LAURINBURG NORTH FIRE STATION

17501 ABERDEEN ROAD
LAURINBURG, NC 28352

100% CONSTRUCTION DOCUMENTS
JANUARY 19, 2021

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NORTH CAROLINA
REGISTERED
15357
ARCHITECT
JOHN MARK CRAWFORD

01-19-2022

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REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 52304
NORTH CAROLINA
CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

COVER SHEET

CS

A/C	AIR CONDITION
A/C UNIT	AIR CONDITIONING UNIT
AB	ANCHOR BOLT
ACC	ACCESSIBLE
ACC FL	ACCESSIBLE FLOOR
ACOUS	ACOUSTICAL
ACS PNL	ACCESS PANEL
ACT	ACOUSTICAL CEILING TILE
AD	AREA DRAIN
ADDM	ADDENDUM
ADH	ADHESIVE
ADJ	ADJACENT; ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZED
APPD	APPROVED
APPROX	APPROXIMATE (LY)
ARCH	ARCHITECT (URAL)
ASPH	ASPHALT
AUTO	AUTOMATIC
AV	AUDIO VISUAL
BBD	BASEBOARD
BD	BOARD
BF	BOTH FACES
BITUM	BITUMINOUS
BKG	BACKING
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
B-ROD	BACKER ROD
BR	BEDROOM
BRCG	BRACING
BRG	BEARING
BRZ	BRONZE
BS	BOTH SIDES
BSMT	BASEMENT
BTWN	BETWEEN
CAB	CABINET
CB	CATCH BASIN
CBB	CEMENTITITOUS (BACKER) BOARD
CEM	CEMENT
CF/CI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED OWNER INSTALLED
CFA	COLD FLUID APPLIED
CFLG	COUNTERFLASHING
CG	CORNER GUARD
CI	CAST IRON
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT; CONSTRUCTION JOINT
CL	CENTERLINE
CLG	CEILING
CLO	CLOSET
CLR	CLEAR (ANCE)
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT; CASED OPENING
COL	COLUMN
CONC	CONCRETE
COND	CONDITION
CONST R	CONSTRUCTION
CONT	CONTINUE
CONTR	CONTRACTOR
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET
CST	CAST STONE
CT	CERAMIC TILE
CTG	COATING
CU FT	CUBIC FOOT
CU YD	CUBIC YARD
CW	COLD WATER
CSWK	CASEWORK
D	DEEP; DEPTH
DBL	DOUBLE
DD	DECK DRAIN
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DH	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DMPF	DAMPPROOFING
DMPR	DAMPER
DPTN	DEMOUNTABLE PARTITION
DR	DOOR
DS	DOWNSPOUT
DSP	DRY STANDPIPE
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
E	EAST
EA	EACH
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELAST	ELASTOMETRIC COATING
CTG	ELECTRIC;
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
EOS	EDGE OF SLAB
EP	ELECTRICAL PANEL (PANELBOARD)
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXP BT	EXPANSION BOLT
EXT	EXTERIOR
F/F	FINISH TO FINISH
FA	FIRE ALARM
FAB	FABRIC
FCTY FIN	FACTORY FINISH
FD	FLOOR DRAIN
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FFE	FINISH FLOOR ELEVATION
FHC	FIRE HOSE CABINET
FIN	FINISH
FLASH	FLASHING
FLDG	FOLDING
FLEX	FLEXIBLE
FLG	FLOORING
FLR	FLOOR
FLUOR	FLUORESCENT
FOC	FACE OF CONCRETE; CURB
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FP	FIRE PROTECTION; FIREPROOF
FPL	FIREPLACE
FRP	FIBERGLASS REINFORCED PLASTIC; FIBER REINFORCED POLYESTER
FRR	FIRE RESISTANCE RATED
FRTW	FIRE RETARDANT TREATED WOOD
FRZ	FREEZER
FLR SK	FLOOR SINK
FT	FOOT; FEET
FRT	FIRE RETARDANT TREATED
FTG	FOOTING
FURG	FURRING
FUT	FUTURE
FIXT	FIXTURE
G	GROUND
GA	GAGE (GAUGE)
GALV	GALVANIZED
GB	GRAB BAR
GFRC	GLASS FIBER REINFORCED CONCRETE
GFRG	GLASS FIBER REINFORCED GYPSUM
GFRP	GLASS FIBER REINFORCED PLASTIC
GFRP	GLASS FIBER REINFORCED PLASTER
GKT	GASKET
GL	GLASS
GL BLK	GLASS BLOCK
GLU LAM	GLUE-LAMINATED WOOD
GLZ	GLAZING
GR	GRANITE
GYP	GYPSUM
GYP BD	GYPSUM BOARD
GYP PLAS	GYPSUM PLASTER
H	HIGH
HB	HOSE BIBB
HC	HANDICAP; HOLLOW CORE
HDBD	HARDBOARD
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING/VENTILATION/ AIR CONDITIONING
HW	HOT WATER
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDED
INSUL	INSULATION
INT	INTERIOR
INTM	INTERMEDIATE
INV	INVERT
JAN	JANITOR
JAN CLO	JANITOR'S CLOSET
J-BOX	JUNCTION BOX
JST	JOIST
JT	JOINT
KIT	KITCHEN
L	ANGLE
LG	LENGTH
LAB	LABORATORY
LAD	LADDER
LAV	LAVATORY
LBS	POUNDS
LBL	LABEL
LF	LINEAL FOOT (FEET)
LH	LEFT HAND
LINO	LINOLEUM
LL	LIVE LOAD
LMST	LIMESTONE
LOC	LOCATION
LPT	LOW POINT
LR	LIVING ROOM
LVR	LOUVER
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MBR	MASTER BEDROOM
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MTL	METAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM; MINUTE
MIRR	MIRROR
MISC	MISCELLANEOUS
MLDG	MOULDING
MO	MASONRY OPENING
MR GWB	MOISTURE RESISTANT GWB
MRB	MARBLE BASE
MRF	MARBLE FLOOR
MRT	MARBLE THRESHOLD
MT	METAL THRESHOLD
MTD	MOUNTED
MTG	MOUNTING
MTL	METAL
MULL	MULLION
MLWK	MILLWORK
N	NORTH
N/A	NOT APPLICABLE
NAT	NATURAL
NIC	NOT IN CONTRACT
NID	NOMINAL INSIDE DIAMETER
NM	NON-METALLIC
NO	NUMBER
NOM	NOMINAL
NON COMB	NON COMBUSTIBLE
NRC	NOISE REDUCTION COEFFICIENT
NST	NATURAL STONE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF/CI	OWNER FURNISHED CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED OWNER INSTALLED
OFD	OVERFLOW DRAIN
OFF	OFFICE
OH	OVERHANG
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
OPR	OPERABLE
OPT	OPTIONAL
ORD	OVERFLOW ROOF DRAIN
OVHD	OVERHEAD
OH DR	OVERHEAD DOOR
PA	PUBLIC ADDRESS
PAR	PARALLEL
PASS	PASSAGE; PASSENGER
PBD	PARTICLE BOARD
PCT	PORCELAIN TILE
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PERF	PERFORATED
PERIM	PERIMETER
PH	PENTHOUSE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER; PLASTIC
PLBG	PLUMBING
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLYWOOD
PNL	PANEL
PNT	PAINT
POLY	POLYETHYLENE (PLASTIC)
PORC	PORCELAIN
PRCST	PRECAST
PREFAB	PREFABRICATED
PREFMD	PREFORMED
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSIONED
PTD	PAPER TOWEL DISPENSER
PRT	PRESERVATIVE TREATED
PTN	PARTITION
PVG	PAVING
QT	QUARRY TILE
QTB	QUARRY TILE BASE
QTY	QUANTITY
R	RADIUS; RISER
RB	RESILIENT BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REBAR	REINFORCING STEEL BARS
REF	REFRIGERATOR; REFERENCE
REINF	REINFORCE
REM	REMOVABLE
REQD	REQUIRED
REQMT	REQUIREMENT
RESIL	RESILIENT
REV	REVISED
RIG INS	RIGID INSULATON
RF	RESILIENT FLOORING
RFG	ROOFING
RH	RIGHT HAND
THRU	THROUGH
RL	ROOF LEADER
RLG	RAILING
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RS	ROUGH SAWN
RVS	REVERSE; REVERSE SIDE
RWD	REDWOOD
S	SOUTH
SC	SOLID CORE
SCD	SEAT COVER DISPENSER
SCHED	SCHEDULE
STN CONC	STAINED CONCRETE
SCP	SCUPPER
SCR	SHOWER CURTAIN ROD
SD	SMOKE DETECTOR; STORM DRAIN
SEAL CON	SEALED CONCRETE
SEC	SECTION
SF	SQUARE FOOT (FEET)
SHV	SHELVING
SHR	SHOWER
SHR H	SHOWER HEAD
SHRD	SHOWER DRAIN
SHT	SHEET
SHTHG	SHEATHING
SIM	SIMILAR
SLDG	SLIDING
SLNT	SEALANT
SLT	SLATE TILE; SLATE
SMS	SHEET METAL SCREWS
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTACLE
SP	STANDPIPE
SPEC	SPECIFICATION
SPKR	SPEAKER
SPKLR	SPRINKLER
SQ	SQUARE
SS	STAINLESS STEEL
SV SK	SERVICE SINK
SSM	SOLID SURFACE MATERIAL
ST	STONE
STA	STATION
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STL	STEEL
STL LNTL	STEEL LINTEL
STN	STAIN
STOR	STORAGE
STRUC T	STRUCTURAL
SURR	SURROUND
SUSP	SUSPENDED
SV	SHEET VINYL
SVCE	SERVICE
SW	SIDEWALK; SOUTHWEST; SWITCH
SYMM	SYMMETRICAL
SYS	SYSTEM
T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TB	TOWEL BAR
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORATY
TERR	TERRAZZO
THK	THICK; THICKNESS
THRES	THRESHOLD
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE; TOP OF CURB
TOM	TOP OF MASONRY
TOP	TOP OF PARAPET;
TOS	TOP OF SLAB
TOT	TOP OF TRUSS
TOW	TOP OF WALL
TP	TOILET PARTITION
TRANS	TRANSOM; TRANSPARENT
TRTD	TREATED
TS	TUBE STEEL
TV	TELEVISION
TYP	TYPICAL
UC	UNDERCUT
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
VAR	VARIES
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERITY IN FIELD
VFAT	VINYL FACED ACOUSTICAL TILE
VNR	VENEER
VOL	VOLUME
VS	VENT STACK; VERSUS
VT	VINYL TILE
VTR	VENT THROUGH ROOF
VWC	VINYL WALLCOVERING
VCCB	VINYL COATED CEILING BOARD
W	WIDTH; WEST; WASHER
W/	WITH
W/O	WITHOUT
WB	WOOD BASE
WC	WATER CLOSET;
WCOV	WALLCOVERING
WD	WOOD
WD DR	WOOD DOOR
WF	WOOD FLOORING
WDW	WINDOW
WGL	WIRED GLASS
WH	WATER HEATER; WALL HUNG; WALL HYDRANT
WI	WROUGHT IRON
WIC	WALK IN CLOSET
WP	WORK POINT
WS	WEATHERSTRIP
WSCT	WAINSCOT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WW	WALL TO WALL
YD	YARD; YARD DRAIN
YH	YARD HYDRANT
'	FOOT; FEET
"	INCH; INCHES
#	POUND; NUMBER
%	PERCENTAGE
&	AND
[	CHANNEL
℄	CENTERLINE
∅	DIAMETER; ROUND
∠	ANGLE
ℙ	PLATE;
±	PLUS/MINUS
ADA	AMERICANS W/ DISABILITES ACT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWI	AMERICAN WOODWORK INSTITUTE
FM	FACTORY MUTUAL
ICC	NTERNATIONAL CODE COUNCIL
NAMM	NATIONAL ASSOCIATION OF METAL MANUFACTURERS
NCSBC	NORTH CAROLINA STATE BUILDING CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NRCA	NATIONAL ROOFING CONTRACTORS ASSOCIATION
PCI	PRECAST/PRESTRESSED CONCRETE INSTITUTE
SMACN	SHEET METAL AND AIR CONDITIONING NATIONAL ASSOCIATION
UL	UNDERWRITERS LABORATORIES

GENERAL NOTES

GENERAL CONDITIONS

1. SEE PROJECT SPECIFICATION MANUAL FOR GENERAL AND SUPPLEMENTARY CONDITIONS

DIMENSIONS

1. DIMENSIONS ARE FROM FINISHED FACE OF WALL OR FACE OF CONCRETE UNLESS NOTED OTHERWISE

2. ALIGNMENT INDICATION SHALL BE FINISHED FACE OF WALL TO FINISHED FACE OF PARTITION OR WALL UNLESS NOTED OTHERWISE

3. PARTITION ANGLES ARE PARALLEL, PERPENDICULAR OR 45 DEGREE ANGLES TO BUILDING PERIMETER UNLESS NOTED OTHERWISE

4. CENTERLINE DIMENSIONS SHALL BE MEASURED FROM CENTERLINE OF ASSEMBLY, FIXTURE OR DEVICE

5. CENTERLINE INDICATION AT PARTITIONS ABUTTING BUILDING ELEMENTS (MULLIONS, COLUMNS, OR PILASTERS), SHALL ALIGN CENTER OF PARTITION ASSEMBLY WITH CENTER OF ELEMENT UNLESS NOTED OTHERWISE

6. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, OBTAIN CLARIFICATION FROM ARCHITECT

PARTITIONS

1. ALIGNMENT OF PARTITIONS SHALL PROVIDE A SMOOTH, UNINTERRUPTED FINISH SURFACE

2. PROVIDE REQUIRED ACCESS PANELS IN PARTITIONS FOR MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. LOCATION OF ACCESS PANEL SHALL BE VERIFIED WITH ARCHITECT PRIOR TO CONSTRUCTION

3. PENETRATION OF PARTITIONS FOR MECHANICAL SYSTEMS SHALL BE HERMETICALLY SEALED. PENETRATIONS WITHIN RATED PARTITION ASSEMBLIES SHALL PROVIDE FOR REQUIRED DAMPERING DEVICES, SLEEVES, AND FIREPROOFING TO MAINTAIN APPROVED RATING

4. CONTRACTOR TO PROVIDE SOLID WOOD BLOCKING AS REQUIRED FOR ALL TOILET ROOM ACCESSORIES, CABINETRY AND INSTALLATION OF GRAB BARS PER APPLICABLE ACCESSIBILITY CODES

5. CABINETRY SHALL MEET ALL APPLICABLE ACCESSIBILITY CODES

6. ALL FINISH AND COLOR SELECTIONS SHALL BE APPROVED BY OWNER & ARCHITECT.

7. CENTER DOOR ON LENGTH OF PARTITION. IF THE TWO SIDES OF PARTITION ARE UNEQUAL, THE DOOR TAG WILL BE ON THE SIDE THAT APPLIES

CEILING

1. MINIMUM HEIGHT OF OVERHEAD OBSTRUCTIONS ALONG AN ACCESSIBLE ROUTE SHALL BE MAINTAINED IN ACCORDANCE WITH APPLICABLE CODES

2. PROVIDE REQUIRED ACCESS PANELS IN CEILING FOR MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS. LOCATIONS OF ACCESS PANEL SHALL BE VERIFIED WITH ARCHITECT PRIOR TO CONSTRUCTION

3. PENETRATIONS AND OPENINGS IN CEILING FOR FIXTURES OR MECHANICAL SYSTEM PATHS AND REGISTERS SHALL BE PRECISELY CUT FOR INSTALLED ITEMS WITH EDGES TO BE CONCEALED BY MOUNTING TRIM OR COVER. INSTALLATION OF TRIM AND COVERS SHALL BE FLUSH TO SURFACE

4. FIXTURES AND REGISTERS SHALL ALIGN SQUARE AND LEVEL WITH FINISHED CEILING

5. DO NOT USE DUCTS, PIPES AND CONDUIT TO SUPPORT CEILING SYSTEM. PROVIDE BRACING AS REQUIRED BY INDICATED SEISMIC ZONE.

ELECTRICAL AND COMMUNICATIONS

1. ADJACENT WALL MOUNTED SINGLE DUPLEX OUTLETS SHALL BE LOCATED 6" O.C. UNLESS NOTED OTHERWISE

2. WALL MOUNTED ELECTRICAL ITEMS ON COLUMNS SHALL BE INSTALLED ON COLUMN CENTERLINE. WHERE MULTIPLE ELECTRICAL ITEMS OCCUR AT THE SAME HEIGHT, THEY SHALL BE PLACED SYMMETRICALLY ABOUT COLUMN CENTERLINE

3. FIXTURES SHALL BE INSTALLED SO THAT EDGES OF CUT-OUTS IN FINISH CAN BE CONCEALED BY MOUNTING TRIM OR COVER. INSTALLATION OF TRIM RINGS AND COVERS SHALL BE FLUSH WITH CEILING SURFACE

4. LIGHT FIXTURES SHALL BE CENTERED IN CEILING TILE OR SPACE UNLESS NOTED OTHERWISE

5. GROUPED SWITCHES SHALL BE MOUNTED WITHIN A SINGLE FACE PLATE, UNLESS NOTED OTHERWISE

6. SWITCHES SHALL BE MOUNTED AN OFFSET OF 6" TO CENTERLINE OF SWITCH FROM FRAME OR CASING OF LATCH JAMB OF DOOR, UNLESS NOTED OTHERWISE

7. ALL CONTROLS & SWITCHES SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES OR AS NOTED ON DRAWINGS AND LEVEL.

FIRE PROTECTION

1. FIRE SUPPRESSION SUPPLY LINES SHALL BE MOUNTED TO PROVIDE CLEARANCE FOR RECESSED CEILING LIGHT FIXTURES AND EQUIPMENT

2. ALL CONTROLS & SWITCHES SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES OR AS NOTED ON DRAWINGS AND LEVEL.

SIGNAGE

1. PROVIDE ALL CODE REQUIRED SIGNAGE PER GOVERNING CODE AUTHORITY.

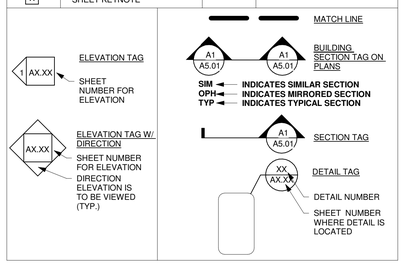
2. SIGNAGE FOR INSIDE THE STAIRWAY AND ELEVATORS SHALL BE PROVIDED PER GOVERNING CODE AUTHORITY.

ARCHITECTURAL MATERIAL LEGEND

	BATT INSULATION		FINISHED WOOD
	BRICK		ROUGH WOOD (CONTINUOUS)
	BRICK (IN PLAN)		ROUGH WOOD (NON-CONTINUOUS)
	CONCRETE		STEEL
	CMU (IN PLAN)		CUT STONE/ CAST STONE
	GRANULAR FILL		RIGID INSULATION
	PLYWOOD (LARGE SCALE)		EARTH
	PLYWOOD (SMALL SCALE)		GYPSUM, SHEATHING, SAND, OR PLASTER

ARCHITECTURAL SYMBOL LEGEND

X	COLUMN LINE TAG	X	REVISION TRIANGLE
X	WINDOW SYBOL TAG		DATUM LINE, BEARING, OR FLOOR ELEVATION
XXX	PARTITION TYPE TAG	X	DOOR TAG
X	SHEET KEYNOTE		



GENERAL	
Sheet Number	Sheet Name
CS	COVER SHEET
G0.01	SHEET INDEX AND GENERAL NOTES
G1.01	CODE SUMMARY (2018)
G2.01	OCCUPANCY & LIFE SAFETY PLAN
G4.01	PARTITION TYPES AND SHELL ASSEMBLIES

CIVIL	
Sheet Number	Sheet Name
C-02	EXISTING TOPOGRAPHIC SURVEY
C-03	SITE LAYOUT PLAN
C-04	GRADING, DRAINAGE, AND EROSION CONTROL PLAN
C-05	UTILITY PLAN
D-01	SITE DETAILS
D-02	EROSION CONTROL DETAILS
D-03	EROSION CONTROL AND DRAINAGE DETAILS
D-04	UTILITY DETAILS

STRUCTURAL	
Sheet Number	Sheet Name
S0.01	GENERAL NOTES
S0.02	SCHEDULES AND TYPICAL DETAIL
S0.03	SPECIAL INSPECTIONS
S1.01	FOUNDATION PLAN
S1.02	ROOF FRAMING PLAN
S2.01	STRUCTURAL DETAILS AND SECTIONS
S2.02	STRUCTURAL DETAILS AND SECTIONS

ARCHITECTURAL SITE	
Sheet Number	Sheet Name
AS1.01	ARCHITECTURAL SITE PLAN
AS1.02	ARCHITECTURAL SIDEWALK PLAN

ARCHITECTURAL	
Sheet Number	Sheet Name
A1.01	FLOOR & DIMENSIONED FLOOR PLAN
A1.10	ROOF PLAN
A2.01	EXTERIOR ELEVATIONS
A2.02	EXTERIOR ELEVATIONS
A3.01	ENLARGED PLANS
A3.11	ENLARGED RESTROOM ACCESSORIES
A4.01	REFLECTED CEILING PLAN
A4.11	TYPICAL CEILING DETAILS
A5.01	BUILDING SECTIONS
A6.01	WALL SECTIONS
A6.02	WALL SECTIONS
A7.01	PLAN DETAILS
A7.11	SECTION DETAILS
A7.12	SECTION DETAILS
A9.01	DOOR & WINDOW SCHEDULE, ELEVATIONS
A10.01	FURNITURE PLAN
A10.21	FINISH PLAN, LEGEND, NOTES, & SCHEDULE
A11.01	INTERIOR ELEVATIONS
A12.01	MILLWORK & CASEWORK DETAILS

ARCH ALTERNATE	
Sheet Number	Sheet Name
A21.01	ALTERNATE FLOOR PLAN
A21.10	ALTERNATE ROOF PLAN
A22.01	ALTERNATE EXTERIOR ELEVATIONS
A23.01	ALTERNATE 1-4 ENLARGED PLANS
A23.02	ALTERNATE 5 ENLARGED PLANS
A24.01	ALTERNATE REFLECTED CEILING PLAN
A30.21	ALTERNATE FINISH PLAN, LEGEND, NOTES, & SCHEDULE

MECHANICAL	
Sheet Number	Sheet Name
M0.01	MECHANICAL LEGEND AND NOTES
M0.02	MECHANICAL SCHEDULES
M1.01	MECHANICAL PLAN - BASE BID
M1.02	MECHANICAL PLAN - ALTERNATE BID
M2.01	MECHANICAL DETAILS

ELECTRICAL	
Sheet Number	Sheet Name
E0.01	ELECTRICAL LEGEND AND NOTES
E0.02	ELECTRICAL SPECIFICATIONS
E0.10	ELECTRICAL SITE PLAN
E1.01	FIRST FLOOR LIGHTING PLAN - BASE BID
E2.01	FIRST FLOOR POWER PLAN - BASE BID
E3.01	FIRST FLOOR ELECTRICAL PLAN - ALTERNATIVE BID
E6.01	ELECTRICAL DETAILS
E6.02	ELECTRICAL DETAILS
E6.03	ELECTRICAL DETAILS
E7.01	ELECTRICAL DIAGRAMS
E8.02	PANEL SCHEDULES

PLUMBING	
Sheet Number	Sheet Name
P0.01	PLUMBING LEGEND, INDEX AND NOTES
P0.02	PLUMBING SCHEDULES
P1.01	FIRST FLOOR PLUMBING PLANS - BASE BID
P5.01	PLUMBING DETAILS AND SCHEMATICS

FIRE PROTECTION	
Sheet Number	Sheet Name
FP0.01	FIRE PROTECTION LEGEND AND NOTES
FP1.01	FIRST FLOOR PLAN - FIRE PROTECTION - BASE BID
FP5.01	FIRE PROTECTION DETAILS AND SCHEMATICS

ALTERNATE LEGEND

SYMBOL	ALTERNATE #	COMMENTS
	BASE BID	
	ALTERNATE 1	2 ADDITIONAL ENCLOSED APPARATUS BAYS, UPDATED FINISHES FROM BASE BID
	ALTERNATE 2	CONVERT ONE OPEN OFFICE TO THREE PRIVATE OFFICES
	ALTERNATE 3	CONVERT ONE SLEEPING ROOM TO THREE SINGLE SLEEPING ROOMS
	ALTERNATE 4	UPDATED FINISHES, ADD ACT CEILING
	ALTERNATE 5	CONVERT TWO APPARATUS SUPPORT ROOMS TO THREE ROOMS

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 01.19.2022

SHEET INDEX AND GENERAL NOTES

G0.01

2018 APPENDIX B

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: LAURINBURG NORTH FIRE STATION
Address : 17501 ABERDEEN RD. LAURINBURG, NC Zip Code: 28352
Owner/Authorized Agent: LAURINBURG FIRE Phone # (910) 276 - 8324 E-Mail: CNICHOLS@LAURINBURG.ORG
Owned By: ☒ City/County ☐ Private ☐ State
Code Enforcement Jurisdiction: ☒ City LAURINBURG ☐ County ☐ State

CONTACT: PROJECT MANAGER:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	CREECH & ASSOCIATES	JOHN CRAWFORD	15357	(704) 376-6000	JCRAWFORD@CREECH-DESIGN.COM
Civil	LKC ENGINEERING	PHILIP PICERNO	043255	(910) 420-1437	PHILIP@LKCENGINEERING.COM
Electrical	OPTIMA ENGINEERING	ZANE KUSEYBI	17308	(919) 926-2200	ZKUSEYBI@OPTIMAENGINEERING.COM
Fire Alarm	OPTIMA ENGINEERING	GEORGE C. FOWLER, III	26023	(919) 926-2200	GFOWLER@OPTIMAENGINEERING.COM
Plumbing	OPTIMA ENGINEERING	GEORGE C. FOWLER, III	26023	(919) 926-2200	GFOWLER@OPTIMAENGINEERING.COM
Mechanical	OPTIMA ENGINNERING	BYRON FORD	25025	(919) 926-2200	BFORD@OPTIMAENGINEERING.COM
Sprinkler-Standpipe	OPTIMA ENGINNERING	GEORGE C. FOWLER, III	26023	(919) 926-2200	GFOWLER@OPTIMAENGINEERING.COM
Structural	BENNETT & PLESS	ROBERT L. PHILLIPS	042466	(704) 597-1340	RPHILLIPS@BENNETT-PLESS.COM
Retaining Walls > 5' High				( )	
Other				( )	

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: ☒ New Building ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements.
☐ Phased Construction - Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements.

2018 NC EXISTING BUILDING CODE: Existing: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level I ☐ Level II ☐ Level III
☐ Historic Property ☐ Change of Use

CONSRUCTED (date): _____ **CURRENT OCCUPANCY(S)** (Chap 3): _____
RENOVATED (date): _____ **PROPOSED OCCUPANCY(S)** (Chap 3): _____

RISK CATEGORY (Table 1604.5): **Current:** ☐ I ☐ II ☐ III ☐ IV
Proposed: ☐ I ☐ II ☐ III ☒ IV

BASIC BUILDING DATA

Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
(check all that apply) ☐ I-B ☒ II-B ☐ III-B ☐ V-B
Sprinklers: ☐ No ☐ Partial ☒ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☐ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☒ No ☐ Yes **Flood Hazard Area:** ☒ No ☐ Yes
Special Inspections Required: ☐ No ☐ Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

GROSS BUILDING AREA TABLE

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB - TOTAL
Roof			
4th Floor			
3rd Floor			
2nd Floor			
1st Floor		9,258 SF	9,258 SF
Basement			
TOTAL			9,258 SF

ALLOWABLE AREA

Primary Occupancy Classification(s):
Assembly ☐ A-1 ☐ A-2 ☒ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ 1 ☐ 2
☐ I-2 Condition ☐ 1 ☐ 2
☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☐

Accessory Occupancy Classification(s): STORAGE, S-2 RESIDENTIAL, R-2 BUSINESS, B
Incidental Uses (Table 509):
Special Uses (Chapter 4 - List Code Sections):
Special Provisions (Chapter 5 - List Code Sections):
Mixed Occupancy: ☐ No ☒ Yes Separation: 1 Hr. Exception:

☒ Non-Separated Use (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1.00$$

$$\frac{4{,}141 \text{ SF}}{38{,}000 \text{ SF}} + \frac{5{,}117 \text{ SF}}{140{,}000 \text{ SF}} = \frac{9{,}258 \text{ SF}}{178{,}000 \text{ SF}} \leq 1.00$$

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,5]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]
1st Floor	ASSEMBLY	1,288 SF	38,000 SF		
	BUSINESS	2,451 SF	92,000 SF		
	RESIDENTIAL	401 SF	64,000 SF		
	STORAGE	5,118 SF	104,000 SF		

[1] Frontage area increases from Section 506.2 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = 408' - 5" (F)
b. Total building perimeter = 408' - 5" (P)
c. Ratio (F/P) = 1 (F/P)
d. W = Minimum width of public way = 30 (W)
e. Percent of frontage increase $I_f = [100F/P - 0.25] \times w/30 =$ 75 (%)

[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2)
[4] The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE[1]
Building Height in Feet (Table 504.3)	75'	36'	
Building Height in Stories (Table 504.4)	3	1	

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET# FOR RATED JOINTS
Structural frame, including columns, girders, and trusses		0HR					
Bearing walls							
Exterior		0HR					
North		0HR					
East		0HR					
West		0HR					
South		0HR					
Interior		0HR					
Nonbearing walls and partitions							
Exterior		0HR					
North		0HR					
East		0HR					
West		0HR					
South		0HR					
Interior Walls and Partitions		0HR					
Floor construction Including supporting beams and joists		0HR					
Floor Ceiling Assembly		0HR					
Columns Supporting Floors		0HR					
Roof construction Including supporting beams and joists		0HR					
Roof Ceiling Assembly		0HR					
Columns Supporting Roof		0HR					
Shafts Enclosures - Exit		N/A					
Shafts Enclosures - Other		N/A					
Corridor Separation		0HR					
Occupancy / Fire Barrier Separation		1HR					
Party/ Fire Wall Separation		0HR					
Smoke Barrier Separation		0HR					
Smoke Partition		0HR					
Tenant / Dwelling Unit / Sleeping Unit Separation		1HR					
Incidental Use Separation		0HR					

* Indicates section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
72"	UP, S	NO LIMIT	---

LIFE SAFETY REQUIREMENTS

Emergency Lighting: ☐ No ☒ Yes
Exit Signs: ☐ No ☒ Yes
Fire Alarm: ☐ No ☒ Yes
Smoke Detection Systems: ☐ No ☒ Yes ☐ Partial _____
Carbon Monoxide Detection: ☐ No ☒ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: G2.01

☒ Fire and/or smoke rated wall locations (Chapter 7)
☒ Assumed and real property line locations (if not on the site plan)
☒ Exterior wall opening area with respect to distance to assumed property lines (705.8) - SEE SITE PLAN ON SHEET AS1.01
☒ Occupancy Use for each area as it relates to occupant load calculations (Table 1004.1.2)
☒ Occupancy loads for each area
☒ Exit access travel distance (1017)
☒ Common path of travel distances (Tables 1006.2.1 & 1006.3.2 (1))
☒ Dead end lengths (1020.4)
☒ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accomodate based on egress width (1005.3)
☒ Actual occupant load for wach exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☒ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egrees locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☒ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment of Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been unitilized regarding the items above

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESIBLE UNITS REQUIRED	ACCESIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESIBLE UNITS PROVIDED

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED: REGULAR WITH 5' ACCESS AISLE	VAN SPACE WITH 132" ACCESS AISLE	VAN SPACE WITH 8' ACCESS AISLE	TOTAL # ACCESIBLE PROVIDED
NEW	13	15	0	0	1	1
TOTAL						

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWER / TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXISTING										
	NEW	0	0	2	0	0	0	2	2	1	1
	REQUIRED	1	1	0	0	1	1	0	0	1	1

B = 19 OCCUPANTS A-3 = 89 OCCUPANTS S-2 = 26 OCCUPANTS R-2 = 26 OCCUPANTS

SPECIAL APPROVALS

2018 NC BUILDING CODE: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc.., describe below)

ENERGY SUMMARY

ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed dessign.

Existing building envelope complies with code:
Exempt Building: Provide code or stautory reference:
Climate Zone: 3A
Method of Compliance:
(If "other" specify source here):

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: METAL PANEL - PROTECTION BOARD - RIGID INSULATION - ROOF DECKING
U-Value of total assembly: U-.04
R-Value of insulation: R-25
Skylights in each assembly: NA
U-Value of skylight: NA
total square footage of skylights in each assembly: NA

Exterior Walls (each assembly)
Description of assembly: METAL PANEL - AIR SPACE - RIGID INSULATION - EXTERIOR SHEATHING - METAL FRAMING WITH BATT INSULATION
U-Value of total assembly: U-.03
R-Value of insulation: R-19 CAVITY + R-10 CONTINUOUS
Openings (windows or doors with glazing)
U-Value of assembly: WINDOWS: U-.38
Solar heat gain coefficient: WINDOWS: .23
Projection factor:
Door R-Values: STOREFRONT: R-2.4

Walls Below Grade (each assembly)
Description of assembly: NA
U-Value of total assembly: NA
R-Value of insulation: NA

Floors Over Unconditioned Space (each assembly)
Description of assembly: NA
U-Value of total assembly: NA
R-Value of insulation: NA

Floors Slab On Grade
Description of assembly: 5" / 7" NORMAL WEIGHT REINFORCED CONCRETE - VAPOR BARRIER - 6" CRUSHED STONE BASE
U-Value of total assembly: U-1.14 / U- .98
R-Value of insulation: R-10 (AT 48" AROUND PERIMETER ONLY)
Horizontal/vertical requirement: NO REQUIREMENT
slab heated: NA

2018 APPENDIX B

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

STRUCTURAL DESIGN

(PROVIDE ON THE STRUCTURAL SHEETS IF APPICABLE)

DESIGN LOADS:

Importance Factors: Wind (I_w) - ; Snow (I_s) 1.2 ; Seismic (I_E) 1.5

Live Loads: Roof 20 psf ; Mezzanine - psf ; Floor 40-OFFICE 250-GARAGE psf

Ground Snow Load: 10 psf

Wind Load: Basic Wind Speed 100 mph (ASCE-7)
Exposure Category C

SEISMIC DESIGN CATEGORY: D

Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5)
Spectral Response Acceleration S_S 0.306 %g S_1 0.121 %g
Site Classification (ASCE 7) D
Data Source:
Basic Structural System: PER PEMB MANUFACTURER
Analysis Procedure: EQUIVALENT LATERAL FORCE PROCEDURE
Architectural, Mechanical, Components anchored?

LATERAL DESIGN CONTROL:

SOIL BEARING CAPACITIES:
Field Test psf
Pile size, type, and capacity:

2018 APPENDIX B

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

MECHANICAL DESIGN

(PROVIDE ON THE MECHANICAL SHEETS IF APPICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone 3A
winter dry bulb: 19° F
summer dry bulb: 93° F
Interior Design Conditions
winter dry bulb: 72° F
summer dry bulb: 75° F
relative humidity:
Building heating load: 103,000 BTUH (peak)
Building cooling load: 123,000 BTUH (peak)
Mechanical Spacing Conditioning System
Unitary
description of unit
heating efficiency
cooling efficiency
size category of unit
Boiler
Size category. If oversized, state reason:
Chiller
Size category. If oversized, state reason:
List equipment efficiencies: See equipment schedule

2018 APPENDIX B

BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

ELECTRICAL DESIGN

(PROVIDE ON THE ELECTRICAL SHEETS IF APPICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: 2018 NCECC CHAPTER 4
Lighting schedule (each fixture type)
lamp type required in fixture SEE ELECTRICAL
number of lamps in fixture SEE ELECTRICAL
ballast type used in fixture SEE ELECTRICAL
number of ballasts in fixture SEE ELECTRICAL
total wattage per fixture SEE ELECTRICAL
total interior wattage specified 9,259
allowed 9,259
total exterior wattage specified 180
allowed 709.1

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient HVAC Equipment Performance
☒ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

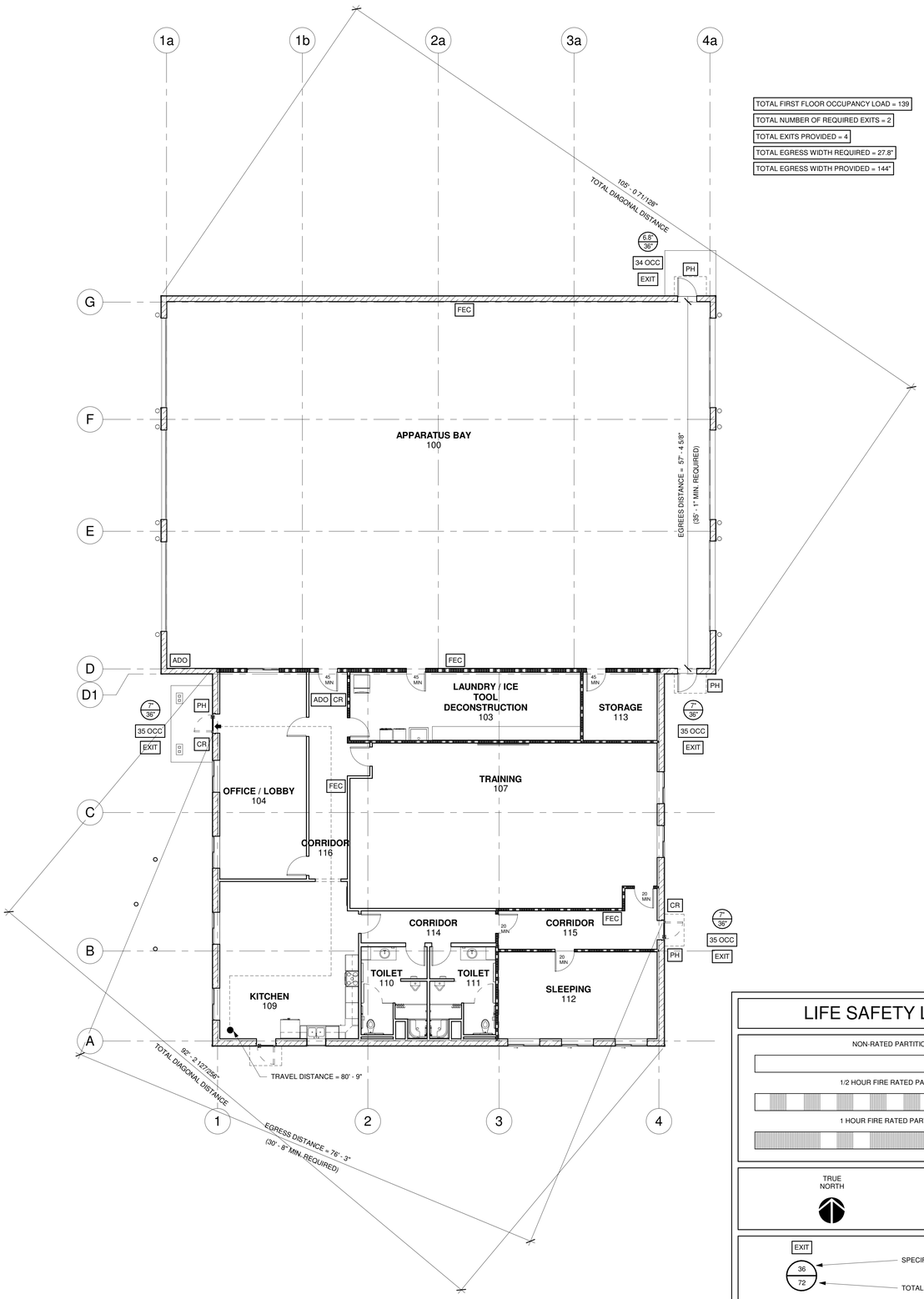
LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

CODE SUMMARY (2018)

G1.01



TOTAL FIRST FLOOR OCCUPANCY LOAD = 139

TOTAL NUMBER OF REQUIRED EXITS = 2

TOTAL EXITS PROVIDED = 4

TOTAL EGRESS WIDTH REQUIRED = 27.8"

TOTAL EGRESS WIDTH PROVIDED = 144"

LIFE SAFETY LEGEND

NON-RATED PARTITION

1/2 HOUR FIRE RATED PARTITION

1 HOUR FIRE RATED PARTITION

TRUE NORTH

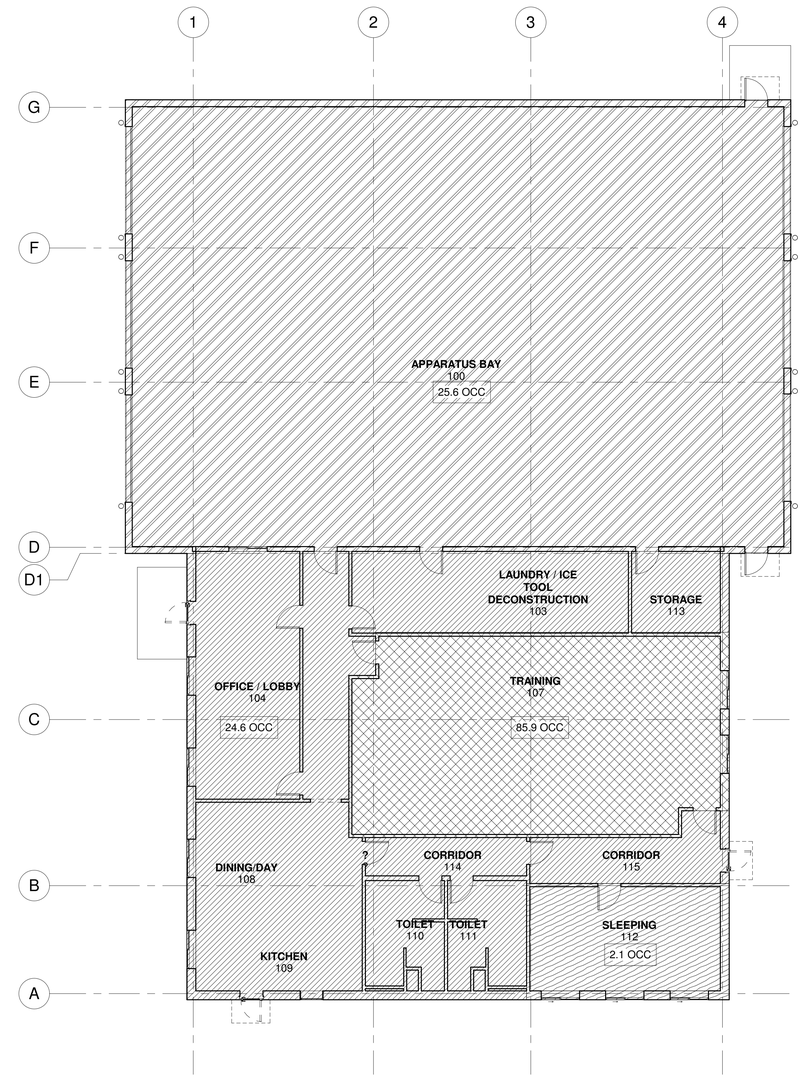
PLAN NORTH

EXIT 36 / 72	SPECIFIC EXIT WIDTH TOTAL EXIT WIDTH
FEC	FIRE EXTINGUISHER CABINET -SEMI RECESSED
PH	PANIC HARDWARE
ADO	APPARATUS DOOR OPENER
CR	CARD READER

2 LIFE SAFTEY PLAN
1/8" = 1'-0"

OCCUPANCY LEGEND

SYMBOL	OCCUPANCY TYPE	SQUARE FOOTAGE	OCCUPANTS
	ASSEMBLY UNCONCENTRATED OCCUPANCY (A-3)	1,288	85.9
	BUSINESS OCCUPANCY (B)	2,451	24.6
	RESIDENTIAL OCCUPANCY (R-2)	401	2.1
	STORAGE OCCUPANCY (S-2)	5,136	25.6
TOTAL OCCUPANCY =			138.2



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

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NORTH CAROLINA
REGISTERED
15357
ARCHITECT
JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 52304
NORTH CAROLINA
CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

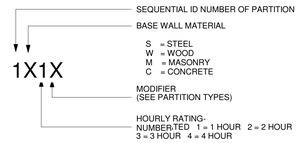
No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

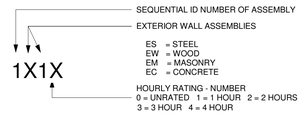
OCCUPANCY & LIFE SAFETY PLAN

G2.01

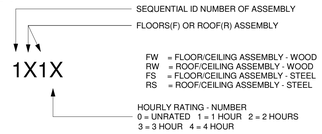
1. UNLESS NOTED OTHERWISE, DIMENSIONS ARE TO COLUMN CENTER LINE, FACE OF STUD, FACE OF MASONRY AND CONCRETE WALLS, AND FACE OF EXISTING WALLS.
2. HOLD TOP OF STUDS DOWN 3/4" FROM TOP RUNNER WHERE PARTITION EXTENDS TO STRUCTURE ABOVE.
3. ALL SEALANT SHALL BE CONTINUOUS.
4. ALL SOUND RATED PARTITIONS SHALL EXTEND FROM FINISHED FLOOR TO WHERE THEY MAY BE SEALED, SUCH AS THE UNDERSIDE OF STRUCTURE OR DECK, AND BE ENTIRELY SEALED OFF WITH ACOUSTIC SEALANT UNLESS NOTED OTHERWISE. ALL PENETRATIONS SUCH AS PIPING, CONDUITS, DUCTS, ETC. IN SUCH SEALED OFF WALLS OF PARTITIONS SHALL BE LIKEWISE SEALED OFF ALONG THE PERIMETER OF THE PENETRATIONS.
5. ALL FIRE AND/OR SMOKE RATED PARTITIONS SHALL EXTEND FROM FINISH FLOOR TO WHERE THEY MAY SEALED, SUCH AS UNDERSIDE OF STRUCTURE OR DECK, AND BE ENTIRELY SEALED OFF WITH CONTINUOUS SAFING MATERIAL. SAFING MATERIAL SHALL BE HELD IN PLACE WITH A FIRE STOPPING MATERIAL ON BOTH SIDES, SUCH AS RATED GYPSUM WALL BOARD OR LISTED FIREPROOFING MATERIAL.
6. ALL MANUFACTURED SOUND RATED STC WALLS OR PARTITIONS SHALL HAVE CLOSURE GASKETS AT TOP, BOTTOM, AND SIDES WHERE A SOUND LEAK WOULD OTHERWISE EXIST. ALL PENETRATIONS THROUGH SUCH PARTITIONS SHALL BE GASKET SEALED ALONG THE PENETRATION PERIMETER.
7. STRUCTURAL STUDS (20 GAUGE MINIMUM) SHALL BE USED WHERE ANY NON-SELF SUPPORTING WALL-HUNG FIXTURES, EQUIPMENT, OR CABINETRY OCCUR AND SHALL EXTEND FROM FLOOR TO STRUCTURE ABOVE. SEE TYPICAL SUPPORT DETAILS FOR WALL MOUNTED ITEMS.
8. ALL 20 GAUGE METAL STUD FRAMED PARTITIONS SHALL BE BRACED ABOVE FINISHED CEILINGS. BRACING SHALL BE AS FOLLOWS ATTACH A 3-5/8" METAL STUD HORIZONTALLY AND CONTINUOUSLY TO PARTITION 6" MAX ABOVE FINISHED CEILING. THEN PROVIDE A 3-5/8" METAL STUD KICKERS AT 45 TO STRUCTURE AT 4'-0" O.C. KICKERS SHALL HAVE CLIP ANGLES (14 GA) WITH TWO 1/4" ANCHORS - ALL KICKER LOCATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES PERFORMING WORK ABOVE CEILING. SEE ALTERNATE STANDARD BRACING DETAIL.
9. ALL RATED PARTITIONS SHALL BE IDENTIFIED ABOVE HUNG CEILINGS.
10. SEE ROOM FINISH SCHEDULE FOR ADDITIONAL REQUIREMENTS FOR FINISH, MATERIALS SUCH AS CERAMIC, PANELING, ETC. WHICH ARE NOT SHOWN OR INCLUDED IN THESE PARTITION TYPES.
11. WHERE PARTITION TYPES CHANGE IN A STRAIGHT RUN, THE EXPOSED OR MOST IMPORTANT EXPOSED FINISH FACE AND NOT NECESSARILY THE CENTERLINE OF STUDS, SHALL ALIGN. REVIEW CASES WHICH ARE UNCLEAR WITH THE ARCHITECT PRIOR TO CONSTRUCTING THESE PARTITIONS.
12. WHERE ITMES ARE RECESSED INTO RATED PARTITIONS, PROVIDE BOXING, INSULATION ETC. AS REQUIRED TO MAINTAIN THE FIRE RESISTANCE RATING. SEE TYPICAL RECESS FRAMING DETAIL.



PARTITION KEY



EXTERIOR WALL ASSEMBLIES KEY

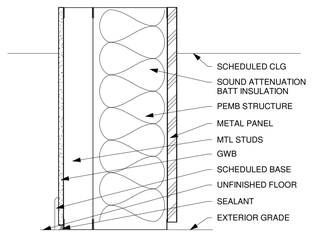


CEILING ASSEMBLIES KEY

GENERAL NOTES:

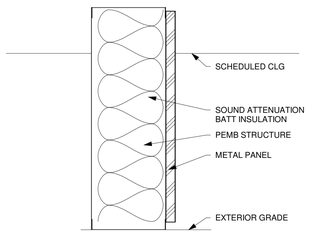
1. FOR COMMON INTERIOR WALLS, PARTITION, AND FLOOR/CEILING ASSEMBLIES BETWEEN ADJACENT DWELLING UNITS OR BETWEEN DWELLING UNITS AND ADJACENT PUBLIC AREAS SUCH AS HALLS, CORRIDORS, STAIRS OR SERVICE AREAS, REFER TO SECTION 1207 OF THE 2009 NCSBC FOR MINIMUM AIRBORNE SOUND AND STRUCTURE- BORNE SOUND RATINGS.
2. STUD SPACING IN ASSEMBLIES SHALL OCCUPY WITH UL ASSEMBLY REQUIREMENTS, REFER TO STRUCTURAL DRAWINGS FOR ACTUAL SPACING.
3. GC SHALL INSTALL ALL RATED ASSEMBLIES PER UL RATED ASSEMBLIES INDICATED ON DRAWINGS
4. * ASTERISK DENOTES ONE HALF OF A SPLIT UL ASSEMBLY SUCH AS AT COLUMN ENCLOSURES, BRACE FRAMEENCLOSURES, ETC.
5. USE OF WATER RESISTANT BACKER BOARD MAY BE LIMITED TO ONLY THOSE AREAS OF A WALL WHICH ARE SCHEDULED TO OR INDICATED BY DETAILS TO RECEIVE CERAMIC TILE FINISH
6. MOISTURE AND MOLD RESISTANT GYPSUM WALL BOARD TO BE USED IN BATHROOMS, SHOWER ROOMS, AND LAUNDRY ROOMS. WET WALLS ONLY.
7. PROVIDE SLOTTED EXPANSION ANCHORS/CLIPS AT TOP PLATE WHERE PARTITION IS SECURED TO BOTTOM CHORD OF ROOF TRUSSES

1ES2A



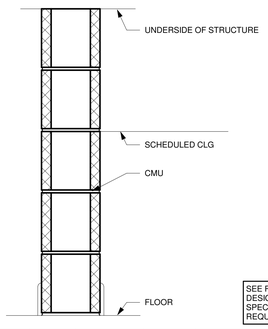
TYPE	STUD SIZE	MTL PNL	INSULATION THICKNESS	STC RATING	REMARKS
1ES2A	3 5/8"	1 1/4"	8 1/2"		PEMB STRUCTURE

1ES2



TYPE	STUD SIZE	MTL PNL	INSULATION THICKNESS	STC RATING	REMARKS
1ES2	-	1 1/4"	8 1/2"		PEMB STRUCTURE

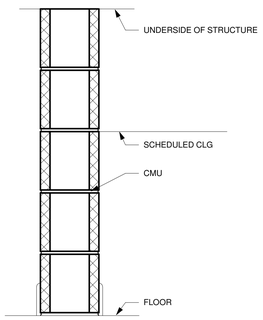
1M1



SEE FIRE RESISTIVE DESIGN FOR SPECIFIC REQUIREMENTS

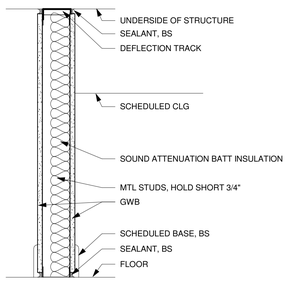
TYPE	CMU SIZE	GWB THK	INSULATION THICKNESS	STC RATING	REMARKS
1M1	7 5/8"	-	-		UL DESIGN NO. U905

1M0



TYPE	CMU SIZE	GWB THK	INSULATION THICKNESS	STC RATING	REMARKS
1M0	7 5/8"	-	-		

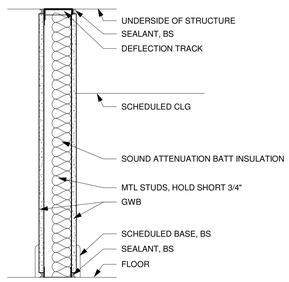
2S1



SEE FIRE RESISTIVE DESIGN FOR SPECIFIC REQUIREMENTS

TYPE	STUD SIZE	GWB THK	INSULATION THICKNESS	STC RATING	REMARKS
2S1	3-5/8"	5/8"	3- 1/2"		UL DESIGN NO. U419

1S0



TYPE	STUD SIZE	GWB THK	INSULATION THICKNESS	STC RATING	REMARKS
1S0	3 5/8"	5/8"	3- 1/2"		
1S0A	2 1/2"	5/8"	2"		

CREECH & ASSOCIATES
1000 W. Morehead St.
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Charlotte, NC 28208
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www.creech-design.com

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 01.19.2022

PARTITION TYPES AND SHELL ASSEMBLIES

G4.01

NOTES:

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3. ALL ELEVATIONS SHOWN ARE IN REFERENCE TO THE BENCHMARK AND MUST BE VERIFIED BY THE GENERAL CONTRACTOR WITH THE SURVEYOR OF RECORD PRIOR TO BEGINNING CONSTRUCTION. THE BENCHMARK IS AN _____ LOCATED AT THE NORTH-EAST PORTION OF THE PROPERTY LOCATED AT_____AND HAVING AN ELEVATION _____ '.
4. LOCATIONS OF EXISTING UTILITY LINES HAVE BEEN TAKEN FROM UTILITY RECORDS SUPPLEMENTED BY FIELD INSPECTIONS AND SHOULD INDICATE IN GENERAL THE TYPE OF UNDERGROUND FACILITIES NOW IN SERVICE. HOWEVER, LOCATIONS SHOWN ARE NOT GUARANTEED AND ANY FURTHER DEVELOPERS OR CONTRACTORS SHOULD NOT ONLY MAKE SUBSURFACE INVESTIGATIONS BUT SHOULD ALSO ALLOW FOR CONTINGENCIES WHICH MIGHT ARISE BY REASON OF ENCOUNTERING UNRECORDED LINES OR LINES BEING IN DIFFERENT LOCATIONS THAN INDICATED ON THIS PLAT.
5. THE HORIZONTAL DATUM FOR THIS SURVEY IS NC GRID NAD-83 AND THE VERTICAL DATUM IS NAVD-88.
6. ALL DISTANCES ARE HORIZONTAL GROUND.
7. AREA BY COORDINATE COMPUTATION.
8. SURVEY INFORMATION FROM THE SURVEYOR OF RECORD, JOHN MCLEAN LAND SURVEYING, 604 PEDEN ST, LAURINBURG, NC 28352; PHONE: 910-280-3524

PARCEL INFO
OWNER: SCOTLAND COUNTY ECONOMIC DEVELOPMENT CORPORATION
PARCEL #: 020305-01036-O
MAIL ADDRESS: 16800A N 401 BYPASS HWY, LAURINBURG, NC
ACRES: 73.2 TOTAL
PROJECT: 3.41 AC
DEED BOOK/PG: 1561, 41

20 0 10 20 40
GRAPHIC SCALE (IN FEET)
FULL SIZE SHEET 22"x34"

CALL 811 BEFORE YOU DIG

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NORTH CAROLINA PROFESSIONAL SEAL 043255 ENGINEER PHILIP A. PICERNO
10-22-21

CONSTRUCTION DOCUMENTS

LKC engineering, pllc
140 Auqa Shed Ct., Aberdeen, NC 28315
Office: 910-420-1437 Fax: 910-420-1438
lkcengineering.com License No. P-1095

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

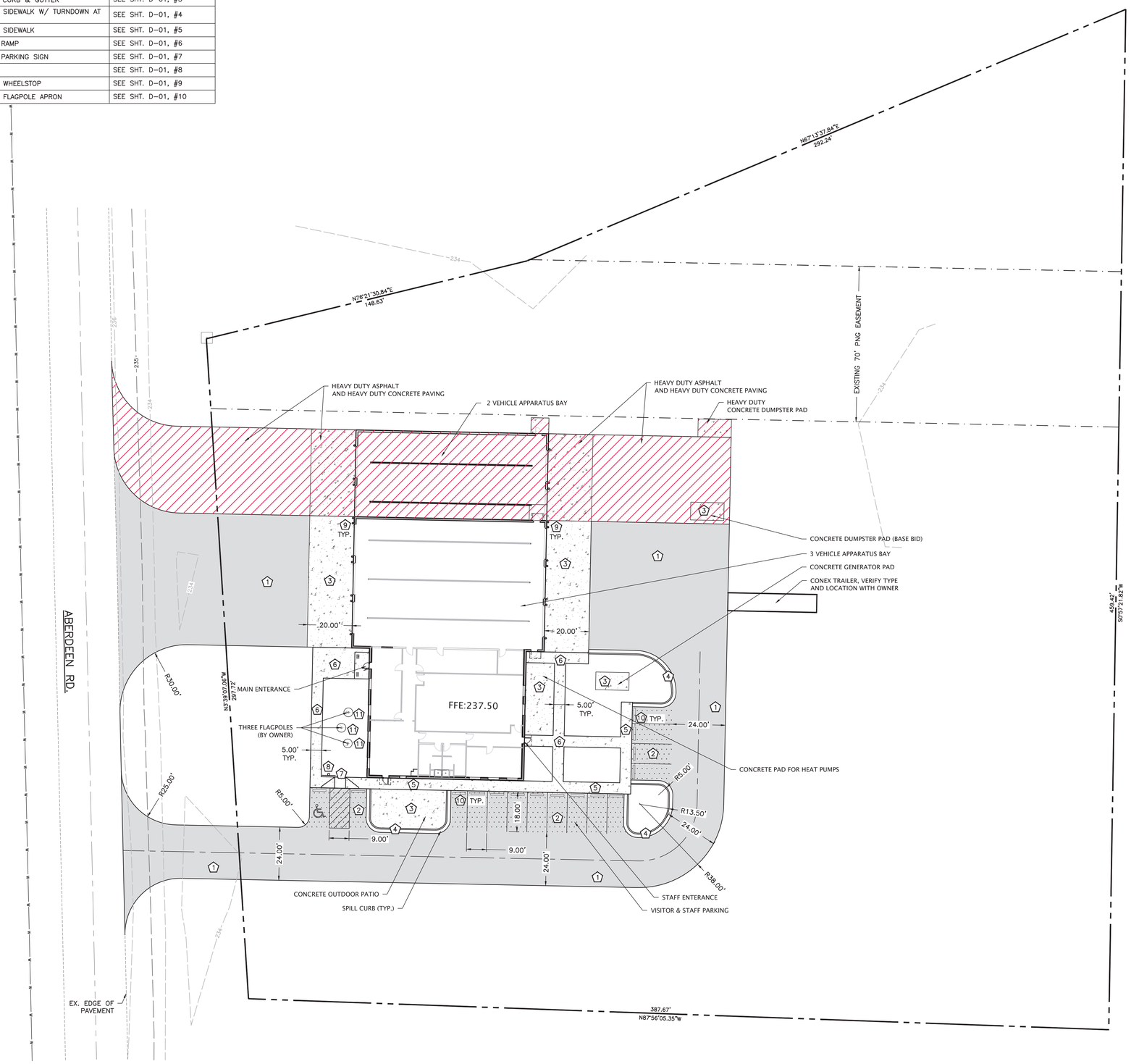
EXISTING TOPOGRAPHIC SURVEY

C-02

File: L:\Creech-21.01 Laurinburg FS\800 - Drawings\810 Design Drawings\02 Civil\CREECH-21.01 C-02 X-TOPO.dwg, By: Morgan, Plotted: Fri Oct 22, 2021 at 2:50pm

SITE KEY NOTING:		
SYMBOL	DESCRIPTION	SHEET REFERENCE
1	INSTALL HEAVY DUTY ASPHALT PAVEMENT	SEE SHT. D-01, #1
2	INSTALL LIGHT DUTY ASPHALT PAVEMENT (PARKING STALLS)	SEE SHT. D-01, #1
3	INSTALL CONCRETE PAVEMENT	SEE SHT. D-01, #2
4	INSTALL 24" SPILL CURB & GUTTER	SEE SHT. D-01, #3
5	INSTALL CONCRETE SIDEWALK W/ TURNDOWN AT PARKING STALLS	SEE SHT. D-01, #4
6	INSTALL CONCRETE SIDEWALK	SEE SHT. D-01, #5
7	INSTALL HANDICAP RAMP	SEE SHT. D-01, #6
8	INSTALL HANDICAP PARKING SIGN	SEE SHT. D-01, #7
9	INSTALL BOLLARDS	SEE SHT. D-01, #8
10	INSTALL CONCRETE WHEELSTOP	SEE SHT. D-01, #9
11	INSTALL CONCRETE FLAGPOLE APRON	SEE SHT. D-01, #10

-ALTERNATE (2 VEHICLE BAY APPARATUS)



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6. ALL DISTANCES ARE HORIZONTAL GROUND.
7. AREA BY COORDINATE COMPUTATION.
8. SURVEY INFORMATION FROM THE SURVEYOR OF RECORD, JOHN MCLEAN LAND SURVEYING, 604 PEDEN ST, LAURINBURG, NC 28352; PHONE: 910-280-3524

GRAPHIC SCALE (IN FEET)
FULL SIZE SHEET 30"x42"

CALL 811 BEFORE YOU DIG

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Suite 120
Charlotte, NC 28208
p 704.376.6000
www.creech-design.com

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 043255 PHILIP A. PICKERING

10-22-21

CONSTRUCTION DOCUMENTS

LKC engineering, pllc
140 Auqa Shed Ct., Aberdeen, NC 28315
Office: 910-420-1437 Fax: 910-420-1438
lkcengineering.com License No. P-1095

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

SITE LAYOUT PLAN

C-03

File: L:\Creech-21.01 Laurinburg FS\800 - Drawings\810 Design Drawings\02 Civil\CREECH-21.01 C-03 SITE LAYOUT.dwg, By: Morgan, Plotted: Fri Oct 22, 2021 at 2:50pm

DWQ CONSTRUCTION GENERAL PERMIT GROUND STABILIZATION REQUIREMENTS		
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water (HQW) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
Slopes 3:1 or flatter	14 days	7-days for slopes greater than 50 feet in length
All other areas with slopes flatter than 4:1	14 days	None (except for perimeters and HQW Zones)

* "Extensions of time may be approved by the permitting authority based on weather or other site-specific condition that make compliance impracticable." (Sectio II.B(2)(b))

DIVERSION SWALE SCHEDULE

TEMPORARY DIVERSION SWALES	CONSTRUCTION SCHEDULE					
	MINIMUM DEPTH (ft)	BOTTOM WIDTH (ft)	SIDE SLOPE (H-ft: V-ft)	MINIMUM TOP WIDTH (ft)	CHANNEL SLOPE (%)	CHANNEL LINING
TSW-1	0.35 Ft	0 Ft	3:1	2.10 Ft	1.00 %	S75 STRAW
TSW-2	0.35 Ft	0 Ft	3:1	2.10 Ft	1.00 %	S75 STRAW

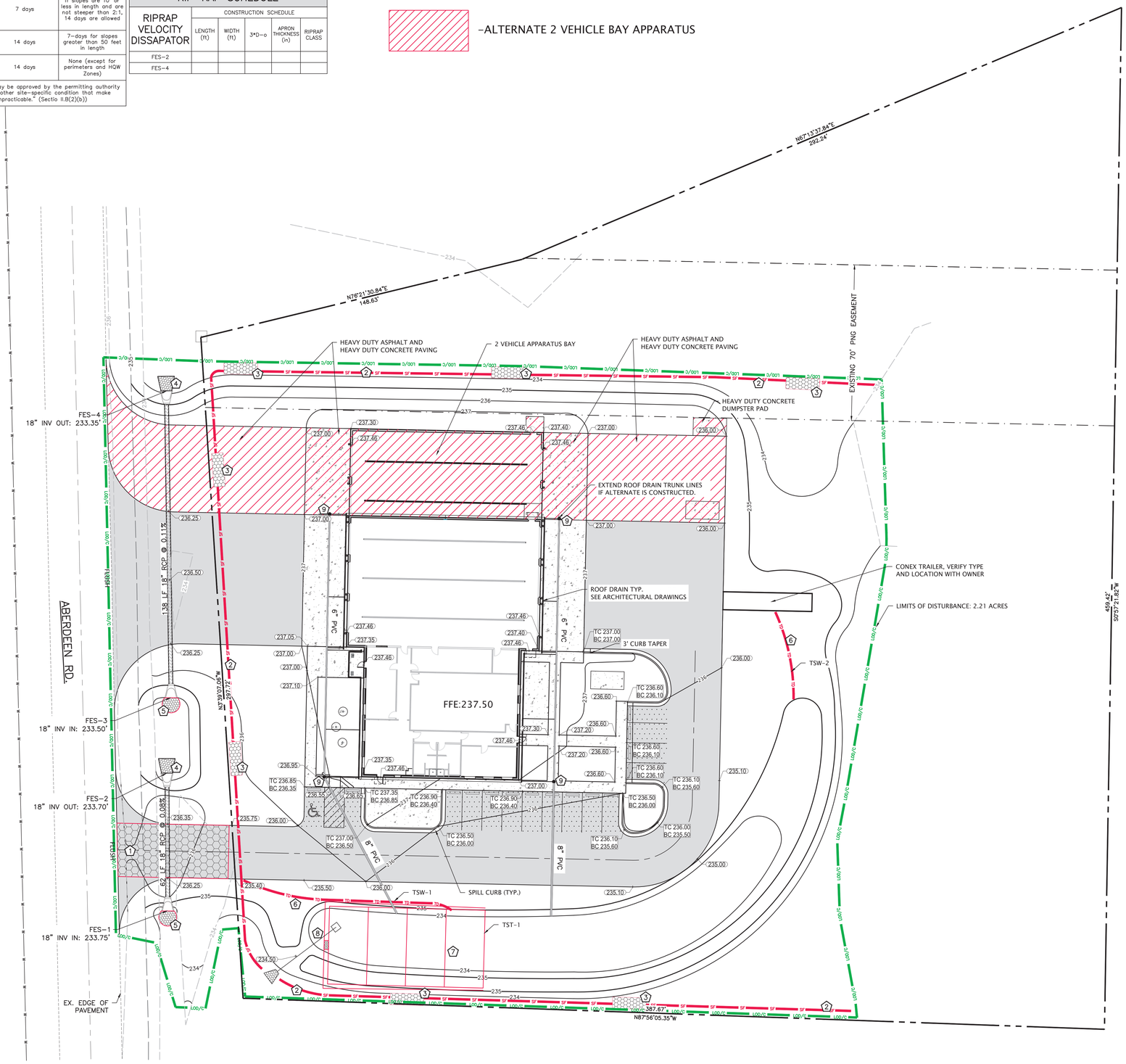
RIP-RAP SCHEDULE

RIPRAP VELOCITY DISSAPATOR	CONSTRUCTION SCHEDULE				
	LENGTH (ft)	WIDTH (ft)	3*D-o	APRON THICKNESS (in)	RIPRAP CLASS
FES-2					
FES-4					

SEDIMENT TRAP SCHEDULE

TEMP. SEDIMENT TRAP	DESIGN INFORMATION					CONSTRUCTION INFORMATION					
	DRAINAGE AREAS (AC)	SURFACE AREA WIDTH (FT)	SURFACE AREA LENGTH (FT)	STORAGE DEPTH (SD)(FT)	STORAGE HEIGHT (SD)(FT)	WIDTH AT TOP OF BERM ** (FT)	LENGTH AT TOP OF BERM ** (ft)	SIDE SLOPE (H-FT : V-FT)	WEIR LENGTH (LW)(FT)	WEIR HEIGHT (LW)(FT)	BAFFLE SPACING (LW)(FT)
TST-1	0.83 AC	33 Ft	66 Ft	2.0 ft	3.5 ft	39 Ft	72 Ft	2:1	4 Ft	1 Ft	16.5 ft

-ALTERNATE 2 VEHICLE BAY APPARATUS



EROSION CONTROL KEY NOTING:

SYMBOL	DESCRIPTION	SHEET REFERENCE
1	INSTALL TEMPORARY CONSTRUCTION ENTRANCE	SEE SHT. D-02, #1
2	INSTALL TEMPORARY SILT FENCE	SEE SHT. D-02, #2
3	INSTALL TEMPORARY SILT FENCE OUTLET	SEE SHT. D-02, #3
4	INSTALL RIP-RAP VELOCITY DISSIPATER	SEE SHT. D-02, #4
5	INSTALL TEMPORARY ROCK PIPE INLET PROTECTION	SEE SHT. D-02, #5
6	INSTALL TEMPORARY DIVERSION SWALE	SEE SHT. D-02, #9
7	INSTALL TEMPORARY SEDIMENT TRAP	SEE SHT. D-03, #1,2,3
8	INSTALL PERMANENT FLOATING SKIMMER	SEE SHT. D-03, #4
9	INSTALL DOWNSPOUT CLEAN OUT	SEE SHT. D-03, #5

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7. AREA BY COORDINATE COMPUTATION.
8. SURVEY INFORMATION FROM THE SURVEYOR OF RECORD, JOHN MCLEAN LAND SURVEYING, 604 PEDEN ST, LAURINBURG, NC 28352; PHONE: 910-280-3524

EROSION CONTROL SEQUENCE:

1. OBTAIN ALL NECESSARY PERMITS AND APPROVALS AND HOLD PRE-CONSTRUCTION CONFERENCE.
2. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE, TEMPORARY SILT FENCE AND SILT FENCE OUTLETS AS SHOWN ON PLANS.
3. APPLY TEMPORARY SEEDING TO ALL DISTURBED AREAS.
4. INSTALL TEMPORARY SEDIMENT TRAP THEN INSTALL DIVERSION SWALES IMMEDIATELY AFTER CONSTRUCTION OF THE SKIMMER BASINS.
5. STABILIZE ALL DIVERSION SWALES WITHIN SEVEN DAYS OF CONSTRUCTION.
6. ROUGH GRADE THE DRIVEWAYS.
7. INSTALL UNDERGROUND UTILITIES WHILE MAINTAINING ALL EROSION CONTROL DEVICES.
8. FINE GRADE THE SITE AND APPLY PERMANENT SEEDING AS REQUIRED.
9. ANY EXCAVATED SOILS, NO LONGER REQUIRED FOR THE PROJECT AREA ARE TO BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGALLY PERMITTED BORROW PIT.
10. CONSTRUCT THE DRIVEWAYS TO THE LIMITS OF AND INCLUDING THE BASE COURSE, ASPHALT SHALL NOT BE INSTALLED AT THIS TIME.
11. ONCE SITE IS COMPLETELY STABILIZED, THE ASPHALT CAN BE APPLIED TO DRIVEWAYS.
12. ALL EROSION CONTROL DEVICES ARE TO BE FULLY MAINTAINED WHILE CONSTRUCTION IS UNDERWAY AND ALL EROSION CONTROL DEVICES ARE TO REMAIN UNTIL THE SITE HAS BEEN INSPECTED AND RELEASED BY THE NCDEQ INSPECTOR.

STORM DRAIN PIPE NOTES:

1. ALL STORM DRAINAGE SHALL BE RCP UNLESS OTHERWISE INDICATED.
2. STORM DRAINAGE PIPING IN ANY NCDOT RIGHT-OF-WAY SHALL CLASS 4 OR BETTER AND STAMPED FOR NCDOT.
3. STORM DRAINAGE PIPING IN NON-NCDOT RIGHT-OF-WAY UNDER PAVEMENT SHALL BE CLASS 4 OR BETTER, STAMP NOT REQUIRED.
4. COMPLETE RUNS OF STORM DRAINAGE PIPING NOT UNDER PAVEMENT SHALL BE CLASS 3 OR BETTER.

STORM DRAIN PIPE SEPARATION NOTES:

1. THE MINIMUM VERTICAL CLEARANCE BETWEEN STORM DRAINAGE AND SANITARY SEWER LINES SHALL BE 24-INCHES UNLESS DUCTILE IRON IS SPECIFIED FOR THE SANITARY SEWER LINES.
2. STORM DRAINAGE PIPE HAVING WATER MAINS CROSSING OVER, OR UNDER MUST MAINTAIN A VERTICAL SEPARATION OF AT LEAST 12-INCHES. IN ADDITION, IF A WATER MAIN MUST CROSS UNDER A STORM DRAINAGE PIPE, THE WATER MAIN SHALL BE MADE OF DUCTILE IRON FOR A MINIMUM OF 10 FEET ON BOTH SIDES OF THE CROSSING.

GRAPHIC SCALE (IN FEET)
FULL SIZE SHEET 22"x34"

CALL 811 BEFORE YOU DIG

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NORTH CAROLINA PROFESSIONAL SEAL 043255 ENGINEER PHILIP A. PICKENS
10-22-21

CONSTRUCTION DOCUMENTS

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LAURINBURG NORTH FIRE STATION

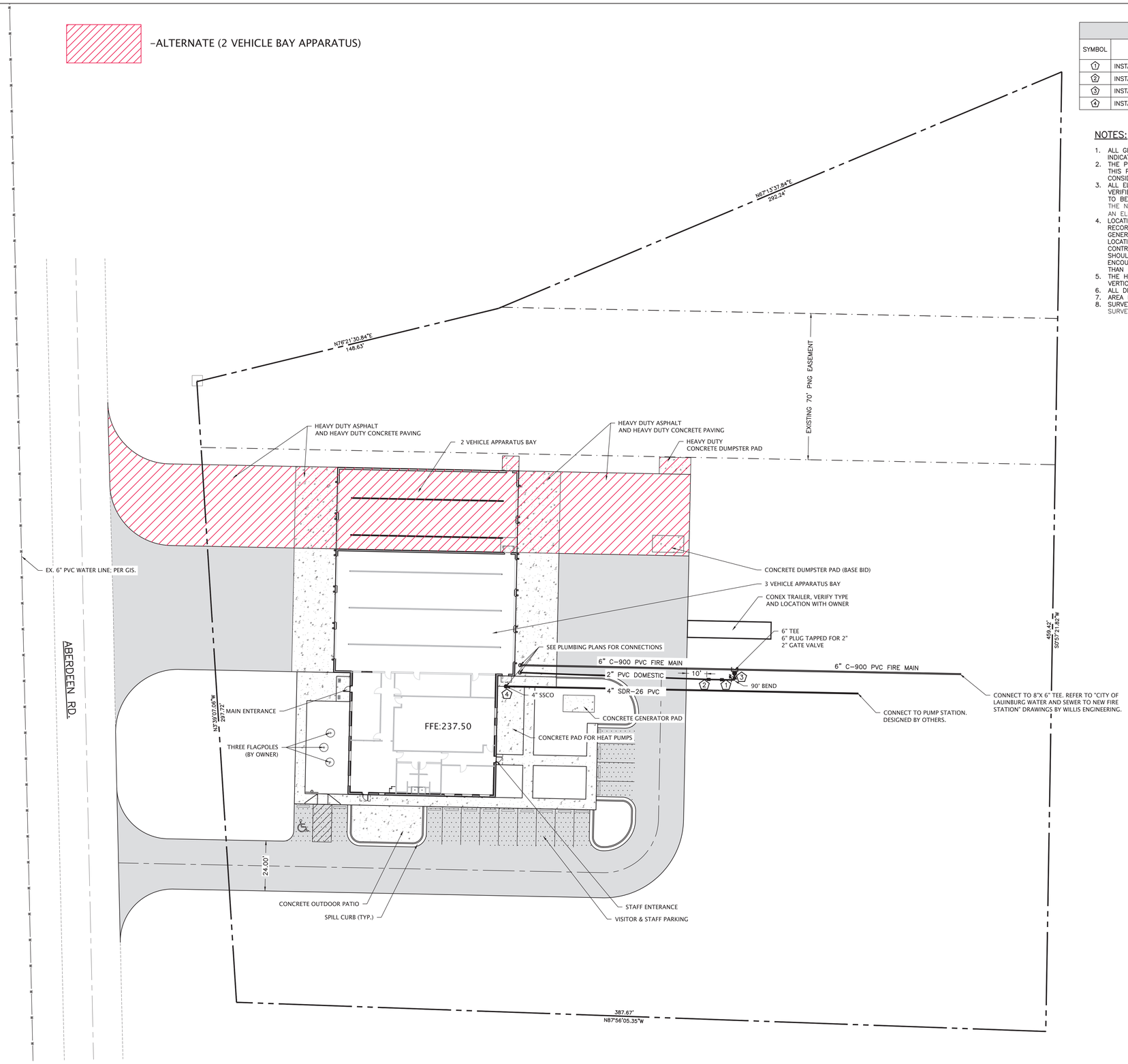
No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

GRADING, DRAINAGE, AND EROSION CONTROL PLAN

C-04

File: L:\Creech-21.01 Laurinburg FS\800 - Drawings\810 Design Drawings\02 Civil\CREECH-21.01 C-04 GRADING AND ED.dwg, By: Morgan, Phillip, Fri Oct 22, 2021 at 2:50pm



UTILITY KEY NOTING:

SYMBOL	DESCRIPTION	SHEET REFERENCE
1	INSTALL 2" WATER METER	SEE SHT. D-04, #1
2	INSTALL 2" RPZ BACKFLOW PREVENTER	SEE SHT. D-04, #2, 3
3	INSTALL GATE VALVE	SEE SHT. D-04, #4
4	INSTALL SANITARY SEWER SERVICE	SEE SHT. D-04, #5

NOTES:

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GRAPHIC SCALE
FULL SIZE SHEET 22"x34"
20 0 10 20 40
(IN FEET)

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NORTH CAROLINA PROFESSIONAL SEAL 043255 ENGINEER PHILIP A. PICERNO
10-22-21

CONSTRUCTION DOCUMENTS

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lkcengineering.com License No. P-1095

LAURINBURG NORTH FIRE STATION

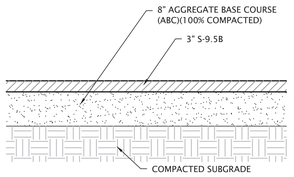
No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

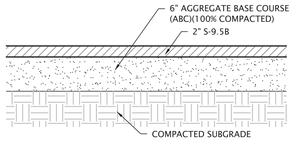
UTILITY PLAN

C-05

File: L:\Creech-21.01 Laurinburg FS\800 - Drawings\810 Design Drawings\02 Civil\CREECH-21.01 C-05 UTILITY.dwg, By: Morgan, Plotted: Fri Oct 22, 2021 at 2:50pm

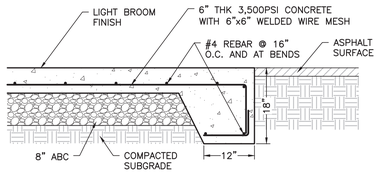


HEAVY DUTY



LIGHT DUTY

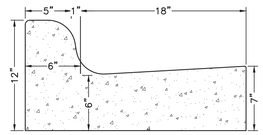
1 ASPHALT PAVEMENT SECTIONS
NOT TO SCALE



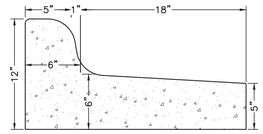
NOTE:

CONTROL JOINTS TO BE PLACE AT 20' INTERVALS

2 HEAVY DUTY CONCRETE PAVEMENT
NOT TO SCALE



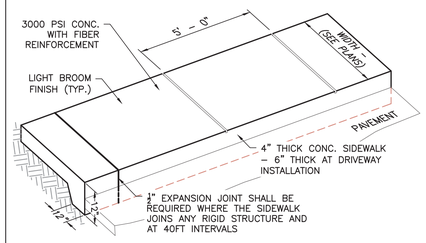
STANDARD SECTION

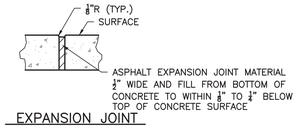


SPILL SECTION

NOTES:
1. ALL WORK AND MATERIALS SHALL COMPLY WITH NCDOT SECTION 846

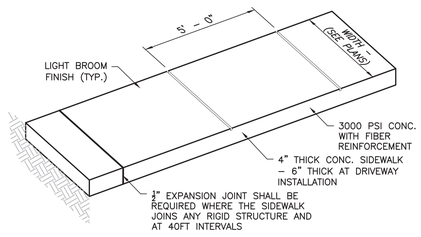
3 24" CONCRETE CURB AND GUTTER
NOT TO SCALE

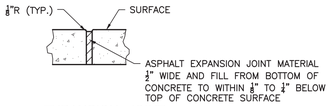




EXPANSION JOINT

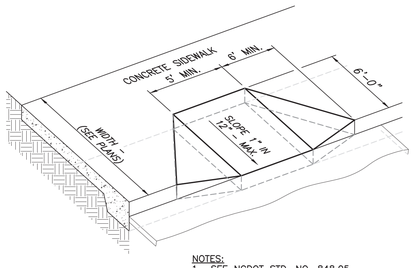
4 CONCRETE SIDEWALK
NOT TO SCALE





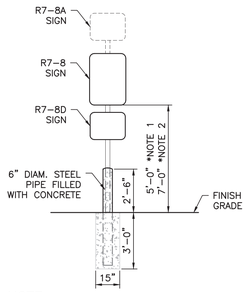
EXPANSION JOINT

5 CONCRETE SIDEWALK
NOT TO SCALE



NOTES:
1. SEE NCDOT STD. NO. 848.05
2. CONTRACTOR SHALL MAINTAIN SIDEWALK THICKNESS AND REIFORCEMENT IN CONSTRUCTING THE HANDICAP RAMP.

6 HANDICAP RAMP – STANDARD
NOT TO SCALE

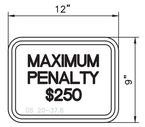


NOTE:

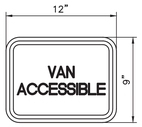
CONSTRUCTION AND INSTALLATION OF SIGNS AND POST SHALL COMPLY WITH GENERAL STATUTE 20-37.6

R7-8

SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20-37.6



R7-8D



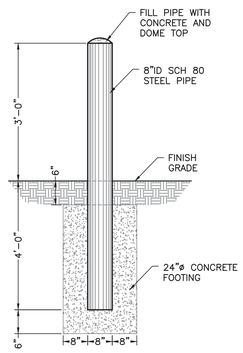
R7-8A

COLORS:

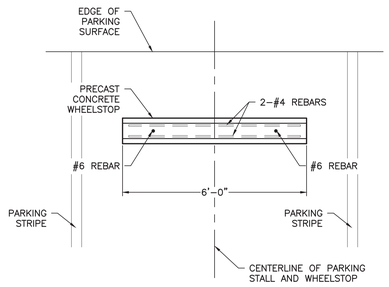
LEGEND AND BORDER – GREEN
WITH WHITE SYMBOL ON BLUE BACKGROUND
BACKGROUND – WHITE

*NOTE 1 – PEDESTRIAN PATH DOES NOT PASS UNDER OR AROUND SIGN
*NOTE 2 – PEDESTRIAN PATH GOES BY, UNDER OR AROUND SIGN

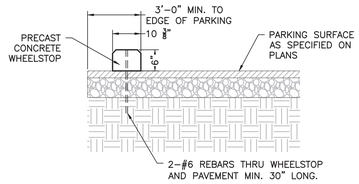
7 HANDICAP PARKING SIGN
NOT TO SCALE



8 CONCRETE FILLED BOLLARD
NOT TO SCALE

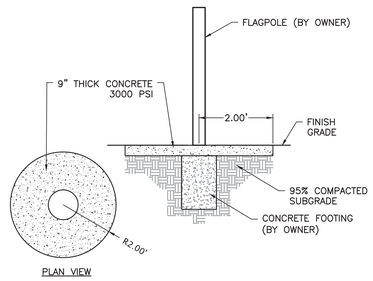


PLAN VIEW



SECTION VIEW

9 CONCRETE WHEELSTOP
NOT TO SCALE



PLAN VIEW

10 CONCRETE FLAGPOLE APRON
NOT TO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 043255 ENGINEER PHILIP A. PICKERING
10-22-21

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lkcengineering.com License No. P-1095

LAURINBURG NORTH FIRE STATION

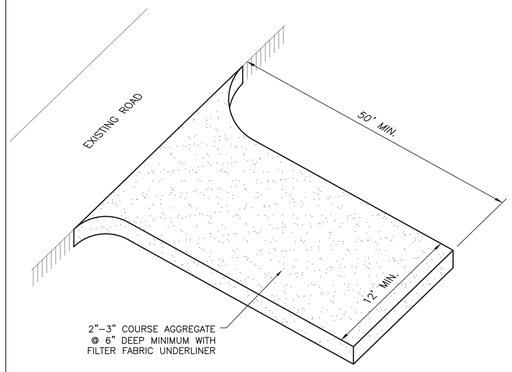
No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

SITE DETAILS

D-01

File: L:\Creech-21.01 Laurinburg FS\800 - Drawings\810 Design Drawings\02 Civil\CREECH-21.01 001 DETAILS.dwg, By: Morgan, Plotted: Fri, Oct 22, 2021 at 2:50pm



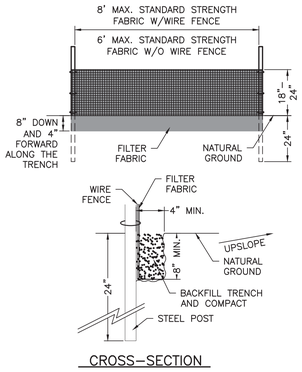
CONSTRUCTION SPECIFICATIONS:

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 TOPDRESSING WITH 2" STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED OR TRACKED ONTO PUBLIC ROADWAYS.

1 TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
NOT TO SCALE



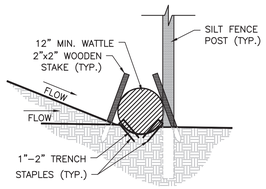
CONSTRUCTION SPECIFICATIONS:

1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE. (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
3. CONSTRUCT THE FILTER FABRIC FROM CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY, FASTEN THE FILTER CLOTH ONLY AT SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THE FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE A MINIMUM 50 POUND TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER (FIGURE 6.62A, NORTH CAROLINA EROSION AND SEDIMENTATION CONTROL DESIGN MANUAL)
8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.

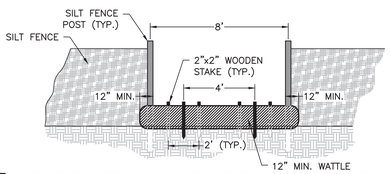
MAINTENANCE:

INSPECT SEDIMENT FENCES 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.

2 TEMPORARY SILT FENCE
NOT TO SCALE



SECTION VIEW



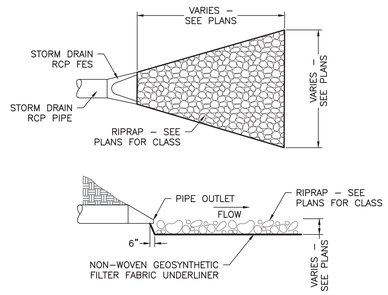
CONSTRUCTION SPECIFICATIONS:

1. USE A MINIMUM 12" DIAMETER WATTLE WITH A MINIMUM LENGTH OF 10 FT.
2. USE 2" X 2" X 2 FT. LONG WOODEN STAKES.
3. EXCAVATE A 1" TO 2" TRENCH FOR WATTLE TO BE PLACED.
4. INSTALL A MINIMUM OF 2 UPSLOPE AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE THE WATTLE TO THE GROUND.
5. PROVIDE STAPLES MADE OF 0.125" DIAMETER STEEL WIRE FORMED INTO A "U" SHAPE AND NOT LESS THAN 12" LENGTH.
6. INSTALL STAPLES APPROXIMATELY EVERY 12" ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
7. WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
8. INSTALL TEMPORARY SEDIMENT FENCE IN ACCORDANCE WITH NCDENR REGULATIONS.
9. OUTLETS TO BE PLACED AS SHOWN ON PLANS ALONG SILT FENCE.

MAINTENANCE:

1. INSPECT OUTLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2" OR GREATER) RAINFALL EVENT.
2. CLEAR THE OUTLET OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS.
3. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE OUTLET DURING SEDIMENT REMOVAL.
4. REPLACE WATTLE AS NEEDED.

3 TEMPORARY STRAW WATTLE OUTLET AT SILT FENCE
NOT TO SCALE



CONSTRUCTION SPECIFICATIONS:

1. ENSURE THAT THE SUBGRADE FOR THE FILTER AND RIPRAP FOLLOWS THE REQUIRED LINES AND GRADES AS SHOWN IN THE PLANS. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO THE DENSITY OF THE SURROUNDING UNDISTURBED MATERIAL. LOW AREAS IN THE SUBGRADE ON UNDISTURBED SOIL MAY ALSO BE FILLED BY INCREASING THE RIPRAP THICKNESS.
2. THE RIPRAP AND GRAVEL FILTER MUST CONFORM TO THE SPECIFIED GRADING LIMITS SHOWN ON THE PLANS.
3. FILTER CLOTH, WHEN USED, MUST MEET DESIGN REQUIREMENTS AND BE PROPERLY PROTECTED FROM PUNCHING OR TEARING DURING INSTALLATION. REPAIR ANY DAMAGE BY REMOVING THE RIPRAP AND PLACING ANOTHER PIECE OF FILTER CLOTH OVER THE DAMAGED AREA. ALL CONNECTING JOINTS SHOULD OVERLAP SO THE TOP LAYER IS ABOVE THE DOWNSTREAM LAYER A MINIMUM OF 1 FOOT. IF THE DAMAGE IS EXTENSIVE, REPLACE THE ENTIRE FILTER CLOTH.
4. RIPRAP MAY BE PLACED BY EQUIPMENT, BUT TAKE CARE TO AVOID DAMAGING THE FILTER.
5. THE MINIMUM THICKNESS OF THE RIPRAP SHOULD BE 1.5 TIMES THE MAXIMUM STONE DIAMETER.
6. RIPRAP MAY BE FIELD STONE OR ROUGH QUARRY STONE. IT SHOULD BE HARD, ANGULAR, HIGHLY WEATHER–RESISTANT AND WELL GRADED.
7. CONSTRUCT THE APRON ON ZERO GRADE WITH NO OVERFILL AT THE END. MAKE THE TOP OF THE RIPRAP AT THE DOWNSTREAM END LEVEL WITH THE RECEIVING AREA OR SLIGHTLY BELOW IT.
8. ENSURE THAT THE APRON IS PROPERLY ALIGNED WITH THE RECEIVING STREAM AND PREFERABLY STRAIGHT THROUGHOUT IT LENGTH. IF A CURVE IS NEEDED TO FIT SITE CONDITIONS, PLACE IT IN THE UPPER SECTION OF THE APRON.
9. IMMEDIATELY AFTER CONSTRUCTION, STABILIZE ALL DISTURBED AREAS WITH VEGETATION.

