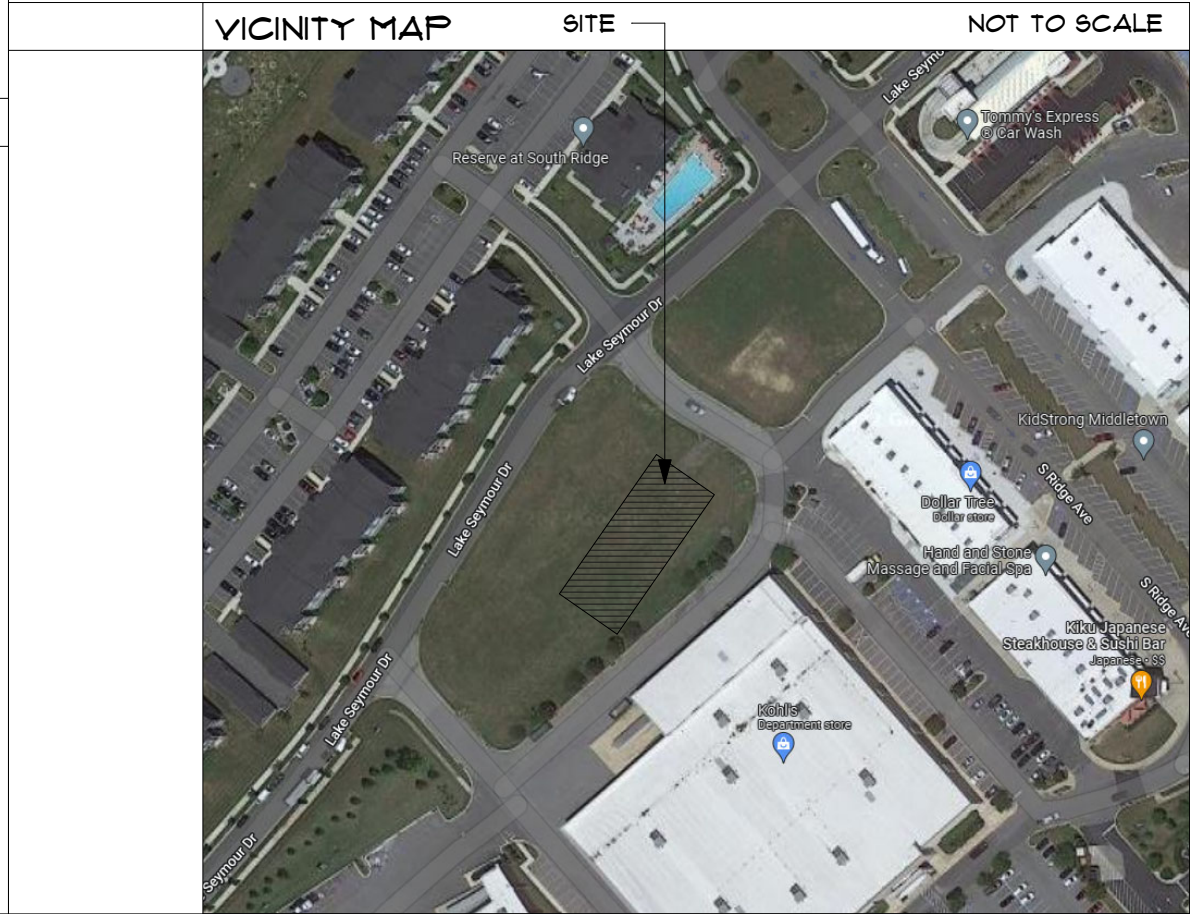


ARCHITECTURAL SYMBOLS			
ROOM NAME	ROOM NAME ROOM NUMBER		SECTION
(101)	DOOR NUMBER OF TYPE		DETAIL
	REVISION		FIRE EXTINGUISHER SEE IBC 906 FOR PLACEMENT REQUIREMENTS
	WINDOW TYPE		EXIT SIGNAGE
	WALL TYPE		EMERGENCY LIGHTING
	BUILDING ELEVATION		INTERIOR ELEVATION

MATERIAL SYMBOLS			
	EARTH		WOOD BLOCKING
	GRAVEL		PLYWOOD
	CONCRETE		STUD PARTITION
	CONCRETE MASONRY UNIT		GLASS - SMALL SCALE
	BRICK		BATT INSULATION
	CAST STONE		RIGID INSULATION
	STEEL - LARGE SCALE		CERAMIC TILE
	ALL METALS - SMALL SCALE		PLASTER OR STUCCO
	SHINGLES		PARTICLE BOARD
	WOOD - FINISH		

ABBREVIATIONS			
AB	ANCHOR BOLT	FLR	FLOOR
ADA	AMERICAN W/ DISABILITIES ACT	FND	FOUNDATION
AFF	ABOVE FINISHED FLOOR	FOC	FACE OF CONCRETE
ALUM	ALUMINUM	FOF	FACE OF FINISH
ASF	ABOVE SUBFLOOR	FOM	FACE OF MASONRY
		FOB	FACE OF STUD
BLDG	BUILDING	FT	FEET/FOOT
BLK	BLOCK	FTG	FOOTING
BLKG	BLOCKING	FV	FIELD VERIFY
BLW	BELOW	GA	GAUGE
BOT	BOTTOM	GALV	GALVANIZED
BP	BEARING POINT	GC	GENERAL CONTRACT (OR)
		GLB	GLUE LAMINATED BEAM
CAB	CABINET	GPM	GALLONS PER MINUTE
CF	CUBIC FEET	GRD	GRADE
CFM	CUBIC FEET PER MINUTE	GYP BD	GYP/BSM
CIR	CIRCLE		
CJ	CONTROL JOINT	HC	HOLLOW CORE
CL	CLOSET	HCP	HANDICAPPED
CLG	CEILING	HDW	HARDWARE
CLR	CLEAR	HM	HOLLOW METAL
CMU	CONCRETE MASONRY UNIT	HOR	HORIZONTAL
COL	COLUMN	HR	HOUR
CONC	CONCRETE	HVAC	HEATING/VENTILATION & AIR CONDITIONING
CONST	CONSTRUCTION	HWH	HOT WATER HEATER
CONT	CONTINUOUS		
CONTR	CONTRACTOR	ID	INSIDE DIAMETER
CORR	CORRUGATED	IN	INCH/INCHES
CTR	CENTER	INSUL	INSULATION
CY	CUBIC YARD	INT	INTERIOR
DET	DETAIL	JSTB	JOIST
DF	DRINKING FOUNTAIN	JT	JOINT
DIA	DIAMETER		
DIM	DIMENSION	L.H.	LEFT HAND
DL	DEAD LOAD	L.L.	LIVE LOAD
DO	DITTO	LAM	LAMINATED
DSP	DOWNSPOUT	LAV	LAVATORY
DW	DISHWASHER	LB	POUNDS
DWG	DRAWING	LN	LINEN
DWGS	DRAWINGS	LLH	LONG LEG HORIZONTAL
		LLV	LONG LEG VERTICAL
E	EAST	LTL	LINTEL
EA	EACH	LVL	LAMINATED VENEER LUMBER
EIPB	EXT. INSUL. & FINISH SYSTEM	LW	LIGHTWEIGHT
EJ	EXPANSION JOINT		
ELEC	ELECTRICAL	MAS	MASONRY
ELEV	ELEVATION	MAX	MAXIMUM
ENCL	ENCLOSURE	MECH	MECHANICAL
EPB	EXPANDED POLYSTYRENE	MFR	MANUFACTURER
EQ	EQUAL	MIN	MINIMUM
EXH	EXHAUST	MISC	MISCELLANEOUS
EXIST	EXISTING	MO	MASONRY OPENING
EXP	EXPANSION	MTL	METAL
EXT	EXTERIOR		
		N	NORTH
FBD	FIBERBOARD	NC	NOT IN CONTRACT
FBO	FURNISHED BY OTHERS	NO	NUMBER
FD	FLOOR DRAIN	NOM	NOMINAL
FE	FIRE EXTINGUISHER	NR	NOT REQUIRED
FF	FINISHED FLOOR	NTS	NOT TO SCALE
FG	FIBERGLASS		



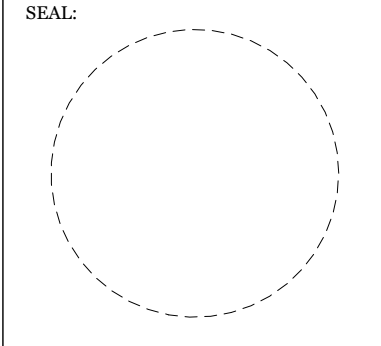
SHELL BUILDING

1611-31 LAKE SEYMOUR DRIVE, MIDDLETOWN, DE 19109

DRAWINGS ISSUED FOR
BUILDING PERMIT: 1.20.2023

PROJECT TEAM	
OWNER: ART HELMICK 901 N MARKET ST SUITE 105 WILMINGTON, DE, 19801 EMAIL: ARTHELMICK@GMAIL.COM	ARCHITECT: FISHER ARCHITECTURE, LLC 542 RIVERSIDE DRIVE SALISBURY, MD 21801 P: 410.742.0738 CONTACT: LAUREN WHITE
CONTRACTOR: GGA CONSTRUCTION 1190 INDUSTRIAL DRIVE MIDDLETOWN, DE, 19109 P: 302.316.6122 CONTACT: DAVID GRAYSON	CIVIL ENGINEER: HILLCREST ASSOCIATES 1760 FLINT HILL ROAD LANDENBERG, PA, 19350 P: 610.214.8613 CONTACT: TOM SCHREIER
MEP ENGINEERS: ALLEN + SHARIFF ENGINEERING 205 EAST MARKET STREET SALISBURY, MD 21801 P: 443-545-1300 CONTACT: TIM CHATTERTON	STRUCTURAL ENGINEER: PILOTTOWN ENGINEERING 17505 NASSAU COMMONS BLVD UNIT 3 LEWES, DE, 19558 P: 302.103.1110 CONTACT: JIM BAKER

BUILDING CODE SUMMARY			
1. JURISDICTION: NEW CASTLE COUNTY, DELAWARE			
2. APPLICABLE CODES: 2018 INTERNATIONAL BUILDING CODE 2018 INTERNATIONAL MECHANICAL CODE 2018 INTERNATIONAL PLUMBING CODE 2018 INTERNATIONAL FUEL GAS CODE 2018 INTERNATIONAL ENERGY CONSERVATION CODE 2020 NFPA 10 NATIONAL ELECTRIC CODE (NEC) 2021 NFPA 101 LIFE SAFETY CODE 2020 NFPA 58 NATIONAL LP GAS CODE 2013 NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS 2011 ICC ANS I 111 ADA STANDARDS FOR ACCESSIBLE DESIGN 2021 DELAWARE STATE FIRE PREVENTION REGULATIONS			
3. BUILDING USE AND OCCUPANCY (IBC 309): USE GROUP: M			
4. TYPE OF CONSTRUCTION (IBC 601): TYPE 5B			
5. BUILDING HEIGHT & AREA (IBC TABLE 504.3, 504.4 & 506.2)			
	PERMITTED PER IBC	PROVIDED	
BUILDING HEIGHT, STORIES	1 STORY	1 STORY	
BUILDING HEIGHT, FEET	40 FEET	20' - 0"	
BUILDING AREA	9,000 S.F. PER FLOOR	9,000 S.F. PER FLOOR	
6. FIRE PROTECTION SYSTEM: AN AUTOMATIC FIRE PROTECTION SYSTEM IS NOT REQUIRED AND WILL NOT BE PROVIDED.			
7. OCCUPANT LOAD (IBC 1004.1.2)			
TOTAL OCCUPANT LOAD	9,000 S.F. / 60	150	PERSONS
8. LENGTH OF ACCESS TRAVEL: GROUP M WITHOUT A SPRINKLER SYSTEM MAXIMUM TRAVEL DISTANCE = 200'-0" MAXIMUM COMMON PATH OF EGRESS WITHOUT A SPRINKLER SYSTEM TRAVEL DISTANCE = 15'-0" ACTUAL MAXIMUM LENGTH OF TRAVEL = 68'-4"; ACTUAL MAXIMUM COMMON PATH = 9'-0"			
9. MINIMUM EGRESS WIDTH PER OCCUPANT:			
	OCCUPANTS	REQUIRED	PROVIDED
AT DOORS	25 PEOPLE / TENANT	32" CLEAR MIN.	(2) 36"
EXIT PASSAGEWAYS	25 PEOPLE / TENANT	< 50 PERSONS, MIN. 36"	-
10. PLUMBING FIXTURES (IBC 2902.1) NOTE: FINAL LOCATION AND NUMBER T.B.D. BY FUTURE TENANT OCCUPANCY CLASSIFICATION			
25 OCCUPANTS/TENANT		REQUIRED	PROVIDED
		MEN	WOMEN
WATER CLOSETS	1/500	25/500 = 1	1
LAVATORIES	1/750	25/500 = 1	1
DRINKING FOUNTAINS	1/1,000	25/1,000 = 1	1
SERVICE SINKS	1	1	1
11. ALL BUILDING MATERIALS AND CONSTRUCTION METHODS TO BE IN ACCORDANCE WITH IBC AND APPLICABLE OSHA REQUIREMENTS.			
12. PROVIDE FIRE EXTINGUISHERS PER LOCATION(S) ON PLAN AND PER LOCAL CODES. AT MINIMUM (1) FIRE EXTINGUISHER TO BE PROVIDED FOR EVERY 3,000 S.F. AND NOT MORE THAN 75 FEET FROM THE FURTHEST OCCUPANT. AT MINIMUM (1) FIRE EXTINGUISHER TO BE PROVIDED FOR EACH TENANT SPACE. PORTABLE FIRE EXTINGUISHERS SHALL BE SELECTED, INSTALLED, INSPECTED, AND MAINTAINED IN ACCORDANCE WITH NFPA 10 STANDARDS FOR PORTABLE FIRE EXTINGUISHERS. GENERAL CONTRACTOR TO VERIFY WITH LOCAL FIRE MARSHAL THE NUMBER AND LOCATIONS OF PROPOSED FIRE EXTINGUISHERS ARE COMPLIANT. FIRE MARSHAL TO HAVE FINAL APPROVAL AND AUTHORITY.			



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LICENSE NO.: S5-0007610
EXPIRATION NO.: 01.31.2023

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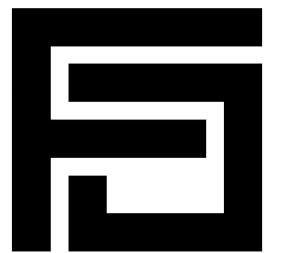
MIDDLETOWN SHOPPING CENTER 2
1611-31 LAKE SEYMOUR DRIVE
MIDDLETOWN, DELAWARE 19109

SHEET INFO:

COVER SHEET

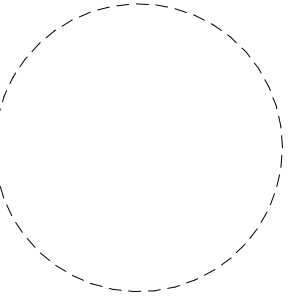
REV	DATE	DESCRIPTION
	2022.01.20	
	2022.01.20	
	12" x 14"	
	L. White	
	L. Sterner	

SHEET NUMBER:
GS-01



FISHER
ARCHITECTURE
Fisher Architecture, LLC
542 Riverside Drive
Salisbury, MD 21801
(410) 742-0238

SEAL:



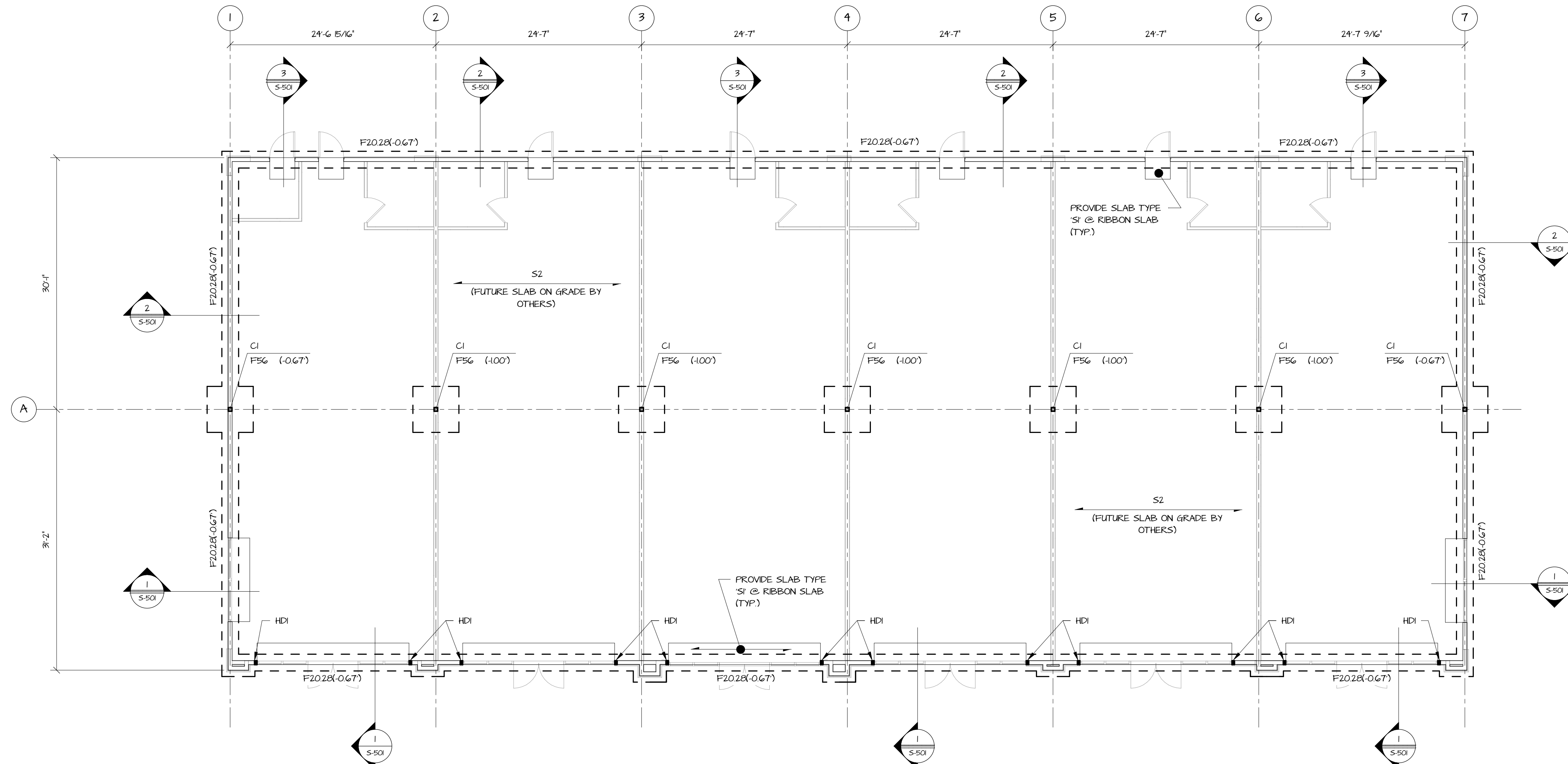
CONSULTANTS:

MIDDLETOWN SHOPPING CENTER 2

1611-31 LAKE SEYMOUR DRIVE
MIDDLETOWN, DELAWARE 19709

SHEET INFO:

FOUNDATION PLAN



1 FOUNDATION PLAN

SCALE: 1/8" = 1'-0"

1
S-101

- NOTES:
1. TOP OF SLAB EL. = DATUM EL. (0.00') UNLESS NOTED OTHERWISE THUS [.]
 2. SEE PLAN FOR TOP OF FOOTING ELEVATION BELOW DATUM ELEVATION
 3. TOP OF PIER EL. = [-0.67'] BELOW DATUM UNLESS NOTED OTHERWISE THUS [.]
 4. 'SP' INDICATES STEPPED FOOTING. SEE TYPICAL DETAIL FOR ADDITIONAL INFORMATION.
 5. 'TDS' INDICATES TURNED DOWN SLAB. SEE TYPICAL DETAIL FOR ADDITIONAL INFORMATION.
 6. 'S...D...' INDICATES FLOOR/ ROOF CONSTRUCTION. SEE SCHEDULE ON THIS SHEET FOR ADDITIONAL INFORMATION.
 7. COORDINATE ALL UNDER SLAB PIPING WITH ARCHITECTURAL/ MECHANICAL DRAWINGS.
 8. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO BUILDING LAYOUT.

SLAB/ DECK CONSTRUCTION SCHEDULE

MARK	SECTION	DESCRIPTION
S1		8" CONCRETE SLAB ON GRADE w/ 6x6- W14xW14 WWF OVER 4" CRUSHED STONE
S2		4" CONCRETE SLAB ON GRADE w/ 6x6- W14xW14 WWF OVER 4" CRUSHED STONE
D1		5/8" T&G PLYWOOD ROOF SHEATHING

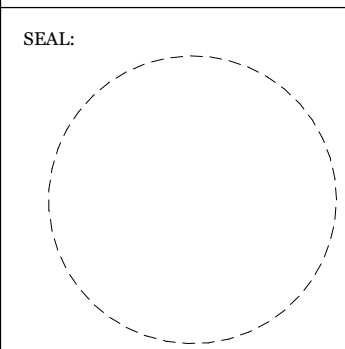


PILOTOWN
ENGINEERING
17585 NASSAU COMMONS BLVD.
UNIT 3 | LEWES, DE 19958
PHONE: 302-703-1770
JOB NUMBER: 101.286
CONTACT: J. BAKER

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REV.	DATE	DESCRIPTION

SHEET NUMBER:
5-101



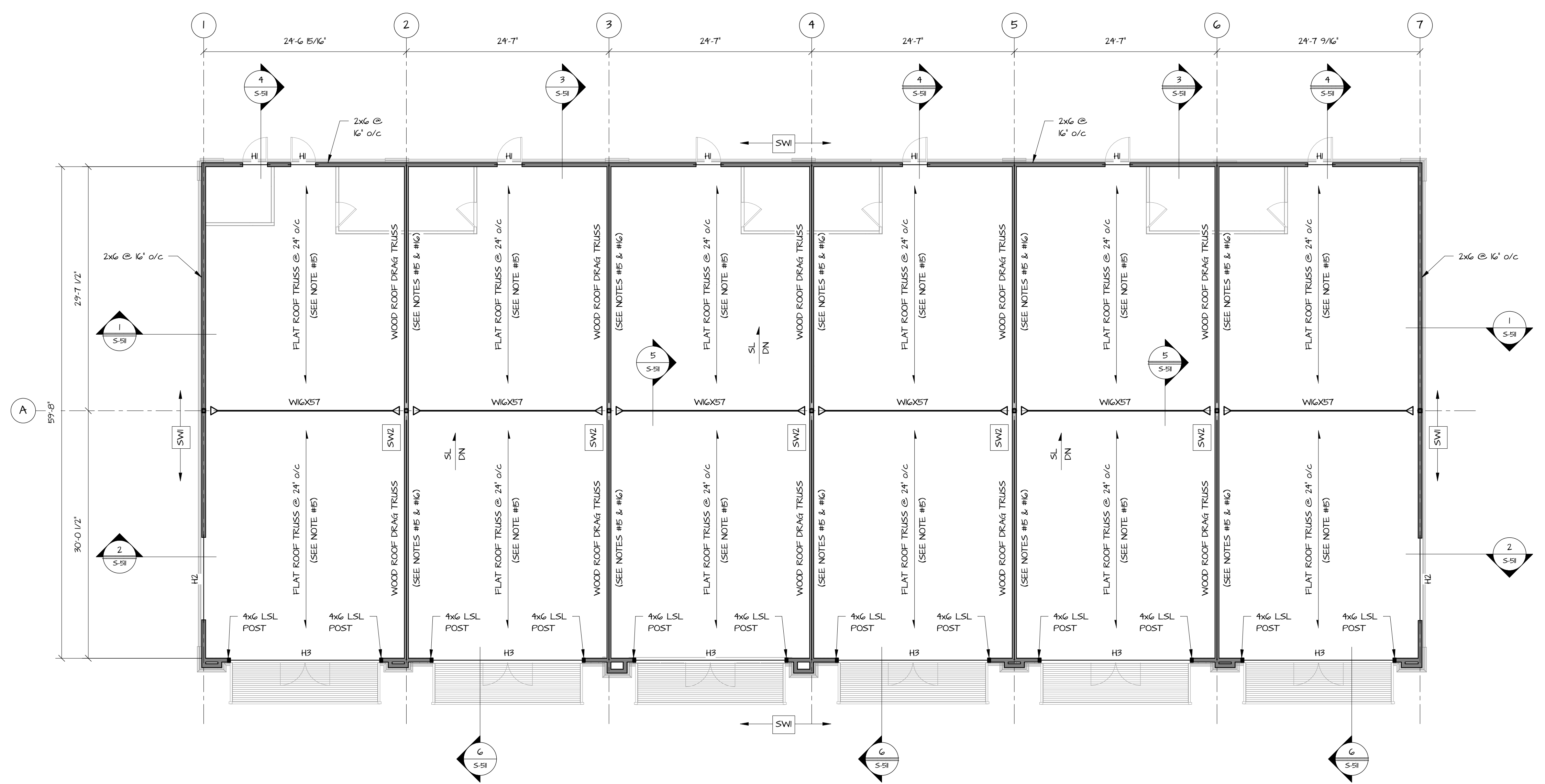
SEAL:
CONSULTANTS:

CONSULTANTS:

MIDDLETOWN SHOPPING CENTER 2
1611-31 LAKE SEYMOUR DRIVE
MIDDLETOWN, DELAWARE 19109

SHEET INFO:

ROOF FRAMING PLAN



1 ROOF FRAMING PLAN SCALE: 1/8" = 1'-0"

- NOTES:**
1. TRUSS BEARING EL. = (4'-0") ABOVE DATUM EL.
 2. SEE PLAN FOR TOP OF STEEL ELEVATION.
 3. 'S./D.' INDICATES FLOOR/ ROOF CONSTRUCTION. SEE SCHEDULE ON THIS SHEET FOR ADDITIONAL INFORMATION.
 4. [Pattern] INDICATES 2x CONVENTIONAL WOOD OVERFRAMING, TRUSS OVERFRAMING, OR ROOF SLOPE BUILT INTO TOP CHORD OF ROOF TRUSS @ CONTRACTORS OPTION.
 5. 'H.' INDICATES HEADER. SEE SCHEDULE FOR ADDITIONAL INFORMATION.
 6. 'GT' INDICATES GIRDER TRUSS.
 7. COORDINATE ROOF TOP UNIT LOCATIONS & DUCT PENETRATIONS WITH ARCHITECTURAL/ MECHANICAL DRAWINGS. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
 8. PROVIDE TRIPLE JAMB STUDS @ ALL LVL, GLB, & GIRDER TRUSS BEARING LOCATIONS UNLESS NOTED OTHERWISE.
 9. PROVIDE MINIMUM (2) JAMB STUDS @ EACH END OF HEADER UNLESS NOTED OTHERWISE.
 10. 'SW.' INDICATES SHEARWALL. SEE SCHEDULE FOR ADDITIONAL INFORMATION.
 11. [Pattern] INDICATES SHEARWALL LOCATION.
 12. 'PT' INDICATES PRESSURE TREATED LUMBER.
 13. ALL STEEL FOR WF MEMBERS SHALL BE ASTM A992.
 14. [Symbol] INDICATES WIND MOMENT CONNECTION. SEE TYPICAL DETAIL FOR ADDITIONAL INFORMATION.
 15. PROVIDE MIN TRUSS DEPTH = (1'-6") @ LOW END. SLOPE TOP CHORD OF TRUSS AS REQ'D.
 16. PROVIDE MIN 250 lb/ft DRAG TRUSS LOADING.
 17. PROVIDE DRAG TRUSS @ HSS COLUMN LOCATIONS. ATTACH TO HSS COLUMN w/ 3/8" STEEL SADDLE SEAT.

