THE COAST ACADEMY

1109 OLD OCEAN HWY,
BOLIVIA, NC 28422

BID DOCUMENTS
04.22.2020
8201-191241





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THE COAST ACADEMY

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SHEET INDEX

GENERAL

SHEET NO.	SHEET NAME	SHT REV NO.	SHT REV DATE	REVISION DESCRIPTION
G-000	COVER SHEET			
G-001	PROJECT INFORMATION SHEET			
G-002	BUILDING CODE SUMMARY_NC			
G-003	U.L. DETAILS			
G-004	LIFE SAFETY PLAN - AUTOMOTIVE			
G-005	LIFE SAFETY PLAN - CULINARY			

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SHEET NO.	SHEET NAME	SHT REV NO.	SHT REV DATE	REVISION DESCRIPTION
C-1.0	GENERAL NOTES - CIVIL			
C-1.1	GENERAL NOTES - CIVIL			
C-2.0	DEMOLITION PLAN			
C-2.1	OVERALL SITE PLAN			
C-2.2	SITE PLAN			
C-2.3	PLANTING PLAN			
C-3.0	GRADING, DRAINAGE, & EROSION CONTROL PLAN			
C-3.1	GRADING, DRAINAGE, & EROSION CONTROL PLAN			
C-4.0	UTILITY PLAN			
C-5.0	DETAILS			
C-5.1	DETIALS			
C-5.2	DETAILS			

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SHEET NO.	SHEET NAME	SHT REV NO	SHT REV DATE	REVISION DESCRIPTION
S-1.01	GENERAL NOTES			
S-1.02	STRUCTURAL MATERIAL INSPECTIONS			
S-2.01	AUTOMOTIVE FOUNDATION AND SLAB PLAN			
S-2.02	CULINARY PLANS			
S-3.01	FOUNDATION SECTIONS & DETAILS			

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SHEET NO.	SHEET NAME	SHT REV NO.	SHT REV DATE	REVISION DESCRIPTION
AD-101	DEMO PLAN - CULINARY			
A-002	CONSTRUCTION SUBSYSTEMS & PARTITION TYPES			
A-101	FIRST FLOOR PLAN - AUTOMOTIVE			
A-102	FIRST FLOOR PLAN - CULINARY			
A-121	REFLECTED CEILING PLAN - AUTOMOTIVE			
A-122	REFLECTED CEILING PLAN - CULINARY			
A-151	ROOF PLAN - AUTOMOTIVE			
A-201	EXTERIOR ELEVATIONS - AUTOMOTIVE			
A-251	INTERIOR ELEVATIONS - AUTOMOTIVE			
A-252	INTERIOR ELEVATIONS - CULINARY			
A-301	BUILDING SECTIONS AND ENLARGED ENVELOPE DETAILS - AUTOMOTIVE			
A-302	BUILDING SECTIONS AND ENLARGED PLANS - CULINARY			
A-401	ENLARGED TOILET ROOM PLAN AND ELEVATIONS			
A-501	PLAN & SECTION DETAILS - AUTOMOTIVE			
A-502	PLAN & SECTION DETAILS - CULINARY			
A-503	SECTION DETAILS - CULINARY			
A-521	HEAD, JAMB & SILL DETAILS			
A-551	ROOF DETAILS			
A-601	DOOR SCHEDULE, DOOR TYPE LEGEND & FRAME TYPES			
A-721	FINISH PLAN & FINISH SCHEDULE - AUTOMOTIVE			
A-722	FINISH PLAN & FINISH SCHEDULE - CULINARY			
A-731	AUTOMOTIVE FURNITURE PLAN			
A-732	CULINARY FURNITURE PLAN			
A-801	SIGNAGE			
A-803	SIGNAGE PLAN			

FIRE PROTECTION

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SHEET NO.	SHEET NAME	SHT REV NO.	SHT REV DATE	REVISION DESCRIPTION
F-101	FIRE PROTECTION PLAN			

PLUMBING

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tel: 919.452.4210
email: klynch@cheathampa.com

SHEET NO.	SHEET NAME	SHT REV NO.	SHT REV DATE	REVISION DESCRIPTION
P-001	PLUMBING LEGEND, DETAILS AND SCHEDULES			
P-101	PLUMBING PLANS - AUTOMOTIVE			
P-102	PLUMBING PLANS - CULINARY			

MECHANICAL

CHEATHAM & ASSOCIATES, P.A.
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SHEET NO.	SHEET NAME	SHT REV NO.	SHT REV DATE	REVISION DESCRIPTION
M-001	MECHANICAL LEGEND, ENERGY SCHEDULE & PENETRATION DETAILS			
M-101	MECHANICAL PLAN - AUTOMOTIVE			
M-102	MECHANICAL PLAN - CULINANRY			
M-501	MECHANICAL DETAILS			
M-601	MECHANICAL SCHEDULES			
M-701	MECHANICAL CONTROL DIAGRAMS			
M-702	MECHANICAL CONTROL DIAGRAMS			

ELECTRICAL

CHEATHAM & ASSOCIATES, P.A.
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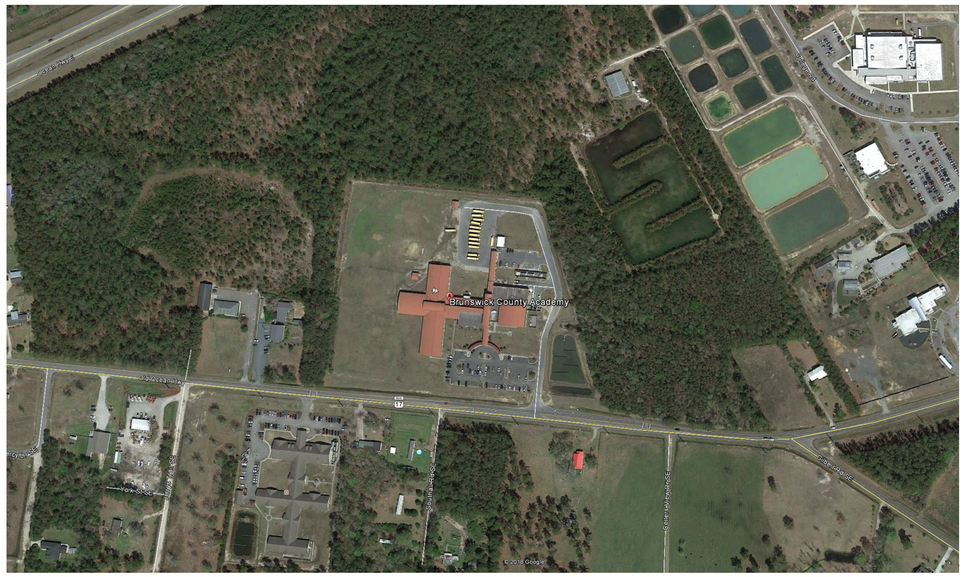
SHEET NO.	SHEET NAME	SHT REV NO.	SHT REV DATE	REVISION DESCRIPTION
E-001	ELECTRICAL LEGENDS, NOTES, SCHEDULES, DETAILS			
E-011	ELECTRICAL SITE PLAN			
E-101	ELECTRICAL POWER PLAN - AUTOMOTIVE			
E-102	ELECTRICAL POWER PLAN - CULINARY			
E-111	ELECTRICAL LIGHTING PLAN - AUTOMOTIVE			
E-112	ELECTRICAL LIGHTING PLAN - CULINARY			
E-121	ELECTRICAL AUXILIARY SYSTEMS PLAN - AUTOMOTIVE			
E-122	ELECTRICAL AUXILIARY SUSTEMS PLAN - CULINARY			
E-501	ELECTRICAL DETAILS			
E-502	ELECTRICAL DETAILS			
E-503	ELECTRICAL DETAILS			
E-601	ELECTRICAL LUMINAIRE SCHEDULE			
E-602	ELECTRICAL PANEL SCHEDULES			
E-701	ELECTRICAL RISER DIAGRAMS			

VICINITY MAP



AREA MAP



UDS SHEET DESIGNATORS AND SHEET ORDER

LEVEL 1 - DISCIPLINE DESIGNATORS

G	GENERAL	F	FIRE PROTECTION
H	HAZARDOUS MATERIALS	P	PLUMBING
V	SURVEY / MAPPING	M	MECHANICAL
B	GEOTECHNICAL	E	ELECTRICAL
C	CIVIL	T	TELECOM
L	LANDSCAPE	R	RESOURCE
S	STRUCTURAL		
A	ARCHITECTURAL		
I	INTERIORS		
Q	EQUIPMENT		

LEVEL 3 - SHEET TYPE DESIGNATORS

0	GENERAL / OVERALL
1	PLANS
2	ELEVATIONS
3	SECTIONS
4	LARGE SCALE VIEWS
5	DETAILS
6	SCHEDULES & DIAGRAMS
7	USER DEFINED
8	USER DEFINED
9	3D REPRESENTATIONS

LEVEL 4 - PLAN TYPE DESIGNATORS

0	DEMOLITION PLAN
1	CONSTRUCTION PLAN
2	REFLECTED CEILING PLAN
3	FINISH PLAN
4	FURNITURE PLAN
5	OUTLET LOCATION PLAN
6	EQUIPMENT PLAN
7	INTERIOR SIGNAGE
8	ACCESS FLOOR GRID PLAN
9	BUILDING AUTOMATION PLAN

A-121

LEVEL 1 LEVEL 2 LEVEL 3 LEVEL 4 SEQUENCE

MATERIAL LEGEND

(NOT ALL MATERIALS APPLICABLE)

PLAN AND SECTION

EARTH
POROUS FILL (STONE OR GRAVEL)
ROCK
LIGHTWEIGHT CONCRETE (OR CONCRETE FILL)
STRUCTURAL CONCRETE (CAST IN PLACE, ETC.)
BRICK (COMMON OR FACE)
CONC. MASONRY UNITS (C.M.U.)
PLASTER, CEMENT, SAND, GROUT
STEEL, IRON
ALUMINUM
WOOD (FINISH)
WOOD (ROUGH)
WOOD BLOCKING
PLYWOOD
SPRAY-ON FIREPROOFING
BATT/LOOSE FILL INSULATION
EXTRUDED POLYSTYRENE
ACOUSTICAL TILE
GYPSUM WALLBOARD
CARPET AND PAD

ELEVATION

BRICK
CERAMIC TILE
CONCRETE / PLASTER / STUCCO
GLASS
SHINGLES/SIDING

GRAPHIC SYMBOL LEGEND

COLUMN GRID REFERENCE

DRAWING TITLE
A1 PLAN 1/8" = 1'-0"
DRAWING LOCATION ON SHEET GRID
DRAWING NAME
DRAWING SCALE

A1 PLAN NTS
DRAWING LOCATION ON SHEET GRID
DRAWING NAME
DRAWING SCALE
SHEET NUMBER WHERE DETAIL IS DRAWN
SHEET NUMBER WHERE DETAIL IS REFERENCED

DETAIL/PLAN KEY
DETAIL LOCATION ON SHEET GRID
TERMINATION OF SECTION
A1 / A-201
SHEET IDENTIFIER FOR LOCATION OF DETAIL

REVISION INDICATION
1
REVISION NUMBER

CENTERLINE

AREA REVISED

TYPICAL DIMENSION INDICATOR
9 1/2"

DOOR NUMBER
201A

FLOOR ELEVATION
1ST FLOOR 0'-0"

GLASS TYPE
A

SUBSYSTEM
W1

ROOM NAME & NUMBER
ROOM NAME
2201
150 SF

ENLARGED DETAIL INDICATOR
DETAIL LOCATION ON SHEET GRID
A1 / A101
SHEET IDENTIFIER FOR LOCATION OF DETAIL

SECTION KEYS
DIRECTION OF SECTION
BUILDING SECTION LOCATION ON SHEET GRID
A1 / A-201
SHEET IDENTIFIER FOR LOCATION OF SECTION

DIRECTION OF SECTION
WALL SECTION LOCATION ON SHEET GRID
A1 / A-201
TERMINATION OF SECTION
SHEET IDENTIFIER FOR LOCATION OF SECTION

ELEVATION KEY
ELEVATION LOCATION ON SHEET GRID
A1 / A-201
SHEET IDENTIFIER FOR LOCATION OF ELEVATION
DIRECTION OF ELEVATION

ABBREVIATIONS

A/C	AIR CONDITION(ING)	EQ	EQUAL	MAINT	MAINTENANCE	SC	SOLID CORE
ADMIN	ADMINISTRATION	EQUIP	EQUIPMENT	MATL	MATERIAL	SD	STORM DRAIN
AFF	ABOVE FINISHED FLOOR	EWC	ELECTRIC WATER COOLER	MAX	MAXIMUM	SECT	SECTION
ALT	ALTERNATE	EXIST	EXISTING	MECH	MECHANICAL	SF	SQUARE FEET
ALUM	ALUMINUM	EXP JT	EXPANSION JOINT	MEZZ	MEZZANINE	SIM	SIMILAR
APPROX	APPROXIMATE(LY)	EXT	EXTERIOR	MFG	MANUFACTURING	SPEC	SPECIFICATION
ARCH	ARCHITECT(URAL)	F/F	FACE TO FACE	MFR	MANUFACTURER	SPKR	SPEAKER
AUTO	AUTOMATIC	FD	FLOOR DRAIN	MIN	MINIMUM	SQ	SQUARE
AUX	AUXILIARY	FE	FIRE EXTINGUISHER	MISC	MISCELLANEOUS	SS	STAINLESS STEEL
AV	AUDIOVISUAL	FEC	FIRE EXTINGUISHER CABINET	MO	MASONRY OPENING	STD	STANDARD
BITUM	BITUMINOUS	FF EL	FINISH FLOOR ELEVATION	MR	MOISTURE RESISTANT	STOR	STORAGE
BL	BUILDING LINE	FHC	FIRE HOSE CABINET	MTD	MOUNTED	SUSP	SUSPENDED
BLDG	BUILDING	FIN FLR	FINISHED FLOOR	MTG	MOUNTING	SYS	SYSTEM
BN	BULL NOSE	FLR	FLOOR, FILLER	MTL	METAL	T	TREAD
BOS	BOTTOM OF STEEL	FOC	FACE OF CURB	N	NORTH	TEL	TELEPHONE
BOT	BOTTOM	FOF	FACE OF FINISH	NIC	NOT IN CONTRACT	TEMP	TEMPORARY
CAB	CABINET	FOM	FACE OF MASONRY	NOM	NOMINAL	TFF	TOP OF FINISH FLOOR
CJ	CONTROL JOINT	FOS	FACE OF SLAB	NON COMB	NON-COMBUSTIBLE	THK	THICKNESS
CL	CENTER LINE	FOW	FACE OF WALL	NTS	NOT TO SCALE	THRU	THROUGH
CLG	CEILING	FT	FOOT, FEET	OC	ON CENTER	TO	TOP OF
CLG HT	CEILING HEIGHT	FTG	FOOTING	OD	OUTSIDE DIAMETER	TOB	TOP OF BEAM
CLO	CLOSET	FURN	FURNISH, FURNITURE	OPP	OPPOSITE	TOC	TOP OF CONCRETE, CURB
CLR	CLEAR(ANCE)	GA	GAGE	OPT	OPTION(AL)	TOF	TOP OF FOOTING
CMU	CONCRETE MASONRY UNIT	GALV	GALVANIZED	PCF	POUNDS PER CUBIC FEET	TOJ	TOP OF JOIST
COL	COLUMN	GC	GENERAL CONTRACTOR	PLAM	PLASTIC LAMINATE	TOM	TOP OF MASONRY
CONC	CONCRETE	GYP BD	GYPSUM BOARD	PLF	POUNDS PER LINEAR FEET	TOP	TOP OF PARAPET
CONF	CONFERENCE	GYP PLAS	GYPSUM PLASTER	PLYWD	PLYWOOD	TOS	TOP OF SLAB
CONT	CONTINUE. CONTINUOUS	HC	HANDICAP	PNL	PANEL	TOW	TOP OF WALL
CORR	CORRIDOR	HD	HEAVY DUTY	PR	PAIR	TRTD	TREATED
CU FT	CUBIC FOOT	HDWD	HARDWOOD	PREFAB	PREFABRICATED	TV	TELEVISION
CU YD	CUBIC YARD	HDWR	HARDWARE	PREFIN	PREFINISH	TYP	TYPICAL
DEMO	DEMOLISH	HM	HOLLOW METAL	PRKG	PARKING	UL	UNDERWRITERS LABORATORIES
DEPT	DEPARTMENT	HORIZ	HORIZONTAL	PSF	POUNDS PER SQUARE FOOT	UNO	UNLESS NOTED OTHERWISE
DET	DETAIL	HT	HEIGHT	PSI	POUNDS PER SQUARE INCH	VERT	VERTICAL
DF	DRINKING FOUNTAIN	HVAC	HEATING, VENTILATION & AIR CONDITIONING	PT	PAINT, POST-TENSIONED, PRE-TREATED	VEST	VESTIBULE
DIA	DIAMETER	ID	INSIDE DIAMETER	PVC	POLYVINYL CHLORIDE (PLASTIC)	VIF	VERIFY IN FIELD
DIAG	DIAGONAL	INCL	INCLUDE(D), (ING)	QTR	QUARTER	W	WEST, WIDE
DIM	DIMENSION	INFO	INFORMATION	QTY	QUANTITY	W/	WITH
DIV	DIVISION	INSUL	INSULATION	R	RADIUS, RISER	W/O	WITHOUT
DS	DOWNSPOUT	INT	INTERIOR	RCP	REFLECTED CEILING PLAN	W/W	WALL TO WALL
E	EAST	JAN CLO	JANITOR CLOSET	RD	ROOF DRAIN	WC	WATER CLOSET
EA	EACH	KIT	KITCHEN	REF	REFRIGERATOR, REFERENCE	WD	WOOD
EIFS	EXTERIOR INSULATION & FINISH SYSTEM	KO	KNOCKOUT	REQD	REQUIRED	WP	WORKING POINT, WATERPROOFING
EJ	EXPANSION JOINT	LAB	LABORATORY	RL	ROOF LEADER	WR	WATER REPELLENT
EL	ELEVATION	LAM	LAMINATE	RM	ROOM	WT	WEIGHT
ELEC	ELECTRIC(AL)	LAU	LAUNDRY	RO	ROUGH OPENING	WWF	WELDED WIRE FABRIC
ELEV	ELEVATOR	LAV	LAVATORY	ROW	RIGHT OF WAY	YD	YARD
ENCL	ENCLOSE(D)	LF	LINEAR FEET	S	SOUTH		
EOS	EDGE OF SLAB	LVR	LOUVER				

BRUNSWICK COUNTY

BRUNSWICK COUNTY SCHOOLS — A Community of Learners

THE COAST ACADEMY

LS3P

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LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL COMPANY CERT. NO. 50417 RALEIGH, NORTH CAROLINA

MARY H. BREHLER REGISTERED ARCHITECT 13105 April 25, 2020 NORTH CAROLINA Raleigh, N.C.

MEMBERS OF THE AMERICAN INSTITUTE OF ARCHITECTS

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

PROJECT INFORMATION SHEET

G-001

BID DOCUMENTS

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AUTOMOTIVE BUILDING

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) (UPDATED 12-6-18)

Name of Project: The Coast Academy Automotive Teaching Facility and Culinary Renovation
Address: 1109 Old Ocean Hwy Bolivia, NC Zip Code 28422
Owner / Authorized Agent: Craig Eckert Phone #: 910-253-1078 E-Mail ceckert@bcswan.net
Owned By: ☐ City/ County ☐ Private ☐ State
Code Enforcement Jurisdiction: ☐ City -- ■ County Brunswick ☐ State --

CONTACT:

DESIGNER	FIRM	NAME	LICENSE#	TELEPHONE#	E-MAIL
Architectural	LS3P	Mary Brehler	13105	919-829-2706	marybrehler@ls3p.com
Civil	Paramounte Engineering	Robert Ballard	031591	910.791.6707	rballard@paramounte-eng.com
Electrical	Cheatham and Associates	Ken Lynch	C-1073	910.452.4210	klynch@cheathampa.com
Fire Alarm	--	--	--	--	--
Plumbing	Cheatham and Associates	Ken Lynch	C-1073	910.452.4210	klynch@cheathampa.com
Mechanical	Cheatham and Associates	Ken Lynch	C-1073	910.452.4210	klynch@cheathampa.com
Sprinkler-Standpipe	--	--	--	--	--
Structural	Woods Engineering	Don Woods	NC 19475	910.343-8007	donwoods@woodseng.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 ☐ 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: ■ N/A ☐ Prescriptive ☐ Repair ☐ Chapter 14
☐ Alteration Level I ☐ Alteration Level II ☐ Alteration Level III
☐ Historic Property ☐ Change of Use

CONSTRUCTED: (date) N/A **CURRENT OCCUPANCY (S)** (Ch. 3): N/A
RENOVATED: (date) N/A **PROPOSED OCCUPANCY (S)** (Ch. 3): N/A

OCCUPANCY CATEGORY (Table 1604.5):
Current: ☐ N/A ☐ I ■ II ☐ III ☐ IV
Proposed: ☐ N/A ☐ I ■ II ☐ III ☐ IV

BASIC BUILDING DATA
Construction Type: ☐ I-A ☐ II-A ☐ III-A ■ IV ☐ V-A ☐
☐ I-B ■ II-B ☐ III-B ☐ V-B

Sprinklers: ☐ N/A ☐ Yes ■ No ☐ Partial ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

Standpipes: ☐ N/A ☐ No Class: ☐ I-Wet ☐ I-Dry ☐ II-Wet ☐ II-Dry ☐ III-Wet ☐ III-Dry

Primary Fire District: ■ Yes ☐ No **Flood Hazard Area:** ☐ Yes ☐ No

Special Inspections Required: ■ No ☐ Yes (Contact the local inspection jurisdiction for possible additional procedures and requirements)

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor	--	--	--
2nd Floor	--	--	--
Mezzanine	--	--	--
1st Floor	--	6848	6848
Basement	--	--	--
TOTAL	0	6848	6848

ALLOWABLE AREA

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

Accessory Occupancy Classification(s): N/A
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐ B
Educational ☐ E
Factory ☐ F-1 ☐ F-2
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition 1 ☐ I-1 Condition 2 ☐ I-2 Condition 1 ☐ I-2 Condition 2
☐ I-3 Condition 1 ☐ I-3 Condition 2 ☐ I-3 Condition 3 ☐ I-3 Condition 4 ☐ I-3 Condition 5
Mercantile ☐ M
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 ☐ S-1 High-Piled ☐ S-2 ☐ S-2 High-piled
☐ Parking Garage (Open) ☐ Parking Garage (Enclosed) ☐ Repair Garage
Utility and Miscellaneous ☐ U

Incidental Uses (Table 509): N/A
Special Uses (Chapter 4 - List Code Sections):
Special Provisions (Chapter 5 - List Code Sections):
Mixed Occupancy: ☐ Yes ■ No ☐ Non-Separated Use (508.3)
☐ Separated Use (508.4) - See below for area calculations for each story. The area of the occupancy shall be such that the sums of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.
Separation: ☐ 1 HR ☐ 2 HR ☐ 3 HR ☐ 4 HR **Exception:**

Actual Area of Occupancy A / Allowable Area of Occupancy A + Actual Area of Occupancy B / Allowable Area of Occupancy B ≤ 1
N/A + N/A = N/A + N/A = N/A ≤ 1.00

(A) STORY NO.	(B) DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA [4]	(C) AREA FOR FRONTAGE INCREASE [1,5]	(E) ALLOWABLE AREA PER STORY OR UNLIMITED [2,3]
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--

[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. OO (F).
b. Total Building Perimeter = N/A (P).
c. Ratio (F/P) = N/A (F/P).
d. W = Minimum width of public way = N/A (W).
[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
Building Height in Feet	55'-0"	27'-4"	503
Building Height in Stories	2	1	503

[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, trusses		0	--	--	--	--	--
Bearing Walls		0	--	--	--	--	--
Exterior	--	0	--	--	--	--	--
North	137'-0"		--	--	--	--	--
East	75'-0"		--	--	--	--	--
West	566'-0"		--	--	--	--	--
South	71'-6"		--	--	--	--	--
Interior	--	0	--	--	--	--	--
Nonbearing Walls and Partitions Exterior walls	--	0	--	--	--	--	--
North	--		--	--	--	--	--
East	--		--	--	--	--	--
West	--		--	--	--	--	--
South	--		--	--	--	--	--
Interior walls and partitions	--	0	--	--	--	--	--
Floor Construction Including supporting beams and joists	--	0	--	--	--	--	--
Floor Ceiling Assembly	--	0	--	--	--	--	--
Columns Supporting Floors	--	0	--	--	--	--	--
Roof construction Including supporting beams and joists	--	0	--	--	--	--	--
Roof Ceiling Assembly	--		--	--	--	--	--
Columns Supporting Roof	--	0	--	--	--	--	--
Shaft Enclosures-Exit	--	1	--	--	--	--	--
Shaft Enclosures-Other	--	1	--	--	--	--	--
Corridor Separation	--	0	--	--	--	--	--
Occupancy/Fire Barrier Separation	--	--	--	--	--	--	--
Party/Fire Wall Separation	--	2	--	--	--	--	--
Smoke Barrier Separation	--	--	--	--	--	--	--
Smoke Partition	--	--	--	--	--	--	--
Tenant/Dwelling Unit/ Sleeping Unit Separation	--	--	--	--	--	--	--
Incidental Use Separation	--	--	--	--	--	--	--

* Indicate 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 (%)
OO	OO	OO	OO
OO	OO	OO	OO
OO	OO	OO	OO

LIFE SAFETY SYSTEM 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 #: G-004

■ 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)
■ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
■ Occupant loads for each area
■ Exit access travel distances (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 accommodate based on egress width (1005.3)
■ Actual occupant load for each 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 egress 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 for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED
LOT	6	8	--	--	1	1
--	--	--	--	--	--	--
TOTAL	6	8	--	--	1	1

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNI SEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNI SEX	SHOWERS / TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXIST'G	--	--	--	--	--	--	--	--	--	--
	NEW	1	2	--	1	2	2	--	--	--	--
	REQ'D	2	2	--	--	2	2	--	--	--	--

SPECIAL APPROVALS
Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, 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 design.
Existing building envelope complies with code: ☐ No ☐ Yes (the remainder of this section is not applicable
Exempt Building: ■ No ☐ Yes
Climate Zone: ☐ N/A ■ 3A ☐ 4A ☐ 5A
Method of Compliance:
■ Energy Code - Prescriptive
☐ Energy Code - Performance
☐ ASHRAE 90.1 - Prescriptive
☐ ASHRAE 90.1 - Performance
☐ Other - Performance, If "Other" specify source here --

THERMAL ENVELOPE: (Prescriptive Method Only)
Roof/Ceiling Assembly (each assembly)
Description of assembly: REFER TO SHEET A -002
U-Value of total assembly: U-0.041
R-Value of insulation: 1H-0.093 + R-19 FC
Skylights in each assembly: N/A
U-Value of skylight: N/A
Total square footage of skylights in each assembly N/A
Exterior Walls (each assembly)
Description of assembly: REFER TO SHEET A-002
U-Value of total assembly: R-0 + R-9.8ci
R-Value of insulation: 1H-0.093
Openings (windows or doors with glazing)
U-Value of assembly: --
Solar heat gain coefficient: --
Projection Factor: --
Door R-values: --
Walls below grade (each assembly)
Description of assembly: --
U-Value of total assembly: --
R-Value of insulation: --
Floors over unconditioned space (each assembly)
Description of assembly: --
U-Value of total assembly: --
R-Value of insulation: --
Floor slabs on grade (each assembly)
Description of assembly: REFER TO SHEET A-002
U-Value of total assembly: F-0.730
R-Value of insulation: NR
Horizontal/Vertical requirement: --
Slab Heated: --

STRUCTURAL DESIGN REFER TO STRUCTURAL DRAWINGS
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE
DESIGN LOADS:
Importance Factors: Wind (Iw) ☐ 1.0
Snow (Is) ☐ 0.8 ☐ 1.0 ☐ 1.1 ☐ 1.2
Seismic (Ie) ☐ 1.0 ☐ 1.25 ☐ 1.5
Live Loads: Roof -- psf
Mezzanine -- psf
Floor -- psf
Ground Snow Load: -- psf
Wind Load: Basic Wind Speed -- mph (ASCE-7)
Exposure Category: ☐ N/A ☐ B ☐ C ☐ D

SEISMIC DESIGN CATEGORY ☐ N/A ☐ A ☐ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☐ N/A ☐ I ☐ II ☐ III ☐ IV
Spectral Response Acceleration: S_S -- %g S_1 -- %g
Site Classification (ASCE 7) ☐ N/A ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F
Data Source: ☐ N/A ☐ Field Test ☐ Presumptive ☐ Historical Data
Basic structural system (check one) ☐ N/A
☐ Bearing Wall ☐ Dual w/ Special Moment Frame
☐ Building Frame ☐ Dual w/ Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ N/A ☐ Yes ☐ No

LATERAL DESIGN CONTROL: ☐ N/A ☐ Earthquake ☐ Wind

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) -- psf
Presumptive Bearing Capacity -- psf
Pile size, type, and capacity --

MECHANICAL DESIGN
(PROVIDE ON MECHANICAL SHEETS IF APPLICABLE)
MECHANICAL SUMMARY
Thermal Zone
winter dry bulb: 26° F
summer dry bulb: 92° F DB/76° F WB
Interior design conditions
winter dry bulb: 70° F
summer dry bulb: 75° F
relative humidity: 50%
Building heating load: BLOCK LOAD = 375.0 MBH
Building cooling load: BLOCK LOAD = 34.8 TONS
Mechanical Spacing Conditioning System
Unitary
description of unit: --
heating efficiency: --
cooling efficiency: --
size category of unit: --
SEE SCHEDULES ON SHEET M-601
Boiler
Size category. If oversized, state reason.: N/A
Chiller
Size category. If oversized, state reason.: N/A
List equipment efficiencies: SEE SCHEDULES ON SHEET M-601

ELECTRICAL DESIGN REFER TO ELECTRICAL DRAWINGS
(PROVIDE ON ELECTRICAL SHEETS IF APPLICABLE)
ELECTRICAL SUMMARY
ELECTRICAL SYSTEM AND EQUIPMENT
Method of Compliance:
Energy Code: ☐ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance
Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed
Additional Required Prescriptive Compliance
☐ 406.2 More Efficient Mechanical Equipment
☐ 406.3 Reduced Lighting Power Density
☐ 406.4 Energy Recovery Ventilation Systems
☐ 406.5 Higher Efficiency Service Water Heating
☐ 406.6 On-Site Supply of Renewable Energy
☐ 406.7 Automatic Daylighting Control Systems

CULINARY RENOVATION

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) (UPDATED 12-6-18)

Name of Project: The Coast Academy Automotive Teaching Facility and Culinary Renovation
Address: 1109 Old Ocean Hwy Bolivia, NC Zip Code 28422
Owner / Authorized Agent: Craig Eckert Phone #: 910-253-1078 E-Mail ceckert@bcswan.net
Owned By: ☐ City/ County ☐ Private ☐ State
Code Enforcement Jurisdiction: ☐ City -- ■ County Brunswick ☐ State --

CONTACT:

DESIGNER	FIRM	NAME	LICENSE#	TELEPHONE#	E-MAIL
Architectural	LS3P	Mary Brehler	13105	919-829-2706	marybrehler@ls3p.com
Civil	Paramounte Engineering	Robert Ballard	031591	910.791.6707	rballard@paramounte-eng.com
Electrical	Cheatham and Associates	Ken Lynch	C-1073	910.452.4210	klynch@cheathampa.com
Fire Alarm	--	--	--	--	--
Plumbing	Cheatham and Associates	Ken Lynch	C-1073	910.452.4210	klynch@cheathampa.com
Mechanical	Cheatham and Associates	Ken Lynch	C-1073	910.452.4210	klynch@cheathampa.com
Sprinkler-Standpipe	--	--	--	--	--
Structural	Woods Engineering	Don Woods	NC 19475	910.343-8007	donwoods@woodseng.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 ☐ 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: ☐ N/A ■ Prescriptive ☐ Repair ☐ Chapter 14
☐ Alteration Level I ■ Alteration Level II ☐ Alteration Level III
☐ Historic Property ☐ Change of Use

CONSTRUCTED: (date) 2005 **CURRENT OCCUPANCY (S)** (Ch. 3): E
RENOVATED: (date) N/A **PROPOSED OCCUPANCY (S)** (Ch. 3): E

OCCUPANCY CATEGORY (Table 1604.5):
Current: ☐ N/A ☐ I ☐ II ■ III ☐ IV
Proposed: ☐ N/A ☐ I ☐ II ■ III ☐ IV

BASIC BUILDING DATA
Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A ☐
☐ I-B ■ II-B ☐ III-B ☐ V-B

Sprinklers: ☐ N/A ■ Yes ☐ No ☐ Partial ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D

Standpipes: ☐ N/A ☐ No Class: ☐ I-Wet ☐ I-Dry ☐ II-Wet ☐ II-Dry ☐ III-Wet ☐ III-Dry

Primary Fire District: ■ Yes ☐ No **Flood Hazard Area:** ☐ Yes ☐ No

Special Inspections Required: ■ No ☐ Yes (Contact the local inspection jurisdiction for possible additional procedures and requirements)

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3rd Floor	--	--	--
2nd Floor	--	--	--
Mezzanine	--	--	--
1st Floor	58,367	--	--
Basement	--	--	--
TOTAL	58,367	--	--

ALLOWABLE AREA

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

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

Incidental Uses (Table 509): N/A
Special Uses (Chapter 4 - List Code Sections):
Special Provisions (Chapter 5 - List Code Sections):
Mixed Occupancy: ☐ Yes ■ No ☐ Non-Separated Use (508.3)
☐ Separated Use (508.4) - See below for area calculations for each story. The area of the occupancy shall be such that the sums of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.
Separation: ☐ 1 HR ☐ 2 HR ☐ 3 HR ☐ 4 HR **Exception:**

Actual Area of Occupancy A / Allowable Area of Occupancy A + Actual Area of Occupancy B / Allowable Area of Occupancy B ≤ 1
___ + ___ = ___ + ___ = ___ ≤ 1.00

(A) STORY NO.	(B) DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 AREA [4]	(C) AREA FOR FRONTAGE INCREASE [1,5]	(E) ALLOWABLE AREA PER STORY OR UNLIMITED [2,3]
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--
--	--	--	--	--	--

[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. OO (F).
b. Total Building Perimeter = N/A (P).
c. Ratio (F/P) = N/A (F/P).
d. W = Minimum width of public way = N/A (W).
[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
Building Height in Feet	EXISTING	EXISTING	EXISTING
Building Height in Stories	EXISTING	EXISTING	EXISTING

[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, trusses		--	--	--	--	--	--
Bearing Walls		--	--	--	--	--	--
Exterior	--	--	--	--	--	--	--
North	--		--	--	--	--	--
East	--		--	--	--	--	--
West	--		--	--	--	--	--
South	--		--	--	--	--	--
Interior	--	--	--	--	--	--	--
Nonbearing Walls and Partitions Exterior walls	--	--	--	--	--	--	--
North	--		--	--	--	--	--
East	--		--	--	--	--	--
West	--		--	--	--	--	--
South	--		--	--	--	--	--
Interior walls and partitions	--	--	--	--	--	--	--
Floor Construction Including supporting beams and joists	--	--	--	--	--	--	--
Floor Ceiling Assembly	--	--	--	--	--	--	--
Columns Supporting Floors	--	--	--	--	--	--	--
Roof construction Including supporting beams and joists	--	--	--	--	--	--	--
Roof Ceiling Assembly	--	--	--	--	--	--	--
Columns Supporting Roof	--	--	--	--	--	--	--
Shaft Enclosures-Exit	--	--	--	--	--	--	--
Shaft Enclosures-Other	--	--	--	--	--	--	--
Corridor Separation	--	--	--	--	--	--	--
Occupancy/Fire Barrier Separation	--	--	--	--	--	--	--
Party/Fire Wall Separation	--	--	--	--	--	--	--
Smoke Barrier Separation	--	--	--	--	--	--	--
Smoke Partition	--	--	--	--	--	--	--
Tenant/Dwelling Unit/ Sleeping Unit Separation	--	--	--	--	--	--	--
Incidental Use Separation	--	--	--	--	--	--	--

* Indicate 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 (%)
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

LIFE SAFETY SYSTEM 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 #: G-004

■ 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)
■ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
■ Occupant loads for each area
■ Exit access travel distances (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 accommodate based on egress width (1005.3)
■ Actual occupant load for each 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 egress 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 for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD	TBD
TOTAL	TBD	TBD	TBD	TBD	TBD	TBD

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNI SEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNI SEX	SHOWERS / TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXIST'G	2	4	--	2	2	2	--	--	--	OO
	NEW	0	0	--	0	--	--	--	--	1	1
	REQ'D	3	3	--	0	1	1	--	--	1	1

SPECIAL APPROVALS
Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, ICC, etc., describe below)

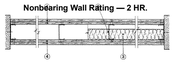
ENERGY SUMMARY

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 design.
Existing building envelope complies with code: ☐ No ☐ Yes (the remainder of this section is not applicable
Exempt Building: ■ No ☐ Yes
Climate Zone: ☐ N/A ■ 3A ☐ 4A ☐ 5A
Method of Compliance:
■ Energy Code - Prescriptive
☐ Energy Code - Performance
☐ ASHRAE 90.1 - Prescriptive
☐ ASHRAE 90.1 - Performance
☐ Other - Performance, If "Other" specify source here --

THERMAL ENVELOPE: (Prescriptive Method Only)
Roof/Ceiling Assembly (each assembly)
Description of assembly: REFER TO SHEET A -002
U-Value of total assembly: --
R-Value of insulation: --
Skylights in each assembly: N/A
U-Value of skylight: N/A
Total square footage of skylights in each assembly N/A
Exterior Walls (each assembly)
Description of assembly: REFER TO SHEET

Design No. U411

Nonbearing Wall Rating — 2 HR.



1. Floor and Ceiling Runner — (Not Shown) — Min. 25 MSG galv steel 1 in. high, return legs 2-1/2 in. wide (min), attached to floor and ceiling with fasteners 24 in. OC.

2. Steel Studs — Min 2-1/2 in. wide, 1-1/4 in. legs, 3/8 in. return, formed of min 25 MSG galv steel max stud spacing 24 in. OC. Studs to be cut 3/4 in. less than assembly height.

3. Batts and Blankets* — (Optional) — Mineral wool or glass fiber batts partially or completely filling stud cavity. Fasten each batt to wallboard base layer with a min 9/16 in. long staple. Use five staples for each 4 ft piece. Drive one staple in the center of each piece and a staple at each corner, approx 3 in. from edges.
See Batts and Blankets (BZJZ) category for names of manufacturers.

3A. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 3) — Spray applied cellulose material. The fiber is applied with water to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 3.0 lb/ft3. Alternate application method: The fiber is applied with U.S. Greenfiber LLC Type AD100 hot melt adhesive at a nominal ratio of one part adhesive to 6.6 parts fiber to completely fill the enclosed cavity in accordance with the application instructions supplied with the product. Nominal dry density of 2.5 lb/ft3.
U S GREENFIBER L L C — — Cocoon2 Stabilized or Cocoon-FRM (Fire Rated Material)

3B. Fiber, Sprayed* — As an alternate to Batts and Blankets (Item 3) and Item 3A - Spray applied cellulose insulation material. The fiber is applied with water to interior surfaces in accordance with the application instructions supplied with the product. Applied to completely fill the enclosed cavity. Minimum dry density of 4.3 pounds per cubic ft.

NU-WOOL CO INC — Cellulose Insulation

4. Gypsum Board* — 5/8 in. thick, outer layer paper or vinyl surfaced. (Laminated System) Wallboard applied vertically in two layers. Inner layer attached to studs with 1 in. long Type S steel screws spaced 8 in. OC along vertical edges, and 12 in. OC in the field and outer layer laminated to inner layer with joint compound, applied with a notched spreader producing continuous beads of compound about 3/8 in. in diameter, spaced not greater than 2 in. OC. Joints of laminated outer layer offset 12 in. from inner layer joints Outer layer wallboard attached to floor and ceiling runner track with 1-5/8 in. long Type S steel screws spaced 12 in. OC. Optional, (Direct Attached System), Inner layer attached to studs with 1 in. long Type S steel screws spaced 16 in. OC in the field and along the vertical edges. Outer layer attached to the studs over the inner layer with 1-5/8 in. long Type S steel screws spaced 16 in. OC in the field and along the vertical edges and 12 in. OC to the floor and ceiling runners. Joints of screw-attached outer layer offset from inner layer joints. Joints of outer layer may be taped or untaped.

Nom 3/32 in. thick gypsum veneer plaster may be applied to the entire surface of Classified veneer baseboard. Joints reinforced.

AMERICAN GYPSUM CO — Types AG-C, AGX-1, AGX-11.
BEIJING NEW BUILDING MATERIALS PUBLIC LTD CO — Type DBX-1.
BPB AMERICA INC — Types 1, FRPC, EGRG, ProRoc Type X or ProRoc Type C.
BPB CANADA INC — ProRoc Type C, ProRoc Type X or ProRoc Type Abuse-Resistant.
CANADIAN GYPSUM COMPANY — Type AR, C, FCV, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or WRX.
G-P GYPSUM CORP, SUB OF GEORGIA-PACIFIC CORP — Types 5, 9, C, DAP, DD, DA, DGG, DS, GPFS6.
LAFARGE NORTH AMERICA INC — Types LGFC2, LGFC2A, LGFC3, LGFC6, LGFC6A, LGFC-C, LGFC-C/A.
NATIONAL GYPSUM CO — Types FSK-C, FSW, FSW-3, FSW-5, FSW-C, FSW-G, FSMR-C.
PABCO BUILDING PRODUCTS L L C, DBA PABCO GYPSUM — Type C, PG-3, PG-5, PG-9 or PG-C.
PANEL REY S A — Type PRX.
SIAM GYPSUM INDUSTRY (SARABURI) CO LTD — Type EX-1
TEMPLE-INLAND FOREST PRODUCTS CORP — Types TG-C, Type X, Veneer Plaster Base-Type X, Water Rated-Type X, Sheathing Type-X, Soffit-Type X.
UNITED STATES GYPSUM CO — Type AR, C, FCV, FRX-G, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or WRX.
USG MEXICO S A DE C V — Type AR, C, FCV, IP-AR, IP-X1, IP-X2, IPC-AR, SCX, SHX, WRC or WRX.

4A. Gypsum Board* — (As an alternate to Item 4) — Nom 3/4 in. thick, installed as described in Item 4 with 1-1/4 in. long Type S screws for inner layer and 2-1/4 in. long Type S screws for outer layer.

CANADIAN GYPSUM COMPANY — Types AR, IP-AR.
UNITED STATES GYPSUM CO — Types AR, IP-AR.
USG MEXICO S A DE C V — Types AR, IP-AR.

4B. Gypsum Board* — (As an alternate to Item 4, 4A and 4B)—5/8 in. thick, 24 to 54 in. wide, applied horizontally as the outer layer to one side of the assembly. Secured as described in Item 4 for the direct attached system. When used in widths other than 48 in., gypsum panels to be installed horizontally.

CANADIAN GYPSUM COMPANY — Type SHX.
UNITED STATES GYPSUM CO — Type SHX, FRX-G.
USG MEXICO S A DE C V — Type SHX.

*Bearing the UL Classification Mark

Last Updated on 2006-11-13

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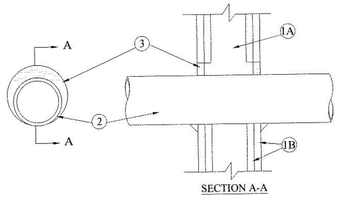
System No. W-L-1054

F Ratings — 1 and 2 Hr (See Items 1 and 3)
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. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.

B. **Gypsum Board* —** 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. for steel stud walls. Max diam of opening is 14-1/2 in. for wood stud walls.

The F Rating of the firestop system is equal to the fire rating of the wall assembly.

2. **Through-Penetrants —** One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. 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 30 in diam (or smaller) Schedule 10 (or heavier) steel pipe.

B. **Iron Pipe —** Nom 30 in. diam (or smaller) cast or ductile iron pipe.

C. **Conduit —** Nom 4 in diam (or smaller) steel electrical metallic tubing or 6 in. diam 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 — Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall
HILTI CONSTRUCTION CHEMICALS, DIV OF

HILTI INC — FS-One Sealant

*Bearing the UL Classification Mark

Last Updated on 2002-12-04

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BRUNSWICK COUNTY

THE COAST ACADEMY

LS3P

434 FAYETTEVILLE STREET SUITE 1700
RALEIGH, NORTH CAROLINA 27601
TEL. 919.829.2700 FAX 919.829.2730
WWW.LS3P.COM

LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL COMPANY CERT. NO. 50417 NORTH CAROLINA RALEIGH, NORTH CAROLINA

MARY H. BREHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

MEMBERS OF THE AMERICAN INSTITUTE OF ARCHITECTS

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: Author
CHECKED BY: Checker

U.L. DETAILS

G-003

BID DOCUMENTS

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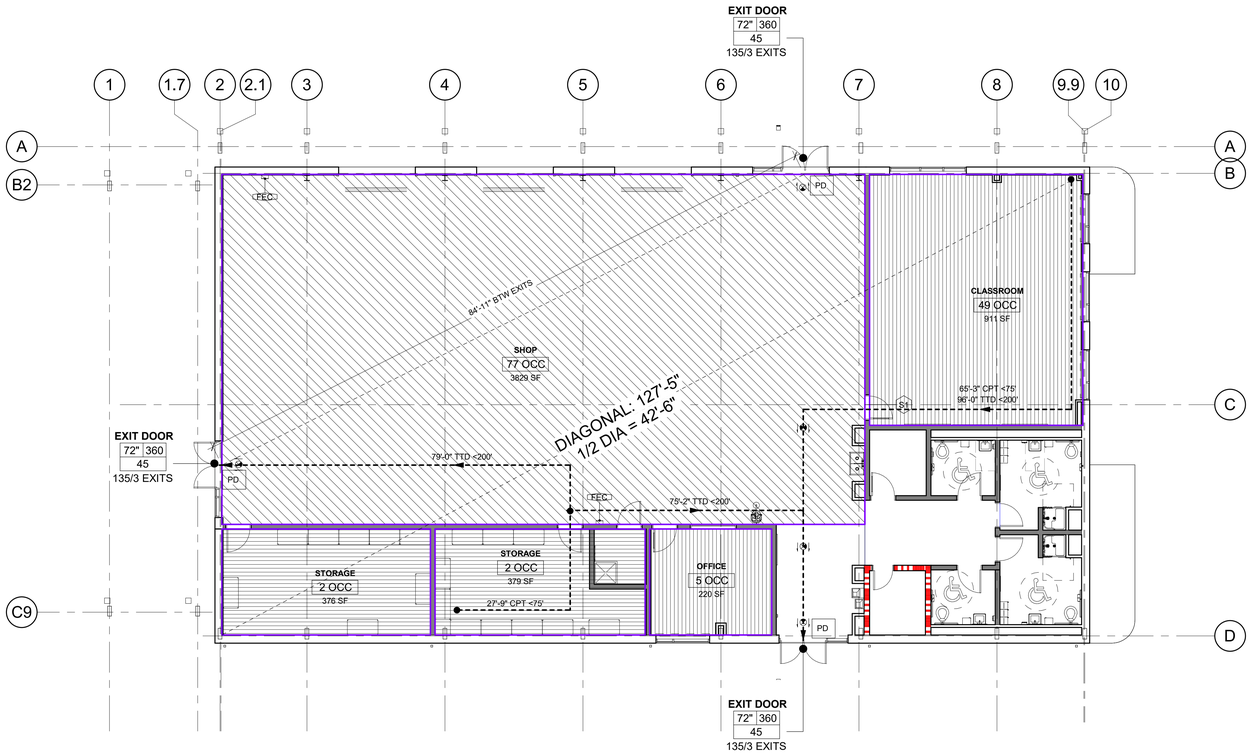

A1 LIFE SAFETY PLAN - AUTOMOTIVE
1/8" = 1'-0"

TRUE NORTH

OCCUPANCY LEGEND

- Assembly - Concentrated
- Business
- Educational - Classroom
- Educational - Vocational
- Storage Areas

LIFE SAFETY PLAN LEGEND

EGRESS TRAVEL PATH:
DISTANCE NOTED IS ACTUAL.
ALLOWABLE DISTANCE IS 300'-0"

ROOM NAME
1 OCC — OCCUPANCY LOAD
150 SF — ROOM AREA
OCC Type / SF per OCC — OCCUPANCY LOAD FACTOR AND METHOD
OCCUPANCY GROUP

EXIT DOOR
34" | 170 — EXIT CAPACITY (DOOR EGRESS WIDTH / .2)
111 — ANTICIPATED LOAD
EGRESS WIDTH

EXIT STAIR
48" | 160 — EXIT CAPACITY (STAIR EGRESS WIDTH / .3)
137 — ANTICIPATED LOAD
EGRESS WIDTH

HO — HOLD OPEN
PD — PANIC DEVICE
FEC — FIRE EXTINGUISHER CABINET WITH FIRE EXTINGUISHER
EXIT SIGN
CPT — COMMON PATH OF TRAVEL
TTD — TOTAL TRAVEL DISTANCE

LIFE SAFETY AREA OCCUPANCY KEY

Occupancy Type	Area per Occupant
Assembly - Concentrated	7 SF
Assembly - Standing Space	5 SF
Assembly - Unconcentrated	15 SF
Business	100 SF
Courtrooms	40 SF
Dormitories	50 SF
Educational - Classroom	20 SF
Educational - Vocational	50 SF
Exercise Rooms	50 SF
Institutional - Inpatient	240 SF
Institutional - Outpatient	100 SF
Institutional - Sleeping Areas	120 SF
Kitchens - Commercial	200 SF
Library - Reading	50 SF
Library - Stack	100 SF
Locker Rooms	50 SF
Mechanical Room	300 SF
Parking Garages	200 SF
Residential	200 SF
Stages and Platforms	15 SF
Storage Areas	300 SF

BRUNSWICK COUNTY

THE COAST ACADEMY

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TEL. 919.829.2700 FAX 919.829.2730
WWW.LS3P.COM

LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL COMPANY CERT. NO. 50417 NORTH CAROLINA RALEIGH, NORTH CAROLINA

MARY H. BRETHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

MEMBERS OF THE AMERICAN INSTITUTE OF ARCHITECTS

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

LIFE SAFETY PLAN - AUTOMOTIVE

G-004

BID DOCUMENTS

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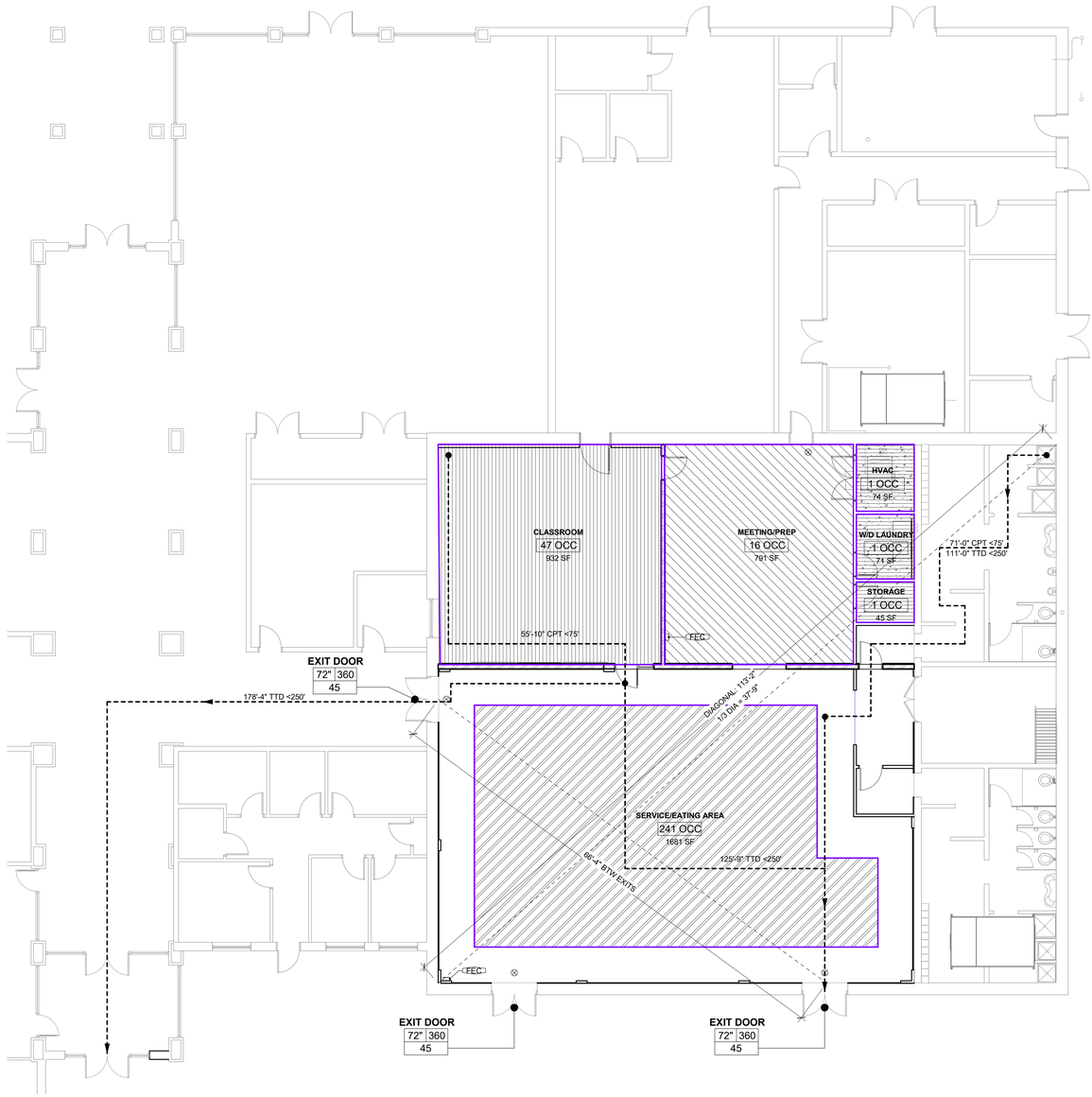

A1 LIFE SAFETY PLAN - CULINARY
1/8" = 1'-0"

N TRUE NORTH N

OCCUPANCY LEGEND

- Assembly - Concentrated
- Business
- Educational - Classroom
- Educational - Vocational
- Storage Areas

LIFE SAFETY PLAN LEGEND

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DISTANCE NOTED IS ACTUAL.
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Library - Reading	50 SF
Library - Stack	100 SF
Locker Rooms	50 SF
Mechanical Room	300 SF
Parking Garages	200 SF
Residential	200 SF
Stages and Platforms	15 SF
Storage Areas	300 SF

BRUNSWICK COUNTY

THE COAST ACADEMY

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LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL COMPANY CERT. NO. 50417 RALEIGH, NORTH CAROLINA

MARY H. BRECHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

LIFE SAFETY PLAN - CULINARY

G-005

BID DOCUMENTS

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PARAMOUNTE
ENGINEERING INC.
122 Cinema Drive Wilmington,
North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846
PEI Project #: 19312.PE

COORDINATION NOTES:

1. THE CONTRACTOR IS REQUIRED TO OBTAIN ANY/ALL PERMITS REQUIRED FOR CONSTRUCTION OF THESE PLANS.
2. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH PERMITS ISSUED AND WITH BRUNSWICK COUNTY, BRUNSWICK COUNTY UTILITIES, AND THE STATE OF NORTH CAROLINA.
3. THE CONTRACTOR IS TO ESTABLISH AND CHECK ALL HORIZONTAL AND VERTICAL CONTROLS TO BE USED WITH THE PROJECT. IN ADDITION, THE CONTRACTOR IS TO COMPUTE THE LAYOUT OF THE ENTIRE SITE PLAN IN ADVANCE OF BEGINNING ANY WORK ASSOCIATED WITH THE SUBJECT PLANS. CONTRACTOR SHALL EMPLOY A PROFESSIONAL SURVEYOR TO PERFORM SITE IMPROVEMENT STAKEOUT(S).
4. ANYTIME WORK IS PERFORMED OFF-SITE OR WITHIN AN EXISTING EASEMENT, THE CONTRACTOR IS TO NOTIFY THE HOLDER OF SAID EASEMENT AS TO THE NATURE OF PROPOSED WORK, AND TO FOLLOW ANY GUIDELINES OR STANDARDS WHICH ARE ASSOCIATED WITH OR REFERENCED IN THE RECORDED EASEMENT.
5. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS BY OTHERS FOR ALL BUILDING DIMENSIONS AND DETAILS.

GENERAL NOTES:

1. LIMITED TREE INVENTORY AND TOPOGRAPHIC SURVEY COMPLETED BY PARAMOUNTE ENGINEERING, INC. THE SURVEY SHALL BE FIELD VERIFIED BY CONTRACTOR AND ANY DISCREPANCIES REPORTED TO THE OWNER AND ENGINEER.
2. REASONABLE CARE HAS BEEN EXERCISED IN SHOWING THE LOCATION OF EXISTING UTILITIES ON THE PLANS. THE EXACT LOCATION OF ALL EXISTING UTILITIES IS NOT KNOWN IN ALL CASES. THE CONTRACTOR SHALL EXPLORE THE AREA AHEAD OF DITCHING OPERATIONS BY OBSERVATIONS, ELECTRONIC DEVICES, HAND DIGGING AND BY PERSONAL CONTACT WITH THE UTILITY COMPANIES. IN ORDER TO LOCATE EXISTING UTILITIES IN ADVANCE OF TRENCHING OPERATIONS SO AS TO ELIMINATE OR MINIMIZE DAMAGE TO EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS RESULTING FROM ANY DAMAGE TO THE EXISTING UTILITY LINES INCLUDING LOSS OF UTILITY REVENUES. CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF EXISTING UTILITIES, SUCH AS POLES, CONDUITS, FIBER OPTIC CABLES, TELEPHONE CABLES, WATER LINES, ETC.
3. CONTRACTOR SHALL COMPLY WITH THE LATEST REVISIONS AND INTERPRETATIONS OF THE DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION PROMULGATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT.
4. CONTRACTOR SHALL PLAN AND CONSTRUCT WORK SO AS TO CAUSE MINIMUM INCONVENIENCE TO THE OWNER AND THE PUBLIC. THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN AT ALL TIMES DURING THE PROGRESS OR TEMPORARY SUSPENSION OF WORK, SUITABLE BARRIERS, FENCES, SIGNS OR OTHER ADEQUATE PROTECTION, INCLUDING FLAGMEN AND WATCHMEN AS NECESSARY TO INSURE THE SAFETY OF THE PUBLIC AS WELL AS THOSE ENGAGED IN THE CONSTRUCTION WORK. CONSTRUCTION SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF "CONSTRUCTION AND MAINTENANCE OPERATIONS SUPPLEMENT TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE USDOT.
5. ALL MATERIAL CLEARED OR DEMOLISHED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE.
6. ALL WORK BY THE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR AFTER THE OWNER ACCEPTS THE WORK.
7. CONTRACTOR SHALL CALL THE NORTH CAROLINA ONE-CALL CENTER AT 811 AN ALLOW THE CENTER TO LOCATE EXISTING UTILITIES BEFORE DIGGING.
8. ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO START OF CONSTRUCTION. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
9. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
10. ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH THE RESPECTIVE UTILITY.
11. DO NOT SCALE THIS DRAWING AS IT IS A REPRODUCTION AND SUBJECT TO DISTORTION.
12. THE GENERAL CONTRACTOR SHALL REMOVE ALL DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
13. THE GENERAL CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
14. ALL STREET SURFACES, DRIVEWAYS, CULVERTS, CURB AND GUTTERS, ROADSIDE DRAINAGE DITCHES AND OTHER STRUCTURES THAT ARE DISTURBED OR DAMAGED IN ANY MANNER AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR REPAIRED IN ACCORDANCE WITH THE SPECIFICATIONS.
15. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
16. IF DEPARTURES FROM THE SPECIFICATIONS OR DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE GIVEN TO THE OWNER FOR REVIEW, NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE PERMISSION OF THE OWNER, BRUNSWICK COUNTY, OR BRUNSWICK COUNTY UTILITIES, RESPECTIVELY.
17. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE OTHER OBSTRUCTIONS OR FROM DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. CONTACT NORTH CAROLINA ONE CALL" TOLL FREE 1-800-632-4949 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NONSUBSCRIBING UTILITIES.
18. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL INSPECTIONS, CERTIFICATIONS, EQUIPMENT, ETC., THAT MAY BE REQUIRED.
19. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
20. ALL LOT STRIPING AND DIRECTIONAL ARROWS TO BE REFLECTIVE MARKINGS AND SHALL CONFORM TO MUTCD. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
21. LANDSCAPE PLANTINGS AT ENTRANCE/ EXITS WILL BE INSTALLED AND MAINTAINED SO AS NOT TO INTERFERE WITH SIGHT DISTANCE NEEDS OF DRIVERS IN THE PARKING AREA AND AT ENTRANCE/EXIT LOCATIONS PER LOCAL STANDARDS.
22. ALL DIMENSIONS AND RADII ARE TO OUTSIDE FACE OF BUILDING OR TO FACE OF CURB UNLESS OTHERWISE NOTED.