MAINTENANCE:

INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS 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.

4 RIPRAP VELOCITY DISSIPATOR
NOT TO SCALE

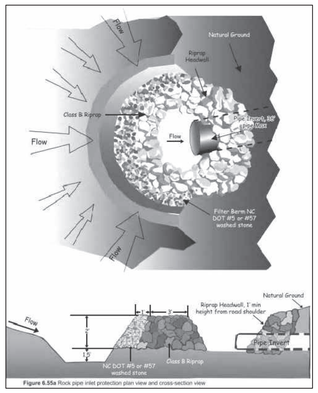


Figure 6.55a Rock pipe inlet protection plan view and cross-section view

CONSTRUCTION SPECIFICATIONS:

1. CLEAR THE AREA OF ALL DEBRIS THAT MIGHT HINDER AND DISPOSAL OF SPOIL.
2. INSTALL THE CLASS B OR CLASS I RIPRAP IN A SEMICIRCLE AROUND THE PIPE INLET. THE STONE SHOULD BE BUILT UP HIGHER ON EACH END WHERE IT TIES INTO THE EMBANKMENT. THE MINIMUM CREST WIDTH OF THE RIPRAP SHOULD BE 3', WITH A MINIMUM BOTTOM WIDTH OF 11'. THE MINIMUM HEIGHT SHOULD BE 2', BUT ALSO 1' LOWER THAN THE SHOULDER OF THE EMBANKMENT OR DIVERSIONS.
3. A 1' THICK LAYER OF NCDOT #5 OR #57 STONE SHOULD BE PLACED ON THE OUTSIDE SLOPE OF THE RIPRAP.
4. THE SEDIMENT STORAGE AREA SHOULD BE EXCAVATED AROUND THE OUTSIDE OF THE STONE HORSESHOE 18" BELOW NATURAL GRADE.
5. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, FILL DEPRESSION AND ESTABLISH FINAL GRADING ELEVATIONS, COMPACT AREA PROPERLY, AND STABILIZE WITH GROUND COVER.

MAINTENANCE:

1. INSPECT ROCK PIPE AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.
2. CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY.
3. AFTER ALL SEDIMENT–PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER.

5 TEMPORARY ROCK PIPE INLET PROTECTION
NOT TO SCALE

1. UNLESS OTHERWISE INDICATED, ALL VEGETATION AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE EROSION & SEDIMENT CONTROL PLANNING & DESIGN MANUAL & ACCORDING TO THE SPECIFICATIONS.
2. ALL HARD SURFACE PUBLIC ROADS SHALL BE CLEAN AT THE END OF EACH WORK DAY. PROVIDE TEMPORARY CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE PLANS OR AS OTHERWISE NECESSARY.
3. THE LOCATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES ARE APPROXIMATE. THESE DEVICES SHALL BE LOCATED TO ACHIEVE MAXIMUM BENEFIT. IF DURING CONSTRUCTION THESE DEVICES ARE NOT SUFFICIENT TO ADEQUATELY CONTROL EROSION AND SEDIMENTATION. ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
4. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED AND DISPOSED OF WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION.
5. CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PREVENT SEDIMENT (GENERATED BY CONSTRUCTION OR EROSION) FROM ENTERING STREAMS. CONSTRUCTION VEHICLES WILL NOT BE ALLOWED IN FLOWING STREAM CHANNELS OR TO DAMAGE THEIR BANKS. TEMPORARY STREAM CROSSINGS SHALL BE INSTALLED IN ALL FLOWING STREAMS WHICH WILL HAVE CONSTRUCTION TRAFFIC CROSSING THEM.
6. STOCKPILING OF EXCESS MATERIALS IN WETLAND AREAS IS NOT ALLOWED.
7. IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AFTER EACH RAINFALL OR WEEKLY, WHICHEVER IS MORE FREQUENT (AT LEAST DAILY DURING PERIODS OF PROLONGED RAINFALL). CONTRACTOR SHALL CLEAN AND REPAIR ACCORDINGLY.

6 EROSION AND SEDIMENT CONTROL NOTES
NOT TO SCALE

1. RIP THE ENTIRE AREA TO 6" DEPTH.
2. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
3. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE IN ACCORDANCE WITH "SEEDING SCHEDULE" AND MIX WITH SOIL.
4. CONTINUE TILLAGE UNTIL A WELL–PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
5. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING. SEED ACCORDING TO "SEEDING SCHEDULE."
6. MULCH IN ACCORDANCE WITH "SEEDING SCHEDULE" IMMEDIATELY AFTER SEEDING.
7. INSPECT ALL SEEDING FOR COMPLIANCE WITH THE REQUIREMENTS OF THE "SEEDING SCHEDULE". MAKE NECESSARY REPAIRS AND RESEED WITHIN THE PLANTING SEASON, IF POSSIBLE, OR THE DAMAGED AREA SHALL BE REESTABLISHED FOLLOWING THE ORIGINAL LIME, FERTILIZER, AND SEEDING REQUIREMENTS.

7 SEED BED PREPARATION
NOT TO SCALE

TEMPORARY SUMMER SEED MIX		
(TO BE FOLLOWED BY PERMANENT FALL SEED MIX)		
DATES	SPECIES	RATE: LB/ACRE
MAR 1 – SEP 1	GERMAN MILLET	120
TEMPORARY WINTER SEED MIX		
(TO BE FOLLOWED BY PERMANENT FALL SEED MIX)		
SEP 1 – MAR 1	WINTER RYE (GRAIN)	200
	KOBE LESPEDEZA	120
PERMANENT SPRING SEED MIX		
MAR 1 – JUL 1	PENSICOLA BAHIAGRASS	60
	COMMON BERMUDA	25
	SERICEA LESPEDEZA	30
PERMANENT FALL SEED MIX		
SEP 1 – NOV 1	COMMON BERMUDA	30
	SERICEA LESPEDEZA	30
	KOBE LESPEDEZA	10

NOTES:
1. TEMPORARY SEED MIX SHALL BE USED FOR ALL AREAS EXPOSED GREATER THAN 15 WORKING DAYS AND SUBJECT TO FURTHER DISTURBANCE. PERMANENT SEED MIX SHALL BE CHECKED FOR ADEQUACY ON JULY 15. AN ADEQUATE COVER SHALL HAVE 50 SPRIGS OF BERMUDA OR SERICEA LESPEDEZA PER ONE SQUARE FOOT.

SOIL AMENDMENTS:

1. TO BE INCORPORATED INTO THE TOP 3 INCHES OF SOIL IN AREAS WITH SLOPES 2:1 OR FLATTER
- APPLY FERTILIZER (10–10–10) AT A RATE OF 1000 LB/ACRE
- APPLY LIME (GROUND AGRICULTURAL LIMESTONE) AT A RATE OF 4000 LB/ACRE *
- APPLY SUPERPHOSPHATE (0–49–0) AT A RATE OF 200 LB/ACRE *

* REQUIRED FOR PERMANENT SEED MIX ONLY

MULCH:

APPLY 4,000 LB/ACRE GRAIN STRAW OR EQUIVALENT COVER. ANCHOR MULCH WITH ROVING, NETTING OR BY TACKING WITH ASPHALT EMULSION AT A RATE OF 400 GAL./ACRE

WATER:

MINIMUM OF 1" OF RAINFALL A WEEK (IF NOT SUPPLIED NATURALLY, CONTRACTOR SHALL SUPPLY THE REMAINING AMOUNT UNTIL GROUND COVER HAS BEEN ESTABLISHED).

MAINTENANCE:

REFERTILIZE IN THE SECOND YEAR UNLESS THE GROWTH IS FULLY ADEQUATE. MOW WHEN THE AVERAGE PLANT HEIGHT EXCEEDS 6 INCHES. RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

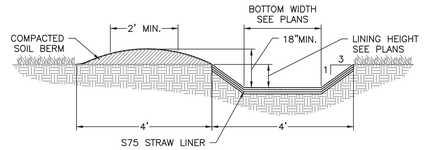
8 SEEDING SCHEDULE
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS:

1. REMOVE AND PROPERLY DISPOSE OF ALL TREES, BRUSH, STUMPS, AND OTHER OBJECTIONABLE MATERIAL.
2. ENSURE THAT THE MINIMUM CONSTRUCTED CROSS SECTION MEETS ALL DESIGN REQUIREMENTS.
3. ENSURE THAT THE TOP OF THE DIKE IS NOT LOWER AT ANY POINT THAN THE DESIGN ELEVATION PLUS THE SPECIFIED SETTLEMENT.
4. PROVIDE SUFFICIENT ROOM AROUND DIVERSIONS TO PERMIT MACHINE REGRADING AND CLEANOUT.
5. VEGETATE THE RIDGE WITHIN 7 DAYS AFTER CONSTRUCTION.

MAINTENANCE:

INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND STABILIZE IT.



9 TEMPORARY DIVERSION SWALE WITH LINER
NOT TO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 043255 ENGINEER PHILIP A. PICKENS
10-22-21

CONSTRUCTION DOCUMENTS

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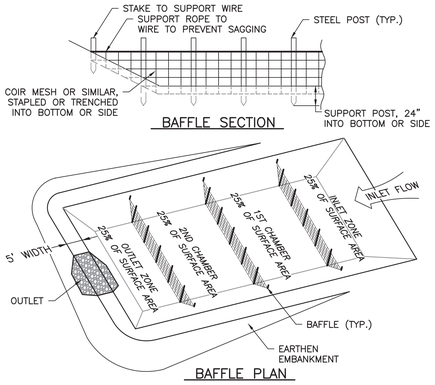
LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

EROSION CONTROL DETAILS

D-02



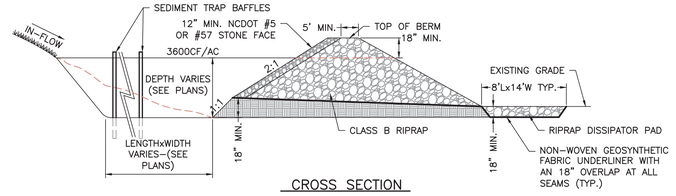
CONSTRUCTION SPECIFICATIONS:

1. GRADE THE BASIN SO THAT THE BOTTOM IS LEVEL FRONT TO BACK AND SIDE TO SIDE.
2. INSTALL POSTS OR SAW HORSES ACROSS THE WIDTH OF THE SEDIMENT TRAP.
3. STEEL POSTS SHOULD BE DRIVEN TO A DEPTH OF 24", SPACED A MAXIMUM OF 4' APART, AND INSTALLED UP THE SIDES OF THE BASIN AS WELL. THE TOP OF THE FABRIC SHOULD BE 6" HIGHER THAN THE INVERT OF THE SPILLWAY. TOPS OF BAFFLES SHOULD BE 2" LOWER THAN THE TOP OF THE BERMS.
4. INSTALL AT LEAST THREE ROWS OF BAFFLES BETWEEN THE INLET AND OUTLET DISHARGE POINT. BASINS LESS THAN THE TOP OF THE BERMS.
5. WHEN USING POSTS, ADD A SUPPORT WIRE OR ROPE ACROSS THE TOP OF THE MEASURE TO PREVENT SAGGING.
6. WRAP POROUS MATERIAL, LIKE JUTE BACKED BY COIR MATERIAL, OVER A SAWHORSE OR THE TOP WIRE. HAMMER REBAR INTO THE SAWHORSE LEGS FOR ANCHORING. THE FABRIC SHOULD HAVE FIVE TO TEN PERCENT OPENINGS IN THE WEAVE. ATTACH FABRIC TO A ROPE AND A SUPPORT STRUCTURE WITH ZIP TIES, WIRE OR STAPLES.
7. THE BOTTOM AND SIDES OF THE FABRIC SHOULD BE ANCHORED IN A TRENCH OR PINNED WITH 8" EROSION CONTROL MATTING STAPLES.
8. DO NOT SPLICE THE FABRIC, BUT USE A CONTINUOUS PIECE ACROSS THE BASIN.

MAINTENANCE:

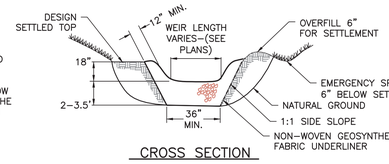
1. INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS WHEN IT REACHED HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PROESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.
4. AFTER CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

1 POROUS BAFFLES
NOT TO SCALE



MAINTENANCE:

- INSPECT TEMPORARY SEDIMENT TRAPS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA, AND REPLACE THE PART OF THE GRAVEL FACING THAT IS IMPAIRED BY SEDIMENT.
- CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING. PERIODICALLY CHECK THE DEPTH OF THE SPILLWAY TO ENSURE IT IS A MINIMUM OF 1.5' BELOW THE LOW POINT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE DESIGN GRADE. ANY RIPRAP DISPLACED FROM THE SPILLWAY MUST BE REPLACED IMMEDIATELY.
- AFTER ALL SEDIMENT PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS, AND STABILIZE PROPERLY.

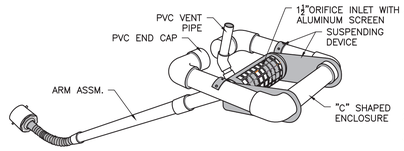


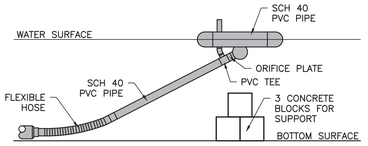
2 TEMPORARY SEDIMENT TRAP
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS:

1. CLEAR, GRUB AND STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT. REMOVE ALL SURFACE SOIL CONTAINING HIGH AMOUNTS OF ORGANIC MATTER, AND STOCKPILE OR DISPOSE OF IT PROPERLY. HAUL ALL OBJECTIONABLE MATERIAL TO THE DESIGNATED DISPOSAL AREA.
2. ENSURE THAT FILL MATERIAL FOR THE EMBANKMENT IS FREE OF ROOTS, WOODY VEGETATION, ORGANIC MATTER AND OTHER OBJECTIONABLE MATERIAL. PLACE THE FILL IN LIFTS NOT TO EXCEED 9", AND MACHINE COMPACT IT. OVER FILL THE EMBANKMENT 6" TO ALLOW FOR SETTLEMENT.
3. CONSTRUCT THE OUTLET SECTION IN THE EMBANKMENT. PROTECT THE CONNECTION BETWEEN THE RIPRAP AND THE SOIL FROM PIPING BY USING FILTER FABRIC OR A KEYWAY CUTOFF TRENCH BETWEEN THE RIPRAP STRUCTURE AND SOIL.
   3.1. PLACE THE FILTER FABRIC BETWEEN THE RIPRAP AND THE SOIL. EXTEND THE FABRIC ACROSS THE SPILLWAY FOUNDATION AND SIDES TO THE TOP OF THE DAM; OR
   3.2. EXCAVATE A KEYWAY TRENCH ALONG THE CENTER OF THE SPILLWAY FOUNDATION EXTENDING UP THE SIDES TO THE HEIGHT OF THE DAM. THE TRENCH SHOULD BE AT LEAST 2' DEEP AND 2' WIDE WITH 1:1 SIDE SLOPES.
4. CLEAR THE POND AREA BELOW THE ELEVATION OF THE CREST OF THE SPILLWAY TO FACILITATE SEDIMENT CLEANOUT.
5. ALL CUT AND FILL SLOPES SHOULD BE 2:1 OR FLATTER.
6. ENSURE THAT THE STONE (DRAINAGE) SECTION OF THE EMBANKMENT HAS A MINIMUM BOTTOM WIDTH OF 3' AND A MAXIMUM SIDE SLOPES OF 1:1 THAT EXTEND TO THE BOTTOM OF THE SPILLWAY SECTION.
7. CONSTRUCT THE MINIMUM FINISHED STONE SPILLWAY BOTTOM WIDTH, AS SHOWN ON THE PLANS, WITH 2:1 SIDE SLOPES EXTENDING TO THE TOP OF THE OVER FILLED EMBANKMENT. KEEP THE THICKNESS OF THE SIDES OF THE SPILLWAY OUTLET STRUCTURE AT A MINIMUM OF 21". THE WEIR MUST BE LEVEL AND CONSTRUCTED TO GRADE TO ASSURE DESIGN CAPACITY.
8. MATERIAL USED IN THE STONE SECTION SHOULD BE WELL-GRADED MIXTURE OF STONE WITH A D50 SIZE OF 9" (CLASS B EROSION CONTROL STONE IS RECOMMENDED) AND A MAXIMUM STONE SIZE OF 14". THE STONE MAY BE MACHINE PLACED AND THE SMALLER STONES WORKED INTO THE VOIDS OF THE LARGER STONES. THE STONE SHOULD BE HARD, ANGULAR AND HIGHLY WEATHER RESISTANT.
9. DISCHARGE INLET WATER INTO THE BASIN IN A MANNER TO PREVENT EROSION. USE TEMPORARY SLOPE DRAINS OR DIVERSIONS WITH OUTLET PROTECTION TO DIVERT SEDIMENT LADEN WATER TO THE UPPER END OF THE POOL AREA TO IMPROVE BASIN TRAP EFFICIENCY.
10. ENSURE THAT THE STONE SPILLWAY OUTLET SECTION EXTENDS DOWNSTREAM PAST THE TOE OF THE EMBANKMENT UNTIL STABLE CONDITIONS ARE REACHED AND OUTLET VELOCITY IS ACCEPTABLE FOR THE RECEIVING STREAM. KEEP THE EDGES OF THE STONE OUTLET SECTION FLUSH WITH THE SURROUNDING GROUND, AND SHAPE THE CENTER TO CONFINE THE OUTFLOW STREAM.
11. DIRECT EMERGENCY BYPASS TO NATURAL, STABLE AREAS. LOCATE BYPASS OUTLETS SO THAT FLOW WILL NOT DAMAGE THE EMBANKMENT.
12. STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION.
13. SHOW THE DISTANCE FROM THE TOP OF THE SPILLWAY TO THE SEDIMENT CLEANOUT LEVEL (1/2 THE DESIGN DEPTH) ON THE PLANS AND MARK IT IN THE FIELD.
14. INSTALL POROUS BAFFLES AS SPECIFIED.

3 TEMPORARY SEDIMENT TRAP
NOT TO SCALE





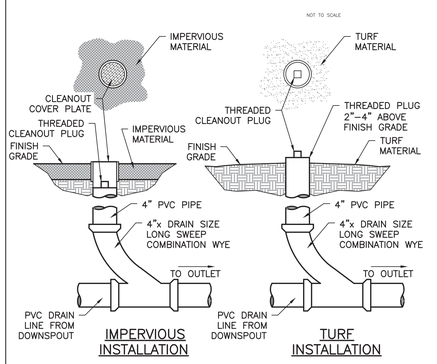
CONSTRUCTION SPECIFICATIONS:

1. PLACE THE BARREL (TYPICALLY 4-INCH SCHEDULE 40 PVC PIPE) ON A FIRM, SMOOTH FOUNDATION OF IMPERVIOUS SOIL. DO NOT USE PERVIOUS MATERAL SUCH AS SAND, GRAVEL, OR CRUSHED STONE AS BACKFILL AROUND THE PIPE. PLACE THE FILL MATERIAL AROUND THE PIP SPILLWAY IN 4-INCH LAYERS AND COMPACT IT UNDER AND AROUND THE PIPE TO AT LEAST THE SAME DENSITY OF THE ADJACENT EMBANKMENT. CARE MUST BE TAKEN NOT TO RAISE THE PIPE FROM THE FIRM CONTACT WITH ITS FOUNDATION WHEN COMPACTING UNDER THE PIPE HAUNCHES. PLACE A MINIMUM DEPTH OF 2-FEET OF COMPACTED BACKFILL OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT. IN NO CASE SHOULD THE PIPE CONDUIT BE INSTALLED BY CUTTING A TRENCH THROUGH THE DAM AFTER THE EMBANKMENT IS COMPLETE.
2. ASSEMBLE THE SKIMMER FOLLOWING THE MANUFACTURERS INSTRUCTIONS, OR AS DESIGNED.
3. LAY THE ASSEMBLED SKIMMER ON THE BOTTOM OF THE BASIN WITH THE FLEXIBLE JOINT AT THE INLET OF THE BARREL PIPE. ATTACH THE FLEXIBLE JOINT TO THE BARREL PIPE AND POSITION THE SKIMMER OVER THE EXCAVATED PIT OR SUPPORT. BE SURE TO ATTACHE A ROPE TO THE SKIMMER AND ANCHOR IT TO THE SIDE OF THE BASIN. THIS WILL BE USED TO PULL THE SKIMMER TO THE SIDE FOR MAINTENANCE.

MAINTENANCE:

INSPECT SKIMMER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.
IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.
IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.
FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

4 FLOATING SKIMMER
NOT TO SCALE



5 STORM DRAIN CLEANOUT
NOT TO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 043255 ENGINEER PHILIP A. PICERNO
10-22-21

CONSTRUCTION DOCUMENTS

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LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

EROSION CONTROL AND DRAINAGE DETAILS

D-03

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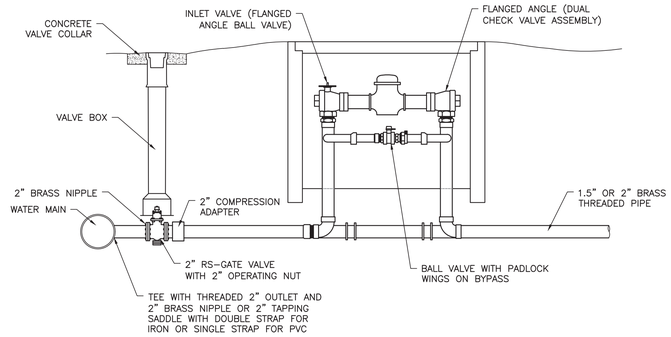
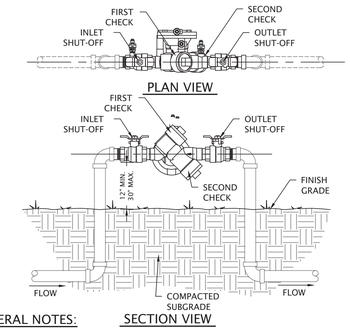


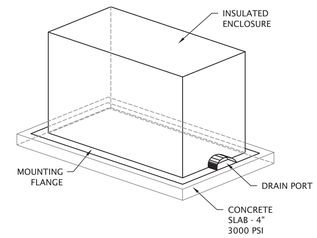
1 1.5" OR 2" FLANGED WATER METER
NOT TO SCALE



GENERAL NOTES: SECTION VIEW

1. ASSEMBLY SHALL BE HOUSED IN AN ALUMINUM INSULATED ENCLOSURE.
2. ASSEMBLY SHALL BE WATTS SERIES 009QT OR APPROVED EQUAL.
3. SEE PLANS FOR SIZE.

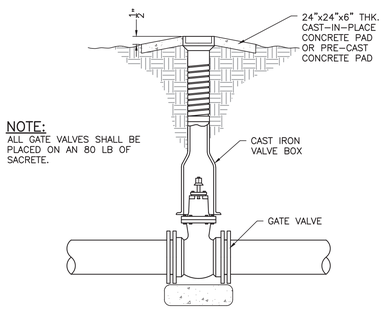
2 RPZ BACKFLOW PREVENTER
NOT TO SCALE



GENERAL NOTES:

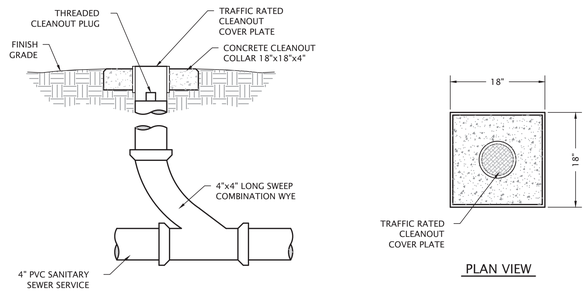
1. ENCLOSURE IS DESIGNED FOR PIPES OF 0.75"-2" DIAMETER.
2. SIZE OF ENCLOSURE PER MANUFACTURER'S SPECIFICATIONS FOR SIZE OF BACKFLOW.
3. ENCLOSURE SHALL HAVE A LOCKING MECHANISM TO SECURE BFP.
4. INSTALLATION SHALL BE PER MANUFACTURER'S GUIDELINES AND SPECIFICATIONS.

3 BFP ENCLOSURE - INSULATED
NOT TO SCALE



NOTE:
ALL GATE VALVES SHALL BE PLACED ON AN 80 LB OF SACRETE.

4 GATE VALVE IN GRASS
NOT TO SCALE



5 SANITARY SEWER CLEANOUT
NOT TO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 043255 ENGINEER PHILIP A. PICERNO
10-22-21

CONSTRUCTION DOCUMENTS

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lkcengineering.com License No. P-1095

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

UTILITY DETAILS

D-04

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GENERAL:

1. PROVIDE CONSTRUCTION CONFORMING TO THE 2018 NORTH CAROLINA BUILDING CODE. REFERENCE TO LATEST EDITION OR OTHER STANDARDS, SPECIFICATIONS, OR CODES SHALL MEET THE LATEST STANDARD OR CODE PUBLISHED AND ADOPTED BY THE LISTED BUILDING CODE.
2. MATERIAL TESTS AND INSPECTIONS ARE REQUIRED PER CHAPTER 17 OF THE 2018 NORTH CAROLINA BUILDING CODE. REFER TO THE PROJECT STATEMENT OF SPECIAL INSPECTIONS FOR REQUIRED TESTS AND INSPECTIONS.
3. THESE NOTES APPLY EXCEPT WHERE OTHERWISE INDICATED BY DRAWINGS OR SPECIFICATIONS.
4. STRUCTURAL DRAWINGS INDICATE TYPICAL AND CERTAIN SPECIFIC CONDITIONS ONLY. SUBMITTED SHOP DRAWINGS DETAIL ALL CONDITIONS IN ACCORDANCE WITH SPECIFIED STANDARDS AND THE SPECIFIC REQUIREMENTS OF THIS PROJECT AS INDICATED ON THE DRAWINGS.
5. COORDINATE THE STRUCTURAL CONTRACT DOCUMENTS WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, CIVIL, AND ALL OTHER CONSULTANTS. NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD IN WRITING OF ANY CONFLICT AND/OR OMISSION. WHERE A CONFLICT OCCURS, THE STRICTEST REQUIREMENT SHALL GOVERN UNLESS OTHERWISE DECIDED BY THE DESIGN TEAM.
6. COORDINATE AND VERIFY FLOOR AND ROOF OPENING SIZES AND LOCATIONS SHOWN WITH ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS. FOR ADDITIONAL OPENINGS NOT SHOWN ON THE STRUCTURAL DRAWINGS REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS. OBTAIN WRITTEN APPROVAL OF ADDITIONAL OPENINGS LARGER THAN 12" X 12" FROM THE STRUCTURAL ENGINEER OF RECORD.
7. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, ADEQUACY, AND SAFETY OF ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, AND ALL OTHER MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
8. COORDINATE THE BUILDING ORIENTATION WITH THE ARCHITECTURAL DRAWINGS.
9. COMPLETE SHOP DRAWINGS FOR CONSTRUCTION OF EACH BUILDING COMPONENT NOT DESIGNED BY THE DESIGN TEAM OF RECORD AND NOT SPECIFIED ON THE PROJECT CONSTRUCTION DOCUMENTS SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER IN THE STATE WHERE THE PROJECT IS LOCATED AND SHALL BE MADE AVAILABLE AT THE JOB SITE.
10. DO NOT SCALE OFF OF DRAWINGS, ASK ARCHITECT FOR DIMENSIONS NOT SHOWN.

DESIGN LOADS

1. LIVE LOADS:

		UNIFORM	CONCENTRATED
PARTITION	=	12 PSF	
ROOF	=	20 PSF	
OFFICE	=	40 PSF	
GARAGE	=	250 PSF	7,500 LBS. ON 4 1/2" SQ AREA

2. DEAD LOADS:

ROOF	=	PER PEMB MFTR
COLLATERAL	=	10 PSF

3. WIND DESIGN DATA:

ULTIMATE WIND SPEED, V_{ULT}	=	129 MPH
NOMINAL DESIGN WIND SPEED, V_{ASD}	=	100 MPH
RISK CATEGORY	=	IV
WIND EXPOSURE	=	C
INTERNAL PRESSURE COEFFICIENT	=	±0.18 ENCLOSED
	=	0.00 OPEN
COMPONENTS AND CLADDING PRESSURES	=	SEE TABLE

4. ROOF SNOW LOADING:

GROUND SNOW LOAD (P/G)	=	10 PSF
FLAT-ROOF SNOW LOAD (P/F)	=	9.2 PSF
SNOW EXPOSURE FACTOR (C/E)	=	1.1
SNOW LOAD IMPORTANCE FACTOR (I)	=	1.2
THERMAL FACTOR (C/T)	=	1.0 MAIN
	=	1.2 FUTURE

5. SEISMIC DESIGN DATA:

SEISMIC IMPORTANCE FACTOR (I)	=	1.50
MAPPED SPECTRAL RESPONSE ACCELERATION PARAMETERS (S_S)	=	0.306
(S_1)	=	0.121
SITE CLASS	=	D
DESIGN SPECTRAL RESPONSE ACCELERATION PARAMETERS (S_{DS})	=	0.317
(S_{D1})	=	0.187
SEISMIC DESIGN CATEGORY	=	D
BASIC SEISMIC FORCE RESISTING SYSTEM	=	PER PEMB MFTR
DESIGN BASE SHEAR	=	PER PEMB MFTR
SEISMIC RESPONSE COEFFICIENT (C/S)	=	PER PEMB MFTR
RESPONSE MODIFICATION COEFFICIENT (R)	=	PER PEMB MFTR
PROCEDURE USED	=	EQUIVALENT LATERAL FORCE PROCEDURE

FOUNDATION:

1. THE DESIGN OF FOUNDATIONS, RETAINING WALLS, AND SLABS-ON-GRADE IS BASED ON THE FOLLOWING CRITERIA ESTABLISHED IN THE GEOTECHNICAL REPORT BY "S&ME, INC", DATED "JUNE 18, 2021", REPORT NUMBER "4305-20-096 CO-1".
   ALLOWABLE SOIL BEARING PRESSURE: 2,000 PSF
   AFTER EXCAVATION, IF THE CONDITION OF THE SOILS DO NOT MEET THE RECOMMENDED DESIGN CRITERIA STATED IN THE GEOTECHNICAL REPORT, NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD SO THAT THE FOUNDATIONS MAY BE REDESIGNED IF NECESSARY.
2. THE GEOTECHNICAL ENGINEER MUST VERIFY THE CONDITION AND/OR ADEQUACY OF ALL SUB-GRADES, FILLS, AND BACKFILLS PRIOR TO THE PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, ETC.
3. DESIGN OF SLAB-ON-GRADE IS BASED UPON A MODULUS OF SUBGRADE REACTION OF 125 PCI.
4. REFER TO GEOTECH FOR REQUIRED SITE PREPARATION AND DEWATERING REQUIREMENTS.

REINFORCED CONCRETE FINISHING:

1. THE FOLLOWING NOTES APPLY TO FINISHING FLOORS AND SLABS.
2. GENERAL: COMPLY WITH ACI 302.1R RECOMMENDATIONS FOR SCREEDING, RESTRAIGHTENING, AND FINISHING OPERATIONS FOR CONCRETE SURFACES. DO NOT WET CONCRETE SURFACES.
3. FLOAT FINISH - APPLY FLOAT FINISH TO SURFACES TO RECEIVE TROWEL FINISH AND TO BE COVERED WITH FLUID-APPLIED OR SHEET WATERPROOFING.
4. TROWEL FINISH (AFTER APPLYING FLOAT FINISH).
   A. APPLY A TROWEL FINISH TO SURFACES EXPOSED TO VIEW OR TO BE COVERED WITH RESILIENT FLOORING, CARPET, CERAMIC OR QUARRY TILE SET OVER A CLEAVAGE MEMBRANE, PAINT, OR ANOTHER THIN FILM FINISH COATING SYSTEM.
   B. FINISH SURFACES TO THE FOLLOWING TOLERANCES F(F) 35 AND F(L) 25 SLAB ON GRADE.
   C. FINISH SURFACES TO THE FOLLOWING TOLERANCES F(F) 25 ELEVATED SLABS.
   D. FINISH AND MEASURE SURFACE SO GAP AT ANY POINT BETWEEN CONCRETE SURFACE AND AN UNLEVELED, FREESTANDING 10-FT LONG STRAIGHTEDGE RESTING ON TWO HIGH SPOTS AND PLACED ANYWHERE ON THE SURFACE DOES NOT EXCEED 1/8 INCH.
5. TROWEL AND FINE BROOM FINISH
   A. APPLY A TROWEL FINISH TO SURFACES WHERE CERAMIC OR QUARRY TILE IS TO BE INSTALLED BY EITHER THICKSET OR THIN-SET METHOD.
   B. COMPLY WITH FLATNESS AND LEVELNESS TOLERANCES FOR TROWEL FINISHED FLOOR SURFACES.
   C. APPLY A BROOM FINISH TO EXTERIOR CONCRETE PLATFORMS, STEPS, RAMPS, AND ELSWHERE WHERE SLIPAGE IS A CONCERN.
6. COORDINATE REQUIRED FINAL FINISH WITH ARCHITECT BEFORE APPLICATION.
7. MEASURE FLOOR AND SLAB FLATNESS AND LEVELNESS ACCORDING TO ASTM E 1155 WITHIN 8 HOURS OF FINISHING.
8. REPAIR AND PATCH DEFECTIVE CONCRETE SURFACE AREAS WHEN APPROVED BY THE ARCHITECT OR STRUCTURAL ENGINEER OF RECORD. REMOVE AND REPLACE CONCRETE THAT CANNOT BE REPAIRED AND PATCHED TO THE STATISFACTION OF THE ARCHITECT OR STRUCTURAL ENGINEER OF RECORD.
9. LIMIT FORMWORK SURFACE IRREGULARITIES 1/8 INCH FOR EXPOSED SMOOTH-FORMED FINISHED SURFACES AND 1/4" FOR EXPOSED ROUGH-FORMED FINISHED SURFACES

REINFORCED CONCRETE:

1. PROVIDE REINFORCED CONCRETE CONFORMING TO THE FOLLOWING STANDARDS.
   A. ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS, LATEST EDITION.
   B. ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE, LATEST EDITION.
   C. ACI 302.1R, GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION, LATEST EDITION.
   D. ACI 360R, DESIGN OF SLABS-ON-GROUND, LATEST EDITION.
   E. PROJECT SPECIFICATION MANUAL DIVISION 3 (WHEN PROVIDED)
2. FULLY DOCUMENT AND SUBMIT FOR REVIEW THE PROPOSED MATERIALS AND MIX DESIGN FOR ALL CONCRETE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE REQUIRED DESIGN STRENGTH. ALL CONCRETE TEST DATA MUST BE AVAILABLE AT THE JOB SITE.
3. DETAIL CONCRETE REINFORCEMENT ACCORDING TO ACI SP-66 DETAILING MANUAL. SUBMIT SHOP DRAWINGS FOR APPROVAL, SHOWING ALL FABRICATION DIMENSIONS AND LOCATIONS FOR PLACING CONCRETE REINFORCING AND ACCESSORIES. DO NOT BEGIN FABRICATION UNTIL SHOP DRAWINGS ARE COMPLETED AND REVIEWED BY THE STRUCTURAL ENGINEER OF RECORD. UNLESS SPECIFICALLY APPROVED OTHERWISE, DETAIL ALL CONCRETE WALLS AND BEAMS IN ELEVATION.
4. PROVIDE NORMAL WEIGHT CONCRETE PER CONCRETE STRENGTH TABLE.
   PROVIDE CONCRETE WITH:
   A. 4% TO 6% ENTRAINED AIR BY VOLUME IN CONCRETE PERMANENTLY EXPOSED TO WEATHER.
   B. THE USE OF CALCIUM CHLORIDE, CHLORIDE IONS, OR OTHER SALTS IS NOT PERMITTED.
   C. PLACE CONCRETE AT A SLUMP OF 5" ± 1" UNLESS NOTED OTHERWISE.
5. UNLESS NOTED OTHERWISE, PROVIDE REINFORCING STEEL CONFORMING TO ASTM A 615, GRADE 60.
6. PROVIDE WELDED WIRE FABRIC (MESH) IN FLAT SHEETS (ROLLS NOT PERMITTED) CONFORMING TO ASTM A1064. LAP WELDED WIRE FABRIC A MINIMUM OF 6" AT EACH SPLICE.
7. SEE ARCHITECTURAL DRAWINGS FOR WATERSTOPS
8. UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING CONCRETE COVER ON ALL REINFORCING STEEL:
   A. CONCRETE AGAINST EARTH (NOT FORMED): 3"
   B. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:
      a. #6 THROUGH #18 BARS: 2"
      b. #5 BARS AND SMALLER: 1 1/2"
   C. FORMED CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
      1. SLABS, JOISTS, AND WALLS: 3/4"
      2. BEAMS (STIRRUPS) AND COLUMNS (TIES): 1 1/2"
9. REINFORCING, INCLUDING DOWELS, SHALL BE SECURELY TIED AND CAST WITH THE LOWER MEMBER. PLACING REINFORCING AFTER CONCRETE HAS BEEN PLACED IS NOT PERMITTED.
10. FIELD BENDING OF REINFORCING PARTIALLY EMBEDDED IN CONCRETE IS NOT ALLOWED UNLESS SPECIFICALLY NOTED IN THE STRUCTURAL DOCUMENTS OR APPROVED BY STRUCTURAL ENGINEER.
11. PROVIDE DOWELS FROM THE FOUNDATION WHICH ARE THE SAME GRADE, SIZE AND NUMBER AS VERTICAL WALL OR COLUMN REINFORCING UNLESS NOTED OTHERWISE.
12. TIE ALL REINFORCING STEEL AND EMBEDDED ITEMS SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO MAINTAIN THE POSITION OF THE REINFORCEMENT WITHIN SPECIFIED TOLERANCES DURING ALL CONSTRUCTION ACTIVITIES.
13. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTIONS OF ALL FOOTINGS, BEAMS, AND WALLS.
14. PROVIDE CONSTRUCTION OR CONTRACTION JOINTS IN SLABS ON GRADE SPACED AT A MAXIMUM 12'-0" OC IN EACH DIRECTION AND WITH THE LENGTH BETWEEN CONTROL JOINTS NO GREATER THAN 1-1/4 TIMES THE WIDTH BETWEEN CONTROL JOINTS.
15. SAWCUT CONTROL JOINTS AS SOON AFTER PLACING AS POSSIBLE, WHEN CONCRETE WILL NOT RAVEL, TEAR, ABRADE, OR OTHERWISE DAMAGE THE SURFACE AND BEFORE THE CONCRETE DEVELOPS RANDOM SHRINKAGE CRACKING. CURE CONCRETE IN ACCORDANCE WITH ACI 301, BEGIN CURING IMMEDIATELY AFTER PLACING TO LIMIT CRACKING PRIOR TO SAWCUTTING CONTROL JOINTS.
16. NON-STRUCTURAL EMBEDMENTS (CONDUIT, PIPES, SLEEVES, ETC) WITHIN WALLS, BEAMS OR SLABS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. ALL EMBEDMENTS SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH ACI STANDARDS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. ALUMINIUM MATERIALS SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE
   B. OVERALL OUTSIDE DIMENSION OF EMBEDMENTS SHALL NOT EXCEED 1/3 THE CONCRETE MEMBER THICKNESS UP TO 2" MAXIMUM.
   C. EMBEDMENTS SHALL BE SPACED A MINIMUM OF 6" OC
   D. EMBEDMENTS SHALL NOT ALTER OR DISPLACE REINFORCING
17. PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE. SPLICE REINFORCING BARS ONLY AS SHOWN OR APPROVED. STAGGER SPLICES WHERE POSSIBLE. USE CLASS "B" TENSION SPLICES UNLESS NOTED OTHERWISE INCLUDING DOWELS.
18. TEST CYLINDERS SHALL BE TAKEN TO THE LESSER OF THE FOLLOWING.
   A. 75 CUBIC YARDS
   B. 24 HOUR PERIOD
   C. CHANGE IN CONCRETE STRENGTH
19. TEST CYLINDERS AT 7 DAYS AND 28 DAYS. SHOULD 28 DAY STRENGTH NOT BE MET, TEST REMAINING CYLINDERS AT 56 DAYS. TEST RESULTS SHALL BE FORWARDED TO THE STRUCTURAL ENGINEER OF RECORD.
20. THE LOCATION OF CONSTRUCTION JOINTS REQUIRES THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
   A. UNLESS NOTED OTHERWISE, THOROUGHLY ROUGHEN (BY MECHANICAL MEANS) AND CLEAN CONSTRUCTION JOINTS.
21. THE PLACEMENT OF ALL REINFORCING STEEL MUST BE REVIEWED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS TO BE CONSTRUCTED OR BY A REPRESENTATIVE RESPONSIBLE TO HIM (REF: ACI 318).
22. PROVIDE COMPRESSIBLE FILLER AND SEALANT IN SLAB-ON-GRADE AND WALL AND COLUMN INTERFACES THAT ARE NOT DOWELED TOGETHER.
23. ALL COLUMN POCKETS SHALL BE FILLED WITH CONCRETE AFTER COLUMN IS ERECTED.
24. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PADS UNDER EQUIPMENT. PADS SHALL EXTEND BEYOND EQUIPMENT 6" NOMINAL ON ALL SIDES. APPLY BONDING AGENT TO EXISTING CONCRETE SLAB PRIOR TO PLACING HOUSEKEEPING PAD. SEE DOCUMENTS FROM OTHER DISCIPLINES FOR EQUIPMENT LOCATIONS.
25. AT FLOOR DRAINS, LOCALLY SLOPE FLOOR TOWARD DRAIN. SEE DOCUMENTS FROM OTHER DISCIPLINES FOR DRAIN LOCATIONS.
26. UNLESS NOTED OTHERWISE, STRUCTURAL SLABS EXPOSED TO WEATHER SHALL BE SLOPED APPROXIMATELY 1/4 INCH PER FOOT AWAY FROM OCCUPIED SPACE TOWARD FLOOR DRAINS, SCUPPERS, GUTTERS, ETC. FOR EXTERIOR NON-STRUCTURAL FLATWORK (EX: SIDEWALKS, PAVEMENT) REFERENCE CIVIL SITE PLAN AND SPECIFICATIONS.
27. SEE ARCHITECTURAL DOCUMENTS FOR MOLDS, GROOVES, ORNAMENTS, CLIPS, ETC REQUIRED TO BE ENCASED IN CONCRETE AND FOR LOCATION OF FLOOR FINISHES AND SLAB DEPRESSIONS.

STRUCTURAL MASONRY:

1. PROVIDE STRUCTURAL MASONRY CONFORMING TO THE FOLLOWING STANDARDS:
   A. ACI 530 / ASCE 5 / TMS 402, BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES, LATEST EDITIONS.
   B. ACI 530.1 / ASCE 6 / TMS 602, SPECIFICATIONS FOR CONCRETE MASONRY STRUCTURES, LATEST EDITIONS.
2. LOAD BEARING MASONRY WALLS ARE DESIGNED IN ACCORDANCE WITH CHAPTERS 1 AND 2 OF ACI 530.
3. PROVIDE HOLLOW, LOAD BEARING CONCRETE MASONRY UNITS (CMU) CONFORMING TO ASTM C 90 WITH A MINIMUM COMPRESSIVE STRENGTH OF MASONRY (F'/M) OF 2000 PSI AND A NET STRENGTH OF 2000 PSI ON THE NET CROSS-SECTIONAL AREA OF CMU DETERMINED IN ACCORDANCE WITH ASTM C 140.
4. PROVIDE MORTAR CONFORMING TO ASTM C 270, TYPE S. STANDARD MORTAR BED JOINT THICKNESS IS 3/8" AND MUST NOT VARY OUTSIDE OF THE RANGE BETWEEN ONE QUARTER INCH AND ONE HALF INCH. DO NOT USE AIR ENTRAINED MORTAR.
5. PROVIDE GROUT FOR REINFORCED MASONRY CONFORMING TO ASTM C 476 WITH MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AND A MINIMUM SLUMP OF 10".
6. PROVIDE STEEL REINFORCEMENT IN MASONRY WALLS CONFORMING TO ASTM A615, GRADE 60.
7. PROVIDE MASONRY TIES AND ANCHORS OF THE TYPE AND SPACING AS DETAILED ON THE STRUCTURAL DRAWINGS AND IN CONFORMANCE WITH ASTM A82.
8. PROVIDE LADDER TYPE HORIZONTAL JOINT REINFORCING CONFORMING TO ASTM A951 IN ALL MASONRY WALLS. UNLESS NOTED OTHERWISE, PLACE 9 GAGE ZINC COATED LADDER TYPE HORIZONTAL JOINT REINFORCING AT 16" ON CENTER. LAP HORIZONTAL JOINT REINFORCING MINIMUM 12". USE PREFABRICATED 'L'S AND 'T'S AT CORNERS AND INTERSECTIONS.
9. LAY ALL MASONRY UNITS IN RUNNING BOND.
10. FOR GROUTED WALLS:
   A. THE MAXIMUM HEIGHT OF GROUT LIFTS MUST NOT EXCEED 5'-0".
   B. THE MAXIMUM UN-GROUTED HEIGHT OF 8" OR THICKER CMU WALLS PRIOR TO GROUTING MUST NOT EXCEED 12'-0".
   C. REFER TO TABLE 7 OF ACI 530.1 FOR THE MAXIMUM UN-GROUTED HEIGHT OF CMU WALLS THINNER THAN 8".
   D. CONSOLIDATE AND RECONSOLIDATE GROUT IN ACCORDANCE WITH PARAGRAPH 3.5.E OF ACI 530.1.
   E. ALL GROUT POURS HIGHER THAN 5'-0" MUST HAVE INSPECTION HOLES AT THE BASE OF THE WALL.
11. REINFORCEMENT:
   A. DETAIL REINFORCEMENT IN LOAD BEARING CMU WALLS IN ELEVATION ON SHOP DRAWINGS.
   B. LAP VERTICAL MASONRY WALL REINFORCING AS SHOWN IN THE MASONRY LAP LENGTH SCHEDULE AND PROVIDE MINIMUM BAR SPLICE LENGTH.
12. PROVIDE VERTICAL CONTROL JOINTS IN ALL MASONRY WALLS NOT RETAINING EARTH. UNLESS NOTED OTHERWISE ON THE ARCHITECTURAL DRAWINGS, PLACE VERTICAL CONTROL JOINTS AT THREE TIMES THE WALL STORY HEIGHT, BUT NOT CLOSER THAN 25'-0" ON CENTER OR FARTHER THAN 40'-0" ON CENTER.
13. UNLESS NOTED OTHERWISE, PROVIDE MINIMUM (1) #5 VERTICAL BAR, GROUTED FULL STORY HEIGHT, AT EACH SIDE OF OPENINGS AND AT ALL CORNERS AND ENDS OF WALLS, INCLUDING BOTH SIDES AT ENDS OF WALL PANELS AT VERTICAL CONTROL JOINTS.
14. UNLESS NOTED OTHERWISE, ANCHOR SIDES AND TOPS OF MASONRY WALL PANELS TO THE STRUCTURE BY DOVETAIL ANCHORS, METAL STRAPS, OR EQUIVALENT.
15. PROVIDE A CONTINUOUS BOND BEAM AT THE TOP OF ALL MASONRY WALLS. UNLESS NOTED OTHERWISE REINFORCE BOND BEAMS WITH (2) #5 CONTINUOUS REINFORCING BARS.
16. PROVIDE LEVEL B QUALITY ASSURANCE AS DESCRIBED IN TABLE 4 OF ACI 530.1 / ASCE 6 / TMS 602, LATEST EDITIONS.
17. SAMPLE AND TEST GROUT IN ACCORDANCE WITH ARTICLES 1.4 B AND 1.6 OF ACI 530.1 / ASCE 6 / TMS 602, LATEST EDITIONS.

PERFORMANCE SPECIFIED ITEMS:

1. EMPLOY OR RETAIN A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF WHICH THIS PROJECT IS LOCATED TO DESIGN THE FOLLOWING STRUCTURAL SYSTEMS AND COMPONENTS:
   A. PRE-ENGINEERED METAL BUILDING SYSTEMS
   B. OTHER SYSTEMS NOT SHOWN IN THE STRUCTURAL DRAWINGS
2. THE COMPONENT ENGINEER IS RESPONSIBLE FOR CODE CONFORMANCE AND ENSURING DESIGN MEETS ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR ALL PERFORMANCE SPECIFIED ITEMS. SUBMITTALS SHALL CLEARLY IDENTIFY THE SPECIFIC PROJECT AND APPLICABLE CODES, LIST THE DESIGN CRITERIA, AND SHOW ALL DETAILS AND PLANS NECESSARY FOR PROPER FABRICATION AND INSTALLATION. CALCULATIONS AND SHOP DRAWINGS SHALL IDENTIFY SPECIFIC PRODUCT UTILIZED, GENERIC PRODUCTS WILL NOT BE ACCEPTED.
4. SHOP DRAWINGS AND CALCULATIONS REQUIRE THE SEAL, DATE AND SIGNATURE OF THE COMPONENT ENGINEER. STRUCTURAL ENGINEER OF RECORD WILL RETAIN ONE SIGNED AND SEALED PRINT FOR RECORD.
5. SHOP DRAWING SUBMITTALS FOR PERFORMANCE SPECIFIED COMPONENTS SHALL BE REVIEWED BY THE COMPONENT ENGINEER PRIOR TO SUBMITTAL. IF THE SHOP DRAWINGS ARE NOT SIGNED AND SEALED BY THE COMPONENT ENGINEER, THEN PROVIDE A SIGNED LETTER OR A NOTE ON SHOP DRAWING SUMBITTAL, WRITTEN AND SIGNED BY THE COMPONENT ENGINEER, INDICATING THAT THE SHOP DRAWINGS ARE IN CONFORMANCE WITH THE CALCULATIONS. ALL CALCULATIONS SHALL BE SIGNED AND SEALED BY COMPONENT ENGINEER, NO EXCEPTIONS WILL BE ALLOWED.
6. SUBMITTALS NOT MEETING THE CRITERIA LISTED IN THIS SECTION WILL NOT BE REJECTED. BENNETT & PLESS, INC WILL NOT BE RESPONSIBLE FOR DELAYS CAUSED BY REJECTED SUBMITTALS.

SPECIAL INSPECTIONS:

1. IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, 2015 EDITION, SECTION 1704, THE OWNER WILL RETAIN THE SERVICES OF "SPECIAL INSPECTOR(S)" TO PERFORM INSPECTIONS PURSUANT TO THE "STATEMENT OF SPECIAL INSPECTIONS" AND THE "SCHEDULE OF SPECIAL INSPECTIONS." THESE INSPECTIONS ARE IN ADDITION TO THE INSPECTIONS SPECIFIED IN SECTION 110 OF THE INTERNATIONAL BUILDING CODE, 2015 EDITION.
2. THE SPECIAL INSPECTOR SHALL BE QUALIFIED IN ACCORDANCE WITH THE BUILDING CODE.
3. THE CONTRACTOR SHALL COOPERATE WITH SPECIAL INSPECTOR(S) TO FACILITATE EXECUTION OF REQUIRED SERVICES. CONTRACTOR SHALL PROVIDE SPECIAL INSPECTOR(S) WITH CURRENT CONSTRUCTION SCHEDULE.
4. THE CONTRACTOR SHALL SUPPLY THE SPECIAL INSPECTOR WITH ALL CONTRACT DOCUMENTS, INCLUDING REVISIONS, AMENDMENTS, ETC.
5. THE CONTRACTOR SHALL SECURE AND DELIVER TO SPECIAL INSPECTORS ALL REQUIRED SUBMITTALS AND MATERIAL SAMPLES FOR TESTING.
6. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS TO THE WORK TO BE INSPECTED BY THE SPECIAL INSPECTORS.
7. THE CONTRACTOR SHALL NOTIFY SPECIAL INSPECTOR SUFFICIENTLY IN ADVANCE OF OPERATIONS TO ALLOW FOR PERSONNEL ASSIGNMENT AND SCHEDULING BY SPECIAL INSPECTOR. WHEN TEST OR INSPECTION CAN NOT BE PERFORMED AFTER SUCH NOTICE (AND WITHOUT ADEQUATE CANCELLATION NOTICE), THE CONTRACTOR SHALL REIMBURSE OWNER THROUGH SPECIFICATION, DIVISION 1, PROCEDURES, FOR SPECIAL INSPECTOR'S COSTS AND EXPENSES. THE CONTRACTOR IS RESPONSIBLE FOR COSTS OF RE-TESTING (INSPECTIONS, TESTS, QUALITY ASSURANCE WORK, ETC.) WHERE RESULTS PROVE UNSATISFACTORY OR NONCOMPLIANT, REGARDLESS OF WHETHER ORIGINAL TEST WAS THE CONTRACTOR'S RESPONSIBILITY. COSTS OF RE-TESTING ARE THE RESPONSIBILITY OF THE CONTRACTOR.
8. THE SPECIAL INSPECTOR SHALL VERIFY THAT THE CONSTRUCTION FOLLOWS THE INTENT OF THE CONTRACT DOCUMENTS, APPLICABLE CODES, AND THE PERMIT SUCH THAT THE PUBLIC SAFETY WILL BE PROVIDED TO OCCUPANTS OF THE STRUCTURE.
9. THE SPECIAL INSPECTOR SHALL:
   A. REVIEW AND BE FAMILIAR WITH THE CONTRACT DOCUMENTS FOR ALL AREAS DEFINED IN THE "SCHEDULE OF SPECIAL INSPECTIONS."
   B. CONSULT WITH THE DESIGN PROFESSIONALS FOR CLARIFICATIONS CONCERNING QUESTIONS, PROBLEMS, ETC.
   C. ATTEND PRE-CONSTRUCTION AND ROUTINE JOB MEETINGS REQUIRED OF THE CONTRACTOR TO ASSURE THAT THE CONTRACTOR UNDERSTANDS THE CONTRACT DOCUMENTS.
   D. NOTIFY THE CONTRACTOR OF THEIR PRESENCE AND RESPONSIBILITIES AT THE JOB SITE.
   E. PROVIDE ADEQUATE OBSERVATIONS TO ASSURE THAT THE WORK BY THE CONTRACTOR IS IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.
   F. PERFORM ALL WORK AS DEFINED IN THE "SCHEDULE OF SPECIAL INSPECTIONS", INCLUDING REVIEW OF APPLICABLE SUBMITTALS. PERFORM ALL SPECIAL INSPECTIONS INDICATED IN THE SPECIFICATIONS.
   G. REPORT NONCONFORMING ITEMS TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
   H. PREPARE AND SUBMIT THE DAILY, INTERIM AND FINAL REPORT OF SPECIAL INSPECTIONS.
   I. REPORT ANY DAMAGING EVENTS AND OBSERVED NONCONFORMING CONDITIONS SUCH AS EXPOSED REINFORCEMENT, UNSPECIFIED FIELD ALTERATIONS TO STEEL, ETC. AND PREPARE AND SUBMIT A DISCREPANCY REPORT.
   J. INITIAL AND DATE THE "DATE COMPLETED" BOX IN THE SCHEDULE OF SPECIAL INSPECTIONS SERVICES AS THE INSPECTION AND TESTING ACTIVITIES ARE COMPLETED.
10. THE DISCREPANCY REPORT SHALL BE WRITTEN FOR EACH NONCONFORMING ITEM AND SHALL CONTAIN:
   A. DESCRIPTION AND EXACT LOCATION.
   B. REFERENCE TO APPLICABLE DRAWINGS AND SPECIFICATIONS.
   C. RESOLUTION OR CORRECTIVE ACTION TAKEN AND THE DATE.
11. THE DAILY AND INTERIM REPORT SHALL CONTAIN:
   A. DESCRIPTION OF THE SPECIAL INSPECTION AND TESTS MADE WITH LOCATION.
   B. INDICATION OF NONCONFORMING ITEMS AND THEIR RESOLUTION.
   C. LISTING OF UNRESOLVED ITEMS AND PARTIES NOTIFIED.
   D. ITEMIZATION OF ANY CHANGES AUTHORIZED BY THE DESIGN PROFESSIONAL
12. SPECIAL INSPECTION REPORTS AND A FINAL REPORT IN ACCORDANCE WITH THE BUILDING CODE SHALL BE AVAILABLE AT THE TIME THE BUILDING IS APPROVED FOR OCCUPANCY.

SHOP DRAWINGS:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS THAT ADEQUATELY DEPICT THE STRUCTURAL ELEMENTS AND CONNECTIONS SHOWN IN THE CONTRACT DOCUMENTS. STRUCTURAL DRAWINGS INDICATE TYPICAL AND CERTAIN CONDITIONS ONLY. SHOP DRAWINGS SHALL DETAIL ALL CONDITIONS IN ACCORDANCE WITH SPECIFIED STANDARDS AND SPECIFIC REQUIREMENTS OF THIS PROJECT.
2. REVIEW OF SUBMITTALS AND SHOP DRAWINGS BY THE ARCHITECT/ENGINEER DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATIONS OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS.
3. SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF QUANTITIES, LENGTHS, ELEVATIONS, DIMENSIONS, ETC.
4. SHOP DRAWING SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY. SHOP DRAWINGS SHALL BE REVIEWED, STAMPED AND SIGNED BY THE CONTRACTOR PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER. DRAWINGS SUBMITTED WITHOUT REVIEW WILL BE RETURNED UNCHECKED.
5. THE USE OR REPRODUCTIONS OF THESE CONTRACT DRAWINGS OR ANY PART OF THEM BY CONTRACTOR IN LIEU OF PREPARATION OF SHOP DRAWINGS WILL BE REJECTED UNCHECKED.
6. MAXIMUM REQUIRED TURN AROUND TIME FOR SHOP DRAWING APPROVAL BY STRUCTURAL ENGINEER IS TEN (10) WORKING DAYS.
7. THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED PRIOR TO CONSTRUCTION:
   A. CONCRETE MIX DESIGN
   B. CONCRETE REINFORCING
   C. MASONRY REINFORCEMENT
   D. MASONRY
   E. STRUCTURAL STEEL
   F. PRE-ENGINEERED METAL BUILDING (REQUIRES DELEGATED DESIGN)
   G. MECHANICAL ANCHORS
   H. CHEMICAL ANCHORS

PRE-ENGINEERED METAL BUILDING:

1. PRE-ENGINEERED BUILDING SHALL BE FULLY ENGINEERED & FABRICATED BY THE MANUFACTURER & SHALL BEAR THE SEAL & SIGNATURE OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE CONSTRUCTION IS TO OCCUR. DESIGN & ERECTION DRAWINGS SHALL BE SUBMITTED & SHALL INCLUDE COLUMN LAYOUT/LOCATIONS, MEMBER SPACING, SIZE OF MEMBERS, CONNECTIONS & BRACING. DESIGN SHALL CONSIDER LL, DL (INCLUDING TRUE COLLATERAL DEAD LOAD FROM SUSPENDED PIPING, HVAC & OTHER EQUIPMENT LOADS SUPPORTED BY SUPER-STUCTURE & COORDINATED/CALCULATED BY PRE-ENGINEERED BUILDING DESIGNER), SNOW LOAD & SNOW DRIFT WHERE APPLICABLE (INCLUDING DRIFT ON PRE-ENGINEERED BUILDING WHERE CONSTRUCTED ADJACENT TO TALLER BUILDING/STRUCTURE). CALCULATIONS SHALL ALSO BE SUBMITTED & BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE PROJECT WILL OCCUR. BUILDING DESIGNER SHALL REFERENCE THE PROJECT NOTES INCLUDED IN THIS SET OF DRAWINGS FOR BUILDING LOADS AND PROVIDE AN INDEPENDENT CODE ANALYSIS FOR CODE-PRESCRIBED LOADS FOR THE PRE-ENGINEERED BUILDING- REPORT DISCREPANCIES TO ENGINEER OF RECORD FOR REVIEW & RESOLUTION BEFORE CONTINUING WITH BUILDING DESIGN. PRE-ENGINEERED BUILDING SHALL HAVE A MAXIMUM BUILDING DRIFT OF H/300.
2. FOUNDATIONS HAVE BEEN DESIGNED FOR PRELIMINARY LOADS PROVIDED BY THE PRE-ENGINEERED METAL BUILDING MANUFACTURER. SHOP DRAWINGS AND REACTIONS TO BE PROVIDED FOR ENGINEER OF RECORD REVIEW PRIOR TO ISSUING OTHER SHOP DRAWINGS OR ORDERING MATERIALS.
3. CONCRETE FOUNDATIONS TO BE CENTERED ON PRE-ENGINEERED BUILDING STEEL COLUMNS UNLESS NOTED OTHERWISE.
4. NO FOUNDATION SHALL BE POURED UNTIL THE PRE-ENGINEERED BUILDING SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED, AND FOUNDATION LOADS HAVE BEEN REVIEWED AND VERIFIED BY THE ENGINEER OF RECORD.
5. DESIGN & ERECTION DRAWINGS SHALL BE SUBMITTED & SHALL INCLUDE COLUMN LAYOUT/LOCATIONS, MEMBER SPACING, SIZE OF MEMBERS, CONNECTIONS & BRACING.
6. PEMB IS TO BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING AND FIRE CODE (2015 IBC) RELATED REGULATIONS AND ASCE/SEI 7-10.

POST-INSTALLED ANCHORS:

1. GENERAL
   A. PRE-CONSTRUCTION DUTIES OF THE CONTRACTOR:
      1. ARRANGE FOR AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED.
      2. PROVIDE 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 INSTALLING ANCHORS.
   B. INSTALL POST-INSTALLED ANCHORS ONLY WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS.
   C. OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
   D. 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 OR INDICATED IN THE MANUFACTURER'S LITERATURE.
   E. EXISTING REINFORCING BARS AND OTHER EMBEDDED MATERIAL CONTAINED IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS.
      1. CONTRACTOR REVIEW THE EXISTING STRUCTURAL DRAWINGS AND UNDERTAKE TO LOCATE THE POSITION OF MATERIAL EMBEDDED IN THE CONCRETE AT THE LOCATIONS OF THE DETAILED ANCHORS, BY HILTI FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS UNLESS IT IS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT.
   F. DRILL AND CLEAN HOLES IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
   G. SUBMIT SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW TO THE ENGINEER-OF-RECORD PRIOR TO USE ALONG WITH:
      1. PROVIDE CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
      2. PROVIDE CALCULATIONS THAT DEMONSTRATE THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE.
      3. INCLUDE CONSIDERATION OF CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE IN SUBSTITUTION REQUEST.
      4. EVALUATION OF SUBSTITUTIONS WILL BE BASED ON THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS.
2. CONCRETE ANCHORS
   A. MEDIUM DUTY MECHANICAL AND SCREW ANCHORS FOR USE IN CRACKED AND UN-CRACKED CONCRETE THAT HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 355.2 AND ICC-ES AC193. PRE-APPROVED MECHANICAL AND SCREW ANCHORS INCLUDE:
      1. HILTI KWIK BOLT-TZ EXPANSION ANCHORS (ICC ESR-1917)
      2. HILTI KWIK HUS-EZ AND KWIK HUS EZ-I SCREW ANCHORS (ICC ESR-3027)
      3. SIMPSON STRONG-TIE "TITEN-HD" SCREW ANCHORS (ICC ESR-2713)
      4. SIMPSON STRONG-TIE "STRONG-BOLT 2" EXPANSION ANCHORS (ICC ESR-3037)
      5. DEWALT / POWERS POWER-STUD + SD2 EXPANSION ANCHORS (ICC ESR 2502)
   B. HEAVY DUTY MECHANICAL ANCHORS FOR CRACKED AND UN-CRACKED CONCRETE USE:
      1. HILTI HDA UNDERCUT ANCHORS (ICC ESR 1546)
      2. HILTI HSL-3 EXPANSION ANCHORS (ICC ESR 1545)
      3. DEWALT / POWERS ATOMIC + UNDERCUT ANCHOR (ICC ESR 3067)
   C. ADHESIVE ANCHORS FOR USE IN CRACKED AND UN-CRACKED CONCRETE THAT HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC308. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
      1. HILTI HIT-HY 200 SAFE SET SYSTEM WITH HILTI HIT-Z ROD (ICC ESR-3187)
      2. HILTI HIT-RE 500-V3 EPOXY ADHESIVE ANCHORING SYSTEM WITH HAS-E THREADED ROD (ICC ESR-3814)
      3. DEWALT / POWERS PURE 110 + STANDARD CURE EPOXY (ICC ESR 3298)
3. MASONRY ANCHORS
   A. ANCHORAGE TO SOLID-GROUTED CONCRETE MASONRY
      1. MECHANICAL AND CONCRETE SCREW ANCHORS FOR USE IN SOLID-GROUTED CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC01 OR AC106, RESPECTIVELY. PRE-APPROVED MECHANICAL AND CONCRETE SCREW ANCHORS INCLUDE:
         a. HILTI KWIK HUS-EZ SCREW ANCHOR (ICC ESR-3056)
         b. HILTI KWIK BOLT-3 EXPANSION ANCHORS (ICC ESR-1385)
         c. SIMPSON STRONG-TIE "WEDGE-ALL" (ICC ESR-1396)
         d. SIMPSON STRONG-TIE "TITEN-HD" (ICC ESR-1056)
         e. DEWALT / POWERS POWER-STUD + SD1 (ICC ESR 2966)
      2. ADHESIVE ANCHORS FOR USE IN SOLID-GROUTED CONCRETE MASONRY SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ICC-ES AC58. PRE-APPROVED ADHESIVE ANCHORS INCLUDE:
         a. HILTI HIT-HY 200 MASONRY ADHESIVE ANCHORING SYSTEM (ICC ESR-3963).
         b. SIMPSON STRONG-TIE "SET-XP" (ICC ESR-1772)
         c. SIMPSON STRONG-TIE "AT" (ICC ESR-1958)
         d. DEWALT / POWERS AC200 + FAST CURE ACRYLIC (ICC ESR-4027)

STRUCTURAL STEEL:

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH LATEST EDITION THE "MANUAL OF STEEL CONSTRUCTION" AND "THE SPECIFICATION FOR DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND SPECIFICATION MANUAL DIVISION 05 (WHEN PROVIDED)
2. SUBMIT SHOP DRAWINGS FOR FABRICATION AND ERECTION OF ALL STEEL MEMBERS IN ACCORDANCE WITH AISC STANDARDS NOTED ABOVE. DETAILER SHALL ASSUME EQUAL BEAM SPACING BETWEEN COLUMN LINES (OR BETWEEN BEAMS THAT ARE SPECIFICALLY LOCATED ON THE DRAWINGS), UNLESS NOTED OTHERWISE ON THE DRAWINGS.
3. STRUCTURAL STEEL SHALL CONFIRM TO THE FOLLOWING, UNLESS OTHERWISE NOTED:
   A. WIDE FLANGE SHAPES.. ASTM A992 (Fy = 50 KSI)
   B. MISC SHAPES (S,M,C, MC, L), PLATES, BARS............. ASTM A36 (Fy = 36 KSI)
   C. SQUARE/RECTANGULAR TUBING (HSS)....................... ASTM A500 GRADE B (Fy = 46 KSI)
   D. ROUND TUBING (HSS)... ASTM A500 GRADE B (Fy = 42 KSI)
   E. STRUCTURAL PIPE.. ASTM A53 GRADE B (Fy = 35 KSI)
   F. STRUCTURAL BOLTS (INCL WASHERS & NUTS)......... ASTM A325 OR A490
   G. ANCHOR RODS... ASTM F1554 GRADE 36
4. PRIME STRUCTURAL STEEL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. IF SPECIFICATION MANUAL HAS NOT BEEN PROVIDED ALL STRUCTURAL STEEL NOT RECEIVING FIRE-PROOFING SHALL RECEIVE ONE SHOP COAT OF RUST-INHIBITIVE PRIMER. ALL STEEL WITH EXTERIOR EXPOSURE SHALL BE PAINTED WITH A DOUBLE COAT OF RUST PROHIBITIVE EPOXY PRIMER (MATERIAL AND THICKNESS TO BE SPECIFIED BY ARCHITECT) UNLESS NOTED AS GALVANIZED.
5. STEEL BELOW GRADE SHALL HAVE A MINIMUM OF 4" CONCRETE COVER PROTECTION OR PROTECTED WITH 2 COATS OF ASPHALTIC PAINT.
6. BOLTING OF STRUCTURAL STEEL SHALL CONFIRM TO THE PROVISIONS OF RCSC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 AND A490 BOLTS".
7. STRUCTURAL STEEL CONNECTIONS:
   A. REVIEW OF SHOP DRAWINGS SHALL NOT RELIEVE FABRICATOR OF CONNECTION DESIGN RESPONSIBILITY.
   B. STRUCTURAL STEEL CONNECTIONS SHALL CONFORM TO THE FOLLOWING, UNO:
      a. MINIMUM SIZE OF BOLTS SHALL BE 3/4" DIAMETER AND EACH CONNECTION SHALL HAVE A MINIMUM OF TWO BOLTS WITH ONE HARDENED WASHER PER BOLT.
      b. BEARING TYPE CONNECTIONS SHALL BE DESIGNED AS TYPE "N".
      c. IN GENERAL, CONNECTIONS SHALL BE FIELD BOLTED AND TIGHTENED TO SNUG TIGHT CONDITION, UNO. ALL BOLTS DESIGNATED "SLIP CRITICAL" OR "FULLY TIGHTENED" SHALL BE TIGHTENED TO THE MINIMUM PRETENSION VALUE SHOWN IN TABLE J3.1 OF THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS. IN ADDITION, CONNECTIONS DESIGNATED "SLIP CRITICAL" SHALL HAVE PROPERLY PREPARED FAYING SURFACES TO MEET CLASS A SURFACE CONDITION, U.N.O.
      d. "FULLY TIGHTENED" CONNECTIONS SHALL INCLUDE ALL BOLTS IN MOMENT CONNECTIONS, BRACED FRAME CONNECTIONS, HANGERS, GIRT CONNECTIONS, BOLTS IN TENSION, CONNECTIONS SUBJECT TO VIBRATION, AND ALL A490 BOLTS. DIRECT TENSION INDICATOR (DTI) WASHERS OR TENSION CONTROL BOLTS (TCB'S) SHALL BE USED AT THESE CONDITIONS.
8. WELDING PROCEDURES SHALL CONFIRM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY'S (AWS) STRUCTURAL WELDING CODES AND SHALL BE PERFORMED BY CERTIFIED WELDERS.
9. WELDS SHOWN ON THE DRAWINGS ARE THE MINIMUM REQUIRED BY DESIGN. MINIMUM WELD SIZE SHALL BE 3/16". ALL STIFFENER PLATES, ANGLES, ETC WHERE SHOWN IN CONTACT WITH OTHER STEEL MEMBERS TO BE CONNECTED w/ 3/16" FILLET WELD ALL AROUND, UNO.
10. FABRICATION SHOP DRAWING SHALL REFLECT WELDS IN ACCORDANCE WITH AWS REQUIREMENTS. SHOP DRAWINGS SHALL DETAIL ALL SHOP AND FIELD WELDS. SHOP AND FIELD WELD SHOWN ON DRAWINGS FOR CONCEPT, GENERAL CONTRACTOR SHALL COORDINATE WELDING SEQUENCE REQUIREMENTS, UNO.
11. GROUT BELOW BASE PLATES SHALL BE HIGH-STRENGTH, NON-SHRINK, NONMETALLIC GROUT, WITH A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 7,000 PSI.

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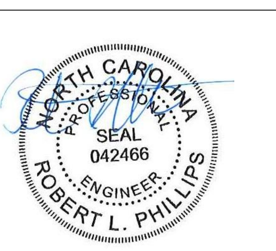


ROBERT L. PHILLIPS 042466
01/19/2022

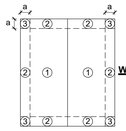
LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1.19.2022

GENERAL NOTES

S0.01



Wind Loads - Components & Cladding : h ≤ 60'

Kh (case 1) = 0.96 h = 27.5 ft
Base pressure (qh) = **34.9 psf** a = 8.7 ft
Minimum parapet ht = 0.0 ft GCpi = +/-0.18
Roof Angle (θ) = 18.4 deg
Type of roof = Gable

Roof

Area	GCp +/- GCpi 10 sf	20 sf	50 sf	100 sf	Surface Pressure (psf) 10 sf	20 sf	50 sf	100 sf	User input 20 sf	300 sf
Negative Zone 1	-1.08	-1.05	-1.01	-0.98	-37.7	-36.7	-35.3	-34.2	-36.7	-34.2
Negative Zone 2	-1.88	-1.73	-1.53	-1.38	-65.7	-60.4	-53.4	-48.2	-60.4	-48.2
Negative Zone 3	-2.78	-2.6	-2.36	-2.18	-97.1	-90.8	-82.4	-76.1	-90.8	-76.1
Positive All Zones	0.68	0.62	0.54	0.48	23.7	21.7	18.9	16.8	21.6	16.8
Overhang Zone 2	-2.2	-2.2	-2.2	-2.2	-76.8	-76.8	-76.8	-76.8	-76.8	-76.8
Overhang Zone 3	-3.7	-3.34	-2.86	-2.5	-129.2	-116.6	-99.9	-87.3	-116.6	-87.3

Overhang pressures in the table above assume an internal pressure coefficient (GCpi) of 0.0
Overhang soffit pressure equals adj wall pressure (which includes internal pressure of 6.3 psf)

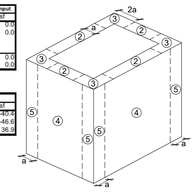
Parapet

qp = 0.0 psf

		Surface Pressure (psf) 10 sf	20 sf	50 sf	100 sf	200 sf	500 sf	User input 40 sf
Solid Parapet Pressure								
CASE A:	Zone 2 :	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Zone 3 :	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CASE B:	Edge zones 2 :	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Corner zones 3 :	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Walls

Area	GCp +/- GCpi 10 sf	100 sf	200 sf	500 sf	Surface Pressure (psf) 10 sf	100 sf	200 sf	500 sf	User input 250 sf	50 sf
Negative Zone 4	-1.28	-1.11	-1.05	-0.98	-44.7	-38.5	-36.7	-34.2	-36.7	-40.4
Negative Zone 5	-1.58	-1.23	-1.12	-0.98	-55.2	-42.8	-39.1	-34.2	-37.9	-46.6
Positive Zone 4 & 5	1.18	1.00	0.95	0.88	41.2	35.0	33.2	30.7	32.8	36.9



CONCRETE MIXTURES

APPLICATION	EXPOSURE (NOTE 1)	f'c (AT 28 DAYS)	MAXIMUM W/C	AIR CONTENT	NOMINAL MAXIMUM AGGREGATE SIZE (NOTE 4)	MAXIMUM CONCRETE WEIGHT
FOUNDATIONS	F0 / C1	4000 PSI	0.48 PSI	SEE NOTE 3	1"	150 PCF
SLAB-ON-GRADE	F0	4000 PSI	0.45 PSI	SEE NOTE 3	3/4"	150 PCF
PIERS	F1 / C1	4000 PSI	0.45 PSI	SEE NOTE 3	3/8"	150 PCF

NOTES:
1. EXPOSURE CATEGORIES AND CLASSES FOR SULFATES, PERMEABILITY, AND CORROSION PROTECTION OF REINFORCEMENT IS CLASS ZERO UNLESS NOTED OTHERWISE.
2. WHERE NO MAXIMUM WATER CEMENT RATIO IS NOTED FOR DURABILITY, PROPORTIONING OF WATER/CEMENT RATIO SHALL BE AS REQUIRED FOR SPECIFIED CONCRETE MIX DESIGN . WATER/CEMENT RATIO IS NOT APPLICABLE FOR DURABILITY REQUIREMENTS IN LIGHTWEIGHT CONCRETE.
3. WHERE AIR ENTRAINMENT IS NOT REQUIRED BY DESIGN, THE CONTRACTOR, INSTALLER, AND SUPPLIER MAY CHOOSE TO INCLUDE AIR ENTRAINMENT TO IMPROVE PLACEMENT AND FINISHING CHARACTERISTICS. AIR ENTRAINMENT IS NOT PERMITTED IN NORMALWEIGHT CONCRETE TO RECEIVE A HARD TROWEL FINISH AND ENTRAPPED AIR SHALL NOT EXCEED 3%. AIR ENTRAINMENT IN LIGHTWEIGHT CONCRETE SLABS IS REQUIRED TO MEET FIRE RATING REQUIRMENTS. SLABS SHALL BE PROPERLY FINISHED TO AVOID SURFACE IMPERFECTIONS, SUCH AS BLISTERING OR DELAMINATION.
4. COURSE AGGREGATE SHALL BE ASTM C 33, GRADED. SELECT GRADING CLASS PER TYPE OF CONSTRUCTION OR LOCATION USED, AND IN RELATION TO SPECIFIC WEATHERING REGION. AGGREGATE SHALL BE FROM A SINGLE SOURCE. #67 GRADING SHALL BE USED FOR CONCRETE WITH 3/4 INCH MAXIMUM; #57 GRADING SHALL BE USED FOR CONCRETE WITH 1 INCH MAXIMUM; A WELL BLENDED MIX OF #4, #57 AND #89 (1 1/2" TO 3/8" NOMINAL SIZE) SHALL BE USED FOR CONCRETE WITH 1 1/2 INCH MAXIMUM. IT IS ACCEPTABLE TO USE A DIFFERENT BLEND OF COURSE AGGREGATES WITH 1 1/2" MAXIMUM, PROVIDED A MIX ANALYSIS IS SUBMITTED WITH A COURSENESS FACTOR CHART SHOWING THE BLEND FALLS WITHIN THE "OPTIMAL" AREA OF THE CHART. REFER TO ACI 302 -CHAPTER 6.

COLUMN FOOTING SCHEDULE (2000 PSF BEARING)

MARK	SIZE	DEPTH	REINFORCING (EACH WAY)	REMARKS
F3.0	3' - 0" x3' - 0"	1' - 0"	(4) #5 EW BOTTOM	
F5.0	5' - 0" x5' - 0"	1' - 6"	(7) #5 EW TOP,(7) #5 EW BOTTOM	
F6.0	6' - 0" x6' - 0"	1' - 6"	(6) #6 EW TOP,(6) #6 EW BOTTOM	
F9.0	9' - 0" x9' - 0"	1' - 8"	(9) #6 EW TOP,(9) #6 EW BOTTOM	
F10.5	10' - 6" x10' - 6"	1' - 8"	(11) #6 EW TOP,(11) #6 EW BOTTOM	
F11.0	11' - 0" x11' - 0"	1' - 8"	(11) #6 EW TOP,(11) #6 EW BOTTOM	
F11.5	11' - 6" x11' - 6"	1' - 10"	(13) #6 EW TOP,(13) #6 EW BOTTOM	
F16x8	8' - 0" x16' - 0"	1' - 8"	#6 @ 10" O.C. E.W. TOP,#6 @ 10" O.C. E.W. BOTTOM	

STRUCTURAL ABBREVIATIONS

&	AND	L	ANGLE
@	AT	LAT	LATERAL
CL	CENTERLINE	LBS	POUND
X°	DEGREE	LF	LATERAL FRAME
dia	DIAMETER	LFT	LINEAR FOOT
Ø	DIAMETER	LG	LONG
#	NUMBER/POUND	LGMF	LIGHT GAGE METAL FRAMING
		LLH	LONG LEG HORIZONTAL
AB	ANCHOR BOLT	LLV	LONG LEG VERTICAL
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL	LO	LOW
		LSH	LONG SLOTTED HOLES
AFF	ABOVE FINISH FLOOR	LVL	LAMINATED VENEER LUMBER
AHU	AIR HANDLING UNIT	LVS	LONG VERTICAL SLOT
ALT	ALTERNATE		
ANC	ANCHOR	M	MATERIAL
APPROX	APPROXIMATE	(M)	MOMENT CONNECTION
APC	ARCHITECTURAL PRECAST VENEER	MAS	MASONRY
ARCH	ARCHITECT/ARCHITECTURAL	MAX	MAXIMUM
		MECH	MECHANICAL
BB	BOND BM	MEP	MECHANICAL, ELECTRICAL, PLUMBING
B/B	BACK TO BACK	MEZZ	MEZZANINE
BL	BUILDING LINE	MFR	MANUFACTURER
BLDG	BUILDING	MID	MIDDLE
BLK	BLOCK	MILS	THOUSANDTH OF AN INCH
BM	BEAM	MIN	MINIMUM
BO	BOTTOM OF	MISC	MISCELLANEOUS
BOD	BOTTOM OF DECK	ML	MASONRY LINTEL
BOS	BOTTOM OF STEEL	MO	MASONRY OPENING
BOT	BOTTOM	MOM	MOMENT
BP	BASE PLATE/BEARING PLATE	MUL	UNSCHEDULED MASONRY LINTEL
BRG	BEARING	MW	MASONRY WALL
BRK	BRICK		
BSMT	BASEMENT	NA	NOT APPLICABLE
BT	BENT	NIC	NOT IN CONTRACT
BTWN	BETWEEN	NOM	NOMINAL
BUR	BUILT-UP ROOF	NS	NEAR SIDE
BW	BOTH WAYS	NTS	NOT TO SCALE
BYD	BEYOND		
		OAE	OR APPROVED EQUAL
CANT	CANTILEVER	OC	ON CENTER
CC	CLEAR COVER	OD	OUTSIDE DIAMETER
CFO	COMPOSITE FORM DECK	OSF	OUTSIDE FACE
CH	COURTHOUSE	OH	OPPOSITE HAND
CHAN	CHANNEL	O/O	OUT TO OUT
CIP	CAST-IN-PLACE	OPNG	OPENING
CJ	CONSTRUCTION JOINT	OPP	OPPOSITE
CLG	CEILING		
CLR	CLEAR	PAF	POWDER ACTUATED FASTENERS
CLJ	CONTROL JOINT	PCF	POUNDS PER CUBIC FOOT
CMU	CONCRETE MASONRY UNIT	PED	PEDESTAL
COL	COLUMN	PEMB	PRE-ENGINEERED METAL BUILDING
CONC	CONCRETE	PERP	PERPENDICULAR
CONNX	CONNECTION	PC	PRECAST
CONST	CONSTRUCTION	PH	PENTHOUSE
CONT	CONTINUOUS	PL	PLATE
CONTR	CONTRACTOR	PLYWD	PLYWOOD
COORD	COORDINATE	PREFAB	PREFABRICATED
CNR	CORNER	PROJ	PROJECTION
CWI	CERTIFIED WELDING INSPECTOR	PSF	POUND PER SQUARE FOOT
		PSI	POUND PER SQUARE INCH
DBL	DOUBLE	PT	POINT
DEMO	DEMOLITION	PG	PARKING GARAGE
DIA	DIAMETER		
DIAG	DIAGONAL	R	RISER
DIAPH	DIAPHRAGM	RAD	RADIUS
DIM	DIMENSION	RD	ROOF DRAIN
DL	DEAD LOAD	REBAR	REINFORCING BAR
DN	DOWN	REF	REFERENCE
DT	DOUBLE TEE - PRECAST	REINF	REINFORCING/REINFORCED
DTL	DETAIL(S)	REQD	REQUIRED
DWL	DOWEL	REQT	REQUIREMENT(S)
DWG	DRAWING	RTU	ROOF TOP UNIT
EA	EACH	SCHED	SCHEDULE
EBA	EPOXY BONDED ANCHOR	SECT	SECTION
EF	EACH FACE	SHT	SHEET/SHEATING
EE	EACH END	SIM	SIMILAR
EJ	EXPANSION JOINT	SJ	SAWN JOINT
ELEV	ELEVATION	SL	SLOPE
EMB	EMBEDMENT/EMBEDDED	SOG	SLAB ON GRADE
EP CT	EPOXY COATED	SPA	SPACES/SPACING
EO	EDGE OF	SPEC	SPECIFICATION
EOD	EDGE OF DECK	SQ	SQUARE
EOS	EDGE OF SLAB	SS	STAINLESS STEEL
EQ	EQUAL	STD	STANDARD
EQUIP	EQUIPMENT	STIFF	STIFFENER
ESS	EXCAVATION SHORING SYSTEM	STL	STEEL
EW	EACH WAY	STRUC	STRUCTURAL
EXIST	EXISTING	SUSP	SUSPENDED
EXP	EXPANSION	SYM	SYMMETRICAL
EXP ANCH	EXPANSION ANCHORS		
EXT	EXTERIOR	TR	TREAD
		T&B	TOP AND BOTTOM
FAS	FASTENER(S)	T&G	TONGUE & GROOVE
FD	FLOOR DRAIN	TESS	TEMPORARY EXCAVATION SHORING SYSTEM
FF	FINISH FLOOR		
FNDN	FOUNDATION	THK	THICK/THICKNESS
FIN	FINISH	THD	THREAD(S)
FLR	FLOOR	TO(#)	TOP OF
FO	FACE OF	TOB	TOP OF BEAM
FOC	FACE OF CONCRETE	TOC	TOP OF CONCRETE
FOS	FACE OF STEEL	TOF	TOP OF FOUNDATION/FOOTING
FS	FAR SIDE	TOG	TOP OF GRADE
FT	FOOT OR FEET	TOJ	TOP OF JOIST
FTG	FOOTING	TOL	TOP OF LEDGE
FUT	FUTURE	TO PED	TOP OF PEDESTAL
FV	FIELD VERIFY	TOS	TOP OF STEEL
		TOW	TOP OF WALL
GA	GAGE	TS	STRUCTURAL TUBE
GALV	GALVANIZED	TD	TURN DOWN
GL	GRIDLINE	TYP	TYPICAL
GEN	GENERAL		
GN	GENERAL NOTE(S)	UNO	UNLESS NOTED OTHERWISE
GR	GRADE	UNSCHED	UNSCHEDULED
GS	GRIND SMOOTH	UT	UTILITIES
H	HORIZONTAL	V	VERTICAL
HCA	HEADED CONCRETE ANCHOR	VERT	VERTICAL
HC	HOLLOW CORE	VUSBC	VIRGINIA UNIFORM STATEWIDE BUILDING CODE
HDG	HOT DIPPED GALVANIZED		
HI	HIGH		
HT	HEIGHT	WD	WOOD
HK	HOOK	WF	WIDE FLANGE BEAM
HORIZ	HORIZONTAL	W/	WITH
HSS	HOLLOW STRUCTURAL STEEL	W/O	WITHOUT
		WP	WORK POINT
ID	INSIDE DIAMETER	WT	WEIGHT
ISF	INSIDE FACE	W/T	WATER TABLE
IN	INCH	WWF	WELDED WIRE FABRIC
INT	INTERIOR	WS	WATERSTOP
INV	INVERT/INVERTED		
		XB	X-BRACING
JST	JOIST		
JT	JOINT	(#)	DATA PER PLAN NOTES
K	KIP (THOUSAND POUNDS)		
KSI	KIPS PER SQUARE INCH		

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B & P Job Number 21.07.064
North Carolina Corporate Engineering Certification No. F-1105

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NORTH CAROLINA PROFESSIONAL SEAL 042466 ENGINEER ROBERT L. PHILLIPS

ROBERT L. PHILLIPS 042466
01/19/2022

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1.19.2022

SCHEDULES AND TYPICAL DETAIL

S0.02

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT

MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT Y/N	EXTENT	AGENT*	DATE COMPLETED
1704.2 Inspection of Fabricators					
Verify fabrication/quality control procedures.	In-plant review (3)	Y	Periodic	1	.
1705.1.1 Special Cases (work unusual in nature, including but not limited to alternative materials and systems, unusual design applications, materials and systems with special manufacturer's requirements	Submittal review, shop (3) and/or field inspection	N	.	.	.
1705.2 Steel Construction					
1. Fabricator and erector documents (Verify reports and certificates as listed in AISC 360, chapter N, paragraph 3.2 for compliance with construction documents)	Submittal Review	Y	Each submittal	1	.
2. Material verification of structural steel	Shop (3) and field inspection	Y	Periodic	1	.
3. Embedments (Verify diameter, grade, type, length, embedment. See 1705.3 for anchors)	Field inspection	Y	Periodic	1	.
4. Verify member locations, braces, stiffeners, and application of joint details at each connection comply with construction documents	Field inspection	Y	Periodic	1	.
5. Structural steel welding:					
a. Inspection tasks Prior to Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)	Shop (3) and field inspection	Y	Observe or perform as noted (4)	1	.
b. Inspection tasks During Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-2)	Shop (3) and field inspection	Y	Observe (4)	1	.
c. Inspection tasks After Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-3)	Shop (3) and field inspection	Y	Observe or perform as noted (4)	1	.
d. Nondestructive testing (NDT) of welded joints: see Commentary					
1) Complete penetration groove welds 5/16" or greater in risk category III or IV	Shop (3) or field Ultrasonic testing - 100%	N	Periodic	.	.
2) Complete penetration groove welds 5/16" or greater in risk category II	Shop (3) or field Ultrasonic testing - 10% of welds minimum	N	Periodic	.	.
3) Thermally cut surfaces of access holes when material t > 2"	Shop (3) or field magnetic Partical or Penetrant testing	N	Periodic	.	.
4) Welded joints subject to fatigue when required by AISC 360, Appendix 3, Table A-3.1	Shop (3) or field radiographic or Ultrasonic testing	N	Periodic	.	.
5) Fabricator's NDT reports when fabricator performs NDT	Verify reports	N	Each Submittal (5)	.	.
6. Structural steel bolting:	Shop (3) and field inspection				
a. Inspection tasks Prior to Bolting (Observe, or perform for each bolted connection, in accordance with QA tasks listed in AISC 360, Table N5.6-1)		Y	Observe or perform as noted (4)	1	.
b. Inspection tasks During Bolting (Observe the QA tasks listed in AISC 360, Table N5.6-2)		Y	Observe (4)	1	.
1) Pre-tensioned and slip-critical joints		N			
a) Turn-of-nut with matching markings		N	Periodic	1	.
b) Direct tension indicator		N	Periodic	.	.
c) Twist-off type tension control bolt		N	Periodic	.	.
d) Turn-of-nut without matching markings		N	Continuous	.	.
e) Calibrated wrench		N	Continuous	.	.
2) Snug-tight joints		Y	Periodic	1	.
c. Inspection tasks After Bolting (Perform tasks for each bolted connection in accordance with QA tasks listed in AISC 360, Table N5.6-3)		Y	Perform (4)	1	.
7. Inspection of steel elements of composite construction prior to concrete placement in accordance with QA tasks listed in AISC 360, Table N6.1	Shop (3) and field inspection and testing	N	Observe or perform as noted (4)	.	.
1705.2.2 Steel Construction Other Than Structural Steel					
1. Material verification of cold-formed steel deck:					
a. Identification markings	Field inspection	Y	Periodic	1	.
b. Manufacturer's certified test reports	Submittal review	Y	Each Submittal	1	.
2. Connection of cold-formed steel deck to supporting structure:	Shop (3) and Field inspection				.
a. Welding		N	Periodic	.	.
b. Other fasteners (in accordance with AISC 360, Section N6)					.
1) Verify fasteners are in conformance with approved submittal		Y	Periodic	1	.
2) Verify fasteners installation is in conformance with approved submittal and manufacturer's recommendations		Y	Periodic	1	.
3. Reinforcing steel	Shop (3) and field inspection				
a. Verification of weldability of steel other than ASTM A706		N	Periodic	.	.
b. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, boundary elements of special concrete structural walls and shear reinforcement		N	Continuous	.	.
c. Shear reinforcement		N	Continuous	.	.
d. Other reinforcing steel		N	Periodic	.	.
1705.3 Concrete Construction					
1. Inspection of reinforcing steel installment (see 1705.2.2 for welding)	Shop (3) and field inspection	Y	Periodic	1	.
2. Inspection of prestressing steel installation	Shop (3) and field inspection	N	Periodic	.	.
3. Inspection of anchors cast in concrete where allowable loads have been increased per section 1908.5 or where strength design is used	Shop (3) and field inspection	N	Periodic	.	.

