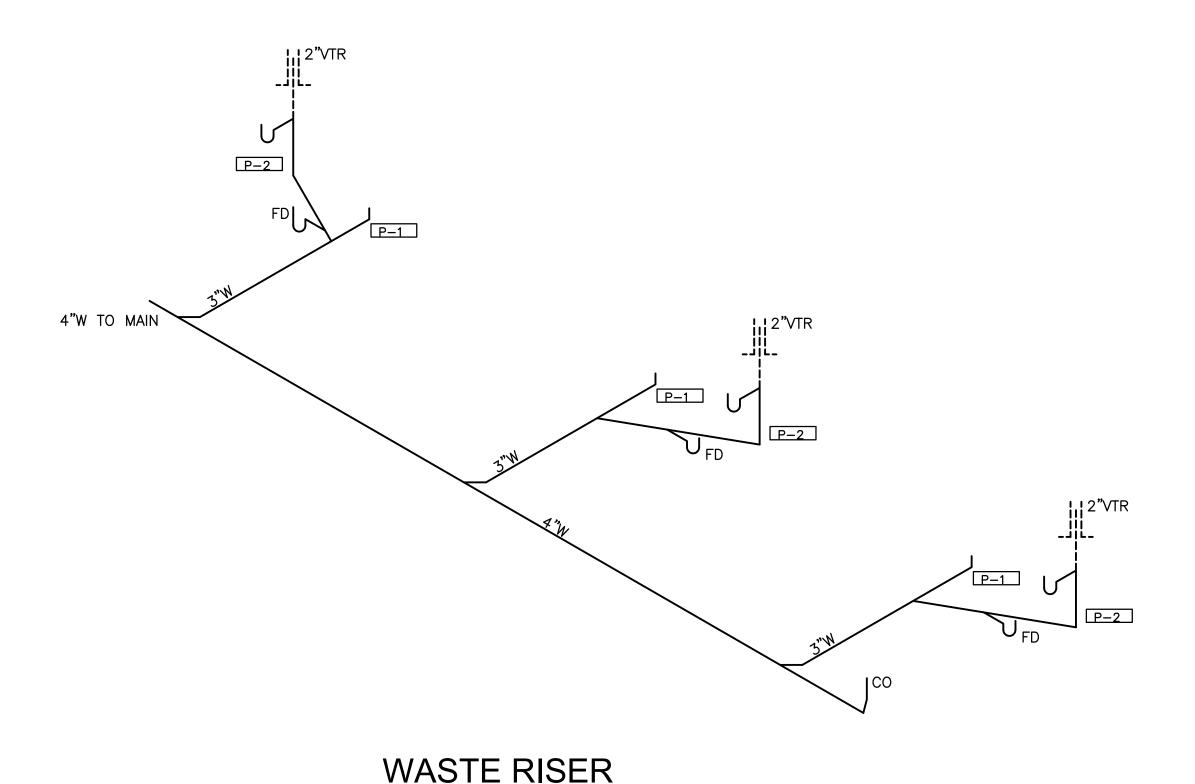
'			 T		
 P-#	FIXTURES	SPECIFICATIONS	PIPING	REQUI	RED
	TIATORES	SI EUI ICATIONS	WASTE	CW	HW
P-1	WATER CLOSET/ADA FLOOR MOUNTED TANK TYPE — 1.6 GPF	AMERICAN STANDARD "CADET RIGHT HEIGHT" MODEL 2298.012 VITREOUS CHINA TOILET WITH ELONGATED BOWL AND TANK WITH SIDE TRIP LEVER, 16 ½" RIM HEIGHT, 1.6 GPF, 12" ROUGH-IN, BOLT CAPS, COMPLIES WITH ANSI A112.19.2 & A117.1 SEAT: BEMIS/CHURCH DURAGUARD 2100 NSSC ANTI-MICROBIAL HEAVY DUTY WHITE ELONGATED OPEN FRONT SEAT WITH COVER. VALVE: McGUIRE NO. 2166 ¾"X12" FLEX CLOSET SUPPLY WITH STOP.	3"	1/2"	
P-2	LAVATORY — WALL MTD. SINGLE LEVER FAUCET ADA	AMERICAN STANDARD "LUCERNE" 0355.012 WALL MTD. WHITE VITREOUS CHINA 20"X18" LAVATORY WITH 4" FAUCET CENTERS. FAUCET: AMERICAN STANDARD "RELIANT +" MODEL NO. 7385 SINGLE LEVER LAVATORY FAUCET WITH CERAMIC DISC CARTRIDGE, INDEXED METAL LEVER, VANDAL RESISTANT 0.5 GPM AERATOR, %"O.D. COPPER INLETS, ADJUSTABLE HOT LIMIT SAFETY STOP. SUPPLIES: McGUIRE NO. 165 %"X12" FLEX ANGLE SUPPLY WITH STOP STRAINER: McGUIRE NO. 155—A GRID STRAINER WITH 1 ¼" TAILPIECE. TRAP AND SUPPLY INSULATION: McGUIRE PREWRAPED PROWRAP INSULATION KIT MODEL NO.2150	1-1/2"	1/2"	1/2"
FD	FLOOR DRAIN	FLUSH MOUNTED FLOOR DRAIN WITH STRAINER. COORDINATE WITH ARCHITECTURAL PLANS AND EQUIPMENT INSTALLER FOR EXACT POSITION.	3"		



SCALE: NONE

GENERAL PLUMBING SPECIFICATIONS
GENERAL: THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA BUILDING PLUMBIING CODE. SUBMIT THREE (3) COPIES OF PLUMBING INSPECTION CERTIFICATES TO OWNER. PLUMBING CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED BY GOVERNING AUTHORITIES FOR WORK DONE UNDER THIS CONTRACT. PROVIDE AND INSTALL ALL SUPPORTS, BRACKETS, MATERIALS AND LABOR AS REQUIRED FOR A COMPLETE AND ACCEPTABLE PLUMBING SYSTEM. PLUMBING CONTRACTOR SHALL CLEAN ALL PLUMBING FIXTURES AFTER ALL CONSTRUCTION IS COMPLETE.

ALL PENETRATIONS THROUGH NON-COMBUSTIBLE CONSTRUCTION SHALL BE PACKED WITH NON-COMBUSTIBLE FIRE STOPPING MATERIAL.

GRADE WASTE AND VENT PIPING 1/4 INCH PER FOOT WHERE POSSIBLE BUT NOT LESS THAN 1/8 INCH PER FOOT, UNLESS SPECIFICALLY DIRECTED. MAINTAIN INVERTS WHERE INDICATED.

WATER HEATER. ALL FITTINGS SHALL BE SWEAT TYPE WROUGHT COPPER WITH WALL THICKNESS EQUAL TO PIPE WALL THICKNESS. ALL JOINTS SHALL BE MADE WITH 95-5 SOLDER OR SILVABRITE 100. NO SOLDER W/LEAD SHALL BE PERMITTED.

ALL ROUGHING-IN PIPING SHALL BE RUN CONCEALED. ALL EXPOSED WATER LINES, STOPS, TRAP AND WASTE PIPE AT THE FIXTURES SHALL BE CHROME PLATED BRASS, WHICH FOR THE MOST PART WILL BE FURNISHED WITH THE FIXTURES. CHROME PLATED ESCUTCHEON RINGS SHALL BE USED AT EACH POINT OF ENTRANCE OF CHROME PIPING INTO WALLS, FLOORS, OR CEILINGS. EXPOSED WORK SHALL BE UNIFORM IN HEIGHT AND LOCATION FOR EACH TYPE FIXTURE.

WATER PIPING UNDER GROUND OUTSIDE OF BUILDING SHALL BE AT LEAST 24 INCHES BELOW THE FINISHED GRADE SURFACE.

THERMAL INSULATION: ALL HOT AND COLD WATER PIPING INSIDE BUILDING AND IN CRAWL SPACE. ALL HOT WATER PIPING BELOW GRADE. AND COLD WATER PIPING BELOW GRADE WITHIN 3'-0" OF OUTSIDE SHALL BE INSULATED WITH 1" THICK "ARMAFLEX" OR IMCOA WITH SEALED JOINTS OR PREMOLDED FIBERGLASS WITH VAPOR BARRIER JACKET. IN LIEU OF INSULATING WATER PIPING IN HEATED WALLS PIPING MAY BE ENCASED IN BATT INSULATION WITHIN THE WALL OR FLOOR/CEILING.

WATER HEATERS: WATER HEATERS SHALL BE UL LISTED AND COMPLETE WITH ALL STANDARD FEATURES, FIVE (5) YEAR TANK WARRANTY, GLASS-LINED TANK, FOAM INSULATION ON THE TANK, ANODE ROD, AUTOMATIC TEMPERATURE CONTROL, AND AUTOMATIC HIGH-LIMIT SAFETY CUTOFF.

EACH WATER HEATER SHALL BE PROVIDED WITH AN ASME APPROVED PRESSURE AND TEMPERATURE RELIEF VALVE. UNITS NOT INSTALLED WITH VACUUM BREAKER ON COLD WATER SUPPLY LINE SHALL BE PROVIDED WITH AGA CERTIFIED VACUUM RELIEF VALVE PER ANSI Z21.22. A GATE VALVE SHALL BE INSTALLED ON SAME FLOOR AS UNIT AND NO FURTHER THAN 3 FEET ON THE COLD WATER SUPPLY.

EACH WATER HEATER AND ITS INSTALLATION SHALL COMPLY WITH THE LATEST ISSUE AND ALL ADDENDA THERETO OF THE STATE BOILER INSPECTION LAWS AND REGULATIONS. ALL WIRING AND CONTROLS ASSOCIATED WITH THE HEATERS SHALL BE U.L. APPROVED AND IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.

EACH HEATER TANK SHALL BE FITTED WITH APPROVED "DIP" TUBE AND LABELED TO SHOW APPROVAL FOR INSTALLATION.

DISCHARGE RELIEF VALVE FROM EACH WATER HEATER SHALL BE PIPED FULL SIZE TO WITHIN SIX (6) INCHES OF THE FLOOR OVER A FLOOR DRAIN, DRIP PAN OR OTHER SAFE LOCATION. DISCHARGE PIPE SHALL BE SUPPORTED AND ANCHORED SO THAT IT WILL NOT PUT UNDUE STRAIN ON THE RELIEF VALVE BODY OR MOUNTING COUPLING.

