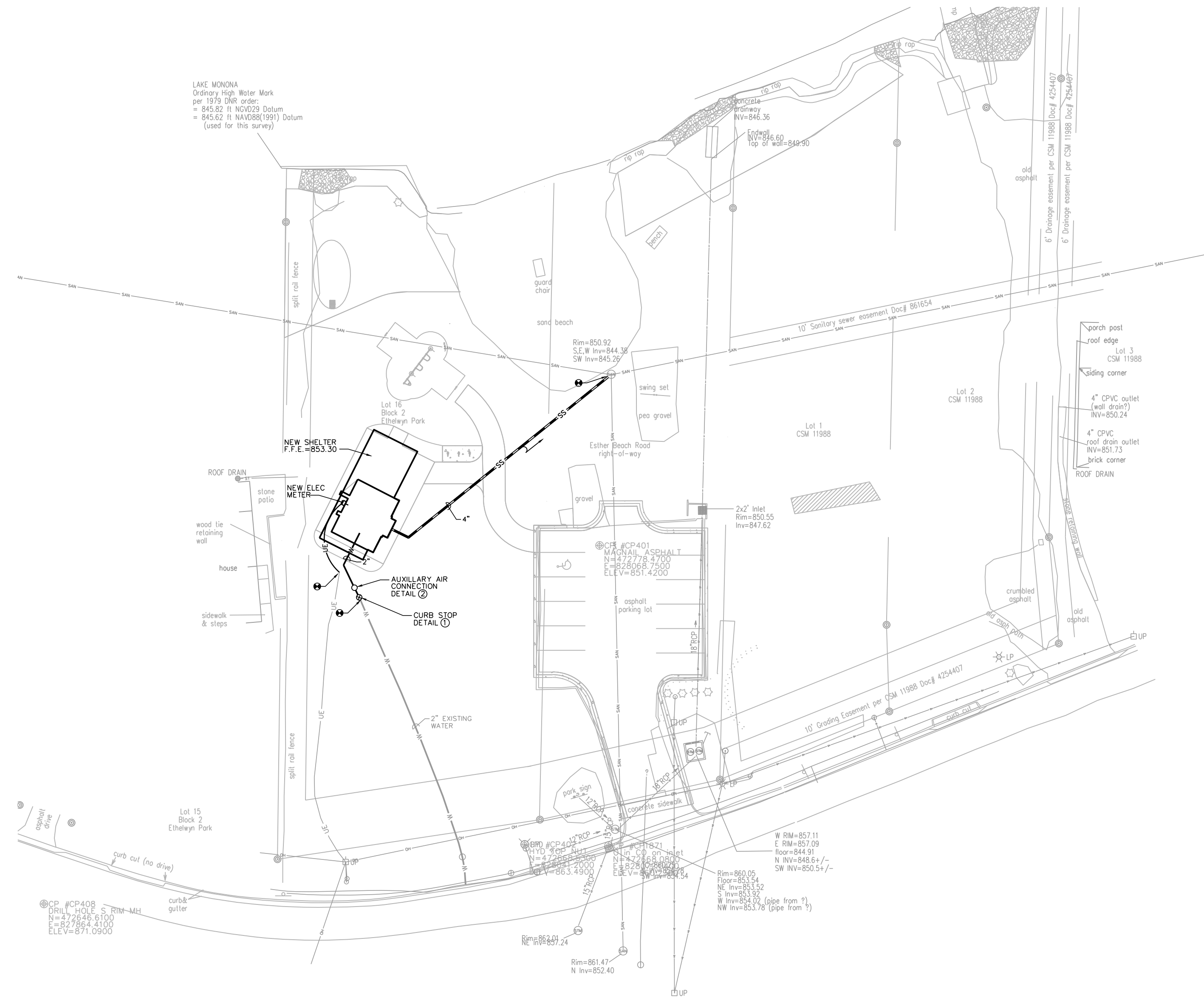
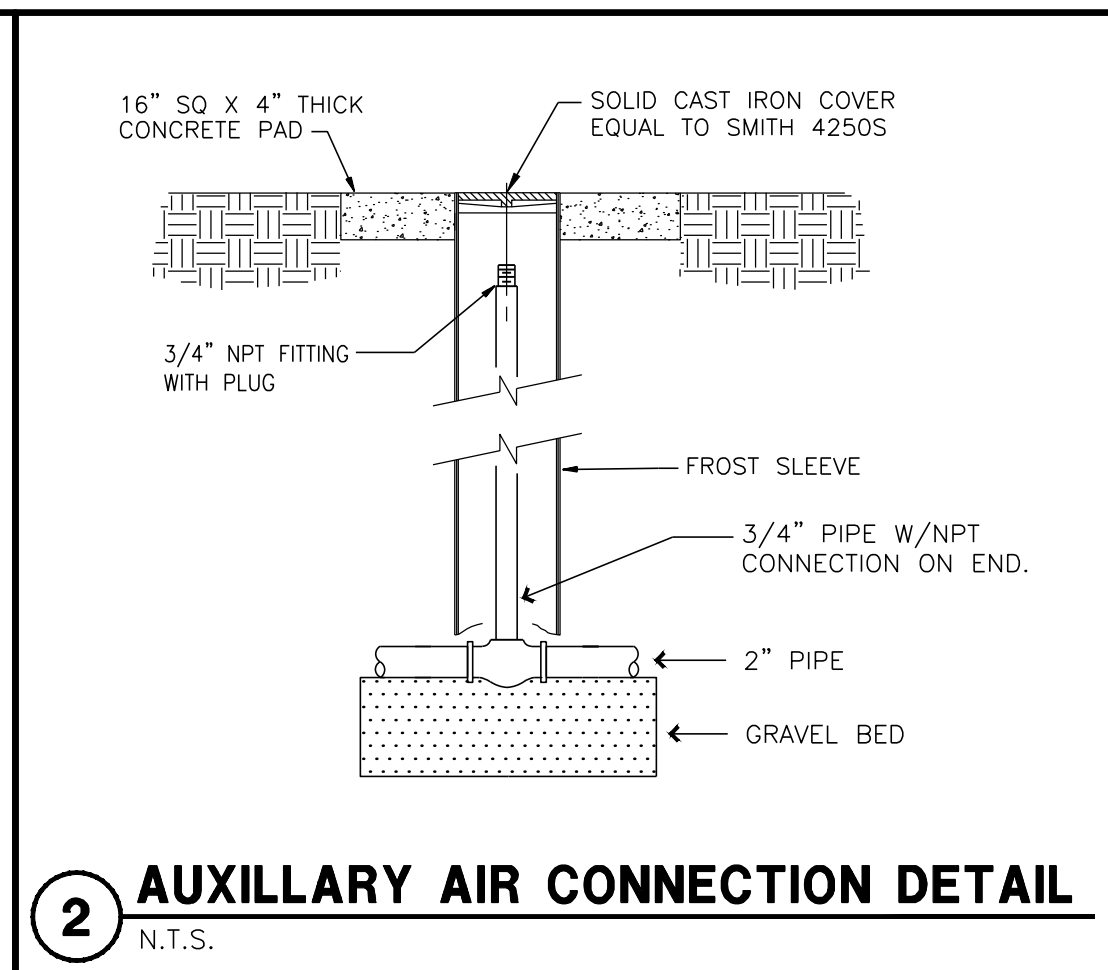
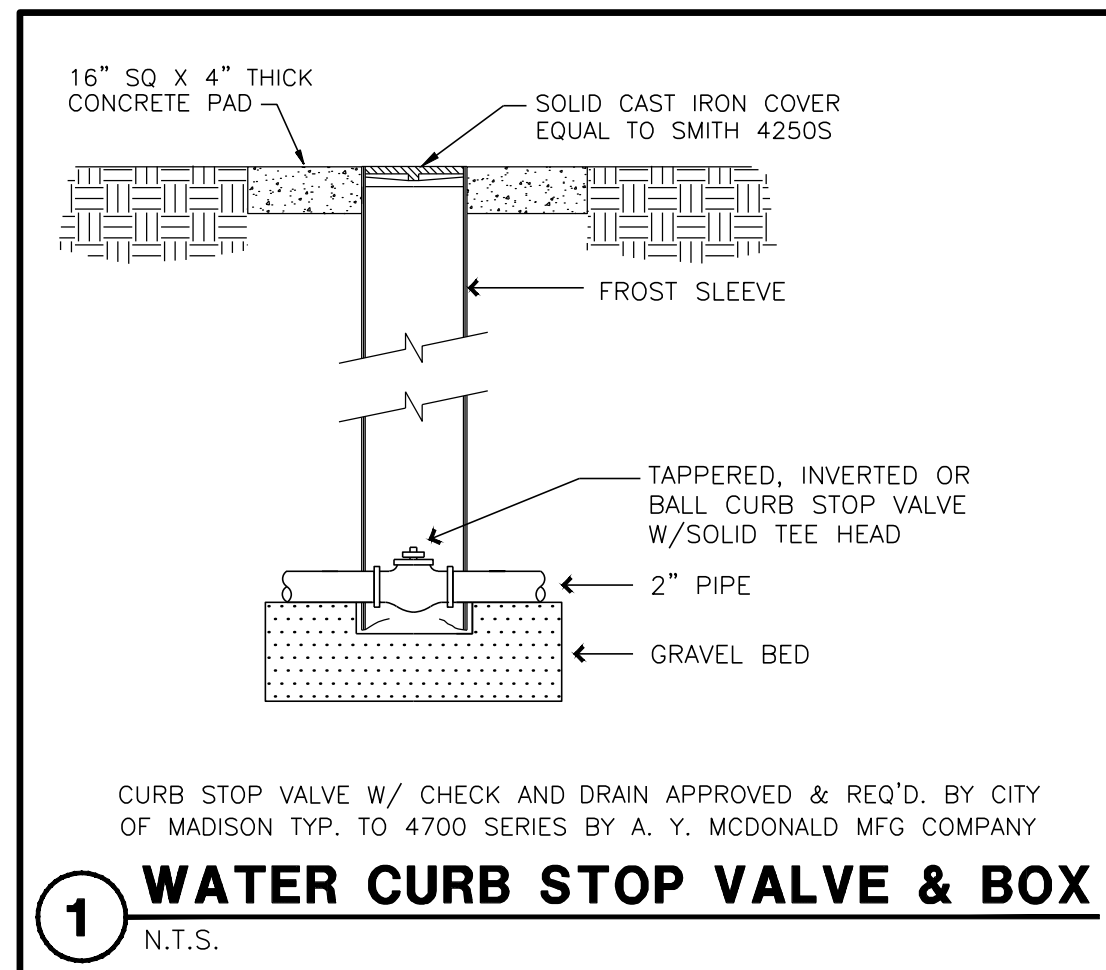


1 DEMO SITE PLAN
1"-30'-0"



2 SITE, WATER, SANITARY & SEWER
1"-30'-0"



SYMBOL SCHEDULE

SS	EXISTING SANITARY SEWER
W	EXISTING WATER SERVICE
UE	EXISTING UNDERGROUND ELECTRICAL SERVICE
-SAN-	EXISTING SANITARY SEWER - REMOVED
-W-	EXISTING WATER SERVICE - REMOVED
-T-	EXISTING UNDERGROUND TELEPHONE - REMOVED
-UE-	EXISTING UNDERGROUND ELECTRICAL SERVICE - REMOVED
W	WATER SERVICE
SS	UNDERGROUND SANITARY
UE	UNDERGROUND ELECTRICAL SERVICE
⊙	CONNECT TO EXISTING
⊗	ELECTRICAL TRANSFORMER
⊗	TELEPHONE PEDESTAL
⊠	ELECTRIC METER
⊠	POLE-MTD LIGHT FIXTURE
⊠	PHOTOCELL ON / TIMECLOCK OFF

SITE UTILITY PLAN NOTES:

- ALL SANITARY SEWER AND WATER MAIN CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE CITY OF MADISON AND WISCONSIN DSPS STANDARDS.
- WATER SERVICE SHALL BE BURIED TO A DEPTH OF 6 FEET. THE DEPTH IS DEFINED AS THE DISTANCE BETWEEN THE FINISHED GRADE ELEVATION AND THE TOP OF WATER MAIN OR SERVICE.
- MAINTAIN AN 8 FOOT MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN PUBLIC SANITARY SEWER, WATER MAIN AND STORM SEWER. PROVIDE 18" MINIMUM VERTICAL SEPARATION WHERE SEWER CROSSES OVER WATER MAIN AND PROVIDE 12" MINIMUM VERTICAL SEPARATION WHERE WATER MAIN CROSSES OVER SEWER.
- ANY UTILITIES WHICH ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
- ALL UNDERGROUND EXTERIOR NON-METALLIC SEWERS/MAINS AND WATER SERVICES/MAINS MUST BE PROVIDED WITH TRACER WIRE OR OTHER METHODS IN ORDER TO BE LOCATED IN ACCORDANCE WITH 182.0715(2r) OF STATE STATUTES.
- CONTRACTOR SHALL VERIFY MATERIAL, SIZE, AND INVERT OF SANITARY SEWER, WATER MAIN, AND STORM SEWER PRIOR TO CONSTRUCTION.