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT

MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT Y/N	EXTENT	AGENT*	DATE COMPLETED
4. Inspection of anchors and reinforcing steel post-installed in hardened concrete: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances,concrete embedment and tightening torque	Field inspection	Y	Periodic or as required by the research report issued by an approved source	1	.
5. Verify use of approved design mix	Shop (3) and field inspection	Y	Periodic	1	.
6. Fresh concrete sampling, perform slump and air content tests and determine temperature of concrete	Shop (3) and field inspection	Y	Continuous	1	.
7. Inspection for concrete and shotcrete placement for proper application techniques	Shop (3) and field inspection	N	Continuous		.
8. Inspection for maintenance of specified curing temperature and techniques	Shop (3) and field inspection	Y	Periodic	1	.
9. Inspection of prestressed concrete:	Shop (3) and field inspection	N			.
a. Application of prestressing force		N	Continuous		.
b. Grouting of bonded prestressing tendons in seismic-force-resisting system		N	Continuous		.
10. Erection of precast concrete members					
a. Inspect in accordance with construction documents	Field inspection	N	In Accordance with Construction Documents	.	.
b. Perform inspections of welding and bolting in accordance with Section 1705.2	Field inspection	N	In Accordance with Section 1705.2	.	.
11. Verification of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs	Review field testing and laboratory reports	N	Periodic	.	
12. Inspection of formwork for shape, lines, location and dimensions	Field inspection	Y	Periodic	1	.
13. Concrete strength testing and verification of compliance with construction documents	Field testing and review of laboratory reports	Y	Periodic	1	.
1705.4 Masonry Construction					
(A) Level A, B and C Quality Assurance:					
1. Verify compliance with approved submittals	Field inspection	Y	Periodic	1	.
(B) Level B Quality Assurance:					
1. Verification of f'm and f'_{AAC} prior to construction	Testing by unit strength method or prism test method	Y	Periodic	1	.
(C) Level C Quality Assurance:					
1. Verification of f'm and f'AAC prior to construction and for every 5,000 SF during construction	Testing by unit strength method or prism test method	Y	Periodic	.	.
2. Verification of proportions of materials in premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout, as delivered to the project site	Field inspection	Y	Continuous	.	.
3. Verify placement of masonry units	Field inspection	Y	Periodic	-	.
(D) Levels B and C Quality Assurance:					
1. Verification of Slump Flow and Visual Stability Index (VSI) of self-consolidating grout as delivered to the project	Field testing	Y	Continuous	.	.
2. Verify compliance with approved submittals	Field inspection	Y	Periodic	1	.
3. Verify proportions of site-mixed mortar, grout and prestressing grout for bonded tendons	Field inspection	Y	Periodic	1	.
4. Verify grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages	Field inspection	Y	Periodic	1	.
5. Verify construction of mortar joints	Field inspection	Y	Periodic	1	.
6. Verify placement of reinforcement, connectors, and prestressing tendons and anchorages	Field inspection	N	Level B - Periodic	.	.
		Y	Level C - Continuous	1	.
7. Verify grout space prior to grouting	Field inspection	N	Level B - Periodic	.	.
		Y	Level C - Continuous	1	
8. Verify placement of grout and prestressing grout for bonded tendons	Field inspection	N	Continuous	1	.
9. Verify size and location of structural masonry elements	Field inspection	Y	Periodic	1	.
10. Verify type, size, and location of anchors, including details of anchorage of masonry to structural members, frames, or other construction	Field inspection	N	Level B - Periodic	.	.
		Y	Level C - Continuous	1	.
11. Verify welding of reinforcement (see 1705.2.2)	Field inspection	N	Continuous	.	.
12. Verify preparation, construction, and protestion of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F)	Field inspection	Y	Periodic	1	.
13. Verify application and measurement of prestressing force	Field inspection	N	Continuous	.	.
14. Verify placement of AAC masonry units and construction of thin-bed mortar joints (first 5000 SF of AAC masonry)	Field inspection	N	Continuous	.	.
15. Verify placement of AAC masonry units and construction of thin-bed mortar joints (after the first 5000 SF of AAC masonry)	Field inspection	N	Level B - Periodic	.	.
		N	Level C - Continuous	.	.
16. Verify properties of thin-bed mortar for AAC masonry (first 5000 SF of AAC masonry)	Field inspection	N	Continuous	.	.
17. Verify properties of thin-bed mortar for AAC masonry (after the first 5000 SF of AAC masonry)	Field inspection	N	Level B - Periodic	.	.
		N	Level C - Continuous	.	.
18. Prepare grout and mortar specimens	Field testing	N	Level B - Periodic	.	.
		Y	Level C - Continuous	1	.
19. Observe preparation of prisms	Field inspection	N	Level B - Periodic	.	.
		Y	Level C - Continuous	1	.
1705.5 Wood Construction					
1. Inspection of the fabrication process of wood structural elements and assemblies in accordance with Section 1704.2.5	In-plat review (3)	N	Periodic	.	.
2. For high-load diaphragms, verify grade and thickness of structural panel sheathing agree with approved building plans	Field inspection	N	Periodic	.	.

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT

MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT Y/N	EXTENT	AGENT*	DATE COMPLETED
3. For high-load diaphragms, verify nominal size of framing members at adjoining panel edges, nail or staple diameter and length, number of fastener lines, and that spacing between fasteners in each line and at edge margins agree with approved building plans	Field inspection	N	Periodic	.	.
4. Metal-plate-connected wood trusses spanning 60 feet or greater: verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field inspection	N	Periodic	.	.
1705.6 Soils					
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Field inspection	Y	Periodic	1	.
2. Verify excavations are extended to proper depth and have reached proper material.	Field inspection	Y	Periodic	1	.
3. Perform classification and testing of controlled fit materials.	Field inspection	Y	Periodic	1	.
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Field inspection	Y	Continuous	1	.
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly	Field inspection	Y	Periodic	1	.
1705.7 Driven Deep Foundations					
1. Verify element materials, sizes and lengths comply with requirements	Field inspection	N	Continuous	.	.
2. Determine capacities of test elements and conduct additional load test, as required	Field inspection	N	Continuous		
3. Observe driving operations and maintain complete and accurate records for each element	Field inspection	N	Continuous		
4. Verify placement locations and plumbness, confirm type and size of hammer ,record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element	Field inspection	N	Continuous	.	.
5. For steel elements, perform additional inspections per Section 1705.2	See Section 1705.2	N	See Section 1705.2	.	.
6. For concrete elements and concrete-filled elements, perform additional inspections per Section 1705.3	See Section 1705.3	N	See Section 1705.3	.	.
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge	Field inspection	N	In Accordance with Construction Documents	.	.
8. Perform additional inspections and tests in accordance with the construction documents	Field inspection and testing	N	In Accordance with Construction Documents	.	.
1705.8 Cast-in-Place Deep Foundations					
1. Observe drilling operations and maintain complete and accurate records for each element	Field inspection	N	Continuous	.	.
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes	Field inspection	N	Continuous	.	.
3. For concrete elements, perform additional inspections in accordance with Section 1705.3	See Section 1705.3	N	See Section 1705.3	.	.
4. Perform additional inspections and tests in accordance with the construction documents	Field inspection and testing	N	In Accordance with Construction Documents	.	.
1705.9 Helical Pile Foundations					
1. Verify installation equipment, pile dimensions, tip elevations, final depth, final installation torque and other data is required	Field inspection	N	Continuous	-	.
2. Perform additional inspections and tests in accordance with the construction documents	Field inspection and testing	N	In Accordance with Construction Documents	-	.
1705.10.1 Structural Wood Special Inspections For Wind Resistance					
1. Inspection of field gluing operations of elements of the main windforce-resisting system	Field inspection	N	Continuous	.	.
2. Inspection of nailing, bolting, anchoring and other fastening of components within the main windforce-resisting system	Shop (3) and field inspection	N	Periodic	.	.
1705.10.2 Cold-formed Steel Special Inspections For Wind Resistance					
1. Inspection during welding operations of elements of the main windforce-resisting system	Shop (3) and field inspection	N	Periodic	.	.
2. Inspections for screw attachment, bolting, anchoring and other fastening of components within the main windforce-resisting system	Shop (3) and field inspection	N	Periodic	.	.
1705.10.3 Wind-resisting Components					
1. Roof cladding	Shop (3) and field inspection	Y	Periodic	.	.
2. Wall cladding	Shop (3) and field inspection	Y	Periodic	.	.
1705.11.1 Structural Steel Special Inspections for Seismic Resistance					
Inspection of structural steel in accordance with AISC 341	Shop (3) and field inspection	N	In Accordance with ASCE 341	.	.
1705.11.2 Structural Wood Special Inspections for Seismic Resistance					
1. Inspection of field gluing operations of elements of the seismic-force resisting system	Field inspection	N	Continuous	.	.
2. Inspection of nailing, bolting, anchoring and other fastening of components within the seismic-force-resisting system	Shop (3) and field inspection	N	Periodic	.	.
1705.11.3 Cold-formed Steel Light-Frame Construction Special Inspections for Seismic Resistance					
1. Inspection during welding operations of elements of the seismic-force-resisting system	Shop (3) and field inspection	N	Periodic	.	.
2. Inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system	Shop (3) and field inspection	N	Periodic	.	.
1705.11.4 Designated Seismic Systems Verification					
Inspect and verify that the component label, anchorage or mounting conforms to the certificate of compliance in accordance with Section 1705.12.3	Field inspection	N	Periodic	.	.

SCHEDULE OF SPECIAL INSPECTION SERVICES

PROJECT

MATERIAL / ACTIVITY	SERVICE	APPLICABLE TO THIS PROJECT Y/N	EXTENT	AGENT*	DATE COMPLETED
1705.11.5 Architectural Components Special Inspections for Seismic Resistance					
1. Inspection during the erection and fastening of exterior cladding and interior and exterior veneer	Field inspection	N	Periodic	.	.
2. Inspection during the erection and fastening of interior and exterior nonbearing walls	Field inspection	N	Periodic	.	.
3. Inspection during anchorage of access floors	Field inspection	N	Periodic	.	.
1705.11.6 Mechanical and Electrical Components Special Inspections for Seismic Resistance					
1. Inspection during anchorage of electrical equipment for emergency or standby power systems	Field inspection	Y	Periodic	1	.
2. Inspection during the anchorage of other electrical equipment	Field inspection	N	Periodic	.	.
3. Inspection during installation and anchorage of piping systems designed to carry hazardous materials, and their associated mechanical units	Field inspection	Y	Periodic	1	.
4. Inspection during the installation and anchorage of HVAC ductwork that will contain hazardous materials	Field inspection	Y	Periodic	.	.
5. Inspection during the installation and anchorage of vibration isolation systems	Field inspection	Y	Periodic	.	.
1705.11.7 Storage Racks Special Inspection for Seismic Resistance					
Inspection during the anchorage of storage racks 8 feet or greater in height	Field inspection	Y	Periodic	.	.
1705.11.8 Seismic Isolation Systems					
Inspection during the fabrication and installation of isolator units and energy dissipation devices used as part of the seismic isolation system	Shop and field inspection	N	Periodic	.	.
1705.12.1 Concrete Reinforcement Testing and Qualification for Seismic Resistance					
1. Review certified mill test reports for each shipment of reinforcement used to resist earthquake-induced flexural and axial forces in reinforced concrete special moment frames, special structural walls, and coupling beams connecting special structural walls	Review certified mill test reports	N	Each Shipment	.	.
2. Verify reinforcement weldability of ASTM A615 reinforcement used to resist earthquake-induced flexural and axial forces in reinforced concrete special moments frames, special structural walls, and coupling beams connecting special structural walls	Review test reports	N	Each Shipment	.	.
1705.12.2 Structural Steel Testing and Qualification for Seismic Resistance					
Test in accordance with the quality assurance requirements of AISC 341	Shop (3) and field testing	Y	Per AISC 341	.	.
1705.12.3 Seismic Certification of Nonstructural Components					
Review certificate of compliance for designed seismic system components	Certificate of compliance review	N	Each Submittal	.	.
1705.12.4 Seismic Isolation Systems					
Test seismic isolation systems in accordance with ASCE 7, Section 17.8	Prototype testing	Y	Per ASCE 7	.	.
1705.13 Sprayed Fire-resistant Materials					
1. Verify surface condition preparation of structural members	Field inspection	N	Periodic	.	.
2. Verify application of sprayed fire-resistant materials	Field inspection	N	Periodic	.	.
3.Verify average thickness of sprayed fire-resistant materials applied to structural members	Field inspection	N	Periodic	.	.
4. Verify density of sprayed fire-resistant material complies with approved fire-resistant design	Field inspection and testing	N	Per IBC Section 1705.13.5	.	.
5. Verify the cohesive/adhesive bond strength of the cured sprayed fire-resistant material	Field inspection and testing	N	Per IBC Section 1705.13.6	.	.
1705.15 Mastic and Intumescent Fire-resistant Coatings					
Inspect mastic and intumescent fire-resistant coatings applied to structural elements and decks	Field inspection	N	Periodic	.	.
1705.16 Exterior Insulation and Finish Systems (EIFS)					
1.Verify materials, details and installations are per the approved construction documents	Field inspection	N	Periodic	.	.
2. Inspection of water-resistive barrier over sheathing substrate	Field inspection	N	Periodic	.	.
1705.16 Fire-resistant Penetrations and Joints					
1. Inspect penetration firestop	Field testing	Y	Per ASTM E2174	.	.
2. Inspect fire-resistant joint systems	Field testing	N	Per ASTM E2393	.	.
1705.17 Smoke Control Systems					
1. Leakage testing and recording of device locations prior to concealment	Field testing	N	Periodic	.	.
2. Prior to occupancy and after sufficient completion, pressure difference testing, flow measurements, and detection and control verification	Field testing	N	Periodic	.	.

* INSPECTION AGENTS	FIRM	ADDRESS	TELEPHONE NO.
1. To be determined			
2.			
3.			
4.			

Notes:
1. *The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and not by the Contractor orsubcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.*
2. *The list of Special Inspectors may be submitted as a separate document, if noted so above.*
3. *Special Inspections as required by Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.2*
4. *Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks on each welded joint, bolted connection, or steel element.*
5. *NDT of welds competed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 360, N7*

Encircle "Yes" or "No" as appropriate and date this document below:
Are Requirements for Seismic Resistance included in the Statement of Special Inspections? Yes No
Are Requirements for Wind Resistance included in the Statement of Special Inspections? Yes No
DATE: 09-15-2021

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B & P Job Number 21.07.064
North Carolina Corporate Engineering Certification No. F-1105

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NORTH CAROLINA PROFESSIONAL SEAL 042466 ENGINEER ROBERT L. PHILLIPS

ROBERT L. PHILLIPS 042466
01/19/2022

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1.19.2022

SPECIAL INSPECTIONS

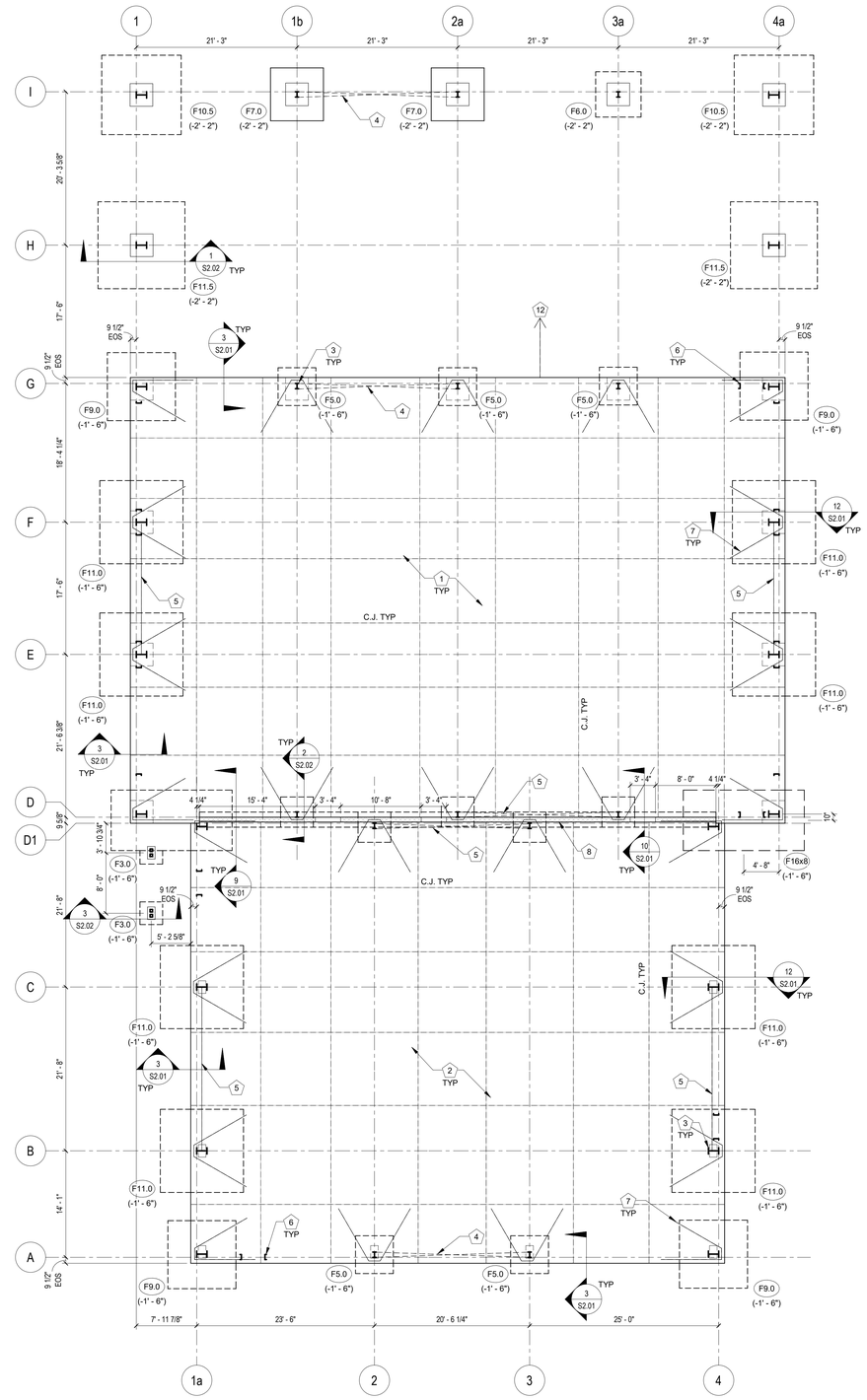
S0.03

FOUNDATION PLAN NOTES:

1. 7" THICK CONCRETE SLAB ON GRADE R/W #3 BARS @ 12" O.C. T&B EACH WAY, ON 15 MIL CLASS "A" VAPOR BARRIER (SEE ARCH DWGS FOR ADD'L WATER PROOFING REQUIREMENTS) ON COMPACTED FILL. T/ SLAB ELEVATION 0' - 0" TYP U.N.O.
2. 5" THICK CONCRETE SLAB ON GRADE R/W 6x6-W2.1xW2.1 WWF (FLAT SHEETS) PLACED MID-DEPTH, ON 15 MIL CLASS "A" VAPOR BARRIER (SEE ARCH DWGS FOR ADD'L WATER PROOFING REQUIREMENTS) ON COMPACTED DENSE GRADED AGGREGATE. T/ SLAB ELEVATION 0' - 0" TYP U.N.O.
3. PRE-ENGINEERED METAL BUILDING COLUMN PER PEMB MFTR.
4. PRE-ENGINEERED METAL BUILDING "X" BRACING PER PEMB MFTR.
5. PRE-ENGINEERED METAL BUILDING PORTAL FRAME PER PEMB MFTR.
6. PRE-ENGINEERED METAL BUILDING DOOR JAMB PER PEMB MFTR.
7. HAIRPIN PER DETAIL 11/S2.01
8. INDICATES 8" WIND BEARING CMU WALL REINFORCED W/ #5 @ 40" O.C. AND AT ALL JAMBS AND TERMINATIONS IN GROUT FILLED CELLS.
9. F# # INDICATES COLUMN FOUNDATION, SEE COLUMN FOUNDATION SCHEDULE FOR SIZE AND REINFORCEMENT.
10. THICKENED SLAB EDGE PER DETAIL 3/S2.01
11. SAWCUT SLAB ON GRADE CONTROL JOINT, INDICATED AT C.J. AS SHOWN ON PLAN, SEE DETAIL 2/S2.01
12. ALTERNATE PRE-ENGINEERED METAL BUILDING APPARATUS BAY TO BE DESIGNED AS BOTH OPEN CANOPY AND ENCLOSED FOR FUTURE USE.

FOUNDATION PLAN LEGEND

C.J.	INDICATES SLAB ON GRADE CONTROL JOINTS. SEE GENERAL NOTES.
	INDICATES ELEVATION RELATIVE TO FINISH FLOOR ELEVATION.
1	INDICATES NOTE REFERRAL. SEE CORRESPONDING PLAN NOTE.
-1'-4"	INDICATES TOP OF FOUNDATION ELEVATION RELATIVE TO FINISH FLOOR ELEVATION.



PLAN — FOUNDATION 1/S1.01

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

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NORTH CAROLINA PROFESSIONAL SEAL 042466 ENGINEER ROBERT L. PHILLIPS

ROBERT L. PHILLIPS 042466
01/19/2022

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number:	2020-062
Date:	1.19.2022

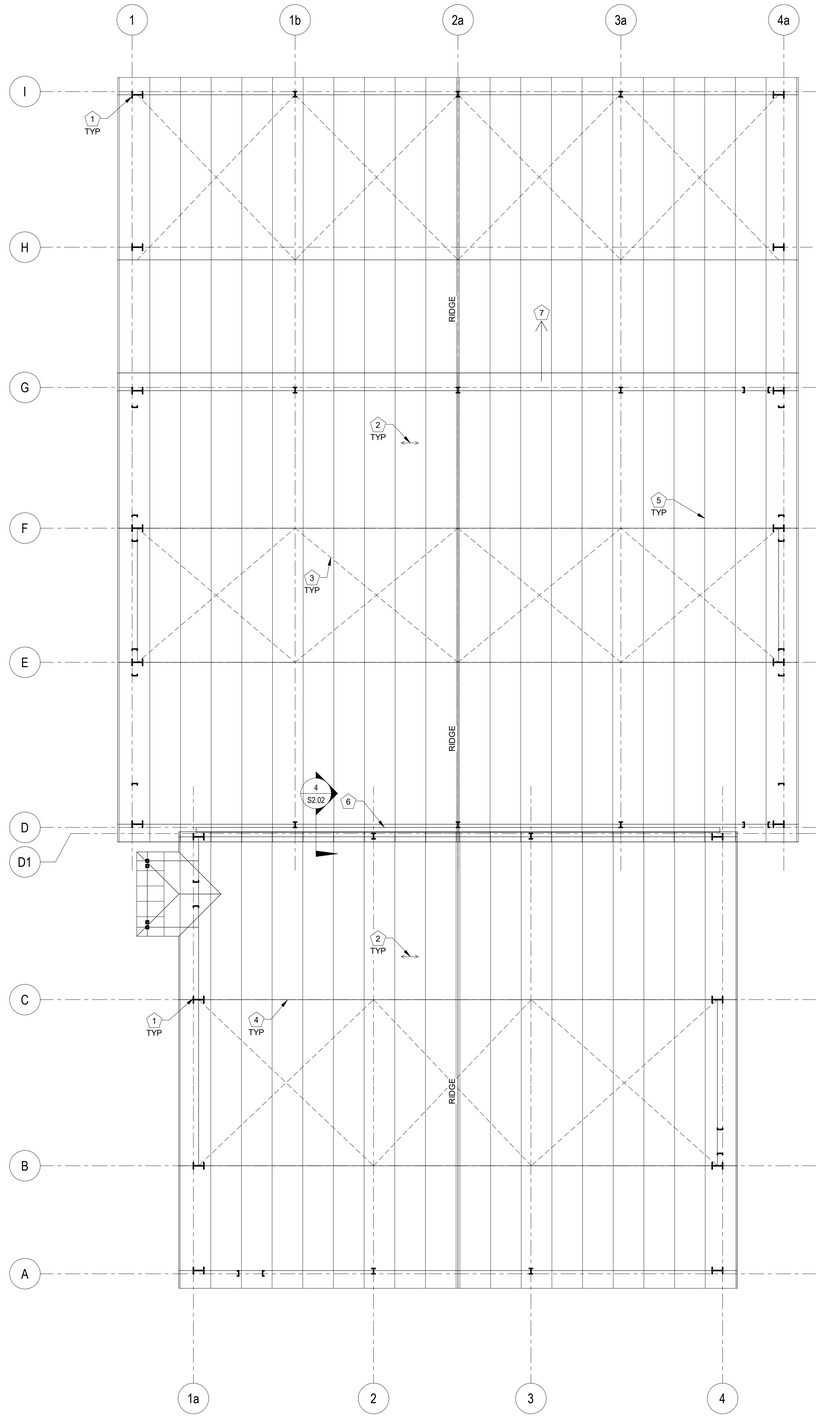
FOUNDATION PLAN

S1.01

ROOF FRAMING PLAN NOTES:
1. PRE-ENGINEERED METAL BUILDING COLUMN PER PEMB MFTR.
2. PRE-ENGINEERED METAL BUILDING ROOF PANELS PER PEMB MFTR.
3. PRE-ENGINEERED METAL BUILDING ROOF "X" BRACING PER PEMB MFTR.
4. PRE-ENGINEERED METAL BUILDING FRAME PER PEMB MFTR.
5. PRE-ENGINEERED METAL BUILDING PURLINS PER PEMB MFTR.
6. INDICATES 8" WIND BEARING CMU WALL REINFORCED PER SHEET S1.01.
7. ALTERNATE PRE-ENGINEERED METAL BUILDING APPARATUS BAY TO BE DESIGNED AS BOTH OPEN CANOPY AND ENCLOSED FOR FUTURE USE.

FRAMINGING PLAN LEGEND

(1) INDICATES NOTE REFERRAL. SEE CORRESPONDING PLAN NOTE.



PLAN — ROOF FRAMING (1 / S1.02)

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

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NORTH CAROLINA PROFESSIONAL SEAL 042466 ENGINEER ROBERT L. PHILLIPS

ROBERT L. PHILLIPS 042466
01/19/2022

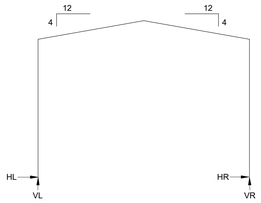
LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1.19.2022

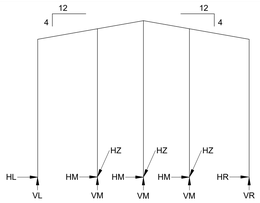
ROOF FRAMING PLAN

S1.02



LOAD CASE	HL	VL	HR	VR
DL	-3.9	8.4	3.9	8.4
LL	-14.6	24.4	14.6	24.4
WL	-20.7	-75.2	21.6	-75.2
COLL.	-3.5	10.2	3.5	10.2
SNOW	-5.7	9.5	5.7	9.5
SEISMIC	-6.3	-40.5	6.3	3.3

MAIN FRAME REACTIONS

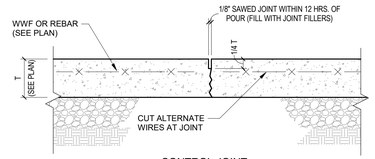


LOAD CASE	HL	VL	HM	VM	HZ	HR	VR
DL	-2.7	6.8	-	1.4	-	2.7	6.8
LL	-8.1	13.2	-	8.4	-	8.1	13.2
WL	-14.8	-53.6	-	±12.4	±11.1	12.2	53.6
COLL.	-3.5	5.6	-	3.5	-	3.5	5.6
SNOW	-12.3	5.2	-	7.7	-	12.3	5.2
SEISMIC	-3.2	-30.1	-	±10.6	-	3.2	5.1

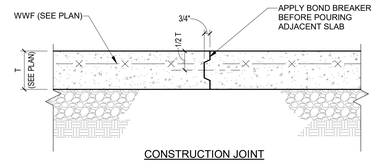
END FRAME REACTIONS

REACTION NOTES:
1. LOADS ARE UNFACTORED IN KIPS AND FEET.
2. DL = DEAD LOAD
3. WL = WIND LOAD (ULTIMATE PRESSURES)
4. LL = LIVE LOAD
5. COLL = COLLATERAL LOADS
6. REACTIONS ARE REVERSIBLE FOR LOAD CASED WITH WIND LOADS.
7. ALL COLUMNS ARE ASSUMED TO BE PINNED AT FOUNDATION.
8. ABOVE REACTIONS ARE ASSUMED PEMB COLUMN REACTIONS AND SHALL BE VERIFIED BY CONTRACTOR ONCE PEMB HAS BEEN DESIGNED BY DELEGATED SPECIALTY ENGINEER.
9. FRAME REACTIONS ARE ADDITIONAL TO TABLE AND ARE AS FOLLOWS: WIND ±7.8 VERT, ±3.8 HORZ. - SEISMIC ±3.75 VERT, ±2.1 HORZ.

DETAIL — PRE-ENGINEERED METAL BUILDING REACTIONS — 1 / S2.01
SCALE: 3/4" = 1'-0"

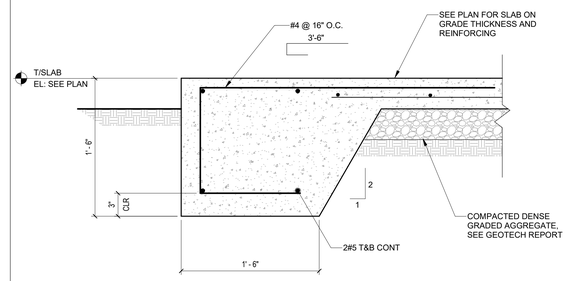


CONTROL JOINT

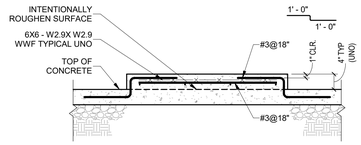


CONSTRUCTION JOINT

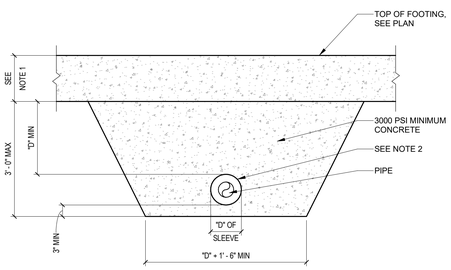
DETAIL — TYPICAL SOG JOINTS — 2 / S2.01
SCALE: NO SCALE



DETAIL — TYPICAL TURNED DOWN SLAB — 3 / S2.01
SCALE: NO SCALE

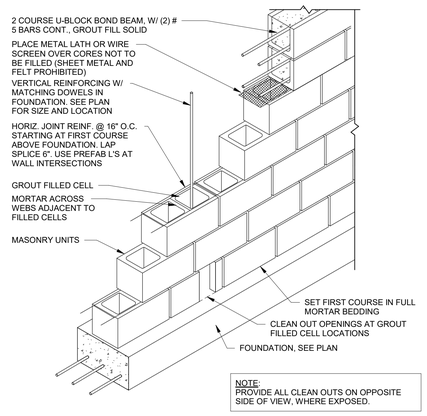


DETAIL — TYPICAL HOUSE KEEPING PAD — 4 / S2.01
SCALE: NO SCALE



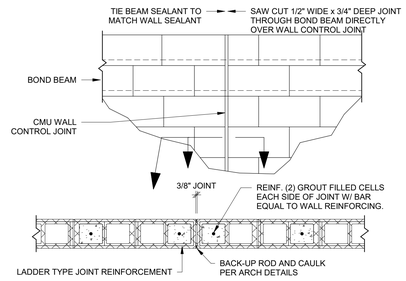
NOTES:
1. REQUIRED FOOTING DEPTH PER FOUNDATION PLAN. NO PIPES TO PENETRATE THROUGH THIS AREA. STEP FOOTING DOWN SO PIPES FALL THROUGH FOOTING WALL. COORDINATE WITH FOOTING STEP DETAIL.
2. PROVIDE SLEEVE WITH INSIDE DIAMETER 2" MINIMUM GREATER THAN OUTSIDE DIAMETER OF PIPE.

DETAIL — TYPICAL WALL FOOTING AT PIPE — 5 / S2.01
SCALE: 3/4" = 1'-0"



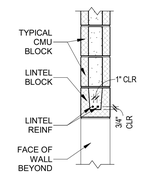
NOTE:
PROVIDE ALL CLEAN OUTS ON OPPOSITE SIDE OF VIEW, WHERE EXPOSED.

DETAIL — TYPICAL REINFORCED CMU WALL CONSTRUCTION — 6 / S2.01
SCALE: NO SCALE



NOTES:
1. DISCONTINUE JOINT REINFORCING AT CONTROL JOINTS.
2. CONTROL JOINTS TO BE LOCATED AT 25'-0" O.C. MAX. REFER TO PLANS AND ARCHITECTURAL DRAWINGS FOR LOCATIONS, SPACING AND ADDITIONAL REQUIREMENTS.
3. BOND BEAM REINFORCING CONTINUOUS ACROSS JOINT.

DETAIL — TYPICAL CMU WALL CONTROL JOINT — 7 / S2.01
SCALE: NO SCALE

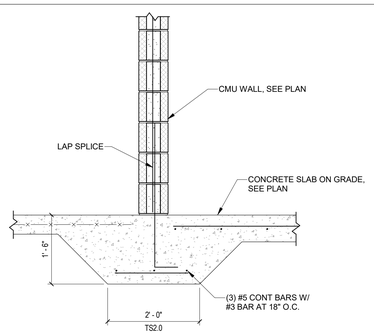


SECTION

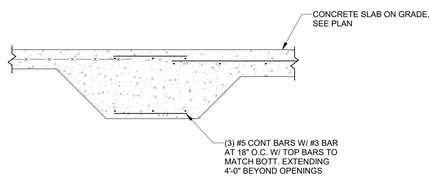
MASONRY WALL LINTEL SCHEDULE				
OPENING WIDTH		WALL DIMENSION AND REINFORCING		
MINIMUM	MAXIMUM	CONCRETE BLOCK OR CONCRETE		
		DEPTH	8" WALL	12" WALL
	2'-0"	7 5/8"	(2) #5 BOTTOM	(2) #5 BOTTOM
2'-1"	3'-6"	7 5/8"	(2) #5 BOTTOM	(2) #5 BOTTOM
3'-7"	5'-0"	7 5/8"	(2) #5 BOTTOM	(2) #5 BOTTOM
5'-1"	6'-6"	7 5/8"	(2) #6 BOTTOM	(2) #6 BOTTOM
6'-7"	8'-0"	7 5/8"	(2) #6 BOTTOM	(2) #7 BOTTOM

SCHEDULE NOTES:
1. DO NOT USE THIS SCHEDULE IF A LOAD OTHER THAN THE WALL LOAD IS IMPOSED ON THE LINTEL.
2. 8" BEARING EACH END ON SOLIDLY GROUTED CELL EACH SIDE OF OPENING REINFORCED WITH #5 VERTICAL. SEE GENERAL NOTES FOR GROUT AND GROUT INSTALLATION INFORMATION.
3. SEE ADDITIONAL DETAILS FOR ADDITIONAL WALL REINFORCEMENT

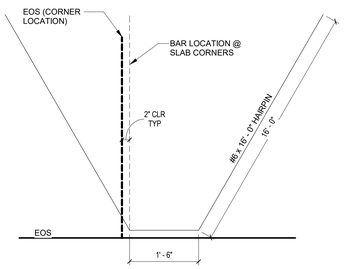
SECTION — TYPICAL CMU WALL LINTEL — 8 / S2.01
SCALE: 3/4" = 1'-0"



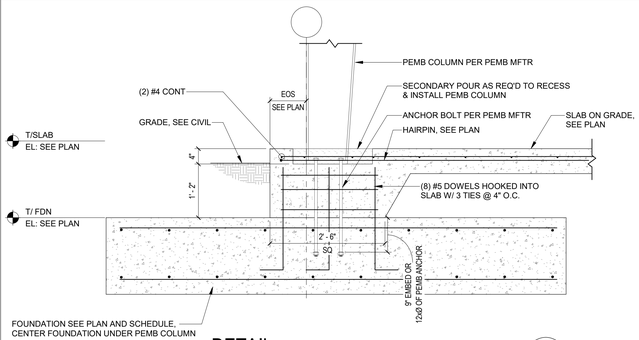
DETAIL — TYP CMU WALL AT INT. CMU WALL — 9 / S2.01
SCALE: 3/4" = 1'-0"



DETAIL — TYP CMU WALL AT INT. CMU WALL OPENING — 10 / S2.01
SCALE: 3/4" = 1'-0"



DETAIL — TYPICAL HAIRPIN DETAIL — 11 / S2.01
SCALE: 3/4" = 1'-0"



DETAIL — TYP PEMB AT COLUMN FOUNDATION — 12 / S2.01
SCALE: 3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 042466 ENGINEER ROBERT L. PHILLIPS

ROBERT L. PHILLIPS 042466
01/19/2022

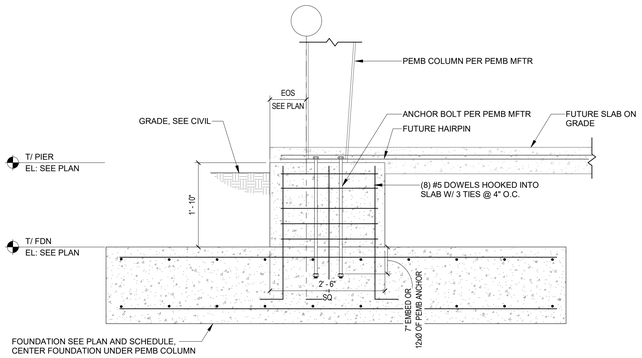
LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1.19.2022

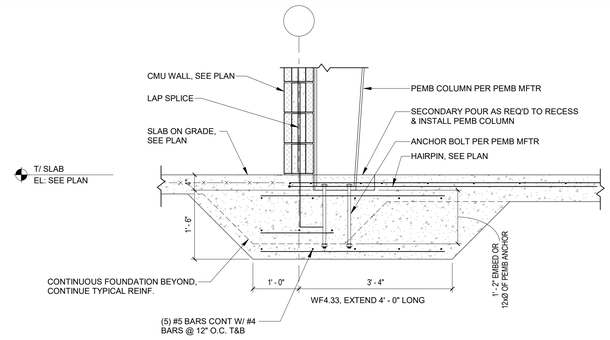
STRUCTURAL DETAILS AND SECTIONS

S2.01



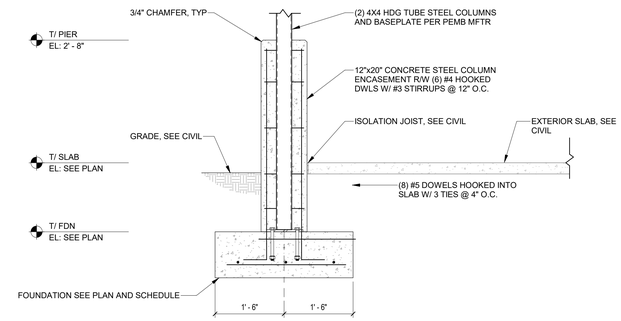
DETAIL — TYP PEMB AT COLUMN FOUNDATION AT FUTURE SLAB (1 / S2.02)

SCALE: 3/4" = 1'-0"



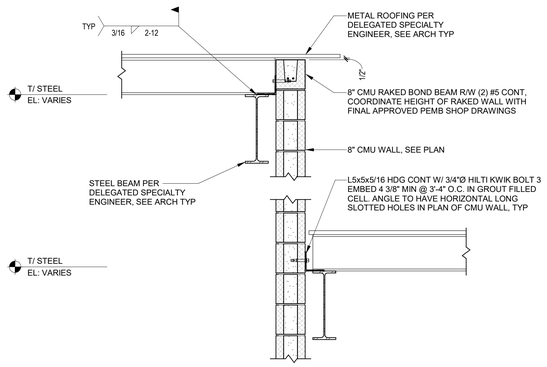
DETAIL — TYP PEMB AT MASONRY WALL (2 / S2.02)

SCALE: 3/4" = 1'-0"



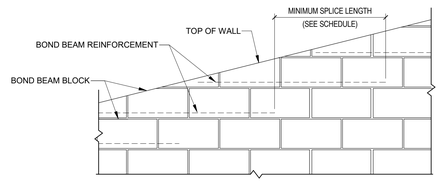
DETAIL — PEMB TUBE COLUMN AT ENTRY (3 / S2.02)

SCALE: 3/4" = 1'-0"



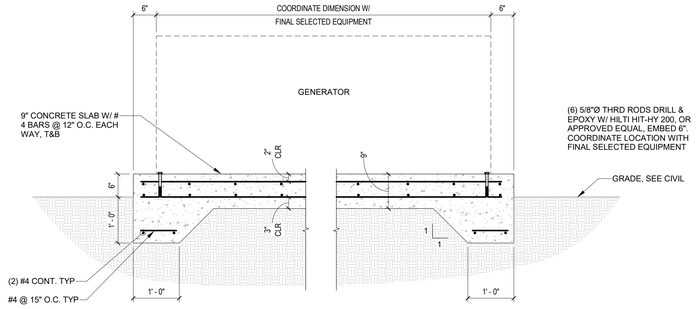
SECTION — CMU WALL TO PEMB FRAME (4 / S2.02)

SCALE: 3/4" = 1'-0"



SECTION — BOND BEAM TRANSITION AT TOP OF SLOPING WALL (5 / S2.02)

SCALE: 3/4" = 1'-0"



DETAIL — GENERATOR PAD FOUNDATION (6 / S2.02)

SCALE: 3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 042466 ENGINEER ROBERT L. PHILLIPS

ROBERT L. PHILLIPS 042466
01/19/2022

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1.19.2022

STRUCTURAL DETAILS AND SECTIONS

S2.02

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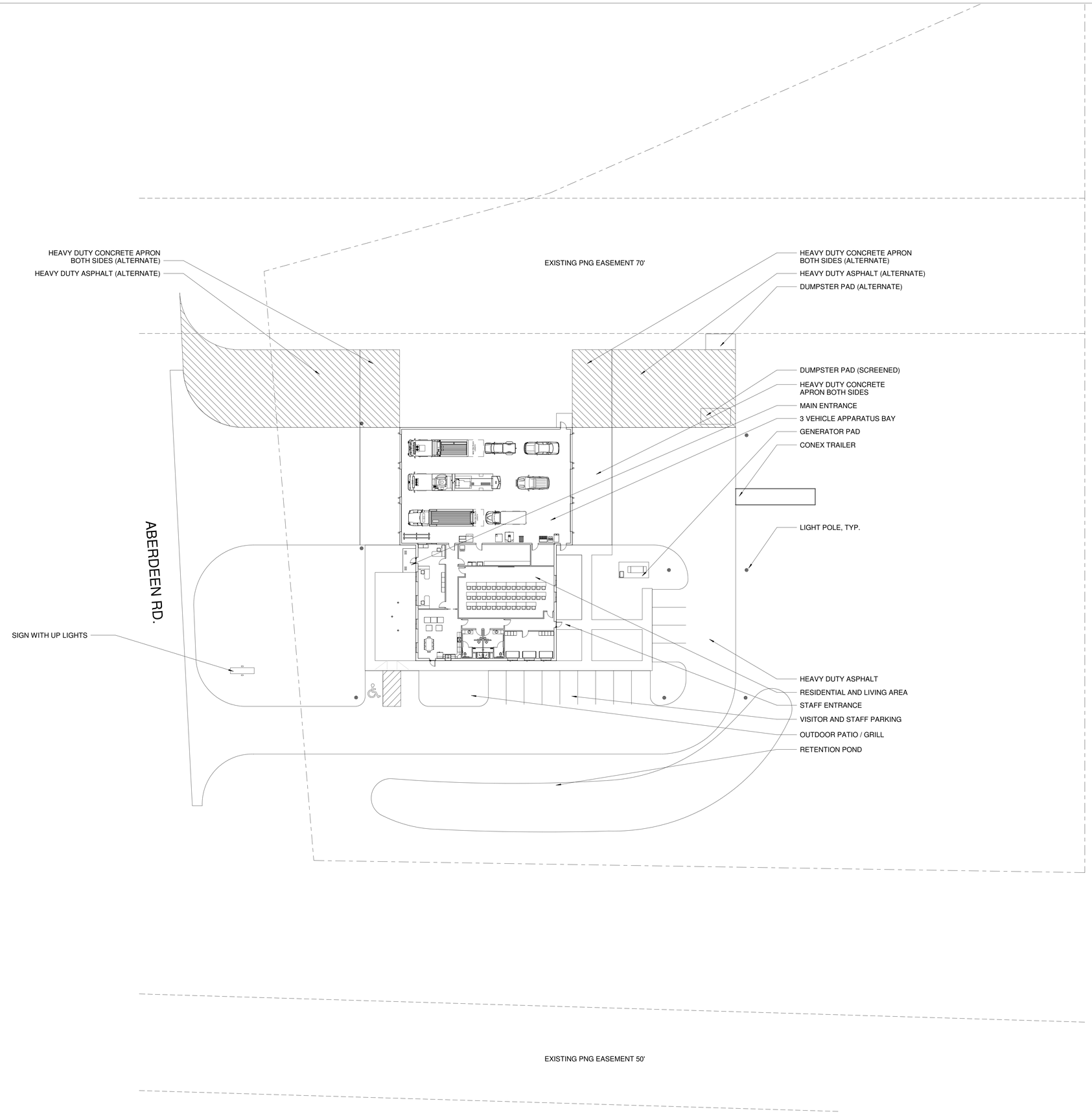
PLAN LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION



1 SITE PLAN
1" = 20'-0"

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NORTH CAROLINA
REGISTERED
15357
ARCHITECT
JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 52304
NORTH CAROLINA
CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

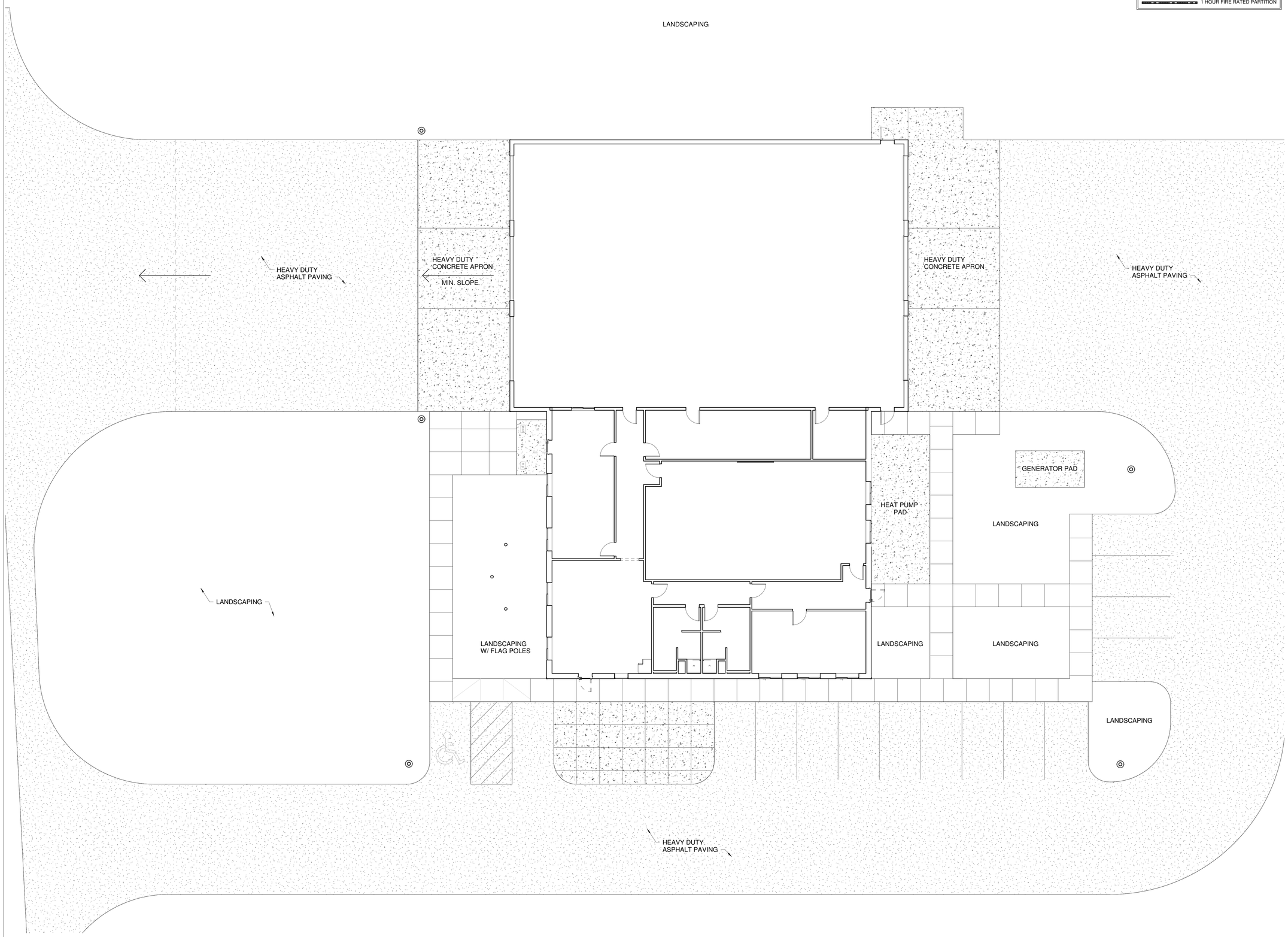
No.	Description	Date

Project Number: 2020-062

Date: 01.19.2022

ARCHITECTURAL SITE PLAN

AS1.01



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

PLAN LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

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ARCHITECT
JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 52304
NORTH CAROLINA
CHARLOTTE, N. C.

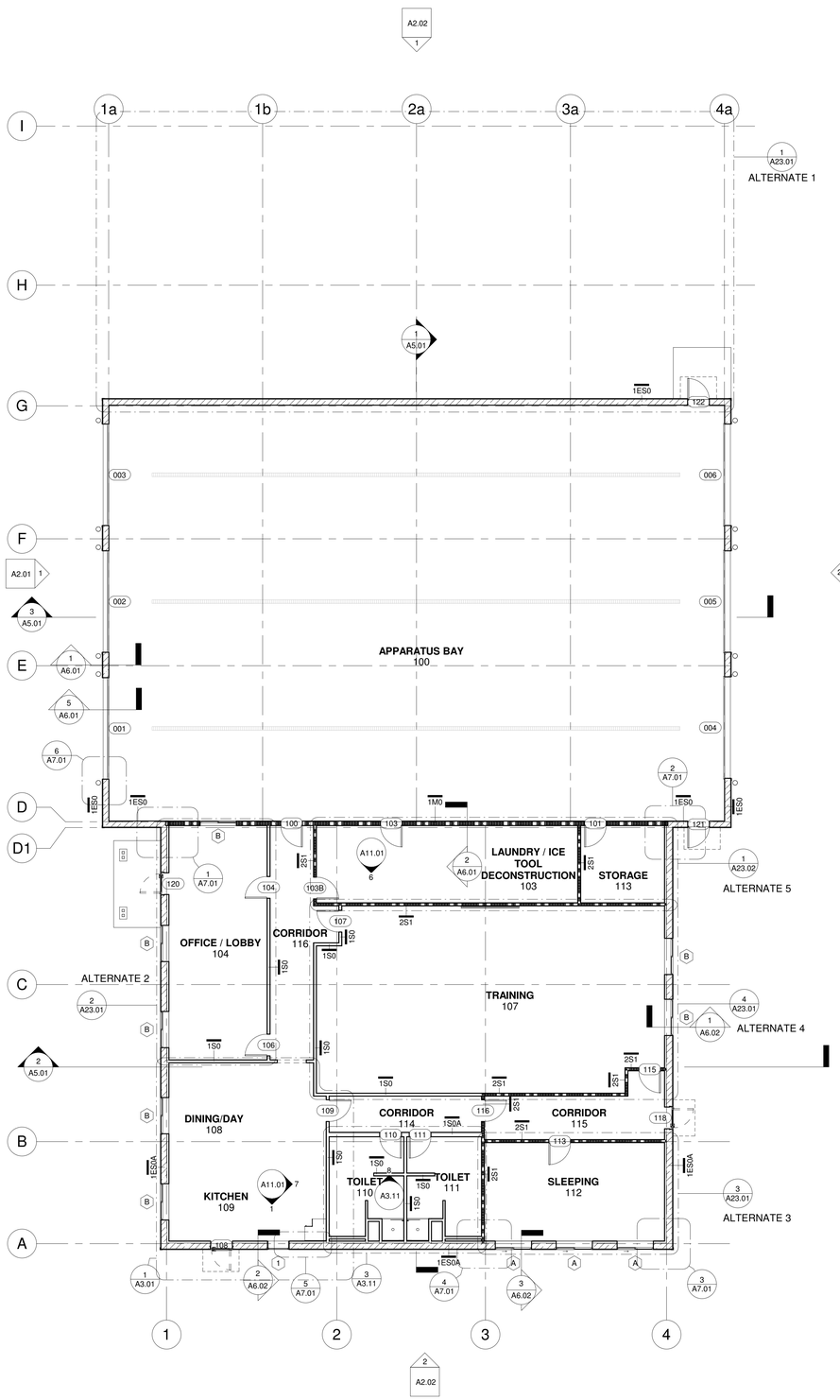
LAURINBURG NORTH FIRE STATION

No.	Description	Date

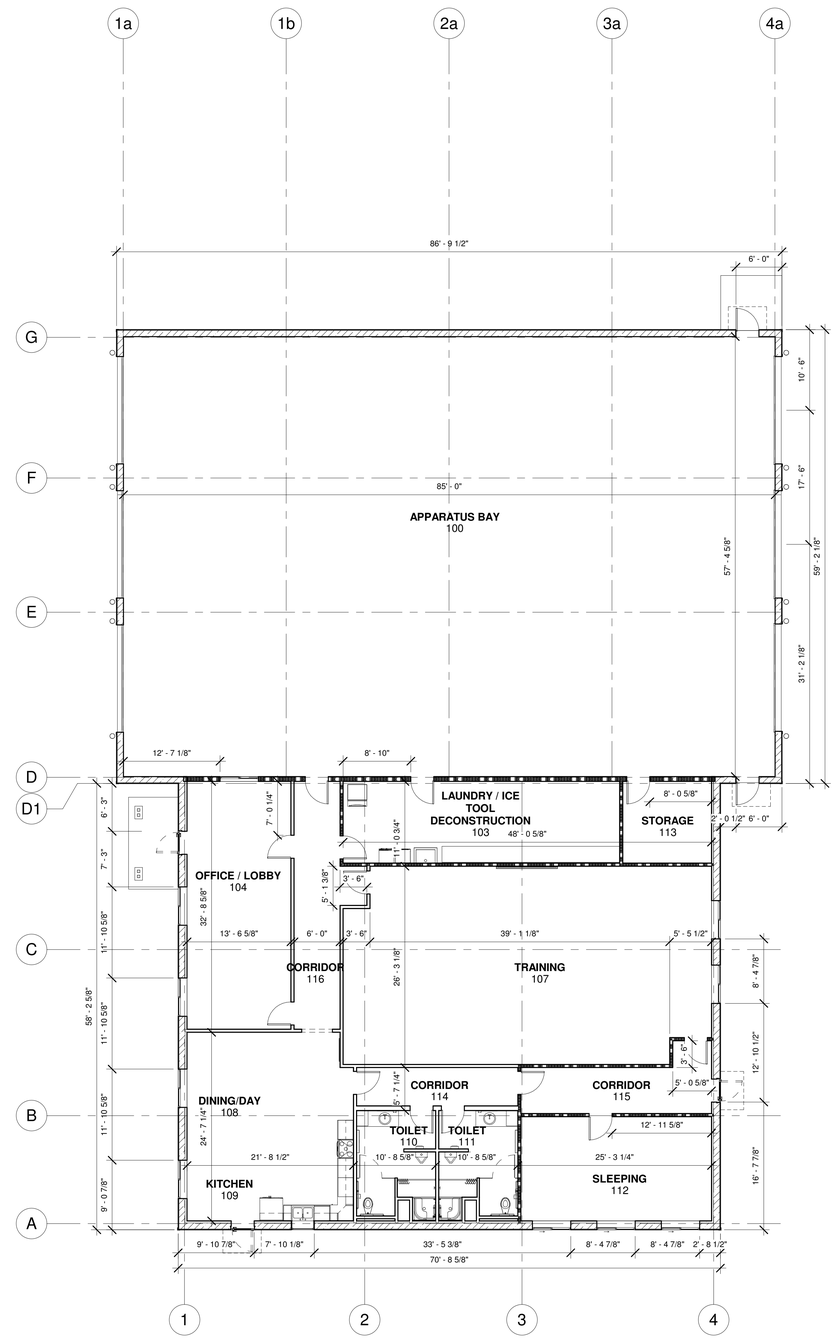
Project Number: 2020-062
Date: 01.19.2022

ARCHITECTURAL SIDEWALK PLAN

AS1.02



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



2 DIMENSIONED PLAN
1/8" = 1'-0"

PLAN LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

CREECH & ASSOCIATES
1000 W. Morehead St.
Suite 120
Charlotte, NC 28208
p 704.376.6000
www.creech-design.com

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION NORTH CAROLINA CERT. NO. 52304 CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

No.	Description	Date

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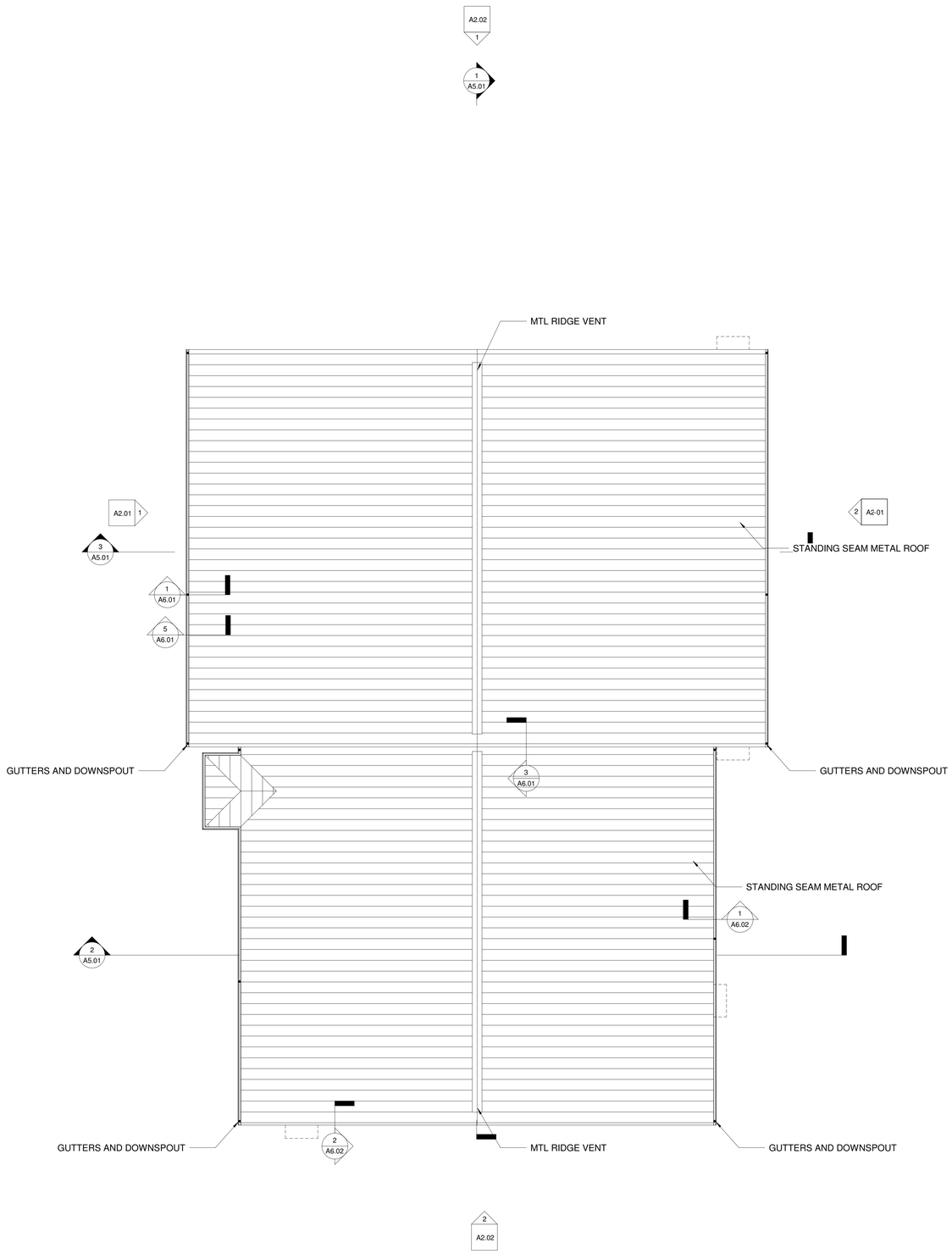
FLOOR & DIMENSIONED FLOOR PLAN

A1.01



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

PLAN LEGEND

TRUE NORTH

PLAN NORTH

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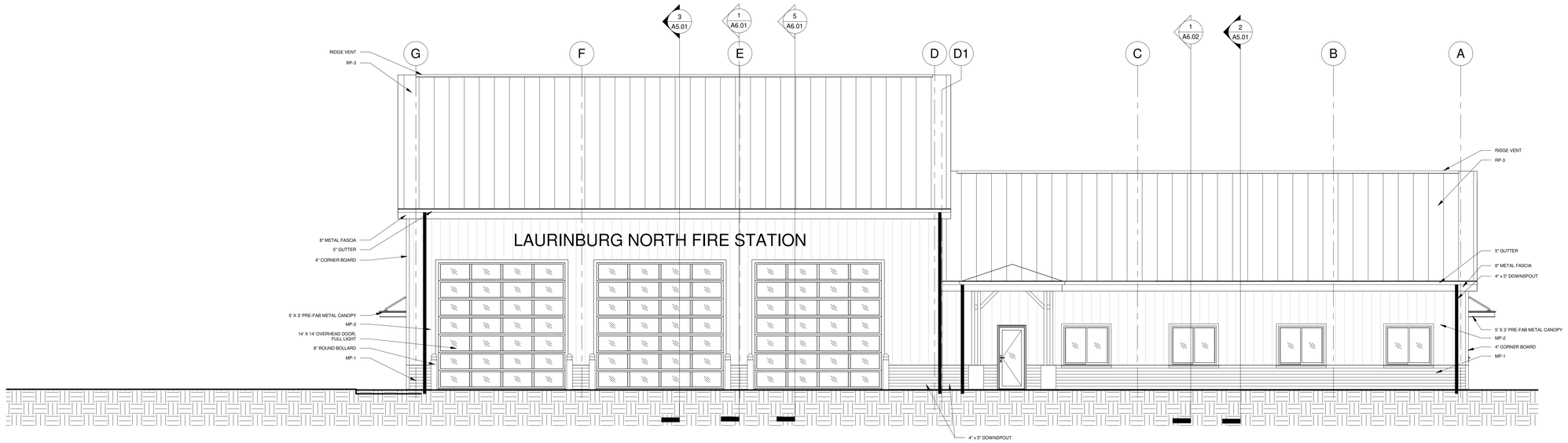
ROOF PLAN

A1.10

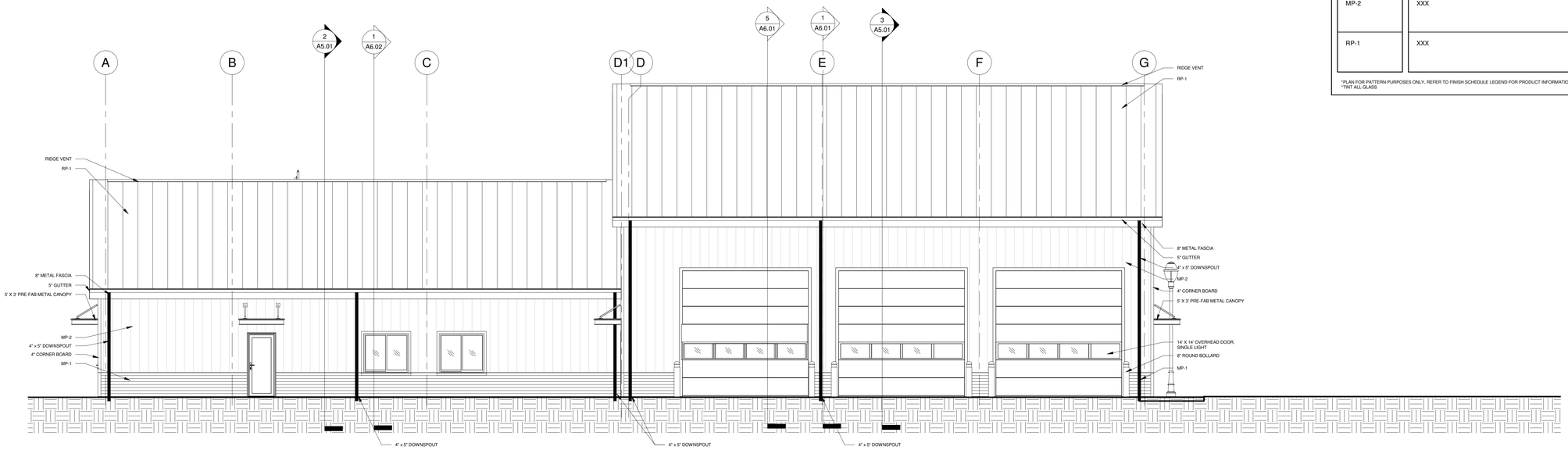


1 WEST ELEVATION
3/16" = 1'-0"

METAL PANEL COLOR LEGEND

MP-1	XXX
MP-2	XXX
RP-1	XXX

*PLAN FOR PATTERN PURPOSES ONLY, REFER TO FINISH SCHEDULE LEGEND FOR PRODUCT INFORMATION
**TINT ALL GLASS



2 EAST ELEVATION
3/16" = 1'-0"

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LAURINBURG NORTH FIRE STATION

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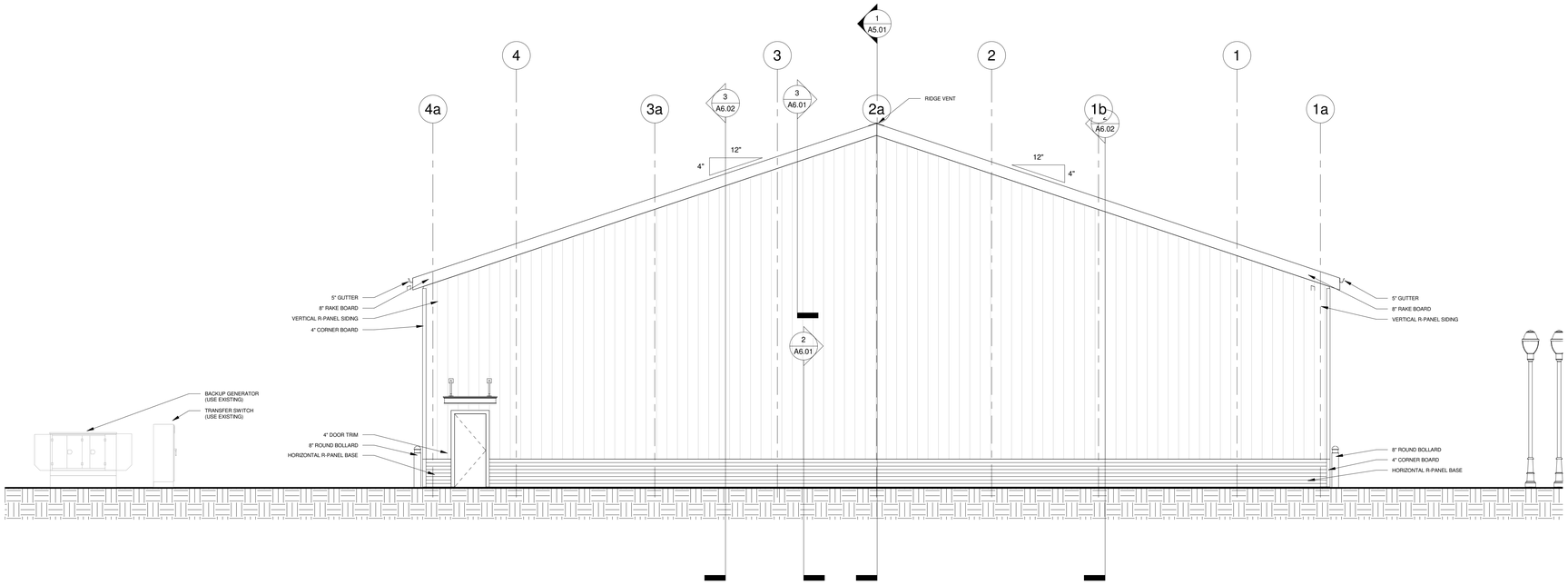
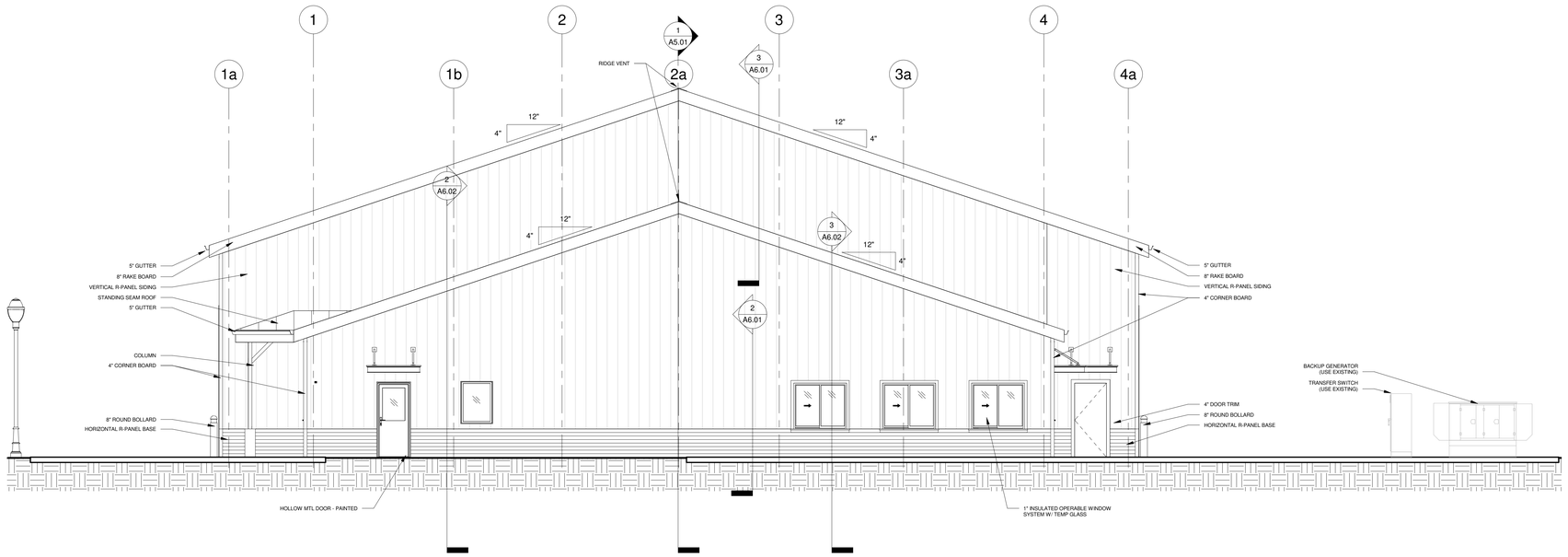
EXTERIOR ELEVATIONS

A2.01



1 NORTH ELEVATION
3/16" = 1'-0"



2 SOUTH ELEVATION
3/16" = 1'-0"

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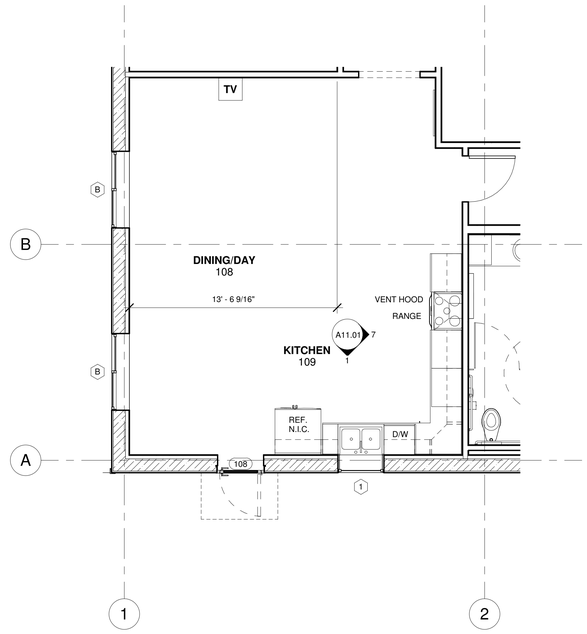
EXTERIOR ELEVATIONS

A2.02

AV/SECURITY LEGEND

SYMBOL	DESCRIPTION
TV	TELEVISION



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

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LAURINBURG NORTH FIRE STATION

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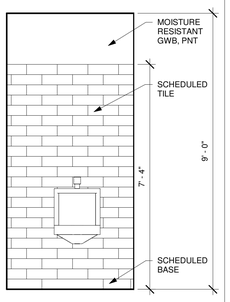
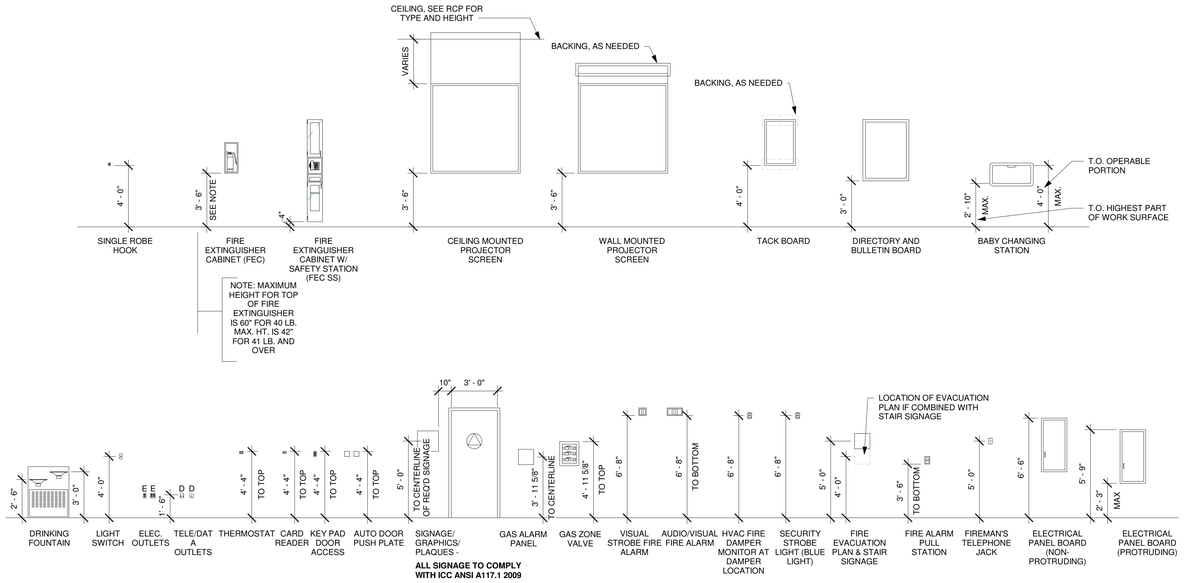
ENLARGED PLANS

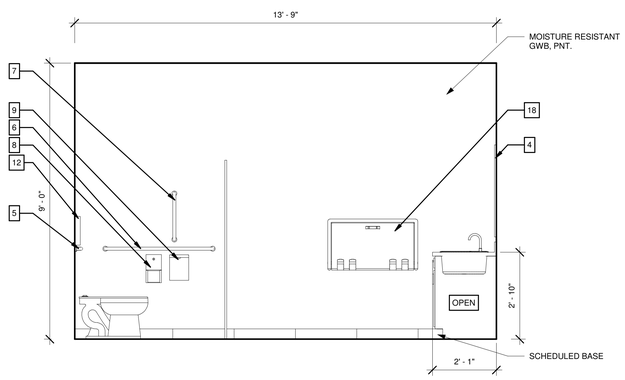
A3.01



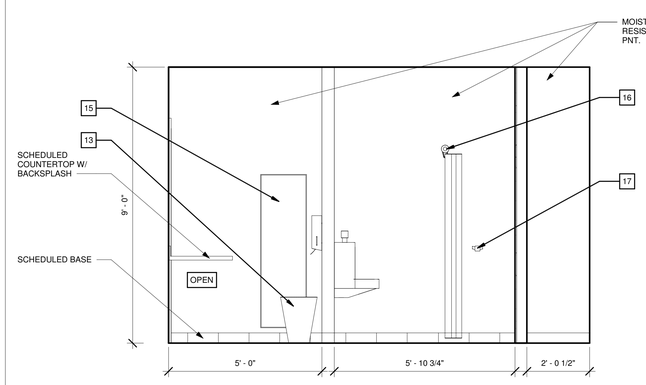
8 TOILET ELEVATION @ URINAL
1/2" = 1'-0"



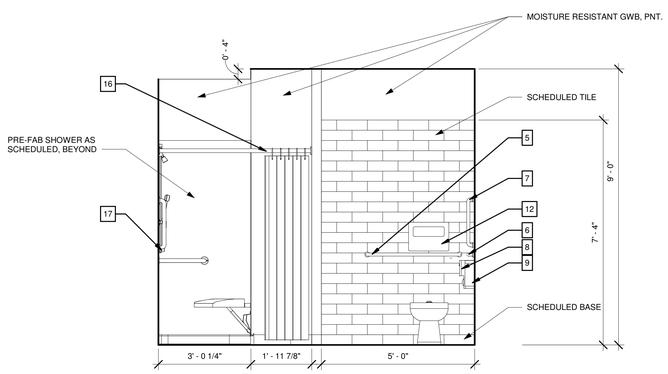
1 TYPICAL MOUNTING HEIGHTS
1/4" = 1'-0"



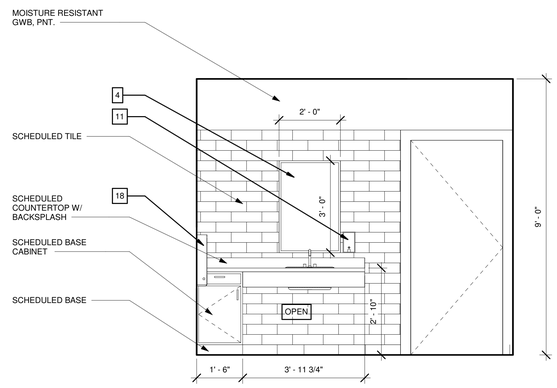
7 TOILET 110 - WEST
1/2" = 1'-0"



5 TOILET 110 - EAST
1/2" = 1'-0"



6 TOILET 110 - SOUTH
1/2" = 1'-0"



4 TOILET 110 - NORTH
1/2" = 1'-0"

TOILET ACCESSORY SCHEDULE

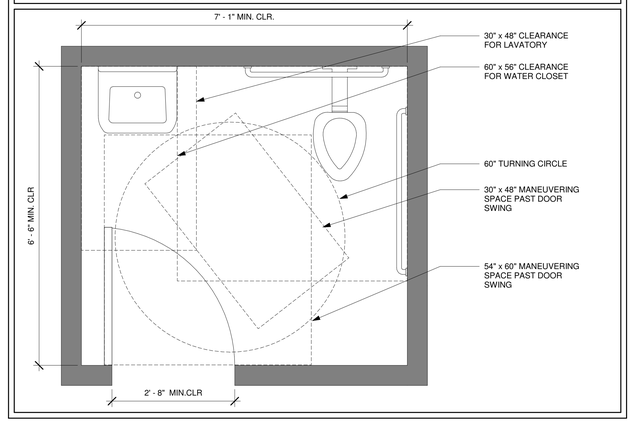
TA-#	DESCRIPTION	MANUFACTURER	MODEL #	NOTES
1	WATER CLOSET	SEE PLUMBING	SEE PLUMBING	SEE PLUMBING
2	SHOWER	SEE PLUMBING	SEE PLUMBING	SEE PLUMBING
3	LAVATORY	SEE PLUMBING	SEE PLUMBING	SEE PLUMBING
4	MIRROR	BOBRICK	B-290	24" WIDTH x 36" HEIGHT, 3/4" FRAME, S.S. FINISH
5	42" HORIZONTAL GRAB BAR	BOBRICK	B-6806x42	1-1/2" DIAMETER
6	36" HORIZONTAL GRAB BAR	BOBRICK	B-6806x36	1-1/2" DIAMETER
7	18" VERTICAL GRAB BAR	BOBRICK	B-6806x18	1-1/2" DIAMETER
8	TOILET TISSUE DISPENSER	BOBRICK	B-4288	SURFACE-MOUNTED
9	SANITARY NAPKIN DISPOSAL	BOBRICK	B-270	SURFACE-MOUNTED
10	PAPER TOWEL DISPENSER	BOBRICK	B-9262	SURFACE-MOUNTED
11	SOAP DISPENSER - WALL	BOBRICK	B-2111	SURFACE-MOUNTED
12	SEAT COVER DISPENSER	BOBRICK	B-4221	SURFACE MOUNTED
13	TRASH CAN	O.F.O.I.	O.F.O.I.	
14	MOP SINK	SEE PLUMBING	SEE PLUMBING	SEE PLUMBING
15	FULL LENGTH MIRROR	BOBRICK	B-1652460	SURFACE MOUNTED
16	HEAVY-DUTY SHOWER CURTAIN ROD	BOBRICK	B-6047X36	204-1 CURTAIN HOOK, 204-2 CURTAIN
17	ROBE HOOK	BOBRICK	B-6727	SURFACE MOUNTED
18	BABY CHANGING STATION	BOBRICK	KB110-SSWM	SURFACE MOUNTED

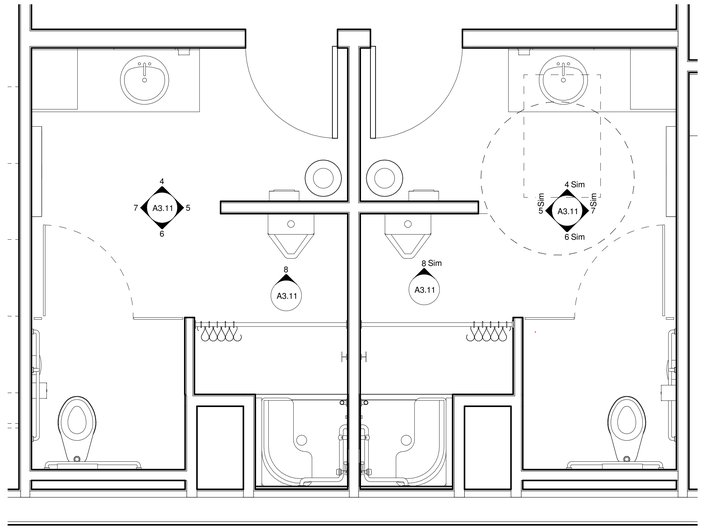
* ALL MANUFACTURES BASIS OF DESIGN SEE SPECIFICATIONS FOR EQUALS
* O.F.O.I. - OWNER FURNISHED OWNER INSTALLED

GENERAL NOTES

1. PROVIDE BLOCKING FOR ALL WALL MOUNTED FIXTURES AND ACCESSORIES.
2. SEE G0.02 FOR ALL MOUNTING HEIGHTS
3. BOBRICK PRODUCTS SHALL BE CONSIDERED THE BASIS OF DESIGN. GC SHALL SUBMIT EQUAL MANUFACTURES / PRODUCTS FOR OWNER & ARCHITECT APPROVAL.

ADA COMPLIANT RESTROOM LEGEND





3 ENLARGED RESTROOM PLAN
1/2" = 1'-0"

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LAURINBURG NORTH FIRE STATION

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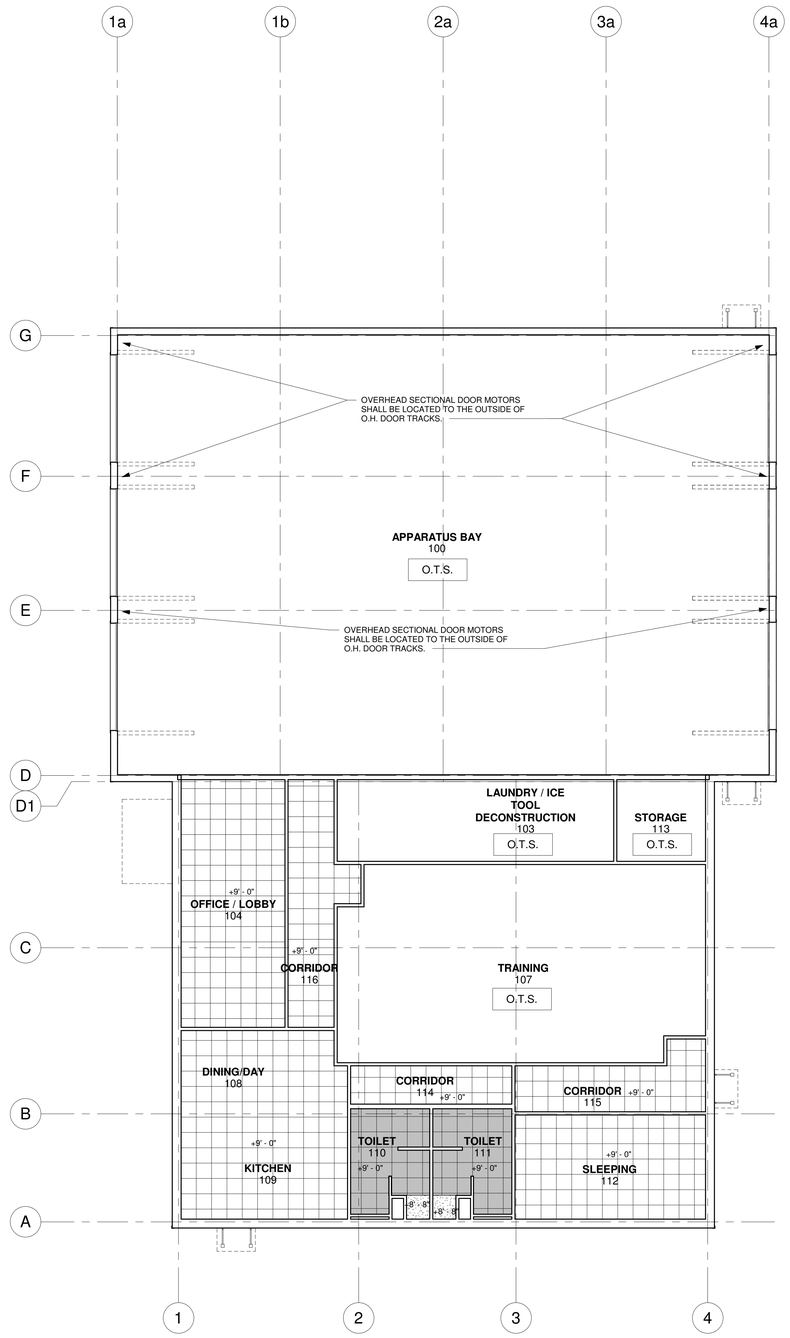
ENLARGED RESTROOM ACCESSORIES

A3.11



1 REFLECTED CEILING PLAN
1/8" = 1'-0"

REFLECTED CEILING PLAN LEGEND

	2 x 2 ACOUSTICAL PANEL CEILING
	MOISTURE RESISTANT 2 x 2 ACOUSTICAL PANEL CEILING
	MOISTURE RESISTANT GYPSUM CEILING
O.T.S.	OPEN TO STRUCTURE
+ XX'-XX"	CEILING HEIGHT ABOVE FINISHED FLOOR

RCP GENERAL NOTES

1. REFER TO DETAILS & SPECIFICATIONS FOR CEILING SUSPENSION/ANCHOR INFORMATION.
2. REFER TO SPECIFICATIONS FOR ACOUSTICAL PANEL CEILING GRID TYPE.
3. REFER TO MEP DRAWINGS FOR SYMBOL IDENTIFICATION.
4. REFER TO UL SYSTEMS SHEET FOR HORIZONTAL RATED ASSEMBLIES.