SLAB/ DECK CONSTRUCTION SCHEDULE

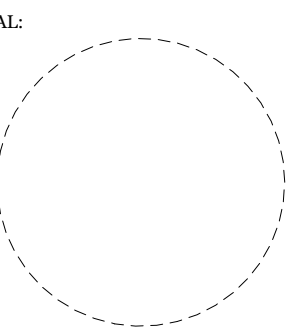
MARK	SECTION	DESCRIPTION
S1		8' CONCRETE SLAB ON GRADE w/ 6x6-W4xM4 WWF OVER 4' CRUSHED STONE
S2		4' CONCRETE SLAB ON GRADE w/ 6x6-W4xM4 WWF OVER 4' CRUSHED STONE
D1		5/8' T&G PLYWOOD ROOF SHEATHING



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REV. DATE. DESCRIPTION
DATE: 2023.01.14
PROJECT NO.: 2022159
SCALE: As indicated
DRAWN BY: J. BAKER
DRAWN BY: J. RODGERS
SHEET NUMBER:
9-102



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CONSULTANTS:

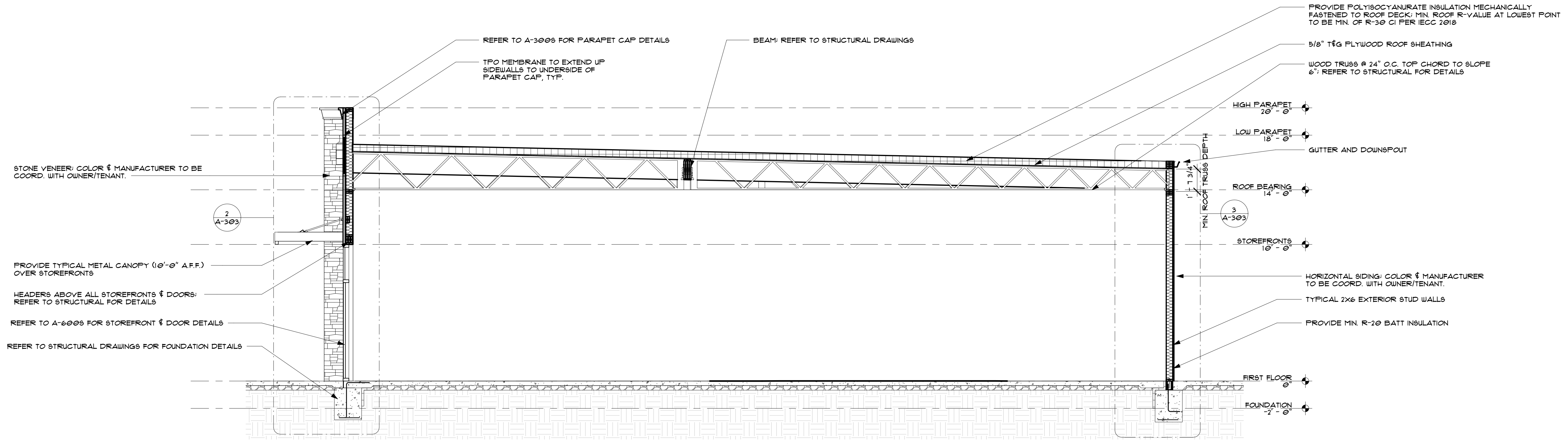
MIDDLETOWN SHOPPING CENTER 2
1611-31 LAKE SEYMOUR DRIVE
MIDDLETOWN, DELAWARE 19709

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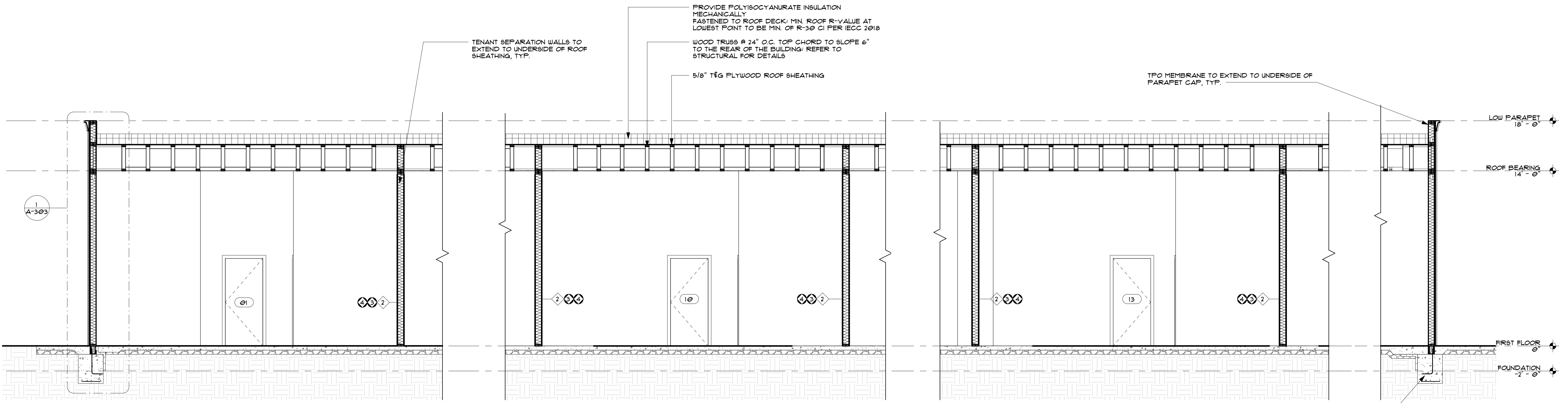
BUILDING SECTIONS

REV	DATE	DESCRIPTION

SHEET NUMBER:
A-301



2 BUILDING SECTION 2
1/4" = 1'-0"



1 BUILDING SECTION 1
1/4" = 1'-0"

REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS

SEAL:

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MIDDLETOWN SHOPPING CENTER 2

1611-31 LAKE SEYMOUR DRIVE
MIDDLETOWN, DELAWARE 19169

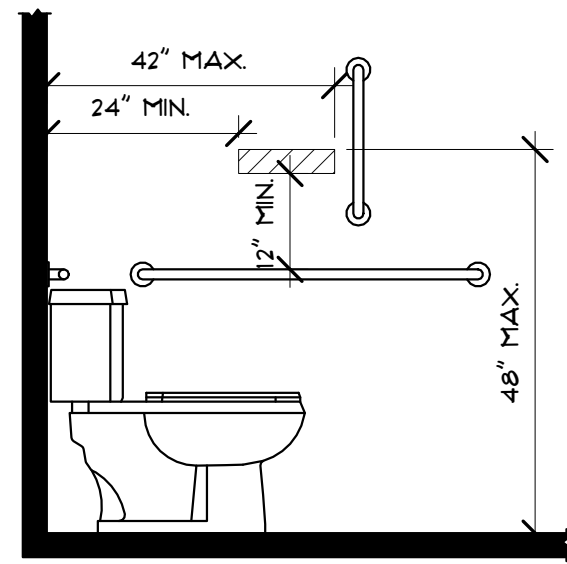
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ADA DETAILS

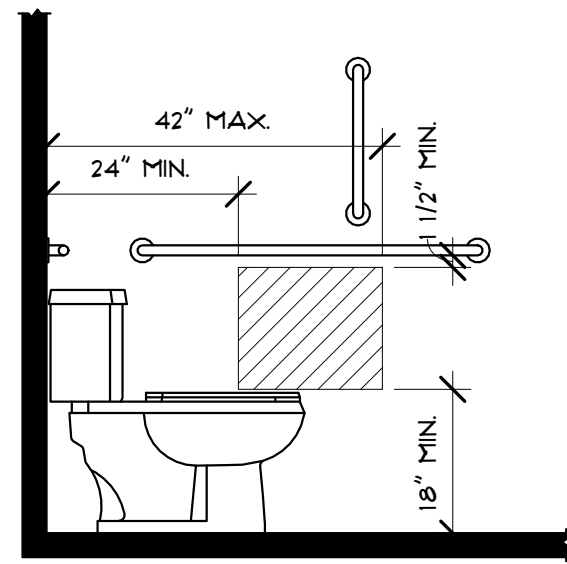
REV	DATE	DESCRIPTION
DATE:	2022.01.20	
PROJECT NO.	2022159	
SCALE:	1/8" = 1'-0"	
FROM MOB:	L. White	
DRAWN BY:	L. Sterner	

SHEET NUMBER:

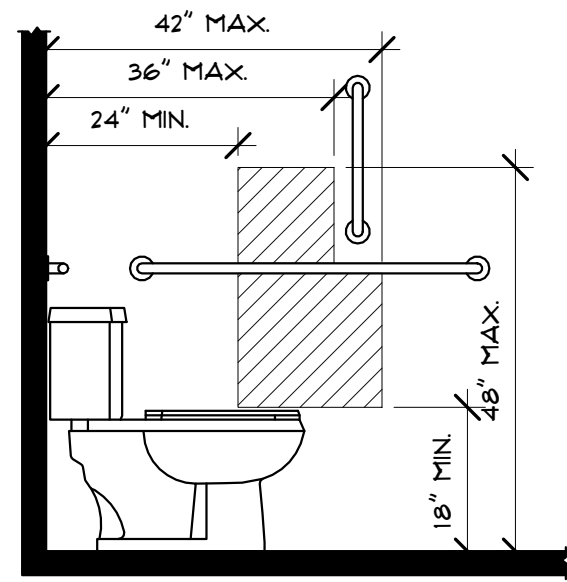
A-101



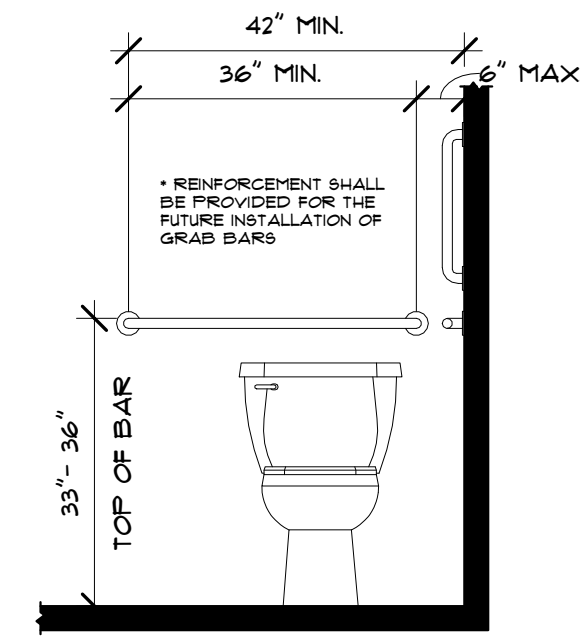
1 DISPENSER OUTLET LOCATION - PROTRUDING DISPENSER ABOVE GRAB BAR
ICC A111 - 604.11(1) & 609.3



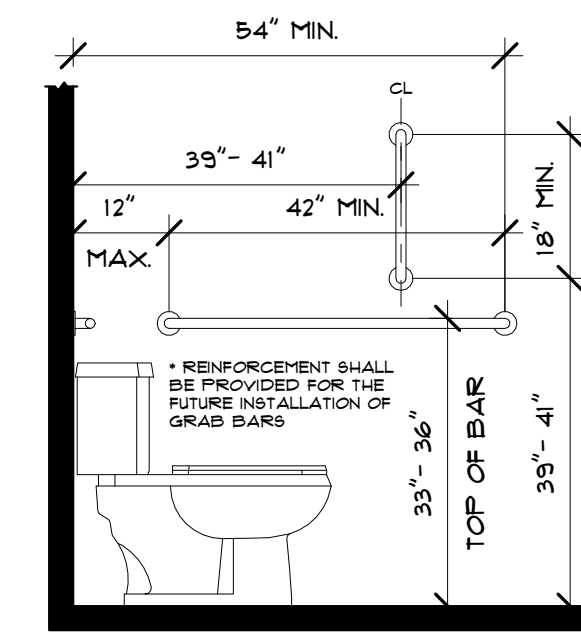
2 DISPENSER OUTLET LOCATION - PROTRUDING DISPENSER BELOW GRAB BAR
ICC A111 - 604.11(A) & 609.3



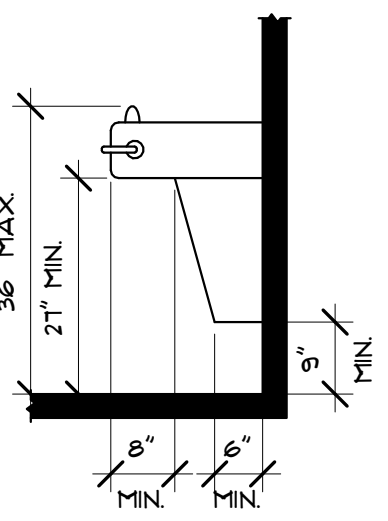
3 DISPENSER OUTLET LOCATION - RECESSED DISPENSER
ICC A111 - 604.11(C) & 609.3



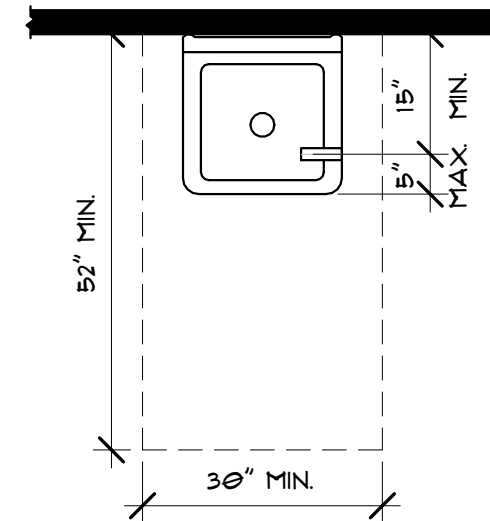
4 REAR-WALL GRAB BAR FOR WATER CLOSET
ICC A111 - 104.111 & 604.5.2 & 609.41 & 609.6



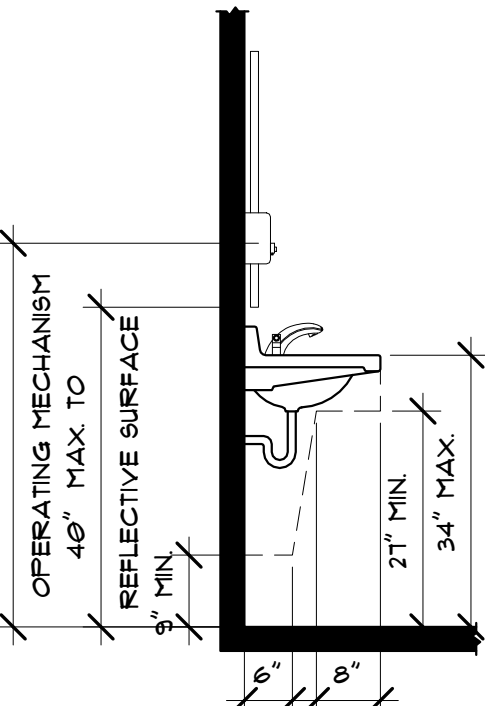
5 SIDE-WALL GRAB BAR FOR WATER CLOSET
ICC A111 - 104.111 & 604.4 & 604.5.1 & 609.41



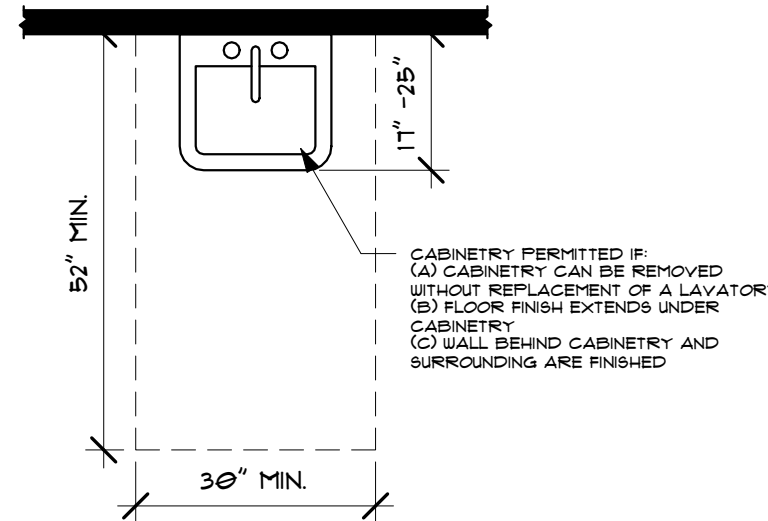
6 DRINKING FOUNTAIN - ELEVATION
ICC A111 - 306.2 & 306.3 & 609.2.3



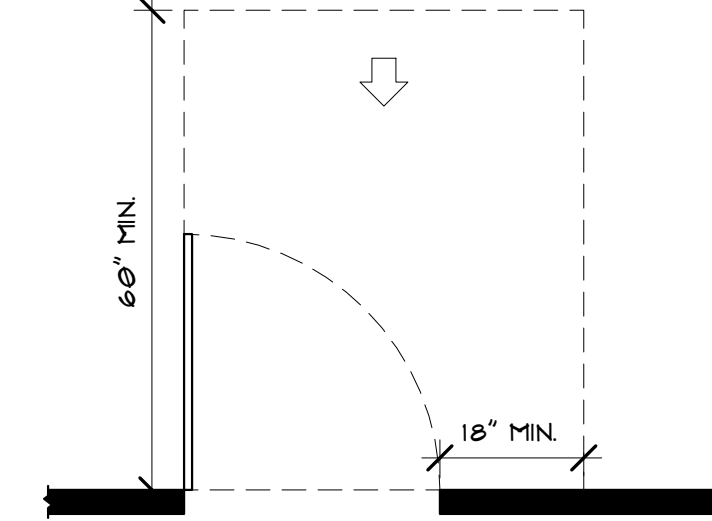
7 DRINKING FOUNTAIN - PLAN
ICC A111 - 609.2



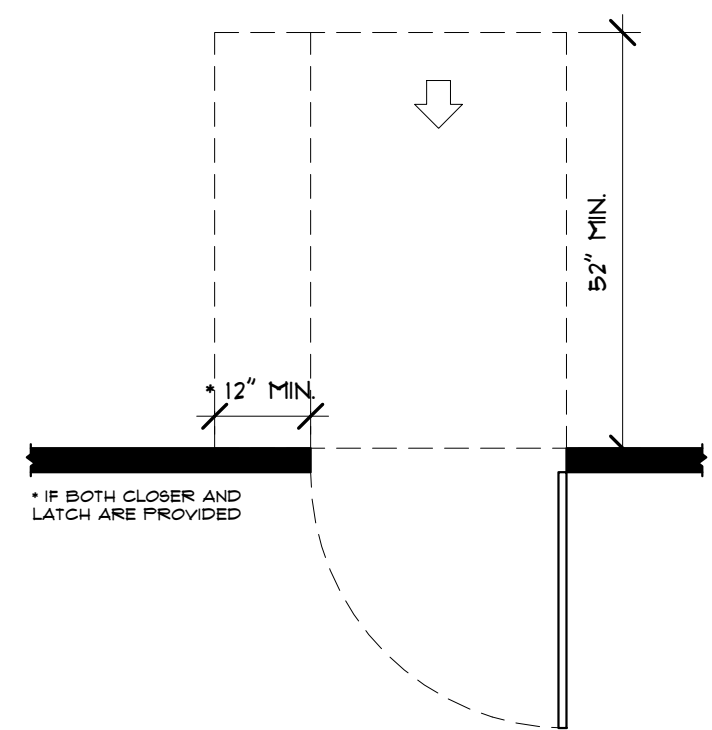
8 LAVATORY CLEARANCES - ELEVATION
ICC A111 - 306.2 & 306.3 & 609.3 & 609.6 & 609.7



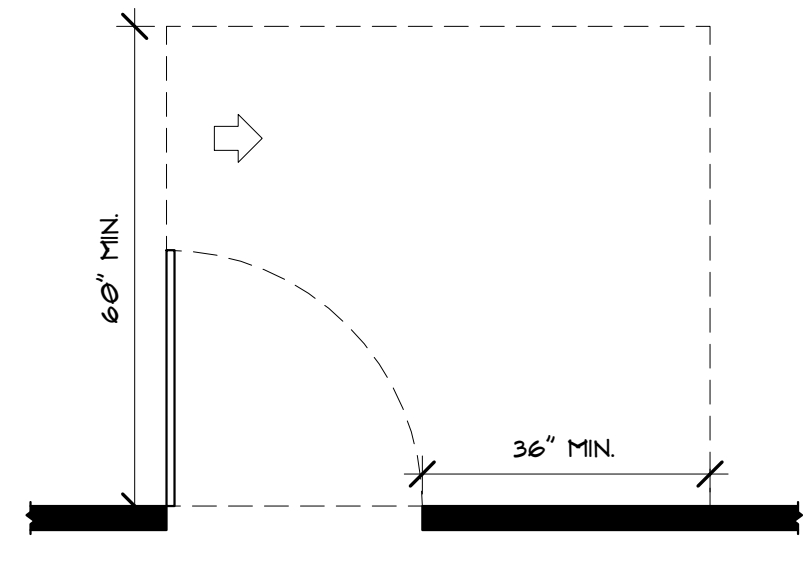
9 LAVATORY CLEARANCES - PLAN
ICC A111 - 609.3 & 609.7



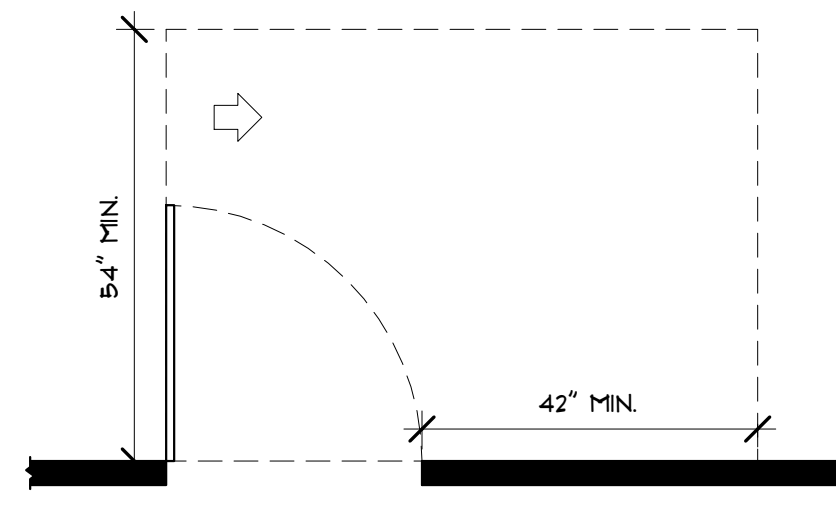
10 HINGED DOOR - FRONT APPROACH - FULL SIDE
ICC A111 - 404.2.3.2(A)



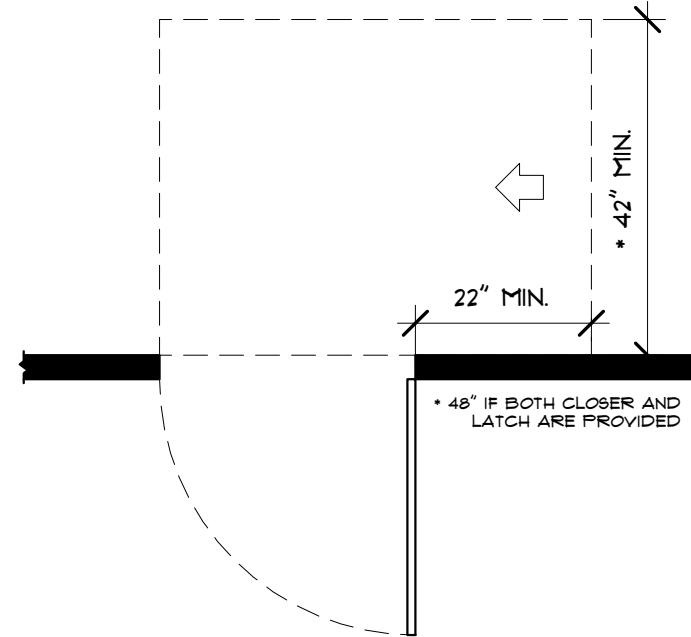
11 HINGED DOOR - FRONT APPROACH - PUSH SIDE
ICC A111 - 404.2.3.2(B)



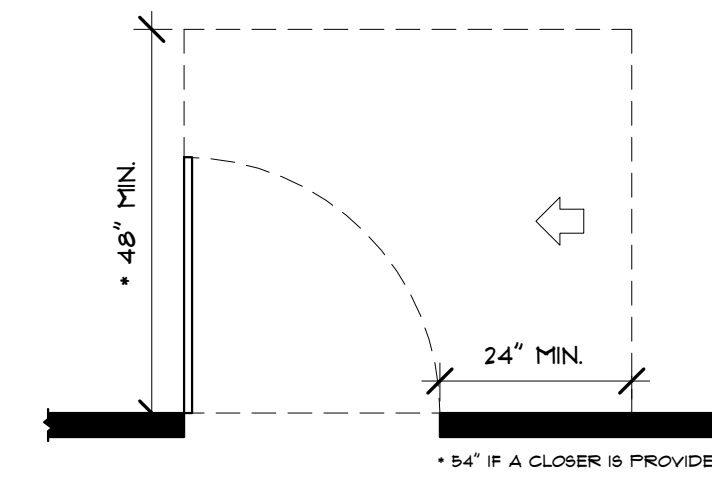
12 HINGED DOOR - HINGE APPROACH - FULL SIDE - OPTION 1
ICC A111 - 404.2.3.2(C)



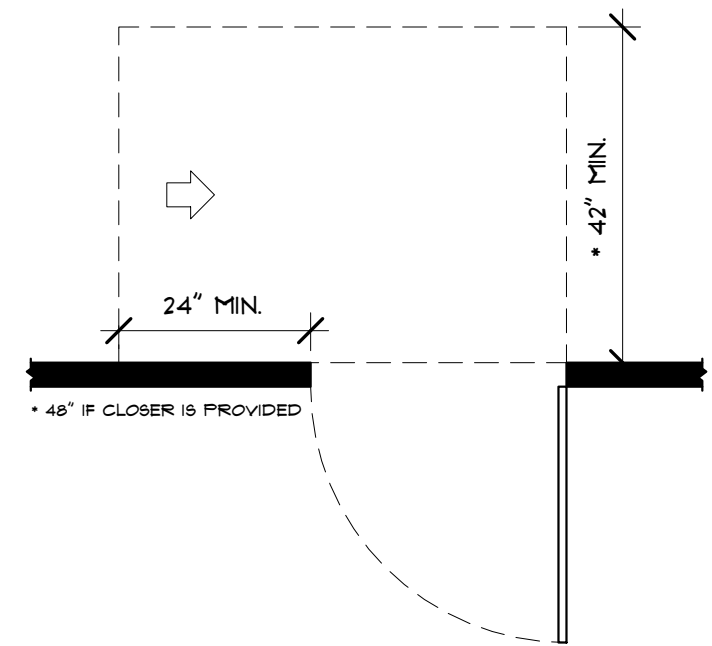
13 HINGED DOOR - HINGE APPROACH - FULL SIDE - OPTION 2
ICC A111 - 404.2.3.2(B)



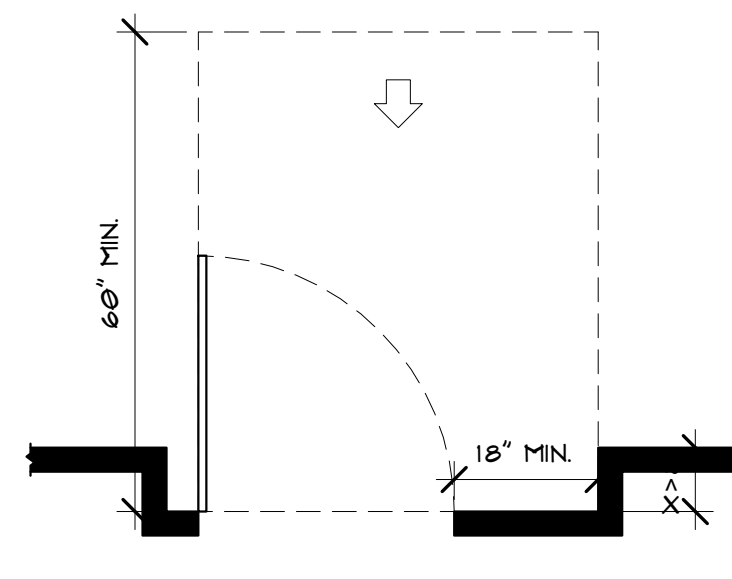
14 HINGED DOOR - HINGE APPROACH - PUSH SIDE
ICC A111 - 404.2.3.2(F)