TRAFFIC NOTES:

1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY & FOR DRIVEWAY(S) ARE TO BE THERMOPLASTIC & MEET BRUNSWICK COUNTY AND/OR NCDOT STANDARDS.
2. TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
3. ALL TRAFFIC CONTROL SIGNS AND MARKINGS NOT WITHIN THE PUBLIC RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
5. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND/OR CURBING SHALL BE REPLACED.
6. TACTILE WARNING MATS TO BE INSTALLED AT ALL WHEELCHAIR RAMPS.

CONTACT INFORMATION

BRUNSWICK COUNTY PLANNING & ZONING
ATTN: BRANDON HACKNEY, PROJECT PLANNER
PH: 910-253-2042

PIEDMONT NATURAL GAS
ATTN: CATHY PLEASANT
PH: 910-251-2827

EMERGENCY DIAL 911
POLICE - FIRE - RESCUE
ATTN: BRUNSWICK COUNTY SHERIFF DEPARTMENT
NON-EMERGENCY PH: 910-253-2777 OR 800-672-6379

OWNER/DEVELOPER:
BRUNSWICK COUNTY SCHOOLS
35 REFERENDUM DRIVE NE
BOLIVIA, NC 28422
ATTN: CRAIG ECKERT, (910) 253-1078

ENGINEER (CIVIL) & LANDSCAPE ARCHITECT:
PARAMOUNTE ENGINEERING, INC.
122 CINEMA DRIVE
WILMINGTON, NORTH CAROLINA 28403
ATTN: ROB BALLAND, P.E. (910) 791-6707 - ENGINEER
ATTN: ALLISON ENGEBRETSON, RLA (910) 791-6707 - LANDSCAPE

SURVEYING:
PARAMOUNTE ENGINEERING, INC.
122 CINEMA DRIVE
WILMINGTON, NORTH CAROLINA 28403
ATTN: CHRIS GAGNE, P.L.S. (910) 791-6707

BRUNSWICK COUNTY PUBLIC WORKS (SEWER & WATER)
ATTN: BILL PINNIX & AMY AYCOCK
PH: 910-253-2408 & 910-253-2407

AFTER HOURS EMERGENCY
PH: 910-755-7921 / 910-371-3490 / 910-454-0512

DUKE ENERGY
DISTRIBUTION CONSTRUCTION SERVICE
ALLISON WALSH
PH: 910-350-3457

TRANSMISSION AGENT
BILL WILDER
PH: 910-772-4903

REPORT A POWER OUTAGE: 1-800-419-6356

AT&T/BELL SOUTH
ATTN: STEVE DAYVAULT (BUILDING ENGINEERING)
PH: 910-341-0741

ATTN: JAMES BATSON, ENGINEERING
PH: 910-341-1621

SPECTRUM
ATTN: STEVE BARNETTE
PH: 910-772-5755

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. THE EROSION CONTROL PLAN SHALL INCLUDE PROVISIONS FOR GROUNDCOVER ON ALL EXPOSED PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1 WITHIN 7 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY. GROUND COVER SHALL BE PROVIDED ON ALL OTHER DISTURBED AREAS WITHIN 14 CALENDAR DAYS FROM THE LAST LAND DISTURBING ACTIVITY.
2. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MINIMUM STANDARDS AND SPECIFICATIONS OF THE NORTH CAROLINA EROSION AND SEDIMENT CONTROL HANDBOOK. (NO SEPARATE PAYMENT).
3. THE CONTRACTOR SHALL NOTIFY PLAN APPROVING AUTHORITY ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO FINAL INSPECTION.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO CLEARING AND/OR LAND DISTURBANCE.
5. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND PERMIT SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
6. PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO OFF-SITE BORROW OR WASTE AREAS STAGING OR STORAGE AREAS), THE CONTRACTOR SHALL PREPARE AND SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND TO NEW HANOVER COUNTY FOR APPROVAL. CONTRACTOR SHALL PAY ALL FEES REQUIRED AND SHALL INSTALL NECESSARY MEASURES AT NO SEPARATE PAYMENT. THE CONTRACTOR SHALL PROVIDE THE OWNER AND THE ENGINEER A COPY OF THE AMENDED PERMIT.
7. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY EITHER THE REVIEWING AGENCY OR THE ENGINEER. (NO SEPARATE PAYMENT).
8. ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
9. ALL AREAS DISTURBED BY CONSTRUCTION UNLESS OTHERWISE IMPROVED SHALL BE SODDED OR SEEDED AS INDICATED AND STABILIZED.
10. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO AN APPROVED FILTERING DEVICE PRIOR TO DISCHARGE TO RECEIVING OUTLET.
11. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF-PRODUCING EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
12. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY CONTRACTOR ONCE STABILIZATION OR A SUFFICIENT GROUND COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY THE ENGINEER. (NO SEPARATE PAYMENT). NCDENR'S FINAL APPROVAL IS REQUIRED.
13. TEMPORARY GRAVEL CONSTRUCTION ENTRANCE SHALL BE REQUIRED AT ALL CONSTRUCTION STAGING AREA ENTRANCES AND ALL CONSTRUCTION ACCESS LOCATIONS INTO NON-PAVED AREA. (NO SEPARATE PAYMENT).
14. WHEN CROSSING CREEK OR DRAINAGE-WAY, THE DIVISION OF WATER QUALITY SHALL BE CONTACTED PRIOR TO DISTURBING A CREEK. THE CONTRACTOR SHALL INSTALL RIP-RAP WITH FABRIC ALONG DISTURBED BANKS AND CHANNEL BED RESTORE SLOPES TO ORIGINAL CONTOURS, BUT NOT STEEPER THAN 2:1 MAXIMUM. DISTURBED CREEK AREA SHALL BE STABILIZED IMMEDIATELY.

DEMOLITION NOTES:

1. CONTRACTOR TO COORDINATE WITH THE OWNER TO PROPERLY MAINTAIN OR RELOCATE EXISTING SERVICE CONNECTIONS WHEN NECESSARY.
2. CONTRACTOR IS TO WALK THE SITE AND BECOME FAMILIAR WITH THE SCOPE OF DEMOLITION REQUIRED. ALL DEMOLITION WORK REQUIRED TO CONSTRUCT NEW SITE IMPROVEMENTS WILL BE PERFORMED BY THE CONTRACTOR AND WILL BE CONSIDERED UNCLASSIFIED EXCAVATION.
3. DEMOLITION SHALL INCLUDE BUT IS NOT LIMITED TO THE EXCAVATION, HAULING AND OFFSITE DISPOSAL OF CONCRETE PADS, CONCRETE DITCHES, FOUNDATIONS, SLABS, STEPS, AND STRUCTURES: ABANDONED UTILITIES, BUILDINGS, PAVEMENTS AND ALL MATERIALS CLEARED AND STRIPPED TO THE EXTENT NECESSARY AS DIRECTED BY THE GEOTECHNICAL ENGINEER FOR THE INSTALLATION OF THE NEW IMPROVEMENTS AND WITHIN THE LIMITS OF CLEARING AND GRADING AND AS SHOWN ON THESE PLANS.
4. THE CONTRACTOR SHALL PROTECT ALL ADJACENT PROPERTY, STRUCTURES AND UTILITIES ON THE PROPERTY NOT TO BE DEMOLISHED. DAMAGE TO PROPERTIES OF OTHERS DUE TO THE CONTRACTOR'S ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR AT NO COST TO OWNER.
5. ELECTRIC, TELEPHONE, SANITARY SEWER, WATER AND STORM SEWER UTILITIES THAT SERVICE OFF-SITE PROPERTIES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL PRODUCE A PHOTOGRAPHIC RECORD (DIGITAL) OF DEVELOPMENT COMMENCING WITH A RECORD OF THE SITE AS IT APPEARS BEFORE DEMOLITION HAS BEGUN. AFTERWARDS, A PHOTOGRAPHIC RECORD SHALL BE MAINTAINED WEEKLY DURING CONSTRUCTION AND ENDING WITH A PHOTOGRAPHIC RECORD OF THE DEVELOPMENT AS IT APPEARS AFTER DEMOLITION. THIS RECORD SHALL BE DELIVERED TO THE OWNER.
7. EXISTING CURB AND GUTTER, LIGHTS, SIDEWALK, AND UTILITIES NOT INTENDED FOR DEMOLITION SHALL BE MAINTAINED, PROTECTED AND UNDISTURBED DURING DEMOLITION.
8. ALL EXISTING IMPROVEMENTS INDICATED OR REQUIRED TO BE DEMOLISHED SHALL INCLUDE REMOVAL FROM THE PROPERTY AND PROPER DISPOSAL.
9. CONTRACTOR SHALL COORDINATE RELOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES INCLUDING CABLE, GAS, TELEPHONE AND ELECTRIC AND ANY OTHER UTILITIES THROUGH THE SITE WITH THE RESPECTIVE COMPANIES.
10. CONTRACTOR SHALL MAINTAIN REQUIRED DISTANCES FROM HIGH VOLTAGE OVERHEAD LINES AND REMOVE TREES SO THEY DO NOT FALL TOWARDS OVERHEAD ELECTRICITY.
11. PROVIDE SMOOTH SAW CUT OF EXISTING PAVEMENTS, CURBS AND GUTTERS AND SIDEWALKS TO BE DEMOLISHED.
12. ALL DEMOLITION WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS AS WELL AS OSHA REGULATIONS.
13. EXISTING FIRE HYDRANTS ON OR NEAR THE SITE ARE TO REMAIN IN SERVICE.
14. INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS, BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATIONS.

EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES:

NOTE: THESE EROSION CONTROL AND SEQUENCE OF CONSTRUCTION NOTES ARE INTENDED FOR EACH "PHASE" OF CONSTRUCTION. THE ORDER AND STEPS TAKEN MUST BE IMPLEMENTED AS EACH PART OF THE PROJECT IS DEVELOPED, WHETHER AS A WHOLE OR IN PHASES. ANY EROSION CONTROL DEVICES/MEASURES MUST REMAIN IN PLACE UNTIL THE ENTIRE DISTURBANCE IS STABILIZED AND ALL IMPROVEMENTS WITHIN THE DISTURBANCE LIMITS ARE COMPLETE.

1. CONSTRUCT TEMPORARY GRAVEL CONSTRUCTION ENTRANCE(S), ESTABLISH THE LIMITS OF DISTURBANCE, TREE PROTECTION FENCING, AND TEMPORARY SILT FENCE.
2. CLEAR AND REMOVE FROM SITE TREES AS DESIGNATED, ROOTS, ROOT MAT, ETC. FROM THE AREA WITHIN THE DESIGNATED CLEARING LIMITS.
3. CONSTRUCT TEMPORARY SEDIMENT BASIN(S) AND ASSOCIATED SKIMMER, OUTLET PIPE, SPILLWAY, ETC.
4. INSTALL REMAINING EROSION CONTROL MEASURES AS SHOWN ON THE PLANS WITHIN THE AREA DISTURBED. ALL EROSION CONTROL MEASURES MUST BE INSTALLED BEFORE COMMENCING CONSTRUCTION.
5. PLANT GRASS OVER ALL GRADED AREAS WITHIN 14 WORKING DAYS OF CEASE OF ANY GRADING ACTIVITY.
6. IMMEDIATELY UPON THE INSTALLATION OF ANY STORM DRAINAGE CATCH BASIN, DROP INLET, ETC., THE CONTRACTOR SHALL INSTALL INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING AND RESTORING TO PRE-CONSTRUCTION CONDITIONS ANY AREAS OUTSIDE THE PROJECT LIMITS THAT MAY INADVERTENTLY BE DAMAGED DUE TO THE FAILURE OF THE EROSION CONTROL MEASURES.
8. DURING GRADING AND AFTER GRADING HAS BEEN COMPLETE, THE CONTRACTOR SHALL CONTINUE TO MAINTAIN PERMANENT AND TEMPORARY EROSION CONTROL MEASURES UNTIL FINAL APPROVAL BY ENGINEER OR EROSION CONTROL INSPECTOR.
9. UPON RECEIVING FINAL APPROVAL, THE CONTRACTOR CAN REMOVE TEMPORARY EROSION CONTROL MEASURES.
10. THE CONTRACTOR SHALL CONTINUE TO WATER, FERTILIZE, MOW AND MAINTAIN GRASS & PLANTED AREAS UNTIL ALL CONSTRUCTION IS COMPLETE.

EROSION CONTROL MAINTENANCE PLAN:

1. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY 1/2-INCH OR GREATER RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. ALL CONSTRUCTION ENTRANCES WILL BE PERIODICALLY TOP DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. ANY SEDIMENT THAT IS TRACKED INTO THE STREET WILL BE IMMEDIATELY REMOVED.
3. SEDIMENT FENCE / SEDIMENT FENCE OUTLETS - SEDIMENT WILL BE REMOVED BEHIND THE SEDIMENT FENCE WHEN IT REACHES HALF THE FENCE HEIGHT. THE SEDIMENT FENCE WILL BE BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL, AND SPACED 6 FEET WITH EXTRA STRENGTH FABRIC AND NO WIRE BACKING. STAKE SPACING CAN BE 8 FEET WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS (OR EXCELSIOR MATTLES) ARE DESIGNED AT LOW POINTS IN THE SEDIMENT FENCE THE ROCK OR MATTLE WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS, OR IS DAMAGED.
4. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS ON THESE PLANS AND CONTRACT SPECIFICATIONS TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
5. INLET PROTECTION - SEDIMENT SHALL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL, BLOCK AND GRAVEL, OR ROCK-PIPE INLET PROTECTION WHEN IT REACHES HALF-FILLED. ROCK WILL BE CLEANED OR REPLACED WHEN NO LONGER DRAINS. SILT SACKS, BEAVER DAMS, SANDY SACKS, AND SOCKS NEED CHECKING EVERY WEEK AND AFTER RAIN.

NPDES BUILDING WASTES HANDLING:
1. NO PAINT OR LIQUID WASTES IN STREAM OR STORM DRAINS.
2. DEDICATED AREAS FOR DEMOLITION, CONSTRUCTION AND OTHER WASTES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
3. EARTHEN-MATERIALS STOCKPILES MUST BE LOCATED 50' FROM STORM DRAINS AND STREAMS UNLESS NO REASONABLE ALTERNATIVES AVAILABLE.
4. CONCRETE MATERIALS MUST BE CONTROLLED TO AVOID CONTACT WITH SURFACE WATERS, WETLANDS, OR BUFFERS.

NPDES INSPECTIONS:
1. SAME WEEKLY INSPECTION REQUIREMENTS.
2. SAME RAIN GAUGE & INSPECTIONS AFTER 0.5" RAIN EVENT.
3. INSPECTIONS ARE ONLY REQUIRED DURING "NORMAL BUSINESS HOURS".
4. INSPECTION REPORTS MUST BE AVAILABLE ON-SITE DURING BUSINESS HOURS UNLESS A SITE-SPECIFIC EXEMPTION IS APPROVED.
5. RECORDS MUST BE KEPT FOR 3 YEARS AND AVAILABLE UPON REQUEST.
6. ELECTRONICALLY AVAILABLE RECORDS MAY BE SUBSTITUTED UNDER CERTAIN CONDITIONS.

NPDES SEDIMENT BASINS:
1. OUTLET STRUCTURES MUST WITHDRAW FROM BASIN SURFACE UNLESS DRAINAGE AREA IS LESS THAN 1 ACRE.
2. USE ONLY DWQ-APPROVED FLOCULANTS.

NPDES - SPECIFIC PLAN SHEETS NOTES:
1. THIS PAGE IS SUBMITTED TO COMPLY WITH NPDES GENERAL STORMWATER PERMIT NCG010000.
2. THIS PAGE CAN BE APPROVED BY THE COUNTY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000 ONLY.
3. THIS PAGE OF THE APPROVED PLANS IS ENFORCEABLE EXCLUSIVELY PURSUANT TO NPDES GENERAL STORMWATER PERMIT NCG010000.
4. THE COUNTY IS NOT AUTHORIZED TO ENFORCE THE NPDES PORTION OF THIS PAGE OF THE PLANS AND THEY ARE NOT A PART OF THE APPROVED PLANS FOR THE PURPOSES OF ENFORCEMENT ACTION UNDER THE COUNTY CODE.

PERMANENT SEEDING			
GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
BERMUDA, HULLED BERMUDA, UNHULLED	10-20 35	MARCH - AUGUST SEPT. - FEB.	BY SOIL TEST
CENTIPEDE	10	MARCH - AUGUST	BY SOIL TEST (NO HIGH PH)
TALL FESCUE (COASTAL CULTIVAR RECOMMENDED)	50	MARCH - AUGUST	300 LB/AC 10-20-20 OR BY SOIL TEST
SLOPES >= 2:1 CENTIPEDE SERICEA LESPEDEZA	5 20	JAN - DEC	BY SOIL TEST

TEMPORARY SEEDING			
GRASS TYPE	LBS/ ACRE	TIME OF SEEDING	FERTILIZER LIMESTONE
RYE GRAIN	50	OCT. - APR.	400 LBS/AC. 10-20-20
SWEET SUDAN GRASS	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
GERMAN or BROWNTOP MILLET	50	JUNE - AUGUST	400 LBS/AC. 10-20-20
STRAW MULCH AS NEEDED	4,000		

STABILIZATION TIME FRAMES:
*IN THE EVENT THAT THE GOVERNING AGENCIES TIMEFRAME FOR STABILIZATION VARY, CONTRACTOR SHALL MEET THE MORE STRINGENT REQUIREMENT.

NPDES WATER QUALITY STABILIZATION TIME FRAMES		
SITE AREA DESCRIPTION	STABILIZATION	TIMEFRAME 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' IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES

NC ACCESSIBILITY NOTES:

GENERAL NOTES:
1. SPECIAL ATTENTION SHALL BE GIVEN TO COMPLIANCE WITH AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1, AND APPLICABLE LOCAL LAWS & REGULATIONS.
2. IT IS ESSENTIAL THAT CONTRACTORS ARE AWARE OF THE SITE ACCESSIBILITY REQUIREMENTS. PARAMOUNTE ENGINEERING HAS DEVELOPED THESE NOTES AND DETAILS TO ASSURE THAT CONTRACTORS ARE AWARE OF THE REQUIREMENTS AT THE POINT IN TIME WHEN THEY ARE BIDDING THE PROJECT. IN ADDITION, PARAMOUNTE ENGINEERING HAS MADE A POINT IN THESE NOTES AND DETAILS, AS WELL AS IN OUR DRAWINGS, TO PROVIDE SLOPES / GRADES AND DIMENSIONS THAT COMPLY WITH THE AMERICANS WITH DISABILITIES ACT (2010 ADA STANDARDS), THE NORTH CAROLINA BUILDING CODE/ANSI A117.1 AND APPLICABLE LOCAL LAWS & REGULATIONS. IF THESE SLOPES / GRADES AND DIMENSIONS ARE NOT ACHIEVABLE, THE CONTRACTOR IS REQUIRED TO CONTACT THE OWNER IMMEDIATELY AND BEFORE MOVING FORWARD WITH THE WORK.
3. THE CONTRACTOR SHALL NOTIFY PARAMOUNTE ENGINEERING IMMEDIATELY OF ANY CONFLICT BETWEEN THESE NOTES AND DETAILS AND OTHER PROJECT DRAWINGS, WHETHER BY PARAMOUNTE ENGINEERING OR OTHERS. THE CONTRACTOR SHALL NOT PROCEED WITH THE WORK FOR WHICH THE ALLEGED CONFLICT HAS BEEN DISCOVERED UNTIL SUCH ALLEGED CONFLICT HAS BEEN RESOLVED. NO CLAIM SHALL BE MADE BY THE CONTRACTOR FOR DELAY OR DAMAGES AS A RESULT OF RESOLUTION OF ANY SUCH CONFLICT(S).
4. THESE ACCESSIBILITY NOTES AND DETAILS ARE INTENDED TO DEPICT SLOPE AND DIMENSIONAL REQUIREMENTS ONLY. REFER TO SIDEWALK, CURBING, AND PAVEMENT DETAILS FOR ADDITIONAL INFORMATION.

ACCESSIBLE ROUTE NOTES:
1. AT LEAST ONE ACCESSIBLE ROUTE SHALL BE PROVIDED WITHIN THE SITE FROM ACCESSIBLE PARKING SPACES AND ACCESSIBLE PASSENGER LOADING ZONES; PUBLIC STREETS OR SIDEWALKS; AND PUBLIC TRANSPORTATION STOPS TO THE ACCESSIBLE BUILDING FACILITY ENTRANCE THEY SERVE.
2. AT LEAST ONE ACCESSIBLE ROUTE SHALL CONNECT ACCESSIBLE BUILDINGS, ACCESSIBLE FACILITIES, ACCESSIBLE ELEMENTS, AND ACCESSIBLE SPACES THAT ARE ON THE SAME SITE.
3. WALKING SURFACES THAT ARE PART OF AN ACCESSIBLE ROUTE SHALL HAVE A MAXIMUM RUNNING SLOPE OF 5.0% AND A MAXIMUM CROSS SLOPE OF 2.0%.
4. ANY WALKING SURFACE THAT IS PART OF AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 5.0% IS A RAMP AND SHALL COMPLY WITH THE GUIDELINES FOR RAMPS OR CURB RAMPS.
5. TRANSITIONS BETWEEN RAMPS, WALKS, LANDINGS, GUTTERS OR STREETS SHALL BE FLUSHAND FREE OF ABRUP

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

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

SECTION E: GROUND STABILIZATION

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

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

GROUND STABILIZATION SPECIFICATION

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

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

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

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

EQUIPMENT AND VEHICLE MAINTENANCE

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

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

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

PAINT AND OTHER LIQUID WASTE

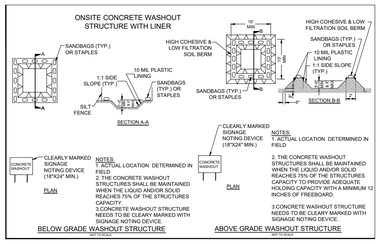
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled,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

PORTABLE TOILETS

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

EARTHEN STOCKPILE MANAGEMENT

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



CONCRETE WASHOUTS

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

HERBICIDES, PESTICIDES AND RODENTICIDES

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

HAZARDOUS AND TOXIC WASTE

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

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING | EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

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

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

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

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

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

2. Additional Documentation

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

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

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

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

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

(b) Anticipated bypasses and unanticipated bypasses.

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

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

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

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING | EFFECTIVE: 04/01/19

PARAMOUNTE ENGINEERING INC.
122 Cinema Drive Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846
PEI Project #: 19312.PE

THE COAST ACADEMY

LS3P
LS3P ASSOCIATES LTD.
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RALEIGH, NORTH CAROLINA 27601
TEL. 919.829.2700 FAX 919.829.2730
WWW.LS3P.COM

NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P BALLARD
04/22/2020

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REVISIONS:

No.	Description	Date

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

GENERAL NOTES - CIVIL

C-1.1

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN
100% CONSTRUCTION DRAWINGS

811 Know what's below. Call before you dig.

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North Carolina 28403
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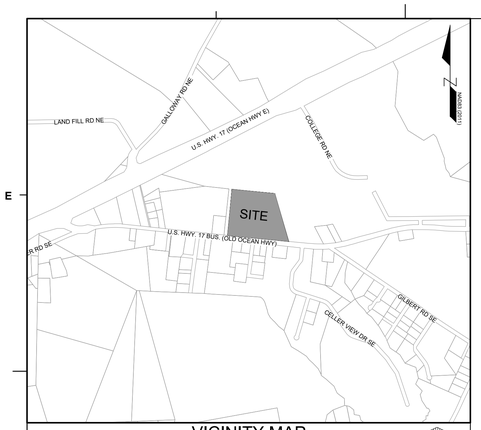


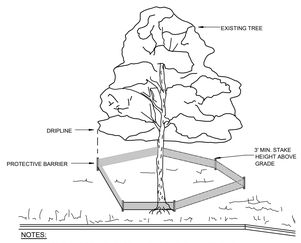
VICINITY MAP
SCALE: 1" = 1,000'
NORTH

DEMOLITION NOTES:

1. CONTRACTOR SHALL REFER TO GENERAL NOTES FOR DEMOLITION NOTES.
2. ALL UTILITIES SHALL BE ABANDONED AND/OR DEMOLISHED AND CAPPED PROPERLY IN ACCORDANCE WITH THE UTILITY OWNERS RULES AND REGULATIONS.

EX. VEGETATION NOTES:

1. CONTRACTOR SHALL REMOVE SHRUBS AS NECESSARY ALONG THE BUILDINGS FOR CONSTRUCTION AS LONG AS THE SAME QUANTITY AND SPECIES ARE REPLACED WHEN CONSTRUCTION IS COMPLETE.



NOTES:

- TREES TO BE SAVED WILL BE CLEARLY MARKED PRIOR TO CONSTRUCTION
- INSTALLATION OF PROTECTION FENCING IS REQUIRED PRIOR TO LAND DISTURBING ACTIVITY AND IS TO BE MAINTAINED UNTIL AFTER FINAL SITE INSPECTION
- FENCING SHALL BE INSTALLED AT THE DRIPLINE OR AT THE BOUNDARY OF THE CRITICAL ROOT ZONE, WHICHEVER IS GREATER
  DRIP LINE - THE AREA OF SOIL DIRECTLY BENEATH THE TREE EXTENDING OUT TO THE TIPS OF THE OUTERMOST BRANCHES.
  CRITICAL ROOT ZONE - 1' RADIUS FROM THE TREE TRUNK PER 1" CALIPER

A METHOD OF TREE PROTECTION DURING CONSTRUCTION
NTS

SYMBOLS LEGEND	
	EXISTING CONCRETE TO BE REMOVED
	EXISTING ASPHALT TO BE REMOVED
	EXISTING UTILITY LINE TO BE REMOVED
	EXISTING STORM STRUCTURE TO BE REMOVED
	EXISTING SIGN/LIGHT/UTILITY POLE TO BE REMOVED
	EXISTING FENCE TO BE REMOVED
	TREE PROTECTION FENCING
X	EXISTING TREE/SHRUBS TO BE REMOVED
	EXISTING BUILDING/STRUCTURE TO BE REMOVED



GRAPHIC SCALE
0 10 20 40 60
SCALE: 1"=20'

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

THE COAST ACADEMY

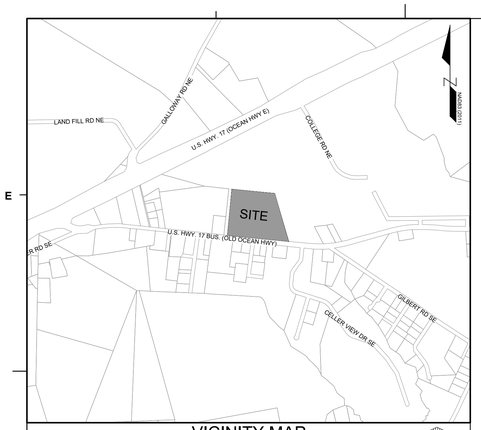
DEMOLITION PLAN

C-2.0

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

100% CONSTRUCTION DRAWINGS



VICINITY MAP

SCALE: 1" = 1,000'

NORTH

SITE INFORMATION

OWNER INFORMATION:	BRUNSWICK COUNTY BOARD OF EDUCATION 35 REFERENDUM DRIVE NE BOLIVIA, NC 28422
PROJECT NAME:	THE COAST ACADEMY
PROJECT ADDRESS:	1109 OLD OCEAN HWY BOLIVIA, NC 28422
PARCEL ID:	1530000120
PARCEL PIN:	2130001057729
RECORDED DEED BOOK:	DB 1830/PG280 & PLAT 28/477
CURRENT ZONING:	C-LD
EXISTING USE:	HIGH SCHOOL
PROPOSED USE:	HIGH SCHOOL
TOTAL SITE AREA:	14.30 AC (622,908 SF)
FLOOD INFORMATION:	THIS PARCEL LIES WITHIN AN AREA OF MINIMAL FLOOD HAZARD (ZONE X) AS INDICATED BY FEMA FLOOD ZONE MAP NUMBER 3720213000K BEARING AN EFFECTIVE DATE OF 08/28/2018.
SPECIAL HIGHWAY DISTRICT:	N/A
CAMA CLASSIFICATION:	COMMERCIAL

BUILDING INFORMATION:

PROPOSED BLDG. GFA	6,848 SF
ALLOWABLE BLDG. HEIGHT	50'
PROPOSED BLDG. HEIGHT	27'-4"
CONSTRUCTION TYPE	II-B
SPRINKLER SYSTEM	NO

SETBACKS*

*FOR PROPOSED NEW ADDITION ONLY	REQUIRED	PROVIDED
FRONT	25'	530'
SIDE	0'	358'
CORNER LOT SIDE	10'	358'
REAR	6'	167'

PARKING INFORMATION

EX. TOTAL SPACES	81 SPACES
EX. HANDICAP	6 SPACES
EX. BUS PARKING	9 SPACES

PARKING STANDARDS	REQUIRED	PROVIDED
6 SPACES/CLASSROOM	6	7
1 PER 300 GFA OF ADMIN. OFFICES	0	1
TOTAL REQUIRED =	6	
TOTAL PROVIDED =		8 (WITH 1 HANDICAP)

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	
ASPHALT	105,300 SF
BUILDINGS	71,060 SF
CONCRETE	15,220 SF
TOTAL	191,580 SF

EXISTING IMPERVIOUS TO BE REMOVED 0 SF

PROPOSED IMPERVIOUS	
ASPHALT	7,940 SF
BUILDINGS	9,400 SF
CONCRETE	1,280 SF
FUTURE	3,444 SF
TOTAL	22,064 SF

TOTAL IMPERVIOUS = EX. IMPERVIOUS TO REMAIN + PROPOSED IMPERVIOUS = 213,644 SF

GENERAL NOTES

1. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET TOWN AND/OR NCDOT STANDARDS.
2. ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD STANDARDS.
3. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
4. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.

GARBAGE REMOVAL

EXISTING DUMPSTERS TO REMAIN AS-IS.

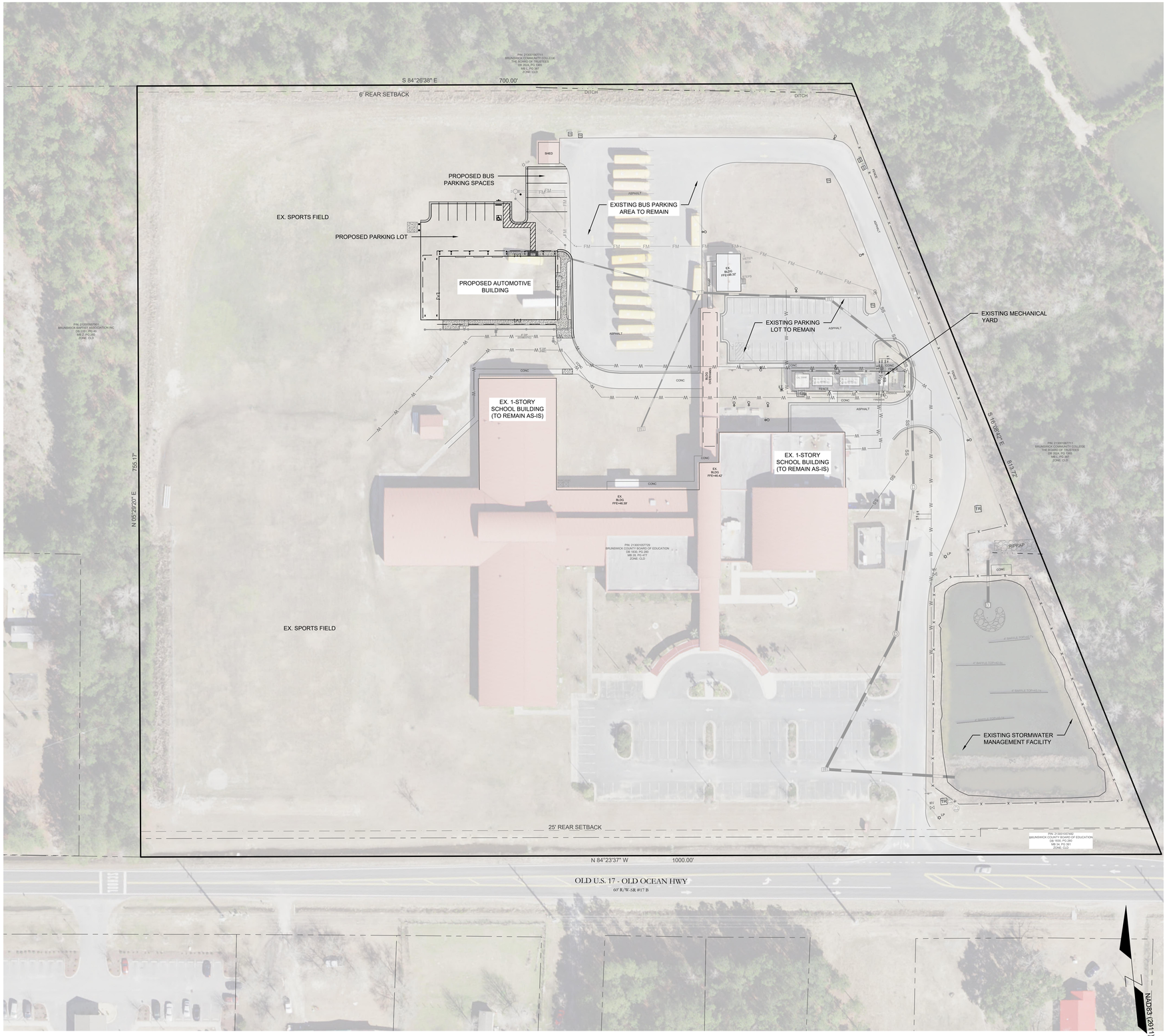
WATER AND SEWER CAPACITY

25 STUDENTS
SCHOOL - 20 GAL/STUDENT
TOTAL = 500 GPD

GENERAL UTILITY NOTES

PROPOSED 2" DOMESTIC WATER SERVICE AND 4" SANITARY SERVICE FOR PROPOSED BUILDING ADDITION. SEE UTILITY PLAN AND PLUMBING PLANS FOR MORE DETAIL.

811 Know what's below. Call before you dig.



GRAPHIC SCALE
0 20 40 80 120
SCALE: 1"=40'

PARAMOUNTE ENGINEERING, INC.
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(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846
PEI Project #: 19312.PE

BRUNSWICK COUNTY SCHOOLS — A Community of Learners

THE COAST ACADEMY

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04/22/2020

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

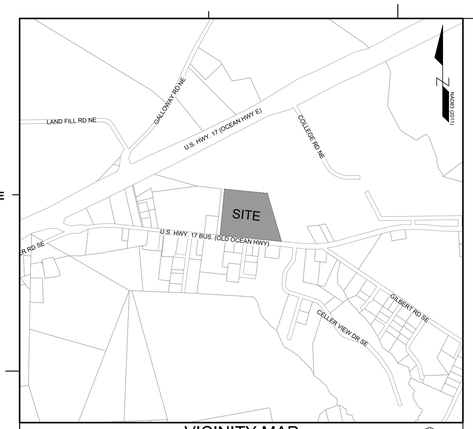
OVERALL SITE PLAN

C-2.1

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

100% CONSTRUCTION DRAWINGS



VICINITY MAP

SCALE: 1" = 1,000'

NORTH

KEY NOTES:

1. LIGHT DUTY ASPHALT PAVING: REFER TO DETAILS
2. HEAVY DUTY ASPHALT PAVING: REFER TO DETAILS
3. STANDARD 24" CURB & GUTTER: REFER TO DETAILS
4. 24" SPILL CURB & GUTTER: REFER TO DETAILS
5. CONCRETE SIDEWALK: REFER TO DETAILS
6. EXPOSED FACE CONCRETE SIDEWALK TO ASPHALT DETAIL: SEE DETAILS
7. HANDICAP PARKING SIGN: REFER TO DETAILS
8. DETECTIBLE WARNING MAT: REFER TO DETAILS
9. HANDICAP RAMP: REFER TO DETAILS
10. HANDICAP PARKING SYMBOL: REFER TO DETAILS
11. HANDICAP ACCESS UNLOADING ZONE: SLOPE 2% MAX. EACH WAY (ADA COMPLIANT) AND STRIPE AS SHOWN.
12. DESIGNATED ACCESSIBLE ROUTE: PROVIDE STRIPING AND SLOPE 5% MAXIMUM IN DIRECTION OF TRAVEL WITH 2% MAXIMUM CROSS SLOPE.
13. STRIPING: PROVIDE 4" WIDE PARKING LOT STRIPING AS SHOWN. USE HIGHWAY MARKING PAINT - WHITE (2 COATS).
14. CONCRETE BUMPER BLOCK: 8"w x 4"h x 6' LONG CONCRETE. ANCHOR TO PAVING WITH (2) 1'-6" LONG #4 REBAR. REFER TO DETAILS.
15. 6" STEEL BOLLARDS: REFER TO DETAILS.

SITE INFORMATION

OWNER INFORMATION:	BRUNSWICK COUNTY BOARD OF EDUCATION 35 REFERENDUM DRIVE NE BOLIVIA, NC 28422
PROJECT NAME:	THE COAST ACADEMY
PROJECT ADDRESS:	1109 OLD OCEAN HWY BOLIVIA, NC 28422
PARCEL ID:	1530000120
PARCEL PIN:	213001057729
RECORDED DEED BOOK:	DB 1830/PG280 & PLAT 28/477
CURRENT ZONING:	C-LD
EXISTING USE:	HIGH SCHOOL
PROPOSED USE:	HIGH SCHOOL
TOTAL SITE AREA:	14.30 AC (622,908 SF)
FLOOD INFORMATION:	THIS PARCEL LIES WITHIN AN AREA OF MINIMAL FLOOD HAZARD (ZONE X) AS INDICATED BY FEMA FLOOD ZONE MAP NUMBER 3720213000K BEARING AN EFFECTIVE DATE OF 08/28/2018.
SPECIAL HIGHWAY DISTRICT:	N/A
CAMA CLASSIFICATION:	COMMERCIAL

BUILDING INFORMATION:

PROPOSED BLDG. GFA	6,848 SF
ALLOWABLE BLDG. HEIGHT	50'
PROPOSED BLDG. HEIGHT	27'-4"
CONSTRUCTION TYPE	II-B
SPRINKLER SYSTEM	NO

SETBACKS*

*FOR PROPOSED NEW ADDITION ONLY	REQUIRED	PROVIDED
FRONT	25'	530'
SIDE	0'	358'
CORNER LOT SIDE	10'	358'
REAR	6'	167'

PARKING INFORMATION

EX. TOTAL SPACES	81 SPACES
EX. HANDICAP	6 SPACES
EX. BUS PARKING	9 SPACES

PARKING STANDARDS	REQUIRED	PROVIDED
6 SPACES/CLASSROOM	6	7
1 PER 300 GFA OF ADMIN. OFFICES	0	1
TOTAL REQUIRED =	6	
TOTAL PROVIDED =		8 (WITH 1 HANDICAP)

IMPERVIOUS INFORMATION

EXISTING IMPERVIOUS	
ASPHALT	105,300 SF
BUILDINGS	71,060 SF
CONCRETE	15,220 SF
TOTAL	191,580 SF
EXISTING IMPERVIOUS TO BE REMOVED	0 SF

PROPOSED IMPERVIOUS	
ASPHALT	7,940 SF
BUILDINGS	9,400 SF
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TOTAL IMPERVIOUS = EX. IMPERVIOUS TO REMAIN + PROPOSED IMPERVIOUS = 213,644 SF

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GARBAGE REMOVAL

EXISTING DUMPSTERS TO REMAIN AS-IS.

WATER AND SEWER CAPACITY

25 STUDENTS
SCHOOL - 20 GAL/STUDENT
TOTAL = 500 GPD

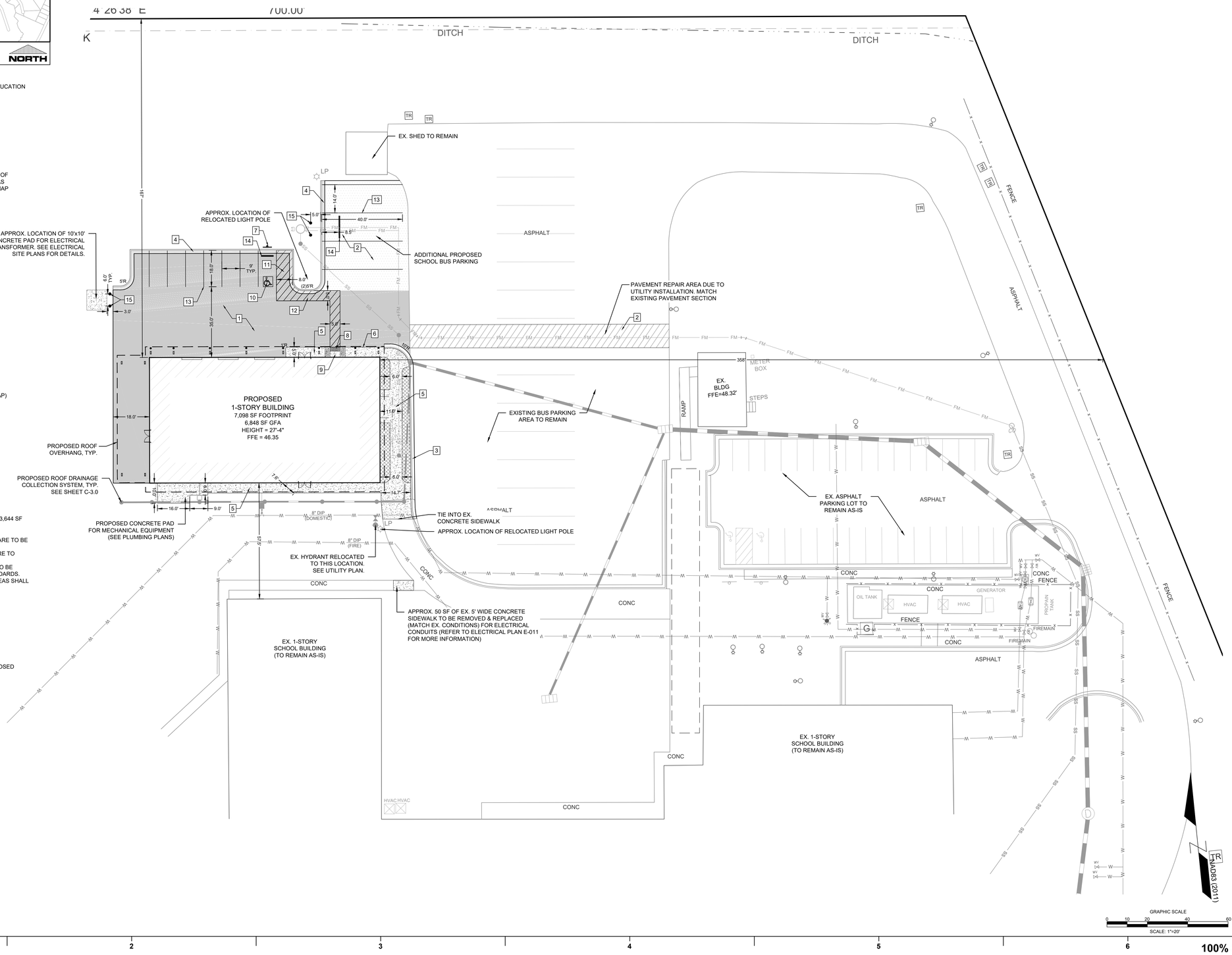
GENERAL UTILITY NOTES

PROPOSED 2" DOMESTIC WATER SERVICE AND 4" SANITARY SERVICE FOR PROPOSED BUILDING ADDITION. SEE UTILITY PLAN AND PLUMBING PLANS FOR MORE DETAIL.

LEGEND:

- PROPOSED LIGHT DUTY ASPHALT SECTION
- PROPOSED HEAVY DUTY ASPHALT SECTION
- PROPOSED BUILDING
- PROPOSED ROOF
- PROPOSED CONCRETE
- EXISTING CONCRETE
- PLANTING AREAS (SEE PLANTING PLAN)
- PROPOSED PAVEMENT REPAIR (FULL-DEPTH SECTION)

Know what's below. Call before you dig.



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04/22/2020

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

SITE PLAN

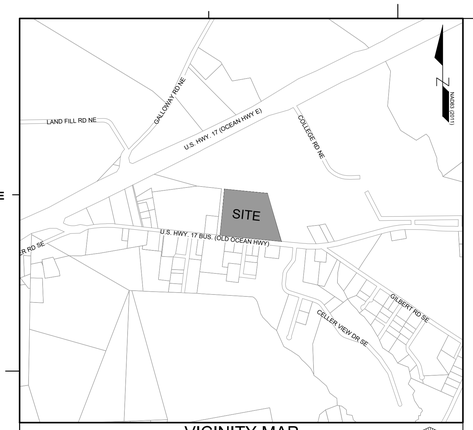
C-2.2

SOLUTIONS THROUGH LISTENING

SERVICE BY DESIGN

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

100% CONSTRUCTION DRAWINGS



VICINITY MAP

SCALE: 1" = 1,000'

NORTH

SITE INFORMATION

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BUILDING INFORMATION:

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ALLOWABLE BLDG. HEIGHT	50'
PROPOSED BLDG. HEIGHT	27'-4"
CONSTRUCTION TYPE	II-B
SPRINKLER SYSTEM	NO

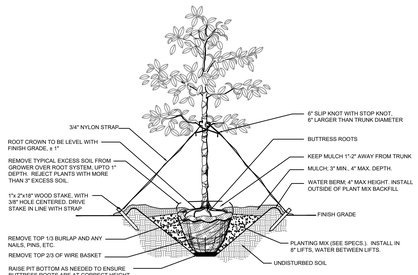
LANDSCAPE NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION.
2. TREES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM SEWER/WATER CONNECTIONS OR AS OTHERWISE DICTATED BY LOCAL REGULATIONS. CONTRACTOR SHALL BE LIABLE FOR DAMAGE TO ANY AND ALL PUBLIC OR PRIVATE UTILITIES.
3. ALL PLANT MATERIAL SHALL MEET THE CURRENT VERSION OF THE AMERICAN ASSOCIATION OF NURSERYMEN'S STANDARDS.
4. NO EXISTING TREES SHALL BE REMOVED WITHOUT WRITTEN AUTHORIZATION FROM OWNER'S REPRESENTATIVE.
5. ALL SHRUB BEDS AND/OR PLANTING AREAS EXCLUDING TURF AREAS SHALL BE MULCHED WITH 3 INCH MINIMUM AND 4 INCH MAXIMUM DEPTH PINE STRAW MULCH UNLESS OTHERWISE NOTED.
6. ALL PLANTS, 4 FEET OR LESS APART, WILL BE CONNECTED IN ONE PLANTING BED. ALL GROUPS OF PLANTS SHOULD BE WITHIN ONE PLANTING BED WITH THE EDGE OF MULCH EXTENDING 2 FEET BEYOND THE EDGE OF PLANT MASS. SINGLE TREES SHOULD HAVE A CIRCLE OF MULCH NOT LESS THAN 5 FEET DIAMETER.
7. PLANTING SOIL MIX: MIX EXISTING SOIL WITH THE SOIL AMENDMENTS AND FERTILIZERS IN THE QUANTITIES RECOMMENDED BY THE SOIL TESTING LABORATORY, THIRD PARTY RECOGNIZED BY THE STATE DEPARTMENT OF AGRICULTURE OR AS OTHERWISE APPROVED BY THE OWNER'S REPRESENTATIVE.
8. ANY AND ALL SUBSTITUTIONS OF PLANT MATERIAL SHALL BE APPROVED BY OWNER'S REPRESENTATIVE. FAILURE IN OBTAINING APPROVAL MAY RESULT IN LIABILITY TO THE CONTRACTOR.
9. THE CONTRACTOR SHALL REPLACE DEAD AND/OR UNHEALTHY PLANT MATERIAL WITHIN 12 MONTHS OF ACCEPTANCE OF THE INSTALLED MATERIAL FROM THE OWNER OR OWNER'S REPRESENTATIVE.
10. IF IRRIGATION IS NEEDED, IT SHALL BE DESIGNED AND INSTALLED BY A LICENSED IRRIGATION CONTRACTOR IN THE STATE OF NORTH CAROLINA.
11. THE CONTRACTOR IS RESPONSIBLE FOR HAND WATERING THE INSTALLED PLANT MATERIAL FOR A PERIOD OF 6 MONTHS FROM THE ACCEPTANCE FROM THE OWNER OR OWNER'S REPRESENTATIVE IF IRRIGATION HAS NOT BEEN INSTALLED. ALL MATERIAL INCLUDING SOD AND SEEDED AREAS SHALL BE HAND WATERED ONCE WEEKLY OR AS NEEDED TO ENSURE SURVIVAL OF PLANTS.
12. CONTRACTOR IS RESPONSIBLE FOR REMOVING TRASH, DEBRIS AND EXCESS MATERIALS FROM THE JOB SITE ONCE THE PROJECT IS COMPLETE. SECURING ANY MATERIALS LEFT ON SITE DURING THE COURSE OF THE PROJECT IS THE CONTRACTOR'S RESPONSIBILITY.
13. ALL DISTURBED AREAS SHALL BE SEEDED WITH BERMUDA 'BLACKJACK' SEED.
14. ALL NEW LANDSCAPE ISLANDS SHALL BE SEEDED WITH BERMUDA 'BLACKJACK' SEED OUTSIDE OF MULCHED PLANTING BEDS.

PLANT SCHEDULE				
CANOPY TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE
	SRO	2	Quercus falcata Southern Red Oak	5` HGT. MIN.
SHRUBS	CODE	QTY	BOTANICAL / COMMON NAME	CONTAINER
	CAR	11	Ilex cornuta `Carissa` Carissa Holly	3 gal
	NFP	10	Nandina domestica `Fire Power` Firepower Nandina	3 gal
ORNAMENTAL GRASSES	CODE	QTY	BOTANICAL / COMMON NAME	CONTAINER
	CAS	23	Pennisetum a. `Cassian` Cassian Fountain Grass	1 gal

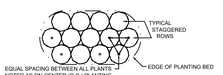
LANDSCAPE DATA:
INTERIOR LANDSCAPE PLANTINGS:

REQUIRED: (1) 5' HGT. MINIMUM TREE PER ISLAND, SHRUBS OR GROUND COVER TO COVER REMAINDER OF ISLAND



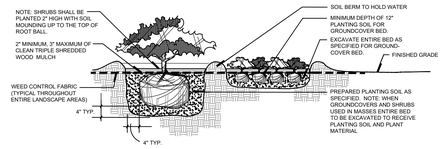
A SINGLE STEM TREE INSTALLATION DETAIL
NTS

NOTES:
1. OMIT COLLAR AROUND EACH SHRUB WHEN IRRIGATION SYSTEM IS PRESENT.
2. INSTALL TOP OF PLANT BALL 2" ABOVE ADJACENT GRADE
3. TAMP PLANT SOIL MIX FIRMLY IN 8" LIFTS AROUND PLANT BALL
4. SOAK PLANT BALL AND PIT IMMEDIATELY AFTER INSTALLATION

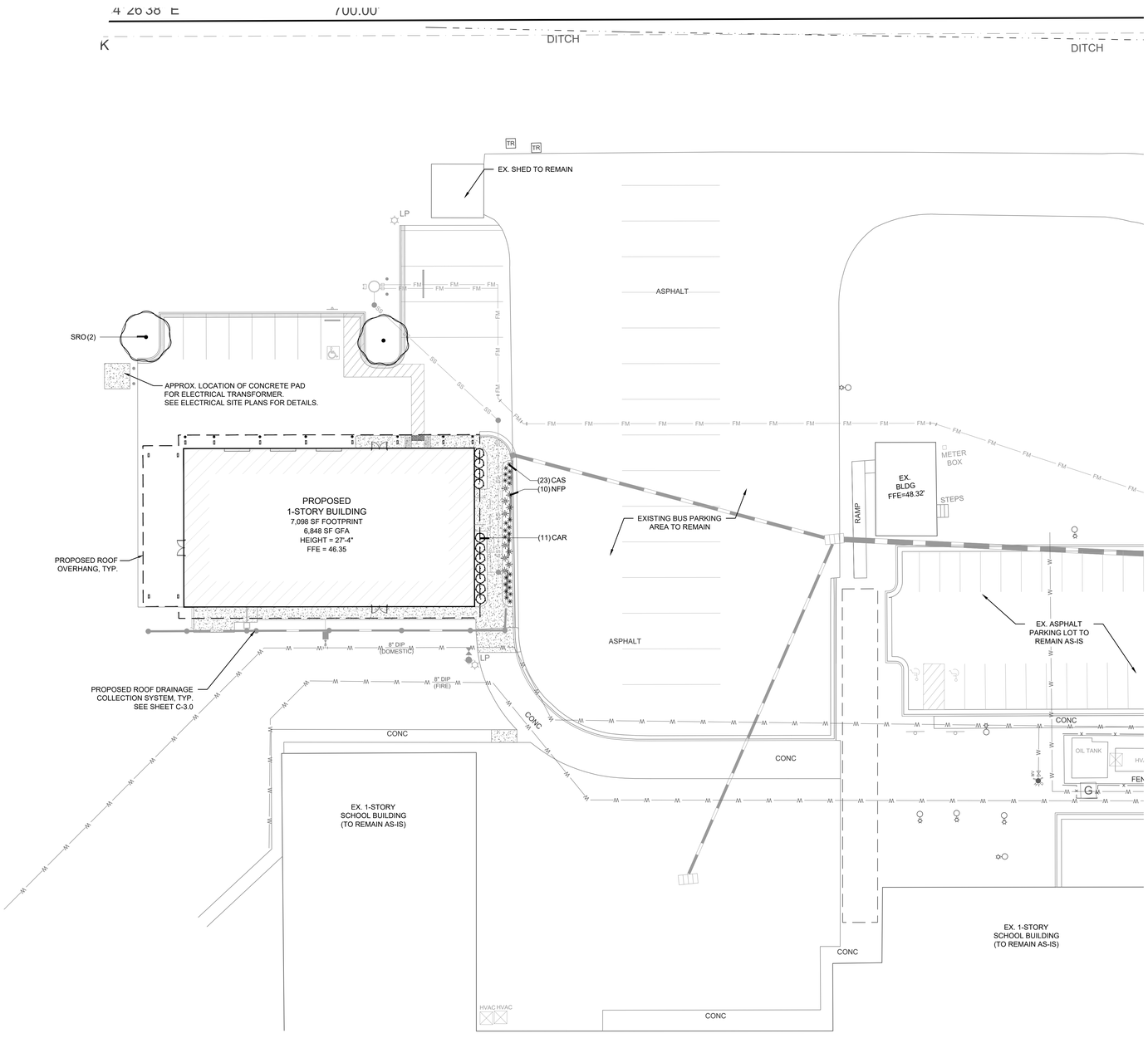


EQUAL SPACING BETWEEN ALL PLANTS NOTED AS ON-CENTER (O.C.) PLANTING DIMENSION IN THE PLANT SCHEDULE

TYPICAL PLANTING BED LAYOUT



B SHRUB INSTALLATION DETAIL
NTS



NAD83 (2011)

GRAPHIC SCALE
0 10 20 40 80
SCALE: 1"=20'

811 Know what's below. Call before you dig.

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

PARAMOUNTE ENGINEERING INC.
122 Cinema Drive Wilmington, North Carolina 28403
(910) 791-6707 (O) (910) 791-6760 (F)
NC License #: C-2846
PEI Project #: 19312.PE

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THE COAST ACADEMY

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NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. BALLARD
04/22/2020

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REVISIONS:

No.	Description	Date

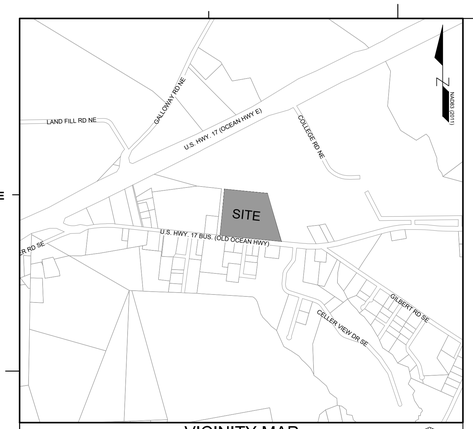
PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

PLANTING PLAN

C-2.3

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

100% CONSTRUCTION DRAWINGS



VICINITY MAP

SCALE: 1" = 1,000'

NORTH

GENERAL NOTES:

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH ALL STATE OF NC AND BRUNSWICK COUNTY STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL PLACE INLET PROTECTION AROUND ALL STORM DRAIN INLETS TO PROTECT THE SYSTEM FROM COLLECTING SEDIMENTATION DURING CONSTRUCTION. INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE ROADS ARE PAVED.
3. CONTRACTOR SHALL ADJUST ALL FRAMES OF EX. UTILITY INFRASTRUCTURE WITHIN ASPHALT OVERLAY AND NEW ASPHALT AREAS TO MATCH PROPOSED GRADES.
4. ALL PROPOSED SPOT ELEVATIONS SHOWN ARE PROPOSED EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
5. CONNECT ROOF DRAINS AS SHOWN. IF THERE ARE ANY DRAINAGE QUESTIONS, PLEASE NOTIFY OWNER AND ENGINEER PRIOR TO MAKING CONNECTIONS.
6. ALL SIDEWALK CROSS SLOPES HAVE BEEN GRADED TO MEET ADA REGULATIONS. CONTRACTOR SHALL CONFIRM GRADES BEFORE PLACING PAVEMENT OR SIDEWALKS AND REPORT ANY DISCREPANCIES TO OWNER AND/OR ENGINEER.
7. THE CONTRACTOR SHALL USE EITHER RCP (CL. III or CL. IV) OR ADS N-12 WT PIPE FOR THE STORM DRAINAGE SYSTEM UNLESS NOTED OTHERWISE. IF THE CONTRACTOR CHOOSES TO USE ADS N-12 WT STORM PIPE, IT SHALL BE INSTALLED TO MANUFACTURER SPECIFICATIONS. IN ADDITION, THE CONTRACTOR SHALL BE SURE TO PROVIDE CONCRETE COLLARS AROUND EACH F.E.S. TO PREVENT FLOATATION IF HDPE PIPE IS CHOSEN.
8. CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE IF A GEOTECHNICAL ENGINEERING REPORT WAS COMPLETED FOR THE SITE.
9. CONTRACTOR SHALL STAKE SILT FENCE ALONG LIMITS OF DISTURBANCE LINE. THE SILT FENCE LINETYPE IS OFFSET ON THE DRAWING FOR CLARITY.

ASPHALT AREA NOTE:

1. SITE CONTRACTOR SHALL STRIP TOPSOIL AND ANY UNSUITALBE MATERIAL AND PROVIDE CUT/FILL OPERATIONS TO PROVIDE A COMPACTED CONTROLLED SUBGRADE, IN ACCORDANCE WITH THE SUBSURFACE GEOTECHNICAL EXPLORATION AND/OR TECHNICAL SPECIFICATIONS.

BUILDING PAD NOTE:

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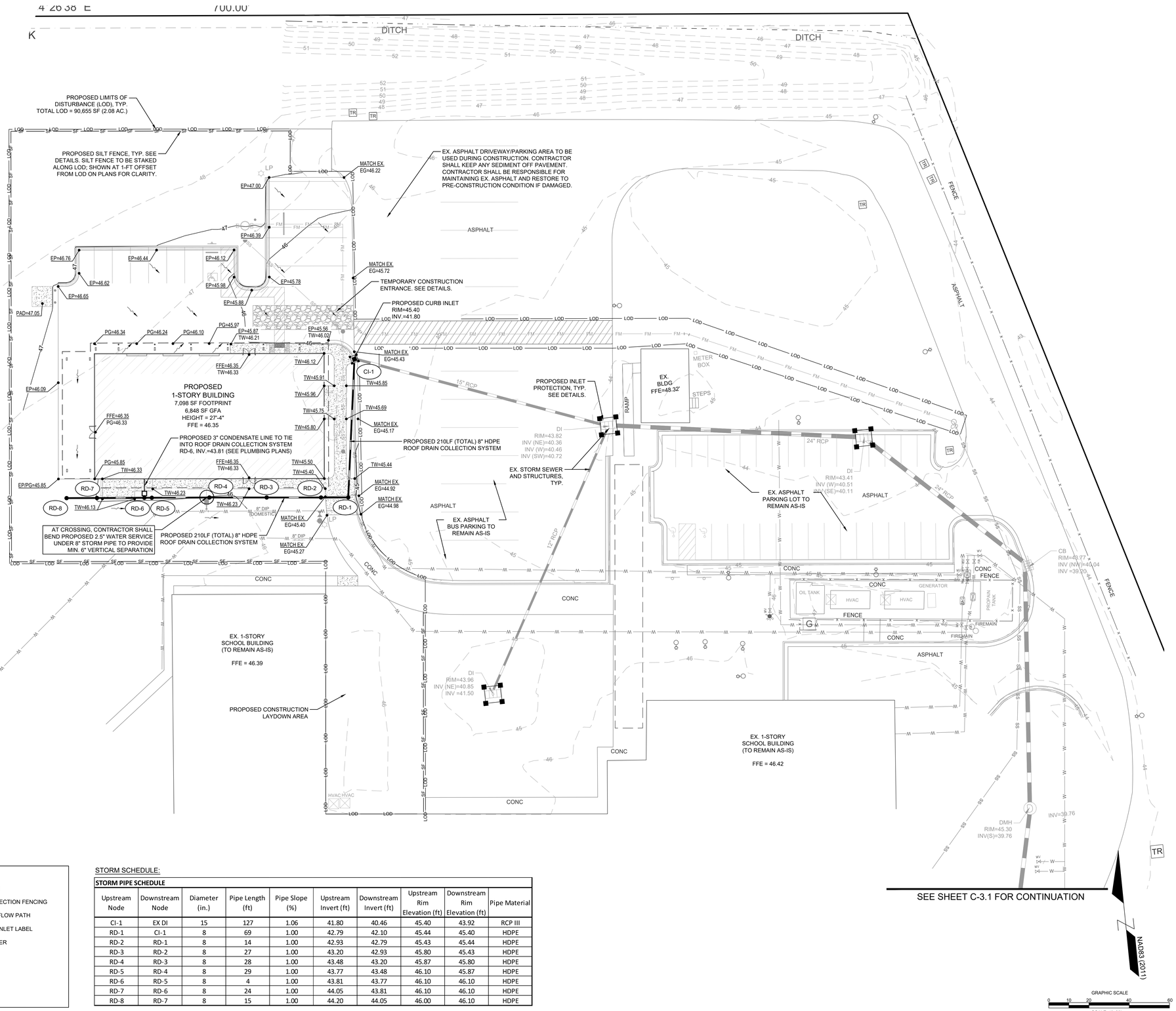
STORMWATER NOTES:

1. THERE IS AN EXISTING STORMWATER POND ON-SITE THAT WILL REMAIN AND TREAT THE RUNOFF FROM THE PROPOSED IMPROVEMENTS. THE PROPOSED RUNOFF WILL BE COLLECTED AND CONVEYED TO THE EXISTING STORM WATER POND.



