NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

100% CONSTRUCTION DOCUMENTS 9/20/2023

REVISION SCHEDULE		
No.	DATE	DESCRIPTION

SYMBOLS & TAGS LEGEND

TAG	DESCRIPTION
L100A	DOOR TAG
NUMBER OF SHELVES; CASEWORK SERIES; 402; CABINET DEPTH (INSIDE CLEAR); 30.00 / 24.00; 84.00; CABINET WIDTH; CABINET HEIGHT	CASEWORK TAG *AS OUTLINED IN THE ARCHITECTURAL WOODWORK INSTITUTE (AWI) STANDARDS* *MINIMUM CLEAR CABINET DEPTH DIMENSION = DEPTH LESS 1"*
EQ-XX	SPECIALTY EQUIPMENT TAG
1 A	COLUMN LINE DESIGNATION TAG
REFERENCE 0'-0"	LEVEL ELEVATION TAG
P T	NORTH ARROW TAG T = TRUE NORTH P = PROJECT NORTH
ROOM 101	ROOM NAME & NUMBER TAG
1 A101	SECTION TAG
1 A101	CALLOUT / DETAIL
0'-0"	SPOT ELEVATION TAG
1 DRAWING TITLE / DRAWING SCALE	DETAIL / DRAWING TITLE TAG
CLG-T2 1'-0" TYPE HEIGHT	CEILING TAG
99	PARTITION TAG
	MATERIAL TAG
11	WINDOW TAG
12 / 6	SLOPE ANNOTATION
1 A101; 0 0.0 0	ELEVATION TAG
0 NEW CONSTRUCTION; 0 DEMOLITION	SPECIFIC NOTE

KEY TO MATERIALS

SECTION PATTERN	DESCRIPTION
	BRICK
	CMU MASONRY
	CONCRETE
	POROUS FILL
	EARTH
	PLYWOOD
	GYPSUM BOARD
	RIGID INSULATION
	BATT INSULATION
	END GRAIN LUMBER
	WOOD BLOCK OR SHIM
	FINISH WOOD

COMMON ABBREVIATIONS

SYMBOLS
& - AND
@ - AT
℄ - DIAMETER
□ - SQUARE

A
AB - ANCHOR BOLT
ABV - ABOVE
ACOUST - ACOUSTICAL
ACT - ACOUSTIC CEILING TILE
AFF - ABOVE FINISH FLOOR
AHJ - AUTHORITY HAVING JURISDICTION
ALUM - ALUMINUM
AP - ACCESS PANEL
APPROX - APPROXIMATELY
ARCH - ARCHITECTURAL

B
B.C. - BOTTOM CHORD
BLK - BLOCK
BLDG - BUILDING
BLKG - BLOCKING
BLKHD - BULKHEAD
BM - BEAM
B.O. - BOTTOM OF
BOD - BASIS OF DESIGN
BOT - BOTTOM
B.R. - BULLET RESISTANT
BRNG - BEARING

C
℄ - CENTER LINE
CFCI - CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFOI - CONTRACTOR FURNISHED, OWNER INSTALLED
CFLS - COUNTER FLASHING
CJ - CONTROL JOINT
CL - CLOSET
CLG - CEILING
CMU - CONCRETE MASONRY UNIT
CND - CONDUIT
COL. - COLUMN
COOR - COORDINATE
CONC - CONCRETE
CONSTR - CONSTRUCTION
CONT - CONTINUOUS
C.T. / CT - CERAMIC TILE
CPT - CARPET / CARPET TILE
CTSK - COUNTERSUNK
CU - CUBIC
CU FT - CUBIC FOOT
CU YD - CUBIC YARD

D
D - DEEP / DEPTH
DEG - DEGREE
DIA - DIAMETER
DIM - DIMENSION
DL - DEAD LOAD
DMPR - DAMPER
DN - DOWN
DR - DOOR
DS - DOWNSPOUT
DTL - DETAIL
DWG - DRAWING

E
EA - EACH
EIFS - EXTERIOR INSULATON AND FINISHING SYSTEM
ELEC - ELECTRICAL
EL - ELEVATION
ELEV - ELEVATION
ELMA - ELEVATOR MACHINE ROOM
EJ - EXPANSION JOINT
ENT - ENTRANCE, ENTRY
EQ - EQUAL
EST - ESTIMATE
ETR - EXISTING TO REMAIN
EW - EACH WAY
EXST - EXISTING
EXT - EXTERIOR
EXP - EXPOSED
EXP JT - EXPANSION JOINT

F
F - FAHRENHEIT
FD - FLOOR DRAIN
F.E. - FIRE EXTINGUISHER
F.E.C. - FIRE EXTINGUISHER CABINET
FF - FINISHED FLOOR
FF EL - FINISHED FLOOR ELEVATION
FG - FINISHED GRADE
FHY - FIRE HYDRANT
FDC - FIRE DEPARTMENT CONNECTION
FIN - FINISH
FIN FL - FINISHED FLOOR
FL - FLOOR
FLEX - FLEXIBLE
FLUOR - FLUORESCENT
FND - FOUNDATION
FPM - FEET PER MINUTE
FRT - FIRE RETARDANT TREATED
FSK - FOIL SCRIM KRAFT
FT - FEET, FOOT
FT - FLOOR TRANSITION
FTG - FOOTING

G
GA - GAGE, GAUGE
GALV - GALVANIZED
GL - GLASS, GLAZING
GND - GROUND
GRTG - GRATING
GWB - GYPSUM WALL BOARD

H
H - HIGH / HEIGHT
HC - HANDICAPPED
HD - HEAD
HM - HOLLOW METAL
HORIZ - HORIZONTAL
HR - HOUR
HT - HEIGHT

I
ID - INSIDE DIAMETER
IN - INCH
INFO - INFORMATION
INSUL - INSULATION

J
JB - JUNCTION BOX
JM - JAMB
JST - JOIST
JT - JOINT

L
LG - LONG
LL - LIVE LOAD
LSC - LIFE SAFETY CODE
LTG - LIGHTING

M
MACH - MACHINE
MAT'L - MATERIAL
MAX - MAXIMUM
MBT - MARBLE THRESHOLD
MECH - MECH
MEP - MECHANICAL / ELECTRICAL / PLUMBING
MFGR - MANUFACTURER
MH - MANHOLE
MIN - MINIMUM
MO - MASONRY OPENING
MSNRY - MASONRY
M.T. - METAL THRESHOLD
MTL - METAL
MTD - MOUNTED

N
NA - NOT APPLICABLE
NIC - NOT IN CONTRACT
NO - NUMBER
NTS - NOT TO SCALE

O
O/C - ON CENTER
OD - OUTSIDE DIAMETER
OFCI - OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI - OWNER FURNISHED, OWNER INSTALLED
OPNG - OPENING
OPP - OPPOSITE
OPP HND - OPPOSITE HAND
OV - OVER
OVHD - OVERHEAD

P
P.LAM - PLASTIC LAMINATE
PLY - PLYWOOD
PLYWD - PLYWOOD
PNLBD - PANELBOARD
PNT/ PT - PAINT
POLYISO - POLYISOCYANURATE
PRESS - PRESSURE
PROJ - PROJECT
PROP - PROPERTY
PSF - POUNDS PER SQUARE FOOT
PSI - POUNDS PER SQUARE INCH
PT - PRESSURE TREATED
PTD - PAINTED
PVC - POLYVINYL CHLORIDE
PVMT - PAVEMENT
PWT - PREFABRICATED WOOD TRUSS

R
R - RADIUS
RCP - REFLECTED CEILING PLAN
REINF - REINFORCING, REINFORCED
RESINOUS - RESINOUS
REQD - REQUIRED
REV - REVISION
RGD - RIGID
RM - ROOM
RO - ROUGH OPENING
RST - REINFORCING STEEL

S
SB - SMART BOARD
SCHED - SCHEDULE
SD - STORM DRAIN
SECT - SECTION
SF - SQUARE FOOT
SI - SQUARE INCH
SIM - SIMILAR
SLOPE - SLOPE
SPCL - SPECIAL
SPEC - SPECIFICATIONS
SPLY - SUPPLY
SQ - SQUARE
SS - STAINLESS STEEL
ST - STREET
STD - STANDARD
STL - STEEL
STOR - STORAGE
STRUCT - STRUCTURAL
SURF - SURFACE
SUSP - SUSPENDED
SW - SWITCH
SYS - SYSTEM

T
T & B - TOP AND BOTTOM
T.B. - TACK BOARD
T.B.D. - TO BE DETERMINED
TEMP - TEMPERATURE
THK - THICK
THRES - THRESHOLD
T&G - TONGUE & GROOVE
T0 - TOP OF
TOB - TOP OF BEARING POINT
TOC - TOP OF CONCRETE
TOF - TOP OF FOOTING
TOM - TOP OF MASONRY
TOP - TOP OF PAVEMENT, PARAPET
TOS - TOP OF STEEL
TRTD - TREATED
T.S. - TRANSITION STRIP
TYP - TYPICAL

U
UGND - UNDERGROUND
UL - UNDERWRITERS LAB
UNO - UNLESS NOTED OTHERWISE
UON - UNLESS OTHERWISE NOTED

V
VB - VAPOR BARRIER
VCT - VINYL COMPOSITION TILE
VERT - VERTICAL
VIF - VERIFY IN FIELD
VOL - VOLUME

W
W - WIDE / WIDTH
W/ - WITH
W/0 - WITHOUT
W.B. - WHITEBOARD
WD - WOOD
WR - WATER RESISTANT
WTRPRF - WATERPROOF
WWF - WELDED WIRE FABRIC
WWM - WELDED WIRE MESH

THIS LIST OF ABBREVIATIONS IS A GUIDE TO ABBREVIATIONS WHICH MAY BE USED IN THESE DOCUMENTS. ABBREVIATIONS NOT LISTED MAY ALSO BE USED.

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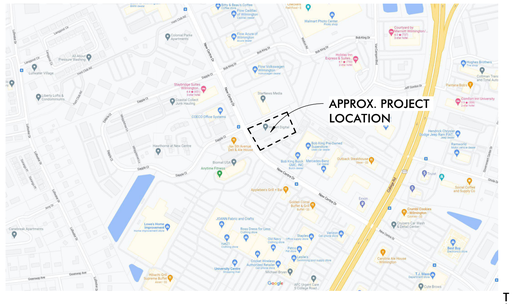
CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

THE INTENT OF THE CONSTRUCTION DRAWINGS AND THE CONSTRUCTION SPECIFICATIONS/PROJECT MANUAL IS TO INCLUDE ALL ITEMS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK BY THE CONTRACTOR. THE CONSTRUCTION DRAWINGS AND THE CONSTRUCTION SPECIFICATIONS/PROJECT MANUAL ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ONE SHALL BE AS BINDING AS IF REQUIRED BY ALL; PERFORMANCE BY THE CONTRACTOR SHALL BE REQUIRED ONLY TO THE EXTENT CONSISTENT WITH THE CONSTRUCTION DRAWINGS AND THE CONSTRUCTION SPECIFICATIONS/PROJECT MANUAL AND REASONABLY INFERABLE FROM THEM AS BEING NECESSARY TO PRODUCE THE INDICATED/INTENDED RESULTS. IN THE CASE OF INCONSISTENCIES BETWEEN THE CONSTRUCTION DRAWINGS AND THE CONSTRUCTION SPECIFICATIONS/PROJECT MANUAL OR WITHIN EITHER DOCUMENT NOT CLARIFIED BY ADDENDUM, THE BETTER QUALITY OR GREATER QUANTITY OF WORK SHALL BE PROVIDED IN ACCORDANCE WITH THE ARCHITECT'S INTERPRETATION.



VICINITY MAP
NOT TO SCALE

PROJECT ALTERNATES:

ALTERNATE NO. 1: ELEVATOR NO. 2 (ELEV. 2)

BASE BID: PROVIDE AND INSTALL ELEVATOR NUMBER 2 (ELEV. 2) AS INDICATED WITHIN CONTRACT DOCUMENTS.

ALTERNATE BID: CONSTRUCT ELEVATOR NUMBER 2 (ELEV. 2) ELEVATOR SHAFT INCLUDING BUT NOT LIMITED TO SHAFT WALLS, SHAFT WALL KNOCK-OUT PANELS FOR FUTURE ELEVATOR OPENINGS, FLOOR OPENINGS, PIT, PIT ACCESS LADDER, SUMP PUMP, SUPPORTING STRUCTURE (RAIL CONNECTIONS, HOIST BEAMS, SILL ANGLES, AND SIMILAR STRUCTURE REQUIRED FOR ELEVATOR INSTALLATION), AND ALL MECHANICAL, ELECTRICAL, PLUMBING, COMMUNICATION, AND FIRE PROTECTION ROUGH-INS REQUIRED FOR COMPLETE AND PROPER OPERATION OF ELEVATOR NUMBER 2 (ELEV. 2). ALL ROUGH-INS SHALL BE CAPPED AND MADE SAFE FOR FUTURE USE AND INSTALLATION OF FUTURE ELEVATOR, ELEVATOR CONTROLS, RAILS AND ELEVATOR APPURTENANCES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING REQUIRED FIRE PROTECTION, FIRE ALARM, AND OTHER LIFE SAFETY ITEMS REQUIRED BY THE AHJ WITHIN THE ELEVATOR SHAFT.

ALTERNATE NO. 2: ELEVATOR NO. 3 (ELEV. 3)

BASE BID: PROVIDE AND INSTALL ELEVATOR NUMBER 3 (ELEV. 3) AS INDICATED WITHIN CONTRACT DOCUMENTS.

ALTERNATE BID: CONSTRUCT ELEVATOR NUMBER 3 (ELEV. 3) ELEVATOR SHAFT INCLUDING BUT NOT LIMITED TO SHAFT WALLS, SHAFT WALL KNOCK-OUT PANELS FOR FUTURE ELEVATOR OPENINGS, FLOOR OPENINGS, PIT, PIT ACCESS LADDER, SUMP PUMP, SUPPORTING STRUCTURE (RAIL CONNECTIONS, HOIST BEAMS, SILL ANGLES, AND SIMILAR STRUCTURE REQUIRED FOR ELEVATOR INSTALLATION), AND ALL MECHANICAL, ELECTRICAL, PLUMBING, COMMUNICATION, AND FIRE PROTECTION ROUGH-INS REQUIRED FOR COMPLETE AND PROPER OPERATION OF ELEVATOR NUMBER 3 (ELEV. 3). ALL ROUGH-INS SHALL BE CAPPED AND MADE SAFE FOR FUTURE USE AND INSTALLATION OF FUTURE ELEVATOR, ELEVATOR CONTROLS, RAILS AND ELEVATOR APPURTENANCES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING REQUIRED FIRE PROTECTION, FIRE ALARM, AND OTHER LIFE SAFETY ITEMS REQUIRED BY THE AHJ WITHIN THE ELEVATOR SHAFT.

ALTERNATE NO. 3: EXISTING ELEVATOR

BASE BID: CONTRACTOR SHALL INSPECT, REPAIR, AND PROVIDE/INSTALL ALL WORK AS INDICATED WITHIN THE CONTRACT DOCUMENTS FOR THE EXISTING ELEVATOR, INCLUDING BUT NOT LIMITED TO HYDRAULIC JACK REPLACEMENT, ADDING LIGHTS AND POWER OUTLETS WITHIN EXISTING SHAFT, REPLACING FINISHES WITHIN EXISTING ELEVATOR CAB, AND OTHER WORK AS REQUIRED BY THE AHJ FOR THE COMPLETE AND PROPER OPERATION OF THE EXISTING ELEVATOR.

ALTERNATE BID: REMOVE EXISTING ELEVATOR IN ITS ENTIRETY INCLUDING BUT NOT LIMITED TO CAB, HYDRAULIC MECHANISM(S), CONTROLS, CONTROL EQUIPMENT, AND ALL ASSOCIATED APPURTENANCES ASSOCIATED WITH AND/OR IMPEDING THE INSTALLATION OF A NEW ELEVATOR. PROVIDE AND INSTALL NEW ELEVATOR INCLUDING BUT NOT LIMITED TO ELEVATOR MACHINES, ELEVATOR CONTROLS, RAILS, STRUCTURE, SYSTEMS, AND ALL OTHER ASSOCIATED APPURTENANCES FOR A COMPLETE & OPERATIONAL INSTALLATION AS INTENDED.

ALTERNATE NO. 4: OUTDOOR STORAGE SHED

BASE BID: CONTRACTOR SHALL PROVIDE AND INSTALL CODE COMPLIANT PREFABRICATED/PRE-ENGINEERED METAL SHED/STRUCTURE. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND SUBMITTING TO AHJ SIGNED AND SEALED DRAWINGS, CALCULATIONS, APPLICATIONS, AND OTHER DOCUMENTATION REQUIRED BY AHJ TO OBTAIN PERMITS AND OCCUPANCY OF PRE-FABRICATED/PRE-ENGINEERED METAL SHED/STRUCTURE.

ALTERNATE BID: PRE-FABRICATED/PRE-ENGINEERED METAL SHED/STRUCTURE SHALL BE REMOVED FROM THE SCOPE OF WORK OF THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING & PREPARING THE SITE FOR THE FUTURE OR CONCURRENT INSTALLATION OF THE PRE-FABRICATED/PRE-ENGINEERED METAL SHED/STRUCTURE BY OWNER OR BY OWNERS SEPARATE CONTRACTOR.

ALTERNATE NO. 5: SITE CONCRETE

BASE BID: PROVIDE AND INSTALL FRONT CONCRETE PATIO AS INDICATED WITHIN THE CONTRACT DOCUMENTS.

ALTERNATE BID: IN LIEU OF PROVIDING & INSTALLING FRONT CONCRETE PATIO, REPAIR & MAINTAIN EXISTING GRASS IN AREA INDICATED TO RECEIVE CONCRETE PATIO AND INSTALL CONCRETE BASES FOR TABLES AS INDICATED IN CONTRACT DOCUMENTS.

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No. 53188

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

COVER SHEET

SHEET NUMBER:
G000

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ELECTRICAL - NEW WORK	
E015	ELECTRICAL SITE PLAN
E201	FIRST FLOOR LIGHTING PLAN
E202	SECOND FLOOR LIGHTING PLAN
E301	FIRST FLOOR POWER PLAN
E301.A	FIRST FLOOR ENLARGED POWER PLAN - AREA A
E301.B	FIRST FLOOR ENLARGED POWER PLAN - AREA B
E301.C	FIRST FLOOR ENLARGED POWER PLAN - AREA C
E301.D	FIRST FLOOR ENLARGED POWER PLAN - AREA D
E301.E	FIRST FLOOR ENLARGED POWER PLAN - AREA E
E302	SECOND FLOOR POWER PLAN
E302.A	SECOND FLOOR ENLARGED POWER PLAN - AREA A
E302.B	SECOND FLOOR ENLARGED POWER PLAN - AREA B
E302.C	SECOND FLOOR ENLARGED POWER PLAN - AREA C
E302.D	SECOND FLOOR ENLARGED POWER PLAN - AREA D
E303	ROOF POWER PLAN
E401	FIRST FLOOR MECHANICAL CONNECTIONS PLAN
E402	SECOND FLOOR MECHANICAL CONNECTIONS PLAN
E501	FIRST FLOOR FIRE ALARM PLAN
E502	SECOND FLOOR FIRE ALARM PLAN
E503	ELECTRICAL FIRE ALARM RISER AND MATRIX
E601	LOW VOLTAGE SYSTEM- FIRST FLOOR PLAN
E602	LOW VOLTAGE SYSTEM- SECOND FLOOR PLAN
E603	ENLARGED IT ROOM
E701	ELECTRICAL DETAILS
E702	ELECTRICAL DETAILS
E703	ELECTRICAL DETAILS
E801	ELECTRICAL POWER RISER DIAGRAM
E802	ELECTRICAL TELECOMMUNICATIONS RISER DIAGRAM
E901	ELECTRICAL SCHEDULES
E902	PANELBOARD SCHEDULES
E903	PANELBOARD SCHEDULES
E904	PANELBOARD SCHEDULES
E905	PANELBOARD SCHEDULES

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No. 53188
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EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
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WILMINGTON, NC 28403

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CODE ANALYSIS - SUMMARY

PROJECT	APPLICABLE CODES		SQUARE FOOTAGE
NATIONAL VETERINARY ASSOCIATES (NVA) EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION	NC ADMINISTRATIVE CODE NC BUILDING CODE NC ENERGY CONSERVATION CODE NC EXISTING BUILDING CODE NC FIRE CODE NC FUEL GAS CODE NC MECHANICAL CODE NC PLUMBING CODE NC ELECTRICAL CODE ANSI A117.1	2018 2018 2018 2018 2018 2018 2018 2018 2020 2009	TOTAL EXISTING BUILDING = 33,027 SF - 1ST FLR = 15,033 SF - 2ND FLR = 17,994 SF STORAGE SHED = 240 SF TENANT SPACE WILL BE THE FULL BUILDING AND SHED WORK AREA IS 100% OF BUILDING SF

PROJECT DESCRIPTION

THIS PROJECT IS A RENOVATION TO AN EXISTING BUILDING. THE FACILITY WILL HOUSE A VETERINARY CLINIC. IT WILL CONSIST OF VETERINARY OFFICE SPACES, AN EMERGENCY SERVICE CLINIC, SURGERY AND OPERATIONS ROOMS, X-RAY MACHINES, CT MACHINES AN O2 GENERATOR AND THE ASSOCIATED SUPPORT SPACES. THE EXISTING SHED WILL BE REMOVED & A NEW SMALL PREFAB SHED WILL BE USED FOR STORAGE. A MRI TRAILER WILL BE ADDED TO THE SITE AND SOME SITE WORK WILL OCCUR INCLUDING NEW CONCRETE PADS/SIDEWALKS AND RE-PAVING THE EXISTING PARKING LOT.
THE EXISTING CONSTRUCTION IS ASSUMED TYPE IIIB, NON-SEPARATED MIXED USE, AND IS FULLY SPRINKLERED. THE EXISTING USES ARE MIXED USES OF B BUSINESS AND F-1 FACTORY MODERATE BUT WILL CHANGE TO CONSIST OF ONLY B BUSINESS USE AND NON-SEPARATED OCCUPANCIES OF B BUSINESS (VETERINARY SPACES), AND A-3 ASSEMBLY (WAITING AREAS AND CONFERENCE ROOM). THE A-3 AREAS ARE ACCESSORY OCCUPANCIES TO THE B USE.

COMPLIANCE METHOD - NCEBC

THIS CODE ANALYSIS IS PREFORMED USING THE WORK AREA COMPLIANCE METHOD PER 301.1.2 THE CONSTRUCTION COMPLIES WITH THE REQUIREMENTS OF A LEVEL 3 ALTERATION BECAUSE THE WORK AREA EXCEEDS 50% OF THE BUILDING AREA PER 505.1. THE DESIGN COMPLIES WITH CHAPTERS 7-9 PER 505.2. A CHANGE IN OCCUPANCY WILL OCCUR AND THE CONSTRUCTION WILL ALSO COMPLY WITH THE REQUIREMENTS OF CHAPTER 10 PER 506.2.

BUILDING ELEMENTS & MATERIALS - NCEBC 702

ALL NEW WORK WILL COMPLY WITH THE REQUIREMENTS OF
THE IBC, IECC, IMC, & NSPC, AS APPLICABLE

COMPLIANCE - NCEBC 801.3

ALL NEW CONSTRUCTION WILL COMPLY WITH THE REQUIREMENTS OF THE IBC WITH EXCEPTIONS THAT NEWLY INSTALLED ELECTRICAL EQUIPMENT SHALL COMPLY WITH NFPA 70, DEAD END CORRIDORS SHALL COMPLY WITH NCEBC 805.6, AND THE MIN. CEILING HEIGHT SHALL BE 7'-0".

STAIRWAY ENCLOSURE - NCEBC 803.2.1 (1), 803.2.3 EXCEPTION, 903.1, 1012.7.2

THE EXISTING FRONT STAIRWAY IS NOT REQUIRED TO BE ENCLOSED BECAUSE IT IS NOT REQUIRED BY THE IBC. SEE CODE ANALYSIS BELOW UNDER THE NEW WORK SECTION.

PLUMBING FIXTURES - NCEBC 810.1, 1010.1

THE NEW OCCUPANT LOAD INCREASES THE EXISTING BY MORE THAN 20%. THEREFORE, THE PLUMBING FIXTURE QUANTITIES ARE PROVIDED BY THE IPC.

BUILDING ENVELOPE - NCEBC 708.1.1(3), 811.1.1. 908.1.1

THE EXISTING ROOF, WALLS, AND FLOOR WILL NOT BE EXPOSED IN THE NEW CONSTRUCTION AND THEREFORE ARE NOT REQUIRED TO MEET THE NCECC. HOWEVER, FOR FUNCTIONAL PURPOSES THE EXTERIOR WALLS WILL RECEIVE A NEW EIFS SYSTEM. THE NEW SYSTEM WILL PROVIDE A VAPOR BARRIER AND INSULATION FOR AN ADDED CONTINUOUS R-VALUE OF 7.7.

CHANGE OF OCCUPANCY CATEGORY - NCEBC

SPRINKLER HAZARD CATEGORY: EXISTING = B (CAT. 6) AND F-1 (CAT. 4) PROPOSED = B (CAT. 6) AND A-3 (CAT. 3)	SPRINKLER SYSTEM REQUIRED DUE TO HIGHER HAZARD CATEGORY. SPRINKLER SYSTEM IS EXISTING TO REMAIN.
MEANS OF EGRESS HAZARD CATEGORY: EXISTING = B (CAT. 4) AND F-1 (CAT. 4) PROPOSED = B (CAT. 4) AND A-3 (CAT. 3)	DUE TO HIGHER HAZARD CATEGORY, THE MEANS OF EGRESS SHALL COMPLY WITH CHAPTER 10 OF THE IBC.
HEIGHTS & AREAS HAZARD CATEGORY: EXISTING = B (CAT. 4) AND F-1 (CAT. 3) PROPOSED = B (CAT. 4) AND A-3 (CAT. 2)	DUE TO HIGHER HAZARD CATEGORY, THE HEIGHTS AND AREAS SHALL COMPLY WITH CHAPTER 5 OF THE IBC.
EXPOSURE OF EXTERIOR WALLS HAZARD CATEGORY: EXISTING = B (CAT. 3) AND F-1 (CAT. 2) PROPOSED = B (CAT. 3) AND A-3 (CAT. 3)	DUE TO LOWER HAZARD CATEGORY, THE EXISTING EXTERIOR WALLS AND OPENINGS ARE ACCEPTABLE.

DISTANCE REQUIREMENTS

CLASSIFICATION		NCBC REFERENCE	ALLOWABLE	PROPOSED
COMMON PATH	BUSINESS	TABLE 1006.2.1	100'-0"	SEE CODE DISTANCES
	ASSEMBLY	TABLE 1006.2.1	75'-0"	
TRAVEL DISTANCE	BUSINESS	TABLE 1017.2	300'-0"	SEE CODE DISTANCES
	ASSEMBLY	TABLE 1017.2	250'-0"	
DEAD END CORRIDORS	BUSINESS	1020.4(2)	50'-0"	SEE CODE DISTANCES
	ASSEMBLY	EBC 805.6	35'-0"	
CORRIDOR WIDTH	BUSINESS	1005.3.2(1)	.15"/OCC.	SEE DIM. PLAN
	ASSEMBLY	1005.3.2(1)	.15"/OCC.	
EXIT SEPARATION DISTANCE		1007.1.1(2)	1/3	SEE CODE PLAN

USE & OCCUPANCY

PROPOSED SPACE	NC BUILDING CODE USE/OCC.	OCCUPANCY TABLE 1004.2.1	NOTES
CLINIC AREAS	B/B BUSINESS (304.1)	BUSINESS 100 SF / OCC	
WAITING ROOMS	B/A-3 ASSEMBLY (303.4) ACCESSORY (508.2)	ACTUAL NUMBER (1004.1.2 EXCEPTION)	PER CONVERSATION W/ E. MCCALEB
CONFERENCE ROOM	B/A-3 ASSEMBLY (303.4) ACCESSORY (508.2)	UNCONCENTRATED 15 SF / OCC	
STORAGE SHED	B/S-2 STORAGE	STORAGE 300 SF/ OCC	

NOTE: REFER TO THE OCCUPANCY CHARTS FOR OCCUPANT COUNTS

ALLOWABLE HEIGHT & AREA - (NCBC CHAPTER 5)

BUILDING:
TABLES 504.3, 504.4, & 506.2
MAXIMUM HEIGHT (B): 75'-0"
MAXIMUM STORIES (B): 4 STORIES
MAXIMUM AREA (B): 57,000 SF

PROPOSED HEIGHT: 25'-0" / 2-STORY
PROPOSED FOOTPRINT: ±18,000 SF

PER NCBC 508.2.2&3, A-3 OCCUPANCIES SHALL NOT BE CONSIDERED FOR THE ALLOWABLE HEIGHT & AREA AS THESE ARE ACCESSORY AND LESS THAN 10% OF THE FLOOR AREA.

CONSTRUCTION TYPE (NCBC TABLE 601)

CONSTRUCTION TYPE: III-B SPRINKLERED

REQ. FIRE-RESISTANCE FOR BUILDING ELEMENTS (IBC TABLE 601)

PRIMARY STRUCTURAL FRAME:	0
BEARING WALLS	
EXTERIOR	2
INTERIOR	0
NONBEARING WALLS	
EXTERIOR	0
INTERIOR	0
FLOOR CONSTRUCTION	0
ROOF CONSTRUTION	0

FIRE PROTECTION SYSTEM REQUIREMENTS (NCBC CHAPTER 9)

ELEMENT		REQUIRED
903	AUTOMATIC SPRINKLER	YES
904	FIRE EXTINGUISHER SYSTEM	NO
905	STANDPIPE SYSTEM	NO
906	PORTABLE FIRE EXTINGUISHERS	YES
907	FIRE ALARM & DETECTION SYSTEMS	YES
908	EMERGENCY ALARM SYSTEM	NO
908.7	CARBON MONOXIDE	NO
909	SMOKE CONTROL SYSTEM	NO
910	SMOKE & HEAT REMOVAL	NO
911	FIRE COMMAND CENTER	NO
912	FIRE DEPARTMENT CONNECTION	NO
913	FIRE PUMP	NO
914	EMERGENCY RESPONDER SAFETY	NO

TWO-STORY OPENING

NCEBC 803.2.1 - EXCEPTION 1 - THE EXISTING TWO-STORY OPENING CAN REMAINING UN-ENCLOSED BECAUSE THE NCBC DOES NOT REQUIRE IT TO BE ENCLOSED.
NCBC 712.9 - THE EXISTING TWO-STORY OPENING COMPLIES WITH THE REQUIREMENTS OF ONLY CONNECTING TWO STORIES AND IS NOT CONCEALED.
NCBC 712.1.12 - THE EXISTING STAIRWAY IN THIS AREA IS CONSIDERED AN EXIT ACCESS STAIRWAY AS IT COMPLIES WITH 1019.
NCBC 1019.3(1) - THE STAIR COMPLIES BECAUSE IT ATMOSPHERICALLY COMMUNICATES BETWEEN ONLY TWO STORIES.

IMPACT RESISTANT EXTERIOR GLAZING

PER A PRELIMINARY MEETING WITH E. MCCALEB, THAT WE DO NOT NEED TO PROVIDE IMPACT RESISTANT EXTERIOR GLAZING. EVEN THOUGH THIS BUILDING IS A RISK CATEGORY II WHICH WOULD REQUIRE IMPACT RESISTANCE FOR THIS BUILDING, E. MCCALEB STATED THE NORTH CAROLINA CODE DOES NOT. ANY LOCATION EAST OF THE INTRACOASTAL WATERWAY DOES NOT REQUIRE IMPACT RESISTANT GLAZING. HOWEVER, THE AREA IS CONSIDERED A HIGH WIND ZONE.

SPECIAL INSPECTIONS AND TESTS

NCBC CHAPTER 17 - A THIRD PARTY INSPECTOR WILL BE HIRED BY THE TENANT (NVA). IT IS UNDERSTOOD THAT THE REQUIRED INSPECTIONS WILL BE PERFORMED BY A THIRD PARTY INSPECTOR AND SHALL BE RELATED TO NEW STRUCTURAL WORK AND SEISMIC REQUIREMENTS FOR NEW SYSTEMS.

SLIDING DOORS

NCBC 1010.1.2 - EXCEPTION 6 - SLIDING DOORS LOCATED IN THE SURGERY SUITE ARE PERMITTED BECAUSE THE DOORS MEET THE REQUIREMENTS OF 1010.1.4.3.

SINGLE MEANS OF EGRESS

NCBC TABLE 1006.2.1 - THE SINGLE EXIT AREA SHOWN (SURGERY SUITE) IS PERMITTED BECAUSE THE OCCUPANT LOAD IS LESS THAN 49 AND THE COMMON PATH IS LESS THAN 100 FEET.

MEDICAL GAS STORAGE

AN O2 GENERATOR SYSTEM W/ O2 STORAGE TANKS ARE PROVIDED IN THE O2 ROOM. THE ROOM WILL HOLD (4) A-30 OXYGEN GENERATORS, (3) 120-GALLON OXYGEN TANKS, & A RESERVE BANK OF (6) H CYLINDER OXYGEN TANKS (2,034 CU. FT. TOTAL).
THE TYPE AND AMOUNT OF NON-FLAMMABLE GAS/COMPRESSED GAS DOES NOT EXCEED THE MAXIMUM REQUIREMENTS IN NCBC TABLE 307.1(1) & THEREFORE ARE NOT CONSIDERED A HAZARDOUS MATERIAL. THERE IS NO REQUIREMENT FOR A CONTROL AREA NOR A REQUIREMENT FOR A HIGH HAZARD GROUP CLASSIFICATION. THE AREA WILL BE CLASSIFIED AS THE MAIN USE GROUP, MODERATE HAZARD.
NCFC 5306 – SINCE THE CONTAINERS OF MEDICAL GASES ARE NOT IN QUANTITIES GREATER THAN THE PERMIT AMOUNT, THERE IS NO REQUIREMENT TO RATE THE O2 ROOM.
HOWEVER, TO ADDRESS POSSIBLE FUTURE EXPANSION OF THE SYSTEM, THE ROOM SHALL BE PROVIDED WITH 1-HOUR RATED PARTITIONS.

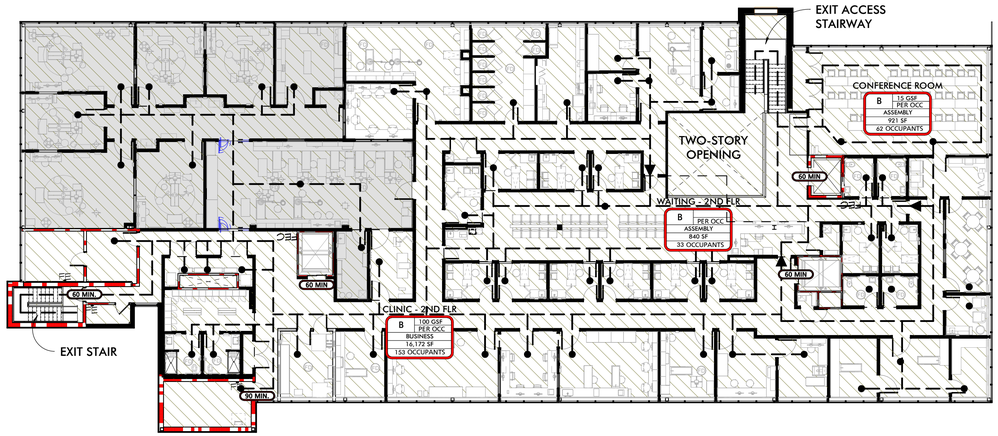
STERILIZERS USING ETHYLENE OXIDE WILL BE STORED AND USED IN STORAGE ROOM 232. THE ROOM WILL HOLD (2) UNITS. 1 UNIT WILL HOLD 110 LITERS OF ETHYLENE OXIDE AND THE OTHER WILL USE (17.6G = 0.0176 LITER) CARTRIDGES. THERE WILL ALSO BE STORAGE OF UP TO (5) 17.6 G CARTRIDGES WITHIN THIS ROOM. THIS IS A TOTAL OF 111 LITERS WHICH EQUALS 245 GASEOUS POUNDS.
THE TYPE AND AMOUNT OF GAS DOES NOT EXCEED THE MAXIMUM REQUIREMENTS IN NCBC TABLE 307.1(2) FOR STORAGE OR FOR A CLOSED-SYSTEM & THEREFORE ARE NOT CONSIDERED A HAZARDOUS MATERIAL. THERE IS NO REQUIREMENT FOR A CONTROL AREA NOR A REQUIREMENT FOR A HIGH-HAZARD GROUP CLASSIFICATION. THE AREA WILL BE CLASSIFIED AS THE MAIN USE GROUP, MODERATE HAZARD.
NCFC 5306 – SINCE THE GASES ARE NOT IN QUANTITIES GREATER THAN THE PERMIT AMOUNT, THERE IS NO REQUIREMENT TO RATE ROOM 232.
HOWEVER, TO ADDRESS POSSIBLE FUMES, THE ROOM DOORS SHALL BE SEALED WHEN CLOSED AND BOTH UNITS ARE VENTED.

OCCUPANCY ANALYSIS

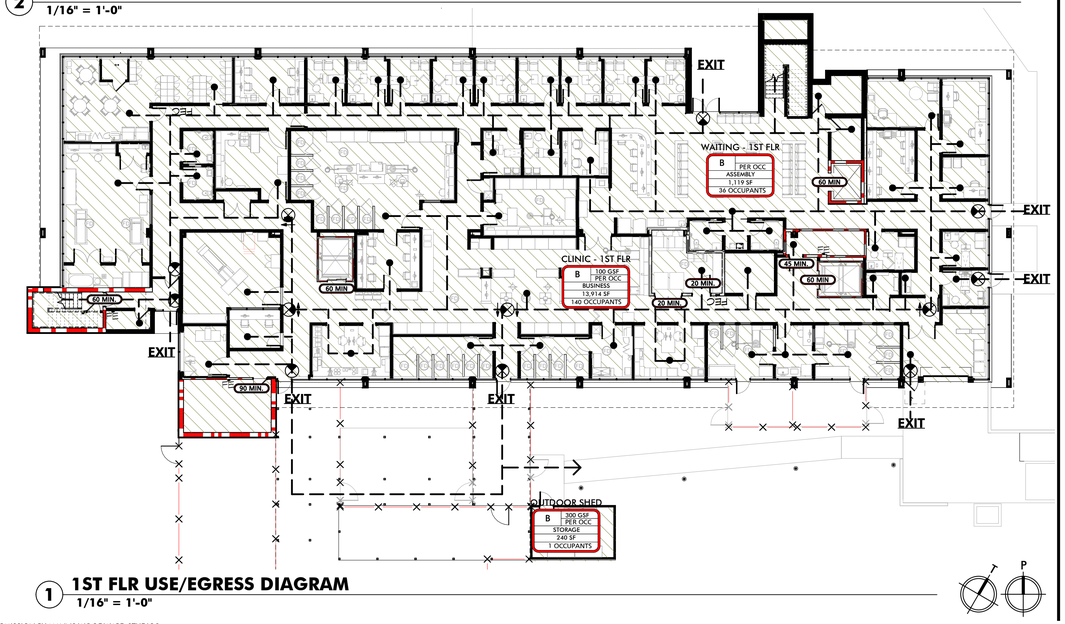
USE	OCCUPANCY	NAME	AREA	FACTOR	OCCUPANT LOAD	COMMENTS
B	ASSEMBLY	CONFERENCE ROOM	921 SF	15 SF	62	
B	ASSEMBLY	WAITING - 1ST FLR	1,119 SF	49 SF	23	ACTUAL SEATING
B	ASSEMBLY	WAITING - 2ND FLR	840 SF	28 SF	31	ACTUAL SEATING
B	BUSINESS	CLINIC - 1ST FLR	13,914 SF	100 SF	140	
B	BUSINESS	CLINIC - 2ND FLR	16,172 SF	100 SF	162	
B	STORAGE	OUTDOOR SHED	240 SF	300 SF	1	

CODE DIAGRAM LEGEND

	B USE (BUSINESS OCCUPANCY)
	A-3 USE (ACTUAL OCCUPANCY OR UNCONC.)
	AREA OF SINGLE MEANS OF EGRESS
	POSSIBLE EXIT PATH
ROOM NAME / USE / USE # NOT PER OCC / CLASSIFICATION / AREA / # OCCUPANTS	ROOM/AREA TAG
	ILLUMINATED "EXIT" SIGN
	ILLUMINATED "EXIT" SIGN W/ DIRECTION INDICATOR



2 2ND FLR USE/EGRESS DIAGRAM
1/16" = 1'-0"



1 1ST FLR USE/EGRESS DIAGRAM
1/16" = 1'-0"

RATING REQUIREMENTS

SPACE/ELEMENT	NCBC REQ. RATING	CODE REF.	FIRE RATING	TYPE OF RATING	OPENING RATING T716.1(2)	PROPOSED
LAUNDRY ROOMS	YES	TABLE 509	SMOKE	PARTITION	20 MIN.	1 HOUR**
O2 ROOM	NO	NCFC 5306	1 HOUR	PARTITION	45 MIN.	1 HOUR
ELECTRICAL ROOM	YES	NFPA 110	2 HOUR	PARTITION	90 MIN.	2 HOUR
EXISTING EGRESS STAIR	YES	NCBC 1023.2.1	1 HOUR	FIRE BARRIER	60 MIN	1 HOUR
ELEVATOR SHAFTS	YES	NCBC 1023.2.1	1 HOUR	FIRE BARRIER	60 MIN	2 HOUR*
SHAFTS	YES	NCBC 713.4	1 HOUR	FIRE BARRIER	60 MIN	1 HOUR
CORRIDORS	NO	TABLE 1020.1	0	N/A	N/A	NO RATING

* DUE TO THE REQUIREMENTS OF THE ELEVATOR, THE WALL ASSEMBLY IS BASED ON A 2-HOUR RATED ASSEMBLY. ALL PENETRATIONS INTO THIS ASSEMBLY SHALL BE BASED ON THE 1-HOUR RATING REQUIREMENTS.
** THE WALL ASSEMBLY IS BASED ON A 1-HOUR RATED ASSEMBLY. ALL PENETRATIONS INTO THIS ASSEMBLY SHALL BE BASED ON THE 1/2-HOUR RATING REQUIREMENTS.

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CODE ANALYSIS & DIAGRAM

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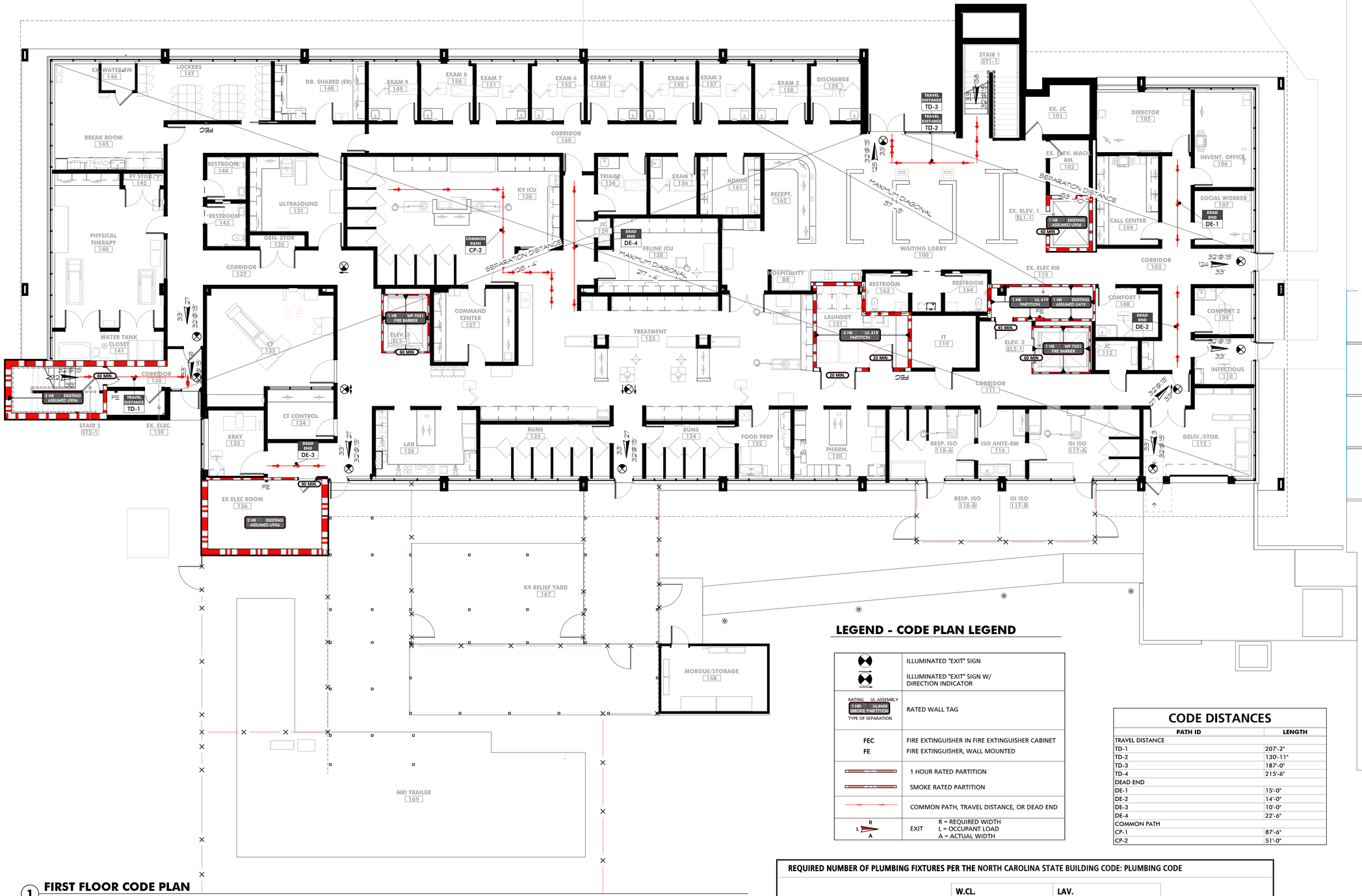

1 FIRST FLOOR CODE PLAN

1/8" = 1'-0"

GENERAL CODE PLAN NOTES

1	FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITIONS OR ANY OTHER WALL REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED AS REQUIRED BY IBC 703.7
2	FOR THE NEW ELEVATOR SHAFTS: A 1-HOUR RATING IS REQUIRED. HOWEVER, DUE TO THE REQUIREMENTS OF THE ELEVATOR, THE WALL ASSEMBLY IS THICKER AND IS BASED ON A 2-HOUR RATED ASSEMBLY. ALL PENETRATIONS INTO THIS ASSEMBLY SHALL BE BASED ON THE 1-HOUR RATING REQUIREMENTS.
3	FOR THE LAUNDRY ROOMS: A 1/2-HOUR RATING (SMOKE PARTITION) IS REQUIRED. HOWEVER, DUE TO THE REQUIREMENTS OF WALL ASSEMBLY, A 1-HOUR RATED UL SYSTEM IS BEING LISTED. ALL PENETRATIONS INTO THIS ASSEMBLY SHALL BE BASED ON SMOKE PARTITION REQUIREMENTS.

LEGEND - CODE PLAN LEGEND

	ILLUMINATED "EXIT" SIGN
	ILLUMINATED "EXIT" SIGN W/ DIRECTION INDICATOR
RATING 1 HR / UL ASSEMBLY UL#400 / SMOKE PARTITION / TYPE OF SEPARATION	RATED WALL TAG
FEC FE	FIRE EXTINGUISHER IN FIRE EXTINGUISHER CABINET FIRE EXTINGUISHER, WALL MOUNTED
	1 HOUR RATED PARTITION
	SMOKE RATED PARTITION
	COMMON PATH, TRAVEL DISTANCE, OR DEAD END
L R A	EXIT R = REQUIRED WIDTH L = OCCUPANT LOAD A = ACTUAL WIDTH

CODE DISTANCES

PATH ID	LENGTH
TRAVEL DISTANCE	
TD-1	207'-2"
TD-2	130'-11"
TD-3	187'-0"
TD-4	215'-6"
DEAD END	
DE-1	15'-0"
DE-2	14'-0"
DE-3	10'-0"
DE-4	22'-6"
COMMON PATH	
CP-1	87'-6"
CP-2	51'-0"

REQUIRED NUMBER OF PLUMBING FIXTURES PER THE NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE

AREA	EGRESS OCC. #	ACTUAL OCC. #	IPC OCC. #	W.CL. M.	W.CL. F.	LAV. M.	LAV. F.	B/S	DF	OTHER
BUSINESS	296		148 M / 148 F	1-50 = 2 50-148 = 2	1-50 = 2 50-148 = 2	1-80 = 2 80-148 = 1	1-80 = 2 80-148 = 1	-	1/100 = 2	1 SS / FLOOR
ASSEMBLY A-3	63	67	65 M / 65 F	1/125 = 1	1/65 = 1	1/200 = 1	1/200 = 1	-	1/500 = 1	1 SS / FLOOR
			REQUIRED	5	5	4	4	0	3	1 SS
			PROVIDED	10 UNISEX				2	4	8 SS

PER A PRELIMINARY MEETING WITH E. MCCALEB, THE CODE OCCUPANCY LOAD SHALL BE USED. HOWEVER, THE WAITING ROOMS ACTUAL OCCUPANCY SHALL BE PERMITTED TO BE USED FOR PLUMBING PURPOSES AND VENTILATION PURPOSES

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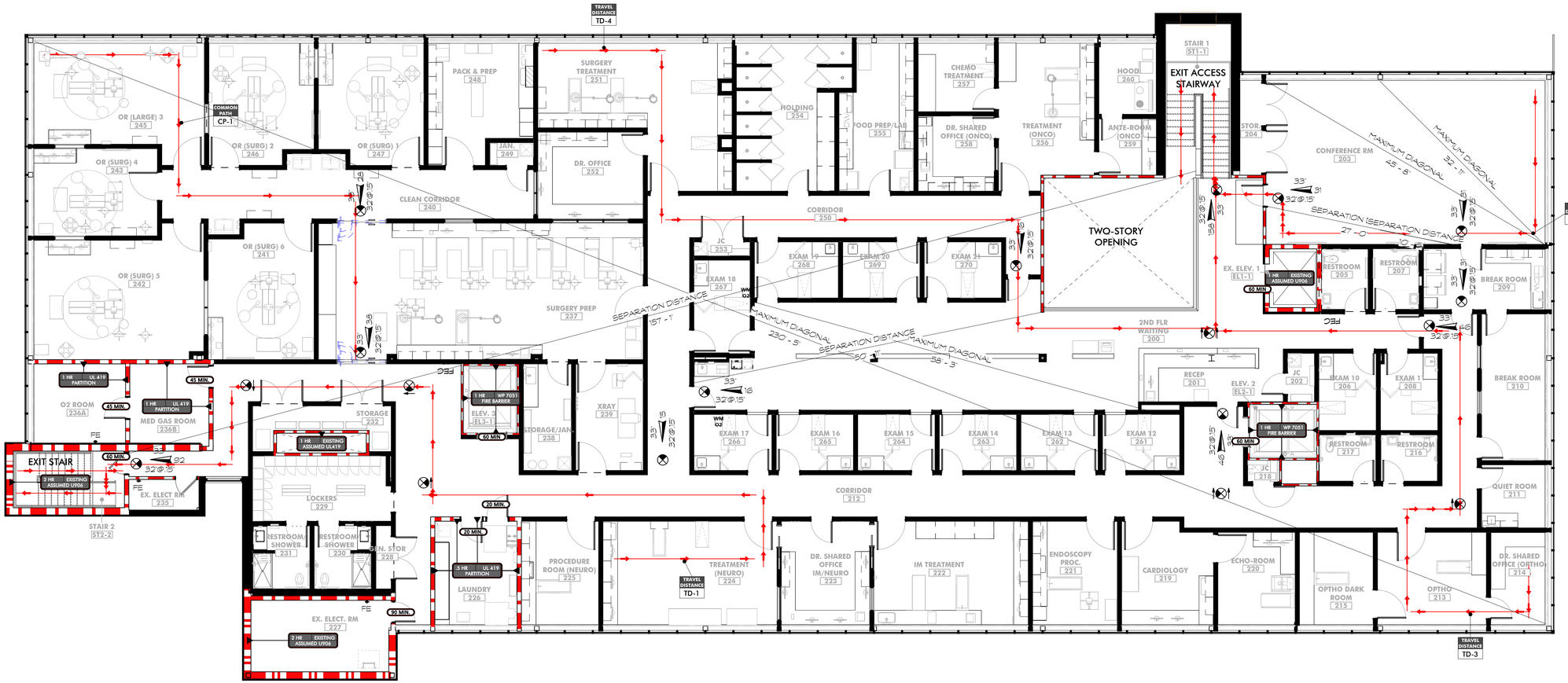

1 SECOND FLOOR CODE PLAN

1/8" = 1'-0"

LEGEND - CODE PLAN LEGEND

	ILLUMINATED "EXIT" SIGN
	ILLUMINATED "EXIT" SIGN W/ DIRECTION INDICATOR
RATING UL ASSEMBLY 1 HR UL#555 SMOKE PARTITION TYPE OF SEPARATION	RATED WALL TAG
FEC	FIRE EXTINGUISHER IN FIRE EXTINGUISHER CABINET
FE	FIRE EXTINGUISHER, WALL MOUNTED
	1 HOUR RATED PARTITION
	SMOKE RATED PARTITION
	COMMON PATH, TRAVEL DISTANCE, OR DEAD END
R L A	EXIT R = REQUIRED WIDTH L = OCCUPANT LOAD A = ACTUAL WIDTH

CODE DISTANCES

PATH ID	LENGTH
TRAVEL DISTANCE	
TD-1	207'-2"
TD-2	130'-11"
TD-3	187'-0"
TD-4	215'-6"
DEAD END	
DE-1	15'-0"
DE-2	14'-0"
DE-3	10'-0"
DE-4	22'-6"
COMMON PATH	
CP-1	87'-6"
CP-2	51'-0"

GENERAL CODE PLAN NOTES

1	FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITIONS OR ANY OTHER WALL REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED AS REQUIRED BY IBC 703.7
2	FOR THE NEW ELEVATOR SHAFTS: A 1-HOUR RATING IS REQUIRED. HOWEVER, DUE TO THE REQUIREMENTS OF THE ELEVATOR, THE WALL ASSEMBLY IS THICKER AND IS BASED ON A 2-HOUR RATED ASSEMBLY. ALL PENETRATIONS INTO THIS ASSEMBLY SHALL BE BASED ON THE 1-HOUR RATING REQUIREMENTS.
3	FOR THE LAUNDRY ROOMS: A 1/2-HOUR RATING (SMOKE PARTITION) IS REQUIRED. HOWEVER, DUE TO THE REQUIREMENTS OF WALL ASSEMBLY, A 1-HOUR RATED UL SYSTEM IS BEING LISTED. ALL PENETRATIONS INTO THIS ASSEMBLY SHALL BE BASED ON SMOKE PARTITION REQUIREMENTS.

MW STUDIOS
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WHITE MARSH, MD 21162
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CONSULTANT:

SEAL:

COA:

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
MANNS WOODWARD STUDIOS, INC.
No. 53188

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

2ND FLR CODE PLAN

SHEET NUMBER:
G004

9/20/2023 5:08:25 PM

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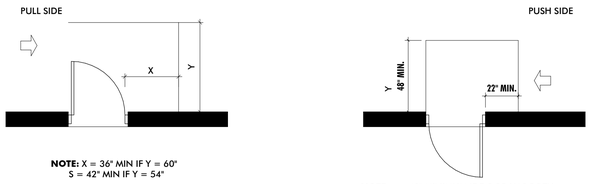
NOTE: x = 12" IF DOOR HAS BOTH A CLOSER AND LATCH.

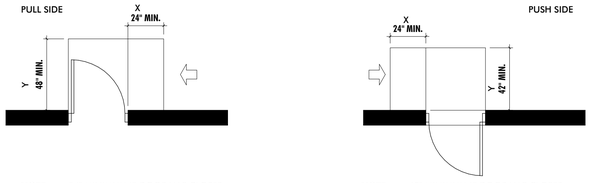
(a)
Front Approaches - Swinging Doors



NOTE: X = 36" MIN IF Y = 60"
S = 42" MIN IF Y = 54"

NOTE: y = 48" MINIMUM IF DOOR HAS BOTH A CLOSER AND LATCH.

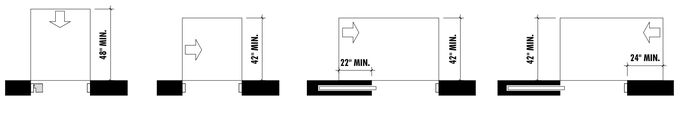
(b)
Hinge Side Approaches - Swinging Doors



NOTE: y = 54" MINIMUM IF DOOR HAS CLOSER

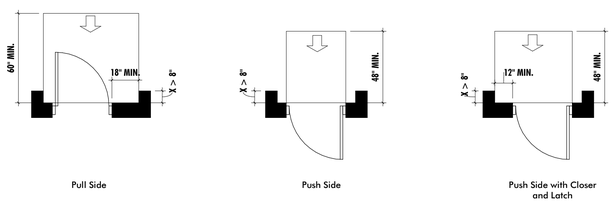
NOTE: y = 48" MINIMUM IF DOOR HAS CLOSER.

(c)
Latch Side Approaches - Swinging Doors



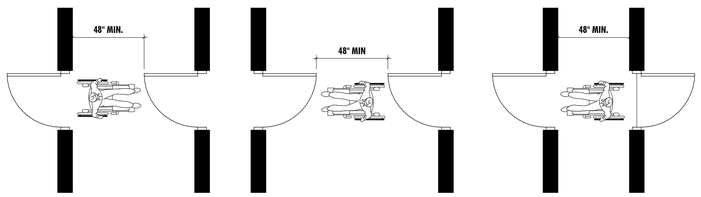
Front Approach | Side Approach | Pocket or Hinge Approach | Stop or Latch Approach

(d)
Doorways without Doors



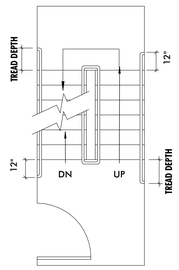
Pull Side | Push Side | Push Side with Closer and Latch

(e)
Recessed Doors and Gates

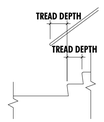


Two Hinged Doors in Series

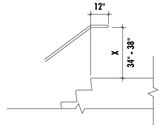
DOOR CLEARANCES (TYPICAL)
NOT TO SCALE



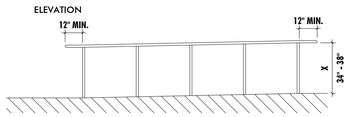
PLAN

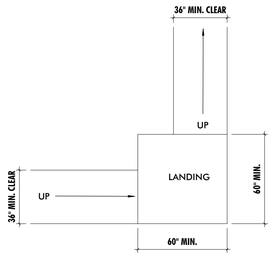


EXTENSION AT BOTTOM OF RUN



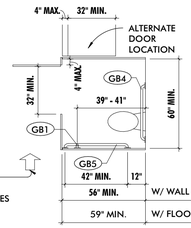
EXTENSION AT TOP OF RUN



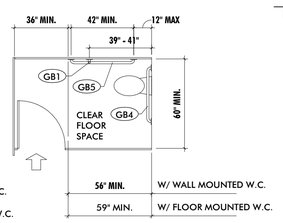


RAMP & LANDING

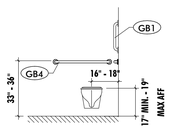
STAIR & RAMP CLEARANCES (TYPICAL)
NOT TO SCALE



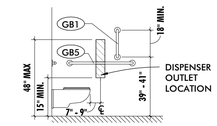
STANDARD STALL



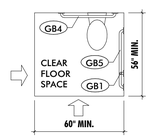
STANDARD STALL (END OF ROW)

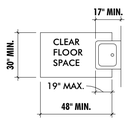


REAR WALL OF STANDARD STALL

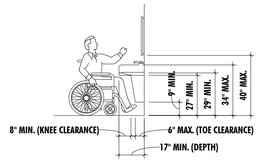


SIDE WALLS



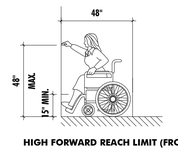


CLEAR FLOOR SPACE AT LAVATORIES

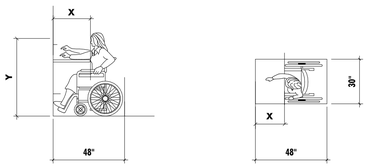


LAVATORY CLEARANCES

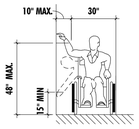
TOILET ROOM CLEARANCES (TYPICAL)
NOT TO SCALE



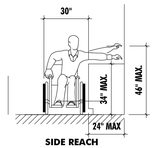
HIGH FORWARD REACH LIMIT (FRONT APPROACH)



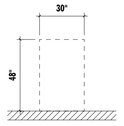
MAXIMUM FORWARD REACH OVER AN OBSTRUCTION
NOTE: WHEN X IS >20 INCHES MAX, Y SHALL BE 48 INCHES MAX
WHEN X IS 20-25 INCHES MAX, Y SHALL BE 44 INCHES MAX



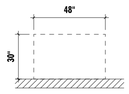
HIGH & LOW SIDE REACH LIMITS



SIDE REACH

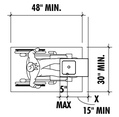


FRONT APPROACH

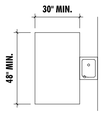


SIDE APPROACH

REACH RANGES & APPROACHES (TYPICAL)
NOT TO SCALE

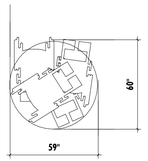


CLEAR FLOOR SPACE

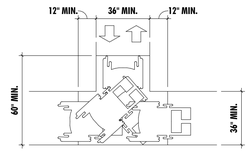


FREE STANDING FOUNTAIN OR COOLER

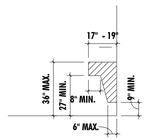
DRINKING FOUNTAINS (TYPICAL)
NOT TO SCALE



60 INCH - DIAMETER SPACE



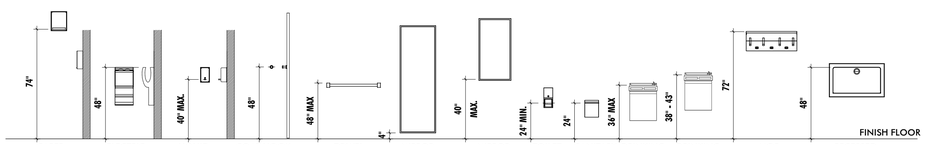
T - SHAPED SPACE FOR 180 DEGREE TURNS



ALLOWABLE PROTRUSIONS INTO WHEELCHAIR SPACE

TAG	FIXTURE/ACCESSORY
GB1	GRAB BAR - 18"
GB2	GRAB BAR - 24"
GB3	GRAB BAR - 30"
GB4	GRAB BAR - 36"
GB5	GRAB BAR - 42"
GB6	GRAB BAR - 48"
CR1	SHOWER CURTAIN ROD
SS1	FOLDING SHOWER SEAT

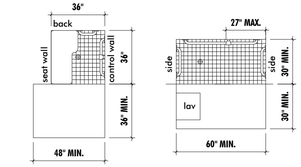
FLOOR CLEARANCES (TYPICAL)
NOT TO SCALE

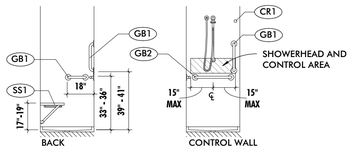


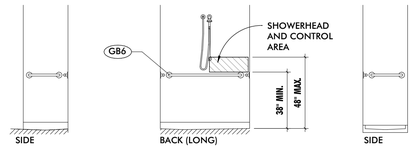
NOTE: ALL CONTROLS SHALL NOT EXTEND ABOVE 48" FOR FRONT APPROACH & 54" FOR SIDE APPROACH. (SEE REACH RANGE DIAGRAMS)

NOTE: NOT ALL ITEMS SHOWN MAY BE USED IN THIS BUILDING.

TYPICAL ACCESSIBLE MOUNTING HEIGHTS
NOT TO SCALE







NOTE: SHOWER HEAD AND CONTROL AREA MAY BE ON BACK (LONG) WALL (AS SHOWN) OR ON EITHER SIDE WALL.

SHOWERS (TYPICAL)
NOT TO SCALE

MW STUDIOS
ARCHITECTURE + MASTER PLANNING
10839 PHILADELPHIA RD
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410-344-1460
INFO@MWSARCH.COM
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9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

TYPICAL ACCESSIBILITY GUIDELINES

SHEET NUMBER:
G005

9/20/2023 5:08:29 PM

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UL-U419

NOT TO SCALE

Design No. U419

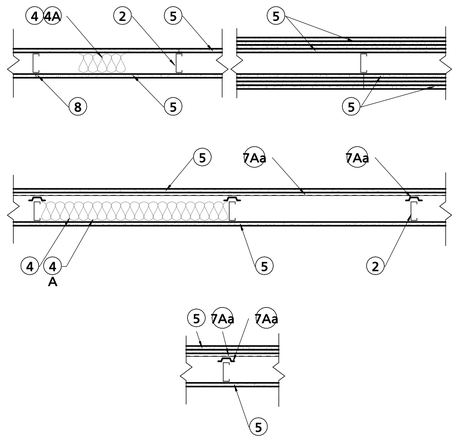
BXUV- Fire Resistance Ratings - ANSI/UL 263
BXUV7 - Fire Resistance Ratings - CAN/ULC-S101 Certified for Canada

Design No. U419

May 28, 2015

Nonbearing Wall Ratings - 1, 2, 3, or 4 Hr (See Items 4 & 5 through 5K)

***Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**



1. **Floor and Ceiling Runners** — (Not shown) — For use with Item 2 - Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.

1A. **Framing Members* - Floor and Ceiling Runner —** Not shown - In lieu of Item 1 — For use with Item 2B, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™ Track

CRACO MFG INC — SmartTrack25™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™ Track

PHILLIPS MFG CO L L C — Viper25™ Track

1B. **Framing Members* - Floor and Ceiling Runner —** Not shown - In lieu of Item 1 — For use with Item 2C, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™ Track

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track

PHILLIPS MFG CO L L C — Viper20™ Track

1C. **Framing Members*— Floor and Ceiling Runners** — (Not shown) — In lieu of Item 1 - Channel shaped, attached to floor and ceiling with fasteners 24 in. OC. max.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME Framing System

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME Framing System

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME Framing System

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME Framing System

UNITED METAL PRODUCTS INC — Type SUPREME Framing System

1D. Floor and Ceiling Runners — (Not shown)—For use with Item 2A- Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1E. Framing Members*— Floor and Ceiling Runners — (Not shown, As an alternate to Item 1) — For use with Items 2E, 5F or 5G or 5I only, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max.
CLARKDIETRICH BUILDING SYSTEMS — CD ProTRAK

DMFCWBS L L C — ProTRAK

MBA METAL FRAMING — ProTRAK

RAM SALES L L C — Ram ProTRAK

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProTRAK

1F. **Framing Members* - Floor and Ceiling Runner —** Not shown - In lieu of Item 1 — For use with Item 2F, proprietary channel shaped runners, minimum width to accommodate stud size, with 1- 1/8 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

SUPER STUD BUILDING PRODUCTS — The Edge

1G. **Framing Members* - Floor and Ceiling Runner —** For use with Item 2G, proprietary channel shaped runners, minimum width to accommodate stud size attached to floor and ceiling with fasteners 24 in. OC max.

STUDCO BUILDING SYSTEMS — CROCSTUD Track

1H. **Floor and Ceiling Runners —** (Not shown) — Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1 in. long legs, for use with studs specified below and fabricated from min 0.02 in. galv steel or thicker, attached to floor and ceiling with fasteners spaced max 24 in. OC.

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™ Track VT100.

1I. **Framing Members*— Floor and Ceiling Runners —** (Not shown, As an alternate to Item 1) — For use with Items 2H, channel shaped, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC. max.

TELLING INDUSTRIES L L C — TRUE-TRACK™

1J. **Framing Members* - Floor and Ceiling Runner —** Not shown - In lieu of Item 1 — For use with Item 2J, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.
TELLING INDUSTRIES L L C — Viper25™ Track

1K. **Framing Members* - Floor and Ceiling Runner —** Not shown - In lieu of Item 1 — For use with Item 2J, proprietary channel shaped runners, 1-1/4 in. wide by 3-5/8 in. deep fabricated from min 0.020 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

TELLING INDUSTRIES L L C — Viper20™ Track

2. **Steel Studs —** Channel shaped, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2A. **Steel Studs** — (As an alternate to Item 2, For use with Items 5B, 5E, 5H, 5J and 5K) Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced a max of 16 in. OC. Studs friction-fit into floor and ceiling runners. Studs to be cut 5/8 to 3/4 in. less than assembly height.

2B. **Framing Members* - Steel Studs** — (As an alternate to Item 2, For use with Items 5C, 5I or 5K) - Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a 1/2 in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper25™

CRACO MFG INC — SmartStud25™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper25™

PHILLIPS MFG CO L L C — Viper25™

2C. **Framing Members* - Steel Studs —** Not shown - In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.020 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights.

CALIFORNIA EXPANDED METAL PRODUCTS CO — Viper20™

MARINO/WARE, DIV OF WARE INDUSTRIES INC — Viper20™

PHILLIPS MFG CO L L C — Viper20™

2D. **Framing Members*— Steel Studs** — In lieu of Item 2 - Channel shaped studs, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

ALLSTEEL & GYPSUM PRODUCTS INC — Type SUPREME Framing System

CONSOLIDATED FABRICATORS CORP, BUILDING PRODUCTS DIV — Type SUPREME Framing System

QUAIL RUN BUILDING MATERIALS INC — Type SUPREME Framing System

SCAFCO STEEL STUD MANUFACTURING CO — Type SUPREME Framing System

STEEL CONSTRUCTION SYSTEMS INC — Type SUPREME Framing System

UNITED METAL PRODUCTS INC — Type SUPREME Framing System

2E. **Framing Members*— Steel Studs** — (Not shown, As an alternate to Item 2) —For use with Items 5F or 5G or 5I or 5K only, channel shaped studs, min depth as indicated under Item 5F, 5G or 5I, fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
CLARKDIETRICH BUILDING SYSTEMS — CD ProSTUD

DMFCWBS L L C — ProSTUD

MBA METAL FRAMING — ProSTUD

RAM SALES L L C — Ram ProSTUD

STEEL STRUCTURAL PRODUCTS L L C — Tri-S ProSTUD

2F. **Framing Members* - Steel Studs** — Not shown - In lieu of Item 2 — proprietary channel shaped steel studs, minimum width indicated under Item 5, 1-1/4 in. deep fabricated from min 0.015 in. (min bare metal thickness) galvanized steel. Studs 3/8 in. to 3/4 in. less in lengths than assembly heights.

SUPER STUD BUILDING PRODUCTS — The Edge

2G. **Framing Members* - Steel Studs** — Not shown - In lieu of Item 2 - proprietary channel shaped studs, minimum width indicated under Item 5, Studs to be cut 3/8 to 3/4 in less than the assembly height.

STUDCO BUILDING SYSTEMS — CROCSTUD

2H. **Framing Members*— Steel Studs** — (Not shown, As an alternate to Item 2) — Fabricated from min. 0.015 in. (min bare metal thickness) galvanized steel, spaced a max of 24 in. OC. Studs to be cut 3/4 in. less than assembly height.
TELLING INDUSTRIES L L C — TRUE-STUD™

2I. **Framing Members* - Steel Studs** — (As an alternate to Item 2, For use with Items 5C or 5L or 5K) - Proprietary channel shaped studs, 3-5/8 in. deep spaced a max of 24 in. OC. Studs to be cut 3/4 in less than the assembly height and installed with a ½ in. gap between the end of the stud and track at the bottom of the wall. For direct attachment of gypsum board only.

TELLING INDUSTRIES L L C — Viper25™

2J. **Framing Members* - Metal Studs** — Not shown - In lieu of Item 2 — proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced a max of 24 in. OC, fabricated from min 0.020 in. thick galv steel. Studs cut 3/8 in. to 3/4 in. less in lengths than assembly heights

TELLING INDUSTRIES L L C — Viper20™

2K. **Framing Members*— Steel Studs** — As an alternate to Item 2 - For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

EB MéTAL INC — EB Stud

2L. **Framing Members* — Steel Studs** — As an alternate to Item 2 - For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

OLMAR SUPPLY INC — PRIMESTUD

2M. **Framing Members* — Steel Studs** — As an alternate to Item 2 - For use with Item 1, channel shaped studs, fabricated from min 25 MSG corrosion-protected steel, min depth as indicated under Item 5, spaced a max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

MARINO/WARE, DIV OF WARE INDUSTRIES INC — StudRite™

3. **Wood Structural Panel Sheathing** — (Optional, For use with Item 5 Only.) - (Not Shown) - 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 15/32 in. thick structural 1 sheathing (plywood) complying with DOC PS1 or PS2, or APA Standard PRP-108, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with flat-head self-drilling tapping screws with a min. head diam. of 0.292 in. at maximum 6 in. OC. in the perimeter and 12 in. OC. in the field. When used, fastener lengths for gypsum panels increased by min. 1/2 in.

4. **Batts and Blankets*** — (Required as indicated under Item 5) — Mineral wool batts, friction fitted between studs and runners. Min nom thickness as indicated under Item 5. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

4A. **Batts and Blankets*** — (Optional) — Placed in stud cavities, any glass fiber or mineral wool insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

4B. **Batts and Blankets*** — For use with Item 5K. Placed in stud cavities, any min. 3-1/2 in. thick glass fiber insulation bearing the UL Classification Marking as to Surface Burning Characteristics and/or Fire Resistance. See Batts and Blankets (BKNV or BZJZ) Categories for names of Classified companies.

5. **Gypsum Board*** — Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Rating, Hr	Min Stud Depth, in. Items 2, 2C, 2D, 2F and 2G	No. of Layers & Thickness of Panel	Min Thickness of Insulation (Item 4)
1	3-1/2	1 layer, 5/8 in. thick	Optional
1	2-1/2	1 layer, 1/2 in. thick	1-1/2 in.
1	1-5/8	1 layer, 3/4 in. thick	Optional
2	1-5/8	2 layer, 1/2 in. thick	Optional
2	1-5/8	2 layer, 5/8 in. thick	Optional
2	3-1/2	1 layer, 3/4 in. thick	3 in.
3	1-5/8	3 layer, 1/2 in. thick	Optional
3	1-5/8	2 layer, 3/4 in. thick	Optional
3	1-5/8	3 layer, 5/8 in. thick	Optional
4	1-5/8	4 layer, 5/8 in. thick	Optional
4	1-5/8	4 layer, 1/2 in. thick	Optional
4	2-1/2	2 layer, 3/4 in. thick	2 in.

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR; WRC, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX or WRC; 3/4 in. thick Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type SCX, SGX, SHX, WRX, IP-X1, AR, C, WRC, FRX-G, IP-AR, IP-X2, IPC-AR ; 3/4 in. thick Types IP-X3 or ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or WRC; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRX, WRC or; 3/4 in. thick Types IP-X3 or ULTRACODE

When Item 7B, Steel Framing Members*, is used, Nonbearing Wall Rating is limited to 1 Hr. Min. stud depth is 3-1/2 in., min. thickness of insulation (Item 4) is 3 in., and two layers of gypsum board panels (1/2 in. or 5/8 in. thick) shall be attached to furring channels as described in Item 6. One layer of gypsum board panels (1/2 in. or 5/8 in. thick) attached to opposite side of stud without furring channels as described in Item 6.

5A. **Gypsum Board*** — (As an alternate to Item 5) — 5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 6.

CGC INC — Type SHX.

UNITED STATES GYPSUM CO — Type FRX-G, SHX.

USG MEXICO S A DE C V — Type SHX.

5B. **Gypsum Board*** — (Not Shown) - As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 in or ¾ in. thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) - Nom 5/8 in. or ¾ in. may be used as alternate to all 5/8 in. or ¾ in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 in. or ¾ in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Gypsum board secured to 20 MSG steel studs Item 2A with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. To be used with Lead Batten Strips (see Item 11) or Lead Discs or Tabs (see Item 12).

RAY-BAR ENGINEERING CORP — Type RB-LBG

5C. **Gypsum Board*** — (For Use With Item 2B) Rating Limited to 1 Hour. 5/8 in. thick, 48 in. wide, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. (Vertical Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. Vertical joints are to be centered over studs and staggered one stud cavity on opposite sides of studs. (Horizontal Application) - The gypsum board is to be installed on each side of the studs with 1 in. long Type S coated steel screws spaced 8 in. OC starting 4 in. from the edge of the board at the vertical edges and 12 in. OC starting 6 in. from the edge of the board at the center of each board. Gypsum boards are to be secured to the top and bottom track with screws spaced 8 in. OC starting 4 in. from the board edge. Fasteners shall not penetrate through both the stud and the track at the same time. All horizontal joints are to be backed as outlined under section VI of Volume 1 in the Fire Resistive Directory.
CGC INC — Type SCX.

UNITED STATES GYPSUM CO — Type SCX, SGX.

USG MEXICO S A DE C V — Type SCX.

5D. **Gypsum Board* —** (As an alternate to Item 5) — 5/8 in. thick, 48 in. wide, applied vertically or horizontally. Secured as described in Item 6. For use with Items 1 and 2 only.

CGC INC — Type USGX.

UNITED STATES GYPSUM CO — Type USGX.

USG MEXICO S A DE C V — Type USGX.

5E. **Gypsum Board*** — (Not Shown) - (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nominal 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 (or No. 6 by 1-1/4 in. long bugle head fine driller) steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field.
NEW ENGLAND LEAD BURNING CO INC, DBA NELCO — Nelco

5F. **Gypsum Board*** — (As an alternate to Item 5) — For use with Items 1E and 2E and limited to 1 Hour Rating only, Gypsum panels with beveled, square or tapered edges, applied vertically, and fastened to the steel studs with 1 in. long Type S screws spaced 8 in. OC along vertical and bottom edges and 12 in. OC in the field. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Steel stud depth shall be a minimum 3-5/8 in.

UNITED STATES GYPSUM CO — 5/8 in. thick Type SCX, SGX.

5G. **Gypsum Board*** — (As an alternate to Item 5) — For use with Items 1E and 2E only, Gypsum panels with beveled, square or tapered edges, applied vertically or horizontally, as specified in the table below and fastened to the steel studs as described in Item 6. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) staggered a min of 12 in. The thickness and number of layers for the 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, in. Item 2E	No. of Layers & Thickness of Panel	Min Thickness of Insulation (Item 4)
2	1-5/8	2 layers, 1/2 in. thick	Optional
2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	3 layers, 1/2 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 1/2 in. thick	Optional

CGC INC — 1/2 in. thick Type C, IP-X2 or IPC-AR;, 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or; 3/4 in. thick Types IP-X3 or ULTRACODE

UNITED STATES GYPSUM CO — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type SCX, SGX, SHX, IP-X1, AR, C, , FRX-G, IP-AR, IP-X2, IPC-AR ; 3/4 in. thick Types IP-X3 or ULTRACODE

USG MEXICO S A DE C V — 1/2 in. thick Type C, IP-X2, IPC-AR or; 5/8 in. thick Type AR, C, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, or; 3/4 in. thick Types IP-X3 or ULTRACODE

5H. **Gypsum Board*** — (Not Shown) - (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 5/8 or 3/4 in thick products are specified. For direct attachment only to steel studs Item 2A, (not to be used with Item 3) - Nom 5/8 or 3/4 in. may be used as alternate to all 5/8 or 3/4 in. shown in Item 5, Wallboard Protection on Each Side of Wall table. Nom 5/8 or 3/4 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over 20 MSG steel studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Gypsum board secured to 20 MSG steel studs Item 2B with 1-1/4 in. long Type S-12 steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. For Joint Compound see Item 5. To be used with Lead Batten Strips (see Item 11A) or Lead Discs (see Item 12A).

MAYCO INDUSTRIES INC — Type X-Ray Shielded Gypsum

5I. **Gypsum Board* —** (As an alternate to Item 5) - Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges installed as described in Item 5. Steel stud minimum depth shall be as indicated in Item 5. INC — Type X-Ray Shielded Gypsum

CGC INC — Type ULX

UNITED STATES GYPSUM CO — Type ULX

USG MEXICO S A DE C V — Type ULX

5J. **Gypsum Board*** — (Not Shown) - (As an alternate to Item 5 when used as the base layer on one or both sides of wall when 1/2 in. or 5/8 in thick products are specified, For direct attachment only to steel studs Item 2A, not to be used with Item 3). Nom 5/8 in. thick lead backed gypsum panels with beveled, square or tapered edges, applied vertically. Vertical joints centered over studs and staggered min 1 stud cavity on opposite sides of studs. Wallboard secured to studs with 1-1/4 in. long Type S-12 steel screws gypsum panel steel screws spaced 8 in. OC at perimeter and 12 in. OC in the field. Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations. Lead batten strips, min 2 in. wide, max 8 ft long with a max thickness of 0.14 in. placed on the face of studs and attached to the stud with construction adhesive and two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead discs, nominal 3/8 in. diam by max 0.085 in. thick. Compression fitted or adhered over the screw heads. Lead batten strips and discs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".
RADIATION PROTECTION PRODUCTS INC — Type RPP - Lead Lined Drywall

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SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

PRELIMINARY NOT FOR CONSTRUCTION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

UL ASSEMBLIES

SHEET NUMBER:

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5K. **Gypsum Board*** — (Not Shown) - (As an alternate to Item 5) - Nom. 5/8 in. thick gypsum panels with beveled, square or tapered edges, applied vertically or horizontally. Vertical joints centered over studs and staggered one stud cavity on opposite sides of studs. Vertical joints in adjacent layers (multilayer systems) staggered one stud cavity. Horizontal joints need not be backed by steel framing. Horizontal edge joints and horizontal butt joints on opposite sides of studs need not be staggered. Horizontal edge joints and horizontal butt joints in adjacent layers (multilayer systems) need not be staggered. The number of layers for the 1 hr, 2 hr, 3 hr and 4 hr ratings are as follows:

Gypsum Board Protection on Each Side of Wall

Rating, Hr	Min Stud Depth, in. Items 2 through 2L	No. of Layers & Thickness of Panel	Min Thickness of Insulation (Item 4)
1	3-5/8	1 layer, 5/8 in. thick	3-1/2 in.
2	1-5/8	2 layers, 5/8 in. thick	Optional
3	1-5/8	3 layers, 5/8 in. thick	Optional
4	1-5/8	4 layers, 5/8 in. thick	Optional

UNITED STATES GYPSUM CO — 5/8 in. thick Type ULIX

6. **Fasteners** — (Not shown) — For use with Items 2 and 2F - Type S or S-12 steel screws used to attach panels to studs (Item 2) or furring channels (Item 7). **Single layer systems:** 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. **Two layer systems:** First layer- 1 in. long for 1/2 and 5/8 in. thick panels or 1-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels or 2-1/4 in. long for 3/4 in. thick panels, spaced 16 in. OC with screws offset 8 in. from first layer.**Three-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in., 5/8 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 12 in. OC. Screws offset min 6 in. from layer below. **Four-layer systems:** First layer- 1 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Second layer- 1-5/8 in. long for 1/2 in., 5/8 in. thick panels, spaced 24 in. OC. Third layer- 2-1/4 in. long for 1/2 in. thick panels or 2-5/8 in. long for 5/8 in. thick panels, spaced 24 in. OC. Fourth layer- 2-5/8 in. long for 1/2 in. thick panels or 3 in. long for 5/8 in. thick panels, spaced 24 in. OC. Screws offset min 6 in. from layer below.

6A. **Fasteners** — (Not shown) — For use with Item 5C Type S or GQ-2 screws offset used for 4 hr rating. Single layer systems: 1 in. long screws, spaced 8 in. OC when panels are applied horizontally, or 8 in. OC along vertical and bottom edges and 12 in. OC in the field when panels are applied vertically. Two layer systems: First layer- 1 in. long screws, spaced 16 in. OC. Second layer- 1-5/8 in. screws, spaced 8 in. OC with screws offset 8 in. from first layer. Three-layer systems: First layer- 1 in. long screws, spaced 24 in. OC. Second layer- 1-5/8 in. long screws, spaced 24 in. OC. Third layer- 2-5/8 in. long screws, spaced 8 in. OC. Screws offset min 6 in. from layer below. Four-layer systems: First layer- 1 in. long screws, spaced 24 in. OC. Second layer- 1-5/8 in. long screws, spaced 24 in. OC. Third layer- 2-5/8 in. long screws, spaced 24 in. OC. Fourth layer- 3 in. long screws, spaced 8 in. OC. Screws offset min 6 in. from layer below.

7. **Furring Channels** — (Optional, not shown, for single or double layer systems) — Resilient furring channels fabricated from min 25 MSG corrosion-protected steel, spaced vertically a max of 24 in. OC. Flange portion attached to each intersecting stud with 1/2 in. long Type S-12 steel screws. Not for use with Item 5A and 5E.

7A. **Framing Members*** — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-9/16 in. or 2-23/32 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.

b. **Steel Framing Members*** — Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. RSIC-1 and RSIC-1 (2.75) clips secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. RSIC-V and RSIC-V (2.75) clips secured to studs with No. 8 x 9/16 in. minimum self-drilling, S-12 steel screw through the center hole. Furring channels are friction fitted into clips. RSIC-1 and RSIC-V clips for use with 2-9/16 in. wide furring channels. RSIC-1 (2.75) and RSIC-V (2.75) clips for use with 2-23/32 in. wide furring channels.

PAC INTERNATIONAL INC — Types RSIC-1, RSIC-V, RSIC-1 (2.75), RSIC-V (2.75).

7B. **Framing Members*** — (Optional, Not Shown) — As an alternate to Item 7, for single or double layer systems, furring channels and Steel Framing Members on only one side of studs as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel, spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Batts and Blankets placed in stud cavity as described in Item 5. Two layers of gypsum board attached to furring channels as described in Item 5. Not for use with Item 5A and 5E.

b. **Steel Framing Members*** — Used to attach furring channels (Item 7Ba) to one side of studs (Item 2) only. Clips spaced 48 in. OC., and secured to studs with two No. 8 x 2-1/2 in. coarse drywall screws, one through the hole at each end of the clip. Furring channels are friction fitted into clips.

KINETICS NOISE CONTROL INC — Type Isomax

7C. **Framing Members*** — (Not Shown) — (Optional on one or both sides, not shown, for single or double layer systems) — As an alternate to Item 7, furring channels and Steel Framing Members as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. 2-3/8 in. wide by 7/8 in. deep, spaced max. 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Gypsum board attached to furring channels as described in Item 6. Not for use with Item 5A and 5E.

b. **Steel Framing Members*** — Used to attach furring channels (Item 7Aa) to studs (Item 2). Clips spaced max. 48 in. OC. GENIECLIPS secured to studs with No. 8 x 1-1/2 in. minimum self-drilling, S-12 steel screw through the center grommet. Furring channels are friction fitted into clips.

PLITEQ INC — Type GENIECLIP

7D. **Steel Framing Members** — (Optional, Not Shown)* - Furring channels and resilient sound isolation clip as described below:

a. **Furring Channels** — Formed of No. 25 MSG galv steel. Spaced 24 in. OC perpendicular to studs. Channels secured to studs as described in Item b. Ends of adjoining channels overlapped 6 in. and secured together with four self-tapping No. 8x1/2 Self Drilling screws (2 per side 1 in. and 4 in. from overlap edge). Gypsum board attached to furring channels as described in Item 4. Side joint furring channels shall be attached to studs with RESILMOUNT Sound Isolation Clips - located approximately 2 in. from each end of length of channel. Both Gypsum Boards at side joints fastened into channel with screws spaced 8 in. OC, approximately 1/2 in. from joint edge. Not for use with Item 5A and 5E.

b. **Steel Framing Members*** — Resilient sound isolation clip used to attach furring channels (Item 7Da) to studs. Clips spaced 24 in. OC., and secured to studs with No. 10 x 2-1/2 in. coarse drywall screw through the center hole. Furring channels are friction fitted into clips.

STUDCO BUILDING SYSTEMS — RESILMOUNT Sound Isolation Clips - Type A237 or A237R

FOR THE LAUNDRY ROOMS: A 1/2-HOUR RATING (SMOKE PARTITION) IS REQUIRED. HOWEVER, DUE TO THE REQUIREMENTS OF WALL ASSEMBLY, A 1-HOUR RATED UL SYSTEM IS BEING LISTED. ALL PENETRATIONS INTO THIS ASSEMBLY SHALL BE BASED ON SMOKE PARTITION REQUIREMENTS.

8. **Joint Tape and Compound** — Vinyl or casein, dry or premixed joint compound applied in two coats to joints and screw heads of outer layers. Paper tape, nom 2 in. wide, embedded in first layer of compound over all joints of outer layer panels. Paper tape and joint compound may be omitted when gypsum panels are supplied with a square edge.

9. **Siding, Brick or Stucco** — (Optional, not shown) — Aluminum, vinyl or steel siding, brick veneer or stucco, meeting the requirements of local code agencies, installed over gypsum panels. Brick veneer attached to studs with corrugated metal wall ties attached to each stud with steel screws, not more than each sixth course of brick.

10. **Caulking and Sealants*** — (Optional, not shown) — A bead of acoustical sealant applied around the partition perimeter for sound control.

UNITED STATES GYPSUM CO — Type AS

11. **Lead Batten Strips** — (Not Shown, For Use With Item 5B) - Lead batten strips, min 1-1/2 in. wide, max 10 ft long with a max thickness of 0.125 in. Strips placed on the interior face of studs and attached from the exterior face of the stud with two 1 in. long Type S-12 pan head steel screws, one at the top of the strip and one at the bottom of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5B) and optional at remaining stud locations. Required behind vertical joints.

11A. **Lead Batten Strips** — (Not Shown, For Use With Item 5H) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.140 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.5% meeting the Federal specification QQ-L-201f, Grades "B, C or D". Lead batten strips required behind vertical joints of lead backed gypsum wallboard and optional at remaining stud locations.

12. **Lead Discs or Tabs** — (Not Shown, For Use With Item 5B) - Used in lieu of or in addition to the lead batten strips (Item 11) or optional at other locations - Max 3/4 in. diam by max 0.125 in. thick lead discs compression fitted or adhered over steel screw heads or max 1/2 in. by 1-1/4 in. by max 0.125 in. thick lead tabs placed on gypsum boards (Item 5B) underneath screw locations prior to the installation of the screws. Lead discs or tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C".

12A. **Lead Discs** — (Not Shown, for use with Item 5H) Max 5/16 in. diam by max 0.140 in. thick lead discs compression fitted or adhered over steel screw heads. Lead discs to have a purity of 99.5% meeting the Federal Specification QQ-L-201f, Grades "B, C or D".

13. **Lead Batten Strips** — (Not Shown, For Use With Item 5E) Lead batten strips, 2 in. wide, max 10 ft long with a max thickness of 0.142 in. Strips placed on the face of studs and attached to the stud with two min. 1 in. long min. Type S-8 pan head steel screws, one at the top of the strip and one at the bottom of the strip or with one min. 1 in. long min. Type S-8 pan head steel screw at the top of the strip. Lead batten strips to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead batten strips required behind vertical joints of lead backed gypsum wallboard (Item 5E) and optional at remaining stud locations.

14. **Lead Tabs** — (Not Shown, For Use With Item 5E) 2 in. wide, 3 in. long with a max thickness of 0.142 in. Tabs friction-fit around front face of stud, the stud folded back flange, and the back face of the stud. Tabs required at each location where a screw (that secures the gypsum boards, Item 5E) will penetrate the steel stud. Lead tabs to have a purity of 99.9% meeting the Federal specification QQ-L-201f, Grade "C". Lead tabs may be held in place with standard adhesive tape if necessary.

*** Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.**

SHAFT WALLS

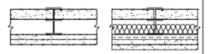
GA FILE NO. WP 7056	PROPRIETARY†	2 HOUR FIRE	50 to 54 STC SOUND

GYPSUM BOARD, SLOTTED STEEL I STUDS

One layer 1" x 24" proprietary type X gypsum panels inserted between 2 1/2" floor and ceiling runners with tab-flange section of 2 1/2" slotted steel I studs between panels. Also fire tested using 2 1/2" steel C-T studs.

OPPOSITE SIDE: **Base** layer 1/2" proprietary type X gypsum wallboard or gypsum veneer base applied at right angles to studs with 1" Type S drywall screws 24" o.c. **Face** layer 1/2" proprietary type X gypsum wallboard or veneer base applied parallel to studs with 1 5/8" Type S drywall screws 12" o.c.

Sound tested with horizontal resilient channels 24" o.c. and 1" glass fiber insulation friction fit in stud space. **(NLB)**



Thickness: 4"
Limiting Height: Refer to manufacturer
Approx. Weight: 9 psf
Fire Test: See WP 7098 (WHI 459-0528,7-12-83; WHI 495-0566, 11-1-83; WHI 495-1227, 2-10-93; WHI 495-1244, 6-30-93)
Sound Test: Estimated, see WP 7057 (WEAL 84-107, 3-16-84)

PROPRIETARY GYPSUM BOARD

CertainTeed Gypsum, Inc. — 1/2" ProRock Type C Gypsum Panels; 1" ProRock Shaftliner

†Contact the manufacturer for more detailed information on proprietary products.

FOR THE NEW ELEVATOR SHAFTS: A 1-HOUR RATING IS REQUIRED. HOWEVER, DUE TO THE REQUIREMENTS OF THE ELEVATOR, THE WALL ASSEMBLY IS THICKER AND IS BASED ON A 2-HOUR RATED ASSEMBLY. ALL PENETRATIONS INTO THIS ASSEMBLY SHALL BE BASED ON THE 1-HOUR RATING REQUIREMENTS.

MW STUDIOS
ARCHITECTURE + MASTER PLANNING
10839 PHILADELPHIA RD
WHITE MARSH, MD 21162
☎ 410-344-1460
INFO@MWSARCH.COM
WWW.MWSARCH.COM

CONSULTANT:

SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC. No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

UL ASSEMBLIES

SHEET NUMBER:

G007

9/20/2023 5:08:33 PM

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NVA - EASTERN CAROLINA CLINIC RENOVATION

FORMAL TRC SUBMITTAL

WILMINGTON, NORTH CAROLINA 28405

SITE DATA

PROJECT:	NVA - EASTERN CAROLINA CLINIC RENOVATION
DEVELOPER:	CVVF WILMINGTON NC LLC 3807 CLEGHORN AVE, STE 903 NASHVILLE, TN 37215 KBIRDSONG@MONTECITOMAC.COM PHONE: 615-921-3850
ENGINEER:	TIMMONS GROUP 430 EASTWOOD ROAD WILMINGTON, NC 28403 PHONE: 910-746-1174 JOHN WALL, PE EMAIL: JOHN.WALL@TIMMONS.COM
ARCHITECT:	MANNS WOODWARD STUDIOS 10839 PHILADELPHIA ROAD WHITE MARCH, MARYLAND 21162 PHONE: 410-334-1460 JESSICA SWEIGART EMAIL: JSWEIGART@MWSARCH.COM
PROPERTY LOCATION:	5051 NEW CENTRE DRIVE, WILMINGTON, NC 28403
EXISTING ZONING:	O&I
EXISTING USE:	OFFICE AND PROFESSIONAL
PROPOSED USE:	OFFICE AND PROFESSIONAL - VETERINARY
SEWER SYSTEM:	CFPUA
WATER SYSTEM	CFPUA
TOTAL SITE AREA:	2.40 AC
PARCEL PIN	R04920-001-001-000

Existing:

Table 1: Trip Generation Summary

ITE Land Use Code	Independent Variable	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
710 – General Office Building	29,824 SF	405	52	7	59	10	51	61

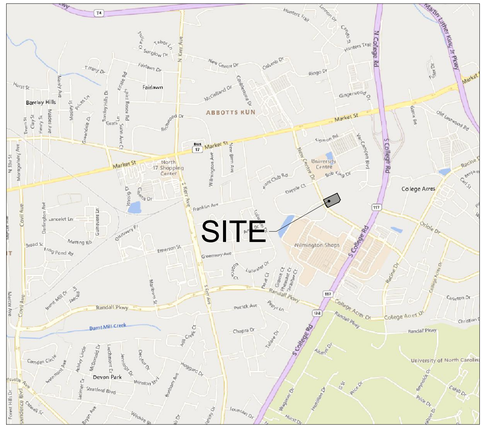
SOURCE: Institute of Transportation Engineers' *Trip Generation Manual* 11th Edition (2021)

Proposed:

Table 2: Trip Generation Summary

ITE Land Use Code	Independent Variable	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
640 – Animal Hospital / Veterinary Clinic	29,824 SF	641	80	39	119	54	81	135

SOURCE: Institute of Transportation Engineers' *Trip Generation Manual* 11th Edition (2021)



VICINITY MAP

1"=2000'

PROPERTY OWNER:

CVVF WILMINGTON NC LLC
3807 CLEGHORN AVENUE, STE 903
NASHVILLE, TN 37215
DB 6691 PG 1593
PARCEL ID: R04920-001-001-000
ZONING: O&I

NAD 83

Sheet List Table

Sheet Number	Sheet Title
C0.0	COVER SHEET
C1.0	EXISTING CONDITIONS AND DEMOLITION PLAN
C1.1	EROSION CONTROL PLAN
C2.0	SITE PLAN
C3.0	GRADING AND DRAINAGE PLAN
C4.0	IMPERVIOUS COVER ANALYSIS
C5.0	NOTES AND DETAILS - SHEET 1 OF 3
C5.1	NOTES AND DETAILS - SHEET 2 OF 3
C5.2	NOTES AND DETAILS - SHEET 3 OF 3
C5.3	EROSION CONTROL NOTES AND DETAILS - SHEET 1 OF 2
C5.4	EROSION CONTROL NOTES AND DETAILS - SHEET 2 OF 2
L1.0	LANDSCAPE PLAN
L1.1	LANDSCAPE NOTES & DETAILS

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

THIS DRAWING PREPARED AT THE **WILMINGTON OFFICE**
430 Eastwood Road | Wilmington, NC 28403
TEL 910.746.1140 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
07/05/2023	*REVISIONS PER OWNER*
09/19/2023	*REVISIONS PER TRC COMMENTS ISSUED 9/5/2023*

DATE: *08/02/2023*
DRAWN BY: *331*
DESIGNED BY: *331*
CHECKED BY: *J. WALL*
SCALE: *AS SHOWN*

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION
WILMINGTON, NORTH CAROLINA
COVER SHEET

JOB NO. *57481*
SHEET NO. *C0.0*

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

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S:\33\157481-NVA_Wilmington_New_Centre_Dr\DWG\Sheet\CD\57481-331-C0.0-COVR.dwg | Plotted by Blake Tutor

NOTE:
EXISTING VEGETATION / TREES NOT SHOWN BEING REMOVED SHALL BE PROTECTED DURING CONSTRUCTION IN ACCORDANCE WITH CITY DETAIL SD 15-09. SEE "TREE PROTECTION DURING CONSTRUCTION" DETAIL, SHEET C5.3.

NOTE:
EXISTING GROUND MOUNTED LIGHTS TO BE REMOVED. REFER TO ELECTRICAL PLANS BY OTHERS FOR LIGHTING PLAN AND FOOTCANDLES.

DEMOLITION NOTES:

1. ALL ITEMS IN BOLD PRINT ARE TO BE DEMOLISHED OR REMOVED AS INDICATED ON THIS PLAN SHEET AND SHALL BE EXCAVATED ACCORDING TO THE GRADING PLAN.
2. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, PAVEMENTS, DRIVEWAYS, SLABS, CURBING, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS.
3. CONTRACTOR SHALL APPLY FOR AND OBTAIN ALL NECESSARY PERMITS FROM LOCAL AND STATE AUTHORITIES TO COMPLETE THE WORK.
4. LOCATION OF UNDERGROUND UTILITIES AND PIPELINES SHOWN WITHIN PLANS ARE APPROXIMATE AND SOME UNDERGROUND UTILITIES MAY NOT BE SHOWN ON THIS PLAN . THEREFORE, ACCURATE LOCATING IS REQUIRED. IF ANY ADDITIONAL UTILITIES OR UNDERGROUND FEATURES ARE IDENTIFIED DURING DEMOLITION WORK, CONTRACTOR SHALL IMMEDIATELY NOTIFY TIMMONS GROUP AT (910) 746-1140.
5. EXISTING UTILITIES TO BE REMOVED SHALL BE TERMINATED, UNLESS OTHERWISE NOTED, IN CONFORMANCE WITH LOCAL, STATE AND INDIVIDUAL UTILITY COMPANY STANDARD SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL COORDINATE UTILITY SERVICE DISCONNECTS WITH THE UTILITY REPRESENTATIVES. ALL INLET GRATES, MANHOLES, VALVES, AND HYDRANTS THAT ARE TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY DEMOLITION ACTIVITIES.
6. CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS, PARKING LOTS, AND ALL OTHER PUBLIC RIGHT-OF-WAYS IN A CLEAN, SAFE, AND USABLE CONDITION, AND REMOVE DEBRIS AND LITTER ON A DAILY BASIS WHILE DEMOLITION IS IN PROGRESS. PEDESTRIAN AND VEHICLE SAFETY MUST BE MAINTAINED DURING ALL DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL ENSURE THE SITE IS LEFT IN A CLEAN MANNER UPON COMPLETION OF DEMOLITION ACTIVITIES AND PRIOR TO NEW CONSTRUCTION ACTIVITIES. THERE SHALL NOT BE ANY DEBRIS, LITTER, OR OTHER DEMOLITION RELATED WASTE LEFT ON THE PROPERTY.
8. UNLESS OTHERWISE SPECIFICALLY PROVIDED ON THE PLANS OR IN THE SPECIFICATIONS, THE ENGINEER HAS NOT PREPARED DESIGNS FOR AND SHALL HAVE NO RESPONSIBILITY FOR THE PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF HAZARDOUS MATERIALS, TOXIC WASTES OR POLLUTANTS AT THE PROJECT SITE. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY CLAIMS OF LOSS, DAMAGE, EXPENSE, DELAY, INJURY OR DEATH ARISING FROM THE PRESENCE OF HAZARDOUS MATERIAL AND CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ANY CLAIMS MADE IN CONNECTION THEREWITH. MOREOVER, THE ENGINEER SHALL HAVE NO ADMINISTRATIVE OBLIGATIONS OF ANY TYPE WITH REGARD TO ANY CONTRACTOR AMENDMENT INVOLVING THE ISSUES OF PRESENCE, DISCOVERY, REMOVAL, ABATEMENT OR DISPOSAL OF ASBESTOS OR OTHER HAZARDOUS MATERIALS.
9. ALL EXISTING UTILITIES SHALL BE PROTECTED DURING PROPOSED CLEARING, DEMOLITION AND CONSTRUCTION AND ADEQUATE COVER SHALL BE MAINTAINED OVER ALL SANITARY SEWER MAINS AND WATER MAINS IN ACCORDANCE WITH LOCAL UTILITY DEPARTMENT STANDARDS.
10. EXISTING TREES THAT ARE PROPOSED TO REMAIN SHALL BE PROTECTED FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION OF SITE.

DEMOLITION LEGEND

- DENOTES AREA OF EXISTING PAVEMENT/CONCRETE TO BE REMOVED
- DENOTES AREA OF EXISTING STRUCTURE/BUILDING TO BE REMOVED
- DENOTES EXISTING TREE / SHRUB TO BE REMOVED
- DENOTES EXISTING LINEAR ITEM TO BE REMOVED

LEGEND

- PROPERTY LINE
- EXISTING WETLANDS

FEMA FLOOD MAP INFO

- PANEL: 3137, 3138
- MAP NUMBER: 3720313700K, 3720313800K
- PANEL EFFECTIVE DATE: 8/28/2018
- ZONE X

LOT 2
N/F
Jerry A. & Marilyn S. Cook
(PID R04916-001-028-000)
(D.B.3752, Pg. 892)
(M.B. 44, Pg. 3)
(Zoned RB)

5041
2 Story Masonry Building

N/F
Jerry A. & Marilyn S. Cook
(PID R04916-001-006-0000)
(D.B.1665, Pg. 798)
(Zoned RB)

5051
2 Story Masonry Building

Singlefin Properties, LLC
PID R04920-001-001-000
D.B.5824, Pg. 2770
Area: 104,662 Sq. Ft.
2.4027 Ac.
Zoned O & I

N/F
Robert S. & Martha S. King
(PID R04916-001-025-000)
(D.B.2007, Pg. 727)
(Zoned R B)

N/F
Robert S. & Martha S. King
(PID R04920-001-002-000)
(D.B.1137, Pg. 1503)
(D.B.2036, Pg. 125)
(Zoned RB)

N/F
Robert S. & Martha S. King
(PID R04920-001-002-000)
(D.B.1137, Pg. 1503)
(D.B.2036, Pg. 125)
(Zoned RB)

24.5' Existing Acess Easement (D.B.5645, Pg. 2031)

N64°12'57"E 429.31'

S64°12'51"W 354.04'

S 25°47'09" E 296.66'

S 30°31'51" W 95.49'

S 30°31'51" W 74.51'

EXISTING FHA

EXISTING FDC LOCATION

EXISTING CATCH BASIN

EXISTING SIDEWALK AND ASSOCIATED WALLS TO BE REMOVED

REMOVE EXISTING SHRUBS AROUND BUILDING WHERE LANDSCAPING IS PROPOSED ON SHEET L1.0.

SAWCUT EXISTING SIDEWALK

REMOVE EXISTING SHRUBS AROUND BUILDING WHERE LANDSCAPING IS PROPOSED ON SHEET L1.0.

EXISTING SIDEWALK TO BE REMOVED

SAWCUT EXISTING SIDEWALK

PORTION OF EXISTING WALL TO BE REMOVED TO ALLOW NEW SIDEWALK CONNECTION

REMOVE EXISTING SHIPPING CONTAINER AND KEEP CONCRETE SLAB INTACT. REPAIR AS NEEDED. REFER TO ARCHITECTURAL PLANS.

SAWCUT EXISTING ASPHALT PAVEMENT

APPROX. LOCATION OF EXISTING INGRESS/EGRESS EASEMENT

MILL & OVERLAY EXISTING PARKING LOT. SEE SHEET C2.0

REMOVE EXISTING CALLERY PEAR TREES (3)

CALLERY PEAR DBH = 26" (REMOVE) 15" RCP

CALLERY PEAR DBH = 23" (REMOVE)

CALLERY PEAR DBH = 29" (REMOVE)

CALLERY PEAR DBH = 25"

Existing 6' Chain Link Fence

Existing 7' wood fence

Existing 6.5 ft Wood Fence

Existing 70' Carolina Power & Light Company Right-of-Way Easement (D.B.831, Pg 670)

Existing Cell Tower (no access)

Metal Shed

Double Trunk

Dock Lift

Metal Handrail (damaged)

Bollard (damaged)

Lift Controllers

Parking Sign (typ.)

Old Pinched Pipe

P.O.C.

P.O.B.

Stop Sign

Gas Paint Marker

Water Paint Marker

Fiber Optic Paint Marker

Existing 5' Utility Easement (D.B. 1011, Pg.752)

New Centre Drive 75' Public Right-of-Way (M.B. 27, Pg. 165)

Realtor Sign

GMC Sign

Handicap Sign

1/2" Old Pipe (f) (Held)

1.49'E TO WESTERN R/W LINE OF S. OLEANDER ROAD (M.B. 33, PG. 240)

Storm Inlet Rim Elev. = 40.30' Inv. = 36.98'

Storm Inlet Rim Elev. = 40.48' Inv. = 36.84'

Storm Inlet (damaged) Rim Elev. = 40.78' Inv. = 38.58'

Storm Inlet Rim Elev. = 41.00' Inv. = 37.99'

Storm Inlet Rim Elev. =40.20' Inv. = 36.38'

Storm Inlet Rim Elev. = 40.53' Inv. = 36.75'

Storm Inlet Rim Elev. = 39.69' Inv. = 33.39'

Storm Inlet Rim Elev. = 39.80' Inv. In (N) = 35.30' Inv. In (NW) = 37.65' Inv. In (SW) = 35.58' Inv. Out (SE) = 35.18' Inv. In (NE) = 35.30'

Storm Inlet Rim Elev. = 39.70' Inv. = 37.39'

Storm Inlet Rim Elev. = 41.17' Inv. = 37.17'

Storm Inlet Rim Elev. = 41.88' Inv. = 40.88'

Storm Inlet Rim Elev. = 39.20' Inv. = 35.50'

Storm Inlet Rim Elev. = 38.37' Inv. = 35.04'

OLD PK NAIL(F) ON P @153.76' L

CPP 4" (4)

CPP 4" (9)

CPP 4" (8)

12" RCP

15" RCP

18" RCP

24" RCP

NOTE: CALLERY PEAR TREES ARE THE SAME AS BRADFORD PEARS AND ARE CONSIDERED INVASIVE. THESE TREES CAN BE REMOVED WITHOUT PENALTY ACCORDING TO THE CITY OF WILMINGTON. A TREE REMOVAL PERMIT SHALL BE ISSUED PRIOR TO THE REMOVAL OF THE TREES.

NAD 83

SCALE 1"=20'
0 20' 40'

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

North Carolina 811 www.nc811.org

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

THIS DRAWING PREPARED AT THE
WILMINGTON OFFICE
430 Eastwood Road | Wilmington, NC 28403
TEL 910.746.1140 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
07/05/2023	REVISIONS PER OWNER
09/19/2023	REVISIONS PER TRC COMMENTS ISSUED 9/5/2023

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

DATE 08/02/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY J. WALL
SCALE 1" = 20'

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION

WILMINGTON, NORTH CAROLINA

EXISTING CONDITIONS AND DEMOLITION PLAN

JOB NO. 57481
SHEET NO. C1.0

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S:\321\57481-NVA_Wilmington_New_Centre_Dr\DWG\Sheet\CD\57481-321-C1.0-EXIS.dwg | Plotted by Blake Tutor

NCDEQ SELF-INSPECTION PROGRAM

THE SEDIMENTATION POLLUTION CONTROL ACT WAS AMENDED IN 2006 TO REQUIRE THAT PERSONS RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES INSPECT A PROJECT AFTER EACH PHASE OF THE PROJECT TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED.

RULES DETAILING THE DOCUMENTATION OF THESE INSPECTIONS TOOK EFFECT OCTOBER 1, 2010.

THE SELF-INSPECTION PROGRAM IS SEPARATE FROM THE WEEKLY SELF-MONITORING PROGRAM OF THE NPDES STORMWATER PERMIT FOR CONSTRUCTION ACTIVITIES. THE FOCUS OF THE SELF-INSPECTION REPORT IS THE INSTALLATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROL MEASURES ACCORDING TO THE APPROVED PLAN. THE INSPECTIONS SHOULD BE CONDUCTED AFTER EACH PHASE OF THE PROJECT, AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FROM THE LAND QUALITY WEB SITE, HTTP://PORTAL.NCDENR.ORG/WEB/LR/EROSION

GENERAL NOTES

1. THE GRADING CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL CODES IN OBSERVING EROSION CONTROL MEASURES BOTH ON AND OFF-SITE.
2. THE GRADING CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES AFTER EACH RAINFALL EVENT OR AS DIRECTED BY LOCAL AUTHORITIES OR THE ENGINEER.
3. THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ALL CLEARING AND GRADING WASTE MATERIALS GENERATED DURING HIS PHASE OF WORK AND FOR OBTAINING ALL APPLICABLE PERMITS FOR OFF-SITE STOCKPILES AND/OR WASTE AREAS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING ANY TRACKED SOIL FROM ALL ADJACENT ROADWAYS THAT ARE IMPACTED BY CONSTRUCTION TRAFFIC.

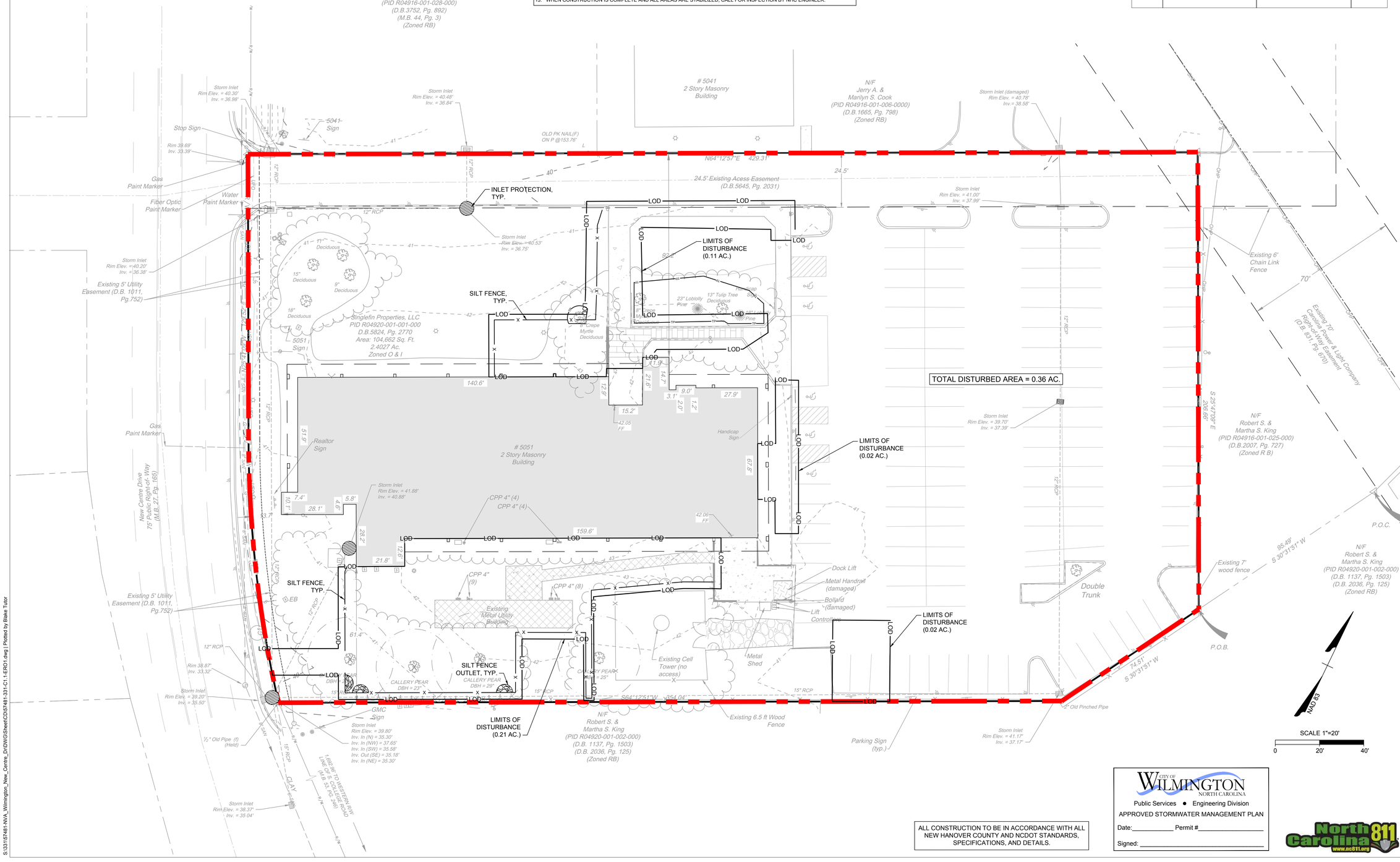
CONSTRUCTION SEQUENCE

1. OBTAIN PLAN APPROVAL, DEMOLITION PERMITS, AND OTHER APPLICABLE PERMITS. KEEP A COPY OF THE APPROVED PLAN ON-SITE AND POST APPROVAL PLACARD.
2. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
3. INSTALL TEMPORARY SILT FENCES, TEMPORARY INLET PROTECTION, AND OTHER MEASURES AS SHOWN ON DRAWINGS. CLEAR ONLY AS NECESSARY TO INSTALL AND MAINTAIN THESE DEVICES.
4. BEGIN CLEARING, DEMOLITION, AND GRUBBING. MAINTAIN DEVICES AS NEEDED.
5. ROUGH GRADE SITE.
6. INSPECT ALL MEASURES AND DEVICES WEEKLY AND AFTER ALL RAINFALL EVENTS. MAKE PROMPT REPAIRS AS NEEDED.
7. INSTALL STORM DRAINAGE PIPES WITH INLETS AND INLET PROTECTION.
8. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES.
9. INSTALL SITE IMPROVEMENTS.
10. COMPLETE GRADING AND PLANT PERMANENT SEEDING AND PLANTING.
11. REMOVE ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES ONCE SITE IS STABILIZED.
12. STABILIZE SITE AS AREAS ARE BROUGHT UP TO FINISHED GRADE WITH VEGETATION, PAVING, TEMPORARY DITCH AND SLOPE LINING, ETC.
13. WHEN CONSTRUCTION IS COMPLETE AND ALL AREAS ARE STABILIZED; CALL FOR INSPECTION BY NHC ENGINEER.

MAINTENANCE PLAN

1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL MEASURES AS DESIGNED.
2. REMOVE SEDIMENT FROM BEHIND SILT FENCE WHEN DEPTH REACHES 6-INCHES AT THE FENCE. REPAIR SILT FENCE AS NECESSARY TO MAINTAIN A BARRIER.
3. ALL SEEDED AREAS SHALL BE FERTILIZED, RE-SEEDED AS NECESSARY, AND MULCHED ACCORDING TO PROJECT SPECS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE GROWTH.
4. MAINTAIN SILT/TREE PROTECTION FENCING THROUGHOUT DURATION OF CONSTRUCTION.
5. INSPECT RIPRAP OUTLET PROTECTION STRUCTURES WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

EROSION CONTROL LEGEND			
LABEL	SYMBOL	STD. NAME	SPEC.#
SF		SILT FENCE OUTLET	N/A
SF		SILT FENCE	6.62
IP		INLET PROTECTION	6.51/6.52
N/A	LOD	LIMITS OF DISTURBANCE	N/A
N/A	TP	TREE PROTECTION	N/A



ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL NEW HANOVER COUNTY AND NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.

CITY OF WILMINGTON NORTH CAROLINA
Public Services ● Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

THIS DRAWING PREPARED AT THE **WILMINGTON OFFICE**
430 Eastwood Road | Wilmington, NC 28403
TEL 910.746.1140 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
REVISIONS PER OWNER	07/05/2023
REVISIONS PER TRC COMMENTS ISSUED 9/5/2023	09/19/2023

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

DATE	08/02/2023
DRAWN BY	331
DESIGNED BY	331
CHECKED BY	J. WALL
SCALE	1" = 20'

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION

WILMINGTON, NORTH CAROLINA

EROSION CONTROL PLAN

JOB NO.	SHEET NO.
57481	C1.1

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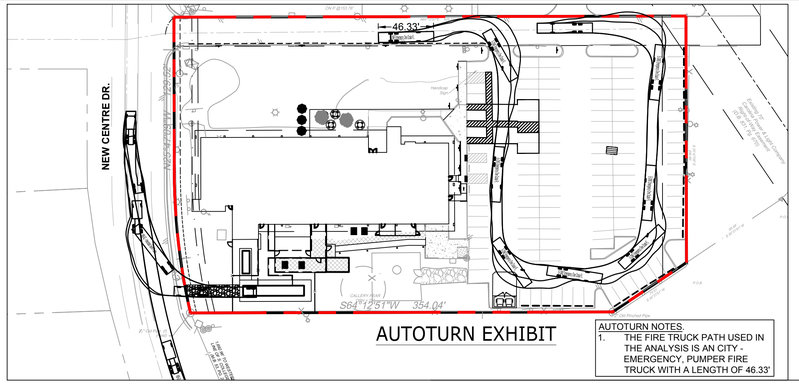

AUTOTURN EXHIBIT

AUTOTURN NOTES.
1. THE FIRE TRUCK PATH USED IN THE ANALYSIS IS AN CITY - EMERGENCY, PUMPER FIRE TRUCK WITH A LENGTH OF 46.33'

SITE PLAN NOTES:
1. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. CONTRACTOR TO CONTACT THE DESIGN PROFESSIONAL FOR ENTRANCE CLARIFICATIONS, CONSTRUCTION ANOMALIES AND INSTALLATION QUESTIONS.
3. ALL DIMENSIONS ARE FROM THE FACE OF CURB, UNLESS NOTED OTHERWISE.
4. NCDOT STANDARD DETAILS, AS REFERENCED, TO BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT VERSIONS OF NCDOT "ROADWAY STANDARD DRAWINGS".
5. ALL CURB RADII ARE 5' UNLESS OTHERWISE NOTED ON THE PLAN.
6. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL STOP SIGNS, DIRECTIONAL SIGNS, AND STRIPING SHOWN ON THE PLANS.
7. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWING BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.
8. ALL GROUND MOUNTED MECHANICAL AND ELECTRICAL EQUIPMENT MUST BE SCREENED BY VIEW-OBSCURING VEGETATION, USED INDIVIDUALLY OR IN COMBINATION WITH A WALL, SEMI-OPAQUE FENCE, AND/OR BERM DESIGNED TO OBSCURE VIEWS TO A HEIGHT OF SIX FEET FROM THE GROUND, EXCEPT FOR MECHANICAL EQUIPMENT WHICH SHALL BE SCREENED TO THE HEIGHT OF THE EQUIPMENT PLUS SIX INCHES.
9. ALL JUNCTION AND ACCESSORY BOXES MUST BE INTEGRATED IN THE ARCHITECTURAL TREATMENT OF THE BUILDING OR VIEW MINIMIZED BY LANDSCAPING.
10. AT LEAST 72 HOURS PRIOR TO CONSTRUCTION OR EXCAVATION, THE CONTRACTOR SHALL NOTIFY "NORTH CAROLINA ONE CALL" (811) OR (1-800-632-4949) TO HAVE EXISTING UTILITIES LOCATED.
11. PARKING SPACES ARE 9' WIDE x 18' LONG MINIMUM, UNLESS OTHERWISE NOTED.
12. CONTRACTOR SHALL NOTIFY THE ENGINEER AND CITY PLANNING AND PERMITTING STAFF OF ANY DIMENSIONAL CONFLICTS PRIOR TO THE BEGINNING OF CONSTRUCTION.
13. ALL GUTTER SHALL BE 24" WIDE.
14. AREAS NOTED FOR TRAILS AND GREENWAYS AND/OR REQUIRED SIDEWALKS SHALL BE UNOBSTRUCTED FROM 6 INCHES BELOW GRADE TO 10 FEET ABOVE GRADE (OVERHEAD CLEARANCE), TELEPHONE PEDESTALS, ELECTRIC TRANSFORMERS, DROP INLETS, FENCES, OR ANY OTHER OBSTRUCTIONS SHALL BE REMOVED AND/OR RELOCATED IN ORDER TO CREATE AND MAINTAIN THIS CLEARANCE AND SHALL BE FREE OF CRACKS AND DAMAGE PRIOR TO THE ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY.
15. IT SHALL BE UNLAWFUL FOR ANY PERSON TO MAKE AN EXCAVATION OR DO ANY OTHER WORK WHICH MAY CAUSE A DANGEROUS CONDITION IN OR ON ANY STREET, ALLEY, SIDEWALK, PUBLIC WAY OR PUBLIC PLACE IN THE CITY, UNLESS A WRITTEN PERMIT IS FIRST OBTAINED FROM AN OFFICER OF THE CITY VESTED WITH AUTHORITY TO GRANT THE SAME. NO PERMIT SHALL BE ISSUED IN ANY CASE WHERE A BOND IS REQUIRED, UNTIL A BOND SHALL HAVE BEEN EXECUTED.
16. ANY DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR SHALL BE GIVEN TO THE OWNER FOR REVIEW. NO DEPARTURES SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER, CITY OF WILMINGTON, NEW HANOVER COUNTY OR CFPUA.
17. DISTURBED DITCH BANKS SHALL BE REGRADED TO HAVE 3:1 SLOPES OR FLATTER SIDE SLOPES AND THE CENTERLINE GRADED TO PRODUCE POSITIVE DRAINAGE.
18. SLOPES 3:1 OR LESS MUST BE SEEDED OR SODDED; SLOPES 2:1 OR GREATER SHALL BE SODDED; SLOPES 1:1 OR GREATER REQUIRE AN ENGINEERED STABILIZATION DESIGN.
19. IF FACILITY IS NOT OPERATED AS A 24/7 ESTABLISHMENT, THE INSTALLATION OF A KNOX BOX IS REQUIRED FOR FIRE DEPARTMENT ACCESS.
20. ALL MECHANICAL EQUIPMENT SHALL BE LOCATED IN INTERNAL YARDS.
21. HVAC EQUIPMENT, AC WINDOW UNITS, OTHER ELECTRICAL EQUIPMENT, AND FIRE ESCAPES SHALL NOT BE LOCATED ON STREET-FACING FACADES.
    21.1. ALL SUCH EQUIPMENT SHALL BE PLACED IN INTERIOR YARDS OR LOCATED ON A ROOF AND INSET INTO THE ROOF PITCH OR LOCATED BEHIND A PARAPET WALL.
    21.2. EXCEPT IN INDUSTRIAL DISTRICTS, ANY ROOF-MOUNTED EQUIPMENT THAT MAY BE VISIBLE FROM THE RIGHT-OF-WAY SHALL BE SCREENED WITH VEGETATION ONE FOOT TALLER THAN THE EQUIPMENT BEING SCREENED.

SITE DATA TABLE

ARCHITECT
MANNS WOODWORD STUDIOS
10839 PHILADELPHIA ROAD
WHITE MARCH, MARYLAND 21162
JESSICA SWEIGART
EMAIL: JSWEIGART@MWSARCH.COM

DEVELOPER
CVVF WILMINTON NC LLC
3807 CLEGHORN AVE, STE 903
NASHVILLE, TN 37215

ENGINEER
TIMMONS GROUP
430 EASTWOOD ROAD, SUITE 100
WILMINGTON, NC 28403
PHONE: 910-746-1174
JOHN WALL, PE
EMAIL: JOHN.WALL@TIMMONS.COM

PARCEL ID: R04920-001-001-000
PROJECT AREA: 2.40 AC
PARCEL OWNER:
CVVF WILMINGTON NC LLC
3807 CLEGHORN AVE, STE 903
NASHVILLE, TN 37215
D.B. 6691, PG 1593
CURRENT ZONING: O&I
PROPOSED USE: OFFICE & PROFESSIONAL - VETERINARY
BUILDING CONSTRUCTION TYPE: III-B

PARKING SPACES
REQUIRED: 1 PER 200 SF OF WAITING AREA (2,000 SF) = 10 (MIN)
1 PER EXAM ROOM (26 ROOMS) = 26 (MIN)
= 36 SPACES

EXISTING TOTAL: 122 SPACES

NEW TOTAL: 108 REGULAR SPACES
6 EMERGENCY ONLY SPACES
6 ADA SPACES
120 SPACES

REQUIRED ADA SPACES: 5

PROVIDED: 6

EXISTING ONSITE IMPERVIOUS COVER: 1.60 AC. (66.7% OF TOTAL SITE AREA)

PROPOSED ONSITE IMPERVIOUS COVER: 1.65 AC. (68.8% OF TOTAL SITE AREA)

TOTAL ONSITE NEWLY CONSTRUCTED IMPERVIOUS AREA: 4,583 SF

TOTAL SITE AREA: 2.40 AC.

SETBACK REQUIREMENTS:
FRONT SETBACK = 20'
REAR SETBACK = 20'
STREETSCAPE BUFFER = 15'

SITE DISTANCE NOTE:
NO PARKING SPACES, FENCES, WALLS, POSTS, LIGHTS, SHRUBS, TREES, OR OTHER TYPE OF OBSTRUCTIONS NOT SPECIFICALLY EXEMPTED SHALL BE PERMITTED IN THE SPACE BETWEEN 30 INCHES AND ABOVE GROUND AND 10 FEET ABOVE GROUND LEVEL WITHIN A TRIANGULAR SIGHT DISTANCE

445' SIGHT DISTANCE PER AASHTO CRITERIA FOR ENTRANCE TO CENTER OF NORTHBOUND LANE. SEE SHEET C5.2 FOR CONTINUATION.

PUBLIC TRANSPORTATION STOP AT THE NORTH SIDE OF DAPPLE CT & NEW CENTRE DR INTERSECTION

20'x70' SIGHT DISTANCE TRIANGLE (SEE SHEET C5.2 FOR CONTINUATION)

20' FRONT BUILDING SETBACK

15' STREETSCAPE BUFFER

EXIST ROAD CENTERLINE

REPLACE EXISTING MONUMENT SIGN PER CITY CODE ARTICLE 5, DIVISION 5 (SEE PLANS AND DETAILS BY OTHERS)

CONTRACTOR SHALL REPAIR ANY R/W DAMAGE FROM MRI TRAILER PLACEMENT PER STANDARD CITY NOTES & DETAILS.

NOTE: MRI TRAILER IS ANTICIPATED TO BE MOVED AT A MAXIMUM OF EVERY 5-7 YEARS.

TEMPORARY GRAVEL CONSTRUCTION ACCESS OR PLATES TO PLACE MRI TRAILER. TEMPORARY ACCESS SHALL BE REMOVED AFTER MRI TRAILER IS IN PLACE. GROUND TO BE PERMANENTLY STABILIZED AND SEEDED IN ACCORDANCE WITH THE "NCG01 GROUND STABILIZATION AND MATERIALS HANDLING", SHEET C5.4.

385' SIGHT DISTANCE PER AASHTO CRITERIA FOR ENTRANCE TO CENTER OF SOUTHBOUND LANE. SEE SHEET C5.2 FOR CONTINUATION.

"NO PARKING. FIRE LANE" PAINTED AREA AND SIGNAGE

"NO PARKING. FIRE LANE" PAINTED AREA AND SIGNAGE

NOTE: ALL WHITE AREAS NOT HATCHED ARE PROPOSED AS GRASS EXCEPT FOR EXISTING ASPHALT/ROADWAY.

LIQUID APPLIED WRB AROUND BUILDING FOUNDATION. REFER TO ARCH. PLANS FOR DETAILS.

EXISTING SIDE WALK TO BE WIDENED TO 6' FOR ACCESS

PROVIDE SMOOTH TRANSITION TO EXISTING S/W

"MAIN ENTRANCE EMERGENCY ROOM" SIGN

H/C SIGN, TYP.

EXISTING EDGE OF PAVEMENT

LIT SIGN "EMERGENCY PARKING TO THE RIGHT" WITH ARROW (DESIGN BY OTHERS)

LIT SIGN "VISITOR PARKING TO THE RIGHT" WITH ARROW (DESIGN BY OTHERS)

(3) EXISTING ADA PARKING STALLS

(6) EMERGENCY PARKING ONLY AREA PAINTED RED WITH BOXED AREA

WHEELSTOP, TYP.

20' REAR BUILDING SETBACK

(3) EXISTING ADA PARKING STALLS

EXISTING PARKING LOT * MILL AND OVERLAY 1.5" OF EXISTING ASPHALT

PROVIDE SMOOTH TRANSITION TO EXISTING S/W

ADA SIDEWALK RAMP

5' S/W

LIQUID APPLIED WRB AROUND BUILDING FOUNDATION. REFER TO ARCH. PLANS FOR DETAILS.

REMOVE AND FLATTEN EXISTING BERM AROUND THE BUILDING TO ENSURE POSITIVE DRAINAGE AWAY FROM THE BUILDING

PROPOSED BACK OF CURB TO TIE INTO EXISTING WALL

H/C SIGN, TYP.

6'x5' TURNDOWN PAD

2 STEPS WITH HANDRAILS BOTH SIDES

K9GRASS CLASSIC+ RELIEF AREA SYNTHETIC TURF (SEE SHEET C5.1)

PROPOSED 6' VINYL FENCE

PROPOSED ENTRANCE/EXIT (TYP.)

EXIST. ROOF LINE

PROPOSED K9 RELIEF AREA

PROPOSED GENERATOR PAD

PROPOSED 4' WIDE GATE

PROPOSED 10' VINYL FENCE SEE DETAIL, SHEET C5.0

PROPOSED MRI TRAILER

PROPOSED 6' VINYL FENCE

BOLLARDS (DETAILS BY OTHERS)

PICNIC TABLE (TYP) (OWNER FURNISHED -CONTRACTOR INSTALLED)

PROPOSED K9 RELIEF AREAS

DUMPSTER PAD AND ENCLOSURE (SEE SHEET C5.2 FOR DETAIL)

WHEELSTOP, TYP.

HEAVY-DUTY CONCRETE

PROPOSED 6' VINYL FENCE

CRITICAL ROOT ZONE (TYP)

PROPOSED STORAGE SHED
*STORAGE SHED TO USE A PORTION OF THE EXISTING PAD. REPAIR AS NEEDED. SEE ARCH. PLANS. (STORAGE SHED TO BE OWNER FURNISHED AND OWNER INSTALLED)

EXISTING WOODEN FENCE TO BE REPAIRED/PATCHED

Existing 6' Chain Link Fence

Existing 70' Carolina Power & Light Company Right-of-Way Easement (O.B. 351, Pg. 670)

N/F Robert S. & Martha S. King (PID R04916-001-025-000) (D.B.2007, Pg. 727) (Zoned R B)

Existing wood fe

Double Trunk

P.O.B.

S 30°37'57" W 74.51'

S 25°47'00" E 206.69'

Singletree Properties, LLC PID R04920-001-001-000 D.B.5824, Pg. 2770 Area: 104,662 Sq. Ft. 2.4027 Ac. Zoned O & I

5051 2 Story Masonry Building

N/F Robert S. & Martha S. King (PID R04920-001-002-000) (D.B. 1137, Pg. 1503) (D.B. 2036, Pg. 125) (Zoned RB)

Existing 6.5 ft Wood Fence

Existing Cell Tower (no access)

Metal Shed

Metal Handrail (damaged)

Bollard (damaged)

Lift Controllers

Stop Sign

5041 Sign

6051 Sign

GMC Sign

Realtor Sign

Gas Paint Marker

Water Paint Marker

Fiber Optic Paint Marker

Existing 5' Utility Easement (D.B. 1011, Pg.752)

New Centre Drive 75' Public Right-of- Way (M.B. 27, Pg. 166)

OLD PK NAIL(F) ON P @153.76'

N64°12'57"E 429.31'

24.5' Existing Acess Easement (D.B.5645, Pg. 2031)

24.5'

S64°12'51"W 354.04'

1,692.96' TO WESTERN R/W LINE S. 17TH STREET (M.B. 50, PG. 246)

CALLERY PEAR DBH = 25"

2" Old Pinched Pipe

11" Deciduous
15" Deciduous
9" Deciduous
16" Deciduous
23" Loblolly Pine
13" Tulip Tree Deciduous
8" Crepe Myrtle Deciduous
Handicap Sign

ALTERNATE NOTES:
ALTERNATE #1: OVERHEAD SAILS COVERING WALKWAYS LEADING FROM TRAILERS TO MAIN BUILDING.

ALTERNATE #2: GRASS AREA WITH CONCRETE BASES FOR TABLES.

ALTERNATE NOTE:
① - OVERHEAD SAILS OVER WALKWAYS FROM TRAILERS TO BUILDING
② - GRASS AREA WITH CONCRETE BASE FOR TABLES

TOTAL SITE AREA	2.40 AC	104,662 SF
PROPOSED NET IMPERVIOUS AREA	0.05 AC	2,379 SF

GENERAL NOTES:
1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS. [DETAIL SD 11-03 AND SD 15-13 COFW TECH STDS]
2. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS. [DETAIL SD 15-13 COFW TECH STDS]
3. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
5. CONTACT 811 PRIOR TO CONTACTING CITY OF WILMINGTON, TRAFFIC ENGINEERING REGARDING THE UTILITIES IN ROW.
6. CONTRACTOR SHALL MAINTAIN AN ALL-WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
7. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE FDC'S OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL ALWAYS BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC'S.
8. ADDITIONAL FIRE PROTECTION AND/OR ACCESSIBILITY REQUIREMENTS MAY BE REQUIRED DUE TO ANY SPECIAL CIRCUMSTANCES CONCERNING THE PROJECT.

GENERAL CONTRACTOR

PRIOR TO BEGINNING ANY CONSTRUCTION, FIELD SURVEY SHALL VERIFY LOCATION, DEPTH, SIZE, MATERIAL, AND CONDITION OF ALL EXISTING UTILITIES. IN CASE OF CONFLICT OR IF DIFFERENT THAN PLAN, NOTIFY ENGINEER.

PAVEMENT SECTIONS LEGEND

DESCRIPTION	HATCH PATTERN
HEAVY DUTY CONCRETE	
SIDEWALK CONCRETE	

NOTE: SEE DETAIL SHEET C5.0 FOR PAVEMENT SECTIONS

LEGEND

PROPERTY LINE
BUFFER
BUILDING SETBACK

NOTE: DETAILS ARE PROVIDED FOR REFERENCE ONLY. SEE ARCHITECTURAL PLANS FOR DESIGN SPECIFICS.

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NAD 83

SCALE 1"=20'
0 20' 40'

North Carolina 811 www.nc811.org

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

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DRAWN BY 331
DESIGNED BY 331
CHECKED BY J. WALL
SCALE 1"=20'

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION
WILMINGTON, NORTH CAROLINA
SITE PLAN

JOB NO. 57481
SHEET NO. C2.0

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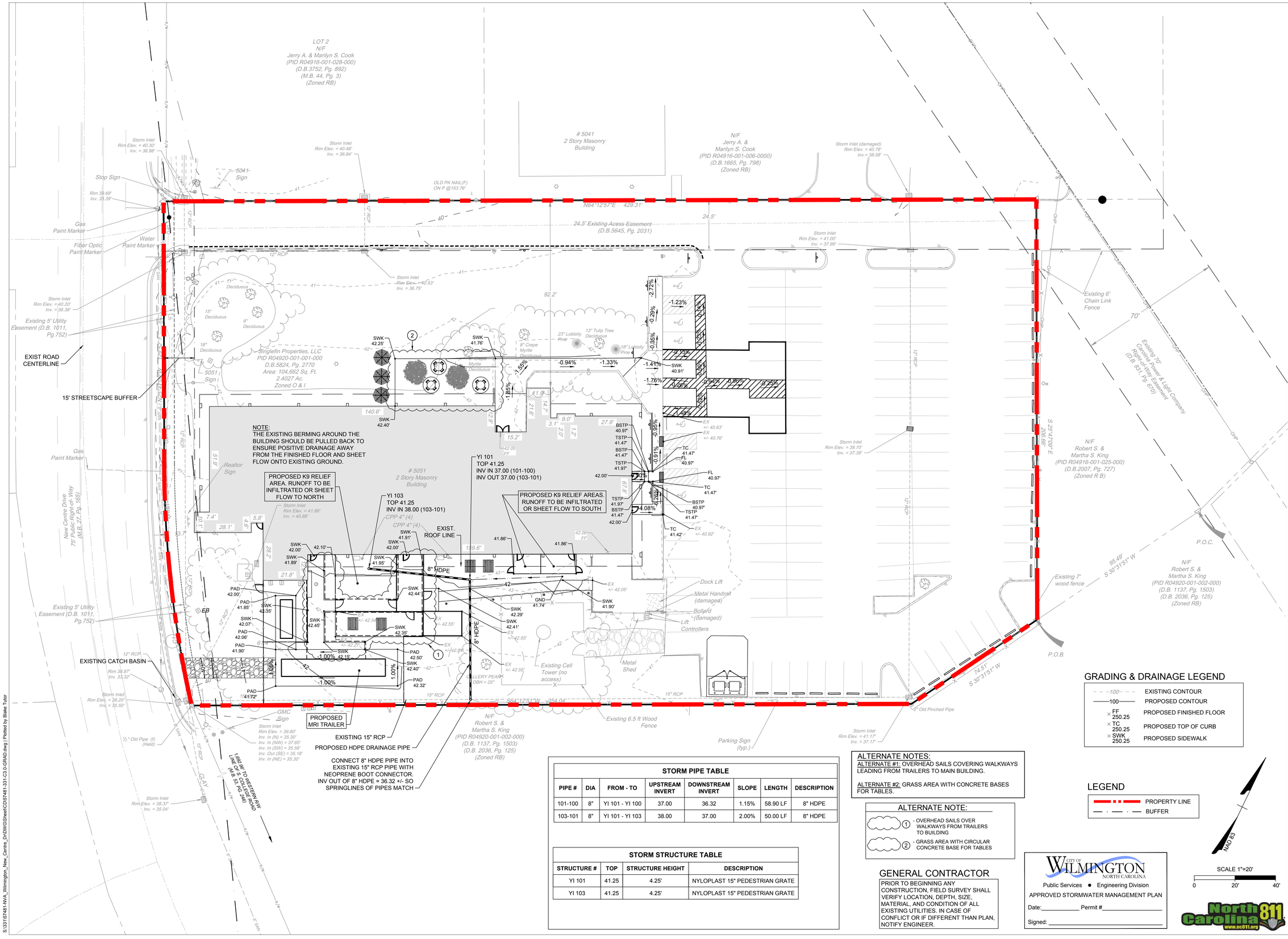

GRADING & DRAINAGE LEGEND

100	EXISTING CONTOUR
100	PROPOSED CONTOUR
FF 250.25	PROPOSED FINISHED FLOOR
TC 250.25	PROPOSED TOP OF CURB
SWK 250.25	PROPOSED SIDEWALK

LEGEND

	PROPERTY LINE
	BUFFER

STORM PIPE TABLE

PIPE #	DIA	FROM - TO	UPSTREAM INVERT	DOWNSTREAM INVERT	SLOPE	LENGTH	DESCRIPTION
101-100	8"	YI 101 - YI 100	37.00	36.32	1.15%	58.90 LF	8" HDPE
103-101	8"	YI 101 - YI 103	38.00	37.00	2.00%	50.00 LF	8" HDPE

STORM STRUCTURE TABLE

STRUCTURE #	TOP	STRUCTURE HEIGHT	DESCRIPTION
YI 101	41.25	4.25'	NYLOPLAST 15" PEDESTRIAN GRATE
YI 103	41.25	4.25'	NYLOPLAST 15" PEDESTRIAN GRATE

ALTERNATE NOTES:

ALTERNATE #1: OVERHEAD SAILS COVERING WALKWAYS LEADING FROM TRAILERS TO MAIN BUILDING.

ALTERNATE #2: GRASS AREA WITH CONCRETE BASES FOR TABLES.

ALTERNATE NOTE:

① - OVERHEAD SAILS OVER WALKWAYS FROM TRAILERS TO BUILDING

② - GRASS AREA WITH CIRCULAR CONCRETE BASE FOR TABLES

GENERAL CONTRACTOR

PRIOR TO BEGINNING ANY CONSTRUCTION, FIELD SURVEY SHALL VERIFY LOCATION, DEPTH, SIZE, MATERIAL, AND CONDITION OF ALL EXISTING UTILITIES. IN CASE OF CONFLICT OR IF DIFFERENT THAN PLAN, NOTIFY ENGINEER.

CITY OF WILMINGTON NORTH CAROLINA
Public Services ● Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NAD 83

SCALE 1"=20'
0 20' 40'

North Carolina 811 www.nc811.org

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

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TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION

WILMINGTON, NORTH CAROLINA

GRADING AND DRAINAGE PLAN

JOB NO. 57481
SHEET NO. C3.0

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

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PRE-DEVELOPMENT



D SOILS: EXISTING ONSITE IMPERVIOUS AREA = 1.60 AC.

D SOILS: EXISTING ONSITE MANAGED TURF AREA = 0.80 AC.

ALTERNATE NOTES:

ALTERNATE #1: OVERHEAD SAILS COVERING WALKWAYS LEADING FROM TRAILERS TO MAIN BUILDING.

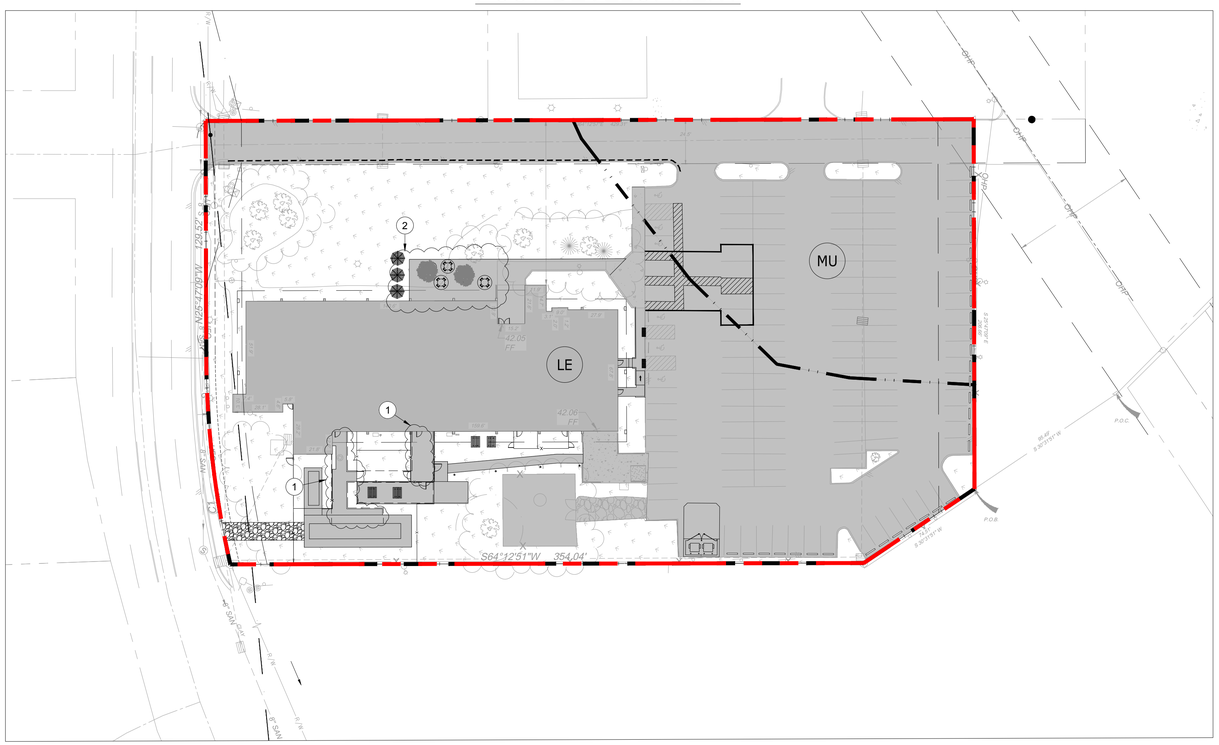
ALTERNATE #2: GRASS AREA WITH CONCRETE BASES FOR TABLES.

ALTERNATE NOTE:

1 - OVERHEAD SAILS OVER WALKWAYS FROM TRAILERS TO BUILDING

2 - GRASS AREA WITH CONCRETE BASES FOR TABLES

POST-DEVELOPMENT



D SOILS: PROPOSED ONSITE IMPERVIOUS AREA = 1.65 AC.

D SOILS: PROPOSED ONSITE MANAGED TURF AREA = 0.75 AC.

2 W/ PATIO ALTERNATE. GRASS AREA WITH CONCRETE BASE FOR TABLES

D SOILS: PROPOSED ONSITE IMPERVIOUS AREA = 1.63 AC.

D SOILS: PROPOSED ONSITE MANAGED TURF AREA = 0.77 AC.

SOIL MAPPING LEGEND

SOIL DIVIDE

LE — SOIL MAP UNIT SYMBOL

Le - Leon Sand
Mu - Murville Fine Sand

SOILS LEGEND

LABEL	PERMEABILITY	K FACTOR, WHOLE SOIL	HYDROLOGIC SOIL GROUP
LE	POORLY DRAINED	0.02	B/D
MU	VERY POORLY DRAINED	0.05	A/D

NOTE:

THE SOURCE OF THE SOILS MAP AND SOIL SERIES DESCRIPTIONS IS FROM THE UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

NAD 83

SCALE 1"=40'
0 40' 80'

North Carolina 811 www.nc811.org

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

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DATE	REVISION DESCRIPTION
07/05/2023	REVISIONS PER OWNER
09/19/2023	REVISIONS PER TRC COMMENTS ISSUED 9/5/2023

DATE 08/02/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY J. WALL
SCALE 1"=40'

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION
WILMINGTON, NORTH CAROLINA
IMPERVIOUS COVER ANALYSIS

JOB NO. 57481
SHEET NO. C4.0

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

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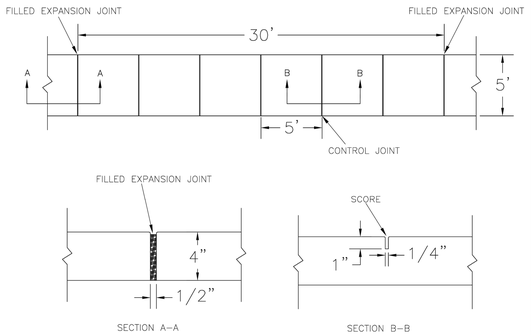


NOTES:

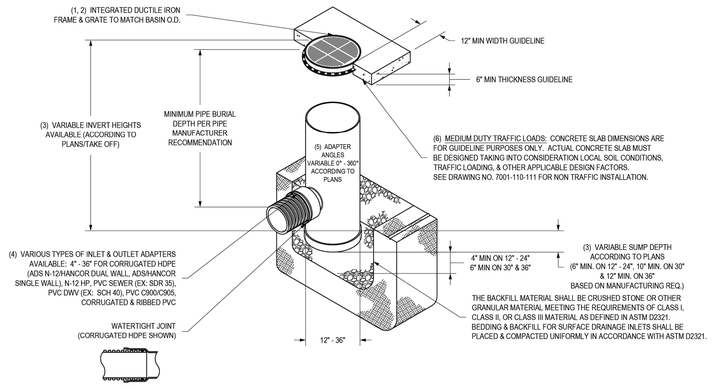
1. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
2. SANITARY SEWER CLEAN–OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" – 3,000 PSI.
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DATE: OCTOBER, 2010	SIDEWALK	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON N.C. 28402 (910) 341–7807
DRAWN: PB/JSR		
CHECKED: DEC		
SCALE NOT TO SCALE		SD 3-10

1. Variances on stall widths, angle and other dimensions will be allowed only upon approval of the Traffic Engineer.
2. Wheel stops shall be required three (3) feet from the end of parking stall when using eighteen (18) feet deep stalls.
3. Curbing, crossties, utility poles, etc., can be used as wheel stops. (Must be anchored down)
4. All medians shall be a minimum of six (6) feet wide.
5. Parking bays which terminate at a circulation way shall provide for a minimum turning radius of twenty–five (25) feet, as measured from the edge of the travel portion.
6. All parking stall markings and lane arrows shall be white.
7. All other pavement markings, signs or other traffic control devices shall conform to the latest edition and/or interpretation of the Manual on Uniform Traffic Control Devices (MUTCD).
8. No obstructions will be allowed adjacent to a parking stall which would prevent safe ingress and egress from a parked vehicle.
9. Parking in fire lanes and in non–residential driveways shall be prevented by standard signs and as needed by portable barricades.

	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DATE: 2001	PARKING FACILITY DESIGN NOTES	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341–7807
DRAWN BY JSR/CMR		
CHECKED BY B.P., P.E.		
SCALE NOT TO SCALE		SD 15-13

NYLOPLAST DRAIN BASIN WITH PEDESTRIAN GRATE



1 - 12" - 30" PEDESTRIAN GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 36").
5 - ADAPTERS CAN BE MOUNTED 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - 12" -24" PEDESTRIAN GRATES SHALL MEET H-10 LOAD RATING. 30" PEDESTRIAN GRATE SHALL MEET H-20 LOAD RATING (SEE DRAWING NO. 7001-110-144 FOR H-20 TRAFFIC LOAD GUIDELINES).

THIS PRINT DISCLOSES SUBJECT MATTER IN WHICH NYLOPLAST HAS PROPRIETARY RIGHTS. THE RECEIPT OR POSSESSION OF THIS PRINT DOES NOT CONFER, TRANSFER, OR LICENSE THE USE OF THE DESIGN OR TECHNICAL INFORMATION SHOWN HEREIN REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM, FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN, EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST. ©2013 NYLOPLAST

DRAWN BY EBC	MATERIAL PVC	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 4-20-07			
REVISED BY NMH	PROJECT NO./NAME	TITLE	DRAIN BASIN WITH PEDESTRIAN GRATE QUICK SPEC INSTALLATION DETAIL
DATE 06-12-18			
DWG SIZE A	SCALE 1:40 SHEET 1 OF 1	DWG NO. 7001-110-283	REV E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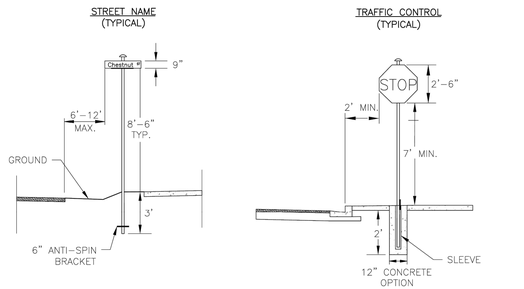
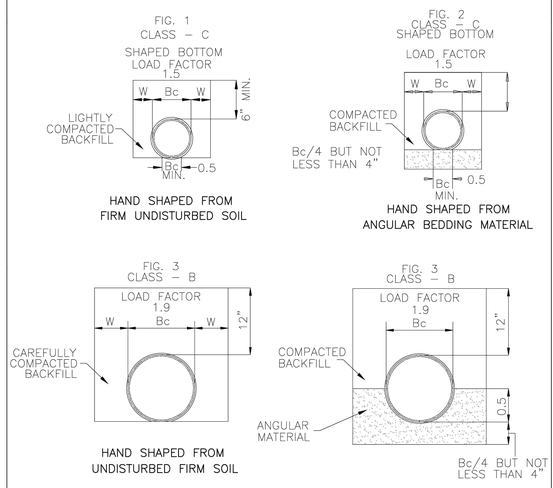
This Detail is for Reference Only. See Notes.



1) All signs and materials shall meet the requirements of MUTCD and City Traffic Engineering in effect at the time of construction. Designer and Contractor shall utilize the latest edition of "City of Wilmington Specifications for Installation of Street Name Signs, Traffic Control Signs and Signs Hardware" guideline. Special Designation signs (downtown, historic, parks, riverfront, cross city trail, etc.) shall adhere to COW Signage Plan and all associated policies.
2) Sign callouts, locations and dimensions are responsibility of the designer and shall be clearly indicated on a plan sheet. A Signs and Pavement Marking design sheet is necessary for larger projects, preferred to include a table with #units, MUTCD#, name, size, lettering, posts, material, color, intensity, etc.
3) In advance of fabrication, Contractor may provide a sign order/or proof sheet from the supplier to City Traffic Engineering for compliance review of material specifications only.
4) All non–standard (decorative) sign posts and hardware installations require a NON–STANDARD TRAFFIC SIGN HARDWARE & MATERIALS AGREEMENT to be executed prior to acceptance. Contact City Traffic Engineering.
5) Contractor shall contact City Inspector prior to sign installation and final acceptance. Modifications may be required for compliance. All signs that are removed and not reinstalled shall be salvaged and delivered to the City.
6) Street name and traffic control signs shall be installed when streets are opened to the public.
7) Developer/HOA is responsible for proper maintenance of all signs until accepted by the City.

	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DATE: FEBRUARY, 2019	STREET & TRAFFIC SIGNS REFERENCE DETAIL	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341–7807
DRAWN BY JSR		
CHECKED BY BDR, P.E.		
SCALE NOT TO SCALE		SD 15-03

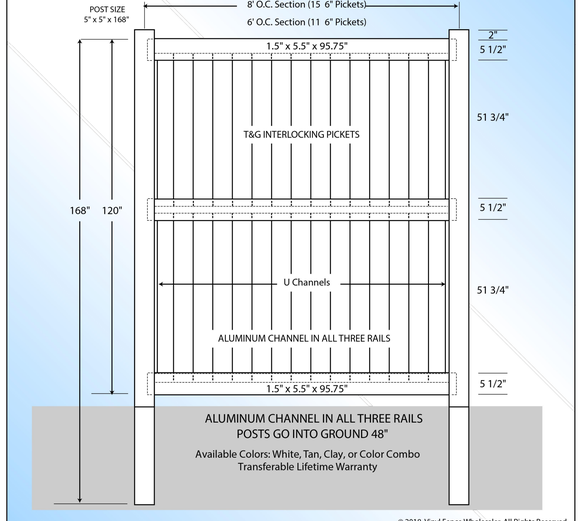


	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DATE: 2001	GUIDELINES FOR BEDDING DETAILS, STORM SEWER CLASSES (B & C)	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341–7807
DRAWN BY JSR/CMR		
CHECKED BY B.P., P.E.		
SCALE NOT TO SCALE		SD 2-17

VINYL FENCE WHOLESALER

Technical Specifications - Rainier Privacy Fence

10' Tall (8' Wide or 6' Wide Sections)



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Phone: (507) 206-4154 - Website: www.vinylfenceanddeck.com

North Carolina 811 www.nc811.org

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

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09/19/2023	REVISIONS PER TRC COMMENTS ISSUED 9/5/2023

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DRAWN BY 331
DESIGNED BY 331
CHECKED BY J. WALL
SCALE N/A

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION

WILMINGTON, NORTH CAROLINA

NOTES AND DETAILS - SHEET 1 OF 3

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K9Grass Classic +

K9Grass®

Product Specifications

Components	Specifications
FACE YARN TYPE	Primary: Polyethylene Secondary: Heat set textured nylon monofilament containing antimicrobial agent
LEAD CONTENT OF YARN FIBER	Maximum of 100 ppm according to ASTM F 2765
PILE WEIGHT	72 oz./sq. yd. according to ASTM D 5848
PILE HEIGHT	3/4 inches according to ASTM D 5823
COLOR	Primary: Summer Green Secondary: Turf Green
CONSTRUCTION	Knitted
ANTIMICROBIAL	AlphaSan® (manufactured into yarn)
TUFTING GAUGE	N/A, knitted product
TOTAL PRODUCT WEIGHT	87 oz/sy
FINISHED ROLL WIDTH	15 feet
FINISHED ROLL LENGTH	Up to 150 feet

*Product heights shown may have a variance of 1/8" and product weights shown may have a variance of 5%. M1729 Rev. 03/22

Grass without limits.®

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866.992.7876
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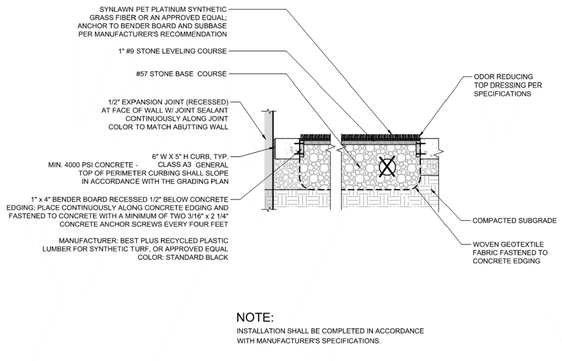
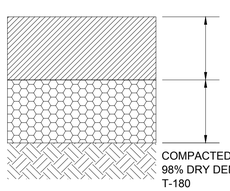


NOTE:
INSTALLATION SHALL BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

* PROVIDED FOR CONVENIENCE ONLY. REFER TO ARCHITECTURAL PLANS FOR EXACT DESIGN.

3 K9 RELIEF AREA SYNTHETIC TURF

NOT TO SCALE



	HEAVY DUTY	SIDEWALK
CONCRETE (4,000 PSI W/ MEDIUM BROOM FINISH)	8.0" W/ 6X6 W1.4XW1.4 W.W.F.	4.0" W/ 6X6 W1.4XW1.4 W.W.F.
CRUSHED AGGREGATE BASE COURSE (ABC) PER 520 NCDOT STANDARD SPEC.	6.0"	4.0"

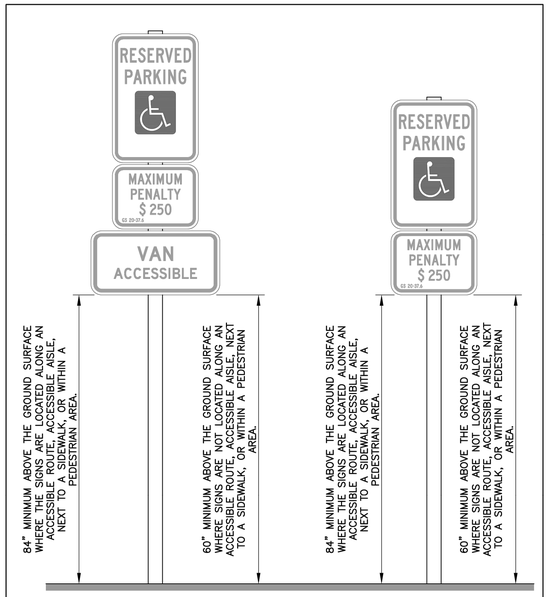
COMPACTED SUBGRADE TO 98% DRY DENSITY, AASHTO T-180

CONCRETE PAVEMENT SECTIONS

NOT TO SCALE

NOTES:
1. PREPARING, GRADING, SHAPING, AND COMPACTION OF SUBGRADE SOILS SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 501 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2018). PREPARING, GRADING, SHAPING, AND COMPACTION OF AGGREGATE BASE COURSE (CABC) STONE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 5, SECTION 520 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2018). PLACEMENT AND COMPACTION OF THE BITUMINOUS CONCRETE SHOULD BE PERFORMED IN ACCORDANCE WITH DIVISION 6, SECTION 600 OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (2018). PROPER SUBGRADE COMPACTION, ADHERENCE TO THE NCDOT SPECIFICATIONS, AND COMPLIANCE WITH PROJECT PLANS AND SPECIFICATIONS ARE CRITICAL TO THE PERFORMANCE OF THE CONSTRUCTED PAVEMENT.
2. CONTRACTOR MAY CHOOSE TO INSTALL INTERMEDIATE COURSES OF PAVEMENT TO STABILIZE THE SITE DURING CONSTRUCTION AT NO ADDITIONAL COST. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ADEQUATE THICKNESS REQUIRED FOR INTERMEDIATE PAVING. INCREASES IN THE DESIGN PAVEMENT SECTION TO FACILITATE INTERMEDIATE PAVING SHALL BE PROVIDED AT NO ADDITIONAL COST.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGES TO SUBGRADE, INSTALLED BASE COURSE AND/OR INTERMEDIATE PAVING PRIOR TO PLACING SUBSEQUENT PAVEMENT LIFTS AT NO ADDITIONAL COST.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING PAVEMENT DURING ALL PHASES OF WORK. THE FINAL SURFACE OF PAVEMENT SHALL BE FREE OF ALL DEFECTS OR DAMAGE.

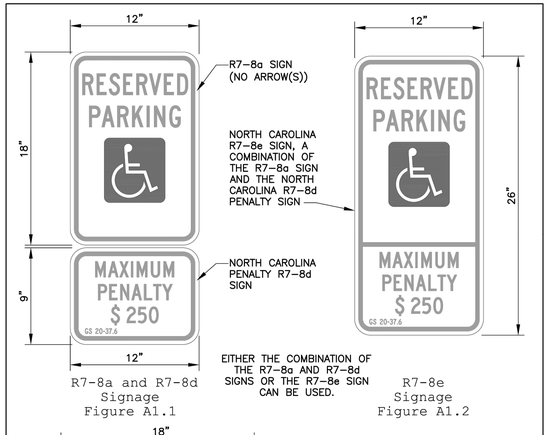
PAVEMENT SECTIONS DETAIL



Signage Height
Figure A2.1

DATE:	NOVEMBER 8, 2016	Accessible Parking Signs Mounting Configuration and Mounting Heights
REVISED:	-	
DRAWN BY:	DALE THOMPSON	
CHECKED BY:	RANDALL GLAZIER	
SCALE:	NOT TO SCALE	

CITY OF WILMINGTON TRAFFIC ENGINEERING
P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7888
DETAIL NO.: TE7-02



R7-8a and R7-8d Signage
Figure A1.1

R7-8e Signage
Figure A1.2

R7-8P Signage
Figure A1.3

DATE:	NOVEMBER 8, 2016	Accessible Parking Signs
REVISED:	-	
DRAWN BY:	DALE THOMPSON	
CHECKED BY:	RANDALL GLAZIER	
SCALE:	NOT TO SCALE	

CITY OF WILMINGTON TRAFFIC ENGINEERING
P.O. Box 1810 • Wilmington, NC 28402 • (910) 341-7888
DETAIL NO.: TE7-01

1. Variances on stall widths, angle and other dimensions will be allowed only upon approval of the Traffic Engineer.
2. Wheel stops shall be required three (3) feet from the end of parking stall when using eighteen (18) feet deep stalls.
3. Curbing, crossties, utility poles, etc., can be used as wheel stops. (Must be anchored down)
4. All medians shall be a minimum of six (6) feet wide.
5. Parking bays which terminate at a circulation way shall provide for a minimum turning radius of twenty-five (25) feet, as measured from the edge of the travel portion.
6. All parking stall markings and lane arrows shall be white.
7. All other pavement markings, signs or other traffic control devices shall conform to the latest edition and/or interpretation of the Manual on Uniform Traffic Control Devices (MUTCD).
8. No obstructions will be allowed adjacent to a parking stall which would prevent safe ingress and egress from a parked vehicle.
9. Parking in fire lanes and in non-residential driveways shall be prevented by standard signs and as needed by portable barricades.

DATE:	2001	STANDARD DETAIL PARKING FACILITY DESIGN NOTES
DRAWN BY	JSR/CMR	
CHECKED BY	B.P., P.E.	
SCALE	NOT TO SCALE	

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CITY OF WILMINGTON ENGINEERING
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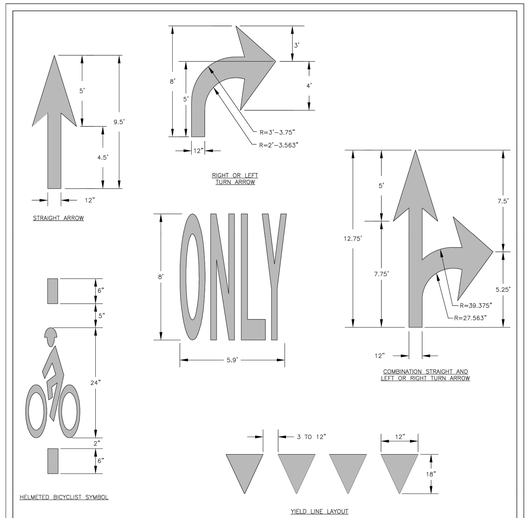
SD 15-13



GENERAL NOTES

1-PAVEMENT MARKINGS, SYMBOLS AND DIMENSIONS SHALL BE DESIGNED PER MUTCD WITH APPROVAL FROM CITY TRAFFIC ENGINEERING, AND INSTALLED IN ACCORDANCE WITH NCDOT DIVISION 12 SPECIFICATIONS. SEE SD 11-01.

DATE:	OCTOBER, 2012	STANDARD DETAIL GUIDELINES FOR PAVEMENT MARKINGS AND SYMBOLS
DRAWN BY	JSR	
CHECKED BY	BDR, P.E.	
SCALE	NOT TO SCALE	

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
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CHECKED BY J. WALL
SCALE N/A

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NVA - EASTERN CAROLINA CLINIC RENOVATION
WILMINGTON, NORTH CAROLINA
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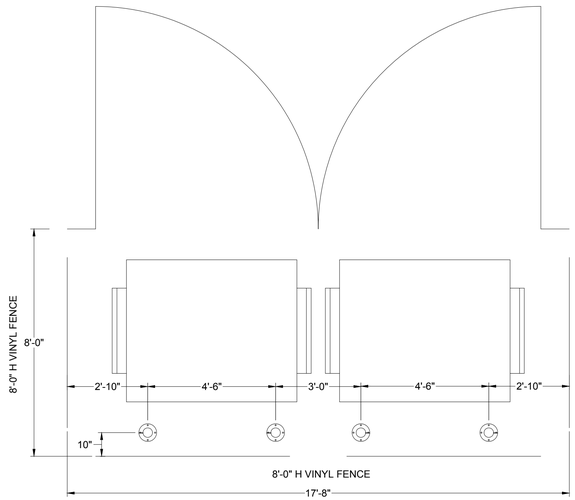
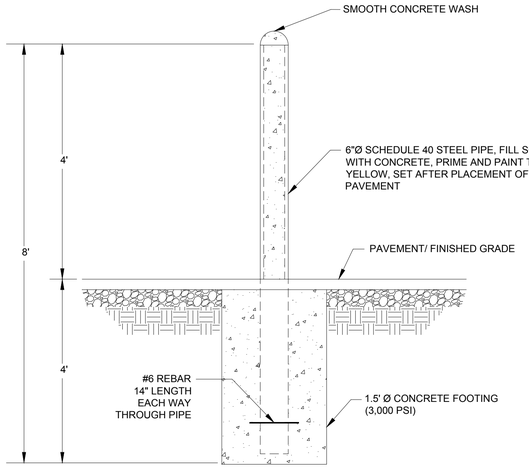


DUMPSTER ENCLOSURE DETAIL

NOT TO SCALE



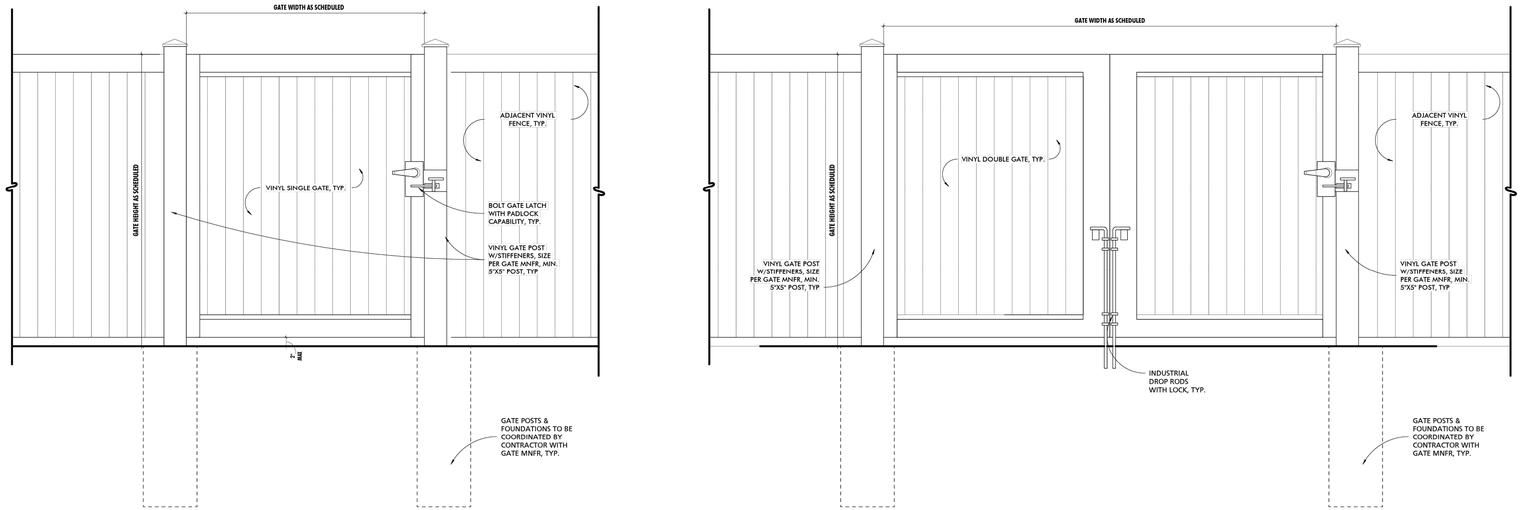
PIPE BOLLARD DETAIL

NOT TO SCALE

DELEGATED DESIGN:

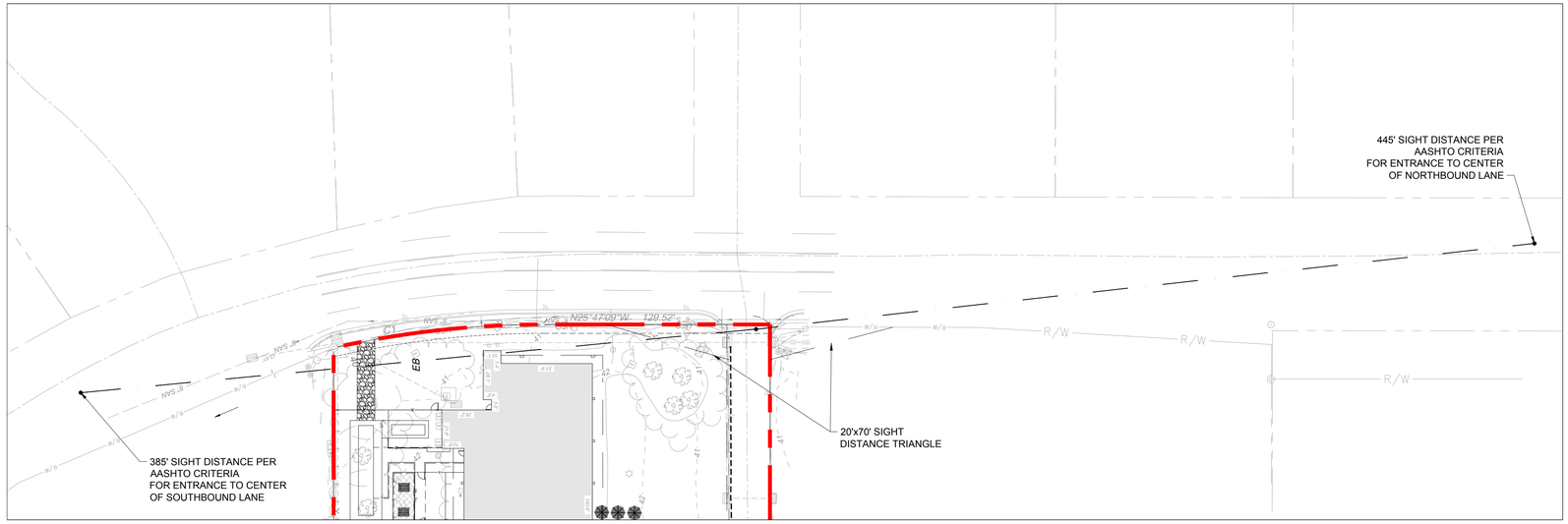
GENERAL CONTRACTOR SHALL RETAIN STRUCTURAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA TO DESIGN GATES, POSTS & ASSOCIATED FOOTINGS.

GENERAL CONTRACTOR TO COORDINATE GATE POSTS AND POST FOOTING SIZES WITH GATE MANUFACTURER.



TYPICAL GATE DETAILS

NOT TO SCALE



SITE DISTANCE EXHIBIT

SCALE: 1" = 40'

NOTE: DETAILS ARE PROVIDED FOR REFERENCE ONLY. SEE ARCHITECTURAL PLANS FOR DESIGN SPECIFICS.

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL

9/19/2023

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JOB NO.	57481
SHEET NO.	C5.2

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION

WILMINGTON, NORTH CAROLINA

NOTES AND DETAILS - SHEET 3 OF 3

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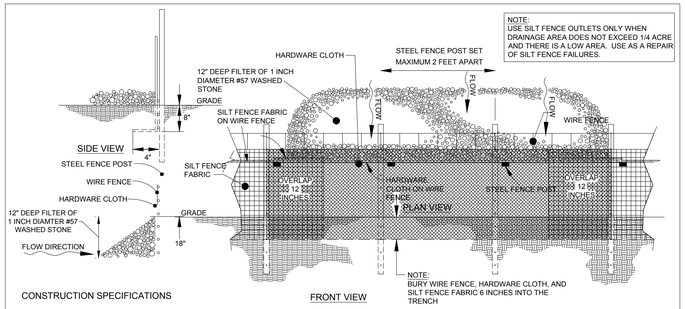


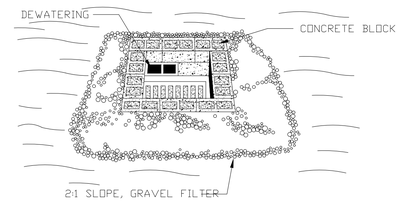
CONSTRUCTION SPECIFICATIONS

1. USE A SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461, WHICH IS SHOWN IN PART IN TABLE 6.62B. SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT TEMPERATURE RANGE OF 0 TO 120° F.
2. 2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.25 LB/LINEAR FT MINIMUM STEEL WITH A MINIMUM LENGTH OF 5 FEET. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.
3. 3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

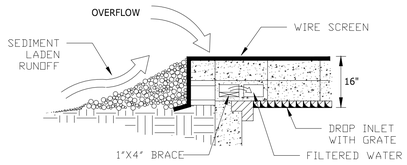
MAINTENANCE

1. INSPECT SEDIMENT FENCE AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
4. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

SILT FENCE STONE OUTLET N.T.S.



CATCH BASIN INLET PROTECTION



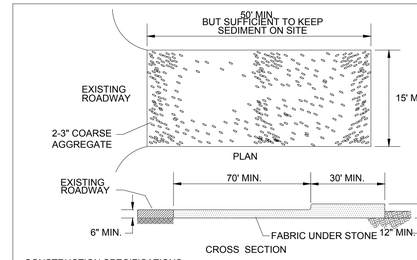
NOTES:

1. PLACE CONCRETE BLOCKS LENGTHWISE ON THEIR SIDES IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET WITH THE ENDS OF ADJACENT BLOCKS ABUTTING. THE HEIGHT OF THE BLOCKS SHALL BE 12".
2. WIRE MESH OR HARDWARE CLOTH SHALL BE PLACED OVER THE OUTSIDE VERTICAL FACE (WEBBING) OF THE BLOCKS, TO PREVENT STONE FROM BEING WASHED THROUGH THE HOLES IN THE BLOCKS.
3. #57 WASHED STONE SHALL BE PILED AGAINST THE WIRE TO THE TOP OF THE BLOCK.
4. PLACE 1"x4" BOARDS THROUGH THE HOLES OF CORNER BLOCKS.

MAINTENANCE NOTES:

1. INSPECT THE BARRIER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL AND MAKE REPAIRS AS NEEDED.
2. REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.
3. REPLACE #57 WASHED STONE IF IT BECOMES CLOGGED WITH SEDIMENT AND DOES NOT DRAIN EFFICIENTLY.
4. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

TEMPORARY CATCH BASIN INLET PROTECTION N.T.S.



CONSTRUCTION SPECIFICATIONS

1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT.
2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS AND SMOOTH IT.
3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET.
4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS SUBJECT TO SEEPAGE OR HIGH WATER TABLE.

MAINTENANCE

MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2" STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND IT OUT A NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS.

CONSTRUCTION ENTRANCE N.T.S.

CONSTRUCTION SPECIFICATIONS

1. USE SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461.

SYNTHETIC FILTER FABRIC SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF 6 MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0-120 DEGREES F.

2. ENSURE THAT POSTS FOR SEDIMENT FENCES ARE 1.33 LB/LF STEEL WITH A MINIMUM LENGTH OF 5'. MAKE SURE THAT STEEL POSTS HAVE PROJECTIONS TO FACILITATE FASTENING THE FABRIC.

3. FOR REINFORCEMENT OF STANDARD STRENGTH FILTER FABRIC, USE WIRE FENCE WITH A MINIMUM 14 GAUGE AND A MAXIMUM MESH SPACING OF 6 INCHES.

MAINTENANCE

INSPECT SEDIMENT FENCE AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

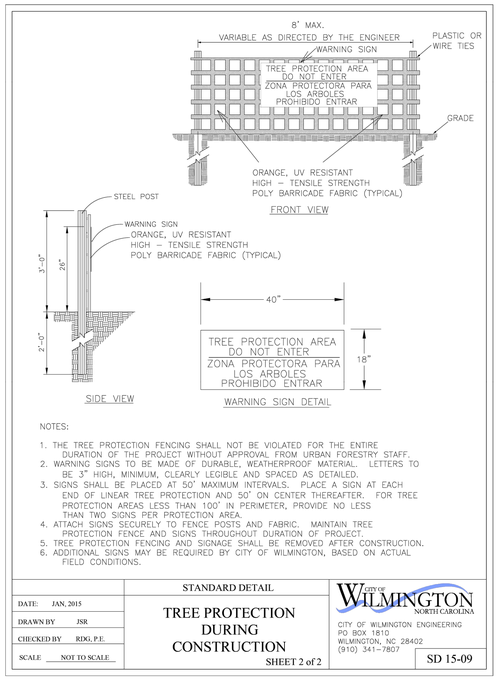
SILT FENCE N.T.S.

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMITS ISSUED AND WITH THE CITY OF WILMINGTON, NEW HANOVER COUNTY, CAPE FEAR PUBLIC UTILITY AUTHORITY (CFPUA), AND THE STATE OF NORTH CAROLINA.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWING BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.
4. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 811 TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
5. ANY DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR SHALL BE GIVEN TO THE OWNER FOR REVIEW. NO DEPARTURES SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER, CITY OF WILMINGTON, NEW HANOVER COUNTY, OR CFPUA.

EROSION & SEDIMENT CONTROL NOTES:

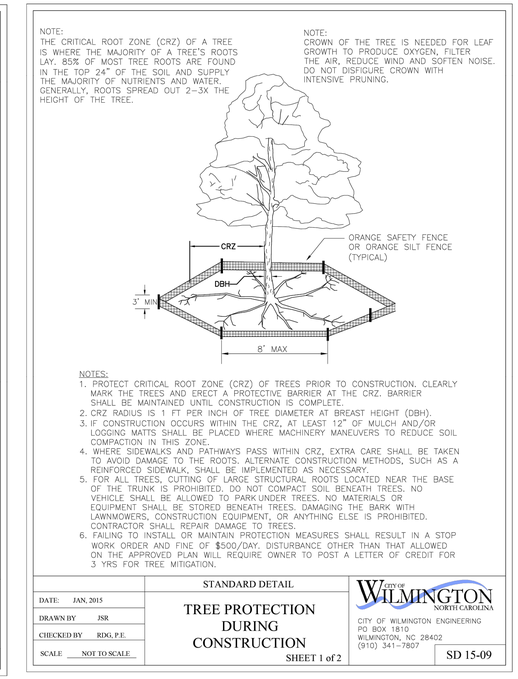
1. LAND DISTURBING ACTIVITIES MUST BE MANAGED TO AVOID SEDIMENT RUN-OFF AND POLLUTION FROM CONSTRUCTION SITES.
2. WHERE PERMITTED LOCALLY BY NEW HANOVER COUNTY, AN EROSION AND SEDIMENT CONTROL (E&SC) PLAN WILL CONTAIN DETAILS AND GUIDANCE. E&SC PLANS ARE PERFORMANCE BASED AND OFTEN REQUIRE ADJUSTMENTS OR REPAIRS.
3. AS PERMITTED BY NCDENR, DIVISIONS OF WATER QUALITY AND LAND RESOURCES, A STORMWATER PERMIT WILL REQUIRE SELF-MONITORING REPORTS (WEEKLY, >1" RAIN EVENT) OR SELF-INSPECTION REPORTS AFTER EACH CONSTRUCTION PHASE, BASED ON ELEMENTS OF THE E&SC PLAN.



NOTES:

1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

DATE: JAN, 2015	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY JSR	TREE PROTECTION DURING CONSTRUCTION SHEET 2 of 2	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY RDG, P.E.		
SCALE NOT TO SCALE		SD 15-09



NOTES:

1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
6. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF $500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

DATE: JAN, 2015	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY JSR	TREE PROTECTION DURING CONSTRUCTION SHEET 1 of 2	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY RDG, P.E.		
SCALE NOT TO SCALE		SD 15-09

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

THIS DRAWING PREPARED AT THE
WILMINGTON OFFICE
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TEL 910.746.1140 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

DATE	REVISION DESCRIPTION
07/05/2023	REVISIONS PER OWNER
09/19/2023	REVISIONS PER TRC COMMENTS ISSUED 9/5/2023

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

DATE 08/02/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY J. WALL
SCALE N/A

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION
WILMINGTON, NORTH CAROLINA
EROSION CONTROL NOTES AND DETAILS - SHEET 1 OF 2

JOB NO. 57481
SHEET NO. C5.3

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North Carolina 811 www.nc811.org

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PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypass [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

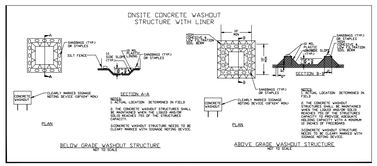
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

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NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

THIS DRAWING PREPARED AT THE
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430 Eastwood Road | Wilmington, NC 28403
TEL 910.746.1140 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS.

REVISION DESCRIPTION	DATE
REVISIONS PER OWNER	07/05/2023
REVISIONS PER TRC COMMENTS ISSUED 9/5/2023	09/19/2023

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

DATE 08/02/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY J. WALL
SCALE N/A

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION
WILMINGTON, NORTH CAROLINA
EROSION CONTROL NOTES AND DETAILS - SHEET 2 OF 2

JOB NO. 57481
SHEET NO. C5.4

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North Carolina 811 www.nc811.org

NVA - EASTERN CAROLINA CLINIC RENOVATION LANDSCAPE REQUIREMENTS:

FOUNDATION PLANTING REQUIREMENTS (18-322)
FOR ALL PORTIONS OF BUILDINGS ADJACENT TO PARKING LOTS OR INTERNAL DRIVE AISLES, FOUNDATION PLANTINGS SHALL BE REQUIRED BETWEEN THE BUILDING WALL AND THE PARKING OR DRIVE AISLE CURB.
GROUND-FLOOR AREA OF BUILDING = 15,000 SF
MINIMUM REQUIRED FOUNDATION PLANTING AREA FOR BUILDING = (15,000 SF X 0.12) = 1,800 SF
PROVIDED: 55 WHEELERS DWARF PITTOSPORUM SHRUBS, 1,853 SF

PLANT SCHEDULE

SHRUBS			
CODE	QTY	SCIENTIFIC NAME	COMMON NAME
PT-WD	55	PITTOSPORUM TOBIRA	WHEELERS DRAWF PITTOSPORUM

SITE DATA TABLE

ARCHITECT
MANNIS WOODWORD STUDIOS
10839 PHILADELPHIA ROAD
WHITE MARCH, MARYLAND 21162
JESSICA SWEIGART
EMAIL: JSWEIGART@MWSARCH.COM

DEVELOPER
CVVF WILMINTON NC LLC
3807 CLEGHORN AVE, STE 903
NASHVILLE, TN 37215

ENGINEER
TIMMONS GROUP
430 EASTWOOD ROAD, SUITE 100
WILMINGTON, NC 28403
PHONE: 910-746-1174
JOHN WALL, PE
EMAIL: JOHN.WALL@TIMMONS.COM

PARCEL ID: R04920-001-001-000
PROJECT AREA: 2.40 AC
PARCEL OWNER:
CVVF WILMINGTON NC LLC
3807 CLEGHORN AVE, STE 903
NASHVILLE, TN 37215
D.B. 6691, PG 1593
CURRENT ZONING: O&I
PROPOSED USE: OFFICE & PROFESSIONAL - VETERINARY
BUILDING CONSTRUCTION TYPE: III-B

PARKING SPACES
REQUIRED: 1 PER 200 SF OF WAITING AREA (2,000 SF) = 10 (MIN)
1 PER EXAM ROOM (26 ROOMS) = 26 (MIN)
= 36 SPACES

EXISTING TOTAL: 122 SPACES

NEW TOTAL: 111 REGULAR SPACES
6 EMERGENCY ONLY SPACES
6 ADA SPACES
123 SPACES

REQUIRED ADA SPACES: 5
PROVIDED: 6

EXISTING ONSITE IMPERVIOUS COVER: 1.60 AC. (66.7% OF TOTAL SITE AREA)
PROPOSED ONSITE IMPERVIOUS COVER: 1.65 AC. (68.8% OF TOTAL SITE AREA)

TOTAL SITE AREA: 2.40 AC.

SETBACK REQUIREMENTS:
FRONT SETBACK = 20'
REAR SETBACK = 20'
STREETSCAPE BUFFER = 15'

ALTERNATE NOTES:

ALTERNATE #1: OVERHEAD SAILS COVERING WALKWAYS LEADING FROM TRAILERS TO MAIN BUILDING.

ALTERNATE #2: GRASS AREA WITH CONCRETE BASES FOR TABLES.

ALTERNATE NOTE:

1 - OVERHEAD SAILS OVER WALKWAYS FROM TRAILERS TO BUILDING
2 - GRASS AREA WITH CONCRETE BASE FOR TABLES

LOT 2
N/F
Jerry A. & Marilyn S. Cook
(PID R04916-001-028-000)
(D.B.3752, Pg. 892)
(M.B. 44, Pg. 3)
(Zoned RB)

5041
2 Story Masonry Building

N/F
Jerry A. & Marilyn S. Cook
(PID R04916-001-006-0000)
(D.B.1665, Pg. 798)
(Zoned RB)

Storm Inlet
Rim Elev. = 40.30'
Inv. = 36.98'

Storm Inlet
Rim Elev. = 40.48'
Inv. = 36.84'

Storm Inlet
Rim Elev. = 41.00'
Inv. = 37.99'

Storm Inlet
Rim Elev. = 40.53'
Inv. = 36.75'

Storm Inlet
Rim Elev. = 40.20'
Inv. = 36.38'

Storm Inlet
Rim Elev. = 41.88'
Inv. = 40.88'

Storm Inlet
Rim Elev. = 39.70'
Inv. = 37.39'

Storm Inlet
Rim Elev. = 39.80'
Inv. In (N) = 35.30'
Inv. In (NW) = 37.65'
Inv. In (SW) = 35.58'
Inv. Out (SE) = 35.18'
Inv. In (NE) = 35.30'

Storm Inlet
Rim Elev. = 39.20'
Inv. = 35.50'

Storm Inlet
Rim Elev. = 38.37'
Inv. = 35 04'

Storm Inlet
Rim Elev. = 41.17'
Inv. = 37.17'

Stop Sign
Rim 39.69'
Inv. 33.39'

5041 Sign
5051 Sign
Realtor Sign
GMC Sign

Gas Paint Marker
Fiber Optic Paint Marker
Water Paint Marker
Gas Paint Marker

OLD PK NAIL(F)
ON P @153.76'

N64°12'57"E 429.31'

24.5' Existing Acess Easement
(D.B.5645, Pg. 2031)

24.5'

12" RCP
15" RCP
18" RCP

Existing 5' Utility Easement (D.B. 1011, Pg.752)

EXIST ROAD CENTERLINE

15' STREETSCAPE BUFFER

Singlefin Properties, LLC
PID R04920-001-001-000
D.B.5824, Pg. 2770
Area: 104,662 Sq. Ft.
2.4027 Ac.
Zoned O & I

New Centre Drive
75' Public Right-of-Way
(M.B. 27, Pg. 166)

Existing 5' Utility Easement (D.B. 1011, Pg.752)

Existing 6' Chain Link Fence

Existing 70' Carolina Power & Light Company Right-of-Way Easement
(D.B. 821, Pg. 670)

N/F
Robert S. & Martha S. King
(PID R04916-001-025-000)
(D.B.2007, Pg. 727)
(Zoned R B)

N/F
Robert S. & Martha S. King
(PID R04920-001-002-000)
(D.B. 1137, Pg. 1503)
(D.B. 2036, Pg. 125)
(Zoned RB)

S 25°14'09" E
206.69'

95.49'
S 30°31'51" W

74.51'
S 30°31'51" W

P.O.C.
P.O.B.
2" Old Pinched Pipe

Existing 7' wood fence

Existing 6.5 ft Wood Fence

S64°12'51"W 354.04'

PROPOSED MRI TRAILER

PROPOSED K9 RELIEF AREAS

CPP 4" (4)

Existing Cell Tower (no access)

GALLERY PEAR
DBH = 25"

Metal Shed

Dock Lift
Metal Handrail (damaged)
Bollard (damaged)
Lift Controllers

798 SF
783 SF
79 SF
193 SF

140.6'
159.6'
92.2'
15.2'
42.05 FF
42.06 FF

23" Loblolly Pine
13" Tulip Tree Deciduous
18" Loblolly Pine
8" Crepe Myrtle Deciduous
6" Crepe Myrtle Deciduous
Handicap Sign

41" Deciduous
15" Deciduous
9" Deciduous
18" Deciduous

½" Old Pipe (f) (Held)

CLAY

(692.98' TO WESTERN R/W LINE OF COLLEGE ROAD (NC HWY 132))

LEGEND

PROPERTY LINE
BUFFER

NAD 83

SCALE 1"=20'
0 20' 40'

GENERAL CONTRACTOR

PRIOR TO BEGINNING ANY CONSTRUCTION, FIELD SURVEY SHALL VERIFY LOCATION, DEPTH, SIZE, MATERIAL, AND CONDITION OF ALL EXISTING UTILITIES. IN CASE OF CONFLICT OR IF DIFFERENT THAN PLAN, NOTIFY ENGINEER.

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

North Carolina 811 www.nc811.org

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

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TEL 910.746.1140 www.timmons.com

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09/19/2023	REVISIONS PER TRC COMMENTS ISSUED 9/5/2023

DATE 08/02/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY J. WALL
SCALE 1"=20'

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION

WILMINGTON, NORTH CAROLINA

LANDSCAPE PLAN

JOB NO. 57481
SHEET NO. L1.0

PRELIMINARY PLAN - NOT FOR CONSTRUCTION, RECORDATION OR CONVEYANCE

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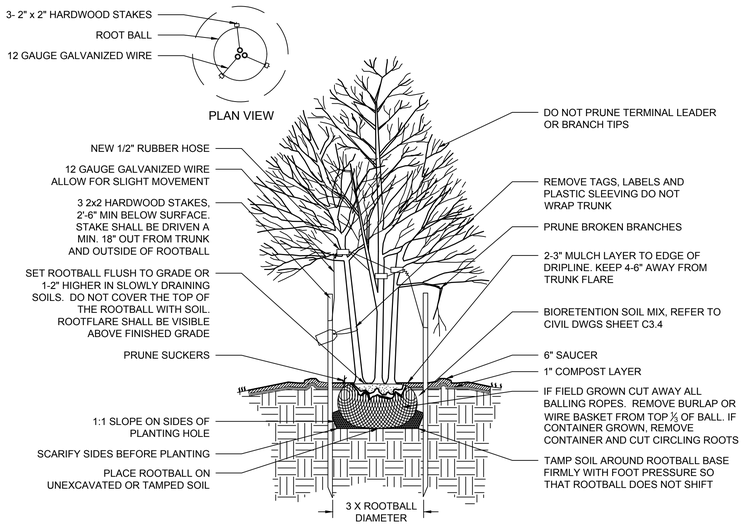
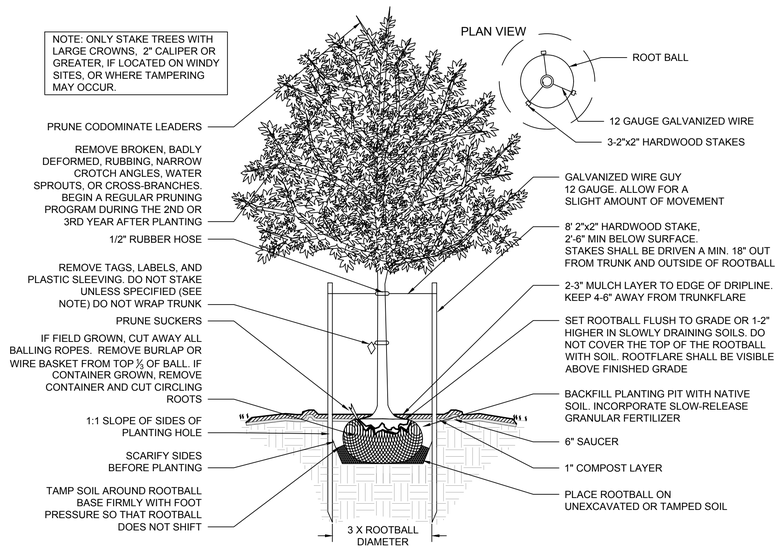
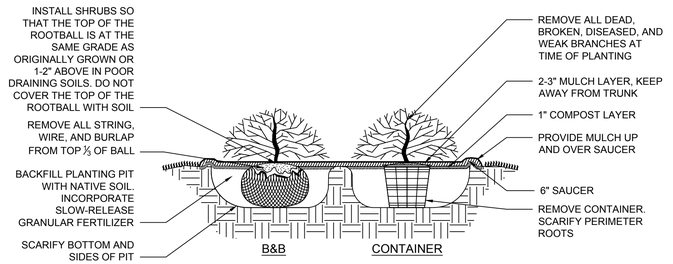


4 MULTI-STEM TREE PLANTING
NOT TO SCALE



2 DECIDUOUS TREE - STAKING SPECIFIED
NOT TO SCALE



3 SHRUB PLANTING
NOT TO SCALE

1. No plantings over thirty (30) inches in height allowed in vision clearance.
2. Protection from vehicular traffic provided around all landscaping with a minimum height of six (6) inches.
3. Owner is responsible for maintenance to ensure plant material lives and prospers.
4. Planting plans shall be approved by Landscape Designer prior to installation.
5. Landscaping shall be required at the ends of all parking rows.
6. A low buffer shall be required where parking is within fifty (50) feet of the Right-of-Way.
7. Landscaped islands shall be a minimun width of twelve (12) feet (back of curb to back of curb) and a minimum of two hundred and sixteen (216) square feet.
8. A minimum of fifteen (15) trees 2 inches or greater in diameter as measured 6 inches above ground per disturbed acre.
9. For recommended Plant List see "Landscape" T-10.4.

	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DATE: APRIL, 2008	LANDSCAPE NOTES	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
DRAWN BY JSR		
CHECKED BY B.P., P.E.		
SCALE NOT TO SCALE		SD 15-14

GENERAL NOTES

PRE-CONSTRUCTION

- CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1.800.552.7001 FOR LOCATION OF ALL UTILITY LINES.TREES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM SEWER/WATER CONNECTIONS. NOTIFY LANDSCAPE ARCHITECT OF CONFLICTS.
- VERIFY ALL PLANT MATERIAL QUANTITIES ON THE PLAN PRIOR TO BIDDING, PLANT LIST TOTALS ARE FOR CONVENIENCE ONLY AND SHALL BE VERIFIED PRIOR TO BIDDING.
- PROVIDE PLANT MATERIALS OF QUANTITY, SIZE, GENUS, SPECIES, AND VARIETY INDICATED ON PLANS. ALL PLANT MATERIALS AND INSTALLATION SHALL COMPLY WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK". IF SPECIFIED PLANT MATERIAL IS NOT OBTAINABLE, SUBMIT PROOF OF NON AVAILABILITY TO THE ARCHITECTS, TOGETHER WITH PROPOSAL FOR USE OF EQUIVALENT MATERIAL.
- PROVIDE AND INSTALL ALL PLANTS AS IN ACCORDANCE WITH DETAILS AND CONTRACT SPECIFICATIONS

CONSTRUCTION/INSTALLATION

- LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS AND MATERIALS THAT ARE IN AN UNHEALTHY OR UNSIGHTLY CONDITION, AS WELL AS PLANTS AND MATERIALS THAT DO NOT CONFORM TO ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK"
- LABEL AT LEAST ONE TREE AND ONE SHRUB OF EACH VARIETY AND CALIPER WITH A SECURELY ATTACHED, WATERPROOF TAG BEARING THE DESIGNATION OF BOTANICAL AND COMMON NAME.
- INSTALL LANDSCAPE PLANTINGS AT ENTRANCES/EXITS AND PARKING AREAS ACCORDING TO PLANS SO THAT MATERIALS WILL NOT INTERFERE WITH SIGHT DISTANCES.
- CONTRACTOR IS RESPONSIBLE FOR WATERING ALL PLANT MATERIAL DURING INSTALLATION AND UNTIL FINAL INSPECTION AND ACCEPTANCE BY OWNER. CONTRACTOR SHALL NOTIFY OWNER OF CONDITIONS WHICH AFFECTS THE GUARANTEE.

INSPECTIONS/GUARANTEE

- UPON COMPLETION OF LANDSCAPE INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR WHO WILL VERIFY COMPLETENESS, INCLUDING THE REPLACEMENT OF ALL DEAD PLANT MATERIAL. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A FINAL INSPECTION BY THE LANDSCAPE ARCHITECT.
- ALL EXTERIOR PLANT MATERIALS SHALL BE GUARANTEED FOR ONE FULL YEAR AFTER DATE OF FINAL INSPECTION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH. DEFECTS RESULTING FROM NEGLECT BY THE OWNER, ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE BEYOND THE CONTRACTORS CONTROL ARE NOT THE RESPONSIBILITY OF THE CONTRACTOR
- PLANT MATERIAL QUANTITIES AND SIZES WILL BE INSPECTED FOR COMPLIANCE WITH APPROVED PLANS BY A SITE PLAN REVIEW AGENT OF THE PLANNING DEPARTMENT PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY.
- REMOVE ALL GUY WIRES AND STAKES 12 MONTHS AFTER INSTALLATION.

MAINTENANCE

1. The responsibility for maintenance of required landscaping shall remain with the owner of the property, his or her successors, heirs, assignees or any consenting grantee. Maintenance is required in order to ensure the proper functioning of the plantings as a landscaped area, which reduces or eliminates nuisance and/or conflict.
2. All plantings shall be maintained in an attractive and healthy condition. Maintenance shall include, but not be limited to, watering, mulching, fertilizing and pest management, mowing, weeding, removal of litter and dead plant material, and necessary pruning and trimming.
3. Necessary pruning and trimming shall be in accordance with the American National Standards for Tree Care Operations: Tree Shrub and Other Woody Plant Maintenance – Standards Practices (Pruning), and shall not be interpreted to include topping of trees through removal of crown material or the central leader, or any other similarly severe procedures such as lollipopping or meatballing that cause irreparable harm to the natural form of the tree, except where such procedures are necessary to maintain public overhead utilities. Any such activity shall be a violation of these zoning regulations.
4. Dead or diseased plantings shall be removed. Unless specifically exempted (such as Understory Trees shaded by Canopy Trees), replacement plantings shall be provided for any required plants which die or are removed for any reason and shall meet all minimum standards and conform to these regulations.
5. Natural watercourses within a landscaped area shall be maintained in a natural condition consistent with any applicable regulations.
6. A water source shall be supplied within 100 feet of any planting requiring continuing watering. Where non-native or non-drought tolerant native vegetation is incorporated, an irrigation system shall be required.
7. Landscape structural features such as walls, fences, berms or water features shall be maintained in a structurally safe and attractive condition.
8. Where other uses, including pedestrian, bike or other trails, are allowed within a landscaped area, these uses shall be maintained to provide for their safe use.
9. Failure to Maintain. In the event that any owner of a landscape area fails to maintain same according to the standards of these regulations, these regulations shall be enforceable by the Town with the right to recover the cost of enforcement, including reasonable attorney fees. The Town may also, following reasonable notice and a demand that deficiency of maintenance be corrected, enter the landscape area to maintain same. The cost of such maintenance shall be charged to those persons having the primary responsibility for maintenance of the landscape area.
10. Hardship Relief. The landscaping requirements may be modified by the Administrator upon a finding that a modification would be consistent with the purpose and intent of this Article, with any adopted land use plans, that such modification would not adversely affect the land use compatibility or public interest, and complies with one or more of the following criteria: (1) The affected area adjoins an existing utility or drainage easement of at least 100 feet in width; (2) The affected area is between uses that are to be developed under a common development plan or series of development plans; or (3) The affected area adjoins a property that has a joint use agreement with the parcel under site plan

CITY OF WILMINGTON NORTH CAROLINA
Public Services ● Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date:_____ Permit #_____
Signed: _____

North Carolina 811 www.nc811.org

NORTH CAROLINA PROFESSIONAL SEAL 052330 ENGINEER JOHN C. WALL
9/19/2023

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DATE 08/02/2023
DRAWN BY 331
DESIGNED BY 331
CHECKED BY J. WALL
SCALE 1"=20'

TIMMONS GROUP

NVA - EASTERN CAROLINA CLINIC RENOVATION
WILMINGTON, NORTH CAROLINA
LANDSCAPE NOTES & DETAILS

JOB NO. 57481
SHEET NO. L1.1

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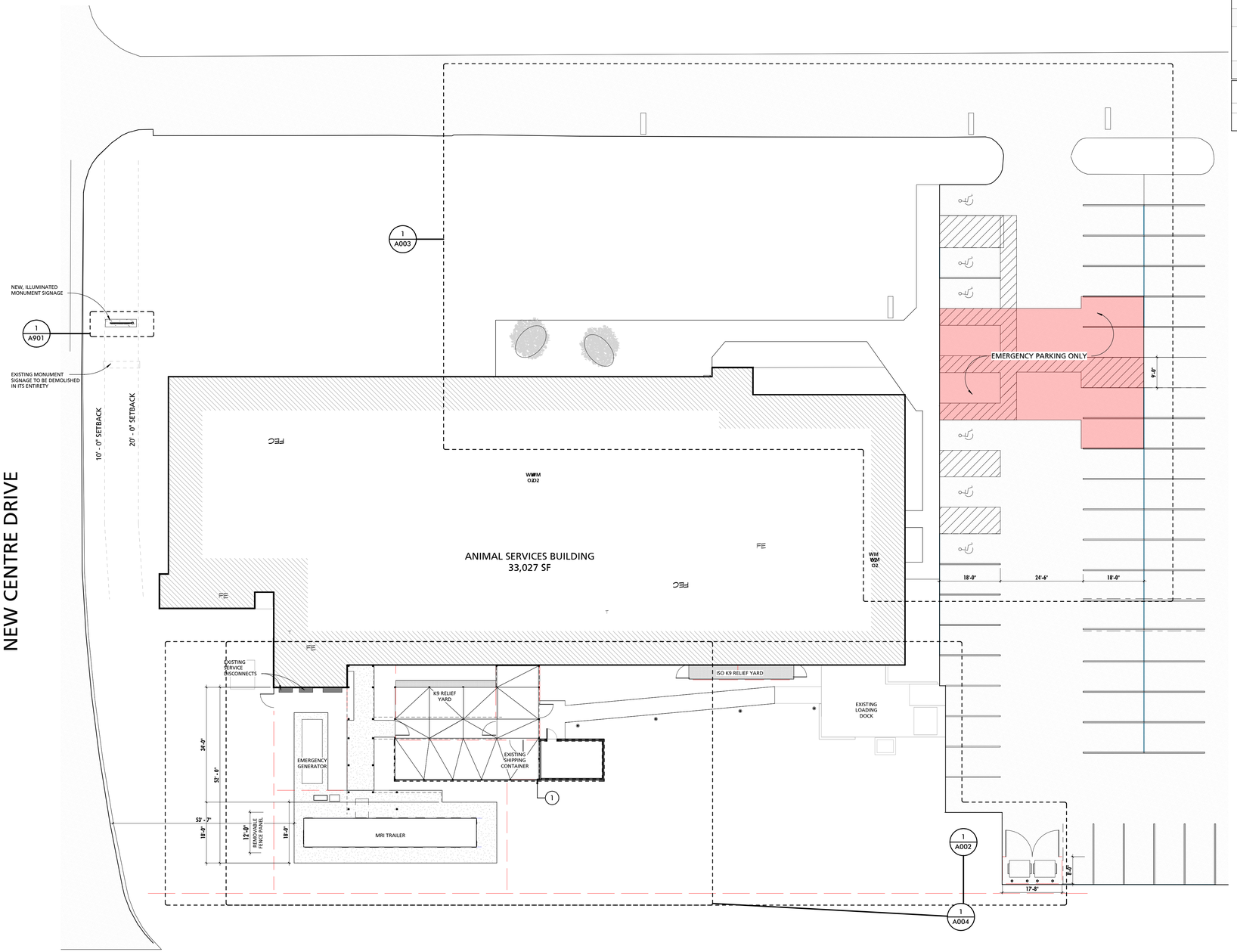

GENERAL SITE NOTES

1	SEE CIVIL, STRUCTURAL & MEP DRAWINGS FOR MORE INFORMATION.
2	ASPHALT TOP COURSE SHALL BE LAID ONLY AFTER ALL MILLING, TRENCHING, HEAVY CONSTRUCTION & EXCAVATION PROCEDURES HAVE BEEN COMPLETED. PATCHES WITHIN NEW TOP COURSE WILL NOT BE ACCEPTED. TOP COURSE DESIGN SHALL MATCH THAT OF PROVIDED PAVING SECTIONS WITHIN CIVIL DRAWINGS. EDGES OF NEW ASPHALT THAT ABUT EXISTING SITE WORK SHALL SHARE A UNIFORM GRADE ELEVATION.
3	MRI TRAILER ELEVATIONS ARE SHOWN FOR REFERENCE ONLY. MRI TRAILER TO BE PROVIDED AND INSTALLED BY OWNER'S VENDOR.
4	EXTERIOR CONCRETE PADS LOCATED AT MAN DOORS SHALL BE 4" THICK MIN AND HAVE A MIN OF 4" THICK CRUSHED STONE BASE. SLAB SHALL HAVE A MIN 30" BELOW GRADE TURN-DOWN PERIMETER. DOWEL SLAB INTO BUILDING W/SMOOTH #4 X 30" DOWELS @ 24" OC, GREASE ONE END, TYP. SLOPE SLAB AWAY FROM BUILDING 1/8" PER FOOT, U.N.O.
5	OUTDOOR FURNITURE IS SHOWN FOR REFERENCE ONLY AND SHALL BE PROVIDED AND INSTALLED BY THE OWNER.

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	EXISTING SHIPPING CONTAINER TO BE REMOVED IN ITS ENTIRETY. EXISTING CONCRETE SLAB TO REMAIN.

1 ARCHITECTURAL SITE DIAGRAM

1/16" = 1'-0"

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SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ARCHITECTURAL SITE DIAGRAM

SHEET NUMBER:
A001

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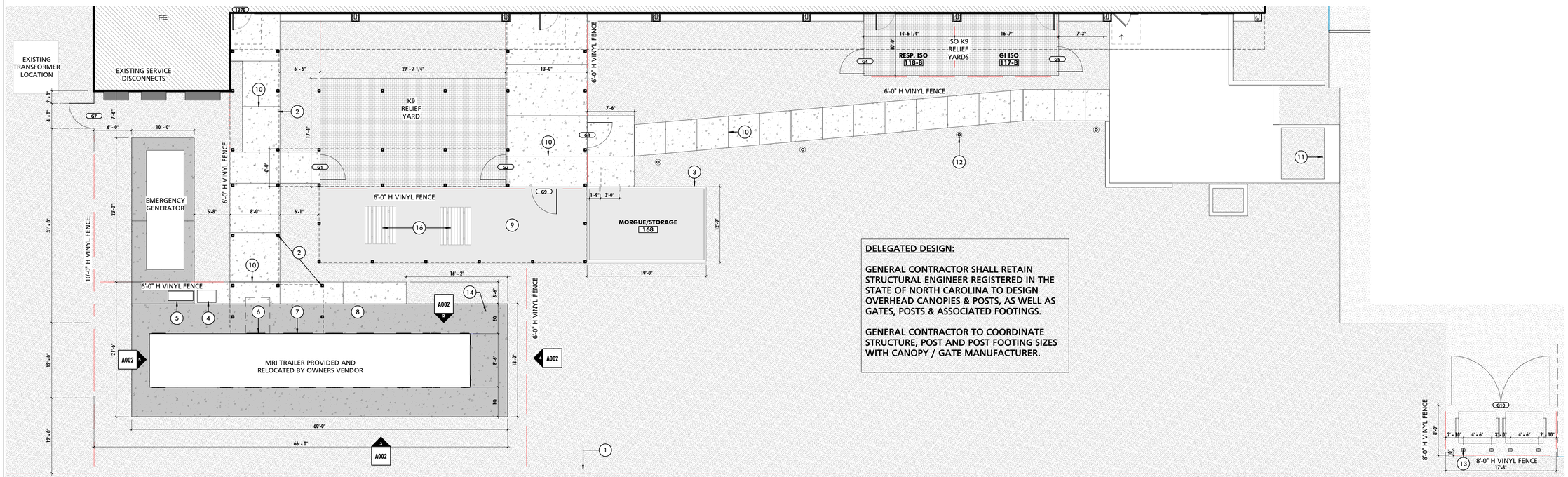
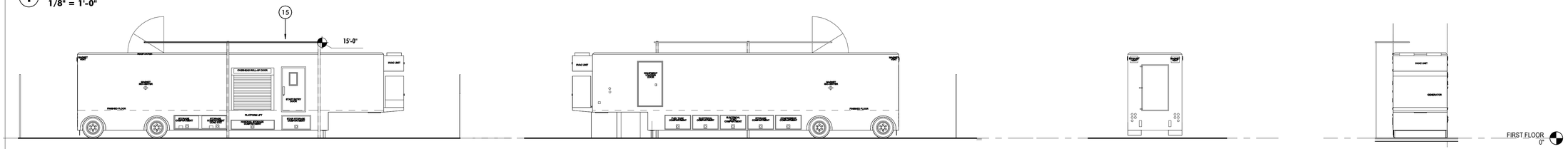
GENERAL SITE NOTES

1	SEE CIVIL, STRUCTURAL & MEP DRAWINGS FOR MORE INFORMATION.
2	ASPHALT TOP COURSE SHALL BE LAID ONLY AFTER ALL MILLING, TRENCHING, HEAVY CONSTRUCTION & EXCAVATION PROCEDURES HAVE BEEN COMPLETED. PATCHES WITHIN NEW TOP COURSE WILL NOT BE ACCEPTED. TOP COURSE DESIGN SHALL MATCH THAT OF PROVIDED PAVING SECTIONS WITHIN CIVIL DRAWINGS. EDGES OF NEW ASPHALT THAT ABUT EXISTING SITE WORK SHALL SHARE A UNIFORM GRADE ELEVATION.
3	MRI TRAILER ELEVATIONS ARE SHOWN FOR REFERENCE ONLY. MRI TRAILER TO BE PROVIDED AND INSTALLED BY OWNER'S VENDOR.
4	EXTERIOR CONCRETE PADS LOCATED AT MAN DOORS SHALL BE 4" THICK MIN AND HAVE A MIN OF 4" THICK CRUSHED STONE BASE. SLAB SHALL HAVE A MIN 20" BELOW GRADE TURN-DOWN PERIMETER. DOWEL SLAB INTO BUILDING W/SMOOTH #4 X 30" DOWELS @ 24" OC, GREASE ONE END, TYP. SLOPE SLAB AWAY FROM BUILDING 1/8" PER FOOT, U.N.O.
5	OUTDOOR FURNITURE IS SHOWN FOR REFERENCE ONLY AND SHALL BE PROVIDED AND INSTALLED BY THE OWNER.



1 ENLARGED SITE DIAGRAM - PROPOSED
1/8" = 1'-0"



2 MRI TRAILER - NORTH
1/8" = 1'-0"

3 MRI TRAILER - SOUTH
1/8" = 1'-0"

4 MRI TRAILER - EAST
1/8" = 1'-0"

5 MRI TRAILER - WEST
1/8" = 1'-0"

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	EXISTING WOOD FENCE TO BE PATCHED & REPAIRED.
2	OVERHEAD ALUMINUM POST MOUNTED WALKWAY CANOPY - DELEGATED DESIGN.
3	PREFABRICATED METAL STORAGE SHED
4	TANK CABINET FOR STORAGE OF MED GAS TANKS. CABINET, O2 HOSE TO MRI TRAILER AND MED GAS FITTINGS PROVIDED BY OWNER'S VENDOR.
5	NEW UNISTRUT FRAME FOR MOUNTING OF MRI TRAILER RECEPTACLE, DISCONNECT SWITCH & WEATHERPROOF ETHERNET BOX. POWER TO ENTER BELOW AND AT THE CENTER OF THE MRI TRAILER. SEE MEP DRAWINGS FOR ADDITIONAL INFORMATION.
6	STAFF ENTRY DOOR TO MRI TRAILER.
7	PLATFORM LIFT FOR PATIENT ENTRANCE TO MRI TRAILER.
8	HEAVY DUTY CONCRETE, REFER TO CIVIL PLANS FOR MORE INFORMATION.
9	EXISTING SLAB TO REMAIN, SLAB TO BE REPAIRED & POWERWASHED.
10	CONTROL JOINT, TYP.
11	EXISITNG LIFT TO BE SERVICED, REPAIRED, AND PAINTED WITH HPC.
12	ILLUMINATED BOLLARD, SEE MEP DRAWINGS FOR ADDITIONAL INFORMATION.
13	5" BOLLARD, PAINTED HPC COLOR TO BE DETERMINED BY OWNER.
14	FROST PROOF YARD HYDRANT.
15	ELEVATED OVERHEAD ALUMINUM POST MOUNTED WALKWAY CANOPY CANTILEVERED OVER MRI TRAILER ENTRANCE, MIN 15'-0" H - DELEGATED DESIGN.
16	ALL EXTERIOR SITE FURNISHINGS SHALL BE PROCURED AND INSTALLED BY THE OWNER.

SCHEDULE - EXTERIOR GATES

MARK	DOOR PANEL SIZE	COMMENTS
G1	4'-0" X 6'-0"	SINGLE SWING VINYL GATE - SEE SCHEDULE FOR HARDWARE
G2	4'-0" X 6'-0"	SINGLE SWING VINYL GATE - SEE SCHEDULE FOR HARDWARE
G4	4'-0" X 6'-0"	SINGLE SWING VINYL GATE - SEE SCHEDULE FOR HARDWARE
G5	4'-0" X 6'-0"	SINGLE SWING VINYL GATE - SEE SCHEDULE FOR HARDWARE
G7	4'-0" X 10'-0"	SINGLE SWING VINYL GATE - SEE SCHEDULE FOR HARDWARE
G8	4'-0" X 6'-0"	SINGLE SWING VINYL GATE - SEE SCHEDULE FOR HARDWARE
G9	4'-0" X 6'-0"	SINGLE SWING VINYL GATE - SEE SCHEDULE FOR HARDWARE
G10	(2)7'-10" X 8'-0"	DOUBLE SWING VINYL GATE W/INDUSTRIAL DROP RODS

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NORTH CAROLINA CERTIFICATE OF AUTHORIZATION MANNS WOODWARD STUDIOS, INC. No. 53188

PRELIMINARY NOT FOR CONSTRUCTION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED ARCHITECTURAL SITE DIAGRAM

SHEET NUMBER:
A002

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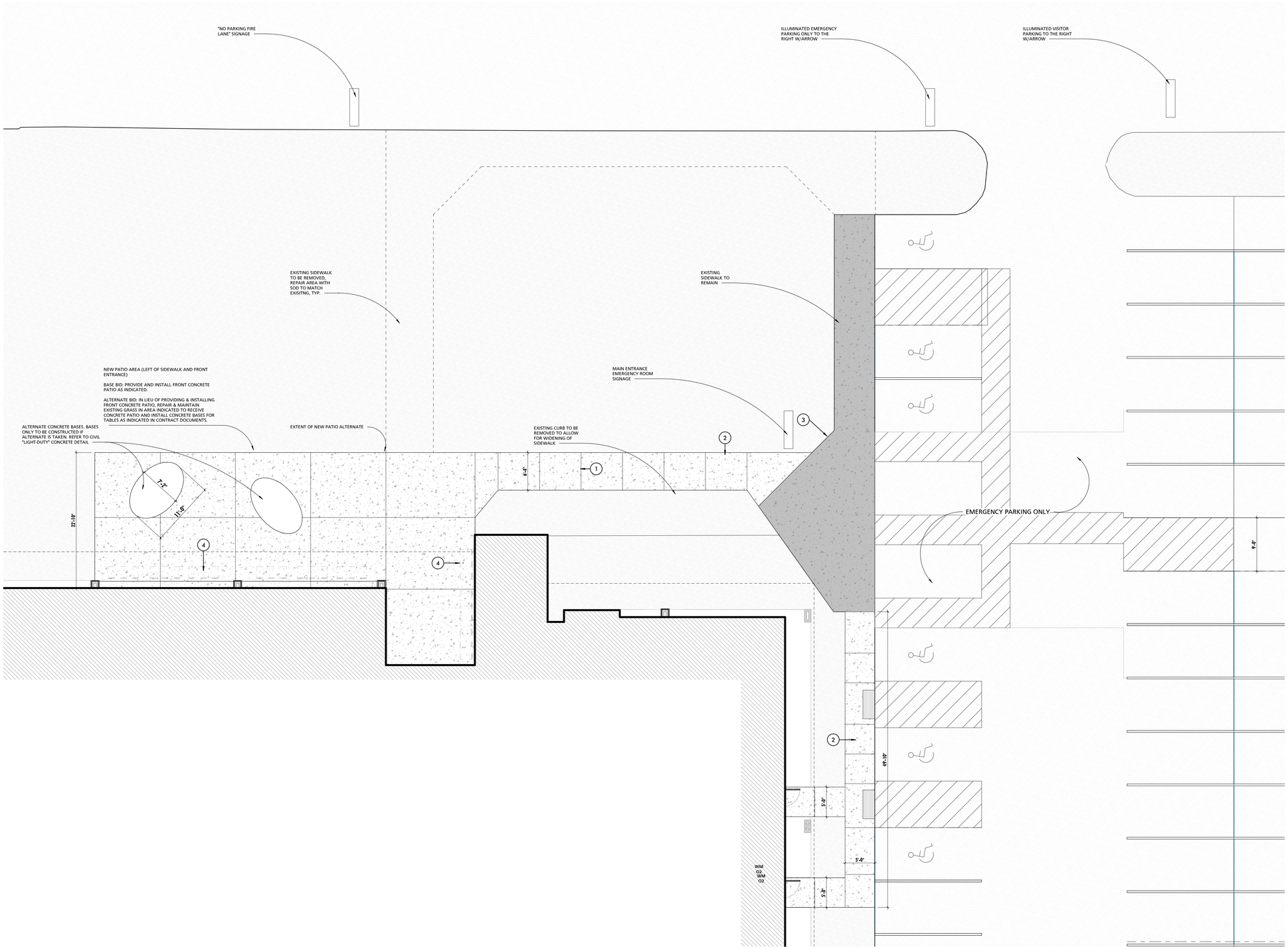

1 ENLARGED SITE DIAGRAM - ENTRANCE

1/8" = 1'-0"

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	CONTROL JOINT, TYP.
2	NEW SIDEWALK, PROVIDE SMOOTH TRANSITION TO EXISTING SIDEWALK.
3	EXISTING SIDEWALK TO REMAIN.
4	ALL EXTERIOR SITE FURNISHINGS SHALL BE PROCURED AND INSTALLED BY THE OWNER.

GENERAL SITE NOTES

1	SEE CIVIL, STRUCTURAL & MEP DRAWINGS FOR MORE INFORMATION.
2	ASPHALT TOP COURSE SHALL BE LAID ONLY AFTER ALL MILLING, TRENCHING, HEAVY CONSTRUCTION & EXCAVATION PROCEDURES HAVE BEEN COMPLETED. PATCHES WITHIN NEW TOP COURSE WILL NOT BE ACCEPTED. TOP COURSE DESIGN SHALL MATCH THAT OF PROVIDED PAVING SECTIONS WITHIN CIVIL DRAWINGS. EDGES OF NEW ASPHALT THAT ABUT EXISTING SITE WORK SHALL SHARE A UNIFORM GRADE ELEVATION.
3	MRI TRAILER ELEVATIONS ARE SHOWN FOR REFERENCE ONLY. MRI TRAILER TO BE PROVIDED AND INSTALLED BY OWNER'S VENDOR.
4	EXTERIOR CONCRETE PADS LOCATED AT MAN DOORS SHALL BE 4" THICK MIN AND HAVE A MIN OF 4" THICK CRUSHED STONE BASE. SLAB SHALL HAVE A MIN 30" BELOW GRADE TURN-DOWN PERIMETER. DOWEL SLAB INTO BUILDING W/SMOOTH #4 X 30" DOWELS @ 24" OC, GREASE ONE END, TYP. SLOPE SLAB AWAY FROM BUILDING 1/8" PER FOOT, U.N.O.
5	OUTDOOR FURNITURE IS SHOWN FOR REFERENCE ONLY AND SHALL BE PROVIDED AND INSTALLED BY THE OWNER.

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EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
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ORIGINAL ISSUE DATE:
9/20/2023

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ENLARGED ARCHITECTURAL SITE DIAGRAM

SHEET NUMBER:

A003

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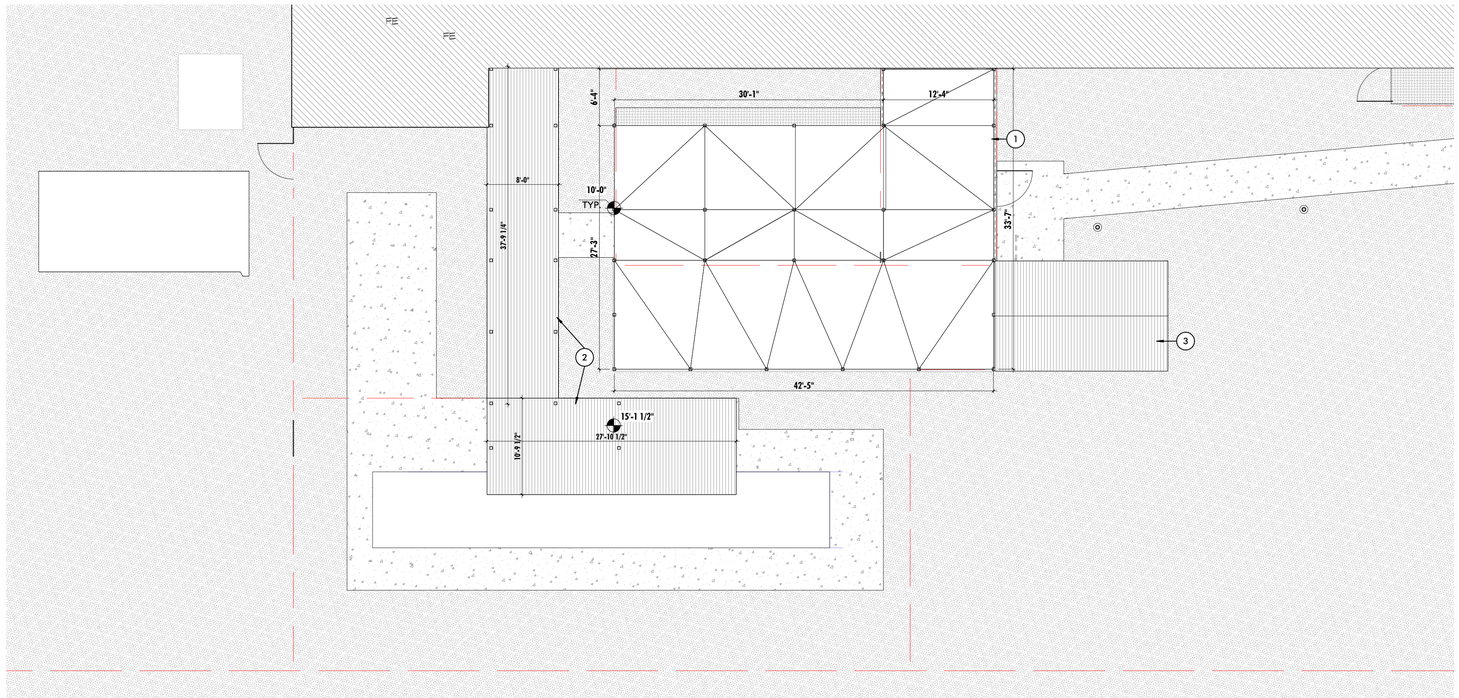

1 ENLARGED CANOPY DIAGRAM

1/8" = 1'-0"

GENERAL SITE NOTES	
1	SEE CIVIL, STRUCTURAL & MEP DRAWINGS FOR MORE INFORMATION.
2	ASPHALT TOP COURSE SHALL BE LAID ONLY AFTER ALL MILLING, TRENCHING, HEAVY CONSTRUCTION & EXCAVATION PROCEDURES HAVE BEEN COMPLETED. PATCHES WITHIN NEW TOP COURSE WILL NOT BE ACCEPTED. TOP COURSE DESIGN SHALL MATCH THAT OF PROVIDED PAVING SECTIONS WITHIN CIVIL DRAWINGS. EDGES OF NEW ASPHALT THAT ABUT EXISTING SITE WORK SHALL SHARE A UNIFORM GRADE ELEVATION.
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5	OUTDOOR FURNITURE IS SHOWN FOR REFERENCE ONLY AND SHALL BE PROVIDED AND INSTALLED BY THE OWNER.

LEGEND - KEYNOTE LEGEND	
KEY	NOTE
1	OVERHEAD SHADE SAIL CANOPY - DELEGATED DESIGN.
2	OVERHEAD ALUMINUM POST MOUNTED WALKWAY CANOPY - DELEGATED DESIGN.
3	PREFABRICATED METAL STORAGE SHED.

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5051 NEW CENTRE DR
WILMINGTON, NC 28403

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No. DATE

ENLARGED CANOPY DIAGRAM

SHEET NUMBER:

A004

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DELEGATED DESIGN:

GENERAL CONTRACTOR SHALL RETAIN STRUCTURAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA TO DESIGN GATES, POSTS & ASSOCIATED FOOTINGS.

GENERAL CONTRACTOR TO COORDINATE GATE POSTS AND POST FOOTING SIZES WITH GATE MANUFACTURER.

1 TYPICAL GATE DETAILS
1" = 1'-0"

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EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

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ARCHITECTURAL SITE DIAGRAM DETAILS

SHEET NUMBER:

A005

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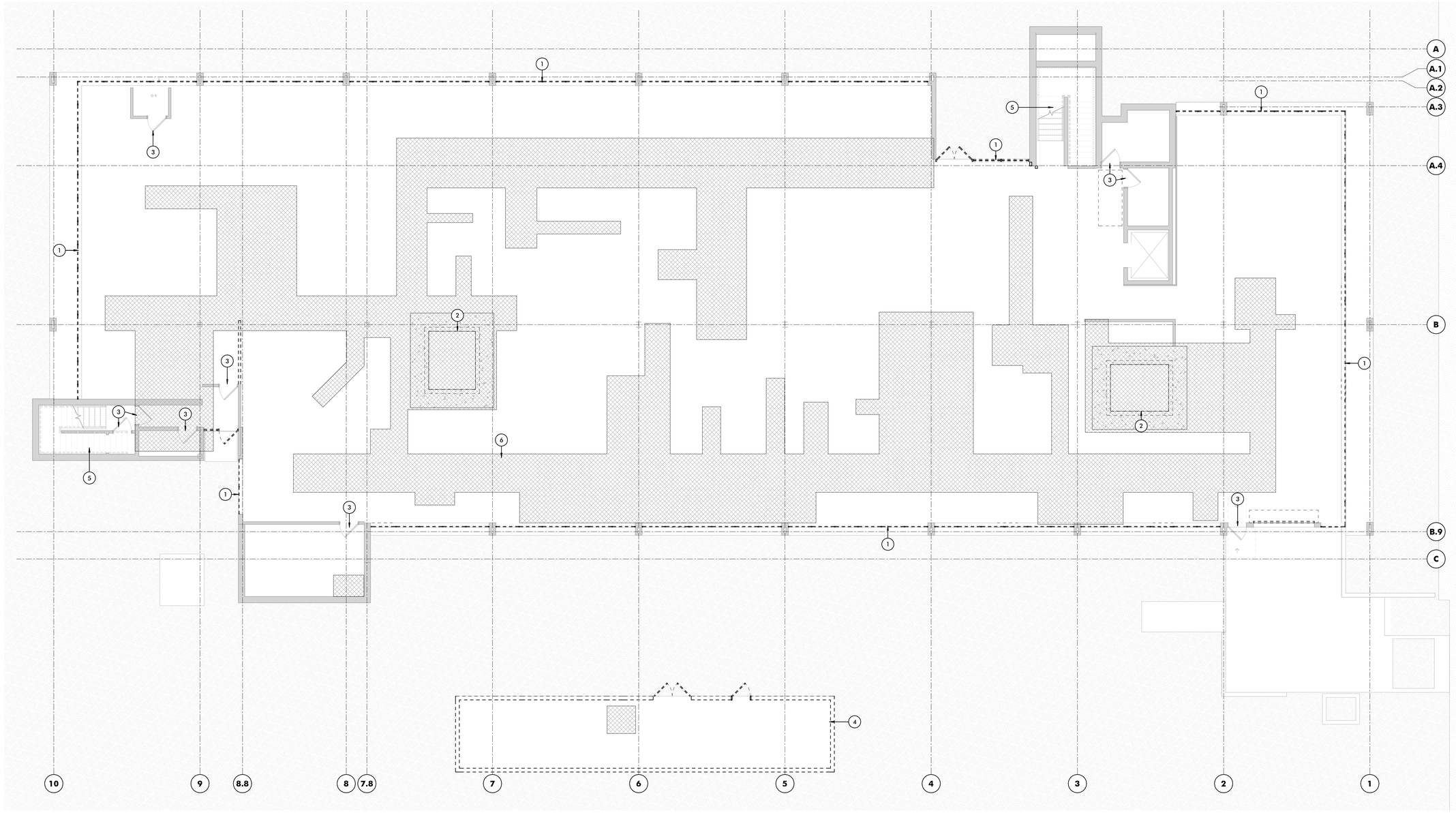

1 DEMO PLAN - FIRST FLOOR

1/8" = 1'-0"

GENERAL DEMOLITION NOTES

1	PRIOR TO THE PERFORMANCE OF ANY DEMOLITION WORK THE CONTRACTOR SHALL MAKE THEMSELVES FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, PROVIDING, INSTALLING, AND MAINTAINING ALL TEMPORARY SUPPORT AND BRACING REQUIRED TO COMPLETE THE WORK.
2	THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS, DIMENSIONS, CONSTRUCTION ASSEMBLIES AND THE LIKE PRIOR TO FABRICATING, INSTALLING, OR PURCHASING ANY NEW WORK. DETAILS INDICATING EXISTING MATERIALS OF CONDITIONS MAY BE SHOWN WITHIN THE DOCUMENTS BUT ARE NOT INTENDED TO FULLY DEFINE EXISTING CONDITIONS.
3	DEMOLITION WORK MAY BE INDICATED THROUGHOUT THE CONTRACT DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DOCUMENTS FOR ADDITIONAL DEMOLITION WORK.
4	IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN SAFE WORKING CONDITIONS THROUGHOUT THE CONSTRUCTION SITE. THE CONTRACTOR SHALL PROVIDE TEMPORARY BARRIERS AS REQUIRED TO PROTECT PERSONS AND PROPERTY AND OTHERWISE MAINTAIN SAFE WORKING CONDITIONS.
5	THE CONTRACTOR SHALL MAINTAIN A CLEAR, CLEAN, USEABLE CONSTRUCTION SITE THROUGH DAILY CLEANUP OF WORK AREAS.
6	ALL ITEMS INDICATED TO BE REMOVED AND/OR DEMOLISHED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL REVIEW WITH THE OWNER IF ANY ITEMS TO BE REMOVED AND/OR DEMOLISHED ARE TO BE RETAINED BY THE OWNER PRIOR TO ANY DEMOLITION WORK BEING PERFORMED. ALL ITEMS TO BE RETAINED BY THE OWNER SHALL BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE OWNER IN THE CONDITION FOUND PRIOR TO ANY WORK BEING PERFORMED. ALL OTHER ITEMS INDICATED TO BE REMOVED AND/OR DEMOLISHED SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR IN A LAWFUL MANNER.
7	THE CONTRACTOR SHALL REPLACE OR REPAIR ANY ITEMS DAMAGED BY THE CONTRACTOR OR ANY OF ITS AGENTS TO A MINIMUM CONDITION MATCHING THE ITEMS' CONDITION AT THE START OF CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
8	THE CONTRACTOR SHALL REPAIR ANY MATERIALS, SYSTEMS, OR FINISHES WITHIN OR OUTSIDE OF THE GENERAL WORK AREA THAT ARE REQUIRED TO BE DISTURBED TO COMPLETE THE ENTIRE SCOPE OF WORK ASSOCIATED WITH BUILDING SYSTEM CONNECTIVITY.
9	THE CONTRACTOR SHALL PREPARE ALL SURFACES AFFECTED BY DEMOLITION OPERATIONS TO RECEIVE NEW WORK AS BOTH INDICATED WITHIN THESE DRAWINGS AND SPECIFICATIONS/PROJECT MANUAL AND AS RECOMMENDED BY THE MANUFACTURERS' WRITTEN INSTRUCTIONS FOR THE INSTALLATION OF EACH RESPECTIVE PRODUCT.
10	THE CONTRACTOR SHALL REMOVE EXISTING FINISHES AS INDICATED THROUGHOUT THE CONTRACT DOCUMENTS AND ENSURE THAT SUBSTRATE CONDITIONS ARE SMOOTH AND IN SATISFACTORY CONDITION TO RECEIVE NEW WORK.
11	THE CONTRACTOR SHALL REMOVE ALL ANCHORS, FASTENERS, WALL HANGERS, AND MISCELLANEOUS EXTRUSIONS AND APPURTENANCES OF ITEMS BOTH NO LONGER INSTALLED AND ITEMS REMOVED THROUGH DEMOLITION PROCEDURES.
12	THE CONTRACTOR SHALL COORDINATE ANY SAW CUTS WITHIN THE EXISTING SLABS WITHIN THE NEW WORK AREA AS REQUIRED TO INSTALL NEW ELECTRICAL CONDUIT, PLUMBING, AND/OR STRUCTURAL ELEMENTS. CONTRACTOR SHALL COORDINATE SIZE, LOCATION, AND DEPTH WITH THE FULL SET OF DOCUMENTS. REPLACE AND REPAIR CONCRETE AND FLASH AS REQUIRED TO CREATE A FLUSH SUBSTRATE AFTER COMPLETION OF WORK TASKS.
13	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING A HVAC FILTER REPLACMENT SCHEDULE TO BE CARRIED OUT BETWEEN THE EARLY DEMOLITION PHASE AND CONSTRUCTION PHASE.

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	EXISTING WINDOW ASSEMBLY TO BE REMOVED. PREPARE OPENING FOR NEW WALL INFILL
2	EXISTING FLOOR SLAB TO BE PARTIALLY DEMOLISHED, PREPARE AREA FOR NEW ELEVATOR PIT
3	DEMOLISH EXISTING LOCKSET & CLOSERS AT ALL EXISTING TO REMAIN DOORS AND PREPARE FOR NEW DOOR HARDWARE
4	EXISTING SHIPPING CONTAINER TO BE REMOVED IN ITS ENTIRETY. EXISTING CONCRETE SLAB TO REMAIN.
5	REMOVE EXISTING FLOOR, STAIR & WALL FINISHES IN STAIRWAY AND PREPARE FOR NEW WORK.
6	EXTENT OF SLAB DEMOLITION, SEE MEP DRAWINGS FOR MORE INFORMATION.