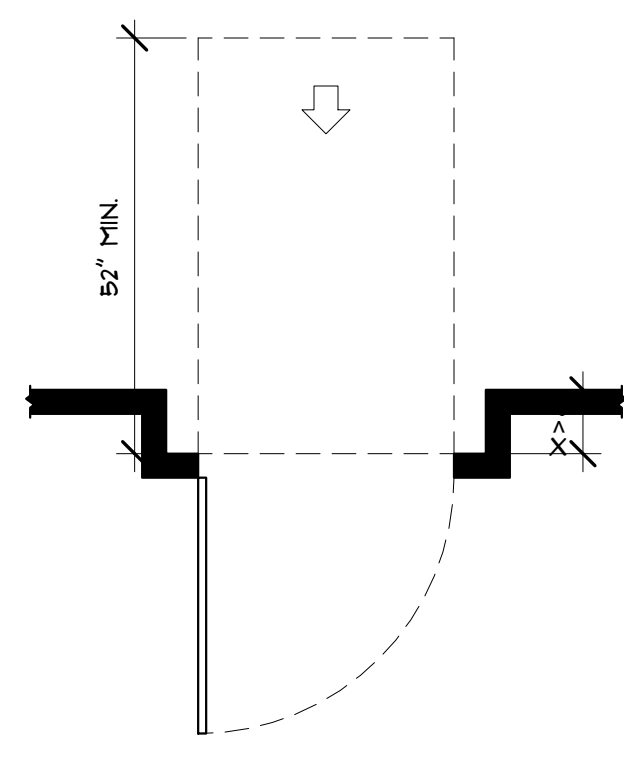
15 HINGED DOOR - LATCH APPROACH - FULL SIDE
ICC A111 - 404.2.3.2(D)



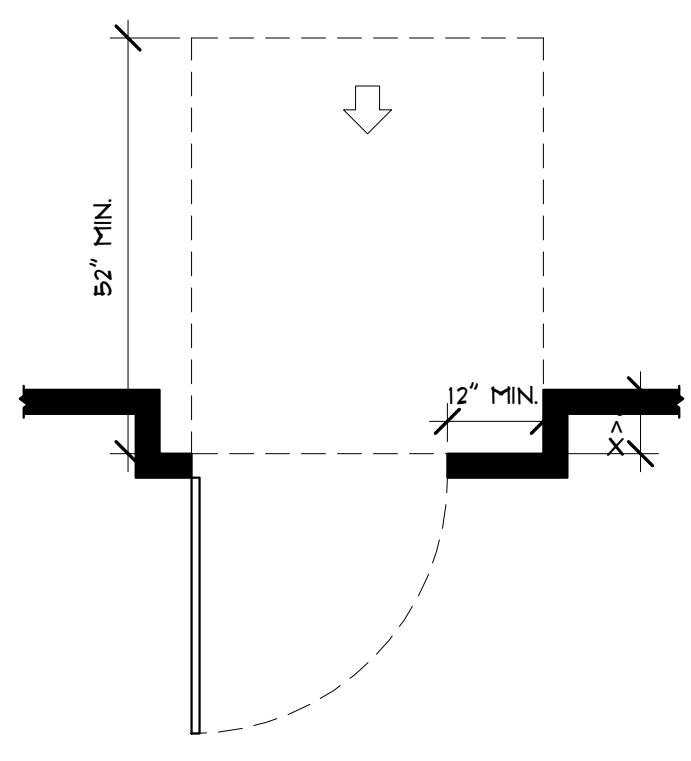
16 HINGED DOOR - LATCH APPROACH - PUSH SIDE
ICC A111 - 404.2.3.2(E)



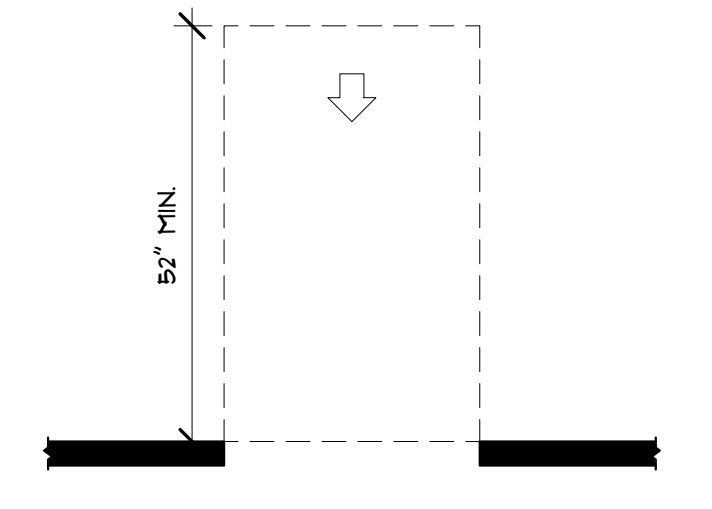
17 RECESSED DOOR - FRONT APPROACH - FULL SIDE
ICC A111 - 404.2.3.3(A)



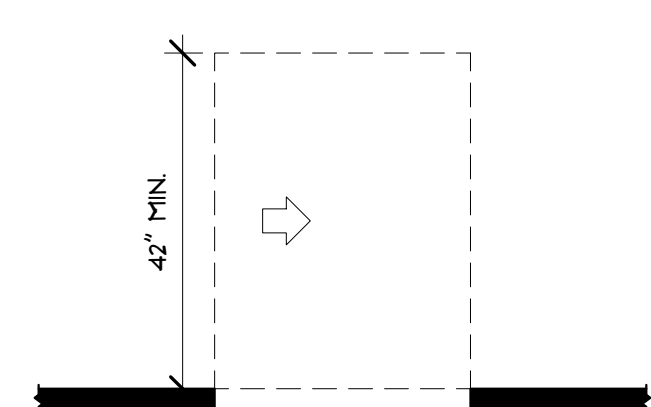
18 RECESSED DOOR - FRONT APPROACH - PUSH SIDE
ICC A111 - 404.2.3.3(B)



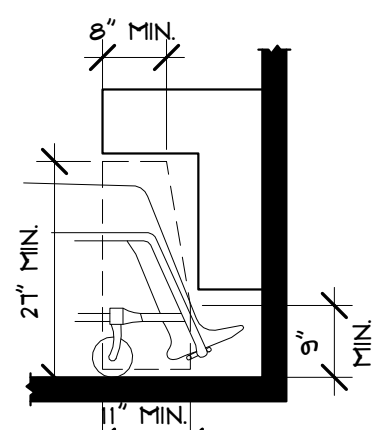
19 RECESSED DOOR - FRONT APPROACH - PUSH SIDE W/ LATCH & CLOSER
ICC A111 - 404.2.3.3(C)



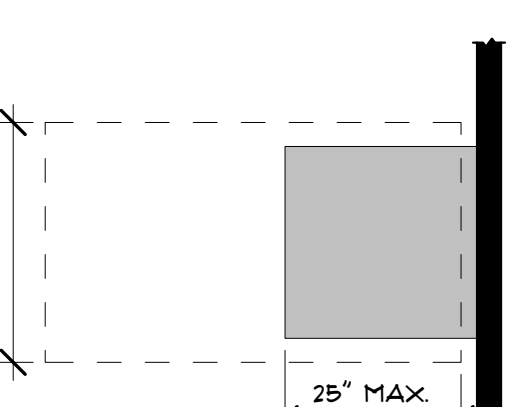
20 OPENINGS WITHOUT DOORS - FRONT APPROACH
ICC A111 - 404.2.3.3(A)



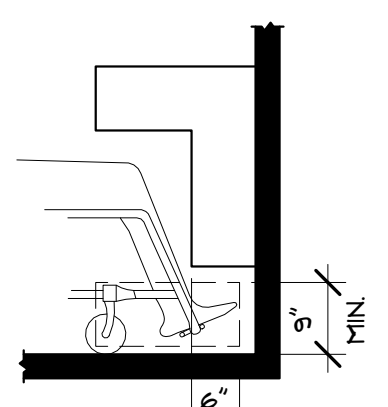
21 OPENINGS WITHOUT DOORS - SIDE APPROACH
ICC A111 - 404.2.3.4(C)



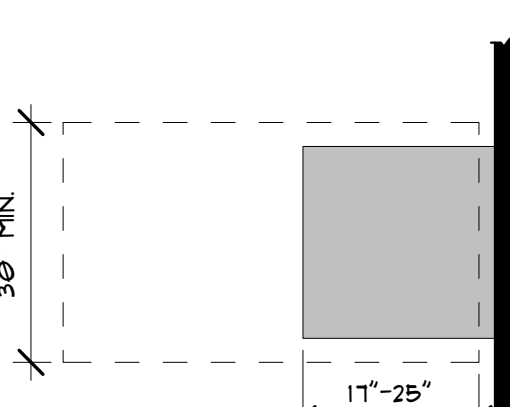
22 KNEE CLEARANCE - ELEVATION
ICC A111 - 306.3



23 KNEE CLEARANCE - PLAN
ICC A111 - 306.3



24 TOE CLEARANCE - ELEVATION
ICC A111 - 306.2



25 TOE CLEARANCE - PLAN
ICC A111 - 306.2

ELECTRICAL ABBREVIATIONS	
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CURRENT
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO/VISUAL
BFG	BELOW FINISHED GRADE
C	CONDUIT
CATV	CABLE ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CFL	COMPACT FLUORESCENT
CKT	CIRCUIT
EBU	EMERGENCY BATTERY UNIT
EC	EMPTY CONDUIT
EC	ELECTRICAL CONTRACTOR
ECB	ENCLOSED CIRCUIT BREAKER
EF	EXHAUST FAN
ERU	ENERGY RECOVERY UNIT
EQUIP	EQUIPMENT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
FLA	FULL LOAD AMPS
FPC	FIRE PROTECTION CONTRACTOR
FPVAV	FAN POWERED VARIABLE AIR VOLUME
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
HID	HIGH INTENSITY DISCHARGE
HP	HORSE POWER/HEAT PUMP
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
IG	ISOLATED GROUND
JB	JUNCTION BOX
KVA	KILO-VOLT AMPERE
KW	KILO-WATT
LC	LIGHTING CONTACTOR
LTG	LIGHTING
MAU	MAKE UP AIR UNIT
MCA	MINIMUM CIRUIT AMPS
MC	MECHANICAL CONTRACTOR
MC	METAL CLAD
MCB	MAIN CIRCUIT BREAKER
MFR	MANUFACTURER
MLO	MAIN LUGS ONLY
MTD	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
P	POLE
PC	PLUMBING CONTRACTOR
PCP	PUMP CONTROL PANEL
PF	POWER FACTOR
PL	PROPERTY LINE
PNL	PANEL
PNLBD	PANELBOARD
Ø	PHASE
PRI	PRIMARY
RECP	RECEPTACLE
RTU	ROOF TOP UNIT
SE	SERVICE ENTRANCE
SEC	SECONDARY
TBB	TELEPHONE BACKBOARD
TR	TAMPER RESISTANT
TRT	TRIPLE TUBE FLUORESCENT LAMP
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS

POWER	
	SINGLE RECEPTACLE, 20A, 120V, 18" AFF, UON.
	DUPLEX RECEPTACLE, 20A, 120V, 18" AFF, UON.
	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, 18" AFF, UON.
	DUPLEX RECEPTACLE, 20A, 120V, 40" AFF OR 4" ABOVE COUNTER TOP OR IN CASEWORK (AS APPLICABLE), OR IN CASEWORK, AS APPLICABLE, UON.
	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, 40" AFF TO 4" ABOVE COUNTER TOP OR IN CASEWORK (AS APPLICABLE), OR IN CASEWORK, AS APPLICABLE, UON.
	QUADRUPLEX RECEPTACLES IN COMMON BOX, 20A, 120V, 18" AFF, UON.
	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, WITH COOPER MODEL WIU-1D (OR EQUAL) "WHILE-IN-USE" WEATHERPROOF COVER, 18" AFF UON.
	ELECTRIC WATER COOLER CONNECTION, PROVIDE 20A, 120V GROUND FAULT INTERRUPTING TYPE DUPLEX RECEPTACLE. COORDINATE WITH EWC MANUFACTURER'S ROUGH-IN REQUIREMENTS. RECEPTACLE SHALL BE ACCESSIBLE THROUGH REMOVAL OF EWC COVER.
	FLOORBOX WITH DUPLEX RECEPTACLE. COORDINATE EXACT LOCATION IN FIELD WITH IN-FLOOR DISTRIBUTION SYSTEM.
	FLOORBOX WITH DUPLEX RECEPTACLE AND TELE/ DATA. COORDINATE EXACT LOCATION IN FIELD WITH IN-FLOOR DISTRIBUTION SYSTEM.
	CABLE TELEVISION OUTLET WITH DUPLEX RECEPTACLE, EQUAL TO ARLINGTON TVBSS05 BOX. PROVIDE DUPLEX RECEPTACLE AND 3/4" C WITH PULL STRING STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH BUSHING.
	FLOOR BOX. REFER TO FLOOR BOX SCHEDULE SHEET EX.X FOR DETAILS.
	SURFACE METAL RACEWAY WITH 20A, 120V SINGLE RECEPTACLES MOUNTED AT 12" ON CENTER. MOUNT 1" ABOVE COUNTERTOP BACKSPLASH.
	SPECIAL RECEPTACLE. NEMA CONFIGURATION AS NOTED. MOUNT 18" AFF UON.
	JUNCTION BOX - ABOVE CEILINGS OR FLUSH IN WALLS.
	MAIN GROUND BAR
	GROUND BAR
	DISCONNECT SWITCH - SIZE AS INDICATED ON PLANS 30/2/20/3R - NEMA RATING (IF OTHER THAN 1) FUSE SIZE (AMPS), N.F. INDICATES NON-FUSED No. OF POLES SIZE (AMPS)
	HORSEPOWER RATED MOTOR SWITCH
	MOTOR CONNECTION.
	EMON DMON METER. REFER TO POWER PLAN FOR ADDITIONAL INFORMATION.
	VARIABLE FREQUENCY DRIVE (FURNISHED WITH ASSOCIATED MECHANICAL EQUIPMENT, INSTALLED BY EC), WITH INTEGRAL DISCONNECT SWITCH.
	SURGE PROTECTIVE DEVICE
	FAN COIL UNIT.
	ELECTRICAL METER. MOUNT 54" AFF (MINIMUM).
	ELECTRICAL PANELBOARD
	ELECTRICAL CIRCUIT RUN IN CONDUIT AND CIRCUIT HOMERUN TO PANELBOARD (PANEL AND CIRCUIT DESIGNATION AS INDICATED), AS A MINIMUM CONDITION. EACH SINGLE PHASE CIRCUIT SHALL HAVE 1 #12 PHASE CONDUCTOR, 1 #12 NEUTRAL CONDUCTOR, AND 1 #12 GROUNDING CONDUCTOR IN 3/4" CONDUIT. PROVIDE ADDITIONAL PHASE CONDUCTORS AS REQUIRED FOR "MULTIPLE PHASED" ELECTRICAL LOADS. PROVIDE ADDITIONAL "SWITCH LEG" CONDUCTORS TO PROVIDE THE LIGHT FIXTURE CONTROL INDICATED. MULTIPLE SINGLE PHASE CONDUCTORS SHALL BE GROUPE TOGETHER IN A COMMON CONDUIT IN ACCORDANCE WITH THE NEC AND AT THE CONTRACTOR'S DISCRETION. NEUTRAL AND GROUNDING CONDUCTORS SHALL BE SHARED AS ALLOWED BY THE NEC. CONDUIT LARGER THAN 3/4" AND CONDUCTORS LARGER THAN #12 SHALL BE AS INDICATED.

GENERAL	
	KEYNOTE.
	LIMIT OF DEMOLITION WORK.
	POINT OF CONNECTION, NEW TO EXISTING.
DETAIL OR SECTION NOTATION: ENUMERATION: A = DETAIL, 1 = SECTION	
	ENUMERATION NUMBER OR LETTER
	SHEET WHERE DETAIL OR SECTION IS SHOWN

ELECTRICAL ABBREVIATIONS	
VAC	VOLTS ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE REQUENCY DRIVE
W	WATTS/WIRE
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER

LIGHTING	
	LIGHTING FIXTURE.
	LIGHTING FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL" WHERE USED. INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS. TYPICAL ALL FIXTURE TYPES.
	DOWNLIGHT FIXTURE.
	DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL" WHERE USED. INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS.
	WALL MOUNTED LIGHTING FIXTURE.
	WALL MOUNTED LIGHTING FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL" WHERE USED, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS.
	EMERGENCY LIGHTING REMOTE UNIT.
	EMERGENCY BATTERY LIGHTING UNIT, CONNECT AHEAD OF LOCAL SWITCH.
	EXIT LIGHTING FIXTURE WITH DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS. CONNECT TO DEDICATED EMERGENCY BRANCH CIRCUIT. SHADED AREA DENOTES LIGHTED FACE.
	DUAL SWITCH (SINGLE POLE OR AS INDICATED BY SUBSCRIPT), 20A, 120/277V, 44" AFF, UON. CONNECT EACH TO SEPARATELY CONTROL INBOARD AND OUTBOARD LAMPS OF EACH FIXTURE INDICATED. CONTROL, INBOARD AND OUTBOARD LAMPS CONSISTENTLY. SUBSCRIPT "a" INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.
	SINGLE POLE SWITCH, 20A, 120/277V, 44" AFF UON. SUBSCRIPT "a" INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.
	SINGLE POLE KEYED SWITCH, 20A, 120/277V, 44" AFF UON. SUBSCRIPT "a" INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.
	THREE-WAY SWITCH, 20A, 120/277V, 44" AFF UON. SUBSCRIPT "a" INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.
	DIMMER SWITCH, 44" AFF UON. SUBSCRIPT "a", WHERE USED, INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.
	WALL SWITCH OCCUPANCY SENSOR, 44" AFF UON.
	WALL SWITCH VACANCY SENSOR, 44" AFF UON.
	OCCUPANCY SENSOR. "F" DENOTES OCCUPANCY SENSOR TYPE. SUBSCRIPT "a", WHERE USED, INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.
	VACANCY SENSOR. "F" DENOTES VACANCY SENSOR TYPE. SUBSCRIPT "a", WHERE USED, INDICATES ASSOCIATED FIXTURES TO BE CONTROLLED.
	PHOTOCELL FOR EXTERIOR LIGHTING CONTROL. MOUNT ON ROOF OF BUILDING AND AIM NORTH.
LIGHTING FIXTURE KEY	
	1. LETTER "A" DENOTES FIXTURE TYPE. REFER TO LIGHTING FIXTURE SCHEDULE. 2. SUBSCRIPT "LP-B" INDICATES NAME OF PANELBOARD FROM WHICH FIXTURE IS FED. ASSOCIATED NUMBER "3" INDICATES CIRCUIT NUMBER IN PANELBOARD FROM WHICH FIXTURE IS FED. ASSOCIATED LETTER "a", WHERE USED, INDICATES LIGHTING FIXTURE CONTROL DEVICE DESIGNATION.

LINEWEIGHTS	
	NEW
	EXISTING
	REMOVE EXISTING

COMMUNICATIONS	
	TELE/ DATA BOX, 4"x4"x2 1/4" D BOX WITH SINGLE GANG PLASTER RING 18" AFF, UON, WITH 3/4" C WITH PULL STRING STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH PLASTIC BUSHING.
	TELE/ DATA BOX, 4"x4"x2 1/4" D BOX WITH SINGLE GANG PLASTER RING 40" AFF OR 4" ABOVE COUNTER TOP OR BACKSPLASH (WHICHEVER IS HIGHER) OR IN CASEWORK AS APPLICABLE, UON, WITH 3/4" C WITH PULL STRING STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH PLASTIC BUSHING.
	TELEPHONE PLYWOOD BACKBOARD 3/4"x8"x4", FIRE RETARDANT. BOTTOM AT 0'-4" AFF.
	CABLE TELEVISION OUTLET WITH DUPLEX RECEPTACLE, PROVIDE DUPLEX RECEPTACLE AND ADDITIONAL 4"x4"x2 1/4" D BOX WITH SINGLE GANG PLASTER RING, WITH 3/4" C WITH PULL STRING STUBBED ABOVE ACCESSIBLE CEILING AND TERMINATED WITH BUSHING. MOUNT 18" AFF UON.
	WIRELESS ACCESS POINT.

DIVISION OF MECHANICAL/ ELECTRICAL WORK		
ITEM	MECH/ DIV 22 AND 23	ELEC/ DIV 26
AUTOMATIC TEMPERATURE CONTROLS	FURNISH, INSTALL & WIRE	POWER WIRE
CONTROL PANELS FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
LOW VOLTAGE CONTROL WIRING FOR MECH EQUIP.	FURNISH & INSTALL	
LINE VOLTAGE CONTROL WIRING FOR MECH. EQUIP.	FURNISH, INSTALL & WIRE	
MECHANICAL FLOW SWITCHES	FURNISH, INSTALL & WIRE	
THERMOSTATS/ SENSORS	FURNISH, INSTALL & WIRE	
P/E & E/P SWITCHES	FURNISH, INSTALL & WIRE	
DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
MECHANICAL EQUIPMENT MONITORS	FURNISH & INSTALL	POWER WIRE
MANUAL STARTERS FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
MAGNETIC STARTERS FOR MECHANICAL EQUIPMENT	FURNISH	INSTALL & POWER WIRE
MOTOR CONTROL CENTERS	CONTROL WIRING	FURNISH, INSTALL, & POWER WIRE
VARIABLE SPEED CONTROLLERS	FURNISH & INSTALL	POWER WIRE
MOTORIZED DAMPERS & VALVES	FURNISH, INSTALL & WIRE	
DUCT SMOKE DETECTORS	INSTALL	FURNISH & WIRE
HEAT TRACE CABLE FOR PIPING	FURNISH & INSTALL	POWER WIRE
OIL/ GAS EMERGENCY SHUT-OFF SWITCHES		FURNISH, INSTALL, & POWER WIRE
SPRINKLER FLOW & TAMPER SWITCHES	BY SPRINKLER CONTRACTOR	WIRE



SEAL:
FOR REVIEW ONLY NOT FOR CONSTRUCTION

CONSULTANTS:
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Middletown, Delaware 19709

SHEET INFO:

ELECTRICAL DATA SHEET

REV. REV. DATE. DESCRIPTION
DATE: 2022.01.19
PROJECT NO. 2022159
SCALE: NONE
PRW. MOD. JTH
DRAWN BY: FRD
SHEET NUMBER:

E001

ELECTRICAL SPECIFICATIONS

1. PRODUCTS AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE LAWS, CODES, GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, ETC. OF ALL AUTHORITIES HAVING JURISDICTION. WORK SHALL COMPLY WITH THE FOLLOWING CODES, STANDARDS AND ORGANIZATIONS:
2017 NATIONAL ELECTRIC CODE (NEC)
2018 INTERNATIONAL MECHANICAL CODE (IMC)
2018 INTERNATIONAL PLUMBING CODE (IPC)
2018 INTERNATIONAL ENERGY CONSERVATION CODE
2018 INTERNATIONAL BUILDING CODE W/ LOCAL AMENDMENTS
NFPA
UNDERWRITERS LABORATORY (UL), IRI, FM
IESNA

DEVIATIONS FROM THE CONTRACT DOCUMENTS REQUIRED BY THE ABOVE AUTHORITIES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. OBTAIN PERMITS AND PAY ALL FEES. ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS. CONFIRM ALL UTILITY COMPANY REQUIREMENTS AND CONNECTION POINTS IN FIELD, PRIOR TO STARTING WORK.

2. ALL SPECIFICATIONS AND DRAWINGS, I.E., ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ARE COMPLEMENTARY AND MUST BE USED IN COMBINATION TO OBTAIN COMPLETE CONSTRUCTION INFORMATION. ANY INFORMATION CONFLICTS WITHIN THE SPECIFICATIONS AND DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT FITS IN THE ROOM OR SPACE SHOWN AND HAS ALL CLEARANCES REQUIRED BY THE NEC, PRIOR TO ORDER. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUI FIELD CONDITIONS.

3. WORK SHALL BE EXECUTED IN A GOOD WORKMANLIKE MANNER USING MECHANICS SKILLED IN THEIR RESPECTIVE TRADES. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS. SYSTEMS ARE TO BE COMPLETE AND WORKABLE IN ALL RESPECTS, PLACED IN OPERATION AND PROPERLY ADJUSTED.

4. MAINTAIN THE CONSTRUCTION PREMISES IN A NEAT AND ORDERLY CONDITION AT THE END OF EACH WORKING DAY. CLEAN UP, REMOVE AND LEGALLY DISPOSE OF ALL RUBBISH DAILY. CONTRACTOR SHALL PROTECT THEIR WORK AND EXISTING OR ADJACENT PROPERTY AGAINST WEATHER, TO MAINTAIN THEIR WORK, MATERIALS, APPARATUS AND FIXTURES FREE FROM INJURY OR DAMAGE. ANY WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION REQUIRED, SHALL BE REMOVED AND REPLACED WITH NEW WORK AT THE CONTRACTOR'S EXPENSE.

5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SAFETY OF HIS WORKERS, ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES FOR COORDINATING THE WORK UNDER THIS CONTRACT. CONFORM TO ALL GENERAL AND SPECIAL CONDITIONS OF CONTRACT AS SPECIFIED BY ARCHITECT AND/OR OWNER.

6. IN CASE OF DOUBT AS TO THE WORK INTENDED, OR IN THE EVENT OF NEED FOR EXPLANATION THEREOF, THE CONTRACTOR SHALL REQUEST SUPPLEMENTARY INSTRUCTIONS FROM THE ENGINEER. NO CHANGES ARE TO BE MADE TO THE WORK OF THIS CONTRACT WITHOUT PRIOR KNOWLEDGE AND APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL HOLD THE OWNER AND ITS CONSULTANTS HARMLESS AGAINST ALL CLAIMS AND JUDGMENTS ARISING OUT OF THE CONTRACTORS PERFORMANCE OF THE WORK OF THIS CONTRACT. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK, WHICH HE EXPECTS ADDITIONAL COMPENSATION BEYOND THE CONTRACT AMOUNT, WITHOUT WRITTEN AUTHORIZATION FROM THE APPROPRIATE AUTHORITY. FAILURE TO OBTAIN SUCH AUTHORIZATION SHALL INVALIDATE ANY CLAIM FOR EXTRA COMPENSATION.

7. ALL PRODUCTS SHALL COMPLY WITH 2550 FLAME AND SMOKE HAZARD RATINGS PER ASTM E-84, NFPA 255 AND UL 723.

8. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO INSTALL ALL ELECTRICAL FIXTURES AND EQUIPMENT IN A QUIET OPERATION. NO VIBRATION OR SOUND SHALL BE TRANSMITTED TO THE BUILDING STRUCTURE OR OCCUPIED AREAS. THE DECISION OF THE ENGINEER AS TO THE QUIETNESS OF THE SYSTEM AND EQUIPMENT SHALL BE FINAL. IT SHALL BE THIS CONTRACTORS RESPONSIBILITY TO CORRECT OR REPLACE ANY NOISY FIXTURES OR EQUIPMENT AS REQUIRED.

WORK IN EXISTING BUILDINGS

1. EXISTING BUILDING IS TO REMAIN OCCUPIED AND ACCESSIBLE AT ALL TIMES. PROTECT THE BUILDING PREMISES AND ALL OCCUPANTS ON THE PROJECT SITE. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES CAUSED BY IMPROPER PROTECTION AND SHALL MAKE ALL NECESSARY ARRANGEMENTS OR REPAIRS WITHOUT ANY ADDITIONAL COST. MAKE ALL ARRANGEMENTS, MAINTAIN AND PAY ALL COSTS FOR TEMPORARY WATER, PLUMBING, POWER, LIGHTING, AND HEATING OR VENTILATION AS REQUIRED TO PROPERLY CONDUCT THE WORK OF THIS CONTRACT AND MAINTAIN SERVICES. PROVIDE AND MAINTAIN FOR THE ENTIRE LENGTH OF THIS CONTRACT ALL EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES AND ALARMS TO CONFORM TO LOCAL BUILDING CODE REQUIREMENTS.

2. CONFORM WITH THE CURRENT EDITION OF THE SMACNA '100 GUIDELINES FOR OCCUPIED BUILDINGS UNDER CONSTRUCTION.'

3. CONTRACTOR SHALL VERIFY ALL POINTS OF CONNECTION BEFORE COMMENCING WORK. CONTRACTOR SHALL COORDINATE WORK WITH EXISTING WORK AND OTHER TRADES. ALL UNUSED EQUIPMENT SERVING THIS AREA SHALL BE REMOVED AND RETURNED TO THE OWNER.