PLAN LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

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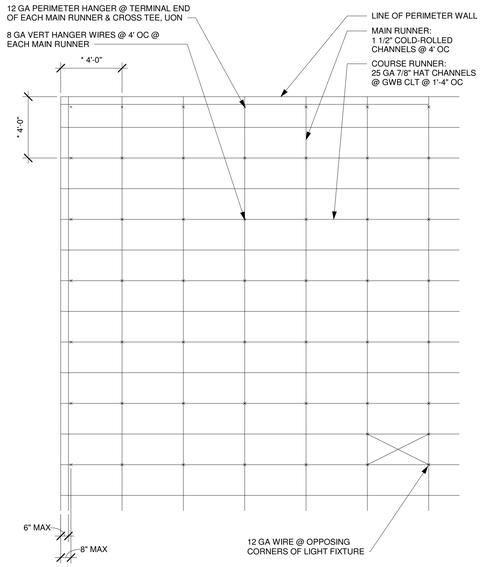
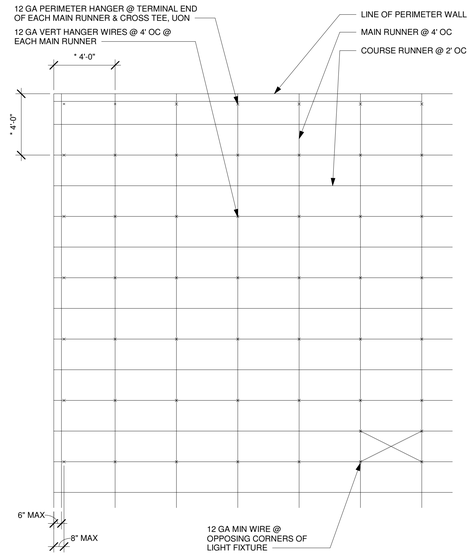
REFLECTED CEILING PLAN

A4.01



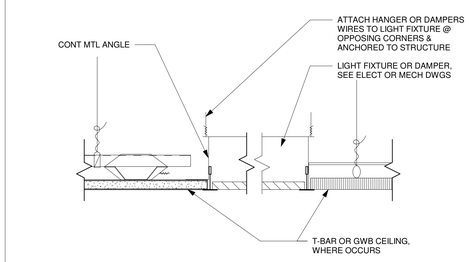
NOTES:
1. * MAX DISTANCE TO FIRST BRACING POINT
2. PROVIDE COUNTER SLOPING WIRES FOR VERIT HANGER WIRES MORE THAN 6 IN 1 OUT-OF-PLUMB
3. ATTACH EACH VERT WIRE TO SUPPORT ABOVE & CEILING SUSPENSION MEMBER W/ MIN OF 3 TIGHT TURNS IN 1 1/2"
4. SECURE DIAGONAL FRAMIN WIRE TO MAIN RUNNERS W/ 4 TIGHT TURNS IN 1 1/2"

1 TYPICAL GWB CEILING
1/4" = 1'-0"

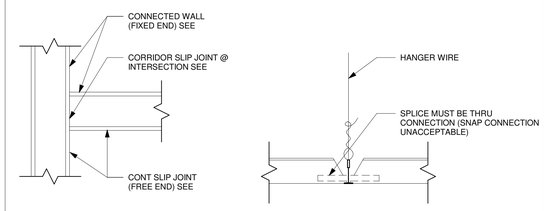


NOTES:
1. * MAX DISTANCE TO FIRST BRACING POINT
2. PROVIDE COUNTER SLOPING WIRES FOR VERIT HANGER WIRES MORE THAN 6 IN 1 OUT-OF-PLUMB
3. ATTACH EACH VERT WIRE TO SUPPORT ABOVE & CEILING SUSPENSION MEMBER W/ MIN OF 3 TIGHT TURNS IN 1 1/2"
4. SECURE DIAGONAL FRAMIN WIRE TO MAIN RUNNERS W/ 4 TIGHT TURNS IN 1 1/2"

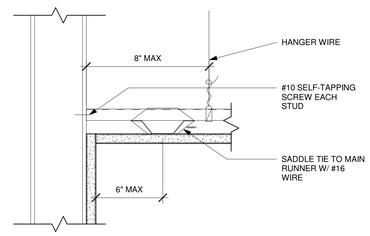
2 TYPICAL ACOUSTICAL TILE CEILING
1/4" = 1'-0"



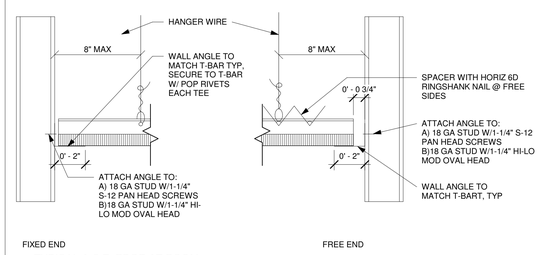
4 TYPICAL LIGHT FIXTURE
3" = 1'-0"



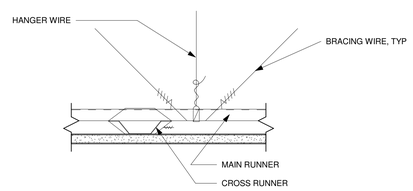
5 TYPICAL SLIP JOINT AND RUNNER
3" = 1'-0"



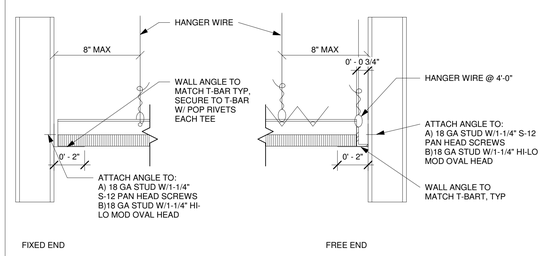
6 GWB CEILING - END
3" = 1'-0"



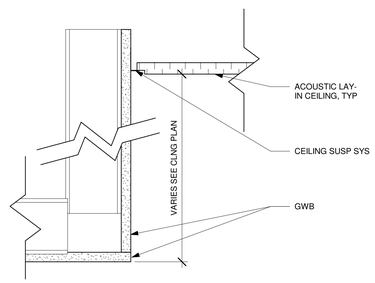
9 TYPICAL A.C.T. EDGE AT ROOM
3" = 1'-0"



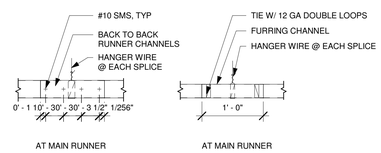
7 GWB CEILING - INTERMEDIATE
3" = 1'-0"



12 TYPICAL A.C.T. EDGE AT CORRIDOR
3" = 1'-0"



10 TYPICAL SOFFIT DETAIL
3" = 1'-0"



11 SPLICING OF GWB CEILING
1" = 1'-0"

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

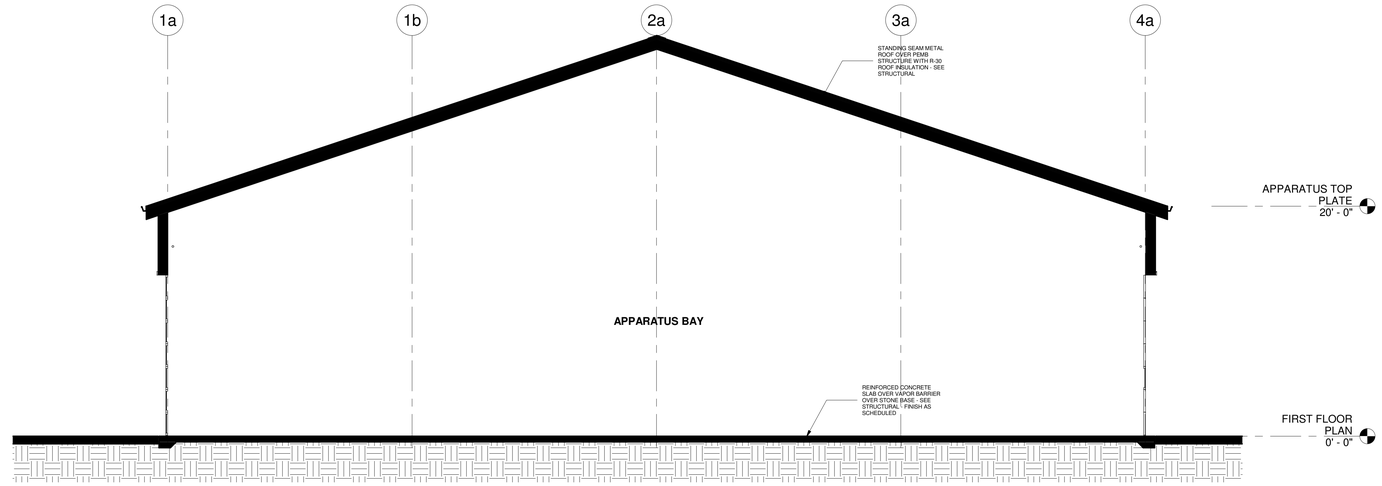
LAURINBURG NORTH FIRE STATION

No.	Description	Date

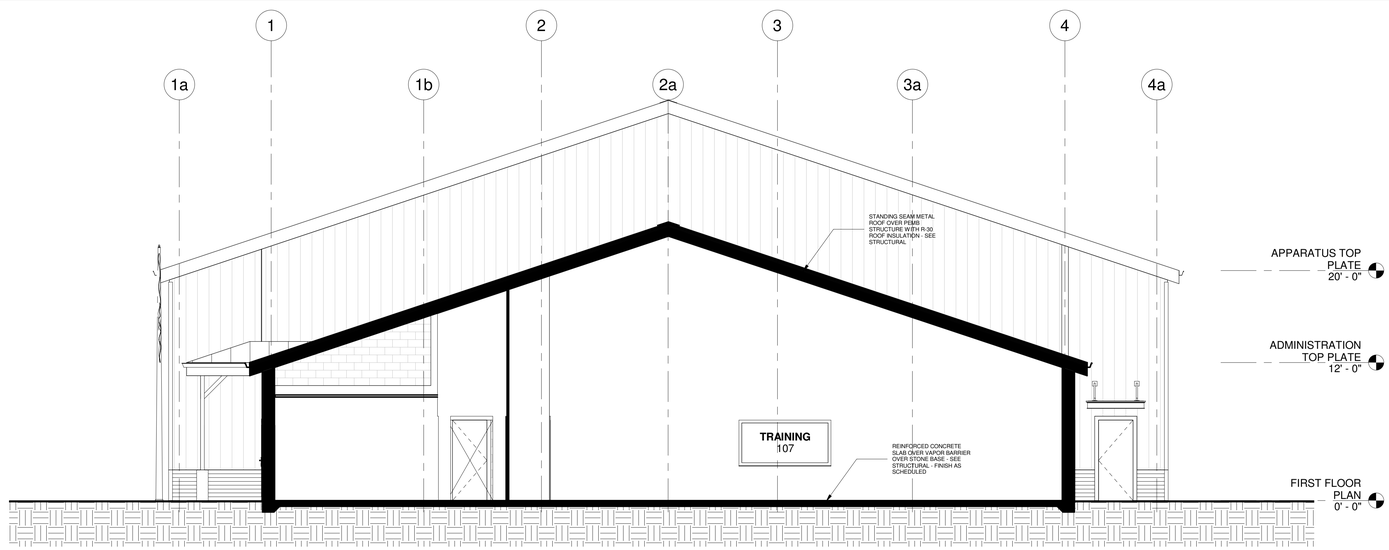
Project Number: 2020-062
Date: 01.19.2022

TYPICAL CEILING DETAILS

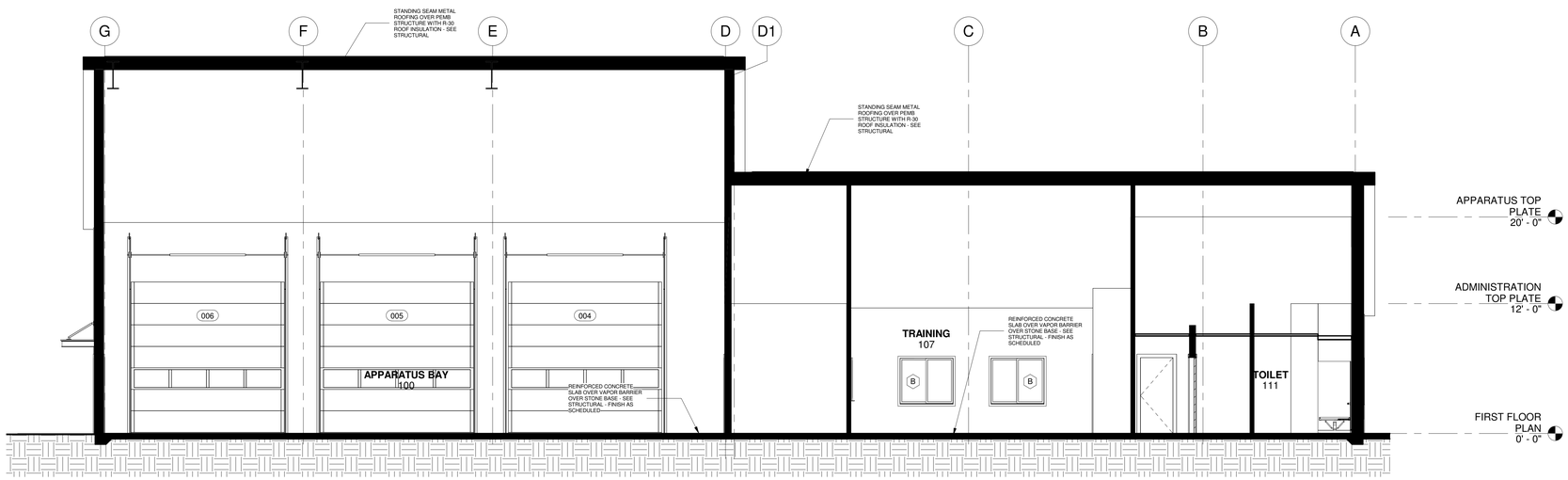
A4.11



3 SECTION - TRAVERSE - APPARATUS BAY
3/16" = 1'-0"



2 SECTION - TRAVERSE - RESIDENTIAL / LIVING
3/16" = 1'-0"



1 SECTION - LONGDITUDINAL
3/16" = 1'-0"

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NORTH CAROLINA
CHARLOTTE, N. C.

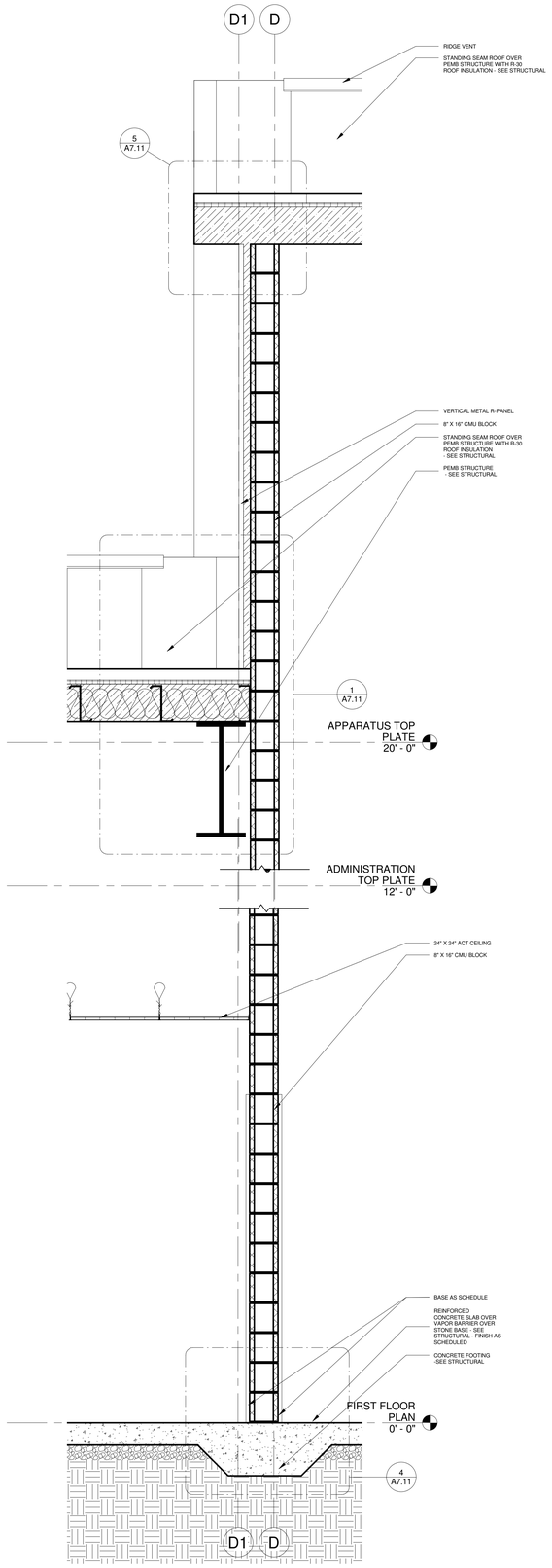
LAURINBURG NORTH FIRE STATION

No.	Description	Date

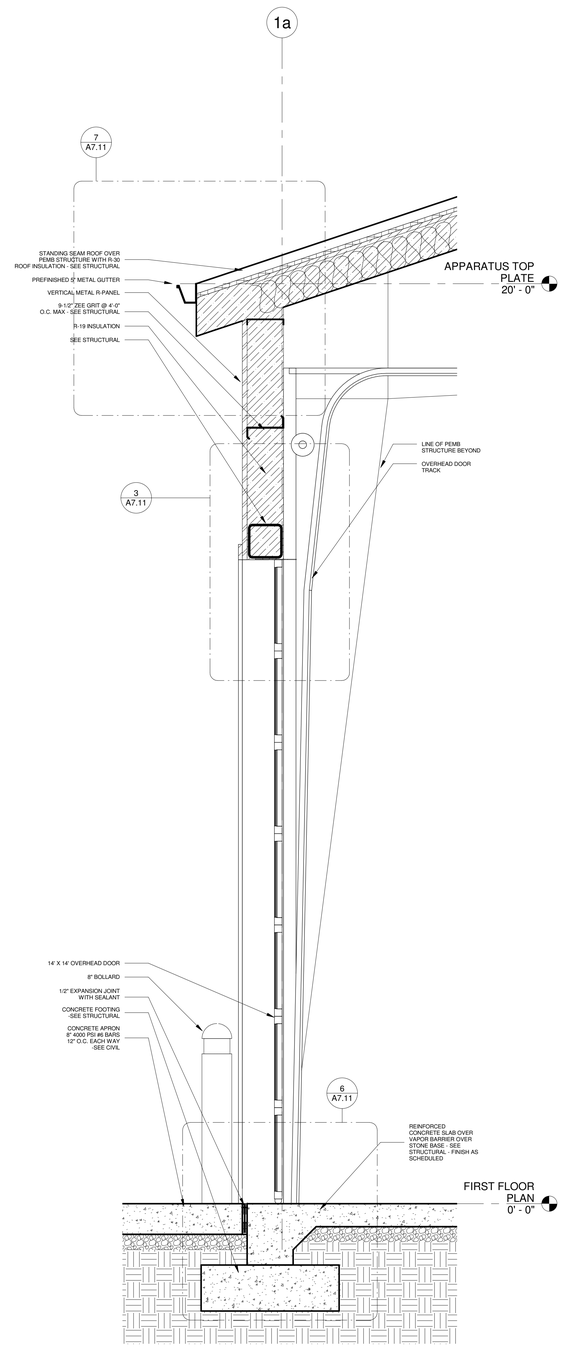
Project Number: 2020-062
Date: 01.19.2022

BUILDING SECTIONS

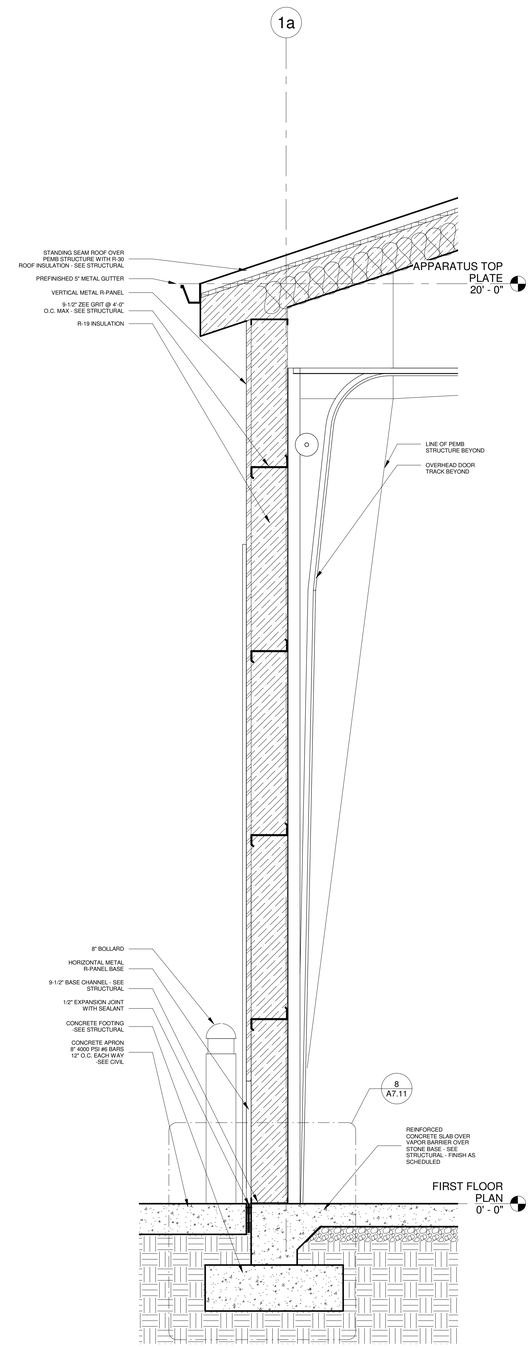
A5.01



2 WALL SECTION - APPARATUS DIVISING WALL BOTTOM
3/4" = 1'-0"



5 WALL SECITON - GARAGE DOOR
3/4" = 1'-0"



1 WALL SECTION - APPARATUS EXTERIOR
3/4" = 1'-0"

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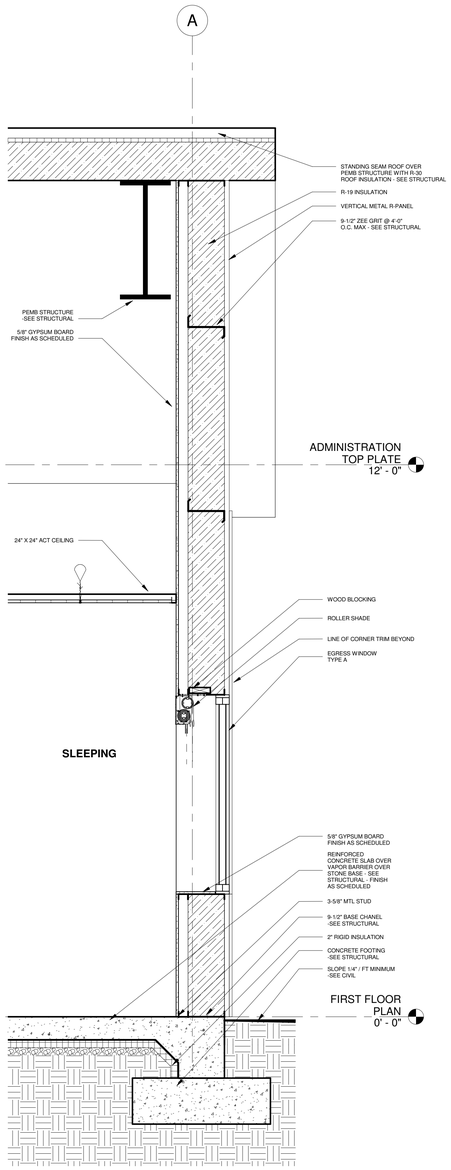
LAURINBURG NORTH FIRE STATION

No.	Description	Date

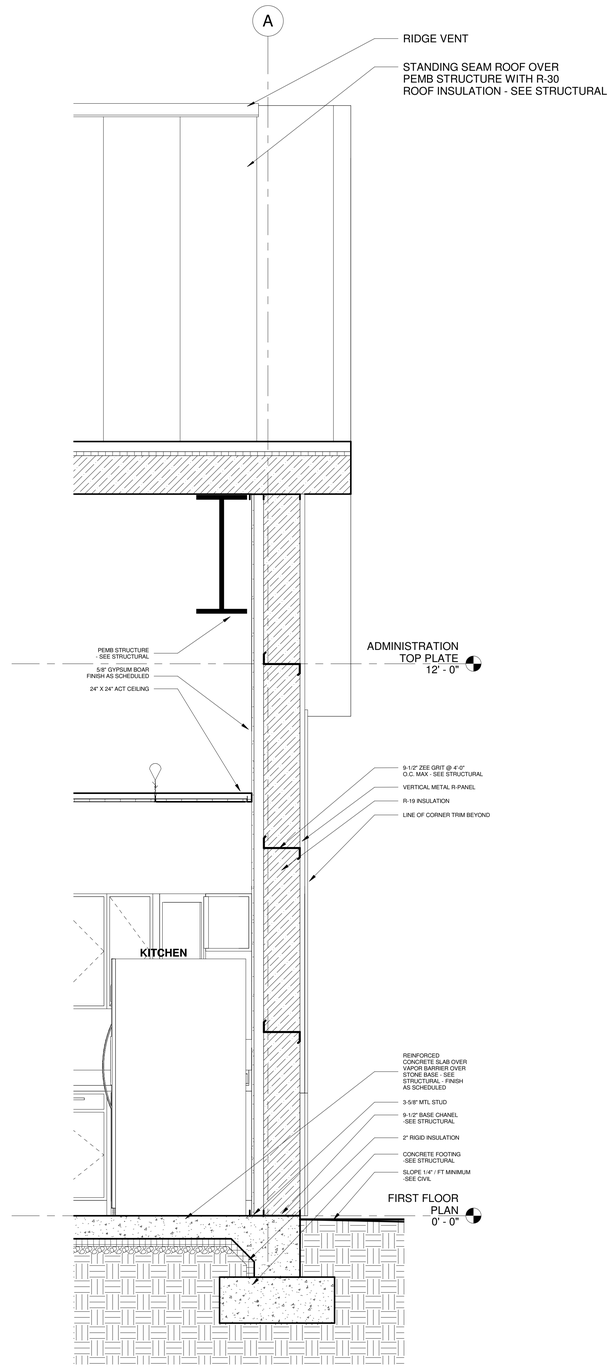
Project Number: 2020-062
Date: 01.19.2022

WALL SECTIONS

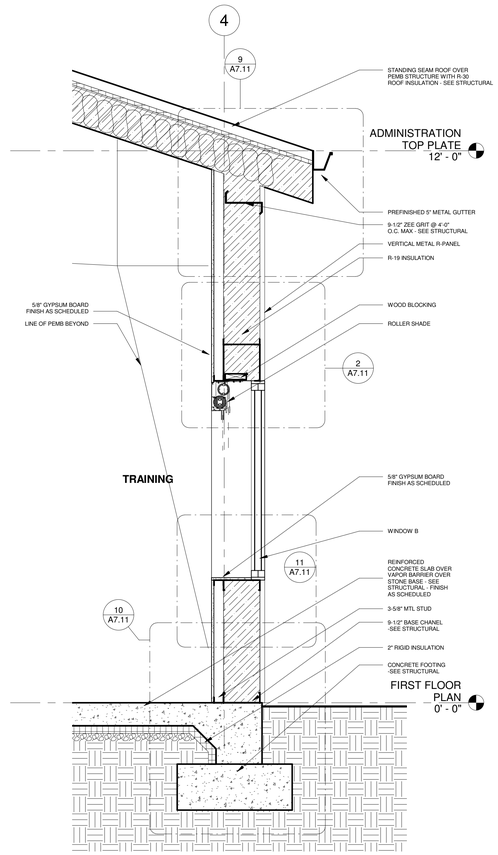
A6.01



3 WALL SECTION - AT WINDOW
3/4" = 1'-0"



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



1 WALL SECTION - AT STOREFRONT
3/4" = 1'-0"

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NORTH CAROLINA
CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

No.	Description	Date

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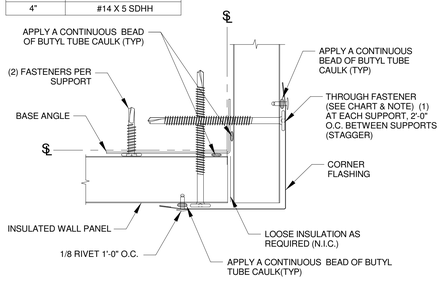
Date: 01.19.2022

WALL SECTIONS

A6.02

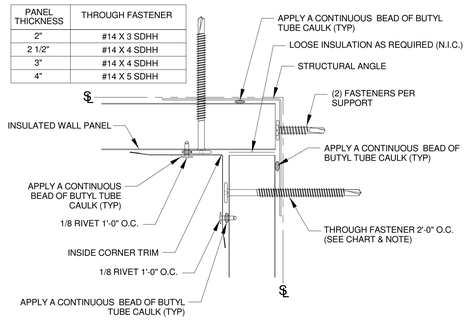
PANEL THICKNESS	THROUGH FASTENER
2"	#14 X 3 SDHH
2 1/2"	#14 X 4 SDHH
3"	#14 X 4 SDHH
4"	#14 X 5 SDHH



OUTSIDE CORNER DETAIL

9 OUTSIDE CORNER
12" = 1'-0"

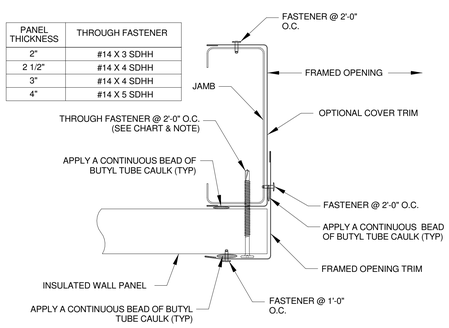
PANEL THICKNESS	THROUGH FASTENER
2"	#14 X 3 SDHH
2 1/2"	#14 X 4 SDHH
3"	#14 X 4 SDHH
4"	#14 X 5 SDHH



INSIDE CORNER DETAIL

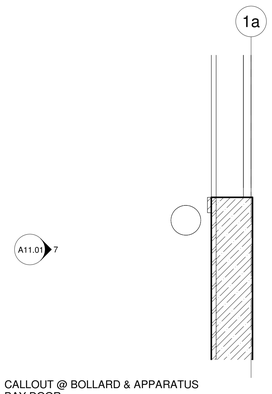
10 INSIDE CORNER
12" = 1'-0"

PANEL THICKNESS	THROUGH FASTENER
2"	#14 X 3 SDHH
2 1/2"	#14 X 4 SDHH
3"	#14 X 4 SDHH
4"	#14 X 5 SDHH

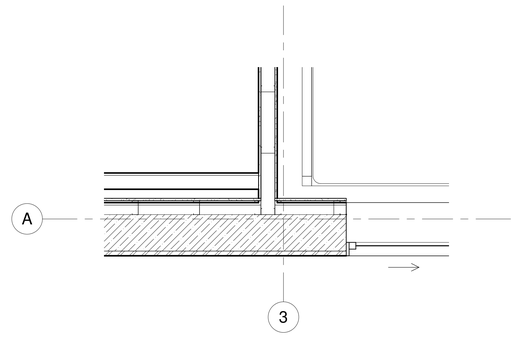


JAMB DETAIL

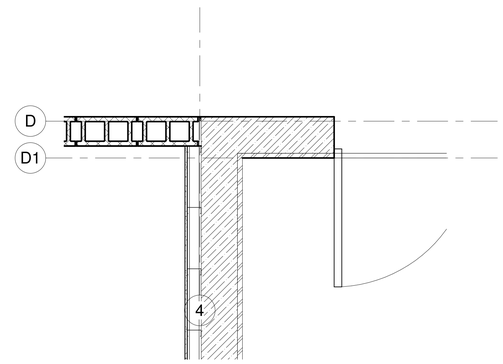
7 JAMB DETAIL
12" = 1'-0"



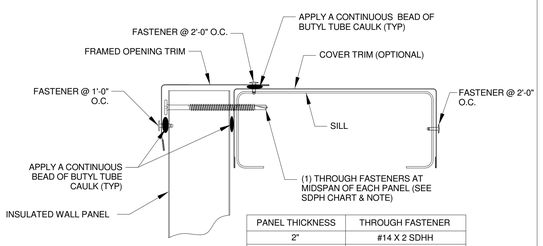
6 CALLOUT @ BOLLARD & APPARATUS BAY DOOR
3/4" = 1'-0"



4 CALLOUT @ EXTERIOR WALL & SLIDING WINDOW
3/4" = 1'-0"



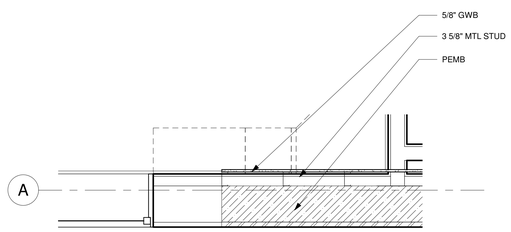
2 CALLOUT @ 2
3/4" = 1'-0"



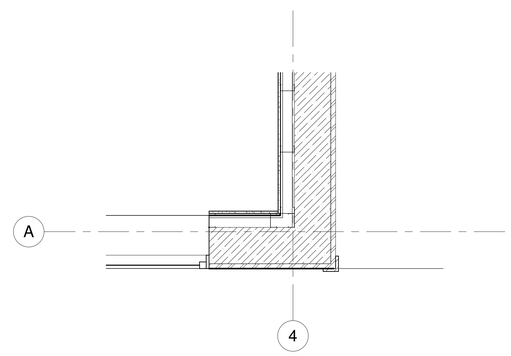
PANEL THICKNESS	THROUGH FASTENER
2"	#14 X 2 SDHH
2 1/2"	#14 X 3 SDHH
3"	#14 X 3 SDHH
4"	#14 X 4 SDHH

SILL TRIM

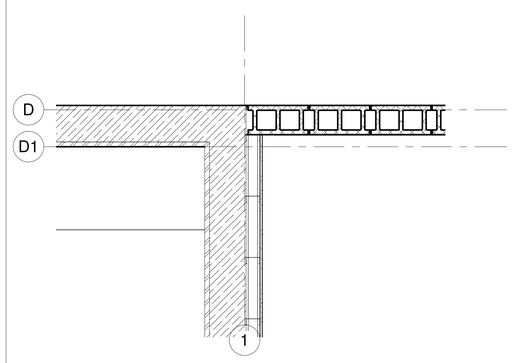
8 SILL DETAIL
12" = 1'-0"



5 CALLOUT @ EXTERIOR WALL & FIXED WINDOW
3/4" = 1'-0"



3 CALLOUT @ EXTERIOR CORNER
3/4" = 1'-0"



1 CALLOUT @
3/4" = 1'-0"

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CERT. NO. 52304
NORTH CAROLINA
CHARLOTTE, N. C.

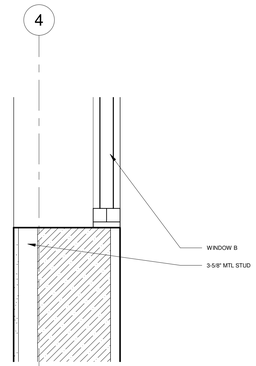
LAURINBURG NORTH FIRE STATION

No.	Description	Date

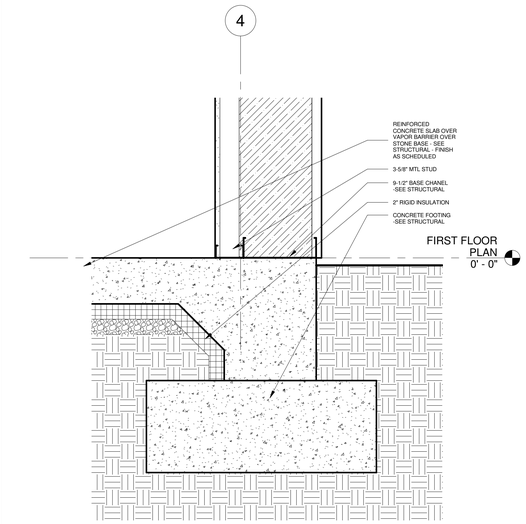
Project Number: 2020-062
Date: 01.19.2022

PLAN DETAILS

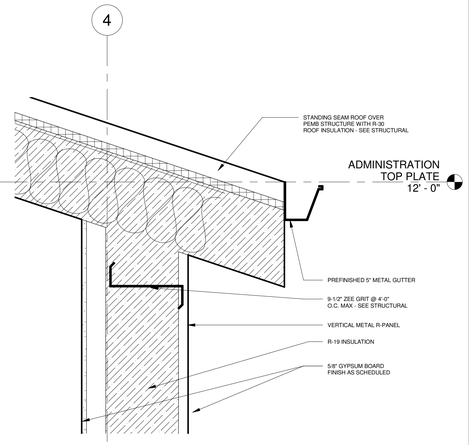
A7.01



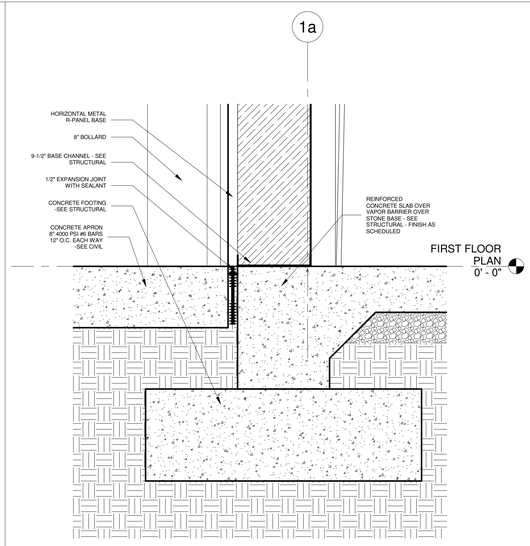
11 WINDOW SILL
1 1/2" = 1'-0"



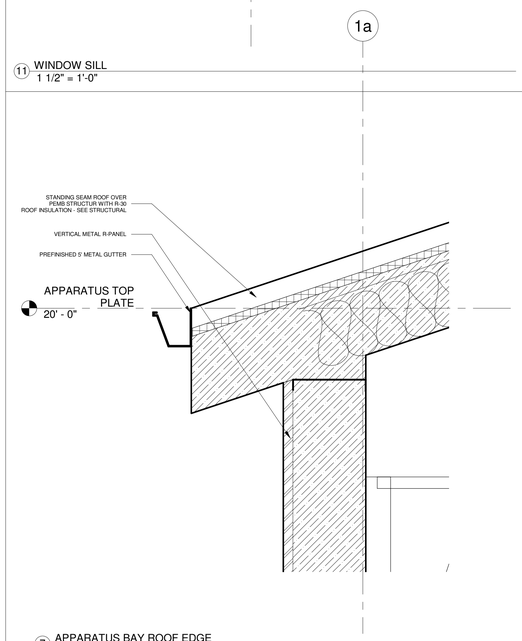
10 RESIDENTIAL FOOTING
1 1/2" = 1'-0"



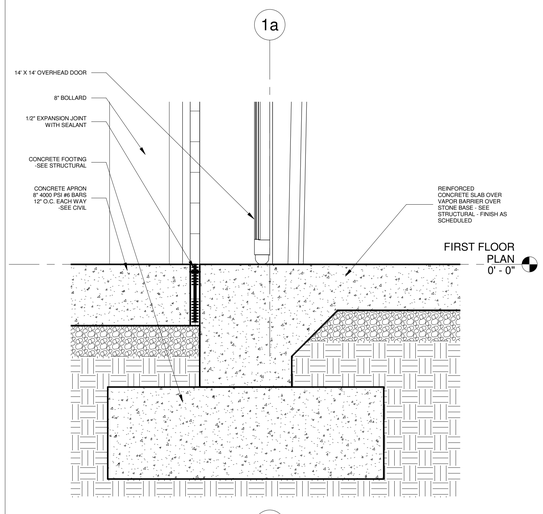
9 RESIDENTIAL ROOF EDGE
1 1/2" = 1'-0"



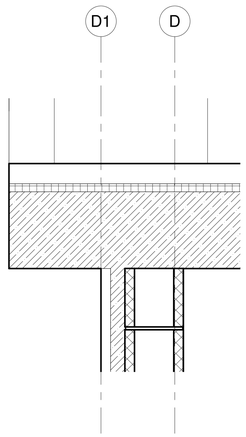
8 APPARATUS BAY FOOTING
1 1/2" = 1'-0"



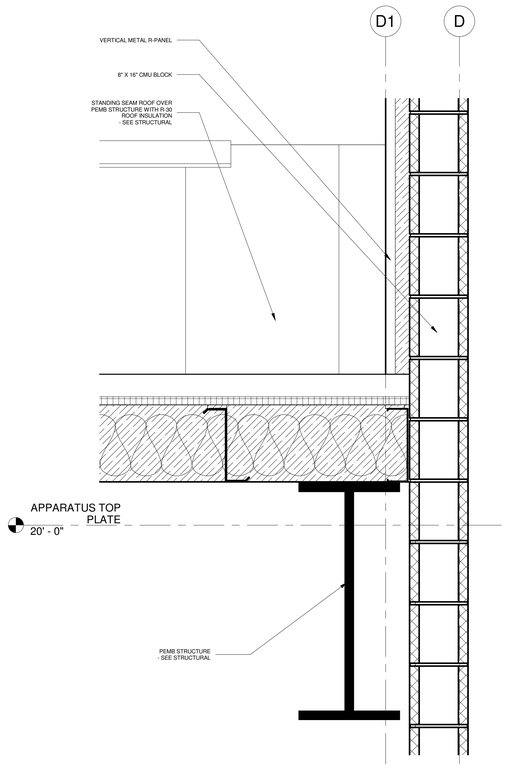
7 APPARATUS BAY ROOF EDGE
1 1/2" = 1'-0"



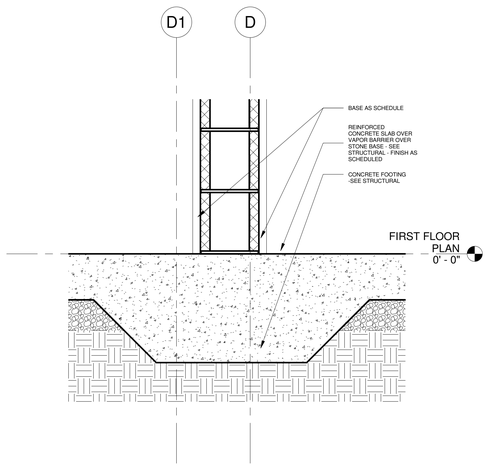
6 GARAGE DOOR FOOTING
1 1/2" = 1'-0"



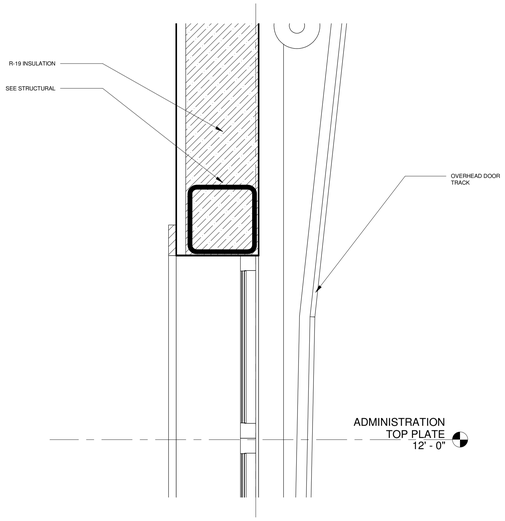
5 APPARATUS BAY ROOF
1 1/2" = 1'-0"



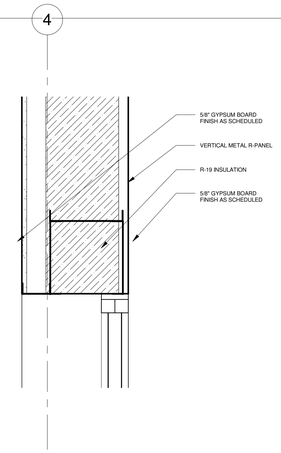
1 RESIDENTIAL ROOF
1 1/2" = 1'-0"



4 DIVISING WALL FOOTING
1 1/2" = 1'-0"



3 GARAGE DOOR LINTEL
1 1/2" = 1'-0"



2 WINDOW LINTEL
1 1/2" = 1'-0"

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

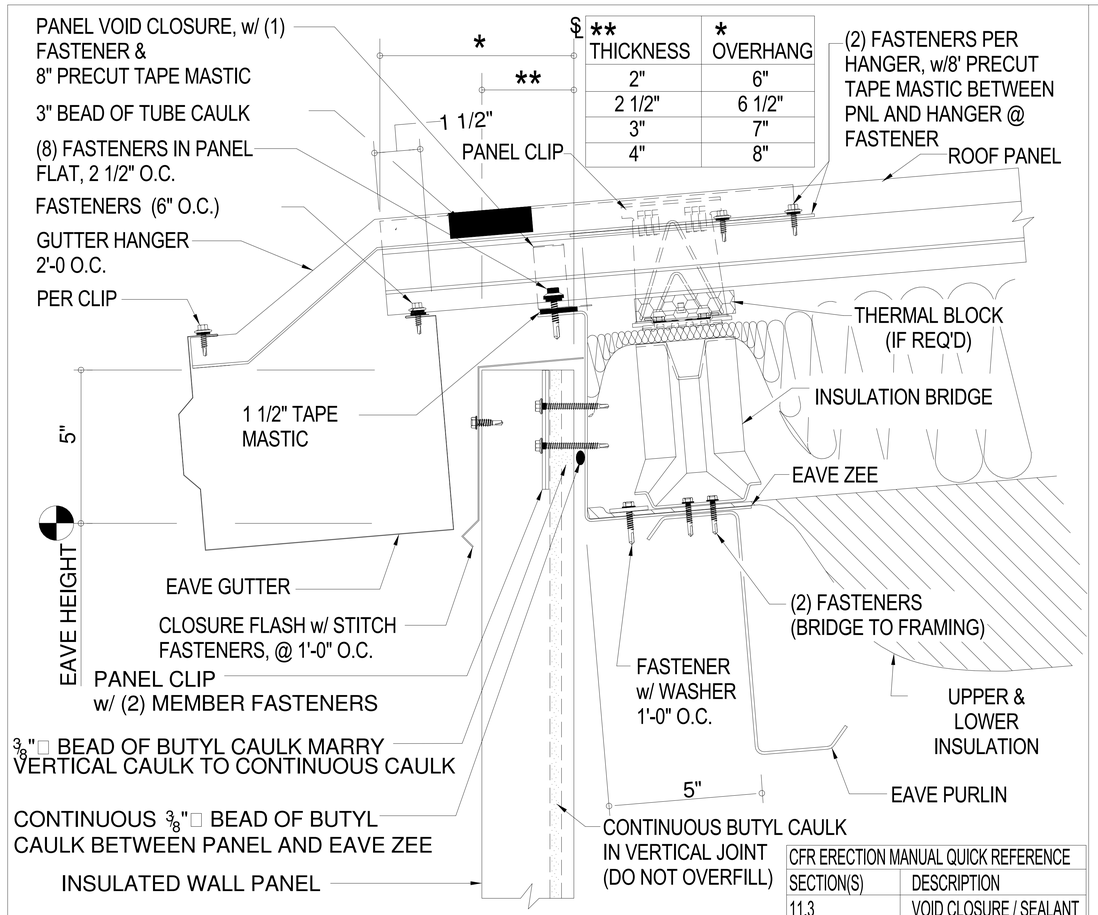
LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

SECTION DETAILS

A7.11

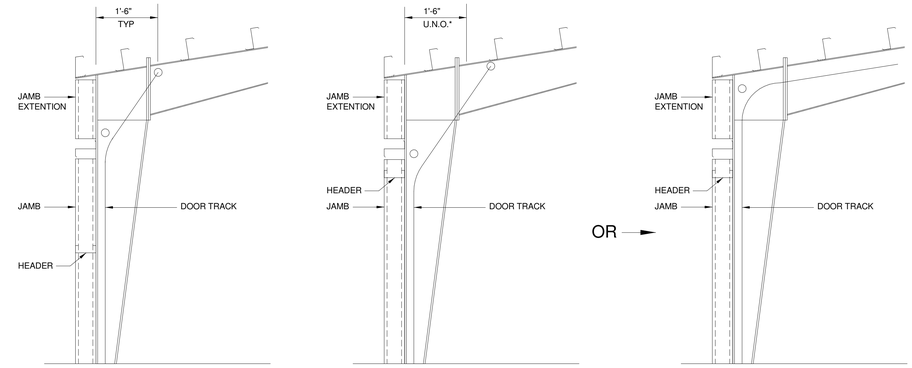


** THICKNESS	* OVERHANG
2"	6"
2 1/2"	6 1/2"
3"	7"
4"	8"

CFR ERECTION MANUAL QUICK REFERENCE	
SECTION(S)	DESCRIPTION
11.3	VOID CLOSURE / SEALANT
16.4-16.7	GUTTER INSTRUCTIONS

EAVE GUTTER DETAIL w/ INSULATED WALL PANELS

6 GUTTER
6" = 1'-0"



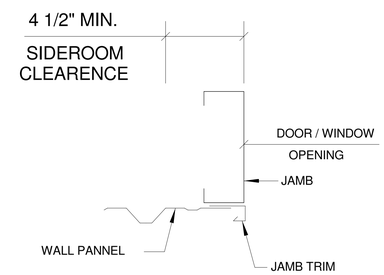
WHEN DOOR HEIGHT IS LESS THAN HALF THE EAVE HEIGHT, THE DOOR HUGS THE WALL. JAMB EXTENTIONS ARE AN ACCEPTABLE SOLUTION TO SUPPORT THE DOOR TRACK.

WHEN DOOR HEIGHT IS GREATER THAN HALF THE EAVE HEIGHT, THE TRACK WILL HUG THE WALL AS HIGH AS POSSIBLE AND THEN FOLLOW THE ROOF.

* AS A RULE OF THUMB, KEEP 1'-6" CLEARANCE UNO.

2 VERTICAL LIFT (HIGH LIFT) DOORS

DOOR JAMBS MUST EXTEND 2 X DOOR HEIGHT + 12" TO EAVE - WHICH EVER IS LESS

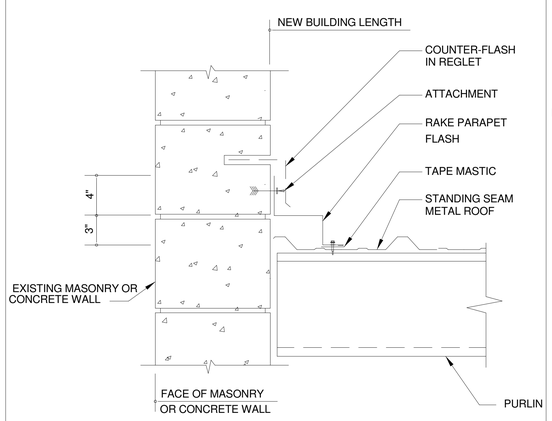


SIDEROOM IS VERY IMPORTANT. THIS IS THE ROOM NEEDED FOR THE HOISTS, TRACKS, AND/OR TORSION SPRING SUPPORT.

TROUBLE SHOOTING AREAS

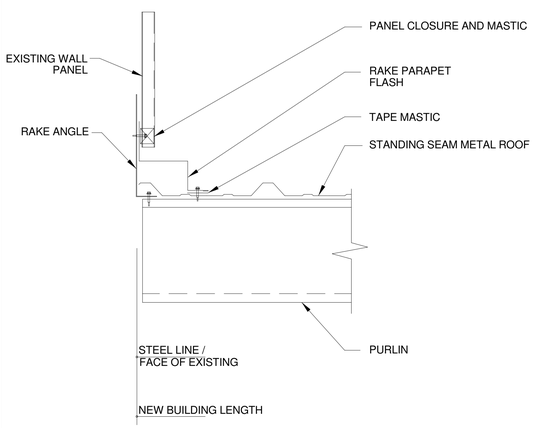
- FULL FRAME ENDWALLS - HEAD AND SIDE CLEARANCE UNDER FRAME.
- PORTAL FRAMES - HEAD CLEARANCE
- CRANE BEAMS - HEAD CLEARANCE
- MEZZANINE - HEAD, SIDE AND BACK CLEARANCE
- LINER PANEL DETAILS
- FLANGE BRACES

5 OVERHEAD DOOR
1/2" = 1'-0"



4 RAKE TO MASONRY
12" = 1'-0"

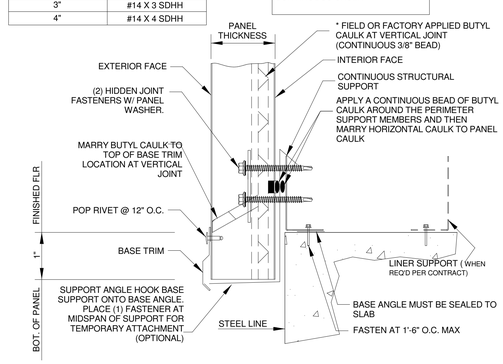
(3/32" X 1/2" TAPE MASTIC IS PROVIDED FOR WALL PANEL SIDELAPS AT THIS CONDITION DUE TO THE POTENTIAL OF SNOW PILING UP AGAINST THE PANELS. THE MASTIC SHOULD BE INSTALLED FROM THE BOTTOM OF THE WALL PANEL ELEVATION TO 10'-0 ABOVE THE LOWER BUILDING ROOF LINE.)



3 RAKE TO METAL PANEL
12" = 1'-0"

PANEL THICKNESS	HIDDEN FASTENER
2"	#14 X 2 SDHH
2 1/2"	#14 X 3 SDHH
3"	#14 X 3 SDHH
4"	#14 X 4 SDHH

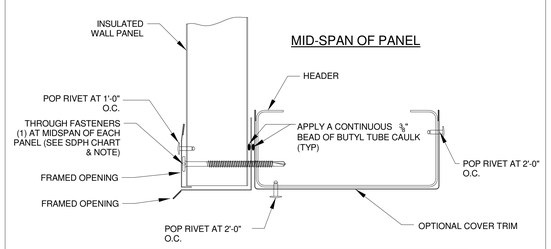
* ENSURE CAULK IS CONTINUOUS, IF NO CAULK IS PRESENT OR IF CAULK IS NOT CONTINUOUS, FIELD APPLY CONTINUOUS CAULK



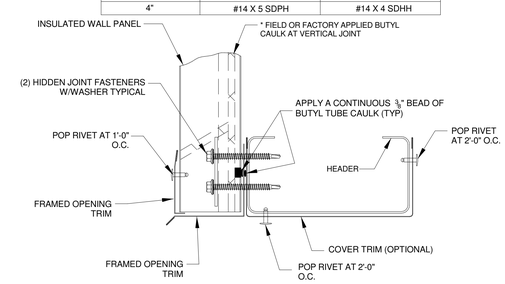
BASE TRIM DETAIL

BASE TRIM WITH PANEL SUPPORT
SEE INSULATED WALL PANEL SHEETING ERECTION NOTES FOR PANEL FASTENER LOCATIONS.

2 BASE TRIM
12" = 1'-0"



PANEL THICKNESS	THROUGH FASTENER	HIDDEN FASTENER
2"	#14 X 3 SDPH	#14 X 2 SDHH
2 1/2"	#14 X 4 SDPH	#14 X 3 SDHH
3"	#14 X 4 SDPH	#14 X 3 SDHH
4"	#14 X 5 SDPH	#14 X 4 SDHH



SIDE JOINT OF PANEL

1 HEADER
12" = 1'-0"

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

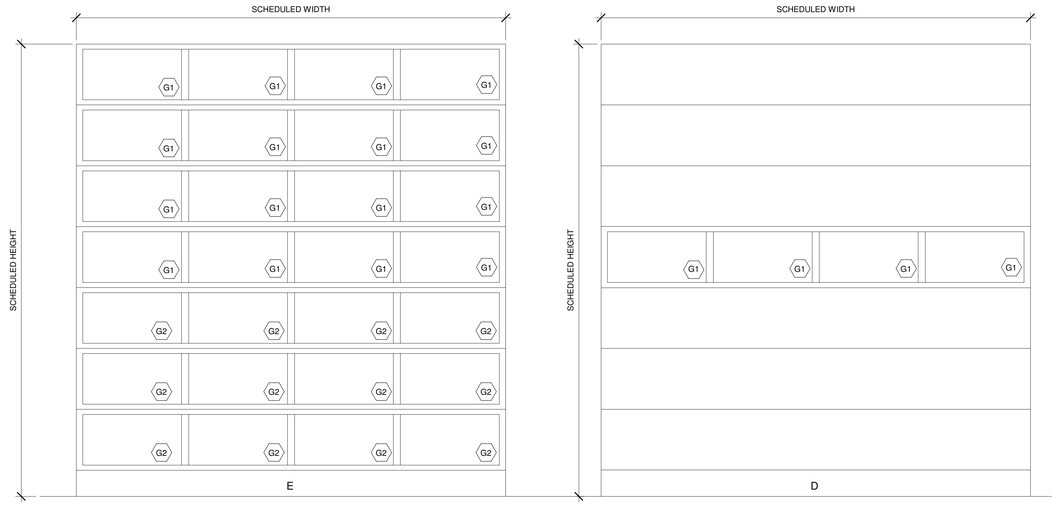
LAURINBURG NORTH FIRE STATION

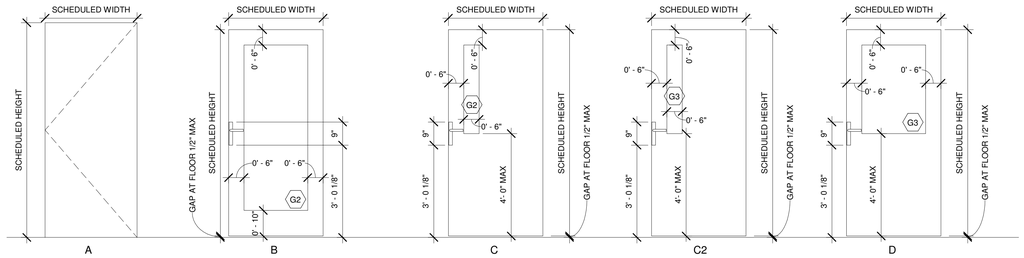
No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

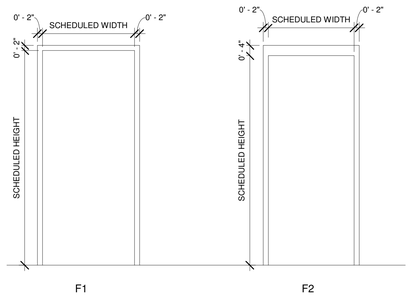
SECTION DETAILS

A7.12





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



1 FRAME ELEVATIONS
1/2" = 1'-0"

DOOR SCHEDULE

Mark	Size: Width	Size: Height	Size: Thickness	Door: Type	Door: Material	Door: Hard ware	Door: Finish	Frame: Type	Frame: Material	Notes
FIRST FLOOR PLAN										
001	14' - 0"	14' - 0"	0' - 2"	E	ALUMINUM	14	Red			
002	14' - 0"	14' - 0"	0' - 2"	E	ALUMINUM	14	Red			
003	14' - 0"	14' - 0"	0' - 2"	E	ALUMINUM	14	Red			
004	14' - 0"	14' - 0"	0' - 2"	D	ALUMINUM	14	Red			
005	14' - 0"	14' - 0"	0' - 2"	D	ALUMINUM	14	Red			
006	14' - 0"	14' - 0"	0' - 2"	D	ALUMINUM	14	Red			
100	3' - 0"	7' - 0"	0' - 2"	C2	HOLLOW METAL	12		F2	HOLLOW METAL	45 MIN
101	3' - 0"	7' - 0"	0' - 2"	A	HOLLOW METAL	13		F2	HOLLOW METAL	45 MIN
103	3' - 0"	7' - 0"	0' - 2"	A	HOLLOW METAL	12		F2	HOLLOW METAL	45 MIN
103B	3' - 0"	7' - 0"	0' - 2"	A	SOLID CORE WOOD	9		F1	HOLLOW METAL	
104	3' - 0"	7' - 0"	0' - 2"	C	SOLID CORE WOOD	10		F1	HOLLOW METAL	
106	3' - 0"	7' - 0"	0' - 2"	A	SOLID CORE WOOD	9		F1	HOLLOW METAL	
107	3' - 0"	7' - 0"	0' - 2"	C	SOLID CORE WOOD	2		F1	HOLLOW METAL	
108	3' - 0"	7' - 0"	0' - 2"	D	WOOD/GLASS	1		F1	HOLLOW METAL	
109	3' - 0"	7' - 0"	0' - 2"	C	SOLID CORE WOOD	5		F1	HOLLOW METAL	
110	3' - 0"	7' - 0"	0' - 2"	A	SOLID CORE WOOD	4		F1	HOLLOW METAL	
111	3' - 0"	7' - 0"	0' - 2"	A	SOLID CORE WOOD	4		F1	HOLLOW METAL	
113	3' - 0"	7' - 0"	0' - 2"	A	SOLID CORE WOOD	7		F1	HOLLOW METAL	20 MIN
115	3' - 0"	7' - 0"	0' - 2"	C2	SOLID CORE WOOD	3		F1	HOLLOW METAL	20 MIN
116	3' - 0"	7' - 0"	0' - 2"	C2	SOLID CORE WOOD	6		F1	HOLLOW METAL	20 MIN
118	3' - 0"	7' - 0"	0' - 2"	A	HOLLOW METAL	1		F1	HOLLOW METAL	
120	3' - 0"	7' - 0"	0' - 2"	B	HOLLOW METAL	1		F1	HOLLOW METAL	
121	3' - 0"	7' - 0"	0' - 2"	A	HOLLOW METAL	1		F1	HOLLOW METAL	
122	3' - 0"	7' - 0"	0' - 2"	A	HOLLOW METAL	1		F1	HOLLOW METAL	

WINDOW SCHEDULE

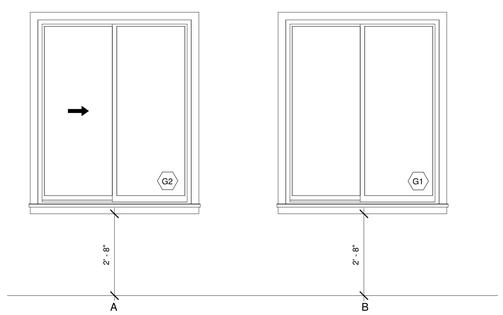
Type Mark	Height	Width	Sill Height	Comments
1	4' - 0"	3' - 0"	3' - 2"	FIXED
A	4' - 4"	5' - 0"	2' - 8"	SLIDING
B	4' - 4"	5' - 0"		

GLASS TYPES

G1	1" INSULATED LOW E GLASS
G2	1" INSULATED LOW E TEMPERED GLASS
G3	45 MIN RATED GLASS

NOTES

1. SET ALL THRESHOLDS IN A FULL BEAD OF SEALANT.
2. ALL FLOOR TRANSITIONS OCCUR ON CENTERLINE OF DOOR LEAF UNLESS NOTED OTHERWISE.
3. ALL CURTAINWALL AND STOREFRONT FINISH TO BE CLEAR ANODIZED UNLESS NOTED OTHERWISE.



WINDOW ELEVATIONS
1/2" = 1'-0"

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

No.	Description	Date

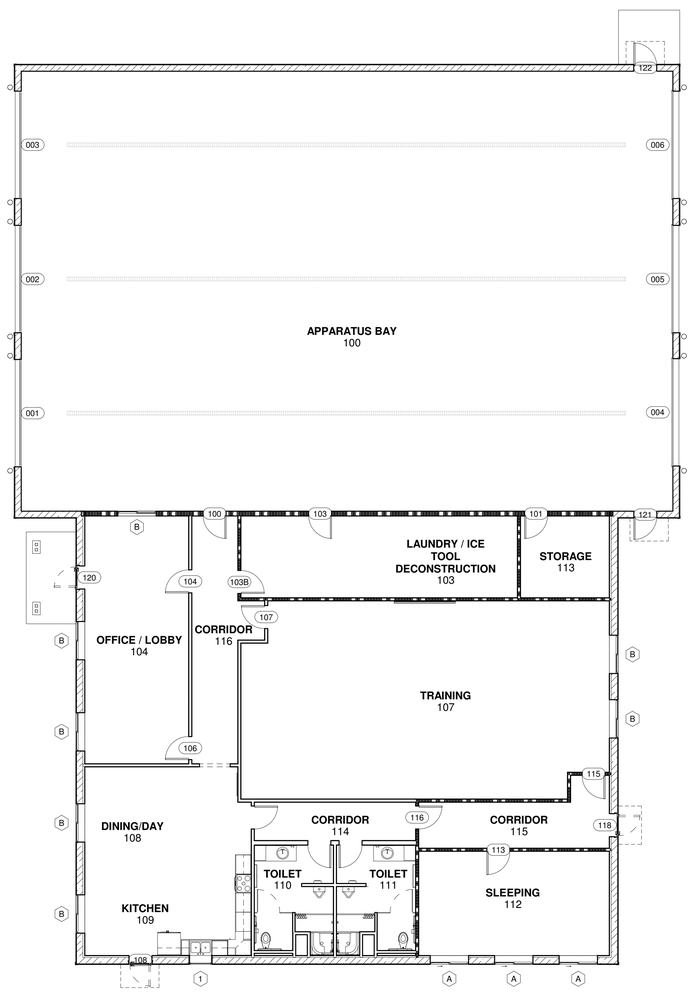
Project Number: 2020-062
Date: 01.19.2022

DOOR & WINDOW SCHEDULE, ELEVATIONS

A9.01

AV/SECURITY LEGEND

SYMBOL	DESCRIPTION
TV	TELEVISION



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

PLAN LEGEND

TRUE NORTH

PLAN NORTH

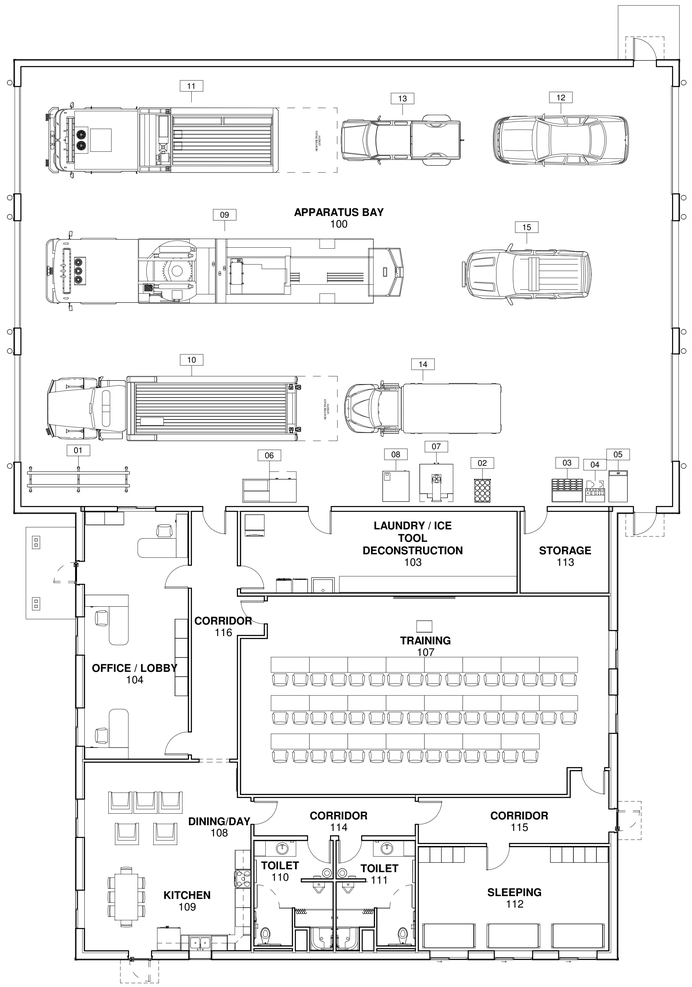
1 HOUR FIRE RATED PARTITION

FIRE APPARATUS SCHEDULE

TA-#	DESCRIPTION	MANUFACTURER	MODEL #	NOTES	PROVIDER & INSTALLER
1	HOSE RACK				
2	BOTTLE CART				
3	BOTTLE RACK				
4	CFSII	BAUER	CFSII-2SL-SF		
5	MINI VERTICUS	BAUER	MNVT12H-E1		
6	HOSE WASHER	CIRCUL-AIR	100A	SERIES 100 HOSE WASHER	
7	DRYING CABINET	CIRCUL-AIR	D612	SERIES 100 ELECTRIC HOSE DRYER	
8	PPE WASHER	UNI-MAC	UCN080HNF		
9	LADDER 1	STUPHEN	100' PLATFORM	1997 - 1,750 GPM, 300 GAL WATER	O.F.O.I.
10	ENGINE 11	KENWORTH	DEEP SOUTH	2016 - 2,000 GPM, 770 GAL WATER, 25 GAL FOAM	O.F.O.I.
11	TANKER 12	KENWORTH	PIERCE	2000 - 300 GPM, 1,250 GAL WATER	O.F.O.I.
12	CAR 16	FORD	CROWN VIC	1998 - SUPPORT VEHICLE	O.F.O.I.
13	BRUSH 1	FORD	F-350	1993 - 100 GPM, 250 GAL WATER, 5 GAL FOAM	O.F.O.I.
14	FIRECOM	FORD	MOBILE COMMAND	1979 - MOBILE COMMUNICATIONS UNIT	O.F.O.I.
15	FIRE COMMAND 1	CHEVROLET	SUBURBAN	2013 - MOBILE FIRE COMMAND UNIT	O.F.O.I.

GENERAL NOTES

1. O.F.O.I - OWNER FURNISHED, OWNER INSTALLED
2. O.F.C.I. - OWNER FURNISHED, CONTRACTOR INSTALLED



2 FURNITURE PLAN
1/8" = 1'-0"

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NORTH CAROLINA
REGISTERED
15357
ARCHITECT
JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, P.L.L.C.
REGISTERED ARCHITECTURAL CORPORATION
CERT. NO. 52304
NORTH CAROLINA
CHARLOTTE, N. C.

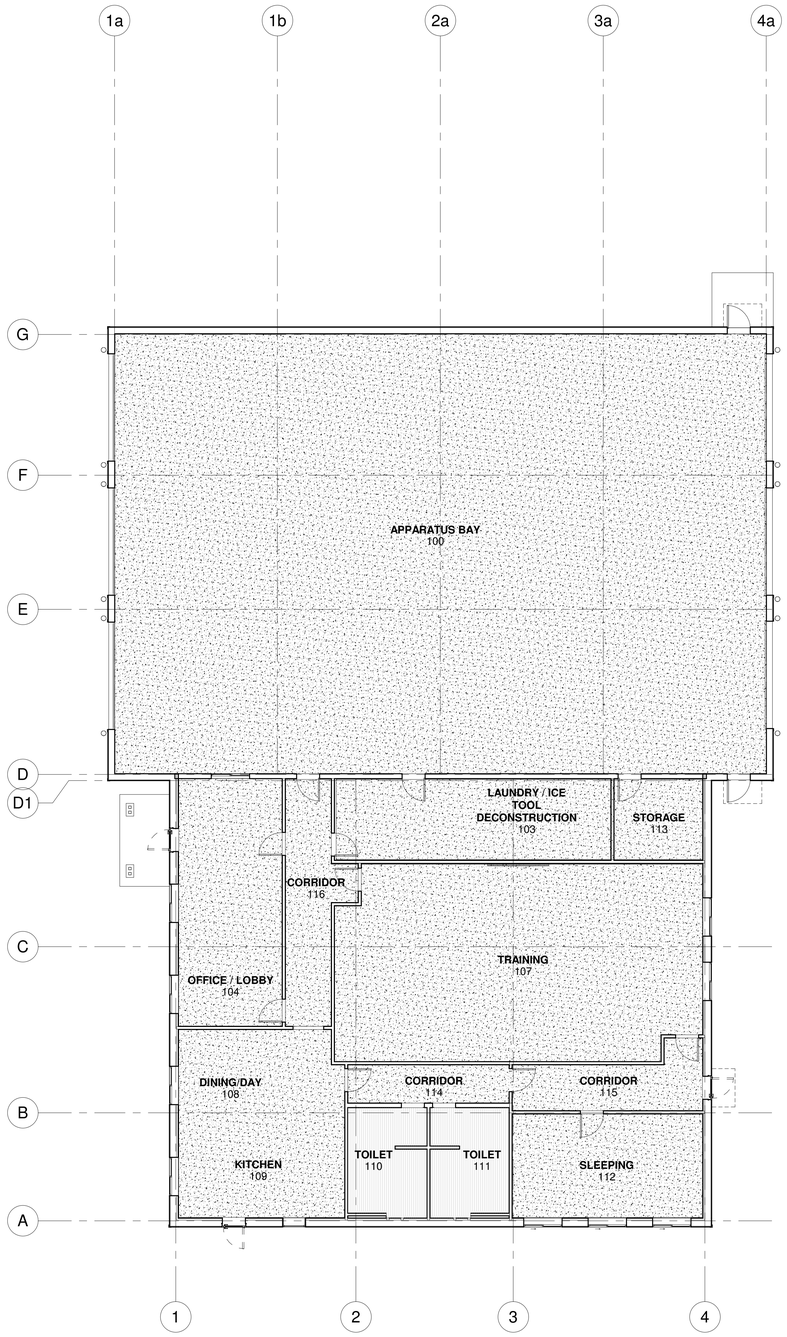
LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 01.19.2022

FURNITURE PLAN

A10.01



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

FINISH LEGEND

DESIGNATION	FINISH TYPE	MANUFACTURER	STYLE NAME/ NUMBER	COLOR NAME / SIZE	LOCATION/ COMMENTS
ACT-1	ACOUSTICAL CEILING TILE	USG	MARS ACOUSTICAL PANELS W/ DONN BRAND DX ACOUSTIC SUSPENSION SYSTEM 15/16"	WHITE / 24" X 24"	TYPICAL LAY IN CEILING
GWB-1	GYPSUM WALL BOARD	TBD	TBD	GWB TYPE IN CEILING TO MATCH GWB IN ADJ. WALL	SEE FINISH PLANS
PLAM-1	LAMINATE	WILSONART	STANDARD LAMINATE	TBD	CASEWORK VERTICAL AND HORIZONTAL SURFACES
SC-1	SEALED CONCRETE	SHERWIN WILLIAMS	REACTIVE CONCRETE SEALER	NO COLOR	8" 4,000 PSI, #6 BARS 12" O.C. EACH WAY

GENERAL NOTES:

1. ALL NEW WALL AND CEILING FINISHES SHALL COMPLY WITH 803 OF THE IFC AND FLOOR FINISHES SHALL COMPLY WITH 804 OF THE IFC.
2. GC SHALL BE RESPONSIBLE FOR COMPLYING WITH VOLATILE ORGANIC COMPOUND REGULATIONS FOR ALL FINISH MATERIALS.
3. GC SHALL PROVIDE GWB FINISH IN COMPLIANCE WITH GYPSUM ASSOCIATION GA214-96.
4. FLOOR SURFACE SHALL BE CLEAN AND CLEAR OF DEBRIS OR MATERIAL PRIOR TO CONSTRUCTION. FLOAT AND SCRAPE TO PROVIDE LEVEL SURFACE FOR NEW SPECIFIED FINISH.
5. CONTRACTOR SHALL PROVIDE NECESSARY SHORING OR TEMPORARY SUPPORT AS REQUIRED.
6. ALL CUTTING AND PATCHING WORK SHALL BE DONE IN A NEAT MANNER WITH QUALITY WORKMANSHIP AND IN ACCORDANCE WITH A PROFESSIONAL STANDARD OF CARE.
7. ALL FINISHES SPECIFIED ARE APPROVED BY THE OWNER; NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PROPER APPROVAL FROM OWNER & INTERIOR DESIGNER IN WRITING.
8. REFER TO THE CONSTRUCTION PLANS DIMENSIONS FOR ALL PRELIMINARY FINISH MATERIAL TAKE-OFFS. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDER PLACEMENT.
9. UNLESS NOTED OTHERWISE (U.N.O.), PROVIDE SATIN ALUMINUM FINISH TRANSITION STRIPS BY SCHLUTER OR EQUAL AT ALL FLOOR FINISH TRANSITIONS. VINYL AND MARBLE THRESHOLDS WILL NOT BE ACCEPTED. U.N.O., TRANSITION FINISHES AT CENTER OF DOOR. FLOAT OR FEATHER ALL FLOORING MATERIALS AS REQUIRED TO ENSURE A LEVEL TRANSITION BETWEEN MATERIALS OF VARYING THICKNESS. CHANGES IN LEVEL SHALL BE 1/4" MAXIMUM VERTICAL AND 1/2" MAXIMUM WITH A 1:2 BEVEL.
   a. SIMILAR HEIGHT TRANSITIONS = SCHLUTER SCHIENE, SATIN ANODIZED ALUMINUM
      i. TILE TO CARPET
   b. CARPET TO LVT = SCHLUTER RENO-TK OR RENO U, SATIN ANODIZED ALUMINUM
      i. ALTERNATE: ROPPE SLIM PROFILE CARPET REDUCER STRIP, COLOR TBD
10. TRANSITION FINISHES SHALL OCCUR AT CENTER OF DOOR OPENING OR AS INDICATED ON FLOOR PLANS.
11. CONTINUE FLOORING AND WALL BASE MATERIAL AS SCHEDULED UNDER MILLWORK AND INTO ALL MILLWORK RECESSES.
12. WALLS THAT CONTAIN MECHANICAL VENTS, ACCESS DOORS, ELECTRICAL PANELS, ETC., SHALL BE PAINTED THE COLOR OF THE WALL IN WHICH IT IS LOCATED.
13. CEILINGS THAT CONTAIN MECHANICAL VENTS, ACCESS DOORS, ETC., SHALL BE PAINTED CEILING COLOR.
14. ALL ELECTRICAL OUTLET COVERS & PLUGS SHALL MATCH AND BE WHITE IN COLOR WITH WHITE PLUGS. DARK WALLS SHALL BE BLACK WITH BLACK PLUGS. FLOORBOXES TO BE METAL, NOT PLASTIC, SATIN ALUMINUM FINISH.
15. ALL SURFACES RECEIVING PAINT, VARNISH, OR WALLCOVERING SHALL BE PREPARED ACCORDING TO MANUFACTURER'SSPECIFICATIONS FOR APPLIED FINISH PRIOR TO INSTALLATION OR APPLICATION OF FINISH MATERIAL WHETHER GYPSUM BOARD, CMU, BRICK, ETC. PAINTER TO DETERMINE CORRECT PAINT TYPE FOR INSTALLATION.
16. PAINT INSTALLATION SHALL CONSIST OF MIN. ONE COAT OF PRIMER AND MIN. TWO COATS OF SPECIFIED PAINT TO PRODUCE A SATISFACTORY FINISH APPEARANCE. INSTALLATION OF ALL PAINT MATERIALS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. CORRECT PAINT TYPE AND FINISH TO BE DETERMINED BY PAINTER FOR GYPSUM BOARD, CMU, BRICK, ETC. TYPE WALLS.
   a. WHERE NEEDED, ALL PTD. INTERIOR HOLLOW METAL FRAMES SHALL RECEIVE A WATERBASED ALKYD SEMI-GLOSS PAINT WITH LOW VOC'S. COLOR SHALL MATCH EXISTING WALL FRAME.
   b. U.N.O., ALL GWB CEILINGS SHALL RECEIVE FLAT FINISH.
   c. U.N.O., ALL GWB WALLS SHALL RECEIVE EGGSHELL FINISH.
17. DOORS: SEE ARCHITECTURAL DOOR SCHEDULE
18. ALL FLOORING MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. INSTALLATION SHALL BE FREE OF ABRASION, BUBBLES, CRACKS, AND OTHER IMPERFECTIONS. SEAMING SHALL BE VISIBLY CONCEALED.
19. PROVIDE WATERPROOF AND CRACK ISOLATION MEMBRANE IN ALL AREAS RECEIVING PORCELAIN FLOOR TILE. PROVIDE APPROPRIATE EXPANSION AND CONTROL JOINTS PER CURRENT T.C.N.A RECOMMENDATIONS. REFER TO TCNA EJ-171-09 FOR MOVEMENT JOINTS - VERTICAL AND HORIZONTAL.
20. TILE AND SUBSTRATE SHALL BE INSTALLED PER TCNA GUIDELINES.
21. ALL FLOOR GROUT TO BE LATICRETE SPECTRALOCK PRO PREMIUM GROUT- COLOR TO BE SUBMITTED AND APPROVED BY ARCHITECT/ DESIGNER
22. G.C. TO FINISH GWB TO FINISHED FLOOR SO THAT BASE IS APPLIED TO A SMOOTH SURFACE.
23. FLOORING PATTERN HATCHING IS FOR MATERIAL INFORMATION AND DESIGN INTENT ONLY. CONTRACTOR SHALL SUBMIT FLOORING SEAMING / PATTERN LAYOUT DIAGRAM TO INTERIOR DESIGNER FOR REVIEW AND APPROVAL PRIOR TO ORDERING AND INSTALLATION. INDICATE ON CARPET SEAMING DIAGRAM THE DIRECTION OF PATTERN INSTALLATION. CUT TILES LESS THAN 1/3 OF A FULL SIZE PIECE WILL NOT BE ACCEPTED. COORDINATE WITH ARCHITECT AS REQUIRED TO AVOID PORCELAIN TILE "SLIVERS".
24. CEILINGS SHALL BE INSTALLED PER PLAN DIAGRAMS. CEILINGS SHALL BE INSTALLED TO AVOID TILE "SLIVERS". CUT TILES LESS THAN 6" WILL NOT BE ACCEPTED.
25. REFER TO INTERIOR ELEVATIONS FOR ALL MILLWORK FINISH DESIGNATIONS.
26. GC SHALL SUBMIT FINISH SAMPLES TO INTERIOR DESIGNER AND ARCHITECT FOR REVIEW PRIOR TO ORDER AND INSTALLATION.
27. PAINT IN BATHROOMS, LAUNDRY ROOMS, AND SHOWER ROOMS TO BE MOISTURE AND MOLD RESISTANT.
28. BATHROOMS TO HAVE TILE AT WET WALLS ONLY, SEE INTERIOR ELEVATIONS.