SITE UTILITY PLAN NOTES:

- DISCONNECT, EXIST 2" WATER SERVICE AT BLDG AS SHOWN. PROTECT FOR CONTINUATION WITH NEW PLAN.
- DISCONNECT AND REMOVE SANITARY LINE FROM EXISTING TOILET FACILITY TO MANHOLE. PROTECT OPENING AT MANHOLE FOR CONTINUATION WITH NEW PLAN.

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 Project No. H1611

ESTHER BEACH SHELTER
CONSTRUCTION DRAWINGS
 CITY OF MADISON PARKS DIVISION
 CONTRACT #7782/MUNIS#10121

ESTHER BEACH PARK
 2802 WAUNONA WAY
 MADISON, WI 53713

ISSUANCES:

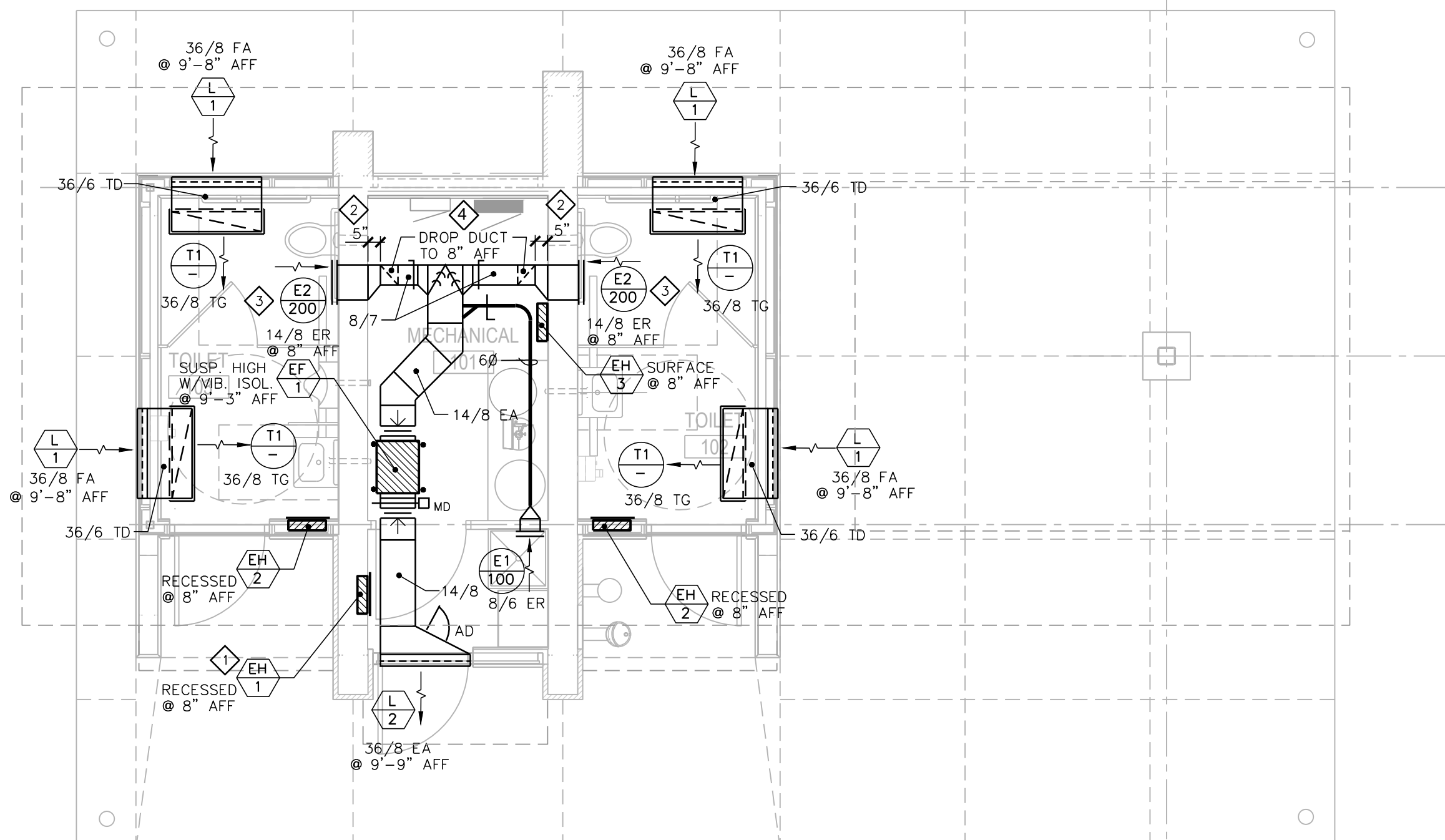
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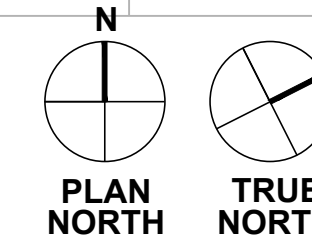
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C101



1 FLOOR PLAN - HVAC
1/4" = 1'-0"



HVAC GENERAL NOTES:

- HVAC CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF HVAC WORK WITH OTHER TRADES.
- COORDINATE PROVISIONS FOR OPENINGS IN NEW CONSTRUCTION WITH THE GENERAL CONTRACTOR FOR APPROVAL PRIOR TO STARTING WORK.
- HVAC CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING WALLS, FLOORS & CEILINGS FOR NEW HVAC WORK, IF REQUIRED.
- COORDINATE FINAL CEILING REGISTER AND GRILLE LOCATIONS WITH OTHER TRADES.
- COORDINATE PIPING AND DUCTWORK ROUTING WITH OTHER TRADES TO MAINTAIN SCHEDULED CEILING HEIGHTS.
- PROVIDE PROPER SERVICE CLEARANCES AND ACCESS SPACE FOR ALL NEW EQUIPMENT.
- PROVIDE ACCESS PANELS TO SERVICE EQUIPMENT, WHERE REQUIRED.

HVAC PLAN NOTES:

- COORDINATE RECESS OPENINGS IN BLOCK WALLS FOR ELECTRIC WALL HEATERS WITH GENERAL CONTRACTOR & MASONRY CONTRACTOR.
- DROP DUCT 5" AWAY FROM WALL TO ALLOW CLEARANCE FOR PLUMBING PIPING.
- COORDINATE DUCT OPENING IN BLOCK WALLS WITH GENERAL CONTRACTOR & MASONRY CONTRACTOR.
- MAINTAIN 3'-0" CLEARANCE FROM LIVE PART OF PANEL.

EXHAUST FANS SCHEDULE

TAG	EF-1
MANUFACTURER	GREENHECK
MODEL NO.	SO-100-VG
AREA SERVED	TOILETS & MECH
CFM	500
ESP *WG	1/2"
RPM	1034
MOUNTING	SPRING VIB. HANGERS
DRIVE	DIRECT
SONES (INLET/RADIATED)	6.3/3.0
ELECTRICAL:	
MOTOR HP (BHP)	1/4 (0.13)
FAN F.L.A.	3.7
VOLTAGE/PHASE	115/1
CONTROL	OCCUPIED BLDG. MODE
REMARKS:	IN-LINE EF
NOTE:	ALL EF LINE VOLTAGE CONTROLS WIRED BY E.C.
1	INTERLOCK EF-1 WITH LCP BUILDING POTENTIOMETER FOR BALANCING.
2	ECM MOTOR WITH UNIT-MOUNTED POTENTIOMETER FOR BALANCING.
3	SPRING/NEOPRENE VIBRATION ISOLATION HANGERS.
4	MOTORIZED (115V) OPPOSED BLADE, LOW-LEAKAGE DAMPER.
5	DIRECT-COUPLED EXTERNAL ACTUATOR (BELIMO).
6	NEMA 1 DISCONNECT SWITCH UNIT-MOUNTED.
7	INSULATED HOUSING.

DIFFUSERS, REGISTERS AND GRILLES SCHEDULE

TAG	MFGR	MODEL	SIZE	MOUNTING	SERVICE	CFM	REMARKS
NECK (WxH)	FACE (L)						
E1	KEES	GHD40	8"x8"	---	SURFACE/WALL EXHAUST	100	1 2 3 HD ER 40 deg BL
E2	KEES	GHD40	14"x8"	---	SURFACE/WALL EXHAUST	200	1 2 3 HD ER 40 deg BL
T1	KEES	GHD40	36"x8"	---	SURFACE/CLG TRANSFER	-	1 3 HD TG 40 deg BL

REMARKS:
 1 WHITE FINISH.
 2 OPPOSED BLADE DAMPER.
 3 SUB-FRAME 24 GA.
 ER = EXHAUST REGISTER
 HD = HEAVY DUTY
 TG = TRANSFER GRILLE

ELECTRIC HEAT SCHEDULE

TAG	MFGR	MODEL	TYPE	SIZE	WATTS	CAP.	ELECTRICAL	REMARKS
HTxWxDPTH	BTU/HR	VOLTS/PHASE	AMPS					
EH-1	Q-MARK	AWH-4404	RECESSED WALL HTR	18 1/4" x 15 3/4" x 3 7/8"	2000	6,825	240/1	8.3 1 2
EH-2	Q-MARK	AWH-4404	RECESSED WALL HTR	18 1/4" x 15 3/4" x 3 7/8"	4000	13,650	240/1	16.7 1 2 3
EH-3	Q-MARK	AWH-4404	SURFACE WALL HTR	18 1/4" x 15 3/4" x 3 7/8"	2000	6,825	240/1	8.3 1 2 4

REMARKS:
 1 INTEGRAL TAMPER PROOF THERMOSTAT.
 2 BUILT-IN DISCONNECT SWITCH.
 3 LFKSFC: 14 GA SECURITY FRONT COVER.
 4 AWHSM: SURFACE MOUNTING FRAME.