NOTATION:

CI	=	CURB INLET
DI	=	DROP INLET
CO	=	CLEANOUT
DDI	=	DOUBLE DROP INLET
MH	=	STORM DRAIN MANHOLE
RD	=	ROOF DRAIN CLEANOUT
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BPE	=	BUILDING PAD ELEVATION

Know what's below. Call before you dig. 811

LEGEND:

- EXISTING CONTOUR (16)
- PROPOSED CONTOUR (29)
- EXISTING GRADE SPOT ELEVATION (EG=25.05)
- PROPOSED EDGE OF PAVEMENT (EP=25.05)
- PROPOSED CONCRETE ELEVATION (TW=25.05)
- PROPOSED GRADE SPOT ELEVATION (PG=25.05)
- PROPOSED BACK OF CURB ELEVATION (BC=25.05)
- INLET PROTECTION
- LIMITS OF DISTURBANCE (LOD)
- SILT FENCE
- TREE PROTECTION FENCING
- DRAINAGE FLOW PATH
- DRAINAGE INLET LABEL (CB-202)
- SPILL GUTTER

STORM SCHEDULE:

STORM PIPE SCHEDULE

Upstream Node	Downstream Node	Diameter (in.)	Pipe Length (ft)	Pipe Slope (%)	Upstream Invert (ft)	Downstream Invert (ft)	Upstream Rim Elevation (ft)	Downstream Rim Elevation (ft)	Pipe Material
CI-1	EX DI	15	127	1.06	41.80	40.46	45.40	43.92	RCP III
RD-1	CI-1	8	69	1.00	42.79	42.10	45.44	45.40	HDPE
RD-2	RD-1	8	14	1.00	42.93	42.79	45.43	45.44	HDPE
RD-3	RD-2	8	27	1.00	43.20	42.93	45.80	45.43	HDPE
RD-4	RD-3	8	28	1.00	43.48	43.20	45.87	45.80	HDPE
RD-5	RD-4	8	29	1.00	43.77	43.48	46.10	45.87	HDPE
RD-6	RD-5	8	4	1.00	43.81	43.77	46.10	46.10	HDPE
RD-7	RD-6	8	24	1.00	44.05	43.81	46.10	46.10	HDPE
RD-8	RD-7	8	15	1.00	44.20	44.05	46.00	46.10	HDPE

GRAPHIC SCALE 0 10 20 40 60

SCALE: 1"=20'

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REVISIONS:

No.	Description	Date

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

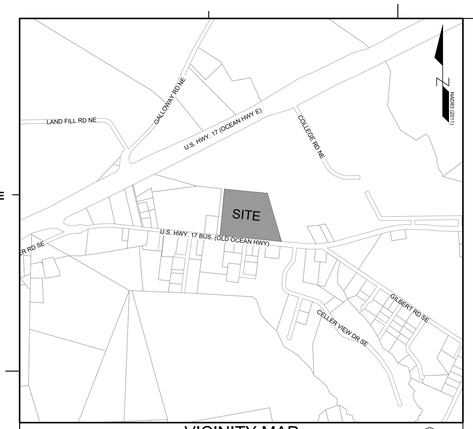
GRADING, DRAINAGE, & EROSION CONTROL PLAN

C-3.0

SOLUTIONS THROUGH LISTENING

SERVICE BY DESIGN

100% CONSTRUCTION DRAWINGS



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SEE SHEET C-3.0 FOR CONTINUATION



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- LOD — LIMITS OF DISTURBANCE
- SILT FENCE
- TREE PROTECTION FENCING
- DRAINAGE FLOW PATH
- CB-202 — DRAINAGE INLET LABEL
- SPILL GUTTER

NAD83 (2011)

GRAPHIC SCALE

0 10 20 40 60

SCALE: 1"=20'

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No.	Description	Date

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

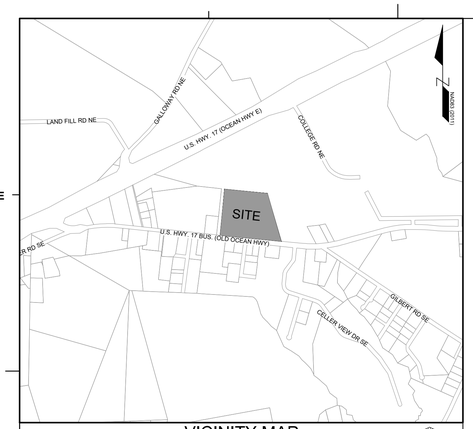
GRADING, DRAINAGE, & EROSION CONTROL PLAN

C-3.1

SOLUTIONS THROUGH LISTENING

SERVICE BY DESIGN

100% CONSTRUCTION DRAWINGS



VICINITY MAP

SCALE: 1" = 1,000'

NORTH

SITE INFORMATION

OWNER INFORMATION:	BRUNSWICK COUNTY BOARD OF EDUCATION 35 REFERENDUM DRIVE NE BOLIVIA, NC 28422
PROJECT NAME:	THE COAST ACADEMY
PROJECT ADDRESS:	1109 OLD OCEAN HWY BOLIVIA, NC 28422
PARCEL ID:	1530000120
PARCEL PIN:	213001057729
RECORDED DEED BOOK:	DB 1830/PG280 & PLAT 28/477
CURRENT ZONING:	C-LD
EXISTING USE:	HIGH SCHOOL
PROPOSED USE:	HIGH SCHOOL
TOTAL SITE AREA:	14.30 AC (622,908 SF)
FLOOD INFORMATION:	THIS PARCEL LIES WITHIN AN AREA OF MINIMAL FLOOD HAZARD (ZONE X) AS INDICATED BY FEMA FLOOD ZONE MAP NUMBER 3720213000K BEARING AN EFFECTIVE DATE OF 08/28/2018.
SPECIAL HIGHWAY DISTRICT:	N/A
CAMA CLASSIFICATION:	COMMERCIAL

WATER AND SEWER CAPACITY

SCHOOL - 25 STUDENTS @ 20 GAL/STUDENT/DAY
TOTAL = 500 GPD

UTILITY NOTES

WATER & SEWER SERVICES PROVIDED BY BRUNSWICK COUNTY PUBLIC UTILITIES. THERE IS AN EXISTING 4" WATER METER LOCATED ON-SITE. CONTRACTOR SHALL CONFIRM LOCATION OF THIS EXISTING METER AND CONTACT BRUNSWICK COUNTY UTILITIES AS REQUIRED. THIS PROJECT IS PROPOSING A 2½" DOMESTIC WATER SERVICE FOR THE BUILDING ADDITION.

THIS PROJECT IS PROPOSING A 4" SCH. 40 PVC SANITARY SEWER SERVICE FOR THE BUILDING ADDITION THAT WILL GRAVITY FLOW TO A PROPOSED DUPLEX SEWAGE PUMP STATION. WASTE WILL BE PUMPED FROM THE PUMP STATION TO AN EXISTING SANITARY CLEANOUT VIA A 2" SDR-21 PVC SANITARY FORCE MAIN. PROPOSED PUMP STATION IS TO BE PERMITTED BY REGULATION PER 2T RULES AND TO BE INSTALLED UNDER N.C. PLUMBING CODE. AS THIS PUMP STATION IS ON PRIVATE PROPERTY, THERE IS NO REQUIREMENT FOR IT TO BE WITHIN A FENCED ENCLOSURE.

NO SPRINKLERS ARE REQUIRED FOR PROPOSED AUTOMOTIVE BUILDING ADDITION. THERE IS AN EXISTING HYDRANT THAT WILL REQUIRE RELOCATION AS NOTED ON THE UTILITY PLAN. CONTRACTOR SHALL COORDINATE WITH BRUNSWICK COUNTY UTILITIES AND RELOCATE HYDRANT FOLLOWING BRUNSWICK COUNTY UTILITY STANDARDS AND SPECIFICATIONS.

CONTRACTOR SHALL CONTACT BRUNSWICK COUNTY UTILITIES PRIOR TO CONSTRUCTION START TO SCHEDULE A PRE-CONSTRUCTION MEETING. FOR SHUTDOWN OF ANY EXISTING UTILITY MAINS / SERVICES, CONTRACTOR TO INFORM AND COORDINATE THE OWNER (BRUNSWICK COUNTY SCHOOLS) AND BRUNSWICK COUNTY UTILITIES. BRUNSWICK COUNTY UTILITIES TO BE ON-SITE DURING TAPPING OF ANY WATER MAINS / SERVICES.

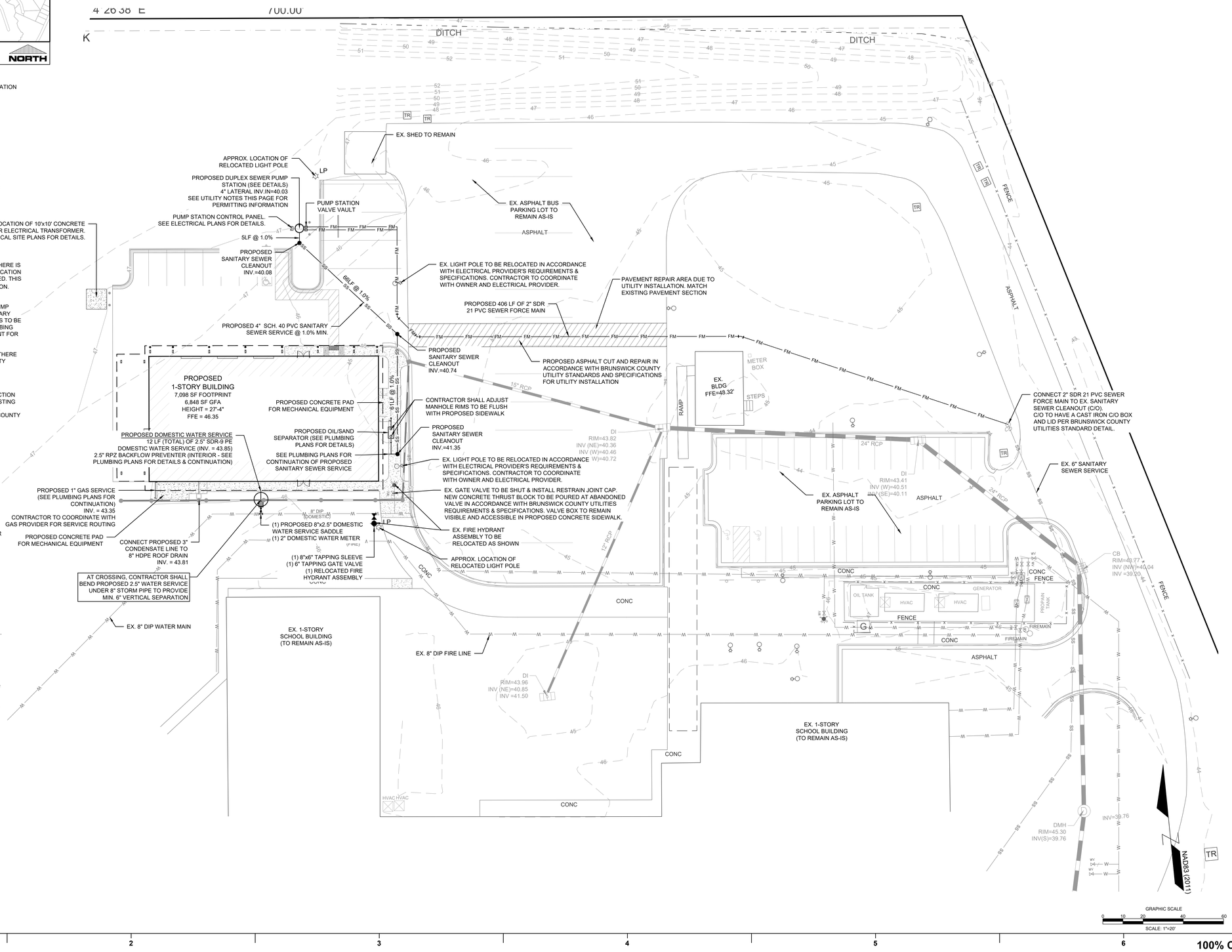
CONTRACTOR TO COORDINATE WITH PIEDMONT NATURAL GAS FOR PLACEMENT, CONNECTIONS, AND ANY EASEMENTS REQUIRED. CONTACT CATHY PLEASANT AT 910-251-2827 TO DISCUSS FURTHER.

UTILITY NOTES: (NCAC 15A.02T.0305 / T15A.18C.0906)

1. WATER MAINS SHALL BE LAID SO AS TO PROVIDE A MINIMUM HORIZONTAL SEPARATION OF 10 FEET FROM SEWERS. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, THE WATER MAIN CAN BE INSTALLED AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, EITHER IN A SEPARATE TRENCH, OR IN THE SAME TRENCH ON A BENCH OF UNDISTURBED EARTH.
2. WHEN CROSSING A WATER MAIN OVER A SEWER, THE WATER MAIN SHALL BE LAID AT LEAST 18 INCHES ABOVE THE SEWER. IF CONDITIONS EXIST SUCH THAT THIS SEPARATION CANNOT BE ACHIEVED, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE WITH JOINTS THAT MEET WATER MAIN STANDARDS. THE DUCTILE IRON PIPE SHALL EXTEND 10 FEET ON EACH SIDE OF THE CROSSING WITH A SECTION OF WATER MAIN PIPE CENTERED ON THE CROSSING.
3. CROSSING A WATER MAIN UNDER A SEWER. WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER, BOTH THE WATER MAIN AND THE SEWER SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING. A SECTION OF WATER MAIN PIPE SHALL BE CENTERED AT THE POINT OF CROSSING.
4. WHERE VERTICAL CLEARANCE IS LESS THAN 24" BETWEEN SANITARY SEWER AND STORM DRAIN, SANITARY SEWER SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.
5. WHERE VERTICAL CLEARANCE IS LESS THAT 18" BETWEEN WATER MAIN AND STORM DRAIN, WATER MAIN SHALL BE DUCTILE IRON PIPE FOR A MINIMUM OF 10' EITHER SIDE OF CROSSING AND STORM DRAIN SHALL BE RC PIPE.

FIRE & LIFE SAFETY NOTES:

1. NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION OF THE BUILDINGS WITHIN ANY DEVELOPMENT.
2. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS FOR EMERGENCY VEHICLES AT ALL TIMES DURING CONSTRUCTION.
3. A MINIMUM OF 4' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM OTHER UNDERGROUND UTILITIES.
4. LANDSCAPING OR PARKING CAN NOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT (3') CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF HYDRANTS AND FDC.



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NC License #: C-2846
PEI Project #: 19312.PE

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THE COAST ACADEMY

LS3P

LS3P ASSOCIATES LTD.
434 FAYETTEVILLE STREET SUITE 1700
RALEIGH, NORTH CAROLINA 27601
TEL. 919.829.2700 FAX 919.829.2730
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NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. BALLARD
04/22/2020

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REVISIONS:

No.	Description	Date

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

UTILITY PLAN

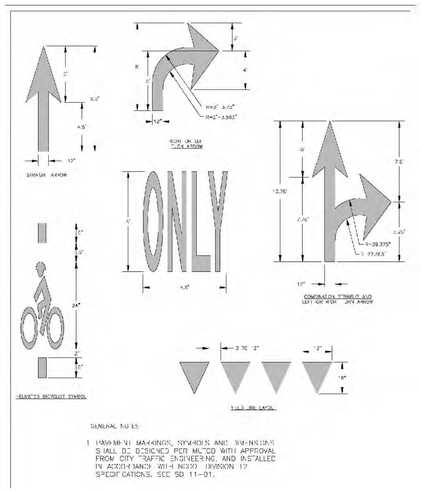
C-4.0

SOLUTIONS THROUGH LISTENING

SERVICE BY DESIGN

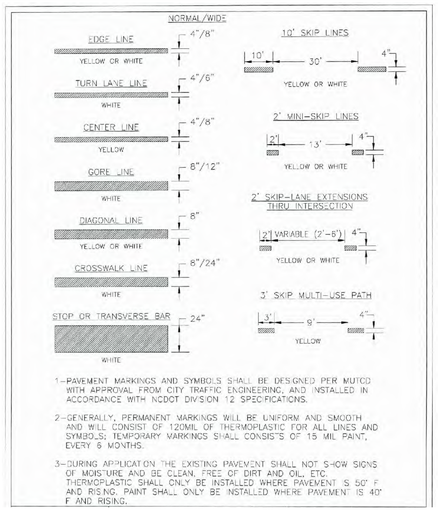
100% CONSTRUCTION DRAWINGS

811 Know what's below. Call before you dig.



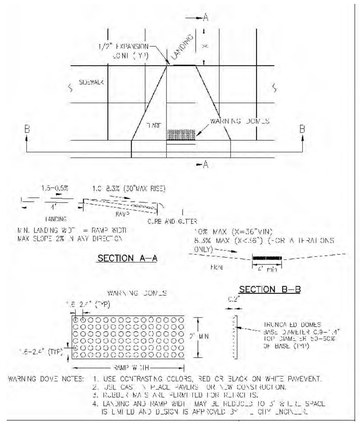
TYPICAL DETAIL FOR PAVEMENT MARKINGS & SYMBOLS

NOT TO SCALE



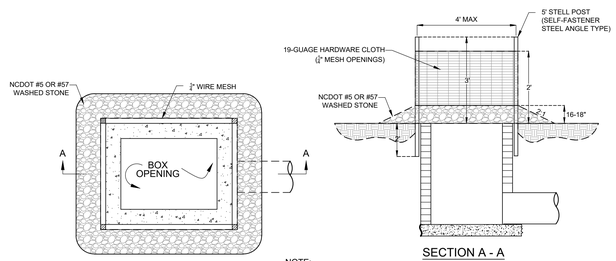
TYPICAL DETAIL FOR PAVEMENT MARKINGS LINE TYPES

NOT TO SCALE



PERPENDICULAR CURB RAMP ADJACENT TO WALKING SURFACE & ADA WARNING DOMES

NOT TO SCALE

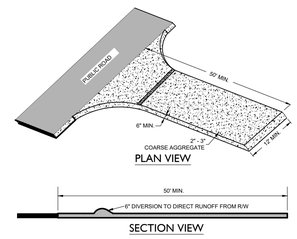


NOTE:
FOR CURB INLETS AND DROP INLETS

INLET PROTECTION

NOT TO SCALE

SECTION A - A

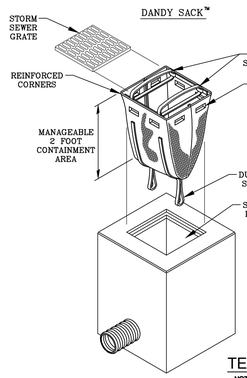


PLAN VIEW

SECTION VIEW

TEMPORARY CONSTRUCTION ENTRANCE

NOT TO SCALE



TEMPORARY DANDY SACK® INLET PROTECTION

NOT TO SCALE

DANDY SACK™ SPECIFICATIONS

NOTE: THE DANDY SACK™ WILL BE MANUFACTURED IN THE U.S.A. FROM A WOVEN MONOFILAMENT FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW DANDY SACK™ (BLACK)

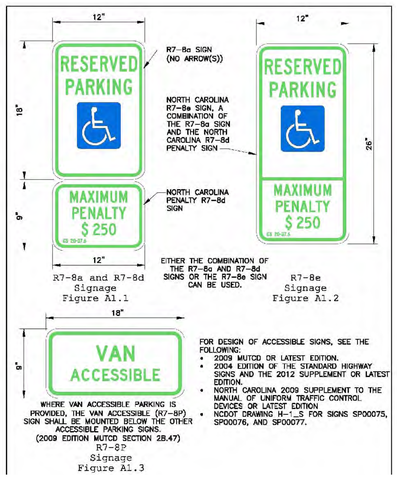
Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.78 (400) x 1.40 (315)
Grab Tensile Elongation	ASTM D 4632	%	15 x 15
Puncture Strength	ASTM D 4833	kN (lbs)	0.67 (150)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3207 (465)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.67 (150) x 0.73 (165)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m²(gal/min/ft²)	2852 (70)
Permittivity	ASTM D 4491	Sec⁻¹	0.90

HI-FLOW DANDY SACK™ (SAFETY ORANGE)

Mechanical Properties	Test Method	Units	MARV
Grab Tensile Strength	ASTM D 4632	kN (lbs)	1.62 (365) x 0.89 (200)
Grab Tensile Elongation	ASTM D 4632	%	24 X 10
Puncture Strength	ASTM D 4833	kN (lbs)	0.40 (90)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	3097 (450)
Trapezoid Tear Strength	ASTM D 4533	kN (lbs)	0.51 (115) X 0.33 (75)
UV Resistance	ASTM D 4355	%	90
Apparent Opening Size	ASTM D 4751	Mm (US Std Sieve)	0.425 (40)
Flow Rate	ASTM D 4491	l/min/m²(gal/min/ft²)	5907 (145)
Permittivity	ASTM D 4491	Sec⁻¹	2.1

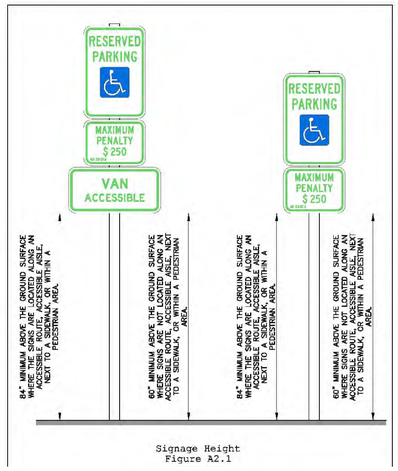
*Note: All Dandy Sacks™ can be ordered with our optional oil absorbent pillows

NOTE
CONTRACTOR SHALL PROPERLY DISPOSE OF SEDIMENT IN A DESIGNATED DISPOSAL AREA AND NOT WITHIN LIMITS OF DISTURBANCE. SEDIMENT SHALL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL, BLOCK AND GRAVEL, OR ROCK-PIPE INLETS, WHEN IT REACHES HALF-FILLED. ROCK WILL BE CLEANED OR REPLACED WHEN NO LONGER DRAINS. SILT SACKS, BEAVER DAMS, SANDY SACKS, AND SOCKS NEED CHECKING EVERY WEEK AND AFTER RAIN.



TYPICAL DETAIL FOR HANDICAP PARKING SIGNAGE (1 OF 2)

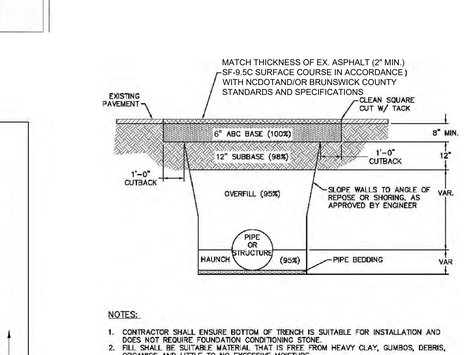
NOT TO SCALE



Signage Height Figure A2.1

TYPICAL DETAIL FOR HANDICAP PARKING SIGNAGE (2 OF 2)

NOT TO SCALE

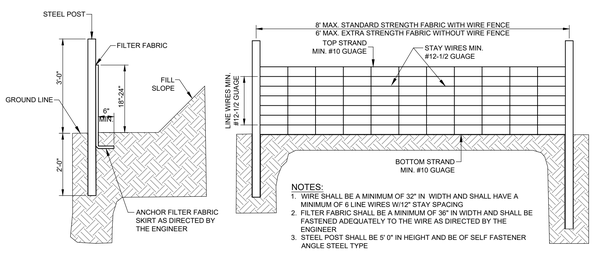


NOTES:

1. CONTRACTOR SHALL ENSURE BOTTOM OF TRENCH IS SUITABLE FOR INSTALLATION AND DOES NOT REQUIRE FOUNDATION CONDITIONING STONE.
2. FILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
3. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57 STONE, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
4. SOIL SHALL BE INSTALLED IN 6"-8" LIFTS AND COMPACTED BY A MECHANIZED TAMPER (I.E. JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
5. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
6. COMPACT MATERIALS TO MINIMUM % DENSITY SHOWN IN DIAGRAM AS DETERMINED BY THE STANDARD PROCTOR METHOD ASTM D-698-A FOR SOILS, AND ASTM D-698-C FOR ABC STONE, AND BY NUCLEAR GAGE OR CORE SAMPLE FOR ASPHALT.
7. CUTBACKS OF ASPHALT SHALL BE PREPARED ON EDGE OF EXCAVATION OVER TOP OF UNDISTURBED SOIL.

TYPICAL DETAIL FOR PAVEMENT REPAIRS-UTILITY CUTS

NOT TO SCALE

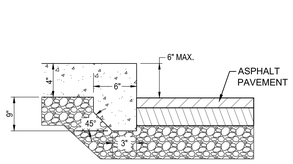


NOTES:

1. WIRE SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES W/12" STAY SPACING
2. FILTER FABRIC SHALL BE A MINIMUM OF 36" IN WIDTH AND SHALL BE FASTENED ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER
3. STEEL POST SHALL BE 5' 0" IN HEIGHT AND BE OF SELF FASTENER ANGLE STEEL TYPE

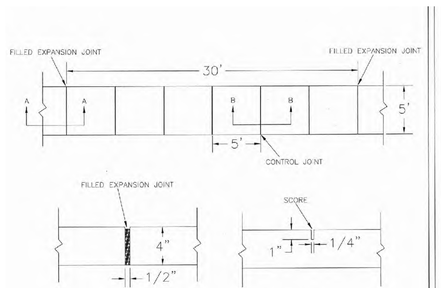
GUIDELINES FOR TEMPORARY SILT FENCE DETAIL

NOT TO SCALE



EXPOSED FACE CONCRETE WALK TO ASPHALT DETAIL

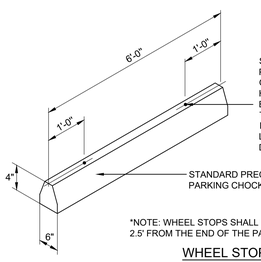
NOT TO SCALE



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

TYPICAL SIDEWALK DETAIL

NOT TO SCALE

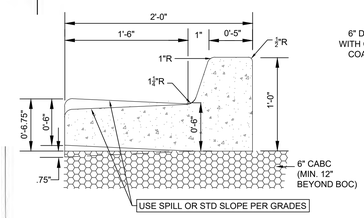


SECURELY ATTACH WHEEL STOPS INTO PAVEMENT WITH NOT LESS THAN TWO GALVANIZED STEEL DOWELS EMBEDDED IN HOLES CAST INTO WHEEL STOPS. FIRMLY BOND EACH DOWEL TO WHEEL STOP AND TO PAVEMENT. EXTEND UPPER PORTION OF DOWEL 5 INCHES INTO WHEEL STOP AND LOWER PORTION AS NOTED ON THE DRAWINGS INTO PAVEMENT

*NOTE: WHEEL STOPS SHALL BE PLACED 2.5' FROM THE END OF THE PARKING STALL

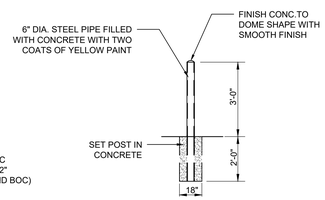
WHEEL STOP

NOT TO SCALE



STANDARD 24" CURB SECTION

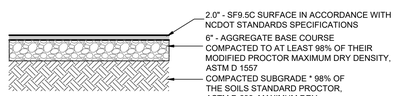
NOT TO SCALE



ELEVATION

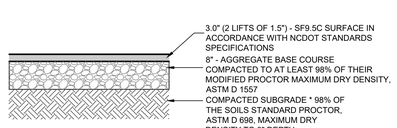
PIPE BOLLARD DETAIL

NOT TO SCALE



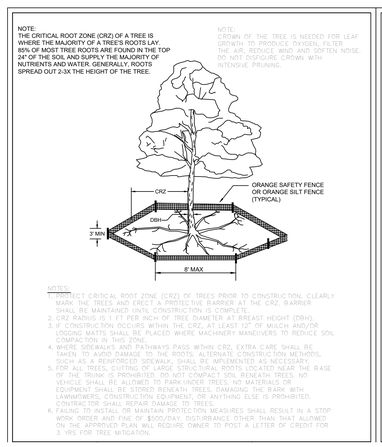
LIGHT DUTY ASPHALT PAVEMENT SECTION

N.T.S.



HEAVY DUTY ASPHALT PAVEMENT SECTION

N.T.S.



TYPICAL TREE PROTECTION FENCING DETAIL

NOT TO SCALE

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NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. BALLING 04/22/2020

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

DETAILS

C-5.0

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

SOLUTIONS THROUGH LISTENING
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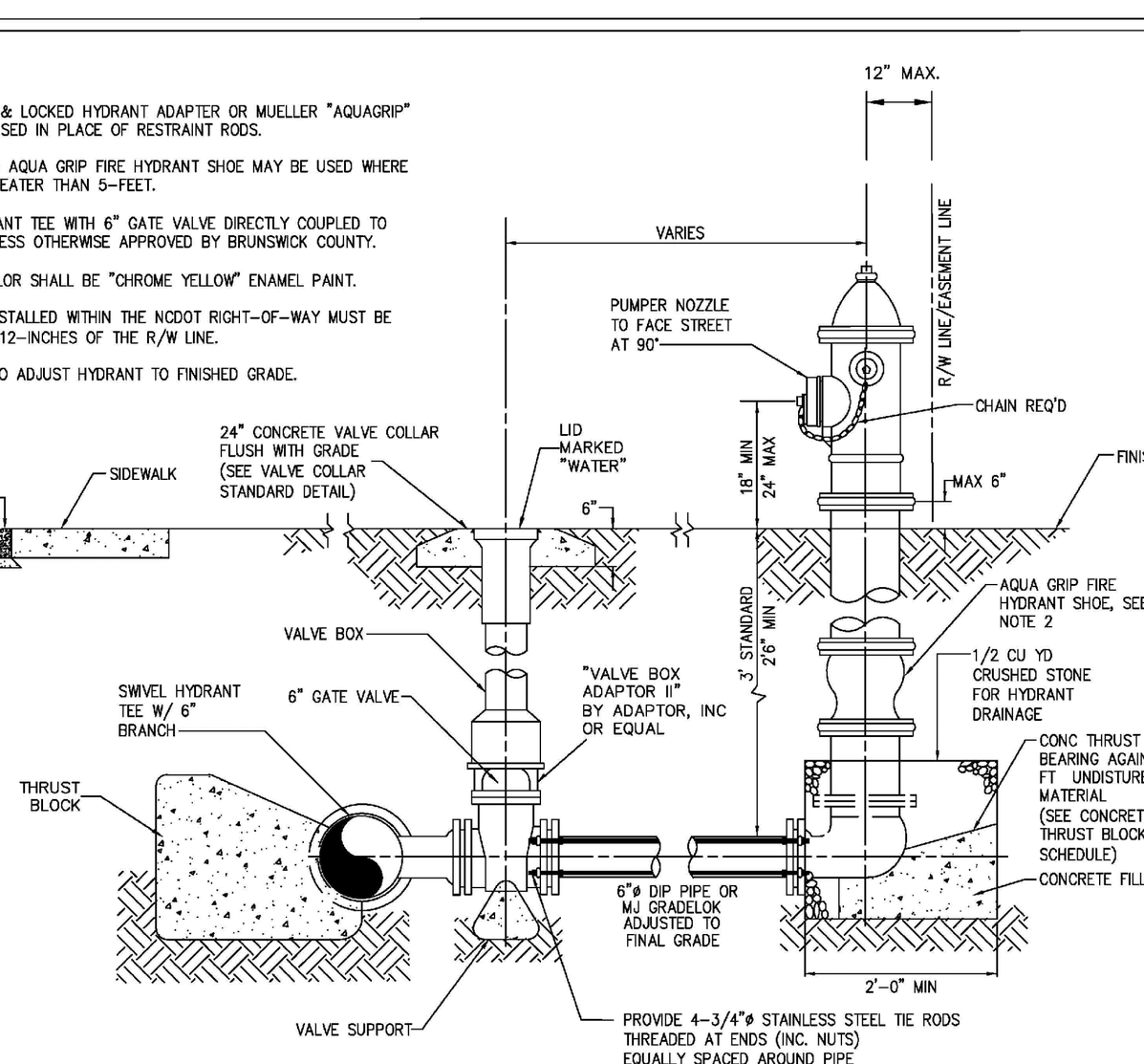
NC License #: C-2846
PEI Project #: 19312.PE

THE COAST ACADEMY

NOTES:

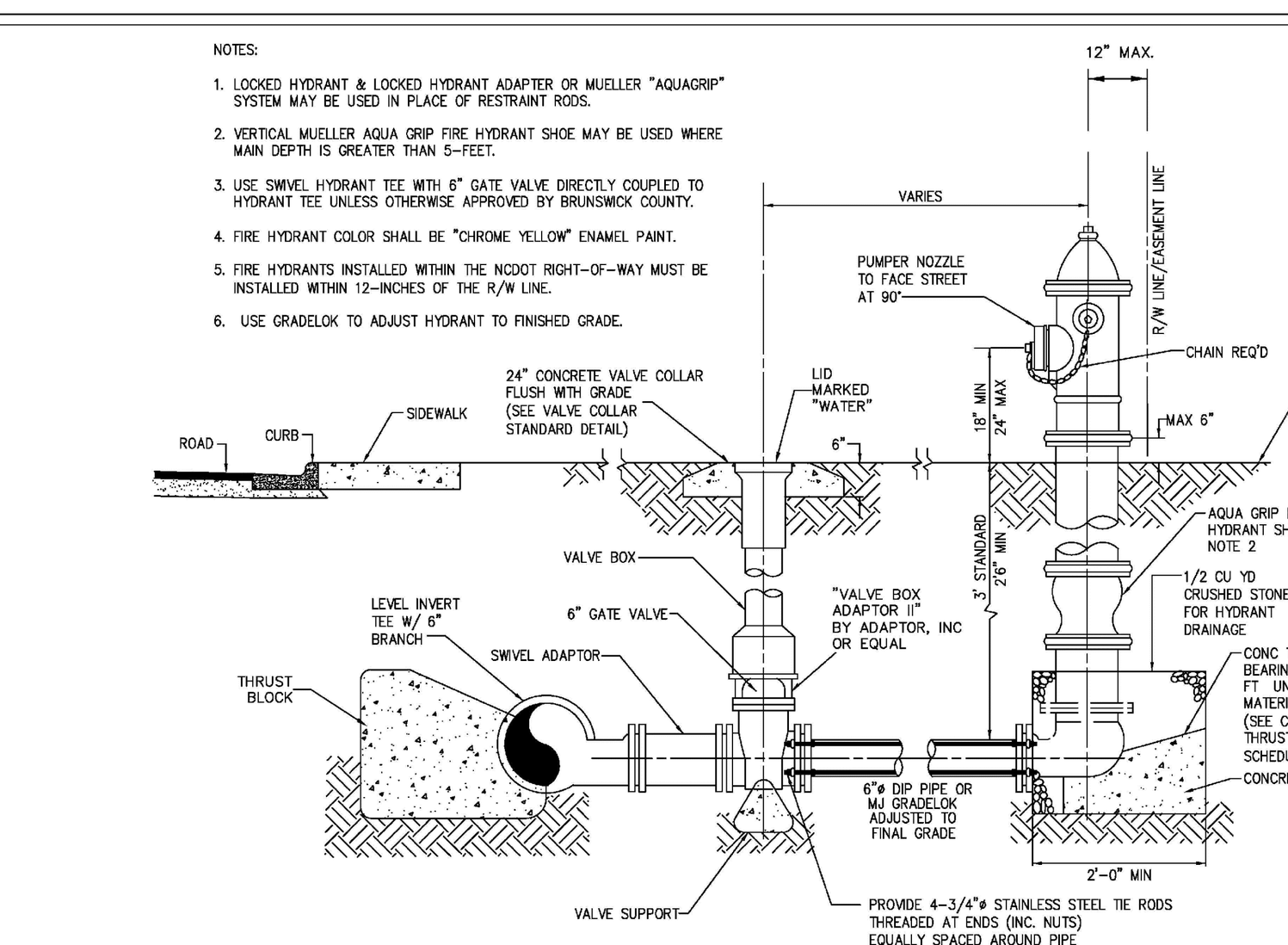
1. LOCKED HYDRANT & LOCKED HYDRANT ADAPTER OR MUELLER "AQUAGRIP" SYSTEM MAY BE USED IN PLACE OF RESTRAINT RODS.
2. VERTICAL MUELLER AQUA GRIP FIRE HYDRANT SHOE MAY BE USED WHERE MAIN DEPTH IS GREATER THAN 5-FEET.
3. USE SWIVEL HYDRANT TEE WITH 6" GATE VALVE DIRECTLY COUPLED TO HYDRANT TEE UNLESS OTHERWISE APPROVED BY BRUNSWICK COUNTY.
4. FIRE HYDRANT COLOR SHALL BE "CHROME YELLOW" ENAMEL PAINT.
5. FIRE HYDRANTS INSTALLED WITHIN THE NCDOT RIGHT-OF-WAY MUST BE INSTALLED WITHIN 12-INCHES OF THE R/W LINE.
6. USE GRADELOK TO ADJUST HYDRANT TO FINISHED GRADE.



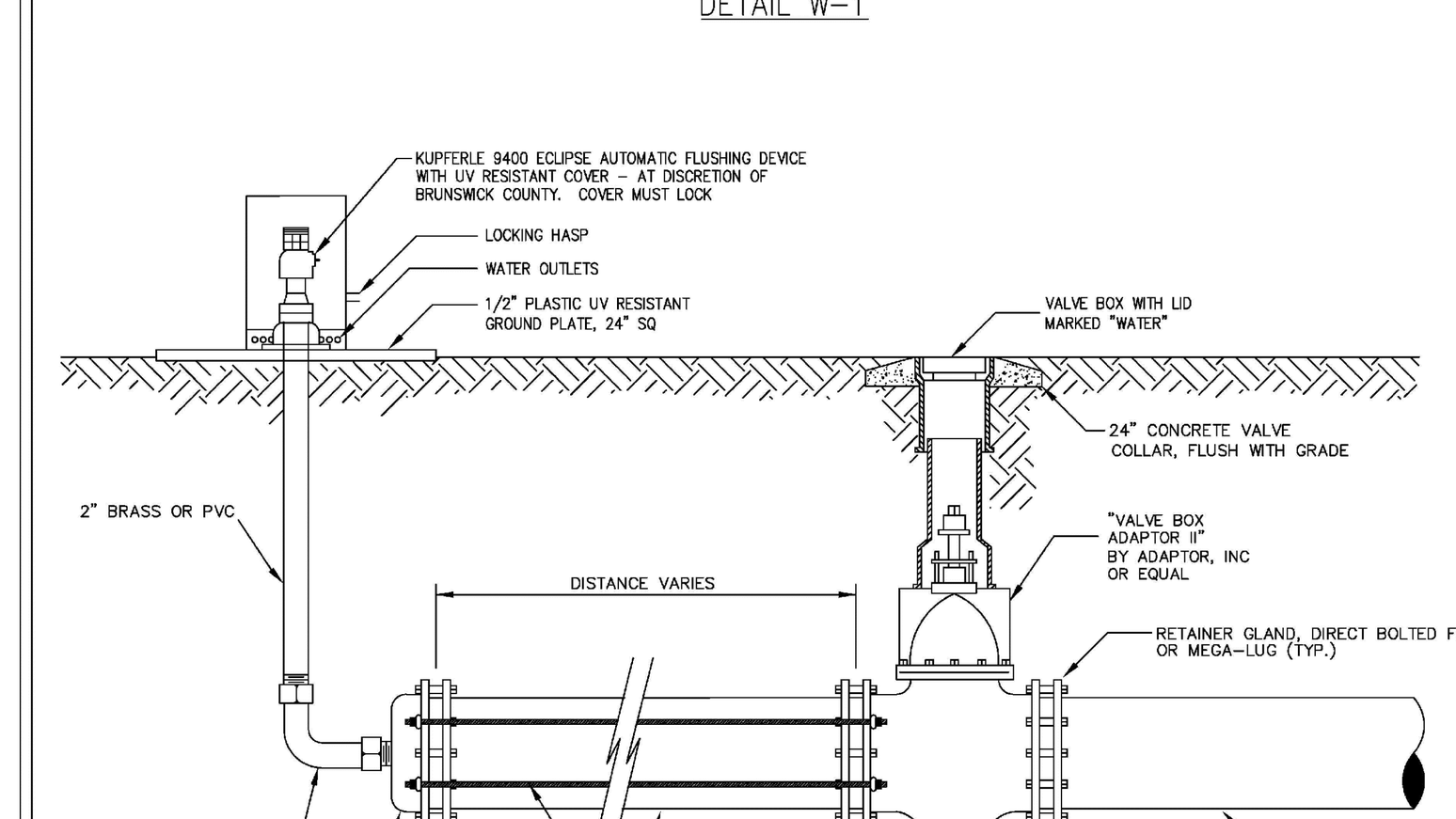
FIRE HYDRANT ON
MAINS 12" AND SMALLER
DETAIL W-1

NOTES:

1. LOCKED HYDRANT & LOCKED HYDRANT ADAPTER OR MUELLER "AQUAGRIP" SYSTEM MAY BE USED IN PLACE OF RESTRAINT RODS.
2. VERTICAL MUELLER AQUA GRIP FIRE HYDRANT SHOE MAY BE USED WHERE MAIN DEPTH IS GREATER THAN 5-FEET.
3. USE SWIVEL HYDRANT TEE WITH 6" GATE VALVE DIRECTLY COUPLED TO HYDRANT TEE UNLESS OTHERWISE APPROVED BY BRUNSWICK COUNTY.
4. FIRE HYDRANT COLOR SHALL BE "CHROME YELLOW" ENAMEL PAINT.
5. FIRE HYDRANTS INSTALLED WITHIN THE NCDOT RIGHT-OF-WAY MUST BE INSTALLED WITHIN 12-INCHES OF THE R/W LINE.
6. USE GRADELOK TO ADJUST HYDRANT TO FINISHED GRADE.



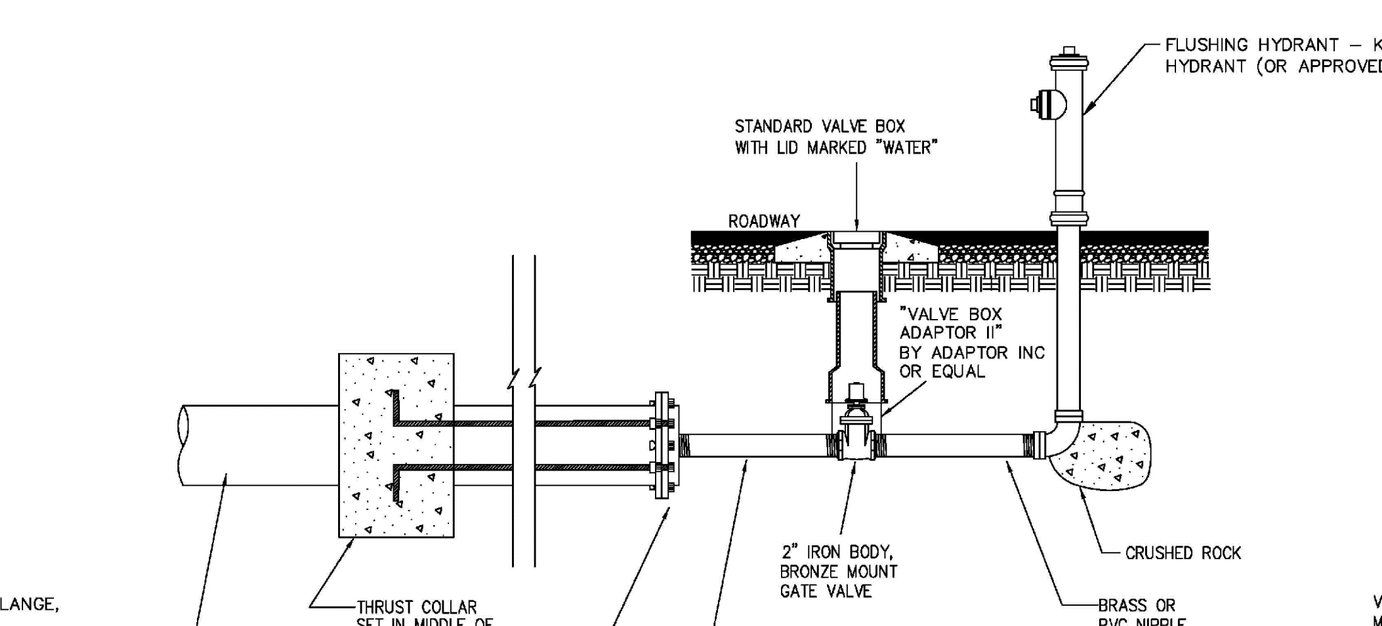
FIRE HYDRANT ON
MAINS LARGER THAN 12"
DETAIL W-2



NOTES:

1. ALL DEAD END LINES WILL HAVE FLUSHING DEVICES.
2. MAINS 6" AND GREATER NOT BEING EXTENDED IN THE FUTURE SHALL USE A FIRE HYDRANT FOR A FLUSHING DEVICE.
3. CONTRACTOR SHALL REMOVE AUTOMATIC FLUSHING DEVICE FOR MAIN EXTENSIONS AND DELIVER AUTOMATIC FLUSHING DEVICE TO BRUNSWICK COUNTY REPRESENTATIVE.

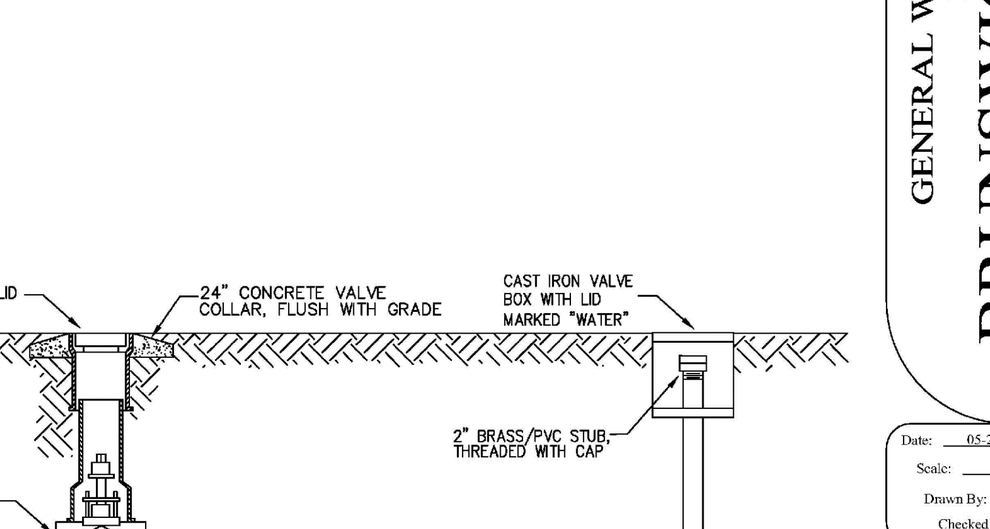
AUTOMATIC FLUSHING DEVICE FOR MAINS 6" AND
LARGER (FOR MAINS TO BE EXTENDED LATER)
DETAIL W-3



NOTES:

1. ALL DEAD END LINES WILL HAVE FLUSHING DEVICE.
2. MAINS 6" AND LARGER SHALL USE A FIRE HYDRANT FOR A FLUSHING DEVICE.
3. FLUSHING HYDRANT COLOR SHALL BE "RED" ENAMEL PAINT.
4. POST HYDRANT SHALL HAVE 1 1/2-INCH PENTAGONAL OPERATING NUT.
5. AT DISCRETION OF BRUNSWICK COUNTY, AN AUTOMATIC FLUSHING DEVICE (KUPFERLE 9400 ECLIPSE) MAY BE REQUIRED IN LIEU OF STANDARD MANUAL FLUSHING HYDRANT (SEE DETAIL THIS SHEET)

STANDARD FLUSHING DEVICE FOR
MAINS LESS THAN 6"
DETAIL W-4



NOTES:

1. TO BE USED WHEN FUTURE EXTENSION OF WATER MAIN IS KNOWN (I.e. PHASES)
2. FULL SIZE BOUNDARY VALVE REQUIRED.
3. THIS CAN ONLY BE USED WITH BRUNSWICK COUNTY ENGINEERING APPROVAL.

OLD STYLE TEMPORARY BLOW-OFF ASSEMBLY
DETAIL W-4A

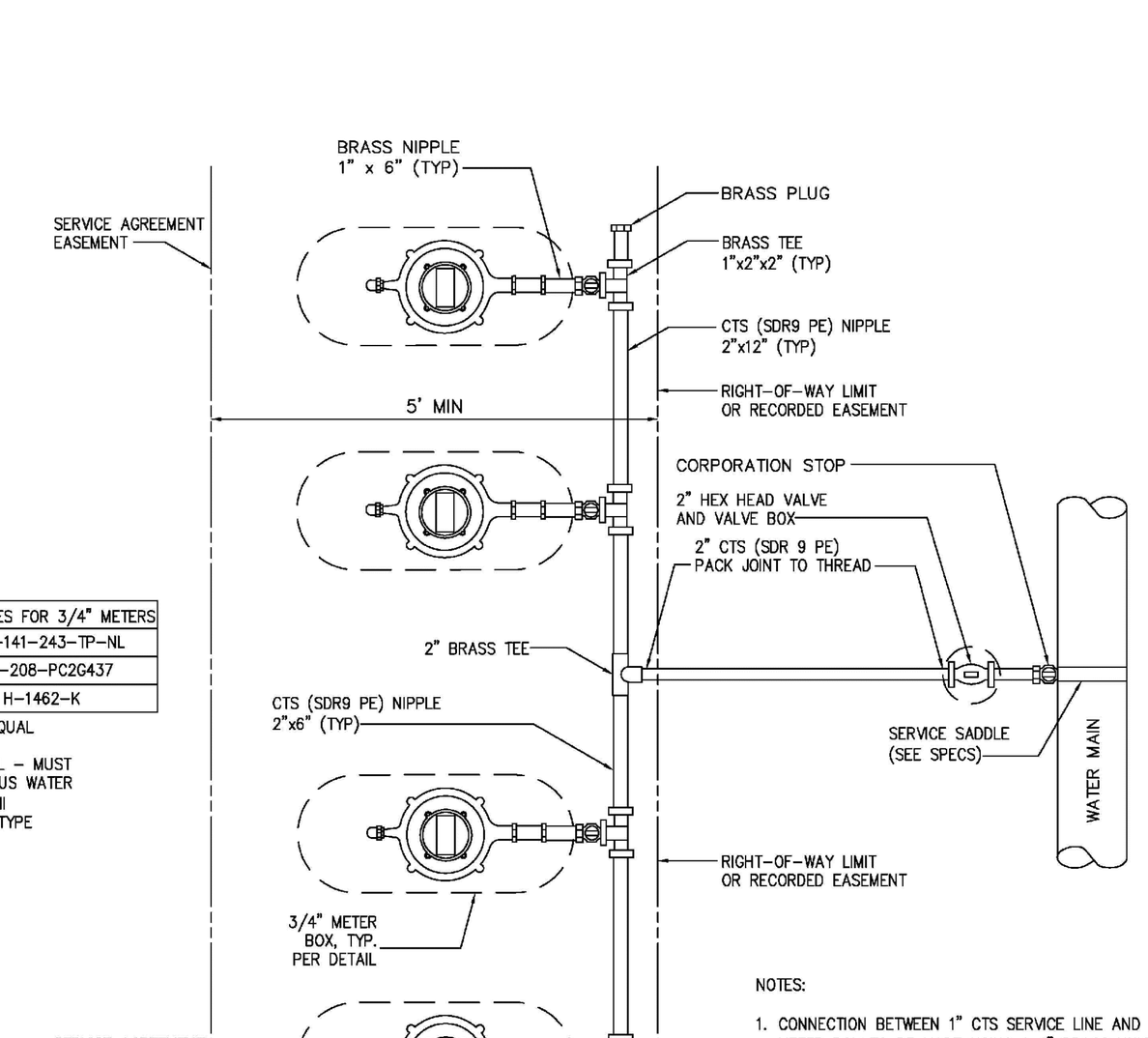
Revisions
1.1 - DATED 4/30/2013 Modified W-2 and W-3
1.2 - DATED 5/29/2013 Added Note 5 to W-1
1.3 - DATED 7/15/2015 Mod. W-1,W-3, & W-4
1.4 - DATED 12/8/2016 Mod. W-1,W-2, W-3, W-4 and Revise Detail Numbers
1.5 - DATED 2/6/2020 Added Detail W-4A

COUNTY OF BRUNSWICK

GENERAL WATER DETAILS
FOR
BRUNSWICK COUNTY
NORTH CAROLINA

Date: 05-22-12
Scale: NTS
Drawn By: JDM
Checked By: WLP

1 OF 5



APPROVED SINGLE METER BOXES FOR 3/4" METERS	
FORD	LYLV-141-243-TP-NL
McDONALD	776-208-PC2G437
MUELLER	H-1462-K

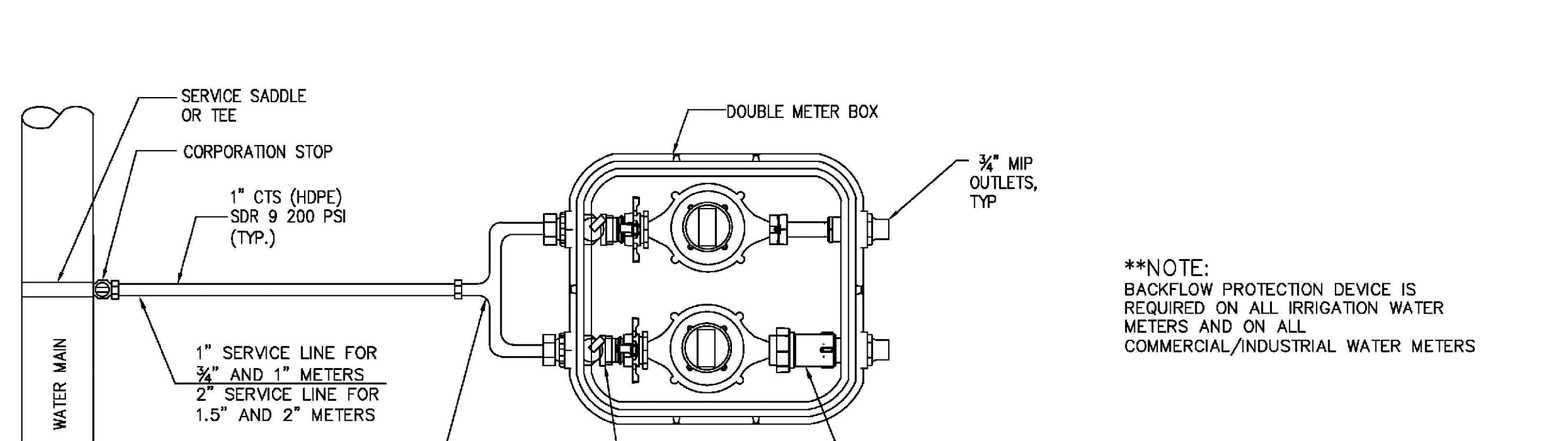
* OR APPROVED EQUAL

1. OR APPROVED EQUAL - MUST ACCOMMODATE SENSUS WATER METER WITH AMR/AMI
2. LID TO BE LOCKING TYPE

NOTES:

1. CONNECTION BETWEEN 1" CTS SERVICE LINE AND METER BOX TO BE MADE USING A 1" BRASS UNION.
2. SERVICE LATERALS TO BE 2" SDR 9 POLYETHYLENE (PE)

STANDARD GANG METER ASSEMBLY
DETAIL W-5



NOTES:

1. CONNECTION BETWEEN 1" CTS SERVICE LINE AND YOKE BOX TO BE MADE USING A 1" BRASS UNION.
2. ALL WATER SERVICE LATERALS SHALL HAVE A TRACER WIRE INSTALLED PER BRUNSWICK COUNTY WATER DISTRIBUTION TECHNICAL SPECIFICATIONS.

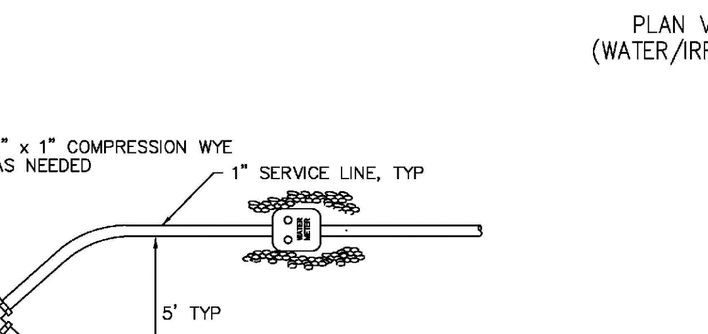
PLAN VIEW FOR WATER/IRRIGATION SPLIT SERVICE
(WATER/IRRIGATION SERVICES INSTALLED CONCURRENTLY)

**NOTE:
BACKFLOW PROTECTION DEVICE IS REQUIRED ON ALL IRRIGATION WATER METERS AND ON ALL COMMERCIAL/INDUSTRIAL WATER METERS

ACCEPTABLE DOUBLE METER BOXES	
FORD	DGHC118-C14439-002-NL
MCDONALD	773N208BCGP 434TCX001

* OR APPROVED EQUAL

1. OR APPROVED EQUAL - MUST ACCOMMODATE TWO (2) SENSUS WATER METERS WITH AMR/AMI
2. LID TO BE LOCKING TYPE
3. DOUBLE METER BOX IS FOR (2) 3/4" METERS ONLY

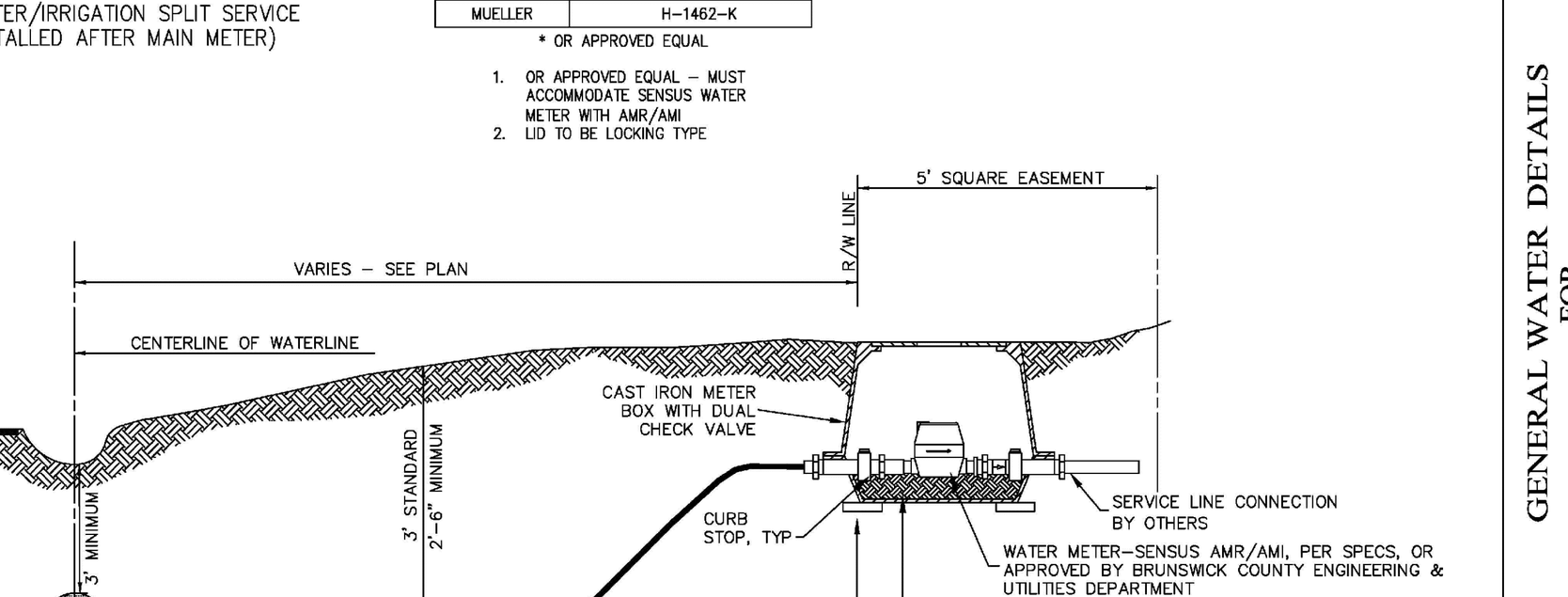


WYE PLAN VIEW FOR WATER/IRRIGATION SPLIT SERVICE
(IRRIGATION SERVICE INSTALLED AFTER MAIN METER)

APPROVED SINGLE METER BOXES FOR 3/4" METERS	
FORD	LYLV-141-243-TP-NL
McDONALD	776-208-PC2G437
MUELLER	H-1462-K

* OR APPROVED EQUAL

1. OR APPROVED EQUAL - MUST ACCOMMODATE SENSUS WATER METER WITH AMR/AMI
2. LID TO BE LOCKING TYPE



NOTE:
1) CONTRACTOR SHALL PLACE METER BOX IN NON-TRAFFIC AREA AT LOCATION SPECIFIED BY BRUNSWICK COUNTY ENGINEERING DEPARTMENT.
2) METER BOXES SHALL BE CAST IRON WITH DUAL CHECK VALVES.
3) 1-1/2" AND 2" METERS WILL REQUIRE 2" CTS POLY TUBING.
4) 1, 1-1/2" AND 2" METERS WILL REQUIRE A METER BOX SIZED ADEQUATELY TO HOUSE A 1, 1-1/2" OR 2" SENSUS METER, HORIZONTAL BYPASS SETTER, AND MXU. ALL REQUIRED ITEMS TO BE PROVIDED BY INSTALLER.
5) 1, 1-1/2" AND 2" METER BOXES SHALL BE MARKED WATER AND HAVE A HOLE FOR INSTALLATION OF THE MXU AND TOUCH PAD TO BE PROVIDED BY INSTALLER.
6) NO PLASTIC BOXES FOR 1 1/2" AND 2" METERS. BOX MUST BE DUCTILE IRON OR QUAZITE.
7) ALL WATER SERVICE LATERALS SHALL HAVE A TRACER WIRE INSTALLED PER BRUNSWICK COUNTY WATER DISTRIBUTION TECHNICAL SPECIFICATIONS.

