND DISCONNECT SWITCHES SHALL BE MANUFACTURED BY ITE/SIEMENS OR EQUAL.

R)

ALL CONCRETE PADS AND POLE BASES ARE PROVIDED AND INSTALLED BY OTHERS.

S)

PVC (SCHEDULE 40) CONDUIT MAY BE USED FOR CONDUITS INSTALLED BELOW FINISHED GRADE OR CONCRETE FLOOR SLAB. PROVIDE WITH APPROVED FITTINGS.

T)

DUCT SMOKE DETECTOR SHALL BE 120 VOLT, PHOTO-ELECTRIC, REMOTE ALARM LAMP, WITH SAMPLING TUBES - INSTALLED IN RETURN AIR DUCT. PROVIDE WITH MIN-ALERT SOUNDER,STROBE AND REMOTE TEST/RESET STATION. WIRE DETECTORS SO THAT UPON SENSING SMOKE UNIT AUTOMATICALLY SHUTS DOWN AND SOUNDER/STROBE IS ACTIVATED. PROVIDE ALL RELAYS AND ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. EQUIPMENT SHALL BE BY EDWARDS, SIMPLEX, PYROTRONICS, OR NOTIFER.

U)

DISCONNECT SWITCHES SHALL BE MANUFACTURED BY ITE/SIEMENS OR EQUAL. NEMA 1 FOR INDOOR INSTALLATION AND NEMA 3R FOR OUTDOOR INSTALLATION.

V)

ALL LIGHT FIXTURES AND DEVICES MOUNTED IN CEILING SHALL BE BRACED TO RESIST SEISMIC FORCES IN ACCORDANCE WITH IBC, NEC, AND LOCAL AUTHORITY HAVING JURISDICTION.

W)

VOICE/DATA AND THERMOSTAT OUTLET BOXES SHALL BE PROVIDED AND INSTALLED WITH 3/4" CONDUIT STUBBED UP OUT TOP OF BOX TO ABOVE ACCESSIBLE CEILING. PROVIDE BUSHING ON END OF CONDUIT.

X)

EMERGENCY AND EXIT LIGHT FIXTURES SHALL BE PROVIDED WITH BATTERY BACK-UP FOR MINIMUM OF (90) MINUTES. EMERGENCY AND EXIT LIGHT FIXTURES SHALL BE CONNECTED TO HOT LEG OF CIRCUIT, NOT SWITCHED.

Y)

PANELBOARDS ARE EXISTING TO REMAIN. NEW CIRCUIT BREAKERS INSTALLED IN EXISTING PANELBOARDS SHALL MATCH PANELBOARD CONSTRUCTION AND AIC RATING. PANELS ARE MANUFACTURED BY ITE/SIEMENS, SQUARE 'D', G.E., OR CUTLER-HAMMER.

Z)

NEW PANELBOARDS SHALL BE ITE/SIEMENS TYPE 'P2' OR APPROVED EQUAL, WITH BOLT-ON CIRCUIT BREAKERS, ALUMINUM BUS, NEMA 1 ENCLOSURE, GROUND, AND NEUTRAL BUS. AIC RATING TO MATCH EXISTING SYSTEM. EQUALS BY SQUARE 'D', G.E., OR CUTLER-HAMMER.
- STATE OF MISSOURI

REGISTERED PROFESSIONAL ENGINEER

GREGORY P. GLADFELTER

NUMBER E-2000150421

08/11/2022

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