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

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SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
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DEMO PLAN - FIRST FLOOR

SHEET NUMBER:
AD100

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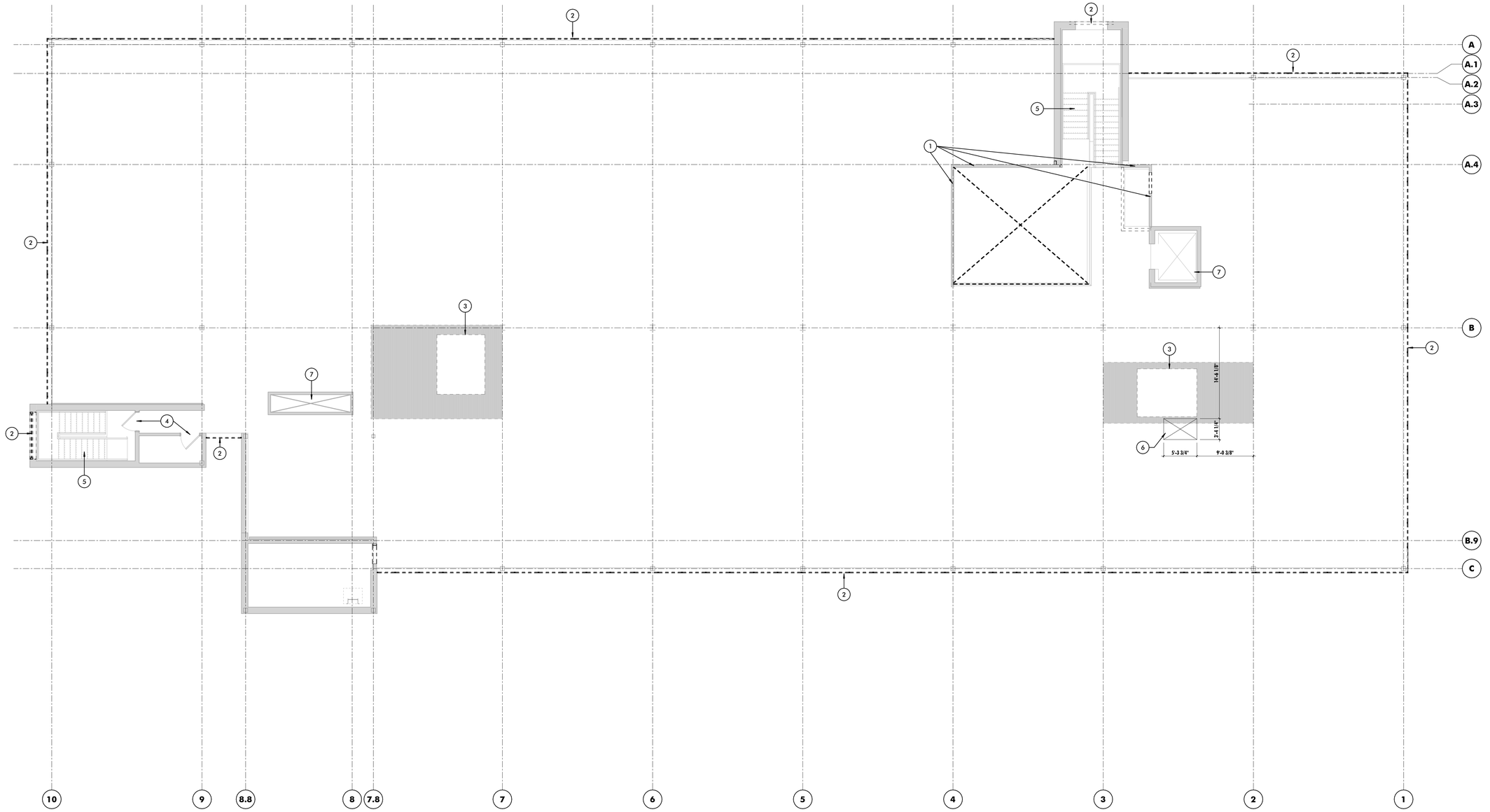

1 DEMO PLAN - SECOND FLOOR

1/8" = 1'-0"

GENERAL DEMOLITION NOTES

1	PRIOR TO THE PERFORMANCE OF ANY DEMOLITION WORK THE CONTRACTOR SHALL MAKE THEMSELVES FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, PROVIDING, INSTALLING, AND MAINTAINING ALL TEMPORARY SUPPORT AND BRACING REQUIRED TO COMPLETE THE WORK.
2	THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS, DIMENSIONS, CONSTRUCTION ASSEMBLIES AND THE LIKE PRIOR TO FABRICATING, INSTALLING, OR PURCHASING ANY NEW WORK. DETAILS INDICATING EXISTING MATERIALS OF CONDITIONS MAY BE SHOWN WITHIN THE DOCUMENTS BUT ARE NOT INTENDED TO FULLY DEFINE EXISTING CONDITIONS.
3	DEMOLITION WORK MAY BE INDICATED THROUGHOUT THE CONTRACT DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DOCUMENTS FOR ADDITIONAL DEMOLITION WORK.
4	IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN SAFE WORKING CONDITIONS THROUGHOUT THE CONSTRUCTION SITE. THE CONTRACTOR SHALL PROVIDE TEMPORARY BARRIERS AS REQUIRED TO PROTECT PERSONS AND PROPERTY AND OTHERWISE MAINTAIN SAFE WORKING CONDITIONS.
5	THE CONTRACTOR SHALL MAINTAIN A CLEAR, CLEAN, USEABLE CONSTRUCTION SITE THROUGH DAILY CLEANUP OF WORK AREAS.
6	ALL ITEMS INDICATED TO BE REMOVED AND/OR DEMOLISHED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL REVIEW WITH THE OWNER IF ANY ITEMS TO BE REMOVED AND/OR DEMOLISHED ARE TO BE RETAINED BY THE OWNER PRIOR TO ANY DEMOLITION WORK BEING PERFORMED. ALL ITEMS TO BE RETAINED BY THE OWNER SHALL BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE OWNER IN THE CONDITION FOUND PRIOR TO ANY WORK BEING PERFORMED. ALL OTHER ITEMS INDICATED TO BE REMOVED AND/OR DEMOLISHED SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR IN A LAWFUL MANNER.
7	THE CONTRACTOR SHALL REPLACE OR REPAIR ANY ITEMS DAMAGED BY THE CONTRACTOR OR ANY OF ITS AGENTS TO A MINIMUM CONDITION MATCHING THE ITEMS' CONDITION AT THE START OF CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
8	THE CONTRACTOR SHALL REPAIR ANY MATERIALS, SYSTEMS, OR FINISHES WITHIN OR OUTSIDE OF THE GENERAL WORK AREA THAT ARE REQUIRED TO BE DISTURBED TO COMPLETE THE ENTIRE SCOPE OF WORK ASSOCIATED WITH BUILDING SYSTEM CONNECTIVITY.
9	THE CONTRACTOR SHALL PREPARE ALL SURFACES AFFECTED BY DEMOLITION OPERATIONS TO RECEIVE NEW WORK AS BOTH INDICATED WITHIN THESE DRAWINGS AND SPECIFICATIONS/PROJECT MANUAL AND AS RECOMMENDED BY THE MANUFACTURERS' WRITTEN INSTRUCTIONS FOR THE INSTALLATION OF EACH RESPECTIVE PRODUCT.
10	THE CONTRACTOR SHALL REMOVE EXISTING FINISHES AS INDICATED THROUGHOUT THE CONTRACT DOCUMENTS AND ENSURE THAT SUBSTRATE CONDITIONS ARE SMOOTH AND IN SATISFACTORY CONDITION TO RECEIVE NEW WORK.
11	THE CONTRACTOR SHALL REMOVE ALL ANCHORS, FASTENERS, WALL HANGERS, AND MISCELLANEOUS EXTRUSIONS AND APPURTENANCES OF ITEMS BOTH NO LONGER INSTALLED AND ITEMS REMOVED THROUGH DEMOLITION PROCEDURES.
12	THE CONTRACTOR SHALL COORDINATE ANY SAW CUTS WITHIN THE EXISTING SLABS WITHIN THE NEW WORK AREA AS REQUIRED TO INSTALL NEW ELECTRICAL CONDUIT, PLUMBING, AND/OR STRUCTURAL ELEMENTS. CONTRACTOR SHALL COORDINATE SIZE, LOCATION, AND DEPTH WITH THE FULL SET OF DOCUMENTS. REPLACE AND REPAIR CONCRETE AND FLASH AS REQUIRED TO CREATE A FLUSH SUBSTRATE AFTER COMPLETION OF WORK TASKS.
13	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING A HVAC FILTER REPLACMENT SCHEDULE TO BE CARRIED OUT BETWEEN THE EARLY DEMOLITION PHASE AND CONSTRUCTION PHASE.

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	REMOVE ONE SIDE OF GYPSUM BOARD AT EXISTING WALL SO THAT INSULATION IS ABLE TO BE INSTALLED WITHIN EXISTING STUD WALL. PATCH / REPAIR AND PREPARE SURFACE TO RECEIVE NEW WORK.
2	EXISTING WINDOW ASSEMBLY TO BE REMOVED. PREPARE OPENING FOR NEW WALL INFILL
3	EXISTING FLOOR STRUCTURE TO BE PARTIALLY DEMOLISHED, PREPARE AREA FOR NEW ELEVATOR SHAFT
4	DEMOLISH EXISTING LOCKSET & CLOSERS AT ALL EXISTING TO REMAIN DOORS AND PREPARE FOR NEW DOOR HARDWARE
5	REMOVE EXISTING FLOOR, STAIR & WALL FINISHES IN STAIRWAY AND PREPARE FOR NEW WORK.
6	NEW CHASE OPENING THROUGH EXISTING FLOOR.
7	EXISTING CHASE TO REMAIN.

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

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CONSULTANT:

SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
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SHEET REVISION SCHEDULE:
No. DATE

DEMO PLAN - SECOND FLOOR

SHEET NUMBER:
AD101

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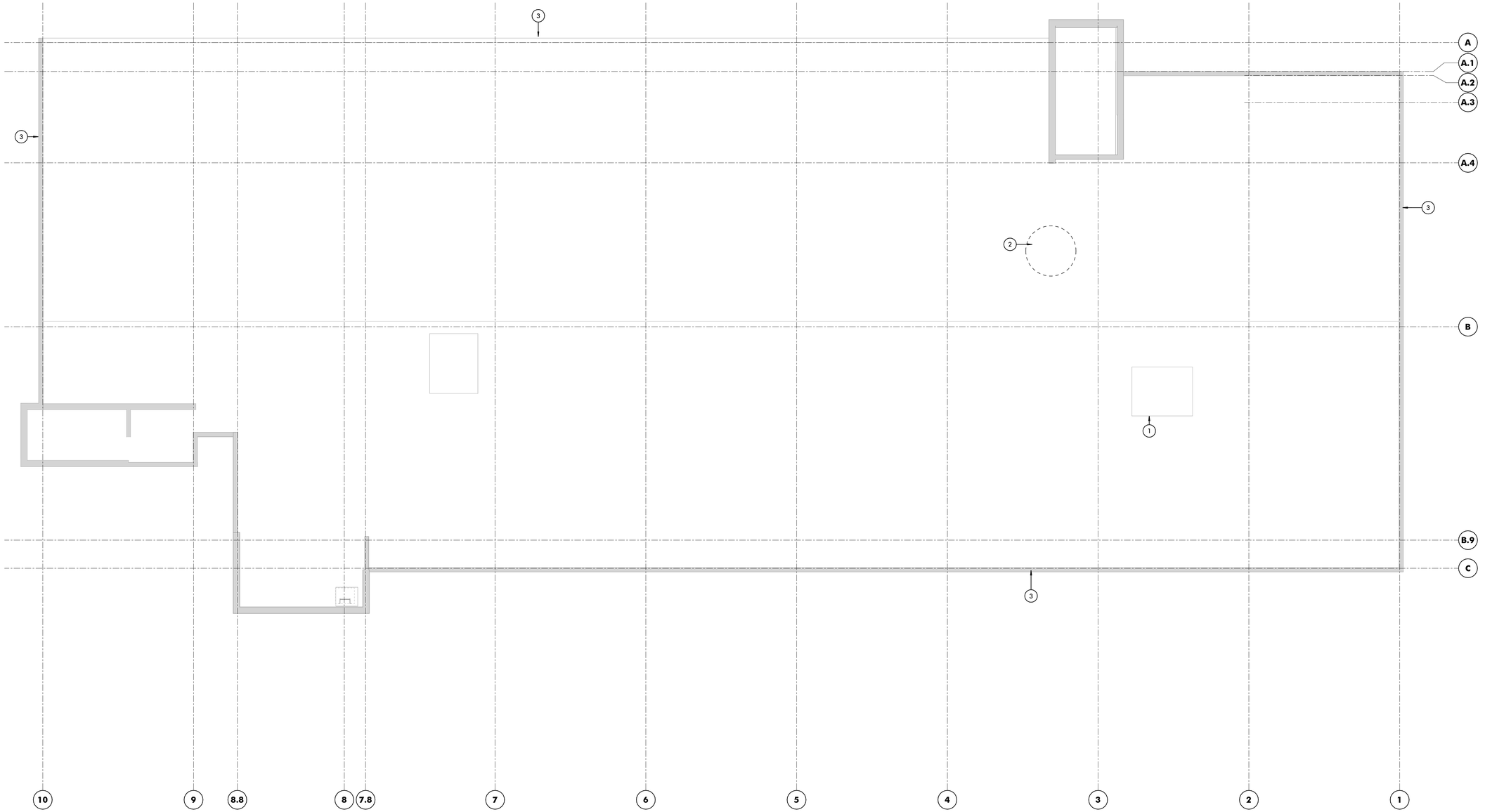

1 DEMO PLAN - ROOF

1/8" = 1'-0"

GENERAL DEMOLITION NOTES

1	PRIOR TO THE PERFORMANCE OF ANY DEMOLITION WORK THE CONTRACTOR SHALL MAKE THEMSELVES FAMILIAR WITH THE EXISTING CONDITIONS OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGNING, PROVIDING, INSTALLING, AND MAINTAINING ALL TEMPORARY SUPPORT AND BRACING REQUIRED TO COMPLETE THE WORK.
2	THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS, DIMENSIONS, CONSTRUCTION ASSEMBLIES AND THE LIKE PRIOR TO FABRICATING, INSTALLING, OR PURCHASING ANY NEW WORK. DETAILS INDICATING EXISTING MATERIALS OF CONDITIONS MAY BE SHOWN WITHIN THE DOCUMENTS BUT ARE NOT INTENDED TO FULLY DEFINE EXISTING CONDITIONS.
3	DEMOLITION WORK MAY BE INDICATED THROUGHOUT THE CONTRACT DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DOCUMENTS FOR ADDITIONAL DEMOLITION WORK.
4	IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN SAFE WORKING CONDITIONS THROUGHOUT THE CONSTRUCTION SITE. THE CONTRACTOR SHALL PROVIDE TEMPORARY BARRIERS AS REQUIRED TO PROTECT PERSONS AND PROPERTY AND OTHERWISE MAINTAIN SAFE WORKING CONDITIONS.
5	THE CONTRACTOR SHALL MAINTAIN A CLEAR, CLEAN, USEABLE CONSTRUCTION SITE THROUGH DAILY CLEANUP OF WORK AREAS.
6	ALL ITEMS INDICATED TO BE REMOVED AND/OR DEMOLISHED SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL REVIEW WITH THE OWNER IF ANY ITEMS TO BE REMOVED AND/OR DEMOLISHED ARE TO BE RETAINED BY THE OWNER PRIOR TO ANY DEMOLITION WORK BEING PERFORMED. ALL ITEMS TO BE RETAINED BY THE OWNER SHALL BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE OWNER IN THE CONDITION FOUND PRIOR TO ANY WORK BEING PERFORMED. ALL OTHER ITEMS INDICATED TO BE REMOVED AND/OR DEMOLISHED SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR IN A LAWFUL MANNER.
7	THE CONTRACTOR SHALL REPLACE OR REPAIR ANY ITEMS DAMAGED BY THE CONTRACTOR OR ANY OF ITS AGENTS TO A MINIMUM CONDITION MATCHING THE ITEMS' CONDITION AT THE START OF CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER.
8	THE CONTRACTOR SHALL REPAIR ANY MATERIALS, SYSTEMS, OR FINISHES WITHIN OR OUTSIDE OF THE GENERAL WORK AREA THAT ARE REQUIRED TO BE DISTURBED TO COMPLETE THE ENTIRE SCOPE OF WORK ASSOCIATED WITH BUILDING SYSTEM CONNECTIVITY.
9	THE CONTRACTOR SHALL PREPARE ALL SURFACES AFFECTED BY DEMOLITION OPERATIONS TO RECEIVE NEW WORK AS BOTH INDICATED WITHIN THESE DRAWINGS AND SPECIFICATIONS/PROJECT MANUAL AND AS RECOMMENDED BY THE MANUFACTURERS' WRITTEN INSTRUCTIONS FOR THE INSTALLATION OF EACH RESPECTIVE PRODUCT.
10	THE CONTRACTOR SHALL REMOVE EXISTING FINISHES AS INDICATED THROUGHOUT THE CONTRACT DOCUMENTS AND ENSURE THAT SUBSTRATE CONDITIONS ARE SMOOTH AND IN SATISFACTORY CONDITION TO RECEIVE NEW WORK.
11	THE CONTRACTOR SHALL REMOVE ALL ANCHORS, FASTENERS, WALL HANGERS, AND MISCELLANEOUS EXTRUSIONS AND APPURTENANCES OF ITEMS BOTH NO LONGER INSTALLED AND ITEMS REMOVED THROUGH DEMOLITION PROCEDURES.
12	THE CONTRACTOR SHALL COORDINATE ANY SAW CUTS WITHIN THE EXISTING SLABS WITHIN THE NEW WORK AREA AS REQUIRED TO INSTALL NEW ELECTRICAL CONDUIT, PLUMBING, AND/OR STRUCTURAL ELEMENTS. CONTRACTOR SHALL COORDINATE SIZE, LOCATION, AND DEPTH WITH THE FULL SET OF DOCUMENTS. REPLACE AND REPAIR CONCRETE AND FLASH AS REQUIRED TO CREATE A FLUSH SUBSTRATE AFTER COMPLETION OF WORK TASKS.
13	THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING A HVAC FILTER REPLACMENT SCHEDULE TO BE CARRIED OUT BETWEEN THE EARLY DEMOLITION PHASE AND CONSTRUCTION PHASE.

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	EXISTING ROOF STRUCTURE TO BE PARTIALLY DEMOLISHED, PREPARE AREA FOR NEW ELEVATOR SHAFT
2	EXISTING SKYLIGHT TO BE DEMOLISHED IN ITS ENTIRETY, PREPARE AREA TO RECEIVE NEW ROOF INFILL. REFER TO STRUCTURAL DRAWINGS FOR MORE INFORMATION.
3	EXISTING PARAPET CAP AND ANY ASSOCIATED BLOCKING BELOW TO BE REMOVED AND PREPPED FOR NEW PARAPET WITH EIFS ADDITION.

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

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DEMO PLAN - ROOF

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GENERAL PROJECT NOTES

1	THE FOLLOWING GENERAL NOTES APPLY TO THE ENTIRE PROJECT.
2	THE CONTRACTOR SHALL EXAMINE ALL CONTRACT DOCUMENTS AND ALL SPECIFICATIONS AND DRAWINGS FOR THE PROJECT, INCLUDING THOSE THAT MAY PRIMARILY PERTAIN TO WORK THAT THE CONTRACTOR NORMALLY DOES NOT PERFORM WITH ITS OWN FORCES. THE CONTRACTOR SHALL USE ALL OF THE PROJECT DRAWINGS AND SPECIFICATIONS FOR A COMPLETE UNDERSTANDING OF THE PROJECT AND ITS WORK, TO DETERMINE THE TYPE OF CONSTRUCTION AND SYSTEMS, FOR COORDINATION, TO DETERMINE WHAT OTHER WORK MAY BE INVOLVED THROUGHOUT, TO ANTICIPATE AND NOTIFY OTHERS WHEN THEIR COORDINATED EFFORTS WILL BE REQUIRED, AND ALL OTHER RELEVANT MATTERS RELATED TO THE PROJECT AND ITS WORK.
3	IF THERE IS ANY INCONSISTENCY IN THE QUALITY OR QUANTITY OF THE WORK REQUIRED UNDER THE CONTRACT DOCUMENTS, THEN THE CONTRACTOR SHALL (1) IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF SUCH INCONSISTENCY AND (2) PROVIDE THE BETTER QUALITY OF OR GREATER QUANTITY OF WORK OR MATERIALS, UNLESS OTHERWISE ORDERED IN WRITING BY THE OWNER. COMPUTED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE DIMENSIONS. THE CONTRACT DOCUMENTS GENERALLY SET FORTH THE BASIS AND ANALYSIS OF DESIGN, AND THE CONTRACTOR SHALL OBTAIN SUCH INFORMATION AS MAY BE NECESSARY TO SATISFACTORILY PERFORM AND COMPLETE THE WORK.
4	THE ARCHITECTURAL DRAWINGS ARE A PART OF A LARGER SET OF DRAWINGS WHICH, WHEN COMPLETE, CONSISTS OF ALL DRAWINGS LISTED BY THE INDEX OF DRAWINGS AND WITHIN THE SPECIFICATIONS. THE WORK DESCRIBED BY THE DRAWINGS OF ANY ONE DISCIPLINE MAY BE AFFECTED BY THE WORK DESCRIBED ON DRAWINGS OF ANOTHER DISCIPLINE AND MAY REQUIRE REFERENCE TO THE DRAWINGS OF ANOTHER DISCIPLINE. PARTIAL SETS OF DRAWINGS ARE INCOMPLETE AND SHOULD NOT BE DISTRIBUTED OR UTILIZED BY THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW AND COORDINATE THE WORK OF ALL SUB-CONTRACTORS, TRADES, AND SUPPLIERS WITH ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS BEFORE COMMENCING CONSTRUCTION AND TO ASSURE THAT ALL PARTIES ARE AWARE OF ALL REQUIREMENTS, REGARDLESS OF WHERE THE REQUIREMENTS OCCUR IN THE CONTRACT DOCUMENTS, WHICH MIGHT AFFECT THE WORK OF THAT PARTY. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION BETWEEN SUBCONTRACTORS, SUPPLIERS, AND VENDORS BASED ON THE ENTIRE SET OF THESE DOCUMENTS. NO ADDITIONAL COMPENSATION WILL BE DUE TO A CONTRACTOR FOR ANY ISSUES AS A RESULT OF ANY USE OF AN INCOMPLETE SET OF CONSTRUCTION DOCUMENTS.
5	LINE OF GRADES AS SHOWN ON THE BUILDING ELEVATIONS AND SECTION ARE APPROXIMATE. THEY ARE AT THE BUILDING FACE OR THE SECTION END UNLESS NOTED OTHERWISE.
6	AT WALLS WITH SOUND ATTENUATION BLANKETS, CONTRACTOR SHALL SEAL DOOR FRAMES, GLAZED OPENING FRAMES, INTERSECTIONS, AND OTHER PENETRATIONS WITH ACOUSTICAL SEALANT.
7	VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT PROVIDED IN THIS CONTRACT, OR BY OTHERS. UNLESS NOTED OTHERWISE, ALL MATERIALS AND EQUIPMENT TO BE INSTALLED PER THE APPLICABLE PROVISIONS OF THESE DOCUMENTS AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
8	CUTTING INTO NEW WORK OF OTHER TRADES SHALL BE DONE BY THE TRADE REQUIRING THE CUTTING. ALL CUTTING SHALL BE DONE IN A NEAT MANNER USING SAWS WHERE POSSIBLE. ALL PATCHING AND PAINTING REQUIRED AS A RESULT OF THIS CUTTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE ADEQUATE TEMPORARY SUPPORT FOR WORK BEING CUT AND PATCHED TO PREVENT FAILURE. DO NOT ENDANGER OTHER WORK. PROVIDE ADEQUATE PROTECTION OF OTHER WORK DURING CUTTING AND PATCHING TO PREVENT DAMAGE.
9	PROPERLY PREPARE ALL SURFACES FOR NEW FINISHES. PATCH WITH SEAMS WHICH ARE DURABLE AND AS INVISIBLE AS POSSIBLE. COMPLY WITH SPECIFIC TOLERANCES FOR THE TYPE OF WORK BEING DONE.
10	ALL PENETRATIONS OF FIRE RATED ASSEMBLIES SHALL BE SEALED WITH PROPER/APPROVED THROUGH PENETRATION FIRE STOP SYSTEM AS RECOGNIZED BY AND LISTED WITH NATIONALLY AND ACCEPTED TESTING LABORATORIES.
11	OBTAIN ARCHITECT'S SPECIFIC APPROVAL PRIOR TO DEVIATING FROM THE CONTRACT DOCUMENTS. THE ARCHITECT'S RESPONSIBILITY IS LIMITED TO THE ITEMS SHOWN ON THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO COMPLY WITH STANDARD BUILDING AND CONSTRUCTION PRACTICES AND MANUFACTURER'S RECOMMENDATIONS FOR ALL ITEMS NOT SPECIFICALLY INDICATED AND DETAILED ON THE DRAWINGS. FOLLOW THE BEST TRADE PRACTICES AND ENGINEERING FOR THE ITEMS NOT SPECIFICALLY DETAILED AND INDICATED.
12	ALL PARTS OF THE WORK, INCLUDING MATERIALS, METHODS, ASSEMBLIES, ETC, MUST COMPLY WITH THE MINIMUM REQUIREMENTS OF THE GOVERNING REGULATIONS OF ALL FEDERAL, STATE, DISTRICT, AND LOCAL AUTHORITIES HAVING JURISDICTION OVER THE PROJECT AS WELL AS THOSE GREATER REQUIREMENTS INDICATED BY THE CONTRACT DOCUMENTS. NO PART OF THE CONTRACT DOCUMENTS MAY BE CONSTRUED TO REQUIRE OR PERMIT WORK CONTRARY TO A GOVERNING REGULATION.
13	THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A CURRENT SET OF CONSTRUCTION DRAWINGS ON SITE DURING CONSTRUCTION. THE CONTRACTOR SHALL INDICATE ON THESE DRAWINGS ALL APPROVED CHANGES TO THE WORK. THIS SET OF DRAWINGS SHALL BE TURNED OVER TO THE OWNER/CLIENT WHEN THE PROJECT IS COMPLETE.
14	THE BUILDING HAS BEEN DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE DEMOLITION, ERECTION PROCEDURES, SEQUENCE, AND TO ENSURE THE STABILITY OF ITS COMPONENTS AND PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS DURING ERECTION. THIS INCLUDES THE ADDITION OF ANY GUYS, SHORING, SHEETING OR TEMPORARY BRACING AND TIE-DOWNS THAT MIGHT BE NECESSARY. SUCH MATERIALS ARE NOT SHOWN ON THE DRAWINGS. IF APPLIED, THEY SHALL BE REMOVED AS CONDITIONS PERMIT, AND SHALL REMAIN THE CONTRACTOR'S PROPERTY.
15	CONTRACTOR SHALL COORDINATE THE FRAMING LAYOUT INCLUDING PRE-ENGINEERED TRUSS WEB DESIGN WITH ELECTRICAL AND MECHANICAL WORK.
16	THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL GRADING, MECHANICAL, AND ELECTRICAL PERMITS, AND ALL OTHER RELATED PERMITS REQUIRED TO COMPLETE THE WORK. ALL PLUMBING, ELECTRICAL & MECHANICAL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED BUILDING CODE AND SHALL BE SUBJECT TO FIELD INSPECTION BY THE AGENCIES HAVING JURISDICTION.
17	MANNS WOODWARD STUDIOS, INC. HAS NO EXPERTISE IN, AND TAKES NO RESPONSIBILITY FOR, CONSTRUCTION MEANS AND METHODS OR JOB SITE SAFETY DURING CONSTRUCTION. PROCESSING AND/OR APPROVING SUBMITTALS MADE BY THE CONTRACTOR CONTAINING INFORMATION RELATED TO CONSTRUCTION METHODS, OR SAFETY ISSUES, OR PARTICIPATION IN MEETINGS WHERE SUCH ISSUES MIGHT BE DISCUSSED, IT SHALL NOT BE CONSTRUED AS VOLUNTARY ASSUMPTION BY MANNS WOODWARD STUDIOS, INC. OR ANY RESPONSIBILITY FOR SAFETY PROCEDURES. IT IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING CONSTRUCTION. MANNS WOODWARD STUDIOS, INC. DOES NOT ENGAGE IN, AND DOES NOT SUPERVISE THE CONSTRUCTION PROCESS.
18	THESE DRAWINGS ARE THE PROPERTY OF MANNS WOODWARD STUDIOS, INC. AND MAY NOT BE MODIFIED OR REPRODUCED WITHOUT WRITTEN PERMISSION. REPRODUCTIONS OF THE DRAWINGS MUST BEAR THE NAME OF THE ARCHITECT AND PROJECT LOCATION. THESE DRAWINGS ARE FULLY PROTECTED BY FEDERAL AND STATE COPYRIGHT LAWS; ANY INFRINGEMENT WILL BE PROSECUTED TO THE FULL EXTENT OF THE LAW.
19	ALL DEVICES INCLUDING SWITCHES, PLATES, THERMOSTATS, CONTROL PANELS, ETC. SHALL BE COORDINATED BY THE CONTRACTOR BASED UPON THE FOLLOWING CRITERIA: A. DEVICES LOCATED WITHIN 36" OF EACH OTHER HORIZONTALLY (IN PLAN VIEW) OF EACH OTHER SHALL BE INSTALLED SUCH THAT THE TOPS OF ALL DEVICES ARE ALIGNED OR THE CENTERLINE OF DEVICES ARE MAINTAINED. B. DEVICES LOCATED VERTICALLY (TWO OR MORE STACKED DEVICES) SHALL BE INSTALLED SUCH THAT THE CENTERLINES ARE MAINTAINED. SEE DIAGRAMS FOR REFERENCE. ADA REACH HEIGHTS AND DEVICE REQUIREMENTS PER CODE SUPERCEDE THIS NOTE AND WHERE IN CONFLICT SHALL REQUIRE COORDINATION AND APPROVAL FROM THE ARCHITECT.
20	FINAL LOCATION OF ALL FIRE ALARM DEVICES, EMERGENCY EGRESS LIGHTING, EXIT SIGNS, FIRE EXTINGUISHERS AND FIRE EXTINGUISHER CABINETS, ETC. SHALL BE REVIEWED AND FIELD COORDINATED WITH CONSIDERATION OF FINAL FINISHES WITH THE ARCHITECT PRIOR TO INSTALLATION. APPROVAL MUST BE OBTAINED BY THE ARCHITECT PRIOR TO INSTALLATION.

GENERAL PARTITION NOTES

1	ENTRY SPACES, LOBBIES, AND CORRIDORS TO RECEIVE IMPACT RESISTANT GYPSUM WALL BOARD UP TO 48" H, U.N.O.
2	PROVIDE FIBERGLASS REINFORCED MOISTURE RESISTANT GYPSUM WALL BOARD IN ALL EQUIPMENT ROOMS, JANITOR'S CLOSETS, RESTROOMS, KITCHENS AND OTHER WET AREAS. PROVIDE FIBERGLASS REINFORCED MOISTURE RESISTANT WALL BOARD IN ALL OTHER AREAS WITHIN 8'-0" OF WATER SOURCE.
3	CONTRACTOR SHALL PROVIDE BLOCKING AND NAILERS AS REQUIRED TO SUPPORT ALL NEW WORK, INCLUDING ITEMS TO BE PROVIDED AND/OR INSTALLED BY OWNER.
4	ALL CORRIDOR AND FIRE-RATED PARTITIONS SHALL BE EXTENDED TO THE UNDERSIDE OF THE STRUCTURE ABOVE, U.N.O. THE PERIMETER WALLS OF ANY SPACE NOT PROVIDED WITH A CEILING SHALL EXTEND THE THE UNDERSIDE OF DECK ABOVE.
5	PROVIDE DEFLECTION TRACKS AT TOP OF ALL NON-LOAD BEARING STUD WALLS EXTENDING TO THE UNDERSIDE OF STRUCTURE ABOVE, U.N.O.
6	PROVIDE CONCRETE BACKER BOARD IN LIEU OF GYPSUM WALL BOARD WHERE TILE FINISH IS INDICATED.
7	ALL FIRE WALLS SHALL BE PLACARDED OR STENCILED ON BOTH SIDES WITH THE PHRASE "FIRE WALL" PER IBC SECTION 703.7.1. THE LETTERS SHALL BE RED IN COLOR, 6" INCHES HIGH AND A MIN. OF 3/4" WIDE. THE PHRASE SHALL BE WRITTEN ONCE FOR EACH 15 FEET OF HORIZONTAL WALL LENGTH. THIS SIGNAGE MAY BE LOCATED IN THE CONCEALED SPACE ABOVE A CEILING.
8	INTERIOR METAL STUD FRAMING AND EXTERIOR FURRING/MISCELLANEOUS FRAMING, UNLESS NOTED OTHERWISE, SHALL BE A MINIMUM OF 20 GAUGE THICKNESS AND SHALL BE SPACED A MINIMUM OF 16 INCHES ON CENTER. METAL STUD PROVIDER/INSTALLER SHALL BE RESPONSIBLE FOR THE DELEGATED DESIGN AND FINAL ENGINEERING OF ALL METAL STUD FRAMING COMPONENTS INCLUDING BUT NOT LIMITED TO SOFFITS, BULKHEADS, PARTITIONS, FURRING, CEILINGS, AND MISCELLANEOUS FRAMING/BLOCKING REQUIRED TO SUPPORT AND COMPLETE THE WORK. METAL STUD PROVIDER/INSTALLER/DESIGNER SHALL PROVIDE METAL STUDS IN WIDTHS INDICATED. METAL STUD DESIGNER SHALL FIRST INCREASE METAL STUD THICKNESS, SECOND DECREASE METAL STUD SPACING TO 12 INCHES ON CENTER, AND THIRD INCREASE STUD WIDTH WHERE ADJUSTING STUD THICKNESS AND SPACING ARE INSUFFICIENT TO COMPLY WITH REQUIREMENTS.
9	NEW MASONRY WALLS ABUTTING EXISTING MASONRY WALLS SHALL BE TOOTHED INTO EXISTING WALLS.
10	MOISTURE RESISTANT GYPSUM WALL BOARD SHALL BE UTILIZED IN ALL AREAS WHERE GYPSUM WALL BOARD IS TO BE DIRECTLY ADHERED TO CONCRETE OR MASONRY SURFACES IN INTERIOR APPLICATIONS. SUBSTRATE SHALL BE CLEANED AS REQUIRED AND FREE OF DUST, DEBRIS, AND MOISTURE PRIOR TO ADHESION AND FINISHING.
11	CONSTRUCTION OF RATED WALL ASSEMBLIES SHALL BE STRICTLY ADHERED TO IN ACCORDANCE WITH UL AND/OR GYPSUM ASSEMBLY SPECIFICATIONS. REFER TO CODE PLANS FOR ADDITIONAL INFORMATION.
12	PROVIDE A BULLNOSE CMU AT ALL OUTSIDE CORNERS OF INTERIOR MASONRY WALLS, JAMBS & SILLS.
13	ALL PARTITIONS RECEIVING INSULATION SHALL TERMINATE TO THE UNDERSIDE OF STRUCTURE ABOVE.
14	PROVIDE 16 GAUGE METAL STUDS UNDERNEATH AND DIRECTLY ADJACENT TO SOUND CONTROL WINDOW ASSEMBLY TO SUPPORT WINDOW ASSEMBLY WEIGHT.
15	STUD WALLS @ FLOATING SHELVES TO CONTINUE TO STRUCTURE ABOVE, TYP.
16	ALL PENETRATIONS THROUGH WALLS WITH AN STC RATING SHALL RECEIVE ACOUSTIC SEALANT.

GENERAL DIMENSION PLAN NOTES

1	G.C. SHALL VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH ANY WORK.
2	ALL DOOR JAMBS IN METAL STUD WALL SHALL BE A MINIMUM OF 4" FROM ADJACENT / PERPENDICULAR WALLS UNLESS NOTED OTHERWISE.
3	FIRE EXTINGUISHERS AND FIRE EXTINGUISHER CABINETS SHALL BE PROVIDED IN LOCATIONS AS INDICATED WITHIN THE CODE PLAN AND DESCRIBED WITHIN THE PROJECT MANUAL.
4	SEE A600 SERIES FOR DOOR, WINDOW & STOREFRONT SCHEDULE AND NOTES.
5	SEE A700 SERIES FOR FURTHER DIMENSIONING ON ENLARGED PLANS.
6	SEE A800 SERIES FOR REFLECTED CEILING PLAN DETAILS AND NOTES.

GENERAL REFERENCE PLAN NOTES

1	FURNITURE SHOWN FOR REFERENCE PURPOSES ONLY.
2	SEE A600 SERIES FOR DOOR, WINDOW & STOREFRONT SCHEDULE, TYPES & NOTES.
3	SEE A700 SERIES FOR ENLARGED PLANS & ELEVATIONS.
4	SEE A800 SERIES FOR REFLECTED CEILING PLAN DETAILS & NOTES.

SCHEDULE - ROOF ASSEMBLY TYPES

TYPE MARK	DESCRIPTION	COMMENTS
RA1	80 MIL. TPO MEMBRANE ON 1/2" COVER BOARD OVER (2) LAYERS RIGID INSULATION ON 1 1/2" METAL DECK	MIN. R-25ci

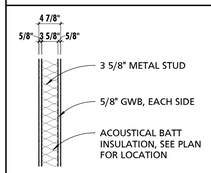
SCHEDULE - FLOOR ASSEMBLY TYPES -

MARK	DESCRIPTION
SOG12	12" REINFORCED CONCRETE SLAB OVER VAPOR BARRIER AND POROUS FILL

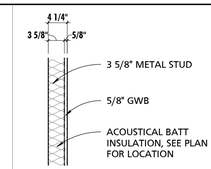
SCHEDULE - PARTITION & WALL TYPES

TAG	WIDTH	DESCRIPTION	FIRE RATING	ASSEMBLY REF	STC RATING
Exterior					
E1A	1 1/4"	EIFS - 1" RIGID INSULATION ON APPROVED SUBSTRATE (EXISTING STUCCO ON CMU WALL)			
E1B	1 3/4"	EIFS - 1.5" RIGID INSULATION ON APPROVED SUBSTRATE (EXISTING STUCCO ON CMU WALL)			
E1C	2 1/4"	EIFS - 2" RIGID INSULATION ON APPROVED SUBSTRATE (EXISTING STUCCO ON CMU WALL)			
E3	6 5/8"	TPO - 2" RIGID INSULATION, 3/4" FRT PLYWOOD, 3 5/8" METAL STUD			
Interior					
P3	4 7/8"	3 5/8" METAL STUD & 5/8" GYPSUM WALL BOARD EACH SIDE UP TO 6" ABOVE CEILING			
P3D	4 7/8"	3 5/8" METAL STUD W/ FIBERGLASS INSULATION & 5/8" GYPSUM WALL BOARD EACH SIDE UP TO DECK, SOUND RATED			49
P4	4 1/4"	3 5/8" METAL STUD W/ 5/8" GWB ONE SIDE UP TO 6" ABOVE CEILING			
P5	6 5/8"	6" METAL STUD W/ 5/8" GYPSUM WALL BOARD ONE SIDE TO 6" ABOVE CEILING			
P6	6 3/4"	6" METAL STUD W/ 3/4" PLYWD ONE SIDE TO 6" ABOVE CEILING			
P7A	4 7/8"	3-5/8" METAL STUD W/ 5/8" IMPACT RESISTANT GYPSUM WALL BOARD EACH SIDE UP TO 6" ABOVE CEILING			
P7B	4 7/8"	3-5/8" METAL STUD W/ 5/8" GYPSUM WALL BOARD EACH SIDE UP TO 3'-6" W/SOLID SURFACE CAP			
P8	4 5/8"	3 5/8" METAL STUD W/ 5/8" GWB ONE SIDE, HOLD OFF OF EXISTING CMU WALL 3/8"			
P9A	7 1/4"	6" METAL STUD W/ 5/8" GYPSUM WALL BOARD EACH SIDE UP TO 6" ABOVE CEILING			
P9B	7 1/4"	6" METAL STUD W/ 5/8" GYPSUM WALL BOARD EACH SIDE UP TO 3' - 0" A.F.F. W/ WALL CAP			
P9C	7 1/4"	6" METAL STUD W/ 5/8" GYPSUM WALL BOARD TYPE SCX EACH SIDE UP TO DECK - SMOKE RATED	.5	UL 419	
P9D	7 1/4"	6" METAL STUD W/ FIBERGLASS INSULATION & 5/8" GYPSUM WALL BOARD EACH SIDE UP TO DECK, SOUND RATED			<varies>
P10	3 3/4"	2-1/2" METAL STUD W/ 5/8" GYPSUM WALL BOARD EACH SIDE			
RP1	7 1/4"	6" METAL STUD W/ 5/8" GYPSUM WALL BOARD TYPE SCX EACH SIDE UP TO DECK - 1 HR RATED, UL U419	1	UL 419	
RP2A	7 1/4"	6" METAL STUD W/ 1/16" LEAD SHIELDING ON IMAGING SIDE(S) & 5/8" GYPSUM WALL BOARD EACH SIDE UP TO 6" ABOVE CEILING			
RP3	3 1/2"	2 1/2" STEEL C-H STUDS W/ 1" TYPE X GYPSUM WALL PANELS ON SHAFT SIDE & 1/2" TYPE X GYPSUM WALLBOARD BASE LAYER,1/2" TYPE X GYPSUM WALLBOARD FACE LAYER ON OPPOSITE SIDE UP TO DECK	1	WP 7051	<varies>
RP4	3 1/8"	2 1/2" METAL STUD W/ 1/32" LEAD LINING & 5/8" GWB ONE SIDE UP TO 6" ABOVE CEILING			
RP5A	7 1/4"	6" METAL STUD W/ 1/32" LEAD SHIELDING ON IMAGING SIDE(S) & 5/8" GYPSUM WALL BOARD EACH SIDE UP TO 6" ABOVE CEILING			
RP5B	7 1/4"	6" METAL STUD W/ 1/32" LEAD SHIELDING ON IMAGING SIDE(S) & 5/8" TYPE SCX GYPSUM WALL BOARD EACH SIDE UP TO DECK - 1 HR RATED, UL U419	1	UL 419	
RP8	4 5/8"	3 5/8" METAL STUD W/ 1/32" LEAD LINING & 5/8" GWB ONE SIDE			

PARTITION TYPE DETAILS



P3/P3D - SOUND RATED



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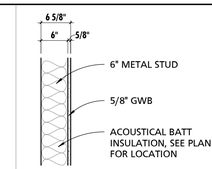

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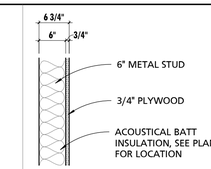

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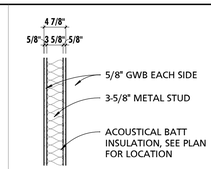
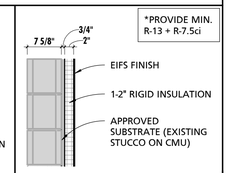
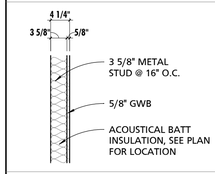


P7A/B



E1A/B/C - EXTERIOR



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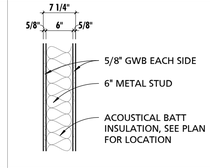
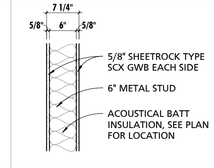
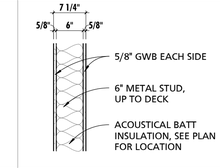


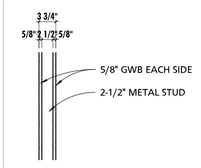
P9A/B



P9C - SMOKE RATED



P9D - SOUND RATED - STC 49



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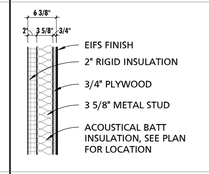
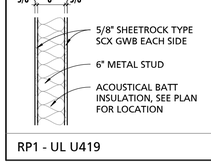
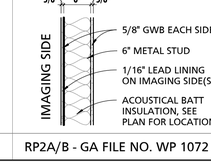


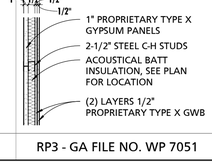
E2 - EXTERIOR



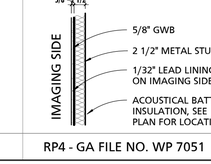
RP1 - UL U419



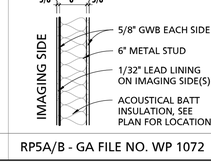
RP2A/B - GA FILE NO. WP 1072



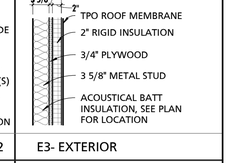
RP3 - GA FILE NO. WP 7051



RP4 - GA FILE NO. WP 7051



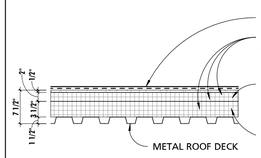
RP5A/B - GA FILE NO. WP 1072



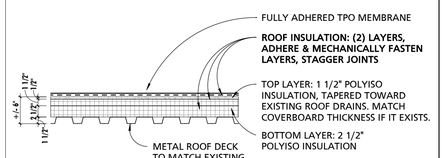
E3- EXTERIOR

TYPICAL ROOF TYPE ASSEMBLIES

*EXISTING INSULATION THICKNESS ESTIMATED TO BE 4", V.I.F.



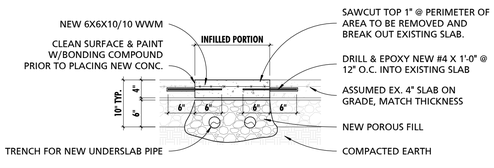
RA1: TPO ROOF — PROVIDE MIN. R-25ci ROOF ASSEMBLY



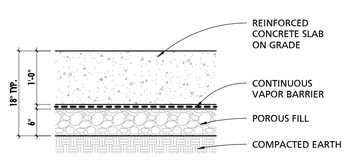
RA2: TPO - EXISTING ROOF INFILL — PROVIDE MIN. R-25ci ROOF ASSEMBLY / MATCH EXISTING ROOF

TYPICAL FLOOR ASSEMBLY DETAILS

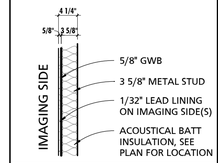
SEE SCHEDULE FOR ADDITIONAL NOTES



SOG4 - TYPICAL SLAB PATCH @ NEW UNDERSLAB PIPING - COORDINATE LOCATION & EXTENT W/MEP



SOG12 - ELEVATOR PIT



RP8 - GA FILE NO. WP 1072

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NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

BUILDING ASSEMBLY TYPES & NOTES

SHEET NUMBER:

A100

9/20/2023 4:48:34 PM

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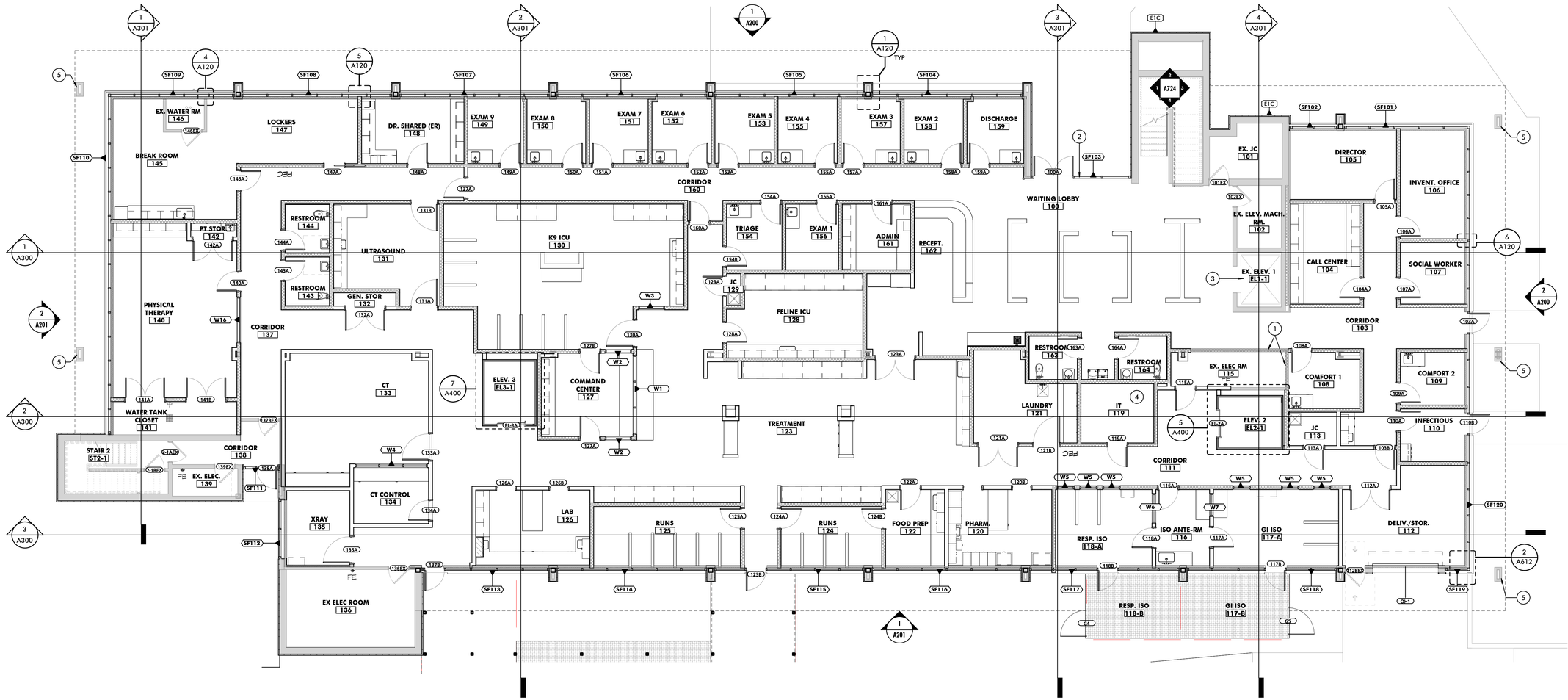

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	REMOVE ONE SIDE OF GYPSUM BOARD AT EXISTING WALL SO THAT INSULATION IS ABLE TO BE INSTALLED WITHIN EXISTING STUD WALL. PATCH / REPAIR AND PREPARE SURFACE TO RECEIVE NEW WORK.
2	EXPOSED PORTION OF STEEL LINTEL SHALL BE CLEANED AND PAINTED. REFER TO RUST INHIBITIVE PAINT SYSTEM NOTES ON SHEET S001.
3	EXISTING ELEVATOR HYDRAULIC JACK SEAL TO BE REPLACED.
4	3/4" FIRE RETARDANT PLYWOOD BACKBOARD, REFER TO ELECTRICAL DRAWINGS.
5	APPLY CUSTOM TEXTURED ACRYLIC FINISH TO MATCH BUILDING.

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

1 REFERENCE PLAN - FIRST FLOOR

1/8" = 1'-0"

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REFERENCE PLAN - FIRST FLOOR

SHEET NUMBER:
A101

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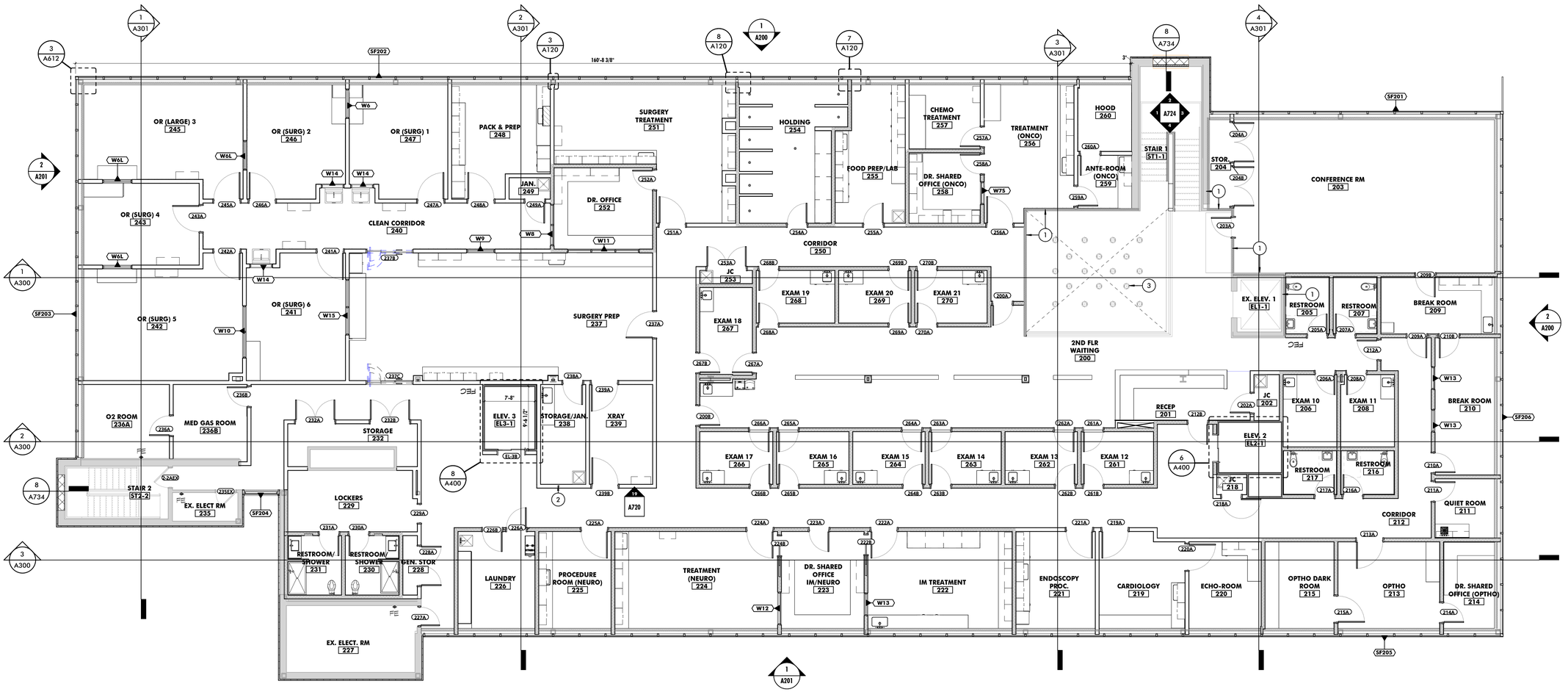

1 REFERENCE PLAN - SECOND FLOOR

1/8" = 1'-0"

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	REMOVE ONE SIDE OF GYPSUM BOARD AT EXISTING WALL SO THAT INSULATION IS ABLE TO BE INSTALLED WITHIN EXISTING STUD WALL. PATCH / REPAIR AND PREPARE SURFACE TO RECEIVE NEW WORK.
2	CENTRAL VACUUM POWER UNIT AND SEPARATOR LOCATION. 2" EXHAUST PIPES TO ROOF, ROUTE THROUGH METAL STUD WALL TO ROOF.
3	CUSTOM ACRYLIC MOBILES HUNG FROM CEILING ABOVE WITH ADJUSTABLE STAINLESS STEEL CABLES, ATTACHED TO 1/4-20 THREADED RODS IN CEILING (PROVIDED BY CONTRACTOR).

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

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No. DATE

REFERENCE PLAN - SECOND FLOOR

SHEET NUMBER:
A102

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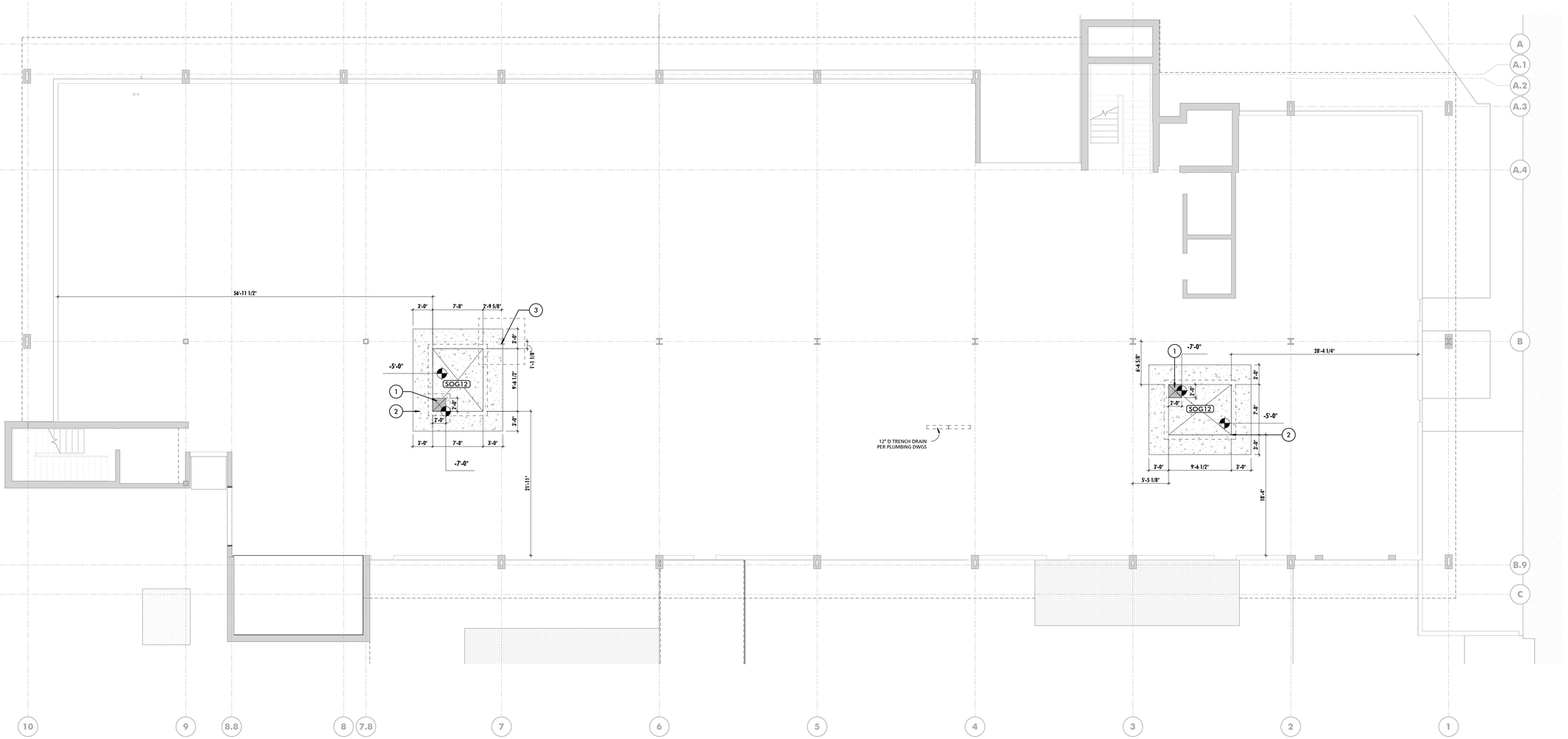

LEGEND - KEYNOTE LEGEND	
KEY	NOTE
1	24" X 24" SUMP PIT, SEE STRUCTURAL & MEP DRAWINGS FOR MORE INFORMATION.
2	REMOVE & REPLACE EXISTING 4" CONCRETE SLAB FOR INSTALLATION OF NEW ELEVATOR. REFER TO STRUCTURAL DETAILS FOR TYPICAL SLAB REMOVAL AND REPLACEMENT.
3	EXISTING BUILDING COLUMN TO BE SHORED PER STRUCTURAL DRAWINGS.

GENERAL SLAB / MASONRY PLAN NOTES	
1	DATUM ELEVATIONS ARE PROVIDED FOR REFERENCE. CONTRACTOR SHALL BE RESPONSIBLE FOR SLOPING SLABS AS REQUIRED TO PROVIDE PROPER FALL TOWARDS FLOOR DRAINS AS NECESSARY
2	REFERENCE PLUMBING DRAWINGS FOR ALL DRAIN LOCATIONS
3	REFERENCE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON CONTROL/EXPANSION JOINTS AND REINFORCING
4	CONTRACTOR SHALL COORDINATE FINAL LOCATION/SIZE REQUIREMENTS OF ALL EQUIPMENT SLABS PRIOR TO POURING

SLAB PLAN LEGEND	
	DEPRESSED SLAB, SEE PLAN FOR DEPTH
	RAISED SLAB, SEE PLAN FOR HEIGHT

1 SLAB PLAN - FIRST FLOOR
1/8" = 1'-0"

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SLAB PLAN - FIRST FLOOR

SHEET NUMBER:
A103

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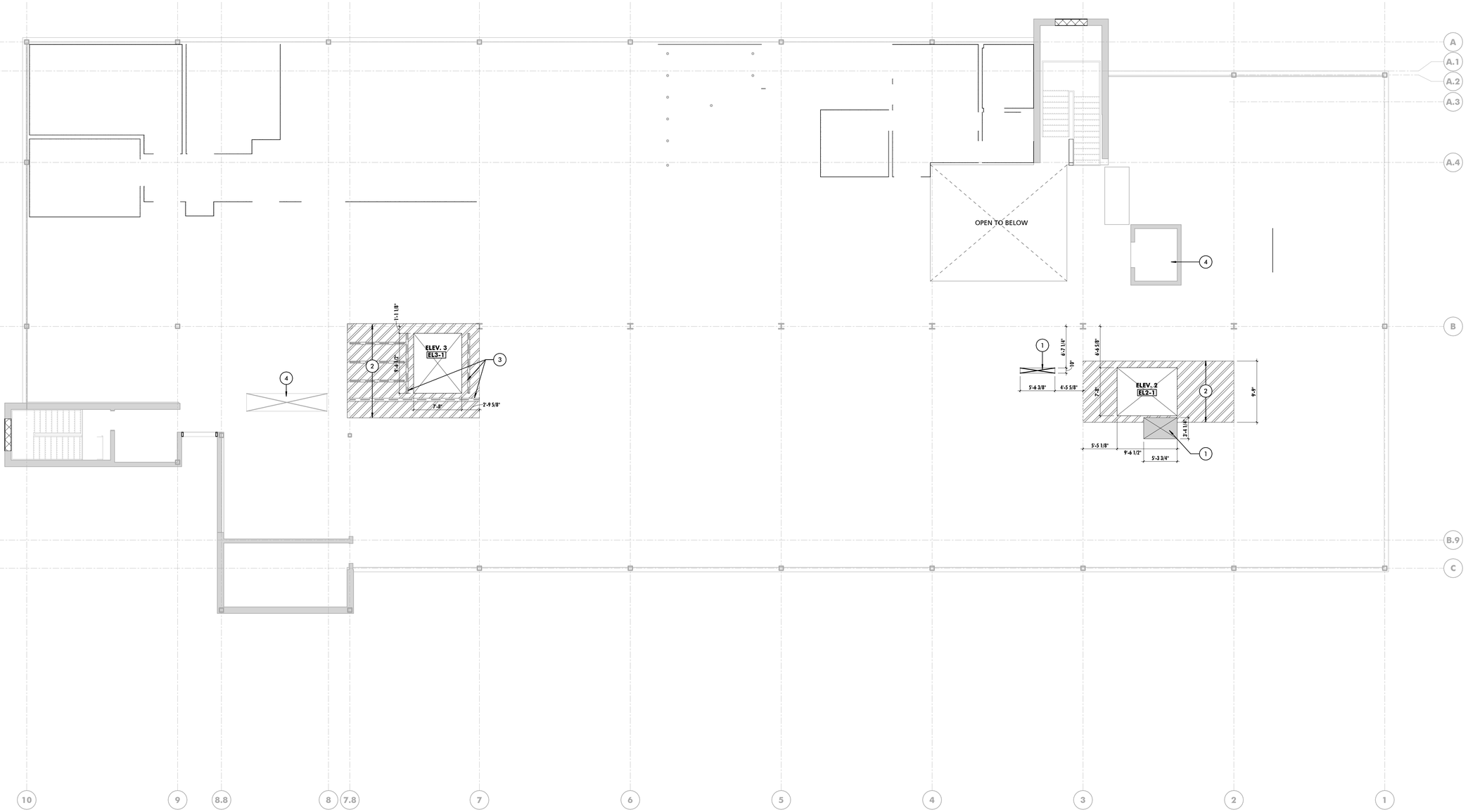

1 SLAB PLAN - SECOND FLOOR

1/8" = 1'-0"

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	NEW CHASE OPENING THROUGH EXISTING FLOOR.
2	REMOVE AND REPLACE EXISTING FLOOR SLAB AND JOISTS FOR INSTALLATION OF NEW ELEVATOR PER STRUCTURAL DRAWINGS.
3	NEW STRUCTURAL BEAM. REFER TO STRUCTURAL DRAWINGS.
4	EXISTING CHASE TO REMAIN.

GENERAL SLAB / MASONRY PLAN NOTES

1	DATUM ELEVATIONS ARE PROVIDED FOR REFERENCE. CONTRACTOR SHALL BE RESPONSIBLE FOR SLOPING SLABS AS REQUIRED TO PROVIDE PROPER FALL TOWARDS FLOOR DRAINS AS NECESSARY
2	REFERENCE PLUMBING DRAWINGS FOR ALL DRAIN LOCATIONS
3	REFERENCE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON CONTROL/EXPANSION JOINTS AND REINFORCING
4	CONTRACTOR SHALL COORDINATE FINAL LOCATION/SIZE REQUIREMENTS OF ALL EQUIPMENT SLABS PRIOR TO POURING

SLAB PLAN LEGEND

DEPRESSED SLAB, SEE PLAN FOR DEPTH

RAISED SLAB, SEE PLAN FOR HEIGHT

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No. DATE

SLAB PLAN - SECOND FLOOR

SHEET NUMBER:

A104

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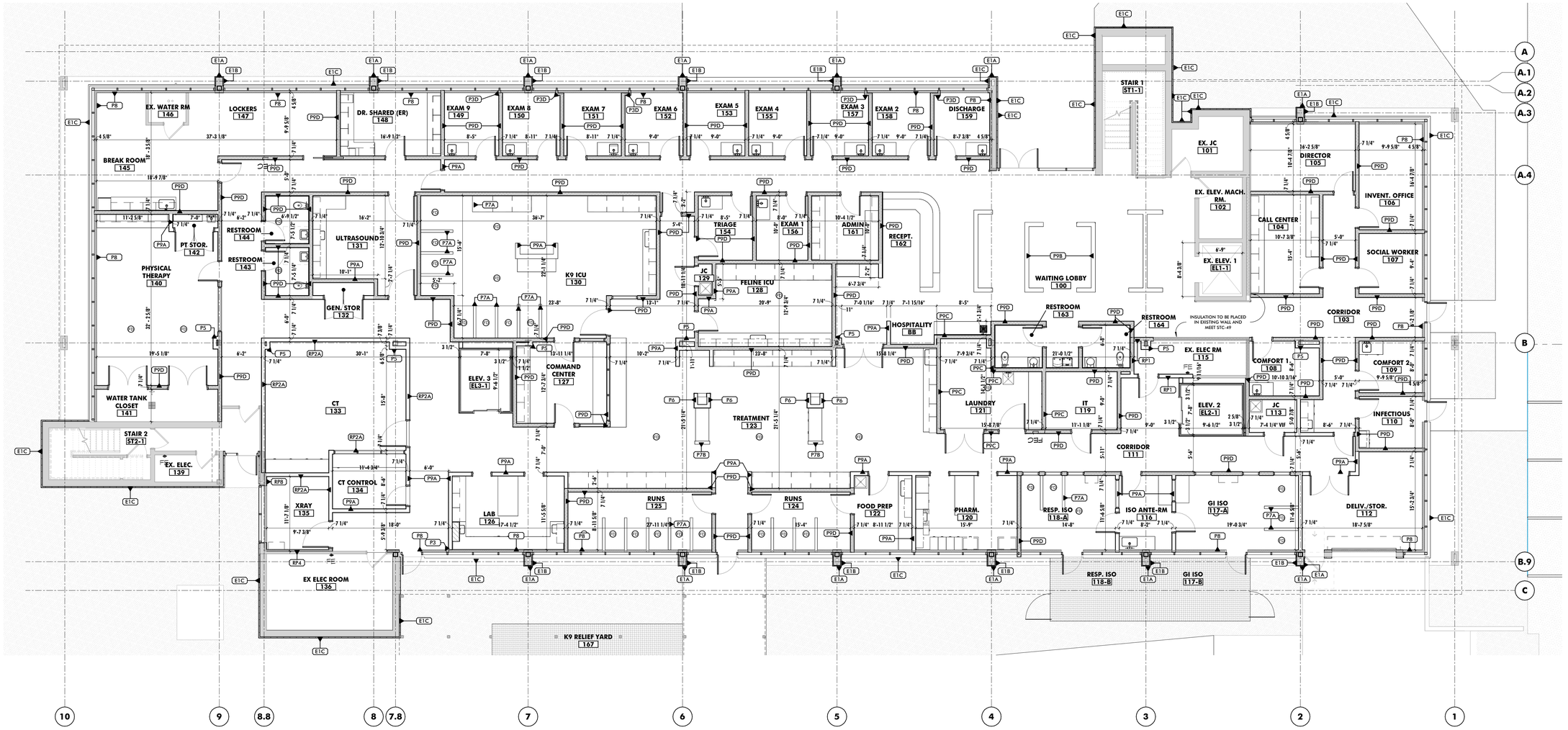

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

1 DIMENSION PLAN - FIRST FLOOR

1/8" = 1'-0"

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9/20/2023

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DIMENSION PLAN - FIRST FLOOR

SHEET NUMBER:

A105

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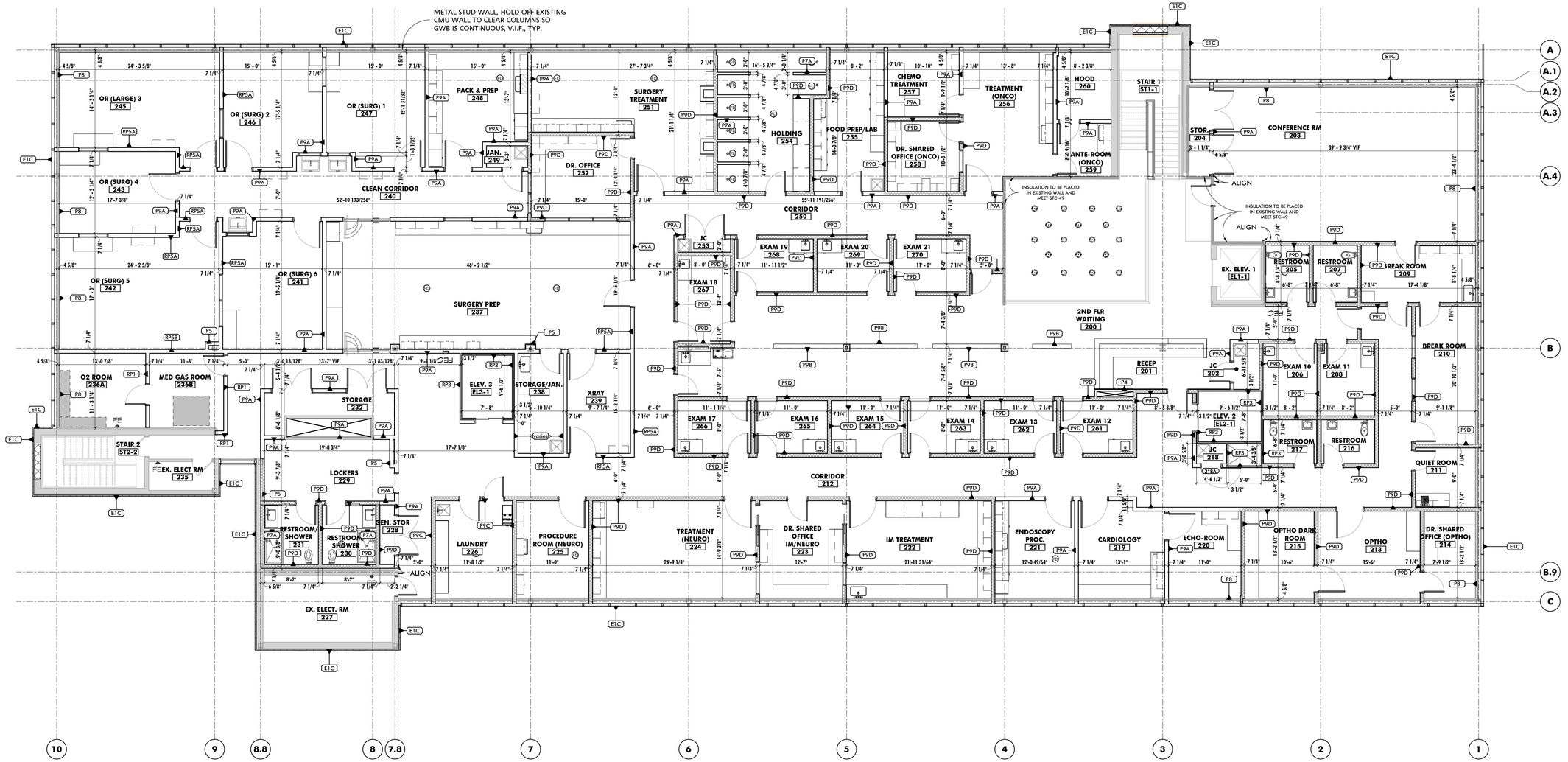

1 DIMENSION PLAN - SECOND FLOOR

1/8" = 1'-0"

LEGEND - KEYNOTE LEGEND	
KEY	NOTE

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

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SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

DIMENSION PLAN - SECOND FLOOR

SHEET NUMBER:

A106

9/20/2023 4:49:22 PM

SCHEDULE - FINISHES

ROOM INFORMATION						WALL FINISH					
RM #	ROOM NAME	FLOOR FINISH	BASE	CORNER GUARD	CHAIR RAIL	NORTH	SOUTH	EAST	WEST	CEILING FINISH	REMARKS
100	WAITING LOBBY	LVT-1	B-1	CG-2	N/A	P-1/WC-2	P-1/WC-2	P-1/WC-2	P-1/WC-2	CLG-1	HALF WALLS - WC-2/QZ-1 CAPS
101	EX. JC	ETR	B-1	N/A	N/A	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	N/A	FRP-1 60" A.F.F.
102	EX. ELEV. MACH. RM.	ETR	B-1	N/A	N/A	P-1	P-1	P-1	P-1	N/A	
103	CORRIDOR	LVT-1	B-1	CG-2	N/A	P-1/WC-2	P-1/WC-2	P-1/WC-2	P-1/WC-2	CLG-1	WC-2 48" A.F.F.
104	CALL CENTER	LVT-1	B-1	N/A	N/A	P-3	P-1	P-1/WC-3	P-1/WC-3	CLG-5	SEE ELEVATIONS FOR WC-3 LOCATIONS
105	DIRECTOR	LVT-1	B-1	N/A	N/A	P-3	P-1	P-1	P-1	CLG-5	
106	INVENT. OFFICE	LVT-1	B-1	N/A	N/A	P-3	P-1	P-1	P-1	CLG-5	
107	SOCIAL WORKER	LVT-1	B-1	N/A	N/A	P-3	P-1	P-1	P-1	CLG-5	
108	COMFORT 1	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-4	P-1	CLG-5	
109	COMFORT 2	LVT-1	B-1	N/A	EAST	P-1	P-3	P-1	P-1	CLG-5	
110	INFECTIOUS	RES-1	B-2	N/A	EAST	P-1	P-1	P-1	P-1	CLG-5	
111	CORRIDOR	RES-1	B-2	CG-1	N/A	P-1/WC-1	P-1/WC-1	P-1/WC-1	P-1/WC-1	CLG-1	WC-1 48" A.F.F.
112	DELIV./STOR.	RES-1	B-2	CG-1	N/A	P-1	P-1	P-1	P-1	N/A	
113	JC	RES-1	B-2	N/A	P/1-FRP-1	P/1-FRP-1	P/1-FRP-1	P/1-FRP-1	P/1-FRP-1	N/A	FRP-1 60" A.F.F.
115	EX. ELEC RM	ETR	B-1	N/A	N/A	P-1	P-1	P-1	P-1	N/A	
116	ISO ANTE-RM	RES-1	B-2	N/A	N/A	P-6	P-6	P-6	P-6	CLG-2	
117-A	GI ISO	RES-1	B-2	N/A	N/A	P-6	P-6	P-6/B-2	P-6	CLG-2	KENNEL RUN WALLS - B-2 64" A.F.F.
117-B	GI ISO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SEE CIVIL DRAWINGS
118-A	RESP. ISO	RES-1	B-2	N/A	N/A	P-6/B-2	P-6	P-6	P-6	CLG-2	KENNEL RUN WALLS - B-2 64" A.F.F.
118-B	RESP. ISO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SEE CIVIL DRAWINGS
119	IT	SDT-1	B-1	N/A	N/A	P-1	P-1	P-1	P-1	CLG-5	
120	PHARM.	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
121	LAUNDRY	RES-1	B-2	N/A	N/A	P-6	P-6	P-6	P-6	CLG-2	
122	FOOD PREP	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
123	TREATMENT	RES-1	B-2	CG-1 & CG-2	N/A	P-1/WC-1	P-1/WC-1	P-1/WC-1	P-1/WC-1	CLG-4	CHASES TO RECEIVE PP-1/WC-4/CG-2 - SEE ELEVATIONS & DETAILS
124	RUNS	RES-1	B-2	N/A	N/A	B-2/P-6	B-2/P-6	B-2/P-6	B-2/P-6	CLG-2	KENNEL RUN WALLS - B-2 64" A.F.F.
125	RUNS	RES-1	B-2	N/A	N/A	B-2/P-6	B-2/P-6	B-2/P-6	B-2/P-6	CLG-2	KENNEL RUN WALLS - B-2 64" A.F.F.
126	LAB	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
127	COMMAND CENTER	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1/WC-3	CLG-2	SEE ELEVATIONS FOR WC-3 LOCATION
128	FELINE ICU	RES-1	B-2	CG-1	N/A	P-1	P-1	P-1	P-1	CLG-2	
129	JC	RES-1	B-2	N/A	N/A	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	N/A	FRP-1 60" A.F.F.
130	K9 ICU	RES-1	B-2	CG-3	N/A	P-6	P-7/B-2	P-6	P-7/B-2	CLG-2	KENNEL RUN WALLS - B-2 64" A.F.F. WC-6 ON HALF HIGH WALLS W/ SS-1
131	ULTRASOUND	RES-1	B-2	CG-3	N/A	P-1	P-1	P-3	P-1	CLG-5	
132	GEN. STOR	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-5	
133	CT	RES-1	B-2	CG-3	N/A	P-1	P-1	P-1	P-1	CLG-1	
134	CT CONTROL	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-1	
135	XRAY	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-1	
136	EX ELEC ROOM	ETR	B-1	N/A	N/A	P-1	P-1	P-1	P-1	N/A	
137	CORRIDOR	RES-1	B-2	CG-1	N/A	P-1/WC-1	P-1/WC-1	P-1/WC-1	P-1/WC-1	CLG-1	WC-1 48" A.F.F.
138	CORRIDOR	RB-1	B-1	CG-3	N/A	P-1	P-1	P-1	P-1	CLG-1	
139	EX. ELEC.	ETR	B-1	N/A	N/A	P-1	P-1	P-1	P-1	N/A	
140	PHYSICAL THERAPY	RES-1	B-2	CG-3	N/A	P-1	P-4	P-1	P-1	CLG-2	
141	WATER TANK CLOSET	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
142	PT STOR.	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-2	
143	RESTROOM	RES-1	B-2	N/A	N/A	CT-2	CT-2	CT-2	CT-2	CLG-2	
144	RESTROOM	RES-1	B-2	N/A	N/A	CT-2	CT-2	CT-2	CT-2	CLG-2	
145	BREAK ROOM	LVT-1	B-1	N/A	N/A	WC-5	P-1	P-1	WC-5	CLG-5	
146	EX. WATER RM	ETR	B-1	N/A	N/A	P-1	P-1	P-1	P-1	N/A	
147	LOCKERS	LVT-1	B-1	N/A	N/A	WC-5	P-1	P-1	P-1	CLG-5	
148	DR. SHARED (ER)	RES-1	B-2	N/A	N/A	P-4	P-1/WC-3	P-1/WC-3	P-1/WC-3	CLG-5	SEE ELEVATIONS FOR WC-3 LOCATIONS
149	EXAM 9	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-3	P-1	CLG-5	
150	EXAM 8	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-4	P-1	CLG-5	
151	EXAM 7	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-1	P-3	CLG-5	
152	EXAM 6	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-1	P-4	CLG-5	
153	EXAM 5	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-1	P-3	CLG-5	
154	TRIAGE	RES-1	B-2	N/A	SOUTH	P-1	P-1	P-4	P-1	CLG-5	
155	EXAM 4	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-4	P-1	CLG-5	
156	EXAM 1	LVT-1	B-1	N/A	SOUTH	P-1	P-1	P-3	P-1	CLG-5	
157	EXAM 3	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-1	P-3	CLG-5	
158	EXAM 2	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-4	P-1	CLG-5	
159	DISCHARGE	LVT-1	B-1	N/A	NORTH	P-1	P-1	P-1	P-3	CLG-5	
160	CORRIDOR	LVT-1	B-1	CG-2	N/A	P-1/WC-2	P-1/WC-2	P-1/WC-2	P-1/WC-2	CLG-1	WC-2 48" A.F.F.
161	ADMIN	LVT-1	B-1	N/A	N/A	P-1	P-4	P-1	P-1/WC-3	CLG-5	SEE ELEVATIONS FOR WC-3 LOCATION
162	RECEPT.	LVT-1	B-1	N/A	N/A	P-1	P-1	P-1	CT-1	CLG-3	SEE ENLARGED PLAN AND ELEVATIONS
163	RESTROOM	LVT-1	CT-1	N/A	N/A	CT-1/P-4	CT-1/P-4	CT-1/P-4	CT-1/P-4	CLG-2	CT-1 TO ALIGN W/ TOP OF DOOR FRAME
164	RESTROOM	LVT-1	CT-1	N/A	N/A	CT-1/P-4	CT-1/P-4	CT-1/P-4	CT-1/P-4	CLG-2	CT-1 TO ALIGN W/ TOP OF DOOR FRAME
167	K9 RELIEF YARD	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SEE CIVIL DRAWINGS
168	MORGUE/STORAGE	- -	- -	- -	- -	- -	- -	- -	- -	- -	PROVIDED BY VENDOR
169	MRI TRAILER	- -	- -	- -	- -	- -	- -	- -	- -	- -	PROVIDED BY VENDOR
200	2ND FLR WAITING	LVT-1	B-1	CG-2	N/A	P-1/WC-2	P-1/WC-2	P-1/WC-2	P-1/WC-2	CLG-1	HALF WALLS - WC-2/QZ-1CAPS
201	RECEP	LVT-1	B-1	N/A	N/A	P-1	CT-1	P-1	P-1	CLG-3	PAINT UNDERSIDE OF BULKHEAD P-4
202	JC	RES-1	B-2	N/A	N/A	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	N/A	FRP-1 60" A.F.F.
203	CONFERENCE RM	LVT-1	B-1	N/A	N/A	P-4	P-1	P-1	P-1	CLG-5	
204	STOR.	LVT-1	B-1	N/A	N/A	P-1	P-1	P-1	P-1	N/A	
205	RESTROOM	LVT-1	CT-1	N/A	N/A	CT-1/P-4	CT-1/P-4	CT-1/P-4	CT-1/P-4	CLG-2	CT-1 TO ALIGN W/ TOP OF DOOR FRAME
206	EXAM 10	LVT-1	B-1	N/A	SOUTH	P-1	P-1	P-3	P-1	CLG-5	
207	RESTROOM	LVT-1	CT-1	N/A	N/A	CT-1/P-4	CT-1/P-4	CT-1/P-4	CT-1/P-4	CLG-2	CT-1 TO ALIGN W/ TOP OF DOOR FRAME
208	EXAM 11	LVT-1	B-1	N/A	SOUTH	P-1	P-1	P-1	P-4	CLG-5	
209	BREAK ROOM	LVT-1	B-1	N/A	N/A	P-1	P-3	P-1	P-1	CLG-5	
210	BREAK ROOM	LVT-1	B-1	N/A	N/A	P-1/WC-5	P-1/WC-5	P-1/WC-5	P-1/WC-5	CLG-5	WC-5 TO MATCH WINDOW SILL HEIGHT
211	QUIET ROOM	LVT-1	B-1	N/A	N/A	WC-5	P-1	P-1	P-1	CLG-5	
212	CORRIDOR	RES-1	B-2	CG-1	N/A	P-1/WC-1	P-1/WC-1	P-1/WC-1	P-1/WC-1	CLG-1	WC-1 48" A.F.F.
213	OPTHO	RES-1	B-2	N/A	N/A	P-4	P-1	P-1	P-1	CLG-2	
214	DR. SHARED OFFICE (OPTHO)	RES-1	B-2	N/A	N/A	P-4	P-1	P-1	P-1	CLG-5	
215	OPTHO DARK ROOM	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-2	
216	RESTROOM	RES-1	B-2	N/A	N/A	CT-2	CT-2	CT-2	CT-2	CLG-2	
217	RESTROOM	RES-1	B-2	N/A	N/A	CT-2	CT-2	CT-2	CT-2	CLG-2	
218	JC	RES-1	B-2	N/A	N/A	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	N/A	FRP-1 60" A.F.F.
219	CARDIOLOGY	RES-1	B-2	CG-3	N/A	P-1	P-1	P-4	P-1	CLG-4	
220	ECHO-ROOM	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-4	CLG-4	
221	ENDOSCOPY PROC.	RES-1	B-2	N/A	N/A	P-1	P-1	P-4	P-1	CLG-4	
222	IM TREATMENT	RES-1	B-2	N/A	N/A	P-4	P-1	P-1	P-1	CLG-2	
223	DR. SHARED OFFICE IM/NEURO	RES-1	B-2	N/A	N/A	P-4	P-1/WC-3	P-1/WC-3	P-1/WC-3	CLG-5	SEE ELEVATIONS FOR WC-3 LOCATION
224	TREATMENT (NEURO)	RES-1	B-2	N/A	N/A	P-4	P-1	P-1	P-1	CLG-2	
225	PROCEDURE ROOM (NEURO)	RES-1	B-2	N/A	N/A	P-4	P-1	P-1	P-1	CLG-2	
226	LAUNDRY	RES-1	B-2	N/A	N/A	P-6	P-6	P-6	P-6	CLG-2	
227	EX. ELECT. RM	ETR	B-1	N/A	N/A	P-1	P-1	P-1	P-1	- -	
228	GEN. STOR	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	- -	
229	LOCKERS	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
230	RESTROOM/ SHOWER	CT-3	- -	N/A	N/A	CT-2	CT-2	CT-4	CT-2	CLG-2	SEE ELEVATIONS
231	RESTROOM/ SHOWER	CT-3	- -	N/A	N/A	CT-2	CT-2	CT-2	CT-4	CLG-2	SEE ELEVATIONS
232	STORAGE	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
235	EX. ELECT RM	ETR	B-1	N/A	N/A	P-1	P-1	P-1	P-1	N/A	

SCHEDULE - FINISHES

ROOM INFORMATION						WALL FINISH					
RM #	ROOM NAME	FLOOR FINISH	BASE	CORNER GUARD	CHAIR RAIL	NORTH	SOUTH	EAST	WEST	CEILING FINISH	REMARKS
236A	O2 ROOM	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
236B	MED GAS ROOM	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
237	SURGERY PREP	RES-1	B-2	CG-1	N/A	P-6	P-6	P-6	P-6	CLG-4	
238	STORAGE/JAN.	RES-1	B-2	N/A	N/A	P-1	FRP-1	FRP-1	P-1	CLG-4	SEE ELEVATIONS
239	XRAY	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-1	
240	CLEAN CORRIDOR	RES-1	B-2	CG-3	N/A	P-6	P-6	P-6	P-6	CLG-4	
241	OR (SURG) 6	RES-1	B-2	CG-3	N/A	P-6	P-6	P-6	P-6	CLG-4	
242	OR (SURG) 5	RES-1	B-2	CG-3	N/A	P-6	P-6	P-6	P-6	CLG-4	
243	OR (SURG) 4	RES-1	B-2	N/A	N/A	P-6	P-6	P-6	P-6	CLG-4	
245	OR (LARGE) 3	RES-1	B-2	CG-3	N/A	P-6	P-6	P-6	P-6	CLG-4	
246	OR (SURG) 2	RES-1	B-2	CG-3	N/A	P-6	P-6	P-6	P-6	CLG-4	
247	OR (SURG) 1	RES-1	B-2	CG-3	N/A	P-6	P-6	P-6	P-6	CLG-4	
248	PACK & PREP	RES-1	B-2	CG-3	N/A	P-6	P-6	P-6	P-6	CLG-4	
249	JAN.	RES-1	B-2	N/A	N/A	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	CLG-4	FRP-1 60" A.F.F.
250	CORRIDOR	RES-1	B-2	CG-1	N/A	P-1/WC-1	P-1/WC-1	P-1/WC-1	P-1/WC-1	CLG-1	WC-1 48" A.F.F.
251	SURGERY TREATMENT	RES-1	B-2	CG-3	N/A	P-6	P-6	P-6	P-6	CLG-4	
252	DR. OFFICE	RES-1	B-2	N/A	N/A	P-1/WC-3	P-1/WC-3	P-4	P-1/WC-3	CLG-5	SEE ELEVATIONS FOR WC-3 LOCATION
253	JC	RES-1	B-2	N/A	N/A	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	FRP-1/P-1	CLG-4	FRP-1 60" A.F.F.
254	HOLDING	RES-1	B-2	CG-3	N/A	P-6/B-2	P-6/B-2	P-6/B-2	P-6/B-2	CLG-2	KENNEL RUN WALLS - B-2 64" A.F.F.
255	FOOD PREP/LAB	RES-1	B-2	CG-3	N/A	P-1	P-1	P-1	P-1	CLG-4	
256	TREATMENT (ONCO)	RES-1	B-2	N/A	N/A	P-6	P-6	P-6	P-6	CLG-4	
257	CHEMO TREATMENT	RES-1	B-2	N/A	N/A	P-6	P-6	P-6	P-6	CLG-4	
258	DR. SHARED OFFICE (ONCO)	RES-1	B-2	N/A	N/A	P-3	P-1/WC-3	P-1	P-1/WC-3	CLG-5	SEE ELEVATIONS FOR WC-3 LOCATION
259	ANTE-ROOM (ONCO)	RES-1	B-2	N/A	N/A	P-6	P-6	P-6	P-6	CLG-4	
260	HOOD	RES-1	B-2	N/A	N/A	P-1	P-1	P-1	P-1	CLG-4	
261	EXAM 12	LVT-1	B-1	N/A	EAST	P-1	P-1	P-1	P-3	CLG-5	
262	EXAM 13	LVT-1	B-1	N/A	WEST	P-1	P-1	P-4	P-1	CLG-5	
263	EXAM 14	LVT-1	B-1	N/A	EAST	P-1	P-1	P-1	P-3	CLG-5	
264	EXAM 15	LVT-1	B-1	N/A	WEST	P-1	P-1	P-4	P-1	CLG-5	
265	EXAM 16	LVT-1	B-1	N/A	EAST	P-1	P-1	P-1	P-3	CLG-5	
266	EXAM 17	LVT-1	B-1	N/A	WEST	P-1	P-1	P-4	P-1	CLG-5	
267	EXAM 18	LVT-1	B-1	N/A	NORTH	P-1	P-4	P-1	P-1	CLG-5	
268	EXAM 19	LVT-1	B-1	N/A	EAST	P-1	P-1	P-1	P-3	CLG-5	
269	EXAM 20	LVT-1	B-1	N/A	WEST	P-1	P-1	P-4	P-1	CLG-5	
270	EXAM 21	LVT-1	B-1	N/A	EAST	P-1	P-1	P-1	P-3	CLG-5	
EL1-1	EX. ELEV. 1	LVT-1	TBD	N/A	TBD	TBD	TBD	TBD	TBD	TBD	PANELS: FORMICA NEUTRAL TWILL 8826; REVEALS: CHALKBOARD F-119; BASE FINISH: CHALKBOARD F-119; 3 HANDRAILS: BRUSHED STAINLESS STEEL #4; 3 6" FLAT BAR BUMPERS: BRUSHED STAINLESS STEEL #4; CEILING TYPE: SUSPENDED WITH LED, CEILING FRAME FINISH: CHALKBOARD F-119
EL2-1	ELEV. 2	LVT-1	TBD	N/A	TBD	TBD	TBD	TBD	TBD	TBD	FINISHES TO MATCH EL1-1
EL3-1	ELEV. 3	LVT-1	TBD	N/A	TBD	TBD	TBD	TBD	TBD	TBD	FINISHES TO MATCH EL1-1
ST1-1	STAIR 1	RB-1	RB-1	N/A	N/A	P-1/WC-2	P-1/WC-2	P-1/WC-2	P-1/WC-2	CLG-3	WALL CAPS TO BE QZ-1. SEE ELEVATIONS. AWP-1 ON NORTH WALL IN EXISTING PLANTER
ST2-1	STAIR 2	RB-1	RB-1	N/A	N/A	HPC-1	HPC-1	HPC-1	HPC-1	CLG-2	
ST2-2	STAIR 2	RB-1	RB-1	N/A	N/A	P-6	P-6	P-6	P-6	CLG-2	

MATERIAL FINISH LEGEND

FINISH MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL/PRODUCT LINE	BOD COMMENTS
ACT-1	2X2 SQUARE EDGE ACOUSTIC CEILING TILE	USG	MARS HIGH NRC #86345 SQ EDGE	
ACT-2	2x2 ACOUSTIC CEILING TILE, WASHABLE	USG	MARS HEALTHCARE HIGH NRC/HIGH-CAC ACOUSTICAL PANELS #86344 / SQUARE EDGE HEALTHCARE	
ACTG-1	15/16" ACOUSTICAL SUSPENSION SYSTEM	USG	DONN BRAND DX/DXL ACOUSTICAL SUSPENSION SYSTEM #86115 SQ. EDGE	SEISMIC PERIMETER ATTACHMENT CLIPS - SEISMIC CATEGORY "C"
AWP-1	ACOUSTICAL WALL PANEL	TURF	WAVE - PRIMARY COLOR: 28 INDIGO | SECONDARY COLOR: 83 HOLLAND OATS	INSTALL HORIZONTAL LAYOUT
B-1	4"H RUBBER BASE	TARKETT	JOHNSONITE MILLWORK BASE / REVEAL 4.25" H - TA6 BEDROCK CG (MW-TA6-F)	
B-2	4"H RESINOUS COVE BASE	DUR-A-FLEX	ACCELERA RXC- HADLEY	
B-3	4"H METAL BASE	FRY REGLET	4" MILLWORK REVEAL BASE	CT-1 BASE
CG-1	RIGID 3" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SM-20AN / SMOKEY BLUE (1576)	MATCH HEIGHT OF WALLCOVERING WC-1 (BOH) U.N.O
CG-2	RIGID 2" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SSM-20AN / SMOKEY BLUE (1576)	TREATMENT CHASES - FULL HEIGHT | MATCH HEIGHT OF WC-2 U.N.O
CG-3	RIGID 3" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SM-20AN / DRIFTWOOD (262)	K9 ICU - MATCH WALL HEIGHT
CG-4	6" LEG STANDARD	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / TF-90 / WHITE PAPYRUS (1609)	OUTSIDE CORNERS OF RECEPTION DESK
CT-1	8" X 40" PORCELAIN TILE	MERCADO	FOREST - CALIFORNIAN WOOD - NAT BOLD #79001ET	WALL TILE ON LVT
CT-2	12" X 24" PORCELAIN TILE	ARCHITESSA	SOUL / WHITE COTTON	RESTROOMS & SHOWER WALLS
CT-3	MOSAIC PORCELAIN TILE	FLORIDATILE	ENCHANT / HEX MOSAIC / HONESTY (MATTE) (ENX10/M3X3HEX-MATTE)	SHOWER FLOOR
CT-4	12" X 24" PORCELAIN TILE	FLORIDATILE	AMPLIFY/DEEP BLUE/MATTE (B669.0047.008)	SHOWER ROOM - ACCENT WALL
DS-1	STAINED WOOD DOORS	MASONITE ARCHITECTURAL	ASPIRO SERIES / PLAIN SLICED WHITE BIRCH / ROLLED OATS	
FRP-1	FIBER REINFORCED PANEL	MARLITE	PEBBLED FINISH / WHITE	INCLUDE TOP CAP & ACCESSORIES; 60" AFF
HPC-1	HIGH PERFORMANCE COATING	SHERWIN WILLIAMS	SW 9165 - GOSSAMER VEIL	
HPC-2	HIGH PERFORMANCE COATING	SHERWIN WILLIAMS	SW 7076 - CYBERSPACE	
LK-1	SOLID COLOR HIGH DENSITY POLYETHYLENE (HDPE)	SCRANTON PRODUCTS	TUFFTEC LOCKERS - SANDSTONE	
LVT-1	18" X 36" LUXURY VINYL TILE	PATCRAFT	INSET ICE GOLD-V2 (1577V)	BRICK INSTALLATION METHOD
P-1	PAINT - FIELD	SHERWIN WILLIAMS	SW 9165 - GOSSAMER VEIL	
P-2	PAINT - TRIM	SHERWIN WILLIAMS	SW 7076 - CYBERSPACE	
P-3	PAINT - ACCENT	SHERWIN WILLIAMS	SW 9148 - SMOKEY AZURITE	SEE FINISH PLAN FOR ACCENT LOCATIONS
P-4	PAINT - ACCENT	SHERWIN WILLIAMS	SW 9150 - ENDLESS SEA	SEE FINISH PLAN FOR ACCENT LOCATIONS
P-5	PAINT - CEILING	SHERWIN WILLIAMS	SW 7557 - HIGH REFLECTIVE WHITE	
P-6	PAINT	SCUFFMASTERS	SW 9165 - GOSSAMER VEIL	KENNEL WALLS
P-7	PAINT	SCUFFMASTERS	SW 9150 - ENDLESS SEA	K9 CUBBIES
PL-1	PLASTIC LAMINATE	WILSONART	7967K-12 - PARK ELM - SOFT GRAIN FINISH	ON LVT - ADMIN | CALL CENTER | RECEPTION | DOC OFF. | HOSPITALITY
PL-2	PLASTIC LAMINATE	LAB DESIGNS	WA403 LS - BEIGEWOOD	ON LVT - BREAK | QUIET
PL-3	PLASTIC LAMINATE	INTERIORARTS	1040 - WHITE NEEDLE NATURAL - NATURAL FINISH	
PL-4	PLASTIC LAMINATE	LAB DESIGNS	P-234 WE - TENINO WALNUT	CONTRACTOR PROVIDED LAB CABINETS
PP-1	PHENOLIC PANEL	FENIX FOR INTERIORS	FENIX NTM / GREGIO EFESO	TREATMENT CHASE
QZ-1	QUARTZ	CAMBRIA	SOUTHPORT - HIGH GLOSS	RECEPTION | HOSPITALITY | WALL CAPS
QZ-2	QUARTZ	SILESTONE	PIETRA - POLISHED	BREAK ROOMS | QUIET ROOM
RB-1	STAIR RISERS/TREADS/LANDINGS	TARKETT	COLOR SPLASH / HAMMERED / VF9 BRYCE POINT & VL4 COOL METAL	
RES-1	RESINOUS FLOORING SYSTEM	DUR-A-FLEX	ACCELERA RXC- HADLEY	FLOORING APPLICATOR TO PERFORM MOISTURE & PH TESTING FOR QUALITY
RP-1	RESINOUS PANEL	3FORM	VARIA - FRAY BALTIC + POWDER (D03) - 3/8" GAUGE	RECEPTION DESK ACCENT
S-1	EXTERIOR STUCCO FINISH	DRYVIT	OUTSULATION PLUS MD	CUSTOM COLOR AND FINISH MATCH TO EXISTING
SC-1	SEALED CONCRETE	- -	- -	
SDT-1	STATIC DISSAPATIVE TILE	ARMSTRONG	EXCELON - 51957 - RIDGE	
SS-1	SOLID SURFACE COUNTERTOP	MEGANITE	701A - BLANCA GRANITE	FIELD
SS-2	SOLID SURFACE COUNTERTOP	KRION	CLEAR NATURE 0102	K9 ICU SHELVING & WINDOW SILLS
WC-1	PROTECTIVE WALLCOVERING	P3TEC	STELLAR - BLUE SWIPE (P3T-60134)	ON RES
WC-2	VINYL WALLCOVERING	ARC/COM	ORSINI (AC-53816) - MONSOON (16)	ON LVT
WC-3	MAGNETIC WALLCOVERING	WOLF GORDON	WINK MAGNETIC - WHITE	OFFICES - SEE FINISH PLAN FOR ACCENT LOCATIONS
WC-4	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / SMOKEY BLUE (1576)	TREATMENT CHASES - FULL HEIGHT
WC-5	TYPE II VINYL WALLCOVERING	MOMENTUM TEXTILES	LANMARK - FRENCH CROWN - FOUNTAIN BLUE (LLN-FC-08)	BREAK ROOMS | QUIET ROOM
WC-6	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / DRIFTWOOD (262)	K9 ICU - CHASE
WC-7	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / WHITE PAPYRUS (1609)	FRONT DESK - INSTALL RAILROADED

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SEAL:

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MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

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9/20/2023

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No. DATE

FINISH SCHEDULES, NOTES, & DETAILS

SHEET NUMBER:
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1 FINISH PLAN - FIRST FLOOR

1/8" = 1'-0"

MATERIAL FINISH LEGEND

FINISH MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL/PRODUCT LINE	BOD COMMENTS
ACT-1	2X2 SQUARE EDGE ACOUSTIC CEILING TILE	USG	MARS HIGH NRC #86345 SQ EDGE	
ACT-2	2x2 ACOUSTIC CEILING TILE, WASHABLE	USG	MARS HEALTHCARE HIGH NRC/HIGH-CAC ACOUSTICAL PANELS #86344 / SQUARE EDGE HEALTHCARE	
ACTG-1	15/16" ACOUSTICAL SUSPENSION SYSTEM	USG	DONN BRAND DX/DXL ACOUSTICAL SUSPENSION SYSTEM #86115 SQ. EDGE	SEISMIC PERIMETER ATTACHMENT CLIPS - SEISMIC CATEGORY "C"
AWP-1	ACOUSTICAL WALL PANEL	TURF	WAVE - PRIMARY COLOR: 28 INDIGO | SECONDARY COLOR: 83 HOLLAND OATS	INSTALL HORIZONTAL LAYOUT
B-1	4"H RUBBER BASE	TARKETT	JOHNSONITE MILLWORK BASE / REVEAL 4.25" H - TA6 BEDROCK CG (MW-TA6-F)	
B-2	4"H RESINOUS COVE BASE	DUR-A-FLEX	ACCELERA RXC- HADLEY	
B-3	4"H METAL BASE	FRY REGLET	4" MILLWORK REVEAL BASE	CT-1 BASE
CG-1	RIGID 3" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SM-20AN / SMOKEY BLUE (1576)	MATCH HEIGHT OF WALLCOVERING WC-1 (BOH) U.N.O
CG-2	RIGID 2" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SSM-20AN / SMOKEY BLUE (1576)	TREATMENT CHASES - FULL HEIGHT | MATCH HEIGHT OF WC-2 U.N.O
CG-3	RIGID 3" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SM-20AN / DRIFTWOOD (262)	K9 ICU - MATCH WALL HEIGHT
CG-4	6" LEG STANDARD	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / TF-90 / WHITE PAPYRUS (1609)	OUTSIDE CORNERS OF RECEPTION DESK
CT-1	8" X 40" PORCELAIN TILE	MERCADO	FOREST - CALIFORNIAN WOOD - NAT BOLD #79001ET	WALL TILE ON LVT
CT-2	12" X 24" PORCELAIN TILE	ARCHITESSA	SOUL / WHITE COTTON	RESTROOMS & SHOWER WALLS
CT-3	MOSAIC PORCELAIN TILE	FLORIDATILE	ENCHANT / HEX MOSAIC / HONESTY (MATTE) (ENX10/M3X3HEX-MATTE)	SHOWER FLOOR
CT-4	12" X 24" PORCELAIN TILE	FLORIDATILE	AMPLIFY/DEEP BLUE/MATTE (B669.0047.008)	SHOWER ROOM - ACCENT WALL
DS-1	STAINED WOOD DOORS	MASONITE ARCHITECTURAL	ASPIRO SERIES / PLAIN SLICED WHITE BIRCH / ROLLED OATS	
FRP-1	FIBER REINFORCED PANEL	MARLITE	PEBBLED FINISH / WHITE	INCLUDE TOP CAP & ACCESSORIES; 60" AFF
HPC-1	HIGH PERFORMANCE COATING	SHERWIN WILLIAMS	SW 9165 - GOSSAMER VEIL	
HPC-2	HIGH PERFORMANCE COATING	SHERWIN WILLIAMS	SW 7076 - CYBERSPACE	
LK-1	SOLID COLOR HIGH DENSITY POLYETHYLENE (HDPE)	SCRANTON PRODUCTS	TUFFTEC LOCKERS - SANDSTONE	
LVT-1	18" X 36" LUXURY VINYL TILE	PATCRAFT	INSET ICE GOLD-V2 (1577V)	BRICK INSTALLATION METHOD
P-1	PAINT - FIELD	SHERWIN WILLIAMS	SW 9165 - GOSSAMER VEIL	
P-2	PAINT - TRIM	SHERWIN WILLIAMS	SW 7076 - CYBERSPACE	
P-3	PAINT - ACCENT	SHERWIN WILLIAMS	SW 9148 - SMOKEY AZURITE	SEE FINISH PLAN FOR ACCENT LOCATIONS
P-4	PAINT - ACCENT	SHERWIN WILLIAMS	SW 9150 - ENDLESS SEA	SEE FINISH PLAN FOR ACCENT LOCATIONS
P-5	PAINT - CEILING	SHERWIN WILLIAMS	SW 7557 - HIGH REFLECTIVE WHITE	
P-6	PAINT	SCUFFMASTERS	SW 9165 - GOSSAMER VEIL	KENNEL WALLS
P-7	PAINT	SCUFFMASTERS	SW 9150 - ENDLESS SEA	K9 CUBBIES
PL-1	PLASTIC LAMINATE	WILSONART	7967K-12 - PARK ELM - SOFT GRAIN FINISH	ON LVT - ADMIN | CALL CENTER | RECEPTION | DOC OFF. | HOSPITALITY
PL-2	PLASTIC LAMINATE	LAB DESIGNS	WA403 LS - BEIGEWOOD	ON LVT - BREAK | QUIET
PL-3	PLASTIC LAMINATE	INTERIORARTS	1040 - WHITE NEEDLE NATURAL - NATURAL FINISH	
PL-4	PLASTIC LAMINATE	LAB DESIGNS	P-234 WE - TENINO WALNUT	CONTRACTOR PROVIDED LAB CABINETS
PP-1	PHENOLIC PANEL	FENIX FOR INTERIORS	FENIX NTM / GREGIO EFESO	TREATMENT CHASE
QZ-1	QUARTZ	CAMBRIA	SOUTHPORT - HIGH GLOSS	RECEPTION | HOSPITALITY | WALL CAPS
QZ-2	QUARTZ	SILESTONE	PIETRA - POLISHED	BREAK ROOMS | QUIET ROOM
RB-1	STAIR RISERS/TREADS/LANDINGS	TARKETT	COLOR SPLASH / HAMMERED / VF9 BRYCE POINT & VL4 COOL METAL	

MATERIAL FINISH LEGEND

FINISH MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL/PRODUCT LINE	BOD COMMENTS
RES-1	RESINOUS FLOORING SYSTEM	DUR-A-FLEX	ACCELERA RXC- HADLEY	FLOORING APPLICATOR TO PERFORM MOISTURE & PH TESTING FOR QUALITY
RP-1	RESINOUS PANEL	3FORM	VARIA - FRAY BALTIC + POWDER (D03) - 3/8" GAUGE	RECEPTION DESK ACCENT
S-1	EXTERIOR STUCCO FINISH	DRYVIT	OUTSULATION PLUS MD	CUSTOM COLOR AND FINISH MATCH TO EXISTING
SC-1	SEALED CONCRETE	- -	- -	
SDT-1	STATIC DISSAPATIVE TILE	ARMSTRONG	EXCELON - 51957 - RIDGE	
SS-1	SOLID SURFACE COUNTERTOP	MEGANITE	701A - BLANCA GRANITE	FIELD
SS-2	SOLID SURFACE COUNTERTOP	KRION	CLEAR NATURE 0102	K9 ICU SHELVING & WINDOW SILLS
WC-1	PROTECTIVE WALLCOVERING	P3TEC	STELLAR - BLUE SWIPE (P3T-60134)	ON RES
WC-2	VINYL WALLCOVERING	ARC/COM	ORSINI (AC-53816) - MONSOON (16)	ON LVT
WC-3	MAGNETIC WALLCOVERING	WOLF GORDON	WINK MAGNETIC - WHITE	OFFICES - SEE FINISH PLAN FOR ACCENT LOCATIONS
WC-4	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / SMOKEY BLUE (1576)	TREATMENT CHASES - FULL HEIGHT
WC-5	TYPE II VINYL WALLCOVERING	MOMENTUM TEXTILES	LANMARK - FRENCH CROWN - FOUNTAIN BLUE (LLN-FC-08)	BREAK ROOMS | QUIET ROOM
WC-6	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / DRIFTWOOD (262)	K9 ICU - CHASE
WC-7	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / WHITE PAPYRUS (1609)	FRONT DESK - INSTALL RAILROADED

GENERAL FINISH NOTES

1	ALL MECHANICAL, ELECTRICAL, PLUMBING, AND SPRINKLER WORK TO OCCUR IN AREAS WHERE THE STRUCTURE IS EXPOSED SHALL BE EXECUTED IN A COORDINATED, NEAT AND WORKMANLIKE MANNER. AT A MINIMUM ALL WIRING SHALL BE RUN THOUGH CONDUITS, PIPE AND DUCT INSULATION SHALL BE NEATLY INSTALLED AND PAINTABLE ALL PENETRATIONS SHALL EITHER BE NEATLY COPED OR UTILIZE PAINTABLE ESCUTCHEONS/COVER PLATES. ALL PIPES AND DUCTS SHALL BE RUN EITHER PERPENDICULAR OR PARALLEL TO WALL CONSTRUCTION AND SHALL BE INSTALLED AT THE SAME NOMINAL ELEVATION OR SLOPE. ALL MATERIALS AND INSTALLATION METHODS SHALL COMPLY WITH APPLICABLE CODES AND STANDARDS. WHERE MECHANICAL ELECTRICAL, AND PLUMBING DRAWINGS INDICATE OTHER REQUIREMENTS, THE GREATER QUALITY SHALL PREVAIL.
2	REFER TO A700 SERIES FOR ADDITIONAL FINISH REQUIREMENTS.
3	REFER TO DOOR SCHEDULE FOR THRESHOLD (TH-#) DETAILS & REFER TO FLOORING TRANSITION DETAILS FOR TRANSITION STRIPS (TS-#) DETAILS.
4	DO NOT MAKE INDELIBLE MARKS ON PORTIONS OF SLAB THAT WILL BE VISIBLE INCLUDING, BUT NOT LIMITED TO PERMANENT MARKER, PAINT, ETCHED LINES OR PINS. REMOVE ALL STAINS, MARKINGS, DISCOLORATIONS, AND VISIBLE SOILS FROM CONCRETE BEFORE APPLYING SEALER.
5	PROVIDE CORNER GUARDS AT ALL OUTSIDE CORNERS AT INTERIOR PARTITIONS. REFER TO FINISH SCHEDULE FOR CORNER GUARD TYPE PER ROOM.
6	REFER TO A800 SERIES REFLECTED CEILING PLAN FOR CEILING TYPES/FINISHES.
7	PROVIDE LEVEL 4 DRYWALL FINISH WHERE WALLCOVERING 1 &2 ARE CALLED OUT.
8	PROVIDE SOLID SURFACE WINDOW SILLS AT ALL EXTERIOR SILL LOCATIONS. REFER TO FINISH SCHEDULE FOR MORE INFORMATION.
9	RESINOUS FLOORING TO SLOPE 1/8" PER 12" MIN. TO THE DRAIN WITHIN EACH KENNEL. THIS WILL BE A 4-WAY SLOPE TO THE DRAIN PER KENNEL. THE TOP OF DRAIN ELEVATION SHOULD MATCH THE TOP OF THE FINISH FLOORING ELEVATION. COORDINATE FLOOR FINISH BUILD UP WITH KENNEL DOOR FRAMING LOCATION.
10	CHAIR RAILS IN EXAM ROOMS TO BE PAINTED WITH SAME ACCENT PT COLOR THAT IS IN THE ROOM.
11	ALUMINUM JCAP - EAGLE MOLDINGS E-514-L TO BE INSTALLED WHERE WALLCOVERING MEETS DRYWALL - REFER TO ELEVATIONS FOR WC HEIGHT PER ROOM.
12	EXPOSED COLUMNS IN SOLID SURFACE WINDOW SILLS TO BE PAINTED P-1 SEMI-GLOSS. EXPOSED SILLS IN ALL ROOMS WHERE P-6 IS CALLED OUT, PAINT P-6.
13	ELEVATOR DOORS AND FRAMES TO BE PAINTED HPC-2.

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

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MANNS WOODWARD STUDIOS, INC. No. 53188

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS

ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

FINISH PLAN - FIRST FLOOR

SHEET NUMBER:

A108

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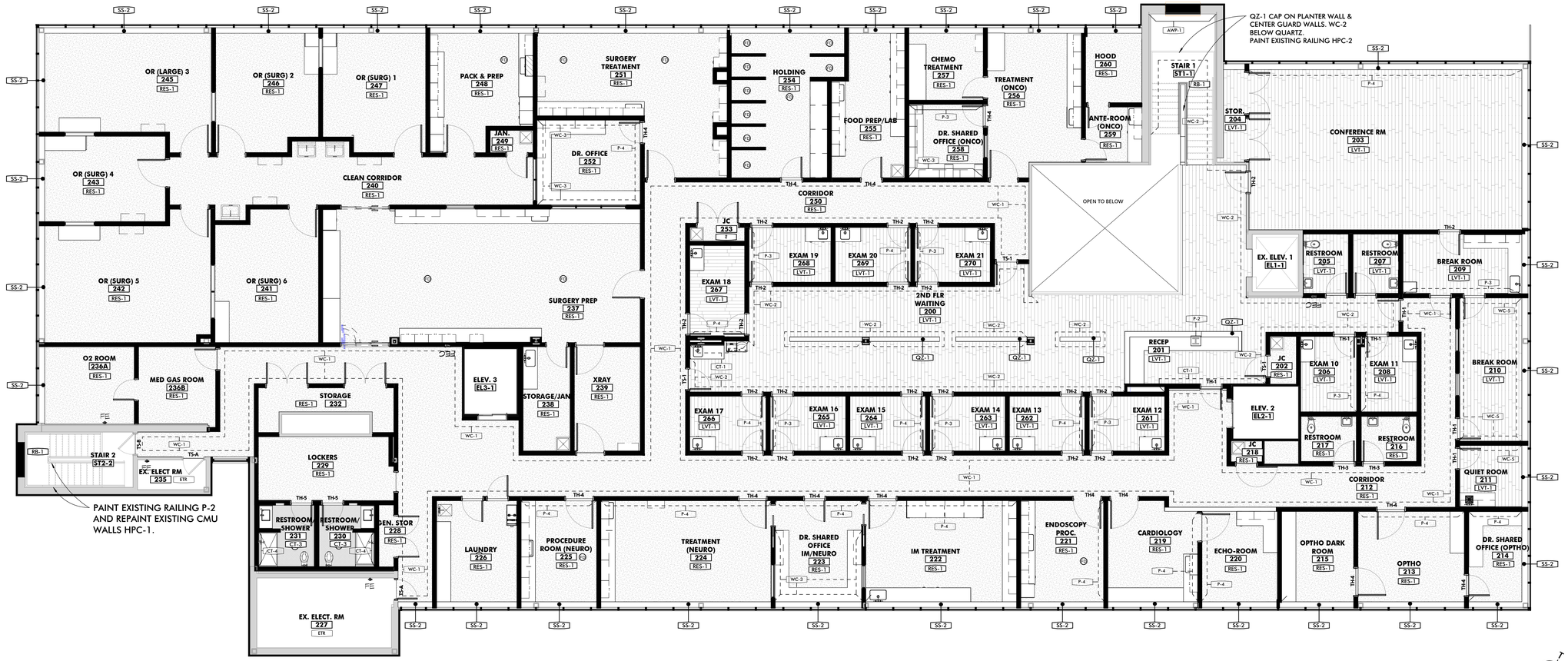

1 FINISH PLAN - SECOND FLOOR

1/8" = 1'-0"

MATERIAL FINISH LEGEND

FINISH MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL/PRODUCT LINE	BOD COMMENTS
ACT-1	2X2 SQUARE EDGE ACOUSTIC CEILING TILE	USG	MARS HIGH NRC #86345 SQ EDGE	
ACT-2	2x2 ACOUSTIC CEILING TILE, WASHABLE	USG	MARS HEALTHCARE HIGH NRC/HIGH-CAC ACOUSTICAL PANELS #86344 / SQUARE EDGE HEALTHCARE	
ACTG-1	15/16" ACOUSTICAL SUSPENSION SYSTEM	USG	DONN BRAND DX/DXL ACOUSTICAL SUSPENSION SYSTEM #86115 SQ. EDGE	SEISMIC PERIMETER ATTACHMENT CLIPS - SEISMIC CATEGORY "C"
AWP-1	ACOUSTICAL WALL PANEL	TURF	WAVE - PRIMARY COLOR: 28 INDIGO | SECONDARY COLOR: 83 HOLLAND OATS	INSTALL HORIZONTAL LAYOUT
B-1	4"H RUBBER BASE	TARKETT	JOHNSONITE MILLWORK BASE / REVEAL 4.25" H - TA6 BEDROCK CG (MW-TA6-F)	
B-2	4"H RESINOUS COVE BASE	DUR-A-FLEX	ACCELERA RXC- HADLEY	
B-3	4"H METAL BASE	FRY REGLET	4" MILLWORK REVEAL BASE	CT-1 BASE
CG-1	RIGID 3" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SM-20AN / SMOKEY BLUE (1576)	MATCH HEIGHT OF WALLCOVERING WC-1 (BOH) U.N.O
CG-2	RIGID 2" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SSM-20AN / SMOKEY BLUE (1576)	TREATMENT CHASES - FULL HEIGHT | MATCH HEIGHT OF WC-2 U.N.O
CG-3	RIGID 3" LEG CORNER GUARDS	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / SM-20AN / DRIFTWOOD (262)	K9 ICU - MATCH WALL HEIGHT
CG-4	6" LEG STANDARD	CONSTRUCTION SPECIALTIES	ACROVYN CORNER GUARDS / TF-90 / WHITE PAPYRUS (1609)	OUTSIDE CORNERS OF RECEPTION DESK
CT-1	8" X 40" PORCELAIN TILE	MERCADO	FOREST - CALIFORNIAN WOOD - NAT BOLD #79001ET	WALL TILE ON LVT
CT-2	12" X 24" PORCELAIN TILE	ARCHITESSA	SOUL / WHITE COTTON	RESTROOMS & SHOWER WALLS
CT-3	MOSAIC PORCELAIN TILE	FLORIDATILE	ENCHANT / HEX MOSAIC / HONESTY (MATTE) (ENX10/M3X3HEX-MATTE)	SHOWER FLOOR
CT-4	12" X 24" PORCELAIN TILE	FLORIDATILE	AMPLIFY/DEEP BLUE/MATTE (B669.0047.008)	SHOWER ROOM - ACCENT WALL
DS-1	STAINED WOOD DOORS	MASONITE ARCHITECTURAL	ASPIRO SERIES / PLAIN SLICED WHITE BIRCH / ROLLED OATS	
FRP-1	FIBER REINFORCED PANEL	MARLITE	PEBBLED FINISH / WHITE	INCLUDE TOP CAP & ACCESSORIES; 60" AFF
HPC-1	HIGH PERFORMANCE COATING	SHERWIN WILLIAMS	SW 9165 - GOSSAMER VEIL	
HPC-2	HIGH PERFORMANCE COATING	SHERWIN WILLIAMS	SW 7076 - CYBERSPACE	
LK-1	SOLID COLOR HIGH DENSITY POLYETHYLENE (HDPE)	SCRANTON PRODUCTS	TUFFTEC LOCKERS - SANDSTONE	
LVT-1	18" X 36" LUXURY VINYL TILE	PATCRAFT	INSET ICE GOLD-V2 (1577V)	BRICK INSTALLATION METHOD
P-1	PAINT - FIELD	SHERWIN WILLIAMS	SW 9165 - GOSSAMER VEIL	
P-2	PAINT - TRIM	SHERWIN WILLIAMS	SW 7076 - CYBERSPACE	
P-3	PAINT - ACCENT	SHERWIN WILLIAMS	SW 9148 - SMOKEY AZURITE	SEE FINISH PLAN FOR ACCENT LOCATIONS
P-4	PAINT - ACCENT	SHERWIN WILLIAMS	SW 9150 - ENDLESS SEA	SEE FINISH PLAN FOR ACCENT LOCATIONS
P-5	PAINT - CEILING	SHERWIN WILLIAMS	SW 7557 - HIGH REFLECTIVE WHITE	
P-6	PAINT	SCUFFMASTERS	SW 9165 - GOSSAMER VEIL	KENNEL WALLS
P-7	PAINT	SCUFFMASTERS	SW 9150 - ENDLESS SEA	K9 CUBBIES
PL-1	PLASTIC LAMINATE	WILSONART	7967K-12 - PARK ELM - SOFT GRAIN FINISH	ON LVT - ADMIN | CALL CENTER | RECEPTION | DOC OFF. | HOSPITALITY
PL-2	PLASTIC LAMINATE	LAB DESIGNS	WA403 LS - BEIGEWOOD	ON LVT - BREAK | QUIET
PL-3	PLASTIC LAMINATE	INTERIORARTS	1040 - WHITE NEEDLE NATURAL - NATURAL FINISH	
PL-4	PLASTIC LAMINATE	LAB DESIGNS	P-234 WE - TENINO WALNUT	CONTRACTOR PROVIDED LAB CABINETS
PP-1	PHENOLIC PANEL	FENIX FOR INTERIORS	FENIX NTM / GREGIO EFESO	TREATMENT CHASE
QZ-1	QUARTZ	CAMBRIA	SOUTHPORT - HIGH GLOSS	RECEPTION | HOSPITALITY | WALL CAPS
QZ-2	QUARTZ	SILESTONE	PIETRA - POLISHED	BREAK ROOMS | QUIET ROOM
RB-1	STAIR RISERS/TREADS/LANDINGS	TARKETT	COLOR SPLASH / HAMMERED / VF9 BRYCE POINT & VL4 COOL METAL	

MATERIAL FINISH LEGEND

FINISH MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL/PRODUCT LINE	BOD COMMENTS
RES-1	RESINOUS FLOORING SYSTEM	DUR-A-FLEX	ACCELERA RXC- HADLEY	FLOORING APPLICATOR TO PERFORM MOISTURE & PH TESTING FOR QUALITY
RP-1	RESINOUS PANEL	3FORM	VARIA - FRAY BALTIC + POWDER (D03) - 3/8" GAUGE	RECEPTION DESK ACCENT
S-1	EXTERIOR STUCCO FINISH	DRYVIT	OUTSULATION PLUS MD	CUSTOM COLOR AND FINISH MATCH TO EXISTING
SC-1	SEALED CONCRETE	- -	- -	
SDT-1	STATIC DISSAPATIVE TILE	ARMSTRONG	EXCELON - 51957 - RIDGE	
SS-1	SOLID SURFACE COUNTERTOP	MEGANITE	701A - BLANCA GRANITE	FIELD
SS-2	SOLID SURFACE COUNTERTOP	KRION	CLEAR NATURE 0102	K9 ICU SHELVING & WINDOW SILLS
WC-1	PROTECTIVE WALLCOVERING	P3TEC	STELLAR - BLUE SWIPE (P3T-60134)	ON RES
WC-2	VINYL WALLCOVERING	ARC/COM	ORSINI (AC-53816) - MONSOON (16)	ON LVT
WC-3	MAGNETIC WALLCOVERING	WOLF GORDON	WINK MAGNETIC - WHITE	OFFICES - SEE FINISH PLAN FOR ACCENT LOCATIONS
WC-4	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / SMOKEY BLUE (1576)	TREATMENT CHASES - FULL HEIGHT
WC-5	TYPE II VINYL WALLCOVERING	MOMENTUM TEXTILES	LANMARK - FRENCH CROWN - FOUNTAIN BLUE (LLN-FC-08)	BREAK ROOMS | QUIET ROOM
WC-6	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / DRIFTWOOD (262)	K9 ICU - CHASE
WC-7	ACROVYN WALLCOVERING	CONSTRUCTION SPECIALTIES	ACROVYN .040" THICK RIGID SHEET / WHITE PAPYRUS (1609)	FRONT DESK - INSTALL RAILROADED

GENERAL FINISH NOTES

1	ALL MECHANICAL, ELECTRICAL, PLUMBING, AND SPRINKLER WORK TO OCCUR IN AREAS WHERE THE STRUCTURE IS EXPOSED SHALL BE EXECUTED IN A COORDINATED, NEAT AND WORKMANLIKE MANNER. AT A MINIMUM ALL WIRING SHALL BE RUN THOUGH CONDUITS, PIPE AND DUCT INSULATION SHALL BE NEATLY INSTALLED AND PAINTABLE ALL PENETRATIONS SHALL EITHER BE NEATLY COPED OR UTILIZE PAINTABLE ESCUTCHEONS/COVER PLATES. ALL PIPES AND DUCTS SHALL BE RUN EITHER PERPENDICULAR OR PARALLEL TO WALL CONSTRUCTION AND SHALL BE INSTALLED AT THE SAME NOMINAL ELEVATION OR SLOPE. ALL MATERIALS AND INSTALLATION METHODS SHALL COMPLY WITH APPLICABLE CODES AND STANDARDS. WHERE MECHANICAL ELECTRICAL, AND PLUMBING DRAWINGS INDICATE OTHER REQUIREMENTS, THE GREATER QUALITY SHALL PREVAIL.
2	REFER TO A700 SERIES FOR ADDITIONAL FINISH REQUIREMENTS.
3	REFER TO DOOR SCHEDULE FOR THRESHOLD (TH-#) DETAILS & REFER TO FLOORING TRANSITION DETAILS FOR TRANSITION STRIPS (TS-#) DETAILS.
4	DO NOT MAKE INDELIBLE MARKS ON PORTIONS OF SLAB THAT WILL BE VISIBLE INCLUDING, BUT NOT LIMITED TO PERMANENT MARKER, PAINT, ETCHED LINES OR PINS. REMOVE ALL STAINS, MARKINGS, DISCOLORATIONS, AND VISIBLE SOILS FROM CONCRETE BEFORE APPLYING SEALER.
5	PROVIDE CORNER GUARDS AT ALL OUTSIDE CORNERS AT INTERIOR PARTITIONS. REFER TO FINISH SCHEDULE FOR CORNER GUARD TYPE PER ROOM.
6	REFER TO A800 SERIES REFLECTED CEILING PLAN FOR CEILING TYPES/FINISHES.
7	PROVIDE LEVEL 4 DRYWALL FINISH WHERE WALLCOVERING 1 &2 ARE CALLED OUT.
8	PROVIDE SOLID SURFACE WINDOW SILLS AT ALL EXTERIOR SILL LOCATIONS. REFER TO FINISH SCHEDULE FOR MORE INFORMATION.
9	RESINOUS FLOORING TO SLOPE 1/8" PER 12" MIN. TO THE DRAIN WITHIN EACH KENNEL. THIS WILL BE A 4-WAY SLOPE TO THE DRAIN PER KENNEL. THE TOP OF DRAIN ELEVATION SHOULD MATCH THE TOP OF THE FINISH FLOORING ELEVATION. COORDINATE FLOOR FINISH BUILD UP WITH KENNEL DOOR FRAMING LOCATION.
10	CHAIR RAILS IN EXAM ROOMS TO BE PAINTED WITH SAME ACCENT PT COLOR THAT IS IN THE ROOM.
11	ALUMINUM JCAP - EAGLE MOLDINGS E-514-L TO BE INSTALLED WHERE WALLCOVERING MEETS DRYWALL - REFER TO ELEVATIONS FOR WC HEIGHT PER ROOM.
12	EXPOSED COLUMNS IN SOLID SURFACE WINDOW SILLS TO BE PAINTED P-1 SEMI-GLOSS. EXPOSED SILLS IN ALL ROOMS WHERE P-6 IS CALLED OUT, PAINT P-6.
13	ELEVATOR DOORS AND FRAMES TO BE PAINTED HPC-2.

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

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No. 53188

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

FINISH PLAN - SECOND FLOOR

SHEET NUMBER:
A109

9/20/2023 4:49:55 PM

SCHEDULE - EQUIPMENT

MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL	OWNER FURNISH AND INSTALL	OWNER FURNISH CONTRACTOR INSTALL	CONTRACTOR FURNISH AND INSTALL	COMMENTS	POWER	DATA	WATER	EXHAUST	SANITARY	MED GAS
EQ-001	PLATFORM SCALE	MIDMARK	110-3110-00		●			●					
EQ-002	ADA UNDERCOUNTER REFRIGERATOR	MARVEL	MA24RAS2RS			●		●					
EQ-003	VENDING MACHINE - SNACK	TBD	TBD		●		VENDOR SUPPLIED	●	●				
EQ-004	VENDING MACHINE - DRINK	TBD	TBD		●		VENDOR SUPPLIED	●	●				
EQ-005	55" TV	SONY	55" CLASS X80J LED 4K UHD SMART GOOGLE TV		●		MODEL TBD BY IT	●	●				
EQ-006	COFFEE MAKER	KEURIG	K-2500 PLUMBED			●	HARD PIPED	●		●			
EQ-007	KIOSK MACHINE	TBD	TBD		●			●	●				
EQ-008	ADA UNDERCOUNTER REFRIGERATOR	SUMMIT	FF31L7SS			●		●					
EQ-009	23 GALLON RECYCLING	RUBBERMAID	SLIMJIM	●									
EQ-010	PRINTER / COPIER	TBD	TBD	●				●	●				
EQ-011	COUNTERTOP PRINTER	BROTHER	HLL6400DW	●				●	●				
EQ-012	COMPUTER MONITOR	LENOVO THINKCENTRE TINY-IN-ONE	11GDPAR1US	●			<varies>	●	●				
EQ-013	SECURITY MONITOR	TBD	TBD	●				●	●				
EQ-013A	32" SECURITY MONITOR	TBD	TBD	●				●	●				
EQ-014	CREDIT CARD MACHINE	PAYJUNCTION	ZEROTOUCH TERMINAL	●				●	●				
EQ-015	LEASH HOOKS - COMPACT	DOGHOOK	STANDARD STAINLESS			●							
EQ-016	10 GALLON TRASH CAN	RUBBERMAID	S-13527BL	●									
EQ-017	WHITE BOARD 2'x3'	TBD	TBD	●									
EQ-018	UNDERCOUNTER FREEZER	ACCUCOLD	FS30L7NZ			●	FUTURE EQ. - PROVIDE POWER	●					
EQ-019	10 GALLON RECYCLING	RUBBERMAID	H-1859BLU	●									
EQ-020	PAPER SHREDDER	FELLOWES POWERSHRED 485Ci	FEL38485	●				●					
EQ-021	LABEL PRINTER	BROTHER	TD2120NW	●			MODEL TBD BY IT	●					
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM	MIDMARK	6282		●		PROVIDE IN WALL BLOCKING	●	●				
EQ-023	FOLD UP EXAM TABLE	MIDMARK	101-2640-00		●		PROVIDE IN WALL BLOCKING						
EQ-024	HAND SANITIZER	ECOLAB	TBD		●		PROVIDED BY CINTAS						
EQ-025	EXAM GLOVE HOLDER	JORGENSEN LABS	J0876A		●								
EQ-026	SMALL ANIMAL SCALE	MIDMARK	110-5090-07	●				●					
EQ-027	WET TABLE - 60"	MIDMARK	WAA.202		●					●		●	
EQ-028	KEY LOCK BOX	KNOX	KNOXBOX 3200 SURFACE MOUNT			●							
EQ-029A	ISO KENNEL GLASS DUTCH DOOR	MIDMARK	GLASS DUTCH DOORS		●								
EQ-029B	KENNEL GRID DUTCH DOOR	MIDMARK	WIRE GRID DUTCH DOORS		●								
EQ-029C	KENNEL FULL GRID DOOR	MIDMARK	FULL WIRE GRID DOORS		●								
EQ-030	SHARPS CONTAINER	GLOBAL INDUSTRIAL	T9FB2218824		●								
EQ-031	16 GALLON TRASH CAN	TBD	TBD	●									
EQ-032	LAUNDRY CART	TBD	TBD	●									
EQ-033	CEILING MOUNT 130 PROCEDURE LIGHT	MIDMARK	TBD		●			●					
EQ-034	SPRING REWIND CEILING MOUNT HOSE & REEL	HOSECRAFT	N716-25-26-10.5B-VR			●	WITH CUSTOM PLENUM RATED ENCLOSURE			●			
EQ-035	O2 CAGE	SNYDER	ICU STACKED 2100H		●			●					●
EQ-036	SCOPE CABINET	INNER SPACE	MDRSEC1936SGS		●			●					
EQ-037A	STACKABLE WASHER	CONTINENTAL GIRBAU	LG HIGH EFFICIENCY FRONT LOAD PLATINUM WASHER - GCWF1069	●			VENDOR INSTALLED	●		●		●	
EQ-037B	STACKABLE DRYER	CONTINENTAL GIRBAU	LG HIGH EFFICIENCY PLATINUM DRYER - GD1329	●			ELECTRIC, VENDOR INSTALLED	●			●		
EQ-038	UNDERCOUNTER REFRIGERATOR	INSIGNIA	NS-CF44GD3			●		●					
EQ-039	IV POLE	BLICKMAN HEALTH INDUSTRIES	MEDLINE MD280500	●									
EQ-040	DRY TABLE - 60"	MIDMARK	103-0170-16		●								
EQ-041	CEILING MOUNTED IV TRACK & POLE	SHORLINE	IV TRACK CEILING MOUNT SYSTEM		●		SUSPENDED BY 12 GA. STEEL HANGER WIRE FROM JOISTS ABOVE						
EQ-042	MOBILE WORKSTATION	MIDMARK	TBD	●				<varies>					
EQ-043	FAST SCAN ULTRASOUND ON CART	WISONIC	MINDRAY VETUS 7 W/ROLLING CART	●				●	●				
EQ-044	MOP SOAP MIXER	ECOLAB	LIQUID DILUTION SYSTEM (LDS)			●				●			
EQ-045	MULTI-PARAMETER MONITOR	MIDMARK	8019-001	●				●	●				
EQ-046	CRASH CART	CASPA	AVALO EMERGENCY CART	●				<varies>					
EQ-047	KENNEL POLE FOR IV/MONITOR MOUNT	PROVITA MEDICAL	P23-078.ZV1.001			●	PROVIDE IN WALL BLOCKING						
EQ-048	DISHWASHER	FRIGIDAIRE	GDPP4515AF			●		●		●		●	
EQ-049	DRY EXAM TABLE - 48"	MIDMARK	TBD		●								
EQ-050	MOBILE ELECTRIC LIFT GURNEY	MIDMARK	103-0170-16 W/203-0170-10 SIDE RAILS		●			●					
EQ-051A	7.5' CAGE BANK - GI ISO	MIDMARK	W/ CASTERS & CAGE/KENNEL PADS. PLEXIGLASS ON CAGE DOORS.		●								
EQ-051B	18' CAGE BANK - TREATMENT NORTH	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051C	15' CAGE BANK - TREATMENT SOUTHEAST	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051D	20' CAGE BANK - TREATMENT SOUTHWEST	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051E	17.5' CAGE BANK - FELINE ICU	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051F	12' CAGE BANK - TREATMENT WEST	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051G	3' CAGE BANK - RESP ISO	MIDMARK	W/ CASTERS & CAGE/KENNEL PADS. PLEXIGLASS ON CAGE DOORS.		●								
EQ-051H	8' CAGE BANK - PHYSICAL THERAPY	MIDMARK	W/ CASTERS & CAGE/KENNEL PADS		●								
EQ-051J	8' CAGE BANK - K9 ICU	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051K	10' CAGE BANK - K9 ICU	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051L	4' CAGE BANK - ULTRASOUND	MIDMARK	W/ CASTERS & CAGE/KENNEL PADS		●								
EQ-051M	5' CAGE BANK - CARDIO	MIDMARK	W/ CASTERS & CAGE/KENNEL PADS		●								
EQ-051N	10' CAGE BANK - IM	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051O	7.5' CAGE BANK - NEURO	MIDMARK	W/ CASTERS & CAGE/KENNEL PADS		●								
EQ-051P	5' CAGE BANK - ONCO TREATMENT	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051Q	7.5' CAGE BANK - ONCO CHEMO	MIDMARK	W/ CASTERS & CAGE/KENNEL PADS		●								
EQ-051R	13.5' CAGE BANK - HOLDING	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051S	9.5' CAGE BANK - SURGERY PREP	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-051T	6' CAGE BANK - SURGERY PREP	MIDMARK	BUILT IN & CAGE/KENNEL PADS		●								
EQ-052	HIGH FLOW PORTABLE O2 & COMPRESSOR	AVANTE	VOLUMAX VOS	●				●					●
EQ-053	MULTI-PARAMETER MONITOR W/PRINTER & STAND	MIDMARK	8019-003 W/8008-005 & CO2 MODULE	●				●	●		<varies>		
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND	MIDMARK	91800042	●							●		●
EQ-055	23 GALLON TRASH CAN	RUBBERMAID	SLIM JIM	●									
EQ-056	BLOOD FREEZER	ACCUCOLD	AFS23ML W/POWER FAIL ALARM & DDL		●			●	●				
EQ-057	COMPUTER MONITOR W/TELEMETRY - CENTRALVUE	LENOVO THINKCENTRE TINY-IN-ONE	11GDPAR1US	●			MODEL TBD BY IT, PREFER TOUCH SCREENS IN EXAM RMS	●	●				
EQ-058	BLOOD REFRIGERATOR	ACCUCOLD	ARS23ML		●			●	●				
EQ-059	COMMERCIAL GAS DRYER	CONTINENTAL GIRBAU	CG75-85	●			VENDOR TO INSTALL	●			●		
EQ-060	COMMERCIAL WASHER	CONTINENTAL GIRBAU	EH060	●			VENDOR TO INSTALL	●		●		●	
EQ-061	CATONE CHEMISTRY ANALYZER	IDEXX	CATONE	●				●	●				
EQ-062	VETLAB STATION	IDEXX	VETLAB STATION	●				●	●				
EQ-063	PROCYTE - HEMOTOLOGY ANALYZER	IDEXX	PROCYTE DX	●				●	●				
EQ-064	URINE SEDIMENT ANALYZER	IDEXX	SEDIVUE DX	●				●	●				
EQ-065	SNAPSHOT DX ANALYZER	IDEXX	SNAPSHOT DX	●				●	●				
EQ-066A	X-RAY MACHINE	MYVET IMAGING	i72W		●		GC/VENDOR COOR'D REQ'D	●	●				
EQ-066B	X-RAY WALL BUCKY STAND	MYVET IMAGING	INCLUDED W/i72W		●								
EQ-067	WET TABLE - 48"	MIDMARK	WAA.202		●					●		●	
EQ-068	APRON / GLOVE MOUNTS	BAR RAY	TBD		●								
EQ-069	BIOSAFETY CABINET	AIRSCIENCE PURAIR	AS-AHA-133-CA-B			●		●			●		
EQ-070	AUTOCLAVE - STEAM STERILIZER	MIDMARK	M11-043		●			●					
EQ-071	ULTRASONIC CLEANER - COUNTERTOP	MIDMARK	QC3-01		●			●					

SCHEDULE - EQUIPMENT

MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL	OWNER FURNISH AND INSTALL	OWNER FURNISH CONTRACTOR INSTALL	CONTRACTOR FURNISH AND INSTALL	COMMENTS	POWER	DATA	WATER	EXHAUST	SANITARY	MED GAS
EQ-072	62" X 20" 12 DRAWER WORKBENCH	HUSKY	H62MWC12BLK	●									
EQ-073	10 GALLON RECYCLING	N/A	N/A	●									
EQ-074	FLUID WARMER	ENTHERMICS MEDICAL SYSTEMS	DC250L	●				●					
EQ-075	CELL COUNTER	JORGENSEN LABS	J0501EZ	●				●	●				
EQ-076	COMPUTER MONITOR FOR TV	TBD	TBD	●				●	●				
EQ-077	SYRINGE PUMP	MEDFUSION	3500-0600	●									
EQ-078	SCRUB BRUSH HOLDER	BECTON DICKINSON	BD371901	●									
EQ-079	HAND SANITIZER - STERILIUM	MEDLINE	LXT10AUTO		●								
EQ-080	ENDOTRACHEAL TUBE RACK	JORGENSEN LABS	J0160A		●								
EQ-081	NARCOTICS CABINET - WALL MOUNT	OMNIMED	181486		●								
EQ-082	GURNEY	TRINITY	48X24X38.5 SS TABLE W/WHEELS	●									
EQ-083	OVER INSTRUMENT TABLE	SHORLINE	75182	●									
EQ-084	OPERATING TABLE W/V-TILT, NON HEATED	MIDMARK	100-4071-00		●								
EQ-085	MAYO STAND	BREWER	#11100	●									
EQ-086	VENTILATOR	MIDMARK	3002PRO - 91806001	●									
EQ-087	ELECTROCAUTERY UNIT ON STAND	MEDTRONIC	AVANTE ASG 350	●				●					
EQ-088	KICK BUCKET	BLICKMAN HEALTH INDUSTRIES	7766SSNP	●									
EQ-089	SUCTION REGULATOR / CANISTER CART	ALLIED HEALTHCARE	20-02-0030 / 01-90-3693	●									
EQ-090	DUAL HEAD PROCEDURE LIGHT	MIDMARK	255 LED PROCEDURE LIGHT		●			●					
EQ-091	SUTURE RACK - WALL MOUNT	OMNIMED	304101 DOUBLE TIER		●		PROVIDE IN WALL BLOCKING						
EQ-092	55" CEILING MOUNTED TV MONITOR	TBD	TBD		●			●	●				
EQ-093	C-ARM	GE	OEC ONE CFD		●			●	●				
EQ-094	SURGICAL TABLE, C-ARM COMPATIBLE	OAK WORKS	CFPM300RT	●				●					
EQ-095	ELECTRIC CAN OPENER	TBD	TBD	●				●					
EQ-096	COUNTERTOP MICROWAVE	GE	JES1145DL/SH			●		●					
EQ-097	DISHWASHER ADA	GE	GDT225SGLSS			●		●		●		●	
EQ-098	POWERSPIN CENTRIFUGE	UNICO	POWERSPIN LX CENTRIFUGE	●				●					
EQ-099	MICROSCOPE	JORGENSEN	REVELATION III LED - J0334AB	●									
EQ-100	MLS LASER & MOBILE CART	TBD	TBD	●				●					
EQ-101	TOP FREEZER / REFRIGERATOR W/ICE MAKER	MAYTAG	MRT711SMFZ			●		●		●			
EQ-102	48" GROOMING TUB W/BACKSPLASH, RIGHT RAMP & SPRAYER	MIDMARK	105-0346-11 w/FAUCET		●					●		●	
EQ-103	BLENDER	OSTER	BLSTTAC00026	●				●					
EQ-104	LEAD GOWN WALL HANGING SYSTEM	JORVET	J0676R		●		PROVIDE IN WALL BLOCKING						
EQ-105	WASHER DETERGENT MIXER	ECOLAB	ADVANCED LAUNDRY CONTROL SYSTEM			●		●					
EQ-106	SHELVING	ULINE	36" W X 12" D X 54"H - CHROME WIRE	●									
EQ-107	MLS LASER & MOBILE CART	TBD	TBD	●				●					
EQ-108	CARDIAC ULTRASOUND SCANNER (AVIM)	GE	E10	●				●	●				
EQ-109	75" TV	TBD	TBD		●								
EQ-110	PODIUM	OKLAHOMA SOUND POWER PLUS	111PLS-MY	●				●	●				
EQ-111	EMPLOYEE LOCKERS	SCRANTON PRODUCTS	3 TIER, 18" X 18" X 72" - GREY			●							
EQ-112	LOCKER BENCH	SCRANTON PRODUCTS	TUFFTEC BENCHES			●							
EQ-113	MORGUE FREEZER CHEST	TBD	TBD	●			PROVIDED BY HOSPITAL'S CREMATION VENDOR	●					
EQ-114	RETRACTABLE ELECTRICAL CORD REEL & ENCLOSURE	HUBBELL	HBLIWC45123GF220HG			●		●					
EQ-115	ETHALINE OXIDE GAS STERILIZER - RELOCATING	ANDERSEN	AN74i		●			●			●		
EQ-116	STATSPIN CENTRIFUGE	BECKMAN COULTER	SSVT1	●				●					
EQ-117	CEILING MOUNTED TV ARM	WALI ELECTRIC	CM 266 FOR 26" TO 65" TV			●	MOUNT TO SLOPED GWB CEILING, CONCEAL ELEC OUTLET AND ROUTE WIRING THROUGH POLE						
EQ-118A	CT GANTRY & TABLE W/CT POSITIONING WEDGES	GE	OPTIMA CT660		●		CONNECTIONS & CONDUIT BY ELECTRICAL CONTRACTOR	●	●				
EQ-118B	POWER DISTRIBUTION UNIT	PER GE		●			CONNECTIONS & CONDUIT BY ELECTRICAL CONTRACTOR	●					
EQ-118C	GE STORAGE CABINET	PER GE		●			SUPPLIED & INSTALLED BY GE	●	●				
EQ-118D	MAIN DISCONNECT CONTROL	GE			●		GE SUPPLIED, CONTRACTOR INSTALLED	●					
EQ-118E	PARTIAL UPS	PER GE		●			CONNECTIONS & CONDUIT BY ELECTRICAL CONTRACTOR	●					
EQ-119	DRY FOOD DISPENSER	TRADE FIXTURE	06100-MBS			●							
EQ-120	COMPACT LAB REFRIGERATOR W/TOP FREEZER	FRIGIDAIRE	FFET1022UV			●		●					
EQ-121	CUBEX MINIPLUS	CUBEX	MPM-CHH2-CFH3-MFH3		●				●	●			
EQ-122	CUBEX FLEX	CUBEX	FLEX1000		●				●	●			
EQ-123	FUTURE CUBEX	CUBEX	MINIPLUS		●				●	●			
EQ-124	MICROSCOPE - LAB	JORGENSEN LABS	REVELATION III LED - J0334AB	●					●				
EQ-125	DEFIBRILLATOR	DIGICARE	CARDIOSTART CS91X	●									
EQ-126	TUBE ROCKER	IDEXX	98-25687-00	●					●				
EQ-127A	UNDERWATER TREADMILL	HUDSON	AQUAPAWS SS		●				●	●		●	
EQ-127B	UNDER WATER TREADMILL TANK & FILTER	HUDSON AQUATICS	400 GAL. WATER TANK		●								
EQ-127E	TREADMILL CONTROL PANEL	HUDSON AQUATICS	3'X3' CONTROL PANEL		●				●				
EQ-128A	EXISTING UNDERWATER TREADMILL	HUDSON AQUATICS	PURPLE		●		GC/VENDOR COOR'D REQ'D. VENDOR TO PROVIDE & INSTALL EXIST. SPECIALTY ELEC BOXES FROM EXIST. FACILITY		●	●		●	
EQ-128B	EXISTING WATER STORAGE TANK	HUDSON AQUATICS			●								
EQ-128C	UNDERWATER TREADMILL EQUIPMENT STAND	HUDSON AQUATICS			●								
EQ-128D	EXISTING TREADMILL WALL MOUNTED DISPLAY	HUDSON AQUATICS			●				●				
EQ-129	TOASTER OVEN	CUISINART	DELUXE 1800 W	●									
EQ-130	SNAP PRO ANALYZER	IDEXX	SNAP PRO	●					●				
EQ-131	WALL MOUNTED 65" TV MONITOR	TBD	TBD		●				●				
EQ-132	UA ANALYZER	IDEXX	UA	●									
EQ-133	VETSTAT ANALYZER	IDEXX	VETSTAT	●					●				
EQ-134	COAG	IDEXX	COAG	●									
EQ-135	CENTRAL VAC POWER UNIT / SEPARATOR	PREMIER CENTRAL VAC	AIRMASTER POWER UNIT/CYCLONIC SEPARATOR			●	EXHAUST TO ROOF	●			●		
EQ-136	FOLDING LIFT EXAM TABLE WITH PLATFORM SCALE	MIDMARK	101-3310-21		●				●				
EQ-137	VENTILATOR ON POLE	HALLOWELL	PRO2002IE	●									
EQ-138	FOLDING LAND TREADMILL	TBD	TBD	●					●				
EQ-144	DISH SOAP	TBD	TBD		●								
EQ-146	L TRACK TIE DOWN SYSTEM	US CARGO CONTROL	L TRACK TIE DOWN SYSTEM W/HOOKS - ALUMINUM			●							
EQ-148	O2 CAGE	SNYDER	ICU STACKED 2100G - 58"		●				●				●
EQ-149A	STEAM STERILIZER	TUTTNAUER	3870M		●				●				
EQ-149B	AUTOCLAVE CART	N/A	30" W X 36" D X 34" H		●								
EQ-150	40" PATIENT MONITOR	TBD	TBD	●					●	●			
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN	AMICO	RIGID (STATIONARY), 30" H			●			●	●			●
EQ-152	ETHYLENE STERILIZER	ANDERSEN	EOGAS4		●				●		●		
EQ-153	TOP FREEZER / REFRIGERATOR	FRIGIDAIRE	FPHT2097VF			●			●				
EQ-154	O2 CAGE	SNYDER	ICU STACKED CUSTOM 93"		●				●				●
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT	MECHOSHADE	MECHO/5X SYSTEM - THERMOVEIL 1500 SERIES/1519 SILVER BIRCH			●							
EQ-156	MANUAL ROLLER SHADE - BLACK OUT - CEILING MOUNT	MECHOSHADE	MECHO/5X SYSTEM -CLASSIC BLACKOUT 0700 SERIES			●							

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NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
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FF&E SCHEDULES & NOTES

SHEET NUMBER:
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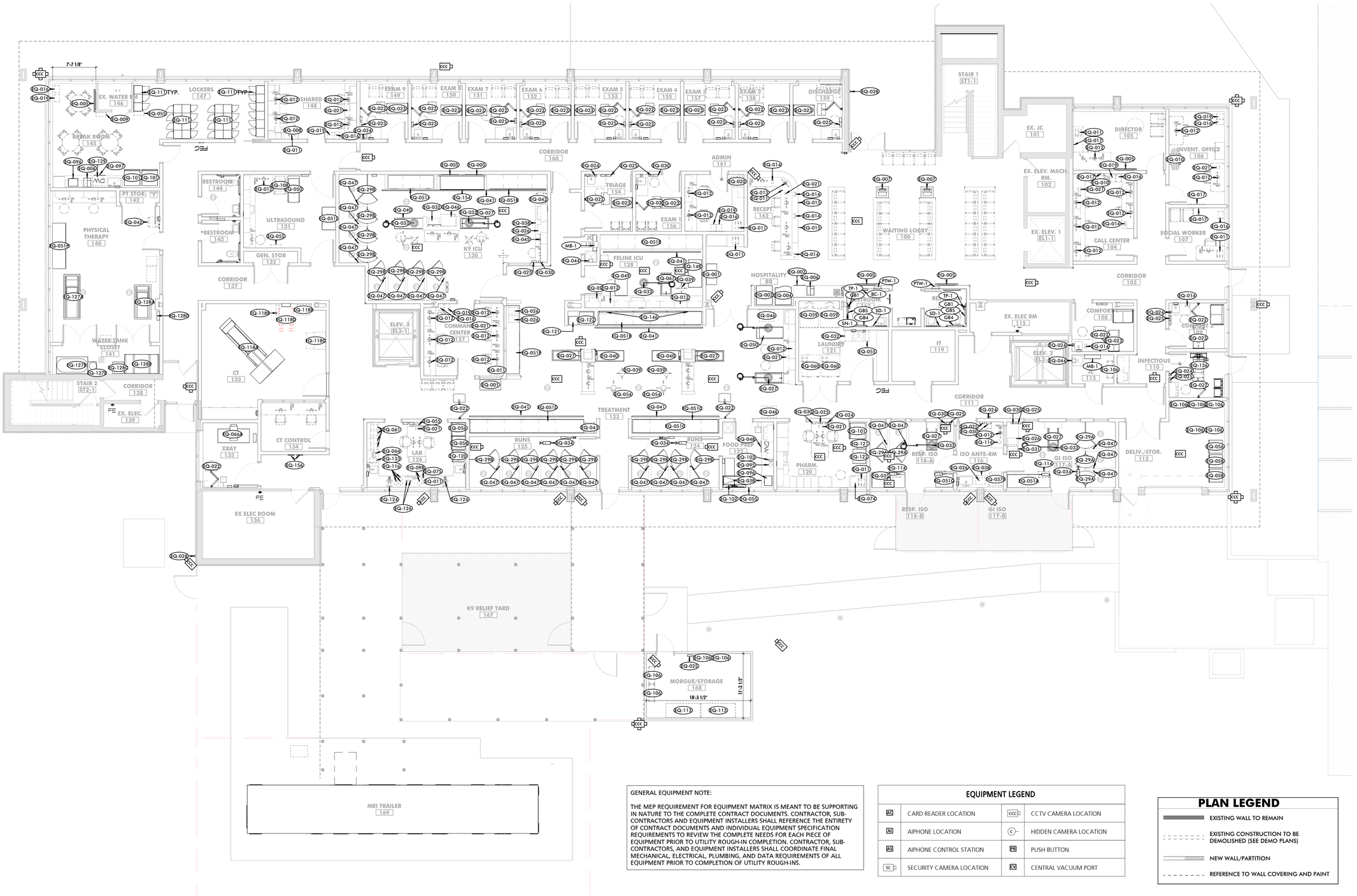

GENERAL EQUIPMENT NOTE:

THE MEP REQUIREMENT FOR EQUIPMENT MATRIX IS MEANT TO BE SUPPORTING IN NATURE TO THE COMPLETE CONTRACT DOCUMENTS. CONTRACTOR, SUB-CONTRACTORS AND EQUIPMENT INSTALLERS SHALL REFERENCE THE ENTIRETY OF CONTRACT DOCUMENTS AND INDIVIDUAL EQUIPMENT SPECIFICATION REQUIREMENTS TO REVIEW THE COMPLETE NEEDS FOR EACH PIECE OF EQUIPMENT PRIOR TO UTILITY ROUGH-IN COMPLETION. CONTRACTOR, SUB-CONTRACTORS, AND EQUIPMENT INSTALLERS SHALL COORDINATE FINAL MECHANICAL, ELECTRICAL, PLUMBING, AND DATA REQUIREMENTS OF ALL EQUIPMENT PRIOR TO COMPLETION OF UTILITY ROUGH-INS.

EQUIPMENT LEGEND

AC	CARD READER LOCATION	CCC	CCTV CAMERA LOCATION
AI	AIPHONE LOCATION	C	HIDDEN CAMERA LOCATION
AS	AIPHONE CONTROL STATION	PB	PUSH BUTTON
SC	SECURITY CAMERA LOCATION	CV	CENTRAL VACUUM PORT

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

1 EQUIPMENT PLAN - FIRST FLOOR

1/8" = 1'-0"

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EQUIPMENT PLAN - FIRST FLOOR

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A111

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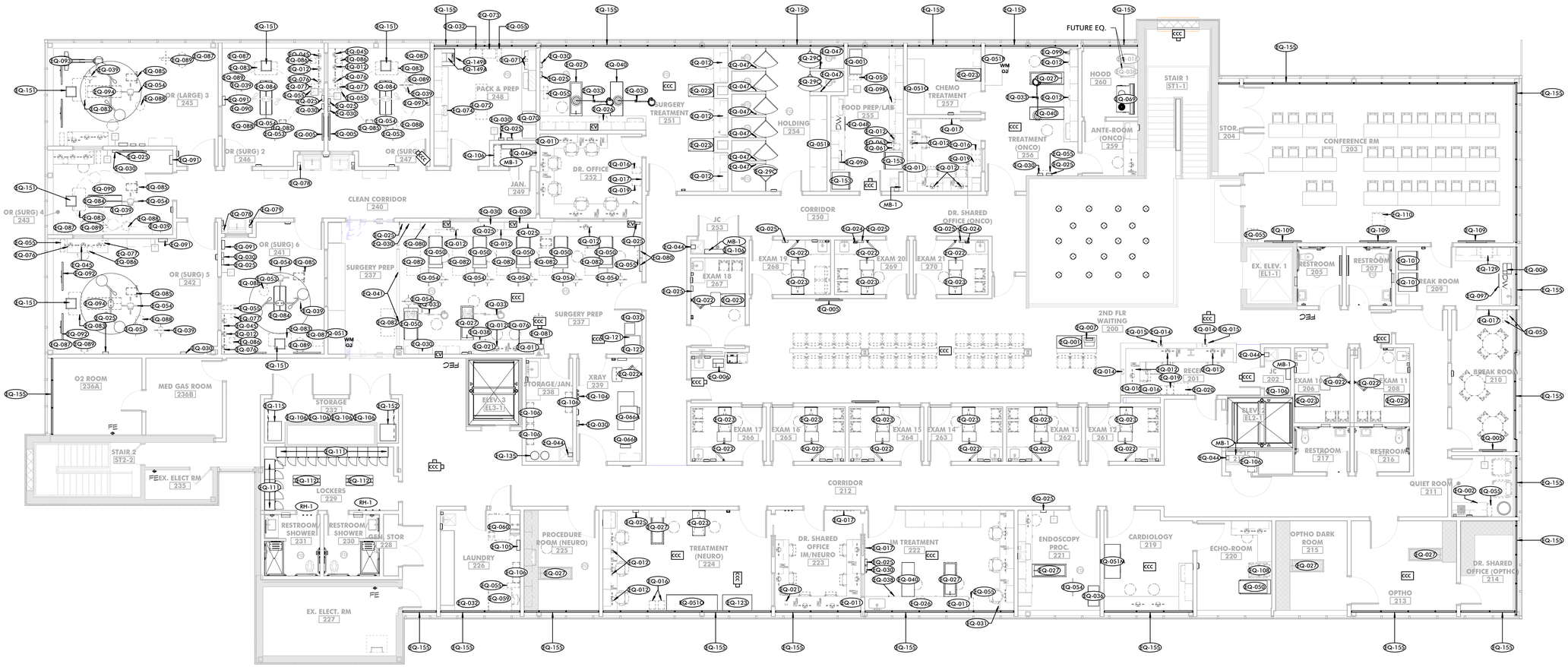

1 EQUIPMENT PLAN - SECOND FLOOR

1/8" = 1'-0"

GENERAL EQUIPMENT NOTE:

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EQUIPMENT LEGEND

AC	CARD READER LOCATION	CCC	CCTV CAMERA LOCATION
AI	AIPHONE LOCATION	C	HIDDEN CAMERA LOCATION
AS	AIPHONE CONTROL STATION	PB	PUSH BUTTON
SC	SECURITY CAMERA LOCATION	CV	CENTRAL VACUUM PORT

PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING CONSTRUCTION TO BE DEMOLISHED (SEE DEMO PLANS)
- NEW WALL/PARTITION
- REFERENCE TO WALL COVERING AND PAINT

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EQUIPMENT PLAN - SECOND FLOOR

SHEET NUMBER:

A112

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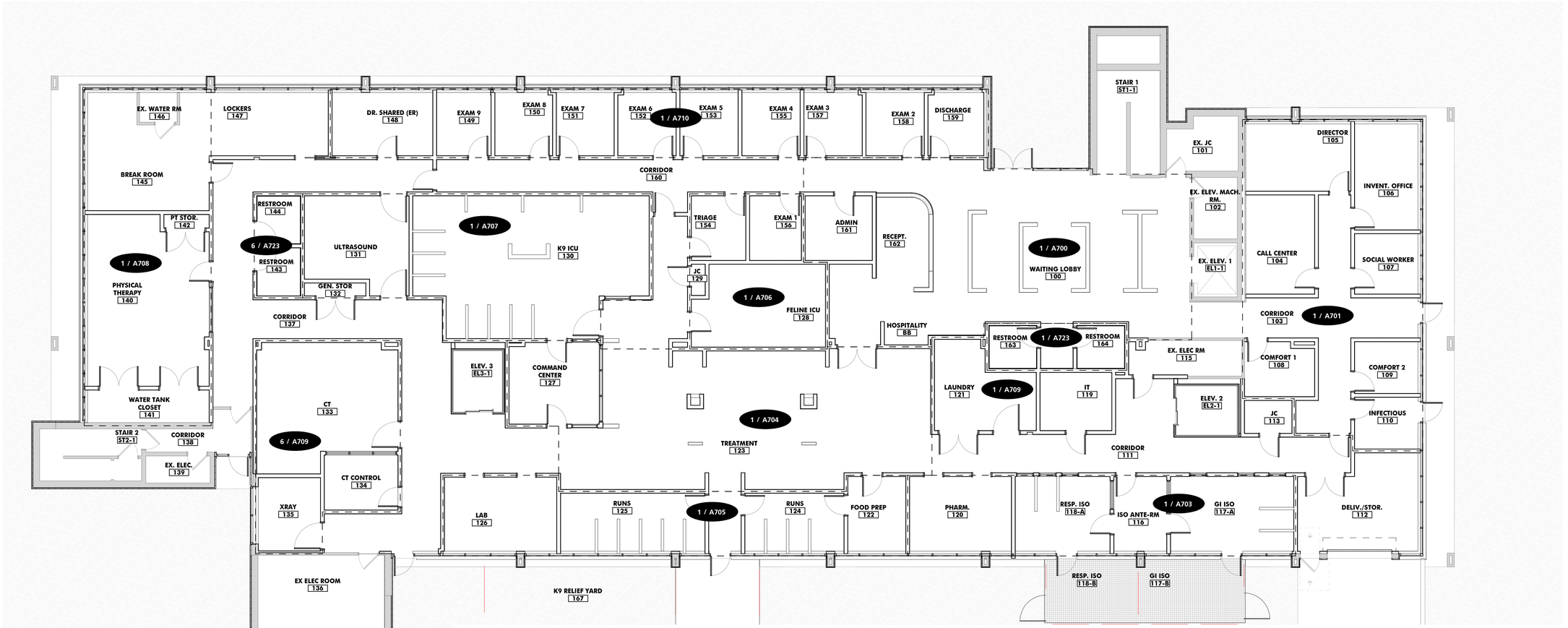

1 ENLARGED KEY PLAN - FIRST FLOOR

1/8" = 1'-0"

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ENLARGED KEY PLAN - FIRST FLOOR

SHEET NUMBER:

A113

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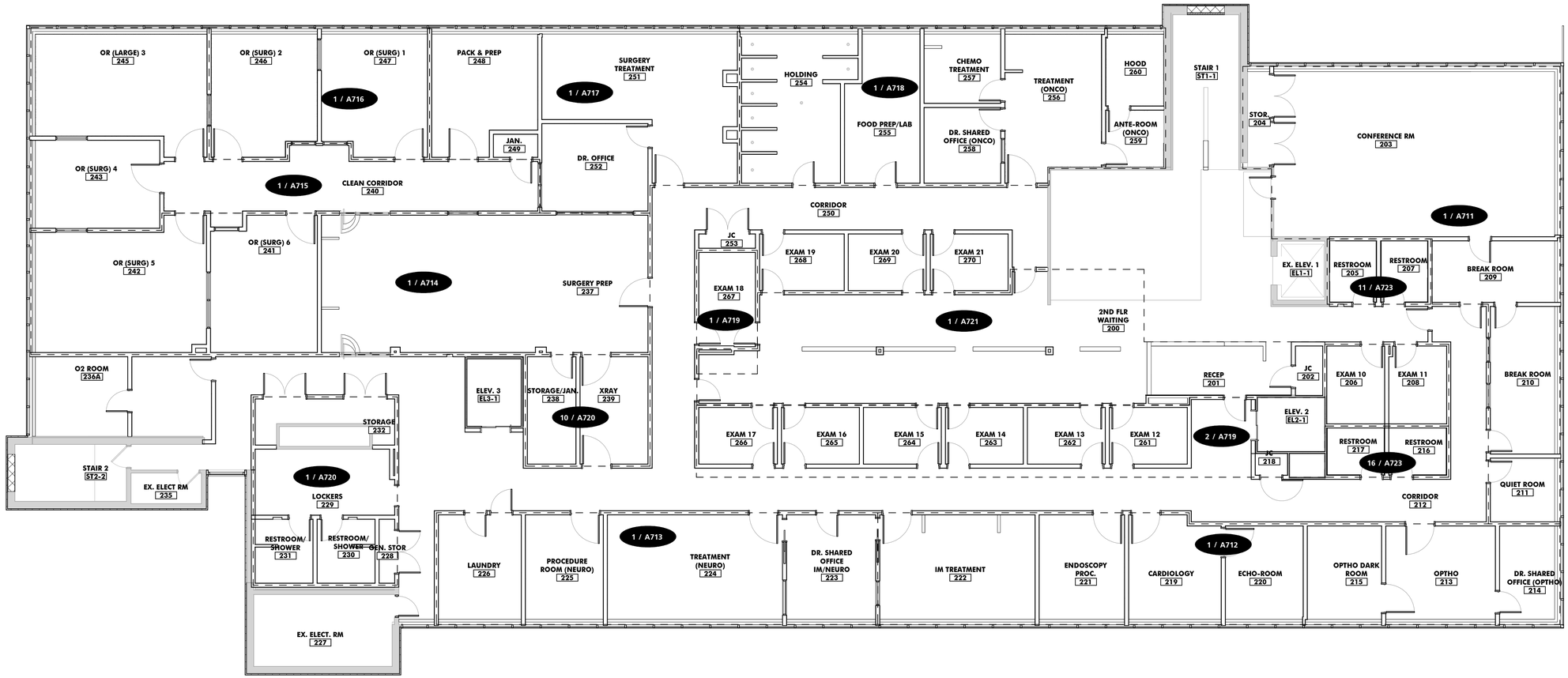

1 ENLARGED KEY PLAN - SECOND FLOOR

1/8" = 1'-0"

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ENLARGED KEY PLAN - SECOND FLOOR

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A114

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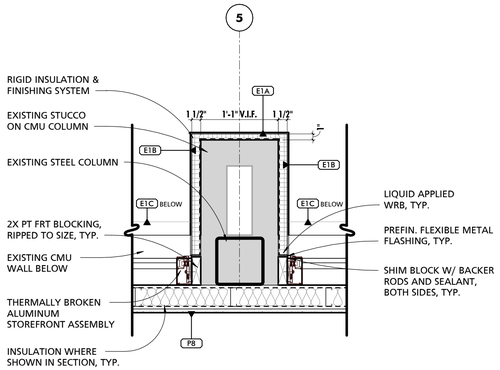
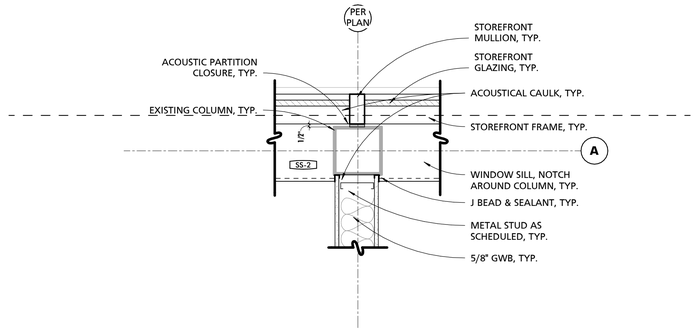
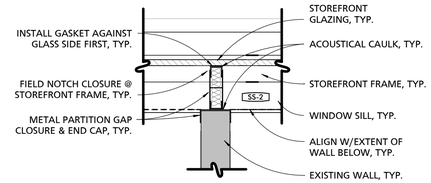


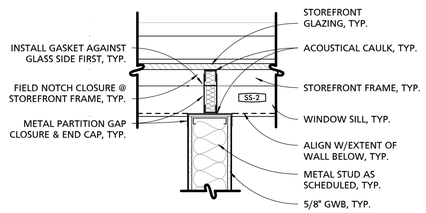
1 PLAN DETAIL - TYPICAL EXISTING 1ST FLOOR PIER
1" = 1'-0"



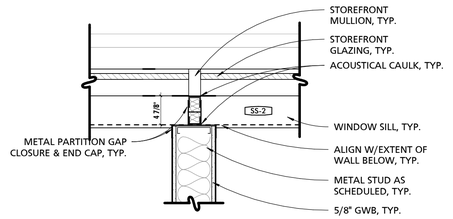
3 PLAN DETAIL - SECOND FLOOR PARTITION AT COLUMN
1" = 1'-0"



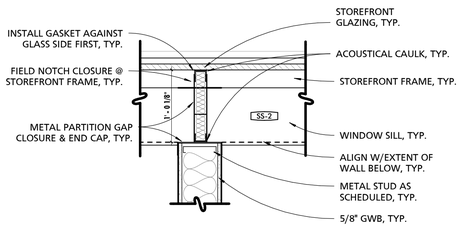
4 PLAN DETAIL - EXISTING WALL TO SF INFILL
1" = 1'-0"



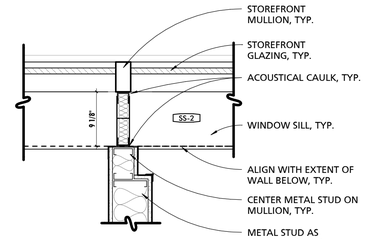
5 PLAN DETAIL - TYP. 1ST FLOOR PARTITION @ SF GLAZING
1" = 1'-0"



6 PLAN DETAIL - TYPICAL 1ST FLOOR PARTITION AT SF MULLION
1" = 1'-0"



7 PLAN DETAIL - TYPICAL 2ND FLOOR PARTITION AT GLAZING
1" = 1'-0"



8 PLAN DETAIL - TYPICAL 2ND FLOOR PARTITION @ SF MULLION
1" = 1'-0"

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WILMINGTON, NC 28403

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PLAN DETAILS

SHEET NUMBER:

A120

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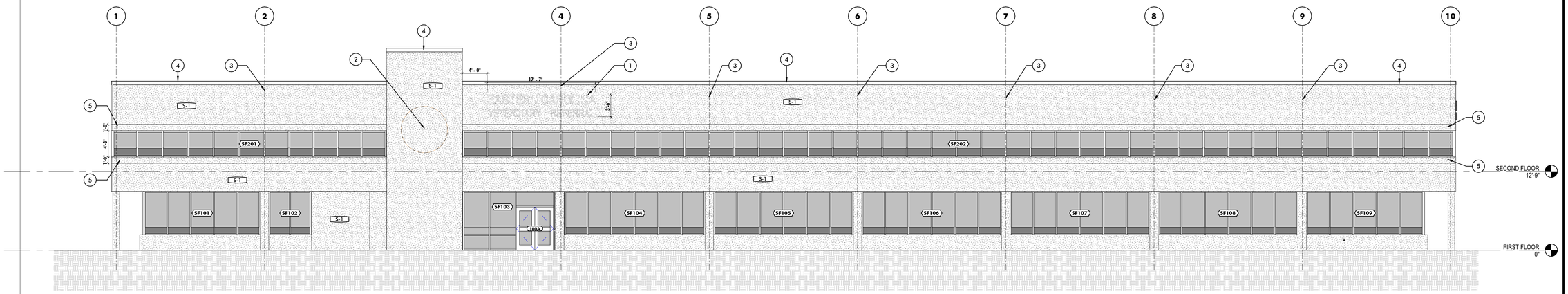
LEGEND - KEYNOTE LEGEND

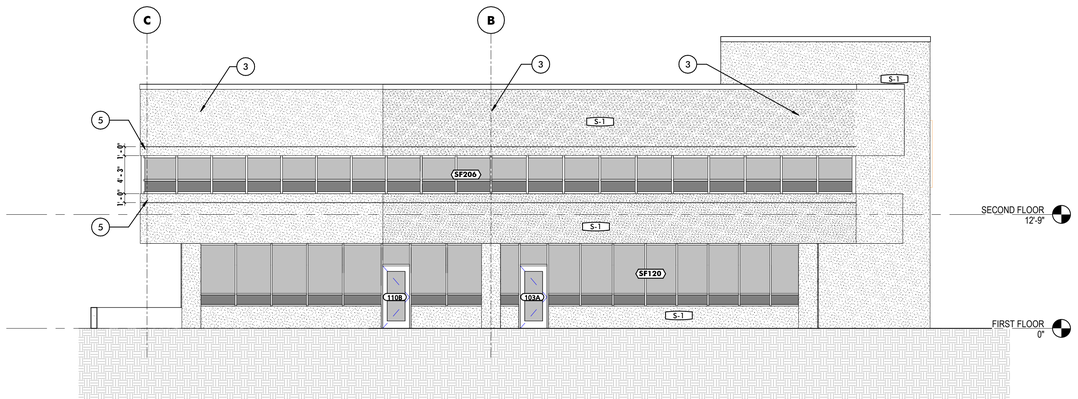
KEY	NOTE
1	BUILDING MOUNTED CHANNEL LETTER SIGNAGE PROVIDED BY VENDOR. CONTRACTOR TO PROVIDE POWER FOR LETTER ILLUMINATION.
2	LOCATION OF EXISTING CIRCULAR EXTERIOR WINDOW TO BE INFILLED WITH METAL STUD AND EIFS PER STRUCTURAL AND ARCHITECTURAL DETAILS.
3	EXPANSION JOINTS IN EXISTING STUCCO FINISH TO BE MAINTAINED THROUGH THE NEW EIFS WITH BACK WRAP AND SEALANT PER MANUFACTURER'S RECOMMEDATIONS.
4	NEW PREFINISHED METAL PARAPET COPING TO BE INSTALLED WITH ADDITION OF NEW EIFS, TYPICAL AT ALL ROOF EDGES.
5	TAPER NEW RIGID INSULATION AT 45 DEGREE ANGLE TO 4" AT SECOND FLOOR STOREFRONT HEAD & SILL. REFER TO STOREFRONT DETAILS FOR MORE INFORMATION.

GENERAL ELEVATION NOTES

1	ALL MEP EQUIPMENT IS SHOWN FOR REFERENCE ONLY.
2	ORIENTATION OF ELEVATIONS ARE IDENTIFIED BASED ON PROJECT NORTH.
3	EXISTING EXTERIOR STUCCO SUBSTRATE TO BE INVESTIGATED BY CONTRACTOR TO CONFIRM IT IS AN APPOVED SUBSTRATE FOR NEW EIFS. APPROVAL OF SUBSTRATE TO GE GIVEN IN ORDER TO RECEIVE WARRANTY ON NEW SYSTEM. RECOMMEND INVESTIGATION INTO GREEN SPOTS NEAR FRONT ENTRANCE AND CRACKS AT REAR ABOVE EXISTING BUILDING DISCONNECTS.



1 BUILDING ELEVATION - NORTH
1/8" = 1'-0"



2 BUILDING ELEVATION - EAST
1/8" = 1'-0"

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BUILDING ELEVATIONS

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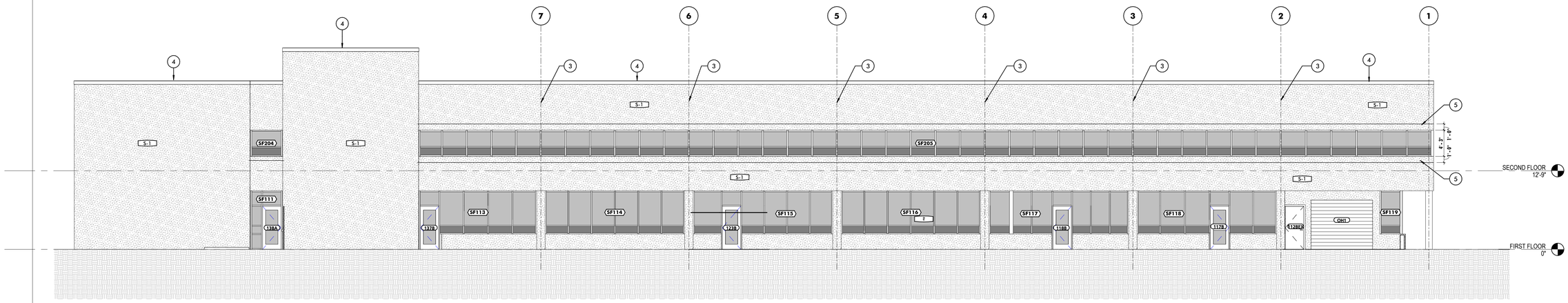
LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	BUILDING MOUNTED CHANNEL LETTER SIGNAGE PROVIDED BY VENDOR. CONTRACTOR TO PROVIDE POWER FOR LETTER ILLUMINATION.
2	LOCATION OF EXISTING CIRCULAR EXTERIOR WINDOW TO BE INFILLED WITH METAL STUD AND EIFS PER STRUCTURAL AND ARCHITECTURAL DETAILS.
3	EXPANSION JOINTS IN EXISTING STUCCO FINISH TO BE MAINTAINED THROUGH THE NEW EIFS WITH BACK WRAP AND SEALANT PER MANUFACTURER'S RECOMMEDATIONS.
4	NEW PREFINISHED METAL PARAPET COPING TO BE INSTALLED WITH ADDITION OF NEW EIFS, TYPICAL AT ALL ROOF EDGES.
5	TAPER NEW RIGID INSULATION AT 45 DEGREE ANGLE TO 4" AT SECOND FLOOR STOREFRONT HEAD & SILL. REFER TO STOREFRONT DETAILS FOR MORE INFORMATION.
6	ELEVATED OVERHEAD ALUMINUM POST MOUNTED WALKWAY CANOPY CANTILEVERED OVER MRI TRAILER ENTRANCE, MIN 15'-0" H - DELEGATED DESIGN.

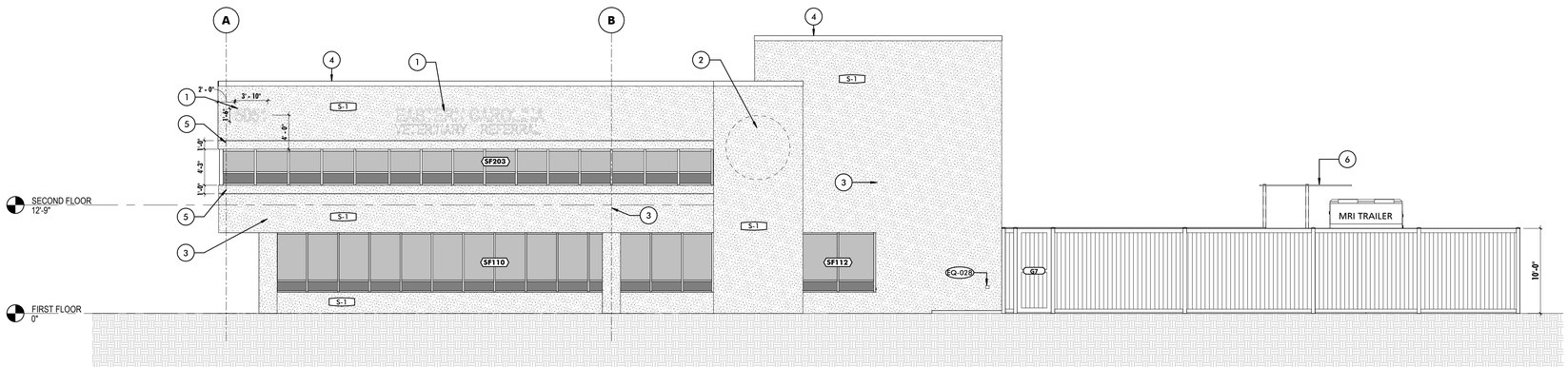
GENERAL ELEVATION NOTES

1	ALL MEP EQUIPMENT IS SHOWN FOR REFERENCE ONLY.
2	ORIENTATION OF ELEVATIONS ARE IDENTIFIED BASED ON PROJECT NORTH.
3	EXISTING EXTERIOR STUCCO SUBSTRATE TO BE INVESTIGATED BY CONTRACTOR TO CONFIRM IT IS AN APPOVED SUBSTRATE FOR NEW EIFS. APPROVAL OF SUBSTRATE TO GE GIVEN IN ORDER TO RECEIVE WARRANTY ON NEW SYSTEM. RECOMMEND INVESTIGATION INTO GREEN SPOTS NEAR FRONT ENTRANCE AND CRACKS AT REAR ABOVE EXISTING BUILDING DISCONNECTS.



1 BUILDING ELEVATION - SOUTH

1/8" = 1'-0"



2 BUILDING ELEVATION - WEST

1/8" = 1'-0"

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NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

BUILDING ELEVATIONS

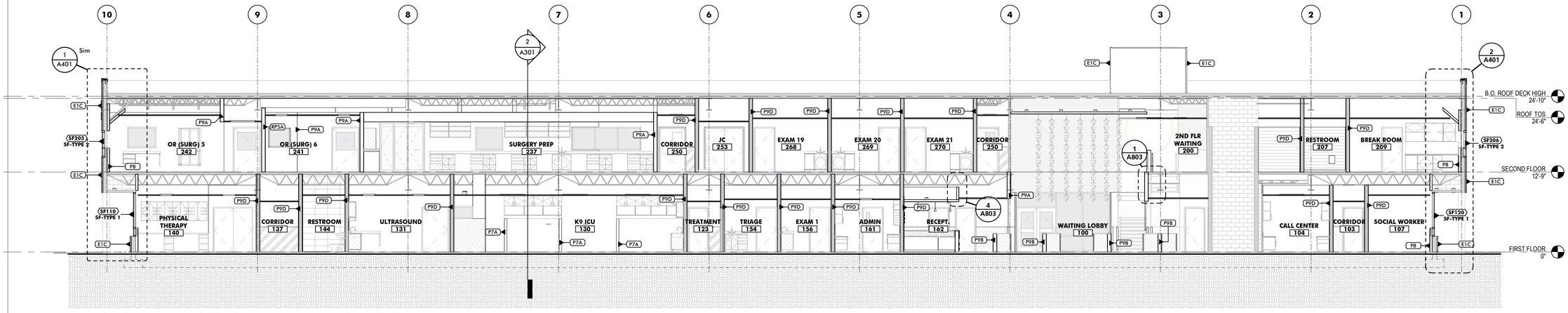
SHEET NUMBER:

A201

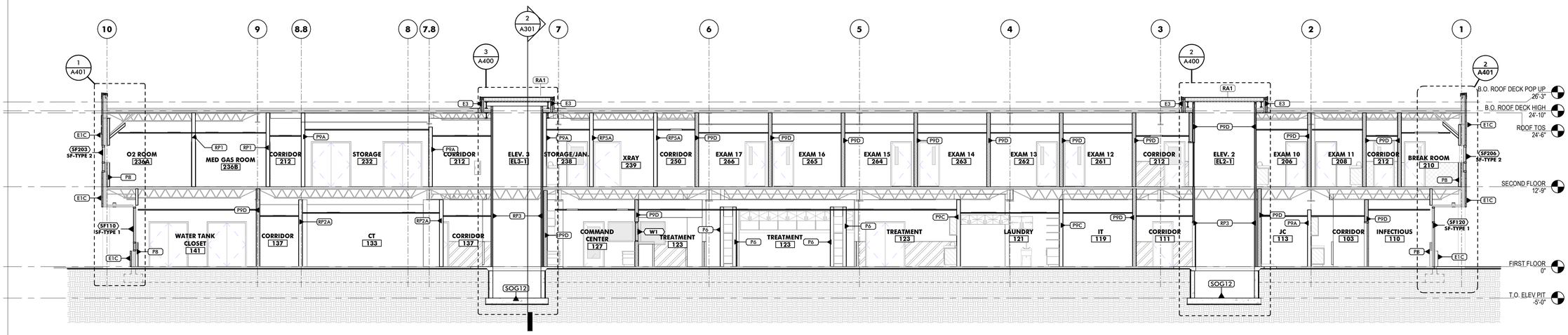
9/20/2023 4:50:53 PM

GENERAL BUILDING SECTION NOTES

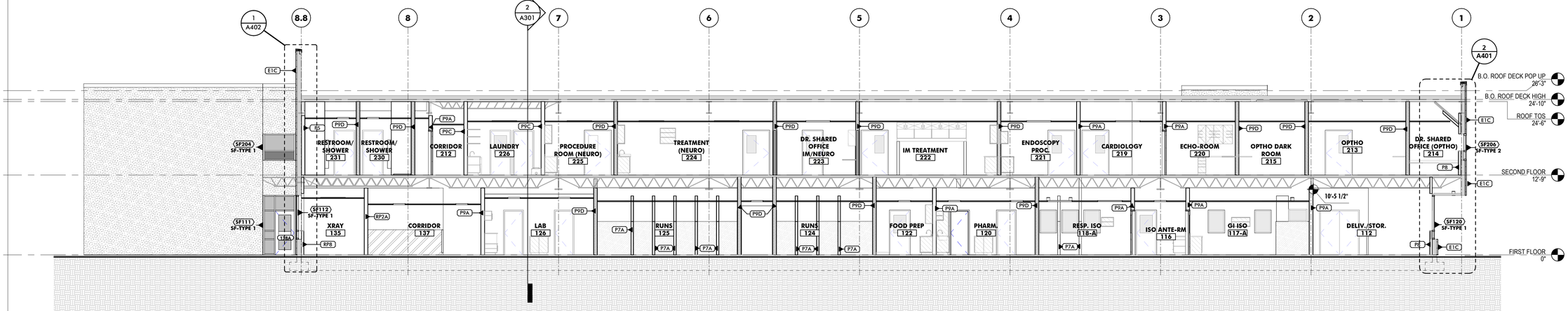
1	BUILDING SECTIONS ARE INTENDED TO SHOW OVERALL RELATIONSHIPS OF SPACES, OVERALL ASSEMBLIES, AND THE GEOMETRY OF THE BUILDING. SEE REFERENCED WALL SECTIONS AND DETAILS FOR ADDITIONAL INFORMATION.



1 LONGITUDINAL SECTION THRU WAITING / LOBBY
1/8" = 1'-0"



2 LONGITUDINAL SECTION THRU ELEVATORS
1/8" = 1'-0"



3 LONGITUDINAL SECTION THRU RUNS / NEURO
1/8" = 1'-0"

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SEAL:

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CERTIFICATE OF AUTHORIZATION

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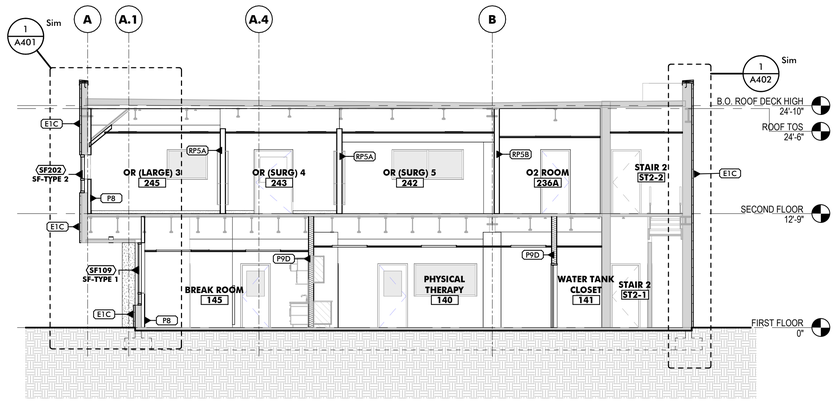
BUILDING SECTIONS

SHEET NUMBER:
A300

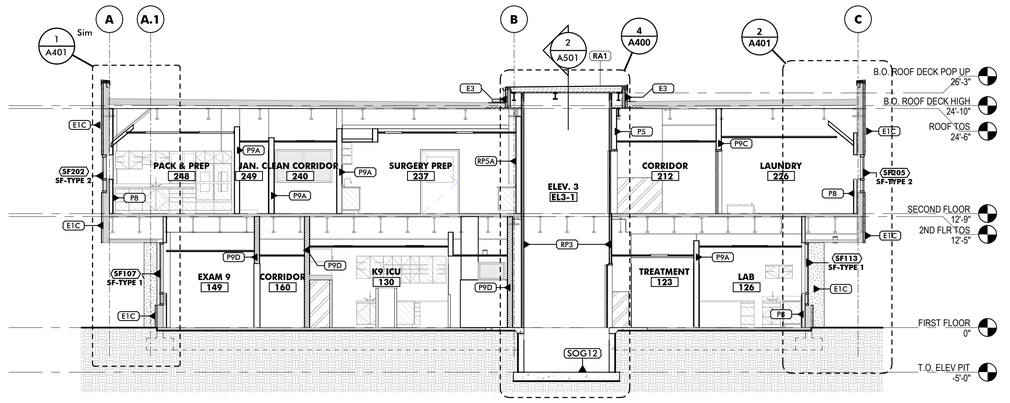
9/20/2023 4:51:03 PM

GENERAL BUILDING SECTION NOTES

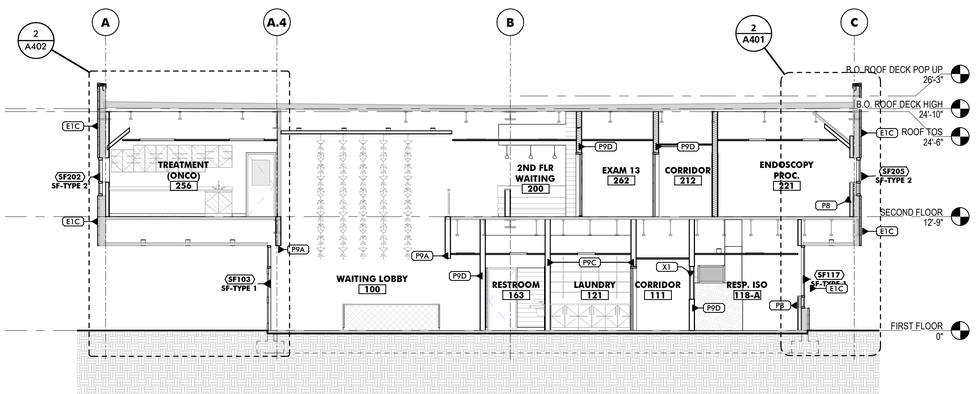
1	BUILDING SECTIONS ARE INTENDED TO SHOW OVERALL RELATIONSHIPS OF SPACES, OVERALL ASSEMBLIES, AND THE GEOMETRY OF THE BUILDING. SEE REFERENCED WALL SECTIONS AND DETAILS FOR ADDITIONAL INFORMATION.



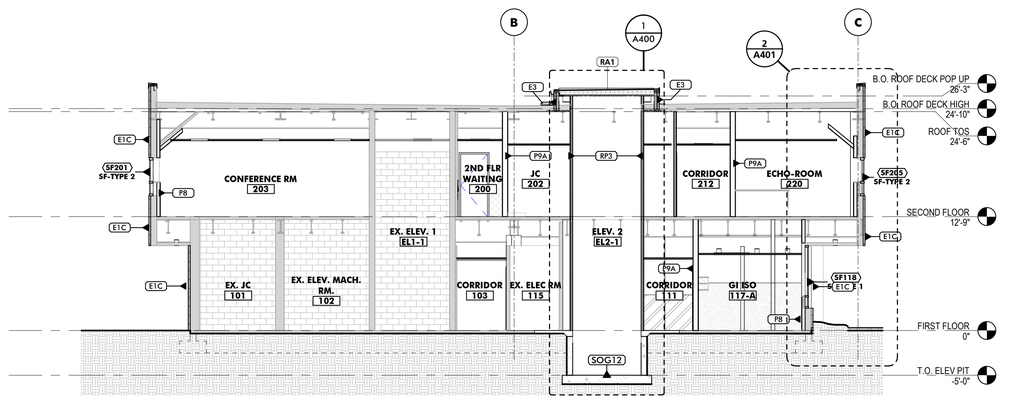
1 TRANSVERSE SECTION @ OR'S / BREAK RM
1/8" = 1'-0"



2 TRANSVERSE SECTION @ SURGERY PREP / ELEV. 3
1/8" = 1'-0"



3 TRANSVERSE SECTION @ ENTRANCE / LOBBY
1/8" = 1'-0"



4 TRANSVERSE SECTION @ EXISTING ELEV. & ELEV. 2
1/8" = 1'-0"

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BUILDING SECTIONS

SHEET NUMBER:
A301

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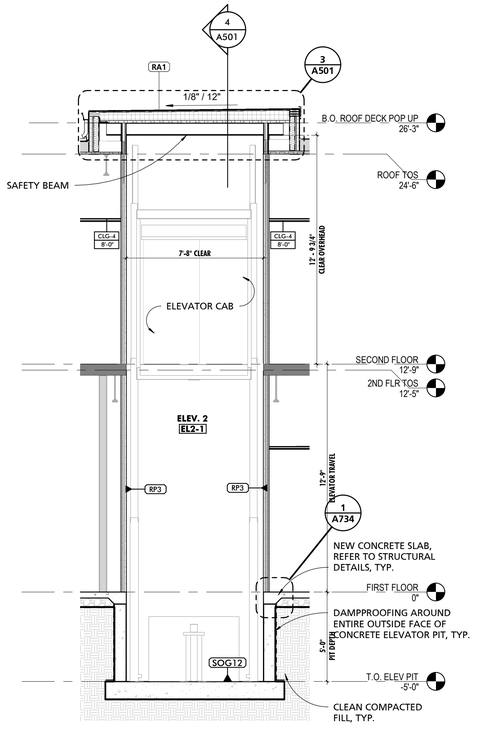
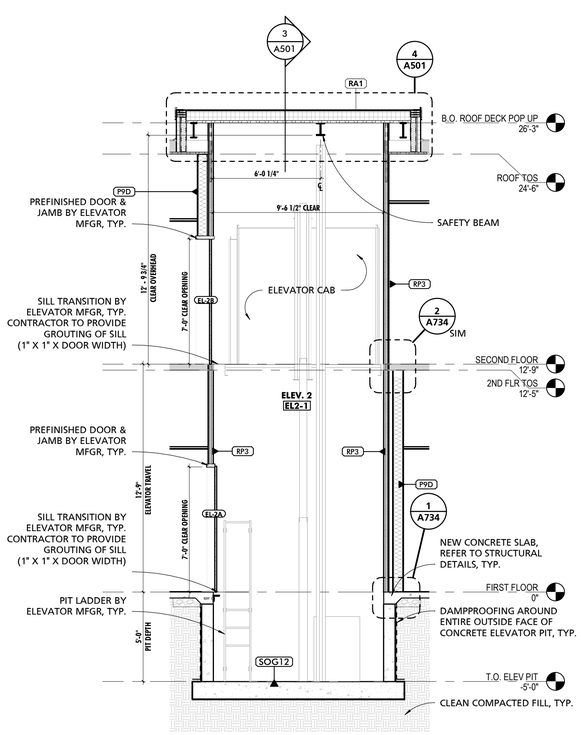
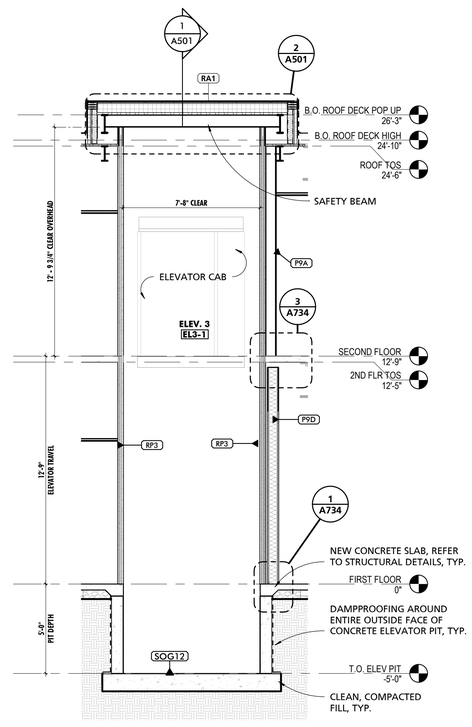


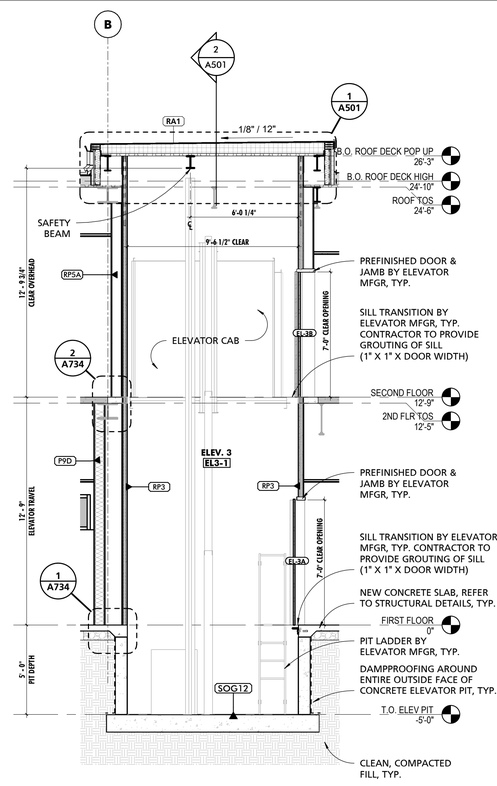
1 ELEVATOR 2 - TRANSVERSE SECTION
1/4" = 1'-0"



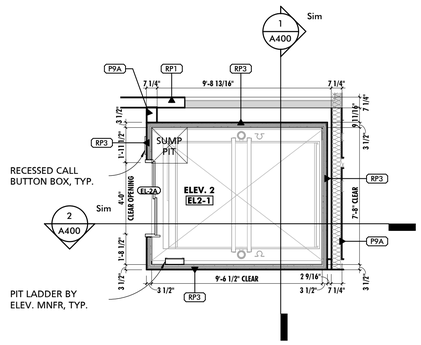
2 ELEVATOR 2 - LONGITUDINAL SECTION
1/4" = 1'-0"



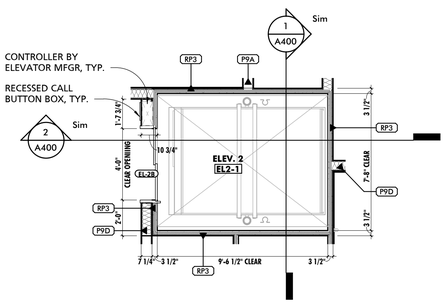
3 ELEVATOR 3 - LONGITUDINAL SECTION
1/4" = 1'-0"



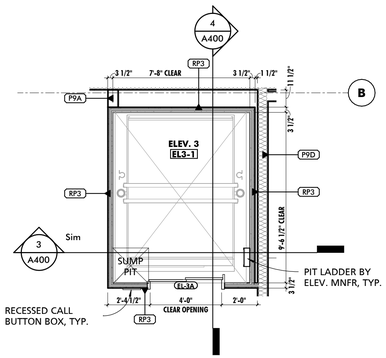
4 ELEVATOR 3 - TRANSVERSE SECTION
1/4" = 1'-0"



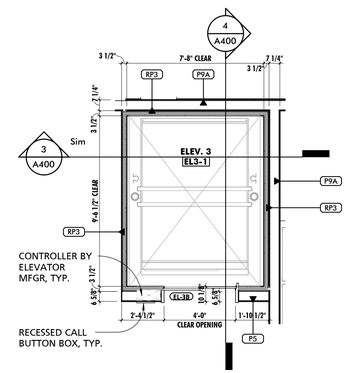
5 ELEV. 2 - FIRST FLOOR LANDING
1/4" = 1'-0"



6 ELEV. 2 - SECOND FLOOR LANDING
1/4" = 1'-0"



7 ELEV. 3 - FIRST FLOOR LANDING
1/4" = 1'-0"



8 ELEV. 3 - SECOND FLOOR LANDING
1/4" = 1'-0"

SECTION LEGEND

- EXISTING WALL TO REMAIN
- NEW WALL/PARTITION/STOREFRONT

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ELEVATOR SECTIONS & ENLARGED PLANS

SHEET NUMBER:

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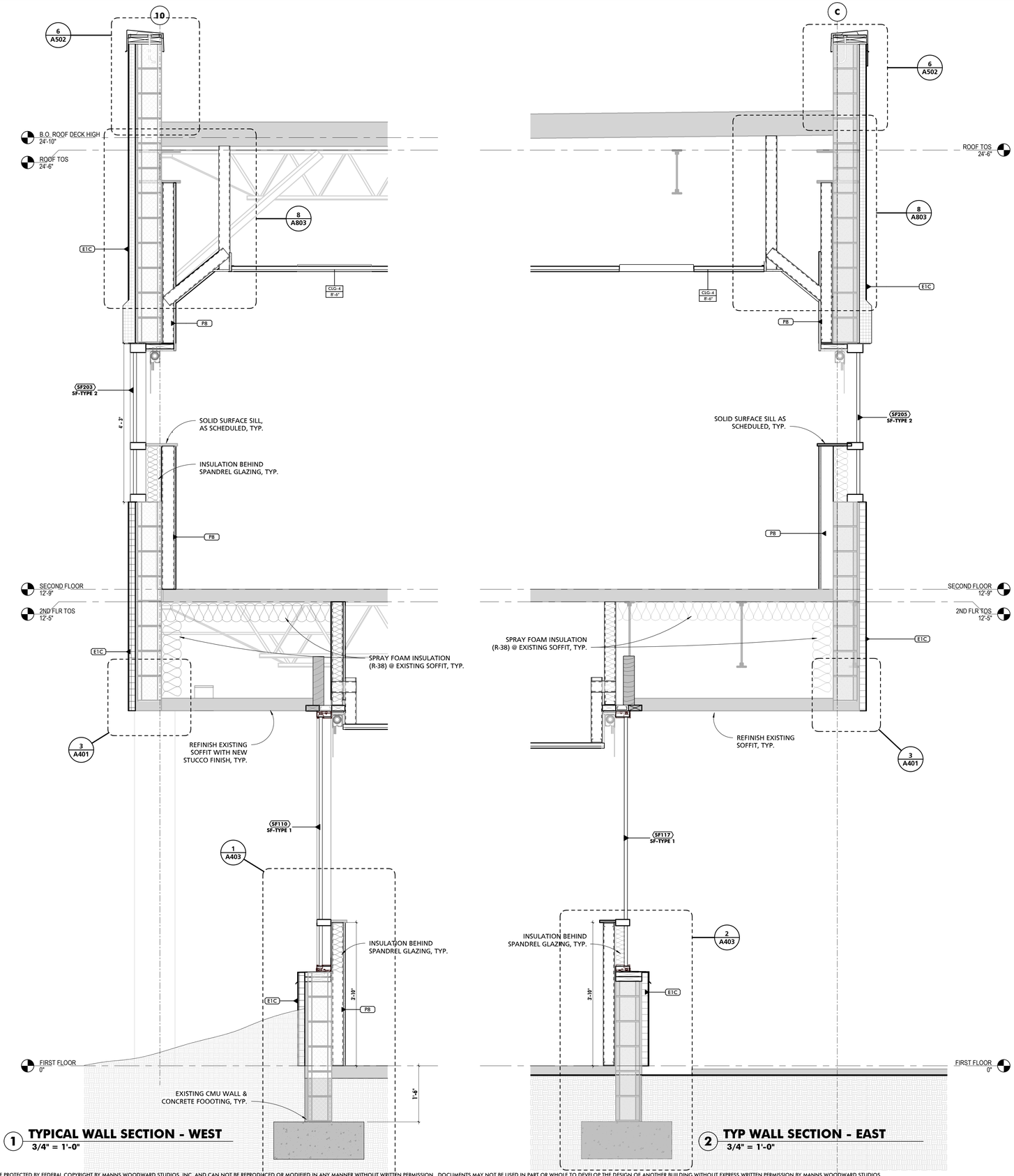


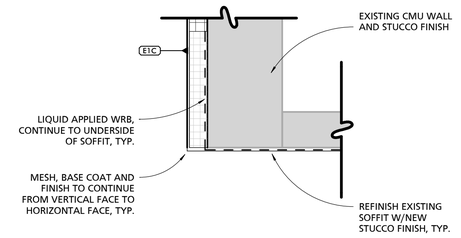
1 TYPICAL WALL SECTION - WEST
3/4" = 1'-0"

2 TYP WALL SECTION - EAST
3/4" = 1'-0"

SECTION LEGEND

EXISTING WALL TO REMAIN

NEW WALL/PARTITION/STOREFRONT



3 TYPICAL EIFS DETAIL AT SOFFIT
1 1/2" = 1'-0"

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WALL SECTIONS

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A401

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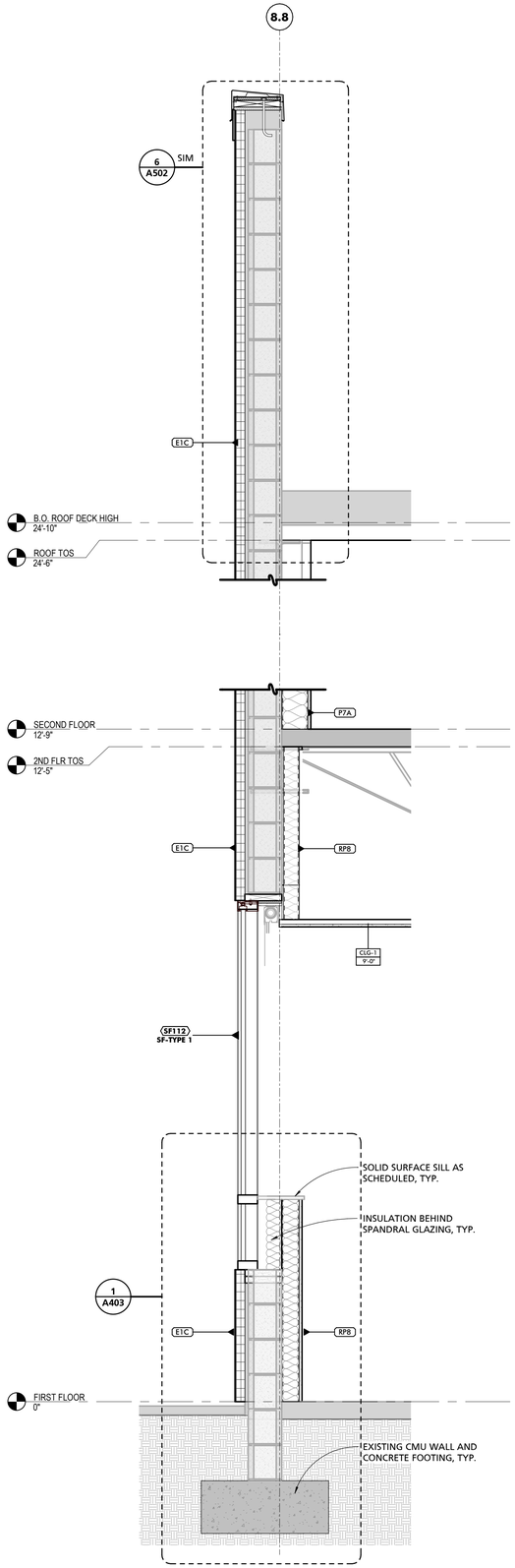
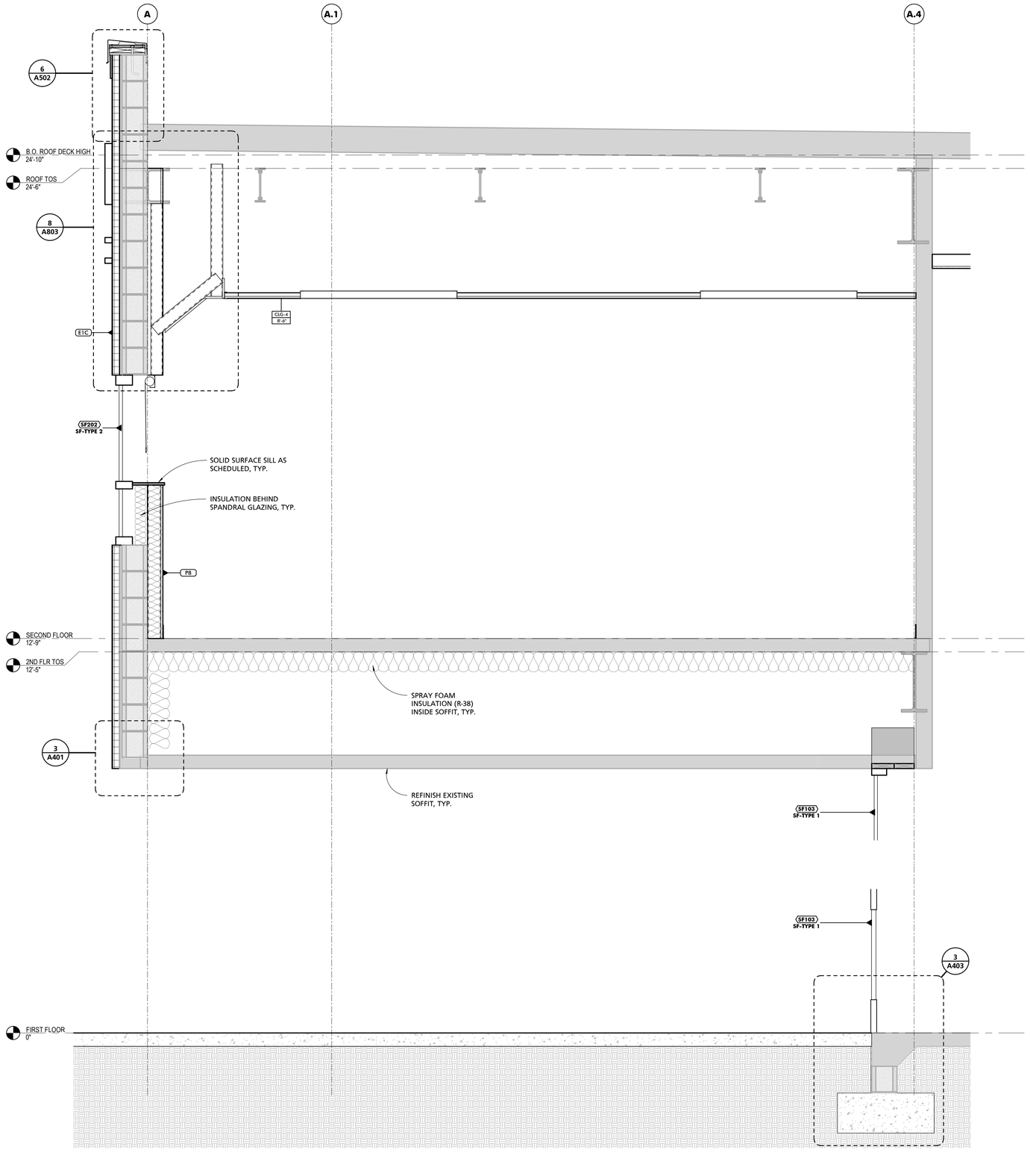


1 TYPICAL WALL SECTION
3/4" = 1'-0"



2 WALL SECTION - ENTRY
3/4" = 1'-0"

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WALL SECTIONS

SHEET NUMBER:
A402

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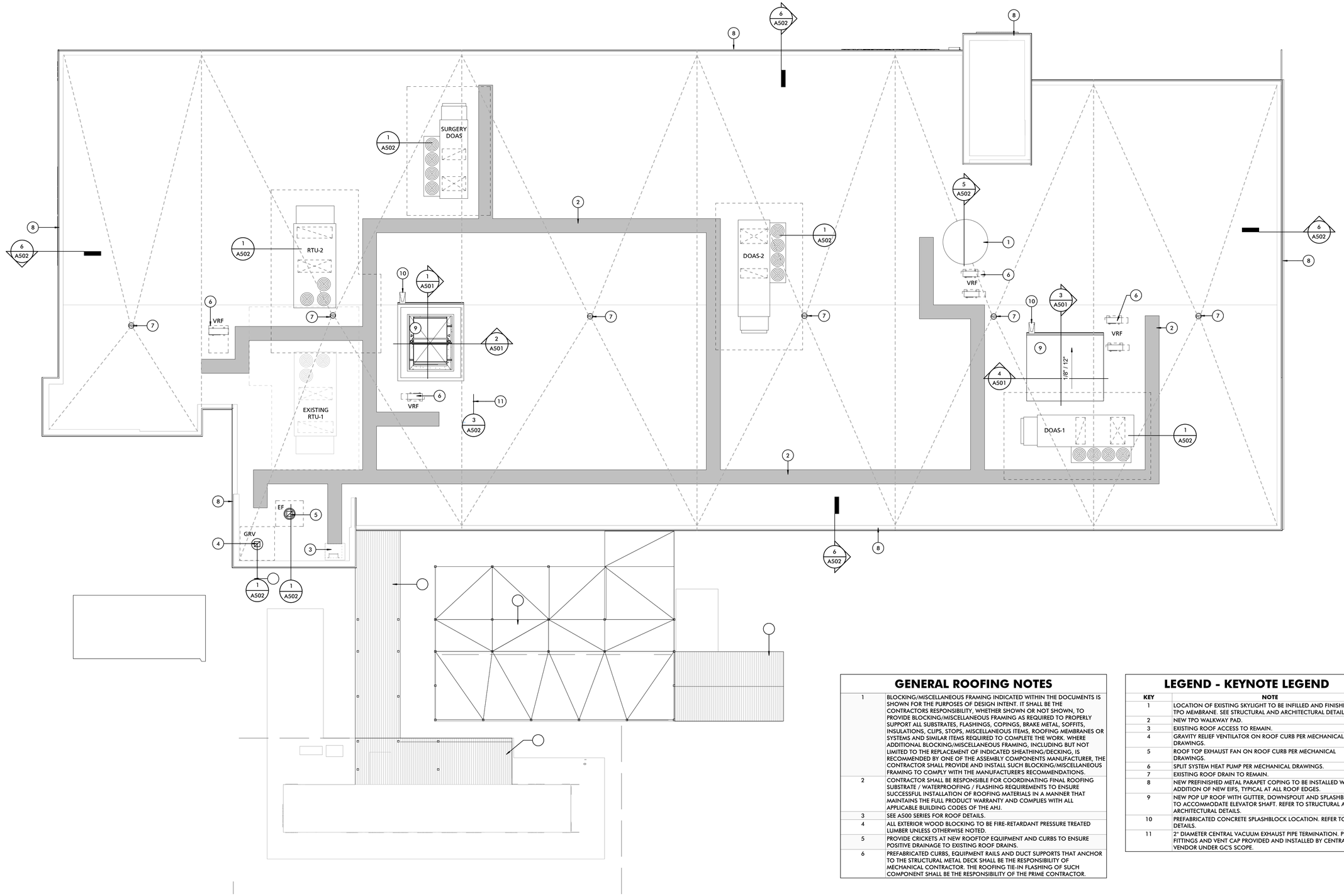

1 ROOF PLAN
1/8" = 1'-0"

GENERAL ROOFING NOTES

1	BLOCKING/MISCELLANEOUS FRAMING INDICATED WITHIN THE DOCUMENTS IS SHOWN FOR THE PURPOSES OF DESIGN INTENT. IT SHALL BE THE CONTRACTORS RESPONSIBILITY, WHETHER SHOWN OR NOT SHOWN, TO PROVIDE BLOCKING/MISCELLANEOUS FRAMING AS REQUIRED TO PROPERLY SUPPORT ALL SUBSTRATES, FLASHINGS, COPINGS, BRAKE METAL, SOFFITS, INSULATIONS, CLIPS, STOPS, MISCELLANEOUS ITEMS, ROOFING MEMBRANES OR SYSTEMS AND SIMILAR ITEMS REQUIRED TO COMPLETE THE WORK. WHERE ADDITIONAL BLOCKING/MISCELLANEOUS FRAMING, INCLUDING BUT NOT LIMITED TO THE REPLACEMENT OF INDICATED SHEATHING/DECKING, IS RECOMMENDED BY ONE OF THE ASSEMBLY COMPONENTS MANUFACTURER, THE CONTRACTOR SHALL PROVIDE AND INSTALL SUCH BLOCKING/MISCELLANEOUS FRAMING TO COMPLY WITH THE MANUFACTURER'S RECOMMENDATIONS.
2	CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING FINAL ROOFING SUBSTRATE / WATERPROOFING / FLASHING REQUIREMENTS TO ENSURE SUCCESSFUL INSTALLATION OF ROOFING MATERIALS IN A MANNER THAT MAINTAINS THE FULL PRODUCT WARRANTY AND COMPLIES WITH ALL APPLICABLE BUILDING CODES OF THE AHJ.
3	SEE A500 SERIES FOR ROOF DETAILS.
4	ALL EXTERIOR WOOD BLOCKING TO BE FIRE-RETARDANT PRESSURE TREATED LUMBER UNLESS OTHERWISE NOTED.
5	PROVIDE CRICKETS AT NEW ROOFTOP EQUIPMENT AND CURBS TO ENSURE POSITIVE DRAINAGE TO EXISTING ROOF DRAINS.
6	PREFABRICATED CURBS, EQUIPMENT RAILS AND DUCT SUPPORTS THAT ANCHOR TO THE STRUCTURAL METAL DECK SHALL BE THE RESPONSIBILITY OF MECHANICAL CONTRACTOR. THE ROOFING TIE-IN FLASHING OF SUCH COMPONENT SHALL BE THE RESPONSIBILITY OF THE PRIME CONTRACTOR.

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	LOCATION OF EXISTING SKYLIGHT TO BE INFILLED AND FINISHED WITH TPO MEMBRANE. SEE STRUCTURAL AND ARCHITECTURAL DETAILS.
2	NEW TPO WALKWAY PAD.
3	EXISTING ROOF ACCESS TO REMAIN.
4	GRAVITY RELIEF VENTILATOR ON ROOF CURB PER MECHANICAL DRAWINGS.
5	ROOF TOP EXHAUST FAN ON ROOF CURB PER MECHANICAL DRAWINGS.
6	SPLIT SYSTEM HEAT PUMP PER MECHANICAL DRAWINGS.
7	EXISTING ROOF DRAIN TO REMAIN.
8	NEW PREFINISHED METAL PARAPET COPING TO BE INSTALLED WITH ADDITION OF NEW EIFS, TYPICAL AT ALL ROOF EDGES.
9	NEW POP UP ROOF WITH GUTTER, DOWNSPOUT AND SPLASHBLOCK TO ACCOMMODATE ELEVATOR SHAFT. REFER TO STRUCTURAL AND ARCHITECTURAL DETAILS.
10	PREFABRICATED CONCRETE SPLASHBLOCK LOCATION. REFER TO ROOF DETAILS.
11	2" DIAMETER CENTRAL VACUUM EXHAUST PIPE TERMINATION. PIPE, FITTINGS AND VENT CAP PROVIDED AND INSTALLED BY CENTRAL VAC VENDOR UNDER GC'S SCOPE.

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ROOF PLAN

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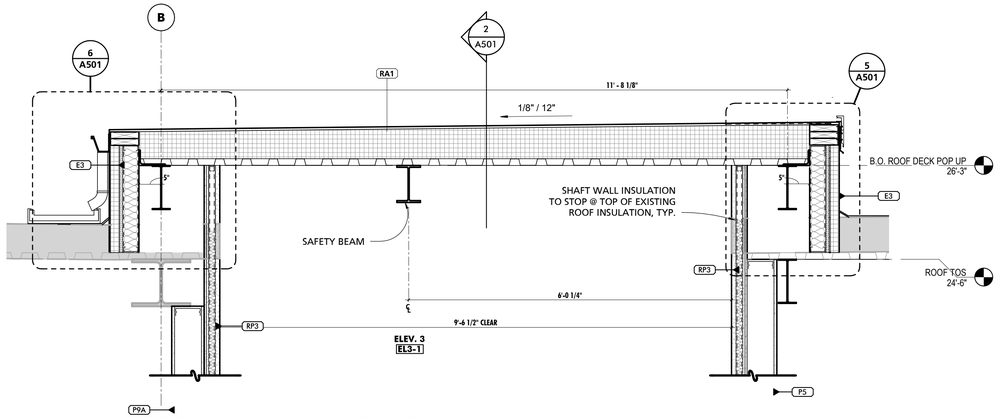
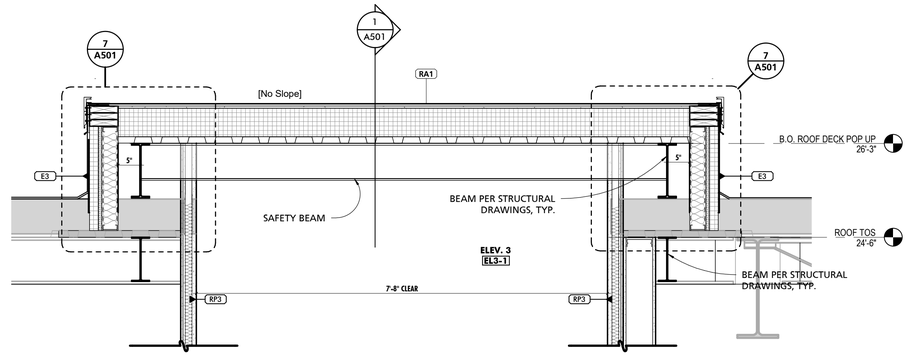
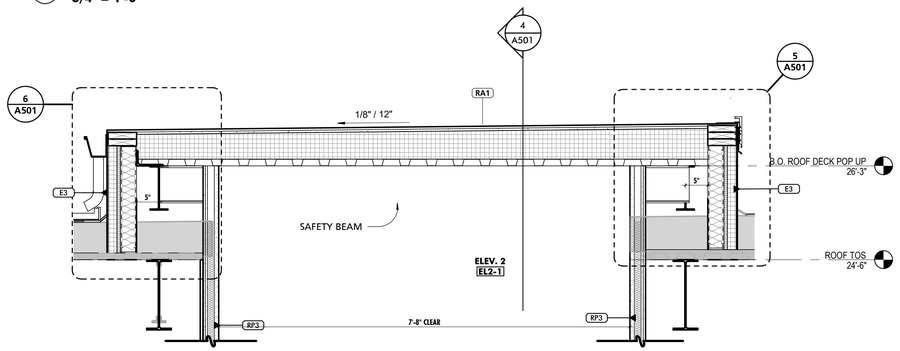


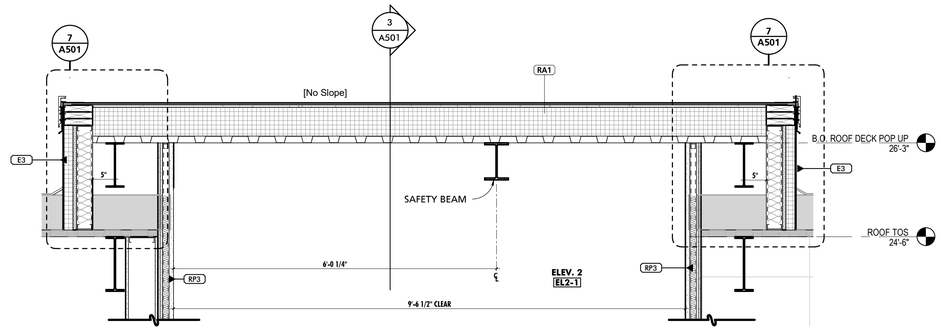
1 TYPICAL ROOF DETAIL @ ELEVATOR 3 SHAFT
3/4" = 1'-0"



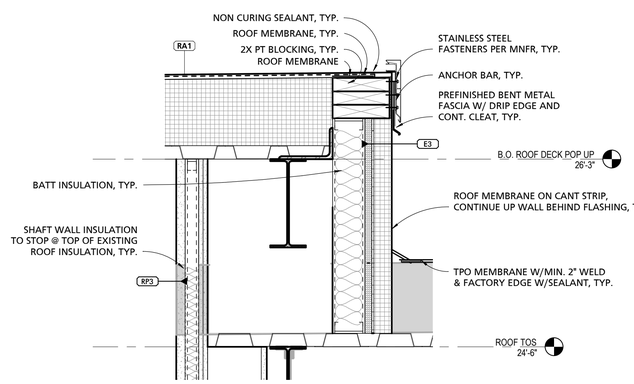
2 TYPICAL ROOF DETAIL @ ELEVATOR 3 SHAFT
3/4" = 1'-0"



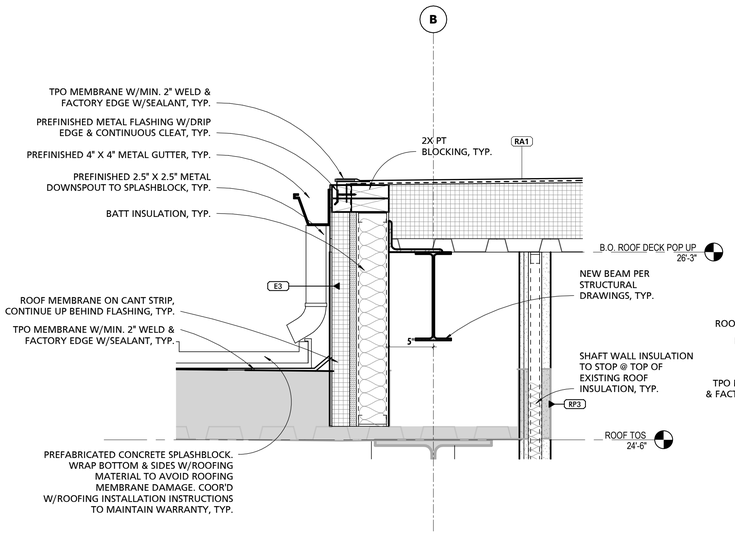
3 TYPICAL ROOF DETAIL @ ELEVATOR 2 SHAFT
3/4" = 1'-0"



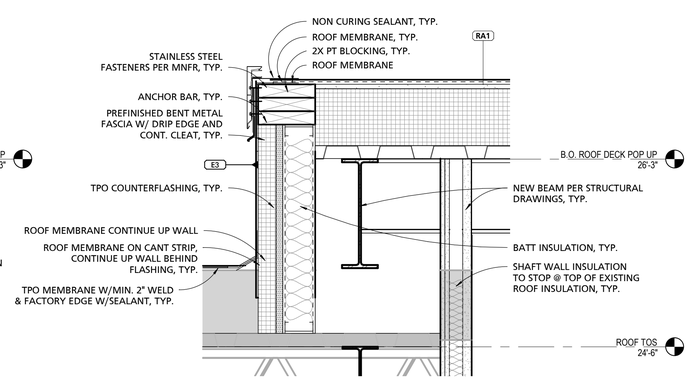
4 TYPICAL ROOF DETAIL @ ELEVATOR 2 SHAFT
3/4" = 1'-0"



5 TYPICAL ROOF EDGE DETAIL @ ELEVATOR SHAFT
1 1/2" = 1'-0"



6 TYPICAL ROOF EDGE DETAIL @ ELEVATOR SHAFT GUTTER
1 1/2" = 1'-0"



7 TYPICAL ROOF RAKE DETAIL @ ELEVATOR SHAFT
1 1/2" = 1'-0"

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CERTIFICATE OF AUTHORIZATION

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5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ROOF DETAILS

SHEET NUMBER:
A501

9/20/2023 4:51:40 PM

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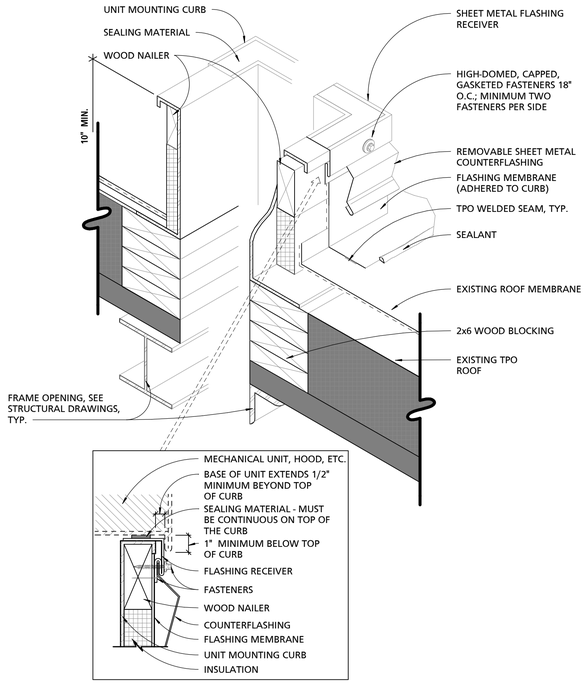
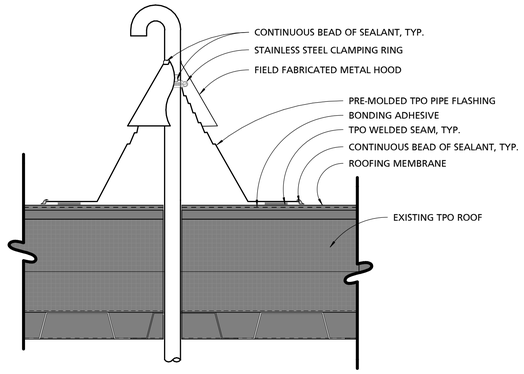
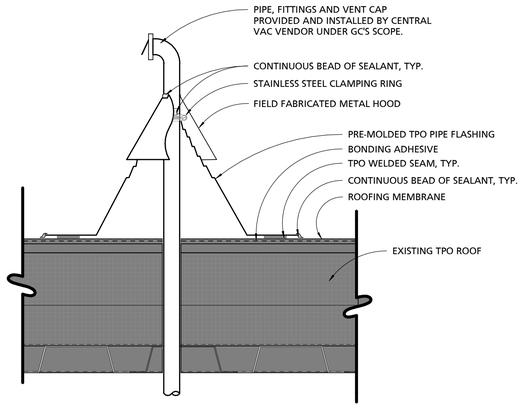


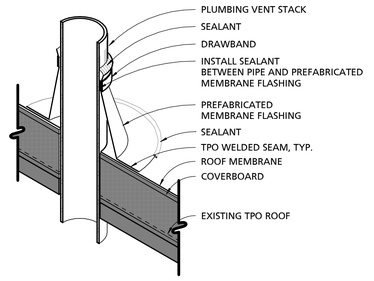
1 EQUIPMENT CURB
3" = 1'-0"



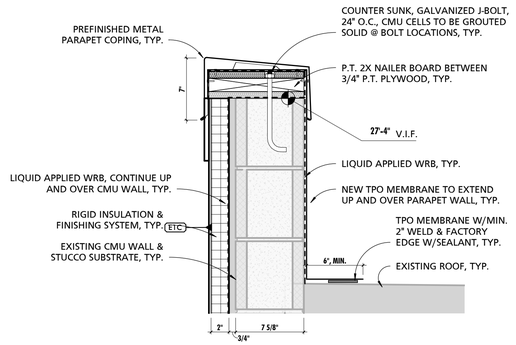
2 TYPICAL PENETRATION @ TPO ROOF
3" = 1'-0"



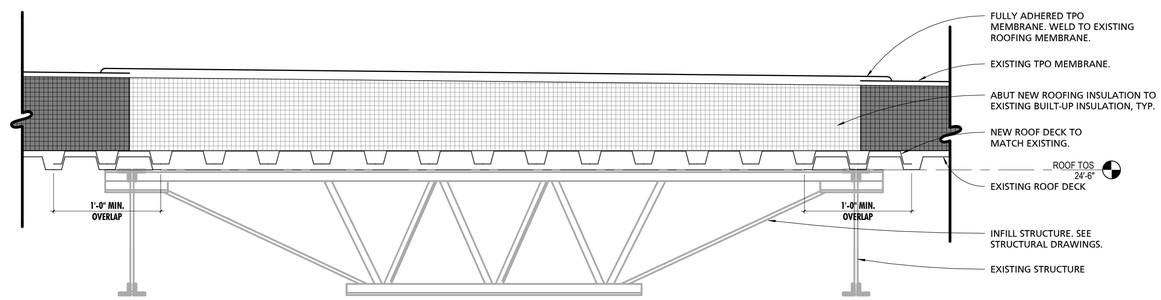
3 CENTRAL VAC EXHAUST PENETRATION @ TPO ROOF
3" = 1'-0"



4 VENT FLASHING DETAIL
1 1/2" = 1'-0"



6 TYPICAL ROOF PARAPET DETAIL
1 1/2" = 1'-0"



5 ROOF DETAIL @ SKYLIGHT INFILL
1 1/2" = 1'-0"

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SEAL:

COA:

NORTH CAROLINA
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No. 53188
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ROOF DETAILS

SHEET NUMBER:
A502

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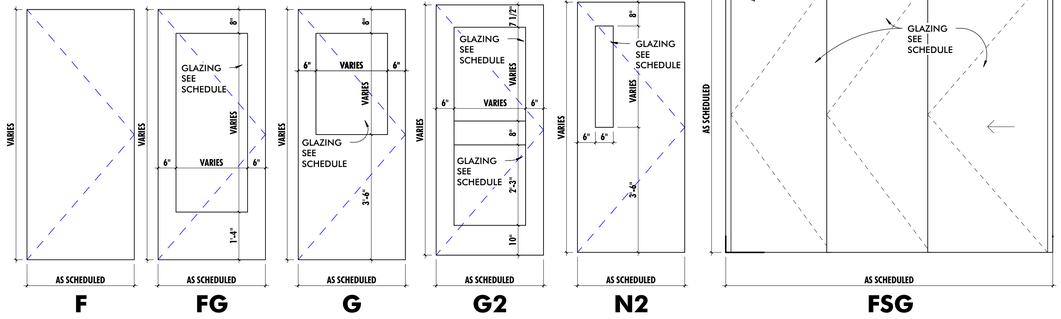
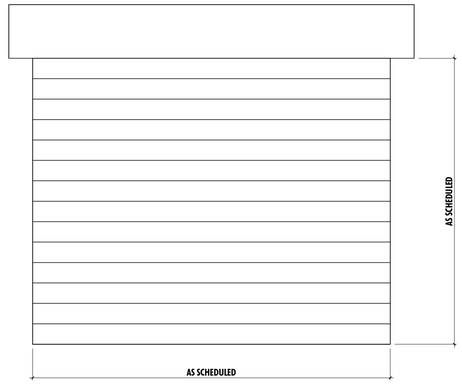




1. SEE DOOR SCHEDULE FOR ACTUAL PANEL DIMENSIONS.
2. NOT ALL PANEL TYPES MAY BE USED IN THIS PROJECT, SEE DOOR SCHEDULE.
3. DIMENSIONS FOR GLAZING INDICATED SHALL CONSTITUTE THE FULL GLAZING WIDTH.
4. SEE STOREFRONT ELEVATIONS FOR CURTAIN WALL / STOREFRONT ENTRANCE

DOOR PANEL TYPES

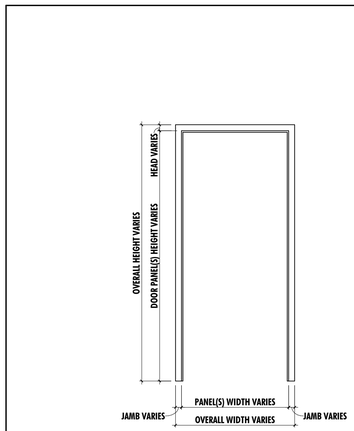
1/2" = 1'-0"

SCHEDULE - GLAZING

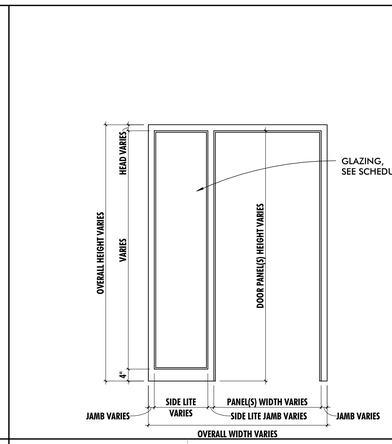
MARK	DESCRIPTION	COMMENTS
GL1	CLEAR SAFETY GLAZING - 1/4"	
GL2	INSULATED CLEAR TEMPERED	
GL3	NOT USED	
GL4	CLEAR LEAD SAFETY GLAZING	TO MATCH LEAD LINING OF WALL
GL5	INSULATED GLAZING UNIT, TEMPERED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR
GL6	INSULATED GLAZING UNIT, SPANDREL	TEMPERED
GL7	CLEAR LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL8	FROSTED LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL9	INSULATED GLAZING UNIT - LEAD LINED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR, LEAD LINED
GL10	INSULATED GLAZING UNIT, SPANDREL - LEAD LINED	

GENERAL DOOR NOTES

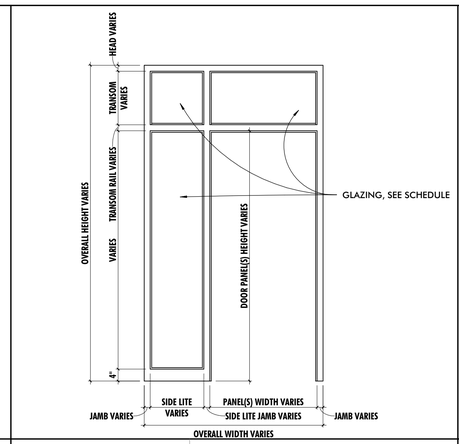
1	CONTRACTOR SHALL FIELD VERIFY ALL EXISTING OPENINGS/MODIFIED OPENINGS PRIOR TO FABRICATION OF DOORS AND FRAMES.
2	DETAILS MAY VARY AT EACH DOOR. VERIFY EACH CONDITION IN FIELD.
3	SEE PARTITION SCHEDULE, FLOOR PLAN, AND STRUCTURAL DRAWINGS FOR CONSTRUCTION OF WALLS AND PARTITIONS.
4	NEW FRAMES IN EXISTING OPENINGS SHALL RECEIVE COUNTER SUNK MASONRY EXPANSION JAMB ANCHORS, 1/2" DIAMETER, IN LIEU OF MASONRY WIRE JAMB ANCHORS.
5	ALL DOORS SHALL BE SET WITHIN OPENINGS TO ENSURE ADA APPROACH COMPLIANCE AS INDICATED ON SHEET A0.3.
6	MOISTURE RESISTANT GYPSUM WALL BOARD SHALL BE UTILIZED IN ALL AREAS WHERE GYPSUM WALL BOARD IS TO BE DIRECTLY ADHERED TO CONCRETE OR MASONRY SURFACES IN INTERIOR APPLICATIONS. SUBSTRATE SHALL BE CLEANED AS REQUIRED AND FREE OF DUST, DEBRIS, AND MOISTURE PRIOR TO ADHESION AND FINISHING.
7	AT WALLS WITH SOUND ATTENUATION BLANKETS, CONTRACTOR SHALL SEAL DOOR FRAMES, GLAZED OPENING FRAMES, INTERSECTIONS, AND OTHER PENETRATIONS WITH ACOUSTICAL SEALANT.