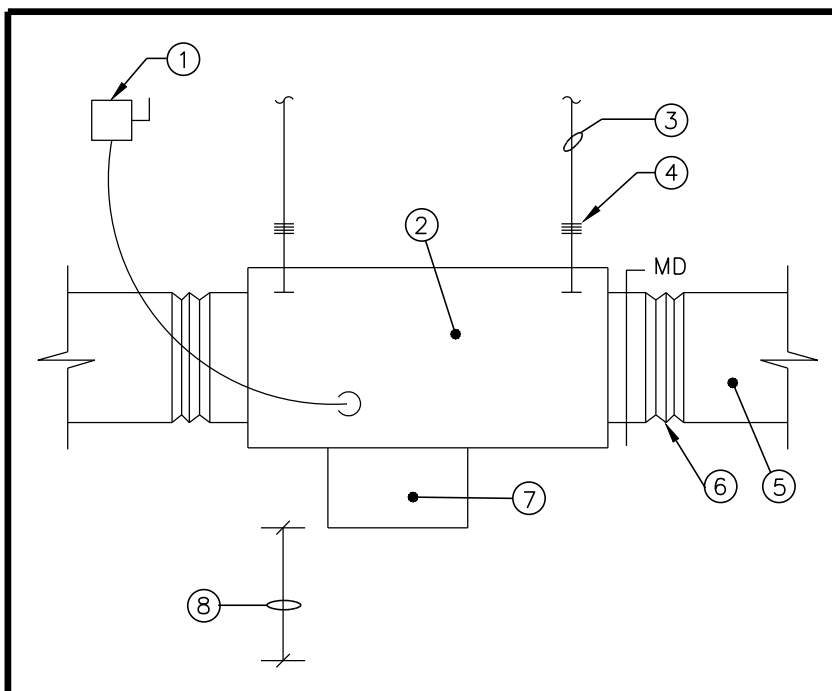
LOUVER SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	METAL	LOUVER	FREE	SERVICE	REMARKS
DEPTH x W x HT	AREA S.F.							
L-1	VENT PRODUCTS	2600-31-34	STAT.	EXT. ALUM.	2" x 36" x 8"	0.67	TRANSFER AIR	2 3 4 FLANGED FRAME W/SUB-FRAME
L-2	VENT PRODUCTS	2600-31-34	STAT.	EXT. ALUM.	2" x 36" x 8"	0.67	EXHAUST AIR	1 3 4 FLANGED FRAME W/SUB-FRAME

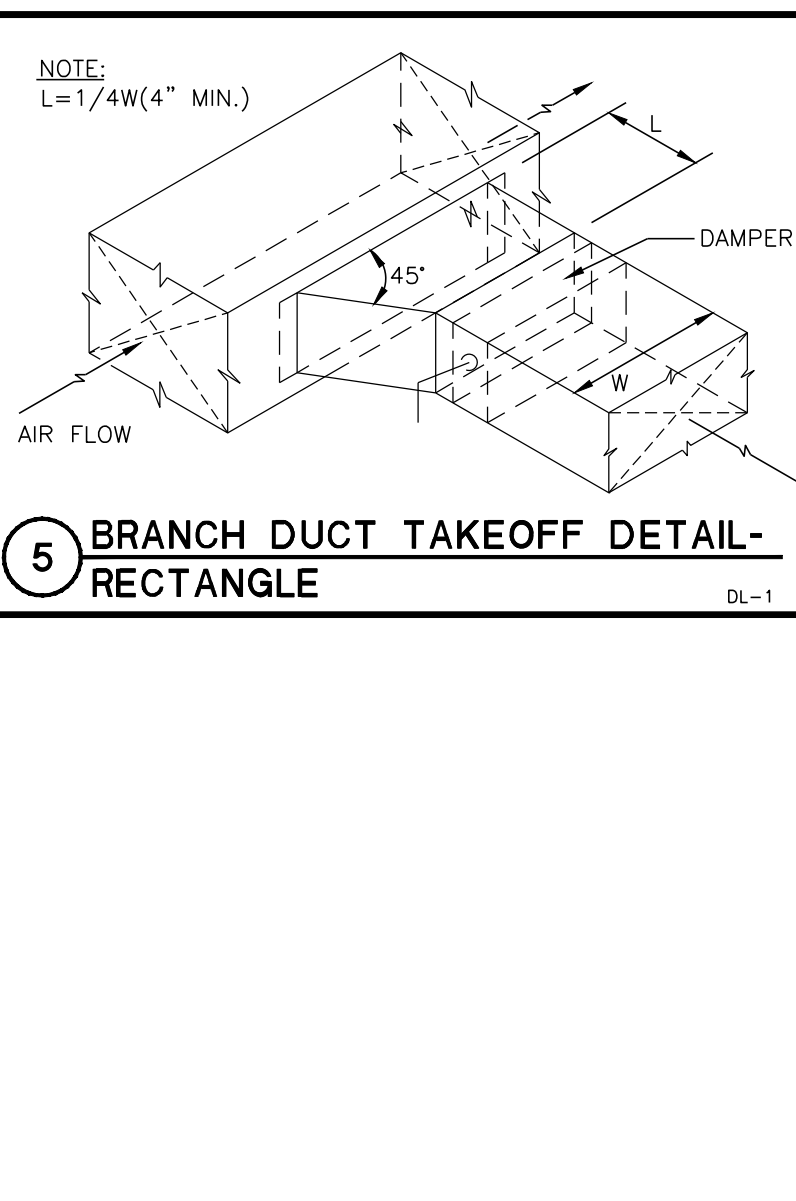
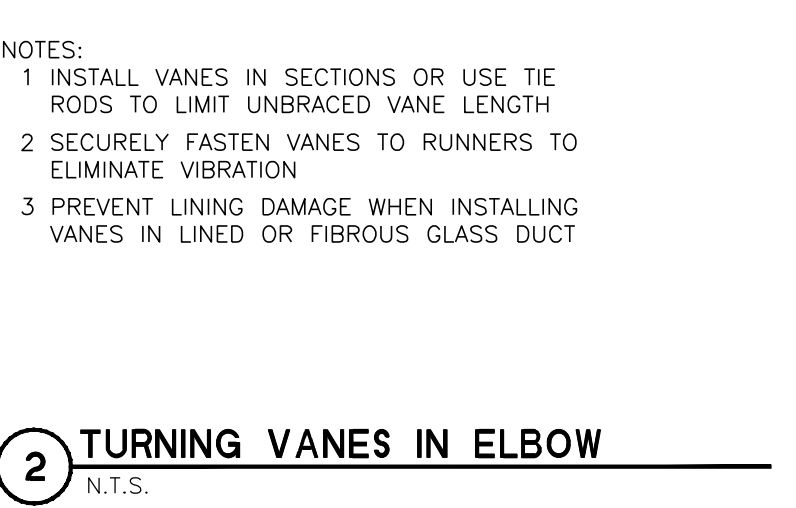
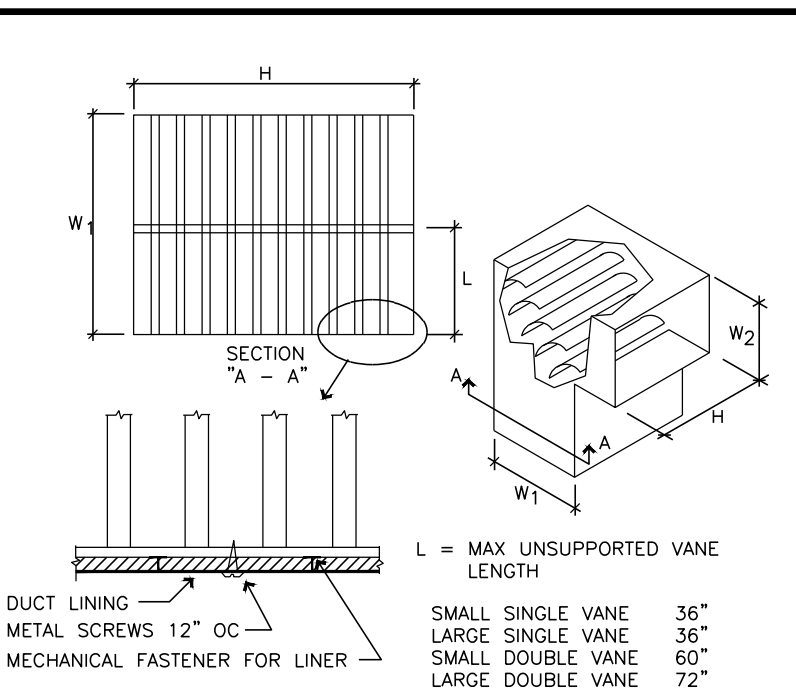
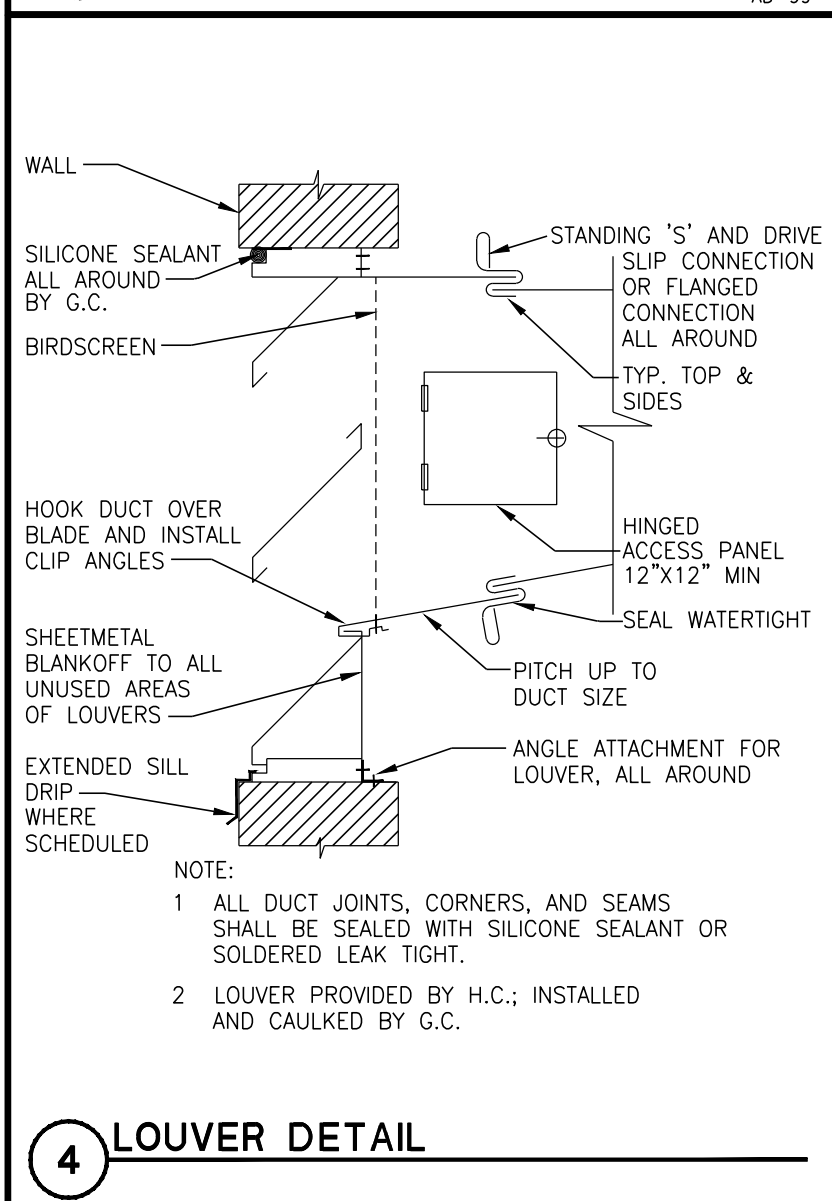
REMARKS:
 1 BIRD SCREEN - ALUM.
 2 18x16 MESH ALUM INSECT SCREEN.
 3 ALUM SUB-FRAME (BUCK FRAME).
 4 POWDER COAT BAKED ENAMEL FINISH; FINAL COLOR SELECTION BY ARCHITECT.