SUBMITTAL: THE CONTRACTOR SHALL WITHIN (15) DAYS OF RECEIPT OF PROPERLY SIGNED CONTRACT SUBMIT TO THE ARCHITECT/ENGINEER FOR APPROVAL (5) COPIES OF A LIST OF SUPPLIES AND MANUFACTURER'S MATERIAL AND EQUIPMENT TO BE USED ON THIS PROJECT.

SUBSTITUTION OF MATERIALS AND/OR EQUIPMENT FOR THAT SPECIFIED WILL NOT BE ACCEPTED WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT/ENGINEER PRIOR TO RECEIPT OF BIDS.

GUARANTEE: THE PLUMBING CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER STATING THE DAY THE GUARANTEE BEGINS AND ENDS.

WATER HEATER (EWH): EEMAX MOD. SP 2412, 2.4 KW INSTANTANEOUS WATER HEATER BELOW SINK.

NOTE: PLANS SHOULD NOT BE SCALED FOR DIMENSIONS. COORDINATE ALL ROUGH IN DIMENSIONS WITH EQUIPMENT TO BE INSTALLED AND DIMENSIONED DRAWINGS INCLUDING KITCHEN EQUIPMENT PLANS IF AVAILIBLE. CONTACT ENGINEER BEFORE CONSTRUCTION WITH ANY CONFLICTS.

BASIS OF DESIGN: UNLESS OTHERWISE NOTED THE PURPOSE OF THESE DRAWINGS IS TO PROVIDE DIRECTION AND BASIS OF DESIGN TO A COMPETENT CONTRACTOR FAMILIAR WITH THE TYPE OF SYSTEMS BEING INSTALLED SUFFICIENT TO INDICATE OWNERS REQUESTS AND CODE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY, WHEN OTHERWISE UNDIRECTED, TO FOLLOW STANDARD INDUSTRY PRACTICES AND BASIC CODE COMPLIANCE INCLUDING, BUT NOT LIMITED TO, PROVIDING MATCHING REQUIRED ACCESSORIES TO THE SYSTEMS INDICATED, COORDINATING EXACT ROUTINGS AND LOCATIONS WITH OTHER TRADES AND THE OWNER, SELECTING CODE APPROVED MATERIALS, AND MAKING MINOR OFFSETS/ADJUSTMENTS BASED ON FIELD COORDINATION AND OWNER'S FIELD REQUESTS. CHANGE OF MANUFACTURER TO EQUIVALENT SYSTEMS, WITH OWNER'S APPROVAL, IS ACCEPTABLE. CONTACT ENGINEER WITH ANY CONFLICTS NOT COVERED BY THE ABOVE INSTRUCTIONS.

1. PROVIDE ALL MATERIALS AND LABOR NECESSARY FOR COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. WARRANTY ALL WORK AND ALL MATERIALS, EQUIPMENT AND DEVICES FOR A PERIOD OF ONE YEAR AFTER OWNER'S ACCEPTANCE.

2. WORK SHALL CONFORM TO OR MEET THE REQUIREMENTS OF THE MOST CURRENT EDITION OF: A. NORTH CAROLINA PLUMBING CODE B. ASPE

C. UL

- E. ALL FEDERAL, STATE AND LOCAL CODES AND ORDINANCES
- 3. DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE NOT INTENDED TO BE SCALED FOR DIMENSIONS, UNLESS DIMENSIONED.

4. ALL MATERIALS, EQUIPMENT AND DEVICES SHALL, AS A MINIMUM, MEET THE REQUIREMENTS OF UL WHERE UL STANDARDS ARE ESTABLISHED FOR THOSE ITEMS. ALL ITEMS SHALL BE CLASSIFIED BY UL AS SUITABLE FOR THE PURPOSE USED.

5. ALL ITEMS SHALL BE NEW, UNLESS NOTED OTHERWISE.

6. ALL MATERIALS AND EQUIPMENT SHALL BE CURRENT PRODUCTS BY MANUFACTURERS REGULARLY ENGAGED IN THE PRODUCTION OF SUCH PRODUCTS.

7. COORDINATE LOCATION OF PLUMBING WORK WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES.

8. INSTALL ALL EQUIPMENT AND MATERIAL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN PRINTED INSTRUCTIONS AND RECOMMENDATIONS.

9. COORDINATE WITH AND OBTAIN PERMITS AND INSPECTIONS FROM AUTHORITY HAVING JURISDICTION AND INCLUDE ALL FEES IN BID.

10. PROVIDE OWNER WITH CERTIFICATES OF FINAL INSPECTION AND ACCEPTANCE FROM AUTHORITY HAVING JURISDICTION.

11. ALL EQUIPMENT AND PIPE ABOVE CEILING SHALL BE SUPPORTED FROM BUILDING STRUCTURE ABOVE,

12. WHERE PIPES PENETRATE FIRE RATED BARRIERS (WALLS, FLOORS AND CEILINGS) SEAL OPENING AROUND PIPES AND DUCTWORK WITH U.L. LISTED FIRE STOPPING MATERIAL TO MAINTAIN THE FIRE RATING OF THE BARRIER. PER NC BUILDING CODE VOLUME 1, PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOORS OF NONCOMBUSTIBLE CONSTRUCTION SHALL BE FIRE-STOPPED WITH NONCOMBUSTIBLE MATERIAL.

13. PROVIDE EXPANSION-DEFLECTION JOINTS WHERE PIPE CROSSES BUILDING EXPANSION OR SEISMIC

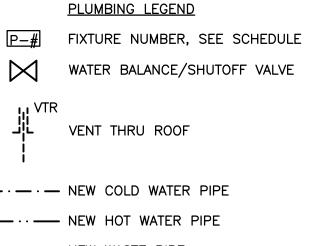
14. PRIOR TO BIDDING, THE CONTRACTOR AND HIS SUBCONTRACTORS SHALL VISIT THE JOBSITE AND SHALL FAMILIARIZE THEMSELVES WITH ALL CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED AND SHALL INCLUDE IN HIS BID ALL LABOR, MATERIAL AND OPERATIONS REQUIRED FOR A COMPLETE JOB. (NOTIFY OWNER AND ENGINEER OF ANY DISCREPANCIES PRIOR TO BID.)

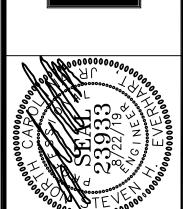
15. CLEANOUTS, LINE SIZE, UNO.

16. FLOOR DRAINS, LINE SIZE, UNO.

17. FLOOR DRAINS WITH SUBSCRIPT CO TO HAVE INTEGRAL CLEANOUT AND SHALL BE SIMILAR TO REGULAR FLOOR DRAIN SPECIFIED, UNO.

18. FLOOR DRAINS AND FLOOR SINKS SHALL BE PROVIDED WITH TRAP PRIMERS OR ALTERNATE METHODS AS APPROVED BY AUTHORITY HAVING JURSIDICTION.