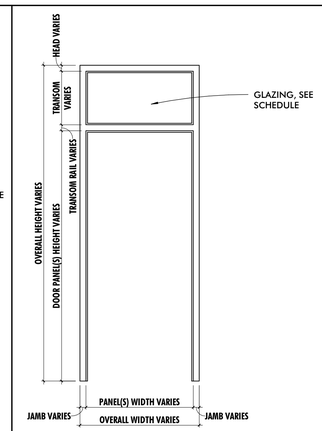
HM ST — HOLLOW METAL STANDARD FRAME



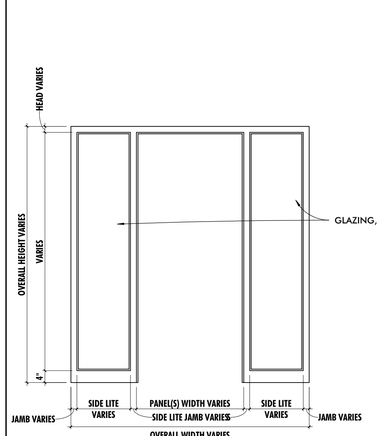
HM SL — HOLLOW METAL FRAME WITH SIDE LITE



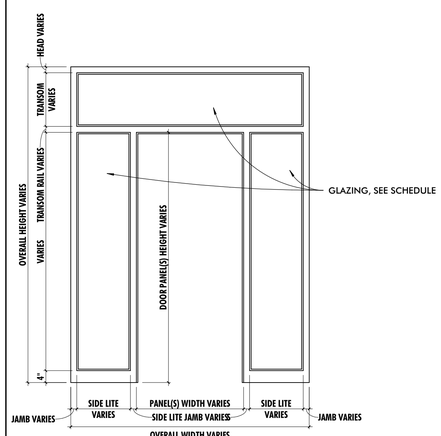
HM SL + TR — HOLLOW METAL FRAME WITH SITE LITE AND TRANSOM CONFIGURATION TYPE A



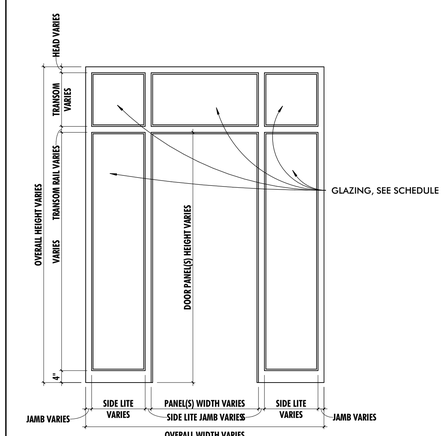
HM TR — HOLLOW METAL FRAME WITH TRANSOM CONFIGURATION TYPE A



HM DSL — HOLLOW METAL FRAME WITH DOUBLE SIDE LITES CONFIGURATION TYPE A



HM DSL+TR-A — HOLLOW METAL FRAME WITH DOUBLE SIDE LITES AND TRANSOM CONFIGURATION TYPE A



HM DSL+TR-B — HOLLOW METAL FRAME WITH DOUBLE SIDE LITES AND TRANSOM CONFIGURATION TYPE B

1.) SEE DOOR SCHEDULE FOR FRAME DIMENSION VARIABLES

FRAME TYPES

1/2" = 1'-0"

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No. DATE

DOOR PANEL, FRAME, & GLAZING TYPES

SHEET NUMBER:

A600

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SCHEDULE - DOOR

	DOOR PANEL					FRAME									GLAZING		DETAILS			RATINGS				
							SIZE SUMMARY		FRAME PROFILE SUMMARY															
MARK	SIZE	TYPE	THICKNESS	MATERIAL	FINISH	FRAME TYPE	OVERALL HEIGHT	OVERALL WIDTH	DEPTH	THROAT	HEAD	JAMB	SIDE LITE WIDTH	MATERIAL	FINISH	THICKNESS	TYPE	HEAD	JAMB	THRESHOLD	STC	FIRE	COMMENTS	HARDWARE	MARK
2-1AEX	EXISTING			EX	HPC									EX	HPC			EX	EX	- -		60 MIN.	EXISTING DOOR FRAME & PANEL TO BE REPAINTED	38	2-1AEX
2-1BEX	EXISTING			EX	HPC									EX	HPC			EX	EX	- -			EXISTING DOOR FRAME & PANEL TO BE REPAINTED	37	2-1BEX
2-2AEX	EXISTING			EX	HPC									EX	HPC			EX	EX	TS-B		60 MIN.	EXISTING DOOR FRAME & PANEL TO BE REPAINTED	38	2-2AEX
100A	SEE ELEV	PANEL : G2	1 3/4"	ALUM	PREFIN-HPC									ALUM-TB	PREFIN-HPC	1 5/16"	GL5	SF	SF	S-1				1	100A
101EX	EXISTING			EX	HPC									EX	HPC			EX	EX	TS-A			EXISTING DOOR FRAME & PANEL TO BE REPAINTED	36	101EX
102EX	EXISTING			EX	HPC									EX	HPC			EX	EX	TS-A			EXISTING DOOR FRAME & PANEL TO BE REPAINTED	36	102EX
103A	SEE ELEV	PANEL : G2	1 3/4"	ALUM	PREFIN-HPC									ALUM-TB	PREFIN-HPC	1 5/16"	GL5	SF	SF	S-1				2	103A
103B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	TH-1				31	103B
103C	2'-10" x 7'-0"	NO PANEL	1 3/4"	N/A	N/A	HM ST	7'-2"	3'-2"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 1	DJ 1	N/A			FRAME ONLY	N/A	103C
104A	3'-0" x 7'-0"	PANEL : G	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	N/A				31	104A
105A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	N/A				31	105A
106A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	N/A				31	106A
107A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	N/A				31	107A
108A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	108A
109A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	109A
110A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-1	43			19	110A
110B	SEE ELEV	PANEL : G2	1 3/4"	ALUM	PREFIN-HPC									ALUM-TB	PREFIN-HPC	1 5/16"	GL5	SF	SF	S-1				2	110B
112A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A		20 MIN.		4	112A
112BEX	EXISTING			EX	HPC									EX	HPC			EX	EX	S-1			EXISTING DOOR FRAME & PANEL TO BE REPAINTED	5	112BEX
113A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A	43			20	113A
115A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	TS-A		45 MIN.		35	115A
116A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	116A
117A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				21A	117A
117B	SEE ELEV	PANEL : G2	1 3/4"	ALUM	PREFIN-HPC									ALUM-TB	PREFIN-HPC	1 5/16"	GL5	SF	SF	S-1				3	117B
118A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				21A	118A
118B	SEE ELEV	PANEL : G2	1 3/4"	ALUM	PREFIN-HPC									ALUM-TB	PREFIN-HPC	1 5/16"	GL5	SF	SF	S-1				3	118B
119A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-6	43			33	119A
120B	2'-10" x 7'-0"	NO PANEL	1 3/4"	N/A	N/A	HM ST	7'-2"	3'-2"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 1	DJ 1	N/A			FRAME ONLY	N/A	120B
121A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-4	43	20 MIN.		26	121A
121B	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43	20 MIN.		25	121B
122A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				21A	122A
123A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-1	43			6	123A
123B	SEE ELEV	PANEL : G2	1 3/4"	ALUM	PREFIN-HPC									ALUM-TB	PREFIN-HPC	1 5/16"	GL5	SF	SF	S-1				3	123B
124A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	124A
124B	3'-0" x 7'-0"	PANEL : G	1 3/4"	- -	- -	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	124B
125A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	125A
126A	2'-10" x 7'-0"	NO PANEL	1 3/4"	N/A	N/A	HM ST	7'-2"	3'-2"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 1	DJ 1	N/A			FRAME ONLY	N/A	126A
126B	2'-10" x 7'-0"	NO PANEL	1 3/4"	N/A	N/A	HM ST	7'-2"	3'-2"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 1	DJ 1	N/A			FRAME ONLY	N/A	126B
127A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	127A
127B	3'-0" x 7'-0"	PANEL : FG	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	127B
128A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	128A
129A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				20	129A
130A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	GL7	DH 2	DJ 2	TH-4	43			22	130A
131A	4'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-4	43			30	131A
131B	4'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-4	43			30	131B
132A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				7	132A
133A	4'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH-1	DJ-1	N/A			LEAD LINED	14	133A
134A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				21A	134A
135A	4'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A			LEAD LINED	14	135A
136EX	EXISTING			EX	HPC									EX	HPC			EX	EX	TS-A		90 MIN.	EXISTING DOOR FRAME & PANEL TO BE REPAINTED	36	136EX
137A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	TH-1				12	137A
137B	SEE ELEV	PANEL : G2	1 3/4"	ALUM	PREFIN-HPC									ALUM-TB	PREFIN-HPC	1 5/16"	GL5	SF	SF	S-1				3	137B
137BEX	EXISTING			EX	HPC									EX	HPC			EX	EX	TS-B			EXISTING DOOR FRAME & PANEL TO BE REPAINTED	39	137BEX
138A	SEE ELEV	PANEL : G2	1 3/4"	ALUM	PREFIN-HPC									ALUM-TB	PREFIN-HPC	1 5/16"	GL5	SF	SF	S-1				2	138A
139EX	EXISTING			EX	HPC									EX	HPC			EX	EX	N/A			EXISTING DOOR FRAME & PANEL TO BE REPAINTED	36	139EX
140A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-3	43			20	140A
141A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	N/A				8	141A
141B	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	N/A				8	141B
142A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				7	142A
143A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 7	DJ 7	TH-3	43			16	143A
144A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 7	DJ 7	TH-3	43			16	144A
145A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-1	43			20	145A
146EX	EXISTING			EX	HPC									EX	HPC			EX	EX	N/A			EXISTING DOOR FRAME & PANEL TO BE REPAINTED	37	146EX
147A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 5	DJ 5	TS-1			POCKET DOOR	28	147A
148A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-3	43			29	148A
149A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	149A
150A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	150A
151A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	151A
152A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	152A
153A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	153A
154A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-3	43			19	154A
154B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	- -	- -	0"	- -	DH 2	DJ 2	TH-3	43			33	154B
155A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	155A
156A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	156A
157A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	157A
158A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	158A
159A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			19	159A
160A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-1	43			33	160A
161A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-2	43			29	161A
163A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 7	DJ 7	TH-2	43			16	163A
164A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 7	DJ 7	TH-2	43			16	164A
200A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TS-1	43			32	200A
200B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TS-1	43			33	200B
202A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	- -	- -	0"	- -	DH 1	DJ 1	TS-1	43			20	202A
203A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-2	43			33	203A
204A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				7	204A
204B	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				7	204B
205A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			16	205A
206A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-1	43			19	206A
207A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			16	207A
208A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-1	43			33	208A
209A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-1				17	209A
209B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2				17	209B
210A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-1	43			20	210A
210B	3'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-2	43			20	210B
211A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-1	43			16	211A
212A	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-1				18	212A
212B	3'-0" x 7'-0"	PANEL : G	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 2	DJ 2	TH-1	43			29	212B
213A	4'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			30	213A
214A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	214A
215A	4'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-4	43			22	215A
216A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 7	DJ 7	TH-3	43			16	216A
217A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 7	DJ 7	TH-3	43			16	217A
218A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 1	DJ 1	N/A				21B	218A
219A	4'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				34	219A
220A	4'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				23	220A
221A	4'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	TH4				34	221A
222A	4'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			30	222A
222B	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 5	DJ 5	N/A				28	222B
223A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			29	223A

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SHEET REVISION SCHEDULE:
No. DATE

DOOR SCHEDULE

SHEET NUMBER:
A601

9/20/2023 4:51:55 PM

SCHEDULE - DOOR

	DOOR PANEL					FRAME									GLAZING		DETAILS			RATINGS				
							SIZE SUMMARY		FRAME PROFILE SUMMARY															
MARK	SIZE	TYPE	THICKNESS	MATERIAL	FINISH	FRAME TYPE	OVERALL HEIGHT	OVERALL WIDTH	DEPTH	THROAT	HEAD	JAMB	SIDE LITE WIDTH	MATERIAL	FINISH	THICKNESS	TYPE	HEAD	JAMB	THRESHOLD	STC	FIRE	COMMENTS	HARDWARE	MARK
224A	4'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			30	224A
224B	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 5	DJ 5	N/A				28	224B
225A	4'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			30	225A
226A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-4	43	20 MIN.		26	226A
226B	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43	20 MIN.		26	226B
227A	2'-10" x 7'-0"	PANEL : F	1 3/4"	- -	- -	HM ST	7'-2"	3'-2"	5 7/8"	4 7/8"	2"	2"	0"	- -	- -	0"	- -	DH 10	DJ 10	TS-A		90 MIN.		35	227A
228A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	TH-4				7	228A
229A	2'-10" x 7'-0"	PANEL : G	1 3/4"	N/A	N/A	HM ST	7'-2"	3'-2"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 1	DJ 1	- -			FRAME ONLY	N/A	229A
230A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 7	DJ 7	TH-5	43			16	230A
231A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 7	DJ 7	TH-5	43			16	231A
232A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				8	232A
232B	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				8	232B
235EX	EXISTING			EX	HPC									EX	HPC			EX	EX	TS-A			EXISTING DOOR FRAME & PANEL TO BE REPAINTED	36	235EX
236A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A		45 MIN.		27	236A
236B	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A		45 MIN.		27	236B
237A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				15	237A
237B	7'-0" x 7'-8"	PANEL : FSG	6"	ALUM	PREFIN-HPC	HM ST	7'-8 1/4"	7'-0 1/2"	8 1/4"	6"	6"	6"	0"	ALUM	PREFIN-HPC	1/4"	GL1	DH 9	DJ 9A/DJ 9B	N/A			AUTOMATIC SLIDING TELESCOPIC DOOR	11	237B
237C	7'-0" x 7'-8"	PANEL : FSG	6"	ALUM	PREFIN-HPC	HM ST	7'-8 1/4"	7'-0 1/2"	8 1/4"	6"	6"	6"	0"	ALUM	PREFIN-HPC	1/4"	GL1	DH 9	DJ 9A/DJ 9B	N/A			AUTOMATIC SLIDING TELESCOPIC DOOR	11	237C
238A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 1	DJ 1	N/A				21A	238A
239A	4'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A			LEAD LINED	24	239A
239B	4'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A			LEAD LINED	24	239B
241A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				23	241A
242A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A			LEAD LINED	24	242A
243A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				23	243A
245A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A			LEAD LINED	24	245A
246A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				23	246A
247A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				23	247A
248A	4'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				23	248A
249A	3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				21A	249A
251A	4'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	N/A				34	251A
252A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 2	DJ 2	TH-4	43			20	252A
253A	(2) 3'-0" x 7'-0"	PANEL : F	1 3/4"	HM	HPC	HM ST	7'-2"	6'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 1	DJ 1	N/A				7	253A
254A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	254A
255A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	TH-4				21A	255A
256A	4'-0" x 7'-0"	PANEL : N2	1 3/4"	HM	HPC	HM ST	7'-2"	4'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	DH 1	DJ 1	TH-4				34	256A
257A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	TH-4				21A	257A
258A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL7	DH 2	DJ 2	TH-4	43			20	258A
259A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	TH-4				21A	259A
260A	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL1	DH 1	DJ 1	TH-4				21A	260A
261A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	261A
261B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	261B
262A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	262A
262B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	262B
263A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	263A
263B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	263B
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264B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	264B
265A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	265A
265B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	265B
266A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	266A
266B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	266B
267A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	267A
267B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	267B
268A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	268A
268B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	268B
269A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	269A
269B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	269B
270A	3'-0" x 7'-0"	PANEL : N2	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	GL8	DH 2	DJ 2	TH-2	43		GLAZING TO BE FROSTED	20	270A
270B	3'-0" x 7'-0"	PANEL : F	1 3/4"	SCWD	STAINED	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	0"	- -	DH 2	DJ 2	TH-2	43			13	270B
OH1	10'-0" X 9'-6"	PANEL : OH	3/4"	PREFIN. POWDERGUARD PREMIUM POWDER COAT	INSUL. S.S.		8'-0"	10'-0"						HM	HPC		- -	OH-HI	OH-J1	OH-S1			FIELD VERIFY EXISTING DOOR SIZE, MATCH NEW DOOR	N/A	OH1
SHED	3'-0" x 7'-0"	PANEL : G	1 3/4"	HM	HPC	HM ST	7'-2"	3'-4"	8 1/4"	7 1/4"	2"	2"	0"	HM	HPC	1/4"	- -	- -	- -	- -				9	SHED

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SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC. No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

DOOR SCHEDULE - CONT.

SHEET NUMBER:
A602

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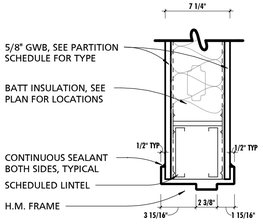

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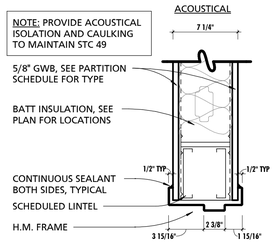

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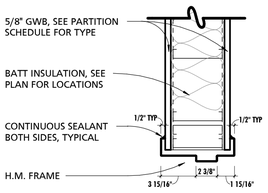

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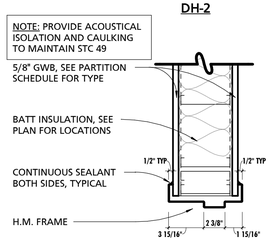

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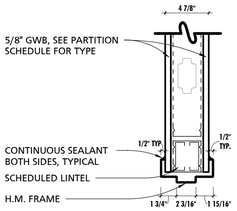

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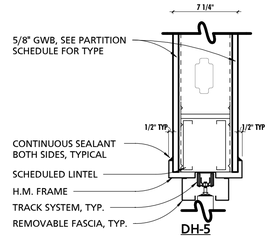

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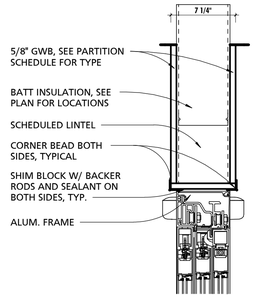

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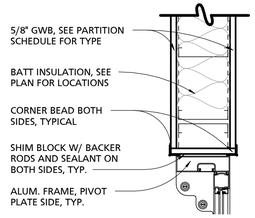
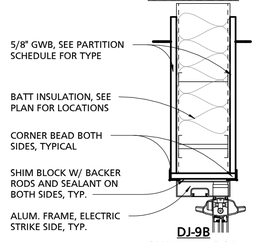
SLIDING DOOR



DJ-9A
SLIDING DOOR



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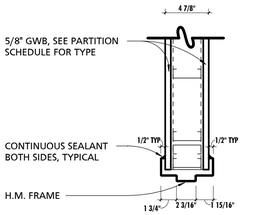

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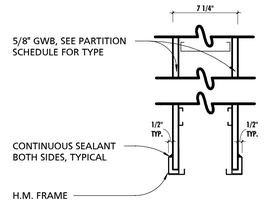

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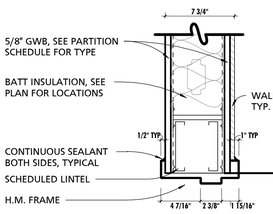

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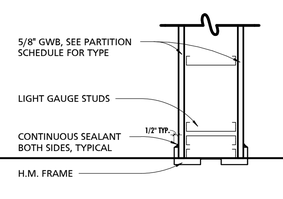

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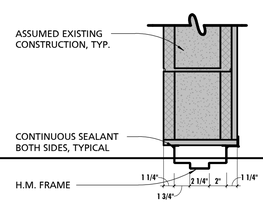

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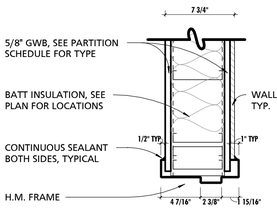

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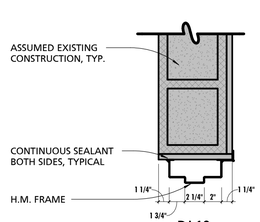
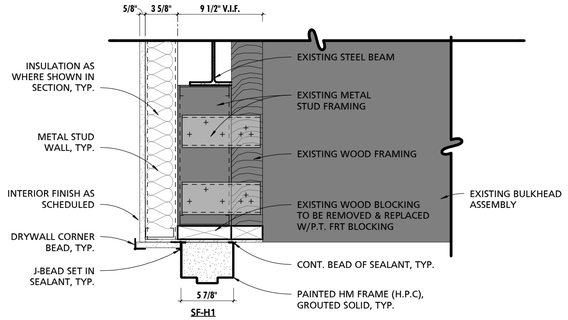


DJ-10

1 DOOR DETAILS
1 1/2" = 1'-0"



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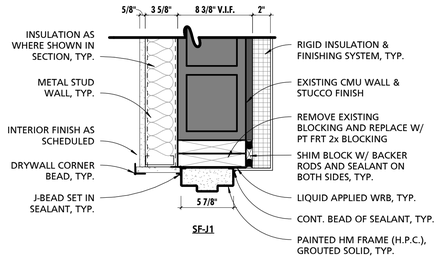

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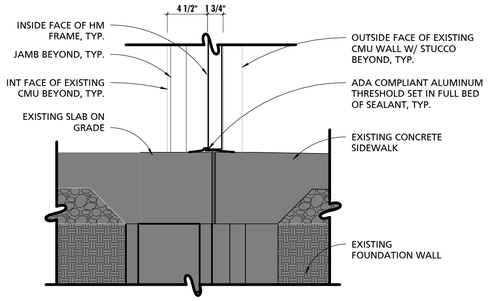
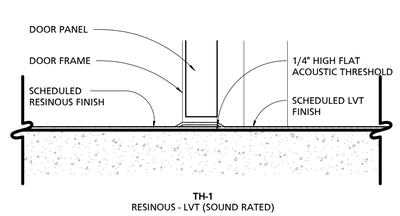
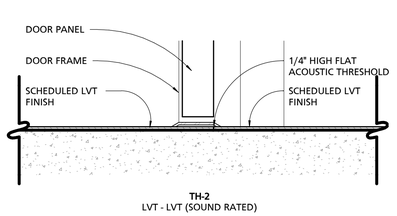


S-1

2 EXTERIOR DOOR DETAILS
1 1/2" = 1'-0"



TH-1
RESINOUS - LVT (SOUND RATED)



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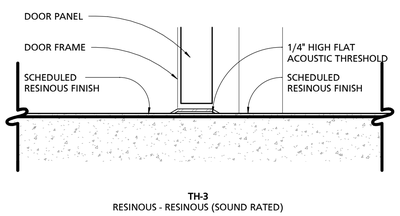
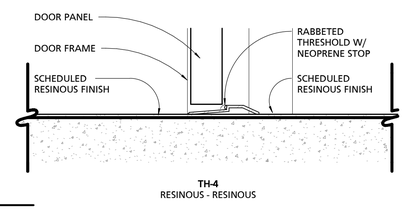
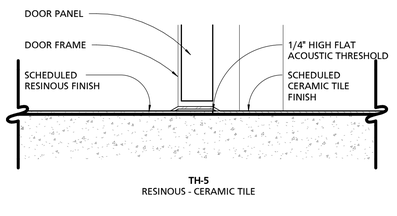
LVT - LVT (SOUND RATED)



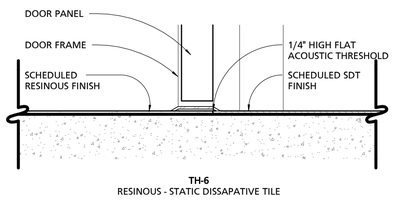
TH-3
RESINOUS - RESINOUS (SOUND RATED)



TH-4
RESINOUS - RESINOUS

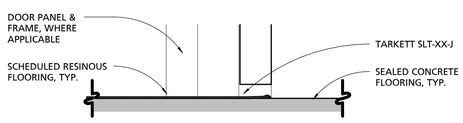


TH-5
RESINOUS - CERAMIC TILE

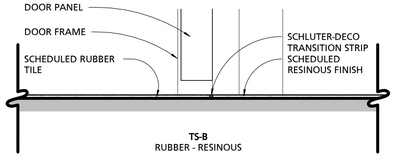


TH-6
RESINOUS - STATIC DISSAPATIVE TILE

3 THRESHOLD DETAILS
3" = 1'-0"



TS-A
RESINOUS TO EXISTING FLOOR FINISH



TS-B
RUBBER - RESINOUS

NOTE: ALIGN FINISH TRANSITIONS WITH DOOR PANEL SIDE OF FRAME, TYP.

4 TRANSITION DETAILS
3" = 1'-0"

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CONSULTANT:

SEAL:

NATIONAL VETERINARY ASSOCIATES
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5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

DOOR DETAILS

SHEET NUMBER:
A603

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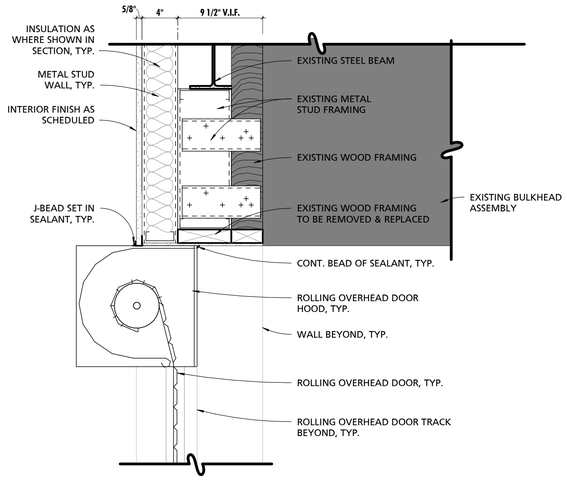
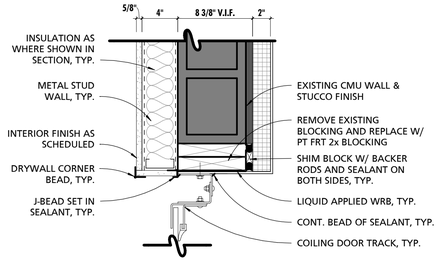
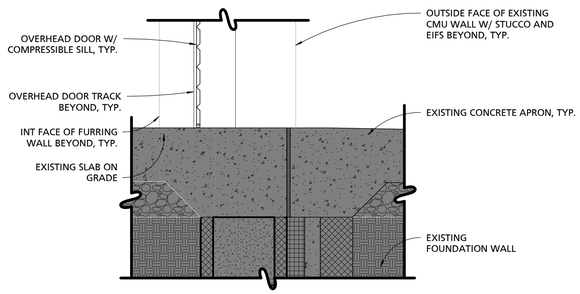


OH-H1



OH-J1



OH-S1

1 OVERHEAD DOOR DETAILS

1 1/2" = 1'-0"

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No. DATE

DOOR DETAILS CONT.

SHEET NUMBER:

A604

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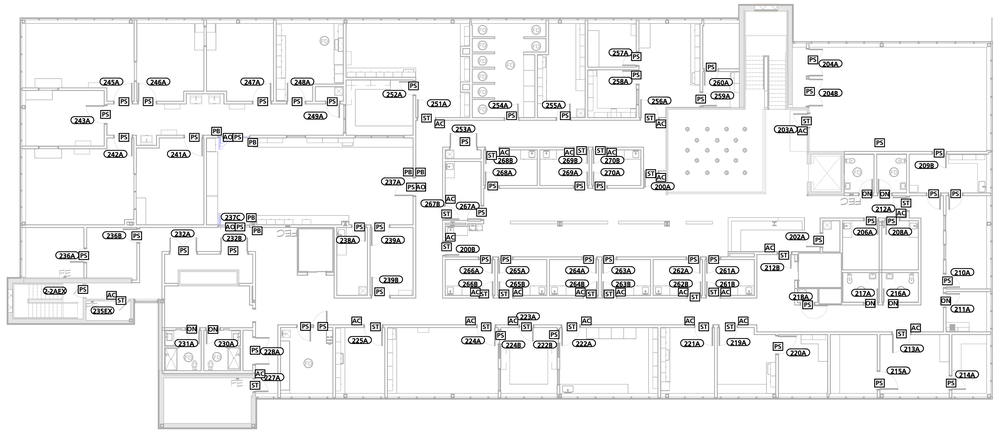
DOOR / HDWR

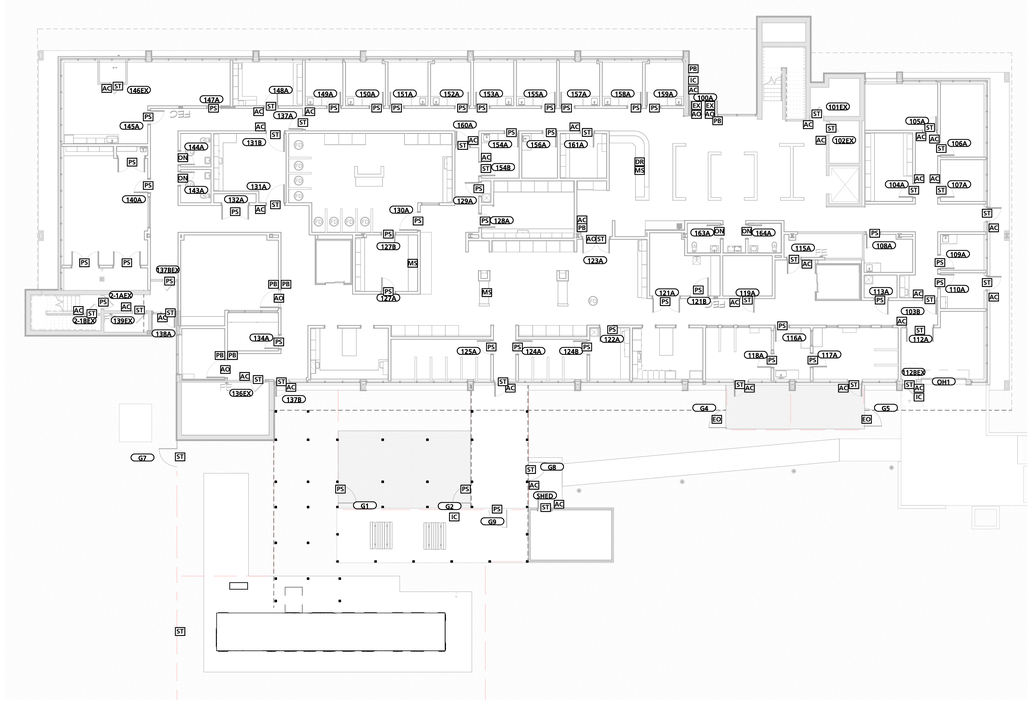
HARDWARE	MARK
1	
1	100A
2	
2	103A
2	110B
2	138A
3	
3	117B
3	118B
3	123B
3	137B
4	
4	112A
5	
5	112BEX
6	
6	123A
7	
7	132A
7	142A
7	204A
7	204B
7	228A
7	253A
8	
8	141A
8	141B
8	232A
8	232B
9	
9	SHED
11	
11	237B
11	237C
12	
12	137A
13	
13	261B
13	262B
13	263B
13	264B
13	265B
13	266B
13	267B
13	268B
13	269B
13	270B
14	
14	133A
14	135A
15	
15	237A
16	
16	143A
16	144A
16	163A
16	164A
16	205A
16	207A
16	211A
16	216A
16	217A
16	230A
16	231A
17	
17	209A
17	209B
18	
18	212A
19	
19	108A
19	109A
19	110A
19	149A
19	150A
19	151A
19	152A
19	153A
19	154A
19	155A
19	156A
19	157A
19	158A
19	159A
19	206A
20	
20	113A
20	116A
20	124A
20	124B
20	125A
20	127A
20	127B
20	128A
20	129A
20	140A
20	145A
20	202A
20	210A
20	210B
20	214A
20	252A
20	254A
20	258A
20	261A
20	262A
20	263A
20	264A
20	265A
20	266A
20	267A
20	268A
20	269A
20	270A

DOOR / HDWR

HARDWARE	MARK
21A	
21A	117A
21A	118A
21A	122A
21A	134A
21A	238A
21A	249A
21A	255A
21A	257A
21A	259A
21A	260A
21B	
21B	218A
22	
22	130A
22	215A
23	
23	220A
23	241A
23	243A
23	246A
23	247A
23	248A
24	
24	239A
24	239B
24	242A
24	245A
25	
25	121B
26	
26	121A
26	226A
26	226B
27	
27	236A
27	236B
28	
28	147A
28	222B
28	224B
29	
29	148A
29	161A
29	212B
29	223A
30	
30	131A
30	131B
30	213A
30	222A
30	224A
30	225A
31	
31	103B
31	104A
31	105A
31	106A
31	107A
32	
32	200A
33	
33	119A
33	154B
33	160A
33	200B
33	203A
33	208A
34	
34	219A
34	221A
34	251A
34	256A
35	
35	115A
35	227A
36	
36	101EX
36	102EX
36	136EX
36	139EX
36	235EX
37	
37	2-1BEX
37	146EX
38	
38	2-1AEX
38	2-2AEX
39	
39	137BEX
40	
40	G1
40	G2
40	G9
41	
41	G4
41	G5
43	
43	G7
44	
44	G8
45	
45	G10
N/A	
N/A	103C
N/A	120B
N/A	126A
N/A	126B
N/A	229A
N/A	EL-2A
N/A	EL-2B
N/A	EL-3A
N/A	EL-3B
N/A	OH1



2 2ND FLOOR DOOR CONTROL DIAGRAM
1/16" = 1'-0"



1 1ST FLOOR DOOR CONTROL DIAGRAM
1/16" = 1'-0"

DOOR CONTROL LEGEND

AC	ACCESS CONTROL - ITEM WILL BE BY OWNER'S SECURITY SYSTEM VENDOR. PROVIDE POWER REQUIREMENTS AND CONDUITS WITH PULLS FOR CABLING BY OWNER'S SECURITY SYSTEM VENDOR.
AO	AUTOMATIC OPENING - PROVIDE POWER REQUIREMENTS AND REQUIRED CABLING FOR FULLY FUNCTIONING SYSTEM PER HDWR FUNCTION NARRATIVE.
DR	FRONT DOOR RELEASE
EX	EXIT FUNCTION
EO	EXIT ONLY
IC	INTERCOM WITH CAMERA - ITEM WILL BE BY OWNER'S SECURITY SYSTEM VENDOR. PROVIDE POWER REQUIREMENTS AND CONDUITS WITH PULLS FOR CABLING BY OWNER'S SECURITY SYSTEM VENDOR.
MS	INTERCOM/DOOR CONTROL MASTER STATION - ITEM WILL BE BY OWNER'S SECURITY SYSTEM VENDOR. PROVIDE POWER REQUIREMENTS AND CONDUITS WITH PULLS FOR CABLING BY OWNER'S SECURITY SYSTEM VENDOR.
ON	OCCUPANCY NOTIFICATION
PB	AUTOMATIC DOOR OPENING PUSH BUTTON - PROVIDE POWER REQUIREMENTS AND REQUIRED CABLING FOR FULLY FUNCTIONING SYSTEM PER HDWR FUNCTION NARRATIVE.
PS	PASSAGE FUNCTION
ST	STOREROOM FUNCTION

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COA:

NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERS AND SURVEYORS
CERTIFICATE OF AUTHORIZATION
MANNS WOODWARD STUDIOS, INC.
No. 53188

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
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DOOR HARDWARE DIAGRAMS

SHEET NUMBER:

A605

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DOOR / HDWR

HARDWARE	MARK
1	
1	100A
2	
2	103A
2	110B
2	138A
3	
3	117B
3	118B
3	123B
3	137B
4	
4	112A
5	
5	112BEX
6	
6	123A
7	
7	132A
7	142A
7	204A
7	204B
7	228A
7	253A
8	
8	141A
8	141B
8	232A
8	232B
9	
9	SHED
11	
11	237B
11	237C
12	
12	137A
13	
13	261B
13	262B
13	263B
13	264B
13	265B
13	266B
13	267B
13	268B
13	269B
13	270B
14	
14	133A
14	135A
15	
15	237A
16	
16	143A
16	144A
16	163A
16	164A
16	205A
16	207A
16	211A
16	216A
16	217A
16	230A
16	231A
17	
17	209A
17	209B
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18	212A
19	
19	108A
19	109A
19	110A
19	149A
19	150A
19	151A
19	152A
19	153A
19	154A
19	155A
19	156A
19	157A
19	158A
19	159A
19	206A
20	
20	113A
20	116A
20	124A
20	124B
20	125A
20	127A
20	127B
20	128A
20	129A
20	140A
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20	202A
20	210A
20	210B
20	214A
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20	261A
20	262A
20	263A
20	264A
20	265A
20	266A
20	267A
20	268A
20	269A
20	270A

DOOR / HDWR

HARDWARE	MARK
21A	
21A	117A
21A	118A
21A	122A
21A	134A
21A	238A
21A	249A
21A	255A
21A	257A
21A	259A
21A	260A
21B	
21B	218A
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26	121A
26	226A
26	226B
27	
27	236A
27	236B
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29	212B
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30	131A
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31	103B
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31	105A
31	106A
31	107A
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32	200A
33	
33	119A
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33	200B
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35	115A
35	227A
36	
36	101EX
36	102EX
36	136EX
36	139EX
36	235EX
37	
37	2-1BEX
37	146EX
38	
38	2-1AEX
38	2-2AEX
39	
39	137BEX
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40	G9
41	
41	G4
41	G5
43	
43	G7
44	
44	G8
45	
45	G10
N/A	
N/A	103C
N/A	120B
N/A	126A
N/A	126B
N/A	229A
N/A	EL-2A
N/A	EL-2B
N/A	EL-3A
N/A	EL-3B
N/A	OH1

HARDWARE SETS

SET No.	HW DESCRIPTION	HW COMPONANTS	HW FUNCTION NARRATIVE
1	DOUBLE EXTERIOR STOREFRONT DOOR W/ CARD ACCESS/INTERCOM & AUTOMATIC OPENING. REMOTE DOOR RELEASE.	•(2) CONTINUOUS ELECTRIFIED HINGE •(2) NARROW STYLE CONCEALED VERTICAL ROD EXIT DEVICE – ELECTRIC LATCH RETRACTION – 3080 TRIM •(2) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(4) DUSTPROOF STRIKES •(1) DOUBLE DOOR SURFACE MOUNTED AUTOMATIC DOOR OPERATOR WITH SELF-CLOSING AND OVERHEAD STOPPING •(2) NARROW PROFILE PUSH PLATE FOR AUTOMATIC OPENING OPERATION – LOCATED ON EXTERIOR AND INTERIOR •(1) THERMALLY BROKEN, ADA COMPLIANT THRESHOLD •(1) SET OF PILE WEATHERSTRIPPING BY STOREFRONT MANUFACTURER •(1) MEETING STILE SEAL BY STOREFRONT MANUFACTURER •(2) DOOR SWEEP BY STOREFRONT MANUFACTURER •(1) CARD READER WITH INTERCOM - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(2) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RETRACTS ELECTRIC VERTICAL RODS, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS ELECTRIC VERTICAL RODS. PUSH SIDE OPERABLE BY PUSHING PANIC BAR. INTERCOM VIA ACCESS CONTROL CONNECTED TO SECURITY SYSTEM BY OWNER'S SECURITY SYSTEM VENDOR. REMOTE DOOR RELEASE, BY OWNER'S SECURITY SYSTEM VENDOR, DOOR RETRACTS ELECTRIC VERTICAL RODS, ALLOWING ACCESS FROM PULL SIDE. AUTOMATIC OPENER POWERED-ON BY ACCESS CONTROL WHEN IN SECURE MODE AND ACTIVATED VIA PUSH BUTTON. AUTOMATIC OPENER ALWAYS POWERED-ON WHEN IN NON-SECURE MODE AND ACTIVATED VIA PUSH BUTTON.
2	SINGLE EXTERIOR STOREFRONT DOOR W/ ACCESS CONTROL & EXIT DEVICE	•(1) CONTINUOUS HINGE •(1) NARROW STYLE MORTISE EXIT DEVICE – 3080 TRIM •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP •(1) THERMALLY BROKEN, ADA COMPLIANT THRESHOLD •(1) SET OF PILE WEATHERSTRIPPING BY STOREFRONT MANUFACTURER •(1) DOOR SWEEP BY STOREFRONT MANUFACTURER •(1) NARROW STYLE CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE OPERABLE BY PUSHING PANIC BAR.
3	SINGLE EXTERIOR STOREFRONT DOOR W/ ACCESS CONTROL	•(1) CONTINUOUS HINGE •(1) MORTISE LOCKSET, STOREROOM FUNCTION ANSI F07 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP •(1) THERMALLY BROKEN, ADA COMPLIANT THRESHOLD •(1) SET OF PILE WEATHERSTRIPPING BY STOREFRONT MANUFACTURER •(1) DOOR SWEEP BY STOREFRONT MANUFACTURER •(1) NARROW STYLE CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
4	DOUBLE INTERIOR DOOR W/ ACCESS CONTROL ON PUSH SIDE	•(2) CONTINUOUS ELECTRIFIED HINGE •(2) ELECTRIFIED MORTISE MULTI-POINT LOCKSET, STOREROOM FUNCTION W/ TOP LATCH •(2) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(2) DUST PROOF STRIKES •(1) CARD READER - PUSH SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(2) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(4) 36" KICK PLATES – FRONT AND BACK OF DOOR PANELS	ACCESS CONTROL SWIPE ON PUSH SIDE OF DOOR RETRACTS ELECTRIC TOP LATCH, ALLOWING ACCESS FROM PUSH SIDE. KEY IN PUSH SIDE CYLINDER RETRACTS TOP LATCH. PULL SIDE OPERABLE BY LEVEL.
5	EXISTING SINGLE EXTERIOR DOOR W/ ACCESS CONTROL & INTERCOM/MASTER RELEASE	•(1) MORTISE LOCKSET, STOREROOM FUNCTION ANSI F07 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP •(1) THERMALLY BROKEN, ADA COMPLIANT THRESHOLD •(1) SET OF PILE WEATHERSTRIPPING •(1) DOOR SWEEP •(1) NARROW STYLE CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR PREP EXISTING DOOR AND FRAME TO RECEIVE NEW DOOR HARDWARE, CONDUITS, AND ELECTRICAL SUPPORT.	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER. INTERCOM VIA ACCESS CONTROL CONNECTED TO SECURITY SYSTEM BY OWNER'S SECURITY SYSTEM VENDOR.
6	DOUBLE INTERIOR DOOR W/ ACCESS CONTROL ON PUSH SIDE & AUTOMATIC OPENING FUNCTION, STC 43	•(2) CONTINUOUS ELECTRIFIED HINGE •(2) ELECTRIFIED MORTISE MULTI-POINT LOCKSET, STOREROOM FUNCTION W/ TOP LATCH •(2) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(2) DUST PROOF STRIKES •(1) DOUBLE DOOR SURFACE MOUNTED AUTOMATIC DOOR OPERATOR WITH SELF-CLOSING AND OVERHEAD STOPPING •(1) PUSH PLATE FOR AUTOMATIC OPENING OPERATION •(1) SET OF PILE WEATHERSTRIPPING •(1) MEETING STILE SEAL •(2) AUTOMATIC DOOR BOTTOM •(1) CARD READER - PUSH SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(2) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(4) 36" KICK PLATES – FRONT AND BACK OF DOOR PANELS •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD	ACCESS CONTROL SWIPE ON PUSH SIDE OF DOOR RETRACTS ELECTRIC TOP LATCH, ALLOWING ACCESS FROM PUSH SIDE. KEY IN PUSH SIDE CYLINDER RETRACTS TOP LATCH. PULL SIDE OPERABLE BY LEVEL. AUTOMATIC OPENER, ON PUSH SIDE, POWERED-ON BY ACCESS CONTROL WHEN IN SECURE MODE AND ACTIVATED VIA PUSH BUTTON (OPENS BOTH LEAFS). AUTOMATIC OPENER ALWAYS POWERED-ON WHEN IN NON-SECURE MODE AND ACTIVATED VIA PUSH BUTTON (OPENS BOTH LEAFS).
7	DOUBLE INTERIOR DOOR W/ PASSAGE FUNCTION	•(6) BUTT HINGES •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75, ACTIVE LEAF •(1) STRIKE, INACTIVE LEAF •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) AUTOMATIC TOP AND BOTTOM FLUSH BOLTS, INACTIVE LEAF •(2) DUST PROOF STRIKES •(2) SILENCER •(2) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP •(1) COORDINATOR •(2) 8" KICK PLATES – PULL SIDE OF EACH DOOR PANEL NOTE: ACTIVE LEAF IS LEFT LEAF ON ENTERING. INACTIVE LEEAF IS RIGHT LEAF ON ENTERING.	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
8	DOUBLE INTERIOR DOOR W/ PASSAGE FUNCTION, WEATHERSTRIPPING	•(6) BUTT HINGES •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75, ACTIVE LEAF •(1) STRIKE, INACTIVE LEAF •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) AUTOMATIC TOP AND BOTTOM FLUSH BOLTS, INACTIVE LEAF •(2) DUST PROOF STRIKES •(1) SET OF PILE WEATHERSTRIPPING •(1) MEETING STILE SEAL •(2) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP •(1) COORDINATOR •(2) 8" KICK PLATES – PULL SIDE OF EACH DOOR PANEL NOTE: ACTIVE LEAF IS LEFT LEAF ON ENTERING. INACTIVE LEEAF IS RIGHT LEAF ON ENTERING.	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
9	SINGLE EXTERIOR SHED DOOR W/ ACCESS CONTROL	•(3) BUTT HINGE •(1) MORTISE LOCKSET, STOREROOM FUNCTION ANSI F07 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP •(1) NARROW STYLE CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
11	AUTOMATIC SLIDING DOOR	•(2) TOUCHLESS (HAND WAVE) ACTIVATION SWITCH BY DOOR MANUFACTURER •(2) PULLS (EACH SIDE OF DOOR) BY DOOR MANUFACTURER •INSET ACCESS CONTROL DUAL ELECTRIC STRIKES FOR CARD ACCESS SECURITY COMPATIBILITY BY DOOR MANUFACTURER	BOTH SIDES ALWAYS PROVIDED FREE ACCESS. AUTOMATIC OPENER ACTIVATED BY TOUCHLESS HAND WAIVE SWITCH ON BOTH SIDES OF DOOR. EMERGENCY EGRESS IS PROVIDED BY PUSHING DOOR ASSEMBLY OPEN.
12	SINGLE INTERIOR DOOR W/ ACCESS CONTROL (PUSH SIDE) CONNECTED TO FIRE ALARM	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE – CONNECTED TO FIRE ALARM •(1) CARD READER - PUSH SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(1) WALL STOP •(3) SILENCERS	ACCESS CONTROL SWIPE ON PUSH SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PUSH SIDE. FIRE ALARM ACTIVATION RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PUSH SIDE KEY IN PUSH SIDE CYLINDER RETRACTS LATCHBOLT. PULL SIDE ALWAYS OPERABLE BY LEVER.
13	SINGLE INTERIOR DOOR WITH ACCESS CONTROL (PULL SIDE) & DOOR VIEWER, STC 43	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) DOOR VIEWER – VIEW FROM PUSH SIDE TO PULL SIDE •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(1) 8" KICK PLATE – PUSH SIDE OF DOOR PANEL •(1) 30" ARMOR PLATE – PULL SIDE OF DOOR PANEL •(1) WALL STOP	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.

HARDWARE SETS

SET No.	HW DESCRIPTION	HW COMPONANTS	HW FUNCTION NARRATIVE
14	SINGLE INTERIOR 48" DOOR W/ AUTO-OPENING & PASSAGE FUNCTION, LEAD LINED	•(1) CONTINUOUS HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) ELECTRICAL STRIKE •(1) SINGLE DOOR SURFACE MOUNTED AUTOMATIC DOOR OPERATOR WITH SELF-CLOSING AND OVERHEAD STOPPING •(2) PUSH PLATE FOR AUTOMATIC OPENING OPERATION – LOCATED ON EXTERIOR AND INTERIOR •(2) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(3) SILENCERS	BOTH PUSH AND PULL SIDE HAVE FREE ACCESS. AUTOMATIC OPENER ALWAYS POWERED-ON AND ACTIVATED VIA PUSH BUTTON. ELECTRIC STRIKE RELEASES WHEN AUTOMATIC OPENER IS ENGAGED.
15	SINGLE INTERIOR 48" DOOR W/ AUTO-OPENING & PASSAGE FUNCTION	•(5) BUTT HINGES •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) ELECTRICAL STRIKE •(1) SINGLE DOOR SURFACE MOUNTED AUTOMATIC DOOR OPERATOR WITH SELF-CLOSING AND OVERHEAD STOPPING •(2) PUSH PLATE FOR AUTOMATIC OPENING OPERATION – LOCATED ON EXTERIOR AND INTERIOR •(2) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(3) SILENCERS	BOTH PUSH AND PULL SIDE HAVE FREE ACCESS. AUTOMATIC OPENER ALWAYS POWERED-ON AND ACTIVATED VIA PUSH BUTTON. ELECTRIC STRIKE RELEASES WHEN AUTOMATIC OPENER IS ENGAGED.
16	SINGLE INTERIOR DOOR W/ OCCUPANCY INDICATOR FUNCTION, STC 43	•(3) BUTT HINGES •(1) CYLINDRICAL LATCHSET, PASSAGE FUNCTION ANSI F75 •(1) DEADBOLT WITH OCCUPANCY INDICATOR •(1) STRIKE •(1) STANDARD ARM CLOSER •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(2) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(1) WALL STOP	PUSH SIDE TRIM SHALL BE LOCKED/UNLOCKED BY PULL SIDE THUMB TURN. OCCUPANCY INDICATOR SHALL BE CONTROLLED BY PULL SIDE THUMB TURN. PULL SIDE SHALL ALWAYS PROVIDES FREE ACCESS.
17	SINGLE INTERIOR DOOR W/ PASSAGE EXIT DEVICE	•(1) CONTINUOUS HINGE •(1) MORTISE EXIT DEVICE – 3080 TRIM – PASSAGE •(1) STRIKE •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(2) 8" KICK PLATE – EACH SIDE OF DOOR PANEL	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
18	SINGLE INTERIOR DOOR W/ PASSAGE EXIT DEVICE & ACCESS CONTROL (PULL SIDE)	•(3) BUTT HINGE •(1) MORTISE EXIT DEVICE – 3080 TRIM – PASSAGE •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER •(1) CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(2) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(1) WALL STOP	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
19	SINGLE INTERIOR DOOR W/ PASSAGE FUCNTION & DOOR VIEWER, STC 43	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) DOOR VIEWER – VIEW FROM PUSH SIDE TO PULL SIDE •(1) SET PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) 8" KICK PLATE – PUSH SIDE OF DOOR PANEL •(1) 30" ARMOR PLATE – PULL SIDE OF DOOR PANEL •(1) WALL STOP	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
20	SINGLE INTERIOR DOOR W/ PASSAGE FUNCTION, STC 43	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) 8" KICK PLATE – PUSH SIDE OF DOOR PANEL •(1) 30" ARMOR PLATE – PULL SIDE OF DOOR PANEL •(1) WALL STOP (EXCEPT AT DOORS 113A, 127A, 127B, 128A, 129A, 140A, 214A, 254A) •(1) OVERHEAD STOP (AT DOORS 113A, 127A, 127B, 128A, 129A, 140A, 214A, 254A ONLY)	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
21A	SINGLE INTERIOR DOOR W/ PASSAGE FUCNTION	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(1) WALL STOP (EXCEPT AT DOORS 117A, 118S, 122A, 249A, 255A) •(1) OVERHEAD STOP (AT DOORS 117A, 118S, 122A, 249A, 255A ONLY) •(3) SILENCERS	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
21B	SINGLE INTERIOR DOOR W/ PASSAGE FUCNTION 180 DEGREE OPENING	•(3) WIDE THROW HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(2) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(1) WALL STOP •(3) SILENCERS	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
22	SINGLE INTERIOR 48" DOOR W/ PASSAGE FUNCTION, STC 43	•(5) BUTT HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) 8" KICK PLATE – PUSH SIDE OF DOOR PANEL •(1) 30" ARMOR PLATE – PULL SIDE OF DOOR PANEL •(1) WALL STOP (EXCEPT AT DOORS 215A) •(1) OVERHEAD STOP (AT DOORS 215A ONLY)	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
23	SINGLE INTERIOR 48" DOOR W/ PASSAGE FUNCTION	•(5) BUTT HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(1) WALL STOP (EXCEPT AT DOORS 248a) •(1) OVERHEAD STOP (AT DOORS 248A) •(3) SILENCERS	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
24	SINGLE INTERIOR 48" DOOR W/ PASSAGE FUNCTION, LEAD LINED	•(1) CONTINUOUS HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(1) WALL STOP (EXCEPT AT DOORS ??) •(1) OVERHEAD STOP (AT DOORS ??) •(3) SILENCERS	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
25	SINGLE INTERIOR 48" DOOR W/ PASSAGE FUNCTION, 20 MIN. FIRE RATED, STC 43	•(5) BUTT HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) PARALLEL ARM CLOSER W/ COMPRESSION STOP •(2) 30" ARMOR PLATE – BOTH SIDES OF DOOR PANEL	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
26	SINGLE INTERIOR DOOR W/ PASSAGE FUNCTION, 20 MIN. FIRE RATED, STC 43	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) PARALLEL ARM CLOSER W/ COMPRESSION STOP •(2) 30" ARMOR PLATE – BOTH SIDES OF DOOR PANEL	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
27	SINGLE INTERIOR DOOR W/ PASSAGE FUNCTION, 45 MIN. FIRE RATED	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) STRIKE •(1) SET OF PILE WEATHERSTRIPPING •(1) PARALLEL ARM CLOSER W/ COMPRESSION STOP	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
28	SINGLE INTERIOR SLIDING DOOR W/ PASSAGE FUNCTION	•POCKET FRAME KIT INCLUDING HEADER TRACK ASSEMBLY, ALUMINUM CASED WOOD STUDS, PRE-MOUNTED HEADER BRACKETS, 200 LB. HANGERS, FLOOR CLEATS, MOUNTING HARDWARE, BUMPER STOP, BOTTOM GUIDE AND ADJUSTING WRENCH WITH SOFT CLOSE AND SOFT OPEN OPTION	BOTH SIDES HAVE FREE ACCESS.

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SUBMISSION:
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ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

DOOR HARDWARE SETS

SHEET NUMBER:
A606

9/20/2023 4:52:23 PM

DOOR / HDWR

HARDWARE	MARK
1	
1	100A
2	
2	103A
2	110B
2	138A
3	
3	117B
3	118B
3	123B
3	137B
4	
4	112A
5	
5	112BEX
6	
6	123A
7	
7	132A
7	142A
7	204A
7	204B
7	228A
7	253A
8	
8	141A
8	141B
8	232A
8	232B
9	
9	SHED
11	
11	237B
11	237C
12	
12	137A
13	
13	261B
13	262B
13	263B
13	264B
13	265B
13	266B
13	267B
13	268B
13	269B
13	270B
14	
14	133A
14	135A
15	
15	237A
16	
16	143A
16	144A
16	163A
16	164A
16	205A
16	207A
16	211A
16	216A
16	217A
16	230A
16	231A
17	
17	209A
17	209B
18	
18	212A
19	
19	108A
19	109A
19	110A
19	149A
19	150A
19	151A
19	152A
19	153A
19	154A
19	155A
19	156A
19	157A
19	158A
19	159A
19	206A
20	
20	113A
20	116A
20	124A
20	124B
20	125A
20	127A
20	127B
20	128A
20	129A
20	140A
20	145A
20	202A
20	210A
20	210B
20	214A
20	252A
20	254A
20	258A
20	261A
20	262A
20	263A
20	264A
20	265A
20	266A
20	267A
20	268A
20	269A
20	270A

DOOR / HDWR

HARDWARE	MARK
21A	
21A	117A
21A	118A
21A	122A
21A	134A
21A	238A
21A	249A
21A	255A
21A	257A
21A	259A
21A	260A
21B	
21B	218A
22	
22	130A
22	215A
23	
23	220A
23	241A
23	243A
23	246A
23	247A
23	248A
24	
24	239A
24	239B
24	242A
24	245A
25	
25	121B
26	
26	121A
26	226A
26	226B
27	
27	236A
27	236B
28	
28	147A
28	222B
28	224B
29	
29	148A
29	161A
29	212B
29	223A
30	
30	131A
30	131B
30	213A
30	222A
30	224A
30	225A
31	
31	103B
31	104A
31	105A
31	106A
31	107A
32	
32	200A
33	
33	119A
33	154B
33	160A
33	200B
33	203A
33	208A
34	
34	219A
34	221A
34	251A
34	256A
35	
35	115A
35	227A
36	
36	101EX
36	102EX
36	136EX
36	139EX
36	235EX
37	
37	2-1BEX
37	146EX
38	
38	2-1AEX
38	2-2AEX
39	
39	137BEX
40	
40	G1
40	G2
40	G9
41	
41	G4
41	G5
43	
43	G7
44	
44	G8
45	
45	G10
N/A	
N/A	103C
N/A	120B
N/A	126A
N/A	126B
N/A	229A
N/A	EL-2A
N/A	EL-2B
N/A	EL-3A
N/A	EL-3B
N/A	OH1

HARDWARE SETS

SET No.	HW DESCRIPTION	HW COMPONANTS	HW FUNCTION NARRATIVE
29	SINGLE INTERIOR DOOR W/ ACCESS CONTROL (PUSH SIDE), STC 43	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP (AT DOORS 148A, 161A, 212B, 223A ONLY) •(1) CARD READER - PUSH SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(2) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(1) WALL STOP (EXCEPT AT DOORS 148A, 161A, 212B, 223A)	ACCESS CONTROL SWIPE ON PUSH SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PUSH SIDE. KEY IN PUSH SIDE CYLINDER RETRACTS LATCHBOLT. PULL SIDE ALWAYS OPERABLE BY LEVER.
30	SINGLE INTERIOR 48" DOOR W/ ACCESS CONTROL (PUSH SIDE), STC 43	•(5) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP (AT DOORS 213A ONLY) •(1) CARD READER - PUSH SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(2) 8" KICK PLATE – BOTH SIDES OF DOOR PANEL •(1) WALL STOP (AT DOORS 222A, 224A ONLY)	ACCESS CONTROL SWIPE ON PUSH SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PUSH SIDE. KEY IN PUSH SIDE CYLINDER RETRACTS LATCHBOLT. PULL SIDE ALWAYS OPERABLE BY LEVER.
31	SINGLE INTERIOR DOOR W/ ACCESS CONTROL (PUSH SIDE)	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) CARD READER - PUSH SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(1) WALL STOP •(3) SILENCERS	ACCESS CONTROL SWIPE ON PUSH SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PUSH SIDE. KEY IN PUSH SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
32	SINGLE INTERIOR DOOR W/ ACCESS CONTROL (PULL SIDE)	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP •(1) CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(1) WALL STOP •(3) SILENCERS	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
33	SINGLE INTERIOR DOOR W/ ACCESS CONTROL (PULL SIDE), STC 43	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) SET OF PILE WEATHERSTRIPPING •(1) AUTOMATIC DOOR BOTTOM •(1) ALUMINUM ACOUSTIC DOOR THRESHOLD •(1) PARALLEL ARM CLOSER W/ HOLD OPEN AND COMPRESSION STOP (AT DOORS 119A ONLY) •(1) CARD READER - PUSH SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(1) WALL STOP (AT DOORS 154B, 160A, 203A, 208B ONLY)	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
34	SINGLE INTERIOR 48" DOOR W/ ACCESS CONTROL (PUSH SIDE)	•(5) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) CARD READER - PUSH SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(1) WALL STOP •(3) SILENCERS	ACCESS CONTROL SWIPE ON PUSH SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PUSH SIDE. KEY IN PUSH SIDE CYLINDER RETRACTS LATCHBOLT. PULL SIDE ALWAYS OPERABLE BY LEVER.
35	SINGLE INTERIOR DOOR W/ ACCESS CONTROL (PULL SIDE), 45 MIN FIRE RATED	•(3) BUTT HINGE •(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER W/ COMPRESSION STOP •(1) CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SET OF PILE WEATHERSTRIPPING •(3) SILENCERS	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
36	EXISTING SINGLE INTERIOR DOOR W/ ACCESS CONTROL (PUSH SIDE)	•(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER •(1) NARROW STYLE CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR •(1) WALL STOP PREP EXISTING DOOR AND FRAME TO RECEIVE NEW DOOR HARDWARE, CONDUITS, AND ELECTRICAL SUPPORT.	ACCESS CONTROL SWIPE ON PUSH SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PUSH SIDE. FIRE ALARM ACTIVATION RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PUSH SIDE KEY IN PUSH SIDE CYLINDER RETRACTS LATCHBOLT. PULL SIDE ALWAYS OPERABLE BY LEVER.
37	EXISTING SINGLE INTERIOR DOOR W/ ACCESS CONTROL (PULL SIDE)	•(1) CYLINDRICAL LOCKSET, STOREROOM FUNCTION ANSI F86 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) PARALLEL ARM CLOSER W/ COMPRESSION STOP •(1) NARROW STYLE CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) SECURITY DOOR CONTACT - BY OWNER'S SECURITY SYSTEM VENDOR PREP EXISTING DOOR AND FRAME TO RECEIVE NEW DOOR HARDWARE, CONDUITS, AND ELECTRICAL SUPPORT.	ACCESS CONTROL SWIPE ON PULL SIDE OF DOOR RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
38	EXISTING SINGLE INTERIOR DOOR W/ PASSAGE EXIT DEVICE, 60 MIN. FIRE RATED	•(1) MORTISE EXIT DEVICE – 3080 TRIM – PASSAGE •(1) STRIKE •(1) PARALLEL ARM CLOSER •(1) SET OF PILE WEATHERSTRIPPING •(2) 8" KICK PLATE – EACH SIDE OF DOOR PANEL •(1) WALL STOP PREP EXISTING DOOR AND FRAME TO RECEIVE NEW DOOR HARDWARE, CONDUITS, AND ELECTRICAL SUPPORT.	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
39	EXISTING SINGLE INTERIOR DOOR W/ PASSAGE EXIT DEVICE	•(1) MORTISE EXIT DEVICE – 3080 TRIM – PASSAGE •(1) STRIKE •(1) PARALLEL ARM CLOSER •(2) 8" KICK PLATE – EACH SIDE OF DOOR PANEL •(1) WALL STOP PREP EXISTING DOOR AND FRAME TO RECEIVE NEW DOOR HARDWARE, CONDUITS, AND ELECTRICAL SUPPORT.	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
40	SINGLE PANEL SWING GATE W/ PASSAGE FUNCTION	•(RECOMMENDED BY GATE MANUFACTURER) STRING HINGES BY GATE MANUFACTURER •(1) STRIKE BY GATE MANUFACTURER •(1) CYLINDRICAL LOCKSET, PASSAGE FUNCTION ANSI F75 •(1) PROTECTION PLATE PREP GATE TO RECEIVE ALL HARDWARE REQUIRED TO FULL FUNCTION	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
41	SINGLE PANEL SWING GATE W/ EXIT LOCK FUNCTION	•(RECOMMENDED BY GATE MANUFACTURER) STRING HINGES BY GATE MANUFACTURER •(1) STRIKE BY GATE MANUFACTURER •(1) CYLINDRICAL LOCKSET, EXIT LOCK FUNCTION •(1) PROTECTION PLATE PREP GATE TO RECEIVE ALL HARDWARE REQUIRED TO FULL FUNCTION	PUSH SIDE ALWAYS PROVIDES FREE EGRESS. PULL SIDE IN A BLANK PLATE ONLY.
42	DOUBLE PANEL SWING GATE W/ STORAGE FUNCTION	•(RECOMMENDED BY GATE MANUFACTURER) STRING HINGES BY GATE MANUFACTURER •(1) STRIKE BY GATE MANUFACTURER – ON INACTIVE LEAF •(1) DROP ROD BY GATE MANUFACTURER – ON INACTIVE LEAF •(1) RECESSED DROP ROD RECEIVER BY GATE MANUFACTURER •(1) MORTISE LOCKSET, STOREROOM FUNCTION ANSI 07 – ON ACTIVE LEAF •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) PROTECTION PLATE – ON ACTIVE LEAF PREP GATE TO RECEIVE ALL HARDWARE REQUIRED TO FULL FUNCTION NOTE: ACTIVE LEAF IS LEFT LEAF ON ENTERING. INACTIVE LEEAF IS RIGHT LEAF ON ENTERING.	PULL SIDE SHALL BE UNLOCKED BY KEY OVERRIDE. PUSH SIDE SHALL ALWAYS PROVIDES FREE ACCESS.

HARDWARE SETS

SET No.	HW DESCRIPTION	HW COMPONANTS	HW FUNCTION NARRATIVE
43	SINGLE PANEL SWING GATE W/ STORAGE FUNCTION	•(RECOMMENDED BY GATE MANUFACTURER) STRING HINGES BY GATE MANUFACTURER •(1) STRIKE BY GATE MANUFACTURER •(1) MORTISE LOCKSET, STOREROOM FUNCTION ANSI 07 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) PROTECTION PLATE PREP GATE TO RECEIVE ALL HARDWARE REQUIRED TO FULL FUNCTION	PULL SIDE SHALL BE UNLOCKED BY KEY OVERRIDE. PUSH SIDE SHALL ALWAYS PROVIDES FREE ACCESS.
44	SINGLE PANEL SWING GATE W/ ACCESS CONTROL (PULL SIDE)	•(RECOMMENDED BY GATE MANUFACTURER) STRING HINGES BY GATE MANUFACTURER •(1) STRIKE BY GATE MANUFACTURER •(1) MORTISE LOCKSET, STOREROOM FUNCTION ANSI 07 •(1) INTERCHANGEABLE CYLINDER WITH CONSTRUCTION KEY CORE •(1) ELECTRICAL STRIKE •(1) CARD READER - PULL SIDE - BY OWNER'S SECURITY SYSTEM VENDOR •(1) PROTECTION PLATE PREP GATE TO RECEIVE ALL HARDWARE REQUIRED TO FULLY FUNCTION	ACCESS CONTROL SWIPE ON PULL SIDE OF GATE RELEASES ELECTRIC STRIKE, ALLOWING ACCESS FROM PULL SIDE. KEY IN PULL SIDE CYLINDER RETRACTS LATCHBOLT. PUSH SIDE ALWAYS OPERABLE BY LEVER.
45	DOUBLE PANEL SWING GATE W/ PASSAGE FUNCTION	•(RECOMMENDED BY GATE MANUFACTURER) STRING HINGES BY GATE MANUFACTURER •(2) DROP ROD BY GATE MANUFACTURER – on both leafs •(2) RECESSED DROP ROD RECEIVER BY GATE MANUFACTURER PREP GATE TO RECEIVE ALL HARDWARE REQUIRED TO FULL FUNCTION	PUSH AND PULL SIDE ALWAYS PROVIDED FREE ACCESS.
N/A	NO HARDWARE		

PRELIMINARY - NOT FOR CONSTRUCTION

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NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

DOOR HARDWARE SETS

SHEET NUMBER:
A607

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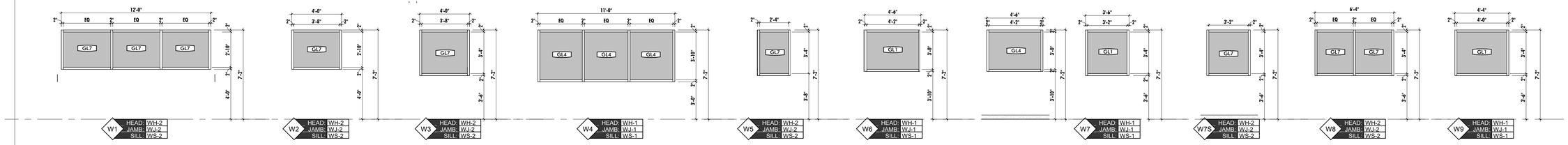

SCHEDULE - GLAZING

MARK	DESCRIPTION	COMMENTS
GL1	CLEAR SAFETY GLAZING - 1/4"	
GL2	INSULATED CLEAR TEMPERED	
GL3	NOT USED	
GL4	CLEAR LEAD SAFETY GLAZING	TO MATCH LEAD LINING OF WALL
GL5	INSULATED GLAZING UNIT, TEMPERED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR
GL6	INSULATED GLAZING UNIT, SPANDREL	TEMPERED
GL7	CLEAR LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL8	FROSTED LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL9	INSULATED GLAZING UNIT - LEAD LINED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR, LEAD LINED
GL10	INSULATED GLAZING UNIT, SPANDREL - LEAD LINED	

GENERAL OPENING NOTES

1	CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS PRIOR TO FABRICATION OF DOORS, WINDOWS, STOREFRONT, ETC.
2	PROVIDE 16 GAUGE METAL STUDS UNDERNEATH AND DIRECTLY ADJACENT TO SOUND CONTROL WINDOW ASSEMBLY TO SUPPORT WINDOW ASSEMBLY WEIGHT.
3	PROVIDE STRUCTURAL SUPPORT BELOW INTERIOR WINDOWS. SEE TYPICAL DETAIL AND REFER TO STRUCTURAL DRAWINGS FOR MORE INFORMATION.

ACOUSTICAL STC-50

17 WINDOW DETAILS
1 1/2" = 1'-0"

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SEAL:

COA:

NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERING AND SURVEYING
CERTIFICATE OF AUTHORIZATION
MANNS WOODWARD STUDIOS, INC.
No. 53188

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

HOLLOW METAL WINDOW TYPES & DETAILS

SHEET NUMBER:
A608

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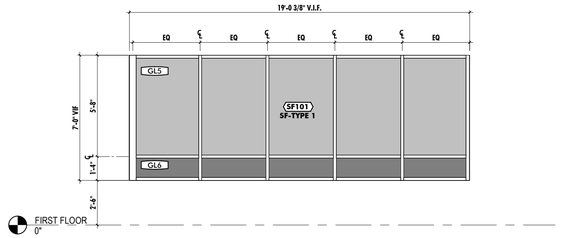
GENERAL OPENING NOTES

1	CONTRACTOR SHALL FIELD VERIFY ALL CONDITIONS PRIOR TO FABRICATION OF DOORS, WINDOWS, STOREFRONT, ETC.
2	PROVIDE 16 GAUGE METAL STUDS UNDERNEATH AND DIRECTLY ADJACENT TO SOUND CONTROL WINDOW ASSEMBLY TO SUPPORT WINDOW ASSEMBLY WEIGHT.
3	PROVIDE STRUCTURAL SUPPORT BELOW INTERIOR WINDOWS. SEE TYPICAL DETAIL AND REFER TO STRUCTURAL DRAWINGS FOR MORE INFORMATION.



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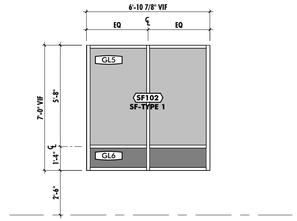

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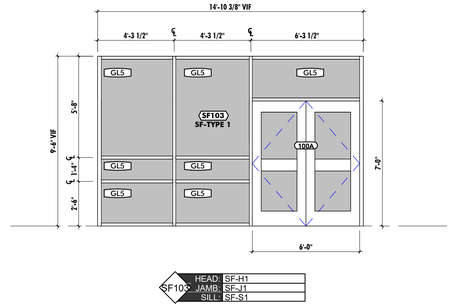

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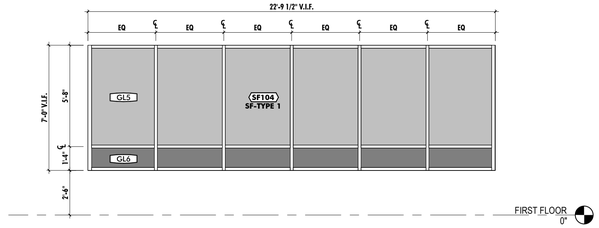

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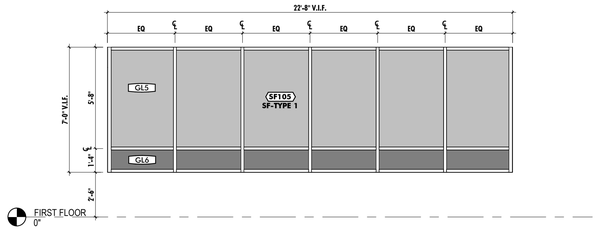

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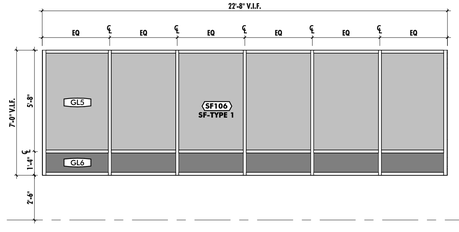

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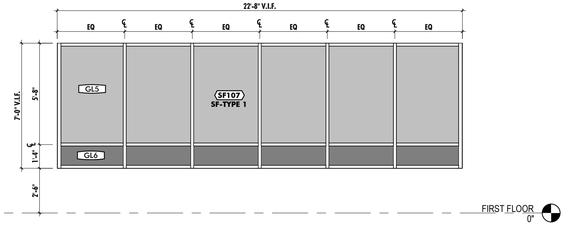

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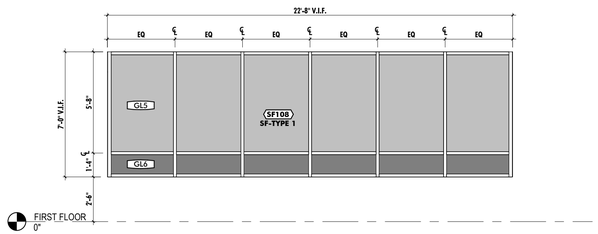

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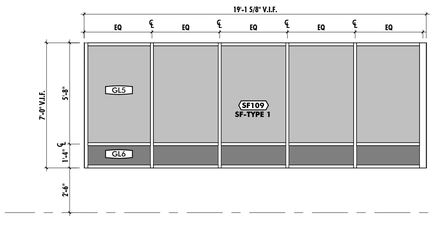
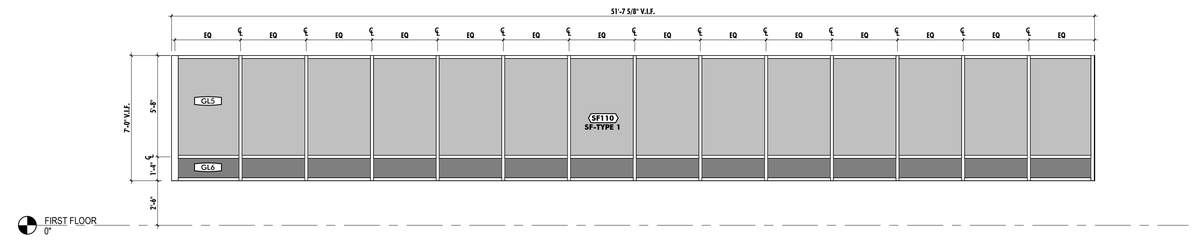


SF109: HEAD: SF-H1, JAMB: SF-J1, SILL: SF-S1

SCHEDULE - GLAZING

MARK	DESCRIPTION	COMMENTS
GL1	CLEAR SAFETY GLAZING - 1/4"	
GL2	INSULATED CLEAR TEMPERED	
GL3	NOT USED	
GL4	CLEAR LEAD SAFETY GLAZING	TO MATCH LEAD LINING OF WALL
GL5	INSULATED GLAZING UNIT, TEMPERED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR
GL6	INSULATED GLAZING UNIT, SPANDREL	TEMPERED
GL7	CLEAR LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL8	FROSTED LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL9	INSULATED GLAZING UNIT - LEAD LINED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR, LEAD LINED
GL10	INSULATED GLAZING UNIT, SPANDREL - LEAD LINED	



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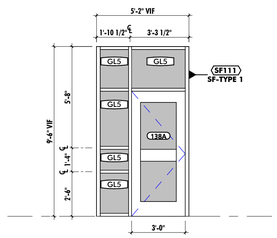

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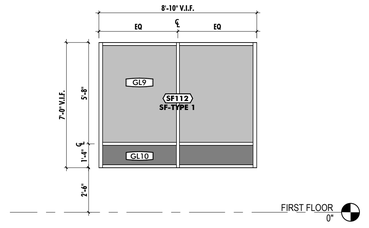

SF112: HEAD: SF-H1, JAMB: SF-J1, SILL: SF-S1

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PROJECT NUMBER: 22-127

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100% CONSTRUCTION DOCUMENTS
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STOREFRONT ELEVATIONS

SHEET NUMBER:

A609

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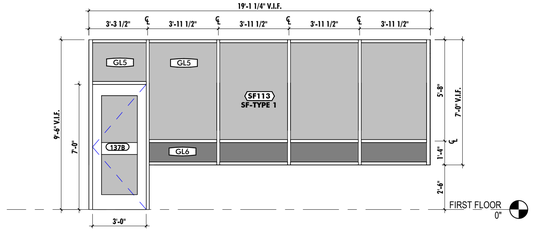

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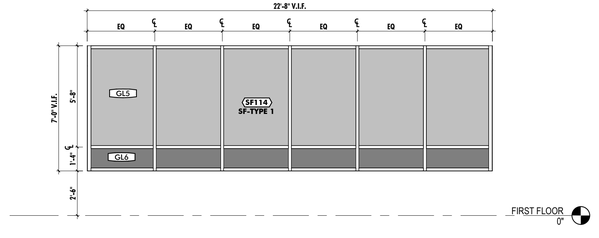

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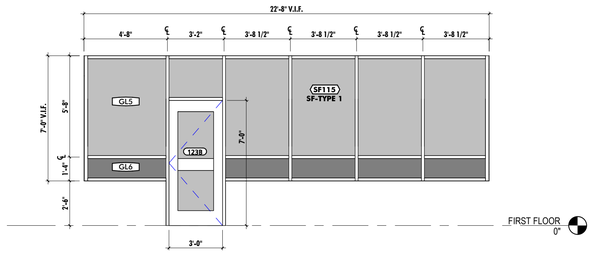
JAMB:	SF-J1
SILL:	SF-S1



SF115	
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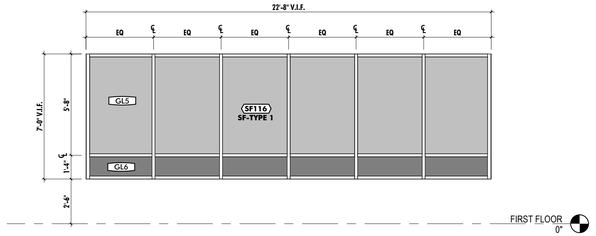
JAMB:	SF-J1
SILL:	SF-S1



SF116	
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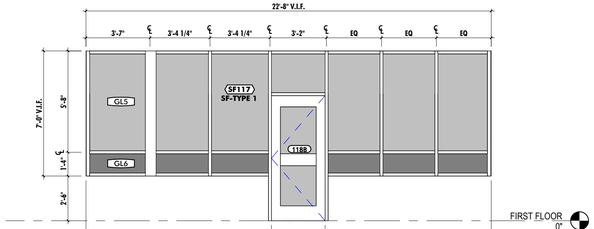
JAMB:	SF-J1
SILL:	SF-S1



SF117	
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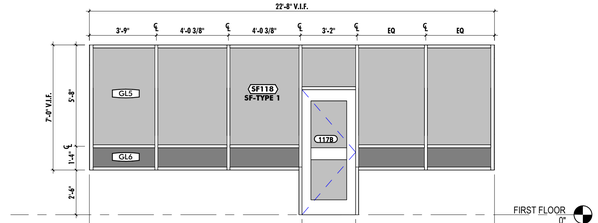
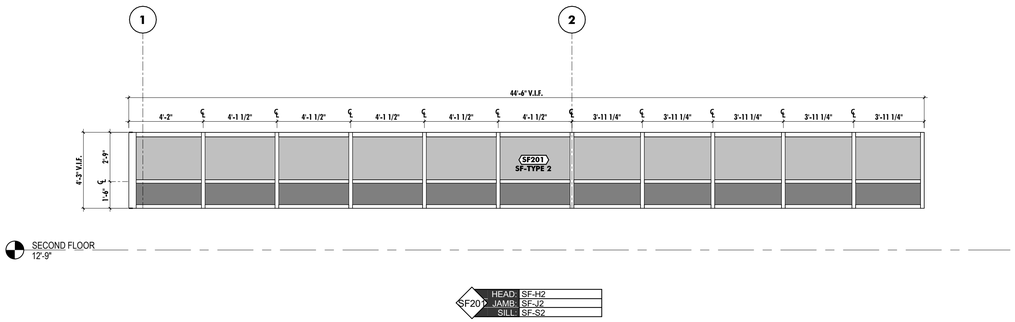
JAMB:	SF-J1
SILL:	SF-S1



SF118	
HEAD:	SF-H1
JAMB:	SF-J1
SILL:	SF-S1

SF119	
HEAD:	SF-H1
JAMB:	SF-J1
SILL:	SF-S1

SF120	
HEAD:	SF-H1
JAMB:	SF-J1
SILL:	SF-S1



SF201	
HEAD:	SF-H2
JAMB:	SF-J2
SILL:	SF-S2

SCHEDULE - GLAZING

MARK	DESCRIPTION	COMMENTS
GL1	CLEAR SAFETY GLAZING - 1/4"	
GL2	INSULATED CLEAR TEMPERED	
GL3	NOT USED	
GL4	CLEAR LEAD SAFETY GLAZING	TO MATCH LEAD LINING OF WALL
GL5	INSULATED GLAZING UNIT, TEMPERED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR
GL6	INSULATED GLAZING UNIT, SPANDREL	TEMPERED
GL7	CLEAR LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL8	FROSTED LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL9	INSULATED GLAZING UNIT - LEAD LINED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR, LEAD LINED
GL10	INSULATED GLAZING UNIT, SPANDREL - LEAD LINED	

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SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC. No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
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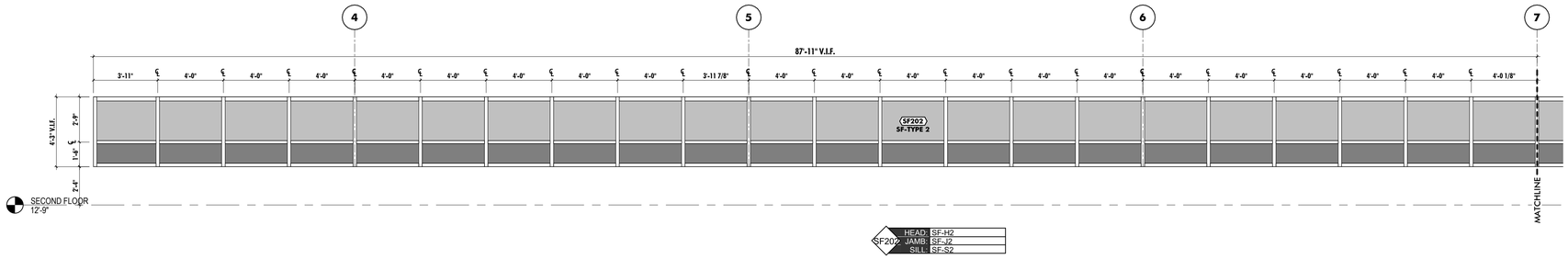
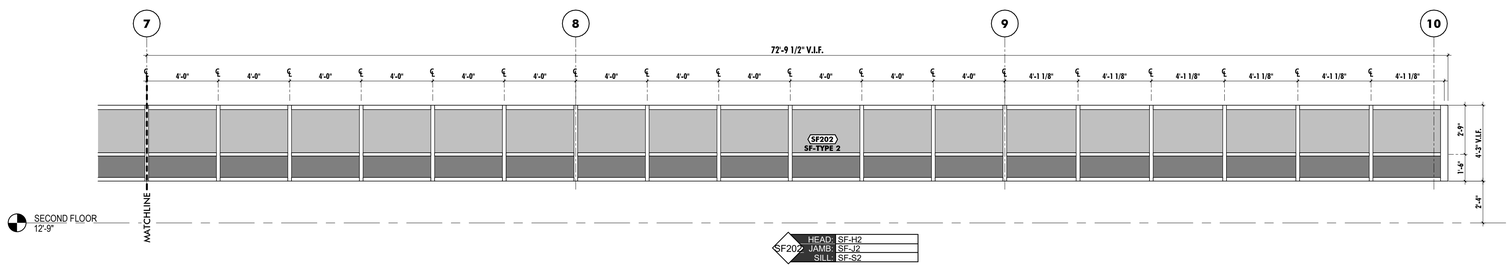
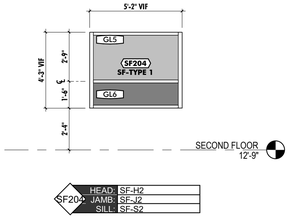
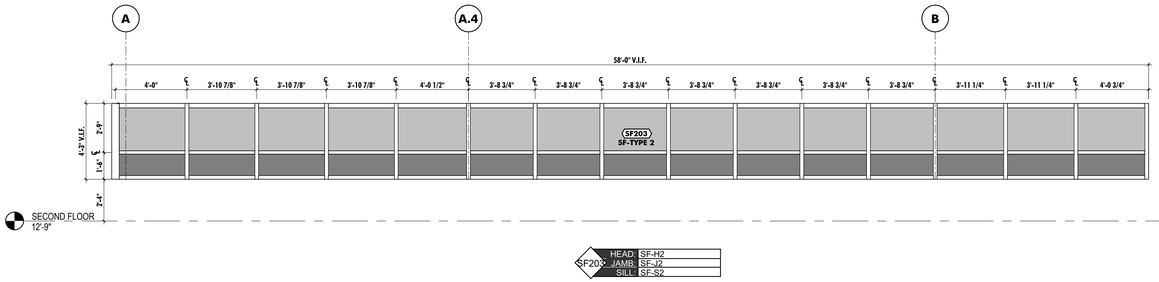


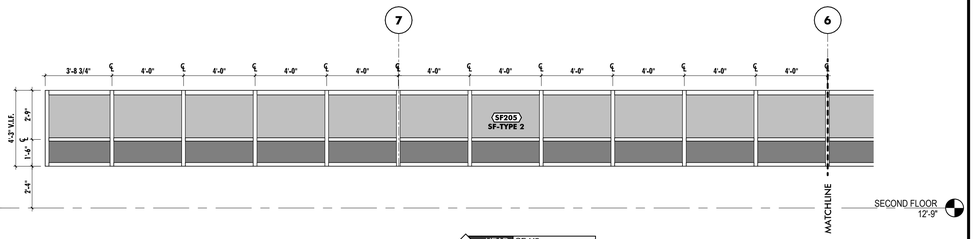
SCHEDULE - GLAZING

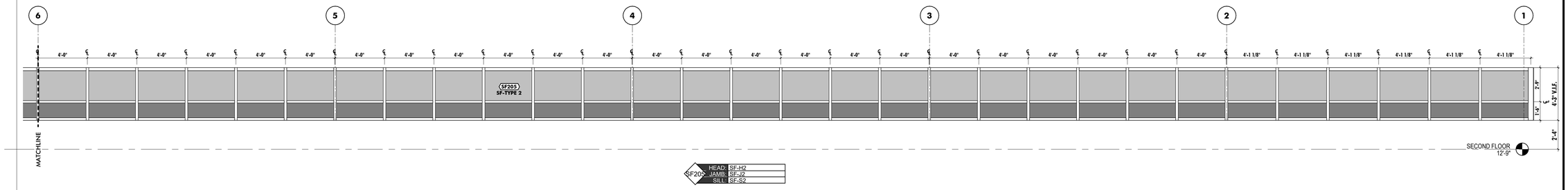
MARK	DESCRIPTION	COMMENTS
GL1	CLEAR SAFETY GLAZING - 1/4"	
GL2	INSULATED CLEAR TEMPERED	
GL3	NOT USED	
GL4	CLEAR LEAD SAFETY GLAZING	TO MATCH LEAD LINING OF WALL
GL5	INSULATED GLAZING UNIT, TEMPERED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR
GL6	INSULATED GLAZING UNIT, SPANDREL	TEMPERED
GL7	CLEAR LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL8	FROSTED LAMINATED SOUND CONTROL GLAZING, STC-49	5/8" LAMINATED GLAZING / 5/16" LAMINATED GLAZING (ON INTERIOR OF SOUND CONTROLLED ROOM)
GL9	INSULATED GLAZING UNIT - LEAD LINED	LOW-E, SOLARBAN R77 (2) OPTIGRAY + CLEAR, LEAD LINED
GL10	INSULATED GLAZING UNIT, SPANDREL - LEAD LINED	

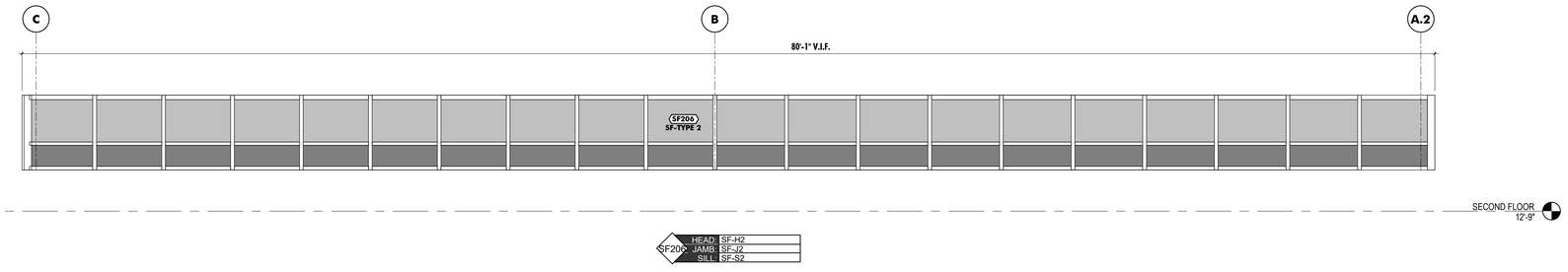












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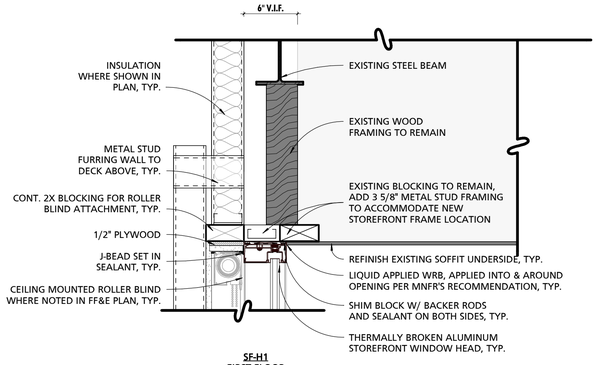
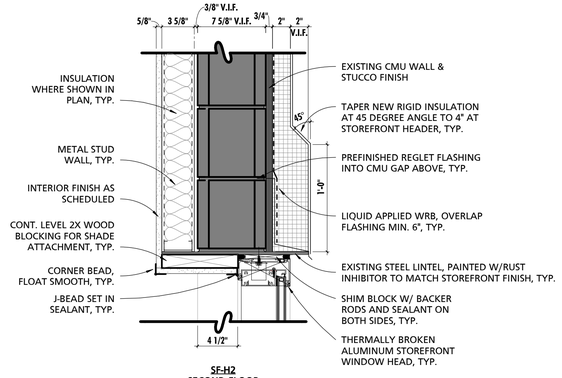
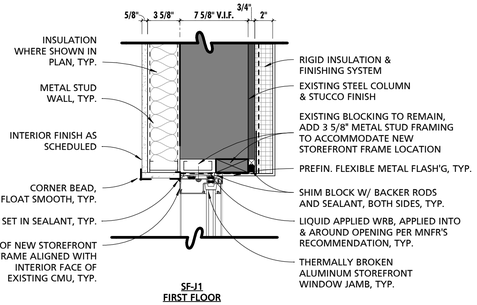


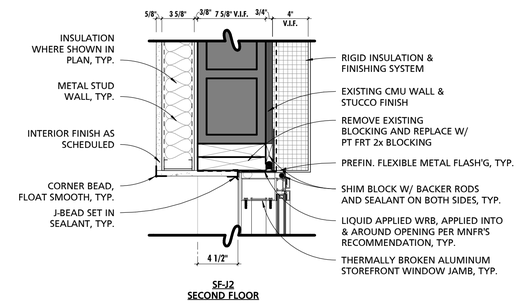
SF-H1
FIRST FLOOR



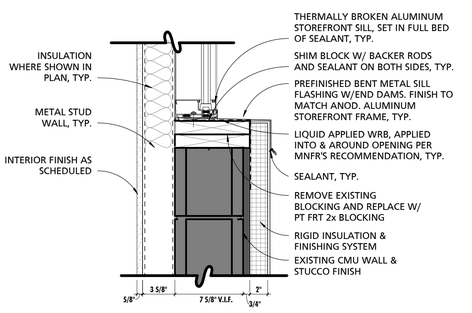
SF-H2
SECOND FLOOR



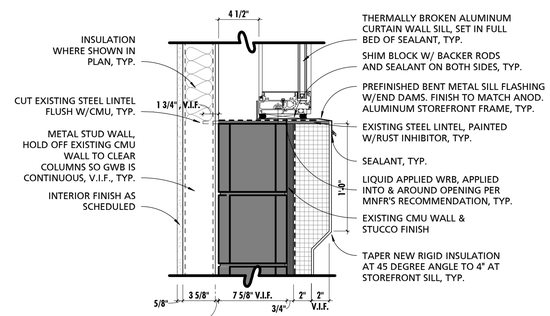
SF-J1
FIRST FLOOR



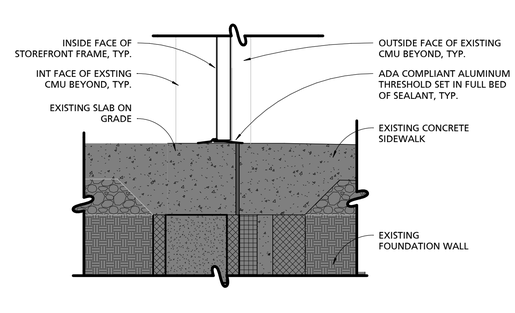
SF-J2
SECOND FLOOR



SF-S1
FIRST FLOOR

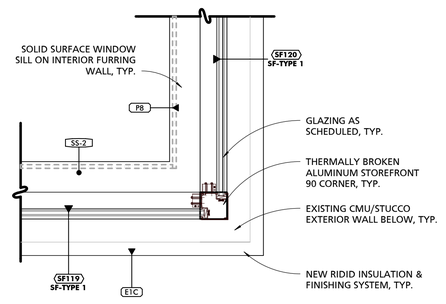


SF-S2
SECOND FLOOR

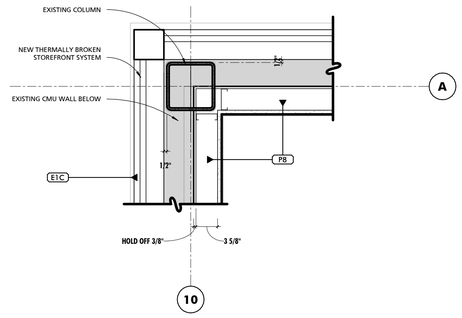


SF-T1

1 EXTERIOR STOREFRONT DETAILS
1 1/2" = 1'-0"



2 SF CORNER DETAIL - FIRST FLOOR STOREFRONT
1" = 1'-0"



3 TYPICAL 2ND FLR STOREFRONT CORNER PLAN
1" = 1'-0"

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NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERS AND SURVEYORS
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

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STOREFRONT DETAILS

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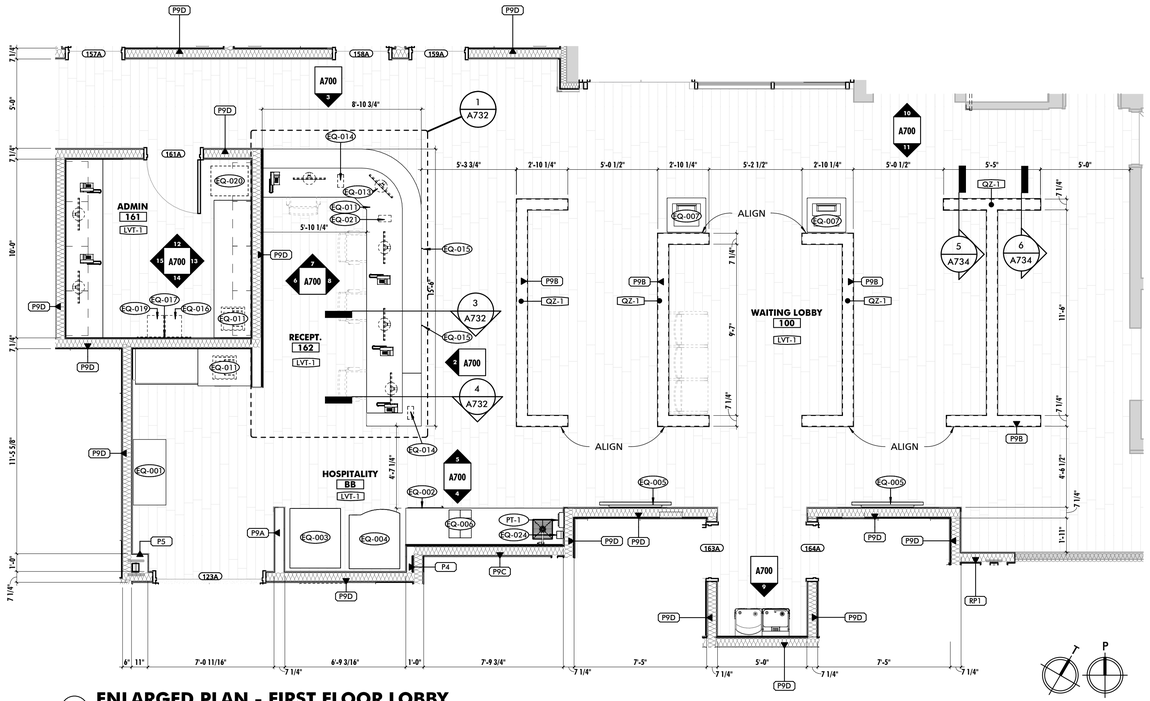
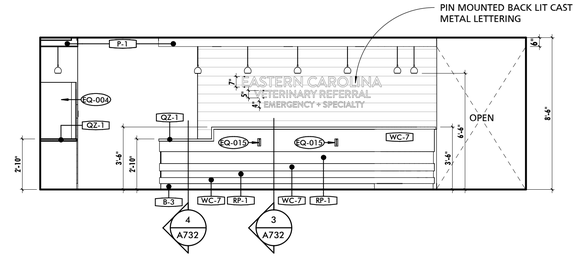
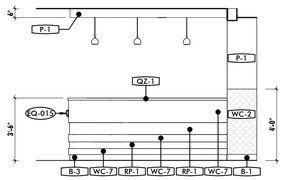


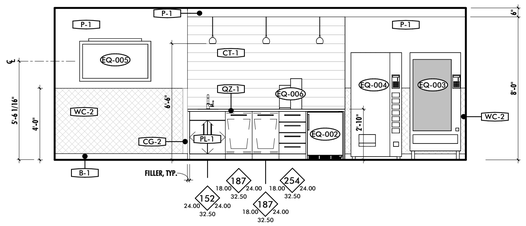
1 ENLARGED PLAN - FIRST FLOOR LOBBY
1/4" = 1'-0"



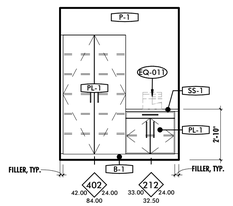
2 RECEPTION DESK - WEST
1/4" = 1'-0"



3 RECEPTION DESK - SOUTH
1/4" = 1'-0"



4 HOSPITALITY - SOUTH
1/4" = 1'-0"



5 RECEPTION - NORTH
1/4" = 1'-0"

6 RECEPTION DESK INTERIOR 162 - WEST
1/4" = 1'-0"

7 RECEPTION DESK INTERIOR 162 - NORTH
1/4" = 1'-0"

8 RECEPTION DESK INTERIOR 162 - EAST
1/4" = 1'-0"

9 FIRST FLOOR DRINKING FOUNTAIN - SOUTH
1/4" = 1'-0"

10 WAITING / LOBBY - NORTH
1/4" = 1'-0"

11 WAITING / LOBBY - SOUTH
1/4" = 1'-0"

12 ADMIN 161 - NORTH
1/4" = 1'-0"

13 ADMIN 161 - EAST
1/4" = 1'-0"

14 ADMIN 161 - SOUTH
1/4" = 1'-0"

15 ADMIN 161 - WEST
1/4" = 1'-0"

EQUIPMENT SCHEDULE - ADMIN	
MARK	**DESCRIPTION**
161	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-017	WHITE BOARD 2'x3'
EQ-019	10 GALLON RECYCLING
EQ-020	PAPER SHREDDER

EQUIPMENT SCHEDULE - HOSPITALITY	
MARK	**DESCRIPTION**
BB	
EQ-001	PLATFORM SCALE
EQ-002	ADA UNDERCOUNTER REFRIGERATOR
EQ-003	VENDING MACHINE - SNACK
EQ-004	VENDING MACHINE - DRINK
EQ-006	COFFEE MAKER
EQ-024	HAND SANITIZER

EQUIPMENT SCHEDULE - WAITING 100	
MARK	**DESCRIPTION**
100	
EQ-005	55" TV
EQ-007	KIOSK MACHINE
EQ-015	LEASH HOOKS - COMPACT
EQ-024	HAND SANITIZER

EQUIPMENT SCHEDULE - RECEP. 162	
MARK	**DESCRIPTION**
162	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-013	SECURITY MONITOR
EQ-014	CREDIT CARD MACHINE
EQ-016	10 GALLON TRASH CAN
EQ-021	LABEL PRINTER

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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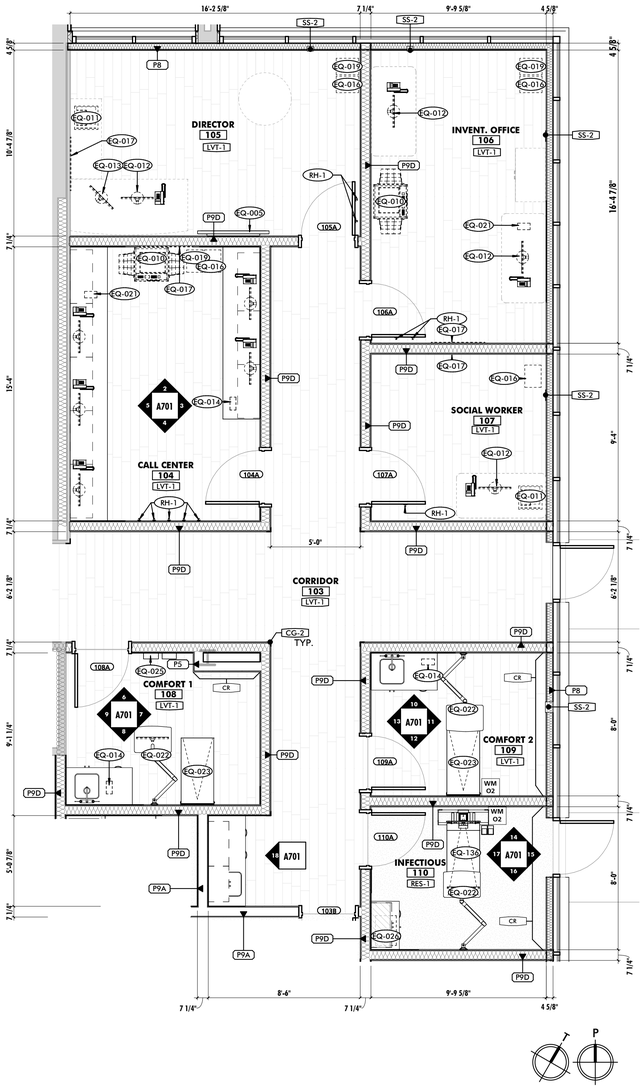
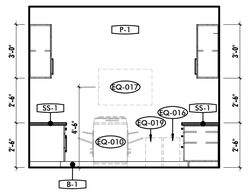
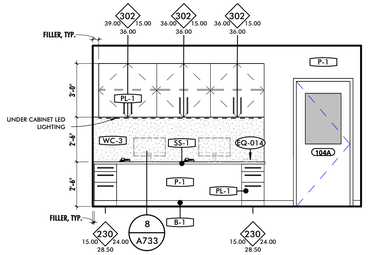


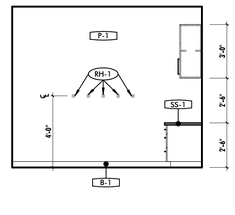
1 ENLARGED PLAN - ADMIN SUPPORT, COMFORT RMS & INFECTOUS
1/4" = 1'-0"



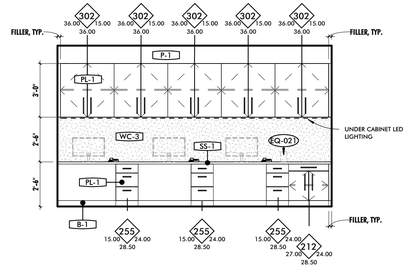
2 CALL CENTER 104 - NORTH
1/4" = 1'-0"



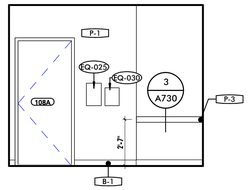
3 CALL CENTER 104 - EAST
1/4" = 1'-0"



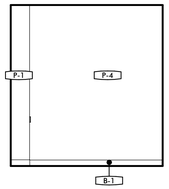
4 CALL CENTER 104 - SOUTH
1/4" = 1'-0"



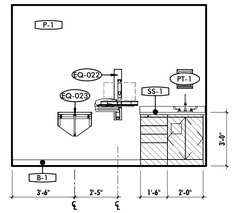
5 CALL CENTER 104 - WEST
1/4" = 1'-0"



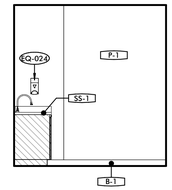
6 COMFORT 1 108 - NORTH
1/4" = 1'-0"



7 COMFORT 1 108 - EAST
1/4" = 1'-0"



8 COMFORT 1 108 - SOUTH
1/4" = 1'-0"



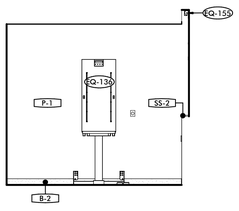
9 COMFORT 1 108 - WEST
1/4" = 1'-0"

10 COMFORT 2 109 - NORTH
1/4" = 1'-0"

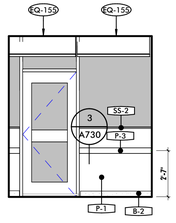
11 COMFORT 2 109 - EAST
1/4" = 1'-0"

12 COMFORT 2 109 - SOUTH
1/4" = 1'-0"

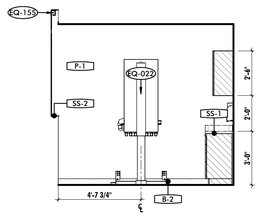
13 COMFORT 2 109 - WEST
1/4" = 1'-0"



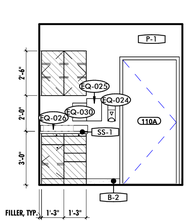
14 INFECTIOUS 110 - NORTH
1/4" = 1'-0"



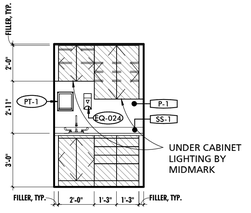
15 INFECTIOUS 110 - EAST
1/4" = 1'-0"



16 INFECTIOUS 110 - SOUTH
1/4" = 1'-0"



17 INFECTIOUS 110 - WEST
1/4" = 1'-0"



18 INFECTIOUS 110 - HALL
1/4" = 1'-0"

EQUIPMENT SCHEDULE - CALL CENTER	
MARK	**DESCRIPTION**
104	
EQ-010	PRINTER / COPIER
EQ-012	COMPUTER MONITOR
EQ-014	CREDIT CARD MACHINE
EQ-016	10 GALLON TRASH CAN
EQ-019	10 GALLON RECYCLING
EQ-021	LABEL PRINTER

EQUIPMENT SCHEDULE - DIRECTOR	
MARK	**DESCRIPTION**
105	
EQ-005	55" TV
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-013	SECURITY MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-017	WHITE BOARD 2'x3'
EQ-019	10 GALLON RECYCLING

EQUIPMENT SCHEDULE - INVENT. OFFICE	
MARK	**DESCRIPTION**
106	
EQ-010	PRINTER / COPIER
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-017	WHITE BOARD 2'x3'
EQ-019	10 GALLON RECYCLING
EQ-021	LABEL PRINTER

EQUIPMENT SCHEDULE - SOCIAL WORKER	
MARK	**DESCRIPTION**
107	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-017	WHITE BOARD 2'x3'

EQUIPMENT SCHEDULE - COMFORT	
MARK	**DESCRIPTION**
108	
EQ-012	COMPUTER MONITOR
EQ-014	CREDIT CARD MACHINE
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM
EQ-023	FOLD UP EXAM TABLE
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER

EQUIPMENT SCHEDULE - INFECTIOUS	
MARK	**DESCRIPTION**
110	
EQ-012	COMPUTER MONITOR
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-026	SMALL ANIMAL SCALE
EQ-030	SHARPS CONTAINER
EQ-136	FOLDING LIFT EXAM TABLE WITH PLATFORM SCALE

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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CONSULTANT:

SEAL:

COA:

NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERING AND SURVEYING
CERTIFICATE OF AUTHORIZATION
MANNS WOODWARD STUDIOS, INC.
No. 53188

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

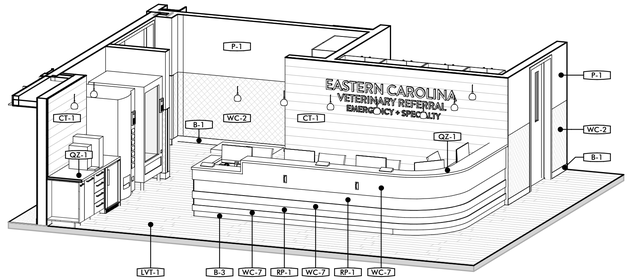
SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

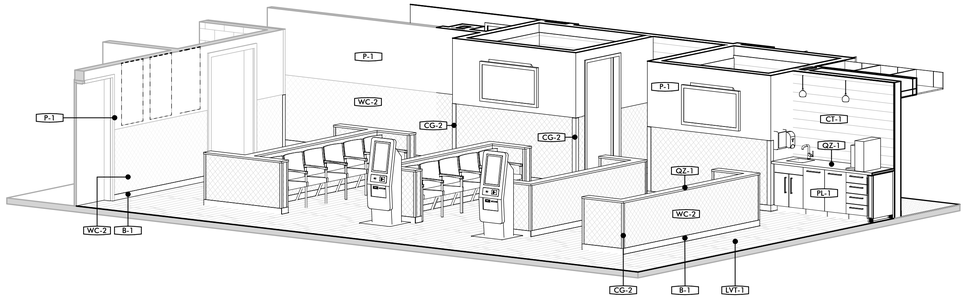
SHEET NUMBER:

A701

9/20/2023 4:53:25 PM



2 AXON-FIRST FLOOR RECEPTION DESK



3 AXON-FIRST FLOOR WAITING



1 FIRST FLOOR RECEPTION DESK



4 FIRST FLOOR WAITING LOBBY

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NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

FIRST FLOOR LOBBY 3D VIEWS

SHEET NUMBER:
A702

9/20/2023 4:58:24 PM

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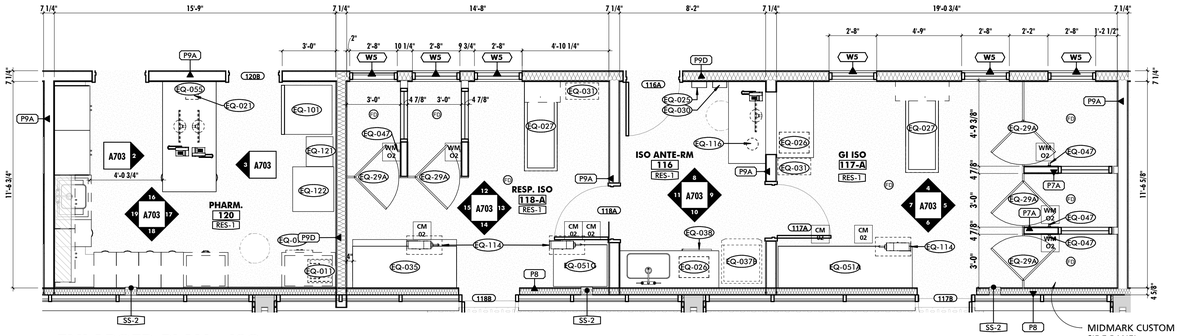
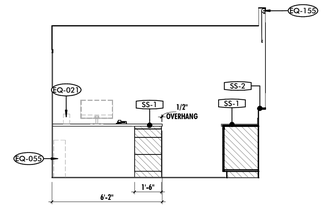
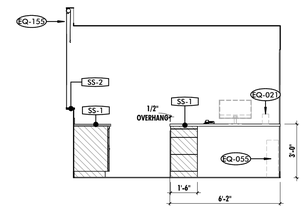


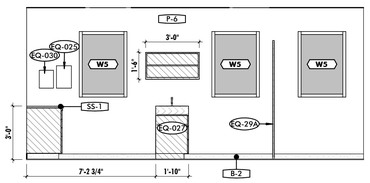
1 ENLARGED PLAN - ISO
1/4" = 1'-0"



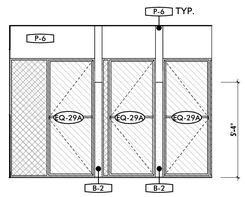
2 PHARMACY ISLAND - EAST
1/4" = 1'-0"



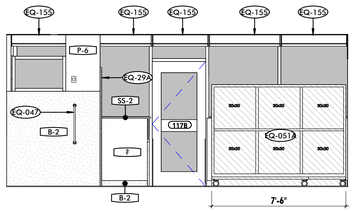
3 PHARMACY ISLAND - WEST
1/4" = 1'-0"



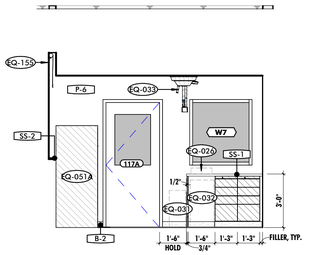
4 GI ISO 117A - NORTH
1/4" = 1'-0"



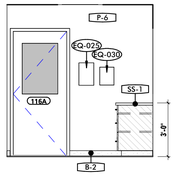
5 GI ISO 117A - EAST
1/4" = 1'-0"



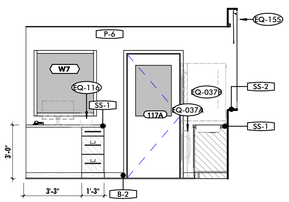
6 GI ISO 117A - SOUTH
1/4" = 1'-0"



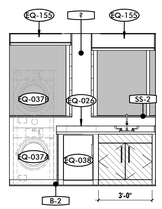
7 GI ISO 117A - WEST
1/4" = 1'-0"



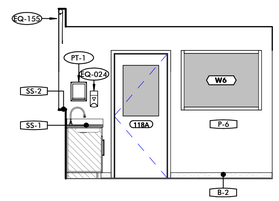
8 ISO ANTE 116 - NORTH
1/4" = 1'-0"



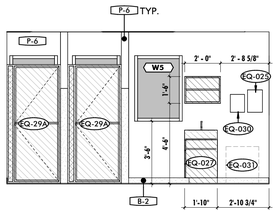
9 ISO ANTE 116 - EAST
1/4" = 1'-0"



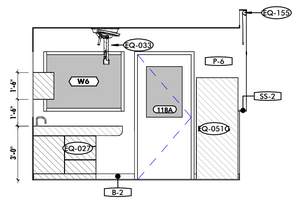
10 ISO ANTE 116 - SOUTH
1/4" = 1'-0"



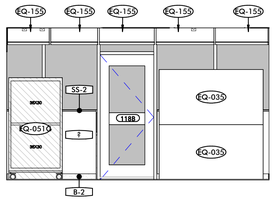
11 ISO ANTE 116 - WEST
1/4" = 1'-0"



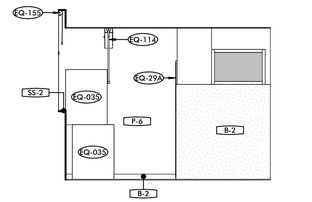
12 RESP. ISO 118A - NORTH
1/4" = 1'-0"



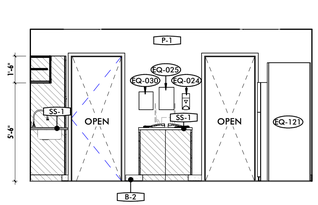
13 RESP. ISO 118A - EAST
1/4" = 1'-0"



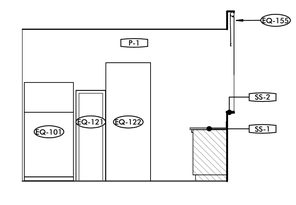
14 RESP. ISO 118A - SOUTH
1/4" = 1'-0"



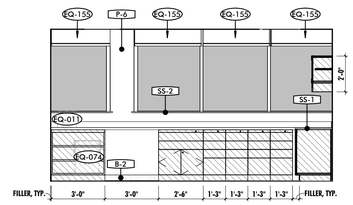
15 RESP. ISO 118A - WEST
1/4" = 1'-0"



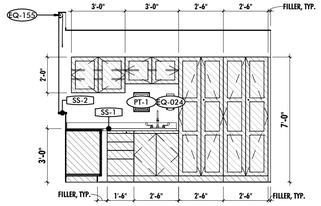
16 PHARMACY 120 - NORTH
1/4" = 1'-0"



17 PHARMACY 120 - EAST
1/4" = 1'-0"



18 PHARMACY 120 - SOUTH
1/4" = 1'-0"



19 PHARMACY 120 - WEST
1/4" = 1'-0"

EQUIPMENT SCHEDULE - GI ISO

MARK	DESCRIPTION
117-A	
EQ-025	EXAM GLOVE HOLDER
EQ-026	SMALL ANIMAL SCALE
EQ-027	WET TABLE - 60"
EQ-29A	ISO KENNEL GLASS DUTCH DOOR
EQ-030	SHARPS CONTAINER
EQ-031	16 GALLON TRASH CAN
EQ-032	LAUNDRY CART
EQ-033	CEILING MOUNT 130 PROCEDURE LIGHT
EQ-034	SPRING REWIND CEILING MOUNT HOSE & REEL
EQ-047	KENNEL POLE FOR IV/MONITOR MOUNT
EQ-051A	7.5' CAGE BANK - GI ISO

EQUIPMENT SCHEDULE - ISO ANTE

MARK	DESCRIPTION
116	
EQ-012	COMPUTER MONITOR
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-026	SMALL ANIMAL SCALE
EQ-030	SHARPS CONTAINER
EQ-037A	STACKABLE WASHER
EQ-037B	STACKABLE DRYER
EQ-038	UNDERCOUNTER REFRIGERATOR
EQ-116	STATSPIN CENTIRFUGE

EQUIPMENT SCHEDULE - RESP ISO

MARK	DESCRIPTION
118-A	
EQ-025	EXAM GLOVE HOLDER
EQ-027	WET TABLE - 60"
EQ-29A	ISO KENNEL GLASS DUTCH DOOR
EQ-030	SHARPS CONTAINER
EQ-031	16 GALLON TRASH CAN
EQ-034	SPRING REWIND CEILING MOUNT HOSE & REEL
EQ-035	O2 CAGE
EQ-047	KENNEL POLE FOR IV/MONITOR MOUNT
EQ-051G	3' CAGE BANK - RESP ISO

EQUIPMENT SCHEDULE - PHARMACY

MARK	DESCRIPTION
120	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-021	LABEL PRINTER
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-055	23 GALLON TRASH CAN
EQ-074	FLUID WARMER
EQ-101	TOP FREEZER / REFRIGERATOR W/ICE MAKER
EQ-121	CUBEX MINIPLUS
EQ-122	CUBEX FLEX

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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5051 NEW CENTRE DR
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PROJECT NUMBER: 22-127

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100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A703

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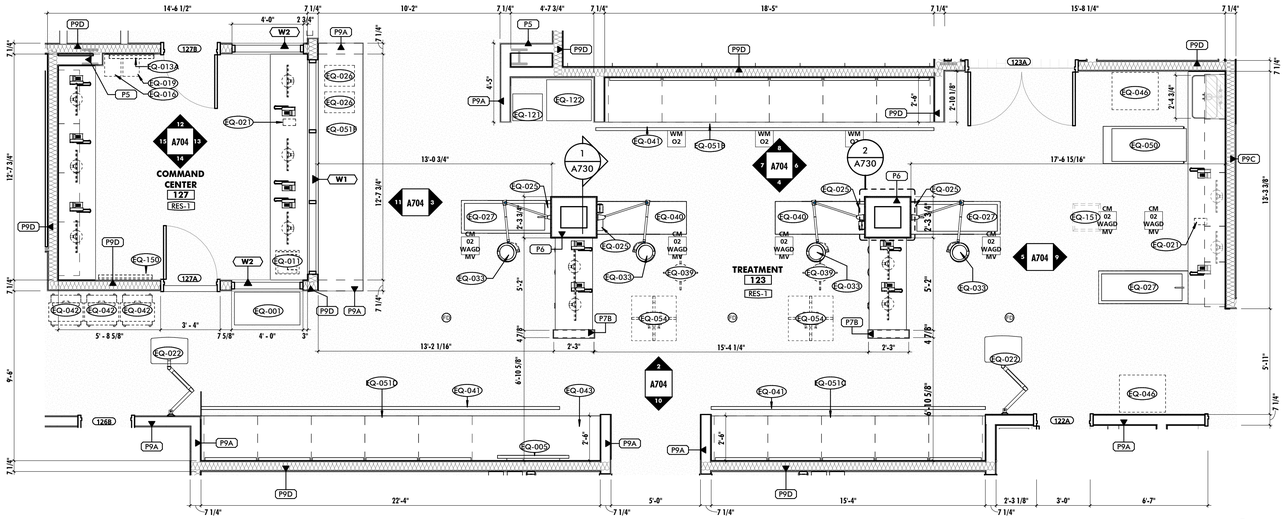


1 ENLARGED PLAN - TREATMENT
1/4" = 1'-0"

EQUIPMENT SCHEDULE - COMMAND CENTER

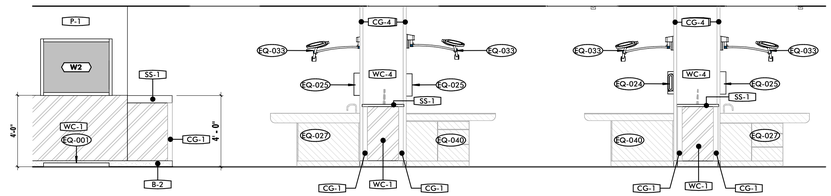
MARK	DESCRIPTION
127	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-013A	32" SECURITY MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-019	10 GALLON RECYCLING
EQ-021	LABEL PRINTER
EQ-150	40" PATIENT MONITOR

EQUIPMENT SCHEDULE - TREATMENT

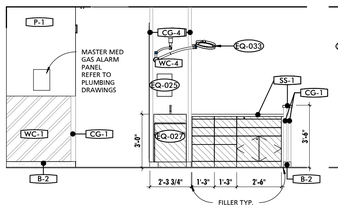
MARK	DESCRIPTION
123	
EQ-001	PLATFORM SCALE
EQ-005	55" TV
EQ-012	COMPUTER MONITOR
EQ-021	LABEL PRINTER
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM
EQ-024	HAND SANITIZER

EQUIPMENT SCHEDULE - TREATMENT

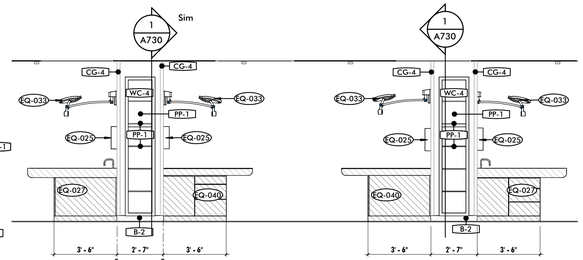
MARK	DESCRIPTION
EQ-025	EXAM GLOVE HOLDER
EQ-026	SMALL ANIMAL SCALE
EQ-027	WET TABLE - 60"
EQ-033	CEILING MOUNT 130 PROCEDURE LIGHT
EQ-039	IV POLE
EQ-040	DRY TABLE - 60"
EQ-041	CEILING MOUNTED IV TRACK & POLE
EQ-042	MOBILE WORKSTATION
EQ-043	FAST SCAN ULTRASOUND ON CART
EQ-046	CRASH CART
EQ-050	MOBILE ELECTRIC LIFT GURNEY
EQ-051B	18' CAGE BANK - TREATMENT NORTH
EQ-051C	15' CAGE BANK - TREATMENT SOUTHEAST
EQ-051D	20' CAGE BANK - TREATMENT SOUTHWEST
EQ-051F	12' CAGE BANK - TREATMENT WEST
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-121	CUBEX MINIPLUS
EQ-122	CUBEX FLEX
EQ-146	L TRACK TIE DOWN SYSTEM



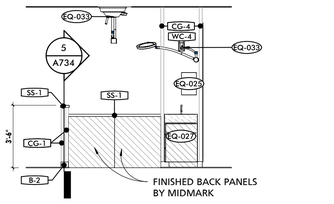
2 TREATMENT TABLES 123 - NORTH
1/4" = 1'-0"



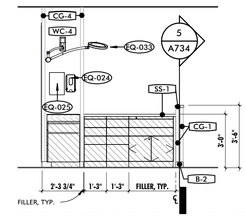
3 TREATMENT TABLES 123 - EAST
1/4" = 1'-0"



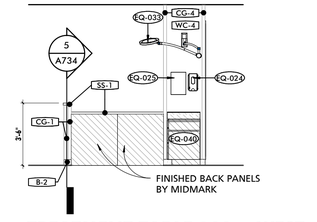
4 TREATMENT TABLES 123 - SOUTH
1/4" = 1'-0"



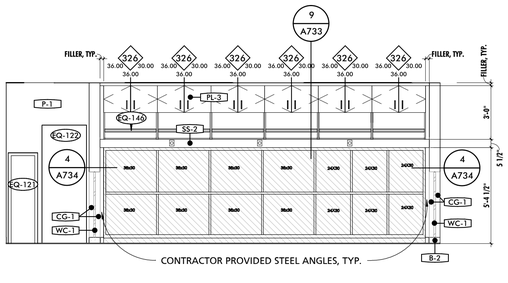
5 TREATMENT TABLES 123 - WEST
1/4" = 1'-0"



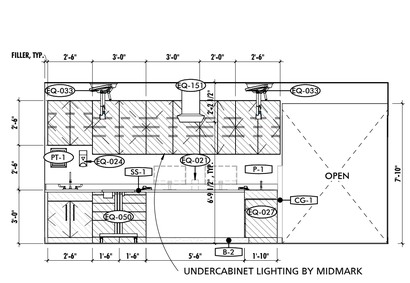
6 TREATMENT TABLES- EAST
1/4" = 1'-0"



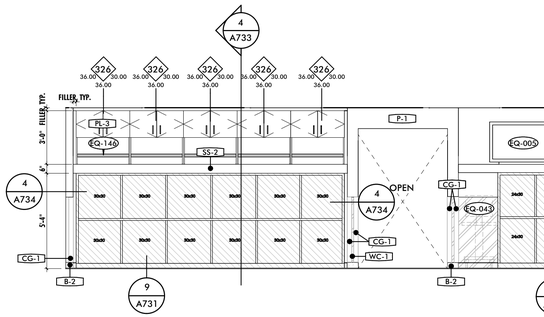
7 TREATMENT TABLE 123 - WEST
1/4" = 1'-0"



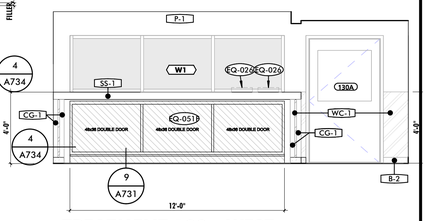
8 TREATMENT 123 - NORTH
1/4" = 1'-0"



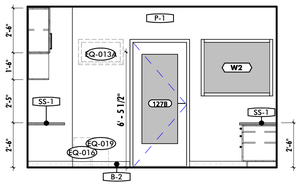
9 TREATMENT 123 - EAST
1/4" = 1'-0"



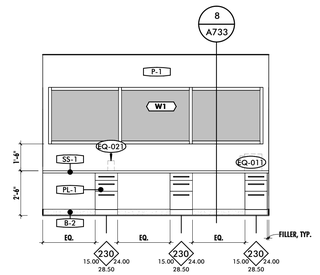
10 TREATMENT 123 - SOUTH
1/4" = 1'-0"



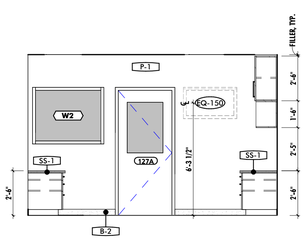
11 TREATMENT 123 - WEST
1/4" = 1'-0"



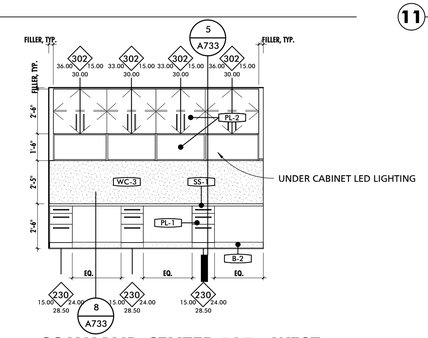
12 COMMAND CENTER 127 - NORTH
1/4" = 1'-0"



13 COMMAND CENTER 127 - EAST
1/4" = 1'-0"



14 COMMAND CENTER 127 - SOUTH
1/4" = 1'-0"



15 COMMAND CENTER 127 - WEST
1/4" = 1'-0"

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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CONSULTANT:

SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

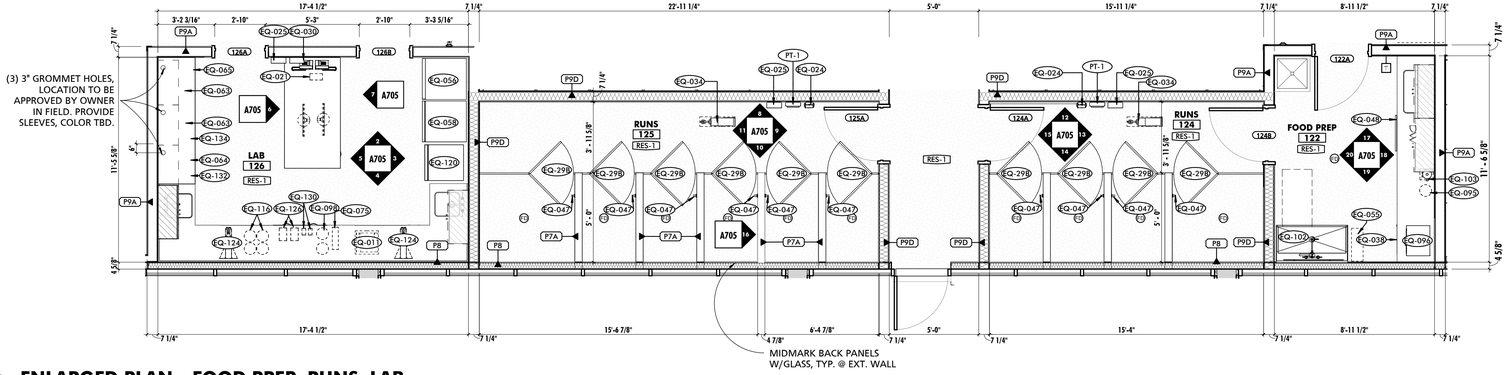
SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:

A704

9/20/2023 4:58:52 PM

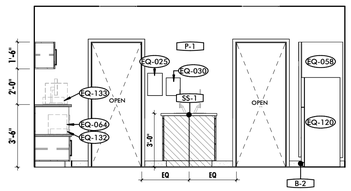


1 ENLARGED PLAN - FOOD PREP, RUNS, LAB
1/4" = 1'-0"

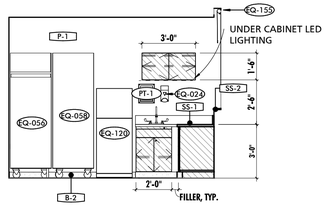
EQUIPMENT SCHEDULE - FOOD PREP	
MARK	DESCRIPTION
122	
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-038	UNDERCOUNTER REFRIGERATOR
EQ-048	DISHWASHER
EQ-055	23 GALLON TRASH CAN
EQ-095	ELECTRIC CAN OPENER
EQ-096	COUNTERTOP MICROWAVE
EQ-102	48" GROOMING TUB W/BACKSPLASH, RIGHT RAMP & SPRAYER
EQ-103	BLENDER
EQ-119	DRY FOOD DISPENSER
EQ-144	DISH SOAP

EQUIPMENT SCHEDULE - RUNS	
MARK	DESCRIPTION
125	
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-29B	KENNEL GRID DUTCH DOOR
EQ-034	SPRING REWIND CEILING MOUNT HOSE & REEL
EQ-047	KENNEL POLE FOR IV/MONITOR MOUNT

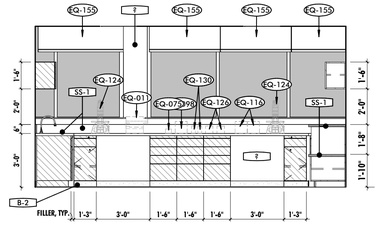
EQUIPMENT SCHEDULE - LAB	
MARK	DESCRIPTION
126	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-021	LABEL PRINTER
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-055	23 GALLON TRASH CAN
EQ-056	BLOOD FREEZER
EQ-058	BLOOD REFRIGERATOR
EQ-061	CATONE CHEMISTRY ANALYZER
EQ-062	VETLAB STATION
EQ-063	PROCYTE - HEMOTOLOGY ANALYZER
EQ-064	URINE SEDIMENT ANALYZER
EQ-065	SNAPSHOT DX ANALYZER
EQ-075	CELL COUNTER
EQ-098	POWERSPIN CENTRIFUGE
EQ-116	STATSPIN CENTIRFUGE
EQ-120	COMPACT LAB REFRIGERATOR W/TOP FREEZER
EQ-124	MICROSCOPE - LAB
EQ-126	TUBE ROCKER
EQ-130	SNAP PRO ANALYZER
EQ-132	UA ANALYZER
EQ-133	VETSTAT ANALYZER
EQ-134	COAG



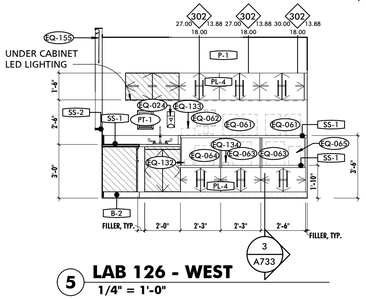
2 LAB 126 - NORTH
1/4" = 1'-0"



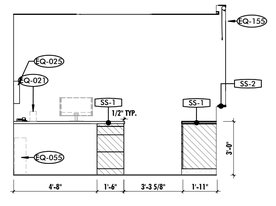
3 LAB 126 - EAST
1/4" = 1'-0"



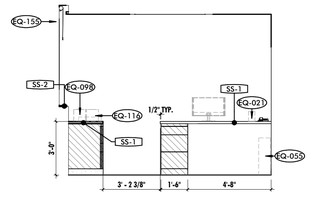
4 LAB 126 - SOUTH
1/4" = 1'-0"



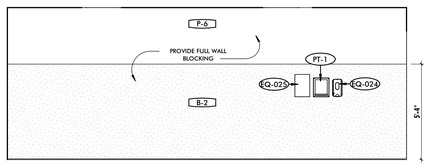
5 LAB 126 - WEST
1/4" = 1'-0"



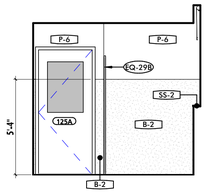
6 LAB ISLAND 126 - EAST
1/4" = 1'-0"



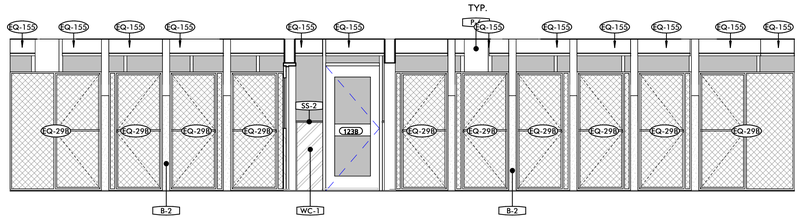
7 LAB ISLAND 126 - WEST
1/4" = 1'-0"



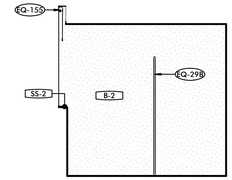
8 RUNS 125 - NORTH
1/4" = 1'-0"



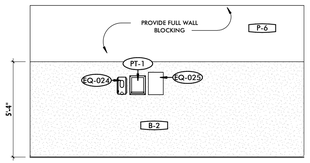
9 RUNS 125 - EAST
1/4" = 1'-0"



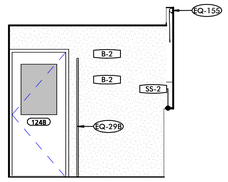
10 RUNS 124 & 125- SOUTH
1/4" = 1'-0"



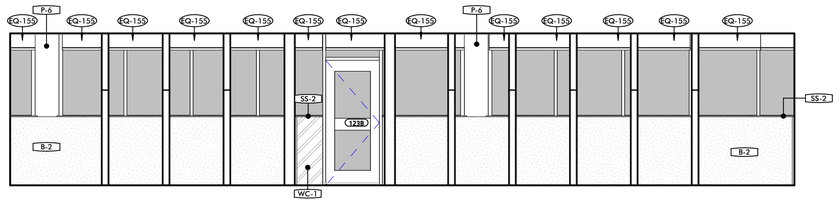
11 RUNS 125 - WEST
1/4" = 1'-0"



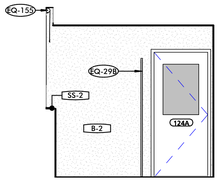
12 RUNS 124 - NORTH
1/4" = 1'-0"



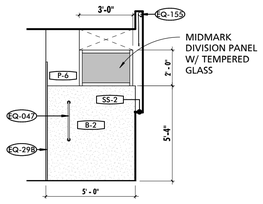
13 RUNS 124 - EAST
1/4" = 1'-0"



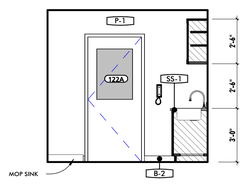
14 INTERIOR RUNS 124 & 125 - SOUTH
1/4" = 1'-0"



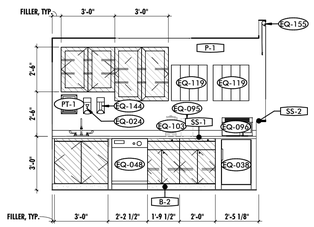
15 RUNS 124 - WEST
1/4" = 1'-0"



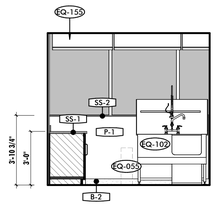
16 TYPICAL RUN INTERIOR
1/4" = 1'-0"



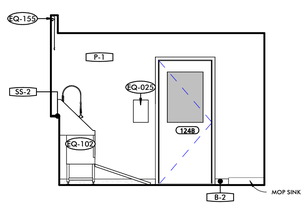
17 FOOD PREP 122 - NORTH
1/4" = 1'-0"



18 FOOD PREP 122 - EAST
1/4" = 1'-0"



19 FOOD PREP 122 - SOUTH
1/4" = 1'-0"



20 FOOD PREP 122 - WEST
1/4" = 1'-0"

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9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A705

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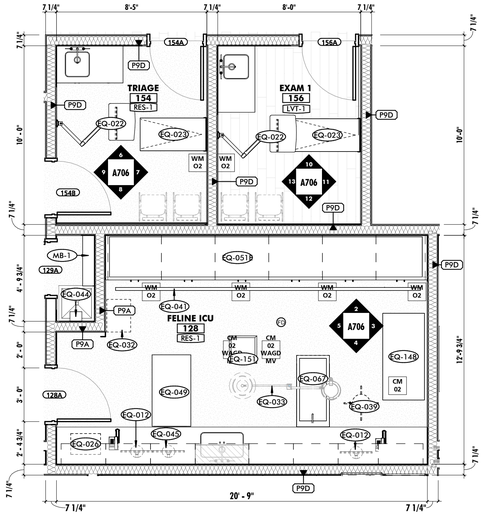


1 ENLARGED PLAN - FELINE ICU, TRIAGE, EXAM
1/4" = 1'-0"

EQUIPMENT SCHEDULE - TRIAGE EXAM

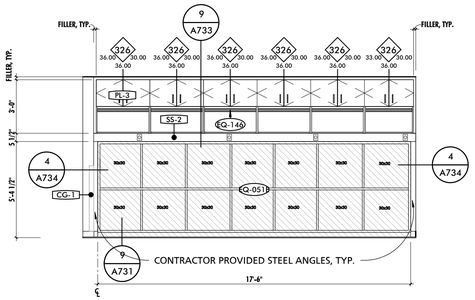
MARK	DESCRIPTION
154	
EQ-012	COMPUTER MONITOR
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM
EQ-023	FOLD UP EXAM TABLE
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER

EQUIPMENT SCHEDULE - TYP. EXAM

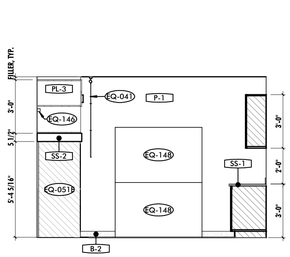
MARK	DESCRIPTION
156	
EQ-012	COMPUTER MONITOR
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM
EQ-023	FOLD UP EXAM TABLE
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER

EQUIPMENT SCHEDULE - FELINE ICU

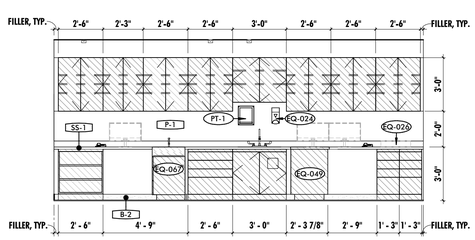
MARK	DESCRIPTION
128	
EQ-012	COMPUTER MONITOR
EQ-024	HAND SANITIZER
EQ-026	SMALL ANIMAL SCALE
EQ-032	LAUNDRY CART
EQ-033	CEILING MOUNT 130 PROCEDURE LIGHT
EQ-039	IV POLE
EQ-041	CEILING MOUNTED IV TRACK & POLE
EQ-045	MULTI-PARAMETER MONITOR
EQ-049	DRY EXAM TABLE - 48"
EQ-051E	17.5' CAGE BANK - FELINE ICU
EQ-067	WET TABLE - 48"
EQ-146	L TRACK TIE DOWN SYSTEM
EQ-148	O2 CAGE



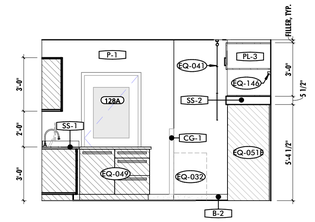
2 FELINE ICU 128 - NORTH
1/4" = 1'-0"



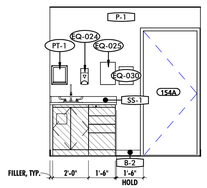
3 FELINE ICU 128 - EAST
1/4" = 1'-0"



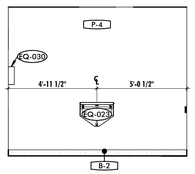
4 FELINE ICU 128 - SOUTH
1/4" = 1'-0"



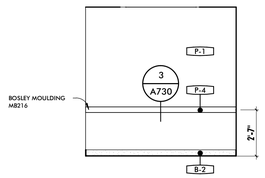
5 FELINE ICU 128 - WEST
1/4" = 1'-0"



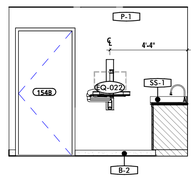
6 TRIAGE 154 - NORTH
1/4" = 1'-0"



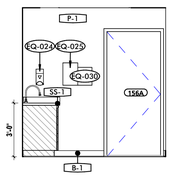
7 TRIAGE 154 - EAST
1/4" = 1'-0"



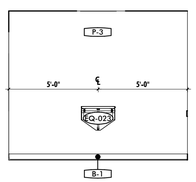
8 TRIAGE 154 - SOUTH
1/4" = 1'-0"



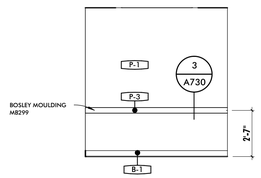
9 TRIAGE 154 - WEST
1/4" = 1'-0"



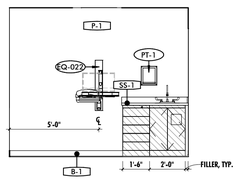
10 EXAM 156 - NORTH
1/4" = 1'-0"



11 EXAM 156 - EAST
1/4" = 1'-0"



12 EXAM 156 - SOUTH
1/4" = 1'-0"



13 EXAM 156 - WEST
1/4" = 1'-0"

CASEWORK LEGEND

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CONSULTANT:

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COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A706

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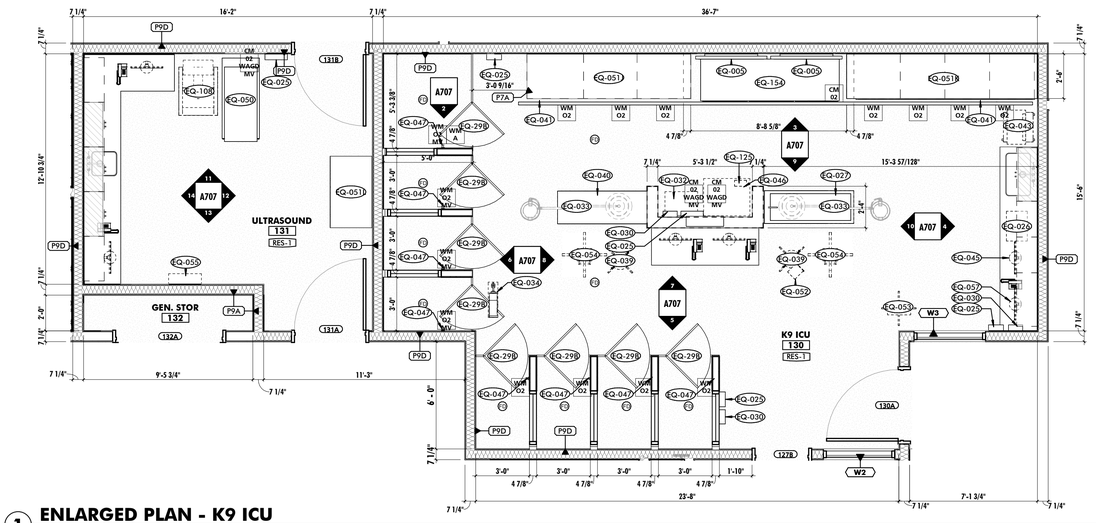
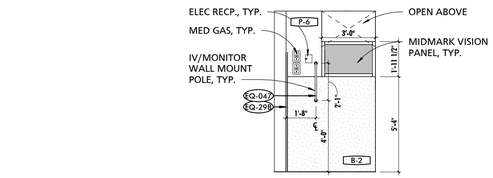


1 ENLARGED PLAN - K9 ICU
1/4" = 1'-0"



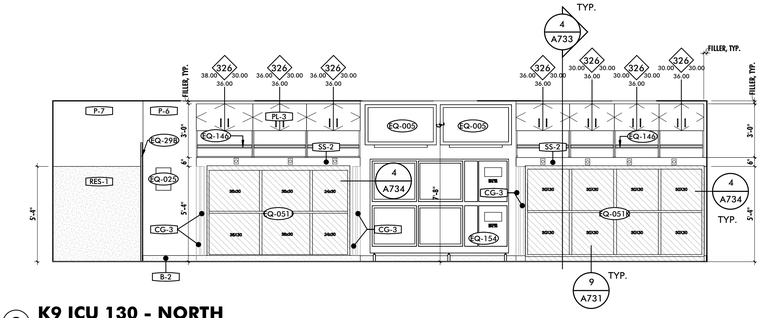
2 TYP. INTERIOR KENNEL WALL
1/4" = 1'-0"

EQUIPMENT SCHEDULE - K9 ICU

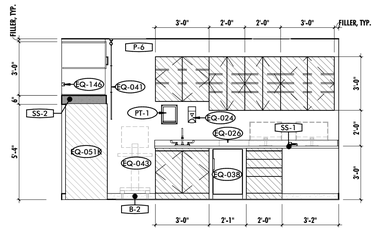
MARK	DESCRIPTION
130	
EQ-005	55" TV
EQ-012	COMPUTER MONITOR
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-026	SMALL ANIMAL SCALE
EQ-027	WET TABLE - 60"
EQ-29B	KENNEL GRID DUTCH DOOR
EQ-030	SHARPS CONTAINER
EQ-032	LAUNDRY CART
EQ-033	CEILING MOUNT 130 PROCEDURE LIGHT
EQ-034	SPRING REWIND CEILING MOUNT HOSE & REEL
EQ-038	UNDERCOUNTER REFRIGERATOR
EQ-039	IV POLE
EQ-040	DRY TABLE - 60"
EQ-041	CEILING MOUNTED IV TRACK & POLE
EQ-043	FAST SCAN ULTRASOUND ON CART
EQ-045	MULTI-PARAMETER MONITOR
EQ-046	CRASH CART
EQ-047	KENNEL POLE FOR IV/MONITOR MOUNT
EQ-051J	8' CAGE BANK - K9 ICU
EQ-051K	10' CAGE BANK - K9 ICU
EQ-052	HIGH FLOW PORTABLE O2 & COMPRESSOR
EQ-053	MULTI-PARAMETER MONITOR W/PRINTER & STAND
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-057	COMPUTER MONITOR W/TELEMETRY - CENTRALVUE
EQ-125	DEFIBRILLATOR
EQ-146	L TRACK TIE DOWN SYSTEM
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN
EQ-154	O2 CAGE

EQUIPMENT SCHEDULE - ULTRASOUND

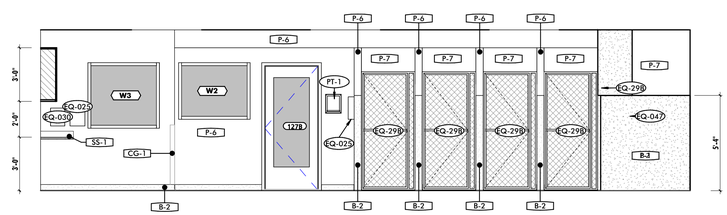
MARK	DESCRIPTION
131	
EQ-012	COMPUTER MONITOR
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-050	MOBILE ELECTRIC LIFT GURNEY
EQ-051L	4' CAGE BANK - ULTRASOUND
EQ-055	23 GALLON TRASH CAN
EQ-108	CARDIAC ULTRASOUND SCANNER (AVIM)



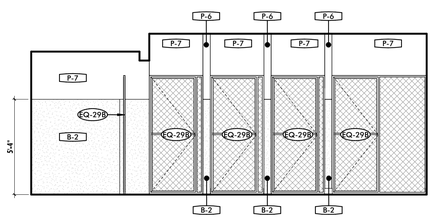
3 K9 ICU 130 - NORTH
1/4" = 1'-0"



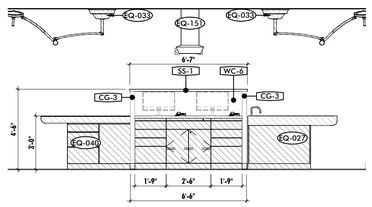
4 K9 ICU 130 - EAST
1/4" = 1'-0"



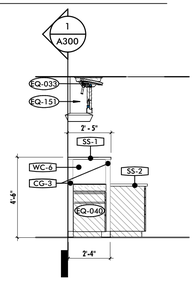
5 K9 ICU 130 - SOUTH
1/4" = 1'-0"



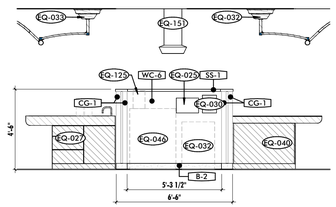
6 K9 ICU 130 - WEST
1/4" = 1'-0"



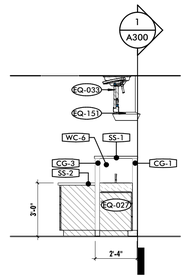
7 K9 ICU TABLES 130 - NORTH
1/4" = 1'-0"



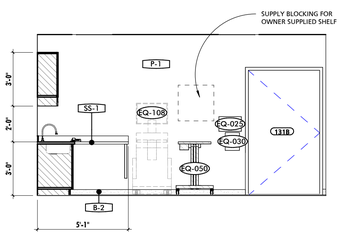
8 K9 ICU TABLES 130 - EAST
1/4" = 1'-0"



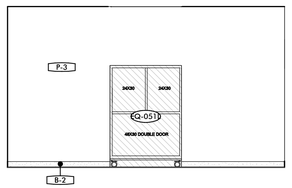
9 K9 ICU TABLES 130 - SOUTH
1/4" = 1'-0"



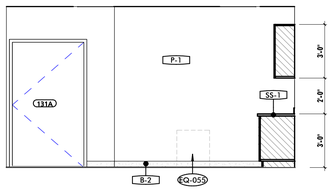
10 K9 ICU TABLES - WEST
1/4" = 1'-0"



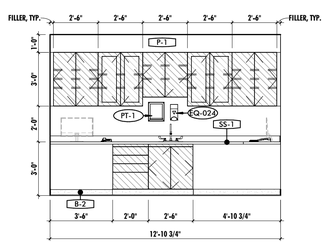
11 ULTRASOUND 131 - NORTH
1/4" = 1'-0"



12 ULTRASOUND 131 - EAST
1/4" = 1'-0"



13 ULTRASOUND 131- SOUTH
1/4" = 1'-0"



14 ULTRASOUND 131 - WEST
1/4" = 1'-0"

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PROJECT NUMBER: 22-127

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100% CONSTRUCTION DOCUMENTS
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9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

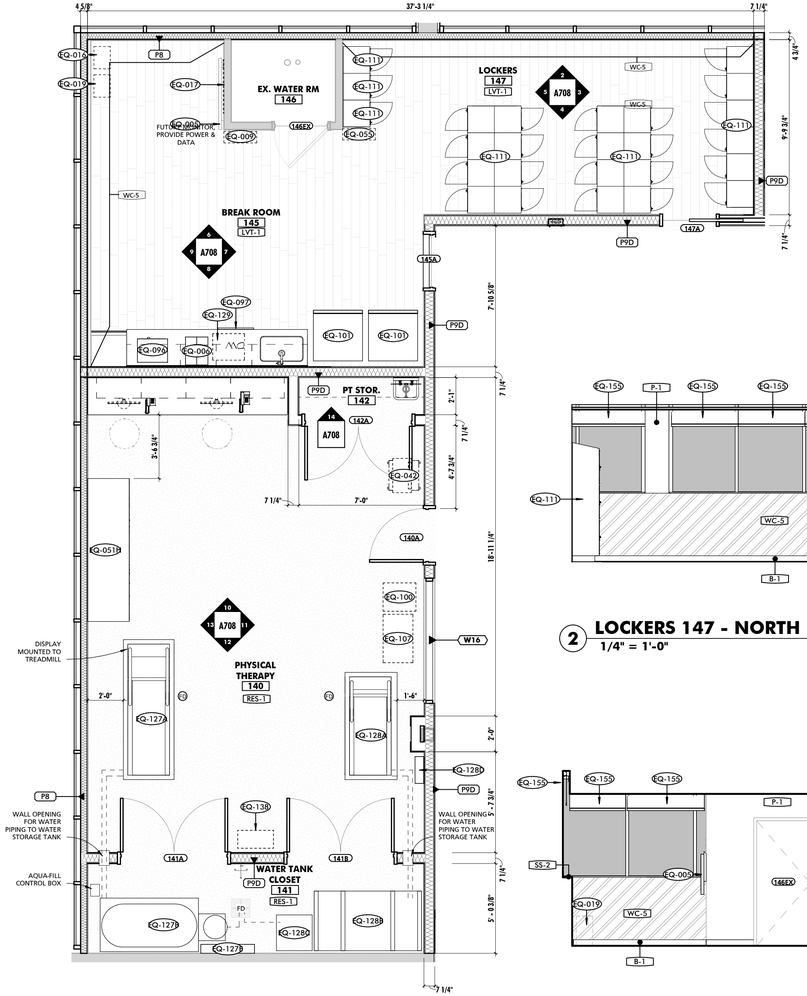
SHEET NUMBER:
A707

9/20/2023 4:59:35 PM

EQUIPMENT SCHEDULE - PHYSICAL THERAPY	
MARK	DESCRIPTION
140	
EQ-012	COMPUTER MONITOR
EQ-034	SPRING REWIND CEILING MOUNT HOSE & REEL
EQ-042	MOBILE WORKSTATION
EQ-051H	8' CAGE BANK - PHYSICAL THERAPY
EQ-100	MLS LASER & MOBILE CART
EQ-107	MLS LASER & MOBILE CART
EQ-127A	UNDERWATER TREADMILL
EQ-128A	EXISTING UNDERWATER TREADMILL
EQ-128D	EXISTING TREADMILL WALL MOUNTED DISPLAY
EQ-138	FOLDING LAND TREADMILL

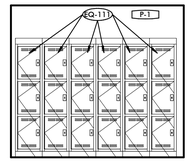
EQUIPMENT SCHEDULE - BREAK ROOM 145	
MARK	DESCRIPTION
145	
EQ-005	55" TV
EQ-006	COFFEE MAKER
EQ-009	23 GALLON RECYCLING
EQ-016	10 GALLON TRASH CAN
EQ-017	WHITE BOARD 2'x3'
EQ-019	10 GALLON RECYCLING
EQ-024	HAND SANITIZER
EQ-096	COUNTERTOP MICROWAVE
EQ-097	DISHWASHER ADA
EQ-101	TOP FREEZER / REFRIGERATOR W/ICE MAKER
EQ-129	TOASTER OVEN

EQUIPMENT SCHEDULE - LOCKERS 147	
MARK	DESCRIPTION
147	
EQ-055	23 GALLON TRASH CAN
EQ-111	EMPLOYEE LOCKERS

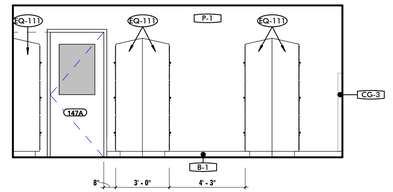


1 ENLARGED PLAN - PT, BREAK ROOM
1/4" = 1'-0"

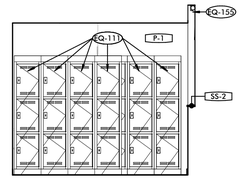
2 LOCKERS 147 - NORTH
1/4" = 1'-0"



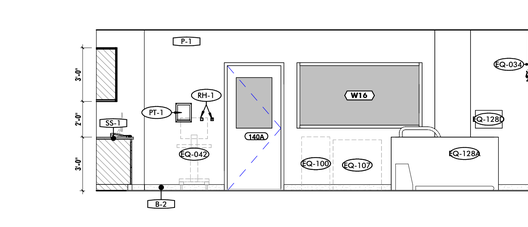
3 LOCKERS 147 - EAST
1/4" = 1'-0"



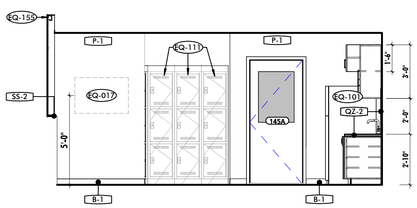
4 LOCKERS 147 - SOUTH
1/4" = 1'-0"



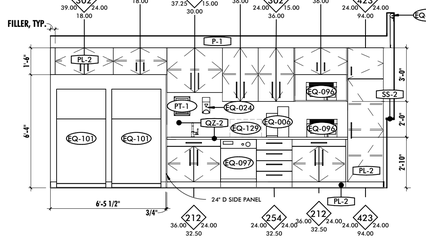
5 LOCKERS 147 - WEST
1/4" = 1'-0"



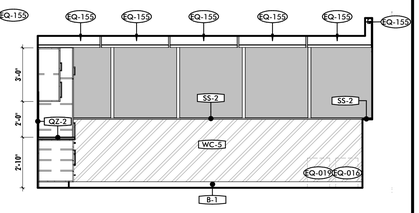
6 BREAK ROOM 145 - NORTH
1/4" = 1'-0"



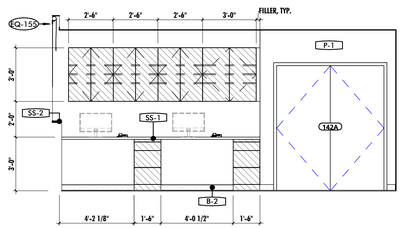
7 BREAK ROOM 145 - EAST
1/4" = 1'-0"



8 BREAK ROOM 145 - SOUTH
1/4" = 1'-0"

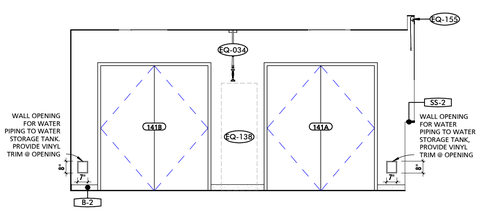


9 BREAK ROOM 145 - WEST
1/4" = 1'-0"

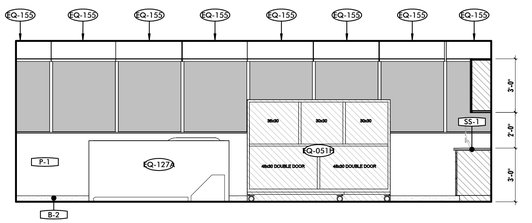


10 PHYSICAL THERAPY 140 - NORTH
1/4" = 1'-0"

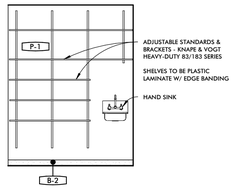
11 PHYSICAL THERAPY 140 - EAST
1/4" = 1'-0"



12 PHYSICAL THERAPY 140 - SOUTH
1/4" = 1'-0"



13 PHYSICAL THERAPY 140 - WEST
1/4" = 1'-0"



14 PHYSICAL THERAPY - CLOSET
1/4" = 1'-0"



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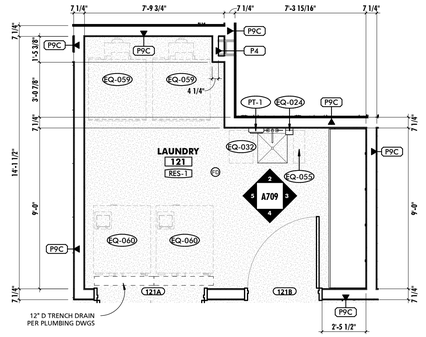
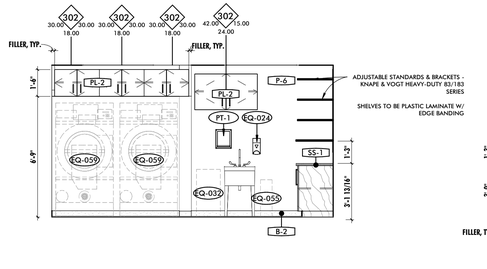
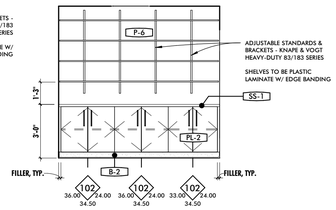


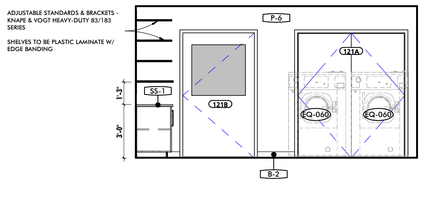
1 ENLARGED PLAN - LAUNDRY 121
1/4" = 1'-0"



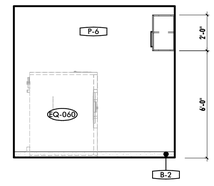
2 LAUNDRY 121 - NORTH
1/4" = 1'-0"



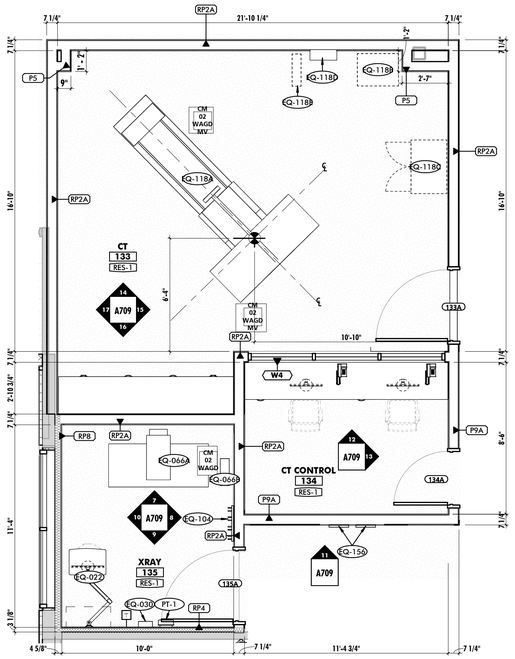
3 LAUNDRY 121 - EAST
1/4" = 1'-0"



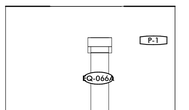
4 LAUNDRY 121 - SOUTH
1/4" = 1'-0"



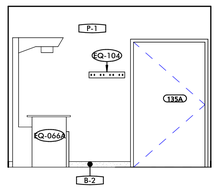
5 LAUNDRY 121 - WEST
1/4" = 1'-0"



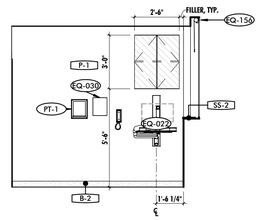
6 ENLARGED PLAN - XRAY
1/4" = 1'-0"



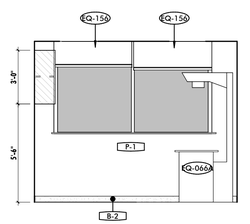
7 XRAY 135 - NORTH
1/4" = 1'-0"



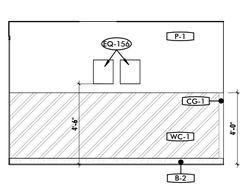
8 XRAY 135 - EAST
1/4" = 1'-0"



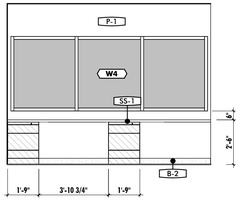
9 XRAY 135 - SOUTH
1/4" = 1'-0"



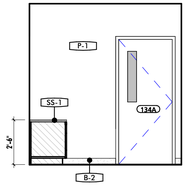
10 XRAY 135 - WEST
1/4" = 1'-0"



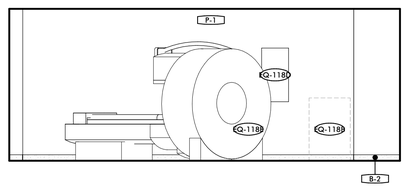
11 OUTSIDE X-RAY 135
1/4" = 1'-0"



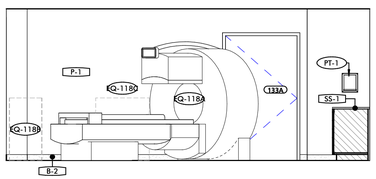
12 CT CONTROL - NORTH
1/4" = 1'-0"



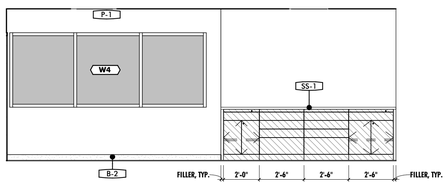
13 CT CONTROL - EAST
1/4" = 1'-0"



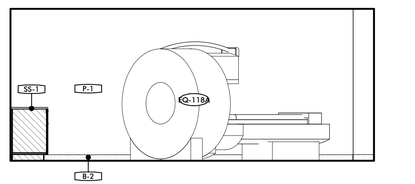
14 CT 133 - NORTH
1/4" = 1'-0"



15 CT 133 - EAST
1/4" = 1'-0"



16 CT 133 - SOUTH
1/4" = 1'-0"



17 CT 133 - WEST
1/4" = 1'-0"

EQUIPMENT SCHEDULE - LAUNDRY 121	
MARK	DESCRIPTION
121	
EQ-024	HAND SANITIZER
EQ-032	LAUNDRY CART
EQ-055	23 GALLON TRASH CAN
EQ-059	COMMERCIAL GAS DRYER
EQ-060	COMMERCIAL WASHER

EQUIPMENT SCHEDULE - CT	
MARK	DESCRIPTION
133	
EQ-118A	CT GANTRY & TABLE W/CT POSITIONING WEDGES
EQ-118B	POWER DISTRIBUTION UNIT
EQ-118C	GE STORAGE CABINET
EQ-118D	MAIN DISCONNECT CONTROL
EQ-118E	PARTIAL UPS

EQUIPMENT SCHEDULE - CT CONTROL	
MARK	DESCRIPTION
134	
EQ-012	COMPUTER MONITOR

EQUIPMENT SCHEDULE - XRAY 135	
MARK	DESCRIPTION
135	
EQ-012	COMPUTER MONITOR
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM
EQ-030	SHARPS CONTAINER
EQ-066A	X-RAY MACHINE
EQ-066B	X-RAY WALL BUCKY STAND
EQ-104	LEAD GOWN WALL HANGING SYSTEM

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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CONSULTANT:

SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC. No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

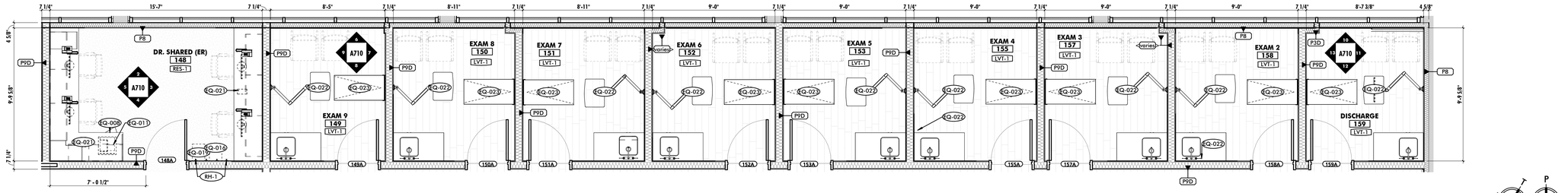
SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

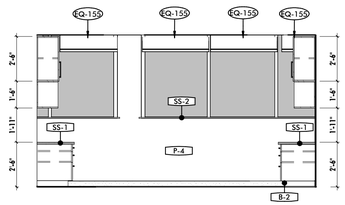
ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A709

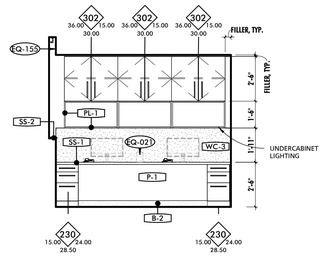
9/20/2023 5:00:05 PM



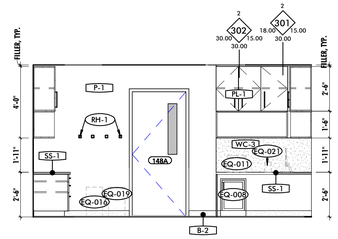
1 ENLARGED PLAN - DR. OFFICE, EXAM ROOMS
1/4" = 1'-0"



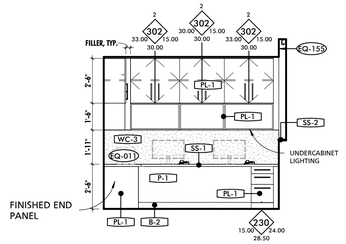
2 DR. SHARED OFFICE 148 - NORTH
1/4" = 1'-0"



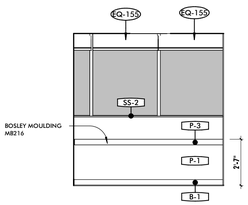
3 DR. SHARED OFFICE 148 - EAST
1/4" = 1'-0"



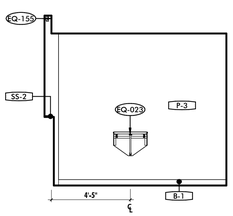
4 DR. SHARED OFFICE 148 - SOUTH
1/4" = 1'-0"



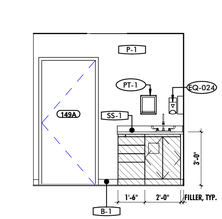
5 DR. SHARED OFFICE 148 - WEST
1/4" = 1'-0"



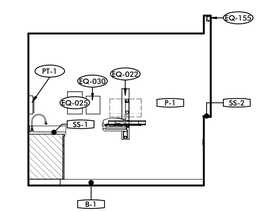
6 TYP. EXAM ROOM - NORTH
1/4" = 1'-0"



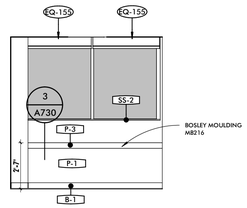
7 TYP. EXAM ROOM - EAST
1/4" = 1'-0"



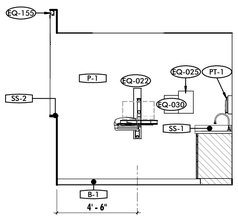
8 TYP. EXAM ROOM - SOUTH
1/4" = 1'-0"



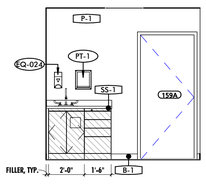
9 TYP. EXAM ROOM - WEST
1/4" = 1'-0"



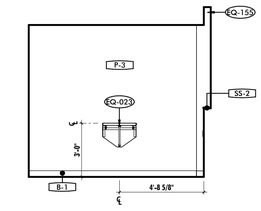
10 DISCHARGE - NORTH
1/4" = 1'-0"



11 DISCHARGE - EAST
1/4" = 1'-0"



12 DISCHARGE - SOUTH
1/4" = 1'-0"



13 DISCHARGE - WEST
1/4" = 1'-0"

EQUIPMENT SCHEDULE - TYP EXAM		EQUIPMENT SCHEDULE - ER DR. OFFICE		EQUIPMENT SCHEDULE - DISCHARGE	
MARK	DESCRIPTION	MARK	DESCRIPTION	MARK	DESCRIPTION
149		148		159	
EQ-012	COMPUTER MONITOR	EQ-008	ADA UNDERCOUNTER REFRIGERATOR	EQ-012	COMPUTER MONITOR
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM	EQ-011	COUNTERTOP PRINTER	EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM
EQ-023	FOLD UP EXAM TABLE	EQ-012	COMPUTER MONITOR	EQ-023	FOLD UP EXAM TABLE
EQ-024	HAND SANITIZER	EQ-016	10 GALLON TRASH CAN	EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER	EQ-019	10 GALLON RECYCLING	EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER	EQ-021	LABEL PRINTER	EQ-030	SHARPS CONTAINER
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT	EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT	EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

CASEWORK LEGEND

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- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
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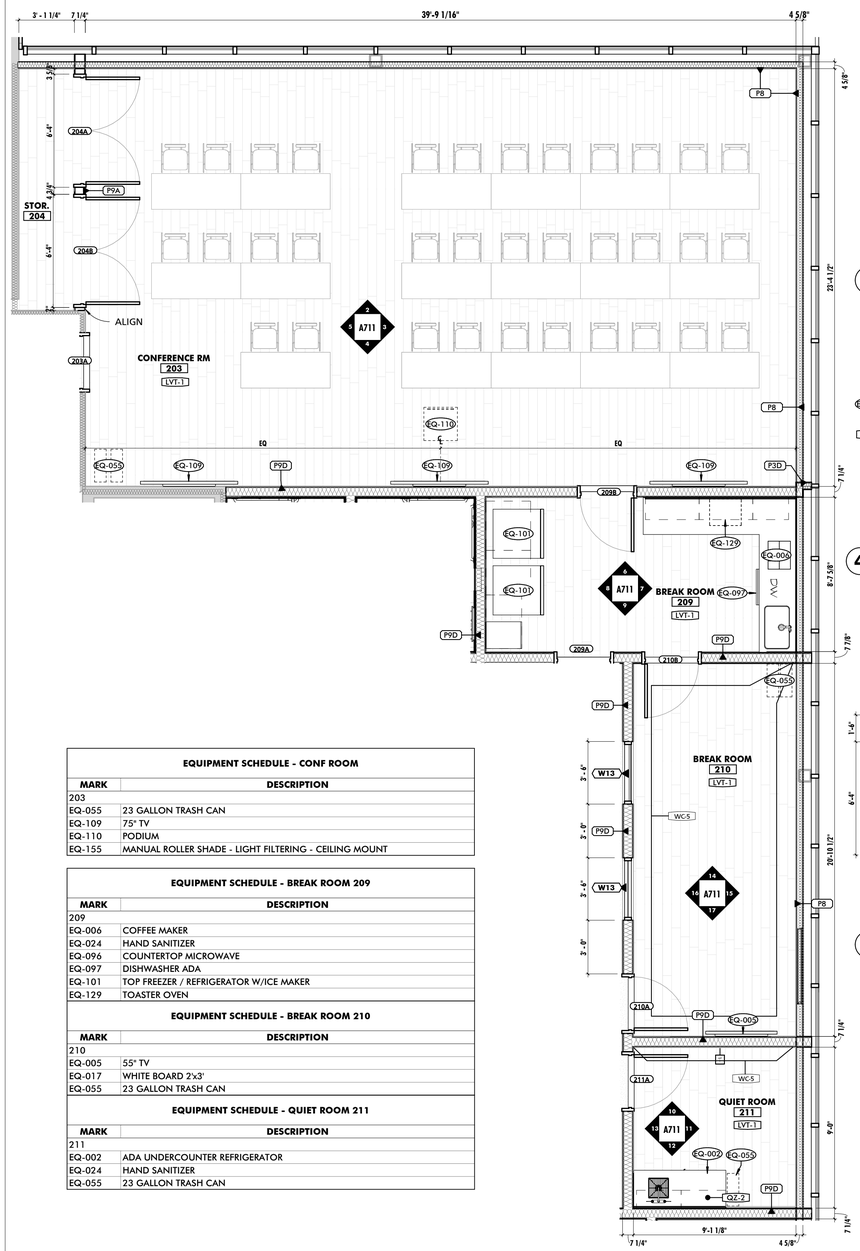
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A710

9/20/2023 5:00:20 PM



1 ENLARGED PLAN - CONF. ROOM, BREAK ROOM & QUIET ROOM
1/4" = 1'-0"

EQUIPMENT SCHEDULE - CONF ROOM

MARK	DESCRIPTION
203	
EQ-055	23 GALLON TRASH CAN
EQ-109	75" TV
EQ-110	PODIUM
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

EQUIPMENT SCHEDULE - BREAK ROOM 209

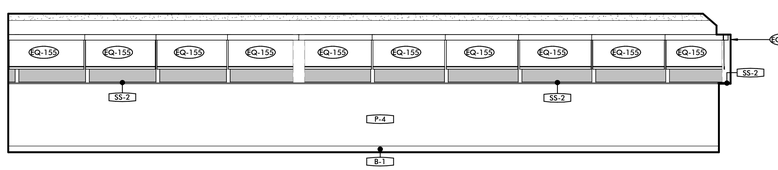
MARK	DESCRIPTION
209	
EQ-006	COFFEE MAKER
EQ-024	HAND SANITIZER
EQ-096	COUNTERTOP MICROWAVE
EQ-097	DISHWASHER ADA
EQ-101	TOP FREEZER / REFRIGERATOR W/ICE MAKER
EQ-129	TOASTER OVEN

EQUIPMENT SCHEDULE - BREAK ROOM 210

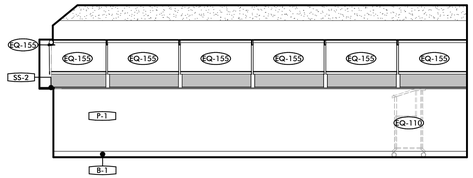
MARK	DESCRIPTION
210	
EQ-005	55" TV
EQ-017	WHITE BOARD 2'x3'
EQ-055	23 GALLON TRASH CAN

EQUIPMENT SCHEDULE - QUIET ROOM 211

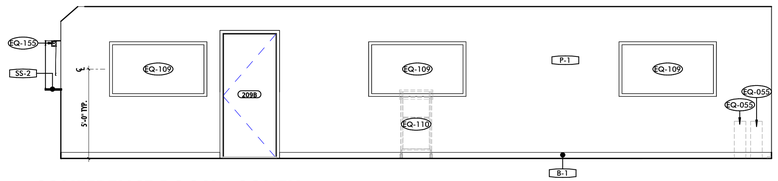
MARK	DESCRIPTION
211	
EQ-002	ADA UNDERCOUNTER REFRIGERATOR
EQ-024	HAND SANITIZER
EQ-055	23 GALLON TRASH CAN



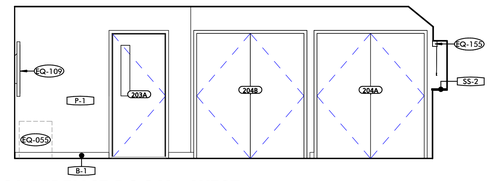
2 CONFERENCE ROOM - NORTH
1/4" = 1'-0"



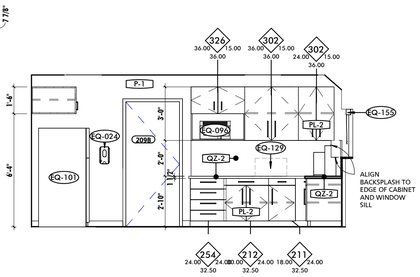
3 CONFERENCE ROOM - EAST
1/4" = 1'-0"



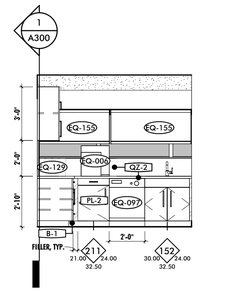
4 CONFERENCE ROOM - SOUTH
1/4" = 1'-0"



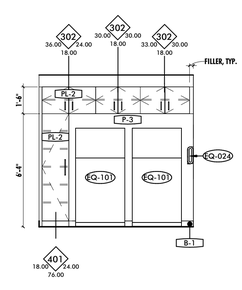
5 CONFERENCE ROOM - WEST
1/4" = 1'-0"



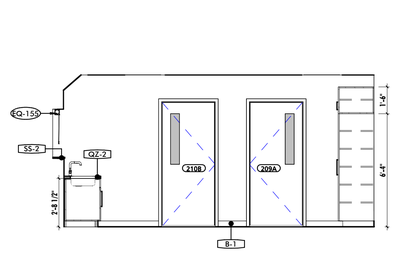
6 BREAK ROOM 209 - NORTH
1/4" = 1'-0"



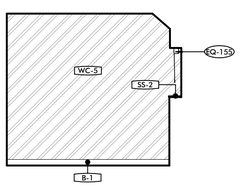
7 BREAK ROOM 209 - EAST
1/4" = 1'-0"



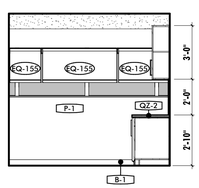
8 BREAK ROOM 209 - WEST
1/4" = 1'-0"



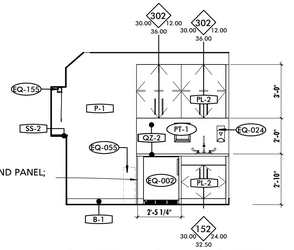
9 BREAK ROOM 209 - SOUTH
1/4" = 1'-0"



10 QUIET ROOM 211 - NORTH
1/4" = 1'-0"

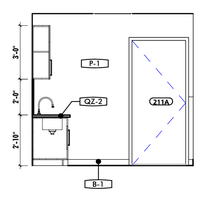


11 QUIET RM - EAST
1/4" = 1'-0"

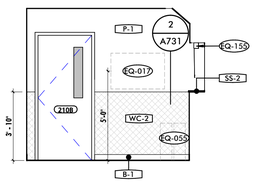


FINISHED END PANEL; PL-2

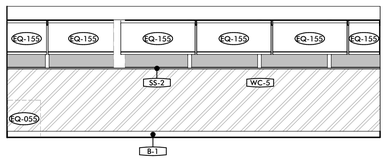
12 QUIET ROOM - SOUTH
1/4" = 1'-0"



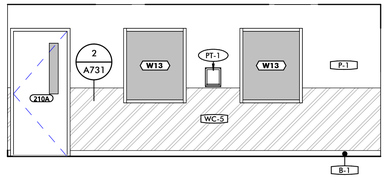
13 QUIET ROOM - WEST
1/4" = 1'-0"



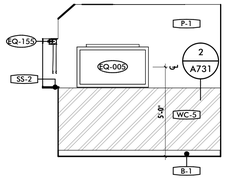
14 BREAK ROOM 210 - NORTH
1/4" = 1'-0"



15 BREAK ROOM 210 - EAST
1/4" = 1'-0"



16 BREAK ROOM 210 - WEST
1/4" = 1'-0"



17 BREAK ROOM 210 - SOUTH
1/4" = 1'-0"

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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CONSULTANT:

SEAL:

COA:

MANNS WOODWARD STUDIOS, INC. No. 53188 NORTH CAROLINA CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

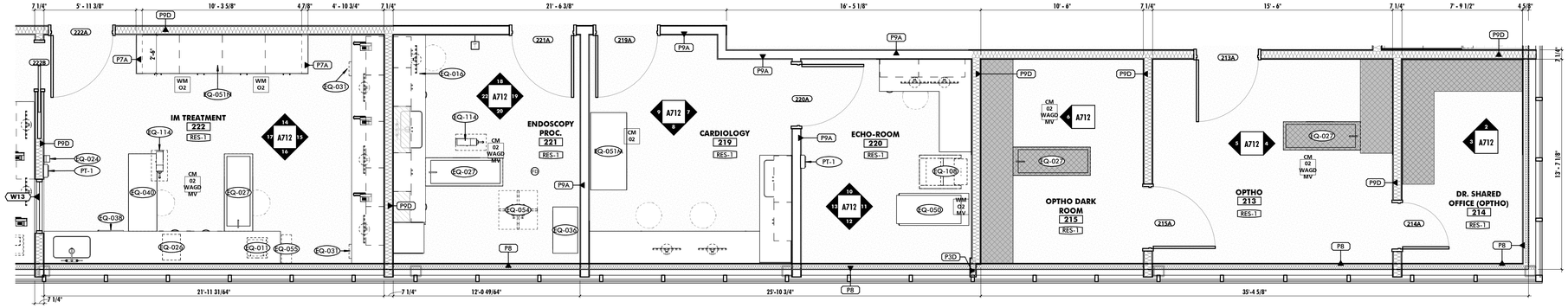
SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A711

9/20/2023 5:00:34 PM



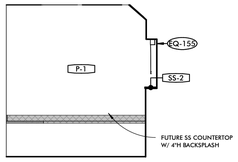
1 ENLARGED PLAN - OPTHO, CARDIOLOGY, ENDOSCOPY & IM TREATMENT ROOMS
1/4" = 1'-0"

EQUIPMENT SCHEDULE - IM TREATMENT	
MARK	DESCRIPTION
222	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-017	WHITE BOARD 2'x3'
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-026	SMALL ANIMAL SCALE
EQ-027	WET TABLE - 60"
EQ-030	SHARPS CONTAINER
EQ-031	16 GALLON TRASH CAN
EQ-038	UNDERCOUNTER REFRIGERATOR
EQ-040	DRY TABLE - 60"
EQ-051N	10' CAGE BANK - IM
EQ-055	23 GALLON TRASH CAN
EQ-146	L TRACK TIE DOWN SYSTEM

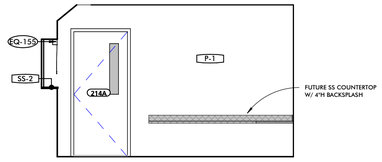
EQUIPMENT SCHEDULE - ENDO PROC	
MARK	DESCRIPTION
221	
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-027	WET TABLE - 60"
EQ-036	SCOPE CABINET
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND

EQUIPMENT SCHEDULE - CARDIO	
MARK	DESCRIPTION
219	
EQ-012	COMPUTER MONITOR
EQ-024	HAND SANITIZER
EQ-051M	5' CAGE BANK - CARDIO

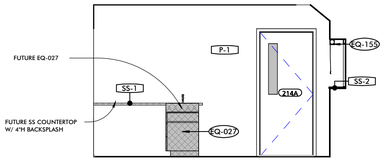
EQUIPMENT SCHEDULE - ECHO	
MARK	DESCRIPTION
220	
EQ-012	COMPUTER MONITOR
EQ-050	MOBILE ELECTRIC LIFT GURNEY
EQ-108	CARDIAC ULTRASOUND SCANNER (AVIM)



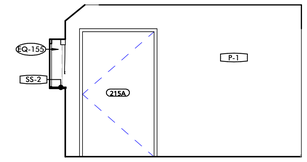
2 DR. SHARED OFFICE OPTHO 214 - NORTH
1/4" = 1'-0"



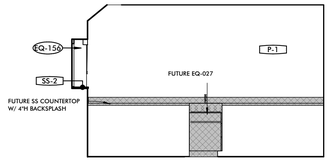
3 DR. SHARED OFFICE OPTHO 214 - WEST
1/4" = 1'-0"



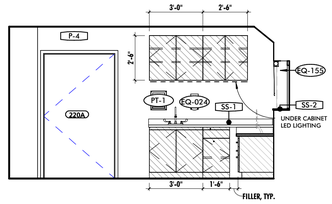
4 OPTHO TREATMENT 21 3- EAST
1/4" = 1'-0"



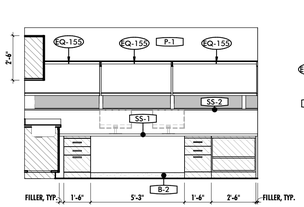
5 OPTHO TREATMENT 213 - WEST
1/4" = 1'-0"



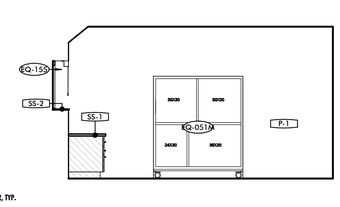
6 OPTHO DARK ROOM 215 - WEST
1/4" = 1'-0"



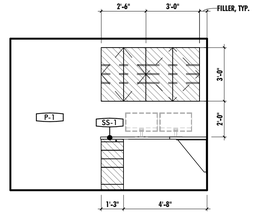
7 CARDIOLOGY 219 - EAST
1/4" = 1'-0"



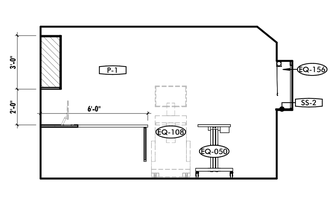
8 CARDIOLOGY 219 - SOUTH
1/4" = 1'-0"



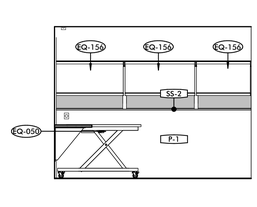
9 CARDIOLOGY 219 - WEST
1/4" = 1'-0"



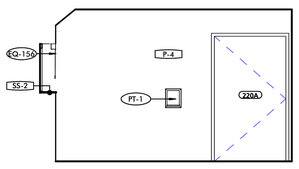
10 ECHO 220 - NORTH
1/4" = 1'-0"



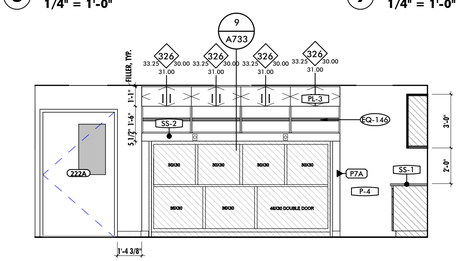
11 ECHO-RM 220 - EAST
1/4" = 1'-0"



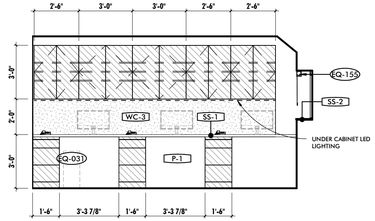
12 ECHO-RM 220 - SOUTH
1/4" = 1'-0"



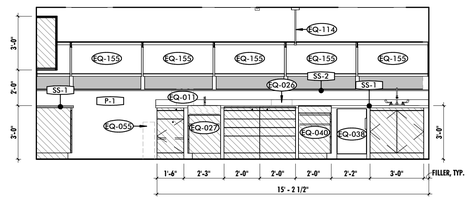
13 ECHO-RM 220 - WEST
1/4" = 1'-0"



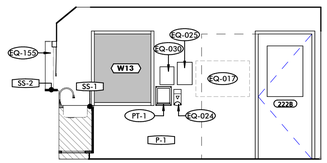
14 IM TREATMENT 222 - NORTH
1/4" = 1'-0"



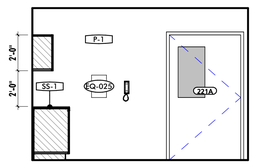
15 IM TREATMENT 222 - EAST
1/4" = 1'-0"



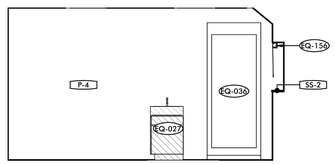
16 IM TREATMENT 222 - SOUTH
1/4" = 1'-0"



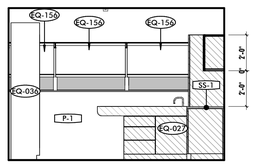
17 IM TREATMENT 222 - WEST
1/4" = 1'-0"



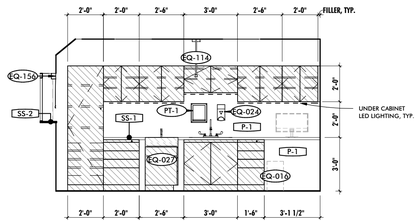
18 ENDOSCOPY 221 - NORTH
1/4" = 1'-0"



19 ENDOSCOPY 221 - EAST
1/4" = 1'-0"



20 ENDOSCOPY 221 - SOUTH
1/4" = 1'-0"



22 ENDOSCOPY 221 - WEST
1/4" = 1'-0"

CASEWORK LEGEND

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CONSULTANT:

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COA:

NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERING AND SURVEYING
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

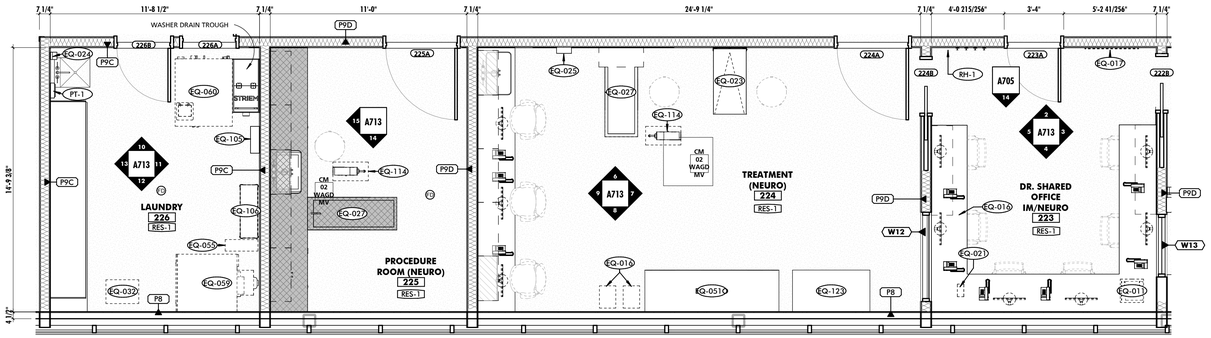
SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A712

9/20/2023 5:00:48 PM



1 ENLARGED PLAN - DR SHARED OFFICE IM/NEURO, NEURO TREATMENT, NEURO PROCEDURE ROOM, LAUNDRY
1/4" = 1'-0"

EQUIPMENT SCHEDULE - IM/NEURO DR....

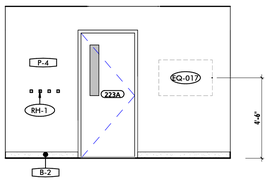
MARK	DESCRIPTION
223	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-017	WHITE BOARD 2'x3'
EQ-019	10 GALLON RECYCLING
EQ-021	LABEL PRINTER

EQUIPMENT SCHEDULE - NEURO TREATMENT

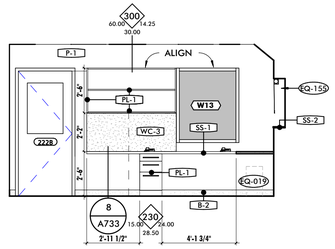
MARK	DESCRIPTION
224	
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-023	FOLD UP EXAM TABLE
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-027	WET TABLE - 60"
EQ-051O	7.5' CAGE BANK - NEURO
EQ-123	FUTURE CUBEX

EQUIPMENT SCHEDULE - LAUNDRY 226

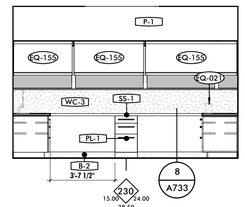
MARK	DESCRIPTION
226	
EQ-024	HAND SANITIZER
EQ-032	LAUNDRY CART
EQ-055	23 GALLON TRASH CAN
EQ-059	COMMERCIAL GAS DRYER
EQ-060	COMMERCIAL WASHER
EQ-105	WASHER DETERGENT MIXER
EQ-106	SHELVING



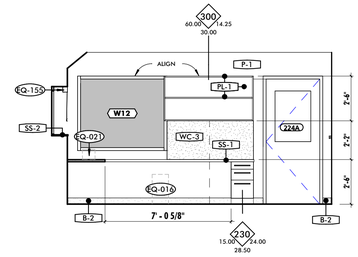
2 DR. SHARED OFFICE IM/NEURO 223 - NORTH
1/4" = 1'-0"



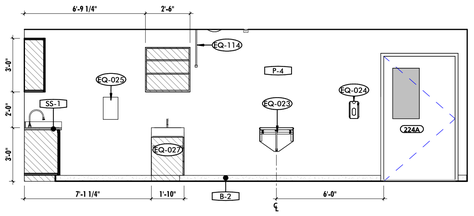
3 DR. SHARED OFFICE IM/NEURO 223- EAST
1/4" = 1'-0"



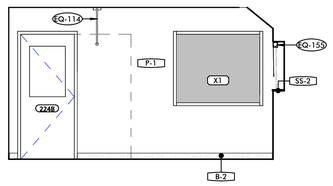
4 DR. SHARED OFFICE IM/NEURO 223 - SOUTH
1/4" = 1'-0"



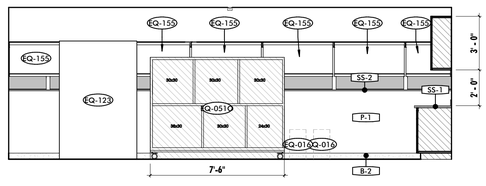
5 DR. SHARED OFFICE IM/NEURO 223 - WEST
1/4" = 1'-0"



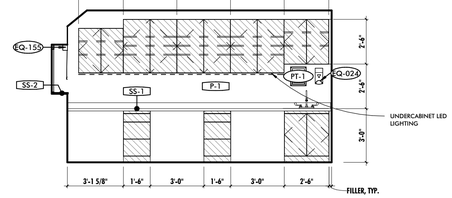
6 NEURO TREATMENT 224 - NORTH
1/4" = 1'-0"



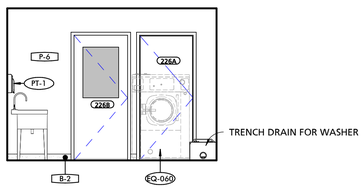
7 NEURO TREATMENT 224 - EAST
1/4" = 1'-0"



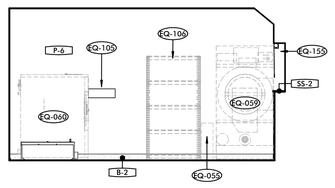
8 NEURO TREATMENT 224 - SOUTH
1/4" = 1'-0"



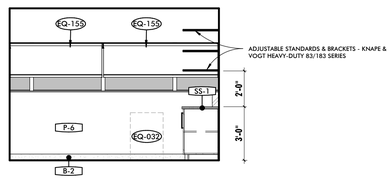
9 NEURO TREATMENT 224 - WEST
1/4" = 1'-0"



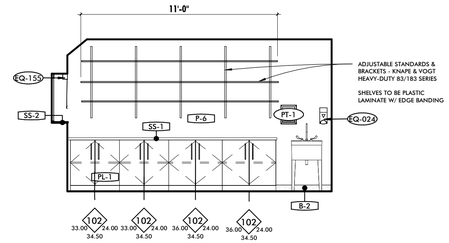
10 LAUNDRY 226 - NORTH
1/4" = 1'-0"



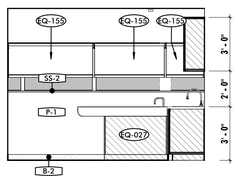
11 LAUNDRY 226 - EAST
1/4" = 1'-0"



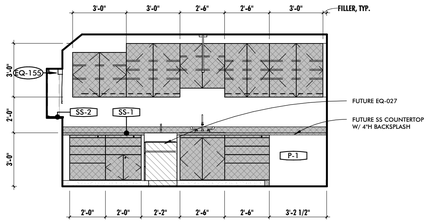
12 LAUNDRY 226 - SOUTH
1/4" = 1'-0"



13 LAUNDRY 226 - WEST
1/4" = 1'-0"



14 NEURO PROCEDURE RM 225 - SOUTH
1/4" = 1'-0"



15 NEURO PROCEDURE RM 225 - WEST
1/4" = 1'-0"

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CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

MW STUDIOS
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INFO@MWSARCH.COM
WWW.MWSARCH.COM

CONSULTANT:

SEAL:

COA:

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
MANNS WOODWARD STUDIOS, INC. No. 53188

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

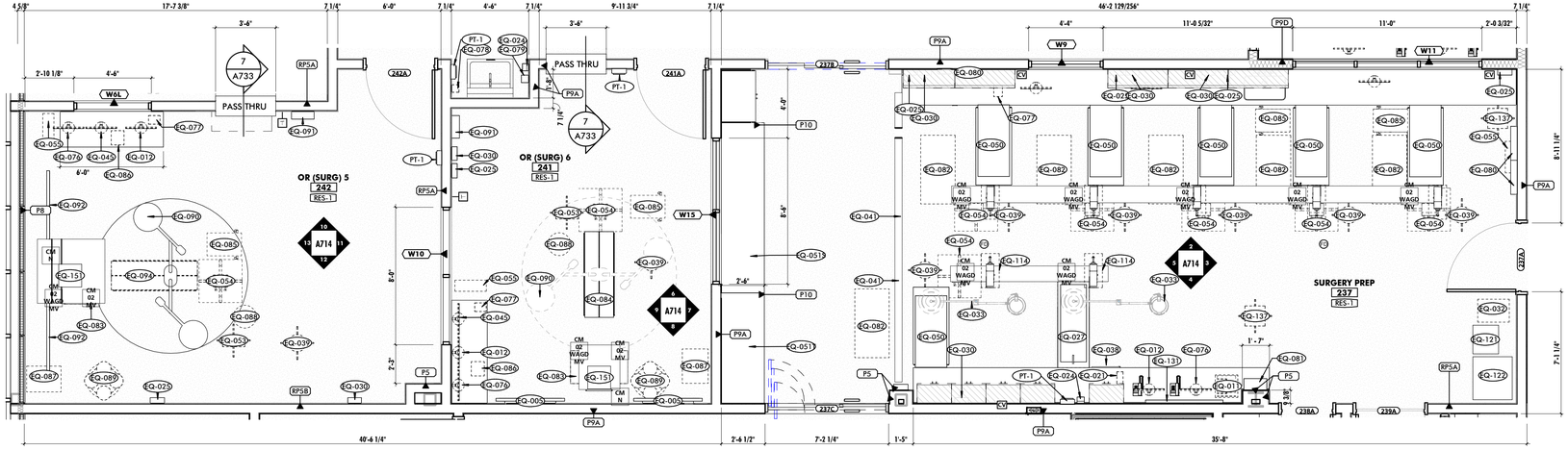
SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A713

9/20/2023 5:01:00 PM



1 ENLARGED PLAN - SURGERY PREP & , OR 5 & OR 6
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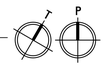
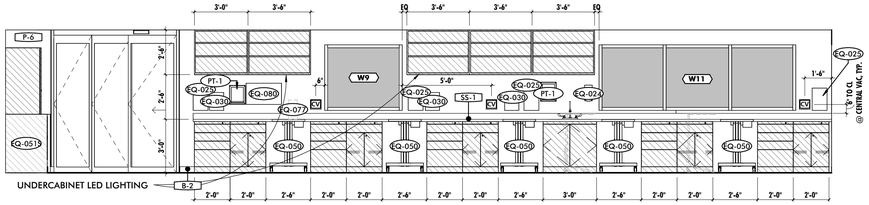
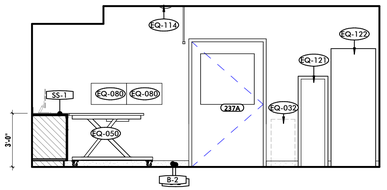
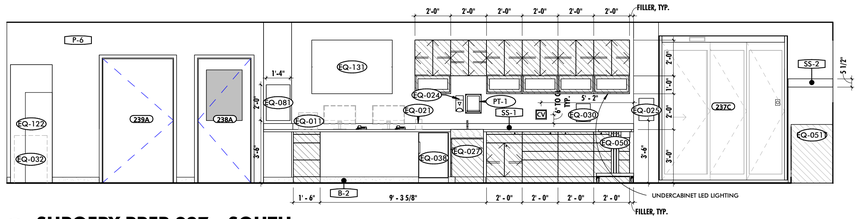




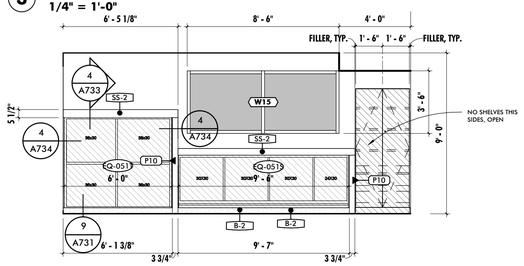
2 SURGERY PREP 237 - NORTH
1/4" = 1'-0"



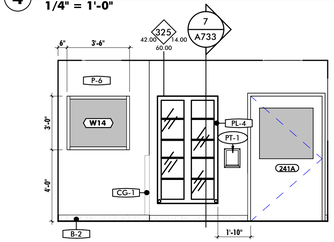
3 SURGERY PREP 237 - EAST
1/4" = 1'-0"



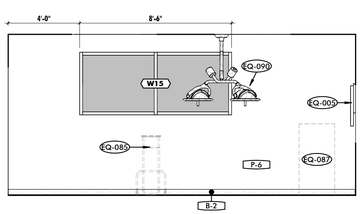
4 SURGERY PREP 237 - SOUTH
1/4" = 1'-0"



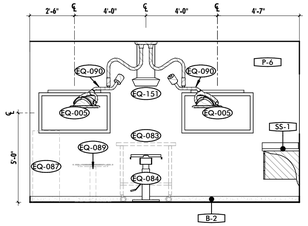
5 SURGERY PREP 237 - WEST
1/4" = 1'-0"



6 OR 6 241 - NORTH
1/4" = 1'-0"



7 OR 6 241 - EAST
1/4" = 1'-0"



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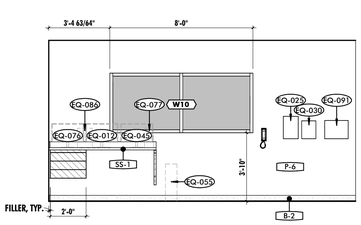
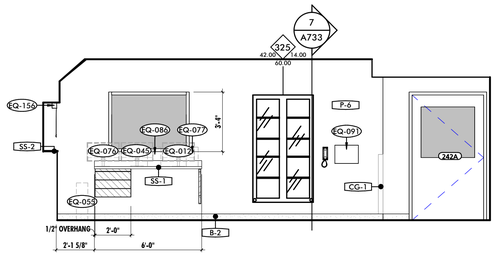
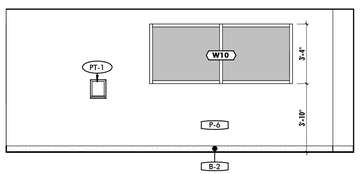
1/4" = 1'-0"



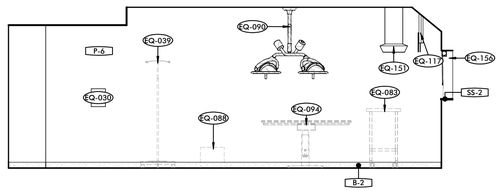
9 OR 6 241 - WEST
1/4" = 1'-0"



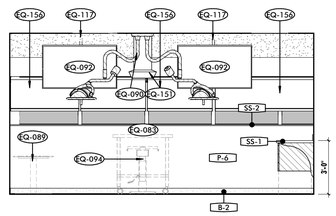
10 OR 5 242 - NORTH
1/4" = 1'-0"



11 OR 5 242 - EAST
1/4" = 1'-0"



12 OR 5 242 - SOUTH
1/4" = 1'-0"



13 OR 5 242 - WEST
1/4" = 1'-0"

EQUIPMENT SCHEDULE - OR #6

MARK	DESCRIPTION
241	
EQ-005	55" TV
EQ-012	COMPUTER MONITOR
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-039	IV POLE
EQ-045	MULTI-PARAMETER MONITOR
EQ-053	MULTI-PARAMETER MONITOR W/PRINTER & STAND
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-055	23 GALLON TRASH CAN
EQ-076	COMPUTER MONITOR FOR TV
EQ-077	SYRINGE PUMP
EQ-083	OVER INSTRUMENT TABLE
EQ-084	OPERATING TABLE W/V-TILT, NON HEATED
EQ-085	MAYO STAND
EQ-086	VENTILATOR
EQ-087	ELECTROCAUTERY UNIT ON STAND
EQ-088	KICK BUCKET
EQ-089	SUCTION REGULATOR / CANISTER CART
EQ-090	DUAL HEAD PROCEDURE LIGHT
EQ-091	SUTURE RACK - WALL MOUNT
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN

EQUIPMENT SCHEDULE - OR #5

MARK	DESCRIPTION
242	
EQ-012	COMPUTER MONITOR
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-039	IV POLE
EQ-045	MULTI-PARAMETER MONITOR
EQ-053	MULTI-PARAMETER MONITOR W/PRINTER & STAND
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-055	23 GALLON TRASH CAN
EQ-076	COMPUTER MONITOR FOR TV
EQ-077	SYRINGE PUMP
EQ-083	OVER INSTRUMENT TABLE
EQ-085	MAYO STAND
EQ-086	VENTILATOR
EQ-087	ELECTROCAUTERY UNIT ON STAND
EQ-088	KICK BUCKET
EQ-089	SUCTION REGULATOR / CANISTER CART
EQ-090	DUAL HEAD PROCEDURE LIGHT
EQ-091	SUTURE RACK - WALL MOUNT
EQ-092	55" CEILING MOUNTED TV MONITOR
EQ-094	SURGICAL TABLE, C-ARM COMPATIBLE
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN

EQUIPMENT SCHEDULE - SURG PREP

MARK	DESCRIPTION
237	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-021	LABEL PRINTER
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-027	WET TABLE - 60"
EQ-030	SHARPS CONTAINER
EQ-032	LAUNDRY CART
EQ-033	CEILING MOUNT 130 PROCEDURE LIGHT
EQ-038	UNDERCOUNTER REFRIGERATOR
EQ-039	IV POLE
EQ-041	CEILING MOUNTED IV TRACK & POLE
EQ-050	MOBILE ELECTRIC LIFT GURNEY
EQ-051S	9.5' CAGE BANK - SURGERY PREP
EQ-051T	6' CAGE BANK - SURGERY PREP
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-055	23 GALLON TRASH CAN
EQ-076	COMPUTER MONITOR FOR TV
EQ-077	SYRINGE PUMP
EQ-080	ENDOTRACHEAL TUBE RACK
EQ-081	NARCOTICS CABINET - WALL MOUNT
EQ-082	GURNEY
EQ-085	MAYO STAND
EQ-121	CUBEX MINIPLUS
EQ-122	CUBEX FLEX
EQ-131	WALL MOUNTED 65" TV MONITOR
EQ-137	VENTILATOR ON POLE

EQUIPMENT LEGEND

AC	CARD READER LOCATION	CCC	CCTV CAMERA LOCATION
AI	AIPHONE LOCATION	C	HIDDEN CAMERA LOCATION
AS	AIPHONE CONTROL STATION	PB	PUSH BUTTON
SC	SECURITY CAMERA LOCATION	CV	CENTRAL VACUUM PORT

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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CONSULTANT:

SEAL:

COA:

NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERING AND SURVEYING
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A714

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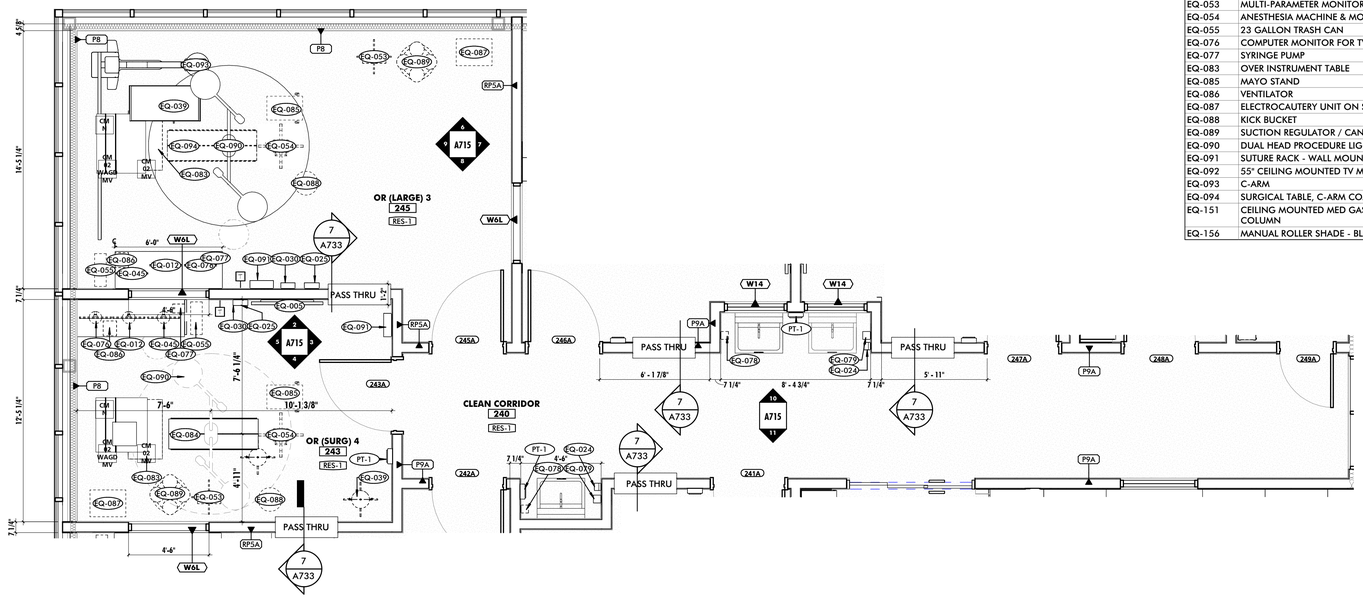
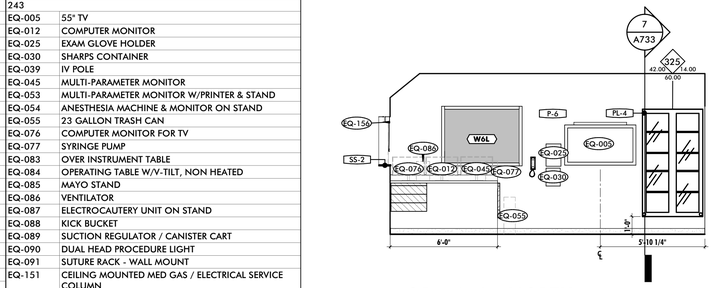
EQUIPMENT SCHEDULE - OR #3	
MARK	DESCRIPTION
245	
EQ-012	COMPUTER MONITOR
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-039	IV POLE
EQ-045	MULTI-PARAMETER MONITOR
EQ-053	MULTI-PARAMETER MONITOR W/PRINTER & STAND
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-055	23 GALLON TRASH CAN
EQ-076	COMPUTER MONITOR FOR TV
EQ-077	SYRINGE PUMP
EQ-083	OVER INSTRUMENT TABLE
EQ-085	MAYO STAND
EQ-086	VENTILATOR
EQ-087	ELECTROCAUTERY UNIT ON STAND
EQ-088	KICK BUCKET
EQ-089	SUCTION REGULATOR / CANISTER CART
EQ-090	DUAL HEAD PROCEDURE LIGHT
EQ-091	SUTURE RACK - WALL MOUNT
EQ-092	55" CEILING MOUNTED TV MONITOR
EQ-093	C-ARM
EQ-094	SURGICAL TABLE, C-ARM COMPATIBLE
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN
EQ-156	MANUAL ROLLER SHADE - BLACK OUT - CEILING MOUNT

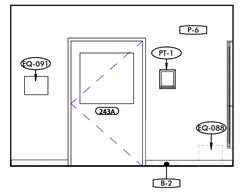
EQUIPMENT SCHEDULE - OR #4	
MARK	DESCRIPTION
243	
EQ-005	55" TV
EQ-012	COMPUTER MONITOR
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-039	IV POLE
EQ-045	MULTI-PARAMETER MONITOR
EQ-053	MULTI-PARAMETER MONITOR W/PRINTER & STAND
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-055	23 GALLON TRASH CAN
EQ-076	COMPUTER MONITOR FOR TV
EQ-077	SYRINGE PUMP
EQ-083	OVER INSTRUMENT TABLE
EQ-084	OPERATING TABLE W/V-TILT, NON HEATED
EQ-085	MAYO STAND
EQ-086	VENTILATOR
EQ-087	ELECTROCAUTERY UNIT ON STAND
EQ-088	KICK BUCKET
EQ-089	SUCTION REGULATOR / CANISTER CART
EQ-090	DUAL HEAD PROCEDURE LIGHT
EQ-091	SUTURE RACK - WALL MOUNT
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN



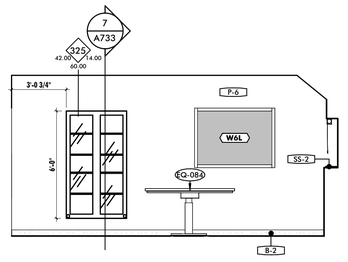
1 ENLARGED PLAN - CLEAN CORRIDOR 240, OR 4 243 & OR 3 245
1/4" = 1'-0"



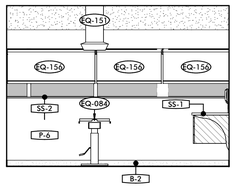
2 OR 4 243 - NORTH
1/4" = 1'-0"



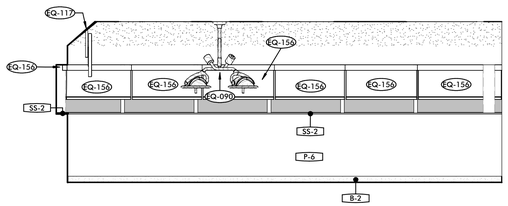
3 OR 4 243 - EAST
1/4" = 1'-0"



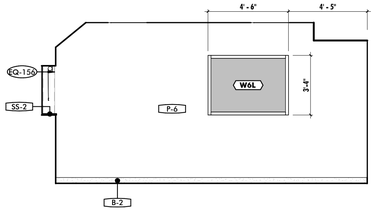
4 OR 4 243 - SOUTH
1/4" = 1'-0"



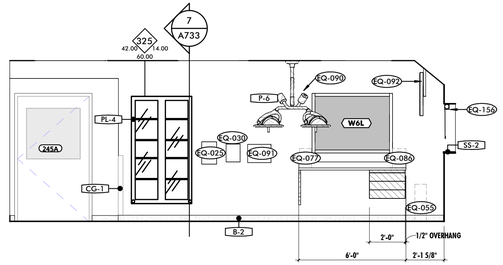
5 OR 4 243 - WEST
1/4" = 1'-0"



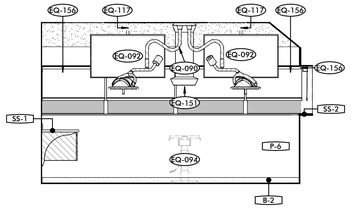
6 OR 3 245 - NORTH
1/4" = 1'-0"



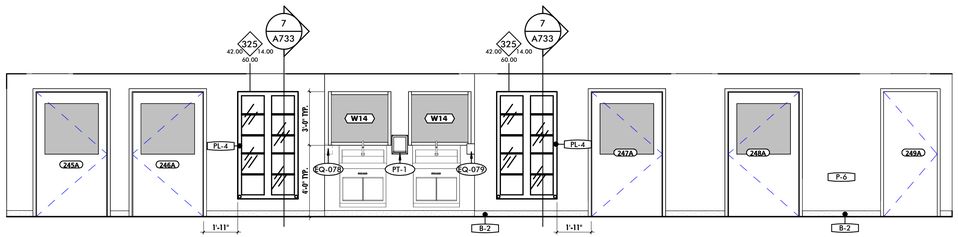
7 OR 3 245 - EAST
1/4" = 1'-0"



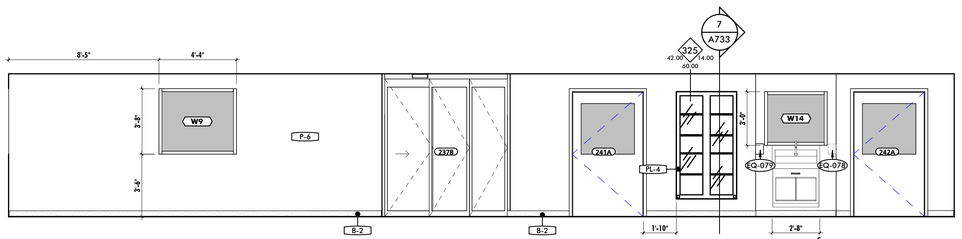
8 OR 3 245 - SOUTH
1/4" = 1'-0"



9 OR 3 245 - WEST
1/4" = 1'-0"



10 CLEAN CORRIDOR 240 - NORTH
1/4" = 1'-0"



11 CLEAN CORRIDOR 240 - SOUTH
1/4" = 1'-0"

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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A715

9/20/2023 5:01:30 PM

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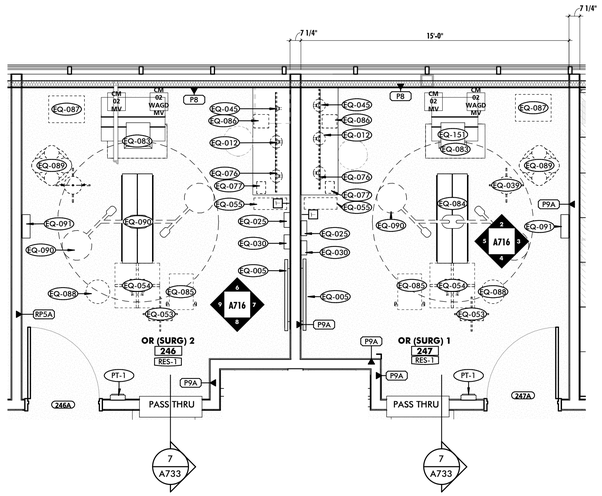
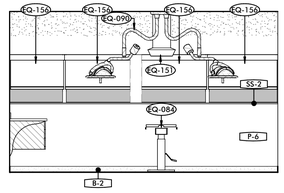


1 ENLARGED PLAN - OR 1 247 & OR 2 246

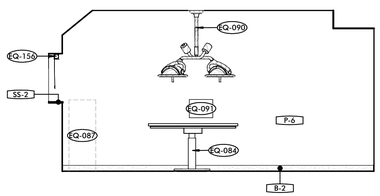
1/4" = 1'-0"





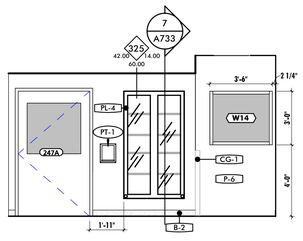
2 OR 1 247- NORTH

1/4" = 1'-0"



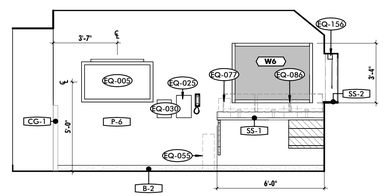
3 OR 1 247 - EAST

1/4" = 1'-0"



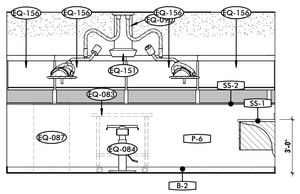
4 OR 1 247 - SOUTH

1/4" = 1'-0"



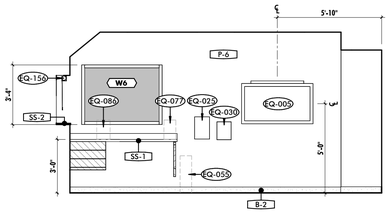
5 OR 1 247 - WEST

1/4" = 1'-0"



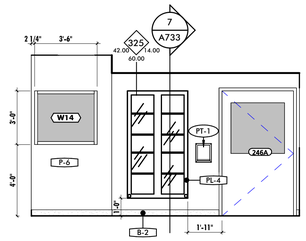
6 OR 2 246 - NORTH

1/4" = 1'-0"



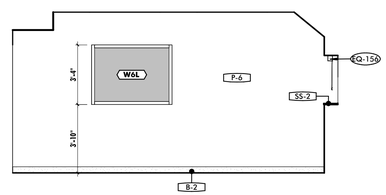
7 OR 2 246 - EAST

1/4" = 1'-0"



8 OR 2 246 - SOUTH

1/4" = 1'-0"



9 OR 2 246 - WEST

1/4" = 1'-0"

EQUIPMENT SCHEDULE - OR #2

MARK	DESCRIPTION
246	
EQ-005	55" TV
EQ-012	COMPUTER MONITOR
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-039	IV POLE
EQ-045	MULTI-PARAMETER MONITOR
EQ-053	MULTI-PARAMETER MONITOR W/PRINTER & STAND
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-055	23 GALLON TRASH CAN
EQ-076	COMPUTER MONITOR FOR TV
EQ-077	SYRINGE PUMP
EQ-083	OVER INSTRUMENT TABLE
EQ-084	OPERATING TABLE W/V-TILT, NON HEATED
EQ-085	MAYO STAND
EQ-086	VENTILATOR
EQ-087	ELECTROCAUTERY UNIT ON STAND
EQ-088	KICK BUCKET
EQ-089	SUCTION REGULATOR / CANISTER CART
EQ-090	DUAL HEAD PROCEDURE LIGHT
EQ-091	SUTURE RACK - WALL MOUNT
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN
EQ-156	MANUAL ROLLER SHADE - BLACK OUT - CEILING MOUNT

EQUIPMENT SCHEDULE - OR #1

MARK	DESCRIPTION
247	
EQ-005	55" TV
EQ-012	COMPUTER MONITOR
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-039	IV POLE
EQ-045	MULTI-PARAMETER MONITOR
EQ-053	MULTI-PARAMETER MONITOR W/PRINTER & STAND
EQ-054	ANESTHESIA MACHINE & MONITOR ON STAND
EQ-055	23 GALLON TRASH CAN
EQ-076	COMPUTER MONITOR FOR TV
EQ-077	SYRINGE PUMP
EQ-083	OVER INSTRUMENT TABLE
EQ-084	OPERATING TABLE W/V-TILT, NON HEATED
EQ-085	MAYO STAND
EQ-086	VENTILATOR
EQ-087	ELECTROCAUTERY UNIT ON STAND
EQ-088	KICK BUCKET
EQ-089	SUCTION REGULATOR / CANISTER CART
EQ-090	DUAL HEAD PROCEDURE LIGHT
EQ-091	SUTURE RACK - WALL MOUNT
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN
EQ-156	MANUAL ROLLER SHADE - BLACK OUT - CEILING MOUNT

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

MW STUDIOS
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410-344-1460
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CONSULTANT:

SEAL:

COA:

MANNS WOODWARD STUDIOS, INC. No. 53188 NORTH CAROLINA CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:

A716

9/20/2023 5:01:41 PM

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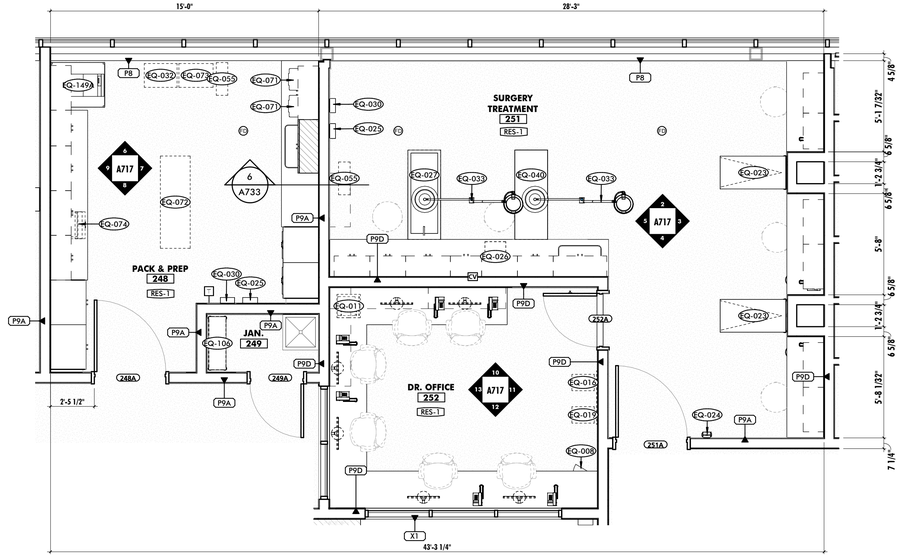
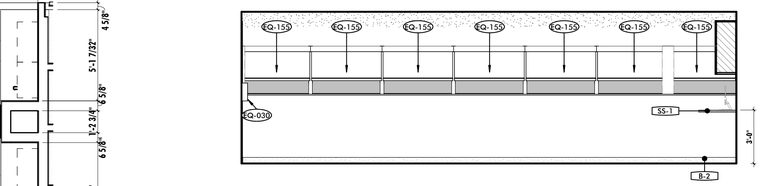
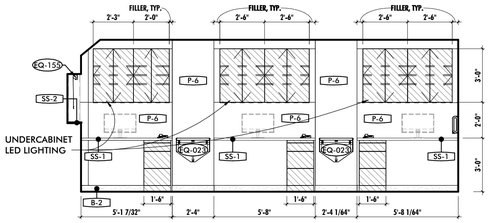


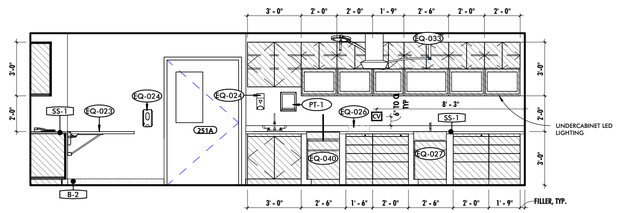
1 ENLARGED PLAN - PACK & PREP 248, SURGERY TREATMENT 251, DR. SHARED OFFICE 252
1/4" = 1'-0"



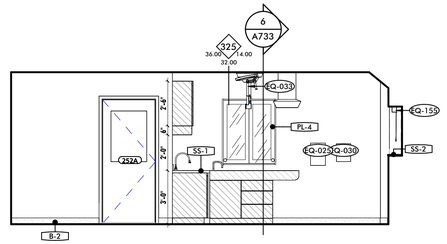
2 SURGERY TREATMENT 251 - NORTH
1/4" = 1'-0"



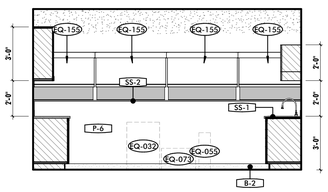
3 SURGERY TREATMENT 251 - EAST
1/4" = 1'-0"



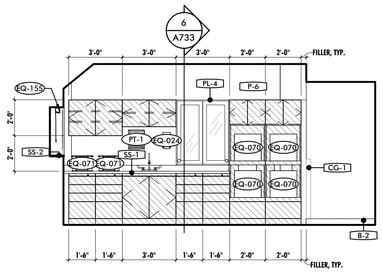
4 SURGERY TREATMENT 251 - SOUTH
1/4" = 1'-0"



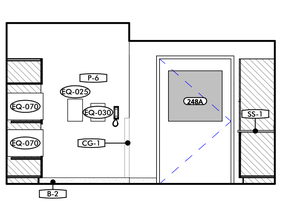
5 SURGERY TREATMENT 251 - WEST
1/4" = 1'-0"



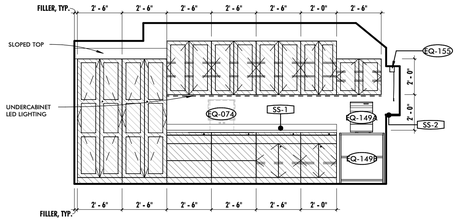
6 PACK & PREP 248 - NORTH
1/4" = 1'-0"



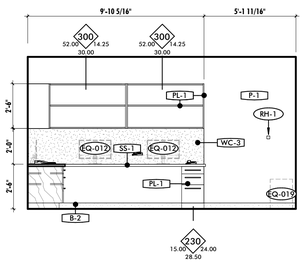
7 PACK & PREP 248 - EAST
1/4" = 1'-0"



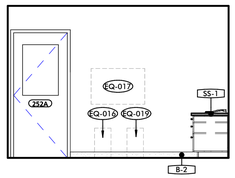
8 PACK & PREP 248 - SOUTH
1/4" = 1'-0"



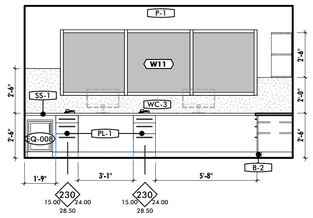
9 PACK & PREP 248 - WEST
1/4" = 1'-0"



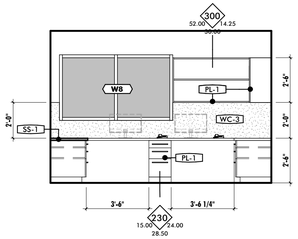
10 DR. SHARED OFFICE OR 252 - NORTH
1/4" = 1'-0"



11 DR. SHARED OFFICE OR 252 - EAST
1/4" = 1'-0"



12 DR. SHARED OFFICE OR 252 - SOUTH
1/4" = 1'-0"



13 DR. SHARED OFFICE OR 252 - WEST
1/4" = 1'-0"

EQUIPMENT LEGEND

AC	CARD READER LOCATION	CCC	CCTV CAMERA LOCATION
AI	AIPHONE LOCATION	C	HIDDEN CAMERA LOCATION
AS	AIPHONE CONTROL STATION	PB	PUSH BUTTON
SC	SECURITY CAMERA LOCATION	CV	CENTRAL VACUUM PORT

EQUIPMENT SCHEDULE - PACK &...

MARK	DESCRIPTION
248	
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-030	SHARPS CONTAINER
EQ-032	LAUNDRY CART
EQ-055	23 GALLON TRASH CAN
EQ-070	AUTOCLAVE - STEAM STERILIZER
EQ-071	ULTRASONIC CLEANER - COUNTERTOP
EQ-072	62" X 20" 12 DRAWER WORKBENCH
EQ-073	10 GALLON RECYCLING
EQ-074	FLUID WARMER
EQ-149A	STEAM STERILIZER
EQ-149B	AUTOCLAVE CART
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

EQUIPMENT SCHEDULE - SURG...