3/4" - 2" STANDARD WATER TAP
INSTALLATION
DETAIL W-6

(FOR METERS LARGER THAN 2", REFER TO DETAIL ON PAGE 3 OF 5)

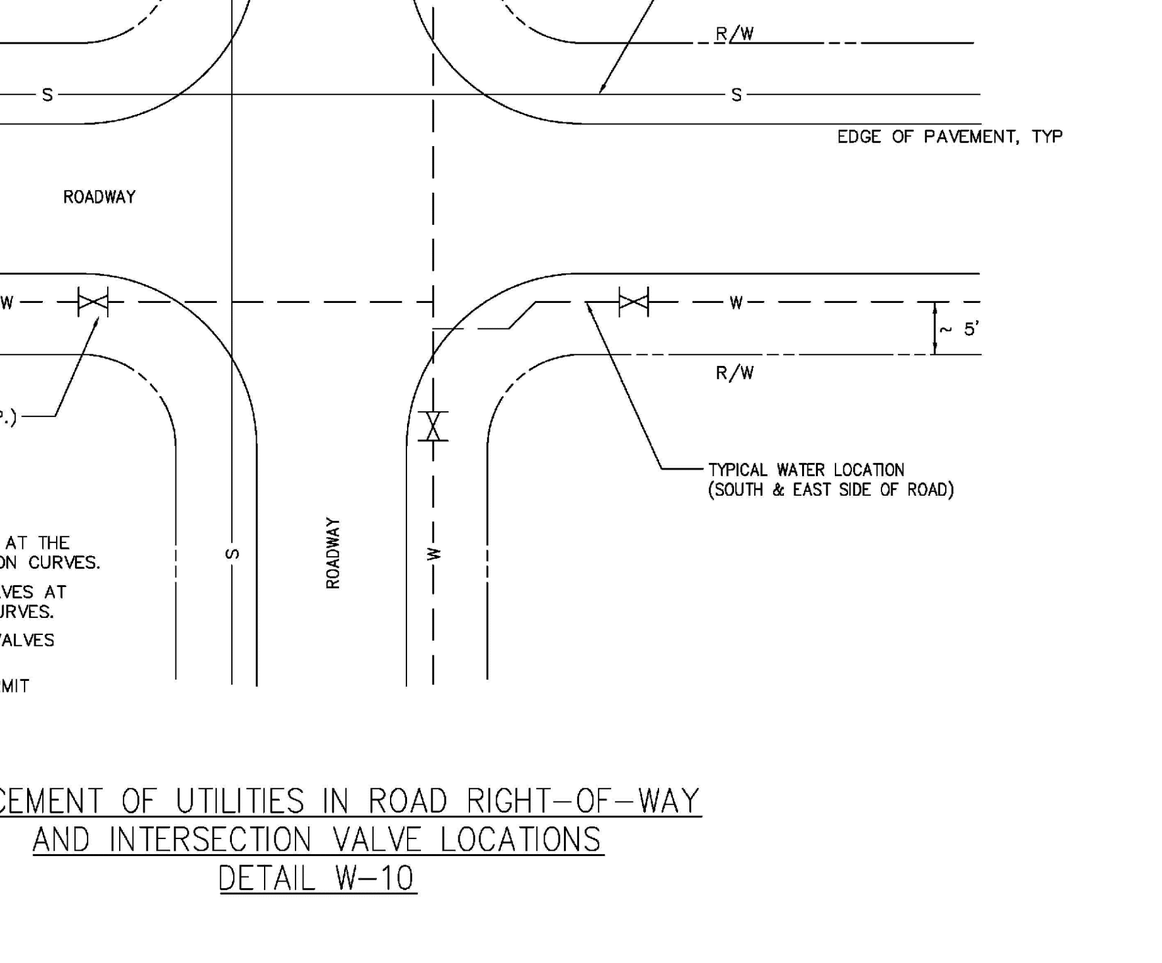
Revisions
1.1 - DATED 3/7/2013 Modified double meter box
1.2 - DATED 4/5/2013 Corrected meter box #'s
1.3 - DATED 7/15/2015 Updated meter box #'s
1.4 - DATED 10/27/2015 Modified W-7
1.5 - DATED 12/8/2016 Revise Detail Numbers
1.6 - DATED 3/6/2017 Revise Detail W-6
1.7 - DATED 3/22/2017 Revise Detail W-6
1.8 - DATED 10/29/2018 Updated acceptable double meter boxes

COUNTY OF BRUNSWICK

GENERAL WATER DETAILS
FOR
BRUNSWICK COUNTY
NORTH CAROLINA

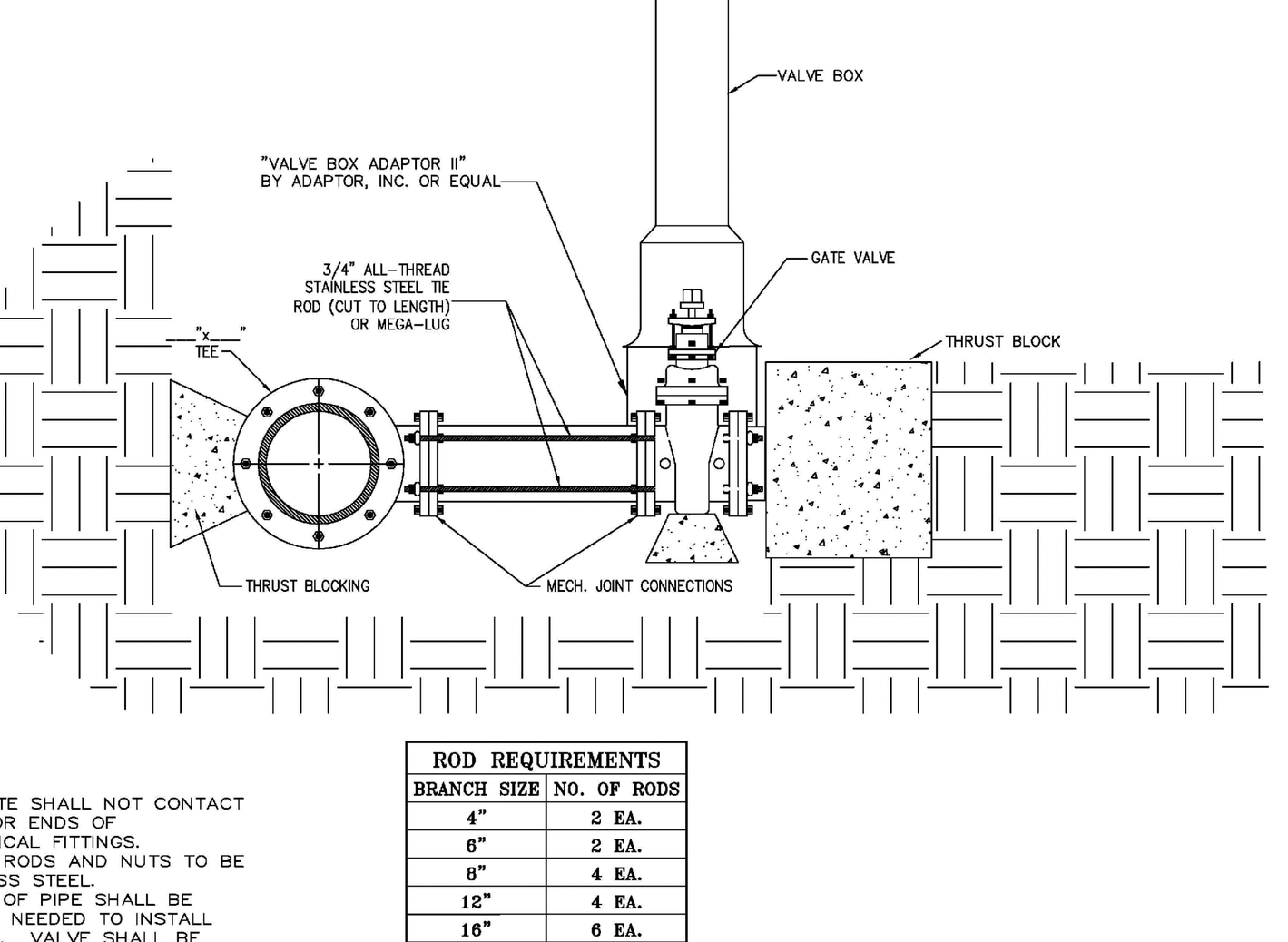
Date: 05-22-12
Scale: NTS
Drawn By: JDM
Checked By: WLP

2 OF 5



1. FOR NEW STREETS INSTALL VALVES AT THE TANGENTS OF THE R/W INTERSECTION CURVES.
2. FOR EXISTING STREETS INSTALL VALVES AT THE ENDS OF PAVED TRANSITION CURVES.
3. USE (2) VALVES AT TEE AND (3) VALVES AT A CROSS
4. INSTALL WATERLINE PER NCDOT PERMIT IN NCDOT RIGHT-OF-WAY

PLACEMENT OF UTILITIES IN ROAD RIGHT-OF-WAY
AND INTERSECTION VALVE LOCATIONS
DETAIL W-10



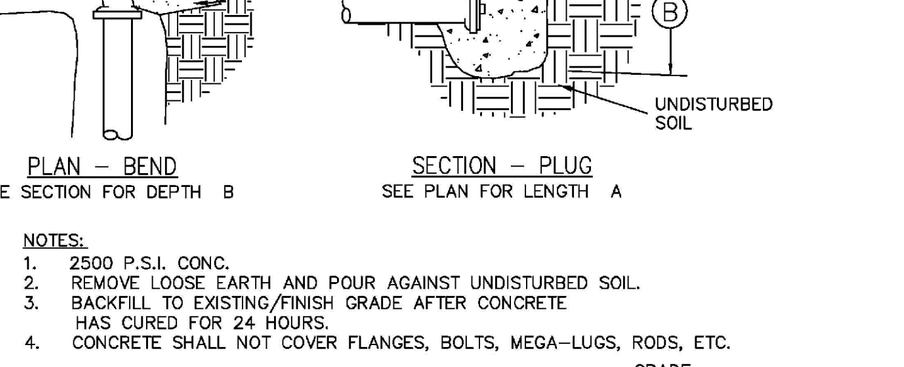
NOTES:

1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL FITTINGS.
2. ALL TIE RODS AND NUTS TO BE STAINLESS STEEL.
3. LENGTH OF PIPE SHALL BE MINIMUM NEEDED TO INSTALL FITTINGS. VALVE SHALL BE BOLTED DIRECTLY TO TEE WHENEVER POISSIBLE.

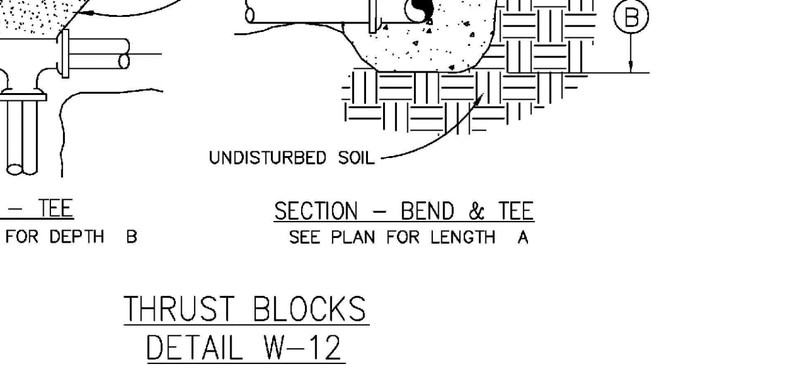
ROD REQUIREMENTS	
BRANCH SIZE	NO. OF RODS
4"	2 EA.
6"	2 EA.
8"	4 EA.
12"	4 EA.
16"	6 EA.
20"	6 EA.
24"	6 EA.

BRANCH STUB-OUT FOR FUTURE CONNECTION
(6-INCH DIA AND LARGER MAIN)
DETAIL W-11

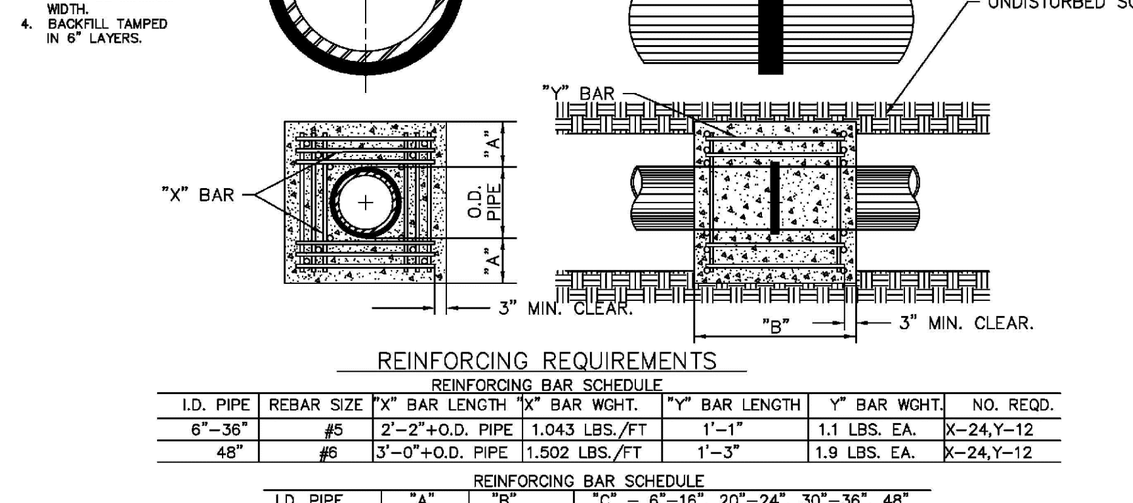
BLOCKING DIMENSIONS			
PIPE SIZE	(A)	(B)	(C)
UP TO 10"	4' - 0"	2' - 6"	1' - 6"
12" TO 16"	5' - 0"	4' - 0"	2' - 0"
18" TO 24"	8' - 0"	6' - 0"	3' - 0"



NOTES:
1. 2500 P.S.I. CONC.
2. REMOVE LOOSE EARTH AND POUR AGAINST UNDISTURBED SOIL.
3. BACKFILL TO EXISTING/FINISH GRADE AFTER CONCRETE HAS CURED FOR 24 HOURS.
4. CONCRETE SHALL NOT COVER FLANGES, BOLTS, MEGA-LUGS, RODS, ETC.



THRUST BLOCKS
DETAIL W-12



REINFORCING REQUIREMENTS

REINFORCING BAR SCHEDULE						
I.D. PIPE	REBAR SIZE	"X" BAR LENGTH	"X" BAR WGHT.	"Y" BAR LENGTH	"Y" BAR WGHT.	NO. REQD.
6"-36"	#5	2'-2"+O.D. PIPE	1.043 LBS./FT	1'-1"	1.1 LBS. EA.	X-24,Y-12
48"	#6	3'-0"+O.D. PIPE	1.502 LBS./FT	1'-3"	1.9 LBS. EA.	X-24,Y-12

REINFORCING BAR SCHEDULE						
I.D. PIPE	"A"	"B"	"C" - 6"-16"	20"-24"	30"-36"	48"
6"-36"	1'-4"	1'-7"	2"	3"	4"	
48"	1'-8"	1'-9"				6"

THRUST COLLAR FOR WATER MAINS
DETAIL W-13

Revisions
1.1 - DATED 12/8/2016 Mod. W-11 and Revise Detail Numbers

COUNTY OF BRUNSWICK

GENERAL WATER DETAILS
FOR
BRUNSWICK COUNTY
NORTH CAROLINA

Date: 06-05-12
Scale: NTS
Drawn By: JDM
Checked By: WLP

4 OF 5

LS3P

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NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. BALLAND
04/22/2020

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REVISIONS:

No.	Description	Date

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

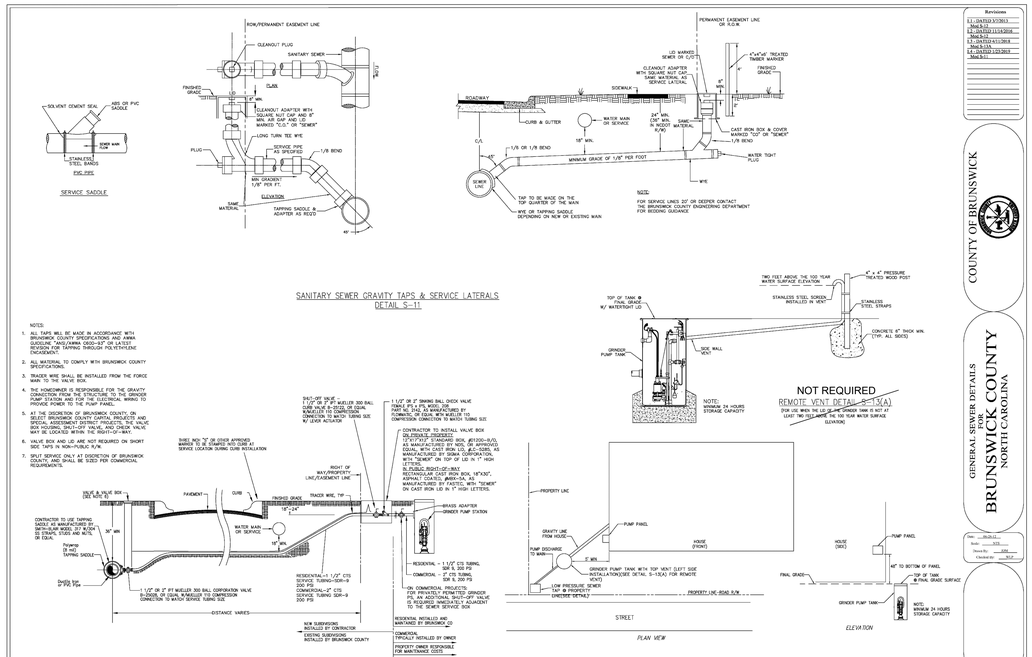
PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

DETAILS

C-5.1

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

100% CONSTRUCTION DRAWINGS



SANITARY SEWER GRAVITY TAPS & SERVICE LATERALS
DETAIL S-11

NOTES:

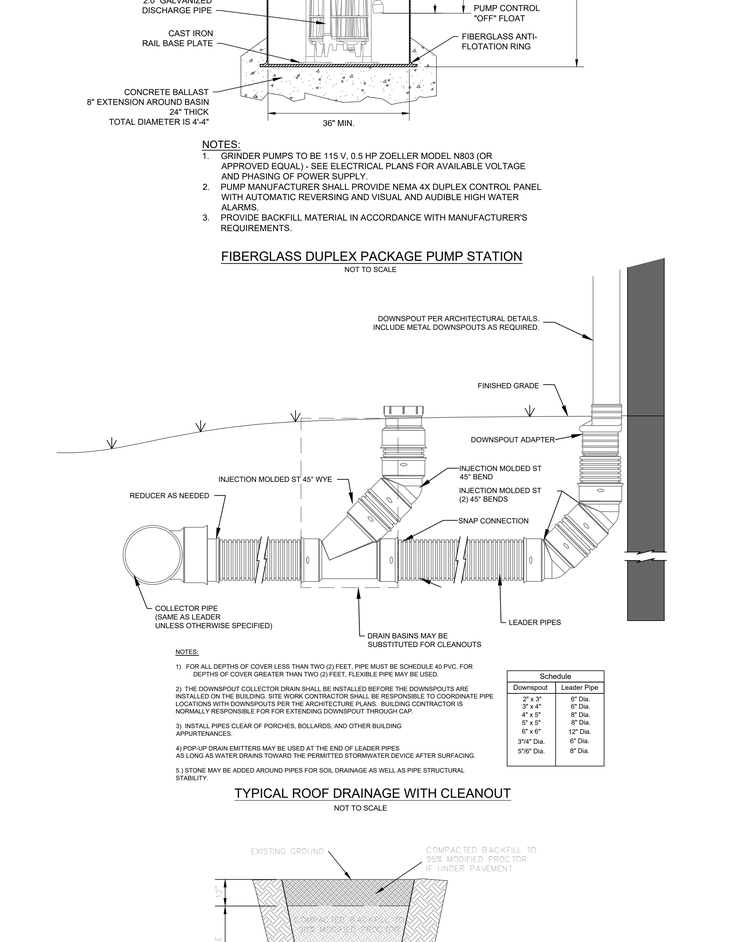
1. ALL TAPS WILL BE MADE IN ACCORDANCE WITH BRUNSWICK COUNTY SPECIFICATIONS AND ANNA GUIDELINE "ANSI/AWWA C800-93" OR LATEST REVISION FOR TAPPING THROUGH POLYETHYLENE ENCASEMENT.
2. ALL MATERIAL TO COMPLY WITH BRUNSWICK COUNTY SPECIFICATIONS.
3. TRACER WIRE SHALL BE INSTALLED FROM THE FORCE MAIN TO THE VALVE BOX.
4. THE HOMEOWNER IS RESPONSIBLE FOR THE GRAVITY CONNECTION FROM THE STRUCTURE TO THE GRINDER PUMP STATION AND FOR THE ELECTRICAL WIRING TO PROVIDE POWER TO THE PUMP PANEL.
5. AT THE DISCRETION OF BRUNSWICK COUNTY, ON PRIVATELY OWNED GRINDER PUMP STATIONS AND SERVICE ASSESSMENT DISTRICT INSTALLATIONS, A VALVE BOX HOUSING SHUT-OFF VALVE, AND CHECK VALVE MAY BE LOCATED WITHIN THE RIGHT-OF-WAY.
6. VALVE BOX AND LID ARE NOT REQUIRED ON SHORT SIDE TAPS IN NON-PUBLIC R/W.
7. SPLIT SERVICE ONLY AT DISCRETION OF BRUNSWICK COUNTY, AND SHALL BE SIZED PER COMMERCIAL REQUIREMENTS.

LOW PRESSURE SEWER CONNECTION
DETAIL S-12

TYPICAL RESIDENTIAL GRINDER PUMP STATION LOCATION
DETAIL S-13

NOT REQUIRED
REMOTE VENT DETAIL S-13(A)
(FOR USE WHEN THE LID OF THE GRINDER TANK IS NOT AT LEAST TWO FEET ABOVE THE 100 YEAR WATER SURFACE ELEVATION)

TYPICAL RESIDENTIAL GRINDER PUMP STATION LOCATION
DETAIL S-13



NOTES:

1. GRINDER PUMPS TO BE 115 V, 0.5 HP ZOELLER MODEL N803 (OR APPROVED EQUAL) - SEE ELECTRICAL PLANS FOR AVAILABLE VOLTAGE AND PHASING OF POWER SUPPLY.
2. PUMP MANUFACTURER SHALL PROVIDE NEMA 4X DUPLEX CONTROL PANEL WITH AUTOMATIC REVERSING AND VISUAL AND AUDIBLE HIGH WATER ALARMS.
3. PROVIDE BACKFILL MATERIAL IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

FIBERGLASS DUPLEX PACKAGE PUMP STATION
NOT TO SCALE

NOTES:

1) FOR ALL DEPTHS OF COVER LESS THAN TWO (2) FEET, PIPE MUST BE SCHEDULE 40 PVC. FOR DEPTHS OF COVER GREATER THAN TWO (2) FEET, FLEXIBLE PIPE MAY BE USED.

2) THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITE WORK CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE PIPE LOCATIONS WITH DOWNSPOUTS PER THE ARCHITECTURE PLANS. BUILDING CONTRACTOR IS NORMALLY RESPONSIBLE FOR FOR EXTENDING DOWNSPOUT THROUGH CAP.

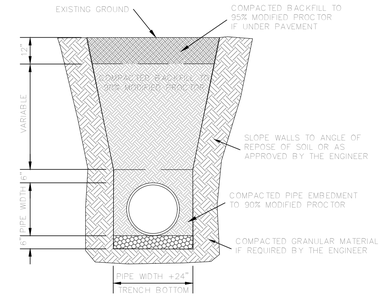
3) INSTALL PIPES CLEAR OF PORCHES, BOLLARDS, AND OTHER BUILDING APPURTENANCES.

4) POP-UP DRAIN EMITTERS MAY BE USED AT THE END OF LEADER PIPES AS LONG AS WATER DRAINS TOWARD THE PERMITTED STORMWATER DEVICE AFTER SURFACING.

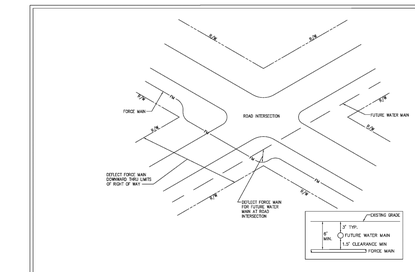
5.) STONE MAY BE ADDED AROUND PIPES FOR SOIL DRAINAGE AS WELL AS PIPE STRUCTURAL STABILITY.

Schedule	
Downspout	Leader Pipe
2" x 3"	6" Dia.
3" x 4"	6" Dia.
4" x 5"	8" Dia.
5" x 5"	8" Dia.
6" x 6"	12" Dia.
3"/4" Dia.	6" Dia.
5"/6" Dia.	8" Dia.

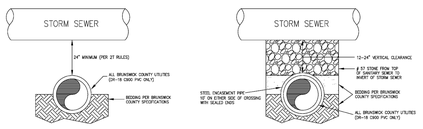
TYPICAL ROOF DRAINAGE WITH CLEANOUT
NOT TO SCALE



STANDARD PIPE TRENCH DETAIL
NOT TO SCALE



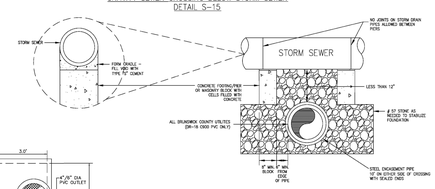
SEWER FORCE MAIN @ ROAD INTERSECTIONS
DETAIL S-14



S-15A
STANDARD CONDITION

S-15B
12-24" VERTICAL CLEARANCE

GRAVITY SEWER CROSSING BELOW STORM SEWER
DETAIL S-15



S-15C
LESS THAN 12" VERTICAL CLEARANCE

MINIMUM DESIGN & CONSTRUCTION STANDARDS FOR GREASE TRAP AND OIL/SAND SEPARATOR

A. GENERAL

1. USABLE LIQUID CAPACITY OF TANK MUST NOT BE LESS THAN 1000 GALLONS. FOR OIL/SAND SEPARATOR REFER TO SPECIFICATIONS FOR SIZING CALCULATIONS.
2. THE TANK LENGTH MUST BE AT LEAST TWO (2) BUT NOT MORE THAN THREE (3) TIMES THE WIDTH.
3. THE UNIFORM LIQUID DEPTH MUST NOT BE LESS THAN FOUR (4) FEET.
4. AT LEAST ONE (1) FOOT OF FREEBOARD MUST BE PROVIDED.
5. VIBRATION METHODS MUST BE EMPLOYED TO PREVENT VOIDS.
6. WALL AND BOTTOM THICKNESS SHALL BE AS REQUIRED FOR STRUCTURAL STABILITY, BUT NOT LESS THAN FOUR (4) INCHES IN THICKNESS.
7. INLET MUST ENTER TANK A MINIMUM OF THREE (3) INCHES ABOVE THE LIQUID LEVEL.
8. INLET TEE SHALL EXTEND SIXTEEN (16) INCHES BELOW LIQUID LEVEL.
9. OUTLET TEE SHALL EXTEND DOWN TO SIX (6) INCHES ABOVE THE BOTTOM OF THE GREASE TRAP.
10. ACCESS OPENINGS MUST BE LOCATED ABOVE INLET AND OUTLET DEVICES, AND LIDS SHALL BE EQUIPPED WITH LIFT RINGS.
11. TANKS LOCATED IN TRAFFIC AREAS MUST BE DESIGNED TO A HS-20 LOADING.

B. TYPE OF REINFORCEMENT

1. TANK WALLS AND BOTTOM – 6 X 6, 10 GAUGE WIRE MESH.
2. TANK LIDS (TOPS) – REMOVE 2 RODS, 6 INCHES ON CENTER EACH WAY, OR 8 X 8, 10 GAUGE WIRE MESH PLUS ONE NUMBER 3 ROD PER LINEAR FOOT OF OPENING.
3. ALL REINFORCING WIRE AND RODS SHOULD BE COVERED BY AT LEAST 1/2 INCH OF CONCRETE.

C. CONCRETE

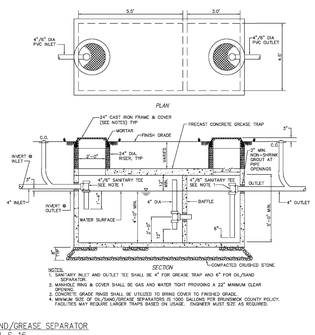
1. STRENGTH – MIX SHOULD BE CALCULATED TO YIELD A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
2. TYPES OF AGGREGATE
   A. GRAVEL SHALL BE TO 1/4 INCH
   B. GRAVES FREE OF FINE SCREENINGS FROM CRUSHER OPERATION MAY BE USED IN LIEU OF SAND
   C. MAXIMUM SIZE OF GRAVEL SHOULD NOT EXCEED 1/3 OF WALL THICKNESS, I.E., FOR 3 1/2" WALL THICKNESS, AGGREGATE SHOULD NOT EXCEED A SIZE OF 3/4."
3. PORTION AND QUALITY CONTROL – EVERY MANUFACTURER SHOULD HAVE PORTION CONTROL AND SUCH OTHER EQUIPMENT AND CAPABILITIES AS ARE NECESSARY TO PRODUCE CONCRETE OF THE RATIOS AND SYSTEMATIC INSPECTION OF FINISHED PRODUCTS TO RULE OUT UNSATISFACTORY SPECIMENS.

D. TANK IDENTIFICATION

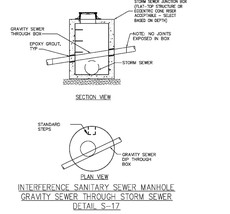
AN IDENTIFYING SEAL BEARING THE FOLLOWING ITEMS MUST BE CAST OR STAMPED INTO THE OUTLET END, OR OTHER CONSPICUOUS OF THE TOP:
   1. MANUFACTURER'S
      1. MANUFACTURER'S ADDRESS
      2. DATE OF MANUFACTURE OF TANK
      3. DESIGN LOADING

E. GUARANTEE

ALL TANKS MUST BE GUARANTEED IN WRITING FOR TWO (2) YEARS AGAINST FAILURE DUE TO POOR WORKMANSHIP AND MATERIALS OF THE MANUFACTURER.



1,000 GALLON OIL/SAND/GREASE SEPARATOR
DETAIL S-16



INTERFERENCE SANITARY SEWER MANHOLE
GRAVITY SEWER THROUGH STORM SEWER
DETAIL S-17

Revisions

1 - 04/03/13	07/2013
Mod 3-13	
2 - 10/2013	11/14/2013
Mod 9-13	
3 - 04/03/14	5/1/2014
Mod 3-14	
4 - 10/2013	12/2014
Mod 2013	

COUNTY OF BRUNSWICK

GENERAL SEWER DETAILS FOR BRUNSWICK COUNTY NORTH CAROLINA

Date: 04-22-20
Scale: N/A
Drawn By: AEC
Checked By: RPB

3 OF 5

4 OF 5

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PEI Project #: 19312.PE

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NORTH CAROLINA PROFESSIONAL SEAL 031591 ENGINEER ROBERT P. BALLARD 04/22/2020

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04/22/2020
DRAWN BY: AEC
CHECKED BY: RPB

DETAILS

C-5.2

SOLUTIONS THROUGH LISTENING
SERVICE BY DESIGN

FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION

100% CONSTRUCTION DRAWINGS

1.0 CODES AND STANDARDS:

1.1 "2018 North Carolina State Building Code" and "International Building Code", 2015.

1.2 "Minimum Design Loads for Buildings and other Structures" SEI/ASCE 7-10.

1.3 "Building Code Requirements for Structural Concrete (ACI 318-14)" American Concrete Institute 2014.

1.4 "Manual of Standard Practice", Concrete Reinforcing Steel Institute, latest edition.

1.5 "Specification for Structural Steel Buildings (AISC 360-10)" American Institute of Steel Construction, 2011 – 14th Edition

1.6 "Structural Welding Code – Steel (AWS D1.1)" and "Structural Welding Code – Reinforcing Steel (AWS D1.4)", American Welding Society.

1.7 "Specification for the Design of Cold-Formed Steel Structural Members", American Iron and Steel Institute (AISI), latest edition.

2.0 DESIGN LOADS:
Project Located in: City of Bolivia, County of Brunswick, State of North Carolina.

2.1 Gravity Loads: (Reduced where allowed)

GRAVITY LOADS		
Location	Uniform (psf)	Concentrated (lbs) (Over 2.5'x2.5')
Roof Loads:		
Dead Load	Structure wt. plus 3psf collateral	
Live Load	20	300

Primary roof structure members shall be designed for concentrated point live load of 2000lbs to be placed anywhere along its length

2.2 Drifting Snow Loads per N.C. Building Code.

Pg = 10 psf
I = 1.0
Ce = 1.0
Ct = 1.0

2.3 Risk Category = II

2.4 Wind Loads per N.C. State Building Codes, 2018 edition (IBC 2015) & ASCE 7-10 (3-second gust)

Main Wind Force Resisting System:
V=147 mph
Exposure Category "C"

Building is enclosed & Internal Pressure coefficient (GCpi) = +0.18 & −0.18
Topographic Factor Kzt = 1.0
Wind Directionality Factor, Kd = 0.85

Calculated Wind Base Shear (For MWFRS) – Final Base Shear will be provided by PEMB Supplier.
Vx = 37.9k Vy = 69k

Components and Cladding:
V 147 mph
Exposure Category "C"

Components and Cladding Wind Pressure (psf)

Walls	Area < 10ft²		< 20ft²		Area < 50ft²		Area < 100ft²		Area < 500ft²	
Zone 4	55.7	-60.3	53.2	-57.9	49.8	-54.6	47.3	-52.0	41.5	-46.2
Zone 5	55.7	-74.5	53.2	-69.5	49.8	-62.8	47.3	-57.9	41.5	-46.2
Roof	**Area < 10ft²**		**Area < 20ft²**		**Area < 50ft²**		**Area < 100ft²**		**Area < 500ft²**	
Zone 1	22.6	-55.7	21.2	-54.2	19.4	-52.4	17.9	-50.9	17.9	-50.9
Zone 2	22.6	-93.4	21.2	-83.5	19.4	-70.3	17.9	-60.3	17.9	-60.3
Zone 3	22.6	-140.5	21.2	-116.5	19.4	-84.5	17.9	-60.3	17.9	-60.3

Notes:
1. Areas noted are effective wind areas as per ASCE 7-10, 26.2 definitions.
2. See figures below for Zone locations.
3. Plus and minus signs signify pressures acting toward and away from surfaces, respectively.
4. Design pressures shown in table are Strength Design wind pressures. Allowable Stress Design wind pressures may be calculated by multiplying table pressures by 0.6.
5. Tributary area = greater of LxW or LxL/3.
6. Design for strength using loads from ASCE-7 or from this table. Deflections may be calculated based on 42% of these loads.

2.5 Seismic Loads per 2018 North Carolina State Building Code (IBC 2015) & ASCE 7-10

Risk Category = II
Site class = "D" (Per Geotechnical Report)
Spectral Response Coefficients:
SDS = 0.269g
SD1 = 0.163g
Cx = Cy = 0.0897

Seismic Design Category = C
Seismic Importance Factor = 1.0
Basic Seismic – Force – Resisting System
Building Frame System – Steel Systems Not Specifically Detailed for Seismic Resistance.

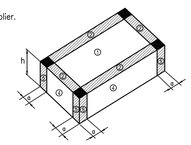
RX=RY=3.0, QX=QY=3.0, CDX=CDY=3.0
Design Base Shear – Final Base Shear will be provided by PEMB Supplier.
Vx = Vy = 35.7k

Building Height Limit = 160'
Analysis Procedure – 12.8.1 ASCE 7-10
Equivalent Lateral Force Procedure

2.6 Guardrail designed per North Carolina State Building Code, Section 1607.8

Guardrail:
Uniform load = 50 plf, any direction – per 1607.8.1
Concentrated load = 200 lbs, any direction – per 1607.8.1.1
Intermediate Rail: (all those expect handrail) per 1607.8.1.2

2.7 Flood Loads:
Property is not in a Designated Flood Zone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SCHEDULE FOR STRUCTURAL MATERIAL INSPECTIONS

BUILDING COMPONENTS OR MATERIAL	MATERIAL SUBMITTAL	INSPECTION / MONITORING	INSPECTION FREQUENCY	INSPECTOR QUALIFICATIONS	TEST REQUIREMENTS	TEST FREQUENCY	INSPECTION AGENCY
SOILS	1. REVIEW S&ME REPORT #1306-19-022 VERIFY ALLOWABLE SOIL BEARING = 2,000 psf 2. FILL MATERIAL SPECIFICATIONS. 3. VAPOR BARRIER	1.-2. INSPECT SOILS PER ATTACHED 2015 IBC, TABLE 1705.6 FOR REQUIRED VERIFICATION AND INSPECTION. 3. INSPECT VAPOR BARRIER INSTALLATION. SEE PROJECT & MANUFACTURER SPECS.	ALL INSPECTIONS ARE PERIODIC EXCEPT FILL PLACEMENT AND COMPACTION WHICH IS CONTINUOUS.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.	1. PROVIDE VISUAL AND DCP TESTS PER ASTM STP-399 2. SUBGRADE DENSITY VERIFICATION	1. EACH ISOLATED FOOTING AND AT 20' INTERVALS FOR CONTINUOUS FOOTINGS. 2. AS REQUIRED TO VERIFY ENTIRE BUILDING PAD.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.
CONCRETE	1. SUBMIT CONCRETE MIX DESIGN. 2. SUBMIT MATERIAL CERTIFICATION 3. SUBMIT REBAR SHOP DRAWINGS.	INSPECT CONCRETE CONSTRUCTION PER ATTACHED 2015 IBC, TABLE 1705.3	AS OUTLINED PER TASK IN TABLE 1705.3	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.	1. TEST CONCRETE FOR COMPRESSIVE STRENGTH, SLUMP, AIR CONTENT, TEMPERATURE AND BATCH TO PLACEMENT TIME.	1. SAMPLES FOR STRENGTH TESTS FOR EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 150 YD^3 OF CONCRETE, NOR LESS THAN ONCE FOR EACH 5,000FT^2 OF SURFACE AREA FOR SLABS OR WALLS.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.
STEEL	1. SUBMIT ANCHOR BOLT SETTING PLAN. 2. SUBMIT STEEL SHOP DRAWINGS. 3. SUBMIT MATERIAL CERTIFICATES. 4. FABRICATOR CERTIFICATE OF COMPLIANCE WITH 2015 IBC, 1705.2.	INSPECT STEEL PER ATTACHED TABLE BELOW	AS OUTLINED PER TASK IN TABLE BELOW	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.	1. VISUAL INSPECTION BY A QUALIFIED STEEL INSPECTOR. 2. MOMENT CONNECTIONS FIELD WELDED. 3. ALL FIELD BOLTING SHALL BE SNUG TIGHT.	INSPECT ALL FIELD CONNECTIONS. CONTINUOUS INSPECTION OF ALL MOMENT CONNECTIONS REQUIRED.	1. QUALIFIED INSPECTION AGENCY A) INSPECTION AGENCY TO BE APPROVED BY SPECIAL INSPECTION COORDINATOR & BUILDING OFFICIAL.

REQUIRED VERIFICATION & INSPECTION OF STEEL CONSTRUCTION

VERIFICATION & INSPECTION TASK	CONTINUOUS	PERIODIC
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:		
a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	–	X
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	–	X
2. INSPECTION OF HIGH-STRENGTH BOLTING:		
a. SNUG-TIGHT JOINTS.	–	X
b. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION.	–	X
c. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION.	X	–
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:		
a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360	–	X
b. FOR OTHER STEEL, INDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	–	X
c. MANUFACTURER'S CERTIFIED TEST REPORTS.	–	X
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:		
a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS.	–	X
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	–	X
5. INSPECTION OF WELDING:		
a. STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:		
1) COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.	X	–
2) MULTIPASS FILLET WELDS.	X	–
3) SINGLE-PASS FILLET WELDS > 5/16"	X	–
4) PLUG AND SLOT WELDS.	X	–
5) SINGLE-PASS FILLET WELDS ≤ 5/16"	–	X
6) FLOOR AND ROOF DECK WELDS.	–	X
b. REINFORCING STEEL:		
1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A 706.	–	X
2) REINFORCING STEEL-RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	X	–
3) SHEAR REINFORCEMENT.	X	–
4) OTHER REINFORCING STEEL	–	X
6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:		
a. DETAILS SUCH AS BRACING AND STIFFENING.	–	X
b. MEMBER LOCATIONS.	–	X
c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION.	–	X

(a) OBSERVE ON A RANDOM BASIS, OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS. PERFORM THESE TASKS FOR EACH WELDED JOINT, BOLTED CONNECTION, OR STEEL ELEMENT
(b) SEE AISC 360 QUALITY ASSURANCE INSPECTION REQUIREMENTS

REQUIRED VERIFICATION & INSPECTION OF CONCRETE CONSTRUCTION FREQUENCY CHART

VERIFICATION & INSPECTION TASK	CONTINUOUS	PERIODIC
1. INSPECTION OF REINFORCING STEEL INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	–	X
2. REINFORCING BAR WELDING: a. VERIFY WEDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706 b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; and c. INSPECT ALL OTHER WELDS.	– X	X X
3. INSPECTION OF ANCHORS CAST IN CONCRETE	–	X
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS a. ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR UPWARDLY INCLUDED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X	 X
5. VERIFY USE OF REQUIRED DESIGN MIX.	–	X
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	–
7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	–
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	–	X
9. INSPECTION OF PRESTRESSED CONCRETE: a. APPLICATION OF PRESTRESSING FORCES. b. GROUTING OF BONDED PRESTRESSING TENDONS	X X	– –
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	–	X
11. VERIFY 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.	–	X
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	–	X

NOTE: SEE IBC 2015, TABLE 1705.3 FOR REFERENCE STANDARDS.

REQUIRED VERIFICATION & INSPECTION OF SOILS

VERIFICATION & INSPECTION TASK	CONTINUOUS	PERIODIC
1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	–	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	–	X
3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.	–	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	X	–
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	–	X

NOTE: SEE IBC-2015, TABLE 1705.6, CHAPTER 17

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NORTH CAROLINA WOODS ENGINEERING P.A. CORPORATE SEAL No. C-1806

NORTH CAROLINA PROFESSIONAL SEAL 19475 ENGINEER DON R. WOODS

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Date: 2020.04.22 09:19:59 -04'00'

REVISIONS:

No.	Description	Date

PROJECT: 19-2990
DATE: APRIL 22, 2020
DRAWN BY: MBK
CHECKED BY: DW

STRUCTURAL MATERIAL INSPECTIONS

S1.02

BID DOCUMENTS

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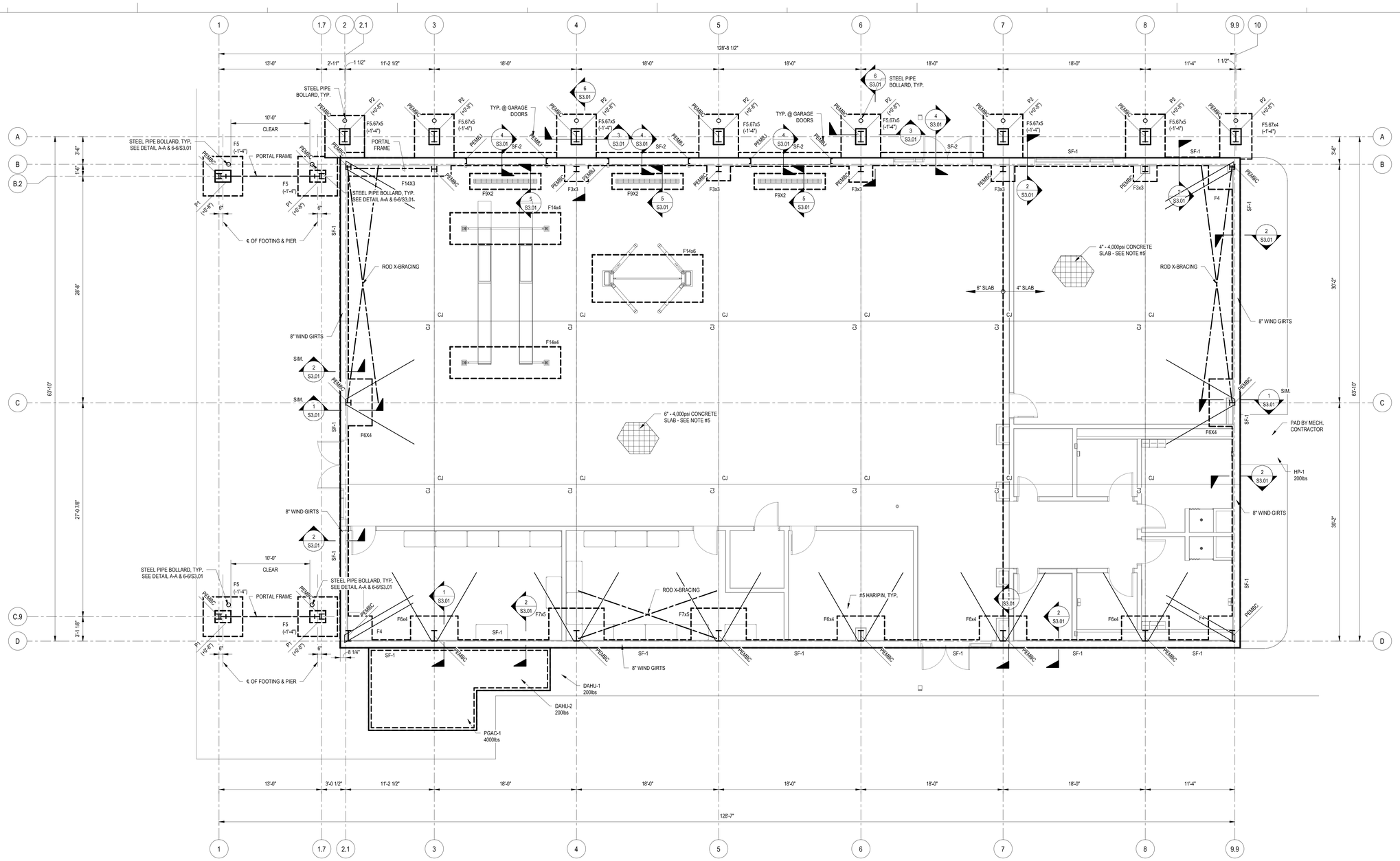
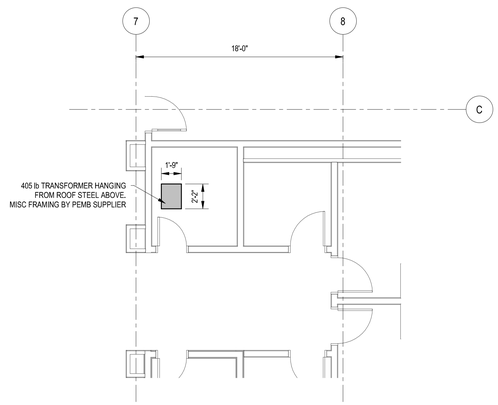


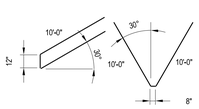
AUTOMOTIVE FOUNDATION AND SLAB PLAN

SCALE: 3/16" = 1'-0"



AUTOMOTIVE ROOF FRAMING PLAN

SCALE: 3/16" = 1'-0"



HAIRPINS
(TYPICAL)

STRIP FOOTING (SF-x) SCHEDULE

MARK	WIDTH x THICKNESS x LENGTH	REINFORCEMENT		COMMENTS
		TOP BARS	BOTTOM BARS	
SF-1	1'-0" x 2'-0" x CONT.	(1) #4 CONT.	(2) #5 CONT.	SEE 2-2/S3.01
SF-2	1'-6" x 2'-0" x CONT.	(1) #4 CONT.	(3) #5 CONT.	SEE 4-4/S3.01

SPREAD FOOTING (Fx) SCHEDULE

MARK	WIDTH x LENGTH x THICKNESS	REINFORCEMENT		COMMENTS
		TOP BARS	BOTTOM BARS	
F3X3	3'-0" x 3'-0" x 2'-0"	(4) #4 E.W.	(4) #4 E.W.	SEE 6-6/S3.01
F4	4'-0" x 4'-0" x 1'-0"	(4) #4 E.W.	(4) #4 E.W.	
F5	5'-0" x 5'-0" x 1'-0"	(4) #4 E.W.	(5) #5 E.W.	
F5.67x4	4'-0" x 5'-8" x 1'-4"	#4 @ 12"o.c. E.W.	#4 @ 12"o.c. E.W.	
F5.67x5	5'-0" x 5'-8" x 1'-4"	(5) #4 E.W.	(6) #5 E.W.	SEE 3-3/S3.01
F8x4	4'-0" x 8'-0" x 2'-0"	#4 @ 12"o.c. E.W.	#4 @ 12"o.c. E.W.	SEE 1-1/S3.01
F7x5	5'-0" x 7'-0" x 2'-0"	#4 @ 12"o.c. E.W.	(5) #6 LONG & (7) #5 SHORT	SEE 1-1/S3.01
F9X2	9'-0" x 2'-0" x 1'-0"	N/A	(5) #5	
F14x3	3'-0" x 14'-0" x 2'-0"	(5) #6 LONG, (13) #4 SHORT	(5) #6 LONG, (13) #4 SHORT	
F14x4	4'-0" x 14'-0" x (0'-8"	N/A	#4 @ 12"o.c. E.W.	
F14x6	6'-0" x 14'-0" x (0'-8"	N/A	#4 @ 12"o.c. E.W.	

LEGEND - FOUNDATION

- INDICATES LIGHT GAUGE METAL STUD WALL
- FX — SPREAD FOOTING DESIGNATION SEE SCHEDULE THIS SHEET
- SF-X — STRIP FOOTING DESIGNATION SEE SCHEDULE THIS SHEET
- 0 — GRID DESIGNATION FOR CENTERLINE OF COLUMN
- CJ — INDICATES CONCRETE SLAB CONTRACTION JOINTS, SEE S1.02 FOR TYPICAL DETAILS.
- UNDERGOUND GRAVITY PIPING - COORD. W/ PLUMBING DWGS.
- PORTAL FRAME
- ROD X-BRACING
- PEMBC — PRE-ENGINEERED METAL BUILDING COLUMN
- PEMBJ — PRE-ENGINEERED METAL BUILDING JAMB
- Px (x'-x") — Px= CONCRETE PIER - SEE S3.01 (x'-x")= ELEVATION RELATIVE TO DATUM ELEVATION
- BOLLARD - SEE SECTION 6-6/S3.01

NOTES - FOUNDATION PLAN

1. SEE SHEET S1.01 FOR ADDITIONAL GENERAL NOTES, FOUNDATION NOTES, CONCRETE NOTES, AND REINFORCING STEEL NOTES. ALSO, SEE SHEET S1.01 & S1.02 FOR TYPICAL DETAILS. TYPICAL DETAILS ARE GENERALLY NOT SHOWN ON PLAN BUT RATHER ARE INTENDED TO DEFINE TYPICAL CONSTRUCTION CONDITIONS.
2. DATUM ELEVATION = TOP OF SLAB ELEVATION = 46,38' MSL (SEE C-2.2) = ASSUMED ELEVATION 0'-0", OTHER ELEVATIONS ARE NOTED AS (+ OR -) FROM DATUM ELEVATION.
3. FOOTINGS ARE MONOLITHIC WITH SLAB UNLESS NOTED AS (±X'-X") FROM DATUM ELEVATION.
4. RELOCATE ANY UTILITY LINES THAT CONFLICT WITH THE FOUNDATIONS OR DROP THE FOUNDATIONS TO AN ELEVATION BELOW THE PROPOSED UTILITIES. RELOCATE ANY GRAVITY FLOW LINES THAT CONFLICT WITH SPREAD FOOTINGS AS SHOWN ON STRUCTURAL FOUNDATION PLANS. IF A GRAVITY FLOW LINE TRAVELS UNDER A CONTINUOUS STRIP FOOTING EITHER
   a. DROP THE FOOTING ELEVATION BELOW THE PROPOSED LINE
   b. ENCASE THE LINE IN A STEEL PIPE 2" LARGER IN DIAMETER THAN THE LINE AND EXTEND THE PIPE 1'-0" PAST EACH SIDE OF THE CONCRETE FOOTING, BACKFILL THE TRENCH WITH #57 STONE. THE BEARING CAPACITY OF THIS AREA MUST MEET OR EXCEED THE ALLOWABLE SOIL BEARING CAPACITY
5. SLAB-ON-GRADE SHALL BE 4" AND 6" THICK (SEE PLAN) 4000 psi CONCRETE WITH WWF6x6xW2.9xW2.9 (FLAT SHEETS) ON 15 mil VAPOR BARRIER, ON 6" CLEAN SANDS WITH LESS THAN 3% FINES, ON WELL COMPACTED SUB GRADE. SEE S1.01 FOUNDATION NOTES FOR COMPACTION REQUIREMENTS. VERIFY COMPACTION w/QUALIFIED GEOTECHNICAL ENGINEER.
6. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER DISCIPLINE DRAWINGS FOR OPENINGS AND DEPRESSIONS NOT SHOWN ON THESE DRAWINGS.
7. G.C. TO VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. (ALL DIMENSIONS ARE TO E.O.S./O.F.B. OR TO A GRID LINE.) WHEN A SECTION IS CUT OR A DETAIL IS LABELED FOR A PARTICULAR CONDITION, THAT SECTION OR DETAIL SHALL APPLY FOR ALL SIMILAR CONDITIONS REGARDLESS OF WHETHER CUT OR LABELED, U.N.O.