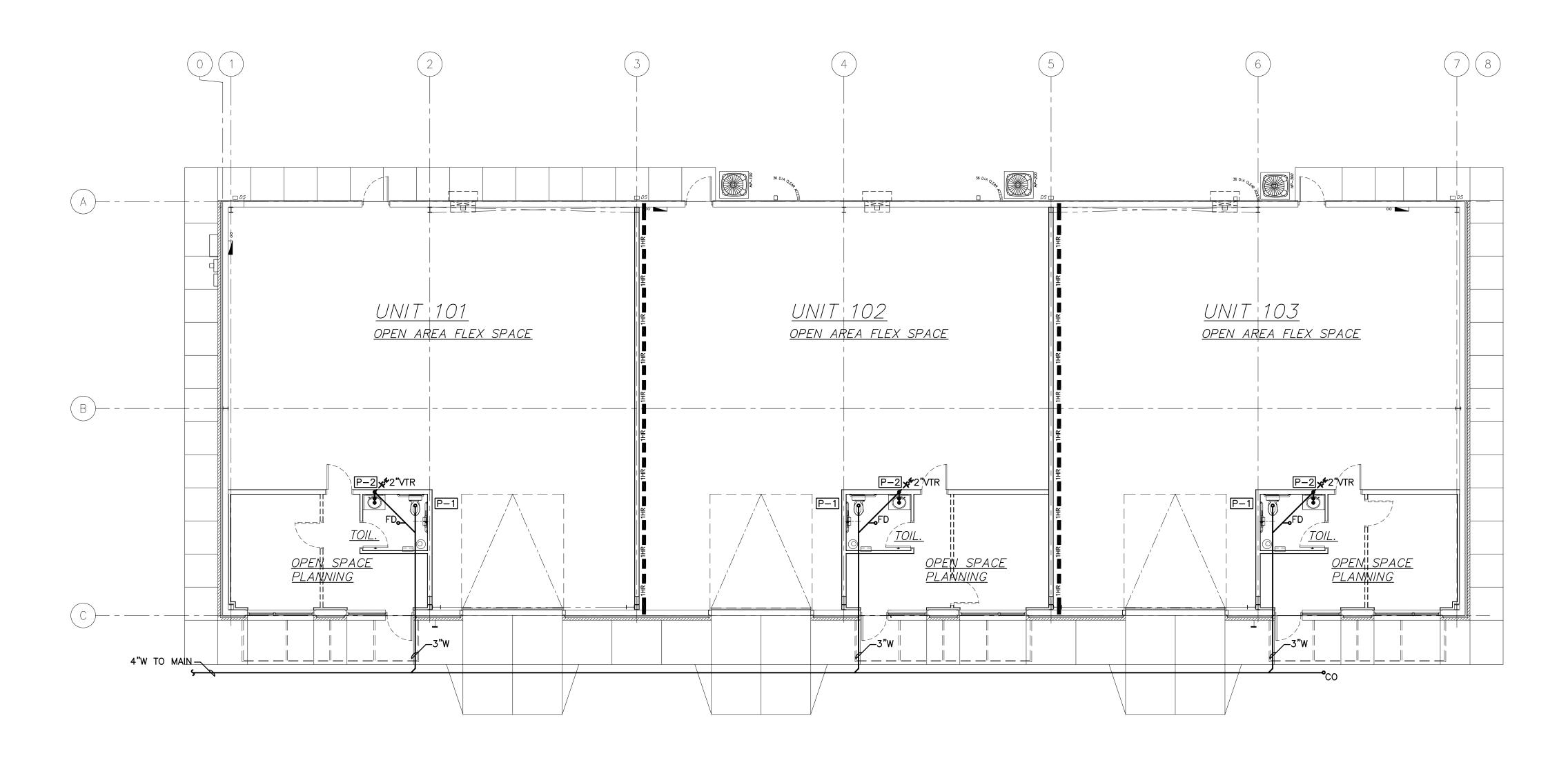




22 AUG, 20 ^{ob no.} TAWOOD/FLEX/1

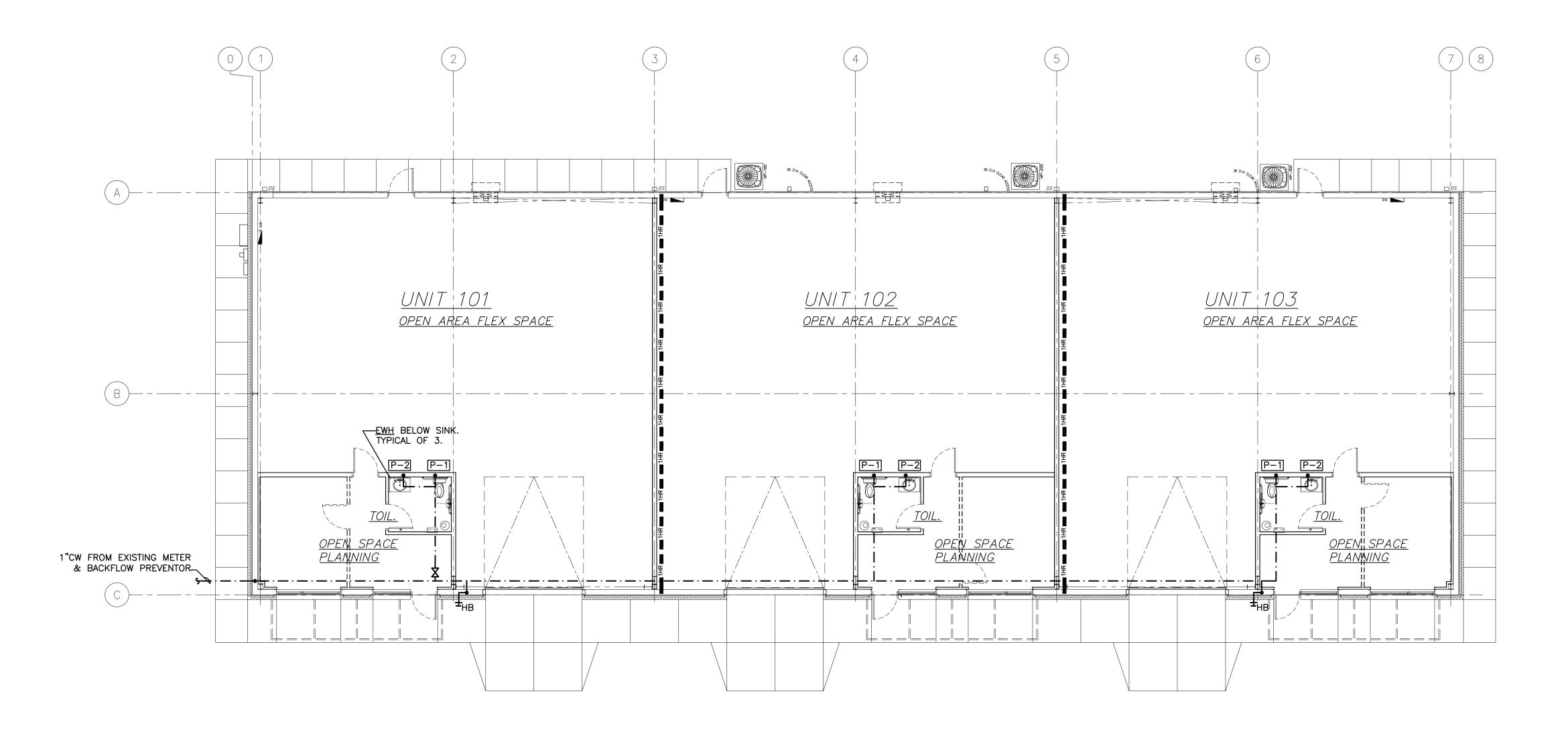
- · - · - NEW COLD WATER PIPE ----- NEW WASTE PIPE

---- NEW VENT PIPE



GRAPHIC BAR SCALE: (FOOT UNITS) SCALE: 1/8" = 1'-0"

OVERALL FLOOR PLAN — PLUMBING — WASTE



GRAPHIC BAR SCALE: (FOOT UNITS) $0 \ 2 \ 4 \ 8 \ 15$ $1 \ 3 \ 20$ SCALE: 1/8" = 1'-0"

OVERALL FLOOR PLAN — PLUMBING — WATER

T.A. Woods Business Center

6713 Netherlands Drive
Wilmington, North Carolina 28405

job no. TAWOOD/FLEX/19

PROJECT NO. 11105

CAROLOMA CONSULTING ENGINEERS, INC
P.O. 8033

S.22/19

VGINEERS, INC
P.O. 88443

TEL.(910) 270-3747 FAX.270-3

NC LICENSE NO. C-2546

S	PLIT SYSTEM HE	AT PUMP SC	HEDULE
UNIT	NUMBER	AHU-2TON	
AREA	A SERVED		
MAN	UFACTURER	TRANE	
MOD	EL NUMBER	TAM7A0A24	
UNIT	WEIGHT (LBS)	111	
	TOTAL AIR CFM	800	
	OUTSIDE AIR CFM	80	
FAN	FAN H.P.	1/3	
	EXT. S.P. (IN. H2O)	0.4	
	POWER SUPPLY	208/230/60/1	
S Z Z	TOTAL CAPACITY COOLING (BTUH)	23,200	
COOLING	SENSIBLE CAPACITY COOLING (BTUH)	16,600	
S	ENTERING AIR TEMP.	80/67	
	ENTERING AIR TEMP.	70 °F	
NG YT	HIGH TEMPERATURE (BTUH) 47 F DB	22,400	
TING	LOW TEMPERATURE (BTUH) 17°F DB	13,600	
HEAT	AUXILARY COIL CAPACITY	3.6/4.8 KW @ 208/240	
- 3	POWER SUPPLY	208/230/60/1	
	MINIMUM AMPACITY	25/29	
	MAX. OVERCURRENT PROTECTION	25/30	
	UNIT NUMBER	HP-2TON	
	MODEL NUMBER	4TWR024	
	UNIT WEIGHT	196	
AIR COOLED HEAT PUMP	ENTERING AIR TEMP.	95°F	
	FAN TYPE	PROPELLER	
AHA	FAN H.P.	1/8	
+	COMPRESSOR	RECIP	
	POWER SUPPLY	208/230/60/1	
	MINIMUM AMPACITY	15	
	MAX. OVERCURRENT PROTECTION	25	
ACC	ESSORIES	(1), (2), (3), (4)	

- (1) PROVIDE WALL MOUNTED, PROGRAMMABLE ELECTRONIC THERMOSTAT WITH AUTO CHANGEOVER.
- (2) PROVIDE RETURN DUCT SMOKE DETECTOR MOUNTED UPSTREAM OF O.A. INTAKE TO SHUTDOWN UNIT AND ACTIVATE VISUAL AND AUDIBLE SIGNAL AS REQUIRED.
- (3) PROVIDE STRIP HEAT SHUTOFF PER 403.2.4.1.1
- (4) SYSTEMS SELECTED MEET REQUIREMENTS UNDER SECTION 406 OF THE NORTH CAROLINA STATE BLILLDING CODE: ENERGY CONSERVATION CODE

	EDII10 OODE: E	NENOT CONSERV	WITTON OODE.		
P	AIR DIS	TRIBUT	ION DEVI	CE SCHEDUL	E
TAG	SERVICE	NECK SIZE	OVERALL SIZE	MODEL NUMBER	DESCRIPTION & ACCESSORIES
А	SUPPLY	8"ø	24 X 24	ASCD	1, 2, 3, 7, 8
В	RETURN	14"ø	24 X 24	80	1, 2, 3, 5

- (1) PRICE AIR DISTRIBUTION; OR APPROVED EQUAL.
- (2) ALUMINUM CONSTRUCTION, STANDARD WHITE FINISH.
- (3) T-BAR LAY-IN PANEL (4) SURFACE MOUNT BORDER.
 - UNLESS OTHERWISE NOTED.
- (5) CFM SHOWN IN GRILLE TAG IS MAXIMUM POSSIBLE WITH EXHAUST AND OUTSIDE AIR AT 0. (6) DOUBLE DEFLECTION GRILLE.
- (7) SQUARE FACE. ROUND NECK DIFFUSER
- (8) BUTTERFLY STYLE VOLUME CONTROL DAMPER.

E	EXHA	AUS'	T FAN S	CHEDU	JLE				
TAG	CFM	RPM	S.P. IN. W.G.	WATTS/HP	SONES	ELECTRIC	CONTROL	MANUFACTURER MODEL NUMBER	DESCRIPTION & ACCESSORIES
EF-1	75	700	.25	50 WATTS	3.0	120-1-60	WIRED WITH LIGHT	GREENHECK SP-B90	1, 2, 3
EF-2	3199	1750	.25	1/3 HP	22	120-1-60	SWITCHED	GREENHECK S2-18-415-A3	4

NOTE: FLEXIBLE DUCTWORK SHALL

MATCH DIFFUSER NECK SIZE

- (1) CABINET CEILING FAN, DIRECT DRIVE, CENTRIFUGAL, SPRING LOADED ALUMINUM BACKDRAFT DAMPER.
- (2) ALUMINUM, WHITE ENAMEL CEILING GRILLE.
- (3) ALUMINUM HOODED WALL CAP WITH BUILT-IN BIRDSCREEN AND DAMPER.
- (4) SIDEWALL PROPELLER EXHAUST FAN WITH MANUFACTURER'S WALL BOX INCLUDING BACKDRAFT DAMPER AND ALL REQUIRED GUARDS.