MARK	DESCRIPTION
251	
EQ-012	COMPUTER MONITOR
EQ-023	FOLD UP EXAM TABLE
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-026	SMALL ANIMAL SCALE
EQ-027	WET TABLE - 60"
EQ-030	SHARPS CONTAINER
EQ-033	CEILING MOUNT 130 PROCEDURE LIGHT
EQ-040	DRY TABLE - 60"
EQ-055	23 GALLON TRASH CAN
EQ-151	CEILING MOUNTED MED GAS / ELECTRICAL SERVICE COLUMN
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

EQUIPMENT SCHEDULE - DR. OFFICE

MARK	DESCRIPTION
252	
EQ-008	ADA UNDERCOUNTER REFRIGERATOR
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-017	WHITE BOARD 2'x3'
EQ-019	10 GALLON RECYCLING

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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CONSULTANT:

SEAL:

COA:

NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERING AND SURVEYING
MANNS WOODWARD STUDIOS, INC.
No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A717

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EQUIPMENT SCHEDULE - HOLDING 254	
MARK	DESCRIPTION
254	
EQ-29C	KENNEL FULL GRID DOOR
EQ-034	SPRING REWIND CEILING MOUNT HOSE & REEL
EQ-047	KENNEL POLE FOR IV/MONITOR MOUNT
EQ-051R	13.5' CAGE BANK - HOLDING
EQ-146	L TRACK TIE DOWN SYSTEM
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

EQUIPMENT SCHEDULE - FOOD PREP/LAB	
MARK	DESCRIPTION
255	
EQ-001	PLATFORM SCALE
EQ-012	COMPUTER MONITOR
EQ-024	HAND SANITIZER
EQ-044	MOP SOAP MIXER
EQ-048	DISHWASHER
EQ-055	23 GALLON TRASH CAN
EQ-061	CATONE CHEMISTRY ANALYZER
EQ-062	VETLAB STATION
EQ-063	PROCYTE - HEMOTOLOGY ANALYZER
EQ-096	COUNTERTOP MICROWAVE
EQ-098	POWERSPIN CENTRIFUGE
EQ-126	TUBE ROCKER
EQ-153	TOP FREEZER / REFRIGERATOR
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

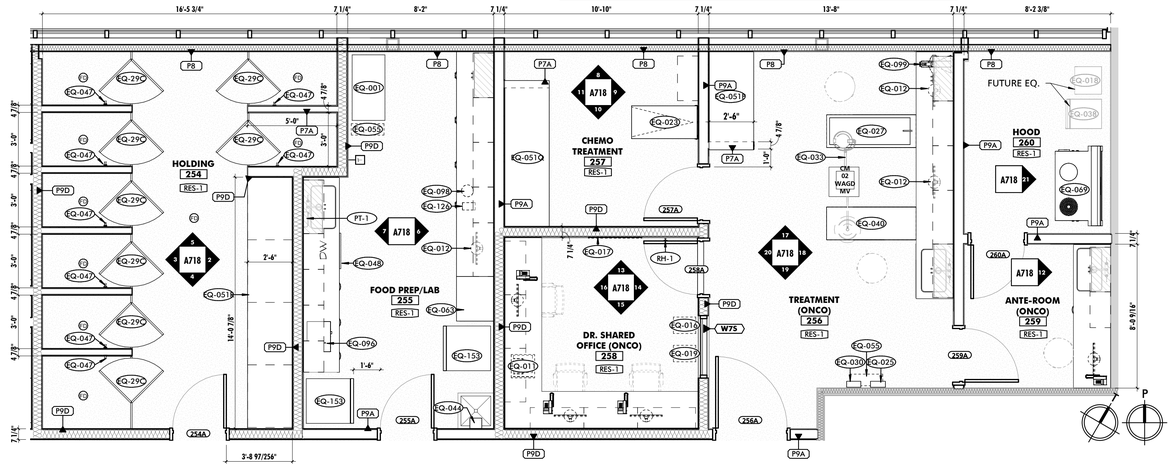
EQUIPMENT SCHEDULE - CHEMO TREATMENT	
MARK	DESCRIPTION
257	
EQ-023	FOLD UP EXAM TABLE
EQ-051Q	7.5' CAGE BANK - ONCO CHEMO
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

EQUIPMENT SCHEDULE - ONCO DR. OFFICE	
MARK	DESCRIPTION
258	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-017	WHITE BOARD 2'x3'
EQ-019	10 GALLON RECYCLING

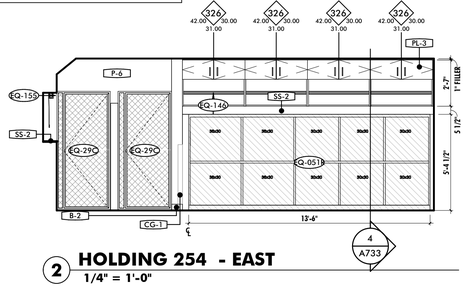
EQUIPMENT SCHEDULE - ONCO TREATMENT	
MARK	DESCRIPTION
256	
EQ-012	COMPUTER MONITOR
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER
EQ-027	WET TABLE - 60"
EQ-030	SHARPS CONTAINER
EQ-040	DRY TABLE - 60"
EQ-051P	5' CAGE BANK - ONCO TREATMENT
EQ-055	23 GALLON TRASH CAN
EQ-099	MICROSCOPE
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

EQUIPMENT SCHEDULE - HOOD	
MARK	DESCRIPTION
260	
EQ-018	UNDERCOUNTER FREEZER
EQ-038	UNDERCOUNTER REFRIGERATOR
EQ-069	BIOSAFETY CABINET
EQ-155	MANUAL ROLLER SHADE - LIGHT FILTERING - CEILING MOUNT

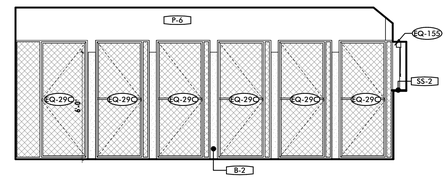
EQUIPMENT SCHEDULE - ONCO ANTE	
MARK	DESCRIPTION
259	
EQ-012	COMPUTER MONITOR
EQ-024	HAND SANITIZER



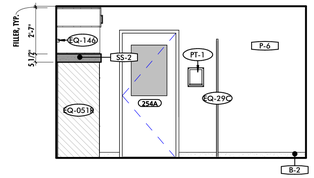
1 ENLARGED PLAN - HOLDING 254, FOOD PREP 255, TREATMENT ONCOLOGY 256, CHEMO TREATMENT 257, ANTE-RM 259 & HOOD 260
1/4" = 1'-0"



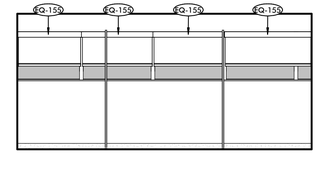
2 HOLDING 254 - EAST
1/4" = 1'-0"



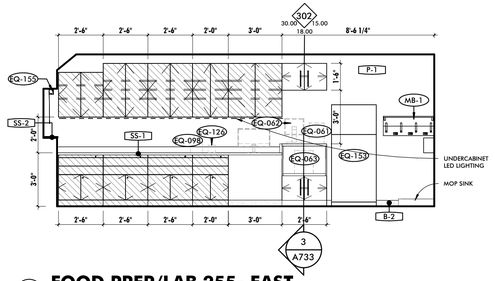
3 HOLDING 254 - WEST
1/4" = 1'-0"



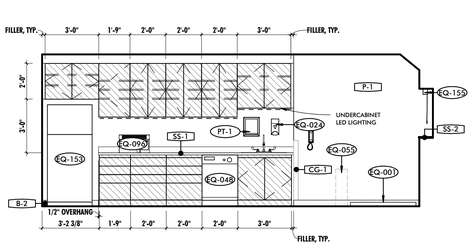
4 HOLDING 254 - SOUTH
1/4" = 1'-0"



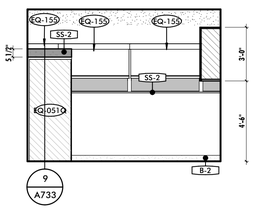
5 HOLDING 254 - NORTH
1/4" = 1'-0"



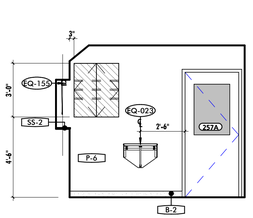
6 FOOD PREP/LAB 255- EAST
1/4" = 1'-0"



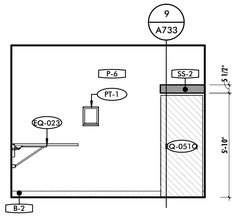
7 FOOD PREP/LAB 255 - WEST
1/4" = 1'-0"



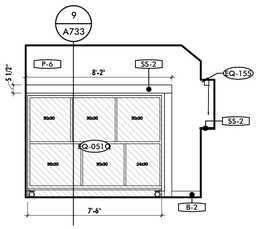
8 CHEMO 257 - NORTH
1/4" = 1'-0"



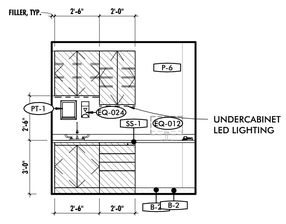
9 CHEMO 257 - EAST
1/4" = 1'-0"



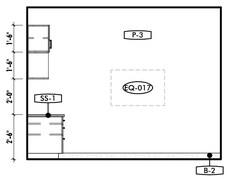
10 CHEMO 257 - SOUTH
1/4" = 1'-0"



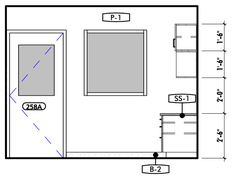
11 CHEMO 257 - WEST
1/4" = 1'-0"



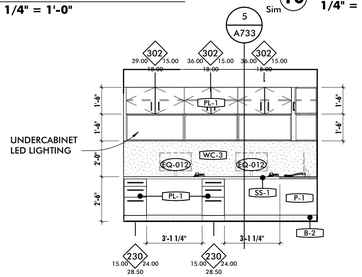
12 ANTE ROOM ONCO 257 - EAST
1/4" = 1'-0"



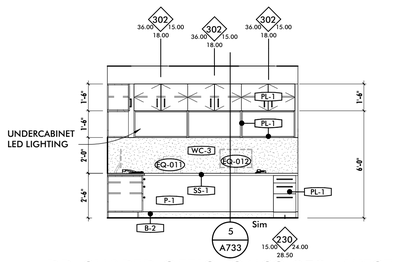
13 DR. SHARED OFFICE ONCO 258 - NORTH
1/4" = 1'-0"



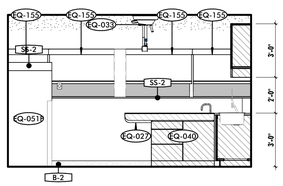
14 DR. SHARED OFFICE ONCO 258 - EAST
1/4" = 1'-0"



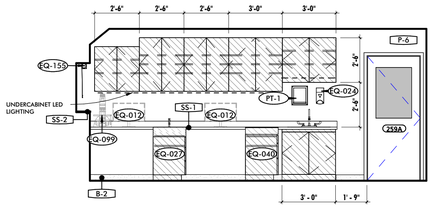
15 DR. SHARED OFFICE ONCO 258 - SOUTH
1/4" = 1'-0"



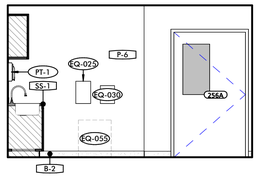
16 DR. SHARED OFFICE ONCO 258 - WEST
1/4" = 1'-0"



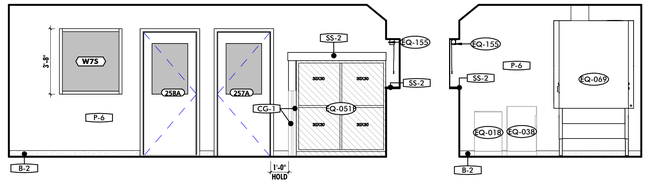
17 ONCO TREATMENT 256 - NORTH
1/4" = 1'-0"



18 ONCO TREATMENT 256 - EAST
1/4" = 1'-0"



19 ONCO TREATMENT 256 - SOUTH
1/4" = 1'-0"



20 ONCO TREATMENT 256 - WEST
1/4" = 1'-0"

21 HOOD - EAST
1/4" = 1'-0"

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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CONSULTANT:

SEAL:

COA:

NORTH CAROLINA CERTIFICATE OF AUTHORIZATION
MANNS WOODWARD STUDIOS, INC. No. 53188

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

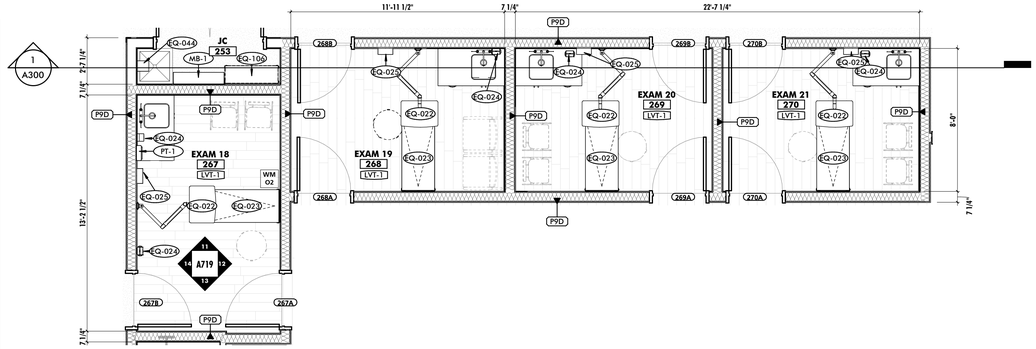
SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

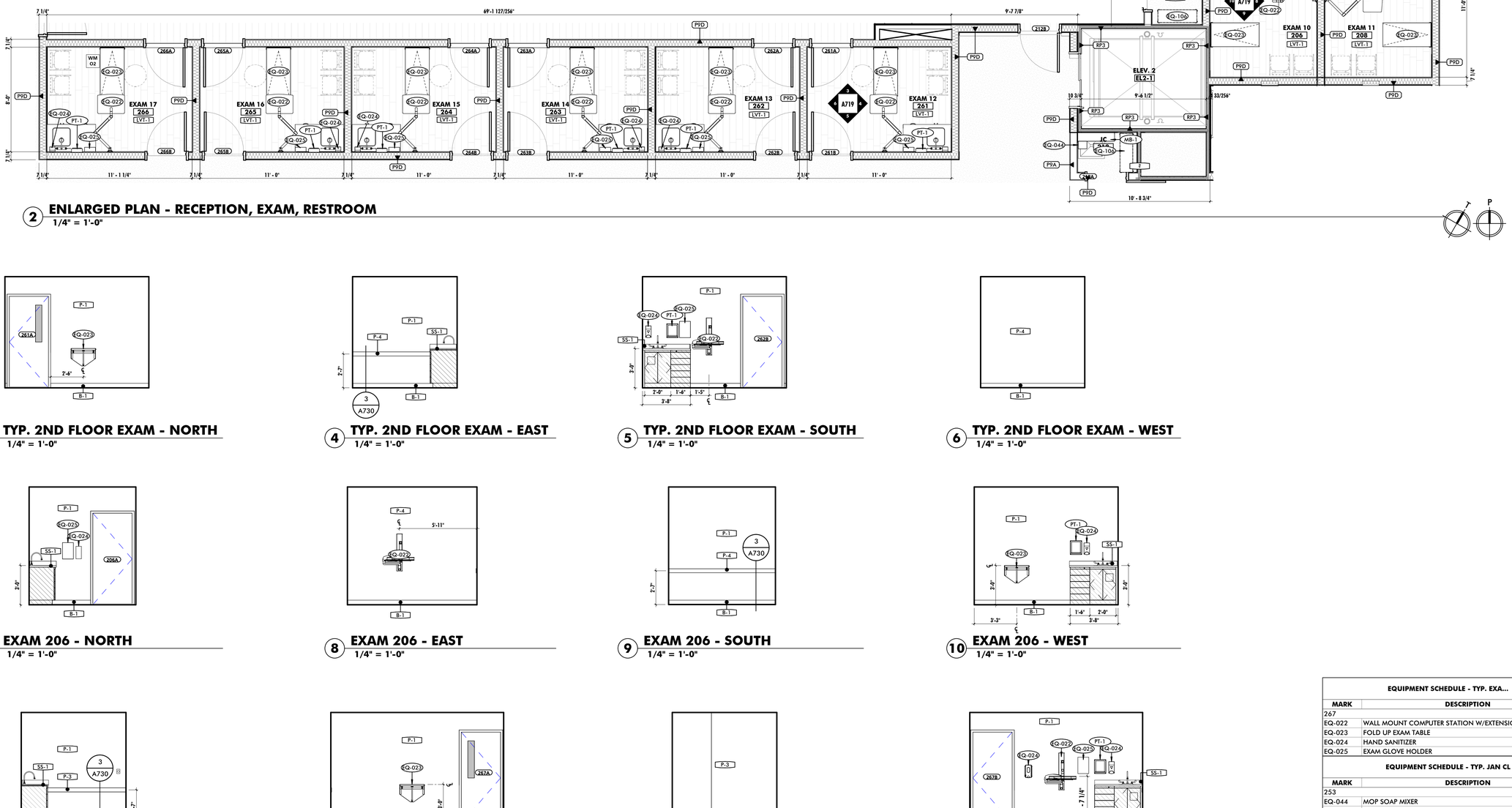
ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:
A718

9/20/2023 5:02:12 PM



1 ENLARGED EXAM 267
1/4" = 1'-0"



2 ENLARGED PLAN - RECEPTION, EXAM, RESTROOM
1/4" = 1'-0"

3 TYP. 2ND FLOOR EXAM - NORTH
1/4" = 1'-0"

4 TYP. 2ND FLOOR EXAM - EAST
1/4" = 1'-0"

5 TYP. 2ND FLOOR EXAM - SOUTH
1/4" = 1'-0"

6 TYP. 2ND FLOOR EXAM - WEST
1/4" = 1'-0"

7 EXAM 206 - NORTH
1/4" = 1'-0"

8 EXAM 206 - EAST
1/4" = 1'-0"

9 EXAM 206 - SOUTH
1/4" = 1'-0"

10 EXAM 206 - WEST
1/4" = 1'-0"

11 LARGE EXAM 267 - NORTH
1/4" = 1'-0"

12 LARGE EXAM - EAST
1/4" = 1'-0"

13 LARGE EXAM 267 - SOUTH
1/4" = 1'-0"

14 LARGE EXAM 267 - WEST
1/4" = 1'-0"

EQUIPMENT SCHEDULE - TYP. EXA...

MARK	DESCRIPTION
267	
EQ-022	WALL MOUNT COMPUTER STATION W/EXTENSION ARM
EQ-023	FOLD UP EXAM TABLE
EQ-024	HAND SANITIZER
EQ-025	EXAM GLOVE HOLDER

EQUIPMENT SCHEDULE - TYP. JAN CL

MARK	DESCRIPTION
253	
EQ-044	MOP SOAP MIXER
EQ-106	SHELVING

CASEWORK LEGEND

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- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
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ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:

A719

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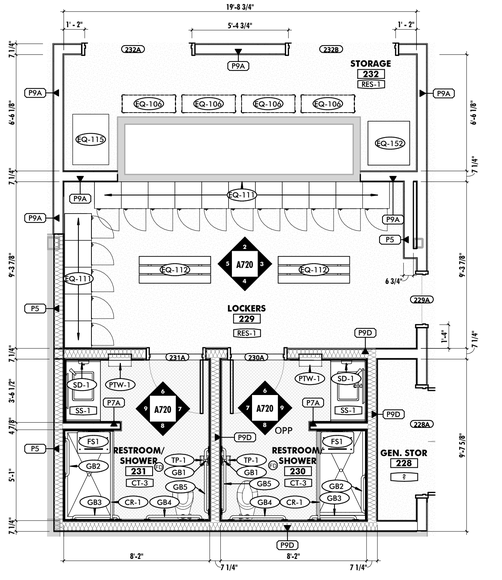
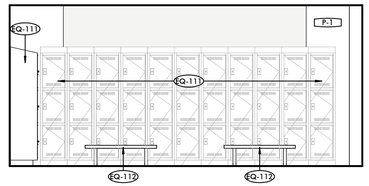
EQUIPMENT SCHEDULE - LOCKERS 229	
MARK	DESCRIPTION
229	
EQ-111	EMPLOYEE LOCKERS
EQ-112	LOCKER BENCH

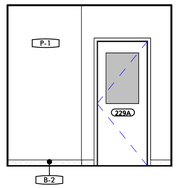
EQUIPMENT SCHEDULE - STORAGE	
MARK	DESCRIPTION
232	
EQ-106	SHELVING
EQ-115	ETHALINE OXIDE GAS STERILIZER - RELOCATING
EQ-152	ETHYLENE STERILIZER



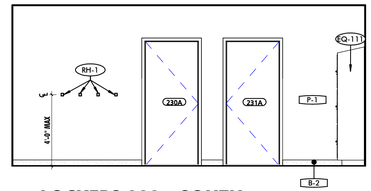
1 ENLARGED PLAN - LOCKERS, SHOWER ROOM
1/4" = 1'-0"



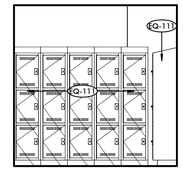
2 LOCKERS 229 - NORTH
1/4" = 1'-0"



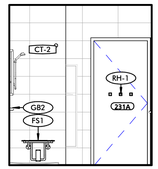
3 LOCKERS 229 - EAST
1/4" = 1'-0"



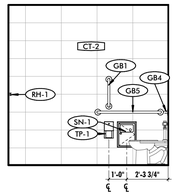
4 LOCKERS 229 - SOUTH
1/4" = 1'-0"



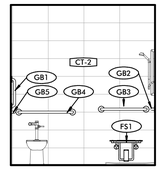
5 LOCKERS 229 - WEST
1/4" = 1'-0"



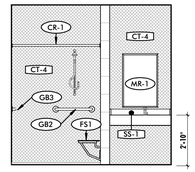
6 SHOWER 231 - NORTH
1/4" = 1'-0"



7 SHOWER 231 - EAST
1/4" = 1'-0"



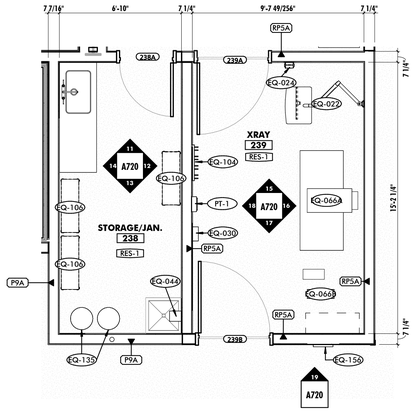
8 SHOWER 231 - SOUTH
1/4" = 1'-0"



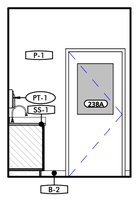
9 SHOWER 231 - WEST
1/4" = 1'-0"

SCHEDULE - TOILET ROOM ACCESSORIES

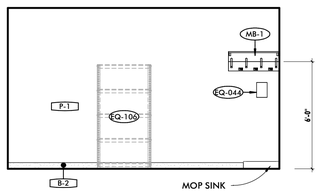
MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL	COMMENTS
BC-1	BABY CHANGING STATION	BOBRICK	KB200-01SS	
CR-1	HEAVY DUTY SHOWER CURTAIN ROD	BOBRICK	B-207	
FS1	RECTANGULAR PHENOLIC FOLD-UP SHOWER SEAT	AMERICAN SPECIALTIES	8203-20	
GB1	18" GRAB BAR	BOBRICK	B-9806 X 18	
GB2	24" GRAB BAR	BOBRICK	B-9806 X 24	
GB3	30" GRAB BAR	BOBRICK	B-9806 X 30	
GB4	36" GRAB BAR	BOBRICK	B-9806 X 36	
GB5	42" GRAB BAR	BOBRICK	B-9806 X 42	
MB-1	MOP & BROOM HOLDER	BOBRICK	B-239	
MR-1	LED BACKLIT MIRROR	BOBRICK	B-167	
PT-1	WALL MOUNTED PAPER TOWEL DISPENSER	CINTAS	SIGNATURE SERIES	
PTW-1	RECESSED PAPER TOWEL DISPENSER AND WASTE RECEPTACLE	BOBRICK	B-3944	
RH-1	COAT HOOK	BOBRICK	B-7671	
SD-1	SURFACE MOUNTED SOAP DISPENSER	BOBRICK	B-4112	
SN-1	RECESSED SANITARY WASTE RECEPTACLE	BOBRICK	B-353	
TP-1	SURFACE MOUNTED TOILET TISSUE DISPENSER	BOBRICK	B-2888	



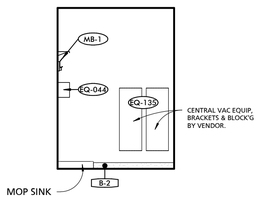
10 ENLARGED PLAN - STORAGE/JAN & XRAY ROOMS
1/4" = 1'-0"



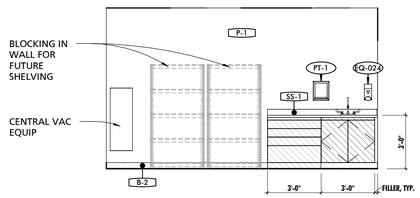
11 STORAGE/JAN 238 - NORTH
1/4" = 1'-0"



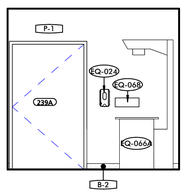
12 STORAGE/JAN 238 - EAST
1/4" = 1'-0"



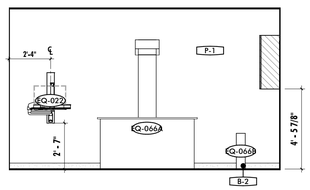
13 STORAGE/JAN 238 - SOUTH
1/4" = 1'-0"



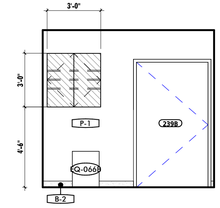
14 STORAGE/JAN 238 - WEST
1/4" = 1'-0"



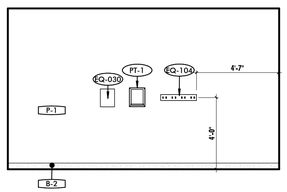
15 XRAY 239 - NORTH
1/4" = 1'-0"



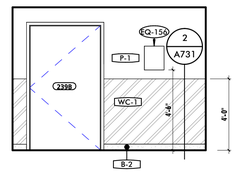
16 XRAY 239 - EAST
1/4" = 1'-0"



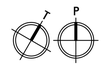
17 XRAY 239 - SOUTH
1/4" = 1'-0"



18 XRAY 239 - WEST
1/4" = 1'-0"



19 OUTSIDE X-RAY 239
1/4" = 1'-0"



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A720

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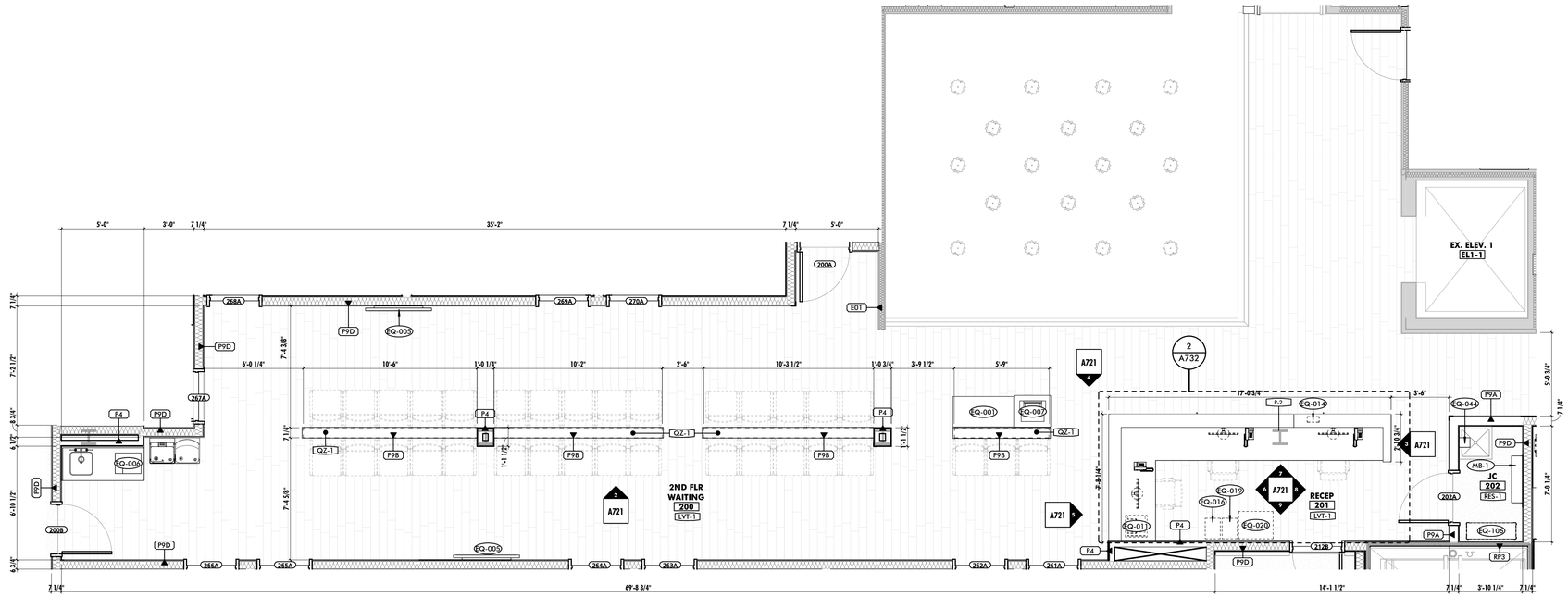
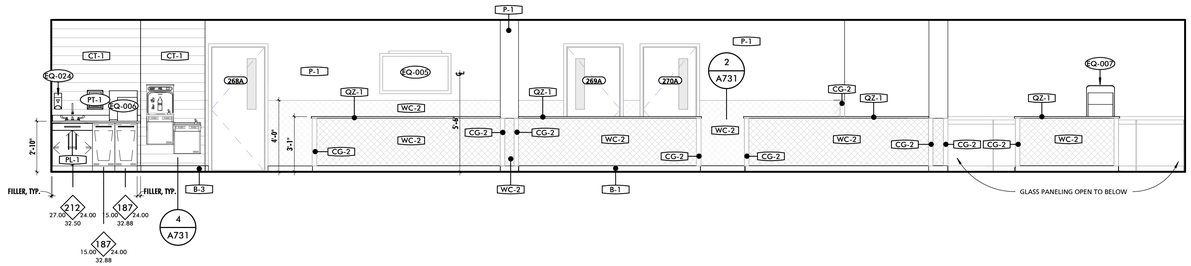
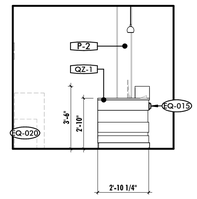
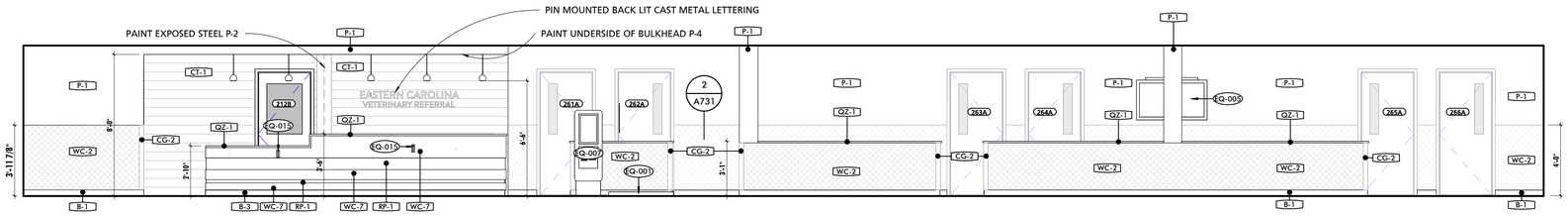


1 ENLARGED PLAN - 2ND FL WAITING 200
1/4" = 1'-0"

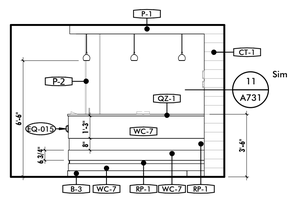




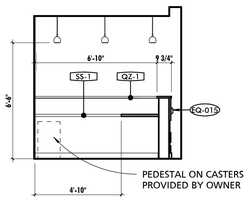
2 2ND FL LOBBY 200 - NORTH
1/4" = 1'-0"



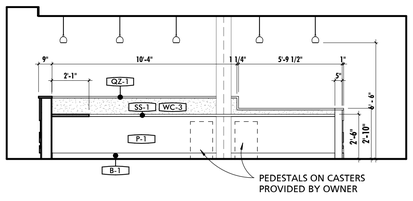
3 2ND FL RECEPTION DESK - EAST
1/4" = 1'-0"



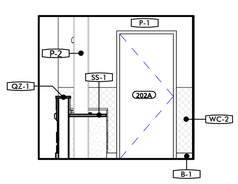
4 2ND FL LOBBY 200 & RECEPTION 201 - SOUTH
1/4" = 1'-0"



6 2ND FL RECEP DESK 201 INTERIOR - WEST
1/4" = 1'-0"

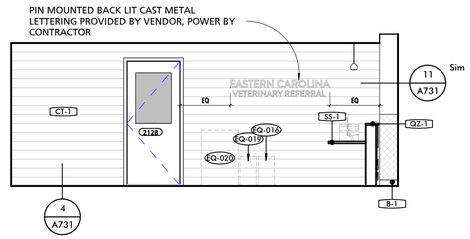


7 2ND FL DESK RECEP 201 INTERIOR - NORTH
1/4" = 1'-0"



8 2ND FL 201 RECEP DESK INTERIOR - EAST
1/4" = 1'-0"

5 2ND FL RECEPTION 201 - WEST
1/4" = 1'-0"



9 2ND FL RECEP DESK INTERIOR - SOUTH
1/4" = 1'-0"

EQUIPMENT SCHEDULE - RECEP. 201	
MARK	**DESCRIPTION**
201	
EQ-011	COUNTERTOP PRINTER
EQ-012	COMPUTER MONITOR
EQ-016	10 GALLON TRASH CAN
EQ-019	10 GALLON RECYCLING
EQ-020	PAPER SHREDDER

EQUIPMENT SCHEDULE - WAITING 200	
MARK	**DESCRIPTION**
200	
EQ-001	PLATFORM SCALE
EQ-005	55" TV
EQ-006	COFFEE MAKER
EQ-007	KIOSK MACHINE
EQ-015	LEASH HOOKS - COMPACT
EQ-024	HAND SANITIZER

CASEWORK LEGEND

- MIDMARK PROVIDED, CONTRACTOR INSTALLED
- CONTRACTOR PROVIDED, CONTRACTOR INSTALLED
- TO BE PROVIDED IN FUTURE PHASE

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10839 PHILADELPHIA RD
WHITE MARSH, MD 21162
☎ 410-344-1460
✉ INFO@MWSARCH.COM
WWW.MWSARCH.COM

CONSULTANT:

SEAL:

COA:

NORTH CAROLINA
MANNS WOODWARD STUDIOS, INC. No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ENLARGED PLANS & INT. ELEVATIONS

SHEET NUMBER:

A721

9/20/2023 5:02:51 PM

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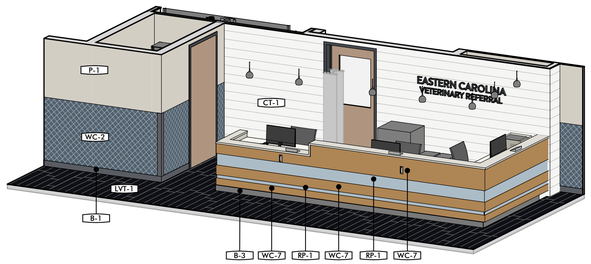
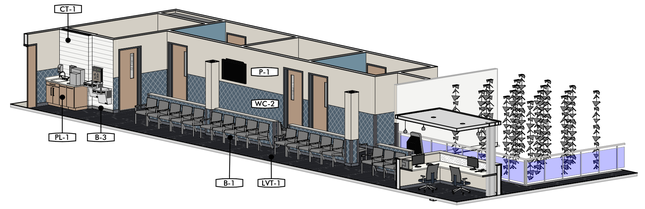
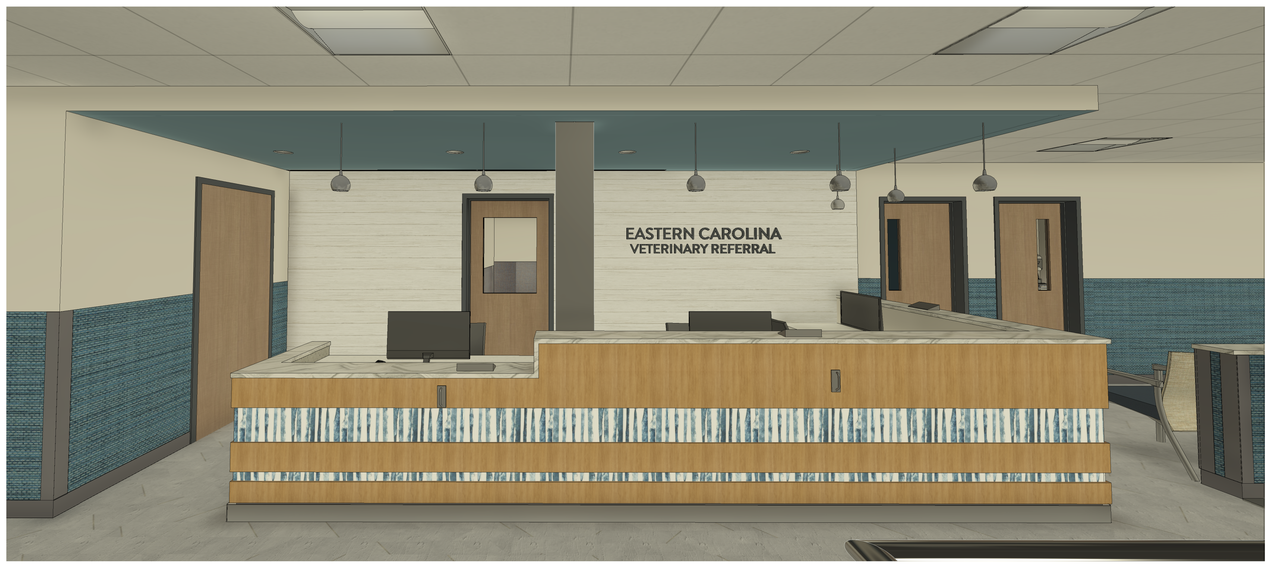


2 AXON-SECOND FLOOR RECEPTION DESK



3 AXON-SECOND FLOOR WAITING



1 02 Reception

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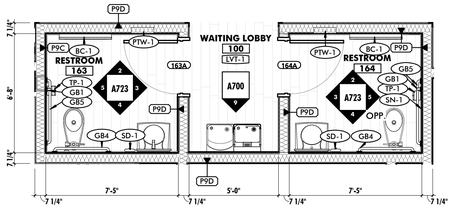
SHEET REVISION SCHEDULE:
No. DATE

SECOND FLOOR WAITING/ATRIUM 3D VIEWS

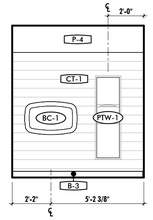
SHEET NUMBER:

A722

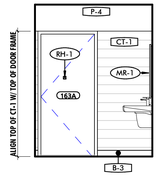
9/20/2023 5:05:42 PM



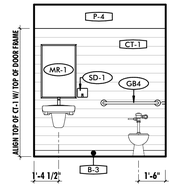
1 ENLARGED PLAN - RESTROOM 163 & 164
1/4" = 1'-0"



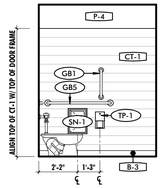
2 RESTROOM 163 - NORTH
1/4" = 1'-0"



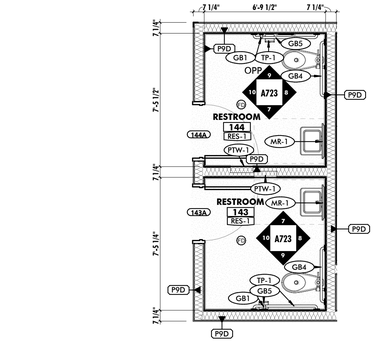
3 RESTROOM 163 - EAST
1/4" = 1'-0"



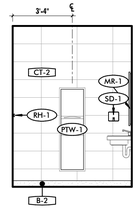
4 RESTROOM 163 - SOUTH
1/4" = 1'-0"



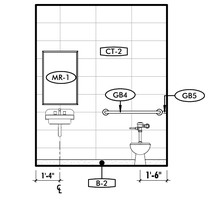
5 RESTROOM 163 - WEST
1/4" = 1'-0"



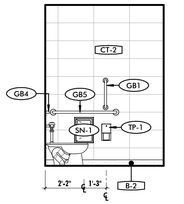
6 ENLARGED PLAN - RESTROOM 143 & 144
1/4" = 1'-0"



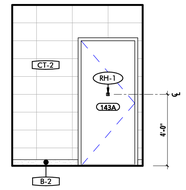
7 RESTROOM 143 - NORTH
1/4" = 1'-0"



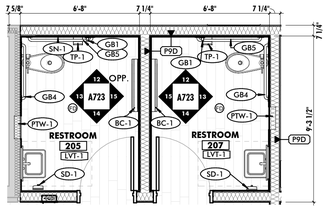
8 RESTROOM 143 - EAST
1/4" = 1'-0"



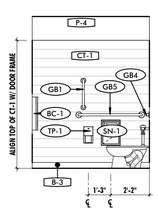
9 RESTROOM 143 - SOUTH
1/4" = 1'-0"



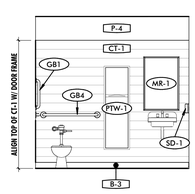
10 RESTROOM 143 - WEST
1/4" = 1'-0"



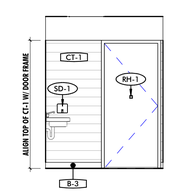
11 ENLARGED PLAN - RESTROOM 205 & 207
1/4" = 1'-0"



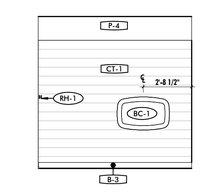
12 RESTROOM 207 - NORTH
1/4" = 1'-0"



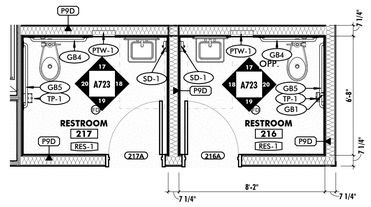
13 RESTROOM 207 - EAST
1/4" = 1'-0"



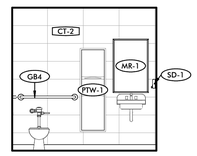
14 RESTROOM 207 - SOUTH
1/4" = 1'-0"



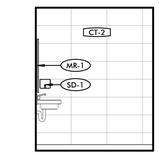
15 RESTROOM 207 - WEST
1/4" = 1'-0"



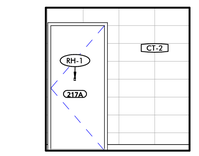
16 ENLARGED PLAN - RESTROOM 216 & 217
1/4" = 1'-0"



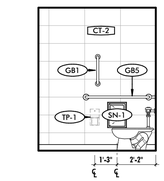
17 RESTROOM 217 - NORTH
1/4" = 1'-0"



18 RESTROOM 217 - EAST
1/4" = 1'-0"



19 RESTROOM 217 - SOUTH
1/4" = 1'-0"



20 RESTROOM 217 - WEST
1/4" = 1'-0"



SCHEDULE - TOILET ROOM ACCESSORIES

MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL	COMMENTS
BC-1	BABY CHANGING STATION	BOBRICK	KB200-01SS	
CR-1	HEAVY DUTY SHOWER CURTAIN ROD	BOBRICK	B-207	
FS1	RECTANGULAR PHENOLIC FOLD-UP SHOWER SEAT	AMERICAN SPECIALTIES	8203-20	
GB1	18" GRAB BAR	BOBRICK	B-9806 X 18	
GB2	24" GRAB BAR	BOBRICK	B-9806 X 24	
GB3	30" GRAB BAR	BOBRICK	B-9806 X 30	
GB4	36" GRAB BAR	BOBRICK	B-9806 X 36	
GB5	42" GRAB BAR	BOBRICK	B-9806 X 42	
MB-1	MOP & BROOM HOLDER	BOBRICK	B-239	
MR-1	LED BACKLIT MIRROR	BOBRICK	B-167	
PT-1	WALL MOUNTED PAPER TOWEL DISPENSER	CINTAS	SIGNATURE SERIES	
PTW-1	RECESSED PAPER TOWEL DISPENSER AND WASTE RECEPTACLE	BOBRICK	B-3944	
RH-1	COAT HOOK	BOBRICK	B-7671	
SD-1	SURFACE MOUNTED SOAP DISPENSER	BOBRICK	B-4112	
SN-1	RECESSED SANITARY WASTE RECEPTACLE	BOBRICK	B-353	
TP-1	SURFACE MOUNTED TOILET TISSUE DISPENSER	BOBRICK	B-2888	

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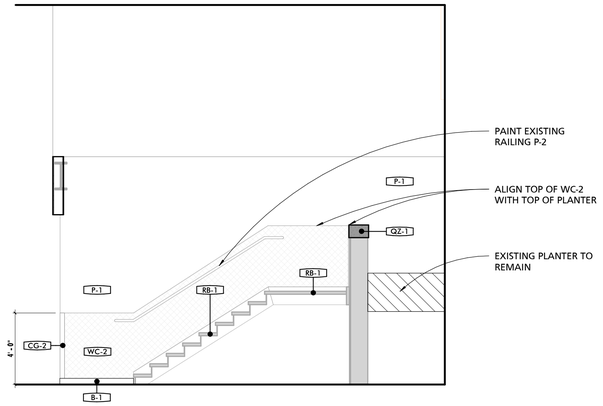
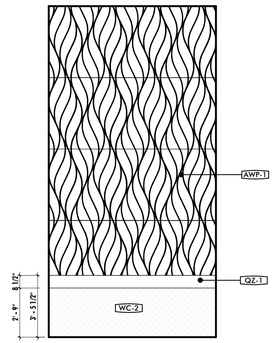
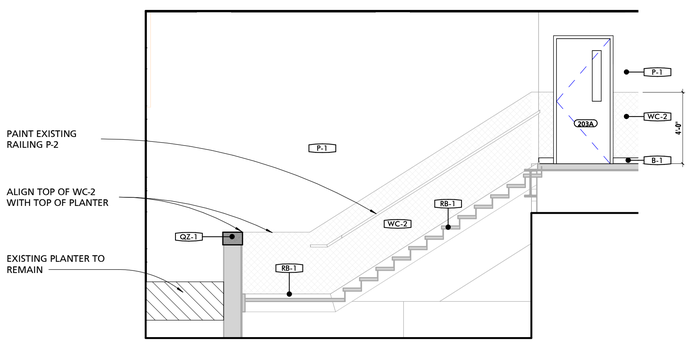


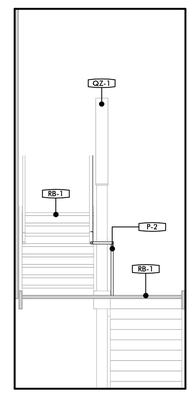
1 STAIR 1 - WEST
1/4" = 1'-0"



2 STAIR 1 - NORTH
1/4" = 1'-0"



3 STAIR 1 - EAST
1/4" = 1'-0"



4 STAIR 1 - SOUTH
1/4" = 1'-0"

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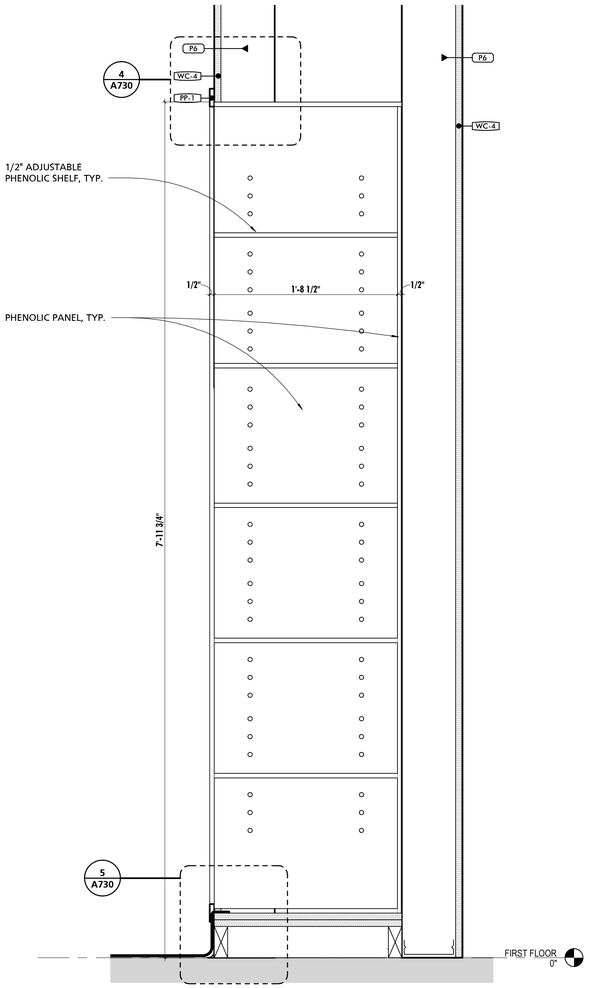
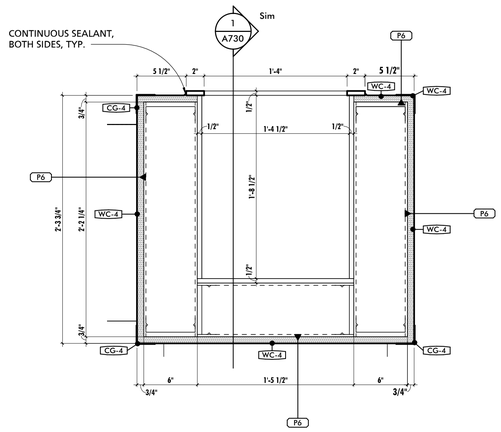
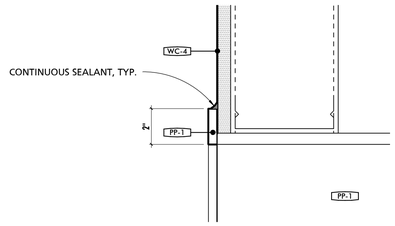


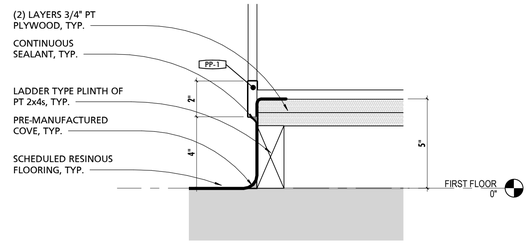
1 SECTION @ CHASE CUBBY
1 1/2" = 1'-0"



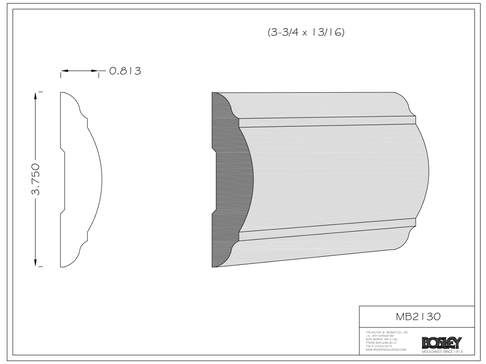
2 TREATMENT CHASE - PLAN DETAIL
1 1/2" = 1'-0"



4 DETAIL @ CHASE CUBBY TOP
3" = 1'-0"



5 DETAIL @ CHASE CUBBY BASE
3" = 1'-0"



3 CHAIR RAIL MOLDING
1" = 1'-0"

GENERAL CASEWORK NOTES

1	CONTRACTOR SHALL BE REQUIRED TO COORDINATE FINAL CASEWORK SHOP DRAWINGS AND INSTALLATION WITH ALL EQUIPMENT, INCLUDING EQUIPMENT PROVIDED BY OWNER. COORDINATION EFFORTS SHALL INCLUDE BUT ARE NOT LIMITED TO ENSURING PROPER CLEARANCES ARE PROVIDED FOR BOTH INSTALLATION AND OPERATION. EQUIPMENT SHALL BE AS TIGHT TO CASEWORK AS POSSIBLE AS PERMITTED BY EQUIPMENT REQUIREMENTS. PRIOR TO INSTALLATION OF CASEWORK EQUIPMENT CUT SHEETS & INSTALLATION INSTRUCTIONS SHALL BE POSTED WITH IN THE ROOM WHERE WORK IS BEING PERFORMED. CONTRACTOR SHALL VERIFY FINAL REVIEWED SHOP DRAWINGS CONFORM TO EQUIPMENT AND CLEARANCE REQUIREMENTS OF ACTUAL PURCHASED EQUIPMENT AS EQUIPMENT TYPES AND MODELS ARE SUBJECT TO FACTORY BASED CHANGES FROM THE TIME OF DESIGN TO THE TIME OF PURCHASE INSTALL.
2	CONTRACTOR SHALL REFER TO ARCHITECTURAL WOODWORK STANDARDS 2014, CABINET DESIGN SERIES (CDS) FOR FURTHER INFORMATION ABOUT CASEWORK
3	CONTRACTOR PROVIDED CASEWORK WITH A HEIGHT LESS THAN 24" SHALL HAVE A 5.5" PULL. WHILE CONTRACTOR PROVIDED CASEWORK WITH A HEIGHT GREATER THAN 24" SHALL HAVE A 10.5" PULL INSTALLED BOTH VERTICALLY AND HORIZONTALLY.
4	CONTRACTOR TO PROVIDE WALL BLOCKING FOR FUTURE WALL CABINETS IN ALL EXAM ROOMS ON THE FIRST AND SECOND FLOOR.

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NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

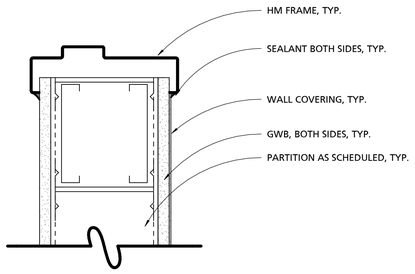
SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

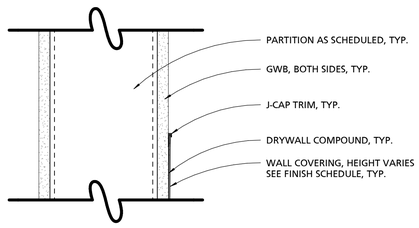
TYPICAL DETAILS

SHEET NUMBER:
A730

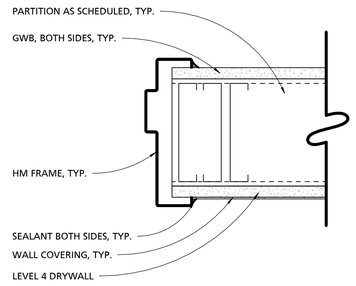
9/20/2023 5:06:05 PM



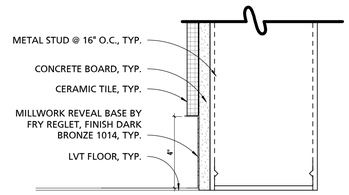
1 WALLCOVERING @ HM SILL
3" = 1'-0"



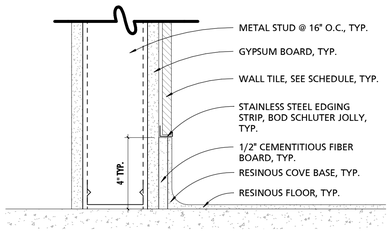
2 J TRIM @ VINYL WALLCOVERING
3" = 1'-0"



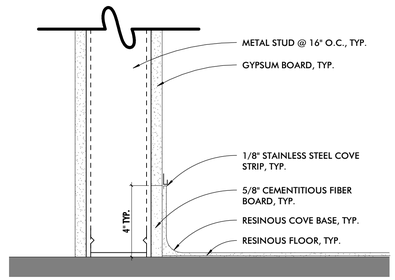
3 WALLCOVERING @ HM JAMB
3" = 1'-0"



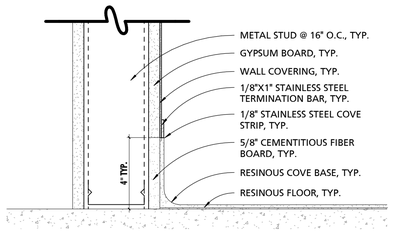
4 METAL BASE @ CT
3" = 1'-0"



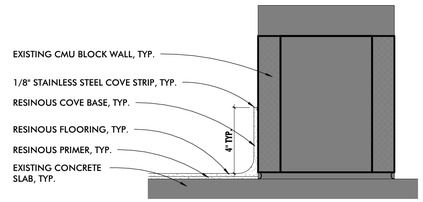
5 RESINOUS COVE BASE @ TILE WALL
3" = 1'-0"



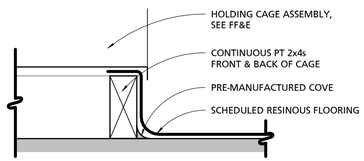
6 RESINOUS COVE BASE @ GYPSUM
3" = 1'-0"



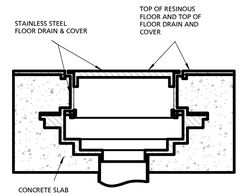
7 RESINOUS COVE BASE @ WALL COVERING
3" = 1'-0"



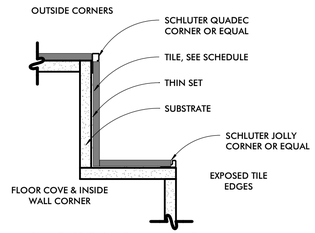
8 RESINOUS COVE BASE @ MASONRY
3" = 1'-0"



9 CAGE BANK BASE DETAIL
3" = 1'-0"



10 RESINOUS FLOORING TO FLOOR DRAIN DETAIL
1 1/2" = 1'-0"



TILE DETAILS APPLICABLE TO ALL TILE WITHOUT SANITARY BASE OR BULLNOSE TRIM PROFILES

SCHLUTER FINISH: SATIN NICKEL ANODIZED ALUMINUM (AT)

11 TYPICAL TILE EDGE DETAILS
3" = 1'-0"

GENERAL CASEWORK NOTES

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4	CONTRACTOR TO PROVIDE WALL BLOCKING FOR FUTURE WALL CABINETS IN ALL EXAM ROOMS ON THE FIRST AND SECOND FLOOR.

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TYPICAL DETAILS

SHEET NUMBER:

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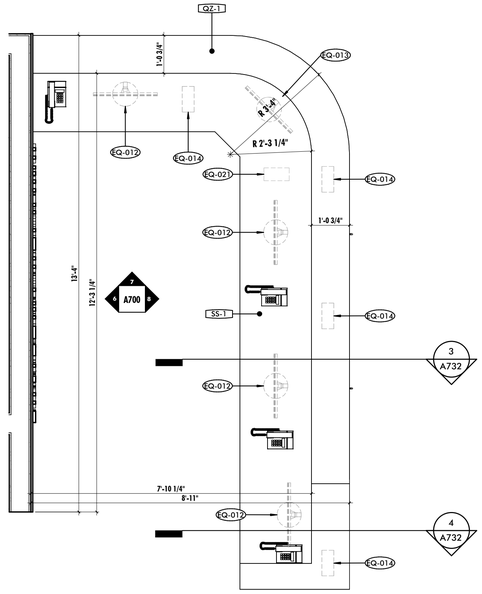
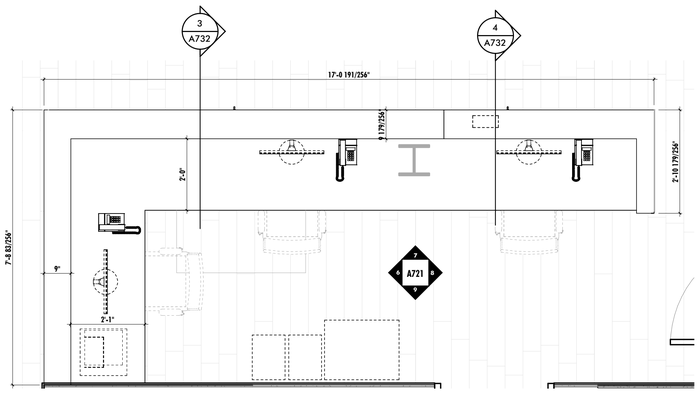


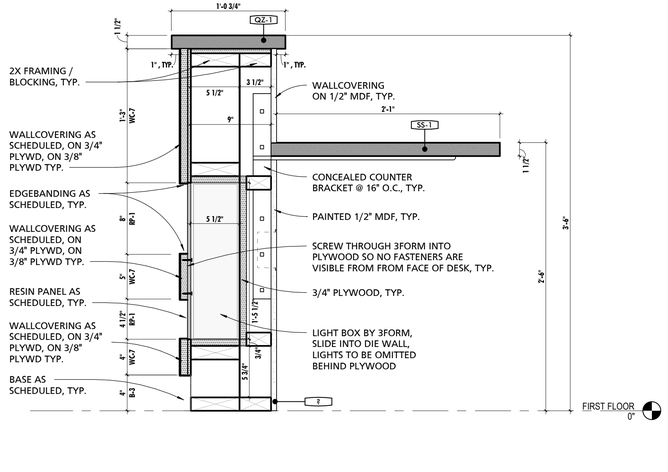
1 ENLARGED PLAN - FIRST FLOOR RECEPTION DESK

1/2" = 1'-0"



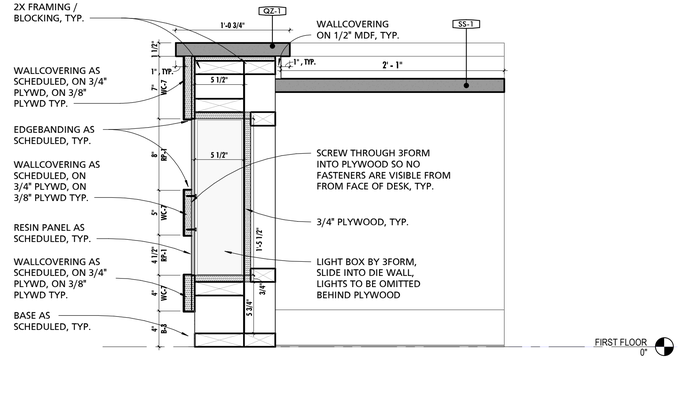
2 ENLARGED PLAN - 2ND FL RECPETION DESK

1/2" = 1'-0"



3 FIRST & SECOND FLOOR RECEPTION DESK - SECTION 1

1 1/2" = 1'-0"



4 FIRST & SECOND FLOOR RECEPTION DESK - SECTION 2 - ADA HEIGHT

1 1/2" = 1'-0"

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100% CONSTRUCTION DOCUMENTS
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9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

TYPICAL DETAILS

SHEET NUMBER:

A732

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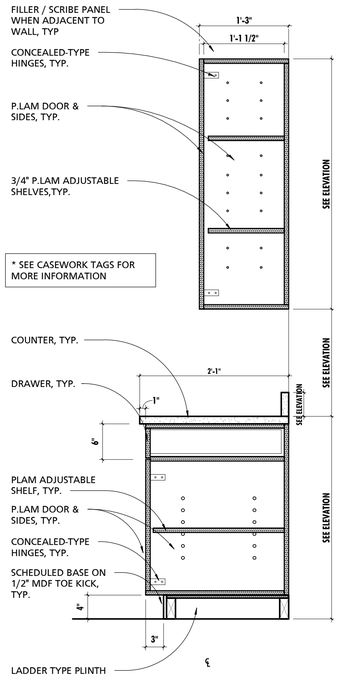
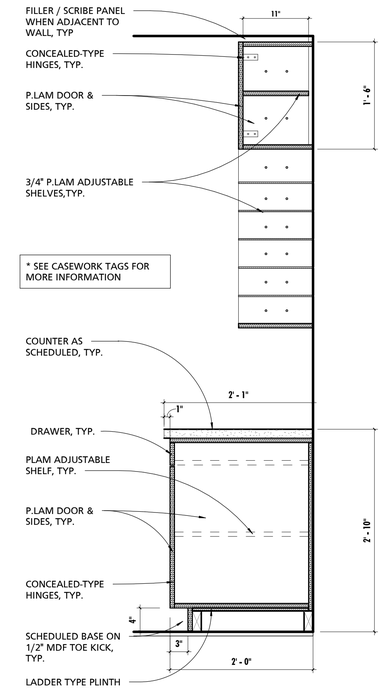
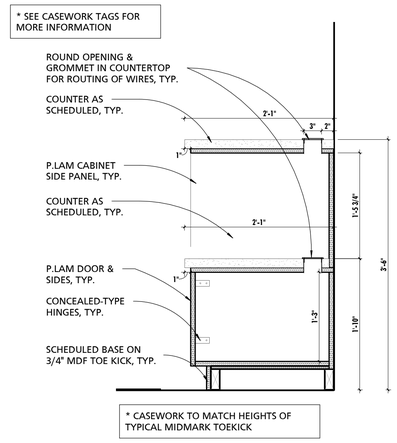


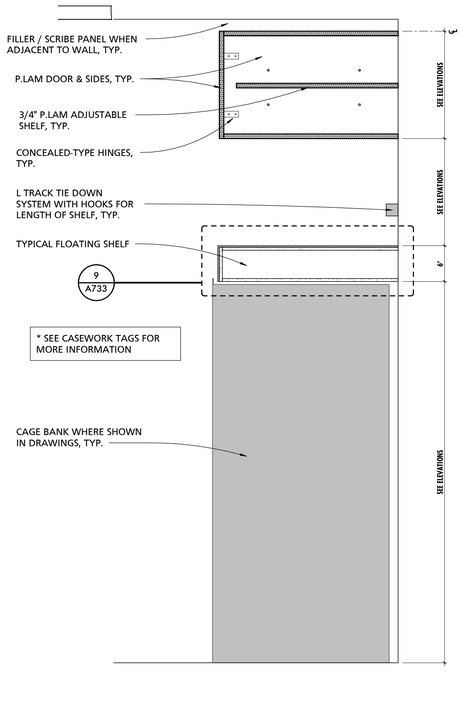
1 TYPICAL CASEWORK DETAIL
1" = 1'-0"



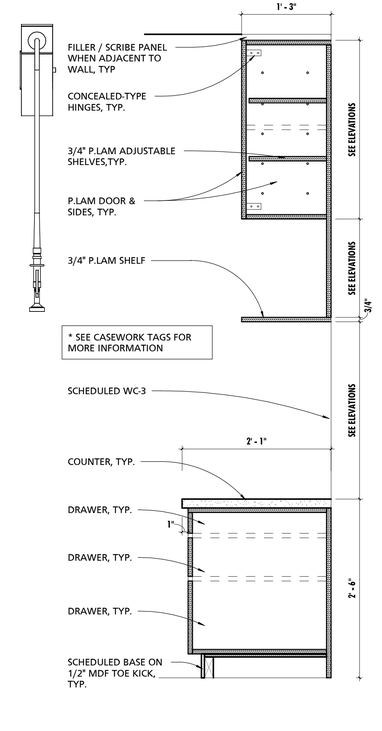
2 WALL SECTION @ ADMIN
1" = 1'-0"



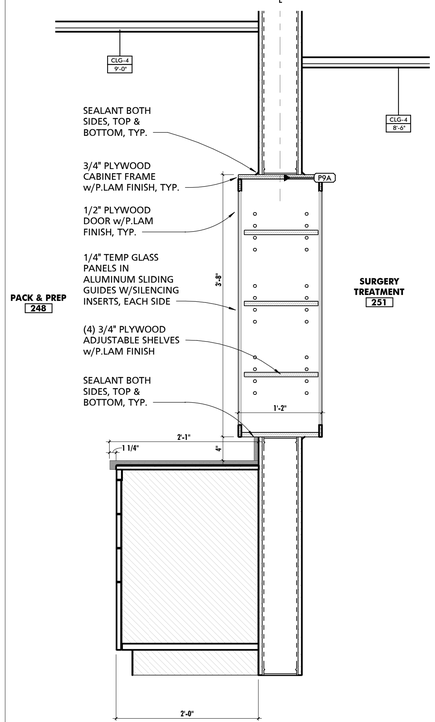
3 CUSTOM CASEWORK AT LAB
1" = 1'-0"



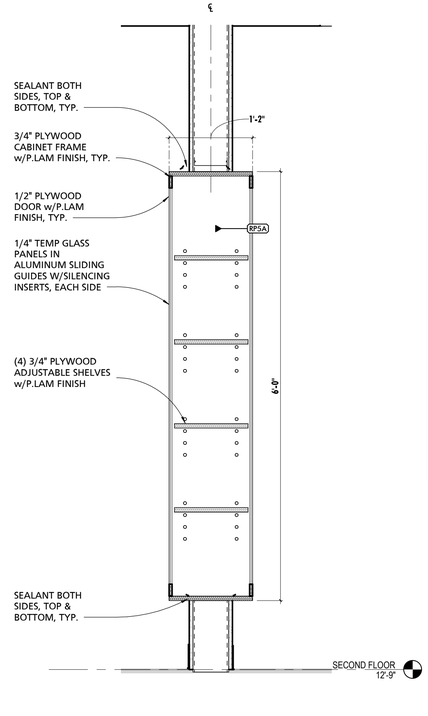
4 TYPICAL SECTION @ CUBBIES & FLOATING SHELF
1" = 1'-0"



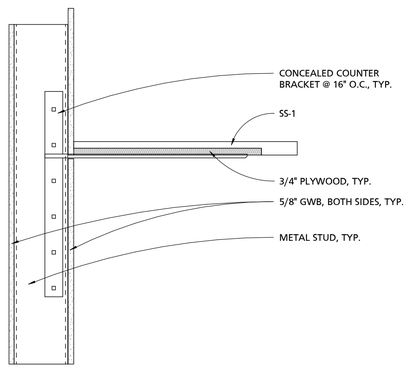
5 TYPICAL SECTION @ CUBBY & CABINET
1" = 1'-0"



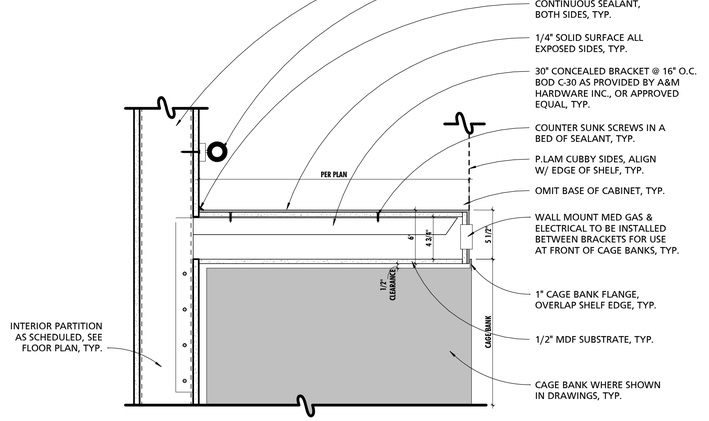
6 SECTION @ PACK & PREP PASS THROUGH
1" = 1'-0"



7 OR TYPICAL PASS THROUGH WINDOW
1" = 1'-0"



8 DETAIL @ COUNTER BRACKET
1 1/2" = 1'-0"



NOTE: INSTALL CONTINUOUS 2x BLOCKING IN WALLS AS REQUIRED TO INSTALL FLOAT SHELF. COORDINATE HEIGHT OF BLOCKING WITH HEIGHT OF SHELF/SUPPORT BRACKET.

9 TYPICAL FLOATING SHELF DETAIL
1 1/2" = 1'-0"

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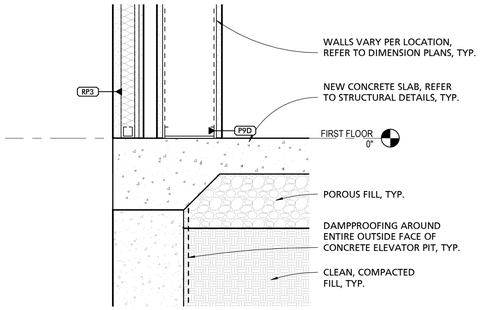
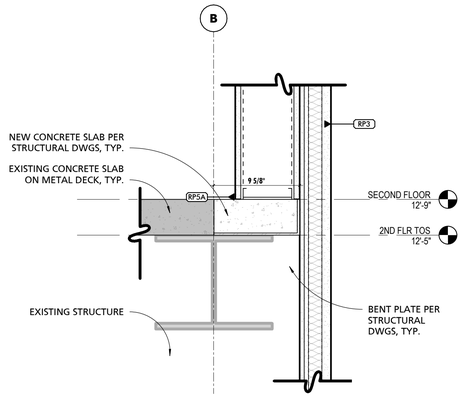
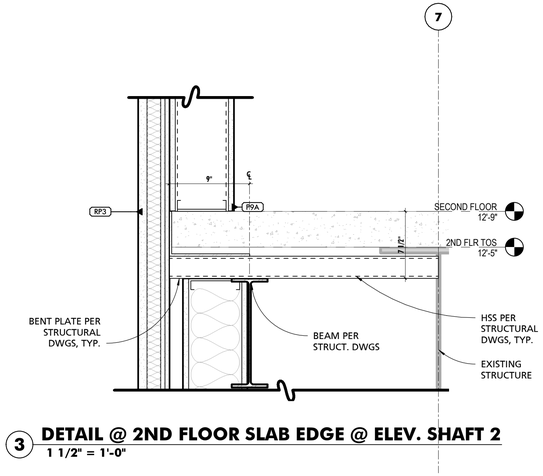


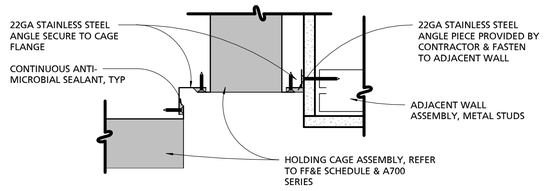
1 SLAB EDGE DETAIL @ 1ST FLOOR ELEVATOR SHAFT
1 1/2" = 1'-0"



2 DETAIL @ 2ND FLOOR SLAB EDGE @ ELEV.SHAFT 1
1 1/2" = 1'-0"



3 DETAIL @ 2ND FLOOR SLAB EDGE @ ELEV. SHAFT 2
1 1/2" = 1'-0"

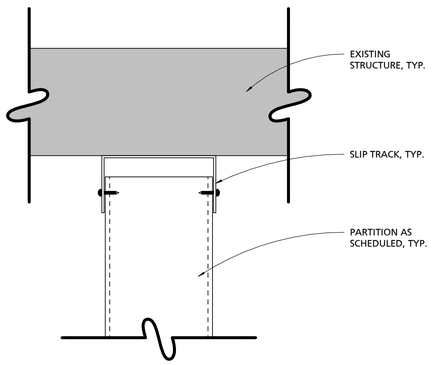


4 CAGE ENDS
3" = 1'-0"

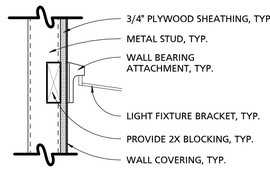
5 SECTION @ KNEE WALL
1 1/2" = 1'-0"

6 KNEE WALL STIFFENER DETAIL
1 1/2" = 1'-0"

8 DETAIL @ WINDOW INFILL
1 1/2" = 1'-0"



9 SLIP TRACK DETAIL
3" = 1'-0"



10 WALL MOUNTED LIGHT DETAIL
1 1/2" = 1'-0"

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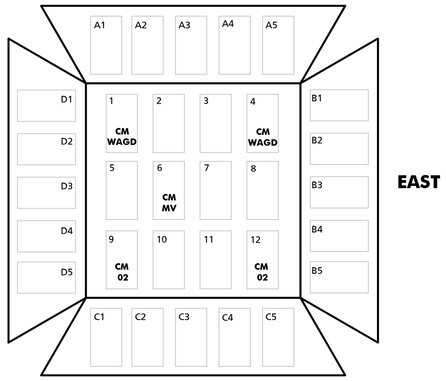
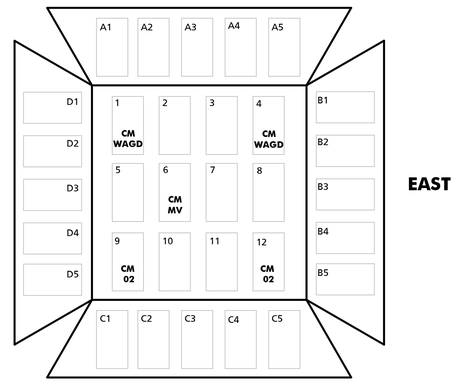
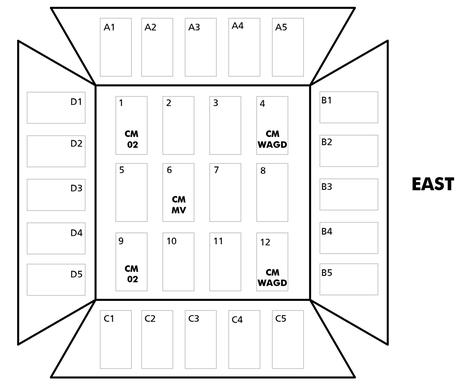


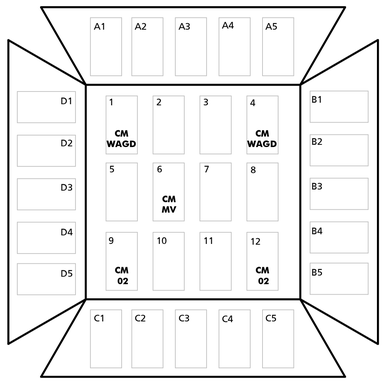
1 K9 ICU MED GAS LAYOUT
3" = 1'-0"



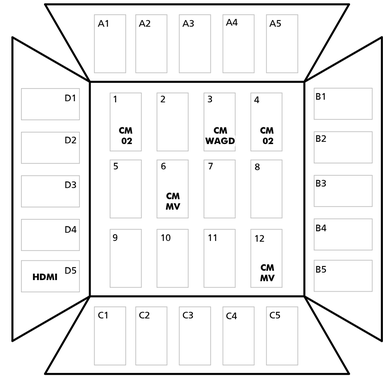
2 FELINE ICU MED GAS LAYOUT
3" = 1'-0"



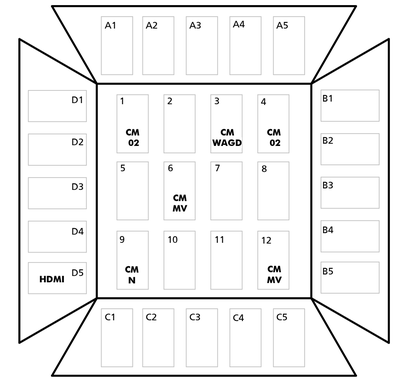
3 ER TREATMENT MED GAS LAYOUT
3" = 1'-0"



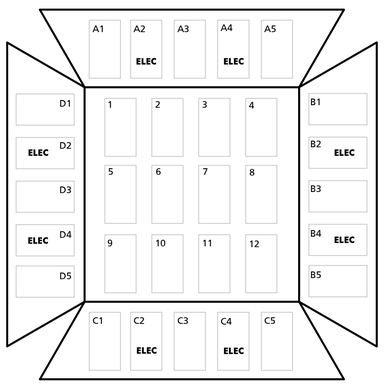
4 SURGERY TREATMENT MED GAS LAYOUT
3" = 1'-0"



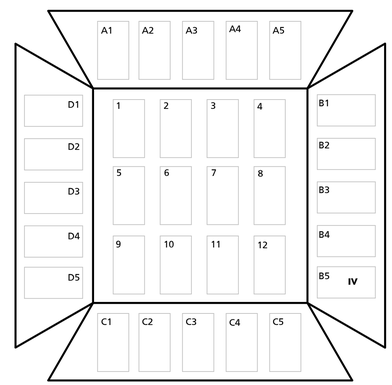
5 OPERATING ROOMS (1&2) MED GAS LAYOUT
3" = 1'-0"



8 OPERATING ROOMS (3,4,5 & 6) MED GAS LAYOUT
3" = 1'-0"



6 ELECTRICAL OUTLET LAYOUT (TYP)
3" = 1'-0"



7 IV HOOK LAYOUT (TYP)
3" = 1'-0"

CEILING COLUMN LEGEND	
CM 02	CEILING MOUNTED OXYGEN LOCATION
CM WAGD	CEILING MOUNTED WASTE ANESTHETIC GAS DISPOSAL LOCATION
CM MV	CEILING MOUNTED MEDICAL VACUUM LOCATION
CM N	CEILING MOUNTED NITROGEN LOCATION
CM A	CEILING MOUNTED MEDICAL AIR
HDMI	PROPOSED LOCATION OF HDMI INPUT
ELEC	SINGLE ELECTRICAL OUTLET
IV	IV HOOK

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No. 53188
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

CEILING COLUMN LAYOUTS

SHEET NUMBER:
A735

9/20/2023 5:06:29 PM

SCHEDULE - CEILING TYPES

MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL	COMMENTS
CLG-1	2x2 ACOUSTICAL CEILING TILE SYSTEM - SQUARE	USG	TILE: ACT-1, GRID: ACTG-1	
CLG-2	2x2 ACOUSTICAL CEILING TILE ASSEMBLY -SQUARE - SOUND INSULATION	USG	TILE: ACT-1, GRID: ACTG-1	MARS HEALTHCARE
CLG-3	5/8" GWB ON 3 5/8" METAL STUDS @ 16" O.C.	N/A	N/A	
CLG-4	2x2 ACOUSTICAL CEILING TILE ASSEMBLY - SQUARE LAY IN	USG	TILE: ACT-2, GRID: ACTG-1	<varies>
CLG-5	2x2 ACOUSTICAL CEILING TILE ASSEMBLY - SQUARE LAY IN - SOUND INSULATION	USG	TILE: ACT-2, GRID: ACTG-1	

GENERAL CEILING NOTES

1	UNDERSIDE OF EXPOSED STRUCTURE, PIPING, AND DUCTWORK IN ALL ROOMS, STAIRWAYS, AND OTHER SPACES SHALL BE PAINTED UNLESS NOTED OTHERWISE. CONTRACTOR SHALL COORDINATE COLOR SELECTION WITH THE ARCHITECT PRIOR TO PAINTING OR PRIMING, TYP.
2	CONTRACTOR SHALL COORDINATE FINAL FIELD LOCATION OF ALL EXIT SIGNS AND EMERGENCY LIGHTING WITH ARCHITECT PRIOR TO ROUGH-IN, TYP.
3	THE CONTRACTOR SHALL PROVIDE SPRINKLER SYSTEM SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL WHERE SPRINKLERS ARE REQUIRED BY CODE (SEE CODE SHEET). DRAWINGS SHALL INDICATE HEAD LOCATIONS, HEAD TYPES, AND PIPING DISTRIBUTION. IN EXPOSED OCCUPIED AREAS MAINS SHALL BE ROUTED THROUGH AREAS WITH ACCESSIBLE FINISHED CEILINGS TO THE MAXIMUM EXTENT FEASIBLE. WHERE CEILINGS ARE FINISHED ALL HEADS SHALL BE EQUIPPED WITH CONCEALMENT COVERS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
4	SPRINKLER LOCATIONS DEPICTED HEREIN ARE DIAGRAMMATIC AND ARE SHOWN FOR DESIGN INTENT ONLY.
5	ON ACT CEILINGS IN FIRE-RATED AREAS INSTALL HOLD DOWN CLIPS ON ACOUSTIC PANELS WEIGHING LESS THAN 1 LB. PER SQ. FT. PER SPEC.
6	ALL MECHANICAL, ELECTRICAL, PLUMBING, AND SPRINKLER WORK TO OCCUR IN AREAS WHERE THE STRUCTURE IS EXPOSED SHALL BE EXECUTED IN A COORDINATED, NEAT AND WORKMANLIKE MANNER. AT A MINIMUM ALL WIRING SHALL BE RUN THOUGH CONDUITS, PIPE AND DUCT INSULATION SHALL BE NEATLY INSTALLED AND PAINTABLE. ALL PIPES AND DUCTS SHALL BE RUN EITHER PERPENDICULAR OR PARALLEL TO WALL CONSTRUCTION AND SHALL BE INSTALLED AT THE SAME NOMINAL ELEVATION OR SLOPE. ALL MATERIALS AND INSTALLATION METHODS SHALL COMPLY WITH APPLICABLE CODES AND STANDARDS. WHERE MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS INDICATE OTHER REQUIREMENTS THE GREATER QUALITY SHALL PREVAIL.
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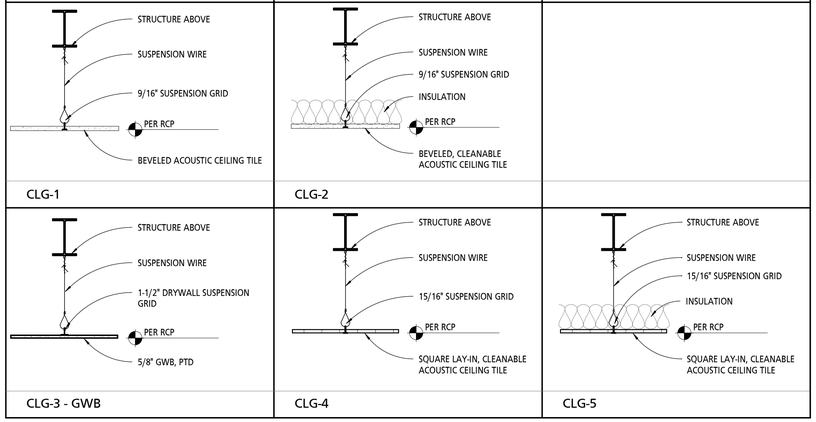
10	CENTER LIGHT FIXTURES OVER KENNELS TO THE EXTENT THAT ACT CEILING ALLOWS.
11	IN ADDITION TO GENERAL REQUIREMENTS, ALL ELECTRICAL WIRING, INCLUDING, BUT NOT LIMITED TO GENERAL POWER SUPPLY, LOW VOLTAGE POWER SUPPLY, COMMUNICATIONS WIRING, A/V, AND DATA WIRING TO BE RUN IN PAINTED METAL CONDUIT IN AREAS WHERE THE METAL DECK/STRUCTURE ABOVE IS FULLY OR PARTIALLY EXPOSED.

CEILING TYPE DETAILS



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No. DATE

CEILING TYPES & NOTES

SHEET NUMBER:
A800

9/20/2023 5:06:33 PM

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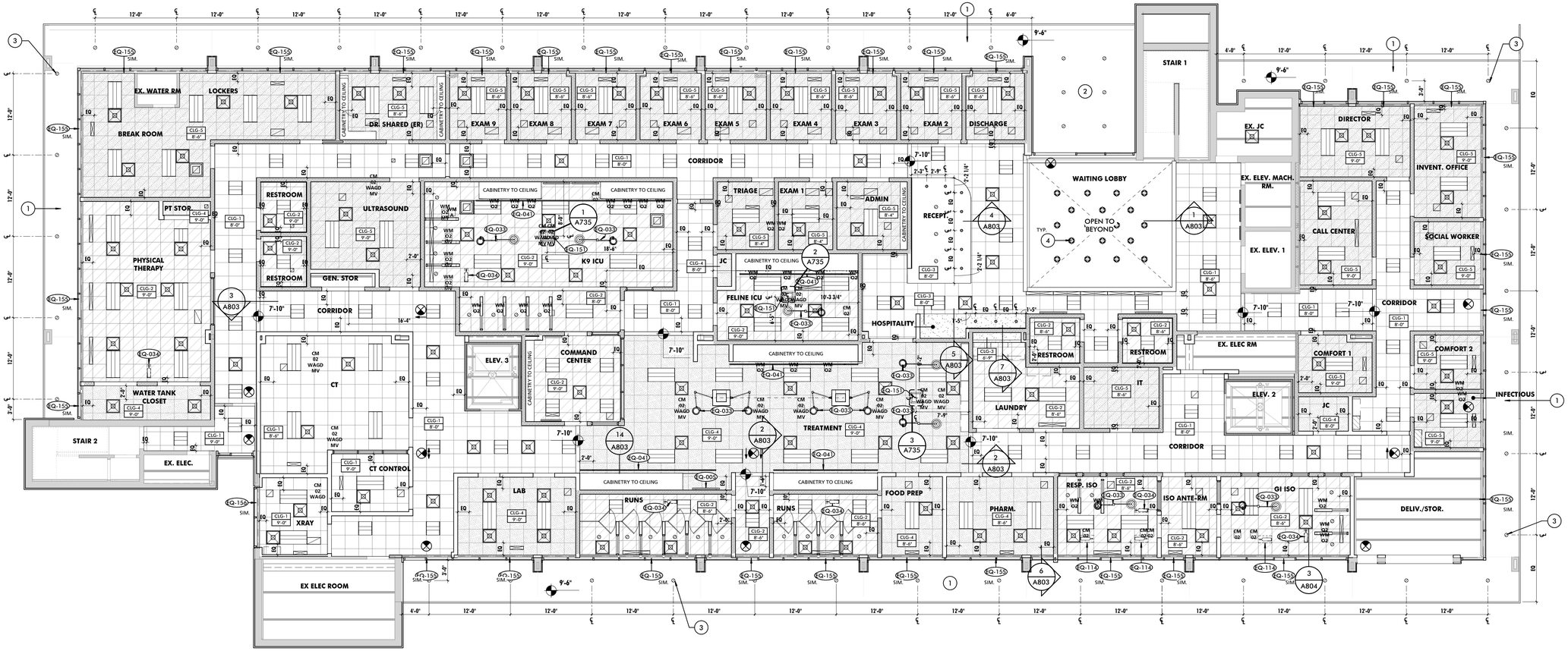

1 FIRST FLOOR - REFLECTED CEILING PLAN

1/8" = 1'-0"

GENERAL CEILING NOTES

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SCHEDULE - CEILING TYPES

MARK	DESCRIPTION	BOD MANUFACTURER	BOD MODEL	COMMENTS
CLG-1	2x2 ACOUSTICAL CEILING TILE SYSTEM - SQUARE	USG	TILE: ACT-1, GRID: ACTG-1	
CLG-2	2x2 ACOUSTICAL CEILING TILE ASSEMBLY -SQUARE - SOUND INSULATION	USG	TILE: ACT-1, GRID: ACTG-1	MARS HEALTHCARE
CLG-3	5/8" GWB ON 3 5/8" METAL STUDS @ 16" O.C.	N/A	N/A	
CLG-4	2x2 ACOUSTICAL CEILING TILE ASSEMBLY - SQUARE LAY IN	USG	TILE: ACT-2, GRID: ACTG-1	<varies>
CLG-5	2x2 ACOUSTICAL CEILING TILE ASSEMBLY - SQUARE LAY IN - SOUND INSULATION	USG	TILE: ACT-2, GRID: ACTG-1	

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	EXISTING SOFFIT ASSEMBLY TO REMAIN
2	EXISTING LIGHT FIXTURES TO BE REPLACED, LOCATIONS TO REMAIN.
3	NEW RECESSED LIGHT FIXTURE IN EXISTING SOFFIT. CONTRACTOR TO CONFIRM STRUCTURE OF EXISTING SOFFIT PRIOR TO INSTALLATION OF NEW LIGHTING.
4	ALL EXTERIOR SITE FURNISHINGS SHALL BE PROCURED AND INSTALLED BY THE OWNER.

RCP EQUIPMENT LEGEND

WM O2	WALL MOUNTED OXYGEN ONLY LOCATION
CM O2	CEILING MOUNTED OXYGEN ONLY LOCATION
WM O2 WAGD	WALL MOUNTED OXYGEN & WASTE ANESTHETIC GAS DISPOSAL LOCATION
CM O2 WAGD	CEILING MOUNTED OXYGEN & WASTE ANESTHETIC GAS DISPOSAL LOCATION
WM O2 MV	WALL MOUNTED OXYGEN & MEDICAL VACUUM LOCATION
CM O2 MV	CEILING MOUNTED OXYGEN & MEDICAL VACUUM LOCATION
CM O2, WAGD MV	CEILING MOUNTED OXYGEN, WASTE ANESTHETIC GAS DISPOSAL & MEDICAL VACUUM LOCATION
CM N	CEILING MOUNTED NITROGEN LOCATION
WM A	WALL MOUNTED MEDICAL AIR
CM A	CEILING MOUNTED MEDICAL AIR

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PROJECT NUMBER: 22-127

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ORIGINAL ISSUE DATE:
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SHEET REVISION SCHEDULE:
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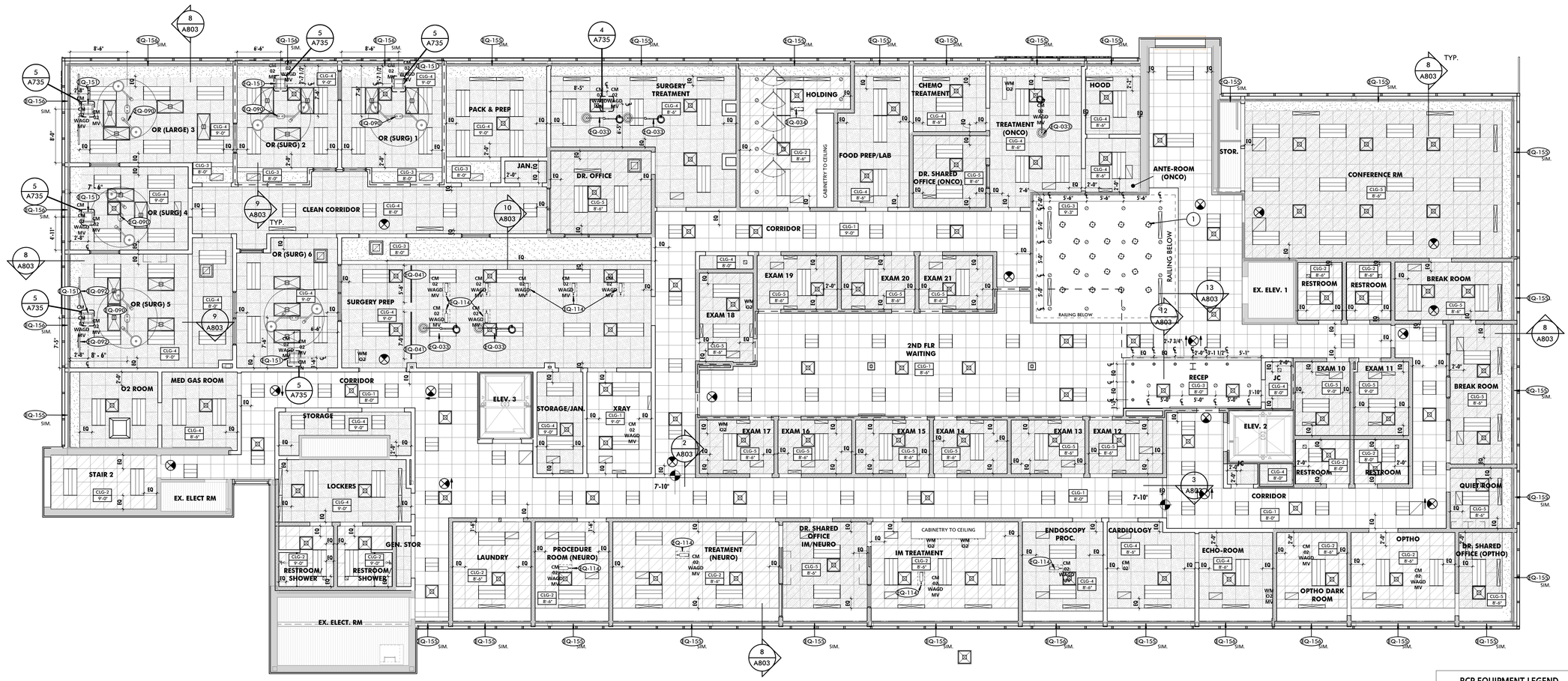
REFLECTED CEILING PLAN - FIRST FLOOR

SHEET NUMBER:
A801

9/20/2023 5:06:50 PM



1 SECOND FLOOR - REFLECTED CEILING PLAN

1/8" = 1'-0"

RCP EQUIPMENT LEGEND	
WM O2	WALL MOUNTED OXYGEN ONLY LOCATION
CM O2	CEILING MOUNTED OXYGEN ONLY LOCATION
WM O2 WAGD	WALL MOUNTED OXYGEN & WASTE ANESTHETIC GAS DISPOSAL LOCATION
CM O2 WAGD	CEILING MOUNTED OXYGEN & WASTE ANESTHETIC GAS DISPOSAL LOCATION
WM O2 MV	WALL MOUNTED OXYGEN & MEDICAL VACUUM LOCATION
CM O2 MV	CEILING MOUNTED OXYGEN & MEDICAL VACUUM LOCATION
CM O2, WAGD MV	CEILING MOUNTED OXYGEN, WASTE ANESTHETIC GAS DISPOSAL & MEDICAL VACUUM LOCATION
CM N	CEILING MOUNTED NITROGEN LOCATION
WM A	WALL MOUNTED MEDICAL AIR
CM A	CEILING MOUNTED MEDICAL AIR

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SCHEDULE - CEILING TYPES

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CLG-3	5/8" GWB ON 3 5/8" METAL STUDS @ 16" O.C.	N/A	N/A	
CLG-4	2x2 ACOUSTICAL CEILING TILE ASSEMBLY - SQUARE LAY IN	USG	TILE: ACT-2, GRID: ACTG-1	<varies>
CLG-5	2x2 ACOUSTICAL CEILING TILE ASSEMBLY - SQUARE LAY IN - SOUND INSULATION	USG	TILE: ACT-2, GRID: ACTG-1	

LEGEND - KEYNOTE LEGEND

KEY	NOTE
1	CUSTOM ACRYLIC MOBILES HUNG FROM CEILING ABOVE WITH ADJUSTABLE STAINLESS STEEL CABLES, ATTACHED TO 1/4-20 THREADED RODS IN CEILING (PROVIDED BY CONTRACTOR).

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SHEET REVISION SCHEDULE:
No. DATE

REFLECTED CEILING PLAN - SECOND FLOOR

SHEET NUMBER:

A802

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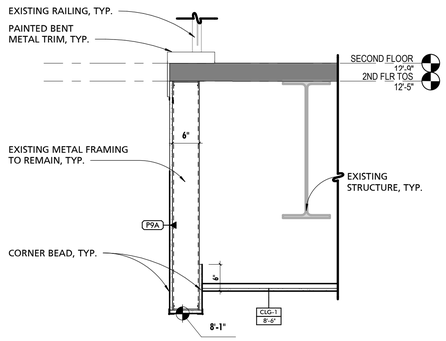
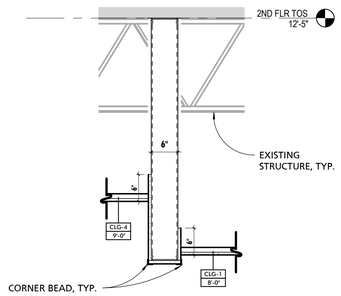
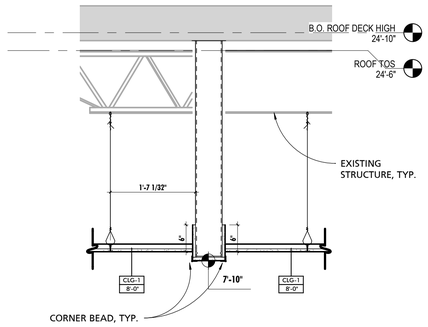


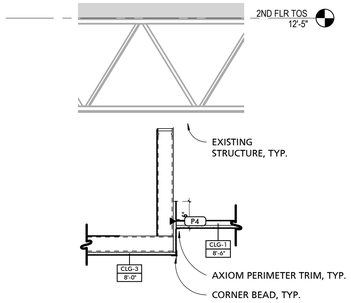
1 DETAIL @ BALCONY
3/4" = 1'-0"



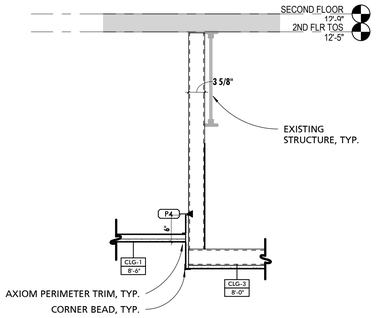
2 BULKHEAD 1 @ CORRIDOR
3/4" = 1'-0"



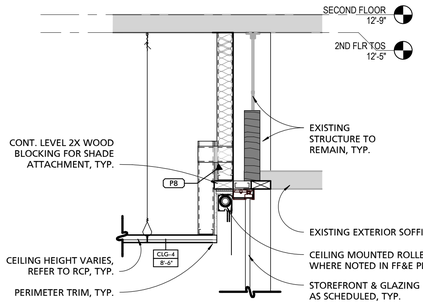
3 BULKHEAD 2 @ CORRIDOR
3/4" = 1'-0"



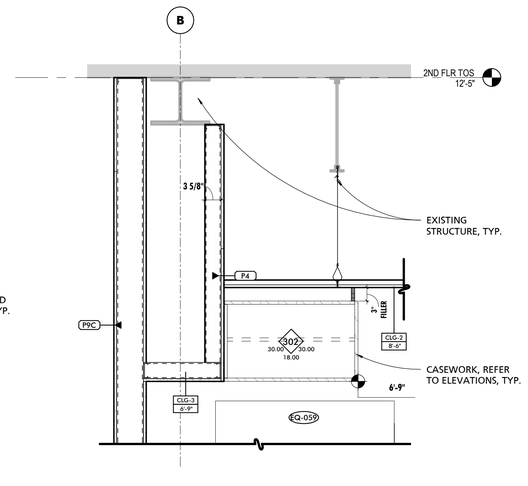
4 DETAIL @ 1ST FLOOR RECEPTION
3/4" = 1'-0"



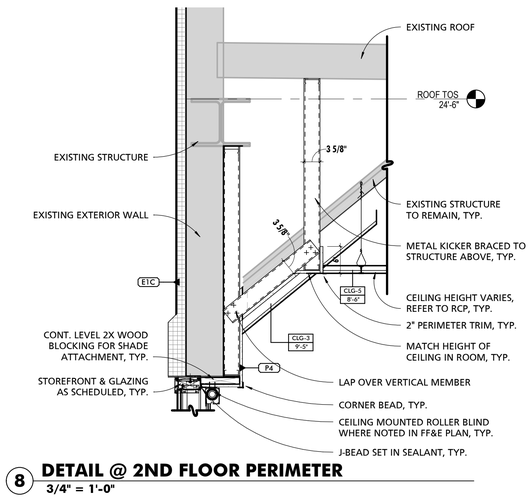
5 DETAIL @ HOSPITALITY
3/4" = 1'-0"



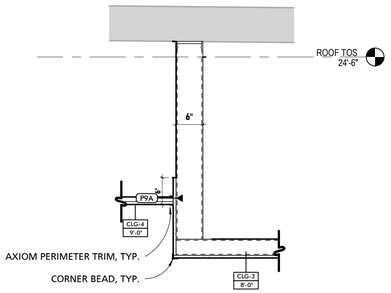
6 DETAIL @ 1ST FLOOR PERIMETER
3/4" = 1'-0"



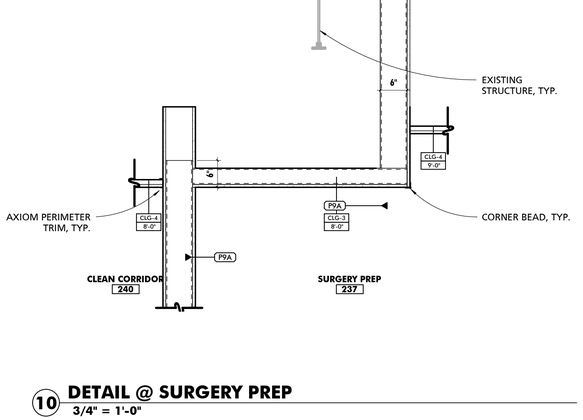
7 DETAIL @ LAUNDRY
3/4" = 1'-0"



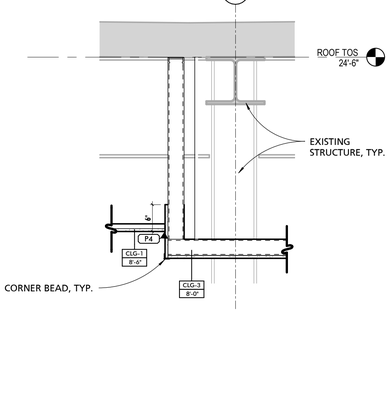
8 DETAIL @ 2ND FLOOR PERIMETER
3/4" = 1'-0"



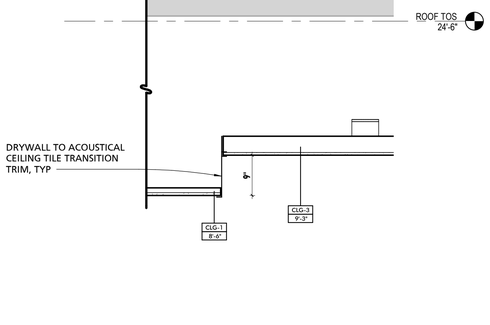
9 DETAIL @ SURGERY
3/4" = 1'-0"



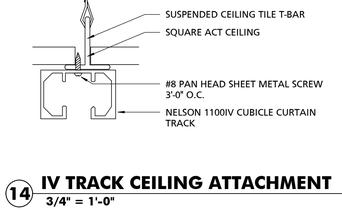
10 DETAIL @ SURGERY PREP
3/4" = 1'-0"



12 DETAIL @ 2ND FLOOR RECEPTION
3/4" = 1'-0"



13 DETAIL @ 2ND FLOOR WAITING
3/4" = 1'-0"



14 IV TRACK CEILING ATTACHMENT
3/4" = 1'-0"

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MANNS WOODWARD STUDIOS, INC. No. 53188

NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 22-127

SUBMISSION:
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE DATE:
9/20/2023

SHEET REVISION SCHEDULE:
No. DATE

RCP DETAILS

SHEET NUMBER:
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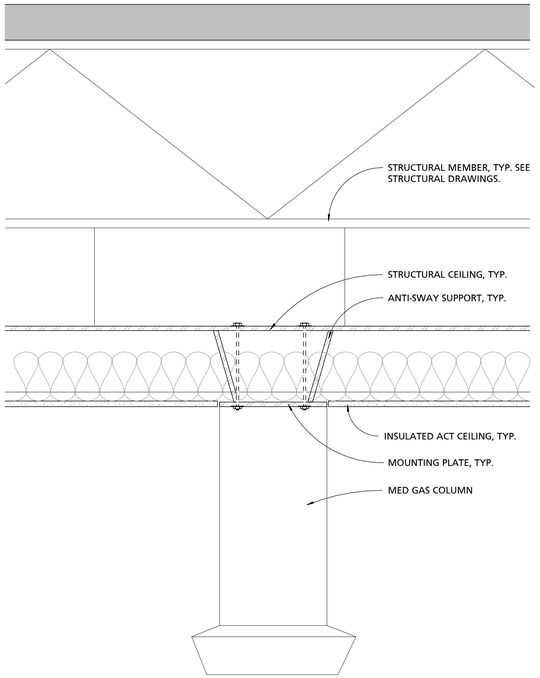
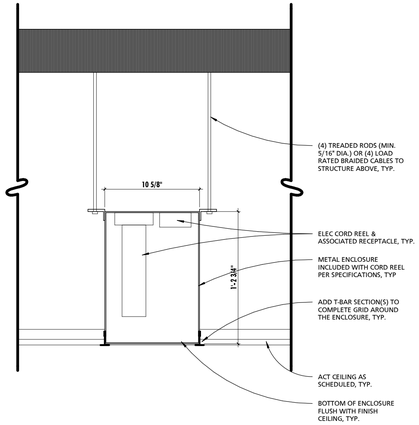
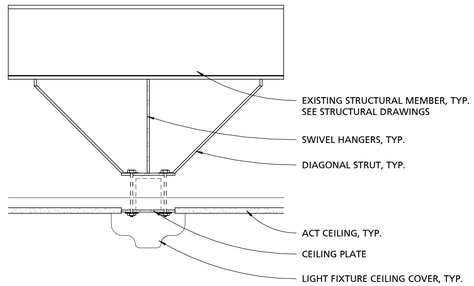


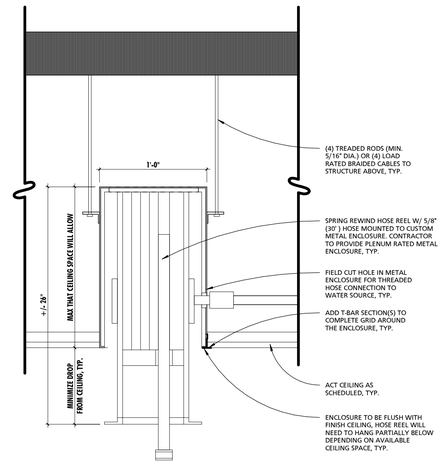
1 MED GAS COLUMN ATTACHMENT DETAIL
1 1/2" = 1'-0"



2 ABOVE CEILING MOUNTED POWER REEL DETAIL
1 1/2" = 1'-0"

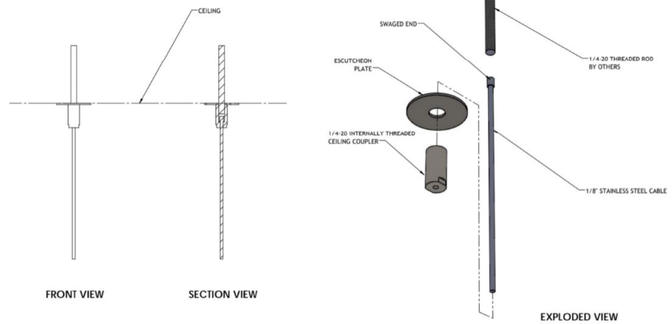


4 SURGICAL LIGHT ATTACHMENT DETAIL
1 1/2" = 1'-0"



3 ABOVE CEILING MOUNTED HOSE REEL DETAIL
1 1/2" = 1'-0"

1/4 - 20 CEILING COUPLER INSTALLATION WITH ESCUTCHEON PLATE



MOBILE ATTACHMENT DETAIL
NOT TO SCALE

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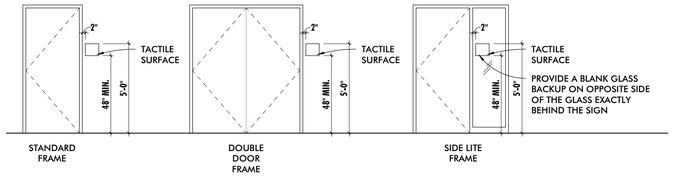
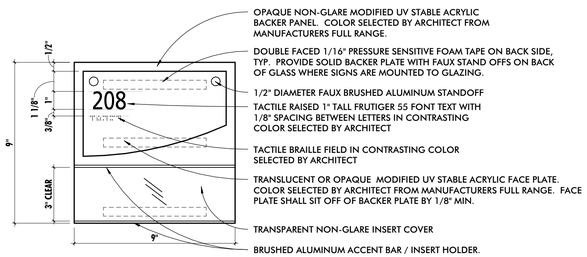


PROVIDE SIGNAGE AT ALL OF THE FOLLOWING LOCATIONS:

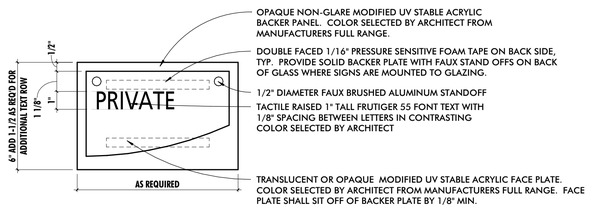
1. ADA COMPLIANT IDENTIFICATION ROOM SIGNAGE WITH REMOVABLE INSERT AT ALL ROOMS OTHER THAN MECHANICAL ROOMS AND TOILET ROOMS. SIGNS SHALL INDICATE ROOM NUMBER AND PROVIDE REMOVABLE INSERT FOR ROOM NAMES.
2. ADA COMPLIANT IDENTIFICATION ROOM SIGNAGE AT MECHANICAL ROOMS AND TOILET ROOMS. SINGLE OCCUPANT TOILET ROOMS SHALL BE IDENTIFIED AS UNI-SEX. SINGLE OCCUPANT TOILET ROOMS WITH CHANGING STATIONS SHALL BE IDENTIFIED AS FAMILY RESTOOMS.
3. ADA COMPLIANT IDENTIFICATION EXIT SIGNAGE AT ALL DOORS LEADING TO RATED EXITS.
4. ADA COMPLIANT IDENTIFICATION FLOOR LEVEL SIGNAGE AT ALL FLOOR LANDINGS OF STAIRS AND RAMPS.
5. ADA COMPLAINT INFORMATIONAL SIGNAGE AT ALL AED STATIONS AND FIRE EXTINGUISHERS.
6. ADA COMPLIANT INFORMATIONAL SIGNAGE INDICATING THE MAXIMUM OCCUPANCY OF ALL ASSEMBLY SPACES.
7. ADA COMPLIANT INFORMATIONAL SIGNAGE SHALL BE PROVIDED AT ALL ELEVATORS.

1 ADA SIGNAGE MOUNTING LOCATIONS

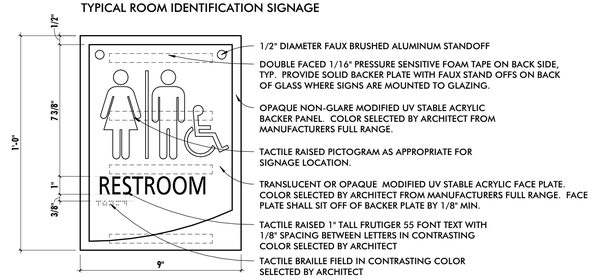
1/4" = 1'-0"



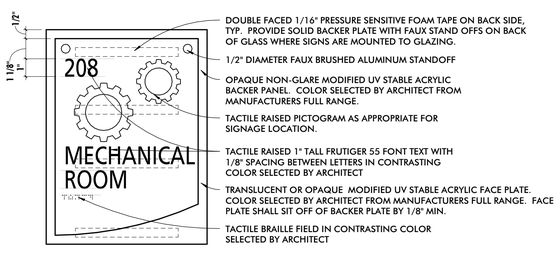
TYPICAL ROOM IDENTIFICATION SIGNAGE



TYPICAL INFORMATIONAL SIGNAGE



TYPICAL RESTROOM SIGN



TYPICAL UTILITY ROOM / STAIRWAY SIGN

2 TYPICAL SIGNAGE DETAILS

3" = 1'-0"

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TYPICAL ADA SIGNAGE DETAILS

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A900

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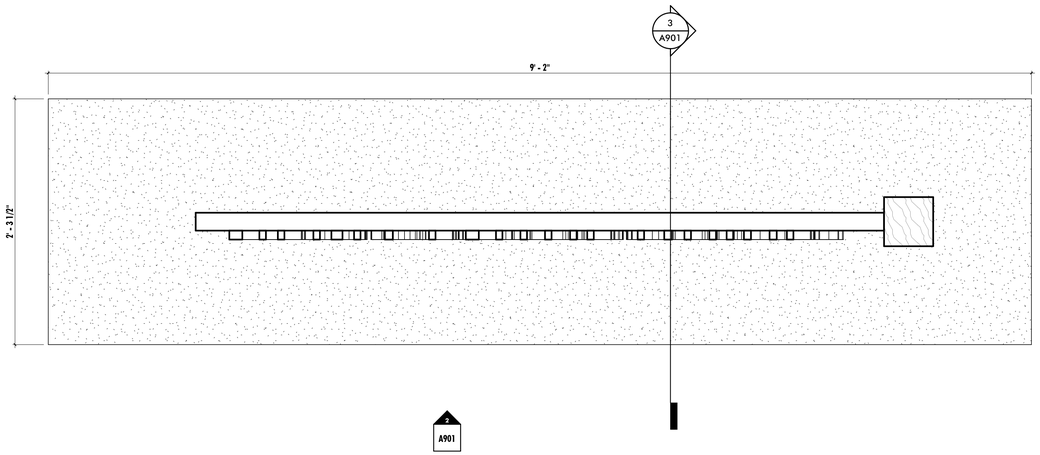
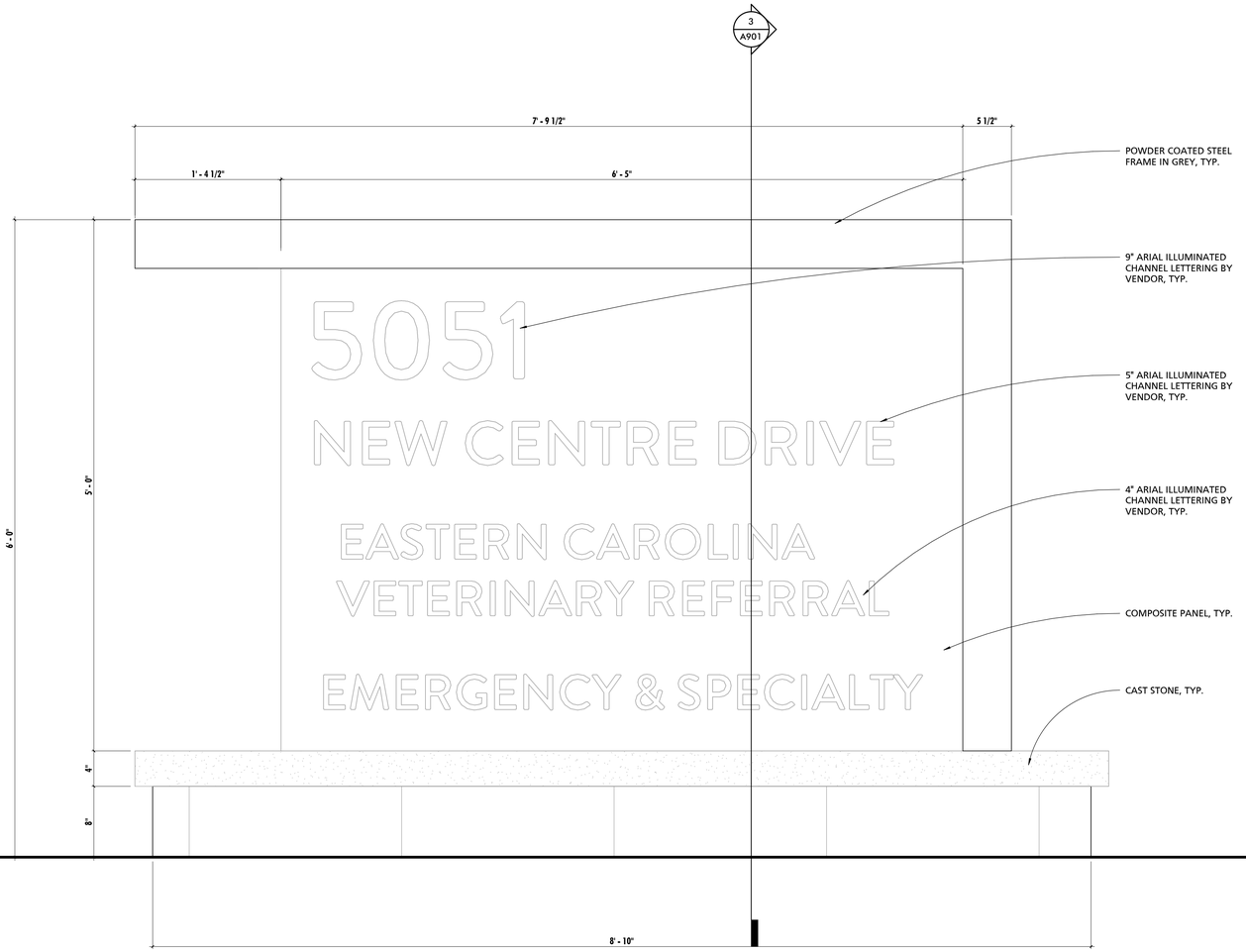
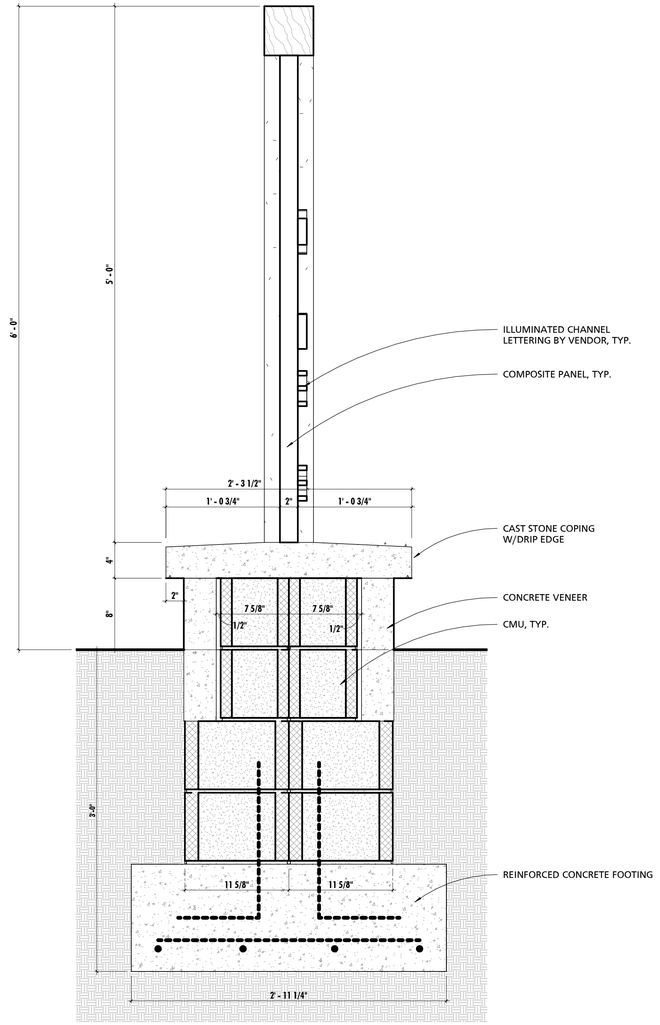


1 MONUMENT SIGNAGE PLAN
1 1/2" = 1'-0"



2 MONUMENT SIGN ELEVATION
1 1/2" = 1'-0"



3 MONUMENT SIGN DETAIL
1 1/2" = 1'-0"

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No. DATE

SITE SIGNAGE DETAILS

SHEET NUMBER:
A901

9/20/2023 5:07:20 PM

GENERAL NOTES:

1. THE STRUCTURAL DRAWINGS MUST BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS, AND THE SPECIFICATIONS. THE CONTRACTOR MUST VERIFY THE REQUIREMENTS OF OTHER TRADES AS TO SLEEVES, CHASES, HANGERS, INSERTS, ANCHORS, HOLES, AND ADDITIONAL ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.

2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF THE NORTH CAROLINA STATE BUILDING CODE, 2018 EDITION AND THE NORTH CAROLINA EXISTING BUILDING CODE, 2018 EDITION.

3. THE CONTRACTOR MUST PROVIDE TEMPORARY SHORING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL PERMANENT SUPPORTS AND LATERAL BRACING ARE IN PLACE.

4. PORTIONS OF THE STRUCTURE NOT ALTERED AND NOT AFFECTED BY THE ALTERATION HAVE NOT BEEN REVIEWED FOR COMPLIANCE WITH THE CODE REQUIREMENTS FOR A NEW STRUCTURE.

5. BEFORE PROCEEDING WITH WORK WITHIN THE EXISTING STRUCTURE, THE CONTRACTOR MUST BECOME FAMILIAR WITH THE EXISTING STRUCTURAL CONDITIONS. ANY SHORING OR BRACING SHOWN IS A PARTIAL AND SCHEMATIC REPRESENTATION OF THAT REQUIRED. THE CONTRACTOR MUST BE SOLELY RESPONSIBLE FOR THE DESIGN AND ERECTION OF ANY AND ALL SAFEGUARDS NECESSARY TO PROTECT THE EXISTING STRUCTURE. THE CONTRACTOR MUST PROVIDE SHORING, BRACING, AND OTHER SAFEGUARDS TO MAINTAIN ALL PARTS OF THE STRUCTURE IN A SAFE CONDITION AT ALL TIMES DURING THE PROCESS OF DEMOLITION AND CONSTRUCTION.

6. THE CONTRACTOR MUST FIELD VERIFY THE DIMENSIONS, ELEVATIONS, AND OTHER REQUIREMENTS NECESSARY FOR THE PROPER CONSTRUCTION AND ALIGNMENT OF THE NEW PORTIONS OF THE STRUCTURE TO THE EXISTING. ANY DIMENSIONS SHOWN OF EXISTING STRUCTURES MUST BE CONSIDERED AS APPROXIMATE AND ADEQUATE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR MUST MAKE ALL MEASUREMENTS NECESSARY FOR THE FABRICATION AND ERECTION OF STRUCTURAL MEMBERS. DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

7. DESIGN CRITERIA:

CLASSIFICATION OF BUILDING
- RISK CATEGORY II

LIVE LOADS - UNIFORM:
- PARTITION ALLOWANCE ..... 15 PSF
- OFFICES ..... 50 PSF
- STORAGE ..... 100 PSF
- LOBBIES ..... 100 PSF
- CORRIDORS (FIRST FLOOR) ..... 100 PSF
- CORRIDORS (SERVING PUBLIC SPACES) ..... 100 PSF
- CORRIDORS (ABOVE FIRST FLOOR) ..... 80 PSF
- STAIRWAYS ..... 100 PSF

SNOW LOADS:
- GROUND SNOW LOAD ..... 10 PSF
- IMPORTANCE FACTOR (Is) 1.1
- THERMAL FACTOR (Ct) 1.0
- EXPOSURE FACTOR (Ce) 1.0

WIND LOADS:
- ULTIMATE DESIGN WIND SPEED (VULT) ..... 146 MPH
- NOMINAL DESIGN (VASD) WIND SPEED ..... 113 MPH
- EXPOSURE CATEGORY ..... B
- INTERNAL PRESSURE COEFFICIENT ..... ±0.18

SEISMIC LOADS:
- SITE CLASSIFICATION ..... D
- SEISMIC DESIGN CATEGORY C
- IMPORTANCE FACTOR (IE) 1.0

SPECTRAL RESPONSE ACCELERATIONS:

S_S	0.213	S_1	0.09
S_{MS}	0.341	S_{M1}	0.216
S_{DS}	0.277	S_{D1}	0.144

FOUNDATION NOTES:

1. FOUNDATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS IN THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY TIMMONS GROUP, DATED MAY 10, 2023.

2. FOUNDATIONS HAVE BEEN DESIGNED FOR A NET ALLOWABLE SOIL BEARING PRESSURE OF 2,000 PSF.

3. PRIOR TO PLACING FOUNDATION CONCRETE, ALL FOUNDATION EXCAVATIONS MUST BE INSPECTED BY THE OWNER'S GEOTECHNICAL TESTING AGENCY TO EXPLORE THE EXTENT OF LOOSE, SOFT, EXPANSIVE, OR OTHERWISE UNSATISFACTORY SOIL MATERIAL AND TO VERIFY DESIGN BEARING PRESSURE. DIRECTION FOR CORRECTIVE ACTION WILL BE PROVIDED BY THE OWNER'S GEOTECHNICAL TESTING AGENCY WHERE UNSATISFACTORY SOILS ARE PRESENT.

4. NO UNBALANCED BACKFILLING MUST BE DONE AGAINST MASONRY OR CONCRETE WALLS UNLESS WALLS ARE SECURELY BRACED AGAINST OVERTURNING, EITHER BY TEMPORARY CONSTRUCTION BRACING OR BY PERMANENT CONSTRUCTION.

5. CONTROL GROUNDWATER AND SURFACE RUNOFF THROUGHOUT THE CONSTRUCTION PROCESS. INUNDATION AND LONG TERM EXPOSURE OF BEARING SURFACES WHICH RESULT IN DETERIORATION OF BEARING MUST BE PREVENTED.

CAST-IN-PLACE CONCRETE NOTES:

1. CONCRETE MUST BE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301 AND 318.

2. CONCRETE MUST BE NORMAL WEIGHT AND MUST OBTAIN 28 DAY COMPRESSIVE STRENGTHS AS FOLLOWS:
   A. SLAB-ON-GRADE ..... 3,500 PSI
   B. SUPPORTED FLOOR SLABS ..... 4,000 PSI
   C. COLUMNS AND WALLS ..... 4,000 PSI
   D. CONCRETE NOT OTHERWISE NOTED ..... 3,000 PSI

3. REINFORCING MATERIALS MUST BE AS FOLLOWS:
   A. REINFORCING BARS - ASTM A615, GRADE 60, DEFORMED.
   B. WELDED REINFORCING BARS - ASTM A706, GRADE 60.
   C. WELDED WIRE REINFORCEMENT - ASTM A1064, WELDED STEEL WIRE REINFORCEMENT; PROVIDE SHEET TYPE, ROLL TYPE IS NOT ACCEPTABLE.

4. ALL REINFORCING STEEL AND EMBEDDED ITEMS SUCH AS ANCHOR RODS AND WELD PLATES MUST BE ACCURATELY PLACED AND ADEQUATELY TIED AND SUPPORTED BEFORE CONCRETE IS PLACED TO PREVENT DISPLACEMENT BEYOND PERMITTED TOLERANCES.

5. CONCRETE COVER TO REINFORCING STEEL MUST CONFORM TO THE MINIMUM COVER RECOMMENDATIONS IN ACI 318, UNLESS THE DRAWINGS SHOW GREATER COVER REQUIREMENTS.

6. LAP CONTINUOUS REINFORCING STEEL AS FOLLOWS, UNLESS OTHERWISE NOTED:

BEAM TOP REINFORCING AND TENSION SPLICES			
BAR SIZE	CONC COMPRESSIVE STRENGTH (PSI)		
	3,000	4,000	5,000
#6 AND SMALLER	75xBD	65xBD	58xBD
#7 AND LARGER	93xBD	81xBD	72xBD

ALL OTHER REINFORCING			
BAR SIZE	CONC COMPRESSIVE STRENGTH (PSI)		
	3,000	4,000	5,000
#6 AND SMALLER	57xBD	50xBD	45xBD
#7 AND LARGER	72xBD	62xBD	56xBD

CONCRETE MASONRY NOTES:

1. CONCRETE MASONRY MATERIALS AND CONSTRUCTION MUST CONFORM TO THE AMERICAN CONCRETE INSTITUTE (ACI) 530.

2. CONCRETE MASONRY UNITS MUST CONFORM TO ASTM C90 AND MUST BE MADE WITH LIGHT WEIGHT AGGREGATE. MINIMUM NET AREA COMPRESSIVE STRENGTH OF MASONRY UNITS MUST BE 2,000 PSI AT 28 DAYS.

3. COMPRESSIVE STRENGTH OF MASONRY MUST BE DETERMINED BY THE UNIT STRENGTH METHOD AS SET FORTH IN ACI 530.1. THE NET AREA COMPRESSIVE STRENGTH OF MASONRY, f'm, MUST BE 2,000 PSI AT 28 DAYS.

4. MORTAR MUST BE TYPE 'M' OR 'S' AND MUST COMPLY WITH ASTM C270, PROPORTIONS OR PROPERTIES SPECIFICATION.

5. GROUT MUST COMPLY WITH EITHER THE PROPORTIONS OR PROPERTIES SPECIFICATION OF ASTM C476 AND THIS MIX MUST BE PROPORTIONED TO OBTAIN A DOCUMENTED 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI, WITH AN 8-11 INCH SLUMP WHEN PLACED IN THE CONCRETE MASONRY UNITS.

6. REINFORCING STEEL MUST COMPLY WITH ASTM A615, GRADE 60. SHOP FABRICATE REINFORCING BARS WHICH ARE SHOWN TO BE BENT OR HOOKED.

7. ALL BOND BEAMS, REINFORCED CELLS AND CELLS WITH EXPANSION BOLTS, EMBED PLATES OR OTHER ANCHORS AND ALL CELLS BELOW GRADE MUST BE GROUTED SOLID. GROUT PROCEDURE MUST COMPLY WITH ACI 530.1.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL MUST BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) 360.

2. STRUCTURAL STEEL MUST COMPLY WITH THE FOLLOWING SPECIFICATIONS:
   A. STRUCTURAL STEEL SHAPES, PLATES AND BARS UNLESS OTHERWISE NOTED - ASTM A36, Fy = 36 KSI
   B. STRUCTURAL STEEL W-SHAPES - ASTM A992, Fy = 50 KSI
   C. HOLLOW STRUCTURAL SECTIONS (HSS):
      1. SQUARE AND RECTANGULAR - ASTM A500, GRADE C, Fy = 50 KSI
      2. ROUND - ASTM A500, GRADE C, Fy = 46 KSI
   D. HIGH STRENGTH BOLTS - ASTM A325 (TYPICAL UON)
   E. FULLY PRETENSIONED BOLTS - ASTM F1852 (TWIST-OFF TYPE)
   F. WASHERS - ASTM F436
   G. NUTS - ASTM A563

3. UNLESS OTHERWISE NOTED, ALL REQUIRED DESIGN STRENGTHS AND REACTIONS INDICATED ARE BASED ON THE "LOADING COMBINATIONS USING STRENGTH DESIGN OR LOAD AND RESISTANCE FACTOR DESIGN" PER SECTION 1605.2 OF THE BUILDING CODE.

4. UNLESS OTHERWISE NOTED, BEAM CONNECTIONS MUST BE AISC "SIMPLE SHEAR CONNECTIONS" WITH ASTM A325 BOLTS DESIGNED FOR ONE HALF THE MAXIMUM TOTAL UNIFORM LOAD FOR LATERALLY SUPPORTED BEAMS GIVEN IN TABLE 3-6 OF THE "STEEL CONSTRUCTION MANUAL."

5. UNLESS OTHERWISE NOTED, BEAM CONNECTIONS MUST BE AISC "SIMPLE SHEAR CONNECTIONS" WITH ASTM A325 BOLTS. DESIGN CONNECTIONS FOR THE REACTIONS (LRFD FACTORED LOADING) SHOWN ON THE DRAWINGS AND THE MINIMUM NUMBER OF BOLTS SHOWN BELOW. IF NO REACTION IS SHOWN, DESIGN CONNECTIONS FOR REACTIONS AND THE MINIMUM NUMBER OF BOLTS SHOWN BELOW.

BEAM SIZE	DESIGN REACTION (LRFD)	MIN # OF BOLTS
W8	14 KIPS	2
W10	18 KIPS	2
W12 AND W14	24 KIPS	3
W16	36 KIPS	3
W18	45 KIPS	4

6. HIGH STRENGTH BOLTS MAY BE TIGHTENED TO THE "SNUG TIGHT" CONDITION IN LIEU OF FULL PRETENSIONING EXCEPT FOR THE FOLLOWING CONNECTIONS WHICH MUST BE FULLY PRETENSIONED:
   A. BOLTED CONNECTIONS USING NON-STANDARD HOLES.

7. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS OF "DELEGATED DESIGN" CONNECTIONS.

8. PROVIDE L4x4x1/4 ANGLE FRAMING AROUND OPENINGS LARGER THAN 6 INCHES IN ANY DIMENSION (INCLUDING ROOF DRAINS) TO SUPPORT STEEL DECK, TYPICAL UNLESS OTHERWISE NOTED OR DETAILED.

9. WELDING MUST BE IN ACCORDANCE WITH AWS D1.1, "STRUCTURAL WELDING CODE - STEEL." WELD ELECTRODES MUST BE E70XX LOW HYDROGEN. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE REQUIRED BY TABLE J2.4 AISC 360.

10. COORDINATE ALL MEMBER LOCATIONS, UNIT WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED.

STEEL DECK NOTES:

1. STEEL DECK MUST BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI), "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" AND THE STEEL DECK INSTITUTE (SDI), "DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS, AND ROOF DECKS."

2. STEEL DECK INSTALLATION MUST COMPLY WITH THE FOLLOWING:
   A. ROOF DECK: 1 1/2" x 22 GAGE TYPE 'B' GALVANIZED. UNLESS OTHERWISE NOTED, ATTACH DECK TO SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS IN ALL RIBS WHERE END LAPS OCCUR AND AT 12 INCHES ON CENTER ALONG SUPPORTS WITH A 36/4 PATTERN. FASTEN SIDE LAPS WITH #10 SELF-TAPPING HEX HEAD SCREWS AT 1/3 POINTS BETWEEN SUPPORTS. FASTEN EDGEMOST DECK PANEL TO STEEL FRAMING WITH 5/8 INCH DIAMETER PUDDLE WELDS AT SAME SPACING AS SIDELAP FASTENERS.
   B. FORM DECK: 1 1/2" x 22 GAGE TYPE 'C' GALVANIZED. UNLESS OTHERWISE NOTED, ATTACH DECK TO SUPPORTS WITH 5/8 INCH DIAMETER PUDDLE WELDS AT 12 INCHES ON CENTER. FASTEN SIDELAPS WITH #10 SELF-TAPPING HEX HEAD SCREWS AT 1/3 POINTS BETWEEN SUPPORTS. FASTEN EDGEMOST DECK PANEL TO STEEL FRAMING WITH 5/8 INCH DIAMETER PUDDLE WELDS AT SAME SPACING AS SIDELAP FASTENERS.

3. STEEL DECK MUST BE INSTALLED PERPENDICULAR TO SUPPORTS AND MUST HAVE A MINIMUM OF THREE CONTINUOUS SPANS. ENDLAPS MUST ONLY OCCUR AT SUPPORTS.

4. WELDING MUST BE IN ACCORDANCE WITH AWS D1.3 "STRUCTURAL WELDING CODE - SHEET STEEL".

5. PERMANENT SUSPENDED LOADS MUST NOT BE SUPPORTED BY STEEL ROOF DECK.

THESE DRAWINGS ARE RELEASED FOR THE FOLLOWING USE. ANY OTHER USE OF THESE DRAWINGS IS AT THE RISK OF THE CONTRACTOR OR OTHERS USING THESE DRAWINGS FOR THAT UNAUTHORIZED USE. LYNCH MYKINS IS NOT RESPONSIBLE FOR ADDITIONAL COSTS DUE TO CHANGES, COORDINATION OR ADDITIONAL SCOPE OF WORK REQUIRED DUE TO SUCH UNAUTHORIZED USE.

- [ ] PRELIMINARY BUDGET PRICING
- [ ] EARLY FOUNDATION PACKAGE
- [ ] MILL ORDER PACKAGE
- [ ] EARLY STEEL PACKAGE
- [x] PERMIT SET
- [ ] CONSTRUCTION SET

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EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
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COLD-FORMED METAL FRAMING NOTES:

1. COLD-FORMED METAL FRAMING MUST BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS"

2. SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED NORTH CAROLINA LICENSED PROFESSIONAL ENGINEER RESPONSIBLE FOR THE DESIGN OF COLD-FORMED METAL FRAMING. SHOP DRAWINGS MUST INCLUDE DESIGN LOADINGS AND REACTIONS APPLIED TO THE SUPPORTING STRUCTURE. INCLUDE PLACING DRAWINGS FOR FRAMING MEMBERS SHOWING SIZE AND GAGE DESIGNATIONS, NUMBER, TYPE, LOCATION AND SPACING. INDICATE CONNECTIONS, SUPPLEMENTAL STRAPPING, BRACING, SPLICES, BRIDGING, ACCESSORIES AND DETAILS AND CONSTRUCTION SEQUENCE REQUIRED FOR PROPER AND SAFE INSTALLATION.

3. WELDING MUST BE IN ACCORDANCE WITH AWS D1.3, "STRUCTURAL WELDING CODE - SHEET STEEL". TOUCH UP ALL WELDS WITH SPECIFIED COATING SYSTEMS.

4. COLD-FORMED METAL FRAMING MEMBERS MUST CONFORM TO ASTM C955, AND BE FORMED OF CORROSION-RESISTANT STEEL CONFORMING TO ASTM A653 AND ASTM C955 WITH A MINIMUM YIELD STRENGTH OF 33 KSI FOR 43 MIL AND THINNER MEMBERS AND 50 KSI FOR ALL OTHER MEMBERS.

5. MEMBER SECTION PROPERTIES MUST CONFORM TO PART 'I' OF THE "COLD-FORMED STEEL DESIGN MANUAL."

6. COLD-FORMED METAL FRAMING MEMBERS, HEADERS AND CONNECTIONS SHOWN ON STRUCTURAL AND ARCHITECTURAL DRAWINGS ARE SCHEMATIC ONLY AND MUST BE DESIGNED TO MEET PERFORMANCE SPECIFICATION REQUIREMENTS.

7. PROVIDE BRIDGING LINES AT 4'-0" MAXIMUM ON CENTER IN ALL WALLS UNLESS OTHERWISE INDICATED. BRIDGING MUST BE FULLY INSTALLED AND ANCHORED AT ENDS BEFORE SUPERIMPOSING LOADS ONTO THE STUDS.

8. FOR ADJACENT TRUSSES WHERE THE WEB CONFIGURATION IS CAPABLE OF CONTAINING A RECTANGLE 42 INCHES HIGH BY 24 INCHES WIDE OR GREATER BETWEEN THE TOP OF THE BOTTOM CHORD AND THE BOTTOM OF ANY OTHER TRUSS MEMBER, SUCH AREAS MUST HAVE THE BOTTOM CHORD DESIGNED FOR A LIVE LOAD OF 20 PSF IN ADDITION TO ANY OTHER LOADS SHOWN.

RUST INHIBITIVE PAINT SYSTEM NOTES:

1. EXISTING STEEL SURFACES INDICATED TO BE PAINTED WITH A TWO-COAT RUST INHIBITIVE PAINT BY RUST BULLET (1-200-245-1600; www.rustbullet.ocm). EACH COAT SHALL BE 3 MILS DFT. COVERAGE IS APPROXIMATELY 400 SF PER GALLON PER COAT.

2. SURFACE PREPARATION: REMOVE LOOSE MIL SCALE BY LIGHTLY SCRAPING, SANDING, OR POWER WIRE BRUSHING. ALL SURFACES MUST BE FREE OF LOOST RUST, MOISTURE, DIRT, MILDEW, OILY SUBSTANCES, WAX, LOOSE PAINT, AND LOOSE PARTICLES, THE SURFACE TO BE COATED MUST BE COMPLETELY DRY. EXISTING TIGHT PAINT SHOULD BE ROUGHED UP WITH 100-150 GRIT SAND PAPER OR SANDING SPONGE TO INSURE ADHESION.

3. CONFORM TO MANUFACTURER'S RECOMMENDATIONS FOR ADDITIONAL DETAILS OF STORAGE, HANDLING, SURFACE PREPARATION, APPLICATION, PROTECTION, SAFETY PRECAUTIONS, AND CLEAN UP.

POST-INSTALLED ANCHOR NOTES:

1. ALL POST INSTALLED ANCHORS INDICATED ON THE DRAWINGS ARE BY HILTI, INC, AND MUST BE CONSIDERED THE BASIS OF DESIGN PRODUCT. WHERE NOT EXPLICITLY INDICATED IN THE DRAWINGS, THE FOLLOWING ANCHORS/ADHESIVES MUST BE USED:
   A. ANCHORAGE TO CONCRETE
      1. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC40U) WITH STEEL THREADED ROD PER ICC ESR-3187.
      2. SCREW ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR-3027.
   B. REBAR DOWELING INTO CONCRETE
      1. ADHESIVE ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         a. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT (TE-CD OR TE-YD) AND VC 20/40 VACUUM SYSTEM (VC 20-U OR VC 40-U) WITH CONTINUOUSLY DEFORMED REBAR PER ICC ESR-3187.
   C. ANCHORAGE TO SOLID GROUTED MASONRY
      1. ADHESIVE ANCHORS USE:
         a. HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM (ICC PENDING).
         b. STEEL ANCHOR ELEMENT MUST BE HILTI HAS-E CONTINUOUSLY THREADED ROD.
      2. MECHANICAL ANCHORS USE:
         a. HILTI KWIK HUS EZ SCREW ANCHORS PER ICC ESR 3056.
   D. ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY
      1. ADHESIVE ANCHORS USE:
         a. HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM PERICCESR-3342.
         b. STEEL ANCHOR ELEMENT MUST BE HILTI HAS-E CONTINUOUSLY THREADED ROD OR CONTINUOUSLY DEFORMED STEEL REBAR.
         c. THE APPROPRIATE SIZE SCREEN TUBE MUST BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION.

2. ALTERNATE POST INSTALLED ANCHOR PRODUCTS MAY BE SUBMITTED TO THE ENGINEER FOR REVIEW AND POSSIBLE APPROVAL. ALL SUBSTITUTION REQUESTS MUST BE ACCOMPANIED BY AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE. ALTERNATE PRODUCTS MAY REQUIRE MODIFICATIONS TO ANCHOR DIAMETER, SPACING, AND EMBEDMENT.

3. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.

4. THE CONTRACTOR MUST ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.

5. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

6. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR MUST LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY FERROSCAN OR GPR.

7. ALL POST INSTALLED ANCHORS REQUIRE CONTINUOUS INSPECTIONS BY THE OWNER'S MATERIALS TESTING AGENCY TO VERIFY INSTALLATION HAS BEEN PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR	HSA	HEADED STUD ANCHOR
ARCH	ARCHITECT	HT	HEIGHT
BD	BAR DIAMETER	HVY	HEAVY
BF	BRACED FRAME	INT	INTERIOR
BEJ	BUILDING EXPANSION JOINT	JBE	JOIST BEARING ELEVATION
BLDG	BUILDING	JT	JOINT
BM	BEAM	KCJ	KEYED CONSTRUCTION JOINT
BOD	BOTTOM OF DECK	L	LOW
BOT, B	BOTTOM	LLH	LONG LEG HORIZONTAL
BRG	BEARING	LLV	LONG LEG VERTICAL
BTWN	BETWEEN	LSH	LONG SIDE HORIZONTAL
C TO C	CENTER TO CENTER	LSV	LONG SIDE VERTICAL
CFMF	COLD-FORMED METAL FRAMING	LTWT	LIGHTWEIGHT
		LWC	LIGHTWEIGHT CONCRETE
CJ	CONTROL JOINT	MAS	MASONRY
CL	CENTERLINE	MATL	MATERIAL
CLR	CLEAR	MAX	MAXIMUM
CMU	CONCRETE MASONRY UNIT	MECH	MECHANICAL
COL	COLUMN	MF	MOMENT FRAME
CONC	CONCRETE	MFR	MANUFACTURER
CONN	CONNECTION	MID	MIDDLE
CONSTR	CONSTRUCTION	MIN	MINIMUM
CONT	CONTINUOUS	MOD	MODIFY
COORD	COORDINATE	MOS	MIDDEPTH OF SLAB
CTR	CENTER	NOM	NOMINAL
CTRD	CENTERED	NTS	NOT TO SCALE
CW	CURTAIN WALL	OC	ON CENTER
DBA	DEFORMED BAR ANCHOR	OPH	OPPOSITE HAND
DBL	DOUBLE	OPNG	OPENING
DC	DIAPHRAGM CHORD	PAF	POWDER ACTUATED FASTENER
DCJ	DOWELED CONSTRUCTION JOINT	PAR	PARALLEL
		PC	PIECE
DIA, Ø	DIAMETER	PEMB	PRE-ENGINEERED METAL BUILDING
DJ	DOUBLE JOIST		
DWGS	DRAWINGS	PEN	PENETRATE, PENETRATION
EA	EACH	PERP	PERPENDICULAR
EF	EACH FACE	PL	PLATE
EJ	EXPANSION JOINT	R	RADIUS
EL	ELEVATION	REF	REFERENCE, REFER TO
ELEV	ELEVATOR	REINF	REINFORCE, REINFORCED, REINFORCING
EMBED	EMBEDMENT		
EOD	EDGE OF DECK	REQD	REQUIRED
EOS	EDGE OF SLAB	REQMTS	REQUIREMENTS
EQ	EQUAL	SCHED	SCHEDULE
EW	EACH WAY	SF	STEPPED FOOTING
EXIST	EXISTING	SGB	STEPPED GRADE BEAM
EXP	EXPANSION	SIM	SIMILAR
EXT	EXTERIOR	SJ	SAWED JOINT
FD	FLOOR DRAIN	SL	SLOPE
FDN	FOUNDATION	SOG	SLAB-ON-GRADE
FO	FACE OF	SPF	SIDEPLATE FRAME
FF EL	FINISHED FLOOR ELEVATION	STD	STANDARD
		TBE	TRUSS BEARING ELEVATION
FIN	FINISH	T&B	TOP & BOTTOM
FIN FLR	FINISHED FLOOR	T&G	TONGUE AND GROOVE
FOB	FACE OF BUILDING	THK	THICKNESS
FOC	FACE OF CONCRETE	TOC	TOP OF CONCRETE
FOM	FACE OF MASONRY	TOF	TOP OF FOOTING
FOS	FACE OF SLAB/ STUD	TOM	TOP OF MASONRY
FRMG	FRAMING	TOCP	TOP OF CONCRETE PEDESTAL
FTG	FOOTING	TOS	TOP OF STEEL
FV, ±	FIELD VERIFY	TS	THICKENED SLAB
GALV	GALVANIZED	TYP	TYPICAL
GEN	GENERAL	UON	UNLESS OTHERWISE NOTED
GR BM	GRADE BEAM	VERT	VERTICAL
H	HIGH	W/	WITH
HK	HOOK	WP	WORKING POINT
HORIZ	HORIZONTAL	WSP	WOOD STRUCTURAL PANEL(S)
HSS	HOLLOW STRUCTURAL SECTION	WWR	WELDED WIRE REINFORCING

PLAN LEGEND:

TOS = +X'-X"	=	TOP OF STEEL ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"
BOS = +X'-X"	=	BOTTOM OF STEEL ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"
TOM = +X'-X"	=	TOP OF MASONRY ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"
BOD = +X'-X"	=	BOTTOM OF DECK ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"
RTU-X XXXX#	=	MECHANICAL UNIT SUPPORTED ABOVE FRAMING (WEIGHT IN POUNDS) - COORD W/ MECH DWGS
RTU-X XXXX#	=	MECHANICAL UNIT SUPPORTED BELOW FRAMING (WEIGHT IN POUNDS) - COORD W/ MECH DWGS
	=	FLOOR / ROOF OPENING
(-X'-X")	=	TOP OF FOOTING ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"
<-X'-X">	=	TOP OF EXISITNG FOOTING ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"
X'-X"	=	TOP OF SLAB ELEVATION MEASURED FROM REFERENCED FINISHED FLOOR ELEVATION = 0'-0"
	=	CHANGE IN ELEVATION
	=	CHANGE IN SLOPE
SL	=	DIRECTION OF SLOPE
	=	WARP LINE OF ROOF DECK
X	=	COLUMN GRID MARK
X	=	EXISTING COLUMN GRID MARK
X	=	PLAN KEY NOTE MARK
X / SX	=	SECTION/DETAIL NUMBER/LETTER SECTION/DETAIL MARK SHEET NUMBER WHERE SECTION/DETAIL MARK IS DRAWN
WFX	=	WALL FOOTING MARK
CFX	=	COLUMN FOOTING MARK
±	=	FIELD VERIFY
	=	DEMOLISH

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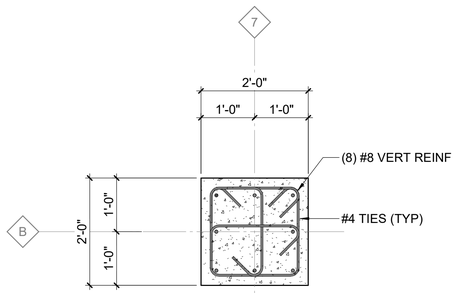


2 PEDESTAL DETAIL

3/4" = 1'-0"

FOUNDATION / SLAB PLAN NOTES

A. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS TO NONBEARING WALLS, WALL CONTROL JOINTS AND OPENINGS.

B. UNLESS OTHERWISE NOTED, ALL ELEVATIONS ARE BASED ON A FINISHED FIRST FLOOR REFERENCE OF 0'-0". ACTUAL FINISHED FLOOR ELEVATION IS 0'-0". REFERENCE ARCHITECTURAL DRAWINGS FOR FINISHED FLOOR MATERIALS.

C. EXISTING FOOTINGS SHOWN ONLY WHERE THEY ARE IN CLOSE PROXIMITY TO NEW WORK.

D. NOT ALL UTILITY LOCATIONS ARE SHOWN ON PLAN. THE CONTRACTOR MUST COORDINATE THE LOCATIONS, SIZES, AND INVERTS OF UTILITIES. AT LOCATIONS WHERE UTILITIES PASS BELOW THE TOP OF FOOTING ELEVATION, STEP THE TOP OF FOOTING DOWN ON EACH SIDE PER THE "STEPPED FOOTING DETAIL" AND SLEEVE THE UTILITY THROUGH THE FOUNDATION WALL. THE CONTRACTOR MAY, AT HIS/HER OPTION, SLEEVE THE UTILITY THROUGH THE FOUNDATION PER THE "UTILITY SLEEVE DETAIL".

E. UNLESS OTHERWISE INDICATED, EXTEND WALL FOOTINGS A MINIMUM OF 6 INCHES BEYOND ENDS OF WALLS.

F. NOT ALL SITE WALLS ARE NOT SHOWN ON PLAN. CONTRACTOR MUST COORDINATE CIVIL AND LANDSCAPE DRAWINGS FOR SITE WALL INFORMATION.

G. DIMENSIONS SHOWN ON FOUNDATION PLAN ARE TO COLUMN GRIDLINES AND OUTSIDE FACE OF FOUNDATION WALLS, UNLESS OTHERWISE NOTED.

KEY NOTES

01 ELEVATOR PIT & SUMP PIT FOR ELEVATOR. REFERENCE TYPICAL DETAILS. COORDINATE LOCATION WITH THE ARCHITECTURAL DRAWINGS, PLUMBING DRAWINGS & THE ELEVATOR MANUFACTURER.

12 REMOVE EXISTING CONCRETE SLAB-ON-GRADE AS REQUIRED FOR INSTALLATION OF NEW ELEVATOR. REPLACE WITH 4" CONCRETE SLAB-ON-GRADE OVER VAPOR RETARDER AND 4" DEPTH OF POROUS FILL UNLESS OTHERWISE INDICATED. REINFORCE SLAB WITH 6x6-W2.1xW2.1 WELDED WIRE REINFORCING PLACED 1" CLEAR BELOW TOP OF SLAB. MAINTAIN REINFORCEMENT IN POSITION ON BOLSTERS, CHAIRS OR SPACERS DURING CONCRETE PLACEMENT.

14 REFER TO "TYPICAL SLAB REMOVAL & REPLACEMENT DETAIL" ON SHEET S-501.

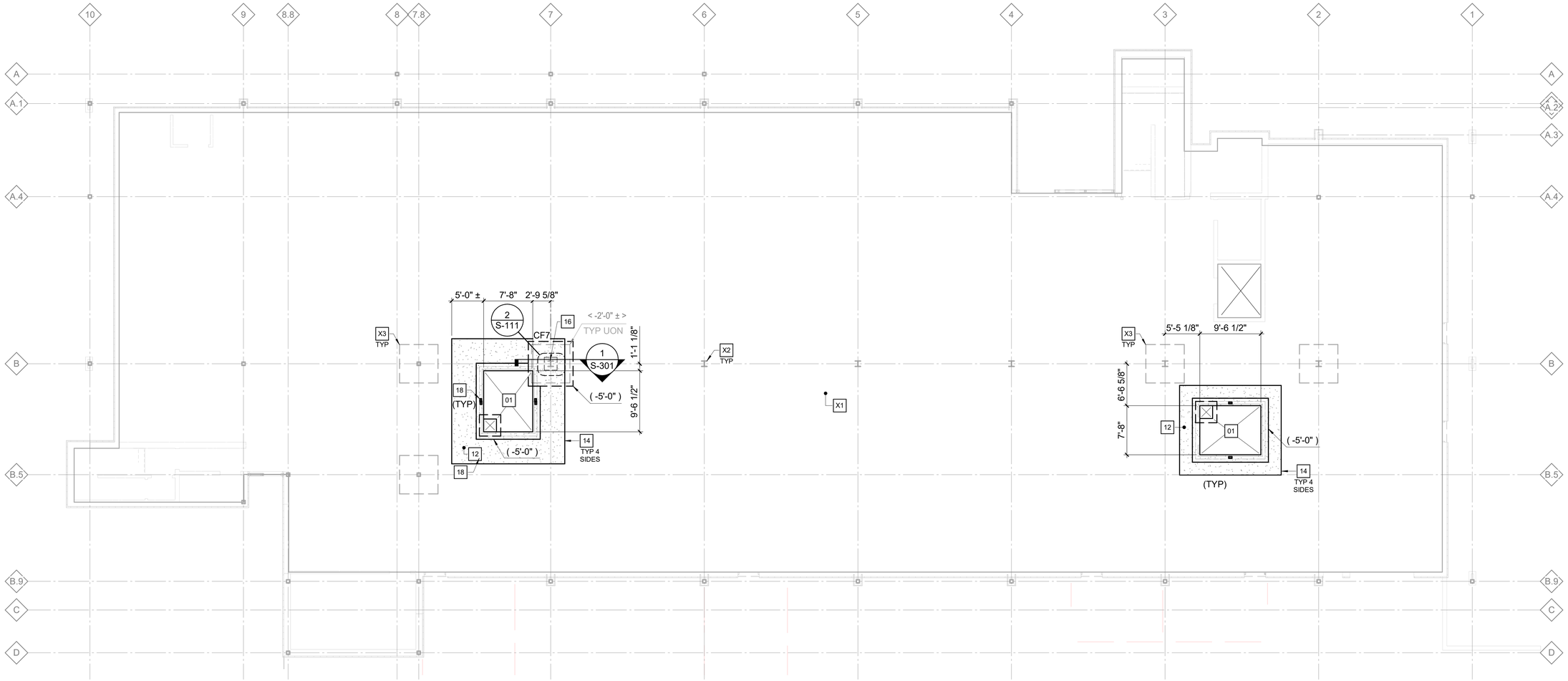
16 SHORE EXISTING BUILDING COLUMN UNTIL NEW CONCRETE PEDESTAL HAS ACHIEVED 28 DAY F'C.

18 HSS6x3x5/16 ELEVATOR GUIDE RAIL SUPPORT POSTS.

X1 EXISTING CONCRETE SLAB-ON-GRADE.

X2 EXISTING STEEL COLUMN.

X3 EXISTING CONCRETE COLUMN FOOTING. FIELD VERIFY ELEVATION.



1 FOUNDATION & SLAB-ON-GRADE PLAN

1/8" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 049684 ENGINEER JUSTIN T. TRENT
9/20/23

COA

NORTH CAROLINA ENGINEERING CORPORATION C-4360 LYNCH MYKINS STRUCTURAL ENGINEERS, P.C.

EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR, WILMINGTON, NC 28403

PROJECT NUMBER: Project Number

SUBMISSION
FOR PERMIT

ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

FOUNDATION PLAN

SHEET
S-111

9/20/2023 3:51:40 PM

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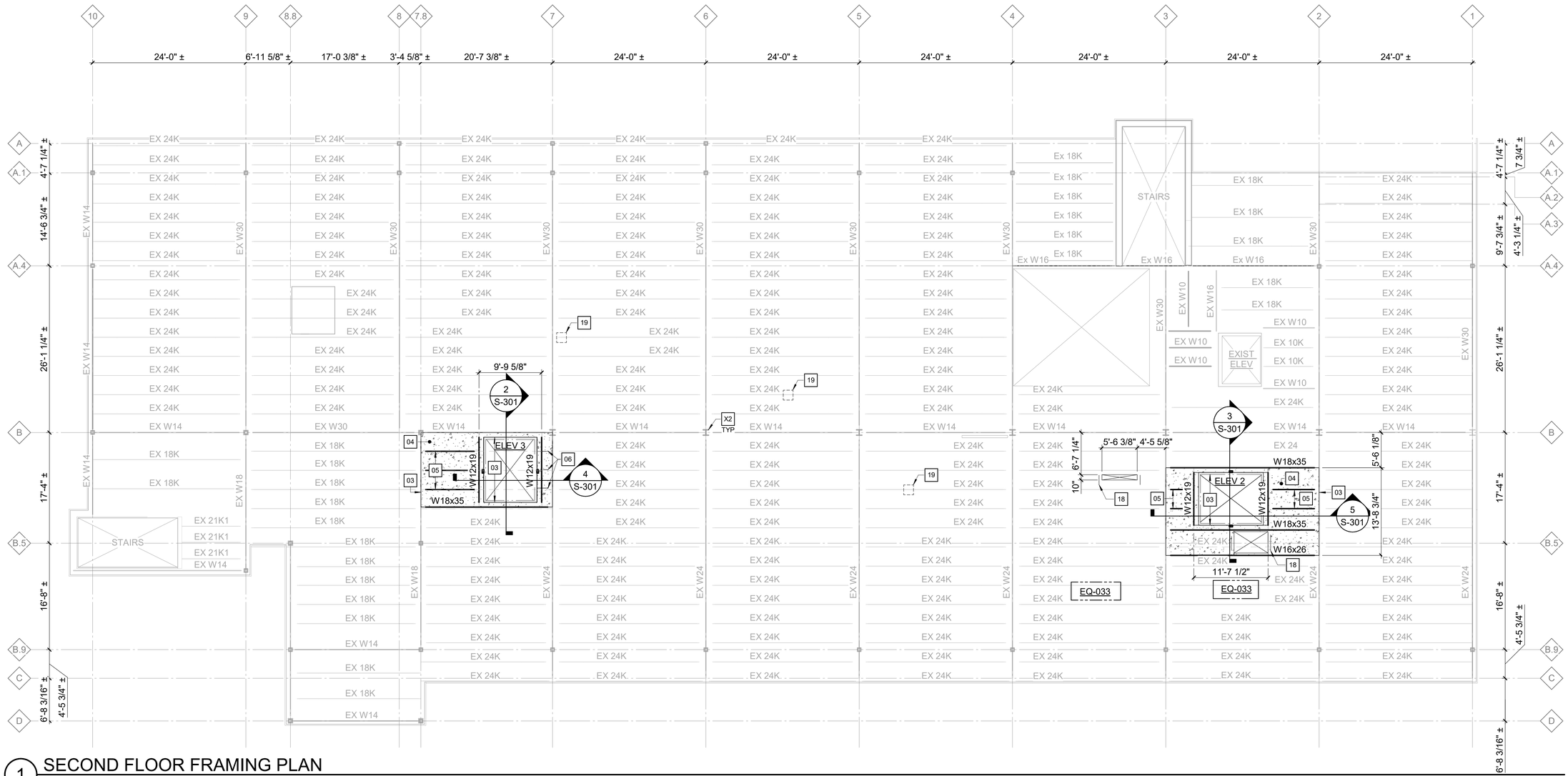
FRAMING PLAN NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
2. TOP OF FINISHED FLOOR ELEVATION MUST BE:
   SECOND FLOOR ELEVATION = 12'-9"±
3. EXISTING FLOOR JOISTS ARE ASSUMED TO BE EQUALLY SPACED NOT TO EXCEED 3'-0"± ON-CENTER TO SUPPORT STEEL DECK.
4. EXISTING SLAB IS ASSUMED TO BE 2 1/2" CONCRETE FLOOR SLAB ON 1 1/2 FORM DECK. (4"TOTAL)
5. EXISTING ROOF FRAMING IS ASSUMED TO BE EQUALLY SPACED NOT TO EXCEEDE 5'-9'± ON CENTER TO SUPPORT STEEL ROOF DECK.
6. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.
7. BOTTOM OF EXISTING ROOF DECK ELEVATION IS ASSUMED TO BE +24'-10"±

KEY NOTES

03 REMOVE EXISTING FLOOR SLAB AND JOISTS FOR INSTALLATION OF NEW ELEVATOR. TEMPORARILY SHORE EXISTING FLOOR SLAB AND FLOOR FRAMING AS REQUIRED UNTIL PERMANENT SUPPORTS ARE IN PLACE.
04 2 1/2" CONCRETE SLAB ON 1 1/2" FORM DECK (4" TOTAL) REINFORCED WITH 6x6-2.9xW2.9 WELDED WIRE REINFORCING LOCATED 1" CLEAR BELOW TOP OF SLAB.
05 W10x12 SPACED NOT TO EXCEED 3'-0" ON CENTER TO SUPPORT FLOOR SLAB
06 HSS2 1/2x2 1/2x 1/4 SPACED NOT TO EXCEED 3'-0" ON CENTER TO SUPPORT FLOOR SLAB.
18 HSS6x3x5/16 ELEVATOR GUIDE RAIL SUPPORT POSTS.
19 REFER TO "TYPICAL CELING MOUNTED GAS/ELECTRIC COLUMN DETAILS".
X2 EXISTING STEEL COLUMN.



1 SECOND FLOOR FRAMING PLAN
1/8" = 1'-0"

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SECOND FLOOR FRAMING PLAN

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S-121

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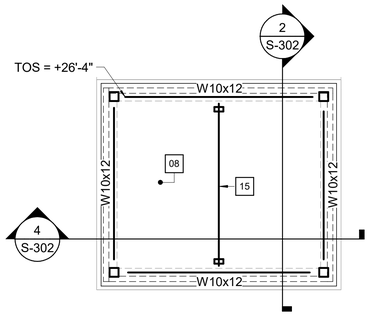
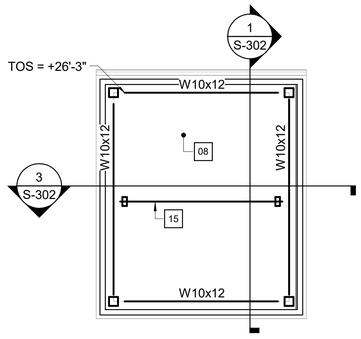


HIGH ROOF PLAN ELEVATOR 2

2 1/4" = 1'-0"



HIGH ROOF PLAN ELEVATOR 3

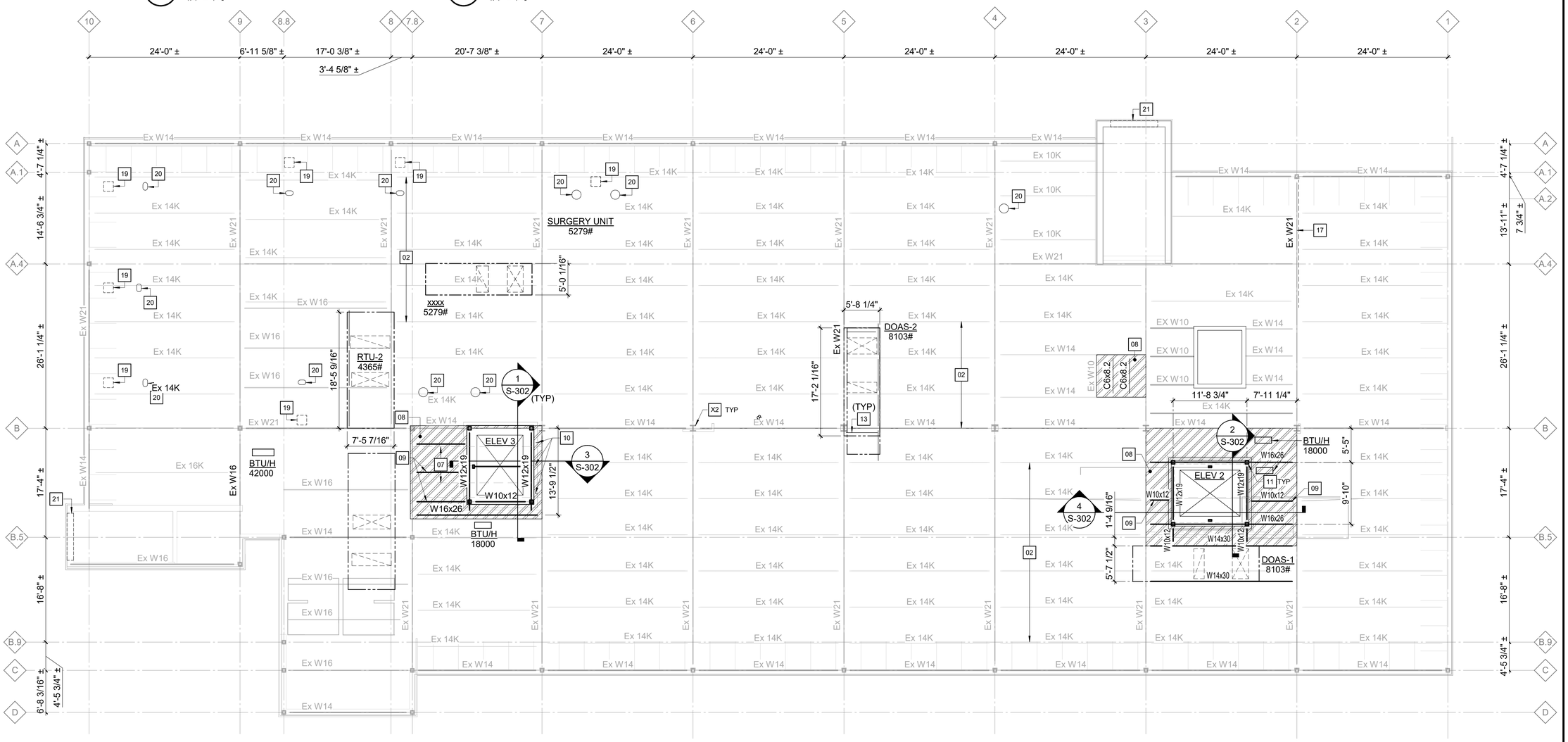
3 1/4" = 1'-0"

FRAMING PLAN NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
2. TOP OF FINISHED FLOOR ELEVATION MUST BE: SECOND FLOOR ELEVATION = 12'-9"±
3. EXISTING FLOOR JOISTS ARE ASSUMED TO BE EQUALLY SPACED NOT TO EXCEED 3'-0"± ON-CENTER TO SUPPORT STEEL DECK.
4. EXISTING SLAB IS ASSUMED TO BE 2 1/2" CONCRETE FLOOR SLAB ON 1 1/2 FORM DECK. (4"TOTAL)
5. EXISTING ROOF FRAMING IS ASSUMED TO BE EQUALLY SPACED NOT TO EXCEEDE 5'-9'± ON CENTER TO SUPPORT STEEL ROOF DECK.
6. COORDINATE AND VERIFY ALL MEMBER LOCATIONS, DIMENSIONS, WEIGHTS, OPENING SIZES, AND CURB DIMENSIONS FOR ALL MECHANICAL EQUIPMENT WITH THE ACTUAL EQUIPMENT FURNISHED. INCLUDE THIS INFORMATION ON THE JOIST AND STRUCTURAL STEEL SHOP DRAWINGS.
7. BOTTOM OF EXISTING ROOF DECK ELEVATION IS ASSUMED TO BE +24'-10"±

KEY NOTES

02	STRENGTHEN EXISTING JOIST PER THE "TYPICAL EXISTING JOIST STRENGTHENING DETAILS" ON SHEET S-502.
07	REMOVE EXISTING ROOF DECK AND JOISTS FOR INSTALLATION OF NEW ELEVATOR. TEMPORARILY SHORE EXISTING ROOF DECK AND ROOF FRAMING AS REQUIRED UNTIL PERMANENT SUPPORTS ARE IN PLACE.
08	1 1/2" STEEL ROOF DECK.
09	W10x12 SPACED NOT TO EXCEED 5'-9" ON CENTER TO SUPPORT STEEL ROOF DECK.
10	C6x8.2 SPACED NOT TO EXCEED 5'-9" ON CENTER TO SUPPORT STEEL ROOF DECK.
11	HSS6x6x1/4 STUB COLUMN TO SUPPORT ELEVATOR ROOF.
13	L4x4x1/4 ANGLE FRAMING BENEATH ROOFTOP MECHANICAL UNIT.
15	W8x21 ELEVATOR HOIST BEAM. COORDINATE WITH THE ARCHITECTURAL DRAWINGS FOR THE BOTTOM OF STEEL ELEVATION.
17	OPERABLE PARTITION. REFERENCE "TYPICAL MOVABLE PARTITION SUPPORT DETAIL" ON SHEET S-501.
19	REFER TO "TYPICAL CELING MOUNTED GAS/ELECTRIC COLUMN DETAILS".
20	REFER TO "TYPICAL SURGICAL LIGHT SUPPORT DETAILS".
21	REFER TO "TYPICAL WINDOW INFILL DETAIL".
X2	EXISTING STEEL COLUMN.



ROOF FRAMING PLAN

1 1/8" = 1'-0"

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COA
NORTH CAROLINA ENGINEERING CORPORATION C-4360 WILLIAMSPORT, PA STRUCTURAL ENGINEERS

EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR,
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PROJECT NUMBER: Project Number

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ROOF FRAMING PLAN

SHEET
S-131

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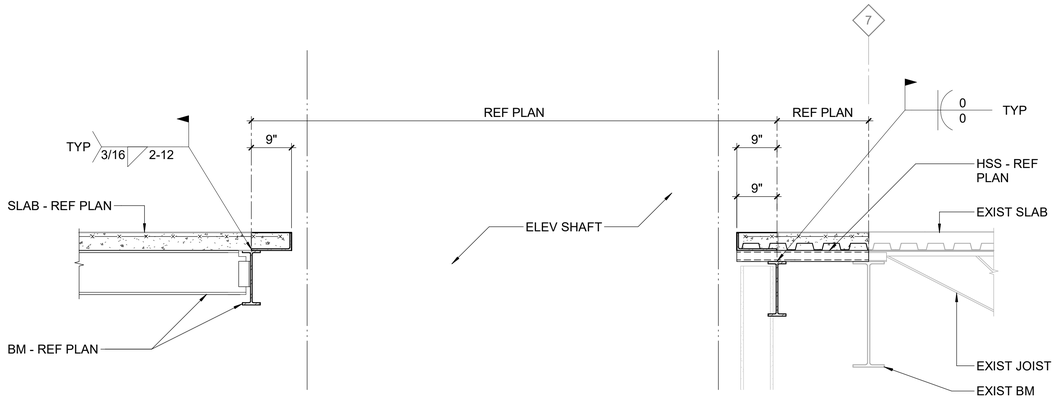
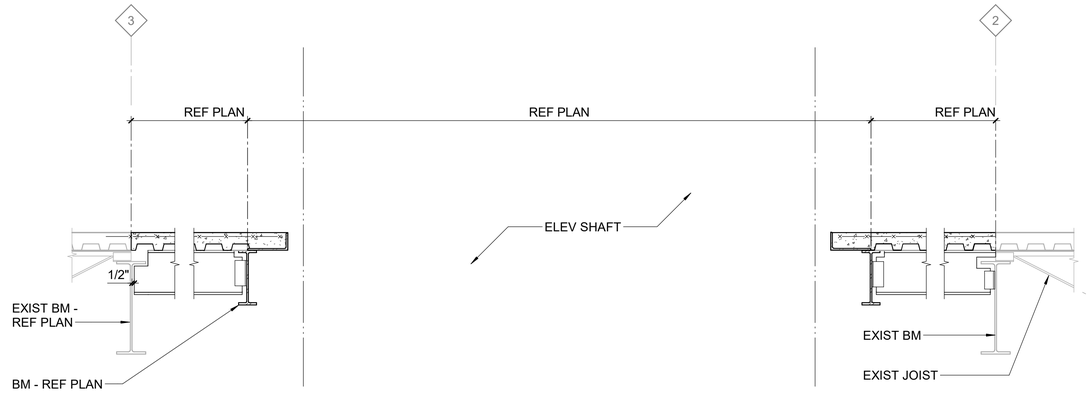


4 SECTION
3/4" = 1'-0"



5 SECTION
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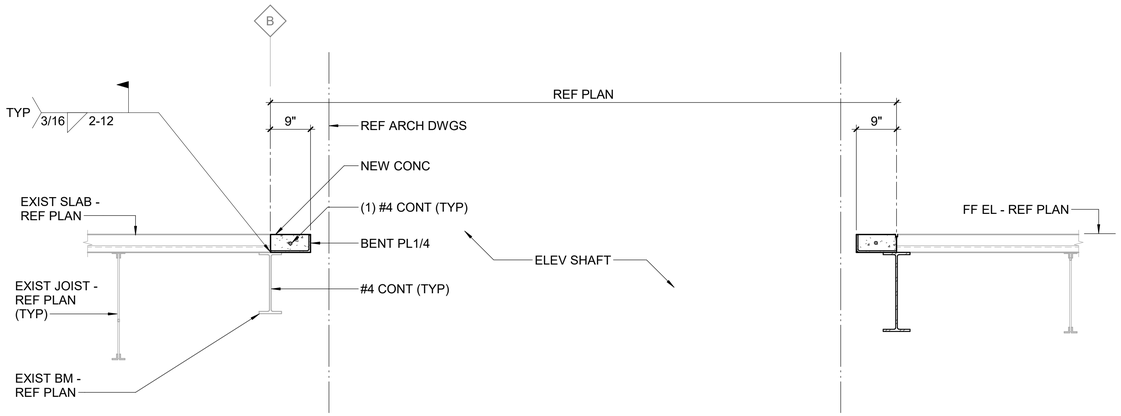

2 SECTION
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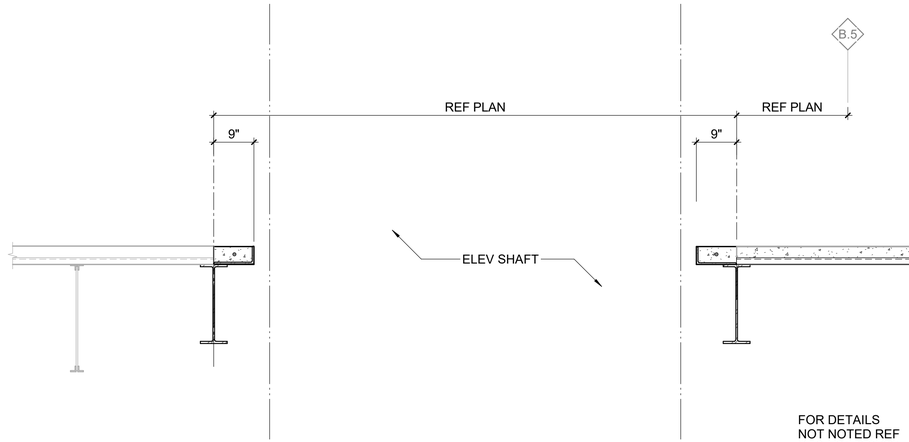
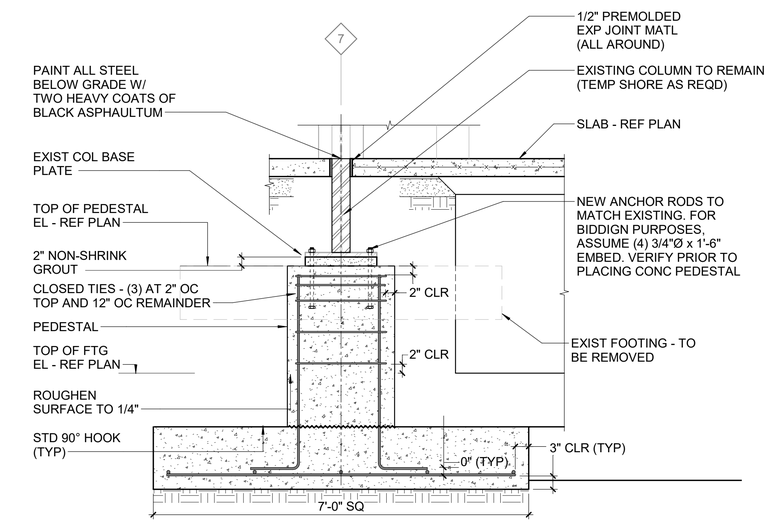


FOR DETAILS NOT NOTED REF SECTION 2/S-301

3 SECTION
3/4" = 1'-0"



1 SECTION
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NORTH CAROLINA ENGINEERING CORPORATION C-4360 STRUCTURAL ENGINEERS

EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR,
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PROJECT NUMBER: Project Number

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09/20/2023

SHEET REVISION SCHEDULE:
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SECTIONS

SHEET
S-301

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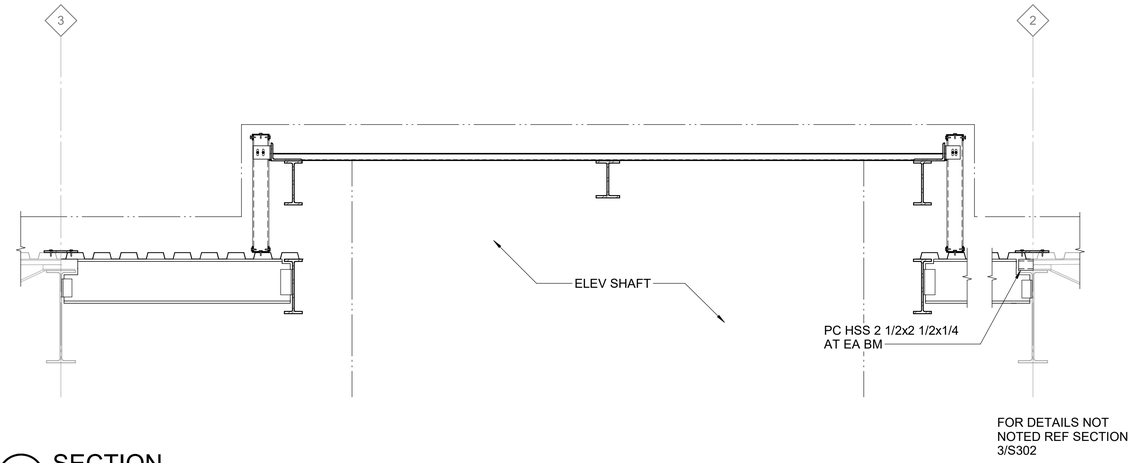

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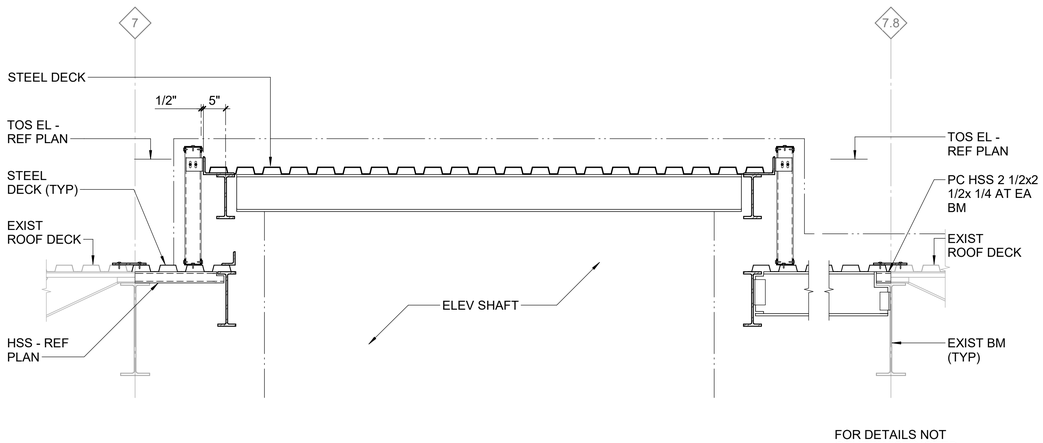

3 SECTION
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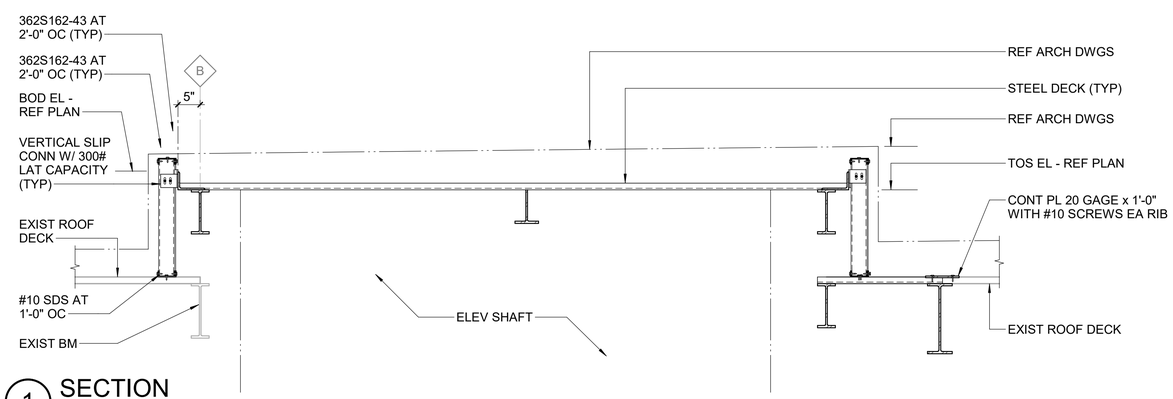
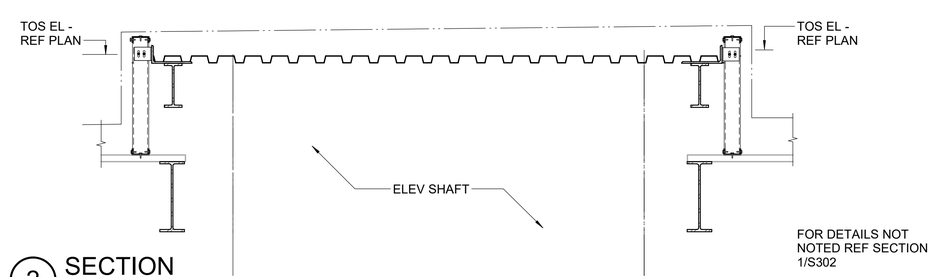


1 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"

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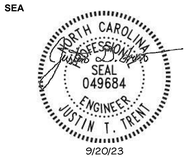

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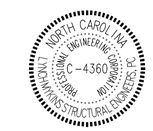

EASTERN CAROLINA
VETERINARY REFERRAL CLINIC
RENOVATION
5051 NEW CENTRE DR,
WILMINGTON, NC 28403

PROJECT NUMBER: Project Number

SUBMISSION
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ORIGINAL ISSUE
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SECTIONS

SHEET
S-302

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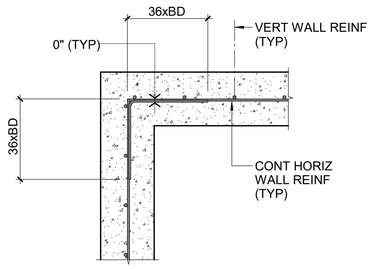
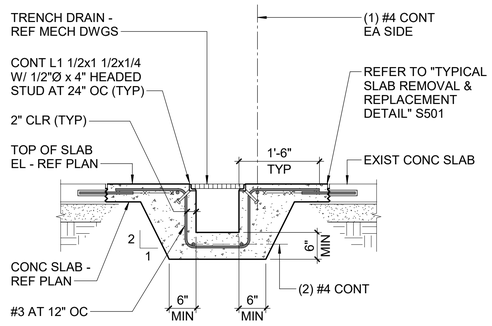
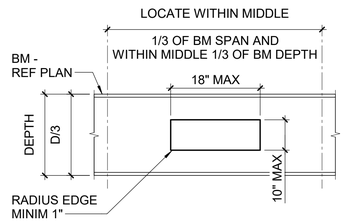


CORNER

7 TYPICAL DETAIL AT CORNERS AND INTERSECTIONS OF CONCRETE WALLS
NTS



8 TYPICAL TRENCH DRAIN DETAIL
NTS



9 TYPICAL BEAM PENETRATION DETAIL
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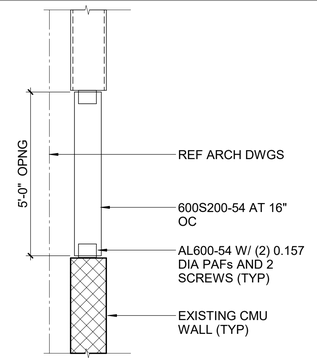
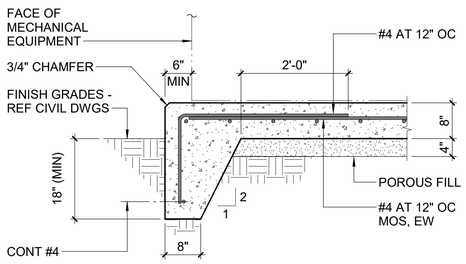


10 TYPICAL CIRCULAR OPENING INFILL DETAIL
NTS

NOTES:
1. REF MECHANICAL/CIVIL DRAWINGS FOR DIMENSIONS AND LOCATION OF CONCRETE PAD.
2. COORDINATE ANY REQUIRED ANCHORAGE EMBEDS NEEDED FOR THE EQUIPMENT PLACED ON PAD.



4 TYPICAL EXTERIOR EQUIPMENT PAD DETAIL
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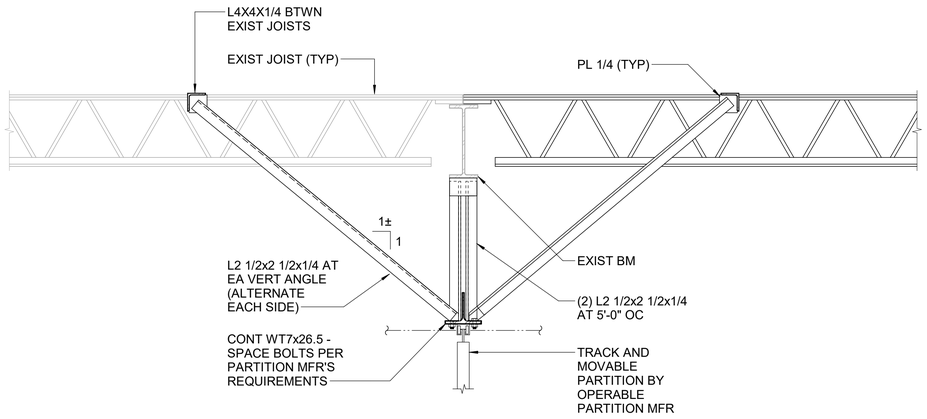

5 TYPICAL MOVABLE PARTITION SUPPORT DETAIL
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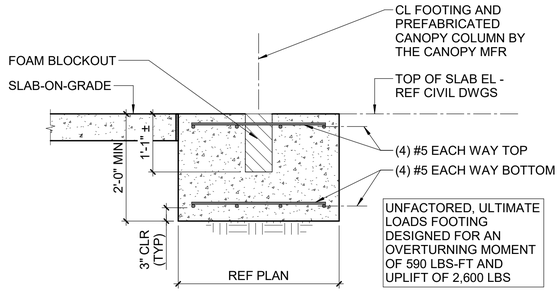

6 TYPICAL CANOPY COLUMN FOOTING DETAIL
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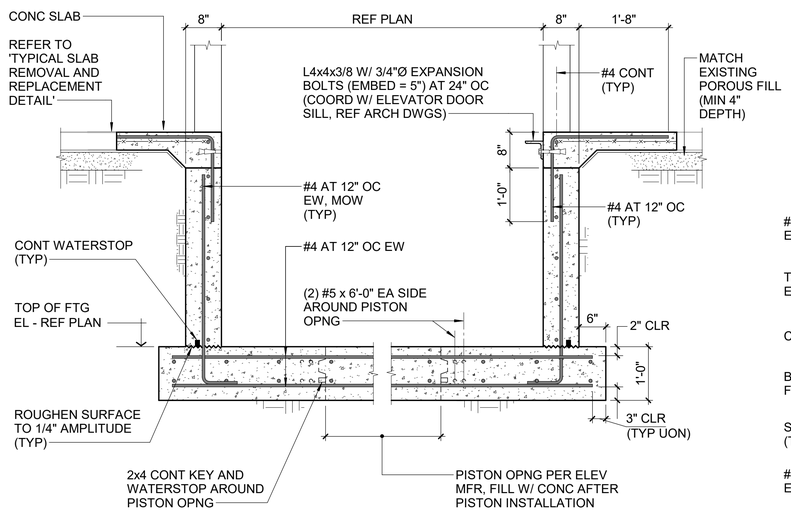

1 TYPICAL ELEVATOR PIT DETAIL
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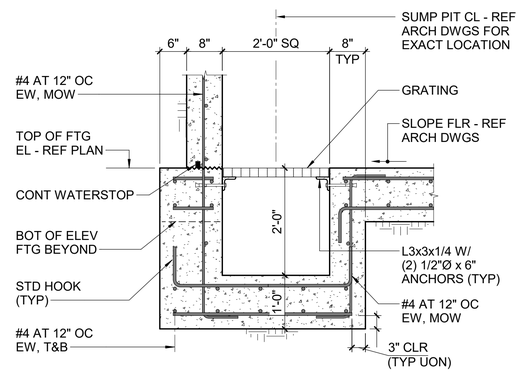
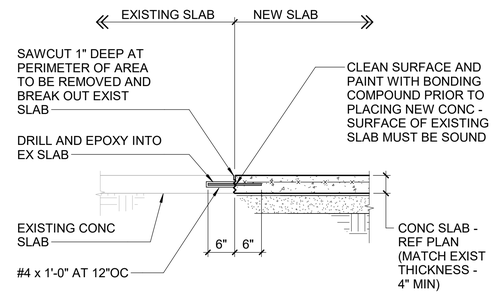


2 TYPICAL ELEVATOR SUMP PIT DETAIL
NTS



3 TYPICAL SLAB REMOVAL & REPLACEMENT DETAIL
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NORTH CAROLINA PROFESSIONAL SEAL 049684 ENGINEER JUSTIN T. TRENT
9/20/23

COA

NORTH CAROLINA ENGINEERING CORPORATION C-4360 REGISTERED STRUCTURAL ENGINEERS

EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR, WILMINGTON, NC 28403

PROJECT NUMBER: Project Number

SUBMISSION
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ORIGINAL ISSUE
09/20/2023

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TYPICAL DETAILS

SHEET
S-501

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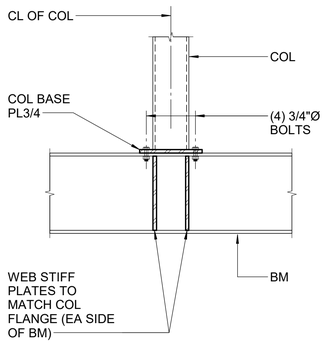
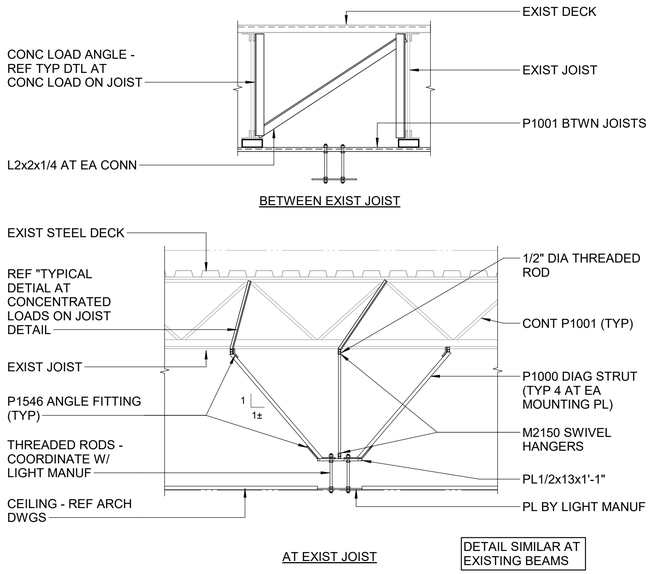
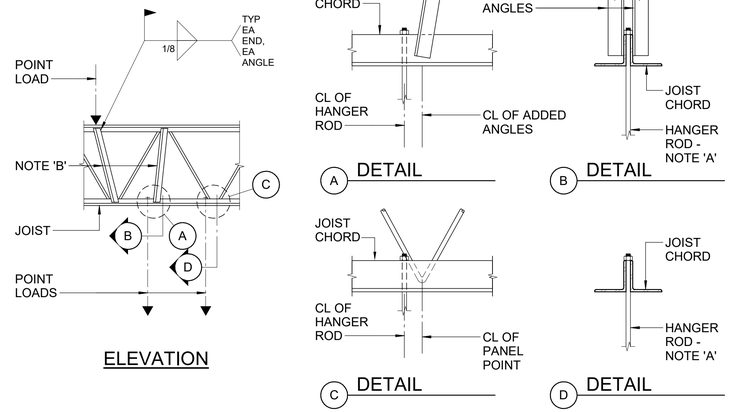


6 TYPICAL TRANSFER BEAM DETAILS
NTS



7 SURGICAL LIGHT SUPPORT DETAILS
NTS



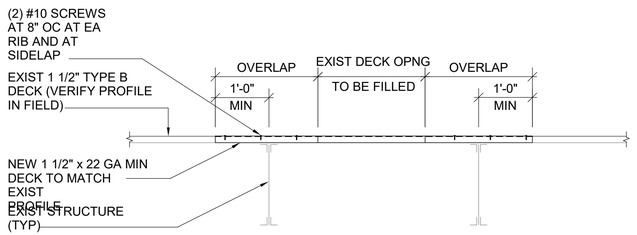
NOTES :

A. POSITION HANGER RODS ON JOIST CENTERLINES BETWEEN CHORD JOIST MEMBERS. DO NOT USE C-CLAMPS TO CHORD ANGLE LEGS.

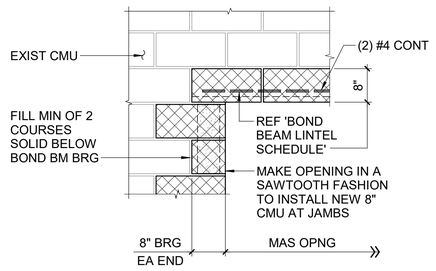
B. WHERE CONCENTRATED LOADS EXCEEDING 300 LBS ARE APPLIED TO TOP CHORDS OR HUNG FROM BOTTOM CHORDS BETWEEN PANEL POINTS, ADD (2) L1x1x1/8 TO PANEL POINT AS SHOWN FOR K SERIES JOISTS.

C. DETAIL APPLIES TO NEW AND EXISTING JOISTS.

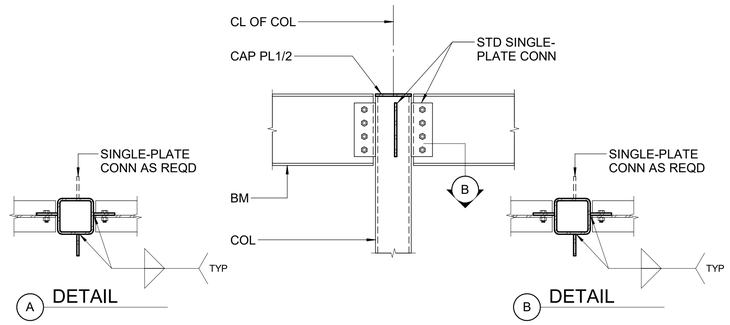
8 TYPICAL DETAIL AT CONCENTRATED LOADS ON K-SERIES JOISTS
NTS



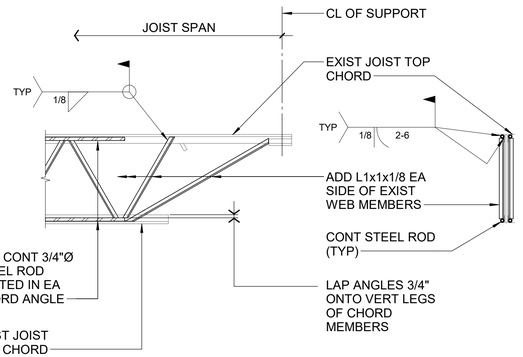
3 TYPICAL ROOF DECK INFILL DETAIL
NTS



4 TYPICAL LINTEL BEARING ON EXISTING MASONRY DETAIL
NTS



5 TYPICAL BEAM TO HSS COLUMN CONNECTION DETAILS
NTS



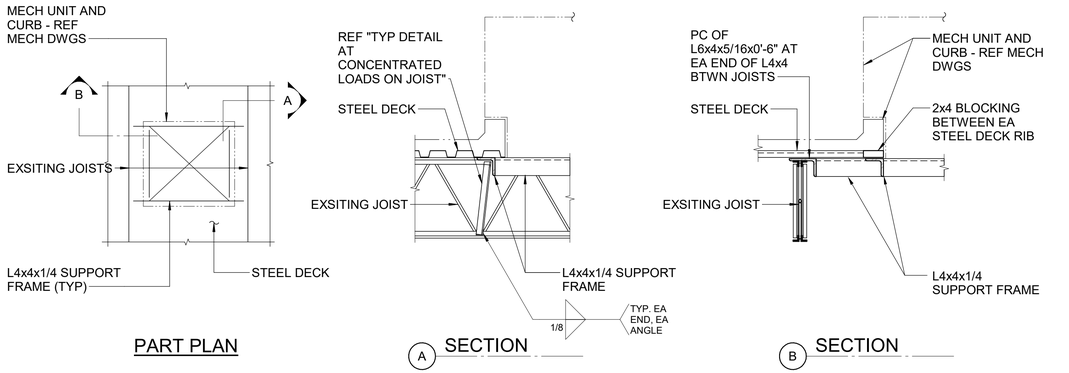
NOTES :

A. CONTINUOUS ROD LENGTHS MUST BE EQUAL TO 3/4 OF JOIST SPAN MEASURED CENTER TO CENTER OF SUPPORTS. CENTER RODS ABOUT JOIST MID SPAN.

B. PROVIDE ADDED WEB ANGLES AT EACH END OF JOIST EXTENDING FROM SUPPORT CENTERLINE TO A DISTANCE OF 1/4 THE SUPPORT JOIST SPAN.

C. DO NOT SUPPORT ANY NEW LOAD (CEILING, DUCTS, LIGHTS, PLUMBING, ELECTRICAL, EQUIPMENT, ETC) ON EXISTING JOISTS UNTIL ALL REINFORCING IS INSTALLED.

1 TYPICAL EXISTING JOIST STRENGTHENING DETAILS
NTS



2 TYPICAL ROOF TOP MECHANICAL UNIT SUPPORT DETAILS
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SEA
NORTH CAROLINA PROFESSIONAL SEAL 049684 ENGINEER JUSTIN T. TRENT
9/20/23

COA
NORTH CAROLINA ENGINEERING INSTITUTIONAL C-4360 STRUCTURAL

EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR, WILMINGTON, NC 28403

PROJECT NUMBER: Project Number

SUBMISSION
FOR PERMIT

ORIGINAL ISSUE
09/20/2023

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TYPICAL DETAILS

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S-502

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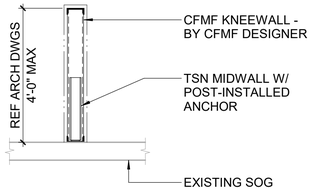
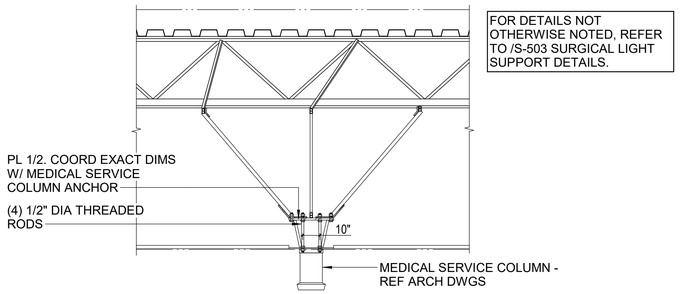
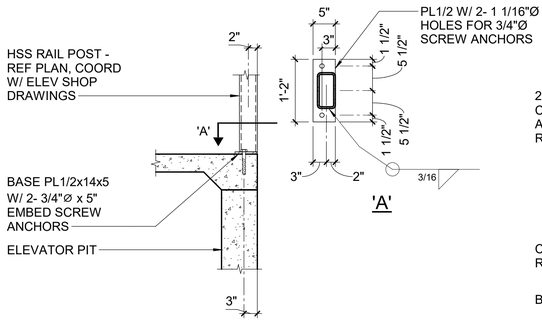


2 TYPICAL KNEEWALL BASE CONNECTION DETAIL
NTS

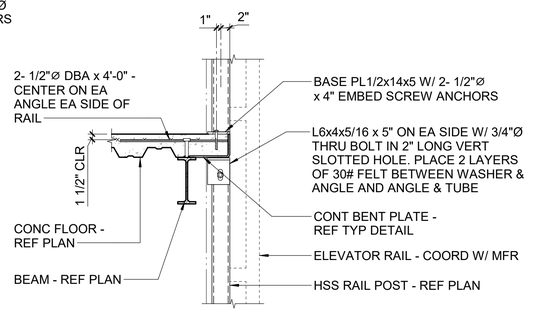


FOR DETAILS NOT OTHERWISE NOTED, REFER TO /S-503 SURGICAL LIGHT SUPPORT DETAILS.

3 TYPICAL CELING MOUNTED GAS/ELECTRIC COLUMN DETAIL
NTS

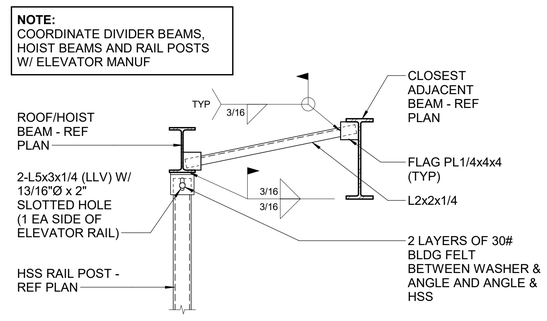


AT ELEVATOR PIT



AT SUPPORTED FLOORS

NOTE:
COORDINATE DIVIDER BEAMS, HOIST BEAMS AND RAIL POSTS W/ ELEVATOR MANUF



AT ROOF / HOIST BEAM

1 TYPICAL ELEVATOR RAIL POST CONNECTION DETAILS
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S-503

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MECHANICAL DUCTWORK & GENERAL SYMBOLS LEGEND

SYMBOL	ABRV.	DESCRIPTION
	XTR	EXISTING EQUIPMENT OR DUCTWORK TO REMAIN
	RX	EXISTING EQUIPMENT OR DUCTWORK TO BE REMOVED
		NEW EQUIPMENT OR DUCTWORK
		LINED DUCTWORK
		SUPPLY DUCT UP
		SUPPLY DUCT DOWN
		RETURN / EXHAUST DUCT UP
		RETURN / EXHAUST DUCT DOWN
		ROUND DUCT ELBOW UP
		ROUND DUCT ELBOW DOWN
		ELBOW WITH TURNING VANES
R		DUCT OFFSET UP
D		DUCT OFFSET DOWN
		SQUARE / RECTANGULAR DUCT TRANSITION
		SQUARE/RECTANGULAR TO ROUND DUCT TRANSITION
	CD	CEILING DIFFUSER. - ROUND NECK - # THROW DIRECTIONS
	SD	SUPPLY DIFFUSER - RECTANGULAR - MULTI-DIRECT.
	SG/EG	SIDEWALL SUPPLY or RETURN GRILLE - (R = REGISTER)
	LD	LINEAR DIFFUSER. SEE SCHEDULE FOR INFORMATION.
	RG/EG	RETURN or EXHAUST GRILLE - (R = REGISTER)
		FLEXIBLE DUCT
	FLEX	FLEXIBLE DUCT CONNECTION (TO EQUIPMENT)
		SPIN TAP WITH VOLUME CONTROL DAMPER
AD	AD	DUCT ACCESS DOOR
	VD	VOLUME CONTROL DAMPER
BDD	BDD	BACKDRAFT DAMPER
M	MD	MOTORIZED DAMPER
	FD	VERTICAL FIRE DAMPER (WALL)
	HFD	HORIZONTAL FIRE DAMPER (FLOOR)
	SD	VERTICAL SMOKE DAMPER (WALL)
	HSD	HORIZONTAL SMOKE DAMPER (FLOOR)
	FD/SD	COMBINATION VERTICAL FIRE & SMOKE DAMPER
	HFD/SD	COMBINATION HORIZONTAL FIRE & SMOKE DAMPER
	RD	CEILING RADIATION FIRE DAMPER
DD	DD	DUCT SMOKE DETECTOR
T		THERMOSTAT
H		HUMIDISTAT
SP		STATIC PRESSURE SENSOR
CO_2		CARBON DIOXIDE SENSOR
CO		CARBON MONOXIDE SENSOR
TAG #		EQUIPMENT UNIT DESIGNATION
TAG CFM		DIFFUSER, REGISTER & GRILLE UNIT DESIGNATION W/ CFM
U		UNDER CUT DOOR
L		LOUVERED DOOR
		CONNECTION POINT, NEW TO EXISTING
		DISCONNECTION POINT WITH CAP
1		DRAWING KEYNOTE
1		DEMOLITION DRAWING KEYNOTE
1		REVISION NUMBER
	RA or EA	RETURN OR EXHAUST AIR
	SA or OA	SUPPLY OR OUTSIDE AIR

MECHANICAL PIPING SYMBOLS LEGEND

SYMBOL	ABRV.	DESCRIPTION
HWS	HWS	HEATING WATER SUPPLY PIPING
HWR	HWR	HEATING WATER RETURN PIPING
CWS	CWS	CONDENSER WATER SUPPLY PIPING
CWR	CWR	CONDENSER WATER RETURN PIPING
CHWS	CHWS	CHILLED WATER SUPPLY PIPING
CHWR	CHWR	CHILLED WATER RETURN PIPING
G	G	NATURAL GAS PIPING
D	D	CONDENSATE DRAIN PIPING
R	R	REFRIGERANT PIPING
LPS	LPS	LOW PRESSURE STEAM SUPPLY PIPING (0-15 PSIG)
MPS	MPS	MEDIUM PRESSURE STEAM SUPPLY PIPING (16-60 PSIG)
HPS	HPS	HIGH PRESSURE STEAM SUPPLY PIPING (61 TO 200 PSIG)
LPR	LPR	LOW PRESSURE STEAM CONDENSATE RETURN
MPR	MPR	MEDIUM PRESSURE STEAM CONDENSATE RETURN
HPR	HPR	HIGH PRESSURE STEAM CONDENSATE RETURN
PC	PC	PUMPED STEAM CONDENSATE
V	V	VENT PIPING
CW	CW	CITY (DOMESTIC) WATER
FOS	FOS	FUEL OIL SUPPLY PIPING
FOR	FOR	FUEL OIL RETURN PIPING
		ELBOW TURNED UP
		ELBOW TURNED DOWN
		BOTTOM PIPE CONNECTION
		TOP PIPE CONNECTION
		PIPING CAP
		UNION
		FLANGED CONNECTION
		CONCENTRIC PIPE REDUCER
		ECCENTRIC PIPE REDUCER
		FLOW ARROW
	BV	BALL VALVE
	BFV	BUTTERFLY VALVE
	PV	PLUG VALVE
	GV	GATE VALVE
	GBV	GLOBE VALVE
	CV	CHECK VALVE
		2-WAY CONTROL VALVE
		3-WAY CONTROL VALVE
		CIRCUIT SETTER (BALANCING VALVE)
		STRAINER (W/ BALL VALVE AND CAP)
		BACKFLOW PREVENTER
		PRESSURE REGULATING VALVE
		PRESSURE RELIEF VALVE
		TRIPLE DUTY VALVE WITH MEASURING CONNECTIONS
		PRESSURE GAGE W/ SHUT-OFF
		FLEXIBLE CONNECTOR
		AUTOMATIC AIR VENT
		HOSE BIB
		PIPE ANCHOR
		PIPE GUIDE
T		STEAM TRAP

MECHANICAL ABBREVIATIONS

ABRV.	DESCRIPTION
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
MBH	1000 - BRITISH THERMAL UNITS
KW	1000-WATT (1 KW = 3,412 BTUH)
SENS.	SENSIBLE
LAT.	LATENT
E.A.T.	ENTERING AIR TEMPERATURE
L.A.T.	LEAVING AIR TEMPERATURE
E.W.T.	ENTERING WATER TEMPERATURE
L.W.T.	LEAVING WATER TEMPERATURE
DB/WB	DRY BULB / WET BULB
IN. W.G.	INCHES WATER GAUGE (AIR)
FT. W.G.	FEET WATER GAUGE (HYDRONIC)
E.S.P.	EXTERNAL STATIC PRESSURE
T.S.P.	TOTAL STATIC PRESSURE
TG	TRANSFER GRILLE
TR	TOP REGISTER
(E)	EXISTING
R / R	REMOVE EXISTING ITEM & RELOCATE TO NEW LOCATION
UNO	UNLESS NOTED OTHERWISE
NTS	NOT TO SCALE
NIC	NOT IN CONTRACT
∅ OR	PHASE
∅	DIAMETER
AFF	ABOVE FINISHED FLOOR
ELEV.	ELEVATION FROM DATUM

NOTES:
1. NOT ALL SYMBOLS AND ABBREVIATIONS ARE IN USE FOR THIS PROJECT.

GENERAL MECHANICAL NOTES (ALL DRAWINGS):

1. MECHANICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND REQUIRED BY CODE.
2. THE CONTRACT DOCUMENT DRAWINGS ARE DIAGRAMMATIC ONLY, AND ARE INTENDED TO CONVEY THE SCOPE AND GENERAL ARRANGEMENT OF WORK.
3. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR BY FIELD INSPECTION PRIOR TO BIDDING. ANY INTERFERENCES TO INSTALLATION SHALL BE NOTED AND THE CONTRACTOR SHALL INCLUDE IN HIS BID PRICE THE COST TO AVOID OR RELOCATE ALL ITEMS, INCLUDING ITEMS OF OTHER TRADES, THAT INTERFERE. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. ALL OFFSETS, RISES, TRANSITIONS AND DROPS IN DUCTS AND PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
4. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS OR PIPE ADAPTERS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
5. PROVIDE ACCESS IN WALLS & CEILINGS TO ACCESS ALL EQUIPMENT, VALVES, CONTROL DEVICES, VOLUME DAMPERS, AND FIRE/SMOKE DAMPERS.
6. FOLLOW MANUFACTURE'S RECOMMENDATIONS FOR INSTALLATION OF EQUIPMENT. ALSO REFER TO TYPICAL DETAILS FOR INSTALLATION OF EQUIPMENT.
7. ALL MATERIALS FURNISHED, AND ALL WORK PERFORMED BY THE MECHANICAL CONTRACTOR SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS, INCLUDING BUT NOT LIMITED TO THE LATEST APPLICABLE EDITIONS OF NFPA, IEEE, OSHA, SMACNA, INTERNATIONAL MECHANICAL CODE, INTERNATIONAL BUILDING CODE, AND ANY STATE, COUNTY, AND LOCAL CODES.
8. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED SUFFICIENTLY AND ANY ADDITIONAL SUPPORT SHALL BE PROVIDED AS REQUIRED TO PROVIDE VIBRATION FREE AND SAFE INSTALLATION. ALL MISCELLANEOUS STEEL REQUIRED AND/OR AS SHOWN IN DETAILS FOR DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. SUPPORT ALL DUCTWORK, PIPING AND EQUIPMENT MOUNTED ABOVE THE CEILING DIRECTLY FROM THE STRUCTURE. ALL ATTACHMENTS TO BEAMS, TRUSSES, OR JOIST SHALL BE MADE AT PANEL POINTS WITH BEAM CLAMPS MEETING MSS STANDARDS.
9. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC AND ELECTRICAL SPECIFICATIONS FOR THIS PROJECT.

DUCTWORK GENERAL NOTES (ALL DRAWINGS):

1. ALL DUCTWORK INDICATED IS SCHEMATIC AND SHOW ONLY RELATIVE POSITIONS. PROVIDE OFFSETS, RISES, TRANSITIONS AND ELBOWS AS NEEDED TO INSTALL PROPERLY.
2. PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL HVAC DEVICES, FANS, DAMPERS, (FIRE, SMOKE, BALANCING) COILS, AND TERMINAL EQUIPMENT.
3. LOCATIONS OF TERMINAL DEVICES, AIR OUTLETS AND INLETS ARE APPROXIMATE. LOCATE PER THE ARCHITECTURAL DRAWINGS AND TO AVOID OTHER TRADE'S WORK. COORDINATE LOCATIONS WITH OTHER TRADES. CONSULT ARCHITECT/ENGINEER FOR CLARIFICATION IF CONFLICTS OCCUR.
4. DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE FACE-TO-FACE DIMENSIONS AND DO NOT INCLUDE DUCT LINER WHERE SPECIFIED. INCREASE DIMENSIONS OF LINED DUCTWORK TO PROVIDE FREE INSIDE AREA EQUAL DIMENSIONS SHOWN. REFER TO THE SPECIFICATIONS FOR LOCATION OF LINED DUCTWORK.
5. FINAL CONNECTIONS FROM HIGH VELOCITY MAIN DUCTS TO AIR TERMINAL UNITS SHALL BE MADE WITH FLEXIBLE DUCTWORK NOT EXCEEDING 3 FEET IN LENGTH. CONNECTIONS BETWEEN LOW VELOCITY DUCTWORK AND/OR TERMINAL UNITS TO AIR INLETS AND OUTLETS SHALL BE MADE WITH FLEXIBLE DUCTWORK NOT EXCEEDING 6 FEET IN LENGTH. LONGER DUCT RUN OUTS SHALL BE CONSTRUCTED OF HARD DUCT OF THE SAME MATERIAL SPECIFIED FOR THE SYSTEM SERVED AND INSULATED AS SPECIFIED FOR THAT SYSTEM. FLEXIBLE DUCTWORK SHALL BE OF THE PRESSURE CLASS AND FACTORY INSULATED AS SPECIFIED FOR THE SYSTEM WHERE INSTALLED.
6. FLEXIBLE DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS WITHOUT ANY SAGS, SHARP TURNS OR KINKS. AT THE MINIMUM, THE FLEXIBLE DUCTWORK SHALL BE FASTENED TO THE HARD DUCT BY A NYLON STRAP SECURED BY SHEETMETAL SCREWS TO PREVENT SLIPPING OFF FROM COLLAR.
7. PROVIDE VOLUME DAMPERS AT EACH AIR OUTLET, AIR INLET AND TERMINAL DEVICE AND AT EACH BRANCH TAKE-OFF CONNECTION FROM THE MAIN.

MECHANICAL PIPING GENERAL NOTES (ALL DRAWINGS):

1. ALL PIPING SHOWN HAS BEEN DRAWN SCHEMATICALLY FOR CLARITY AND SHOW ONLY RELATIVE POSITIONS. PROVIDE OFFSETS AND ELBOWS AS NEEDED TO INSTALL PROPERLY AND TO AVOID INTERFERENCES.
2. ALL NEW OR REPLACED HYDRONIC PIPING SHALL BE INSTALLED SO THAT IT CAN BE COMPLETELY VENTED AT HIGH POINTS AND DRAINED AT LOW POINTS. PROVIDE AIR VENTS AT HIGH POINTS, TYPE PER SPECIFICATIONS. PROVIDE 1/2" BALL VALVES WITH HOSE END CONNECTIONS AND CAPS AT LOW POINT. ALL WATER MAINS SHALL BE INSTALLED LEVEL, UNLESS OTHERWISE NOTES.
3. PROVIDE SERVICE VALVES AT EACH BRANCH CONNECTION FROM MAINS AND AT EACH TERMINAL DEVICE OR EQUIPMENT CONNECTION.
4. CONTRACTOR SHALL PROVIDE NEW VALVES ON EXISTING PIPING WHERE THE PIPES ARE TO BE REMOVED SO THAT THE SYSTEM DOES NOT HAVE TO BE DRAINED WHILE REMOVING EXISTING UNITS, INSTALLING NEW UNITS AND MAKING CONNECTIONS TO NEW EQUIPMENT.

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CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC
RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

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MECHANICAL DATA SHEET

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MECHANICAL SPECIFICATIONS

MECHANICAL GENERAL CONDITIONS (230010)

A. GENERAL

1. CONFORM TO ALL GENERAL AND SPECIAL CONDITIONS OF CONTRACT AS SPECIFIED BY ARCHITECT AND/OR OWNER.

2. 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: INTERNATIONAL MECHANICAL CODE (IMC), INTERNATIONAL PLUMBING CODE (IPC), INTERNATIONAL ENERGY CODE, NATIONAL ELECTRIC CODE, NFPA, UNDERWRITERS LABORATORY (UL), IRI, FM, SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" GUIDELINES, DETAILS, & MODEL SPECIFICATION, ASHRAE. WHERE CONFLICTS EXIST BETWEEN CODES, STANDARDS OR THIS SPECIFICATION THE HIGHER REQUIREMENT SHALL APPLY. 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.

3. ALL SPECIFICATIONS AND DRAWINGS, I.E., ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ARE COMPLIMENTARY 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. DRAWINGS ARE DIAGRAMMATIC. CONFIRM ALL 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.

4. VISIT SITE, CHECK FACILITIES AND CONDITIONS MAKE ALL NECESSARY OBSERVATIONS, MEASUREMENTS, NOTE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED, AND TAKE ALL ITEMS INTO CONSIDERATION IN BID.

5. EACH CONTRACTOR SHALL PROVIDE FOR HIS OWN CLEAN-UP, REMOVAL AND LEGAL DISPOSAL 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.

6. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN.

7. NO PIPING, DUCTWORK, CONTROLS, ETC., SHALL BE INSTALLED OR ROUTED ABOVE ELECTRICAL PANELS AND EQUIPMENT OR THROUGH ELEVATOR ROOMS.

8. THE CONTRACTOR SHALL COORDINATE AND OBTAIN A WRITTEN LISTING OF ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT FROM ELECTRICAL CONTRACTOR PRIOR TO ORDERING OF EQUIPMENT. NO ADDITIONAL PAYMENT WILL BE MADE FOR LACK OF CONTRACTOR COORDINATION OF ELECTRICAL CHARACTERISTICS.

9. 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 EXTRA COST TO THE OWNER, AS THOUGH FULLY DETAILED ON PLANS AND/OR DESCRIBED IN THE SPECIFICATIONS.

10. 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 PHASING REQUIREMENTS.

11. IN CASES 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.

12. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO INSTALL THE HEATING, VENTILATION AND AIR CONDITIONING SYSTEM SO AS TO INSURE 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 SYSTEM OR EQUIPMENT AS REQUIRED.

13. OBTAIN PERMITS AND PAY ALL FEES. ARRANGE FOR ALL REQUIRED INSPECTIONS AND APPROVALS.

B. DEMOLITION

1. DISCONNECT, DISASSEMBLE, CAP, PLUG AND REMOVE ALL MEP ELEMENTS (PIPING, DUCTS, ELECTRICAL DEVICES, WIRING, CONDUIT, EQUIPMENT, HANGERS, SUPPORTS, ETC) INDICATED ON THE DRAWINGS OR NOT OTHERWISE REQUIRED FOR COMPLETED PRODUCT. NO MEP ELEMENTS ARE TO BE ABANDONED IN PLACE UNLESS SPECIFICALLY NOTED. NOT ALL ITEMS TO BE REMOVED ARE INDICATED ON DRAWING.

2. ALL OPENINGS ON PIPING AND DUCTS THAT REMAIN SHALL BE CAPPED AND PROPERLY SECURED. WIRING SHALL BE DISCONNECTED AT CIRCUIT BREAKERS AND REMOVED AND BREAKERS MARKED "SPARE." REMOVE AND RECLAIM ANY REFRIGERANT IN EXISTING SYSTEMS PRIOR TO DEMOLITION OF ANY EQUIPMENT ACCORDING TO FEDERAL REQUIREMENT.

3. ANY EQUIPMENT DESIGNATED BY OWNER TO BE SALVAGED SHALL BE PROTECTED AND DELIVERED TO AN OWNER DESIGNATED AREA ON SITE.

4. ALL ASBESTOS REMOVAL (IF REQUIRED) WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; NOTIFY ARCHITECT AND OWNER IMMEDIATELY.

C. BASIS OF DESIGN AND SUBSTITUTIONS

1. WHEREVER THE WORDS "APPROVED BY", "APPROVED EQUAL", "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THE SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD".

2. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARDS OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THE CONTRACTOR SHALL SUBMIT THE BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE OWNER, ARCHITECT, AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. IN ADDITION, SAMPLES OF THE PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE OWNER, ARCHITECT, AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION. EQUIPMENT ACCEPTED AS DETAILED BELOW SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.

3. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTION TO THE OWNER, ARCHITECT AND ENGINEER AT BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE OWNER, ARCHITECT, AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF THE PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS DATE.

4. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL ALLIED TRADES INVOLVED.

5. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE OWNER, ARCHITECT, AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT THEIR COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.

6. IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BEAR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE PROVIDED.

7. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND U.L. LABELED.

D. 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. NEATLY SAW CUT ALL RECTANGULAR OPENINGS. SET SLEEVE THROUGH OPENING, AND FINISH PATCH OR PROVIDE TRIM FLANGE AROUND OPENING. CORE DRILL AND SLEEVE ALL ROUND OPENINGS. DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S APPROVAL.

2. 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. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER.

3. ALL CONTRACTORS SHALL CONFIRM WITH OWNER, PRIOR TO BID, TIMES AVAILABLE FOR NOISE PRODUCING WORK SUCH AS CUTTING AND CORE DRILLING OF FLOORS, WALLS, ETC., AS WELL AS TIMES FOR WORK WHICH REQUIRE ACCESS INTO ADJOINING TENANT SPACES. INCLUDE ANY PREMIUM TIME IN BID.

4. EXACT LOCATION OF ROOFTOP EQUIPMENT SHALL BE APPROVED BY OWNER'S STRUCTURAL ENGINEER.

5. INFORMATION REGARDING REQUIRED PIPE OPENINGS IN WALLS, FLOORS, CHASES, ETC., AND CONCRETE EQUIPMENT PADS OR FOUNDATIONS SHALL BE GIVEN TO THE GENERAL CONTRACTOR BY THIS CONTRACTOR PRIOR TO THE CONSTRUCTION PERIOD. IF THIS CONTRACTOR FAILS TO COMPLY WITH THIS REQUEST, OR IF INCORRECT INFORMATION IS GIVEN, THE NECESSARY CUTTING AND PATCHING WILL BE PERFORMED BY THE GENERAL CONTRACTOR, AT THIS CONTRACTOR'S EXPENSE.

E. WARRANTY

1. FULLY WARRANT ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE.EXTEND ALL MANUFACTURER'S WARRANTIES TO OWNER, INCLUDING ALL EXTENDED WARRANTIES ON HVAC EQUIPMENT.

2. REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ALL ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD. IN THE CASE OF REPLACEMENT OR REPAIR DUE TO FAILURE WITHIN THE WARRANTY PERIOD, THE WARRANTY ON THAT PORTION OF THE WORK SHALL BE EXTENDED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF SUCH REPLACEMENT OR REPAIR.

F. SHOP DRAWING SUBMITTALS

1. SUBMIT SHOP DRAWINGS FOR MECHANICAL EQUIPMENT, FIRE PROTECTION SYSTEMS, DUCTWORK, AND PLUMBING FIXTURES AND EQUIPMENT WITH ADEQUATE DETAILS AND SCALES TO CLEARLY SHOW CONSTRUCTION. INDICATE THE OPERATING CHARACTERISTICS FOR EACH REQUIRED ITEM. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO MARK, LOCATION AND USE, USING SAME IDENTIFICATION AS PROVIDED ON DESIGN DRAWINGS.

2. DUCTWORK AND FIRE PROTECTION DRAWINGS SHALL BE FULLY DIMENSIONED BASED ON FIELD VERIFIED BUILDING CLEARANCES AND ARCHITECTURAL CEILING LAYOUTS, AND INDICATE STRUCTURAL, LIGHTING, DUCTWORK AND PIPING AT ALL CRITICAL LOCATIONS.

3. CONTRACTOR SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR REVIEW. DO NOT START WORK OR FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER AND RETURNED TO THE CONTRACTOR.

4. 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.

5. WHERE SUBMITTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON SUBMITTAL OR ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR VARIATIONS.

6. REFER TO VARIOUS SECTIONS FOR LISTING OF SHOP DRAWINGS REQUIRED ON THIS PROJECT.

7. EACH MANUFACTURER OR HIS REPRESENTATIVE MUST CHECK THE APPLICATION OF HIS EQUIPMENT AND CERTIFY AT TIME OF SHOP DRAWING SUBMITTAL THAT EQUIPMENT HAS BEEN PROPERLY APPLIED AND CAN BE INSTALLED, SERVICED AND MAINTAINED WHERE INDICATED ON DRAWINGS. ADVISE ENGINEER IN WRITING WITH SUBMITTAL DRAWINGS OF ANY POTENTIAL PROBLEMS. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ANY CHANGES THAT MIGHT BE NECESSARY BECAUSE OF PHYSICAL CHARACTERISTICS OF EQUIPMENT THAT HAVE NOT BEEN CALLED TO THE ENGINEER'S ATTENTION AT THE TIME OF SUBMITTAL.

G. RECORD DRAWINGS

1. EACH CONTRACTOR OR SUBCONTRACTOR SHALL KEEP ONE (1) COMPLETE SET OF THE CONTRACT WORKING DRAWINGS ON THE JOB SITE ON WHICH HE SHALL REGULARLY RECORD ANY DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS MADE DURING CONSTRUCTION.

2. THESE DRAWINGS SHALL RECORD THE LOCATION OF ALL CONCEALED EQUIPMENT, PIPING, ELECTRIC SERVICE, SEWERS, WASTES, VENTS, DUCTS, CONDUIT AND OTHER PIPING, BY MEASURED DIMENSIONS TO EACH SUCH ITEM FROM READILY IDENTIFIABLE AND ACCESSIBLE WALLS OR CORNERS OF THE BUILDING. PLANS ALSO SHALL SHOW INVERT ELEVATION OF SEWERS AND TOP ELEVATION OF ALL OTHER BELOW-GRADE LINES.

3. RECORD DRAWINGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN RECORDING DEVIATIONS FROM WORKING DRAWINGS AND EXACT LOCATIONS OF CONCEALED WORK.

4. 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.

H. FIRESTOPPING

1. ALL SERVICES THAT PASS THRU FIRE OR SMOKE RATED PARTITIONS, WALLS, FLOORS, SHALL BE FIRESTOPPED. FIRE STOPPING RATING SHALL MATCH PARTITION RATING. ALL FIRE STOPPING SYSTEM SHALL MEET THE REQUIREMENTS OF ASTM E 814,UL 1479, AND BE FACTORY MUTUAL APPROVED.

2. ALL FIRESTOPPING AND/OR SMOKE STOPPING MATERIAL AND INSTALLATION SHALL BE AS MANUFACTURED BY HILTI OR APPROVED EQUAL.

I. ACCESS DOORS & PANELS

1. ACCESS DOORS SHALL BE PROVIDED IN WALLS AND CEILINGS WHERE REQUIRED TO PERMIT PROPER ACCESS TO VALVES AND ANY OTHER SUCH 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. THIS CONTRACTOR SHALL FURNISH ACCESS PANELS TO THE GENERAL CONTRACTOR FOR INSTALLATION.

3. 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 INCH WIDE EXPANDED METAL FOR PLASTERED SURFACES AND PLAIN FLANGED TYPE FRAME FOR TILE, MASONRY OR GYPSUM 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 SCREWDRIVER TYPE WITH STEEL CAMS. ACCESS PANELS SHALL BE 16 INCHES BY 16 INCHES OR LARGER AS MAY BE REQUIRED FOR PROPER ACCESS TO THE DEVICE BEING SERVED.

4. 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 PANEL

J. PAINTING

1. IN FINISHED SPACES, PAINTING OF ALL MECHANICAL EQUIPMENT, APPARATUS, AND PIPING SHALL BE DONE BY THE PAINTING TRADE UNDER THE GENERAL CONTRACTOR SPECIFICATION, EXCEPT WHERE SPECIFIED TO BE DONE BY THE MECHANICAL CONTRACTOR.

K. TEMPORARY HEAT

1. THE COSTS OF TEMPORARY HEAT, INCLUDING UTILITY COSTS, SHALL BE AT THE EXPENSE OF THE HEATING TRADE (MECHANICAL CONTRACTOR). THE HEATING TRADE SHALL PROVIDE THE MEANS OF TEMPORARY HEAT. EXISTING HEATING EQUIPMENT AND SYSTEMS MAY NOT BE USED DURING CONSTRUCTION AS THE SYSTEMS SERVE OTHER OCCUPIED SPACES WITHIN THE BUILDING.

2. THE PERMANENT MECHANICAL SYSTEM SHALL NOT BE USED UNDER ANY EXCEPTIONS TO PROVIDE TEMPORARY HEATING, VENTILATING, EXHAUST OR AIR CONDITIONING UNTIL THE BUILDING IS CLEAN, WITHOUT ANY DUST OR DEBRIS THAT CAN ENTER THE MECHANICAL SYSTEM AND IS READY FOR OCCUPANCY. COVERING THE RETURN/EXHAUST AIR INLETS WITH FILTER MEDIA IS NOT AN ACCEPTABLE ALTERNATIVE TO HAVING AN ENCLOSED, DUST-FREE ENVIRONMENT FOR THE SYSTEMS TO OPERATE IN. IN NO EVENT SHALL THE MECHANICAL CONTRACTOR'S ONE YEAR WARRANTY BE SHORTENED BY THE USE OF PERMANENT EQUIPMENT FOR TEMPORARY HEAT.

REFRIGERANT PIPING (232300)

1. INSTALL REFRIGERANT PIPING BETWEEN CONDENSING UNIT AND DX COIL. PIPING SHALL BE REFRIGERANT GRADE TYPE "L" OR ACR COPPER WITH BRAZED JOINTS. PIPE PER MANUFACTURER'S PIPING DIAGRAMS AND RECOMMENDATIONS.

2. ISOLATE PIPING FROM STRUCTURE WITH ONE (1) INCH INSULATION BETWEEN ALL PIPING AND SUPPORT POINTS.

3. AFTER COMPLETION, PRESSURE TEST PIPING, PURGE AND EVACUATE SYSTEM TWICE AND CHARGE SYSTEM WITH REFRIGERANT AND OIL.

4. INSTALL PIPING IN AS SHORT AND DIRECT ARRANGEMENT AS POSSIBLE TO MINIMIZE PRESSURE DROP. PROVIDE OIL TRAP AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.

5. INSTALL UNIONS TO ALLOW REMOVAL OF SOLENOID VALVES, PRESSURE REDUCING VALVES, EXPANSION VALVES, AND AT CONNECTIONS TO COMPRESSORS AND EVAPORATORS.

6. FILL THE PIPE AND FITTINGS DURING BRAZING, WITH NITROGEN TO PREVENT FORMATION OF SCALE.

PIPE WALL SEALS (230517)

1. WALL PIPE SEALS WITH RUBBER LINKS SHALL BE THUNDERLINE LINK SEAL, OR APPROVED EQUAL. WALL PIPE SEALS WITH INORGANIC MATERIAL LINKS THE PENETRATIONS OF FIRE RATED WALLS SHALL BE THUNDERLINE PYRO-PAC, OR APPROVED EQUAL.

2. SEALS SHALL BE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING SYNTHETIC RUBBER OR INORGANIC MATERIAL LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND WALL OPENING. LINKS SHALL BE LOOSELY ASSEMBLED WITH BOLTS TO FORM A CONTINUOUS BELT AROUND THE PIPE. A PRESSURE PLATE SHALL BE PROVIDED UNDER THE BOLT HEAD AND NUT OF EACH LINK. SEALS SHALL BE CONSTRUCTED TO PROVIDE ELECTRICAL INSULATION BETWEEN THE PIPE AND SLEEVE, THUS REDUCING CHANCES OF CATHODIC REACTION BETWEEN THESE TWO MEMBERS.

3. AFTER THE SEAL ASSEMBLY IS POSITIONED IN THE SLEEVE, THE TIGHTENING OF THE BOLTS SHALL CAUSE THE SEALING ELEMENTS TO EXPAND AND PROVIDE AN ABSOLUTELY WATER-TIGHT SEAL BETWEEN THE PIPE AND SLEEVE.

4. SLEEVES SHALL BE MANUFACTURED FROM HEAVY-WALL, WELDED OR SEAMLESS STEEL PIPE. A FULL CIRCLE CONTINUOUSLY WELDED WATER STOP PLATE SHALL BE PROVIDED TO ASSURE POSITIVE WATER SEALING OF THE SLEEVE. SLEEVE SHALL BE PROTECTED BY A COATING OF ENRICHED RED PRIMER.

DUCTWORK (233113)

1. FABRICATE AND ERECT ALL DUCTWORK TO ASHRAE AND SMACNA STANDARDS FROM G90 GALVANIZED STEEL. COMPLY WITH NFPA BULLETIN 90A REQUIREMENTS.

2. SUPPLY DUCTWORK UPSTREAM OF TERMINAL UNITS AND WITHIN 15' OF ANY AHU FAN OUTLET SHALL HAVE A SMACNA 3" STATIC PRESSURE RATING WITH SEAL CLASS A SEAMS AND JOINTS.

3. GENERAL SUPPLY AND RETURN DUCTWORK HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS B SEAMS AND JOINTS.

4. OUTDOOR AIR INTAKE DUCTWORK SHALL HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS A SEAMS AND JOINTS.

5. ALL EXPOSED ROUND AND OVAL DUCTWORK IN SHALL HAVE SPIRAL LOCKSEAM CONSTRUCTION.

6. ALL RECTANGULAR TRANSFER DUCTWORK SHALL HAVE 1" THICK ACOUSTICAL LINER. LINER SHALL BE FLEXIBLE AND CONSTRUCTED OF GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. THE SURFACE OF THE LINER SHALL HAVE AN ANTIMICROBIAL EROSION RESISTANCE COATING TESTED BY NRTL AND REGISTERED BY THE EPA FOR USE IN HVAC SYSTEMS. MINIMUM R-VALUE SHALL BE 4.2.

7. GENERAL EXHAUST DUCTWORK UNDER 45' IN LENGTH SHALL HAVE A SMACNA 1" STATIC PRESSURE RATING WITH SEAL CLASS B SEAM AND JOINTS. EXHAUST DUCTWORK OVER 45' IN LENGTH SHALL HAVE A SMACNA 2" STATIC PRESSURE RATING WITH SEAL CLASS A SEAM AND JOINTS.

8. EXTERIOR DUCTWORK(ALL DUCTWORK EXPOSED TO AMBIENT CONDITIONS) SHALL BE 2" THICK RIGID PHENOLIC, MINIMUM R-10 INSULATION VALUE, NOT EXCEEDING 25 FLAME SPREAD AND 50 SMOKE DEVELOPED RATINGS, WITH FACTORY-APPLIED WEATHERPROOF JACKETING DESIGNED FOR EXTERIOR INSTALLATION. SUPPORT AND INSTALLATION SHALL BE PER MANUFACTURER'S RECOMMENDATIONS, UTILIZING SUPPORT SYSTEM THAT FULLY ENCLOSES THE DUCT. REINFORCE DUCT AS NECESSARY PER SMACNA HVAC PHENOLIC DUCT CONSTRUCTION STANDARDS. ACCEPTABLE MANUFACTURERS ARE AQC INDUSTRIES' Q-DUCT AND THERMADUCT.

9. ALL FLEXIBLE DUCTWORK SHALL BEAR THE UL 181 LABEL (CLASS 1 AIR DUCT) AND SHALL BE FACTORY INSULATED (1-1/2 ", 0.6 LB., FIBERGLASS) ATCO UPC #076 I OR EQUAL. FLEXIBLE DUCTWORK SHALL COMPLY W/ NFPA 90A, AND NFPA 90B. ALL FLEXIBLE DUCTWORK CONNECTED TO DIFFUSERS SHALL NOT BE LESS THAN THE NECK SIZE OF THE DIFFUSER. MINIMUM FLEXIBLE DUCT BEND RADIUS OF CURVATURE SHALL BE 3 DUCT DIAMETERS, MAXIMUM LENGTH SHALL BE 6'-0", NO MORE THAN THE EQUIVALENT OF TWO (2) 90 DEGREE BENDS WILL BE ACCEPTABLE. FLEXIBLE DUCTS SHALL BE INDEPENDENTLY SUPPORTED FROM THE STRUCTURE AND CONNECTED WITH PLASTIC DRAW BANDS TIGHTENED WITH MANUFACTURER'S TOOL. FLEXIBLE DUCTS ARE NOT PERMITTED IN ROOMS WITHOUT CEILINGS.

10. INCLUDE ALL ACOUSTIC, DOUBLE RADIUS AIRFOIL SHAPED PERFORATED ALUMINUM TURNING VANES, MANUAL DAMPERS, FLEXIBLE CONNECTORS, GRILLES AND DIFFUSERS, ACOUSTIC LINING, AND OTHER SHEET METAL ACCESSORIES FOR THE PROJECT. VOLUME DAMPERS TO BE OF OPPOSED BLADE TYPE CONSTRUCTED IN ACCORDANCE WITH "SMACNA" STANDARDS.

11. ALL BRANCH CONNECTION FITTINGS IN RECTANGULAR DUCTWORK SHALL BE 45 DEGREE TRANSITION TYPE, CONICAL FITTINGS OR SPIN-IN FITTINGS. BUTT FITTINGS ARE NOT ACCEPTABLE.

12. DRYER VENT ROUND DUCTWORK SHALL BE 22 GAUGE (MINIMUM) ALUMINUM CONSTRUCTION WITH DIESTAMPED OR FABRICATED FITTINGS. DUCTS SHALL BE CONSTRUCTED FOR LOW PRESSURE OPERATION WITH LONGITUDINAL SEAM UP. FABRICATED ELBOWS SHALL BE THE MULTI-PIECE TYPE WITH EACH SEGMENT NOT EXCEEDING 22-1/2 DEGREES. THROAT RADIUM OF ALL ELBOWS SHALL BE EQUAL TO THE DUCT DIAMETER. TEES SHALL BE THE CONCEALED TYPE. JOINTS SHALL BE THE SLIP OF FLANGED TYPE. DO NOT USE DRIVE SLIP COUPLING BANDS. MAKE-UP SLIP JOINTS WITH DUCT SEALER. DUCTS FOR EXHAUSTING CLOTHES DRYERS SHALL NOT BE ASSEMBLED WITH SCREWS OR OTHER FASTENING MEANS THAT EXTEND INTO THE DUCT AND THAT WOULD CATCH LINT. PROVIDE NFPA 90 A APPROVED FLEXIBLE DUCT SECTION AT CONNECTION OF DRYER TO DUCTWORK. PROVIDE AND INSTALL EXTRUDED ALUMINUM DRYER FLAPPER VENT AT TERMINATION OF EACH DRYER VENT. WHERE CLOTHES DRYER VENT DUCTS PASS THROUGH WALLS, FLOORS, OR PARTITIONS, THAT SPACE AROUND THE DUCT SHALL BE SEALED WITH NON-COMBUSTIBLE MATERIAL AND FIRESTOPPED. SIGNAGE INDICATING EQUIVALENT LENGTH SHALL BE POSTED WITHIN 6' OF THE DRYER CONNECTION IN ACCORDANCE WITH IMC 504.6.5 2009.

13. PROVIDE FIRE DAMPERS WITH ACCESS DOORS AT ALL FIRE RATED WALLS, PARTITIONS AND CEILINGS. DAMPERS SHALL HAVE RATING EQUIVALENT TO BARRIER. DAMPER SHALL BE THE DYNAMIC TYPE AND SHALL BE ABLE TO CLOSE AGAINST AN AIRSTREAM. DAMPERS SHALL MEET ALL NFPA AND IBC REQUIREMENTS.

14. PROVIDE SMOKE DAMPERS WITH ACCESS DOORS AT ALL SMOKE BARRIERS/PARTITIONS. UNIT SHALL INCORPORATE BLADE END SWITCHES (OPEN AND CLOSED), AND OUTSIDE THE DUCT MOUNTED UL LISTED MOTOR. PROVIDE MANUFACTURER'S STANDARD U.L. LISTED OPEN– CLOSE – RESET SWITCH AND POSITION PILOT LIGHTS IN UNIT MOUNTED ENCLOSURE. ENCLOSURE TO BE CAPABLE OF BEING REMOVED FOR REMOTE MOUNTING TO ENSURE VISIBILITY AFTER SYSTEM INSTALLATION.

15. PROVIDE COMBINATION FIRE/SMOKE DAMPERS AT ALL FIRE/SMOKE RATED SHAFT AND WALL LOCATIONS. EACH COMBINATION FIRE SMOKE DAMPER SHALL HAVE 16 GA. GALVANIZED BLADES STRENGTHENED WITH GROOVES MEETING REQUIREMENTS OF UL STANDARD 555 & 555S AND HAVE AN 1-1/2 HOUR RATING. BASIS OF DESIGN

2.4. PHENOLIC DUCTWORK

3. INTERNAL DUCT INSULATION -- DUCTWORK INDICATED TO HAVE INTERNAL INSULATION SHALL BE INTERNALLY COVERED WITH 1" THICK FIBERGLASS INSULATION MANUFACTURED FROM A ROTARY PROCESS WITH A NON-WOVEN HYDROPHOBIC FACING. FOR DUCTWORK LOCATED OUTDOORS USE INSULATION AS ABOVE THAT IS 2" THICK. INSULATION SHALL HAVE AN "R" RATING OF 4.2 FOR 1" THICK INSULATION AND R-8 FOR 2" THICK INSULATION. INSULATION SHALL HAVE FLAME/SMOKE RATING OF 25/50. INSULATION SHALL WITHSTAND DUCT VELOCITIES OF 4000 FPM MINIMUM. DUCT SIZES SHOWN ON DRAWINGS ARE CLEAR INTERNAL DIMENSIONS. WHERE LINER IS USED, INCREASE OUTSIDE DIMENSIONS OF DUCT TO MAINTAIN INTERNAL DIMENSIONS. INSTALL LINER PER SMACNA OR NAIMA STANDARDS.

4. INSULATE REFRIGERANT PIPING LINES AS DESCRIBED IN PIPING INSULATION SCHEDULE WITH ELASTOMERIC FOAM INSULATION WITH SELF-SEALING SEAM. ARMACELL - AP ARMAFLEX SS INSULATION. PAINT CLOSED CELL INSULATION OUTDOORS WITH TWO COATS OF UV RESISTANT PAINT PER MANUFACTURER'S RECOMMENDATIONS. USE PRE-MOLDED COVERS OVER FITTINGS, VALVES, ELBOWS AND CONTROL DEVICES SEALED VAPOR TIGHT.

5. ALL INSULATION TO BE APPLIED IN FULL ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL INSULATION SHALL COMPLY WITH 25/50 FLAME AND SMOKE HAZARD RATINGS PER ASTM E-84, NFPA 255 AND UL 723.

6. PROVIDE REMOVABLE INSULATION SECTIONS TO COVER PARTS OF EQUIPMENT WHICH MUST BE OPENED PERIODICALLY FOR MAINTENANCE; INCLUDE METAL VESSEL COVERS, FASTENERS, FLANGES, CHILLED WATER PUMPS, FRAMES AND ACCESSORIES.

7. REPLACE DAMAGED INSULATION WHICH CANNOT BE REPAIRED SATISFACTORILY, INCLUDING UNITS WITH VAPOR BARRIER DAMAGE AND MOISTURE SATURATED UNITS.

8. CONDENSATE DRAIN PIPING IN RETURN AIR RATED PLENUMS SHALL BE TYPE L COPPER WITH 1/2" FIBERGLASS INSULATION (MIN. R-VALUE = 3). SCHEDULE 40 PVC WITHOUT INSULATION MAY BE USED IN ALL OTHER LOCATIONS.

HANGERS AND SUPPORTS (230529)

1. SUPPORT ALL PIPING FROM STRUCTURE WITH UL LISTED HANGERS AND SUPPORTS SUITABLE FOR THE INTENDED INSTALLATION. DESIGN, SELECTION, SPACING, AND APPLICATION OF HANGERS AND SUPPORTS SHALL COMPLY WITH ANSI B31.1 AND MSS SP-69. HANGERS SHALL BE MANUFACTURED BY PENTAIR., OR APPROVED EQUAL. BLACK OR GALVANIZED STEEL PIPE = MODEL NO. 100, CAST IRON PIPE = MODEL NO. 400, COPPER TUBING = MODEL NO. 102-A.