HVAC SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
[Symbol]	SQUARE/RECTANGULAR SUPPLY DIFFUSER, GRILLE OR REGISTER-HORIZONTAL MOUNT
[Symbol]	SQUARE/RECTANGULAR RETURN/EXHAUST REGISTER OR GRILLE-HORIZONTAL MOUNT
[Symbol]	SUPPLY REGISTER OR GRILLE VERT. MOUNT
[Symbol]	RETURN/EXHAUST REGISTER OR GRILLE VERT. MOUNT
[Symbol]	VERTICAL SUPPLY DUCT DOWN
[Symbol]	VERTICAL RETURN/EXHAUST DUCT DOWN
[Symbol]	VOLUME DAMPER
[Symbol]	MOTORIZED DAMPER
[Symbol]	FLEXIBLE CONNECTION
[Symbol]	DIFFUSER/REGISTER/GRILLE TYPE CFM
[Symbol]	EXHAUST CFM
[Symbol]	EQUIPMENT SYMBOL NO.
[Symbol]	EQUIPMENT SYMBOLS
EF	EXHAUST FAN
EH	ELECTRIC HEATER
EA	ELECTRIC WATER HEATER
L	LOUVER
ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
EA	EXHAUST AIR
FA	FRESH AIR
MD	MOTORIZED DAMPER



- INSTALLATION NOTES:**
- ELECT. DISCONNECT BY E.C.
 - INLINE FAN
 - SUPPORT RODS
 - SPRING VIBRATION ISOLATOR HANGER SUPPORTS
 - EXHAUST DUCTWORK
 - FLEXIBLE DUCT CONNECTION
 - MOTOR DRIVE & GUARD
 - PROVIDE SERVICE ACCESS
 - MOTORIZED BACKDRAFT DAMPER



ISSUANCES:

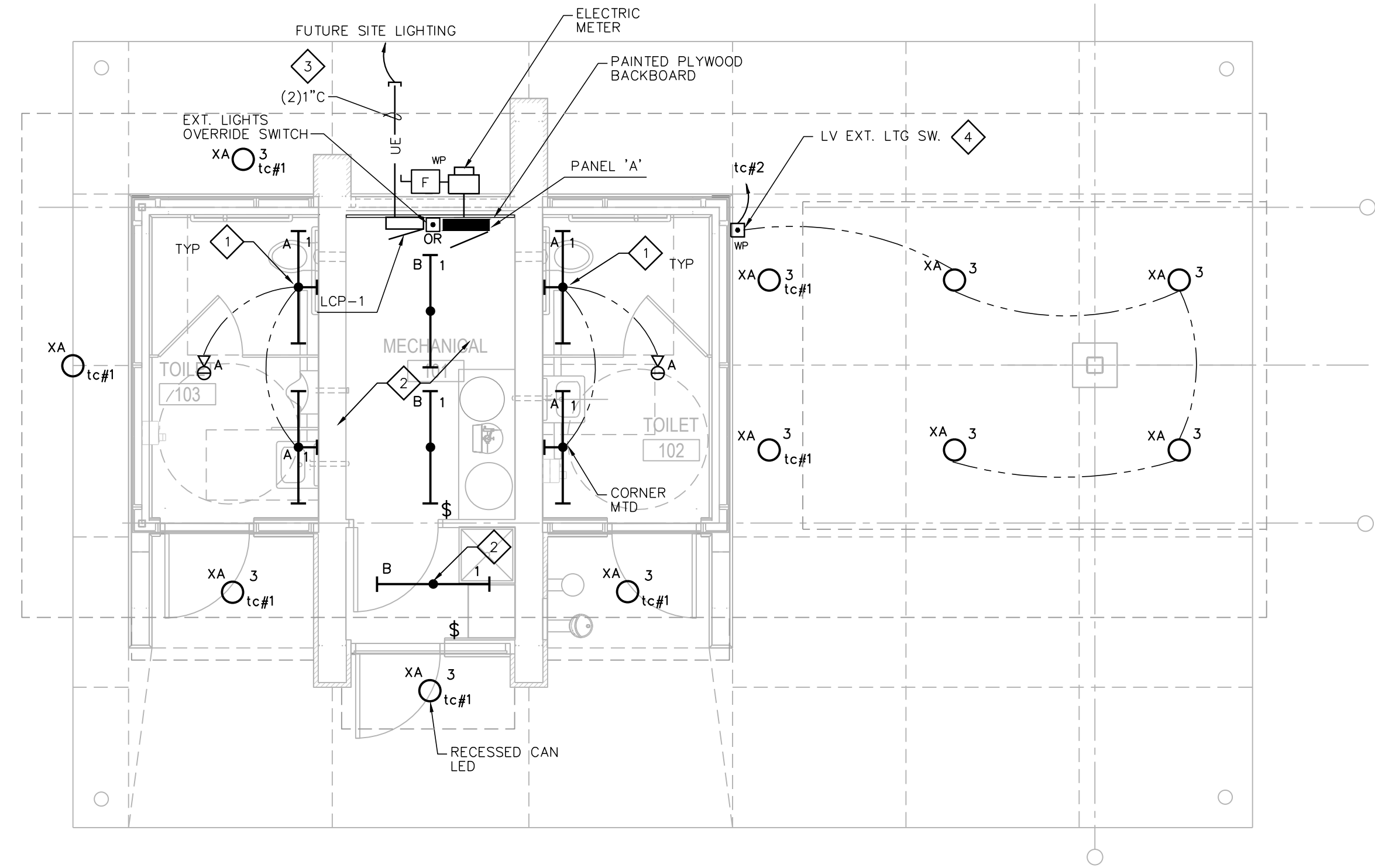
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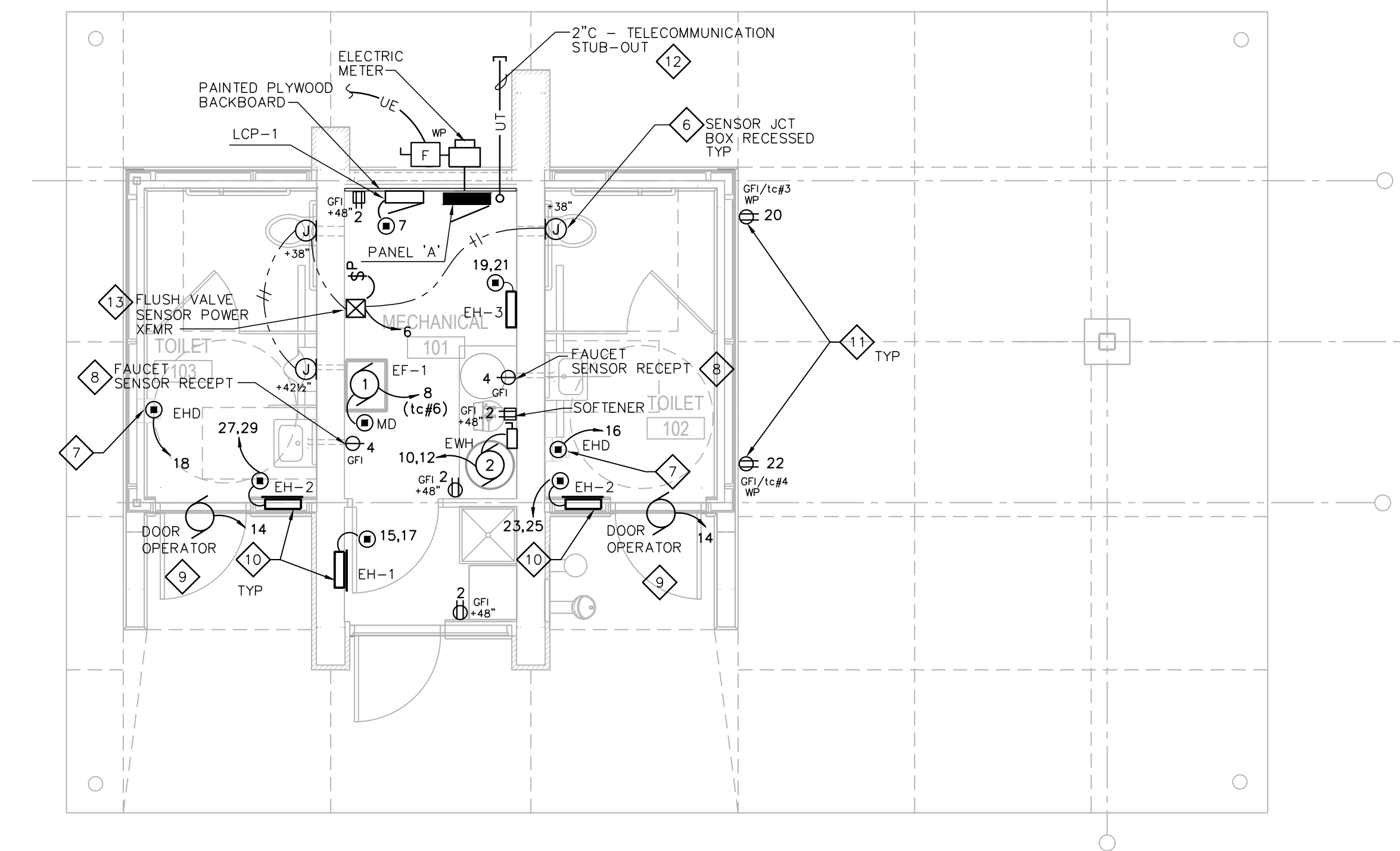
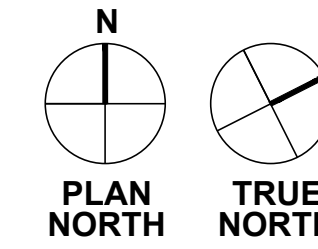
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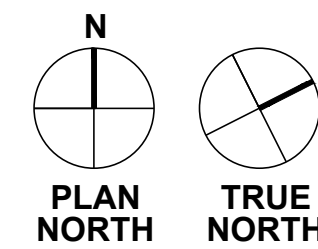
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1 FLOOR PLAN - ELECTRICAL LIGHTING
1/4" = 1'-0"



2 FLOOR PLAN - ELECTRICAL POWER/LV
1/4" = 1'-0"



ELECTRICAL GENERAL NOTES:

1. COORDINATE LIGHTING & DEVICE LAYOUT WITH GENERAL CONTRACTOR.
2. COORDINATE ELECTRICAL RACEWAYS ROUTING WITH GENERAL CONTRACTOR AND OTHER TRADES FOR PROPER EQUIPMENT ACCESS.
3. ALL RACEWAYS ARE TO BE CONCEALED IN FINISHED AREAS. MECHANICAL & UTILITY AREAS MAY USE SURFACE CONDUIT SYSTEMS.
4. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL CONSTRUCTION CONDITIONS.
5. COORDINATE AND SCHEDULE ALL WORK WITH THE GENERAL CONTRACTOR AND LOW-VOLTAGE CABLING PRIOR TO STARTING.
6. ALL LIGHTS CIRCUITED TO PANEL 'A' UNLESS INDICATED OTHERWISE.