4. EXISTING EQUIPMENT, MATERIALS OR WORK TO REMAIN, BE REUSED, OR RELOCATED WITHIN OR SERVING THE SPACE, WHICH IS DAMAGED OR DOES NOT COMPLY WITH THE SPECIFICATIONS, SHALL BE RESTORED TO LIKE NEW CONDITION SUBJECT TO REVIEW BY THE ARCHITECT AND ENGINEER, OR SHALL BE REPLACED WITH NEW MATERIALS MEETING THE SPECIFICATION REQUIREMENTS.

5. SOME WORK SHOWN MAY REQUIRE PREMIUM TIME INCLUDING NOISE PRODUCING ACTIVITIES, ACCESS INTO ADJOINING SPACES & ACTIVITIES DISRUPTING MEP SERVICES. CONFIRM THE REQUIREMENTS FOR PREMIUM TIME OR SPECIAL PROCEDURES WITH THE OWNER/LANDLORD AND INCLUDE THE COST IN BID PROPOSAL. WORK RELATED TO THE EXISTING BUILDING SHALL BE COORDINATED TO MINIMIZE INTERFERENCE OR INTERRUPTION OF NORMAL BUILDING USE BY OWNER. REFER TO ARCHITECTURAL PLANS FOR ANY PHASING REQUIREMENTS. ARRANGE FOR AND OBTAIN OWNER'S PERMISSION FOR ANY SERVICE SHUTDOWNS.

6. THE CONTRACTOR, BY SUBMITTING HIS BID PROPOSAL AGREES TO ACCEPT ALL EXISTING SITE CONDITIONS NOT SPECIFICALLY EXCEPTED. ALL EXCEPTIONS SHALL BE PROVIDED IN WRITING TO THE ARCHITECT AND ENGINEER.

BASIS OF DESIGN AND REGULATIONS

1. MANUFACTURERS LISTED ARE BASIS OF DESIGN. SUBSTITUTIONS ARE SUBJECT TO THE APPROVAL OF THE DESIGN-BUILDER, ARCHITECT & ENGINEER. IF SUBSTITUTION IS SUBMITTED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE IT AND CERTIFY THAT THE SUBSTITUTION IS EQUIVARIANT IN ALL RESPECTS TO THE BASIS OF DESIGN, WHERE SUBSTITUTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON SUBMITTAL OR ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR VARIATIONS. IF SUBSTITUTIONS ARE APPROVED, NOTIFY ALL OTHER CONTRACTORS, SUBCONTRACTORS OR TRADES AFFECTED BY SUBSTITUTION AND FULLY COORDINATE. ANY COSTS RESULTING FROM SUBSTITUTION, WHETHER BY CONTRACTOR OR OTHERS, SHALL BE RESPONSIBILITY OF AND PAID FOR BY SUBSTITUTING CONTRACTOR. APPROVED SHOP DRAWINGS DOES NOT ABSOLVE THIS CONTRACTOR FROM THIS RESPONSIBILITY. APPROVAL OF SUBSTITUTIONS IS AT THE DISCRETION OF THE ARCHITECT & ENGINEER AND IF SUBMITTED AFTER THE BID, AT THE RISK OF THE CONTRACTOR.

SHOP DRAWING SUBMITTALS

1. COORDINATE, PREPARE AND SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND ENGINEER FOR THEIR REVIEW. CONTRACTOR SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR REVIEW. DO NOT ORDER, START WORK OR FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER AND RETURNED TO THE CONTRACTOR. SHOP DRAWINGS TO BE SUBMITTED INCLUDE, BUT NOT LIMITED TO:
WIRING DEVICES
PANEL BOARDS, STARTERS, SAFETY SWITCHES, TRANSFORMERS
CONDUCTORS
LIGHTING SYSTEMS, FIXTURES AND EQUIPMENT
FIRE ALARM SYSTEM AND DEVICES
SECURITY SYSTEM AND EQUIPMENT

2. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO MARK, LOCATION AND USE, USING SAME IDENTIFICATION AS PROVIDED ON DESIGN DRAWINGS. ELECTRONIC SUBMITTALS SHALL BE PRESENTED WITH ALL SHEETS IN ALPHANUMERIC ORDER AND ALL SHEETS ORIENTED WITH TOP OF SHEET UP.

3. SUBMITTALS WILL BE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS AND NOT FOR DIMENSIONS OR QUANTITIES. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PURCHASE OF ANY ITEM IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS OR ITS COMPLETE AND PROPER INSTALLATION.

RECORD DRAWINGS

1. A SET OF MEP RECORD/COORDINATION DRAWINGS SHALL BE MAINTAINED IN THE GENERAL CONTRACTORS OFFICE AT THE JOB SITE. PRINTS SHALL INDICATE ADDITIONS, DELETIONS, VARIATIONS IN LOCATION, VARIATIONS IN NUMBERING, ETC. ALTERATIONS SHALL BE MARKED IN RED AND DELETIONS ALL BE MARKED IN GREEN AND SHALL BE ON THE LATEST CONTRACT DRAWING ISSUED. RECORD DRAWINGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN RECORDING DEVIATIONS FROM WORKING DRAWINGS. AFTER THE PROJECT IS COMPLETED, THESE SETS OF DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT IN GOOD CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION AS ACTUALLY CONSTRUCTED

EQUIPMENT

1. ALL PACKAGED EQUIPMENT SHALL BE INDEPENDENTLY THIRD PARTY LABELED AS A SYSTEM FOR ITS INTENDED USE BY A NATIONAL I RECOGNIZED TESTING LABORATORY (NRTL) IN ACCORDANCE WITH OSHA FEDERAL REGULATIONS 29CFR1910.303 AND .399, AS WELL AS NFPA PAMPHLET NO. 70, AND THE NATIONAL ELECTRICAL CODE (NEC), ARTICLE 90-7.

2. MAKE ALL FINAL EQUIPMENT CONNECTIONS AND PROVIDE THE NECESSARY ADAPTORS, FITTINGS, DEVICES, ETC. FOR A COMPLETE AND OPERABLE SYSTEM. PROVIDE COMPLETE WITH BASES, ISOLATORS, SUPPORTS AND OTHER REQUIRED ACCESSORIES.

3. EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURERS DATA AND INSTALLATION INSTRUCTIONS, INCLUDING CLEARANCES. IT IS THIS CONTRACTORS RESPONSIBILITY TO CHECK AND CONFORM TO THESE REQUIREMENTS PRIOR TO STARTING WORK.

4. THE CONTRACTOR SHALL COORDINATE WITH THE OTHER TRADES FOR ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT. COORDINATE REQUIREMENT FOR PROVISION OF MOTOR STARTERS, DISCONNECTS, CONTACTORS, CONTROL WIRING, ETC. AS REQUIRED FOR PROPER FUNCTIONING SYSTEM.

5. ALL FLOOR MOUNTED EQUIPMENT SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PADS. MINIMUM PAD THICKNESS SHALL BE NOMINAL 4" PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 4" ON EACH SIDE. CONCRETE PADS SHALL BE PROVIDED BY THIS CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE SIZE AND LOCATION OF THE CONCRETE HOUSEKEEPING PADS WITH THE GENERAL CONTRACTOR.

IDENTIFICATION

1. FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.

2. PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH.

CUTTING, PATCHING AND DRILLING

1. ALL CUTTING AND PATCHING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR UNLESS SHOWN ON ARCHITECTURAL DRAWINGS AND CONFIRMED AS TO SIZE AND LOCATION PRIOR TO NEW CONSTRUCTION. CUTTING SHALL BE IN A NEAT AND WORKMANLIKE MANNER.

2. DO NOT CORE DRILL OR CUT ANY CONCRETE SLABS OR OTHER STRUCTURAL COMPONENTS FOR ANY REASON WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER, ARCHITECT AND THE OWNER.

3. PATCH AND FINISH TO MATCH ADJACENT AREAS THAT HAVE BEEN CUT, DAMAGED OR MODIFIED AS A RESULT OF THE INSTALLATION OF THE MECHANICAL OR ELECTRICAL EQUIPMENT.

MOUNTING ACCESSORIES

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.

2. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANIZED, PAINTED OR OTHERWISE SUITABLY FINISHED.

FIRESTOPPING/FIREDAMPERS

1. ALL PENETRATIONS OF SLAB-TO-SLAB PARTITIONS SHALL BE SEALED AIRTIGHT.

2. WHEREVER FIRE RATED PARTITIONS ARE PENETRATED FOR WIRE, DUCT, OR PIPE PASSAGE, SEAL AND FIRESTOPPING SHALL BE LABORED, LABORED AND LABELED SEALANT OF FIRE RESISTANCE RATING NOT LESS THAN THAT OF PENETRATED ASSEMBLY THAT WILL PREVENT PASSAGE OF FIRE AND SMOKE. ALL FIRE STOPPING SYSTEM SHALL MEET THE REQUIREMENTS OF ASTM E 814, UL 1479, AND BE FACTORY APPROVED. ALL FIRE STOPPING AND/OR SMOKE STOPPING MATERIAL AND INSTALLATION SHALL BE AS MANUFACTURED BY HILTI OR APPROVED EQUAL.

3. INSTALLATION OF LIGHT FIXTURES, AND OUTLETS IN RATED CEILINGS OR WALLS SHALL HAVE RATED BOXES OR BE PROVIDED WITH PREMANUFACTURED TENTS MATCHING THE RATINGS OF THE CEILING OR WALL ASSEMBLY.

ACCESS DOORS

1. ACCESS DOORS SHALL BE PROVIDED IN WALLS AND CEILINGS WHERE REQUIRED TO PERMIT PROPER ACCESS TO EQUIPMENT AND OTHER DEVICES WHICH REQUIRE MAINTENANCE OR SERVICE. DOORS PLACED IN WALLS, PARTITIONS OR OTHER FIRE-RATED CONSTRUCTION SHALL HAVE A LABEL SIGNIFYING THAT THE DOOR HAS THE SAME FIRE RATING AS THE FIRE-RATED CONSTRUCTION.

2. ACCESS PANELS SHALL BE CONSTRUCTED OF 14 GAUGE STEEL, WITH 16 GAUGE STEEL FRAMES. DOORS SHALL FINISH FLUSH WITH THE SURROUNDING SURFACE. FRAMES SHALL HAVE 3" WIDE EXPANDED METAL FLOOR CASTED SURFACES AND PLAIN FLANGED TYPE FRAME FOR TILE, MASONRY OR CRYSTALLINE BOARD SURFACES. DOORS AND FRAMES SHALL BE FURNISHED PRIME COATED. DOORS INSTALLED IN CERAMIC TILE OR OTHER NON-PAINTED SURFACES SHALL BE STAINLESS STEEL. HINGES SHALL BE CONCEALED SPRING TYPE, TO ALLOW DOORS TO BE OPENED 175 DEGREES. LOCKS SHALL BE FLUSH SUREDRYORNER TYPE WITH STEEL CAMS. ACCESS PANELS SHALL BE 16" X 16" OR LARGER AS MAY BE REQUIRED FOR PROPER ACCESS TO THE DEVICE BEING SERVED.

3. ACCESS PANELS ARE NOT REQUIRED IN COMPLETELY ACCESSIBLE LIFT OUT TILE CEILINGS. CONTRACTOR SHALL REVIEW THE ROOM FINISH SCHEDULE ON THE ARCHITECTURAL DRAWINGS IN ORDER TO VERIFY THE NEED FOR ACCESS PANELS. PROVIDE ACCESS PANELS TO GENERAL CONTRACTOR FOR INSTALLATION.

RACEWAYS

1. ALL WIRE SHALL BE RUN IN ACCORDANCE WITH CODE IN INTERMEDIATE METAL CONDUIT (IMC) OR ELECTRICAL METALLIC TUBING (EMT) OR METAL CLAD (MC) CABLING UNLESS OTHERWISE SPECIFICALLY STATED HEREIN. CONDUIT SIZE SHALL BE 3/4" MINIMUM UNLESS NOTED OTHERWISE.

2. CONDUIT IN EXTERIOR WALLS, EXPOSED TO THE WEATHER OR OTHER DAMP/WET LOCATIONS SHALL BE RIGID, THREADED, GALVANIZED, HEAVY WALL TYPE.

3. CONDUIT UNDERGROUND SHALL BE SCHEDULE 40 PVC CONDUIT WITH GROUND WIRE. PVC CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED

METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE METAL.

4. ALL CONDUIT SHALL BE CONCEALED IN WALLS, FLOORS AND CEILINGS WHENEVER POSSIBLE. EXPOSED CONDUIT IN FINISHED AREAS WILL NOT BE PERMITTED. EXPOSED CONDUIT WILL BE PERMITTED IN UNFINISHED AREAS WITH THE SPECIFIC APPROVAL OF THE ARCHITECT.

5. USE FLEXIBLE CONDUIT FOR THE CONNECTION TO THE RECESSED OR SEMI-RECESSED LIGHTING FIXTURES (6' LENGTH MAXIMUM), USE LIQUID TIGHT METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION AND IN AREAS SUBJECT TO MOISTURE.

6. USE WATERTIGHT JOINTS WITH BURIED AND CONCRETE ENCASED CONDUIT. ALL BURIED CONDUITS OUTSIDE OF BUILDINGS SHALL HAVE A MINIMUM OF 24" OF COVER. METAL CONDUITS BURIED IN EARTH SHALL BE PAINTED WITH TWO COATS OF HEAVY ASPHALTUM PAINT.

7. CONDUIT SHALL BE SECURELY FASTENED IN PLACE. SUPPORT RUNS OF CONDUIT AS DETAILED IN THE APPROPRIATE TABLE OF THE NATIONAL ELECTRICAL CODE.

8. INSTALL EXPOSED RUNS OF CONDUIT AND CONDUIT ABOVE LAY IN CEILINGS PARALLEL OR PERPENDICULAR TO THE WALLS. STRUCTURAL MEMBERS OF INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. PROVIDE RIGHT ANGLE TURNS USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1' OF ALL CHANGES IN DIRECTION.

9. IF A CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZE HANGERS, WHICH USE "ALL-THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.

10. INSTALL EMPT CONDUIT FOR FUTURE USE AS INDICATED ON THE DRAWINGS. CONDUIT SHALL BE COMPLETE WITH JETLINE OR PULL ROPE, JUNCTION/OUTLET BOXES, TILE RINGS AND APPROPRIATE COVER PLATES.

11. PROVIDE PITCHPOCKETS WHERE CONDUITS PENETRATE THE ROOF. HORIZONTAL PORTIONS OF CONDUIT EXPOSED ON THE ROOF AND FEEDING EQUIPMENT SHALL NOT BE MORE THAN 5'-0" UNLESS THE WRITTEN APPROVAL FROM ARCHITECT OR ENGINEER IS OBTAINED.

12. THREAD LUBRICATION/SEALANT IS REQUIRED ON OUTDOOR AND UNDERGROUND THREADED METAL JOINTS.

13. COORDINATE CONDUIT RUNS WITH OTHER TRADES AND ADJUST ROUTING TO AVOID INTERFERENCE.

14. RACEWAYS SHALL BE PROVIDED WITH EXPANSION FITTINGS WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION.

15. SURFACE RACEWAYS SHALL BE AS INDICATED ON DRAWINGS AND INSTALLED AS A COMPLETE SYSTEM WITH ALL REQUIRED FITTINGS AND APPURTENANCES. RECEPTACLE BOXES AS INDICATED ON PLAN, INSTALL RACEWAYS PARALLEL AND PERPENDICULAR TO BUILDING ELEMENTS.

BOXES

1. INSTALL PULL AND JUNCTION BOXES WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED FOR CHANGES IN DIRECTION, AT JUNCTION POINTS AND TO FACILITATE WIRE PULLING. FURNISH BOX SIZES IN ACCORDANCE WITH NEC UNLESS LARGER BOXES ARE INDICATED ON THE DRAWINGS.

2. INTERIOR CONCEALED - USE SHEET STEEL BOXES, ZINC COATED OR CADMIUM PLATED

3. IN FLOOR LOCATIONS - PROVIDE CAST IRON, CONCRETE-TITE FLOOR BOXES WITH ADJUSTABLE COVERS SET FLUSH AND LEVEL WITH THE FINISHED FLOOR, WITH OUTLETS AS INDICATED ON THE DRAWINGS. PROVIDE BOXES WITH LEVELING SCREWS. FLUSH TYPE BRASS COVERS AND OPENINGS TO SERVE OUTLETS USED. FURNISH FLUSH CAPS FOR CLOSING OFF BOX WHEN NOT IN USE.

4. ALL OTHER LOCATIONS EXCEPT BELOW GRADE - USE CAST BOXES, ZINC-CADMIUM FINISH MALLEABLE IRON. FURNISH WEATHERPROOF BOXES WHEN INSTALLED OUTSIDE OR IN DAMP/WET LOCATIONS.

5. PROVIDE REMOVABLE COVERS OF CODE GAUGE, HOT ROLLED SHEET STEEL, HOT DIPPED GALVANIZED FOR ALL BOXES, UNO.

6. EXTERIOR BELOW GRADE - COMPOSITE WATERPROOF ASSEMBLIES SUITABLE FOR INGROUND INSTALLATIONS.

7. WALL BOX SIZES SHALL BE MINIMUM 4" SQUARE X 2-1/2" DEEP WHERE WALL CONSTRUCTION PERMITS. FIXTURE OUTLETS IN CEILING SHALL BE MINIMUM 4" OCTAGONAL X 1-1/2" DEEP (4-1/16" OCTAGONAL X 2-1/2" DEEP WHERE REQUIRED TO ACCOMMODATE LARGER CONDUIT OR LARGER NUMBER OF WIRES), GANG BOXES SHALL BE ONE PIECE MINIMUM 2-1/8" DEEP.

8. FLUSH MOUNT BOXES IN ALL FINISHED WALLS, INSTALL THE PLASTER RINGS IN DRYWALLED PLASTERED WALLS AND RAISED COVERS AS REQUIRED IN WALLS WITH OTHER FINISHES SO THAT THE COVER PLATES FIT TIGHTLY AGAINST BOXES OR RINGS. 3/16" MAXIMUM GAPS ARE ALLOWED FOR NONCOMBUSTIBLE WALLS. SUPPORT ALL BOXES TO MAINTAIN PROPER ALIGNMENT AND RIGIDITY. CLEAN BOXES OF ALL FOREIGN MATTER PRIOR TO THE INSTALLATION OR WIRING OR DEVICES.

9. MOUNTING HEIGHTS ON THE DRAWING ARE TO THE CENTERLINE OF THE BOXES UNLESS OTHERWISE NOTED. ADJUST LOCATIONS OF OUTLETS IN MASONRY OR TILE CONSTRUCTION TO OCCUR IN THE NEAREST JOINT TO THE HEIGHT SPECIFIED. HEIGHTS SHALL MEET ADA REQUIREMENTS.

CONDUCTORS

1. COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS:

	208 or 240/120 VOLT SYSTEM
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUND	GREEN

CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE. COLOR CODE CONDUCTORS WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. CONDUCTORS SHALL BE SOFT ANNEALED COPPER INSULATED FOR 600 VOLTS UNLESS SPECIFICALLY INDICATED OTHERWISE. DRAWINGS INDICATE SIZES BASED ON COPPER CONDUCTORS. THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE ALUMINUM ALLOY CONDUCTORS FOR FEEDERS 100AMP OR LARGER, INCLUSIVE. FOR USE IN DISTRIBUTION FEEDER CIRCUITS. ALUMINUM CONDUCTORS SHALL HAVE EQUAL OR GREATER AMPACITIES TO THAT OF THE COPPER CONDUCTORS SHOWN ON THE DRAWINGS. CONTRACTOR ASSUMES RESPONSIBILITY FOR CORRECTLY IDENTIFYING AND LABELING ALUMINUM IN LIEU OF COPPER, TO INCLUDE RESIZING CONDUIT AND CABLE.

2. INSULATION TYPE SHALL BE TYPE THHW FOR WIRE SIZES #8 AWG AND LARGER AND THHN FOR #10 AWG AND SMALLER. THHN SHALL NOT BE USED IN WET OR DAMP LOCATIONS.

3. FLEXIBLE CORD SHALL BE HEAVY DUTY TYPE SO WITH AN EQUIPMENT GROUND CONDUCTOR IN ADDITION TO THE CURRENT CARRYING CONDUCTORS.

4. PROVIDE #12 CONDUCTORS, UNLESS OTHERWISE INDICATED. CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR NEC CLASS 1 AND #16 FOR NEC CLASS 11. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID.

5. CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS. CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES.

6. INSTALL WIRING IN CONDUIT. PULL CONDUCTORS USING RECOGNIZED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS. CLEANOUT EACH CONDUIT SYSTEM TO ELIMINATE OBSTRUCTIONS OVER FULL LENGTH BEFORE PULLING WIRE.

7. FORM AND TIE ALL WIRING IN PANELBOARDS, THERE SHALL BE NO WIRENUT JOINTS OR SPLICES MADE INSIDE SWITCHBOARDS/PANELBOARDS.

8. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM

THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED LIMIT OF 2%.

9. WIRE SIZES SHALL BE BASED ON THE 60°C. AMPACITIES FOR WIRE SIZES #14-1 AWG AND 75°C AMPACITIES FOR WIRE SIZES #10 AWG AND LARGER.

10. CIRCUITS MAY BE MULTI-PLEXED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER NEC. UNDO NOT CIRCUMSTANCES SHALL MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT. WIREMOLD SERVED BY CIRCUITS SHALL BE WRAPPED WITH INDIVIDUAL SEPARATE NEUTRALS FOR EACH CIRCUIT.

11. METAL-CLAD (MC) OR ARMORED CABLE (AC) MAY BE USED FOR BRANCH CIRCUITS WHERE ALLOWED BY CODE. ARMORED CABLE SHALL NOT BE USED IN ASSEMBLY AREAS OR WHERE PROHIBITED BY CODE. CABLES SHALL BE CONCEALED IN FINISHED SPACES. TEST CABLES FOR CONTINUITY AND GROUNDS. INSTALL CABLES PARALLEL AND PERPENDICULAR TO BUILDING SURFACES. COORDINATE CABLE RUNS WITH OTHER TRADES AND ADJUST ROUTING TO AVOID INTERFERENCE. LOW VOLTAGE WIRING INSTALLED ABOVE CEILINGS SHALL BE BUNDLED AND SUPPORTED FROM THE BUILDING STRUCTURE. DO NOT LAY CABLE ON CEILINGS.

12. COMMUNICATION CABLE SHALL BE PLENUM RATED.

DEVICES

1. WIRING DEVICE COLOR SHALL BE IVORY OR AS SELECTED BY ARCHITECT, UNLESS OTHERWISE INDICATED.

2. PROVIDE TOTALLY ENCLOSED, SPECIFICATION GRADE, 20 AMPERE, 120/277 VOLT QUIET A/C GENERAL USE SNAP SWITCHES MANUFACTURED BY HUBBELL, P&S OR LEVITON.

3. PROVIDE SPECIFICATION GRADE NEMA CONFIGURATION 5-20R DUPLEX 125-VOLT GROUNDING TYPE RECEPTACLES UNLESS OTHERWISE NOTED ON THE DRAWINGS. MANUFACTURED BY HUBBELL, P&S OR LEVITON.

4. RECEPTACLES REQUIRING AMPERAGES, VOLTAGES OR CONFIGURATIONS DIFFERENT FROM THE DUPLEX CONVENIENCE RECEPTACLES ABOVE SHALL BE AS INDICATED ON THE DRAWINGS AND OF A QUALITY, MATERIAL AND CONSTRUCTION EQUAL TO THAT SPECIFIED FOR DUPLEX CONVENIENCE RECEPTACLES.

5. PROVIDE COVER OR DEVICE PLATES FOR OUTLET BOXES AS FOLLOWS UNLESS OTHERWISE NOTED:

FINISHED AREAS: THERMOPLASTIC-COLOR TO MATCH DEVICE UNFINISHED AREAS: ZINC COATED SHEET METAL, ALUMINUM, OR CAST METAL AS APPROPRIATE FOR THE TYPE OF BOX.
EXTERIOR AREAS: COPPER FINE ALUMINUM WITH GRAY, POWDER EPOXY FINISH, GASKETED, WEATHERPROOF.
TELEPHONE, COMMUNICATION, AND SIGNAL OUTLET PLATES, SHALL MATCH THOSE USED FOR RECEPTACLES AND SWITCHES.
ALL OUTLET AND/OR JUNCTION BOXES SHALL BE COMPLETE WITH A COVER PLATE BY THIS CONTRACTOR.
WHERE DEVICES ARE GANGED, THEY SHALL BE INSTALLED UNDER A COMMON COVER PLATE.
LOCATE THE SWITCHES APPROXIMATELY 4'-0" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITH IN ADA REQUIREMENTS) UNLESS OTHERWISE NOTED. THE LONG DIMENSION OF THE SWITCHES SHALL BE VERTICAL.

6. LOCATE RECEPTACLES APPROXIMATELY 1'-6" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITH IN ADA REQUIREMENTS), UNLESS OTHERWISE NOTED. THE LONG DIMENSION OF THE RECEPTACLE SHALL BE VERTICAL. ALL DEVICES SHALL BE FLUSH MOUNTED UNO.
7. RECEPTACLES WITHIN 6' OF SINKS SHALL BE GFCI TYPE. ALL DEVICES INSTALLED OUTDOORS SHALL BE WEATHERPROOF AND GFCI PROTECTED.
8. RECEPTACLE IN KITCHEN AREA OR BATHROOM TO BE GFCI PROTECTED.

SAFETY SWITCHES

1. PROVIDE DISCONNECT SWITCHES FOR ALL EQUIPMENT, WHERE REQUIRED BY CODE. MANUFACTURER SHALL BE SQUARE D, SIEMENS, G.E., OR CUTLER-HAMMER. ALL SAFETY SWITCHES SHALL BE BY ONE MANUFACTURER.

2. SAFETY SWITCHES SHALL BE THE ENCLOSED HEAVY-DUTY TYPE (TYPE HD) WITH QUICK-MAKE, QUICK-BREAK MECHANISM AND EXTERNAL PAD LOCKABLE OPERATING HANDLE.

3. SAFETY SWITCHES SHALL BE RATED FOR 240 OR 600 VOLTS AS APPLICABLE. THEY SHALL BE HORSEPOWER RATED WHEN USED IN MOTOR CIRCUITS. SAFETY SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE 2, 3, OR 4 POLE AS INDICATED ON THE DRAWINGS. SAFETY SWITCHES SHALL BE SINGLE THROW, UNO. ENCLOSURES SHALL BE NEMA 1 INDOORS AND NEMA 3R OUTDOORS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

4. MOUNT THE SAFETY SWITCHES SECURELY BETWEEN 3' X 6' LEVELS ABOVE THE FLOOR UNLESS OTHERWISE NOTED IN THE DRAWINGS. SWITCHES ON BLOCK WALLS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD, WHERE LOCATED INDOORS.

5. THE CONTRACTOR SHALL FURNISH A COMPLETE SET OF FUSES FOR ALL FUSIBLE SWITCHES, PLUS FUSIBLE EQUIPMENT FURNISHED BY OTHER TRADES. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, THE FUSES SHALL BE OF THE FOLLOWING TYPE:
FUSES 601 TO 6000 AMPS SHALL BE UL CLASS RK5, TRADE TYPE SHALL BE BULSMAAN COMPANY.
FUSES 1/10 TO 600 AMPS SHALL BE UL CLASS RK1. TRADE TYPE SHALL BE LOW LEAK LPS-RK (600V) AND LPN-RK (250C) AS MANUFACTURED BY BULSMAAN COMPANY.
OTHER FUSES SHALL BE DUAL ELEMENT CURRENT LIMITING TYPE WITH 200,000 AMPERES SYMMETRICAL INTERRUPTING CAPACITY.

6. THIS CONTRACTOR SHALL REPLACE ALL FUSES BLOWN DURING CONSTRUCTION.

MOTOR STARTERS

1. STARTERS SHALL BE SQUARE D, G.E., CUTLER-HAMMER/WESTINGHOUSE, OR SIEMENS.

2. COORDINATE ALL EQUIPMENT INDICATED ON THE ELECTRICAL DRAWINGS WITH MECHANICAL EQUIPMENT SCHEDULES AND SPECIFICATIONS. STARTERS AND DISCONNECTS SUPPLIED AS AN INTEGRAL PART OF EQUIPMENT SHALL BE FURNISHED UNDER THE DIVISION PROVIDING THE EQUIPMENT. WIRING AND EQUIPMENT CONNECTIONS SHALL BE BY THIS CONTRACTOR.