2. CONTRACTOR SHALL PROVIDE INSULATION HANGER WITH PROTECTIVE SHIELDS, SUCH AS PENTAIR, MODEL NO. 125, OR APPROVED EQUAL FOR ALL INSULATED PIPING.

3. CONTRACTOR SHALL PROVIDE RISER CLAMPS FOR VERTICAL PIPING AT EACH LEVEL. RISER CLAPS SHALL BE PENTAIR MODEL NO. 510 FOR STEEL PIPING AND MODEL NO. 511 FOR COPPER TUBING OR APPROVED EQUAL. USE "SHORT-END" RISER CLAMPS WHERE SPACE IS LIMITED.

4. CONTRACTOR SHALL PROVIDE SIDE BEAM CLAMPS FOR SUPPORTING PIPING FROM STRUCTURAL STEEL MEMBERS. BEAM CLAMPS SHALL BE MANUFACTURED BY PENTAIR, MODEL 300 OR APPROVED EQUAL.

5. WHERE OTHER MEANS OF SUPPORT PIPING ARE REQUIRED OR DESIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE ENGINEER'S APPROVAL PRIOR TO INSTALLING THOSE SUPPORTS.

6. HANGERS AND SUPPORTS SHALL BE SPACED AT INTERVALS WHICH WILL PREVENT SAGGING AND REDUCE STRAIN ON VALVES AND SPECIALTIES. HANGER SPACING SHALL BE NO GREATER AND ROD SIZE SHALL BE NO SMALLER THAN THAT SHOWN IN THE FOLLOWING TABLE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION. HANGER SHALL BE PROVIDED AT EACH CHANGE OF DIRECTION.

7. RISER CLAMPS SHALL BE INSTALLED ABOVE THE FLOOR AT EACH LEVEL. RISER CLAMPS MAY BE SUSPENDED BELOW FLOOR LEVEL, WITH HANGER RODS AND INSERTS, WHERE THE INSTALLATION OF ESCUTCHEON PLATES IS REQUIRED.

EQUIPMENT (235000)

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

2. EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS, INCLUDING CLEARANCES; LUBRICATE AND ADJUST AS REQUIRED. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM TO THESE REQUIREMENTS PRIOR TO STARTING WORK. FURNISH AND INSTALL CLEAN SET OF FILTERS PRIOR TO BALANCING.

3. THE CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT PRIOR TO ORDERING OF EQUIPMENT. COORDINATE REQUIREMENT FOR PROVISION OF MOTOR STARTERS, DISCONNECTS, CONTACTORS, CONTROL WIRING, ETC. AS REQUIRED FOR PROPER FUNCTIONING SYSTEM WITH ELECTRICAL CONTRACTOR. NO ADDITIONAL PAYMENT WILL BE MADE FOR LACK OF CONTRACTOR COORDINATION OF ELECTRICAL CHARACTERISTICS.

4. 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 THE THIS CONTRACTOR TO COORDINATE THE SIZE AND LOCATION OF THE CONCRETE HOUSEKEEPING PADS WITH THE GENERAL CONTRACTOR.

5. ALL EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATORS TO PREVENT THE TRANSMISSION OF VIBRATION AND MECHANICALLY TRANSMITTED SOUND TO THE BUILDING STRUCTURE.

6. ISOLATION EQUIPMENT SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, AND SHALL BE DESIGNED SPECIFICALLY FOR THE APPLICATION REQUIRED. THIS INCLUDES, BUT IS NOT LIMITED TO, PIPING DUCTWORK, PUMPS, COMPRESSORS. VIBRATION ISOLATORS SHALL BE RATED FOR THE WEIGHT AND SPACING REQUIRED FOR THE EQUIPMENT REQUIRING ISOLATION.

7. PROVIDE CURBS FOR ALL ROOF OPENINGS FOR DUCTS, FLUES, PIPING AND EQUIPMENT. CURBS SHALL BE FURNISHED AS ACCESSORIES TO THE EQUIPMENT OR 8" HIGH PATE OR EQUAL EQUIPMENT SUPPORTS SPANNING STRUCTURE AND FLASHED INTO ROOFING. ALL CUTTING, FLASHING, AND PATCHING OF ROOF SHALL BE BY OWNER'S ROOFING CONTRACTOR AND PAID FOR BY MECHANICAL CONTRACTOR.

CONTROLS (230910)

1. PROVIDE COMPLETE TEMPERATURE CONTROLS FOR ALL HVAC SYSTEMS. PROVIDE NEW CONTROL DEVICES INCLUDING DAMPER OPERATORS, TEMPERATURE SENSORS, STAGING RELAYS AND OTHER REQUIRED DEVICES TO PROVIDE A COMPLETE OPERATIONAL SYSTEM PER THE FOLLOWING OPERATING SEQUENCE. MOUNT ALL CONTROLS FURNISHED AS ACCESSORIES TO EQUIPMENT AND PROVIDE ALL CONTROL WIRING REQUIRED FOR PROPER OPERATION WHERE NOT SPECIFICALLY SHOWN ON ELECTRICAL PLANS. ALL WIRING SHALL BE IN CONDUIT OR PER N.E.C. AND LOCAL CODE REQUIREMENTS . STANDARD MOUNTING HEIGHT TO TOP OF THERMOSTAT IS 48" ABOVE FINISHED FLOOR OR AS INDICATED ON THE ARCHITECTURAL DRAWINGS. DO NOT INSTALL THERMOSTATS NEAR DIMMER SWITCHES. WIRING OF ALL MOTORIZED OPERATORS AND THERMOSTATS (REGARDLESS OF VOLTAGE) ARE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.

2. THE CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE, WEB-BASED, NATIVE BACNET-INTEGRATED BUILDING AUTOMATION SYSTEM (BAS) INCLUDING ALL NECESSARY HARDWARE, ALL OPERATING AND APPLICATIONS SOFTWARE NECESSARY TO PERFORM THE HVAC CONTROL SEQUENCES OF OPERATION AS CALLED FOR IN THIS SPECIFICATION OR AS SHOWN ON THE DRAWINGS. BAS CONTRACTOR SHALL FURNISH AND INSTALL ALL RELATED SOFTWARE AND HVAC-DDC CONTROLS AS SPECIFIED WITHIN THIS SPECIFICATION. IT SHALL BE THE RESPONSIBILITY OF THE BAS CONTRACTOR TO COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR, MECHANICAL CONTRACTOR, AND THE ELECTRICAL CONTRACTOR AS IT RELATES TO THE INSTALLATION AND WIRING OF ALL RELATED HVAC SYSTEMS.

3. IT SHALL BE THE RESPONSIBILITY OF THE BAS CONTRACTOR TO PROVIDE ALL THE REQUIRED LABOR AND PROGRAMMING TO SEAMLESSLY INTEGRATE THE NEW BAS BACNET SYSTEM AND ITS DDC POINTS, GRAPHICS, ALARMS, ETC. INTO AN EXISTING BAS IF PRESENT.

4. THE CONTROLS CONTRACTOR SHALL WARRANT THE SYSTEM FOR 24 MONTHS AFTER SUBSTANTIAL COMPLETION. DURING THE WARRANTY PERIOD, THE BUILDING SYSTEM CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY REVISIONS TO THE SOFTWARE AS REQUIRED TO PROVIDE A COMPLETE AND WORKABLE SYSTEM CONSISTENT WITH THE LETTER AND INTENT OF THE SEQUENCE OF OPERATION SECTION OF THE SPECIFICATION.

5. THE FOLLOWING ARE THE APPROVED BAS MANUFACTURERS:

- AUTOMATED LOGIC, INC.
- CARRIER CONTROLS
- DISTECH CONTROLS BY TRINITY AUTOMATED SOLUTIONS
- HONEYWELL CONTROLS BY CHESAPEAKE CONTROLS, INC
- JOHNSON CONTROLS, PITTSBURGH BRANCH OFFICE
- KMC CONTROLS BY BUILDING CONTROL SYSTEMS
- SIEMENS CONTROLS
- TRANE CONTROLS
- OR PRE-APPROVED EQUAL

6. THE CONTROL SYSTEM SHALL BE PROGRAMMED WITH THE FOLLOWING SEQUENCES AND FEATURES:
   6.1. SEE DRAWING M007 FOR SEQUENCE OF OPERATIONS FOR MECHANICAL SYSTEMS

IDENTIFICATION (230593)

1. CONTRACTOR SHALL PROVIDE IDENTIFICATION LABELS, TAGS, ETC. AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.THE IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI STANDARD A13.1. PRESSURE SENSITIVE MARKERS SHALL BE MANUFACTURED BY THE BRADY CO., OR APPROVED EQUAL. MARKERS SHALL BE MANUFACTURER'S STANDARD PRODUCT. PRESSURE SENSITIVE PIPE MARKERS SHALL BE MANUFACTURED BY THE BRADY CO., OR APPROVED EQUAL. PIPE MARKERS SHALL BE MANUFACTURER'S STANDARD PRODUCT.

MOTOR CONTROLLERS (230513)

1. UNLESS OTHERWISE INDICATED, EVERY MOTOR NOT SPECIFIED TO BE PROVIDED WITH A CONTROLLER AT THE FACTORY SHALL BE PROVIDED WITH A CONTROLLER AS SPECIFIED HEREIN. CONTROLLERS SHALL BE FURNISHED BY THIS CONTRACTOR. INSTALLATION OF ALL CONTROLLERS SHALL BE BY THE ELECTRICAL CONTRACTOR.

2. MOTOR CONTROLLERS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF NEMA STANDARD IC-1, INDUSTRIAL CONTROL AND BE HEAVY DUTY CONSTRUCTION. CONTROLLER SIZES SHALL BE VERIFIED TO BE COMPATIBLE WITH HORSEPOWER OF THE MOTOR. CONTROLLERS SHALL BE MANUFACTURED BY ALLEN-BRADLEY CO., GENERAL ELECTRIC, CUTLER-HAMMER OR APPROVED EQUAL.

3. MANUAL MOTOR STARTERS:
   a. SWITCHES SHALL BE TUMBLER-SWITCH STYLE. THE MANUAL MOTOR STARTERS SHALL PROVIDE OVERLOAD PROTECTION WHICH CLOSELY FOLLOWS THE MOTOR LOAD. MANUAL MOTOR STARTERS FOR OUTDOOR USE SHALL BE NEMA TYPE 4X, INDOOR USE SHALL BE NEMA TYPE 1, EXPLOSION PROOF USE SHALL BE NEMA TYPE 7.

4. MAGNETIC MOTOR CONTROLLERS:
   a. MAGNETIC MOTOR CONTROLLERS SHALL BE PROVIDED AS INDICATED. THEY SHALL NOT BE SMALLER THAN NEMA SIZE 1.
   b. NON-REVERSING MAGNETIC CONTROLLER SHALL BE UTILIZED TO START FULL VOLTAGE, NON-REVERSING, AC SINGLE SPEED MOTORS. THE CONTROLLERS SHALL BE SIZED FOR THE LOAD UNLESS OTHERWISE INDICATED.
   c. REVERSING MAGNETIC CONTROLLER SHALL BE UTILIZED TO START FULL VOLTAGE REVERSING, AC SINGLE SPEED MOTORS. THE CONTROLLER SHALL BE SIZED FOR THE LOAD UNLESS OTHERWISE INDICATED. LOCATION OF REVERSING MAGNETIC CONTROLLERS IS INDICATED ON THE DRAWINGS.
   d. WHERE MULTI-SPEED MOTORS ARE SCHEDULED ON THE DRAWINGS, THE MOTOR CONTROLS SHALL BE COMPATIBLE WITH THE TYPE MOTOR SHOWN.
   e. OVERLOAD RELAYS SHALL BE SOLID STATE AND BE SUPPLIED IN EACH LEG. OVERLOAD RELAYS SHALL BE MATCHED TO LOAD AND SHALL BE ADJUSTABLE FROM 90% TO 110%. A SINGLE RESET BUTTON SHALL BE MOUNTED ON THE STARTER DOOR TO PERMIT EXTERNAL RESET. RELAYS SHALL BE CONVERTIBLE FROM MANUAL TO AUTOMATIC RESET BY A SIMPLE ADJUSTMENT.
   f. CONTROL TRANSFORMERS SHALL BE PROVIDED, WHERE REQUIRED. BOTH LEGS OF THE PRIMARY AND ONE LEG OF THE SECONDARY OF THE CONTROL TRANSFORMER SHALL BE PROTECTED BY NEMA CLASS J FUSES. THE OTHER LEG OF THE SECONDARY SHALL BE GROUNDED. CONTROL TRANSFORMER CAPACITY SHALL BE ADEQUATE TO OPERATE ALL CONTROL DEVICES IN THE CIRCUIT. CONTROL VOLTAGE SHALL BE 120V AC UNLESS OTHERWISE SPECIFIED.
   g. UNLESS OTHERWISE INDICATED, ALL MOTOR STARTERS SHALL BE PROVIDED WITH HAND-OFF-AUTOMATIC (H-O-A.) SWITCH IN THE DOOR. ENCLOSURES FOR MAGNETIC STARTERS SHALL BE NEMA TYPE 1 FOR INDOOR USE NEMA TYPE 4X FOR OUTDOOR USE AND NEMA TYPE 7 FOR EXPLOSION PROOF USE.
   h. MOTOR CONTROLLERS SHALL BE PROVIDED WITH ALL CONTROL DEVICES, INCLUDING AUXILIARY CONTACTS, REQUIRED FOR EQUIPMENT TO OPERATE AS SPECIFIED.

5. COMBINATION MOTOR CONTROLLERS:
   a. COMBINATION MOTOR CONTROLLERS SHALL BE PROVIDED WITH MOLDED CASE MOTOR CIRCUIT PROTECTORS OR MOLDED CASE CIRCUIT BREAKERS AS INDICATED. MOTOR CIRCUIT PROTECTIVE DEVICES SHALL HAVE SHORT CIRCUIT CAPACITY AS REQUIRED. UNIT CONTROL CIRCUIT FUSING SHALL BE PROVIDED. THE MOTOR CIRCUIT PROTECTIVE DEVICE SHALL BE MOUNTED IN THE SAME ENCLOSURE AS THE MAGNETIC CONTROLLER AND SHALL BE OPERABLE BY HAND FROM OUTSIDE THE ENCLOSURE. THE HANDLE SHALL BE SO INTERLOCKED WITH THE DOOR THAT IT MUST BE RETURNED TO THE "OFF" POSITION BEFORE THE DOOR CAN BE OPENED, BUT A COIN-PROOF DEFEAT MECHANISM SHALL BE PROVIDED TO ALLOW AUTHORIZED PERSONNEL TO OPEN THE ENCLOSURE DOOR WITHOUT OPENING THE DISCONNECTING DEVICE. PROVISIONS FOR PADLOCKING THE DISCONNECT HANDLE IN THE "OFF" POSITION SHALL BE MADE. THE ENCLOSURE FOR COMBINATION STARTERS SHALL BE NEMA TYPE 1 FOR INDOOR USE AND NEMA TYPE 4X FOR OUTDOOR USE, AND NEMA TYPE 7 FOR EXPLOSION PROOF USE.
   b. MOTOR CIRCUIT PROTECTORS SHALL BE THE CONTINUOUSLY ADJUSTABLE, INSTANTANEOUS MAGNETIC TRIP TYPE CIRCUIT BREAKER AND SHALL BE SO CONSTRUCTED THAT ALL POLES OPEN, CLOSE AND TRIP SIMULTANEOUSLY.

6. OVERLOAD AND SHORT CIRCUIT PROTECTION:
   a. HEATER ELEMENTS SHALL BE PROVIDED FOR OVERLOAD PROTECTION. MOTOR CIRCUIT PROTECTOR SHALL BE PROVIDED FOR MOTOR SHORT CIRCUIT PROTECTION.

DISCONNECT SWITCHES (230514)

1. THIS CONTRACTOR SHALL FURNISH ALL SAFETY DISCONNECT SWITCHES (FUSED AND NON-FUSED) REQUIRED FOR EQUIPMENT FURNISHED UNDER THIS CONTRACT. IN ADDITION, THIS CONTRACTOR SHALL FURNISH A SAFETY DISCONNECT SWITCH FOR ALL MOTORS AND EQUIPMENT WHICH DO NOT HAVE COMBINATION STARTERS OR INTEGRAL DISCONNECTING MEANS. FUSIBLE DISCONNECT SWITCHES SHALL BE PROVIDED FOR ALL EQUIPMENT RATED FOR USE ONLY WITH FUSES (SUCH AS CONDENSING UNITS, COMPRESSORS, ETC.). SUCH SWITCHES SHALL BE ONE, TWO OR THREE POLE TYPE, WITH SOLID NEUTRAL FOR 4 WIRE SERVICE, AND SHALL HAVE THE PROPER CURRENT AND VOLTAGE RATING AS REQUIRED. INSTALLATION OF ALL DISCONNECT SWITCHES SHALL BE BY THE ELECTRICAL CONTRACTOR.

2. ALL SAFETY SWITCHES SHALL BE NEMA HEAVY DUTY TYPE AND SHALL CARRY THE UNDERWRITERS' LABORATORIES LABEL. FUSIBLE SWITCHES SHALL INCORPORATE CLASS "R" FUSE REJECTION FEATURE AND SHALL BE BRACED TO WITHSTAND 200,000 AMPERE RMS SYMMETRICAL FAULT CURRENT. SAFETY SWITCHES SHALL CONFORM TO FEDERAL SPECIFICATION W-S-865.

3. PROVIDE HEAVY-DUTY TYPE, SHEET ENCLOSED, SAFETY SWITCHES. THE TYPE, SIZE, AND RATING SHALL BE AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE MOTOR OR EQUIPMENT SERVED. THE ENCLOSURE FOR DISCONNECT SWITCHES SHALL BE NEMA TYPE 1 FOR INDOOR USE, NEMA TYPE 4X FOR OUTDOOR USE AND NEMA TYPE 7 FOR EXPLOSION PROOF USE. DISCONNECTS SHALL BE MANUFACTURED BY ALLEN-BRADLEY, GENERAL ELECTRIC, CUTLER-HAMMER APPROVED EQUAL.

4. SWITCHES SHALL INCORPORATE QUICK-MAKE, QUICK-BREAK OPERATING HANDLES. THE MECHANISM SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER, AND SWITCHES SHALL HAVE A COVER INTERLOCK TO PREVENT UNAUTHORIZED OPENING OF THE SWITCH DOOR IN THE ON POSITION OR CLOSING OF THE SWITCH MECHANISM WITH THE DOOR OPEN. CURRENT CARRYING PARTS SHALL BE CONSTRUCTED OF HIGH-CONDUCTIVITY COPPER WITH SILVER-TUNGSTEN TYPE SWITCH CONTACT.

5. FUSE CLIPS SHALL BE POSITIVE PRESSURE TYPE REINFORCED FUSE CLIPS.

6. THE ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL POWER WIRING TO ALL MECHANICAL CONTRACTOR FURNISHED EQUIPMENT. THE MECHANICAL CONTRACTOR SHALL FURNISH, INSTALL AND CONNECT ALL CONTROL WIRING TO ALL FURNISHED EQUIPMENT, INCLUDING CONTROL DEVICES, STARTERS AND INTEGRAL DISCONNECT SWITCHES OF CONTRACTOR FURNISHED EQUIPMENT.

VARIABLE FREQUENCY DRIVES (230515)

1. PROVIDE VARIABLE FREQUENCY DRIVES (VFD) AS SPECIFIED HEREIN AND AS SHOWN ON THE CONTRACT DRAWINGS. BASIS OF DESIGN IS ABB MODEL ACH-550. THE ENCLOSURE FOR VFD SHALL BE NEMA TYPE 12 FOR INDOOR USE AND NEMA TYPE 3R FOR OUTDOOR USE. VFD SHALL PROVIDE MICROPROCESSOR-BASED CONTROL FOR THREE-PHASE INDUCTION MOTORS USING PULSE WIDTH MODULATED (PWM) DESIGN, WHICH CONVERTS THE UTILITY INPUT VOLTAGE AND FREQUENCY TO A VARIABLE VOLTAGE AND FREQUENCY OUTPUT VIA A TWO-STEP OPERATION. VFD SHALL HAVE AN EFFICIENCY AT FULL LOAD AND SPEED THAT EXCEEDS 97%. THE EFFICIENCY SHALL EXCEED 90% AT 50% SPEED.

2. VFD SHALL MAINTAIN A MINIMUM LINE SIDE DISPLACEMENT POWER FACTOR OF 0.96, REGARDLESS OF SPEED AND LOAD FOR VFD'S LESS THAN 75 HP. VFD SHALL MAINTAIN A MINIMUM LINE SIDE DISPLACEMENT POWER FACTOR OF .99, REGARDLESS OF SPEED AND LOAD FOR MOTORS GREATER THAN 75 HP. THE VFD'S SHALL HAVE A ONE (1) MINUTE OVERLOAD CURRENT RATING OF 110% FOR LOW OVERLOAD APPLICATIONS. VFD SHALL HAVE AN INTEGRAL EMI/RFI FILTER AND CIRCUIT BREAKER AS STANDARD. THE CURRENT WITHSTAND RATING OF THE OPEN VFD SHALL BE 65,000 AIC.

3. COMMUNICATION CAPABILITY OPTIONS SHALL INCLUDE MODBUS RTU, JOHNSON CONTROLS METASYS N2, BACNET MSTP, BACNET/IP, MODBUS/TCP AND EXPANSION CARD COMMUNICATIONS SHALL INCLUDE LONWORKS. THE EXACT PROTOCOL NEEDED IS THAT WHICH WILL COMMUNICATE WITH THE BAS COMMUNICATION SYSTEM PROVIDED.

4. VFD SHALL HAVE A COOLING FAN(S) THAT IS FIELD REPLACEABLE.

5. VFD SHALL INCLUDE THE FOLLOWING PROTECTIVE FEATURES: OVERCURRENT, OVERVOLTAGE, SYSTEM FAULT, UNDER VOLTAGE, INPUT LINE SUPERVISION, OUTPUT PHASE SUPERVISION, UNDER TEMPERATURE, OVER TEMPERATURE, MOTOR STALLED, MOTOR OVER TEMPERATURE AND MOTOR UNDER LOAD. VFD SHALL PROVIDE GROUND FAULT PROTECTION DURING POWER-UP, STARTING, AND RUNNING.

6. WARRANTY SHALL BE TWENTY-FOUR (24) MONTHS FROM CERTIFIED START-UP DATE. THIS WARRANTY DURATION INCLUDES START-UP BY AN AUTHORIZED SERVICE REPRESENTATIVE AND PARTS, LABOR AND TRAVEL TIME.

CHECK, TEST, START, ADJUST, BALANCE AND INSTRUCTIONS (230593)

1. AFTER INSTALLATION, CHECK ALL EQUIPMENT, AND PERFORM START UP IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

2. ALL PIPING SHALL BE TESTED AND FREE OF LEAKS.

3. CONCEALED OR INSULATED WORK SHALL REMAIN UNCOVERED UNTIL REQUIRED TESTS HAVE BEEN COMPLETED, BUT IF CONSTRUCTION SCHEDULE REQUIRES IT, ARRANGE FOR PRIOR TESTS ON PARTS OF SYSTEM AS APPROVED BY THE TENANT.

4. BALANCE ALL SYSTEMS, CALIBRATE CONTROLS, CHECK FOR PROPER OPERATION AND SEQUENCE UNDER ALL CONDITIONS AND MAKE ALL NECESSARY ADJUSTMENTS.

5. AFTER INSTALLATION AND EQUIPMENT IS PLACED IN OPERATION, HVAC CONTRACTOR IS RESPONSIBLE FOR BALANCING SYSTEMS. BALANCING SHALL BE PERFORMED BY AN INDEPENDENT AABC CERTIFIED CONTRACTOR.

6. ADJUST AND BALANCE THE AIR SYSTEMS BEFORE HYDRONIC, STEAM, AND REFRIGERANT SYSTEMS. TESTING AND BALANCING SHALL BE DONE IN ACCORDANCE WITH THE MOST RECENT AABC NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE. GPM'S SHALL BE BALANCED WITHIN 10% OF DESIGN. AFTER ALL AIR SYSTEMS ARE INSTALLED, EACH SUPPLY AIR OUTLET SHALL BE AIR BALANCED TO WITHIN 10% OF THE CFM SHOWN WITH AIR PATTERNS SET AS INDICATED ON DRAWINGS (OR WITHIN 10 CFM WHEN BELOW 100 CFM). FAN RPMS AND ZONE DAMPERS SHALL BE ADJUSTED AND SHEAVES SHALL BE REPLACED AS REQUIRED TO ACHIEVE AIR BALANCE. ALL ZONES OR PORTIONS THEREOF SERVING OTHER SPACES AND WHICH MAY BE AFFECTED BY THE PROJECT SHALL BE TRAVERSED PRIOR TO CONSTRUCTION. THE FINAL AIR BALANCE SHALL RESTORE THESE AIR QUANTITIES. BEFORE AND AFTER AIR QUANTITIES SHALL BE LISTED IN THE AIR BALANCE REPORT

7. START UP AND PLACE ALL SYSTEMS IN OPERATION AND TAG ALL SWITCHES AND CONTROLS WITH PERMANENT LABELS.

5. INSTRUCT OWNER IN OPERATION OF SYSTEMS AND SUBMIT OPERATING AND MAINTENANCE MANUAL ON ALL EQUIPMENT AND SYSTEMS.

MECHANICAL GENERAL SPECIFICATION

a. 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:
   1. NORTH CAROLINA MECHANICAL CODE
   2. NORTH CAROLINA PLUMBING CODE
   3. NORTH CAROLINA ENERGY CODE
   4. NATIONAL ELECTRIC CODE
   5. NFPA
   6. UNDERWRITERS LABORATORY (UL), IRI, FM
   7. SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" GUIDELINES, DETAILS, & MODEL SPECIFICATION,
   8. ASHRAE

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WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

MECHANICAL SPECIFICATIONS

SHEET
M003

ASC PROJECT NUMBER: 21-000

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Mechanical Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Nation Veterinary Associates Eastern Carolina Veterinary Referral Clinic Renovation
Location: Wilmington, North Carolina
Climate Zone: 3a

Project Type: Alteration

Construction Site:
5051 New Centre Dr
Wilmington, North Carolina 28403

Owner/Agent:

Designer/Contractor:

Mechanical Systems List

Quantity **System Type & Description**

1 RTU-2 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 250 kBtu/h
Proposed Efficiency = 81.00% Et, Required Efficiency: 80.00 % Et
Cooling: 1 each - Single Package DX Unit, Capacity = 424 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 15.40 EER, Required Efficiency = 9.80 EER
Proposed Part Load Efficiency = 17.00 IEER, Required Part Load Efficiency = 11.40 IEER
Fan System: DOAS-3 -- Compliance (Brake HP and fan efficiency method) : Passes

Fans:
FAN 6 Exhaust, Constant Volume, 7000 CFM, 2.0 motor nameplate hp, 1.1 design brake hp (1.1 max. BHP), 67.0 fan efficiency grade, 70.0 total fan efficiency, 70.0 design fan efficiency
FAN 5 Supply, Constant Volume, 7000 CFM, 7.5 motor nameplate hp, 4.6 design brake hp (4.6 max. BHP), 67.0 fan efficiency grade, 70.0 total fan efficiency, 70.0 design fan efficiency

1 DOAS-2 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 350 kBtu/h
Proposed Efficiency = 81.00% Et, Required Efficiency: 80.00 % Et
Cooling: 1 each - Single Package DX Unit, Capacity = 465 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 15.40 EER, Required Efficiency = 9.80 EER
Proposed Part Load Efficiency = 17.00 IEER, Required Part Load Efficiency = 11.40 IEER
Fan System: DOAS-2 -- Compliance (Brake HP and fan efficiency method) : Passes

Fans:
FAN 4 Supply, Single-Zone VAV, 7000 CFM, 5.0 motor nameplate hp, 3.1 design brake hp (3.1 max. BHP), 67.0 fan efficiency grade, 70.0 total fan efficiency, 70.0 design fan efficiency
FAN 3 Supply, Single-Zone VAV, 7000 CFM, 7.5 motor nameplate hp, 5.3 design brake hp (5.3 max. BHP), 67.0 fan efficiency grade, 70.0 total fan efficiency, 70.0 design fan efficiency
Pressure Drop Credits:
Fully ducted return and/or exhaust air systems, 0.8473 credit
Particulate filtration credit: MERV 13 through 15, 1.5251 credit
Energy recover device, other than Coil Runaround Loop, 2.0232 credit

1 DOAS-1 (Single Zone):
Heating: 1 each - Central Furnace, Gas, Capacity = 350 kBtu/h
Proposed Efficiency = 81.00% Et, Required Efficiency: 80.00 % Et
Cooling: 1 each - Single Package DX Unit, Capacity = 465 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 15.40 EER, Required Efficiency = 9.80 EER
Proposed Part Load Efficiency = 17.00 IEER, Required Part Load Efficiency = 11.40 IEER
Fan System: DOAS-1 -- Compliance (Brake HP and fan efficiency method) : Passes

Fans:
FAN 2 Exhaust, Single-Zone VAV, 7000 CFM, 5.0 motor nameplate hp, 3.1 design brake hp (3.1 max. BHP), 67.0 fan efficiency grade, 70.0 total fan efficiency, 70.0 design fan efficiency
FAN 1 Supply, Single-Zone VAV, 7000 CFM, 7.5 motor nameplate hp, 5.3 design brake hp (5.3 max. BHP), 67.0 fan efficiency grade, 70.0 total fan efficiency, 70.0 design fan efficiency

Quantity **System Type & Description**

Pressure Drop Credits:
Fully ducted return and/or exhaust air systems, 0.8473 credit
Particulate filtration credit: MERV 13 through 15, 1.5251 credit
Energy recover device, other than Coil Runaround Loop, 2.0232 credit

1 RTU-2 (Multiple-Zone):
Cooling: 1 each - Single Package DX Unit, Capacity = 424 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 10.80 EER, Required Efficiency = 10.00 EER
Proposed Part Load Efficiency = 15.60 IEER, Required Part Load Efficiency = 11.60 IEER
Fan System: RTU-2 -- Compliance (Brake HP and fan efficiency method) : Passes

Fans:
FAN 7 Supply, Multi-Zone VAV, 13000 CFM, 15.0 motor nameplate hp, 12.1 design brake hp (12.1 max. BHP), 67.0 fan efficiency grade, 70.0 total fan efficiency, 70.0 design fan efficiency

1 SS IT-1 (Single Zone):
Cooling: 1 each - Split System, Capacity = 18 kBtu/h, Air-Cooled Condenser, Unknown Economizer
Proposed Efficiency = 20.00 SEER, Required Efficiency = 13.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00

1 SS IT-2 (Single Zone):
Cooling: 1 each - Split System, Capacity = 18 kBtu/h, Air-Cooled Condenser, Unknown Economizer
Proposed Efficiency = 20.00 SEER, Required Efficiency = 13.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00

1 SS E-1 (Single Zone):
Cooling: 1 each - Split System, Capacity = 18 kBtu/h, Air-Cooled Condenser, Unknown Economizer
Proposed Efficiency = 20.00 SEER, Required Efficiency = 13.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00

1 SS E-2 (Single Zone):
Cooling: 1 each - Split System, Capacity = 36 kBtu/h, Air-Cooled Condenser, Unknown Economizer
Proposed Efficiency = 20.00 SEER, Required Efficiency = 13.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00

1 SS O2 (Single Zone):
Cooling: 1 each - Split System, Capacity = 36 kBtu/h, Air-Cooled Condenser, Unknown Economizer
Proposed Efficiency = 20.00 SEER, Required Efficiency = 13.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00

1 SS MG (Single Zone):
Cooling: 1 each - Split System, Capacity = 36 kBtu/h, Air-Cooled Condenser, Unknown Economizer
Proposed Efficiency = 20.00 SEER, Required Efficiency = 13.00 SEER
Proposed Part Load Efficiency = 0.00 , Required Part Load Efficiency = 0.00

2 0.5KW Wall Heater (Unknown w/ PerimeterSystem):
Heating: 1 each - Unit Heater, Electric, Capacity = 1 kBtu/h
No minimum efficiency requirement applies

1 EUH 1.1 (Unknown w/ PerimeterSystem):
Heating: 1 each - Unit Heater, Electric, Capacity = 17 kBtu/h
No minimum efficiency requirement applies

4 0.75KW Wall Heater (Unknown w/ PerimeterSystem):
Heating: 1 each - Unit Heater, Electric, Capacity = 2 kBtu/h
No minimum efficiency requirement applies

2 2 (Unknown w/ PerimeterSystem):
Heating: 1 each - Unit Heater, Electric, Capacity = 6 kBtu/h
No minimum efficiency requirement applies

1 GWH-1:
Gas Storage Water Heater, Capacity: 119 gallons, Input Rating: 300 kBtu/h w/ Circulation Pump
Proposed Efficiency: 96.00 % Et, Required Efficiency: 80.00 % Et

1 GWH-2:
Gas Storage Water Heater, Capacity: 119 gallons, Input Rating: 300 kBtu/h w/ Circulation Pump
Proposed Efficiency: 96.00 % Et, Required Efficiency: 80.00 % Et

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Alexander Radkoff - Mechanical Engineer	Alexander G. Radkoff	08/31/2023
Name - Title	Signature	Date

COM*check* Software Version COMcheckWeb

Inspection Checklist

Energy Code: 2018 IECC

Requirements: 96.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C103.2 [PR3][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the service water heating systems and equipment and document where exceptions to the standard are claimed. Hot water system sized per manufacturer's sizing guide.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C403.12.2 , C403.12.3 [FO9][1]	Snow/ice melting system and freeze protection systems have sensors and controls configured to limit service for pavement temperature and outdoor temperature. future connection to controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.5, C404.5.1, C404.5.2 [PL6][1]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.6.1, C404.6.2 [PL3][1]	Automatic time switches installed to automatically switch off the recirculating hot-water system or heat trace.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.6.3 [PL7][1]	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.7 [PL8][1]	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) | 2 Medium Impact (Tier 2) | 3 Low Impact (Tier 3)

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Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41][1]	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.11.3 [ME61][2]	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.1 [ME65][3]	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. *See the Mechanical Systems list for values.*
C403.8.2 [ME21][2]	HVAC fan motors not oversized beyond allowable limits.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.3 [ME117][2]	Fans have efficiency grade (FEG) >= 67. The total efficiency of the fan at the design point of operation <= 15% of maximum total efficiency of the fan.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.4 [ME142][2]	Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.8.5 [ME143][2]	Each DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C403.12.1 [ME71][2]	Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or timer switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.2.1 [ME112][3]	Zone isolation devices and controls installed where applicable.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5.5 [ME113][2]	Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.2 [ME59][1]	Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IMC Chapter 4.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.7.1 [ME59][1]	Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Systems with energy recovery.
C403.7.2 [ME115][3]	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.7.3 [ME140][3]	Units that provide ventilation air to multiple zones and operate in combination with zone heating and cooling systems do not use heating or heat recovery to warm supply air to a temperature greater than 60°F when representative building loads or outdoor air temperatures indicate that the majority of zones require cooling.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.7.6 [ME141][3]	HVAC systems serving guestrooms in Group R-1 buildings with > 50 guestrooms: Each guestroom is provided with controls that automatically manage temperature setpoint and ventilation (see sections C403.7.6.1 and C403.7.6.2).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.7.4 [ME57][1]	Exhaust air energy recovery on systems meeting Table C403.7.4(1) and C403.7.4(2).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.7.5 [ME116][3]	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.11.1, C403.11.2 [ME60][2]	HVAC ducts and plenums insulated in accordance with C403.11.1 and constructed in accordance with C403.11.2, verification may need to occur during Foundation Inspection.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5, C403.5.1, C403.5.2 [ME62][1]	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5.3.3 [ME124][1]	Air economizers automatically reduce outdoor air intake to the design minimum outdoor air quantity when outdoor air intake will not reduce cooling energy usage. See Table C403.5.3.3 for applicable device types and climate zones.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5.3.4 [ME125][1]	System capable of relieving excess outdoor air during air economizer operation to prevent overpressurizing the building. The relief air outlet located to avoid recirculation into the building.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.5.3.5 [ME126][1]	Return, exhaust/relief and outdoor air dampers used in economizers have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Reference section C403.7.7 for details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.1 [ME75][2]	Hydronic and multizone HVAC system controls areVAV fans driven by mechanical or electrical variable speed drive per Table C403.4.1.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.2 [ME67][2]	VAV fans have static pressure sensors located so controller setpoint <=1.2 w.c..	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.3 [ME24][2]	Reset static pressure setpoint for DDC controlled VAV boxes reporting to central controller based on the zones requiring the most pressure.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.6.1 [ME130][2]	Supply air systems serving multiple zones have VAV systems with controls configured to reduce the volume of air that is reheated, recooled or mixed in each zone. See section for details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.6.2 [ME131][2]	Single-duct VAV systems use terminal devices configured to reduce the supply of primary supply air before reheating or recooling takes place.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.6.3 [ME132][2]	Systems that have 1 warm air duct and 1 cool air duct use terminal devices configured to reduce the flow from one duct to a minimum before mixing of air from the other duct takes place.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.6.4 [ME133][2]	Individual dual-duct or mixing heating and cooling systems with a single fan and with total capacities > 90,000 Btu/h not equipped with air economizers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.6.5 [ME134][2]	Multiple zone HVAC systems have supply air temperature reset controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.6.7 [ME136][2]	Parallel-flow fan-powered VAV air terminals have automatic controls configured to 1) turn off the terminal fan except when space heating is required or where required for ventilation, 2) turn on the terminal fan as the first stage of heating before the heating coil is activated, and 3) during heating for warmup or setback temperature control, either operate the terminal fan and heating coil without primary air or, reverse the terminal damper logic and provide heating from the central air handler by primary air.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.6.8 [ME137][2]	Systems with DDC of individual zones reporting to the central control panel configured to reset the static pressure setpoint based on zone requiring the most pressure. The DDC is capable of monitoring zone damper positions or have an alternative method of indicating the need for static pressure. See section for details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.6.9 [ME138][2]	Static pressure sensors used to control VAV fans located such that the controller setpoint is <= 1.2 inches w.c.. Where this results in one or more sensors being located downstream of major duct splits, not less than one sensor located on each major branch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.6.6 [ME135][2]	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. *See the Mechanical Systems list for values.*
C403.4.1.4 [ME63][2]	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.3.3 [ME35][1]	Hot gas bypass limited to: <=240 kBtu/h - 50% >240 kBtu/h - 25%	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.2.1 [ME111][3]	Gas-fired water-heating equipment installed in new buildings: where a singular piece of water-heating equipment >= 1,000 kBtu/h serves the entire building, thermal efficiency >= 90 Et. Where multiple pieces of water-heating equipment serve the building with combined rating >= 1,000 kBtu/h, the combined input-capacity-weighted-average thermal efficiency >= 90 Et. Exclude input rating of equipment in individual dwelling units and equipment <= 100 kBtu/h.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.2.1 [ME53][3]	Air outlets and zone terminal devices have means for air balancing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5, C403.5.1, C403.5.2 [ME123][3]	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.6 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.7 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.8.2, C405.8.2.1 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.9 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.3 [FI8][3]	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.2 [FI27][3]	HVAC systems and equipment capacity does not exceed calculated loads.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1 [FI47][3]	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.2 [FI38][3]	Thermostatic controls have a 5 °F deadband.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1.3 [FI20][3]	Temperature controls have setpoint overlap restrictions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2 [FI39][3]	Each zone equipped with setback controls using automatic time clock or programmable control system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2.1, C403.2.4.2.2 [FI40][3]	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2.3 [FI41][3]	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.3 [FI11][3]	Heat traps installed on supply and discharge piping of non-circulating systems.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.4 [FI25][2]	All piping insulated in accordance with section details and Table C403.11.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.6.1 [FI12][3]	Controls are installed that limit the operation of a recirculation pump installed to maintain temperature of a storage tank. System return pipe is a dedicated return pipe or a cold water supply pipe.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.1 [FI28][1]	Commissioning plan developed by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.3.1 [FI31][1]	HVAC equipment has been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.3.2 [FI10][1]	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.3.3 [FI32][1]	Economizers have been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.4 [FI29][1]	Preliminary commissioning report completed and certified by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5.1 [FI7][1]	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5.3 [FI43][1]	An air and/or hydronic system balancing report is provided for HVAC systems.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5.4 [FI30][1]	Final commissioning report due to building owner within 90 days of receipt of certificate of occupancy.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

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MECHANICAL SEQUENCE OF OPERATIONS

TRENDING

TREND INFORMATION WILL BE RECORDED AT 15 MINUTE INTERVALS FOR ANALOG CONTROL POINTS AND THE FOLLOWING SETPOINTS:

A. RTU AND DOAS SUPPLY AIR DISCHARGE TEMPERATURE
B. RTU AND DOAS OUTSIDE AIR DAMPER POSITION
C. SPLIT SYSTEM SPACE TEMPERATURE
D. SPACE TEMPERATURE FOR SPACES SERVED BY EXHAUST FANS FOR PURPOSES OF HEAT REJECTION.
E. VAV SPACE TEMPERATURE
F. VAV SUPPLY AIRFLOW
G. VAV ELECTRIC RESISTANCE HEATER ENERGIZATION
H. DOAS-1, DOAS-2, AND DOAS-3 OTUSIDE AIRFLOW AND EXHAUST AIRFLOW VALUES IN CUBIC FEET PER MINUTE (CFM)

TREND INFORMATION WILL BE UPLOADED TO THE BAS OEPRATOR INTERFACE AS REQUIRED TO PREVENT LOSS OF ANY INFORMATION.

TREND INFORMATION WILL BE RECORDED UPON A CHANGE OF STATE FOR THE FOLLOWING CONTROL POINTS:

A. VAV LOCAL OCCUPANCY OVERRIDE

ALARMING

LOCAL ALARMS WILL BE INITIATED AND DISPLAYED AT THE BAS OPERATOR INTERFACE FOR THE FOLLOWING CONDITIONS:

A. VAV HIGH SPACE TEMPERATURE (4 DEGREES ABOVE SETPOINT)
B. VAV LOW SPACE TEMPERATURE (4 DEGREES BELOW SETPOINT)
C. VAV CONTROLLER OFFLINE
D. RTU CONTROLLER OFFLINE
E. DOAS CONTROLLER OFFLINE
F. SPLIT SYSTEM HIGH SPACE TEMPERATURE (4 DEGREES ABOVE SETPOINT)
G. ELECTRIC ROOM HIGH SPACE TEMPERATURE (4 DEGREES ABOVE SETPOINT)

ALARMS WILL BE RECOGNIZED AFTER A 60 SECOND DELAY UNLESS INDICATED OTHERWISE. A CONTROLLER OFFLINE ALARM SHALL BE RECOGNIZED AFTER A 300 SECOND DELAY.

ALARMS WILL INCLUDE THE ALARM DESCRIPTION, CONTROL POINT VALUE, SETPOINT VALUE, DATE AND TIME.

ALARMS WILL BE ACKNOWLEDGED AT THE BAS OPERATOR INTERFACE WITH A STORED RECORD OF CORRESPONDING DATE AND TIME.

ALL ALARM SETPOINTS AND TIME DELAYS SHALL BE ADJUSTABLE.

VARIABLE AIR VOLUME ROOFTOP AIR HANDLING UNITS RTU-1 AND RTU-2:

AIR HANDLING UNIT SHALL CONSIST OF MODULATING DX COOLING, MODULATING GAS HEATING, VARIABLE SPEED SUPPLY AIR FAN. THE UNIT SHALL BE CONTROLLED BY A MANUFACTURER PROVIDED BACNET COMPATABLE DIGITAL CONTROLLER.

1. OCCUPIED/UNOCCUPIED MODE: THE OCCUPIED/UNOCCUPIED MODE SHALL BE DETERMINED VIA A TIME OF DAY SCHEDULE. THE OCCUPPIED MODE SHALL BE FROM 6:00 AM TO 10:00 PM (ADJ).

2. OCCUPIED MODE: DURING THE OCCUPIED MODE, THE FOLLOWING SHALL OCCUR:
   A. THE SUPPLY FANS VFD SHALL RAMP UP SLOWLY TO MEET THE STATIC PRESSURE SETPOINT AS READ BY A STATIC PRESSURE SENSOR LOCATED 75% OF THE WAY DOWN THE DUCT RUN (OR AS SHOWN ON THE PLANS).
   B. THE OUTSIDE AIR DAMPER SHALL OPEN TO MINIMUM POSITION (0% OPEN).
   C. THE RETURN AIR DAMPER SHALL BE OPEN.
   D. IN COOLING MODE, THE UNIT'S DX COOLING SECTION SHALL ENERGIZE AND STAGE ITSELF TO MAINTAIN A 55 DEG. F. DISCHARGE AIR TEMPERATURE.
   E. THE UNIT SHALL BE EQUIPPED WITH OUTSIDE AIR AND RETURN AIR ENTHALPY SENSORS. WHEN THE OUTSIDE AIR HAS LESS ENTHALPY THAN THE RETURN AIR, THE UNIT SHALL OPEN ITS OUTSIDE AIR DAMPER TO OPERATE IN ECONOMIZER MODE. WHEN THE OUTSIDE AIR ENTHALPY IS GREATER THAN THE RETURN AIR THE OUTSIDE AIR DAMPER SHALL CLOSE TO MINIMUM POSITION.
   F. IN HEATING MODE, THE UNITS DX COOLING SECTION SHALL BE DE-ENERGIZED. THE UNIT'S GAS FIRED HEATING TRAIN SHALL STAGE TO MAINTAIN 55 DEG. F. SUPPLY AIR DISCHARGE AIR TEMPERATURE.

5. UN-OCCUPIED MODE: DURING THE UNOCCUPIED MODE, THE FOLLOWING SHALL OCCUR:
   A. THE SUPPLY FAN SHALL BE OFF. ALL HEATING SHALL OCCUR FROM THE SINGLE DUCT VAV BOXES WITH ELECTRIC RESISTANCE REHEAT;

6. MORNING WARM-UP MODE: DURING THE MORNING WARM-UP MODE THE FOLLOWING SHALL OCCUR:
   A. THE SUPPLY FANS VFD SHALL RAMP UP SLOWLY TO MEET THE STATIC PRESSURE SETPOINT AS READ BY A STATIC PRESSURE SENSOR LOCATED 75% OF THE WAY DOWN THE DUCT RUN (OR AS SHOWN ON THE PLANS).
   B. THE OUTSIDE AIR DAMPER SHALL BE CLOSED.
   C. WHEN THE BAS PROVIDES A START COMMAND FOR MORNING WARM-UP OR COOL DOWN MODE, THE VAV BOXES AND ASSOCIATED HEATING COIL WILL BE CONTROLLED AS FOLLOWS BELOW.
   D. THE ZONE WILL CALCULATE HOW LONG IT WILL TAKE TO RETURN FROM ITS UNOCCUPIED STATE TO ITS OCCUPIED SETPOINT BASED ON THE HEATING OR COOLING LOAD OF THE ZONE AND OUTDOOR AIR TEMPERATURE. THE CONTROLLER SHALL THEN SEND A HEATING OR COOLING REQUEST THE RESPECTIVE VAV BOX AT THE APPROPRIATE WARMUP OR COOL DOWN START TIME SUCH THAT THE CONDITIONS MEET THE OCCUPIED SETPOINT AT THE BEGINNING OF THE OCCUPIED MODE. THE SYSTEM WILL NOT BE PERMITTED TO START MORE THAN 4 HOURS (ADJUSTABLE) BEFORE SCHEDULED OCCUPANCY.
   E. THE HVAC BOXES SHALL DRIVE OPEN. THE UNITS GAS-FIRED HEATING TRAIN SHALL STAGE TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 95 DEG. F. (ADJ.) UNTIL ALL OF THE VAV BOX ZONE THERMOSTATS ARE MEETING THE OCCUPIED MODE TEMPERATURE SETPOINTS.

6. SAFETIES: FAN SHALL SHUTDOWN IF THE FOLLOWING OCCUR:
   A. HIGH STATIC PRESSURE IN THE SUPPLY FAN DISCHARGE.
   B. SMOKE IS DETECTED BY SMOKE DETECTORS IN THE SUPPLY FAN DISCHARGE AND/OR THE RETURN AIR.
   C. EACH LIMIT SHALL BE A MANUAL RESET DEVICE.
   D. SMOKE DETECTOR(S) SHALL BE PROVIDED IN THE UNIT SUPPLY AND RETURN AIR WHERE REQUIRED BY CODE BY THE ELECTRICAL CONTRACTOR. THE SMOKE DETECTOR SHALL BE PROVIDED WITH A SET OF AUXILIARY CONTACTS WHICH WILL DE-ENERGIZE THE FAN UPON SENSING PRODUCTS OF COMBUSTION. ALL CONTROL INTERLOCK WIRING ASSOCIATED WITH THIS SHUTDOWN BETWEEN THE AUXILIARY CONTACTS AND THE FAN STARTER SHALL BE FURNISHED AND INSTALLED BY THE AUTOMATIC TEMPERATURE CONTROL CONTRACTOR. CONTROL INTERLOCK WIRING BETWEEN THE SMOKE DETECTOR AND THE BUILDING FIRE-ALARM SYSTEM SHALL BE FURNISHED AND NSTALLED BY THE ELECTRICAL CONTRACTOR.
   E. AN ALARM SHALL BE GENERATED AT THE BUILDING AUTOMATION SYSTEM THAT SHALL INDICATE IF THE DIRTY FILTER ALARM SENSOR IN UNIT IS IN ALARM STATUS.

VARIABLE AIR VOLUME DEDICATED OUTSIDE AIR HANDLING ROOFTOP UNITS DOAS-1 AND DOAS-2:

AIR HANDLING UNIT SHALL CONSIST OF MODULATING DX COOLING, MODULATING GAS HEATING, VARIABLE SPEED SUPPLY AIR FAN. THE UNIT SHALL BE CONTROLLED BY A MANUFACTURER PROVIDED BACNET COMPATABLE DIGITAL CONTROLLER.

1. OCCUPIED/UNOCCUPIED MODE: THE OCCUPIED/UNOCCUPIED MODE SHALL BE DETERMINED VIA A TIME OF DAY SCHEDULE. THE OCCUPPIED MODE SHALL BE FROM 6:00 AM TO 10:00 PM (ADJ).

2. OCCUPIED MODE: DURING THE OCCUPIED MODE, THE FOLLOWING SHALL OCCUR:
   A. THE SUPPLY FAN'S VFD SHALL RAMP UP SLOWLY TO MEET THE STATIC PRESSURE SETPOINT AS READ BY A STATIC PRESSURE SENSOR LOCATED 75% OF THE WAY DOWN THE DUCT RUN (OR AS SHOWN ON THE PLANS).
   B. THE OUTSIDE AIR DAMPER SHALL OPEN TO MINIMUM POSITION.
   C. THE RETURN AIR AND EXHAUST AIR DAMPERS SHALL BE OPEN.
   D. IN COOLING MODE, THE UNIT'S DX COOLING SECTION SHALL ENERGIZE AND STAGE ITSELF TO MAINTAIN A MINIMUM 55 DEG. F. DISCHARGE AIR TEMPERATURE OFF OF THE COIL.
   E. THE UNIT'S HOT GAS REHEAT SECTION SHALL OPERATE TO MAINTAIN A 70 DEGREE FAHRENHEIT DISCHARGE TEMPERATURE OFF OF THE REHEAT COIL.
   F. THE UNIT SHALL BE EQUIPPED WITH OUTSIDE AIR AND RETURN AIR ENTHALPY SENSORS. WHEN THE OUTSIDE AIR HAS LESS ENTHALPY THAN THE RETURN AIR, THE UNIT SHALL OPEN ITS OUTSIDE AIR DAMPER TO OPERATE IN ECONOMIZER MODE. WHEN THE OUTSIDE AIR ENTHALPY IS GREATER THAN THE RETURN AIR THE OUTSIDE AIR DAMPER SHALL CLOSE TO MINIMUM POSITION.
   G. IN HEATING MODE, THE UNITS DX COOLING SECTION SHALL BE DE-ENERGIZED. THE UNIT'S GAS FIRED HEATING TRAIN SHALL STAGE TO MAINTAIN 70 DEG. F. SUPPLY AIR DISCHARGE AIR TEMPERATURE.

5. UN-OCCUPIED MODE: DURING THE UNOCCUPIED MODE, THE FOLLOWING SHALL OCCUR:
   A. THE SUPPLY FAN SHALL BE OFF AND UNIT SHALL NOT OPERATE.
   B. THE OUTSIDE AIR AND EXHAUST AIR DAMPERS SHALL CLOSE 100%

6. SAFETIES: FAN SHALL SHUTDOWN IF THE FOLLOWING OCCUR:
   A. SMOKE IS DETECTED BY SMOKE DETECTORS IN THE SUPPLY FAN DISCHARGE AND/OR THE RETURN AIR.
   B. EACH LIMIT SHALL BE A MANUAL RESET DEVICE.
   C. SMOKE DETECTOR(S) SHALL BE PROVIDED IN THE UNIT SUPPLY AND RETURN AIR WHERE REQUIRED BY CODE BY THE ELECTRICAL CONTRACTOR. THE SMOKE DETECTOR SHALL BE PROVIDED WITH A SET OF AUXILIARY CONTACTS WHICH WILL DE-ENERGIZE THE FAN UPON SENSING PRODUCTS OF COMBUSTION. ALL CONTROL INTERLOCK WIRING ASSOCIATED WITH THIS SHUTDOWN BETWEEN THE AUXILIARY CONTACTS AND THE FAN STARTER SHALL BE FURNISHED AND INSTALLED BY THE AUTOMATIC TEMPERATURE CONTROL CONTRACTOR. CONTROL INTERLOCK WIRING BETWEEN THE SMOKE DETECTOR AND THE BUILDING FIRE-ALARM SYSTEM SHALL BE FURNISHED AND NSTALLED BY THE ELECTRICAL CONTRACTOR.
   D. AN ALARM SHALL BE GENERATED AT THE BUILDING AUTOMATION SYSTEM THAT SHALL INDICATE IF THE DIRTY FILTER ALARM SENSOR IN UNIT IS IN ALARM STATUS.

VARIABLE AIR VOLUME DEDICATED OUTSIDE AIR HANDLING ROOFTOP UNIT AIR HANDLING UNIT DOAS-3:

AIR HANDLING UNIT SHALL CONSIST OF MODULATING DX COOLING, MODULATING GAS HEATING, VARIABLE SPEED SUPPLY AIR FAN. THE UNIT SHALL BE CONTROLLED BY A MANUFACTURER PROVIDED BACNET COMPATABLE DIGITAL CONTROLLER.

1. OCCUPIED/UNOCCUPIED MODE: THE OCCUPIED/UNOCCUPIED MODE SHALL BE DETERMINED VIA A TIME OF DAY SCHEDULE. THE OCCUPPIED MODE SHALL BE FROM 6:00 AM TO 10:00 PM (ADJ).

2. OCCUPIED MODE: DURING THE OCCUPIED MODE, THE FOLLOWING SHALL OCCUR:
   A. THE SUPPLY FANS VFD SHALL RAMP UP SLOWLY TO MEET THE STATIC PRESSURE SETPOINT AS READ BY A STATIC PRESSURE SENSOR LOCATED 75% OF THE WAY DOWN THE DUCT RUN (OR AS SHOWN ON THE PLANS).
   B. THE OUTSIDE AIR DAMPER SHALL BE OPEN TO MINIMUM POSITION.
   C. THE RETURN AIR DAMPER SHALL BE OPEN.
   D. IN COOLING MODE, THE UNIT'S DX COOLING SECTION SHALL ENERGIZE AND STAGE ITSELF TO MAINTAIN A 48 DEG. F. DISCHARGE AIR TEMPERATURE.
   E. THE UNIT'S HOT GAS REHEAT SECTION SHALL OPERATE TO MAINTAIN A 70 DEGREE FAHRENHEIT DISCHARGE TEMPERATURE OFF OF THE REHEAT COIL AS REQUIRED WHEN UNIT ENTERS DEHUMIDIFICATION MODE TO MAINTAIN A RELATIVE HUMIDITY OF NO GREATER THAN 50%.
   F. THE UNIT SHALL BE EQUIPPED WITH OUTSIDE AIR AND RETURN AIR ENTHALPY SENSORS. WHEN THE OUTSIDE AIR HAS LESS ENTHALPY THAN THE RETURN AIR, THE UNIT SHALL OPEN ITS OUTSIDE AIR DAMPER TO OPERATE IN ECONOMIZER MODE. WHEN THE OUTSIDE AIR ENTHALPY IS GREATER THAN THE RETURN AIR THE OUTSIDE AIR DAMPER SHALL CLOSE TO MINIMUM POSITION.
   G. IN HEATING MODE, THE UNITS DX COOLING SECTION SHALL BE DE-ENERGIZED. THE UNIT'S GAS FIRED HEATING TRAIN SHALL STAGE TO MAINTAIN 48 DEG. F. SUPPLY AIR DISCHARGE AIR TEMPERATURE.

5. UN-OCCUPIED MODE: DURING THE UNOCCUPIED MODE, THE FOLLOWING SHALL OCCUR:
   A. THE SUPPLY FAN SHALL BE OFF. ALL HEATING SHALL OCCUR FROM THE SINGLE DUCT VAV BOXES WITH ELECTRIC RESISTANCE REHEAT;

6. MORNING WARM-UP MODE: DURING THE MORNING WARM-UP MODE THE FOLLOWING SHALL OCCUR:
   A. THE SUPPLY FANS VFD SHALL RAMP UP SLOWLY TO MEET THE STATIC PRESSURE SETPOINT AS READ BY A STATIC PRESSURE SENSOR LOCATED 75% OF THE WAY DOWN THE DUCT RUN (OR AS SHOWN ON THE PLANS).
   B. THE OUTSIDE AIR DAMPER SHALL BE CLOSED.
   C. WHEN THE BAS PROVIDES A START COMMAND FOR MORNING WARM-UP OR COOL DOWN MODE, THE VAV BOXES AND ASSOCIATED HEATING COIL WILL BE CONTROLLED AS FOLLOWS BELOW.
   D. THE ZONE WILL CALCULATE HOW LONG IT WILL TAKE TO RETURN FROM ITS UNOCCUPIED STATE TO ITS OCCUPIED SETPOINT BASED ON THE HEATING OR COOLING LOAD OF THE ZONE AND OUTDOOR AIR TEMPERATURE. THE CONTROLLER SHALL THEN SEND A HEATING OR COOLING REQUEST THE RESPECTIVE VAV BOX AT THE APPROPRIATE WARMUP OR COOL DOWN START TIME SUCH THAT THE CONDITIONS MEET THE OCCUPIED SETPOINT AT THE BEGINNING OF THE OCCUPIED MODE. THE SYSTEM WILL NOT BE PERMITTED TO START MORE THAN 4 HOURS (ADJUSTABLE) BEFORE SCHEDULED OCCUPANCY.
   E. THE HVAC BOXES SHALL DRIVE OPEN. THE UNITS GAS-FIRED HEATING TRAIN SHALL STAGE TO MAINTAIN A DISCHARGE AIR TEMPERATURE OF 95 DEG. F. (ADJ.) UNTIL ALL OF THE VAV BOX ZONE THERMOSTATS ARE MEETING THE OCCUPIED MODE TEMPERATURE SETPOINTS.

6. SAFETIES: FAN SHALL SHUTDOWN IF THE FOLLOWING OCCUR:
   A. HIGH STATIC PRESSURE IN THE SUPPLY FAN DISCHARGE.
   B. SMOKE IS DETECTED BY SMOKE DETECTORS IN THE SUPPLY FAN DISCHARGE AND/OR THE RETURN AIR.
   C. EACH LIMIT SHALL BE A MANUAL RESET DEVICE.
   D. SMOKE DETECTOR(S) SHALL BE PROVIDED IN THE UNIT SUPPLY AND RETURN AIR WHERE REQUIRED BY CODE BY THE ELECTRICAL CONTRACTOR. THE SMOKE DETECTOR SHALL BE PROVIDED WITH A SET OF AUXILIARY CONTACTS WHICH WILL DE-ENERGIZE THE FAN UPON SENSING PRODUCTS OF COMBUSTION. ALL CONTROL INTERLOCK WIRING ASSOCIATED WITH THIS SHUTDOWN BETWEEN THE AUXILIARY CONTACTS AND THE FAN STARTER SHALL BE FURNISHED AND INSTALLED BY THE AUTOMATIC TEMPERATURE CONTROL CONTRACTOR. CONTROL INTERLOCK WIRING BETWEEN THE SMOKE DETECTOR AND THE BUILDING FIRE-ALARM SYSTEM SHALL BE FURNISHED AND NSTALLED BY THE ELECTRICAL CONTRACTOR.
   E. AN ALARM SHALL BE GENERATED AT THE BUILDING AUTOMATION SYSTEM THAT SHALL INDICATE IF THE DIRTY FILTER ALARM SENSOR IN UNIT IS IN ALARM STATUS.

VARIABLE AIR VOLUME SINGLE DUCT BOXES WITH ELECTRIC REISTANCE REHEAT (NON-SURGICAL AREAS)

THE SINGLE DUCT VARIABLE AIR VOLUME (VAV) WITH ELECTRIC RESISTANCE HEATING COILS ARE MONITORED AND CONTROLLED THROUGH THE BUILDING AUTOMATION SYSTEM (BAS) USING DIRECT DITIGAL CONTROL WITH ELECTRIC ACTUATION. THE BOX SHALL MODULATE BETWEEN ITS SCHEDULE'S MINIMUM AND MAXMIMUM AIRFLOW RATES AND SHALL MODULATE THE ELECTRIC RESISTANCE HEATING COIL'S SCR CONTROL STAGES TO MAINTAIN ZONE TEMPERATURE SETPOITNS.

THE VAV BOX DAMPERS WILL FAIL IN THEIR LAST POSITION UPON A LOSS OF POWER.

THE VAV BOX DAMPERS WILL BE CONTROLLED IN THE FOLLOWING MODES OF OPERATION - OCCUPIED, UNOCCUPIED, WARM UP AND COOL DOWN.

CONTROL OF THE BOXES SHALL BE INDEXED TO OCCUPIED AND UNOCCUPIED MODES AS SCHEDULED THROUGH THE BUILDING AUTOMATION SYSTEM. THIS CONTROL MAY BE OVERRIDDEN FROM UNOCCUPIED TO OCCUPIED MODE FOR THE LOCAL OCCUPANCY OVERRIDE TIME SETPOINT BY PRESSING THE ASSOCIATED PUSH-BUTTON ON THE SPACE TEMPERATURE SENSORS OR THERMOSTATS. THE BOXES WILL BE CONTROLLED WITH THE FOLLOWING INITIAL SCHEDULE (ADJ.)

A. MONDAY THROUGH FRIDAY OCCUPANCY START: 6:00 AM
B. MONDAY THROUGH FRIDAY OCCUPANCY END: 10:00 PM
C. SATURDAY OCCUPANCY START: 9;00 AM
D. SATURDAY OCCUPANCY END: 6:00 PM
E. SUNDAY OCCUPANCY START: 10:00 AM
F. SUNDAY OCCUPANCY END: 4:00 PM

VAV BOX SETPOINTS SHALL BE ADJUSTED THROUGH THE BUILDING AUTOMATION SYSTEM. THE HEATING AND COOLING SETPOINTS ARE NOT ABLE TO BE ADJUSTED THROUGH LOCAL SETPOINT ADJUSTMENT EXCEPT FOR ACTIVATION OF THE OCCUPANCY OVERRIDE PUSH BUTTON FOR ALL SPACE TEMPERATURE SENSORS/THERMOSTATS/ THE VAV BOXES WILL BE CONTROLLED USING THE FOLLOWING INITIAL USER-ADJUSTABLE SETPOINTS:

A. VAV OCCUPIED HEATING SETPOINT (70 DEGREES FAHRENHEIT)
B. VAV OCCUPIED COOLING SETPOINT (75 DEGREES FAHRENHEIT)
C. VAV UNOCCUPIED HEATING SETPOINT (65 DEGREES FAHRENHEIT)
D. VAV UNOCCUPIED COOLING SETPOINT (80 DEGREES FAHRENHEIT)
E. VAV MINIMUM AND MAXIMUM AIRFLOW SETPOINT (SEE MECHANICAL SCHEDULES)
F. VAV LOCAL OCCUPANCY OVERRIDE TIME SETPOINT (1 HOUR)

ACCES TO THE BAS SHALL BE PROVIDED THROUGH THE BAS OPERATION WORKSTATION IN THE BUILDING/MAINTENANCE ENGINEER'S OFFICE. ALL CONTORL POINTS AND SETPOINTS WILL BE AVAILABLE FOR MONITORING AND ADJUSTMENT, AS PERMITTED BY THE ACCESS LEVEL OF THE USER THROUGH A GRAPHICAL INTERFACE. A GRAPHIC WILL BE PROVIDED FOR EACH VAV BOX WITH SETPOINTS, OPERATING CONDITIONS AND A PLAN WITH ALL VAV BOX LOCATIONS AND SPACE CONDITIONS.

VARIABLE AIR VOLUME BOXES WITH REHEAT

A. A WALL MOUNTED THERMOSTAT WITH BLANK FACEPLATE AND OCCUPANT OVERRIDE PUSH BUTTON WILL BE USED BY THE VAV BOX CONTROLLER FOR ITS CONTROL LOGIC POINT.
B. THE CONTROLLER WILL STORE BOTH OCCUPIED AND UNOCCUPIED SCHEDULES AND SET POINTS THROUGH LINKAGE CONTROL. THE CONTROLLER WILL MONITOR THE PRIMARY AIR TEMPERATURE TO THE VAV BOX AND MODULATE THE PRIMARY AIR DAMPER FROM ITS MINIMUM CFM SETPOINT TO ITS MAIMUM CFM SETPOINT TO SATISFY ITS DEMAND.
C. IF HEAT IS REQUIRED AND THE PRIMARY IS DAMPER IS NOT SUITABLE FOR HEATING, THE CONTROLLER WILL ACTIVATE ITS ELECTRIC RESISTANCE HEATING COIL TO MEET SPACE DEMAND. AN AIRFLOW PROVING SWITCH SHALL BE PROVIDED THAT SHALL PROVE AIRFLOW PRIOR TO ENERGIZATION OF ELECTRIC RESISTANCE HEATING COIL.
D. THE CONTROLLER WILL MONITOR THE DISCHARGE AIR TEMPERATURE AFTER THE COIL, AND WILL NOT ALLOW THE AIR TO EXCEED THE MAXIMUM HEATING SUPPLY TEMPERATURE SETPOINT OF 95 DEGREES FAHRENHEIT.
E. IN HEATING MODE, THE CONTROLLER WILL MAINTAIN THE CONFIGURED AUXILIARY HEATING CFM SET POINT.
F. PROVIDE BACNET COMPATIBLE THERMOSTATS AND CONTROLLERS.

VARIABLE AIR VOLUME SINGLE DUCT BOXES WITH ELECTRIC REISTANCE REHEAT (SURGERY AREAS)

THE SINGLE DUCT VARIABLE AIR VOLUME (VAV) WITH ELECTRIC RESISTANCE HEATING COILS ARE MONITORED AND CONTROLLED THROUGH THE BUILDING AUTOMATION SYSTEM (BAS) USING DIRECT DITIGAL CONTROL WITH ELECTRIC ACTUATION. THE BOX SHALL MODULATE BETWEEN ITS SCHEDULE'S MINIMUM AND MAXMIMUM AIRFLOW RATES AND SHALL MODULATE THE ELECTRIC RESISTANCE HEATING COIL'S SCR CONTROL STAGES TO MAINTAIN ZONE TEMPERATURE SETPOITNS.

THE VAV BOX DAMPERS WILL FAIL IN THEIR LAST POSITION UPON A LOSS OF POWER.

THE VAV BOX DAMPERS WILL BE CONTROLLED IN THE FOLLOWING MODES OF OPERATION - OCCUPIED, UNOCCUPIED, WARM UP AND COOL DOWN.

CONTROL OF THE BOXES SHALL BE INDEXED TO OCCUPIED AND UNOCCUPIED MODES AS SCHEDULED THROUGH THE BUILDING AUTOMATION SYSTEM. THIS CONTROL MAY BE OVERRIDDEN FROM UNOCCUPIED TO OCCUPIED MODE FOR THE LOCAL OCCUPANCY OVERRIDE TIME SETPOINT BY PRESSING THE ASSOCIATED PUSH-BUTTON ON THE SPACE TEMPERATURE SENSORS OR THERMOSTATS. THE BOXES WILL BE CONTROLLED WITH THE FOLLOWING INITIAL SCHEDULE (ADJ.)

A. MONDAY THROUGH FRIDAY OCCUPANCY START: 6:00 AM
B. MONDAY THROUGH FRIDAY OCCUPANCY END: 10:00 PM
C. SATURDAY OCCUPANCY START: 9;00 AM
D. SATURDAY OCCUPANCY END: 6:00 PM
E. SUNDAY OCCUPANCY START: 10:00 AM
F. SUNDAY OCCUPANCY END: 4:00 PM

VAV BOX SETPOINTS SHALL BE ADJUSTED THROUGH THE BUILDING AUTOMATION SYSTEM. THE HEATING AND COOLING SETPOINTS ARE NOT ABLE TO BE ADJUSTED THROUGH LOCAL SETPOINT ADJUSTMENT EXCEPT FOR ACTIVATION OF THE OCCUPANCY OVERRIDE PUSH BUTTON FOR ALL SPACE TEMPERATURE SENSORS/THERMOSTATS/ THE VAV BOXES WILL BE CONTROLLED USING THE FOLLOWING INITIAL USER-ADJUSTABLE SETPOINTS:

A. VAV OCCUPIED HEATING SETPOINT (66 DEGREES FAHRENHEIT)
B. VAV OCCUPIED COOLING SETPOINT (66 DEGREES FAHRENHEIT)
C. VAV UNOCCUPIED HEATING SETPOINT (65 DEGREES FAHRENHEIT)
D. VAV UNOCCUPIED COOLING SETPOINT (72 DEGREES FAHRENHEIT)
E. VAV MINIMUM AND MAXIMUM AIRFLOW SETPOINT (SEE MECHANICAL SCHEDULES)
F. VAV LOCAL OCCUPANCY OVERRIDE TIME SETPOINT (1 HOUR)

ACCES TO THE BAS SHALL BE PROVIDED THROUGH THE BAS OPERATION WORKSTATION IN THE BUILDING/MAINTENANCE ENGINEER'S OFFICE. ALL CONTORL POINTS AND SETPOINTS WILL BE AVAILABLE FOR MONITORING AND ADJUSTMENT, AS PERMITTED BY THE ACCESS LEVEL OF THE USER THROUGH A GRAPHICAL INTERFACE. A GRAPHIC WILL BE PROVIDED FOR EACH VAV BOX WITH SETPOINTS, OPERATING CONDITIONS AND A PLAN WITH ALL VAV BOX LOCATIONS AND SPACE CONDITIONS.

VARIABLE AIR VOLUME BOXES WITH REHEAT

A. A WALL MOUNTED THERMOSTAT WITH BLANK FACEPLATE AND OCCUPANT OVERRIDE PUSH BUTTON WILL BE USED BY THE VAV BOX CONTROLLER FOR ITS CONTROL LOGIC POINT.
B. THE CONTROLLER WILL STORE BOTH OCCUPIED AND UNOCCUPIED SCHEDULES AND SET POINTS THROUGH LINKAGE CONTROL. THE CONTROLLER WILL MONITOR THE PRIMARY AIR TEMPERATURE TO THE VAV BOX AND MODULATE THE PRIMARY AIR DAMPER FROM ITS MINIMUM CFM SETPOINT TO ITS MAIMUM CFM SETPOINT TO SATISFY ITS DEMAND.
C. IF HEAT IS REQUIRED AND THE PRIMARY IS DAMPER IS NOT SUITABLE FOR HEATING, THE CONTROLLER WILL ACTIVATE ITS ELECTRIC RESISTANCE HEATING COIL TO MEET SPACE DEMAND. AN AIRFLOW PROVING SWITCH SHALL BE PROVIDED THAT SHALL PROVE AIRFLOW PRIOR TO ENERGIZATION OF ELECTRIC RESISTANCE HEATING COIL.
D. THE CONTROLLER WILL MONITOR THE DISCHARGE AIR TEMPERATURE AFTER THE COIL, AND WILL NOT ALLOW THE AIR TO EXCEED THE MAXIMUM HEATING SUPPLY TEMPERATURE SETPOINT OF 95 DEGREES FAHRENHEIT.
E. IN HEATING MODE, THE CONTROLLER WILL MAINTAIN THE CONFIGURED AUXILIARY HEATING CFM SET POINT.
F. PROVIDE BACNET COMPATIBLE THERMOSTATS AND CONTROLLERS.

SPLIT SYSTEM CONDENSING UNIT (O2 ROOM & MEDICAL GAS ROOM)

SPLIT SYSTEM CONDENSING UNIT AND FAN COIL OPERATION SHALL BE CONTROLLED VIA A WALL MOUNTED BACNET COMPATIBLE THERMOSTAT TO MAINTAIN A SPACE TEMPERATURE OF NO GREATER THAN 75 DEGREES FAHRENHEIT (ADJUSTABLE) 24 HOURS A DAY, 7 DAYS A WEEK.

AN ALARM SHALL BE GENERATED AND SHALL NOTIFY THE BUILDING OPERATOR INTERFACE VIA THE BUILDING AUTOMATION SYSTEM IN THE EVENT OF AN ALARM GENERATION OF THE CONDENSATE SAFTEY DEVICE.

SPLIT SYSTEM CONDENSING UNITS (ELEVATOR EQUIPMENT ROOM)

SPLIT SYSTEM CONDENSING UNIT AND FAN COIL OPERATION SHALL BE CONTROLLED VIA A WALL MOUNTED BACNET COMPATIBLE THERMOSTAT TO MAINTAIN A SPACE TEMPERATURE OF NO GREATER THAN 80 DEGREES FAHRENHEIT (ADJUSTABLE) 24 HOURS A DAY, 7 DAYS A WEEK.

AN ALARM SHALL BE GENERATED AND SHALL NOTIFY THE BUILDING OPERATOR INTERFACE VIA THE BUILDING AUTOMATION SYSTEM IN THE EVENT OF AN ALARM GENERATION OF THE CONDENSATE SAFTEY DEVICE.

SPLIT SYSTEM CONDENSING UNITS (IT EQUIPMENT ROOM)

SPLIT SYSTEM CONDENSING UNIT AND FAN COIL OPERATION SHALL BE CONTROLLED VIA A WALL MOUNTED BACNET COMPATIBLE THERMOSTAT TO MAINTAIN A SPACE TEMPERATURE OF NO GREATER THAN 75 DEGREES FAHRENHEIT (ADJUSTABLE) 24 HOURS A DAY, 7 DAYS A WEEK.

AN ALARM SHALL BE GENERATED AND SHALL NOTIFY THE BUILDING OPERATOR INTERFACE VIA THE BUILDING AUTOMATION SYSTEM IN THE EVENT OF AN ALARM GENERATION OF THE CONDENSATE SAFTEY DEVICE.

EXHAUST FAN (ELEVATOR EQUIPMENT ROOM AND ELECTRICAL EQUIPMENT ROOMS)

FAN OPERATION SHALL BE CONTROLLED VIA A WALL MOUNTED BACNET COMPATIBLE THERMOSTAT TO MAINTAIN A SPACE TEMPERATURE OF NO GREATER THAN 85 DEGREES FAHRENHEIT (ADJUSTABLE).

ELECTRIC WALL HEATERS

ELECTRIC RESISTANCE WALL HEATERS SHALL OPERATE VIA THEIR INTRGRAL THERMOSTATS TO MAINTAIN A SPACE TEMPERATURE OF 65 DEGREES FAHRENHEIT (ADJUSTABLE).

ELECTRIC UNIT HEATERS

ELECTRIC RESISTANCE UNIT HEATER SHALL OPERATE VIA A WALL MOUNTED BACNET COMPATIBLE THERMOSTATSTO MAINTAIN A SPACE TEMPERATURE OF 65 DEGREES FAHRENHEIT (ADJUSTABLE).

THE UNIT HEATER SHALL FEATURE A SUMMER FAN SWITCH THAT SHALL ACTIVATE VIA SWITCH AND BACNET CONTROL.

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PROJECT NUMBER: 21-000

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No. DATE

MECHANICAL SEQUENCE OF OPERATION

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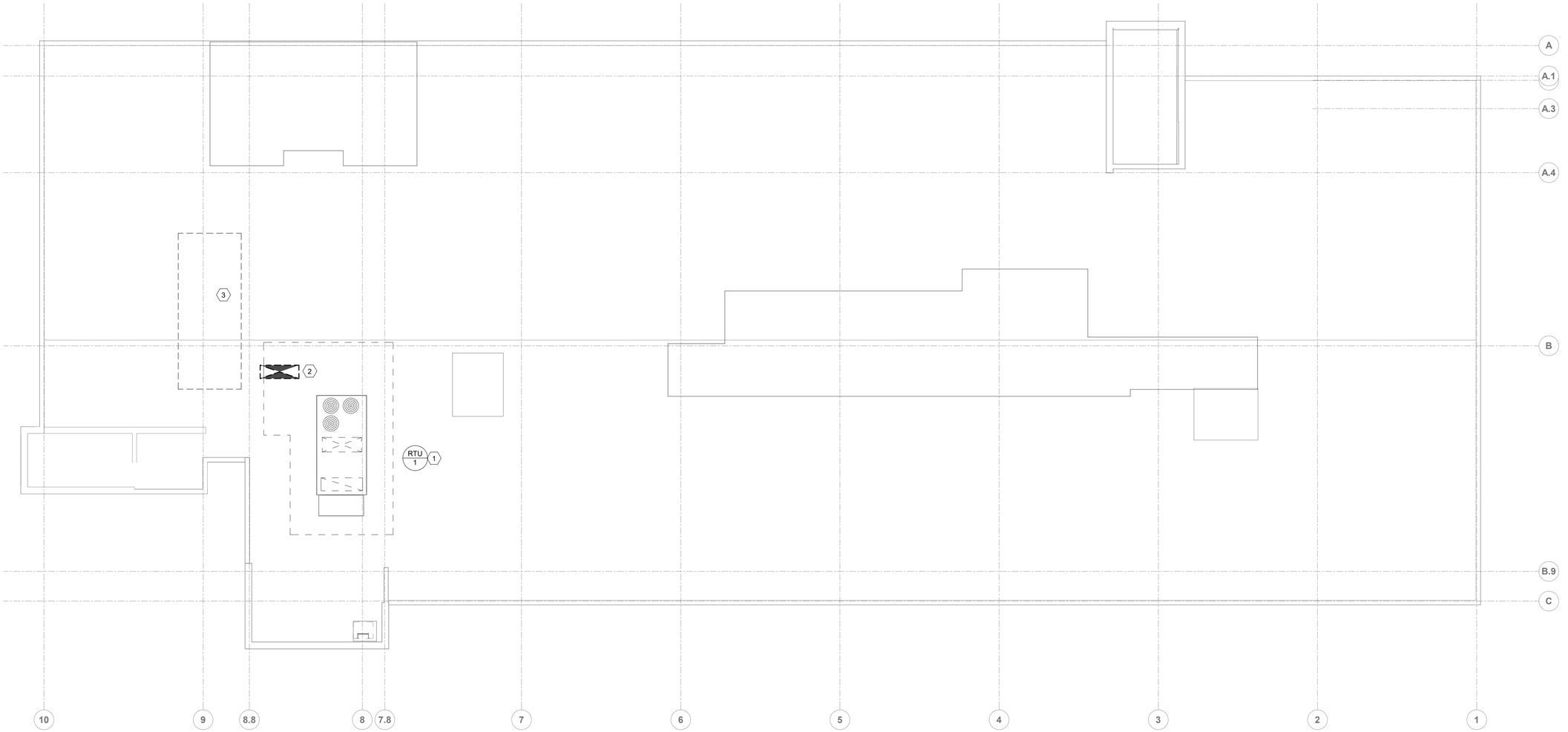
ASC PROJECT NUMBER: 21-000

MECHANICAL DEMOLITION GENERAL NOTES:

1. MC SHALL VERIFY EXISTING CONDITIONS AND LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND GRILLES, REGISTERS AND DIFFUSERS IN FIELD PRIOR TO BID. MC SHALL VERIFY EQUIPMENT IS IN GOOD WORKING ORDER AND THAT ANY COMPONENTS OF EQUIPMENT THAT REQUIRE REPLACEMENT ARE REPLACED PRIOR TO RE-INSTALLATION. EXISTING GRILLES, REGISTERS AND DIFFUSERS TO REMAIN SHALL BE CLEANED OF DUST AND DEBRIS PRIOR TO FINAL RE-INSTALLATION AND EQUIPMENT STARTUP.
2. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
3. MC SHALL COORDINATE WITH GC TO PATCH ALL EXISTING TO REMAIN WALL, FLOOR ROOF AND CEILING PENETRATIONS TO MATCH EXISTING MATERIAL AT ALL DEMOLISHED PIPE, DUCT, AND MECHANICAL SYSTEMS RELATED PENETRATIONS.
.

MECHANICAL DEMOLITION KEY NOTES: (#)

1. EXISTING ROOFTOP UNIT AND ALL ASSOCIATED ACCESSORIES AND APPURTENANCES TO REMAIN. VERIFY EXACT SIZE AND LOCATION IN FIELD.
2. EXISTING ROOF CURB AND ALL ASSOCIATED ACCESSORIES AND APPURTENANCES TO BE DEMOLISHED IN THEIR ENTIRETY. VERIFY EXACT SIZE AND LOCATION IN FIELD. MC SHALL COORDINATE WITH GC TO PATCH ROOF TO MATCH NEW CONSTRUCTION.
3. EXISTING DUCTWORK TO BE DEMOLISHED IN THIS PHASE OF DEMOLITION. MC SHALL COORDINATE WITH GC TO PATCH ROOF TO MATCH NEW CONSTRUCTION.



1 / M103 **MECHANICAL DEMOLITION PLAN - ROOF**

1/8" = 1'-0"

0' 2' 4' 8' 16' 24'

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

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ROOF MECHANICAL DEMOLITION PLAN

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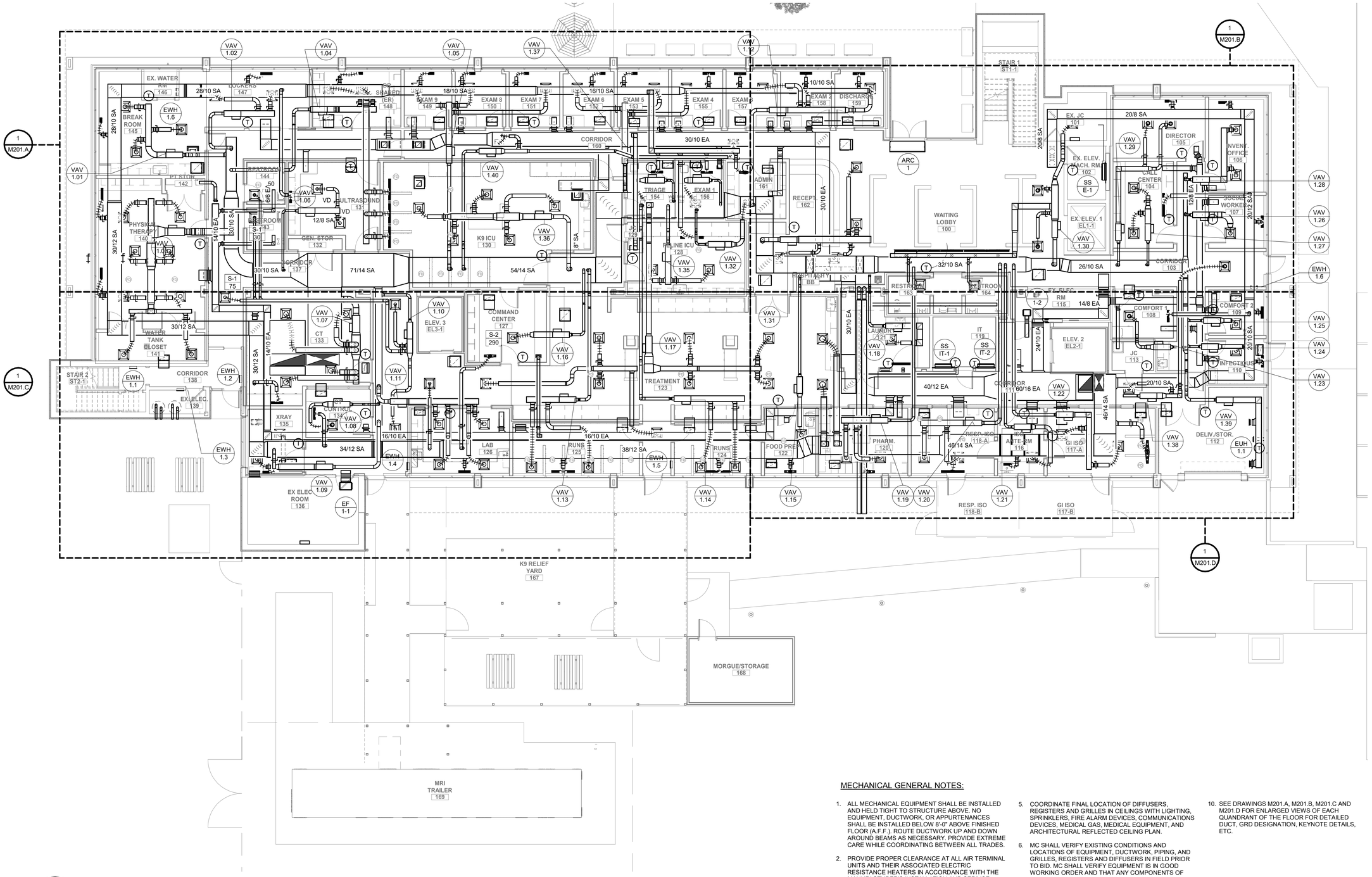

1 M201 **MECHANICAL PLAN - FIRST FLOOR**
1/8" = 1'-0"

0' 2' 4' 8' 16' 24'

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

MECHANICAL GENERAL NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED AND HELD TIGHT TO STRUCTURE ABOVE. NO EQUIPMENT, DUCTWORK, OR APPURTENANCES SHALL BE INSTALLED BELOW 8'-0" ABOVE FINISHED FLOOR (A.F.F.). ROUTE DUCTWORK UP AND DOWN AROUND BEAMS AS NECESSARY. PROVIDE EXTREME CARE WHILE COORDINATING BETWEEN ALL TRADES.
2. PROVIDE PROPER CLEARANCE AT ALL AIR TERMINAL UNITS AND THEIR ASSOCIATED ELECTRIC RESISTANCE HEATERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND SERIVCE REQUIREMENTS.
3. MC SHALL PROVIDE ACCESS PANELS IN INACCESSIBLE CEILINGS FOR AIR TERMINAL UNITS, VOLUME DAMPERS, MECHANICAL CONTROLS AND OTHER MECHANICAL EQUIPMENT/CONTROLS REQUIRING ACCESS FOR ADJUSTMENT, REPLACEMENT AND SERIVCE. SIZE OF DAMPER SHALL BE IN ACCORDANCE WITH EQUIPMENT OR APPURTENANCE MANUFACTURER'S REQUIREMENTS. PROVIDE RATED ACCESS PANELS WITH EQUAL FIRE RATING FOR ANY PANELS LOCATED WITHIN RATEDS WALLS, CEILINGS OR ASSEMBLIES.
4. MECHANICAL CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS AND COMPLETE COORDINATION WITH ALL TRADES PRIOR TO CONSTRUCTION. FIELD COORDINATION SHALL BE REQUIRED DUE TO CEILING HEIGHT AND STRUCTURAL BEAM DEPTHS.
5. COORDINATE FINAL LOCATION OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH LIGHTING, SPRINKLERS, FIRE ALARM DEVICES, COMMUNICATIONS DEVICES, MEDICAL GAS, MEDICAL EQUIPMENT, AND ARCHITECTURAL REFLECTED CEILING PLAN.
6. MC SHALL VERIFY EXISTING CONDITIONS AND LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND GRILLES, REGISTERS AND DIFFUSERS IN FIELD PRIOR TO BID. MC SHALL VERIFY EQUIPMENT IS IN GOOD WORKING ORDER AND THAT ANY COMPONENTS OF EQUIPMENT THAT REQUIRE REPLACEMENT ARE REPLACED PRIOR TO RE-INSTALLATION. EXISTING GRILLES, REGISTERS AND DIFFUSERS TO REMAIN SHALL BE CLEANED OF DUST AND DEBRIS PRIOR TO FINAL RE-INSTALLATION AND EQUIPMENT STARTUP.
7. DUCTWORK DIMENSIONS ARE PERMITTED TO BE ADJUSTED AS NECESSARY SO LONG AS THE NET FREE SQUARE AREA OF THE INSIDE DUCT DIMENSIONS ARE MAINTAINED AND THE WIDTH TO HEIGTH RATIO OF THE DUCTWORK DOES NOT EXCEED 3:1.
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. SEE DRAWINGS M201.A, M201.B, M201.C AND M201.D FOR ENLARGED VIEWS OF EACH QUANDRANT OF THE FLOOR FOR DETAILED DUCT, GRD DESIGNATION, KEYNOTE DETAILS, ETC.

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FIRST FLOOR MECHANICAL PLAN

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MECHANICAL KEY NOTES: (#)

1. PROVIDE 1/2" UNDERCUT OF DOOR.
2. DUCTWORK SHALL PENETRATE EXISTING BEAM AT MIDDLE THIRD (WIDTH AND HEIGHTH) OF BEAM. COORDINATE FINAL LOCATION OF BEAM PENETRATION WITH GC IN CONJUNCTION WITH STRUCTURAL DRAWINGS.

MECHANICAL GENERAL NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED AND HELD TIGHT TO STRUCTURE ABOVE. NO EQUIPMENT, DUCTWORK, OR APPURTENANCES SHALL BE INSTALLED BELOW 8'-0" ABOVE FINISHED FLOOR (A.F.F.). ROUTE DUCTWORK UP AND DOWN AROUND BEAMS AS NECESSARY. PROVIDE EXTREME CARE WHILE COORDINATING BETWEEN ALL TRADES.
2. PROVIDE PROPER CLEARANCE AT ALL AIR TERMINAL UNITS AND THEIR ASSOCIATED ELECTRIC RESISTANCE HEATERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND SERIVCE REQUIREMENTS.
3. MC SHALL PROVIDE ACCESS PANELS IN INACCESSIBLE CEILINGS FOR AIR TERMINAL UNITS, VOLUME DAMPERS, MECHANICAL CONTROLS AND OTHER MECHANICAL EQUIPMENT/CONTROLS REQUIRING ACCESS FOR ADJUSTMENT, REPLACEMENT AND SERIVCE. SIZE OF DAMPER SHALL BE IN ACCORDANCE WITH EQUIPMENT OR APPURTENANCE MANUFACTURER'S REQUIREMENTS. PROVIDE RATED ACCESS PANELS WITH EQUAL FIRE RATING FOR ANY PANELS LOCATED WITHIN RATEDS WALLS, CEILINGS OR ASSEMBLIES.
4. MECHANICAL CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS AND COMPLETE COORDINATION WITH ALL TRADES PRIOR TO CONSTRUCTION. FIELD COORDINATION SHALL BE REQUIRED DUE TO CEILING HEIGHT AND STRUCTURAL BEAM DEPTHS.
5. COORDINATE FINAL LOCATION OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH LIGHTING, SPRINKLERS, FIRE ALARM DEVICES, COMMUNICATIONS DEVICES, MEDICAL GAS, MEDICAL EQUIPMENT, AND ARCHITECTURAL REFLECTED CEILING PLAN.
6. MC SHALL VERIFY EXISTING CONDITIONS AND LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND GRILLES, REGISTERS AND DIFFUSERS IN FIELD PRIOR TO BID. MC SHALL VERIFY EQUIPMENT IS IN GOOD WORKING ORDER AND THAT ANY COMPONENTS OF EQUIPMENT THAT REQUIRE REPLACEMENT ARE REPLACED PRIOR TO RE-INSTALLATION. EXISTING GRILLES, REGISTERS AND DIFFUSERS TO REMAIN SHALL BE CLEANED OF DUST AND DEBRIS PRIOR TO FINAL RE-INSTALLATION AND EQUIPMENT STARTUP.
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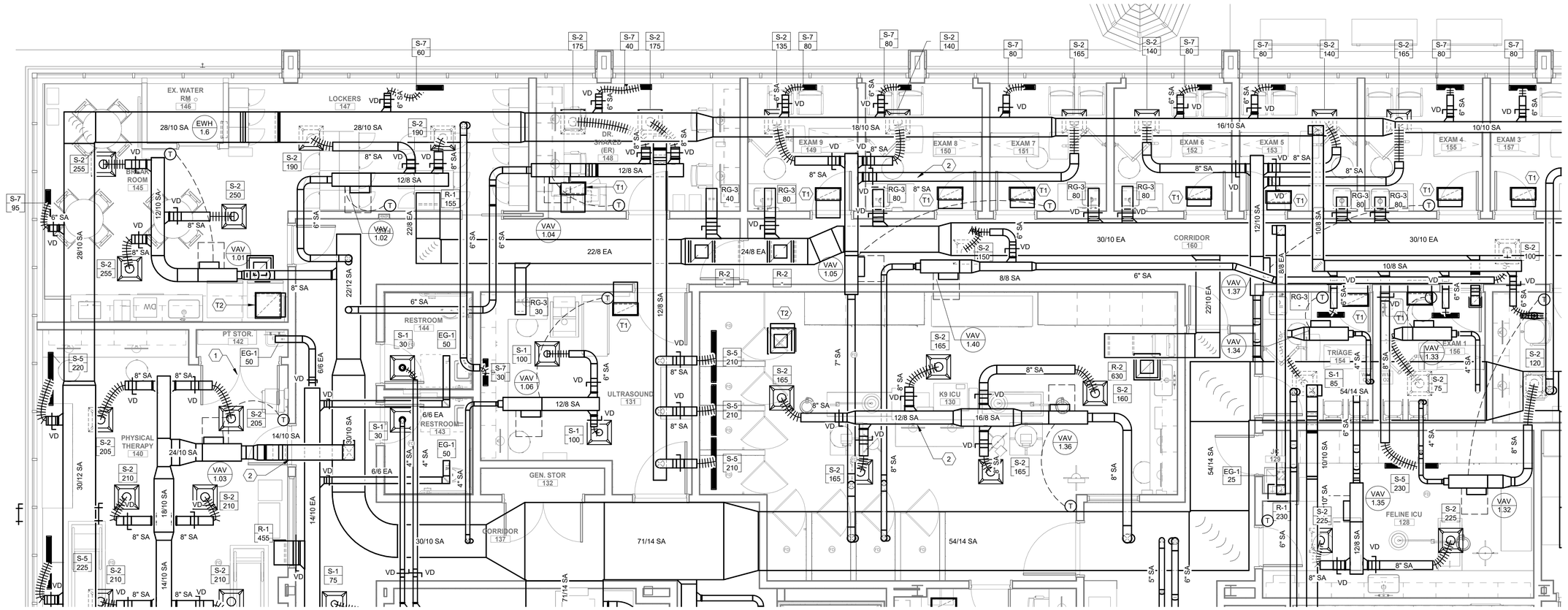
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. CONDENSATE DRAIN PIPING SHALL BE SLOPED NO LESS THAN 1/4" PER LINEAL FOOT TOWARDS THE POINT OF INDIRECT TERMINATION.



1 M201.A **ENLARGED MECHANICAL PLAN - FIRST FLOOR AREA A**
1/4" = 1'-0"

0' 1' 2' 4' 8' 12'
SCALE : 1/4" = 1'-0"

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FIRST FLOOR ENLARGED MECHANICAL PLAN AREA A

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M201.A

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MECHANICAL KEY NOTES: (#)

1. DUCTWORK SHALL PENETRATE EXISTING BEAM AT MIDDLE THIRD (WIDTH AND HEIGHTH) OF BEAM. COORDINATE FINAL LOCATION OF BEAM PENETRATION WITH GC IN CONJUNCTION WITH STRUCTURAL DRAWINGS.
2. LINEAR SLOT DIFFUSER SHALL BE INSTALLED IN SIDEWALL BULKHEAD. MC SHALL PROVIDE CONTINUOUS LINEAR SLOT DIFFUSER WITH NECESSARY UNIONS, END CAPS AND CONNECTORS FOR CONTINUOUS LINEAR APPEARANCE.
3. AIR CURTAIN SHALL BE INSTALLED HUNG WALL MOUNTED VIA MOUNTING TO STOREFRONT MULLION. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS. MC SHALL PROVIDE DOOR CONTACT SWITCH AT DOOR AND REMOTE WALL MOUNTED CONTROLLER SHALL BE INSTALLED BEHIND RECEPTION DESK AT WALL.
4. 4" COMBUSTION AIR AND 4" FLUE FOR HOT WATER HEATER SHALL TERMINATE AT EXTERIOR WALL. INSTALL TERMINATIONS, END CAPS, BIRD/INSECT SCREENS AND ANGLE TERMINATIONS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS. COORDINATE FINAL INSTALLATION WITH PC IN ACCORDANCE WITH FINAL HOT WATER HEATER INSTALLATION LOCATION.
5. 3/4" CONDENSATE DRAIN SHALL BE ROUTED AND TERMINATE INDIRECTLY AT FLOOR DRAIN IN JANITOR'S CLOSET. COORDINATE FINAL LOCATION OF FLOOR DRAIN WITH PC.
6. SPLIT SYSTEM FAN COIL INDOOR UNIT SHALL BE INSTALLED ON WALL OF ELEVATOR ROOM. COORDINATE FINAL LOCATION OF UNIT WITH ELEVATOR EQUIPMENT AND ELECTRICAL EQUIPMENT. 3/4" CONDENSATE ROUTING SHALL BE ROUTED FROM UNIT TO DESIGNATED INDIRECT TERMINATION. MC SHALL COORDINATE WITH EC SUCH THAT PIPING IS NOT ROUTED ABOVE ELECTRICAL EQUIPMENT OR WITHIN WORKING/SERVICE CLEARANCE AREA OF ELECTRICAL EQUIPMENT. PROVIDE UL-508 RATED SAFETY LEVEL SENSOR CUTOFF SWITCH IN CONDENSATE PIPING AND PROVIDE CONDENSATE PUMP POWERED THROUGH INDOOR FAN COIL UNIT. PROVIDE SUCTION AND LIQUID LINE ROUTING FROM INDOOR SPLIT SYSTEM UNIT TO ASSOCIATED OUTDOOR CONDENSING UNIT AT ROOF ABOVE. COORDINATE ROUTING IN FIELD.
7. DUCT STATIC PRESSURE SENSOR SHALL BE INSTALLED 2/3RDS OF THE LENGTH OF THE SUPPLY DUCTWORK AT THIS LOCATION. NOTE THAT ADDITIONAL STATIC PRESSURE SENSORS MAY BE INSTALLED FOR OTHER SIGNIFICANT SUPPLY MAINS ASSOCIATED WITH THIS ROOFTOP UNIT.
8. BACNET MS/TP CONTROL PANEL SHALL BE INSTALLED IN ELECTRIC ROOM. MC SHALL COORDINATE WITH EC TO PLACE CONTROL PNAEL WITHIN ROOM SUCH THAT IT DOES NOT INTERFERE WITH ELECTRICAL EQUIPMENT/GEAR IN ROOM. EC SHALL PROVIDE 120V CIRCUIT TO CONTROL PANEL. CONTROL PANEL SHALL CONTAIN 5 AMP CIRCUIT BREAKER AND 120/24v CONTROL TRANSFORMER.

MECHANICAL GENERAL NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED AND HELD TIGHT TO STRUCTURE ABOVE. NO EQUIPMENT, DUCTWORK, OR APPURTENANCES SHALL BE INSTALLED BELOW 8'-0" ABOVE FINISHED FLOOR (A.F.F.). ROUTE DUCTWORK UP AND DOWN AROUND BEAMS AS NECESSARY. PROVIDE EXTREME CARE WHILE COORDINATING BETWEEN ALL TRADES.
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4. MECHANICAL CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS AND COMPLETE COORDINATION WITH ALL TRADES PRIOR TO CONSTRUCTION. FIELD COORDINATION SHALL BE REQUIRED DUE TO CEILING HEIGHT AND STRUCTURAL BEAM DEPTHS.
5. COORDINATE FINAL LOCATION OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH LIGHTING, SPRINKLERS, FIRE ALARM DEVICES, COMMUNICATIONS DEVICES, MEDICAL GAS, MEDICAL EQUIPMENT, AND ARCHITECTURAL REFLECTED CEILING PLAN.
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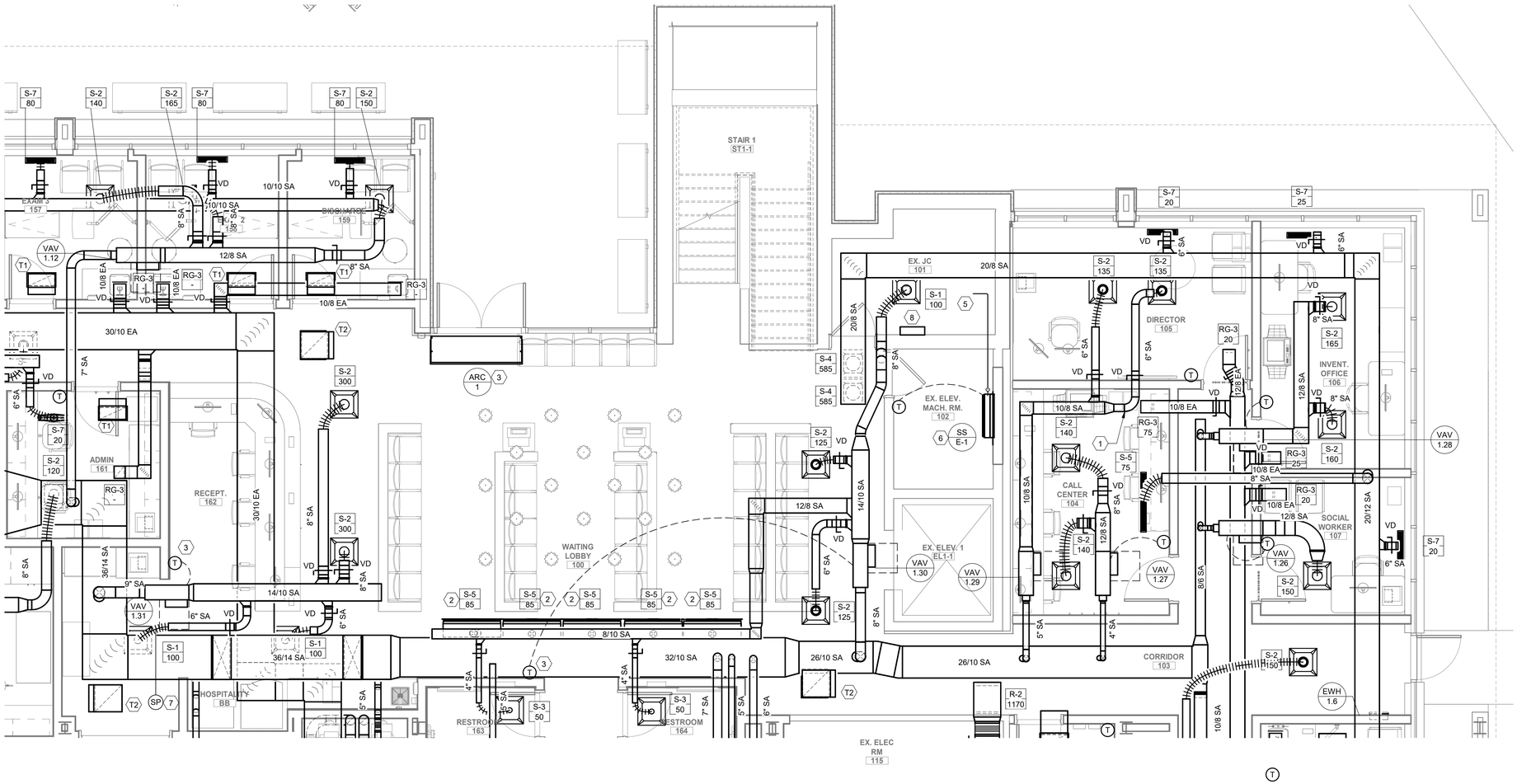
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. CONDENSATE DRAIN PIPING SHALL BE SLOPED NO LESS THAN 1/4" PER LINEAL FOOT TOWARDS THE POINT OF INDIRECT TERMINATION.



1 M201.B **ENLARGED MECHANICAL PLAN - FIRST FLOOR AREA B**
1/4" = 1'-0"

0' 1' 2' 4' 8' 12'

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

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FIRST FLOOR ENLARGED MECHANICAL PLAN AREA B

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MECHANICAL KEY NOTES: (#)

1. RETURN AIR DUCTWORK SHALL BE ROUTED UP THROUGH EXISTING MECHANICAL CHASE UP TO FLOOR ABOVE. RETURN AIR DUCTWORK SHALL ELBOW INTO CEILING ABOVE CT ROOM AND SHALL STUB OPEN INTO THE CEILING SPACE. PROVIDE BIRDSCREEN AT RETURN AIR TERMINATION. PROVIDE FIRE DAMPER AT PENETRATION OF EXISTING MECHANICAL CHASE.
2. SUPPLY AIR DUCTWORK SHALL BE ROUTED UP THROUGH EXISTING MECHANICAL CHASE UP TO FLOOR ABOVE. PROVIDE FIRE DAMPER AT PENETRATION OF EXISTING MECHANICAL CHASE.
3. 4" COMBUSTION AIR AND 4" FLUE FOR HOT WATER HEATER SHALL TERMINATE AT EXTERIOR WALL. INSTALL TERMINATIONS, END CAPS, BIRD/INSECT SCREENS AND ANGLE TERMINATIONS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS. COORDINATE FINAL INSTALLATION WITH PC IN ACCORDANCE WITH FINAL HOT WATER HEATER INSTALLATION LOCATION.
4. EXHAUST DUCTWORK STUBS INTO CEILING PLENUM RETURN. PROVIDE BIRDSCREEN AT DUCT OPENING TERMINATION ABOVE CEILING.
5. TRANSFER GRILLE SHALL BE INSTALLED AT WALL. MC SHALL COORDINATE WITH EC TO LOCATE GRILLE SUCH THAT IT IS NOT INSTALLED AT OR ABOVE ELECTRICAL EQUIPMENT IN ELECTRICAL ROOM.
6. BACNET MS/TP CONTROL PANEL SHALL BE INSTALLED IN ELECTRIC ROOM. MC SHALL COORDINATE WITH EC TO PLACE CONTROL PNAEL WITHIN ROOM SUCH THAT IT DOES NOT INTERFERE WITH ELECTRICAL EQUIPMENT/GEAR IN ROOM. EC SHALL PROVIDE 120V CIRCUIT TO CONTROL PANEL. CONTROL PANEL SHALL CONTAIN 5 AMP CIRCUIT BREAKER AND 120/24v CONTROL TRANSFORMER.
7. BACENT MS/TP NETWORK AUTOMATION ENGINE SHALL BE INSTALLED IN THIS LOCAITON. NETWORK AUTOMATION ENGINE SHALL BE POWERED BY 24V CONTROL WIRING AND SHALL PROVIDE WEB ACCESS TO BUILDING AUTOMATION SYSTEM SUPERVISION, CONTROL, MONITORING AND TRENDING IN ADDITION TO SUPERVISION OF FIELD CONTROLLER NETWORKS.

MECHANICAL GENERAL NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED AND HELD TIGHT TO STRUCTURE ABOVE. NO EQUIPMENT, DUCTWORK, OR APPURTENANCES SHALL BE INSTALLED BELOW 8'-0" ABOVE FINISHED FLOOR (A.F.F.). ROUTE DUCTWORK UP AND DOWN AROUND BEAMS AS NECESSARY. PROVIDE EXTREME CARE WHILE COORDINATING BETWEEN ALL TRADES.
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4. MECHANICAL CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS AND COMPLETE COORDINATION WITH ALL TRADES PRIOR TO CONSTRUCTION. FIELD COORDINATION SHALL BE REQUIRED DUE TO CEILING HEIGHT AND STRUCTURAL BEAM DEPTHS.
5. COORDINATE FINAL LOCATION OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH LIGHTING, SPRINKLERS, FIRE ALARM DEVICES, COMMUNICATIONS DEVICES, MEDICAL GAS, MEDICAL EQUIPMENT, AND ARCHITECTURAL REFLECTED CEILING PLAN.
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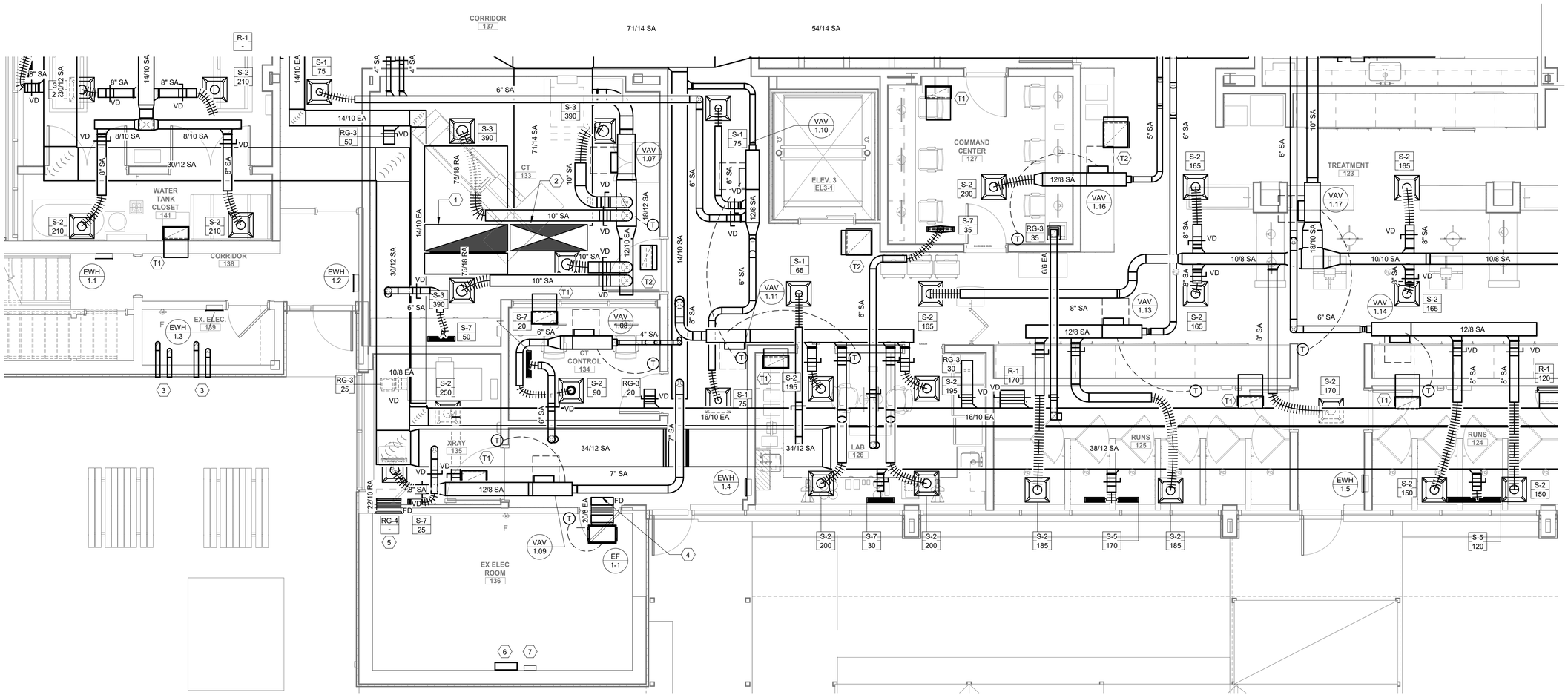
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. CONDENSATE DRAIN PIPING SHALL BE SLOPED NO LESS THAN 1/4" PER LINEAL FOOT TOWARDS THE POINT OF INDIRECT TERMINATION.



1 M201.C **ENLARGED MECHANICAL PLAN - FIRST FLOOR AREA C**
1/4" = 1'-0"

0' 1' 2' 4' 8' 12'
SCALE : 1/4" = 1'-0"

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NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

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FIRST FLOOR ENLARGED MECHANICAL PLAN AREA C

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M201.C

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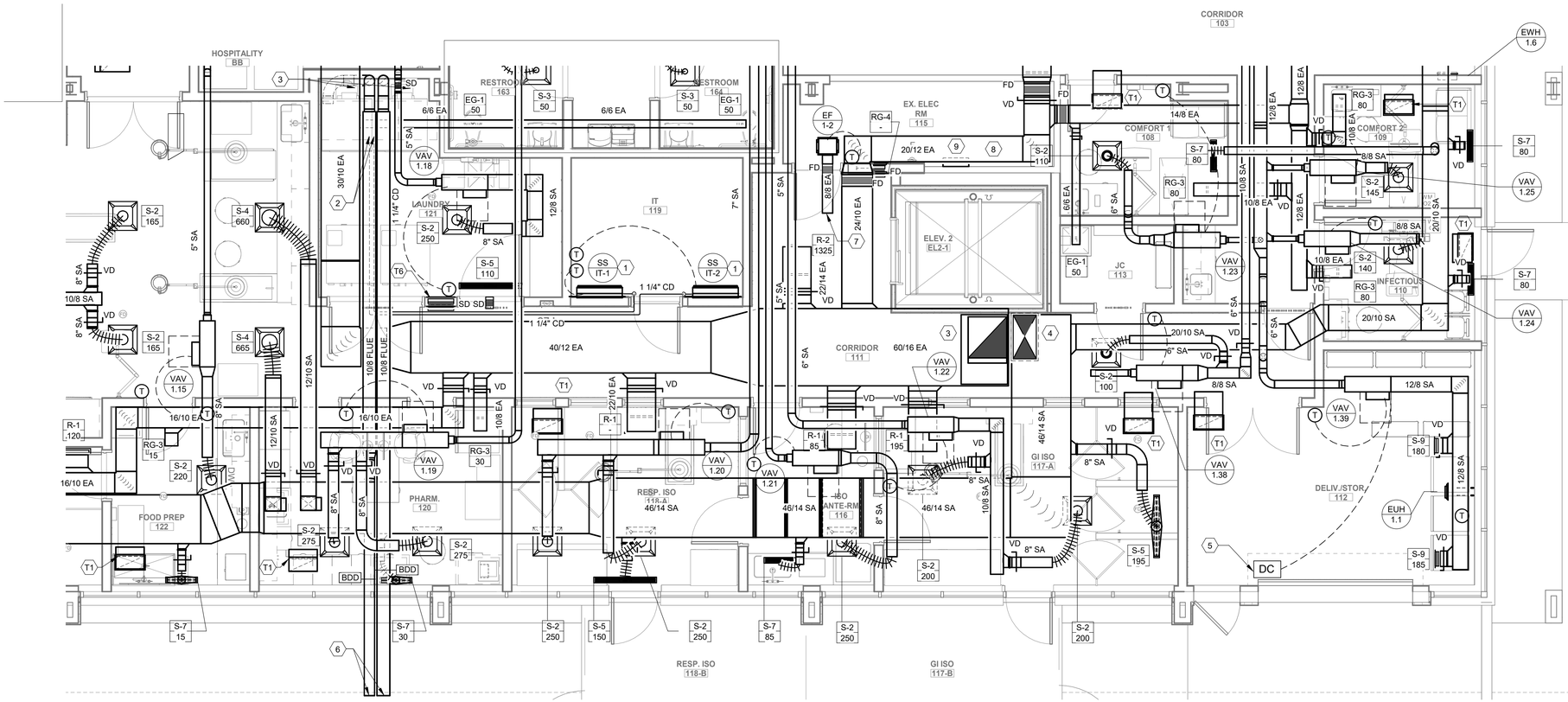
ASC PROJECT NUMBER: 21-000

MECHANICAL KEY NOTES: (#)

1. SPLIT SYSTEM FAN COIL INDOOR UNIT SHALL BE INSTALLED ON WALL OF ELEVATOR ROOM. COORDINATE FINAL LOCATION OF UNIT WITH ELEVATOR EQUIPMENT AND ELECTRICAL EQUIPMENT. 3/4" CONDENSATE ROUTING SHALL BE ROUTED FROM UNIT TO DESIGNATED INDIRECT TERMINATION. MC SHALL COORDINATE WITH EC SUCH THAT PIPING IS NOT ROUTED ABOVE ELECTRICAL EQUIPMENT OR WITHIN WORKING/SERVICE CLEARANCE AREA OF ELECTRICAL EQUIPMENT. PROVIDE UL-508 RATED SAFETY LEVEL SENSOR CUTOFF SWITCH IN CONDENSATE PIPING AND PROVIDE CONDENSATE PUMP POWERED THROUGH INDOOR FAN COIL UNIT. PROVIDE SUCTION AND LIQUID LINE ROUTING FROM INDOOR SPLIT SYSTEM UNIT TO ASSOCIATED OUTDOOR CONDENSING UNIT AT ROOF ABOVE. COORDINATE ROUTING IN FIELD.
2. 3/4" CONDENSATE DRAIN SHALL BE ROUTED AND TERMINATE INDIRECTLY AT FLOOR DRAIN IN LAUNDRY ROOM. COORDINATE FINAL LOCATION OF FLOOR DRAIN WITH PC.
3. EXHAUST AIR DUCTWORK SHALL BE ROUTED UP THROUGH EXISTING MECHANICAL CHASE UP TO FLOOR ABOVE. PROVIDE FIRE DAMPER AT PENETRATION OF EXISTING MECHANICAL CHASE.
4. SUPPLY AIR DUCTWORK SHALL BE ROUTED UP THROUGH EXISTING MECHANICAL CHASE UP TO FLOOR ABOVE. PROVIDE FIRE DAMPER AT PENETRATION OF EXISTING MECHANICAL CHASE.
5. MC SHALL PROVIDE DOOR CONTACT SWITCH AT DOOR THAT SHALL FULLY CLOSE ASSOCIATED VAV'S PRIMARY AIR DAMPER 100% UPON DETECTION OF DOOR OPENING.
6. 10"X8" DRYER FLUE DUCTWORK SHALL BE ROUTED TO TERMINATION AT EXTERIOR SOFFIT. FLUE DUCTWORK SHALL TERMINATE AND ELBOW DOWNWARDS IN ACCORDANCE WITH INSTALLATION REQUIREMENTS. DRYER DUCTWORK SHALL MAINTAIN SLIGHT SLOPE BACKWARDS TOWARDS RESPECTIVE DRYER. INSTALL BACKDRAFT DAMPER AT ACCESSIBLE LOCATION IN DRYER FLUE DUCTWORK .
7. EXHAUST DUCTWORK STUBS INTO CEILING PLENUM RETURN. PROVIDE BIRDSCREEN AT DUCT OPENING TERMINATION ABOVE CEILING.
8. COORDINATE DUCT ROUTING IN ELECTRIC ROOM WITH EC TO ENSURE THAT DUCTWORK IS NOT ROUTED ABOVE ELECTRICAL EQUIPMENT OR WITHIN WORKING/SERVICE CLEARANCES FOR ALL ELECTRICAL EQUIPMENT WITHIN ROOM.
9. BACNET MS/TP CONTROL PANEL SHALL BE INSTALLED IN ELECTRIC ROOM. MC SHALL COORDINATE WITH EC TO PLACE CONTROL PNAEL WITHIN ROOM SUCH THAT IT DOES NOT INTERFERE WITH ELECTRICAL EQUIPMENT/GEAR IN ROOM. EC SHALL PROVIDE 120V CIRCUIT TO CONTROL PANEL. CONTROL PANEL SHALL CONTAIN 5 AMP CIRCUIT BREAKER AND 120/24v CONTROL TRANSFORMER.

MECHANICAL GENERAL NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED AND HELD TIGHT TO STRUCTURE ABOVE. NO EQUIPMENT, DUCTWORK, OR APPURTENANCES SHALL BE INSTALLED BELOW 8'-0" ABOVE FINISHED FLOOR (A.F.F.). ROUTE DUCTWORK UP AND DOWN AROUND BEAMS AS NECESSARY. PROVIDE EXTREME CARE WHILE COORDINATING BETWEEN ALL TRADES.
2. PROVIDE PROPER CLEARANCE AT ALL AIR TERMINAL UNITS AND THEIR ASSOCIATED ELECTRIC RESISTANCE HEATERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND SERIVCE REQUIREMENTS.
3. MC SHALL PROVIDE ACCESS PANELS IN INACCESSIBLE CEILINGS FOR AIR TERMINAL UNITS, VOLUME DAMPERS, MECHANICAL CONTROLS AND OTHER MECHANICAL EQUIPMENT/CONTROLS REQUIRING ACCESS FOR ADJUSTMENT, REPLACEMENT AND SERIVCE. SIZE OF DAMPER SHALL BE IN ACCORDANCE WITH EQUIPMENT OR APPURTENANCE MANUFACTURER'S REQUIREMENTS. PROVIDE RATED ACCESS PANELS WITH EQUAL FIRE RATING FOR ANY PANELS LOCATED WITHIN RATEDS WALLS, CEILINGS OR ASSEMBLIES.
4. MECHANICAL CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS AND COMPLETE COORDINATION WITH ALL TRADES PRIOR TO CONSTRUCTION. FIELD COORDINATION SHALL BE REQUIRED DUE TO CEILING HEIGHT AND STRUCTURAL BEAM DEPTHS.
5. COORDINATE FINAL LOCATION OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH LIGHTING, SPRINKLERS, FIRE ALARM DEVICES, COMMUNICATIONS DEVICES, MEDICAL GAS, MEDICAL EQUIPMENT, AND ARCHITECTURAL REFLECTED CEILING PLAN.
6. MC SHALL VERIFY EXISTING CONDITIONS AND LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND GRILLES, REGISTERS AND DIFFUSERS IN FIELD PRIOR TO BID. MC SHALL VERIFY EQUIPMENT IS IN GOOD WORKING ORDER AND THAT ANY COMPONENTS OF EQUIPMENT THAT REQUIRE REPLACEMENT ARE REPLACED PRIOR TO RE-INSTALLATION. EXISTING GRILLES, REGISTERS AND DIFFUSERS TO REMAIN SHALL BE CLEANED OF DUST AND DEBRIS PRIOR TO FINAL RE-INSTALLATION AND EQUIPMENT STARTUP.
7. DUCTWORK DIMENSIONS ARE PERMITTED TO BE ADJUSTED AS NECESSARY SO LONG AS THE NET FREE SQUARE AREA OF THE INSIDE DUCT DIMENSIONS ARE MAINTAINED AND THE WIDTH TO HEIGTH RATIO OF THE DUCTWORK DOES NOT EXCEED 3:1.
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. CONDENSATE DRAIN PIPING SHALL BE SLOPED NO LESS THAN 1/4" PER LINEAL FOOT TOWARDS THE POINT OF INDIRECT TERMINATION.



1 M201.D **ENLARGED MECHANICAL PLAN - FIRST FLOOR AREA D**

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0' 1' 2' 4' 8' 12'

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

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FIRST FLOOR ENLARGED MECHANICAL PLAN AREA D

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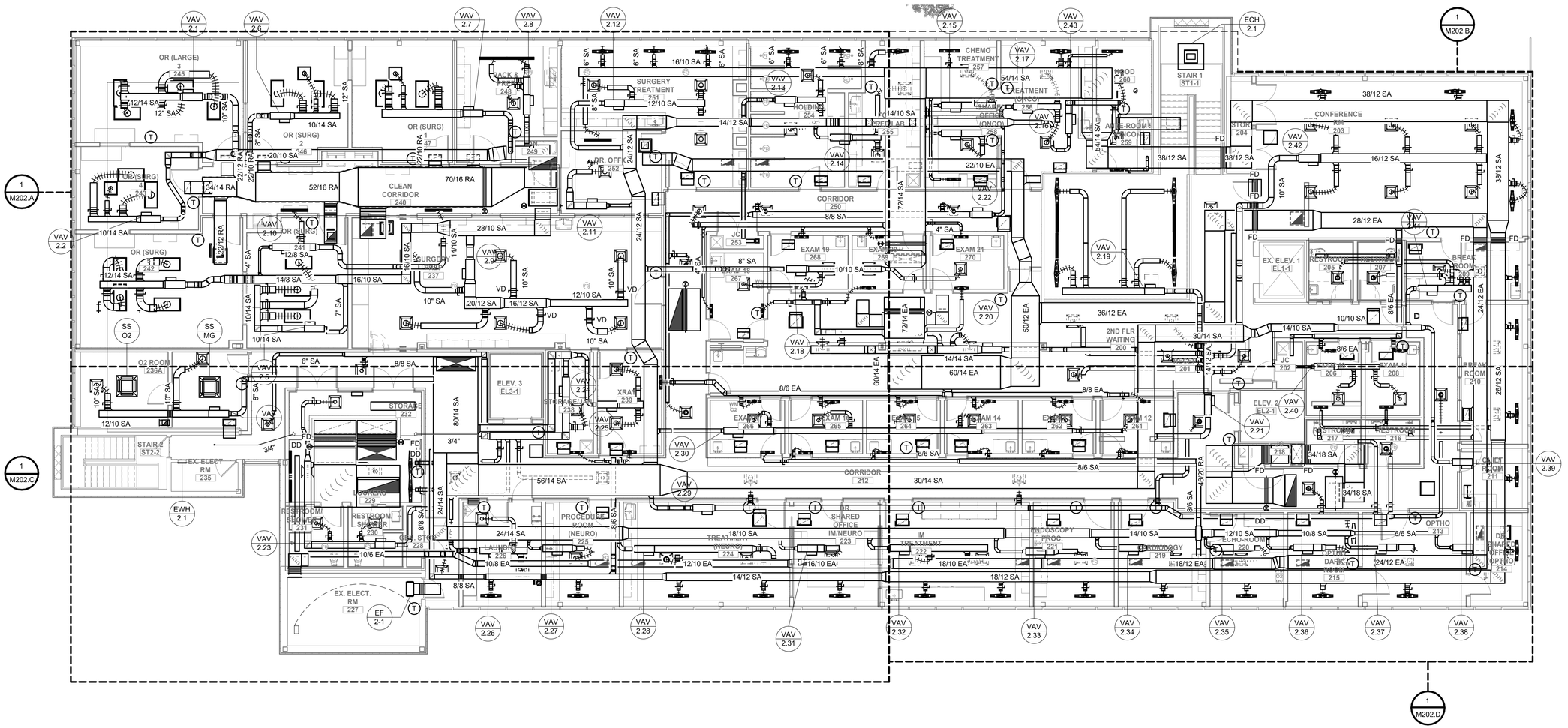
MECHANICAL GENERAL NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED AND HELD TIGHT TO STRUCTURE ABOVE. NO EQUIPMENT, DUCTWORK, OR APPURTENANCES SHALL BE INSTALLED BELOW 8'-0" ABOVE FINISHED FLOOR (A.F.F.). ROUTE DUCTWORK UP AND DOWN AROUND BEAMS AS NECESSARY. PROVIDE EXTREME CARE WHILE COORDINATING BETWEEN ALL TRADES.
2. PROVIDE PROPER CLEARANCE AT ALL AIR TERMINAL UNITS AND THEIR ASSOCIATED ELECTRIC RESISTANCE HEATERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND SERIVCE REQUIREMENTS.
3. MC SHALL PROVIDE ACCESS PANELS IN INACCESSIBLE CEILINGS FOR AIR TERMINAL UNITS, VOLUME DAMPERS, MECHANICAL CONTROLS AND OTHER MECHANICAL EQUIPMENT/CONTROLS REQUIRING ACCESS FOR ADJUSTMENT, REPLACEMENT AND SERIVCE. SIZE OF DAMPER SHALL BE IN ACCORDANCE WITH EQUIPMENT OR APPURTENANCE MANUFACTURER'S REQUIREMENTS. PROVIDE RATED ACCESS PANELS WITH EQUAL FIRE RATING FOR ANY PANELS LOCATED WITHIN RATEDS WALLS, CEILINGS OR ASSEMBLIES.
4. MECHANICAL CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS AND COMPLETE COORDINATION WITH ALL TRADES PRIOR TO CONSTRUCTION. FIELD COORDINATION SHALL BE REQUIRED DUE TO CEILING HEIGHT AND STRUCTURAL BEAM DEPTHS.
5. COORDINATE FINAL LOCATION OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH LIGHTING, SPRINKLERS, FIRE ALARM DEVICES, COMMUNICATIONS DEVICES, MEDICAL GAS, MEDICAL EQUIPMENT, AND ARCHITECTURAL REFLECTED CEILING PLAN.
6. MC SHALL VERIFY EXISTING CONDITIONS AND LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND GRILLES, REGISTERS AND DIFFUSERS IN FIELD PRIOR TO BID. MC SHALL VERIFY EQUIPMENT IS IN GOOD WORKING ORDER AND THAT ANY COMPONENTS OF EQUIPMENT THAT REQUIRE REPLACEMENT ARE REPLACED PRIOR TO RE-INSTALLATION. EXISTING GRILLES, REGISTERS AND DIFFUSERS TO REMAIN SHALL BE CLEANED OF DUST AND DEBRIS PRIOR TO FINAL RE-INSTALLATION AND EQUIPMENT STARTUP.
7. DUCTWORK DIMENSIONS ARE PERMITTED TO BE ADJUSTED AS NECESSARY SO LONG AS THE NET FREE SQUARE AREA OF THE INSIDE DUCT DIMENSIONS ARE MAINTAINED AND THE WIDTH TO HEIGTH RATIO OF THE DUCTWORK DOES NOT EXCEED 3:1.
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. SEE DRAWINGS M201.A, M201.B, M201.C AND M201.D FOR ENLARGED VIEWS OF EACH QUANDRANT OF THE FLOOR FOR DETAILED DUCT, GRD DESIGNATION, KEYNOTE DETAILS, ETC.



1 M202 **MECHANICAL PLAN - SECOND FLOOR**
1/8" = 1'-0"

0' 2' 4' 8' 16' 24'
SCALE : 1/8" = 1'-0"

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SECOND FLOOR MECHANICAL PLAN

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ASC PROJECT NUMBER: 21-000

9/20/2023 1:24:21 PM

MECHANICAL KEY NOTES: (#)

1. DUCTWORK SHALL PENETRATE EXISTING BEAM AT MIDDLE THIRD (WIDTH AND HEIGHTH) OF BEAM. COORDINATE FINAL LOCATION OF BEAM PENETRATION WITH GC IN CONJUNCTION WITH STRUCTURAL DRAWINGS.
2. SUPPLY AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT SUPPLY AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION.
3. EXHAUST AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT EXHAUST AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION.
4. RETURN AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT RETURN AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION. RETURN AIR DUCTWORK STUBS OPEN IN PLENUM CEILING SPACE. PROVIDE BIRDSCREEN AT DUCT OPENING.
5. DUCT STATIC PRESSURE SENSOR SHALL BE INSTALLED 2/3RDS OF THE LENGTH OF THE SUPPLY DUCTWORK AT THIS LOCATION. NOTE THAT ADDITIONAL STATIC PRESSURE SENSORS MAY BE INSTALLED FOR OTHER SIGNIFICANT SUPPLY MAINS ASSOCIATED WITH THIS ROOFTOP UNIT.

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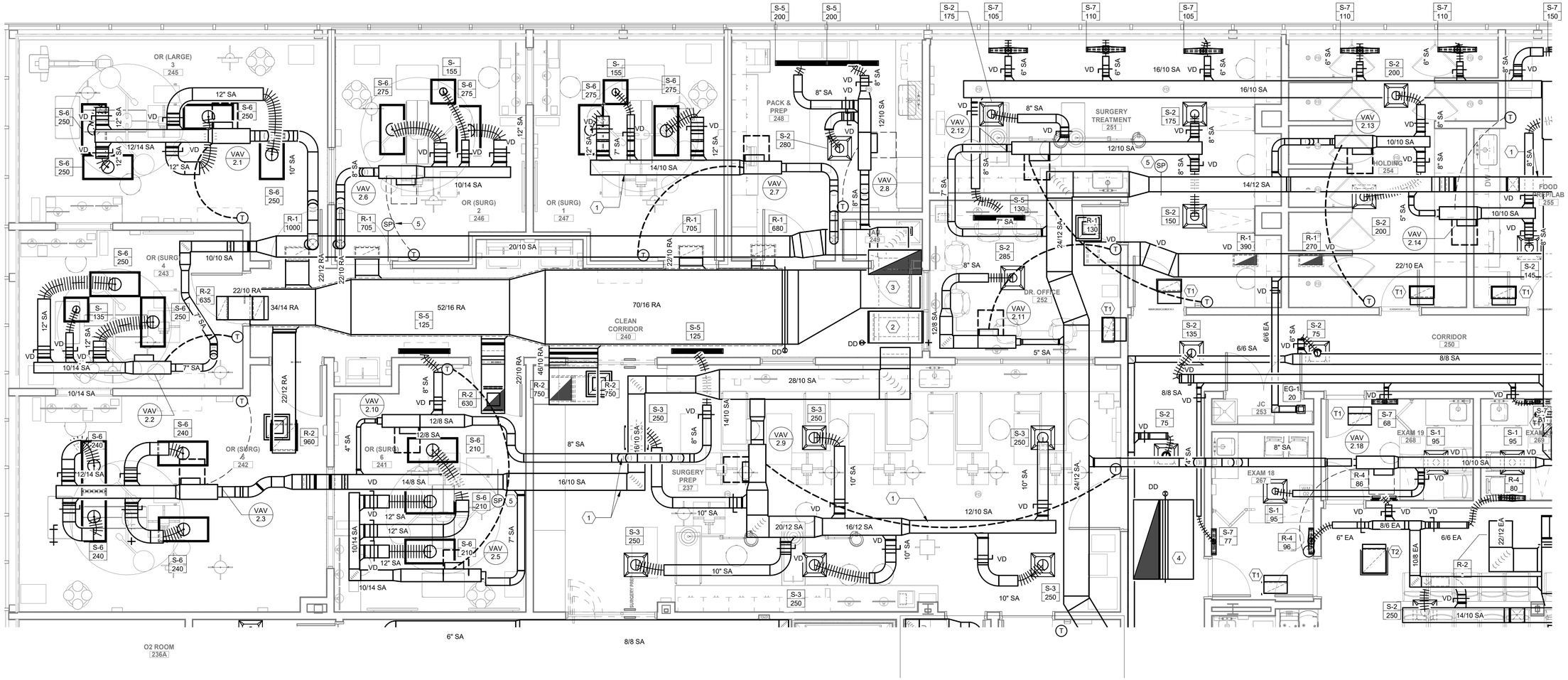
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. CONDENSATE DRAIN PIPING SHALL BE SLOPED NO LESS THAN 1/4" PER LINEAL FOOT TOWARDS THE POINT OF INDIRECT TERMINATION.



1 M202.A **ENLARGED MECHANICAL PLAN - SECOND FLOOR AREA A**
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SCALE : 1/4" = 1'-0"

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SECOND FLOOR ENLARGED MECHANICAL PLAN AREA A

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MECHANICAL KEY NOTES: (#)

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2. SUPPLY AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT SUPPLY AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION.
3. EXHAUST AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT EXHAUST AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION.
4. LINEAR SLOT DIFFUSER SHALL BE INSTALLED IN CLOUD CEILING. MC SHALL PROVIDE CONTINUOUS LINEAR SLOT DIFFUSER WITH NECESSARY UNIONS, END CAPS AND CONNECTORS FOR CONTINUOUS LINEAR APPEARANCE. FOR LINEAR SLOT DIFFUSERS WITH '0' AIRFLOW INDICATED, DIFFUSER SHALL BE BLANKED OFF ABOVE CEILING AND NO SUPPLY AIR SHALL BE CONNECTED TO DIFFUSER.
5. 8" EXHAUST DUCTWORK SHALL BE ROUTED UP TO ROOF ABOVE AND SHALL TERMINATE AT ROOF ABOVE. INSTALL PER THE HOOD MANUFACTURER'S INSTALLATION REQUIREMENTS. PROVIDE ROOF CAP, BIRDSCREEN AND TERMINATION ACCESSORIES AS REQUIRED BY THE MANUFACTURER.
6. DUCT STATIC PRESSURE SENSOR SHALL BE INSTALLED 2/3RDS OF THE LENGTH OF THE SUPPLY DUCTWORK AT THIS LOCATION. NOTE THAT ADDITIONAL STATIC PRESSURE SENSORS MAY BE INSTALLED FOR OTHER SIGNIFICANT SUPPLY MAINS ASSOCIATED WITH THIS ROOFTOP UNIT.

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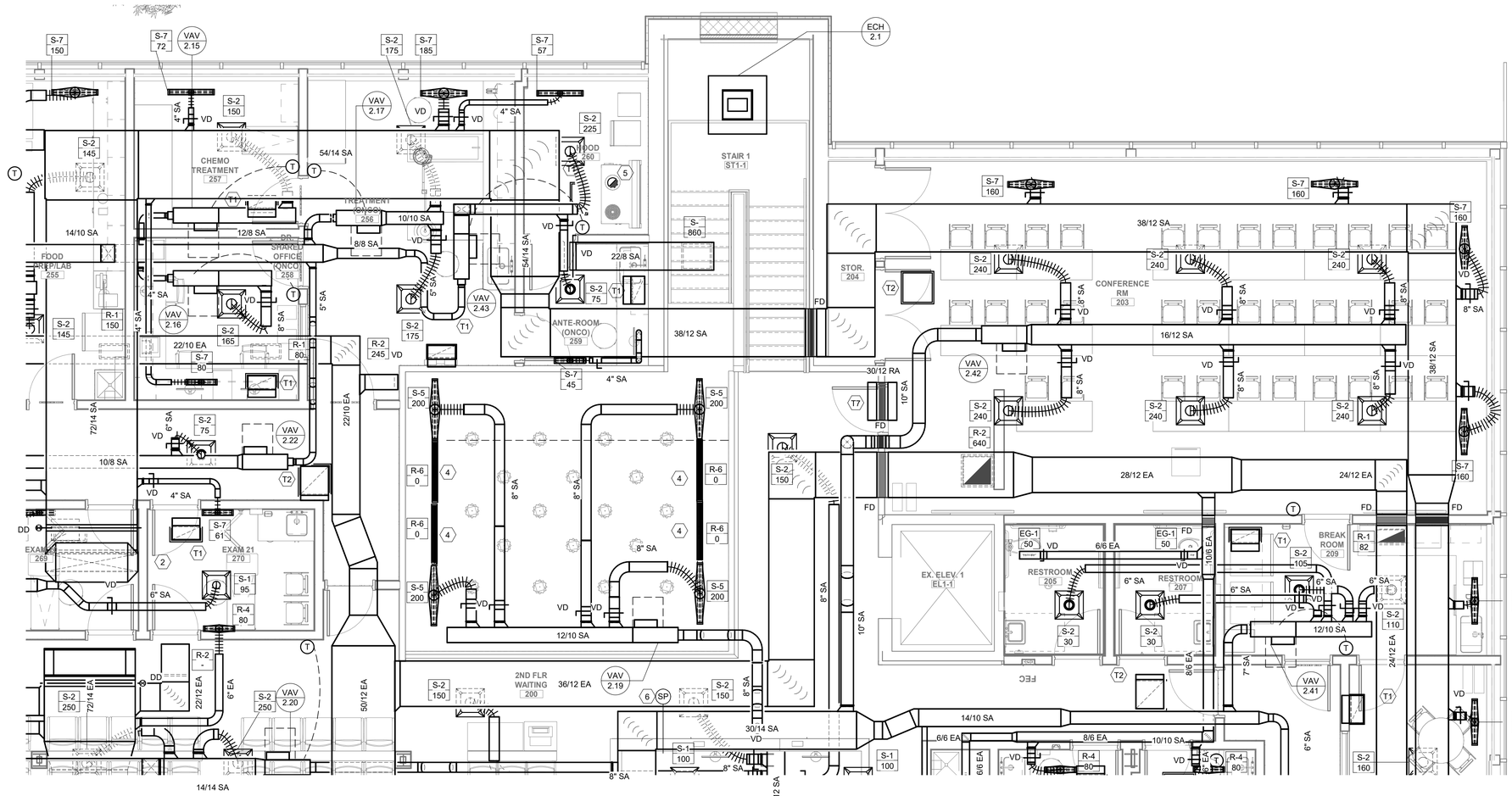

1 M202.B **ENLARGED MECHANICAL PLAN - SECOND FLOOR AREA B**

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0' 1' 2' 4' 8' 12'

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

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No. C - 1486120
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC
RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

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No. DATE

SECOND FLOOR ENLARGED MECHANICAL PLAN AREA B

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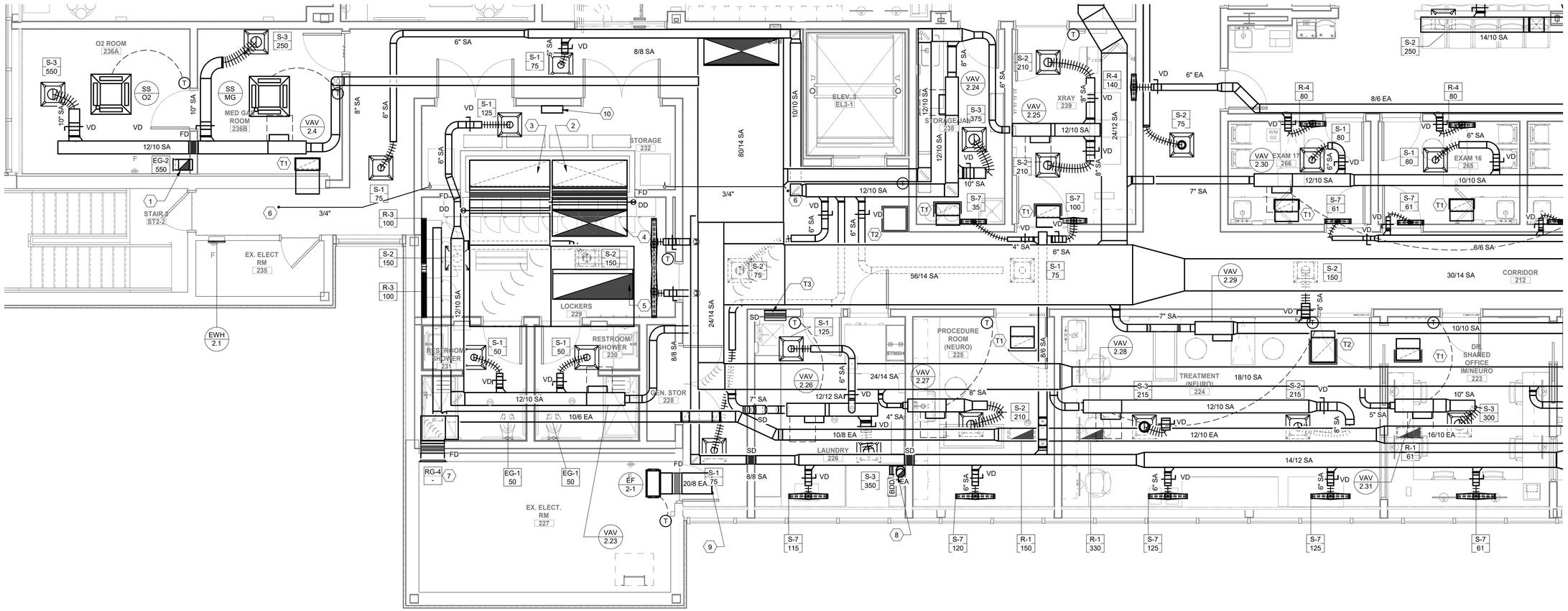
ASC PROJECT NUMBER: 21-000

MECHANICAL KEY NOTES: (#)

1. 10"X10" EXHAUST DUCTWORK SHALL BE ROUTED UP TO ROOF ABOVE AND SHALL TRANSITION AS NECESSARY TO CONNECT TO EFR-O2 AT ROOF ABOVE. INSTALL PER THE 02 GENERATOR MANUFACTURER'S INSTALLATION REQUIREMENTS. 10"X10" EXHAUST SHALL TERMINATE AT EXHAUST GRILLE LOCATED 12" ABOVE FINISHED FLOOR (A.F.F.)
2. SUPPLY DUCTWORK SHALL PENETRATE EXISTING MECHANICAL CHASE AND SHALL BE ROUTED DOWN TO FLOOR BELOW. PROVIDE FIRE DAMPER AT CHASE PENETRATION.
3. RETURN DUCTWORK SHALL PENETRATE EXISTING MECHANICAL CHASE AND SHALL BE ROUTED DOWN TO FLOOR BELOW. PROVIDE FIRE DAMPER AT CHASE PENETRATION.
4. SUPPLY AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT SUPPLY AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION.
5. RETURN AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT RETURN AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION.
6. 3/4" TUBING PIPING SHALL BE ROUTED FROM ASSOCIATED STERILIZER TO 2" SCH. 40 PVC PIPE THROUGH ROOF. 3/4" TUBING SHALL CONNECT TO 2" SCH. 40 PVC PIPING WITH ADAPTER CAP AS INDICATED IN STERILIZER MANUFACTURER'S INSTALLATION REQUIREMENTS. PROVIDE QUICK RELEASE CONNECTOR AT STERILIZER. PVC PIPING SHALL ELBOW TO HORIZONTAL SLANTED TERMINATION WITH BIRD/INSECTSCREEN IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
7. TRANSFER GRILLE SHALL BE INSTALLED AT WALL. MC SHALL COORDINATE WITH EC TO LOCATE GRILLE SUCH THAT IT IS NOT INSTALLED AT OR ABOVE ELECTRICAL EQUIPMENT IN ELECTRICAL ROOM.
8. 8" ROUND DRYER FLUE DUCTWORK SHALL BE ROUTED TO TERMINATION AT ROOF LEVEL ABOVE. FLUE DUCTWORK SHALL TERMINATE NO LESS THAN 36" ABOVE FINISHED ROOF LEVEL AND ELBOW DOWNWARDS IN ACCORDANCE WITH INSTALLATION REQUIREMENTS. DRYER DUCTWORK SHALL MAINTAIN SLIGHT SLOPE BACKWARDS TOWARDS RESPECTIVE DRYER. INSTALL BACKDRAFT DAMPER AT ACCESSIBLE LOCATION IN DRYER FLUE DUCTWORK .
9. EXHAUST DUCTWORK STUBS INTO CEILING PLENUM RETURN. PROVIDE BIRDSCREEN AT DUCT OPENING TERMINATION ABOVE CEILING.
10. BACNET MS/TP CONTROL PANEL SHALL BE INSTALLED IN ELECTRIC ROOM. MC SHALL COORDINATE WITH EC TO PLACE CONTROL PNAEL WITHIN ROOM SUCH THAT IT DOES NOT INTERFERE WITH EQUIPMENT/FFE IN ROOM. EC SHALL PROVIDE 120V CIRCUIT TO CONTROL PANEL. CONTROL PANEL SHALL CONTAIN 5 AMP CIRCUIT BREAKER AND 120/24v CONTROL TRANSFORMER.

MECHANICAL GENERAL NOTES:

1. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED AND HELD TIGHT TO STRUCTURE ABOVE. NO EQUIPMENT, DUCTWORK, OR APPURTENANCES SHALL BE INSTALLED BELOW 8'-0" ABOVE FINISHED FLOOR (A.F.F.). ROUTE DUCTWORK UP AND DOWN AROUND BEAMS AS NECESSARY. PROVIDE EXTREME CARE WHILE COORDINATING BETWEEN ALL TRADES.
2. PROVIDE PROPER CLEARANCE AT ALL AIR TERMINAL UNITS AND THEIR ASSOCIATED ELECTRIC RESISTANCE HEATERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND SERIVCE REQUIREMENTS.
3. MC SHALL PROVIDE ACCESS PANELS IN INACCESSIBLE CEILINGS FOR AIR TERMINAL UNITS, VOLUME DAMPERS, MECHANICAL CONTROLS AND OTHER MECHANICAL EQUIPMENT/CONTROLS REQUIRING ACCESS FOR ADJUSTMENT, REPLACEMENT AND SERIVCE. SIZE OF DAMPER SHALL BE IN ACCORDANCE WITH EQUIPMENT OR APPURTENANCE MANUFACTURER'S REQUIREMENTS. PROVIDE RATED ACCESS PANELS WITH EQUAL FIRE RATING FOR ANY PANELS LOCATED WITHIN RATEDS WALLS, CEILINGS OR ASSEMBLIES.
4. MECHANICAL CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS AND COMPLETE COORDINATION WITH ALL TRADES PRIOR TO CONSTRUCTION. FIELD COORDINATION SHALL BE REQUIRED DUE TO CEILING HEIGHT AND STRUCTURAL BEAM DEPTHS.
5. COORDINATE FINAL LOCATION OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH LIGHTING, SPRINKLERS, FIRE ALARM DEVICES, COMMUNICATIONS DEVICES, MEDICAL GAS, MEDICAL EQUIPMENT, AND ARCHITECTURAL REFLECTED CEILING PLAN.
6. MC SHALL VERIFY EXISTING CONDITIONS AND LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND GRILLES, REGISTERS AND DIFFUSERS IN FIELD PRIOR TO BID. MC SHALL VERIFY EQUIPMENT IS IN GOOD WORKING ORDER AND THAT ANY COMPONENTS OF EQUIPMENT THAT REQUIRE REPLACEMENT ARE REPLACED PRIOR TO RE-INSTALLATION. EXISTING GRILLES, REGISTERS AND DIFFUSERS TO REMAIN SHALL BE CLEANED OF DUST AND DEBRIS PRIOR TO FINAL RE-INSTALLATION AND EQUIPMENT STARTUP.
7. DUCTWORK DIMENSIONS ARE PERMITTED TO BE ADJUSTED AS NECESSARY SO LONG AS THE NET FREE SQUARE AREA OF THE INSIDE DUCT DIMENSIONS ARE MAINTAINED AND THE WIDTH TO HEIGTH RATIO OF THE DUCTWORK DOES NOT EXCEED 3:1.
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. CONDENSATE DRAIN PIPING SHALL BE SLOPED NO LESS THAN 1/4" PER LINEAL FOOT TOWARDS THE POINT OF INDIRECT TERMINATION.



1 M202.C **ENLARGED MECHANICAL PLAN - SECOND FLOOR AREA C**

1/4" = 1'-0"

0' 1' 2' 4' 8' 12'

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

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SECOND FLOOR ENLARGED MECHANICAL PLAN AREA C

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ASC PROJECT NUMBER: 21-000

MECHANICAL KEY NOTES: (#)

1. SUPPLY DUCTWORK SHALL PENETRATE EXISTING MECHANICAL CHASE AND SHALL BE ROUTED DOWN TO FLOOR BELOW. PROVIDE FIRE DAMPER AT CHASE PENETRATION.
2. RETURN DUCTWORK SHALL PENETRATE EXISTING MECHANICAL CHASE AND SHALL BE ROUTED DOWN TO FLOOR BELOW. PROVIDE FIRE DAMPER AT CHASE PENETRATION.
3. SUPPLY AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT SUPPLY AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION.
4. RETURN AIR DUCTWORK SHALL BE ROUTED TO ROOF ABOVE AND SHALL TRANSITION TO ROOFTOP UNIT RETURN AIR OPENING. MC SHALL PROVIDE TRANSITIONS AS NECESSARY TO MAKE CONNECTION.

MECHANICAL GENERAL NOTES:

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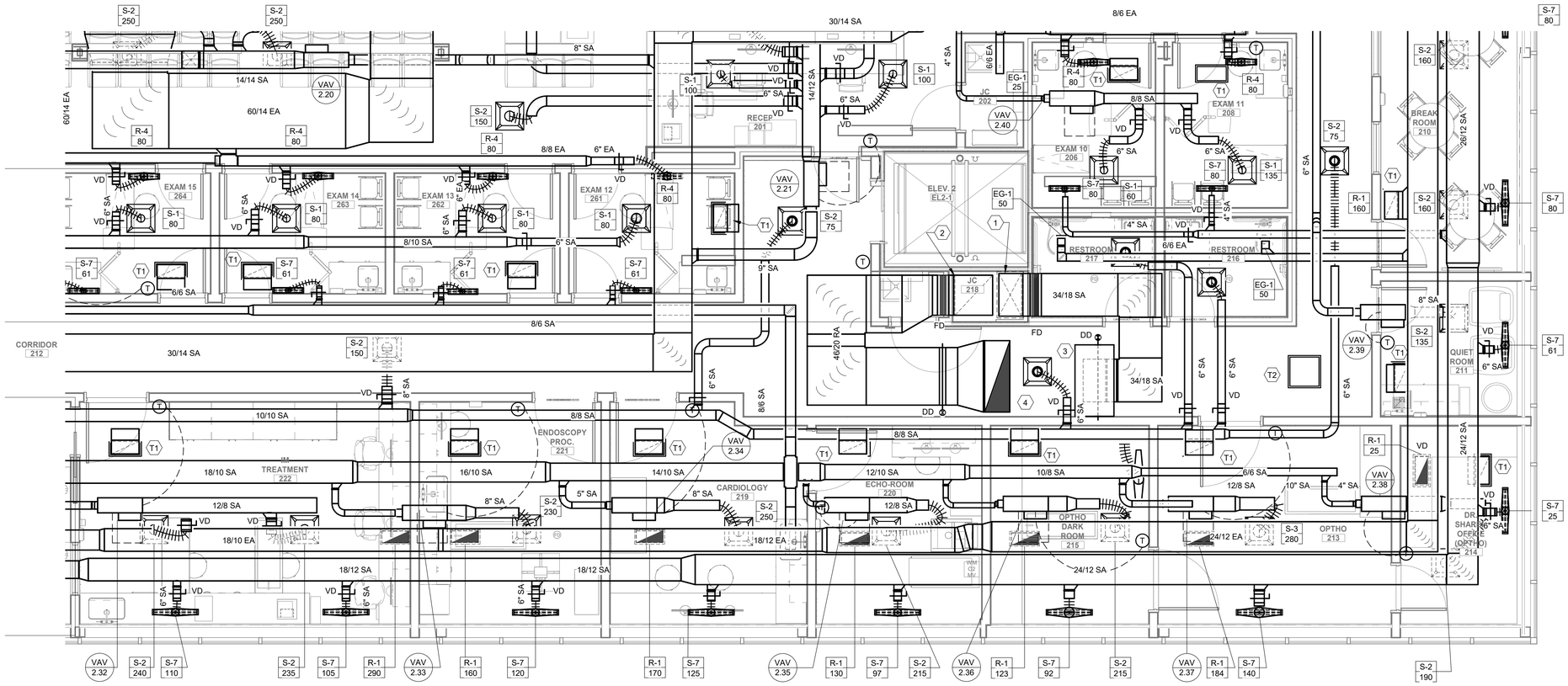
2. PROVIDE PROPER CLEARANCE AT ALL AIR TERMINAL UNITS AND THEIR ASSOCIATED ELECTRIC RESISTANCE HEATERS IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION AND SERIVCE REQUIREMENTS.
3. MC SHALL PROVIDE ACCESS PANELS IN INACCESSIBLE CEILINGS FOR AIR TERMINAL UNITS, VOLUME DAMPERS, MECHANICAL CONTROLS AND OTHER MECHANICAL EQUIPMENT/CONTROLS REQUIRING ACCESS FOR ADJUSTMENT, REPLACEMENT AND SERIVCE. SIZE OF DAMPER SHALL BE IN ACCORDANCE WITH EQUIPMENT OR APPURTENANCE MANUFACTURER'S REQUIREMENTS. PROVIDE RATED ACCESS PANELS WITH EQUAL FIRE RATING FOR ANY PANELS LOCATED WITHIN RATEDS WALLS, CEILINGS OR ASSEMBLIES.
4. MECHANICAL CONTRACTOR SHALL PROVIDE DETAILED SHOP DRAWINGS AND COMPLETE COORDINATION WITH ALL TRADES PRIOR TO CONSTRUCTION. FIELD COORDINATION SHALL BE REQUIRED DUE TO CEILING HEIGHT AND STRUCTURAL BEAM DEPTHS.
5. COORDINATE FINAL LOCATION OF DIFFUSERS, REGISTERS AND GRILLES IN CEILINGS WITH LIGHTING, SPRINKLERS, FIRE ALARM DEVICES, COMMUNICATIONS DEVICES, MEDICAL GAS, MEDICAL EQUIPMENT, AND ARCHITECTURAL REFLECTED CEILING PLAN.
6. MC SHALL VERIFY EXISTING CONDITIONS AND LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND GRILLES, REGISTERS AND DIFFUSERS IN FIELD PRIOR TO BID. MC SHALL VERIFY EQUIPMENT IS IN GOOD WORKING ORDER AND THAT ANY COMPONENTS OF EQUIPMENT THAT REQUIRE REPLACEMENT ARE REPLACED PRIOR TO RE-INSTALLATION. EXISTING GRILLES, REGISTERS AND DIFFUSERS TO REMAIN SHALL BE CLEANED OF DUST AND DEBRIS PRIOR TO FINAL RE-INSTALLATION AND EQUIPMENT STARTUP.
7. DUCTWORK DIMENSIONS ARE PERMITTED TO BE ADJUSTED AS NECESSARY SO LONG AS THE NET FREE SQUARE AREA OF THE INSIDE DUCT DIMENSIONS ARE MAINTAINED AND THE WIDTH TO HEIGTH RATIO OF THE DUCTWORK DOES NOT EXCEED 3:1.
8. THERMOSTATS SHALL BE INSTALLED AT 48" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
9. CEILING SPACE ABOVE OCCUPIABLE SPACES SHALL BE DESIGNATED AS A PLENUM RETURN CEILING. MC SHALL COORDINATE WITH ALL TRADES SUCH THAT NO NON-PLENUM RATED MATERIALS ARE LOCATED WITHIN THE MECHANICAL CEILING RETURN PLENUM.
10. CONDENSATE DRAIN PIPING SHALL BE SLOPED NO LESS THAN 1/4" PER LINEAL FOOT TOWARDS THE POINT OF INDIRECT TERMINATION.



1 M202.D **ENLARGED MECHANICAL PLAN - SECOND FLOOR AREA D**
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SECOND FLOOR ENLARGED MECHANICAL PLAN AREA D

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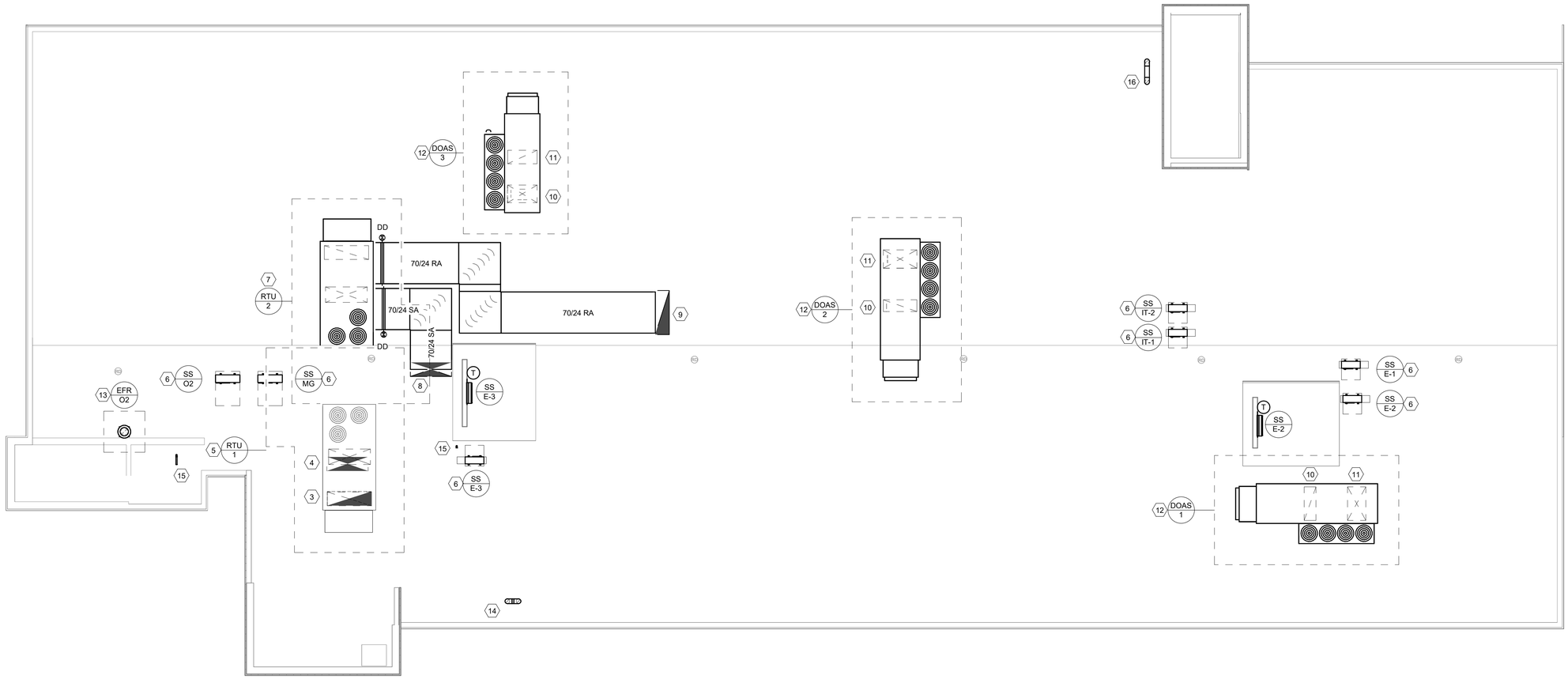
ASC PROJECT NUMBER: 21-000

MECHANICAL GENERAL NOTES:

1. MC SHALL VERIFY EXISTING CONDITIONS AND LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND GRILLES, REGISTERS AND DIFFUSERS IN FIELD PRIOR TO BID. MC SHALL VERIFY EQUIPMENT IS IN GOOD WORKING ORDER AND THAT ANY COMPONENTS OF EQUIPMENT THAT REQUIRE REPLACEMENT ARE REPLACED PRIOR TO RE-INSTALLATION. EXISTING GRILLES, REGISTERS AND DIFFUSERS TO REMAIN SHALL BE CLEANED OF DUST AND DEBRIS PRIOR TO FINAL RE-INSTALLATION AND EQUIPMENT STARTUP.
2. ALL MECHANICAL EQUIPMENT, SENSORS AND DAMPERS LOCATED ABOVE HARD CEILINGS OR WITHIN WALLS SHALL BE PROVIDED WITH ACCESS PANELS SIZED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS AND SUCH THAT THE FULL REMOVAL OF THE EQUIPMENT AND/OR DAMPER IS POSSIBLE. PROVIDE RATED ACCESS PANELS FOR ALL ACCESS PANELS LOCATED WITHIN RATED CEILINGS OR WALLS. ACCESS DOORS SHALL BE TAMPER AND VANDAL PROOF.
3. MC SHALL VERIFY ALL EQUIPMENT TO REMAIN IS FUNCTIONING PROPERLY AND IS IN GOOD WORKING CONDITION.
4. MC SHALL COORDINATE WITH GC TO PATCH ALL EXISTING TO REMAIN WALL, FLOOR AND CEILING PENETRATIONS TO MATCH EXISTING MATERIAL AT ALL DEMOLISHED PIPE, DUCT, AND MECHANICAL SYSTEMS RELATED PENETRATIONS.
5. MC SHALL COORDINATE WITH GC TO VERIFY FINAL LINTEL SIZE REQUIREMENTS FOR STRUCTURAL PENETRATIONS REQUIRING LINTELS. FINAL LINTEL SIZE SHALL BE VERIFIED TO MATCH DIMENSIONS OF MECHANICAL CONTRACTOR'S APPROVED DUCT SHOP DRAWINGS.
6. CONDENSATE DRAIN PIPING SHALL BE SLOPED NO LESS THAN 1/4" PER LINEAL FOOT OF HORIZONTAL RUN. PIPING SHALL BE SLOPED TOWARDS POINT OF TERMINATION.
7. THE MC SHALL ENGAGE THE TESTING, ADJUSTING, AND BALANCING AGENT TO RE-BALANCE EXISTING AIR HANDLING UNITS SERVING THE SPACES WITHIN THE PROJECT SCOPE TO THE NEW AIRFLOW VALUES.
8. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED NO LESS THAN 10 FEET FROM ROOF EDGE OR PARAPET. NEW MECHANICAL EQUIPMENT INSTALLED WITHIN 10 FEET OF ROOF EDGE WITH A PARAPET HEIGHT OF LESS THAN 42" SHALL BE PROVIDED WITH SERVICE AND MAINTENANCE RAILING IN ACCORDANCE WITH THE 2015 IMC AND OSHA REQUIREMENTS.
9. MECHANICAL FRESH AIR INTAKES SHALL BE LOCATED NO LESS THAN 10 FEET FROM ALL EXHAUST OUTLETS. MC SHALL VERIFY MECHANICAL EQUIPMENT INSTALLATION IS IN ACCORDANCE WITH THIS REQUIREMENT.
10. MC SHALL PROVIDE HORIZONTAL DUCTWORK SUPPORT (BIGFOOT H FRAME: BASIS OF DESIGN) WITH RUBBER BASE AND METAL VERTICAL SUPPORTS AT A MINIMUM SPACING OF 5 FEET PER LINEAR FEET OF EXTERIOR DUCTWORK.
11. MECHANICAL FRESH AIR INTAKES SHALL BE LOCATED NO LESS THAN 10 FEET FROM ALL EXHAUST OUTLETS. MC SHALL VERIFY MECHANICAL EQUIPMENT INSTALLATION IS IN ACCORDANCE WITH THIS REQUIREMENT.
12. MC SHALL PROVIDE HORIZONTAL DUCTWORK SUPPORT (BIGFOOT H FRAME: BASIS OF DESIGN) WITH RUBBER BASE AND METAL VERTICAL SUPPORTS AT A MINIMUM SPACING OF 5 FEET PER LINEAR FEET OF EXTERIOR DUCTWORK.
13. MC SHALL PROVIDE HORIZONTAL PIPING SUPPORT (DURA-BLOK: BASIS OF DESIGN) WITH RUBBER BASE AND METAL VERTICAL CHANNEL AT A MINIMUM SPACING OF 5 FEET PER LINEAR FEET OF EXTERIOR REFRIGERANT PIPING.
14. MC SHALL PROVIDE 14" INSULATED PIPE PORTAL CURB AND CAP AT LOCATIONS IN WHICH REFRIGERANT PIPING PENETRATES ROOF.
8. ALL MECHANICAL EQUIPMENT SHALL BE FASTENED, BOLTED SECURED AND/OR ANCHORED TO THEIR RESPECTIVE EQUIPMENT CURBS OR EQUIPMENT STANDS. FASTENER/ANCHOR TYPE, QUANTITY AND LOCATION OF SECURE INSTALLATION SHALL BE IN ACCORDANCE WITH ASCE 7-16 AND FEMA P-424. STRATEGIES SUCH AS CABLE TIEDOWNS OR METAL STRAPS FOR EQUIPMENT SUCH AS EXHAUST FANS, BOLTS AND TIEDOWNS FOR CONDENSING UNITS.
9. THE BASIS OF WIND DESIGN PARAMETERS SHALL BE BASED ON THE ASCE 7-16 WIND DESIGN VALUES FOR A RISK CATEGORY ii FACILITY LOCATED AT THE ADDRESS/SITE.
10. THE GAUGE OF DUCTWORK FOR EXPOSED DUCTWORK ON THE ROOF SHALL BE CAPABLE OF RESISTING THE DESIGN WIND LOAD FOR THE SITE (144 VMPH) FOR RISK CATEGORY II FACILITY.
11. ALL ROOF AND EQUIPMENT CURBS SHALL BE DESIGNED TO RESIST THE DESIGN WIND LOAD SPECIFIED BY ASCE 7-16 FOR A RISK CATEGORY II FACILITY AND THE PROJECT SITE LOCATION.

MECHANICAL KEY NOTES: (#)

1. GRAVITY RELIEF VENTILATOR SHALL BE INSTALLED ON 14" INSULATED ROOF CURB. PROVIDE RELIEF DUCT INTO EXISTING ELECTRICAL ROOM SPACE. PROVIDE MOTORIZED DAMPER AT ROOF OPENING.
2. ROOFTOP EXHAUST FAN SHALL BE INSTALLED ON ROOF ON 14" INSULATED ROOF CURB WITH SPRING VIBRATION ISOLATION RAILS. PROVIDE MOTORIZED DAMPER AT ROOF OPENING. EXHAUST DUCTWORK DOWN TO EXISTING ELECTRICAL ROOM CEILING.
3. EXISTING RETURN DUCT TO REMAIN. VERIFY EXACT SIZE AND LOCATION OF PENETRATION IN FIELD.
4. EXISTING SUPPLY DUCT TO REMAIN. VERIFY EXACT SIZE AND LOCATION OF PENETRATION IN FIELD.
5. EXISTING ROOFTOP UNIT AND ALL ASSOCIATED ACCESSORIES AND APPURTENANCES TO REMAIN. VERIFY EXACT SIZE AND LOCATION IN FIELD.
6. SPLIT SYSTEM HEAT PUMP SHALL BE INSTALLED ON 14" HEAT PUMP STANDS WITH VIBRATION ISOLATION PADS. MC SHALL PROVIDE REFRIGERANT PIPING FROM OUTDOOR HEAT PUMP TO ASSOCIATED INDOOR FAN COIL UNIT.
7. NEW RTU-2 SHALL BE INSTALLED ON NEW INSULATED ROOF CURB WITH VIBRATION ISOLATION RAILS.. PROVIDE KINESTICS KSI 2.0 SPRING VIBRATION ISOLATION RAIL OR APPROVED EQUAL. PROVIDE 24" CURB WITH HORIZONTAL CURB KNOCKDOWN FOR HORIZONTAL SUPPLY AND RETURN DISTRIBUTION.
8. NEW SUPPLY DUCT TO DN TO CEILING BELOW. COORDINATE ROOF PENETRATION WITH STRUCTURAL DRAWINGS. PROVIDE DUCT SMOKE DETECTOR AT ACCESSIBLE PORTION OF CEILING BELOW.
9. NEW RETURN DUCT TO DN TO CEILING BELOW. COORDINATE ROOF PENETRATION WITH STRUCTURAL DRAWINGS. PROVIDE DUCT SMOKE DETECTOR AT ACCESSIBLE PORTION OF CEILING BELOW.
10. NEW RETURN DUCT TO DN TO CEILING BELOW THROUGH ROOF CURB. COORDINATE ROOF PENETRATION WITH STRUCTURAL DRAWINGS. PROVIDE DUCT SMOKE DETECTOR AT ACCESSIBLE PORTION OF CEILING BELOW.
11. NEW SUPPLY DUCT TO DN TO CEILING BELOW THROUGH ROOF CURB. COORDINATE ROOF PENETRATION WITH STRUCTURAL DRAWINGS. PROVIDE DUCT SMOKE DETECTOR AT ACCESSIBLE PORTION OF CEILING BELOW.
12. NEW DOAS UNIT SHALL BE INSTALLED ON NEW 24" ROOF CURB. PROVIDE KINESTICS KSI 2.0 SPRING VIBRATION ISOLATION RAIL OR APPROVED EQUAL AT ADAPTER CURB.
13. DOWNBLAST EXHAUST FAN SHALL BE INSTALLED ON NEW 14" ROOF CURB. PROVIDE KINESTICS KSI 2.0 SPRING VIBRATION ISOLATION RAIL OR APPROVED EQUAL. EXHAUST DUCTWORK SHALL TRANSITION DOWN TO FLOOR BELOW.
14. 8" ROUND DRYER FLUE DUCTWORK SHALL BE ROUTED FROM TERMINATION AT ROOF LEVEL TO FLOOR BELOW. FLUE DUCTWORK SHALL TERMINATE NO LESS THAN 36" ABOVE FINISHED ROOF LEVEL AND ELBOW DOWNWARDS IN ACCORDANCE WITH INSTALLATION REQUIREMENTS. DRYER DUCTWORK SHALL MAINTAIN SLIGHT SLOPE BACKWARDS TOWARDS RESPECTIVE DRYER. INSTALL BACKDRAFT DAMPER AT ACCESSIBLE LOCATION IN DRYER FLUE DUCTWORK .
15. 3/4" TUBING PIPING SHALL BE ROUTED FROM ASSOCIATED STERILIZER TO 2" SCH. 40 PVC PIPE THROUGH ROOF. 3/4" TUBING SHALL CONNECT TO 2" SCH. 40 PVC PIPING WITH ADAPTER CAP AS INDICATED IN STERILIZER MANUFACTURER'S INSTALLATION REQUIREMENTS. PROVIDE QUICK RELEASE CONNECTOR AT STERILIZER. PVC PIPING SHALL ELBOW TO HORIZONTAL SLANTED TERMINATION WITH BIRD/INSECTSCREEN IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION REQUIREMENTS.
16. 8" EXHAUST DUCTWORK SHALL TERMINATE AT ROOF. INSTALL PER THE HOOD MANUFACTURER'S INSTALLATION REQUIREMENTS. PROVIDE ROOF CAP, BIRDSCREEN AND TERMINATION ACCESSORIES AS REQUIRED BY THE MANUFACTURER. 8" EXHAUST DUCTWORK SHALL BE ROUTED DN TO FLOOR BELOW.



1 / M203 **MECHANICAL PLAN - ROOF**
1/8" = 1'-0"

0' 2' 4' 8' 16' 24'
SCALE : 1/8" = 1'-0"

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ROOF MECHANICAL PLAN

SHEET
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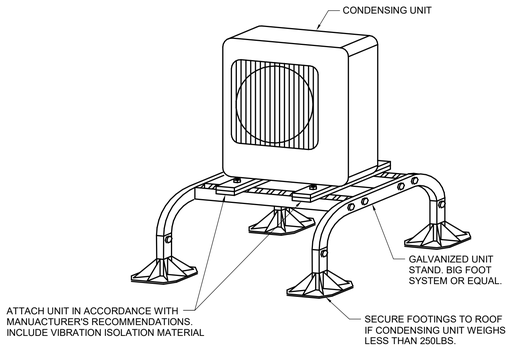
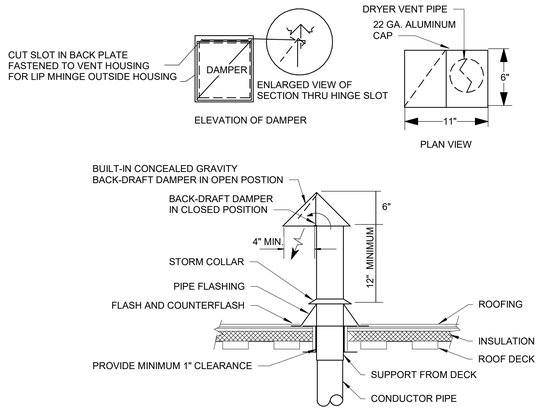
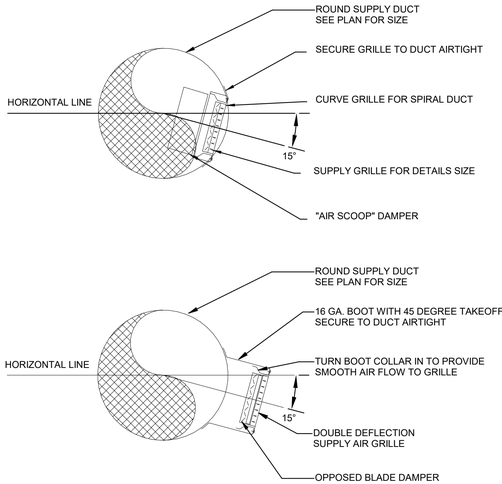


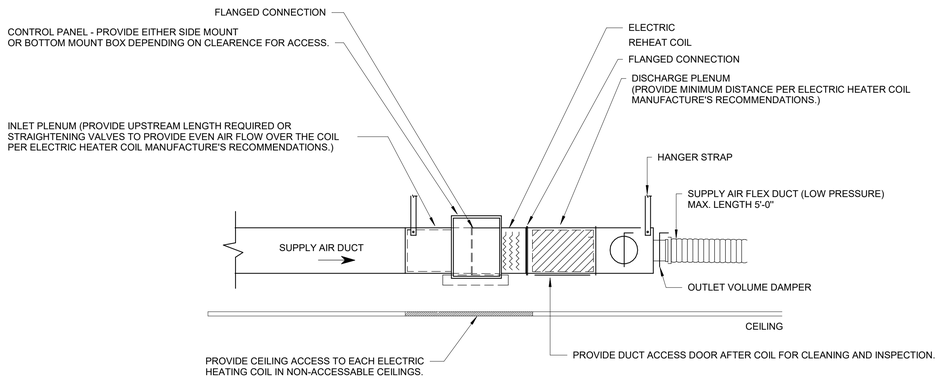
1 M301 **CONDENSING UNIT STAND DETAIL**



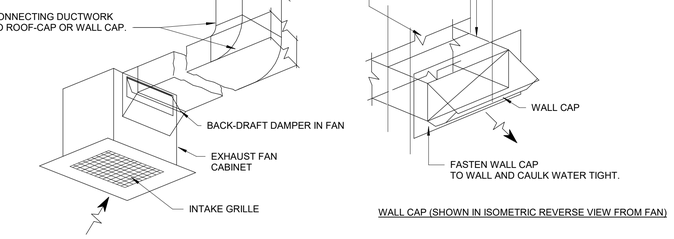
2 M301 **DRYER VENT ROOF CAP**



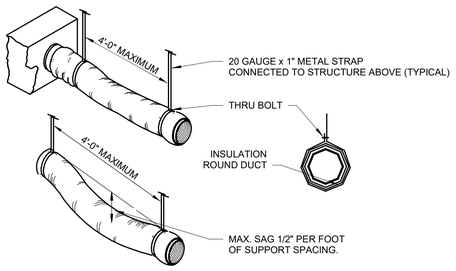
3 M301 **DUCT MOUNTED SUPPLY GRILLE DETAIL**



5 M301 **ELECTRIC HEATER IN DUCT**



4 M301 **CEILING FAN EXHAUST**



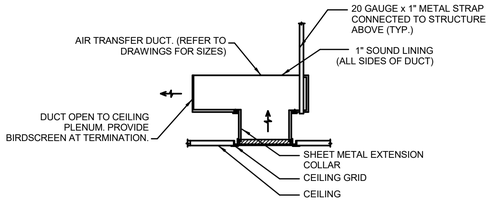
NOTES:

1. FLEXIBLE DUCT SHOULD EXTEND STRAIGHT FOR SEVERAL INCHES FROM RECTANGULAR DUCT CONNECTION BEFORE BENDING.

2. FLEXIBLE DUCT SHOULD NOT EXCEED 6'-0" IN LENGTH. USE RIGID ROUND DUCTWORK WHEN RUNOUTS EXCEED 6'-0".

6 M301 **FLEXIBLE DUCT RUN-OUT SUPPORT DETAIL**

7 M301 **AIR TRANSFER DUCT WITH FIXED LOUVER GRILLE & OPEN STUB DETAIL**



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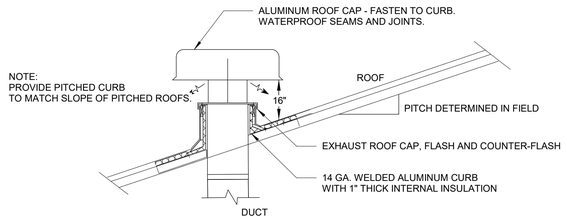
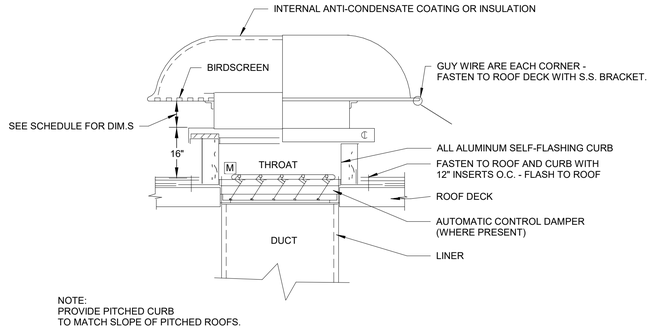
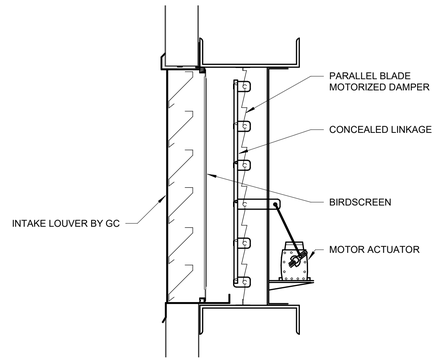


ROUND ROOF VENTILATOR

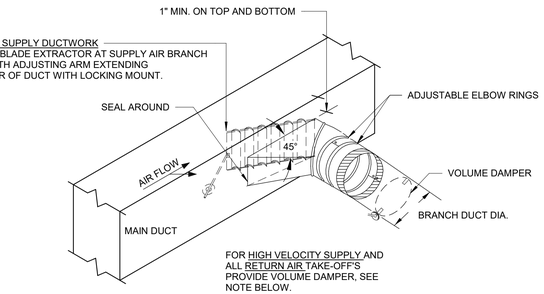


RECTANGULAR ROOF VENTILATOR

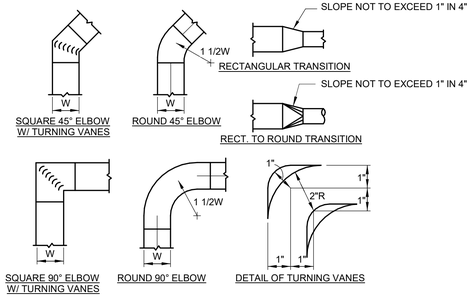
1 M302 **GRAVITY VENTILATOR DETAIL**

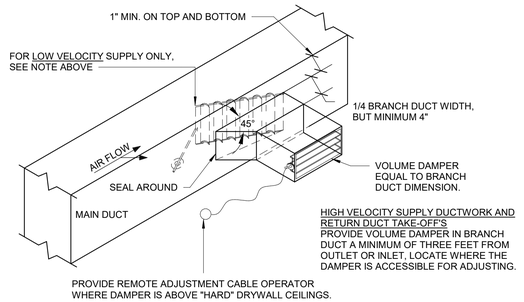


3 M302 **LOUVER DAMPER DETAIL**



ROUND DUCT TAKE-0FF



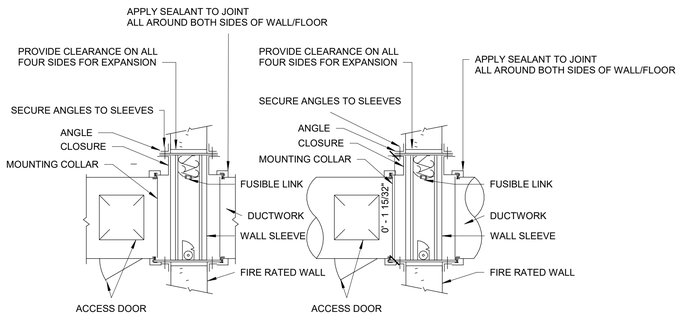


RECTangular DUCT TAKE-0FF

NOTES:
PROVIDE RADIUS ELBOWS, 18" AND LARGER WITH TURNING BLADES AT 1/3 AND 1/2 THE WIDTH OF THE DUCT FROM THE INSIDE RADIUS. TURNING BLADES SHALL BE PROVIDED WITH HEMMED ENDS. (SEE SECTION 15840 OF MECHANICAL SPECIFICATIONS FOR ADDITIONAL DUCT CONSTRUCTION INFORMATION AND RESTRICTIONS.)

5 M302 **LOW VELOCITY DUCTWORK DIAGRAMS**

4 M302 **LOW VELOCITY BRANCH DUCT CONNECTIONS**

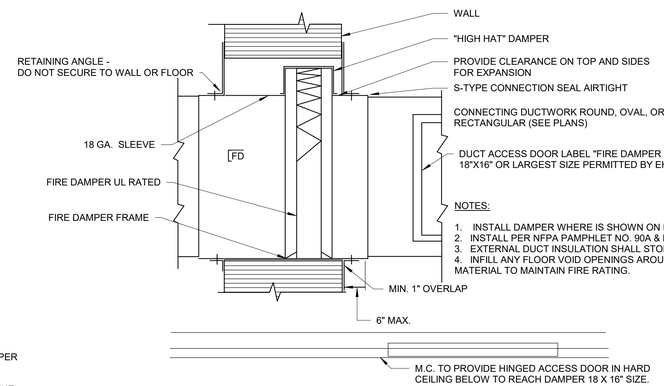


TYPE 'B' VERTICAL MOUNTING TYPE 'C' VERTICAL MOUNTING

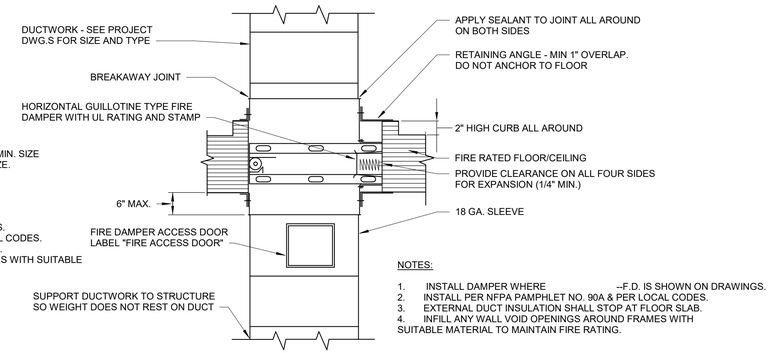
NOTES:

1. ANGLES SHALL BE A MINIMUM OF 1 1/2" x 1 1/2" x 14GA. FASTEN TO COLLAR ONLY, WITH 1/4" DIA. NUTS & BOLTS OR WELDING 8" ON CENTER OR, NO. 10 SHEET METAL SCREWS 8" ON CENTER OR 3/16" STEEL POP RIVETS (SEE NOT 3 FOR CLEARANCE AND OVERLAP
2. COLLARS SHALL BE OF THE SAME OR HEAVIER GAUGE AS THE DUCT TO WHICH IT IS ATTACHED. GAUGES SHALL CONFORM TO SMACNA OR ASHRAE DUCT STANDARDS.
3. WHEN THE FOLLOWING DUCT COLLARS CONNECTIONS ARE USED, THE MINIMUM GAUGE OF THE COLLAR SHALL BE 16 GAUGE ON DAMPERS NOT EXCEEDING 36"W x 24"H AND 14 GAUGE ON LARGER CURTAIN TYPE DAMPERS.
4. FIRE DAMPERS SHALL HAVE A CLEARANCE OF 1/8" PER FOOT ON HEIGHT AND WIDTH AND ANGLES SHALL INCREASE IN SIZE, PROPORTIONATELY, SO THAT THERE WILL BE A MINIMUM OF 1" OVERLAP ON THE PARTITION.
5. ON TYPE 'C' INSTALLATIONS, THE WALL COLLAR MUST BE 18 GAUGE OR HEAVIER.
6. MAXIMUM SINGLE DAMPER OF MULTIPLE DAMPER ASSEMBLY SHALL BE 40" x 40" IN VERTICAL MOUNTINGS, 42"H x 36"H IN HORIZONTAL MOUNTINGS.
7. IN MULTIPLE DAMPER ASSEMBLY, UNITS SHALL BE FASTENED TOGETHER.
8. FIRE DAMPER INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS "NFPA 90A", "UL 555", & "FIRE DAMPER & HEAT STOP GUIDE FOR AIR HANDLING SYSTEMS 1992 EDITION".
9. FIRE DAMPER SLEEVES SHALL HAVE BREAK-AWAY CONNECTIONS AT DUCT ATTACHMENTS.
10. ACCESS DOOR FOR A FIRE DAMPER LOCATED IN A RATED WALL DIRECTLY BEHIND A GRILLE OR REGISTER MAY BE ELIMINATED. THE FUSIBLE LINK MAY BE ACCESSED THRU THE REMOVABLE CORE.
11. FIRE DAMPERS LOCATED IN FIRE RATED FLOORS SHALL BE RATED FOR HORIZONTAL MOUNTING AND SHALL BE INSTALLED IN A SIMILAR MANNER TO THOSE INSTALLED IN FIRE RATED WALLS.
12. NOT REQUIRED ON FUME HOOD EXHAUST DUCTWORK.
13. ACCESS DOORS TO BE DOUBLE WALL INSULATED TYPE IF DUCTWORK IS SPECIFIED TO BE INSULATED TYPE.

2 M302 **FIRE DAMPERS**



VERTICAL FIRE DAMPERS



HORIZONTAL FIRE DAMPERS

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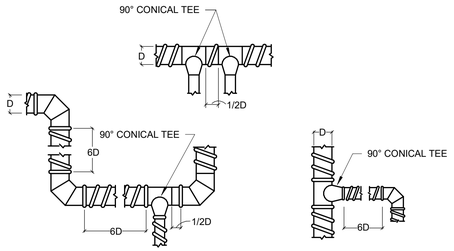
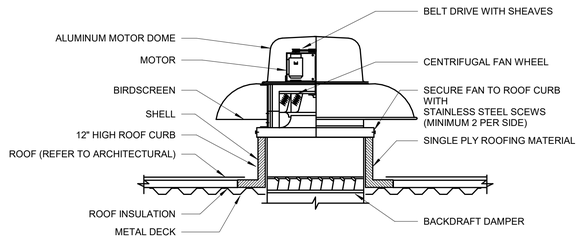


SPACING OF FITTINGS WHEN USING 90° CONICAL TEE

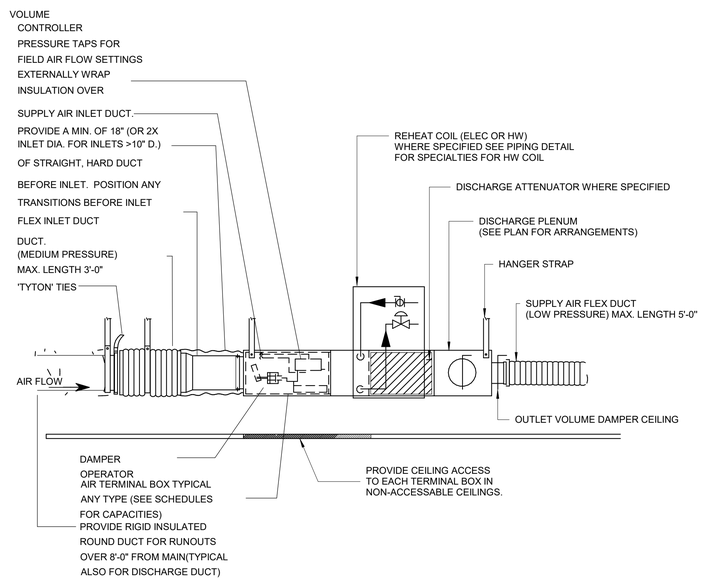
NOTE:
TURNING VANES IN HIGH AND MEDIUM PRESSURE DUCTWORK SHALL BE DOUBLE WIDTH. (SEE SECTION 15840 OF MECHANICAL SPECIFICATION FOR ADDITIONAL DUCT CONSTRUCTION INFORMATION AND RESTRICTIONS.)

1 M303 **MEDIUM AND HIGH VELOCITY DUCTWORK**

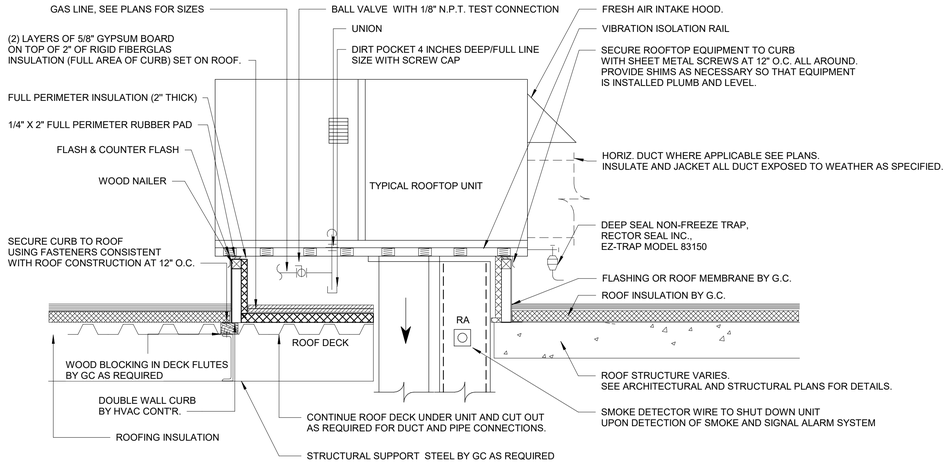
MEDIUM AND HIGH VELOCITY DUCTWORK



3 M303 **ROOF MOUNTED EXHAUST FAN DETAIL**



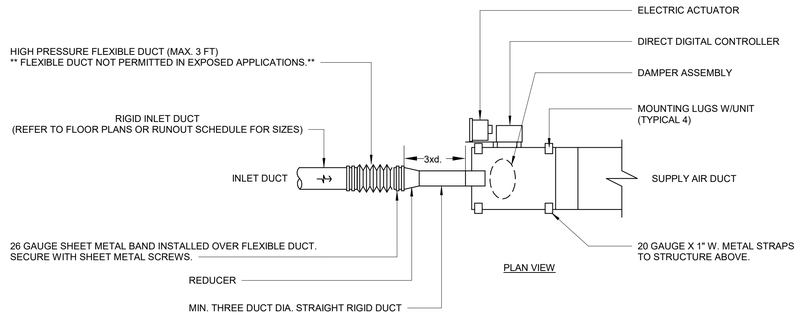
4 M303 **VAV BOX W/ HEAT DETAIL**



ROOF CURB INSTALLATION NOTES:

1) THIS DETAIL IS DIAGRAMMATIC IN THAT IT ILLUSTRATES AN INSTALLATION ON A FLAT ROOF. ACTUAL CONSTRUCTION AND PITCH MAY VARY. CONTRACTORS SHALL SHIM CURB AS NECESSARY TO PROVIDE PLUMB AND LEVEL EQUIPMENT INSTALLATION.
2) ROOF CURBS SHALL BE INSTALLED SQUARE WITH BUILDING LINES.
3) CONTRACTOR SHALL SEAL, FLASH, AND COUNTER FLASH ROOF CURB TO PROVIDE A COMPLETE WEATHERTIGHT INSTALLATION.

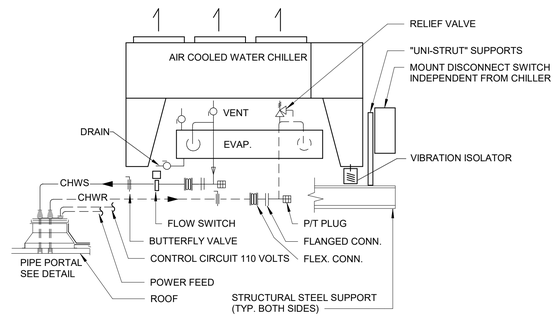
2 M303 **PACKAGED ROOF TOP INTALLATION DETAIL**



PLAN VIEW

NOTE: PROVIDE ACCESS DOORS WHERE UNITS ARE LOCATED ABOVE INACCESSIBLE "HARD" CEILINGS.

5 M303 **VAV COOLING ONLY TERMINAL**



NOTE:

HEAT TRACE ALL EXPOSED PIPING, DRAINS, AND VENTS FROM CHILLER TO PIPE PORTAL. COVER ALL VALVES, FLEX. CONN., ETC.

6 M303 **AIR COOLED WATER CHILLER PIPING DETAIL**

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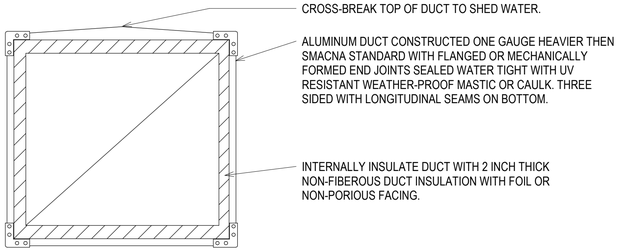
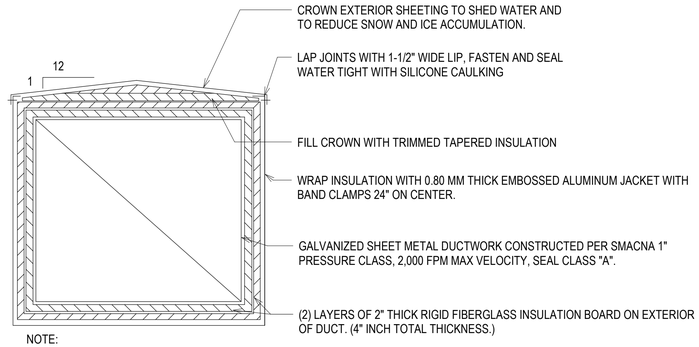
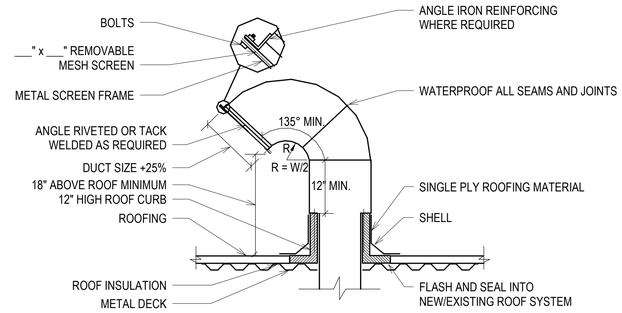




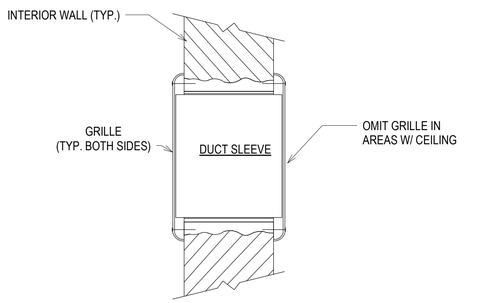
NOTE:

1. WHERE TWO OR MORE DUCTS ARE ENCLOSED IN COMMON INSULATION ENCLOSURE, THE INSULATION BETWEEN DUCTS SHALL BE 2".
2. INSULATION SHALL BE SEALED AT DUCT SUPPORTS FOR VAPOR BARRIER AND WATERPROOFING.

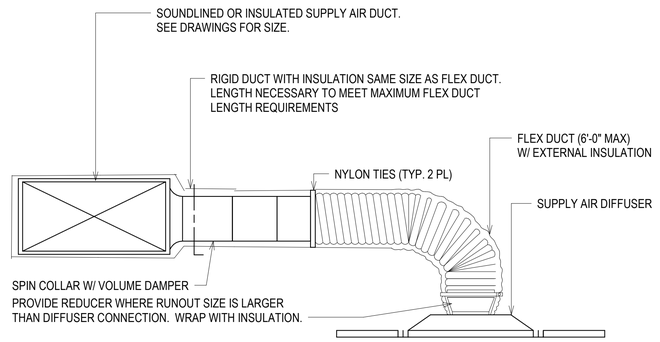
1 M304 **EXTERIOR DUCT INSULATION DETAIL**



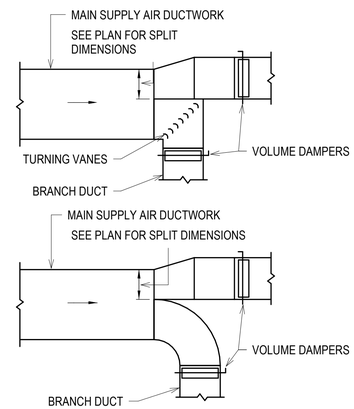
2 M304 **GOOSENECK THRU FLAT ROOF DETAIL**



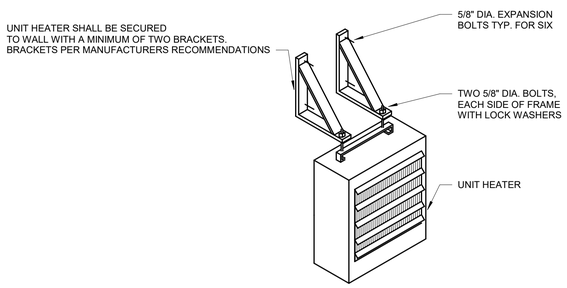
3 M304 **RETURN AIR TRANSFER WITH GRILLES THROUGH NON-RATED WALL DETAIL**



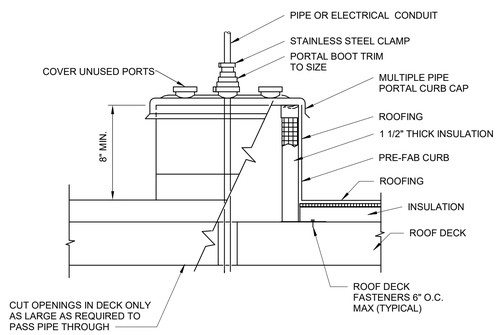
4 M304 **SUPPLY AIR DIFFUSER CONNECTION DETAIL**



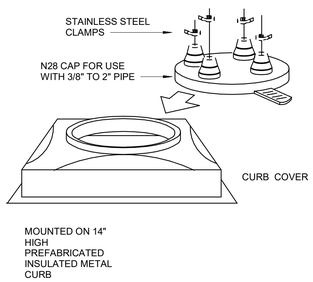
5 M304 **TYPICAL LOW VELOCITY DUCT BRANCH DETAILS**



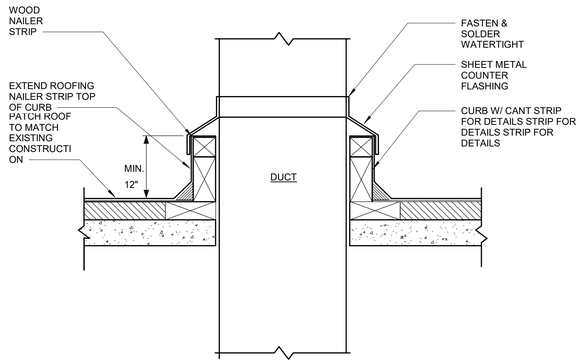
6 M304 **ELECTRIC UNIT HEATER DETAIL**



7 M304 **PIPE PORTAL DETAIL**



8 M304 **ROOF CURB FLASHING DETAIL**



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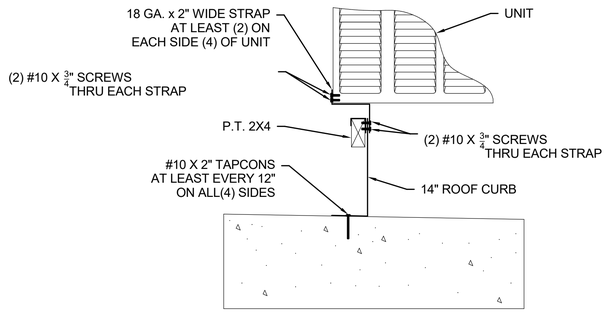

1 / M305 **160 MPH MECHANICAL UNIT TIE DOWN DETAIL**

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NORTH CAROLINA
ALLEN + SHARIFF CORPORATION
No. C - 1486120
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC
RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

MECHANICAL DETAILS

SHEET
M305

ASC PROJECT NUMBER: 21-000

9/20/2023 1:24:51 PM

SINGLE DUCT VAV BOX SCHEDULE

TAG	SERVES	BASIS OF DESIGN MANU.F/ MODEL#	PRIMARY AIR			ELECTRIC RESISTANCE HEATING COIL DATA						ELECTRICAL VOLTS/ PHASE	REMARKS
			DESIGN CFM	MIN. CFM	INLET DIA.	CAPACITY MBH	KW	STEPS	EAT/LAT	AIR P.D. (IN.WC)	ELECTRIC VOLTS/PHASE		
VAV-1.01	145 BREAK ROOM	PRICE - SDV 08	760	465	8"□	15.1	4.4	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.02	147 LOCKERS	PRICE - SDV 06	380	310	6"□	10.0	2.9	SCR	60 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.03	140 PHYSICAL THERAPY & 141 WATER TANK ROOM	PRICE - SDV 12	1805	545	12"□	17.7	5.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.04	148 DR. SHARED (ER)	PRICE - SDV 06	360	230	6"□	7.5	2.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.05	149 EXAM 9 & 150 EXAM 8 & 151 EXAM 7	PRICE - SDV 07	435	375	7"□	12.2	3.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.06	131 ULTRASOUND	PRICE - SDV 04	225	70	4"□	2.3	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.07	133 CT	PRICE - SDV 12	1565	470	7"□	15.2	4.5	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.08	134 CT CONTROL	PRICE - SDV 05	240	75	5"□	2.4	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.09	135 XRAY	PRICE - SDV 07	500	175	7"□	5.7	1.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.10	137 CORRIDOR, 143 RESTROOM & 144 RESTROOM	PRICE - SDV 05	335	125	5"□	4.1	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.11	126 LAB	PRICE - SDV 08	790	250	8"□	8.1	2.4	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.12	157 EXAM 3, 158 EXAM 2 & 159 DISCHARGE	PRICE - SDV 07	450	410	7"□	13.3	3.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.13	125 RUNS	PRICE - SDV 05	305	305	5"□	9.9	2.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.14	124 RUNS	PRICE - SDV 05	250	250	5"□	8.1	2.4	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.15	122 FOOD PREP	PRICE - SDV 04	220	140	4"□	4.5	1.3	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.16	127 COMMAND CENTER	PRICE - SDV 05	290	90	5"□	2.9	0.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.17	123 TREATMENT	PRICE - SDV 10	1325	365	10"□	11.8	3.5	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.18	121 LAUNDRY	PRICE - SDV 04	150	70	4"□	2.3	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.19	120 PHARMACY	PRICE - SDV 07	540	225	7"□	7.3	2.1	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.20	118-A RESP. ISO	PRICE - SDV 07	500	210	7"□	6.8	2.0	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.21	116 ANTE ISO ROOM	PRICE - SDV 04	260	125	4"□	4.1	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.22	117-A GI-ISO	PRICE - SDV 06	370	270	6"□	8.7	2.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.23	108 COMFORT 1	PRICE - SDV 04	80	70	4"□	2.3	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.24	110 INFECTIOUS	PRICE - SDV 04	140	105	4"□	3.4	1.0	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.25	109 COMFORT 2	PRICE - SDV 04	150	125	4"□	4.1	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.26	107 SOCIAL WORKER	PRICE - SDV 04	150	140	4"□	4.5	1.3	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.27	104 CALL CENTER	PRICE - SDV 4	280	85	4"□	2.8	0.8	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.28	106 INVENTORY OFFICE	PRICE - SDV 05	375	375	5"□	12.2	3.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.29	105 DIRECTOR	PRICE - SDV 05	270	270	5"□	8.7	2.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.30	100 WAITING LOBBY, STAIR ST-1 & 101 EX. JC	PRICE - SDV 07	505	205	7"□	6.6	1.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.31	162 RECEPTION, 100 WAITING LOBBY, 163 RESTROOM & 164 RESTROOM	PRICE - SDV 08	870	300	8"□	9.7	2.8	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.32	161 ADMIN	PRICE - SDV 04	120	70	4"□	2.3	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.33	156 EXAM 1	PRICE - SDV 04	75	70	4"□	2.3	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.34	154 TRIAGE	PRICE - SDV 04	85	70	4"□	2.3	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.35	128 FELINE ICU	PRICE - SDV 06	450	150	6"□	4.9	1.4	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.36	130 K9 ICU	PRICE - SDV 8	815	250	8"□	8.1	2.4	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.37	, 152 EXAM 6, 153 EXAM 5 & 155 EXAM 4	PRICE - SDV 7	445	380	7"□	12.3	3.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6

REMARKS:
1. PROVIDE SPRING HANGER BRACKETS
2. SOUND BASED ON 1" INLET S.P. , CAP. 0.25" DOWNSTREAM.
3. 1/2" THICK FIBRE FREE LINER.
4. SINGLE POINT POWER CONNECTION AND DOOR INTERLOCK DISCONNECT SWITCH.
5. DDC CONTROLS COMPATIBLE WITH BUILDING CONTROL SYSTEM.
6. ELECTRIC RESISTANCE HEATING COIL - AIRFLOW PROVING SWITCH AND SCR CONTROL.

SINGLE DUCT VAV BOX SCHEDULE

TAG	SERVES	BASIS OF DESIGN MANU.F/ MODEL#	PRIMARY AIR			ELECTRIC RESISTANCE HEATING COIL DATA						ELECTRICAL VOLTS/ PHASE	REMARKS
			DESIGN CFM	MIN. CFM	INLET DIA.	CAPACITY MBH	KW	STEPS	EAT/LAT	AIR P.D. (IN.WC)	ELECTRIC VOLTS/PHASE		
VAV-1.37	, 152 EXAM 6, 153 EXAM 5 & 155 EXAM 4	PRICE - SDV 7	445	380	7"□	12.3	3.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.38	111 CORRIDOR, 115 EX. ELEC ROOM & 113 JC	PRICE - SDV 4	175	70	4"□	2.3	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.39	112 DELIVERY/STORAGE	PRICE - SDV 6	365	350	6"□	11.3	3.3	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-1.40	160 CORRIDOR	PRICE - SDV 4	150	70	4"□	2.3	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6

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3. 1/2" THICK FIBRE FREE LINER.
4. SINGLE POINT POWER CONNECTION AND DOOR INTERLOCK DISCONNECT SWITCH.
5. DDC CONTROLS COMPATIBLE WITH BUILDING CONTROL SYSTEM.
6. ELECTRIC RESISTANCE HEATING COIL - AIRFLOW PROVING SWITCH AND SCR CONTROL.

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M401

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SINGLE DUCT VAV BOX SCHEDULE

TAG	SERVES	BASIS OF DESIGN MANU.F/ MODEL#	PRIMARY AIR			ELECTRIC RESISTANCE HEATING COIL DATA						ELECTRICAL VOLTS/ PHASE	REMARKS
			DESIGN CFM	MIN. CFM	INLET DIA.	CAPACITY MBH	KW	STEPS	EAT/LAT	AIR P.D. (IN.WC)	ELECTRIC VOLTS/PHASE		
VAV-2.01	245 OR (LARGE) 3	PRICE - SDV 10	1000	1000	10"□	28.1	8.2	SCR	55 / 85	-	480 / 3	24V	1 THRU 6
VAV-2.02	243 OR (SURG) 4	PRICE - SDV 07	640	640	7"□	16.3	4.8	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.03	242 OR (SURG) 5	PRICE - SDV 10	960	960	10"□	28.6	8.4	SCR	55 / 85	-	480 / 3	24V	1 THRU 6
VAV-2.04	236 O2 ROOM	PRICE - SDV 08	800	800	8"□	21.6	7.6	SCR	55 / 85	-	480/ 3	24V	1 THRU 6
VAV-2.05	241 OR (SURG) 6	PRICE - SDV 07	630	630	8"□	19.0	5.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.06	246 OR (SURG) 2	PRICE - SDV 08	705	705	8"□	19.0	5.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.07	247 OR (SURG) 1	PRICE - SDV 08	705	705	8"□	19.0	5.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.08	248 PACK & PREP	PRICE - SDV 08	680	680	8"□	22.0	6.5	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.09	237 SURGERY PREP	PRICE - SDV 12	1500	1500	12"□	48.6	14.2	SCR	55 / 85	-	480 / 3	24V	1 THRU 6
VAV-2.10	240 CLEAN CORRIDOR	PRICE - SDV 04	250	250	4"□	6.75	2.0	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.11	252 DR OFFICE	PRICE - SDV 05	285	90	5"□	2.9	0.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.12	251 SURGERY TREATMENT	PRICE - SDV 07	500	225	7"□	7.3	2.1	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.13	254 HOLDING	PRICE - SDV 06	400	145	6"□	4.7	1.4	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.14	255 FOOD PREP/LAB	PRICE - SDV 05	290	225	5"□	7.3	2.1	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.15	257 CHEMO TREATMENT	PRICE - SDV 04	150	80	4"□	2.6	0.8	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.16	258 DR SHARED OFFICE (ONCO)	PRICE - SDV 04	165	60	4"□	1.9	0.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.17	256 TREATMENT ONCO	PRICE - SDV 06	350	140	6"□	4.5	1.3	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.18	267 EXAM, 268 EXAM, 269 EXAM, 270 EXAM	PRICE - SDV 05	380	130	5"□	4.2	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.19	100 WAITING LOBBY	PRICE - SDV 08	800	400	8"□	13.0	3.8	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.20	200 2ND FLOOR WAITING	PRICE - SDV 08	750	225	8"□	7.3	2.1	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.21	200 SECOND FLOOR WAITING, 205 RESTROOM, 207 RESTROOM	PRICE - SDV 08	800	240	8"□	7.8	2.3	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.22	250 CORRIDOR	PRICE - SDV 05	300	125	5"□	4.1	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.23	229 LOCKERS, 230 RR/SHOWER, 231 RR/SHOWER	PRICE - SDV 07	525	160	7"□	5.2	1.5	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.24	212 CORRIDOR, 238 STORAGE/JAN	PRICE - SDV 08	750	375	8"□	12.2	3.6	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.25	239 XRAY	PRICE - SDV 06	410	130	6"□	4.2	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.26	226 LAUNDRY	PRICE - SDV 07	485	150	7"□	4.9	1.4	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.27	227 PROCEDURE ROOM (NEURO)	PRICE - SDV 04	210	95	4"□	3.1	0.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.28	224 TREATMENT (NEURO)	PRICE - SDV 07	430	220	7"□	7.1	2.1	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.29	212 CORRIDOR, 216 RESTROOM, 217 RESTROOM	PRICE - SDV 07	625	250	7"□	8.1	2.4	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.30	261 EXAM, 262 EXAM, 263 EXAM, 264 EXAM, 265 EXAM, 266 EXAM	PRICE - SDV 07	480	200	7"□	6.5	1.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.31	223 (SHARED OFFICE IM/NEURO)	PRICE - SDV 05	300	125	5"□	4.1	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.32	222 IM TREATMENT	PRICE - SDV 06	450	185	6"□	6.0	1.8	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.33	221 ENDOSCOPY PROC.	PRICE - SDV 05	230	125	5"□	4.1	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.34	219 CARDIOLOGY	PRICE - SDV 05	250	125	5"□	4.1	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.35	220 ECHO ROOM	PRICE - SDV 04	215	100	4"□	3.2	0.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.36	215 ORTHO DARK ROOM	PRICE - SDV 04	205	100	4"□	2.7	0.8	SCR	55 / 85	-	277 / 1	24V	1 THRU 6

REMARKS:
1. PROVIDE SPRING HANGER BRACKETS
2. SOUND BASED ON 1" INLET S.P. , CAP. 0.25" DOWNSTREAM.
3. 1/2" THICK FIBRE FREE LINER.
4. SINGLE POINT POWER CONNECTION AND DOOR INTERLOCK DISCONNECT SWITCH.
5. DDC CONTROLS COMPATIBLE WITH BUILDING CONTROL SYSTEM.
6. ELECTRIC RESISTANCE HEATING COIL - AIRFLOW PROVING SWITCH AND SCR CONTROL.

SINGLE DUCT VAV BOX SCHEDULE (CONTINUED)

TAG	SERVES	BASIS OF DESIGN MANU.F/ MODEL#	PRIMARY AIR			ELECTRIC RESISTANCE HEATING COIL DATA						ELECTRICAL VOLTS/ PHASE	REMARKS
			DESIGN CFM	MIN. CFM	INLET DIA.	CAPACITY MBH	KW	STEPS	EAT/LAT	AIR P.D. (IN.WC)	ELECTRIC VOLTS/PHASE		
VAV-2.37	213 OPTHO	PRICE - SDV 05	280	130	5"□	3.5	1.0	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.38	214 D. SHARED OFFICE (OPTHO)	PRICE - SDV 04	190	150	4"□	4.1	1.2	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.39	211 QUIET ROOM	PRICE - SDV 04	135	90	4"□	2.4	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.40	206 EXAM, 208 EXAM	PRICE - SDV 04	160	90	4"□	2.4	0.7	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.41	209 BREAM ROOM, 210 BREAK ROOM	PRICE - SDV 07	600	260	7"□	7.0	2.1	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.42	203 CONFERENCE RM	PRICE - SDV 10	1440	700	10"□	18.9	5.5	SCR	55 / 85	-	277 / 1	24V	1 THRU 6
VAV-2.43	259 ANTE-ROOM (ONCO) & 260 HOOD (ONCO)	PRICE - SDV 05	300	90	5"□	2.9	0.9	SCR	55 / 85	-	277 / 1	24V	1 THRU 6

REMARKS:
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4. SINGLE POINT POWER CONNECTION AND DOOR INTERLOCK DISCONNECT SWITCH.
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SHEET REVISION SCHEDULE:
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MECHANICAL SCHEDULES

SHEET
M402

ASC PROJECT NUMBER: 21-000

9/20/2023 1:24:52 PM

DOAS UNIT SCHEDULE

TAG	SUPPLY FAN							EXHAUST FAN					COOLING COIL				NATURAL GAS HEATING SECTION				HOT GAS REHEAT			TOTAL ENTHALPY ENERGY RECOVERY WHEEL PERFORMANCE										POWER				WEIGHT (LB)	BASIS OF DESIGN/ MODEL	REMARKS
	CFM	MIN OA	MAX OA	E.S.P. (IN WG)	BHP	MOTOR HP	RPM MAX	CFM	E.S.P. (IN WG)	BHP	MOTOR HP	RPM MAX	TOTAL MBH	SENSIBLE MBH	EAT DB/WB (°F)	LAT DB/WB (°F)	TOTAL MBH INPUT	TOTAL MBH OUTPUT	EAT DB/WB (°F)	LAT DB/WB (°F)	MRC (LB/HR)	LAT DB/WB (°F)	LEAVING DP (°F)	SUMMER OA DB/WB (°F)	SUMMER RA DB/WB (°F)	SUMMER OA POST WHEEL DB/WB (°F)	SUMMER RA POST WHEEL DB/WB (°F)	SUMMER EFF. (%) SENSIBLE / LATENT	WINTER OA DB/WB (°F)	WINTER RA DB/WB (°F)	WINTER OA POST WHEEL DB/WB (°F)	WINTER RA POST WHEEL DB/WB (°F)	WINTER EFF. (%) SENSIBLE / LATENT	VOLTAGE	PHASE	MCA	MOCP			
DOAS-1	7000	3575	7000	1.5	5.25	7.5	1919	7000	1.0	3.15	5.0	1634	465.7	254.8	80.8 / 69.6	47.9 / 47.3	350.0	283.5	53.8	91.1	356.34	76.6 / 59.3	46.6	93.0 / 73.0	75.0 / 62.5	80.8 / 69.6	88.8 / 74.6	76% / 65%	23.0 / 22.0	70.0 / 60.0	53.8 / 48.1	34.7 / 34.6	77% / 65%	480	3	102.0	125.0	8,013 LBS	TRANE HORIZON OAK/NREV5 K540	1 THRU 21
DOAS-2	7000	3575	7000	1.5	5.25	7.5	1919	7000	1.0	3.15	5.0	1634	465.7	254.8	80.8 / 69.6	47.9 / 47.3	350.0	283.5	53.8	91.1	356.34	76.6 / 59.3	46.6	93.0 / 73.0	75.0 / 62.5	80.8 / 69.6	88.8 / 74.6	76% / 65%	23.0 / 22.0	70.0 / 60.0	53.8 / 48.1	34.7 / 34.6	77% / 65%	480	3	102.0	125.0	8,013 LBS	TRANE HORIZON OAK/NREV5 K540	1 THRU 21
DOAS-3	7000	2500	3000	1.5	4.6	7.5	1837	7000	1.0	1.15	2.0	1366	321.3	200.04	77.8 / 66.0	47.5 / 47.3	250.0	202.5	62.4	93.5	303.0	72 / 57.7	46.9	93.0 / 73.0	75.0 / 62.5	80.5 / 69.1	88.6 / 74.5	75% / 65%	23.0 / 22.0	70.0 / 60.0	54.7 / 48.8	35.0 / 34.9	76% / 65%	480	3	72.6	90.0	5,279 LBS	TRANE HORIZON OAK/NREV5 K360	1 THRU 21

REMARKS:
1. UNIT SHALL BE FURNISHED FULLY OPERATIONAL WITH CONTROLS.
2. PROVIDE CONTROL TRANSFORMER, SINGLE POINT POWER, NON-FUSED DISCONNECT, AND SERVICE RECEPTACLE POWERED BY UNIT POWER.
3. FANS SHALL BE VARIABLE SPEED DIRECT DRIVE WITH ECM MOTORS.
4. PROVIDE IN SUPPLY AIR AND RETURN AIR PHOTOELECTRIC TYPE DUCT SMOKE DETECTOR INTERLOCKED WITH UNIT TO PROVIDE IMMEDIATE SHUTDOWN AND SOUND BUILDING ALARM SYSTEM.
5. FILTERS SHALL BE DISPOSABLE PANEL TYPE WITH MERV-8 PRE-FILTER AND MERV-14 FINAL FILTER.
6. PROVIDE FULLY MODULATING OUTDOOR AIR MOTORIZED CONTROL DAMPER AND ACTUATOR.
7. PROVIDE AIRFLOW MONITORING STATION FOR OUTDOOR AIR AND EXHAUST AIR.
8. PROVIDE STOP/JOG ECONOMIZER WHEEL CONTROL.
9. PROVIDE ROTATION DETECTOR WITH ALARM
10. PROVIDE ON/OFF FROST CONTROL THERMOSTAT.
11. PROVIDE FULLY MODULATING EXHAUST DAMPER AND ACTUATOR.
12. PROVIDE FAN VARIABLE FREQUENCY DRIVE FOR SUPPLY FAN AND EXHAUST FAN.
13. PROVIDE FACTORY STARTUP.
14. PROVIDE ANTIMICROBIAL CLEANABLE FOAM INSULATION FOR CABINET.
15. PROVIDE BACNET COMPATIBLE CONTROLLER FOR ALL COMPONENTS OF UNIT.
16. PROVIDE NATURAL GAS HEATING SECTION WITH 10:1 MODULATION TURNDOWN .
17. PROVIDE HIGH PRESSURE STATIC SENSOR.
18. UNIT SHALL BE CONFIGURED FOR MULTIZONE VARIABLE AIR VOLUME CONTROL .
19. PROVIDE UNIT WITH AIR COOLED VARIABLE SPEED HEAD PRESSURE LOW AMBIENT CONTROL.
20. PROVIDE COASTAL CORROSION PACKAGE.
21. PROVIDE MODULATING HOT GAS REHEAT COIL AND DEHUMIDIFICATION CONTROL.

PACKAGED ROOFTOP UNIT SCHEDULE

TAG	NOM. TONS	MIN. O/A CFM	MAX. O/A CFM	SUPPLY FAN DATA					EXHAUST FAN DATA				EER	IEER	COOLING COIL					AIR PRE-FILTER		AIR FINAL FILTER		ELECTRICAL DATA			SOUND (dBA)	W.T. (LBS)	BASIS OF DESIGN TRANE MODEL NUMBER	REMARKS
				CFM	E.S.P. IN. WG	RPM	BHP	MOTOR HP	CFM	E.S.P. IN. WG	RPM	BHP			COIL E.A.T. DB/WB	L.A.T. DB/WB	TOTAL NET MBH	SENS. NET MBH	REFGT. TYPE	MERV RATING	DEPTH	MERV RATING	DEPTH	VOLTS/ PH	MCA	MOCP				
RTU-1 (EX)	30.0	0	0	12000	2.0	1760	-	10.0	-	-	-	-	10.3	12.6	80.0/67.0	59.3/57.8	348.6	270.94	R-410a	8	2"	-	-	480 / 3	74.85	90.0	-	-	TCD360B40-1B2EFBA------HJ-0100--500-0000X---*	27
RTU-2	35.0	0	0	13000	2.0	750	12.01	15.0	-	-	-	-	10.8	15.6	77.3/64.2	55.0/54.0	424.4	315.5	R-410a	8	2"	-	-	480 / 3	95.0	110.0	93	4365	TCD420C40*1B3EFB00*****HJB02L0*0000*0000XA	1 THRU 26

REMARKS + NOTES:

1. EQUIP UNIT WITH LOW LEAK ECONOMIZER WITH BAROMETRIC RELIEF, DIFFERENTIAL DRY BULB CONTROL WITH FAULT DETECTION AND DIAGNOSTICS.
2. PROVIDE POWERED EXHAUST FAN FOR BUILDING PRESSURIZATION.
3. FIELD INSTALL DIRTY FILTER INDICATOR. CONTRACTOR TO PROVIDE AND MAINTAIN MERV-8 FILTERS, 2" THICK. INSTALL NEW FILTERS IMMEDIATELY PRIOR TO SPACE TURNOVER.
4. EQUIP UNIT WITH FACTORY NON-FUSED DISCONNECT.
5. EQUIP UNIT WITH NON-POWERED 120V/1 WEATHER PROTECTED CONVENIENCE RECEPTACLE.
6. EQUIP UNIT WITH HINGED ACCESS PANELS.
7. EQUIP UNIT WITH HIGH AND LOW PRESSURE SWITCHES.
8. EQUIP UNIT WITH WITH THRU-THE-BASE POWER CONNECTIONS.
9. EQUIP UNIT WITH SHORT CYCLE COMPRESSOR PROTECTION.
10. PURCHASE 5 YEAR COMPRESSOR WARRANTY AND 5 YEAR PARTS WARRANTY.
11. UNIT SHALL BE EQUIPPED WITH SUPPLY FAN VFD FOR VARIABLE AIR VOLUME APPLICATION WITH BYPASS
12. EQUIP UNIT WITH FACTORY CONDENSATE OVERFLOW SENSOR.
13. EQUIP UNIT WITH INTEGRAL DISCHARGE AIR TEMPERATURE SENSOR.
14. INTERLOCK DUCT SMOKE DETECTORS WITH UNIT TO SHUT DOWN WHEN SMOKE IS DETECTED.
15. EQUIP ALL UNITS WITH TRANE ADVANCE CONTROL & BACNET COMMUNICATIONS (BCI).
16. TEST AND BALANCE TO BE PERFORMED UTILIZING SHEAVE ADJUSTMENTS ONLY. VFD DISPLAY KIT IS TO BE UTILIZED ONLY FOR VFD TROUBLESHOOTING.
17. PROVIDE REFRIGERANT METERING DEVICE TXV FOR.
18. PROVIDE HUMIDIMIZER COMFOT CONTROL OPTION.
19. PROVIDE 30" INSULATED ROOF CURB WITH VIBRATION ISOLATION RAILS AND HORIZONTAL CURB KNOCKOUTS FOR SUPPLY AND RETURN.
20. PROVIDE PHASE MONITORING SYSTEM
21. PROVIDE MOTORIZED CONTROL OA AND EA DAMPERS.
22. PROVIDE WINTER START KIT AND LOW AMBIENT CONTROLLER.
23. PROVIDE CO2 SENSOR WITHIN RETURN DUCT OF UNIT FOR PURPOSES OF DEMAND CONTROLLED VENTILATION.
24. PROVIDE SUPPLY AND RETURN DUCT SMOKE DETECTOR AT UNIT.
25. PROVIDE HIGH DUCT PRESSURE SENSOR WITHIN UNIT.
26. PROVIDE COASTAL CORROSION PACKAGE.
27. EXISTING ROOFTOP UNIT AND ALL ASSOCIATED ACCESSORIES AND APPURTENANCES TO REMAIN. UNIT CONTROLS SHALL BE UPGRADED TO ACCEPT A NEW BACNET CARD AND INTEGRATED INTO NEW BUILDING AUTOMATION SYSTEM.

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SPLIT SYSTEM AIR-COOLED A/C UNIT SCHEDULE

	EVAPORATOR						CONDENSER							
TAG	NOMINAL TONS	TOTAL COOLING CAP.	CFM (DRY COIL)	MCA/MFS	ELECTRICAL VOLTS/PH.	MANUF./ EVAPORATOR MODEL	TAG	EAT COOLING	SEER	MCA/MOCP	ELECTRICAL VOLTS/PH.	MANUF./ CONDENSER MODEL	WEIGHT	REMARKS
SS IT-1	1.5	18.0	265 - 455	1.0A/SERVED FROM CONDENSER	208 V/1□	MITSUBISHI PKA-A18LA	SS IT-1	95.0	19.8	11.8/30 A.	208 V/1□	MITSUBISHI PUY-A18NKA7-BS	99 LBS.	1,2,3,4,5,6,7,8,9,10,11,12
SS IT-2	1.5	18.0	265 - 455	1.0A/SERVED FROM CONDENSER	208 V/1□	MITSUBISHI PKA-A18LA	SS IT-2	95.0	19.8	11.8/30 A.	208 V/1□	MITSUBISHI PUY-A18NKA7-BS	99 LBS.	1,2,3,4,5,6,7,8,9,10,11,12
SS E-1	1.5	18.0	265 - 455	1.0A/SERVED FROM CONDENSER	208 V/1□	MITSUBISHI PKA-A18LA	SS E-1	95.0	19.8	11.8/30 A.	208 V/1□	MITSUBISHI PUY-A18NKA7-BS	99 LBS.	1,2,3,4,5,6,7,8,9,10,11,12
SS E-2	3.0	36.0	775 - 990	2.0A/SERVED FROM CONDENSER	208 V/1□	MITSUBISHI PCA-A36KA7	SS E-2	95.0	19.1	25.0/30.0 A.	208 V/1□	MITSUBISHI PUY-A36NKA7-BS	211 LBS.	1,2,3,4,5,6,7,8,9,10,11,13
SS E-3	3.0	36.0	775 - 990	2.0A/SERVED FROM CONDENSER	208 V/1□	MITSUBISHI PCA-A36KA7	SS E-3	95.0	19.1	25.0/30.0 A.	208 V/1□	MITSUBISHI PUY-A36NKA7-BS	211 LBS.	1,2,3,4,5,6,7,8,9,10,11,13
SS O2	3.0	36.0	775 - 990	2.0A/SERVED FROM CONDENSER	208 V/1□	MITSUBISHI PLA-A36KEA7	SS O2	95.0	19.1	25.0/30.0 A.	208 V/1□	MITSUBISHI PUY-A36NKA7-BS	211 LBS.	1,2,3,4,5,6,7,8,9,10,11,13
SS MG	3.0	36.0	775 - 990	2.0A/SERVED FROM CONDENSER	208 V/1□	MITSUBISHI PLA-A36KEA7	SS MG	95.0	19.1	25.0/30.0 A.	208 V/1□	MITSUBISHI PUY-A36NKA7-BS	211 LBS.	1,2,3,4,5,6,7,8,9,10,11,13

NOTES:
1. CAPACITY BASED ON 80 DEG. F. DB/67 DEG. F. WB EAT ON EVAPORATOR
2. UNIT SHALL BE EQUIPPED WITH A WIND BAFFLE FOR OPERATION DOWN TO 0 DEG.S F.
3. PROVIDE DISCONNECT AT EACH OUTDOOR AND INDOOR UNITS.
4. PROVIDE BACNET COMPATIBLE UNIT CONTROLS AND A WALL MOUNTED THERMOSTAT/CONTROLLER MODEL.
5. PROVIDE LOW AMBIENT KIT ACCESSORY WITH WIND BAFFLES.
6. PROVIDE CONDENSATE PUMP WITH RESERVOIR AND SENSOR THAT SHALL SHUT UNIT DOWN UPON ALARM OF SENSOR. CONDENSATE PUMP SHALL BE POWERED THROUGH FAN COIL.
7. DDC CONTROLS COMPATIBLE WITH BUILDING CONTROL SYSTEM.
8. PROVIDE 18" UNIT STANDS FOR CONDENSING UNIT WITH VIBRATION ISOLATION PADS.
9. RATED VERTICAL HEIGHT DIFFERENCE BETWEEN EVAPORATOR AND CONDENSER SHALL BE 100 FEET. PROVIDE LONG LINE APPLICATIONS FOR ALL LINESETS EXCEEDING 80 FEET IN LENGTH.
10. POWER FROM CONDENSER TO INDOOR FAN COIL UNIT SHALL BE PROVIDED AND COORDINATED WITH EC.
11. UNIT SHALL BE SEACOAST RATED FOR CORROSIVE COASTAL ENVIRONMENTS.
12. INDOOR UNIT SHALL BE A WALL MOUNTED NON-DUCTED FAN COIL UNIT.
13. INDOOR UNIT SHALL BE A CEILING HUNG NON-DUCTED FAN COIL UNIT.

ELECTRIC RESISTANCE UNIT HEATER SCHEDULE

TAG	TYPE	KW	BTUH	ELEC. VOLT/PH	AMPS	WEIGHT	BASIS OF DESIGN	MODEL	REMARKS
EUH 1.1	CEILING	5.0	17065	480/3	6.0	24 LBS.	BERKO	HUHAA548	1,2,3,4,5,6,7

REMARKS:
1. PROVIDE VIBRATION ISOLATION HANGERS.
2. CEILING MOUNTING BRACKET.
3. PROVIDE DISCONNECT.
4. PROVIDE SUMMER FAN SWITCH.
5. RADIAL DIFFUSER.
6. PROVIDE REMOTE WALL MOUNTED THERMOSTAT.
7. FOR INSTALLATIONS OF UNIT HEATERS BELOW 7'-0", PROVIDE PROTECTIVE WIRE GUARD IN FRONT OF FAN.

ELECTRIC WALL HEATER SCHEDULE

TAG	TYPE	KW	ELEC. VOLT/PH	AMPS	BASIS OF DESIGN	MODEL	REMARKS
EWH 1.1	WALL	2.0	277/1	8.3	BERKO	FRA4027F	2,3,4,5
EWH 1.2	WALL	0.75	120/1	4.2	BERKO	CWH1151DSF	1,3,4,5
EWH 1.3	WALL	0.5	120/1	4.2	BERKO	CWH1101DSF	2,3,4,5
EWH 1.4	WALL	0.75	120/1	4.2	BERKO	CWH1151DSF	1,3,4,5
EWH 1.5	WALL	0.75	120/1	4.2	BERKO	CWH1151DSF	1,3,4,5
EWH 1.6	WALL	0.75	120/1	4.2	BERKO	CWH1151DSF	1,3,4,5
EWH 2.1	WALL	0.5	120/1	4.2	BERKO	CWH1101DSF	2,3,4,5
ECH 2.1	CEILING	2.0	277/1	7.2	BERKO	QFF4007	3,4,5,6

REMARKS:
1. FULLY RECESSED ELECTRIC WALL HEATER.
2. SURFACE MOUNTED ELECTRIC WALL HEATER.
3. INTEGRAL DISCONNECT.
4. TAMPER PROOF COVER.
5. INTEGRAL THERMOSTAT.
6. FULLY RECESSED ELECTRIC CEILING HANGER.

AIR CURTAINS

TAG	SERVES	AIR FLOW		ELECTRIC HEATING		ELECTRICAL			PHYSICAL		MODEL
		CFM	H.P.	kW	TEMP RISE	VOLTS/PHASE	MCA	MOCP 1	LENGTH	WEIGHT	
ARC-1	WAITING LOBBY 100	1978	(1) @ 1/5	15.0	23°	480/3	20.2 AMPS	30.0 AMPS	6'-0"	100	AE08-E-1072E

REMARKS:
1. PROVIDE DISCONNECT SWITCH.
2. ARCHITECT TO CONFIRM FINISH.
3. PROVIDE BACNET COMPATIBLE CONTROLS AND INTERFACE FOR MONITORING AND CONTROL.

ROOFTOP DOWNBLAST EXHAUST FAN SCHEDULE

TAG	SERVES	TYPE	CFM	SP IN W.C.	FAN RPM	MAX SONES (INLET)	WALL/ ROOF OPNG SIZE	WT. LB.S	INLET (dBA)	MOTOR		BASIS OF DESIGN		REMARKS
										HP (WATT)	VOLTS/ PH	MFG.	MODEL	
EFR-O2	236A O2	DOWNBLAST CENTRIFUGAL	550	0.25	1412	6.3	12.5X12.5"	29	52	1/10	120/1	GREENHECK	G-090-VG	1 THRU 7

REMARKS:
1. PROVIDE REMOTE STARTER/DISCONNECT SWITCH
2. DIRECT DRIVEN "VARI-GREEN" ECM MOTOR DOWNBLAST EXHAUST FAN.
3. PROVIDE MOTOR VIBRATION ISOLATION.
4. PROVIDE MOTORIZED BACKDRAFT CONTROL DAMPER.
5. PROVIDE BIRDSCREEN AT FAN OPENING.
6. PROVIDE 14" HIGH INSULATED ROOF CURB.
7. PROVIDE BACNET COMPATIBLE CONTROLS AND INTEGRATION FOR EXHAUST FANS.
8. BELT DRIVEN MOTOR DOWNBLAST EXHAUST FAN.

EXHAUST FAN SCHEDULE

TAG	SERVES	TYPE	CFM	ESP (IN W.C.)	FAN RPM	MAX SONES (OUTLET)	WEIGHT (LB)	INLET (dBA)	MOTOR		BASIS OF DESIGN		REMARKS
									FLA	VOLTS/ PH	MFG.	MODEL	
EF1-1	136 EX. ELECTRICAL ROOM	CEILING CABINET	525	0.25"	857	3.0	49	42	4.75	115/1	GREENHECK	CSP-A1050-VG	1,2,3,4,5,6,7
EF1-2	115 EXISTING ELECTRICAL ROOM	CEILING CABINET	280	0.25"	1138	3.5	24	44	1.5	115/1	GREENHECK	CSP-A380-VG	1,2,3,4,5,6,7
EF2-1	237 EXISTING ELECTRICAL ROOM	CEILING CABINET	425	0.25"	952	3.5	39	45	4.1	115/1	GREENHECK	CSP-A700-VG	1,2,3,4,5,6,7

REMARKS:
1. PROVIDE INTEGRAL BACKDRAFT DAMPER.
2. PROVIDE INSULATED CABINET.
3. PROVIDE DISCONNECT.
4. PROVIDE VIBRATION SPRING ISOLATORS.
5. PROVIDE BACNET COMPATIBLE CONTROLS AND CONTROL TRANSFORMER.
6. PROVIDE VARIABLE SPEED "VARI-GREEN" ECM MOTOR FOR PURPOSES OF BALANCING.
7. EXHAUST FAN SHALL OPERATE VIA WALL MOUNTED REMOTE BACNET COMPATIBLE SPACE THERMOSTAT.
8. EXHAUST FAN SHALL OPERATE CONTINUOUSLY VIA TIMECLOCK.