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

NAME:

TITLE:

Prescriptive ____ Energy Cost Budget _____

Thermal Zone	3A
Exterior design condi	
winter dry	
summer di	001 5 00 /701 5 110
Interior design condi	
winter dry	
summer di	
relative hu	
Building heating load	4.4.1.5
Building cooling load	
•	Conditioning System
Unitary	• ,
	description of unit
	heating efficiency 9.0 HSPF
•	cooling efficiency 15.0 SEER AVG.
	heat output of unitSEE_SCHEDULES
	cooling output of unit <u>SEE SCHEDULES</u>
boiler	cooling output of unit
boller	total boiler output. If oversized, state reason. N/A
chiller	total chiller capacity. If oversized, state reason.
list equipment efficie	encies N/A
List equipment emen	
motor hors	with motors (mechanical systems) sepowerSEE SCHEDULES phasesSEE SCHEDULES
number of	efficiency SEE SCHEDULES
	·
· · ·	S
Additional prescriptive	e compliance method : <u>506.2.1 More Eff. Mech Equip.</u>
DESIGNER STATEMENT	· :
To the best of my k with the mechanical North Carolina State SIGNED:	knowledge and belief, the design of this building complies systems, service systems and equipments of the 2018 Energy Code.

PROFESSIONAL ENGINEER

GENERAL MECHANICAL SPECIFICATIONS

ALL WORK SHALL COMPLY WITH THE REQUIRMENTS OF THE LATEST EDITION OF THE NC MECHANICAL CODE.

BASIS OF DESIGN: UNLESS OTHERWISE NOTED THE PURPOSE OF THESE DRAWINGS IS TO PROVIDE DIRECTION AND BASIS OF DESIGN TO A COMPETENT CONTRACTOR FAMILIAR WITH THE TYPE OF SYSTEMS BEING INSTALLED SUFFICIENT TO INDICATE OWNERS REQUESTS AND CODE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY, WHEN OTHERWISE UNDIRECTED, TO FOLLOW STANDARD INDUSTRY PRACTICES AND BASIC CODE COMPLIANCE INCLUDING, BUT NOT LIMITED TO, PROVIDING MATCHING REQUIRED ACCESSORIES TO THE SYSTEMS INDICATED, COORDINATING EXACT ROUTINGS AND LOCATIONS WITH OTHER TRADES AND THE OWNER, SELECTING CODE APPROVED MATERIALS, AND MAKING MINOR OFFSETS/ADJUSTMENTS BASED ON FIELD COORDINATION AND OWNER'S FIELD REQUESTS. CHANGE OF MANUFACTURER TO EQUIVALENT SYSTEMS, WITH OWNER'S APPROVAL, IS ACCEPTABLE. CONTACT ENGINEER WITH ANY CONFLICTS NOT COVERED BY THE ABOVE INSTRUCTIONS.

SHEET METAL WORK: THIS CONTRACTOR SHALL FURNISH ALL DUCTWORK AND ASSOCIATED SHEET METAL WORK AS CALLED FOR ON THE DRAWINGS AND REQUIRED FOR A COMPLETE DUCTED AIR DISTRIBUTION SYSTEM. DUCTWORK SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH BEST PRACTICES OF SHEET METAL

ALL DUCTWORK SHALL BE GALVANIZED SHEET IRON THROUGHOUT EXCEPT WHERE OTHERWISE SHOWN AND FABRICATED IN ACCORDANCE WITH THE FOLLOWING TABLE (ALL DUCT SIZES ON CONTRACT DRAWINGS ARE SHEET METAL FABRICATION SIZES):

MAXIMUM DIMENSIO OF DUCT	N GAUGE U.S. STD.	TRANSVERSE JOINT	BRACING
UP TO 12"	26	DRIVE SLIPS 7'-10" CENTERS	NONE
13" TO 30"	24	DRIVE SLIPS 7'-10" CENTERS	1"X1"X1/8" ANGLES 4 FEET FROM JOI

DUCTS 25 INCHES OR SMALLER IN MAXIMUM DIMENSION SHALL BE SUPPORTED WITH 1 INCH FLAT BAND HANGERS; DUCTS 25 INCHES AND LARGER SHALL BE SUPPORTED BY 3/4 INCH X 1-1/2 INCH ANGLE IRON AND ROUND ROD. SUPPORTS SHALL BE NOT MORE THAN 8 FEET ON CENTERS, PROPERLY FASTENED AND PLACED TO BUILDING STRUCTURES AND SHALL EXTEND AND BE RIVETED TO THE BOTTOM OF DUCTS.

UNLESS OTHERWISE SPECIFIED, FURNISH AND INSTALL ALL NECESSARY LINTELS, PROPERLY SIZED, SHEET METAL SLEEVES AND ESCUTCHEON COLLARS WHERE DUCTWORK RISES THROUGH FLOORS OR PASSES THROUGH WALLS OR

FURNISH AND INSTALL FLEXIBLE COLLARS IN THE DUCTWORK CONNECTIONS TO AIR HANDLING FANS TO PREVENT NOISE TRANSMISSION BETWEEN SECTIONS.

ALL CHANGES IN DUCT DIRECTION SHALL BE LONG RADIUS ELBOWS OR SHALL BE FITTED WITH TURNING VANES. IT IS ACCEPTABLE TO CHANGE RECTANGULAR DUCTWORK TO THE EQUIVALENT SIZE IN ROUND PROVIDED THE CONTRACTOR COORDINATES ALL CLEARANCE ISSUES.

DUCT INSULATION:

WORK AND SMACNA STANDARDS.

ALL CONCEALED DUCTWORK SHALL BE INSULATED ON THE OUTSIDE WITH TWO INCH (2") THICK, 3/4 POUND DENSITY FIBERGLASS BLANKET INSULATION HAVING AN ALUMINUM FOIL-SCRIM VAPOR BARRIER JACKET.

EDGES OF INSULATION SHALL BE CUT STRAIGHT AND TRUE AND SHALL BE TIGHTLY BUTTED. THE VAPOR BARRIER JACKET SHALL OVERLAP THE BLANKET JOINT A MINIMUM OF THREE INCHES (3"). THE JACKET LAP SHALL BE FASTENED WITH MOISTURE RESISTANT ADHESIVE AND ALSO OUTWARD CLINCHING STAPLES SPACED TEN INCHES (10") C/C. THE VAPOR BARRIER EDGE AND STAPLES SHALL THEN BE COVERED WITH A THREE INCH (3") WIDE TAPE OF THE SAME MATERIAL AS THE JACKET AND SHALL BE FASTENED WITH MOISTURE RESISTANT ADHESIVE.

ALL CUTS, TEARS AND PENETRATIONS IN THE VAPOR BARRIER JACKET SHALL BE SEALED WITH JOINT TAPE. ALL EDGES OF INSULATING BLANKET SHALL BE SEALED FROM THE JACKET TO DUCT SURFACE WITH TAPE.

INSULATING BLANKET ON THE BOTTOM OF SURFACES IN EXCESS OF 24 INCHES WIDE SHALL BE SECURED AGAINST THE DUCT WITH ADHESIVE OVER THE ENTIRE AREA, MECHANICAL CLIPS ON 24 INCH CENTER OR BY WIRE TIES AROUND THE DUCT SPACED 24 INCHES C/C.

CONTRACTOR MAY USE FLEXIBLE DUCTWORK (MAXIMUM LENGTHS 15'-0") FOR FINAL CONNECTIONS TO DIFFUSERS/GRILLES. FLEXIBLE DUCTWORK SHALL BE CERTAFLEX 25 AS MANUFACTURED BY THE CERTAINTEED CORPORATION.

REGISTERS AND GRILLES: ALL REGISTERS AND GRILLES SHALL BE OF SIZE, STYLE AND CAPACITY CALLED FOR ON PLANS AND IN THE GRILLE SCHEDULE. PROVIDE RUBBER OR EXPANDED FOAM GASKETS COMPLETELY AROUND ALL REGISTER AND GRILLE FRAMES TO PREVENT AIR LEAKAGE BETWEEN GRILLE FRAME AND DUCT OR BETWEEN GRILLE FRAME AND SURROUNDING FINISHED SURFACE. ACCEPTABLE MGFS: PRICE, CARNES, METALAIR, KRUGER REGISTERS AND GRILLES SHALL BE BALANCED TO CFM SHOWN AND RECORD MADE OF ACTUAL FLOW AND BALANCE METHOD.

EQUIPMENT: MECHANICAL AND ELECTRICAL CONTRACTORS SHALL COORDINATE PRIOR TO ORDERING EQUIPMENT TO VERIFY CONSISTANT VOLTAGES. PRIOR TO EQUIPMENT BEING ENERGIZED, VOLTAGE TO EQUIPMENT CIRCUITS SHALL BE VERIFIED AS INSTALLED TO MATCH EQUIPMENT NAMEPLATE.

<u>OPERATING INSTRUCTIONS, CERTIFICATES AND WARRANTIES:</u> THE ORIGINAL OF ALL INSPECTION CERTIFICATES SHALL BE DELIVERED TO THE OWNER AND ONE (1) COPY EACH TO THE ENGINEER PRIOR TO REQUEST FOR FINAL PAYMENT.

THREE (3) COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUFACTURER'S WARRANTIES FOR ALL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL BE PROVIDED TO THE OWNER PRIOR TO SUBMITTING REQUEST FOR FINAL PAYMENT.

PRIOR TO FINAL PAYMENT TO THE CONTRACT, THE CONTRACTOR SHALL BE RESPONSIBLE TO TRAIN THE AUTHORIZED PERSONNEL ON HOW TO SERVICE, START-UP AND SHUT-DOWN THE VARIOUS SECTIONS OF THE SYSTEM. UPON COMPLETION OF THIS PHASE OF THE CONTRACT, THE CONTRACTOR SHALL SECURE A LETTER OF ACCEPTANCE FROM THE OWNER THAT HE IS SATISFIED WITH THE CONDITIONS STIPULATED HEREIN. UPON ACCEPTANCE OF THIS LETTER AND AT THE DISCRETION OF THE ENGINEER, THE FINAL PAYMENT WILL BE MADE.