FLOOR FINISH LEGEND - BASE BID

	SC-1

*PLAN FOR PATTERN PURPOSES ONLY, REFER TO FINISH SCHEDULE LEGEND FOR PRODUCT INFORMATION

FINISH SCHEDULE - BASE BID

Number	Name	Floor Finish	Base Finish	Ceiling Finish	Casework	Countertop	Wall Finish North	Wall Finish South	Wall Finish East	Wall Finish West	Comments
100	APPARATUS BAY	SC-1	N/A	OTS	N/A	N/A	N/A	N/A	N/A	N/A	
103	LAUNDRY / ICE TOOL DECONSTRUCTION	SC-1	N/A	OTS	N/A	N/A	N/A	N/A	N/A	N/A	
104	OFFICE / LOBBY	SC-1	N/A	ACT-1	N/A	N/A	N/A	N/A	N/A	N/A	
107	TRAINING	SC-1	N/A	OTS	N/A	N/A	N/A	N/A	N/A	N/A	
108	DINING/DAY	SC-1	N/A	ACT-1	PLAM-1	PLAM-1	N/A	N/A	N/A	N/A	
109	KITCHEN	SC-1	N/A	ACT-1	PLAM-1	PLAM-1	N/A	N/A	N/A	N/A	
110	TOILET	SC-1	N/A	ACT-1	PLAM-1	PLAM-1	N/A	N/A	N/A	N/A	
111	TOILET	SC-1	N/A	ACT-1	PLAM-1	PLAM-1	N/A	N/A	N/A	N/A	
112	SLEEPING	SC-1	N/A	ACT-1	N/A	N/A	N/A	N/A	N/A	N/A	
113	STORAGE	SC-1	N/A	OTS	N/A	N/A	N/A	N/A	N/A	N/A	
114	CORRIDOR	SC-1	N/A	ACT-1	N/A	N/A	N/A	N/A	N/A	N/A	
115	CORRIDOR	SC-1	N/A	ACT-1	N/A	N/A	N/A	N/A	N/A	N/A	
116	CORRIDOR	SC-1	N/A	ACT-1	N/A	N/A	N/A	N/A	N/A	N/A	
117	STORAGE	SC-1	N/A	ACT-1	N/A	N/A	N/A	N/A	N/A	N/A	

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

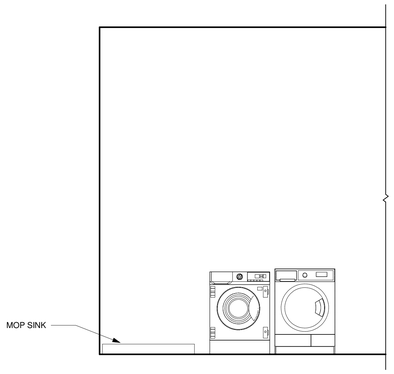
LAURINBURG NORTH FIRE STATION

No.	Description	Date
1	Addendum 2	12/13/2021

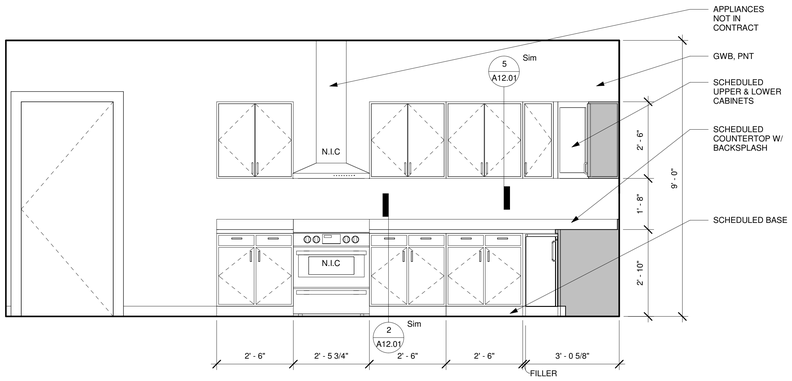
Project Number: 2020-062
Date: 01.19.2022

FINISH PLAN, LEGEND, NOTES, & SCHEDULE

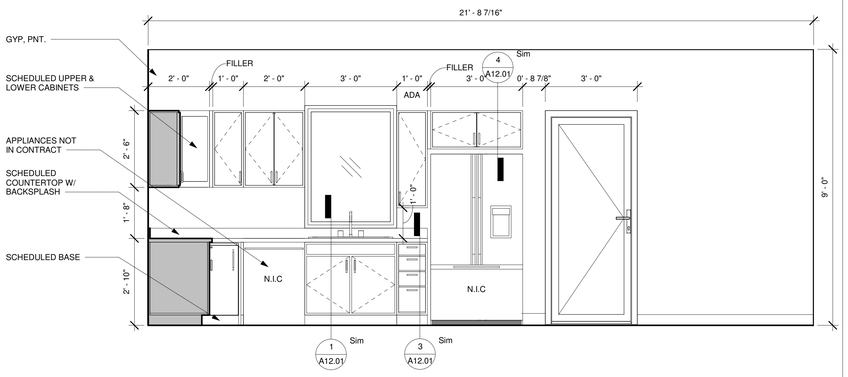
A10.21



6 ELEVATION - LAUNDRY / ICE
1/2" = 1'-0"



7 KITCHEN 109 - EAST
1/2" = 1'-0"



1 KITCHEN 109 - SOUTH
1/2" = 1'-0"

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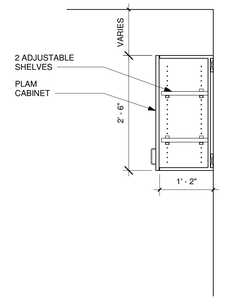
LAURINBURG NORTH FIRE STATION

No.	Description	Date

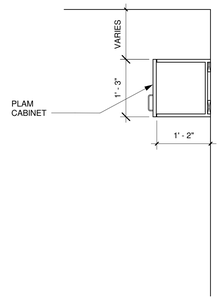
Project Number: 2020-062
Date: 01.19.2022

INTERIOR ELEVATIONS

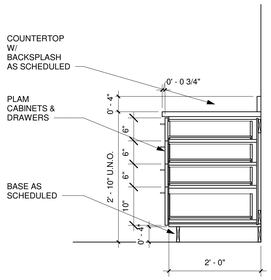
A11.01



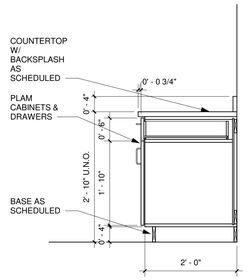
5 CASEWORK SECTION - UPPER CABINET
3/4" = 1'-0"



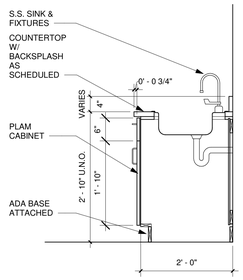
4 CASEWORK SECTION - UPPER CABINET ABOVE SINK
3/4" = 1'-0"



3 CASEWORK SECTION - BASE CABINET - 4 DRAWERS
3/4" = 1'-0"



2 CASEWORK SECTION - BASE CABINET - W/ DRAWER ADA
3/4" = 1'-0"



1 CASEWORK SECTION - BASE CABINET - ADA SINK
3/4" = 1'-0"

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LAURINBURG NORTH FIRE STATION

No.	Description	Date

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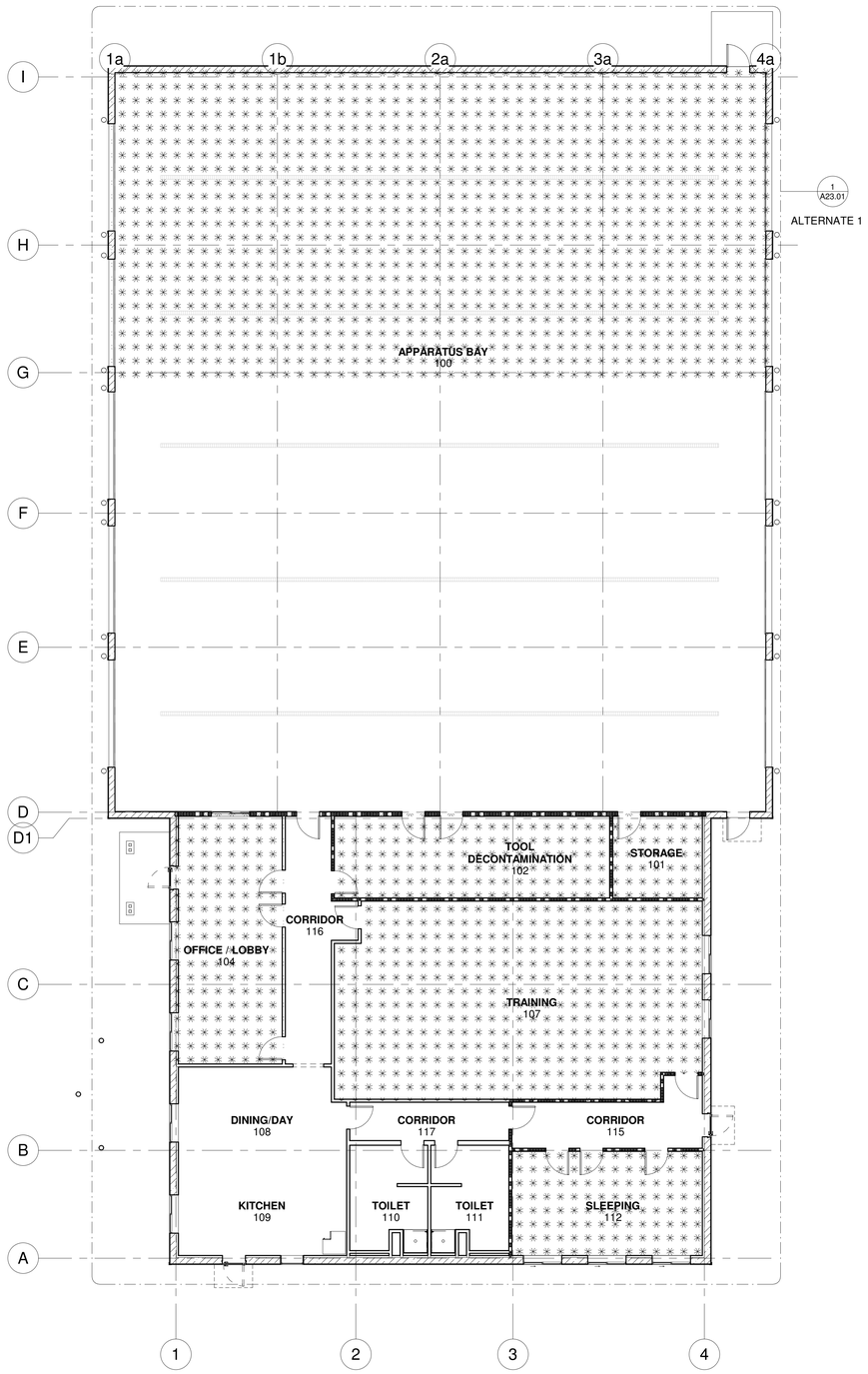
Date: 01.19.2022

MILLWORK & CASEWORK DETAILS

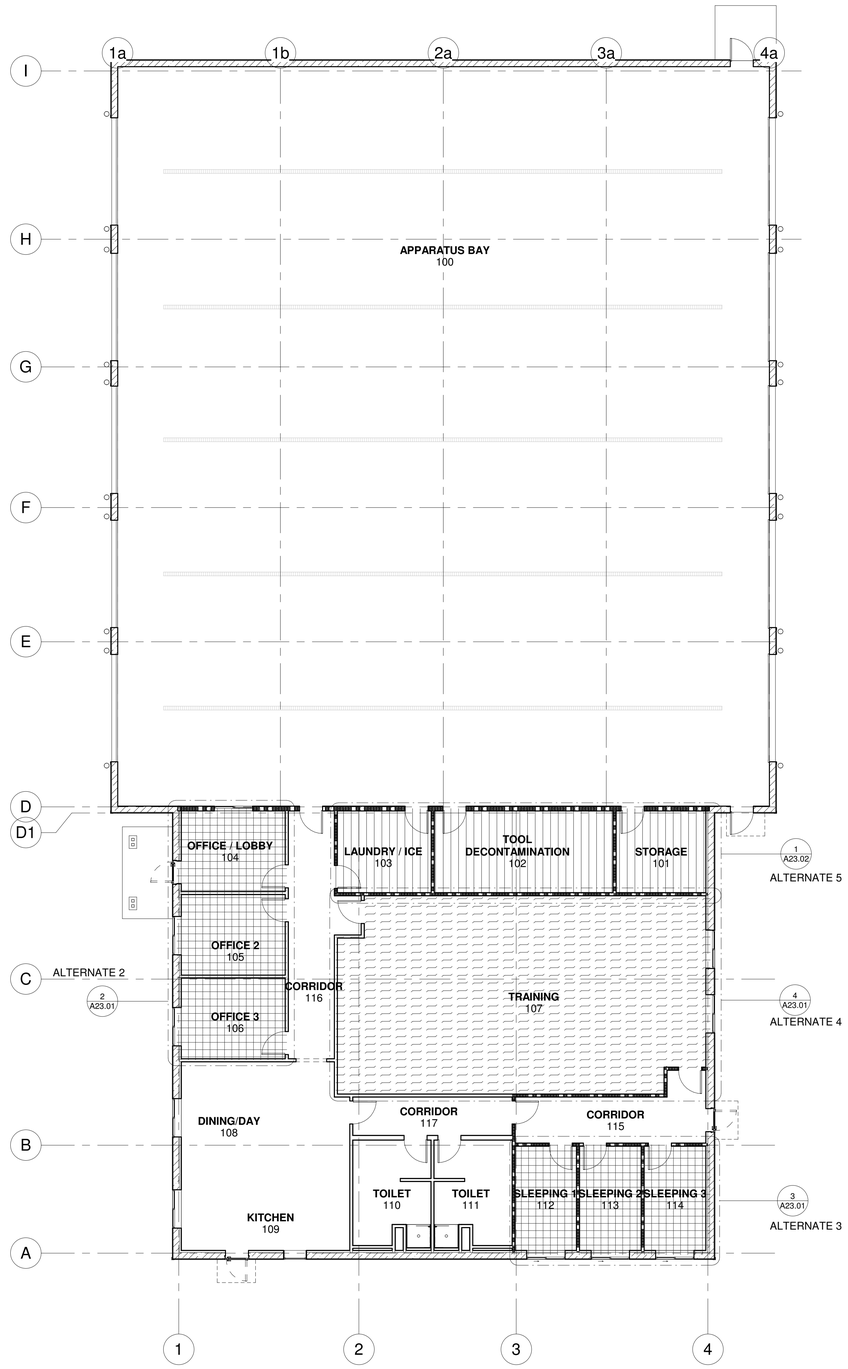
A12.01

ALTERNATE LEGEND

SYMBOL	ALTERNATE #	COMMENTS
	BASE BID	
	ALTERNATE 1	2 ADDITIONAL ENCLOSED APPARATUS BAYS, UPDATED FINISHES FROM BASE BID
	ALTERNATE 2	CONVERT ONE OPEN OFFICE TO THREE PRIVATE OFFICES
	ALTERNATE 3	CONVERT ONE SLEEPING ROOM TO THREE SINGLE SLEEPING ROOMS
	ALTERNATE 4	UPDATED FINISHES, ADD ACT CEILING
	ALTERNATE 5	CONVERT TWO APPARATUS SUPPORT ROOMS TO THREE ROOMS



2 ALTERNATE 1 FLOOR PLAN
1/8" = 1'-0"



1 ALTERNATE 2-5 FLOOR PLAN
1/8" = 1'-0"

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LAURINBURG NORTH FIRE STATION

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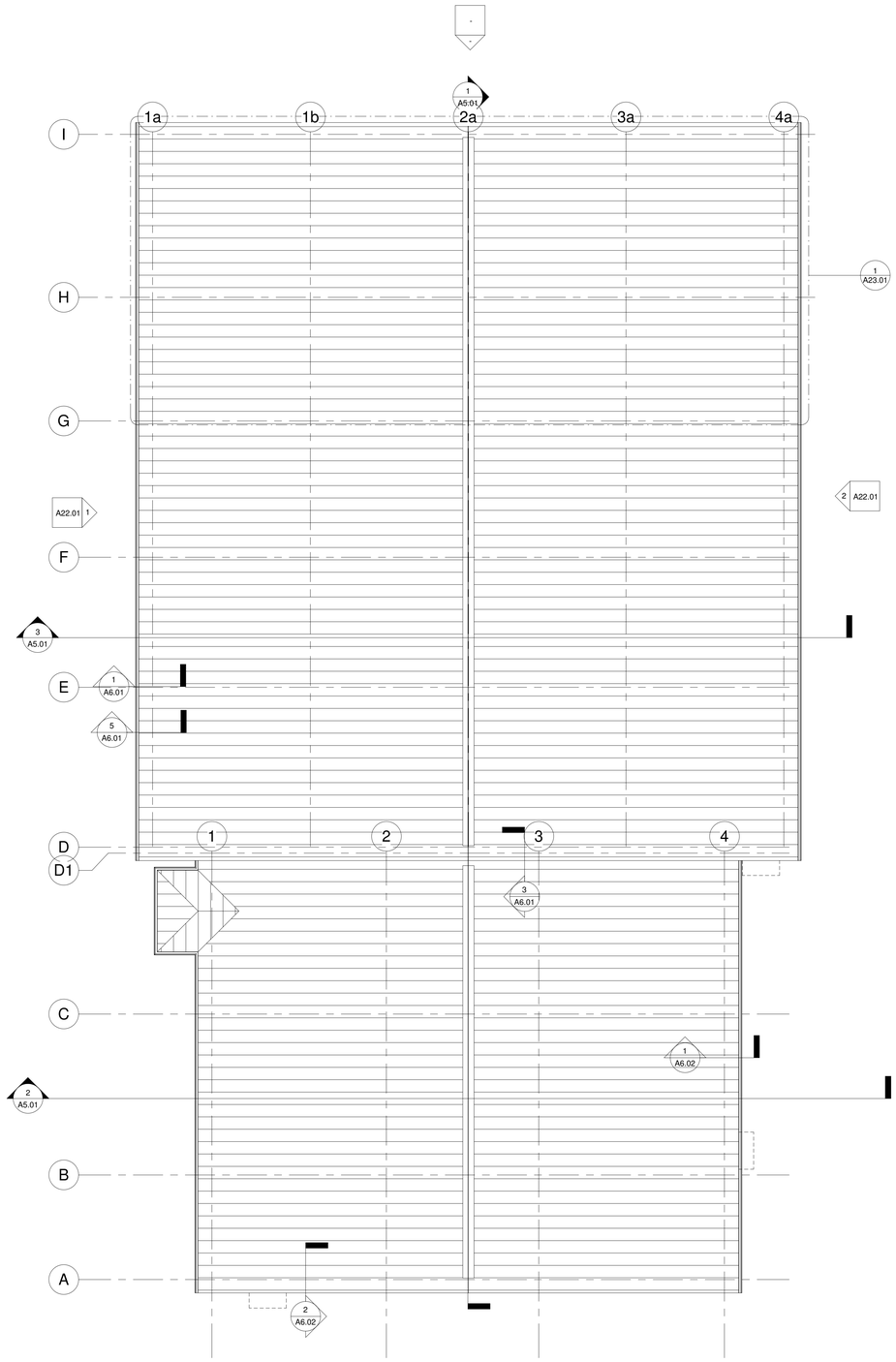
ALTERNATE FLOOR PLAN

A21.01



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

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LAURINBURG NORTH FIRE STATION

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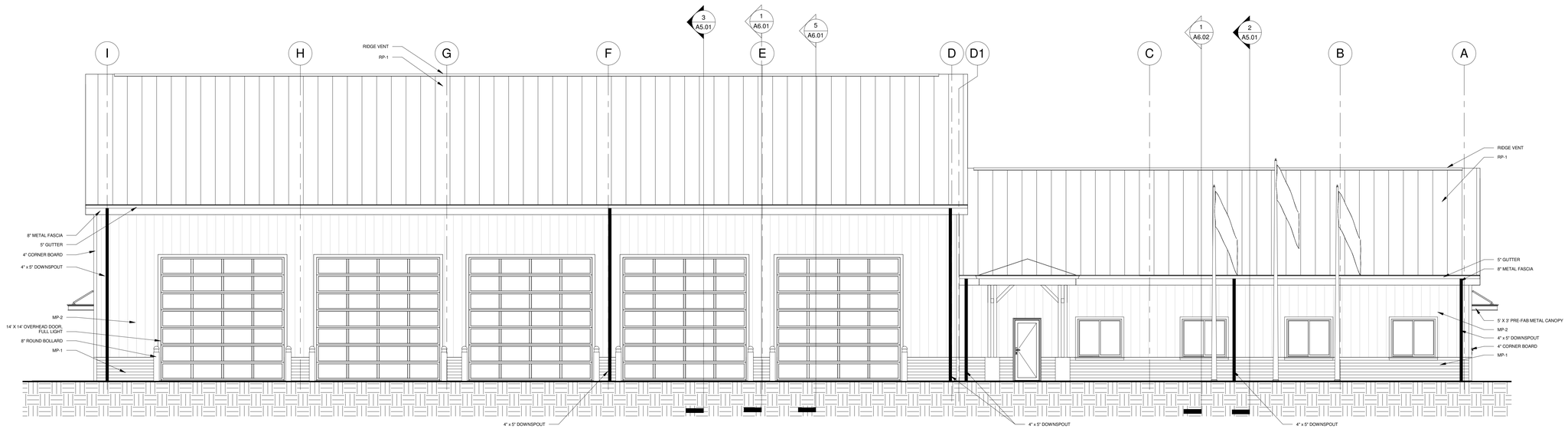
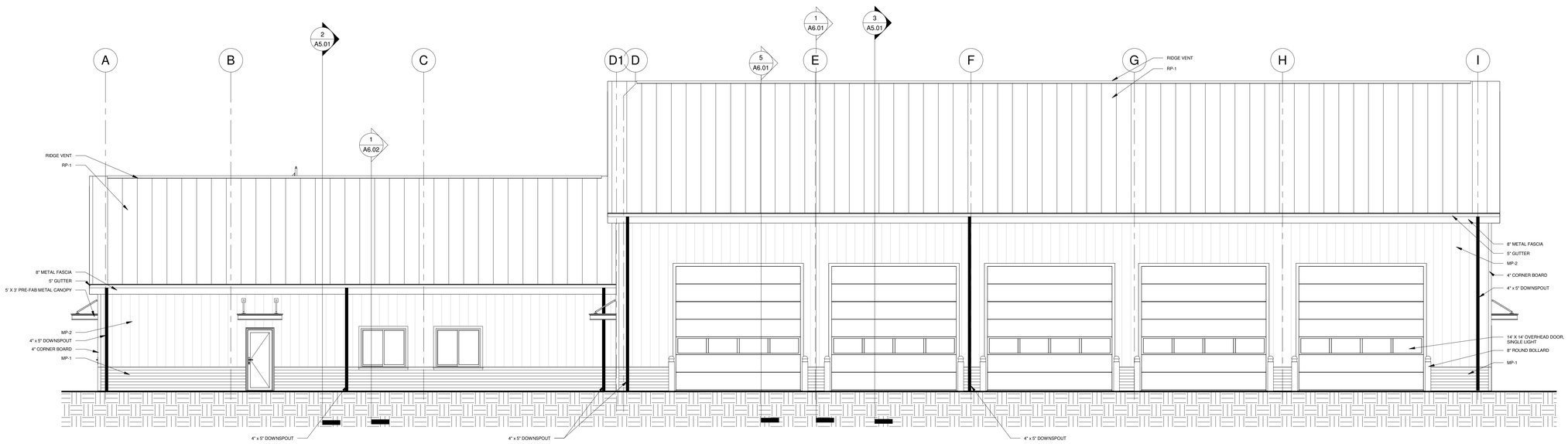
ALTERNATE ROOF PLAN

A21.10



1 WEST ELEVATION - ALTERNATE
3/16" = 1'-0"



2 EAST ELEVATION - ALTERNATE
3/16" = 1'-0"

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LAURINBURG NORTH FIRE STATION

No.	Description	Date

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Date: 01.19.2022

ALTERNATE EXTERIOR ELEVATIONS

A22.01

DOOR SCHEDULE - ALTERNATE 1

Mark	Size			Door				Frame		Notes
	Width	Height	Thickness	Type	Material	Hardware	Finish	Type	Material	
007	14' - 0"	14' - 0"	0' - 2"	D	ALUMINUM	14	Red			
008	14' - 0"	14' - 0"	0' - 2"	D	ALUMINUM	14	Red			
009	14' - 0"	14' - 0"	0' - 2"	E	ALUMINUM	14	Red			
010	14' - 0"	14' - 0"	0' - 2"	E	ALUMINUM	14	Red			
122	3' - 0"	7' - 0"	0' - 2"	A	HOLLOW METAL	11		F1	HOLLOW METAL	

DOOR SCHEDULE - ALTERNATE 2

Mark	Size			Door				Frame			Notes
	Width	Height	Thickness	Type	Material	Hardware	Finish	Type	Material	Finish	
105	3' - 0"	7' - 0"	0' - 2"	A	SOLID CORE WOOD	8		F1	HOLLOW METAL		

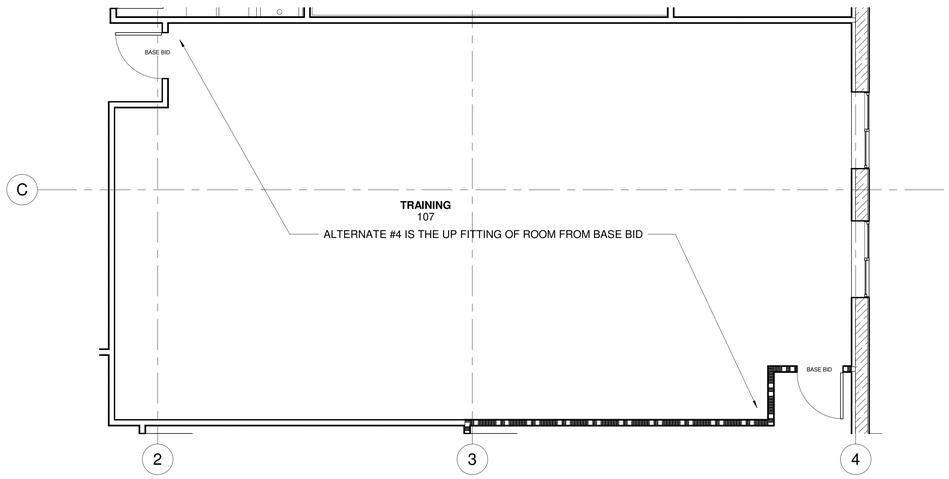
DOOR SCHEDULE - ALTERNATE 3

Mark	Size			Door				Frame			Notes
	Width	Height	Thickness	Type	Material	Hardware	Finish	Type	Material	Finish	
112	3' - 0"	7' - 0"	0' - 2"	A	SOLID CORE WOOD	7		F1	HOLLOW METAL		20 MIN
114	3' - 0"	7' - 0"	0' - 2"	A	SOLID CORE WOOD	7		F1	HOLLOW METAL		20 MIN

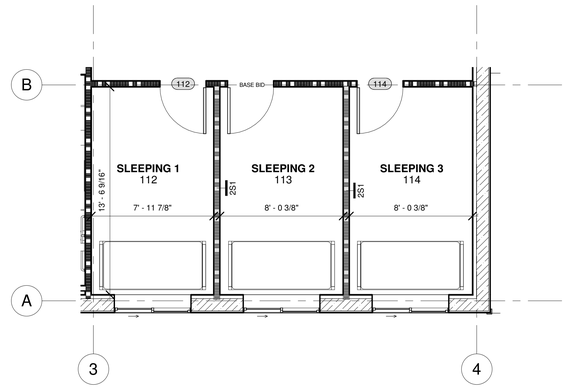
ADD ALTERNATE

BASE BID

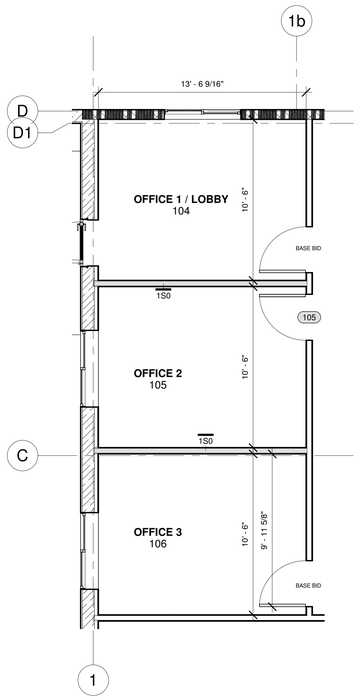
ADD ALTERNATE



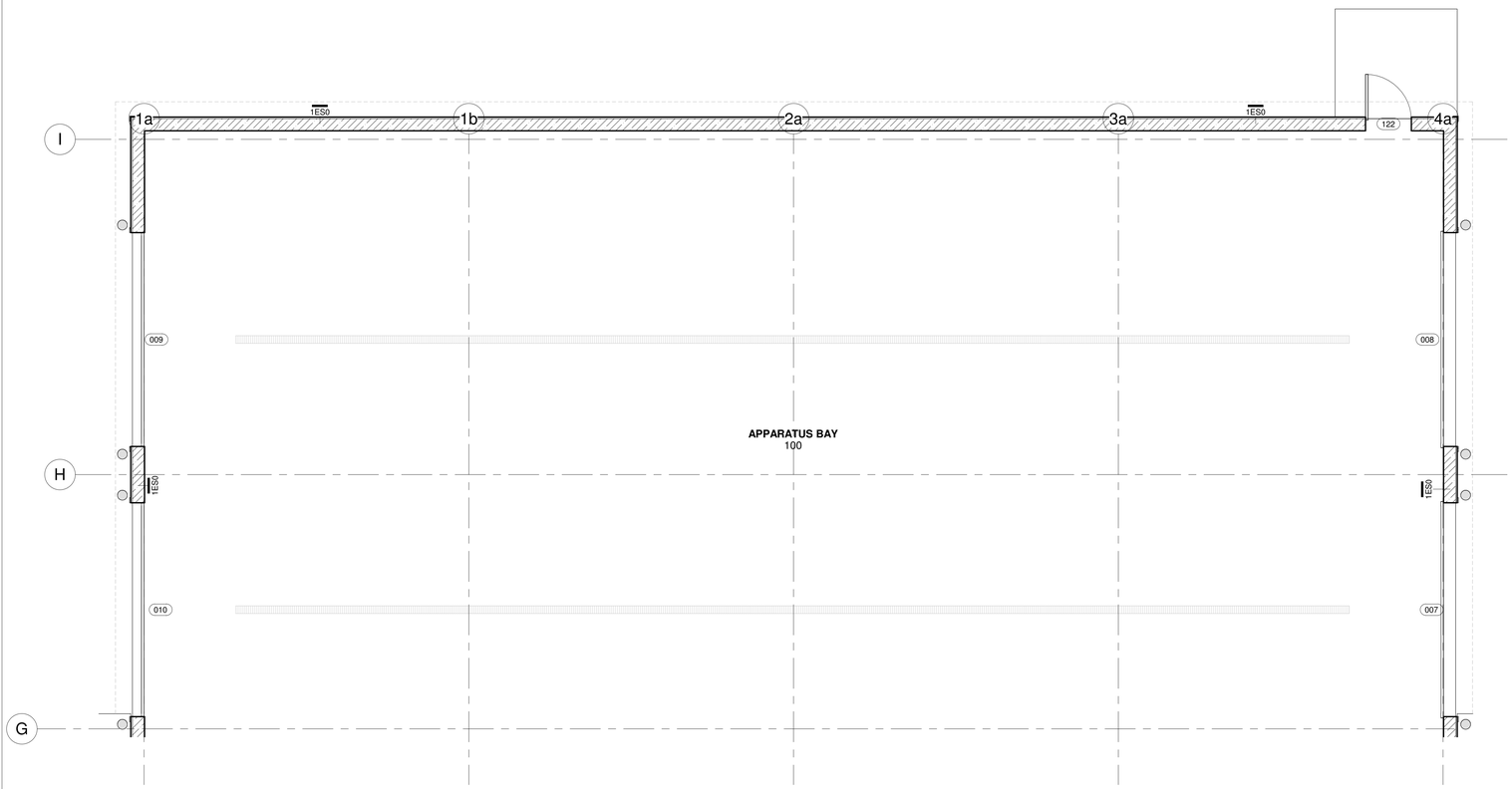
4 ALTERNATE 4 ENLARGED PLAN
1/4" = 1'-0"



3 ALTERNATE 3 ENLARGED PLAN
1/4" = 1'-0"



2 ALTERNATE 2 ENLARGED PLAN
1/4" = 1'-0"



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

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LAURINBURG NORTH FIRE STATION

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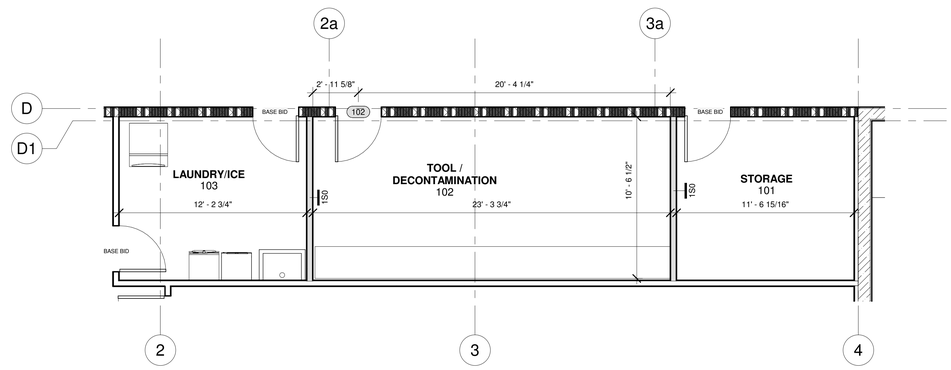
ALTERNATE 1-4 ENLARGED PLANS

A23.01

DOOR SCHEDULE - ALTERNATE 5											
	Size			Door				Frame			
Mark	Width	Height	Thickness	Type	Material	Hardware	Finish	Type	Material	Finish	Notes
102	3' - 0"	7' - 0"	0' - 2"	A	HOLLOW METAL	13		F1	HOLLOW METAL		45 MIN

ADD ALTERNATE
BASE BID
ADD ALTERNATE



1 ALTERNATE 5 ENLARGED PLAN
1/4" = 1'-0"

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LAURINBURG NORTH FIRE STATION

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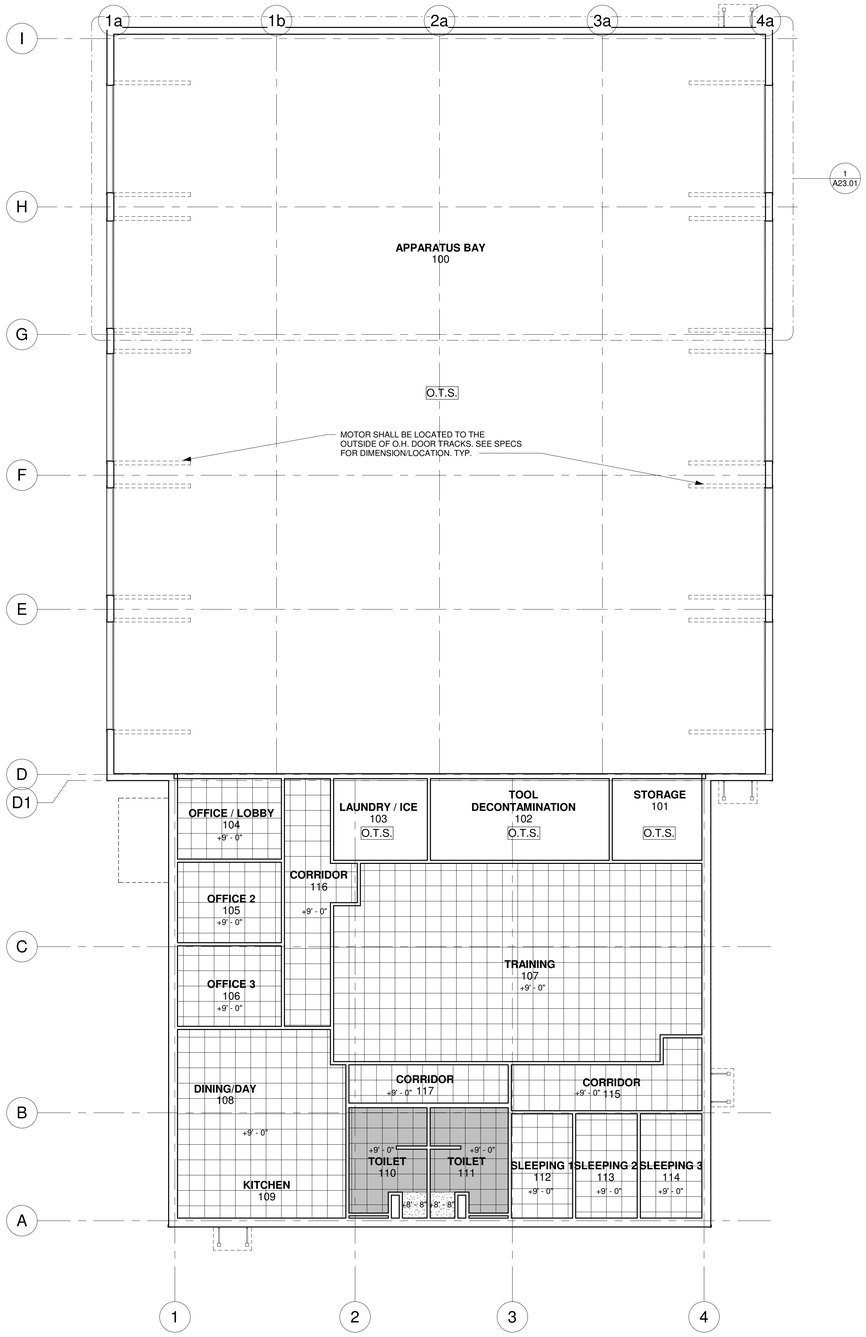
ALTERNATE 5 ENLARGED PLANS

A23.02



1 ALTERNATE REFLECTED CEILING PLAN
1/8" = 1'-0"

REFLECTED CEILING PLAN LEGEND

	2 x 2 ACOUSTICAL PANEL CEILING
	MOISTURE RESISTANT 2 x 2 ACOUSTICAL PANEL CEILING
	MOISTURE RESISTANT GYPSUM CEILING
O.T.S.	OPEN TO STRUCTURE
+ XX'-XX"	CEILING HEIGHT ABOVE FINISHED FLOOR

RCP GENERAL NOTES

1. REFER TO DETAILS & SPECIFICATIONS FOR CEILING SUSPENSION/ANCHOR INFORMATION.
2. REFER TO SPECIFICATIONS FOR ACOUSTICAL PANEL CEILING GRID TYPE.
3. REFER TO MEP DRAWINGS FOR SYMBOL IDENTIFICATION.
4. REFER TO UL SYSTEMS SHEET FOR HORIZONTAL RATED ASSEMBLIES.

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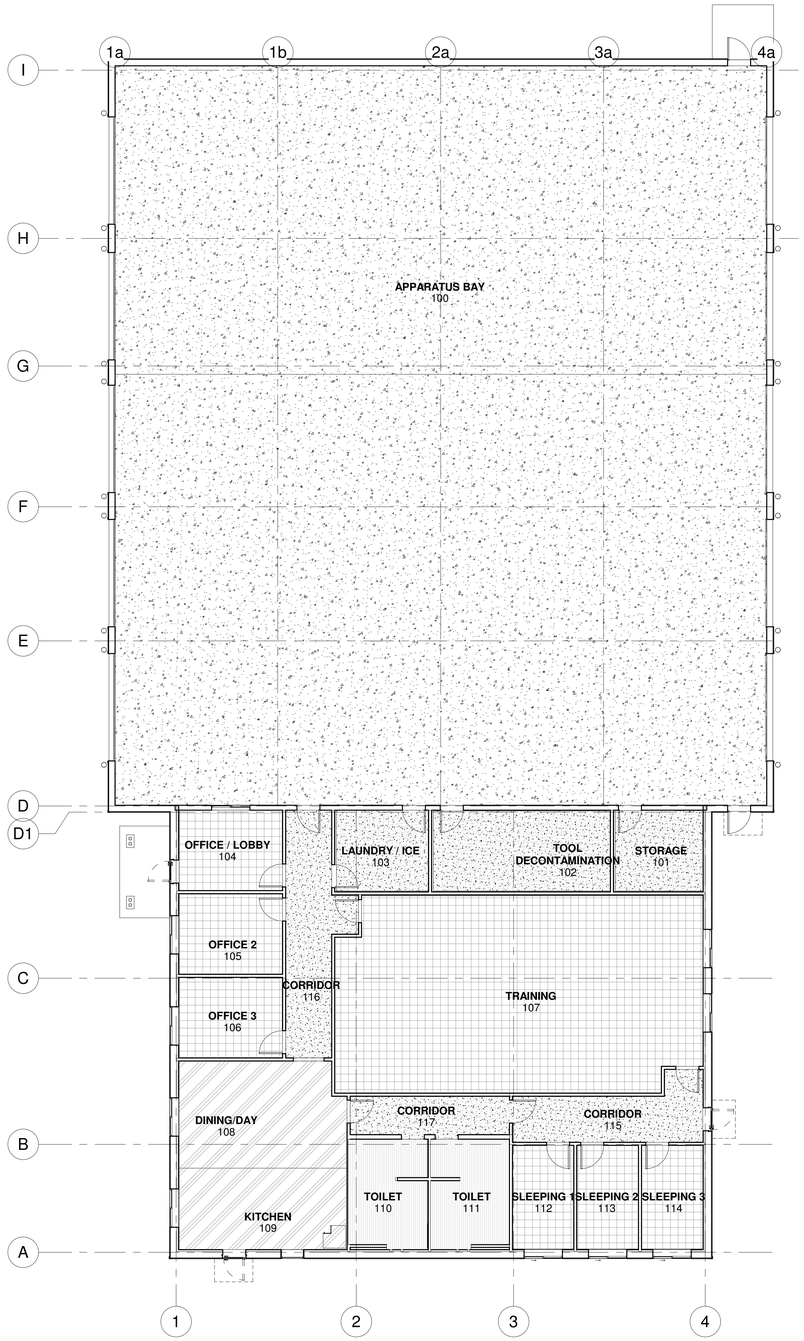
ALTERNATE REFLECTED CEILING PLAN

A24.01

FINISH SCHEDULE - ALTERNATE 1

Number	Name	Floor Finish	Base Finish	Ceiling Finish	Casework	Countertop	Wall Finish North	Wall Finish South	Wall Finish East	Wall Finish West	Comments
100	APPARATUS BAY	EF-1	EF-1	OTS/ PNT-#	N/A	N/A	PNT-1	PNT-1	PNT-1	PNT-1	
101	STORAGE										
102	TOOL DECONTAMINATION	SC-1	RB-1	OTS/PNT-#	N/A	N/A	PNT-1	PNT-1	PNT-1	PNT-1	
104	OFFICE / LOBBY										
107	TRAINING	RF-1	RB-1	OTS	N/A	N/A	PNT-1	PNT-1	PNT-1	PNT-1	
108	DINING/DAY	LVT-1	RB-1	ACT-1	PLAM-1	PLAM-2	PNT-1	PNT-1	PNT-1	PNT-1	
109	KITCHEN	LVT-1	WB-1	ACT-1	PLAM-1	PLAM-2	PNT-2	PNT-2	PNT-2	PNT-2	
110	TOILET	TILE-1	TILE-1	ACT-1	PLAM-1	PLAM-2	PNT-1	PNT-1	PNT-1	PNT-1	
111	TOILET	TILE-1	TILE-1	ACT-1	PLAM-1	PLAM-2	PNT-1	PNT-1	PNT-1	PNT-1	
112	SLEEPING	CPT-1	RB-1	ACT-1	N/A	N/A	PNT-2	PNT-2	PNT-2	PNT-2	
115	CORRIDOR	SC-1	RB-1	ACT-1	N/A	N/A	PNT-1	PNT-1	PNT-1	PNT-1	
116	CORRIDOR	SC-1	RB-1	ACT-1	N/A	N/A	PNT-1	PNT-1	PNT-1	PNT-1	
117	CORRIDOR										



1 ALTERNATE FINISH PLAN
1/8" = 1'-0"

FINISH SCHEDULE - ALTERNATE 2

Number	Name	Floor Finish	Base Finish	Ceiling Finish	Casework	Countertop	Wall Finish North	Wall Finish South	Wall Finish East	Wall Finish West	Comments
104	OFFICE 1 / LOBBY	CPT-1	RB-1	ACT-1	N/A	N/A	PNT-2	PNT-2	PNT-2	PNT-2	
105	OFFICE 2	CPT-1	RB-1	ACT-1	N/A	N/A	PNT-2	PNT-2	PNT-2	PNT-2	
106	OFFICE 3	CPT-1	RB-1	ACT-1	N/A	N/A	PNT-2	PNT-2	PNT-2	PNT-2	

FINISH SCHEDULE - ALTERNATE 3

Number	Name	Floor Finish	Base Finish	Ceiling Finish	Casework	Countertop	Wall Finish North	Wall Finish South	Wall Finish East	Wall Finish West	Comments
112	SLEEPING 1	CPT-1	RB-1	ACT-1	N/A	N/A	PNT-2	PNT-2	PNT-2	PNT-2	
113	SLEEPING 2	CPT-1	RB-1	ACT-1	N/A	N/A	PNT-2	PNT-2	PNT-2	PNT-2	
114	SLEEPING 3	CPT-1	RB-1	ACT-1	N/A	N/A	PNT-2	PNT-2	PNT-2	PNT-2	

FINISH SCHEDULE - ALTERNATE 4

Number	Name	Floor Finish	Base Finish	Ceiling Finish	Casework	Countertop	Wall Finish North	Wall Finish South	Wall Finish East	Wall Finish West	Comments
107	TRAINING	CPT-1	RB-1	ACT-1	N/A	N/A	PNT-1	PNT-1	PNT-1	PNT-1	

FINISH SCHEDULE - ALTERNATE 5

Number	Name	Floor Finish	Base Finish	Ceiling Finish	Casework	Countertop	Wall Finish North	Wall Finish South	Wall Finish East	Wall Finish West	Comments
101	STORAGE	SC-1	RB-1	OTS	N/A	PLAM-2	PNT-1	PNT-1	PNT-1	PNT-1	
102	TOOL / DECONTAMINATION	SC-1	RB-1	OTS	N/A	N/A	PNT-1	PNT-1	PNT-1	PNT-1	
103	LAUNDRY/ICE	SC-1	RB-1	OTS	N/A	N/A	PNT-1	PNT-1	PNT-1	PNT-1	

1. ALTERNATE 2 & 3 HAVE FINISHES IN BASE BID BUT NEED TO INSTALL ADDITIONAL FINISHES TO SEPERATE SINGLE ROOM INTO MULTIPLE ROOMS
2. ALTERNATE 5 HAS FINISHES IN BASE BID BUT NEED TO INSTALL ADDITIONAL FINISHES TO AND ADD ACT CEILING AS SCHEDULED TO SEPERATE SINGLE ROOM INTO MULTIPLE ROOMS

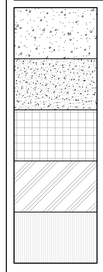
FINISH LEGEND

DESIGNATION	FINISH TYPE	MANUFACTURER	STYLE NAME/ NUMBER	COLOR NAME / SIZE	LOCATION/ COMMENTS
ACT-1	ACOUSTICAL CEILING TILE	ARMSTRONG	OPTIMA LAY-IN TEGULAR , 15/16" GRID	WHITE / 24" X 24"	TYPICAL LAY IN CEILING
CPT-1	CARPET TILE	SHAW	BLEND TILE	RUST / 24" X 24"	
EF-1	EPOXY FLOORING	PROMAR	3000	TBD	APPARATUS BAY
GWB-1	GYPSUM WALL BOARD	TBD	TBD	GWB TYPE IN CEILING TO MATCH GWB IN ADJ. WALL	SEE FINISH PLANS
LVT-1	LUXURY VINYL TILE	MANNINGTON	TBD	TBD	
PLAM-1	LAMINATE	WILSONART	PREMIUM LAMINATE	TBD	CASEWORK VERTICAL SURFACES
PLAM-2	LAMINATE	WILSONART	SOLID CORE LAMINATE	TBD	CASEWORK HORIZONTAL SURFACES
PNT-1	PAINT	SHERWIN WILLIAMS	EGGSHELL	TBD	FIELD PAINT, TYP.
PNT-2	PAINT	SHERWIN WILLIAMS	EGGSHELL	TBD	ACCENT PAINT - SEE FINISH SCHEDULE
PNT-3	PAINT	SHERWIN WILLIAMS	EGGSHELL	TBD	ACCENT PAINT - SEE FINISH SCHEDULE
PNT-4	PAINT	SHERWIN WILLIAMS	FLAT	TBD	GWB / EXPOSED CEILING PAINT, TYP.
PNT-5	PAINT	SHERWIN WILLIAMS	SEMI-GLOSS	TBD	TRIM PAINT, TYP.
RB-1	RUBBER BASE	TARKETT	TRADITIONAL VINYL BASE	TBD	SEE FINISH PLANS
RF-1	RUBBER FLOORING	DINOFLEX	DIRECT-APPLIED SPORTMAT	TBD	SEE FINISH PLANS
SC-1	SEALED CONCRETE	SHERWIN WILLIAMS	REACTIVE CONCRETE SEALER	NO COLOR	8" 4,000 PSI, #6 BARS 12" O.C. EACH WAY
SSM-1	SOLID SURFACE COUNTERTOP	CORIAN	QUARTZ	TBD	SEE FINISH SCHEDULE
T-1	FLOOR TILE	TBD	TBD		RESTROOM FLOOR TILES / 4" X 12" COORDINATING COVE BASE TO MATCH
T-2	FLOOR TILE	TBD		TBD	SHOWER FLOOR TILES / 4" X 12" COORDINATING COVE BASE TO MATCH
T-3	WALL TILE	TBD			RESTROOM WALL TILES / COORDINATING BULLNOSE TO MATCH
VCT-1	VINYL COMPOSITION TILE	ARMSTRONG	STANDARD EXCELON	TBD	SEE FINISH PLANS

GENERAL NOTES:

1. ALL NEW WALL AND CEILING FINISHES SHALL COMPLY WITH 803 OF THE IFC AND FLOOR FINISHES SHALL COMPLY WITH 804 OF THE IFC.
2. GC SHALL BE RESPONSIBLE FOR COMPLYING WITH VOLATILE ORGANIC COMPOUND REGULATIONS FOR ALL FINISH MATERIALS.
3. GC SHALL PROVIDE GWB FINISH IN COMPLIANCE WITH GYPSUM ASSOCIATION GA214-96.
4. FLOOR SURFACE SHALL BE CLEAN AND CLEAR OF DEBRIS OR MATERIAL PRIOR TO CONSTRUCTION. FLOAT AND SCRAPE TO PROVIDE LEVEL SURFACE FOR NEW SPECIFIED FINISH.
5. CONTRACTOR SHALL PROVIDE NECESSARY SHORING OR TEMPORARY SUPPORT AS REQUIRED.
6. ALL CUTTING AND PATCHING WORK SHALL BE DONE IN A NEAT MANNER WITH QUALITY WORKMANSHIP AND IN ACCORDANCE WITH A PROFESSIONAL STANDARD OF CARE.
7. ALL FINISHES SPECIFIED ARE APPROVED BY THE OWNER; NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PROPER APPROVAL FROM OWNER & INTERIOR DESIGNER IN WRITING.
8. REFER TO THE CONSTRUCTION PLANS DIMENSIONS FOR ALL PRELIMINARY FINISH MATERIAL TAKE-OFFS. FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDER PLACEMENT.
9. UNLESS NOTED OTHERWISE (U.N.O.), PROVIDE SATIN ALUMINUM FINISH TRANSITION STRIPS BY SCHLUTER OR EQUAL AT ALL FLOOR FINISH TRANSITIONS. VINYL AND MARBLE THRESHOLDS WILL NOT BE ACCEPTED. U.N.O., TRANSITION FINISHES AT CENTER OF DOOR. FLOAT OR FEATHER ALL FLOORING MATERIALS AS REQUIRED TO ENSURE A LEVEL TRANSITION BETWEEN MATERIALS OF VARYING THICKNESS. CHANGES IN LEVEL SHALL BE 1/4" MAXIMUM VERTICAL AND 1/2" MAXIMUM WITH A 1:2 BEVEL.
   a. SIMILAR HEIGHT TRANSITIONS = SCHLUTER SCHIENE, SATIN ANODIZED ALUMINUM
      i.TILE TO CARPET
   b. CARPET TO LVT = SCHLUTER RENO-TK OR RENO U, SATIN ANODIZED ALUMINUM
      i. ALTERNATE: ROPPE SLIM PROFILE CARPET REDUCER STRIP, COLOR TBD
10. TRANSITION FINISHES SHALL OCCUR AT CENTER OF DOOR OPENING OR AS INDICATED ON FLOOR PLANS.
11. CONTINUE FLOORING AND WALL BASE MATERIAL AS SCHEDULED UNDER MILLWORK AND INTO ALL MILLWORK RECESSES.
12. WALLS THAT CONTAIN MECHANICAL VENTS, ACCESS DOORS, ELECTRICAL PANELS, ETC., SHALL BE PAINTED THE COLOR OF THE WALL IN WHICH IT IS LOCATED.
13. CEILINGS THAT CONTAIN MECHANICAL VENTS, ACCESS DOORS, ETC., SHALL BE PAINTED CEILING COLOR.
14. ALL ELECTRICAL OUTLET COVERS & PLUGS SHALL MATCH AND BE WHITE IN COLOR WITH WHITE PLUGS. DARK WALLS SHALL BE BLACK WITH BLACK PLUGS. FLOORBOXES TO BE METAL, NOT PLASTIC, SATIN ALUMINUM FINISH.
15. ALL SURFACES RECEIVING PAINT, VARNISH, OR WALLCOVERING SHALL BE PREPARED ACCORDING TO MANUFACTURER'SSPECIFICATIONS FOR APPLIED FINISH PRIOR TO INSTALLATION OR APPLICATION OF FINISH MATERIAL WHETHER GYPSUM BOARD, CMU, BRICK, ETC. PAINTER TO DETERMINE CORRECT PAINT TYPE FOR INSTALLATION.
16. PAINT INSTALLATION SHALL CONSIST OF MIN. ONE COAT OF PRIMER AND MIN. TWO COATS OF SPECIFIED PAINT TO PRODUCE A SATISFACTORY FINISH APPEARANCE. INSTALLATION OF ALL PAINT MATERIALS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. CORRECT PAINT TYPE AND FINISH TO BE DETERMINED BY PAINTER FOR GYPSUM BOARD, CMU, BRICK, ETC. TYPE WALLS.
   a. WHERE NEEDED, ALL PTD. INTERIOR HOLLOW METAL FRAMES SHALL RECEIVE A WATERBASED ALKYD SEMI-GLOSS PAINT WITH LOW VOC'S. COLOR SHALL MATCH EXISTING WALL FRAME.
   b. U.N.O., ALL GWB CEILINGS SHALL RECEIVE FLAT FINISH.
   c. U.N.O., ALL GWB WALLS SHALL RECEIVE EGGSHELL FINISH.
17. DOORS: SEE ARCHITECTURAL DOOR SCHEDULE
18. ALL FLOORING MATERIALS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS. INSTALLATION SHALL BE FREE OF ABRASION, BUBBLES, CRACKS, AND OTHER IMPERFECTIONS. SEAMING SHALL BE VISIBLY CONCEALED.
19. PROVIDE WATERPROOF AND CRACK ISOLATION MEMBRANE IN ALL AREAS RECEIVING PORCELAIN FLOOR TILE. PROVIDE APPROPRIATE EXPANSION AND CONTROL JOINTS PER CURRENT T.C.N.A RECOMMENDATIONS. REFER TO TCNA EJ-171-09 FOR MOVEMENT JOINTS - VERTICAL AND HORIZONTAL.
20. TILE AND SUBSTRATE SHALL BE INSTALLED PER TCNA GUIDELINES.
21. ALL FLOOR GROUT TO BE LATICRETE SPECTRALOCK PRO PREMIUM GROUT- COLOR TO BE SUBMITTED AND APPROVED BY ARCHITECT/ DESIGNER
22. G.C. TO FINISH GWB TO FINISHED FLOOR SO THAT BASE IS APPLIED TO A SMOOTH SURFACE.
23. FLOORING PATTERN/MATCHING IS FOR MATERIAL INFORMATION AND DESIGN INTENT ONLY. CONTRACTOR SHALL SUBMIT FLOORING SEAMING / PATTERN LAYOUT DIAGRAM TO INTERIOR DESIGNER FOR REVIEW AND APPROVAL PRIOR TO ORDERING AND INSTALLATION. INDICATE ON CARPET SEAMING DIAGRAM THE DIRECTION OF PATTERN INSTALLATION. CUT TILES LESS THAN 1/3 OF A FULL SIZE PIECE WILL NOT BE ACCEPTED. COORDINATE WITH ARCHITECT AS REQUIRED TO AVOID PORCELAIN TILE "SLIVERS".
24. CEILINGS SHALL BE INSTALLED PER PLAN DIAGRAMS. CEILINGS SHALL BE INSTALLED TO AVOID TILE "SLIVERS". CUT TILES LESS THAN 6" WILL NOT BE ACCEPTED.
25. REFER TO INTERIOR ELEVATIONS FOR ALL MILLWORK FINISH DESIGNATIONS.
26. GC SHALL SUBMIT FINISH SAMPLES TO INTERIOR DESIGNER AND ARCHITECT FOR REVIEW PRIOR TO ORDER AND INSTALLATION.
27. PAINT IN BATHROOMS, LAUNDRY ROOMS, AND SHOWER ROOMS TO BE MOISTURE AND MOLD RESISTANT.
28. BATHROOMS TO HAVE TILE AT WET WALLS ONLY, SEE INTERIOR ELEVATIONS.

FLOOR FINISH LEGEND



EF-1
SC-1
CPT-1
LVT-1
TILE-1

*PLAN FOR PATTERN PURPOSES ONLY, REFER TO FINISH SCHEDULE LEGEND FOR PRODUCT INFORMATION

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NORTH CAROLINA REGISTERED 15357 ARCHITECT JOHN MARK CRAWFORD

01-19-2022

CREECH & ASSOCIATES, PLLC REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 52304 NORTH CAROLINA CHARLOTTE, N. C.

LAURINBURG NORTH FIRE STATION

No.	Description	Date
1	Addendum 2	12/13/2021

Project Number: 2020-062
Date: 01.19.2022

ALTERNATE FINISH PLAN, LEGEND, NOTES, & SCHEDULE

A30.21

FIRE PROTECTION DESIGN CRITERIA

SYMBOL	OCCUPANCY	TYPE	DESIGN DENSITY (GPM/SF)	HYDRAULIC REMOTE AREA (SF)	MAX. COVERAGE PER SPRINKLER HEAD (SF)	HOSE STREAM		AREAS OF COVERAGE
						INSIDE GPM	OUTSIDE GPM	
LH	LIGHT HAZARD	WET	0.10	1500	225	100	-	ENTIRE FACILITY, EXCEPT AS NOTED OTHERWISE
LH-A	LIGHT HAZARD - SLOPED CEILING	WET	0.10	1950	225	100	-	ROOMS WITH EXPOSED SLOPED CEILINGS - TRAINING 107
OH-1	ORDINARY HAZARD GROUP I	WET	0.15	1500	130	100	150	MECHANICAL ROOMS, STORAGE ROOMS, ELECTRICAL ROOMS, JANITORS CLOSETS, ETC.
OH-1A	ORDINARY HAZARD GROUP I	WET	0.15	1950	130	100	150	ROOMS WITH SLOPED CEILINGS - APPARATUS BAY 100, LAUNDRY / ICE / TOOL 103 / ALT #1 APPARATUS BAY

APPLICABLE PUBLICATIONS: THE FOLLOWING PUBLICATIONS SHALL BE USED AS A REFERENCE FOR THE DESIGN OF THE FIRE PROTECTION SYSTEM ON THIS PROJECT:

1. NORTH CAROLINA STATE BUILDING CODE: FIRE PREVENTION CODE - 2018 EDITION
2. NFPA 13 - STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS - 2013 EDITION
3. NFPA 24 - STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES - 2013 EDITION

FIRE PROTECTION GENERAL NOTES

1. THE INTENT OF THESE PLANS IS TO PROVIDE INFORMATION TO THE REVIEWING AUTHORITIES THAT THE BUILDING WILL BE PROTECTED BY A SPRINKLER SYSTEM.
2. SCOPE: PROVIDE DESIGN, FABRICATION AND INSTALLATION OF A HYDRAULICALLY CALCULATED AUTOMATIC SPRINKLER SYSTEM INCLUDING ALL SERVICES, MATERIALS, LABOR AND EQUIPMENT REQUIRED FOR A COMPLETE WORKING SPRINKLER SYSTEM IN FULL COMPLIANCE WITH THE REQUIREMENTS OF THE 2013 EDITION OF NFPA 13, THE OWNER'S INSURANCE UNDERWRITER, THE 2018 NORTH CAROLINA STATE FIRE CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION.
3. PERMITS: APPLY AND PAY FOR ALL NECESSARY PERMITS, FEES AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION. ACREAGE CHARGES, FACILITIES CHARGES AND BOND PROPERTY ASSESSMENTS ARE NOT TO BE CONSTRUED TO BE A PART OF THIS CONTRACT.
4. WARRANTY: PROVIDE A ONE YEAR WARRANTY, FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER, FOR ALL SPRINKLER SYSTEM MATERIALS AND EQUIPMENT.
5. COORDINATE ALL SPRINKLER PIPING LOCATIONS, SPRINKLER LOCATIONS AND EQUIPMENT LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. FINAL PIPING AND EQUIPMENT LOCATIONS SHALL BE A CODE COMPLIANT INSTALLATION FOR ALL TRADES.
6. DO NOT SCALE THE DRAWINGS, REFERENCE THE ARCHITECTURAL PLANS FOR DIMENSIONAL INFORMATION.
7. WHERE DISCREPANCIES ARE FOUND IN THE DRAWINGS AND SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. CONTACT ENGINEER FOR CLARIFICATION.
8. OBTAIN A NEW FLOW TEST, LESS THAN 1 MONTH OLD, PRIOR TO STARTING THE DESIGN OF THE SPRINKLER SYSTEM. THE FLOW TEST CRITERIA SHALL INCLUDE THE STATIC PRESSURE, RESIDUAL PRESSURE, FLOW IN GPM, HORIZONTAL AND VERTICAL DISTANCE OF TEST FROM BASE OF FIRE RISER, THE NAME OF THE PERSON AND COMPANY WHOM PERFORMED THE FLOW TEST, THE TESTING COMPANY'S PHONE NUMBER, AND THE DATE AND TIME THE TEST WAS PERFORMED.
9. DESIGN AND HYDRAULICALLY CALCULATE THE SPRINKLER SYSTEM UTILIZING THE CURRENT FLOW TEST DATA. MEET ALL NFPA 13 REQUIREMENTS WHETHER OR NOT SPECIFICALLY INDICATED WITHIN THESE DOCUMENTS. TERMINATE THE HYDRAULIC CALCULATIONS AT THE CITY CONNECTION MINIMUM. INDICATE ON DRAWINGS ALL UNDERGROUND PIPE AND FITTINGS BOTH NEW AND EXISTING.
10. THE CONTRACTOR SHALL HAVE A DESIGNER ON STAFF WITH A CURRENT N.I.C.E.T. LEVEL III CERTIFICATION OR HIGHER TO PREPARE THE WORKING PLANS AND HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA 13 CHAPTER 23 "PLANS AND CALCULATIONS". THE N.I.C.E.T. DESIGNERS NAME, SIGNATURE AND CERTIFICATE NUMBER SHALL APPEAR ON THE WORKING DRAWINGS AND HYDRAULIC CALCULATIONS.
11. PROVIDE DESIGN AND INSTALLATION OF SEISMIC RESTRAINT ELEMENTS FOR THE FIRE PROTECTION SYSTEM(S) IN COMPLIANCE WITH THE 2013 EDITION OF NFPA 13. REFER TO THE APPENDIX B ON THE ARCHITECTURAL DRAWINGS FOR THE SITE'S SEISMIC DESIGN CATEGORY.
12. SUBMIT WORKING PLANS, HYDRAULIC CALCULATIONS AND MATERIALS DATA AND ACCESSORIES IN ELECTRONIC FORMAT (PDF) TO THE ARCHITECT / ENGINEER FOR REVIEW AND OBTAIN APPROVAL BEFORE STARTING THE INSTALLATION OF THE SPRINKLER SYSTEM.
13. THE CONTRACTOR SHALL SUBMIT WORKING PLANS AND HYDRAULIC CALCULATIONS EXPEDIENTLY TO THE AUTHORITIES HAVING JURISDICTION. APPROVAL FROM ALL AUTHORITIES HAVING JURISDICTION SHALL BE OBTAINED BEFORE STARTING THE INSTALLATION OF THE SPRINKLER SYSTEM.
14. AT THE COMPLETION OF THE PROJECT, PROVIDE TWO SETS OF RECORD DRAWINGS TO THE OWNER, CLEARLY SHOWING ANY CHANGES AND/OR MODIFICATIONS, ADDITIONS OR DELETIONS TO AND FROM THE CONSTRUCTION DOCUMENTS. THESE SETS SHALL BE REVIEWED BY THE ARCHITECT / ENGINEER BEFORE BEING TURNING OVER TO THE OWNER.

INSTALLATION REQUIREMENTS:

1. PROVIDE ALL NECESSARY OFFSETS, RISES OR DROPS IN THE PIPING AND AUXILIARY DRAINS AS REQUIRED BY ALL APPLICABLE CODES WHETHER OR NOT SHOWN ON THE PLANS.
2. CONNECT ALL SPRINKLER ALARM, TAMPER AND DETECTION SYSTEMS TO THE BUILDINGS CENTRAL FIRE ALARM SYSTEM, COORDINATE LOCATIONS AND REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
3. PIPE PENETRATIONS THRU WALLS, PARTITIONS AND FLOORS SHALL BE SLEEVED. CORE DRILLING THRU WALLS AND PARTITIONS IS PERMITTED IF PERFORMED IN A NEAT CRAFTSMAN LIKE MANNER. PIPES PENETRATING THRU EXTERIOR WALLS SHALL BE SEALED WATER TIGHT. INSTALL ESCUTCHEONS IN ALL EXPOSED AREAS.
4. CONCEAL PIPING ABOVE CEILINGS OR TIGHT TO UNDERSIDE OF STRUCTURE IN EXPOSED AREAS.
5. PAINT ALL EXPOSED FIRE PROTECTION SYSTEM PIPING (IN CLOSETS, STAIRWELLS, MECHANICAL ROOMS, ETC.). COLOR TO BE SELECTED BY THE ARCHITECT.
6. SPRINKLER LOCATIONS ARE TO BE IN THE CENTER OF THE CEILING TILE USING THE REFLECTED CEILING PLANS AND AS COORDINATED WITH THE CEILING CONTRACTOR.
7. WARRANT THE SYSTEM LABOR, MATERIALS AND EQUIPMENT FOR THE AMOUNT OF TIME SPECIFIED IN THE PROJECT MANUAL. IF NO WARRANTY SECTION IS PROVIDED, THEN WARRANT THE SYSTEM LABOR, MATERIAL AND EQUIPMENT FOR A MINIMUM OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE. PRIOR TO TURNING THE COMPLETED SYSTEM OVER TO THE OWNER, REVIEW THE INSTALLATION WITH THE ARCHITECT / ENGINEER AND REPLACE OR REPAIR ANY DEFECTIVE WORKMANSHIP, EQUIPMENT AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.

TESTING AND FLUSHING:

1. OVERHEAD SPRINKLER PIPING: TESTED FOR A PERIOD OF TWO HOURS AT A HYDROSTATIC PRESSURE OF 200 LBS. AND ALL PIPING, VALVES, HEADS,ETC. SHALL BE WATERTIGHT.

FIRE PROTECTION LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
— F —	F	FIRE PROTECTION SUPPLY PIPING
— D —	D	DRAIN PIPING
	-	PIPING ELBOW DOWN
	-	PIPING ELBOW UP
	-	PIPING CONTINUES
	OSY	OS&Y VALVE
	-	SHUT-OFF VALVE
	CV	CHECK VALVE
	FDC	FIRE DEPARTMENT CONNECTION

ADDITIONAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MFG	MANUFACTURER
AFG	ABOVE FINISHED GRADE	PSI	POUNDS PER SQUARE INCH
BAS	BUILDING AUTOMATION SYSTEM	TS	TAMPER SWITCH
BFF	BELOW FINISHED FLOOR	TYP	TYPICAL
CLG	CEILING	WMG	WATER MOTOR GONG
CONT	CONTINUATION	WC	WATER COLUMN
DN	DOWN		
FS	FLOW SWITCH	EC	ELECTRICAL CONTRACTOR
FHV	FIRE HOSE VALVE	GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE	MC	MECHANICAL CONTRACTOR
HP	HORSE POWER	PC	PLUMBING CONTRACTOR
INV	INVERT ELEVATION		
KW	KILOWATT		

FIRE PROTECTION MATERIALS

1. ALL PIPING SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.
2. ABOVE GRADE PIPING: BLACK STEEL PIPING (ASTM A53, ASTM A135, OR ASTM A795) SHALL BE LISTED FOR FIRE SPRINKLER PIPING USE AND INCLUDE FM APPROVED MIC INHIBITING COATING. PIPING 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL PIPE THREADED, WELDED OR ROLL GROOVED FOR MECHANICAL FITTINGS. PIPING 2-1/2" AND LARGER SHALL BE SCHEDULE 10 BLACK STEEL PIPE WELDED, OR ROLL GROOVED FOR MECHANICAL FITTINGS.
3. THREADED FITTINGS: UL-LISTED, STANDARD WEIGHT SUITABLE FOR PRESSURE UP TO 175 PSIG, CAST IRON MEETING ASTM A126 OR MALLEABLE IRON MEETING ASTM A197. THREADED CAST IRON FITTINGS SHALL MEET ANSI B16.4; FLANGED CAST IRON FITTINGS SHALL MEET ANSI B16.1. THREADED MALLEABLE IRON FITTINGS SHALL MEET ANSI B16.3.
4. GROOVED FITTINGS AND COUPLINGS: UL-LISTED, DUCTILE IRON MEETING ASTM A536, UTILIZING AN EDPM GASKET. PLAIN-END FITTINGS AND COUPLINGS, OR WELDED-SEGMENTED FITTINGS SHALL NOT BE USED. CHANGES IN PIPE DIAMETER SHALL BE MADE USING TAPERED REDUCING FITTINGS. BUSHINGS OR GROOVED-END REDUCING COUPLINGS SHALL NOT BE USED UNLESS STANDARD REDUCING FITTINGS ARE NOT REGULARLY AVAILABLE.
5. USE HOT-DIPPED GALVANIZED PIPING AND FITTINGS FOR COMPRESSED AIR PIPING, WATER MOTOR ALARM PIPING, BALL DRIP DISCHARGES AND TEST / DRAIN PIPING SUBJECT TO ALTERNATE WETTING AND DRYING.
6. PIPE HANGERS: UL-LISTED SWIVEL LOOP TYPE WITH PRE-GALVANIZED CARBON STEEL BAND, HANGER RODS SIZED PER NFPA 13, UL-LISTED STEEL OR MALLEABLE IRON BEAM CLAMPS, UL-LISTED ANCHORS. POWER DRIVEN ANCHORS SHALL NOT BE USED. REFER TO THE STRUCTURAL PLANS AND DETAILS FOR ACCEPTABLE LOCATIONS TO ATTACH HANGERS AND SUPPORTS TO THE BUILDING STRUCTURE. HANGERS SHALL NOT ATTACH TO THE ROOF DECK.
7. VALVES: OS&Y TYPE, IRON BODY BRONZE MOUNTED, DOUBLE DISC WITH PARALLEL SEATS, OR; BUTTERFLY, LUG TYPE, DUCTILE IRON BODY, STAINLESS STEEL STEM, ALUMINUM BRONZE DISC, PHENOLIC RING AND BUNA N SEAT. VALVES SHALL BE FM/UL LISTED AND APPROVED FOR FIRE PROTECTION SERVICE.
8. ESCUTCHEON PLATES: PROVIDE CHROME PLATED ESCUTCHEON PLATES WHERE PIPES PASS THROUGH FINISHED WALLS, FLOORS, OR CEILING. PROVIDE PRIME COAT PAINTED ESCUTCHEON PLATES WHERE PIPES PASS THROUGH WALLS, CEILINGS, ETC. IN UNFINISHED EXPOSED AREAS.

SPRINKLER SCHEDULE

1. PROVIDE ADJUSTABLE CONCEALED PENDENT SPRINKLERS ALL LAY-IN ACOUSTICAL TILE AND GYPBOARD CEILINGS. COORDINATE COLOR OF CONCEALED SPRINKLER HEAD COVER-PLATE WITH ARCHITECT.
2. LOCATE SPRINKLERS TO AVOID OBSTRUCTIONS BY CEILING MOUNTED DEVICES. WHERE CEILING DEVICES OBSTRUCT SPRINKLER DISCHARGE, ADD ADDITIONAL SPRINKLERS SPACED AROUND THE OBSTRUCTION.
3. PROVIDE BRASS UPRIGHT SPRINKLERS IN EXPOSED AREAS WITH NO FINISH CEILING.
4. PROVIDE BRASS PENDENT SPRINKLERS WITH SHIELDS IN MECHANICAL ROOMS, ELECTRIC ROOMS, GYMNASIUMS, STORAGE ROOMS AND OTHER AREAS WHERE EXPOSED SPRINKLERS ARE SUBJECT TO DAMAGE.
5. PROVIDE RECESSED DRY STEM PENDENT SPRINKLER WITH WHITE PLATE IN AREAS SUBJECT TO FREEZING.
6. PROVIDE RECESSED SIDEWALL SPRINKLERS AS REQUIRED OR AS INDICATED.
7. PROVIDE INTERMEDIATE TEMPERATURE SPRINKLERS (175° F - 225°F ACTIVATION TEMPERATURE) IN ELEC. ROOMS, BOILER ROOMS, DATA CLOSETS AND WHEN SPRINKLER IS LOCATED WITHIN 18" OF HVAC DIFFUSER.
8. PROVIDE HIGH TEMPERATURE SPRINKLERS (250° F - 300°F ACTIVATION TEMPERATURE) IN AREAS SUBJECT TO HIGH TEMPERATURES.

* INSTALL SPRINKLERS IN ACCORDANCE WITH NFPA 13 AND THE MANUFACTURERS APPROVAL LISTING.
* PROVIDE QUICK RESPONSE SPRINKLERS.

FIRE PROTECTION SHEET INDEX

SHEET NUMBER	SHEET NAME
FP0.01	FIRE PROTECTION LEGEND AND NOTES
FP1.01	FIRST FLOOR PLAN - FIRE PROTECTION - BASE BID
FP5.01	FIRE PROTECTION DETAILS AND SCHEMATICS

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 26023 ENGINEER GEORGE C. FOWLER, III

George C. Fowler III

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

FIRE PROTECTION LEGEND AND NOTES

FP0.01

Optima # 21-0180

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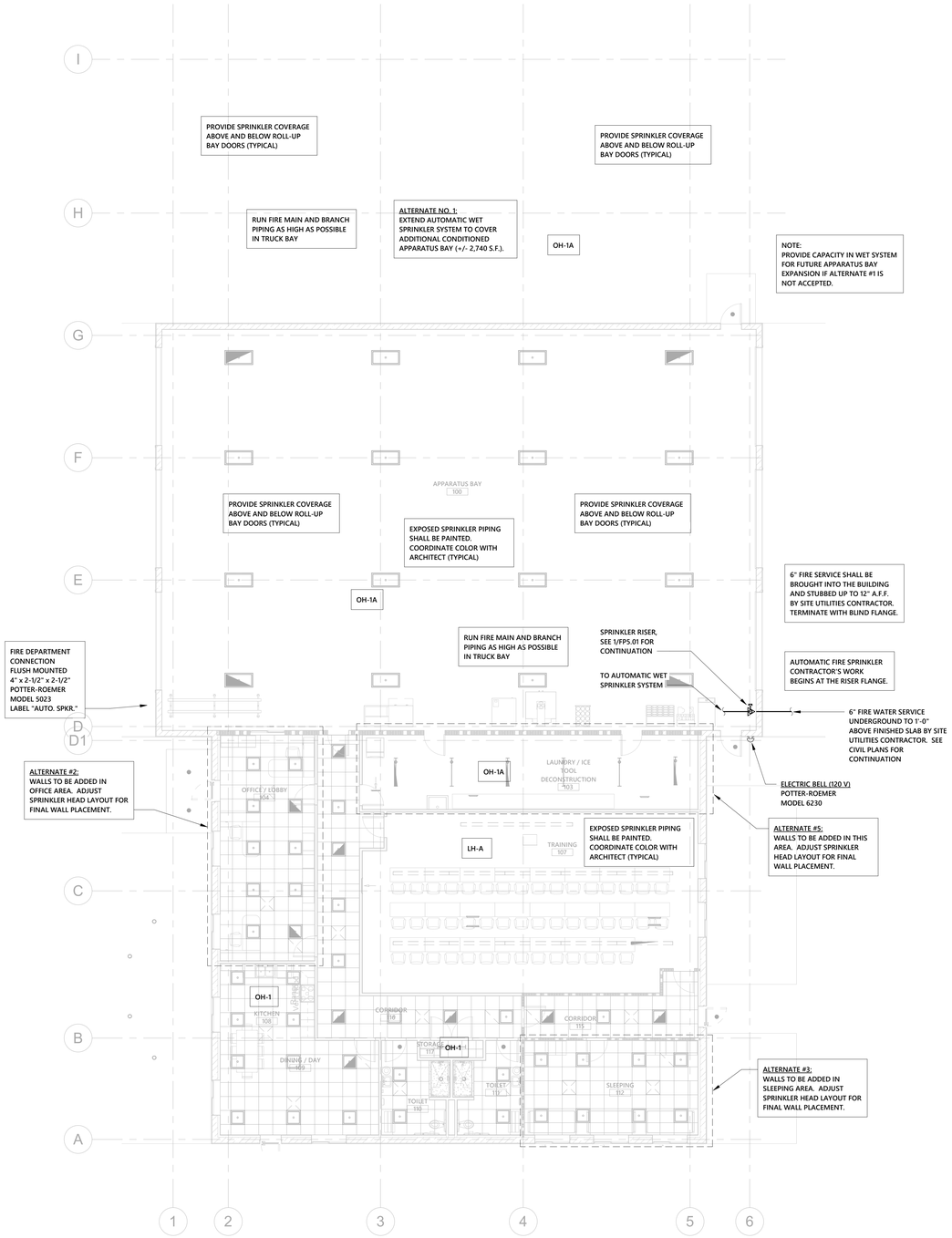

1 FIRST FLOOR PLAN - FIRE PROTECTION - BASE BID
1/8" = 1'-0"

LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26023 ENGINEER-IN-TRAINING

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 1-19-2022

FIRST FLOOR PLAN - FIRE PROTECTION - BASE BID

FP1.01

Optima # 21-0180

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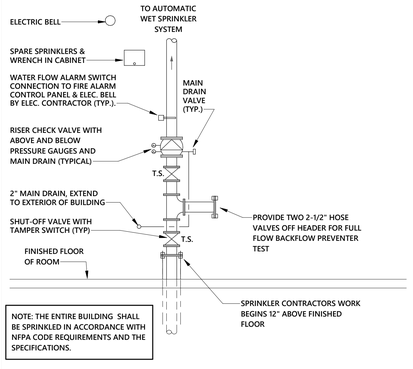
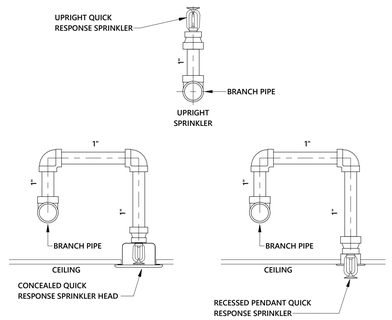
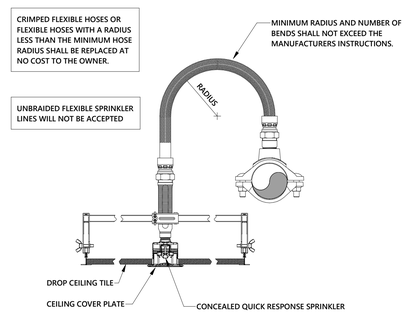


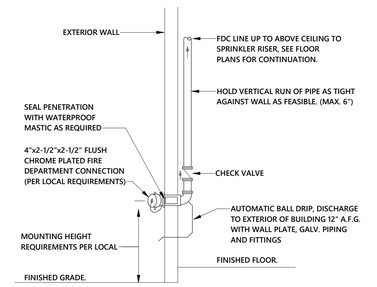
1 FIRE SERVICE ENTRY DETAIL
NOT TO SCALE



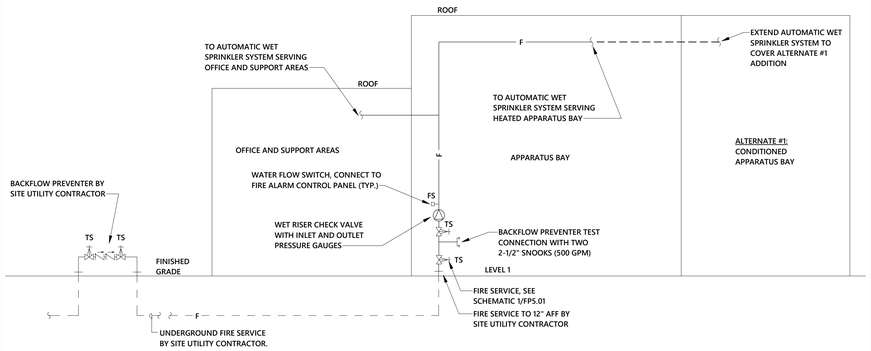
2 TYPICAL RETURN BEND SCHEMATIC
NOT TO SCALE



3 TYPICAL RETURN BEND SCHEMATIC - FLEXIBLE HOSE
NOT TO SCALE



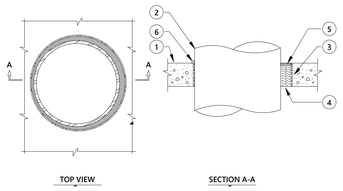
4 FIRE DEPARTMENT CONNECTION DETAIL - WALL MOUNTED
NOT TO SCALE



5 AUTOMATIC SPRINKLER RISER DIAGRAM
NOT TO SCALE

U.L. SYSTEM NO. CAJ1155
METAL PIPE THROUGH A SLEEVE IN CONCRETE WALL OR FLOOR

F RATING = 3-HR.
T RATING = 0-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F = 4 CFM/SQ. FT.



1. FLOOR OR WALL ASSEMBLY: B. U.L. CLASSIFIED CONCRETE BLOCK WALL (MINIMUM 8" BLOCK). A. MINIMUM 4-1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR.

2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
   A. MAXIMUM 20" DIAMETER STEEL PIPE.
   B. MAXIMUM 6" DIAMETER COPPER PIPE.
   C. MAXIMUM 6" DIAMETER STEEL CONDUIT.
   D. MAXIMUM 4" DIAMETER EMT.

3. OPTIONAL: MAXIMUM 22" DIAMETER STEEL PIPE SLEEVE (SCHEDULE 10 OR HEAVIER).

4. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) RECESSED 1/2" FROM TOP OF SLEEVE.

5. MINIMUM 1/2" DEPTH HILTI FS-ONE FIRESTOP SEALANT.

6. A GENEROUS BEAD OF HILTI FS-ONE FIRESTOP SEALANT AROUND OUTER PERIMETER OF STEEL SLEEVE.

NOTES:
1. MAXIMUM DIAMETER OF OPENING = 22".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 1-1/2".

INSTALLATION INSTRUCTIONS FOR UL NO.CAJ1155

STEP 1 - PREPARATION: to application of firestopping materials. All surfaces must be clean, sound, dry and frost free prior

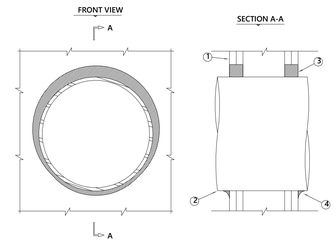
STEP 2 - BACKING MATERIAL: Firmly pack mineral wool around the penetrating item recessing it 1/2" below surface of the sleeve (or both ends of sleeve in wall)

STEP 3 - FIRESTOP SEALANT: Apply the Firestop Sealant over the backing material to a min. depth of 1/2" flush with the end(s) of the sleeve. Wall penetrations require Firestop Sealant installed on both sides. Leave completed seal undisturbed for 48 hours.

6 U.L. SYSTEM NO CAJ-1155 DETAIL
NOT TO SCALE

U.L. SYSTEM NO. WL1054
METAL PIPE THROUGH GYPSUM WALL ASSEMBLY

F RATING = 1-HR OR 2-HR
T RATING = 0-HR
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F = 4 CFM/SQ. FT.



1. GYPSUM-WALL ASSEMBLY (1-HR. AND 2-HR. FIRE RATING)(2-HR. SHOWN).

2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING:
   A. MAXIMUM 20" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 6" DIAMETER COPPER PIPE.
   C. MAXIMUM 6" DIAMETER STEEL CONDUIT.
   D. MAXIMUM 4" DIAMETER STEEL EMT.

1. MINIMUM DEPTH
   A. MINIMUM 5/8" DEPTH HILTI FS-ONE FIRESTOP SEALANT = 1-HR. FIRE-RATING. B. MINIMUM 1-1/4" DEPTH HILTI FS-ONE FIRESTOP SEALANT = 2-HR. FIRE-RATING.

2. MINIMUM 1/2" BEAD HILTI FS-ONE FIRESTOP SEALANT FOR POINT OF CONTACT.

NOTES: 1. MAXIMUM DIAMETER OF OPENING = 22-1/4".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/4".

INSTALLATION INSTRUCTIONS FOR UL NO.WL1054

STEP 1 - PREPARATION: All surfaces must be clean, sound, dry and frost free prior to application of firestopping materials.

STEP 2 - FIRESTOP SEALANT: Apply a minimum 5/8" or 1-1/4" depth of FS-ONE in the annular space around the penetrating item. Tool excess sealant beyond perimeter of the opening 1/2" onto wall surface. Leave completed seal undisturbed for for 48 hours.

7 U.L. SYSTEM NO WL1054 DETAIL
NOT TO SCALE

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 26023 ENGINEER
9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

FIRE PROTECTION DETAILS AND SCHEMATICS

FP5.01

Optima # 21-0180

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SANITARY WASTE AND VENT PIPING

1. BELOW GRADE PIPING AND JOINTS: PROVIDE SCHEDULE 40 PVC PIPE AND SOCKET FITTINGS (ASTM D 2665) WITH SOLVENT WELD JOINTS (ASTM D2855). INSTALL PLASTIC PIPE BELOW GRADE PER ASTM D2321. FOAM CORE PVC PIPING IS NOT APPROVED.
2. ABOVE GRADE PIPING AND JOINTS: PROVIDE SCHEDULE 40 PVC PIPE AND SOCKET FITTINGS (ASTM D 2665) WITH SOLVENT WELD JOINTS (ASTM D2855). FOAM CORE PIPE IS NOT APPROVED. DO NOT INSTALL PVC PIPING IN RETURN AIR PLENUMS.
3. SLOPE WASTE PIPING AT 1/4" PER FOOT MINIMUM FOR PIPING 2-1/2" AND SMALLER AND 1/8" PER FOOT MINIMUM FOR PIPING 3" AND LARGER UNLESS NOTED OTHERWISE.
4. PROVIDE CLEAN-OUTS AT EVERY TURN IN PIPING IN EXCESS OF 45° AND SPACED WITH-IN 100'-0" APART IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.
5. PROVIDE FLOOR CLEANOUTS WITH TOPS DESIGNED TO MATCH SPECIFIC FLOOR FINISHES SUCH AS CARPET, TILE, ETC.
6. WHERE WASTE PIPING IS EXPOSED IN REST ROOM AREAS, PROVIDE CHROME PLATED BRASS PIPING, REMOVABLE P-TRAPS, MATCHING STOPS AND ESCUTCHEONS FOR ALL LAVATORIES.
7. WASTE AND VENT SYSTEMS SHALL BE TESTED AND PROVED WATER TIGHT UNDER A HEAD PRESSURE OF NO LESS THAN 10 FT. THIS PRESSURE SHALL BE HELD FOR A PERIOD OF NO LESS THAN 15 MINUTES.
8. WHERE MECHANICAL ROOM FLOOR DRAINS ARE INSTALLED ABOVE GRADE, PROVIDE 1"THICK GLASS FIBER INSULATION WITH VAPOR BARRIER AND JACKET ON THE FLOOR DRAIN BODY, THE ASSOCIATED P-TRAP AND HORIZONTAL DRAIN PIPING ABOVE GRADE.
9. INSULATE ROOF DRAIN BODIES AND HORIZONTAL DRAIN PIPING ABOVE GRADE WITH 1" THICK GLASS FIBER INSULATION WITH VAPOR BARRIER AND JACKET.
10. PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES SHALL MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS AS TESTED BY ASTM E84 (NFPA 255) METHOD. INSTALL INSULATION CONTINUOUSLY THRU FIRE RATED WALLS AND PIPE HANGERS. PROVIDE GALVANIZED STEEL SHIELD BETWEEN PIPE HANGER AND INSULATION.

DOMESTIC WATER PIPING

1. BELOW GRADE PIPING AND JOINTS: PROVIDE TYPE 'K' SOFT ANNEALED SEAMLESS COPPER TUBING (ASTM B 88) WITH NO JOINTS FOR PIPING 1" AND SMALLER. PROVIDE TYPE 'K' HARD DRAWN SEAMLESS COPPER TUBING (ASTM B 88) AND CAST COPPER ALLOY FITTINGS (ASME B16.18) WITH BCUP SILVER/PHOSPHORUS/ COPPER BRAZED JOINTS (AWS A5.8) FOR PIPING 1-1/4" TO 3" IN SIZE.
2. ABOVE GRADE PIPING AND JOINTS: PROVIDE TYPE 'L' HARD DRAWN SEAMLESS COPPER TUBING (ASTM B 88) AND CAST COPPER ALLOY FITTINGS (ASME B16.18). JOINTS 2" AND SMALLER SHALL BE LEAD FREE 95-5 TIN/SILVER SOLDER JOINTS (ASTM B 32), JOINTS 2-1/2" AND LARGER SHALL BE BCUP SILVER / PHOSPHORUS / COPPER BRAZED JOINTS (AWS A5.8). ALTERNATELY PRESS FITTINGS MAY BE USED FOR JOINTS. SEALING ELEMENTS FOR PRESS FITTINGS SHALL BE EPDM. SEALING ELEMENTS SHALL BE FACTORY INSTALLED. PRESS FITTINGS SHALL ALLOW IDENTIFICATION OF AN UNPRESSED FITTINGS DURING PRESSURE TESTING.
3. INSULATE PIPING ABOVE GRADE (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES) WITH GLASS FIBER INSULATION HAVING A VAPOR BARRIER AND JACKET. PIPE INSULATION SHALL HAVE A CONDUCTIVITY NOT EXCEEDING 0.27 BTUH x SQ. FT., SEE LIST BELOW FOR INSULATION THICKNESS:
   - PROVIDE 1" THICK INSULATION FOR HOT WATER & CIRCULATION PIPING SIZES 1/2" THRU 1-1/4".
   - PROVIDE 1-1/2" THICK INSULATION FOR HOT WATER & CIRCULATON PIPING SIZES 1-1/2" THRU 4".
   - PROVIDE 1/2" THICK INSULATION FOR COLD WATER PIPING SIZES 1/2" THRU 1-1/4".
   - PROVIDE 1" THICK INSULATION FOR COLD WATER PIPING SIZES 1-1/2" THRU 4".
4. PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES SHALL MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS AS TESTED BY ASTM E84 (NFPA 255) METHOD AND SHALL BE PLENUM RATED. PROVIDE PVC INSULATION JACKET FOR EXPOSED PIPING IN MECHANICAL ROOMS. INSTALL INSULATION CONTINUOUSLY THRU FIRE RATED WALLS AND PIPE HANGERS. PROVIDE GALVANIZED STEEL SHIELD BETWEEN PIPE HANGER AND INSULATION.
5. PROVIDE A CHROME FINISH ON EXPOSED PIPING IN REST ROOMS AND OTHER FINISHED AREAS.
6. PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS AND CLIPS SHALL BE COPPER OR COPPER PLATED. WHERE COPPER PIPING IS CARRIED ON TRAPEZE HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH DISSIMILAR OTHER METALS.
7. PROTECT COPPER PIPING AGAINST CONTACT WITH MASONRY. WHERE COPPER IS SLEEVED THROUGH MASONRY, PROVIDE COPPER OR RED BRASS SLEEVES. WHERE COPPER MUST BE CONCEALED IN OR AGAINST MASONRY PARTITIONS, PROVIDE A HEAVY COATING OF ASPHALTIC ENAMEL ON THE COPPER PIPING AND 15# ASPHALT SATURATED FELT BETWEEN THE PIPING AND THE MASONRY PARTITION.
8. PERFORM A PRESSURE TEST ON ALL WATER PIPING. FILL PIPING WITH POTABLE WATER, CAP AND SUBJECT PIPING TO A STATIC WATER PRESSURE OF 50 PSIG ABOVE OPERATING PRESSURE, WITHOUT EXCEEDING PRESSURE RATING OF PIPING SYSTEM MATERIALS OR PRESSURIZE PIPING WITH AIR TO AT LEAST ONE-HUNDRED (100) PSI. ISOLATE TEST SOURCE AND ALLOW TO STAND FOR FOUR HOURS. LEAKS AND LOSS IN TEST PRESSURE CONSTITUTE DEFECTS THAT MUST BE REPAIRED. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING OR PORTION THEREOF UNTIL SATISFACTORY RESULTS ARE OBTAINED
9. STERILIZE THE DOMESTIC WATER SYSTEM IN PER THE AMERICAN WATER WORKS ASSOCIATION'S INSTRUCTIONSSPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
10. SLOPE WATER PIPING FOR DRAINAGE WITH DRAIN VALVES INSTALLED AT LOW POINTS.
11. BALANCE THE DOMESTIC HOT WATER CIRCULATION SYSTEM TO THE PERFORMANCE SPECIFICATIONS INDICATED ON THE PLANS AND PROVIDE THE ENGINEER WITH THREE COPIES OF A COMPLETE TEST AND BALANCE REPORT. THE REPORT IS TO BE ISSUED A MINIMUM OF TWO WEEKS PRIOR TO PROJECT COMPLETION. THE TEST AND BALANCE REPORT WILL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. ANY ADDITIONAL TESTING, ADJUSTING AND BALANCING REQUIRED (AT ENGINEER'S REQUEST) AFTER REVIEW OF THE INITIAL REPORT SHALL BE PROVIDED AT NO ADDITIONAL COST. TEST AND BALANCE REPORT TO BE COMPLETED BY AN INDEPENDENT, CERTIFIED TEST AND BALANCE CONTRACTOR.