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THERMAL INSULATION SCHEDULE

SYSTEM	SYSTEM- LOCATION	OPERATING TEMPERATURE	MATERIAL	SMACNA CLASS					REMARKS
				TYPE	THICKNESS IN.S	DENSITY LB/CU. FT.	INSTALLED "R" VALUE/ CONDUCTIVITY	JACKET	
DUCT	SUPPLY AIR DUCT - INDOOR CONCEALED, ACCESSIBLE	40-120	MINERAL-FIBER	BLANKET	1.5"	2.25	6.0	FSK	1, 4
DUCT	SUPPLY AIR DUCT - INDOOR CONCEALED, INACCESSIBLE	40-120	MINERAL-FIBER	BOARD	1.5"	2.25	6.5	FSK	2
DUCT	SUPPLY AIR DUCT - INDOOR EXPOSED	40-120	MINERAL-FIBER	BOARD	1.5"	2.25	6.5	ASJ	1, 4
DUCT	EXHAUST AIR DUCT (WITHIN 10 FEET OF EXTERIOR TERMINATION) - INDOOR CONCEALED	40-120	MINERAL-FIBER	BOARD	1.5"	2.25	6.5	FSK	1, 4
DUCT	EXHAUST AIR DUCT - INDOOR EXPOSED	40-120	UNINSULATED	NONE	-	-	-	-	1, 4
DUCT	TRANSFER AIR - INDOOR CONCEALED AND EXPOSED	40-120	MINERAL-FIBER	LINER	1"	1.5	4.0	-	1, 4
PIPING	HEATING WATER SUPPLY AND RETURN	120-200	MINERAL-FIBER	PRE-MOLDED	REFER TO PIPING INSULATION THICKNESS SCHEDULE			ASJ+SSL	6
PIPING	CONDENSER WATER SUPPLY AND RETURN - INDOOR	BELOW 55 F	ELASTOMERIC	TYPE 1				NONE	6
PIPING	CONDENSER WATER SUPPLY AND RETURN - INDOOR	55-105	NONE REQUIRED	--				--	--
PIPING	COLD CONDENSATE DRAIN - INDOOR, ONLY ON METAL PIPE	40-60	MINERAL-FIBER	PRE-MOLDED				ASJ+SSL	7

NOTES:
1. CONCEALED, ACCESSIBLE LOCATIONS - ABOVE LAY-IN OR ACCESSIBLE CEILINGS, ACCESSIBLE MECHANICAL SHAFTS.
2. CONCEALED, INACCESSIBLE LOCATIONS - ABOVE HARD CEILINGS, (DRY WALL, PLASTER), MECHANICAL SHAFTS, BEHIND WALLS.
3. FOR DUCTS LOCATED OUTDOORS PROVIDE WATERPROOF CONSTRUCTION WITH WATER & UV RESISTANT MASTIC ON ALL JOINTS. INTERNALLY LINE WITH ACOUSTICAL DUCT LINER. CROSS-BREAK TOP TO SHED WATER.
4. DO NOT INSULATE:
   - EXPOSED DUCTWORK DOWNSTREAM OF VAV TERMINALS
   - FACTORY-INSULATED FLEXIBLE DUCTS.
   - FACTORY-INSULATED PLENUMS AND CASINGS.
   - FLEXIBLE CONNECTORS.
   - VIBRATION-CONTROL DEVICES.
   - FACTORY-INSULATED ACCESS PANELS AND DOORS.
5. COVER ALL EXPOSED PIPING LOCATED BELOW 7' 0" ABOVE FINISHED FLOOR WITH PVC JACKET.
6. MULTIPLE INSULATION METHODS MAY BE USED TO ACHIEVE THE TOTAL REQUIRED R-VALUE.
7. DUCTWORK SHALL BE PAINTED WHERE EXPOSED OR VISIBLE TO OCCUPANTS. COLOR TO BE SELECTED BY ARCHITECT.

GRILLE, REGISTER & DIFFUSER SCHEDULE

TAG	FACE SIZE (SLOT WIDTH)	# SLOTS/ BAR, GRID SPACE	DEFLECTION/ THROW	CONN. SIZE	MAX CFM	P.D. IN. W.C.	MAX. NC	BASIS OF DESIGN	MODEL	REMARKS
S-1	24/24	N/A	4W	6"□	160	0.06	27	PRICE	SPD	1,2,5,6
S-2	24/24	N/A	4W	8"□	280	0.08	27	PRICE	SPD	1,2,5,6
S-3	24/24	N/A	4W	10"□	436	0.15	22	PRICE	SPD	1,2,5,6
S-4	24/24	N/A	4W	12"□	707	0.21	29	PRICE	SPD	1,2,5,6
S-5	3/4" SLOT	2 SLOT 48" LENGTH	35°	7"□	215	0.13	27	PRICE	SDA075	1,2,3,5,6
S-6	48/24	N/A	PERF.	12" ROUND	320	0.04	22	TITUS	TLF	1,2,5,7
S-7	3/4" SLOT	2 SLOT 24" LENGTH	35°	4"□	85	0.13	27	PRICE	SDA075	1,2,3,5,6
RG-1	24/12	3/4"	45°	22/10	1200	0.10	29	PRICE	530D	1,2,5,6
RG-2	24/24	3/4"	45°	22/22	2000	0.10	29	PRICE	530D	1,2,5,6
RG-3	12/10	3/4"	45°	10/8	200	0.10	29	PRICE	530D	1,2,5,6
EG-1	10/10	3/4"	45°	8/8	150	0.10	29	PRICE	80D	1,2,5,6

REMARKS:
1. SEE ARCHITECTURAL REFLECTED CEILING PLAN FOR CEILING TYPES AND MOUNTING REQUIREMENTS.
2. COLOR SELECTED BY ARCHITECT.
3. LINEAR SLOT DIFFUSER WITH INSULATED ENGINEERED PLENUM. PROVIDE PATTERN CONTROLLERS AND CABLE OPERATED DAMPER FOR SLOT DIFFUSERS INSTALLED IN HARD CEILINGS.
4. SPIRAL DUCT MOUNTED SUPPLY DIFFUSER WITH AIR SCOOP DAMPER AND DOUBLE DEFLECTION GRILLE.
5. PROVIDE OPPOSED BLADE DAMPERS AT DIFFUSERS, GRILLES, OR REGISTERS IF INSTALLED IN HARD CEILING.
6. PROVIDE ALUMINUM CONSTRUCTION FOR DIFFUSERS INSTALLED IN OPERATING ROOMS, RESTROOMS AND JANITOR'S CLOSETS.
7. PERFORATED LAMINAR SUPPLY DIFFUSER WITH EQUALIZATION BAFFLES AND EXTERNAL INSULATION.

PIPE INSULATION THICKNESS SCHEDULE

FLUID OPERATING TEMPERATURE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (IN)				
	CONDUCTIVITY BTU·IN.(h·ft²·°F)	MEAN RATING TEMPERATURE (°F)	< 1	1 to < 1 1/2	1 1/2 < 4	4 to < 8	≥ 8
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0
105 - 140	0.21 - 0.28	100	1.5	1.5	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	1.5	1.5	1.5	1.5	1.5
40	0.20 - 0.26	50	1.5	1.5	1.5	1.5	1.5

REMARKS:

PIPING SERVING AS PART OF A HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE ABOVE (NC ENERGY CONSERVATION CODE 2018 TABLE C403.2.10) WITH THE FOLLOWING EXCEPTIONS:
1. FACTORY-INSTALLED PIPING WITHIN HVAC EQUIPMENT TESTED AND RATED IN ACCORDANCE WITH A TEST PROCEDURE REFERENCED BY THIS CODE.
2. FACTORY-INSTALLED PIPING WITHIN ROOM FAN-COILS AND UNIT VENTILATORS TESTED AND RATED ACCORDING TO AHRI 330 (EXCEPT THAT THE SAMPLING AND VARIATION PROVISIONS OF SECTION 6.5 SHALL NOT APPLY) AND AHRI 840, RESPECTIVELY.
3. PIPING THAT CONVEYS FLUIDS THAT HAVE A DESIGN OPERATING TEMPERATURE RANGE BETWEEN 60°F AND 105°F.
4. PIPING THAT CONVEYS FLUIDS THAT HAVE NOT BEEN HEATED OR COOLED THROUGH THE USE OF FOSSIL FUELS OR ELECTRIC POWER.
5. STRAINERS, CONTROL VALVES, AND BALANCE VALVES ASSOCIATED WITH PIPING 1 INCH OR LESS IN DIAMETER.
6. DIRECT BURIED PIPING THAT CONVEYS FLUIDS AT OR BELOW 60°F.

TRANSFER AIR DUCT SCHEDULE

DESIGNATION	DUCT SIZE	CFM RANGE	DETAIL
T1	22 x 10	0-1080	#7/M301
T2	22 x 22	1080-1800	#7/M301
T3	20 x 24	1080-1800	#3/M304

NOTES:
1. SIZING BASED ON 0.05"/100 FT. P.D. ~ 700 FPM
2. REFER TO DETAIL FOR DUCT CONFIGURATION.
3. PROVIDE 1" THICK ACOUSTICAL LINER.
4. DESIGNATION T1 SHALL UTILIZE TYPE 'RG-1' GRILLES. DESIGNATION T2 SHALL UTILIZE TYPE 'RG-2' GRILLES. SEE MECHANICAL GRILLES, REGISTERS, AND DIFFUSERS SCHEDULE.

DUCT CONSTRUCTION SCHEDULE

SYSTEM	LOCATION IN DUCT SYSTEM	MATERIAL	SMACNA CLASS				DUCT TEST PRESS. INs W.C.	REMARKS
			STATIC PRESSURE IN.S W.C.	SEAL CLASS	LEAKAGE CLASS (RECT./ROUND)	POS. or NEG.		
RTU-1, RTU-2, DOAS-1, DOAS-2, DOAS-3	SUPPLY AIR DUCT 15 FEET DOWNSTREAM OF FAN DISCHARGE.	GALVANIZED STEEL	3"	A	6	POS.	3	1
RTU-1, RTU-2, DOAS-1, DOAS-2, DOAS-3	SUPPLY DUCT - MEDIUM PRESSURE DUCTWORK	GALVANIZED STEEL	2"	A	12	POS.	2	
RTU-1, RTU-2, DOAS-1, DOAS-2, DOAS-3	SUPPLY DUCT - LOW PRESSURE DUCTWORK	GALVANIZED STEEL	1"	B	12	POS.	1	1
RTU-1, RTU-2, DOAS-1, DOAS-2, DOAS-3	RETURN & EXHAUST DUCTWORK	GALVANIZED STEEL	2"	A	12	POS.	2	
VARIOUS	OUTSIDE AIR DUCTWORK	GALVANIZED STEEL	2"	A	12	POS.	2	
VARIOUS	TRANSFER AIR DUCT	GALVANIZED STEEL	1"	A	24/12	NEG.	1	
VARIOUS	GENERAL EXHAUST DUCT RUNS UNDER 45' RUN	GALVANIZED STEEL	1"	B	24/12	NEG.	1	
VARIOUS	GENERAL EXHAUST DUCT OVER 46' RUN	GALVANIZED STEEL	2"	A	12/6	NEG.	2	
LAUNDRY	LAUNDRY EXHAUST DUCTWORK	GALVANIZED STEEL	2"	A	6	NEG.	2	2

NOTES:
1. FOR DUCTS LOCATED OUTDOORS PROVIDE WATERPROOF CONSTRUCTION WITH WATER & UV RESISTANT MASTIC ON ALL JOINTS. INTERNALLY LINE WITH ACOUSTICAL DUCT LINER. CROSS-BREAK TOP TO SHED WATER.
2. DRYER DUCTS SHALL HAVE SMOOTH INTERIOR FINISH AND SHALL BE CONSTRUCTED OF GALVANIZED STEEL AT A MINIMUM OF 16 GAUGE. EXHAUST DUCTS SHALL BE SUPPORTED A 4 FOOT INTERVALS AND SECURED IN PLACE. DUCTS SHALL NOT BE JOINED WITH SCREWS OR SIMILAR FASTENERS THAT PROTRUDE MORE THAN 1/8" INTO THE INSIDE OF THE DUCT.

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MECHANICAL SCHEDULES

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VENTILATION SCHEDULE

AIR HANDLING UNIT / EXHAUST FAN	AREA SERVED	SPACE DESIGNATION	AREA RATE			PEOPLE RATE				TOTAL REQ'D VENT @ ROOM (CFM)	VENT EFFECTIVENESS (%)	TOTAL REQ'D VENT @ AHU INLET (CFM)	TOTAL VENT PROVIDED @ AHU INLET (CFM)	EXHAUST RATE REQUIRED (CFM/SQ.FT.) OR NOMINAL AIRFLOW (CFM)	EXHAUST RATE PROVIDED (CFM/SQ.FT.) OR NOMINAL AIRFLOW (CFM)	REMARKS
			AREA (SQFT)	REQ'D VENT (CFM/SQFT)	REQ'D VENT (CFM)	PEOPLE	REQ'D VENT (CFM/PERSON)	DIVERSITY	REQ'D VENT (CFM)							
DOAS-1	100 WAITING LOBBY	OFFICE - RECEPTION AREAS	1,017	0.06	61	31	5.0	1.0	153	214	0.8	267.0	1090	N/A	1090	
DOAS-1	101 EX J.C.	JANITOR'S CLOSET	86	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	0.0	
DOAS-1	102 EXISTING ELEV. MACH. RM	MECHANICAL/ELECTRICAL ROOM	64	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	103 CORRIDOR	CORRIDOR	384	0.06	23	0	0.0	1.0	0	23	0.8	28.8	30.0	N/A	N/A	
DOAS-1	104 CALL CENTER	TELEPHONE/DATA ENTRY	163	0.06	10	10	5.0	1.0	49	59	0.8	73.4	75.0	N/A	75.0	
DOAS-1	105 DIRECTOR	OFFICE	168	0.06	10	1	5.0	1.0	5	15	0.8	18.9	20.0	N/A	20.0	
DOAS-1	106 INVENTORY OFFICE	OFFICE	161	0.06	10	1	5.0	1.0	5	15	0.8	18.3	25.0	N/A	25.0	
DOAS-1	107 SOCIAL WORKER	OFFICE	92	0.06	6	1	5.0	1.0	5	11	0.8	13.2	20.0	N/A	20.0	
DOAS-1	108 COMFORT 1	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	77 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	109 COMFORT 2	PET SHOPS (ANIMAL AREAS)	78	0.18	14	1	7.5	1.0	6	20	0.8	24.9	80.0	70 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	110 INFECTIOUS	PET SHOPS (ANIMAL AREAS)	80	0.18	14	1	7.5	1.0	6	20	0.8	25.5	80.0	72 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	111 CORRIDOR	CORRIDOR	456	0.06	27	0	0.0	1.0	0	27	0.8	34.2	35.0	N/A	N/A	
DOAS-1	112 DELIVERY/STORAGE	SHIPPING AND RECEIVING	251	0.12	30	0	0.0	1.0	0	30	0.8	37.6	N.V. (113.25 SQ.FT. OPERABLE OPENING)	N/A	N/A	
DOAS-1	113 JANITOR'S CLOSET	JANITOR'S CLOSET	38	0.0	0	1	0.0	1.0	0	0	0.8	0.0	0.0	N/A	50 CFM	
DOAS-1	115 EXISTING ELECTRIC ROOM	UTILITY / MECHANICAL / ELECTRICAL ROOM	92	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	116 ISO ANTE ROOM	PET SHOPS (ANIMAL AREAS)	95	0.18	17	1	7.5	1.0	7	24	0.8	30.3	85.0	85 CFM (0.90 CFM/SQ.FT.)	85 CFM	
DOAS-1	117-A GI ISO	PET SHOPS (ANIMAL AREAS)	218	0.18	39	2	7.5	1.0	16	56	0.8	69.5	195.0	195 CFM (0.90 CFM/SQ.FT.)	195 CFM	
DOAS-1	118-A RESPIRATORY ISO	PET SHOPS (ANIMAL AREAS)	167	0.18	30	2	7.5	1.0	13	43	0.8	53.2	150.0	150 CFM (0.90 CFM/SQ.FT.)	150 CFM	
DOAS-1	119 IT	UTILITY / MECHANICAL / ELECTRICAL ROOM	100	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	120 PHARMACY	OFFICE	182	0.06	11	1	5.0	1.0	5	15	0.8	19.3	30.0	N/A	30 CFM	
DOAS-1	121 LAUNDRY	CENTRAL LAUNDRY	181	0.06	11	4	7.5	1.0	27	38	0.8	47.5	110.0	N/A	0 CFM	
DOAS-1	122 FOOD PREP	OFFICE	105	0.06	6	1	5.0	1.0	3	9	0.8	11.2	15.0	N/A	15 CFM	
DOAS-1	123 TREATMENT	PET SHOPS (ANIMAL AREAS)	1,470	0.18	265	15	7.5	1.0	110	375	0.8	468.6	1325.0	1323 CFM (0.90 CFM/SQ.FT.)	1325 CFM	
DOAS-1	124 RUNS	PET SHOPS (ANIMAL AREAS)	131	0.18	24	1	7.5	1.0	10	33	0.8	41.8	120.0	118 CFM (0.90 CFM/SQ.FT.)	120 CFM	
DOAS-1	125 RUNS	PET SHOPS (ANIMAL AREAS)	190	0.18	34	2	7.5	1.0	14	48	0.8	60.6	170.0	170 CFM (0.90 CFM/SQ.FT.)	170 CFM	
DOAS-1	126 LAB	OFFICE	200	0.06	12	2	5.0	1.0	10	22	0.8	27.5	30.0	N/A	30 CFM	
DOAS-1	127 COMMAND CENTER	OFFICE	175	0.06	11	2	5.0	1.0	10	21	0.8	25.6	35	N/A	35 CFM	
DOAS-1	128 FELINE ICU	PET SHOPS (ANIMAL AREAS)	251	0.18	45	3	7.5	1.0	19	64	0.8	80.0	230.0	226 CFM (0.90 CFM/SQ.FT.)	230 CFM	
DOAS-1	129 JANITOR'S CLOSET	JANITOR'S CLOSET	54	0.0	0	1	0.0	1.0	0	0	0.8	0.0	0.0	N/A	25 CFM	
DOAS-1	130 K9 ICU	PET SHOPS (ANIMAL AREAS)	700	0.18	126	7	7.5	1.0	53	179	0.8	223.1	630	630 CFM (0.90 CFM/SQ.FT.)	630 CFM	
DOAS-1	131 ULTRASOUND	OFFICE	224	0.06	13	2	5.0	1.0	10	23	0.8	29.3	30.0	N/A	30 CFM	
DOAS-1	132 GENERAL STORAGE	CLOSET	19	0.00	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	133 CT	OFFICE	398	0.06	24	2	5.0	1.0	10	34	0.8	42.4	50.0	N/A	50 CFM	
DOAS-1	134 CT CONTROL	OFFICE	97	0.06	6	1	5.0	1.0	5	11	0.8	13.5	20.0	N/A	20 CFM	
DOAS-1	135 XRAY	OFFICE	109	0.06	7	1	5.0	1.0	5	12	0.8	14.4	25.0	N/A	25 CFM	
DOAS-1	136 EXISTING ELECTRIC ROOM	UTILITY / MECHANICAL / ELECTRICAL ROOM	232	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	137 CORRIDOR	CORRIDOR	828	0.06	50	0	0.0	1.0	0	50	0.8	62.1	65.0	N/A	N/A	
DOAS-1	138 CORRIDOR	CORRIDOR	77	0.06	5	0	0.0	1.0	0	5	0.8	5.8	10.0	N/A	N/A	
DOAS-1	139 EXISTING ELECTRIC ROOM	UTILITY / MECHANICAL / ELECTRICAL ROOM	42	0.00	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	140 PHYSICAL THERAPY	PET SHOPS (ANIMAL AREAS)	478	0.18	86	5	7.5	1.0	36	122	0.8	152.4	455.0	430 CFM (0.90 CFM/SQ.FT.)	455 CFM	

REMARKS:
1. CALCULATIONS WERE PERFORMED BASED ON 2018 NORTH CAROLINA MECHANICAL CODE SECTIONS 402 & 403 AND ASHRAE 62.1-2016.
2. N.V.= NATURAL VENTILATION

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MECHANICAL SCHEDULES

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VENTILATION SCHEDULE

AIR HANDLING UNIT / EXHAUST FAN	AREA SERVED	SPACE DESIGNATION	AREA RATE			PEOPLE RATE				TOTAL REQ'D VENT @ ROOM (CFM)	VENT EFFECTIVENESS (%)	TOTAL REQ'D VENT @ AHU INLET (CFM)	TOTAL VENT PROVIDED @ AHU INLET (CFM)	EXHAUST RATE REQUIRED (CFM/SQ.FT.) OR NOMINAL AIRFLOW (CFM)	EXHAUST RATE PROVIDED (CFM/SQ.FT.) OR NOMINAL AIRFLOW (CFM)	REMARKS
			AREA (SQFT)	REQ'D VENT (CFM/SQFT)	REQ'D VENT (CFM)	PEOPLE	REQ'D VENT (CFM/PERSON)	DIVERSITY	REQ'D VENT (CFM)							
DOAS-1	141 WATER TANK CLOSET	UTILITY / MECHANICAL / ELECTRICAL ROOM	94	0.00	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	142 PT STOR.	CLOSET	15	0.00	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	143 RESTROOM	RESTROOM	50	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	50 CFM (CONT.)	50 CFM (CONT.)	
DOAS-1	144 RESTROOM	RESTROOM	50	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	50 CFM (CONT.)	50 CFM (CONT.)	
DOAS-1	145 BREAK ROOM	OFFICE	266	0.06	16	12	5.0	1.0	60	76	0.8	95.0	95.0	NAN.A	95 CFM	
DOAS-1	146 EX. WATER ROOM	UTILITY / MECHANICAL / ELECTRICAL ROOM	27	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-1	147 LOCKERS	LOCKER / DRESSING ROOM	225	0.0	0	0	0.0	1.0	0	0	0.8	0.0	60.0	57 CFM (0.25 CFM/SQ.FT.)	60 CFM	
DOAS-1	148 DR. SHARED ER	OFFICE	152	0.06	9	1	5.0	1.0	5	14	0.8	17.7	40.0	N/A	40 CFM	
DOAS-1	149 EXAM 9	PET SHOPS (ANIMAL AREAS)	82	0.18	15	1	7.5	1.0	6	21	0.8	26.1	80.0	74 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	150 EXAM 8	PET SHOPS (ANIMAL AREAS)	87	0.18	16	1	7.5	1.0	7	22	0.8	27.7	80.0	78 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	151 EXAM 7	PET SHOPS (ANIMAL AREAS)	87	0.18	16	1	7.5	1.0	7	22	0.8	27.7	80.0	78 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	152 EXAM 6	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	79 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	153 EXAM 5	PET SHOPS (ANIMAL AREAS)	87	0.18	16	1	7.5	1.0	7	22	0.8	27.7	80.0	78 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	154 TRIAGE	PET SHOPS (ANIMAL AREAS)	84	0.18	15	1	7.5	1.0	6	21	0.8	26.8	80.0	76 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	156 EXAM 1	PET SHOPS (ANIMAL AREAS)	80	0.18	14	1	7.5	1.0	6	20	0.8	25.5	80.0	72 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	157 EXAM 3	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	79 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	158 EXAM 2	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	79 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	159 DISCHARGE	PET SHOPS (ANIMAL AREAS)	84	0.18	15	1	7.5	1.0	6	21	0.8	26.8	80.0	76 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-1	161 ADMIN	OFFICE	104	0.06	6	1	5.0	1.0	5	11	0.8	14.1	20.0	N/A	20 CFM	
DOAS-1	162 RECEPTION	OFFICE - RECEPTION AREA	118	0.06	7	4	5.0	1.0	18	25	0.8	31.0	50.0	N/A	50 CFM	
DOAS-2	200 2ND FLOOR WAITING	OFFICE - RECEPTION AREAS	1,282	0.06	77	38	5.0	1.0	192	269	0.8	336.5	800.0	N/A	800 CFM	
DOAS-2	201 RECEPTION	OFFICE - RECEPTION AREAS	138	0.06	8	4	5.0	1.0	21	29	0.8	36.2	60.0	N/A	60 CFM	
DOAS-2	202 JC	JANITOR'S CLOSET	27	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	25 CFM	
DOAS-2	203 CONFERENCE ROOM	CONFERENCE ROOM	929	0.06	56	46	5.0	1.0	232	288	0.8	360.0	640.0	N/A	640 CFM	
DOAS-2	204 CLOSET	CLOSET	42	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	0 CFM	
DOAS-2	205 RESTROOM	RESTROOM	55	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	50 CFM (CONT.)	50 CFM (CONT.)	
DOAS-2	206 EXAM 10	PET SHOPS (ANIMAL AREAS)	89	0.18	16	1	7.5	1.0	7	23	0.8	28.4	80.0	77 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	207 RESTROOM	RESTROOM	55	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	50 CFM (CONT.)	50 CFM (CONT.)	
DOAS-2	208 EXAM 11	PET SHOPS (ANIMAL AREAS)	89	0.18	16	1	7.5	1.0	7	23	0.8	28.4	80.0	77 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	209 BREAK ROOM	OFFICE SPACE	151	0.06	9	6	5.0	1.0	30	39	0.8	48.8	82.0	N/A	82 CFM	
DOAS-2	210 BREAK ROOM	OFFICE SPACE	189	0.06	11	12	5.0	1.0	60	71	0.8	89.2	160.0	N/A	160 CFM	
DOAS-2	211 QUIET ROOM	OFFICE SPACE	82	0.06	5	0	5.0	1.0	2	7	0.8	8.7	61.0	N/A	61 CFM	
DOAS-2	212 CORRIDOR	CORRIDOR	1,657	0.06	99	0	0.0	1.0	0	99	0.8	124.3	125.0	N/A	N/A	
DOAS-2	213 OPTHOMOLOGY	PET SHOPS (ANIMAL AREAS)	204	0.18	37	2	7.5	1.0	15	52	0.8	65.0	140.0	184 CFM (0.90 CFM/SQ.FT.)	184	
DOAS-2	214 DR. SHARE OFFICE	OFFICE SPACE	103	0.06	6	1	5.0	1.0	3	9	0.8	10.9	61.0	N/A	61 CFM	
DOAS-2	215 OPTHO DARK ROOM	UTILITY / MECHANICAL / ELECTRICAL ROOM	139	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-2	216 RESTROOM	RESTROOM	53	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	50 CFM (CONT.)	50 CFM (CONT.)	
DOAS-2	217 RESTROOM	RESTROOM	53	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	50 CFM (CONT.)	50 CFM (CONT.)	
DOAS-2	218 JC	JANITOR'S CLOSET	29	0.0	0	0	0.0	1.0	0	0	0.8	0.0	N/A	N/A	0.0 CFM	
DOAS-2	219 CARDIOLOGY	PET SHOPS (ANIMAL AREAS)	186	0.18	33	2	7.5	1.0	14	47	0.8	59.3	125.0	167 CFM (0.90 CFM/SQ.FT.)	170 CFM	

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MECHANICAL SCHEDULES

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VENTILATION SCHEDULE

AIR HANDLING UNIT / EXHAUST FAN	AREA SERVED	SPACE DESIGNATION	AREA RATE			PEOPLE RATE				TOTAL REQ'D VENT @ ROOM (CFM)	VENT EFFECTIVENESS (%)	TOTAL REQ'D VENT @ AHU INLET (CFM)	TOTAL VENT PROVIDED @ AHU INLET (CFM)	EXHAUST RATE REQUIRED (CFM/SQ.FT.) OR NOMINAL AIRFLOW (CFM)	EXHAUST RATE PROVIDED (CFM/SQ.FT.) OR NOMINAL AIRFLOW (CFM)	REMARKS
			AREA (SQFT)	REQ'D VENT (CFM/SQFT)	REQ'D VENT (CFM)	PEOPLE	REQ'D VENT (CFM/PERSON)	DIVERSITY	REQ'D VENT (CFM)							
DOAS-2	220 ECHO ROOM	PET SHOPS (ANIMAL AREAS)	145	0.18	26	1	7.5	1.0	11	37	0.8	46.2	97.0	130 CFM (0.90 CFM/SQ.FT.)	130 CFM	
DOAS-2	221 ENDOSCOPY PROCEDURE	PET SHOPS (ANIMAL AREAS)	178	0.18	32	2	7.5	1.0	13	45	0.8	56.7	120.0	160 CFM (0.90 CFM/SQ.FT.)	160 CFM	
DOAS-2	222 IM TREATMENT	PET SHOPS (ANIMAL AREAS)	322	0.18	58	3	7.5	1.0	24	82	0.8	102.6	225.0	290 CFM (0.90 CFM/SQ.FT.)	290 CFM	
DOAS-2	223 DR. SHARED OFFICE IM.NEURO	OFFICE SPACE	186	0.06	11	1	5.0	1.0	5	16	0.8	19.8	61.0	N/A	61 CFM	
DOAS-2	224 TREATMENT (NEURO)	PET SHOPS (ANIMAL AREAS)	366	0.18	66	4	7.5	1.0	27	93	0.8	116.7	250.0	329 CFM (0.90 CFM/SQ.FT.)	330 CFM	
DOAS-2	225 PROCEDURE ROOM (NEURO)	PET SHOPS (ANIMAL AREAS)	163	0.18	29	2	7.5	1.0	12	42	0.8	52.0	120.0	147 CFM (0.90 CFM/SQ.FT.)	150 CFM	
DOAS-2	226 LAUNDRY	CENTRAL LAUNDRY	173	0.06	10	3	7.5	1.0	26	36	0.8	45.4	115	N/A	0 CFM	
DOAS-2	227 EXISTING ELECTRIC ROOM	UTILITY / MECHANICAL / ELECTRICAL ROOM	200	0.0	0	2	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-2	228 GENERAL STORAGE	CLOSET	20	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-2	229 LOCKERS	LOCKER/DRESSING ROOM	181	0.0	0	1	0.0	1.0	0	0	0.8	0.0	200.0	45 CFM (0.25 CFM/SQ.FT.)	200 CFM	
DOAS-2	230 RESTROOM/SHOWER	RESTROOM	70	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	50 CFM (CONT.)	50 CFM (CONT.)	
DOAS-2	231 RESTROOM/SHOWER	RESTROOM	71	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	50 CFM (CONT.)	50 CFM (CONT.)	
DOAS-2	232 STORAGE	CLOSET	19	0.00	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-2	236A O2 ROOM	N/A	398	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	550 CFM	
DOAS-2	236B MED GAS ROOM	N/A	97	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0 CFM	
DOAS-3	237 SURGERY PREP	SURGERY / PREP ROOM	894	4 ACH	536	N/A	N/A	N/A	N/A	N/A	N/A	536.0	1500.0	N/A	N/A	
DOAS-2	238 STORAGE/JAN	UTILITY / MECHANICAL / ELECTRICAL ROOM	104	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	N/A	
DOAS-2	239 XRAY	OFFICE	146	0.06	9	1	5.0	1.0	5	14	0.8	17.2	100.0	N/A	140 CFM	
DOAS-3	240 CLEAN CORRIDOR	CORRIDOR	399	4 ACH	239	N/A	N/A	N/A	N/A	N/A	N/A	239.0	250.0	N/A	N/A	
DOAS-3	241 OR (SURG) 6	SURGERY / OPERATING ROOM	282	4 ACH	169	N/A	N/A	N/A	N/A	N/A	N/A	169.0	630.0	N/A	N/A	
DOAS-3	242 OR (SURG) 5	SURGERY / OPERATING ROOM	424	4 ACH	254	N/A	N/A	N/A	N/A	N/A	N/A	254.0	960.0	N/A	N/A	
DOAS-3	243 OR (SURG) 4	SURGERY / OPERATING ROOM	219	4 ACH	131	N/A	N/A	N/A	N/A	N/A	N/A	131.0	635.0	N/A	N/A	
DOAS-3	245 OR (SURG) 3	SURGERY / OPERATING ROOM	369	4 ACH	221	N/A	N/A	N/A	N/A	N/A	N/A	221.0	1000.0	N/A	N/A	
DOAS-3	246 OR (SURG) 2	SURGERY / OPERATING ROOM	251	4 ACH	151	N/A	N/A	N/A	N/A	N/A	N/A	151.0	705.0	N/A	N/A	
DOAS-3	247 OR (SURG) 1	SURGERY / OPERATING ROOM	251	4 ACH	151	N/A	N/A	N/A	N/A	N/A	N/A	151.0	705	N/A	N/A	
DOAS-3	248 PACK & PREP	OFFICE SPACE	235	4 ACH	141	N/A	N/A	N/A	N/A	N/A	N/A	141.0	680.0	N/A	N/A	
DOAS-3	249 JAN	JANITOR'S CLOSET	27	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	30 CFM	
DOAS-2	250 CORRIDOR	CORRIDOR	225	0.06	14	0	0.0	1.0	0	14	0.8	16.9	20	N/A	N/A	
DOAS-2	251 SURGERY TREATMENT	PET SHOPS (ANIMAL AREAS)	433	0.18	78	4	7.5	1.0	32	110	0.8	138.0	390.0	390 CFM (0.90 CFM/SQ.FT.)	390 CFM	
DOAS-2	252 DR. OFFICE	OFFICE SPACE	185	0.06	11	2	5.0	1.0	9	20	0.8	25.4	130.0	N/A	130 CFM	
DOAS-2	253 JANITOR'S CLOSET	JANITOR'S CLOSET	16	0.0	0	0	0.0	1.0	0	0	0.8	0.0	0.0	N/A	25 CFM	
DOAS-2	254 HOLDING	PET SHOPS (ANIMAL AREAS)	297	0.18	53	3	7.5	1.0	22	76	0.8	94.7	220.0	267 CFM (0.90 CFM/SQ.FT.)	270 CFM	
DOAS-2	255 FOOR PREP/LAB	OFFICE SPACE	207	0.06	12	2	5.0	1.0	10	23	0.8	28.5	150	N/A	150 CFM	
DOAS-2	256 TREATMENT (ONCO)	PET SHOPS (ANIMAL AREAS)	270	0.18	49	3	7.5	1.0	20	69	0.8	86.1	185.0	243 CFM (0.90 CFM/SQ.FT.)	245 CFM	
DOAS-2	257 CHEMO TREATMENT	PET SHOPS (ANIMAL AREAS)	105	0.18	19	1	7.5	1.0	8	27	0.8	33.5	72.0	95 CFM (0.90 CFM/SQ.FT.)	95 CFM	
DOAS-2	258 DR. SHARED OFFICE (ONCO)	OFFICE SPACE	116	0.06	7	1	5.0	1.0	6	13	0.8	16.0	25.0	N/A	25 CFM	
DOAS-2	259 ANTE-ROOM (ONCO)	SCIENCE LABORATORY	66	0.18	12	2	10.0	1.0	17	28	0.8	35.5	45	0	0 CFM	
DOAS-2	260 HOOD	SCIENCE LABORATORY	83	0.18	15	2	10.0	1.0	21	36	0.8	44.6	57	0	459 CFM (THRU HOOD)	
DOAS-2	261 EXAM 12	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	79 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	262 EXAM 13	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	79 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	263 EXAM 14	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	76 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	264 EXAM 15	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	76 CFM (0.90 CFM/SQ.FT.)	80 CFM	

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MECHANICAL SCHEDULES

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VENTILATION SCHEDULE

AIR HANDLING UNIT / EXHAUST FAN	AREA SERVED	SPACE DESIGNATION	AREA RATE			PEOPLE RATE				TOTAL REQ'D VENT @ ROOM (CFM)	VENT EFFECTIVENESS (%)	TOTAL REQ'D VENT @ AHU INLET (CFM)	TOTAL VENT PROVIDED @ AHU INLET (CFM)	EXHAUST RATE REQUIRED (CFM/SQ.FT.) OR NOMINAL AIRFLOW (CFM)	EXHAUST RATE PROVIDED (CFM/SQ.FT.) OR NOMINAL AIRFLOW (CFM)	REMARKS
			AREA (SQFT)	REQ'D VENT (CFM/SQFT)	REQ'D VENT (CFM)	PEOPLE	REQ'D VENT (CFM/PERSON)	DIVERSITY	REQ'D VENT (CFM)							
DOAS-2	265 EXAM 16	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	76 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	266 EXAM 17	PET SHOPS (ANIMAL AREAS)	89	0.18	16	1	7.5	1.0	7	23	0.8	28.4	80.0	80 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	267 EXAM 18	PET SHOPS (ANIMAL AREAS)	106	0.18	19	1	7.5	1.0	8	27	0.8	33.8	80.0	95 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	268 EXAM 19	PET SHOPS (ANIMAL AREAS)	95	0.18	17	1	7.5	1.0	7	24	0.8	30.3	80.0	86 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	269 EXAM 20	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	79 CFM (0.90 CFM/SQ.FT.)	80 CFM	
DOAS-2	270 EXAM 21	PET SHOPS (ANIMAL AREAS)	88	0.18	16	1	7.5	1.0	7	22	0.8	28.1	80.0	79 CFM (0.90 CFM/SQ.FT.)	80 CFM	

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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....	FURNISH & INSTALL	
LINE VOLTAGE CONTROL WIRING FOR MECH....	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 MECH. EQUIP.	FURNISH & INSTALL	POWER WIRE
MECHANICAL EQUIP. MONITORS	FURNISH, INSTALL, & CONTROL WIRE	POWER WIRE
MANUAL STARTERS FOR MECH. EQUIP.	FURNISH & INSTALL	POWER WIRE
MAGNETIC STARTERS FOR MECH. EQUIP..	FURNISH	INSTALL & POWER WIRE
MOTOR CONTROL CENTERS	CONTORL WIRING	FURNISH, INSTALL, & POWER WIRE
VARIABLE SPEED CONTROLLERS	FURNISH, INSTALL, & CONTROL WIRE	POWER WIRE
MOTORIZED DAMPERS & VALVES	FURNISH, INSTALL, & CONTROL WIRE	POWER WIRE & 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

PLUMBING LEGEND

SYMBOL	ABRV.	DESCRIPTION
SAN	SAN	SANITARY PIPING
ST	ST	STORM PIPING (PRIMARY)
OD	OD	SECONDARY / OVERFLOW DRAIN PIPING
V	V	VENT PIPING
CW	CW	COLD WATER PIPING
HW	HW	HOT WATER PIPING
HWR	HWR	HOT WATER RETURN PIPING
TP	TP	TRAP PRIMER PIPING
G	G	GAS PIPING (NATURAL OR PROPANE)
S	S	SPRINKLER PIPING
CD	CD	CONDENSATE DRAIN PIPING
		PIPING ROUTED BELOW GRADE / SLAB (LINE TYPE INDICATES SERVICE TYPE UNO)
EX (X)	EX	EXISTING PIPING TO REMAIN - (X) DESIGNATES SERVICE
RX (X)	RX	EXISTING PIPING TO BE REMOVED - (X) DESIGNATES SERVICE
VAC	VAC	MEDICAL VACUUM PIPING
MA	MA	MEDICAL AIR PIPING
OXY	OXY	OXYGEN PIPING
N	N	NITROGEN PIPING
CA	CA	COMPRESSED AIR PIPING
CO2	CO2	CARBON DIOXIDE PIPING
PD	PD	PUMP DISCHARGE
		OXYGEN OUTLET
		NITROGEN OUTLET
		WAGD INLET
		MED VAC INLET
		MED AIR OUTLET

SYMBOL	ABRV.	DESCRIPTION
		PIPE UP
		PIPE DOWN
		PIPE TEE DOWN
		PIPE UNION
		PIPE CAP
		PIPE TRAP
		BALL VALVE
		BALL VALVE OR SHUTOFF VALVE IN RISE
		GAS COCK
	MV	MIXING VALVE
		VACUUM RELIEF VALVE
	VB	VACUUM BREAKER
		GAS SOLENOID VALVE
	BV	BALANCING VALVE
	PRV	PRESSURE REDUCING VALVE
	PRV	PRESSURE REGULATING VALVE
	CV	CHECK VALVE
		STRAINER
	T&P	TEMPERATURE AND PRESSURE RELIEF VALVE
	BFP	BACK FLOW PREVENTER
	PG	PRESSURE GAUGE
		THERMOMETER
		AQUASTAT
		HOT WATER RECIRC. PUMP
		INTERIOR HOSE BIBB OR HOSE END DRAIN VALVE
		EXTERNAL WALL HYDRANT
X		DOMESTIC SHOCK ABSORBER/WATER HAMMER ARRESTER; TEXT DENOTES SIZE (PDI: A ~ F)
	FCO	CLEAN OUT, FLOOR
	CO	CLEAN OUT, EXPOSED
	FD	FLOOR DRAIN
	RD	ROOF DRAIN
		FLOOR DRAIN WITH TRAP PRIMER
		FLOOR SINK/RECEPTOR WITH HALF GRATE
	OS&Y	OS&Y VALVE
	T.S.	OS&Y VALVE WITH TAMPER SWITCH
		FIRE DEPARTMENT SIAMESE CONNECTION
I.E. XX.XX		INVERT ELEVATION B.F.F. (IN FEET)
		CONNECT TO EXISTING
		DISCONNECT FROM EXISTING

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PLUMBING SPECIFICATION

GENERAL INFORMATION

A. GENERAL

1. CONFORM TO GENERAL AND SPECIAL CONDITIONS OF CONTRACT.
2. SPECIFICATIONS ARE APPLICABLE TO CONTRACTORS AND/OR SUBCONTRACTORS.
3. 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.
4. VISIT SITE, CHECK FACILITIES AND CONDITIONS.
5. SYSTEMS SHALL BE COMPLETE AND PLACED IN OPERATION.
6. 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.
7. CONTRACTORS SHALL CONFIRM AND COMPLY WITH UTILITY COMPANY REQUIREMENTS, COORDINATE CONNECTION POINTS IN FIELD.
8. ARRANGE FOR AND OBTAIN OWNER'S AND INSURANCE REPRESENTATIVE'S PERMISSION FOR ANY SERVICE SHUTDOWNS.
9. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, SEQUENCES OF CONSTRUCTION AND THE SAFETY OF WORKMEN.
10. PIPING, CONTROLS, ETC., SHALL NOT BE INSTALLED, OR ROUTED ABOVE, ELECTRICAL PANELS AND EQUIPMENT OR THROUGH ELEVATOR MACHINE ROOMS.
11. 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.
12. 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.
13. 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.
14. 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

1. CONFORM TO APPLICABLE CODES (LOCAL, STATE, NATIONAL CODES, NFPA, OSHA, ETC.), GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, AND APPLICABLE STANDARDS.
2. 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

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

D. DRAWINGS

1. THE SYSTEMS SHOWN ON DRAWINGS ARE DIAGRAMMATIC. CONFIRM DIMENSIONS BY FIELD MEASUREMENT.
2. 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.
3. DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT ONE ANOTHER. ANY MATERIALS OR LABOR CALLED FOR IN ONE BUT NOT THE OTHER SHALL BE PROVIDED.

E. DEMOLITION AND REMOVAL

1. DISCONNECT, DISASSEMBLE, CAP, PLUG AND REMOVE PIPING, DUCTS AND EQUIPMENT INDICATED ON THE DRAWINGS, AND AS REQUIRED FOR THE PROJECT.
2. ANY EQUIPMENT DESIGNATED BY OWNER TO BE SALVAGED SHALL BE PROTECTED AND DELIVERED TO THE OWNER'S ON SITE.
3. DEMOLITION SHALL BE DONE IN A MANNER NOT TO DAMAGE ADJACENT WORK AND NOT AFFECT THE OPERATION OF SYSTEMS TO REMAIN IN USE. ANY ITEM TO REMAIN THAT IS DAMAGED BY THE CONTRACTOR OR THAT REQUIRES DAMAGE DUE TO THE ABSOLUTE NECESSITY FOR DEMOLITION REQUIREMENTS SHALL BE REPLACED AND/OR REPAIRED AT HIS EXPENSE.
4. OPENINGS ON PIPING AND DUCTS THAT REMAIN SHALL BE CAPPED AND PROPERLY SECURED.
5. ASBESTOS REMOVAL WILL BE HANDLED BY THE OWNER AND IS NOT A PART OF THIS WORK.
6. EXAMINE AREAS AND CONDITIONS UNDER WHICH DEMOLITION WORK SHALL BE PERFORMED. CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES PERFORMING DEMOLITION WORK.
7. REMOVE SUPPORTS, HANGERS, AND ACCESSORIES FROM EQUIPMENT AND MATERIAL INDICATED TO BE REMOVED.

F. BASE EQUIPMENT, MATERIALS AND SUBSTITUTIONS

1. EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS AND U.L. LABELED.
2. BASE BID MANUFACTURERS ARE INCLUDED IN SPECIFICATIONS OR LISTED IN SCHEDULE ON DRAWINGS. OTHER MANUFACTURERS ARE CONSIDERED A SUBSTITUTION.
3. THE NAME OR MAKE OF ANY ARTICLE, DEVICE, MATERIAL, FORM OF CONSTRUCTION, FIXTURE, ETC., STATED IN THIS SPECIFICATION, SHALL BE KNOWN AS A "STANDARD".
4. PROPOSALS SHALL BE BASED ON "STANDARDS" SPECIFIED.
5. THE EQUIPMENT SCHEDULES ON DRAWINGS INDICATE MANUFACTURERS EQUIPMENT MODEL NUMBERS UPON WHICH DESIGN HAS BEEN BASED. THE USE OF OTHER MANUFACTURERS EQUIPMENT THAT IS LISTED AS ACCEPTABLE ALTERNATES THAT REQUIRES STRUCTURAL CHANGES, CHANGES IN ROOF OPENINGS, CHANGE OF PIPE SIZES & BUILDING CONFIGURATION, ARCHITECTURAL CHANGES, ETC., SHALL BE THE CONTRACTOR'S RESPONSIBILITY. ADDITIONAL COSTS OF SUCH CHANGES SHALL BE PAID BY THE CONTRACTOR SUBMITTING THE ALTERNATE.
6. SUBSTITUTIONS ARE SUBJECT TO THE APPROVAL OF THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EVALUATE AND CERTIFY WITH DOCUMENTATION THAT THE SUBSTITUTION IS EQUIVALENT TO THE BASE SPECIFICATIONS.
7. IF SUBSTITUTIONS ARE APPROVED, NOTIFY 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.
8. EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM TO THESE REQUIREMENTS.

G. CHECK, TEST, START, ADJUST, BALANCE AND INSTRUCTIONS

1. AFTER INSTALLATION, CHECK EQUIPMENT, AND PERFORM START UP IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, AND REQUIREMENTS OF THE SPECIFICATIONS.
2. PIPING SHALL BE TESTED AND FREE OF LEAKS. MAKE REPAIRS NEEDED FOR LEAK FREE SYSTEMS.
3. CONCEALED OR INSULATED WORK SHALL REMAIN UNCOVERED UNTIL REQUIRED INSPECTIONS, AND TESTS HAVE BEEN COMPLETED. IF CONSTRUCTION SCHEDULE REQUIRES IT, ARRANGE FOR PRIOR TESTS ON PARTS OF SYSTEM AS APPROVED BY THE TENANT.
4. INSTRUCT OWNER IN OPERATION OF SYSTEMS AND SUBMIT OPERATING AND MAINTENANCE MANUAL ON EQUIPMENT AND SYSTEMS AS REQUIRED BY THE SPECIFICATION. PROVIDE A MINIMUM OF 16 HOURS INSTRUCTION TO OWNER'S REPRESENTATIVES.

H. CUTTING, PATCHING AND DRILLING

1. CUTTING AND PATCHING OF THE BUILDING CONSTRUCTION REQUIRED FOR THIS WORK SHALL BE BY THIS CONTRACTOR. CUTTING SHALL BE IN A NEAT AND WORKMANLIKE MANNER.
2. NEATLY SAW CUT RECTANGULAR OPENINGS, SET SLEEVE THROUGH OPENING, AND FINISH PATCH OR PROVIDE TRIM FLANGE AROUND OPENINGS.
3. NEATLY SAW CUT FLOORS FOR SEWER INSTALLATION AND PATCH FLOOR TO MATCH EXISTING, INCLUDING FLOOR COVERING. PROVIDE IRON DOWEL RODS TO ANCHOR CONCRETE PATCH TO EXISTING CONCRETE FLOORS. RODS SHALL BE PLACED @ 12" ON CENTER FOR THE ENTIRE LENGTH OF PATCH.
4. CORE DRILL AND SLEEVE ROUND OPENINGS.
5. DO NOT CUT ANY STRUCTURAL COMPONENTS WITHOUT ARCHITECT'S/ENGINEER'S APPROVAL.
6. 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. FIRE STOP PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER. MAINTAIN FIRE RATING OF ASSEMBLY. COORDINATE FIRE RATING ASSEMBLIES WITH ARCHITECT.
7. CONTRACTORS SHALL CONFIRM WITH OWNER, PRIOR TO BID, TIMES AVAILABLE FOR NOISE PRODUCING WORK SUCH AS CUTTING AND CORE DRILLING OF FLOORS, WALLS, ETC., AS WELL AS TIMES FOR WORK WHICH REQUIRE ACCESS INTO ADJOINING TENANT SPACES. INCLUDE PREMIUM TIME IN BID.
8. INFORMATION REGARDING REQUIRED PIPE OPENINGS IN WALLS, FLOORS, CHASES, ETC., AND CONCRETE EQUIPMENT PADS OR FOUNDATIONS SHALL BE GIVEN TO THE GENERAL CONTRACTOR BY THIS CONTRACTOR PRIOR TO THE CONSTRUCTION PERIOD. IF THIS CONTRACTOR FAILS TO COMPLY WITH THIS REQUEST, OR IF INCORRECT INFORMATION IS GIVEN, THE NECESSARY CUTTING AND PATCHING WILL BE PERFORMED BY THE GENERAL CONTRACTOR, AT THIS CONTRACTOR'S EXPENSE.

I. WARRANTY

1. FULLY WARRANT MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE.
2. PROVIDE MANUFACTURER'S WARRANTIES TO OWNER, INCLUDING AVAILABLE EXTENDED WARRANTIES.
3. REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD. IN THE CASE OF REPLACEMENT OR REPAIR DUE TO FAILURE WITHIN THE WARRANTY PERIOD, THE WARRANTY ON THAT PORTION OF THE WORK SHALL BE EXTENDED FOR A MINIMUM PERIOD OF ONE (1) YEAR FROM THE DATE OF SUCH REPLACEMENT OR REPAIR.

J. SHOP DRAWING SUBMITTALS

1. SUBMIT SHOP DRAWINGS WITH ADEQUATE DETAILS AND SCALES TO CLEARLY SHOW CONSTRUCTION. INDICATE THE OPERATING CHARACTERISTICS FOR EACH REQUIRED ITEM. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO MARK, LOCATION AND USE, USING SAME IDENTIFICATION AS PROVIDED ON DESIGN DRAWINGS. SUBMITTAL WITH MULTIPLE ITEMS MUST BE MARKED FOR PROPOSED ITEM OR SUBMITTAL WILL BE REJECTED.
2. PLUMBING DRAWINGS SHALL BE FULLY DIMENSIONED BASED ON FIELD VERIFIED BUILDING CLEARANCES AND ARCHITECTURAL CEILING LAYOUTS. INDICATE STRUCTURAL, LIGHTING, DUCTWORK AND PIPING AT CRITICAL LOCATIONS.
3. CONTRACTOR SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR REVIEW. DO NOT START WORK OR FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER AND RETURNED TO THE CONTRACTOR.
4. SUBMITTALS SHALL 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.
5. WHERE SUBMITTALS VARY FROM THE CONTRACT REQUIREMENTS, THE CONTRACTOR SHALL CLEARLY INDICATE ON SUBMITTAL OR ACCOMPANYING DOCUMENTS THE NATURE AND REASON FOR VARIATIONS.
6. REFER TO VARIOUS SECTIONS FOR LISTING OF SHOP DRAWINGS REQUIRED ON THIS PROJECT.
7. EACH MANUFACTURER OR HIS REPRESENTATIVE SHALL CHECK THE APPLICATION OF HIS EQUIPMENT AND CERTIFY AT TIME OF SHOP DRAWING SUBMITTAL THAT EQUIPMENT HAS BEEN PROPERLY SELECTED AND CAN BE INSTALLED, SERVICED AND MAINTAINED WHERE INDICATED ON DRAWINGS. ADVISE ENGINEER IN WRITING WITH SUBMITTAL DRAWINGS OF ANY POTENTIAL PROBLEMS. THE MANUFACTURER SHALL BE RESPONSIBLE FOR ANY CHANGES THAT MIGHT BE NECESSARY BECAUSE OF PHYSICAL CHARACTERISTICS OF EQUIPMENT THAT HAVE NOT BEEN CALLED TO THE ENGINEER'S ATTENTION AT THE TIME OF SUBMITTAL.

K. RECORD DRAWINGS

1. EACH CONTRACTOR OR SUBCONTRACTOR SHALL KEEP ONE (1) COMPLETE SET OF THE CONTRACT WORKING DRAWINGS ON THE JOB SITE. THE CONTRACTOR SHALL REGULARLY RECORD DEVIATIONS OR CHANGES FROM SUCH CONTRACT DRAWINGS MADE DURING CONSTRUCTION.
2. THESE DRAWINGS SHALL RECORD THE LOCATION OF CONCEALED EQUIPMENT, PIPING, ELECTRIC SERVICE, SEWERS, WASTES, VENTS, DUCTS, CONDUIT AND OTHER PIPING, BY MEASURED DIMENSIONS TO EACH SUCH ITEM FROM READILY IDENTIFIABLE AND ACCESSIBLE WALLS OR CORNERS OF THE BUILDING. PLANS ALSO SHALL SHOW INVERT ELEVATION OF SANITARY AND/OR STORM SEWERS AND TOP ELEVATION OF OTHER BELOW-GRADE LINES.
3. RECORD DRAWINGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN RECORDING DEVIATIONS FROM WORKING DRAWINGS AND EXACT LOCATIONS OF CONCEALED WORK.
4. 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.

PLUMBING SYSTEMS

A. SCOPE

1. PROVIDE PLUMBING FIXTURES, EQUIPMENT AND MATERIAL INDICATED AND SHOWN ON DRAWINGS AND PLACE IN PROPER OPERATION.
2. PLUMBING SYSTEMS TO ESSENTIALLY CONSIST OF BUT NOT LIMITED TO THE FOLLOWING:
   a. ROOF DRAINS, RAIN CONDUCTORS, HUBS FOR DOWN SPOUTS, CATCH BASINS, CLEANOUTS, MANHOLES AND STORM SEWERS TO FIVE (5) FEET OUTSIDE BUILDING, OR AS DEFINED BY CONTRACT DOCUMENTS.
   b. SANITARY WASTE AND VENT PIPING AND SANITARY SEWER EXTENDED TO FIVE (5) FEET OUTSIDE BUILDING, OR AS DEFINED BY CONTRACT DOCUMENTS.
   c. SANITARY WASTE AND VENT PIPING AND SANITARY SEWER EXTENDED TO EXISTING BUILDING FACILITIES. CONTRACTOR SHALL MAKE THE CONNECTIONS TO THE EXISTING SERVICES AS INDICATED ON DRAWINGS. EXISTING LINE SIZES, CONDITIONS, INVERT ELEVATIONS, AND CAPACITIES SHALL BE VERIFIED, CLEAN, TEST, AND VIDEO TAPE PIPING FOR PROPER OPERATION BEFORE FINAL CONNECTION FOR UTILITIES. IMMEDIATELY REPORT TO THE ARCHITECT OR ENGINEER ANY INSTANCES WHERE CONNECTIONS CANNOT BE MADE BETWEEN NEW AND EXISTING SYSTEMS AS INDICATED ON PLANS. ADDITIONAL COMPENSATION WILL NOT BE GRANTED FOR NEW WORK THAT MUST BE ABANDONED AND REPLACED BECAUSE LOCATION AND ELEVATION OF EXISTING WAS NOT DETERMINED BEFORE STARTING NEW WORK.
   d. DOMESTIC WATER EXTENDED FROM CITY MAIN AND DISTRIBUTION SYSTEM, INCLUDING TAP TO MAIN, METER VAULT AND METER, BACKFLOW PREVENTION DEVICE AS REQUIRED;
   e. PROVIDE DOMESTIC WATER FROM CITY MAIN INTO BUILDING AS INDICATED ON DRAWINGS. INSTALL WATER METER WITH REMOTE REGISTER AND REDUCED PRESSURE BACKFLOW PREVENTION DEVICE INSIDE BUILDING. PIPE BACKFLOW DEVICE DRAIN TO FLOOR DRAIN. INCLUDE FITTINGS, VALVES, HANGERS, AND OTHER ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
   f. EXTEND DOMESTIC WATER FROM FIVE (5) FEET OUTSIDE BUILDING INTO BUILDING AS INDICATED ON DRAWINGS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO FIXTURES AND EQUIPMENT REQUIRING SAME. INCLUDE FITTINGS, VALVES, HANGERS, AND OTHER ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE WATER METER AS REQUIRED. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
   g. EXTEND DOMESTIC WATER FROM EXISTING BUILDING FACILITIES AS INDICATED ON DRAWINGS. INSTALL WATER METER WITH REMOTE REGISTER AS INDICATED ON DRAWINGS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO FIXTURES AND EQUIPMENT REQUIRING SAME. INCLUDE FITTINGS, VALVES, HANGERS, AND OTHER ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. PROVIDE INSTALLATION AS REQUIRED BY AUTHORITY HAVING JURISDICTION.
   h. DOMESTIC WATER EXTENDED FROM FIVE (5) FEET OUTSIDE BUILDING AND DISTRIBUTION SYSTEM, INCLUDING PRESSURE REDUCING VALVE AND BACKFLOW PREVENTION DEVICES AND UTILITY METER.
   i. DOMESTIC WATER EXTENDED FROM EXISTING BUILDING FACILITIES AND DISTRIBUTION SYSTEM TO NEW FIXTURES.
   j. GAS SERVICE EXTENDED FROM FIVE (5) FEET OUTSIDE THE BUILDING TO GAS USING EQUIPMENT, INCLUDING METER MANIFOLDS AND SETTING OF GAS METER.
   k. GAS SERVICE EXTENDED FROM EXISTING BUILDING FACILITIES TO GAS USING EQUIPMENT, AND SUB METERS IF SO REQUIRED.
   l. PLUMBING FIXTURES, DRAINS AND EQUIPMENT WITH REQUIRED TRIM, CONTROLS AND ACCESSORIES.
   m. INSULATION OF PLUMBING PIPING.
   n. NEW GREASE INTERCEPTOR TANK WITH REQUIRED ACCESSORIES, AND PIPING.
   o. A COMPLETE SYSTEM OF COMPRESSED AIR DISTRIBUTION AS SHOWN ON DRAWINGS.
   p. OTHER ITEMS INDICATED ON DRAWINGS OR REQUIRED FOR COMPLETE INSTALLATION.

B. EXCAVATION AND BACKFILL

1. PERFORM EXCAVATION AND BACKFILL REQUIRED FOR INSTALLATION OF PIPING.
2. EXCAVATE TO DEPTH REQUIRED TO INSTALL PIPING AT REQUIRED LEVEL AND PITCH. PIPE SHALL BE INSTALLED ON SAND BEDDING TO GIVE UNIFORM BEARING ALONG LENGTH OF PIPE (SAND INSIDE BUILDING AND INTERLOCKING AGGREGATE OUTSIDE BUILDING).
3. BACKFILL WITH BEDDING MATERIAL TO A MINIMUM OF TWELVE (12) INCHES ABOVE TOP OF PIPES AND COMPACT. BALANCE OF BACKFILL IN GRASS AREAS SHALL BE CLEAN EARTH UP TO SIX (6) INCHES ABOVE SURROUNDING GRADES, UNDER FLOORS SAND, AND UNDER PAVING INTERLOCKING AGGREGATE. BACKFILL SHALL BE COMPACTED IN MAXIMUM SIX (6) INCH LAYERS.
4. OTHER EXCAVATIONS SHALL BE BACKFILLED WITH CLEAN EARTH, EXCLUDING RUBBISH AND BOULDERS AND THE DIRT SHALL BE PROPERLY COMPACTED.
5. PATCH FLOOR TO MATCH EXISTING.

C. CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS

1. PROVIDE VALVED WATER AND/OR GAS CONNECTION FOR EQUIPMENT FURNISHED BY OTHER CONTRACTORS OR OWNER. PROVIDE SANITARY DRAINAGE AND VENT CONNECTIONS FOR EQUIPMENT FURNISHED BY OTHERS.
2. INCLUDE ACCESSORIES REQUIRED BY CODE, DRAWINGS, OR MANUFACTURER'S INSTRUCTIONS.
3. FULLY COORDINATE WITH KITCHEN EQUIPMENT SUPPLIER AND CONFIRM ROUGH-IN REQUIREMENTS PRIOR TO STARTING WORK. PROVIDE FINAL CONNECTIONS TO EQUIPMENT.

D. SANITARY AND STORM SEWERS

1. PROVIDE SANITARY AND STORM SEWERS, RAIN CONDUCTORS, STACKS, VENTS, FLOOR DRAINS, HUBS FOR DOWN SPOUTS AND CLEANOUTS FOR PROJECT AND EXTEND TO EXISTING BUILDING FACILITIES AS INDICATED ON THE DRAWINGS.
2. SEWERS SHALL BE PITCHED A MINIMUM OF 1/4" PER FOOT FOR SIZES 3" AND UNDER, AND 1/8" PER FOOT FOR SIZES 4" AND LARGER OR TO GRADES INDICATED ON DRAWINGS.
3. CHANGES IN DIRECTION AND BRANCH CONNECTIONS SHALL BE MADE WITH CODE APPROVED DRAINAGE FITTINGS COMPATIBLE WITH THE PIPING SYSTEM MATERIAL.
4. FIXTURES AND SANITARY DRAINS SHALL BE VENTED AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH CODE. VENTS ARE TO BE EXTENDED TO EXISTING BUILDING FACILITIES THROUGH ROOF AS INDICATED ON DRAWING AND FLASHED WITH 4 LB. LEAD WITH VENT FLASHING TOP TURNED DOWN TWO (2) INCHES MINIMUM INSIDE PIPE. COORDINATE WITH ROOFING CONTRACTOR.
5. PVC PIPING
   a. PVC PIPING SHALL NOT BE ALLOWED FOR ABOVE GROUND INSTALLATION DUE TO PLENUM CEILING HVAC DESIGN DIRECTION.
6. SEWER AND VENT MATERIAL SHALL BE AS FOLLOWS:
   a. BELOW GRADE STORM AND SANITARY INSIDE BUILDING
      - SERVICE WEIGHT - CAST IRON PIPE ASTM A-74-82 WITH ASTM C-564-70 NEOPRENE COMPRESSION JOINTS. CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL.
      - NO-HUB COUPLINGS
        HEAVY-DUTY, 4 BAND, SHIELDED FOR 4" AND SMALLER.
        HEAVY-DUTY, 6 BAND, SHIELDED FOR 5" AND LARGER.
      - PVC-DWV PLASTIC ASTM D-1785 WITH ASTM D-2665 DWV SOLVENT WELD SOCKET FITTINGS.
   b. ABOVE GRADE RAIN CONDUCTORS, VENTS AND SANITARY -
      b.a. NO-HUB CAST IRON PIPE CISPI 1-301-78. CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONAL.
      b.b. NO-HUB COUPLINGS
      b.b.a. HEAVY-DUTY, 4 BAND, SHIELDED FOR 4" AND SMALLER.
      b.b.b. HEAVY-DUTY, 6 BAND, SHIELDED FOR 5" AND LARGER.
      b.d. DWV COPPER ASTM B306.
      b.e. STAINLESS STEEL
      b.f. ALL EXISTING STORM PVC PIPING SHALL BE REPLACED IN KIND WITH NEW CAST IRON. PROVIDE NEW 1" THICK INSULATION ON ALL EXPOSED HORIZONTAL STORM WATER PIPING.
   c. SITE STORM AND SANITARY SEWERS
      - UP TO 15" - PVC PLASTIC ASTM D-3034 SDR 35 WITH ASTM D-3212 GASKET JOINTS.
      - 18" AND OVER - REINFORCED CONCRETE PIPE (RCP) ASTM C 76-83 WITH ASTM C 443-79 RUBBER GASKET JOINTS.

E. WATER PIPING

1. INCLUDE UNIONS, OR OTHER DISCONNECT MEANS, STOPS OR VALVES FOR ISOLATION OF FIXTURES AND EQUIPMENT. VALVES SHALL FULLY COMPATIBLE WITH PIPING FOR SERVICE INTENDED. AS MANUFACTURED BY APOLLO, NIBCO, CRANE OR OTHER APPROVED MANUFACTURER. INCLUDE HOSE OR DRAIN VALVES AT LOW POINTS WHERE FIXTURES CANNOT BE USED FOR DRAINAGE.
2. POTABLE WATER PIPING AND COMPONENTS SHALL COMPLY WITH NSF 14, NSF 372, AND NSF 61 ANNEX G. ALL PIPING SHALL BE SUPPORTED DIRECTLY ON EACH SIDE OF A JOINT. ALL PIPING SUPPORTS AND RESTRAINTS SHALL BE IN STRICT ACCORDANCE WITH THE PIPE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION GUIDELINES.
3. INSTALL SHOCK ABSORBERS AT EACH FIXTURE OR WHERE REQUIRED TO PREVENT WATER HAMMER. SHOCK ARRESTORS SHALL BE AS MANUFACTURED BY PRECISION PLUMBING PRODUCTS OR APPROVED EQUAL AND CONFORM TO THE REQUIREMENTS OF THE PLUMBING AND DRAINAGE INSTITUTE.
4. HANGERS ON INSULATED PIPE SHALL BE OUTSIDE OF INSULATION, SIZED ACCORDINGLY AND WITH SUFFICIENT SADDLE TO PROTECT INSULATION.
5. WATER PIPING ABOVE GRADE SHALL BE -
   a. TYPE "L" HARD COPPER ASTM B 88-832 WITH WROUGHT COPPER FITTINGS ASTM B 16.22 1980 AND NON-LEAD OR ANTIMONY SOLDER JOINTS.
   b. TYPE "L" HARD COPPER ASTM B 88-832 WITH WROUGHT COPPER FITTINGS ASTM B 16.22 1980 AND PRESS-FIT JOINTS. PRESS-CONNECT FITTINGS SHALL CONFORM TO ASME B16.51 STANDARD. CONTRACTOR SHALL BE CERTIFIED BY THE PRESS CONNECT MANUFACTURER AS A CERTIFIED INSTALLER; PROOF OF CERTIFICATION SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AS PART OF THE SUBMITTAL PROCESS
6. WATER PIPING BELOW GRADE SHALL BE TYPE "K" SOFT COPPER WITHOUT JOINTS.
7. ALL COLD WATER, HOT WATER, AND HOT WATER RETURN PIPING THAT IS PART OF A NEW SYSTEM OR AN ADDITION OF AN EXISTING SYSTEM SHALL BE THOROUGHLY CLEANED AND DISINFECTED AS PER AWWA C651 OR AWWA C652 GUIDELINES. THE DISINFECTION PROCESS SHALL BE PERFORMED AFTER ALL PIPES, COMPONENTS, VALVES, AND FIXTURES ARE INSTALLED AND THE REQUIRED LEAK/PRESSURE TESTS HAVE BEEN COMPLETED. THE SYSTEM SHALL BE FLUSHED WITH CLEAN, POTABLE WATER UNTIL THE SYSTEM IS COMPLETELY CLEAR OF ALL DIRT, SEDIMENT, AND DEBRIS. THE SYSTEM SHALL BE FILLED WITH A WATER/CHLORINE SOLUTION AS PER CODE AND SHALL BE VALVED OFF FROM THE MAIN WATER SUPPLY AND ALLOWED TO STAND FOR A MINIMUM OF 24 HOURS. AFTER THE REQUIRED STANDING TIME, THE SYSTEM SHALL BE FLUSHED WITH CLEAN POTABLE WATER UNTIL THE DISINFECTANT SOLUTION IS COMPLETELY PURGED FROM THE SYSTEM, FIXTURES, AND COMPONENTS. REPEAT DISINFECTION PROCEDURE AS NEEDED IF BACTERIOLOGICAL EXAMINATION INDICATES THAT CONTAMINATES ARE STILL PRESENT IN THE SYSTEM. CONTRACTOR SHALL PROVIDE FINAL STERILIZATION TESTING REPORT TO THE ENGINEER FOR REVIEW
8. DOMESTIC HOT AND COLD WATER PIPING UNDER CONCRETE FLOOR TO BE COVERED WITH SAND SO THAT PIPING WILL NOT BECOME EMBEDDED IN THE CONCRETE.
9. PIPING UNDER CONCRETE FLOOR SHALL BE TYPE "K" SOFT COPPER OR PEX - TYPE A TUBING AND SHALL BE CONTINUOUS. SPLICES OR FITTINGS SHALL NOT BE PERMITTED.
10. EXTREME CAUTION MUST BE TAKEN SO THAT COPPER LINES AND INSULATION UNDER CONCRETE ARE NOT CRUSHED, CUT, SPLIT, RUPTURED OR DEFORMED DURING THE POURING OF THE FLOOR SLAB.
11. BALANCING DOMESTIC WATER SYSTEMS
    11.1. TESTING AND BALANCING (TAB) AGENCY SHALL BE ASSOCIATED AIR BALANCE COUNCIL (AABC) CERTIFIED. UPON COMPLETION OF DOMESTIC HOT WATER RE-CIRCULATION TAB CONTRACTOR SHALL SUBMIT AABC NATIONAL PERFORMANCE GUARANTEE. TAB CONTRACTOR SHALL ADJUST WATER SYSTEMS TO PROVIDE REQUIRED FLOW AS INDICATED ON DRAWINGS AND RECORD FLOW AT EACH LOCATION FOR THE DOMESTIC HOT WATER RE-CIRCULATION BALANCING VALVE. TAB CONTRACTOR SHALL USE CALIBRATED VENTURI TUBES OR OTHER METERED FITTINGS AND PRESSURE GAUGES TO DETERMINE FLOW RATES FOR SYSTEM BALANCE. SHUT-OFF VALVES SHALL NOT BE USED FOR BALANCING OF SYSTEM. TAB CONTRACTOR SHALL ALSO INCLUDE PUMP: IDENTIFICATION NUMBER, MANUFACTURER, SIZE / MODEL, DESIGN FLOW RATE, ACTUAL FLOW RATE, DISCHARGE PRESSURE, SUCTION PRESSURE, TOTAL OPERATING HEAD PRESSURE, SHUT OFF, AND TOTAL HEAD PRESSURE

F. GAS PIPING

1. EXTEND GAS PIPING FROM EXISTING MAIN, INCLUDING TAP TO MAIN, METER AND REGULATOR, AS INDICATED ON DRAWINGS AND CONNECT TO GAS USING EQUIPMENT.
1. EXTEND GAS PIPING FROM FIVE (5) FEET OUTSIDE BUILDING INTO BUILDING, INCLUDING METER SET AND REGULATOR, AS INDICATED ON DRAWINGS AND CONNECT TO GAS USING EQUIPMENT.
1. EXTEND GAS PIPING FROM EXISTING BUILDING FACILITIES AS INDICATED ON DRAWINGS AND CONNECT TO G

AND WRAPPED WITH WELDED BLACK STEEL FITTINGS. INSTALL CATHODIC PROTECTION ANODE ON
SERVICE LINE.

e. VALVES SHALL NOT BE LOCATED ABOVE ACCESSIBLE CEILING SPACES (SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION), WHETHER OR NOT SUCH SPACES ARE USED AS A PLENUM.

f. EXTERIOR EXPOSED BARE STEEL PIPE SHALL BE PAINTED WITH TWO (2) COATS RUST INHIBITIVE PAINT. PAINTING SHALL OCCUR AFTER PIPE INSTALLATION AND TESTING.

g. WELDING SHALL BE PERFORMED BY STATE CERTIFIED WELDERS. PROVIDE WELDING CERTIFICATIONS TO A/E.

h. MOUNT GAS PIPING ON ADJUSTABLE ROOF PIPE SUPPORTS ADHERED TO THE ROOF MEMBRANE. SEE DETAIL ON DRAWINGS. SUPPORTS SHALL BE MODEL #3-RAH-7AS MANUFACTURED BY MIRO INDUSTRIES OR APPROVED EQUAL.

G. COMPRESSED AIR SYSTEM

1. EXTEND COMPRESSED AIR PIPING FROM EXISTING MAIN, INCLUDING TAP TO MAIN, PRESSURE REGULATOR, AS INDICATED ON DRAWINGS AND CONNECT TO COMPRESSED AIR USING EQUIPMENT.

1. EXTEND COMPRESSED AIR PIPING FROM EXISTING AIR COMPRESSOR, AND CONNECT TO COMPRESSED AIR USING EQUIPMENT.

1. PROVIDE COMPRESSED AIR SYSTEM INCLUDING COMPRESSOR, REGULATORS, PIPING, HANGERS, TERMINATIONS AND CONNECTIONS TO EQUIPMENT USING COMPRESSED AIR.

2. COMPRESSED AIR CONNECTIONS AT EQUIPMENT SHALL INCLUDE PRESSURE REGULATOR AND FLEXIBLE PIPE CONNECTIONS.

3. COMPRESSED AIR PIPING SHALL BE AS FOLLOWS:

a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE
- SCHEDULE 40 SEAMLESS BLACK STEEL PIPE, THREADED ENDS.

a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE
- SCHEDULE 5 STEEL PIPE WITH PRESSURE SEAL FITTINGS.

a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE
- COPPER TUBE TYPE K, TYPE L, TYPE M WITH WROUGHT COPPER FITTINGS.

a. ABOVE-GRADE INSIDE OR OUTSIDE BUILDING, LOW PRESSURE
- BLUE ABS PIPE, WITH ABS MODIFIED RESIN, WITH SOCKET TYPE FITTINGS.

b. VALVES SHALL NOT BE LOCATED ABOVE ACCESSIBLE CEILING SPACES (SUBJECT TO THE APPROVAL OF THE AUTHORITY HAVING JURISDICTION), WHETHER OR NOT SUCH SPACES ARE USED AS A PLENUM.

H. FIXTURES AND EQUIPMENT

1. FURNISH FIXTURES AND EQUIPMENT INDICATED AND SCHEDULED ON DRAWINGS, COMPLETE WITH ACCESSORIES, CONTROLS AND INSTALLATION ITEMS REQUIRED.

2. INSTALL IN FULL ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND PLACE IN SATISFACTORY OPERATION.

3. FIXTURES AND EQUIPMENT SHALL BE AS INDICATED ON THE PLUMBING FIXTURE SCHEDULE.

H. CLEANOUTS

1. CLEANOUTS SHALL BE INSTALLED FLUSH WITH FINISHED FLOOR OR WALLS WITH PLATED COVERS.

2. CLEANOUTS SHALL BE AS SCHEDULED ON DRAWINGS.

I. FLOOR, CEILING AND WALL PLATES:

1. FIT PIPE PASSING THROUGH WALLS, FLOORS OR CEILINGS IN FINISHED ROOMS WITH STEEL OR BRASS ESCUTCHEONS. WHERE SURFACE IS TO RECEIVE A PAINT FINISH ESCUTCHEONS SHALL BE PRIME PAINTED; OTHERWISE MAKE ESCUTCHEONS NICKEL OR CHROME PLATED. WHERE PIPING IS INSULATED, FIT ESCUTCHEONS OUTSIDE INSULATION.

J. INSULATION

1. REFER TO DOMESTIC PIPING INSULATION SCHEDULE FOR PIPING INSULATION REQUIREMENTS.

2. INCLUDE INSULATION OF FITTINGS AND VALVES. KEEP VAPOR BARRIERS INTACT. APPLY TO MANUFACTURER'S RECOMMENDATIONS.

3. AT PIPE HANGERS, PROVIDE SOLID INSULATION COUPLING SYSTEM TO PREVENT INSULATION DAMAGE OR COMPRESSION. INSULATION COUPLINGS SHALL BE THE KLO-SHURE INSULATION COUPLING SYSTEM AS MANUFACTURED BY ANVIL-STRUT.

4. INSULATE BELOW-GRADE PIPING INSIDE BUILDING WITH 3/8" FOAMED PLASTIC INSULATION.

5. INSULATE EXPOSED WASTE AND SUPPLY PIPING UNDER LAVATORIES WITH THE LAV-SHIELD SAFETY COVERS AS PER "PLUMBEREX SPECIALTY PRODUCTS, INC." OR EQUAL.

6. REPAIR DAMAGED SECTIONS OF EXISTING PIPING INSULATION, BOTH PREVIOUSLY DAMAGED OR DAMAGED DURING THIS CONSTRUCTION PERIOD. USE INSULATION OF SAME THICKNESS AS SPECIFIED, INSTALL NEW JACKET LAPPING AND SEALED OVER EXISTING.

7. EXISTING PVC PIPING SHALL BE REPLACED IN KIND WITH NEW CAST IRON PIPING AND SHALL BE PROVIDED WITH NEW 1" THICK INSULATION ON ALL EXPOSED HORIZONTAL RUNS.

K. HANGERS AND SUPPORTS

1. HANGERS FOR BLACK OR GALVANIZED STEEL PIPE SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL NO. 100, OR APPROVED EQUAL.

2. HANGERS FOR CAST IRON PIPE SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL NO. 400, OR APPROVED EQUAL.

3. HANGERS FOR COPPER TUBING SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL NO. 102-A, OR APPROVED EQUAL.

4. TRAPEZE HANGERS OF A TYPE APPROVED BY THE ENGINEER. MAINTAIN PIPE INSULATION AT PIPE ANCHORS. PROVIDE INSULATION COUPLERS AS SPECIFIED ABOVE.

5. CONTRACTOR SHALL PROVIDE INSULATION HANGER WITH PROTECTIVE SHIELDS, SUCH AS MICHIGAN HANGER CO., MODEL NO. 103, OR APPROVED EQUAL. 5 INCH LONG SECTION OF 1/2 INCH THICK CALCIUM SILICATE SECTIONAL PIPE INSULATION WITH FACTORY LONGITUDINAL LAP SHALL BE PROVIDED AT HANGER POINTS. BUTT JOINTS SHALL BE SEALED WITH INSULATING CEMENT.

6. STRAP HANGERS SHALL NOT BE PERMITTED.

7. CONTRACTOR SHALL PROVIDE RISER CLAMPS FOR VERTICAL PIPING AT EACH LEVEL. RISER CLAPS SHALL BE MICHIGAN HANGER CO., MODEL NO. 510 FOR STEEL PIPING AND MODEL NO. 511 FOR COPPER TUBING OR APPROVED EQUAL. USE "SHORT-END" RISER CLAMPS WHERE SPACE IS LIMITED.

8. IN CONCRETE, MICHIGAN HANGER CO., MODEL NO. 355 INSERTS, OR APPROVED EQUAL. INSERTS SHALL PERMIT ADJUSTMENT FROM 3/4 INCH THROUGH 1-1/4 INCH. IN METAL DECKS, CONTRACTOR SHALL PROVIDE REDHEAD SDI INSERTS, OR APPROVED EQUAL. POWDER PROPELLED INSERTS WILL BE PERMITTED IN NEW CONSTRUCTION WHERE TYPE AND LOCATION ARE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

9. CONTRACTOR SHALL PROVIDE SIDE BEAM CLAMPS FOR SUPPORTING PIPING FROM STRUCTURAL STEEL MEMBERS. BEAM CLAMPS SHALL BE MANUFACTURED BY MICHIGAN HANGER CO., MODEL 300 OR APPROVED EQUAL.

10. WHERE OTHER MEANS OF SUPPORT PIPING ARE REQUIRED OR DESIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE ENGINEER'S APPROVAL PRIOR TO INSTALLING THOSE SUPPORTS.

11. HANGER SHALL BE PROVIDED AT EACH CHANGE OF DIRECTION.

12. HANGERS AND SUPPORTS SHALL BE SPACED AT INTERVALS WHICH WILL PREVENT SAGGING AND REDUCE STRAIN ON VALVES AND SPECIALTIES. HANGER SPACING SHALL BE NO GREATER THAN INDICATED IN PIPE HANGER SPACING SCHEDULE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION.

13. RISER CLAMPS SHALL BE INSTALLED ABOVE THE FLOOR AT EACH LEVEL. RISER CLAMPS MAY BE SUSPENDED BELOW FLOOR LEVEL, WITH HANGER RODS AND INSERTS, WHERE THE INSTALLATION OF ESCUTCHEON PLATES IS REQUIRED.

L. PIPE WALL SEALS

1. WALL PIPE SEALS WITH RUBBER LINKS SHALL BE THUNDERLINE LINK SEAL, OR APPROVED EQUAL. WALL PIPE SEALS WITH INORGANIC MATERIAL LINKS THE PENETRATIONS OF FIRE RATED WALLS SHALL BE THUNDERLINE PYRO-PAC, OR APPROVED EQUAL.

2. SEALS SHALL BE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING SYNTHETIC RUBBER OR INORGANIC MATERIAL LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE PIPE AND WALL OPENING.

3. LINKS SHALL BE LOOSELY ASSEMBLED WITH BOLTS TO FORM A CONTINUOUS BELT AROUND THE PIPE. A PRESSURE PLATE SHALL BE PROVIDED UNDER THE BOLT HEAD AND NUT OF EACH LINK.

4. AFTER THE SEAL ASSEMBLY IS POSITIONED IN THE SLEEVE, THE TIGHTENING OF THE BOLTS SHALL CAUSE THE SEALING ELEMENTS TO EXPAND AND PROVIDE AN ABSOLUTELY WATER-TIGHT SEAL BETWEEN THE PIPE AND SLEEVE.

5. SEALS SHALL BE CONSTRUCTED TO PROVIDE ELECTRICAL INSULATION BETWEEN THE PIPE AND SLEEVE, THUS REDUCING CHANCES OF CATHODIC REACTION BETWEEN THESE TWO MEMBERS.

6. SLEEVES SHALL BE MANUFACTURED FROM HEAVY-WALL, WELDED OR SEAMLESS STEEL PIPE. A FULL CIRCLE CONTINUOUSLY WELDED WATER STOP PLATE SHALL BE PROVIDED TO ASSURE POSITIVE WATER SEALING OF THE SLEEVE. SLEEVE SHALL BE PROTECTED BY A COATING OF ENRICHED RED PRIMER.

M. VALVES

1. BALL VALVES
BALL VALVES INSTALLED ON COPPER PIPING SHALL BE TWO PIECE,
FULL PORT, WITH BRASS BODY, STAINLESS STEEL BALL AND TRIM, BLOW-OUT PROOF STEM, AND REPLACEABLE "TEFLON OR TFE" SEATS AND SEALS. VALVES SHALL BE NIBCO OR EQUAL. PROVIDE VALVE HANDLE EXTENSIONS FOR ALL INSULATED BALL VALVES

2. BUTTERFLY VALVES SHALL BE LUG WAFER TYPE, SUITABLE FOR 150 PSI WOG AT TEMPERATURE RANGING FROM 25 DEGREES F THROUGH 230 DEGREES F.

3. BUTTERFLY VALVES SHALL HAVE FULLY REPLACEABLE SEATS MADE OF EPDM ELASTOMER. BUTTERFLY VALVES CLOSURE SHALL BE BUBBLE TIGHT.

4. BUTTERFLY VALVES SHALL HAVE CAST IRON OR SEMI-STEEL BODIES, ONE PIECE TYPE 416 STAINLESS STEEL STEMS, AND BRONZE DISCS. DISCS SHALL BE ANCHORED TO STEM WITH BRONZE DRIVE PINS. SEMI-STEEL DISCS WITH WELDED NICKEL EDGE MAY BE USED IN LIEU OF BRONZE DISCS.

5. PROVIDE 2 INCH EXTENSION NECKS ON VALVES INSTALLED IN INSULATED LINES.

6. LEVER TYPE HANDLE OPERATORS SHALL BE PROVIDED ON VALVES UP TO 4 INCHES IN SIZE. GEAR OPERATORS SHALL BE PROVIDED ON VALVES OVER 4 INCHES IN SIZE, AND ON VALVES REQUIRING CHAIN OPERATION. VALVES USED FOR BALANCING SHALL HAVE INFINITE POSITION LEVER OR GEAR OPERATORS WITH ADJUSTABLE, OPEN POSITION "MEMORY" STOP.

7. BUTTERFLY VALVES SHALL BE NIBCO LD-2000, ITT GRINNELL 8000 SERIES, OR APPROVED EQUAL.

8. GLOBE VALVES (3 INCH AND SMALLER) SHALL BE 150#, TEFLON DISC, UNION BONNET TYPE VALVES WITH THREADED OR SOLDER JOINT ENDS, GLOVE VALVES WITH THREADED ENDS SHALL BE HAMMOND, MODEL 1B4137, OR APPROVED EQUAL. GLOBE VALVES FOR INSTALLATION IN COPPER TUBING SHALL BE HAMMOND, MODEL 1B423, OR APPROVED EQUAL

9. CHECK VALVES (3 INCH AND SMALLER) SHALL BE 125# WITH REMOVABLE, REGRINDABLE DISCS AND THREADED OR SOLDER JOINT ENDS. CHECK VALVES TO BE INSTALLED IN HORIZONTAL LINES SHALL BE HAMMOND, MODEL IB940, OR APPROVED EQUAL, (SCREWED JOINTS) OR HAMMOND, MODEL IB941, OR APPROVED EQUAL (SOLDER JOINTS). CHECK VALVES TO BE INSTALLED IN VERTICAL PIPING SHALL BE HAMMOND, MODEL, IB939, OR APPROVED EQUAL. CONTRACTOR SHALL PROVIDE SWEAT-TO-THREAD ADAPTERS FOR SOLDER JOINT CONNECTIONS.

10. GATE VALVES FOR UNDERGROUND WATER SERVICE SHALL BE UL LISTED AND FM APPROVED, 175#, WWP, WITH CAST IRON BODIES BRONZE MOUNTED, NON-RISING STEMS, SOLID WEDGE DISCS, AND INDICATOR POST FLANGES. VALVES SHALL BE STOCKHAM VALVE MODEL, G-635, WITH CONVENTIONAL PACKING AND MECHANICAL JOINT ENDS.

11. PROVIDE VALVE TAGS AND VALVE CHART PER ASME A13.1 SCHEME FOR THE IDENTIFICATION OF PIPING SYSTEMS

N. STRAINERS

1. Y-TYPE STRAINERS - BRONZE 3" AND SMALLER

a. STRAINER BODY TO BE ASTM B584 OR B62 BRONZE WITH THREADED OR SOLDER END CONNECTIONS AND .033 INCH PERFORATED TYPE 304 STAINLESS STEEL SCREEN OR 20 MESH TYPE 304 STAINLESS STEEL SCREEN ACCESSIBLE WITHOUT REMOVING THE STRAINER FROM THE LINE.

2. Y-TYPE STRAINERS - IRON 3" AND SMALLER

a. STRAINER BODY TO BE CLASS 250 THREADED, TAPPED SCREW-IN BONNET WITH PLUG AND STAINLESS STEEL SCREEN. BODY AND BONNET TO BE ASTM A126. SCREEN MUST BE ACCESSIBLE WITHOUT REMOVING THE STRAINER FROM THE LINE.

3. Y-TYPE STRAINERS - IRON 2 1/2" AND LARGER

a. STRAINER BODY TO BE CLASS 125 FLANGED, TAPPED BOLTED BONNET WITH PLUG AND STAINLESS STEEL SCREEN. BODY AND BONNET TO BE ASTM A126. SCREEN MUST BE ACCESSIBLE WITHOUT REMOVING THE STRAINER FROM THE LINE.

4. ACCEPTABLE MANUFACTURERS -

a. NIBCO
b. APOLLO
c. WATTS

O. PIPE IDENTIFICATION

1. CONTRACTOR SHALL PROVIDE IDENTIFICATION LABELS, TAGS, ETC., FOR PLUMBING AS INDICATED ON THE DRAWINGS AND AS SPECIFIED HEREIN.

2. THE IDENTIFICATION OF PLUMBING PIPING SHALL BE IN ACCORDANCE WITH ANSI STANDARD A13.1, EXCEPT AS HEREINAFTER SPECIFIED.

3. PRESSURE SENSITIVE PIPE MARKERS SHALL BE MANUFACTURED BY THE BRADY CO., OR APPROVED EQUAL. PIPE MARKERS SHALL BE MANUFACTURER'S STANDARD PRODUCT.

4. PIPE LABEL LOCATIONS: LOCATE PIPE LABELS WHERE PIPING IS EXPOSED OR ABOVE ACCESSIBLE CEILINGS IN FINISHED SPACES; MACHINE ROOMS; ACCESSIBLE MAINTENANCE SPACES SUCH AS SHAFTS, TUNNELS, AND PLENUMS; AND EXTERIOR EXPOSED LOCATIONS AS FOLLOWS:
4.1. NEAR EACH VALVE AND CONTROL DEVICE.
4.2. NEAR EACH BRANCH CONNECTION, EXCLUDING SHORT TAKEOFFS FOR FIXTURES AND TERMINAL UNITS. WHERE FLOW PATTERN IS NOT OBVIOUS, MARK EACH PIPE AT BRANCH.
4.3. NEAR PENETRATIONS AND ON BOTH SIDES OF THROUGH WALLS, FLOORS, CEILINGS, AND INACCESSIBLE ENCLOSURES.
4.4. AT ACCESS DOORS, MANHOLES, AND SIMILAR ACCESS POINTS THAT PERMIT VIEW OF CONCEALED PIPING.
4.5. NEAR MAJOR EQUIPMENT ITEMS AND OTHER POINTS OF ORIGINATION AND TERMINATION.
4.6. SPACED AT MAXIMUM INTERVALS OF 50 FEET ALONG EACH RUN. REDUCE INTERVALS TO 25 FEET (7.6 m) IN AREAS OF CONGESTED PIPING AND EQUIPMENT.

P. VACUUM BREAKERS

1. VACUUM BREAKERS SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL CODE AND SHALL BE PROVIDED FOR HOSE BIBBS, WALL HYDRANTS, FLUSHOMETERS AND ANY FIXTURE OR EQUIPMENT HAVING DOMESTIC WATER SUPPLY.

Q. ACCESS DOORS

1. ACCESS DOORS SHALL BE PROVIDED IN WALLS AND CEILINGS WHERE REQUIRED TO PERMIT PROPER ACCESS TO VALVES AND ANY OTHER SUCH 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. THIS CONTRACTOR SHALL FURNISH ACCESS PANELS TO THE GENERAL CONTRACTOR FOR INSTALLATION.

3. 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 INCH WIDE EXPANDED METAL FOR PLASTERED SURFACES AND PLAIN FLANGED TYPE FRAME FOR TILE, MASONRY OR GYPSUM BOARD SURFACES. DOORS AND FRAMES SHALL BE FURNISHED PRIME COATED. DOORS INSTALLED IN CERAMIC TILE OR OTHER NON-PAINTED SURFACES SHALL BE STAINLESS STEEL.

4. HINGES SHALL BE CONCEALED SPRING TYPE, TO ALLOW DOORS TO BE OPENED 175 DEGREES. LOCKS SHALL BE FLUSH SCREWDRIVER TYPE WITH STEEL CAMS.

5. ACCESS PANELS SHALL BE 16 INCHES BY 16 INCHES OR LARGER AS MAY BE REQUIRED FOR PROPER ACCESS TO THE DEVICE BEING SERVED.

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

R. CONCRETE HOUSEKEEPING PADS

1. EQUIPMENT SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PADS. MINIMUM PAD THICKNESS SHALL BE 6 INCHES. PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 4 INCHES ON EACH SIDE.

2. CONCRETE PADS SHALL BE PROVIDED BY THIS CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE THIS CONTRACTOR TO COORDINATE THE SIZE AND LOCATION OF THE CONCRETE HOUSEKEEPING PADS WITH THE GENERAL CONTRACTOR.

S. MOTOR STARTERS

1. UNLESS OTHERWISE INDICATED, EVERY MOTOR NOT SPECIFIED TO BE PROVIDED WITH A CONTROLLER AT THE FACTORY SHALL BE PROVIDED WITH A CONTROLLER AS SPECIFIED HEREIN. CONTROLLERS SHALL BE FURNISHED BY THIS CONTRACTOR. INSTALLATION OF CONTROLLERS SHALL BE BY THE ELECTRICAL CONTRACTOR.

2. MOTOR CONTROLLERS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF NEMA STANDARD IC-1, INDUSTRIAL CONTROL AND BE HEAVY DUTY CONSTRUCTION. CONTROLLER SIZES SHALL BE VERIFIED TO BE COMPATIBLE WITH HORSEPOWER OF THE MOTOR. CONTROLLERS SHALL BE MANUFACTURED BY ALLEN-BRADLEY CO., GENERAL ELECTRIC, CUTLER-HAMMER OR APPROVED EQUAL.

3. MANUAL MOTOR STARTERS

a. SWITCHES SHALL BE TUMBLER-SWITCH STYLE. THE MANUAL MOTOR STARTERS SHALL PROVIDE OVERLOAD PROTECTION WHICH CLOSELY FOLLOWS THE MOTOR LOAD. MANUAL MOTOR STARTERS FOR OUTDOOR USE SHALL BE NEMA TYPE 4X, INDOOR USE SHALL BE NEMA TYPE 1, EXPLOSION PROOF USE SHALL BE NEMA TYPE 7.

4. MAGNETIC MOTOR CONTROLLERS

a. MAGNETIC MOTOR CONTROLLERS SHALL BE PROVIDED AS INDICATED. THEY SHALL NOT BE SMALLER THAN NEMA SIZE 1.

b. NON-REVERSING MAGNETIC CONTROLLER SHALL BE UTILIZED TO START FULL VOLTAGE, NON-REVERSING, AC SINGLE SPEED MOTORS. THE CONTROLLERS SHALL BE SIZED FOR THE LOAD UNLESS OTHERWISE INDICATED.

c. REVERSING MAGNETIC CONTROLLER SHALL BE UTILIZED TO START FULL VOLTAGE REVERSING, AC SINGLE SPEED MOTORS. THE CONTROLLER SHALL BE SIZED FOR THE LOAD UNLESS OTHERWISE INDICATED. LOCATION OF REVERSING MAGNETIC CONTROLLERS IS INDICATED ON THE DRAWINGS.

d. WHERE MULTI-SPEED MOTORS ARE SCHEDULED ON THE DRAWINGS, THE MOTOR CONTROLS SHALL BE COMPATIBLE WITH THE TYPE MOTOR SHOWN.

e. BI-METALLIC OVERLOAD RELAYS ARE PREFERRED. OVERLOAD RELAYS SHALL BE SUPPLIED IN EACH LEG. OVERLOAD RELAYS SHALL BE MATCHED TO LOAD AND SHALL BE ADJUSTABLE FROM 90% TO 110%. A SINGLE RESET BUTTON SHALL BE MOUNTED ON THE STARTER DOOR TO PERMIT EXTERNAL RESET. RELAYS SHALL BE CONVERTIBLE FROM MANUAL TO AUTOMATIC RESET BY A SIMPLE ADJUSTMENT.

f. CONTROL TRANSFORMERS SHALL BE PROVIDED, WHERE REQUIRED. BOTH LEGS OF THE PRIMARY AND ONE LEG OF THE SECONDARY OF THE CONTROL TRANSFORMER SHALL BE PROTECTED BY NEMA CLASS J FUSES. THE OTHER LEG OF THE SECONDARY SHALL BE GROUNDED. CONTROL TRANSFORMER CAPACITY SHALL BE ADEQUATE TO OPERATE ALL CONTROL DEVICES IN THE CIRCUIT. CONTROL VOLTAGE SHALL BE 120V AC UNLESS OTHERWISE SPECIFIED.

g. UNLESS OTHERWISE INDICATED, ALL MOTOR STARTERS SHALL BE PROVIDED WITH HAND-OFF-AUTOMATIC (H.O.A.) SWITCH IN THE DOOR. ENCLOSURES FOR MAGNETIC STARTERS SHALL BE NEMA TYPE 1 FOR INDOOR USE NEMA TYPE 4X FOR OUTDOOR USE AND NEMA TYPE 7 FOR EXPLOSION PROOF USE.

h. MOTOR CONTROLLERS SHALL BE PROVIDED WITH ALL CONTROL DEVICES, INCLUDING AUXILIARY CONTACTS, REQUIRED FOR EQUIPMENT TO OPERATE AS SPECIFIED.

5. COMBINATION MOTOR CONTROLLERS

a. COMBINATION MOTOR CONTROLLERS SHALL BE PROVIDED WITH MOLDED CASE MOTOR CIRCUIT PROTECTORS OR MOLDED CASE CIRCUIT BREAKERS AS INDICATED. MOTOR CIRCUIT PROTECTIVE DEVICES SHALL HAVE SHORT CIRCUIT CAPACITY AS REQUIRED. UNIT CONTROL CIRCUIT FUSING SHALL BE PROVIDED. THE MOTOR CIRCUIT PROTECTIVE DEVICE SHALL BE MOUNTED IN THE SAME ENCLOSURE AS THE MAGNETIC CONTROLLER AND SHALL BE OPERABLE BY HAND FROM OUTSIDE THE ENCLOSURE. THE HANDLE SHALL BE SO INTERLOCKED WITH THE DOOR THAT IT MUST BE RETURNED TO THE "OFF" POSITION BEFORE THE DOOR CAN BE OPENED, BUT A COIN-PROOF DEFEAT MECHANISM SHALL BE PROVIDED TO ALLOW AUTHORIZED PERSONNEL TO OPEN THE ENCLOSURE DOOR WITHOUT OPENING THE DISCONNECTING DEVICE. PROVISIONS FOR PADLOCKING THE DISCONNECT HANDLE IN THE "OFF" POSITION SHALL BE MADE. THE ENCLOSURE FOR COMBINATION STARTERS SHALL BE NEMA TYPE 1 FOR INDOOR USE AND NEMA TYPE 4X FOR OUTDOOR USE, AND NEMA TYPE 7 FOR EXPLOSION PROOF USE.

b. MOTOR CIRCUIT PROTECTORS SHALL BE THE CONTINUOUSLY ADJUSTABLE, INSTANTANEOUS MAGNETIC TRIP TYPE CIRCUIT BREAKER AND SHALL BE SO CONSTRUCTED THAT ALL POLES OPEN, CLOSE AND TRIP SIMULTANEOUSLY.

6. OVERLOAD AND SHORT CIRCUIT PROTECTION

a. HEATER ELEMENTS SHALL BE PROVIDED FOR OVERLOAD PROTECTION. MOTOR CIRCUIT PROTECTOR SHALL BE PROVIDED FOR MOTOR SHORT CIRCUIT PROTECTION.

T. DISCONNECT SWITCHES

1. THIS CONTRACTOR SHALL FURNISH SAFETY DISCONNECT SWITCHES (FUSED AND NON-FUSED) REQUIRED FOR EQUIPMENT FURNISHED UNDER THIS CONTRACT. IN ADDITION, THIS CONTRACTOR SHALL FURNISH A SAFETY DISCONNECT SWITCH FOR MOTORS AND EQUIPMENT WHICH DO NOT HAVE COMBINATION STARTERS OR INTEGRAL DISCONNECTING MEANS. FUSIBLE DISCONNECT SWITCHES SHALL BE PROVIDED FOR EQUIPMENT RATED FOR USE ONLY WITH FUSES (SUCH AS CONDENSING UNITS, COMPRESSORS, ETC.). SUCH SWITCHES SHALL BE ONE, TWO OR THREE POLE TYPE, WITH SOLID NEUTRAL FOR 4 WIRE SERVICE, AND SHALL HAVE THE PROPER CURRENT AND VOLTAGE RATING AS REQUIRED. INSTALLATION OF DISCONNECT SWITCHES SHALL BE BY THE ELECTRICAL CONTRACTOR.

2. SAFETY SWITCHES SHALL BE NEMA HEAVY DUTY TYPE AND SHALL CARRY THE UNDERWRITERS' LABORATORIES LABEL. FUSIBLE SWITCHES SHALL INCORPORATE CLASS "R" FUSE REJECTION FEATURE AND SHALL BE BRACED TO WITHSTAND 200,000 AMPERE RMS SYMMETRICAL FAULT CURRENT. SAFETY SWITCHES SHALL CONFORM TO FEDERAL SPECIFICATION W-S-865.

3. PROVIDE HEAVY-DUTY TYPE, SHEET ENCLOSED, SAFETY SWITCHES. THE TYPE, SIZE, AND RATING SHALL BE AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE MOTOR OR EQUIPMENT SERVED. THE ENCLOSURE FOR DISCONNECT SWITCHES SHALL BE NEMA TYPE 1 FOR INDOOR USE, NEMA TYPE 4X FOR OUTDOOR USE AND NEMA TYPE 7 FOR EXPLOSION PROOF USE. DISCONNECTS SHALL BE MANUFACTURED BY ALLEN-BRADLEY, GENERAL ELECTRIC, CUTLER-HAMMER APPROVED EQUAL.

4. SWITCHES SHALL INCORPORATE QUICK-MAKE, QUICK-BREAK OPERATING HANDLES. THE MECHANISM SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER, AND SWITCHES SHALL HAVE A COVER INTERLOCK TO PREVENT UNAUTHORIZED OPENING OF THE SWITCH DOOR IN THE ON POSITION OR CLOSING OF THE SWITCH MECHANISM WITH THE DOOR OPEN. CURRENT CARRYING PARTS SHALL BE CONSTRUCTED OF HIGH-CONDUCTIVITY COPPER WITH SILVER-TUNGSTEN TYPE SWITCH CONTACT.

5. FUSE CLIPS SHALL BE POSITIVE PRESSURE TYPE REINFORCED FUSE CLIPS.

U. VIBRATION ISOLATION

1. EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATORS TO PREVENT THE TRANSMISSION OF VIBRATION AND MECHANICALLY TRANSMITTED SOUND TO THE BUILDING STRUCTURE.

2. ISOLATION EQUIPMENT SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, AND SHALL BE DESIGNED SPECIFICALLY FOR THE APPLICATION REQUIRED. THIS INCLUDES, BUT IS NOT LIMITED TO, PIPING DUCTWORK, PUMPS, COMPRESSORS. VIBRATION ISOLATORS SHALL BE RATED FOR THE WEIGHT AND SPACING REQUIRED FOR THE EQUIPMENT REQUIRING ISOLATION.

V. FIRESTOPPING

1. SERVICES THAT PASS THRU FIRE OR SMOKE RATED PARTITIONS, WALLS, FLOORS, SHALL BE FIRESTOPPED. FIRE STOPPING SYSTEM RATING SHALL MATCH PARTITION RATING. FIRE STOPPING SYSTEM SHALL MEET THE REQUIREMENTS OF ASTM E 814,UL 1479, AND BE FACTORY MUTUAL APPROVED.

2. FIRESTOPING AND/OR SMOKE STOPPING MATERIAL AND INSTALLATION SHALL BE AS MANUFACTURED BY HILTI OR APPROVED EQUAL.

W. WATER HEATERS

1. DOMESTIC WATER HEATERS LOCATED AND DESIGNATED ON THE DRAWINGS SHALL BE MANUFACTURED BY "LOCHINVAR", "STATE", OR "BRADFORD-WHITE". WATER HEATERS SHALL BE AS SPECIFIED ON THE WATER HEATER SCHEDULE ON THE DRAWINGS AND SHALL HAVE MINIMUM STORAGE CAPACITIES AND RECOVERY RATES NOTED. HEATERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

2. WATER HEATERS SHALL BE EQUIPPED WITH TEMPERATURE AND PRESSURE RELIEF VALVES AND STAINLESS STEEL DRIP PANS WITH MINIMUM 4" RAISED EDGES. CONTRACTOR SHALL PIPE THE DRAIN PANS AND THE T&P VALVES TO MOP BASINS AS INDICATED ON THE PLANS OR AS REQUIRED BY CODE.

END OF PLUMBING SPECIFICATIONS

SPRINKLER PERFORMANCE SPECIFICATION

1. THE CONTRACTOR SHALL PROVIDE THE DESIGN, MATERIALS, AND INSTALLATION OF A HYDRAULICALLY CALCULATED WET/DRY SPRINKLER AND WET STANDPIPE SYSTEM IN CONFORMANCE WITH THE REQUIREMENTS OF NFPA STANDARD NOS. 13 AND LOCAL CODES. THE CONTRACTOR SHALL PREPARE SPRINKLER SHOP DRAWINGS FOR SUBMISSION TO AND APPROVAL BY THE PROJECT ENGINEER, LOCAL AUTHORITIES, AND THE FIRE MARSHAL. ALL HYDRAULIC CALCULATIONS AND SPRINKLER SYSTEM DESIGN SHALL BE BASED ON THE AVAILABLE WATER PRESSURE. THE CONTRACTOR SHALL PERFORM THE REQUIRED WATER FLOW TESTS BEFORE PROCEEDING WITH DESIGN. SPRINKLER CONTRACTOR SHALL EMPLOY A NICET LEVEL III OR GREATER SPRINKLER DESIGNER TO LAYOUT AND SIZE SYSTEM AND STAMP DRAWINGS.

2. SPRINKLER HEAD LAYOUTS SHALL BE SYMMETRICAL. SPRINKLER CONTRACTOR SHALL COORDINATE LOCATIONS OF SPRINKLER PIPING AND SPRINKLER HEADS WITH LIGHT FIXTURES, DIFFUSERS, STRUCTURAL ELEMENTS, CEILING ELEVATIONS, DUCTWORK, PIPING AND CEILING ELEVATIONS FOR PROPER FIRE PROTECTION COVERAGE. SPRINKLER PIPING WILL NOT BE ALLOWED TO COMPROMISE LIGHTING, HVAC, OR ARCHITECTURAL ELEMENTS AND/OR THEIR LOCATIONS. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR PROPOSED SPRINKLER HEAD LOCATIONS WHERE APPLICABLE. ALL SPRINKLER HEADS MOUNTED IN REMOVABLE ACCESSIBLE CEILINGS SHALL BE LOCATED AT THE CENTER (+1") OF THE CEILING TILE.

3. SPRINKLER HEADS SHALL BE RATED AND UL LISTED FOR THE INTENDED TEMPERATURE CLASSIFICATION. SPRINKLERS IN AREAS REQUIRING TEMPERATURE CLASSIFICATIONS OF INTERMEDIATE AND GREATER SHALL REQUIRE THE USE OF A TEMPERATURE MEASURING DEVICE TO DETERMINE THE APPROPRIATE TEMPERATURE CLASSIFICATION.

4. UNLESS OTHERWISE NOTED, SPRINKLER HEADS SHALL BE AS SPECIFIED IN THE CONTRACT DOCUMENTS OR AS OTHERWISE SPECIFIED BY THE ARCHITECT. WHERE NO STANDARD IS SPECIFIED, THE SPRINKLER HEADS SHALL BE CHROME PLATED S

MEDICAL GAS SYSTEMS SPECIFICATION

PART 1 - GENERAL

1.1GENERAL

A. PROVIDE MEDICAL GAS SYSTEMS FOR THE FOLLOWING SERVICES: OXYGEN, MEDICAL VACUUM, AND NITROGEN. SYSTEMS SHALL INCLUDE PIPING, FITTINGS, VALVES, OUTLETS, ALARMS, ETC., REQUIRED TO PROVIDE A COMPLETE WORKING SYSTEM.

B. SUBMIT RECORD OF EXPERIENCE TO ARCHITECT FOR APPROVAL. INSUFFICIENT EXPERIENCE IN THE MEDICAL GAS SYSTEM FIELD MAY BE CAUSE FOR REJECTION BY THE ARCHITECT. INSTALLERS, INSPECTORS, AND VERIFIERS OF MEDICAL GAS SYSTEMS SHALL COMPLY WITH ASSE 6010 STANDARD.

C. OUTLET TYPE SHALL BE EQUIVALENT AND COMPATIBLE TO THE EXISTING STYLE PRESENTLY USED BY THE FACILITY.

1.2 MINIMUM PIPE SIZE SHALL BE ½ INCH FOR ALL GASES EXCEPT MEDICAL VACUUM AND ANESTHESIA VACUUM (WAGD) WHICH SHALL BE ¾ INCH. SIZES SHALL BE NOMINAL PIPE SIZE.

PART 2 - PRODUCTS

2.1 OUTLETS AND EQUIPMENT

A. MEDICAL GAS OUTLETS

1. OUTLETS SHALL BE FOR OXYGEN, MEDICAL VACUUM, WAGD, AND NITROGEN. OUTLETS SHALL BE OF A TYPE SELECTED BY OWNER.
2. PRIMARY VALVES SHALL BE CHROME PLATED STEEL FIELD ADJUSTABLE FOR WALL FINISH THICKNESS. THE PRIMARY GAS CHECK SHALL BE SERVICEABLE WITHOUT SHUTTING OFF GAS SUPPLY.
3. OUTLET FACE PLATE SHALL BE STAINLESS STEEL MOUNTED ON CHROME COVER PLATE. COVER PLATE FOR A PARTICULAR GAS SHALL BE INDEXED TO FIT ONLY THAT GAS OUTLET.
4. OUTLETS SHALL BE PERMANENTLY MARKED AND COLOR CODED AS TO TYPE OF GAS. OUTLET SHALL PREVENT INSERTION OF SECONDARY EQUIPMENT INTO THE WRONG GAS OUTLET.
5. MEDICAL GAS OUTLETS SHALL BE CLEANED FOR OXYGEN SERVICE IN ACCORDANCE WITH NFPA 99. ASSEMBLY SHALL BE CAPPED AND SHIPPED TO JOB SITE IN INDIVIDUALLY SEALED BAGS.
6. OUTLETS SHALL HAVE A 7 INCH LONG 1/2 INCH O.D. COPPER PIGTAIL WHICH SWIVELS 360.
7. PROVIDE BOTTLE SLIDES FOR MEDICAL GAS OUTLET ACCESSORIES. BOTTLE SLIDES SHALL BE INCORPORATED INTO GANGED OUTLETS. COORDINATE WITH OWNER SIZE OF VACUUM COLLECTION CANISTERS PRIOR TO ORDERING.
8. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT OUTLET LOCATIONS, BOTTLE SLIDE LOCATIONS, AND ELEVATIONS. MOUNTING HEIGHTS SHALL BE 54 INCHES FROM OUTLET CENTER TO FINISHED FLOOR.
9. APPROVED MANUFACTURERS: AMICO AND BEACON MEDAES.

B. ZONE VALVE BOX ASSEMBLIES

1. ZONE VALVE BOX ASSEMBLIES SHALL BE 18 GAUGE SHEET STEEL WITH LACQUER FINISH.
2. ASSEMBLY SHALL HAVE THE ABILITY TO GANG UNITS TOGETHER VERTICALLY WITH MULTIPLE UNITS ASSEMBLED TO HAVE UNIFORM APPEARANCE.
3. UNIT SHALL CONTAIN FULL PORT BALL VALVES, 1-1/2 INCH PRESSURE GAUGES WITH RANGE APPROPRIATE FOR GAS, PERMANENT MARKINGS AND COLOR CODING FOR EACH GAS SERVICE. WITH VALVE IN OFF POSITION, HANDLE SHALL NOT PROTRUDE BEYOND OPENING TO PREVENT COVER FROM CLOSING.
4. ZONE VALVE BOX ASSEMBLIES SHALL COMPLY WITH NFPA 99.
5. BALL VALVES AND PIPING EXTENSIONS SHALL BE CLEANED FOR OXYGEN SERVICE AS REQUIRED BY NFPA 99.
6. UNLESS OTHERWISE INDICATED, MOUNT ZONE VALVE BOXES 5 FEET FROM FLOOR TO CENTERLINE OF BOX EXCEPT TOPMOST VALVES SHALL BE NO HIGHER THAN 6 FEET.
7. ZONE VALVE BOXES SHALL BE LABELED WITH PHENOLIC ENGRAVED LABELS STATING AREA OR ROOMS SERVED.
8. APPROVED MANUFACTURERS: AMICO AND BEACON MEDAES.

C. AREA ALARM PANELS

1. AREA ALARM PANELS SHALL BE LOCATED WHERE INDICATED ON THE DRAWINGS.
2. PANEL SHALL HAVE A PUSH-TO-TEST BUTTON AND SHALL ALARM VISUALLY AND AUDIBLY THE CONDITIONS LISTED IN PARAGRAPH 2.1 E.6. BELOW.
3. PANELS SHALL ALARM AND MONITOR THE FOLLOWING GASES: OXYGEN, MEDICAL VACUUM, AND NITROGEN.
4. VOLTAGE SHALL BE 120 VOLTS. REFER TO ELECTRICAL DRAWINGS FOR POWER CONNECTION. UNIT SHALL INCLUDE ALL TRANSFORMERS, CIRCUITRY, AND CONNECTIONS TO PROVIDE CONTROL CIRCUIT POWER.
5. PANEL SHALL HAVE ELECTRONIC PRESSURE TRANSMITTERS FOR PRESSURE SENSING. SENSING WIRING SHALL RUN IN CONDUIT FROM SENSING LOCATION TO PANEL. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF TRANSMITTER TYPE AND VOLTAGE REQUIRED FOR ALARM PANEL TYPE.
6. AREA ALARM PANEL SHALL SIGNAL THE FOLLOWING WHEN THE PRESSURE INCREASES OR DECREASES BY 20 PERCENT:
   a. LOW PRESSURE - OXYGEN, MEDICAL VACUUM, AND NITROGEN.
   b. HIGH PRESSURE - OXYGEN, MEDICAL VACUUM, AND NITROGEN.
7. AREA ALARM PANEL SHALL INCLUDE GAUGES, POWER SUPPLIES, ALARMS, PRESSURE SWITCHES AND OTHER EQUIPMENT REQUIRED FOR AN OPERATIONAL, COMPLETE SYSTEM.
8. APPROVED MANUFACTURERS: AMICO AND BEACON MEDAES.

D. MASTER ALARM PANEL

1. MASTER ALARM PANELS SHALL BE LOCATED WHERE INDICATED ON THE DRAWINGS.
2. PANEL SHALL HAVE A PUSH-TO-TEST BUTTON AND SHALL ALARM VISUALLY AND AUDIBLY THE CONDITIONS LISTED IN PARAGRAPH 2.01 H(5).
3. PANEL SHALL ALARM THE FOLLOWING GASES: OXYGEN, MEDICAL VACUUM, AND NITROGEN.
4. VOLTAGE SHALL BE 115 VOLTS. REFER TO ELECTRICAL DRAWINGS FOR POWER CONNECTION AND PRESSURE SWITCH WIRING.
5. MASTER ALARM PANEL SHALL INCLUDE POWER SUPPLIES, ALARMS, PRESSURE SWITCHES, AND OTHER EQUIPMENT REQUIRED FOR A COMPLETE, OPERATIONAL SYSTEM.
6. APPROVED MANUFACTURERS: AMICO AND BEACON MEDAES.

E. MANIFOLDS

1. PROVIDE FULLY AUTOMATIC MANIFOLD AND CONTROLLER HAVING THREE (3) CYLINDERS IN THE SERVICE AND THREE (3) CYLINDERS IN THE RESERVE FOR THE SUPPLY OF OXYGEN. UNIT SHALL HAVE NECESSARY HEADER AND PIGTAILS.
2. PROVIDE FULLY AUTOMATIC MANIFOLD AND CONTROLLER HAVING TWO (2) CYLINDERS IN THE SERVICE AND TWO (2) CYLINDERS IN THE RESERVE FOR THE SUPPLY OF NITROGEN. UNIT SHALL HAVE NECESSARY HEADER AND PIGTAILS.
3. CONTROLLER FOR EACH MANIFOLD SHALL AUTOMATICALLY SWITCH FROM SERVICE TO RESERVE WITHOUT LINE PRESSURE DROP.
4. CONTROLLER FOR EACH MANIFOLD SHALL VISUALLY SIGNAL THAT RESERVE IS IN USE, AND BY GAUGES SHOW REMAINING PRESSURE IN EACH BANK AND LINE PRESSURE.
5. PROVIDE NECESSARY PRESSURE SWITCHES TO SEND "RESERVE IN USE" SIGNAL TO MASTER ALARM PANELS.
6. THE CONTROLLER SHALL BE EQUIPPED TO REDUCE GAS PRESSURE TO 55 PSIG FOR OXYGEN AND 185 PSIG FOR NITROGEN.

F. MEDICAL VACUUM PUMPS

1. REFER TO DRAWING P601 FOR VACUUM PUMP BASIS OF DESIGN.
2. ELECTRICAL CONTROLS SHALL INCLUDE FACTORY WIRED AND MOUNTED NEMA-1 CONTROL PANEL ENCLOSURE CONTAINING TWO (2) MAGNETIC ACROSS THE LINE, NON-COMBINATION, NON-REVERSING MOTOR STARTERS WITH CIRCUIT BREAKERS, TWO (2) 120 VOLT CONTROL CIRCUIT TRANSFORMERS WITH FUSED SECONDARY, TWO (2) HOA SELECTOR SWITCHES AND AN AUTOMATIC ELECTRIC ALTERNATOR. STARTERS SHALL HAVE 3 PHASE PROTECTION AND UNDERCURRENT RELEASE.
3. PROVIDE PRESSURE SWITCHES AND ADJUST FOR THE LEAD PUMP TO START AT 18 INCHES HG AND STOP AT 22 INCHES HG; THE LAG PUMP TO START AT 16 INCHES HG AND STOP AT 22 INCHES HG. LEAD-LAG PUMP ASSIGNMENT SHALL REVERSE ON EACH CYCLE. PROVIDE LAG ALARM AT 16 HG SET POINT.
4. THE VACUUM SYSTEM SHALL BE STARTED BY FACTORY TECHNICIAN OF THE SUPPLIER WHO SHALL PROVIDE IN-SERVICE INSTRUCTION TO THE OWNER'S REPRESENTATIVE AT START-UP.
5. MANUFACTURER SHALL PROVIDE TWO (2) YEAR WARRANTY ON COMPONENTS FROM DATE OF SHIPMENT.
6. FILTRATION SHALL BE PROVIDED WITH VACCUM SYSTEM IN ACCORDANCE WITH 2018 NFPA 99.

PART 3 - EXECUTION

3.1 GENERAL

A. INSTALLERS, INSPECTORS, AND VERIFIERS OF MEDICAL GAS SYSTEMS SHALL COMPLY WITH ASSE 6010 STANDARD.

B. WHERE CONNECTION TO EXISTING SYSTEMS OCCURS, DO NOT MAKE CONNECTION UNTIL TESTS ARE COMPLETE.

C. PROVIDE GAS VERIFICATION FOR EACH OUTLET AS PER NFPA 99. VERIFICATION SHALL INCLUDE VERIFICATION OF PROPER GAS FOR EACH OUTLET. ALSO, AN ANALYSIS SHALL BE DONE TO CONFIRM THE DESIRED PERCENTAGE OF OXYGEN. ALL OUTLETS SHALL BE FLOWED AT 100 LITERS PER MINUTE TO CHECK FOR DIRT.

D. VERIFICATION SHALL BE BY AN INDEPENDENT TESTING AGENCY. AGENCY SHALL BE REGISTERED IN NORTH CAROLINA AND SHALL SEAL THE TEST REPORT.

E. OUTLET LOCATIONS, ZONE VALVE LOCATIONS, ETC., SHALL BE FIELD CHECKED BY THE ARCHITECT BEFORE ACTUAL INSTALLATION BEGINS.

F. MEDICAL GAS SYSTEMS SHALL BE INSTALLED AND TESTED IN STRICT ACCORDANCE WITH NFPA 99.

G. REFER TO ARCHITECTURAL DRAWINGS FOR BOTTLE SLIDE LOCATIONS. COORDINATE WITH OWNER THE SIZE OF COLLECTION CANISTERS.

H. VACUUM STUBS SHALL BE INSTALLED EVERY FIFTY FEET AND EVERY CHANGE IN DIRECTION. A STUB SHALL CONSIST OF A Y FITTING, A 6 INCH STRAIGHT SECTION, AND CAP ALL BRAZED CONSTRUCTION.

I. PIPING CONNECTIONS FROM MAINS TO BRANCHES SHALL BE ABOVE THE CENTERLINE OF MAINS. PIPING CONNECTIONS FROM BRANCHES TO RUNOUTS SHALL BE ABOVE THE CENTERLINE OF THE PIPE.

J. AREA ALARM PANELS

J.A. REFER TO DRAWINGS FOR LOCATIONS OF AREA ALARM PANELS. COORDINATE EXACT LOCATIONS WITH OTHER TRADES.

J.B. PROVIDE PIPING CONNECTIONS TO EACH MEDICAL GAS PIPING AS FOLLOWS:

a. IN ANESTHETIZING LOCATIONS, PROVIDE CONNECTION IN BRANCH UPSTREAM OF ZONE VALVES.

b. IN THE REMAINING LOCATIONS, PROVIDE CONNECTION IN BRANCH SERVING ROOM DOWNSTREAM OF THE ZONE VALVES.

8. IF ELECTRONIC TRANSMITTERS ARE PROVIDED, PROVIDE WIRING IN CONDUIT FROM TRANSMITTER TO PANEL WITH WIRING SIZED FOR VOLTAGE AND AMPERAGE OF TRANSMITTER PER THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE. LOCATION OF CONNECTIONS SHALL BE AS FOLLOWS:

a. IN ANESTHETIZING LOCATIONS, PROVIDE CONNECTION IN BRANCH UPSTREAM OF ZONE VALVES.

b. IN THE REMAINING LOCATIONS, PROVIDE CONNECTION IN BRANCH SERVING ROOM DOWNSTREAM OF THE ZONE VALVES.

J. MASTER ALARM PANELS

1. MASTER ALARM SIGNALS

1.1. PROVIDE MASTER ALARM SIGNALS FOR THE FOLLOWING SOURCE EQUIPMENT:

1) MANIFOLD SYSTEMS

2) OXYGEN GENERATOR

3) VACUUM PUMPS

2. MASTER ALARM SIGNALS SHALL BE PER THE LATEST NFPA 99. AT MINIMUM, PROVIDE THE FOLLOWING:

1) OXYGEN SYSTEM

a. OXYGEN HI-LOW

b. MAIN SUPPLY HI-LOW OXY

c. RESERVE SUPPLY LOW OXY

d. RESERVE IN USE OXY

e. LOCAL ALARM PANEL ALARM

f. FUTURE

2) VACUUM PUMP SYSTEM

a. VACUUM HI-LOW

b. VACUUM VAC FAN

c. VACUUM SEPARATOR WATER LEVEL

d. VACUUM RECEIVER WATER LEVEL

e. VACUUM LAG PUMP IN USE

f. LOCAL ALARM PANEL ALARM

g. VACUUM FUTURE

3) NITROGEN SYSTEM

a. NITROGEN HI-LOW

b. PRIMARY SUPPLY HI-LOW

c. RESERVE SUPPLY LOW

d. RESERVE IN USE

e. LOCAL ALARM PANEL ALARM

f. FUTURE

2. PROVIDE WIRING FROM SENSING DEVICES TO MASTER ALARM PANELS IN CONDUIT WITH WIRING SIZED FOR VOLTAGE AND AMPERAGE AND DISTANCE PER THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE.

K. MOUNTING HEIGHTS

1. REFER TO ARCHITECTURAL DRAWINGS FOR COORDINATED LOCATION AND HEIGHT OF MEDICAL GAS DEVICES. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS, USE THE FOLLOWING:
   a. ZONE VALVES - 54 INCHES TO THE CENTERLINE OF THE ASSEMBLY WITH A 68 INCH MAXIMUM HEIGHT. FOR TALL ZONE VALVES, THE MAXIMUM HEIGHT TAKES PRECEDENCE.
   b. ALARM PANELS - 54 INCHES TO THE CENTERLINE.
   c. MEDICAL GAS OUTLETS - 48 INCHES TO THE TOP OF THE OUTLET.

L. PIPE IDENTIFICATION

1. PROVIDE PIPE IDENTIFICATION PER SPECIFICATION SECTION 22 05 53.
2. PIPING SHALL BE LABELED IN EACH PATIENT ROOM, WHERE ENTERING PATIENT ROOMS, EVERY 20 FEET, AT ZONE VALVES AND AT SHAFT ENTRANCES.
3. GAS PIPING SHALL BE LABELED AS O FOR OXYGEN, MV FOR MEDICAL VACUUM, N FOR NITROGEN, AND WAGD FOR WASTE ANESTHESIA GAS DISPOSAL.

END OF SECTION 22 09 00

MEDICAL GAS PIPING MATERIAL SPECIFICATION

POSITIVE PRESSURE MEDICAL GAS SYSTEM PIPING SHALL BE CLEANED FOR OXYGEN SERVICE BY THE MANUFACTURER IN ACCORDANCE WITH CGA G-4.1, CLEANING EQUIPMENT FOR OXYGEN SERVICE; EACH LENGTH OF TUBE, FITTINGS, AND VALVES SHALL BE DELIVERED PLUGGED OR CAPPED BY THE MANUFACTURER AND KEPT SEALED UNTIL PREPARED FOR INSTALLATION. PIPING SHALL BE ASTM B819, STANDARD FOR SEAMLESS COPPER TUBE FOR MEDICAL GAS SYSTEMS, MEDICAL GAS TUBE, TYPE L, EXCEPT TYPE K SHALL BE USED WHERE OPERATING PRESSURES EXCEED 185 PSI AND/OR PIPE SIZES ARE GREATER THAN 3"Ø. JOINING METHODS SHALL COMPLY WITH NFPA 99 GUIDELINES.

VACUUM AND WAGD SYSTEM PIPING SHALL BE ONE (1) OF THE FOLLOWING:

- HARD-DRAWN SEAMLESS COPPER TUBE COMPLYING WITH ASTM B88, STANDARD SPECIFICATION FOR SEAMLESS COPPER WATER TUBE, TYPE K OR L
- COPPER MEDICAL GAS TUBING COMPLYING WITH ASTM B819, STANDARD SPECIFICATION FOR SEAMLESS COPPER TUBE FORE MEDICAL GAS SYSTEMS, TYPE K OR L
- VACUUM AND WAGD SYSTEM PIPING JOINING METHODS SHALL COMPLY WITH NFPA 99 GUIDELINES.

MEDICAL VACUUM COMPRESSOR SYSTEM (BASIS OF DESIGN):

AMICO MODEL# V-CCD-D-200P-SS-N-090-MS MEDICAL VACUUM SYSTEM:

- DUPLEX DRY CONTACTLESS CLAW VACUUM SYSTEM
- SKID MOUNTED STACKING CONFIGURATION
- 200 GALLON PAINTED VERTICAL ASME AIR RECEIVER
- DUPLEX 5" PREMIUM HMI TOUCH SCREEN CONTROL PANEL WITH CIRCUIT BREAKER DISCONNECTS
- ETHERNET CONNECTIVITY, ALARM LOGGING & ALARM EMAIL CAPABILITIES
- 9 HP
- PUMP CAPACITY 77 SCFM AT 19 IN HG
- SYSTEM CAPACITY 77 SCFM AT 19 IN HG AS PER NFPA
- FILTRATION SYSTEM SHALL BE PROVIDED BY THE MANUFACTURER; FILTRATION SHALL BE IN COMPLIANCE WITH 2018 NFPA 99

OXYGEN MANIFOLD AND HEADER (BASIS OF DESIGN):

AMICO MANIFOLD MODEL# M4D-DL-HH-U-OXY WITH M2-HBXC-06U-OXY HEADER:

- SIX (6) "H" SIZED TANKS ORIENTED IN A STAGGERED ARRAY; 3 TANKS SHALL BE PRIMARY WITH 3 TANK SECONDARY
- PROVIDE AMICO WALL BRACKET MODEL# M-X-HB-WLBRKIT WITH HEADER
- SYSTEM OUTLET PRESSURE: 55 PSI
- MANIFOLD SHALL BE CONNECTED TO OXYGEN GENERATION SYSTEM'S EMERGENCY SWITCH OVER CONNECTION; GENERATION SYSTEM TO BE PROVIDED BY OTHERS. REFER TO GENERATION SYSTEM'S VENDOR DOCUMENTATION FOR CONNECTION REQUIREMENTS.

NITROGEN MANIFOLD AND HEADER (BASIS OF DESIGN):

AMICO MANIFOLD MODEL# M4D-DL-HH-U-NIT WITH M2-HBXC-04U-NIT HEADER:

- FOUR (4) "H" SIZED TANKS ORIENTED IN A STAGGERED ARRAY; 2 TANKS SHALL BE PRIMARY WITH 2 TANK SECONDARY
- PROVIDE AMICO WALL BRACKET MODEL# M-X-HB-WLBRKIT WITH HEADER
- SYSTEM OUTLET PRESSURE: 185 PSI

SPRINKLER PERFORMANCE SPECIFICATION (CONTINUED FROM P003)

11. FIRE PROTECTION PIPING SWING CHECK VALVES SHALL BE UL LISTED AND APPROVED, RATED FOR 175 PSIG WORKING PRESSURE, AND HAVE A IRON BODY, BRONZE TRIM, CAST IRON OR BRONZE DISC, BOLTED COVER AND SCREWED OR FLANGED ENDS. SWING CHECK VALVES SHALL BE INSTALLED IN HORIZONTAL PIPING ONLY. VALVES MANUFACTURED BY KENNEDY, CRANE, JENKINS, GRINNELL, STOCKHAM OR NIBCO-SCOTT WILL BE ACCEPTABLE IF THEY COMPLY WITH THESE SPECIFICATIONS.

12. FLOW AND TAMPER SWITCH ALARM ANNUNCIATION SHALL BE INTERLOCKED WITH THE CORRESPONDING ALARM SYSTEMS FOR PROPER ANNUNCIATION. WATER FLOW SWITCHES SHALL BE SIMILAR TO AUTOCALL WF-4. COORDINATE ALL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR. IF THEY COMPLY WITH THESE SPECIFICATIONS, WATER FLOW SWITCHES MANUFACTURED BY AUTOCALL, POTTER ELECTRIC SIGNAL COMPANY, GRINNELL, OR STAR SPRINKLER CORPORATION WILL BE ACCEPTABLE. SUPERVISORY (TAMPER) SWITCHES SHALL BE SINGLE POLE, DOUBLE THROW TYPE WITH CAST ALUMINUM HOUSING AND TAMPER-PROOF COVER. SWITCH RATING SHALL BE AT LEAST 7 AMPERES AT 125/250 VOLTS. SWITCHES SHALL BE POTTER ELECTRIC SIGNAL CO. MODEL OSYS-B, STAR SPRINKLER CORP. SERIES NGV, OR APPROVED EQUAL.

13. DRY SYSTEMS SHALL BE INSTALLED IN ANY UNCONDITIONED SPACES. DRY PIPE AIR COMPRESSORS FOR DRY PIPE SPRINKLERS SYSTEM SHALL BE WITH BRACKET FOR MOUNTING. EACH COMPRESSOR SHALL BE AUTOMATICALLY CONTROLLED BY A FACTORY-MOUNTED PRESSURE SWITCH. IN ADDITION, FOR EACH COMPRESSOR PROVIDE A HIGH/LOW PRESSURE SWITCH WITH SET POINTS HIGHER AND LOWER OPERATING SWITCH, TO PROVIDE A SUPERVISORY SIGNAL TO AN ALARM ANNUNCIATOR PANEL. DRY PIPE AIR COMPRESSOR SHALL BE UL LISTED FOR THE INTENDED SERVICE. STORAGE TANKS, IF REQUIRED, SHALL BE ASME LISTED.

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

15. THE CONTRACTOR SHALL MODIFY THE EXISTING SPRINKLER PIPING IN THE AREAS BEING MODIFIED TO CONFORM TO THE REQUIRED FIRE SPRINKLER AND FIRE ALARM ZONES. MODIFICATIONS, ADDITIONS, REPAIRS, EQUIPMENT AND DEVICES REQUIRED FOR THE WET/DRY SPRINKLER AND STANDPIPE SYSTEMS TO CONFORM TO LOCAL CODES AND TO PROVIDE A COMPLETE AND WORKING SYSTEM IN COMPLIANCE WITH THE CODE REGULATIONS AND BUILDING STANDARDS SHALL BE AT NO ADDITIONAL COST OVER THE CONTRACT. CONTRACTOR SHALL EXTEND SPRINKLER SYSTEM FROM EXISTING SPRINKLER SYSTEM. MODIFICATIONS TO SPRINKLER SYSTEMS SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

- ADJUSTMENT TO THE ELEVATIONS OF EXISTING SPRINKLER PIPING MAINS, BRANCHES, AND ARM-OVERS TO ACCOUNT FOR NEW OR RENOVATED CEILING HEIGHTS AND TYPES.
- COORDINATION AND ADJUSTMENTS OF EXISTING SPRINKLER PIPING (MAINS, BRANCHES, ETC.) WITH ARCHITECTURAL, INTERIOR DESIGN, AND MEP DRAWINGS AND ELEMENTS.
- REPLACEMENT OF SPRINKLER HEAD TYPES AND/OR FINISHES AS REQUIRED BY ARCHITECTURAL DIRECTION.
- ADDITION OF SPRINKLER HEADS TO ACCOUNT FOR CODE REQUIRED COVERAGE.
- REWORKING OR RELOCATION OF ANY FIRE PROTECTION ZONE VALVES/ALARMS THAT MAY INTERFERE WITH RENOVATION OF SPACE.

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PROJECT NUMBER: 21-000

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SHEET REVISION SCHEDULE:
No. DATE

PLUMBING SPECIFICATIONS

SHEET
P004

ASC PROJECT NUMBER: 21-000

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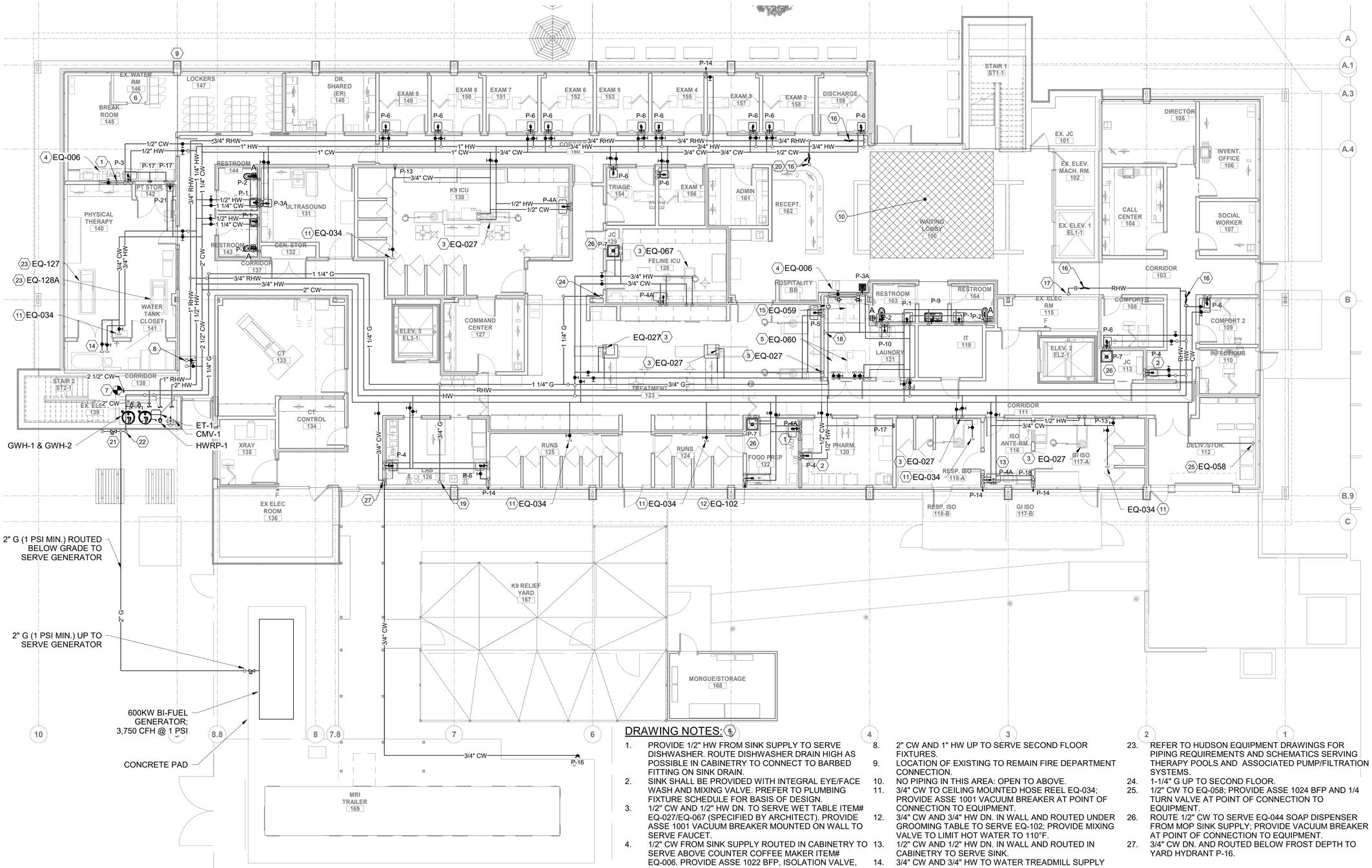

1 P201 **PLUMBING SUPPLY PLAN - FIRST FLOOR**
1/8" = 1'-0"

0' 2' 4' 8' 16' 24'
SCALE : 1/8" = 1'-0"

GENERAL NOTES:

A. EXISTING CONDITIONS SHOWN ON THIS DRAWING HAVE BEEN OBTAINED FROM FIELD OBSERVATIONS AND/OR AS-BUILT DRAWINGS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. "EQ-" ITEMS ARE SCHEDULED BY OTHERS. REFER TO EQUIPMENT PROVIDER'S SPECIFICATIONS FOR CONNECTION DETAILS AND REQUIREMENTS.

DRAWING NOTES:

1. PROVIDE 1/2" HW FROM SINK SUPPLY TO SERVE DISHWASHER. ROUTE DISHWASHER DRAIN HIGH AS POSSIBLE IN CABINETRY TO CONNECT TO BARBED FITTING ON SINK DRAIN.
2. SINK SHALL BE PROVIDED WITH INTEGRAL EYE/FACE WASH AND MIXING VALVE. PREFER TO PLUMBING FIXTURE SCHEDULE FOR BASIS OF DESIGN.
3. 1/2" CW AND 1/2" HW DN. TO SERVE WET TABLE ITEM# EQ-027/EQ-067 (SPECIFIED BY ARCHITECT). PROVIDE ASSE 1001 VACUUM BREAKER MOUNTED ON WALL TO SERVE FAUCET.
4. 1/2" CW FROM SINK SUPPLY ROUTED IN CABINETRY TO SERVE ABOVE COUNTER COFFEE MAKER ITEM# EQ-006. PROVIDE ASSE 1022 BFP, ISOLATION VALVE, AND STUB TO EQUIPMENT. COORDINATE EXACT LOCATION WITH OWNER AND ARCHITECT. ROUTE BFP DRAIN TO DISCHARGE TO NEAREST FLOOR DRAIN VIA AIR GAP.
5. 3/4" CW AND 3/4" HW DN AND ROUTED EXPOSED TO SERVE WASHING MACHINES ITEM# EQ-060. PROVIDE HOSE END VALVE CONNECTIONS WITH WHEEL HANDLES AND SUPPLY HOSES TO SERVE EACH WASHER. PROVIDE SHOCK ARRESTOR PDI SIZE "A" ON EACH CONNECTION TO EQUIPMENT.
6. EXISTING LOCATION OF FIRE PROTECTION SERVICE ENTRANCE AND ASSOCIATED PIPING, BACKFLOW PREVENTER, AND ALARM VALVES. SYSTEM SHALL REMAIN AND SHALL BE RECONFIGURED AS REQUIRED TO ACCOMMODATE NEW FLOOR PLAN LAYOUT OF BUILDING.
7. 2-1/2" CW CONNECTED TO EXISTING TO REMAIN DOMESTIC WATER SERVICE ENTRANCE.
8. 2" CW AND 1" HW UP TO SERVE SECOND FLOOR FIXTURES.
9. LOCATION OF EXISTING TO REMAIN FIRE DEPARTMENT CONNECTION.
10. NO PIPING IN THIS AREA: OPEN TO ABOVE.
11. 3/4" CW TO CEILING MOUNTED HOSE REEL EQ-034; PROVIDE ASSE 1001 VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
12. 3/4" CW AND 3/4" HW DN. IN WALL AND ROUTED UNDER GROOMING TABLE TO SERVE EQ-102; PROVIDE MIXING VALVE TO LIMIT HOT WATER TO 110°F.
13. 1/2" CW AND 1/2" HW DN. IN WALL AND ROUTED IN CABINETRY TO SERVE SINK.
14. 3/4" CW AND 3/4" HW TO WATER TREADMILL SUPPLY AND TREATMENT SYSTEM. PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
15. 3/4" G DN. TO MANIFOLD SERVING DRYERS ITEM# EQ-059 AT 165 MBH EA.
16. THERMOSTATIC BALANCE VALVE ASSEMBLY AS SCHEDULED ON DRAWING P501.
17. 3/4" HW FROM FLOOR ABOVE TO TRANSITION TO 3/4" RHW AT FIRST FLOOR CEILING.
18. 3/4" CW DN. TO ITEM# EQ-105; PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
19. 3/4" G UP TO SERVE DRYER ON SECOND FLOOR.
20. 3/4" RHW FROM FLOOR ABOVE AND ROUTED IN FIRST FLOOR CEILING.
21. PROPOSED LOCATION FOR GAS SERVICE AND REGULATOR(2 PSI OUTLET SERVICE PRESSURE); COORDINATE LOCATION WITH UTILITY PROVIDER.
22. 1-1/2" G (2 PSI) UP AND ROUTED ABOVE FIRST FLOOR CEILING; PROVIDE WATER TIGHT SLEEVE SEAL AT WALL PENETRATION.
23. REFER TO HUDSON EQUIPMENT DRAWINGS FOR PIPING REQUIREMENTS AND SCHEMATICS SERVING THERAPY POOLS AND ASSOCIATED PUMP/FILTRATION SYSTEMS.
24. 1-1/4" G UP TO SECOND FLOOR.
25. 1/2" CW TO EQ-058; PROVIDE ASSE 1024 BFP AND 1/4 TURN VALVE AT POINT OF CONNECTION TO EQUIPMENT.
26. ROUTE 1/2" CW TO SERVE EQ-044 SOAP DISPENSER FROM MOP SINK SUPPLY; PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
27. 3/4" CW DN. AND ROUTED BELOW FROST DEPTH TO YARD HYDRANT P-16.

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FIRST FLOOR PLUMBING SUPPLY PLAN

SHEET
P201

9/20/2023 3:33:35 PM

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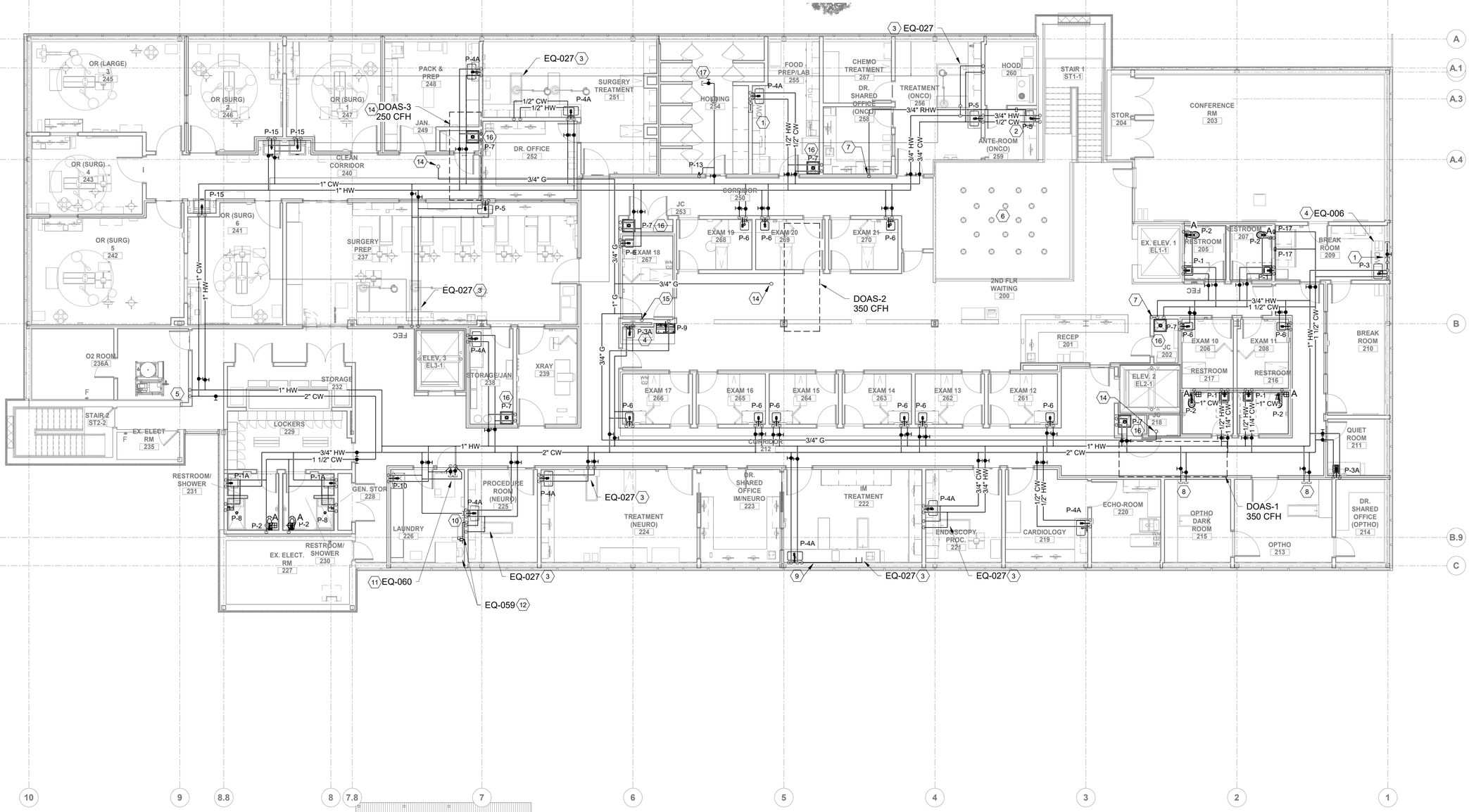

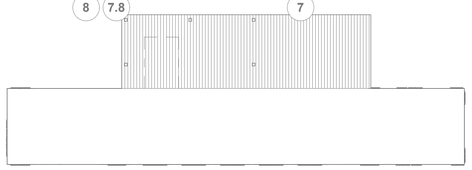

1 P202 **PLUMBING SUPPLY PLAN - SECOND FLOOR**
1/8" = 1'-0"

0' 2' 4' 8' 16' 24'
SCALE : 1/8" = 1'-0"

DRAWING NOTES: (#)

1. PROVIDE 1/2" HW FROM SINK SUPPLY TO SERVE DISHWASHER. ROUTE DISHWASHER DRAIN HIGH AS POSSIBLE IN CABINETRY TO CONNECT TO BARBED FITTING ON SINK DRAIN.
2. SINK SHALL BE PROVIDED WITH INTEGRAL EYE/FACE WASH AND MIXING VALVE. PREFER TO PLUMBING FIXTURE SCHEDULE FOR BASIS OF DESIGN.
3. 1/2" CW AND 1/2" HW DN. TO SERVE WET TABLE ITEM# EQ-027 (SPECIFIED BY OTHERS). PROVIDE ASSE 1001 VACUUM BREAKER MOUNTED ON WALL TO SERVE FAUCET.
4. 1/2" CW FROM SINK SUPPLY ROUTED IN CABINETRY TO SERVE ABOVE COUNTER COFFEE MAKER ITEM# EQ-006. PROVIDE ASSE 1022 BFP, ISOLATION VALVE, AND STUB TO EQUIPMENT. COORDINATE EXACT LOCATION WITH OWNER AND ARCHITECT. ROUTE BFP DRAIN TO DISCHARGE TO NEAREST FLOOR DRAIN VIA AIR GAP.
5. 2" CW AND 1" HW FROM FLOOR BELOW.
6. AREA OPEN TO BELOW.
7. 3/4" HW DN. TO FLOOR BELOW TO TRANSITION TO 3/4" RWH AT FIRST FLOOR CEILING.
8. 3/4" CW AND 3/4" HW VALVED AND CAPPED FOR FUTURE USE.
9. 1/2" CW AND 1/2" HW ROUTED UNDER COUNTER TO SERVE EQ-027.
10. 3/4" CW DN. TO ITEM# EQ-105; PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
11. 3/4" CW AND 3/4" HW DN AND ROUTED EXPOSED TO SERVE WASHING MACHINE ITEM# EQ-060. PROVIDE HOSE END VALVE CONNECTIONS WITH WHEEL HANDLES AND SUPPLY HOSES TO SERVE EACH WASHER. PROVIDE SHOCK ARRESTOR PDI SIZE "A" ON EACH CONNECTION TO EQUIPMENT.
12. 3/4" G UP FROM FLOOR BELOW TO MANIFOLD SERVING DRYER ITEM# EQ-059 AT 165 MBH.
13. 3/4" RHW DN. TO FLOOR BELOW.
14. 3/4" G UP TO DOAS LOCATED ON ROOF. REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION AND SPECIFICATION OF UNIT. DOAS SHOWN DASHED FOR CLARITY.
15. 1-1/4" G FROM FLOOR BELOW.
16. ROUTE 1/2" CW TO SERVE EQ-044 SOAP DISPENSER FROM MOP SINK SUPPLY; PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
17. 3/4" CW TO CEILING MOUNTED HOSE REEL EQ-034; PROVIDE ASSE 1001 VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.

GENERAL NOTES:

A. EXISTING CONDITIONS SHOWN ON THIS DRAWING HAVE BEEN OBTAINED FROM FIELD OBSERVATIONS AND/OR AS-BUILT DRAWINGS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. "EQ-" ITEMS ARE SCHEDULED BY OTHERS. REFER TO EQUIPMENT PROVIDER'S SPECIFICATIONS FOR CONNECTION DETAILS AND REQUIREMENTS.

C. MED GAS, VAC, AND O2 SYSTEM EQUIPMENT SHALL BE PROVIDED BY OTHERS. REFER TO EQUIPMENT VENDOR DRAWINGS FOR SPECIFICATION AND SCHEDULES.

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SECOND FLOOR PLUMBING SUPPLY PLAN

SHEET
P202

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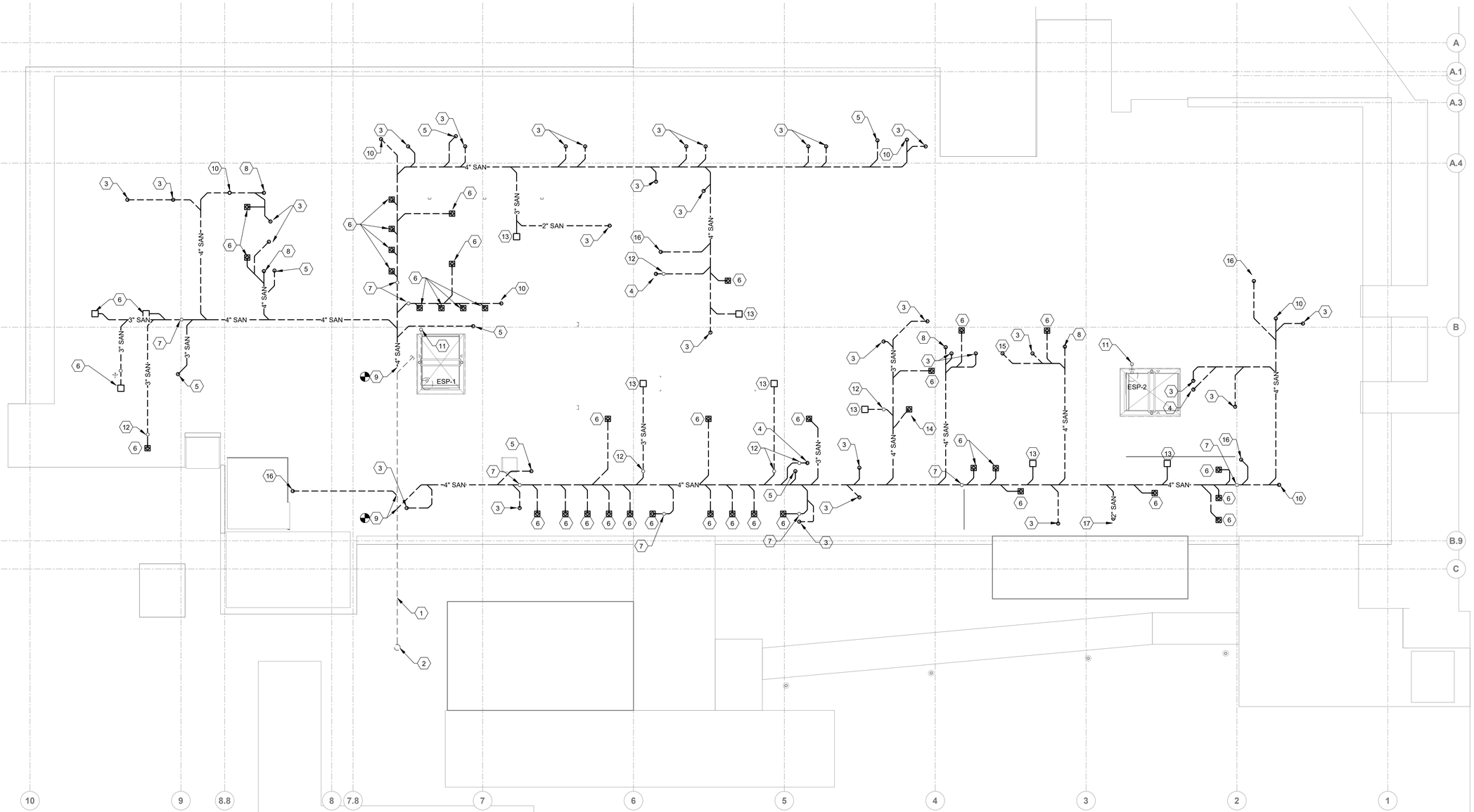

1 P301 **PLUMBING UNDERSLAB DRAINAGE PLAN**
1/8" = 1'-0"

0' 2' 4' 8' 16' 24'

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

DRAWING NOTES: (#)

1. EXISTING TO REMAIN SANITARY BUILDING DRAIN.
2. EXISTING TO REMAIN COTG.
3. 2" SAN UP TO FIXTURE.
4. 3" SAN UP TO MOP SINK.
5. 3" WASTE STACK.
6. 3" SAN UP TO FLOOR DRAIN OR FLOOR SINK.
7. 2" V UP.
8. 4" SAN UP TO WATER CLOSET.
9. CONNECT NEW 4" SAN TO EXISTING BUILDING DRAIN.
10. SAN UP TO FCO.
11. 2" PD UP FROM ELEVATOR SUMP PUMP.
12. 1-1/2" V UP.
13. 3" SAN UP TO FLOOR SINK SERVING INDIRECT DRAIN TO ITEM# EQ-027/EQ-067.
14. 4" SAN UP TO SERVE WASHING MACHINE TRENCH DRAIN.
15. 2" SAN UP TO DRINKING FOUNTAIN.
16. 4" WASTE STACK.
17. 2" SAN UP TO WASHER UTILITY BOX.

GENERAL NOTES:

A. EXISTING CONDITIONS SHOWN ON THIS DRAWING HAVE BEEN OBTAINED FROM FIELD OBSERVATIONS AND/OR AS-BUILT DRAWINGS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. "EQ-" ITEMS ARE SCHEDULED BY OTHERS. REFER TO EQUIPMENT PROVIDER'S SPECIFICATIONS FOR CONNECTION DETAILS AND REQUIREMENTS.

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UNDERSLAB PLUMBING DRAINAGE PLAN

SHEET
P301

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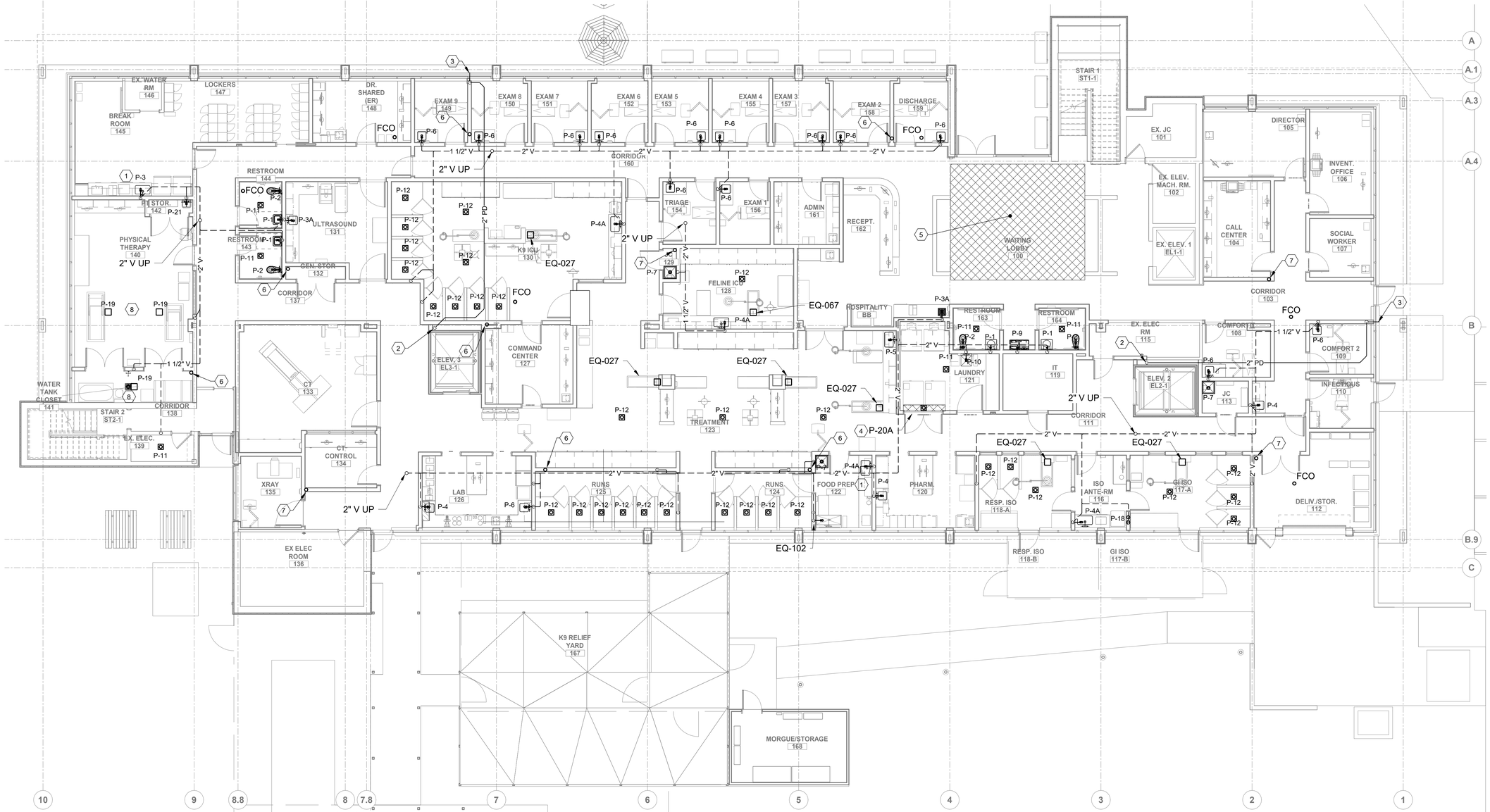

1 P302 **PLUMBING DRAINAGE PLAN - FIRST FLOOR**
1/8" = 1'-0"

0' 2' 4' 8' 16' 24'
SCALE : 1/8" = 1'-0"

DRAWING NOTES: (#)

1. PROVIDE 1/2" HW FROM SINK SUPPLY TO SERVE DISHWASHER. ROUTE DISHWASHER DRAIN HIGH AS POSSIBLE IN CABINETRY TO CONNECT TO BARBED FITTING ON SINK DRAIN.
2. 2" PD FROM ELEVATOR SUMP PIT AND ROUTED ABOVE CEILING.
3. 2" PD DN. IN WALL AND DISCHARGE TO EXTERIOR SPLASH BLOCK ON GRADE.
4. TRENCH DRAIN INSTALLED IN SLAB TO SERVE COMMERCIAL GRADE WASHING MACHINES.
5. NO ABOVE GROUND PIPING IN THIS AREA: OPEN TO ABOVE.
6. 3" WASTE STACK TO SERVE FLOOR ABOVE.
7. 4" WASTE STACK TO SERVE FLOOR ABOVE.
8. REFER TO HUDSON EQUIPMENT DRAWINGS FOR PIPING REQUIREMENTS AND SCHEMATICS SERVING THEREAPY POOLS AND ASSOCIATED PUMP/FILTRATION SYSTEMS.

GENERAL NOTES:

A. EXISTING CONDITIONS SHOWN ON THIS DRAWING HAVE BEEN OBTAINED FROM FIELD OBSERVATIONS AND/OR AS-BUILT DRAWINGS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. "EQ-" ITEMS ARE SCHEDULED BY OTHERS. REFER TO EQUIPMENT PROVIDER'S SPECIFICATIONS FOR CONNECTION DETAILS AND REQUIREMENTS.

C. ALL EXISTING EXPOSED PVC STORM PIPING SHALL BE REPLACED IN KIND WITH CAST IRON. PROVIDE NEW 1" THICK INSULATION ON ALL EXPOSED HORIZONTAL STORM PIPING.

D. PROVIDE P-19 FLOOR SINK FOR ALL WET TABLE (EQ-027 AND EQ-067) DRAINS. WET TABLE DRAIN SHALL DISCHARGE TO FLOOR SINK VIA AIR GAP.

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FIRST FLOOR PLUMBING DRAINAGE PLAN

SHEET
P302

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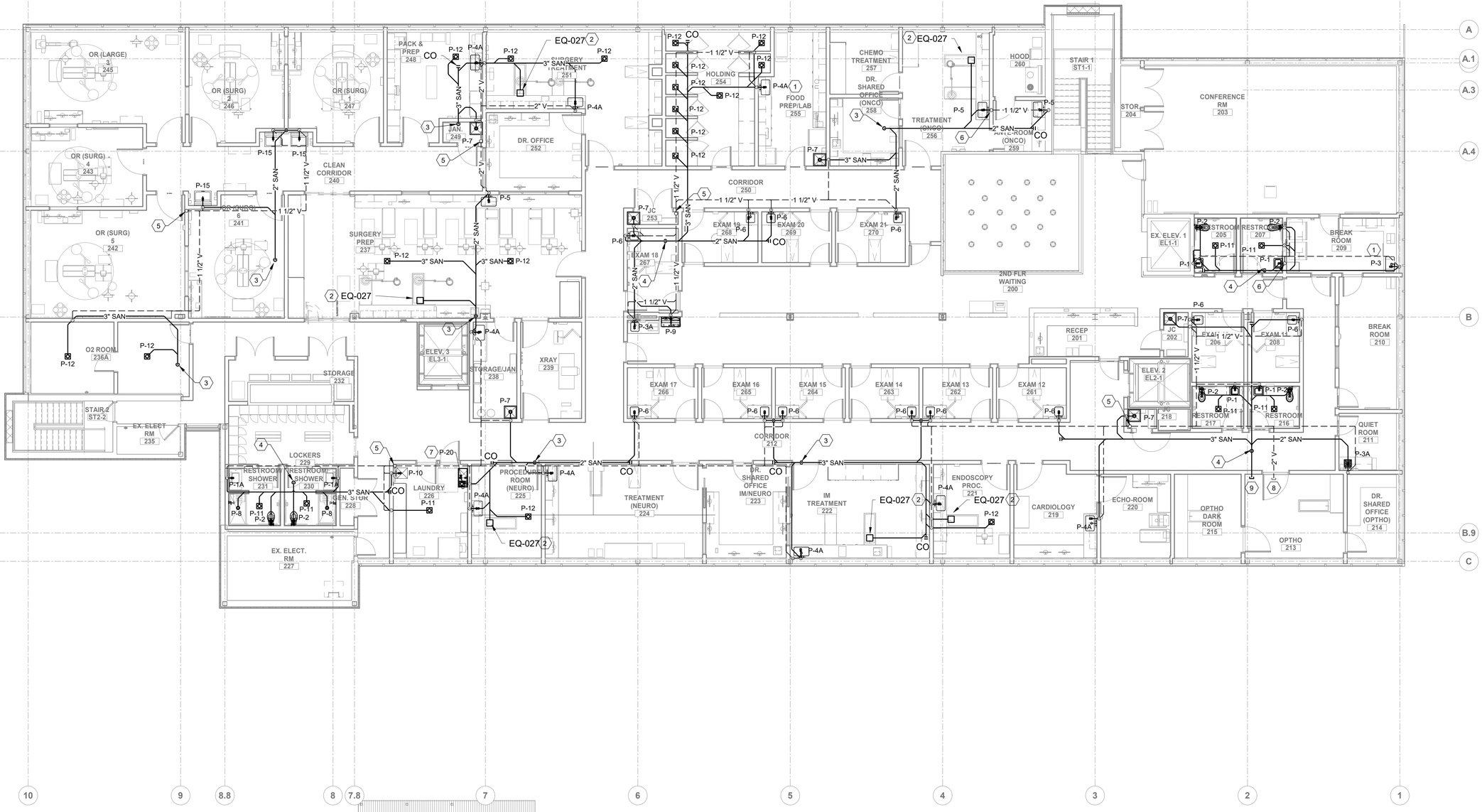

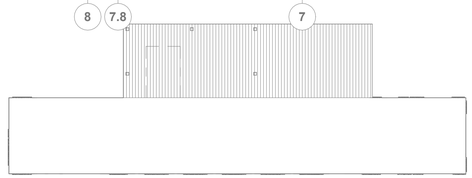

1 P303 PLUMBING DRAINAGE PLAN - SECOND FLOOR

1/8" = 1'-0"

0' 2' 4' 8' 16' 24'

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

DRAWING NOTES: (#)

1. PROVIDE 1/2" HW FROM SINK SUPPLY TO SERVE DISHWASHER. ROUTE DISHWASHER DRAIN HIGH AS POSSIBLE IN CABINETRY TO CONNECT TO BARBED FITTING ON SINK DRAIN.
2. PROVIDE P-19 FLOOR SINK FOR ALL WET TABLE (EQ-027 AND EQ-067) DRAINS. WET TABLE DRAIN SHALL DISCHARGE TO FLOOR SINK VIA AIR GAP.
3. 3" WASTE STACK AND BRANCH IN CEILING OF FIRST FLOOR.
4. 4" WASTE STACK AND BRANCH IN CEILING OF FIRST FLOOR.
5. 2" V FROM FLOOR BELOW TO TRANISITION TO 3" VTR.
6. 2" V UP TO 3" VTR.
7. ABOVE FLOOR TRENCH DRAIN TO SERVE COMMERCIAL GRADE WASHING MACHINE. COORDINATE ELEVATION OF WASHER DISCHARGE WITH INLET OPENING OF TRENCH DRAIN.
8. 2" V CAPPED FOR FUTURE USE.
9. 4" SAN CAPPED FOR FUTURE USE.

GENERAL NOTES:

A. EXISTING CONDITIONS SHOWN ON THIS DRAWING HAVE BEEN OBTAINED FROM FIELD OBSERVATIONS AND/OR AS-BUILT DRAWINGS AND MAY NOT INDICATE ACTUAL EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE ACTUAL EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. "EQ-" ITEMS ARE SCHEDULED BY OTHERS. REFER TO EQUIPMENT PROVIDER'S SPECIFICATIONS FOR CONNECTION DETAILS AND REQUIREMENTS.

C. ALL EXISTING EXPOSED PVC STORM PIPING SHALL BE REPLACED IN KIND WITH CAST IRON. PROVIDE NEW 1" THICK INSULATION ON ALL EXPOSED HORIZONTAL STORM PIPING.

D. PROVIDE P-19 FLOOR SINK FOR ALL WET TABLE (EQ-027 AND EQ-067) DRAINS. WET TABLE DRAIN SHALL DISCHARGE TO FLOOR SINK VIA AIR GAP.

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09/20/2023

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SECOND FLOOR PLUMBING DRAINAGE PLAN

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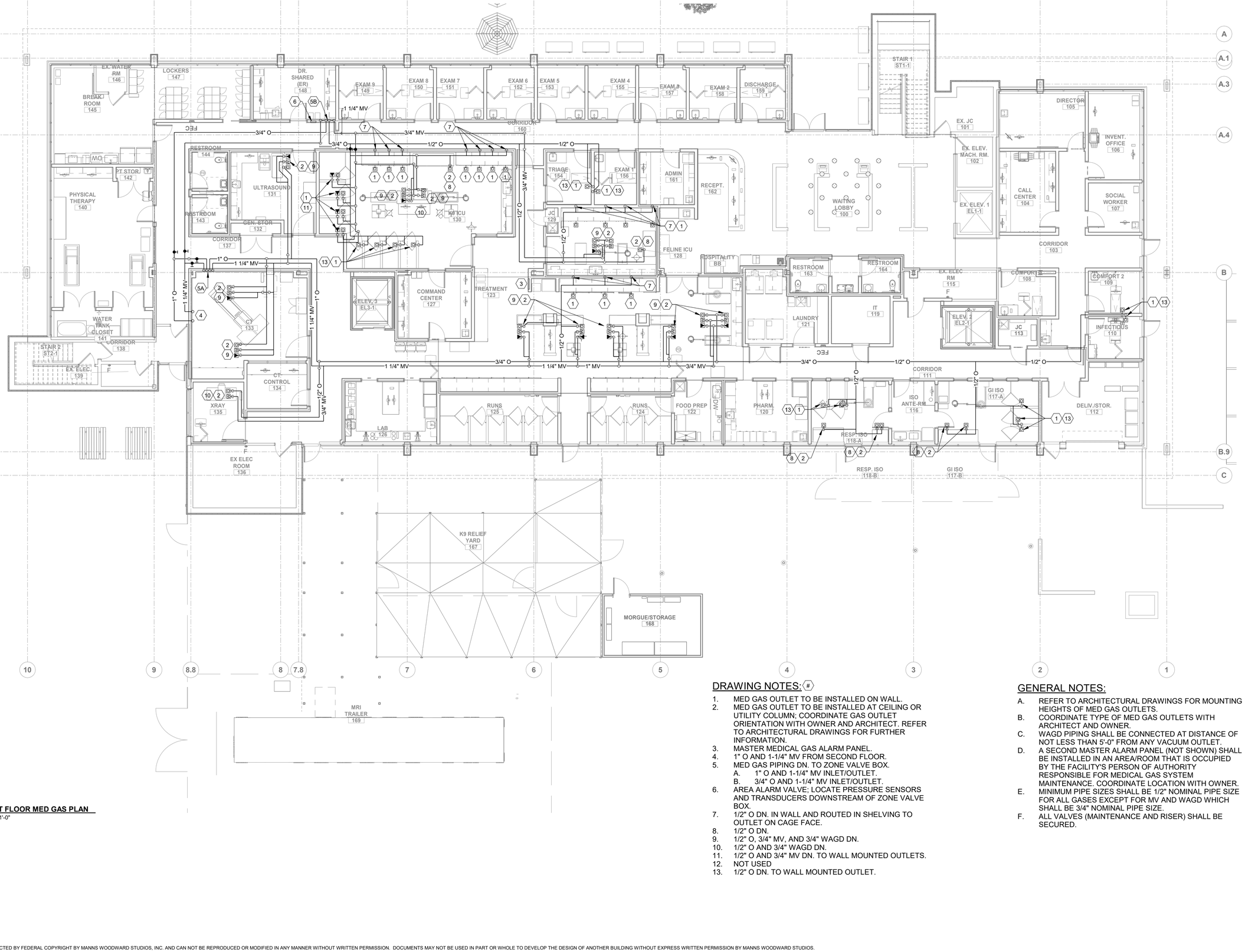

1 P401 **FIRST FLOOR MED GAS PLAN**
1/8" = 1'-0"

DRAWING NOTES: (#)

1. MED GAS OUTLET TO BE INSTALLED ON WALL.
2. MED GAS OUTLET TO BE INSTALLED AT CEILING OR UTILITY COLUMN; COORDINATE GAS OUTLET ORIENTATION WITH OWNER AND ARCHITECT. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
3. MASTER MEDICAL GAS ALARM PANEL.
4. 1" O AND 1-1/4" MV FROM SECOND FLOOR.
5. MED GAS PIPING DN. TO ZONE VALVE BOX.
   A. 1" O AND 1-1/4" MV INLET/OUTLET.
   B. 3/4" O AND 1-1/4" MV INLET/OUTLET.
6. AREA ALARM VALVE; LOCATE PRESSURE SENSORS AND TRANSDUCERS DOWNSTREAM OF ZONE VALVE BOX.
7. 1/2" O DN. IN WALL AND ROUTED IN SHELVING TO OUTLET ON CAGE FACE.
8. 1/2" O DN.
9. 1/2" O, 3/4" MV, AND 3/4" WAGD DN.
10. 1/2" O AND 3/4" WAGD DN.
11. 1/2" O AND 3/4" MV DN. TO WALL MOUNTED OUTLETS.
12. NOT USED
13. 1/2" O DN. TO WALL MOUNTED OUTLET.

GENERAL NOTES:

A. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF MED GAS OUTLETS.
B. COORDINATE TYPE OF MED GAS OUTLETS WITH ARCHITECT AND OWNER.
C. WAGD PIPING SHALL BE CONNECTED AT DISTANCE OF NOT LESS THAN 5'-0" FROM ANY VACUUM OUTLET.
D. A SECOND MASTER ALARM PANEL (NOT SHOWN) SHALL BE INSTALLED IN AN AREA/ROOM THAT IS OCCUPIED BY THE FACILITY'S PERSON OF AUTHORITY RESPONSIBLE FOR MEDICAL GAS SYSTEM MAINTENANCE. COORDINATE LOCATION WITH OWNER.
E. MINIMUM PIPE SIZES SHALL BE 1/2" NOMINAL PIPE SIZE FOR ALL GASES EXCEPT FOR MV AND WAGD WHICH SHALL BE 3/4" NOMINAL PIPE SIZE.
F. ALL VALVES (MAINTENANCE AND RISER) SHALL BE SECURED.

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WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

FIRST FLOOR MED GAS PLAN

SHEET
P401

ASC PROJECT NUMBER: 21-000

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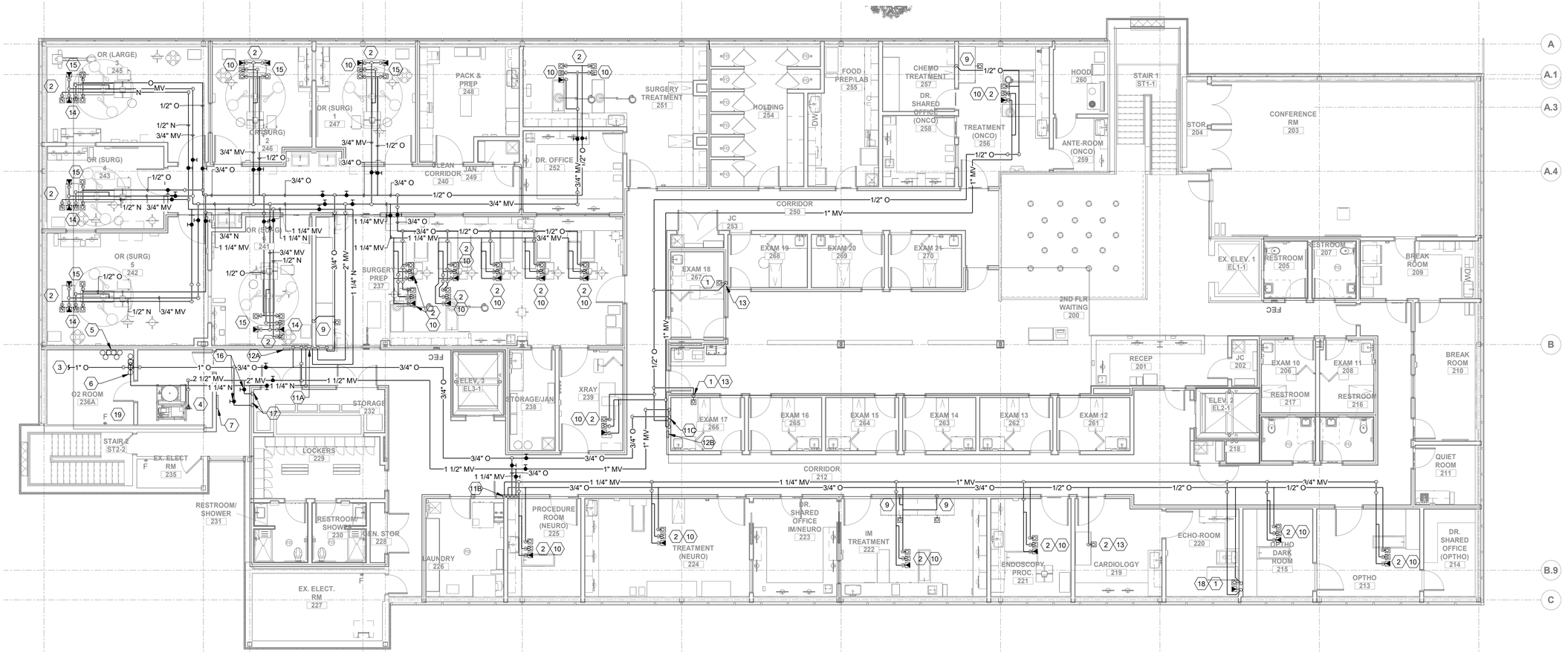

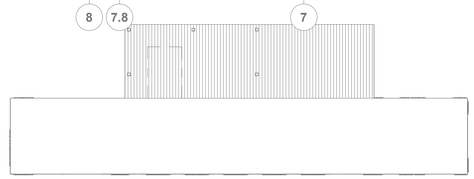

1 / P402 **SECOND FLOOR MED GAS PLAN**
1/8" = 1'-0"

DRAWING NOTES: (#)

1. MED GAS OUTLET TO BE INSTALLED ON WALL.
2. MED GAS OUTLET TO BE INSTALLED AT CEILING OR UTILITY COLUMN; COORDINATE GAS OUTLET ORIENTATION WITH OWNER AND ARCHITECT. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
3. 1" O (55 PSI SOURCE PRESSURE) TO OXYGEN GENERATION SYSTEM; SYSTEM BY OTHERS. COORDINATE CONNECTION WITH SYSTEM VENDOR.
4. MEDICAL VACUUM COMPRESSOR SYSTEM.
5. OXYGEN TANK MANIFOLD (BACK-UP FOR OXYGEN GENERATOR PLANT) AND H-CYLINDER TANKS TO BE CONNECTED TO OXYGEN GENERATOR EMERGENCY SWITCH OVER SYSTEM. REFER TO SYSTEM VENDOR'S DRAWINGS FOR CONNECTION REQUIREMENTS.
6. NITROGEN TANK MANIFOLD.
7. LOCAL MEDICAL GAS ALARM PANEL.
8. 1/2" O DN.
9. 1/2" O DN. IN WALL AND ROUTED IN SHELVING TO OUTLET ON CAGE FACE.
10. 1/2" O, 3/4" MV, AND 3/4" WAGD DN.
11. MED GAS PIPING DN. TO ZONE VALVE BOX.
    - A. 1-1/4" N, 3/4" O, AND 2" MV INLET/OUTLET.
    - B. 3/4" O AND 1-1/4" MV INLET/OUTLET.
    - C. 3/4" O AND 1" MV INLET/OUTLET
12. AREA ALARM VALVE.
    - A. LOCATE PRESSURE SENSORS AND TRANSDUCERS ON SOURCE SIDE OF ZONE VALVE BOX.
    - B. LOCATE PRESSURE SENSORS AND TRANSDUCERS DOWNSTREAM OF ZONE VALVE BOX.
13. 1/2" O DN.
14. 1/2" O, 3/4" MV, 3/4" WAGD, AND 1/2" N DN.
15. 1/2" O AND 3/4" MV DN.
16. SECURED RISER VALVE.
17. 1" O AND 1-1/4" MV DN. TO FIRST FLOOR CEILING.
18. 1/2" O AND 3/4" MV DN. TO WALL MOUNTED OUTLETS.
19. APPROXIMATE LOCATION OF "E" TANK STOARGE RACK.

GENERAL NOTES:

A. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF MED GAS OUTLETS.
B. COORDINATE TYPE OF MED GAS OUTLETS AND COLUMN ORIENTATION WITH ARCHITECT AND OWNER.
C. WAGD PIPING SHALL BE CONNECTED AT DISTANCE OF NOT LESS THAN 5'-0" FROM ANY VACUUM OUTLET.
D. MINIMUM PIPE SIZES SHALL BE 1/2" NOMINAL PIPE SIZE FOR ALL GASES EXCEPT FOR MV AND WAGD WHICH SHALL BE 3/4" NOMINAL PIPE SIZE.
E. ALL VALVES (MAINTENANCE AND RISER) SHALL BE SECURED.

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RENOVATION
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SECOND FLOOR MED GAS PLAN

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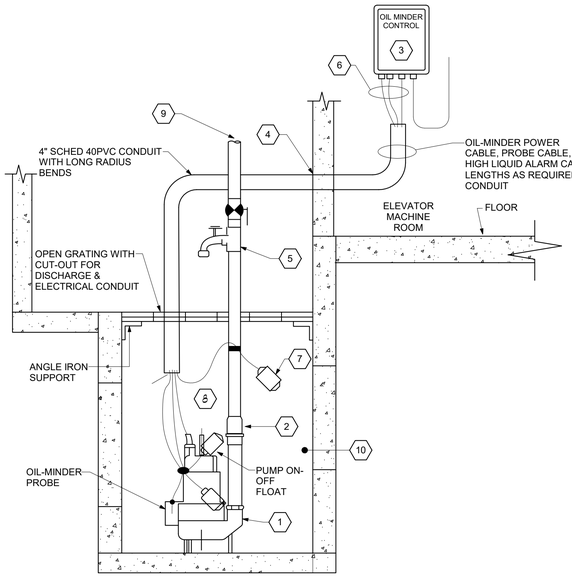
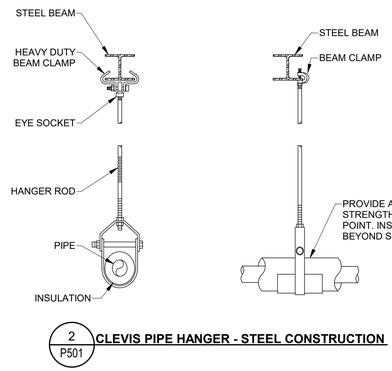


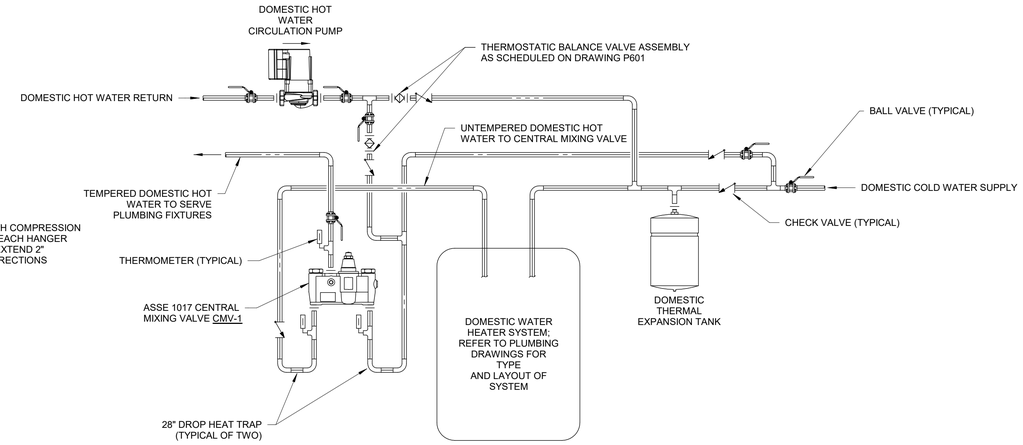
1 P501 **ESP-1 AND ESP-2 ELEVATOR SUMP & PUMP DETAIL**

DETAIL NOTES:

1. STANCOR OILMINDER ELEVATOR SUMP PUMP.
2. STANCOR CHECK VALVE
3. STANCOR OIL MINDER 208V, 3 PHASE CONTROL SYSTEM WITH OPTIONAL BUILT-IN AUDIBLE AND VISUAL ALARM WHEN PUMP DOES NOT RUN DUE TO OIL IN PIT OR HIGH LIQUID CONDITION. PROVIDE SIILENCING BUTTON FOR AUDIBLE ALARM BUILT INTO PANEL. PANEL SHALL HAVE ADDITIONAL CONTACT FOR A REMOTE ALARM LOCATION.
4. WATERTIGHT SLEEVE
5. PROVIDE BYPASS SHUTOFF VALVE AND HOSE BIB, TO TEMPORARILY PUMP LIQUIDS. HOSE BIB TO BE NORMALLY CLOSED, AND VALVE TO BE NORMALLY OPEN.
6. OIL MINDER POWER CABLE, PROBE, AND HIGH LIQUID ALARM CABLE
7. HIGH LIQUID ALARM FLOAT WITH CLAMP DEVICE TO MOUNT TO PUMP DISCHARGE PIPING
8. PROVIDE A MINIMUM OF 5 FT. EXTRA OF EACH CABLE (SLACK) ROLLED AND CLAMPED TO THE DISCHARGE PIPE TO ALLOW FOR THE REMOVAL OF THE PUMP FROM THE PIT.
9. SEE PLANS FOR CONTINUATION OF DISCHARGE PIPING
10. 24"Ø X 24" DEEP CAST IN PLACE PIT

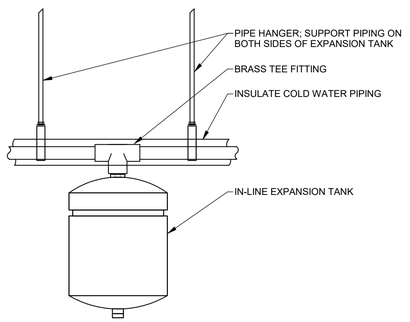


2 P501 **CLEVIS PIPE HANGER - STEEL CONSTRUCTION**



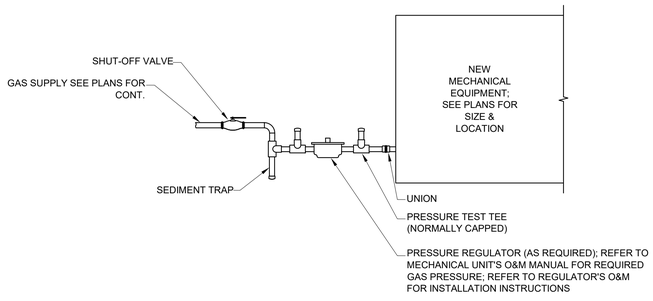
3 P501 **CMV-1 CENTRAL MIXING VALVE PIPING DETAIL**

NOTES:
1. REFER TO PLUMBING DRAWINGS FOR EQUIPMENT SPECIFICATIONS.
2. REFER TO PLUMBING RISERS FOR PIPING SIZES.
3. REFER TO EQUIPMENT MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FURTHER REQUIREMENTS.

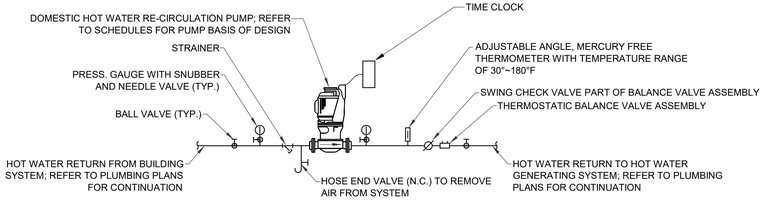


5 P501 **IN-LINE EXPANSION TANK SUPPORT DETAIL**

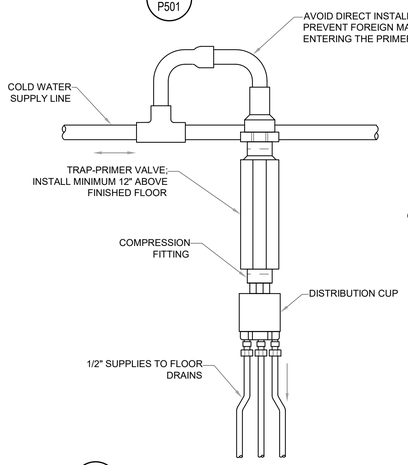
HOLDRITE MOUNTING BRACKETS "QS" SERIES MAY BE USED IN LIEU OF HANGERS.



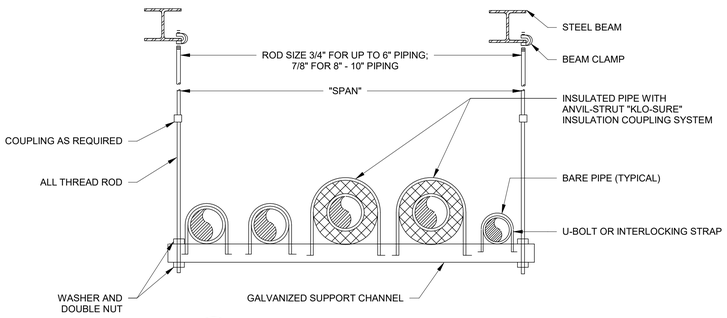
6 P501 **MECHANICAL EQUIPMENT CONNECTION DETAIL**



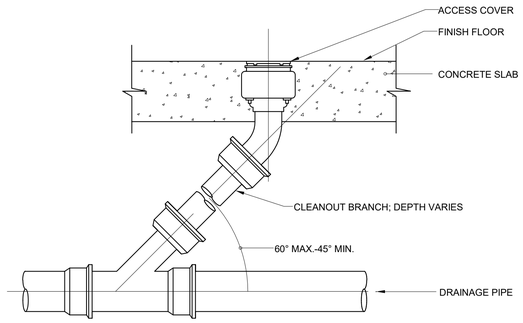
4 P501 **DOMESTIC HOT WATER RE-CIRCULATION PUMP PIPING DETAIL**



7 P501 **TRAP PRIMER PIPING DETAIL W/ DISTRIBUTION CUP**

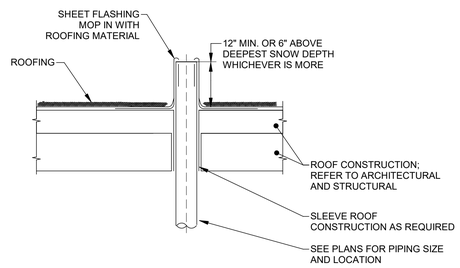


8 P501 **TRAPEZE PIPE SUPPORT DETAIL**



9 P501 **TYPICAL FLOOR CLEAN OUT DETAIL**

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.



10 P501 **FLAT ROOF PENETRATION DETAIL**

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PLUMBING DETAILS

SHEET
P501

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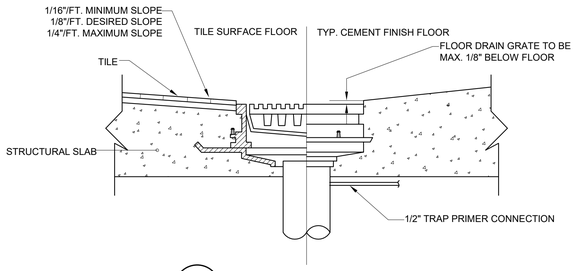
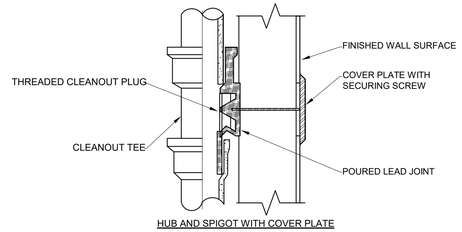
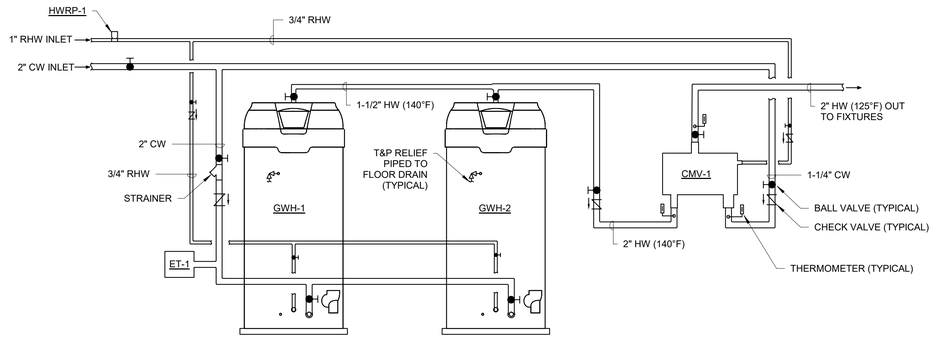


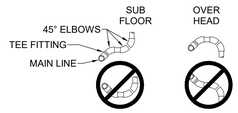
1 P502 **TYPICAL FLOOR DRAIN DETAIL**



2 P502 **WALL CLEANOUTS DETAIL**

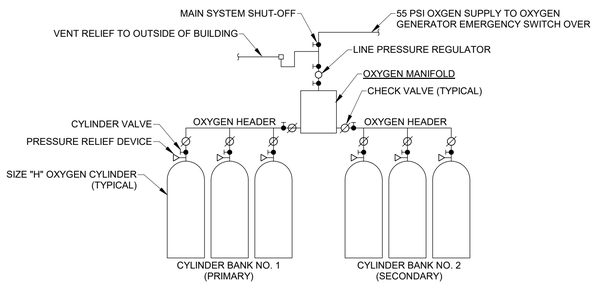


3 P502 **HOT WATER FLOW DIAGRAM**

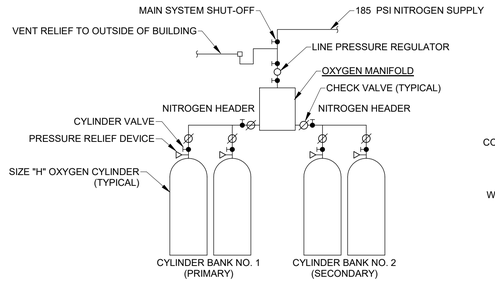


4 P502 **AIR & VACUUM BRANCH LINE CONFIGURATIONS**

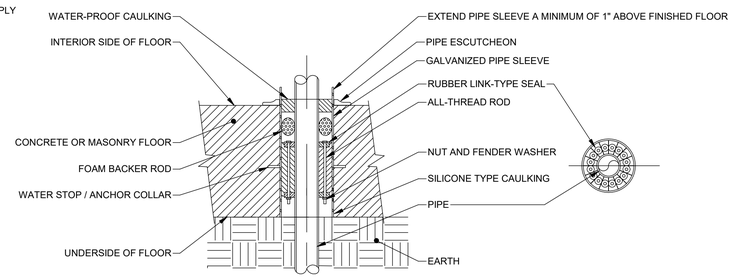
NOTES:
1. TRUNK LINE(S): VACUUM TRUNK LINE(S) TO BE SUPPORTED EVERY 6'-0" TO PREVENT SAG AND SLOPED A MINIMUM OF 1/4" PER 10'-0" TOWARD THE VACUUM PUMP.
2. BRANCH LINE(S): BRANCH LINES ARE TO BE "SWEEPING" 90 DEGREE TURNS TO AVOID VACUUM LOSS. A "Y" TEE FITTING SHOULD BE USED WHEN AVAILABLE TO BRANCH TWO LINES TOGETHER.
SPECIAL NOTE: IF VACUUM LINES ENCROACH ON EITHER A WALL OR COLUMN FOOTING, USE 45 DEGREE ELBOWS TO PIPE AROUND FOOTING SO PIPE REACHES PROPER LOCATION.



5 P502 **OXYGEN CYLINDER SUPPLY MANIFOLD DETAIL**



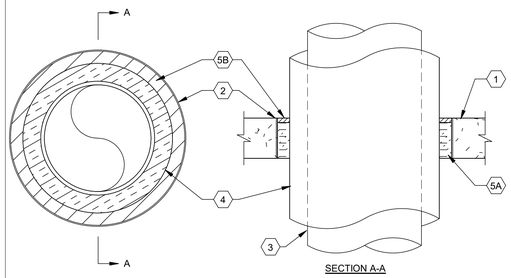
6 P502 **NITROGEN CYLINDER SUPPLY MANIFOLD DETAIL**



7 P502 **UNDERGROUND PIPING FLOOR SLEEVE DETAIL**

SYSTEM NO. C-AJ-5091

F RATING - 2 HR
T RATING - 1 HR
L RATING AT AMBIENT - 4 CFM/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT

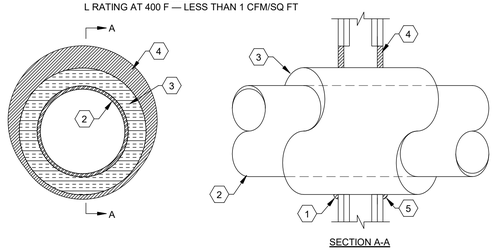


DETAIL NOTES: (#)
1. FLOOR OR WALL ASSEMBLY — MIN 4-1/2 IN. THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 19-1/2 IN.
2. METALLIC SLEEVE — NOM 20 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
3. THROUGH PENETRANTS — ONE METALLIC PIPE OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:
   A. STEEL PIPE — NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE — NOM 12 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. COPPER PIPE — NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
   D. COPPER TUBING — NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
4. PIPE COVERING — NOM 2 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL-SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED, SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT. THE ANNULAR SPACE BETWEEN THE INSULATED PIPE AND THE EDGE OF THE PERIPHERY OF THE OPENING SHALL BE MIN 1/2 IN. TO A MAX 2-1/4 IN.
   A. PIPE COVERING — (NOT SHOWN) — AS AN ALTERNATE TO ITEM 4, MAX 2 IN. THICK CYLINDRICAL CALCIUM SILICATE (MIN 14 PCF) UNITS SIZED TO THE OUTSIDE DIAM OF THE PIPE OR TUBE MAY BE USED. PIPE INSULATION SECURED WITH STAINLESS STEEL BANDS OR MIN 8 AWG STAINLESS STEEL WIRE SPACED MAX 12 IN. OC. THE ANNULAR SPACE SHALL BE MIN 1/2 IN. TO MAX 2-1/4 IN.
5. FIRESTOP SYSTEM — THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   A. PACKING MATERIAL — MIN 4 IN. THICKNESS OF MIN 4 PCF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
   B. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 1/2 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.
6. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE SEALANT
*BEARING THE UL CLASSIFICATION MARK

8 P502 **PIPE PENETRATION DETAIL - CONCRETE**

SYSTEM NO. W-L-5029

F RATINGS — 1 AND 2 HR (SEE ITEM 1)
T RATINGS — 1/2, 3/4, 1, 1-1/2 AND 1-3/4 HR (SEE ITEM 3)
L RATING AT AMBIENT — 4 CFM/SQ FT
L RATING AT 400 F — LESS THAN 1 CFM/SQ FT



WALL ASSEMBLY RATING HR	THROUGH PENETRANT		PIPE COVERING THKNS IN.	ANNULAR SPACE		T RATING HR
	TYPE +	MAX DIAM IN.		MIN IN.	MAX IN.	
1	A	4	1	0	1-1/2	1/2
1	B or C	2	1 or 1-1/2	0	1-1/2	1/2
1	A	4	1-1/2	0	1-1/2	1
1	A	12	2	0	1-7/8	3/4
1	B or C	6	2	0	1-7/8	1
2	A	4	1	0	1-1/2	1
2	B or C	4	1 or 1-1/2	0	1-1/2	1
2	B or C	6	2	0	1-7/8	1
2	A	4	1-1/2	0	1-1/2	1-3/4
2	A	12	2	0	1-7/8	1-1/2
2	B or C	6	2	0	1-7/8	1

+INDICATES PENETRANT TYPE AS ITEMIZED IN ITEM 2.

DETAIL NOTES: (#)
1. WALL ASSEMBLY — THE 1 OR 2 HR FIRE-RATED GYPSUM BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS — WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. LUMBER SPACED 16 IN. OC. STEEL STUDS TO BE MIN 2-1/2 IN. WIDE AND SPACED MAX 24 IN. OC.
   B. GYPSUM BOARD* — 5/8 IN. THICK, 4 FT WIDE, WITH SQUARE OR TAPERED EDGES. THE GYPSUM BOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX DIAM OF OPENING IS 18-5/8 IN. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.
2. THROUGH PENETRANTS — ONE METALLIC PIPE OR TUBING TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. PIPE OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR TUBING MAY BE USED:
   A. STEEL PIPE — NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
   B. COPPER TUBING — NOM 6 IN. DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
   C. IRON PIPE — NOM 12 IN. DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   D. COPPER PIPE — NOM 6 IN. DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
3. PIPE COVERING* — NOM 1, 1-1/2 OR 2 IN. THICK HOLLOW CYLINDRICAL HEAVY DENSITY (MIN 3.5 PCF) GLASS FIBER UNITS JACKETED ON THE OUTSIDE WITH AN ALL SERVICE JACKET. LONGITUDINAL JOINTS SEALED WITH METAL FASTENERS OR FACTORY-APPLIED SELF-SEALING LAP TAPE. TRANSVERSE JOINTS SECURED WITH METAL FASTENERS OR WITH BUTT TAPE SUPPLIED WITH THE PRODUCT.
   A. PIPE COVERING* — (NOT SHOWN) — AS AN ALTERNATE TO ITEM 3, MAX 2 IN. THICK CYLINDRICAL CALCIUM SILICATE (MIN 14 PCF) UNITS SIZED TO THE OUTSIDE DIAM OF THE PIPE OR TUBE MAY BE USED. PIPE INSULATION SECURED WITH STAINLESS STEEL BANDS OR MIN 8 AWG STAINLESS STEEL WIRE SPACED MAX 12 IN. OC. WHEN THE ALTERNATE PIPE COVERING IS USED, THE T RATING SHALL BE DETERMINED FROM THE TABLE ABOVE.
4. FILL, VOID OR CAVITY MATERIAL* — SEALANT — MIN 5/8 IN. THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH BOTH SURFACES OF WALL . AT THE POINT CONTACT LOCATION BETWEEN PIPE COVERING AND GYPSUM BOARD, A MIN 1/2 IN. DIAM BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE PIPE COVERING/GYPSUM BOARD INTERFACE ON BOTH SURFACES OF WALL.
5. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE SEALANT.
*BEARING THE UL CLASSIFICATION MARK

9 P502 **PIPE PENETRATION DETAIL - DRYWALL**

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GAS WATER HEATER SCHEDULE (BASIS OF DESIGN)

DESIGNATION	DESCRIPTION	MANUFACTURER / MODEL#	LOCATION	STORAGE VOLUME	GPH RECOVERY RATE @ 100°F RISE	GAS INPUT (MBH)	VOLTAGE	EFFICIENCY	FLUE SIZE AND TYPE	REMARKS
GWH-1 & GWH-2	GAS FIRED CONDENSING WATER HEATER; STORAGE TEMP SHALL BE SET TO 140°F MINIMUM	STATE / SUF119-300NE(A); ASME RATED	AS NOTED ON PLANS	119	349	300 EACH	120V / 1Ø	96% MAX.	REFER TO MECH. DRAWINGS	1, 2, 3, 4, 5, 6, 7

REMARKS:
1. PROVIDE EXPANSION TANK WITH WATER HEATER INSTALLATION. REFER TO EXPANSION TANK SCHEDULE ON THIS DRAWING.
2. PROVIDE HEAT TRAPS ON WATER HEATER INLET AND OUTLET PIPING.
3. DISCONNECTS BY PLUMBING CONTRACTOR; WIRED BY ELECTRICAL CONTRACTOR.
4. PROVIDE CONDENSATE NEUTRALIZATION KIT WITH WATER HEATER INSTALLATION. DISCHARGE TO NEAREST FLOOR DRAIN.
5. PROVIDE CONCENTRIC VENT KIT OF A TYPE APPROVED MY WWATER HEATER MANUFACTURER.
6. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FURTHER INSTALLATION REQUIREMENTS.
7. PROVIDE METAL DRAIN PAN WITH WATER HEATER INSTALLATION. DRAIN

MIXING VALVE SCHEDULE

DESIGNATION	DESCRIPTION	LOCATION	MANUFACTUER / MODEL #	OPTIONS	LOAD RANGE
CMV-1	CENTRAL MIXING VALVE CONFORMING TO ASSE 1017; 140°F INLET TEMPERED TO 125°F	AT WATER HEATER	BRADLEY / S59-3130 (HL130) - R/S/B/P/O/O	WALL MOUNTED BRACKET, STANDARD THERMOSTATS, BRONZE FINISH, PRE-PIPED INLET AND OUTLET ASSEMBLY., AND DIAL THERMOMETER; PROVIDE CHECK VALVES ON INLET PIPING	58 GPM AT 10 PSI DROP; OUTLET TEMPERATURE SHALL BE SET TO 125°F
TMV-1	POINT OF USE MIXING VALVE; VALVE SHALL CONFORM TO ASSE 1070	AT ALL LAVATORIES	WATTS / LFMMV	INTEGRAL STRAINERS AND CHECK VALVESON INLET PIPING	0.5 GPM @ 0.8 PSI DROP; OUTLET TEMPERATURE SHALL BE SET TO 105°F MIN. TO 110°F MAX.

EXPANSION TANK SCHEDULE (BASIS OF DESIGN)

DESIGNATION	DESCRIPTION	MANUFACTURER / MODEL #	LOCATION	TANK SIZE	REMARKS
ET-1	DOMESTIC HOT WATER EXPANSION TANK	AMTROL / ST-20V-C	AS NOTED ON PLANS	8 GALLON	1, 2

REMARKS:
1. MAXIMUM WORKING PRESSURE 150 PSIG.
2. MAXIMUM SYSTEM TEMPERATURE 140 DEGREES F.

PUMP SCHEDULE (BASIS OF DESIGN)

DESIGNATION	DESCRIPTION	MANUFACTURER / MODEL #	LOCATION	DESIGN FLOW (GPM)	DESIGN HEAD (FT.)	HORSE POWER	VOLTS / PHASE	REMARKS
HWRP-1	DOMESTIC 125°F HOT WATER RE-CIRCULATION PUMP	BELL & GOSETT / PL30B	AS NOTED ON PLANS	3	12	1/12	120V/1Ø	1, 2, 3

REMARKS:
1. PROVIDE NSI TORK INDUSTRIES TIMECLOCK MODEL# E101B WITH PUMP INSTALLATION. PUMP OPERATION SHALL BE INTERLOCKED WITH TIMECLOCK. TIME CLOCK SHALL BE PROGRAMMED TO FACILITY'S HOURS OF OPERATION.
2. PROVIDE HONEYWELL AQUASTAT MODEL# L4006B WITH PUMP INSTALLATION. PUMP OPERATION SHALL BE INTERLOCKED WITH AQUASTAT. AQUASTAT SET TEMP SHALL BE SET TO 125°F.
3. PROVIDE FLANGED CONNECTIONS ON INLET AND OUTLET OF PUMP.

SHOCK ARRESTOR SCHEDULE

DESG.	W.S.F.U.'S	CONN. SIZE	MODEL NO. (BASIS OF DESIGN)
A	1 TO 11	1/2"	500A
B	12 TO 32	3/4"	750B
C	33 TO 60	1"	1000C
D	61 TO 113	1"	1250D

NOTES:
1. W.S.F.U. COUNT BASED UPON PLUMBING DRAINAGE INSTITUTE (PDI) STANDARD PDI-WH 201.
2. MODEL NUMBERS BASED ON PRECISION PLUMBING PRODUCTS PISTON TYPE ARRESTORS.
3. NOT ALL MODEL #'S LISTED ARE USED ON PROJECT. REFER TO FLOOR PLANS FOR LOCATIONS AND SIZES USED.

TRAP PRIMER VALVE SCHEDULE

DESG.	MANUFACTURER / MODEL #	TYPE	REMARKS
TP-1	PRECISION PLUMBING PRODUCTS / P2-500	PRESSURE ACTUATED	1, 2
TP-2	PRECISION PLUMBING PRODUCTS / P1-500	PRESSURE ACTUATED	1, 2
TP-3	PRECISION PLUMBING PRODUCTS / MP-500	ELECTRONIC; 120V/1Ø	1, 2, 3

NOTES:
1. NOT ALL MODEL #'S LISTED ARE USED ON PROJECT. REFER TO FLOOR PLANS FOR LOCATIONS AND SIZES USED.
2. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PROVIDE DISTRIBUTION UNIT WITH VALVE TO SERVE MULTIPLE FLOOR DRAINS AS REQUIRED.

MEDICAL VACUUM COMPRESSOR SYSTEM (BASIS OF DESIGN):

AMICO MODEL# V-CCD-D-200P-SS-N-090-MS MEDICAL VACUUM SYSTEM:
- DUPLEX DRY CONTACTLESS CLAW VACUUM SYSTEM
- SKID MOUNTED STACKING CONFIGURATION
- 200 GALLON PAINTED VERTICAL ASME AIR RECEIVER
- DUPLEX 5" PREMIUM HMI TOUCH SCREEN CONTROL PANEL WITH CIRCUIT BREAKER DISCONNECTS
- ETHERNET CONNECTIVITY, ALARM LOGGING & ALARM EMAIL CAPABILITIES
- 9 HP
- PUMP CAPACITY 77 SCFM AT 19 IN HG
- SYSTEM CAPACITY 77 SCFM AT 19 IN HG AS PER NFPA
- FILTRATION SYSTEM SHALL BE PROVIDED BY THE MANUFACTURER; FILTRATION SHALL BE IN COMPLIANCE WITH 2018 NFPA 99

OXYGEN MANIFOLD AND HEADER (BASIS OF DESIGN):

AMICO MANIFOLD MODEL# M4D-DL-HH-U-OXY WITH M2-HBXC-06U-OXY HEADER:
- SIX (6) "H" SIZED TANKS ORIENTED IN A STAGGERED ARRAY; 3 TANKS SHALL BE PRIMARY WITH 3 TANK SECONDARY
- PROVIDE AMICO WALL BRACKET MODEL# M-X-HB-WLBRKIT WITH HEADER
- SYSTEM OUTLET PRESSURE: 55 PSI
- MANIFOLD SHALL BE CONNECTED TO OXYGEN GENERATION SYSTEM'S EMERGENCY SWITCH OVER CONNECTION; GENERATION SYSTEM TO BE PROVIDED BY OTHERS. REFER TO GENERATION SYSTEM'S VENDOR DOCUMENTATION FOR CONNECTION REQUIREMENTS.

NITROGEN MANIFOLD AND HEADER (BASIS OF DESIGN):

AMICO MANIFOLD MODEL# M4D-DL-HH-U-NIT WITH M2-HBXC-04U-NIT HEADER:
- FOUR (4) "H" SIZED TANKS ORIENTED IN A STAGGERED ARRAY; 2 TANKS SHALL BE PRIMARY WITH 2 TANK SECONDARY
- PROVIDE AMICO WALL BRACKET MODEL# M-X-HB-WLBRKIT WITH HEADER
- SYSTEM OUTLET PRESSURE: 185 PSI

DOMESTIC AND STORM PIPING INSULATION SCHEDULE

SYSTEM OR SERVICE	FLUID TEMPERATURE RANGE (DEG F)	INSULATION TYPE	INSULATION THICKNESS (INCHES)			
			PIPE SIZE (INCHES)			
			1/2" TO 1-1/4"	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	55 TO 105	MINERAL FIBER	1/2"	1"	1"	1"
ROOF DRAIN BODIES & HORIZONTAL STORM DRAIN PIPING	-	MINERAL FIBER	1"	1"	1"	1"

NOTES:
1. NOT ALL PIPE SIZES LISTED ARE USED ON PROJECT.
2. SIZES LISTED ARE BASED UPON 2018 NC ENERGY CODE TABLE C403.2.10 AND C404.4.
3. ALL PIPING INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY FACTOR (K) OF 0.27 BTU*IN/HR*FT2DEGF. ADHESIVE SYSTEMS THAT EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE.
4. 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.

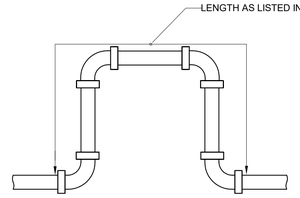
THERMOSTATIC BALANCE VALVE ASSEMBLY SPECIFICATION (BASIS OF DESIGN):

I. FURNISH AND INSTALL CIRCUITSOLVER® AS INDICATED ON THE PLANS. CIRCUITSOLVER® SHALL BE SELF CONTAINED AND FULLY AUTOMATIC WITHOUT ADDITIONAL PIPING OR CONTROL MECHANISMS. VALVE SHALL BE A CIRCUITSOLVER® AS MANUFACTURED BY THERMOMEGATECH®, INC., OR EQUIVALENT.
- A. CIRCUITSOLVER® SHALL REGULATE THE FLOW OF RECIRCULATED DOMESTIC HOT WATER BASED ON WATER TEMPERATURE ENTERING THE CIRCUITSOLVER® REGARDLESS OF SYSTEM OPERATING PRESSURE.
  1. EVEN WHEN FULLY CLOSED THE CIRCUITSOLVER® SHALL BYPASS A SMALL AMOUNT HOT WATER TO MAINTAIN DYNAMIC CONTROL OF THE RECIRCULATING LOOP.
  2. CIRCUITSOLVER® SHALL BE FACTORY ADJUSTABLE AS REQUIRED BY PROJECT CONDITIONS.
  3. CIRCUITSOLVER® SHALL BE AVAILABLE IN SIZES RANGING FROM ½" NPT TO 2" NPT.

II. CIRCUITSOLVER® BODY AND ALL INTERNAL COMPONENTS SHALL BE CONSTRUCTED OF STAINLESS STEEL WITH MAJOR COMPONENTS CONSTRUCTED OF TYPE 303 STAINLESS STEEL.
- A. CIRCUITSOLVER® SIZES ½" THROUGH 2" SHALL BE RATED TO 200 PSIG MAXIMUM WORKING PRESSURE.
  1. ALL CIRCUITSOLVER® SHALL BE STANDARD TAPERED FEMALE PIPE THREAD, NPT.
- B. ALL CIRCUITSOLVER® SHALL BE RATED TO 300°F (148.9°C) MAXIMUM WORKING TEMPERATURE.
- C. ALL CIRCUITSOLVER® SHALL BE NSF-61 CERTIFIED FOR USE IN ALL DOMESTIC WATER SYSTEMS.
- D. THERMAL ACTUATOR SHALL BE SPRING LOADED AND SELF CLEANING, DELIVERING CLOSING THRUST SUFFICIENT TO KEEP ORIFICE OPENING FREE OF SCALE DEPOSITS.

III. INSTALLATION OF CIRCUITSOLVER® SHALL BE MADE BY QUALIFIED TRADESMEN. INSTALL CIRCUITSOLVER® IN EACH DOMESTIC HOT WATER RETURN PIPING BRANCH BEYOND LAST HOT WATER DEVICE IN THAT BRANCH.
- A. PROVIDE SUITABLE LINE SIZE ISOLATION VALVES, UNIONS, AND STRAINER AS INDICATED IN PIPING DETAIL SHOWN ON THE DRAWINGS. CIRCUITSOLVER® SHALL COME WITH INTEGRAL CHECK VALVE INSTALLED BY THE MANUFACTURER.
- B. PROVIDE SUITABLE ACCESS PANEL AS REQUIRED IN NON-ACCESSIBLE CEILINGS AND WALLS.

IV. BASIS OF DESIGN PRODUCT MODEL#: CSUAS-3/4-125-CV1 CIRCUITSOLVER ASSEMBLY WITH ISOLATION VALVES, STRAINER, INTEGRAL CHECK VALVE, AND 125°F CLOSING TEMPERATURE. PRESSURE LOSS THROUGH THE VALVE SHALL NOT BE MORE THAN 2 PSI @ 1.7 GPM FLOW.



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:
1. EXPANSION LOOPS SHALL BE INSTALLED AT INTERVALS AS RECOMMENDED BY PIPE MANUFACTURER.
2. PRE-MANUFACTURED EXPANSION JOINTS MAY BE USED IN-LIEU OF EXPANSION LOOPS.
3. NOT ALL SIZES LISTED ARE USED IN PROJECT.

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PLUMBING SCHEDULES

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PLUMBING FIXTURE SCHEDULE

DESIGNATION	FIXTURE TYPE	C.W.	H.W.	WASTE	FLOW RATE	MANUFACTURER	MODEL NO.	TRIM	DRAIN	TRAP	SUPPLY	ACCESSORIES	REMARKS
P-1	LAVATORY; WALL HUNG, ADA	1/2"	1/2"	1-1/4"	0.5 GPM	KOHLER	K-1997	K-97094-4	GRID DRAIN W/ OVERLFOW	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	TMV-1	1, 2, 3, 4
P-1A	LAVATORY; COUNTER TOP W/ INTEGRAL BOWL	1/2"	1/2"	1-1/4"	0.5 GPM	COUNTER TOP W/ INTEGRAL BOWL		K-97094-4	GRID DRAIN W/ OVERLFOW	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	TMV-1	1, 2, 3, 4
P-2	WATER CLOSET; FLOOR MOUNTED MANUAL FLUSH VALVE, ADA	1"	-	4"	1.28 GPF	KOHLER	K-96057-SS	SLOAN / ROYAL 111.128-SG	-	INTEGRAL	FLUSH VALVE	BEMIS 1955SSTFR SEAT	1, 2, 4, 5, 6
P-3	BREAKROOM SINK - ADA	1/2"	1/2"	1-1/2"	1.8 GPM	ELKAY	ELUHAD281655	KOHLER / K-7505	LK35	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	-	1, 2,3, 4, 7
P-3A	HOSPITALITY/QUIET ROOM SINK - ADA	1/2"	1/2"	1-1/2"	1.5 GPM	ELKAY	ELUHAD131645PD	KOHLER / K-7505	LK35	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	-	1, 4
P-4	SINK; UNDERMOUNT - FAUCET WITH INTEGRAL EYE WASH	1/2"	1/2"	1-1/2"	1.5 & 2.5 GPM	ELKAY	ELUH1616DBG	BRADLEY / S19-505W FAUCET & FACE WASH	LK18 GRID DRAIN	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	BRADLEY S19-2010 MIXING VALVE	1, 4
P-4A	LARGE UNDERMOUNT SINK	1/2"	1/2"	1-1/2"	1.5 GPM	ELKAY	ELUH3017T	LK406GN05T4	LK35	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	-	1, 4, 7
P-5	SINK; UNDERMOUNT - FAUCET WITH INTEGRAL EYE WASH	1/2"	1/2"	1-1/2"	1.5 GPM	ELKAY	ELUH231710	BRADLEY / S19-505W FAUCET & FACE WASH	LK35	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	-	1, 4
P-6	EXAM SINKS	1/2"	1/2"	1-1/2"	1.5 GPM	ELKAY	ELUH1616DBG	LK406GN05T4	LK18 GRID DRAIN	CHROME PLATED W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	TMV-1	1, 4
P-7	MOP SERVICE SINK	1/2"	1/2"	3"	NA	FIAT	MSB2424	832-AA / 830-AA	QUICK DRAIN CONNECTOR	SAME SIZE AS OUTLET	-	889-CC / MSG2424	1, 4
P-8	SHOWER	1/2"	1/2"	2"	2 GPM	CUSTOM FABRICATED IN FIELD W/ SWANSTONE SBF-3462 BASE		DELTA / T13H332	INTEGRAL TO BASE	SAME SIZE AS OUTLET	ASSE 1016-P VALVE	-	1, 4
P-9	BI-LEVEL DRINKING FOUNTAIN W/ BOTTLE FILLER	1/2"	-	1-1/4"	NA	ELKAY	LZSTL8WSVRSK	-	PROVIDE INSULATION ON DRAIN PIPING	CHROME PLATED W/ CLEAN OUT PLUG	-	WALL SUPPORT BRACKET	1, 2, 4
P-10	FLOOR MOUNTED LAUNDRY TUB	1/2"	1/2"	1-1/2"	NA	FIAT	FL-1	LK801GN08L2	GRID DRAIN; PROVIDE RUBBER STOPPER	PVC W/ CLEAN OUT PLUG	BRASSCRAFT B1-**A W/ 1/4 TURN VALVES AND ANGLE SUPPLIES	-	1, 4
P-11	FLOOR DRAIN	-	-	3"	NA	ZURN	Z415-P-V SERIES	SQUARE OR ROUND HEEL PROOF GRATE AS SELECTED BY ARCHITECT	-	SAME SIZE AS OUTLET	-	BACK WATER VALVE / TRAP PRIMER CONNECTION	1, 4
P-12	FLOOR DRAIN W/ HAIR SCREEN AND HINGED GRATE	-	-	3"	NA	JR SMITH	2005 SERIES W/ SEDIMENT BUCKET "B" AND STAINLESS STEEL STRAINER "SS" OPTIONS	ROUND HEEL PROOF GRATE WITH HINGE	-	SAME SIZE AS OUTLET	-	TRAP PRIMER CONNECTION , SEDIMENT BUCKET	1, 4
P-13	INTERIOR HOSE BIB	3/4"	-	-	NA	PRIER	C-155NP.75	VACUUM BREAKER; WHEEL HANDLE	-	-	-	-	1
P-14	EXTERIOR WALL HYDRANT; FREEZE RESISTANT	3/4"	-	-	NA	PRIER	C-634NXX W/ C-634BX1 COVER	VACUUM BREAKER; KEY OPERATED; BOX COVER	-	-	-	-	1, 8
P-15	SURGEON SCRUB SINK	1/2"	1/2"	1-1/2"	NA	STERIS	FLEXMATIC SCRUB STATION	-	-	SAME SIZE AS OUTLET	-	TMV-1	1, 4
P-16	YARD HYDRANT	3/4"	-	-	NA	WOODFORD	Y2	ASSE 1052 BFP	-	-	-	-	1
P-17	REFRIGERATOR SUPPLY BOX	1/2"	-	-	NA	WATER TITE	AB9700HA	1/4 TURN VALVE WITH SHOCK ARRESTOR	-	-	-	-	1
P-18	WASHING MACHINE UTILITY BOX	1/2"	1/2"	2"	NA	WATER TITE	W4700HA	1/4 TURN VALVES WITH SHOCK ARRESTORS	-	SAME SIZE AS OUTLET	-	-	1, 4
P-19	FLOOR SINK	-	-	3"	NA	ZURN	Z1900-2	1/2 REMOVABLE GRATE; ANTI-SPLASH DOME	-	SAME SIZE AS OUTLET	-	-	1, 4
P-20	LAUNDRY TROUGH DRAIN - ABOVE FLOOR	-	-	4"	NA	STRIEM	TUFF TROUGH DRAIN TROUGH TT-3	-	-	-	-	FIELD INSTALLED INLET AND OUTLET CONNECTIONS	1, 4
P-20A	LAUNDRY TROUGH DRAIN - IN SLAB	-	-	4"	NA	ACO DRAIN	K300 KLASSIKDRAIN LOAD CLASS: A; 80" L X 13.86" W X 12"D	TYPE 847D LOCKING GRATE	-	-	-	-	1, 4
P-21	HAND SIK	1/2"	1/2"	1-1/2"	1.5 GPM	ELKAY	SEHS-17X	-	GRID DRAIN	CHROME PLATED W/ CLEAN OUT PLUT	-	TMV-1	1, 4

REMARKS:

1. 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."
2. FIXTURES SHALL BE ADA COMPLIANT. PROVIDED WITH ADA COMPLIANT ACCESSORIES. MOUNT ADA COMPLIANT. SEE ARCHITECTURAL PLANS FOR ELEVATIONS.
3. PROVIDE SKAL+GUARD INSULATING DEVICES ON EXPOSED UNDER-COUNTER PLUMBING.
4. REFER TO RISER DIAGRAM FOR VENT PIPE SIZES AND CONNECTIONS.
5. COORDINATE ADA GRAB BAR INSTALLATION WITH FLUSH VALVE. GRAB BARS SHALL NOT INTERFERE WITH USE AND MAINTENANCE OF FLUSH VALVE. PROVIDE EXTENSIONS AS REQUIRED.
6. COORDINATE FLUSH VALVE LEVER ORIENTATION WITH FIXTURE POSITION. LEVER SHALL BE INSTALLED ON OPEN/APPROACH SIDE OF FIXTURE.
7. PROVIDE INSINKERATOR GARBAGE DISPOSAL RATED 1/2 HP WITH KITCHEN SINK ROUGH IN.
8. COORDINATE MODEL NUMBER SUFFIX "XX" WITH WALL THICKNESS.

PIPE HANGER SPACING

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

REMARKS:

A. THE MAXIMUM HORIZONTAL SPACING OF CAST-IRON PIPE HANGERS SHALL BE INCREASED TO 10 FEET WHERE 10-FOOT LENGTHS OF PIPE ARE INSTALLED.

B. 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.

C. THIS SCHEDULE IS BASED UPON 2018 NC 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.

D. HANGERS/SUPPORTS SHALL BE PROVIDE DIN ADDITIONAL AREAS NOT NOTED ABOVE. AREAS INCLUDE BUT NOT LIMITED TO THE FOLLOWING: EACH SIDE OF A WALL/FLOOR PENETRATION, EACH SIDE OF A JOINT, AT A CHANGE IN DIRECTION, AND EACH SIDE OF A VALVE.

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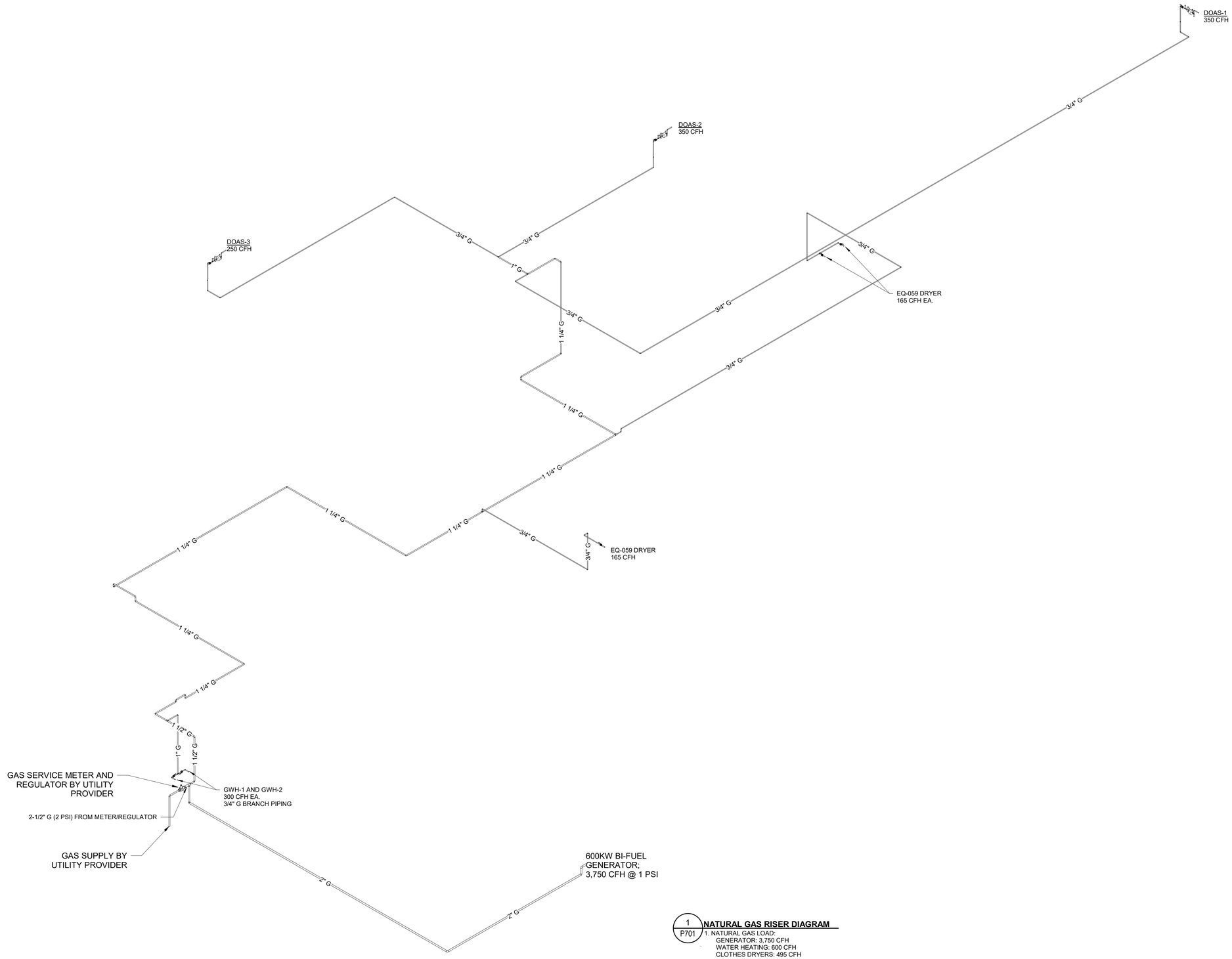

1/P701 **NATURAL GAS RISER DIAGRAM**

1. NATURAL GAS LOAD:
   GENERATOR: 3,750 CFH
   WATER HEATING: 600 CFH
   CLOTHES DRYERS: 495 CFH
   COMFORT HEATING: 950 CFH
   TOTAL GAS LOAD: 5,795 CFH
2. GAS PIPE SIZING BASED UPON 5,795 CFH AT 450'-0" MAXIMUM EQUIVALENT LENGTH AND 2025 IFGC TABLE 402.4(5) SCHEDULE 40 METALLIC PIPE WITH AN INLET PRESSURE OF 2 PSI, PRESSURE DORP OF 1 PSI, AND A SPECIFIC GRAVITY OF 0.60.

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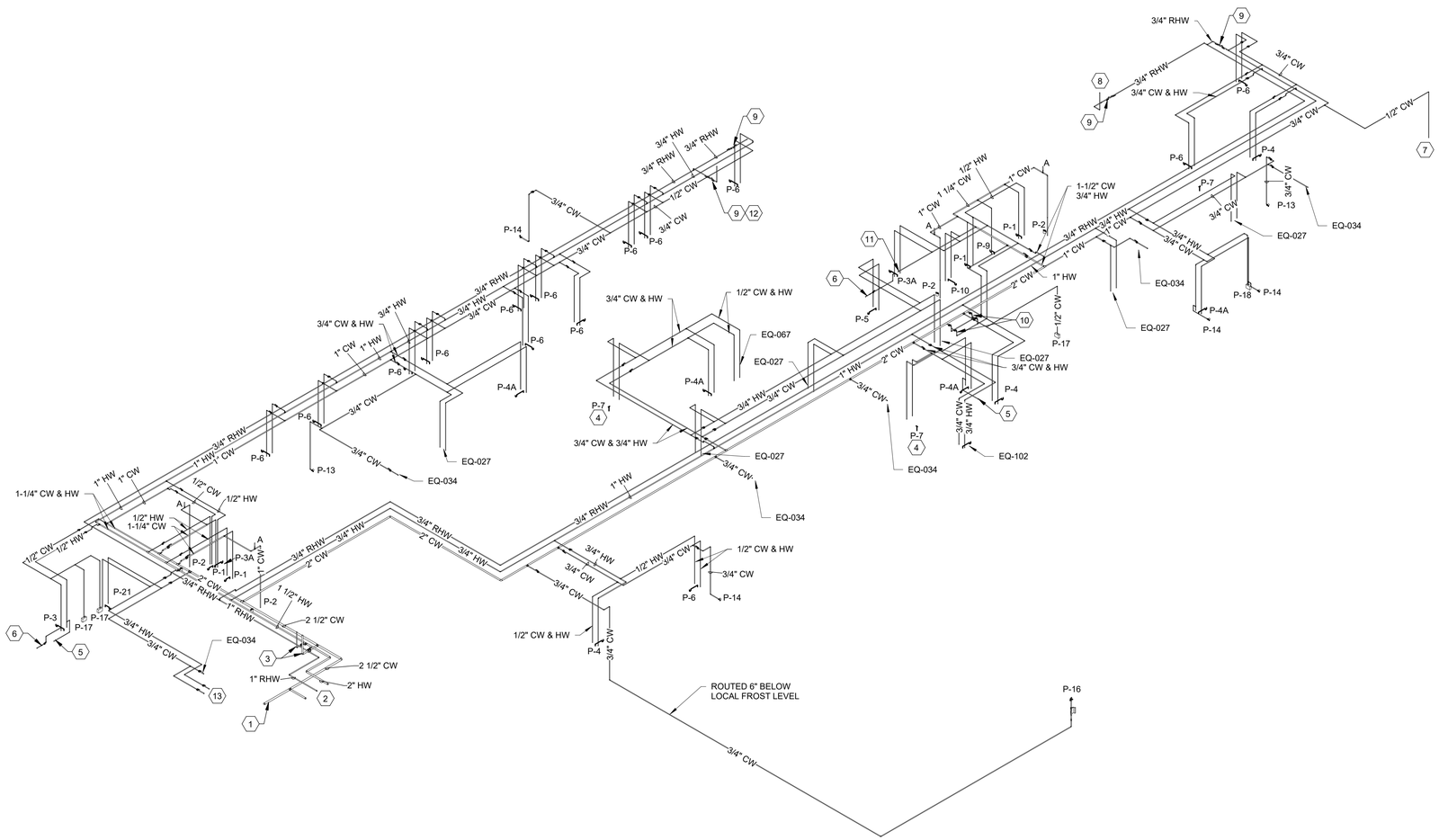

1 P702 **DOMESTIC RISER - FIRST FLOOR**

GENERAL NOTES:

1. TOTAL WATER SUPPLY FIXTURE UNITS: 224
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZING.

DRAWING NOTES: (#)

1. 2-1/2" CW CONNECTED TO EXISTING TO REMAIN DOMESTIC WATER SERVICE ENTRANCE.
2. REFER TO DETAIL 3/P502 FOR HOT WATER FLOW DIAGRAM.
3. 2" CW AND 1" HW UP TO SECOND FLOOR.
4. ROUTE 1/2" CW TO SERVE EQ-044 SOAP DISPENSER FROM MOP SINK SUPPLY; PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
5. PROVIDE 1/2" HW FROM SINK SUPPLY TO SERVE DISHWASHER. ROUTE DISHWASHER DRAIN HIGH AS POSSIBLE IN CABINETRY TO CONNECT TO BARBED FITTING ON SINK DRAIN.
6. 1/2" CW FROM SINK SUPPLY ROUTED IN CABINETRY TO SERVE ABOVE COUNTER COFFEE MAKER ITEM# EQ-006. PROVIDE ASSE 1022 BFP, ISOLATION VALVE, AND STUB TO EQUIPMENT. COORDINATE EXACT LOCATION WITH OWNER AND ARCHITECT.
7. 1/2" CW TO EQ-058; PROVIDE ASSE 1024 BFP AND 1/4 TURN VALVE AT POINT OF CONNECTION TO EQUIPMENT.
8. 3/4" HW FROM FLOOR ABOVE TO TRANSITION TO 3/4" RHW AT FIRST FLOOR CEILING.
9. THERMOSTATIC BALANCE VALVE ASSEMBLY AS SCHEDULED ON DRAWING P501.
10. 3/4" CW AND 3/4" HW DN AND ROUTED EXPOSED TO SERVE WASHING MACHINES ITEM# EQ-060. PROVIDE HOSE END VALVE CONNECTIONS WITH WHEEL HANDLES AND SUPPLY HOSES TO SERVE EACH WASHER. PROVIDE SHOCK ARRESTOR PDI SIZE "A" ON EACH CONNECTION TO EQUIPMENT.
11. 3/4" CW DN. TO ITEM# EQ-105; PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
12. 3/4" RHW FROM FLOOR ABOVE AND ROUTED IN FIRST FLOOR CEILING.
13. 3/4" CW AND 3/4" HW TO WATER TREADMILL SUPPLY AND TREATMENT SYSTEM. PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.

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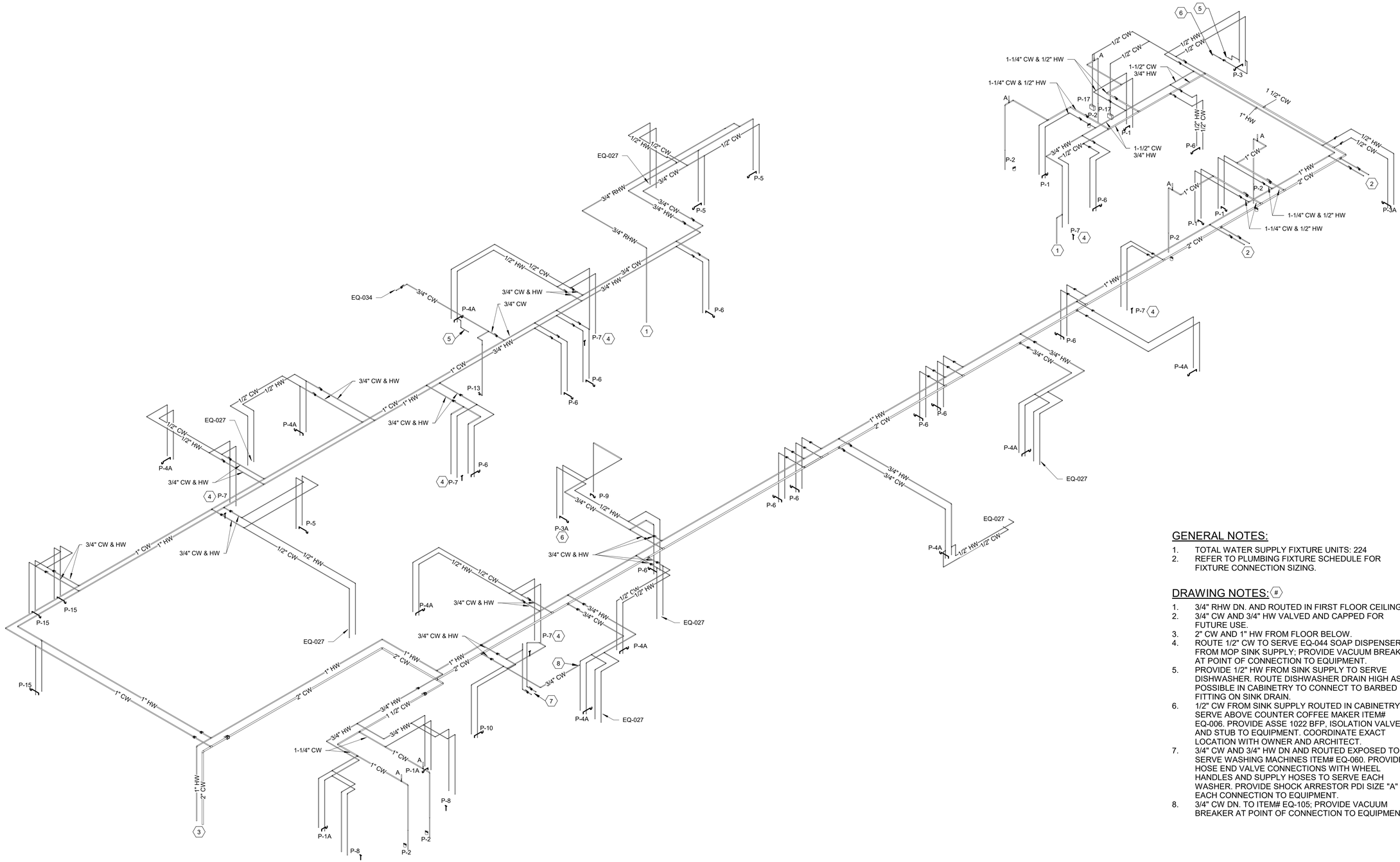

1 P703 **DOMESTIC RISER - SECOND FLOOR**

GENERAL NOTES:

1. TOTAL WATER SUPPLY FIXTURE UNITS: 224
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZING.

DRAWING NOTES: (#)

1. 3/4" RHW DN. AND ROUTED IN FIRST FLOOR CEILING.
2. 3/4" CW AND 3/4" HW VALVED AND CAPPED FOR FUTURE USE.
3. 2" CW AND 1" HW FROM FLOOR BELOW.
4. ROUTE 1/2" CW TO SERVE EQ-044 SOAP DISPENSER FROM MOP SINK SUPPLY; PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.
5. PROVIDE 1/2" HW FROM SINK SUPPLY TO SERVE DISHWASHER. ROUTE DISHWASHER DRAIN HIGH AS POSSIBLE IN CABINETRY TO CONNECT TO BARBED FITTING ON SINK DRAIN.
6. 1/2" CW FROM SINK SUPPLY ROUTED IN CABINETRY TO SERVE ABOVE COUNTER COFFEE MAKER ITEM# EQ-006. PROVIDE ASSE 1022 BFP, ISOLATION VALVE, AND STUB TO EQUIPMENT. COORDINATE EXACT LOCATION WITH OWNER AND ARCHITECT.
7. 3/4" CW AND 3/4" HW DN AND ROUTED EXPOSED TO SERVE WASHING MACHINES ITEM# EQ-060. PROVIDE HOSE END VALVE CONNECTIONS WITH WHEEL HANDLES AND SUPPLY HOSES TO SERVE EACH WASHER. PROVIDE SHOCK ARRESTOR PDI SIZE "A" ON EACH CONNECTION TO EQUIPMENT.
8. 3/4" CW DN. TO ITEM# EQ-105; PROVIDE VACUUM BREAKER AT POINT OF CONNECTION TO EQUIPMENT.