THE CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE OF ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SYSTEM ACCEPTANCE.

THE WORK UNDER THIS CONTRACT WILL BE ACCEPTED ONLY AS AN ENTIRE SYSTEM UPON SATISFACTORY COMPLETION OF THE REQUIRED TESTS. NO PARTIAL ACCEPTANCE OF ANY PART OR PORTION OF APPARATUS WILL BE MADE.

INSTALL AND CONNECT ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DO ALL WORK IN A NEAT AND WORKMANLIKE MANNER AND IN ACCORDANCE WITH ACCEPTED GOOD PRACTICE AS JUDGED BY THE ENGINEER.

ALL EQUIPMENT AND PIPING SHALL BE SO INSTALLED THAT NO OBJECTIONABLE NOISES FROM EQUIPMENT, PIPING OR AIR DISTRIBUTION ARE AUDIBLE IN THE FINISHED AREAS.

GUARANTEE: THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FOLLOWING FINAL INSPECTION AND ACCEPTANCE OF THE BUILDING BY THE ENGINEER AND OWNER. THIS APPLIES TO ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT, REGARDLESS OF

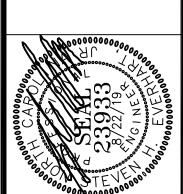
THE ONE (1) YEAR GUARANTEE PERIOD WILL START ON THE DAY OF FINAL INSPECTION AND ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER A LETTER WITH TWO (2) COPIES STATING THE BEGINNING AND ENDING DATES OF THE GUARANTEE BASED ON THE AFOREMENTIONED STARTING DATES.

EXTENDED GUARANTEE: PROVIDE AN ADDITIONAL FOUR (4) YEAR GUARANTEE ON ALL COMPRESSORS BEYOND THE ABOVE MENTIONED ONE (1) YEAR GUARANTÈÉ PERIOD.

AIR BALANCE: ALL SYSTEMS SHALL BE BALANCED BY THE CONTRACTOR PER THE REQUIREMENTS OF SECTION 408.2.2.1 OF THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE.

ENERGY CODE COMPLIANCE: HVAC EQUIPMENT SELECTED MEETS PERFORMANCE REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE SECTION 406.2 ANY SUBSTITUTIONS MUST MEET THIS STANDARD AS WELL. UPON FINAL INSPECTION THE CONTRACTOR SHALL PROVIDE TO OWNER MANUALS AND EVIDENCE OF AIR BALANCE. CONTRACTOR SHALL SCHEDULE DESIGN PROFESSIONAL AND ASSIST TO COMPLETE SYSTEM INSTALLATION STATEMENT IN ACCORDANCE WITH THE NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE SECTION 408.1.



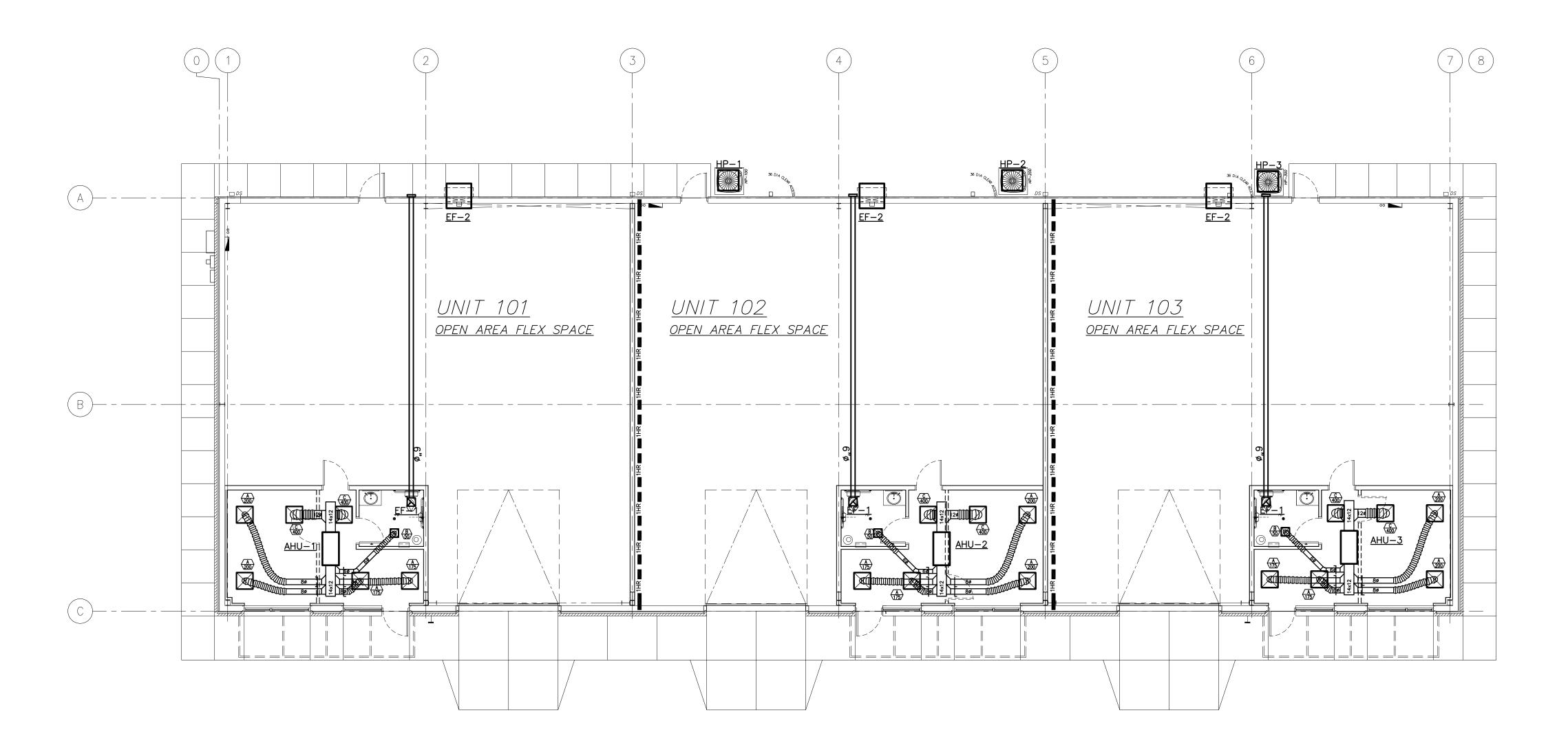






M

22 AUG, 20 ^{ob no.} TAWOOD/FLEX/1



GRAPHIC BAR SCALE: (FOOT UNITS) SCALE: 1/8" = 1'-0"

OVERALL FLOOR PLAN — MECHANICAL

DETAILED ELECTRICAL SPECIFICATIONS
SCOPE: FURNISH ALL MATERIALS, LABOR, TOOLS, EQUIPMENT AND SUPERVISION NECESSARY TO INSTALL COMPLETE ELECTRICAL POWER AND LIGHTING SYSTEM IN THE BUILDING AS FURTHER DESCRIBED ON THE ELECTRICAL CONTRACT

SUPPLY ALL MATERIALS, FITTINGS AND HARDWARE NECESSARY FOR COMPLETE OPERATING SYSTEMS WITHIN THE OBVIOUS INTENT OF THE DRAWINGS. NO ATTEMPT HAS BEEN MADE TO DETAIL OR LIST EACH AND EVERY ITEM OF MATERIAL. THE ELECTRICAL CONTRACTOR IS CAUTIONED TO READ THE ENTIRE PROJECT DRAWINGS AND SPECIFICATIONS TO ASSURE HIMSELF OF A THOROUGH KNOWLEDGE OF BUILDING CONSTRUCTION, STRUCTURAL RESTRICTIONS TO ELECTRICAL CONTRACT WORK AND TO ASSURE THAT NO REFERENCE ANYWHERE IN THE PROJECT DRAWINGS AND SPECIFICATIONS TO WORK BY THE ELECTRICAL CONTRACTOR IS OVERLOOKED.

CODES, PERMITS AND INSPECTIONS: THE LATEST EDITION OF THE STATE BUILDING CODE WHICH INCLUDES THE 2017 EDITION OF THE NATIONAL ELECTRICAL CODE IS HEREBY MADE A PART OF THIS SPECIFICATION. CODE REQUIREMENTS SHALL TAKE PRECEDENCE OVER THESE SPECIFICATIONS WHERE THE CODE REQUIREMENTS EXCEED THAT OF THE SPECIFICATIONS. HOWEVER, THE SPECIFICATIONS SHALL BE FOLLOWED WHERE THEY EXCEED CODE REQUIREMENTS. THE ELECTRICAL CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE OWNER, OBTAIN THE SERVICES OF THE LOCAL ELECTRICAL INSPECTOR TO MAKE ALL REQUIRED DURING CONSTRUCTION AND COMPLETED ELECTRICAL SYSTEM INSPECTIONS.

MATERIALS AND WORKMANSHIP: ALL MATERIAL BUILT INTO THIS PROJECT SHALL BE NEW OF EQUIVALENT OR BETTER QUALITY THAN THAT SPECIFIED. SPECIFIC NAMES AND CATALOG NUMBERS USED HEREIN ARE TO ESTABLISH THE ITEM FUNCTION, ARRANGEMENT AND QUALITY REQUIRED AND ARE NOT INTENDED TO RESTRICT COMPETITION. ALL MATERIALS SHALL BE UL LISTED AND LABELED FOR THE PARTICULAR APPLICATION AS USED ON THIS PROJECT

CONDUCTORS: ALL CONDUCTORS SHALL BE COPPER (#10 AWG AND SMALLER SHALL BE SOLID, AND #8 AWG AND LARGER STRANDED) WITH THHN/THWN INSULATION, INSTALLED IN CONDUIT OR APPROVED CABLE ASSEMBLY. NM CABLE SHALL NOT BE USED. CONDUCTORS SHALL BE #12 AWG MINIMUM EXCEPT WITHIN LIGHT FIXTURES, LOW VOLTAGE CONTROLS OR COMMUNICATION/FIRE ALARM EQUIPMENT. CONDUCTOR COLOR CODE SHALL CONFORM TO THE NEC. CONDUCTORS SHALL BE CONTINUOUS FROM TERMINAL TO TERMINAL OR PULL BOX TO PULL BOX. JOINTS SHALL BE MADE WITH IDEAL "WIRENUTS."