PLUMBING GENERAL NOTES

1. PLUMBING WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2018 NORTH CAROLINA STATE PLUMBING CODE AND WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. SCOPE: PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL PLUMBING SYSTEMS IN ACCORDANCE WITH ALL APPLICABLE CODES.
3. PERMITS: APPLY AND PAY FOR ALL NECESSARY PERMITS, FEES AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION. ACREAGE CHARGES, FACILITIES CHARGES AND BOND PROPERTY ASSESSMENTS ARE NOT TO BE CONSTRUED TO BE A PART OF THIS CONTRACT.
4. WARRANT THE SYSTEM LABOR, MATERIALS AND EQUIPMENT FOR THE TIME PERIOD SPECIFIED IN THE PROJECT MANUAL. IF NO WARRANTY SECTION IS PROVIDED, THEN WARRANT THE SYSTEM LABOR, MATERIAL AND EQUIPMENT FOR A MINIMUM OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE. PRIOR TO TURNING THE COMPLETED SYSTEM OVER TO THE OWNER, REVIEW THE INSTALLATION WITH THE ARCHITECT / ENGINEER AND REPLACE OR REPAIR ANY DEFECTIVE WORKMANSHIP, EQUIPMENT AND MATERIALS AT NO ADDITIONAL COST TO THE OWNER.
5. COORDINATE ALL PLUMBING PIPING LOCATIONS, ROUGH-IN LOCATIONS AND EQUIPMENT LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. FINAL PIPING AND EQUIPMENT LOCATIONS SHALL BE A CODE COMPLIANT INSTALLATION FOR ALL TRADES.
6. FIELD VERIFY PROPER OPERATION OF EXISTING SYSTEMS BEFORE STARTING CONSTRUCTION. NOTIFY THE ARCHITECT / ENGINEER OF RECORD OF ANY PROBLEMS OR DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS AND/OR ANY POTENTIAL PROBLEMS OBSERVED BEFORE CONTINUING WORK IN THE AFFECTED AREAS.
7. PLUMBING PLANS SHALL NOT BE SCALED. REFERENCE THE ARCHITECTURAL PLANS FOR DIMENSIONS OF ALL LOCATIONS OF PLUMBING FIXTURES, FLOOR DRAINS, COLUMNS, WALLS, DOORS, ETC.
8. WHERE DISCREPANCIES ARE FOUND IN THE DRAWINGS AND SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. CONTACT ENGINEER FOR CLARIFICATION.
9. ALL PIPING SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.
10. ALL VALVES, BACKFLOW PREVENTERS, BOOSTER PUMPS, ETC. SERVING THE DOMESTIC WATER SYSTEM SHALL MEET LEAD FREE STANDARDS PER ANSI/NSF 372 AND NSF 61, ANNEX G.
11. PROVIDE COMPLETE PLUMBING FIXTURES AND EQUIPMENT. INCLUDE SUPPLIES, STOPS, VALVES, FAUCETS, DRAINS, TRAPS, TAIL PIECES, ESCUTCHEONS, ETC. AND INSTALL PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
12. CUT WALLS, FLOORS AND CEILINGS AS REQUIRED FOR INSTALLATION OF PLUMBING WORK. ALL CUTTING SHALL BE HELD TO A MINIMUM. PATCH AND FINISH SURFACES TO MATCH ADJOINING SURFACES.
13. PIPING AND SPECIALTIES SHALL BE LOCATED CONCEALED IN WALLS, PARTITIONS OR ABOVE CEILINGS UNLESS NOTED OTHERWISE. PIPING IN EXPOSED AREAS SHALL BE RUN TIGHT TO UNDERSIDE OF STRUCTURE.
14. PIPE PENETRATIONS THRU WALLS, PARTITIONS AND FLOORS SHALL BE SLEEVED. CORE DRILLING THRU WALLS AND PARTITIONS IS PERMITTED IF PERFORMED IN A NEAT CRAFTSMAN LIKE MANNER. OPENINGS THRU WALLS, PARTITIONS, AND FLOORS SHALL BE LARGE ENOUGH FOR PIPE INSULATION TO REMAIN CONTINUOUS. PIPES PENETRATING THRU EXTERIOR WALLS SHALL BE SEALED WATER TIGHT. INSTALL ESCUTCHEONS IN ALL EXPOSED AREAS.
15. PROVIDE ACCESS DOORS FOR ALL SPECIALTIES, VALVES, WATER HAMMER ARRESTORS, TRAP PRIMERS, ETC., CONCEALED BEHIND WALLS OR CEILINGS THAT REQUIRE MAINTENANCE ACCESS.
16. DO NOT INSTALL PIPING IN AREAS SUBJECT TO FREEZING TEMPERATURES. INSTALL PIPING SHOWN IN EXTERIOR WALLS ON THE CONDITIONED SIDE OF THE WALL INSULATION.
17. PIPING, VENTS, ETC. EXTENDING THROUGH EXTERIOR WALLS AND/OR THE ROOF SHALL BE FLASHED AND COUNTER FLASHED IN A WATERPROOF MANNER. COORDINATE FLASHING WITH THE GENERAL CONTRACTOR.
18. PROVIDE A CHROME FINISH FOR ALL EXPOSED PIPING IN REST ROOMS AND OTHER FINISHED AREAS.
19. PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
20. REFER TO THE STRUCTURAL PLANS AND DETAILS FOR ACCEPTABLE LOCATIONS TO ATTACH HANGERS AND SUPPORTS TO THE BUILDING STRUCTURE. HANGERS SHALL NOT ATTACH TO THE ROOF DECK.
21. PROVIDE MANUFACTURERS RECOMMENDED CLEARANCES AROUND ALL EQUIPMENT FOR MAINTENANCE.
22. VALVES AND OTHER PIPING ACCESSORIES REQUIRING ACCESS SHALL BE INSTALLED IN ACCESSIBLE LOCATION NO MORE THAN 18" ABOVE THE CEILING, PROVIDE OFFSETS IN PIPING AS NEEDED.
23. PLUMBING SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO: PLUMBING FIXTURES AND EQUIPMENT, FIRE STOPPING, PIPE IDENTIFICATION, DOMESTIC WATER SYSTEM, SANITARY WASTE AND VENT SYSTEM.

FIRE STOPPING:

1. FIRE STOP ALL PENETRATIONS, BY PIPING OR CONDUITS, OF FIRE RATED WALLS, FLOORS AND PARTITIONS. PROVIDE A DEVICE(S) OR SYSTEM(S) WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE A DEVICE(S) OR SYSTEM(S) WITH AN 'F' RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED. REFER TO ARCHITECTURAL PLANS FOR WALL AND FLOOR TYPES.

PIPE IDENTIFICATION:

1. PIPE IDENTIFICATION SHALL MATCH THE FACILITY'S EXISTING STANDARD. IF NO STANDARD EXISTS, THEN THE PIPE IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI A13.1.
2. PROVIDE PIPING LABELS FOR ALL PLUMBING PIPING. PIPING LABELS SHALL BE ACRYLIC FACED, WRAP-AROUND TYPE. EACH LABEL SHALL INDICATE THE PIPING CONTENTS, DIRECTION OF FLOW AND SHALL BEAR THE MANUFACTURER'S STANDARD COLOR FOR THE SERVICE INDICATED.

SUBMITTALS:

1. PROVIDE SUBMITTALS BEARING THE CONTRACTORS REVIEW STAMP FOR ALL PLUMBING FIXTURES, PIPING, EQUIPMENT AND ACCESSORIES IN ELECTRONIC FORMAT (PDF).
2. NO PRIVATE LABELED MATERIALS WILL BE ACCEPTED AS EQUALS TO PRODUCTS SPECIFIED HEREIN.
3. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH SUBSTITUTIONS TO SPECIFIED PLUMBING FIXTURES AND EQUIPMENT INCLUDING BUT NOT LIMITED TO; PROVIDING MAINTENANCE ACCESS CLEARANCE, PIPING, ELECTRICAL, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC. AND ANY MODIFICATIONS TO ASSOCIATED MECHANICAL, ELECTRICAL OR PLUMBING SYSTEMS REQUIRED BY THE EQUIPMENTS INSTALLATION INSTRUCTIONS. ALL COSTS ASSOCIATED WITH SUBSTITUTIONS SHALL BE INCLUDED IN THE ORIGINAL BASE BID.

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
	HWR	HOT WATER RETURN PIPING
	W	SANITARY WASTE PIPING
	V	SANITARY VENT PIPING
D	D	DRAIN PIPING (INDIRECT)
	-	PIPING ELBOW DOWN
	-	PIPING ELBOW UP
	-	PIPING CONTINUES
	-	SHUT-OFF VALVE
	-	CHECK VALVE
	-	BALANCING VALVE
	-	IN-LINE PUMP
	-	PIPING REDUCER
	FCO	FLOOR CLEANOUT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
	HB	HOSE BIBB / WALL HYDRANT
	SA-#	SHOCK ARRESTOR - SUFFIX INDICATES PDI SIZE

ADDITIONAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MFG	MANUFACTURER
AFG	ABOVE FINISHED GRADE	PSI	POUNDS PER SQUARE INCH
AVTR	ACID VENT THRU ROOF	T&P	TEMPERATURE AND PRESSURE
BAS	BUILDING AUTOMATION SYSTEM	TW	TEMPERED WATER
BFF	BELOW FINISHED FLOOR	TYP	TYPICAL
CFH	CUBIC FEET PER HOUR	UG	UNDERGROUND
CLG	CEILING	VTR	VENT THRU ROOF
CONT	CONTINUATION	WSV	WASTE STACK VENT
DN	DOWN	WC	WATER COLUMN
GPF	GALLONS PER FLUSH		
GPM	GALLONS PER MINUTE	EC	ELECTRICAL CONTRACTOR
HP	HORSE POWER	GC	GENERAL CONTRACTOR
INV	INVERT ELEVATION	MC	MECHANICAL CONTRACTOR
KW	KILOWATT	PC	PLUMBING CONTRACTOR
MBH	1,000 BRITISH THERMAL UNIT / HOUR		

2018 NORTH CAROLINA ENERGY CONSERVATION CODE

COMMERCIAL ENERGY EFFICIENCY - PLUMBING SUMMARY

C401 METHOD OF COMPLIANCE

- ■ 2018 NCECC CHAPTER 4
- ☐ COMCHECK PROVIDED (2018 NCECC)
- ☐ ASHRAE 90.1-2013 PRESCRIPTIVE
- ☐ COMCHECK PROVIDED (90.1-2013)
- ☐ ASHRAE 90.1-2013 PERFORMANCE
- ☐ ENERGY MODELING DATA PROVIDED
- ☐ N/A (EXISTING LIGHTING, HVAC, AND DOM. WATER HEATING SYSTEMS TO REMAIN)

C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- ☐ C406.2 EFFICIENT MECH EQUIPMENT
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ■ C406.3 REDUCED LTG DENSITY
- ☐ C406.6 DEDICATED OA SYSTEM
- ☐ C406.4 ENHANCED LTG CONTROLS
- ☐ C406.7 SERVICE WATER HEATING

TABLE C404.2 - MINIMUM PERFORMANCE OF WATER HEATING EQUIPMENT c

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUB CATEGORY OR RATING CONDITION	PERFORMANCE REQUIRED a,b	REQ'D EFFICIENCY	SPECIFIED EQPM
WATER HEATER ELECTRIC	> 12 kW	RESISTANCE	$(0.3=27/V_M)$, %/h	*EDIT*	*EDIT*

a. ENERGY FACTOR (EF) AND THERMAL EFFICIENCY (E_t) ARE MINIMUM REQUIREMENTS. IN THE EF EQUATION V IS THE VOLUME IN GALLONS.
b. STANDBY LOSS (SL) IS THE MAXIMUM BTU/H BASED ON A NOMINAL 70° TEMPERATURE DIFFERENCE BETWEEN STORED WATER AND AMBIENT REQUIREMENTS. IN THE SL EQUATION Q IS THE NAMEPLATE INPUT RATE IN BTU/H. IN THE EQUATIONS FOR ELECTRIC WATER HEATERS, V IS THE RATED VOLUME IN GALLONS AND V_m IS THE MEASURED VOLUME IN GALLONS. IN THE SL EQUATION FOR GAS WATER HEATERS AND BOILERS, V IS THE RATED VOLUME IN GALLONS.
c. REFER TO WATER HEATER SCHEDULES FOR SPECIFIED WATER HEATING EQUIPMENT TYPES, CAPACITIES (STORAGE VOLUME) AND ENERGY INPUTS (ELECTRIC AND/OR GAS)

C408 - SYSTEM COMMISSIONING

- ☐ PROJECT AREA IS LESS THAN 10,000 SQUARE FEET AND IS EXEMPT FROM THE SYSTEM COMMISSIONING REQUIREMENTS OF SECTION C408.
- ■ PROJECT AREA IS GREATER THAN 10,000 SQUARE FEET AND REQUIRES SYSTEM COMMISSIONING PER SECTION C408.

PLUMBING SHEET INDEX

SHEET NUMBER	SHEET NAME
P0.01	PLUMBING LEGEND, INDEX AND NOTES
P0.02	PLUMBING SCHEDULES
P1.01	FIRST FLOOR PLUMBING PLANS - BASE BID
P5.01	PLUMBING DETAILS AND SCHEMATICS

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North Carolina License Number C-0914

FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 26023 ENGINEER GEORGE C. FOWLER, III

George C. Fowler III

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 1-19-2022

PLUMBING LEGEND, INDEX AND NOTES

P0.01

Optima # 21-0180

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PLUMBING SPECIALTIES SCHEDULE

SYMBOL	DESCRIPTION	CONNECTION SIZE W	V	CW	HW	SPECIFICATION	REMARKS
WB1	WASHING MACHINE CONNECTION BOX; 14"x 9"x 3.5", 20 GAUGE STEEL WITH WHITE POWDER COATING, RECESSED IN WALL	3"	2"	1/2"	1/2"	FIXTURE: GUY GRAY T200TPPVCHA WITH WATER HAMMER ARRESTOR STOPS: INTEGRAL 1/4 TURN SUPPLIES: (2) 5/8" BRAIDED S.S. FLEXIBLE HOSES	2" DRAIN OUTLET, 2" STANDPIPE WITH 2" P-TRAP. SEE 8/P501
WB2	WATER CONNECTION BOX; 7"X 7"X 3.5", 20 GAUGE STEEL WITH WHITE POWDER COATING, RECESSED IN WALL	-	-	1/2"	-	FIXTURE: GUY GRAY MIB1AB STOP: QUARTER TURN WITH SHOCK ARRESTOR SUPPLY: 1/4" FLEXIBLE HOSE	PROVIDE INLINE DOUBLE CHECK VALVE WILKINS SERIES 700
CS-x	BALANCING VALVE, THERMOSTATIC, AUTOMATIC, SUFFIX INDICATES PIPE SIZE, SEE FLOOR PLANS	-	-	-	**	EQUIPMENT: CIRCUIT SOLVER CS SERIES, SIZES 1/2" THRU 2", NSF 61 CERTIFIED.	PROVIDE 105°F MODEL
SA-x	SHOCK ARRESTOR, SUFFIX INDICATES PDI SIZE	-	-	x	-	EQUIPMENT: SIOUX CHIEF 650 SERIES, SIZES 1/2" THRU 2", NSF 61 CERTIFIED.	SEE SHOCK ARRESTOR TABLE THIS SHEET
HB1	HOSE BIBB, INTERIOR, EXPOSED, STAINLESS STEEL FACE PLATE, ANTI-SIPHON	-	-	3/4"	-	EQUIPMENT: WOODFORD 24, PROVIDE METAL LOOSE KEY FOR EACH HOSE BIBB	MOUNT 18" AFF
HB2	HOSE BIBB, EXTERIOR, EXPOSED, STAINLESS STEEL FACE PLATE, FREEZELESS, ANTI-SIPHON	-	-	3/4"	-	EQUIPMENT: ZURN Z1310-34EL, PROVIDE VACUUM BREAKER AND METAL LOOSE KEY FOR EACH HOSE BIBB	MOUNT 18" AFF
FCO	FLOOR CLEANOUT, CAST IRON BODY, NICKEL BRONZE TOP, ADJUSTABLE	**	-	-	-	CLEANOUT: ZURN ZN-1400-BP, BRONZE PLUG CLEANOUT SIZE SHALL MATCH PIPE SIZE	GAS / WATER TIGHT, INSTALL TOP FLUSH WITH FINISHED FLOOR
YCO	YARD CLEANOUT, CAST IRON BODY, NICKEL BRONZE TOP, ADJUSTABLE, INSTALLED IN 18"x18"x6" CONCRETE PAD	**	-	-	-	CLEANOUT: ZURN ZN-1400-BP, BRONZE PLUG INSTALL IN 18"x 18"x 6" DEEP CONCRETE PAD	GAS / WATER TIGHT, INSTALL TOP FLUSH WITH FINISHED GRADE
FD1	FLOOR DRAIN, CAST IRON BODY, ROUND NICKEL BRONZE GRATE, ADJUSTABLE	3"	2"	-	-	DRAIN: ZURN ZN-415-B, 6" DIAMETER GRATE P-TRAP: 3" DEEP SEAL.	INSTALL TOP FLUSH WITH FINISHED FLOOR. SEE NOTE 1 BELOW.
FD2	FLOOR DRAIN, CAST IRON BODY, ROUND NICKEL BRONZE GRATE, ADJUSTABLE	3"	2"	-	-	DRAIN: ZURN ZN-415-I, 9" DIAMETER RECESSED GRATE P-TRAP: 3" CAST IRON, DEEP SEAL.	INSTALL TOP OF DRAIN LIP FLUSH WITH FLOOR. SEE NOTE 1 BELOW.
FS1	FLOOR SINK, 12"x 12"x 6" DEEP, STAINLESS STEEL BODY AND GRATE	4"	2"	-	-	DRAIN: ZURN Z1750 P-TRAP: 4" CAST IRON, DEEP SEAL	PROVIDE 3/4 GRATE.

NOTES:
1. PROVIDE WATERLESS INLINE TRAP GUARD FOR EACH FLOOR DRAIN CONFORMING TO ASSE 1072 AND EQUAL TO RECOTORSEAL"SURE-SEAL" MODEL SS3009V. INSTALL TRAP GUARDS IN THE OUTLET OF THE FLOOR DRAIN BODY (NOT IN THE STRAINER).

** MATCH PIPE SIZE SHOWN ON PLANS, SEE PLANS.

APPROVED EQUALS:	PRODUCT TYPE:	ACCEPTED MANUFACTURERS:
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MODEL WHICH MOST CLOSELY MATCHES THE SPECIFIED PRODUCT. PROVIDE PRODUCTS MADE BY THE MANUFACTURER'S LISTED.	SHOCK ARRESTOR HOSE BIBBS DRAINS BACKFLOW PREVENTER	SIOUX CHIEF, PPP INC., ZURN, WATTS ZURN, WOODFORD, WATTS, J.R. SMITH ZURN, J.R. SMITH, WADE WILKINS, WATTS, APOLLO

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	CONNECTION SIZE W	V	CW	HW	SPECIFICATION	REMARKS
P1	TOILET, A.D.A. COMPLIANT ELONGATED, WHITE VITREOUS CHINA, FLOOR MOUNTED (1.28 GPF) MANUALLY OPERATED FLUSH VALVE	4"	2"	1-1/4"	-	FIXTURE: KOHLER K-96057-0 "HIGHCLIFF ULTRA" FLUSH VALVE: SLOAN 111-1.28-DFB SEAT: CHURCH 9500CT	17" RIM HEIGHT. INSTALL FLUSH LEVER ON OPEN ACCESS SIDE OF TOILET. SEE NOTE 5 BELOW
P3	LAVATORY, A.D.A. COMPLIANT, 20"x18" RECTANGULAR BOWL, WHITE ENAMELED VITREOUS CHINA, CARRIER MOUNTED, 4" CENTER FAUCET HOLES, MANUAL FAUCET WITH SINGLE LEVER HANDLE (1.5 GPM) LAMINAR FLOW OUTLET	2"	1-1/2"	1/2"	1/2"	FIXTURE: KOHLER K-2032 FAUCET: DELTA 22C121, 1.5 GPM GRID DRAIN: MCGUIRE 155A GRID DRAIN P-TRAP: MCGUIRE 8902 (1-1/4"x1-1/2", 17 GA.) SUPPLIES/STOPS: MCGUIRE LF175	SEE NOTES 2 & 4 BELOW
P5	2-COMP. SINK, 21"x33"x12", THREE HOLE PUNCH, 18 GAUGE STAINLESS STEEL, COUNTER MOUNTED, SELF RIMMING, 9.5" GOOSENECK FAUCET WITH SPRAY HEAD, SINGLE HANDLE, 1.8 GPM OUTLET	2"	1-1/2"	1/2"	1/2"	FIXTURE: JUST DLXDF-2133-16-GR FAUCET: DELTA 9659-DST WITH ESCUTCHEON DRAIN: JUST J-35, BASKET STRAINER P-TRAP: MCGUIRE 8912 (1-1/2"x1-1/2", 17 GA.) SUPPLY/STOP: MCGUIRE LF175	PROVIDE WATER AND WASTE CONNECTIONS FOR ADJACENT DISHWASHER.
P6	MOP SINK, 36"x 24"x 10" MOLDED STONE, SERVICE FAUCET, HOSE, MOP HANGER BRACKET	3"	2"	3/4"	3/4"	FIXTURE: FIAT MSB-3624 FAUCET: FIAT 830-AA, DRAIN: FIAT 1453-BB ACCESSORIES: FIAT 832-AA HOSE & BRACKET ACCESSORIES: FIAT 889-CC MOP HANGER DRAIN: 3" STAINLESS STEEL SLOTTED P-TRAP: 3" DEEP SEAL, CAST IRON	PROVIDE CHECK VALVES ON HW AND CW SUPPLIES.
P7	SHOWER, ADA COMPLIANT, ONE PIECE GEL-COAT PRESSURE BALANCED SHOWER VALVE WITH 1.5 GPM WALL MOUNTED HAND HELD SHOWER AND SLIDE BAR.	2"	2"	1/2"	1/2"	FIXTURE: COMFORT DESIGNS XST-6232 BF .75 SP SHOWER VALVE & HEAD : AMERICAN STANDARD 1662SG.211 DRAIN: CHROME PLATED NO-CAULK DRAIN P-TRAP: 2" DEEP SEAL TRAP	COORDINATE RIGHT OR LEFT HAND CONTROLS WITH ARCHITECTURAL PLANS AND ELEVATIONS

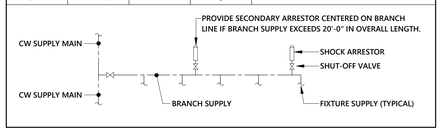
NOTES:
1. NOT USED.
2. SEE ARCHITECTURAL PLANS FOR MOUNTING HEIGHT. PROVIDE A FLOOR MOUNTED, ADJUSTABLE CONCEALED ARM CARRIER EQUAL TO ZURN Z1231-EZ (-SL) SERIES. WHEN CARRIER IS LOCATED BEHIND BLOCK WALL, PROVIDE EXTENDED CONCEALED ARM SLEEVES TO COMPENSATE FOR THE BLOCK WALL THICKNESS.
3. NOT USED.
4. PROVIDE PRE-MANUFACTURED A.D.A. COMPLIANT INSULATION KIT FOR EXPOSED P'TRAP AND SUPPLY TRIM UNDER SINK.
5. PROVIDE HEAVY DUTY CAST IRON CLOSET FLANGE WITH COMPRESSION SEAL AND TEST CAP EQUAL TO ZURN CF2980-CI4. OFFSET FLANGES ARE NOT ACCEPTABLE.

** MATCH PIPE SIZE SHOWN ON PLANS, SEE PLANS.

APPROVED EQUALS:	PRODUCT TYPE:	ACCEPTED MANUFACTURERS:
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MODEL WHICH MOST CLOSELY MATCHES THE SPECIFIED PRODUCT. PROVIDE PRODUCTS MADE BY THE MANUFACTURER'S LISTED.	VITREOUS CHINA FIXTURES TOILET SEATS FLUSH VALVES FAUCETS STAINLESS STEEL SINKS UTILITY SINKS SHOWER INSERTS SHOWER VALVES CARRIERS SUPPLIES, STOPS, P-TRAPS ADA KIT FOR EXPOSED TRIM INLINE FLOOR DRAIN TRAP SEALER	KOHLER, AMERICAN STANDARD, ZURN, TOTO, SLOAN CHURCH, OLSONITE, BEMIS, CENTOCO SLOAN, ZURN, DELANEY DELTA COMMERCIAL, T&S BRASS, CHICAGO, ZURN, MOEN COMMERCIAL ELKAY, JUST, ADVANCE-TABCO FIAT, FLORESTONE, STEN WILLIAMS COMFORT DESIGNS, LIBERTY LINE, STERLING AMERICAN STANDARD, LEONARD, SYMMONS, LAWLER ZURN, J.R. SMITH, WADE, JOSAM, WATTS ZURN, MCGUIRE, BRASSCRAFT, KEENEY TRUEBRO, PLUMBEREX, KEENEY SURESEAL, MIFAB, PROVENT

SHOCK ARRESTOR TABLE

DRAWING SYMBOL	FIXTURE UNITS	P.D.I. WH201 DESIGNATION	ARRESTOR SIZE	REMARKS
SA-A	1 - 11	A	1/2"	INSTALL SHOCK ARRESTORS PER THE PLUMBING DRAINAGE INSTITUTE (P.D.I.) GUIDELINES. ACCEPTED MANUFACTURERS: SIOUX CHIEF, WATTS, PPP INC., ZURN
SA-B	12 - 32	B	3/4"	
SA-C	33 - 60	C	1"	
SA-D	61 - 113	D	1-1/4"	
SA-E	114 - 154	E	1-1/2"	



PLUMBING EQUIPMENT SCHEDULE

SYM.	DESCRIPTION	CONN. SIZE INLET	OUT	SPECIFICATION	REMARKS
WH1	WATER HEATER, COMMERCIAL, ELECTRIC, STORAGE TANK	1-1/4"	1-1/4"	EQUIPMENT: A.O. SMITH DRE-120 ELEC: 36 KW, 208 V, 3 PHASE RECOVERY: 184 GPH AT 80° RISE.	SET OUTLET TEMPERATURE TO 120°F SEE NOTE 1
ET1	THERMAL EXPANSION TANK 5.1 GALLON CAPACITY	3/4"	-	EQUIPMENT: AMTROL ST-12-C	-
RCP1	CIRCULATION PUMP ALL BRONZE CONSTRUCTION	3/4"	3/4"	PUMP: B&G NBF-22, 1/12 HP, 120V RATED FOR 6 GPM AT 6' HEAD	SEE NOTE 2

NOTES:
1. COMMERCIAL ELECTRIC FIRED WATER HEATER SHALL BE LISTED BY UNDERWRITER'S LABORATORIES AND APPROVED TO THE NSF STANDARD 5 BY UL. TANK SHALL HAVE 150 PSI WORKING PRESSURE AND BE EQUIPPED WITH EXTRUDED HIGH DENSITY ANODE. ALL INTERNAL SURFACES OF THE HEATER EXPOSED TO WATER SHALL BE GLASSLINED WITH AN ALKALINE BOROSILICATE COMPOSITION THAT HAS BEEN FUSED TO STEEL BY FIRING AT A TEMPERATURE OF 1400 F TO 1600 F. ELECTRIC HEATING ELEMENTS SHALL BE LOW WATT DENSITY. EACH ELEMENT SHALL BE CONTROLLED BY AN INDIVIDUALLY MOUNTED THERMOSTAT AND HIGH TEMPERATURE CUT-OFF SWITCH. ALL INTERNAL CIRCUITS SHALL BE FUSED. THE OUTER JACKET SHALL BE OF BAKED ENAMEL FINISH AND SHALL BE PROVIDED WITH FULL SIZE CONTROL COMPARTMENT FOR PERFORMANCE OF SERVICE AND MAINTENANCE THROUGH HINGED FRONT PANEL AND SHALL ENCLOSE THE TANK WITH FOAM INSULATION. ELECTRICAL JUNCTION BOX WITH HEAVY DUTY TERMINAL BLOCK SHALL BE PROVIDED. THE DRAIN VALVE SHALL BE LOCATED IN THE FRONT FOR EASE OF SERVICING. HEATER TANK SHALL HAVE A THREE YEAR WARRANTY. MANUFACTURER SHALL SUPPLY ASME RATED TEMPERATURE AND PRESSURE RELIEF VALVE. FULLY ILLUSTRATED INSTRUCTION MANUAL TO BE INCLUDED. WATER HEATER SHALL MEET OR EXCEED ASHRAE 90.1 REQUIREMENTS.
2. INTERLOCK WITH FULLY ADJUSTABLE AQUASTAT AND 7-DAY, 24 HOUR TIMER.

** MATCH PIPE SIZE SHOWN ON PLANS, SEE PLANS.

APPROVED EQUALS:	PRODUCT TYPE:	ACCEPTED MANUFACTURERS:
THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MODEL WHICH MOST CLOSELY MATCHES THE SPECIFIED PRODUCT. PROVIDE PRODUCTS MADE BY THE MANUFACTURER'S LISTED.	WATER HEATERS EXPANSION TANKS PUMPS	A.O. SMITH, LOCHINVAR, BRADFORD WHITE AMTROL, A.O. SMITH, WATTS, WESSELS B&G, TACO, ARMSTRONG

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FOR CONSTRUCTION

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

PLUMBING SCHEDULES

P0.02

Optima # 21-0180

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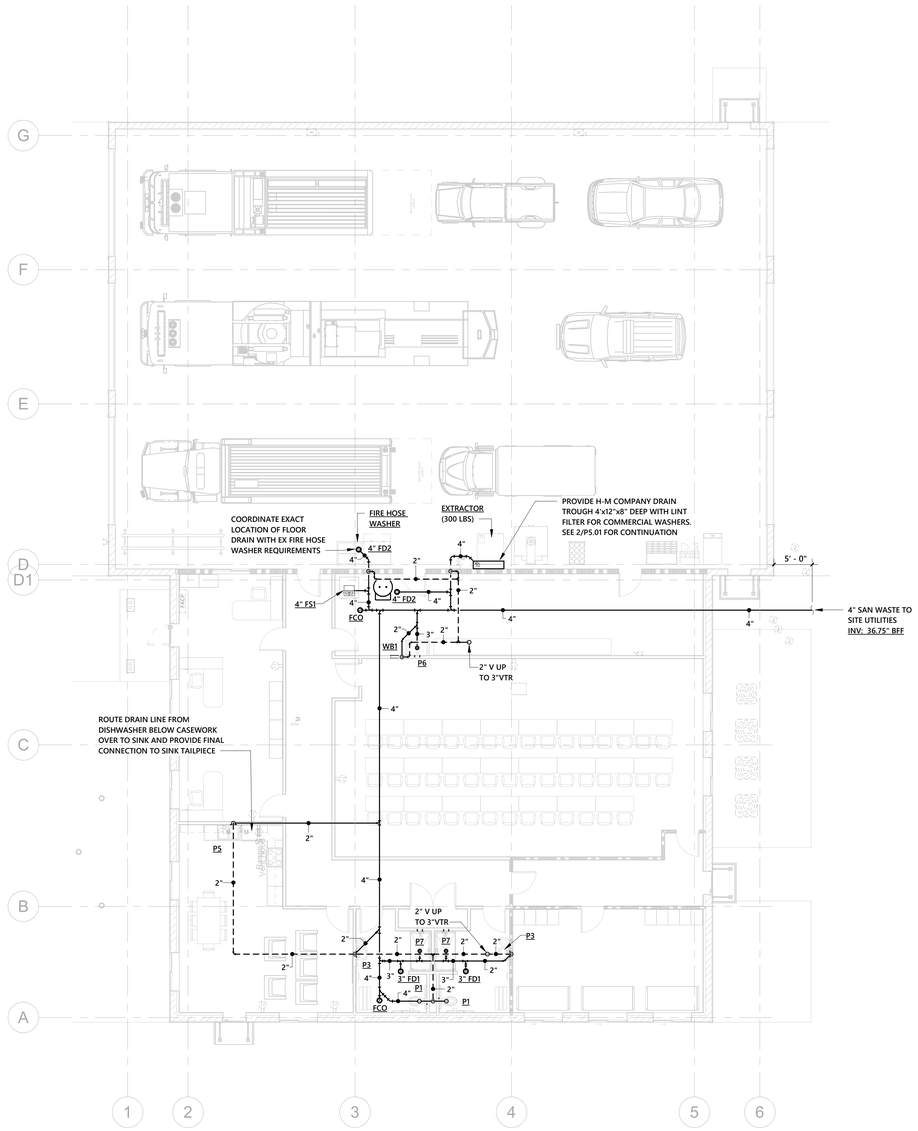
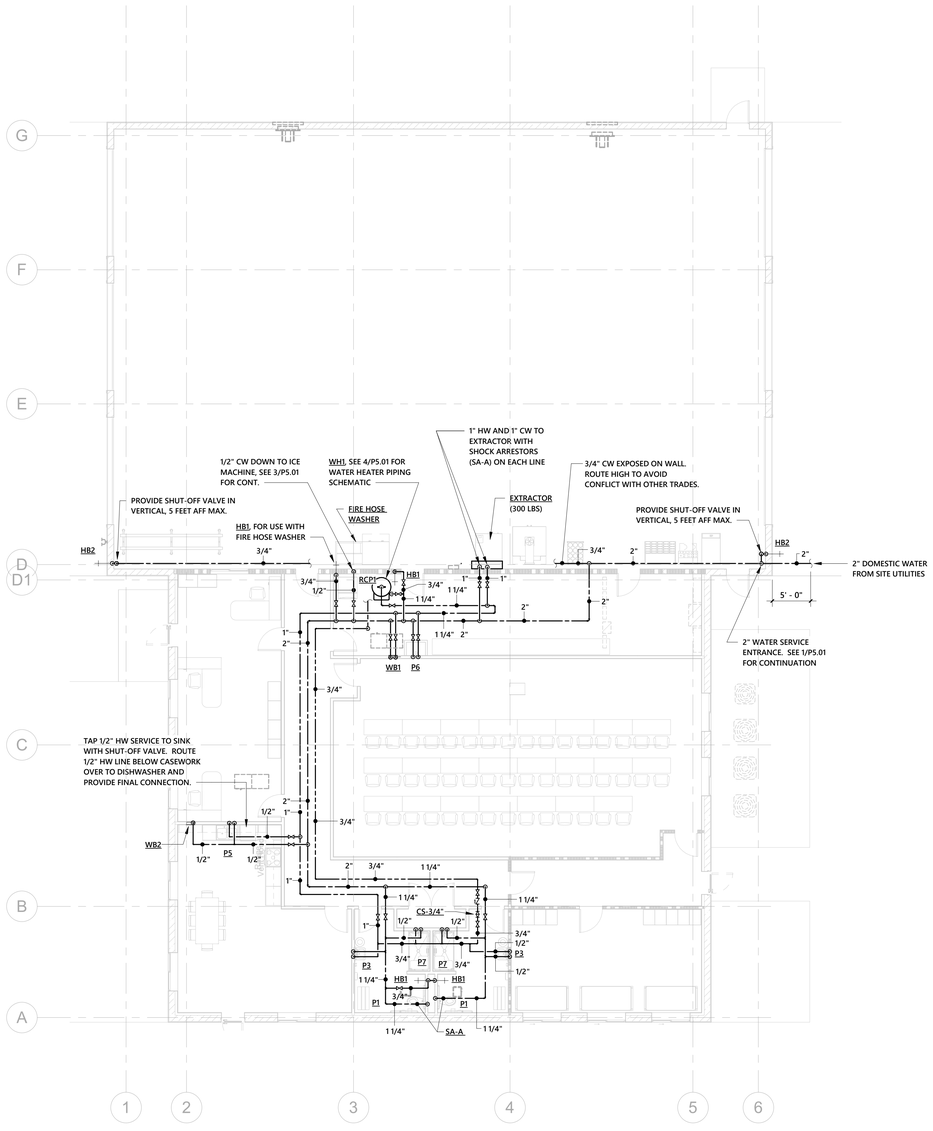


1 FIRST FLOOR DRAINAGE PIPING FLOOR PLAN - BASE BID

1/8" = 1'-0"



2 FIRST FLOOR SUPPLY PIPING FLOOR PLAN - BASE BID

1/8" = 1'-0"

LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 26023 GEORGE C. FOULER III

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 1-19-2022

FIRST FLOOR PLUMBING PLANS - BASE BID

P1.01

Optima # 21-0180

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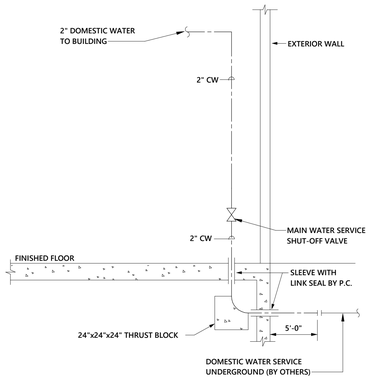
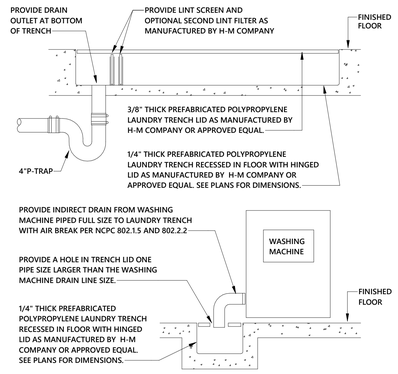


1 WATER SERVICE ENTRANCEW W/ WATER METER
NOT TO SCALE



2 LAUNDRY TRENCH WITH LINT SCREEN DETAIL
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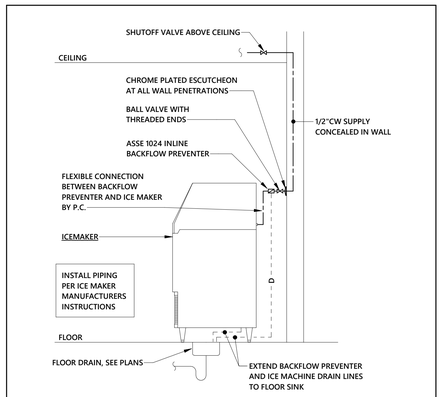
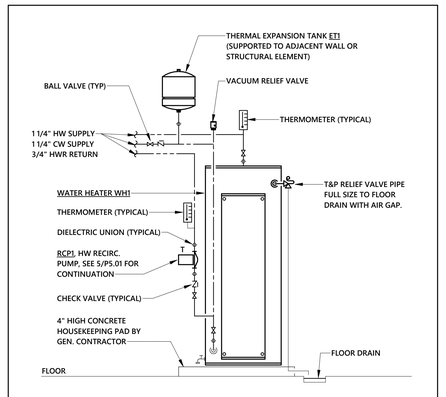


3 ICEMAKER PIPING SCHEMATIC
NOT TO SCALE



4 ELECTRIC WATER HEATER PIPING SCHEMATIC
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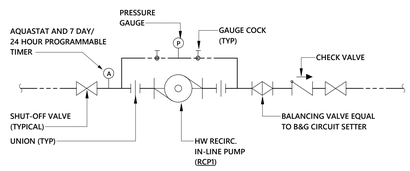

5 HOTWATER RECIRC PUMP DETAIL
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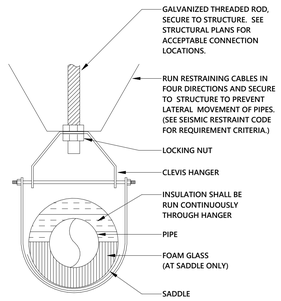
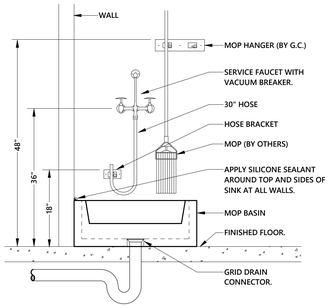


6 PIPE HANGER SCHEMATIC
NOT TO SCALE



7 MOP BASIN AND ACCESSORIES
NOT TO SCALE

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9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

PLUMBING DETAILS AND SCHEMATICS

P5.01

Optima # 21-0180

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VENTILATION CALCULATIONS (NCMC 2018, SECT 403): IDU-1

OCCUPANCY CLASSIFICATION	Rp (CFM/PERSON)	Ra (CFM/SQ.FT.)	OCCUPANT DENSITY PEOPLE/1000 SQ.FT.	EXHAUST AIRFLOW (CFM/SQ.FT.)	Az AREA (SQ. FT.)	Pz CALCULATED OCCUPANCY (PEOPLE)	RpPz CALCULATED PEOPLE O/A (CFM)	RaAz CALCUTATED AREA O/A (CFM)	Vbz AREA	PEOPLE + O/A (CFM)	Voz ZONE OUTDOOR AIRFLOW (Ez=0.8)	CALCULATED AREA E/A (CFM)
STORAGE	0	0.12	0	0	512	0	0	61		61	77	0
						TOTAL AIR REQUIRED (Ez = 0.8) (CFM)					77	0
						TOTAL AIR PROVIDED (Ez = 0.8) (CFM)					100	0

VENTILATION CALCULATIONS (NCMC 2018, SECT 403): IDU-2

OCCUPANCY CLASSIFICATION	Rp (CFM/PERSON)	Ra (CFM/SQ.FT.)	OCCUPANT DENSITY PEOPLE/1000 SQ.FT.	EXHAUST AIRFLOW (CFM/SQ.FT.)	Az AREA (SQ. FT.)	Pz CALCULATED OCCUPANCY (PEOPLE)	RpPz CALCULATED PEOPLE O/A (CFM)	RaAz CALCUTATED AREA O/A (CFM)	Vbz AREA	PEOPLE + O/A (CFM)	Voz ZONE OUTDOOR AIRFLOW (Ez=0.8)	CALCULATED AREA E/A (CFM)
CONFERENCE/MEETING	5	0.06	50	0	1203	60	301	72		373	466	0
						TOTAL AIR REQUIRED (Ez = 0.8) (CFM)					466	0
						TOTAL AIR PROVIDED (Ez = 0.8) (CFM)					475	0

VENTILATION CALCULATIONS (NCMC 2018, SECT 403): IDU-3

OCCUPANCY CLASSIFICATION	Rp (CFM/PERSON)	Ra (CFM/SQ.FT.)	OCCUPANT DENSITY PEOPLE/1000 SQ.FT.	EXHAUST AIRFLOW (CFM/SQ.FT.)	Az AREA (SQ. FT.)	Pz CALCULATED OCCUPANCY (PEOPLE)	RpPz CALCULATED PEOPLE O/A (CFM)	RaAz CALCUTATED AREA O/A (CFM)	Vbz AREA	PEOPLE + O/A (CFM)	Voz ZONE OUTDOOR AIRFLOW (Ez=0.8)	CALCULATED AREA E/A (CFM)
OFFICE SPACES	5	0.06	5	0	436	2	11	26		37	46	0
DAYROOM	5	0.06	30	0	455	14	69	27		96	120	0
						TOTAL AIR REQUIRED (Ez = 0.8) (CFM)					166	0
						TOTAL AIR PROVIDED (Ez = 0.8) (CFM)					175	0

VENTILATION CALCULATIONS (NCMC 2018, SECT 403): IDU-4

OCCUPANCY CLASSIFICATION	Rp (CFM/PERSON)	Ra (CFM/SQ.FT.)	OCCUPANT DENSITY PEOPLE/1000 SQ.FT.	EXHAUST AIRFLOW (CFM/FIXTURE)	Az AREA (SQ. FT.)	Pz CALCULATED OCCUPANCY (PEOPLE)	RpPz CALCULATED PEOPLE O/A (CFM)	RaAz CALCUTATED AREA O/A (CFM)	Vbz AREA	PEOPLE + O/A (CFM)	Voz ZONE OUTDOOR AIRFLOW (Ez=0.8)	CALCULATED AREA E/A (CFM)
BEDROOM/LIVING ROOM	5	0.06	10	0	335	3	17	20		37	46	0
CORRIDOR	0	0.06	0	0	583	0	0	35		35	44	0
SHOWER ROOMS	0	0	0	50	2	0	0	0		0	0	100
TOILET ROOMS	0	0	0	70	2	0	0	0		0	0	140
NOTE: MAKEUP AIR IS PROVIDED FROM ADJACENT INDOOR UNITS TO PROVIDE POSITIVE SPACE						TOTAL AIR REQUIRED (Ez = 0.8) (CFM)					90	240
						TOTAL AIR PROVIDED (Ez = 0.8) (CFM)					100	250

VENTILATION CALCULATIONS (NCMC 2018, SECT 403): APPARATUS BAY

OCCUPANCY CLASSIFICATION	Rp (CFM/PERSON)	Ra (CFM/SQ.FT.)	OCCUPANT DENSITY PEOPLE/1000 SQ.FT.	EXHAUST AIRFLOW (CFM/SQ.FT.)	Az AREA (SQ. FT.)	Pz CALCULATED OCCUPANCY (PEOPLE)	RpPz CALCULATED PEOPLE O/A (CFM)	RaAz CALCUTATED AREA O/A (CFM)	Vbz AREA	PEOPLE + O/A (CFM)	Voz ZONE OUTDOOR AIRFLOW (Ez=0.8)	CALCULATED AREA E/A (CFM)
APPARATUS BAY	0	0	0	0.75	4877	0	0	0		0	0	3658
						TOTAL AIR REQUIRED (Ez = 0.8) (CFM)					0	3658
						TOTAL AIR PROVIDED (Ez = 0.8) (CFM)					5000	5000

MECHANICAL DUCT SYMBOLS

SYMBOL	DESCRIPTION
16x8	SQUARE DUCT SIZE TAG (WIDTH x HEIGHT)
16"Ø	ROUND DUCT SIZE TAG (DIAMETER)
	SUPPLY AIR DIFFUSER (4-WAY)
	RETURN AIR GRILLE
M.C.	MECHANICAL CONTRACTOR
E.C.	ELECTRICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
AFF	ABOVE FINISHED FLOOR

MECHANICAL ACCESSORIES SYMBOL LEGEND

SYMBOL	DESCRIPTION
NO2	NITROGEN DIOXIDE (NO2)
T	THERMOSTAT / TEMP SENSOR (4'-0" AFF TO TOP)
CO	CARBON MONOXIDE SENSOR
S	SWITCH (4'-0" AFF TO TOP)
FD	FIRE DAMPER W/ACCESS DOOR (SEE DETAIL)
CO2	RECTANGULAR DUCT MOUNTED CO2 SENSOR
M	RECTANGULAR DUCT MOUNTED MOTOR OPERATED DAMPER, INTERLOCK WITH FAN AS INDICATED. (DAMPER BY M.C.)

EQUIVALENT MANUFACTURERS LISTING

LISTING OF MANUFACTURER'S NAME DOES NOT GUARANTEE APPROVAL. ALL EQUIPMENT MUST MEET OR EXCEED QUALITY AND CAPACITIES OF SPECIFIED EQUIPMENT. FINAL APPROVAL WILL BE BASED ON EQUIPMENT SUBMITTALS. ANY MANUFACTURER NOT LISTED BUT WISHING TO BID THIS PROJECT SHALL SUBMIT A WRITTEN REQUEST A MINIMUM OF 7 DAYS PRIOR TO BID DATE OR AS INDICATED IN THE SPECIFICATIONS, PRIOR APPROVAL IS REQUIRED FOR ALL MANUFACTURERS NOT LISTED.

(ALPHABETICAL ORDER)
DUCTED SPLIT SYSTEMS: CARRIER, TRANE, YORK
FANS: COOK, GREENHECK, PENN, TWIN CITY
AIR DISTRIBUTION: CARNES, METAL*AIRE, NAILOR, PRICE, TITUS, KRUEGER
FIRE DAMPERS: GREENHECK, NAILOR, RUSKIN, POTTORFF, NCA, SAFE-AIRE
LOUVER: GREENHECK, RUSKIN, SAFE-AIR, POTTORFF
ELECTRIC WALL/UNIT HEATERS: MARKEL, MODINE, RAYWALL, BERKO, QMARK
SPIRAL DUCTWORK: EASTERN SHEET METAL, LINDAB, UNITED MCGILL, HAMLIN

NOTE:
ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, PIPING, SHEET METAL, ELECTRICAL, REPLACEMENT OF SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED DURING CONSTRUCTION AND ALL COST WILL BE THE RESPONSIBILITY OF TH MECHANICAL CONTRACTOR.

2018 NORTH CAROLINA ENERGY CONSERVATION CODE

COMMERCIAL ENERGY EFFICIENCY - MECHANICAL SUMMARY

C401 METHOD OF COMPLIANCE

- [x] 2018 NCECC CHAPTER 4
- [ ] ASHRAE 90.1-2013 PRESCRIPTIVE
- [ ] ASHRAE 90.1-2013 PERFORMANCE
- [ ] N/A (EXISTING LIGHTING, HVAC, AND DOM. WATER HEATING SYSTEMS TO REMAIN)
- [ ] COMCHECK PROVIDED (2018 NCECC)
- [ ] COMCHECK PROVIDED (90.1-2013)
- [ ] ENERGY MODELING DATA PROVIDED

C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- [ ] C406.2 EFFICIENT MECH EQUIPMENT
- [x] C406.3 REDUCED LTG DENSITY
- [ ] C406.4 ENHANCED LTG CONTROLS
- [ ] C406.5 ON-SITE RENEWABLE ENERGY
- [ ] C406.6 DEDICATED OA SYSTEM
- [ ] C406.7 SERVICE WATER HEATING

C301 CLIMATE ZONE

3A - SCOTLAND COUNTY, NORTH CAROLINA

DESIGN CONDITIONS
EXTERIOR (ASHRAE 90.1-2013 TABLE D-1)
winter dry bulb 19° F.
summer dry bulb 93° F.
summer wet bulb 78° F.
INTERIOR (2018 NCECC SECTION C302.1)
winter dry bulb 72° F.
summer dry bulb 75° F.

C403.2 HEATING & COOLING LOADS AND EQUIPMENT & SYSTEM SIZING

BUILDING HEATING LOAD 103,000 BTUH (peak)
BUILDING COOLING LOAD 123,000 BTUH (peak)

INSTALLED HEATING CAPACITY SEE SCHEDULES
INSTALLED COOLING CAPACITY SEE SCHEDULES

C403.2.3 & C406.2 - REQUIRED & INCREASED HVAC EQUIPMENT PERFORMANCE

SYSTEM DESCRIPTION - SPLIT SYSTEM HEAT PUMPS WITH ELECTRIC AUXILLARY HEAT

- [x] MINIMUM HVAC EQUIP EFFICIENCY COMPLIANCE - TABLE C403.2.3
- [ ] INCREASED HVAC EQUIP EFFICIENCY COMPLIANCE - 10% OVER TABLE C403.2.3

EQUIP TYPE	SIZE CATEGORY (BTUH)	SUBCATEGORY	C403.2.3 MINIMUM EFFICIENCY (a)	10% INCREASED EFF. (a)	DESIGN EFFIC.
TABLE C403.2.3(2) - ELECTRICALLY OPERATED UNITARY AND APPLIED HEAT PUMPS					
AIR COOLED COOL MODE	< 65,000 (<= 5 TONS)	SPLIT SYSTEM & SINGLE PACKAGE	14.0 SEER	15.4 SEER	SEE SCHEDULE

a. DEDUCT 0.2 FROM THE REQUIRED EERS AND IEERS FOR UNITS WITH A HEATING SECTION OTHER THAN ELECTRIC RESISTANCE HEAT OR NO HEAT.

C403.2.4 THRU C403.2.11

- [x] HVAC SYSTEMS ARE FULLY COMPLIANT WITH THE REQUIREMENTS FOR HVAC SYSTEM CONTROL, VENTILATION, ENERGY RECOVERY, DUCT AND PLENUM INSULATION AND SEALING, PIPING INSULATION, AND SYSTEM COMPLETION.

C403.2.12 - AIR SYSTEM DESIGN AND CONTROL

- [x] ALL FANS INSTALLED ON THE PROJECT ARE 5 HP OR LESS AND ARE EXEMPT FROM THESE REQUIREMENTS.

C403.3 - ECONOMIZERS (PRESCRIPTIVE)

- [ ] PROJECT INCLUDES AN AIR OR WATER ECONOMIZER COMPLIANT WITH C403.3
- [x] PROJECT MEETS AN ECONOMIZER EXCEPTION LISTED IN C403.3

C403.4 - HYDRONIC AND MULTIPLE-ZONE HVAC SYSTEMS CONTROL AND EQUIPMENT (PRESCRIPTIVE)

- [x] PROJECT CONSISTS OF ONLY SINGLE ZONE DX SYSTEMS, EXEMPT FROM THE PRESCRIPTIVE REQUIREMENTS OF C403.4.
- [ ] PROJECT CONSISTS OF HVAC SYSTEMS FULLY COMPLIANT WITH THE PRESCRIPTIVE REQUIREMENTS OF C403.4.

C405.8 - ELECTRICAL MOTORS (MANDATORY REQUIREMENTS).

- [x] ELECTRICAL MOTORS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMNTS PER C405.8, EXCEPT WHERE EXEMPT.
- [ ] NOT APPLICABLE.

C408 - SYSTEM COMMISSIONING

- [x] PROJECT AREA IS LESS THAN 10,000 SQUARE FEET AND IS EXEMPT FROM THE SYSTEM COMMISSIONING REQUIREMENTS OF SECTION C408.
- [ ] PROJECT AREA IS GREATER THAN 10,000 SQUARE FEET AND REQUIRES SYSTEM COMMISSIONING PER SECTION C408.

MECHANICAL GENERAL NOTES

1. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, CEILING DIFFUSERS, ETC.
2. ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, PIPING, SHEET METAL, ELECTRICAL, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED DURING CONSTRUCTION AND ALL COST WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. THIS INCLUDES ANY MODIFICATIONS TO ANY ASSOCIATED MECHANICAL, PLUMBING, OR ELECTRICAL SYSTEMS REQUIRED BY THIS SPECIFIC MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. ALL DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS. ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK SHALL BE WRAPPED WITH 2" THICK DUCT WRAP WITH VAPOR BARRIER. INSULATION (INCLUDING FLEXIBLE DUCT INSULATION) SHALL HAVE A MINIMUM INSTALLED R-VALUE OF 6.0.
4. ALL DUCTWORK SHALL BE SEALED PER THE REQUIREMENTS OF THE NORTH CAROLINA MECHANICAL CODE. SEAL LOW PRESSURE SUPPLY, RETURN, OUTSIDE AIR, AND EXHAUST DUCTWORK FOR POSITIVE/NEGATIVE 2" PRESSURE CLASS, SMACNA SEAL CLASS A, SMACNA LEAKAGE CLASS 4.
5. ALL PIPING, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS AND ROOF SHALL BE FLASHED AND COUNTERFLASHED IN A WATERPROOF MANNER.
6. ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH THE WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS, TO AVOID INTERFERENCE.
7. THE MECHANICAL CONTRACTOR SHALL BALANCE ALL MECHANICAL SYSTEMS TO THE PERFORMANCE SPECIFICATIONS INDICATED ON PLANS AND PROVIDE THE ENGINEER WITH THREE COPIES OF A COMPLETE TEST AND BALANCE REPORT. THE REPORT IS TO BE ISSUED A MINIMUM OF TWO WEEKS PRIOR TO PROJECT COMPLETION. THE TEST AND BALANCE REPORT WILL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. ANY ADDITIONAL TESTING, ADJUSTING AND BALANCING REQUIRED (AT ENGINEER'S REQUEST) AFTER REVIEW OF THE INITIAL REPORT SHALL BE PROVIDED AT NO ADDITIONAL COST. TESTING AND BALANCING CONTRACTOR TO CONFIRM FILTERS ARE CLEAN, AND FREE OF DEBRIS PRIOR TO BEGINNING WORK. THE MECHANICAL CONTRACTOR SHALL REPLACE ANY DIRTY FILTERS, AS NEEDED. TEST AND BALANCE REPORT TO BE COMPLETED BY AN INDEPENDENT, CERTIFIED TEST AND BALANCE CONTRACTOR.
8. UPON PROJECT COMPLETION, THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER INSTALLATION INFORMATION INCLUDING RECORD SUBMITTALS (WITH ANY SUBMITTAL REVIEW COMMENTS ADDRESSED) AND O&M MANUALS FOR EACH PIECE OF EQUIPMENT INCLUDING ALL SELECTED OPTIONS, THE NAME AND ADDRESS OF AT LEAST ONE SERVICE AGENCY, FULL CONTROL SYSTEM O&M AND CALIBRATION INFORMATION INCLUDING WIRING DIAGRAMS, SCHEMATICS, FULL SEQUENCE OF OPERATION, AND PROGRAMMED SETPOINTS.
9. PROVIDE A ONE YEAR WARRANTY FOR ALL WORK PERFORMED BEGINNING ON THE DAY THE SYSTEM IS COMPLETELY OPERATIONAL AND ACCEPTABLE BY THE OWNER.
10. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND ALL EQUIPMENT FOR MAINTENANCE AND FILTER REMOVAL.
11. CONDENSATE DRAIN PIPING SHALL BE SCHEDULE 40 PVC PIPE AND FITTINGS. DRAINS FROM AIR HANDLING UNITS SHALL BE TRAPPED. CONDENSATE DRAINS SHALL BE INSULATED WITH 1" THICK ARMAFLEX INSULATION. MINIMUM DRAIN SIZE SHALL BE ¾".
12. ALL REFRIGERANT PIPE SHALL BE NITROGENIZED ACR COPPER TUBE. SIZE, INSULATE, AND INSTALL REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. REFRIGERANT PIPING INSULATION EXPOSED OUTDOORS SHALL BE COVERED WITH AN OUTER ALUMINUM JACKET.
13. ANY DEVICE REQUIRING A THERMOSTAT FOR CONTROL SHALL BE FURNISHED WITH A THERMOSTAT WHETHER INDICATED ON THE DRAWINGS OR NOT.
14. INSTALL THE TOP OF ALL THERMOSTATS, SENSORS, AND SWITCHES AT 4'-0" (MAXIMUM) ABOVE FINISH FLOOR. COORDINATE EXACT THERMOSTAT LOCATION WITH OWNER PRIOR TO INSTALLATION. ANY DEVICE ON A PERIMETER WALL SHALL BE MOUNTED ON A FOAM-FILLED ELECTRICAL BOX, WITH ALL GAPS BETWEEN BOX AND WALL SEALED TO PREVENT INFILTRATION.
15. CONTRACTOR SHALL VERIFY LOCATION OF ALL ROOF PENETRATIONS WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.
16. ALL ROOF CURBS SHALL EXTEND A MINIMUM OF 8" ABOVE ROOF INSULATION OR AS INDICATED ON THE DRAWINGS, WHICHEVER IS GREATER. IN ADDITION, ALL ROOF CURBS OR EQUIPMENT SUPPORT RAILS THAT SUPPORT EQUIPMENT, PIPING, CONDUIT, ETC. EXPOSED ON THE ROOF SHALL HAVE SUFFICIENT HEIGHT TO MAINTAIN A MINIMUM OF 18" CLEARANCE BELOW SUPPORTED EQUIPMENT FOR ROOF MAINTENANCE.
17. CONTRACTOR SHALL LOCATE EXHAUST FANS, OUTLETS, AND GAS FLUES A MINIMUM OF 10 '-0" FROM ANY OUTSIDE AIR INTAKE.
18. DRYER VENT WALL CAPS SHALL BE PROVIDED WITH A BACKDRAFT DAMPER. DRYER VENT SHALL NOT EXCEED A TOTAL EQUIVALENT LENGTH OF 35'-0" WITH A 2.5' DEDUCTION FOR EACH 45° BEND AND A 5' DEDUCTION FOR EACH 90° BEND.
19. PROVIDE UNIONS, FLANGES OR COUPLINGS AT CONNECTION TO ALL VALVES AND EQUIPMENT. DO NOT USE DIRECT WELDED OR THREADED CONNECTIONS TO VALVES, EQUIPMENT OR OTHER APPARATUS.
20. PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
21. ALL ISOLATION VALVES, TERMINAL UNITS, CONTROLS, ETC. REQUIRING ACCESS AND SERVICE SHALL BE INSTALLED WITHIN 18" OF THE CEILING FOR SERVICE ACCESSIBILITY. LOCATIONS SHALL BE INDICATED ON THE CEILING GRID PER THE SPECIFICATIONS.
22. ALL EQUIPMENT CONCRETE PAD SIZES FOR MECHANICAL EQUIPMENT SHALL BE CONFIRMED WITH APPROVED SHOP DRAWING SUBMITTALS AND ASSOCIATED UNIT MANUFACTURER ANCHOR LOCATIONS PRIOR TO FABRICATION/INSTALLATION. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL COORDINATE THE EXACT LOCATION OF MECHANICAL EQUIPMENT HOUSEKEEPING PADS WITH THE FLOOR DRAIN LOCATIONS PRIOR TO INSTALLATION OF DRAINS AT EQUIPMENT/PAD LOCATIONS.
23. DUCTWORK AND PIPING PASSING THROUGH/ABOVE ELECTRICAL ROOMS SHALL BE CLOSELY COORDINATED WITH THE ELECTRICAL CONTRACTOR. DUCTWORK OR PIPING SHALL NOT BE LOCATED ABOVE ELECTRICAL PANELS.
24. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING RESTRAINTS TO RESIST THE EARTHQUAKE EFFECTS ON THE MECHANICAL SYSTEMS. THE REQUIREMENTS FOR THOSE RESTRAINTS ARE FOUND IN THE LOCAL BUILDING CODE AND ASCE 7. THE ANCHORAGE OF THE MECHANICAL SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE LOCAL BUILDING CODE AND ASCE 7.
25. MECHANICAL CONTRACTOR SHALL PROVIDE PRE-PRINTED COLOR-CODED PIPE LABELS WITH 1-1/2" HIGH LETTERING INDICATING SERVICE AND FLOW DIRECTION. PLASTIC PIPE LABELS UTILIZED IN A RETURN AIR PLENUM SHALL BE LISTED/APPROVED FOR USE IN A RETURN AIR PLENUM. ALL PIPING TO MATCH EXISTING FACILITIES STANDARD (IF APPLICABLE). OTHERWISE, PIPE LABELS SHALL MATCH THE FOLLOWING: REFRIGERANT PIPING: YELLOW BACKGROUND, BLACK LETTERING
26. ALL MECHANICAL EQUIPMENT SHALL BE U.L. LISTED AND LABELED AS A COMPLETE PACKAGE, NOT THOUGH INDIVIDUAL COMPONENTS OR PARTS. PROVIDE REQUIRED 3RD PARTY FIELD UL LISTING SERVICES AS REQUIRED TO COMPLY.

MECHANICAL SHEET INDEX

SHEET NUMBER	SHEET NAME
M0.01	MECHANICAL LEGEND AND NOTES
M0.02	MECHANICAL SCHEDULES
M1.01	MECHANICAL PLAN - BASE BID
M1.02	MECHANICAL PLAN - ALTERNATE BID
M2.01	MECHANICAL DETAILS

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER BYRON L. FORD

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

MECHANICAL LEGEND AND NOTES

M0.01

Optima # 21-0180

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COMMON AREA INDOOR UNIT SCHEDULE

SYMBOL	NOMINAL TONNAGE	SUPPLY AIR FLOW (CFM)	O.A. CFM	E.S.P. "/WG	COOLING CAPACITY TC (BTUH)	COOLING CAPACITY SHC (BTUH)	HEATING CAPACITY (BTUH)	ELECTRIC AUXILIARY HEAT KW	STAGES	AMPS	VOLTAGE	PHASE	FAN MOTOR FLA	ELECTRICAL DATA MCA	FUSE	VOLTAGE	PHASE	CARRIER MODEL	WEIGHT	REFRIGERANT TYPE	MATCHING OUTDOOR UNIT
IDU-1	1.5	600	100	0.5	17800	13400	17600	5.0	1	20.0	208 V	1	2.8 A	26.1	30.0	208 V	1	FB4CNF018	112	R-410A	HP-1
IDU-2	4	1600	475	0.5	46000	36200	45500	15.0	1	31.3	208 V	3	4.1 A	47.7	50.0	208 V	3	FB4CNF048	157	R-410A	HP-2
IDU-3	3	1200	300	0.5	33000	25400	33800	10.0	1	36.2	208 V	1	4.1 A	50.4	60.0	208 V	1	FB4CNF036	122	R-410A	HP-3
IDU-4	2	800	200	0.5	22200	17100	22200	10.0	1	36.2	208 V	1	2.8 A	50.4	60.0	208 V	1	FB4CNF024	112	R-410A	HP-4

COMMON AREA INDOOR UNIT NOTES:

1. COOLING CAPACITY BASED ON 80°/67° ENTERING AIR.
2. PROVIDE UNITS WITH: ELECTRONIC 7-DAY PROGRAMMABLE THERMOSTAT, 1" THICK DISPOSABLE FILTER (MERV 8 MINIMUM), FIELD INSTALLED HEATER, U.L. LABEL, SINGLE POINT ELECTRICAL CONNECTION, 1-INCH INSULATION.
3. SEQUENCE OF OPERATION: UNIT SHALL BE CONTROLLED BY ITS ELECTRONIC PROGRAMMABLE THERMOSTAT. UNIT SUPPLY FAN SHALL RUN CONSTANTLY IN THE WHILE THE UNIT IS IN OCCUPIED MODE. UPON A RISE IN SPACE TEMPERATURE, UNIT COMPRESSOR AND CONDENSER FAN SHALL ACTIVATE TO SATISFY SPACE. UPON A DROP IN SPACE TEMPERATURE, UNIT COMPRESSOR SHALL ACTIVATE IN REVERSE CYCLE FOR HEATING. UPON A FURTHER DROP IN SPACE TEMPERATURE, ELECTRIC HEAT SHALL BE ENERGIZED TO SATISFY SPACE TEMPERATURE. THERMOSTATS SHALL PROVIDE A DEADBAND OF 5°, WITHIN WHICH THE SUPPLY OF HEATING OR COOLING ENERGY TO THE ZONE CAN BE REDUCED TO THE MINIMUM. THERMOSTATS SHALL BE SET FOR COOLING 75°, HEATING 70°. ALL TEMPERATURE SETPOINTS SHALL BE VERIFIED BY THE OWNER PRIOR TO PROGRAMMING. THERMOSTATS SHALL BE PROGRAMMED BY MECHANICAL CONTRACTOR IN THE PRESENCE OF OWNER'S REPRESENTATIVE PRIOR TO PROJECT COMPLETION.
4. PROVIDE EACH UNIT WITH A IONIZATION TYPE SMOKE DETECTOR, INSTALLED IN THE RETURN DUCT WIRED TO SHUT DOWN THE UNIT UPON ACTIVATION. SMOKE DETECTOR SHALL BE SUPPLIED, WIRED FOR INTERFACE WITH FIRE ALARM SYSTEM AND UNIT SHUTDOWN BY THE ELECTRICAL CONTRACTOR. SMOKE DETECTOR SHALL BE INSTALLED IN THE RETURN DUCT BY THE MECHANICAL CONTRACTOR.
5. ELECTRIC AUXILIARY HEAT LISTED FOR ALL UNITS IS NOMINAL KW BASED ON 240V ELECTRICAL POWER.
6. DEMAND CONTROL VENTILATIN SEQUENCE: A DUCT MOUNTED CO2 SENSOR SHALL BE PROVIDED FOR IDU-2 IN THE RETURN DUCT AND SHALL MODULATE THE MOTORIZED DAMPER CONTROLING THE OUTSIDE AIRFLOW TO THE UNIT (MAXIMUM SETPOINT SHALL BE 475 CFM, MINIMUM SETPOINT SHALL BE 100 CFM). DAMPER SHALL MODULATE OPEN AS REQUIRED TO MAINTAIN A SPACE CO2 LEVEL OF 700 PPM (ADJ) ABOVE THE OUTSIDE AIR CO2 LEVEL.

COMMON AREA HEAT PUMP SCHEDULE (AIR COOLED)

ID	NOMINAL TONNAGE	COOLING COIL TC (BTUH)	COOLING COIL SHC (BTUH)	EFFICIENCY EER	EFFICIENCY SEER	HEATNG CAPACITY (BTUH)	EFFICIENCY COP	EFFICIENCY HSPF	COMPRESSOR LRA	COMPRESSOR RLA	FAN FLA	ELECTRICAL DATA MCA	FUSE	VOLTAGE	PH	REFRIG. TYPE	MANUFACTURER CARRIER MODEL	WEIGHT	MATCHING INDOOR UNIT
HP-1	1.5	17800	13400	11.5	14	17600	3.72	8.2	48.0	9.0	0.5	11.8	20.0	208 V	1	R-410A	25HCE418	136 lb	IDU-1
HP-2	4	46000	36200	11.5	14	45500	3.64	8.2	60.0	6.0	0.8	8.3	15.0	208 V	3	R-410A	25HCE448	197 lb	IDU-2
HP-3	3	33000	25400	11.5	14	33800	3.64	8.2	70.0	8.5	1.1	11.7	20.0	208 V	3	R-410A	25HCE436	170 lb	IDU-3
HP-4	2	22200	17100	11.5	14	22200	3.72	8.2	62.9	10.9	0.5	11.8	20.0	208 V	1	R-410A	25HCE424	144 lb	IDU-4

NOTES:

1. COOLING CAPACITY @ 95 AMBIENT.
2. ALL UNITS SHALL BE U.L. LISTED AND HAVE A MINIMUM SEER OF 14.
3. HEAT PUMP SUPPLEMENTARY ELECTRIC RESISTANCE HEAT SHALL BE PROVIDED WITH CONTROLS TO PREVENT OPERATION WHEN THE REVERSE CYCLE HEAT CAN MEET HEATING LOAD. SUPPLEMENTAL ELECTRIC HEAT SHALL BE ALLOWED TO OPERATE DURING HEAT PUMP DEFROST CYCLE. SUPPLEMENTAL ELECTRIC HEAT SHALL BE LOCKED OUT WHEN THE OUTDOOR TEMPERATURE IS BETWEEN 35°F AND 40°F AND THE INDOOR TEMPERATURE SETPOINT IS INCREASED.
4. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND UNITS.
5. PROVIDE UNITS WITH CONDENSER COIL HAIL GUARDS AND LOW AMBIENT CONTROLS.
6. FOR REFRIGERANT LINE APPLICATIONS WITH A TOTAL EQUIVALENT LENGTH BETWEEN 50'-0" AND 175'-0".
   THE FOLLOWING ACCESSORIES SHALL BE PROVIDED;
   - COMPRESSOR CRANKCASE HEATER
   - COMPRESSOR START ASSIST CAPACITOR AND RELAY (NOT REQUIRED FOR SCROLL COMPRESSORS OR 3 PHASE UNITS.
   - FOR INDOOR UNIT LOCATED ABOVE OUTDOOR UNIT (50'-0" MAX); A LIQUID LINE (BI-FLOW) SOLENOID MUST BE INSTALLED WITHIN 2'-0" OF OUTDOOR UNIT WITH FLOW ARROW POINTING TOWARD OUTDOOR UNIT. AN INVERTED VAPOR LINE TRAP MUST BE INSTALLED AT INDOOR UNIT. THE TOP OF THE TRAP MUST BE GREATER THAN THE HEIGHT OF THE INDOOR COIL.
   - MECHANICAL CONTRACTOR & UNIT MANUFACTURER ARE TO REVIEW INSTALLATION, AND FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR LONG REFRIGERANT LINE APPLICATIONS (AS DEFINED BY UNIT MFGR).

ELECTRIC WALL HEATER SCHEDULE

ID	LOCATION	CFM	BTUH	KW	MOTOR VOLT	MOTOR PH	MANUFACTURER (MARKEL)	ACCESSORIES
EUH-1	APPARATUS BAY	700	25600	7.5	208 V	3	F2F5107CA1L	A,C,E,G
EUH-2	APPARATUS BAY	700	25600	7.5	208 V	3	F2F5107CA1L	A,C,E,G
EUH-3	APPARATUS BAY	700	25600	7.5	208 V	3	F2F5107CA1L	A,C,E,G
EUH-4	APPARATUS BAY	700	25600	7.5	208 V	3	F2F5107CA1L	A,C,E,G

NOTES:

1. HEATING CAPACITY BASED ON 65° F E.A.T.
2. SEE PLANS FOR TYPE OF THERMOSTAT REQUIRED (WALL MOUNTED OR UNIT MOUNTED). UNIT HEATERS SHOWN WITHOUT THERMOSTAT INDICATED SHALL BE PROVIDED WITH A UNIT MOUNTED THERMOSTAT.
3. SET TO MAINTAIN 45°F.

ELECTRIC UNIT HEATER ACCESSORIES:

A. DISCONNECT SWITCH
B. BUILT IN THERMOSTAT
C. WALL MOUNTED THERMOSTAT
D. WALL MOUNTING BRACKETS
E. CEILING MOUNTED BRACKETS
F. ADJUSTABLE DISCHARGE LOUVERS
G. CABINET FOR SURFACE MOUNTING

EXHAUST FAN SCHEDULE

ID	LOCATION	TYPE	CFM	APPROX. ESP	DRIVE TYPE	FAN RPM	ELECTRICAL DATA WATTS	HP	VOLTAGE	PH	MANUFACTURER	MODEL	ACCESSORIES	CONTROL TYPE
F-1	APPARATUS BAY	SUPPLY	5000	0.250	BELT	680	1176	0.5 hp	208 V	2	GREENHECK	SBE-3H30	A,C,G,N,S,T,U	4,7
F-2	APPARATUS BAY	EXHAUST	5000	0.250	BELT	680	1176	0.5 hp	208 V	2	GREENHECK	SBE-3H30	A,B,G,N,S,T,U	4,7
F-3	110 TOILET	EXHAUST	150	0.250	DIRECT	700	26		120 V	1	GREENHECK	SP-A200	A,B,F,G,O	3
F-4	111 TOILET	EXHAUST	150	0.250	DIRECT	700	26		120 V	1	GREENHECK	SP-A200	A,B,F,G,O	3

EXHAUST FAN SCHEDULE ACCESSORIES:

A. DISCONNECT SWITCH
B. GRAVITY BACKDRAFT DAMPER
C. MOTORIZED BACKDRAFT DAMPER
D. PREFAB. ROOF CURB
E. BIRDSCREEN
F. ACOUSTICAL LINING
G. HANGING BRACKETS WITH VIBRATION ISOLATION
H. WL, WALL LOUVER DISCHARGE
I. RCC OR GRS ROOF CAP (FLAT ROOF) OR RJ ROOF CAP (PITCHED ROOF)
J. WALL MOUNTING COLLAR
K. INLET GUARD
M. 2" WASHABLE ALUMINUM FILTERS
N. MOTORSIDE FAN GUARD
O. EXHAUST GRILLE
P. U.L. 762
Q. VENTED ROOF CURB EXTENSION
R. COMBINATION KITCHEN HOOD FAN CURB
S. 1.5 TIMES MINIMUM REQUIRED # OF BELTS
T. FACTORY MOUNTED MOTOR ACCESSIBLE BETWEEN OCCUPIED SPACE AND FAN BLADES
U. BEARINGS WITH GREASE FITTINGS

EXHAUST FAN SCHEDULE CONTROLS:

1. WALL MOUNTED THERMOSTAT (REVERSE ACTING, SET FOR 80°)
2. INTERLOCK WITH ROOM LIGHT SWITCH (FAN SHALL OPERATE WHEN LIGHT IS ON IF ANY ROOM IS SERVED BY FAN)
3. WALL MOUNTED SWITCH MATCHING LIGHT SWITCH (BY E.C.)
4. WALL MOUNTED ON/OFF SWITCH WITH IDENTIFICATION LABEL
5. CONTROLLED BY BUILDING AUTOMATION SYSTEM
6. CONTINUOUS OPERATION
7. CONTROLLED BY GARAGE VENTILATION DETECTION SYSTEM. CARBON MONOXIDE SENSORS & NITROGEN DIOXIDE SENSORS SHALL INDICATE READINESS TO START FANS.

EXHAUST FAN SCHEDULE NOTES:

1. ALL FANS SHALL BE U.L. LISTED AND LABELED AND SHALL BE AMCA CERTIFIED FOR SOUND AND AIR FLOW. ALL FANS INSTALLED INSIDE, ABOVE, OR ADJACENT TO OCCUPIED SPACES SHALL HAVE A MAXIMUM 9.0 INLET SONE LEVEL.
2. ALL FANS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. PROVIDE ALL DIRECT DRIVE FANS WITH SPEED CONTROLLERS.

GRILLES, REGISTERS AND DIFFUSERS SCHEDULE

SYMBOL	SERVICE	CFM RANGE	FACE SIZE	NECK SIZE	TYPE	ORD	PRICE
A	SUPPLY	0-220	24 x 24	9 x 9	LOUVERED	NO	SMD
B	SUPPLY	225 - 500	24 x 24	12 x 12	LOUVERD	NO	SMD
C	SUPPLY	SEE PLANS	SEE PLANS	SEE PLANS	DOUBLE DEFLECTION	NO	520
D	SUPPLY	SEE PLANS	SEE PLANS	SEE PLANS	SPIRAL DUCT DIFFUSER	NO	SDG
E	RETURN	0-175	24 x 24	8"Ø	PERFERATED	NO	PDDR
F	RETURN	300 - 500	24 x 24	12 x 12	PERFERATED	NO	PDDR
G	RETURN	SEE PLANS	SEE PLANS	SEE PLANS	FIXED BLADE	NO	530

AIR DISTRIBUTION SCHEDULE NOTES:

1. ALL CEILING AND WALL MOUNTED DEVICES SHALL BE FURNISHED WITH AN ENAMEL BRIGHT WHITE FINISH UNLESS NOTED OTHERWISE.
2. ALL DEVICES SHALL BE FURNISHED WITH FRAMES SUITABLE FOR THE TYPE OF INSTALLATION REQUIRED.
3. ALL DOUBLE DEFLECTION SUPPLY GRILLES SHALL HAVE DAMPER BLADES ADJUSTED TO PROVIDE AIRFLOW PATTERN INDICATED BY FLOW ARROWS ON PLANS. DAMPERS SHALL BE ADJUSTED TO A 30 DEGREE POSITION UNLESS NOTED OTHERWISE ON PLANS.

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North Carolina License Number C-0914

FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER BYRON L. FORD

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

MECHANICAL SCHEDULES

M0.02

Optima # 21-0180

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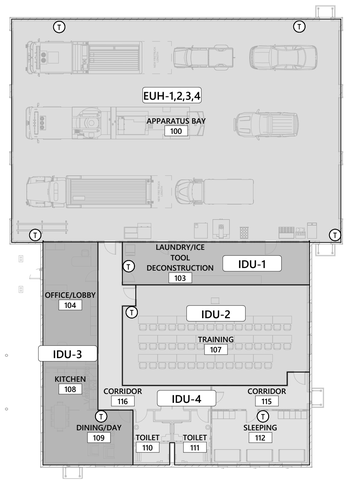
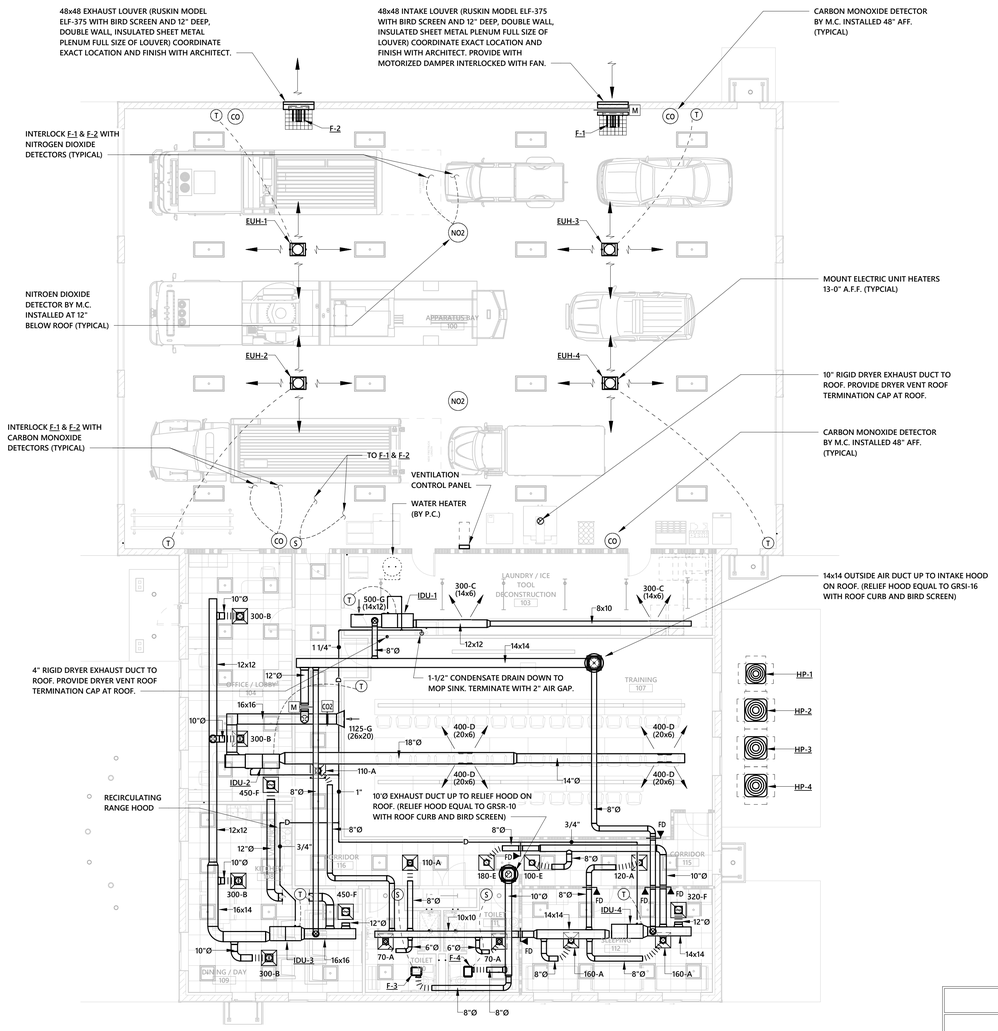


2 FIRST FLOOR MECHANICAL THERMAL ZONING DIAGRAM
1/16" = 1'-0"



1 FIRST FLOOR MECHANICAL FLOOR PLAN - BASE BID
1/8" = 1'-0"

LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25025 BYRON L. FORD

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

MECHANICAL PLAN - BASE BID

M1.01

Optima # 21-0180

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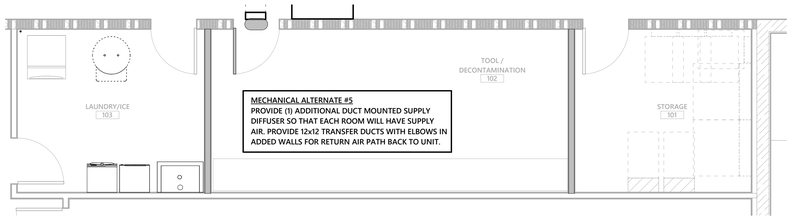
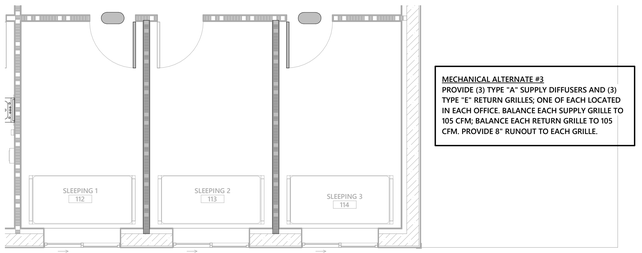
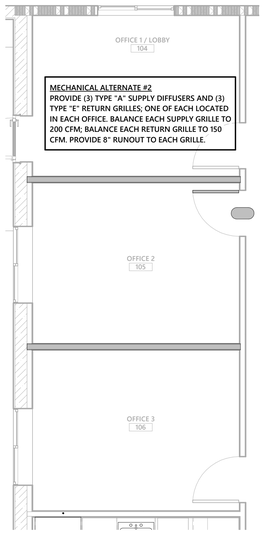


5 FIRST FLOOR MECHANICAL FLOOR PLAN - ALTERNATE 5
1/4" = 1'-0"

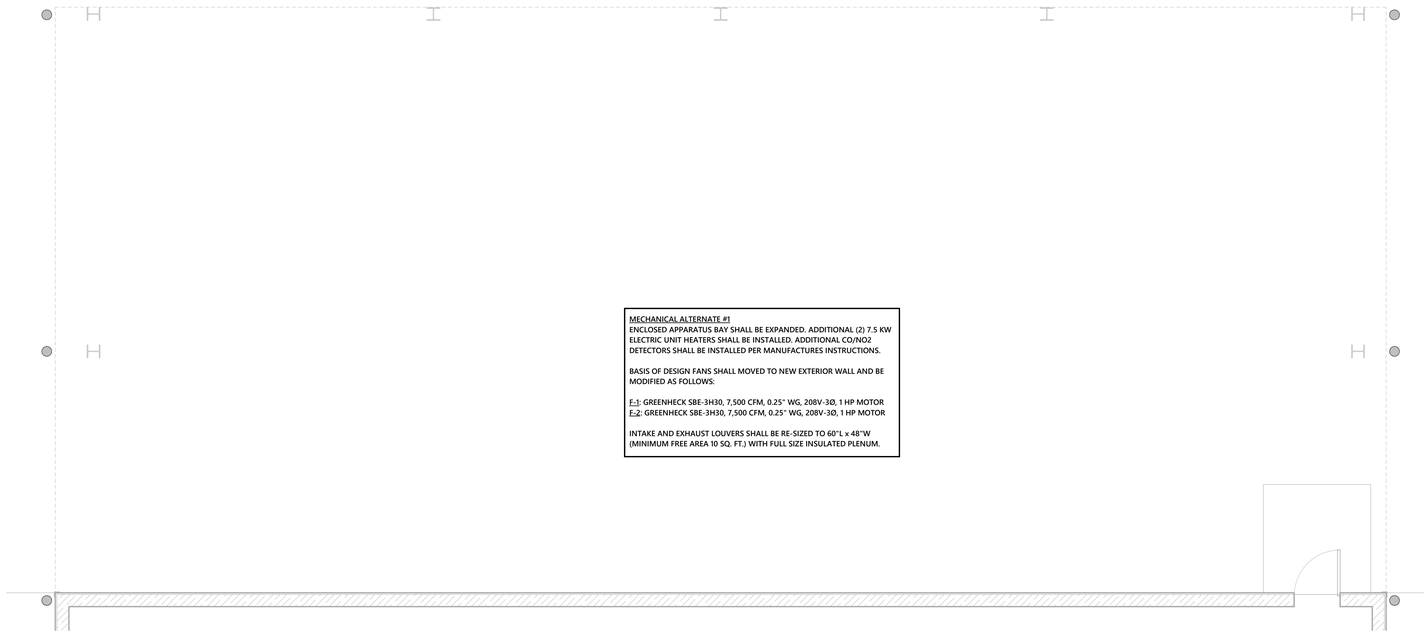
4 FIRST FLOOR MECHANICAL FLOOR PLAN - ALTERNATE 4
1/4" = 1'-0"



3 FIRST FLOOR MECHANICAL FLOOR PLAN - ALTERNATE 3
1/4" = 1'-0"



2 FIRST FLOOR MECHANICAL FLOOR PLAN - ALTERNATE 2
1/4" = 1'-0"



1 FIRST FLOOR MECHANICAL FLOOR PLAN - ALTERNATE 1
1/4" = 1'-0"

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 20025 ENGINEER BYRON L. FORD

9/15/2021

LAURINBURG NORTH FIRE STATION

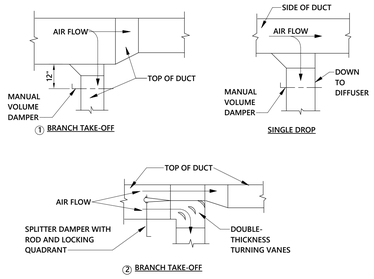
No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

MECHANICAL PLAN - ALTERNATE BID

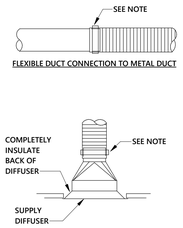
M1.02

Optima # 21-0180



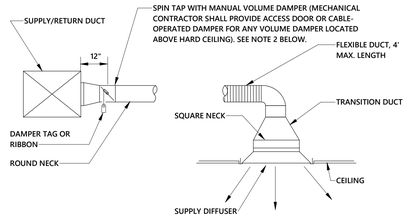
NOTE:
1. USE BRANCH TAKE-OFF 1 WHEN MAIN AND BRANCH DUCTS ARE DIFFERENT DEPTHS
2. USE BRANCH TAKE-OFF 2 WHEN MAIN AND BRANCH DUCTS ARE SAME DEPTHS
3. MANUAL VOLUME DAMPERS SHALL BE PROVIDED FOR ALL SUPPLY, RETURN AND GENERAL EXHAUST SINGLE DROP DUCT RUNS.

1 DUCTWORK DETAILS
NOT TO SCALE



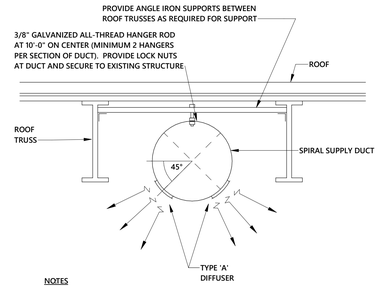
NOTE:
ALL FLEXIBLE DUCT CONNECTIONS TO SHEET METAL SHALL BE SECURED WITH APPROVED STRAP AND SEALANT.

2 FLEX CONNECTION DETAIL
NOT TO SCALE



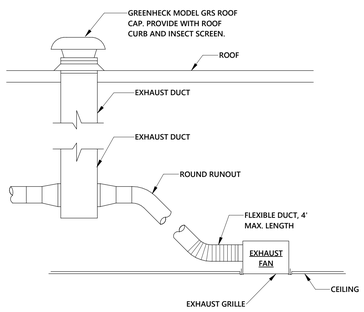
NOTE:
1. MANUAL VOLUME DAMPERS SHALL BE PROVIDED FOR ALL SUPPLY, RETURN AND GENERAL EXHAUST RUNOUTS.
2. ALL MANUAL VOLUME DAMPERS (FOR INSULATED DUCTWORKS) SHALL BE PROVIDED WITH AN ELEVATED REGULATOR (STAND-OFF) EQUAL TO DURO DYNE SEST SERIES AND FULL-LENGTH SHAFT. STAND SHALL EXTEND A MINIMUM OF 2" BEYOND DUCTWORK WITH EXTENDED TAB/SHAFT.
3. CONTRACTOR TO COORDINATE WITH ARCHITECT FOR DESIRED DAMPER ACCESS STYLE CABLE-OPERATED DAMPER ADJUSTMENT SHALL BE THROUGH AIR TERMINAL. FACE OPERATION (CONCEALED MOUNTING) OR THROUGH CEILING-MOUNTED RECESSED PORTS EQUAL TO MAT RT-CCM.

3 SPIN TAP TO ROUND NECK DIFFUSER
NOT TO SCALE



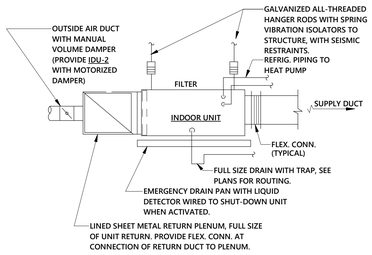
NOTES
1. DUCTWORK SHALL BE INSTALLED LEVEL, AS HIGH AS POSSIBLE (UNLESS OTHERWISE NOTED).
2. ALL EXPOSED SPIRAL DUCTWORK SHALL BE A DOUBLE WALL LINDAB SPIROSAFE SELF-SEALING DUCT SYSTEM (OR APPROVED EQUAL). REGISTERS ON SPIRAL DUCT SHALL BE MOUNTED WITHOUT THE USE OF RECTANGULAR REGISTER TAPS, TOP AND BOTTOM FLANGES SHALL MEET FLUSH WITH THE SPIRAL DUCT WALL REGARDLESS OF DUCT DIAMETER.