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Date: 2020.04.22 09:20:09-04'00'

REVISIONS:

No.	Description	Date

PROJECT: 19-2990
DATE: APRIL 22, 2020
DRAWN BY: MBK
CHECKED BY: DW

AUTOMOTIVE FOUNDATION AND SLAB PLAN

S2.01

BID DOCUMENTS

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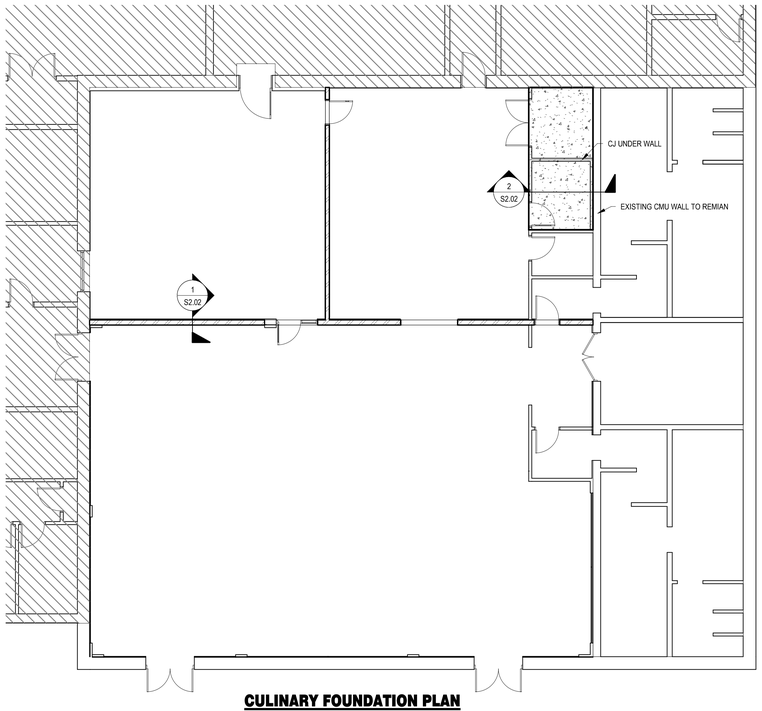

CULINARY FOUNDATION PLAN
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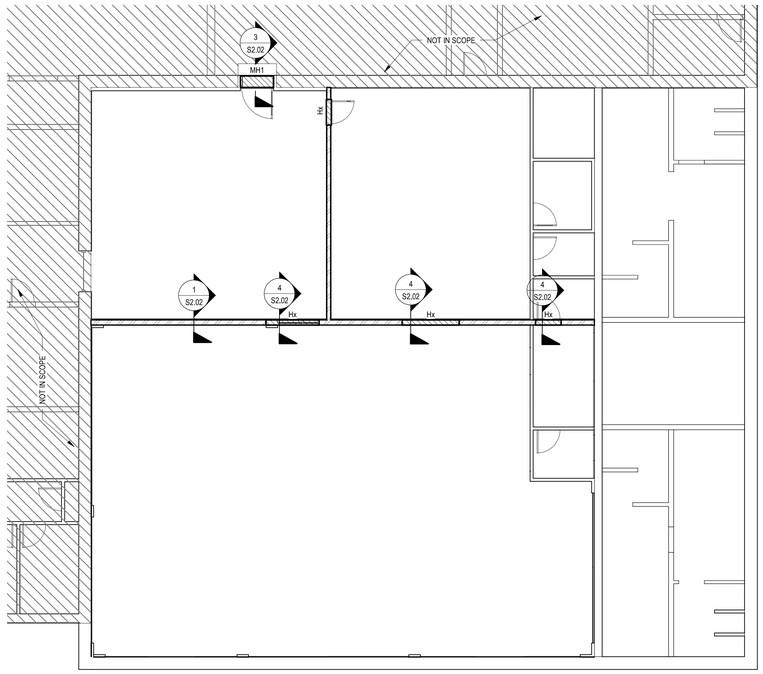

CULINARY FRAMING PLAN
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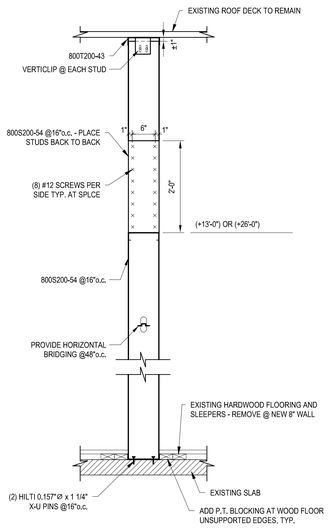

SECTION 1-1
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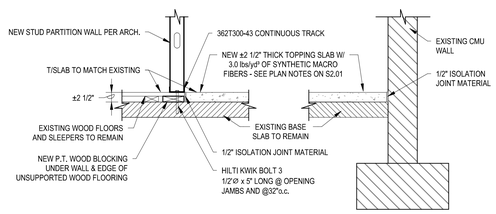

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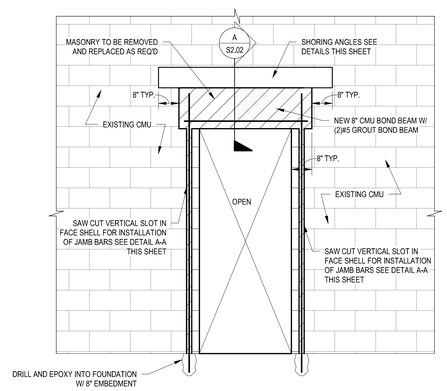

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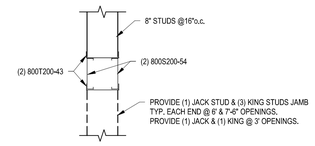

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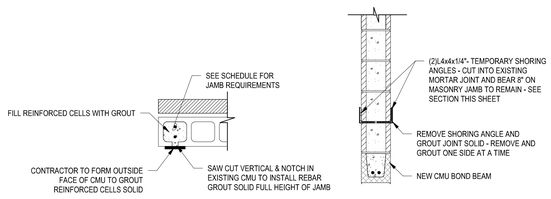

DETAIL A-A
SCALE: 3/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19475 DON R. WOODS

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Date: 2020.04.22 09:20:17-04'00'

REVISIONS:

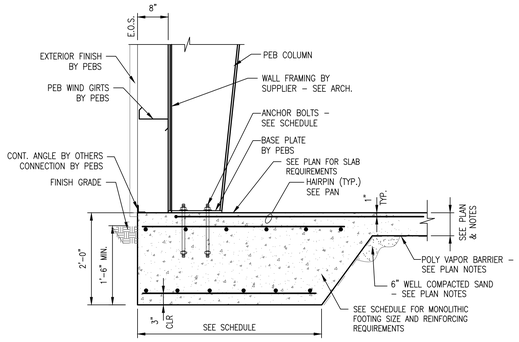
No.	Description	Date

PROJECT: 19-2990
DATE: APRIL 22, 2020
DRAWN BY: MBK
CHECKED BY: DW

CULINARY PLANS

S2.02

BID DOCUMENTS



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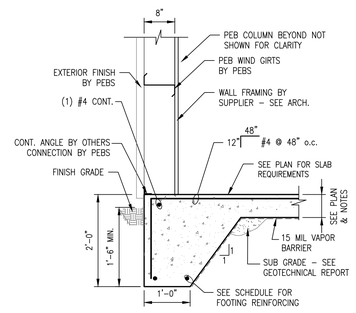

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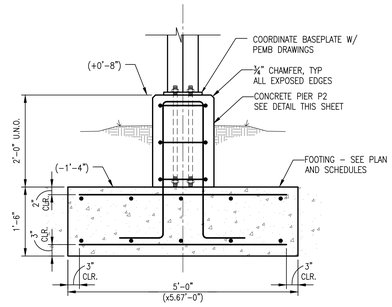

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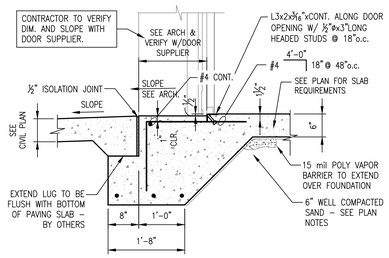
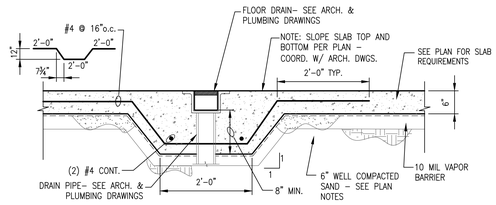


SECTION 4–4
SCALE: 3/4" = 1'-0"



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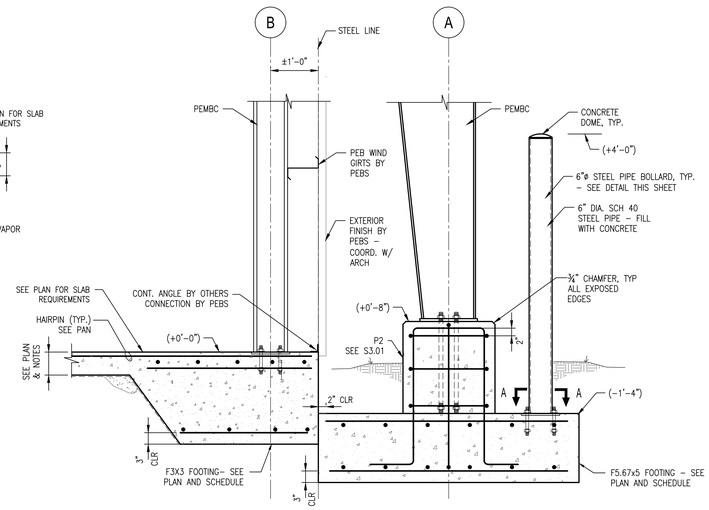

SECTION 6–6
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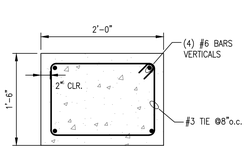
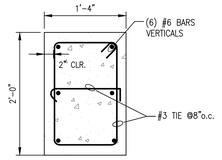
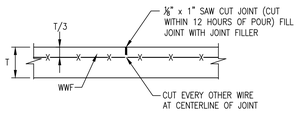


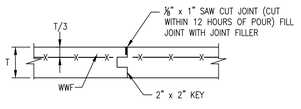
P1
SCALE: 1" = 1'-0"
24"x18" CONCRETE PIER



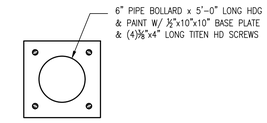
P2
SCALE: 1" = 1'-0"
24"x16" CONCRETE PIER



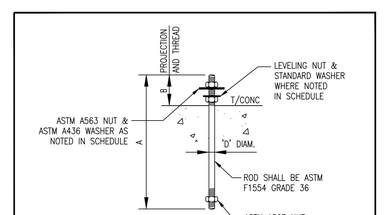
CONTRACTION JOINT DETAIL
NOT TO SCALE



CONSTRUCTION JOINT DETAIL
NOT TO SCALE



DETAIL A–A
SCALE: 1 1/2" = 1'-0"



ANCHOR BOLT SCHEDULE

MARK	BOLT DIAM. D	HOLE DIAMETER	A	B	WASHER O.D. x t	LEVELING NUT	REMARKS
AB–1	¾"	1 5/16"	1'–2"	3"	2" x ¼"	NO	
AB–2	1¼"	2 1/16"	2'–2"	3"	2½" x 9/16"	NO	
AB–3	1"	1 13/16"	2'–3"	3"	3" x ⅜"	NO	
AB–4	1¼"	2 1/16"	2'–3"	3"	3" x ½"	NO	

BRUNSWICK COUNTY

THE COAST ACADEMY

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Consulting Structural Engineers
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Wilmington, N.C. 28401 www.woodseng.com

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 19475 DON R. WOODS

Digitally signed by Don R. Woods, PE
DN: Evdsnwoods@woodseng.com, CN="Don R. Woods, PE", O="Woods Engineering, PA", L=Wilmington, S=North Carolina, C=US
Date: 2020.04.22 09:20:25-04'00'

REVISIONS:

No.	Description	Date

PROJECT: 19-2990
DATE: APRIL 22, 2020
DRAWN BY: MBK
CHECKED BY: DW

FOUNDATION SECTIONS & DETAILS

S3.01

BID DOCUMENTS

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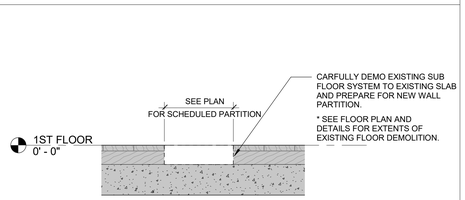
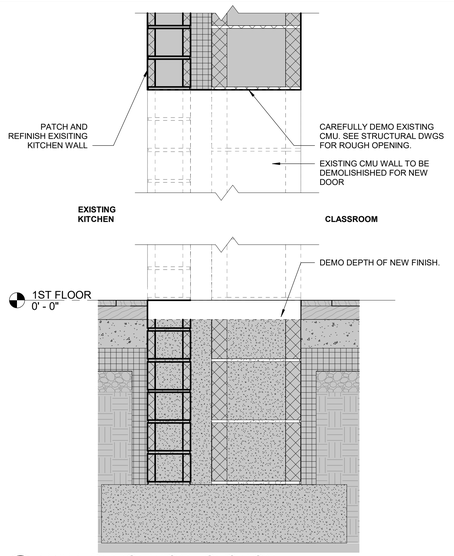


D1 FLOOR DEMOLITION - SECTION
1 1/2" = 1'-0"



D2 WALL DEMOLITION - SECTION
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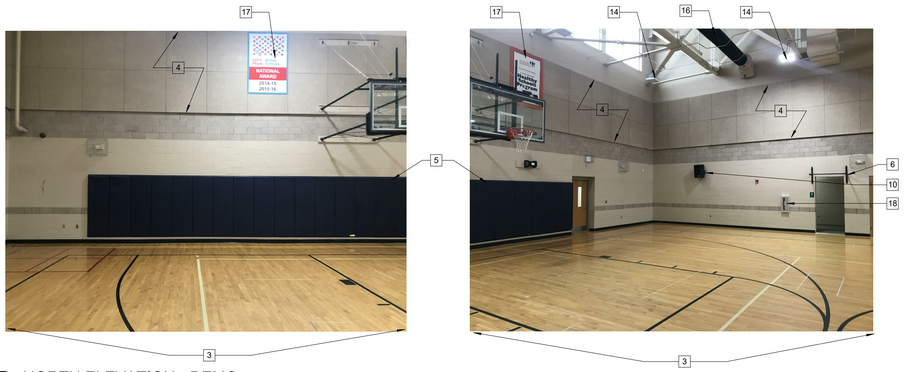


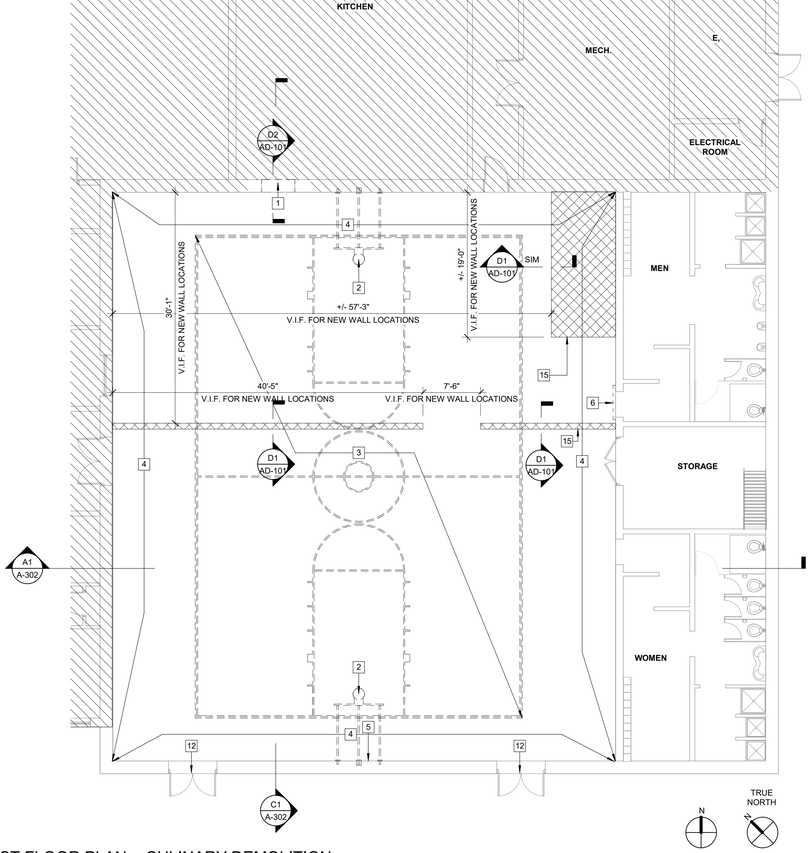
D3 NORTH ELEVATION - DEMO
1" = 1'-0"



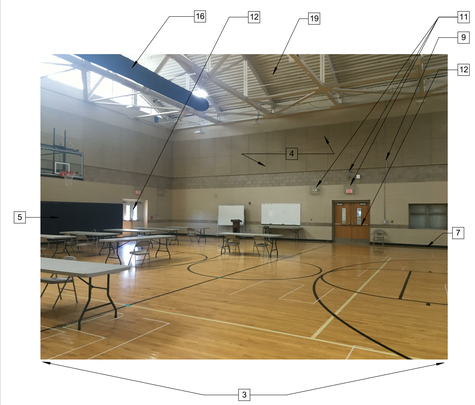
B3 EAST ELEVATION - DEMO
1" = 1'-0"



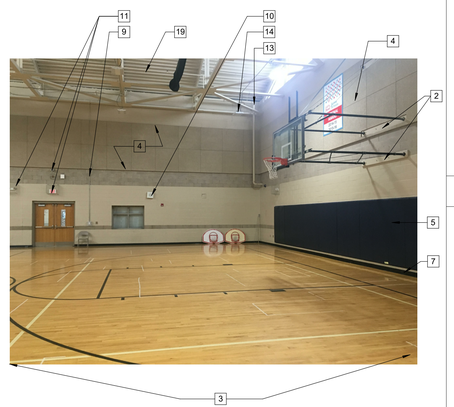
B5 SOUTH ELEVATION - DEMO
1" = 1'-0"



A1 1ST FLOOR PLAN - CULINARY DEMOLITION
1/8" = 1'-0"



A3 WEST ELEVATION - DEMO
1" = 1'-0"



DEMOLITION PLAN SHEET NOTES

1. NUMBERED KEY NOTES DO NOT IMPLY SEQUENCE. CONTRACTOR TO PERFORM DEMOLITION WORK AS REQUIRED PER WORK SEQUENCE.
2. DEMOLITION DRAWINGS ARE INTENDED TO SHOW GENERAL AREAS OF DEMOLITION AS WELL AS GENERAL EXISTING CONDITIONS. THEY DO NOT SHOW ALL WORK WHICH MAY BE NECESSARY. COMPARE WITH DRAWINGS INDICATING NEW CONSTRUCTION.
3. REFER TO OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION ON DEMOLITION. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION ON MECHANICAL AND ELECTRICAL DEMOLITION.
4. EXISTING WORK TO REMAIN SHALL BE TEMPORARILY SECURED, BRACED AND STABILIZED UNTIL PERMANENT CONSTRUCTION IS IN PLACE.
5. VERIFY FIELD CONDITIONS PRIOR TO START OF DEMOTION/CONSTRUCTION AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
6. VERIFY THAT CONSTRUCTION INDICATED FOR REMOVAL IS NOT LOAD BEARING OR IS ADEQUATELY SHORED AS INDICATED ON STRUCTURAL DRAWINGS PRIOR TO STARTING ANY WORK.
7. ERECT BARRICADES, FENCES OR OTHER SECURABLE MEANS TO PREVENT UNAUTHORIZED ACCESS INTO CONSTRUCTION ZONES.
8. DO NOT ALLOW MATERIAL AND DEBRIS GENERATED BY DEMOLITION ACTIVITIES TO ACCUMULATE ON THE JOB SITE. REMOVE DAILY AND DISPOSE OF IN A LEGAL MANNER. NO ON-SITE SALE OR BURNING OF REMOVED ITEMS IS PERMITTED.
9. THE CONTRACTOR MUST MAINTAIN ADEQUATE SUPPORT INSULATION, WATERPROOFING, EMERGENCY LIGHTING, SECURITY, ALARMS, ETC. FOR ALL OR PART OF ITEMS WHICH ARE TO REMAIN.
10. TERMINATE AND CAP ANY UTILITY IN WALLS CEILINGS AND FLOORS TO BE REMOVED AND NOT INTENDED FOR REUSE.
11. PREPARE AND PATCH SURFACES THAT RECEIVE NEW FINISHES AS REQUIRED BY REMOVING OR RELOCATING DEVICES, WIRING OR OTHER APPURTENANCES NO LONGER APPROPRIATE FOR THE NEW USE OF THE ROOM.
12. MAINTAIN EXISTING FINISHES, OPERATIONAL CHARACTERISTICS, AND APPEARANCE OF ITEMS SCHEDULED TO REMAIN OR BE REUSED.

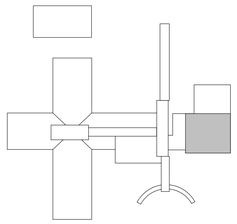
DEMOLITION NUMBERED NOTES

1	DEMOLISH AND PREPARE WALL FOR NEW DOOR AND FRAME. SEE DOOR SCHEDULE FOR SIZE OF OPENING. PATCH AND REPAINT KITCHEN FINISHES.
2	REMOVE EXISTING BASKETBALL GOAL AND ASSOCIATED HARDWARE AND MOUNTING BRACKETS AND RETURN TO OWNER. PATCH AND REPAIR SURFACES TO RECEIVE NEW FINISHES.
3	REMOVE BASKETBALL/VOLLEYBALL COURT PAINT STRIPING. PREPARE EXISTING FLOOR TO BE REFINISHED
4	PREPARE EXISTING WALLS TO BE REFINISHED UP TO 14', CAREFULLY REMOVE EXISTING ACOUSTICAL PANELS AND TURN OVER TO OWNER.
5	REMOVE WALL PADDING AND TURN OVER TO OWNER AND PREPARE SURFACE FOR NEW WALL FINISHES.
6	REMOVE EXISTING PULL UP BAR AND PREPARE SURFACE FOR NEW WALL FINISH
7	DEMOLISH RUBBER BASE AND PREPARE SURFACE FOR NEW WALL FINISH
8	PREPARE DOOR AND FRAME TO RECEIVE NEW FINISH.
9	DEMOLISH ELECTRICAL CONDUIT AND RELOCATE TO PROPOSED LOCATIONS. REFER TO ELEC DWGS.
10	REMOVE SPEAKERS AND RETURN TO OWNER. PATCH AND PREPARE SURFACE FOR NEW WALL FINISH
11	REMOVE EMERGENCY LIGHTING AND EXIT SIGNS. PREP WALL TO RECEIVE NEW EXIT SIGNS. SEE ELEC. DRAWINGS FOR NEW WORK.
12	EXISTING HARDWARE TO BE REPLACED AND DOOR PREPPED TO RECEIVE NEW PAINT.
13	NOT USED
14	REMOVE EXISTING LIGHT FIXTURES.
15	CAREFULLY SAWCUT EXISTING GYM FLOOR TO EXISTING SLAB BELOW. PREP ENTIRE SURFACE TO RECEIVE NEW CONCRETE TOP COAT.
16	REMOVE MECHANICAL DUCT SOCKS. REFER TO MECHANICAL DRAWINGS FOR NEW WORK.
17	CAREFULLY REMOVE AND RETURN BANNER/SIGNAGE TO OWNER. PREP SURFACE TO RECEIVE NEW FINISH.
18	REMOVE FEC AND INFILL MASONRY WALL TO RECEIVE NEW FINISH.
19	SPRAY AND REMOVE ALL SPALLING PAINT AT EXISTING DECK. PATCH AND REPAIR AS NEEDED TO RECEIVE NEW SURFACES.

DEMOLITION PLAN LEGEND

- EXISTING TO BE DEMOLISHED
- EXISTING TO REMAIN
- DEMOLISH EXISTING WOOD GYMNASIUM FLOOR SYSTEM.
- OUT OF SCOPE

KEY PLAN



BRUNSWICK COUNTY

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LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL COMPANY CERT. NO. 50417 NORTH CAROLINA ARCHITECTURE RALEIGH, NORTH CAROLINA

MARY H. BREWER REGISTERED ARCHITECT 13105 APRIL 22, 2020 NORTH CAROLINA Raleigh, N.C.

MEMBERS OF THE AMERICAN INSTITUTE OF ARCHITECTS

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

DEMO PLAN - CULINARY

AD-101

BID DOCUMENTS

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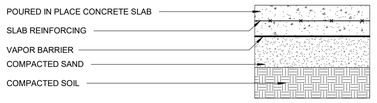
CONSTRUCTION SUBSYSTEMS

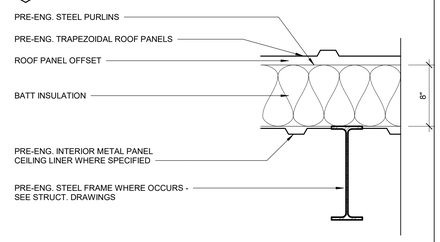
SYMBOL	DESCRIPTION	FIRE AND SOUND RATING REFERENCE

FLOOR SYSTEMS

S1 TYPICAL SLAB ON GRADE CONSTRUCTION



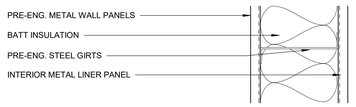
R01 TYPICAL PRE-ENG. METAL BUILDING ROOF CONSTRUCTION



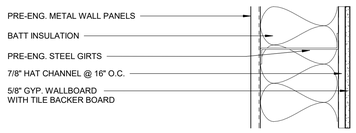
W01A TYPICAL PRE-ENG. METAL BUILDING WALL CONSTRUCTION

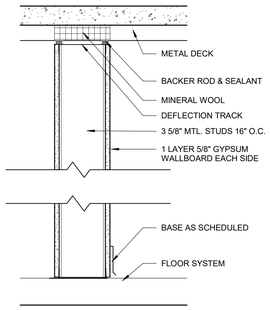


W01B TYPICAL PRE-ENG. METAL BUILDING WALL CONSTRUCTION

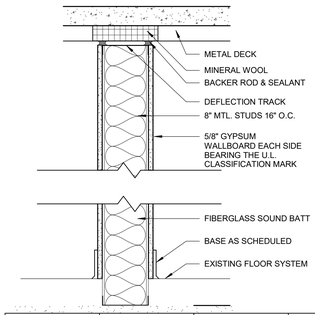


W01C TYPICAL PRE-ENG. METAL BUILDING WALL CONSTRUCTION





A6NX	FIRE RATING	UL TEST NO.	STC RATING - N/A
	N/A	N/A	N/A



A8SX	FIRE RATING	UL TEST NO.	STC RATING - 56
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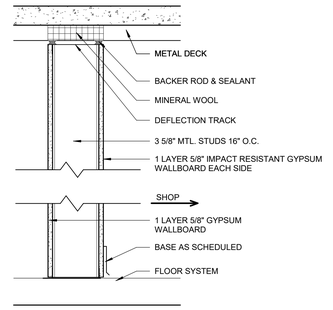
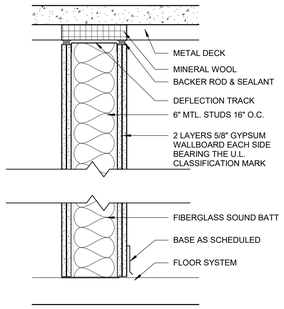
NOTE: IMPACT RESISTANT GYP SIDE OF WALL SHOULD ALWAYS FACE TOWARDS SHOP AREA



A6NR	FIRE RATING	UL TEST NO.	STC RATING - N/A
	N/A	N/A	N/A



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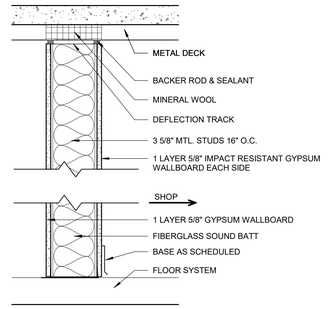
	2 HOUR	U411	NGC 3022



A6SR	FIRE RATING	UL TEST NO.	STC RATING - N/A
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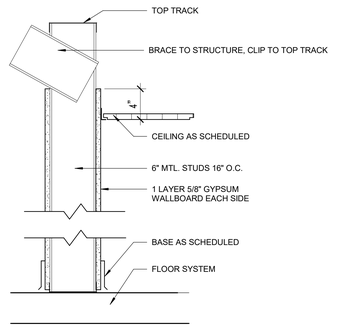
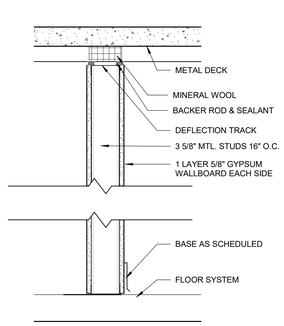
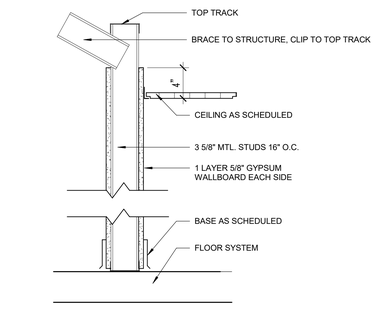


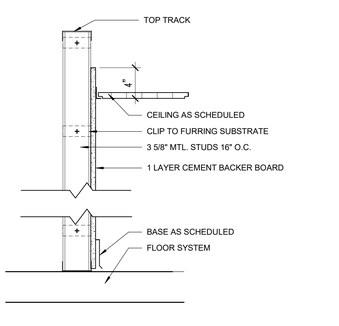
A6N0	FIRE RATING	UL TEST NO.	STC RATING - N/A
	N/A	N/A	N/A



A3NX	FIRE RATING	UL TEST NO.	STC RATING - N/A
	N/A	N/A	N/A



A3N0	FIRE RATING	UL TEST NO.	STC RATING - N/A
	N/A	N/A	N/A



F3NT	FIRE RATING	UL TEST NO.	STC RATING - N/A
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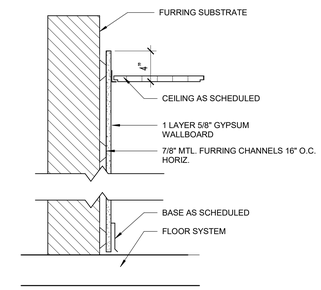

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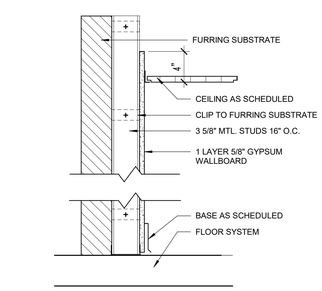
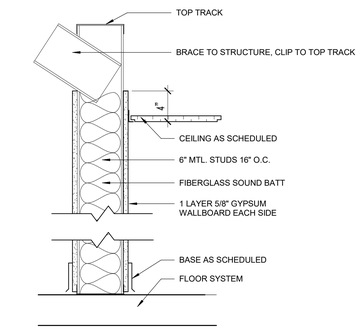


F3N0	FIRE RATING	UL TEST NO.	STC RATING - N/A
	N/A	N/A	N/A



A6S0	FIRE RATING	UL TEST NO.	STC RATING - 47
	N/A	N/A	NGC 2386

GENERAL NOTES

A. THE CONSTRUCTION SUBSYSTEMS AND PARTITION TYPES SHOWN, INDICATE THE GENERAL CONSTRUCTION FEATURES OF THE MAJORITY OF THE CONSTRUCTION SYSTEMS TO BE PROVIDED. THEY ARE NOT INTENDED TO REPRESENT A COMPLETE LISTING OF SYSTEMS REQUIRED AND DO NOT NECESSARILY INDICATE ALL OF THE CONSTRUCTION REQUIREMENTS TO BE PROVIDED BY THE CONTRACT DOCUMENTS.

B. SEE REFLECTED CEILING PLANS FOR ADDITIONAL REQUIREMENTS FOR PARTITION TYPES.

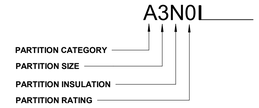
C. REFERENCE FOR FIRE RESISTANCE & SOUND RATINGS:

- CCMA: CAROLINAS CONCRETE MASONRY ASSOCIATION, CONCRETE MASONRY HANDBOOK, SOUND CONTROL
- GA: GYPSUM ASSOCIATION, FIRE RESISTANCE DESIGN MANUAL, ELEVENTH EDITION
- NCMA: NATIONAL CONCRETE MASONRY ASSOCIATION, TEK NOTES
- SA: SHINER AND ASSOCIATES
- SBCC: STANDARD BUILDING CODE CONGRESS, LATEST EDITION
- UL: UNDERWRITERS LABORATORY, INC., FIRE RESISTANCE DIRECTORY

D. WHERE FURRED/SINGLE FACED SYSTEMS OCCUR ON CONCRETE MASONRY UNIT WALL OR PARTITION SURFACE, PROVIDE GYPSUM BOARD TO 4" ABOVE CEILING, OR IF NO CEILING OCCURS, PROVIDE GYPSUM BOARD TO UNDERSIDE OF DECK.

NOTES

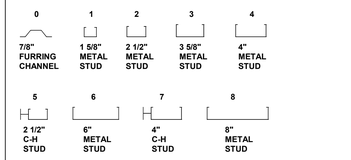
1. CONCRETE MASONRY UNIT WALLS AND PARTITIONS: PROVIDE HORIZONTAL JOINT REINFORCEMENT, VERTICAL REINFORCEMENT, BOND BEAMS, GROUTING, AND ADDITIONAL REQUIREMENTS AS INDICATED BY STRUCTURAL DRAWINGS AND SPECIFICATIONS.
2. COLOR, TEXTURE AND FACE PATTERN MAY VARY. SEE MISCELLANEOUS AND EXTERIOR COLOR SCHEDULE (SPEC SECT 9000), SPECIFICATIONS AND DRAWINGS FOR CLARIFICATION.
3. KEEP CAVITY CLEAR OF ALL MORTAR.
4. SEE FINISH SCHEDULE FOR LOCATION OF APPLIED FINISHES (SUCH AS CERAMIC TILE, WALL COVERING, ETC) THAT MAY AFFECT THE PARTITION SURFACE AND CONSTRUCTION REQUIREMENTS.
5. WHERE CERAMIC TILE AND CEMENTITIOUS BACKER UNIT ARE NOT SCHEDULED TO BE FULL HEIGHT OF PARTITION, PROVIDE GYPSUM BOARD (TYPE X @ RATED PARTITIONS) @ THOSE PORTIONS OF THE PARTITION NOT SCHEDULED TO RECEIVE CERAMIC TILE. CEMENTITIOUS BACKER UNIT TO BE SAME THICKNESS AS GYPSUM BOARD.
6. PROVIDE FIRE RATED CMU (OR EQUIVALENT) WHERE PARTITION INDICATED TO BE FIRE RATED ON REFLECTED CEILING PLANS. RATED PARTITION TO MEET CONSTRUCTION REQUIREMENTS OF FIRE RATING REFERENCE LISTED.
7. PROVIDE MANUFACTURER'S PROPRIETARY TYPE 'X' GYPSUM BOARD (MEETING THE DESIGNATED FIRE REFERENCE LISTED) WHERE PARTITION IS INDICATED TO BE FIRE RATED ON REFLECTED CEILING PLANS. RATED PARTITION TO MEET CONSTRUCTION REQUIREMENTS OF FIRE RATING REFERENCE LISTED.
8. PROVIDE ACOUSTICAL SEALANT (09250.K) AT PERIMETER OF ALL SOUND RATED PARTITIONS AND AT ALL PARTITION PENETRATIONS. IF PARTITION IS FIRE RATED, PROVIDE UL LABELED FIRESTOPPING IN PLACE OF ACOUSTICAL SEALANT. AT PARTITIONS THAT ARE SOUND AND FIRE RATED, PROVIDE ACOUSTICAL SEALANT AT PARTITION PENETRATIONS THAT DO NOT REQUIRE FIRESTOPPING (EXAMPLE: DUCT PENETRATIONS WITH FIRE DAMPERS).

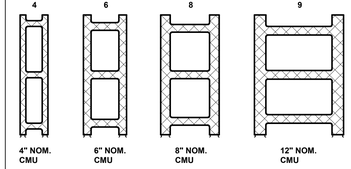


PARTITION CATEGORY

A - METAL STUD	M - MASONRY
C - CHASE	C - CHASE
F - FURRING	S - SHAFT
G - GLASS BLOCK	W - WOOD

PARTITION SIZE





PARTITION INSULATION

S - SOUND ATTENUATION
N - NON-INSULATED

PARTITION RATING

0 - NON-RATED TO 4" ABOVE CEILING
1 - 1 HOUR FIRE PARTITION
2 - 2 HOUR FIRE PARTITION
3 - 3 HOUR FIRE PARTITION
4 - 4 HOUR FIRE PARTITION
R - IMPACT RESISTANT
S - SMOKE PARTITION
T - TILE SUBSTRATE PARTITION
X - NON-RATED TO DECK, SEALED TOP & BOTTOM
Y - STRUCTURE TO DECK, FIN MAT'L TO 4" ABOVE CLG

BRUNSWICK COUNTY

THE COAST ACADEMY

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LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL CORPORATION CERT. NO. 50417 NORTH CAROLINA RALEIGH, NORTH CAROLINA

MARY H. BREHEER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

CONSTRUCTION SUBSYSTEMS & PARTITION TYPES

A-002

BID DOCUMENTS

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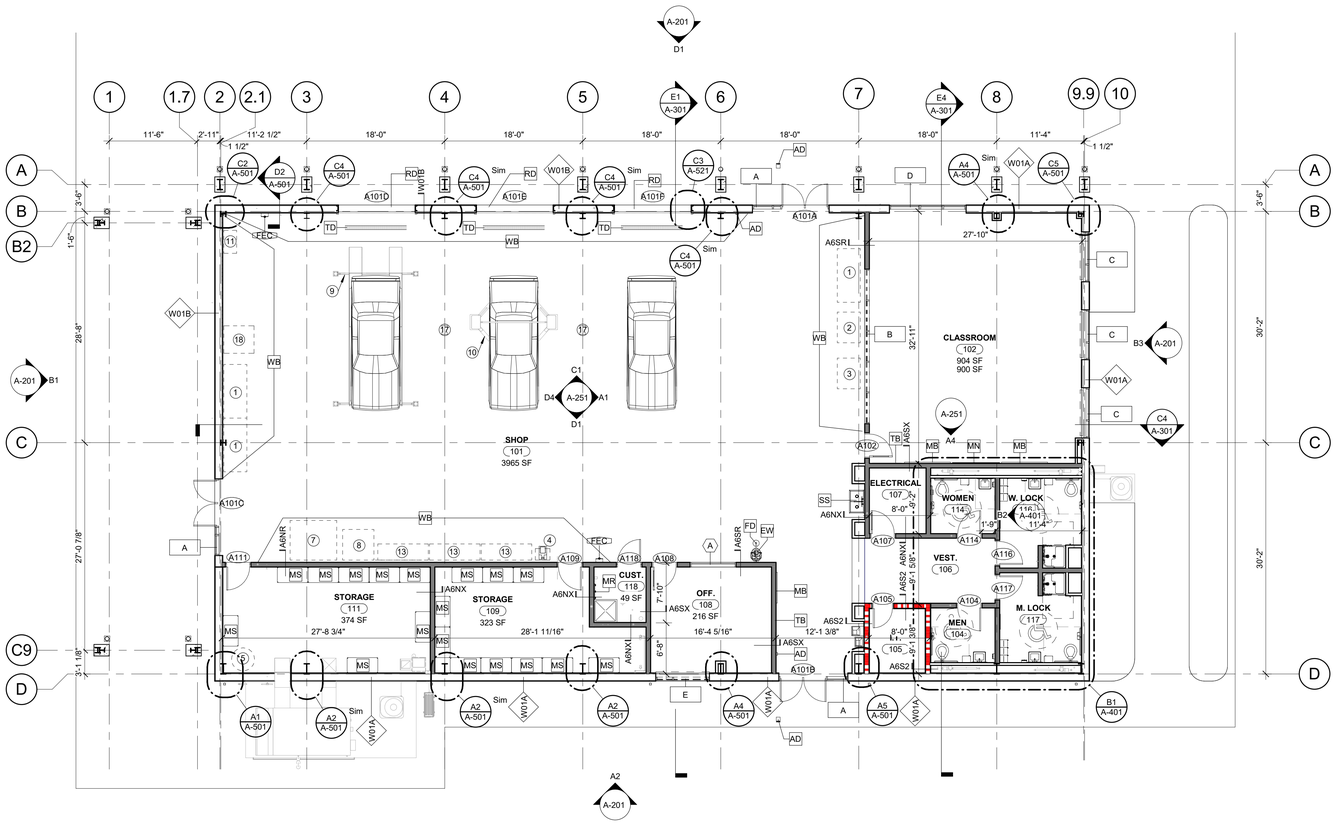


B1 1ST FLOOR PLAN - AUTOMOTIVE

1/8" = 1'-0"

TRUE NORTH

FLOOR PLAN EQUIPMENT NUMBERED NOTES

Plan Note Number	EQUIPMENT	OWNER FURNISHED	OWNER INSTALLED	CONTRACTOR FURNISHED	CONTRACTOR INSTALLED	BASIS OF DESIGN
1	TABLE	X			X	---
2	ARC WELDER	X			X	---
3	TORCH SET	X			X	--
4	DRILL PRESS	X			X	SHOP PRESS BENDBACK RP - 20T
5	COMPRESSOR	X			X	BENDPACK VMX-10120V-603 10 HP 120 GAL, STRUT COMPRESSOR STAND: BRANICK 764
7	TIRE BALANCER	X			X	RANGER LS43B
8	TIRE CHANGER	X			X	RANGER R76ATR
9	FOUR POST LIFT	X			X	BENDPACK HDS-14LSX
10	TWO POST LIFT	X			X	BENDPACK XPR-10AXLS
11	FLAMMABLE STORAGE CABINET			X	X	ULINE H-1564M
13	WORK BENCH	X			X	BENDPAK RWB-2S
15	WASHER			X	X	LG GCWP1069LS2
16	DRYER			X	X	LG GD1329LES2
17	HOSE REEL			X	X	PENDNIG OWNER SELECTION
18	BRAKE LATHE	X			X	PROCUT B17

FLOOR PLAN SHEET NOTES

1. INTERIOR DIMENSIONS INDICATED ARE TO (FACE OF FINISH, FACE OF STUD, PARTITION CENTERLINE) AND CENTERLINES OF COLUMNS, UNO.
2. LOCATE DOOR OPENINGS 4" FROM NEAREST PERPENDICULAR WALL.
3. FIRE AND SOUND RATED WALLS/PARTITIONS TO BE CONSTRUCTED TIGHT TO STRUCTURE, PIPING, DUCTWORK AND OTHER PENETRATIONS. ALL WORK IS TO BE BRACED TO STRUCTURE ABOVE.
4. WHERE PARTITIONS OF DIFFERENT FIRE RATINGS INTERSECT, THE HIGHEST RATED PARTITION SHALL CONTINUE THROUGH. MAINTAIN PARTITION FIRE RATING BEHIND RECESSED FIRE EXTINGUISHER CABINETS.
5. INSTALL BLOCKING IN PARTITIONS FOR CASEWORK, WALL MOUNTED EQUIPMENT, TRIM AND RELATED CONSTRUCTION AS INDICATED IN THE SPECIFICATIONS.
6. SEE LIFE SAFETY PLANS FOR REQUIRED FIRE SEPARATION WALLS.
7. SEE SHEET A-601 FOR DOOR WINDOW & GLAZING TYPES
8. SEE SHEET A-601 FOR LOUVER TYPES
9. SEE SHEET A-002 FOR CONSTRUCTION SUBSYSTEMS (OR PARTITION SCHEDULE).
10. SEE SHEET A-741 FOR CASEWORK SCHEDULES, DESIGNATIONS & DETAILS.
11. SEE SHEET A-401 FOR INTERIOR ELEVATIONS, ACCESSORY DESCRIPTIONS & MOUNTING HEIGHTS.
12. SEE SHEETS A-XXX FOR FINISH FLOORING, TRANSITIONS, PATTERNS AND WALL PROTECTION.
13. SEE SHEET A-721 & A-722 FOR FINISH SCHEDULE.
14. SEE SHEETS A-XXX FOR ENLARGED PLANS INDICATING ADDITIONAL DIMENSIONS AND PARTITION TYPES.
15. SEE SHEET A-801 & A-802 FOR SIGN SCHEDULE & ELEVATIONS AND DETAILS.
16. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
17. SEE BUILDING ELEVATION DRAWINGS FOR LOCATION OF EXTERIOR MASONRY CONTROL JOINTS.

PARTITION NOTES

1. ALL NON-DESIGNATED PARTITIONS SHALL BE TYPE ____
2. ALL PIPE AND CONDUIT PENETRATIONS THRU 2 HR RATED OR MORE PARTITIONS, FLOORS, ROOF, ETC. SHALL BE SEALED WITH A RESPECTIVELY RATED FIRE BARRIER PENETRATION SEALING SYSTEM BY 3M OR U.L. APPROVED EQUAL
3. TILE BACKER BOARD SHALL BE USED IN ALL LOCATIONS TO RECEIVE TILE FINISHES. REFER TO FINISH SCHEDULE AND INTERIOR ELEVATIONS FOR LOCATIONS.
4. CONTRACTOR SHALL COORDINATE WITH MECHANICAL DUCTWORK PRIOR TO FABRICATION OF PARTITION WALLS.
5. SHOULD CONDITIONS OCCUR WHERE A WALL IS UNABLE TO GO STRAIGHT UP TO STRUCTURE DUE TO PIPING, DUCTWORK, ETC., THE PARTITION (GYPSUM BOARD AND FRAMING) MAY JOG HORIZONTALLY ABOVE THE CEILING TO AVOID THE PROBLEM. RATED WALL INTEGRITY SHALL BE MAINTAINED.
6. WHERE STUDS EXTEND TO STRUCTURE AND GYPSUM WALLBOARD AND SOUND ATTENUATION BLANKETS EXTEND JUST ABOVE THE FINISH CEILING, CAP OFF PARTITION FINISHES WITH A RUNNER CHANNEL WHEN CEILING PLENUM IS USED AS A RETURN AIR PLENUM.
7. DIMENSIONAL CONFLICTS BETWEEN PARTITION TYPES AND THE ARCHITECTURAL FLOOR PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT.
8. SEE LIFE SAFETY PLANS FOR THE LOCATIONS OF SMOKE BARRIERS, SMOKE PARTITIONS AND FIRE-RATED PARTITIONS.
9. REFER TO UNDERWRITERS LABORATORIES, INC. FIRE RESISTANCE VOLUMES - CURRENT EDITION FOR SPECIFIC CONSTRUCTION REQUIREMENTS OF U.L. LISTED ASSEMBLIES.
10. REFER TO MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR TYPICAL U.L. LISTED PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE PROJECT-SPECIFIC U.L. LISTED ASSEMBLIES FOR PENETRATIONS.
11. REFER TO DETAIL ___/___ FOR TYPICAL WALL FRAMING FOR FIRE DAMPERS IN RATED WALLS. COORDINATE EXACT FRAMING REQUIREMENTS WITH FIRE DAMPER MANUFACTURER. (COORDINATE ALL PARTITION CONSTRUCTION WITH MECHANICAL PRIME CONTRACTOR PRIOR TO COMMENCING PARTITION CONSTRUCTION).
12. ALL PIPE AND CONDUIT PENETRATIONS THRU 2 HR RATED OR MORE PARTITIONS, FLOORS, ROOF, ETC. SHALL BE SEALED WITH A RESPECTIVELY RATED FIRE BARRIER PENETRATION SEALING SYSTEM BY 3M OR U.L. APPROVED EQUAL
13. AT ALL EXISTING AND CONSTRUCTED PARTITIONS THE CONTRACTOR IS TO MAINTAIN THE FIRE-RESISTIVE INTEGRITY

KEY NOTES

AD	AUTOMATIC DOOR OPENER (ADA)
EW	EYE WASH STATION
FD	FLOOR DRAIN
MB	MARKER BOARD
MN	MONITOR
MR	MOP RACK
MS	METAL SHELVING
RD	MANUAL ROLL UP DOOR. SEE ELECTRICAL DWGS FOR ALTERNATE INFORMATION.
SS	SHOP SINK
TB	TACK BOARD
TD	TRENCH DRAIN, SEE PLUMBING DRAWINGS
WB	PROVIDE TWO ROWS OF PERIMETER WALL BLOCKING - VERIFY HEIGHT WITH OWNER

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

EXISTING PARTITION

NON-RATED PARTITION TO CEILING

NON-RATED PARTITION TO DECK

1 HR. RATED PARTITION TO DECK

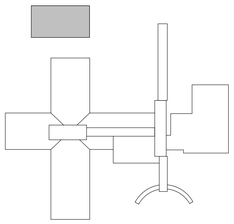
2 HR. RATED PARTITION TO DECK

4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

OUT OF SCOPE

KEY PLAN



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RALEIGH, NORTH CAROLINA

MARY H. BRECHEEN
REGISTERED ARCHITECT
13105
April 25, 2018
NORTH CAROLINA
Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL, EL
CHECKED BY: MB

FIRST FLOOR PLAN - AUTOMOTIVE

A-101

BID DOCUMENTS

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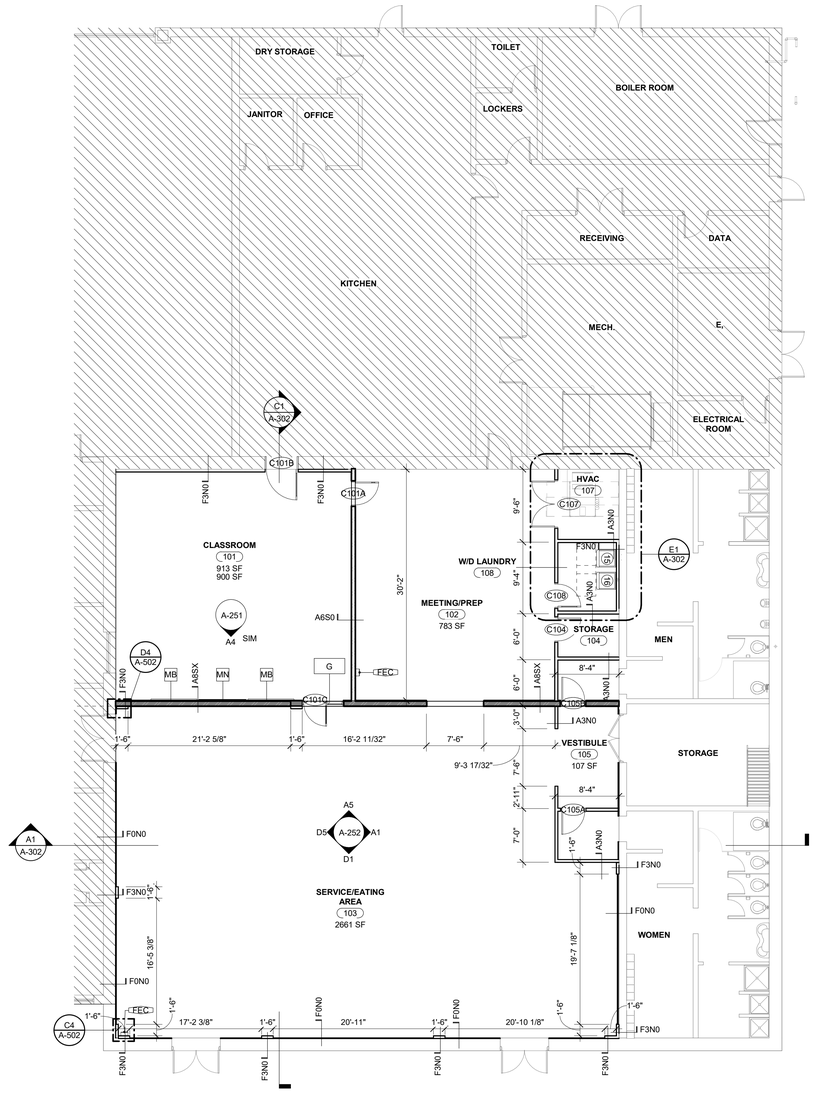

A1 1ST FLOOR PLAN - CULINARY
1/8" = 1'-0"

TRUE NORTH

FLOOR PLAN SHEET NOTES

1. INTERIOR DIMENSIONS INDICATED ARE TO (FACE OF FINISH, FACE OF STUD, PARTITION CENTERLINE) AND CENTERLINES OF COLUMNS, UNO.
2. LOCATE DOOR OPENINGS 4" FROM NEAREST PERPENDICULAR WALL.
3. FIRE AND SOUND RATED WALLS/PARTITIONS TO BE CONSTRUCTED TIGHT TO STRUCTURE, PIPING, DUCTWORK AND OTHER PENETRATIONS. ALL WORK IS TO BE BRACED TO STRUCTURE ABOVE.
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15. SEE SHEET A-801 & A-802 FOR SIGN SCHEDULE & ELEVATIONS AND DETAILS.
16. SEE STRUCTURAL DRAWINGS FOR SLAB DEPRESSIONS AND CUTOUTS.
17. SEE BUILDING ELEVATION DRAWINGS FOR LOCATION OF EXTERIOR MASONRY CONTROL JOINTS.

PARTITION NOTES

1. ALL NON-DESIGNATED PARTITIONS SHALL BE TYPE ____
2. ALL PIPE AND CONDUIT PENETRATIONS THRU 2 HR RATED OR MORE PARTITIONS, FLOORS, ROOF, ETC. SHALL BE SEALED WITH A RESPECTIVELY RATED FIRE BARRIER PENETRATION SEALING SYSTEM BY 3M OR U.L. APPROVED EQUAL
3. TILE BACKER BOARD SHALL BE USED IN ALL LOCATIONS TO RECEIVE TILE FINISHES. REFER TO FINISH SCHEDULE AND INTERIOR ELEVATIONS FOR LOCATIONS.
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8. SEE LIFE SAFETY PLANS FOR THE LOCATIONS OF SMOKE BARRIERS, SMOKE PARTITIONS AND FIRE-RATED PARTITIONS.
9. REFER TO UNDERWRITERS LABORATORIES, INC. FIRE RESISTANCE VOLUMES - CURRENT EDITION FOR SPECIFIC CONSTRUCTION REQUIREMENTS OF U.L. LISTED ASSEMBLIES.
10. REFER TO MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR TYPICAL U.L. LISTED PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE PROJECT-SPECIFIC U.L. LISTED ASSEMBLIES FOR PENETRATIONS.
11. REFER TO DETAIL ___/___ FOR TYPICAL WALL FRAMING FOR FIRE DAMPERS IN RATED WALLS. COORDINATE EXACT FRAMING REQUIREMENTS WITH FIRE DAMPER MANUFACTURER. (COORDINATE ALL PARTITION CONSTRUCTION WITH MECHANICAL PRIME CONTRACTOR PRIOR TO COMMENCING PARTITION CONSTRUCTION).
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13. AT ALL EXISTING AND CONSTRUCTED PARTITIONS THE CONTRACTOR IS TO MAINTAIN THE FIRE-RESISTIVE INTEGRITY

KEY NOTES

AD	AUTOMATIC DOOR OPENER (ADA)
EW	EYE WASH STATION
FD	FLOOR DRAIN
MB	MARKER BOARD
MN	MONITOR
MR	MOP RACK
MS	METAL SHELVING
RD	MANUAL ROLL UP DOOR. SEE ELECTRICAL DWGS FOR ALTERNATE INFORMATION.
SS	SHOP SINK
TB	TACK BOARD
TD	TRENCH DRAIN. SEE PLUMBING DRAWINGS
WB	PROVIDE TWO ROWS OF PERIMETER WALL BLOCKING - VERIFY HEIGHT WITH OWNER

PARTITION LEGEND

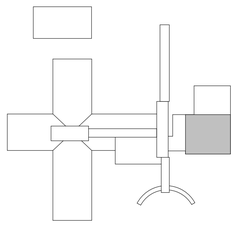
1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

EXISTING PARTITION
NON-RATED PARTITION TO CEILING
NON-RATED PARTITION TO DECK
1 HR. RATED PARTITION TO DECK
2 HR. RATED PARTITION TO DECK
4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

OUT OF SCOPE

KEY PLAN



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MARY H. BRICHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

FIRST FLOOR PLAN - CULINARY

A-102

BID DOCUMENTS

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A2
A-201

B1 REFLECTED CEILING PLAN - AUTOMOTIVE
1/8" = 1'-0"

TRUE NORTH

REFLECTED CEILING PLAN SHEET NOTES

1. SEE SHEET A-002 FOR WALL TYPES AND HEIGHT OF WALLS ABOVE CEILING.
2. SEE FINISH SCHEDULE FOR CEILING TYPES & MATERIALS IN EACH ROOM / AREA.
3. SEE SHEET A-XXX FOR SEISMIC CEILING CONSTRUCTION DETAILS. (N/A)
4. PERIMETER TRACK FOR ALL ACOUSTICAL CEILINGS GRIDS TO BE 2" WIDE INSTALLED IN ACCORDANCE WITH IBC AND CISCA GUIDELINES.
5. DIMENSIONS ARE TO FACE OF STUD OR MASONRY.
6. CEILING GRIDS/TILES TO BE CENTERED IN ALL ROOMS UNLESS NOTED OTHERWISE. PARTIAL TILES AT ROOM PERIMETERS SHALL NOT BE LESS THAN 6" IN EITHER DIMENSION.
7. ALL CEILINGS TO BE 9'-0" AFF, UNO. CEILING HEIGHTS SHOWN ON THE REFLECTED CEILING PLANS ARE NON-TYPICAL AND SPECIFIC TO THE AREA INDICATED. REFER TO INTERIOR ELEVATIONS FOR THE HEIGHTS OF SOFFITS ABOVE CASEWORK.
8. SEE ELECTRICAL, FIRE ALARM AND FIRE PROTECTION DRAWINGS FOR SPECIAL SYSTEMS, SMOKE DETECTORS, LIGHTING AND WALL MOUNTED FIXTURES NOT SHOWN ON THIS SHEET. COORDINATE LOCATIONS OF ALL FIXTURES NOT INDICATED WITH LAYOUT INDICATED ON THIS SHEET.
9. LIGHT FIXTURES AND MECHANICAL DIFFUSERS ARE SHOWN FOR POSITIONING IN FINISH CEILING SYSTEM. COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR FIXTURE TYPES, MECHANICAL DIFFUSERS, WALL MOUNTED FIXTURES AND INSTALLATION OF FIXTURES IN SPACES WITHOUT CEILINGS. (LIGHTING AND HVAC DIFFUSERS ARE SHOWN FOR COORDINATION ONLY - SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION).
10. SEE MECHANICAL FLOOR PLANS FOR EXTENT OF EXPOSED DUCTWORK IN EXPOSED STRUCTURE AREAS WITHOUT CEILINGS.
11. EXTEND PERIMETER WALLS AND FINISH TO STRUCTURE ABOVE AT EXPOSED STRUCTURE AREAS. PAINT ALL EXPOSED DUCTWORK, PIPING, HANGERS, ETC..
12. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR MOUNTING LOCATIONS OF ITEMS WHERE NO CEILING IS INDICATED.
13. CENTER LIGHTS, DIFFUSERS, EXIT SIGNS SMOKE DETECTORS, SPEAKERS, GENERAL ALARM SPEAKERS/STROBES & MISC DEVICES IN CEILING TILES WHERE THEY ARE LOCATED. ALIGN MULTIPLE ITEM CENTER OR EDGES.
14. LOCATE MECHANICAL GRILLES AND DIFFUSERS SHOWN IN CORNERS OR NEAR WALL TO 12" OFF WALLS, UNO.
15. INSTALL ACCESS PANELS IN GYPSUM BOARD CEILINGS AT DUCT DAMPER CONTROLS, DUCT MOUNTED SMOKE DETECTORS, MANUAL DUCT CONTROLS, ETC.
16. ALL SINGLE LIGHT FIXTURES SHALL BE CENTERED IN THE CEILING WITHIN THEY OCCUR.
17. LIGHTS LOCATED IN STAIRS SHALL OCCUR AT EACH FLOOR AND INTERMEDIATE LANDINGS.
18. LOCATE SPRINKLER HEADS IN THE CENTER ZONE OF THE CEILING TILE. ALIGN CORRIDOR SPRINKLER HEADS IN THE SAME LINE PARALLEL TO THE WALL WITHIN EACH SPECIFIC CEILING CONSTRUCTION.
19. SPRINKLER HEADS, OTHER THAN CONCEALED, SHALL BE FULLY RECESSED (CENTER IN CEILING TILE).
20. ALL GWB CEILINGS TO RECEIVE CONCEALED SPRINKLER HEADS.

RCP LEGEND

- 2x4 LAY-IN CEILING PANEL
- 2X2 LAY-IN IMPACT RESISTANT CEILING PANEL
- 2x4 LAY-IN VINYL FACED CEILING PANEL
- GYPSUM BOARD
- EXPOSED STRUCTURE - PAINTED
- METAL CEILING LINER
- 4' INDUSTRIAL FIXTURE
- RS — ROLLER SHADE
- 1'-0" AFF — HEIGHT (FEET, INCHES) ABOVE FINISHED FLOOR, 9'-0" U.N.O.
- 1 X 4 FLUORESCENT FIXTURE
- 2 X 4 FLUORESCENT FIXTURE
- 2 X 2 FLUORESCENT FIXTURE
- INCANDESCENT FIXTURE
- SUPPLY AIR DIFFUSER
- RETURN AIR DIFFUSER
- EXHAUST FAN
- PENDANT FIXTURE
- PA — PA / INTERCOM SPEAKER, SEE ELEC.
- F — HORN/STROBE, SEE ELEC.