RACEWAYS: RACEWAYS SHALL BE ELECTRICAL METALLIC TUBING (EMT) WITH THREADED STEEL HEXAGONAL COMPRESSION FITTINGS - NEITHER INDENTOR TYPE OR DIE METAL FITTING WILL BE ACCEPTED. CONDUIT UNDER THE FLOOR SLAB AND UNDER GROUND OUTSIDE THE BUILDING MAY BE PVC. FITTINGS IN EMT SHALL BE WEATHER TIGHT (THOMAS AND BETTS SERIES #5123 WITH NYLON INSULATED THROATS), BENDS SHALL BE FACTORY FABRICATED OR MADE "COLD" WITH BENDING TOOL, FREE OF KINKS OR RESTRICTIONS. NO SINGLE BEND SHALL BE IN EXCESS OF 90 DEGREES. THERE SHALL BE NO MORE THAN THE EQUIVALENT OF THREE (3) 90 DEGREE BENDS IN A GIVEN RACEWAY FROM PULL BOX TO PULL BOX. RIGID RACEWAY THREADS SHALL BE CUT STRAIGHT AND TRUE - PIPE ENDS SHALL BE REAMED AND SMOOTHED INSIDE AND OUT.

SUPPORT 1-1/2 INCH AND LARGER CONDUIT 10 FEET O/C OR LESS, AND 1 INCH AND SMALLER 6 FEET O/C MAXIMUM. RACEWAYS SHALL BE SUPPORTED DIRECTLY FROM BUILDING STRUCTURE WITH BOLTS, SCREWS, STRAPS, HANGER RODS AND BRACKETS. ALL METALLIC HARDWARE SHALL BE GALVANIZED OR CADMIUM PLATED. NAILS, WIRE AND/OR PERFORATED STRAPS WILL NOT BE ACCEPTED.

USE THREADED LOCKNUTS OUTSIDE AND THREADED LOCKNUT AND BUSHING INSIDE ALL RACEWAY CONNECTIONS TO BOXES, DEVICES, PANELS AND GUTTERS. USE NON-METALLIC BUSHINGS ON ALL 1-1/4 INCH AND LARGER CONDUIT. EXPOSED CONDUIT SHALL BE RUN STRAIGHT AND TRUE PARALLEL AND PERPENDICULAR TO PRIMARY BUILDING LINES.

BOXES AND DEVICES: ALL BOXES, PANELS AND EQUIPMENT SHALL BE SUPPORTED DIRECTLY FROM THE BUILDING STRUCTURE AND SHALL NOT DEPEND ON THE FEEDER RACEWAYS FOR SUPPORT. ALL ITEMS SHALL BE CAREFULLY ALIGNED SO THAT COVERS WILL FINISH FLUSH AND STRAIGHT. ALL UNUSED KNOCKOUTS SHALL BE CLOSED WITH BLANKING DEVICES. BOXES IN CONCRETE OR MASONRY SHALL BE 3-1/2 INCH DEEP (MINIMUM) SQUARE 16 GAUGE GALVANIZED STEEL - STEEL CITY SERIES GW. BOXES INSTALLED IN WOOD PARTITIONS SHALL BE STEEL CITY 3-1/2 INCH DEEP GANGABLE SQUARE CORNER TYPE. RECEPTACLES SHALL BE HUBBELL 5362 OR EQUAL. SWITCHES SHALL BE HUBBELL 1120 SERIES OR EQUAL. COVER PLATES SHALL BE IMPACT RESISTANT.

PULL BOXES SHALL BE 14 GAUGE GALVANIZED STEEL WITH BLANK COVER SIZED AS REQUIRED BY NATIONAL LOCATE DEVICES AND EQUIPMENT ABOVE FINISHED FLOOR AS FOLLOWS UNLESS OTHERWISE SPECIFICALLY NOTED ON

WALL SWITCHES - 4'-0" OR TO NEAREST MASONRY COURSE JOINT. RECEPTACLES - 1'-6" OR TO NEAREST MASONRY COURSE JOINT. LIGHT FIXTURES - AS NOTED ON FIXTURE SCHEDULE.

ALL 15- AND 20-AMPERE, 125- AND 250-VOLT NONLOCKING-TYPE RECEPTACLES IN THE AREAS SPECIFIED SHALL BE LISTED

- TAMPER-RESISTANT RECEPTACLES. (1) DWELLING UNITS
-) GUEST ROOM AND GUEST SUITES OF HOTELS AND MOTELS) CHILD CARE FACILITIES
- PRESCHOOLS AND ELEMENTARY EDUCATION FACILITIES
-) BUSINESS OFFICES, CORRIDORS, WAITING ROOMS AND THE LIKE IN CLINICS, MEDICAL AND DENTAL OFFICES AND OUTPATIENT FACILITIES
- (6) SUBSET OF ASSEMBLY OCCUPANCIES INCLUDING PLACES OF WAITING TRANSPORTATION, GYMNASIUMS, SKATING RINKS, AND AUDITORIUMS (7) DORMITORIES

GROUNDING: THE ELECTRICAL SYSTEM AND ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. GREEN EQUIPMENT GROUND WIRE SHALL BE USED WITH ALL FEEDERS AND BRANCH CIRCUITS.

<u>LIGHTING FIXTURES:</u> LIGHTING FIXTURES AND LAMPS SHALL BE PROVIDED AND INSTALLED AS PER SCHEDULE. ALL FIXTURES SHALL BE CLEANED ON COMPLETION OF INSTALLATION.

TESTS: THE CONTRACTOR SHALL MEGGER ALL BUSWAYS, CABLES AND CONTROL CONNECTIONS TO PROVE INSULATION RESISTANCE IS OF ACCEPTABLE VALUE.

PANELBOARDS: PROVIDE PANELBOARDS RATED AND SIZED AS INDICATED IN THE SCHEDULE AND SHOWN ON THE

PLANS EQUAL TO SQUARE D COMPANY MODEL QO LOAD CENTER. ACCEPTABLE MANUFACTURERS: SQUARE D, GENERAL ELECTRIC, SIEMENS, CUTLER-HAMMER

SAFETY SWITCHES: SWITCHES SHALL BE EQUAL TO SQUARE D TYPE GD WITH RATINGS AND FUSING PROVISIONS AS

<u>IDENTIFICATION AND NAMEPLATES:</u> PROVIDE ENGRAVED, LAMINATED BAKELITE (WHITE LETTERS ON BLACK SURFACE) NAMEPLATES SCREWED TO EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT AS FOLLOWS:

A. PANELBOARDS, SWITCHBOARDS - DESIGNATION L1, P1, ETC., VOLTAGE, PHASE NUMBER OF WIRES, ETC.; WORDING EXAMPLE: PANEL L1-208V-3 PHASE, 4 WIRE.

B. MOTOR STARTERS, DISCONNECT SWITCHES - UNLESS MOUNTED DIRECTLY ON OR ADJACENT TO IDENTIFY EQUIPMENT; WORDING EXAMPLE: EXHAUST FAN 1, MAKE-UP AIR UNIT.

PROVIDE TYPED DIRECTORIES FOR PANELBOARD BRANCH CIRCUIT IDENTIFICATION. IDENTIFY EACH CIRCUIT BREAKER AS TO THE EXACT ROOM NUMBERS OR AREA SERVED AND THE TYPE OF CIRCUIT, I.E. "ROOMS 101-104 LIGHTS" OR "CAFETERIA EXHAUST FAN".

EQUIPMENT CONNECTIONS: THIS CONTRACTOR SHALL BRING ALL REQUIRED ELECTRICAL SERVICE TO ALL EQUIPMENT ITEMS FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS OR BY THE OWNER, MAKE FINAL CONNECTIONS, AND LEAVE EQUIPMENT READY FOR OPERATION. THIS CONTRACTOR SHALL COORDINATE WITH ANY AFFECTED TRADE TO ASSURE CORRECT OPERATION OF THE EQUIPMENT ITEM.

CONTROL AND INTERLOCK WIRING: EXCEPT AS OTHERWISE INDICATED ON THE DRAWINGS, ALL CONTROL AND INTERLOCK WIRING SHALL BE PERFORMED BY THE RESPECTIVE CONTRACTORS.

THE ELECTRICAL SUBCONTRACTOR SHALL INSTALL ALL STARTERS, PILOT SWITCHES, CONTROL DEVICES AND MISCELLANEOUS ITEMS OF ELECTRICAL EQUIPMENT FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS THAT ARE NOT INTEGRALLY MOUNTED WITH THEIR ASSOCIATED EQUIPMENT.

SERVICE: THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING SERVICE WITH THE UTILITY COMPANY. PROVIDE UTILITY REQUIRED METERING PROVISIONS. PROVIDE CONDUIT FOR UTILITY IF REQUIRED. EC SHALL WORK DIRECTLY WITH THE UTILITY AND SHALL COMPLETE AND SUBMIT ALL LOAD DATA SHEETS REQUIRED FOR SERVICE APPLICATION.