ELECTRICAL POWER/LV PLAN NOTES:

- 1 CORNER-MTD LIGHT FIXTURE.
- 2 COORDINATE LIGHT FIXTURE MOUNTING LOCATION WITH DUCTWORK, PIPING & OTHER TRADES.
- 3 STUB OUT 1" (PVC) RACEWAYS 24" BELOW GRADE AND CAP FOR FUTURE SITE LIGHTING.
- 4 LV LIGHTING CONTROL STA. (WP). REFER TO LCP RISER.
- 5 COORDINATE POWER TO LOW-VOLTAGE TRANSFORMER FOR FLUSH VALVES BY PLUMBING TRADE. PROVIDE MASTER PILOT LIGHT SWITCH FOR POWER TO FLUSH VALVES AND LABEL. ROUTE ALL LV CABLING IN RACEWAY.
- 6 PROVIDE 4"x4"x2 1/2" RECESSED BOX WITH PLASTER RING FOR SENSOR MOUNTING HEIGHT TO CENTER OF BOX. COORDINATE INSTALLATION WITH PLUMBING TRADE. COORDINATE FINAL MOUNTING HEIGHT LOCATION WITH GENERAL CONTRACTOR.
- 7 PROVIDE 4"x4"x2 1/2" RECESSED BOX WITH PLASTER RING FOR ELECTRIC HAND DRYER CONNECTION. PROVIDE POWER CONNECTION TO HAND DRYERS. COORDINATE FINAL MOUNTING HEIGHT LOCATION WITH GENERAL CONTRACTOR.
- 8 COORDINATE FINAL RECEPTACLE LOCATION WITH PLUMBING TRADE FOR FAUCET SENSOR POWER.
- 9 COORDINATE POWER AND CONTROL WIRING AND RACEWAY REQUIREMENTS FOR DOOR OPERATORS WITH GENERAL CONTRACTOR.
- 10 COORDINATE POWER WIRING AND RACEWAY REQUIREMENTS FOR ELECTRIC HEATERS WITH HVAC CONTRACTOR.
- 11 EXTERIOR RECEPTABLES POWER CONTROLLED BY LCP TIMECLOCK. REFER TO LCP RISER.
- 12 STUB OUT 2" (PVC) RACEWAY 24" BELOW GRADE AND CAPPED FOR FUTURE COMMUNICATIONS CABLING.
- 13 EXTEND LOW-VOLTAGE CABLING FROM TRANSFORMER (BY P.C.) TO FLUSH VALVE SENSORS. ROUTE CABLING IN CONDUIT OR RACEWAYS.

ISSUANCES:

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PROJECT:

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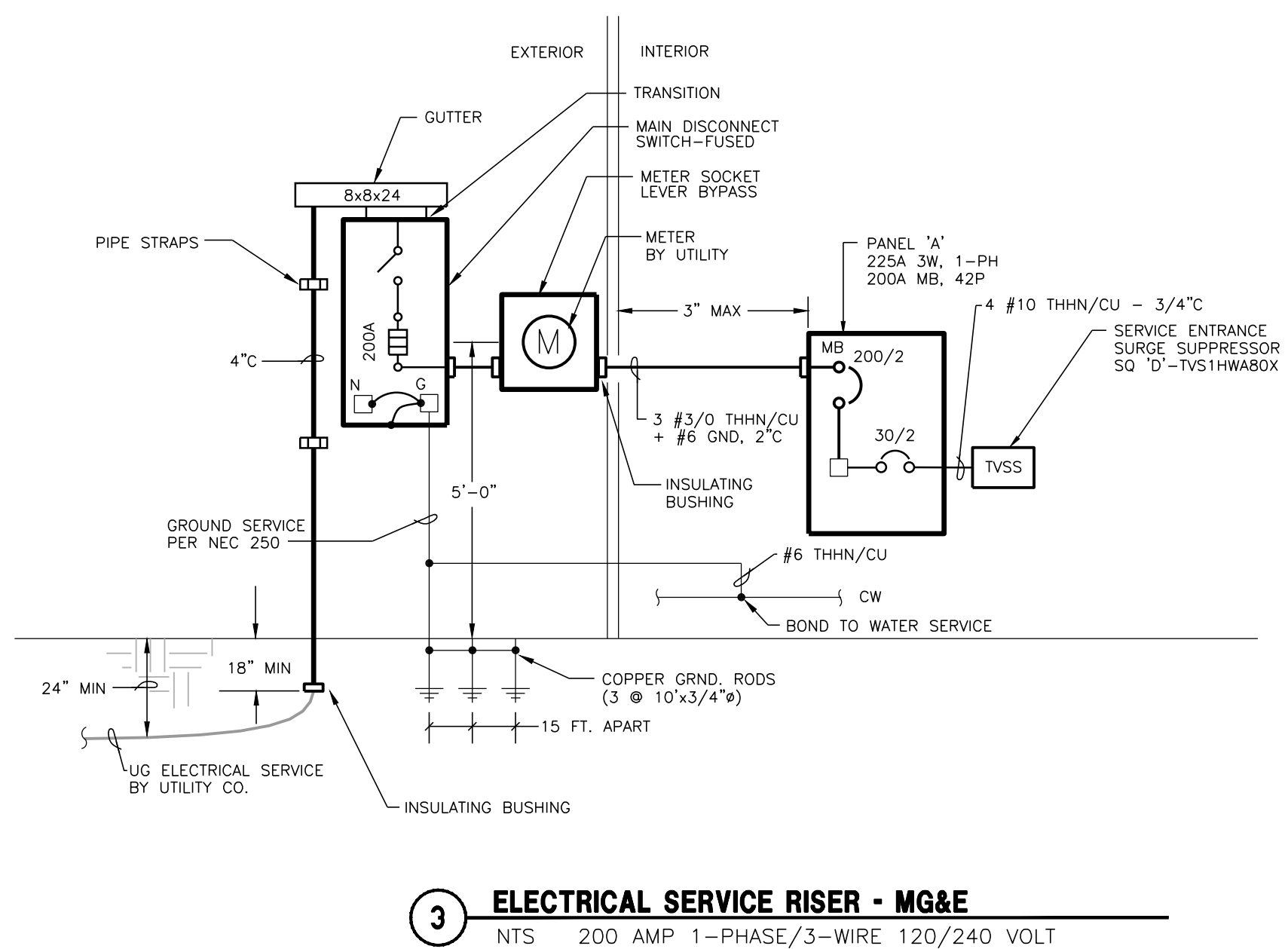
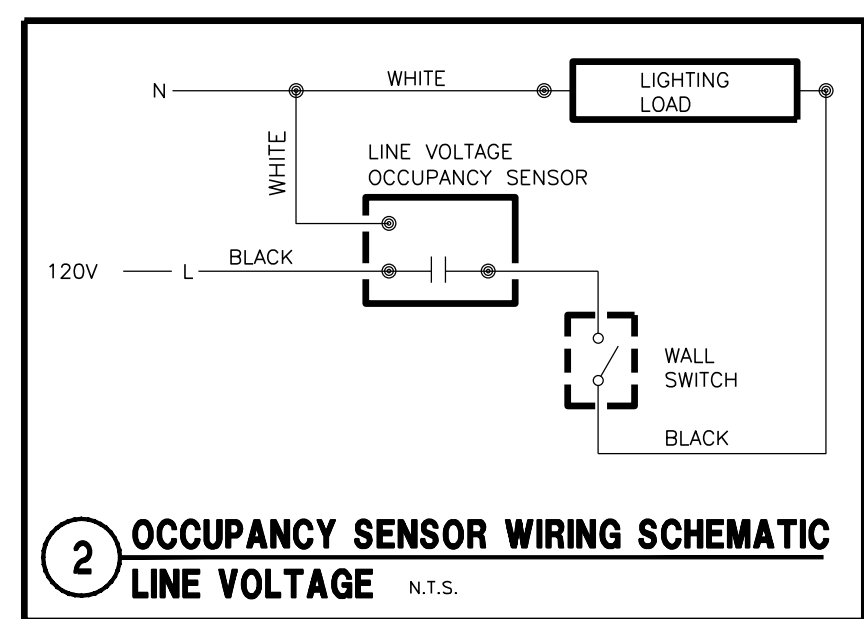
ELECTRICAL MOTOR/EQUIPMENT SCHEDULE

TAG	1	2	3	4	5
PANEL NO.	A	A	A	A	A
CIRCUIT	8	10,12	15,17	SEE PLAN	19,21
BREAKER	15	30	15	25	15
POLE	1	2	2	2	2
WIRING					
NO.	2+G (#12)	2+G (#10)	2+G (#12)	2+G (#10)	2+G (#12)
TYPE	THHN	THHN	THHN	THHN	THHN
SIZE	#12	#10	#12	#10	#12
COND.	1/2"	1/2"	1/2"	1/2"	1/2"
ELECTRICAL					
HP	1/4	(4.5)	(2.0)	(4.0)	(2.0)
VOLT	115	240	240	240	240
PHASE	1	1	1	1	1
FLA (MCA)	3.7 (4.6)	18.8 (23.4)	8.3 (10.4)	16.7 (20.9)	8.3 (10.4)
STARTER					
TYPE	N.R.	w/UNIT	w/UNIT	w/UNIT	w/UNIT
SIZE	-	-	-	-	-
BY	-	P.C.	H.C.	H.C.	H.C.
CONTROL					
TYPE	LCP	AQUASTAT	STAT	STAT	STAT
BY	E.C.	P.C.	H.C.	H.C.	H.C.
DISCONNECT					
TYPE	w/UNIT	NEMA 1	w/UNIT	w/UNIT	w/UNIT
SIZE	-	30	-	-	-
FUSE	-	-	-	-	-
BY	H.C.	E.C.	H.C.	H.C.	H.C.
REMARKS	EXHAUST FAN EF-1	ELECTRIC WTR. HTR. EWH	ELECTRIC HEATER EH-1	ELECTRIC HEATER EH-2	ELECTRIC HEATER EH-3

E.C. = ELECTRICAL CONTRACTOR
H.C. = HVAC CONTRACTOR
P.C. = PLUMBING CONTRACTOR
G.C. = GENERAL CONTRACTOR

N.R.=NOT REQUIRED
H.D.=HEAVY DUTY

① PROVIDE GREEN WIRE GROUND TO ALL MOTORS AND EQUIPMENT PER NEC 250-95.



LIGHTING FIXTURE SCHEDULE

TAG	NO.	TYPE	LAMPS	DESCRIPTION	MOUNTING	MFGR. & MODEL	REMARKS
A	-	LED	45	W/FIXTURE	SURFACE/ CORNER MTD	KENALL - MLH4S-48-R-WM- PP-1-45L40K-DCC-1-120-CMB	(1)(2) 4 FT CORNER MTD SURFACE WRAP
B	-	LED	42	W/FIXTURE	SURFACE PENDANT/CLG	LITHONIA - ZL2N-L48-3000LM- MDD-MVOLT-40K-80CRI-WH + HC36	(1)(4) 4 FT SURFACE PENDANT CHAIN HUNG STRIP
XA	-	LED	26	W/FIXTURE	RECESSED/ SOFFIT	KENALL HRDLB-26L40K-DV-5CC-FW-CSS-G	(1)(3) EXT. RECESSED 6" CAN W/POLYCARBONITE LENSE

LAMP ABBREVIATIONS:
LED=LIGHT EMITTING DIODE

REMARKS:
① LED LAMPING/DRIVER.
② CORNER MTG BRACKET (CMB).
③ WET LOCATION UL LISTED.
④ CHAIN HUNG FIXTURE.

ALL VOLTAGES ARE 120 VOLT UNLESS INDICATED OTHERWISE.

OCCUPANCY SENSOR SCHEDULE

SYMBOL	MOUNTING	VOLTAGE	RATED CURRENT /LOAD	SENSOR		MFGR. & MODEL	REMARKS
				TYPE	COVERAGE		
⊕	SURFACE/ CLG	120 VAC	800 Watt	DT	360° 24'x24'	SENSOR SWITCH RMR-PDT-9	RECESSED CLG MTD DT
⊕OS	WALL SWITCH	120 VAC	800 Watt	DT	160° 20'	SENSOR SWITCH WSD-PDT	(1) WALL SWITCH DT

ABBREVIATIONS:
PIR=PASSIVE INFRARED
U=ULTRASONIC
DT=DUAL TECHNOLOGY (PIR+U)

(1) COORDINATE PLATE FINISH COLOR WITH ARCHITECT.