PARTITION LEGEND

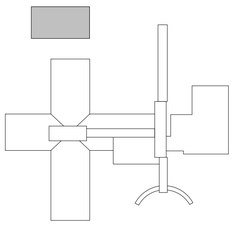
1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

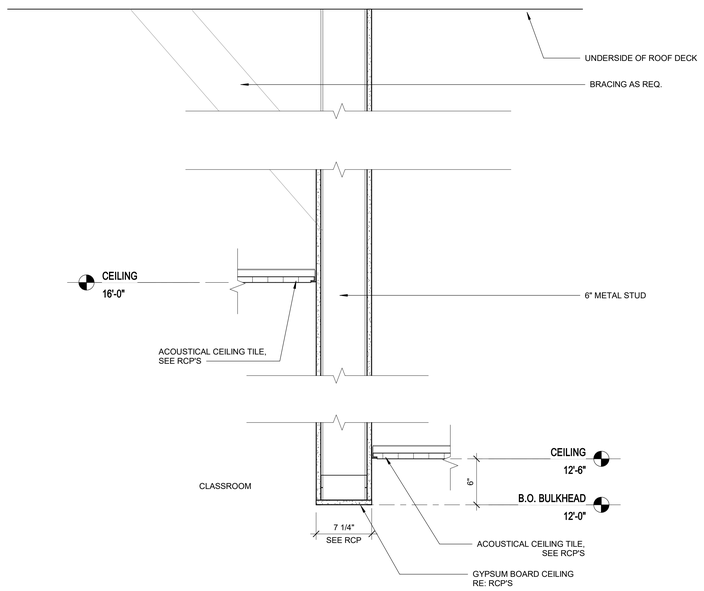
- EXISTING PARTITION
- NON-RATED PARTITION TO CEILING
- NON-RATED PARTITION TO DECK
- 1 HR. RATED PARTITION TO DECK
- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

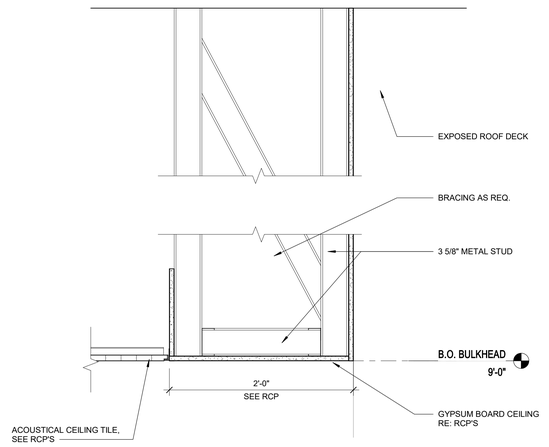
- OUT OF SCOPE

KEY PLAN





A2 BULKHEAD DETAIL AT CLASSROOM
1 1/2" = 1'-0"



A4 TYP. BULKHEAD DETAIL AT CORRIDOR
1 1/2" = 1'-0"

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PROJECT: 8201-191241
DATE: 04.22.2020
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REFLECTED CEILING PLAN - AUTOMOTIVE

A-121

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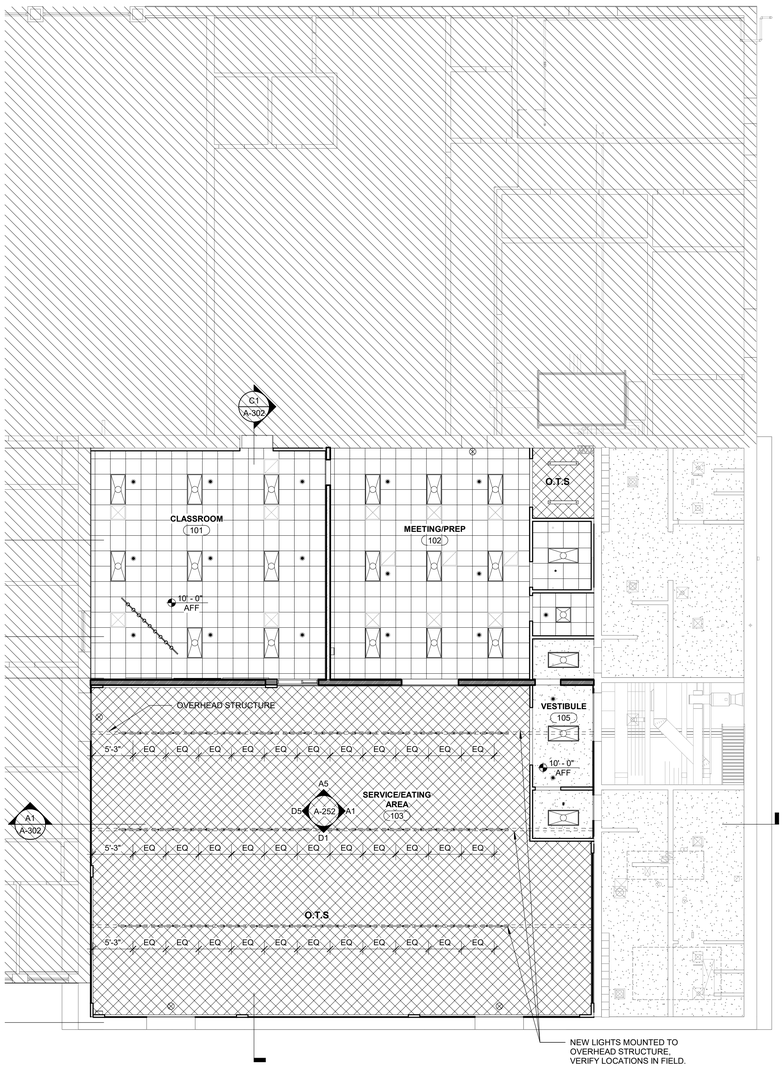


A1 REFLECTED CEILING PLANS - CULINARY
1/8" = 1'-0"

TRUE NORTH

REFLECTED CEILING PLAN SHEET NOTES

1. SEE SHEET A-002 FOR WALL TYPES AND HEIGHT OF WALLS ABOVE CEILING.
2. SEE FINISH SCHEDULE FOR CEILING TYPES & MATERIALS IN EACH ROOM / AREA.
3. SEE SHEET A-XXX FOR SEISMIC CEILING CONSTRUCTION DETAILS. (N/A)
4. PERIMETER TRACK FOR ALL ACOUSTICAL CEILINGS GRIDS TO BE 2" WIDE INSTALLED IN ACCORDANCE WITH IBC AND CISCA GUIDELINES.
5. DIMENSIONS ARE TO FACE OF STUD OR MASONRY.
6. CEILING GRIDS/TILES TO BE CENTERED IN ALL ROOMS UNLESS NOTED OTHERWISE. PARTIAL TILES AT ROOM PERIMETERS SHALL NOT BE LESS THAN 6" IN EITHER DIMENSION.
7. ALL CEILINGS TO BE 9'-0" AFF, UNO. CEILING HEIGHTS SHOWN ON THE REFLECTED CEILING PLANS ARE NON-TYPICAL AND SPECIFIC TO THE AREA INDICATED. REFER TO INTERIOR ELEVATIONS FOR THE HEIGHTS OF SOFFITS ABOVE CASEWORK.
8. SEE ELECTRICAL, FIRE ALARM AND FIRE PROTECTION DRAWINGS FOR SPECIAL SYSTEMS, SMOKE DETECTORS, LIGHTING AND WALL MOUNTED FIXTURES NOT SHOWN ON THIS SHEET. COORDINATE LOCATIONS OF ALL FIXTURES NOT INDICATED WITH LAYOUT INDICATED ON THIS SHEET.
9. LIGHT FIXTURES AND MECHANICAL DIFFUSERS ARE SHOWN FOR POSITIONING IN FINISH CEILING SYSTEM. COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR FIXTURE TYPES, MECHANICAL DIFFUSERS, WALL MOUNTED FIXTURES AND INSTALLATION OF FIXTURES IN SPACES WITHOUT CEILINGS. (LIGHTING AND HVAC DIFFUSERS ARE SHOWN FOR COORDINATION ONLY - SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION).
10. SEE MECHANICAL FLOOR PLANS FOR EXTENT OF EXPOSED DUCTWORK IN EXPOSED STRUCTURE AREAS WITHOUT CEILINGS.
11. EXTEND PERIMETER WALLS AND FINISH TO STRUCTURE ABOVE AT EXPOSED STRUCTURE AREAS. PAINT ALL EXPOSED DUCTWORK, PIPING, HANGERS, ETC..
12. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR MOUNTING LOCATIONS OF ITEMS WHERE NO CEILING IS INDICATED.
13. CENTER LIGHTS, DIFFUSERS, EXIT SIGNS SMOKE DETECTORS, SPEAKERS, GENERAL ALARM SPEAKERS/STROBES & MISC DEVICES IN CEILING TILES WHERE THEY ARE LOCATED. ALIGN MULTIPLE ITEM CENTER OR EDGES.
14. LOCATE MECHANICAL GRILLES AND DIFFUSERS SHOWN IN CORNERS OR NEAR WALL TO 12" OFF WALLS, UNO.
15. INSTALL ACCESS PANELS IN GYPSUM BOARD CEILINGS AT DUCT DAMPER CONTROLS, DUCT MOUNTED SMOKE DETECTORS, MANUAL DUCT CONTROLS, ETC.
16. ALL SINGLE LIGHT FIXTURES SHALL BE CENTERED IN THE CEILING WITHIN THEY OCCUR.
17. LIGHTS LOCATED IN STAIRS SHALL OCCUR AT EACH FLOOR AND INTERMEDIATE LANDINGS.
18. LOCATE SPRINKLER HEADS IN THE CENTER ZONE OF THE CEILING TILE. ALIGN CORRIDOR SPRINKLER HEADS IN THE SAME LINE PARALLEL TO THE WALL WITHIN EACH SPECIFIC CEILING CONSTRUCTION.
19. SPRINKLER HEADS, OTHER THAN CONCEALED, SHALL BE FULLY RECESSED (CENTER IN CEILING TILE).
20. ALL GWB CEILINGS TO RECEIVE CONCEALED SPRINKLER HEADS.

RCP LEGEND

- 2x4 LAY-IN CEILING PANEL
- 2X2 LAY-IN IMPACT RESISTANT CEILING PANEL
- 2x4 LAY-IN VINYL FACED CEILING PANEL
- GYPSUM BOARD
- EXPOSED STRUCTURE - PAINTED
- METAL CEILING LINER
- 4' INDUSTRIAL FIXTURE
- RS — ROLLER SHADE
- 1'-0" AFF — HEIGHT (FEET, INCHES) ABOVE FINISHED FLOOR, 9'-0" U.N.O.
- 1 X 4 FLUORESCENT FIXTURE
- 2 X 4 FLUORESCENT FIXTURE
- 2 X 2 FLUORESCENT FIXTURE
- INCANDESCENT FIXTURE
- SUPPLY AIR DIFFUSER
- RETURN AIR DIFFUSER
- EXHAUST FAN
- PENDANT FIXTURE
- PA / INTERCOM SPEAKER, SEE ELEC.
- HORN/STROBE, SEE ELEC.

PARTITION LEGEND

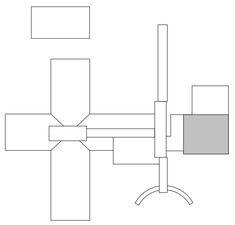
1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

- EXISTING PARTITION
- NON-RATED PARTITION TO CEILING
- NON-RATED PARTITION TO DECK
- 1 HR. RATED PARTITION TO DECK
- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

- OUT OF SCOPE

KEY PLAN



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April 22, 2020
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REFLECTED CEILING PLAN - CULINARY

A-122

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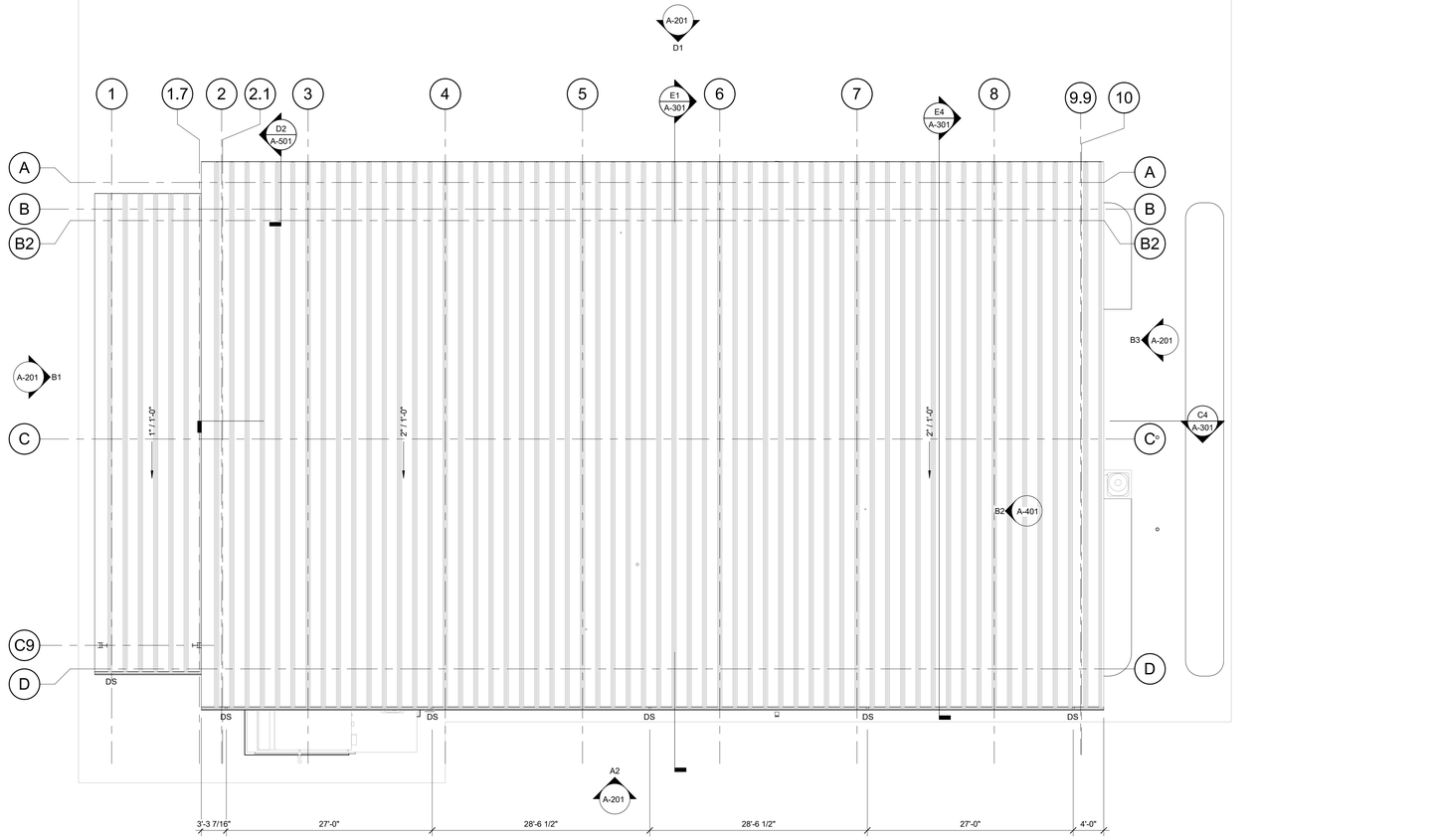

B1 ROOF PLAN - AUTOMOTIVE
1/8" = 1'-0"

TRUE NORTH

ROOF PLAN SHEET NOTES

1. ROOF SURFACE SHOWN IS PVC MEMBRANE, UNO.
2. LOCATIONS AND SIZES OF MECHANICAL EQUIPMENT ARE APPROXIMATE. SEE STRUCTURAL AND MECHANICAL DRAWINGS FOR ACTUAL LOCATIONS.
3. SEE PLUMBING DRAWINGS FOR VENTS THROUGH ROOF LOCATIONS.
4. SEE SHEET A-551 FOR TYPICAL ROOF DETAILS AND NOTES.
5. SEE STRUCTURAL DRAWINGS FOR FASTENING REQUIREMENTS.
6. TIE ALL DOWNSPOUTS INTO THE STORM DRAIN SYSTEM.
7. COPING CORNERS TO BE PREFABRICATED PIECES WITH EQUAL RETURNS A MINIMUM OF 18" IN LENGTH. TOP HORIZONTAL JOINTS TO BE STANDING SEAM, VERTICAL JOINTS TO BE FLAT JOINTS.
8. WOOD BLOCKING SHOWN IN ROOF DETAILING SHALL BE PRESERVATIVE TREATED. USE SUITABLE FASTENERS WITH THE PRESERVATIVE TREATED WOOD.
9. EXTEND ALL PENETRATIONS, CURBS, AND COMPONENTS A MINIMUM OF 8" ABOVE THE ROOF SURFACE. PROVIDE 12" CLEAR DISTANCE BETWEEN PENETRATIONS AND TO ANY VERTICAL SURFACE.
10. IF NOT DETAILED, APPLY MOST STRINGENT CONDITION OF NRCA AND SMACNA (CURRENT EDITIONS) STANDARDS FOR ROOF DETAIL CONDITIONS.

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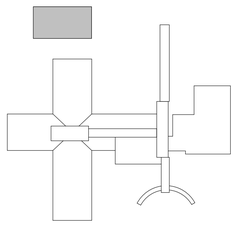

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ROOF PLAN - AUTOMOTIVE

A-151

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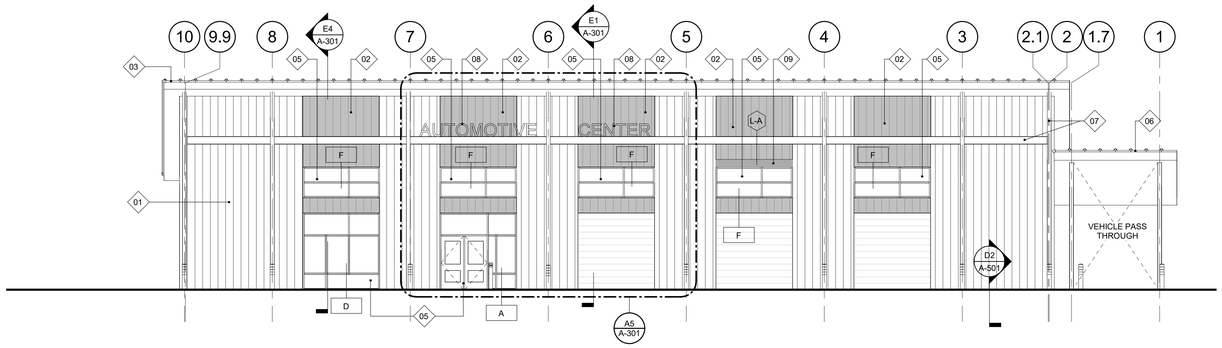
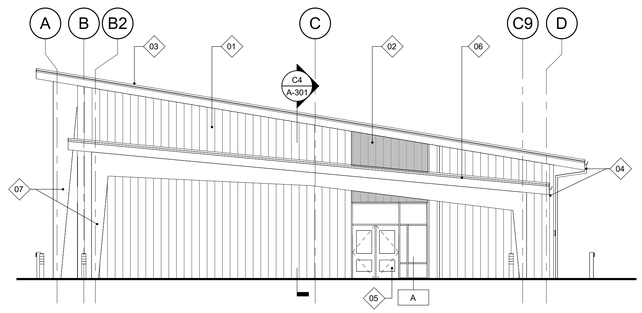
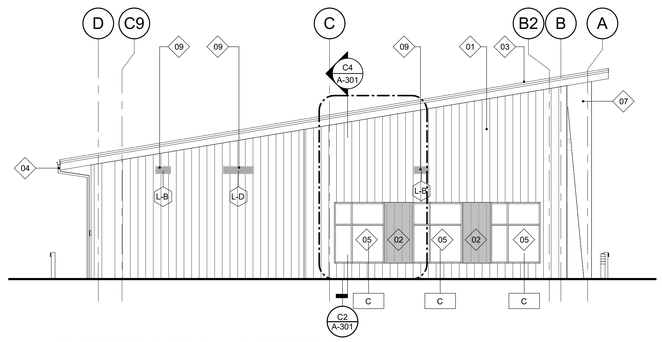


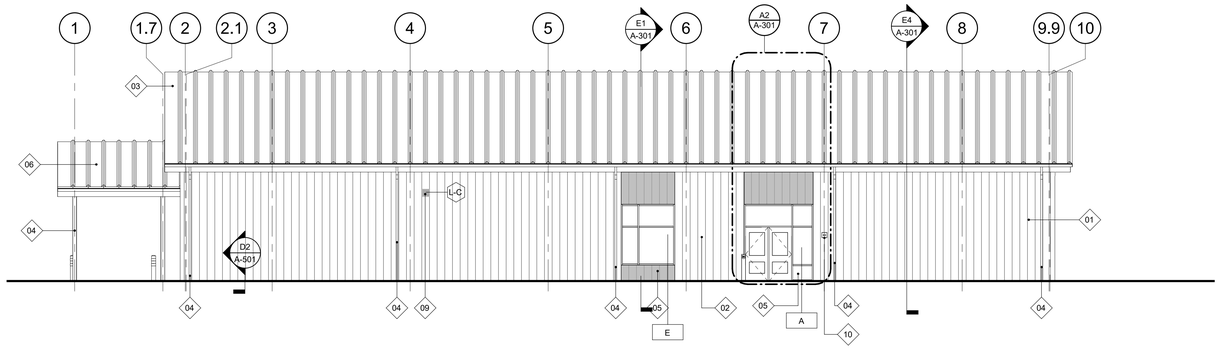
D1 NORTH ELEVATION - AUTOMOTIVE
1/8" = 1'-0"



B1 WEST ELEVATION - AUTOMOTIVE
1/8" = 1'-0"



B3 EAST ELEVATION - AUTOMOTIVE
1/8" = 1'-0"



A2 SOUTH ELEVATION - AUTOMOTIVE
1/8" = 1'-0"

EXTERIOR MATERIALS LEGEND

01	METAL WALL SYSTEM - FACTORY FINISHED
02	METAL WALL SYSTEM - PAINTED ACCENT COLOR IN FIELD
03	METAL ROOF SYSTEM - FACTORY FINISHED
04	DOWNSPOUT - FACTORY FINISHED, TIE INTO STORM DRAIN
05	ALUMINUM STOREFRONT SYSTEM WITH INSULATED GLAZING UNITS
06	PRE-ENGINEERED CANOPY
07	STEEL BEAM AND COLUMN
08	EXTRUDED METAL SIGNAGE
09	METAL LOUVER - PAINTED TO MATCH METAL WALL SYSTEM.
10	KNOX BOX

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EXTERIOR ELEVATIONS - AUTOMOTIVE

A-201

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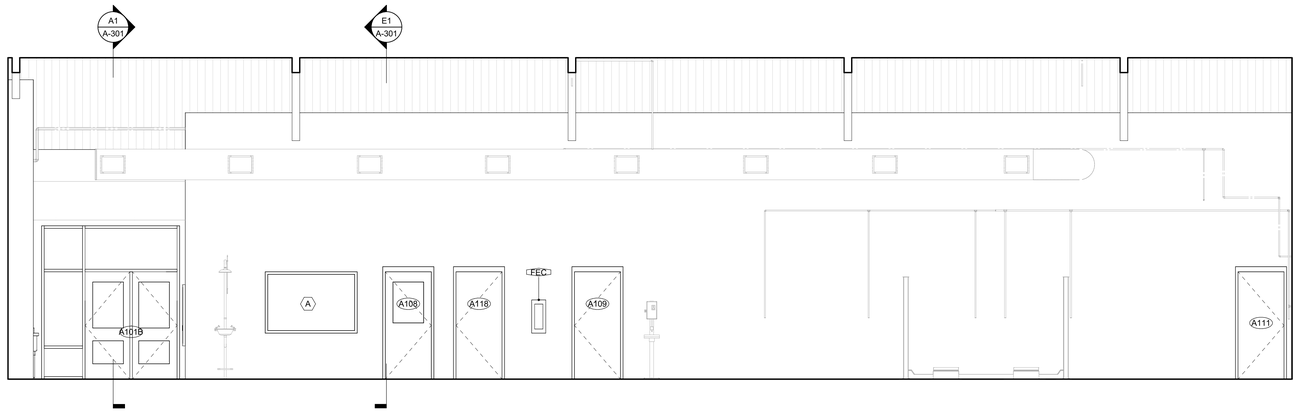
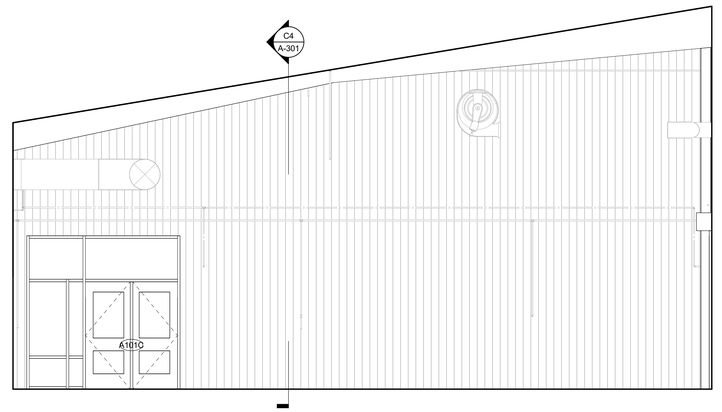
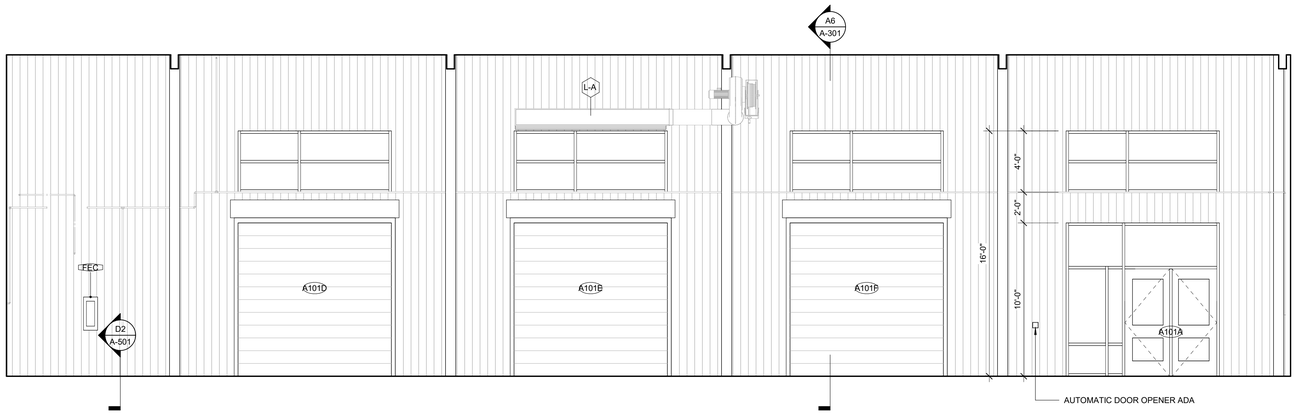


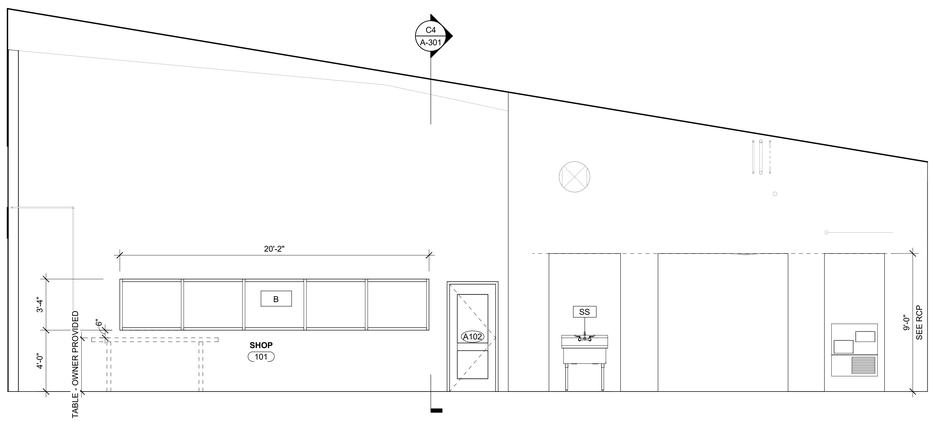
D1 AUTOMOTIVE - INTERIOR ELEVATION - SOUTH
1/4" = 1'-0"



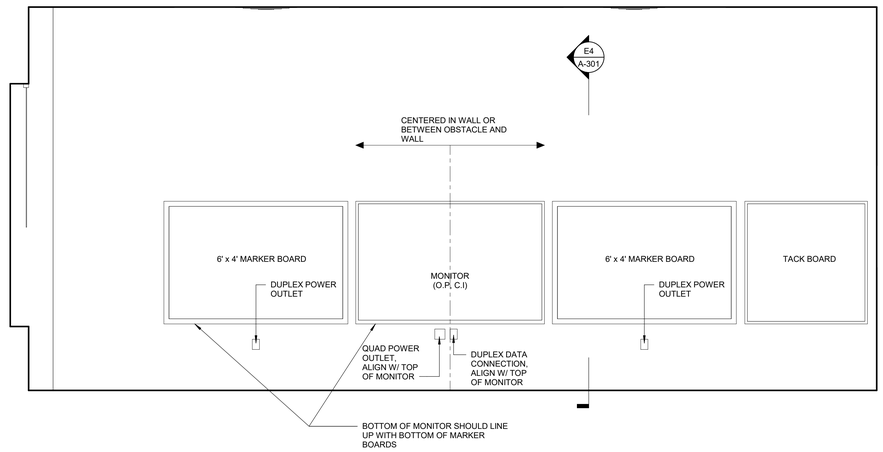
D4 AUTOMOTIVE - INTERIOR ELEVATION - WEST
1/4" = 1'-0"



C1 AUTOMOTIVE - INTERIOR ELEVATION - NORTH
1/4" = 1'-0"



A1 INTERIOR AUTOMOTIVE ELEVATION - EAST
1/4" = 1'-0"



A4 CLASSROOM TEACHING WALL ELEVATION - TYP.
1/2" = 1'-0"

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INTERIOR ELEVATIONS - AUTOMOTIVE

A-251

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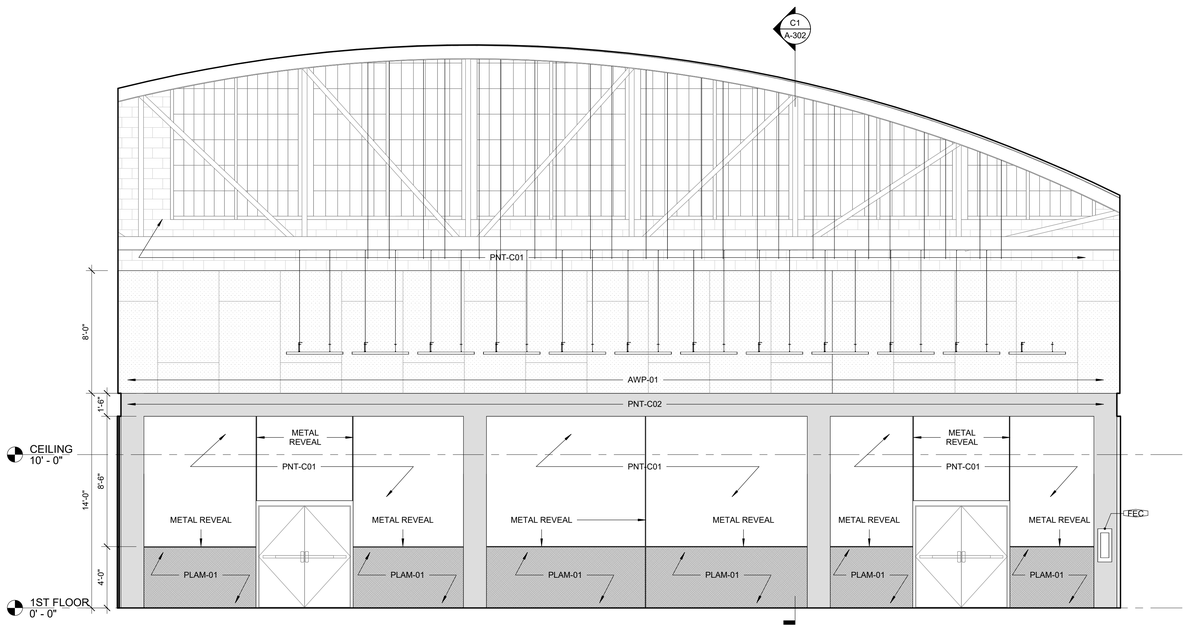
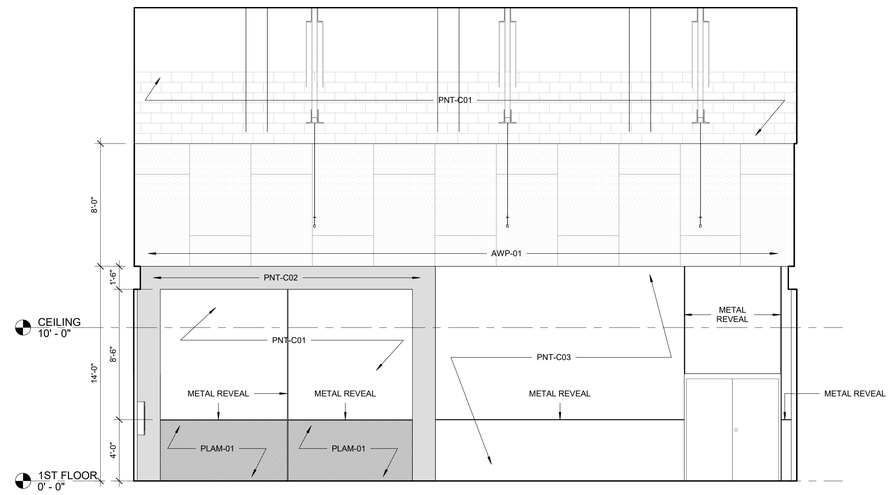
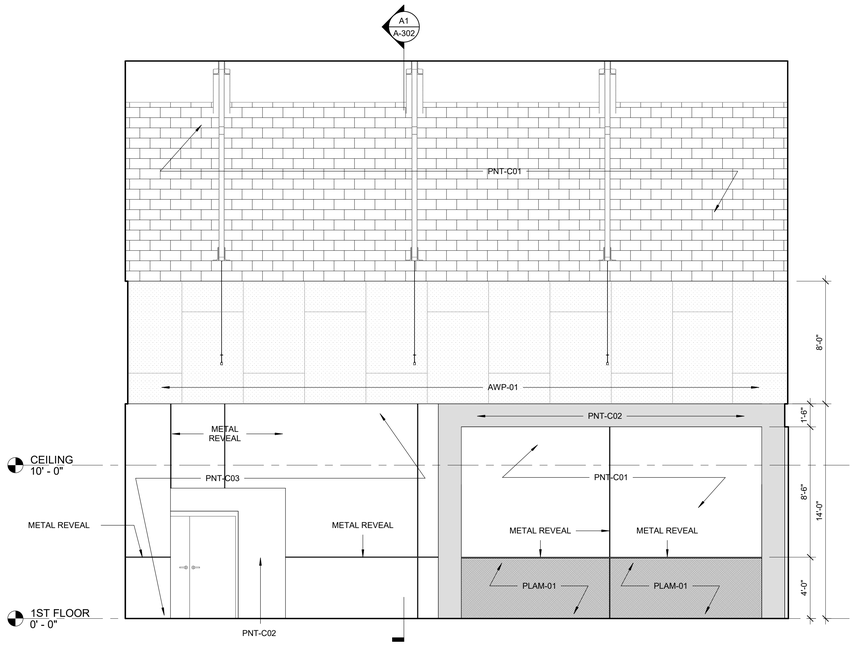


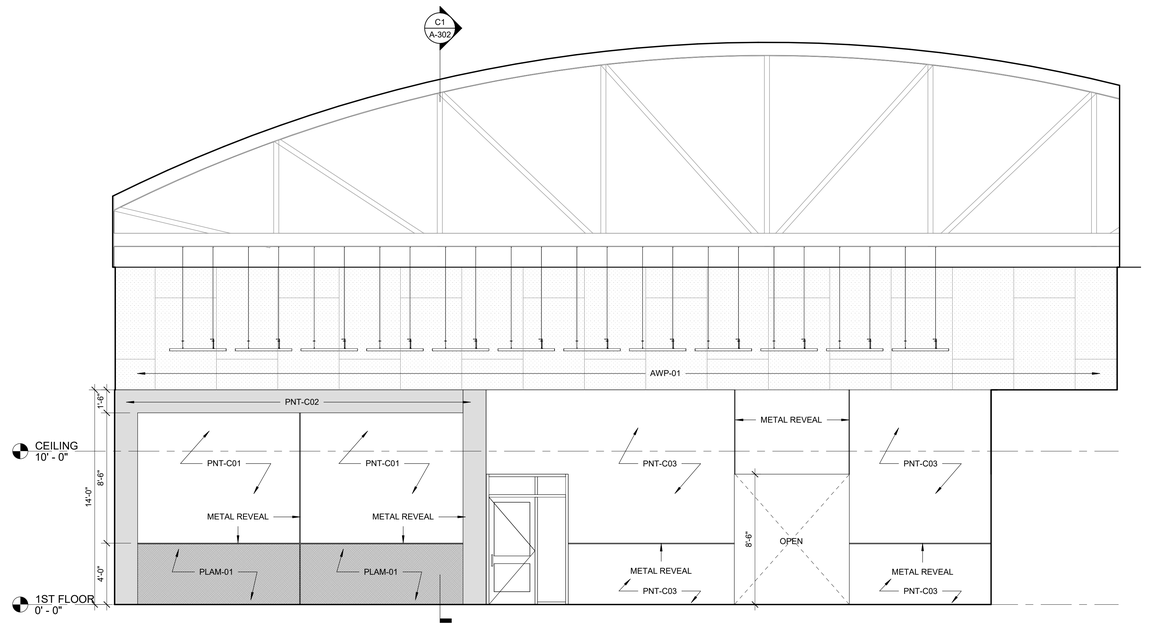
D1 SERVICE/EATING AREA - SOUTH ELEVATON
1/4" = 1'-0"



D5 SERVICE/EATING AREA - EAST ELEVATION
1/4" = 1'-0"



A1 SERVICE/EATING AREA - WEST ELEVATION
1/4" = 1'-0"



A5 SERVICE/EATING AREA - NORTH ELEVATION
1/4" = 1'-0"

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INTERIOR ELEVATIONS - CULINARY

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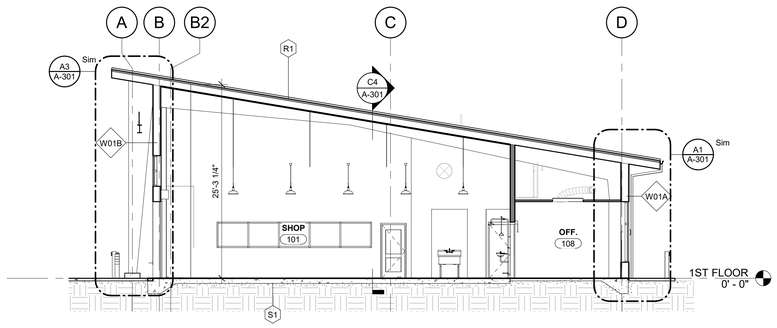
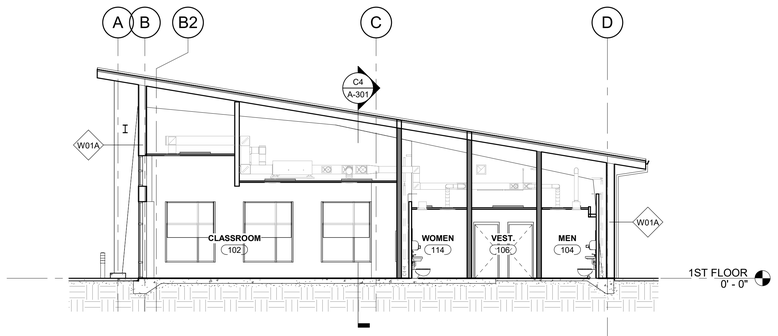
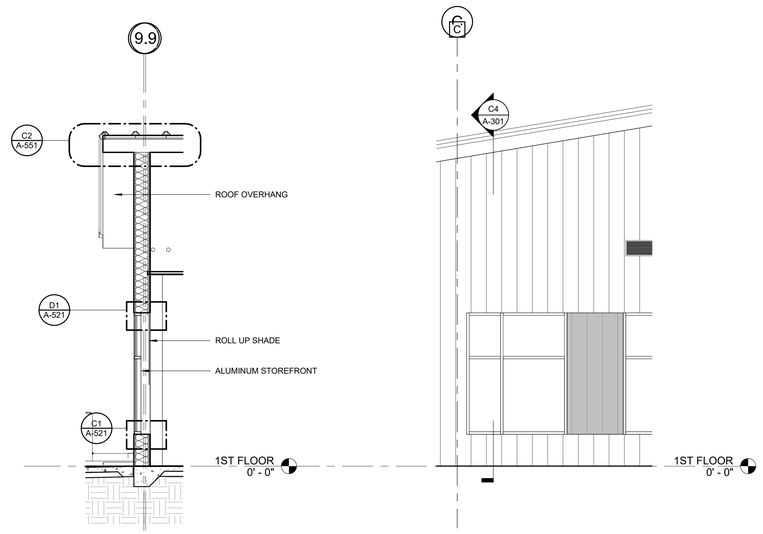


E1 AUTOMOTIVE - BUILDING SECTION - NORTH/SOUTH
1/8" = 1'-0"

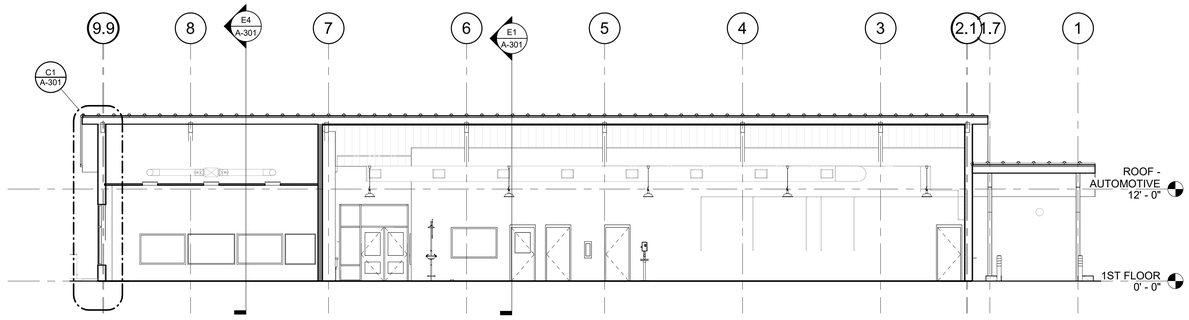


E4 AUTOMOTIVE - BUILDING SECTION - NORTH/SOUTH @ CLASSROOM
1/8" = 1'-0"

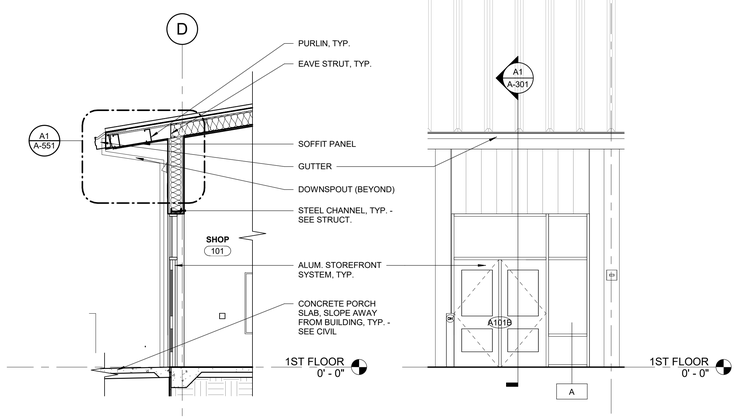


C1 AUTOMOTIVE -WAL SECTION
1/4" = 1'-0"

C2 AUTOMOTIVE - ENLARGED EAST ELEVATION
1/4" = 1'-0"

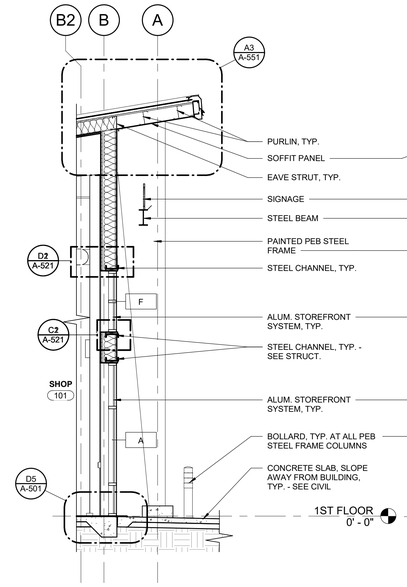


C4 AUTOMOTIVE - BUILDING SECTION - EAST/WEST1
1/8" = 1'-0"

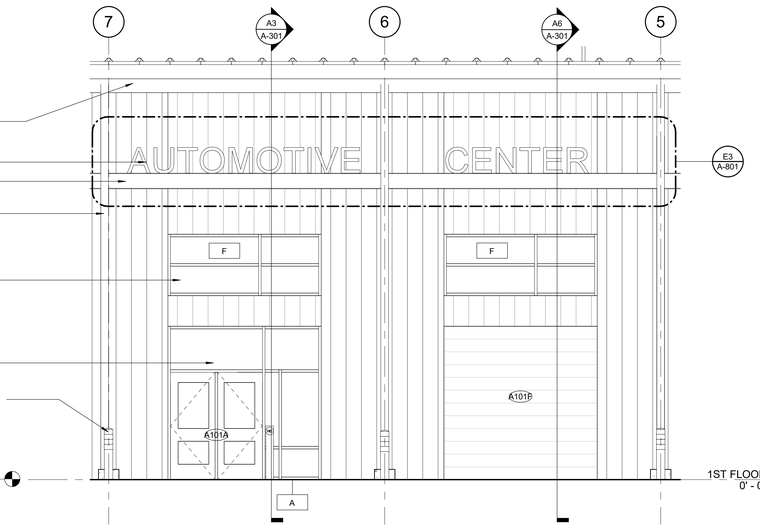


A1 AUTOMOTIVE - WALL SECTION
1/4" = 1'-0"

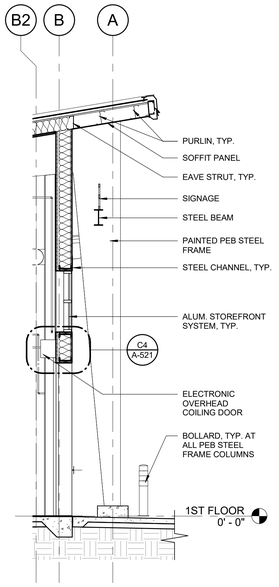
A2 AUTOMOTIVE - ENLARGED SOUTH ELEVATION
1/4" = 1'-0"



A3 AUTOMOTIVE - WALL SECTION
1/4" = 1'-0"



A5 AUTOMOTIVE - ENLARGED NORTH ELEVATION
1/4" = 1'-0"



A6 Section 9
1/4" = 1'-0"

BRUNSWICK COUNTY

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LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL COMPANY CERT. NO. 50417 NORTH CAROLINA RALEIGH, NORTH CAROLINA

MARY H. BREHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL, EL
CHECKED BY: MB

BUILDING SECTIONS AND ENLARGED ENVELOPE DETAILS - AUTOMOTIVE

A-301

BID DOCUMENTS

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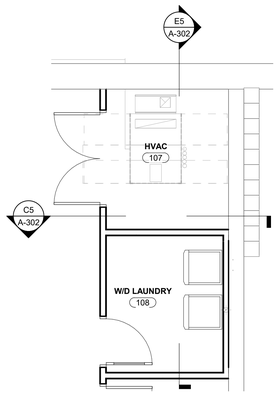
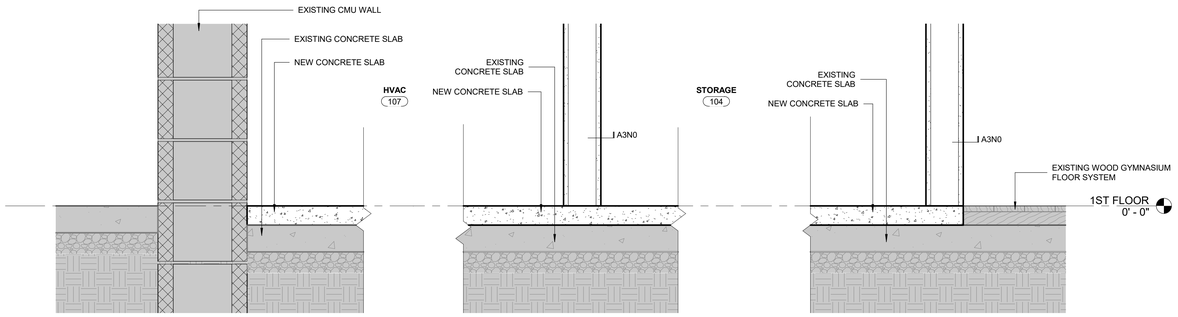
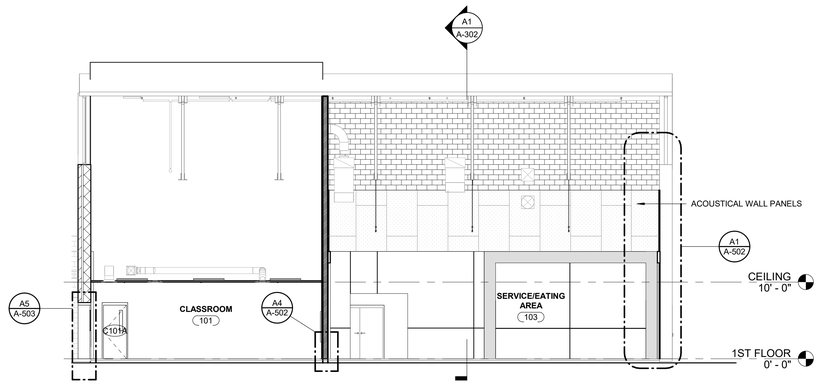


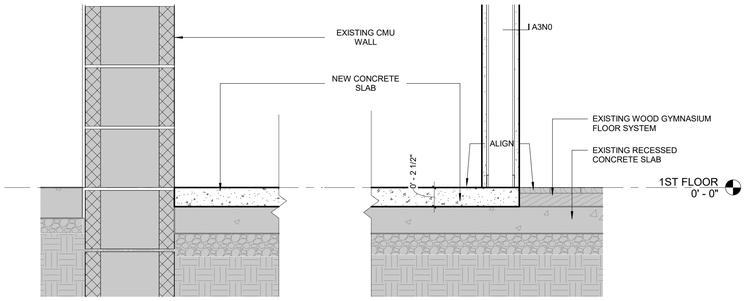
E1 ENLARGE HVAC AND LAUNDRY ROOM PLAN
1/4" = 1'-0"



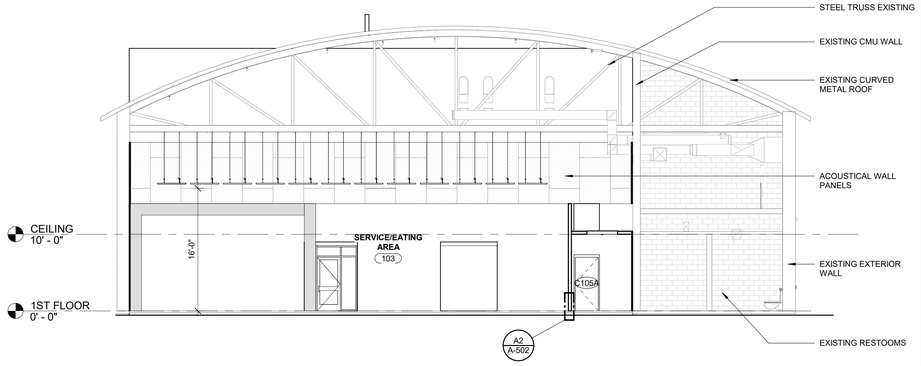
E5 SECTION @ HVAC AND LAUNDRY ROOM - 01
1 1/2" = 1'-0"



C1 CULINARY - BUILDING SECTION - NORTH/SOUTH
1/8" = 1'-0"



C5 SECTION @ HVAC AND LAUNDRY ROOM - 02
1 1/2" = 1'-0"



A1 CULINARY - BUILDING SECTION - EAST/WEST
1/8" = 1'-0"

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RALEIGH, NORTH CAROLINA

MARY H. BREHER
REGISTERED ARCHITECT
13105
April 22, 2020
NORTH CAROLINA
Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

BUILDING SECTIONS AND ENLARGED PLANS - CULINARY

A-302

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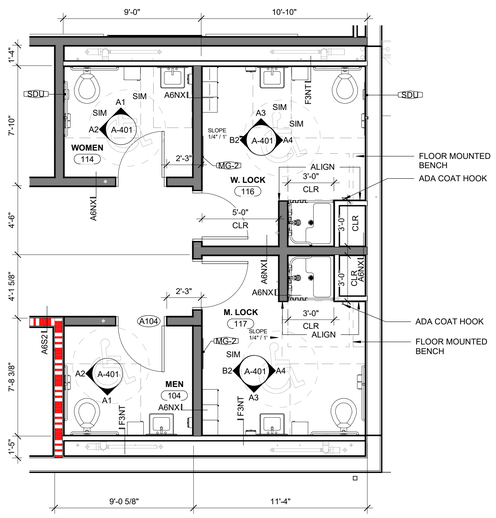

B1 ENLARGED PLAN - AUTOMOTIVE RESTROOMS
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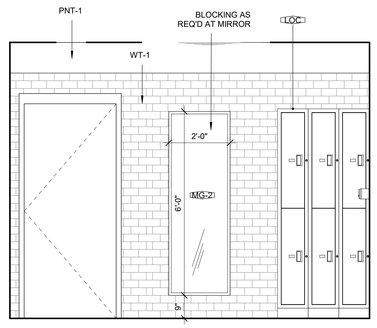
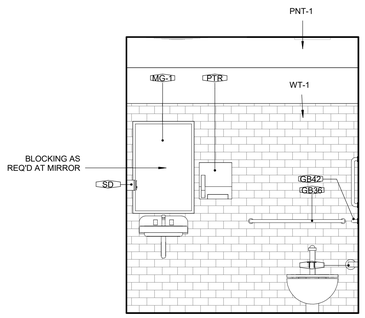


B2 LOCKER ROOM ELEVATION - WEST
1/2" = 1'-0"



A1 RESTROOM ELEVATION - SOUTH
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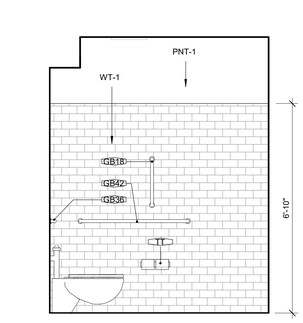
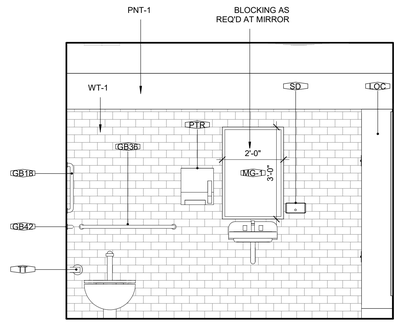
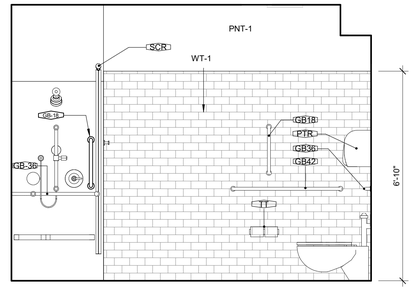


A2 RESTRIIN ELEVATION - WEST
1/2" = 1'-0"



A3 LOCKER ROOM ELEVATION - SOUTH
1/2" = 1'-0"



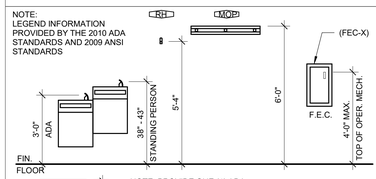
A4 LOCKER ROOM ELEVATION - EAST
1/2" = 1'-0"

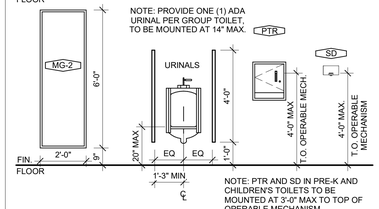
TOILET ROOM NOTES

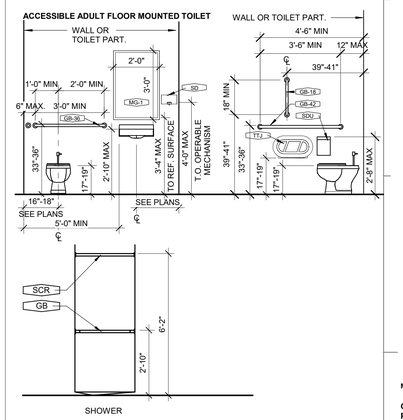
A. IT IS THE INTENT OF THE DESIGN THAT ALL ITEMS SHOWN MOUNTED AT TYPICAL HEIGHTS BE ACCESSIBLE TO PERSONS WITH DISABILITIES.
B. THE PURPOSE OF THIS SHEET IS TO ILLUSTRATE TYPICAL MOUNTING HEIGHTS AND, WHERE APPLICABLE, TYPICAL MINIMUM OR MAXIMUM CLEARANCES AND/OR TYPICAL MOUNTING CONFIGURATIONS FOR A VARIETY OF ITEMS.
CAUTION: THIS SHEET MAY ILLUSTRATE ITEMS OR CONFIGURATIONS WHICH DO NOT OCCUR AS PART OF THE WORK OF THIS PROJECT. REFER TO THE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND SCHEDULES TO DETERMINE WHICH ITEMS AND CONFIGURATIONS APPLY TO THE WORK OF THIS PROJECT.
C. SPECIAL OR NON-TYPICAL MOUNTING HEIGHTS OCCUR ONLY WHERE INDICATED BY ANNOTATED SYMBOLS; BY KEYED NOTES; BY NOTES ON PLANS, ELEVATIONS, OR DETAILS; OR BY UNIQUE DIMENSIONS ON ELEVATIONS OR DETAILS.
D. MOUNTING HEIGHTS, DIMENSIONS, CLEARANCES, AND ACCESS REQUIREMENTS FOR TOILET ACCESSORIES SHOWN ON THIS SHEET ARE BASED UPON SPECIFIC MANUFACTURERS AND MODELS AS INDICATED BY THE "TOILET ACCESSORY SCHEDULE" OR PER THE SPECIFICATIONS. WHEN SIMILAR ACCESSORIES OF OTHER SPECIFIED, ACCEPTABLE MANUFACTURERS (IF ANY) ARE UTILIZED, MOUNTING HEIGHTS, DIMENSIONS, CLEARANCES, AND ACCESS REQUIREMENTS OF THE SIMILAR ACCESSORIES MAY VARY FROM THOSE SHOWN. WHEN SIMILAR ACCESSORIES ARE UTILIZED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION REQUIRED TO ACHIEVE THE SAME AESTHETIC AND FUNCTIONAL DESIGN INTENT ILLUSTRATED BY THAT SHOWN ON THE DRAWINGS.