DISTRIBUTION PANELS

1. DISTRIBUTION PANELS SHALL BE DEAD FRONT TYPE WITH CIRCUIT BREAKERS, FUSES AND HEAVY-DUTY SWITCHES OF SIZE AND NUMBER INDICATED ON THE PANELS. PANELS SHALL BE MANUFACTURED AS A COMPLETE UNIT AND NOT AN ASSEMBLY OF PARTS SECURED FROM A SUPPLY HOUSE. ALL BUS BARS SHALL BE RECTANGULAR SOLID COPPER. ALL LUGS SHALL BE UL APPROVED EQUAL TYPE. VERTICAL BUSING SHALL BE EXTENDED THE FULL LENGTH OF THE PANEL. ALL PANELS SHALL BE CAPABLE OF ACCEPTING SWITCH SIZES UP TO AND INCLUDING 600 AMPS. DISTRIBUTION PANELS SHALL BE G.E., SQUARE "D", SIEMENS, OR WESTINGHOUSE.

2. THE INDIVIDUAL SWITCH AND FUSE UNITS SHALL BE OF THE QUICK-MAKE, QUICK-BREAK TYPE. FUSED UNITS SHALL HAVE HINGED FUSE COMPARTMENTS WITH INTERLOCKED FUSE DOORS WHEN THE EXTERNALLY OPERATED HANDLE IS IN THE OFF POSITION. THESE UNITS SHALL BE REMOVABLE AND ACCESSIBLE FROM THE FRONT SO THAT THE CABINET MAY BE WALL-MOUNTED.

3. INSTALL PANELS SUCH THAT HANDLE FOR THE TOP SWITCH DOES NOT EXCEED 6'-6" ABOVE FINISHED FLOOR. SURFACE-MOUNTED PANELS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD. FLOOR-MOUNTED PANELS SHALL BE MOUNTED ON A 4" HIGH CONCRETE PAD. PROVIDE PHENOLIC LABELS FOR EACH PANEL AND FOR EACH SWITCH.

4. ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS. RETORQUE CONNECTIONS ONE MONTH OR MORE AFTER INITIAL TORQUE.

PANELBOARDS

1. PANELBOARDS SHALL BE ENCLOSED DEAD FRONT SAFETY TYPE WITH

FEATURES AND RATINGS AS SCHEDULED ON DRAWINGS. ALL BUS BARS SHALL BE RECTANGULAR SOLID COPPER. SPACE, WHERE SHOWN IN PANEL SCHEDULES, DESIGNATES SPACE FOR FUTURE PROTECTIVE DEVICES AND SCHEDULED BUS AND SUPPORT PANELS AND KNOWN LOAD CENTERS ARE UNACCEPTABLE. MANUFACTURER SHALL BE SQUARE D, SIEMENS, GE OR CUTLER-HAMMER.

2. MOLDED CASE CIRCUIT BREAKERS SHALL BE AS SCHEDULED ON THE DRAWINGS AND SPECIFIED IN THIS DIVISION. ALL BREAKERS SHALL BE BOLT ON TYPE. ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURERS STANDARDS. RETORQUE ALL CONNECTIONS ONE MONTH AFTER INITIAL TORQUE.

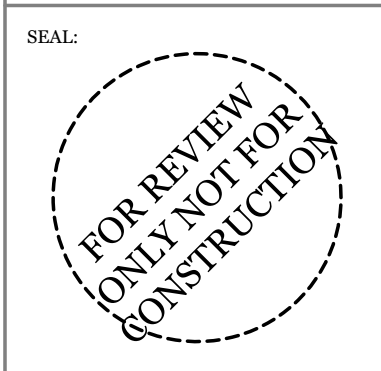
3. INSTALL CABINETS SO THAT CENTER OF THE TOP BREAKER DOES NOT EXCEED 6'-6" ABOVE THE FINISHED FLOOR. PROVIDE (3) SQUARE 1" CONDUITS INTO ACCESSIBLE CEILING WHERE PANELS ARE FLUSH MOUNTED.

4. ELECTRICAL CONTRACTOR SHALL ARRANGE CIRCUITS AS NEAR AS POSSIBLE TO CIRCUIT NUMBERS ON THE DRAWINGS. AT COMPLETION OF JOB, ELECTRICAL CONTRACTOR SHALL TAKE CURRENT READING CHECKS OF RESPECTIVE PHASES. A MINIMUM OF CIRCUIT CONNECTIONS SHALL BE REARRANGED TO BALANCE, AS CLOSELY AS POSSIBLE, THE LOAD IN THE PANEL. ENTRIES ON DIRECTORY CARDS SHALL BE TYPED, COMPLETE AND ACCURATE. FINAL ROOM NAMES/NUMBERS MAY BE DIFFERENT FROM THOSE USED ON PLANS AND SHOULD BE USED TO CREATE DIRECTORIES.

TRANSFORMERS

1. TRANSFORMERS SHALL BE CONTINUOUSLY RATED ISOLATING TYPE FOR 60-HERTZ SERVICE UNLESS OTHERWISE INDICATED. TRANSFORMERS SHALL BE DRY TYPE, GENERAL PURPOSE, COPPER OR WINDINGS. PROVIDE CLASS 220 INSULATOR (80°C RISE).

2. K RATED TRANSFORMERS AS INDICATED FOR NONLINEAR LOADS, WITH MAX

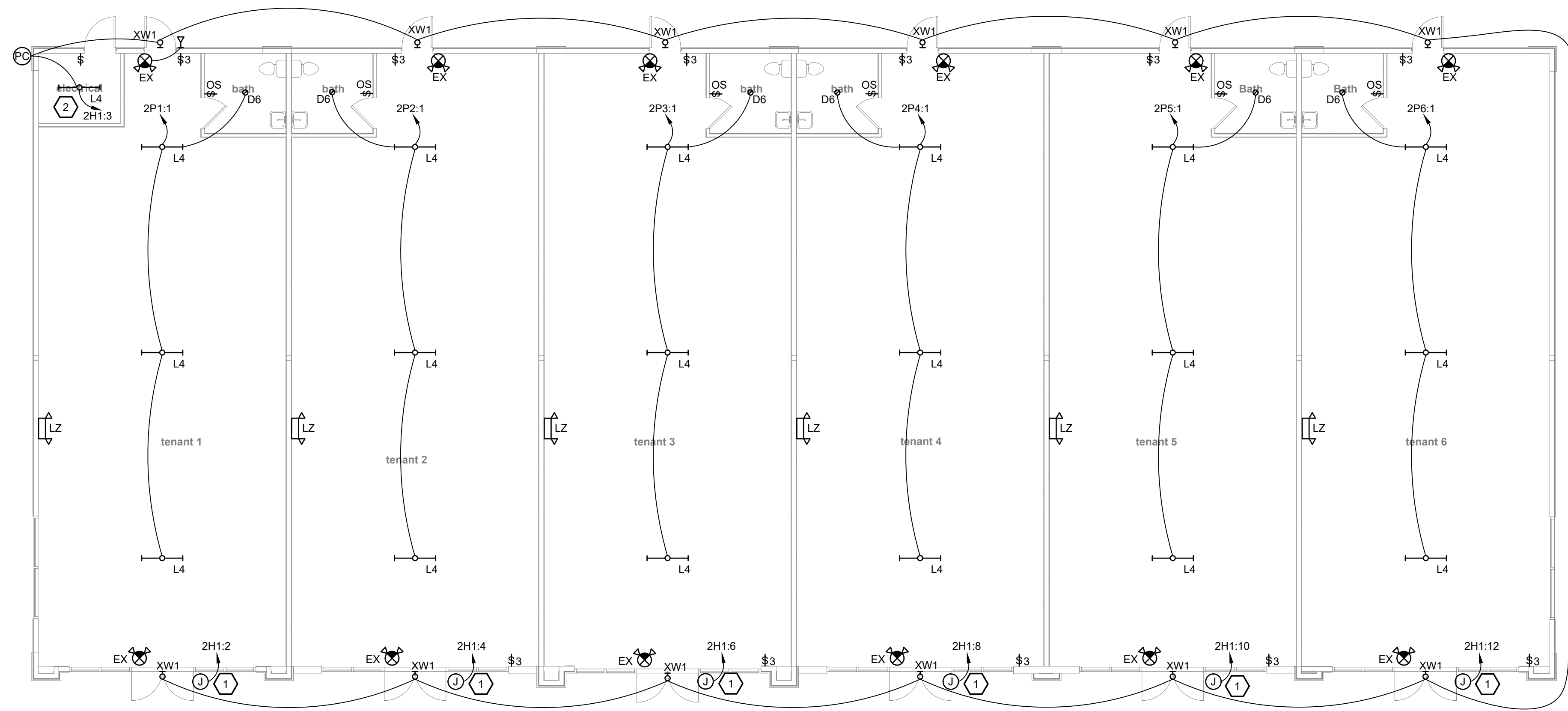


LIGHTING GENERAL NOTES:

1. FIRE STOP ALL FIRE RATED FLOORS, CEILINGS, AND WALLS AS REQUIRED BY CODE. PENETRATIONS INTO OR THROUGH FIRE RESISTANCE RATED WALLS SHALL COMPLY WITH IBC CHAPTER 7.
2. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE WITH ARCHITECTURAL PLANS.
3. WHERE EXPOSED, BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. WHERE CONCEALED WITHIN WALLS OR ABOVE CEILING, MC CABLE IS PERMISSIBLE.
4. EC SHALL NOT HAVE MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A CONDUIT WITHOUT DERATING AMPACITIES PER THE NEC.
5. VERIFY EXACT LOCATIONS OF ALL DEVICES WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.
6. WHERE DEVICES ARE DIMENSIONED ON ARCHITECTURAL DRAWINGS, INSTALL DEVICES PER THOSE DIMENSIONS. WHERE DEVICE LOCATIONS ARE NOT DIMENSIONED ON ARCHITECTURAL DRAWINGS, INSTALL IN ACCORDANCE WITH DEFAULT LOCATIONS IN ELECTRICAL SPECIFICATIONS.
7. WHERE WIRE SIZE IS NOT INDICATED, #12 AWG MINIMUM SHALL BE USED FOR CIRCUITS LESS THAN 100 FEET IN LENGTH, #10 AWG SHALL BE USED FOR CIRCUITS FROM 100 TO 150 FEET IN LENGTH, AND #8 AWG SHALL BE USED FOR CIRCUITS FROM 150 TO 250 FEET IN LENGTH. CIRCUIT LENGTHS GREATER THAN 250 FEET SHALL BE WIRED USING #6 MINIMUM, SUBJECT TO FIELD VERIFICATION. ALL EXACT CONDUIT FOOTINGS, LENGTHS, AND WIRE SIZES SHALL BE FIELD DETERMINED BY THE E.C. PER ALL APPLICABLE CODES BASED ON ACTUAL CONDUIT AND WIRE ROUTING. THE INFORMATION ABOVE SHALL BE USED FOR PRICING PURPOSES ONLY.

DISCIPLINE KEY NOTES: (#)

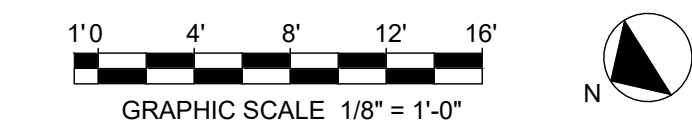
1. PROVIDE JUNCTION BOX FOR EXTERIOR SIGNAGE. COORDINATE EXACT LOCATION FOR EXTERIOR ILLUMINATED SIGNAGE.
2. PROVIDE 10 30A ELECTRICALLY HELD POLES ENCLOSED LIGHTING CONTACTOR WITH PHOTOCELL IN NEMA 1 ENCLOSURE. ROUTE EXTERIOR LIGHTING CIRCUIT AND EACH EXTERIOR ILLUMINATED SIGN CIRCUIT THROUGH CONTACTOR.



1 ELECTRICAL FLOOR PLAN
E101 1/8" = 1'-0"

TYPE	FIXTURE DESCRIPTION	MANUFACTURER	MODEL	LAMP(S)		DRIVER/BALLAST	INPUT WATTS	VOLTS	MOUNTING	NOTES
				LAMP #	LAMP TYPE					
L4	4' LED STRIP LIGHT	LITHONIA LIGHTING	ZL1D L48 3000LMFST MMOLT 35K 80CRI VH	N/A	LED 35K	0-10V	30	120	SURFACE	
XW1	EXTERIOR LED WALL PACK	LITHONIA LIGHTING	WDGE1 P2 40K 80CRI VW MVOLT E4VH XX	N/A	LED 40K	N/A	15	120	SURFACE ABOVE DOOR	PROVIDE WITH INTEGRAL COLD WEATHER EMERGENCY BATTERY DRIVER.
D6	DOWNLIGHT	LITHONIA LIGHTING	LDN6 35 07 L06 AR MVOLT G210	N/A	LED 35K	N/A	8.9	120	RECESSED SOFFIT	
EX	COMBINATION EXIT SIGN EMERGENCY LIGHT	LITHONIA LIGHTING	LHGM LED R HO SD	N/A	LED	N/A	4	120	WALL	

NOTES:
 1. ARCHITECT SHALL SPECIFY / VERIFY ALL FINISH SELECTIONS.
 2. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
 3. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL MOUNTING ACCESSORIES.
 4. LIGHTING FIXTURE SUBSTITUTIONS THAT ARE CONSIDERED EQUAL TO THE SPECIFIED PRODUCTS MAY BE SUBMITTED AND WILL BE REVIEWED BY ARCHITECT AND ELECTRICAL ENGINEER. ACCEPTANCE WILL BE EVALUATED BASED ON AESTHETICS, PERFORMANCE, AND QUALITY. DO NOT PROVIDE VALUE ENGINEERING OPTIONS UNLESS SPECIFICALLY DIRECTED BY THE OWNER. ARCHITECT OR ENGINEER.
 5. THE STANDARD DRIVER OPTION FOR MOST FIXTURES IS 0-10V DIM. THE CONTRACTOR IS ONLY REQUIRED TO PROVIDE 0-10V WIRING WHERE DIMMING CONTROLS ARE SHOWN ON THE LIGHTING PLAN.
 6. FIXTURES WITH FILLED/HALF FILLED CENTERS SHALL BE PROVIDED WITH COLD WEATHER TYPE EMERGENCY BATTERY DRIVER.



SHEET INFO:

ELECTRICAL LIGHTING

REV	DATE	DESCRIPTION

DATE: 2022.01.19
 PROJECT NO: 2022159
 SCALE: 1/8" = 1'-0"
 PROJ MOR: AM
 DRAWN BY: JTH
 SHEET NUMBER:

E-101

SEAL:
FOR REVIEW
ONLY NOT FOR
CONSTRUCTION

CONSULTANTS:

Allen + Shariff
MEP Engineering
Project Management
205 East Market Street
Salisbury, Maryland 21801
443.545.1300

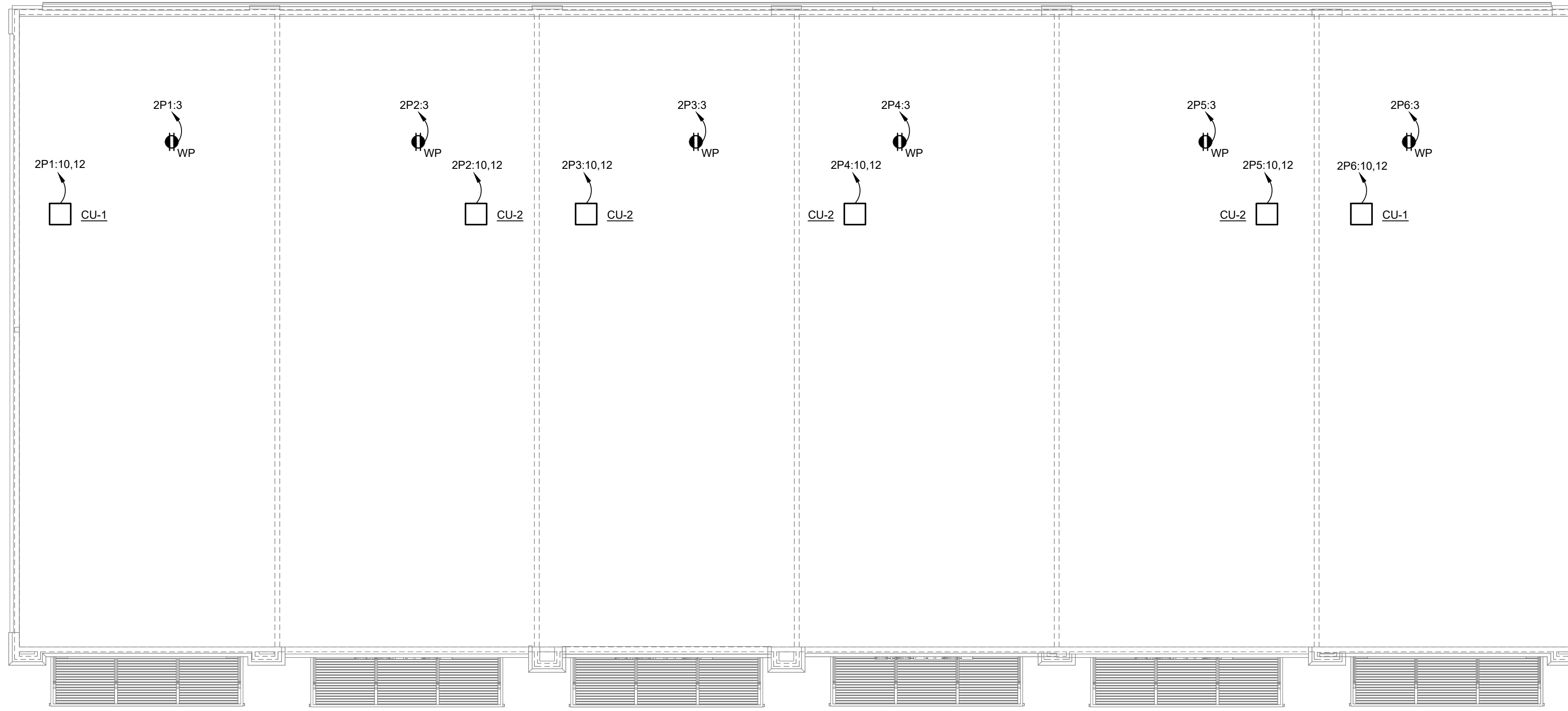
Middletown Shopping Center 2
1725 Lake Seymour Drive
Middletown, Delaware 19709

SHEET INFO:

ELECTRICAL
POWER

REV	DATE	DESCRIPTION

SHEET NUMBER:
E-201



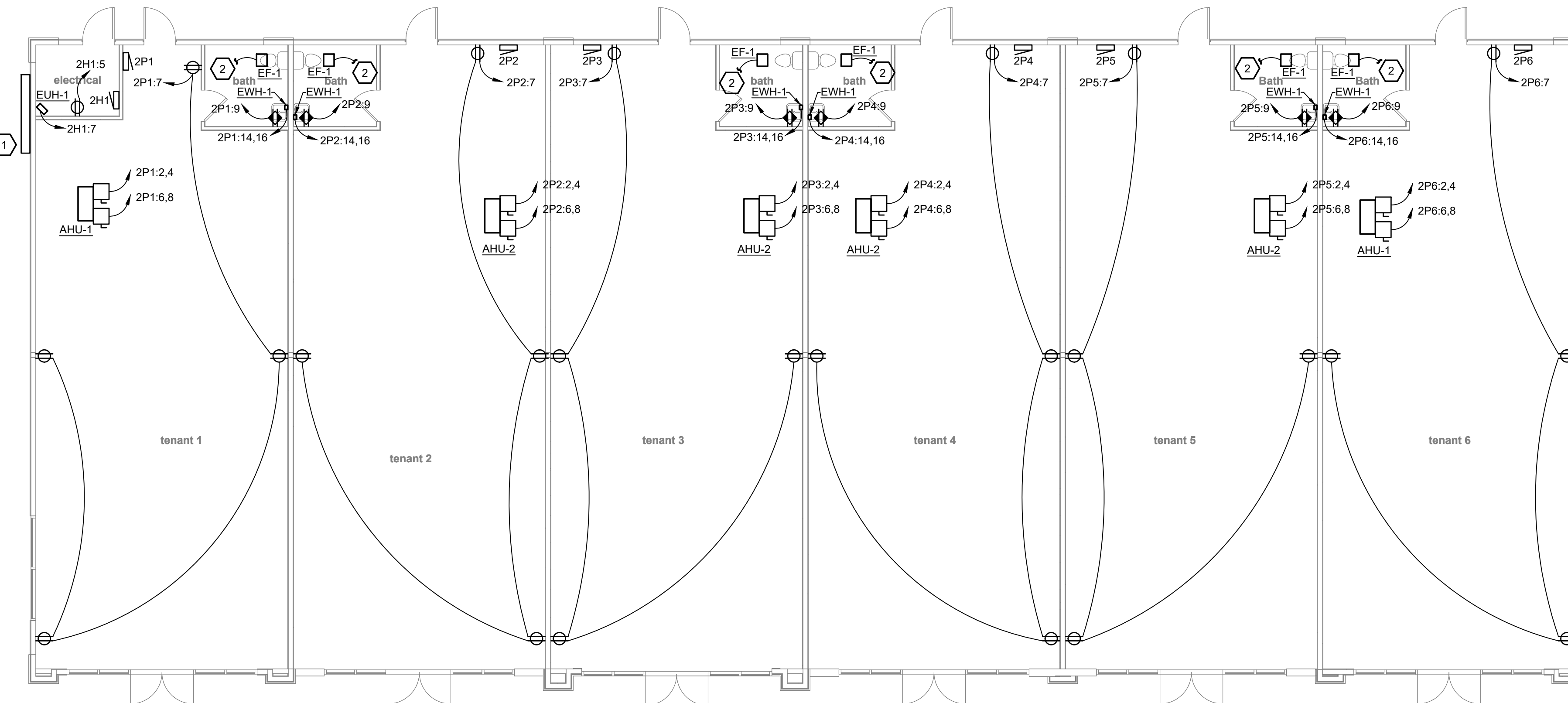
POWER GENERAL NOTES:

1. FIRE STOP ALL FIRE RATED FLOORS, CEILINGS, AND WALLS AS REQUIRED BY CODE. PENETRATIONS INTO OR THROUGH FIRE RESISTANCE RATED WALLS SHALL COMPLY WITH IBC CHAPTER 7.
2. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE WITH ARCHITECTURAL PLANS.
3. WHERE EXPOSED, BRANCH CIRCUITS SHALL BE RUN IN EMT CONDUIT ROUTED PARALLEL AND PERPENDICULAR TO BUILDING STRUCTURE. WHERE CONCEALED WITHIN WALLS OR ABOVE CEILING, MC CABLE IS PERMISSIBLE.
4. EC SHALL NOT HAVE MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A CONDUIT WITHOUT DERATING AMPACITIES PER THE NEC.
5. VERIFY EXACT LOCATIONS OF ALL DEVICES WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.
6. WHERE DEVICES ARE DIMENSIONED ON ARCHITECTURAL DRAWINGS, INSTALL DEVICES PER THOSE DIMENSIONS. WHERE DEVICE LOCATIONS ARE NOT DIMENSIONED ON ARCHITECTURAL DRAWINGS, INSTALL IN ACCORDANCE WITH DEFAULT LOCATIONS IN ELECTRICAL SPECIFICATIONS.
7. WHERE WIRE SIZE IS NOT INDICATED, #12 AWG MINIMUM SHALL BE USED FOR CIRCUITS LESS THAN 100 FEET IN LENGTH, #10 AWG SHALL BE USED FOR CIRCUITS FROM 100 TO 150 FEET IN LENGTH, AND #8 AWG SHALL BE USED FOR CIRCUITS FROM 150 TO 250 FEET IN LENGTH. CIRCUIT LENGTHS GREATER THAN 250 FEET SHALL BE WIRED USING #6 MINIMUM, SUBJECT TO FIELD VERIFICATION. ALL EXACT CONDUIT FOOTINGS, LENGTHS, AND WIRE SIZES SHALL BE FIELD DETERMINED BY THE E.C. PER ALL APPLICABLE CODES BASED ON ACTUAL CONDUIT AND WIRE ROUTING. THE INFORMATION ABOVE SHALL BE USED FOR PRICING PURPOSES ONLY.

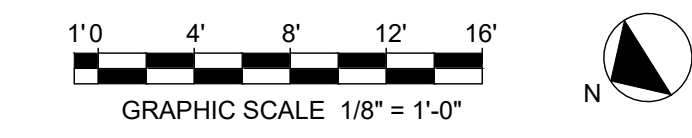
DISCIPLINE KEY NOTES:

1. SERVICE ENTRANCE METER CENTER. REFER TO SINGLE LINE DIAGRAM FOR REQUIREMENTS.
2. CONNECT EXHAUST FAN TO LOCAL SWITCHED LIGHTING CIRCUIT.