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE:

Energy Code: Prescriptive Performance

lamp type required in fixture See Fixture Schedule number of lamps in fixture See Fixture Schedule ballast type used in the fixture See Fixture Schedule number of ballasts in fixture See Fixture Schedule total wattage per fixture <u>See Fixture Schedule</u>

total interior wattage specified vs allowed ______2001/4897 total exterior wattage specified vs allowed 387/500

Additional Efficiency Package Options

C406.2 More Efficient HVAC Equipment Performance C406.3 Reduced Lighting Power Density

C406.4 Enhanced Digital Lighting Controls C406.5 On—Site Renewable Energy

C406.6 Dedicated Outdoor Air System

C406.7 Reduced Energy Use in Service Water Heating □ N/A EXISTING/RENOVATION

SYMBOL

AHU-1

AHU-2

To the best of my knowledge and belief, the design of this building complies with the requirements of Section C405 of the 2018 North Carolina State

EQUIPMENT CONNECTION SCHEDULE

KVA

A-8,10

B-8,10

5.76

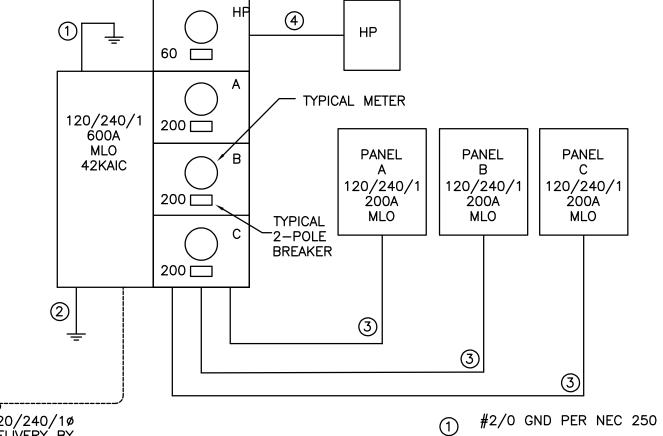
5.76

VOLTS

Gregory McDowell <u>Professional Engineer</u>

-∃STUB ABOVE CEILING 3/4"C W/PULL STRING NOTE: DEVICES & WIRING BY OTHERS 4" SQUARE BOX W/BLANK COVER FINISH FL

TYPICAL DATA/COMM OUTLET



120/240/1ø DELÍVERY BY POWER COMPANY

NOTE: EC SHALL LABEL THE AVAILABLE

FAULT CURRENT AT POINT OF DELIVERY

SERVING UTILITY PRIOR TO ORDERING

FAULT CURRENT IS LESS THAN 42,000

AMPS. DOWNSTREAM PANELS TO BE

SERIES RATED.

DISCONNECT

DESCRIPTION

240/30/2

240/30/2

DISCONNECT

FUSED

GEAR. DESIGN ASSUMES AVAILABLE

PER NEC 110.24A. OBTAIN FROM

POWER RISER SCALE: NONE

SYMBOL

 $S_{D_1} S_{D_3}$

AFF

(2) #6 SUPPLEMENTAL GND

ELECTRICAL LEGEND

ARROW INDICATES HOMERUN,

TICKMARKS: NEUTRAL, PHASE, GND.

DISCONNECT SWITCH; FUSED; NONFUSED

SINGLE POLE SWITCH , 3 WAY, 4 WAY

DUPLEX RECEPT , ABOVE COUNTER

DIMMER SWITCH, 3-WAY DIMMER SWITCH

CONDUIT

POWER PANEL

JUNCTION BOX

LIGHT FIXTURE

₩P , ⊕GFI WEATHERPROOF , GROUND FAULT

DATA/COMM OUTLET

FUSE PER NAMEPLATE

MOTOR TOGGLE SWITCH

EXISTING OR BY OTHERS

ABOVE FINISHED FLOOR

QUAD-PLEX RECEPTACLE

DESCRIPTION

CONDUIT UNDERFFLOOR OR UNDERGROUND

(3) 3 #3/0, #6 GND, 2"C

(4) 3 #6, #10 GND, 1"C

22 AUG, 20

job no. TAWOOD/FLEX/19

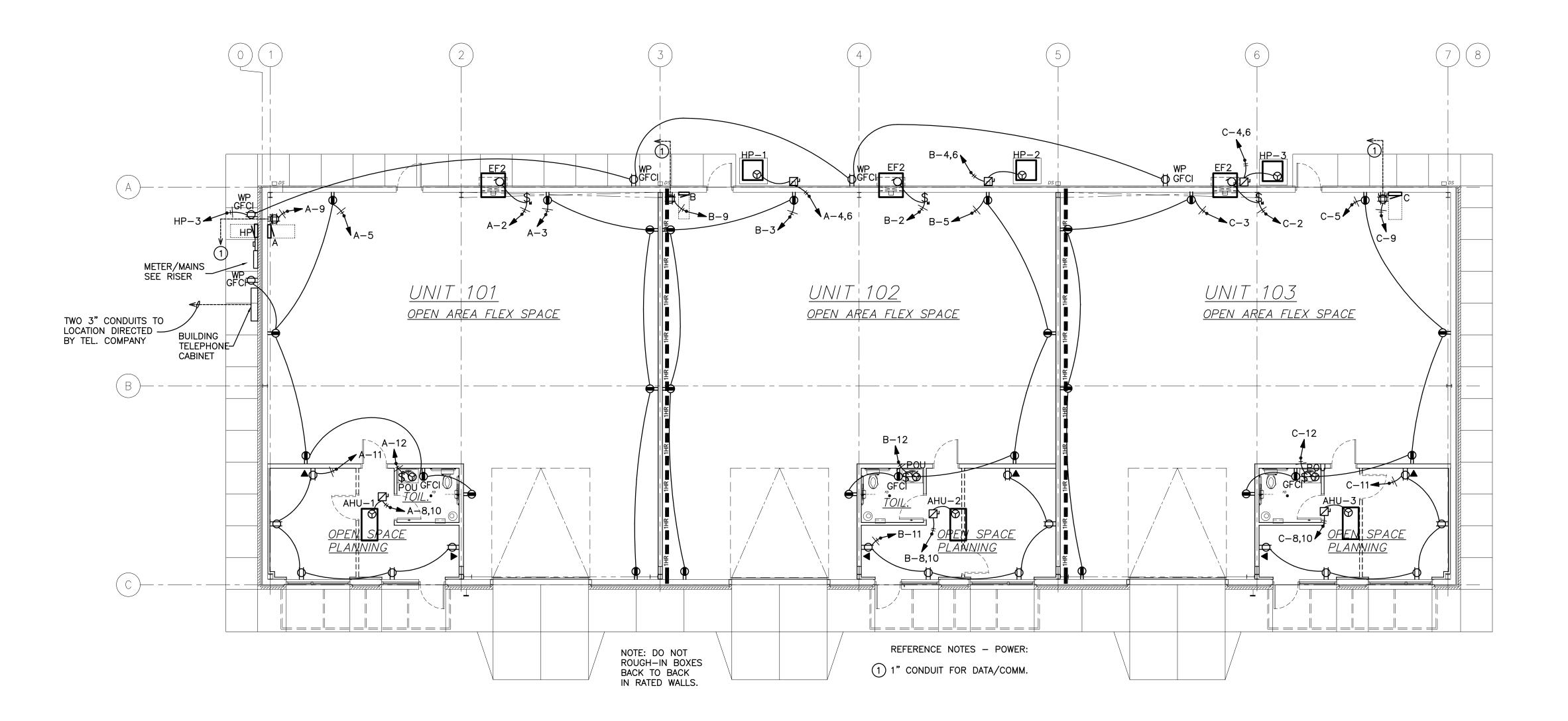
AHU-3	⊗ Z'	240V 2P 2W	24	5.76	C-8,10	1/2"C,2#10,#10G	29	30	FUSED	240/30/2
EF2	1 ((((((((((120V 1P 2W	7.2	0.86	A-2	1/2"C,1#12,#12N,#12G			MANUAL MOTOR STARTER	MOTOR RATED SWITCH
EF2	♦	120V 1P 2W	7.2	0.86	B-2	1/2"C,1#12,#12N,#12G			MANUAL MOTOR STARTER	MOTOR RATED SWITCH
EF2	0 \$	120V 1P 2W	7.2	0.86	C-2	1/2"C,1#12,#12N,#12G			MANUAL MOTOR STARTER	MOTOR RATED SWITCH
HP-1	⊗ ~⊠	240V 2P 2W	12	2.88	A-4,6	1/2"C,2#10,#10G	15	25	FUSED	240/30/2/3R
HP-2	⊗ Z'	240V 2P 2W	12	2.88	B-4,6	1/2"C,2#10,#10G	15	25	FUSED	240/30/2/3R
HP-3	⊘ ₽	240V 2P 2W	12	2.88	C-4,6	1/2"C,2#12,#12G	15	25	FUSED	240/30/2/3R

WIRE CALLOUT

1/2"C,2#10,#10G

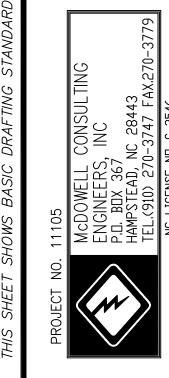
1/2"C,2#10,#10G

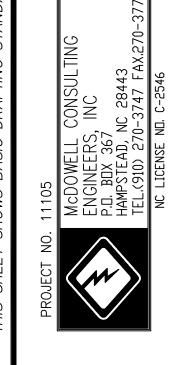
CALLOUT	LAMP	DESCRIPTION	MOUNTING	MODEL	TOTAL VA	VOLTS	NOTE 1	QUANTITY
A	LED	8' STRIP	CHAIN HUNG	DAY-BRITE FSS880L835UNVDIM	62	120		18
В	LED	LED FLAT PANEL	LAY-IN	DAY-BRITE 2FXP48L8354DSUNVDIM	47	120		15
С	AS REQUIRED	VANITY	WALL	SELECTED BY OWNER	60	120	60W MAX	3
D	LED	SURFACE DOWNLIGHT	SURFACE	LIGHTOLIER SD7R099301W	15	120	UL WET LOCATION	12
Ē	LED INCLUDED	EMERGENCY	WALL	ISOLITE BUG3	0	120	90 MINUTE BATTERY	9
ΞR	INCLUDED	REMOTE HEAD	WALL	CHLORIDE VLL2R	0	120		6
ΞX	LED (EXIT) INCLUDED (EM)	EXIT/EM COMBO	WALL/CEILING	CHLORIDE VCRW	0	120	90 MINUTE BATTERY	6
AC	LED	EXTERIOR SCONCE	WALL	STONCO LPW7-8XX	14	120	FINISH SELECTED BY OWNER	3
ОВ	LED	EXTERIOR SCONCE	WALL	STONCO WPMLED36L530NWUNV	33	120	FINISH SELECTED BY OWNER	5