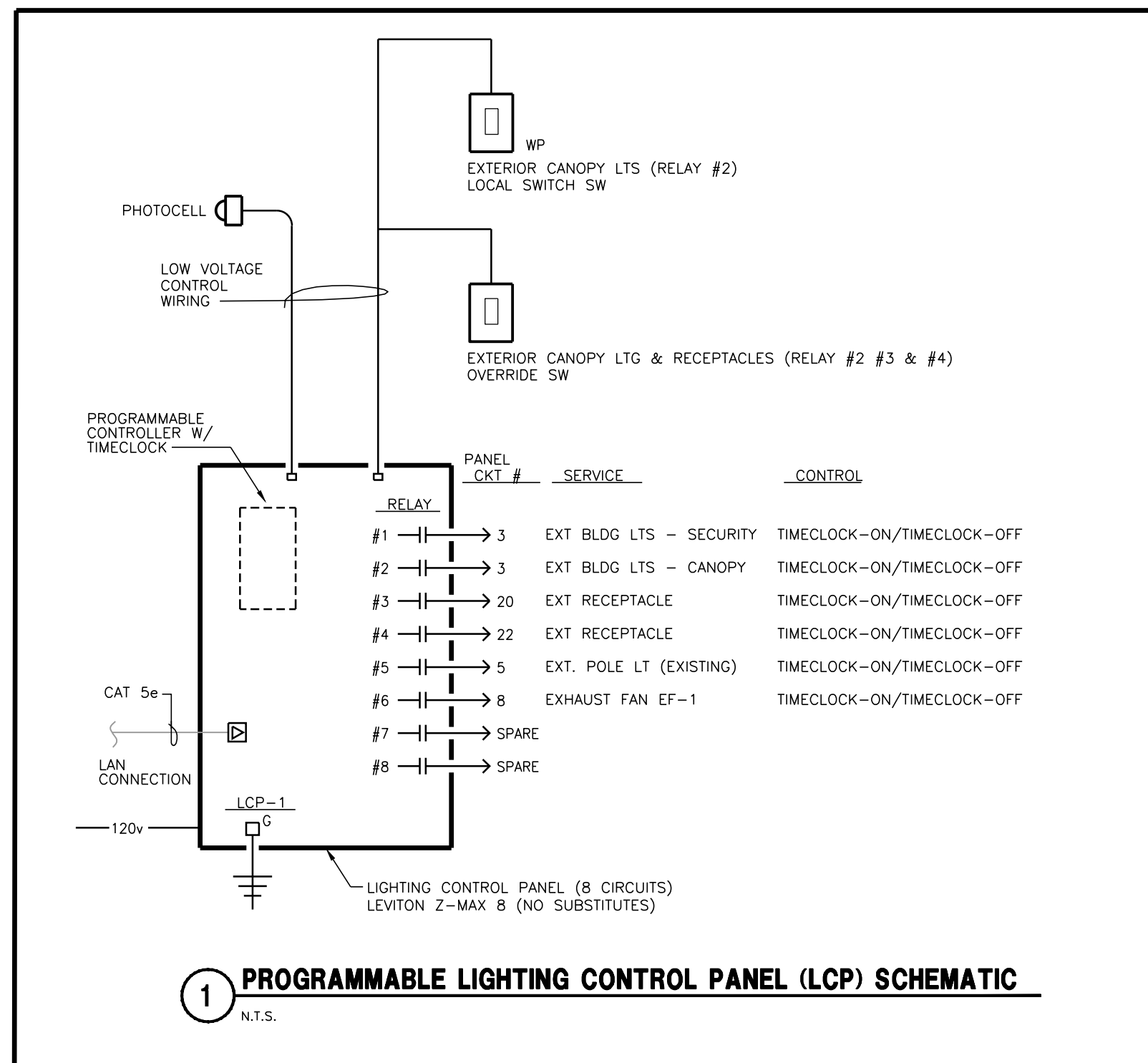
PANEL 'A' AIC=22K W/SERVICE GRND

AMPS MAIN		VOLTS PHASE		MOUNTING LOCATION	
225	200	120/240	1	SURFACE	MECH 101

BRKR	DESCRIPTION	CIRCUIT	PHASELOADS	CIRCUIT	DESCRIPTION	BRKR
A	P	WATT	NO. A B	NO. WATT		A P
20	1	310	1 850	2	540 RECEPT MECH 101	20 1
20	1	340	3	640	4 300 RECEPT FLUSH VALVES-LAV	15 1
20	1	500	5 800	6	300 XFMR - FLUSH VALVES	15 1
20	1	300	7	730	8 430 EXHAUST FAN EF-1	15 1
				9	2250 EWH-ELECT. WTR HTR	30 2
				11	2250	- -
				13	600 DOOR OPERATORS	20 1
15	2	1000	15	2500	16 1500 EHD-TOILET 102	20 1
-	-	1000	17	2500	18 1500 EHD-TOILET 103	20 1
15	2	1000	19	2500	20 1500 RECEPT-SHELTER	20 1
-	-	1000	21	2500	22 1500 RECEPT-SHELTER	20 1
25	2	2000	23	2000	24	
-	-	2000	25	2000	30	
25	2	2000	27	2000	28	
-	-	2000	29	2000	30	
				31		
				32		
				33		
				34		
				35		
				36		
				37		
				38		
				39		
				40	- SPD	30 2
				41	- SPD	- -
				42		
				13,500	12,620	

ESTIMATED DEMAND LOAD: 26,120 WATTS / 108.8 AMPS

TOTAL CONNECTED LOADS: 26,120 WATTS / 108.8 AMPS



ELECTRICAL SYMBOL SCHEDULE

MOUNTING HGT.	SYMBOL	DESCRIPTION
		LIGHTING FIXTURES
	⊕	LED: SURFACE/PENDANT
	⊕	LED: RECESSED
	⊕	LED: SURFACE/WALL MTD
	⊕	LED LINEAR: SURFACE, CEILING MOUNTED
	⊕	LED LINEAR: SURFACE, WALL MOUNTED
		SWITCHES
48"	⊕	SINGLE POLE
48"	⊕OS	OCCUPANCY SENSOR CONTROLLED WALL SWITCH
48"	⊕P	SINGLEPOLE - PILOT ILLUMINATED
	⊕	OCCUPANCY SENSOR
	⊕	CEILING MTD TYPE
		LIGHTING CONTROL SYSTEM
60"	LCP	LIGHTING CONTROL PANEL
48"	OR	LOW-VOLTAGE SWITCH OVERRIDE
		RECEPTACLES
18"	⊕	125V, 2P, 2W SINGLE RECEPTACLE
18"	⊕	DUPLEX: SURFACE MTD
18"	⊕	DUPLEX: RECESSED WP = WATERPROOF
18"	⊕	DUPLEX: SURFACE MTD
18"	⊕GFI	DUPLEX: W/GROUND FAULT INTERRUPTION PROTECTION
		EQUIPMENT AND WIRING
	⊕	DIRECT EQUIPMENT CONNECTION
	⊕	MOTOR CONNECTION-SEE EQUIP. SCHEDULE FOR TYPE, WIRING, ETC.
	⊕	JUNCTION BOX-CONCEALED IN FINISHED AREAS, SURFACE IN UNFINISHED AREAS
	⊕	SAFETY DISCONNECT SWITCH WITH COVER INTERLOCK-W.P. INDICATES WATERPROOF (NON-FUSED UNLESS INDICATED BY 'F'-FUSED)
	⊕	TRANSFORMER
	⊕	MANUAL STARTER
	⊕	ELECTRICAL POWER PANEL
	UE	UNDERGROUND ELECTRICAL CONDUIT
	UT	UNDERGROUND TELECOM CONDUIT

ABBREVIATIONS
AFF=ABOVE FINISH FLOOR
GFI=GROUND FAULT INTERRUPTER
NL=NIGHT LIGHT-24 HOURS
PC=PHOTOCELL CONTROLLED
PC/TC=PHOTOCELL ON/TIMECLOCK OFF
TC=TIMECLOCK CONTROLLED
WP=WEATHERPROOF

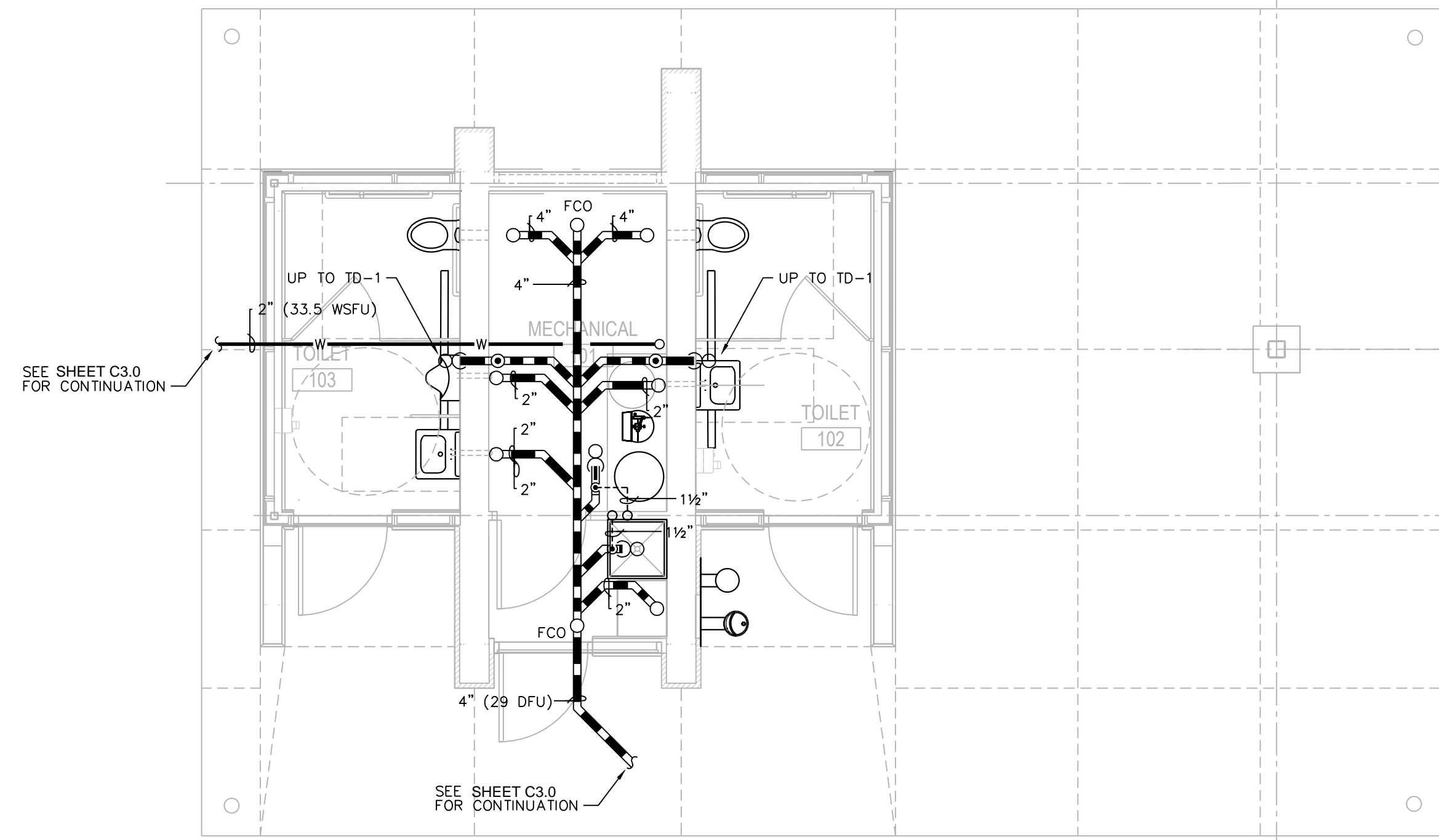
EQUIPMENT
EF = EXHAUST FAN
EH = ELECT. HEATER
EHD = ELECT. HAND DRYER
EWH = ELECTRIC WATER HEATER