1 ELECTRICAL ROOF PLAN
E101 1/8" = 1'0"



2 ELECTRICAL FLOOR PLAN
E101 1/8" = 1'0"



Branch Panel: 2P1													
Location: TENANT 1 Supply From: METER CENTER Mounting: SURFACE Enclosure: TYPE 1				Volts: 208/120V Phases: 3 Wires: 4				A.I.C. Rating: 22 KAIC Main: Type: MCB Mains Rating: 200 MCB Rating: 200					
CKT	Circuit Description	Wire Size	Twp	LOAD (VA)			Pole	Twp	Wire Size	Circuit Description	CKT		
				A	B	C							
1	LTO	2#12, 1#12G, 3/4"	20	1	99	4908		2	60	2#10, 1#10G, 3/4"	AHU-1A	2	
3	SPACE	-	-	-	-	-	-	-	-	-	-	4	
5	EXTERIOR SIGN LTO	2#12, 1#12G, 3/4"	20	1		4908	1000	2080	2	25	2#10, 1#10G, 3/4"	AHU-1B	5
7	REC	2#12, 1#12G, 3/4"	20	1	720	2080			2	25	2#10, 1#10G, 3/4"	AHU-2B	7
9	REC BATH RM	2#12, 1#12G, 3/4"	20	1		180	2163		2	40	2#10, 1#10G, 3/4"	CU-1	9
11	SPACE	-	-	-	-	-	-	-	-	-	-	10	
13	SPACE	-	-	-	-	-	-	-	-	-	-	12	
15	SPACE	-	-	-	-	-	-	-	-	-	-	14	
17	SPACE	-	-	-	-	-	-	-	-	-	-	16	
19	SPACE	-	-	-	-	-	-	-	-	-	-	18	
21	SPACE	-	-	-	-	-	-	-	-	-	-	20	
23	SPACE	-	-	-	-	-	-	-	-	-	-	22	
25	SPACE	-	-	-	-	-	-	-	-	-	-	24	
27	SPACE	-	-	-	-	-	-	-	-	-	-	26	
29	SPACE	-	-	-	-	-	-	-	-	-	-	28	
31	SPACE	-	-	-	-	-	-	-	-	-	-	29	
33	SPACE	-	-	-	-	-	-	-	-	-	-	30	
35	SPACE	-	-	-	-	-	-	-	-	-	-	32	
37	SPACE	-	-	-	-	-	-	-	-	-	-	34	
39	SPACE	-	-	-	-	-	-	-	-	-	-	36	
41	SPACE	-	-	-	-	-	-	-	-	-	-	38	
43	SPACE	-	-	-	-	-	-	-	-	-	-	40	
45	SPACE	-	-	-	-	-	-	-	-	-	-	42	
Total Load:				9857	9301	5243							
Amps:				67.7									

Branch Panel: 2P4													
Location: TENANT 4 Supply From: METER CENTER Mounting: SURFACE Enclosure: TYPE 1				Volts: 208/120V Phases: 3 Wires: 4				A.I.C. Rating: 22 KAIC Main: Type: MCB Mains Rating: 200 MCB Rating: 200					
CKT	Circuit Description	Wire Size	Twp	LOAD (VA)			Pole	Twp	Wire Size	Circuit Description	CKT		
				A	B	C							
1	LTO	2#12, 1#12G, 3/4"	20	1	99	4908		2	60	2#10, 1#10G, 3/4"	AHU-2A	2	
3	SPACE	-	-	-	-	-	-	-	-	-	-	4	
5	EXTERIOR SIGN LTO	2#12, 1#12G, 3/4"	20	1		4908	1000	2080	2	25	2#10, 1#10G, 3/4"	AHU-2B	5
7	REC	2#12, 1#12G, 3/4"	20	1	720	2080			2	25	2#10, 1#10G, 3/4"	AHU-2B	7
9	REC BATH RM	2#12, 1#12G, 3/4"	20	1		180	2163		2	40	2#10, 1#10G, 3/4"	CU-2	9
11	SPACE	-	-	-	-	-	-	-	-	-	-	10	
13	SPACE	-	-	-	-	-	-	-	-	-	-	12	
15	SPACE	-	-	-	-	-	-	-	-	-	-	14	
17	SPACE	-	-	-	-	-	-	-	-	-	-	16	
19	SPACE	-	-	-	-	-	-	-	-	-	-	18	
21	SPACE	-	-	-	-	-	-	-	-	-	-	20	
23	SPACE	-	-	-	-	-	-	-	-	-	-	22	
25	SPACE	-	-	-	-	-	-	-	-	-	-	24	
27	SPACE	-	-	-	-	-	-	-	-	-	-	26	
29	SPACE	-	-	-	-	-	-	-	-	-	-	28	
31	SPACE	-	-	-	-	-	-	-	-	-	-	29	
33	SPACE	-	-	-	-	-	-	-	-	-	-	30	
35	SPACE	-	-	-	-	-	-	-	-	-	-	32	
37	SPACE	-	-	-	-	-	-	-	-	-	-	34	
39	SPACE	-	-	-	-	-	-	-	-	-	-	36	
41	SPACE	-	-	-	-	-	-	-	-	-	-	38	
43	SPACE	-	-	-	-	-	-	-	-	-	-	40	
45	SPACE	-	-	-	-	-	-	-	-	-	-	42	
Total Load:				9857	9301	5243							
Amps:				67.7									

Branch Panel: 2H1													
Location: TENANT 1 Supply From: METER CENTER Mounting: SURFACE Enclosure: TYPE 1				Volts: 208/120V Phases: 3 Wires: 4				A.I.C. Rating: 22 KAIC Main: Type: MCB Mains Rating: 200 MCB Rating: 200					
CKT	Circuit Description	Wire Size	Twp	LOAD (VA)			Pole	Twp	Wire Size	Circuit Description	CKT		
				A	B	C							
1	SPACE	-	-	-	-	500		1	20	2#12, 1#12G, 3/4"	TENANT 1 EXT. SIGN	2	
3	LTO	2#12, 1#12G, 3/4"	20	1		210	500		1	20	2#12, 1#12G, 3/4"	TENANT 2 EXT. SIGN	4
5	REC ELEC ROOM	2#12, 1#12G, 3/4"	20	1		180	500		1	20	2#12, 1#12G, 3/4"	TENANT 3 EXT. SIGN	6
7	EUH-1	2#12, 1#12G, 3/4"	20	1	1500	500			1	20	2#12, 1#12G, 3/4"	TENANT 4 EXT. SIGN	8
9	SPACE	-	-	-	-	-	-	-	-	-	-	10	
11	SPACE	-	-	-	-	-	-	-	-	-	-	12	
13	SPACE	-	-	-	-	-	-	-	-	-	-	14	
15	SPACE	-	-	-	-	-	-	-	-	-	-	16	
17	SPACE	-	-	-	-	-	-	-	-	-	-	18	
19	SPACE	-	-	-	-	-	-	-	-	-	-	20	
21	SPACE	-	-	-	-	-	-	-	-	-	-	22	
23	SPACE	-	-	-	-	-	-	-	-	-	-	24	
25	SPACE	-	-	-	-	-	-	-	-	-	-	26	
27	SPACE	-	-	-	-	-	-	-	-	-	-	28	
29	SPACE	-	-	-	-	-	-	-	-	-	-	30	
31	SPACE	-	-	-	-	-	-	-	-	-	-	32	
33	SPACE	-	-	-	-	-	-	-	-	-	-	34	
35	SPACE	-	-	-	-	-	-	-	-	-	-	36	
37	SPACE	-	-	-	-	-	-	-	-	-	-	38	
39	SPACE	-	-	-	-	-	-	-	-	-	-	40	
41	SPACE	-	-	-	-	-	-	-	-	-	-	42	
Total Load:				2500	1210	1180							
Amps:				13.6									

Branch Panel: 2P2													
Location: TENANT 2 Supply From: METER CENTER Mounting: SURFACE Enclosure: TYPE 1				Volts: 208/120V Phases: 3 Wires: 4				A.I.C. Rating: 22 KAIC Main: Type: MCB Mains Rating: 200 MCB Rating: 200					
CKT	Circuit Description	Wire Size	Twp	LOAD (VA)			Pole	Twp	Wire Size	Circuit Description	CKT		
				A	B	C							
1	LTO	2#12, 1#12G, 3/4"	20	1	99	4908		2	60	2#10, 1#10G, 3/4"	AHU-2A	2	
3	SPACE	-	-	-	-	-	-	-	-	-	-	4	
5	EXTERIOR SIGN LTO	2#12, 1#12G, 3/4"	20	1		4908	1000	2080	2	25	2#10, 1#10G, 3/4"	AHU-2B	5
7	REC	2#12, 1#12G, 3/4"	20	1	720	2080			2	25	2#10, 1#10G, 3/4"	AHU-2B	7
9	REC BATH RM	2#12, 1#12G, 3/4"	20	1		180	2163		2	40	2#10, 1#10G, 3/4"	CU-2	9
11	SPACE	-	-	-	-	-	-	-	-	-	-	10	
13	SPACE	-	-	-	-	-	-	-	-	-	-	12	
15	SPACE	-	-	-	-	-	-	-	-	-	-	14	
17	SPACE	-	-	-	-	-	-	-	-	-	-	16	
19	SPACE	-	-	-	-	-	-	-	-	-	-	18	
21	SPACE	-	-	-	-	-	-	-	-	-	-	20	
23	SPACE	-	-	-	-	-	-	-	-	-	-	22	
25	SPACE	-	-	-	-	-	-	-	-	-	-	24	
27	SPACE	-	-	-	-	-	-	-	-	-	-	26	
29	SPACE	-	-	-	-	-	-	-	-	-	-	28	
31	SPACE	-	-	-	-	-	-	-	-	-	-	29	
33	SPACE	-	-	-	-	-	-	-	-	-	-	30	
35	SPACE	-	-	-	-	-	-	-	-	-	-	32	
37	SPACE	-	-	-	-	-	-	-	-	-	-	34	
39	SPACE	-	-	-	-	-	-	-	-	-	-	36	
41	SPACE	-	-	-	-	-	-	-	-	-	-	38	
43	SPACE	-	-	-	-	-	-	-	-	-	-	40	
45	SPACE	-	-	-	-	-	-	-	-	-	-	42	
Total Load:				9857	9301	5243							
Amps:				67.7									

Branch Panel: 2P5													
Location: TENANT 5 Supply From: METER CENTER Mounting: SURFACE Enclosure: TYPE 1				Volts: 208/120V Phases: 3 Wires: 4				A.I.C. Rating: 22 KAIC Main: Type: MCB Mains Rating: 200 MCB Rating: 200					
CKT	Circuit Description	Wire Size	Twp	LOAD (VA)			Pole	Twp	Wire Size	Circuit Description	CKT		
				A	B	C							
1	LTO	2#12, 1#12G, 3/4"	20	1	99	4908		2	60	2#10, 1#10G, 3/4"	AHU-2A	2	
3	SPACE	-	-	-	-	-	-	-	-	-	-	4	
5	EXTERIOR SIGN LTO	2#12, 1#12G, 3/4"	20	1		4908	1000	2080	2	25	2#10, 1#10G, 3/4"	AHU-2B	5
7	REC	2#12, 1#12G, 3/4"	20	1	720	2080			2	25	2#10, 1#10G, 3/4"	AHU-2B	7
9	REC BATH RM	2#12, 1#12G, 3/4"	20	1		180	2163		2	40	2#10, 1#10G, 3/4"	CU-2	9
11	SPACE	-	-	-	-	-	-	-	-	-	-	10	
13	SPACE	-	-	-	-	-	-	-	-	-	-	12	
15	SPACE	-	-	-	-	-	-	-	-	-	-	14	
17	SPACE	-	-	-	-	-	-	-	-	-	-	16	
19	SPACE	-	-	-	-	-	-	-	-	-	-	18	
21	SPACE	-	-	-	-	-	-	-	-	-	-	20	
23	SPACE	-	-	-	-	-	-	-	-	-	-	22	
25	SPACE	-	-	-	-	-	-	-	-	-	-	24	
27	SPACE	-	-	-	-	-	-	-	-	-	-	26	
29	SPACE	-	-	-	-	-	-	-	-	-	-	28	
31	SPACE	-	-	-	-	-	-	-	-	-	-	29	
33	SPACE	-	-	-	-	-	-	-	-	-	-	30	
35	SPACE	-	-	-	-	-	-	-	-	-	-	32	
37	SPACE	-	-	-	-	-	-	-	-	-	-	34	
39	SPACE	-	-	-	-	-	-	-	-	-	-	36	
41	SPACE	-	-	-	-	-	-	-	-	-	-	38	
43	SPACE	-	-	-	-	-	-	-	-	-	-	40	
45	SPACE	-	-	-	-	-	-	-	-	-	-	42	
Total Load:				9857	9301	5243							
Amps:				67.7									

Branch Panel: 2P6													
Location: TENANT 6 Supply From: METER CENTER Mounting: SURFACE Enclosure: TYPE 1				Volts: 208/120V Phases: 3 Wires: 4				A.I.C. Rating: 22 KAIC Main: Type: MCB Mains Rating: 200 MCB Rating: 200					
CKT	Circuit Description	Wire Size	Twp	LOAD (VA)			Pole	Twp	Wire Size	Circuit Description	CKT		
				A	B	C							
1	LTO	2#12, 1#12G, 3/4"	20	1	99	4908		2	60	2#10, 1#10G, 3/4"	AHU-1A	2	
3	SPACE	-	-	-	-	-	-	-	-	-	-	4	
5	EXTERIOR SIGN LTO	2#12, 1#12G, 3/4"	20	1		4908	1000	2080	2	25	2#10, 1#10G, 3/4"	AHU-1B	5
7	REC	2#12, 1#12G, 3/4"	20	1									

DIVISION OF MECHANICAL/ ELECTRICAL WORK		
ITEM	MECH/ DIV 22 AND 23	ELEC/ DIV 26
AUTOMATIC TEMPERATURE CONTROLS	FURNISH, INSTALL & WIRE	POWER WIRE
CONTROL PANELS FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
LOW VOLTAGE CONTROL WIRING FOR MECH EQUIP.	FURNISH & INSTALL	
LINE VOLTAGE CONTROL WIRING FOR MECH. EQUIP.	FURNISH, INSTALL & WIRE	
MECHANICAL FLOW SWITCHES	FURNISH, INSTALL & WIRE	
THERMOSTATS/ SENSORS	FURNISH, INSTALL & WIRE	
P/E & E/P SWITCHES	FURNISH, INSTALL & WIRE	
DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
MECHANICAL EQUIPMENT MONITORS	FURNISH & INSTALL	POWER WIRE
MANUAL STARTERS FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
MAGNETIC STARTERS FOR MECHANICAL EQUIPMENT	FURNISH	INSTALL & POWER WIRE
MOTOR CONTROL CENTERS	CONTROL WIRING	FURNISH, INSTALL, & POWER WIRE
VARIABLE SPEED CONTROLLERS	FURNISH & INSTALL	POWER WIRE
MOTORIZED DAMPERS & VALVES	FURNISH, INSTALL & WIRE	
DUCT SMOKE DETECTORS	INSTALL	FURNISH & WIRE
HEAT TRACE CABLE FOR PIPING	FURNISH & INSTALL	POWER WIRE
OIL/ GAS EMERGENCY SHUT-OFF SWITCHES		FURNISH, INSTALL, & POWER WIRE
SPRINKLER FLOW & TAMPER SWITCHES	BY SPRINKLER CONTRACTOR	WIRE

EXHAUST FAN SCHEDULE										
TAG	TYPE	CFM	SP IN W.C.	FAN RPM	WT. LB.S	MOTOR		BASIS OF DESIGN		REMARKS
						HP	VOLTS/ PH	MFG.	MODEL	
EF-1	CEILING	75	.5	900	9	(18)	115/1	GREENHECK	SP-B80	1,2

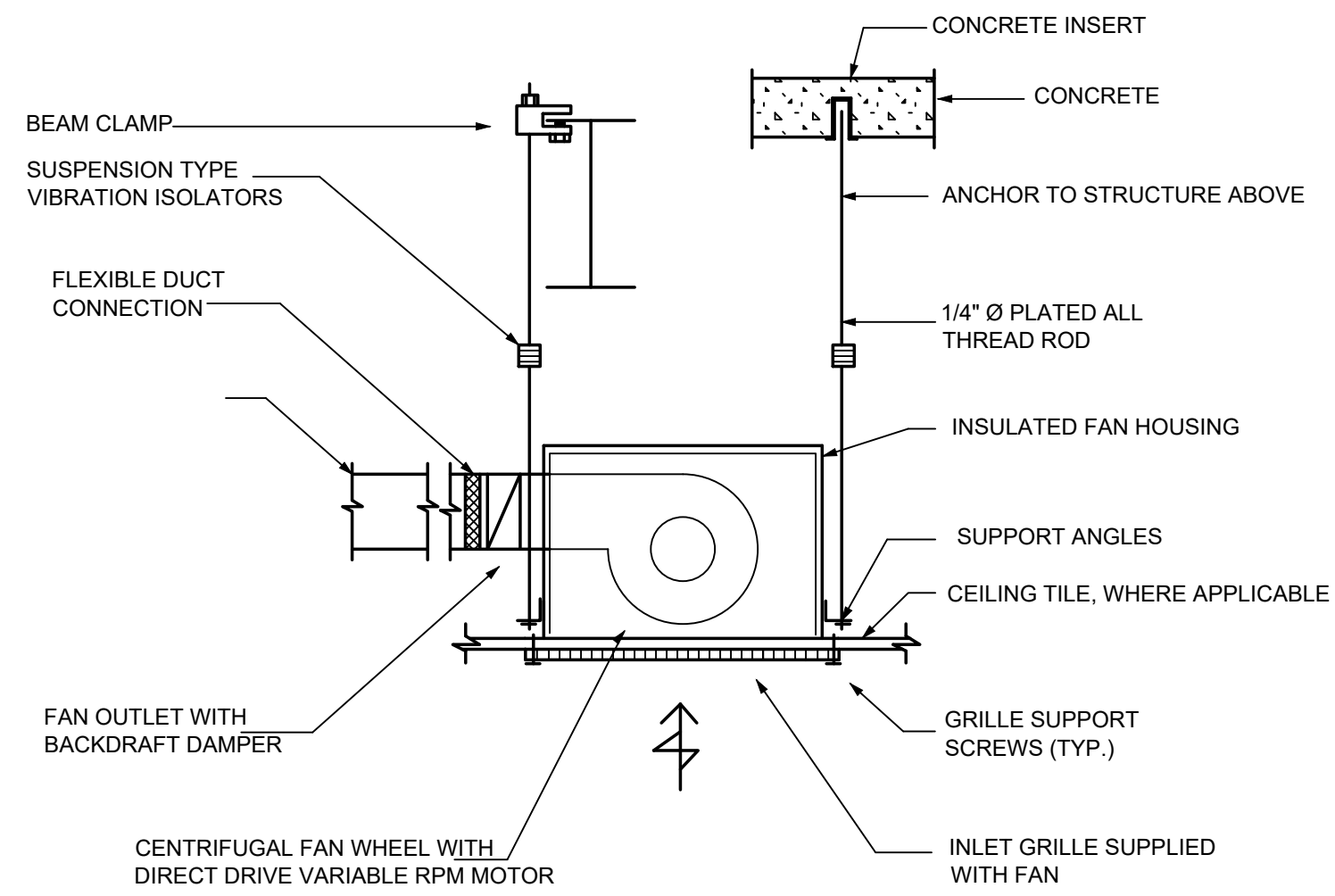
REMARKS:
1. PROVIDE DISCONNECT SWITCH AND SPEED CONTROLLER.
2. UNIT TO BE INTERLOCKED WITH BATHROOM OCCUPANCY SENSOR.

ELECTRIC HEATER SCHEDULE												
UNIT DES.	TYPE	SERVES	BTUH	WATTS/ FT. or CFM	KW	NO. OF ELMT.S OR STAGES	AMP.S	ELECTRICAL VOLTS/PH.	DIMENSIONS or HEIGHT ABOVE FLOOR	BASIS OF DESIGN	MODEL	
												EUH-1

REMARKS:
1. PROVIDE DISCONNECT SWITCH.
2. PROVIDE INTEGRAL BUILT-IN THERMOSTAT.
3. PROVIDE WALL MOUNT BACK BOX
4. CUSTOM COLOR SELECTED BY ARCHITECT.

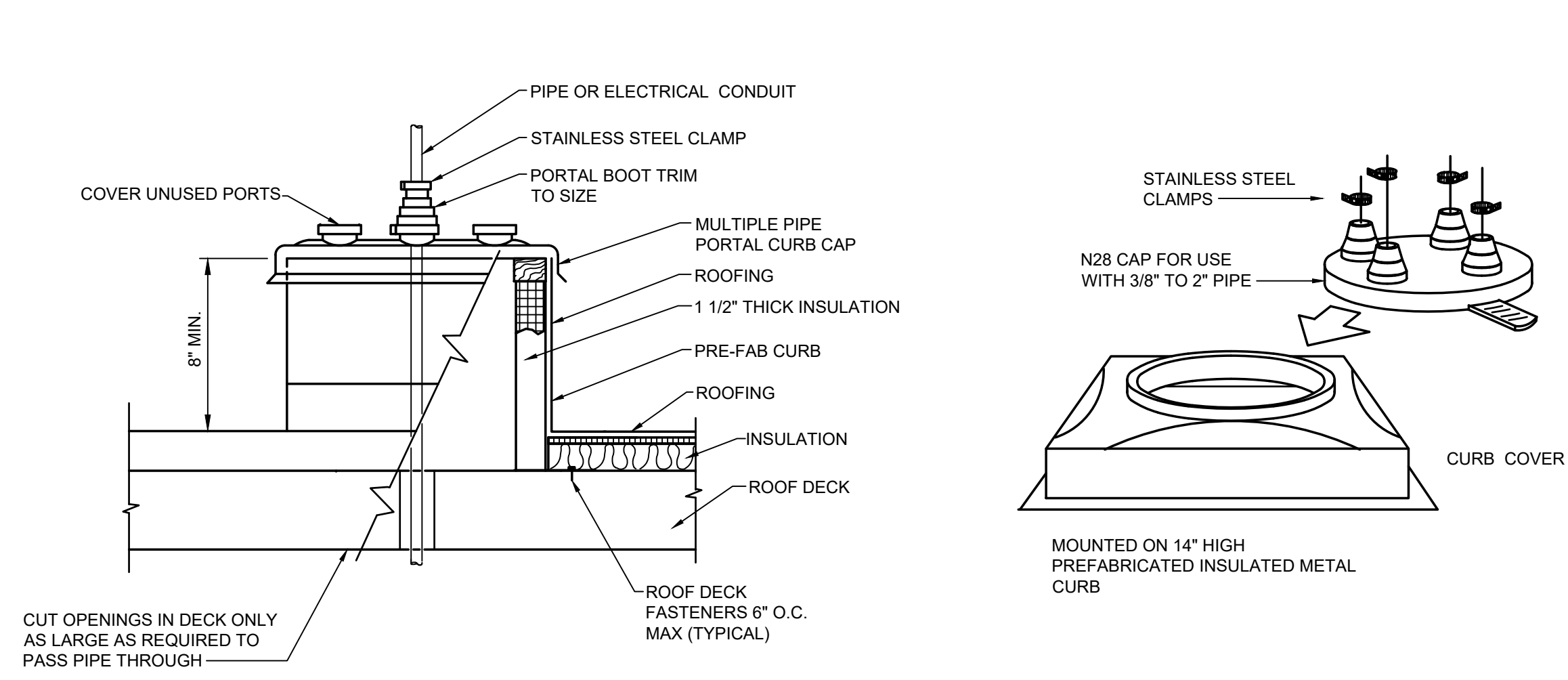
SPLIT SYSTEM SCHEDULE - HEAT PUMP																	
UNIT DES.	SENS. CAP MBH	TOTAL CAP MBH	E.A.T. DB / WB	REVERSE CYCLE HEAT CAP. MBH @ 47°F O.A.T.	INDOOR UNIT					ELEC. VOLTS / PHASE	OUTDOOR UNIT				ELEC. VOLTS / PHASE	REMARKS	
					CFM	O.A. CFM	E.S.P. IN. W.G.	HP	HEATER KW@208V		BASIS OF DESIGN FRAME MODEL	UNIT. DES.	NOM. TONS	SEER			HSPF (BTUH/W)
AHU-1	37.2	48.8	80/67	44.0	1600	310	0.5	0.75	9.6	208/1φ	CU-1	4	15.4	7.8 BTUH/W	4TWR5048	208/230/1φ	1 - 11
AHU-2	32.2	42.2	80/67	38.5	1400	310	0.5	0.75	9.6	208/1φ	CU-2	4	15.4	7.8 BTUH/W	4TWR5042	208/230/1φ	1 - 11

- PIPE 3/4" INSULATED CONDENSATE DRAIN PIPING TO SPILL ON SPLASH BLOCK LOCATED ON GRADE OUTSIDE. SEAL EXTERIOR WALL PENETRATION.
- PROVIDE ELECTRIC HEAT WITH 24° HEAT RISE, 208V/1φ, DUAL-CIRCUIT WIRING, CIRCUIT BREAKER, AND DISCONNECT SWITCH FOR AHU.
- SIZE AND INSTALL INSULATED REFRIGERANT LINES PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE STANDARD 1" RETURN AIR FILTER IN AHU.
- PROVIDE 7-DAY, REMOTE, PROGRAMMABLE, WALL MOUNTED THERMOSTAT WITH AUTOMATIC CHANGEOVER. MOUNT 48" AFF. INTERLOCK AHU WITH ASSOCIATED CU.
- PROVIDE CONDENSATE OVERFLOW SENSOR IN PRIMARY CONNECTION OF THE COOLING COIL TO SHUT DOWN THE UNIT UPON SENSING CONDENSATE.
- PROVIDE FLEXIBLE CONNECTION AT INLET AND DISCHARGE OF AHU TO ISOLATE FAN. USE HEAT RESISTANT MATERIAL.
- PROVIDE TXV, VARIABLE SPEED ECM MOTOR, TIME DELAY RELAY AND LOW AMBIENT COOLING TO 14°F.
- PROVIDE VIBRATION ISOLATION FOR AHU AND CU.
- PROGRAM THERMOSTATS TO OPERATE AT 80°/55° CLGHTG DURING OCCUPIED HOURS OF OPERATION AND 85°/50° CLGHTG DURING UNOCCUPIED HOURS OF OPERATION.

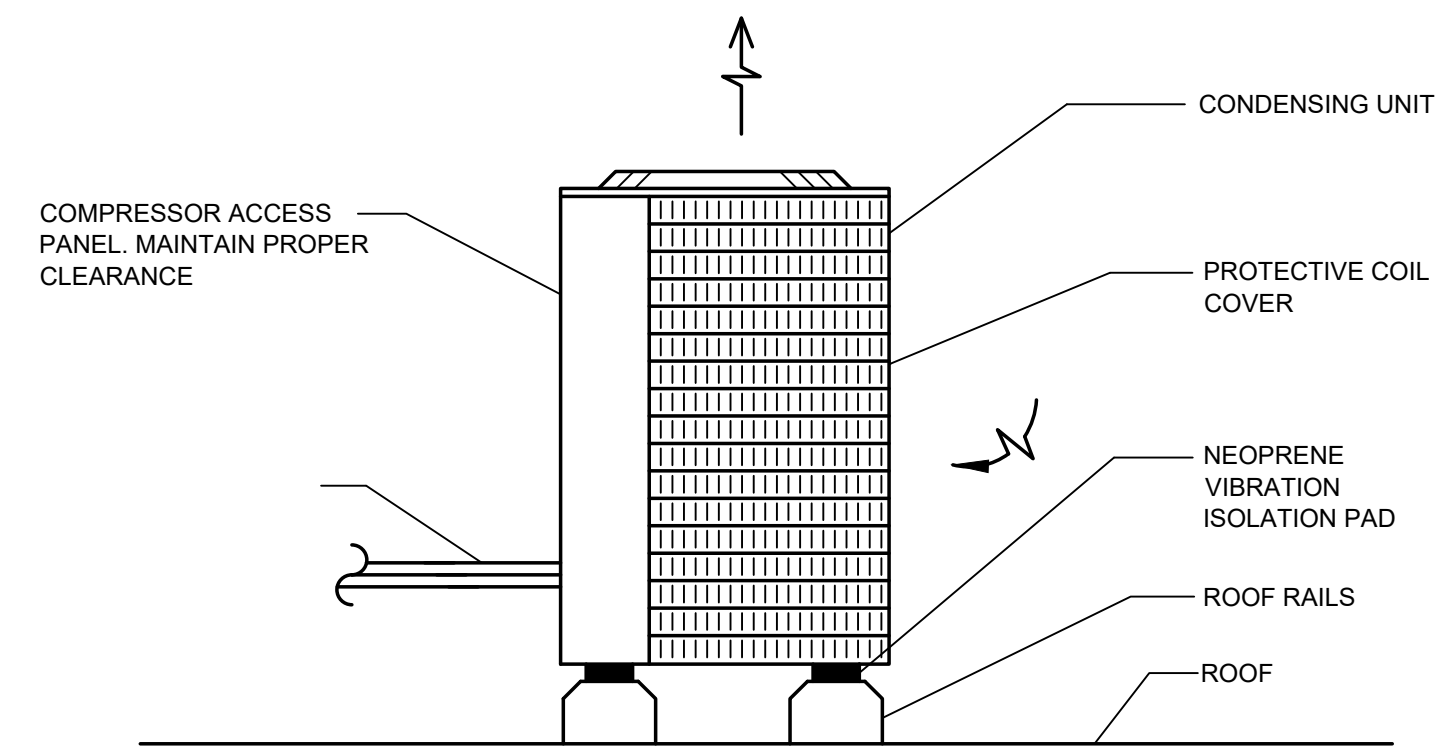


1 CEILING MOUNTED EXHAUST FAN TO WALL CAP DETAIL
M201 NOT TO SCALE

NOTE:
1. PROVIDE VARIABLE SPEED SWITCH ON THE SIDE OF THE CASING FOR FINAL AIR BALANCE.