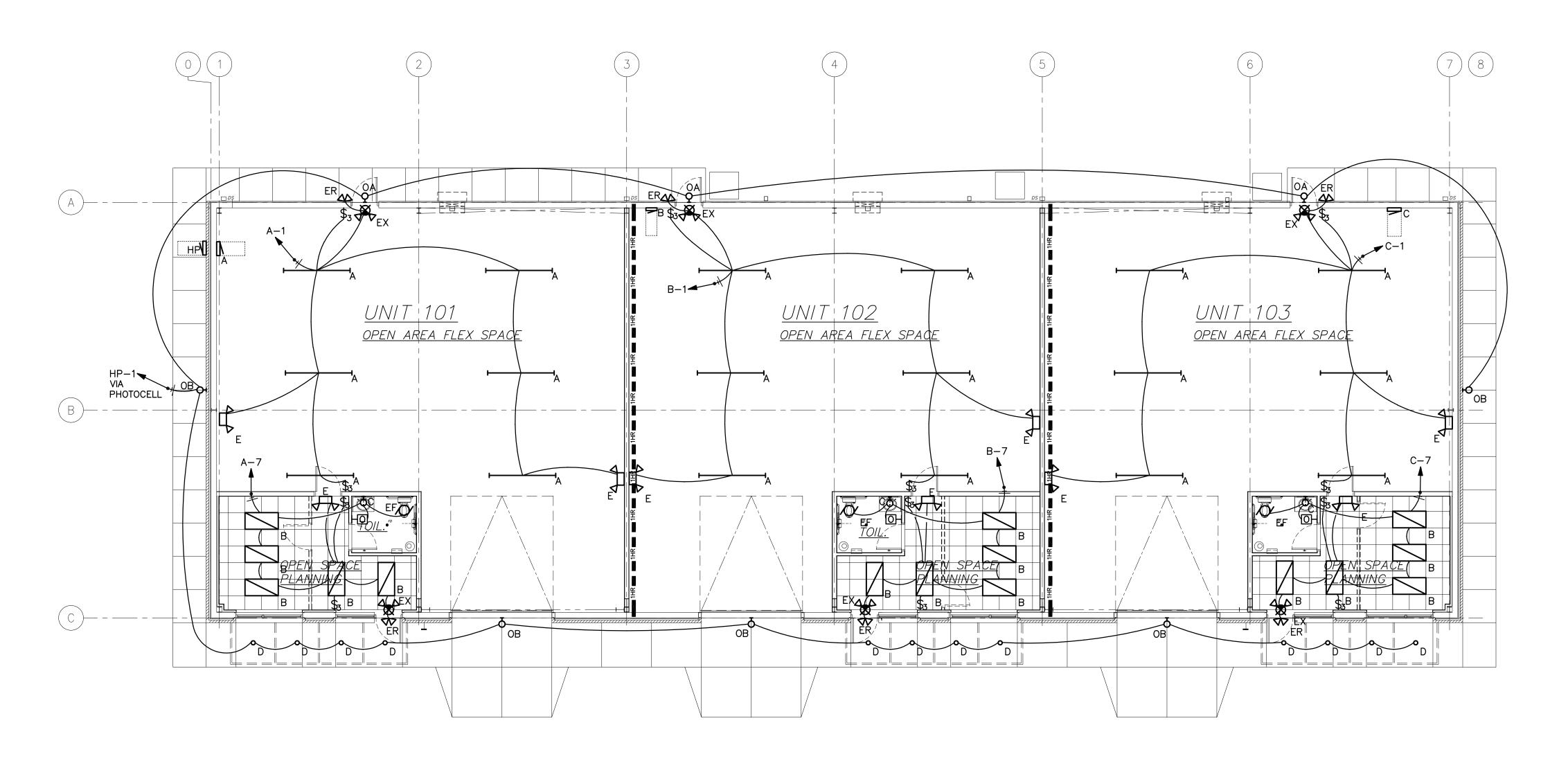


SCALE: 1/8" = 1'-0"

OVERALL FLOOR PLAN — ELECTRICAL — POWER







GRAPHIC BAR SCALE: (FOOT UNITS) SCALE: 1/8" = 1'-0"

OVERALL FLOOR PLAN — ELECTRICAL — LIGHTING

OCCUF	PANCY SENSOR LEGEND
SYMBOL	DESCRIPTION
HO	WALL BOX OCCUPANCY SENSOR GREENGATE ONW-P-1001-MV-W

NOTE: PROVIDE SWITCHPACKS AS REQUIRED

		JRFACE TILITY		BUS	TS 240/120 AMPS 200 TRAL 100%)	5W			AIC 10,000 MAIN MLO LUGS STAND	ARD			
СКТ	CKT				LOAD	KVA	СКТ	CKT					LOAD	KVA
#	BKR	CIRCUIT	DESCRIPTION		A	В	#	BKR	CIRCUIT	DESCRIPTION			Α	В
1 3	20/1 20/1	LIGHTING	ACLE		0.372	0.72	2 4	20/1 25/2	EXHAUS	T FAN 2			0.864	1.44
5 7 9	20/1 20/1 20/1	RECEPTA LIGHTING RECEPTA	;		0.9	0.345	6 8 10	 30/2 	AHU-3				1.44 2.88	2.88
11 13	20/1 20/1 20/1	RECEPTA SPARE			0.50	0.9	12 14	25/1 20/1	POU WT	R HTR			0	2.4
15 17	20/1 20/1	SPARE SPARE			0	0	16 18	20/1 20/1	SPARE SPARE				0	0
19 21 23	20/1 20/1	SPARE SPARE SPARE			0	0	20 22 24	20/1 20/1	SPARE SPARE SPARE				0	0
25 25 27	20/1 20/1 20/1	SPARE SPARE			0	0	26 26 28	20/1 20/1 20/1	SPARE SPARE				0	0
29 31	20/1 20/1	SPARE SPARE			0	0	30 32	20/1 20/1	SPARE SPARE				0	0
33 35	20/1 20/1	SPARE SPARE			0	0	34 36	20/1 20/1	SPARE SPARE				0	0
37 39	20/1 20/1	SPARE SPARE			0	0	38 40	20/1 20/1	SPARE SPARE				0	0
									ТОТ		D KVA BY PH	IASE	6.82	8.69
			CONN KVA	CALC KVA						CONN KVA	CALC KVA			
LAR	HTING RGEST MC TORS	TOR	0.717 0.96 0.864	0.896 0.24 0.864	(125%) (25%) (100%)					2.88 2.4 8.64 0.96	2.88 3 8.64 0	(50%) (125 (100) (0%))%)	
								L LOAD NCED AN	MPS		16.5 68.8			

	ITING SU FROM U			BUS	TS 240/120 AMPS 200 TRAL 100%)	5W			AIC 10,00 MAIN MLO LUGS STA	O			
CKT	CKT				LOAD	KVA	СКТ	CKT					LOAD	KVA
#	BKR	CIRCUIT	DESCRIPTION		A	В	#	BKR	CIRCUIT	DESCRIPT	TON		Α	В
1 3	20/1	LIGHTING RECEPTA			0.372	0.72	2 4	20/1 30/2	EXHAUS	ST FAN 2			0.864	2.88
5	20/1 20/1	RECEPTA			0.9	0.72	6	30/2 	NP-2				2.88	2.00
7	20/1	LIGHTING			0.5	0.345	8	30/2	AHU-2				2.00	2.88
9	20/1	RECEPT			0.36		10	ĺ					2.88	
11	20/1	RECEPT	ACLE			0.9	12	25/1	POU WI	R HTR				2.4
13	20/1	SPARE			0		14	20/1	SPARE				0	
15	20/1	SPARE				0	16	20/1	SPARE				0	0
17 19	20/1 20/1	SPARE SPARE			0	0	18 20	20/1 20/1	SPARE SPARE				0	0
21	20/1	SPARE			0		22	20/1	SPARE				0	
23	20/1	SPARE				0	24	20/1	SPARE					0
25	20/1	SPARE			0		26	20/1	SPARE				0	
27	20/1	SPARE				0	28	20/1	SPARE					0
29	20/1	SPARE			0	_	30	20/1	SPARE				0	_
31	20/1	SPARE				0	32	20/1	SPARE					0
33 35	20/1 20/1	SPARE SPARE			0	0	34 36	20/1 20/1	SPARE SPARE				0	0
37	20/1	SPARE			0		38	20/1	SPARE				0	
39	20/1	SPARE				0	40	20/1	SPARE					0
		1							ТОТ	AL CONNE	CTED KVA BY F	PHASE	8.26	10.1
			CONN KVA	CALC KVA	•	•	-			CONN K	/A CALC KVA	,		•
LIGH	ITING		0.717	0.896	(125%)		RECE	PTACLES	;	2.88		_ (50%	%>10)	
	GEST MC	TOR	0.96	0.24	(25%)			INUOUS		2.4	3	(125	•	
МОТ	ORS		0.864	0.864	(100%)		HEA1	ING		11.5	11.5	(100	•	
							COOL	ING		1.92	0	_ (0%) _)	
							TOTA	L LOAD			19.4	<u> </u>		
								NCED AN	MPS		80.8			

HF)										
MOUNTING SURFACE FED FROM UTILITY NOTE NEMA 3R ENCLOSURE The state of the state				S 240/120 AMPS 60 RAL 100%		5W		AIC 22,000 MAIN MLO LUGS STANDARD	MAIN MLO		
CKT	CKT				LOAD	KVA	ckt	CKT		LOAD	KVA
#	BKR	CIRCUIT	DESCRIPTION		Α	В	#	BKR	CIRCUIT DESCRIPTION	Α	В
1	20/1	LIGHTING			0.387	0.70	2	20/1	SPARE	0	
3 5	20/1 20/1	RECEPTA(SPARE	JLE		0	0.72	4 6	20/1 20/1	SPARE SPARE	0	0
7	20/1	SPARE				0	8	20/1	SPARE		0
9	20/1	SPARE			0		10	20/1	SPARE	0	O
11	20/1	SPARE				О	12	20/1	SPARE		0
13	20/1	SPARE			0		14	20/1	SPARE	0	
15	20/1	SPARE				0	16	20/1	SPARE		0
17	20/1	SPARE			0		18	20/1	SPARE	0	
19	20/1	SPARE				0	20	20/1	SPARE		0
									TOTAL CONNECTED KVA BY PHASE	0.387	0.72
			CONN KVA	CALC KVA					CALC KVA		
LIGH	TING		0.387	0.484	(125%)		TOTA	L LOAD	1.2		
RECE	PTACLE:	S	0.72	0.72	(50%>10)		BALA	NCED AN	MPS 5.02		