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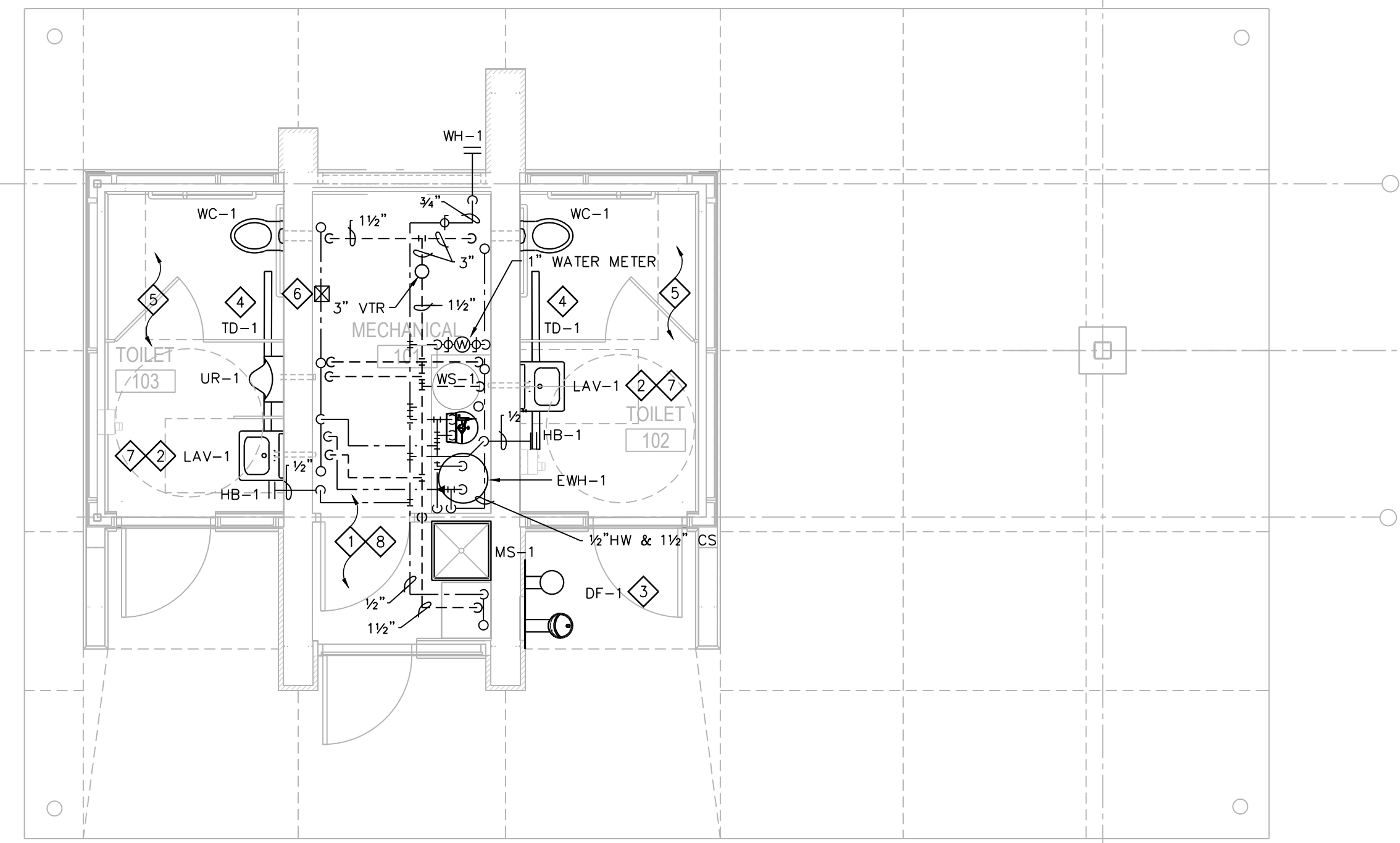
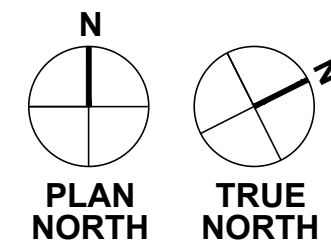
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HEIN Engineering Group

ESTHER BEACH SHELTER
CONSTRUCTION DRAWINGS
CITY OF MADISON PARKS DIVISION
CONTRACT #7782/MUNIS#10121

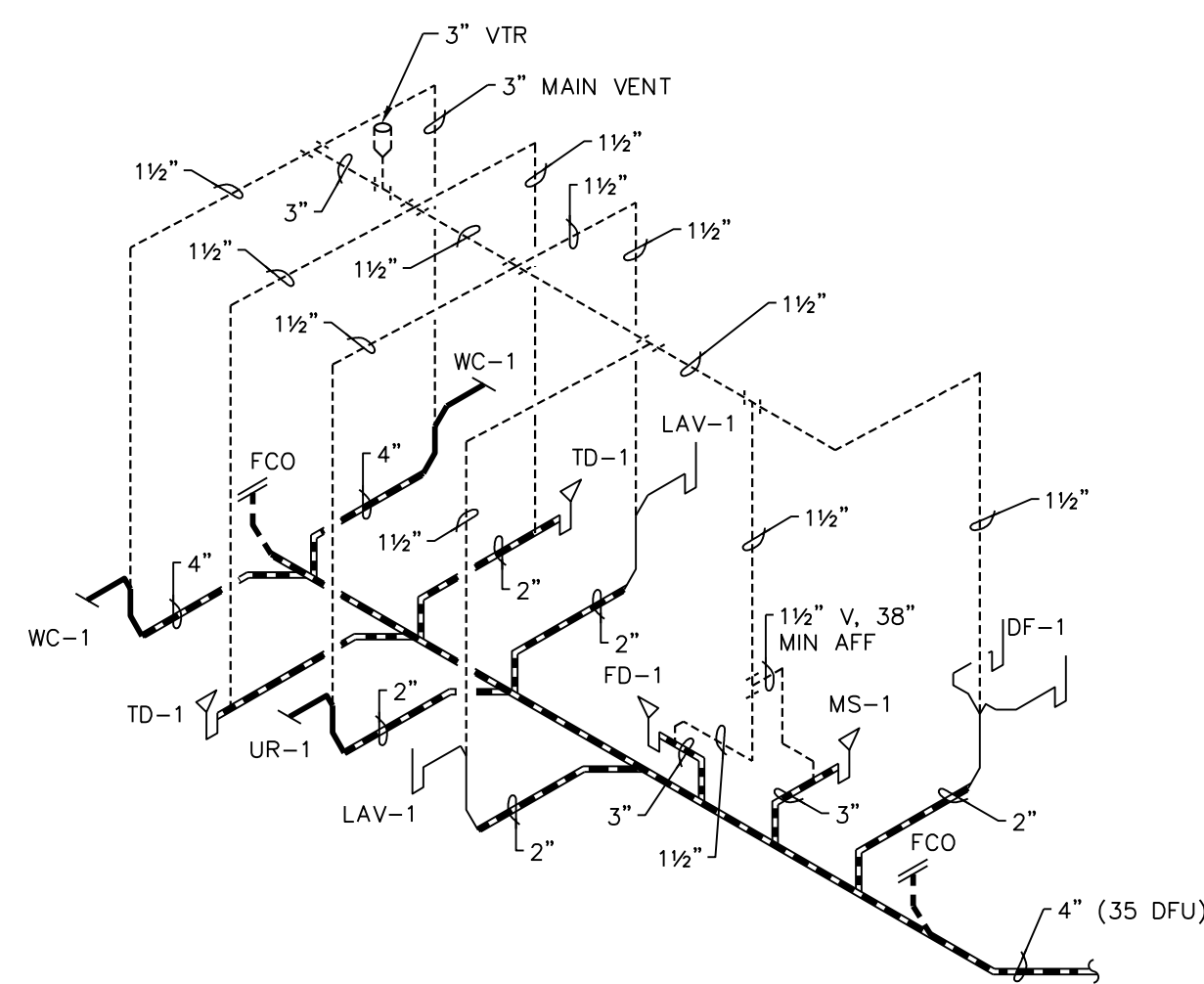
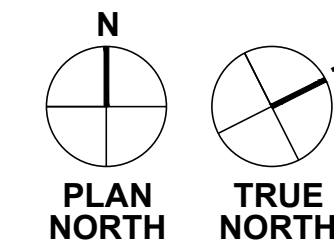
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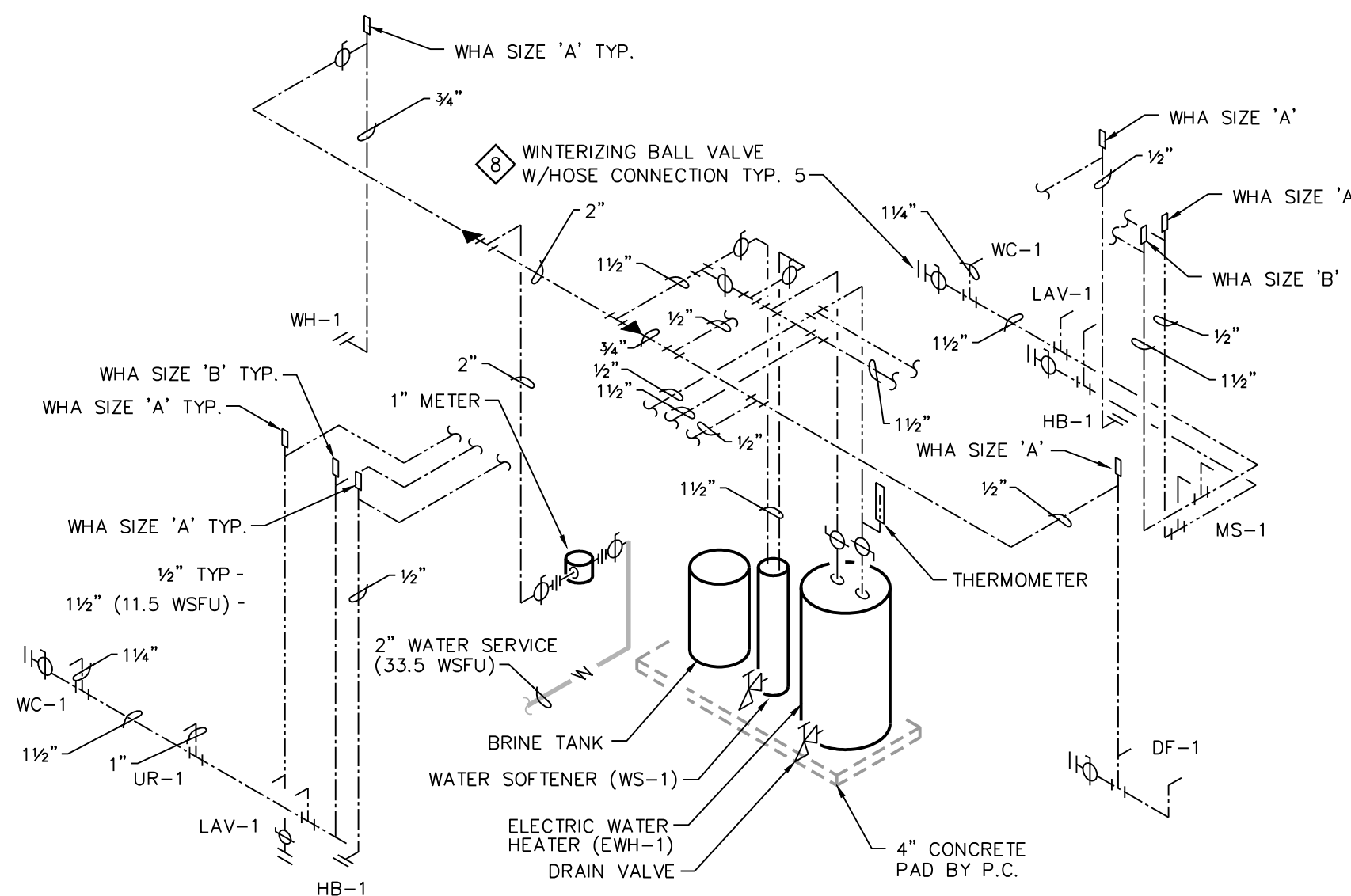
1 UNDERGROUND PLUMBING PLAN
1/4" = 1'-0"



2 PLUMBING PLAN
1/4" = 1'-0"



WASTE & VENT RISER
N.T.S.