4 DBL. DEFL. DIFFUSER MOUNTING ON SPIRAL DUCT
NOT TO SCALE

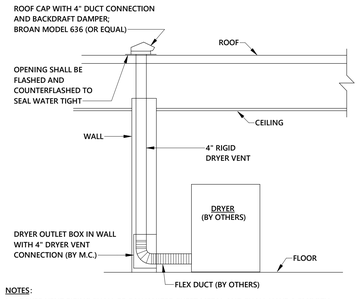


5 EXHAUST FAN AT CEILING AND VENTED THRU ROOF
NOT TO SCALE

NOTE: 1. PROVIDE MOTORIZED DAMPER IN LIEW OF GRAVITY DAMPER ON OUTSIDE AIR DUCT IF BUILDING IS GREATER THAN TWO STORIES IN HEIGHT, OR IF OUTSIDE AIR FLOW IS GREATER THAN 300 CFM.
2. MECHANICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF INDOOR UNIT WITH DUCTWORK, PLUMBING, ELECTRICAL, ETC. TO MAINTAIN FILTER AND MAINTENANCE ACCESS CLEARANCES.

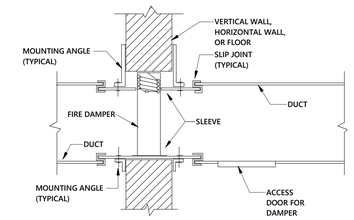


6 IDU - HORIZONTAL ELEC. UNIT W/SMOKE DETECTOR
NOT TO SCALE



NOTES:
1. DRYER VENT PIPING SHALL BE GALVANIZED SHEET METAL AND SHALL HAVE A SMOOTH INTERIOR FINISH WITH JOINTS RUNNING IN THE DIRECTION OF THE AIR FLOW.
2. MAXIMUM LENGTH OF DRYER VENT SHALL NOT EXCEED 35' IN TOTAL LENGTH (DEDUCT 5' FOR EACH 90° ELBOW AND 2.5' FOR EACH 45° ELBOW).
3. DRYER VENT CAP SHALL BE NONSCREENED WITH A BACKDRAFT DAMPER AND MINIMUM SIZE OF 4".

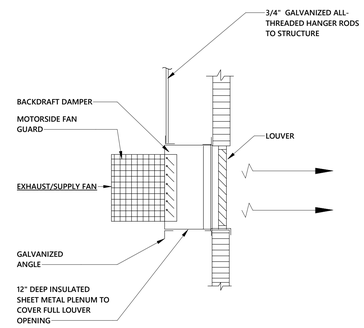
7 DRYER VENT THRU ROOF DETAIL
NOT TO SCALE



NOTE: DAMPERS SHALL BE INSTALLED AS PER MFG. INSTRUCTIONS.

FIRE DAMPER SHALL BE RUSKIN TYPE DIBD2 STYLE B 1 1/2 HOUR UL, INSTALLED IN ACCORDANCE WITH NFPA. ACCESS DOOR SHALL BE RUSKIN MODEL ADC2 LOCATED ON ACCESSIBLE CEILING SIDE OF WALL. IF ACCESSIBLE CEILING NOT AVAILABLE, MECHANICAL CONTRACTOR SHALL PROVIDE ACCESS DOOR IN CEILING (OR WALL) TO MATCH FINISH COLOR. DAMPER SHALL BE EQUIPPED FOR HORIZONTAL OR VERTICAL MOUNTING AS REQUIRED. WHERE ROUND DUCTS REQUIRE A DAMPER, AN ENCLOSURE WITH ROUND DUCT CONNECTION WILL BE REQUIRED WITH TYPE B DAMPER INSIDE. ALL MODELS ARE RUSKIN (APPROVED EQUAL ACCEPTABLE).

8 DAMPER - LOW PRESSURE FIRE
NOT TO SCALE



9 FAN - SIDEWALL EXHAUST/SUPPLY (BASE BID)
NOT TO SCALE

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER BYRON L. FORD

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

MECHANICAL DETAILS

M2.01

Optima # 21-0180

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2018 NORTH CAROLINA ENERGY CONSERVATION CODE

COMMERCIAL ENERGY EFFICIENCY - ELECTRICAL SUMMARY

C401 METHOD OF COMPLIANCE

- ■ 2018 NCECC CHAPTER 4
- ☐ N/A BASED ON PROJECT SCOPE
- ☐ NC SPECIFIC COMCHECK PROVIDED
- ☐ ASHRAE 90.1-2013

C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- ☐ C406.2 EFFICIENT MECH EQUIPMENT
- ■ C406.3 REDUCED LTG DENSITY
- ☐ C406.4 ENHANCED DIGITAL LTG CNTLS
- ☐ NOT APPLICABLE BASED ON PROJECT SCOPE
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ☐ C406.6 DEDICATED OA SYSTEM
- ☐ C406.7 HI-EFF SERVICE WTR HTG
- ☐ C406.7.1 WTR HTG LOAD FRACTION

C405.2 - LIGHTING CONTROLS (MANDATORY REQUIREMENTS):

- ■ LIGHTING SYSTEMS ARE PROVIDED WITH CONTROLS AS REQUIRED PER SECTION C405.2, EXCEPT WHERE EXEMPT.
- ☐ NOT APPLICABLE

C405.3 - EXIT SIGNS (MANDATORY REQUIREMENTS):

- ■ INTERNALLY ILLUMINATED EXIT SIGNS DO NOT EXCEED 5 WATTS PER SIDE.
- ☐ NOT APPLICABLE

C405.4 - INTERIOR LIGHTING POWER REQUIREMENTS (PRESCRIPTIVE) (NON-EXEMPT):

- ☐ NOT APPLICABLE PER 2018 NCECC C503.1, EXCEPTION 2.G.

C405.4.1 - TOTAL CONNECTED INTERIOR LIGHTING POWER:

9,259 WATTS SPECIFIED

57.5 % REDUCTION OF SPECIFIED VS. ALLOWED (APPLICABLE IF C406.1.2 IS SELECTED)

C405.4.2 - TOTAL ALLOWABLE INTERIOR LIGHTING POWER:

METHOD OF COMPLIANCE:

- ■ BUILDING AREA METHOD
- ☐ SPACE-BY-SPACE METHOD

9,259 WATTS ALLOWED

C405.5.1 - EXTERIOR BUILDING LIGHTING POWER (NON-EXEMPT):

- ☐ NOT APPLICABLE

TOTAL CONNECTED EXTERIOR LIGHTING POWER:

180 WATTS SPECIFIED

TOTAL ALLOWABLE EXTERIOR LIGHTING POWER:

709.1 WATTS ALLOWED

C405.6 - ELECTRICAL ENERGY CONSUMPTION (DWELLING UNITS):

- ☐ SEPARATE ELECTRICAL METERING HAS BEEN PROVIDED FOR EACH DWELLING UNIT IN GROUP R-2 BUILDINGS.
- ■ NOT APPLICABLE

C405.7 - ELECTRICAL TRANSFORMERS (MANDATORY REQUIREMENTS):

- ☐ ELECTRICAL TRANSFORMERS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.7, EXCEPT WHERE EXEMPT.
- ■ NOT APPLICABLE

C405.8 - ELECTRICAL MOTORS (MANDATORY REQUIREMENTS):

- ☐ ELECTRICAL MOTORS HAVE BEEN SPECIFIED TO MEET MINIMUM EFFICIENCY REQUIREMENTS PER C405.8, EXCEPT WHERE EXEMPT.
- ■ NOT APPLICABLE

C408 - SYSTEM COMMISSIONING:

- ■ PROJECT AREA IS LESS THAN 10,000 SQUARE FEET AND IS EXEMPT FROM THE SYSTEM COMMISSIONING REQUIREMENTS OF SECTION C408.
- ☐ PROJECT AREA IS GREATER THAN 10,000 SQUARE FEET AND REQUIRES SYSTEM COMMISSIONING PER SECTION C408.

NFPA FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL
15cd	FIRE ALARM HORN W/STROBE (CANDELAS), WHITE FINISH
15cd	FIRE ALARM STROBE (CANDELAS), WHITE FINISH
AM	ADDRESSABLE IMPUT/OUTPUT MODULE. N = DENOTES NUMBER OF INPUTS AND OUTPUTS
AM	ADDRESABLE INPUT MONITOR
SB	DETECTOR WITH SOUNDER BASE (SB)
MC	DETECTOR - MULTI CRITERIA TYPE (MC)
P	SMOKE DETECTOR/SENSOR (DEFAULT PHOTOELECTRIC TYPE)
X	HEAT DETECTOR/SENSOR. X=TYPE
F	F.A. PULLSTATION (TYPE DENOTED)
WF	SPRINKLER FLOW SWITCH
VS	VALVE SUPERVISORY SWITCH

**Note: AUDIBLE DEVICES WITHIN SLEEPING ROOMS SHALL BE SUBJECT TO LOW FREQUENCY REQUIREMENTS. A SQUARE WAVE 520HZ TONE COMPATIBLE WITH NFPA 72 18.4.5.3. COORDINATE WITH LOCAL CODES AND REQUIREMENTS.

TELECOM LEGEND - ELECTRICAL

SYMBOL	DESCRIPTION
	PLYWOOD TELEPHONE BACKBOARD. SIZE AS INDICATED ON RISER.
(1)	DATA OUTLET ABOVE COUNTER OR HEIGHT SPECIFIED. MINIMUM 1 1/4" CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING FOR J-HOOK SYSTEM OR TO LOCAL CABLE TRAY (WITHIN 6") AS APPLICABLE WITH PULL STRING. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING. SUBSCRIPT NEXT TO OUTLET INDICATES HEIGHT OR DATA DROPS. WHERE NO HEIGHT SHOWN, MOUNT 6" ABOVE COUNTER TOP. WHERE NO QUANTITY SHOWN, THIS INDICATES PATHWAYS AND BOXES ONLY.
(1)	DATA OUTLET. MINIMUM 1 1/4" CONDUIT TO ABOVE NEAREST ACCESSIBLE CEILING FOR J-HOOK SYSTEM WITH PULL STRING. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING. SUBSCRIPT NEXT TO OUTLET INDICATES DATA DROPS. WHERE NO QUANTITY SHOWN, THIS INDICATES PATHWAYS AND BOXES ONLY.
TV	SEE TV DETAIL FOR TYPE AND REQUIREMENTS. MINIMUM 1 1/4" CONDUIT FOR CABLING AND 3/4" CONDUIT FOR POWER. PROVIDE PULL STRING FOR LOW VOLTAGE CABLING TO ACCESSIBLE CEILING.
AVI	SEE TV DETAIL FOR TYPE AND REQUIREMENTS. MINIMUM 1 1/4" CONDUIT FOR CABLING AND 3/4" CONDUIT FOR POWER. PROVIDE PULL STRING FOR LOW VOLTAGE CABLING TO ACCESSIBLE CEILING.
TGB	TELECOMMUNICATIONS GROUND BAR.

SPECIAL SYSTEMS LEGEND

SYMBOL	DESCRIPTION
TV	DISPLAY. PROVIDE QUANTITY OF CATEGORY 6A CABLES AS INDICATED BY SUBSCRIPT. REFER TO ELECTRICAL DRAWINGS FOR RECESSED WALL BOX AND CONDUIT REQUIREMENTS.
AVI	DISPLAY. PROVIDE QUANTITY OF CATEGORY 6A CABLES AS INDICATED BY SUBSCRIPT. REFER TO ELECTRICAL DRAWINGS FOR RECESSED WALL BOX AND CONDUIT REQUIREMENTS.
S	FLUSH-MOUNTED CEILING SPEAKER.

SECURITY DEVICES SYMBOL LEGEND - ELECTRICAL

SYMBOL	DESCRIPTION
CR	CARD READER, MINIMUM 1/2" CONDUIT. PROVIDE SINGLE GANG JUNCTION BOX AND PULL STRING. SEE CARD READER DETAIL FOR ADDITIONAL REQUIREMENTS OF PATHWAYS AND CABLING.

ELECTRICAL FIXTURES LEGEND - COMMERCIAL

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, 20 AMP, 120 VOLT COOPER 5362 OR EQUAL.
GFCI	GROUND FAULT RECEPTACLE - BREAKER AT PANEL. NEMA 5-20R DUPLEX. ALL RECEPTACLES INSTALLED OUTSIDE, WITHIN 6' OF A SINK OR IN A KITCHEN SHALL BE GFCI.
USB	COMBINATION USB AND NEMA 5-20R DUPLEX. COOPER TR7756 OR EQUAL.
GFCI	GROUND FAULT DUPLEX RECEPTACLE, NEMA 5-20R MOUNTED ABOVE COUNTER BACKSPLASH OR AT HEIGHT NOTED.
GFCI	GROUND FAULT DUPLEX RECEPTACLE - BREAKER AT PANEL, NEMA 5-20R MOUNTED ABOVE COUNTER BACKSPLASH OR AT HEIGHT NOTED.
WP	WEATHERPROOF GROUND FAULT RECEPTACLE. NEMA 5-20R DUPLEX, CORROSION RESISTANT. COVER SHALL BE INTERMATIC #WP1020 (CLEAR) OR EQUAL.
	QUAD RECEPTACLE. TWO NEMA 5-20R DUPLEX RECEPTACLES.

SYMBOL SCHEDULE POWER

SYMBOL	DESCRIPTION
	WIRING SYSTEM CONCEALED IN WALL OR CEILING. WHEN SHOWN, CROSS LINES INDICATE NUMBER OF WIRES. (GROUND WIRES ARE NOT SHOWN)
	WIRING SYSTEM CONCEALED IN OR UNDER SLAB OR UNDERGROUND.
	WIRING SYSTEM EXPOSED.
	CONDUIT TURNED UP TO FLOOR ABOVE.
	CONDUIT TURNED DOWN TO FLOOR BELOW.
	BRANCH CIRCUIT HOMERUN TO PANEL.

SYMBOL SCHEDULE POWER LEGEND

SYMBOL	DESCRIPTION
	JUNCTION BOX WITH CONNECTION TO EQUIPMENT SERVED. 4" SQUARE BOX WITH A SINGLE-GANG OPENING AND PLASTER RING.
	208Y/120V THREE PHASE PANELBOARD. SEE SCHEDULE FOR MOUNTING. TOP OF PANEL AT 6'-6" AFF.
	AUTOMATIC TRANSFER SWITCH
	SPECIAL OUTLET. SEE PLANS.
	SPECIAL OUTLET. SEE PLANS FOR MOUNTING HEIGHT.
	COMBINATION STARTER/FUSED DISCONNECT. NUMERALS INDICATE SWITCH RATING. NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED.
0.3 hp XX-1	CONNECTION TO MOTOR. STARTER PROVIDED BY OTHERS UNLESS OTHERWISE NOTED. NUMBER INDICATES HORSEPOWER.
0.0 hp	FRACTIONAL HORSEPOWER MANUAL MOTOR STARTER, WITH OVERLOAD PROTECTION
	SPECIAL RECEPTACLE ON CORD REEL.
M	RECTANGULAR DUCT MOUNTED MOTOR OPERATED DAMPER, INTERLOCK WITH FAN AS INDICATED. (DAMPER BY M.C.)

LIFE SAFETY LIGHTING FIXTURE SYMBOLS

SYMBOL	DESCRIPTION
E	LED FIXTURE ON GENERATOR SUPPLIE LIFE SAFETY BRANCH. SEE FIXTURE SCHEDULE FOR FIXTURE TYPE.

LIGHTING FIXTURES SYMBOLS AND DEVICES...

SYMBOL	DESCRIPTION
	LED LIGHTING FIXTURE. SEE FIXTURE SCHEDULE. SUSPEND FOUR CORNERS WITH WIRE TO STRUCTURE. DO NOT ALLOW GRID ALONE TO SUPPORT FIXTURE.
	LED STRIP LIGHT FIXTURE
	RECESSED LED LIGHTING FIXTURE.
S	SINGLE POLE SWITCH, 20 AMP, 120/277 VOLT, COOPER AH 1221, OR EQUAL BY HUBBELL, LEVITON AND PASS & SEYMOUR.
DLV	LOW VOLTAGE DIMMER SWITCH MOUNTED IN FLUSH JUNCTION BOX.
OCS	CEILING MOUNTED OCCUPANCY SENSOR, DUAL TECHNOLOGY. SENSOR SWITCH CM PDT 10, WATT STOPPER #DT-300, COOPER OAC-DT OR EQUAL.
OCS	CEILING MOUNTED VACANCY SENSOR, DUAL TECHNOLOGY. SENSOR SWITCH, WATT STOPPER , COOPER OR EQUAL.
PP	CEILING MOUNTED OCCUPANCY SENSOR POWER PACK. SENSOR SWITCH PP-20, WATT STOPPER #BZ-100, COOPER SP-20, OR EQUAL.

ELECTRICAL SHEET INDEX

SHEET NUMBER	SHEET NAME
E0.01	ELECTRICAL LEGEND AND NOTES
E0.02	ELECTRICAL SPECIFICATIONS
E0.10	ELECTRICAL SITE PLAN
E1.01	FIRST FLOOR LIGHTING PLAN - BASE BID
E2.01	FIRST FLOOR POWER PLAN - BASE BID
E3.01	FIRST FLOOR ELECTRICAL PLAN - ALTERNATE BID
E6.01	ELECTRICAL DETAILS
E6.02	ELECTRICAL DETAILS
E6.03	ELECTRICAL DETAILS
E7.01	ELECTRICAL DIAGRAMS
E8.02	PANEL SCHEDULES

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER JANE KUSEYB

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 1-19-2022

ELECTRICAL LEGEND AND NOTES

E0.01

Optima # 21-0180

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1. GENERAL:

A. THE WORK COVERED BY THESE SPECIFICATIONS CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, MATERIALS, AND SUPPLIES AS NECESSARY FOR THE COMPLETE AND SATISFACTORY OPERATING ELECTRICAL SYSTEMS AS SHOWN ON THE PLANS.
B. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, NFPA, STATE BUILDING CODE, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY APPLY.
C. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL ELECTRICAL PERMITS AND INSPECTION FEES.
D. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BE LISTED BY THE UNDERWRITER'S LABORATORIES, INC. OR BY A STATE APPROVED THIRD PARTY TESTING AGENCY FOR THE USE INTENDED WHERE A STANDARD FOR SUCH MATERIALS AND USE EXISTS. ALL ITEMS OF THE SAME TYPE AND RATING SHALL BE IDENTICAL AND OF THE SAME MANUFACTURER.
E. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CATALOG DATA IN ELECTRONIC FORMAT (PDF) FOR ALL ELECTRICAL ITEMS IN THE SCOPE OF WORK, INCLUDING, BUT NOT LIMITED TO, RACEWAYS, BOXES, FITTINGS, CONDUCTORS, LUMINAIRES, WIRING DEVICES, SAFETY SWITCHES, DISCONNECTS, TRANSFORMERS, PANELBOARDS, AUTOMATIC TRANSFER SWITCHES (ATS), FIRE ALARM, TELECOMMUNICATIONS, ETC. FOR APPROVAL AS APPLICABLE FOR THE PROJECT. ONE COMPLETE SET OF APPROVED SUBMITTALS SHALL BE MAINTAINED AT THE JOB SITE.
F. ALL COST ASSOCIATED WITH SUBSTITUTED EQUIPMENT TO COMPLY WITH THE BASIS OF DESIGN, INCLUDING PROVIDING MAINTENANCE ACCESS, CLEARANCE, CONDUIT, WIRING, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, METHODS, ETC., SHALL BE INCLUDED IN THE ORIGINAL BASE BID. NO ADDITIONAL COSTS ASSOCIATED WITH SUBSTITUTED EQUIPMENT WILL BE APPROVED AFTER BIDS HAVE BEEN ACCEPTED AND ALL COSTS WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. CREDITS SHALL BE GIVEN TO THE OWNER WHERE SUCH EQUIPMENT AND METHODS RESULT IN LESS EXPENSE TO THE CONTRACTOR.
G. ONE COMPLETE SET OF THE LATEST CONSTRUCTION PLANS OF ALL TRADES SHALL BE MAINTAINED AT THE JOB SITE. IN ADDITION, ALL ADDENDUMS, BULLETINS, AND/OR SKETCHES SHALL BE INCORPORATED INTO THE ON-SITE CONSTRUCTION PLANS AS THE JOB PROGRESSES.
H. COMPLETELY ADEQUATE HOUSING SHALL BE PROVIDED FOR ALL MATERIALS STORED ON JOB SITE. ONLY CONDUIT MAY BE STORED OUTSIDE, BUT NOT IN CONTACT WITH THE GROUND.
I. THE CONDUIT AND NEUTRAL SYSTEM SHALL BE GROUNDED AT THE MAIN SERVICE EQUIPMENT. GROUNDING ELECTRODE SYSTEM SHALL BE INSTALLED PER NEC 250.
J. PROVIDE AN INTERSYSTEM BONDING TERMINATION DEVICE AT THE MAIN ELECTRICAL SERVICE PER NEC 250.94.
K. WIRING SHALL BE TESTED FOR CONTINUITY AND GROUNDS BEFORE BEING ENERGIZED. FAULTY WIRING SHALL BE REPLACED AT NO ADDITIONAL EXPENSE TO THE OWNER.
L. PROVIDE ALL CUTTING AND PATCHING FOR INSTALLATION OF WORK AND REPAIR ANY DAMAGE DONE.
M. THE ELECTRICAL CONTRACTOR SHALL CONNECT ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS (UNLESS OTHERWISE NOTED), EXCEPT FOR CONTROL WIRING FOR EQUIPMENT NOT PROVIDED BY THE ELECTRICAL CONTRACTOR. CONTROL WIRING FOR SUCH EQUIPMENT SHALL BE PROVIDED BY THE RESPECTIVE DISCIPLINE.
N. ALL ELECTRICAL JUNCTION BOXES, ELECTRICAL OUTLETS, EMERGENCY RECEPTACLES, ETC. SHALL BE LABELED ACCORDING TO PANEL AND CIRCUIT NUMBER.
O. UPON COMPLETION OF WORK, CONTRACTOR SHALL PRESENT ENGINEER WITH CERTIFICATE OF APPROVAL FROM LOCAL INSPECTOR AND/OR AUTHORITY HAVING JURISDICTION BEFORE WORK WILL BE APPROVED FOR FINAL PAYMENT.
P. CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR EFFECTIVE THE DATE THE PROJECT IS ACCEPTED BY THE OWNER. ANY IMPERFECT MATERIALS OR WORKMANSHIP SHALL BE REPLACED WITHOUT ADDED COST TO THE PROJECT.
Q. IT SHALL NOT BE THE INTENT OF ISSUED PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL NECESSARY ITEMS FOR A COMPLETE AND OPERATING SYSTEM.
R. THE WORD "PROVIDE" MEANS THAT THIS CONTRACTOR SHALL FURNISH, FABRICATE, ERECT, CONNECT, AND COMPLETELY INSTALL SYSTEMS IN PROPER OPERATING CONDITION. ALL LABOR, PRODUCT OPTIONS, ACCESSORIES AND INCIDENTAL MATERIALS REQUIRED SHALL BE INCLUDED AS PART OF THIS WORK TO COMPLETE THE INSTALLATION.
S. THE WORD "CONNECT" MEANS THAT THIS CONTRACTOR SHALL PROVIDE (SEE DEFINITION ABOVE) ALL DISCONNECTING MEANS, OVERCURRENT PROTECTION AND WIRING REQUIRED TO PLACE THE EQUIPMENT AND SYSTEMS IN PROPER OPERATING CONDITION AND TO COMPLY WITH CODE REQUIREMENTS.
T. CONTRACTOR SHALL COORDINATE THE ROUGH-IN OF ALL OUTLET LOCATIONS WITH ARCHITECTURAL FLOOR PLANS, ELEVATIONS, AND MILLWORK SHOP DRAWINGS PRIOR TO ROUGH-IN.
U. ELECTRICAL CONTRACTOR SHALL NOT SCALE PLANS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, UNLESS OTHERWISE NOTED.
V. CONTRACTOR SHALL TEST ALL "LIFE SAFETY" EQUIPMENT AND SYSTEMS FOR PROPER FUNCTION AND OPERATION. UPON SUCCESSFUL COMPLETION OF TESTS, CONFIRMATION SHALL BE SENT TO THE ENGINEER OF RECORD IN THE FORM OF A LETTER STATING THE TESTS PERFORMED, THE RESULTS, AND THE DATE TESTS WERE SUCCESSFULLY COMPLETE. "LIFE SAFETY" EQUIPMENT AND SYSTEMS CONSIST OF THOSE AS SPECIFIED IN THE STATE BUILDING CODE, THE NATIONAL ELECTRICAL CODE, NFPA 101, AND ANY OTHER LOCAL REQUIREMENTS THAT MAY APPLY.
W. IF DURING THE COURSE OF WORK, THE CONTRACTOR DISCOVERS A PROBLEM WITH THE PERFORMANCE OF THE INSTALLATION RELATIVE TO THE PLANS AND SPECIFICATIONS, THE NEC, OR OTHER CODES OR REQUIREMENTS, THE CONTRACTOR SHALL IMMEDIATELY BRING THE PROBLEM TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK.
X. WHERE THERE ARE CONFLICTS BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL BRING THE ISSUE TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE EXECUTION OF THE WORK OR ORDERING ANY MATERIALS. NO ADDITIONAL COSTS SHALL BE WARRANTED WITHOUT A CHANGE TO THE PROJECT SCOPE.
Y. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PROVIDING TEMPORARY POWER AND LIGHTING FOR ALL TRADES. AT NO TIME SHALL EXISTING BUILDING POWER SYSTEMS BE UTILIZED WITHOUT WRITTEN PERMISSION FROM THE OWNER.
Z. COORDINATE LOCATION AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH THE POWER COMPANY.
AA. COORDINATE LOCATION AND REQUIREMENTS FOR TELEPHONE SERVICE WITH THE TELEPHONE COMPANY.
BB. THE CONTRACTOR SHALL PROVIDE A MINIMUM TWO WEEK NOTICE FOR ANY PLANNED UTILITY OUTAGES. WRITTEN AUTHORIZATION FROM THE OWNER SHALL BE PROVIDED PRIOR TO ANY OUTAGE. ALL PLANNED UTILITY OUTAGES SHALL BE COORDINATED WITH THE OWNER TO OCCUR DURING NON-OPERATING TIMES, INCLUDING NIGHTS, WEEKENDS AND HOLIDAYS. ALL PLANNED UTILITY OUTAGES SHALL INCLUDE PROVISIONS FOR PROPER BACK-UP OF ALL LIFE-SAFETY SYSTEMS AND INCLUDE AN APPROVED FIRE-WATCH PROGRAM AS REQUIRED BY THE LOCAL FIRE MARSHALL.
CC. EACH BIDDER SHALL VISIT THE JOB SITE PRIOR TO BIDDING TO FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND TO ASCERTAIN THE EXTENT OF WORK REQUIRED. FAILURE TO VISIT SITE SHALL NOT EXCUSE CONTRACTOR FROM PERFORMING REQUIRED WORK NOR SHALL IT BE AN ACCEPTABLE REASON FOR REQUESTING ADDITIONS TO THE CONTRACT.

2. RACEWAY:

A. CONDUIT SHALL BE MANUFACTURED BY ALLIED, WHEATLAND, REPUBLIC CONDUIT, WESTERN TUBE, OR APPROVED EQUIVALENT.
B. FOR INTERIOR WORK, CONDUIT SHALL BE ZINC COATED EMT EXCEPT WHERE NOT PERMITTED BY CODE. USE SCHEDULE 40 PVC BELOW CONCRETE SLAB, IN DUCTBANKS, AND FOR EXTERIOR WORK WHERE NOT SUBJECT TO DAMAGE. USE IMC WHERE SUBJECT TO PHYSICAL DAMAGE.
C. EMT FITTINGS SHALL BE COMPRESSION GLAND TYPE, OF MALLEABLE STEEL. CONNECTORS SHALL HAVE INSULATED THROATS. CAST, SET SCREW, OR INDENTER TYPE FITTINGS ARE NOT ACCEPTABLE. ALL FITTINGS FOR EMT SHALL BE MADE OF STEEL.
D. ALL RACEWAY SHALL BE RUN CONCEALED, UNLESS OTHERWISE NOTED. FISH ALL NEW OUTLETS IN EXISTING WALLS, WHERE POSSIBLE. ALL RUNS SHALL BE NEAT AND SQUARE.
E. LOW VOLTAGE CABLING NOT SPECIFIED TO BE INSTALLED IN CONDUIT, SHALL BE INSTALLED IN A J-HOOK SYSTEM CONSISTING OF MINIMUM 2" DIAMETER HOOKS LOCATED ON 3'-0" CENTERS IN ALL ACCESSIBLE CEILINGS. WHERE THERE ARE INACCESSIBLE CEILINGS, PROVIDE CONDUIT FOR ENTIRE LENGTH OF INACCESSIBILITY.
F. RACEWAYS USED FOR LOW VOLTAGE SYSTEMS SUCH AS TELECOMMUNICATIONS, FIRE ALARM, SECURITY, CCTV, CONTROLS, AND SIMILAR CONDUITS ABOVE THE CEILING AND BACKBOARD(S) SHALL BE PROVIDED WITH INSULATED THROAT BUSHINGS AT EACH CONDUIT TERMINATION. THESE BUSHINGS SHALL BE INSTALLED PRIOR TO PULLING LOW-VOLTAGE CABLES.
G. RACEWAY PENETRATIONS THROUGH FLOOR SLABS AND FIRE-RATED WALLS SHALL BE FILLED WITH IMPERVIOUS, NON-SHRINK GROUT SUFFICIENTLY TIGHT TO PREVENT THE TRANSFER OF SMOKE, WATER, AND DUST. ROOF PENETRATIONS SHALL BE WITHIN THE EQUIPMENT ROOF CURB.
H. SUPPORT ALL CONDUIT WITH STRAPS AND CLAMPS.
I. ALL CONDUIT SHALL BE RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES, WHETHER EXPOSED OR NOT AND SUPPORTED FROM STRUCTURE AND PROPERLY SECURED.
J. WHERE CONDUITS PASS THROUGH A BUILDING EXPANSION JOINT, PROVIDE GALVANIZED EXPANSION FITTINGS WITH BONDING JUMPERS.
K. MINIMUM CONDUIT SIZE SHALL BE 3/4" FOR INTERIOR WORK, 1" FOR EXTERIOR WORK.
L. PROVIDE MINIMUM 210# TEST NYLON PULL CORD AND NYLON BUSHINGS IN ALL EMPTY RACEWAYS.
M. LIQUID-TIGHT METAL CONDUIT SHALL ONLY BE USED FOR FINAL CONNECTIONS TO EQUIPMENT AND ALL OTHER ROTATING AND VIBRATING EQUIPMENT, MAXIMUM LENGTH OF 3'-0".
N. FLEXIBLE METAL CONDUIT, MINIMUM SIZE 3/8", SHALL ONLY BE USED FOR FINAL CONNECTION TO LIGHTING FIXTURES, MAXIMUM LENGTH OF 6'-0".
O. PROVIDE PULL BOXES, SUCH THAT NO SINGLE CONDUIT RUN HAS BENDS IN EXCESS OF 360°. PULL BOXES SHALL BE SUITABLE AND APPROVED FOR THE INTENDED USE. WHERE CONDUITS PASS UNDER PAVED AREAS, THEY SHALL BE RGS.
P. ALL CONDUIT BENDS/ELBOWS EMERGING FROM UNDERGROUND SHALL BE IMC AND SHALL EXTEND A MINIMUM OF 18" BELOW GRADE.
Q. ALL UNDERGROUND RACEWAYS SHALL BE THOROUGHLY COATED WITH TWO COATS OF ASPHALTUM BITUMASTIC.
R. ALL CONDUITS INSTALLED UNDERGROUND OR IN CONCRETE SHALL HAVE JOINTS MADE WATERTIGHT BY USE OF POLYETRA-FLUOROETHYLENE TAPE.
S. THE USE OF AC OR NM CABLE IS NOT PERMITTED.
T. APPROVED SEALS SHALL BE PROVIDED IN HAZARDOUS LOCATIONS AS REQUIRED BY THE NEC.
U.

3. OUTLET BOXES:

A. JUNCTION AND PULL BOXES SHALL BE CODE GAUGE GALVANIZED STEEL. ACCEPTED MANUFACTURERS SHALL BE STEEL CITY (THOMAS & BETTS), RACO, CROUSE-HINDS, APPLETON (EMERSON), OR APPROVED EQUIVALENT.
B. OUTLET BOXES SHALL NOT BE MOUNTED BACK TO BACK IN COMMON WALLS.
C. ATTACH EMT WITH CONNECTORS HAVING INSULATED THROAT.
D. ATTACH BOXES TO STUD WORK USING CADDY BAR STRAPS THAT CONNECT TO TWO ADJACENT STUDS TO PREVENT TWISTING OF BOX IN WALL.
E. ALL OUTLET BOXES (INCLUDING TELEPHONE, CABLE TV, AND COMPUTER) SHALL HAVE COVER PLATES, BLANK IF NOT USED.
F. ALL EXTERIOR BOXES SHALL BE WATER-TIGHT.

4. CONDUCTORS:

A. CONDUCTORS SHALL BE MANUFACTURED BY SOUTHWIRE (SIMPULL), ENCORE (SUPERSLICK), UNITED COPPER (SLK), CERRO (SLP), OR APPROVED EQUAL, "PRE-LUBRICATED" BY THE MANUFACTURER.
B. ALL CONDUCTORS SHALL BE COPPER, RATED 75° C WET/DRY EXCEPT WHERE OTHERWISE NOTED OR REQUIRED BY U.L. OR OTHER CODES.
C. ALL CONDUCTORS SHALL BE SINGLE INSULATED CONDUCTOR, THHN/THWN-2. SIZES #10 AWG AND SMALLER SHALL BE SOLID, SIZES #8 AWG AND LARGER SHALL BE STRANDED.
D. BRANCH CIRCUITS SHALL NOT BE SMALLER THAN #12 AWG. CONTROL WIRING MAY BE #14 AWG.
E. CONDUCTORS SHALL BE COLOR CODED BLACK/RED/BLUE FOR 120/208 VOLT SYSTEMS FOR A, B, AND C PHASES, RESPECTIVELY. NEUTRAL SHALL BE WHITE FOR 120/208 VOLT SYSTEMS. GROUND CONDUCTOR SHALL BE GREEN ON ALL SYSTEMS. ALL CONDUCTOR SIZES SHALL HAVE COLOR-CODED INSULATION. THE USE OF COLORED TAPE ON LARGER WIRE SIZES SHALL NOT BE ALLOWED.
F. INSULATION SHALL BE DUAL RATED TYPE THHN/THWN-2 FOR FEEDERS AND BRANCH CIRCUITS. FIXTURE TAPS SHALL BE #12 THHN/THWN-2 IN FLEX WITH GREEN #12 AWG GROUNDING CONDUCTOR.
G. ALL CONDUCTORS SHALL BE IN CONDUIT.
H. WIRING TO LIGHTING FIXTURES SHALL BE AS REQUIRED BY UL LABEL.
I. MULTI-WIRE BRANCH CIRCUITS SHALL NOT BE ALLOWED.
J. JOINTS IN #10 AWG AND SMALLER SHALL BE MADE UP WITH CRIMPED CONNECTORS WITH INSULATING CAPS (NO TAPE) OR WIRENUTS (MAXIMUM OF 3 CONDUCTORS UNDER ANY CONNECTOR OR WIRENUT). LARGER WIRE SHALL USE SPLIT BOLTS OR BOLTED CLAMPS.
K. ALL WIRING LUGS THROUGHOUT THE PROJECT, INCLUDING, BUT NOT LIMITED TO, BREAKERS, PANELBOARD LUGS, SAFETY SWITCH LUGS, MOTOR STARTER LUGS, TRANSFORMER LUGS, WIRING DEVICE TERMINALS, AND ALL EQUIPMENT LUGS/TERMINALS SHALL BE RATED FOR USE WITH 75 DEGREE INSULATED CONDUCTORS AT THEIR 75 DEGREE AMPACITY AND SHALL BE SIZED AND SELECTED TO MATCH THE CONDUCTOR SIZE AND MATERIAL.
L. CIRCUIT JOINTS SHALL NOT BE MADE ON DEVICE TERMINALS.
M. WIRE WITHIN PANELBOARDS SHALL BE NEATLY TRAINED, SQUARED, BUNCHED, AND TAGGED.
N. ALL SYSTEM FURNITURE CONNECTIONS SHALL COMPLY WITH NEC 605.
O. GROUND ALL EQUIPMENT PER NEC ARTICLE 250. BOND WHERE CONDUITS ENTER ENCLOSURES THROUGH CONCENTRIC KNOCKOUTS. ALL FLEX, INCLUDING FIXTURE TAPS, SHALL INCLUDE GREEN GROUNDING CONDUCTOR, #12 AWG MINIMUM. PROVIDE GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN EACH CONDUIT AND FOR EACH CIRCUIT, SIZED PER NEC 250-122.
P. ALL CONDUCTORS INSTALLED IN VERTICAL RACEWAYS SHALL BE SUPPORTED AT INTERVALS AS REQUIRED PER NEC 300-19.
Q. THE ELECTRICAL CONTRACTOR SHALL FOLLOW AND APPLY THE TABLE BELOW, REGARDLESS WHAT THE PANEL SCHEDULE INDICATES, FOR SIZING ALL 120V, 20 AMP BRANCH CIRCUITS (COPPER CONDUCTORS) TO ALLOW A MAXIMUM OF 3% VOLTAGE DROP FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE ON THE BRANCH CIRCUIT AND ACHIEVE A MAXIMUM OF 5% VOLTAGE DROP ACROSS THE ENTIRE BRANCH CIRCUIT:

VOLTAGE	CONDUCTOR LENGTH *	BRANCH CIRCUIT
120	0' - 50'	#12
120	51' - 90'	#10
120	91' - 140'	#8
120	141' - 255'	#6

* - THE LENGTH IS MEASURED FROM THE CIRCUIT BREAKER TO THE FIRST DEVICE WHICH THE BRANCH CIRCUIT SERVES. WHERE THE DISTANCE EXCEEDS ABOVE, CONSULT WITH THE ENGINEER.

5. WIRING DEVICES:

A. WIRING DEVICES SHALL BE SPECIFICATION GRADE, MINIMUM, EQUAL TO COOPER QUALITY INDICATED BELOW OR AS MANUFACTURED BY HUBBELL, LEGRAND-PASS & SEYMOUR, LEVITON, OR APPROVED EQUAL, UNLESS OTHERWISE NOTED:

SWITCHES (120/277V) SHALL BE AS FOLLOWS:

SINGLE-POLE 20 AMP	COOPER AH1221
THREE-WAY 20 AMP	COOPER AH1223
SINGLE-POLE-KEY 20 AMP	COOPER AH1221L

DUPLEX RECEPTACLES SHALL HAVE A NYLON FACE AND SHALL BE AS FOLLOWS:

20 AMP DUPLEX	COOPER 5352
20 AMP DUPLEX GFCI	COOPER SGF20F
20 AMP DUPLEX TAMPER	COOPER TR5362
20 AMP DUPLEX GFCI-TAMPER	COOPER TRSGF20F

THE PART NUMBERS ABOVE ARE FOR WIRING DEVICE TYPE ONLY. SEE BELOW FOR WIRING DEVICE COLOR AND PLATE MATERIAL/COLOR.

B. SEE MOUNTING HEIGHT ELEVATION DETAIL FOR STANDARD MOUNTING HEIGHTS OF ALL DEVICES, UNLESS OTHERWISE NOTED.
C. ALL WIRING DEVICES (SWITCHES AND RECEPTACLES) SHALL BE GRAY, UNLESS OTHERWISE NOTED. ALL COVER PLATES SHALL BE 302 STAINLESS STEEL. COVER PLATES IN MASONRY WALLS SHALL BE OVERSIZE TYPE.
D. ALL WIRING DEVICES FED FROM THE EMERGENCY POWER SYSTEM SHALL BE RED.
E. EACH DUPLEX RECEPTACLE INDICATED TO BE ON A DEDICATED CIRCUIT SHALL BE 20 AMP TYPE.
F. ADJACENT DEVICES SHALL HAVE A COMMON WALL PLATE.
G. WEATHERPROOF COVERS SHALL BE "WHILE-IN-USE" SO PLUGS MAY BE INSTALLED WITHOUT COMPROMISING THE WP FUNCTION. COOPER #WIU-2 DOUBLE-GANG WITH CLEAR COVER OR APPROVED EQUAL.
H. DIMMERS SHALL BE LINEAR SLIDE, PRESENT ON/OFF, SQUARE LAW DIMMING, W/RFI FILTERING AND VOLTAGE COMPENSATION CIRCUITING.
I. ALL WALL MOUNTED OCCUPANCY/VACANCY SENSORS/SWITCHES SHALL BE INSTALLED WITH AN EQUIPMENT GROUNDING CONDUCTOR.
J. GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL SHALL BE PROVIDED FOR ALL LOCATIONS PER NEC 210.8, INSTALLED IN A READILY ACCESSIBLE LOCATION. WHERE A DEVICE LOCATION IS NOT ACCESSIBLE, THE GFCI PROTECTION SHALL BE PROVIDED WITH THE BREAKER SERVING THE DEVICE.
K. ALL GFCI RECEPTACLES SHALL HAVE AUTO-MONITORING / SELF-TEST FUNCTION AND REVERSE LINE-LOAD MISFIRE FUNCTION AND MEET ALL REQUIREMENTS OF UL 943 (LATEST EDITION).
L. TAMPER-RESISTANT RECEPTACLES SHALL BE PROVIDED FOR ALL AREAS PER NEC 406.12, INCLUDING BUSINESS OFFICES/CORRIDORS/WAITING ROOMS AND DORMITORIES HOUSING.

6. SUPPORTS:

A. ALL EQUIPMENT SHALL BE ADEQUATELY SUPPORTED FROM STRUCTURE.
B. INSERTS IN MASONRY SHALL BE LEAD OR FIBER IN DRILLED HOLES, OR CAST IN PLACE.
C. NAILS OR POWDER ACTUATED FASTENERS SHALL NOT BE USED.
D. EMT/IMC/RGS SUPPORTS SHALL BE A MAXIMUM OF 8'-0" APART AND A MAXIMUM OF 3'-0" FROM BOXES.
E. LIGHTING FIXTURES MOUNTED IN OR ON CEILING SHALL BE SUPPORTED FROM STRUCTURE VIA 12 GAUGE STEEL WIRE. PROVIDE A MINIMUM OF FOUR WIRES, ONE ATTACHED TO EACH CORNER OF LAY-IN FIXTURES. RECESSED DOWNLIGHT FIXTURES SHALL BE SUPPORTED THE SAME. DO NOT SUPPORT RACEWAY OR FIXTURES FROM CEILING GRID OR DUCT WORK. USE U.L. LISTED GRID CLIPS ON ALL LAY-IN FIXTURES.

7. PAINTING:

A. SUITABLE FINISH COAT SHALL BE PROVIDED FOR ALL EQUIPMENT. PANEL TUBS, COVERS, ETC. SHALL BE PRIMED AND ENAMELED TO BLEND WITH ADJACENT SURFACES, OR SHALL BE MANUFACTURER'S STANDARD COLOR BAKED ENAMEL FINISH, OR AS DIRECTED BY THE ARCHITECT.

8. TELECOMMUNICATIONS:

A. FURNISH A COMPLETE TELEPHONE CONDUIT SYSTEM AS INDICATED ON THE DRAWINGS.
B. TELECOMMUNICATION OUTLETS SHALL CONSIST OF A 4" SQUARE DEEP BOX WITH SINGLE GANG PLASTER RING. PROVIDE BLANK PLATE WITH KNOCKOUTS FOR OUTLETS, AS PERMANENT COVERS WILL BE PROVIDED BY A SEPARATE INSTALLER.
C. PROVIDE MINIMUM 1 1/4" RACEWAY, UNLESS OTHERWISE NOTED, FROM EACH BOX TO ABOVE NEAREST ACCESSIBLE CEILING SPACE FOR J-HOOK SYSTEM OR TO CABLE TRAY AS APPLICABLE. PROVIDE MINIMUM 210# TEST NYLON PULL CORD AND NYLON BUSHINGS IN ALL EMPTY RACEWAYS.
D. PROVIDE RACEWAYS FOR ALL EXTERIOR AND/OR EXPOSED LOCATIONS.
E. PROVIDE GROUNDING FOR ALL TELEPHONE/DATA SYSTEMS AND EQUIPMENT PER REQUIREMENTS AND SPECIFICATIONS PROVIDED BY THE OWNERS DESIGNATED VENDOR.
F. ALL LOW-VOLTAGE CABLING SHALL BE PLENUM-RATED.
G. CONTRACTOR SHALL FURNISH AND INSTALL A #6 AWG GREEN INSULATED COPPER WIRE IN CONDUIT FROM THE MAIN ELECTRICAL GROUNDING BAR TO TELECOMMUNICATIONS GROUNDING BUS BAR.
H. PROVIDE MOUNTING BACKBOARDS FOR COMMUNICATIONS EQUIPMENT. BACKBOARDS SHALL BE OF 3/4" TYPE AC, EXTERIOR PLYWOOD, PAINTED BOTH SIDES AND ALL EDGES WITH 2 COATS OF GRAY FLAME RETARDANT PAINT.
I. VERIFY SITE LOCATION OF TELEPHONE SERVICES WITH APPROPRIATE VENDOR, PRIOR TO SUBMITTING BID. TELEPHONE SERVICE CONDUITS SHALL BE PROVIDED TO THE PROPERTY LINE OR POINT AS DIRECTED BY THE LOCAL UTILITY.
J. THE SCOPE OF TELECOMMUNICATIONS DESIGN SHOWN ON THESE DRAWINGS INCLUDES ALL DEVICES, CABLES, AND PATHWAYS IN THE HORIZONTAL DISTRIBUTION SYSTEM. PATHWAYS ONLY, ARE SHOWN FOR THE BACKBONE DISTRIBUTION SYSTEMS TO ALL TELECOMMUNICAITON ROOMS, AND/OR ENCLOSURES. BACKBONE MEDIA, CONNECTIONS BETWEEN THE BACKBONE AND HORIZONTAL DISTRIBUTION SYSTEMS AND TELECOMMUNICATIONS EQUIPMENT ARE NOT WITHIN THE SCOPE OF THESE DOCUMENTS.

9. LIGHTING FIXTURES:

A. TYPES AND MANUFACTURERS ARE SCHEDULED ON THE PLANS. EQUIVALENT FIXTURES BY OTHERS MAY BE SUBMITTED ONLY AS INDICATED ON THE PLANS AND ARE SUBJECT TO THE APPROVAL OF THE OWNER AND ENGINEER.
B. ALL FIXTURES SHALL BE U.L. LISTED AND LABELED.
C. ALL FIXTURES SHALL BE PROVIDED FOR PROPER VOLTAGE BASED ON THE CIRCUIT ASSIGNMENT INDICATED ON THE PLANS.
D. CATALOG NUMBERS ARE FOR GENERAL IDENTIFICATION OF FIXTURES ONLY. ALL RELATED PARTS, SUCH AS PLASTER RINGS, JUNCTION BOXES, LOUVERS, SHIELDS, MOUNTING STEMS, CANOPIES, CONNECTORS, STRAPS, NIPPLES, HARDWARE, ACCESSORIES, ETC., TO FIT THEM PROPERLY TO THE CONSTRUCTION, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. CONTRACTOR SHALL PROVIDE SUITABLE TRIM AND APPURTENANCES TO MOUNT FIXTURES IN TYPE OF CEILING OR WALL AS SPECIFIED IN ARCHITECTURAL FINISH SCHEDULES REGARDLESS OF CATALOG NUMBER GIVEN.
E. ALL FIXTURES SHALL BE GROUNDED PER THE NEC.
F. FIXTURES CONNECTED WITH FLEX TO THE RIGID RACEWAY PORTION OF THE WIRING SYSTEM SHALL CARRY A GREEN BONDING JUMPER WITHIN THE FLEX. THE JUMPER SHALL BE FASTENED TO BOTH THE FIXTURE AND THE RACEWAY SYSTEM WITH A STEEL CITY "G" CLIP OR APPROVED EQUIVALENT. PHASE AND GROUND CONDUCTORS RUN IN FLEX SHALL BE #12 AWG MINIMUM. MAXIMUM FLEX LENGTH SHALL BE 6'-0".
G. SURFACE-MOUNTED FIXTURES INSTALLED ON COMBUSTIBLE MATERIAL SHALL BE MOUNTED AT LEAST 1/4" FROM THE SURFACE OF THE MATERIAL, EXCEPT FOR FIXTURES WHICH ARE PLAINLY MARKED AS U.L. APPROVED FOR MOUNTING DIRECTLY TO SUCH SURFACES.
H. MOUNT ALL FIXTURES PLUMB AND SQUARE WITH ROWS ALIGNED.
I. LUMINAIRES THAT CAN BE SERVICED IN PLACE SHALL HAVE A DISCONNECTING MEANS, WHETHER INTEGRAL OR EXTERNAL, TO EACH LUMINAIRE PER NEC 410.130(G).
J. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF FIXTURES.
K. CONTRACTOR SHALL COORDINATE FIXTURE TYPE AND TRIM WITH CEILING CONSTRUCTION AND ADJUST ACCORDINGLY WITHOUT ADDITIONAL EXPENSE.
L. ALL LIGHTING FIXTURES SHALL BE THERMALLY PROTECTED PER THE NEC.
M. FIXTURES IN CONTACT WITH INSULATION SHALL BE IC RATED.
N. FOR RECESSED LIGHTING FIXTURES IN FIRE RATED CEILINGS, PROVIDE A MANUFACTURER APPROVED AND LISTED FIRE RATED COVER/ASSEMBLY OVER THE FIXTURE TO MAINTAIN THE INTEGRITY OF THE CEILING FIRE RATING. ANY LIGHTING FIXTURES INSTALLED UNDER THE FIRE RATED CAP SHALL BE SUITABLE FOR THE INSTALLATION.

10. LIGHTING CONTROLS:

A. FURNISH AND INSTALL WHERE SHOWN AN ELECTRONIC TIME CONTROLLER AS MANUFACTURED BY TORK (NSI), PARAGON, INTERMATIC, OR APPROVED EQUAL. CONTACTS SHALL BE SPST OR AS INDICATED, RATED 120/277V AT 20A BALLAST LOAD, AND MINIMUM 30,000 SWITCHING CYCLES. PROVIDE WITH THE NUMBER OF CHANNELS INDICATED (MINIMUM 2 CHANNELS) OR AS REQUIRED TO MEET THE INTENT OF THE DRAWINGS. EACH CHANNEL SHALL BE INDIVIDUALLY PROGRAMMABLE WITH 128 ON-OFF OPERATIONS PER WEEK PLUS FOUR SEASONAL SCHEDULES TO MODIFY THE BASIC PROGRAM AND A HOLIDAY SCHEDULE THAT OVERRIDES THE WEEKLY OPERATION. THE CONTROLLER SHALL BE PROVIDED WITH A PHOTOELECTRIC SENSOR, ASTRONOMIC DIAL, AND A BATTERY BACKED-UP, NON-VOLITILE MEMORY FOR SCHEDULES AND TIME CLOCK.
B. LIGHTING CONTACTORS SHALL SWITCH LOADS AT THE VOLTAGE AND AMPERE RATING INDICATED AND SHALL HAVE THE NUMBER OF POLES INDICATED ON THE DRAWINGS OR AS REQUIRED. THE CONTACTOR AND CONTACTS SHALL BE CONTINUOUSLY RATED FOR THE LOAD SERVED, INCLUDING TUNGSTEN FILAMENT, INDUCTIVE, AND HIGH-INRUSH BALLAST LOADS.
C. ALL LIGHTING CONTACTORS SHALL BE ELECTRICALLY HELD AND BE INSTALLED IN A NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED.

1. EQUIPMENT IDENTIFICATION:

A. PROVIDE ENGRAVED PHENOLIC NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT SUPPLIED FOR THE PROJECT, INCLUDING BUT NOT LIMITED TO, WIRING TROUGHS, SAFETY SWITCHES, DISCONNECTS, TRANSFORMERS, PANELBOARDS, SWITCHBOARDS, SWITCHGEARS, MOTOR CONTROL CENTERS (MCC), BUSWAYS, GENERATORS, AUTOMATIC TRANSFER SWITCHES (ATS), UNINTERRUPTIBLE POWER SUPPLY (UPS), POWER DISTRIBUTION UNITS (PDU), FLOOR/REMOTE DISTRIBUTION CABINETS (FDC/RDC), STATIC TRANSFER SWITCHES (STS), ETC. NAMEPLATE SHALL INDICATE THE DEVICE NAME, SYSTEM VOLTAGE (VOLTAGE/PHASE/WIRE), AND UPSTREAM DEVICE AND CIRCUIT. PROVIDE NAMEPLATES FOR CIRCUIT BREAKERS IN SWITCHGEARS, SWITCHBOARDS AND DISTRIBUTION PANELS.
B. NAMEPLATE COLORS SHALL BE AS FOLLOWS:

120/208V EQUIPMENT	BLUE SURFACE WITH WHITE CORE
EMERGENCY SYSTEMS	GREEN SURFACE WITH WHITE CORE
FIRE ALARM SYSTEMS	BRIGHT RED SURFACE WITH WHITE CORE
SECURITY SYSTEMS	BURGUNDY SURFACE WITH WHITE CORE
TELEPHONE SYSTEMS	ORANGE SURFACE WITH WHITE CORE
DATA SYSTEMS	BROWN SURFACE WITH WHITE CORE
TV SYSTEMS	PURPLE SURFACE WITH WHITE CORE
PAGING SYSTEMS	WHITE SURFACE WITH BLACK CORE

C. NAMEPLATES UP TO 8 SQUARE INCHES SHALL NOT BE LESS THAN 1/16" THICK. NAMEPLATES LARGER THAN 8 SQUARE INCHES SHALL NOT LESS THAN 1/8" THICK.
D. LETTERING HEIGHT SHALL BE 1/2" MINIMUM.
E. NAMEPLATES SHALL BE ATTACHED WITH SELF-DRILLING/SELF-TAPPING SCREWS, EXCEPT RIVETS SHALL BE USED WHERE END OF SCREW IS NOT PROTECTED. QUANTITY AS FOLLOWS:

UP TO 5 SQUARE INCHES:	2 SCREWS
5 TO 12 SQUARE INCHES:	4 SCREWS
ABOVE 12 SQUARE INCHES:	6 SCREWS

2. DISCONNECTS:

A. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE IN NEMA 1 ENCLOSURES, UNLESS OTHERWISE NOTED, FUSED OR NON-FUSED AS INDICATED. SWITCHES SHALL HAVE REJECTION-TYPE FUSE CLIPS. SWITCHES SHALL BE BY EATON, SQUARE-D, GENERAL ELECTRIC, OR APPROVED EQUAL.
B. FUSES LESS THAN 60A SHALL BE CLASS RK5, DUAL-ELEMENT, TIME-DELAY WITH INDICATION
C. FUSES GREATER THAN 60A SHALL BE CLASS J, DUAL-ELEMENT, TIME-DELAY WITH INDICATION.
D. A SET OF 3 SPARE FUSES OF EACH SIZE AND TYPE SHALL BE FURNISHED TO THE OWNER.

13. PANELBOARDS:

A. PANELBOARDS SHALL BE PROVIDED AS MANUFACTURED BY EATON, SQUARE-D, GENERAL ELECTRIC, OR APPROVED EQUAL. ALL NEW EQUIPMENT FOR THE PROJECT SHALL BE BY THE SAME MANUFACTURER. LOAD CENTER TYPE PANELBOARDS SHALL BE USED WHERE THE PANELBOARD SERVES A DWELLING UNIT.
B. ALL BUSSING, INCLUDING NEUTRAL AND GROUND, SHALL BE COPPER.
C. ALL BREAKERS SHALL BE AUTOMATIC THERMAL-MAGNETIC TYPE MOLDED CASE BOLT-ON TYPE, CALIBRATED FOR 40 DEGREE C, OR AMBIENT COMPENSATION, UNLESS OTHERWISE NOTED.
D. PANELS SHALL BE FULLY RATED (AIC). NO SERIES AIC RATINGS ARE ALLOWED.
E. PANELS SHALL HAVE FULL SIZE EQUIPMENT GROUNDING BARS AND NEUTRAL BARS.
F. ALL PANELBOARD AND BREAKER LUGS SHALL BE SIZED AND RATED PER THE CONDUCTOR SIZE AND MATERIAL.
G. LIGHTING AND APPLIANCE PANELS (100A-600A) SHALL HAVE FRONT ACCESSIBLE HINGED DOOR-IN-DOOR COVERS WITH DEAD FRONT, SHALL BE 20" WIDE MINIMUM WITH MINIMUM 4" WIDE WIRING GUTTERS.
H. DISTRIBUTION PANELS (600A-1200A) SHALL HAVE FRONT ACCESSIBLE DEAD FRONT COVERS.
I. PROVIDE HANDLE LOCK-ON DEVICES FOR ALL CIRCUIT BREAKERS CONNECTED TO EMERGENCY, EXIT, NIGHT LIGHTING, FIRE ALARM, TELEPHONE BOARDS, AND SECURITY SYSTEMS.
J. BREAKERS USED FOR SWITCHING SHALL BE SWITCHING DUTY (SWD) RATED.
K. BREAKERS USED FOR HEATING, AIR-CONDITIONING AND/OR REFRIGERATION SHALL BE HACR RATED.
L. GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL SHALL BE PROVIDED FOR ALL LOCATIONS PER NEC 210.8, INSTALLED IN A READILY ACCESSIBLE LOCATION. WHERE A DEVICE LOCATION IS NOT ACCESSIBLE, THE GFCI PROTECTION SHALL BE PROVIDED WITH THE BREAKER SERVING THE DEVICE.
M. ARC-FAULT CIRCUIT-INTERRUPTER (AFCI) PROTECTION SHALL BE PROVIDED FOR ALL LOCATIONS PER NEC 210.12, INSTALLED IN A READILY ACCESSIBLE LOCATION. THIS INCLUDES ALL 120V, 20A BRANCH CIRCUITS IN, DORMITORY STYLE HOUSING UNITS AS DEFINED BY THE NEC.

13. PANELBOARDS:

N. ALL OVERCURRENT DEVICES WHICH COMPRISE THE EMERGENCY SYSTEM OR LEGALLY REQUIRED STANDBY SYSTEM SHALL BE SELECTIVELY COORDINATED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE MANUFACTURER DOCUMENTATION INDICATING COMPLIANCE WITH THE SELECTIVE COORDINATION REQUIREMENTS PER THE NEC.
O. ALL PANELBOARDS SHALL HAVE METAL DIRECTORY FRAME. FOR EACH PANELBOARD, PROVIDE TYPED CIRCUIT DIRECTORY PER NEC 408.4. SPARE CIRCUIT BREAKERS SHALL BE LABELED SPARE AND IN THE OFF POSITION.
P. ALL CIRCUIT BREAKERS RATED 1200A OR HIGHER, OR CAPABLE OF BEING RATED 1200A OR HIGHER (I.E. ADJUSTABLE LONG-TIME PICKUP OR REPLACEABLE TRIP/RATING PLUG), SHALL BE PROVIDED WITH AN ENERGY-REDUCING MAINTENANCE SWITCH WITH LOCAL STATUS INDICATOR PER NEC 240.87(B).
Q. ALL ELECTRICAL EQUIPMENT ENCLOSURES IN POOL EQUIPMENT ROOM, CHLORINE, AND ACID ROOMS SHALL BE NEMA-4X STAINLESS STEEL OR NON-METALLIC, WET-LOCATION LISTED AND LISTED TO RESIST CORROSION FROM POOL CHEMICALS.
R. ALL GROUNDING TERMINAL BUSSES OF PANELBOARDS SERVING THE SAME PATIENT VICINITY SHALL BE BONDED TOGETHER WITH 1#10 AWG GREEN INSULATED COPPER GROUNDING CONDUCTOR. THE CONDUCTOR SHALL BE CONTINUOUS EXCEPT THAT IT MAY BE BROKEN AT THE PANELBOARD GROUND BAR IN ORDER TO TERMINATE.

14. FIRE ALARM SYSTEM:

A. SYSTEM SHALL BE A CENTRALIZED, ANALOG, ADDRESSABLE, FULLY ELECTRONICALLY SUPERVISED (INCLUDING AUXILIARY SYSTEMS INTERCONNECT WIRING) SYSTEM LISTED BY UL IN COMPLIANCE WITH ALL APPLICABLE NFPA 72 AND OTHER STANDARDS AS WELL AS THE AMERICAN'S WITH DISABILITIES ACT (ADA). ALL FINAL CONNECTIONS, TESTING AND ADJUSTMENTS SHALL BE PERFORMED BY OR UNDER DIRECT SUPERVISION OF AN AUTHORIZED FACTORY REPRESENTATIVE. SYSTEM SHALL BE SIMPLEX, NOTIFIER, SIEMENS, OR APPROVED EQUAL AS ACCEPTED BY THE ENGINEER. SYSTEM SHALL HAVE A 24HR MINIMUM BATTERY BACKUP.

B. INITIATING DEVICE ACTIVATION SHALL CAUSE OPERATION OF THE PROPER ALARM CIRCUIT IN THE CONTROL PANEL, AND OPERATE ALL AUDIBLE AND VISUAL INDICATING ALARMS. ALL AIR HANDLING UNITS SHALL BE STOPPED UPON ANY ALARM INPUT. EACH AIR HANDLER UNIT SHALL BE PROVIDED WITH A SYSTEM CONTROLLED RELAY TO EFFECT SHUTDOWN. ALL ALARM DEVICES AND LAMPS SHALL CONTINUE TO OPERATE UNTIL THE INITIATING DEVICE IS RESET. SUBSEQUENT ALARMS SHALL RESOUND THE SYSTEM. AN AUDIBLE AND VISUAL SIGNAL SHALL INDICATE SYSTEM TROUBLE. THE CONTROL PANEL SHALL PROVIDE FOR ACTIVATING A UL LISTED CENTRAL STATION SIGNAL FOR NOTIFYING THE FIRE DEPARTMENT.
C. MANUAL STATIONS SHALL BE NON-CODED, WITH PULL LEVER AND GLASS ROD, SEMI-FLUSH MOUNTED. COMBINATION LIGHT AND HORN SIGNALS SHALL BE FLUSH MOUNTED. WIRING SHALL BE IN CONDUIT AS PREVIOUSLY SPECIFIED, #14 AWG MINIMUM, THHN. ALL J-BOXES USED FOR THE FIRE ALARM SYSTEM SHALL BE PAINTED RED.
D. SPRINKLER SYSTEM TAMPER SWITCHES SHALL BE CONNECTED INTO A COMMON ZONE WHICH SHALL DISTINGUISH BETWEEN A CONDUIT FAULT AND A CLOSED VALVE. A CLOSED VALVE SHALL BE INDICATED AS AN ALARM CONDITION, BUT WILL NOT ACTIVATE THE AUDIO-VISUAL DEVICES AND SHALL CAUSE A SUPERVISORY SIGNAL TO BE TRANSMITTED TO THE CENTRAL STATION.
E. CONDUCTORS SHALL BE PLENUM-RATED AND INSTALLED IN CONDUIT AND INSTALLED IN COMPLIANCE WITH NFPA 70, ARTICLE 760; IN ADDITION TO WIRING METHODS 300.4.
F. ALL FIRE ALARM WIRING SHALL BE CLASS B.
G. PROVIDE ALL REQUIRED MODULES, POWER EXTENDERS, PROGRAMMING, ETC. FOR A COMPLETE AND OPERATIONAL SYSTEM.
H. SUBMIT FIRE ALARM SHOP DRAWINGS CONSISTING OF PRODUCT DATA, TO THE ENGINEER AND FOR APPROVAL.
I. FILL OUT NFPA 72 CERTIFICATION REPORT AND SUBMIT TO ENGINEER AND AUTHORITY HAVING JURISDICTION.
J. WARRANTY - ALL WORK PERFORMED AND ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE FREE FROM DEFECTS AND SHALL REMAIN SO FOR A PERIOD OF AT LEAST TWO (2) YEARS FROM THE DATE OF ACCEPTANCE BY THE PROFESSIONAL ENGINEER AND/OR OWNER. THE FULL COST OF MAINTENANCE, LABOR, AND MATERIALS REQUIRED TO CORRECT ANY DEFECT DURING THIS TWO YEAR PERIOD SHALL BE IMMEDIATELY CORRECTED AT NO ADDITIONAL COST TO THE OWNER. ANY DEFECTS THAT RENDER THE SYSTEM INOPERATIVE SHALL BE REPAIRED WITHIN 24 HOURS OF THE OWNER NOTIFYING THE CONTRACTOR. OTHER DEFECTS SHALL BE REPAIRED WITHIN 48 HOURS OF THE OWNER NOTIFYING THE CONTRACTOR.
K. AUDIBLE DEVICES WITHIN SLEEPING ROOMS SHALL PROVIDE A SQUARE WAVE 520HZ TONE COMPATIBLE WITH NFPA 72 18.4.5.3.

16. FIRE STOPPING:

A. ALL PENETRATIONS OF RATED ASSEMBLIES SHALL BE SEALED WITH RATED MATERIALS MEETING ASTM E-814.
B. PROVIDE FIRESTOPPING DEVICE(S) OR SYSTEM(S) WHICH HAVE BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814. INSTALL THE DEVICE(S) OR SYSTEM(S) IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE THE APPROPRIATE DEVICE(S) OR SYSTEM(S) WITH AN 'F' RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED.
C. DEVICE(S) AND/OR SYSTEM(S) SHALL BE BY HILTI, 3M OR EQUIVALENT.

17. SEISMIC:

A. THE ELECTRICAL CONTRACTOR SHALL RETAIN THE SERVICES OF A STRUCTURAL ENGINEER TO DETERMINE SITE CLASSIFICATION AND SEISMIC RESTRAINT REQUIREMENTS FOR ELECTRICAL EQUIPMENT AND SYSTEMS REQUIRED FOR THIS PROJECT. WHERE REQUIRED, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING RESTRAINTS TO RESIST THE EARTHQUAKE EFFECTS ON THE ELECTRICAL SYSTEM. THE REQUIREMENTS FOR THESE RESTRAINTS ARE FOUND IN CHAPTERS 16 AND 17 OF THE NORTH CAROLINA STATE BUILDING CODE (NCSBC).
B. THE ELECTRICAL CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA TO DESIGN SEISMIC RESTRAINT ELEMENTS REQUIRED FOR THIS PROJECT. THE ENGINEER'S COMPUTATIONS, BEARING HIS PROFESSIONAL SEAL, SHALL ACCOMPANY SHOP DRAWINGS WHICH SHOW COMPLIANCE WITH THE NORTH CAROLINA STATE BUILDING CODE. COMPUTATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW PRIOR TO THE PURCHASING OF MATERIALS, EQUIPMENT, SYSTEMS AND ASSEMBLIES.
C. THE ELECTRICAL CONTRACTOR SHALL INCLUDE SHOP DRAWINGS OF THE SPECIFIC METHODS OF SEISMIC RESTRAINT TO BE USED FOR THIS PROJECT PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT AND SYSTEMS.
D. INTERNAL SEISMIC RESTRAINT ELEMENTS OF MANUFACTURED EQUIPMENT SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER RETAINED BY THE MANUFACTURER. SUCH CERTIFICATE APPLIES ONLY TO INTERNAL ELEMENTS OF THE EQUIPMENT. ALL EQUIPMENT ANCHORAGE REQUIREMENTS SHALL BE COORDINATED WITH THE BUILDING STRUCTURE AND SHALL BE COMPATIBLE THERETO. ALL SUCH ANCHORAGE SHALL BE REVIEWED BY THE PROJECT'S ELECTRICAL ENGINEER PRIOR TO INSTALLATION.
E. THE PROFESSIONAL ENGINEER RETAINED BY THE ELECTRICAL CONTRACTOR FOR SEISMIC RESTRAINT CALCULATIONS AND DESIGN SHALL VISIT THE JOB SITE UPON COMPLETION OF THE SEISMIC RESTRAINT INSTALLATION. THIS ENGINEER SHALL PROVIDE IN WRITING, VERIFICATION OF COMPLIANCE WITH THE APPROVED SEISMIC SUBMITTAL. THIS ENGINEER SHALL ALSO PERFORM ANY SPECIAL INSPECTIONS REQUIRED. THIS VERIFICATION SHALL BEAR THE ENGINEER'S PROFESSIONAL SEAL. JOB SITE INSPECTION BY OTHER THAN THIS ENGINEER IS NOT ACCEPTABLE. SEE CHAPTERS 16 AND 17 OF THE NORTH CAROLINA STATE BUILDING CODE.
F. REVIEW OF THE SEISMIC DESIGN AND SHOP DRAWINGS BY THE PROJECT'S ELECTRICAL ENGINEER, STRUCTURAL ENGINEER OR ARCHITECT SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY WITH SEISMIC AND OTHER REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE.

18. ELECTRICAL COORDINATION WITH OTHER TRADES:

A. THE ELECTRICAL CONTRACTOR SHALL CONNECT AND/OR PROVIDE FINAL CONNECTIONS TO ALL EQUIPMENT SUPPLIED BY OTHERS APPLICABLE TO THE PROJECT, INCLUDING BUT NOT LIMITED TO, MECHANICAL, PLUMBING, FIRE PROTECTION AND SUPPRESSION, OWNER FURNISHED, KITCHEN, LABORATORY, ETC. UNLESS OTHERWISE NOTED.
B. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONNECTIONS PRIOR TO ROUGH-IN USING APPROVED CATALOG SHEETS AND SHOP DRAWINGS.
C. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANUAL MOTOR STARTER SWITCHES, DISCONNECT SWITCHES, RECEPTACLES, ETC. TO MECHANICAL AND PLUMBING EQUIPMENT. ALL STARTERS, OTHER THAN MANUAL STARTER SWITCHES, SHALL BE PROVIDED BY OTHERS, BUT INSTALLED BY THE ELECTRICAL CONTRACTOR.
D. ALL DISCONNECT SWITCHES AND FUSE SIZES SHALL BE COORDINATED WITH SHOP DRAWINGS PRIOR TO ORDERING OR INSTALLING. ANY EQUIPMENT INSTALLED INCORRECTLY BECAUSE OF LACK OF COORDINATION WILL BE REMOVED AND INSTALLED CORRECTLY AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
E. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL CONDUIT RUNS AND LIGHT FIXTURE LOCATIONS ABOVE THE CEILING WITH OTHER TRADES PRIOR TO INSTALLATION.
F. ALL DUCT SMOKE DETECTORS SHALL BE PROVIDED AND CONNECTED BY THE ELECTRICAL CONTRACTOR, BUT INSTALLED BY THE MECHANICAL CONTRACTOR.
G. THE ELECTRICAL CONTRACTOR SHALL PROVIDE 120V POWER AT EACH HVAC UNIT HAVING A CONTROLS POWER SUPPLY. CIRCUIT(S) SHALL BE DEDICATED 20A SERVING A MAXIMUM OF 10 HVAC UNITS PER CIRCUIT. COORDINATE ALL LOCATIONS WITH THE MECHANICAL CONTRACTOR.

19. TESTING AND DOCUMENTATION:

A. THE ELECTRICAL CONTRACTOR SHALL ENGAGE THE GEAR MANUFACTURER OR ANOTHER INDEPENDENT 3RD PARTY TO PROVIDE A COMPLETE FAULT CURRENT, COORDINATION, AND ARC-FLASH HAZARD ANALYSIS STUDY AND REPORT, COMPLETE WITH ARC-FLASH HAZARD LABELS FOR ALL EQUIPMENT.
B. TESTING AND DOCUMENTATION SHALL BE PROVIDED AS FOLLOWS:
1. ALL CONDUCTORS SHALL BE MEGGERED BEFORE FINAL CONNECTIONS.
2. THE GROUND SYSTEM SHALL BE TESTED AND VERIFIED TO BE 25 OHMS OR LESS RESISTANCE-TO-GROUND.
3. GFCI EQUIPPED BREAKERS SHALL BE PERFORMANCE TESTED.
4. LIGHTING CONTROL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION OF SETPOINTS.
5. GENERATOR TESTING SHALL INCLUDE AN 4-HOUR, 100% LOAD BANK AND TRANSIENT TESTING.
6. ATS TESTING SHALL INCLUDE TRANSFER FUNCTIONS, VERIFICATION OF TIMER/PICKUP/DROP-OUT SETPOINTS AND LOAD/NO-LOAD TEST OPERATION.

20. COMMISSIONING:

A. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR EQUIPMENT/SYSTEM START-UP AND TESTING.

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER ZANE KUSEYBI

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

ELECTRICAL SPECIFICATIONS

E0.02

Optima # 21-0180

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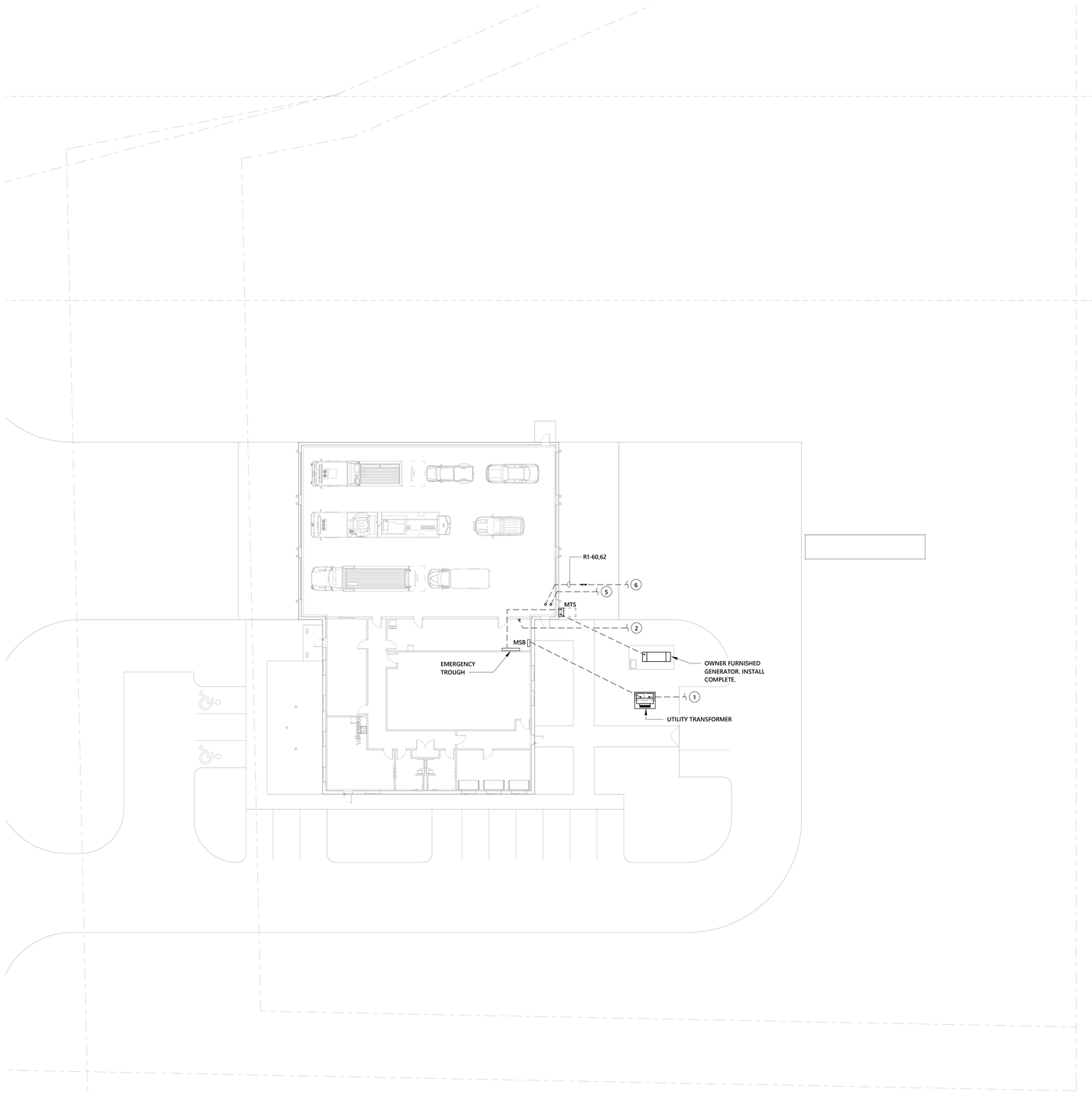
NOTES:

1. PROVIDE (2)-6" CONDUIT FROM PAD MOUNTED TRANSFORMER TO DESIGNATED POINT AT EDGE OF PROPERTY FOR LOCAL POWER UTILITY USE. CONDUIT LOCATION, SIZE, AND BENDING RADIUS SHALL BE COORDINATED WITH UTILITY BEFORE INSTALLATION. PULLBOXES AS REQUIRED BY CODE/LOCAL UTILITY.
2. PROVIDE (2)-4" CONDUIT FROM MAIN HEAD END ROOM TO PROPERTY LINE FOR TELEPHONE SERVICE. CONDUIT LOCATION, SIZE, AND BENDING RADIUS SHALL BE COORDINATED WITH UTILITY BEFORE INSTALLATION.
3. PROVIDE (1)-4"CONDUIT FROM MAIN HEAD END ROOM TO PROPERTY LINE FOR CATV SERVICE. CONDUIT LOCATION, SIZE, AND BENDING RADIUS SHALL BE COORDINATED WITH UTILITY BEFORE INSTALLATION.
4. ALL LOW VOLTAGE CONDUIT RUNS SHALL HAVE HAND HOLES/PULL BOXES SUPPLIED AT 150' INTERVALS UNLESS OTHERWISE INDICATED BY LOCAL UTILITY. MINIMUM SIZE SHALL BE 36" X 36" CAST CONCRETE.
5. EXTEND 1"C-4#10 FOR FIRE SERVICE BACKFLOW & TAMPER SWITCHES. COORDINATE EXACT QUANTITY AND LOCATION WITH CIVIL PLANS. PROVIDE TVSS AT BUILDING.
6. DOMESTIC SERVICE BACKFLOW AND FIRE SERVICE ENCLOSURE HEATERS. 1"C-4#10 & 1#10G. PROVIDE (1) CIRCUIT AND (1) SIMPLEX RECEPTACLE PER ENCLOSURE.
7. SITE LIGHTING BY UTILITY.
8. FINAL LOCATION OF UTILITY TRANSFORMER AND GENERATOR TO BE DETERMINED.
9. ALL LIGHTING AND POWER CONDUCTORS SHALL BE INSTALLED BETWEEN 24" (MINIMUM) AND 36" (MAXIMUM) BELOW FINISHED GRADE.
10. ALL COMMUNICATIONS CONDUIT AND CABLES SHALL BE INSTALLED 36" (MINIMUM) BELOW FINISHED GRADE.
11. ALL CONDUCTORS FOR EXTERIOR LIGHTING AND POWER CIRCUITS SHALL BE #10 AWG MINIMUM.



1 SITE-ELECTRICAL PLAN
1/16" = 1'-0"

LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

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North Carolina License Number C-0914

FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER JANE KUSETH

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 1-19-2022

ELECTRICAL SITE PLAN

E0.10

Optima # 21-0180

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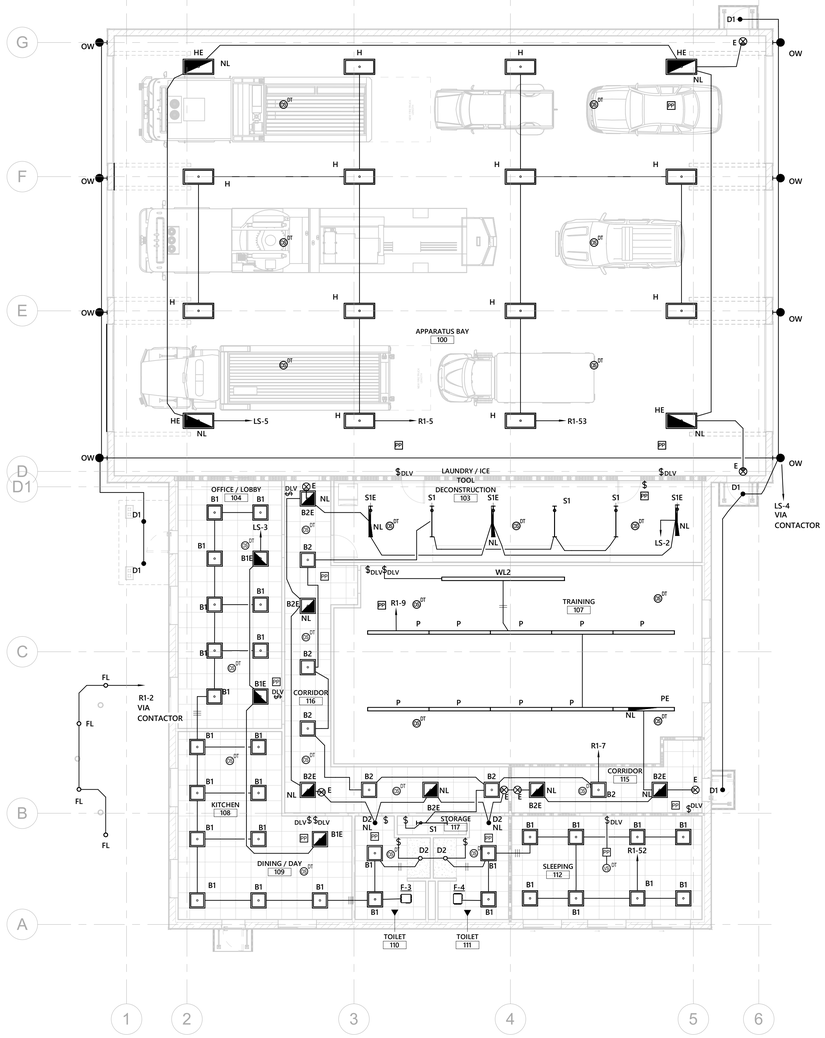
LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMP	BALLAST/DRIVER	Apparent Load	Voltage Nominal	MFR	CATALOG SERIES	NOTE
B1	2X2 LED LAY-IN TROFFER	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	23.40 VA	120 V	COOPER	22SR LD2 29 C UNV L835	3500K 2900 MINIMUM LUMENS UL LISTED DAMP LOCATIONS PROVIDE FLANGE KIT FOR GYPBOARD APPLICATION
B1E	2X2 LED LAY-IN TROFFER	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	23.40 VA	120 V	COOPER	22SR LD2 29 C UNV L835	4000K 2000 MINIMUM LUMENS UL LISTED DAMP LOCATIONS PROVIDE FLANGE KIT FOR GYPBOARD APPLICATION
B2	2X2 LED LAY-IN FLAT PANEL	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	24.10 VA	120 V	COOPER	22FPSL2SCT3	4000K 2000 MINIMUM LUMENS UL LISTED DAMP LOCATIONS PROVIDE FLANGE KIT FOR GYPBOARD APPLICATION
B2E	2X2 LED LAY-IN FLAT PANEL	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	24.10 VA	120 V	COOPER	22FPSL2SCT3	4000K 2000 MINIMUM LUMENS UL LISTED DAMP LOCATIONS PROVIDE FLANGE KIT FOR GYPBOARD APPLICATION
D1	3-1/2" ADJUSTABLE/ SLOPE LED DOWNLIGHT	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	20.00 VA	120 V	COOPER	LDA3B-18-R45-90-35-0010	3-1/2" APERATURE MINIMUM 1250 LUMEN PACKAGE MINIMUM 10% DIMMING CLEAR SPECULAR
D2	4" RECESSED LED DOWNLIGHT. WET LOCATION LABEL	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	10.30 VA	120 V	COOPER	LD4 06 930 WH	4" APERATURE 600 LUMEN PACKAGE
E	EXIT SIGN	LED	INTEGRAL LED DRIVER	1.01 VA	120 V	COOPER	APX6	AC ONLY
FL	FLOOD FLAG LED	LED		20.00 VA	120 V	LUMASCAPE	LS853LED-20-H6-A-B-NM-28-Q-01-09	
H	2X4 LED HI BAY	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	138.00 VA	120 V	COOPER	LHB-24-UNV-L840-CD-U	4000K 4200 MINIMUM LUMENS UL LISTED DAMP LOCATIONS
HE	2X4 LED HI BAY	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	138.02 VA	120 V	COOPER	LHB-24-UNV-L840-CD-U	4000K 4200 MINIMUM LUMENS UL LISTED DAMP LOCATIONS
OW	UP/DOWN EXTERIOR SCONCE UP/DOWN EXTERIOR SCONCE	LED	INTEGRAL LED DRIVERS (2)	10.00 VA	120 V	ATLANTIC	4VUDWL-1-25-8-10-30-25-8-10-30	3000K 850 LUMENS UP/DOWN WET LOCATION
P	8' LED PENDANT	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	90.00 VA	120 V	LUMENWERX	VIA4DI-HLO-1.5D-LED-80-750-500-40-8'-UNV-D1-1-53WAC36	4000K 10000 MINIMUM LUMENS
PE	8' LED PENDANT	LED	INTEGRAL LED DRIVER	90.00 VA	120 V	LUMENWERX	VIA4DI-HLO-1.5D-LED-80-750-500-40-8'-UNV-D1-1-53WAC36	4000K 10000 MINIMUM LUMENS
S1	4 FT. LED STRIP	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	48.00 VA	120 V	COOPER	4SNLED-LD5-70SL-SLW-UNV-L835-CD-1-U	PROVIDE CHAIN FOR PENDANT MOUNTING PROVIDE WIRE GUARD 4000 MINIMUM LUMENS LENSED
S1E	4 FT. LED STRIP	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	48.00 VA	120 V	COOPER	4SNLED-LD5-70SL-SLW-UNV-L835-CD-1-U	PROVIDE CHAIN FOR PENDANT MOUNTING PROVIDE WIRE GUARD 4000 MINIMUM LUMENS LENSED
WL2	16' LED PENDANT	LED	INTEGRAL LED DRIVER (STANDARD 0-10V DIMMING)	304.04 VA	120 V	LUMENWERX	VIA4PD ARO2 LED 80 500 40 16FT 120 D1 1	PROVIDE AIRCRAFT CABLE FOR SUSPENSION ARCHITECT TO CHOOSE COLOR AND FINISH.