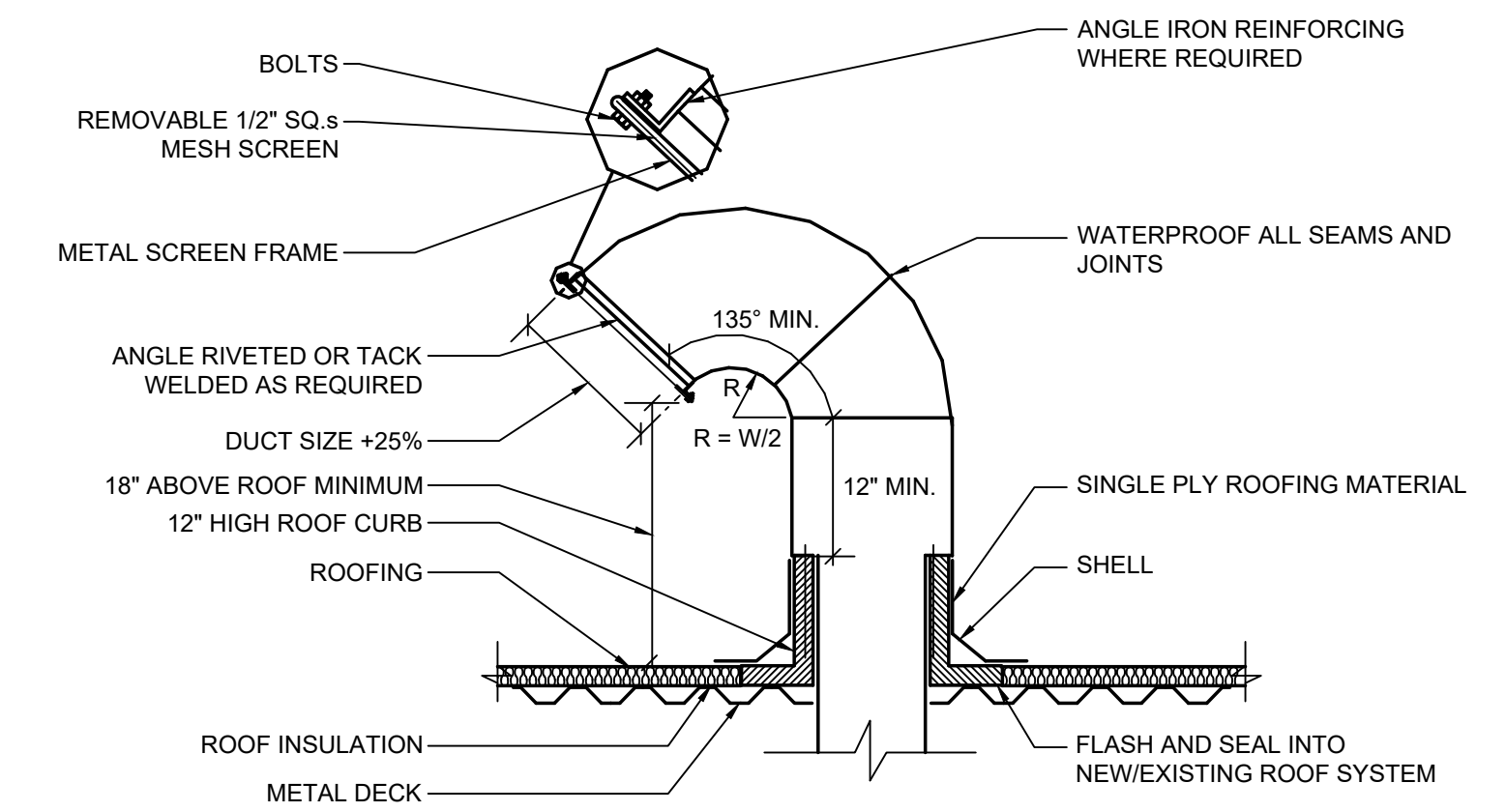


2 PIPE PORTAL DETAIL
M201 NOT TO SCALE



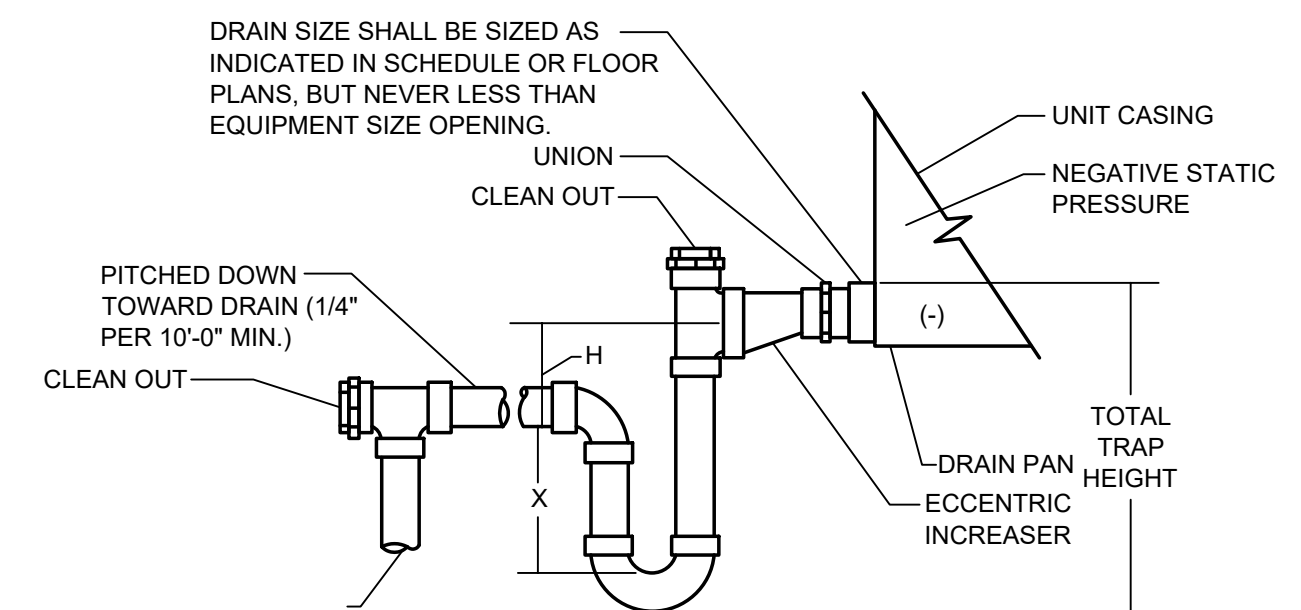
3 ROOF MOUNTED CONDENSING UNIT DETAIL
M201 NOT TO SCALE

NOTE:
1. ROOF RAILS SHALL BE SECURELY FASTENED TO THE ROOF AND FLASHED BY THE ROOFING CONTRACTOR.
2. ATTACH UNIT TO ROOF RAILS WITH THEFT RESISTANT ATTACHMENTS.



4 GOOSENECK THRU FLAT ROOF DETAIL
M201 NO SCALE

TRAP SIZING
"H" MUST EQUAL 1 INCH PLUS CASING STATIC PRESSURE
"X" = 1/2 "H"
TOTAL TRAP HEIGHT = "X" + "H" + (1.5 X PIPE DIAMETER) + INSULATION THICKNESS



5 A/C CONDENSATE DRAIN TRAP ASSEMBLY DETAIL - TYPICAL DRAW-THROUGH OR NEGATIVE PRESSURE
M201 NOT TO SCALE

DIVISION OF MECHANICAL/ ELECTRICAL WORK		
ITEM	MECH/ DIV 22 AND 23	ELEC/ DIV 26
AUTOMATIC TEMPERATURE CONTROLS	FURNISH, INSTALL & WIRE	POWER WIRE
CONTROL PANELS FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
LOW VOLTAGE CONTROL WIRING FOR MECH EQUIP.	FURNISH & INSTALL	
LINE VOLTAGE CONTROL WIRING FOR MECH. EQUIP.	FURNISH, INSTALL & WIRE	
MECHANICAL FLOW SWITCHES	FURNISH, INSTALL & WIRE	
THERMOSTATS/ SENSORS	FURNISH, INSTALL & WIRE	
PIE & E/P SWITCHES	FURNISH, INSTALL & WIRE	
DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
MECHANICAL EQUIPMENT MONITORS	FURNISH & INSTALL	POWER WIRE
MANUAL STARTERS FOR MECHANICAL EQUIPMENT	FURNISH & INSTALL	POWER WIRE
MAGNETIC STARTERS FOR MECHANICAL EQUIPMENT	FURNISH	INSTALL & POWER WIRE
MOTOR CONTROL CENTERS	CONTROL WIRING	FURNISH, INSTALL & POWER WIRE
VARIABLE SPEED CONTROLLERS	FURNISH & INSTALL	POWER WIRE
MOTORIZED DAMPERS & VALVES	FURNISH, INSTALL & WIRE	
DUCT SMOKE DETECTORS	INSTALL	FURNISH & WIRE
HEAT TRACE CABLE FOR PIPING	FURNISH & INSTALL	POWER WIRE
OIL/ GAS EMERGENCY SHUT-OFF SWITCHES		FURNISH, INSTALL & POWER WIRE
SPRINKLER FLOW & TAMPER SWITCHES	BY SPRINKLER CONTRACTOR	WIRE

GENERAL PLUMBING DATA

GENERAL INFORMATION

A. GENERAL

- CONFORM TO GENERAL AND SPECIAL CONDITIONS OF CONTRACT.
- SPECIFICATIONS ARE APPLICABLE TO CONTRACTORS AND/OR SUBCONTRACTORS.
- THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF THE BID SHALL INDICATE SUCH KNOWLEDGE.
- VISIT SITE, CHECK FACILITIES AND CONDITIONS.
- SYSTEMS SHALL BE COMPLETE AND PLACED IN OPERATION.
- EACH CONTRACTOR SHALL PROVIDE FOR HIS OWN CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF RUBBISH DAILY. CONTRACTOR SHALL PROTECT THEIR WORK AND EXISTING OR ADJACENT PROPERTY AGAINST WEATHER, TO MAINTAIN THEIR WORK, MATERIALS, APPARATUS AND FIXTURES FREE FROM INJURY OR DAMAGE. ANY WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION REQUIRED, SHALL BE REMOVED AND REPLACED WITH NEW WORK AT THE CONTRACTOR'S EXPENSE.
- CONTRACTORS SHALL CONFIRM AND COMPLY WITH UTILITY COMPANY REQUIREMENTS, COORDINATE CONNECTION POINTS IN FIELD.
- ARRANGE FOR AND OBTAIN OWNER'S AND INSURANCE REPRESENTATIVE'S PERMISSION FOR ANY SERVICE SHUTDOWNS.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN.
- PIPING, CONTROLS, ETC. SHALL NOT BE INSTALLED, OR ROUTED ABOVE, ELECTRICAL PANELS AND EQUIPMENT OR THROUGH ELEVATOR MACHINE ROOMS.
- THE CONTRACTOR SHALL COORDINATE AND PROVIDE A WRITTEN LISTING OF ELECTRICAL CHARACTERISTICS OF PLUMBING EQUIPMENT TO ELECTRICAL CONTRACTOR PRIOR TO ORDERING OF EQUIPMENT. ADDITIONAL COMPENSATION WILL NOT BE MADE FOR LACK OF CONTRACTOR COORDINATION OF EQUIPMENT'S ELECTRICAL CHARACTERISTICS.
- DURING THE BUILDING CONSTRUCTION SOME EXISTING INSTALLATION MAY BE EXPOSED THAT WILL HAVE TO BE CHANGED, ALTERED, REROUTED AND/OR ABANDONED. ANY SUCH WORK WHICH COMES UNDER THE JURISDICTION OF THIS CONTRACTOR SHALL BE DONE BY THIS CONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNER.
- WORK RELATED TO THE EXISTING BUILDING SHALL BE COORDINATED TO MINIMIZE INTERFERENCE OR INTERRUPTION OF NORMAL BUILDING USE BY OWNER. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR PHASING REQUIREMENTS.
- THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING CONDITIONS THAT MAY AFFECT THE BID. ADDITIONAL COMPENSATION WILL NOT BE PROVIDED FOR FAILURE TO REVIEW EXISTING CONDITIONS PRIOR TO BIDDING.

B. CODES, PERMITS, STANDARDS AND REGULATIONS

- CONFORM TO APPLICABLE CODES (LOCAL, STATE, NATIONAL CODES, NFPA, OSHA, ETC.), GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND APPLICABLE STANDARDS.
- OBTAIN PERMITS AND PAY FEES. ARRANGE FOR REQUIRED TESTS, INSPECTIONS AND APPROVALS, PROVIDE COPIES OF INSPECTIONS, AND APPROVALS TO THE ARCHITECT-ENGINEER.

C. RELATED WORK SPECIFIED ELSEWHERE

- OPENINGS AND CHASES, WHEN SHOWN ON ARCHITECTURAL DRAWINGS.
- TEMPORARY WATER SERVICE, SANITARY FACILITIES, FIRE PROTECTION AND HEATING DURING CONSTRUCTION.
- POURED-IN-PLACE CONCRETE.
- FINISH PAINTING.
- ELECTRIC POWER WIRING.

D. DRAWINGS

- THE SYSTEMS SHOWN ON DRAWINGS ARE DIAGRAMMATIC. CONFIRM DIMENSIONS BY FIELD MEASUREMENT.
- THE EXACT LOCATIONS FOR APPARATUS, FIXTURES, EQUIPMENT AND PIPING WHICH IS NOT COVERED BY DRAWINGS, SHALL BE OBTAINED FROM THE ARCHITECT OR HIS REPRESENTATIVE IN THE FIELD, AND THE WORK SHALL BE LAID OUT ACCORDINGLY.
- DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT ONE ANOTHER. ANY MATERIALS OR LABOR CALLED FOR IN ONE BUT NOT THE OTHER SHALL BE PROVIDED.

PLUMBING LEGEND AND ABBREVIATIONS		
SYMBOL	ABRV.	DESCRIPTION
	SAN., W.	SANITARY PIPING
	V	VENT PIPING
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
		PIPE UP
		PIPE DOWN
		PIPE TEE DOWN
		CAPPED PIPE
		PIPE UNION
		BALL VALVE OR SHUTOFF VALVE
		BALL VALVE OR SHUTOFF VALVE IN RISE
	MV	MIXING VALVE
	CV	CHECK VALVE
		"Y" TYPE STRAINER
	BFP	BACK FLOW PREVENTER
		HOSE BIB OR HOSE END DRAIN VALVE
	CO	CLEAN OUT, EXPOSED
	#	DRAWING NOTE
	XX	REVISION NUMBER
	#	PART PLAN NUMBER
	X-###	SHEET NUMBER WHERE PART PLAN IS FOUND
		CONNECTION POINT, NEW TO EXISTING
	DISC.	POINT OF DISCONNECTION
	IN. W.C.	INCHES WATER COLUMN
	UNO	UNLESS NOTED OTHERWISE
	GW	GREASE WASTE DRAIN LINE
	FCO	FLOOR CLEAN OUT
	WCO	WALL CLEAN OUT
	COTG	CLEAN OUT TO GRADE
	A.F.F.	ABOVE FINISHED FLOOR ELEVATION
	B.F.F.	BELOW FINISHED FLOOR ELEVATION
	F.F.E.	FINISHED FLOOR ELEVATION
	DN.	DOWN
	VTR	VENT THROUGH ROOF TERMINATION
	ETR	EXISTING TO REMAIN
	RX	REMOVE EXISTING
	TBR	TO BE RELOCATED



Middletown Shopping Center 2
 1725 Lake Seymour Drive
 Middletown, Delaware 19709

SHEET INFO:

PLUMBING DATA SHEET

REV	REV DATE	DESCRIPTION
DATE	2022.01.19	
PROJECT NO.	2022159	
SCALE	NONE	
PROJ. MOR.	AMAS	
DRAWN BY	PLG	
SHEET NUMBER:		

P001

DRAWING NOTES: (#)

1. 1" DOMESTIC WATER SERVICE; REFER TO CIVIL FOR CONTINUATION.
2. 1" CW TO BACKFLOW PREVENTER (BFP). NO CONNECTIONS SHALL BE MADE UPSTREAM OF BFP.
3. ASSE 1015 BFP MOUNTED ON WALL AT A HEIGHT NOT TO EXCEED 60" A.F.F.
4. 1" CW CONNECTION FOR FUTURE TENANT FIT-OUT.
5. 3/4" CW UP AND ROUTED ABOVE RESTROOM CEILING TO SERVE RESTROOM.
6. 1" CW UP AND ROUTED TIGHT TO UNDERSIDE OF STRUCTURE.

SCALE:

FOR REVIEW
ONLY NOT FOR
CONSTRUCTION

CONSULTANTS:



Allen + Shariff
MEP Engineering
Project Management
205 East Market Street
Salisbury, Maryland 21801
443.545.1300

Middletown Shopping Center 2

1725 Lake Seymour Drive
Middletown, Delaware 19709

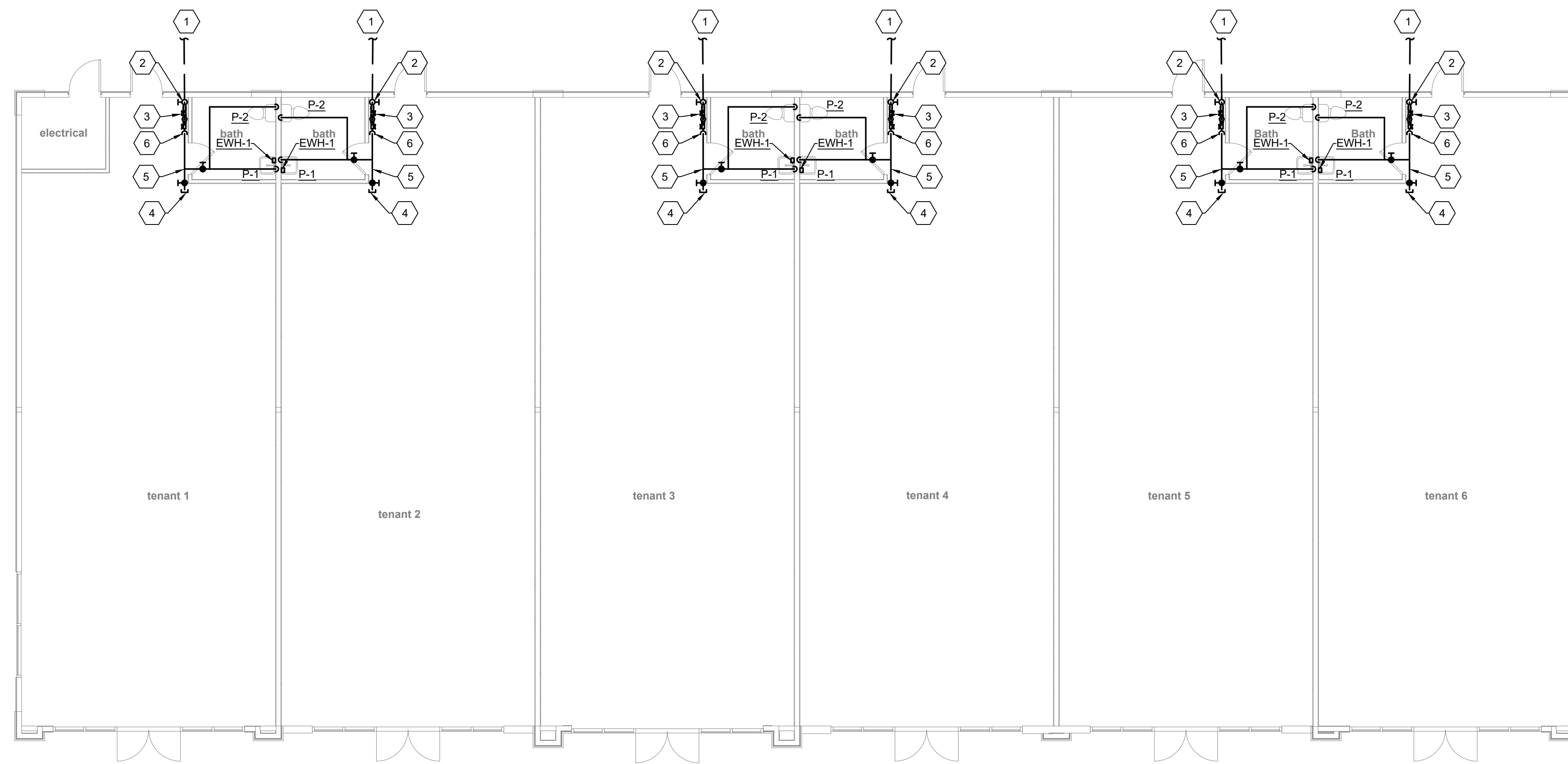
SHEET INFO:

PLUMBING SUPPLY
PLAN AND RISER
DIAGRAM

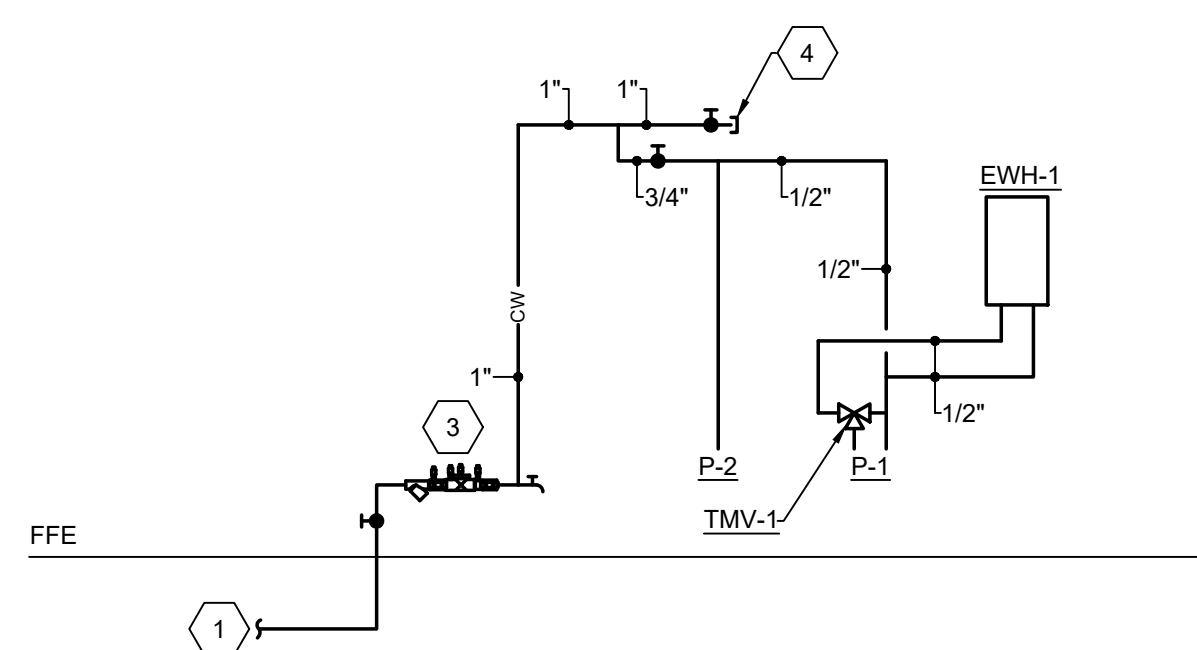
REV	DATE	DESCRIPTION

SHEET NUMBER:

P101

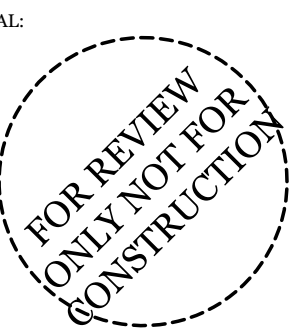


1 PLUMBING SUPPLY FLOOR PLAN
P101 1/8" = 1'0"



2 TYPICAL DOMESTIC RISER DIAGRAM
P101 SCALE: NONE; W.S.F.U.'S = 4 (NOT INCLUSIVE OF FUTURE FIT-OUT)



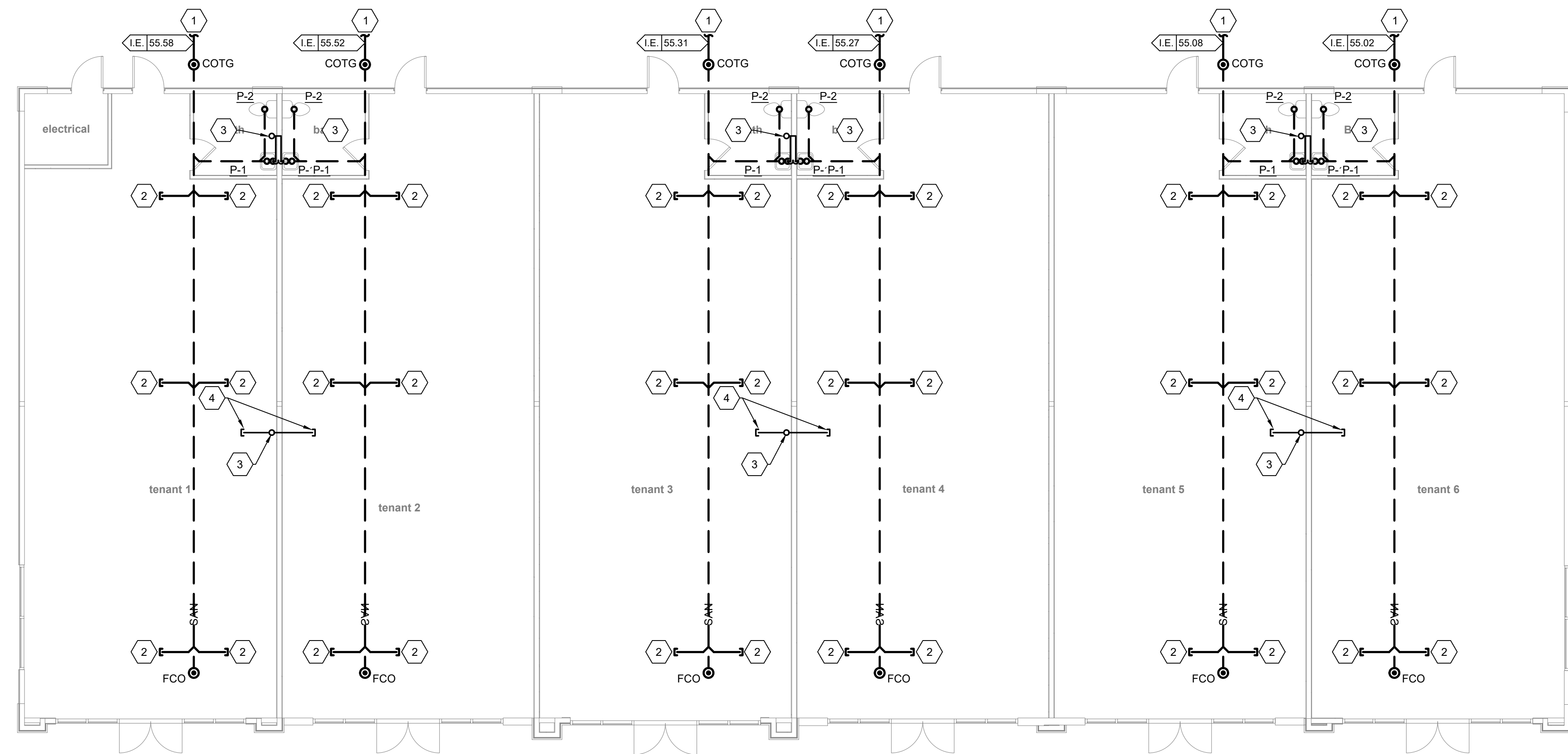


GENERAL NOTES:

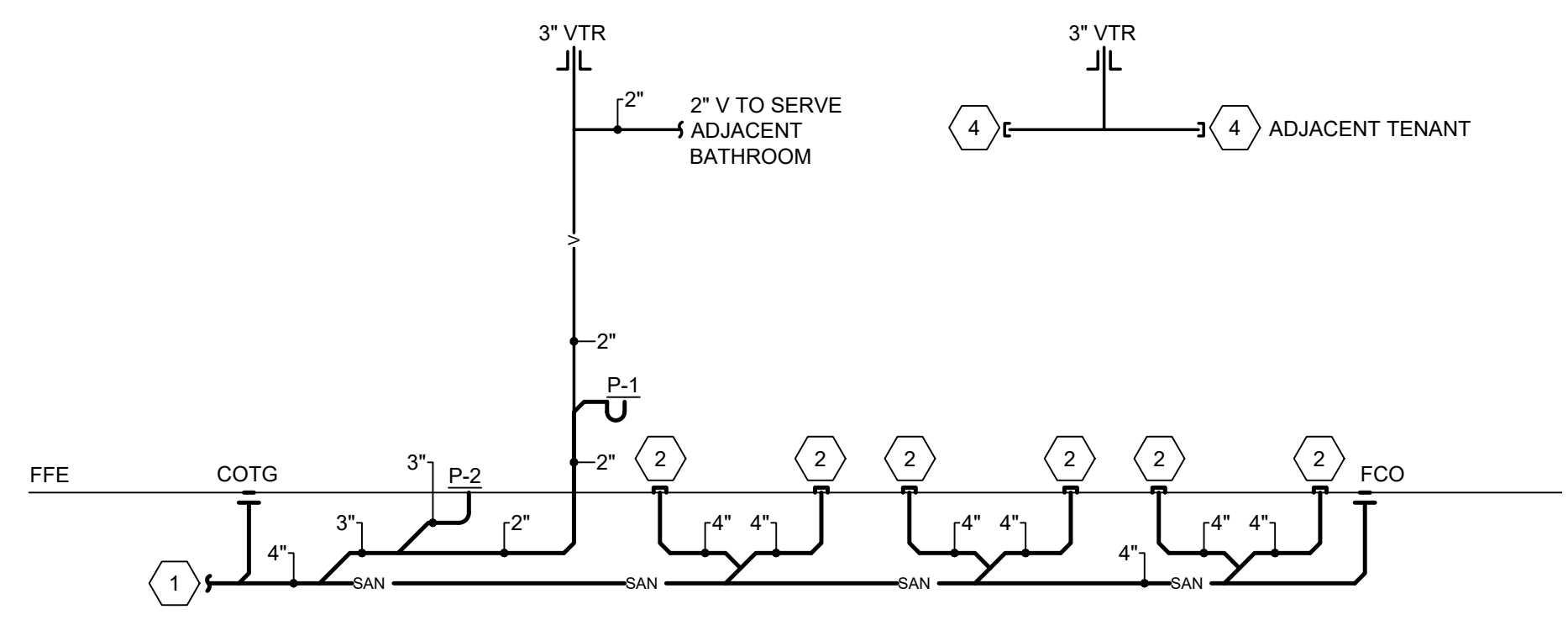
A. FINISHED FLOOR ELEVATION = 64.90'.