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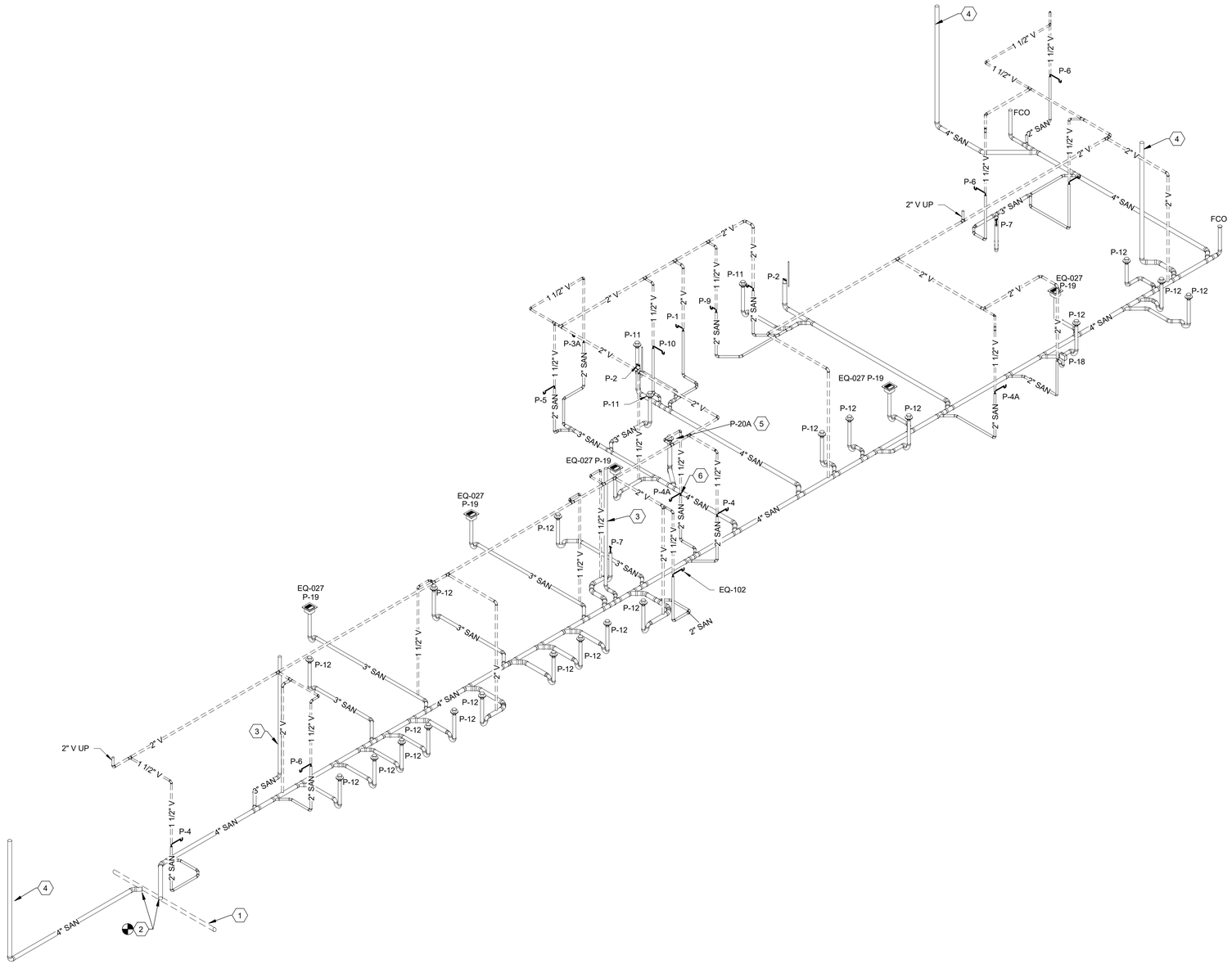

1 P704 **SANITARY RISER - FIRST FLOOR SOUTH**

GENERAL NOTES:

1. TOTAL DRAINAGE FIXTURE UNITS FOR PROJECT: 176
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZING.
3. ALL FLOOR DRAINS WITHOUT A CONSTANT WATER DISCHARGE SHALL BE PROVIDED WITH A TRAP SEAL MAINTENANCE DEVICE IN ACCORDANCE WITH 2018 NC BUILDING CODE: PLUMBING CODE SECTION 1002.4. POTABLE WATER SUPPLIED TRAP SEAL PRIMER VALVES SHALL BE SUPPLIED FROM NEAREST WATER SOURCE.

DRAWING NOTES: (#)

1. EXISTING TO REMAIN BUILDING SANITARY DRAIN.
2. CONNECT NEW 4" SAN TO EXISTING BUILDING DRAIN.
3. 3" WASTE STACK.
4. 4" WASTE STACK.
5. TRENCH DRAIN TO SERVE COMMERCIAL GRADE WASHING MACHINES.
6. PROVIDE 1/2" HW FROM SINK SUPPLY TO SERVE DISHWASHER. ROUTE DISHWASHER DRAIN HIGH AS POSSIBLE IN CABINETRY TO CONNECT TO BARBED FITTING ON SINK DRAIN.

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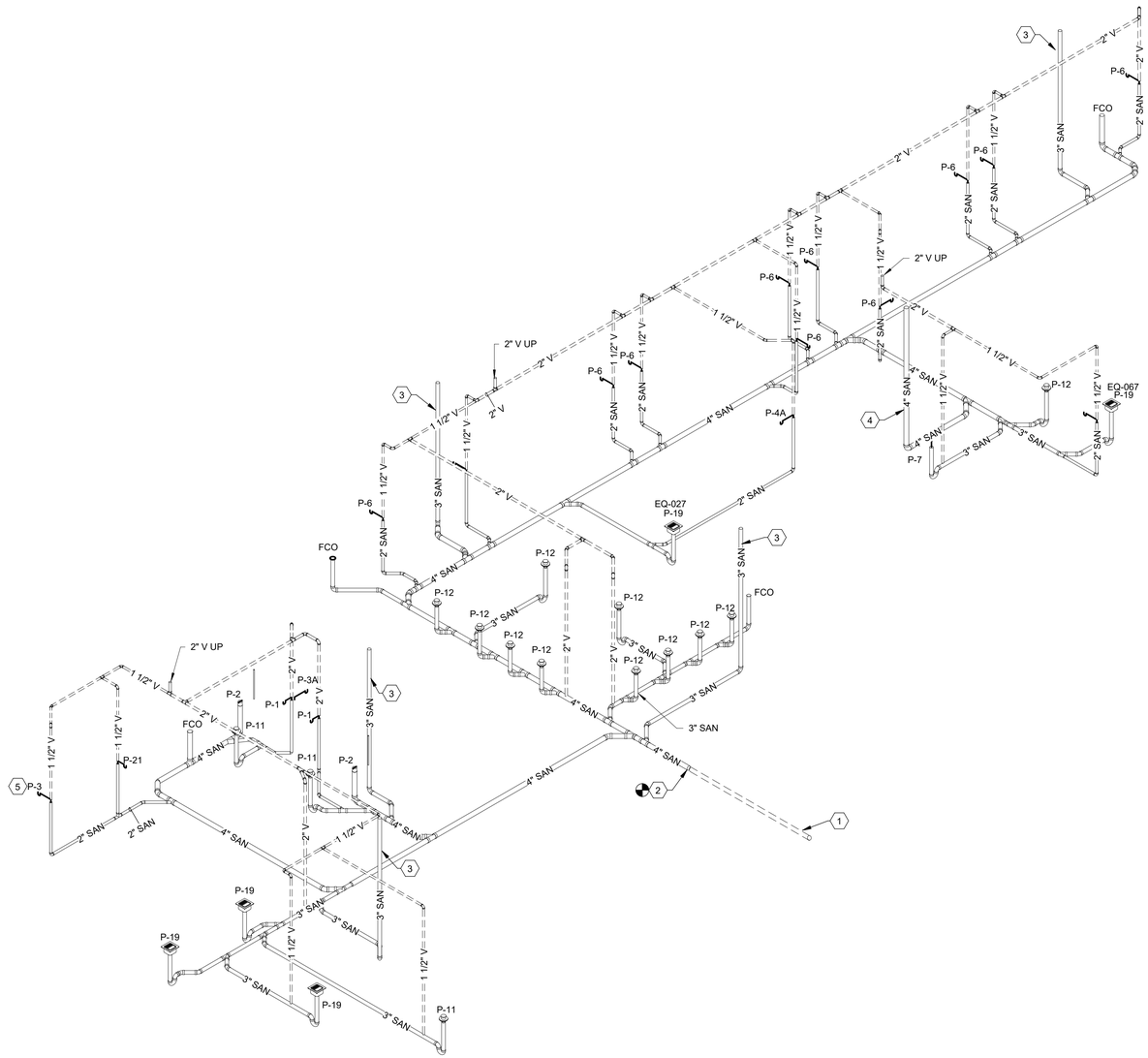

1 P705 **SANITARY RISER - FIRST FLOOR NORTH**

GENERAL NOTES:

1. TOTAL DRAINAGE FIXTURE UNITS FOR PROJECT: 176
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZING.
3. ALL FLOOR DRAINS WITHOUT A CONSTANT WATER DISCHARGE SHALL BE PROVIDED WITH A TRAP SEAL MAINTENANCE DEVICE IN ACCORDANCE WITH 2018 NC BUILDING CODE: PLUMBING CODE SECTION 1002.4. POTABLE WATER SUPPLIED TRAP SEAL PRIMER VALVES SHALL BE SUPPLIED FROM NEAREST WATER SOURCE.

DRAWING NOTES: (#)

1. EXISTING TO REMAIN BUILDING SANITARY DRAIN.
2. CONNECT NEW 4" SAN TO EXISTING BUILDING DRAIN.
3. 3" WASTE STACK.
4. 4" WASTE STACK.
5. PROVIDE 1/2" HW FROM SINK SUPPLY TO SERVE DISHWASHER. ROUTE DISHWASHER DRAIN HIGH AS POSSIBLE IN CABINETRY TO CONNECT TO BARBED FITTING ON SINK DRAIN.

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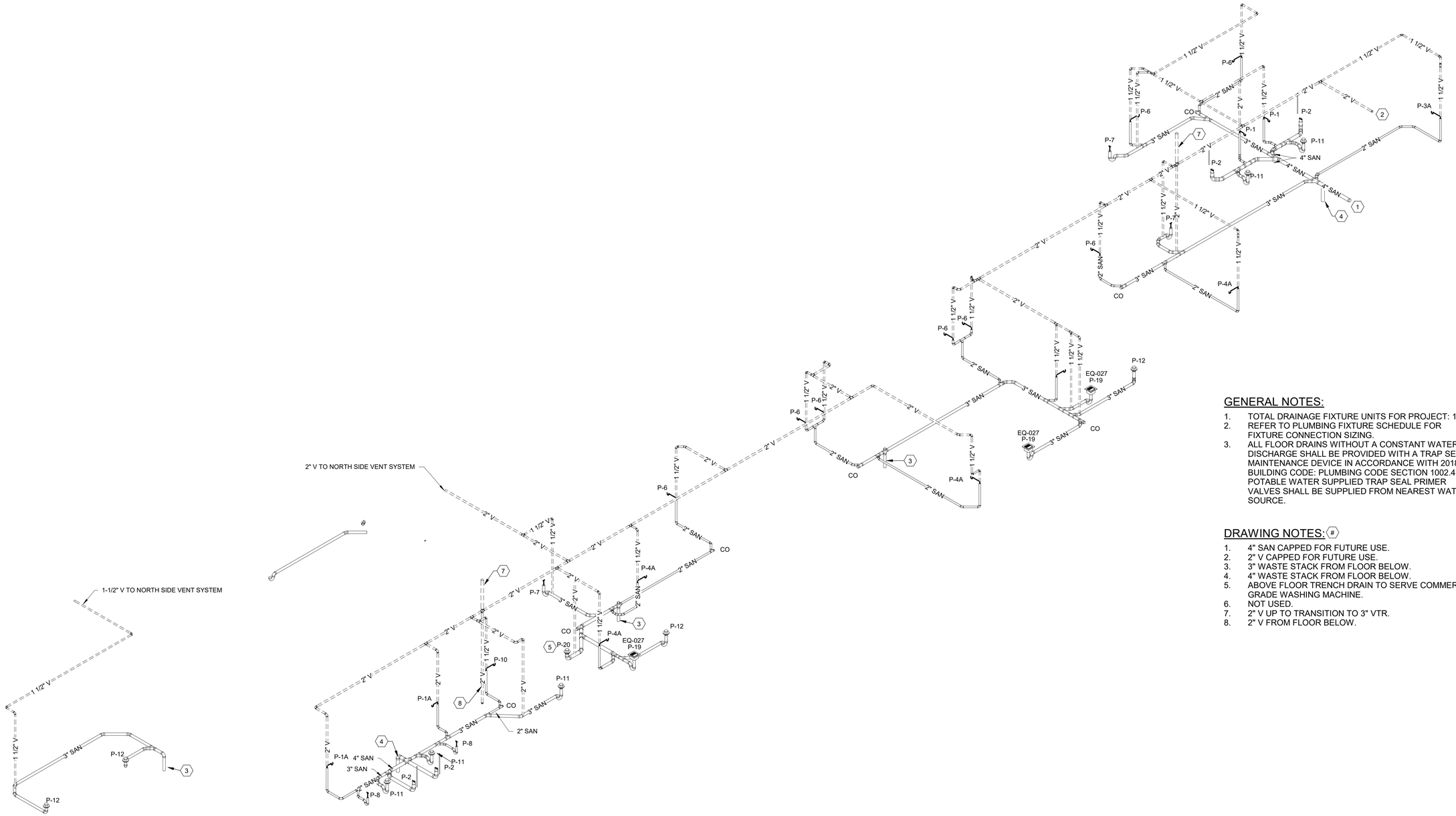

1 P706 **SANITARY RISER - SECOND FLOOR SOUTH**

GENERAL NOTES:

1. TOTAL DRAINAGE FIXTURE UNITS FOR PROJECT: 176
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZING.
3. ALL FLOOR DRAINS WITHOUT A CONSTANT WATER DISCHARGE SHALL BE PROVIDED WITH A TRAP SEAL MAINTENANCE DEVICE IN ACCORDANCE WITH 2018 NC BUILDING CODE: PLUMBING CODE SECTION 1002.4. POTABLE WATER SUPPLIED TRAP SEAL PRIMER VALVES SHALL BE SUPPLIED FROM NEAREST WATER SOURCE.

DRAWING NOTES: (#)

1. 4" SAN CAPPED FOR FUTURE USE.
2. 2" V CAPPED FOR FUTURE USE.
3. 3" WASTE STACK FROM FLOOR BELOW.
4. 4" WASTE STACK FROM FLOOR BELOW.
5. ABOVE FLOOR TRENCH DRAIN TO SERVE COMMERCIAL GRADE WASHING MACHINE.
6. NOT USED.
7. 2" V UP TO TRANSITION TO 3" VTR.
8. 2" V FROM FLOOR BELOW.

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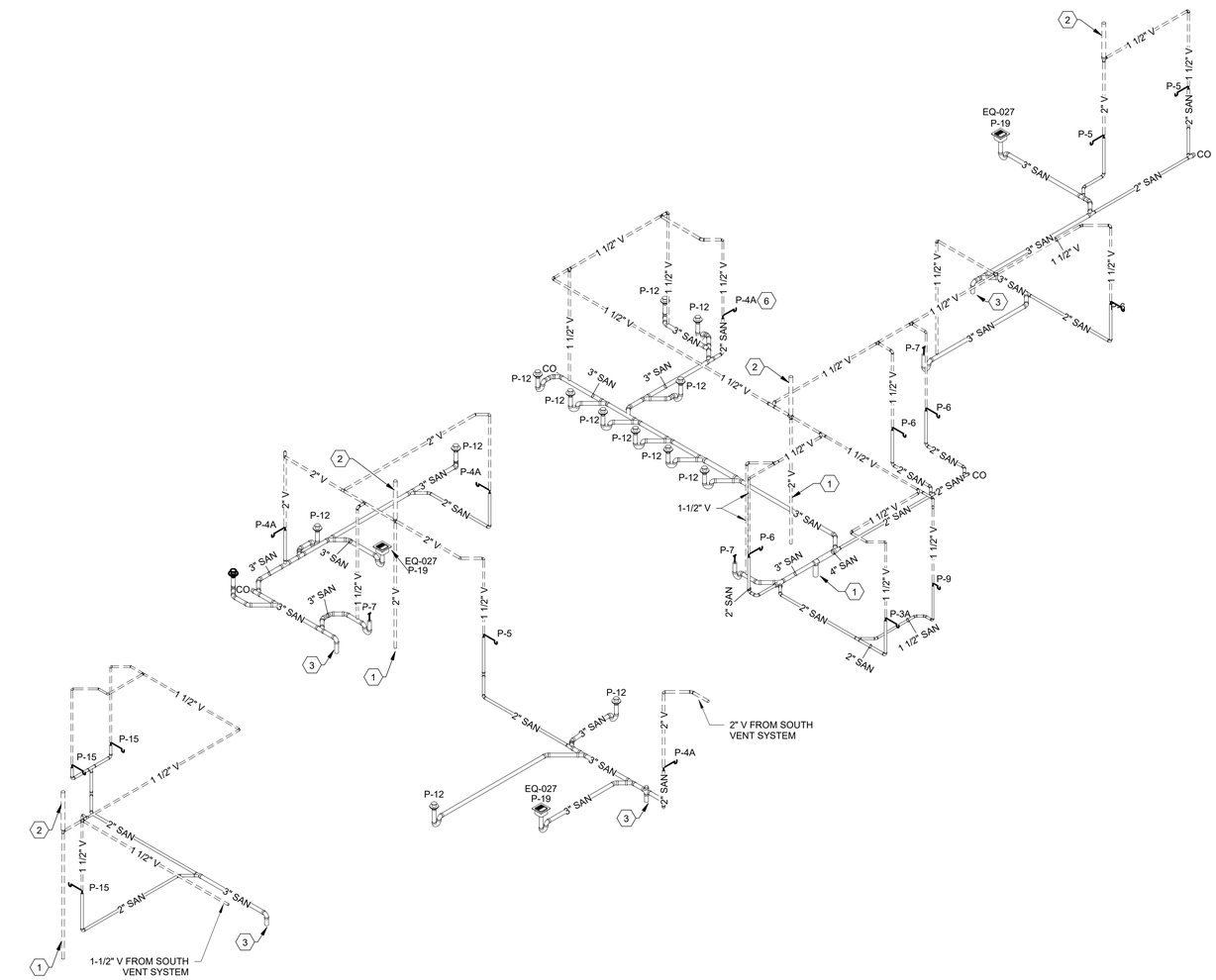

1 P707 **SANITARY RISER - SECOND FLOOR NORTH**

GENERAL NOTES:

1. TOTAL DRAINAGE FIXTURE UNITS: 176
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR FIXTURE CONNECTION SIZING.
3. ALL FLOOR DRAINS WITHOUT A CONSTANT WATER DISCHARGE SHALL BE PROVIDED WITH A TRAP SEAL MAINTENANCE DEVICE IN ACCORDANCE WITH 2018 NC BUILDING CODE: PLUMBING CODE SECTION 1002.4. POTABLE WATER SUPPLIED TRAP SEAL PRIMER VALVES SHALL BE SUPPLIED FROM NEAREST WATER SOURCE.

DRAWING NOTES: (#)

1. 2" V FROM FLOOR BELOW.
2. 2" V UP TO TRANSITION TO 3" VTR.
3. 3" WASTE STACK FROM FLOOR BELOW.

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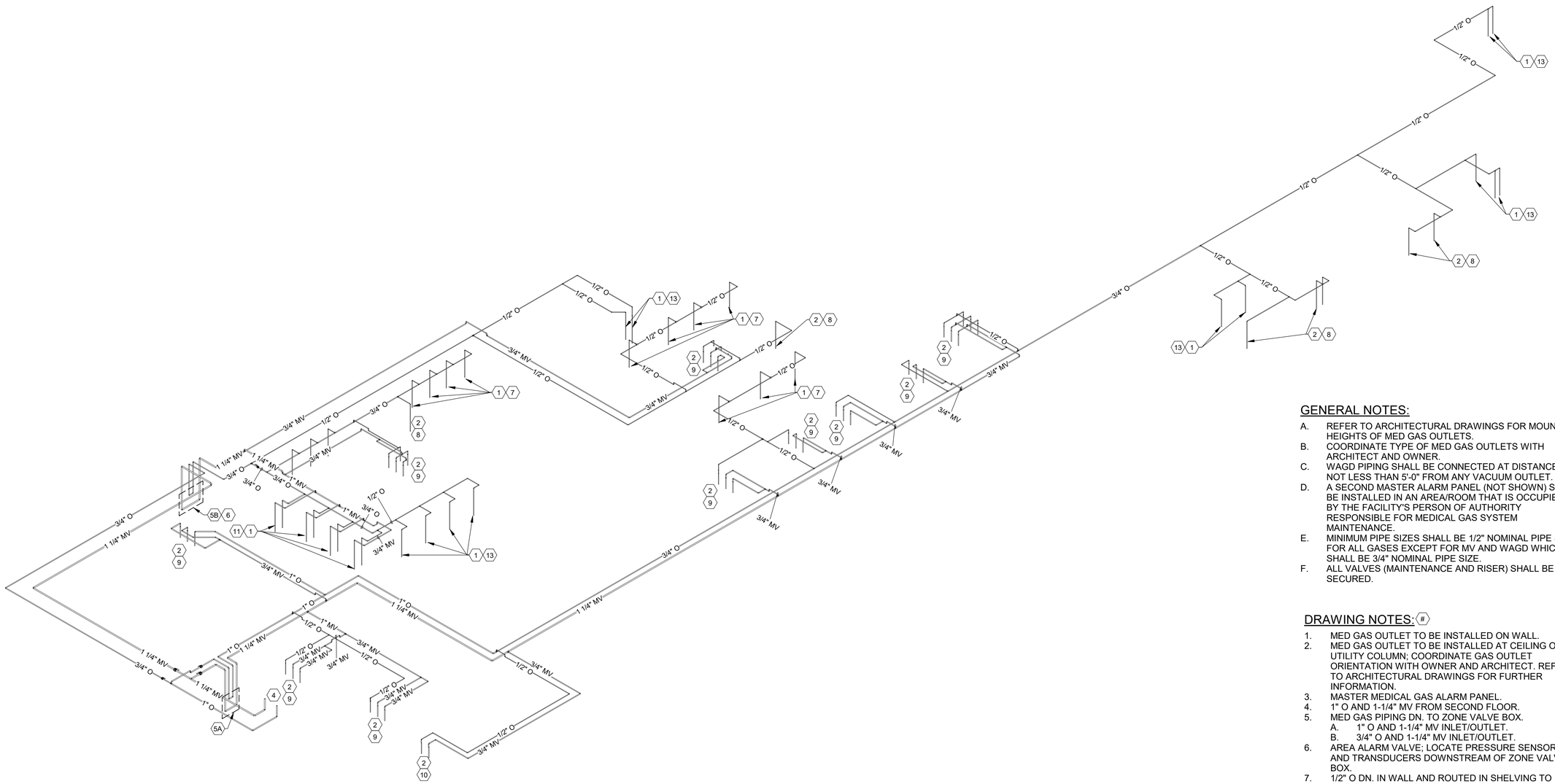

1 / P708 **MEDICAL GAS RISER DIAGRAM - FIRST FLOOR**

GENERAL NOTES:

A. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF MED GAS OUTLETS.
B. COORDINATE TYPE OF MED GAS OUTLETS WITH ARCHITECT AND OWNER.
C. WAGD PIPING SHALL BE CONNECTED AT DISTANCE OF NOT LESS THAN 5'-0" FROM ANY VACUUM OUTLET.
D. A SECOND MASTER ALARM PANEL (NOT SHOWN) SHALL BE INSTALLED IN AN AREA/ROOM THAT IS OCCUPIED BY THE FACILITY'S PERSON OF AUTHORITY RESPONSIBLE FOR MEDICAL GAS SYSTEM MAINTENANCE.
E. MINIMUM PIPE SIZES SHALL BE 1/2" NOMINAL PIPE SIZE FOR ALL GASES EXCEPT FOR MV AND WAGD WHICH SHALL BE 3/4" NOMINAL PIPE SIZE.
F. ALL VALVES (MAINTENANCE AND RISER) SHALL BE SECURED.

DRAWING NOTES: (#)

1. MED GAS OUTLET TO BE INSTALLED ON WALL.
2. MED GAS OUTLET TO BE INSTALLED AT CEILING OR UTILITY COLUMN; COORDINATE GAS OUTLET ORIENTATION WITH OWNER AND ARCHITECT. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
3. MASTER MEDICAL GAS ALARM PANEL.
4. 1" O AND 1-1/4" MV FROM SECOND FLOOR.
5. MED GAS PIPING DN. TO ZONE VALVE BOX.
   A. 1" O AND 1-1/4" MV INLET/OUTLET.
   B. 3/4" O AND 1-1/4" MV INLET/OUTLET.
6. AREA ALARM VALVE; LOCATE PRESSURE SENSORS AND TRANSDUCERS DOWNSTREAM OF ZONE VALVE BOX.
7. 1/2" O DN. IN WALL AND ROUTED IN SHELVING TO OUTLET ON CAGE FACE.
8. 1/2" O DN.
9. 1/2" O, 3/4" MV, AND 3/4" WAGD DN.
10. 1/2" O AND 3/4" WAGD DN.
11. 1/2" O AND 3/4" MV DN. TO WALL MOUNTED OUTLETS.
12. NOT USED
13. 1/2" O DN. TO WALL MOUNTED OUTLET.

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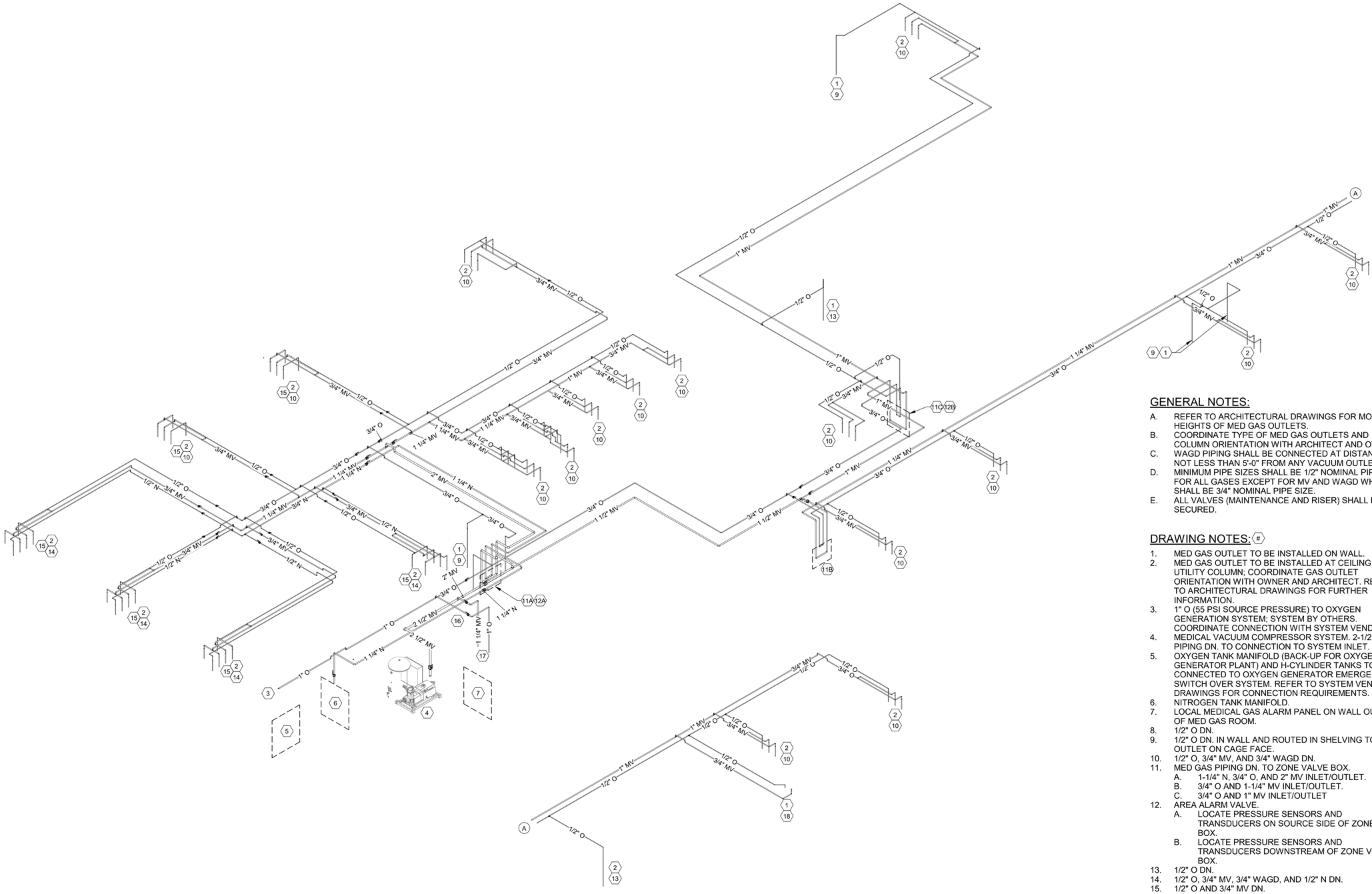

1 P709 **MEDICAL GAS RISER DIAGRAM- SECOND FLOOR**

GENERAL NOTES:

A. REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF MED GAS OUTLETS.
B. COORDINATE TYPE OF MED GAS OUTLETS AND COLUMN ORIENTATION WITH ARCHITECT AND OWNER.
C. WAGD PIPING SHALL BE CONNECTED AT DISTANCE OF NOT LESS THAN 5'-0" FROM ANY VACUUM OUTLET.
D. MINIMUM PIPE SIZES SHALL BE 1/2" NOMINAL PIPE SIZE FOR ALL GASES EXCEPT FOR MV AND WAGD WHICH SHALL BE 3/4" NOMINAL PIPE SIZE.
E. ALL VALVES (MAINTENANCE AND RISER) SHALL BE SECURED.

DRAWING NOTES: (#)

1. MED GAS OUTLET TO BE INSTALLED ON WALL.
2. MED GAS OUTLET TO BE INSTALLED AT CEILING OR UTILITY COLUMN; COORDINATE GAS OUTLET ORIENTATION WITH OWNER AND ARCHITECT. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
3. 1" O (55 PSI SOURCE PRESSURE) TO OXYGEN GENERATION SYSTEM; SYSTEM BY OTHERS. COORDINATE CONNECTION WITH SYSTEM VENDOR.
4. MEDICAL VACUUM COMPRESSOR SYSTEM. 2-1/2" MV PIPING DN. TO CONNECTION TO SYSTEM INLET.
5. OXYGEN TANK MANIFOLD (BACK-UP FOR OXYGEN GENERATOR PLANT) AND H-CYLINDER TANKS TO BE CONNECTED TO OXYGEN GENERATOR EMERGENCY SWITCH OVER SYSTEM. REFER TO SYSTEM VENDOR'S DRAWINGS FOR CONNECTION REQUIREMENTS.
6. NITROGEN TANK MANIFOLD.
7. LOCAL MEDICAL GAS ALARM PANEL ON WALL OUTSIDE OF MED GAS ROOM.
8. 1/2" O DN.
9. 1/2" O DN. IN WALL AND ROUTED IN SHELVING TO OUTLET ON CAGE FACE.
10. 1/2" O, 3/4" MV, AND 3/4" WAGD DN.
11. MED GAS PIPING DN. TO ZONE VALVE BOX.
    A. 1-1/4" N, 3/4" O, AND 2" MV INLET/OUTLET.
    B. 3/4" O AND 1-1/4" MV INLET/OUTLET.
    C. 3/4" O AND 1" MV INLET/OUTLET
12. AREA ALARM VALVE.
    A. LOCATE PRESSURE SENSORS AND TRANSDUCERS ON SOURCE SIDE OF ZONE VALVE BOX.
    B. LOCATE PRESSURE SENSORS AND TRANSDUCERS DOWNSTREAM OF ZONE VALVE BOX.
13. 1/2" O DN.
14. 1/2" O, 3/4" MV, 3/4" WAGD, AND 1/2" N DN.
15. 1/2" O AND 3/4" MV DN.
16. SECURED RISER VALVE.
17. 1" O AND 1-1/4" MV DN. TO FIRST FLOOR CEILING.
18. 1/2" O AND 3/4" MV DN. TO WALL MOUNTED OUTLETS.

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ELECTRICAL GENERAL NOTES

GENERAL: UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL WORK SHOWN ON THE ELECTRICAL DRAWINGS IS NEW WORK TO BE PROVIDED UNDER THIS CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR THE ENTIRE PROJECT DOCUMENT SET, INCLUDING ALL SPECIFICATIONS, CONTRACT DRAWINGS, ADDENDUMS, ETC. PRIOR TO THEIR BID, THE CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS. IF WORK ON OTHER TRADE DRAWINGS OR WITHIN OTHER DIVISION SPECIFICATIONS HAS EQUIPMENT, DEVICES, APPURTENANCES, ETC. INCLUDED WITHIN THEM REQUIRING ELECTRICAL EQUIPMENT OR POWER FEEDS IN ORDER TO PROVIDE A COMPLETE OPERATIONAL SYSTEM, IT IS THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE WITHIN THEIR BID AND PAY FOR ALL ELECTRICAL WORK REQUIRED TO COMPLETE THOSE SYSTEMS. THE CONTRACTOR SHALL SUBMIT REQUESTS FOR INFORMATION DURING THE BIDDING PHASE FOR ALL DISCREPANCIES, CONFLICTS, CONSTRUCTIBILITY ISSUES, AND CLARIFICATIONS NEEDED IN ORDER FOR THE CONTRACTOR TO PROVIDE COMPLETE OPERATIONAL SYSTEMS FOR THIS PROJECT.

DEMOLITION: SEE "ELECTRICAL GENERAL DEMOLITION NOTES" THIS SHEET FOR ADDITIONAL DEMOLITION REQUIREMENTS.

COORDINATION: COORDINATE AND COOPERATE WITH ALL TRADES ON THE PROJECT.

RECORD DRAWINGS: SECURE AN EXTRA SET OF ELECTRICAL DRAWINGS TO BE KEPT ON SITE AND MARK, DAILY, THE DRAWINGS IN RED AS THE PROJECT PROGRESSES IN ORDER TO KEEP AN ACCURATE RECORD OF ALL DEVIATIONS BETWEEN THE WORK SHOWN ON THE DRAWINGS AND THE WORK WHICH IS ACTUALLY INSTALLED. THESE MARKED DRAWINGS SHALL REFLECT ANY AND ALL CHANGES AND REVISIONS TO THE ORIGINAL DESIGN WHICH EXISTS IN THE COMPLETED WORK. DELIVER THE MARKED DRAWINGS TO THE <ARCHITECT/ENGINEER> AT PROJECT CLOSE OUT.

TESTS: TEST ALL WIRING FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR DEVICES. PERFORM INSULATION RESISTANCE TESTS ON ALL WIRING #8 OR LARGER TO ENSURE THAT ALL PORTIONS ARE FREE FROM SHORT-CIRCUITS AND GROUNDS. PROVIDE TYPEWRITTEN SIGNED REPORTS TO ENGINEER WITH RESULTS.

INSPECTIONS: ARRANGE ALL NECESSARY INSPECTIONS. DELIVER ALL REQUIRED INSPECTION CERTIFICATES TO THE OWNER.

GROUNDING: PROVIDE GROUNDING IN ACCORDANCE WITH THE NEC FOR THE ELECTRICAL SYSTEM INCLUDING EQUIPMENT FRAMES, CONDUITS, SWITCHES, CONTROLLERS, WIRE-WAYS, NEUTRAL CONDUCTORS, AND OTHER EQUIPMENT. PROVIDE A GROUNDING CONDUCTOR IN ALL POWER CIRCUITS.

LABELS: PROVIDE LABELS FOR ALL PANELBOARDS, CABINETS, SAFETY SWITCHES, MOTOR-DISCONNECT SWITCHES, AND MOTOR CONTROLLERS. LABELS SHALL BE MACHINE ENGRAVED, LAMINATED PLASTIC, PERMANENTLY ATTACHED WITH SELF-TAPPING SCREWS OR RIVETS. DO NOT USE SELF ADHESIVE LABELS. PROVIDE ADDITIONAL LABELS FOR CLARITY AT THE ENGINEER'S REQUEST.

J-BOX LABELING: LABEL ALL JUNCTION BOXES WITH PERMANENT MARKER IDENTIFYING CIRCUIT NUMBER AND PANELBOARD OF CIRCUITS WITHIN.

CONDUCTOR SIZE: USE #10 AWG CONDUCTORS (MINIMUM) FOR ALL 20 AMP, 120 VOLT CIRCUIT RUNS GREATER THAN 50' ONE WAY FROM PANELBOARD TO FIRST DEVICE/FIXTURE. USE #10 AWG CONDUCTORS (MINIMUM) FOR ALL 20 AMP, 277 VOLT CIRCUIT RUNS GREATER THAN 100' ONE WAY FROM PANELBOARD TO FIRST DEVICE/FIXTURE.

PANEL DIRECTORY: PROVIDE TYPEWRITTEN PANELBOARD DIRECTORY CARD IN EACH PANELBOARD INCLUDING EXISTING PANELBOARDS MODIFIED FOR THIS PROJECT WITH CIRCUIT LOAD INFORMATION AND ROOM NUMBER CLEARLY IDENTIFIED. USE ACTUAL ROOM NUMBERS IN THE BUILDING, NOT THE ROOM NUMBERS SHOWN ON THE CONTRACT DRAWINGS, AS THEY ARE OFTEN DIFFERENT.

MOTOR COORDINATION: MOTORS, MOTOR STARTERS, CONTROLLERS, INTEGRAL DISCONNECT SWITCHES, AND CONTACTORS SHALL BE PROVIDED WITH THEIR RESPECTIVE PIECES OF EQUIPMENT BY THE EQUIPMENT SUPPLIER. COMMUNICATE WITH THE TRADES PROVIDING THE EQUIPMENT, VERIFYING ALL REQUIREMENTS. PROVIDE ALL ELECTRICAL CONNECTIONS REQUIRED THEREIN, AND INSTALL MOTOR STARTERS.

MOTOR DISCONNECTS: ALL MOTORS SHALL HAVE DISCONNECTING MEANS.

MOTOR FUSE PROTECTION: WHERE FUSE PROTECTION IS SPECIFICALLY REQUIRED BY THE EQUIPMENT MANUFACTURER, PROVIDE FUSED SWITCHES IN LIEU OF NON-FUSED SWITCHES OR IN LIEU OF ENCLOSED CIRCUIT BREAKERS, OR OTHER DEVICES INDICATED.

CONNECTION DETAILS: SECURE APPROVED SHOP DRAWINGS SHOWING WIRING DIAGRAMS, ROUGH-IN AND HOOK UP DETAILS FROM OTHER INVOLVED CONTRACTORS FOR EQUIPMENT WHICH MUST BE CONNECTED ELECTRICALLY.

EQUIPMENT DETAILS: MECHANICAL EQUIPMENT WILL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. THE LOCATIONS SHOWN ON THE ELECTRICAL DRAWINGS ARE APPROXIMATE. COORDINATE WITH THE MECHANICAL CONTRACTOR TO DETERMINE THE EXACT LOCATION OF EACH PIECE OF EQUIPMENT AND DETERMINE THE EXACT ROUGH-IN AND CONNECTION REQUIREMENTS.

STARTER MOUNTING: WHERE AN INDIVIDUALLY MOUNTED SAFETY SWITCH, STARTER, OR CIRCUIT BREAKER IS SHOWN ADJACENT TO ITS RESPECTIVE LOAD AND NOT MOUNTED ON A WALL, PROVIDE ALL SUPPORTS, BRACKETS, ANCHORING, ETC. NECESSARY TO PROPERLY SUPPORT THE DEVICE.

LIGHTING ARRANGEMENT: ARRANGE LIGHTING FIXTURES IN ACCORDANCE WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.

LIGHTING COORDINATION: COORDINATE LIGHTING FIXTURES WITH GRILLES, DIFFUSERS, SPRINKLER HEADS, AND ACCESS PANELS, ETC.

MATERIAL COORDINATION: VERIFY CEILING AND WALL CONSTRUCTION AND MATERIAL PRIOR TO ORDERING LIGHT FIXTURES OR OTHER DEVICES TO ENSURE PROPER FIXTURE OR DEVICE IS FURNISHED TO MATCH CONSTRUCTION.

MOUNTING HEIGHTS: MOUNTING HEIGHTS INDICATED ARE FROM THE FINISHED FLOOR TO THE CENTERLINE OF THE WIRING DEVICE UNLESS OTHERWISE NOTED. MOUNTING HEIGHTS OF LIGHTING FIXTURES ARE TO THE BOTTOM OF THE FIXTURE UNLESS OTHERWISE NOTED.

DEVICE LOCATIONS: COORDINATE LOCATIONS OF SWITCHES, RECEPTACLES, AND TELE/DATA OUTLETS WITH OTHER WALL MOUNTED DEVICES SUCH AS THERMOSTATS AND CONTROL STATIONS. DO NOT MOUNT WIRING DEVICES BACK TO BACK. PROVIDE MINIMUM OF ONE STUD SEPARATION.

EWC RECEPTACLES: RECEPTACLES FOR ELECTRIC WATER COOLERS (EWC) SHALL BE INSTALLED OUT OF VIEW AND BEHIND THE EWC ENCLOSURE. VERIFY THE MOUNTING HEIGHT WITH THE EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.

DEVICE COORDINATION: THOROUGHLY REVIEW AND COORDINATE ALL CASEWORK, DOOR SWINGS, AND CABINET DRAWINGS AND ARCHITECTURAL ELEVATIONS WITH DEVICE LOCATIONS PRIOR TO ROUGH-IN OF OUTLET BOXES.

BARRIERS: WHERE A MULTIPLE GANG BOX HAS CIRCUITS OF DIFFERENT VOLTAGES OR SYSTEMS WHICH ARE REQUIRED TO BE SEPARATED, PROVIDE THE CODE-REQUIRED SEPARATION USING A FULL HEIGHT AND DEPTH BARRIER PLATE.

FIRE PROOFING: FOR ANY WALL OR FLOOR PENETRATIONS THROUGH FIRE RATED STRUCTURES, PROVIDE FIRE-PROOFING TO SEAL ALL THE PENETRATIONS AFTER THE RACEWAY HAS BEEN INSTALLED. FIRE PROOFING FOR PENETRATIONS SHALL BE UL APPROVED PER THE PENETRATION MADE IN ORDER TO MAINTAIN FIRE RATED INTEGRITY OF THE STRUCTURE.

CLEAN UP: ON PROJECT CLOSE-OUT, CLEAN ALL ELECTRICAL DEVICES, LIGHTING FIXTURES, LAMPS AND LENSES, AND REMOVE ALL PAINT SPATTERS FROM DEVICES, FIXTURES, AND PLATES. REPLACE ALL INOPERATIVE LAMPS.

OWNER FURNISHED EQUIPMENT: CONTRACTOR SHALL OBTAIN CUT SHEETS, INSTALLATION DATA, AND ROUGH-IN REQUIREMENTS FOR OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT AND COORDINATE ROUGH-IN AND POWER REQUIREMENTS WITH THE OWNER'S REPRESENTATIVE PRIOR TO STARTING ANY ASSOCIATED WORK.

CONDUIT ROUTING: ALL CONDUIT RUN OVERHEAD SHALL BE RUN AT THE BOTTOM OF THE FLOOR, ROOF STRUCTURE, OR LOWEST CHORD OF JOIST SPACE (AS APPLICABLE) ABOVE IN ORDER TO AVOID CONFLICTS WITH OTHER TRADES. ALL CONDUITS SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES AND USE RIGHT ANGLE OFFSETS TO CHANGE DIRECTION.

WIRING DEVICES: ALL RECEPTACLES AND SWITCHES SHALL BE LABELED WITH PLASTIC LAMINATED LABEL WITH THE PANELBOARD DESIGNATION AND CIRCUIT NUMBER FROM WHICH IT IS FED.

CEILING PLENUM: ALL WIRING THAT WILL NOT BE RUN IN CONDUIT SHALL BE PLENUM RATED.

TEMPORARY ELECTRICAL SERVICE: PROVIDE TEMPORARY ELECTRICAL SERVICE AS REQUIRED FOR CONSTRUCTION PROJECT. REFER TO SPECIFICATION SECTION 260501 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

FIRE ALARM GENERAL NOTES

ALL FIRE ALARM NOTIFICATION DEVICES SHALL MEET THE REQUREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) AND NFPA 72.

ALL WIRING SHALL BE RUN IN CONDUIT (3/4" MINIMUM). MAKE ALL WIRE CONNECTIONS TO DEVICES PER MANUFACTURERS RECOMMENDATION AND NFPA 72.

MANUFACTURER IN CONJUNCTION WITH THE CONTRACTOR SHALL DETERMINE CONDUIT AND WIRING REQUIREMENTS AND DOCUMENT ALL ADDITIONS AND CHANGES ON AS-BUILT RECORD DRAWINGS.

ACCEPTABLE MANUFACTURERS OF FIRE ALARM SYSTEMS SHALL BE SIMPLEX, NOTIFIER, AND EST.

ELECTRICAL GENERAL DEMOLITION NOTES

GENERAL: DEMOLITION DRAWINGS ARE BASED ON EXISTING PLANS AND FIELD INVESTIGATION PRIOR TO DEMOLITION. VISIT THE EXISTING BUILDING PRIOR TO BID IN ORDER TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS AND IN ORDER TO AVOID CONFLICTS.

DASHED ITEMS: ALL ITEMS SHOWN DASHED OR HAVE AN "ERV" SUBSCRIPT ON DEMOLITION PLANS ARE EXISTING AND SHALL BE REMOVED COMPLETE INCLUDING BOXES, CONDUIT, WIRE, FASTENERS, AND ASSOCIATED APPURTENANCES, UON.

SOLID ITEMS: ALL ITEMS SHOWN SOLID OR HAVE AN "ERM" SUBSCRIPT ON DEMOLITION PLANS ARE EXISTING TO REMAIN.

CIRCUITING TO REMAIN: EXISTING CIRCUITING TO REMAIN SHALL BE REROUTED OR RECONNECTED, AS REQUIRED, WHERE AFFECTED BY NEW WORK IN ORDER TO MAINTAIN CONTINUITY OF CIRCUIT.

REUSE OF EXISTING CIRCUITRY: EXISTING CIRCUITRY SERVING LIGHTING FIXTURES AND/OR RECEPTACLES FOR A GIVEN AREA SHALL BE REUSED WHERE CONVENIENT TO SERVE THE NEW LAYOUT. PROVIDE CIRCUIT MODIFICATIONS INDICATED OR AS OTHERWISE REQUIRED TO MAINTAIN THE CONTINUITY OF THE EXISTING CIRCUIT THAT REMAIN.

EXTENSION OF EXISTING CIRCUITS: WHERE AN EXISTING CIRCUIT IS NOTED TO BE SAVED AND REUTILIZED, EXTEND EXISTING CIRCUIT SAVED DURING DEMOLITION AS REQUIRED TO SERVE EQUIPMENT IN NEW LOCATION.

EXISTING CONDUIT: ALL EXISTING CONDUITS AND WIRING THAT WILL NOT BE REUSED SHALL BE REMOVED WHERE THEY WILL BE EXPOSED UPON COMPLETION OF NEW WORK. EXISTING CONDUIT TO REMAIN CONCEALED IN WALLS SHALL BE ABANDONED. EXISTING CONDUIT TO REMAIN BELOW FLOOR SLAB SHALL BE CUT OFF ONE INCH BELOW ROUGH FLOOR AND GROUTED FLUSH. ALL EXISTING WIRING IN CONDUITS TO BE ABANDONED SHALL BE DISCONNECTED FROM POWER SOURCE AND REMOVED.

REPAIR DAMAGE: EXERCISE CARE IN REMOVAL OF DEMOLITION ITEMS. REPAIR, AT NO ADDITIONAL COST TO OWNER, AND DAMAGE CAUSE TO EXISTING CONSTRUCTION AND/OR EQUIPMENT TO REMAIN.

ASSOCIATED APPURTENANCES: REMOVE ALL ELECTRICAL APPURTENANCES (DISCONNECTS, STARTERS, WIRING, CONDUIT, ETC.) ASSOCIATED WITH EQUIPMENT TO BE REMOVED BY OTHERS.

KNOCKOUT PLUGS AND COVERS: ALL CONDUIT REMOVED SHALL BE REMOVED IN ITS ENTIRETY, INCLUDING FITTINGS, MOUNTING DEVICES, MOUNTING HARDWARE, ETC. PROVIDE CONDUIT PLUGS AND BLANKS FOR ALL OPENINGS CREATED BY THE REMOVAL OF CONDUIT. PROVIDE BLANK COVER PLATES FOR ALL OPENED OUTLET BOXES CREATED BY THE REMOVAL OF THE EQUIPMENT AND/OR DEVICES.

DEMOLISHED MATERIALS: ALL MATERIALS REMOVED UNDER DEMOLITION, NOT TO BE RELOCATED OR DESIGNATED TO BE TURNED OVER TO THE OWNER, SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED COMPLETELY FROM THE SITE.

SCHEDULE OUTAGES: ALL WORK AND ALL POWER OUTAGES IN THE EXISTING BUILDING SHALL BE SCHEDULED AT TIMES CONVENIENT TO THE OWNER.

NOTIFICATION: NOTIFY THE OWNER PRIOR TO TURNING OFF ANY CIRCUITS.

EXISTING CIRCUITS: IF DURING THE COURSE OF CONSTRUCTION, IT ITS DETERMINED BY THE CONTRACTOR THAT AN EXISTING CIRCUIT BECOMES SPARE, THE CONTRACTOR SHALL UPDATE THE PANELBOARD DIRECTORY TO INDICATE SUCH, EVEN IF IT IS NOT EXPLICITLY MARKED ON THE ELECTRICAL PLANS.

GENERAL TELEPHONE & DATA SYSTEMS NOTES:

THE TELEPHONE AND DATA SYSTEMS SHALL BE OWNER FURNISHED, OWNER INSTALLED THROUGH THE OWNER'S VENDOR (THE VENDOR) UNDER A SEPARATE CONTRACT. ALL CABLING AND WIRING (EXCEPT FOR POWER WIRING), J-HOOKS, JACKS, COVERPLATE COMPATIBLE WITH THE EQUIPMENT, DEVICES, RACKS, AND COMPONENT EQUIPMENT SHALL BE PROVIDED BY THE VENDOR UNLESS INDICATED OTHERWISE. THE VENDOR SHALL PROVIDE INSTALLATION DURING CONSTRUCTION. THE ELECTRICAL CONTRACTOR (THE CONTRACTOR) SHALL COORDINATE ALL ROUGH-IN, BOX SIZES AND CONFIGURATIONS, CONDUIT SIZES AND ROUTING WITH THE VENDOR PRIOR TO INSTALLATION OF THE RACEWAY SYSTEM.

THE CONTRACTOR SHALL PROVIDE ALL CONDUIT WITH PULL WIRE AND 4"X4"X2 1/4" BOX UNLESS OTHERWISE NOTED. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELECTRICAL REQUIREMENTS WITH THE VENDOR PRIOR TO ROUGH-IN.

STUB ALL CONDUITS WITH PULL WIRE FOR COMMUNICATIONS DEVICES OUT, ABOVE AN ACCESSIBLE CEILING AND TERMINATE WITH INSULATED NYLON BUSHING. THE VENDOR WILL PROVIDE J-HOOKS ABOVE THE CEILING FROM THE STUB OUT TO EQUIPMENT LOCATION. PROVIDE A MINIMUM 1 1/4"C SLEEVE THROUGH THE WALL, ABOVE AN ACCESSIBLE CEILING TO ACCOMMODATE THE CABLING. ALL CONDUITS AND SLEEVES PENETRATING FIRE OR SMOKE WALLS SHALL BE PROVIDED WITH APPROVED FIRE RETARDANT TO PROVIDE A UL RATED WALL PENETRATION ASSEMBLY. ALL SLEEVES SHALL BE PROVIDED WITH ESCUTCHEON PLATES. MAINTAIN VENDOR RECOMMENDED SEPARATION BETWEEN WIRING OF DIFFERENT SYSTEMS AND FROM INTERFERENCE PRODUCING ELECTRICAL DEVICES SUCH AS FLUORESCENT LIGHTS, BALLASTS, TRANSFORMERS, RELAYS, MOTOR CONTROLS, ETC.

PROVIDE POWER CIRCUITS FOR TELECOMMUNICATIONS EQUIPMENT AS INDICATED.

THE CONTRACTOR SHALL PROVIDE ALL BACKBOXES, CONDUIT, GROUNDING AND SHALL INSTALL ALL SPECIAL BOXES WITH PLASTER RING FURNISHED BY THE VENDOR FOR THE TELECOMMUNICATIONS SYSTEMS IN ACCORDANCE WITH APPLICABLE CODES.

THE CONTRACTOR SHALL INSTALL ALL COMMUNICATIONS SLEEVES AND CONDUIT IN ACCORDANCE WITH DRAWINGS, ELECTRICAL SPECIFICATIONS, VENDOR WIRING DIAGRAMS, AND ALL APPLICABLE CODES.

PROVIDE IN-WALL REINFORCEMENT AS NECESSARY FOR ALL COMMUNICATIONS CABINETS, SHELVES, BRACKETS, FURNITURE MOUNTS, ETC. AND SHALL MOUNT CABINETS, SLEEVES, BRACKETS, AND FURNITURE MOUNTS IN ACCORDANCE WITH DRAWINGS, VENDOR SUBMITTALS, AND ALL APPLICABLE CODES.

COORDINATE FINAL LOCATIONS AND ELEVATIONS OF ALL TELECOMMUNICATIONS DEVICES AND OUTLETS WITH ARCHITECTURAL PLANS, CASEWORK AND ELEVATIONS, AND VENDOR REQUIREMENTS.

THE CONTRACTOR SHALL PROVIDE A COMPLETION SCHEDULE BROKEN DOWN BY PROJECT PHASES FOR TURNOVER OF COMPLETED COMMUNICATIONS ROUGH-IN FOR VENDOR FINISH WORK. THE CONTRACTOR SHALL COORDINATE TURNOVER WITH VENDORS, AND SHALL TURNOVER AREAS FOR VENDOR FINISH WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA VENDOR COST RESULTING FROM INCORRECT COMMUNICATIONS ROUGH-IN.

GENERAL SECURITY / CCTV SYSTEM NOTES:

THE SECURITY AND CCTV SYSTEMS SHALL BE OWNER FURNISHED, OWNER INSTALLED THROUGH THE OWNER'S VENDOR (THE VENDOR) UNDER A SEPARATE CONTRACT. ALL CABLING AND WIRING (EXCEPT FOR POWER WIRING), J-HOOKS, JACKS, COVERPLATE COMPATIBLE WITH THE EQUIPMENT, DEVICES, RACKS, AND COMPONENT EQUIPMENT SHALL BE PROVIDED BY THE VENDOR UNLESS INDICATED OTHERWISE. THE VENDOR SHALL PROVIDE INSTALLATION DURING CONSTRUCTION. THE ELECTRICAL CONTRACTOR (THE CONTRACTOR) SHALL COORDINATE ALL ROUGH-IN, BOX SIZES AND CONFIGURATIONS, CONDUIT SIZES AND ROUTING WITH THE VENDOR PRIOR TO INSTALLATION OF THE RACEWAY SYSTEM.

GENERAL ACCESS CONTROL SYSTEM NOTES:

THE ACCESS CONTROL SYSTEM SHALL BE OWNER FURNISHED, OWNER INSTALLED THROUGH THE OWNER'S VENDOR (THE VENDOR) UNDER A SEPARATE CONTRACT. ALL CABLING AND WIRING (EXCEPT FOR POWER WIRING), J-HOOKS, JACKS, COVERPLATE COMPATIBLE WITH THE EQUIPMENT, DEVICES, RACKS, AND COMPONENT EQUIPMENT SHALL BE PROVIDED BY THE VENDOR UNLESS INDICATED OTHERWISE. THE VENDOR SHALL PROVIDE INSTALLATION DURING CONSTRUCTION. THE ELECTRICAL CONTRACTOR (THE CONTRACTOR) SHALL COORDINATE ALL ROUGH-IN, BOX SIZES AND CONFIGURATIONS, CONDUIT SIZES AND ROUTING WITH THE VENDOR PRIOR TO INSTALLATION OF THE RACEWAY SYSTEM.

LIGHTING LEGEND

- LIGHTING FIXTURE
- LIGHTING FIXTURE ON EMERGENCY CIRCUIT
- RECESSED DOWNLIGHT FIXTURE.
- RECESSED DOWNLIGHT FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL", WHERE USE, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS.
- WALL MOUNTED LIGHTING FIXTURE.
- WALL MOUNTED LIGHTING FIXTURE ON EMERGENCY CIRCUIT. SUBSCRIPT "NL", WHERE USE, INDICATES NIGHT LIGHT CONNECTED AHEAD OF LIGHTING CONTROLS.
- PENDANT LIGHT FIXTURE
- 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.
- $a — SINGLE POLE SWITCH, 20A, 120/277V, 44" AFF UON. SUBSCRIPT "a" INDICATES ASSOCAITED FIXTURES TO BE CONTROLLED.
- $4a — FOUR-WAY SWITCH, 20A, 120/277V, 44" AFF UON. SUBSCRIPT "a" INDICATES ASSOCAITED FIXTURES TO BE CONTROLLED.
- $3a — THREE-WAY SWITCH, 20A, 120/277V, 44" AFF UON. SUBSCRIPT "a" INDICATES ASSOCAITED FIXTURES TO BE CONTROLLED.
- $Da — DIMMER SWITCH, 44" AFF UON. PROVIDE DIMMER COMPATIBLE WITH DIMMING BALLAST OR DRIVER. SUSCRIPT "a", WHERE USED, INDICATES ASSOCAITED FIXTURES TO BE CONTROLLED. DIMMER SHALL BE SLIDER TYPE.
- $LVa — LOW VOLTAGE SWITCH, 44" AFF UON. SUBSCRIPT "1" INDICATES LOW VOLTAGE SWITCH DESIGNATION. SUBSCRIPT "a" INDICATES LOW VOLTAGE BUTTON DESIGNATION. REFER TO LOW VOLTAGE SWITCH SCHEDULE FOR TOTAL NUMBER OF BUTTONS PER SWITCH.
- OS# — OCCUPANCY SENSOR, CEILING MOUNTED.
- VS# — VACANCY SENSOR, CEILING MOUNTED.
- $OS — WALL SWITCH OCCUPANCY SENSOR, 44" AFF UON.
- $VS — WALL SWITCH VACANCY SENSOR, 44" AFF UON.
- $DOS — WALL DIMMER OCCUPANCY SENSOR, 44" AFF UON.
- $DVS — WALL DIMMER VACANCY SENSOR, 44" AFF UON.
- OS — OCCUPANCY SENSOR, CEILING MOUNTED.
- VS — VACANCY SENSOR, CEILING MOUNTED.
- DS — DAYLIGHT SENSOR
- PC — PHOTOCELL

LIGHTING FIXTURE KEY

A1 / LP-3a

1. "A1" DENOTES FIXTURE TYPE. REFER TO LIGHTING FIXTURE SCHEDULE FOR DETAILS.
2. "LP-1" INDICATES NAME OF PANELBOARD FROM WHICH FIXTURE IS FED. ASSOCIATED NUMBER "3" INDICATES THE CIRCUIT NUMBER IN PANELBOARD FROM WHICH FIXTURE IS FED. ASSOCIATED LETTER "a", WHERE USED, INDICATES LIGHTING FIXTURE CONTROL DEVICE DESIGNATION.

POWER LEGEND

- 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.
- WP — DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, WITH COPPER MODEL WIU-1D (OR APPROVED EQUAL) "WHILE IN USE" WEATHERPROOF COVER, 18"AFG, UON.
- DUPLEX RECEPTACLE ON EMERGENCY POWER, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, 18"AFF, UON. RECEPTACLE SHALL BE RED.
- DUPLEX RECEPTACLE, 20A, 120V, 44" AFF OR 8" ABOVE COUNTER TOP OR IN CASEWORK AS APPLICABLE, UON.
- DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, 44" AFF OR 8" ABOVE COUNTER TOP OR IN CASEWORK AS APPLICABLE, UON.
- DUPLEX RECEPTACLE, 20A, 120V, 18"AFF, UON. TOP RECEPTACLE SHALL BE CONNECTED TO LOCAL SWITCH.
- DOUBLE DUPLEX RECEPTACLES IN COMMON BOX, 20A, 120V, 18"AFF, UON.
- SPECIAL PURPOSE RECEPTACLE, NEMA CONFIGURATION AS NOTED. MOUNT 18" AFF, UON.
- AV — COMBINATION RECESSED TV BACK BOX. PROVIDE AN ARLINGTON MODEL #TVBS507 OR APPROVED EQUAL. ALL DEVICES SHALL INCLUDE A SINGLE 20A DUPLEX RECEPTACLE. PROVIDE (1)3/4"C AND (1)1-1/2"C WITH PULL STRING AND BUSHING TO ABOVE ACCESSIBLE CEILING FOR POWER AND AV/IT.
- 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.
- RECESSED FLUSH MOUNTED MULTIPLE SERVICE POKE THROUGH FOR POWER, TELE/DATA, AND AV (WHERE INDICATED). CONFIRM REQUIRED TELE/DATA AND AV DEVICES WITH CLIENT'S VENDOR AND AV DRAWINGS. PROVIDE (1)3/4"C FOR POWER AND (1)1-1/2"C FOR TELE/DATA TO ABOVE ACCESSIBLE CEILING WITHIN THE SAME CONFERENCE. FINISH TO BE VERIFIED BY ARCHITECT.
- J — JUNCTION BOX - ABOVE CEILINGS OR FLUSH IN WALLS.
- DISCONNECT SWITCH - SIZE AS INDICATED ON PLANS
  - 30/3/20/3R — NEMA RATING (IF OTHER THAN 1)
  - FUSE SIZE (AMPS), NF INDICATES NON-FUSED
  - NUMBER OF POLES
  - SIZE OF SWITCH (AMPS)
- $M — HORSEPOWER RATED MOTOR SWITCH
- SPD — SURGE PROTECTIVE DEVICE
- ELECTRICAL METER, MOUNT 54" AFF (MINIMUM)
- 208/120V PANELBOARD
- 480/277V PANELBOARD
- DRY-TYPE TRANSFORMER
- MGB — MAIN GROUND BAR
- TAMPER RESISTANT DUPLEX RECEPTACLE, 20A, 120V, 18"AFF, UON.
- TAMPER RESISTANT DUPLEX RECEPTACLE, GROUND FAULT INTERRUPTING TYPE, 20A, 120V, 18"AFF, UON.
- TAMPER RESISTANT DUPLEX RECEPTACLE, 20A, 120V, 18"AFF, UON. TOP RECEPTACLE SHALL BE CONNECTED TO LOCAL SWITCH.
- TAMPER RESISTANT DOUBLE DUPLEX RECEPTACLES IN COMMON BOX, 20A, 120V, 18"AFF, UON.
- 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 GROUPED TOGETHER IN A COMMON CONDUIT IN ACCORDANCE WITH THE NEC AND AT THE CONTRACTOR'S DISCRETION. NEUTRAL AND GROUNDING CONDUCTORS SHALL NOT BE SHARED. CONDUIT LARGER THAN 3/4" AND CONDUCTORS LARGER THAN #12 SHALL BE AS INDICATED.

COMMUNICATIONS

- TELE/DATA BOX, 2-GANG OUTLET BOX WITH SINGLE GANG PLASTER RING. ROUTE 3/4"C., TO ABOVE ACCESSIBLE CEILING. TERMINATED CONDUIT WITH PULLCORD AND PLASTIC BUSHING. MOUNT 18"AFF, UON.
- DATA BOX, 2-GANG OUTLET BOX WITH SINGLE GANG PLASTER RING 40" AFF OR 4" ABOVE COUNTER TOP OR BACKSPLASH (WHICHEVER IS HIGHER) OR IN CASEWORK AS APPLICABLE, UON, ROUTE 3/4"C., TO ABOVE ACCESSIBLE CEILING. TERMINATED CONDUIT WITH PULLCORD AND PLASTIC BUSHING.
- PLYWOOD BACKBOARD, 3/4"X8'X4', FIRE RETARDANT. BOTTOM AT 0'-4" AFF, UON.
- TV — CABLE TELEVISION OUTLET BOX, 2-GANG OUTLET BOX WITH SINGLE GANG PLASTER RING. ROUTE 3/4"C., TO ABOVE ACCESSIBLE CEILING. TERMINATED CONDUIT WITH PULLCORD AND PLASTIC BUSHING. MOUNT RECESSED 18"AFF, UON.
- WAP — WIRELESS ACCESS POINT.

REFER TO NVA STRUCTURED CABLING SPECIFICATION AND NVA LOW VOLTAGE STANDARD PART'S LIST FOR ADDITIONAL REQUIREMENTS AND INSTALLATION.

REFER TO ARCHITECTURAL SHEET A600 SERIES SHEETS FOR ADDITIONAL DOOR AND HARDWARE INFORMATION.

FIRE ALARM

- FACP — FIRE ALARM CONTROL PANEL, SURFACE MOUNTED, TOP 5'-9" AFF, UON.
- RAIL — FIRE ALARM ANNUNCIATOR PANEL, RECESSED MOUNTED, TOP 5'-0" AFF, UON.
- NACP — FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT ENTENDER PANEL, SURFACE MOUNTED, TOP 5'-9" AFF, UON.
- FATP — FIRE ALARM TRANSPONDER PANEL, SURFACE MOUNTED, TOP 5'-9" AFF, UON.
- F — FIRE ALARM MANUAL PULL STATION, 42" AFF TO ACTUATING ARM.
- SD — FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR, CEILING MOUNTED.
- DD — DUCT MOUNTED ADDRESSABLE FIRE ALARM SYSTEM PHOTO-ELECTRIC SMOKE DETECTOR.
- HD — ADDRESSABLE FIRE ALARM SYSTEM HEAT DETECTOR, FIXED TEMPERATURE/RATE OF RISE TYPE. CEILING MOUNTED.
- CM — FIRE ALARM SYSTEM ADDRESSABLE CONTROL MODULE.
- MM — FIRE ALARM SYSTEM ADDRESSABLE INPUT MONITORING MODULE.
- TS — SPRINKLER SYSTEM SUPERVISORY VALVE TAMPER SWITCH CONNECTION.
- FS — SPRINKLER SYSTEM SUPERVISORY VALVE FLOW SWITCH CONNECTION.
- CO — CARBON MONOXIDE DETECTOR. PROVIDE INTELLIGENT ADDRESSABLE SOUNDER BASE.
- FSD — FIRE/SMOKE DAMPER CONNECTION, 120V. REFER TO DETAIL X ON EXXX.
- FIRE ALARM SYSTEM HORN/STROBE, CEILING MOUNTED, RECESSED. SUBSCRIPT INDICATES MINIMUM CANDELA RATING.
- AV — FIRE ALARM SYSTEM HORN/STROBE, WALL MOUNTED AT 80" AFF TO BOTTOM OF LENS

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:

2020 NATIONAL ELECTRIC CODE (NEC)
2018 NORTH CAROLINA MECHANICAL CODE (IMC)
2018 NORTH CAROLINA PLUMBING CODE (IPC)
2018 NORTH CAROLINA ENERGY CONSERVATION CODE
2018 NORTH CAROLINA 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 COMPLIMENTARY 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 SUIT 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 CASES 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 25/50 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 AS TO INSURE 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 REPLACEMENTS 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 “IAQ 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 SUBSTITUTIONS

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 EQUIVALENT IN ALL RESPECTS TO THE BASIS OF DESIGN. WHERE SUBMITTALS 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. COORDINATES, 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
CONTACTORS
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.

2. OCEAN CITY REQUIRES STAMPED AS-BUILT DRAWINGS PRIOR TO ISSUING A CERTIFICATE OF OCCUPANCY. PER THE MD STATE ATTORNEY'S OFFICE "UNDER THE CODE OF ETHICS GOVERNING PROFESSIONAL ENGINEERS, A PROFESSIONAL ENGINEER MAY NOT SIGN OR SEAL DRAWINGS UNLESS HE OR SHE PERSONALLY PREPARED THEM OR APPROVED THEM. THE CODE OF ETHICS DEFINES THE TERM "APPROVED" AS "(1) HAVING TECHNICAL KNOWLEDGE AND RESPONSIBLE CONTROL OVER THE CONTENT OF TECHNICAL SUBMISSIONS DURING THEIR PREPARATION AND (2) PERFORMING SUBSTANTIVE REVIEW AND HAVING AUTHORITY TO MAKE REVISIONS WITH REGARD TO THE PREPARATION OF SUBMISSIONS . . .” THEREFORE ALL SUBSTANTIVE CHANGES IN THE DESIGN OR INSTALLATION OF MEP SYSTEMS SHALL BE DISCUSSED AND APPROVED BY OUR OFFICE PRIOR TO INSTALLATION. IF THE CONTRACTOR FAILS TO DO SO OUR OFFICE WILL NOT STAMP THE AS-BUILT DRAWINGS FOR THE CERTIFICATE OF OCCUPANCY.

EQUIPMENT

1. ALL PACKAGED EQUIPMENT SHALL BE INDEPENDENTLY THIRD PARTY LABELED AS A SYSTEM FOR ITS INTENDED USE BY A NATIONALLY 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 MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS, INCLUDING CLEARANCES. IT IS THIS CONTRACTOR'S 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 PASSAGES WITH CODE APPROVED, LABORATORY TESTED 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 MUTUAL APPROVED. ALL FIRESTOPPING 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 RATING 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 FOR PLASTERED SURFACES AND PLAIN FLANGED TYPE FRAME FOR TILE, MASONRY OR GYPSUM 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 SCREWDRIVER 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 WHEREVER 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 INDIRECTION.

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 EMPTY 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. RECEPTACLES/OUTLETS 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 (4-11/16 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.

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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	480/277 VOLT SYSTEM
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GREY
GROUND	GREEN	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 MODIFICATIONS ASSOCIATED WITH USING 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 THWN 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 #1/0 AWG AND LARGER.

10. CIRCUITS MAY BE MULTI-PLEXED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER NEC. UNDER NO CIRCUMSTANCES SHALL MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT. WIREMOLD SERVED BY MULTIPLE CIRCUITS SHALL BE WIRED 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 FREE 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 COVERPLATE.
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 U.N.O.

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 NONFUSIBLE 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 KRP-C AS MANUFACTURED BY THE BUSSMANN COMPANY.
FUSES 1/10 TO 600 AMPS SHALL BE UL CLASS RK1. TRADE TYPE SHALL BE LOW PEAK LPS-RK (600V) AND LPN-RK (250C) AS MANUFACTURED BY BUSSMANN COMPANY.
ALL 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 CU/AL TYPE. VERTICAL BUSSING 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 SHALL INCLUDE BUS AND SUPPORT. PANELS KNOWN AS "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) SPARE 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 INSULATION (80°C RISE).

2. K RATED TRANSFORMERS AS INDICATED FOR NONLINEAR LOADS, WITH MAX 220°C TEMP RISE, WITH DOUBLE SIZE NEUTRAL BUS, COPPER WINDINGS, ELECTROSTATICALLY SHIELDED, WHERE INDICATED.

3. ENCLOSURES FOR TRANSFORMERS SHALL BE METALLIC, SUITABLE FOR INDOOR AND OUTDOOR INSTALLATION AS APPLICABLE AND RODENT PROOF. MANUFACTURER SHALL BE EATON/CUTLER-HAMMER, SQUARE "D", GENERAL ELECTRIC OR SIEMENS. FRACTIONAL KVA TRANSFORMERS SHALL BE MANUFACTURED BY EDWARDS OR THE SPECIAL EQUIPMENT MANUFACTURER IN WHICH THE TRANSFORMERS ARE USED.

GROUNDING

1. GROUND ALL EQUIPMENT PER NEC 250. GROUND EACH OUTSIDE LIGHTING STANDARD SEPARATELY WITH ONE GROUND ROD AND A #6 GROUND WIRE. GROUND ALL DRY TYPE TRANSFORMERS AS PER DRAWINGS AND NEC SECTION #450, AND #250.

2. ALL CONDUITS SHALL CONTAIN A CODE SIZED GROUND WIRE SIZE PER NEC IN ADDITION TO THE CONDUCTORS SHOWN ON THE PLANS. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONALLY.

3. WHERE AN ISOLATED, INSULATED GROUND IS REQUIRED A SEPARATE GREEN GROUND SHALL BE RUN FROM THE PANEL GROUND BUS TO THE ISOLATED GROUND CONNECTION OF THE DEVICE SERVED. IN NO CASE SHALL THE SYSTEM GROUND (WIRE AND ASSOCIATED OUTLET BOXES, CONDUIT AND BUILDING STEEL) BE ALLOWED TO CONTACT THE ISOLATED GROUND (GREEN WIRE AND DEVICE GROUND).

COMMUNICATION SYSTEMS

1. ALL COMMUNICATION SYSTEMS ARE BY THE OWNER TO BE BE COORDINATED WITH THE DESIGN-BUILDER.

2. PROVIDE A 3/4" THICK PLYWOOD TERMINAL BOARD AS SHOWN ON DRAWINGS. ELECTRICAL CONTRACTOR TO PROVIDE TELEPHONE SERVICE CONDUIT OR DUCT TO TELEPHONE BOARD AS SHOWN ON PLANS. CONDUIT TO BE A MINIMUM OF 3/4".

3. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUITS WITH PULL WIRES, OUTLET BOXES, METAL CABINETS AND PULL BOXES. PROVIDE A COMPLETE CONDUIT SYSTEM WITH PULL WIRES AS INDICATED ON THE DRAWINGS. ALL CONDUIT RUN SHALL HAVE NOT MORE THAN THREE (3) BENDS IN A RUN BETWEEN OUTLET BOXES OR BETWEEN OUTLET BOX AND A METAL CABINET OR PULL BOX. WHEN A RUN REQUIRES MORE THAN THREE (3) BENDS, A PULL BOX OF SUITABLE SIZE SHALL BE PLACED IN A SUITABLE LOCATION TO MEET THE ABOVE CONDITIONS.

4. TELEPHONE AND DATA OUTLET LOCATIONS BY OWNER TO BE COORDINATED WITH THE DESIGN-BUILDER. PROVIDE OUTLET BOX AND EMPTY RACEWAY WITH PULL WIRE IN INSULATED OR SOLID OR INACCESSIBLE AREAS. ALL PLATES SHALL BE STANDARD TELEPHONE TYPE WITH JACK. PROVIDE PLATES OF SAME MATERIAL AND FINISH AS SPECIFIED FOR RECEPTACLES. WALL PHONE PLATES SHALL HAVE MOUNTING STUDS.

FIRE ALARM AND DETECTION SYSTEMS

1. PROVIDE A COMPLETELY ADDRESSABLE, ELECTRICALLY SUPERVISED, CENTRALLY MONITORED (VIA AUTOMATIC DIALER), POWER-LIMITED, CLASS "B" FIRE ALARM AND DETECTION SYSTEM.

2. ALL DEVICES, COMBINATIONS OF DEVICES, APPLIANCES AND EQUIPMENT SHALL BE UL LISTED FOR THE PURPOSE, WHICH THEY ARE USED AND SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72, AS WELL AS ALL APPLICABLE LOCAL CODES, AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S REQUIREMENTS.

3. THE INSTALLATION OF THIS SYSTEM SHALL BE BY A COMPANY THAT SPECIALIZES IN INSTALLATION OF THIS EQUIPMENT AND HAS A SUCCESSFUL RECORD OF SYSTEM INSTALLATIONS DATING BACK A MINIMUM OF 5 YEARS ON SIMILAR TYPES OF INSTALLATIONS.

4. THE CONTRACTOR SHALL MAINTAIN AN UP-TO-DATE SET OF DESIGN DOCUMENTS, APPROVED PERMIT DOCUMENTS AND SHOP DRAWINGS ON-SITE AND SHALL TURN THESE DOCUMENTS OVER TO THE OWNER UPON PROJECT COMPLETION AND APPROVAL BY THE LOCAL AUTHORITY.

5. RECORD DRAWINGS SHALL INCLUDE A SET OF DOCUMENTS, WHICH INDICATE LOCATION OF ALL DEVICES, CONTROL PANELS, ANNUNCIATORS, INTERFACE ADDRESSABLE MODULES, AND END-OF-LINE DEVICES.

6. CONTROL PANEL SHALL BE SINGLE LOOP ADDRESSABLE FIRE ALARM CONTROL PANEL. CONTROL PANEL SHALL BE CAPABLE OF REPORTING SUPERVISORY, TROUBLE AND ALARM CONDITIONS TO CENTRAL STATION VIA FLOOR, ZONE AND TYPE OF DEVICE. POWER SUPPLY SHALL BE ADEQUATE TO SERVE PANEL MODULES, RELAYS AND ALARM INDICATING AND INITIATING DEVICES. PANEL SHALL BE PROVIDED WITH A SECONDARY EMERGENCY POWER SUPPLY WITH CAPACITY FOR OPERATING SYSTEM IN STAND-ALONE MODE FOR 24-HOURS FOLLOWED BY ALARM MODE FOR 10 MINUTES.

7. SUBMIT BATTERY CALCULATIONS TO SUBSTANTIATE COMPLIANCE WITH REQUIREMENTS.

8. PROVIDE PANEL MOUNTED ANNUNCIATOR AND AUDIBLE TROUBLE ALARM ON CONTROL PANEL COVER.

9. PROVIDE AUTO-DIALER OR DACT TECHNOLOGY FOR COMMUNICATING ALARMS TO CENTRAL STATION CONNECTION, WHICH WILL BE COORDINATE WITH OWNER. PROVIDE 3/4" E.C. TO TELEPHONE BACKBOARD AND PROVIDE DEDICATED PHONE LINE FOR FIRE ALARM COMMUNICATION USE.

10. DEVICES TO BE PROVIDED FOR THIS PROJECT INCLUDE; NFPA 72 AND ADA COMPLIANT FLASHING STROBE LIGHTS (MINIMUM 15/75 CANDELA, UNO) AND COMBINATION STROBE / HORNS, WALL AND CEILING MOUNT TYPE AS INDICATED; PHOTOELECTRIC SMOKE DETECTORS, HEAT DETECTORS, FLOW AND TAMPER ALARMS, AND DUCT MOUNTED SMOKE DETECTORS. DUCT DETECTORS SHALL HAVE A BASE WITH AN AUXILIARY RELAY (FOR HVAC UNIT SHUTDOWN) AND A PHOTOELECTRIC DETECTOR WITH SAMPLING TUBE (LENGTH AS REQUIRED.

11. SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL CONSTRUCTION AND FINAL CLEANUP OF ALL TRADES IS COMPLETE. SMOKE DETECTOR BASES SHALL BE BAGGED UNTIL DETECTOR IS INSTALLED.

12. WATERFLOW AND TAMPER SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE SPRINKLER CONTRACTOR. VERIFY QUANTITY OF WATER FLOW, TAMPER DEVICES, ETC. WITH SPRINKLER CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL CONNECT EACH DEVICE TO THE FIRE ALARM SYSTEM.

13. WHERE MULTIPLE STROBE DEVICES ARE INSTALLED IN A COMMON AREA, PROVIDE SYNCHRONIZED STROBES TO ALLOW FLASH TO OCCUR SIMULTANEOUSLY.

14. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN MINIMUM OF 3/4" CONDUIT, EXCEPT USE UL RATED "MC" FIRE ALARM CABLE FROM JUNCTION BOX LOCATED ABOVE CEILING SPACE OVER THE STROBE, DOWN INSIDE THE WALL TO STROBE JUNCTION BOX. FIRE ALARM JUNCTION BOX COVERS SHALL BE PAINTED RED. WHERE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION (AHJ), THE CONTRACTOR MAY USE UL LISTED, MC FIRE ALARM CABLE.

15. ALL WIRING TO DEVICES SHALL BE SIZED AND INSTALLED PER MANUFACTURERS REQUIREMENTS.

3. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUITS WITH PULL WIRES, OUTLET BOXES, METAL CABINETS AND PULL BOXES. PROVIDE A COMPLETE CONDUIT SYSTEM WITH PULL WIRES AS INDICATED ON THE DRAWINGS. ALL CONDUIT RUN SHALL HAVE NOT MORE THAN THREE (3) BENDS IN A RUN BETWEEN OUTLET BOXES OR BETWEEN OUTLET BOX AND A METAL CABINET OR PULL BOX. WHEN A RUN REQUIRES MORE THAN THREE (3) BENDS, A PULL BOX OF SUITABLE SIZE SHALL BE PLACED IN A SUITABLE LOCATION TO MEET THE ABOVE CONDITIONS.

4. TELEPHONE AND DATA OUTLET LOCATIONS BY OWNER TO BE COORDINATED WITH THE DESIGN-BUILDER. PROVIDE OUTLET BOX AND EMPTY RACEWAY WITH PULL WIRE IN INSULATED OR SOLID OR INACCESSIBLE AREAS. ALL PLATES SHALL BE STANDARD TELEPHONE TYPE WITH JACK. PROVIDE PLATES OF SAME MATERIAL AND FINISH AS SPECIFIED FOR RECEPTACLES. WALL PHONE PLATES SHALL HAVE MOUNTING STUDS.

FIRE ALARM AND DETECTION SYSTEMS

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ASC PROJECT NUMBER: 21-000

ELECTRICAL SPECIFICATIONS

3. THE INSTALLATION OF THIS SYSTEM SHALL BE BY A COMPANY THAT SPECIALIZES IN INSTALLATION OF THIS EQUIPMENT AND HAS A SUCCESSFUL RECORD OF SYSTEM INSTALLATIONS DATING BACK A MINIMUM OF 5 YEARS ON SIMILAR TYPES OF INSTALLATIONS.

4. THE CONTRACTOR SHALL MAINTAIN AN UP-TO-DATE SET OF DESIGN DOCUMENTS, APPROVED PERMIT DOCUMENTS AND SHOP DRAWINGS ON-SITE AND SHALL TURN THESE DOCUMENTS OVER TO THE OWNER UPON PROJECT COMPLETION AND APPROVAL BY THE LOCAL AUTHORITY.

5. RECORD DRAWINGS SHALL INCLUDE A SET OF DOCUMENTS, WHICH INDICATE LOCATION OF ALL DEVICES, CONTROL PANELS, ANNUNCIATORS, INTERFACE ADDRESSABLE MODULES, AND END-OF-LINE DEVICES.

6. CONTROL PANEL SHALL BE SINGLE LOOP ADDRESSABLE FIRE ALARM CONTROL PANEL. CONTROL PANEL SHALL BE CAPABLE OF REPORTING SUPERVISORY, TROUBLE AND ALARM CONDITIONS TO CENTRAL STATION VIA FLOOR, ZONE AND TYPE OF DEVICE. POWER SUPPLY SHALL BE ADEQUATE TO SERVE PANEL MODULES, RELAYS AND ALARM INDICATING AND INITIATING DEVICES. PANEL SHALL BE PROVIDED WITH A SECONDARY EMERGENCY POWER SUPPLY WITH CAPACITY FOR OPERATING SYSTEM IN STAND-ALONE MODE FOR 24-HOURS FOLLOWED BY ALARM MODE FOR 10 MINUTES.

7. SUBMIT BATTERY CALCULATIONS TO SUBSTANTIATE COMPLIANCE WITH REQUIREMENTS.

8. PROVIDE PANEL MOUNTED ANNUNCIATOR AND AUDIBLE TROUBLE ALARM ON CONTROL PANEL COVER.

9. PROVIDE AUTO-DIALER OR DACT TECHNOLOGY FOR COMMUNICATING ALARMS TO CENTRAL STATION CONNECTION, WHICH WILL BE COORDINATE WITH OWNER. PROVIDE 3/4" E.C. TO TELEPHONE BACKBOARD AND PROVIDE DEDICATED PHONE LINE FOR FIRE ALARM COMMUNICATION USE.

10. DEVICES TO BE PROVIDED FOR THIS PROJECT INCLUDE; NFPA 72 AND ADA COMPLIANT FLASHING STROBE LIGHTS (MINIMUM 15/75 CANDELA, UNO) AND COMBINATION STROBE / HORNS, WALL AND CEILING MOUNT TYPE AS INDICATED; PHOTOELECTRIC SMOKE DETECTORS, HEAT DETECTORS, FLOW AND TAMPER ALARMS, AND DUCT MOUNTED SMOKE DETECTORS. DUCT DETECTORS SHALL HAVE A BASE WITH AN AUXILIARY RELAY (FOR HVAC UNIT SHUTDOWN) AND A PHOTOELECTRIC DETECTOR WITH SAMPLING TUBE (LENGTH AS REQUIRED.

11. SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL CONSTRUCTION AND FINAL CLEANUP OF ALL TRADES IS COMPLETE. SMOKE DETECTOR BASES SHALL BE BAGGED UNTIL DETECTOR IS INSTALLED.

12. WATERFLOW AND TAMPER SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE SPRINKLER CONTRACTOR. VERIFY QUANTITY OF WATER FLOW, TAMPER DEVICES, ETC. WITH SPRINKLER CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL CONNECT EACH DEVICE TO THE FIRE ALARM SYSTEM.

13. WHERE MULTIPLE STROBE DEVICES ARE INSTALLED IN A COMMON AREA, PROVIDE SYNCHRONIZED STROBES TO ALLOW FLASH TO OCCUR SIMULTANEOUSLY.

14. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN MINIMUM OF 3/4" CONDUIT, EXCEPT USE UL RATED "MC" FIRE ALARM CABLE FROM JUNCTION BOX LOCATED ABOVE CEILING SPACE OVER THE STROBE, DOWN INSIDE THE WALL TO STROBE JUNCTION BOX. FIRE ALARM JUNCTION BOX COVERS SHALL BE PAINTED RED. WHERE ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION (AHJ), THE CONTRACTOR MAY USE UL LISTED, MC FIRE ALARM CABLE.

15. ALL WIRING TO DEVICES SHALL BE SIZED AND INSTALLED PER MANUFACTURERS REQUIREMENTS.

16. FIRE ALARM WIRING SHALL NOT BE INSTALLED IN THE SAME CONDUIT OR JUNCTION BOXES AS POWER AND LIGHTING WIRING.

17. ALL WIRE SPLICING SHALL BE PERFORMED IN JUNCTION BOXES SIZED TO ACCOMMODATE TERMINAL BLOCKS (NUMBER AS REQUIRED). ALL CONNECTIONS SHALL BE MADE WITH APPROVED CRIMP-ON TERMINAL SPADE LUGS, PRESSURE-TYPE TERMINAL BLOCKS OR PLUG CONNECTORS. CABLE TAPS OR T-TAPS WILL NOT BE PERMITTED.

18. THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN ACCORDANCE WITH NFPA 72, AND LOCAL FIRE DEPARTMENT REQUIREMENTS, BY THE INSTALLER, AND IN THE PRESENCE OF THE OWNERS REPRESENTATIVE AND THE LOCAL FIRE MARSHALL. UPON COMPLETION OF A SUCCESSFUL TEST, THE INSTALLER SHALL SO CERTIFY IN WRITING TO THE OWNER AND GENERAL CONTRACTOR.

19. TEST CONDUCTORS FOR SHORT CIRCUITS USING AN INSULATION-TESTING DEVICE, INDICATING AND INITIATING CIRCUITS FOR PROPER SIGNAL TRANSMISSION UNDER OPEN CIRCUIT CONDITIONS, INDICATING AND INITIATING CIRCUITS FOR PROPER ALARM OPERATION AND RESPONSE AND ANNUNCIATION AT THE MAIN FIRE ALARM CONTROL PANEL, AND NEW SYSTEMS FOR SPECIFIED FUNCTIONS ACCORDING TO THIS SPECIFICATION AND THE FIRE ALARM MATRIX INDICATED ON THE DRAWINGS.

20. CORRECT DEFICIENCIES INDICATED BY TESTING AND COMPLETELY RETEST WORK AFFECTED BY SUCH DEFICIENCIES. VERIFY BY THE SYSTEM TEST THAT THE TOTAL SYSTEM MEETS THE EXISTING BASE BUILDING SYSTEM OPERATION STANDARD.

21. PROVIDE INTERFACE WITH SECURITY SYSTEM, IF PROVIDED, TO UNLOCK ALL EGRESS DOORS IN THE EVENT OF AN ALARM BY AN INITIATING DEVICE. ACTIVATION OF FLOOR FIRE ALARM PULL STATION, SMOKE DETECTORS, HEAT DETECTORS AND WATERFLOW SWITCH AND ETC., SHALL CAUSE THE RELEASE OF ALL SECURITY DOOR LOCKS/ELECTRIC DOOR STRIKE.

22. INCLUDE ON-SITE SERVICES OF A CERTIFIED FACTORY TECHNICIAN TO PROVIDE TECHNICAL INSTALLATION SUPPORT FOR PANEL START UP, PROGRAMMING AND PROGRAM EDITING BASED ON LOCAL AUTHORITY COMMENTS, ASSIST CONTRACTORS WITH TROUBLESHOOTING AND ASSIST INSTALLER FOR ONE COMPLETE FINAL SYSTEM CHECKOUT.

23. THE CONTRACTOR SHALL WARRANTY THE INSTALLATION OF THIS SYSTEM FOR A PERIOD OF NOT LESS THAN 12 MONTHS, AND THAT SHALL INCLUDE ALL DEFECTIVE PARTS, TROUBLESHOOTING OF NUISANCE ALARMS DUE TO SHORTS OR OTHER ANOMALIES. THE STANDARD MANUFACTURER WARRANTY SHALL APPLY TO ALL DEVICES, POWER SUPPLIES AND EQUIPMENT.

24. COORDINATION WITH BUILDING ENGINEER.

25. GET APPROVAL FROM FIRE MARSHAL AND INCORPORATE ALL COMMENTS.

START UP AND INSTRUCTIONS

1. AFTER INSTALLATION, CHECK ALL EQUIPMENT, AND PERFORM START UP IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PLACE ALL SYSTEMS INTO OPERATION.

2. TESTS SHALL INCLUDE THE FOLLOWING:
MEASURE THE LOAD ON EACH PHASE OF THE MAIN SERVICE AND EACH PHASE OF EVERY FEEDER UNDER FULL LOAD CONDITIONS
MEASURE THE NO-LOAD AND FULL-LOAD VOLTAGES (PHASE TO PHASE, PHASE TO NEUTRAL AND PHASE TO GROUND FOR EACH PHASE OF EACH SERVICE, OF EACH SEPARATELY DERIVED SYSTEM, AND AT EACH PANELBOARD OR TRANSFORMER).
MEASURE THE GROUND RESISTANCE OF THE MAIN SERVICE GROUNDING ELECTRODE AND THE GROUND RESISTANCE OF EACH SEPARATELY DERIVED SYSTEM'S GROUNDING ELECTRODE.
MAKE INSULATION RESISTANCE TESTS ON ALL DRY TYPE TRANSFORMERS AND MOTORS.

3. CLEAN ALL ELECTRICAL EQUIPMENT AND FIXTURES OF ALL CONSTRUCTION DUST AT PROJECT COMPLETION.

4. PROVIDE OWNER TRAINING AND DEMONSTRATION OF ALL ELECTRICAL SYSTEMS AND EQUIPMENT. INSTRUCT OWNER ON PROPER OPERATION AND PREVENTATIVE MAINTENANCE OF SYSTEM. SUBMIT OPERATING AND MAINTENANCE MANUAL ON ALL EQUIPMENT AND SYSTEMS.

WARRANTY

1. FULLY WARRANT ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE. EXTEND ALL MANUFACTURER'S WARRANTIES TO OWNER, INCLUDING ALL EXTENDED WARRANTIES.

2. REPAIR OR REPLACE WITHOUT CHARGE TO THE OWNER ALL ITEMS FOUND DEFECTIVE DURING THE WARRANTY PERIOD.

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ALL DRAWINGS ARE PROTECTED BY FEDERAL COPYRIGHT BY MANNS WOODWARD STUDIOS, INC. AND CAN NOT BE REPRODUCED OR MODIFIED IN ANY MANNER WITHOUT WRITTEN PERMISSION. DOCUMENTS MAY NOT BE USED IN PART OR WHOLE TO DEVELOP THE DESIGN OF ANOTHER BUILDING WITHOUT EXPRESS WRITTEN PERMISSION BY MANNS WOODWARD STUDIOS.

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ALLEN + SHARIFF CORPORATION
No. C - 1486120
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC
RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

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AUTOMATIC TRANSFER SWITCH

PART 1 GENERAL

1. FURNISH AND INSTALL AUTOMATIC TRANSFER SWITCH(ES) WITH NUMBER OF POLES, AMPERAGE, VOLTAGE, AND WITHSTAND CURRENT RATINGS AS SHOWN ON THE PLANS. BASIS OF DESIGN IS A GENERAC TX TRANSFER SWITCH NON-SERVICE ENTRANCE RATED OPEN TRANSITION, 800A, 3 POLE 4 WIRE, 480V TRANSFER SWITCH IN A NEMA 1 ENCLOSURE. EACH AUTOMATIC TRANSFER SHALL CONSIST OF A MECHANICALLY HELD POWER TRANSFER SWITCH UNIT AND A MICROPROCESSOR CONTROLLER, INTERCONNECTED TO PROVIDE COMPLETE AUTOMATIC OPERATION. ALL TRANSFER SWITCHES AND CONTROL PANELS SHALL BE THE PRODUCT OF THE SAME MANUFACTURER.

2. ACCEPTABLE MANUFACTURERS

   AUTOMATIC TRANSFER SWITCHES SHALL BE GENERAC TX SERIES. ANY ALTERNATE SHALL BE SUBMITTED TO THE CONSULTING ENGINEER IN WRITING AT LEAST 10 DAYS PRIOR TO BID. EACH ALTERNATE BID MUST LIST ANY DEVIATIONS FROM THIS SPECIFICATION.

3. CODES AND STANDARDS

   THE AUTOMATIC TRANSFER SWITCHES AND ACCESSORIES SHALL CONFORM TO THE REQUIREMENTS OF:

   A. UL 1008 - STANDARD FOR AUTOMATIC TRANSFER SWITCHES
   B. NFPA 70 - NATIONAL ELECTRICAL CODE (2017 VERSION AND LATER FOR START CIRCUIT MONITORING)
   C. NEC ARTICLES 700, 701, 702, 703
   D. NFPA 110 – EMERGENCY AND STANDBY POWER SYSTEMS
   E. IEEE STANDARD 446 – IEEE RECOMMENDED PRACTICE FOR EMERGENCY AND STANDBY POWER SYSTEMS FOR COMMERCIAL AND INDUSTRIAL APPLICATIONS
   F. NEMA STANDARDS ICS10, MG1, MG250, ICS6, AB1
   G. ANSI C62.41
   H. INTERNATIONAL STANDARDS ORGANIZATION: ISO 8528, 9001.
   I. WHERE SEISMIC RATING AND/OR CERTIFICATION IS REQUIRED: IBC 2018, OSHPD

PART 2 PRODUCTS

1. MECHANICALLY HELD TRANSFER SWITCH

   A. THE BASIS OF DESIGN IS THE GENERAC TX SERIES TRANSFER SWITCH THAT UTILITIES A KNIFE BLADE MECHANICALLY LATCHING DESIGN WITH MAINTENANCE FREE CONTACTS. THE TRANSFER SWITCH UNIT SHALL BE AN ELECTRICALLY OPERATED AND MECHANICALLY HELD. THE OPEN TRANSITION SWITCH SHALL BE MECHANICALLY INTERLOCKED TO ENSURE ONLY ONE OF TWO POSSIBLE POSITIONS, NORMAL OR EMERGENCY.

   B. THE SWITCH SHALL BE POSITIVELY LOCKED AND UNAFFECTED BY MOMENTARY OUTAGES SO THAT CONTACT PRESSURE IS CONTACTS IS MINIMIZED FOR MAXIMUM RELIABILITY AND OPERATING LIFE.

   C. ALL MAIN CONTACTS SHALL BE SILVER COMPOSITION. SWITCHES SHALL HAVE SEGMENTED BLOW-ON CONSTRUCTION FOR HIGH WITHSTAND CURRENT CAPABILITY AND BE PROTECTED BY SEPARATE ARCING CONTACTS.

   D. A MANUAL OPERATING HANDLE SHALL BE PROVIDED FOR MAINTENANCE PURPOSES.

   E. DESIGNS UTILIZING COMPONENTS OF OR PARTS THEREOF WHICH ARE NOT INTENDED FOR CONTINUOUS DUTY, REPETITIVE SWITCHING, OR TRANSFER BETWEEN TWO ACTIVE POWER SOURCES ARE NOT ACCEPTABLE.

   F. WHERE NEUTRAL CONDUCTORS MUST BE SWITCHED, THE ATS SHALL BE PROVIDED WITH FULLY RATED NEUTRAL TRANSFER CONTACTS.

   G. WHERE NEUTRAL CONDUCTORS ARE TO BE SOLIDLY CONNECTED, A NEUTRAL TERMINAL PLATE WITH FULLY RATED AL-CU PRESSURE CONNECTORS SHALL BE PROVIDED.

   H. THE SWITCH SHALL BE CAPABLE OF THE FOLLOWING METHODS OF TRANSFER: OPEN WITH IN-PHASE TRANSITION ONLY

2. ATS CONTROL WITH INTEGRATED USER INTERFACE PANEL

   A. THE BASIS OF DESIGN IS THE GENERAC TXC-100 CONTROLLER WITH INTEGRATED USER INTERFACE PANEL WHICH IS VOLTAGE AGNOSTIC FOR SERVICE PURPOSES REMOVING THE NEED FOR TECHNICIANS TO CARRY AND SUPPORT CONTROL PANELS FOR EVERY AVAILABLE VOLTAGE. ANY MANUFACTURERS THAT PROVIDE A CONTROLLER OR CONTROL PANEL THAT DOES NOT MEET THIS REQUIREMENT SHOULD NOTIFY THE CONSULTING ENGINEER BEFORE BIDDING.

   B. THE CONTROLLER SHALL BE CONNECTED TO THE TRANSFER SWITCH BY AN INTERCONNECTING WIRING HARNESS. THE HARNESS SHALL INCLUDE A KEYED DISCONNECT PLUG TO ENABLE THE CONTROLLER TO BE DISCONNECTED FROM THE TRANSFER SWITCH FOR ROUTINE MAINTENANCE.

   C. THE CONTROLLER SHALL DIRECT THE OPERATION OF THE TRANSFER SWITCH. THE CONTROLLER'S SENSING AND LOGIC SHALL BE CONTROLLED BY A BUILT-IN MICROPROCESSOR FOR MAXIMUM RELIABILITY, MINIMUM MAINTENANCE, AND INCLUDE STANDARD ON-BOARD SERIAL COMMUNICATIONS CAPABILITY.

   D. A USER ACCESSIBLE USB PORT SHALL BE PROVIDED TO FACILITATE FIRMWARE UPDATES, UPLOADING OF SWITCH OPERATIONAL PARAMETERS, DOWNLOADING OF EVENT HISTORY AND SWITCH OPERATIONAL STATISTICS. THIS USB PORT SHALL BE FRONT ACCESSIBLE WITHOUT OPENING THE ATS DOOR.

   E. THE CONTROLLER SHALL PROVIDE SINGLE AND THREE PHASE CAPABILITY FOR MAXIMUM APPLICATION FLEXIBILITY AND MINIMAL SPARE PART REQUIREMENTS. VOLTAGE SENSING SHALL BE TRUE RMS TYPE AND SHALL BE ACCURATE TO ± 1% OF NOMINAL VOLTAGE. FREQUENCY SENSING SHALL BE ACCURATE TO ± 0.1HZ. TIME DELAY SETTINGS SHALL BE ACCURATE TO ±0.5% OF THE FULL-SCALE VALUE OF THE TIME DELAY. THE PANEL SHALL BE CAPABLE OF OPERATING OVER A TEMPERATURE RANGE OF -20 TO + 70 DEGREES C.

   F. THE CONTROLLER POWER SUPPLY SHALL BE FIELD-CONFIGURABLE TO OPERATE ON 120V THROUGH 480V SYSTEMS WITHOUT THE NEED FOR TRANSFORMERS.

   G. CONTROL LOGIC SHALL BE BACKED UP WITH A RECHARGEABLE, USER-REPLACEABLE LITHIUM-ION BATTERY THAT SHALL ALSO MAINTAIN CONTROL POWER FOR UP TO 60 MINUTES IN THE EVENT NO SOURCE POWER IS AVAILABLE.

   H. THE CONTROLLER SHALL BE ENCLOSED WITH A PROTECTIVE COVER AND BE MOUNTED SEPARATE FROM THE TRANSFER SWITCH UNIT FOR SAFETY AND EASE OF MAINTENANCE.

   I. THE CONTROLLER SHALL MEET OR EXCEED THE REQUIREMENTS FOR ELECTROMAGNETIC COMPATIBILITY (EMC) AS FOLLOWS:
   1. IEC 61000 – 4 – 3 RADIATED RF FIELD IMMUNITY
   2. IEC 61000 – 4 – 4 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY
   3. IEC 61000 – 4 – 5 SURGE IMMUNITY
   4. IEC 61000 – 4 – 6 CONDUCTED RF IMMUNITY
   5. IEC 61000 – 4 -11 VOLTAGE DIPS AND INTERRUPTIONS
   6. EN 61000 – 6 - 2 INDUSTRIAL IMMUNITY REQUIREMENTS EN 61000-6-4 - RADIATED EMISSIONS
   7. EN 61000 – 6 - 4 CONDUCTED EMISSIONS
   8. CISPR 11 – CONDUCTED RF EMISSIONS AND RADIATED RF EMISSIONS

3. ENCLOSURE

   THE BASIS OF DESIGN IS A GENERAC TX SERIES TRANSFER SWITCH IN A NEMA 3R ENCLOSURE. LARGER ENCLOSURES THAN THE BASIS OF DESIGN WILL NEED TO BE APPROVED BY THE CONSULTING ENGINEER TO ENSURE THERE IS ENOUGH WALL SPACE AND APPROPRIATE CLEARANCE.

   A. PROVIDE A TEMPERATURE AND HUMIDITY CONTROLLED ANTI-CONDENSATION HEATER FOR ALL NEMA 3R AND 4X ENCLOSED UNITS. HEATER SHALL BE AN AVAILABLE OPTION ON NEMA 1 ENCLOSURES, WHEN CALLED FOR ON PLANS. HEATER COVER TO INDICATE A HOT SURFACE.

   B. THE SWITCH MECHANISM AND CONTROLLER SHALL BE EASILY REMOVABLE FROM THE ENCLOSURE IN THE FIELD. THIS REQUIREMENT WILL FACILITATE EASY SINGLE-PERSON INSTALLATION ON WALL MOUNTED SWITCHES, CONDUIT FITTING, AND CABLE PULLING WHILE MINIMIZING RISK OF DAMAGE AND/OR CONTAMINATION OF ATS COMPONENTS DURING THE INSTALL PROCESS.

   C. CONTROLLER HUMAN INTERFACE AND USB PORT SHALL BE VISIBLE AND OPERATIONAL THROUGH THE ENCLOSURE DOOR, WITHOUT THE NEED FOR PERSONAL PROTECTIVE EQUIPMENT, AVOIDING ARC-FLASH HAZARD FOR ROUTINE CHECKS OF THE CONTROLLER STATUS.

PART 3 OPERATIONS

1 CONTROLLER DISPLAY AND KEYPAD

   A. A BACKLIT FOUR-LINE GRAPHICAL LCD DISPLAY AND HUMAN INTERFACE SHALL BE AN INTEGRAL PART OF THE CONTROLLER FOR VIEWING ALL AVAILABLE DATA AND SETTING DESIRED OPERATIONAL PARAMETERS. OPERATIONAL PARAMETERS SHALL ALSO BE AVAILABLE FOR VIEWING AND LIMITED CONTROL THROUGH THE RS-485 COMMUNICATIONS PORT.

   B. ALL INSTRUCTIONS AND CONTROLLER SETTINGS SHALL BE EASILY ACCESSIBLE, READABLE AND ACCOMPLISHED WITHOUT THE USE OF CODES, CALCULATIONS, OR INSTRUCTION MANUALS.

   C. THE USER INTERFACE SHALL BE PROVIDED WITH TEST/RESET MODES. THE TEST MODE WILL SIMULATE A NORMAL SOURCE FAILURE. THE RESET MODE SHALL BYPASS THE TIME DELAYS ON EITHER TRANSFER TO EMERGENCY OR RETRANSFER TO NORMAL.

   D. THE FOLLOWING PARAMETERS SHALL ONLY BE ADJUSTABLE ONLY BY AUTHORIZED SERVICE PERSONNEL:

   1. NOMINAL LINE VOLTAGE AND FREQUENCY
   2. SINGLE OR THREE PHASE SENSING ON NORMAL
   3. TRANSFER OPERATING MODE CONFIGURATION, (OPEN TRANSITION, OR DELAYED TRANSITION)

2 VOLTAGE AND FREQUENCY SENSING

A. VOLTAGE AND FREQUENCY ON BOTH THE NORMAL AND EMERGENCY SOURCES (AS NOTED BELOW) SHALL BE CONTINUOUSLY MONITORED, WITH THE FOLLOWING PICKUP, DROPOUT, AND TRIP SETTINGS CAPABILITIES; VALUES SHOWN AS PERCENTAGE OF NOMINAL UNLESS OTHERWISE SPECIFIED.

VOLTAGE AND FREQUECY SETTINGS	RANGE	DEFAULT VALUE
SOURCE 1 (NORMAL) IS GENSET	YES OR NO	NO
SOURCE 1 UNDERVOLTAGE DROPOUT	50 - 97%	85%
SOURCE 1 UNDERVOLTAGE PICKUP	52 - 99%	90%
SOURCE 1 OVERVOLTAGE DROPOUT	105 - 120%	110%
SOURCE 1 OVERVOLTAGE PICKUP	103 - 118%	105%
SOURCE 1 UNDERFREQUECY DROPOUT	90 - 97%	90%
SOURCE 1 UNDERFREQUECY PICKUP	91 - 99%	95%
SOURCE 1 OVERFREQUECY DROPOUT	103 - 110%	105%
SOURCE 1 OVERFREQUECY PICKUP	101 - 109%	102%
SOURCE 1 VOLTAGE IMBALANCE DROPOUT	5 - 20%	5%
SOURCE 1 VOLTAGE IMBALANCE PICKUP	3 - 18%	3%
SOURCE 1 WARMUP TIME	0 - 1,800 SEC	3 SEC
SOURCE 1 COOL DOWN TIME	0 - 1,800 SEC	1,800 SEC
SOURCE 1 MINIMUM RUN TIME	300 - 1,800 SEC	1,200 SEC
SOURCE 2 (NORMAL) IS GENSET	YES OR NO	YES
SOURCE 2 UNDERVOLTAGE DROPOUT	50 - 97%	85%
SOURCE 2 UNDERVOLTAGE PICKUP	52 - 99%	90%
SOURCE 2 OVERVOLTAGE DROPOUT	105 - 120%	110%
SOURCE 2 OVERVOLTAGE PICKUP	103 - 118%	105%
SOURCE 2 UNDERFREQUECY DROPOUT	90 - 97%	90%
SOURCE 2 UNDERFREQUECY PICKUP	91 - 99%	99%
SOURCE 2 OVERFREQUECY DROPOUT	103 - 110%	105%
SOURCE 2 OVERFREQUECY PICKUP	101 - 109%	102%
SOURCE 2 VOLTAGE IMBALANCE DROPOUT	5 - 20%	5%
SOURCE 2 VOLTAGE IMBALANCE PICKUP	3 - 18%	3%
SOURCE 2 WARMUP TIME	0 - 1,800 SEC	3 SEC
SOURCE 2 COOL DOWN TIME	0 - 1,800 SEC	1,800 SEC
SOURCE 2 MINIMUM RUN TIME	300 - 1,800 SEC	1,200 SEC
PHASE ROTATION CHECK	ABC, CBA, OFF	ABC
SUPPLY OVERVOLTAGE	350 VAC	FIXED
MANUAL RETURN TO NORMAL	YES OR NO	YES OR NO

TIME DELAY SETTINGS	RANGE	DEFAULT VALUE
TRANSFER TO EMERGENCY	120 SEC MAX	30 SEC
RE-TRANSFER TO NORMAL	1,800 SEC MAX	1,800 SEC
TIME DELAY NEUTRAL	120 SEC MAX	30 SEC
ENGINE COOL DOWN	300 - 1,800 MAX	1,800 SEC
DELAY TRANSITION TIME	120 SEC MAX	120 SEC
ELEVATOR SIGNAL	120 SEC MAX	30 SEC
IN PHASE TRANSFER	YES OR NO	YES OR NO
IN PHASE SYNCHRONIZATION	TIME 60 - 3,600 SEC	300 SEC
PREFERRED SOURCE	S1, S2	S1
VOLTAGE IMBALANCE ENABLE	YES OR NO	YES OR NO
VOLTAGE IMBALANCE TIMEOUT	10 - 30 SEC MAX	20 SEC

B. REPETITIVE ACCURACY OF ALL SETTINGS SHALL BE WITHIN 1% AT +25C

C. VOLTAGE AND FREQUENCY SETTINGS SHALL BE FIELD ADJUSTABLE IN 1% INCREMENTS EITHER LOCALLY WITH THE DISPLAY AND KEYPAD OR REMOTELY VIA RS-485 COMMUNICATIONS PORT ACCESS.

D. SOURCE STATUS SCREENS SHALL BE PROVIDED FOR BOTH NORMAL & EMERGENCY TO PROVIDE DIGITAL READOUT OF VOLTAGE AND FREQUENCY.

E. THE BACKLIT GRAPHICAL DISPLAY SHALL HAVE MULTIPLE LANGUAGE CAPABILITY. LANGUAGES CAN BE SELECTED FROM THE USER INTERFACE.

3. TIME DELAYS

A. A LINE INTERRUPT DELAY SHALL BE PROVIDED TO OVERRIDE MOMENTARY NORMAL SOURCE OUTAGES, DELAY ALL TRANSFER AND ENGINE STARTING SIGNALS; ADJUSTABLE 0 TO 120 SECONDS. IT SHALL BE POSSIBLE TO BYPASS THE TIME DELAY FROM THE CONTROLLER USER INTERFACE.

B. AN ENGINE WARM UP DELAY SHALL BE PROVIDED FOR EXTENDED ENGINE RPM STABILIZATION WHERE FAST TRANSFER TO THE EMERGENCY SOURCE IS NOT REQUIRED; ADJUSTABLE 0 TO 1,800 SECONDS. IT SHALL BE POSSIBLE TO BYPASS THE TIME DELAY FROM THE CONTROLLER USER INTERFACE.

C. A TRANSFER TO EMERGENCY DELAY SHALL BE PROVIDED FOR CONTROLLED SEQUENCING OF LOADS TO THE EMERGENCY SOURCE; ADJUSTABLE FROM 0 TO 120 SECONDS. IT SHALL BE POSSIBLE TO BYPASS THE TIME DELAY FROM THE CONTROLLER USER INTERFACE.

D. A RETRANSFER TO NORMAL DELAY SHALL BE PROVIDED TO ENSURE STABILITY OF THE NORMAL SOURCE, ADJUSTABLE FROM 0 TO 1,800 SECONDS. TIME DELAY SHALL BE AUTOMATICALLY BYPASSED IF THE EMERGENCY SOURCE FAILS AND NORMAL SOURCE IS ACCEPTABLE.

E. AN ENGINE MINIMUM RUNTIME DELAY SHALL BE PROVIDED TO REDUCE NUISANCE STARTS WHEN THE NORMAL SOURCE POWER IS UNSTABLE BUT DOES NOT TRIGGER A TRANSFER TO THE EMERGENCY SOURCE, ADJUSTABLE FROM 5 TO 30 MINUTES. OPERATES IN CONJUNCTION WITH ENGINE COOL DOWN DELAY.

F. AN ENGINE COOL DOWN DELAY SHALL BE PROVIDED; ADJUSTABLE 300 – 1,800 SECONDS.

G. A DELAYED TRANSITION DELAY SHALL BE PROVIDED TO ENSURE SUFFICIENT TIME FOR MOTOR VOLTAGE DECAY FOR TRANSITION BETWEEN LIVE SOURCES; ADJUSTABLE FROM 0 – 120 SECONDS.

H. AN ELEVATOR SIGNAL BEFORE TRANSFER OUTPUT SIGNAL SHALL BE PROVIDED TO DRIVE AN EXTERNAL RELAY FOR SELECTIVE LOAD DISCONNECT CONTROL. THE CONTROLLER SHALL HAVE THE ABILITY TO ACTIVATE AN ADJUSTABLE 0 TO 120 SECOND DELAY IN ANY OF THE FOLLOWING MODES:

   1. PRIOR TO TRANSFER ONLY.
   2. PRIOR TO AND AFTER TRANSFER.
   3. NORMAL TO EMERGENCY ONLY.
   4. EMERGENCY TO NORMAL ONLY.
   5. NORMAL TO EMERGENCY AND EMERGENCY TO NORMAL.
   6. ALL TRANSFER CONDITIONS OR ONLY WHEN BOTH SOURCES ARE AVAILABLE.

I. FOR SPECIAL APPLICATIONS (I.E. THREE-SOURCES), THE OPTION TO SELECT THE PREFERRED SOURCE.

J. ALL ADJUSTABLE TIME DELAYS SHALL BE FIELD ADJUSTABLE WITHOUT THE USE OF SPECIAL TOOLS OR SOFTWARE.

TIME DELAY SUMMARY TABLE:

TIME DELAY DESCRIPTION	RANGE	DEFAULT VALUE
LINE INTERRUPT DELAY	0 - 120 SEC	3 SEC
ENGINE WARM UP DELAY	0 - 1,800 SEC	3 SEC
TRANSFER TO EMERGENCY	0 - 120 SEC	3 SEC
RETRANSFER TO NORMAL	0 - 1,800 SEC	1,800 SEC
ENGINE MINIMUM RUN TIME	5 - 30 MIN	5 MIN
ENGINE COOL DOWN	300 - 1,800 SEC	1,800 SEC
DELAYED TRANSITION (CENTER OFF POSITION)	0 - 120 SEC	120 SEC
ELEVATOR SIGNAL BEFOR TRANSFER	0 - 120 SEC	0 SEC
PREFERRED SOURCE	NORMAL(S1), EMERG.(S2)	NORMAL(S1)

4. EXTERNAL CONTROL INTERFACES AND INDICATORS

A. COMMUNICATIONS CONNECTORS, USER INTERFACE AND DISPLAY SHALL BE ACCESSIBLE AND USABLE WITHOUT PRESENTING AN ARC-FLASH HAZARD.

B. CUSTOMER INPUTS SHALL BE OPTICALLY ISOLATED FOR WIDER COMPATIBILITY WITH EXTERNAL SYSTEMS. THIS WILL PROTECT THE CONTROLLER FROM EXTERNAL SURGES AND TRANSIENT VOLTAGES.

C. SURGE PROTECTION FOR THE ATS CONTROLS SHALL BE PROVIDED.

D. REPLACEABLE FUSES TO PROTECT THE POWER SUPPLY TO THE ATS CONTROL PANEL.

E. A SET OF CONTACTS RATED 5 AMPS, 30 VDC SHALL BE PROVIDED FOR A LOW-VOLTAGE ENGINE START SIGNAL. THE START SIGNAL SHALL PREVENT DRY CRANKING OF THE ENGINE BY REQUIRING THE GENERATOR SET TO REACH PROPER OUTPUT AND RUN FOR THE DURATION OF THE ENGINE MINIMUM RUNTIME SETTING, REGARDLESS OF WHETHER THE NORMAL SOURCE RESTORES BEFORE THE LOAD IS TRANSFERRED.

F. ENGINE STARTING CONTACTS SHALL FACILITATE START-CIRCUIT MONITORING TO COMPLY WITH THE 2017 AND LATER VERSIONS OF NFPA 70 ARTICLE 700.10 (D)(3).

G. TWO SETS OF FORM-C AUXILIARY CONTACTS RATED 10 AMPS, 250 VAC SHALL BE PROVIDED TO INDICATE THE SWITCH ACTUATOR POSITION, INCLUDING CENTER-OFF FOR TIME DELAY NEUTRAL SWITCHES OR A PERMISSIVE (EMERGENCY INHIBIT) CONDITION.

H. A SINGLE GENERAL ALARM (SUMMARY ALARM) INDICATION SHALL LIGHT UP THE ALERT INDICATOR AND DE-ENERGIZE THE CONFIGURED COMMON ALARM OUTPUT RELAY FOR EXTERNAL MONITORING.

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No. DATE

ELECTRICAL SPECIFICATIONS

SHEET
E005

ASC PROJECT NUMBER: 21-000

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ELECTRICAL SPECIFICATIONS

I. LED INDICATING LIGHTS SHALL BE PROVIDED; ONE TO INDICATE WHEN THE ATS IS CONNECTED TO THE NORMAL SOURCE AND ONE TO INDICATE WHEN THE ATS IS CONNECTED TO THE EMERGENCY SOURCE.

J. LED INDICATING LIGHTS SHALL BE PROVIDED AND ENERGIZED BY CONTROLLER OUTPUTS. THE LIGHTS SHALL PROVIDE TRUE SOURCE AVAILABILITY OF THE NORMAL AND EMERGENCY SOURCE, AS DETERMINED BY THE VOLTAGE SENSING TRIP AND RESET SETTINGS FOR EACH SOURCE.

K. LED INDICATING LIGHT SHALL BE PROVIDED TO INDICATE SWITCH NOT IN AUTOMATIC MODE (MANUAL).

L. LED INDICATING LIGHT SHALL BE PROVIDED TO INDICATE ANY ALARM CONDITION.

M. THE CONTROLLER SHALL HAVE TWO PROGRAMMABLE INPUTS AND ONE PROGRAMMABLE OUTPUT AS STANDARD; WITH AN OPTIONAL EXPANSION BOARD TO ADD UP TO FOUR PROGRAMMABLE INPUT/OUTPUTS. PROGRAMMABLE I/O CONDITIONS SHALL INCLUDE:

PROGRAMMABLE OUTPUT	PROGRAMMABLE INPUT
SOURCE 1 - TWO WIRE START	PERMISSIVE (EMERGENCY INHIBIT)
SOURCE 2 - TWO SIRE START	REMOTE ENGINE FAST TEST
ENGINE EXERCISING	REMOTE ENGINE NORMAL TEST
ENGINE WARMUP	ATS TIMER
SIGNAL BEFORE TRANSFER	INITIATE DEMAND RESPONSE
GENERAL ALARM	
SOURCE 1 GOOD	
SOURCE 2 GOOD	

N. SYSTEM STATUS - THE CONTROLLER LCD DISPLAY SHALL INCLUDE A SYSTEM STATUS SCREEN WHICH SHALL BE ACCESSIBLE FROM ANY POINT IN THE MENU SYSTEM BY DEPRESSING THE “ESC” KEY UNTIL YOU ARRIVE AT THE SYSTEM STATUS SCREEN. THIS SCREEN SHALL DISPLAY A CLEAR DESCRIPTION OF THE ACTIVE OPERATING SEQUENCES AND SWITCH POSITION. OPERATIONAL STATUS INFORMATION DISPLAYED SHALL INCLUDE:

1. SOURCE 1 STATUS (GOOD OR BAD)
2. SOURCE 2 STATUS (GOOD OR BAD)
3. ANY ACTIVE TIMER
4. PERMISSIVE (EMERGENCY INHIBIT WHEN ACTIVE)

5. TRANSFER AND EXERCISE CONTROLS

THE FOLLOWING STANDARD FEATURES SHALL BE BUILT INTO THE CONTROLLER, CAPABLE OF BEING ACTIVATED THROUGH KEYPAD PROGRAMMING AS REQUIRED BY THE USER:

A. PROVIDE THE ABILITY TO SELECT “COMMIT/NO COMMIT TO TRANSFER” TO DETERMINE WHETHER THE LOAD SHOULD BE TRANSFERRED TO THE EMERGENCY GENERATOR IF THE NORMAL SOURCE RESTORES BEFORE THE GENERATOR IS READY TO ACCEPT THE LOAD.

B. AN ENGINE GENERATOR EXERCISING TIMER SHALL BE PROVIDED TO CONFIGURE DAILY, DAY OF WEEK, WEEKLY, BI-WEEKLY, OR MONTHLY TESTING OF AN ENGINE GENERATOR SET AT A SPECIFIED TIME OF DAY WITH OR WITHOUT LOAD FOR A PROGRAMMABLE PERIOD OF TIME (ENGINE MINIMUM RUNTIME).

C. TERMINALS SHALL BE PROVIDED FOR A REMOTE CONTACT TO SIGNAL THE ATS TO TRANSFER TO EMERGENCY FOR REMOTE TEST. TEST SIGNAL CAN BE ENABLED THROUGH THE KEYPAD OR DIGITAL INPUT. TRANSFER TO EMERGENCY FOR DEMAND RESPONSE CAN BE ENABLED BY A DIGITAL INPUT.

D. FOR IN-PHASE TRANSFER SWITCH DESIGNS: AN IN-PHASE MONITOR SHALL BE PROVIDED IN THE CONTROLLER SUCH THAT THE TRANSFER OCCURS WITH LESS THAN TEN DEGREES PHASE ANGLE DIFFERENCE BETWEEN SOURCES. THE MONITOR SHALL CONTROL TRANSFER SO THAT MOTOR LOAD INRUSH CURRENTS DO NOT EXCEED NORMAL STARTING CURRENTS AND SHALL NOT REQUIRE EXTERNAL CONTROL OF POWER SOURCES. IN-PHASE SWITCH TRANSFER TIME SHALL NOT EXCEED 25MS.

E. FOR DELAYED TRANSITION TRANSFER SWITCH DESIGNS: TERMINALS SHALL BE PROVIDED FOR A REMOTE CONTACT TO SIGNAL THE ATS TO LOAD-SHED (PERMISSIVE IS REMOVED) AND MOVE TO A CENTER-OFF POSITION. WHEN THE LOAD-SHED SIGNAL IS REMOVED (PERMISSIVE IS RESTORED), THE ATS SHALL RECLOSE TO THE EMERGENCY. IF NORMAL SOURCE IS GOOD DURING LOAD-SHED THE ATS SHALL TRANSFER TO AND REMAIN ON NORMAL SOURCE.

6. DATA LOGGING AND DIAGNOSTICS

CONTROLLERS THAT REQUIRE MULTIPLE SCREENS TO DETERMINE SYSTEM STATUS OR DISPLAY “CODED” SYSTEM STATUS MESSAGES, WHICH MUST BE EXPLAINED BY REFERENCES IN THE OPERATOR’S MANUAL ARE NOT PERMISSIBLE.

A. CONTROLLER & CONTACTOR HEALTH MONITORING WITH VISUAL AND AUXILIARY CONTACT STATUS SHALL BE PROVIDED.

B. COMMUNICATIONS INTERFACE – THE CONTROLLER SHALL BE CAPABLE OF INTERFACING, THROUGH A STANDARD RS-485 SERIAL COMMUNICATION PORT WITH A NETWORK OF TRANSFER SWITCHES. ADJUSTABLE HUMIDISTAT. 120VAC POWER FOR THE STRIP HEATER IS TO BE PROVIDED BY OTHERS.

C. DATA LOGGING – THE CONTROLLER SHALL HAVE THE ABILITY TO LOG DATA AND TO MAINTAIN THE LAST 200 EVENTS, EVEN IN THE EVENT OF TOTAL POWER LOSS. THE FOLLOWING EVENTS SHALL BE TIME AND DATE STAMPED AND MAINTAINED IN A NON-VOLATILE MEMORY:

1. DATE, TIME AND REASON FOR TRANSFER NORMAL TO EMERGENCY
2. DATE, TIME AND REASON FOR TRANSFER EMERGENCY TO NORMAL
3. DATE, TIME AND REASON FOR ENGINE START
4. DATE AND TIME ENGINE STOPPED
5. DATE AND TIME EMERGENCY SOURCE AVAILABLE
6. DATE AND TIME EMERGENCY SOURCE NOT AVAILABLE

PART 4 ADDITIONAL FEATURES AND ACCESSORIES

1. ADDITIONAL OPTIONAL FEATURES

A. LINE INTERUPT TIME DELAY. AN EXTENDED TIME DELAY ON ENGINE STARTING SHALL BE PROVIDED. ADJUSTABLE FROM 0 TO 120 SECONDS. DEFAULT SET AT 3 SECONDS.

B. INTEGRATED METERING WITH CURRENT TRANSFORMERS. THREE PHASE AMMETER WITH SELECTOR SWITCH (WITH CURRENT TRANSFORMERS AND SHORTING BLOCKS) SHALL BE PROVIDED.

C. MANUAL RETRANSFER TO GENERATOR. PERMISSIVE CONTACT (NORMAL) ALLOWS THE ABILITY TO INHIBIT TRANSFER TO NORMAL WHEN CONTACT IS CLOSED SHALL BE PROVIDED.

D. PERMISSIVE (EMERGENCY INHIBIT). PERMISSIVE CONTACT (EMERGENCY INHIBIT) ALLOWS THE ABILITY TO INHIBIT TRANSFER TO EMERGENCY WHEN CONTACT IS CLOSED SHALL BE PROVIDED.

E. CHICAGO CODE KIT. FOR CITY OF CHICAGO CODE REQUIREMENT - AUDIBLE ALARM TO SIGNAL EACH TIME TRANSFER TO EMERGENCY OCCURS, NORMAL SOURCE AVAILABLE INDICATION AND EMERGENCY SOURCE AVAILABLE INDICATION SHALL BE PROVIDED.

F. EXPANDED INPUT/OUTPUT MODULE. EXPANDABLE INPUT/OUTPUT BOARD MODULE INCLUDES: 4 RELAY OUTPUTS AND 4 OPTICALLY ISOLATED INPUTS

G. PAD LOCKABLE CONTROLLER COVER (STANDARD ON NEMA 3R). PAD LOCKABLE USER INTERFACE COVER SHALL BE PROVIDED WITH THE ABILITY TO PROTECT THE USER INTERFACE FROM THE ENVIROMENT.

H. TEMP & HUMIDITY CONTROLLED HEATER FOR NEMA 1 (STANDARD NEMA 3R). AN ENCLOSURE HEATER STRIP SHALL BE SUPPLIED INSIDE THE TRANSFER SWITCH ENCLOSURE AND SHALL BE CONTROLLED BY AN ADJUSTABLE HUMIDISTAT. 120VAC POWER FOR THE STRIP HEATER IS TO BE PROVIDED BY OTHERS.

PART 5 ADDITIONAL REQUIREMENTS

1. WITHSTAND AND CLOSING RATINGS

A. THE ATS SHALL BE RATED TO CLOSE ON AND WITHSTAND THE AVAILABLE RMS SYMMETRICAL SHORT CIRCUIT CURRENT AT THE ATS TERMINALS WITH THE TYPE OF OVERCURRENT PROTECTION SHOWN ON THE PLANS.

B. THE SWITCH MECHANISM AND CONTROLLER SHALL BE EASILY REMOVABLE FROM THE ENCLOSURE IN THE FIELD. THIS REQUIREMENT WILL FACILITATE EASY SINGLE-PERSON INSTALLATION ON WALL MOUNTED SWITCHES, CONDUIT FITTING, AND CABLE PULLING WHILE MINIMIZING RISK OF DAMAGE AND/OR CONTAMINATION OF ATS COMPONENTS DURING THE INSTALL PROCESS.

C. CONTROLLER HUMAN INTERFACE AND USB PORT SHALL BE VISIBLE AND OPERATIONAL THROUGH THE ENCLOSURE DOOR, WITHOUT THE NEED FOR PERSONAL PROTECTIVE EQUIPMENT, AVOIDING ARC-FLASH HAZARD FOR ROUTINE CHECKS OF THE CONTROLLER STATUS.

2. TESTS AND CERTIFICATION

A. THE COMPLETE ATS SHALL BE FACTORY TESTED TO ENSURE PROPER OPERATION OF THE INDIVIDUAL COMPONENTS AND CORRECT OVERALL SEQUENCE OF OPERATION AND TO ENSURE THAT THE OPERATING TRANSFER TIME, VOLTAGE, FREQUENCY, AND TIME DELAY SETTINGS ARE IN COMPLIANCE WITH THE SPECIFICATION REQUIREMENTS.

B. THE ATS MANUFACTURER SHALL BE CERTIFIED TO ISO 9001: 2015 INTERNATIONAL QUALITY STANDARD AND THE MANUFACTURER SHALL HAVE THIRD PARTY CERTIFICATION VERIFYING QUALITY ASSURANCE IN DESIGN/DEVELOPMENT, PRODUCTION, INSTALLATION, AND SERVICING IN ACCORDANCE WITH ISO 9001: 2015.

3. SERVICE REPRESENTATION

A. THE ATS MANUFACTURER SHALL SUPPORT A SERVICE ORGANIZATION OF COMPANY-EMPLOYED PERSONNEL LOCATED THROUGHOUT THE CONTIGUOUS UNITED STATES. THE SERVICE CENTER'S PERSONNEL MUST BE FACTORY TRAINED AND MUST BE ON CALL 24 HOURS A DAY, 365 DAYS A YEAR.

B. THE MANUFACTURER SHALL MAINTAIN RECORDS OF SWITCH SHIPMENTS, BY SERIAL NUMBER, FOR A MINIMUM OF 10 YEARS.

4. WARRANTY

A. THE BASIS OF THE DESIGN IS A GENERAC TX SERIES AUTOMATIC TRANSFER SWITCH WITH A COMPREHENSIVE 5 YEAR WARRANTY.

B. THE COMPREHENSIVE WARRANTY IS DEFINED AS THE MANUFACTURER COVERING REPLACEMENT PARTS, LABOR, AND LIMITED TECHNICIAN TRAVEL COSTS FOR COVERED WARRANTY REPAIRS DURING THE LISTED WARRANTY PERIOD.

C. THE SWITCH MECHANISM AND CONTROLLER SHALL BE EASILY REMOVABLE FROM THE ENCLOSURE IN THE FIELD. THIS REQUIREMENT WILL FACILITATE EASY SINGLE-PERSON INSTALLATION ON WALL MOUNTED SWITCHES, CONDUIT FITTING, AND CABLE PULLING WHILE MINIMIZING RISK OF DAMAGE AND/OR CONTAMINATION OF ATS COMPONENTS DURING THE INSTALL PROCESS.

D. CONTROLLER HUMAN INTERFACE AND USB PORT SHALL BE VISIBLE AND OPERATIONAL THROUGH THE ENCLOSURE DOOR, WITHOUT THE NEED FOR PERSONAL PROTECTIVE EQUIPMENT, AVOIDING ARC-FLASH HAZARD FOR ROUTINE CHECKS OF THE CONTROLLER STATUS.

SECTION 263213 - ENGINE GENERATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT

1.2 SUMMARY

A. SECTION INCLUDES PACKAGED ENGINE-GENERATOR SETS FOR EMERGRNCY POWER SUPPLY WITH THE FOLLOWING FEATURES: ADJUST LIST BELOW TO SUIT PROJECT.

1. BIFUEL: COMBINED DIESEL AND NATURAL GAS ENGINE.
2. UNIT-MOUNTED COOLING SYSTEM.
3. UNIT-MOUNTED CONTROL AND MONITORING.
4. PERFORMANCE REQUIREMENTS FOR SENSITIVE LOADS.
5. FUEL SYSTEM.
6. OUTDOOR ENCLOSURE.

B. RELATED REQUIREMENTS:

1. "TRANSFER SWITCHES" FOR TRANSFER SWITCHES INCLUDING SENSORS AND RELAYS TO INITIATE AUTOMATIC-STARTING AND -STOPPING SIGNALS FOR ENGINE-GENERATOR SETS.

1.3 DEFINITIONS

A. OPERATIONAL BANDWIDTH: THE TOTAL VARIATION FROM THE LOWEST TO HIGHEST VALUE OF A PARAMETER OVER THE RANGE OF CONDITIONS INDICATED, EXPRESSED AS A PERCENTAGE OF THE NOMINAL VALUE OF THE PARAMETER.

B. LP: LIQUID PETROLEUM.

C. EPS: EMERGENCY POWER SUPPLY.

D. EPSS: EMERGENCY POWER SUPPLY SYSTEM.

E. BIFUEL: STARTING AND PILOT FUEL AS DIESEL, RUNNING FUEL AS NATURAL GAS.

F. DUAL-FUEL: PRIMARY FUEL AS NATURAL GAS, BACKUP ONSITE FUEL AS LP.

G. EMERGENCY POWER SUPPLY: NEC700, ESSENTIAL FOR LIFE SAFETY LOADS. GENERATOR TO MEET NFPA 110 LEVEL 1.

H. STANDBY POWER SUPPLY: NEC701, LEGALLY REQUIRED. GENERATOR TO MEET NFPA 110 LEVEL 2.

I. OPTIONAL STANDBY POWER SUPPLY: NEC702, OPTIONAL STANDBY.

1.4 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

1. INCLUDE RATED CAPACITIES, OPERATING CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND FURNISHED SPECIALTIES AND ACCESSORIES.

2. INCLUDE THERMAL DAMAGE CURVE FOR GENERATOR.

3. INCLUDE TIME-CURRENT CHARACTERISTIC CURVES FOR GENERATOR PROTECTIVE DEVICE.

4. INCLUDE FUEL CONSUMPTION IN **GALLONS PER HOUR** AT 0.8 POWER FACTOR AT 0.5, 0.75 AND 1.0 TIMES GENERATOR CAPACITY.

5. INCLUDE GENERATOR EFFICIENCY AT 0.8 POWER FACTOR AT 0.5, 0.75 AND 1.0 TIMES GENERATOR CAPACITY.

6. INCLUDE AIR FLOW REQUIREMENTS FOR COOLING AND COMBUSTION AIR IN CFM AT 0.8 POWER FACTOR AND RATED LOAD. DRAWINGS SHOWING REQUIREMENTS AND LIMITATIONS FOR LOCATION OF AIR INTAKE AND EXHAUSTS.

7. INCLUDE GENERATOR CHARACTERISTICS, INCLUDING, BUT NOT LIMITED TO KW RATING, EFFICIENCY, REACTANCES, AND SHORT-CIRCUIT CURRENT CAPABILITY.

B. SHOP DRAWINGS:

1. INCLUDE PLANS AND ELEVATIONS FOR ENGINE-GENERATOR SET AND OTHER COMPONENTS SPECIFIED. INDICATE ACCESS REQUIREMENTS AFFECTED BY HEIGHT OF SUBBASE FUEL TANK.

2. INCLUDE DETAILS OF EQUIPMENT ASSEMBLIES. INDICATE DIMENSIONS, WEIGHTS, CENTER OF GRAVITY OF FULL ASSEMBLY, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH FIELD CONNECTION.

3. IDENTIFY FLUID DRAIN PORTS AND CLEARANCE REQUIREMENTS FOR PROPER FLUID DRAIN.

4. DESIGN CALCULATIONS FOR SELECTING VIBRATION ISOLATORS AND SEISMIC RESTRAINTS AND FOR DESIGNING VIBRATION ISOLATION BASES.

5. VIBRATION ISOLATION BASE DETAILS: DETAIL FABRICATION INCLUDING ANCHORAGES AND ATTACHMENTS TO STRUCTURE AND TO SUPPORTED EQUIPMENT. INCLUDE BASE WEIGHTS.

6. INCLUDE DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING. COMPLETE SCHEMATIC, WIRING, AND INTERCONNECTION DIAGRAMS SHOWING TERMINAL MARKINGS FOR EPS EQUIPMENT AND FUNCTIONAL RELATIONSHIP BETWEEN ALL ELECTRICAL COMPONENTS.

1.5 INFORMATIONAL SUBMITTALS

A. QUALIFICATION DATA: FOR MANUFACTURER.

1. STATEMENT OF QUALITY FROM MANUFACTURER DETAILING ACCEPTANCE AS AN ISO9001 MANUFACTURER.

B. SOURCE QUALITY-CONTROL REPORTS, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING: SEE THE EVALUATIONS FOR DISCUSSION ABOUT PROTOTYPE-UNIT TESTING.

1. CERTIFIED SUMMARY OF PROTOTYPE-UNIT TEST REPORT.

2. CERTIFIED TEST REPORTS: FOR COMPONENTS AND ACCESSORIES THAT ARE EQUIVALENT, BUT NOT IDENTICAL, TO THOSE TESTED ON PROTOTYPE UNIT.

3. CERTIFIED SUMMARY OF PERFORMANCE TESTS: CERTIFY COMPLIANCE WITH SPECIFIED REQUIREMENT TO MEET PERFORMANCE CRITERIA FOR SENSITIVE LOADS.

4. REPORT OF FACTORY TEST ON UNITS TO BE SHIPPED FOR THIS PROJECT, SHOWING EVIDENCE OF COMPLIANCE WITH SPECIFIED REQUIREMENTS.

5. REPORT OF SOUND GENERATION.

6. REPORT OF EXHAUST EMISSIONS SHOWING COMPLIANCE WITH APPLICABLE REGULATIONS.

7. CERTIFIED TORSIONAL VIBRATION COMPATIBILITY: COMPLY WITH NFPA 110.

C. FIELD QUALITY-CONTROL REPORTS.

D. WARRANTY: FOR SPECIAL WARRANTY.

1.6 CLOSEOUT SUBMITTALS

A. OPERATION AND MAINTENANCE DATA: FOR PACKAGED ENGINE GENERATORS TO INCLUDE IN EMERGENCY, OPERATION, AND MAINTENANCE MANUALS.

1. IN ADDITION TO ITEMS SPECIFIED IN SECTION 017823 "OPERATION AND MAINTENANCE DATA," INCLUDE THE FOLLOWING:

A. LIST OF TOOLS AND REPLACEMENT ITEMS RECOMMENDED TO BE STORED AT PROJECT FOR READY ACCESS. INCLUDE PART SUPPLY.

B. OPERATING INSTRUCTIONS LAMINATED AND MOUNTED ADJACENT TO GENERATOR LOCATION.

C. TRAINING PLAN.

1.7 MAINTENANCE MATERIAL

A. FURNISH EXTRA MATERIALS THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS.
QUANTITIES BELOW ARE EXAMPLES ONLY.

1. FUSES: ONE FOR EVERY 10 OF EACH TYPE AND RATING BUT NO FEWER THAN ONE OF EACH.

2. INDICATOR LAMPS: TWO FOR EVERY SIX OF EACH TYPE USED, BUT NO FEWER THAN TWO OF EACH.

3. FILTERS: ONE SET EACH OF LUBRICATING OIL, FUEL, AN COMBUSTION-AIR FILTERS.

4. SPECIAL TOOLS: TOOLS UNIQUE TO THE PRODUCT FOR STANDARD MAINTENANCE, LISTED BY PART NUMBER IN OPERATIONS AND MAINTENANCE MANUAL.

1.8 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS: MANUFACTURER ACCEPTED AS AN ISO9001 MANUFACTURER.

B. INSTALLER QUALIFICATIONS: MANUFACTURER'S AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED BY MANUFACTURER. RETAIN "TESTING AGENCY QUALIFICATIONS" PARAGRAPH BELOW IF CONTRACTOR SELECTS TESTING AGENCY OR IF CONTRACTOR IS REQUIRED TO PROVIDE SERVICES OF A QUALIFIED TESTING AGENCY IN "FIELD QUALITY CONTROL" ARTICLE. QUALIFICATION REQUIREMENTS ARE IN ADDITION TO THOSE SPECIFIED IN SECTION 014000 "QUALITY REQUIREMENTS," WHICH ALSO DEFINES "NRTL" (NATIONALLY RECOGNIZED TESTING LABORATORY).

C. THIRD-PARTY TESTING AGENCY QUALIFICATIONS: MEMBER COMPANY OF NETA OR AN NRTL.

1. TESTING AGENCY'S FIELD SUPERVISOR: CERTIFIED BY NETA TO SUPERVISE ON-SITE TESTING.

1.9 WARRANTY

A. MANUFACTURER'S WARRANTY: MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF PACKAGED ENGINE GENERATORS AND ASSOCIATED AUXILIARY COMPONENTS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD. WARRANTY SHALL INCLUDE PARTS, LABOR AND TRAVEL.

VERIFY AVAILABLE WARRANTIES AND WARRANTY PERIODS FOR UNITS AND COMPONENTS.

1. WARRANTY PERIOD: 5 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE GENERAC POWER SYSTEMS, INC; BI-FUEL MODEL SB600 GENERATOR SET, RATED 800KW. 277/480V, THREE PHASE, 60 HZ, OR A COMPARABLE PRODUCT.

B. SOURCE LIMITATIONS: OBTAIN PACKAGED GENERATOR SETS AND AUXILIARY COMPONENTS THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER. GENERATOR SET SHALL BE STANDARD OFFERING FROM MANUFACTURER. NO SPECIAL RATINGS WILL BE PERMITTED.

C. ENGINEERING CHANGES RESULTING FROM THE SUBSTITUTION OF ANOTHER PRODUCT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

2.2 PERFORMANCE REQUIREMENTS

A. NFPA COMPLIANCE:
1. COMPLY WITH NFPA 37.
2. COMPLY WITH NFPA 70.
3. COMPLY WITH NFPA 99.
4. COMPLY WITH NFPA 110 REQUIREMENTS FOR LEVEL 1 EMERGENCY POWER SUPPLY SYSTEM.

B. UL COMPLIANCE: COMPLY WITH UL 2200.

C. ENGINE EXHAUST EMISSIONS: COMPLY WITH EPA TIER REQUIREMENTS AND APPLICABLE STATE AND LOCAL GOVERNMENT REQUIREMENTS.

D. NOISE EMISSION: COMPLY WITH APPLICABLE STATE AND LOCAL GOVERNMENT REQUIREMENTS FOR MAXIMUM NOISE LEVEL DUE TO SOUND EMITTED BY GENERATOR SET INCLUDING ENGINE, ENGINE EXHAUST, ENGINE COOLING-AIR INTAKE AND DISCHARGE, AND OTHER COMPONENTS OF INSTALLATION.

E. ENVIRONMENTAL CONDITIONS: ENGINE-GENERATOR SYSTEM SHALL WITHSTAND THE FOLLOWING ENVIRONMENTAL CONDITIONS WITHOUT MECHANICAL OR ELECTRICAL DAMAGE OR DEGRADATION OF PERFORMANCE CAPABILITY:

1. AMBIENT TEMPERATURE: MINUS 15 TO PLUS 50 DEG C FOR DIESEL-FIRED AND BIFUEL.
2. ALTITUDE: SEA LEVEL TO 1000 FEET

2.3 ASSEMBLY DESCRIPTION

A. FACTORY-ASSEMBLED AND -TESTED, WATER-COOLED ENGINE, WITH BRUSHLESS GENERATOR AND ACCESSORIES.

B. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED LOCATION AND APPLICATION. "CLASS" AS USED IN THE "EPSS CLASS" PARAGRAPH BELOW REFERS TO THE NUMBER OF HOURS THE EPSS IS REQUIRED TO OPERATE AT FULL LOAD WITHOUT REFUELING.

C. EPSS CLASSIFICATION: ENGINE-GENERATOR SET SHALL BE CLASSIFIED AS CLASS 18, TYPE 10, LEVEL 1 IN ACCORDANCE WITH NFPA 110.

D. GOVERNOR: ADJUSTABLE ISOCHRONOUS, WITH SPEED SENSING. SELECTION OF TIER 2, 3, OR 4 IN "EMISSIONS" PARAGRAPH BELOW IS DEPENDENT ON THE SIZE OF THE ENGINE AND THE METHOD OF USE. SEE DISCUSSION IN THE EVALUATIONS AND REFER TO EPA AND MANUFACTURER'S DOCUMENTATION.

E. EMISSIONS: COMPLY WITH EPA TIER AND LOCAL REQUIREMENTS FOR STANDBY GENERATION.

F. MOUNTING FRAME: STRUCTURAL STEEL FRAMEWORK TO MAINTAIN ALIGNMENT OF MOUNTED COMPONENTS WITHOUT DEPENDING ON CONCRETE FOUNDATION. PROVIDE LIFTING ATTACHMENTS SIZED AND SPACED TO PREVENT DEFLECTION OF BASE DURING LIFTING AND MOVING.

G. CAPACITIES AND CHARACTERISTICS:
1. POWER OUTPUT RATINGS: NOMINAL RATINGS AS INDICATED AT 0.8 POWER FACTOR EXCLUDING POWER REQUIRED FOR THE CONTINUED AND REPEATED OPERATION OF THE UNIT AND AUXILIARIES, WITH CAPACITY AS REQUIRED TO OPERATE AS A UNIT AS EVIDENCED BY RECORDS OF PROTOTYPE TESTING.
2. OUTPUT CONNECTIONS: THREE-PHASE, FOUR WIRE.
3. NAMEPLATE: FOR EACH MAJOR SYSTEM COMPONENT TO IDENTIFY MANUFACTURER'S NAME AND ADDRESS, AND MODEL AND SERIAL NUMBER OF COMPONENTS. NAMEPLATE SHALL BE IN ACCORDANCE WITH NFPA 70.

H. GENERATOR-SET PERFORMANCE:

1. OVERSIZING ALTERNATOR COMPARED WITH THE RATED POWER OUTPUT OF THE ENGINE IS PERMISSIBLE TO MEET SPECIFIED PERFORMANCE.
   A. NAMEPLATE DATA FOR OVERSIZED GENERATOR: SHOW RATINGS REQUIRED BY THE CONTRACT DOCUMENTS RATHER THAN RATINGS THAT WOULD NORMALLY BE APPLIED TO GENERATOR SIZE INSTALLED.
2. STEADY-STATE VOLTAGE OPERATIONAL BANDWIDTH: 1 PERCENT OF RATED OUTPUT VOLTAGE FROM NO LOAD TO FULL LOAD.
3. TRANSIENT VOLTAGE PERFORMANCE: NOT MORE THAN 20 PERCENT VARIATION FOR 50 PERCENT STEP-LOAD INCREASE OR DECREASE. VOLTAGE SHALL RECOVER AND REMAIN WITHIN THE STEADY-STATE OPERATING BAND WITHIN 5 SECONDS.
4. STEADY-STATE FREQUENCY OPERATIONAL BANDWIDTH: PLUS OR MINUS 0.25 PERCENT OF RATED FREQUENCY FROM NO LOAD TO FULL LOAD.
5. STEADY-STATE FREQUENCY STABILITY: WHEN SYSTEM IS OPERATING AT ANY CONSTANT LOAD WITHIN THE RATED LOAD, THERE SHALL BE NO RANDOM SPEED VARIATIONS OUTSIDE THE STEADY-STATE OPERATIONAL BAND AND NO HUNTING OR SURGING OF SPEED.
6. TRANSIENT FREQUENCY PERFORMANCE: LESS THAN 5-HZ VARIATION FOR 50 PERCENT STEP-LOAD INCREASE OR DECREASE. FREQUENCY SHALL RECOVER AND REMAIN WITHIN THE STEADY-STATE OPERATING BAND WITHIN 5 SECONDS.
7. OUTPUT WAVEFORM: AT NO LOAD, HARMONIC CONTENT MEASURED LINE TO NEUTRAL SHALL NOT EXCEED 2 PERCENT TOTAL WITH NO SLOT RIPPLE. TELEPHONE INFLUENCE FACTOR, DETERMINED ACCORDING TO NEMA MG 1, SHALL NOT EXCEED 50 PERCENT.
8. SUSTAINED SHORT-CIRCUIT CURRENT: FOR A THREE-PHASE, BOLTED SHORT CIRCUIT AT SYSTEM OUTPUT TERMINALS, SYSTEM SHALL SUPPLY A MINIMUM OF 300 PERCENT OF RATED FULL-LOAD CURRENT FOR NOT LESS THAN 10 SECONDS AND THEN CLEAR THE FAULT AUTOMATICALLY, WITHOUT DAMAGE TO WINDING INSULATION OR OTHER GENERATOR SYSTEM COMPONENTS.
9. BLOCK LOAD PERFORMANCE: PER NFPA110, THE UNIT SHALL BE ABLE TO FULLY RECOVER FROM A 100% BLOCK LOAD.
10. EXCITATION SYSTEM: PERFORMANCE SHALL BE UNAFFECTED BY 10% TOTAL VOLTAGE DISTORTION (THD) CAUSED BY NONLINEAR LOAD.
    A. PROVIDE PERMANENT MAGNET EXCITATION (PMG) FOR POWER SOURCE TO VOLTAGE REGULATOR.
11. START TIME: COMPLY WITH NFPA 110, TYPE 10, SYSTEM REQUIREMENTS.

2.4 ENGINE

A. FUEL: COMBINED DIESEL FUEL OIL, GRADE DF-2AND NATURAL GAS.

1. ASTM D 975 OR ASTM D 396 FOR ULTRA LOWER SULFUR DIESEL.
2. BIODIESEL FUEL IS NOT RECOMMENDED.

B. ENGINE RATING: PRIME MOVER SHALL HAVE ADEQUATE HORSEPOWER TO MEET THE SPECIFIED KW AT THE SPECIFIED SITE ALTITUDE AND TEMPERATURES. PRODUCTS THAT DE-RATE BELOW SPECIFIED KW FOR TEMPERATURE OR ALTITUDE SHALL NOT BE ACCEPTED.

C. MAXIMUM PISTON SPEED FOR FOUR-CYCLE ENGINES: 2250 FPM.

D. LUBRICATION SYSTEM: THE FOLLOWING ITEMS ARE MOUNTED ON ENGINE OR SKID:

1. FILTER AND STRAINER: PER MANUFACTURER RECOMMENDATIONS.
2. THERMOSTATIC CONTROL VALVE: CONTROL FLOW IN SYSTEM TO MAINTAIN OPTIMUM OIL TEMPERATURE. UNIT SHALL BE CAPABLE OF FULL FLOW AND IS DESIGNED TO BE FAIL-SAFE.
3. CRANKCASE DRAIN: ARRANGED FOR COMPLETE GRAVITY DRAINAGE TO AN EASILY REMOVABLE CONTAINER WITH NO DISASSEMBLY AND WITHOUT USE OF PUMPS, SIPHONS, SPECIAL TOOLS, OR APPLIANCES.

E. JACKET COOLANT HEATER: ELECTRIC-IMMERSION TYPE, FACTORY INSTALLED IN COOLANT JACKET SYSTEM. COMPLY WITH NFPA 110 REQUIREMENTS FOR LEVEL 1 EQUIPMENT FOR HEATER CAPACITY. RETAIN ONE OF TWO "COOLING SYSTEM" PARAGRAPHS BELOW. COORDINATE WITH DRAWINGS. SEE THE EVALUATIONS FOR FURTHER DISCUSSION OF COOLING CYCLE AND EFFECT OF LOCATION ON RADIATOR EFFECTIVENESS.

F. COOLING SYSTEM: CLOSED LOOP, LIQUID COOLED, WITH RADIATOR FACTORY MOUNTED ON ENGINE-GENERATOR-SET MOUNTING FRAME AND INTEGRAL ENGINE-DRIVEN COOLANT PUMP.

1. COOLANT: SOLUTION OF 50 PERCENT ETHYLENE-GLYCOL-BASED ANTIFREEZE AND 50 PERCENT WATER, WITH ANTICORROSION ADDITIVES AS RECOMMENDED BY ENGINE MANUFACTURER. RETAIN FIRST OPTION IN "COOLING SYSTEM SIZING" SUBPARAGRAPH BELOW FOR DIESEL. RETAIN SECOND OPTION FOR GAS.
2. COOLING SYSTEM SIZING: SIZED TO ADEQUATELY COOL THE GENERATOR SET, INCLUDING AFTERCOOLER, WITHOUT DE-RATE TO AN AMBIENT TEMPERATURE OF 122 DEG F FOR DIESEL. THE MAXIMUM EXTERNAL RESTRICTION SHALL BE NO GREATER THAN 0.5 INCH OF WATER COLUMN.
3. SIZE OF RADIATOR: ADEQUATE TO CONTAIN EXPANSION OF TOTAL SYSTEM COOLANT FROM COLD START TO 110 PERCENT LOAD CONDITION.
4. EXPANSION TANK: CONSTRUCTED OF WELDED STEEL PLATE AND RATED TO WITHSTAND MAXIMUM CLOSED-LOOP COOLANT SYSTEM PRESSURE FOR ENGINE USED. EQUIP WITH GAGE GLASS AND PETCOCK.
5. TEMPERATURE CONTROL: SELF-CONTAINED, THERMOSTATIC-CONTROL VALVE MODULATES COOLANT FLOW AUTOMATICALLY TO MAINTAIN OPTIMUM CONSTANT COOLANT TEMPERATURE AS RECOMMENDED BY ENGINE MANUFACTURER.
6. COOLANT HOSE: FLEXIBLE ASSEMBLY WITH INSIDE SURFACE OF NONPOROUS RUBBER AND OUTER COVERING OF AGING-, ULTRAVIOLET-, AND ABRASION-RESISTANT FABRIC.
   A. RATING: 50-PSIG MAXIMUM WORKING PRESSURE WITH COOLANT AT 180 DEG F AND NON-COLLAPSIBLE UNDER VACUUM.
   B. END FITTINGS: FLANGES OR STEEL PIPE NIPPLES WITH CLAMPS TO SUIT PIPING AND EQUIPMENT CONNECTIONS.
7. FAN: DRIVEN BY MULTIPLE BELTS FROM ENGINE SHAFT.
8. COOLANT: SOLUTION OF 50 PERCENT ETHYLENE-GLYCOL-BASED ANTIFREEZE AND 50 PERCENT WATER, WITH ANTICORROSION ADDITIVES AS RECOMMENDED BY ENGINE MANUFACTURER.
9. TEMPERATURE CONTROL: SELF-CONTAINED, THERMOSTATIC-CONTROL VALVE MODULATES COOLANT FLOW AUTOMATICALLY TO MAINTAIN OPTIMUM CONSTANT COOLANT TEMPERATURE AS RECOMMENDED BY ENGINE MANUFACTURER.

G. MUFFLER/SILENCER: CRITICAL TYPE, SIZED AS RECOMMENDED BY ENGINE MANUFACTURER AND SELECTED WITH EXHAUST PIPING SYSTEM TO NOT EXCEED ENGINE MANUFACTURER'S ENGINE BACKPRESSURE REQUIREMENTS.

1. MINIMUM SOUND ATTENUATION OF 25 DB(A) AT 500 HZ.
2. SOUND LEVEL MEASURED AT 23 FEET FROM EXHAUST DISCHARGE AFTER INSTALLATION IS COMPLETE SHALL BE 75 DB(A) OR LESS. IF AIR CONTAMINANT LEVEL IS EXCESSIVE, CONSULT MANUFACTURERS TO DETERMINE IF SPECIAL FILTRATION OF COMBUSTION AIR IS NEEDED.

H. AIR-INTAKE FILTER: ENGINE-MOUNTED AIR CLEANER WITH REPLACEABLE DRY-FILTER ELEMENT.

I. STARTING SYSTEM: 24-V ELECTRIC, WITH NEGATIVE GROUND.

1. COMPONENTS: SIZED SO THEY ARE NOT DAMAGED DURING A FULL ENGINE-CRANKING CYCLE WITH AMBIENT TEMPERATURE AT MAXIMUM SPECIFIED IN "PERFORMANCE REQUIREMENTS" ARTICLE.
2. CRANKING MOTOR: HEAVY-DUTY UNIT THAT AUTOMATICALLY ENGAGES AND RELEASES FROM ENGINE FLYWHEEL WITHOUT BINDING.
3. CRANKING CYCLE: AS REQUIRED BY NFPA 110 FOR SYSTEM LEVEL SPECIFIED.
4. BATTERY: LEAD ACID, CERTIFIED TO MEET NFPA110, WITH CAPACITY WITHIN AMBIENT TEMPERATURE RANGE SPECIFIED IN "PERFORMANCE REQUIREMENTS" ARTICLE TO PROVIDE SPECIFIED CRANKING CYCLE AT LEAST TWICE WITHOUT RECHARGING. COORDINATE "BATTERY CABLE" SUBPARAGRAPH BELOW WITH DRAWINGS.
5. BATTERY CABLE: SIZE AS RECOMMENDED BY ENGINE MANUFACTURE FOR CABLE LENGTH INDICATED. INTERCONNECTING CONDUCTORS AND CONNECTION ACCESSORIES.
6. BATTERY COMPARTMENT: FACTORY FABRICATED OF METAL WITH ACID-RESISTANT FINISH AND THERMAL INSULATION. THERMOSTATICALLY CONTROLLED HEATER SHALL BE ARRANGED TO MAINTAIN BATTERY ABOVE 10 DEG C REGARDLESS OF EXTERNAL AMBIENT TEMPERATURE WITHIN RANGE SPECIFIED IN "PERFORMANCE REQUIREMENTS" ARTICLE. INCLUDE ACCESSORIES REQUIRED TO SUPPORT AND FASTEN BATTERIES IN PLACE. PROVIDE VENTILATION TO EXHAUST BATTERY GASES.
7. BATTERY-CHARGING ALTERNATOR: FACTORY MOUNTED ON ENGINE WITH SOLID-STATE VOLTAGE REGULATION AND CONTINUOUS RATING ADEQUATE FOR THE BATTERIES PROVIDED.
8. BATTERY CHARGER: CURRENT-LIMITING, AUTOMATIC-EQUALIZING AND FLOAT-CHARGING TYPE DESIGNED FOR LEAD-ACID BATTERIES. UNIT SHALL COMPLY WITH UL 1236 AND INCLUDE THE FOLLOWING FEATURES:
   A. OPERATION: EQUALIZING-CHARGING RATE OF 10 A SHALL BE INITIATED AUTOMATICALLY AFTER BATTERY HAS LOST CHARGE UNTIL AN ADJUSTABLE EQUALIZING VOLTAGE IS ACHIEVED AT BATTERY TERMINALS. UNIT SHALL THEN BE AUTOMATICALLY SWITCHED TO A LOWER FLOAT-CHARGING MODE AND SHALL CONTINUE TO OPERATE IN THAT MODE UNTIL BATTERY IS DISCHARGED AGAIN.
   B. AUTOMATIC TEMPERATURE COMPENSATION: ADJUST FLOAT AND EQUALIZE VOLTAGES FOR VARIATIONS IN AMBIENT TEMPERATURE FROM MINUS 40 DEG F TO 140 DEG F TO PREVENT OVERCHARGING AT HIGH TEMPERATURES AND UNDERCHARGING AT LOW TEMPERATURES.
   C. AUTOMATIC VOLTAGE REGULATION: MAINTAIN CONSTANT OUTPUT VOLTAGE REGARDLESS OF INPUT VOLTAGE VARIATIONS UP TO PLUS OR MINUS 10 PERCENT.
   D. SAFETY FUNCTIONS: SENSE ABNORMALLY LOW BATTERY VOLTAGE AND CLOSE CONTACTS PROVIDING LOW BATTERY VOLTAGE INDICATION ON CONTROL AND MONITORING PANEL. SENSE HIGH BATTERY VOLTAGE AND LOSS OF AC INPUT OR DC OUTPUT OF BATTERY CHARGER. EITHER CONDITION SHALL CLOSE CONTACTS THAT PROVIDE A BATTERY-CHARGER MALFUNCTION INDICATION AT SYSTEM CONTROL AND MONITORING PANEL.
   E. BATTERY CHARGERS MOUNTED WITHIN THE AUTOMATIC TRANSFER SWITCH ARE NOT ACCEPTABLE.

2.5 DIESEL FUEL-OIL SYSTEM

A. COMPLY WITH NFPA 30.

B. MAIN FUEL PUMP: MOUNTED ON ENGINE TO PROVIDE PRIMARY FUEL FLOW UNDER STARTING AND LOAD CONDITIONS.

C. FUEL FILTERING: PRIMARY FUEL FILTER TO REMOVE WATER AND CONTAMINANTS LARGER THAN 10 MICRON. SECONDARY FILTER TO REMOVE CONTAMINANTS LARGER THAN 2 MICRON.

D. RELIEF-BYPASS VALVE: AUTOMATICALLY REGULATES PRESSURE IN FUEL LINE AND RETURNS EXCESS FUEL TO SOURCE.

E. SUBBASE-MOUNTED, DOUBLE-WALL, FUEL-OIL TANK: FACTORY INSTALLED AND PIPED, COMPLYING WITH UL 142 FUEL-OIL TANK. FEATURES INCLUDE THE FOLLOWING:
1. TANK BOTTOM: SLOPED BOTTOM TO REMOVE PARTICULATES AND OTHER FUEL-BORNE CONTAMINANTS FROM THE FUEL INTAKE TO THE ENGINE.
2. TANK TOP: SLOPED TOP TO PREVENT STANDING WATER.
3. ELECTRIC TANK LEVEL INDICATOR WITH DIGITAL READOUT ON CONSULT TANK MANUFACTURERS ABOUT CAPACITIES AVAILABLE FOR SIZE OF SET IN PROJECT. SEE DISCUSSION OF FUEL TANKS IN THE EVALUATIONS.
4. LOW FUEL SENSING SWITCH: SHALL BE PROVIDED, IN ACCORDANCE WITH NFPA110, TO INDICATE WHEN LESS THAN THE MINIMUM FUEL NECESSARY FOR FULL LOAD RUNNING, AS REQUIRED BY THE SPECIFIED EPSS CLASS.
5. FUEL-TANK CAPACITY: MINIMUM 133 PERCENT OF TOTAL FUEL REQUIRED FOR LOW-FUEL SENSOR QUANTITY OR FOR THE HOURS OF CONTINUOUS OPERATION FOR INDICATED EPSS CLASS. 18 HOURS AT 100% NAMEPLATE LOAD.
6. LEAK DETECTION IN INTERSTITIAL SPACE.
7. VANDAL-RESISTANT FILL CAP.
8. CONTAINMENT PROVISIONS: COMPLY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
9. TANK SHALL BE PRODUCTION TESTED TO 2 PSI

2.6 GASEOUS FUEL SYSTEM

A. NATURAL-GAS PIPING:
1. GAS PIPING IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
2. GAS PIPING SHALL BE SIZED TO PROVIDE ADEQUATE FUEL TO THE ENGINE WHILE ALLOWING FOR NO GREATER THAN 1 INCH WATER COLUMN PRESSURE DROP FROM NO LOAD TO FULL LOAD.
3. NATURAL GAS PIPING WILL SUPPLY PRESSURE TO THE GENERATOR SET INLET PER MANUFACTURER'S RECOMMENDATIONS, NOMINALLY 1 PSI.
4. NATURAL GAS REGULATOR SHALL BE SIZED TO PROVIDE 125 PERCENT OF FULL-LOAD GENERATOR SET CAPACITY.

B. GAS TRAIN: COMPLY WITH NFPA 37.

C. ENGINE FUEL SYSTEM:

1. NATURAL-GAS
   A. CARBURETOR.
   B. SECONDARY GAS REGULATOR.
   C. FUEL-SHUTOFF SOLENOID VALVES: NRTL-LISTED, NORMALLY CLOSED, SAFETY SHUTOFF VALVES
   D. FLEXIBLE FUEL CONNECTORS.

2.7 CONTROL AND MONITORING

A. AUTOMATIC STARTING SYSTEM SEQUENCE OF OPERATION: WHEN MODE-SELECTOR SWITCH ON THE CONTROL AND MONITORING PANEL IS IN THE AUTOMATIC POSITION, REMOTE-CONTROL CONTACTS IN ONE OR MORE SEPARATE AUTOMATIC TRANSFER SWITCHES INITIATE STARTING AND STOPPING OF GENERATOR SET. WHEN MODE-SELECTOR SWITCH IS SWITCHED TO THE MANUAL POSITION, GENERATOR SET STARTS. THE OFF POSITION OF SAME SWITCH INITIATES GENERATOR-SET SHUTDOWN. WHEN GENERATOR SET IS RUNNING, SPECIFIED SYSTEM OR EQUIPMENT FAILURES OR DERANGEMENTS AUTOMATICALLY SHUT DOWN GENERATOR SET AND INITIATE ALARMS.

B. MANUAL STARTING SYSTEM SEQUENCE OF OPERATION: SWITCHING ON-OFF SWITCH ON THE GENERATOR CONTROL PANEL TO THE MANUAL POSITION STARTS GENERATOR SET. THE OFF POSITION OF SAME SWITCH INITIATES GENERATOR-SET SHUTDOWN. WHEN GENERATOR SET IS RUNNING, SPECIFIED SYSTEM OR EQUIPMENT FAILURES OR DERANGEMENTS AUTOMATICALLY SHUT DOWN GENERATOR SET AND INITIATE ALARMS.
NFPA 70 REQUIRES A MINIMUM OF 15 MINUTES RUN TIME AND NFPA 110 RECOMMENDS A MINIMUM OF 30 MINUTES.

C. PROVIDE MINIMUM RUN TIME CONTROL SET FOR 15 MINUTES WITH OVERRIDE ONLY BY OPERATION OF A REMOTE EMERGENCY-STOP SWITCH OR CONTROL PANEL.

D. COMPLY WITH UL 508A.

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E. CONFIGURATION: OPERATING AND SAFETY INDICATIONS, PROTECTIVE DEVICES, BASIC SYSTEM CONTROLS, AND ENGINE GAGES SHALL BE GROUPED IN A COMMON CONTROL AND MONITORING PANEL MOUNTED ON THE GENERATOR SET. MOUNTING METHOD SHALL ISOLATE THE CONTROL PANEL FROM GENERATOR-SET VIBRATION. PANEL SHALL BE POWERED FROM THE ENGINE-GENERATOR SET BATTERY.

1. ENGINE AND GENERATOR CONTROL WIRING SHALL BE MULTI-STRANDED ANNEALED COPPER CONDUCTORS ENCASED BY CROSS-LINKED POLYETHYLENE INSULATION RESISTANT TO HEAT, ABRASION, OIL, WATER, DIESEL FUEL, AND ANTIFREEZE. WIRING SHALL BE SUITABLE FOR CONTINUOUS USE AT 250 DEG F WITH INSULATION NOT BRITTLE AT MINUS 60 DEG F. CABLES SHALL BE ENCLOSED IN NYLON FLEXIBLE CONDUIT, WHICH IS SLOTTED TO ALLOW EASY ACCESS AND MOISTURE TO ESCAPE.

   A. ENGINES THAT ARE EQUIPPED WITH AN ELECTRONIC ENGINE CONTROL MODULE (ECM), SHALL MONITOR AND CONTROL ENGINE FUNCTIONALITY AND SEAMLESSLY INTEGRATE WITH THE GENERATOR SET CONTROLLER THROUGH DIGITAL COMMUNICATIONS. ECM MONITORED PARAMETERS SHALL BE INTEGRATED INTO THE GENSET CONTROLLERS NFPA 110 ALARM AND WARNING REQUIREMENTS.

   B. FOR ENGINES WITHOUT ECM FUNCTIONALITY OR FOR ANY ADDITIONAL GENERATOR SET CONTROLLER MONITORING, SENSORS ARE TO BE CONDITIONED TO A 4 TO 20 MA SIGNAL LEVEL TO ENHANCE NOISE IMMUNITY AND ALL SENSOR CONNECTIONS SHALL BE SEALED TO PREVENT CORROSION.

2. CONSTRUCTION: ALL CIRCUITRY WITHIN THE CONTROL PANEL SHALL BE INDIVIDUALLY ENVIRONMENTALLY SEALED TO PREVENT CORROSION. ENCAPSULATED CIRCUIT BOARDS WITH SURFACE MOUNTED COMPONENTS AND SEALED, AUTOMOTIVE-STYLE CONNECTORS FOR SENSORS AND CIRCUIT BOARD CONNECTORS. ENCLOSED CIRCUIT BOARDS AND TERMINAL STRIPS THAT ARE SUSCEPTIBLE TO CORROSION ARE NOT ACCEPTABLE.

3. CUSTOM LADDER LOGIC FUNCTIONALITY INSIDE THE GENERATOR CONTROLLER SHALL BE SUPPORTED TO PROVIDE APPLICATION SUPPORT FLEXIBILITY. THE LADDER LOGIC FUNCTION SHALL HAVE ACCESS TO ALL THE CONTROLLER INPUTS AND CUSTOMER ASSIGNABLE OUTPUTS.

F. INDICATING DEVICES: AS REQUIRED BY NFPA 110 FOR LEVEL 1 SYSTEM. ALL ECM FAULT CODES SHALL BE DISPLAYED AT THE GENERATOR SET CONTROLLER IN STANDARD LANGUAGE; FAULT CODE NUMBERS ARE NOT ACCEPTABLE. UTILIZING A DIGITAL DISPLAY, INCLUDING THE FOLLOWING: RETAIN FIRST FOUR SUBPARAGRAPHS BELOW FOR LEVEL 1 SYSTEMS BECAUSE THEY ARE REQUIRED BY NFPA 110. CONSIDER RETAINING THEM FOR LEVEL 2 SYSTEMS ALSO.
1. AC VOLTAGE: TRUE THREE-PHASE SENSING.
2. AC CURRENT.
3. FREQUENCY.
4. EPS SUPPLYING LOAD INDICATOR.
5. DC VOLTAGE (ALTERNATOR BATTERY CHARGING).
6. ENGINE-COOLANT TEMPERATURE.
7. ENGINE LUBRICATING-OIL PRESSURE.
8. RUNNING-TIME METER.
9. CURRENT AND POTENTIAL TRANSFORMERS: INSTRUMENT ACCURACY CLASS.

G. PROTECTIVE DEVICES AND CONTROLS IN LOCAL CONTROL PANEL: SHUTDOWN DEVICES AND COMMON VISUAL ALARM INDICATION AS REQUIRED BY NFPA 110 FOR LEVEL 1SYSTEM, INCLUDING THE FOLLOWING:

1. START-STOP SWITCH.
2. OVERCRANK SHUTDOWN DEVICE.
3. OVERSPEED SHUTDOWN DEVICE.
4. COOLANT HIGH-TEMPERATURE SHUTDOWN DEVICE.
5. COOLANT LOW-LEVEL SHUTDOWN DEVICE.
6. LOW LUBE OIL PRESSURE SHUTDOWN DEVICE.
7. OVERCRANK ALARM.
8. OVERSPEED ALARM.
9. COOLANT HIGH-TEMPERATURE ALARM.
10. COOLANT LOW-TEMPERATURE ALARM.
11. COOLANT LOW-LEVEL ALARM.
12. LOW LUBE OIL PRESSURE ALARM.
13. LAMP TEST.
14. CONTACTS FOR LOCAL AND REMOTE COMMON ALARM.
15. COOLANT HIGH TEMPERATURE PRE-ALARM.
16. GENERATOR-VOLTAGE; DIGITALLY ADJUSTABLE VIA CONTROLLER, PASSWORD PROTECTED.
17. MAIN FUEL TANK LOW-LEVEL ALARM.
    A. LOW FUEL LEVEL ALARM SHALL BE INITIATED WHEN THE LEVEL FALLS BELOW THAT REQUIRED FOR OPERATION FOR THE DURATION REQUIRED IN "FUEL TANK CAPACITY" PARAGRAPH IN "DIESEL FUEL-OIL SYSTEM" ARTICLE.
18. RUN-OFF-MANUAL SELECTOR SWITCH.
19. CONTROL SWITCH NOT IN AUTOMATIC POSITION ALARM
20. LOW CRANKING VOLTAGE ALARM.
21. BATTERY-CHARGER MALFUNCTION ALARM.
22. BATTERY LOW-VOLTAGE ALARM.
23. BATTERY HIGH-VOLTAGE ALARM.
24. GENERATOR OVERCURRENT PROTECTIVE DEVICE NOT CLOSED ALARM.

H. SUPPORTING ITEMS: INCLUDE SENSORS, TRANSDUCERS, TERMINALS, RELAYS, AND OTHER DEVICES AND INCLUDE WIRING REQUIRED TO SUPPORT SPECIFIED ITEMS. LOCATE SENSORS AND OTHER SUPPORTING ITEMS ON ENGINE OR GENERATOR, UNLESS OTHERWISE INDICATED. SENSORS ARE TO BE CONDITIONED TO A 4 TO 20 MA SIGNAL LEVEL TO ENHANCE NOISE IMMUNITY AND ALL SENSOR CONNECTIONS SHALL BE SEALED TO PREVENT CORROSION.

I. CONNECTION TO DATALINK: PROVIDE CONNECTIONS FOR DATALINK TRANSMISSION OF INDICATIONS TO REMOTE DATA TERMINALS VIA MODBUS RS485.

J. REMOTE ALARM ANNUNCIATOR: COMPLY WITH NFPA 110 LEVEL 1. AN LED LABELED WITH PROPER ALARM CONDITIONS SHALL IDENTIFY EACH ALARM EVENT, AND A COMMON AUDIBLE SIGNAL SHALL SOUND FOR EACH ALARM CONDITION. SILENCING SWITCH IN FACE OF PANEL SHALL SILENCE SIGNAL WITHOUT ALTERING VISUAL INDICATION. CONNECT SO THAT AFTER AN ALARM IS SILENCED, CLEARING OF INITIATING CONDITION WILL REACTIVATE ALARM UNTIL SILENCING SWITCH IS RESET. CABINET AND FACEPLATE ARE SURFACE- OR FLUSH-MOUNTING TYPE TO SUIT MOUNTING CONDITIONS INDICATED.

1. OVERCRANK ALARM.
2. COOLANT LOW-TEMPERATURE ALARM.
3. HIGH ENGINE TEMPERATURE PREALARM.
4. HIGH ENGINE TEMPERATURE ALARM.
5. LOW LUBE OIL PRESSURE ALARM.
6. OVERSPEED ALARM.
7. LOW FUEL MAIN TANK ALARM.
8. LOW COOLANT LEVEL ALARM.
9. LOW CRANKING VOLTAGE ALARM.
10. CONTACTS FOR LOCAL AND REMOTE COMMON ALARM.
11. AUDIBLE-ALARM SILENCING SWITCH.
12. CONTROL SWITCH NOT IN AUTOMATIC POSITION ALARM. DEVICES IN FIRST THREE SUBPARAGRAPHS BELOW ARE OPTIONAL.
13. FUEL TANK DERANGEMENT ALARM.
14. FUEL TANK HIGH-LEVEL SHUTDOWN OF FUEL SUPPLY ALARM.
15. LAMP TEST.
16. LOW CRANKING VOLTAGE ALARM.
17. GENERATOR OVERCURRENT PROTECTIVE DEVICE NOT CLOSED.

K. THE CONTROL SYSTEM SHALL PROVIDE PRE-WIRED CUSTOMER USE I/O: 4 RELAY OUTPUTS (USER DEFINABLE FUNCTIONS), 4 CONTACT INPUTS, 2 ANALOG INPUTS, COMMUNICATIONS SUPPORT VIA RS232, RS485, OR AN OPTIONAL MODEM. ADDITIONAL I/O MUST BE AN AVAILABLE OPTION. CUSTOMER I/O SHALL BE SOFTWARE CONFIGURABLE PROVIDING FULL ACCESS TO ALL ALARM, EVENT, DATA LOGGING, AND SHUTDOWN FUNCTIONALITY.

L. SUPPORTING ITEMS: INCLUDE SENSORS, TRANSDUCERS, TERMINALS, RELAYS, AND OTHER DEVICES AND INCLUDE WIRING REQUIRED TO SUPPORT SPECIFIED ITEMS. LOCATE SENSORS AND OTHER SUPPORTING ITEMS ON ENGINE OR GENERATOR, UNLESS OTHERWISE INDICATED. COORDINATE "REMOTE EMERGENCY-STOP SWITCH" PARAGRAPH BELOW WITH DRAWINGS.

M. REMOTE EMERGENCY-STOP SWITCH: FLUSH; WALL MOUNTED, UNLESS OTHERWISE INDICATED; AND LABELED. PUSH BUTTON SHALL BE PROTECTED FROM ACCIDENTAL OPERATION.

N. MAINTENANCE:

1. ALL ENGINE, VOLTAGE REGULATOR, CONTROL PANEL, AND ACCESSORY UNITS SHALL BE ACCESSIBLE THROUGH A SINGLE ELECTRONIC SERVICE TOOL. THE FOLLOWING MAINTENANCE FUNCTIONALITY SHALL BE INTEGRAL TO THE GENERATOR SET CONTROLS:
   A. ENGINE RUNNING HOURS.
   B. SERVICE MAINTENANCE INTERVAL (RUNNING HOURS, CALENDAR DAYS).
   C. ENGINE CRANK ATTEMPT COUNTER.
   D. ENGINE SUCCESSFUL STARTS COUNTER.
   E. 20 EVENTS ARE STORED IN CONTROL PANEL MEMORY.
   F. CONTROL PANEL SHALL TIME AND DATE STAMP ALL ALARMS AND WARNINGS. A SNAP SHOT OF KEY PARAMETERS SHALL BE SAVED IN THE CONTROL PANEL FOR USE IN TROUBLESHOOTING ALARMS.
   G. A PREDICTIVE MAINTENANCE ALGORITHM WILL DETERMINE THE OPTIMAL TIME FOR MAINTENANCE SERVICE BASED ON THE GENERATOR LOADING AND OPERATION.

O. PROGRAMMABLE CYCLE TIMER: TO START AND RUN THE GENERATOR FOR A PREDETERMINED TIME. THE TIMER SHALL USE 14 USER-PROGRAMMABLE SEQUENCES THAT ARE REPEATED IN A 7-DAY CYCLE. EACH SEQUENCE SHALL HAVE THE FOLLOWING PROGRAMMABLE SET POINTS:

1. DAY OF THE WEEK.
2. TIME OF THE DAY START.
3. DURATION OF CYCLE.
4. OPTION TO EXERCISE AT REDUCED SPEED FOR QUIET TEST MODE.

O. MONITORING SOFTWARE: PROVIDE MONITORING SOFTWARE CAPABLE OF COMMUNICATING TO NO LESS THAN 15 GENERATOR SETS. SOFTWARE SHALL BE CONNECTABLE VIA RS232 CONNECTION DIRECTLY ON THE GENERATOR CONTROL PANEL. SOFTWARE FUNCTIONALITY TO INCLUDE:

1. DISPLAY GENERATOR SET OPERATING PARAMETERS INCLUDING NECESSARY PRESSURES AND TEMPERATURES, ELECTRICAL OUTPUT, FUEL LEVEL.

2. ABILITY TO PROGRAM CUSTOM I/O ALARMS AS WELL AS MODIFY STANDARD ALARM SETTINGS FOR APPLICATIONS (PASSWORD PROTECTED).

3. DATA LOGGING AND TRENDING OF UP TO 15 PARAMETERS, USER SELECTABLE, FOR TESTING, TROUBLESHOOTING, AND RECORD KEEPING.

4. HIGH SPEED DATA LOGGING AND TRENDING OF UP TO 0.2 MILLISECOND PROVIDING SINE WAVE VISIBILITY FOR TESTING AND IDENTIFICATION OF HARMONIC DISTORTION LEVELS.

2.8 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. OVERCURRENT PROTECTIVE DEVICES FOR THE ENTIRE EPSS SHALL BE COORDINATED TO OPTIMIZE SELECTIVE TRIPPING WHEN A SHORT CIRCUIT OCCURS. COORDINATION OF PROTECTIVE DEVICES SHALL CONSIDER BOTH UTILITY AND EPSS AS THE VOLTAGE SOURCE.

1. OVERCURRENT PROTECTIVE DEVICES FOR THE EPSS SHALL BE ACCESSIBLE ONLY TO AUTHORIZED PERSONNEL AND EACH LOCATED IN A SEPARATE BOX PER NEC700 SEPARATION OF CIRCUITS.

B. GENERATOR CIRCUIT BREAKER: MOLDED-CASE, ELECTRONIC-TRIP TYPE; 100 PERCENT RATED; COMPLYING WITH UL 489.

1. TRIPPING CHARACTERISTICS: ADJUSTABLE LONG-TIME AND SHORT-TIME DELAY AND INSTANTANEOUS.
2. TRIP SETTINGS: SELECTED TO COORDINATE WITH GENERATOR THERMAL DAMAGE CURVE.
3. MOUNTING: EACH CIRCUIT BREAKER INSTALLED IN SEPARATE BOX IN ACCORDANCE WITH NEC700 SEPARATION OF CIRCUITS.

C. GENERATOR PROTECTOR: MICROPROCESSOR-BASED UNIT SHALL CONTINUOUSLY MONITOR CURRENT LEVEL IN EACH PHASE OF GENERATOR OUTPUT, INTEGRATE GENERATOR HEATING EFFECT OVER TIME, AND PREDICT WHEN THERMAL DAMAGE OF ALTERNATOR WILL OCCUR. WHEN SIGNALED BY GENERATOR PROTECTOR OR OTHER GENERATOR-SET PROTECTIVE DEVICES, A SHUNT-TRIP DEVICE IN THE GENERATOR DISCONNECT SWITCH SHALL OPEN THE SWITCH TO DISCONNECT THE GENERATOR FROM LOAD CIRCUITS. PROTECTOR PERFORMS THE FOLLOWING FUNCTIONS:

1. INITIATES A GENERATOR OVERLOAD ALARM WHEN GENERATOR HAS OPERATED AT AN OVERLOAD EQUIVALENT TO 110 PERCENT OF FULL-RATED LOAD FOR 60 SECONDS. INDICATION FOR THIS ALARM IS INTEGRATED WITH OTHER GENERATOR-SET MALFUNCTION ALARMS. CONTACTS SHALL BE AVAILABLE FOR LOAD SHED FUNCTIONS.

2. UNDER SINGLE OR THREE-PHASE FAULT CONDITIONS, REGULATES GENERATOR TO 300 PERCENT OF RATED FULL-LOAD CURRENT FOR UP TO 10 SECONDS.

3. AS OVERCURRENT HEATING EFFECT ON THE GENERATOR APPROACHES THE THERMAL DAMAGE POINT OF THE UNIT, PROTECTOR SWITCHES THE EXCITATION SYSTEM OFF, OPENS THE GENERATOR DISCONNECT DEVICE, AND SHUTS DOWN THE GENERATOR SET.

4. SENSES CLEARING OF A FAULT BY OTHER OVERCURRENT DEVICES AND CONTROLS RECOVERY OF RATED VOLTAGE TO AVOID OVERSHOOT.

D. GROUND-FAULT INDICATION: COMPLY WITH NFPA 70, "EMERGENCY SYSTEM" SIGNALS FOR GROUND FAULT.

1. INDICATE GROUND FAULT WITH OTHER GENERATOR-SET ALARM INDICATIONS.

2. TRIP GENERATOR PROTECTIVE DEVICE ON GROUND FAULT.

2.9 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

A. COMPLY WITH NEMA MG 1 AND UL2200, SIZED FOR 248 DEG F (120 DEG C) TEMPERATURE RISE ABOVE AMBIENT AT RATED LOAD.

B. DRIVE: GENERATOR SHAFT SHALL BE DIRECTLY CONNECTED TO ENGINE SHAFT. EXCITER SHALL BE ROTATED INTEGRALLY WITH GENERATOR ROTOR.

C. ELECTRICAL INSULATION: CLASS H.

D. STATOR-WINDING LEADS: BROUGHT OUT TO TERMINAL BOX TO PERMIT FUTURE RECONNECTION FOR OTHER VOLTAGES IF REQUIRED. PROVIDE **12** LEAD ALTERNATOR.

E. WINDING COILS: SKEWED TO IMPROVE SINE WAVE SHAPE AND ELIMINATE RIPPLE EFFECTS CAUSED BY AIR GAPS.

F. RANGE: PROVIDE BROAD RANGE OF OUTPUT VOLTAGE BY ADJUSTING THE EXCITATION LEVEL.

G. CONSTRUCTION SHALL PREVENT MECHANICAL, ELECTRICAL, AND THERMAL DAMAGE DUE TO VIBRATION, OVERSPEED UP TO 125 PERCENT OF RATED SPEED, AND HEAT DURING OPERATION AT 110 PERCENT OF RATED CAPACITY.

H. ENCLOSURE: DRIPPROOF.

I. INSTRUMENT TRANSFORMERS: MOUNTED WITHIN GENERATOR ENCLOSURE.

J. VOLTAGE REGULATOR: SOLID-STATE TYPE ON A SEALED CIRCUIT BOARD, SEPARATE FROM EXCITER, PROVIDING PERFORMANCE AS SPECIFIED AND AS REQUIRED BY NFPA 110. MUST BE 3-PHASE SENSING.

1. VOLTAGE ADJUSTMENT ON CONTROL AND MONITORING PANEL: PROVIDE PLUS OR MINUS 5 PERCENT ADJUSTMENT OF OUTPUT-VOLTAGE OPERATING BAND

2. PROVIDE ANTI-HUNT PROVISION TO STABILIZE VOLTAGE.

K. WINDINGS: TWO-THIRDS PITCH STATOR WINDING AND FULLY LINKED AMORTISSEUR WINDING.

L. SUBTRANSIENT REACTANCE: 15 PERCENT, MAXIMUM.

M. EXCITATION: PERMANENT MAGNET (PMG) TYPE PROVIDING 300 PERCENT CURRENT OUTPUT FOR UP TO 10 SECONDS TO A DOWNSTREAM BREAKER SELECTIVE COORDINATION AND IMPROVED MOTOR STARTING.

2.10 OUTDOOR GENERATOR-SET ENCLOSURE

A. DESCRIPTION: OEM FACTORY MANUFACTURED, VANDAL-RESISTANT, SOUND-ATTENUATING, WEATHERPROOF STEEL HOUSING, WIND RESISTANT UP TO 180 MPH. MULTIPLE PANELS SHALL BE LOCKABLE AND PROVIDE ADEQUATE ACCESS TO COMPONENTS REQUIRING MAINTENANCE. PANELS SHALL BE REMOVABLE BY ONE PERSON WITHOUT TOOLS. INSTRUMENTS AND CONTROL SHALL BE MOUNTED WITHIN ENCLOSURE.

1. STRUCTURAL DESIGN AND ANCHORAGE: COMPLY WITH ASCE 7 FOR WIND LOADS UP TO 180 MPH

2. HINGED DOORS:

   A. DOOR PANELS: WITH INTEGRAL STIFFENERS, AND CAPABLE OF BEING REMOVED BY ONE PERSON WITHOUT TOOLS.

   B. SLIP-PIN HINGES AND LATCHES STAINLESS STEEL WITH NYLON SPACERS.

   C. GASKETED FOR WEATHER AND RODENT PROTECTION.

   D. HANDLES TO HAVE PADLOCKING PROVISIONS.

3. THERMAL INSULATION: MANUFACTURER'S STANDARD MATERIALS AND THICKNESS SELECTED IN COORDINATION WITH SPACE HEATER TO MAINTAIN WINTER INTERIOR TEMPERATURE WITHIN OPERATING

4. MUFFLER LOCATION: WITHIN ENCLOSURE. ALL EXHAUST PIPING SHALL BE WRAPPED FOR PERSONNEL PROTECTION AND TO ELIMINATE EXCESSIVE HEAT BUILDUP DURING GENERATOR OPERATION.

5. ASSEMBLY HARDWARE (NUTS AND BOLTS): USE JS500 AND NYLON WASHERS TO PREVENT PAINT DETERIORATION.

B. SOUND ATTENUATION: FACTORY ENCLOSURE, DESIGNED TO MEET THE FOLLOWING DESIGN CRITERIA:

1. SOUND ATTENUATED LEVEL TWO ENCLOSURE DESIGNED TO MEET 75 DB(A) IN A FREE FIELD ENVIRONMENT. ENCLOSURE SHALL HAVE INTAKE AND DISCHARGE HOODS, AS WELL AS SOUND INSULATING FOAM PANELS WITHIN; DESIGNED TO MEET THE ACCEPTABLE SOUND LEVEL. FOAM SHALL BE UL LISTED FOR PURPOSE AND HAVE A REFLECTIVE COATING ALLOWING FOR BETTER LIGHTING WITHIN THE ENCLOSURE.

C. ENGINE COOLING AIRFLOW THROUGH ENCLOSURE: MAINTAIN TEMPERATURE RISE OF SYSTEM COMPONENTS WITHIN REQUIRED LIMITS WHEN UNIT OPERATES AT 110 PERCENT OF RATED LOAD FOR 2 HOURS WITH AMBIENT TEMPERATURE AT TOP OF RANGE SPECIFIED IN SYSTEM SERVICE CONDITIONS.

1. LOUVERS: FIXED-ENGINE, COOLING-AIR INLET AND DISCHARGE. STORM-PROOF AND DRAINABLE LOUVERS PREVENT ENTRY OF RAIN AND SNOW.

D. CONVENIENCE OUTLETS: FACTORY WIRED, GFCI. ARRANGE FOR EXTERNAL ELECTRICAL CONNECTION.

2.11 FINISHES

A. OUTDOOR ENCLOSURES AND COMPONENTS: ELECTROSTATICALLY APPLIED RHINO COAT FINISH OVER CORROSION-RESISTANT PRETREATMENT AND COMPATIBLE PRIMER.

B. POWDERCOATED PAINT SURFACES, MEETING THE FOLLOWING APPLICABLE STANDARDS:

1. PAINT THICKNESS: MORE THAN 2.5 MIL PER ASTM D 1186-87.
2. MATERIAL HARDNESS: ASTM D 3363-92A.
3. RESISTANCE TO CRACKING: ASTM D 522-B.
4. PAINT ADHESION: ASTM D 3359-B.
5. RESISTANCE TO SALTWATER CORROSION: ASTM B 117 OR ASTM D 1654.
6. RESISTANCE TO HUMIDITY: ASTM D 1735 OR ASTM D 1654.
7. IMPACT RESISTANCE: ASTM 2784.
8. UV PROTECTION: SAE J1690.

2.12 SOURCE QUALITY CONTROL

A. PROTOTYPE TESTING: FACTORY TEST ENGINE-GENERATOR SET USING SAME ENGINE MODEL, CONSTRUCTED OF IDENTICAL OR EQUIVALENT COMPONENTS, AND EQUIPPED WITH IDENTICAL OR EQUIVALENT ACCESSORIES.

1. TESTS: COMPLY WITH NFPA 110, LEVEL 1 ENERGY CONVERTERS AND WITH IEEE 115.

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ELECTRICAL SPECIFICATIONS

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ELECTRICAL SPECIFICATIONS

B. PROJECT-SPECIFIC EQUIPMENT TESTS: BEFORE SHIPMENT, FACTORY TEST ENGINE-GENERATOR SET AND OTHER SYSTEM COMPONENTS AND ACCESSORIES MANUFACTURED SPECIFICALLY FOR THIS PROJECT. PERFORM TESTS AT RATED LOAD AND POWER FACTOR. INCLUDE THE FOLLOWING TESTS:

1. TEST COMPONENTS AND ACCESSORIES FURNISHED WITH INSTALLED UNIT THAT ARE NOT IDENTICAL TO THOSE ON TESTED PROTOTYPE TO DEMONSTRATE COMPATIBILITY AND RELIABILITY.
2. TEST GENERATOR, EXCITER, AND VOLTAGE REGULATOR AS A UNIT.
3. FULL LOAD RUN.
4. MAXIMUM POWER.
5. VOLTAGE REGULATION.
6. TRANSIENT AND STEADY-STATE GOVERNING.
7. SINGLE-STEP LOAD PICKUP.
8. SAFETY SHUTDOWN.
9. PROVIDE 14 DAYS' ADVANCE NOTICE OF TESTS AND OPPORTUNITY
10. REPORT FACTORY TEST RESULTS WITHIN 10 DAYS OF COMPLETION OF TEST.

PART 1 - EXECUTION

1.1 EXAMINATION

A. EXAMINE AREAS, EQUIPMENT BASES, AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION AND OTHER CONDITIONS AFFECTING PACKAGED ENGINE-GENERATOR PERFORMANCE.

B. EXAMINE ROUGHING-IN FOR PIPING SYSTEMS AND ELECTRICAL CONNECTIONS. VERIFY ACTUAL LOCATIONS OF CONNECTIONS BEFORE PACKAGED ENGINE-GENERATOR INSTALLATION.

C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

1.2 PREPARATION

A. INTERRUPTION OF EXISTING ELECTRICAL SERVICE: DO NOT INTERRUPT ELECTRICAL SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY ELECTRICAL SERVICE ACCORDING TO REQUIREMENTS INDICATED:

1. NOTIFY CONSTRUCTION MANAGER NO FEWER THAN TEN(10) WORKING DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF ELECTRICAL SERVICE.

2. DO NOT PROCEED WITH INTERRUPTION OF ELECTRICAL SERVICE WITHOUT CONSTRUCTION MANAGER'S WRITTEN PERMISSION.

1.3 INSTALLATION

A. COMPLY WITH PACKAGED ENGINE-GENERATOR MANUFACTURERS' WRITTEN INSTALLATION AND ALIGNMENT INSTRUCTIONS AND WITH NFPA 110.

B. EQUIPMENT MOUNTING:

1. INSTALL PACKAGED ENGINE GENERATORS ON CAST-IN-PLACE CONCRETE EQUIPMENT BASES.

2. COORDINATE SIZE AND LOCATION OF CONCRETE BASES FOR PACKAGED ENGINE GENERATORS. CAST ANCHOR-BOLT INSERTS INTO BASES. CONCRETE, REINFORCEMENT, AND FORMWORK REQUIREMENTS ARE SPECIFIED WITH CONCRETE.

C. INSTALL PACKAGED ENGINE-GENERATOR TO PROVIDE ACCESS, WITHOUT REMOVING CONNECTIONS OR ACCESSORIES, FOR PERIODIC MAINTENANCE.

D. INSTALL PACKAGED ENGINE-GENERATOR ON CONCRETE BASE. SECURE SETS TO ANCHOR BOLTS INSTALLED IN CONCRETE BASES.

E. ELECTRICAL WIRING: INSTALL ELECTRICAL DEVICES FURNISHED BY EQUIPMENT MANUFACTURERS BUT NOT SPECIFIED TO BE FACTORY MOUNTED.

1.4 CONNECTIONS

A. CONNECT FUEL PIPING TO ENGINES WITH A GATE VALVE AND UNION AND FLEXIBLE CONNECTOR.

B. GROUND EQUIPMENT ACCORDING TO SECTION 260526 "GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS."

C. CONNECT WIRING USING MANUFACTURERS RECOMMENDATION.TO PROVIDE A MINIMUM OF ONE 90 DEGREE BEND IN FLEXIBLE CONDUIT ROUTED TO THE GENERATOR SET FROM A STATIONARY ELEMENT.

D. BALANCE SINGLE-PHASE LOADS TO OBTAIN A MAXIMUM OF 10 PERCENT UNBALANCE BETWEEN ANY TWO PHASES.

1.5 FIELD QUALITY CONTROL

A. TESTING AGENCY: AT THE OWNER'S REQUEST, THE CONTRACTOR SHALL ENGAGE A QUALIFIED, THIRD-PARTY, TESTING AGENCY TO WITNESS TESTS AND INSPECTIONS.

B. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT, TEST, AND ADJUST COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS.
RETAIN "PERFORM TESTS AND INSPECTIONS" PARAGRAPH BELOW TO REQUIRE CONTRACTOR TO PERFORM TESTS AND INSPECTIONS.

C. PERFORM TESTS AND INSPECTIONS.
RETAIN "MANUFACTURER'S FIELD SERVICE" SUBPARAGRAPH BELOW TO REQUIRE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO ASSIST CONTRACTOR TO PERFORM TEST AND INSPECTIONS.

1. MANUFACTURER'S FIELD SERVICE: ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS.

D. TESTS AND INSPECTIONS:

1. PERFORM TESTS RECOMMENDED BY MANUFACTURER AND EACH VISUAL AND MECHANICAL INSPECTION AND ELECTRICAL AND MECHANICAL TEST LISTED IN THE FIRST TWO SUBPARAGRAPHS AS SPECIFIED IN NETA ACCEPTANCE TESTING SPECIFICATION. CERTIFY COMPLIANCE WITH TEST PARAMETERS.

A. VISUAL AND MECHANICAL INSPECTION

1) COMPARE EQUIPMENT NAMEPLATE DATA WITH DRAWINGS AND SPECIFICATIONS.
2) INSPECT PHYSICAL AND MECHANICAL CONDITION
3) INSPECT ANCHORAGE, ALIGNMENT, AND GROUNDING.
4) VERIFY THE UNIT IS CLEAN.

B. ELECTRICAL AND MECHANICAL TESTS

1) TEST PROTECTIVE RELAY DEVICES PER MANUFACTURER RECOMMENDATIONS.
2) VERIFY PHASE ROTATION, PHASING, AND SYNCHRONIZED OPERATION AS REQUIRED BY THE APPLICATION.
3) FUNCTIONALLY TEST ENGINE SHUTDOWN FOR LOW OIL PRESSURE, OVERTEMPERATURE, OVERSPEED, AND OTHER PROTECTION FEATURES AS APPLICABLE.
4) CONDUCT PERFORMANCE TEST IN ACCORDANCE WITH NFPA 110
5) VERIFY CORRECT FUNCTIONING OF THE GOVERNOR AND REGULATOR.

2. NFPA 110 ACCEPTANCE TESTS: PERFORM TESTS REQUIRED BY NFPA 110 THAT ARE ADDITIONAL TO THOSE SPECIFIED HERE INCLUDING, BUT NOT LIMITED TO, SINGLE-STEP FULL-LOAD PICKUP TEST.

3. BATTERY TESTS: EQUALIZE CHARGING OF BATTERY CELLS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. RECORD INDIVIDUAL CELL VOLTAGES.

A. MEASURE CHARGING VOLTAGE AND VOLTAGES BETWEEN AVAILABLE BATTERY TERMINALS FOR FULL-CHARGING AND FLOAT-CHARGING CONDITIONS. CHECK ELECTROLYTE LEVEL AND SPECIFIC GRAVITY UNDER BOTH CONDITIONS.
B. TEST FOR CONTACT INTEGRITY OF ALL CONNECTORS. PERFORM AN INTEGRITY LOAD TEST AND A CAPACITY LOAD TEST FOR THE BATTERY.
C. VERIFY ACCEPTANCE OF CHARGE FOR EACH ELEMENT OF THE BATTERY AFTER DISCHARGE.
D. VERIFY THAT MEASUREMENTS ARE WITHIN MANUFACTURER'S SPECIFICATIONS.

4. BATTERY-CHARGER TESTS: VERIFY SPECIFIED RATES OF CHARGE FOR BOTH EQUALIZING AND FLOAT-CHARGING CONDITIONS.

5. SYSTEM INTEGRITY TESTS: METHODICALLY VERIFY PROPER INSTALLATION, CONNECTION, AND INTEGRITY OF EACH ELEMENT OF ENGINE-GENERATOR SYSTEM BEFORE AND DURING SYSTEM OPERATION. CHECK FOR AIR, EXHAUST, AND FLUID LEAKS.

6. VOLTAGE AND FREQUENCY TRANSIENT STABILITY TESTS: USE DATA CAPTURE FROM MANUFACTURER CONTROL PANEL AND SOFTWARE TO MEASURE VOLTAGE AND FREQUENCY TRANSIENTS FOR 50 AND 100 PERCENT STEP-LOAD INCREASES AND DECREASES AND VERIFY THAT PERFORMANCE IS AS SPECIFIED.

E. COORDINATE TESTS WITH TESTS FOR TRANSFER SWITCHES AND RUN THEM CONCURRENTLY.

F. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION AND UNIT OPERATION FOR GENERATOR AND ASSOCIATED EQUIPMENT.

G. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.

H. REMOVE AND REPLACE MALFUNCTIONING UNITS AND RETEST AS SPECIFIED ABOVE.

I. RETEST: CORRECT DEFICIENCIES IDENTIFIED BY TESTS AND OBSERVATIONS AND RETEST UNTIL SPECIFIED REQUIREMENTS ARE MET.

J. REPORT RESULTS OF TESTS AND INSPECTIONS IN WRITING. RECORD ADJUSTABLE RELAY SETTINGS AND MEASURED INSULATION RESISTANCES, TIME DELAYS, AND OTHER VALUES AND OBSERVATIONS. ATTACH A LABEL OR TAG TO EACH TESTED COMPONENT INDICATING SATISFACTORY COMPLETION OF TESTS.

1.6 MAINTENANCE SERVICE

A. INITIAL MAINTENANCE SERVICE: BEGINNING AT SUBSTANTIAL COMPLETION, PROVIDE 12 MONTHS' FULL MAINTENANCE BY EGSA CERTIFIED EMPLOYEES OF MANUFACTURER'S DESIGNATED SERVICE ORGANIZATION. INCLUDE QUARTERLY EXERCISING TO CHECK FOR PROPER STARTING, LOAD TRANSFER, AND RUNNING UNDER LOAD. INCLUDE ROUTINE PREVENTIVE MAINTENANCE AS RECOMMENDED BY MANUFACTURER AND ADJUSTING AS REQUIRED FOR PROPER OPERATION. PROVIDE PARTS AND SUPPLIES SAME AS THOSE USED IN THE MANUFACTURE AND INSTALLATION OF ORIGINAL EQUIPMENT.

1.7 TRAINING

A. THE EQUIPMENT SUPPLIER SHALL PROVIDE TRAINING FOR THE FACILITY OPERATING PERSONNEL COVERING OPERATION AND MAINTENANCE OF THE EQUIPMENT PROVIDED. THE TRAINING PROGRAM SHALL BE NOT LESS THAN 4 HOURS IN DURATION AND THE CLASS SIZE SHALL BE LIMITED TO 5 PERSONS. TRAINING DATE SHALL BE COORDINATED WITH THE FACILITY OWNER.

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DIVISION 27 - COMMUNICATIONS SECTION 27 05 29
HANGERS AND SUPPORTS FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other communications work.
1.01 REFERENCE STANDARDS
A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.
C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2023.
D. BICSI ITSIMM - Information Technology Systems Installation Methods Manual (ITSIMM), 8th Edition 2022.
E. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition 2019.
F. MFMA-4 - Metal Framing Standards Publication 2004.
G. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
H. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
I. TIA-569 - Telecommunications Pathways and Spaces 2019e.
J. UL 2043 - Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air- Handling Spaces Current Edition, Including All Revisions.
PART 2 PRODUCTS
2.01 SUPPORT AND ATTACHMENT COMPONENTS
A. General Requirements:
1. Comply with the following. Where requirements differ, comply with most stringent.
   a. TIA-569.
   b. NFPA 70.
   c. Requirements of authorities having jurisdiction.
2. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of communications work.
3. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
4. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for load to be supported. Include consideration for vibration, equipment operation, and shock loads where applicable.
5. Do not use products for applications other than as permitted by NFPA 70 and product listing.
6. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
   a. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
   b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.

B. Conduit Supports: Straps and clamps suitable for conduit to be supported.
1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
2. Conduit Clamps: Bolted type unless otherwise indicated.

C. Cable Supports: Suitable for cables to be supported, including but not limited to J-hooks, bridle rings, drive rings, and flexible harnesses/slings.
1. Applications:
   a. Do not exceed 5 feet (1.5 m) between cable supports.
   b. Maximum Number of Cables per Cable Support:
      1) J-Hooks: 50, regardless of capacity.
      2) Bridle Rings: 40 percent of fill capacity.
   c. Allowable Cable Types:
      1) J-Hooks: Category 5e and Category 6.
      2) Bridle Rings with Saddle: Category 5e and Category 6.
2. Comply with TIA-569.
3. Cable Supports Installed in Spaces Used for Environmental Air: Plenum rated; listed and labeled as complying with UL 2043, suitable for use in air-handling spaces.
4. J-Hooks: Noncontinuous cabling support with removable top retainer clip.
   a. Material: Use galvanized steel, factory-painted steel, or stainless steel.
   b. Provide support surfaces with smooth, beveled edges and radius not less than minimum allowable bend radius of cables supported.
   c. Provide multitiered J-hooks where required to support multiple cabling systems.
5. Bridle rings: Noncontinuous circular cabling support.
   a. Material: Use galvanized steel, painted steel, or stainless steel.
   b. Provide integral saddle with smooth, beveled edges and radius not less than minimum allowable bend radius of cables supported.

D. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
E. Metal Channel/Strut Framing Systems:
1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
2. Comply with MFMA-4.
3. Channel Material:
   a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
4. Minimum Channel Thickness: Steel sheet, 12 gauge, 0.1046 inch (2.66 mm).
5. Minimum Channel Dimensions: 1-5/8 inch (41 mm) wide by 13/16 inch (21 mm) high.

F. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
1. Minimum Size, Unless Otherwise Indicated or Required:
   a. Equipment Supports: 1/2-inch (13 mm) diameter.
   b. Single Conduit up to 1-inch (27 mm) Trade Size: 1/4-inch (6 mm) diameter.
   c. Single Conduit Larger than 1-inch (27 mm) Trade Size: 3/8-inch (10 mm) diameter.
   d. Outlet Boxes: 1/4-inch (6 mm) diameter.

G. Anchors and Fasteners:
1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.
2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
4. Hollow Masonry: Use toggle bolts.
5. Hollow Stud Walls: Use toggle bolts.
6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
7. Sheet Metal: Use sheet metal screws.
8. Wood: Use wood screws.
9. Plastic and lead anchors are not permitted.
10. Preset Concrete Inserts: Continuous metal channel/strut and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
    a. Manufacturer: Same as manufacturer of metal channel/strut framing system.
    b. Comply with MFMA-4.
    c. Channel Material: Use galvanized steel.

PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that field measurements are as indicated.
B. Verify that mounting surfaces are ready to receive support and attachment components.
C. Verify that conditions are satisfactory for installation prior to starting work.
3.02 INSTALLATION
A. Install products in accordance with manufacturer's instructions.
B. Install hangers and supports in accordance with NECA 1, BICSI ITSIMM, and BICSI N1.
C. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
D. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
E. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
F. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
G. Equipment Support and Attachment:
1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.

H. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.
I. Secure fasteners in accordance with manufacturer's recommended torque settings.
J. Remove temporary supports.

END OF SECTION SECTION 27 05 33.13
CONDUIT FOR COMMUNICATIONS SYSTEMS

PART 1 GENERAL
1.01 SECTION INCLUDES
A. Galvanized steel rigid metal conduit (RMC).
B. Galvanized steel electrical metallic tubing (EMT).
C. Inside-plant flexible nonmetallic communications raceway/innerduct.

1.02 RELATED REQUIREMENTS
A. Section 07 84 00 - Firestopping.
1.03 REFERENCE STANDARDS
A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC) 2020.
B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S) 2020.
C. BICSI ITSIMM - Information Technology Systems Installation Methods Manual (ITSIMM), 8th Edition 2022.
D. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition 2019.
E. BICSI TDMM - Telecommunications Distribution Methods Manual, 14th Edition 2020.
F. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
G. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT) 2020.
H. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
I. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
J. TIA-568.0 - Generic Telecommunications Cabling for Customer Premises 2020e.
K. TIA-569 - Telecommunications Pathways and Spaces 2019e.
L. UL 6 - Electrical Rigid Metal Conduit-Steel Current Edition, Including All Revisions.
M. UL 514B - Conduit, Tubing, and Cable Fittings Current Edition, Including All Revisions.
N. UL 797 - Electrical Metallic Tubing-Steel Current Edition, Including All Revisions.
O. UL 2024 - Standard for Cable Routing Assemblies and Communications Raceways Current Edition, Including All Revisions.
P. UL 2419 - Outline of Investigation for Electrically Conductive Corrosion Resistant Compounds Current Edition, Including All Revisions.
PART 2 PRODUCTS
2.01 CONDUIT APPLICATIONS
A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, TIA-569, BICSI ITSIMM, BICSI TDMM, manufacturers' instructions, and product listing.
B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.
2.02 CONDUIT - GENERAL REQUIREMENTS
A. Comply with NFPA 70 and TIA-569.
B. Provide conduit, fittings, supports, and accessories required for complete communications pathway.
C. Provide products listed, classified, and labeled as suitable for purpose intended.
D. Maximum Number of Communications Outlet Boxes per Continuous Conduit Homerun: Two.
E. Minimum Conduit Size, Unless Otherwise Indicated:
1. Communications Outlet Box: 3/4-inch (21 mm) trade size.
2. Continuous Conduit Homerun Serving One Communications Outlet Box: 1-inch (27 mm) trade size.
3. Continuous Conduit Homerun Serving Two Communications Outlet Boxes: 1-inch (27 mm) trade size.

F. Where conduit size is not indicated, size to comply with NFPA 70, TIA-569, and BICSI TDMM, but not less than applicable minimum size requirements specified. Where specified standards differ, comply with most stringent.
2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)
A. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
B. Fittings:
1. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6.
2. Material: Use steel or malleable iron.
3. Connectors and Couplings: Use threaded fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.
4. Conduit Bodies: Use only conduit bodies specifically designed for communications cabling. Standard conduit bodies designed for electrical raceways are not permitted.
   a. Comply with TIA-568.0 minimum bend radius requirements for fiber optic cables.

2.04 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)
A. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
B. Fittings:
1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
2. Material: Use steel or malleable iron.
3. Connectors and Couplings: Use compression/gland or set-screw type.
   a. Do not use indenter type connectors and couplings.
4. Conduit Bodies: Use only conduit bodies specifically designed for communications cabling. Standard conduit bodies designed for electrical raceways are not permitted.
   a. Comply with TIA-568.0 minimum bend radius requirements for fiber optic cables.

2.05 INSIDE-PLANT FLEXIBLE NONMETALLIC COMMUNICATIONS RACEWAY/INNERDUCT
A. Description: Flexible, corrugated, nonmetallic communications raceway and associated fittings listed and labeled as complying with UL 2024; also suitable for installation as innerduct.
B. Raceway Applications:
1. Plenum Applications: Use listed plenum raceway.
2. Riser Applications: Use listed riser or plenum raceway.
3. General Purpose Applications: Use listed general purpose, riser, or plenum raceway.

C. Use only with approved cables in accordance with listing.
D. Color: Orange, unless otherwise indicated.
2.06 ACCESSORIES
A. Inside-Plant Fabric Innerduct: Listed as complying with UL 2024; plenum rated.
B. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil, 0.020 inch (0.51 mm).
C. Conduit Joint Compound: Corrosion-resistant, electrically conductive compound listed as complying with UL 2419; suitable for use with conduit to be installed.
D. Pull Strings: Use nylon or polyester tape with average breaking strength of not less than 1,250 lbf (5.6 kN).
PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that field measurements are as indicated.
B. Verify that mounting surfaces are ready to receive conduits.
C. Verify that conditions are satisfactory for installation prior to starting work.
3.02 INSTALLATION
A. Install products in accordance with manufacturer's instructions.
B. Install conduit in accordance with NECA 1, BICSI ITSIMM, and BICSI N1.
C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
D. Install galvanized steel electrical metallic tubing (EMT) in accordance with NECA 101.
E. Conduit Routing:
1. Unless dimensioned, conduit routing indicated is diagrammatic.
2. Conceal conduits unless specifically indicated to be exposed.
3. Conduits in the following areas may be exposed, unless otherwise indicated:
   a. Electrical rooms.
   b. Communications rooms.
   c. Mechanical equipment rooms.
4. Arrange conduit to provide no more than 100 feet (33 m) between pull points.
5. Arrange conduit to provide minimum bend radii in accordance with BICSI TDMM.
6. Maintain minimum clearance of 12 inches (300 mm) between conduits and hot surfaces. This includes, but is not limited to:
   a. Heaters.
   b. Hot water piping.
   c. Flues.
7. Group parallel conduits in same area on common rack.

F. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction.
2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
4. Use conduit strap to support single surface-mounted conduit.
   a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
5. Use metal channel/strut with accessory conduit clamps to support multiple, parallel, surface-mounted conduits.
6. Use conduit clamp to support single conduit from beam clamp or threaded rod.
7. Use trapeze hangers assembled from threaded rods and metal channel/strut with accessory conduit clamps to support multiple, parallel, suspended conduits.
8.
8. Use of spring steel conduit clips for support of conduits is permitted only as follows:
   a. Support of electrical metallic tubing (EMT) up to 1-inch (27 mm) trade size concealed above accessible ceilings and within hollow stud walls.
1. Use of wire for support of conduits is permitted only as follows:
   a. For securing conduits to studs in hollow stud walls.
2. Where conduit support intervals specified in NFPA 70 and NECA standards differ, comply with most stringent requirements.

A. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
3. Use suitable adapters where required to transition from one type of conduit to another.
4. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
5. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect cables.
6. Secure joints and connections to provide mechanical strength and electrical continuity.

B. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
2. Make penetrations perpendicular to surfaces unless otherwise indicated.
3. Provide sleeves and/or slots for penetrations as indicated or as required to facilitate installation.
4. Conceal bends for conduit risers emerging above ground.
5. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
6. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty.
7. Install firestopping to preserve fire resistance rating of partitions and other elements; see Section 07 84 00.

C. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed cables or connected equipment. This includes, but is not limited to:
1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
2. Where conduits are subject to earth movement by settlement or frost.

D. Provide grounding and bonding.

END OF SECTION
SECTION 27 10 00 STRUCTURED CABLING

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PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 07 84 00 - Firestopping.
B. Section 26 05 36 - Cable Trays for Electrical Systems.
C. Section 26 05 33.16 - Boxes for Electrical Systems.

1.02 REFERENCE STANDARDS

A. BICSI N1 - Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure, 1st Edition 2019.
B. EIA/ECA-310 - Cabinets, Racks, Panels, and Associated Equipment 2005e.
C. ICEA S-83-596 - Indoor Optical Fiber Cable 2021.
D. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
E. TIA-455-21 - FOTP-21 - Mating Durability of Fiber Optic Interconnecting Devices 1988a (Reaffirmed 2012).
F. TIA-492AAAC - Detail Specification for 850-nm Laser-Optimized, 50-um Core Diameter/125-um Cladding Diameter Class Ia Graded-Index Multimode Optical Fibers 2009b.
G. TIA-526-7 - Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant, Adoption of IEC 61280-4-2 Edition 2: Fibre-Optic Communications Subsystem Test Procedures – Part 4-2: Installed Cable Plant – Single-Mode Attenuation and Optical Return Loss Measurement 2015a (Reaffirmed 2022).
H. TIA-526-14 - Optical Power Loss Measurement of Installed Multimode Fiber Cable Plant; IEC 61280-4.1 Edition 3.1, Fiber Optic Communications Subsystem Test Procedures- Part 4-1: Installed Cable Plant- Multimode Attenuation Measurement 2023d.
I. TIA-568 (SET) - Commercial Building Telecommunications Cabling Standard Set 2020.
J. TIA-568.2 - Balanced Twisted-Pair Telecommunications Cabling and Components Standards 2018d, with Addenda (2020).
K. TIA-568.3 - Optical Fiber Cabling and Components Standard 2022e.
L. TIA-569 - Telecommunications Pathways and Spaces 2019e.
M. TIA-598 - Optical Fiber Cable Color Coding 2014d, with Addendum (2018).
N. TIA-606 - Administration Standard for Telecommunications Infrastructure 2021d.
O. TIA-607 - Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises 2019d.
P. UL 444 - Communications Cables Current Edition, Including All Revisions.
Q. UL 514C - Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers Current Edition, Including All Revisions.
R. UL 1651 - Fiber Optic Cable Current Edition, Including All Revisions.
S. UL 1863 - Communications-Circuit Accessories Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.
C. Shop Drawings: Show compliance with requirements on isometric schematic diagram of network layout, showing cable routings, telecommunication closets, rack and enclosure layouts and locations, service entrance, and grounding, prepared and approved by BICSI Registered Communications Distribution Designer (RCDD).
D. Test Plan: Complete and detailed plan, with list of test equipment, procedures for inspection and testing, and intended test date; submit at least 60 days prior to intended test date.
E. Field Test Reports.
F. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of project record documents.

1.04 WARRANTY

A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
B. Correct defective Work within a 2 year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 SYSTEM DESIGN

A. Provide a complete permanent system of cabling and pathways for voice and data communications, including cables, conduits and wireways, pull wires, support structures, enclosures and cabinets, and outlets.
1. Provide fixed cables and pathways that comply with NFPA 70 and TIA-607 and are UL listed or third party independent testing laboratory certified.
2. Provide connection devices that are rated for operation under conditions of 32 to 140 degrees F (0 to 60 degrees C) at relative humidity of 0 to 95 percent, noncondensing.
3. In this project, the term plenum is defined as return air spaces above ceilings, inside ducts, under raised floors, and other air-handling spaces.
B. System Description:
1. Building Entrance Cable: By others.
2. Provide outlets where indicated on drawings.
C. Main Distribution Frame (MDF): Centrally located support structure for terminating horizontal cables that extend to telecommunications outlets, functioning as point of presence to external service provider.
1. Locate main distribution frame as indicated on the drawings.
D. Cabling to Outlets: Specified horizontal cabling, wired in star topology to distribution frame located at center hub of star; also referred to as "links".

2.02 PATHWAYS

A. Cable Trays: See Section 26 05 36.
B. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.

2.03 COPPER CABLE AND TERMINATIONS

A. Manufacturers:
1. CommScope: HYPERLINK "http://www.commscope.com/#sle"www.commscope.com/#sle.
2. General Cable Technologies Corporation: HYPERLINK "http://www.generalcable.com/#sle"www.generalcable.com/#sle.
3. Siemon Company: HYPERLINK "http://www.siemon.com/#sle"www.siemon.com/#sle.
B. Copper Horizontal Cable:

1. Description: 100 ohm, balanced twisted pair cable complying with TIA-568.2 and listed and labeled as complying with UL 444.
2. Cable Type - Data: TIA-568.2 Category 6 UTP (unshielded twisted pair); 23 AWG.
3. Cable Capacity: 4-pair.
4. Cable Applications: Use listed NFPA 70 Type CMP plenum cable unless otherwise indicated.
5. Cable Jacket Color -Data Cable: Blue.
6. Product(s):
   a. CommScope; SYSTIMAX Twisted Pair Cables; GigaSPEED XL Category 6 U/UTP Cable: HYPERLINK "http://www.commscope.com/#sle"www.commscope.com/#sle.
   b. CommScope; Uniprise Twisted Pair Cables; CS34 Series Category 6 U/UTP Cable: HYPERLINK "http://www.commscope.com/#sle"www.commscope.com/#sle.
   c. General Cable Technologies Corporation; GenSPEED Cables: HYPERLINK "http://www.generalcable.com/#sle"www.generalcable.com/#sle.
      A. Copper Cable Terminations: Insulation displacement connection (IDC) type using appropriate tool; use screw connections only where specifically indicated.
      B. Jacks and Connectors: Modular RJ-45, non-keyed, terminated with 110-style insulation displacement connectors (IDC); high impact thermoplastic housing; suitable for and complying with same standard as specified horizontal cable; UL 1863 listed.
         1. Performance: 500 mating cycles.
         2. Voice and Data Jacks: 8-position modular jack, color-coded for both T568A and T568B wiring configurations.
      C. Copper Patch Cords:
         1. Description: Factory-fabricated 4-pair cable assemblies with 8-position modular connectors terminated at each end.

2.02 FIBER OPTIC CABLE AND INTERCONNECTING DEVICES

A. Manufacturers:
1. CommScope: HYPERLINK "http://www.commscope.com/#sle"www.commscope.com/#sle.
2. General Cable Technologies Corporation: HYPERLINK "http://www.generalcable.com/#sle"www.generalcable.com/#sle.
3. Siemon Company: HYPERLINK "http://www.siemon.com/#sle"www.siemon.com/#sle.
B. Fiber Optic Backbone Cable:
1. Description: Tight buffered, non-conductive fiber optic cable complying with TIA-568.3, TIA-598, ICEA S-83-596 and listed as complying with UL 444 and UL 1651.
2. Cable Type: Multimode, laser-optimized 50/125 um (OM3) complying with TIA-492AAAC.
3. Cable Capacity: Quantity of fibers as indicated on drawings.
4. Cable Applications:
   a. Plenum Applications: Use listed NFPA 70 Type OFNP plenum cable.
5. Cable Jacket Color:
   a. Multimode Fiber (OM1/OM2): Orange.
   b. Single-Mode Fiber (OS1/OS2): Yellow.
C. Fiber Optic Horizontal Cable:
1. Description: Tight buffered, non-conductive fiber optic cable complying with TIA-568.3, ICEA S-83-596 and listed as complying with UL 444 and UL 1651.
2. Cable Type: Multimode, laser-optimized 50/125 um (OM3) complying with TIA-492AAAC.
3. Cable Capacity: 2-fiber.
4. Cable Applications: Use listed NFPA 70 Type OFNP plenum cable unless otherwise indicated.
5. Cable Jacket Color:
   a. Multimode Fiber (OM1/OM2): Orange.
   b. Single-Mode Fiber (OS1/OS2): Yellow.
D. Fiber Optic Interconnecting Devices:
1. Connector Type: Type LC.
2. Connector Performance: 500 mating cycles, when tested in accordance with TIA-455-21.
3. Maximum Attenuation/Insertion Loss: 0.3 dB.

2.01 COMMUNICATIONS EQUIPMENT ROOM FITTINGS

A. Copper Cross-Connection Equipment:
1. Manufacturers:
   a. CommScope: HYPERLINK "http://www.commscope.com/#sle"www.commscope.com/#sle.
   b. Siemon Company: HYPERLINK "http://www.siemon.com/#sle"www.siemon.com/#sle.
2. Connector Blocks for Category 5e and Up Cabling: Type 110 insulation displacement connectors; capacity sufficient for cables to be terminated plus 25 percent spare.
3. Patch Panels for Copper Cabling: Sized to fit EIA/ECA-310 standard 19 inch (482.6 mm) wide equipment racks; 0.09 inch (2.2 mm) thick aluminum; cabling terminated on Type 110 insulation displacement connectors; printed circuit board interface.
   a. Jacks: Non-keyed RJ-45, suitable for and complying with same standard as cable to be terminated; maximum 48 ports per standard width panel.
   b. Capacity: Provide ports sufficient for cables to be terminated plus 25 percent spare.
   c. Labels: Factory installed laminated plastic nameplates above each port, numbered consecutively; comply with TIA-606.
   d. Provide incoming cable strain relief and routing guides on back of panel.
B. Backboards: Interior grade plywood without voids, 3/4 inch (19 mm) thick; UL-labeled fire-retardant.
1. Size: As indicated on drawings.
2. Do not paint over UL label.
C. Equipment Frames, Racks and Cabinets:
1. Component Racks: EIA/ECA-310 standard 19 inch (482.6 mm) wide.
2. Floor Mounted Racks: Aluminum or steel construction with corrosion resistant finish; vertical and horizontal cable management channels, top and bottom cable troughs, and grounding lug.
3. Freestanding Cabinets: Front and rear doors with locks; removable side panels with locks; vented top and rear door; adjustable leveling feet; cable access in roof and base; grounding bar.
4. Cabinets: Steel construction with corrosion resistant finish.
5. Locks: Keyed alike.

2.02 COMMUNICATIONS OUTLETS

A. Outlet Boxes: Comply with Section 26 05 33.16.
1. Provide depth as required to accommodate cable manufacturer's recommended minimum conductor bend radius.
2. Minimum Size, Unless Otherwise Indicated:
   a. Data or Combination Voice/Data Outlets: 4 inch square by 2-1/8 inch deep (100 by 54 mm) trade size.
B. Wall Plates:
1. Comply with system design standards and UL 514C.
2. Accepts modular jacks/inserts.
3. Capacity:
   a. Data or Combination Voice/Data Outlets: As indicated on drawings.
4. Wall Plate Material/Finish - Flush-Mounted Outlets: High impact thermoplastic, color to be selected.

2.03 IDENTIFICATION PRODUCTS

A. Comply with TIA-606.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Comply with latest editions and addenda of TIA-568 (SET) (cabling), TIA-569 (pathways), TIA-607 (grounding and bonding), BICSI N1, NFPA 70, and SYSTEM DESIGN as specified in PART 2.
B. Comply with Communication Service Provider requirements.
C. Grounding and Bonding: Perform in accordance with TIA-607 and NFPA 70.
D. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

3.02 INSTALLATION OF PATHWAYS

A. Install pathways with the following minimum clearances:
1. 48 inches (1220 mm) from motors, generators, frequency converters, transformers, x-ray equipment, and uninterruptible power systems.
2. 12 inches (300 mm) from power conduits and cables and panelboards.
3. 5 inches (125 mm) from fluorescent and high frequency lighting fixtures.
4. 6 inches (150 mm) from flues, hot water pipes, and steam pipes.
B. Outlet Boxes:
1. Coordinate locations of outlet boxes provided under Section 26 05 33.16 as required for installation of telecommunications outlets provided under this section.
   a. Mounting Heights: As indicated on drawings.
   b. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
   c. Provide minimum of 24 inches (600 mm) horizontal separation between flush mounted outlet boxes installed on opposite sides of fire rated walls.
   d. Unless otherwise indicated, provide separate outlet boxes for line voltage and low voltage devices.
   e. Locate outlet boxes so that wall plate does not span different building finishes.
   f. Locate outlet boxes so that wall plate does not cross masonry joints.

3.03 INSTALLATION OF EQUIPMENT AND CABLING

A. Cabling:
1. Do not bend cable at radius less than manufacturer's recommended bend radius; for unshielded twisted pair use bend radius of not less than 4 times cable diameter.
2. Do not over-cinch or crush cables.
3. Do not exceed manufacturer's recommended cable pull tension.
4. When installing in conduit, use only lubricants approved by cable manufacturer and do not chafe or damage outer jacket.
B. Service Loops (Slack or Excess Length): Provide the following minimum extra length of cable, looped neatly:
1. At Distribution Frames: 120 inches (3000 mm).
2. At Outlets - Copper: 12 inches (305 mm).
   1. At Outlets - Optical Fiber: 39 inches (1000 mm).
   A. Copper Cabling:
      1. Category 5e and Above: Maintain cable geometry; do not untwist more than 1/2 inch (12 mm) from point of termination.
      2. For 4-pair cables in conduit, do not exceed 25 pounds (110 N) pull tension.
      3. Use T568B wiring configuration.
   B. Fiber Optic Cabling:
      1. Prepare for pulling by cutting outer jacket for 10 inches (250 mm) from end, leaving strength members exposed. Twist strength members together and attach to pulling eye.
      2. Support vertical cable at intervals as recommended by manufacturer.
   D. Floor-Mounted Racks and Enclosures: Permanently anchor to floor in accordance with manufacturer's recommendations.
   E. Identification:
      1. Use wire and cable markers to identify cables at each end.
      2. Use manufacturer-furnished label inserts, identification labels, or engraved wallplate to identify each jack at communications outlets with unique identifier.
      3. Use identification nameplate to identify cross-connection equipment, equipment racks, and cabinets.

3.02 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.
B. Comply with inspection and testing requirements of specified installation standards.
C. Visual Inspection:
1. Inspect cable jackets for certification markings.
2. Inspect cable terminations for color coded labels of proper type.
3. Inspect outlet plates and patch panels for complete labels.
D. Testing - Copper Cabling and Associated Equipment:
1. Test backbone cables for DC loop resistance, shorts, opens, intermittent faults, and polarity between connectors and between conductors and shield, if cable has overall shield.
2. Test operation of shorting bars in connection blocks.
3. Category 5e and Above Backbone: Perform near end cross talk (NEXT) and attenuation tests.
E. Testing - Fiber Optic Cabling:
1. Backbone: Perform optical fiber end-to-end attenuation test using an optical time domain reflectometer (OTDR) and manufacturer's recommended test procedures; perform verification acceptance tests and factory reel tests.
2. Multimode Backbone: Perform tests in accordance with TIA-526-14.
3. Single Mode Backbone: Perform tests in accordance with TIA-526-7.
F. Final Testing: After all work is complete, including installation of telecommunications outlets, and telephone dial tone service is active, test each voice jack for dial tone.

END OF SECTION SECTION 27 51 16
PUBLIC ADDRESS SYSTEMS

PART 2 PRODUCTS

1.01 MANUFACTURERS

A. Bogen Communications, Inc: www.bogen.com/#sle.
B. Toa Electronics, Inc: www.toaelectronics.com/#sle.

1.02 AMPLIFICATION AND CONTROL EQUIPMENT

A. Microphone Inputs: Two low impedance inputs with 600 microvolt sensitivity and noise level at least 55 dB below rated output.
B. System Frequency Response: 50 to 15,000 Hz, plus or minus 2 dB.
C. System Distortion: Less than 1.5 percent, 100 to 100,000 Hz at rated power.
D. System Output: 4 ohms 25 volts.
E. Volume Controls: One for each input and one master volume.
F. Bass Control: Plus 8 dB to minus 12 dB at 50 Hz.
G. Treble Control: Plus 8 dB to minus 12 dB at 10,000 Hz.
H. Program Selector: Provide program , listen-talk, and mode selector switches.

1.03 COMPONENTS

A. Microphone: Desk type low impedance microphone with push-to-talk switch.
1. Directional Response: Unidirectional.
B. Speakers: 8 inch (200 mm) coaxial speaker with integral crossover circuit.
1. Power Rating: 20 watts.
2. Frequency Range: 45 to 18,000 Hz.
3. Sound Pressure Level: 95 dB at 3 feet (0.9 M) with 1 watt input.
4. Magnet: Ceramic; 10 ounces (283 g) low frequency unit; 3 ounces (85 g) high frequency unit.

1.04 WIRE AND CABLE

A. Microphone Cord: 20 AWG stranded copper conductor, 600 volt insulation, rated 60 degrees C, two conductor shielded cable with rubber jacket.
B. Input Cable: 22 AWG copper conductor, 300 volt insulation, rated 60 degrees C, paired conductors twisted together, shielded, and covered with a PVC jacket.
C. Speaker Wire and Cable: 22 AWG copper conductor, 300 volt insulation, rated 60 degrees C, paired conductors twisted together shielded and covered with a PVC jacket.
D. Plenum Cable for Speaker Circuits: 22 AWG copper conductor, 300 volt insulation, rated 200 degrees C, paired conductors twisted together shielded and covered with a nonmetallic jacket; suitable for use for Class 2 circuits in air handling ducts, hollow spaces used as ducts, and plenums.

PART 3 EXECUTION

2.01 INSTALLATION

A. Install in accordance with manufacturer's instructions.
B. Splice cable only in accessible junction boxes or at terminal block units.
C. Make cable shields continuous at splices and connect speaker circuit shield to equipment ground only at amplifier.
D. Install input circuits in separate cables and raceways from output circuits.
E. Leave 18 inches (300 mm) excess cable at each termination at microphone, volume pad, speaker, and other system outlet.
F. Provide protection for exposed cables where subject to damage.
G. Use armored cable for outside speaker circuits.
H. Support cables above accessible ceilings to keep them from resting on ceiling tiles. Use spring metal clips or plastic cable ties to support cables from structure for ceiling suspension system. Include bridle rings or drive rings.
I. Use suitable cable fittings and connectors.
J. Connect reproducers to amplifier with matching transformers.
K. Ground and bond equipment and circuits in accordance with Section 26 05 26.

2.02 ADJUSTING

A. Adjust transformer taps for appropriate sound level.
B. Adjust devices and wall plates to be flush and level.

2.03 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate operation of system to Owner's personnel.
1. Use operation and maintenance data as reference during demonstration.
2. Briefly describe function, operation, and maintenance of each component.
B. Training: Train Owner's personnel on operation and maintenance of system.
1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
2. Provide minimum of two hours of training.

2.04 MAINTENANCE

A. Provide service and maintenance of public address and music system for one year from Date of Substantial Completion.

END OF SECTION

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ELECTRICAL SPECIFICATIONS

SHEET
E011

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SITE PLAN KEYNOTES: (#)

1. INDICATES APPROXIMATE LOCATION OF EXISTING GROUND MOUNTED LUMINAIRE. REMOVE EXISTING GROUND MOUNTED LUMINAIRE, BASE, CONDUCTORS, ETC. CONDUIT SHALL BE REMOVED TO 6" BELOW GRADE AND ABANDONED IN PLACE.
2. PROVIDE RECEPTACLE, SWITCH, PHOTOCELL, CONDUIT, CONDUCTORS, ETC., AS REQUIRED FOR INSTALLATION OF MONUMENT SIGN. COORDINATE LOCATION AT MONUMENT SIGNAGE WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
3. PROVIDE SWITCH, PHOTOCELL, CONDUIT, CONDUCTORS, ETC., AS REQUIRED FOR INSTALLATION OF MONUMENT SIGN. COORDINATE LOCATION AT BUILDING SIGNAGE WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
4. MAINTAIN EXISTING CONDIUT FOR RE-USE.

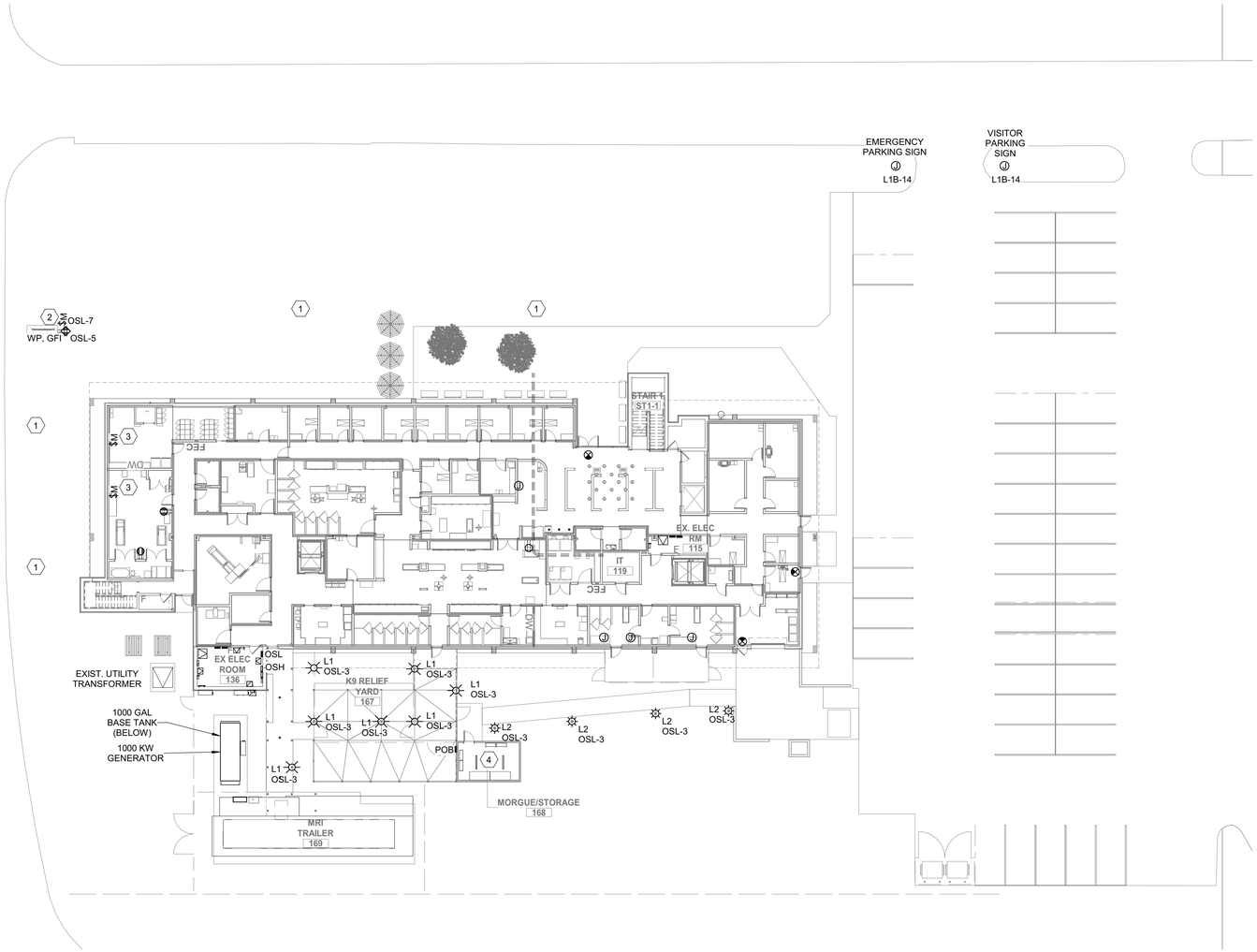
GENERAL NOTES: SITE PLAN

A. ELECTRICAL CONTRACTOR SHALL COORDINATE UTILITY SERVICES WITH THE LOCAL UTILITY PROVIDER AS REQUIRED TO PROVIDE THE VARIOUS UTILITY SERVICES TO BUILDING AND TO ALLOW FOR NEW WORK.

B. PROVIDE MATERIALS, EQUIPMENT, LABOR, ETC., AS REQUIRED TO INSTALL OR UPGRADE UTILITY SERVICE ENTRANCE OR DEMARK POINT TO BUILDING, PER UTILITY REQUIREMENTS AND SPECIFICATIONS.

C. PROVIDE TRENCHING, BACKFILL, COMPACTION, WARNING TAPE, ETC., AS REQUIRED FOR INSTALLATION OF CONDUIT, CONDUCTORS, PULL CORDS, ETC., AS REQUIRED TO INSTALL UTILITY SERVICES TO BUILDING.

D. UTILITY INFORMATION SHOWN FOR REFERENCE PURPOSES ONLY. COORDINATE UTILITY PROVIDED PRIOR TO PERFORMING WORK.



1 E015 **SITE PLAN - ELECTRICAL**
1" = 20'-0"

0' 10' 20' 40' 60'
SCALE : 1" = 20'-0"

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ELECTRICAL SITE PLAN

SHEET
E015

9/20/2023 3:34:00 PM

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FIRST FLOOR LIGHTING KEYNOTES: (#)

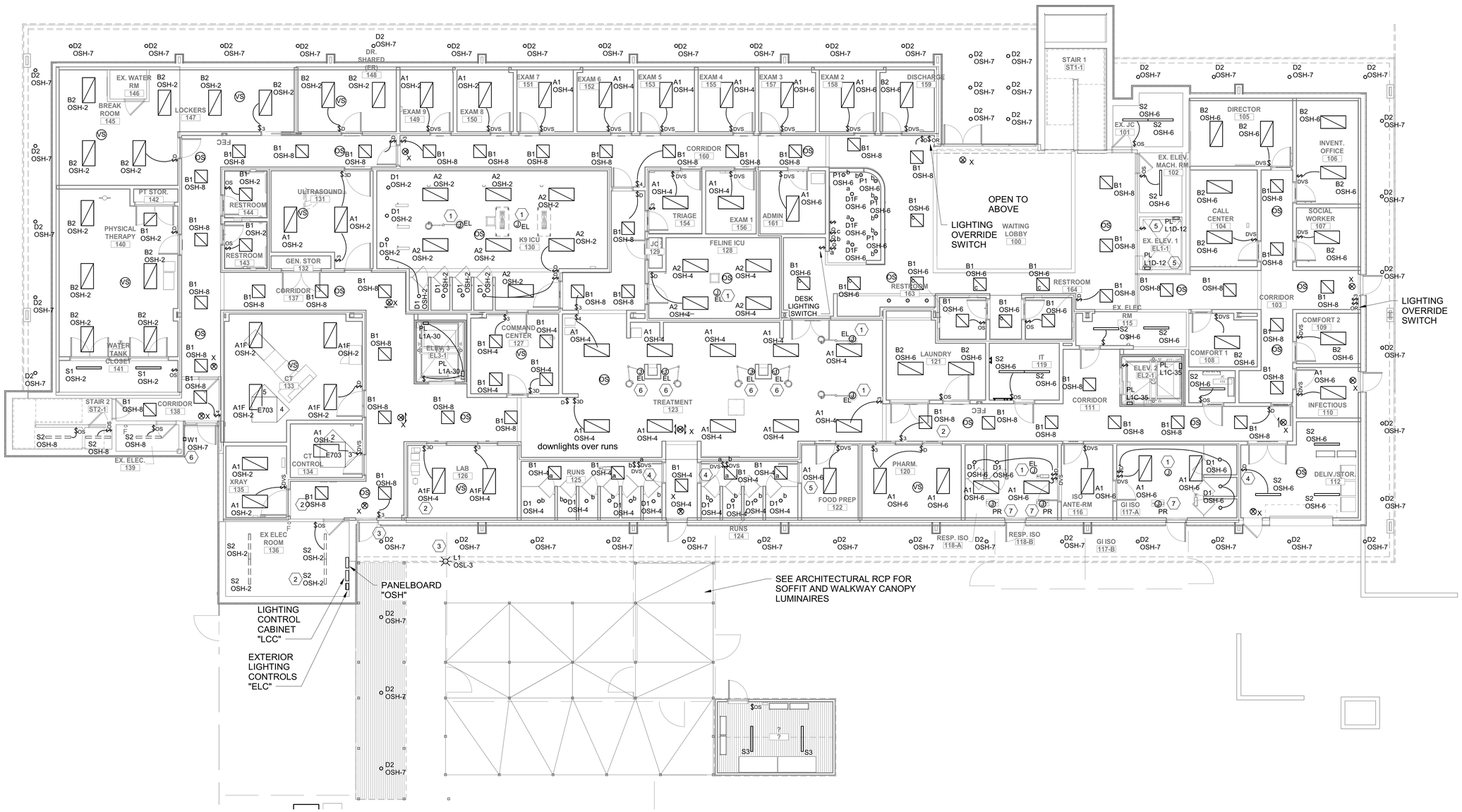
1. PROVIDE JUNCTION BOX ABOVE ACCESSIBLE CEILING CONNECTION OF MEDICAL EXAMINATION LIGHT. COORDINATE INSTALLATION, LOCATION AND TERMINATION OF LUMINAIRE WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
2. ROUTE LIGHTING CIRCUITS THOUGH LIGHTING CONTROL CABINET "LCC", THEN TO PANELBOARD. LIGHTING CONTROL CABINET "LCC" IS LOCATED IN THE MAIN ELECTRICAL ROOM ON THE FIRST FLOOR.
3. ROUTE EXTERIOR LIGHTING CIRCUITS THOUGH EXTERIOR LIGHTING CONTROLS "ELC", THEN TO PANELBOARD. EXTERIOR LIGHTING CONTROL CABINET "ELC" IS LOCATED IN THE MAIN ELECTRICAL ROOM ON THE FIRST FLOOR.
4. INSTALL LEADING EDGE OF SWITCH OUTLET BOX A MINIMUM OF 3" AND A MAXIMUM OF 6" BEYOND THE OUTER EDGE OF THE DOOR SWING. SWITCHES SHALL NOT BE INSTALLED BEHIND THE DOOR.
5. REMOVE AND REPLACE EXISTING SPST SWITCH AND ELEVATOR PIT LIGHTING. CONNECT TO CIRCUIT INDICATED.
6. PROVIDE JUNCTION BOX ABOVE ACCESSIBLE CEILING CONNECTION OF MEDICAL EXAMINATION LIGHT. COORDINATE INSTALLATION, LOCATION AND TERMINATION OF LUMINAIRE WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
7. PROVIDE JUNCTION BOX ABOVE ACCESSIBLE CEILING CONNECTION OF POWER REEL. PROVIDE RECEPTACLE AND POWER CORD PER ARCHITECTS REQUIREMENTS. COORDINATE INSTALLATION, LOCATION AND TERMINATION OF POWER REEL WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.