1 **FIRST FLOOR LIGHTING FOOR PLAN - BASE BID**
1/8" = 1'-0"

LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER JANE KUSEYB

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 1-19-2022

FIRST FLOOR LIGHTING PLAN - BASE BID

E1.01

Optima # 21-0180

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EXHAUST FAN SCHEDULE

ID	LOCATION	TYPE	CFM	APPROX. ESP	DRIVE TYPE	FAN RPM	ELECTRICAL DATA HP	VOLTAGE	POLES	Panel	Circuit Number	Apparent Load	Disconnect Type	WIRE & CONDUIT SIZE
F-1	APPARATUS BAY	SUPPLY	5000	0.250	BELT	680	0.5 hp	208 V	2	M1	2,4	1,176.00 VA	MANUAL MOTOR SWITCH-2P	2#12, 1#12 G 3/4"-C
F-2	APPARATUS BAY	EXHAUST	5000	0.250	BELT	680	0.5 hp	208 V	2	M1	47,49	1,176.00 VA	MANUAL MOTOR SWITCH-2P	2#12, 1#12 G 3/4"-C
F-3	110 TOILET	EXHAUST	150	0.250	DIRECT	700		120 V	1	R1	52	26.00 VA	MANUAL MOTOR SWITCH	2#12, 1#12 G 3/4"-C
F-4	111 TOILET	EXHAUST	150	0.250	DIRECT	700		120 V	1	R1	52	26.00 VA	MANUAL MOTOR SWITCH	2#12, 1#12 G 3/4"-C

COMMON AREA INDOOR UNIT SCHEDULE

SYMBOL	NOMINAL TONNAGE	ELECTRIC AUXILIARY HEAT KW	STAGES	AMPS	VOLTAGE	PHASE	FAN MOTOR FLA	ELECTRICAL DATA MCA	FUSE	VOLTAGE	PHASE	Panel	Circuit Number	Apparent Load	Load Classification	Disconnect Size	Wire & Conduit Size	MATCHING OUTDOOR UNIT
IDU-1	1.5	5.0	1	20.0	208 V	1	2.8 A	26.1	30.0	208 V	1	M1	12,14	5,430.00 VA	HEATING	30A/F30-2P	2#10, 1#10 G 3/4"-C	HP-1
IDU-2	4	15.0	1	31.3	208 V	3	4.1 A	47.7	50.0	208 V	3	M1	41,43,45	19,980.00 VA	HEATING	60A/F60-3P	3#4, 1#10G 1-1/4"C	HP-2
IDU-3	3	10.0	1	36.2	208 V	1	4.1 A	50.4	60.0	208 V	1	M1	13,15	10,483.20 VA	HEATING	60A/F60-2P	2#4, 1#10G 1-1/4"C	HP-3
IDU-4	2	10.0	1	36.2	208 V	1	2.8 A	50.4	60.0	208 V	1	M1	16,18	10,483.20 VA	HEATING	60A/F60-2P	2#4, 1#10G 1-1/4"C	HP-4

COMMON AREA HEAT PUMP SCHEDULE (AIR COOLED)

ID	NOMINAL TONNAGE	COMPRESSOR LRA	RLA	FAN FLA	ELECTRICAL DATA MCA	FUSE	VOLTAGE	PH	Panel	Circuit Number	Apparent Load	Load Classification	Disconnect Size	Wire & Conuit Size	MATCHING INDOOR UNIT
HP-1	1.5	48.0	9.0	0.5	11.8	20.0	208 V	1	M1	6,8	2,450.00 VA	COOLING	30A/F20-2P	2#12, 1#12 G 3/4"-C	IDU-1
HP-2	4	60.0	6.0	0.8	8.3	15.0	208 V	3	M1	17,19,21	7,740.00 VA	COOLING	30A/F30-3P	3#10, 1#10 G 3/4"-C	IDU-2
HP-3	3	70.0	8.5	1.1	11.7	20.0	208 V	1	M1	20,22,24	4,210.00 VA	COOLING	30A/F20-3P	3#12, 1#12 G 3/4"-C	IDU-3
HP-4	2	62.9	10.9	0.5	11.8	20.0	208 V	1	M1	9,11	3,810.00 VA	COOLING	30A/F30-2P	2#10, 1#10 G 3/4"-C	IDU-4

ELECTRIC WALL HEATER SCHEDULE

ID	LOCATION	CFM	BTUH	KW	MOTOR VOLT	PH	Panel	Circuit Number	Apparent Load	Load Classification	Disconnect Size	Wire & Conduit Size
EUH-1	APPARATUS BAY	700	25600	7.5	208 V	3	M1	29,31,33	7,500.00 VA	HEATING	30A/F30-3P	3#10, 1#10 G 3/4"-C
EUH-2	APPARATUS BAY	700	25600	7.5	208 V	3	M1	32,34,36	7,500.00 VA	HEATING	30A/F30-3P	3#10, 1#10 G 3/4"-C
EUH-3	APPARATUS BAY	700	25600	7.5	208 V	3	M1	35,37,39	7,500.00 VA	HEATING	30A/F30-3P	3#10, 1#10 G 3/4"-C
EUH-4	APPARATUS BAY	700	25600	7.5	208 V	3	M1	38,40,42	7,500.00 VA	HEATING	30A/F30-3P	3#10, 1#10 G 3/4"-C

E_FIRE_EQ Schedule

Identity Mark	VOLT	Phase	Panel	Circuit Number	Apparent Load	Load Classification	Disconnect SIZE	Conduit and Wire Size	REMARK
FIRE HOSE WASHER	120 V	1	R1	13	1,610.00 VA	MISC.	30A/F20-2P	2#12, 1#12 G 3/4"-C	REFER TO ITEM #06 OF FIRE APPARATUS SCHEDULE ON SHEET A10.01
FIRE WASHER EXTRACTOR	240 V	1	MQ	3,5	2,880.00 VA	MISC.	30A/F20-2P	2#12, 1#12 G 3/4"-C	REFER TO ITEM #08 OF FIRE APPARATUS SCHEDULE ON SHEET A10.01
HOSE DRYER	240 V	1	MQ	2,4	7,220.00 VA	MISC.	60A/F35-2P	2#8, 1#10 G 3/4"-C	REFER TO ITEM #07 OF FIRE APPARATUS SCHEDULE ON SHEET A10.01
FIRE AIR COMPRESSOR	240 V	1	MQ	6,8	11,500.00 VA	MOTORS	100A/F80-2P	2#3, 1#8 G 1-1/4"-C	REFER TO ITEM #05 OF FIRE APPARATUS SCHEDULE ON SHEET A10.01

PLUMBING CIRCULATION PUMP SCHEDULE

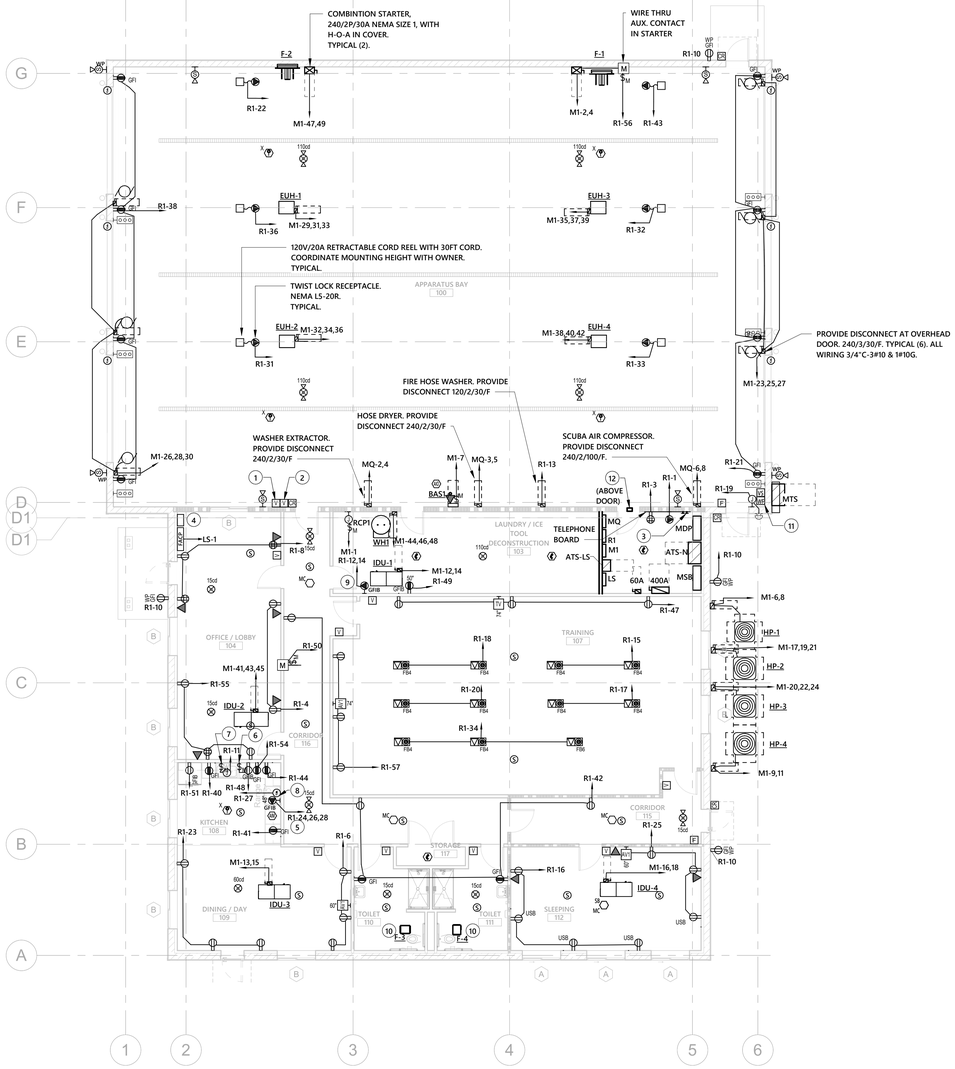
ID	Voltage Nominal	HP	Phase	Panel	Circuit Number	Apparent Load	Load Classification	Disconnect SIZE	Conduit and Wire Size
RCP1	120 V	1/2	1	M1	1	1,176.00 VA	MOTORS	MANUAL MOTOR SWITCH	2#12, 1#12 G 3/4"-C

E_PLUMBING AIR COMPRESSOR Schedule

ID	Voltage Nominal	HP	Phase	Panel	Circuit Number	Apparent Load	Load Classification	Disconnect SIZE	Conduit and Wire Size

PLUMBING EQ SCHEDULE (WH1)

ID	ELECTRICAL DATA VOLTAGE	PH	Panel	Circuit Number	Apparent Load	Load Classification	Disconnect Size	Wire & Conduit Size
WH1	208 V	3	M1	44,46,48	36,000.00 VA	WATER HEATER	200A/F125-3P	4#1, 1#6 G 1-1/2"C



1 FIRST FLOOR POWER FLOOR PLAN - BASE BID

1/8" = 1'-0"

GENERAL NOTES

1. SEE DETAIL FOR STANDARD MOUNTING HEIGHTS OF ALL DEVICES, UNLESS OTHERWISE NOTED.
2. ALL DEVICES (SWITCHES AND RECEPTACLES) SHALL BE GRAY AND EMERGENCY SHALL BE RED. COVER PLATE SHALL BE 302 STAINLESS STEEL. ALL COVER PLATES IN MASONRY WALLS SHALL BE JUMBO PLATES.
3. DEVICE BOXES SHALL NOT BE MOUNTED BACK TO BACK IN COMMON WALLS UNLESS OTHERWISE NOTED.
4. ALL FIRE ALARM SHALL BE IN METALLIC CONDUIT UNLESS OTHERWISE NOTED.
5. ALL LOW VOLTAGE CABLING SHALL BE PLENUM RATED.
6. ALL WALL MOUNTED OCCUPANCY/VACANCY SENSOR SWITCH OUTLETS SHALL BE BE PROVIDED WITH A GROUNDED CONDUCTOR AS PART OF THE WIRING SYSTEM.
7. ALL PANELBOARDS SHALL BE PROVIDED WITH A TYPED CIRCUIT DIRECTORY PER NEC 408.4. SPARE CIRCUIT BREAKERS SHALL BE PLACED IN THE "OFF" POSITION.

KEYED NOTES

1. VOLUME CONTROL FOR BAY SPEAKER.
2. VOLUME CONTROL FOR EXTERIOR SPEAKER.
3. GROUND BAR AT TELEPHONE BOARD.
4. GENSET ANNUNCIATOR.
5. PROVIDE 4#6, 1#10G 1" C.
6. SWITCH FOR DISWASHER.
7. J-BOX FOR 120V CONNECTION TO GARBAGE DISPOSAL.
8. J - BOX FOR 120V COONECTION TO RANGE HOOD. COORDINATE EXACT REQUIREMENT WITH RANGE HOOD MANUFACTURER PRIOR TO ROUGH-IN. MONITOR FIRE STATUS THRU FIRE ALARM MODULE.
9. PROVIDE 3#10, 1#10G, 3/4" C FOR DRYER CIRCUIT.
10. REFER TO SHEET E101 FOR EXHAUST FAN CONNECT TO LOCAL LIGHTING CIRCUIT.
11. FIRE SPRINKLER FLOW AND TAMPER SWITCH.
12. BUCK BOOSTER TRANSFORMER 208V:230V, 3 PHASE. 30KVA OUTPUT (ACME MODEL T-1-11685).

LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER TANE KUSEYB

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 1-19-2022

FIRST FLOOR POWER PLAN - BASE BID

E2.01

Optima # 21-0180

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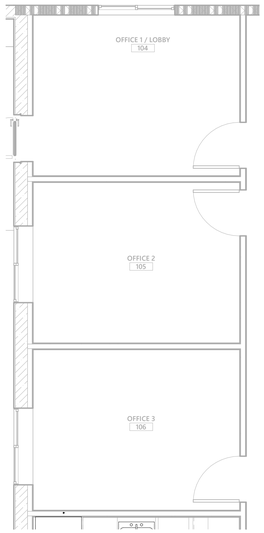
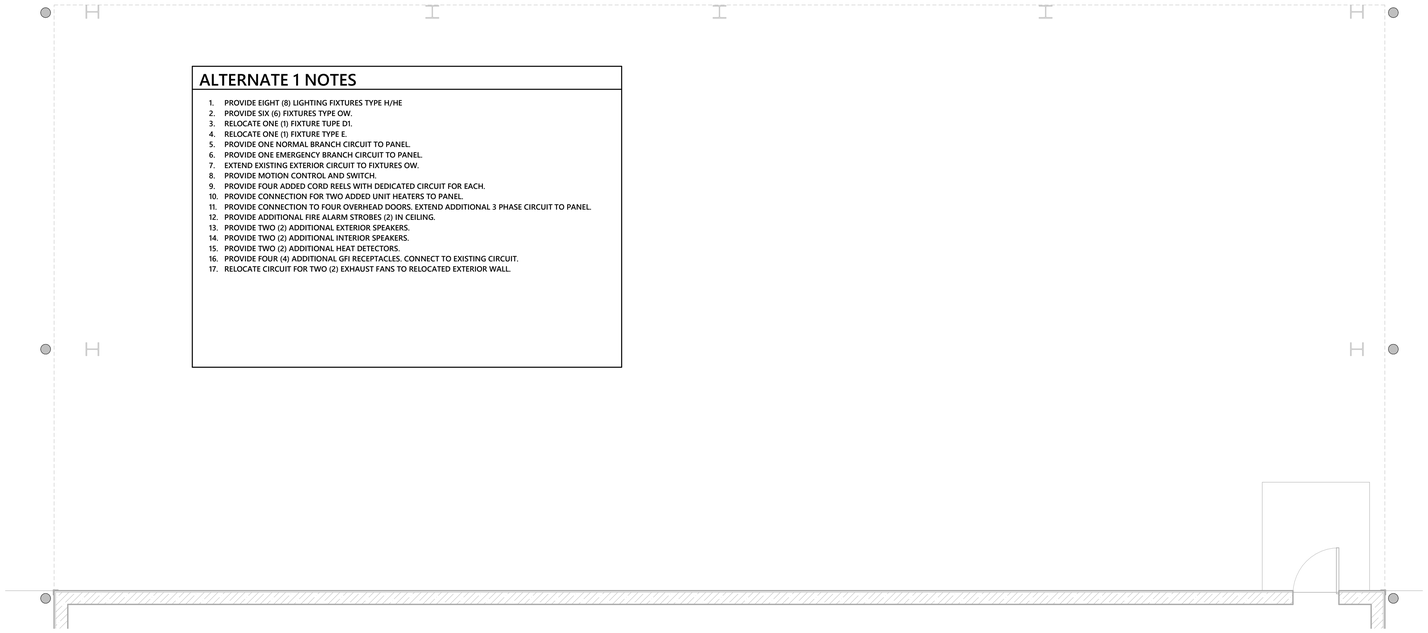


2 FIRST FLOOR ELECTRICAL FLOOR PLAN - ALTERNATE 2
1/4" = 1'-0"

ALTERNATE 2 NOTES

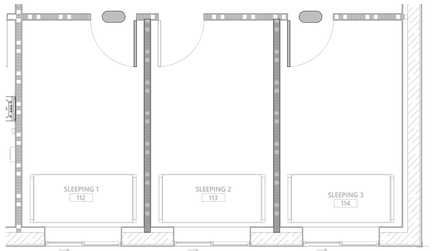
1. PROVIDE 4 TYPE "B" LIGHTING FIXTURES FOR EACH ROOM.
2. PROVIDE 1 LOW VOLTAGE DIMMER SWITCH FOR EACH ROOM.
3. PROVIDE 1 CEILING MOUNTED OCCUPANCY SENSOR, DUAL TECHNOLOGY FOR EACH ROOM.
4. PROVIDE 1 OCCUPANCY SENSOR POWER PACK FOR EACH ROOM.
5. PROVIDE 4 DUPLEX RECEPTACLES FOR EACH ROOM.
6. PROVIDE 1 QUAD RECEPTACLE FOR EACH ROOM.
7. PROVIDE 1 DATA OUTLET FOR EACH ROOM.
8. PROVIDE 1 FIRE ALARM STROBE FOR EACH ROOM.
9. PROVIDE 1 CEILING SPEAKER FOR EACH ROOM.
10. PROVIDE 1 VOLUME CONTROL FOR EACH ROOM.



1 FIRST FLOOR ELECTRICAL FLOOR PLAN - ALTERNATE 1
1/4" = 1'-0"

ALTERNATE 1 NOTES

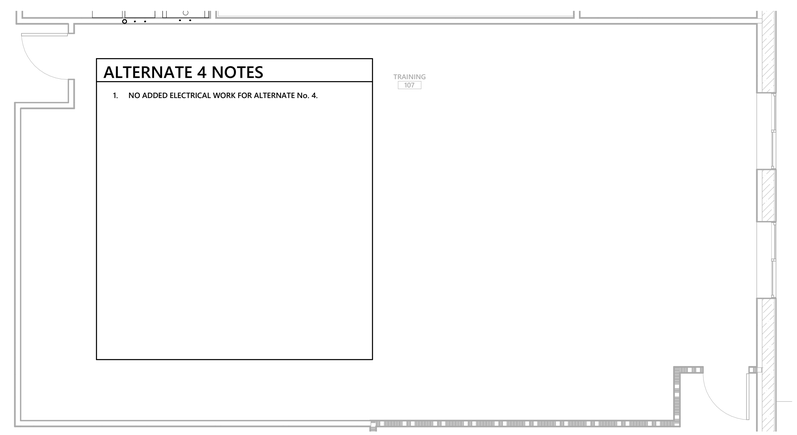
1. PROVIDE EIGHT (8) LIGHTING FIXTURES TYPE H/HE
2. PROVIDE SIX (6) FIXTURES TYPE OW.
3. RELOCATE ONE (1) FIXTURE TUPE D1.
4. RELOCATE ONE (1) FIXTURE TYPE E.
5. PROVIDE ONE NORMAL BRANCH CIRCUIT TO PANEL.
6. PROVIDE ONE EMERGENCY BRANCH CIRCUIT TO PANEL.
7. EXTEND EXISTING EXTERIOR CIRCUIT TO FIXTURES OW.
8. PROVIDE MOTION CONTROL AND SWITCH.
9. PROVIDE FOUR ADDED CORD REELS WITH DEDICATED CIRCUIT FOR EACH.
10. PROVIDE CONNECTION FOR TWO ADDED UNIT HEATERS TO PANEL.
11. PROVIDE CONNECTION TO FOUR OVERHEAD DOORS. EXTEND ADDITIONAL 3 PHASE CIRCUIT TO PANEL.
12. PROVIDE ADDITIONAL FIRE ALARM STROBES (2) IN CEILING.
13. PROVIDE TWO (2) ADDITIONAL EXTERIOR SPEAKERS.
14. PROVIDE TWO (2) ADDITIONAL INTERIOR SPEAKERS.
15. PROVIDE TWO (2) ADDITIONAL HEAT DETECTORS.
16. PROVIDE FOUR (4) ADDITIONAL GFI RECEPTACLES. CONNECT TO EXISTING CIRCUIT.
17. RELOCATE CIRCUIT FOR TWO (2) EXHAUST FANS TO RELOCATED EXTERIOR WALL.



3 FIRST FLOOR ELECTRICAL FLOOR PLAN - ALTERNATE 3
1/4" = 1'-0"

ALTERNATE 3 NOTES

1. PROVIDE 2 TYPE "B" LIGHTING FIXTURES FOR EACH ROOM.
2. PROVIDE 1 DIMMER SWITCH FOR EACH ROOM.
3. PROVIDE 1 CEILING MOUNTED VACANCY SENSOR, DUAL TECHNOLOGY FOR EACH ROOM.
4. PROVIDE 1 OCCUPANCY SENSOR POWER PACK FOR EACH ROOM.
5. PROVIDE 2 DUPLEX RECEPTACLE FOR EACH ROOM.
6. PROVIDE 1 QUAD RECEPTACLE FOR EACH ROOM.
7. PROVIDE 1 DATA OUTLET FOR EACH ROOM.
8. PROVIDE 1 FIRE ALARM MUTI CRITERIA DETECTOR FOR EACH ROOM.
9. PROVIDE 1 CEILING SPEAKER FOR EACH ROOM.
10. PROVIDE 1 VOLUME CONTROL FOR EACH ROOM.
11. PROVIDE 1 CEILING STROBE, 177CD FOR EACH ROOM.



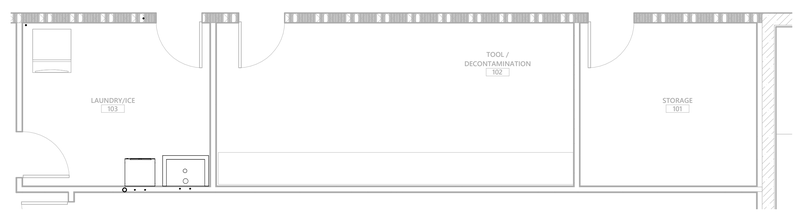
4 FIRST FLOOR ELECTRICAL FLOOR PLAN - ALTERNATE 4
1/4" = 1'-0"

ALTERNATE 4 NOTES

1. NO ADDED ELECTRICAL WORK FOR ALTERNATE No. 4.

ALTERNATE 5 NOTES

1. PROVIDE 2 TYPE "S1" LIGHTING FIXTURES FOR RM 101 AND RM 103.
2. PROVIDE 4 TYPE "S1" LIGHTING FIXTURES FOR RM 102.
3. PROVIDE 1 LOW VOLTAGE DIMMER SWITCH FOR EACH ROOM.
4. PROVIDE 1 CEILING MOUNTED OCCUPANCY SENSOR, DUAL TECHNOLOGY FOR EACH ROOM.
5. PROVIDE 1 OCCUPANCY SENSOR POWER PACK FOR EACH ROOM.
6. PROVIDE 2 DUPLEX RECEPTACLES FOR EACH ROOM.
7. PROVIDE 1 QUAD RECEPTACLE FOR EACH ROOM.
8. PROVIDE 1 DATA OUTLET FOR EACH ROOM.
9. PROVIDE 1 FIRE ALARM SMOKE DETECTOR FOR ROOM 101 AND 103. PROVIDE 2 FIRE ALARM SMOKE DETECTORS FOR ROOM 102.
10. PROVIDE 1 CEILING SPEAKER FOR EACH ROOM.
11. PROVIDE 1 VOLUME CONTROL FOR EACH ROOM.
12. PROVIDE 1 FIRE ALARM STROBE FOR EACH ROOM.



5 FIRST FLOOR ELECTRICAL FLOOR PLAN - ALTERNATE 5
1/4" = 1'-0"

CREECH & ASSOCIATES
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North Carolina License Number C-0914

FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER JANE KUSEYH

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

FIRST FLOOR ELECTRICAL PLAN - ALTERNATE BID

E3.01

Optima # 21-0180

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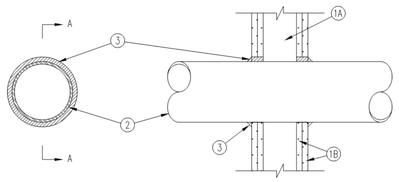
WL 1085

System No. W-L-1085

F Rating – 1 and 2 Hr (See Item 1B)
T Rating – 0 Hr
L Rating At Ambient – Less Than 1 CFM/Sq Ft
L Rating At 400 F – 4 CFM/Sq Ft



SECTION A–A

1. Wall Assembly The 1 or 2 hr fire–rated gypsum wallboard/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 wallboard type, number of layers, fastener type and sheet orientation shall be as specified in the individual Wall and Partition Designs. Max diam of opening is 13–1/4 in.
   Diam of circular opening cut through gypsum wallboard on each side of wall assembly to be min 1/4 in. to max 1/2 in. larger than outside diam of through penetrant (Item 2). The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

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HILTI FIRESTOP SYSTEMS

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November 24, 1999

CLASSIFIED C UL US

WL 1085

System No. W-L-1085

F Rating – 1 and 2 Hr (See Item 1B)
T Rating – 0 Hr
L Rating At Ambient – Less Than 1 CFM/Sq Ft
L Rating At 400 F – 4 CFM/Sq Ft

2. Through Penetrants One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The annular space between the through–penetrant and the periphery of the opening shall be min 0 in. to max 1/4 in. The following types and sizes of metallic pipes, conduits 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. Conduit Nom 6 in. diam (or smaller) steel electrical metallic tubing or steel conduit.
   D. Copper Tubing Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* –– Sealant Fill material to be forced into the annulus to maximum extent possible. Additional fill material to be installed such that a min 1/2 in. crown is formed around the penetrating item and lapping 1/4 in. beyond the periphery of the opening.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC –– FS–One Sealant
*Bearing the UL Classification Marking

HILTI FIRESTOP SYSTEMS

Reproduced by HILTI, Inc. Courtesy of Underwriters Laboratories, Inc.
November 24, 1999

CLASSIFIED C UL US

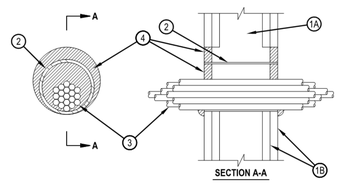
SYSTEM NO. W-L-1085

WL 3065

CLASSIFIED C UL US
Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

System No. W-L-3065

F Ratings — 1 and 2 Hr (See Item 1)
T Rating — 0 and ¾ Hr (See item 3)



SECTION A-A

1. Wall Assembly — The 1 or 2 fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 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. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC.
   B. Gypsum Board* — Nom 5/8 in. (16 mm) thick gypsum board, 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 U300, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 5-1/2 in. (138 mm) when sleeve (Item 2) is employed. Max diam of opening is 4 in. (102 mm) when sleeve (Item 2) is not employed.
   The F Rating of the firestop system is equal to the fire rating of the wall assembly.
2. Metallic Sleeve — (Optional) - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or Schedule 5 (or heavier) steel pipe or min 0.016 in. thick (0.41 mm. No. 28 ga) galv steel sleeve installed flush with wall surfaces. The annular space between steel sleeve and periphery of opening shall be min 0 in. (0 mm, point contact) to max 1 in. (25mm). When Schedule 5 steel pipe or EMT is used, sleeve may extend up to 18 in. (457 mm) beyond the wall surfaces. As an option when Schedule 5 steel pipe or EMT is used, sleeve may extend continuously beyond one wall surfaces. When cable bundle penetrates wall assembly at an angle of 45 degrees, no metallic sleeve is used.

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HILTI Hilti Firestop Systems

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March 15, 2012

WL 3065

3. Cables — Aggregate cross-sectional area of cable in opening to be max 45 percent of the cross-sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 0 in. (0 mm, point contact) to max 1 in. (25 mm) Cables to be rigidly supported on both sides of the wall assembly. Cable bundle, using cables described below, may penetrate the wall at an angle not greater than 45 degrees. Any combination of the following types and sizes of copper conductor cables may be used:
   A. Max 7/C No. 12 AWG with polyvinyl chloride (PVC) insulation and jacket.
   B. Max 25 pair No. 24 AWG telephone cable with PVC insulation and jacket.
   B1. Max 4 pr No. 22 AWG Cat 5 or Cat 6 computer cables.
   C. Type RG/U coaxial cable with polyethylene (PE) insulation and PVC jacket having a max outside diameter of ½ in. (13 mm).
   C1. Max RG 6/U coaxial cable with fluorinated ethylene insulation and jacketing.
   D. Multiple fiber optical communication cable jacketed with PVC and having a max OD of 5/8 in. (16 mm).
   E. Through Penetrating Products*— Max three copper conductor No. 8 AWG .Metal-Clad Cable+.
   AFC CABLE SYSTEMS INC
   F. Max 3/C (with ground)(or smaller) No. 8 AWG copper conductor cable with PVC insulation and jacketing.
   G. Max 3/4 in. (19 mm) diam copper ground cable with or without a PVC jacket.
   H. Fire Resistive Cables* - Max 1-1/4 in. (32 mm) diam single conductor or multi conductor Type MI cable. A min 1/8 in. (3 mm) separation shall be maintained between MI cables and any other types of cable.
   I. Max 4/C with ground 300 kcmil (or smaller) aluminum SER cable with PVC insulation and jacket.
   J. Through Penetrating Product* - Any cables, Metal-Clad Cable+ or Armored Cable+ currently Classified under the Through Penetrating Products category.
   K. Maximum 3/C No. 8 AWG metal-clad cable.
   L. Maximum 5/8 diam fiber-optic cable with PVC jacket.
   For cable bundle penetrating the wall assembly at an angle of 45 degrees, the T rating is ¾ hr for a 2 hr wall assembly.
   See Through Penetrating Product (XHLY) category in the Fire Resistance Directory for names of manufacturers.
4. Fill, Void or Cavity Material*— Sealant or Putty — Fill material applied within the annulus, flush with each end of the steel sleeve or wall surface. Fill material installed symmetrically on both sides of the wall. A min 5/8 in. (16 mm) thickness of sealant is required for the 1 or 2 hr F Rating . An additional 1/2 in. (13 mm) diam bead of fill material shall be applied around the perimeter of sleeve on both sides of the wall when sleeve extends beyond surface of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S, CP606, FS-One Sealants or CP618 Putty
*Bearing the UL Classification Mark
+Bearing the UL Listing Mark

HILTI Hilti Firestop Systems

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March 15, 2012

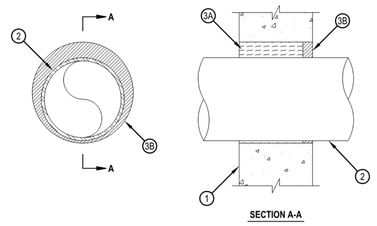
SYSTEM NO. W-L-3065

WJ 1088

CLASSIFIED C UL US
Classified by Underwriters Laboratories, Inc. to UL 1479 and CAN/ULC-S115

System No. W-J-1088

F Ratings — 1 and 2 Hr (See Item 3)
T Rating — 0 Hr



SECTION A-A

1. Wall Assembly — Min 3-3/4 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diameter of opening 10-1/2 in.
   See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
2. Through-Penetrants — One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. An annular space of min 1/4 in. to max 1-5/8 in. is required within firestop system. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe — Nom 8 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe — Nom 8 in. diam (or smaller) cast or ductile iron pipe.
   C. Conduit — Nom 4 in. diam (or smaller) steel electrical metallic tubing (EMT) or 6 in. diam steel conduit.
   D. Copper Tubing — Nom 4 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe — Nom 4 in. diam (or smaller) Regular (or heavier) copper pipe.
   F. Flexible Steel Conduit+ — Nom 2 in. diam (or smaller) flexible steel conduit.
   See Flexible Metal Conduit (DXUZ) category in the Electrical Construction Equipment Directory for names of manufacturers.
3. Firestop System — The firestop system shall consist of the following:
   A. Packing Material — Min 2-1/8 in. or 2-3/4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening on one side of the wall as permanent form for 1 and 2 Hr walls, respectively. Packing material to be recessed from one side of wall as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material — Sealant* — Min 1 in. thickness of fill material applied within opening, flush with one surface of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant
*Bearing the UL Classification Mark
+Bearing the UL Listing Mark

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HILTI Hilti Firestop Systems

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December 04, 2002

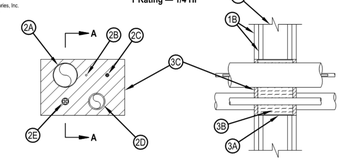
SYSTEM NO. W-J-1088

WL 8004

CLASSIFIED C UL US
Classified by Underwriters Laboratories, Inc. to UL 1479

System No. W-L-8004

F Rating — 2 Hr
T Rating — 1/4 Hr



SECTION A-A

1. Wall Assembly — The fire-rated gypsum wallboard/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. (51 by 102 mm) lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. OC. (610 mm) Additional framing (not shown) may be installed around the perimeter of the opening in lieu of the steel wire mesh (Item No. 3A).
   B. Gypsum Board* — Two layers of nom 5/8 in. (16 mm) thick gypsum wallboard, as specified in the individual Wall and Partition Design. Max area of opening is 96 sq in. (692 cm2) with max dimension of 12 in. (305 mm) Max width of opening in wood stud walls is limited to 12 in. (305 mm)
2. Through Penetrants — The following types and sizes of pipes, conduits, tubing or cables may be used:
   A. Nom 3 in. (76 mm) diam (or smaller) electrical metallic tubing (EMT).
   B. Max 25 pair — No. 24 AWG (or smaller) telephone cable with polyvinyl chloride (PVC) insulation and jacket.
   C. Max 3/C with ground — No. 10 AWG (or smaller) Type NM cable with PVC insulation and jacket.
   D. Nom 2 in. (51 mm) diam (or smaller) Schedule 40 PVC pipe for use in closed (process or supply) piping systems only.
   E. Max 300 kcmil (or smaller) power cable with PVC insulation and nylon jacket.
   The through penetrating items to be rigidly supported on both sides of wall assembly and located as shown in the table below:

Item No.	Max Distance Between Adjacent Pen. Item In. (mm)	Min Distance Between Adjacent Pen. Item In. (mm)	Max Distance From Through Opening In. (mm)	Min Distance From Through Opening In. (mm)
2A	7-7/16 (189)	1-11/16 (43)	14-1/2(370)	½ (13 mm)
2B	7-7/16 (189)	1-11/1 (43)6	14-1/2(370)	1/2 (13 mm)
2C	7-7/16 (189)	1-11/16 (43)	14-1/2(370)	1/2 (13 mm)
2D	7-7/16 (189)	1-11/16 (43)	14-1/2(370)	1/2 (13 mm)
2E	7-7/16 (189)	1-11/16 (43)	14-1/2(370)	1-1/2 (32 mm)

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HILTI Hilti Firestop Systems

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October 08, 2007

WL 8004

CLASSIFIED C UL US
Classified by Underwriters Laboratories, Inc. to UL 1479

System No. W-L-8004

F Rating — 2 Hr
T Rating — 1/4 Hr

3. Firestop System — The firestop system shall consist of the following:
   A. Steel Wire Mesh — No. 8 steel wire mesh having a min 1 in. (25 mm) lap along the longitudinal seam. Length of steel wire mesh to be 4-3/4 in., (120 mm) centered and formed to fit periphery of through opening. Steel wire mesh is not required when additional framing members (Item No. 1A) are used.
   B. Packing Material — Min 4.0 in. (102 mm) thickness of min 3.5 pcf (56 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from both surfaces of wall as required to accommodate the required thickness of fill material.
   C. Fill, Void or Cavity Material* — Sealant — Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE Sealant
*Bearing the UL Classification Mark

HILTI Hilti Firestop Systems

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October 08, 2007

SYSTEM NO. W-L-8004

LEGEND

TRUE NORTH

PLAN NORTH

1 HOUR FIRE RATED PARTITION

2 HOUR FIRE RATED PARTITION

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North Carolina License Number C-0914

FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER JANE KUSEVITH

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

ELECTRICAL DETAILS

E6.01

Optima # 21-0180

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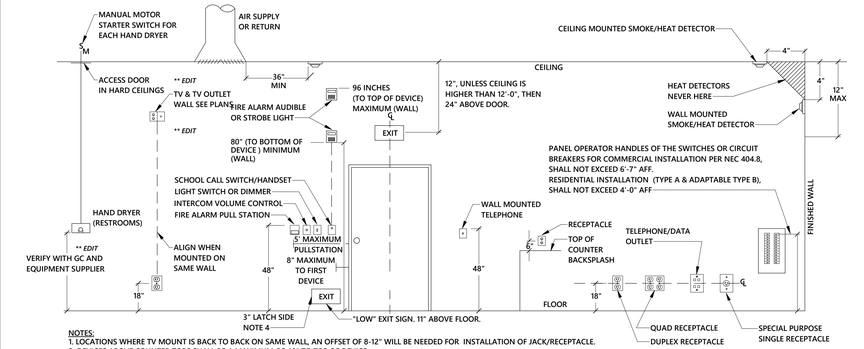
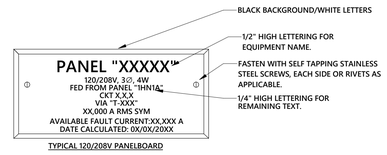


NOTES:
1. LOCATIONS WHERE TV MOUNT IS BACK TO BACK ON SAME WALL, AN OFFSET OF 8-12" WILL BE NEEDED FOR INSTALLATION OF JACK/RECEPTACLE.
2. DEVICES ABOVE COUNTER TOPS SHALL BE A MAXIMUM OF 48" TO TOP OF DEVICE.
3. DEVICES NEXT TO DOOR EXIT SHALL BE WITHIN 8" (MAXIMUM) TYPICAL OF DOOR UNLESS OBSTACLES SUCH AS SIDELITES, ETC.
4. LOW EXIT SIGN AS INDICATED ON PLANS. PER IBC 1011.2.
5. DEVICES REQUIRED TO BE ADA ACCESSIBLE SHALL BE INSTALLED PER ANSI A117.1.

1 MOUNTING HEIGHTS OF DEVICES - ELEVATION
NOT TO SCALE

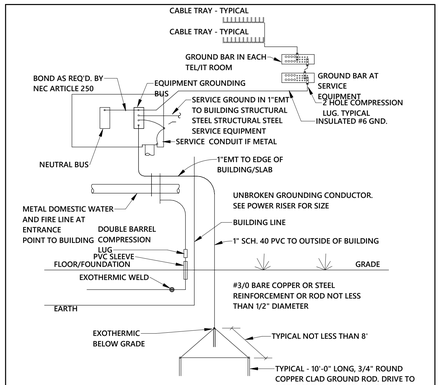


PANELBOARD NAMEPLATES

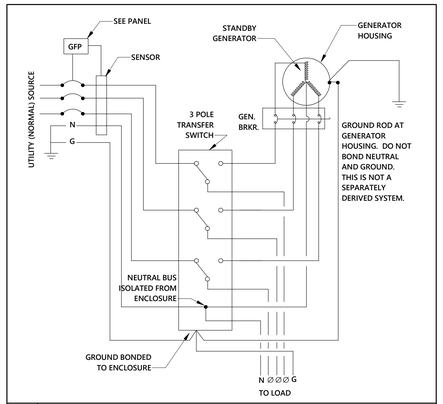
EQUIPMENT NAMEPLATES

NOTES:
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS, COLORS, ETC.
2. PROVIDE SHORT-CIRCUIT CURRENT RATING AND AVAILABLE FAULT CURRENT ON EACH NON-DWELLING SERVICE EQUIPMENT NAMEPLATE.

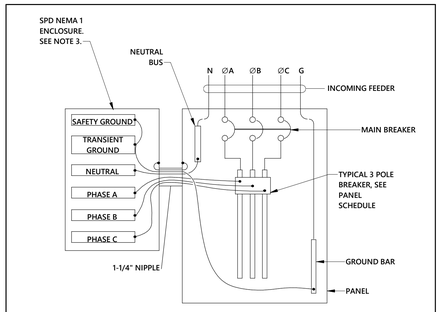
2 TYPICAL NAMEPLATE DIAGRAM
NOT TO SCALE



3 SERVICE GROUND DIAGRAM
NOT TO SCALE



4 GENERATOR GROUNDING DETAIL
NOT TO SCALE



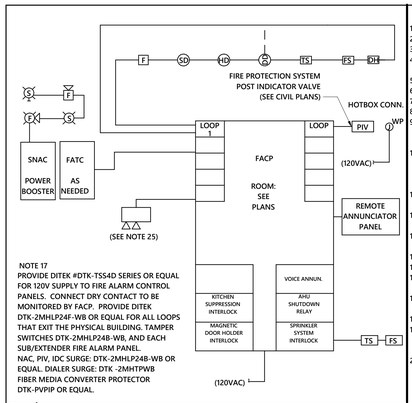
NOTES:
1. ALL WIRING SHALL BE #6 AWG.
2. AVOID SHARP BENDS IN WIRES. ALL WIRE LENGTHS SHALL NOT EXCEED 18" (WHERE POSSIBLE).
3. 120/208V, 3Ø, 4W, 300KA/Ø, 150KA PER MODE. TOTAL PROTECTION SOLUTIONS MODEL TK-ST300-3Y208-L

5 SPD CONNECTION DETAIL
NOT TO SCALE

FIRE ALARM SYSTEM MATRIX — BUILDING SYSTEM OUTPUTS

	ACTIVATE COMMON ALARM SIGNAL INDICATOR	ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTIVATE AUDIBLE SUPERVISORY INDICATOR	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR	ACTIVATE AUDIBLE TROUBLE SIGNAL	ACTIVATE GENERAL EVACUATION SIGNAL	DISPLAY CHANGE OF STATUS	ACTIVATE EXTERNAL HORNS/STROBES	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION	SHUT DOWN RESPECTIVE HVAC UNIT	SHUNT POWER TO RANGE			
MANUAL FIRE ALARM PULL BOXES	X	X			X	X	X	X									
BUILDING SMOKE DETECTOR	X	X			X	X	X	X									
DUCT SMOKE DETECTOR (NON-DOAS)			X	X		X			X		X						
BAY CO SYSTEM			X	X		X			X								
SPRINKLER WATER FLOW	X	X			X	X	X	X									
SPRINKLER TAMPER			X	X		X			X								
HOOD SUPPRESSION SYSTEM	X	X			X	X	X	X				X					
NOTIFICATION DEVICE SHORT CIRCUIT				X	X	X				X							
OPEN CIRCUIT				X	X	X				X							
GROUND FAULT				X	X	X				X							
FIRE ALARM A.C. POWER FAILURE				X	X	X				X							
FIRE ALARM SYSTEM LOW BATTERY				X		X				X							

6 FIRE ALARM SYSTEM MATRIX
1/8" = 1'-0"

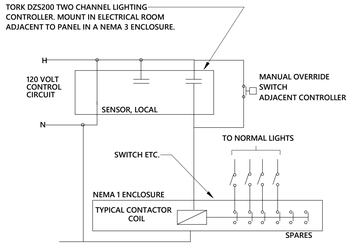


NOTE 17
PROVIDE DITEK #DTK-TSS4D SERIES OR EQUAL FOR 120V SUPPLY TO FIRE ALARM CONTROL PANELS. CONNECT DRY CONTACT TO BE MONITORED BY FACP. PROVIDE DITEK DTK-2MHLP24F-WB OR EQUAL FOR ALL LOOPS THAT EXIT THE PHYSICAL BUILDING. TAMPER SWITCHES DTK-2MHLP24B-WB, AND EACH SUB/EXTENDER FIRE ALARM PANEL.
NAC, PIV, IDC SURGE: DTK-2MHLP24B-WB OR EQUAL. DIALER SURGE: DTK -2MHITPWB
FIBER MEDIA CONVERTER PROTECTOR DTK-PVPIP OR EQUAL.

7 FIRE ALARM RISER DIAGRAM
NOT TO SCALE

FIRE ALARM NOTES

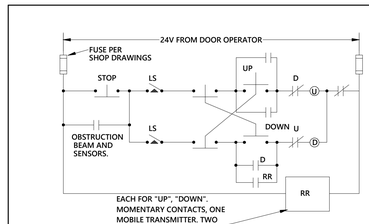
1. FACP SHALL HAVE A MINIMUM 24HR. BATTERY BACKUP.
2. FACP SHALL BE FULLY ANALOG ADDRESSABLE.
3. FACP SHALL BE CONNECTED TO A UL APPROVED CENTRAL STATION.
4. ZONE PER NFPA 72, 2013 AND MANUFACTURER'S RECOMMENDATIONS WITH NO ONE ZONE EXCEEDING 15,000 S.F. PER FLOOR.
5. COORDINATE QUANTITY AND LOCATIONS OF DEVICES WITH CONTRACT DRAWINGS.
6. LOCATE SMOKE DETECTOR WITHIN 5' OF THE MAGNETIC HOLD OPEN DOORS. (TYPICAL)
7. LOCATE FIRE ALARM PULL STATION WITHIN 5' OF THE EXIT DOOR.
8. LOCATE SMOKE/HEAT DETECTOR WITHIN 5' OF THE FA EQUIPMENT (FACP, FATC).
9. LOCATION OF CEILING MOUNTED SMOKE/HEAT DETECTOR SHALL BE FIELD COORDINATED PRIOR TO ROUGH IN. THE DETECTOR SHALL BE A MINIMUM OF 2' AWAY FROM LIGHT FIXTURE AND A MINIMUM OF 3' AWAY FROM AIR DISTRIBUTION DEVICES.
10. AUTOMATIC DOOR CLOSING SHALL BE ACCOMPLISHED BY THE ACTIVATION OF THE LOCAL SMOKE DETECTORS AT THAT DOOR. SMOKE DETECTOR ACTIVATION SHALL ALERT THE BUILDING FIRE ALARM SYSTEM. THE FIRE ALARM SYSTEM SHALL CAUSE ALL HOLD OPEN DOORS TO CLOSE UPON ALARM ACTIVATION IN THE BUILDING.
11. ACTIVATION OF AN ALARM ZONE SHALL CAUSE ALL AIR HANDLING EQUIPMENT TO SHUT DOWN (ALL DAMPERS, AIR HANDLERS AND EXHAUST FANS MUST STOP).
12. ACTIVATION OF KITCHEN HOOD SUPPRESSION SYSTEM PROVIDES SIGNAL TO FACP WHICH IN TURN ACTIVATES ALL ANNUNCIATING ZONES & CUTS OFF AHU SUPPLY AIR.
13. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF ALL FLOW, PRESSURE, & TAMPER SWITCHES WITH FIRE PROTECTION CONTRACTOR PRIOR TO INSTALLATION.
14. ALL VISUAL DEVICES WITHIN THE SAME AREA SHALL BE SYNCHRONIZED.
15. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT.
16. PROVIDE MULTI-TEMPORAL SOUNDING CAPABILITY AT ALL AUDIO DEVICES FOR EMERGENCY NOTIFICATION FOR NON VOICE SYSTEMS COMPONENTS.
17. THE FIRE ALARM SYSTEM MANUFACTURER SHALL PROVIDE NOTIFICATION APPLIANCE CIRCUIT (NAC) POWER EXTENDERS AS REQUIRED.
18. THE DUCT SMOKE DETECTORS SHALL COMPLY WITH IFC 907.12.
19. SLEEPING AREAS SHALL COMPLY WITH NFPA 72 2013 SECTION 18.4.5.3. WHERE AUDIBLE APPLIANCES ARE PROVIDED TO PRODUCT SIGNALS FOR SLEEPING AREAS, THEY SHALL PRODUCE A LOW FREQUENCY ALARM SIGNAL OF 520HZ SQUAREWAVE ALARM SIGNAL.
20. THE CIRCUIT FEEDING THE FIRE ALARM PANEL IS DEDICATED FOR THE FIRE ALARM ONLY. BREAKER SHALL BE PROVIDED WITH A LABEL "FIRE ALARM CIRCUIT" AND SHALL BE RED.
21. PROVIDE REMOTE LIGHT FOR DUCT SMOKE DETECTOR ON CEILING WHERE UNIT IS ABOVE CEILING.
22. CONTRACTOR SHALL INCLUDE IN BID LABOR AND MATERIAL FOR UP TO (2) DUCT DETECTORS. (5) ANNUNCIATION DEVICES, (6) SMOKE DETECTORS AND (2) PULL STATIONS 100' FROM LOCAL PANEL (IN WALL) AS REQUIRED BY LOCAL AHJ/ENGINEER. INCLUDE ALL PROGRAMMING.
23. CONTRACTOR RESPONSIBLE FOR SHOP DRAWINGS AS REQUIRED BY LOCAL AHJ.
24. DUCT DETECTORS SHALL BE VERIFIED WITH THE MECHANICAL DRAWINGS FOR QUANTITY AND LOCATION. TOTAL QUANTITY MINIMUM SHALL BE BASED ON BOTH MECHANICAL SCHEDULES AND MECHANICAL PLAN LOCATIONS AND ELECTRICAL PLANS. WHEN DEVICE QUANTITIES (ELECTRICAL VS. MECHANICAL) ARE IN CONFLICT, PROVIDE THE GREATER QUANTITY OF DETECTORS.
25. DIGITAL ALARM COMMUNICATOR TRANSMITTER SHALL BE ACCEPTABLE TO THE REMOTE CENTRAL STATION AND SHALL COMPLY WITH UL 632. CELLULAR LINE – SINGLE MAIN SOURCE. PROVIDE NAPCO STARLINK (SLD-CMDA-FIRE) FIRE ALARM COMMUNICATOR AND SLE-ANTEXT50 EXTERNAL ANTENNA TO OR EQUAL AND COORDINATED WITH THE CELLULAR DIAL OUT SERVICE. CELLULAR DIAL OUT SHALL BE BACKED UP AS PART OF BATTERY BACKUP AS WELL AS GENERATOR BACKED UP WHERE AVAILABLE. FUNCTIONAL PERFORMANCE: UNIT SHALL RECEIVE AN ALARM, SUPERVISORY, OR TROUBLE SIGNAL FROM FIRE-ALARM CONTROL UNIT AND AUTOMATICALLY CAPTURE A PRESET NUMBER FOR A REMOTE CENTRAL STATION. WHEN CONTACT IS MADE WITH CENTRAL STATION(S), SIGNALS SHALL BE TRANSMITTED. IF SERVICE ON THE CELLULAR LINE IS INTERRUPTED FOR LONGER THAN 45 SECONDS, TRANSMITTER SHALL INITIATE A LOCAL TROUBLE SIGNAL. TRANSMITTER SHALL AUTOMATICALLY REPORT CELLULAR SERVICE RESTORATION TO THE CENTRAL STATION. IF SERVICE IS LOST, TRANSMITTER SHALL INITIATE THE LOCAL TROUBLE SIGNAL.
26. INTERCONNECT NEW FACP WITH EXISTING EST-3 SYSTEM IN MAIN BUILDING ELECTRICAL/MECHANICAL ROOM. PROVIDE FIBER TIE BETWEEN PANELS WITH NECESSARY FIBER TRANSPONDER.



CONTACTOR	COIL VOLTAGE	POLES	CIRCUITS SWITCHED	ZONE DESCRIPTION
LC-1	120	4	R1-2 & LS-4	*EXTERIOR LIGHTING ETC*

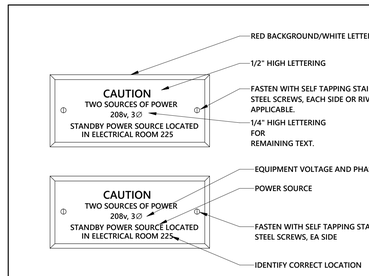
NOTE: EMERGENCY FIXTURES SHALL HAVE "AVAILABLE" POWER AT ALL TIMES.

8 LIGHTING CONTACTOR DETAIL W-TIMER
NOT TO SCALE



NOTES:
1. OVERHEAD DOORS ARE TO OPERATE FROM LOCAL WALL-MOUNTED SWITCHES. FRONT AND REAR DOORS ARE TO ALSO OPERATE FROM MOBILE UNITS IN THE TRUCKS.
2. SEE POWER PLANS FOR EXACT QUANTITY OF MOTORS.
3. ONE SYSTEM EACH DOOR.
4. WIRING BY E.C.
5. SEE SPEC. SECTION ON SECTIONAL OVERHEAD DOORS.
6. MASTER CONTROL LOCATION, SHALL ACT AS A THREE WAY CONTROL. MASTER CONTROL SHALL BE ONE UP/DOWN/STOP PER DOOR. I.E. (12) TOTAL APPARATUS BAY DOORS SHALL HAVE (12) TOTAL INDIVIDUAL UP/DOWN/STOP CONTROL SWITCHES LOCATED AT THE MASTER CONTROL LOCATION.
7. UNDER NORMAL CONDITIONS THE DOORS ARE CLOSED, THE HEATERS ARE CONTROLLED VIA THERMOSTAT (BY MC). WHEN DOORS OPEN THE HEATERS TURN OFF. PROVIDE RELAYS AS NECESSARY. COORDINATE WITH MECHANICAL.

9 DOOR CONTROL SCHEMATIC
NOT TO SCALE



10 EMERGENCY POWER NAMEPLATE
NOT TO SCALE

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER JANE KUSEYN

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

ELECTRICAL DETAILS

E6.02

Optima # 21-0180

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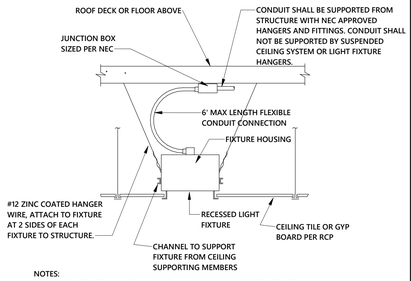
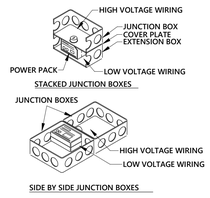


NOTES:
1. WHERE ROOF DECKING IS THE IS THE ALLOWABLE SUPPORT STRUCTURE, AND PATHWAY SYSTEM IS NOT IMC OR RMC, THE MINIMUM DISTANCE FROM ROOF DECKING SHALL BE 1.5" FOR ALL BOXES AND CONDUIT.

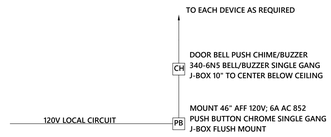
4 TYPICAL RECESSED DOWN LIGHT FIXTURE INSTALLATION DIAGRAM
NOT TO SCALE



NOTE:
DO NOT MOUNT POWER PACKS CLOSER THAN 6-12 INCHES FROM SENSOR. PROVIDE DOUBLE STACKED JUNCTION BOX FOR MAXIMUM VENTILATION OF POWER PACK. PROVIDE BLANK COVER. WHERE PERMITTED BY CODE AND AHJ, LEAVE (2) OPENINGS IN CONDUIT KNOCKOUT FOR VENTING OF POWER PACK. VERIFY WITH AHJ PRIOR TO KNOCKOUT REMOVAL.

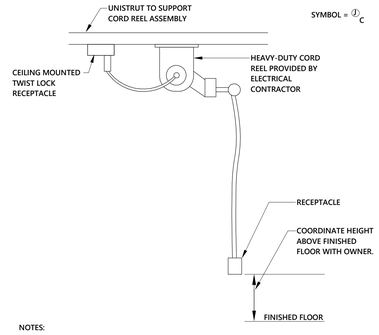
POWER PACK INSTALLED IN J-BOX

3 POWER PACK INSTALLATION
NOT TO SCALE



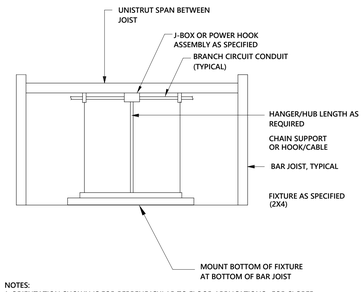
NOTES:
1. DEVICES ARE BASED ON EDWARDS SIGNALING SYSTEMS, OR APPROVED EQUAL.

2 DOOR BELL SYSTEM
NOT TO SCALE



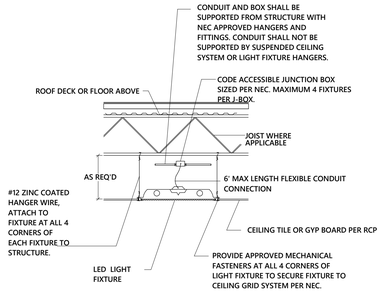
NOTES:
1. COORDINATE EXACT LOCATION WITH OWNER.
2. PROVIDE GFI BREAKER FOR CORD REEL CIRCUIT.
3. PROVIDE UNISTRUT MOUNTED STRUCTURE ABOVE CEILING TO SUPPORT CORD REEL ASSEMBLY.

1 OVERHEAD CORD REEL DETAIL
NOT TO SCALE

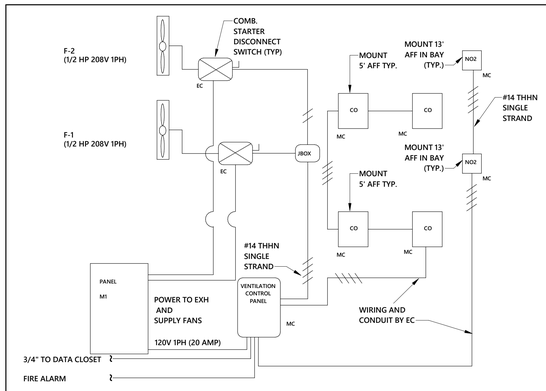


NOTES:
1. ORIENTATION SHOWN IS FOR PERPENDICULAR TO FLOOR APPLICATIONS. FOR SLOPED JOIST INSTALLATION, MATCH SLOPE OF JOIST AND MOUNT FLUSH WITH JOIST. ADJUST UNISTRUT AS REQUIRED.

7 HI-BAY FIXTURE
NOT TO SCALE



6 TYPICAL LAY-IN FIXTURE DIAGRAM
NOT TO SCALE



NOTES:

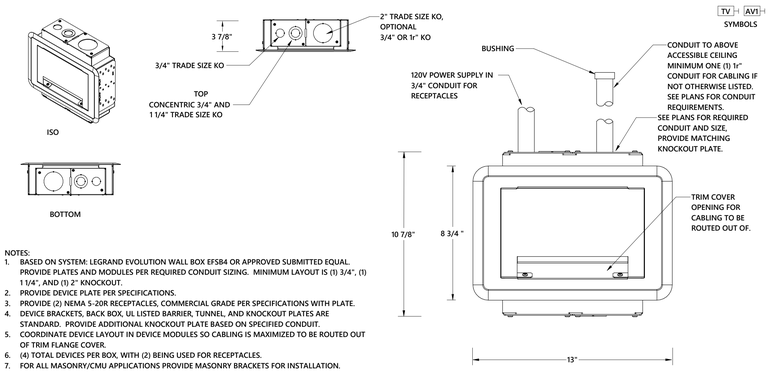
EQUIPMENT INSTALLED AND PROVIDED BY MECHANICAL CONTRACTOR

(1) VENTILATION CONTROL PANEL 120V-1PH (20 AMP)
(4) CO POINT MONITOR(S)
(2) NO2 REMOTE SENSOR(S)

EQUIPMENT INSTALLED AND PROVIDED BY ELECTRICAL CONTRACTOR:

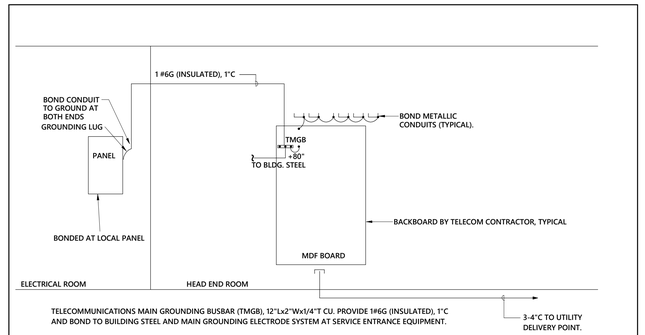
1. ALL CONDUIT FOR CONTROL WIRE FROM THE VENTILATION PANEL TO THE FOLLOWING: FAN COMB. STARTERS, CO DETECTORS, NOX DETECTORS.
2. ALL 208V-3PH AND 120V-1PH POWER TO RESPECTIVE SYSTEMS: TO INCLUDE CONDUIT AND WIRE.
3. MOUNTING OF THE FOLLOWING: VENTILATION PANEL, CO DETECTORS. AND NO2 DETECTORS.
4. FURNISHING AND INSTALLING CONTROL WIRE FROM THE CONTROL PANEL TO THE FOLLOWING: FAN COMB. STARTERS, CO AND NOX DETECTORS.
5. ALL ELECTRICAL DISCONNECT SWITCHES.
6. INTERFACE WITH FACP FOR SHUTDOWN DURING FULL BUILDING ALARM VIA LOW VOLTAGE RELAY.
7. COMBINATION STARTERS FOR FANS F-1 & F-2.

5 VENTILATION CONTROL PANEL ELECTRICAL FLOW DIAGRAM BASE BID
NOT TO SCALE



NOTES:
1. BASED ON SYSTEM: LEGRAND EVOLUTION WALL BOX EFSB4 OR APPROVED SUBMITTED EQUAL. PROVIDE PLATES AND MODULES PER REQUIRED CONDUIT SIZING. MINIMUM LAYOUT IS (1) 3/4", (1) 1 1/4", AND (1) 2" KNOCKOUT.
2. PROVIDE DEVICE PLATE PER SPECIFICATIONS.
3. PROVIDE (2) NEMA 5-20R RECEPTACLES, COMMERCIAL GRADE PER SPECIFICATIONS WITH PLATE.
4. DEVICE BRACKETS, BACK BOX, UL LISTED BARRIER, TUNNEL, AND KNOCKOUT PLATES ARE STANDARD. PROVIDE ADDITIONAL KNOCKOUT PLATE BASED ON SPECIFIED CONDUIT.
5. COORDINATE DEVICE LAYOUT IN DEVICE MODULES SO CABLING IS MAXIMIZED TO BE ROUTED OUT OF TRIM FLANGE COVER.
6. (4) TOTAL DEVICES PER BOX, WITH (2) BEING USED FOR RECEPTACLES.
7. FOR ALL MASONRY/CMU APPLICATIONS PROVIDE MASONRY BRACKETS FOR INSTALLATION.

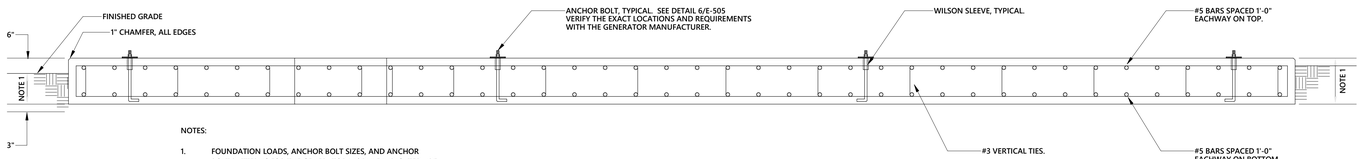
9 TYPICAL TV/MONITOR AND POWER BACK BOX DIAGRAM FOR WALL MOUNTED FLAT SCREEN
NOT TO SCALE



TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB), 12"Lx2"Wx1/4"T CU. PROVIDE 1#6G (INSULATED), 1"C AND BOND TO BUILDING STEEL AND MAIN GROUNDING ELECTRODE SYSTEM AT SERVICE ENTRANCE EQUIPMENT.

NOTES:
1. FLOOR PLANS INDICATE THE EXACT QUANTITY AND LOCATION OF ALL TELECOM OUTLETS.
2. SEE PLANS FOR HEAD END LOCATION, AND DISTRIBUTION CLOSETS.
3. METALLIC CONDUIT TO AND FROM CABLE TRAY SHALL BE GROUNDED PER NEC 392.
4. SEE SITE PLAN FOR ALL SERVICE ENTRANCE CONDUIT.

8 TELECOMMUNICATIONS GROUNDING AND PATHWAY RISER DIAGRAM
NOT TO SCALE



NOTES:

1. FOUNDATION LOADS, ANCHOR BOLT SIZES, AND ANCHOR BOLT PATTERNS FOR THE GENERATOR MODULE INDICATED ARE BASED ON TYPICAL INSTALLATIONS. EXACT PAD REQUIREMENTS SHALL BE BASED ON THE GENERATOR MANUFACTURER'S REQUIREMENTS BUT IN NO CASE SHALL THE THE PAD BE LESS THAN 18" THICK.

10 GENERATOR PAD SECTION
NOT TO SCALE

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North Carolina License Number C-0914

FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER JANE KUSEYN

9/15/2021

LAURINBURG NORTH FIRE STATION

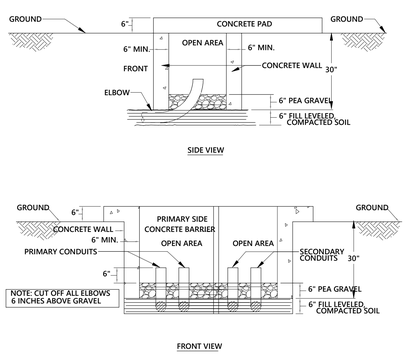
No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

ELECTRICAL DETAILS

E6.03

Optima # 21-0180



STEP 9:

POUR CONCRETE AROUND THE BOXES AND WITHIN THE 2-INCH BY 6-INCH FORMS. SEE PAGE 2 FOR CONCRETE MIX SPECIFICATIONS.

STEP 10:

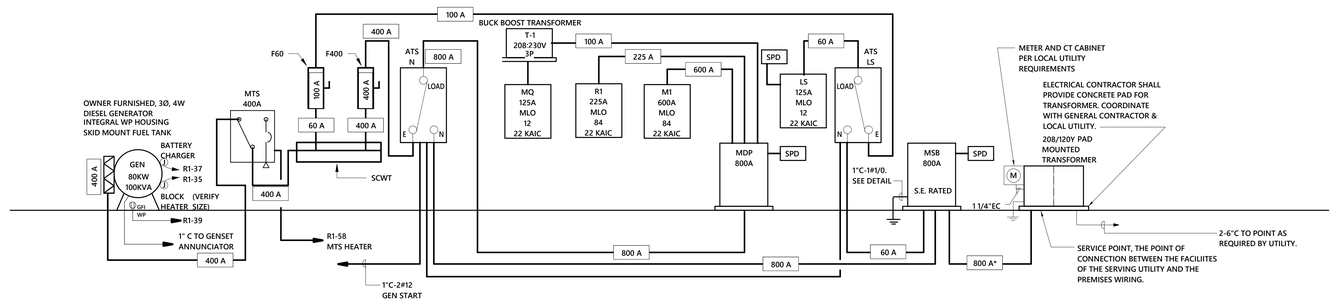
ALLOW CONCRETE TO SET UP, THEN REMOVE 2-INCH BY 6-INCH FORMS AND BOXES.

1 **BUILDING A SMALL PIT PAD MECKLENBURG COUNTY, NC**

NO SCALE

ELECTRICAL FEEDER SCHEDULE

FEEDER AMPS	WIRE SIZE (AL)
60 A	4#3, 1#8G, 1-1/2"C
100 A	4#1, 1#6G, 2"C
225 A	4-300 KCMIL, 1#2G, 3"C
400 A	(2) 4-250 KCMIL, 1#1 G, 3"C
600 A	(2) 4-500 KCMIL, 1#2/0G, 3-1/2"C
800 A	(3) 4-400 KCMIL, 1#3/0G, 3-1/2"C
800 A*	(3) 4-400 KCMIL, 3-1/2"C



2 **POWER RISER PLAN**

1/8" = 1'-0"

ATS-LS: 240V, 3P, SN, 100A, NEMA 1
ATS-N: 240V, 3P, SN, 800A, NEMA 1
MTS: 208V, 3P, SN, 400A WITH 400A INPUT BREAKER ON PORTABLE INPUT, KIRK-KEY OR ROTARY SWITCH, CAMLOCK CONNECTIONS, HEATER, START RECEPTACLE.

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER JANE KUSEYII

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062

Date: 1-19-2022

ELECTRICAL DIAGRAMS

E7.01

Optima # 21-0180

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PANEL: MSB

VOLTAGE: 208Y/120 3Ø | **FED FROM:**

MOUNTING: SURFACE | **MAIN TYPE:** MCB | **MFR:** SIEMENS
ENCLOSURE: NEMA1 | **PHASE:** 3 | **TYPE:** P5
MAIN: 800 A | **WIRE:** 4 | **AIC:** 22 KAIC

LC Abbr	Load Served	Wire	Trip	Ckt No	Pole	A		B		C		Pole	Ckt No	Trip	Wire	Load Served	LC Abbr
				1		78.61	0.90						2				
F	MDP VIA ATS-N (NOTE 8)	(3)-300	800 A	3	3			73.52	0.25			3	4	60 A	4	LS VIA ATS - LS (NOTE 8)	F
				5						72.44	0.55		6				
				7		0.00	0.00						8				
--	SPARE	--	200 A	9	3			0.00	0.00			3	10	60 A	4	SPD	MI
				11						0.00	0.00		12				

	LOAD	Connected Load	Demand Factor	Estimated Demand
L	LIGHTS	4,914.53 VA	125.00%	6,143.17 VA
LE	LIGHTING - EXTERIOR	180.00 VA	125.00%	225.00 VA
H	HEATING	76,370.00 VA	100.00%	76,370.00 VA
C	COOLING	12,272.00 VA	100.00%	12,272.00 VA
V	VENTILATION	2,404.00 VA	100.00%	2,404.00 VA
M	MOTORS	22,276.00 VA	112.91%	25,151.00 VA
K	KITCHEN	18,500.00 VA	100.00%	18,500.00 VA
R	RECEPTACLES	18,420.00 VA	77.14%	14,210.00 VA
WH	WATER HEATER	36,000.00 VA	100.00%	36,000.00 VA
MI	MISC.	29,530.00 VA	100.00%	29,530.00 VA
S	Spare	0.00 VA	0.00%	0.00 VA
E	ELEVATOR	0.00 VA	0.00%	0.00 VA
LD	LAUNDRY	5,400.00 VA	100.00%	5,400.00 VA

NOTES:
1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.
2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.
3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.
5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.
6. PROVIDE METAL DIRECTORY FRAME.
7. THIS PANEL SHALL BE U.L. LISTED FOR USE AS S.E. EQUIP.
8. SEE RISER FOR WIRE SIZE.

TOTAL KVA...	226.27 kVA	TOTAL PER PHASE: (CONNECTED)		
TOTAL KVA (DEMAND):	226.21 kVA	663.6 A	615.7 A	608.2 A
TOTAL AMP....	628 A			
TOTAL AMP. (DEMAND):	628 A			

LOAD CLASSIFICATION ABBREVIATIONS (CONT.)
F - FEEDER FOR DOWN STREAM PANEL. LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.

PANEL: MDP

VOLTAGE: 208Y/120 3Ø | **FED FROM:** MSB

MOUNTING: SURFACE | **MAIN TYPE:** MLO | **MFR:** SIEMENS
ENCLOSURE: NEMA1 | **PHASE:** 3 | **TYPE:** P5
MAIN: 800 A | **WIRE:** 4 | **AIC:** 22 KAIC

LC Abbr	Load Served	Wire	Trip	Ckt No	Pole	A		B		C		Pole	Ckt No	Trip	Wire	Load Served	LC Abbr
				1		46.75	22.50						2				
F	PNL "M1" (NOTE 7)	(2)-3/0	400 A	3	3			46.51	21.96			3	4	225 A	4/0	PNL "R1" (NOTE 7)	F
				5						45.52	19.73		6				
				7		9.36	0.00						8				
F	PNL "MQ "VIA BUCK BOOST TRANSFORMER	1	100 A	9	3			5.05	0.00			3	10	100 A	--	SPARE	--
				11						7.19	0.00		12				
				13		0.00	0.00						14				
--	SPARE	--	100 A	15	3			0.00	0.00			3	16	100 A	--	SPARE	--
				17						0.00	0.00		18				
				19		0.00	0.00						20				
--	SPARE	--	200 A	21	3			0.00	0.00			3	22	60 A	4	SPD	MI
				23						0.00	0.00		24				

	LOAD	Connected Load	Demand Factor	Estimated Demand
L	LIGHTS	3,805.96 VA	125.00%	4,757.45 VA
LE	LIGHTING - EXTERIOR	80.00 VA	125.00%	100.00 VA
H	HEATING	76,370.00 VA	100.00%	76,370.00 VA
C	COOLING	12,272.00 VA	100.00%	12,272.00 VA
V	VENTILATION	2,404.00 VA	100.00%	2,404.00 VA
M	MOTORS	22,276.00 VA	112.91%	25,151.00 VA
K	KITCHEN	18,500.00 VA	100.00%	18,500.00 VA
R	RECEPTACLES	18,420.00 VA	77.14%	14,210.00 VA
WH	WATER HEATER	36,000.00 VA	100.00%	36,000.00 VA
MI	MISC.	29,030.00 VA	100.00%	29,030.00 VA
S	Spare	0.00 VA	0.00%	0.00 VA
E	ELEVATOR	0.00 VA	0.00%	0.00 VA
LD	LAUNDRY	5,400.00 VA	100.00%	5,400.00 VA

NOTES:
1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.
2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.
3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.
5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.
6. PROVIDE METAL DIRECTORY FRAME.
7. SEE RISER FOR WIRE SIZE.

TOTAL KVA...	224.56 kVA	TOTAL PER PHASE: (CONNECTED)		
TOTAL KVA (DEMAND):	224.19 kVA	656.4 A	614.0 A	603.6 A
TOTAL AMP....	623 A			
TOTAL AMP. (DEMAND):	622 A			

LOAD CLASSIFICATION ABBREVIATIONS (CONT.)
F - FEEDER FOR DOWN STREAM PANEL. LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.

PANEL: LS

VOLTAGE: 208Y/120 3Ø | **FED FROM:** MSB

MOUNTING: SURFACE | **MAIN TYPE:** MLO | **MFR:** SIEMENS
ENCLOSURE: NEMA1 | **PHASE:** 3 | **TYPE:** P1
MAIN: 125 A | **WIRE:** 4 | **AIC:** 22 KAIC

LC Abbr	Load Served	Wire	Trip	Ckt No	Pole	A		B		C		Pole	Ckt No	Trip	Wire	Load Served	LC Abbr
MI	FACP OFFICE 104 (NOTE 7)	12	20 A	1	1	0.50	0.40					1	2	20 A	12	LIGHTS Room 116, 115, 104, 109	L
L	LIGHTS OFFICE/LOBBY 104	12	20 A	3	1			0.07	0.18			1	4	20 A	12	LIGHTS	L
L	LIGHTS APPARATUS BAY 100	12	20 A	5	1					0.55	0.00	1	6	20 A	--	SPARE	--
--	SPARE	--	20 A	7	1	0.00	0.00						8				
--	SPARE	--	20 A	9	1			0.00	0.00			3	10	30 A	10	SPD	MI
--	SPARE	--	20 A	11	1					0.00	0.00		12				

	LOAD	Connected Load	Demand Factor	Estimated Demand
L	LIGHTS	1,108.57 VA	125.00%	1,385.71 VA
LE	LIGHTING - EXTERIOR	100.00 VA	125.00%	125.00 VA
H	HEATING	0.00 VA	0.00%	0.00 VA
C	COOLING	0.00 VA	0.00%	0.00 VA
V	VENTILATION	0.00 VA	0.00%	0.00 VA
M	MOTORS	0.00 VA	0.00%	0.00 VA
K	KITCHEN	0.00 VA	0.00%	0.00 VA
R	RECEPTACLES	0.00 VA	0.00%	0.00 VA
WH	WATER HEATER	0.00 VA	0.00%	0.00 VA
MI	MISC.	500.00 VA	100.00%	500.00 VA
S	Spare	0.00 VA	0.00%	0.00 VA
E	ELEVATOR	0.00 VA	0.00%	0.00 VA
LD	LAUNDRY	0.00 VA	0.00%	0.00 VA

NOTES:
1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.
2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.
3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.
5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.
6. PROVIDE METAL DIRECTORY FRAME.
7. PROVIDE BREAKER WITH HANDLE LOCK-ON DEVICE.

TOTAL KVA...	1.71 kVA	TOTAL PER PHASE: (CONNECTED)		
TOTAL KVA (DEMAND):	2.01 kVA	7.9 A	2.1 A	5.0 A
TOTAL AMP....	5 A			
TOTAL AMP. (DEMAND):	6 A			

LOAD CLASSIFICATION ABBREVIATIONS (CONT.)
F - FEEDER FOR DOWN STREAM PANEL. LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.

PANEL: M1

VOLTAGE: 208Y/120 3Ø | **FED FROM:** MDP

MOUNTING: SURFACE | **MAIN TYPE:** MLO | **MFR:** SIEMENS
ENCLOSURE: NEMA1 | **PHASE:** 3 | **TYPE:** P2
MAIN: 400 A | **WIRE:** 4 | **AIC:** 22 KAIC

LC Abbr	Load Served	Wire	Trip	Ckt No	Pole	A		B		C		Pole	Ckt No	Trip	Wire	Load Served	LC Abbr
M	RCP1 LAUNDRY/ICE TOOL 103	12	20 A	1	1	1.18	0.59					2	2	15 A	12	F-1 APPARATUS BAY 100	V
--	SPARE	--	20 A	3	1			0.00	0.59				4				
--	SPARE	--	20 A	5	1					0.00	1.53	2	6	20 A	12	HP-1	C
MI	BAS PANEL	12	20 A	7	1	1.00	1.53						8				
C	HP-4	12	20 A	9	2			1.53	0.00			1	10	20 A	--	SPARE	--
				11						1.53	2.72	2	12	30 A	10	IDU-1 LAUNDRY 103	H
H	IDU-3 DINING 109	4	60 A	13	2	5.24	2.72						14				
				15				5.24	5.24			2	16	60 A	4	IDU-4 SLEEPING 112	H
				17						1.02	5.24		18				
C	HP-2	12	20 A	19	3	1.02	1.02						20				
				21				1.02	1.02			3	22	20 A	12	HP-3	C
				23						1.60	1.02		24				
M	GARAGE DOORS - APPARATUS BAYS 100	10	30 A	25	3	1.60	1.60						26				
				27				1.60	1.60			3	28	30 A	10	GARAGE DOORS - APPARATUS BAYS 100	M
				29						2.50	1.60		30				
H	EUH-1 - APPARATUS BAYS 100	10	30 A	31	3	2.50	2.50						32				
				33				2.50	2.50			3	34	30 A	10	EUH-2 - APPARATUS BAYS 100	H
				35						2.50	2.50		36				
H	EUH-3 - APPARATUS BAYS 100	10	30 A	37	3	2.50	2.50						38				
				39				2.50	2.50			3	40	30 A	10	EUH-4 - APPARATUS BAYS 100	H
				41						6.66	2.50		42				
H	IDU-2 TRAINING 103	6	50 A	43	3	6.66	12.00						44				
				45				6.66	12.00			3	46	125 A	1	WH1 LAUNDRY/ICE 103	WH
V	F-2 APPARATUS BAY 100	12	20 A	47	2					0.59	12.00		48				
				49		0.59	0.00					--	50	--	--	SPACE ONLY	--
--	SPARE	--	20 A	51	1			0.00	0.00			--	52	--	--	SPACE ONLY	--
--	SPARE	--	20 A	53	1					0.00	0.00	--	54	--	--	SPACE ONLY	--
--	SPARE	--	20 A	55	1	0.00	0.00					--	56	--	--	SPACE ONLY	--
--	SPARE	--	20 A	57	1			0.00	0.00			--	58	--	--	SPACE ONLY	--
--	SPARE	--	20 A	59	1					0.00	0.00	--	60	--	--	SPACE ONLY	--
--	SPARE	--	20 A	61	1	0.00	0.00					--	62	--	--	SPACE ONLY	--
--	SPARE	--	20 A	63	1			0.00	0.00			--	64	--	--	SPACE ONLY	--
--	SPARE	--	20 A	65	1					0.00	0.00	--	66	--	--	SPACE ONLY	--
--	SPARE	--	20 A	67	1	0.00	0.00					--	68	--	--	SPACE ONLY	--
--	SPARE	--	20 A	69	1			0.00	0.00			--	70	--	--	SPACE ONLY	--
--	SPARE	--	20 A	71	1					0.00	0.00	--	72	--	--	SPACE ONLY	--
--	SPARE	--	20 A	73	1	0.00	0.00					--	74	--	--	SPACE ONLY	--
--	SPARE	--	20 A	75	1			0.00	0.00			--	76	--	--	SPACE ONLY	--
--	SPARE	--	20 A	77	1					0.00	0.00	--	78	--	--	SPACE ONLY	--
--	SPARE	--	20 A	79	1	0.00	0.00					--	80	--	--	SPACE ONLY	--
--	SPARE	--	20 A	81	1			0.00	0.00			--	82	--	--	SPACE ONLY	--
--	SPARE	--	20 A	83	1					0.00	0.00	--	84	--	--	SPACE ONLY	--

	LOAD	Connected Load	Demand Factor	Estimated Demand
L	LIGHTS	0.00 VA	0.00%	0.00 VA
LE	LIGHTING - EXTERIOR	0.00 VA	0.00%	0.00 VA
H	HEATING	76,370.00 VA	100.00%	76,370.00 VA
C	COOLING	12,272.00 VA	100.00%	12,272.00 VA
V	VENTILATION	2,352.00 VA	100.00%	2,352.00 VA
M	MOTORS	10,776.00 VA	103.71%	11,176.00 VA
K	KITCHEN	0.00 VA	0.00%	0.00 VA
R	RECEPTACLES	0.00 VA	0.00%	0.00 VA
WH	WATER HEATER	36,000.00 VA	100.00%	36,000.00 VA
MI	MISC.	1,000.00 VA	100.00%	1,000.00 VA
S	Spare	0.00 VA	0.00%	0.00 VA
E	ELEVATOR	0.00 VA	0.00%	0.00 VA
LD	LAUNDRY	0.00 VA	0.00%	0.00 VA

NOTES:
1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.
2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.
3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.
5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.
6. PROVIDE METAL DIRECTORY FRAME.

TOTAL KVA...	138.77 kVA	TOTAL PER PHASE: (CONNECTED)		
TOTAL KVA (DEMAND):	139.17 kVA	390.8 A	388.8 A	379.3 A
TOTAL AMP....	385 A			
TOTAL AMP. (DEMAND):	386 A			

LOAD CLASSIFICATION ABBREVIATIONS (CONT.)
F - FEEDER FOR DOWN STREAM PANEL. LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.

PANEL: R1

VOLTAGE: 208Y/120 3Ø | **FED FROM:** MDP

MOUNTING: SURFACE | **MAIN TYPE:** MLO | **MFR:** SIEMENS
ENCLOSURE: NEMA1 | **PHASE:** 3 | **TYPE:** P2
MAIN: 225 A | **WIRE:** 4 | **AIC:** 22 KAIC

LC Abbr	Load Served	Wire	Trip	Ckt No	Pole	A		B		C		Pole	Ckt No	Trip	Wire	Load Served	LC Abbr
MI	RECEPT - ELEC ROOM (L5-30)	10	30 A	1	1	1.00	0.08					1	2	20 A	12	LIGHTS FLAG	LE
MI	RECEPT - LAUNDRY 103	12	20 A	3	1			0.50	0.36			1	4	20 A	12	RECEPT - OFFICE/LOBBY 104	R
L	LIGHTS APPARATUS BAY 100	12	20 A	5	1					0.83	0.72	1	6	20 A	12	RECEPT - DINING/DAY 109	R
L	LIGHTS Room 104, 108, 109, 111, 11...	12	20 A	7	1	0.34	0.90					1	8	20 A	12	RECEPT - OFFICE/LOBBY 104	R
L	LIGHTS	12	20 A	9	1			1.11	4.00			1	10	20 A	12	RECEPTACLES	R
MI	DISPOSAL KITCHEN 108 (NOTE 7)	12	20 A	11	1					1.00	2.20	2	12	25 A	10	DRYER LAUNDRY 103 (NOTE 7)	LD
MI	MI- FIRE HOSE WASHER (ITEM #6)	10	25 A	13	1	1.61	2.20						14				
R	RECEPT - TRAIN 107	12	20 A	15	1			0.72	0.72			1	16	20 A	12	RECEPT - SLEEP 112	R
R	RECEPT - TRAIN 107	12	20 A	17	1					0.72	0.72	1	18	20 A	12	RECEPT - TRAIN 107	R
MI	ELECTRICAL BELL OUTDOOR)	12	20 A	19	1	0.50	0.72					1	20	20 A	12	RECEPT - TRAIN 107	R
R	RECEPT - APPARATUS 100...	12	20 A	21	1			0.72	0.72			1	22	20 A	12	RECEPT - APPARATUS 100	MI
R	RECEPT - DINING/DAY 109	12	20 A	23	1					0.54	5.83		24				
R	RECEPT - SLEEP 112	12	20 A	25	1	0.72	5.83					3	26	50 A	6	KITCHEN - RANGE 108 (NOTE 7 & 8)	K
K	KITCHEN HOOD 108	12	20 A	27	1			1.00	5.83				28				
--	SPARE	--	20 A	29	1					0.00	0.00	--	30	--	--	SHUNT TRIP	--
MI	RECEPT - APPARATUS 100	12	20 A	31	1	0.72	0.72					1	32	20 A	12	RECEPT - APPARATUS 100	MI
MI	RECEPT - APPARATUS 100	12	20 A	33	1			0.72	0.90			1	34	20 A	12	RECEPT - TRAIN 107	R
MI	GENSET BLOCK HEATER OUTSIDE	12	20 A	35	1					0.50	0.72	1	36	20 A	12	**RECEPT - APPARATUS 100**	MI
MI	GENSET BATTERY CHARGER...	12	20 A	37	1	0.50	0.72					1	38	20 A	12	RECEPT - APPARATUS 100	R
R	GENSET RECEPTACLE	12	20 A	39	1			0.18	1.00			1	40	20 A	12	RECEPT - COFFEE 108	MI
R	RECEPT - TOASTER 108	12	20 A	41	1					1.00	0.90	1	42	20 A	12	RECEPT - CORR, TOILET 110,1,5	R
MI	RECEPT - APPARATUS 100	12	20 A	43	1	0.72	1.00					1	44	20 A	12	RECEPT - MICRO 108	MI
--	SPARE	--	20 A	45	1			0.00	0.00			1	46	20 A	--	SPARE	--
R	RECEPT - TRAIN 107	12	20 A	47	1					0.54	1.00	1	48	20 A	12	DISWASHER 108 (NOTE 7)	R
LD	WASHER LAUNDRY 103 (NOTE 7)	12	20 A	49	1	1.00	0.50					1	50	20 A	12	MOTORIZER DAMPER TRAINING 107	MI
MI	MI- REFRIG KITCHEN 108 (NOTE 7)	12	20 A	51	1			1.00	0.75			1	52	20 A	12	LIGHTS OFFICE/LOBBY 104	L
L	LIGHTS APPARATUS BAY 100	12	20 A	53	1					0.83	0.18	1	54	20 A	12	RECEPT - KITCHEN 108	R
R	RECEPT - OFFICE/LOBBY 104	12	20 A	55	1	0.72	0.50					1	56	20 A	12	MOTORIZED DAMPER APP BAY 100	MI
R	RECEPT - TRAINING 107	12	20 A	57	1			0.72	1.00			1	58	20 A	12	MTS HEATER	MI
--	SPARE	--	20 A	59	1					0.00	1.50	1	60	20 A	12	HOTBOX	MI
--	SPARE	--	20 A	61	1	0.00	1.50					1	62	20 A	12	HOTBOX	MI
--	SPARE	--	20 A	63	1			0.00	0.00			--	64	--	--	SPACE ONLY	--
--	SPARE	--	20 A	65	1					0.00	0.00	--	66	--	--	SPACE ONLY	--
--	SPARE	--	20 A	67	1	0.00	0.00					--	68	--	--	SPACE ONLY	--
--	SPARE	--	20 A	69	1			0.00	0.00			--	70	--	--	SPACE ONLY	--
--	SPARE	--	20 A	71	1					0.00	0.00	--	72	--	--	SPACE ONLY	--
--	SPARE	--	20 A	73	1	0.00	0.00					--	74	--	--	SPACE ONLY	--
--	SPARE	--	20 A	75	1			0.00	0.00			--	76	--	--	SPACE ONLY	--
--	SPARE	--	20 A	77	1					0.00	0.00	--	78	--	--	SPACE ONLY	--
--	SPARE	--	20 A	79	1	0.00	0.00					--	80	--	--	SPACE ONLY	--
--	SPARE	--	20 A	81	1			0.00	0.00			--	82	--	--	SPACE ONLY	--
--	SPARE	--	20 A	83	1					0.00	0.00	--	84	--	--	SPACE ONLY	--

	LOAD	Connected Load	Demand Factor	Estimated Demand
L	LIGHTS	3,805.96 VA	125.00%	4,757.45 VA
LE	LIGHTING - EXTERIOR	80.00 VA	125.00%	100.00 VA
H	HEATING	0.00 VA	0.00%	0.00 VA
C	COOLING	0.00 VA	0.00%	0.00 VA
V	VENTILATION	52.00 VA	100.00%	52.00 VA
M	MOTORS	0.00 VA	0.00%	0.00 VA
K	KITCHEN	18,500.00 VA	100.00%	18,500.00 VA
R	RECEPTACLES	18,420.00 VA	77.14%	14,210.00 VA
WH	WATER HEATER	0.00 VA	0.00%	0.00 VA
MI	MISC.	17,930.00 VA	100.00%	17,930.00 VA
S	Spare	0.00 VA	0.00%	0.00 VA
E	ELEVATOR	0.00 VA	0.00%	0.00 VA
LD	LAUNDRY	5,400.00 VA	100.00%	5,400.00 VA

NOTES:
1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.
2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.
3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.
5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.
6. PROVIDE METAL DIRECTORY FRAME.
7. PROVIDE CLASS A GFI (6mA-PERSONNEL) BRKR (250' MAX).
8. PROVIDE BREAKER WITH SHUNT TRIP.

TOTAL KVA...	64.19 kVA	TOTAL PER PHASE: (CONNECTED)		
TOTAL KVA (DEMAND):	60.95 kVA	190.4 A	185.8 A	164.4 A
TOTAL AMP....	178 A			
TOTAL AMP. (DEMAND):	169 A			

LOAD CLASSIFICATION ABBREVIATIONS (CONT.)
F - FEEDER FOR DOWN STREAM PANEL. LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.

PANEL: MQ

VOLTAGE: 240/120V, 3Ø | **FED FROM:** MDP

MOUNTING: SURFACE | **MAIN TYPE:** MLO | **MFR:** SIEMENS
ENCLOSURE: NEMA1 | **PHASE:** 3 | **TYPE:** P2
MAIN: 125 A | **WIRE:** 4 | **AIC:** 22 KAIC

LC Abbr	Load Served	Wire	Trip	Ckt No	Pole	A		B		C		Pole	Ckt No	Trip	Wire	Load Served	LC Abbr
--	SPARE	--	20 A	1	1	0.00	3.61					2	2	20 A	12	HOSE DRYER (ITEM #7)	M
MI	WASHER EXTRACTOR (ITEM#8)	12	20 A	3	2			1.44	3.61				4				
				5						1.44	5.75	2	6	80 A	3	FIRE AIR COMPRESSOR (ITEM #5)	M
--	SPARE	--	20 A	7	1	0.00	5.75						8				
--	SPARE	--	20 A	9	1			0.00	0.00			1	10	20 A	--	SPARE	--
--	SPARE	--	20 A	11	1					0.00	0.00	1	12	20 A	--	SPARE	--

	LOAD	Connected Load	Demand Factor	Estimated Demand
L	LIGHTS	0.00 VA	0.00%	0.00 VA
LE	LIGHTING - EXTERIOR	0.00 VA	0.00%	0.00 VA
H	HEATING	0.00 VA	0.00%	0.00 VA
C	COOLING	0.00 VA	0.00%	0.00 VA
V	VENTILATION	0.00 VA	0.00%	0.00 VA
M	MOTORS	11,500.00 VA	125.00%	14,375.00 VA
K	KITCHEN	0.00 VA	0.00%	0.00 VA
R	RECEPTACLES	0.00 VA	0.00%	0.00 VA
WH	WATER HEATER	0.00 VA	0.00%	0.00 VA
MI	MISC.	10,100.00 VA	100.00%	10,100.00 VA
S	Spare	0.00 VA	0.00%	0.00 VA
E	ELEVATOR	0.00 VA	0.00%	0.00 VA
LD	LAUNDRY	0.00 VA	0.00%	0.00 VA

NOTES:
1. BREAKER FRAME SHALL BE AS REQ'D PER PANEL AIC RATING.
2. SHALL BE FULLY RATED - SERIES RATINGS NOT ALLOWED.
3. ALL BUSSING, INCL GND AND NEUTRAL, SHALL BE COPPER.
4. ALL INCOMING PANEL & BRKR LUGS SHALL MATCH FEEDERS.
5. PROVIDE HINGED DOOR-IN-DOOR WITH OUTER DOOR LOCK.
6. PROVIDE METAL DIRECTORY FRAME.
7. THIS PANEL SHALL BE U.L. LISTED FOR USE AS S.E. EQUIP.
8. PANEL WAS DESIGNED FOR ? kVA.
9. PROVIDE BREAKER WITH HANDLE LOCK-ON DEVICE.
10. PROVIDE BREAKER WITH SHUNT TRIP.
11. PROVIDE FEED-THRU LUGS.
12. PROVIDE "ALL MODES" SPD (40kA / MODE, 80kA / PHASE

TOTAL KVA...	21.60 kVA	TOTAL PER PHASE: (CONNECTED)		
TOTAL KVA (DEMAND):	24.48 kVA	80.7 A	42.1 A	62.7 A
TOTAL AMP....	60 A			
TOTAL AMP. (DEMAND):	68 A			

LOAD CLASSIFICATION ABBREVIATIONS (CONT.)
F - FEEDER FOR DOWN STREAM PANEL. LOADS ARE INCLUDED IN THE PANEL LOAD SUMMARY.

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FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 17308 ENGINEER ZANE KUSEYBI

9/15/2021

LAURINBURG NORTH FIRE STATION

No.	Description	Date

Project Number: 2020-062
Date: 1-19-2022

PANEL SCHEDULES

E8.02

Optima # 21-0180

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