DRAWING NOTES: (#)

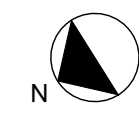
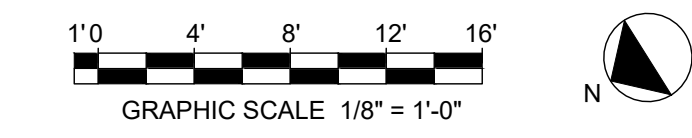
1. 4" SANITARY DRAIN, REFER TO CIVIL FOR CONTINUATION.
2. 4" SAN CAPPED FOR FUTURE TENANT FIT-OUT.
3. 3" VTR.
4. 2" V STUBBED AND CAPPED FOR FUTURE TENANT FIT-OUT.



1 PLUMBING DRAINAGE FLOOR PLAN
P201 1/8" = 1'0"



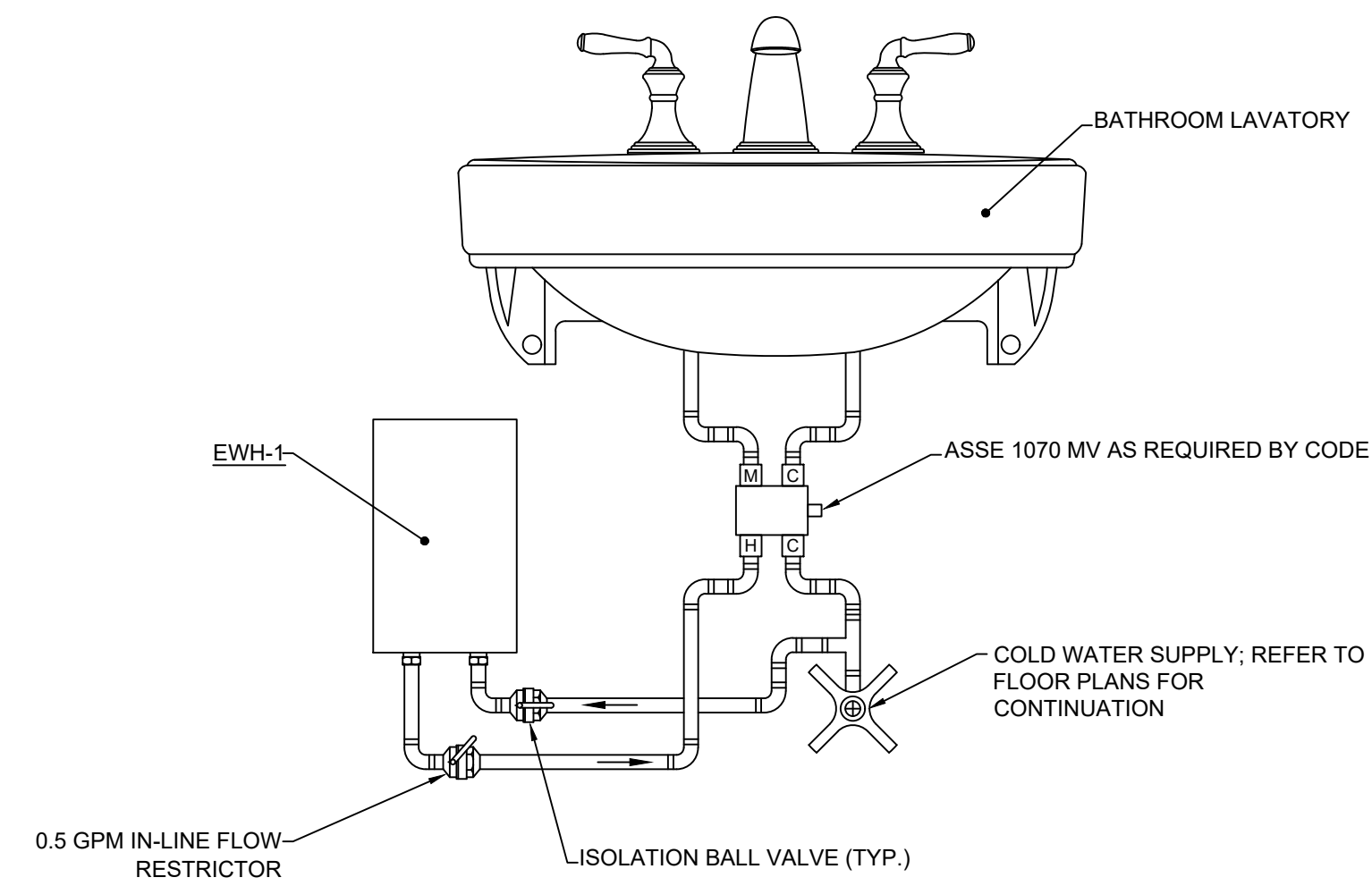
2 TYPICAL SANITARY RISER DIAGRAM
P201 SCALE: NONE; W.S.F.U.'S = 5 (NOT INCLUSIVE OF FUTURE FIT-OUT)



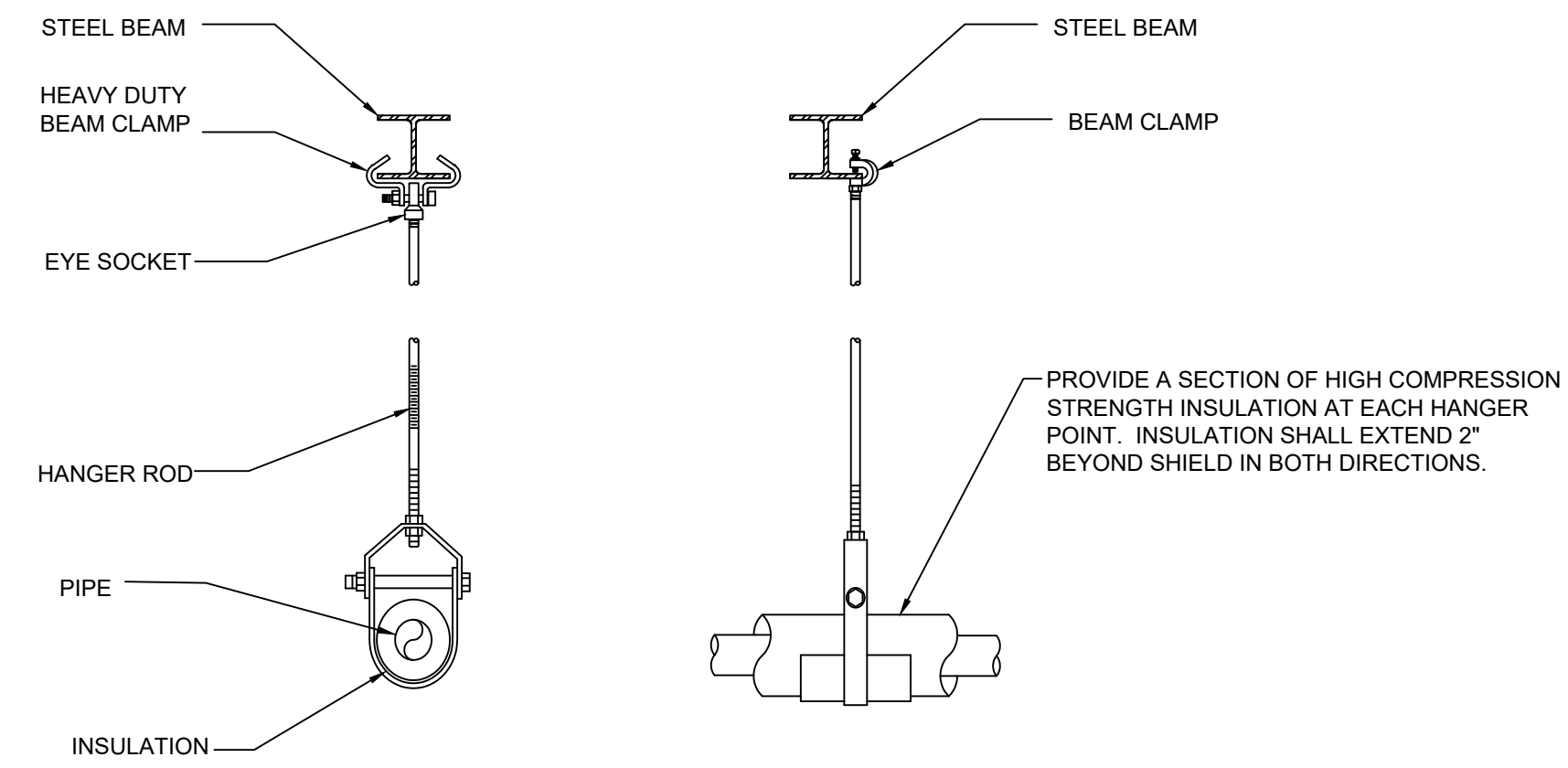
FOR REVIEW
ONLY NOT FOR
CONSTRUCTION

CONSULTANTS:
Allen + Shariff
Project Management
MEP Engineering
205 East Market Street
Salisbury, Maryland 21801
443.545.1300

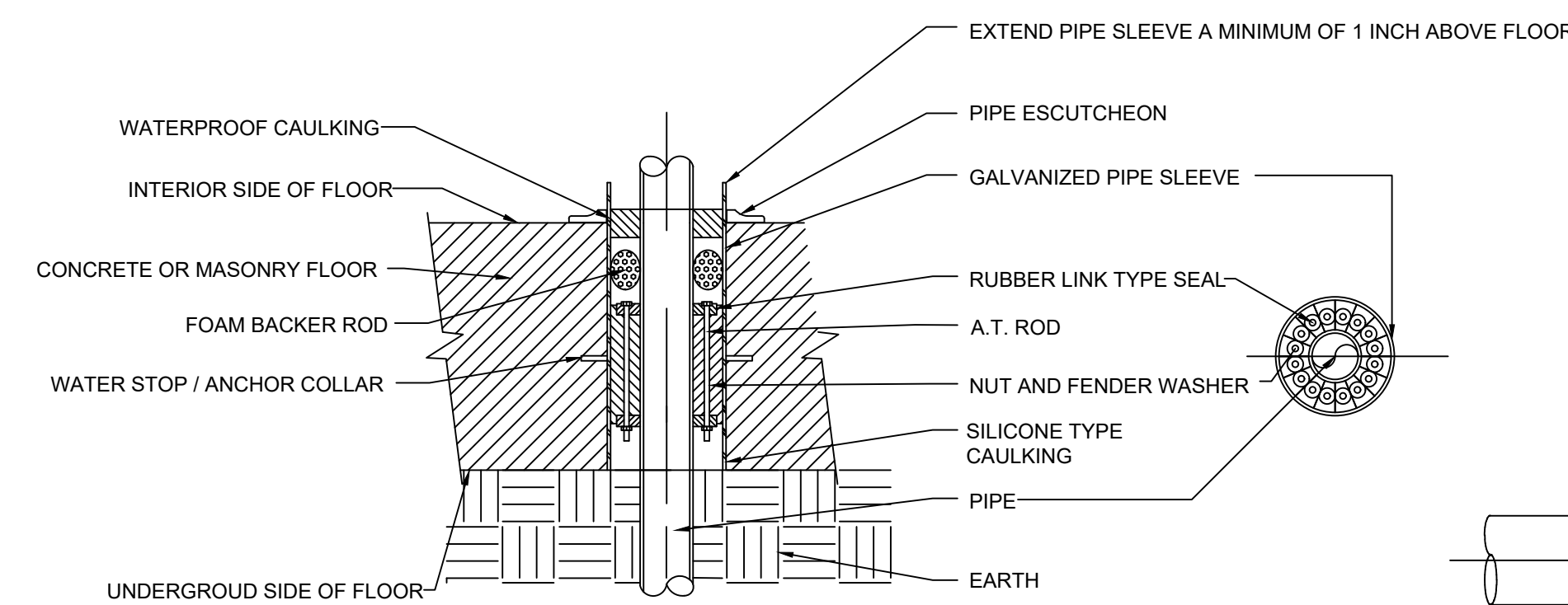
Middletown Shopping Center 2
1725 Lake Seymour Drive
Middletown, Delaware 19709



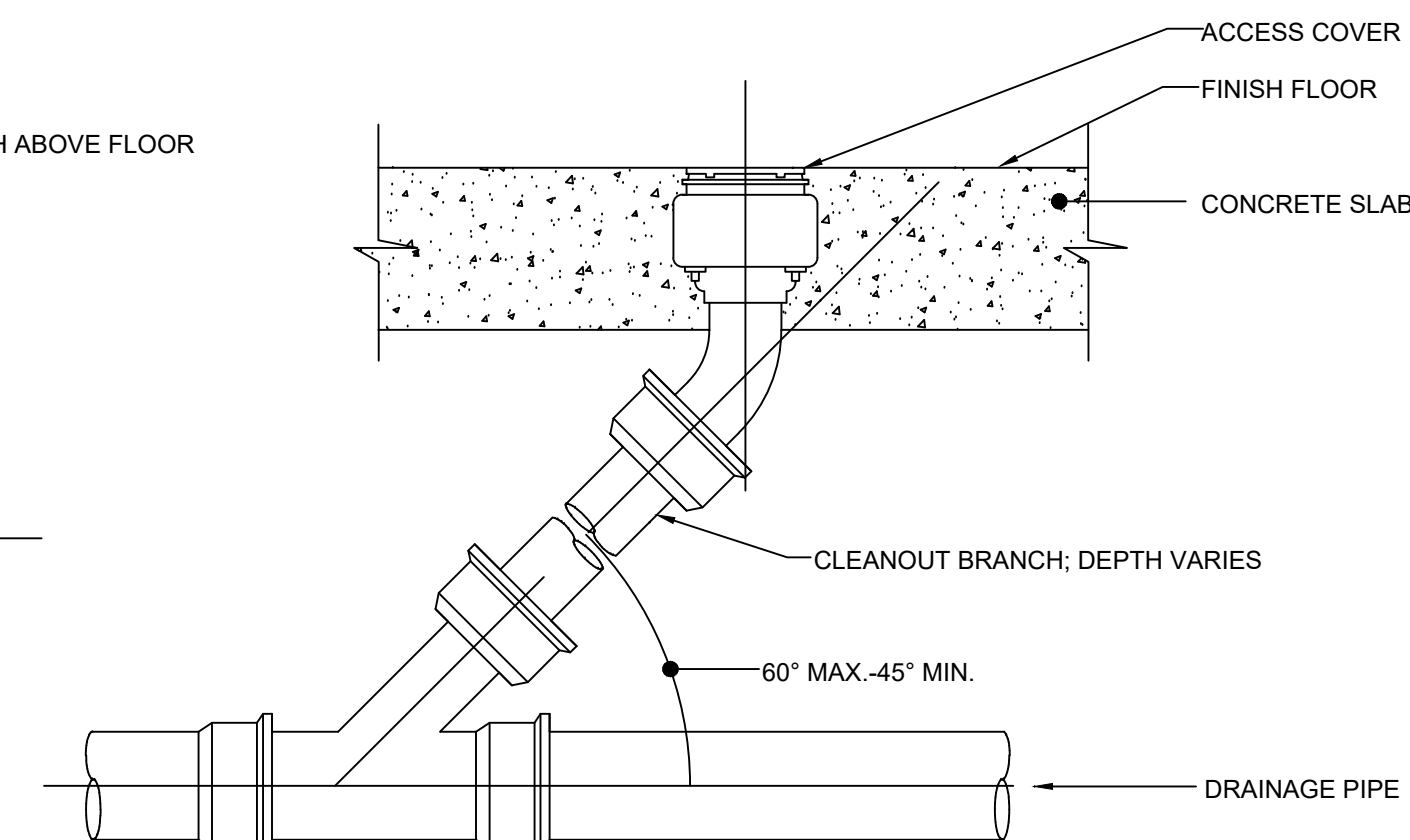
1 ELECTRIC INSTANTANEOUS WATER HEATER DETAIL
P301 NOT TO SCALE
NOTES:
1. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FURTHER INSTALLATION REQUIREMENTS.



2 CLEVIS PIPE HANGER - STEEL CONSTRUCTION
P301 NOT TO SCALE



3 UNDERGROUND PIPE SLEEVE DETAIL
P301 NOT TO SCALE



4 TYPICAL FLOOR CLEAN OUT DETAIL
P301 NOT TO SCALE
NOTES:
1. PROVIDE EXTRA HEAVY DUTY POLISHED BRONZE OR NICKEL BRONZE COVER IN FINISHED AREAS ONLY; CAST IRON IN UNFINISHED AREAS.
2. FLOOR CLEANOUT SHOWN. CLEANOUT AT GRADE SIMILAR EXCEPT PROVIDE 12"x12"x6" D CONCRETE BLOCK AT GRADE.

SHEET INFO:

PLUMBING DETAILS

REV	DATE	DESCRIPTION
DATE:	2022.01.19	
PROJECT NO.	2022159	
SCALE:	NONE	
PROJ. MGR.	JMAS	
DRAWN BY:	PLG	
SHEET NUMBER:		

P301

PLUMBING FIXTURE SCHEDULE (BASIS OF DESIGN)												
DESIGNATION	FIXTURE TYPE	C.W.	H.W.	WASTE	MANUFACTURER	MODEL NO.	TRIM	DRAIN	TRAP	SUPPLY	ACCESSORIES	REMARKS
P-1	LAVATORY - WALL MOUNTED; ADA	1/2"	1/2"	1-1/4"	KOHLER	K-1728	CHICAGO FAUCETS / 420-ABCP	GRID DRAIN W/ OVERFLOW	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-1/4" SUPPLIES W/ 1/4" HANDLE ISOLATION VALVES	TMV-1	1, 2, 3, 4
P-2	WATER CLOSET - FLOOR MOUNTED TANK TYPE; ADA	1/2"	-	3"	KOHLER	K-3493 OR K-3493-RA		-	INTEGRAL	BRASSCRAFT B1-1/4" DL SUPPLY W/ 1/4" HANDLE ISOLATION VALVE	BEMIS 1955SSTFR SEAT	1, 2, 4, 5, 6

REMARKS

- PROVIDE ALL REQUIRED COMPONENTS FOR COMPLETE FIXTURE ROUGH-IN, I.E., SUPPLIES, STOPS, TRAPS, CARRIERS, GRID DRAINS, TAILPIECES, ETC. NOT ALL REQUIRED COMPONENTS ARE SPECIFIED ABOVE. CARRIERS FOR LAVATORIES AND WATER CLOSETS SHALL COMPLY WITH ANSI STANDARD A112.6.1M AND PLUMBING DRAIN INSTITUTE (PDI) ARTICLE "MINIMUM SPACE REQUIREMENTS FOR ENCLOSED PLUMBING FIXTURE SUPPORTS."
- FIXTURES SHALL BE ADA COMPLIANT. PROVIDED WITH ADA COMPLIANT ACCESSORIES. MOUNT ADA COMPLIANT. SEE ARCHITECTURAL PLANS FOR ELEVATIONS.
- PROVIDE SKAL+GUARD INSULATING DEVICES ON EXPOSED UNDER-COUNTER PLUMBING.
- REFER TO RISER DIAGRAM FOR VENT PIPE SIZES AND CONNECTIONS.
- COORDINATE ADA GRAB BAR INSTALLATION WITH WATER CLOSET. GRAB BARS SHALL NOT INTERFERE WITH USE AND MAINTENANCE OF FIXTURE. PROVIDE EXTENSIONS AS REQUIRED.
- COORDINATE MODEL NUMBER WITH FIXTURE ORIENTATION. FLUSH VALVE SHALL BE INSTALLED ON OPEN / APPROACH SIDE OF FIXTURE.

DOMESTIC PIPING INSULATION SCHEDULE						
SYSTEM OR SERVICE	FLUID TEMPERATURE RANGE (DEG F)	INSULATION TYPE	INSULATION THICKNESS (INCHES)			
			PIPE SIZE (INCHES)			
			1/2" TO <1-1/2"	1-1/2" TO <4"	4" TO <8"	≥8"
DOMESTIC HOT WATER AND HOT WATER CIRCULATION	105 TO 140	MINERAL FIBER	1"	1-1/2"	1-1/2"	1-1/2"
DOMESTIC COLD WATER	40 TO 60	MINERAL FIBER	1/2"	1/2"	1"	1"

NOTES:

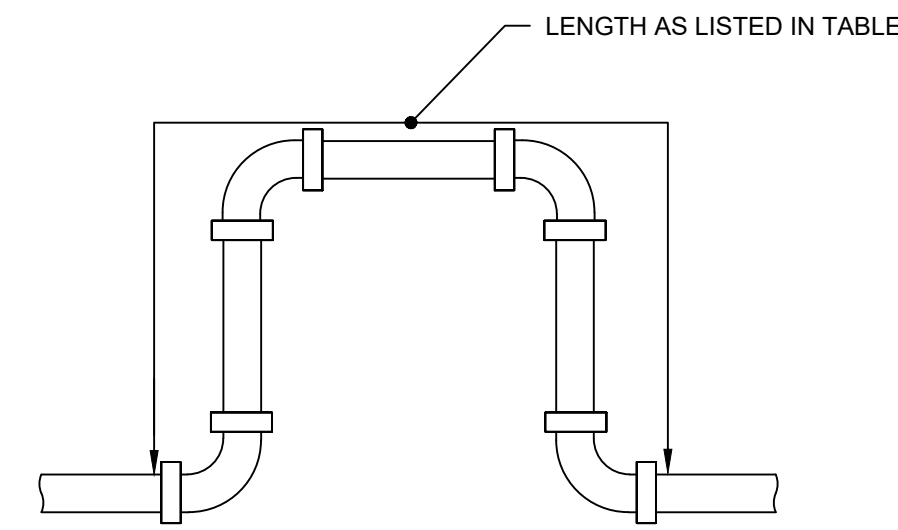
- NOT ALL PIPE SIZES LISTED ARE USED ON PROJECT.
- SIZES LISTED ARE BASED UPON 2018 IECC TABLE C403.11.3.
- ALL PIPING INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY FACTOR (K) OF 0.27 BTU-IN/HR-FT²-F.
- OTHER INSULATION MATERIAL THAT MEETS OR EXCEEDS THE PERFORMANCE CHARACTERISTICS OF THE LISTED MATERIAL MAY BE USED. CONTRACTOR SHALL PROVIDE INSULATION PERFORMANCE CUT SHEET PRIOR TO INSTALLATION.

ELECTRIC WATER HEATER SCHEDULE (BASIS OF DESIGN)								
DESIGNATION	DESCRIPTION	MANUFACTURER / MODEL#	LOCATION	STORAGE VOLUME	GPH RECOVERY	ELEMENT WATTAGE	VOLTAGE	REMARKS
EWH-1	ELECTRIC WATER HEATER	EEMAX / SPEX4208	UNDER LAVATORY	NA	0.5 GPM AT 56°F RISE	4.1 KW	208V/1Ø	1, 2, 3, 4

REMARKS:

- REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FURTHER INSTALLATION REQUIREMENTS.

MIXING VALVE SCHEDULE (BASIS OF DESIGN)					
DESIGNATION	DESCRIPTION	LOCATION	MANUFACTURER / MODEL#	OPTIONS	LOAD RANGE
TMV-1	POINT OF USE MIXING VALVE CONFORMING TO ASSE 1070	AT EACH LAVATORY	WATTS / LFMMV	INTEGRAL STRAINERS AND CHECKS ON INLET PIPING	0.5 GPM AT 0.8 PSI LOSS; MIXED TEMPERATURE RANGE: 105°F - 110°F



DEVELOPED LENGTH OF EXPANSION LOOP TO ACCOMMODATE 1-1/2" MOVEMENT

NOMINAL PIPE DIA.	LENGTH PIPING IN FEET		
	STEEL PIPE	COPPER PIPE	SCH. 40 CPVC
1/2"	4.7'	5.3'	1.7'
3/4"	5.2'	6.2'	1.9'
1"	5.9'	7.1'	2.1'
1-1/4"	6.6'	7.8'	2.3'
1-1/2"	7.0'	8.5'	2.5'
2"	7.9'	9.7'	2.8'
2-1/2"	8.7'	10.8'	3.1'
3"	9.6'	11.8'	3.4'
4"	10.8'	13.5'	3.8'

NOTES:

- EXPANSION LOOPS SHALL BE INSTALLED AT INTERVALS AS RECOMMENDED BY PIPE MANUFACTURER.
- PRE-MANUFACTURED EXPANSION JOINTS MAY BE USED IN-LIEU OF EXPANSION LOOPS.
- NOT ALL SIZES AND MATERIALS ARE USED ON PROJECT.

PIPE HANGER SPACING ^{C,D}		
PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (FEET)	MAXIMUM VERTICAL SPACING (FEET)
CAST-IRON PIPE	5 ^A	10
CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE AND TUBING, 1 INCH AND SMALLER	3	10 ^B
CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE AND TUBING, 1-1/4 INCH AND LARGER	4	10 ^B
COPPER OR COPPER-ALLOY TUBING, 1-1/4 INCH AND SMALLER	6	10
COPPER OR COPPER-ALLOY TUBING, 1-1/2 INCH AND LARGER	10	10
CROSS-LINKED POLYETHYLENE (PEX) PIPE 1 INCH AND SMALLER	2.67 (32 INCHES)	10 ^B
CROSS-LINKED POLYETHYLENE (PEX) PIPE 1-1/4 INCH AND LARGER	4	10 ^B
CROSS-LINKED POLYETHYLENE/ALUMINUM/CROSS-LINKED POLYETHYLENE (PEX-AL-PEX) PIPE	2.67 (32 INCHES)	4
POLYVINYL CHLORIDE (PVC) PIPE	4	10 ^B
STEEL PIPE	12	15

REMARKS:

- THE MAXIMUM HORIZONTAL SPACING OF CAST-IRON PIPE HANGERS SHALL BE INCREASED TO 10 FEET WHERE 10-FOOT LENGTHS OF PIPE ARE INSTALLED.
- FOR SIZES 2 INCHES AND SMALLER, A GUIDE SHALL BE INSTALLED MIDWAY BETWEEN REQUIRED VERTICAL SUPPORTS. SUCH GUIDES SHALL PREVENT PIPE MOVEMENT IN A DIRECTION PERPENDICULAR TO THE AXIS OF THE PIPE.
- THIS SCHEDULE IS BASED UPON 2021 INTERNATIONAL PLUMBING CODE TABLE 308.5. NOT ALL PIPE TYPES LISTED ARE USED IN PROJECT. PIPE MANUFACTURER'S SPACING RECOMMENDATIONS SHALL BE TAKEN INTO ACCOUNT WHEN INSTALLING HANGERS AND WHERE CONFLICTS BETWEEN THE CODE AND MANUFACTURER'S RECOMMENDATIONS OCCUR THE MOST STRINGENT SHALL BE APPLIED.
- HANGERS/SUPPORTS SHALL BE PROVIDED IN ADDITIONAL AREAS NOT NOTED ABOVE. AREAS INCLUDE BUT NOT LIMITED TO THE FOLLOWING: EACH SIDE OF WALL/FLOOR PENETRATION, EACH SIDE OF JOINT, AT A CHANGE IN DIRECTION, AND EACH SIDE OF A VALVE.



SCALE:



CONSULTANTS:



Middletown Shopping Center 2

1725 Lake Seymour Drive Middletown, Delaware 19709

SHEET INFO:

PLUMBING SCHEDULES

REV DATE DESCRIPTION
DATE: 2022.01.19
PROJECT NO.: 2022159
SCALE: NONE
FROM MOR: AMAS
DRAWN BY: PLG
SHEET NUMBER:

P401