TYPICAL MOUNTING HEIGHTS

NOTE:
LEGEND INFORMATION PROVIDED BY THE 2010 ADA STANDARDS AND 2009 ANSI STANDARDS







TOILET ACCESSORIES LEGEND

	DESCRIPTION	PROVIDED BY	INSTALLED BY
TT	TOILET TISSUE DISPENSER	OWNER	CONTRACTOR
PTR	PAPER TOWEL DISPENSER, ROLL	OWNER	CONTRACTOR
WR	WASTE RECEPTACLE	OWNER	CONTRACTOR
SD	LIQUID SOAP DISPENSER	OWNER	CONTRACTOR
GB18	18" GRAB BAR	CONTRACTOR	CONTRACTOR
GB36	36" GRAB BAR	CONTRACTOR	CONTRACTOR
GB42	42" GRAB BAR	CONTRACTOR	CONTRACTOR
SDU	SANITARY PRODUCT DISPOSAL UNIT	CONTRACTOR	CONTRACTOR
MG-1	GLASS MIRROR UNIT - 2'X3'	CONTRACTOR	CONTRACTOR
SCR	SHOWER CURTAIN ROD	CONTRACTOR	CONTRACTOR
LOC	LOCKERS	CONTRACTOR	CONTRACTOR

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MARY H. BREHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: EL
CHECKED BY: MB

ENLARGED TOILET ROOM PLAN AND ELEVATIONS

A-401

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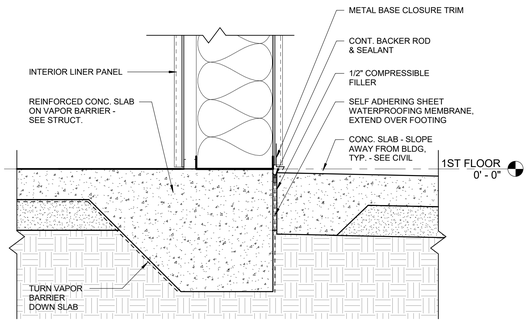
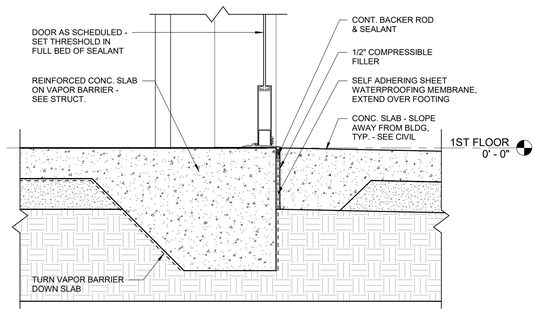
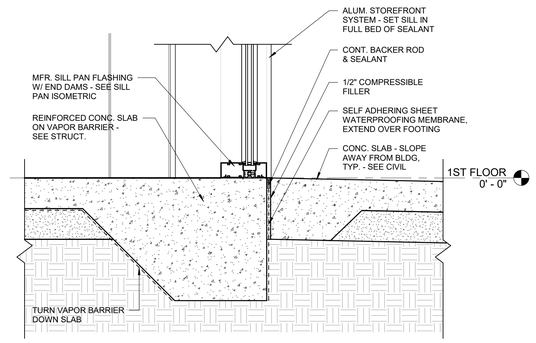


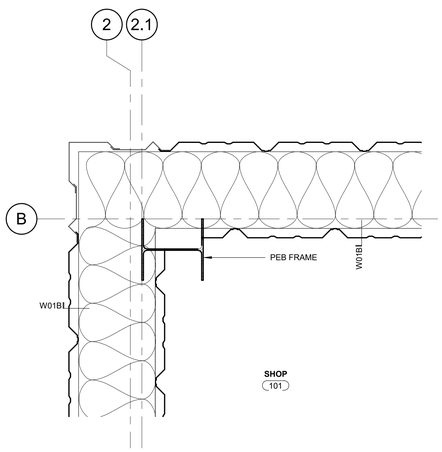
D2 AUTOMOTIVE - SLAB EDGE AT WALL - TYP
1 1/2" = 1'-0"



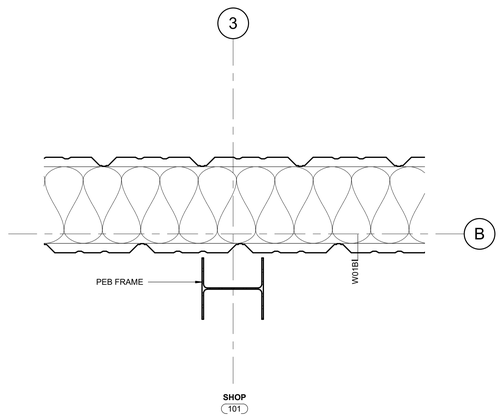
D4 AUTOMOTIVE - SLAB EDGE AT STOREFRONT DOOR
1 1/2" = 1'-0"



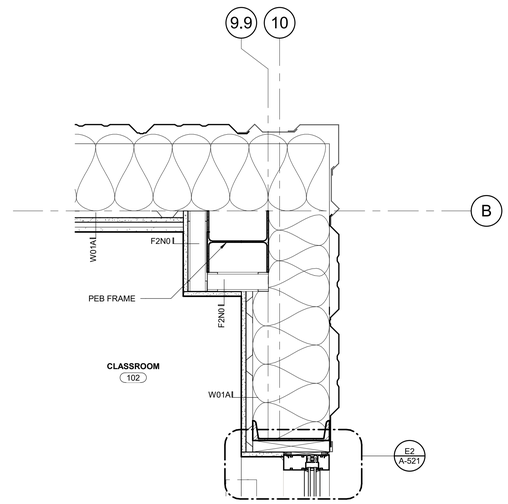
D5 AUTOMOTIVE - SLAB EDGE AT STOREFRONT
1 1/2" = 1'-0"



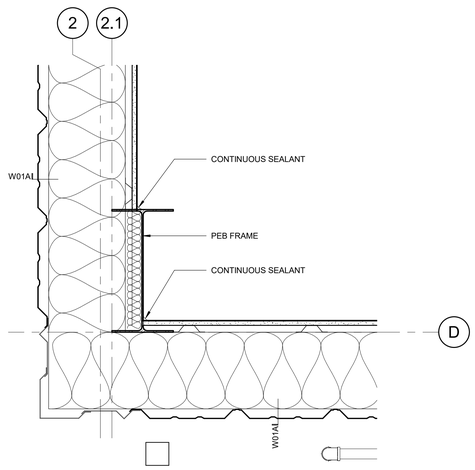
C2 EXPOSED COLUMN AT CORNER W/ INTERIOR METAL LINER
1 1/2" = 1'-0"



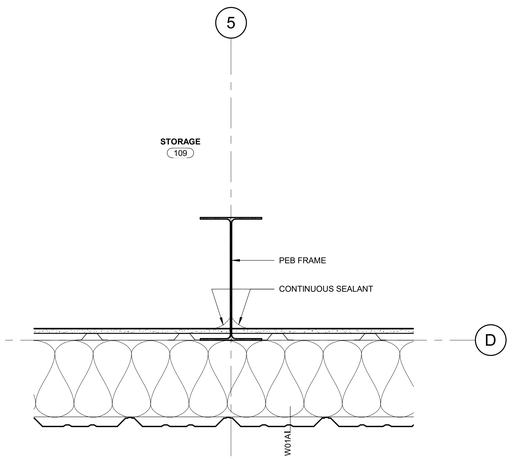
C4 EXPOSED COLUMN IN AUTOMOTIVE SHOP
1 1/2" = 1'-0"



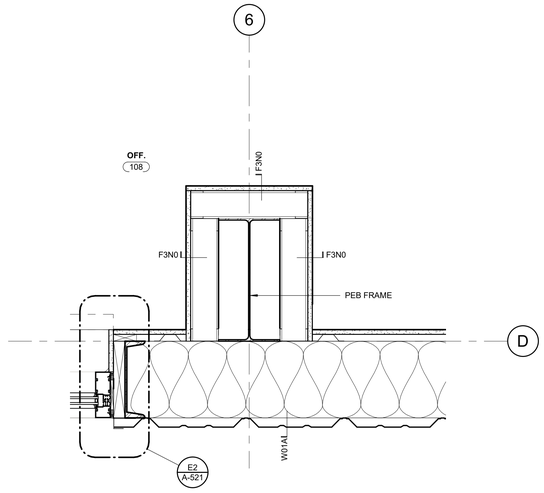
C5 WRAPPED COLUMN AT CORNER
1 1/2" = 1'-0"



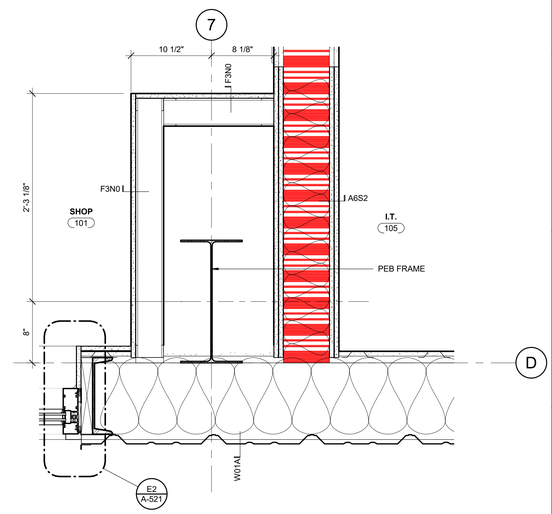
A1 EXPOSED COLUMN AT CORNER W/ INTERIOR GYP. BRD
1 1/2" = 1'-0"



A2 EXPOSED COLUMN IN STORAGE ROOM
1 1/2" = 1'-0"



A4 WRAPPED COLUMN
1 1/2" = 1'-0"



A5 WRAPPED COLUMN AT IT ROOM
1 1/2" = 1'-0"

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MARY H. BREHMER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: Author
CHECKED BY: Checker

PLAN & SECTION DETAILS - AUTOMOTIVE

A-501

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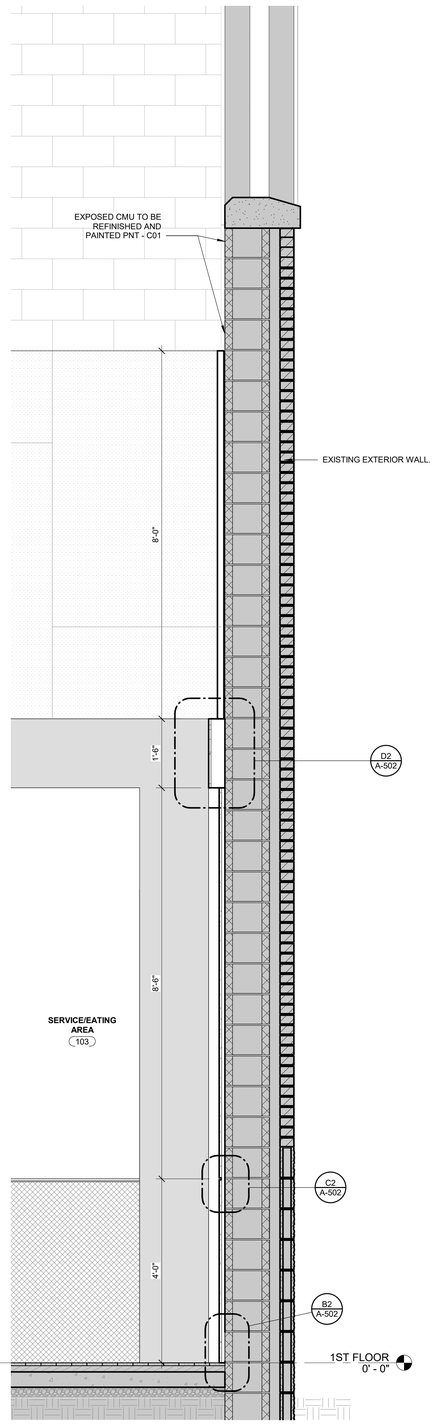
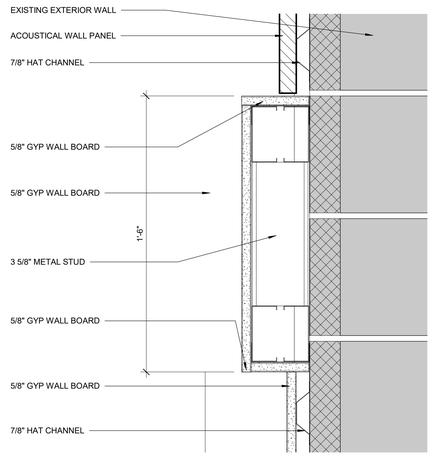
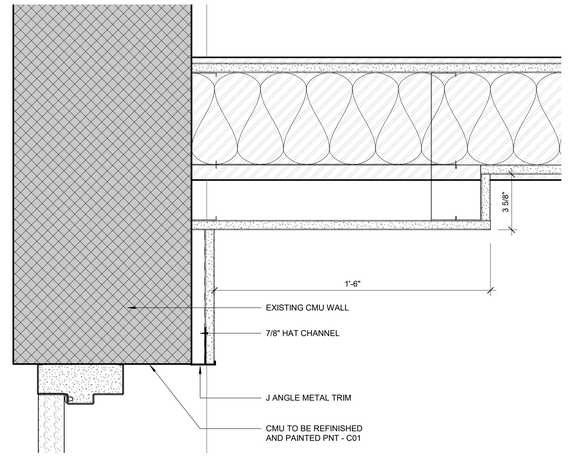


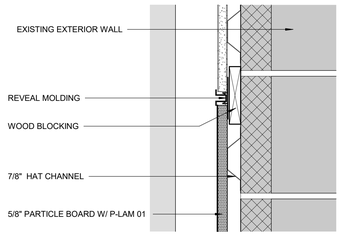
A1 CULINARY - SECTION @ EXTERIOR WALL
3/4" = 1'-0"



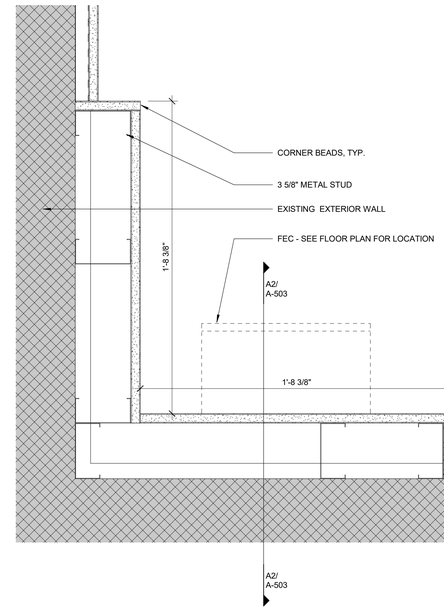
D2 DETAIL @ FURRING BULKHEAD
3" = 1'-0"



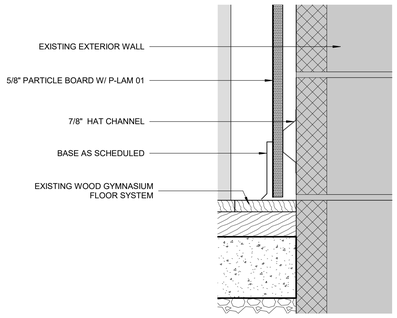
D4 PLAN DETAIL @ EXISTING CMU WALL AND FURRING
3" = 1'-0"



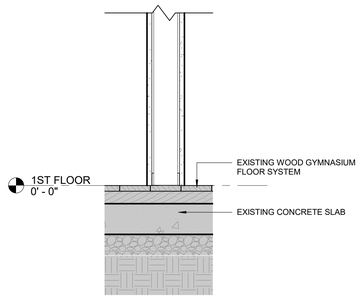
C2 DETAIL @ METAL REVEAL
3" = 1'-0"



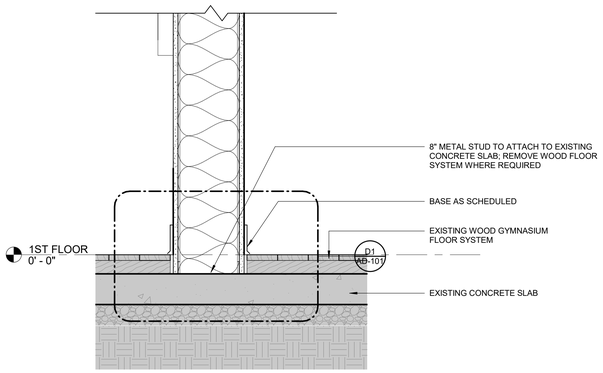
C4 PLAN DETAIL @ CORNER - CULINARY
3" = 1'-0"



B2 DETAIL AT FURRING WALL BASE
3" = 1'-0"



A2 CULINARY - TYPICAL INTERIOR WALL SECTION
1 1/2" = 1'-0"



A4 CULINARY - WALL SECTION - TO CONCRETE SLAB
1 1/2" = 1'-0"

BRUNSWICK COUNTY

THE COAST ACADEMY

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434 FAYETTEVILLE STREET SUITE 1700
RALEIGH, NORTH CAROLINA 27601
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MARY H. BRECHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
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CHECKED BY: MB

PLAN & SECTION DETAILS - CULINARY

A-502

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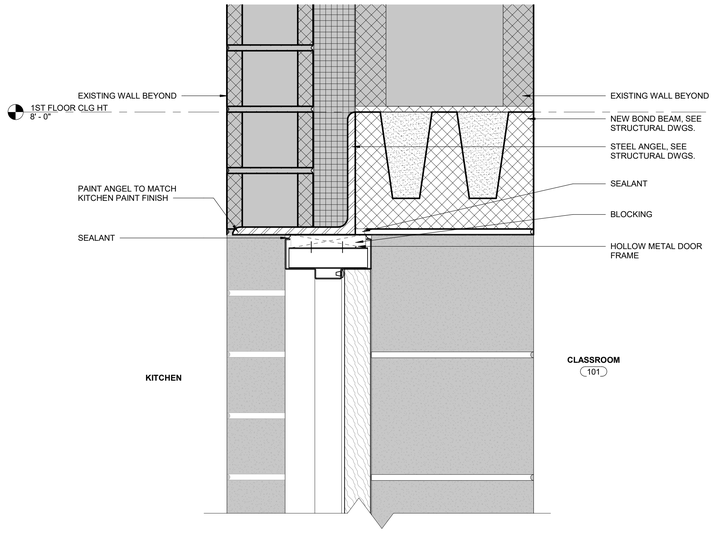
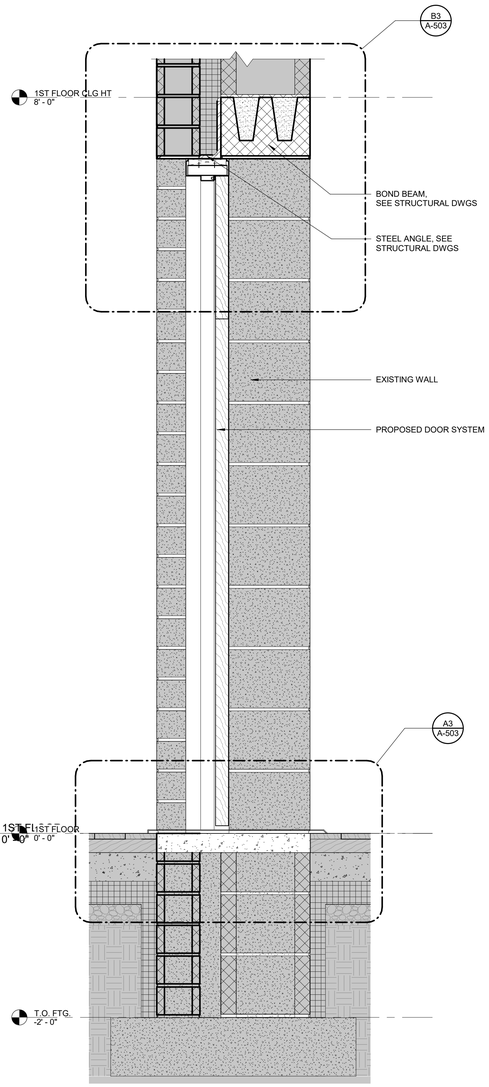
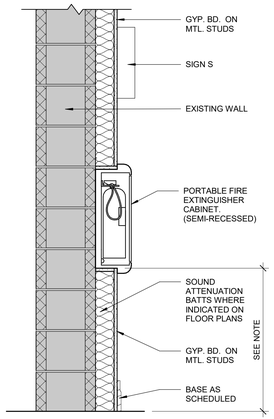


B3 HEAD DETAIL FOR NEW DOOR
3" = 1'-0"

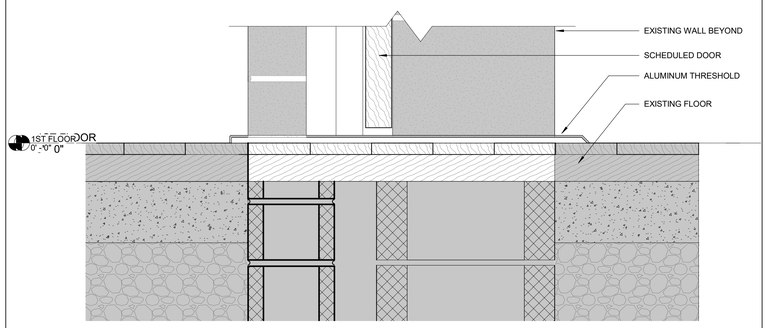


A5 NEW DOOR IN CLASSROOM - SECTION
1 1/2" = 1'-0"



FIRE EXTINGUISHER NOTE:
MOUNT EXTINGUISHER CABINET WITH EXTINGUISHER OPERATING MECHANISM BETWEEN 15"(MINIMUM) AND 48"(MAX.) ABOVE FINISH FLOOR

A2 SEMI RECESSED FEC
1" = 1'-0"



A3 BASE DETAIL FOR NEW DOOR
3" = 1'-0"

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MARY H. BRECHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

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PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: Author
CHECKED BY: Checker

SECTION DETAILS - CULINARY

A-503

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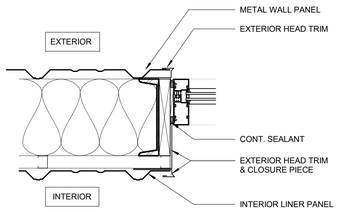
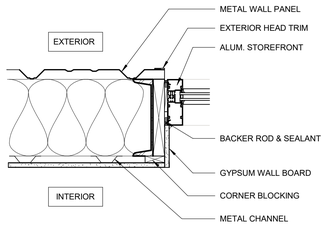
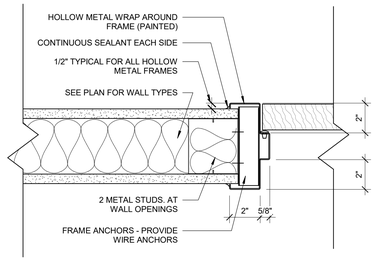


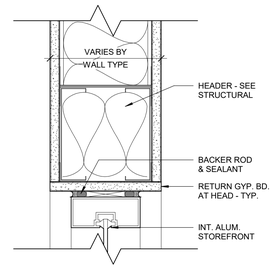
E1 AUTOMOTIVE - TYP. ALUM. FRAME JAMB DETAIL - INTERIOR METAL LINER
1 1/2" = 1'-0"



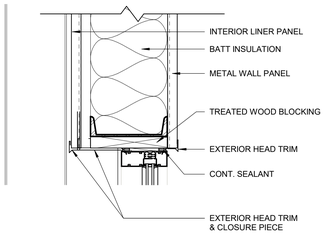
E2 AUTOMOTIVE - TYP. ALUM. FRAME JAMB DETAIL - W01A
1 1/2" = 1'-0"



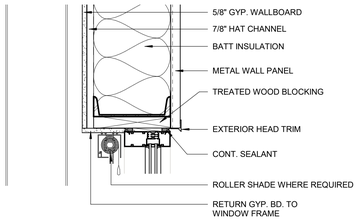
E3 HM DOOR JAMB - INT. STUD WALL
3" = 1'-0"



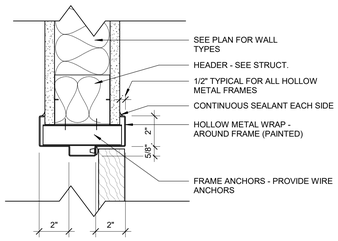
E4 TYP. ALUM FRAME HEAD DETAIL @ INTERIOR WALL
3" = 1'-0"



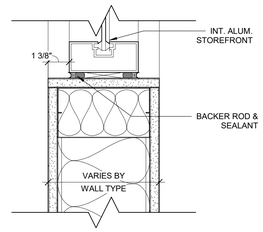
D1 AUTOMOTIVE - TYP. ALUM. FRAME HEAD DETAIL
1 1/2" = 1'-0"



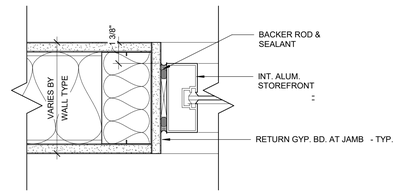
D2 AUTOMOTIVE - ALUM. FRAME HEAD DETAIL - W01A
1 1/2" = 1'-0"



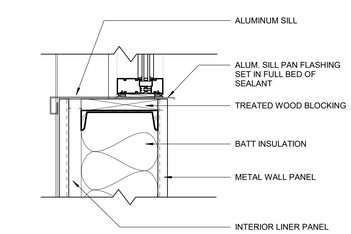
D3 HM DOOR HEAD - INT. STUD WALL
3" = 1'-0"



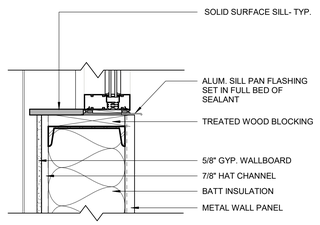
D4 TYP. ALUM FRAME SILL DETAIL @ INTERIOR WALL
3" = 1'-0"



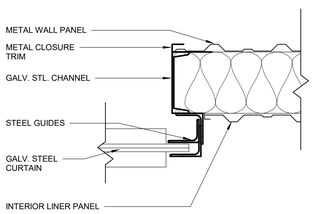
D5 TYP. ALUM FRAME JAMB DETAIL @ INTERIOR WALL
3" = 1'-0"



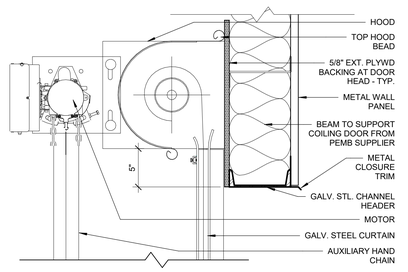
C1 AUTOMOTIVE - TYP. ALUM. FRAME SILL DETAIL
1 1/2" = 1'-0"



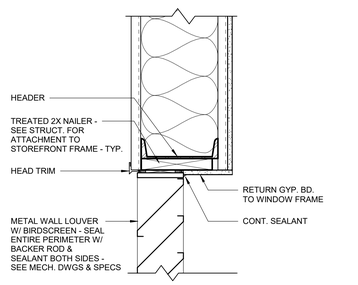
C2 AUTOMOTIVE - ALUM. FRAME SILL DETAIL - W01A
1 1/2" = 1'-0"



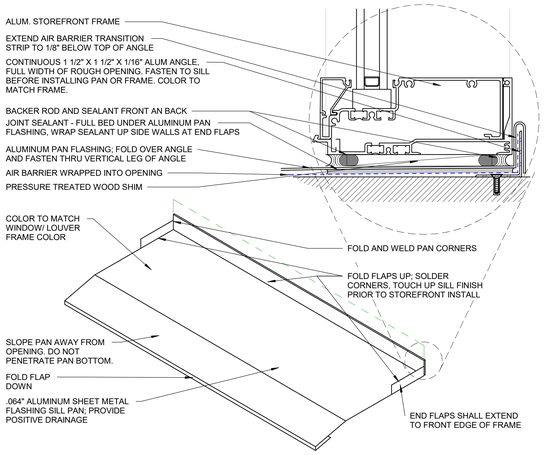
C3 OVERHEAD COILING DOOR JAMB
1 1/2" = 1'-0"



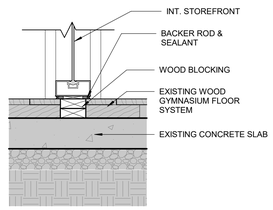
C4 OVERHEAD COILING DOOR HEAD
1 1/2" = 1'-0"



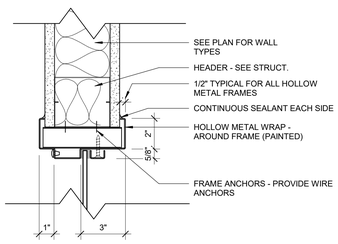
C5 TYP. LOUVER HEAD (JAMB SIM.)
1 1/2" = 1'-0"



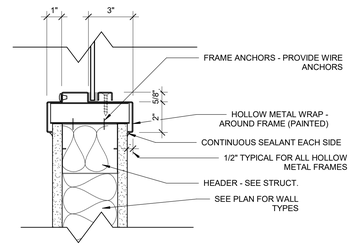
A1 TYPICAL SILL PAN DETAIL
6" = 1'-0"



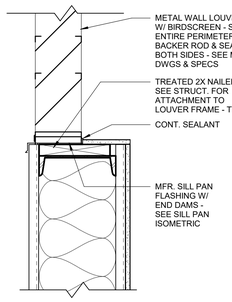
A3 SILL DETAIL @ CULINARY CLASSROOM
1 1/2" = 1'-0"



A4 HM WINDOW HEAD - INT. STUD WALL
3" = 1'-0"



A5 HM WINDOW SILL- INT. STUD WALL
3" = 1'-0"



A6 TYP. LOUVER SILL
1 1/2" = 1'-0"

BRUNSWICK COUNTY

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MARY H. BREHER REGISTERED ARCHITECT 13105 APPT. 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: Author
CHECKED BY: Checker

HEAD, JAMB & SILL DETAILS

A-521

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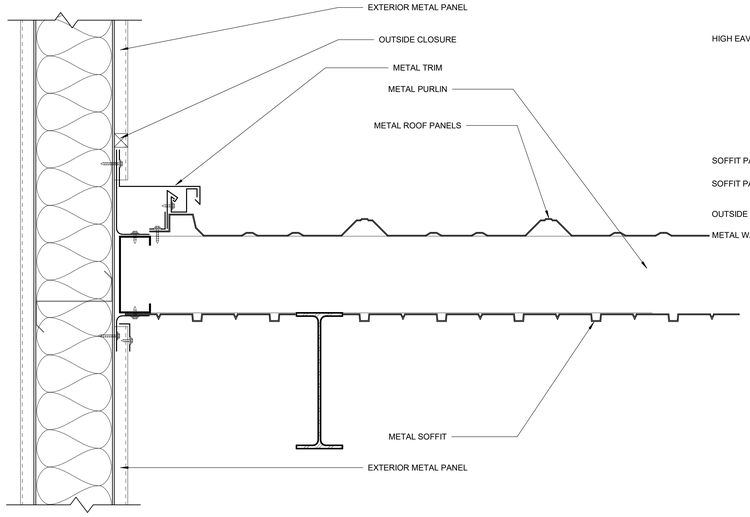
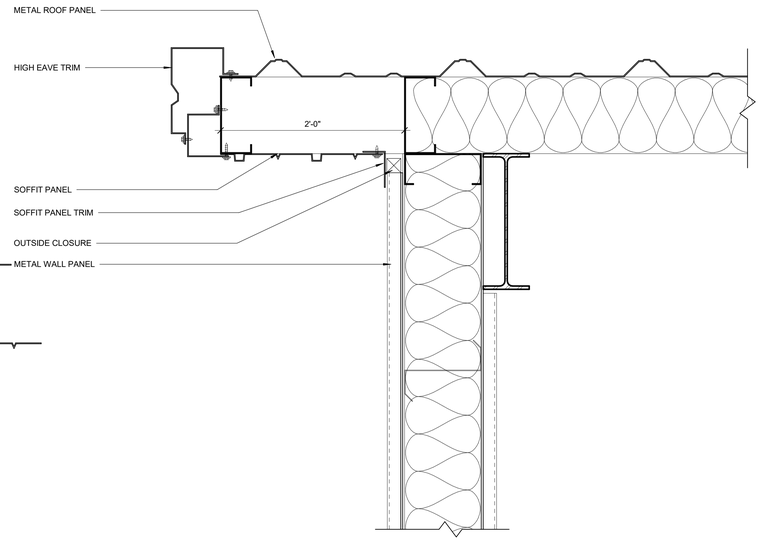
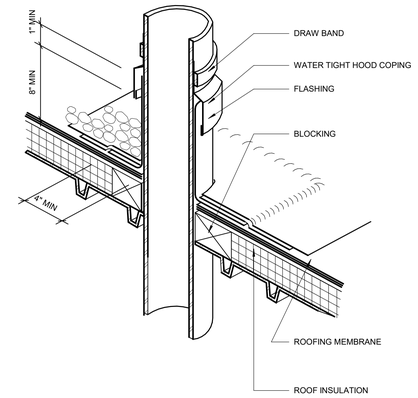


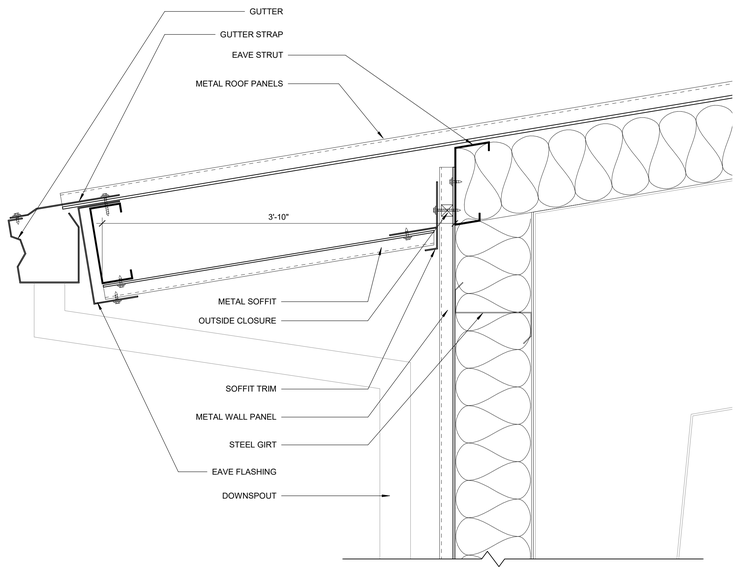
C1 AUTOMOTIVE -DETAIL AT CANOPY INTERSECTION
1 1/2" = 1'-0"



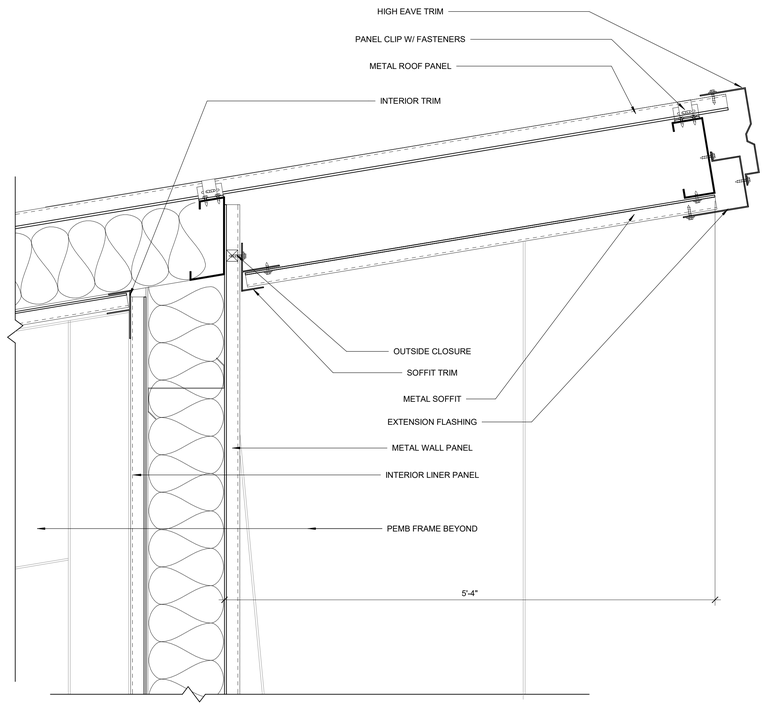
C2 AUTOMOTIVE - SIDE EAVE OVERHANG
1 1/2" = 1'-0"



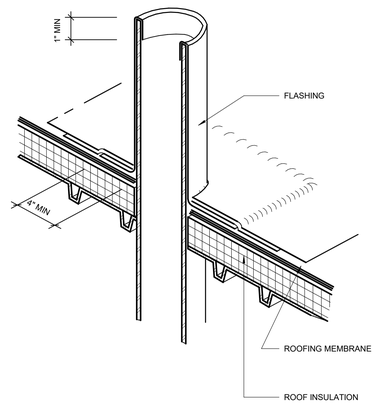
C5 ROOF PIPE PENETRATION
12" = 1'-0"



A1 AUTOMOTIVE - LOW EAVE OVERHANG
1 1/2" = 1'-0"



A3 AUTOMOTIVE - HIGH EAVE OVERHANG
1 1/2" = 1'-0"



A5 VENT PENETRATION
12" = 1'-0"

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DATE: 04.22.2020
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CHECKED BY: MB

ROOF DETAILS

A-551

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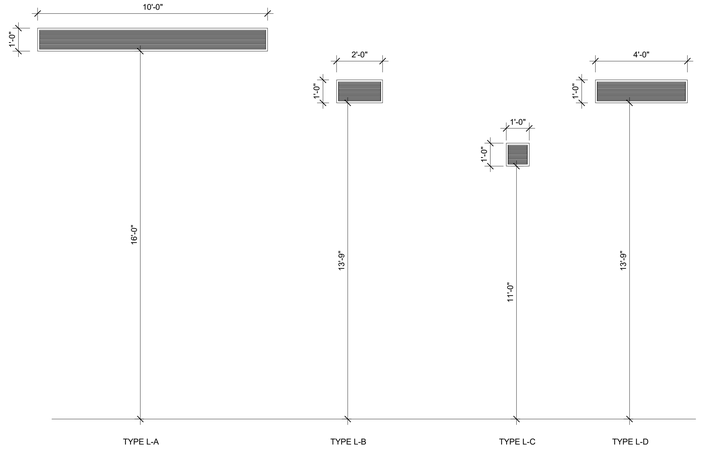
DOOR AND FRAME SCHEDULE - AUTOMOTIVE										
DOOR NUMBER	ROOM NAME	DOOR MATL	DOOR TYPE	DOOR WIDTH	DOOR HEIGHT	FRAME MATL	FRAME TYPE	HARDWARE TYPE	SIGNAGE TYPE	REMARKS
1ST FLOOR										
A101A	SHOP	SEE ELEV	S	6' - 0"	7' - 0"	ALUM	A	01	--	ADA, CARD READER - FIXED MULLION
A101B	SHOP	SEE ELEV	S	6' - 0"	7' - 0"	ALUM	A	01	--	ADA, CARD READER - FIXED MULLION
A101C	SHOP	SEE ELEV	S	6' - 0"	7' - 0"	ALUM	A	02	--	REMOVEABLE MULLION
A101D	SHOP	GALV	OH	10' - 0"	10' - 0"	STL	-	13	--	MANUAL ROLL UP DOOR. SEE ELECTRICAL DWGS FOR ALTERNATE INFORMATION. - SEE C2 & C3 SHEET A-521 FOR FRAME DETAILS
A101E	SHOP	GALV	OH	10' - 0"	10' - 0"	STL	-	13	--	MANUAL ROLL UP DOOR. SEE ELECTRICAL DWGS FOR ALTERNATE INFORMATION - SEE C2 & C3 SHEET A-521 FOR FRAME DETAILS
A101F	SHOP	GALV	OH	10' - 0"	10' - 0"	STL	-	13	--	MANUAL ROLL UP DOOR. SEE ELECTRICAL DWGS FOR ALTERNATE INFORMATION. - SEE C2 & C3 SHEET A-521 FOR FRAME DETAILS
A102	CLASSROOM	WD	FG2	3' - 0"	7' - 0"	HM	F	15	B,G	
A104	MEN	WD	F	3' - 0"	7' - 0"	HM	F	03	F-3	
A105	I.T.	WD	F	2' - 6"	7' - 0"	HM	F	12	B	2 HR RATED DOOR AND HARDWARE, CARD READER
A107	ELECTRICAL	WD	FL	3' - 0"	7' - 0"	HM	F	10	C	
A108	OFF.	WD	FG	3' - 0"	7' - 0"	HM	F	06	D	
A109	STORAGE	WD	F	3' - 0"	7' - 0"	HM	F	07	B	
A111	STORAGE	WD	F	3' - 0"	7' - 0"	HM	F	07	D	
A114	WOMEN	WD	F	3' - 0"	7' - 0"	HM	F	03	F-2	
A116	W. LOCK	WD	F	3' - 0"	7' - 0"	HM	F	03	F-2	
A117	M. LOCK	WD	F	3' - 0"	7' - 0"	HM	F	03	F-3	
A118	CUST.	WD	F	3' - 0"	7' - 0"	HM	F	08	B	

DOOR AND FRAME SCHEDULE - CULINARY										
DOOR NUMBER	ROOM NAME	DOOR MATL	DOOR TYPE	DOOR WIDTH	DOOR HEIGHT	FRAME MATL	FRAME TYPE	HARDWARE TYPE	SIGNAGE TYPE	REMARKS
1ST FLOOR										
C101A	MEETING/PREP	WD	F	3' - 0"	7' - 0"	HM	F	05	B,G	
C101B	CLASSROOM	WD	F	4' - 0"	7' - 0"	HM	F	04	B	
C101C	CLASSROOM	SEE ELEV	FG2	3' - 0"	7' - 0"	HM	G	14	B,G	
C104	STORAGE	WD	F	3' - 0"	7' - 0"	HM	F	07	B	
C105A	WOMEN	WD	F	3' - 0"	7' - 0"	HM	F	09	F-2	
C105B	VESTIBULE	WD	F	3' - 0"	7' - 0"	HM	F	09	F-3	
C107	HVAC	WD	FP	6' - 0"	7' - 0"	HM	F	11	B	
C108	W/D LAUNDRY	WD	FL	3' - 0"	7' - 0"	HM	F	07	B	



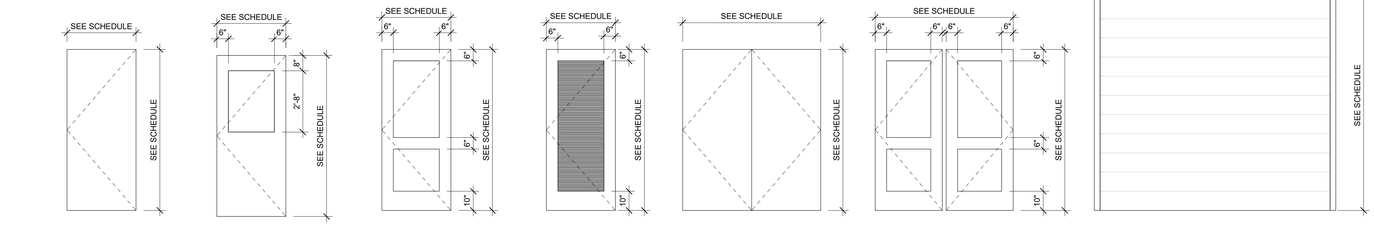
LOUVER LEGEND
3/8" = 1'-0"

WINDOW ELEVATION NOTES

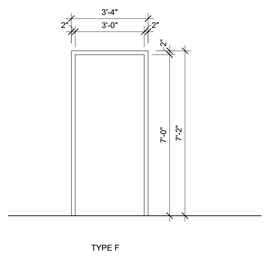
A. GLAZE INTERIOR HOLLOW METAL FRAMES TO CORRIDOR SIDE OF FRAME TO ACCOMMODATE INSTALLATION OF HORIZONTAL BLINDS AT CLASSROOM SIDE OF FRAME.
B. INTERIOR WINDOWS AND HOLLOW METAL SIDE LIGHTS SHALL BE PROVIDED WITH CLEAR GLASS, UNO.
C. CENTER HOLLOW METAL FRAMES IN CMU WALLS, UNO.
D. SILL PANS SHALL BE PROVIDED UNDER ALL EXTERIOR WINDOWS AND STOREFRONT NOT SITTING DIRECTLY ON FLOOR SLAB. WINDOWS AND STOREFRONTS SITTING DIRECTLY ON FLOOR SLABS SHALL BE SET ON MANUFACTURER'S SUBSILL, SET IN FULL BED OF SEALANT.
E. ALL WINDOWS TO HAVE MANUAL ROLLER SHADES UNLESS CALLED OUT AS MECHANICALLY OPERATED, SHOWN AS "MRS" ON ELEVATIONS
F. ALL SAFELY GLAZING IN DOOR LOCATIONS.

WINDOW ELEVATION LEGEND

TNG	TEMPERED INSULATED GLAZING
IS	INSULATED SPANDREL GLASS
TIG	TEMPERED INTERIOR GLASS
MRS	MANUAL ROLLER SHADE
SIC	STOREFRONT INTEGRATED CANOPY



DOOR TYPE LEGEND
3/8" = 1'-0"



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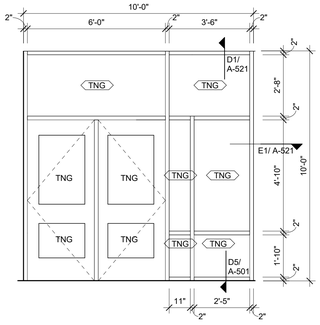
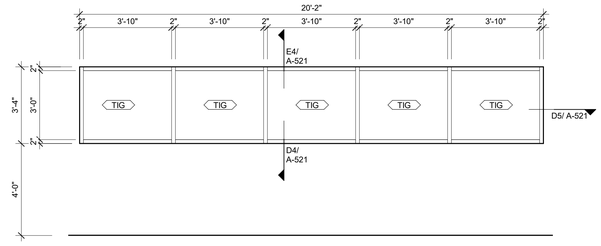
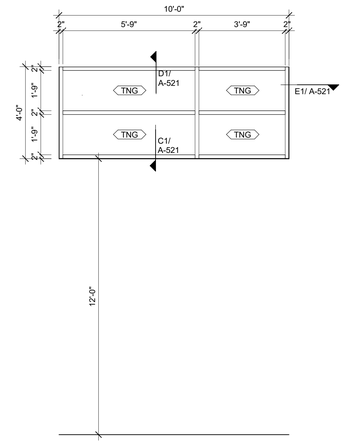
3/8" = 1'-0"

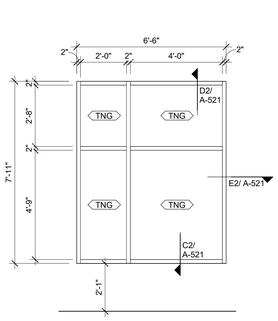


C4 ALUM FRAME - TYPE A
3/8" = 1'-0"

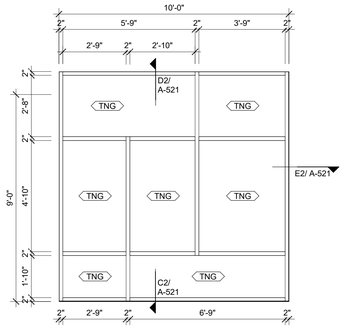


C5 INT. ALUM FRAME - TYPE B
3/8" = 1'-0"

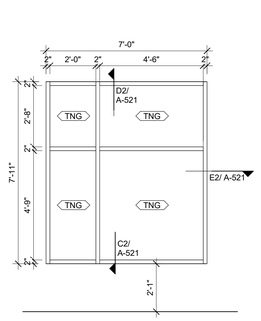




B3 ALUM FRAME - TYPE C
3/8" = 1'-0"

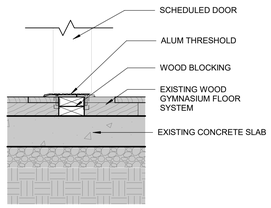


B4 ALUM FRAME - TYPE D
3/8" = 1'-0"

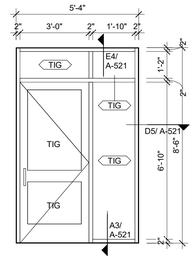


B5 ALUM FRAME - TYPE E
3/8" = 1'-0"

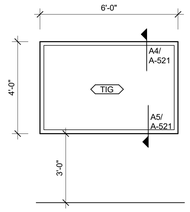
B6 ALUM FRAME - TYPE F
3/8" = 1'-0"



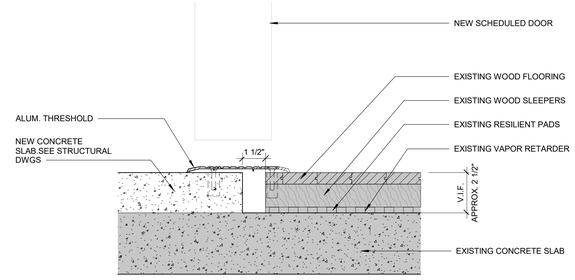
A2 THRESHOLD DETAIL @ CULINARY CLASSROOM
1 1/2" = 1'-0"



A3 ALUM FRAME - TYPE G
3/8" = 1'-0"



A4 HOLLOW METAL FRAME - TYPE A
3/8" = 1'-0"



A5 THRESHOLD DETAIL
3" = 1'-0"

BRUNSWICK COUNTY

THE COAST ACADEMY

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LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL COMPANY NORTH CAROLINA CERT. NO. 50417 RALEIGH, NORTH CAROLINA

MARY H. BRECHER REGISTERED ARCHITECT 13105 April 25, 2018 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

DOOR SCHEDULE, DOOR TYPE LEGEND & FRAME TYPES

A-601

BID DOCUMENTS

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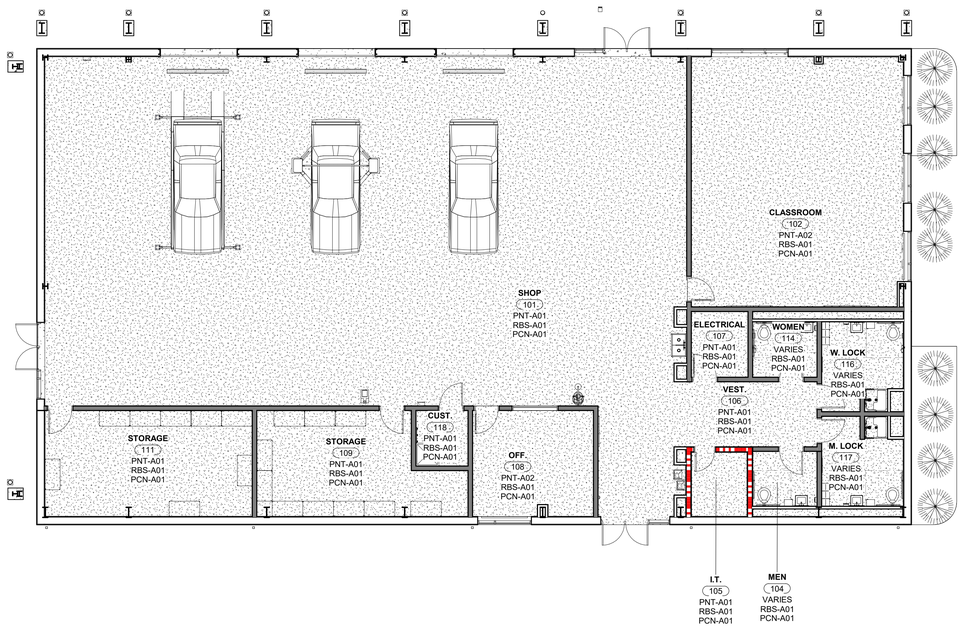
4/22/2020 4:23:52 PM



A1 FINISH PLAN - AUTOMOTIVE
1/8" = 1'-0"

ROOM FINISH SCHEDULE - AUTOMOTIVE

ROOM NUMBER	ROOM NAME	FLOORING	BASE	CEILING	WALL FINISH	REMARK
1ST FLOOR						
101	SHOP	PCN-A01	RBS-A01		PNT-A01	
102	CLASSROOM	PCN-A01	RBS-A01	ACT-A01	PNT-A02	
104	MEN	PCN-A01	RBS-A01	ACT-A01	VARIES	SEE ELEVATIONS
105	I.T.	PCN-A01	RBS-A01		PNT-A01	
106	VEST.	PCN-A01	RBS-A01	ACT-A01	PNT-A01	
107	ELECTRICAL	PCN-A01	RBS-A01		PNT-A01	
108	OFF.	PCN-A01	RBS-A01	ACT-A01	PNT-A02	
109	STORAGE	PCN-A01	RBS-A01	ACT-A01	PNT-A01	
111	STORAGE	PCN-A01	RBS-A01	ACT-A01	PNT-A01	
114	WOMEN	PCN-A01	RBS-A01	ACT-A01	VARIES	SEE ELEVATIONS
116	W. LOCK	PCN-A01	RBS-A01	ACT-A01	VARIES	SEE ELEVATIONS
117	M. LOCK	PCN-A01	RBS-A01	ACT-A01	VARIES	SEE ELEVATIONS
118	CUST.	PCN-A01	RBS-A01	ACT-A01	PNT-A01	

FLOOR FINISH LEGEND

AUTOMOTIVE
PCN-01
POLISHED CONCRETE

CULINARY
SCN-01
SEALED CONCRETE

CULINARY
WDF-C01
EXISTING WOOD FLOORING TO BE REFINISHED
REMOVE ALL STRIPING

ROOM FINISH PLAN SHEET NOTES

1. PRIOR TO INSTALLATION AND FABRICATION, CONTRACTOR SHALL COORDINATE WITH ARCHITECT AND INTERIOR DESIGNER TO REVIEW ALL FLOOR PATTERNS, FINISHES AND DOCUMENTATION INFORMATION

2. PRIOR TO PAINTING, PAINTING CONTRACTOR SHALL SUBMIT TO ARCHITECT/INTERIOR DESIGNER EACH PAINT COLOR FINISH ON A 8 1/2" X 11" SHEET OF CHIPBOARD FOR PRELIMINARY APPROVAL. FOR FINAL APPROVAL BY OWNER AND ARCHITECT PRIOR TO PAINTING, THE PAINTING CONTRACTOR SHALL PAINT EACH PAINT COLOR WITH THE DESIGNATED FINISH ON A 4' X 4' PIECE OF GYPSUM BOARD. SAMPLE BOARDS SHALL BE REVIEWED AND APPROVED AT THE JOB SITE WITH THE APPROPRIATE LIGHTING.

3. INSTALLERS OF EACH FINISH MATERIAL SHALL INSPECT BOTH THE SUBSTRATE AND CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED. INSTALLER SHALL NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN AN ACCEPTABLE MANNER TO ALL PARTIES AND MEET ALL MANUFACTURER'S REQUIREMENTS

4. ALL INTERIOR FINISHES SHALL COMPLY WITH SECTION 803 OF RESTRICTIONS OF COMBUSTIBLE MATERIALS OF THE INTERNATIONAL BUILDING CODE. ALL INTERIOR FINISHES SHALL BE CLASS B OR BETTER

5. THE INTENT IS TO PROVIDE A COMPLETE FINISHED INTERIOR WHETHER OR NOT SPECIFICALLY INDICATED. ITEMS SHALL BE FINISHED AND/OR PAINTED AS DIRECTED BY DESIGNER, WHETHER OR NOT SPECIFICALLY SCHEDULED OR INDICATED ON DRAWINGS

6. TILE SUBCONTRACTOR SHALL USE LATEX ADDITIVE IN SETTING BED PER MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE NOTED

7. INSTALL ALL VINYL COMPOSITION TILE IN THE SAME DIRECTION UNLESS OTHERWISE NOTED

8. NOT USED

9. PAINT ALL EXPOSED AND SEMI-EXPOSED WOOD BLOCKING AND METAL SUPPORTS TO MATCH ADJACENT SURFACES. COORDINATE WITH INTERIOR DESIGNER

10. PAINTED FINISH ON METAL SURFACES SHALL BE SMOOTH, CLEAR AND FREE OF ALL BRUSH MARKS

11. ADHESIVE FOR WALL COVERING SHALL BE STRIPPABLE, MILDEW RESISTANT AND NON-STAINING PER MANUFACTURER'S REQUIREMENTS

12. ALL WALL COVERING SHALL BE WRAPPED AT LEAST 2" AROUND OUTSIDE CORNERS. MATCH ALL PATTERN AT SEAMS

13. WHERE WOOD BASE IS SPECIFIED, CAULK AT TOP OF BASE AND WALL WITH COLORED CAULK TO MATCH WOOD STAIN

14. INSTALL TRANSITION STRIP AT THRESHOLD WHERE DIFFERING FLOORING MATERIALS ABUTT, UNLESS OTHERWISE NOTED. COORDINATE COLOR/FINISH WITH DESIGNER

15. PAINT METAL WALL-MOUNTED ACCESS DOORS, GRILLES, RETURN AIR GRILLES, COVER PLATES, FAN COIL UNITS, FIRE EQUIPMENT CABINETS, AND ELECTRICAL CABINETS TO MATCH ADJACENT SURFACE UNLESS OTHERWISE NOTED.

16. ALL FLOOR FINISH CHANGES SHALL OCCUR AT THE CENTER LINE OF CLOSED DOORS.

17. FLOOR PATTERN TO CONTINUE UNDER ALL OPEN WOODWORK/ WORKSURFACES.

18. FLOORING CONTRACTOR SHALL MAKE ADJUSTMENTS TO ACCOMMODATE FOR ANY DIFFERENCES IN THE PILE HEIGHT OF THE CARPET.

19. PRIOR TO ORDERING, SUB-CONTRACTORS FOR FLOORING, PAINTING, AND MILLWORK SHALL SUBMIT TO ARCHITECT / INTERIOR DESIGNER AN 8" X 8" SAMPLE OF EACH MATERIAL SPECIFIED FOR FINAL APPROVAL.

20. IF ANY DISCREPANCIES OR OMISSIONS ARE NOTED IN THESE DRAWINGS, CONTACT INTERIOR DESIGNER OR ARCHITECT PRIOR TO ORDERING OR COMMENCING WORK.

21. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK LEAD TIMES ON FINISHES IN ORDER TO AVOID DELAYING WORK.

22. ALIGN GROUT JOINTS AT FLOOR, BASE, AND WALL TILE. TILE INSTALLER TO USE RAIMONDI BREAKAWAY LEVELING SYSTEM CLIPS & WEDGES OR EQUAL. INSTALLER TO USE PROPER LEVELING SPACERS IN ORDER TO OBTAIN GROUT JOINT SIZE SPECIFIED BY ARCHITECT OR INTERIOR DESIGNER.

ROOM FINISH NOTES

1. EXAMPLE NOTE: PROVIDE TWO 4X8 MARKERBOARDS ON NORTH WALL
2. EXAMPLE NOTE: MIRRORS ON SOUTH WALL

ROOM FINISH TAG LEGEND

ROOM NAME — ROOM NAME
(2201) — ROOM NUMBER
PNT-1 — WALL MATERIAL CODE
RBS-1 — BASE MATERIAL CODE
CPT-1 — FLOOR MATERIAL CODE
— ROOM FINISH NOTES

MATERIAL CODE LEGEND

AWP	ACOUSTICAL WRAPPED PANEL	PTB	PORCELAIN TILE BASE
CCS	COLORED CONCRETE SURFACE	PTF	PORCELAIN TILE FLOORING
CHD	CONCRETE LIQUID HARDENER	PTW	PORCELAIN TILE WALL
CKT	CORK TILE	PWB	PAINTED WALL BASE
CON	CONCRETE	RBS	RUBBER BASE
CPT	CARPET	RBT	RUBBER TILE
CRT	ACOUSTICAL CURTAIN	RTF	RESILIENT TILE FLOORING
CSL	CONCRETE SEALER	SCN	SEALED CONCRETE
CTB	CERAMIC TILE BASE	SDT	STATIC DISSIPATIVE TILE
CTF	CERAMIC TILE FLOORING	SHV	SHEET VINYL
CTW	CERAMIC TILE WALL	SPF	SPORTS FLOORING
EPX	EPOXY FLOORING	STC	STAMPED CONCRETE
ETR	EXISTING TO REMAIN	STF	PERFORMANCE STAGE FLOORING
FWC	FABRIC WALLCOVERING	STN	STONE COUNTER
GTF	GROUT, FLOORING	TBD	TO BE DETERMINED
GTW	GLASS TILE WALL	TZB	TERRAZZO BASE
LIN	LINOLEUM	TZZ	TERRAZZO FLOORING
MCC	MULTI-COLORED COATING	VCT	VINYL COMPOSITION TILE
MEL	MELAMINE	VPF	VINYL PLANK FLOORING
MPW	METAL PANEL WALL	VWC	VINYL WALLCOVERING
PLM	PLASTIC LAMINATE	WDB	WOOD BASE
PCN	POLISHED CONCRETE	WDF	WOOD FLOORING
PNC	PAINTED CONCRETE		
PNT	PAINT		

BRUNSWICK COUNTY

THE COAST ACADEMY

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WWW.LS3P.COM

LS3P ASSOCIATES LTD. REGISTERED ARCHITECTURAL COMPANY CERT. NO. 50417 RALEIGH, NORTH CAROLINA

MARY H. BREHEER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

FINISH PLAN & FINISH SCHEDULE - AUTOMOTIVE

A-721

BID DOCUMENTS

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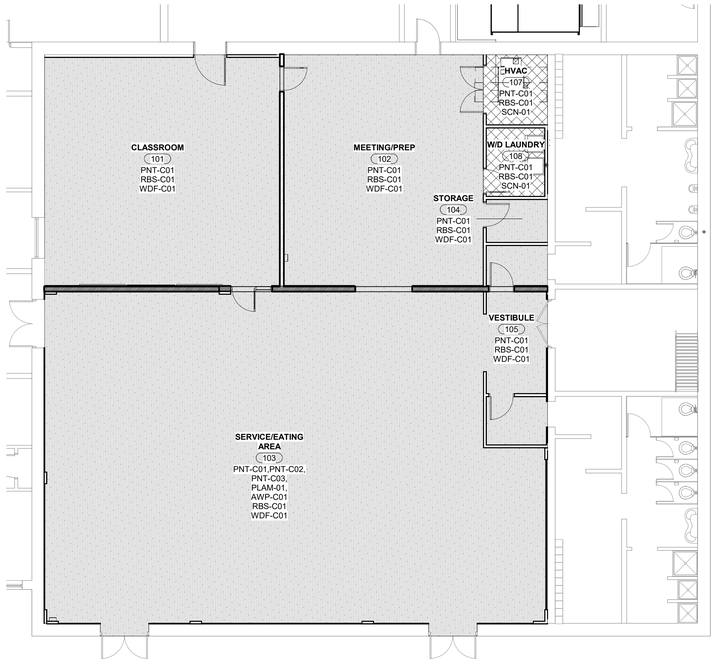

A1 FINISH PLAN - CULINARY
1/8" = 1'-0"

ROOM FINISH SCHEDULE - CULINARY

ROOM NUMBER	ROOM NAME	FLOORING	BASE	CEILING	WALL FINISH	REMARK
1ST FLOOR						
101	CLASSROOM	WDF-C01	RBS-C01	ACT-C01	PNT-C01	EXISTING FLOOR TO REMAIN AND BE REFINISHED
102	MEETING/PREP	WDF-C01	RBS-C01	ACT-C01	PNT-C01	EXISTING FLOOR TO REMAIN AND BE REFINISHED
103	SERVICE/EATING AREA	WDF-C01	RBS-C01	DRYFALL PAINT	PNT-C01, PNT-C02, PNT-C03, PLAM-01, AWP-C01	EXISTING FLOOR TO REMAIN AND BE REFINISHED, EXISTING ROOF DECK AND STRUCTURE TO BE PAINTED DRYFALL. SEE ELEVATIONS FOR WALL FINISH LOCATIONS.
104	STORAGE	WDF-C01	RBS-C01	ACT-C01	PNT-C01	EXISTING FLOOR TO REMAIN AND BE REFINISHED
105	VESTIBULE	WDF-C01	RBS-C01	ACT-C01	PNT-C01	EXISTING FLOOR TO REMAIN AND BE REFINISHED
107	HVAC	SCN-01	RBS-C01	--	PNT-C01	
108	W/D LAUNDRY	SCN-01	RBS-C01	ACT-C01	PNT-C01	

FLOOR FINISH LEGEND

AUTOMOTIVE
PCN-01
POLISHED CONCRETE

CULINARY
SCN-01
SEALED CONCRETE

CULINARY
WDF-C01
EXISTING WOOD FLOORING TO BE REFINISHED
REMOVE ALL STRIPING

ROOM FINISH PLAN SHEET NOTES

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ROOM FINISH NOTES

1. EXAMPLE NOTE: PROVIDE TWO 4X8 MARKERBOARDS ON NORTH WALL
2. EXAMPLE NOTE: MIRRORS ON SOUTH WALL

ROOM FINISH TAG LEGEND

ROOM NAME → ROOM NAME
(2201) → ROOM NUMBER
PNT-1 → WALL MATERIAL CODE
RBS-1 → BASE MATERIAL CODE
CPT-1 → FLOOR MATERIAL CODE
→ ROOM FINISH NOTES

MATERIAL CODE LEGEND

AWP	ACOUSTICAL WRAPPED PANEL	PTB	PORCELAIN TILE BASE
CCS	COLORED CONCRETE SURFACE	PTF	PORCELAIN TILE FLOORING
CHD	CONCRETE LIQUID HARDENER	PTW	PORCELAIN TILE WALL
CKT	CORK TILE	PWB	PAINTED WALL BASE
CON	CONCRETE	RBS	RUBBER BASE
CPT	CARPET	RBT	RUBBER TILE
CRT	ACOUSTICAL CURTAIN	RTF	RESILIENT TILE FLOORING
CSL	CONCRETE SEALER	SCN	SEALED CONCRETE
CTB	CERAMIC TILE BASE	SDT	STATIC DISSIPATIVE TILE
CTF	CERAMIC TILE FLOORING	SHV	SHEET VINYL
CTW	CERAMIC TILE WALL	SPF	SPORTS FLOORING
EPX	EPOXY FLOORING	STC	STAMPED CONCRETE
ETR	EXISTING TO REMAIN	STF	PERFORMANCE STAGE FLOORING
FWC	FABRIC WALLCOVERING	STN	STONE COUNTER
GTF	GROUT, FLOORING	TBD	TO BE DETERMINED
GTW	GLASS TILE WALL	TZB	TERRAZZO BASE
LIN	LINOLEUM	TZZ	TERRAZZO FLOORING
MCC	MULTI-COLORED COATING	VCT	VINYL COMPOSITION TILE
MEL	MELAMINE	VPF	VINYL PLANK FLOORING
MPW	METAL PANEL WALL	VWC	VINYL WALLCOVERING
PLM	PLASTIC LAMINATE	WDB	WOOD BASE
PCN	POLISHED CONCRETE	WDF	WOOD FLOORING
PNC	PAINTED CONCRETE		
PNT	PAINT		

BRUNSWICK COUNTY

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REGISTERED ARCHITECTURAL COMPANY
CERT. NO. 50417
NORTH CAROLINA
RALEIGH, NORTH CAROLINA

MARY H. BREHER
REGISTERED ARCHITECT
13105
April 22, 2020
NORTH CAROLINA
Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: Author
CHECKED BY: Checker

FINISH PLAN & FINISH SCHEDULE - CULINARY

A-722

BID DOCUMENTS

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NOTE: ALL FURNITURE IS TO BE PROVIDED BY OWNER. SHOWN IN PLAN FOR REFERENCE ONLY

TRUE NORTH

A1 FURNITURE PLAN - AUTOMOTIVE
1/8" = 1'-0"

BRUNSWICK COUNTY

THE COAST ACADEMY

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MARY H. BREHER REGISTERED ARCHITECT 13105 April 22, 2020 NORTH CAROLINA Raleigh, N.C.