WATER PIPING RISER
N.T.S.

PLUMBING GENERAL NOTES:

1. PLUMBING CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS.
2. COORDINATE PHASING OF WORK WITH GENERAL CONTRACTOR.
3. ALL PLUMBING SHALL BE CONCEALED IN MECHANICAL ROOM.

PLUMBING PLAN NOTES:

1. COORDINATE ROUTING OF PIPING IN MECH ROOM WITH OTHER TRADES FOR PROPER SERVICE CLEARANCES.
2. COORDINATE INSTALLATION OF LAV WALL CARRIER SUPPORTS WITH GENERAL CONTRACTOR & MASONRY TRADE.
3. COORDINATE INSTALLATION OF DF WALL CARRIER SUPPORTS WITH GENERAL CONTRACTOR & MASONRY TRADE.
4. COORDINATE FINAL LOCATIONS OF TRENCH DRAINS WITH FLOOR SLOPE BY GENERAL CONTRACTOR.
5. COORDINATE PLACEMENT OF RECESSED/FLUSH SENSOR BOX (4x4) AT EACH FIXTURE WITH GENERAL CONTRACTOR & MASONRY TRADE.
6. COORDINATE SENSOR TRANSFORMER PLACEMENT WITH ELECTRICAL TRADE FOR LINE VOLTAGE POWER. LOW-VOLTAGE POWER BY PLUMBING TRADE IN CONDUIT (EXPOSED) PER DIVISION 16.
7. MOUNT CONTROL MODULE & TRANSFORMER IN MECHANICAL 101, CABLE CONTROLS THROUGH WALL GROMMET. PROVIDE ADDITIONAL CABLE LENGTHS AS REQUIRED. COORDINATE WORK WITH E.C.
8. SLOPE ALL WATER PIPING TO LOW POINTS WITH DRAIN VALVE FOR WINTERIZING.

WATER SERVICE SIZING (POTABLE):

- 1) 42 _____ DEMAND OF BUILDING IN G.P.M.
- 2) 27 _____ PSI LOW PRESSURE AT MAIN IN STREET
- 3) 6 _____ FT DIFFERENCE IN ELEVATION. MAIN TO METER.
- 4) 1 _____ IN SIZE OF WATER METER.
- 5) 150 _____ FT DEVELOPED LENGTH FROM MAIN TO METER.

AVAILABLE PRESSURE AFTER THE WATER METER:

- 1) 1.4 _____ PSI PRESSURE LOSS DUE TO FRICTION LOSS IN 2" WATER SERVICE.
- 2) 1.0 _____ PSI PRESSURE LOSS DUE TO ELEVATION, MAIN TO METER.
- 3) 12.0 _____ PSI PRESSURE LOSS DUE TO METER.
- 4) 63.7 _____ PSI AVAILABLE PRESSURE AFTER THE WATER METER.

HOT WATER DISTRIBUTION SIZING:

PERMISSIBLE UNIFORM PRESSURE LOSS FOR FRICTION (A): (P.S.I./100' OF PIPE)

$$\text{WHERE: } A = \frac{B - (C + D + E)}{F} \times 100$$

A. 132.6 _____ PERMISSIBLE PRESSURE LOSS FOR FRICTION. (PSI/100' OF PIPE).

B. 63.7 _____ PSI AVAILABLE PRESSURE AFTER WATER METER

C. 8 _____ PSI PRESSURE NEEDED AT CONTROLLING FIXTURE.

D. 0.9 _____ PSI DIFFERENCE IN ELEVATION BETWEEN WATER METER AND CONTROLLING FIXTURE IN FEET 2 FT x .434 PSI/FT.

E. 15 _____ PSI PRESSURE LOSS DUE TO WATER HEATER, WATER TREATMENT DEVICES AND BACKFLOW PREVENTERS.

F. 30 _____ FT DEVELOPED LENGTH FROM WATER METER TO CONTROLLING FIXTURE IN FEET 20 x 1.5.

COLD WATER DISTRIBUTION SIZING:

PERMISSIBLE UNIFORM PRESSURE LOSS FOR FRICTION (A): (P.S.I./100' OF PIPE)

$$\text{WHERE: } A = \frac{B - (C + D + E)}{F} \times 100$$

A. 110.9 _____ PERMISSIBLE PRESSURE LOSS FOR FRICTION. (PSI/100' OF PIPE).

B. 63.7 _____ PSI AVAILABLE PRESSURE AFTER WATER METER

C. 15 _____ PSI PRESSURE NEEDED AT CONTROLLING FIXTURE.

D. 0.9 _____ PSI DIFFERENCE IN ELEVATION BETWEEN WATER METER AND CONTROLLING FIXTURE IN FEET 2 FT x .434 PSI/FT.

E. 15 _____ PSI PRESSURE LOSS DUE TO WATER HEATER, WATER TREATMENT DEVICES AND BACKFLOW PREVENTERS.

F. 30 _____ FT DEVELOPED LENGTH FROM WATER METER TO CONTROLLING FIXTURE IN FEET 20 x 1.5.

WATER PIPING SIZING CHART (COPPER TYPE 'L')

PIPE SIZE	COLD WATER @ 19.0 PSI/100'						HOT WATER @ 19.0 PSI/100'					
	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
WSFU (FT)	6.0	14.5	28.5	55.0	103	250	6.0	14.5	28.5	55.0	103	250
WSFU (FM)	-	4.0	6.0	13.5	34.0	128	-	-	-	-	-	-

FT = FLUSHTANK
FM = FLUSHMETER

PLUMBING FIXTURE SCHEDULE

P#	FIXTURE	WASTE	VENT	CW.	HW.	DESCRIPTION
WC-1	WATER CLOSET ADA	4"	1-1/2"	1"	--	VITREOUS CHINA, WHITE, WALL-MTD. ELONGATED BOWL, REAR SPUD, RIM @ 17" AFF. FIXTURE EQUAL TO KOHLER KINGSTON K-4323, SLOAN OPTIMA 152-1.6 ES-S SENSOR OPERATED FLUSH VALVE (1.6 GPF) & BEMIS 1955-SSC OPEN FRONT SEAT. PROVIDE EL-154 (120V) TRANSFORMER & VERTICAL ADJ. WALL CARRIERS EQUAL TO SMITH 0230 SERIES.
UR-1	URINAL ADA	2"	1-1/2"	3/4"	--	VITREOUS CHINA, WHITE, WALL HUNG, REAR SPUD, RIM MTD @ 17" AFF. KOHLER BARDON MODEL K-4904-ER WITH SLOAN 195-1.0 ES-S SENSOR-CONTROLLED FLUSH VALVE (1.0 GPF), S.S. BEEHIVE STRAINER, PROVIDE EL-154 (102V) TRANSFORMER & VERTICAL ADJ. WALL CARRIER EQUAL TO SMITH 0630 SERIES.
LAV-1	LAVATORY ADA	1-1/4"	1-1/2"	1/2"	1/2"	VITREOUS CHINA, WHITE, WALL HUNG EQUAL TO KOHLER KINGSTON LAV K-1729, (2-HOLE 4" O.C.) W/SLOAN ETF-600-P-BDM ELECTRIC FAUCET, MECH MIXING VALVE, ETF-233 (120V) PLUG-IN TRANSFORMER, MOUNT CONTROL MODULE & TRANSFORMER IN MECH 101 W/GROMMET OPENING IN WALL, PROWRAP 2000 INSULATION GUARDS, CONCEALED ARM CARRIER EQUAL TO SMITH 0700 SERIES & KOHLER 8998 P-TRAP WITH CLEANOUT. ADA COMPLIANT.
MS-1	MOP SINK	3"	1-1/2"	1/2"	1/2"	FLOOR-MOUNTED MOLDED STONE EQUAL TO MUSTEE MODEL #63M WITH #63.700 HOSE & HOSE HOLDER, #65.600 MOP HANGER & #67.2424 WALLGUARDS, CHICAGO 897 FAUCET WITH HOSE CONN. VB (WATTS 8A-ASSE 1011).
HB-1	HOSE BIBB	--	--	3/4"	--	KEY-OPERATED, AUTOMATIC DRAINING WITH ANTI-SIPHON VB & FLUSH TAMPER-PROOF BOX W/HINGED COVER. EQUAL TO WOODFORD MODEL B65. (ASSE 1011)
WH-1	WALL HYDRANT	--	--	3/4"	--	KEY-OPERATED, FREEZELESS, AUTOMATIC DRAINING WITH ANTI-SIPHON VB & FLUSH TAMPER-PROOF BOX W/HINGED COVER. EQUAL TO WOODFORD MODEL B65-PB. (ASSE 1011)
DF-1	EXTERIOR DRINKING FOUNTAIN, ADA	1-1/4"	1-1/2"	1/2"	--	EXTERIOR, WALL-MOUNTED, DRINKING FOUNTAIN WITH BOTTLE FILLER STATION. COLOR, FINISH SELECTED BY ARCHITECT. STERN-WILLIAMS MODEL 7315.
FD-1	FLOOR DRAIN	3"	1-1/2"	--	--	POLISHED BRONZE ADJ. ROUNDTOP W/PROSET TRAP GUARD EQUAL TO SMITH MODEL 2005Y-A-PB (NO HUB), 2010C-A-PB (CAULKED OUTLET).
TD-1	TRENCH DRAIN	2"	1-1/2"	--	--	HDPE 2-1/2" WIDE x 72" LONG LINEAR TRENCH DRAIN WITH BOTTOM OUTLET & STAINLESS STEEL BAR GRATE, ZURN Z880-U1.5-E1-SWG
EWH-1	ELECTRIC WATER HEATER	--	--	3/4"	3/4"	FLOOR MOUNTED ELECTRIC WATER HEATER 30 GALLON CAPACITY, 23 GPH @ 80° F RISE, EQUAL AQ SMITH DEN-30, 4500 WATT, 240V SINGLE PHASE, 18.8 FLA, T&P RELIEF VALVE.
WS-1	WATER SOFTENER	OPEN SITE DRAIN	--	1-1/2"	--	HELLENBRAND MODEL H151-90-BD OR APPROVED EQUAL. CAPACITY = 96,000 GRAIN, 3.0 CF RESIN, 35 GPM @ 15 PSIG MAX WPD. SOFTENER SIZE: 14"Ø x 65"H. BRINE TANK: 18"Ø x 40" H (300 LB. SALT CAP.). 1 1/2" VALVE/MANIFOLD. METERED DEMAND-CONTROLLED REGENERATION. PROVIDE BOTTOM DRAIN FOR WINTERIZING.

PLUMBING SYMBOL SCHEDULE

SYMBOL	DESCRIPTION
-----	WASTE BELOW SLAB
-----	COLD WATER
-----	HOT WATER
-----	VENT
-----	PIPE UP
-----	PIPE DOWN
-----	CLEAN OUT