GENERAL NOTES: LIGHTING

A. CONNECT EXIT SIGN, EMERGENCY EGRESS BATTERY PACKS AND INTEGRAL EMERGENCY BATTERY PACKS AHEAD OF LOCAL AREA SWITCHING.

B. CONNECT EXIT SIGN, EMERGENCY EGRESS BATTERY PACKS AND INTEGRAL EMERGENCY BATTERY PACKS TO LIGHTING CIRCUIT IN THIS AREA.

C. ROUTE LIGHTING CIRCUITS THOUGH LIGHTING CONTROL CABINET "LCC", THEN TO PANELBOARD. LIGHTING CONTROL CABINET "LCC" IS LOCATED IN THE MAIN ELECTRICAL ROOM ON THE FIRST FLOOR.



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

1 E201 **FIRST FLOOR - LIGHTING PLAN**
1/8" = 1'-0"

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FIRST FLOOR LIGHTING PLAN

SHEET
E201

ASC PROJECT NUMBER: 21-000

9/20/2023 3:34:02 PM

SECOND FLOOR LIGHTING KEYNOTES: (#)

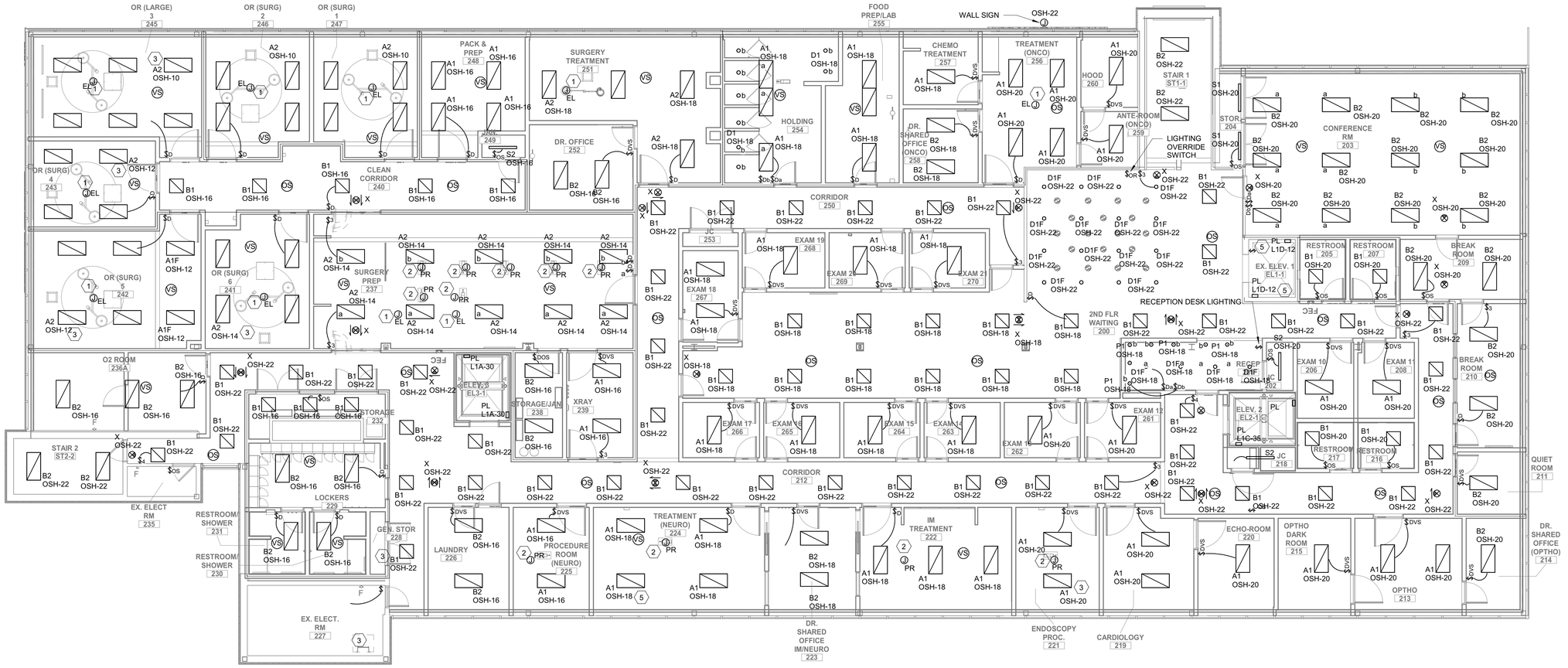
1. PROVIDE JUNCTION BOX ABOVE ACCESSIBLE CEILING CONNECTION OF MEDICAL EXAMINATION LIGHT. COORDINATE INSTALLATION, LOCATION AND TERMINATION OF LUMINAIRE WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
2. PROVIDE JUNCTION BOX ABOVE ACCESSIBLE CEILING CONNECTION OF POWER REEL. PROVIDE RECEPTACLE AND POWER CORD PER ARCHITECTS REQUIREMENTS. COORDINATE INSTALLATION, LOCATION AND TERMINATION OF POWER REEL WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
3. ROUTE LIGHTING CIRCUITS THOUGH LIGHTING CONTROL CABINET "LCC", THEN TO PANELBOARD. LIGHTING CONTROL CABINET "LCC" IS LOCATED IN THE MAIN ELECTRICAL ROOM ON THE FIRST FLOOR.
4. INSTALL LEADING EDGE OF SWITCH OUTLET BOX A MINIMUM OF 3" AND A MAXIMUM OF 6" BEYOND THE OUTER EDGE OF THE DOOR SWING. SWITCHES SHALL NOT BE INSTALLED BEHIND THE DOOR.
5. REMOVE AND REPLACE EXISTING SPST SWITCH AND ELEVATOR PIT LIGHTING. CONNECT TO CIRCUIT INDICATED.

GENERAL NOTES: LIGHTING

A. CONNECT EXIT SIGN, EMERGENCY EGRESS BATTERY PACKS AND INTEGRAL EMERGENCY BATTERY PACKS AHEAD OF LOCAL AREA SWITCHING.

B. CONNECT EXIT SIGN, EMERGENCY EGRESS BATTERY PACKS AND INTEGRAL EMERGENCY BATTERY PACKS TO LIGHTING CIRCUIT IN THIS AREA.

C. ROUTE LIGHTING CIRCUITS THOUGH LIGHTING CONTROL CABINET "LCC", THEN TO PANELBOARD. LIGHTING CONTROL CABINET "LCC" IS LOCATED IN THE MAIN ELECTRICAL ROOM ON THE FIRST FLOOR.



0' 2' 4' 8' 16' 24'

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

1 / E202 **SECOND FLOOR - LIGHTING PLAN**

1/8" = 1'-0"

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SECOND FLOOR LIGHTING PLAN

SHEET
E202

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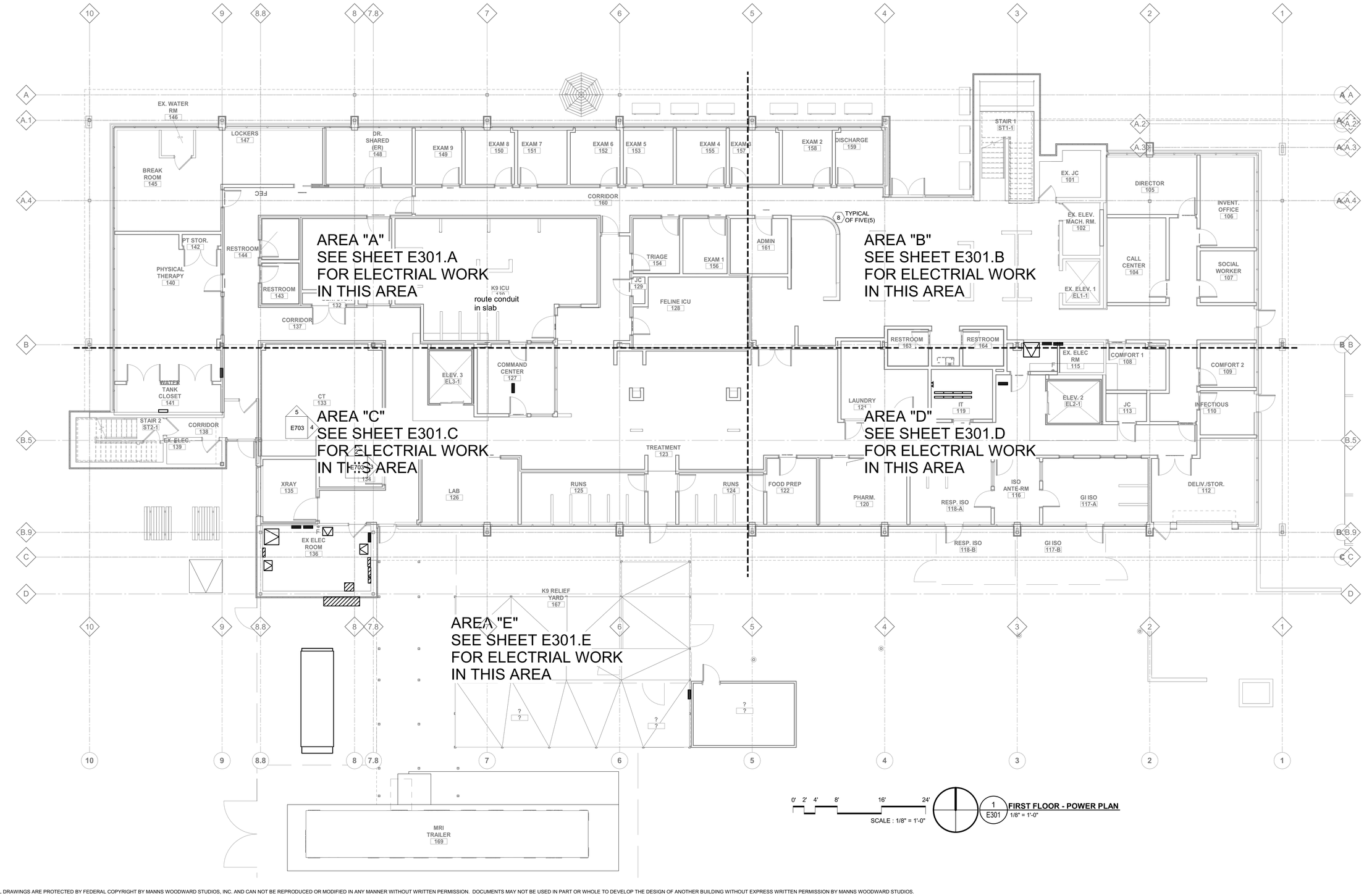

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FIRST FLOOR POWER PLAN

SHEET
E301

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FIRST FLOOR POWER KEYNOTES: (#)

1. PROVIDE TWO(2) SPST TOGGLE SWITCH AND TWO(2) JUCTION BOX FOR CONNECTION OF DISPOSAL AND DISHWASHER. CONNECT USING 2#12, 1#12G., IN 1/2"C. INSTALL SWITCH AT 42" AFF., ABOVE COUNTER. INSTALL JUNCTION BOX AT 18" AFF. COORDINATE MOUNTING HEIGHT AND TERMINATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
2. INSTALL CENTERED IN FACE OF FURNITURE. OUTLET BOX SHALL BE INSTALLED 6" FROM THE CENTER LINE OF THE SUCTION INLET. ROUTE 1/2" RMC FROM FLUSH MOUNTED JUNCTION BOX TO OUTLET BOX AT FACE OF FURNITURE AND TO PANELBOARD FOR INSTALLATION OF RECEPTACLE. PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED.
3. ROUTE THREE(3)-1"C., FOR POWER AND ONE(1)-1 1/2"C., FOR TELECOMMUNICATIONS. CONDUITS SHALL BE INSTALLED IN SLAB AS REQUIRED. TERMINATE 1 1/2" TELECOM CONDUIT ABOVE ACCESSIBLE CEILING WITH PULLCORD AND PLASTIC BUSHING.
4. RECEPTACLES AND LUMINAIRES SHALL BE INSTALLED AT THE TOP AND BOTTOM OF THE ELEVATOR SHAFT. THE DEVICES AT THE TOP OF THE SHAFT SHALL BE CONNECTED TO THE SAME CIRCUIT AS THE DEVICES AT THE BOTTOM OF THE SHAFT. COORDINATE MOUNTING HEIGHT AND LOCATION WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
5. PROVIDE DUPLEX RECEPTACEL FOR CONNECTION OF ELEVATOR SUMP PUMP. COORDINATE LOCTION OF RECEPTACLE AND SUMP PUMP WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
6. PROVIDE DATA DROP FOR CONNECTION OF REMOTE DIAGNOSTIC AND MAINTENANCE SOFTWARE. FOR USE BY HUDSON AQUATICS
7. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
8. REMOVAL AND RELOCATION OF EXISTING WATER TREADMILL IS THE RESPONSIBILITY OF HUDSON AQUATIC SYSTEMS. THIS INCLUDES BUT NOT LIMITED TO, WATER TREADMILL, PUMPS, PIPING, ASSOCIATED ELECTRICAL GEAR, LABOR, DELIVERY, ETC. ELECTRICAL CONTRACTOR SHALL PROVIDE ROUGH-INS PRIOR TO VENDOR'S INSTALLATION AND MAKE FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT. HUSON AQUATICS HAS DELIVERED THE WATER TREADMILL TO THE SITE, THEY SHALL WORK WITH THE GENERAL CONTRACTOR AND ELECTRICIAN TO PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
9. PROVIDE FOR CONNECTIONS FOR PET THERAPY. CONNECT USING 2#10, 1#10G., IN 1/2" LFMC., OR 2#12, 1#12G., IN 1/2" LFMC. COORDINATE LOCATION, MOUNTING HEIGHT AND TERMINATION WITH HUDSON AQUATICS CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
10. PROVIDE FOR CONNECTIONS FOR BACKLIT MIRRIOR. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION, MOUNTING HEIGHT AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
11. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR CONNECTION OF SINGLE 20A RECEPTACLES PROVIDE WITH CEILING MOUNTED MEDICAL COLUMN. EACH CIRCUIT SHALL SERVE FOUR(4) RECEPTACLES. FIRST CIRCUIT SHALL SERVE RECEPTACLES ON THE NORTH AND EAST FACE OF THE COLUMN. THE OTHER SHALL SEVER THE SOUTH AND WEST FACE. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION EACH RECEPTACLE IN THE COLUMN. COORDINATE MOUNTING AND LOCATION OF JUNCTION BOXES WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

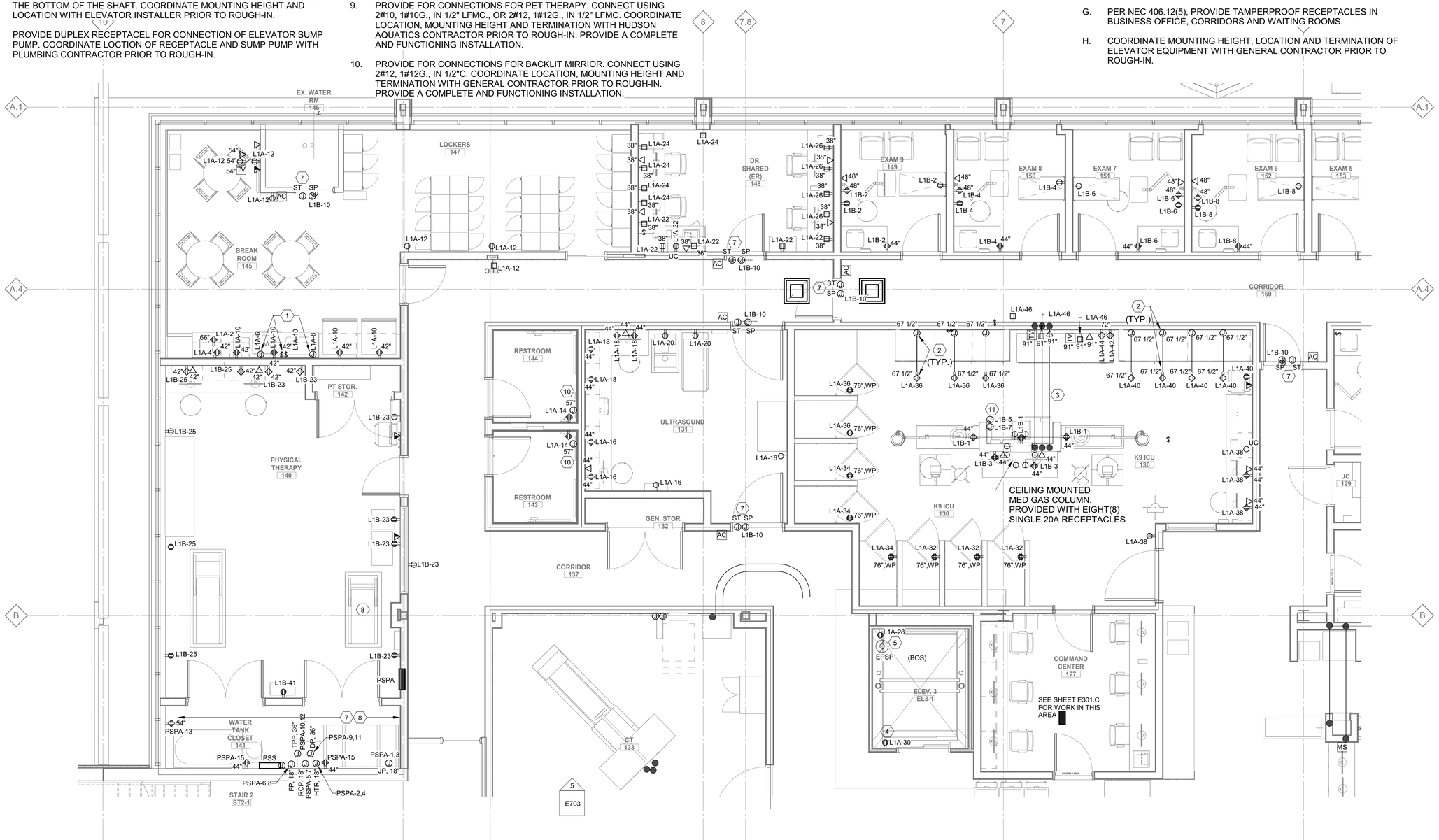
D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

F. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN MANUFACTURER, TYPE, PHYSICAL SIZE AND AIC RATING.

G. PER NEC 406.12(5), PROVIDE TAMPERPROOF RECEPTACLES IN BUSINESS OFFICE, CORRIDORS AND WAITING ROOMS.

H. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF ELEVATOR EQUIPMENT WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.



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

1 E301.A **ENLARGED POWER PLAN - FIRST FLOOR - AREA A** 1/4" = 1'-0"

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FIRST FLOOR ENLARGED POWER PLAN AREA A

SHEET
E301.A

ASC PROJECT NUMBER: 21-000

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FIRST FLOOR POWER KEYNOTES: (#)

1. INSTALL CENTERED IN FACE OF FURNITURE. OUTLET BOX SHALL BE INSTALLED 6" FROM THE CENTER LINE OF THE SUCTION INLET. ROUTE 1/2" RMC FROM FLUSH MOUNTED JUNCTION BOX TO OUTLET BOX AT FACE OF FURNITURE AND TO PANELBOARD FOR INSTALLATION OF RECEPTACLE. PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED.
2. PROVIDE DUPLEX RECEPTACLE, DATA AND SPECIAL SYSTEMS OUTLETS. COORDINATE INSTALLATION WITH CASEWORK CONTRACTOR PRIOR TO ROUGH-IN.
3. ROUTE TWO(2) 4"C., AND ONE(1) 2"C., WITH PULLCORD FROM TELECOMMUNICATIONS TERMINAL BOARD TO 9'-0" FROM FACE OF BUILDING. INSTALL CONDUIT 8" AFF., BELOW TTB, 24" BELOW GRADE AND STUB 5'-0" BEYOND FACE OF BUILDING. TERMINATE BELOW TTB WITH PLASTIC BUSHING AND THE OTHER END WITH PLASTIC CAP.
4. RECONNECT EXISTING ELEVATOR EQUIPMENT AS REQUIRED. RECEPTACLES AND LUMINAIRES SHALL BE INSTALLED AT THE TOP AND BOTTOM OF THE ELEVATOR SHAFT. THE DEVICES AT THE TOP OF THE SHAFT SHALL BE CONNECTED TO THE SAME CIRCUIT AS THE DEVICES AT THE BOTTOM OF THE SHAFT. COORDINATE MOUNTING HEIGHT AND LOCATION WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
5. PROVIDE TWO(2) COMPARTMENT FLOOR BOX FOR CONNECTION OF CHECK-IN KIOSK. ROUTE ONE(1)-1"C., FOR POWER AND ONE(1)-1"C., FOR TELECOMMUNICATIONS. TERMINATE 1" CONDUIT ABOVE ACCESSIBLE CEILING WITH PULLCORD AND PLASTIC BUSHING. FLOOR BOX SHALL BE MANUFACTURED BY LEGRAND OF EQUAL.
6. ROUTE TWO(2) 4"C., AND ONE(1) 2"C., WITH PULLCORD FROM TELECOMMUNICATIONS TERMINAL BOARD TO 9'-0" FROM FACE OF BUILDING. INSTALL CONDUIT 8" AFF., BELOW TTB, 24" BELOW GRADE AND STUB 5'-0" BEYOND FACE OF BUILDING. TERMINATE BELOW TTB WITH PLASTIC BUSHING AND THE OTHER END WITH PLASTIC CAP.
7. CONNECT RECEPTACLE TO LIGHTING CIRCUIT IN THIS AREA. CONNECT USING 2#12, 1#12G., IN 1/2"C. CONNECT RECEPTACLE AHEAD OF LOCAL AREA SWITCHING. RECEPTACLE SHALL NOT BE SWITCHED.
8. PROVIDE GFI TYPE RECEPTACLE FOR CONNECTION OF WATER HEATER. INSTALL RECEPTACLE SUCH THAT THE WATER COOLER DOESN'T HAVE TO BE DISASSEMBLED TO RESET GFI RECEPTACLE.
9. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
10. INSTALL DOOR RELEASE AND INTERCOM/DOOR CONTROL MASTER STATION INSIDE CASEWORK. FLUSH MOUNT AT 38". COORDINATE INSTALLATION WITH CASEWORK CONTRACTOR PRIOR TO ROUGH-IN.
11. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR CONNECTION OF SINGLE 20A RECEPTACLES PROVIDE WITH CEILING MOUNTED MEDICAL COLUMN. EACH CIRCUIT SHALL SERVE FOUR(4) RECEPTACLES. FIRST CIRCUIT SHALL SEVER RECEPTACLES ON THE NORTH AND EAST FACE OF THE COLUMN. THE OTHER SHALL SEVER THE SOUTH AND WEST FACE. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION EACH RECEPTACLE IN THE COLUMN. COORDINATE MOUNTING AND LOCATION OF JUNCTION BOXES WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
12. ADD ALTERNATE E1: REMOVE AND REPLACE ELEVATOR
13. PROVIDE SPST SWITCH AND JUNCTION BOX FOR CONNECTION OF ILLUMINATED DESK FEATURE. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE INSTALLATION, LOCATION AND TERMINATION WITH CASEWORK CONTRACTOR PRIOR TO ROUGH-IN.
14. PROVIDE TWO(2) FLUSH WALL MOUNTED JUCTION BOXES FOR POWER AND TELECOMMUNICATIONS CONNECTIONS TO CASEWORK. ROUTE ONE(1)-1/2"C., FOR POWER AND ONE(1)-1 1/2"C., FOR TELECOMMUNICATIONS/SPECIAL SYSTEMS. TERMINATE 2"C., ABOVE ACCESSIBLE CEILING WITH PULLCORD AND PLASTIC BUSHING.
15. PROVIDE DUPLEX RECEPTACLE FOR CONNECTION OF ELEVATOR SUMP PUMP. COORDINATE LOCTION OF RECEPTACLE AND SUMP PUMP WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

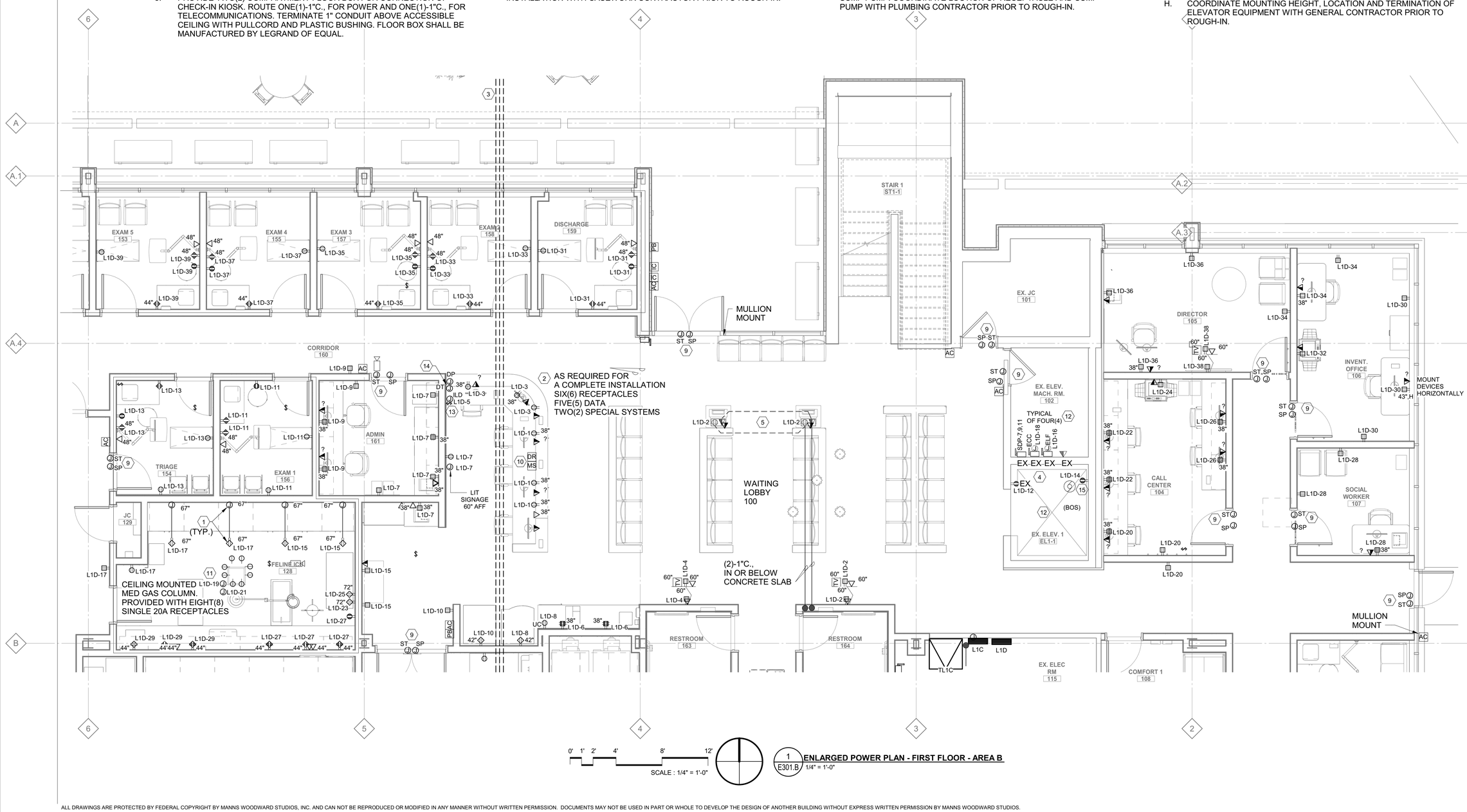
D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

F. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN MANUFACTURER, TYPE, PHYSICAL SIZE AND AIC RATING.

G. PER NEC 406.12(5), PROVIDE TAMPERPROOF RECEPTACLES IN BUSINESS OFFICE, CORRIDORS AND WAITING ROOMS.

H. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF ELEVATOR EQUIPMENT WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.



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

1 E301.B **ENLARGED POWER PLAN - FIRST FLOOR - AREA B** 1/4" = 1'-0"

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WILMINGTON, NC 28403

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FIRST FLOOR ENLARGED POWER PLAN AREA B

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FIRST FLOOR POWER KEYNOTES: (#)

1. INSTALL CENTERED IN FACE OF FURNITURE. OUTLET BOX SHALL BE INSTALLED 6" FROM THE CENTER LINE OF THE SUCTION INLET. ROUTE 1/2" RMC FROM FLUSH MOUNTED JUNCTION BOX TO OUTLET BOX AT FACE OF FURNITURE AND TO PANELBOARD FOR INSTALLATION OF RECEPTACLE. PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED.
2. ROUTE ONE(1)-1"C., FOR POWER AND ONE(1)-1"C., FOR TELECOMMUNICATIONS. CONDUITS SHALL BE INSTALLED IN SLAB AS REQUIRED. TERMINATE 1" TELECOM CONDUIT ABOVE ACCESSIBLE CEILING WITH PULLCORD AND PLASTIC BUSHING.
3. COORDINATE OUTLET BOX MOUNTING HEIGHT AND LOCATION WITH CASEWORK ELEVATION (LAB 126 - WEST) PRIOR TO ROUGH-IN.
4. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
5. PROVIDE 100A/2P, NEMA 1, HEAVY DUTY FUSED DISCONNECT SWITCH FOR CONNECTION OF X-RAY MACHINE. FUSE AT 100 AMPS. CONNECT USING 2#1, 1#1G., IN 1 1/4"C. COORDINATE LOCATION AND MOUNTING HEIGHT AND LOCATION WITH IMAGING EQUIPMENT CONTRACTOR PRIOR TO ROUGH-IN AND PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
6. PROVIDE 200A/3P, NEMA 1, HEAVY DUTY FUSED DISCONNECT SWITCH FOR CONNECTION OF CT SCAN. FUSE AT 125 AMPS. CONNECT USING 3#1, 1#1G., IN 2"C. COORDINATE LOCATION AND MOUNTING HEIGHT AND LOCATION WITH IMAGING EQUIPMENT CONTRACTOR PRIOR TO ROUGH-IN AND PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
7. PROVIDE MOTOR RATED SWITCH AND JUNCTION BOX FOR CONNECTION OF WATER HEATER IGNITOR. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION AND MOUNTING HEIGHT AND LOCATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
8. SEE CT RISER DIAGRAM FOR WORK ASSOCIATED WITH DEVICE(S) AND FOR ADDITIONAL INFORMATION. ALL CONDUCTORS UTILIZED FOR EQUIPMENT CONNECTION SHALL BE STRANDED.
9. REMOVE AND CUT CONCRETE SLAB IN AREA INDICATED BY THE CENTER LINE. SEE CT RISER DIAGRAM FOR WORK ASSOCIATED WITH DEVICE(S) AND FOR ADDITIONAL INFORMATION.

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

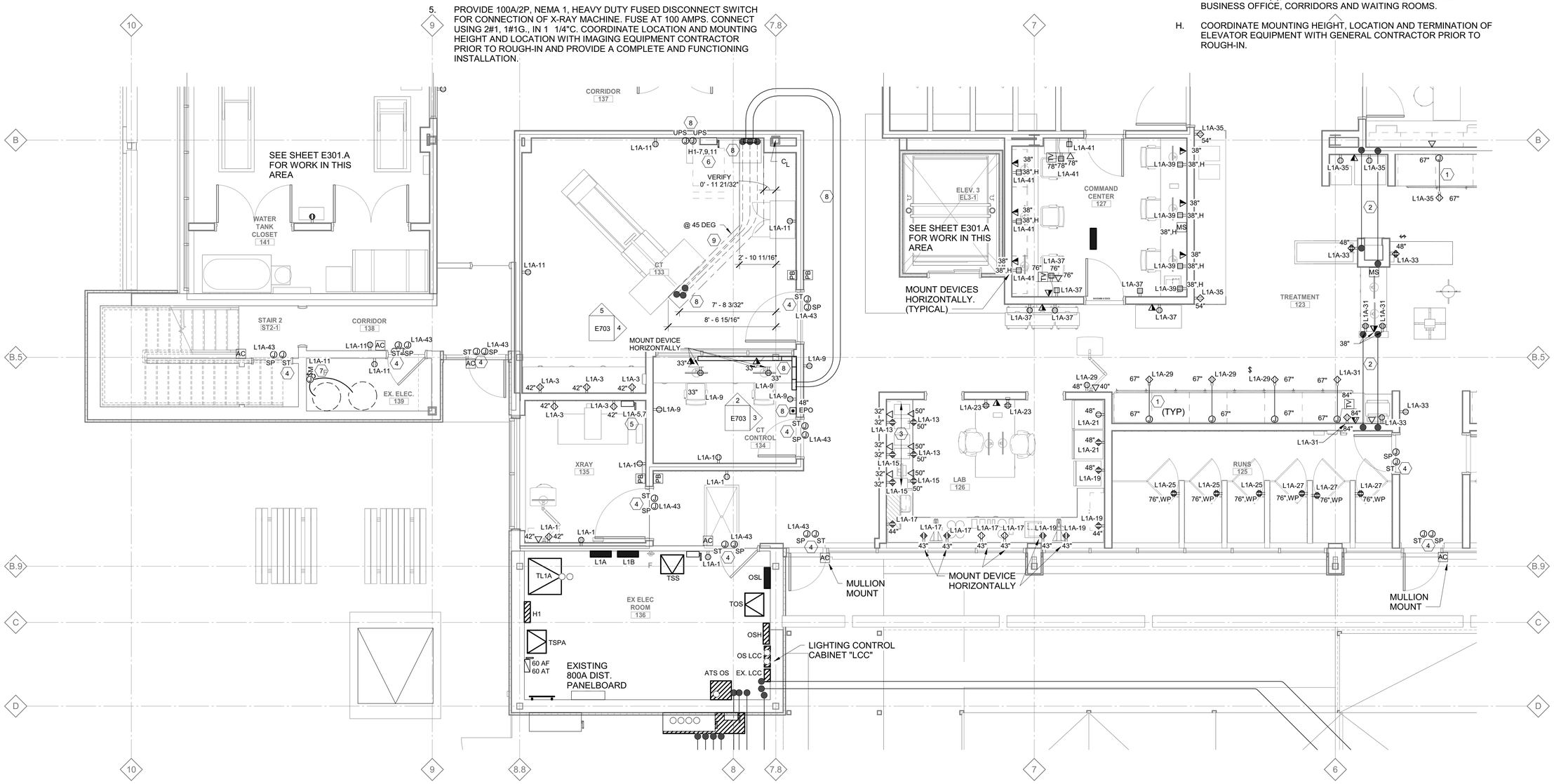
D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

F. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN MANUFACTURER, TYPE, PHYSICAL SIZE AND AIC RATING.

G. PER NEC 406.12(5), PROVIDE TAMPERPROOF RECEPTACLES IN BUSINESS OFFICE, CORRIDORS AND WAITING ROOMS.

H. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF ELEVATOR EQUIPMENT WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.



0' 1' 2' 4' 8' 12'
SCALE : 1/4" = 1'-0"

1 E301.C **ENLARGED POWER PLAN - FIRST FLOOR - AREA C**
1/4" = 1'-0"

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FIRST FLOOR ENLARGED POWER PLAN AREA C

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FIRST FLOOR POWER KEYNOTES: (#)

1. PROVIDE SPST TOGGLE SWITCH AND JUCTION BOX FOR CONNECTION OF DISHWASHER. CONNECT USING 2#12, 1#12G., IN 1/2"C. INSTALL SWITCH AT 42" AFF., ABOVE COUNTER. INSTALL JUNCTION BOX AT 18" AFF. COORDINATE MOUNTING HEIGHT AND TERMINATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
2. INSTALL CENTERED IN FACE OF FURNITURE. OUTLET BOX SHALL BE INSTALLED 6" FROM THE CENTER LINE OF THE SUCTION INLET. ROUTE 1/2" RMC FROM FLUSH MOUNTED JUNCTION BOX TO OUTLET BOX AT FACE OF FURNITURE AND TO PANELBOARD FOR INSTALLATION OF RECEPTACLE. PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED.
3. ROUTE ONE(1)-1"C., FOR POWER AND ONE(1)-1"C., FOR TELECOMMUNICATIONS. CONDUITS SHALL BE INSTALLED IN SLAB AS REQUIRED. TERMINATE 1" TELECOM CONDUIT ABOVE ACCESSIBLE CEILING WITH PULLCORD AND PLASTIC BUSHING.
4. ROUTE TWO(2) 4"C., AND ONE(1) 2"C., WITH PULLCORD FROM TELECOMMUNICATIONS TERMINAL BOARD TO 9'-0" FROM FACE OF BUILDING. INSTALL CONDUIT 8" AFF., BELOW TTB, 24" BELOW GRADE AND STUB 5'-0" BEYOND FACE OF BUILDING. TERMINATE BELOW TTB WITH PLASTIC BUSHING AND THE OTHER END WITH PLASTIC CAP.
5. PROVIDE GFI TYPE RECEPTACLE FOR CONNECTION OF WATER HEATER. INSTALL RECEPTACLE SUCH THAT THE WATER COOLER DOESN'T HAVE TO BE DISASSEMBLED TO RESET GFI RECEPTACLE.
6. RECEPTACLES AND LUMINAIRES SHALL BE INSTALLED AT THE TOP AND BOTTOM OF THE ELEVATOR SHAFT. THE DEVICES AT THE TOP OF THE SHAFT SHALL BE CONNECTED TO THE SAME CIRCUIT AS THE DEVICES AT THE BOTTOM OF THE SHAFT. COORDINATE MOUNTING HEIGHT AND LOCATION WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
7. PROVIDE DUPLEX RECEPTACLE FOR CONNECTION OF ELEVATOR SUMP PUMP. COORDINATE LOCTION OF RECEPTACLE AND SUMP PUMP WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
8. PROVIDE OUTLET BOX ABOVE ACCESSIBLE CEILING FOR CONNECTION OF RETRACTABLE ELECTRICAL REEL. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
9. PROVIDE CONNECTION FOR STACKED WASHER/DRYER. COORDINATE LOCATION WITH ARCHITECTURAL FURNITURE DRAWING PRIOR TO ROUGH-IN.
10. PROVIDE TWO(2) OUTLET BOXES FOR INSTALLATION OF OVERHEAD DOOR. ONE(1) FOR INSTALLATION OF CONTROLS AND THE OTHER FOR CONNECTION OF OH DOOR MOTOR. ROUTE 1/2"C., FROM CONTROLS OUTLET BOX TO STRUCTURE ABOVE. TERMINATE CONDUIT WITH PULLCORD AND PLASTIC BUSHING. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
11. PROVIDE NEMA 1, 30A/2P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF DRYER. FUSE PER NAMEPLATE. CONNECT USING 2#12, 1#12G., IN 1/2" LFMC. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
12. PROVIDE NEMA 1, 30A/3P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF WASHER. FUSE PER NAMEPLATE. CONNECT USING 2#12, 1#12G., IN 1/2" LFMC. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
13. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
14. PROVIDE "SHALLOW" 2-GANG OULET BOXES FOR RECEPACLES, TO ALLOW FOR BACK TO BACK INSTALLATION.
15. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR CONNECTION OF SINGLE 20A RECEPTACLES PROVIDE WITH CEILING MOUNTED MEDICAL COLUMN. EACH CIRCUIT SHALL SERVE FOUR(4) RECEPTACLES. FIRST CIRCUIT SHALL SEVER RECEPTACLES ON THE NORTH AND EAST FACE OF THE COLUMN. THE OTHER SHALL SEVER THE SOUTH AND WEST FACE. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION EACH RECEPTACLE IN THE COLUMN. COORDINATE MOUNTING AND LOCATION OF JUNCTION BOXES WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
16. PROVIDE FOR CONNECTIONS FOR BACKLIT MIRRIOR. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION, MOUNTING HEIGHT AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
17. PROVIDE 30A, 208V, NEMA 6-30R. COORDINATE MOUNTING HEIGHT AND LOCATION WITH NVA IT CONTRACTOR PRIOR TO ROUGH-IN.

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

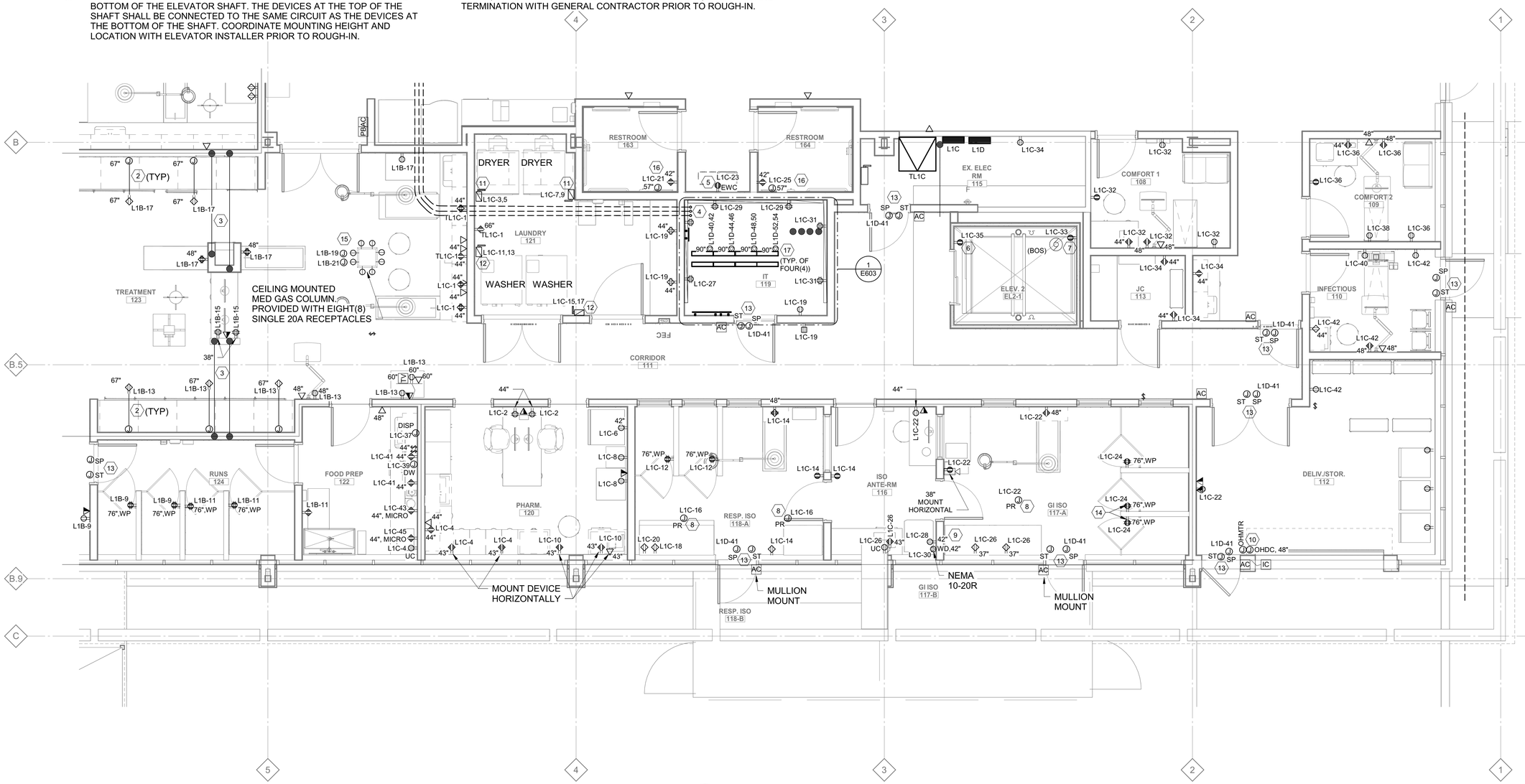
D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

F. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN MANUFACTURER, TYPE, PHYSICAL SIZE AND AIC RATING.

G. PER NEC 406.12(5), PROVIDE TAMPERPROOF RECEPTACLES IN BUSINESS OFFICE, CORRIDORS AND WAITING ROOMS.

H. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF ELEVATOR EQUIPMENT WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.



0' 1' 2' 4' 8' 12'
SCALE : 1/4" = 1'-0"

1 E301.D **ENLARGED POWER PLAN - FIRST FLOOR - AREA D**
1/4" = 1'-0"

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NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

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09/20/2023

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FIRST FLOOR ENLARGED POWER PLAN AREA D

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E301.D

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FIRST FLOOR POWER KEYNOTES: (#)

1. PROVIDE TWO(2) JUNCTION BOXES. SURFACE MOUNT, 12" ABOVE DOOR FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 1"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
2. SEE DETAIL MRI TRAILER FOR ADDITIONAL WORK AND INFORMATION. PROVIDE 200A/3P, NEMA 3R, HEAVY DUTY FUSED DISCONNECT SWITCH FOR CONNECTION OF MRI TRAILER. FUSE AT 150 AMPS. COORDINATE LOCATION AND MOUNTING HEIGHT AND LOCATION WITH IMAGING EQUIPMENT CONTRACTOR PRIOR TO ROUGH-IN AND PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
3. ROUTE 3#1/0, 1#1/0N., 1#1/0G., IN 2 1/2"C. FROM DISCONNECT SWITCH TO CIRCUIT BREAKER IN PANELBOARD "H1A".
4. ROUTE 3#1/0, 1#1/0N., 1#1/0G., IN 2 1/2"C. FROM DISCONNECT SWITCH TO CIRCUIT BREAKER IN PANELBOARD "MDP".
5. PROVIDE NEMA 3R MINI-POWER ZONE, 15KVA, 480/120/208 1-PHASE, 4-WIRE. PROVIDE MCB'S, PANELBOARD CB'S, CONDUIT, CONDUCTORS, #8 SERVICE GROUNDING. GROUNDING ELECTRODE, ETC., AS REQUIRED FOR A COMPLETE INSTALLATION

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

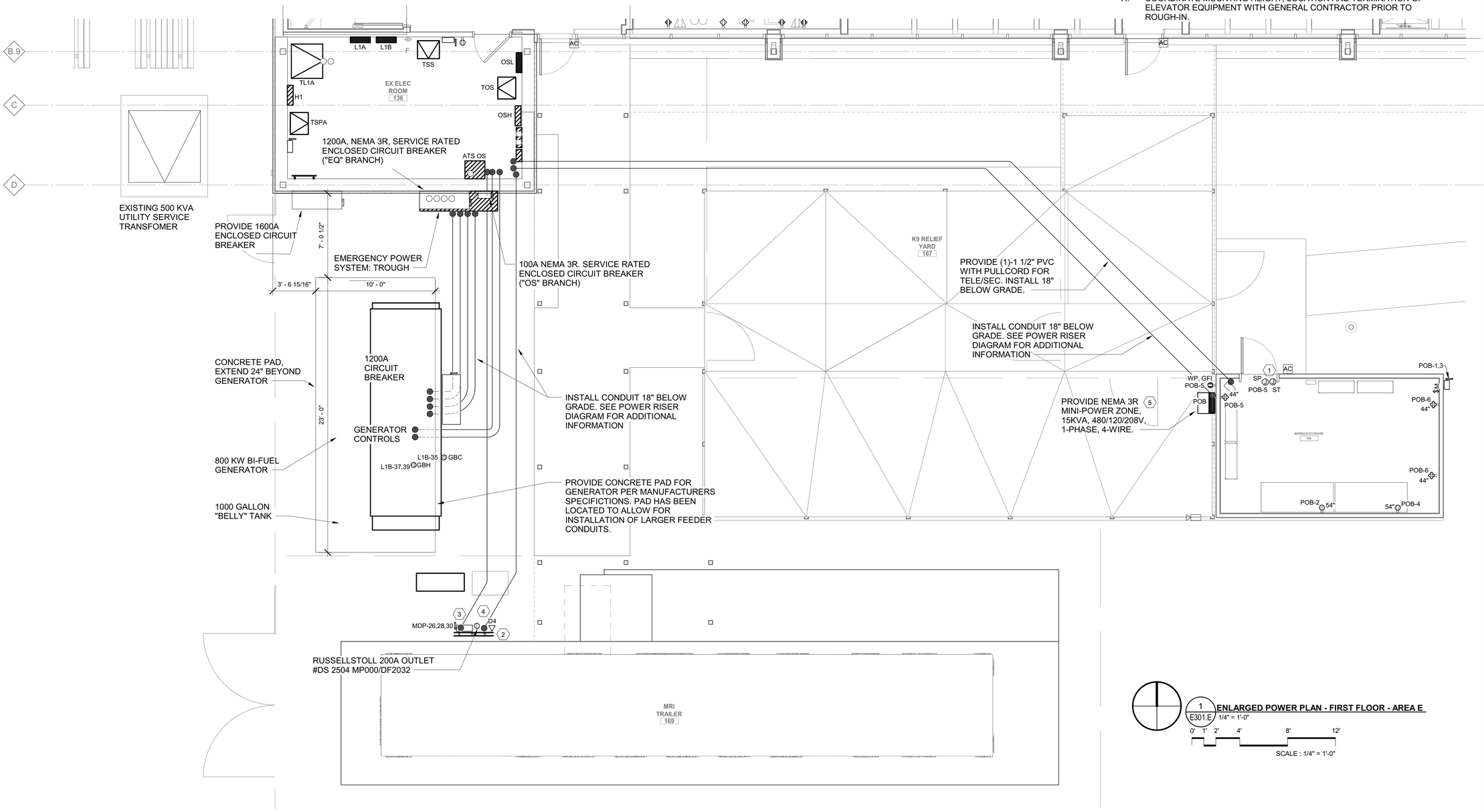
D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

F. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN MANUFACTURER, TYPE, PHYSICAL SIZE AND AIC RATING.

G. PER NEC 406.12(5), PROVIDE TAMPERPROOF RECEPTACLES IN BUSINESS OFFICE, CORRIDORS AND WAITING ROOMS.

H. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF ELEVATOR EQUIPMENT WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.



1 E301.E **ENLARGED POWER PLAN - FIRST FLOOR - AREA E**
1/4" = 1'-0"

0' 1' 2' 4' 8' 12'

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

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FIRST FLOOR ENLARGED POWER PLAN AREA E

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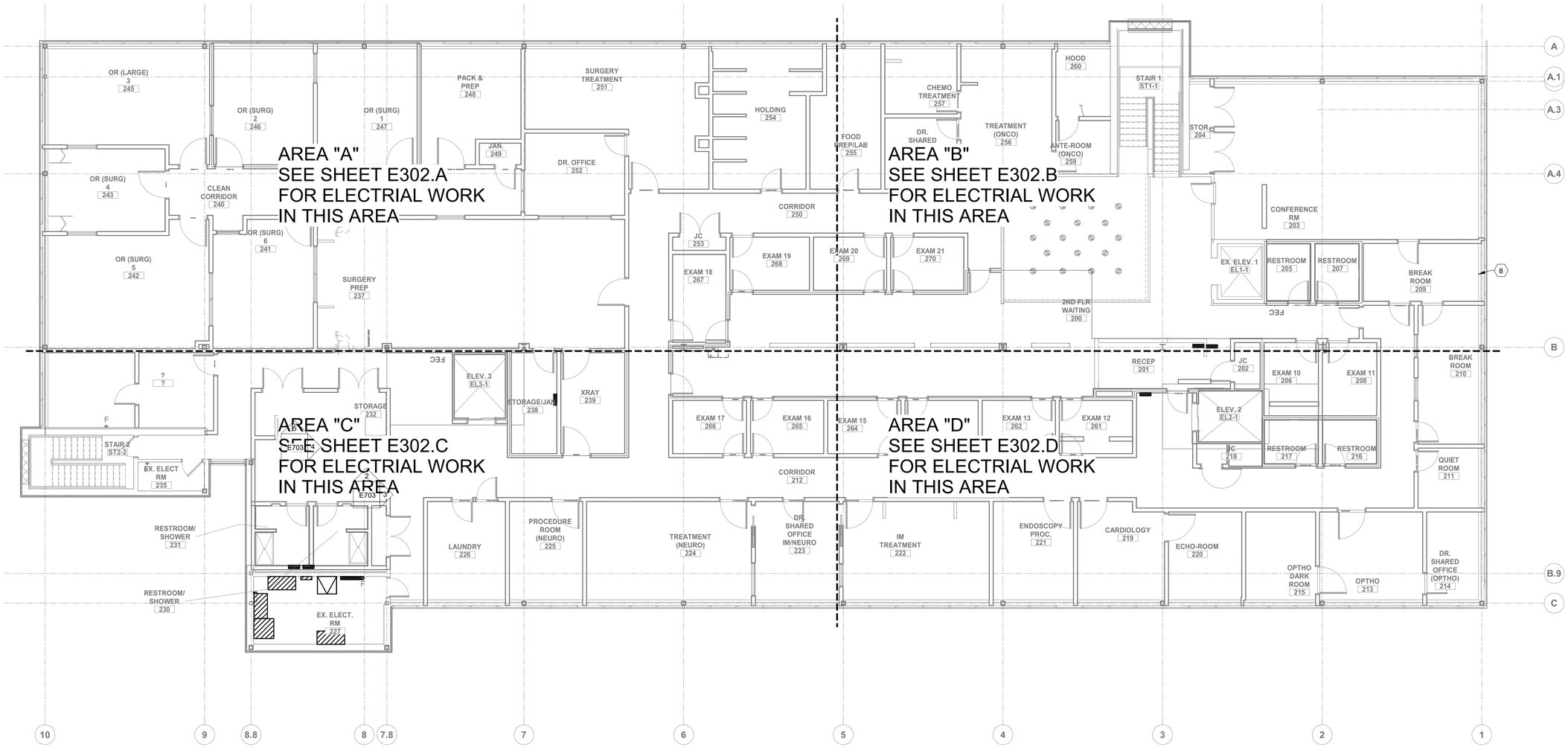

0' 2' 4' 8' 16' 24'

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

1 / E302 **SECOND FLOOR - POWER PLAN**

1/8" = 1'-0"

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SECOND FLOOR POWER PLAN

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E302

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SECOND FLOOR POWER KEYNOTES: (#)

1. PROVIDE OUTLET BOX ABOVE ACCESSIBLE CEILING FOR CONNECTION OF RETRACTABLE ELECTRICAL REEL. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
2. PROVIDE OUTLET BOX ABOVE ACCESSIBLE CEILING FOR CONNECTION OF AUTOMATIC DOOR. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
3. FLUSH MOUNT OUTLETS IN CEILING FOR CONNECTION OF SURGICAL MONITOR. COORDINATE LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
4. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
5. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR CONNECTION OF SINGLE 20A RECEPTACLES PROVIDE WITH CEILING MOUNTED MEDICAL COLUMN. EACH CIRCUIT SHALL SERVE FOUR(4) RECEPTACLES. FIRST CIRCUIT SHALL SEVER RECEPTACLES ON THE NORTH AND EAST FACE OF THE COLUMN. THE OTHER SHALL SEVER THE SOUTH AND WEST FACE. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION EACH RECEPTACLE IN THE COLUMN. COORDINATE MOUNTING AND LOCATION OF JUNCTION BOXES WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
6. COORDINATE OUTLET BOX MOUNTING HEIGHT AND LOCATION WITH CASEWORK ELEVATION PRIOR TO ROUGH-IN.
7. COORDINATE MOUNTING HEIGHT WITH EQUIPMENT VENDOR.

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

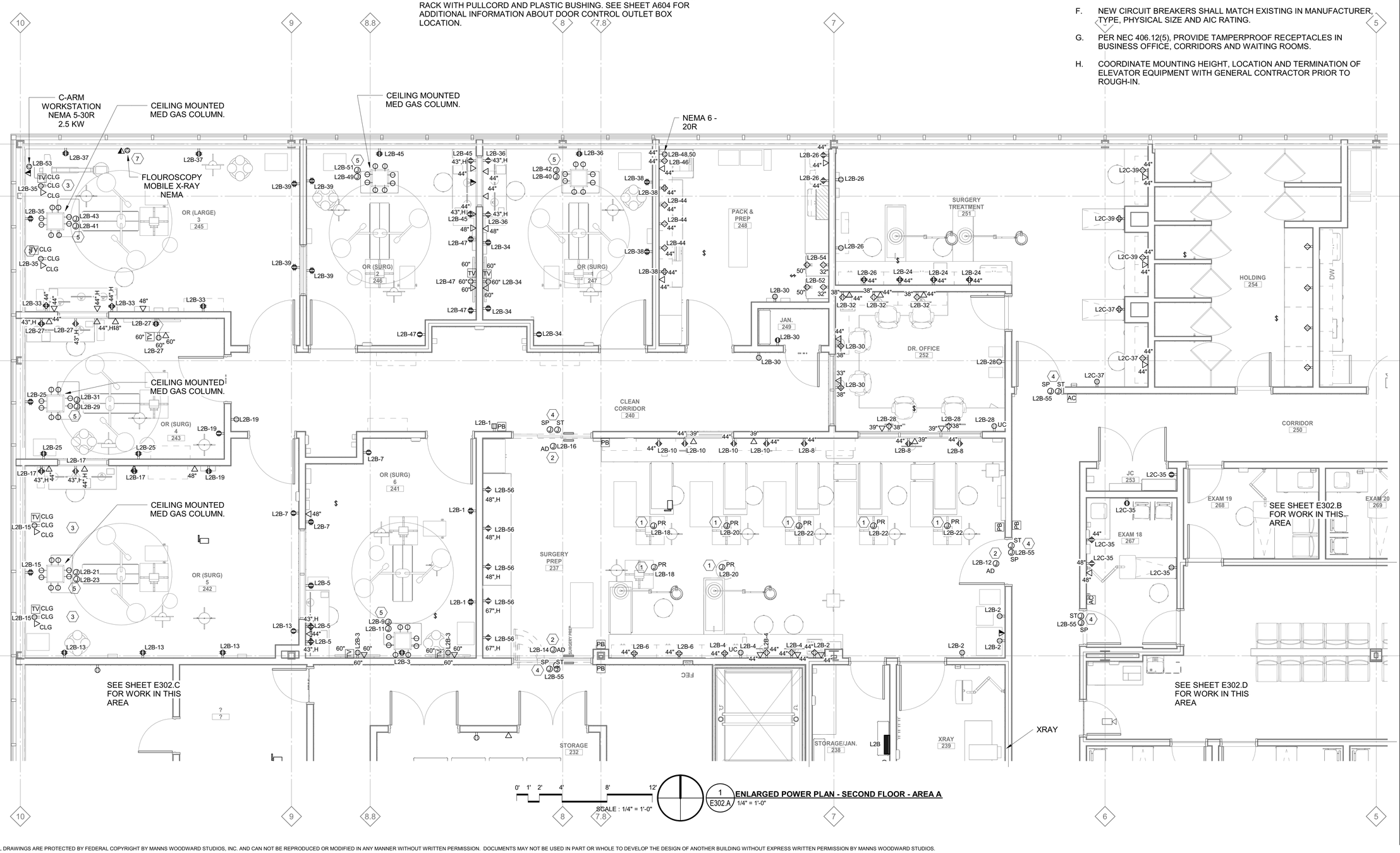
D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

F. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN MANUFACTURER, TYPE, PHYSICAL SIZE AND AIC RATING.

G. PER NEC 406.12(5), PROVIDE TAMPERPROOF RECEPTACLES IN BUSINESS OFFICE, CORRIDORS AND WAITING ROOMS.

H. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF ELEVATOR EQUIPMENT WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.



0' 1' 2' 4' 8' 12'
SCALE : 1/4" = 1'-0"

1 / E302.A **ENLARGED POWER PLAN - SECOND FLOOR - AREA A**
1/4" = 1'-0"

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SECOND FLOOR ENLARGED POWER PLAN AREA A

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SECOND FLOOR POWER KEYNOTES: (#)

1. PROVIDE SPST TOGGLE SWITCH AND JUCTION BOX FOR CONNECTION OF HOOD. CONNECT USING 2#12, 1#12G., IN 1/2"C. INSTALL SWITCH AT 44" AFF. INSTALL JUNCTION BOX AT 96" AFF. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
2. PROVIDE SPST TOGGLE SWITCH AND JUCTION BOX FOR CONNECTION OF HOOD. CONNECT USING 2#12, 1#12G., IN 1/2"C. INSTALL SWITCH AT 44" AFF. INSTALL JUNCTION BOX AT 96" AFF. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
3. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
4. ADD ALTERNATE E1: REMOVE AND REPLACE ELEVATOR
5. PROVIDE TWO(2) SPST TOGGLE SWITCH AND TWO(2) JUCTION BOX FOR CONNECTION OF DISPOSAL AND DISHWASHER. CONNECT USING 2#12, 1#12G., IN 1/2"C. INSTALL SWITCH AT 42" AFF., ABOVE COUNTER. INSTALL JUNCTION BOX AT 18" AFF. COORDINATE MOUNTING HEIGHT AND TERMINATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
6. PROVIDE FOR CONNECTIONS FOR BACKLIT MIRRIOR. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION, MOUNTING HEIGHT AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
7. COORDINATE LOCATION AND TERMINATIONS WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
8. PROVIDE 30A/2P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 20A. UTILIZE ONE POLE OF THE TWO POLE DISCONNECT SWITCH FOR CONNECTION OF ELEVATOR CAB LIGHTS AND FAN.
9.. PROVIDE 30A/2P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 20A. UTILIZE ONE POLE OF THE TWO POLE DISCONNECT SWITCH FOR CONNECTION OF ELEVATOR CAB CONTROLS.
10. PROVIDE 100A/3P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 80A., FOR CONNECTION OF ELEVATOR MOTOR..
11. ROUTE ONE(1)-1"C., FOR POWER AND ONE(1)-1 1/2"C., FOR TELECOMMUNICATIONS. CONDUITS SHALL BE INSTALLED IN SLAB AS REQUIRED. TERMINATE 1" TELECOM CONDUIT ABOVE ACCESSIBLE CEILING WITH PULLCORD AND PLASTIC BUSHING.
12. COORDINATE OUTLET BOX MOUNTING HEIGHT AND LOCATION WITH CASEWORK ELEVATION PRIOR TO ROUGH-IN.

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

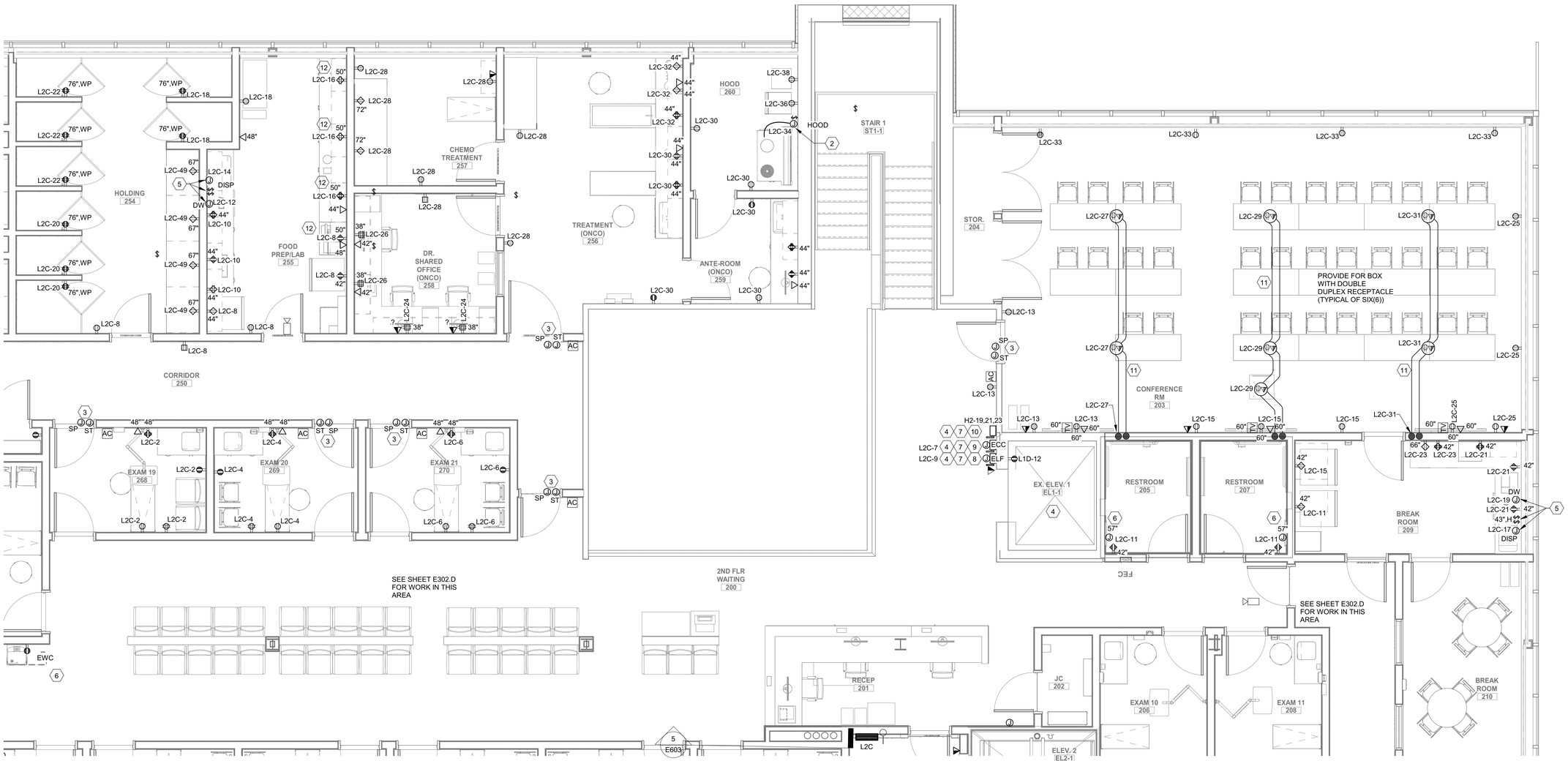
D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

F. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN MANUFACTURER, TYPE, PHYSICAL SIZE AND AIC RATING.

G. PER NEC 406.12(5), PROVIDE TAMPERPROOF RECEPTACLES IN BUSINESS OFFICE, CORRIDORS AND WAITING ROOMS.

H. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF ELEVATOR EQUIPMENT WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.



0' 1' 2' 4' 8' 12'
SCALE : 1/4" = 1'-0"

1 / E302.B **ENLARGED POWER PLAN - SECOND FLOOR - AREA B**
1/4" = 1'-0"

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SECOND FLOOR ENLARGED POWER PLAN AREA B

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E302.B

ASC PROJECT NUMBER: 21-000

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SECOND FLOOR POWER KEYNOTES: (#)

1. COORDINATE LOCATION AND TERMINATIONS WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
2. PROVIDE 30A/2P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 20A. UTILIZE ONE POLE OF THE TWO POLE DISCONNECT SWITCH FOR CONNECTION OF ELEVATOR CAB LIGHTS AND FAN.
3. PROVIDE 30A/2P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 20A. UTILIZE ONE POLE OF THE TWO POLE DISCONNECT SWITCH FOR CONNECTION OF ELEVATOR CAB CONTROLS.
4. PROVIDE 100A/3P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 80A., FOR CONNECTION OF ELEVATOR MOTOR.
5. CONNECT RECEPTACLE TO LIGHTING CIRCUIT IN THIS AREA. CONNECT USING 2#12, 1#12G., IN 1/2"C. CONNECT RECEPTACLE AHEAD OF LOCAL AREA SWITCHING. RECEPTACLE SHALL NOT BE SWITCHED.
6. PROVIDE GFI TYPE RECEPTACLE FOR CONNECTION OF WATER HEATER. INSTALL RECEPTACLE SUCH THAT THE WATER COOLER DOESN'T HAVE TO BE DISASSEMBLED TO RESET GFI RECEPTACLE.
7. PROVIDE NEMA 1, 30A/3P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF DRYER. FUSE PER NAMEPLATE. CONNECT USING 3#12, 1#12G., IN 1/2" LFMC. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
8. PROVIDE NEMA 1, 30A/3P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF WASHER. FUSE PER NAMEPLATE. CONNECT USING 3#12, 1#12G., IN 1/2" LFMC. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
9. INSTALL OUTLET BOX SUCH THAT IT DOESN'T INTERFER WITH OPERATION OF POCKET DOOR, COORDINATE INSTALLATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
10. INSTALL OUTLET BOX, 6" FROM THE CENTER LINE OF THE SUCTION INLET.
11. PROVIDE GFI TYPE RECEPTACLE FOR CONNECTION OF WATER COOLER INSTALL RECEPTACLE SUCH THAT THE WATER COOLER DOESN'T HAVE TO BE DISASSEMBLED TO RESET GFI RECEPTACLE.
12. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
13. PROVIDE 100A/2P, NEMA 1, HEAVY DUTY FUSED DISCONNECT SWITCH FOR CONNECTION OF X-RAY MACHINE. CONNECT USING 2#1, 1#1G., IN 1 1/4". COORDINATE LOCATION AND MOUNTING HEIGHT AND LOCATION WITH IMAGING EQUIPMENT CONTRACTOR PRIOR TO ROUGH-IN AND PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
14. PROVIDE FOR CONNECTIONS FOR BACKLIT MIRRIOR. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION, MOUNTING HEIGHT AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.
15. PROVIDE OUTLET BOX ABOVE ACCESSIBLE CEILING FOR CONNECTION OF RETRACTABLE ELECTRICAL REEL. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

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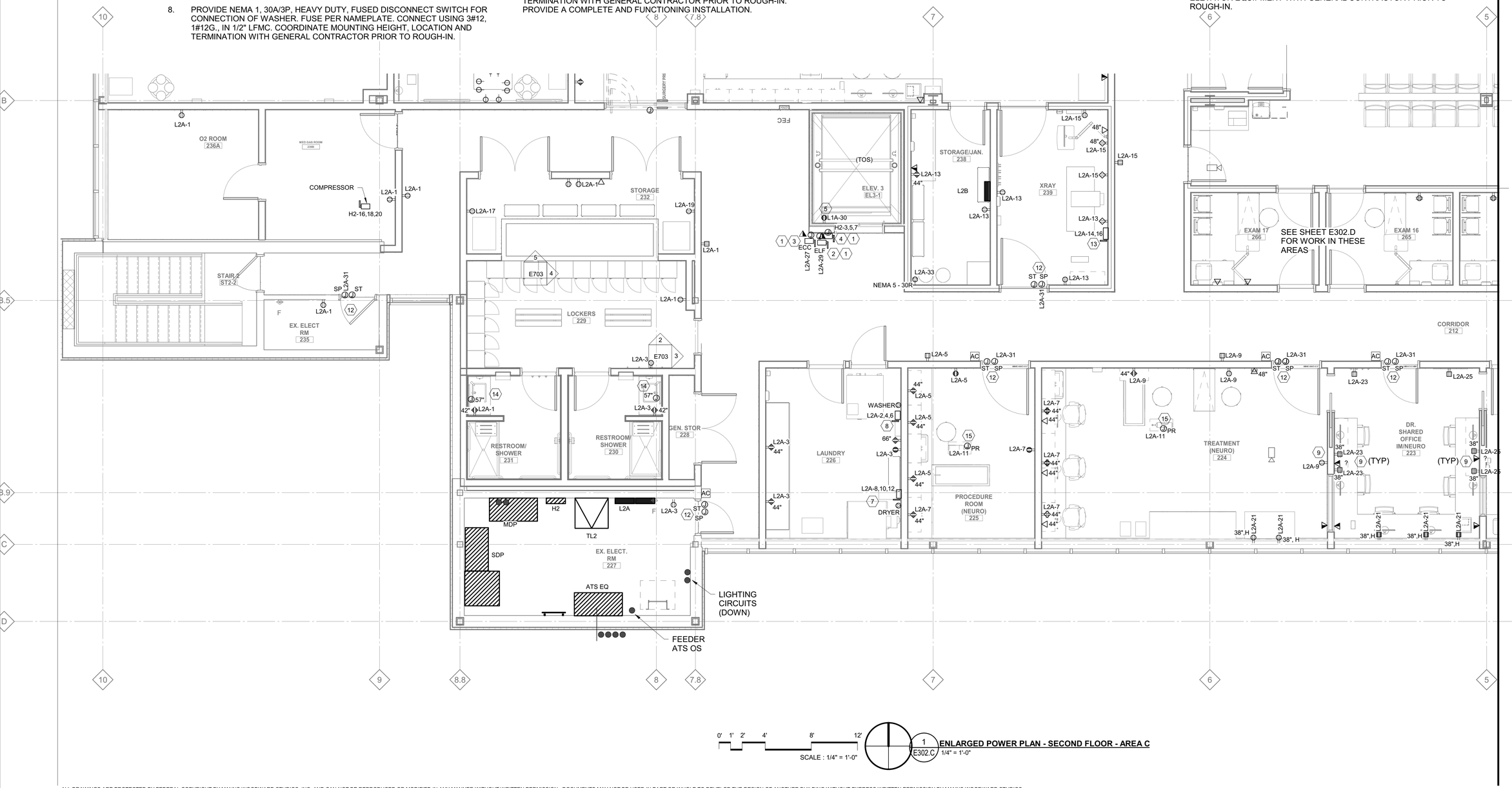

0' 1' 2' 4' 8' 12'
SCALE : 1/4" = 1'-0"

1 E302.C — **ENLARGED POWER PLAN - SECOND FLOOR - AREA C**
1/4" = 1'-0"

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ALLEN + SHARIFF CORPORATION No. C - 1486120
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NATIONAL VETERINARY ASSOCIATES EASTERN CAROLINA VETERINARY REFERRAL CLINIC RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

SECOND FLOOR ENLARGED POWER PLAN AREA C

SHEET
E302.C

ASC PROJECT NUMBER: 21-000

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SECOND FLOOR POWER KEYNOTES: (#)

1. COORDINATE LOCATION AND TERMINATIONS WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
2. PROVIDE 30A/2P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 20A. UTILIZE ONE POLE OF THE TWO POLE DISCONNECT SWITCH FOR CONNECTION OF ELEVATOR CAB LIGHTS AND FAN.
3. PROVIDE 30A/2P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 20A. UTILIZE ONE POLE OF THE TWO POLE DISCONNECT SWITCH FOR CONNECTION OF ELEVATOR CAB CONTROLS.
4. PROVIDE 100A/3P NEMA 1, FUSED DISCONNECT SWITCH. FUSE AT 80A., FOR CONNECTION OF ELEVATOR MOTOR.
5. RECEPTACLES AND LUMINAIRES SHALL BE INSTALLED AT THE TOP AND BOTTOM OF THE ELEVATOR SHAFT. THE DEVICES AT THE TOP OF THE SHAFT SHALL BE CONNECTED TO THE SAME CIRCUIT AS THE DEVICES AT THE BOTTOM OF THE SHAFT. COORDINATE MOUNTING HEIGHT AND LOCATION WITH ELEVATOR INSTALLER PRIOR TO ROUGH-IN.
6. PROVIDE GFI TYPE RECEPTACLE FOR CONNECTION OF WATER COOLER.. INSTALL RECEPTACLE SUCH THAT THE WATER COOLER DOESN'T HAVE TO BE DISASSEMBLED TO RESET GFI RECEPTACLE.
7. INSTALL DUPLEX RECEPTACLE AND DATA OUTLETS INSIDE CASEWORK. COORDINATE INSTALLATION WITH CASEWORK CONTRACTOR PRIOR TO ROUGH-IN.
8. ROUTE ONE(1)-1"C., FOR POWER AND ONE(1)-1 1/2"C., FOR TELECOMMUNICATIONS. CONDUITS SHALL BE INSTALLED IN SLAB AS REQUIRED. TERMINATE 1" TELECOM CONDUIT ABOVE ACCESSIBLE CEILING WITH PULLCORD AND PLASTIC BUSHING.
9. INSTALL CENTERED IN FACE OF FURNITURE. OUTLET BOX SHALL BE INSTALLED 6" FROM THE CENTER LINE OF THE SUCTION INLET. ROUTE 1/2" RMC FROM FLUSH MOUNTED JUNCTION BOX TO OUTLET BOX AT FACE OF FURNITURE AND TO PANELBOARD FOR INSTALLATION OF RECEPTACLE. PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED.
10. PROVIDE OUTLET BOX ABOVE ACCESSIBLE CEILING FOR CONNECTION OF RETRACTABLE ELECTRICAL REEL. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
11. PROVIDE TWO(2) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL AND DOOR CONTROL POWER. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING. SEE SHEET A604 FOR ADDITIONAL INFORMATION ABOUT DOOR CONTROL OUTLET BOX LOCATION.
12. PROVIDE TWO(2) SPST TOGGLE SWITCH AND TWO(2) JUCTION BOX FOR CONNECTION OF DISPOSAL AND DISHWASHER. CONNECT USING 2#12, 1#12G., IN 1/2"C. INSTALL SWITCH AT 42" AFF., ABOVE COUNTER. INSTALL JUNCTION BOX AT 18" AFF. COORDINATE MOUNTING HEIGHT AND TERMINATION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.
13. PROVIDE FOR CONNECTIONS FOR BACKLIT MIRRIOR. CONNECT USING 2#12, 1#12G., IN 1/2"C. COORDINATE LOCATION, MOUNTING HEIGHT AND TERMINATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.

GENERAL NOTES: POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DUPLEX RECEPTACLES AND DATA OUTLETS WITH ARCHITECTURAL CASEWORK DRAWINGS AND ELEVATIONS.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

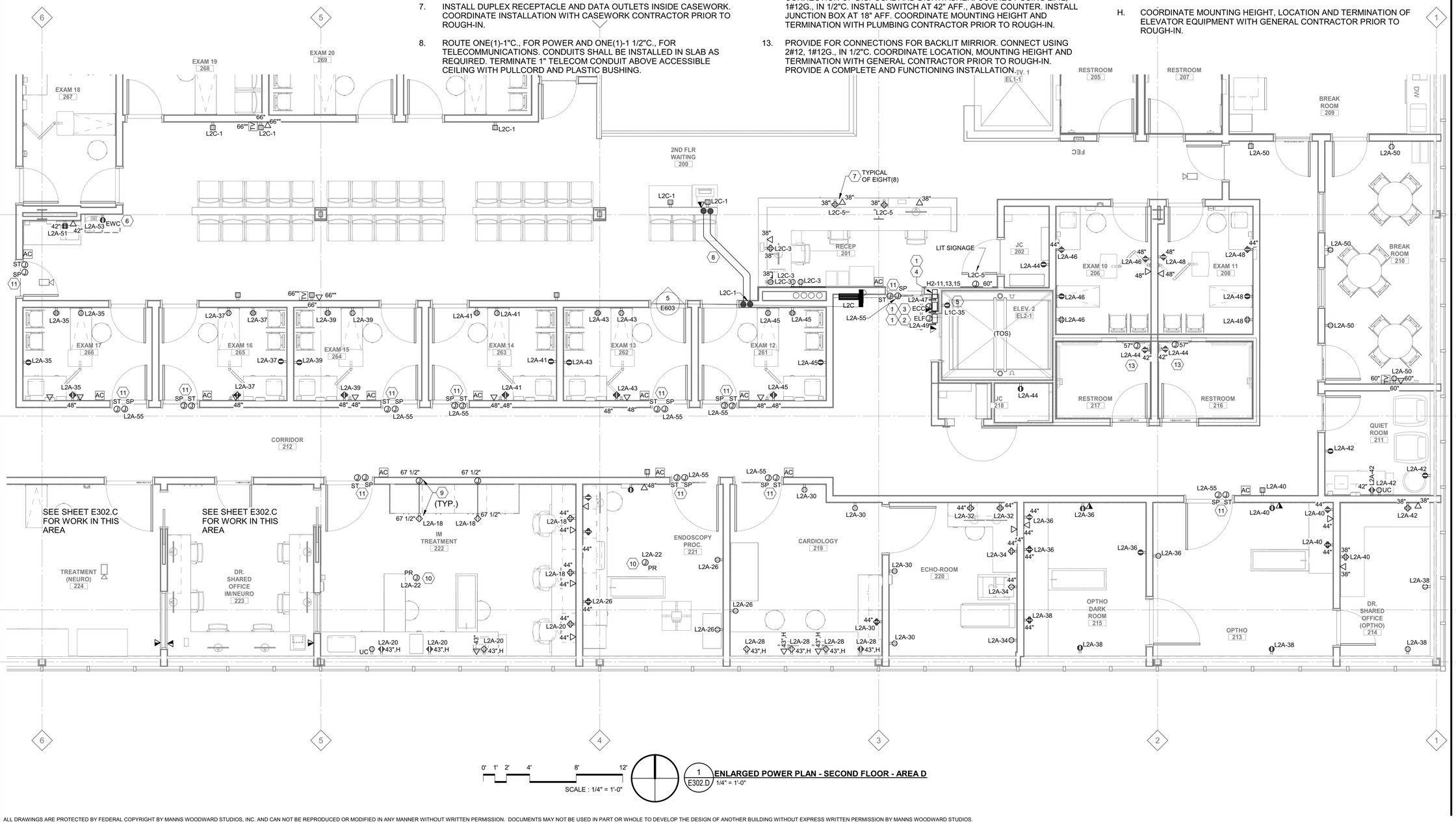
D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

F. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING IN MANUFACTURER, TYPE, PHYSICAL SIZE AND AIC RATING.

G. PER NEC 406.12(5), PROVIDE TAMPERPROOF RECEPTACLES IN BUSINESS OFFICE, CORRIDORS AND WAITING ROOMS.

H. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF ELEVATOR EQUIPMENT WITH GENERAL CONTRACTOR PRIOR TO ROUGH-IN.



0' 1' 2' 4' 8' 12'
SCALE : 1/4" = 1'-0"

1 / E302.D **ENLARGED POWER PLAN - SECOND FLOOR - AREA D**
1/4" = 1'-0"

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SECOND FLOOR ENLARGED POWER PLAN AREA D

SHEET
E302.D

ASC PROJECT NUMBER: 21-000

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ROOF MECHANICAL POWER KEYNOTES: (#)

1. PROVIDE NEMA 3R, 200A/3P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF ROOF TOP UNIT. FUSE PER NAMEPLATE. CONNECT USING 3#1, 1#6G., IN 1 1/2"C.
2. PROVIDE NEMA 3R, 100A/3P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF ROOF TOP UNIT. FUSE PER NAMEPLATE. CONNECT USING 3#1, 1#8G., IN 1 1/2"C.
3. PROVIDE 30A/2P NEMA 3R, HEAVY DUTY FUSED DISCONNECT SWITCH. FUSE AT 25A., FOR CONNECTION OF SPLIT SYSTEM OUTDOOR UNIT. CONNECT USING 2#10, 1#10G., IN 1/2"C.
4. PROVIDE 2#10, 1#10G., IN 1/2"C. ROUTE CONDUIT AND CONDUCTORS FROM TERMINAL BLOCK IN OUTDOOR UNIT TO TERMINAL BLOCK IN INDOOR UNIT.
5. PROVIDE NEMA 1, 20A/2P MOTOR RATED SWITCH FOR CONNECTION OF SPLIT SYSTEM INDOOR UNIT. CONNECT 2#10, 1#10., IN 1/2"C.
6. COORDINATE ROOF PENETRATION WITH ROOF INSTALLER AS REQUIRED TO ENSURE ROOFING WARRENTY REMAINS IN FULL EFFECT.

GENERAL NOTES: MECHANICAL POWER

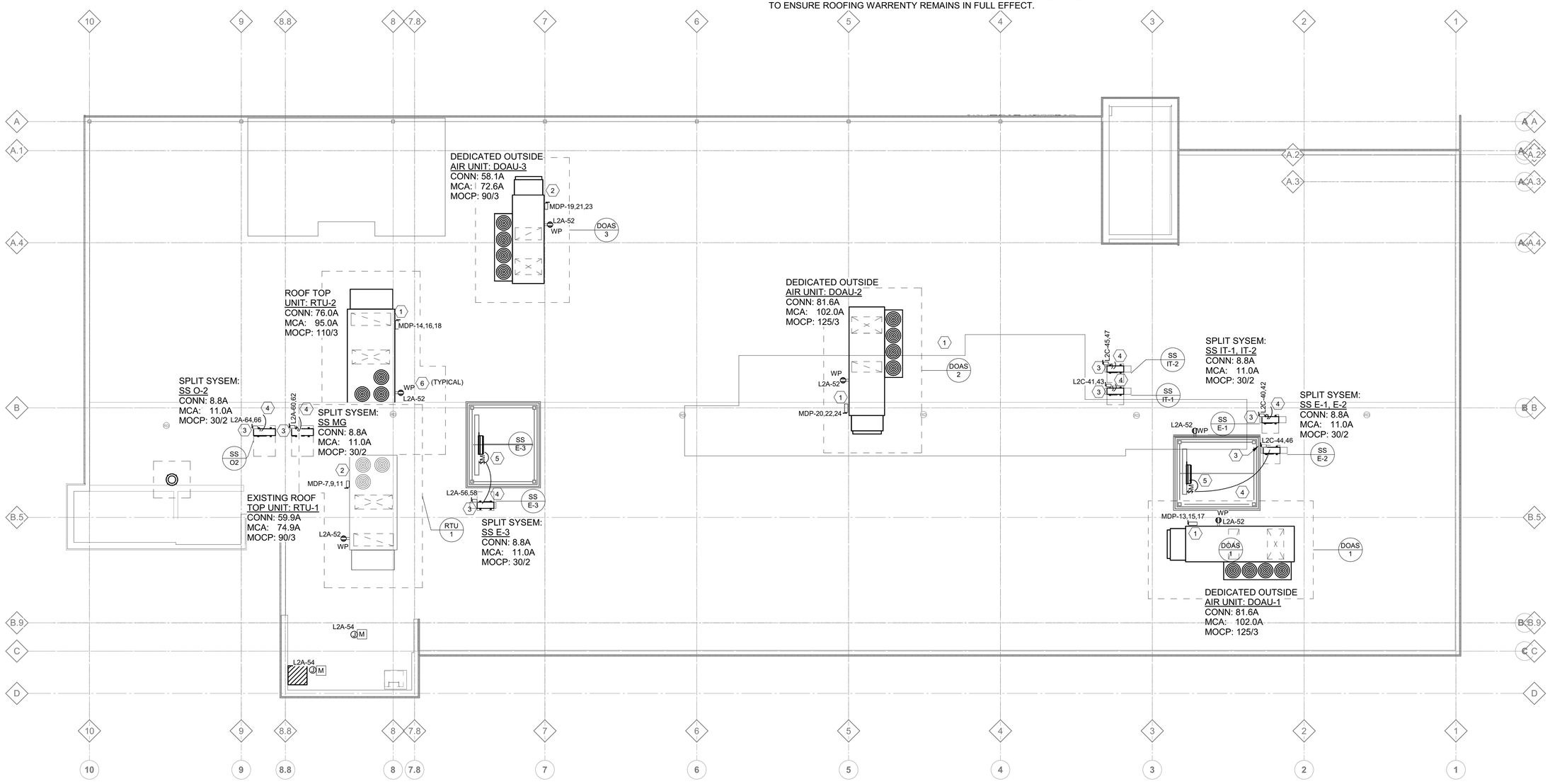
A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DISCONNECTING MEANS ASSOCIATED WITH GENERAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.



0' 2' 4' 8' 16' 24'

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

1 E303 **POWER PLAN - ROOF**
1/8" = 1'-0"

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ROOF POWER PLAN

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E303

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FIRST FLOOR MECHANICAL POWER KEYNOTES: (#)

1. PROVIDE NEMA 1, 208V, 30A/2P, MOTOR RATED SWITCH FOR CONNECTION OF SPLIT SYSTEM INDOOR UNIT. CONNECT USING 2#10, 1# 10G., IN 1/2" FMC. ROUTE 2#10, 1#10G., IN 1/2"C. ROUTE CONDUIT AND CONDUCTORS FROM TERMINAL BLOCK IN OUTDOOR UNIT (ON ROOF) TO TERMINAL BLOCK IN INDOOR UNIT.
2. PROVIDE NEMA 1, 277V, 20A/1P, MOTOR RATED SWITCH FOR CONNECTION OF VAV BOXES. CONNECT USING 2#12, 1#12G., IN 1/2" FMC.
3. PROVIDE NEMA 1, 480V, 30A/3P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF VAV BOX. FUSE PER NAMEPLATE. CONNECT USING 3#10, 1#10G., IN 1/2" FMC.
4. PROVIDE NEMA 1, 277V, 30A/1P, MOTOR RATED SWITCH FOR CONNECTION OF VAV BOX. CONNECT USING 2#10, 1#10G., IN 1/2" FMC.
5. PROVIDE JUCTION BOX FOR CONNECTION OF VAV CONTROLS POWER. INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING. COORDINATE LOCATION AND TERMINATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

PROVIDE NEMA 1, 277V, 15A/1P, MOTOR RATED SWITCH FOR CONNECTION OF MECHANICAL EQUIPMENT. CONNECT USING 2#12, 1#12G., IN 1/2" FMC.

7.. PROVIDE NEMA 1, 120V, 20A/1P, MOTOR RATED SWITCH FOR CONNECTION OF ELECTRIC WALL HEATER. CONNECT USING 2#12, 1#12G., IN 1/2" FMC.

8. PROVIDE NEMA 1, 480V, 30A/3P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF AIR CURTIAN. FUSE PER NAMEPLATE. CONNECT USING 3#10, 1#10G., IN 1/2" FMC.
9. PROVIDE 30A/2P NEMA 3R, HEAVY DUTY FUSED DISCONNECT SWITCH. FUSE AT 25A., FOR CONNECTION OF SPLIT SYSTEM OUTDOOR UNIT. CONNECT USING 2#10, 1#10G., IN 1/2"C.

GENERAL NOTES: MECHANICAL POWER

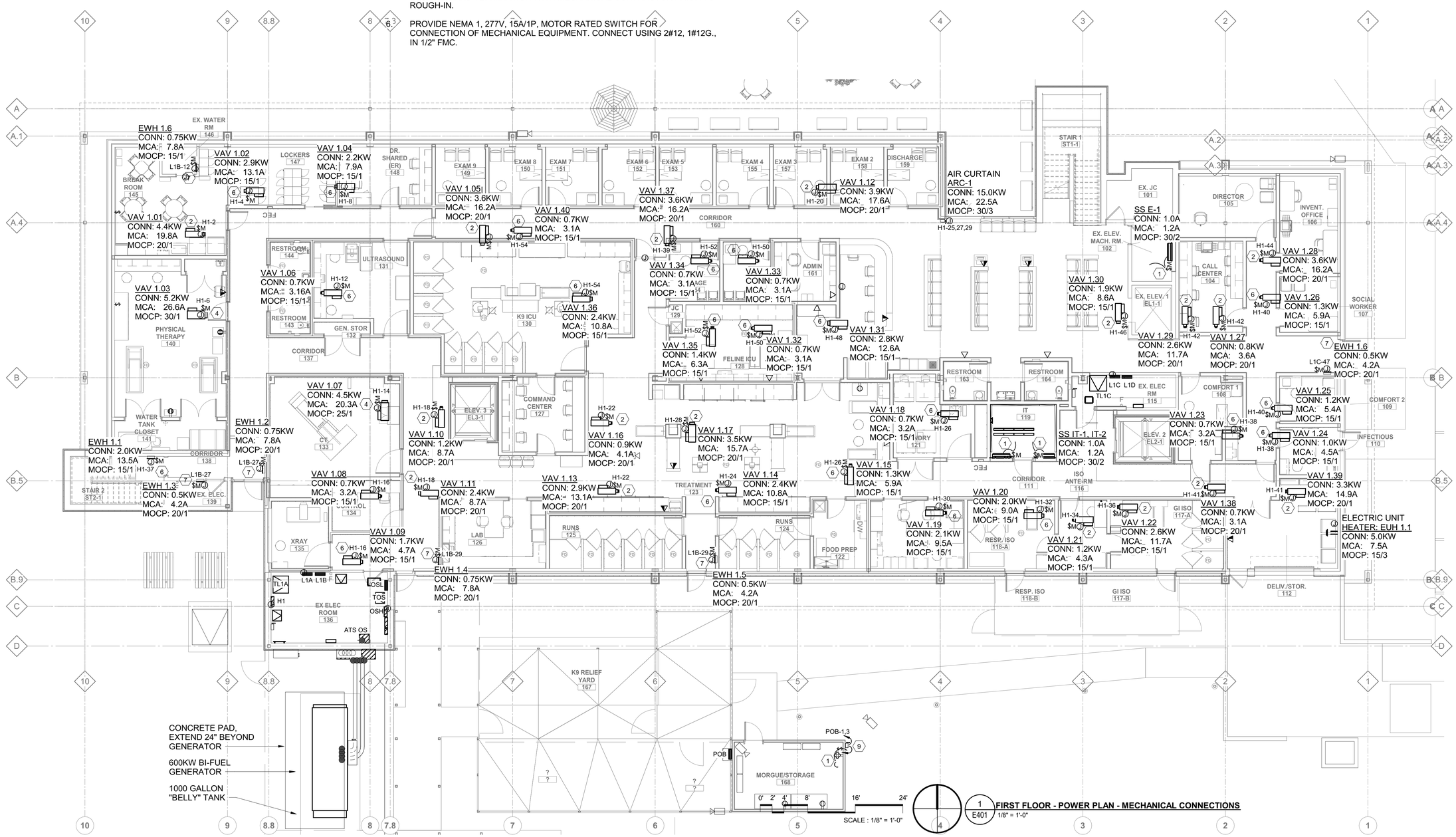
A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DISCONNECTING MEANS ASSOCIATED WITH GENERAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

C. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH PLUMBING EQUIPMENT WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN.

D. FIRE STOP ALL PENETRATIONS THROUGH FIRE RATED FLOORS, CEILINGS AND WALLS AS REQUIRED.

E. PROVIDE EXPANSION FITTINGS AS REQUIRED AT ALL EXPANSION JOINTS. COORDINATE LOCATION OF EXPANSION JOINTS WITH ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.



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FIRST FLOOR MECHANICAL CONNECITONS PLAN

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E401

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SECOND FLOOR MECHANICAL POWER KEYNOTES: (#)

1. PROVIDE NEMA 1, 480V, 30A/3P, HEAVY DUTY, FUSED DISCONNECT SWITCH FOR CONNECTION OF VAV BOX. FUSE PER NAMEPLATE. CONNECT USING 3#12, 1#12G., IN 1/2" FMC.
2. PROVIDE NEMA 1, 277V, 20A/1P, MOTOR RATED SWITCH FOR CONNECTION OF VAV BOX. CONNECT USING 2#12, 1#12G., IN 1/2" FMC.
3. PROVIDE JUCTION BOX FOR CONNECTION OF VAV CONTROLS POWER. INSTALL JUNCTION BOX ABOVE ACCESSIBLE CEILING. COORDINATE LOCATION AND TERMINATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
4. PROVIDE NEMA 1, 208V, 30A/2P, MOTOR RATED SWITCH FOR CONNECTION OF SPLIT SYSTEM INDOOR UNIT. CONNECT USING 2#10, 1# 10G., IN 1/2" FMC. ROUTE 2#10, 1#10G., IN 1/2"C. ROUTE CONDUIT AND CONDUCTORS FROM TERMINAL BLOCK IN OUTDOOR UNIT (ON ROOF) TO TERMINAL BLOCK IN INDOOR UNIT.
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7. PROVIDE NEMA 1, 277V, 15A/1P, MOTOR RATED SWITCH FOR CONNECTION OF VAV BOX. CONNECT USING 2#12, 1#12G., IN 1/2" FMC.

GENERAL NOTES: MECHANICAL POWER

A. COORDINATE MOUNTING HEIGHT AND LOCATION OF DISCONNECTING MEANS ASSOCIATED WITH GENERAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

B. COORDINATE MOUNTING HEIGHT, LOCATION AND TERMINATION OF DISCONNECTING MEANS ASSOCIATED WITH MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

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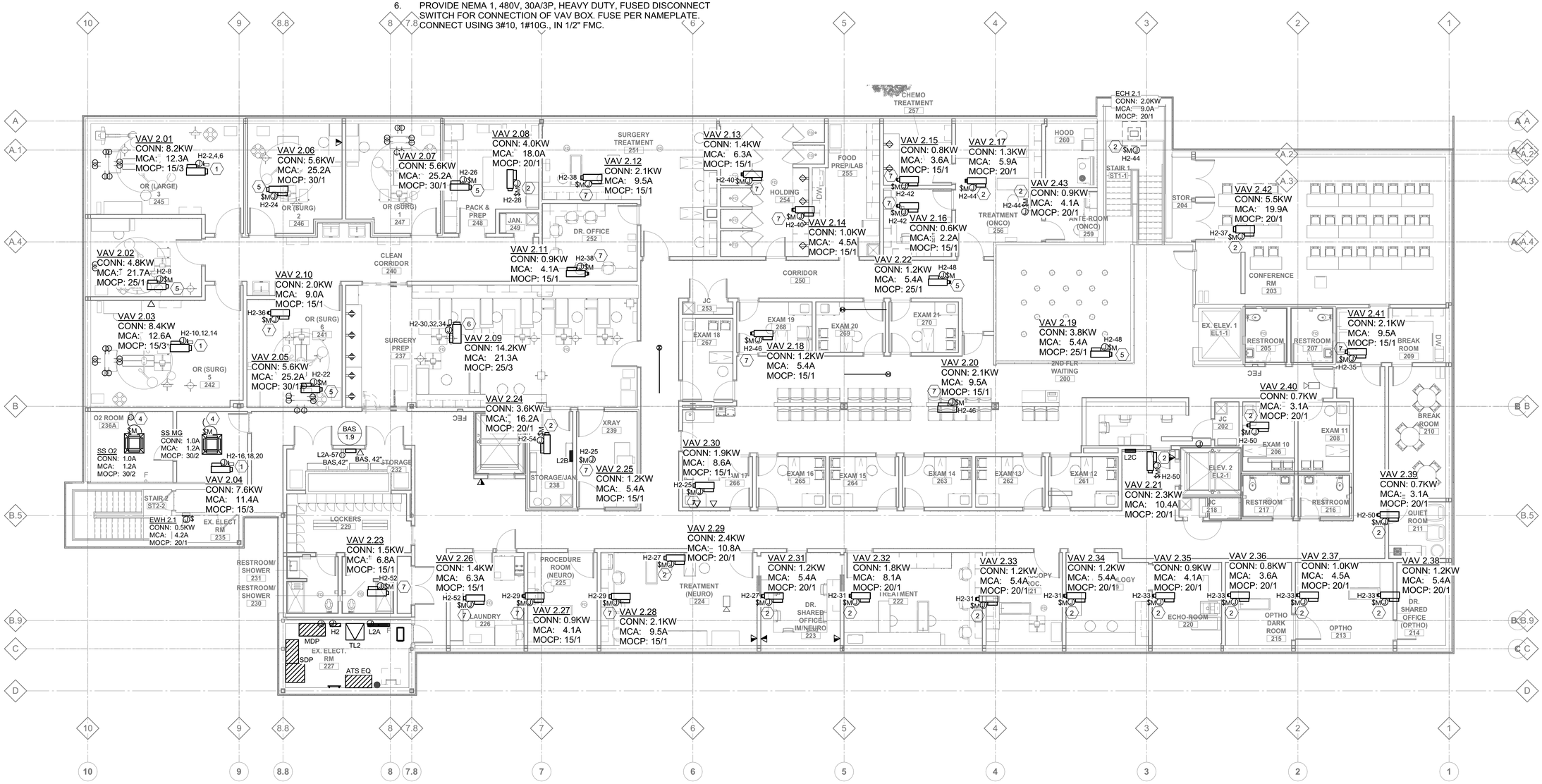

0' 2' 4' 8' 16' 24'

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

1 / E402 **SECOND FLOOR - POWER PLAN - MECHANICAL CONNECTIONS**

1/8" = 1'-0"

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SECOND FLOOR MECHANICAL CONNECITONS PLAN

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E402

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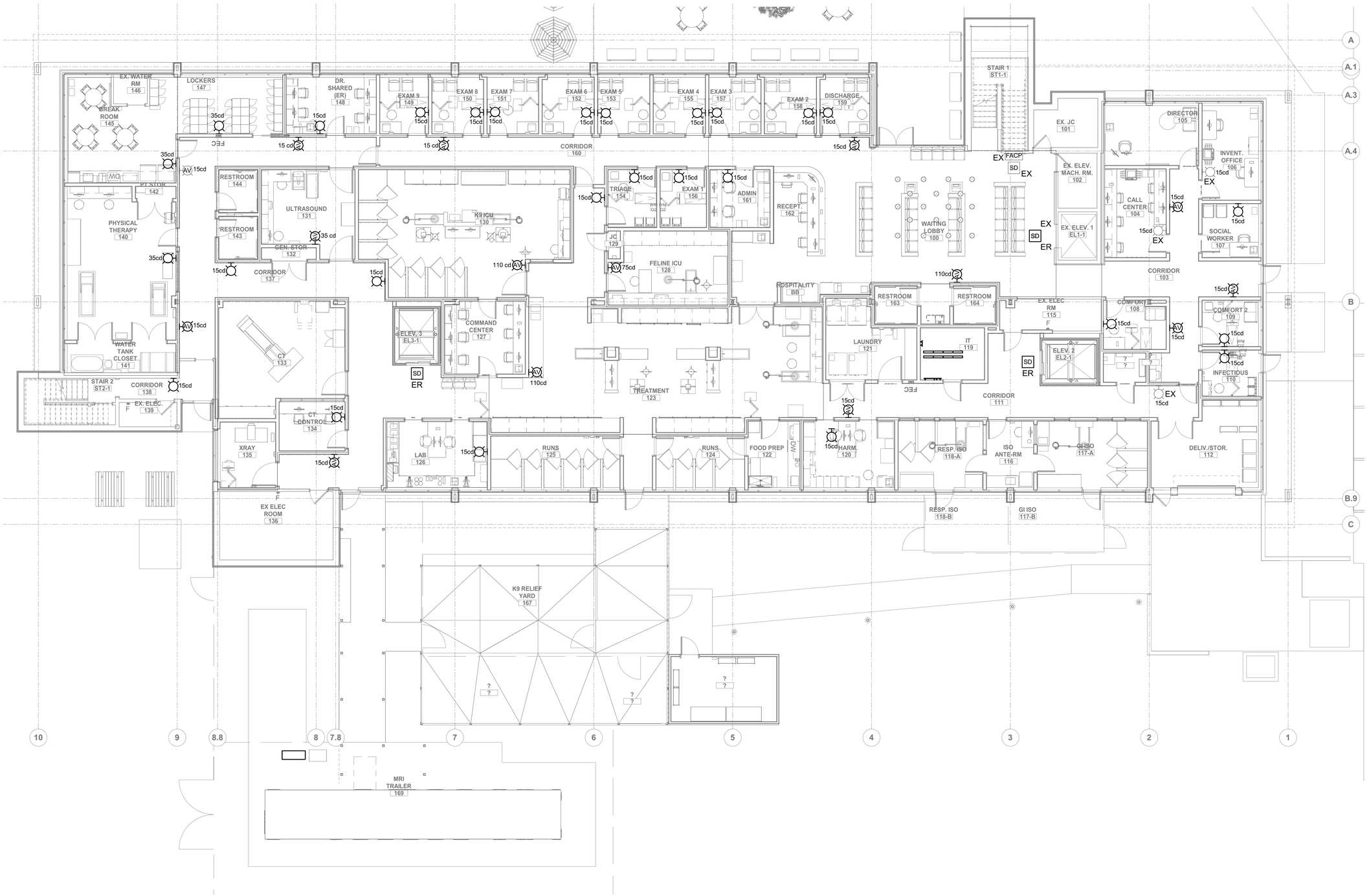

0' 2' 4' 8' 16' 24'

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

1 / E501 **FIRST FLOOR - FIRE ALARM PLAN**

1/8" = 1'-0"

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FIRST FLOOR FIRE ALARM PLAN

SHEET
E501

ASC PROJECT NUMBER: 21-000

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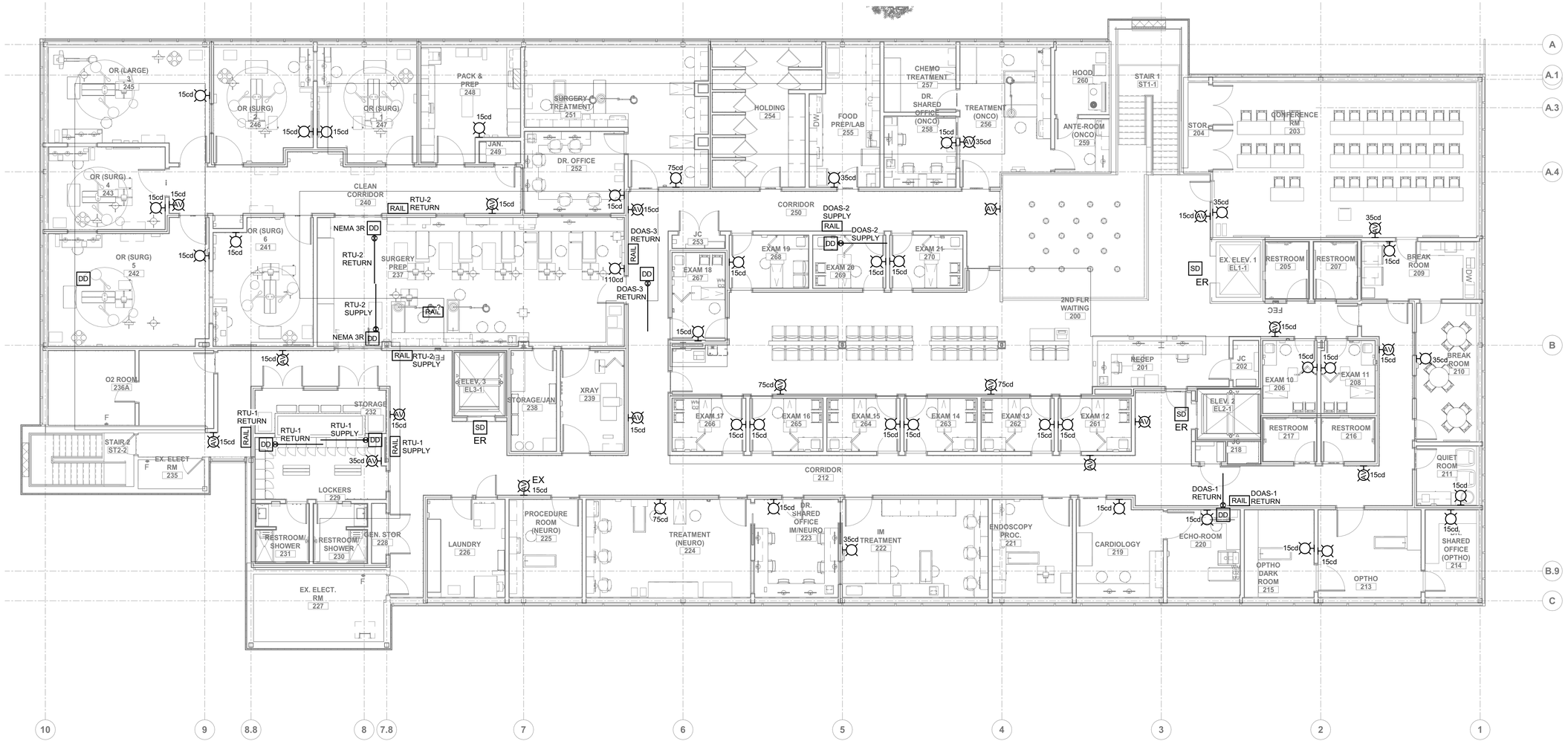

0' 2' 4' 8' 16' 24'

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

1 E502 **SECOND FLOOR - FIRE ALARM PLAN**

1/8" = 1'-0"

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SECOND FLOOR FIRE ALARM PLAN

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E502

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GENERAL FIRE ALARM NOTES :

1. REFER TO PLUMBING FLOOR PLANS FOR LOCATIONS OF ALL SPRINKLER FLOW AND TAMPER SWITCHES, AS WELL AS DRY PIPE SPRINKLER SYSTEM HI-LO AIR PRESSURE SWITCHES.

2. COORDINATE DUCT SMOKE DETECTORS AND AREA SMOKE DETECTORS UTILIZED IN RETURN AIR DUCT OPENINGS WITH MECHANICAL DRAWINGS.

3. THE ENTIRE FIRE ALARM SYSTEM SHALL MEET ALL APPLICABLE FIRE ALARM AND BUILDING CODES.

4. CONTRACTOR TO PROVIDE ELEVATOR CAB F/A SPEAKERS.

5. FATC IS THE SAME AS FACP. THE PANEL HAS BATTERY WITH DEADICATED 20A 120V EMERGENCY CIRCUIT. FEEDS ALL FIRE ALARM NOTIFICATIONS DEVICES.

6. FIRE SMOKE DAMPERS TO BE INTERFACED WITH FIRE ALARM DETECTION SYSTEM FOR CLOSURE. REFER TO MECHANICAL DRAWINGS FOR SPECIFIC CONTROL SEQUENCE.

UNDER FIRE CONDITION - ELEVATOR EMERGENCY OPERATION SHALL BE AS FOLLOWS:

A. ELEVATOR SHAFT SMOKE DETECTORS SHALL ACTIVATE RECALL OF ALL ELEVATORS WITHIN SHAFT, SOUND GENERAL ALARM, AND ANNUNCIATE APPROPRIATE LAMPS AT ANNUNCIATOR PANELS.

B. HEAT DETECTORS ASSOCIATED WITH THE ANSI 17.1 ELEVATOR SHUNT TRIP ARRANGEMENT SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM.

C. ELEVATOR SHUNT TRIP CIRCUIT SHALL BE MONITORED BY THE FIRE ALARM SYSTEM.

D. WHEN THE ELEVATOR IS STOPPED AND UNOCCUPIED WITH THE DOORS CLOSED FOR OVER 15 MINUTES, ELEVATOR CAB INTERIOR LIGHTING AND VENTILATION SHALL BE DE-ENERGIZED UNTIL REQUIRED FOR OPERATION.

FIRE ALARM MATRIX

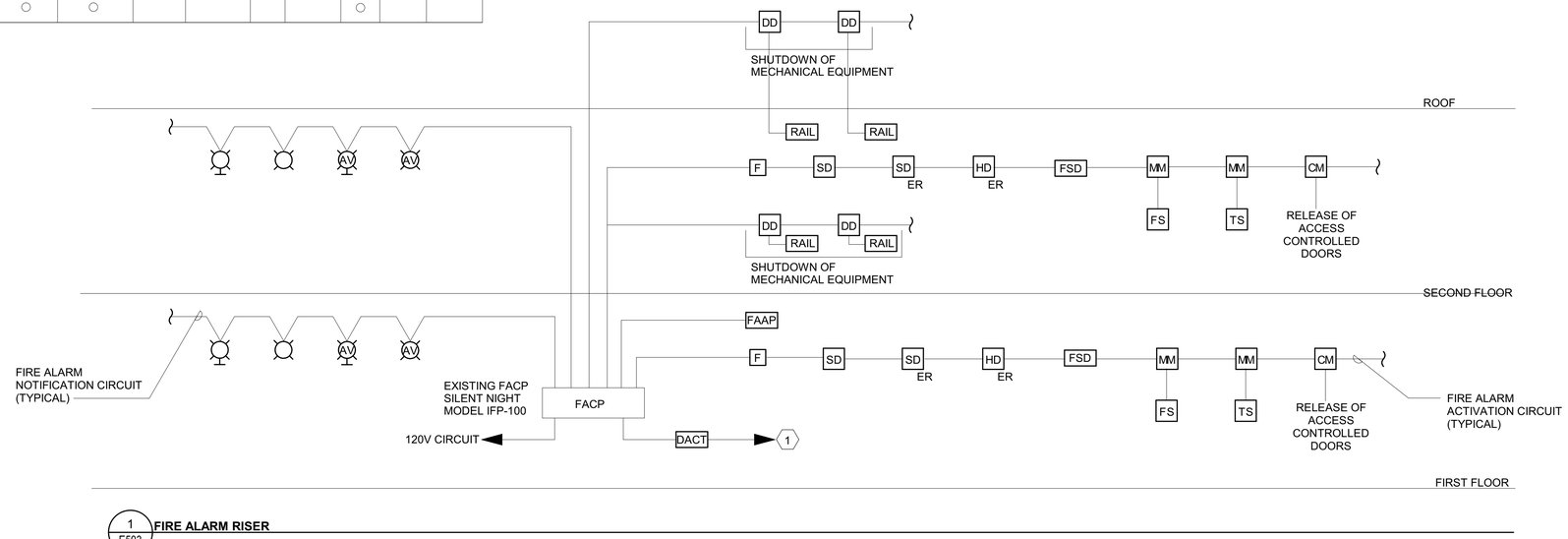
DEVICE - SYSTEM INITIATING DEVICES / FUNCTION	SEND ALARM SIG TO CENTRAL STATION	SEND SUPERVISORY SIGNAL TO CENTRAL STATION AND THE FIRE ALARM CONTROL PANEL IN THE FIRE CONTROL ROOM	SEND TROUBLE SIGNAL TO CENTRAL STATION, FACP AND ALL ANNUNCIATOR PANELS	SEND SIGNAL TO ANNUNCIATOR PANELS. SIGNALS SHALL BE ISSUED BY FLOOR, ZONE, TYPE OF DEVICE AND DEVICE ADDRESS	ISSUE GENERAL ALARM OR ALL CALL SIGNAL UPON CONFIRMATION BY AHJ	ISSUE SIGNAL TO VISUAL AND AUDIBLE ALARMS ENTIRE BUILDING	INITIATE ELEVATOR RECALL	INITIATE TRIPPING SIGNAL TO AFFECTED ELEVATOR BANK CIRCUIT BREAKER(S)	CLOSES ASSOCIATED FSD	SHUT DOWN EQUIPMENT ASSOCIATED WITH THE SPECIFIC SMOKE DETECTOR.	REMARKS
MANUAL PULL STATION	○			○	○	○					
ELEVATOR LOBBY SMOKE DETECTOR	○			○	○	○	○				
UTILITY ROOM SMOKE DETECTOR	○			○	○	○					
ELEVATOR SHAFT SMOKE DETECTOR	○			○	○	○	○				
SPRINKLER FLOW SWITCH	○			○	○	○					
STANDPIPE FLOW SWITCH	○			○	○	○					
ELEVATOR ROOM HEAT DETECTOR	○			○	○	○		○			
VALVE TAMPER SWITCH		○		○							
DUCT SMOKE DETECTOR (DOAS-1)		○	○	○						○	
AREA SMOKE DETECTORS	○		○	○							
SMOKE DETECTORS/ FIRE SMOKE DAMPERS	○	○	○	○					○		

FIRE ALARM RISER KEY NOTES: (#)

1. IN ORDER TO PROVIDE DIAL OUT CAPABILITIES TO THE FIRE DEPARTMENT, TWO TRANSMISSION CHANNELS SHALL BE PROVIDED TO THE DACT WITHIN THE FIRE ALARM SYSTEM PER [**2018 NFPA-72 SECTION 26.6.3.2.1.4**]. THE SYSTEM SHALL EMPLOY ONE PHONE LINE AND AN ADDITIONAL, APPROVED TRANSMISSION MEANS AS OUTLINED UNDER THAT CODE SECTION AND DEEMED AVAILABLE AT THE SITE. WHERE ONE OF THE ALTERNATE TRANSMISSION CHANNELS IS NOT AVAILABLE AT THE SITE AND WHERE THE AHJ APPROVES, A SECOND TELEPHONE LINE MAY BE USED IN LIEU OF THE ALTERNATE TECHNOLOGY. COORDINATE WITH OWNER TO DETERMINE IF THE DACT DIALS DIRECTLY TO FIRE DEPARTMENT OR TO THIRD PARTY 24/7 MONITORING SERVICE CONTRACTED BY OWNER.

FIRE ALARM RISER GENERAL NOTES

1. REFER TO FLOOR PLAN FOR QUANTITY AND LOCATION OF SYSTEM COMPONENTS. EXACT ARRANGEMENT AND QUANTITY OF DEVICES SHALL BE INDICATED ON THE SHOP DRAWINGS. PROVIDE COMPLETE RISER DIAGRAM AS PART OF SHOP DRAWINGS.
2. VERIFY WIRING SIZES WITH THE FIRE ALARM SYSTEM MANUFACTURER AND INSTALL AS DIRECTED. DO NOT LOAD ANY CIRCUIT BEYOND 80% OF RATED CAPACITY. ADD CIRCUITS AS REQUIRED AND SUBMIT CALCULATIONS TO SUBSTANTIATE.
3. FIRE ALARM WIRING SHALL BE ROUTED VIA A SEPARATE CONDUIT SYSTEM (1/2" MINIMUM). FIRE RATED MC CABLE IS ACCEPTABLE WHERE CONCEALED. MC CABLE SHALL BE COLORED RED. PROVIDE CONDUIT SLEEVES WITH ESCUTCHEON PLATES WHERE PASSING THROUGH WALLS, FLOOR, OR CEILINGS. WIRING SHALL BE INSTALLED IN THE APPROPRIATE RACEWAY TO MEET THE SURVIVABILITY REQUIREMENTS OF THE LOCAL JURISDICTION.
4. FIRE ALARM CIRCUITS SHALL BE CLEARLY IDENTIFIED AT TERMINAL AND JUNCTION LOCATIONS IN COMPLIANCE WITH [**2018 NEC SECTION 760.30**].
5. PROVIDE ADDITIONAL POWER SUPPLIES, BATTERIES, EXTENDER PANELS, ETC. AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. PROVIDE BATTERY CALCULATIONS, WIRING DIAGRAMS, EQUIPMENT CUTS, ETC. AS PART OF THE SHOP DRAWING SUBMITTAL.
6. CANDELA RATING SHALL BE PER [**2018 NFPA-72 CHAPTER 18**] REQUIREMENTS. ALL VISUAL AND AUDIO DEVICES SHALL BE SYNCHRONIZED.
7. AUDIBLE ALARM SYSTEM SOUND PRESSURE LEVELS SHALL COMPLY WITH [**2018 NCBC SECTION 907.5.2.1**].
8. COORDINATE WITH DIVISION 23 TO PROVIDE DUCT DETECTORS WHERE REQUIRED FOR HVAC EQUIPMENT. COORDINATE LOCATION OF REMOTE TEST SWITCHES WITH OWNER PRIOR TO INSTALLATION. THESE SHALL BE LOCATED IN UTILITY OR BACK OF HOUSE SPACES.
9. COORDINATE THE EXACT QUANTITY OF TAMPER, FLOW, AND PRESSURE SWITCH CONNECTIONS, AS APPLICABLE, WITH DIVISION 21 PRIOR TO PROCUREMENT.
10. PROVIDE 120V CONNECTION, DUCT DETECTOR(S), ADDRESSABLE CONTROL MODULE, AND REMOTE TEST SWITCH FOR EACH FIRE SMOKE AND SMOKE DAMPER. COORDINATE QUANTITY AND LOCATION WITH DIVISION 23. COORDINATE LOCATION OF REMOTE TEST SWITCHES WITH OWNER PRIOR TO INSTALLATION. THESE SHALL BE LOCATED IN UTILITY OR BACK OF HOUSE SPACES.
11. PROVIDE ADDRESSABLE CONTROL MODULES TO INTERFACE WITH ALL ACCESS CONTROLLED DOORS AS REQUIRED BY CODE. CONTROL MODULES SHALL FUNCTION TO SIGNAL DOORS TO FAIL SAFE UPON ACTIVATION OF FIRE ALARM.
12. THE COMPLETED FIRE ALARM SYSTEM SHALL BE FULLY TESTED IN ACCORDANCE WITH NFPA-72 AND LOCAL FIRE DEPARTMENT REQUIREMENTS BY THE INSTALLER, IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE AND THE LOCAL FIRE MARSHALL. UPON COMPLETE ON A SUCCESSFUL TEST, THE INSTALLER SHALL SO CERTIFY, IN WRITING, TO THE OWNER AND GENERAL CONTRACTOR.
13. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS, PRODUCTS, EXECUTION, AND INSTALLATION OF THE FIRE ALARM SYSTEM.



1 / E503 **FIRE ALARM RISER**

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ELECTRICAL FIRE ALARM RISER AND MATRIX

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E503

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9/20/2023 3:34:52 PM

TECHNOLOGY GENERAL NOTES

1. CABLING SHALL BE TERMINATED IN TECHNOLOGY ROOMS AS NOTED.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. ALL ITEMS ARE NOT ENUMERATED IN THE DESIGN PACKAGE AND THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND ACCESSORIES REQUIRED TO MEET THE DESIGN INTENT.

3. VERIFY DEVICE LOCATIONS IN THE FIELD WITH DUE REGARD TO AS-BUILT CONDITIONS BEFORE INSTALLATION. COORDINATE WORK WITH FIELD CONDITIONS AND OTHER TRADES IN ORDER TO MEET DESIGN INTENT.

4. DEBURR ALL CONDUIT AND PROVIDE BUSHINGS AND PROVIDE 200LB PULLSTRING PRIOR TO INSTALLING CABLE.

5. CONDUIT BENDS SHALL BE SWEEPS TO MAINTAIN PROPER CABLE BEND RADIUS.

6. CONDUIT STUB-OUTS SHALL BE EXTENDED TO NEAREST ACCESSIBLE CEILING SPACE WITHIN ROOM IN WHICH THE DEVICE RESIDES UNLESS OTHERWISE NOTED. FOR ROOMS WITH HARD CEILINGS, CONDUIT SHALL BE ROUTED TO ADJOINING CORRIDOR IN COMMON WITH A ROOM DOOR UNLESS NOTED OTHERWISE. CONDUITS SHALL NOT PASS THROUGH OTHER ROOMS TO REACH A CORRIDOR, UNLESS THE ROOM IS COMPLETELY SURROUNDED BY OTHER ROOMS OR SPACES (E.G., ELEVATORS AND INACCESSIBLE CHASES).

7. PROVIDE PULL BOXES AND JUNCTION BOXES IN ACCORDANCE WITH SPECIFIED STANDARDS AND LOCAL CODES. AT A MINIMUM, PROVIDE ONE (1) PULL BOX FOR EVERY 100 FEET OF STRAIGHT CONDUIT RUN, AND ONE (1) PULL BOX AFTER TWO (2) 90-DEGREE BENDS OR 180 DEGRESS OF ACCUMULATED BEND.

8. COORDINATE EXACT ROUTING OF CONDUIT AND PATHWAYS BASED ON FIELD CONDITIONS. WHERE GENERAL DESIGN INTENT CANNOT BE ACHIEVED, OBTAIN FORMAL APPROVAL OF ROUTING CHANGES FROM DESIGN PROFESSIONAL.

9. PLACE CABLES WITHIN CABLE TRAY IN A RANDOM FASHION WITHOUT BUNDLING. CABLE TIES SHALL NOT BE USED.

10. PROVIDE CABLE TRAY RADIUS DROP (WATERFALL) WHERE CABLES EXIT TRAY.

11. CABLES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE BY APPROVED J-HOOKS OR SLINGS WHEN NOT IN CONDUIT OR COMMON LOW VOLTAGE CABLE TRAY. CABLES TRANSITIONING TO AND FROM CABLE TRAY, CONDUIT, SLEEVES, J-HOOKS OR OTHER SUPPORT MECHANISM SHALL BE SUPPORTED WHEN THE TRANSITION SPANS MORE THAN 3 FEET.

12. PROVIDE PLENUM RATED CABLE WHEN INSTALLED IN PLENUM SPACE.

13. PROVIDE BLANK PLATES FOR ALL UNUSED BOXES.

14. ALL CABLING PASSING THROUGH WALL STRUCTURE SHALL BE SUPPORTED WITH CONDUIT, SLEEVE, FIRESTOP ASSEMBLY, ETC, AS REQUIRED THROUGH THE WALL STRUCTURE. PATHWAY SIZING SHALL ADHERE TO THE REFERENCED STANDARDS AND FILL RATIO REQUIREMENTS. PROVIDE CONDUIT, SLEEVES, FIRESTOP ASSEMBLIES, ETC, FOR ALL CABLE PENETRATING WALLS IN ACCORDANCE WITH THE REFERENCED STANDARDS IN THE SPECIFICATIONS.

15. SUBMIT DEVICE, FACEPLATE, AND OUTLET COLOR SAMPLES TO OWNER'S REPRESENTATIVE PRIOR TO ORDER.

16. REFER TO LIFE SAFETY DRAWINGS FOR FIRE & SMOKE WALL LOCATIONS. CONDUIT PENETRATIONS SHALL BE PROPERLY FIRESTOPPED PER CODE. CABLE TRAY SHALL NOT PENETRATE FIRE & SMOKE WALLS. LISTED FIRESTOP ASSEMBLIES SHALL BE USED TO PENETRATE FIRE & SMOKE WALLS FOR CABLE TRAY PATHWAYS.

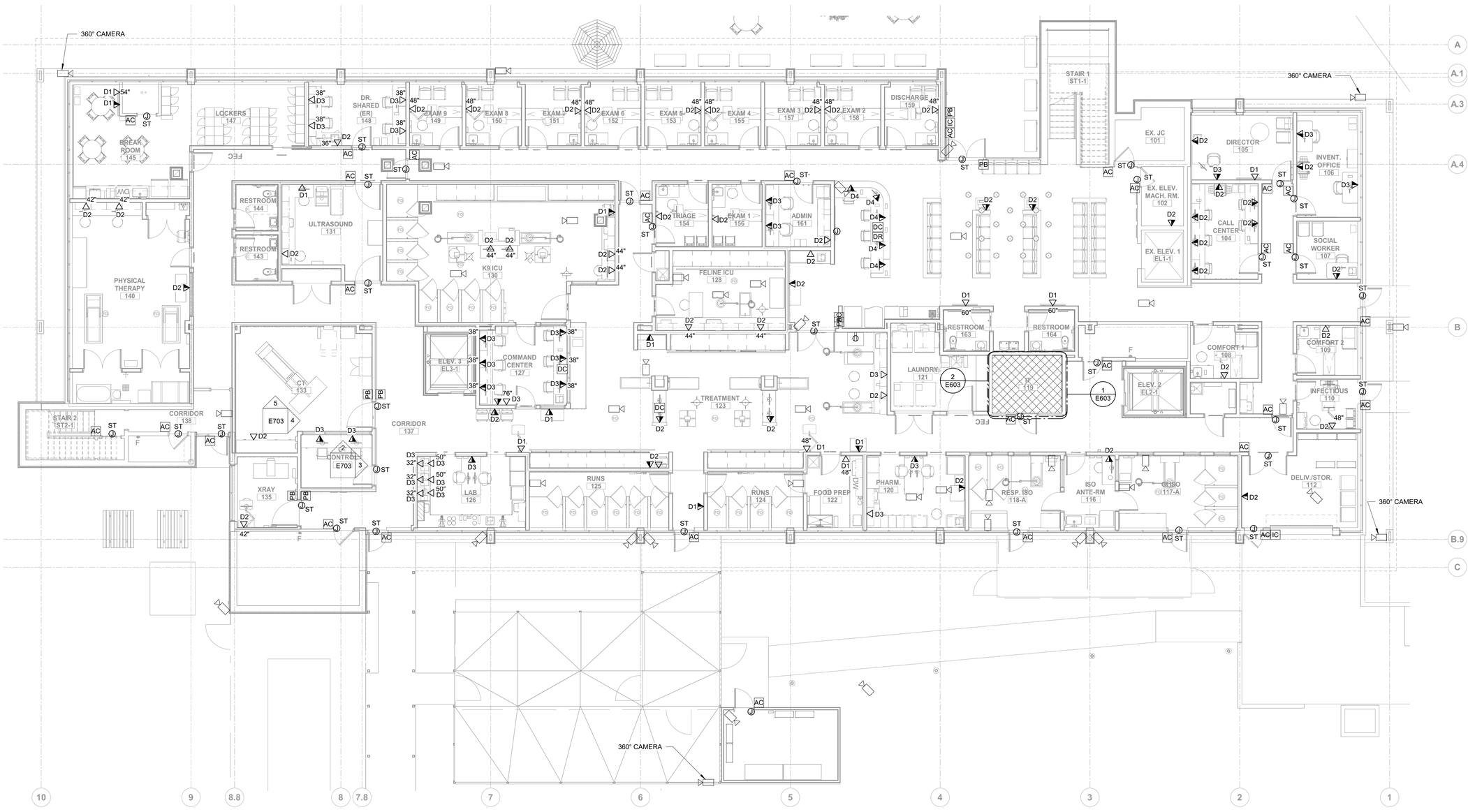
17. PROVIDE ALL CABLE TRAY MATERIALS AS NEEDED FOR A COMPLETE, MANUFACTURER-APPROVED SYSTEM USING CABLE TRAY MANUFACTURERS' MATERIALS AND PARTS WHEN AVAILABLE FROM THE MANUFACTURER, AND AS INTENDED. PROVIDE SWEEPS AND T-SECTIONS FOR ALL CHANGES IN DIRECTION AND INTERSECTIONS. MAINTAIN A 1 FOOT MINIMUM RADIUS IN CHANGES OF DIRECTION FOR ALL SWEEPS AND TEES UNLESS OTHERWISE NOTED.

TELECOMMUNICATIONS ABBREVIATIONS	
D1	ONE (1) DATA DROP
D2	TWO (2) DATA DROP
D3	THREE (3) DATA DROP
D4	FOUR (4) DATA DROP

GENERAL NOTES

1.PROVIDE DATA OUTLETS AS INDICATED AND CABLING ROUTED BACK TO IT ROOM VIA CABLE TRAY.

2.PROVIDE ONE (1) JUNCTION BOXES ABOVE ACCESSIBLE CEILING FOR INSTALLATION OF DOOR ACCESS CONTROL. ROUTE 3/4"C., FROM ACCESS CONTROL JUNCTION BOX BACK TO IT ROOM (119) AS REQUIRED. TERMINATE CONDUIT ABOVE SECURITY CONTROL RACK WITH PULLCORD AND PLASTIC BUSHING.



0' 2' 4' 8' 16' 24'

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

1 / E601 **FIRST FLOOR - LV SYSTEM** 1/8" = 1'-0"

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LOW VOLTAGE SYSTEM- FIRST FLOOR PLAN

SHEET

E601

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9/20/2023 3:34:57 PM

TELECOMMUNICATIONS ABBREVIATIONS	
D1	ONE (1) DATA DROP
D2	TWO (2) DATA DROP
D3	THREE (3) DATA DROP
D4	FOUR (4) DATA DROP

GENERAL NOTES

1.PROVIDE DATA OUTLETS AS INDICATED AND CABLING ROUTED BACK TO IT ROOM VIA CABLE TRAY.

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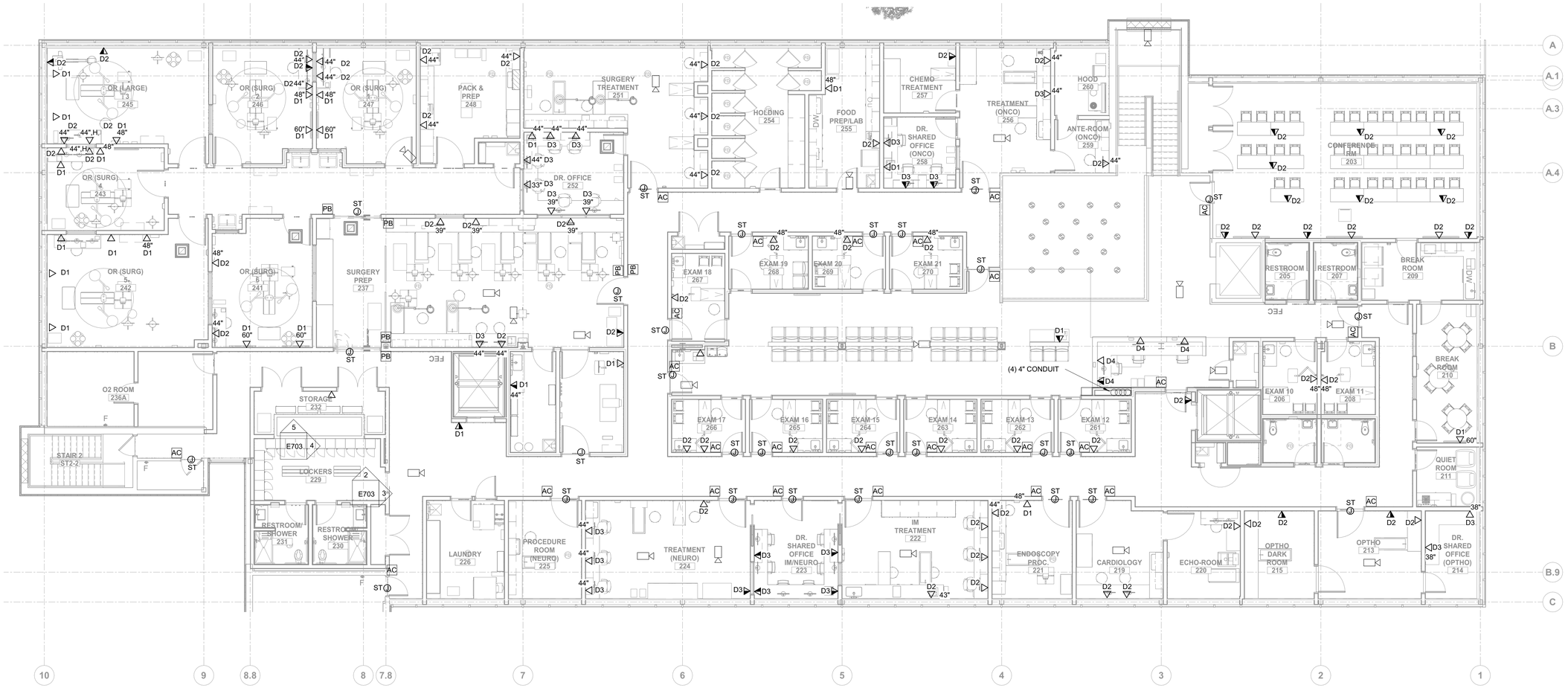

SCALE : 1/8" = 1'-0"

1 E602 **SECOND FLOOR - LV SYSTEM**
1/8" = 1'-0"

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LOW VOLTAGE SYSTEM- SECOND FLOOR PLAN

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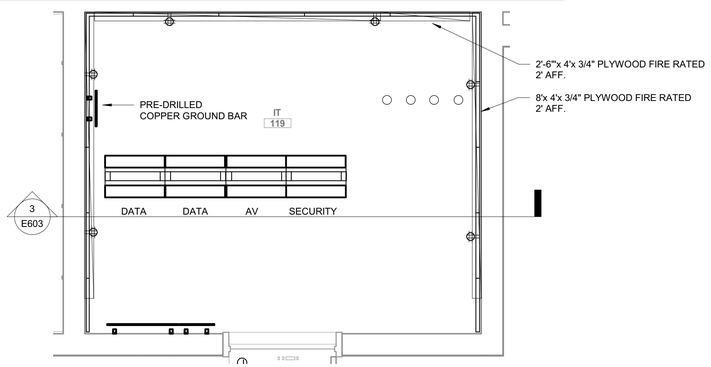
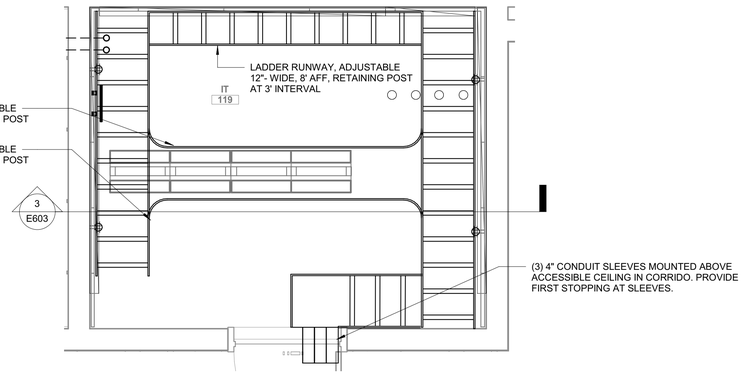
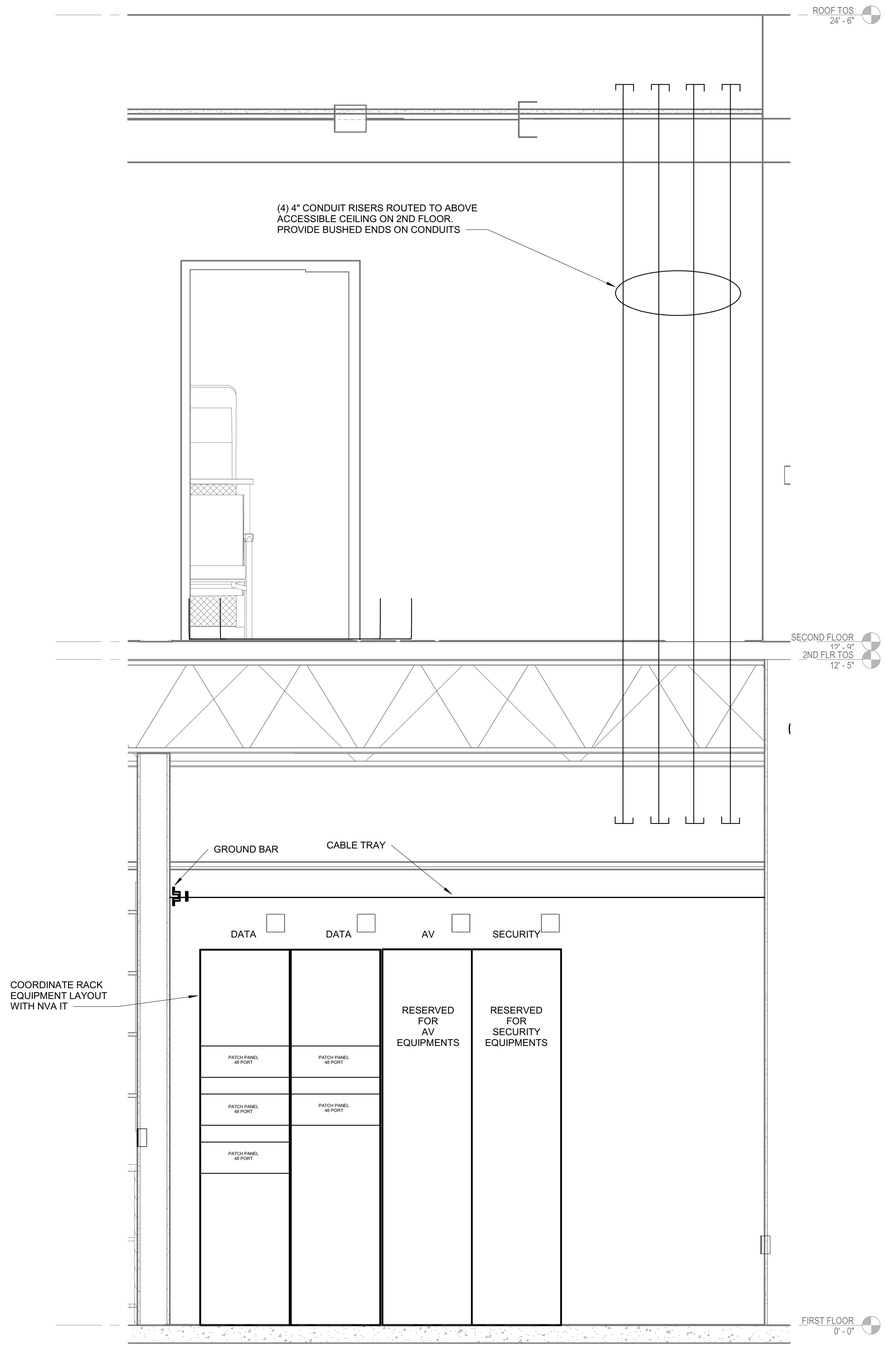


1 E603 **IT ROOM LAYOUT**
1/2" = 1'-0"



2 E603 **IT ROOM- CABLE RUNWAY**
1/2" = 1'-0"



3 E603 **TEL/COMM RACK ELEVATIONS**
3/4" = 1'-0"

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ENLARGED IT ROOM

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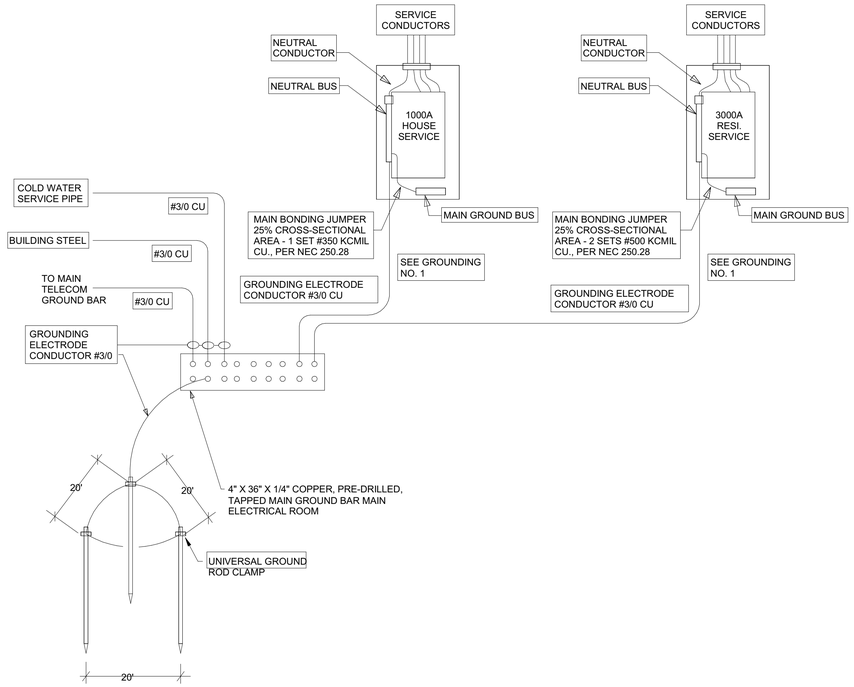
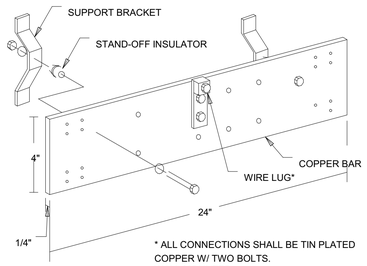


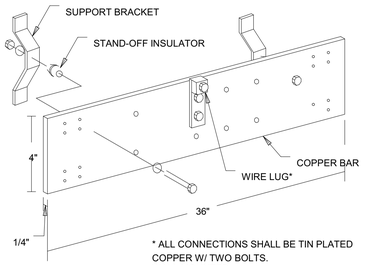
GROUNDING NOTES:

1. ALL GROUNDING ELECTRODES THAT ARE PRESENT AT THE BUILDING SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRIC SYSTEM PER NATIONAL ELECTRICAL CODE (NEC) SECTION 250.
2. GROUNDING ELECTRODE CONDUCTOR SHALL NOW BE LESS THAN REQUIRED BY NEC TABLE 250.66.
3. TEST GROUND SYSTEM RESISTANCE & VERIFY LESS THAN 25 OHMS PER NEC 250-53 EXCEPTION NOTE.
4. ALL GROUNDING AND BONDING CONDUCTORS SHALL BE COPPER, UNO.

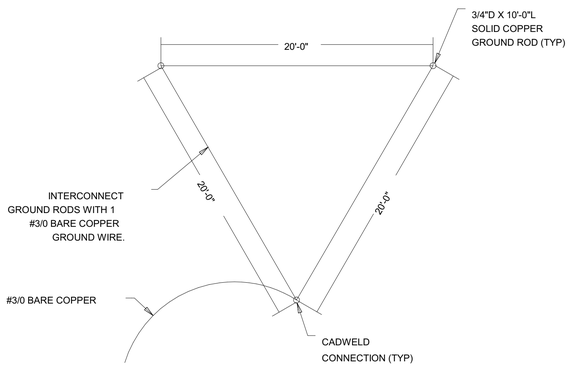
1 E-701 **BUILDING SWITCHBOARD GROUNDING DIAGRAM**
Not to Scale



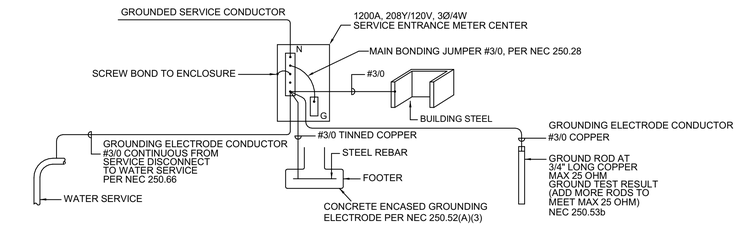
5 E-701 **IT GROUND BAR**
Not to Scale



6 E-701 **GROUND BAR**
Not to Scale



7 E-701 **GROUNDING TRIAD**
Not to Scale



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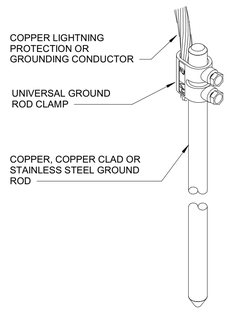
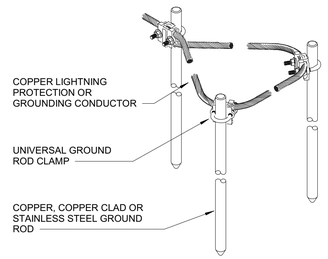
2 E-701 **METER CENTER GROUNDING DIAGRAM**
Not to Scale



3 E-701 **GROUNDING ROD DETAIL**
Not to Scale



4 E-701 **DELTA GROUNDING DETAIL**
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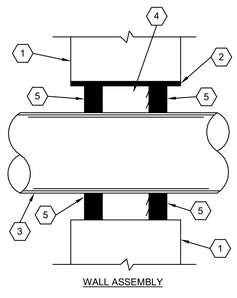

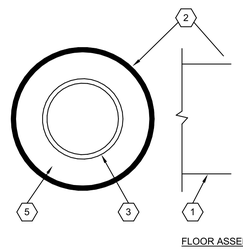

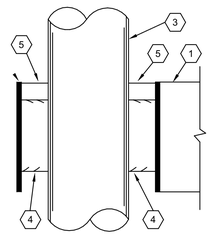

KEY NOTES:

1. FLOOR OR WALL ASSEMBLY MINIMUM 5" THICK NORMAL WEIGHT CONCRETE FLOOR OR WALL OR MINIMUM 7-5/8" THICK MASONRY WALL HAVING A MINIMUM 2 HOUR FIRE RESISTIVE RATING WITH A NOMINAL 6" DIAMETER OPENING.

2. STEEL PIPE SLEEVE (OPTIONAL) NOMINAL 6" DIAMETER SCHEDULE 40 OR HEAVIER STEEL PIPE SLEEVE. (2 TRADE SIZES LARGER THAN CONDUIT).

3. STEEL OR EMT CONDUIT NOMINAL 4" DIAMETER CENTERED THROUGH THE OPENING.

4. FORMING MATERIAL MINERAL WOOL, MINIMUM DENSITY OF 4.4 PCF FIRMLY PACKED WITHIN THE OPENING TO A NOMINAL THICKNESS OF 3" FOR FLOORS. FOR WALLS, THE MINERAL WOOL SHALL BE CENTERED IN THE OPENING.

5. FILL, VOID OR CAVITY MATERIAL* - FILL MATERIAL THAT IS TROWELED INTO THE OPENING TO A MINIMUM THICKNESS OF 1/2" IN ACCORDANCE WITH THE ACCOMPANYING INSTALLATION INSTRUCTIONS. IN WALLS, THE FILL MATERIAL SHALL BE INSTALLED ON BOTH SURFACES OF THE OPENING.

* BEARING THE "UL" CLASSIFICATION MARKING

8 E-701 **FIRE PENETRATION DETAIL**
Not to Scale

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ALLEN + SHARIFF CORPORATION No. C - 1486120

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC
RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

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ELECTRICAL DETAILS

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E701

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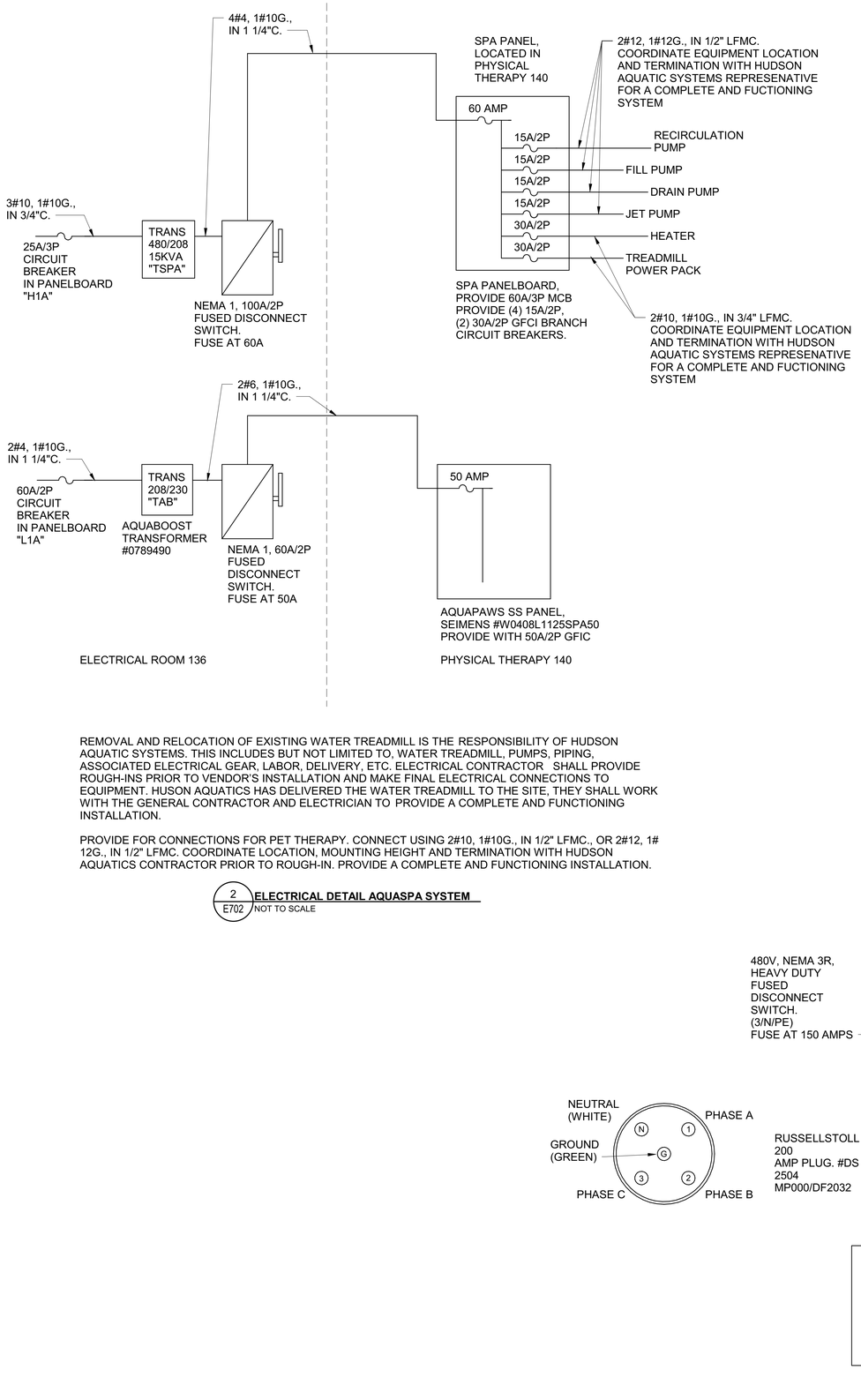


Branch Panel: PSPA

Location: PHYSICAL THERAPY 140 | **Volts:** 120/208 Wye | **A.I.C. Rating:** 10,000 AIC
Supply From: TSPA | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 60 A
Enclosure: Type 1

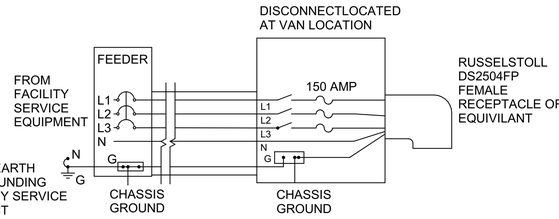
CKT	Circuit Description	Wire Size	Trip	Pole	A	B	C	Pole	Trip	Wire Size	Circuit Description	CKT
1	JET PUMP (GFIC)	2#12, 1#12G., IN 1/2" LFMC.	15 A	2	1648	2384		2	30 A	2#10, 1#10G., IN 1/2" LFMC.	HEATER (GFIC)	2
3						1648	2384					4
5	RECIRC. PUMP (GFIC)	2#12, 1#12G., IN 1/2" LFMC.	15 A	2			770	1134	2	15 A	2#12, 1#12G., IN 1/2" LFMC.	FILL PUMP (GFCI)	6
7					770	1134							8
9	DRAIN PUMP (GFCI)	2#12, 1#12G., IN 1/2" LFMC.	15 A	2		1134	1648		2	30 A	2#10, 1#10G., IN 1/2" LFMC.	TREADMILL PP (GFCI)	10
11							1134	1648					12
13	REC: AQUA FILL CONTR...	2#12, 1#12G., IN 1/2"...	20 A	1	180								14
15	REC: SPA EQUIP (GFCI)	2#12, 1#12G., IN 1/2"...	20 A	1		360	--		1	--	--	Space	16
17	Spare	--	20 A	1			0	--	1	--	--	Space	18
			Total Load:		6115 VA	7173 VA	4685 VA						
			Total Connected Amps:		50 A								

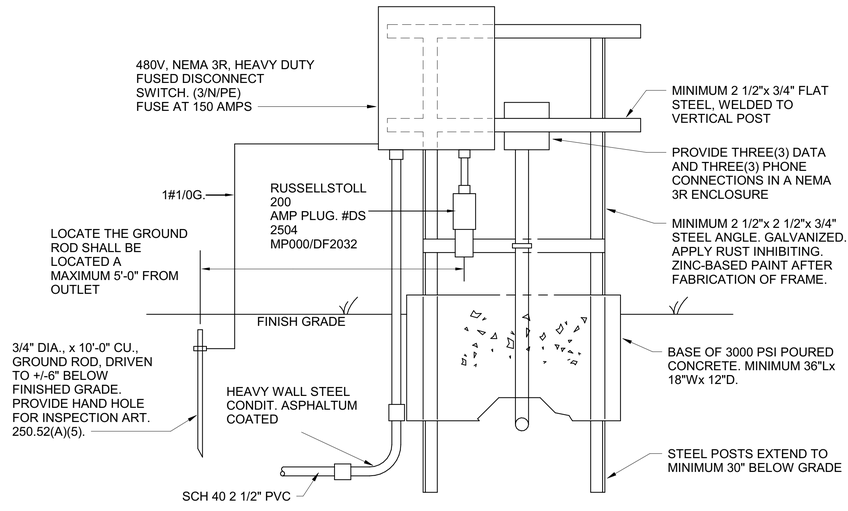
Notes:

REMOVAL AND RELOCATION OF EXISTING WATER TREADMILL IS THE RESPONSIBILITY OF HUDSON AQUATIC SYSTEMS. THIS INCLUDES BUT NOT LIMITED TO, WATER TREADMILL, PUMPS, PIPING, ASSOCIATED ELECTRICAL GEAR, LABOR, DELIVERY, ETC. ELECTRICAL CONTRACTOR SHALL PROVIDE ROUGH-INS PRIOR TO VENDOR'S INSTALLATION AND MAKE FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT. HUSON AQUATICS HAS DELIVERED THE WATER TREADMILL TO THE SITE, THEY SHALL WORK WITH THE GENERAL CONTRACTOR AND ELECTRICIAN TO PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.

PROVIDE FOR CONNECTIONS FOR PET THERAPY. CONNECT USING 2#10, 1#10G., IN 1/2" LFMC., OR 2#12, 1# 12G., IN 1/2" LFMC. COORDINATE LOCATION, MOUNTING HEIGHT AND TERMINATION WITH HUDSON AQUATICS CONTRACTOR PRIOR TO ROUGH-IN. PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.

2 / E702 **ELECTRICAL DETAIL AQUASPA SYSTEM**
NOT TO SCALE





1 / E702 **ELECTRICAL DETAIL MRI TRAILER**
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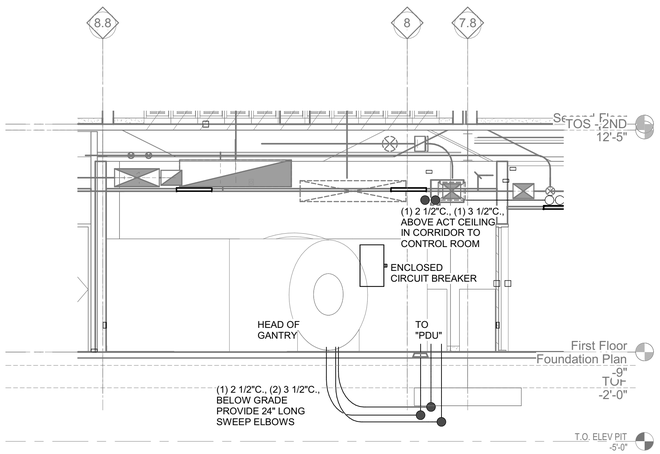
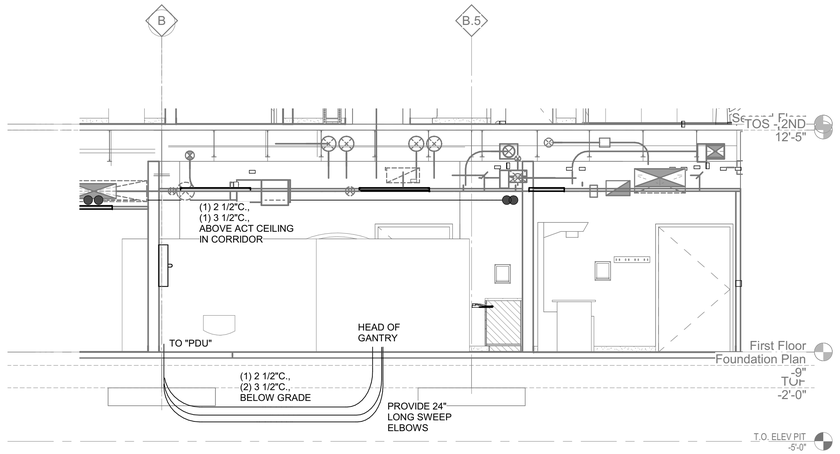
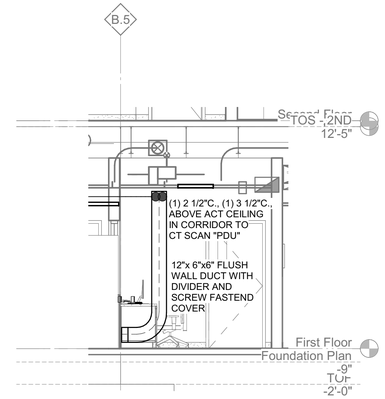


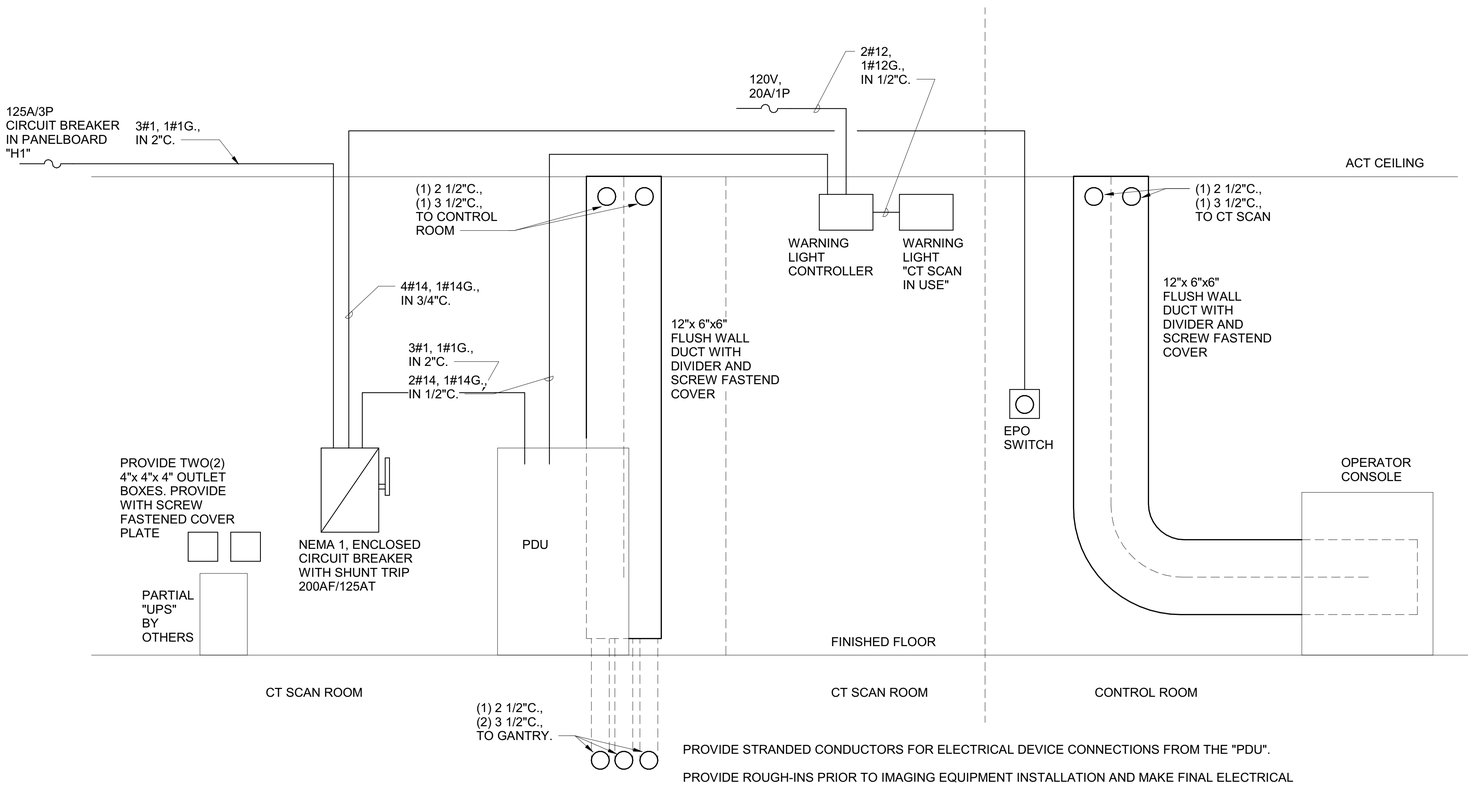
5 E703 **CT SCAN 133 - NORTH WALL**
1/4" = 1'-0"



4 E703 **CT SCAN 133 - EAST WALL**
1/4" = 1'-0"



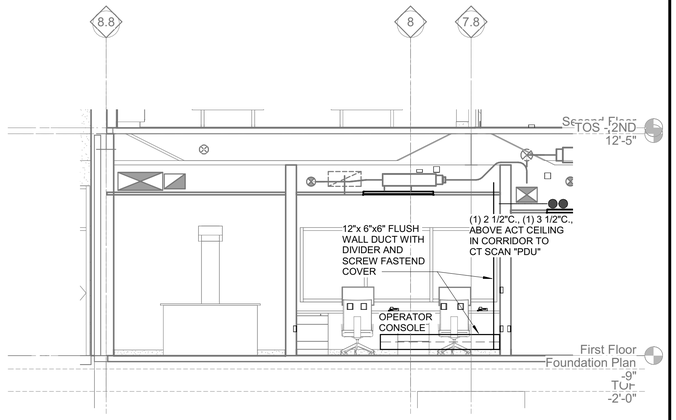
3 E703 **CT CONTROL 134 - EAST WALL**
1/4" = 1'-0"



PROVIDE STRANDED CONDUCTORS FOR ELECTRICAL DEVICE CONNECTIONS FROM THE "PDU".

PROVIDE ROUGH-INS PRIOR TO IMAGING EQUIPMENT INSTALLATION AND MAKE FINAL ELECTRICAL CONNECTIONS TO EQUIPMENT. IMAGING EQUIPMENT CONTRACTOR SHALL WORK WITH THE GENERAL CONTRACTOR AND ELECTRICIAN TO PROVIDE A COMPLETE AND FUNCTIONING INSTALLATION.

1 E703 **ELECTRICAL DETAIL CT SCAN RISER DIAGRAM**
NOT TO SCALE



2 E703 **CT CONTROL 134 - NORTH WALL**
1/4" = 1'-0"

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MATERIAL NOTES:

- THE BASIS OF DESIGN BUSSING MATERIAL FOR ALL DISTRIBUTION PANELS, PANELBOARDS, LOAD CENTERS, AND ELECTRICAL EQUIPMENT SHALL BE **ALUMINUM**.
- THE BASIS OF DESIGN MATERIAL FOR ALL FEEDERS SHALL BE **COPPER**. ALUMINUM MAY BE PROPOSED AS A VALUE ENGINEERING ITEM FOR APPROVAL BY THE ENGINEER AND OWNER. PLEASE NOTE THAT IF PURSUED, THIS V.E. MAY NOT BE APPLIED TO THE FOLLOWING FEEDERS:
  1. AMPACITY OF LESS THAN 100-AMPS
  2. ELEVATOR
  3. LIFE SAFETY DISTRIBUTION
  4. EMERGENCY STANDBY DISTRIBUTION

POWER RISER DIAGRAM KEYNOTES: (#)

1. MAIN CIRCUIT BREAKER AND EQUIPMENT ASSEMBLY SHALL BE RATED FOR USE AS SERVICE ENTRANCE EQUIPMENT.
2. PROVIDE SURGE PROTECTION DEVICE. SPD SHALL BE FURNISHED INTEGRAL TO THE EQUIPMENT OR MOUNTED EXTERNALLY LESS THAN 1'-0" FROM THE EQUIPMENT ENCLOSURE.
3. PROVIDE ARC FLASH MITIGATION TO MEET THE REQUIREMENTS OF NEC SECTION 240.87. EQUIPMENT SHALL BE PROVIDED WITH AN ARC-FLASH HAZARD WARNING PER NEC SECTION 110.16.
4. CONDUITS SERVING AUXILIARY POWER CONNECTIONS AND CONTROL WIRING SHALL BE CONSOLIDATED AND ROUTED TO THE MAIN ELECTRICAL ROOM.
5. REFER TO X/EXXX FOR GENERATOR PAD DETAIL.
6. ELECTRICAL CONTRACTOR SHALL PROVIDE FIRST FILL-UP OF TANK AND TOP OFF AFTER INITIAL START-UP TEST.

GENERAL NOTES: POWER RISER DIAGRAM

A. THE RISER DIAGRAM IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO SHOW SYSTEM CONNECTIVITY AND FEEDER SIZES. REFER TO POWER PLANS FOR EQUIPMENT LAYOUTS AND LOCATIONS. ELECTRICAL CONTRACTOR SHALL VERIFY THAT THE SUBMITTED EQUIPMENT DIMENSIONS FIT WITHIN THE CORRESPONDING ELECTRICAL SPACE(S). ALL EQUIPMENT CLEARANCES AND MOUNTING HEIGHTS REQUIRED BY THE NEC SHALL BE MAINTAINED.

B. ELECTRICAL CONTRACTOR SHALL COORDINATE SITE WORK WITH CIVIL SITE PLANS, WHERE APPLICABLE, AND EXISTING SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK.

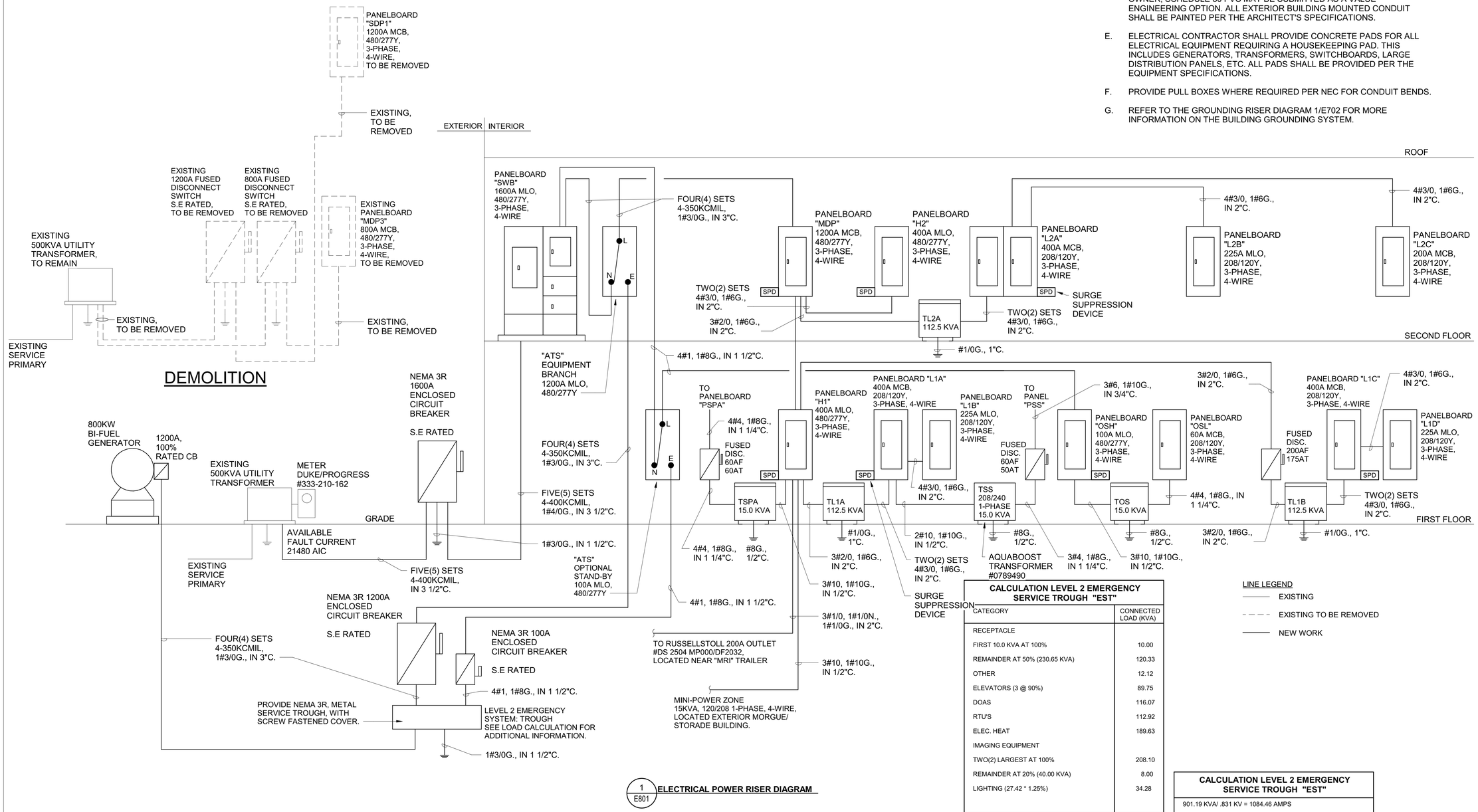
C. UNDERGROUND CONDUIT SHALL BE RMC WITH RMC ELBOWS. WHERE APPROVED BY[THE OWNER, SCHEDULE 80 PVC WITH RMC OR FIBERGLASS ELBOWS MAY BE SUBMITTED AS A VALUE ENGINEERING OPTION. UNDERGROUND FEEDER(S) SHALL BE CONCRETE ENCASED WHERE ROUTED UNDER PARKING LOTS OR DRIVE LANES. ELECTRICAL CONTRACTOR SHALL TRENCH AND BACKFILL FOR ALL UNDERGROUND PATHWAYS. UNDERGROUND CONDUIT SHALL BE A MINIMUM OF 36" BFG.

D. EXPOSED EXTERIOR CONDUIT SHALL BE RMC. WHERE APPROVED BY THE OWNER, SCHEDULE 80 PVC MAY BE SUBMITTED AS A VALUE ENGINEERING OPTION. ALL EXTERIOR BUILDING MOUNTED CONDUIT SHALL BE PAINTED PER THE ARCHITECT'S SPECIFICATIONS.

E. ELECTRICAL CONTRACTOR SHALL PROVIDE CONCRETE PADS FOR ALL ELECTRICAL EQUIPMENT REQUIRING A HOUSEKEEPING PAD. THIS INCLUDES GENERATORS, TRANSFORMERS, SWITCHBOARDS, LARGE DISTRIBUTION PANELS, ETC. ALL PADS SHALL BE PROVIDED PER THE EQUIPMENT SPECIFICATIONS.

F. PROVIDE PULL BOXES WHERE REQUIRED PER NEC FOR CONDUIT BENDS.

G. REFER TO THE GROUNDING RISER DIAGRAM 1/E702 FOR MORE INFORMATION ON THE BUILDING GROUNDING SYSTEM.



1 / E801 **ELECTRICAL POWER RISER DIAGRAM**

CALCULATION LEVEL 2 EMERGENCY SERVICE TROUGH "EST"

CATEGORY	CONNECTED LOAD (KVA)
RECEPTACLE	
FIRST 10.0 KVA AT 100%	10.00
REMAINDER AT 50% (230.65 KVA)	120.33
OTHER	12.12
ELEVATORS (3 @ 90%)	89.75
DOAS	116.07
RTU'S	112.92
ELEC. HEAT	189.63
IMAGING EQUIPMENT	
TWO(2) LARGEST AT 100%	208.10
REMAINDER AT 20% (40.00 KVA)	8.00
LIGHTING (27.42 * 1.25%)	34.28
TOTAL	901.19

CALCULATION LEVEL 2 EMERGENCY SERVICE TROUGH "EST"

901.19 KVA/ .831 KV = 1084.46 AMPS
277/480V, 3-PHASE, 4-WIRE

LINE LEGEND
- EXISTING
- EXISTING TO BE REMOVED
- NEW WORK

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ELECTRICAL POWER RISER DIAGRAM

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E801

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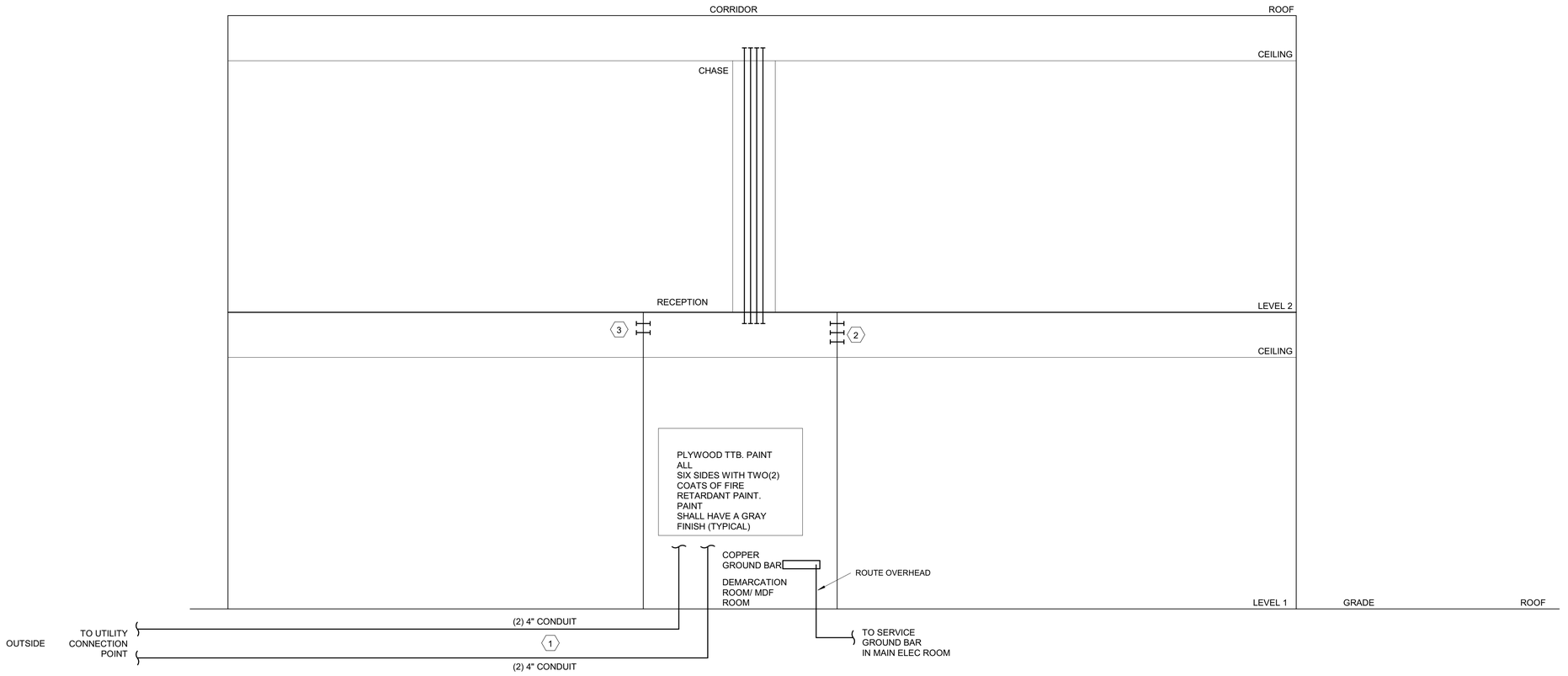

RISER KEY NOTES:

1. (4) 4" PVC CONDUITS FROM LOW VOLTAGE SYSTEM PROVIDER HAND HOLES/MANHOLES TO DEMARACTION ROOM PER UTILITY STANDARDS.
2. (3) 4" SLEEVE FOR LOW VOLTAGE CABLES COMING IN FROM CORRIDOR. EXTEND CONDUIT 4" ON EITHER SIDE OF THE WALL. TERMINATE CONDUIT SLEEVES WITH PLASTIC BUSHING. PROVIDED SEAL FOR FIRE PROOFING TO KEEP CONTINUITY OF VERTICAL ASSEMBLY FOR EACH CONDUIT.
3. (2) 4" SLEEVE FOR LOW VOLTAGE CABLES COMING IN FROM CORRIDOR. EXTEND CONDUIT 4" ON EITHER SIDE OF THE WALL. TERMINATE CONDUIT SLEEVES WITH PLASTIC BUSHING. PROVIDED SEAL FOR FIRE PROOFING TO KEEP CONTINUITY OF VERTICAL ASSEMBLY FOR EACH CONDUIT.
4. PROVIDE 1 1/2"C., FOR INSTALLATION OF LOW VOLTAGE CABLES. ROUTE CONDUIT FROM MEDIA CABINET TO CORRIDOR ON THE FIRST FLOOR, EXTEND 4" ON CORRIDOR SIDE OF THE WALL. TERMINATE CONDUIT WITH PULLCORD AND PLASTIC BUSHING. PROVIDED SEAL FOR FIRE PROOFING TO KEEP CONTINUITY OF VERTICAL ASSEMBLY FOR EACH CONDUIT.

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ELECTRICAL TELECOMMUNICATIONS RISER DIAGRAM

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E802

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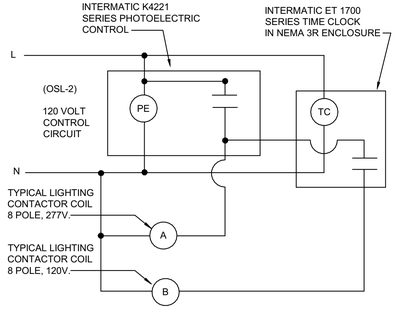
LIGHT FIXTURE SCHEDULE

TYPE	FIXTURE DESCRIPTION	MANUFACTURER	MODEL	LAMPS(S)		DRIVER/ BALLAST	INPUT WATTS	VOLTAGE	MOUNTING	NOTES
				LAMP #	LAMP TYPE					
A1	2x4 LED TROFFER, STEEL HOUSING, BAKED WHITE ENAMEL FINISH, PAINTED AFTER FABRICATION. FULLY ENCLOSED, FLUSH STEEL DOOR, CAM LATCHES, .125 THICK, #12 PATTERN ACRYLIC LENS.	WILLIAMS	MDSG-24-L116-9-40-SYM-DIM-UNV	1	LED	DIMMABLE	94 W	277 V	RECESSED	WHITE LED ARRAYS
A1F	2x4 LED TROFFER, STEEL HOUSING, BAKED WHITE ENAMEL FINISH, PAINTED AFTER FABRICATION. FULLY ENCLOSED, FLUSH STEEL DOOR, CAM LATCHES, .125 THICK, #12 PATTERN ACRYLIC LENS.	WILLIAMS	MDSF-24-L116-9-40-SYM-DIM-UNV	1	LED	DIMMABLE	94 W	277 V	RECESSED	WHITE LED ARRAYS. PROVIDE WITH FLANGE KIT FOR GYPSUM BOARD CEILING.
A2	2x4 LED TROFFER, STEEL HOUSING, BAKED WHITE ENAMEL FINISH, PAINTED AFTER FABRICATION. FULLY ENCLOSED, FLUSH STEEL DOOR, CAM LATCHES, .125 THICK, #12 PATTERN ACRYLIC LENS.	WILLIAMS	MDSG-24-L220-9-40-SYM-DIM-UNV	1	LED	DIMMABLE	171 W	277 V	RECESSED	WHITE LED ARRAYS
B1	2x2 LED TROFFER, DIE-FORMED STEEL HOUSING, HIGH GLOSS WHITE POWDER COAT FINISH, PAINTED AFTER FABRICATION. ROUND DIFFUSE RIBBED ACRYLIC LENS.	WILLIAMS	PT-22-L43-8-40-RA-DIM-UNV	1	LED	DIMMABLE	35 W	277 V	RECESSED	WHITE LED ARRAYS
B2	2x4 LED TROFFER, DIE-FORMED STEEL HOUSING, HIGH GLOSS WHITE POWDER COAT FINISH, PAINTED AFTER FABRICATION. ROUND DIFFUSE RIBBED ACRYLIC LENS.	WILLIAMS	PT-24-L61-8-40-RA-DIM-UNV	1	LED	DIMMABLE	49 W	277 V	RECESSED	
D1	6" LED OPEN DOWNLIGHT, DIE-CAST ALUMINUM HEAT FINS, WHITE TRIM RING, SEMI-SPECULAR ANODIZE ALUMINUM REFLECTOR, WIDE DISTRIBUTION, PRE-WIRED JUNCTION BOX.	WILLIAMS	6DR-TL-L30-8-40-DIM-W-CS-WH	1	LED	DIMMABLE	0 W	277 V	RECESSED	
D1F	6" LED OPEN DOWNLIGHT, DIE-CAST ALUMINUM HEAT FINS, FLANGED WHITE TRIM RING, SEMI-SPECULAR ANODIZE ALUMINUM REFLECTOR, WIDE DISTRIBUTION, PRE-WIRED JUNCTION BOX.	WILLIAMS	6DR-TL-L30-8-40-DIM-W-OF-CS-WH	1	LED	DIMMABLE	0 W	277 V	RECESSED	PROVIDE WITH FLANGE FOR INSTALLATION IN GYPSUMBOARD CEILING.
D2	6" LED OPEN DOWNLIGHT, DIE-CAST ALUMINUM HEAT FINS, WHITE TRIM RING, SEMI-SPECULAR ANODIZE ALUMINUM REFLECTOR, WIDE DISTRIBUTION, PRE-WIRED JUNCTION BOX. DIFFUSE 1/8" PLOYCARBONATE LENS. UL "WET" LOCATION LABELED.	WILLIAMS	6DR-TL-L30-8-35-DIM-R-W-OF-CS-WH-PD-WET/CC	1	LED	DIMMABLE	20 W	277 V	RECESSED	PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED FOR A COMPLETE INSTALLATION.
L1	POST TOP	LMT Mercer Group	1508-LED-WHITE-5K	1	LED	DIMMABLE	8 W	120 V	POLE	-
L2	LED BOLLARD, 42" TALL, 8" DIA. EXTRUDED ALUMINUM HOUSING. DIE-CAST ALUMINUM REFLECTOR AND TOP CAP, SYMETRIC DISTRIBUTION. FULLY GASKETED LENS. TEXTURED DARK BRONZE POWER COAT FINISH.	LITHONIA	DSXB LED-16C-700-40K-SYM-MVOLT-ELCW-H42-DDBTXD	1	LED	NON-DIMMABLE	28 W	<varies>	SURFACE	PROVIDE WITH 1100 LUMEN FOR 90 MINUTE COLD WEATHER EMERGENCY BATTERY BACK-UP. PROVIDE WITH MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED FOR A COMPLETE INSTALLATION.
P1	DECORATIVE PENDANT	BRUCK	MLED-35-909-MC-P	1	LED	DIMMABLE	7 W	277 V	SURFACE, PENDANT	
PL	VANDAL RESISTANT LED, METAL BACKPLATE, FULLY GASKETED POLYCARBONATE LENS, HIGH GLOSS WHITE REFLECTOR. UL WET LOCATION LABEL	FAIL-SAFE	B95-LD4-20-40-CL-UNR-EDC1	1	LED	NON-DIMMABLE	2 W	120 V	SURFACE, WALL	COORDINATE INSTALLATION WITH ELEVATOR INSTALLER
S1	4' LED STRIP FIXTURE, STEEL HOUSING, PAINTED AFTER FABRICATION, LINEAR RIBBED DIFFUSE ACRYLIC LENS.	WILLIAMS	76R 4 L30 8 40 DRV UNV	1	LED	DIMMABLE	21 W	277 V	SURFACE, WALL	PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED FOR A COMPLETE INSTALLATION.
S2	4' LED STRIP FIXTURE, STEEL HOUSING, PAINTED AFTER FABRICATION, LINEAR RIBBED DIFFUSE ACRYLIC LENS.	WILLIAMS	76R 4 L30 8 40 DRV UNV	1	LED	DIMMABLE	21 W	277 V	SURFACE, CEILING	PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED FOR A COMPLETE INSTALLATION.
S3	4' LED STRIP FIXTURE, STEEL HOUSING, PAINTED AFTER FABRICATION, LINEAR RIBBED DIFFUSE ACRYLIC LENS.	WILLIAMS	76R 4 L30 8 40 DRV UNV	1	LED	DIMMABLE	21 W	120 V	SURFACE, CEILING	PROVIDE MOUNTING HARDWARE AND APPURTENANCES AS REQUIRED FOR A COMPLETE INSTALLATION.
W1	LED, DIE-CAST METAL HOUSING, FULLY GASKETED IMPACT RESISTANT, UV STABILIZED FROSTED ACRYLIC LENS, HIGH GLOSS WHITE REFLECTOR. UL WET LOCATION LABEL	TECH LIGHTING	700WSPIT-S-Z-LED830277	1	LED	NON-DIMMABLE	27 W	277 V	SURFACE, WALL	MOUNT TOP OF LUMINAIRE AT 8'-6"
X	LED EXIT SIGN, WHITE THERMOPLASTIC HOUSING, STENCIL FACE , GREEN LETTERS	MULE	MX-B-G-U-SD	1	LED	NON-DIMMABLE	10 W	277 V	UNIVERSAL	PROVIDE TEST POWER INDICATOR LIGHT, NICKLE CADIUM BATTERY, SOLID-STATE VOLTAGE LIMITED CHARGER, NFPA 101 COMPLIANT KNOCKOUT CHEVERONS.
XL	EXTERIOR WALL MOUNTED LED LIGHT	LITHONIA	DSXF3-LED-6-P2-40K-70CRI-WFR-MVOLT-YKO62-DBLXD	1	LED	DIMMABLE	138 W	UNV	SURFACE	COORDINATE AIMING OF FIXTURE WITH OWNER



OSH-7	LTG: EXTERIOR WALL	OSL-X	LTG: MONUMENT SIGNAGE
OSH-9	LTG: COVERED RELIEF	OSL-X	LTG: WALL SIGNAGE
OSH-11	LTG: EXTERIOR FLOOD	OSL-X	LTG: WALL SIGNAGE
-	SPARE	-	SPARE
-	SPARE	-	SPARE
-	SPARE	-	SPARE
-	SPARE	-	SPARE
-	SPARE	-	SPARE

SEQUENCE OF OPERATION

1. PHOTOCELL WILL ENERGIZE ALL LIGHTS AT DUSK. TIME CLOCK WILL DE-ENERGIZE A PORTION OF THE LIGHTS AFTER HOURS, AS DETERMINED BY OWNER, AS AN ENERGY SAVING MEASURE.
2. TIME CLOCK SHALL BE SET "ON" AT 6:00 AM AND "OFF" AT MIDNIGHT.
3. DURING WINTER, ALL SITE LIGHTING SHALL OPERATE IN THE MORNING.
4. PHOTOCELL OVER-RIDES TIME CLOCK AND WILL NOT ALLOW LIGHTING TO OPERATE DURING DAYLIGHT HOURS.
5. PHOTOCELL OVER-RIDES TIME CLOCK AND WILL NOT ALLOW LIGHTING TO OPERATE DURING DAYLIGHT HOURS.

* NOTE: ALL LIGHTING CONTACTORS SHALL ELECTRICALLY HELD

1 / E901 **ELECTRICAL EXTERIOR LIGHTING CONTROLS "ELC"**
NOT TO SCALE

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

METHOD OF COMPLIANCE: 2018 NCECC

LIGHTING SCHEDULE (each fixture type)

SEE FIXTURE SCHEDULE	LAMP TYPE REQUIRED IN FIXTURE
SEE FIXTURE SCHEDULE	NUMBER OF LAMPS IN FIXTURE
SEE FIXTURE SCHEDULE	BALLAST/DRIVER TYPE USED IN THE FIXTURE
SEE FIXTURE SCHEDULE	NUMBER OF BALLAST/DRIVERS IN FIXTURE
SEE FIXTURE SCHEDULE	TOTAL WATTAGE PER FIXTURE
26204 VS 32942 W	TOTAL INTERIOR WATT SPECIFIED VS. ALLOWED
3204 VS 3942	TOTAL EXTERIOR WATT SPECIFIED VS. ALLOWED

ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- ☐ C406.2 MORE EFFICIENT MECHANICAL EQUIPMENT
- ■ 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

DESIGNER STATEMENT:
TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE ENERGY CODE.

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RENOVATION
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WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

ELECTRICAL SCHEDULES

SHEET
E901

ASC PROJECT NUMBER: 21-000

9/20/2023 3:35:11 PM

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Branch Panel: SDP

Location: EX. ELECT. RM 227 | **Volts:** 480/277 Wye | **A.I.C. Rating:**
Supply From: | **Phases:** 3 | **Mains Type:** MLO
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 1600 A
Enclosure: Type 1

CKT	Circuit Description	Wire Size	Trip	Pole	A		B		C		Pole	Trip	Wire Size	Circuit Description	CKT
1					4104...	11536									2
3	ATS EQ	(3 sets) 4-300KCMIL, 1#1/0G., 3"c.	1200 A	3			3887...	8915			3	100 A	4#1, 1#8G., in 2"C.	ATS OS	4
5									3763...	7717					6
7					8310										8
9	EXIST. ELEV #1 MOTOR	3#4, 1#10G., IN 1 1/4"C.	60 A	3			8310								10
11									8310						12
13															14
15															16
17															18
				Total Load:	430304 VA		406015 VA		392386 VA						
				Total Connected Amps:			1478 A								

Notes:

CALCULATION PANELBOARD "SDP"

CATEGORY	CONNECTED LOAD (KVA)
RECEPTACLE	
FIRST 10.0 KVA AT 100%	10.00
REMAINDER AT 50% (230.65 KVA)	120.33
OTHER	12.12
ELEVATORS (3 @ 90%)	89.75
DOAS	116.07
RTU'S	112.92
ELEC. HEAT	189.63
IMAGING EQUIPMENT	
TWO(2) LARGEST AT 100%	208.10
REMAINDER AT 20% (40.00 KVA)	8.00
LIGHTING (27.42 * 1.25%)	34.28
TOTAL	901.19

CALCULATION FOR PANELBOARD "SDP"

901.19 KVA/ .831 KV = 1084.46 AMPS

277/480V, 3-PHASE, 4-WIRE

CALCULATION PANELBOARD "MDP"

CATEGORY	CONNECTED LOAD (KVA)
RECEPTACLE	
FIRST 10.0 KVA AT 100%	10.00
REMAINDER AT 50% (230.65 KVA)	120.33
OTHER	12.12
ELEVATORS (3 @ 90%)	89.75
DOAS	116.07
RTU'S	112.92
ELEC. HEAT	189.63
IMAGING EQUIPMENT	
TWO(2) LARGEST AT 100%	208.10
REMAINDER AT 20% (40.00 KVA)	8.00
TOTAL	866.91

CALCULATION FOR PANELBOARD "MDP"

866.91 KVA/ .831 KV = 1043.22 AMPS

277/480V, 3-PHASE, 4-WIRE

Branch Panel: MDP

Location: EX. ELECT. RM 227 | **Volts:** 480/277 Wye | **A.I.C. Rating:**
Supply From: ATS EQ | **Phases:** 3 | **Mains Type:** MLO
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 1200 A
Enclosure: Type 1

CKT	Circuit Description	Wire Size	Trip	Pole	A (VA)		B (VA)		C (VA)		Pole	Trip	Wire Size	Circuit Description	CKT
1					1328...	79874									2
3	PANELBOARD "H1"	(2 SETS) 4#3/0, 1#3G., IN 2 1/2"C.	400 A	3			1179...	69874			3	400 A	(2 SETS) 4#3/0, 1#3G., IN 2 1/2"C.	PANELBOARD "H2"	4
5									1270...	63874					6
7					16587	57120									8
9	EXIST. ROOF TOP UNIT: RTU-1	3#2, 186G., IN 1 1/2"C.	90 A	3			16587	60386			3	175 A	3#2/0, 1#6G., IN 2"C.	TRANSFORMER TL2	10
11									16587	44855					12
13					22603	21052									14
15	DED. OUTSIDE AIR UNIT: DOAS-1	3#1, 1#6G., IN 1 1/2"C.	125 A	3			22603	21052			3	110 A	3#1, 1#6G., IN 1 1/2"C.	ROOF TOP UNIT: RTU-2	16
17									22603	21052					18
19					16088	22603									20
21	DED. OUTSIDE AIR UNIT: DOAS-3	3#2, 1#8G., IN 1 1/2"C.	90 A	3			16088	22603			3	125 A	3#1, 1#6G., IN 1 1/2"C.	DED. OUTSIDE AIR UNIT: DOAS-2	22
23									16088	22603					24
25	Space	--	--	1	--	41667									26
27	Space	--	--	1			--	41667			3	150 A	3#1/0, 1#1/0N., 1#1/0G., IN 2 1/2"	MRI TRAILER	28
29	Space	--	--	1					--	41667					30
31	Space	--	--	1	--	--					1	--	--	Space	32
33	Space	--	--	1			--	--			1	--	--	Space	34
35	Space	--	--	1					--	--	1	--	--	Space	36
37					1	--					1	--	--	Space	38
39	SURGE SPRESSION	3#3, 1#8G., IN 1 1/4"C.	60 A	3			1	--			1	--	--	Space	40
41									1	--	1	--	--	Space	42
				Total Load:	410458 VA		388790 VA		376359 VA						
				Total Connected Amps:			1414 A								

Notes:

CALCULATION PANELBOARD "H1"

CATEGORY	CONNECTED LOAD (KVA)
RECEPTACLE	
FIRST 10.0 KVA AT 100%	10.00
REMAINDER AT 50% (115.86 KVA)	57.93
OTHER	111.31
TOTAL	179.44

CALCULATION FOR PANELBOARD "H1"

179.44 KVA/ .831 KV = 215.93 AMPS

277/480V, 3-PHASE, 4-WIRE

Branch Panel: H1

Location: EX ELEC ROOM 136 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 22,000 AIC
Supply From: MDP | **Phases:** 3 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 400 A
Enclosure: Type 1

CKT	Circuit Description	Wire Size	Trip	Pole	A		B		C		Pole	Trip	Wire Size	Circuit Description	CKT
1					36551	4400					1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.01	2
3	TRANSFORMER TL1A	3#2/0, 1#6G., IN 2"C.	175 A	3			24361	2900			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.02	4
5									29101	5200	1	30 A	2#10, 1#10G., IN 1/2"C.	VAV 1.03	6
7					27700	2200					1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.04	8
9	CT SCAN	3#1, 1#1G., IN 2"C.	125 A	3			27700	3600			1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.05	10
11									27700	700	1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.06	12
13					6115	4500					1	25 A	2#10, 1#10G., IN 1/2"C.	VAV 1.07	14
15	TSPA	3#10, 1#10G., IN 3/4"C."C.	25 A	3			7173	1700			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.08, 1.09	16
17									4685	3600	1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.10, 1.11	18
19					26729	3900					1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.12	20
21	TRANSFORMER TL1C	3#2/0, 1#6G., IN 2"C.	175 A	3			26727	3800			1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.13, 1.26	22
23									26176	2400	1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.14	24
25					5000	3400					1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.15, 1.18	26
27	AIR CURTAIN (HTR)	3#10, 1#10G., IN 1/2"C.	30 A	3			5000	3500			1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.17	28
29									5000	2100	1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.19	30
31					1667	2000					1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.20	32
33	EUH 1.1	3#10, 1#10G., IN 1/2"C.	30 A	3			1667	1300			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.21	34
35									1667	2600	1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.22	36
37	EWH 1.1	2#12, 1#12G., IN 1/2"C.	15 A	1	2000	1700					1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.23, 1.24	38
39	VAV 1.37	2#12, 1#12G., IN 1/2"C.	20 A	1			3600	2400			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.25, 1.26	40
41	VAV 1.38, 1.39	2#12, 1#12G., IN 1/2"C.	20 A	1					4000	4500	1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.27, 1.29	42
43	Spare	--	20 A	1	0	3600					1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 1.28	44
45	Spare	--	20 A	1			0	900			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.30	46
47	Spare	--	20 A	1					0	2800	1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.31	48
49					1	1400					1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.32, 1.33	50
51	SURGE SPRESSION	3#3, 1#8G., IN 1 1/4"C.	60 A	3			1	1600			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.34, 1.35	52
53									1	4800	1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 1.36	54
				Total Load:	132862 VA		117929 VA		127029 VA						
				Total Connected Amps:			454 A								

Notes:

Branch Panel: H2

Location: EX. ELECT. RM 227 | **Volts:** 480/277 Wye | **A.I.C. Rating:** 22,000 AIC
Supply From: MDP | **Phases:** 3 | **Mains Type:** MLO
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 400 A
Enclosure: Type 1

CKT	Circuit Description	Wire Size	Trip	Pole	A		B		C		Pole	Trip	Wire Size	Circuit Description	CKT
1	SHUNT TRIP		0 A	1	0	2733									2
3							11080	2733			3	15 A	3#12, 1#12G., IN 1/2"C.	VAV 2.01	4
5	ELEVATOR #3	3#3, 1#8G., IN 1 1/4"C.	80 A	3					11080	2733					6
7					11080	4800					1	25 A	2#10, 1#10G., IN 1/2"C.	VAV 2.02	8
9	SHUNT TRIP		0 A	1			0	2733							10
11									11080	2733	3	15 A	3#12, 1#12G., IN 1/2"C.	VAV 2.03	12
13	ELEVATOR #2	3#3, 1#8G., IN 1 1/4"C.	80 A	3	11080	2733									14
15							11080	2733							16
17	SHUNT TRIP		0 A	1					0	2733	3	15 A	3#12, 1#12G., IN 1/2"C.	VAV 2.04	18
19					11080	2733									20
21	ELEVATOR #1	3#3, 1#8G., IN 1 1/4"C.	80 A	3			11080	5600			1	30 A	2#10, 1#10G., IN 1/2"C.	VAV 2.05	22
23									11080	5600	1	30 A	2#10, 1#10G., IN 1/2"C.	VAV 2.06	24
25	VAV 2.25, 2.30	2#12, 1#12G., IN 1/2"C.	15 A	1	3100	5600					1	30 A	2#10, 1#10G., IN 1/2"C.	VAV 2.07	26
27	VAV 2.29, 2.31	2#12, 1#12G., IN 1/2"C.	20 A	1			3600	4000			1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 2.09	28
29	VAV 2.27, 2.28	2#12, 1#12G., IN 1/2"C.	15 A	1					3000	2733					30
31	VAV 2.33, 2.34	2#12, 1#12G., IN 1/2"C.	20 A	1	5800	2733					3	25 A	3#10, 1#10G., IN 1/2"C.	VAV 2.09	32
33	VAV 2.35,2.36,2.37,2.38	2#12, 1#12G., IN 1/2"C.	20 A	1			3900	2733							34
35	VAV 2.41	2#12, 1#12G., IN 1/2"C.	15 A	1					2100	2000	1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 2.10	36
37	VAV 2.42	2#12, 1#12G., IN 1/2"C.	20 A	1	5500	3000					1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 2.12, 2.13	38
39	Spare	--	20 A	1			0	2400			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 2.13, 2.14	40
41	Spare	--	20 A	1					0	1400	1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 2.15, 2.16	42
43	Spare	--	20 A	1	0	4200					1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 2.17, ECH 2.1	44
45	Spare	--	20 A	1			0	3300			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 2.18, 2.20	46
47	Spare	--	20 A	1					0	2000	1	25 A	2#10, 1#10G., IN 1/2"C.	VAV 2.19, 2.22	48
49					1	3700					1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 2.21, 2.39, 2.40	50
51	SURGE SPRESSION	3#3, 1#8G., IN 1 1/4"C.	60 A	3			1	2900			1	15 A	2#12, 1#12G., IN 1/2"C.	VAV 2.23, 2.26	52
53									1	3600	1	20 A	2#12, 1#12G., IN 1/2"C.	VAV 2.24	54
				Total Load:	79874 VA		69874 VA		63874 VA						
				Total Connected Amps:			257 A								

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WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

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09/20/2023

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No. DATE

PANELBOARD SCHEDULES

SHEET

E902

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ASC PROJECT NUMBER: 21-000

CALCULATION PANELBOARD "L1A"	
CATEGORY	CONNECTED LOAD (KVA)
RECEPTALCE	
FIRST 10.0 KVA AT 100%	10.00
REMAINDER AT 50% (52.43 KVA)	26.21
OTHER	20.00
TOTAL	56.21

CALCULATION FOR PANELBOARD "L1A"
56.21 KVA/ .360 KV = 156.14 AMPS
120/208V, 3-PHASE, 4-WIRE

Branch Panel: L1A

Location: EX ELEC ROOM 136 | **Supply From:** TL1A | **Mounting:** Surface | **Enclosure:** Type 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10,000 AIC | **Mains Type:** MLO | **Mains Rating:** 400 A | **MCB Rating:** 400 A

CKT	Circuit Description	Wire Size	Trip	Pole	A	B	C	Pole	Trip	Wire Size	Circuit Description	CKT
1	REC: 134, 135, 136	2#12, 1#12G., IN 1/2"C.	20 A	1	1080	1080		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: MICROWAVE	2
3	REC: 133, 135	2#12, 1#12G., IN 1/2"C.	20 A	1		900	1080	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: MCROWAVE	4
5	X-RAY MACHINE	2#1, 1#1G., IN 1 1/4"	100 A	2			10000	1	20 A	2#12, 1#12G., IN 1/2"C.	DISHWASHER (GFCI)	6
7					10000	900		1	20 A	2#12, 1#12G., IN 1/2"C.	DISPOSAL	8
9	REC: 134	2#12, 1#12G., IN 1/2"C.	20 A	1		900	720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: BEAKROOM 145	10
11	REC:133	2#12, 1#12G., IN 1/2"C.	20 A	1			900	1080	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: BREAK. RM, LOCKER	12
13	REC: LAB 126	2#12, 1#12G., IN 1/2"C.	20 A	1	540	1360			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: RESTROOM	14
15	REC: LAB 126	2#12, 1#12G., IN 1/2"C.	20 A	1		540	720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: ULTRASOUND	16
17	REC: LAB 126	2#12, 1#12G., IN 1/2"C.	20 A	1			900	720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: ULTRASOUND	18
19	REC: LAB 126	2#12, 1#12G., IN 1/2"C.	20 A	1	720	1080			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: ULTRASOUND	20
21	REC: LAB 126	2#12, 1#12G., IN 1/2"C.	20 A	1		360	1080		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: DR. SHARED	22
23	REC: LAB 126	2#12, 1#12G., IN 1/2"C.	20 A	1			720	900	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: DR. SHARED	24
25	REC: RUNS 125	2#12, 1#12G., IN 1/2"C.	20 A	1	1080	720			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: DR. SHARED	26
27	REC: RUNS 125	2#12, 1#12G., IN 1/2"C.	20 A	1		1080	180		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: ELEV. PIT SUMP PUMP	28
29	REC: TREATMENT 123	2#12, 1#12G., IN 1/2"C.	20 A	1			720	370	1	20 A	2#12, 1#12G., IN 1/2"C.	REC/LTG: ELEV #3	30
31	REC: TREATMENT 123	2#12, 1#12G., IN 1/2"C.	20 A	1	1080	1080			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: K9 ICU (GFI)	32
33	REC: TREATMENT 123	2#12, 1#12G., IN 1/2"C.	20 A	1		720	720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: K9 ICU (GFI)	34
35	REC: TREATMENT 123	2#12, 1#12G., IN 1/2"C.	20 A	1			900	1080	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: K9 ICU (GFI)	36
37	REC: COMMAND CENTER	2#12, 1#12G., IN 1/2"C.	20 A	1	1080	720			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: K9 ICU (GFI)	38
39	REC: COMMAND CENTER	2#12, 1#12G., IN 1/2"C.	20 A	1		900	900		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: K9 ICU (GFI)	40
41	REC: COMMAND CENTER	2#12, 1#12G., IN 1/2"C.	20 A	1			900	540	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: K9 ICU (GFI)	42
43	SECURITY	2#12, 1#12G., IN 1/2"C.	20 A	1	800	540			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: K9 ICU (GFI)	44
45	Spare	--	20 A	1		0	1180		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: K9 ICU (GFI)	46
47	Spare	--	20 A	1			0	0	1	20 A	--	Spare	48
49					1	12690							50
51	SURGE SPRESSION	3#6, 1#10G., IN 1"C.	30 A	3		1	12380		3	200 A	4#3/0, 1#6G., IN 2 1/2"C.	PANELBOARD "L1B"	52
53							1	8470					54
				Total Load:	36551 VA		24361 VA	29101 VA					
				Total Connected Amps:	250 A								

Notes:

Branch Panel: L1B

Location: EX ELEC ROOM 136 | **Supply From:** L1A | **Mounting:** Surface | **Enclosure:** Type 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10,000 AIC | **Mains Type:** MLO | **Mains Rating:** 225 A

CKT	Circuit Description	Wire Size	Trip	Pole	A (VA)	B (VA)	C (VA)	Pole	Trip	Wire Size	Circuit Description	CKT
1	REC: K9 ICU (GFI)	2#10, 1#10G., IN 1/2"C.	20 A	1	1080	720		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: EXAM 9	2
3	REC: K9 ICU (GFI)	2#10, 1#10G., IN 1/2"C.	20 A	1		720	720	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: EXAM 8	4
5	REC: MED. COLUMN (GFCI)	2#10, 1#10G., IN 1/2"C.	20 A	1			720	720	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: EXAM 7	6
7	REC: MED. COLUMN (GFCI)	2#10, 1#10G., IN 1/2"C.	20 A	1	720	720			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: EXAM 6	8
9	REC: RUNS 124	2#10, 1#10G., IN 1/2"C.	20 A	1		900	600		1	20 A	2#12, 1#12G., IN 1/2"C.	SECURITY	10
11	REC: RUNS 124	2#10, 1#10G., IN 1/2"C.	20 A	1			900	750	1	15 A	2#12, 1#12G., IN 1/2"C.	EWH-1.6 (WATER RM.)	12
13	REC: TREATMENT 123	2#10, 1#10G., IN 1/2"C.	20 A	1	1080	0			1	20 A	2 #8, 1 #10G, IN 3/4" C	PARKING SIGNAGE	14
15	REC: TREATMENT 123	2#10, 1#10G., IN 1/2"C.	20 A	1		720	0		1	20 A	--	Spare	16
17	REC: TREATMENT 123	2#10, 1#10G., IN 1/2"C.	20 A	1			1620	0	1	20 A	--	Spare	18
19	REC: MED. COLUMN (GFCI)	2#10, 1#10G., IN 1/2"C.	20 A	1	720	0			1	20 A	--	Spare	20
21	REC: TREATMENT 123	2#10, 1#10G., IN 1/2"C.	20 A	1		720	0		1	20 A	--	Spare	22
23	REC: PHY. THERAPY 140	2#12, 1#12G., IN 1/2"C.	20 A	1			1260	0	1	20 A	--	Spare	24
25	REC: PHY. THERAPY 140	2#12, 1#12G., IN 1/2"C.	20 A	1	900	0			1	20 A	--	Spare	26
27	EWH 1.2, 1.3	2#12, 1#12G., IN 1/2"C.	20 A	1		1250	0		1	20 A	--	Spare	28
29	EWH 1.4, 1.5	2#12, 1#12G., IN 1/2"C.	20 A	1			1500	0	1	20 A	--	Spare	30
31	PANELBOARD "PSS"	3#6, 1#10G., IN 1"C.	50 A	2	5750	--			1	--	--	Space	32
33						5750	--		1	--	--	Space	34
35	GEN BAT CHGR (GBC)	2#12, 1#12G., IN 1/2"C.	20 A	1			500	--	1	--	--	Space	36
37	GEN BLK HTR (GBH)	2#10, 1#10N,1#10G., IN 1"C.	30 A	2	1000	--			1	--	--	Space	38
39						1000	--		1	--	--	Space	40
41	REC: PHY. THER TREADMILL		20 A	1			500	--	1	--	--	Space	42
43	Space	--	--	1	--	--			1	--	--	Space	44
45	Space	--	--	1		--	--		1	--	--	Space	46
47	Space	--	--	1			--	--	1	--	--	Space	48
49	Space	--	--	1	--	--			1	--	--	Space	50
51	Space	--	--	1		--	--		1	--	--	Space	52
53	Space	--	--	1			--	--	1	--	--	Space	54
				Total Load:	12690 VA	12380 VA	8470 VA					
				Total Connected Amps:	93 A							

Notes:

CALCULATION PANELBOARD "L1C"	
CATEGORY	CONNECTED LOAD (KVA)
RECEPTALCE	
FIRST 10.0 KVA AT 100%	10.00
REMAINDER AT 50% (43.64 KVA)	21.82
OTHER	10.95
TOTAL	93.37

CALCULATION FOR PANELBOARD "L1C"
42.77 KVA/ .360 KV = 118.81 AMPS
120/208V, 3-PHASE, 4-WIRE

Branch Panel: L1C

Location: EX. ELEC RM 115 | **Supply From:** TL1C | **Mounting:** Surface | **Enclosure:** Type 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10,000 AIC | **Mains Type:** MLO | **Mains Rating:** 400 A | **MCB Rating:** 400 A

CKT	Circuit Description	Wire Size	Trip	Pole	A (VA)	B (VA)	C (VA)	Pole	Trip	Wire Size	Circuit Description	CKT
1	REC: TREATMENT 123	2#12, 1#12G., IN 1/2"C.	20 A	1	360	720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: PHARM 120	2
3	DRYER	2#12, 1#12G., IN 1/2"C.	15 A	2		728	1440	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: PHARM 120	4
5							728	900	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: PHARM 120	6
7	DRYER	2#12, 1#12G., IN 1/2"C.	15 A	2	728	360			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: PHARM 120	8
9						728	360		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: PHARM 120	10
11	WASHER	2#12, 1#12G., IN 1/2"C.	20 A	2			1560	720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: RESP. ISO 118A	12
13					1560	720			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: RESP. ISO 118A	14
15	WASHER	3#12, 1#12G., IN 1/2"C.	20 A	2		1560	720		1	20 A	2#12, 1#12G., IN 1/2"C.	POWER REEL	16
17							1560	180	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: O2 CAGE	18
19	REC: LAUNDRY 121	2#12, 1#12G., IN 1/2"C.	20 A	1	720	180			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: O2 CAGE	20
21	REC: RESTROOM	2#12, 1#12G., IN 1/2"C.	20 A	1		680	720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: GI ISO 117-A	22
23	REC: EWC	2#12, 1#12G., IN 1/2"C.	20 A	1			900	1080	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: GI-ISO 117-A	24
25	REC: RESTROOM	2#12, 1#12G., IN 1/2"C.	20 A	1	180	720			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: GI-ISO 117-A	26
27	REC: IT 119	2#12, 1#12G., IN 1/2"C.	20 A	1		720	600		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: STACKED WASHER	28
29	REC: IT 119	2#12, 1#12G., IN 1/2"C.	20 A	1			720	1500	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: STACKED DRYER	30
31	REC: IT 119	2#12, 1#12G., IN 1/2"C.	20 A	1	720	900			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: COMFORT 108	32
33	REC: ELEV. PIT SUMP PUMP	2#12, 1#12G., IN 1/2"C.	20 A	1		180	720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: ELEC. RM., JC	34
35	REC/LTG: ELEV #2	2#12, 1#12G., IN 1/2"C.	20 A	1			367	720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: COMFORT 109	36
37	DISPOSAL	2#12, 1#12G., IN 1/2"C.	20 A	1	900	180			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: LIFT TABLE	38
39	DISHWASHER (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1		900	180		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: LIFT TABLE	40
41	REC: FOOD PREP (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1			360	720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: INFECTIOUS 110	42
43	REC: MICROWAVE	2#12, 1#12G., IN 1/2"C.	20 A	1	1200	1200			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: FREEZER	44
45	REC: MICROWAVE	2#12, 1#12G., IN 1/2"C.	20 A	1		1200	900		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: REFRIGERATOR	46
47	EWH 1.6		20 A	1			500	900	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: REFRIGERATOR	48
49					1	14840							50
51	SURGE SPRESSION	3#6, 1#10G., IN 1"C.	30 A	3		1	14390		3	200 A	4#3/0, 1#6G., IN 2"C.	PANELBOARD L1D	52
53							1	12760					54
				Total Load:	26189 VA		26727 VA	26176 VA					
				Total Connected Amps:	220 A								

Notes:

Branch Panel: L1D

Location: EX. ELEC RM 115 | **Supply From:** L1C | **Mounting:** Surface | **Enclosure:** Type 1
Volts: 120/208 Wye | **Phases:** 3 | **Wires:** 4
A.I.C. Rating: 10,000 AIC | **Mains Type:** MLO | **Mains Rating:** 125 A

CKT	Circuit Description	Wire Size	Trip	Pole	A	B	C	Pole	Trip	Wire Size	Circuit Description	CKT
1	REC: RECEPT. DESK	2#12, 1#12G., IN 1/2"C.	20 A	1	540	1440			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: TV, WAITING LOBBY	2
3	REC: RECEPT. DESK	2#12, 1#12G., IN 1/2"C.	20 A	1			540	1080	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: TV, WAITING LOBBY	4
5	ILLUM. DESK	2#12, 1#12G., IN 1/2"C.	20 A	1				0	360	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: COUNTER, LOBBY	6
7	REC: ADMIN. 161	2#12, 1#12G., IN 1/2"C.	20 A	1	1080	360				1	20 A	2#12, 1#12G., IN 1/2"C.	REC: VENDING, LOBBY	8
9	REC: ADMIN. 161	2#12, 1#12G., IN 1/2"C.	20 A	1			1080	360		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: VENDING, LOBBY	10
11	REC: EXAM 1	2#12, 1#12G., IN 1/2"C.	20 A	1				900	370	1	20 A	2#12, 1#12G., IN 1/2"C.	REC/LTG: ELEV #1	12
13	REC: TRIAGE 154	2#12, 1#12G., IN 1/2"C.	20 A	1	900	900				1	20 A	2#12, 1#12G., IN 1/2"...	REC: ELEV. PIT SUMP PUMP	14
15	REC: FELINE ICU 128	2#12, 1#12G., IN 1/2"C.	20 A	1			720	500		1	20 A	2#12, 1#12G., IN 1/2"C.	EXIST. ELEV LTG/FAN	16
17	REC: FELINE ICU 128	2#12, 1#12G., IN 1/2"C.	20 A	1				720	500	1	20 A	2#12, 1#12G., IN 1/2"C.	EXIST. ELEV. CAB CONT.	18
19	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1	720	720				1	20 A	2#12, 1#12G., IN 1/2"C.	REC: CALL CENTER 104	20
21	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1			720	720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: CALL CENTER 104	22
23	REC: O2 CAGE	2#12, 1#12G., IN 1/2"C.	20 A	1				540	900	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: COPIER 104	24
25	REC: O2 CAGE	2#12, 1#12G., IN 1/2"C.	20 A	1	540	720				1	20 A	2#12, 1#12G., IN 1/2"C.	REC: CALL CENTER 104	26
27	REC: FELINE ICU 128	2#12, 1#12G., IN 1/2"C.	20 A	1			720	720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: SOC WORKER 107	28
29	REC: FELINE ICU 128	2#12, 1#12G., IN 1/2"C.	20 A	1				720	540	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: INVENT. OFF. 106	30
31	REC: DISCHARGE 159	2#12, 1#12G., IN 1/2"C.	20 A	1	720	900				1	20 A	2#12, 1#12G., IN 1/2"C.	REC: COPIER 106	32
33	REC: EXAM 2	2#12, 1#12G., IN 1/2"C.	20 A	1			720	540		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: INVENT. OFF. 106	34
35	REC: EXAM 3	2#10, 1#10G., IN 1/2"C.	20 A	1				720	540	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: DIRECTOR 105	36
37	REC: EXAM 4	2#10, 1#10G., IN 1/2"C.	20 A	1	720	1080				1	20 A	2#12, 1#12G., IN 1/2"C.	REC: TV, DIRECTOR 105	38
39	REC: EXAM 5	2#10, 1#10G., IN 1/2"C.	20 A	1			720	1750		2	20 A	2#10, 1#10G., IN 1/2"C.	REC: IT RACK	40
41	SECURITY	2#12, 1#12G., IN 1/2"C.	20 A	1				700	1750					42
43	Spare	--	20 A	1	0	1750				2	30 A	2#10, 1#10G., IN 1/2"C.	REC: IT RACK	44
45	Spare	--	20 A	1			0	1750						46
47	Spare	--	20 A	1				0	1750	2	30 A	2#10, 1#10G., IN 1/2"C.	REC: IT RACK	48
49	Spare	--	20 A	1	0	1750								50
51	Spare	--	20 A	1			0	1750		2	30 A	2#10, 1#10G., IN 1/2"C.	REC: IT RACK	52
53	Spare	--	20 A	1				0	1750					54
				Total Load:	14840 VA	14390 VA	12760 VA							
				Total Connected Amps:	117 A									

Notes:

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PROJECT NUMBER: 21-000

SUBMISSION
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ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

PANELBOARD SCHEDULES

SHEET
E903

ASC PROJECT NUMBER: 21-000

9/20/2023 3:35:14 PM

Branch Panel: L2A

Location: EX. ELECT. RM 227
Supply From: TL2
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000 AIC
Mains Type: MCB
Mains Rating: 400 A
MCB Rating: 400 A

CKT	Circuit Description	Wire Size	Trip	Pole	A	B	C	Pole	Trip	Wire Size	Circuit Description	CKT
1	REC: R.ROOMS, LOCKERS	2#12, 1#12G., IN 1/2"C.	20 A	1	1440 1200							2
3	REC: ELEC. RM., LAUNDRY	2#12, 1#12G., IN 1/2"C.	20 A	1		1260 1200		3	15 A	3#12, 1#12G., IN 1/2"C.	WASHER	4
5	REC: PROCEDURE ROOM	2#12, 1#12G., IN 1/2"C.	20 A	1			900 1200					6
7	REC: TREATMENT	2#12, 1#12G., IN 1/2"C.	20 A	1	1440 360							8
9	REC: TREATMENT	2#12, 1#12G., IN 1/2"C.	20 A	1		720 360		3	15 A	3#12, 1#12G., IN 1/2"C.	DRYER	10
11	POWER REEL: 224,225	2#12, 1#12G., IN 1/2"C.	20 A	1			0 360					12
13	REC: STORE/JAN, XRAY	2#12, 1#12G., IN 1/2"C.	20 A	1	900 10000							14
15	REC: XRAY	2#12, 1#12G., IN 1/2"C.	20 A	1		720 10000		2	100 A	2#1, 1#1G., IN 1 1/4"	X-RAY MACHINE	16
17	REC: STERILIZER	2#12, 1#12G., IN 1/2"C.	20 A	1			720 720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: TREATMENT 222	18
19	REC: STERILIZER	2#12, 1#12G., IN 1/2"C.	20 A	1	720 720			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: TREATMENT 222	20
21	REC: TREAT., DR., OFFICE	2#12, 1#12G., IN 1/2"C.	20 A	1		900 0		1	20 A	2#12, 1#12G., IN 1/2"C.	POWER REEL: 221, 222	22
23	REC: DR. OFFICE	2#12, 1#12G., IN 1/2"C.	20 A	1			900 540	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: ENDOSCOPY 221	24
25	REC: DR. OFFICE	2#12, 1#12G., IN 1/2"C.	20 A	1	900 720			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: ENDOSCOPY 221	26
27	ELEV. 3: CAB CONTROLS	2#12, 1#12G., IN 1/2"C.	20 A	1		500 720		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: CARDIOLOGY	28
29	ELEV. 3: LIGHTS AND FAN	2#12, 1#12G., IN 1/2"C.	20 A	1			500 1080	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: CARDIOLOGY	30
31	SECURITY	2#12, 1#12G., IN 1/2"C.	20 A	1	0 360			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: ECHO ROOM 220	32
33	REC: CENTRAL VAC	2#10, 1#10G., IN 1/2"C.	20 A	1		2880 540		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: ECHO ROOM 220	34
35	REC: EXAM 17	2#12, 1#12G., IN 1/2"C.	20 A	1			900 900	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: OPTHO 215	36
37	REC: EXAM 16	2#12, 1#12G., IN 1/2"C.	20 A	1	900 900			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: OPTHO 213, 214, 215	38
39	REC: EXAM 15	2#12, 1#12G., IN 1/2"C.	20 A	1		900 900		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: OPTHO 213	40
41	REC: EXAM 14	2#12, 1#12G., IN 1/2"C.	20 A	1			900 900	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: OPTHO 214	42
43	REC: EXAM 13	2#12, 1#12G., IN 1/2"C.	20 A	1	900 1720			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: JC, RESTROOM	44
45	REC: EXAM 12	2#12, 1#12G., IN 1/2"C.	20 A	1		900 720		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: EXAM 10	46
47	ELEV. 2: CAB CONTROLS	2#10, 1#10G., IN 1/2"C.	20 A	1			0 720	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: EXAM 11	48
49	ELEV. 2: LIGHTS AND FAN	2#10, 1#10G., IN 1/2"C.	20 A	1	500 1620			1	20 A	2#10, 1#10G., IN 1/2"C.	REC: BREAKROOM 210	50
51	REC: WAITING 200	2#12, 1#12G., IN 1/2"C.	20 A	1		1620 1080		1	20 A	2#10, 1#10G., IN 1/2"C.	REC: ROOF	52
53	REC: EWC	2#10, 1#10G., IN 1/2"C.	20 A	1			900 0	1	20 A	2#12, 1#12G., IN 1/2"C.	MOTORIZED DAMPERS	54
55	SECURITY	2#10, 1#10G., IN 1/2"C.	20 A	1	1100 915			2	30 A	2#10, 1#10G., IN 1/2"C.	SS E-3	56
57	REC: BAS	2#12, 1#12G., IN 1/2"C.	20 A	1		180 915						58
59	Spare	--	20 A	1			0 915	2	30 A	2#10, 1#10G., IN 1/2"C.	SS MG	60
61	Spare	--	20 A	1	0 915							62
63	Spare	--	20 A	1		0 915		2	30 A	2#10, 1#10G., IN 1/2"C.	SS O2	64
65	Spare	--	20 A	1			0 915					66
67	Spare	--	20 A	1	0 0			1	20 A	--	Spare	68
69	Spare	--	20 A	1		0 0		1	20 A	--	Spare	70
71	Spare	--	20 A	1			0 0	1	20 A	--	Spare	72
73	Space	--	--	1	-- 14030							74
75	Space	--	--	1		-- 14425		3	200 A	4#3/0, 1#6G., IN 2"C.	PANELBOARD L2C	76
77	Space	--	--	1			-- 12845					78
79					14859 1							80
81	PANELBOARD L2B	4#3/0, 1#6G., IN 2 1/2"C.	200 A	3		18030 1		3	30 A	3#6, 1#10G., IN 1"C.	SURGE SPRESSION	82
83							18039 1					84
		Total Load:			57120 VA	60386 VA	44855 VA					
		Total Connected Amps:			451 A							

Notes:

CALCULATION PANELBOARD "LA2"

CATEGORY	CONNECTED LOAD (KVA)
RECEPTALCE	
FIRST 10.0 KVA AT 100%	10.00
REMAINDER AT 50% (104.79)	52.39
OTHER	30.98
TOTAL	93.37

CALCULATION FOR PANELBOARD "L2A"

93.37 KVA/ .360 KV = 259.37 AMPS

120/208V, 3-PHASE, 4-WIRE

Branch Panel: L2B

Location: STORAGE/JAN. 238
Supply From: L2A
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000 AIC
Mains Type: MLO
Mains Rating: 225 A

CKT	Circuit Description	Wire Size	Trip	Pole	A	B	C	Pole	Trip	Wire Size	Circuit Description	CKT
1	REC: OR 6	2#12, 1#12G., IN 1/2"C.	20 A	1	540 720			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: SURGERY PREP 237	2
3	REC: OR 6	2#12, 1#12G., IN 1/2"C.	20 A	1		540 1620		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: SURGERY PREP 237	4
5	REC: OR 6	2#12, 1#12G., IN 1/2"C.	20 A	1			900 720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: SURGERY PREP 237	6
7	REC: OR 6	2#12, 1#12G., IN 1/2"C.	20 A	1	540 540			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: SURGERY PREP 237	8
9	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1		720 720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: SURGERY PREP 237	10
11	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1			720 900	1	20 A	2#12, 1#12G., IN 1/2"C.	AUTOMATIC DOOR	12
13	REC: OR 5	2#12, 1#12G., IN 1/2"C.	20 A	1	720 900			1	20 A	2#12, 1#12G., IN 1/2"C.	AUTOMATIC DOOR	14
15	REC: OR 5	2#12, 1#12G., IN 1/2"C.	20 A	1		1980 900		1	20 A	2#12, 1#12G., IN 1/2"C.	AUTOMATIC DOOR	16
17	REC: OR 5	2#12, 1#12G., IN 1/2"C.	20 A	1			720 720	1	20 A	2#12, 1#12G., IN 1/2"C.	POWER REEL: 237	18
19	REC: OR 5	2#12, 1#12G., IN 1/2"C.	20 A	1	540 720			1	20 A	2#12, 1#12G., IN 1/2"C.	POWER REEL: 237	20
21	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1		720 1080		1	20 A	2#12, 1#12G., IN 1/2"C.	POWER REEL: 237	22
23	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1			720 1080	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: SURGERY TREAT. 251	24
25	REC: OR 4	2#12, 1#12G., IN 1/2"C.	20 A	1	540 1080			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: SURGERY TREAT. 251	26
27	REC: OR 4	2#10, 1#10G., IN 1/2"C.	20 A	1		1800 720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: DR OFFICE 252	28
29	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1			720 900	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: DR OFFICE 252	30
31	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1	720 540			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: DR OFFICE 252	32
33	REC: OR 3	2#10, 1#10G., IN 1/2"C.	20 A	1		900 1440		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: OR 1	34
35	REC: OR 3	2#10, 1#10G., IN 1/2"C.	20 A	1			1980 540	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: OR 1	36
37	REC: OR 3	2#10, 1#10G., IN 1/2"C.	20 A	1	360 1440			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: OR 1	38
39	REC: OR 2,3	2#10, 1#10G., IN 1/2"C.	20 A	1		720 720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: MED. COLUMN (GFCI)	40
41	REC: MED. COLUMN (GFCI)	2#10, 1#10G., IN 1/2"C.	20 A	1			720 720	1	20 A	2#10, 1#10G., IN 1/2"C.	REC: MED. COLUMN (GFCI)	42
43	REC: MED. COLUMN (GFCI)	2#10, 1#10G., IN 1/2"C.	20 A	1	720 540			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: PACK/PREP 248	44
45	REC: OR 2	2#12, 1#12G., IN 1/2"C.	20 A	1		540 1830		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: STERILIZER	46
47	REC: OR 2	2#12, 1#12G., IN 1/2"C.	20 A	1			1440 1679	2	20 A	2#12, 1#12G., IN 1/2"C.	REC: STERILIZER	48
49	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1	720 1679							50
51	REC: MED. COLUMN (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1		720 360		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: PACK/PREP 248	52
53	REC: C-ARM WORKSTATION	2#10, 1#10G., IN 1/2"C.	30 A	1			2500 360	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: PACK/PREP 248	54
55	SECURITY	2#12, 1#12G., IN 1/2"C.	20 A	1	400 900			1	20 A		REC: SURG/PREP 237	56
57	Spare	--	20 A	1		0 0		1	20 A	--	Spare	58
59	Spare	--	20 A	1			0 0	1	20 A	--	Spare	60
61	Space	--	--	1	-- --			1	--	--	Space	62
63	Space	--	--	1		-- --		1	--	--	Space	64
65	Space	--	--	1			-- --	1	--	--	Space	66
		Total Load:			14859 VA	18030 VA	18039 VA					
		Total Connected Amps:			141 A							

Notes:

Branch Panel: L2C

Location: CORRIDOR 212
Supply From: L2A
Mounting: FLUSH
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Mains Rating: 225 A
MCB Rating: 200 A

CKT	Circuit Description	Wire Size	Trip	Pole	A (VA)	B (VA)	C (VA)	Pole	Trip	Wire Size	Circuit Description	CKT
1	REC: WAITING 200	2#12, 1#12G., IN 1/2"C.	20 A	1	1620 720			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: EXAM 19	2
3	REC: RECPT 201	2#12, 1#12G., IN 1/2"C.	20 A	1		900 720		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: EXM 20	4
5	REC: RECPT 201	2#12, 1#12G., IN 1/2"C.	20 A	1			720 720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: EXAM 21	6
7	ELEV. 1: CAB CONTROLS	2#12, 1#12G., IN 1/2"C.	20 A	1	500 1080			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: FOOD PREP (GFCI)	8
9	ELEV. 1: LIGHTS AND FAN	2#12, 1#12G., IN 1/2"C.	20 A	1		500 1360		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: FOOD PREP (GFCI)	10
11	REC: RESTROOMS 205,207	2#12, 1#12G., IN 1/2"C.	20 A	1			1540 0	1	20 A	2#12, 1#12G., IN 1/2"C.	DISHWASHER	12
13	REC: CONF. ROOM 203	2#12, 1#12G., IN 1/2"C.	20 A	1	1440 0			1	20 A	2#12, 1#12G., IN 1/2"C.	DISPOSAL	14
15	REC: CONF. ROOM 203	2#12, 1#12G., IN 1/2"C.	20 A	1		1440 540		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: FOOD PREP (GFCI)	16
17	DISPOSAL	2#12, 1#12G., IN 1/2"C.	20 A	1			900 900	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: HOLDING 254	18
19	DISHWASHER (GFCI)	2#12, 1#12G., IN 1/2"C.	20 A	1	900 1080			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: HOLDING 254	20
21	REC: BREAKROOM 209...	2#12, 1#12G., IN 1/2"C.	20 A	1		720 1080		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: HOLDING 254	22
23	REC: BREAKROOM 209...	2#12, 1#12G., IN 1/2"C.	20 A	1			1360 720	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: ONCO 258	24
25	REC: CONF. ROOM 203	2#12, 1#12G., IN 1/2"C.	20 A	1	1440 720			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: ONCO 258	26
27	REC FB: CONF. RM. 203	2#12, 1#12G., IN 1/2"C.	20 A	1		720 1440		1	20 A	2#12, 1#12G., IN 1/2"C.	REC: CHEMO 257	28
29	REC FB: CONF. RM. 203	2#12, 1#12G., IN 1/2"C.	20 A	1			900 1260	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: TREATMENT 256	30
31	REC FB: CONF. RM. 203	2#12, 1#12G., IN 1/2"C.	20 A	1	720 540			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: TREATMENT 256	32
33	REC: CONF. ROOM 203	2#10, 1#10G., IN 1/2"C.	20 A	1		720 1000		1	20 A	2#10, 1#10G., IN 1/2"C.	LAB HOOD	34
35	REC: EXAM 18	2#12, 1#12G., IN 1/2"C.	20 A	1			900 180	1	20 A	2#12, 1#12G., IN 1/2"C.	REC: REFRIGERATOR	36
37	REC: SURGERY TREAT. 251	2#10, 1#10G., IN 1/2"C.	20 A	1	540 180			1	20 A	2#12, 1#12G., IN 1/2"C.	REC: FREEZER	38
39	REC: SURGERY TREAT. 251	2#10, 1#10G., IN 1/2"C.	20 A	1		540 915		2	30 A	2#10, 1#10G., IN 1/2"C.	SS E-1	40
41	SS IT-1	2#10, 1#10G., IN 1/2"C.	30 A	2			915 915					42
43					915 915			2	30 A	2#10, 1#10G., IN 1/2"C.	SS E-2	44
45	SS IT-2	2#10, 1#10G., IN 1/2"C.	30 A	2		915 915						46
47							915 0	1	20 A	--	Spare	48
49	REC		20 A	1	720 --			1	--	--	Space	50
51	Spare	--	20 A	1		0 --		1	--	--	Space	52
53	Spare	--	20 A	1			0 --	1	--	--	Space	54
		Total Load:			14030 VA	14425 VA	12845 VA					
		Total Connected Amps:			115 A							

Notes:

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No. C-1220
CERTIFICATE OF AUTHORIZATION

NATIONAL VETERINARY ASSOCIATES
EASTERN CAROLINA VETERINARY REFERRAL CLINIC
RENOVATION
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WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

PANELBOARD SCHEDULES

SHEET
E904

ASC PROJECT NUMBER: 21-000

9/20/2023 3:35:15 PM

Branch Panel: OSH

Location: EX ELEC ROOM 136
Supply From: ATS OS
Mounting: Surface
Enclosure: Type 1

Volts: 480/277 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 100 A

CKT	Circuit Description	Wire Size	Trip	Pole	A (VA)		B (VA)		C (VA)		Pole	Trip	Wire Size	Circuit Description	CKT
1	15.0 KVA TRANSFOMER "TOS"	3#10, 1#10G., IN 1/2"C.	25 A	3	500	3099					1	20 A	2#12, 1#12G., IN 1/2"C.	LTG: 1ST FLOOR (WEST)	2
3							168	2701			1	20 A	2#12, 1#12G., IN 1/2"C.	LTG: 1ST FLOOR (MIDDLE)	4
5									360	2311	1	20 A	2#12, 1#12G., IN 1/2"C.	LTG: 1ST FLOOR (EAST)	6
7	LTG: EXTERIOR WALL	2#12, 1#12G., IN 1/2"C.	20 A	1	1027	1708					1	20 A	2#12, 1#12G., IN 1/2"C.	LTG: 1ST FLOOR COORIDOR	8
9	Space	--	--	1			--	2394			1	20 A	2#10, 1#10G., IN 1/2"C.	LTG: 2ND FLOOR SURGERY	10
11	Space	--	--	1					--	1556	1	20 A	2#10, 1#10G., IN 1/2"C.	LTG: 2ND FLOOR SURGERY	12
13	Space	--	--	1	--	2394					1	20 A	2#10, 1#10G., IN 1/2"C.	LTG: 2ND FLOOR SURGERY	14
15	Space	--	--	1			--	1774			1	20 A	2#12, 1#12G., IN 1/2"C.	LTG: 2ND FLOOR (EAST)	16
17	Space	--	--	1					--	3489	1	20 A	2#12, 1#12G., IN 1/2"C.	LTG: 2ND FLOOR (MIDDLE)	18
19	Space	--	--	1	--	2807					1	20 A	2#10, 1#10G., IN 1/2"C.	LTG: 2ND FLOOR (WEST)	20
21	Space	--	--	1			--	1877			1	20 A	2#12, 1#12G., IN 1/2"C.	LTG: 2ND FLOOR CORRIDOR	22
23	Space	--	--	1					--	0	1	20 A	--	Spare	24
25					1	0					1	20 A	--	Spare	26
27	SURGE SPRESSION	3#3, 1#8G., IN 1 1/4"C.	60 A	3			1	0			1	20 A	--	Spare	28
29									1	0	1	20 A	--	Spare	30
			Total Load:		11536 VA		8915 VA		7717 VA						
			Total Connected Amps:				34 A								

Notes:

Branch Panel: OSL

Location: EX ELEC ROOM 136
Supply From: TOS
Mounting: Surface
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 10,000 AIC
Mains Type: MCB
Mains Rating: 125 A
MCB Rating: 60 A

CKT	Circuit Description	Wire Size	Trip	Pole	A (VA)		B (VA)		C (VA)		Pole	Trip	Wire Size	Circuit Description	CKT
1	LTG. CONTACTOR COIL	2#12, 1#12G., IN 1/2"C.	20 A	1	500										2
3	LTG: BOLLARDS	2#8, 1#10G., IN 1"C	20 A	1			168	0			1	20 A	--	Spare	4
5	REC: SIGNAGE	2#8, 1#10G., IN 1"C	20 A	1					360	0	1	20 A	--	Spare	6
7	SIGNAGE	2#8, 1#10G., IN 1"C	20 A	1	0	0					1	20 A	--	Spare	8
9	Spare	--	20 A	1			0	0			1	20 A	--	Spare	10
11	Spare	--	20 A	1					0	0	1	20 A	--	Spare	12
13	Spare	--	20 A	1	0	0					1	20 A	--	Spare	14
15	Spare	--	20 A	1			0	0			1	20 A	--	Spare	16
17	Space	--	--	1					--	--	1	--	--	Space	18
19	Space	--	--	1	--	--					1	--	--	Space	20
21	Space	--	--	1			--	--			1	--	--	Space	22
23	Space	--	--	1					--	--	1	--	--	Space	24
25	Space	--	--	1	--	--					1	--	--	Space	26
27	Space	--	--	1			--	--			1	--	--	Space	28
29	Space	--	--	1					--	--	1	--	--	Space	30
			Total Load:		500 VA		168 VA		360 VA						
			Total Connected Amps:				3 A								

Notes:

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RENOVATION
5051 NEW CENTRE DR
WILMINGTON, NC 28403

PROJECT NUMBER: 21-000

SUBMISSION
100% CONSTRUCTION DOCUMENTS
ORIGINAL ISSUE
09/20/2023

SHEET REVISION SCHEDULE:
No. DATE

PANELBOARD SCHEDULES

SHEET
E905

ASC PROJECT NUMBER: 21-000

9/20/2023 3:35:15 PM

PRELIMINARY - NOT FOR CONSTRUCTION

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