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: AL
CHECKED BY: MB

AUTOMOTIVE FURNITURE PLAN

A-731

BID DOCUMENTS

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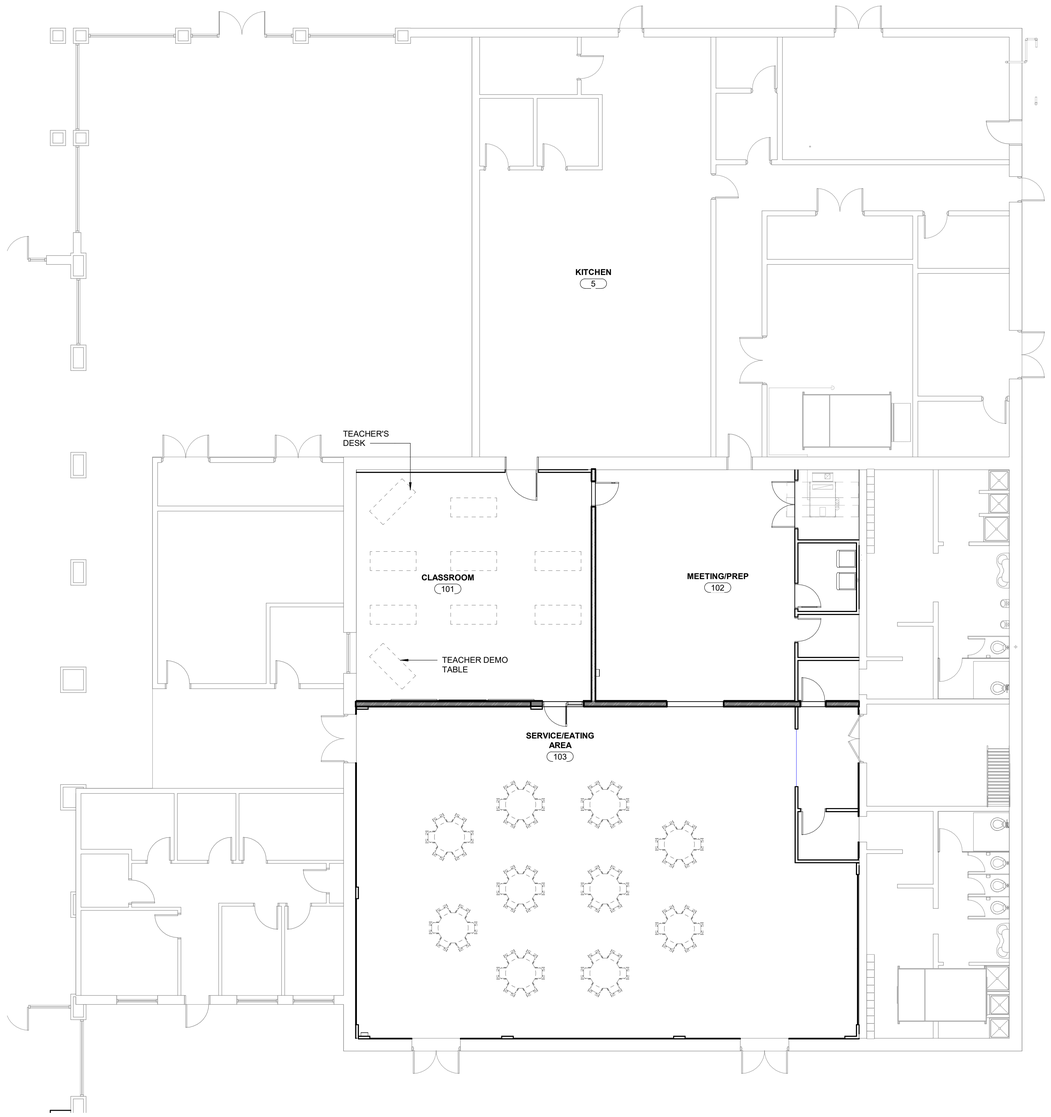

NOTE: ALL FURNITURE IS TO BE PROVIDED BY OWNER. SHOWN IN PLAN FOR REFERENCE ONLY

A1 FURNITURE PLAN - CULINARY
1/8" = 1'-0"

TRUE NORTH

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
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CULINARY FURNITURE PLAN

A-732

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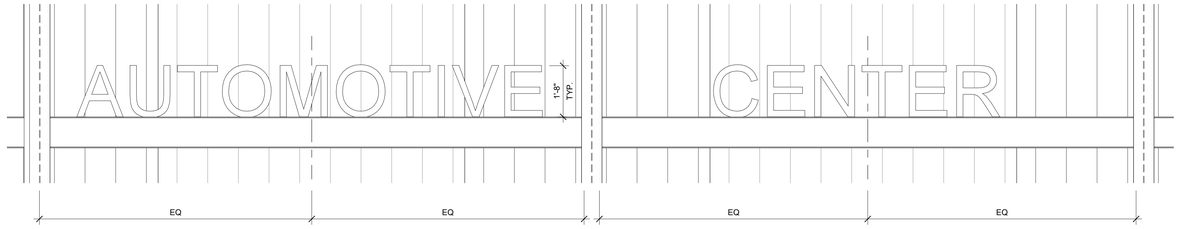
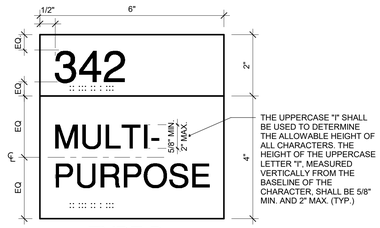


CAST ALUMINUM LETTERS TO BE 24" TALL, AND IN A TEXT STYLE CHOSEN BY THE ARCHITECT FROM MANUFACTURER'S STANDARDS. INCLUDE SIXTEEN (16) 24" TALL LETTERS TO BE CHOSEN BY THE OWNER. CENTER OVER BAY. MOUNTED ON TOP OF STEEL BEAM

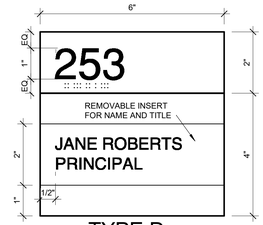
E3 AUTOMOTIVE - BUILDING SIGNAGE
1/2" = 1'-0"

INTERIOR SIGNAGE NOTES

1. REFER TO DOOR SCHEDULE FOR TYPICAL ROOM IDENTIFICATION SIGNAGE LOCATIONS. REFER TO DETAIL A3/A-801 FOR TYPICAL MOUNTING HEIGHT.
2. REFER TO DETAIL A3/A-801 FOR TYPICAL MOUNTING LOCATION.
3. "-EX" MODIFIER ON A SIGN TYPE INDICATES THAT SIGN IS TO BE EXTERIOR GRADE.
4. INSTALL SIGN TYPES _ AND _ ON THE LEFT SIDE OF EACH ELEVATOR DOOR. REFER DETAIL A3/A-801 FOR SIMILAR MOUNTING DIMENSIONS.
5. SIGN TYPE " _ " AND SIGN TYPE " _ " SHALL BE LOCATED ON THE WALL NEXT TO THE LATCH OF SIDE OF THE DOOR, TYP. IF GLAZING IS LOCATED N THE LATCH SIDE OF THE DOOR, THE SIGNAGE SHALL BE MOUNTED WITH BACK PLATE - SEE SPECIFICATIONS.



TYPE B



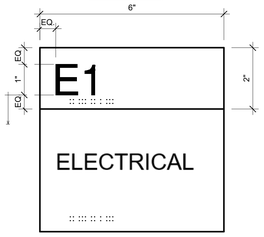
TYPE D



TYPE F-2

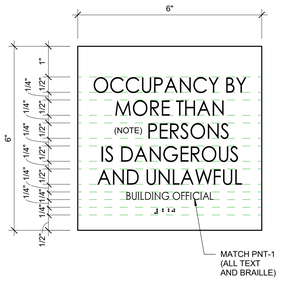


TYPE F-3



TYPE C

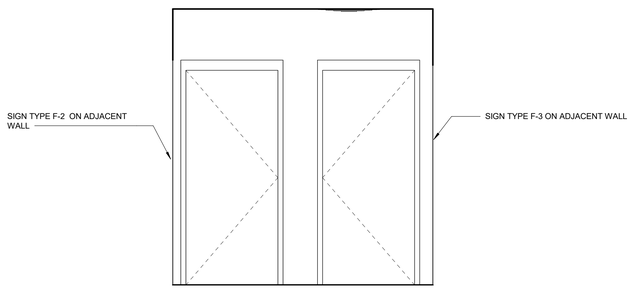
NOTE: BRAILLE SHOWN FOR REFERENCE ONLY. VERIFY ALL SPELLING MATCHES SIGNAGE



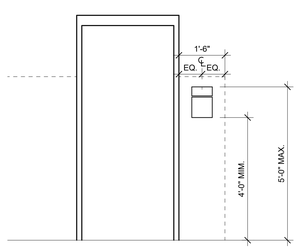
NOTE: SEE SHEET G-002 FOR OCCUPANCY COUNT TO BE LISTED ON EACH SIGN.

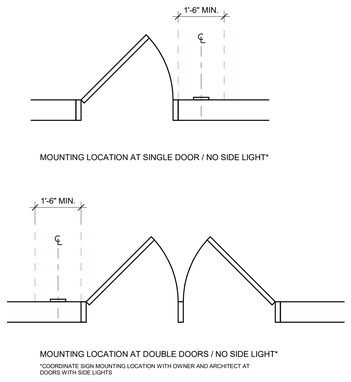
B2 SIGNAGE - OCCUPANCY
6" = 1'-0"

B3 TYPICAL SIGNAGE
6" = 1'-0"

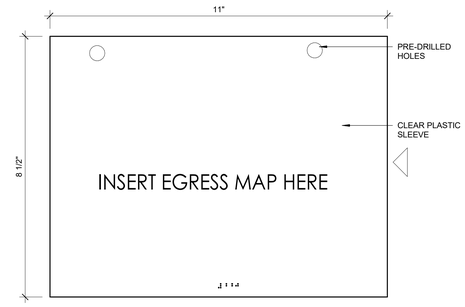


1 GROUP TOILET SIGNAGE
1/2" = 1'-0"





A3 SIGNAGE MOUNTING LOCATIONS
1/2" = 1'-0"



A5 TYPE G - EGRESS MAP
6" = 1'-0"

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
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SIGNAGE

A-801

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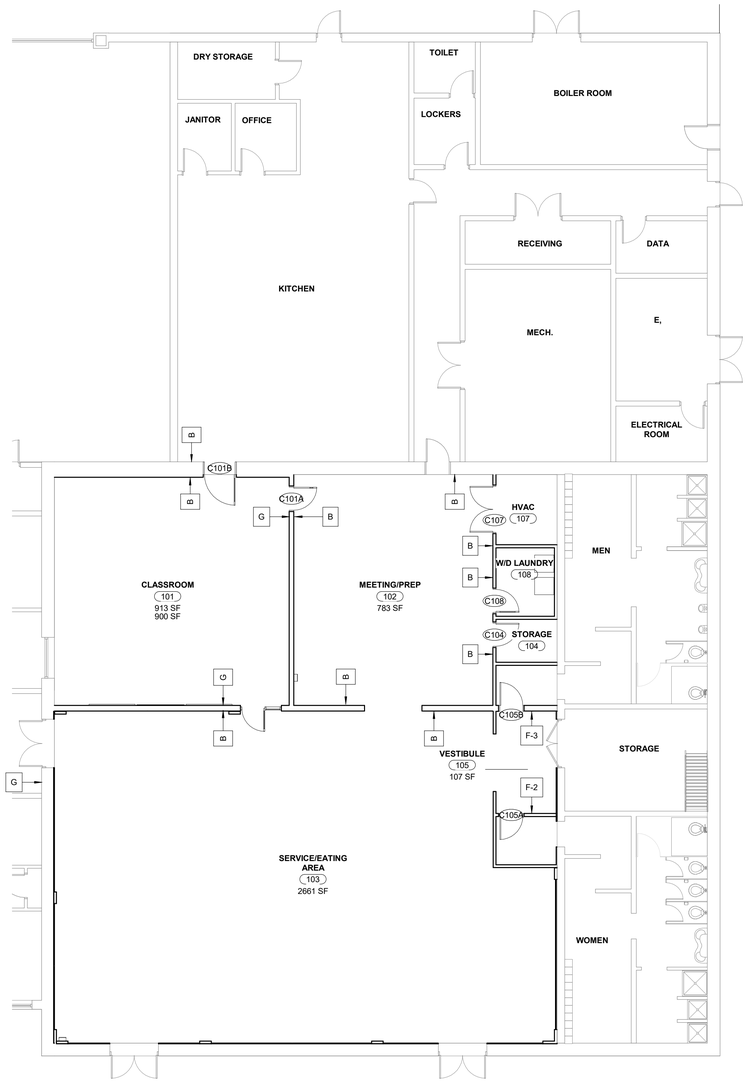
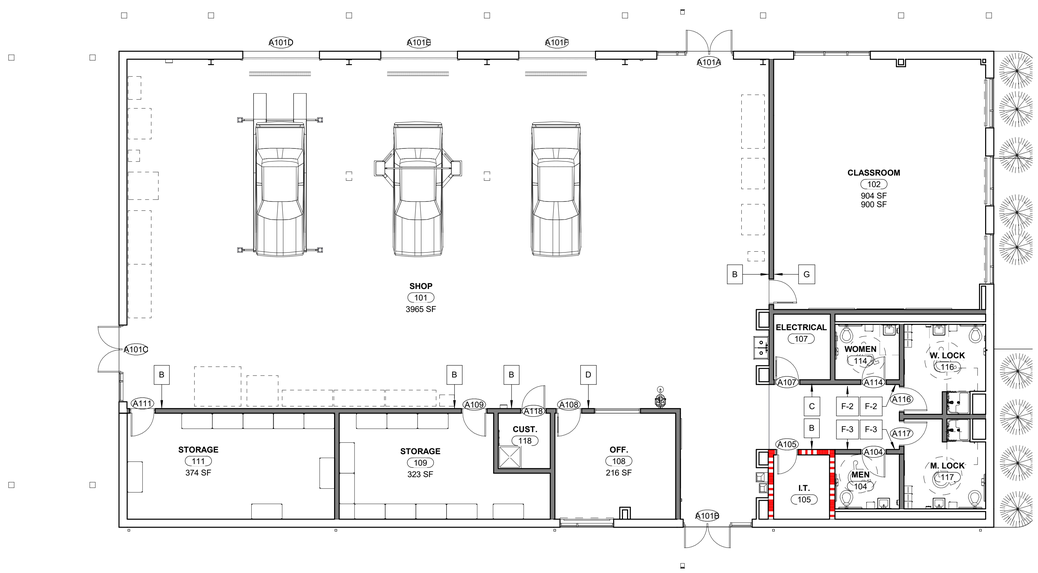


B1 SIGNAGE PLAN - CULINARY
1/8" = 1'-0"



B4 SIGNAGE PLAN - AUTOMOTIVE
1/8" = 1'-0"

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REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
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CHECKED BY: MB

SIGNAGE PLAN

A-803

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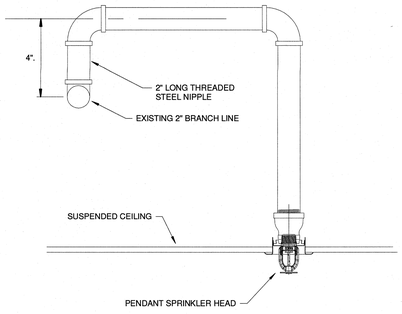
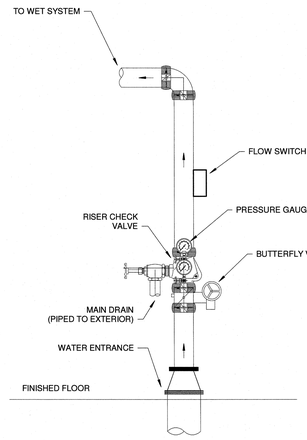
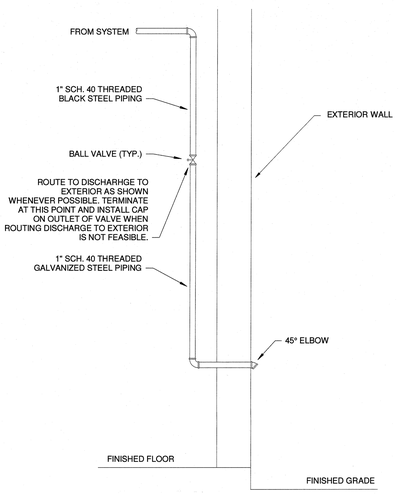


C F-101 ARMOVER DETAIL
SCALE: NONE



B F-101 EXISTING SPRINKLER ENTRANCE DETAIL
SCALE: NONE



A F-101 AUXILIARY DRAIN DETAIL (WET)
SCALE: NONE

GENERAL NOTES: (APPLIES TO ALL FIRE PROTECTION DRAWINGS)

1. SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH BUILDING STRUCTURE AND SYSTEMS, AS WELL AS THE WORK OF OTHER TRADES IN ORDER TO ELIMINATE CONFLICTS.

2. SPRINKLER CONTRACTOR'S DESIGN SHALL BE PER NFPA 13.

3. SPRINKLER CONTRACTOR SHALL PERFORM FLOW TEST PRIOR TO STARTING DESIGN, AND PERFORM HYDRAULIC CALCULATIONS AS NEEDED FOR CODE COMPLIANCE AND TO SATISFY THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

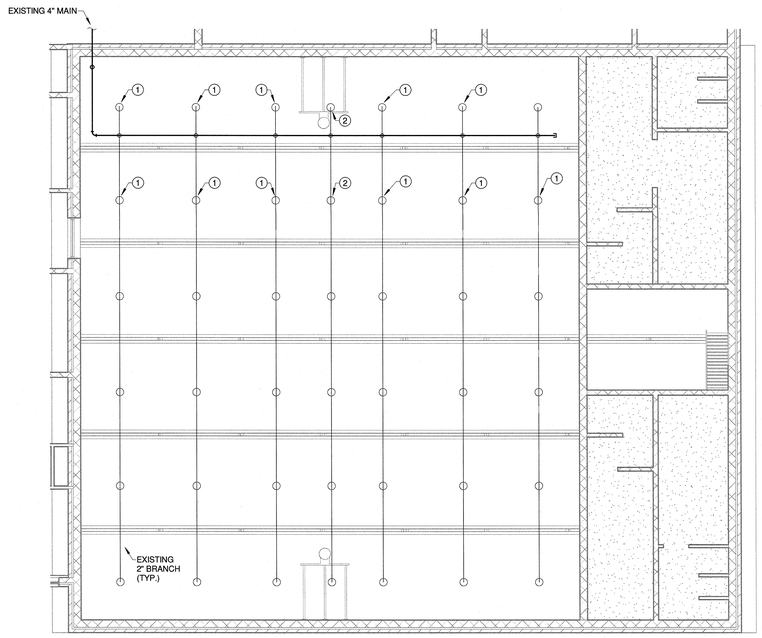
4. PROVIDE AUXILIARY DRAINS WHEREVER WET SYSTEM PIPING IS ROUTED SUCH THAT WATER IS TRAPPED IN EXCESS OF 5 GALLONS, OR WHEREVER DRY SYSTEM PIPING IS ROUTED SUCH THAT ANY AMOUNT OF WATER IS TRAPPED.

5. LIGHT HAZARD OCCUPANCIES: PER NFPA 13, DESIGN DENSITY SHALL BE 0.1 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1,500 SQUARE FEET. REDUCE REMOTE AREA DUE TO THE USE OF QUICK RESPONSE HEADS PER NFPA 13. HOSE ALLOWANCE FOR LIGHT HAZARD SHALL BE 100 GPM PER NFPA 13.

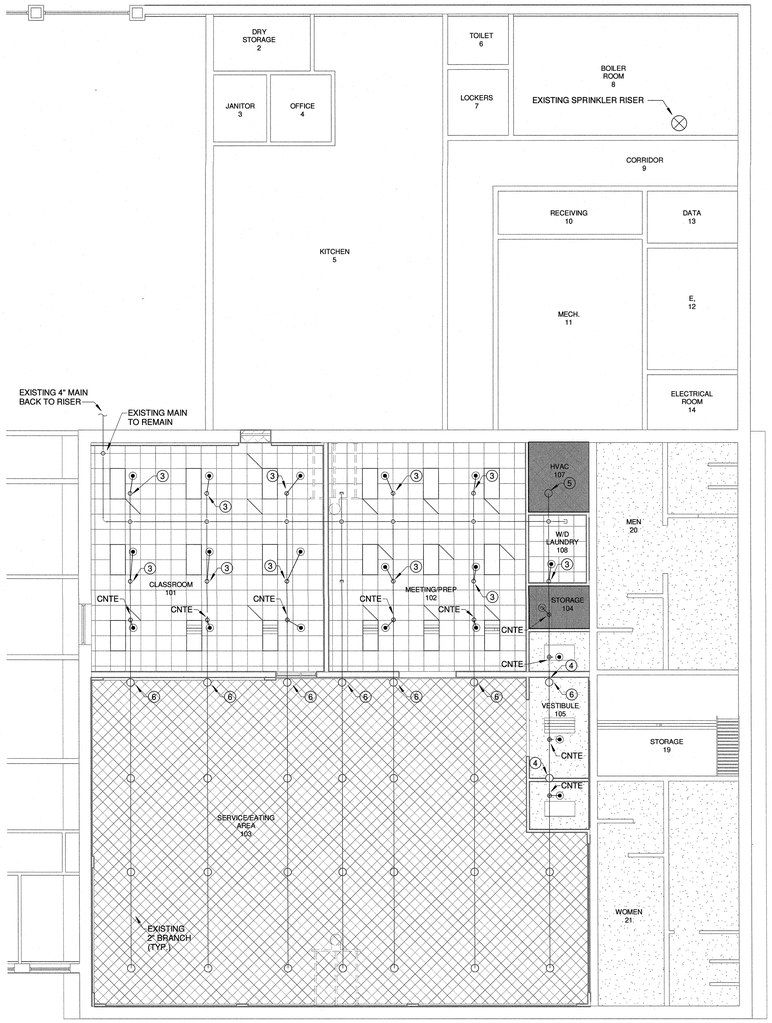
6. ORDINARY HAZARD I OCCUPANCIES: PER NFPA 13, DESIGN DENSITY SHALL BE 0.2 GPM PER SQUARE FOOT OVER THE MOST REMOTE 1,500 SQUARE FEET. REDUCE REMOTE AREA DUE TO THE USE OF QUICK RESPONSE HEADS PER NFPA 13. HOSE ALLOWANCE FOR ORDINARY HAZARD I SHALL BE 250 GPM PER NFPA 13.

8. SPRINKLER CONTRACTOR SHALL PROVIDE SEISMIC BRACING. DESIGN OF SEISMIC BRACING SHALL BE BY THE SPRINKLER CONTRACTOR OR A LICENSED STRUCTURAL ENGINEER WHOM THE SPRINKLER CONTRACTOR HAS RETAINED THE SERVICES OF. DESIGN SHALL BE PER NFPA 13 AND ASCE-07 FOR SEISMIC DESIGN CATEGORY 'C'.

9. LOCATE SPRINKLER HEADS IN THE CENTER OF CEILING TILES.



2 F-101 FIRE PROTECTION DEMO PLAN - CULINARY
SCALE: 1/8" = 1'-0"



1 F-101 FIRE PROTECTION PLAN - CULINARY
SCALE: 1/8" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE EXISTING UPRIGHT SPRINKLER HEAD. PIPING TO BE RECONNECTED. SEE 1/F-101 AND KEYNOTE (3).
2. REMOVE EXISTING UPRIGHT SPRINKLER HEAD AND CAP.
3. RECONNECT TO EXISTING OPENING. SEE 2/F-101 AND KEYNOTE (1).
4. EXISTING UPRIGHT SPRINKLER TO REMAIN OVER VESTIBULE 105.
5. EXISTING UPRIGHT SPRINKLER TO REMAIN OVER HVAC 107.
6. EXISTING SPRINKLER HEAD SHALL BE ON SERVICE/EATING AREA 103 SIDE OF NEW WALL. COORDINATE FINAL WALL LOCATION WITH EXISTING SPRINKLER HEADS.

HAZARD LEGEND

- LIGHT HAZARD
- ORDINARY HAZARD I

SPRINKLER LEGEND

- PENDANT SPRINKLER HEAD
- EXISTING UPRIGHT SPRINKLER HEAD
- WET SPRINKLER RISER
- PIPE RISER DOWN

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.
   - NON-RATED PARTITION TO CEILING
   - NON-RATED PARTITION TO DECK
   - 1 HR. RATED PARTITION TO DECK
   - 2 HR. RATED PARTITION TO DECK
   - 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

BRUNSWICK COUNTY

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JOB # 19051

NORTH CAROLINA PROFESSIONAL SEAL 043164 ENGINEER CASEY D. GILMAN

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: SAL/CDG
CHECKED BY: CDG

FIRE PROTECTION PLAN - CULINARY

F-101 OF 1

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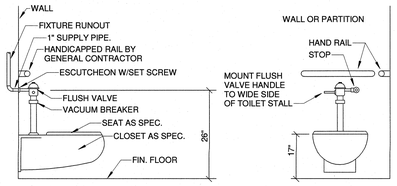
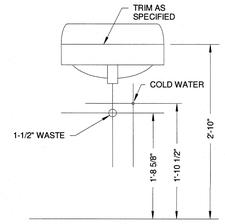


A P-001 ADULT ADA WATER CLOSET (WC-1) DETAIL
SCALE: NONE



B P-001 ADULT ADA LAVATORY (L-1) DETAIL
SCALE: NONE

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	ROUGH-IN SIZES			REMARKS
		WASTE	C.W.	H.W.	
WC-1	WATER CLOSET - ADA	4"	1-1/4"	-	ADA HEIGHT/DETAIL A/P-001
L-1	WALL HUNG LAVATORY	1-1/2"	1/2"	-	ADA HEIGHT/DETAIL B/P-001
SK-1	UTILITY SINK	1-1/2"	1/2"	1/2"	
EWC-1	ELECTRIC WATER COOLER	1-1/2"	1/2"	-	DUAL HEIGHT W/ BOT FILLER/E/P-001
SH-1	SHOWER - ADA	2"	1/2"	1/2"	DETAIL F/P-001
MR-1	MOP RECEPTOR	3"	1/2"	1/2"	DETAIL N/P-001
HB-1	HOSE BIBB	-	1/2"	-	MOUNT 12" A.F.F.
HB-2	WALL HYDRANT	-	3/4"	-	MOUNT 24" A.F.G.
HB-3	HOSE BIBB IN BOX	-	1/2"	-	MOUNT 12" A.F.F.
FD-1	FLOOR DRAIN	4"	-	-	
FD-2	FLOOR DRAIN	2"	-	-	
FD-3	FLOOR DRAIN	3"	-	-	
TD-1	TRENCH DRAIN	4"	-	-	
HD-1	HUB DRAIN	3"	-	-	DETAIL H/P-001
CB-1	WASHER CONNECTION BOX	2"	1/2"	1/2"	
ESH-1	EMERGENCY SHOWER	-	1/2"	1/2"	W/ EYEWASH/ SIGNAGE/ DETAIL L/P-001

NOTE: LAVATORIES AND WASHFOUNTAINS SHALL HAVE MIXING VALVES INSTALLED SUCH THAT WATER TEMPERATURE IS LIMITED TO 110F. MIXING VALVES SHALL CONFORM TO ASSE 1070 OR CSA B125.3. SEE SPECIFICATIONS.

WATER HEATER SCHEDULE

SYMBOL	DESCRIPTION	ROUGH-IN SIZES		TEMP. SETTING	STORAGE CAPACITY	RECOVERY	FUEL	LOAD	ELEC.	DETAIL
		C.W.	H.W.							
WH-1	TANK TYPE GAS WATER HEATER	1-1/2"	1-1/2"	140°F	119 GAL.	349 GPH	NATURAL	300MBH	120V, 1Ø	K/P-001

CIRCULATOR PUMP SCHEDULE

SYMBOL	GPM	THD	ELECTRICAL		LOCATION	SERVICE	CONTROL
			HP	VOLTAGE			
CP-1	1	6	1/40	115 V., 1Ø	CUSTODIAL 118	H.W. RETURN	AQUASTAT, DDC

GAS REGULATOR SCHEDULE-AUTOMOTIVE BUILDING

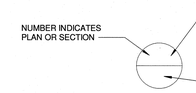
SYMBOL	LOCATION	SERVING	CAPACITY			REMARKS
			MBH	INLET PRESSURE	OUTLET PRESSURE	
REG 1	EXTERIOR	PHP 1	300	2 PSIG	7" W.C.	LIMITED VENTING
REG 2	CUST. 118	WH-1	300	2 PSIG	7" W.C.	LIMITED VENTING

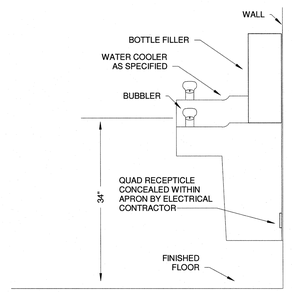
GAS REGULATOR SCHEDULE-EXISTING BUILDING

SYMBOL	LOCATION	SERVING	CAPACITY			REMARKS
			MBH	INLET PRESSURE	OUTLET PRESSURE	
REG 3	BOILER ROOM 8	GAS DRYER	55	5 PSIG	7" W.C.	LIMITED VENTING

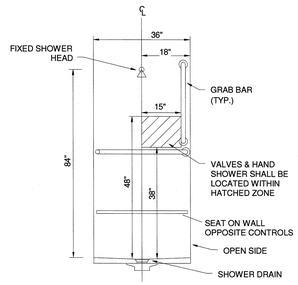
LEGEND

W	WASTE PIPING
WO	WASTE OIL PIPING
V	VENT PIPING
WOV	WASTE OIL VENT PIPING
C	CONDENSATE PIPING
G	NATURAL GAS PIPING
CW	COLD WATER PIPING
HW	HOT WATER PIPING
HWR	HOT WATER RETURN PIPING
CA	COMPRESSED AIR PIPING
EG	EXISTING NATURAL GAS PIPING
EW	EXISTING WASTE PIPING
EV	EXISTING VENT PIPING
ECW	EXISTING COLD WATER PIPING
EHW	EXISTING HOT WATER PIPING
EHWR	EXISTING HOT WATER RETURN PIPING
	BALL/BUTTERFLY VALVE
	BALANCING VALVE
	CHECK VALVE
	GAS VALVE
	SOLENOID VALVE
	VALVE IN RISE
	PIPE ELBOW TURNED DOWN
	PIPE ELBOW TURNED UP
	PIPE TEE TURNED DOWN
	PIPE TEE TURNED UP
	UNION
	STRAINER
	DOUBLE CHECK VALVE BACKFLOW PREVENTER
	REDUCED PRESSURE BACKFLOW PREVENTER
'A'	SHOCK ARRESTER, 'A' INDICATES PLUMBING DRAINAGE INSTITUTE STANDARD SIZE
	ASME PRESSURE TEMPERATURE RELIEF VALVE
VTR	VENT THRU ROOF
WOVTR	WASTE OIL VENT THRU ROOF
CO	CLEANOUT
ECO	EXTERIOR CLEANOUT
WCO	WALL CLEANOUT
FCO	FLOOR CLEANOUT
HDFCO	HEAVY DUTY FLOOR CLEANOUT
RD	ROOF DRAIN
ORD	OVERFLOW ROOF DRAIN
AFF	ABOVE FINISHED FLOOR
BFF	BELOW FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFG	BELOW FINISHED GRADE
INV.	INVERT ELEVATION
CNTE	CONNECT NEW TO EXISTING

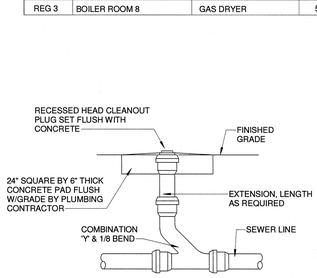




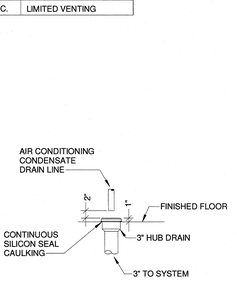
E P-001 DUAL HEIGHT EWC DETAIL (EWC-1)
SCALE: NONE



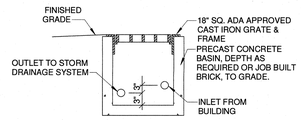
F P-001 ADULT ADA STANDARD TRANSFER SHOWER (SH-1) DETAIL
SCALE: NONE



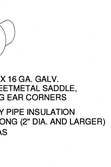
G P-001 EXTERIOR CLEANOUT DETAIL
SCALE: NONE

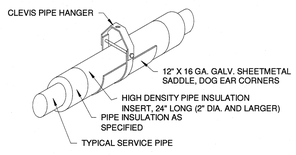


H P-001 HUB DRAIN (HD-1) DETAIL
SCALE: NONE

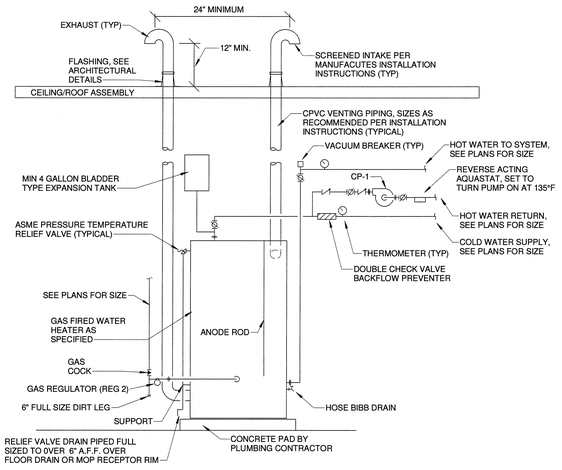


M P-001 CONDENSATE RELIEF BASIN
SCALE: NONE

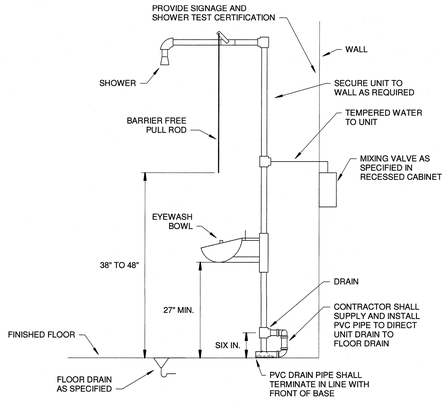




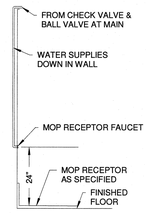
J P-001 PIPE HANGER DETAILS
SCALE: NONE



K P-001 GAS WATER HEATER (WH-1) PIPING DETAIL
SCALE: NONE



L P-001 EMERGENCY EYEWASH/SHOWER (ESH-1) DETAIL
SCALE: NONE



N P-001 MOP RECEPTOR (MR-1) DETAIL
SCALE: NONE

TOTAL CONNECTED LOAD - AUTOMOTIVE

WASTE FIXTURE UNITS =	48.5	F.U.
WASTE OIL FIXTURE UNITS =	8	F.U.
TOTAL WASTE FIXTURE UNITS =	56.5	F.U.
COLD WATER DEMAND =	70	GPM
HOT WATER DEMAND =	16	GPM
GAS LOADS		
BUILDING HEATING DEMAND =	300	CFH
WATER HEATING DEMAND =	300	CFH
TOTAL CONNECTED LOAD =	600	CFH

TOTAL CONNECTED LOAD - CULINARY

GAS LOADS		
EXISTING BUILDING HEATING DEMAND =	2,274	CFH
GAS DRYER DEMAND =	55	CFH
TOTAL CONNECTED LOAD =	2,329	CFH

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OFFICE@CHEATHAMPA.COM
NC LICENSE# C-1073

JOB # 19051

NORTH CAROLINA PROFESSIONAL SEAL 043154 ENGINEER CASEY D. GILLMAN

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: SAL
CHECKED BY: CDG

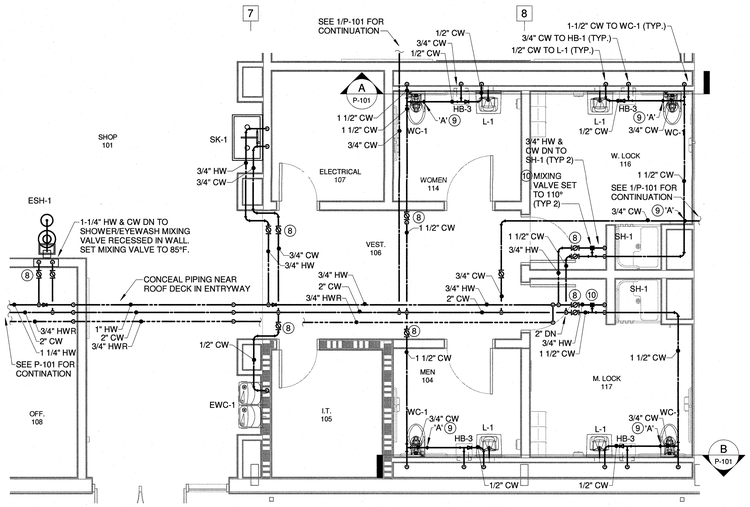
PLUMBING LEGEND, DETAILS AND SCHEDULES

P-001 OF 3

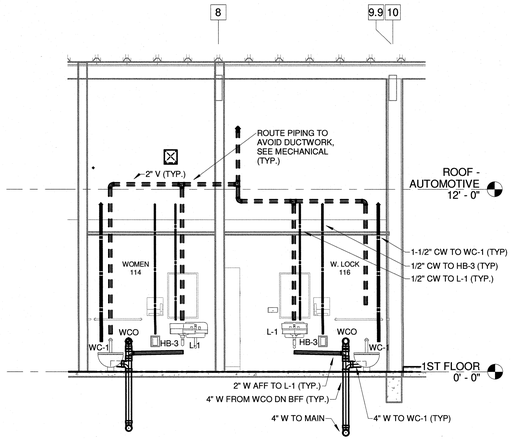
BID DOCUMENTS

KEYED NOTES

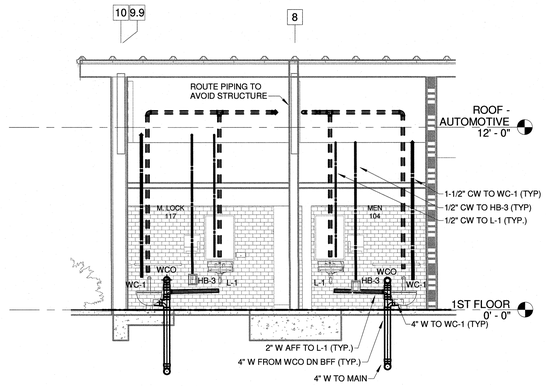
1. PROVIDE 3/4" CA DN TO COMPRESSED AIR OUTLET AS SPECIFIED AT 4'-0" AFF
2. 1" CA DN TO TIRE BALANCER. SEE ARCHITECTURAL PLANS TO VERIFY LOCATION.
3. 1" CA DN TO TIRE CHANGER. SEE ARCHITECTURAL PLANS TO VERIFY LOCATION.
4. PROVIDE 3/4" CA DN TO COMPRESSED AIR OUTLET AT WORK BENCH 4'-0" AFF. SEE ARCHITECTURAL PLANS TO VERIFY LOCATION.
5. PROVIDE 3/4" CA DN TO COMPRESSED AIR OUTLET AT TABLE 4'-0" AFF. SEE ARCHITECTURAL PLANS TO VERIFY LOCATION.
6. NOT USED.
7. 1" CA DN TO ARM-TYPE LIFT, SEE ARCHITECTURAL PLANS TO VERIFY LOCATION.
8. INSTALL BALL VALVE IN EASILY ACCESSIBLE AREA. DO NOT INSTALL WITHIN SOFFIT, PLUMBING CHASE, OR ABOVE HARD CEILING.
9. INSTALL SHOCK ARRESTOR IN EASILY ACCESSIBLE AREA. DO NOT INSTALL WITHIN SOFFIT, PLUMBING CHASE, OR ABOVE HARD CEILING.
10. INSTALL MIXING VALVE IN EASILY ACCESSIBLE AREA. DO NOT INSTALL WITHIN SOFFIT, PLUMBING CHASE, OR ABOVE HARD CEILING.
11. 1/2" GAS TO REG 1. 1-1/4" GAS FROM REG 1 TO PHP-1. SEE MECHANICAL.
12. 1/2" GAS TO REG 2. 1-1/4" GAS FROM REG 2 TO WH-1.



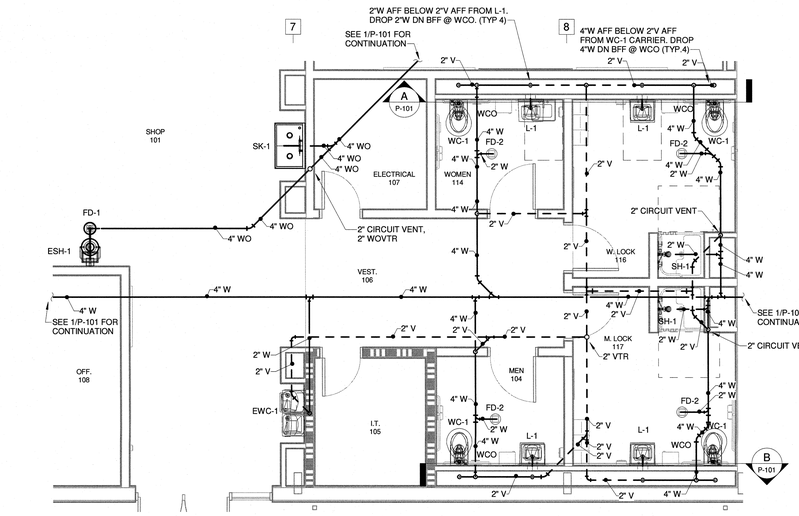
5 P-101 ENLARGED AUTOMOTIVE DOMESTIC WATER
SCALE: 1/4" = 1'-0"



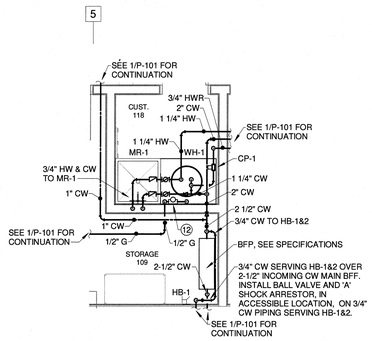
A P-101 WOMEN'S RESTROOMS SECTION
SCALE: 1/4" = 1'-0"



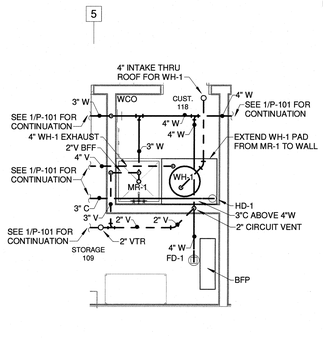
B P-101 MEN'S RESTROOM SECTION
SCALE: 1/4" = 1'-0"



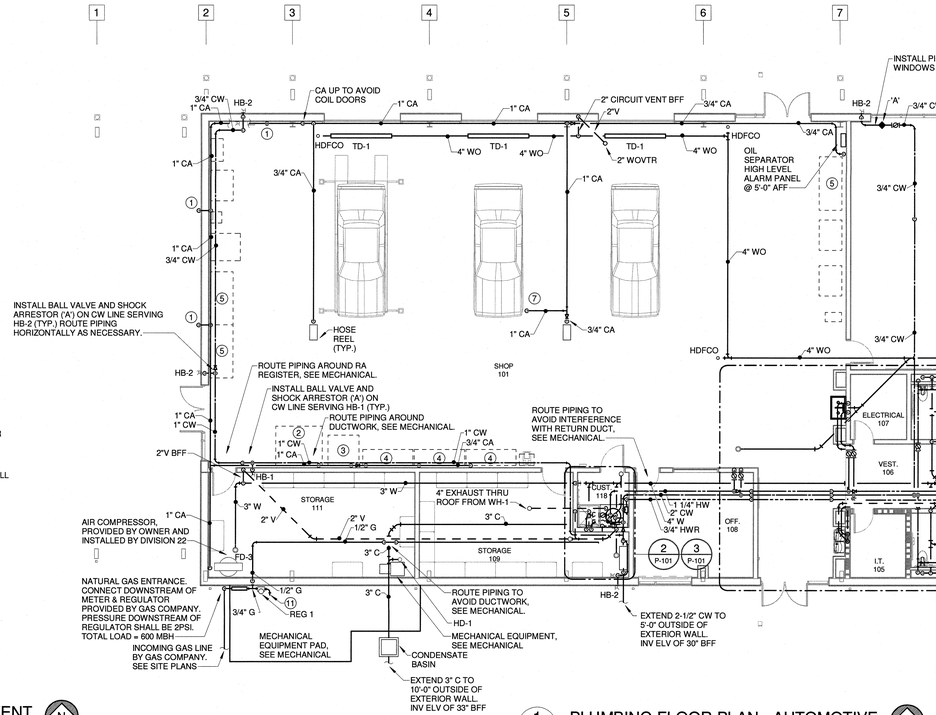
4 P-101 ENLARGED AUTOMOTIVE WASTE & VENT
SCALE: 1/4" = 1'-0"



3 P-101 ENLARGED CUST. 118 - DOMESTIC WATER
SCALE: 1/4" = 1'-0"



2 P-101 ENLARGED CUST. 118 - WASTE & VENT
SCALE: 1/4" = 1'-0"



1 P-101 PLUMBING FLOOR PLAN - AUTOMOTIVE
SCALE: 1/8" = 1'-0"

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.
   - NON-RATED PARTITION TO CEILING
   - NON-RATED PARTITION TO DECK
   - 1 HR. RATED PARTITION TO DECK
   - 2 HR. RATED PARTITION TO DECK
   - 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

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NC LICENSE# C-1073

JOB # 19051

NORTH CAROLINA PROFESSIONAL SEAL 043164 ENGINEER CASEY D. GILMAN

REVISIONS:

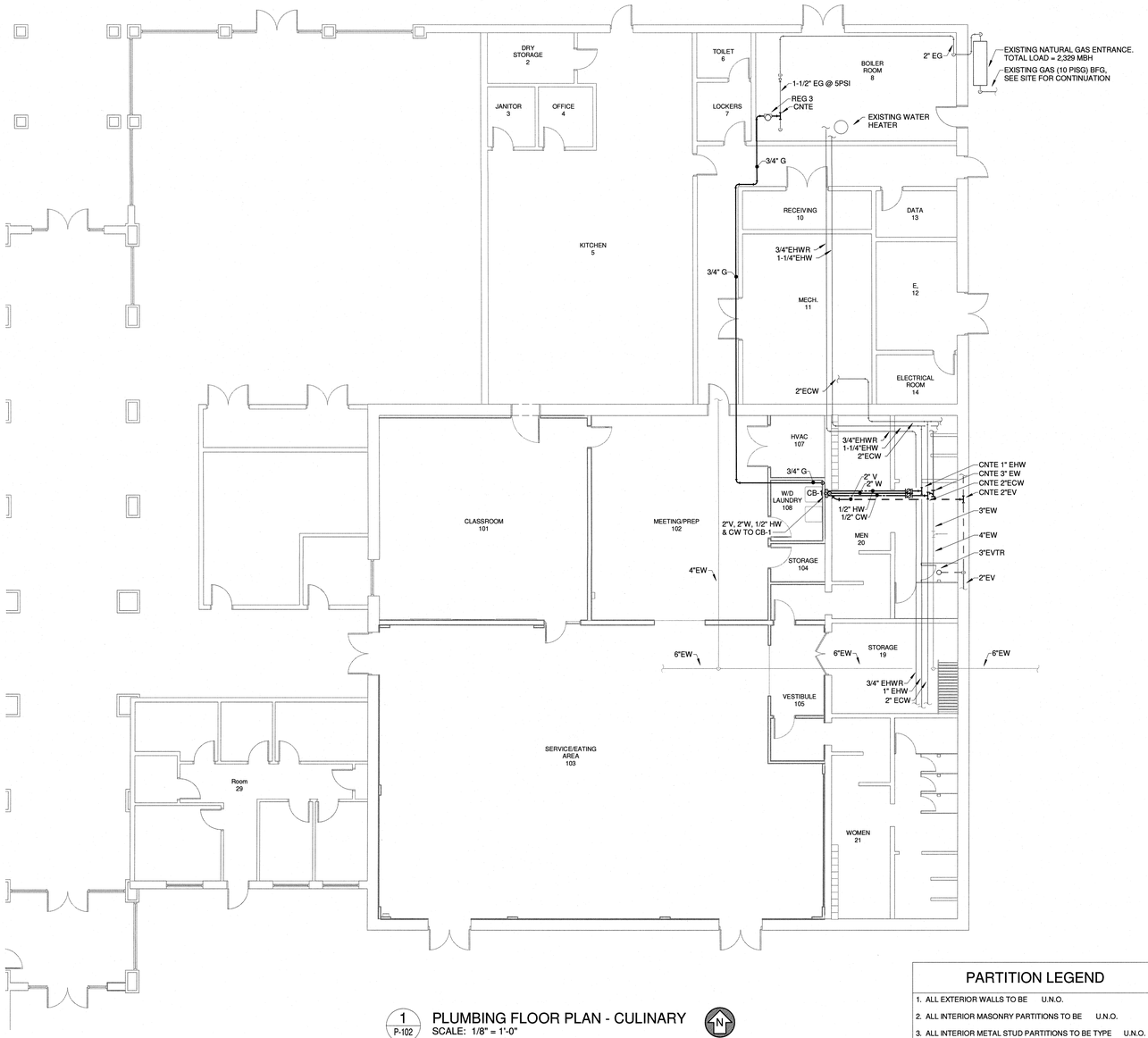
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: SAL
CHECKED BY: CDG

PLUMBING PLANS - AUTOMOTIVE

P-101
OF 3

BID DOCUMENTS



1 / P-102 PLUMBING FLOOR PLAN - CULINARY
SCALE: 1/8" = 1'-0"

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

- NON-RATED PARTITION TO CEILING
- NON-RATED PARTITION TO DECK
- 1 HR. RATED PARTITION TO DECK
- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

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REVISIONS:

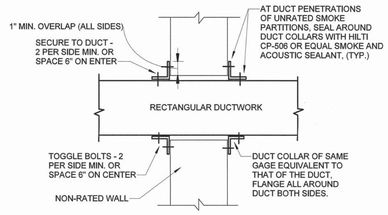
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: SAL
CHECKED BY: CDG

PLUMBING PLANS - CULINARY

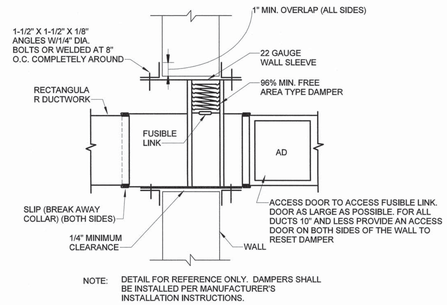
P-102
OF 3

BID DOCUMENTS



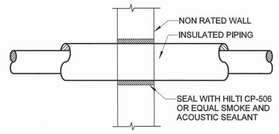
NON-RATED WALLS

A M-001 DUCT PENETRATION DETAIL
SCALE: NONE



NOTE: DETAIL FOR REFERENCE ONLY. DAMPERS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

B M-001 TYPICAL VERTICAL FIRE DAMPER DETAIL
SCALE: NONE



NON-RATED WALLS

C M-001 PIPE PENETRATION DETAIL
SCALE: NONE

GENERAL NOTES:

1. HVAC CONTRACTOR SHALL FIELD VERIFY ALL RELEVANT DIMENSIONS, CLEARANCES, LOCATIONS AND ELEVATIONS PRIOR TO ORDERING, FABRICATION, AND INSTALLATION OF HIS WORK. DISCREPANCIES OR INTERFERENCE'S SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER AS SOON AS POSSIBLE. THE DRAWINGS DIAGRAMMATIC ALLY INDICATE THE GENERAL LOCATION OF DUCTS, PIPING AND EQUIPMENT AND DO NOT SHOW ALL OFFSETS, FITTINGS, BOLTS, CONNECTIONS, ETC. REQUIRED FOR A COMPLETE SYSTEM. WHILE THE DRAWINGS ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS FOUND NECESSARY TO CHANGE THE LOCATION OF ANY WORK TO ACCOMMODATE THE CONDITIONS AT THE BUILDING, SUCH CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER, AND AS DIRECTED BY THE ENGINEER.
2. ALL SUPPLY AND RETURN CONNECTIONS TO AHU SHALL BE MADE WITH A FLEXIBLE DUCT CONNECTION.
3. PIPING, DUCTWORK, ETC., SHALL NOT BE SUPPORTED FROM ROOF STRUCTURE BRIDGING OR ROOFDECK. DUCTWORK AND PIPING SHALL BE SUPPORTED DIRECTLY FROM STRUCTURAL ELEMENTS OF THE BUILDING. EQUIPMENT SUPPORTED BY ROOF STRUCTURE SHALL HAVE SUPPORTS ATTACHED AS CLOSE AS POSSIBLE TO PANEL POINTS.
4. ALL DUCT JOINTS SHALL BE SEALED AS SPECIFIED.
5. IN AREAS WITH GYPBOARD CEILINGS, HVAC CONTRACTOR SHALL INSTALL EQUIPMENT, DUCTWORK AND PIPE HANGERS PRIOR TO GYPBOARD INSTALLATION.
6. SEE SPECIFICATION SECTION 230500 FOR DESCRIPTION AND DEMARCATION OF WORK FOR POWER TO BAS CONTROL.
7. ALL PIPING PENETRATIONS THROUGH RATED WALLS SHALL BE FIRE STOPPED USING PIPE PENETRATIONS DETAILS SHOWN ON SHEET M-001. ALL DUCT PENETRATIONS THRU RATED WALLS SHALL BE FIRE STOPPED USING DETAILS SHOWN ON SHEET M-001.
8. ALL THERMOSTATS AND SWITCHES FOR MECHANICAL SYSTEMS AND MIDDLE OF HVAC CONTROL PANELS SHALL BE MOUNTED 44" AFF MAXIMUM. PROVIDE SERVICE CLEARANCES AS REQUIRED FOR ALL EQUIPMENT.
9. AIR CONDITIONING CONDENSATE LINE SIZES ARE MINIMAL SIZE. DO NOT INSTALL SMALLER THAN ACTUAL COIL DISCHARGE SIZE.
10. PIPING SHALL BE PRESSURE TESTED AS SPECIFIED.
11. FLUSHING OF NEW PIPING AND EQUIPMENT SHALL BE BY THE HEATING AND AIR CONDITIONING CONTRACTOR. FLUSHING SHALL BE COORDINATED WITH BRUNSWICK COUNTY SCHOOLS' CHEMICAL TREATMENT CONTRACTOR. CHEMICAL CLEANING AND TREATMENT OF NEW PIPING, INCLUDING CHEMICALS, WILL BE BY BRUNSWICK COUNTY SCHOOLS' CHEMICAL TREATMENT CONTRACTOR.

LEGEND

	REMOVE EXISTING DUCTWORK
	REMOVE EXISTING PIPING, LINE SYMBOL INDICATES SERVICE
	EXISTING DUCTWORK TO REMAIN
R	REFRIGERANT PIPING
C	AIR CONDITIONING CONDENSATE PIPING
	FLEXIBLE DUCTWORK
	RECTANGULAR DUCTWORK
	SUPPLY AIR DUCTWORK TURNED DOWN
	SUPPLY AIR DUCTWORK TURNED UP
	RETURN AIR/EXHAUST AIR TURNED DOWN
	RETURN AIR/EXHAUST AIR TURNED UP
	FABRIC DUCTWORK
	DOUBLE WALL SPIRAL DUCTWORK
	BRANCH TAKEOFF WITH TURNING VANES, SPLITTER DAMPER AND LOCKING QUADRANT
	DUCT TEE WITH TURNING VANES, SPLITTER DAMPER AND LOCKING QUADRANT
	DUCT WITH RUNOUT (SPIN-IN TAKE OFF WITH DAMPER)
	CEILING RETURN AIR/ EXHAUST AIR REGISTER
	CEILING SUPPLY AIR DIFFUSER
A	REGISTER, GRILLE OR DIFFUSER SYMBOL
TS_2	HEATING AND COOLING THERMOSTAT WITH # INDICATING UNIT
TS_C	COOLING THERMOSTAT
TS_H	HEATING ATHERMOSTAT
S	SWITCH ON WALL
	HEAVY DUTY DISCONNECT SWITCH
1	KEYED NOTE SYMBOL
S	SMOKE DETECTOR WITH DUCT ACCESS DOOR, ACCESS DOOR BY THE MECH. CONTR., DETECTOR FURNISHED BY THE ELECT. CONTR. AND INSTALLED BY THE MECH. CONTR. PROVIDE CEILING ACCESS DOOR (16"X16" MIN.) WHERE NECESSARY.
F/D	FIRE DAMPER (1-1/2 HOUR RATED) MOUNTED IN WALL WITH DUCT ACCESS DOOR AND CEILING ACCESS DOOR (16"X16" MIN.) WHERE NECESSARY.
AD	ACCESS DOOR
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTSIDE AIR
EX.A.	EXHAUST AIR
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
MD	MANUAL DAMPER
MOD	MOTOR OPERATED DAMPER
AFF	ABOVE FINISHED FLOOR
FIN. FL.	FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
CONC.	CONCRETE
CONT.	CONTINUATION
CONTR.	CONTRACTOR
	NON-RATED PARTITION TO CEILING
	NON-RATED PARTITION TO DECK
	1 HR. RATED PARTITION TO DECK
	2 HR. RATED PARTITION TO DECK
	4 HR. RATED PARTITION TO DECK

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT METHOD OF COMPLIANCE

☒ COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C403.2 (MANDATORY), C403.3 ECONOMIZERS (PRESCRIPTIVE) AND C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS.
- ☐ C406.2 MORE EFFICIENT HVAC PERFORMANCE
- ☒ C406.3 REDUCED LIGHTING POWER DENSITY
- ☐ C406.4 ENHANCED LIGHTING CONTROLS
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ☐ C406.6 DOAS PROVISION FOR CERTAIN HVAC
- ☐ C406.7 HIGH ENERGY SERVICE WATER HEATING

☐ COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C403.2 (MANDATORY), C403.3 ECONOMIZERS (PRESCRIPTIVE), C403.4 HYDRONIC AND MULTIPLE ZONE (PRESCRIPTIVE) AND C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS.
- ☐ C406.2 MORE EFFICIENT HVAC PERFORMANCE
- ☐ C406.3 REDUCED LIGHTING POWER DENSITY
- ☐ C406.4 ENHANCED LIGHTING CONTROLS
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ☐ C406.6 DOAS PROVISION FOR CERTAIN HVAC
- ☐ C406.7 HIGH ENERGY SERVICE WATER HEATING

☐ COMPLIANCE PER CHAPTER 4 NORTH CAROLINA ENERGY CONSERVATION CODE - SECTIONS C402.5, C403.2, C404, C405.2, C405.3, C405.5, C405.6 AND C407 TOTAL BUILDING PERFORMANCE. THE BUILDING ENERGY COST SHALL BE EQUAL TO OR LESS THAT 85 PERCENT OF THE STANDARD REFERENCE DESIGN BUILDING.

☐ COMPLIANCE PER ANSI/ASHRAE/IESNA 90.1-2013 .

☐ COMPLIANCE PER NORTH CAROLINA SPECIFIC COMCHECK OR ASHRAE 90.1-2013 COMCHECK.

CLIMATE ZONE 3A

EXTERIOR DESIGN CONDITIONS
winter dry bulb: 26°F
summer dry bulb: 92°F DB/76°F WB

INTERIOR DESIGN CONDITIONS
winter dry bulb: 70°F
summer dry bulb: 75°F
relative humidity: 50%

BUILDING HEATING LOAD: BLOCK LOAD = 375.0 MBH

BUILDING COOLING LOAD: BLOCK LOAD = 34.8 TONS

MECHANICAL SPACING CONDITIONING SYSTEM
Unitary: (description of unit: / heating efficiency: / cooling efficiency: / heat output of unit: / cooling output of unit:) SEE SCHEDULES ON SHEET M-601

Boiler: N/A
total boiler output. If oversized, state reason.

Chiller: N/A
total chiller capacity. If oversized, state reason.

LIST EQUIPMENT EFFICIENCIES: SEE SCHEDULES ON SHEET M-601

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)
(motor horsepower: / number of phases: / minimum efficiency: / motor type: / # of poles:) SEE SCHEDULES ON SHEET M-601

DESIGNER STATEMENT

To the best of my knowledge and belief, the design of this building complies with the mechanical systems, service systems and equipment requirements of the North Carolina Energy Conservation Code.

SIGNED: _____
NAME: Kenneth Lynch, P.E.
TITLE: Professional Engineer

BRUNSWICK COUNTY

THE COAST ACADEMY

LS3P

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FAX: (910) 452-4211
OFFICE@CHEATHAMPA.COM
NC LICENSE# C-1073

JOB # 19051

NORTH CAROLINA PROFESSIONAL SEAL 17661 ENGINEER KENNETH LYNCH

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: NAH
CHECKED BY: KL

MECHANICAL LEGEND, ENERGY SCHEDULE & PENETRATION DETAILS

M-001

OP1

BID DOCUMENTS

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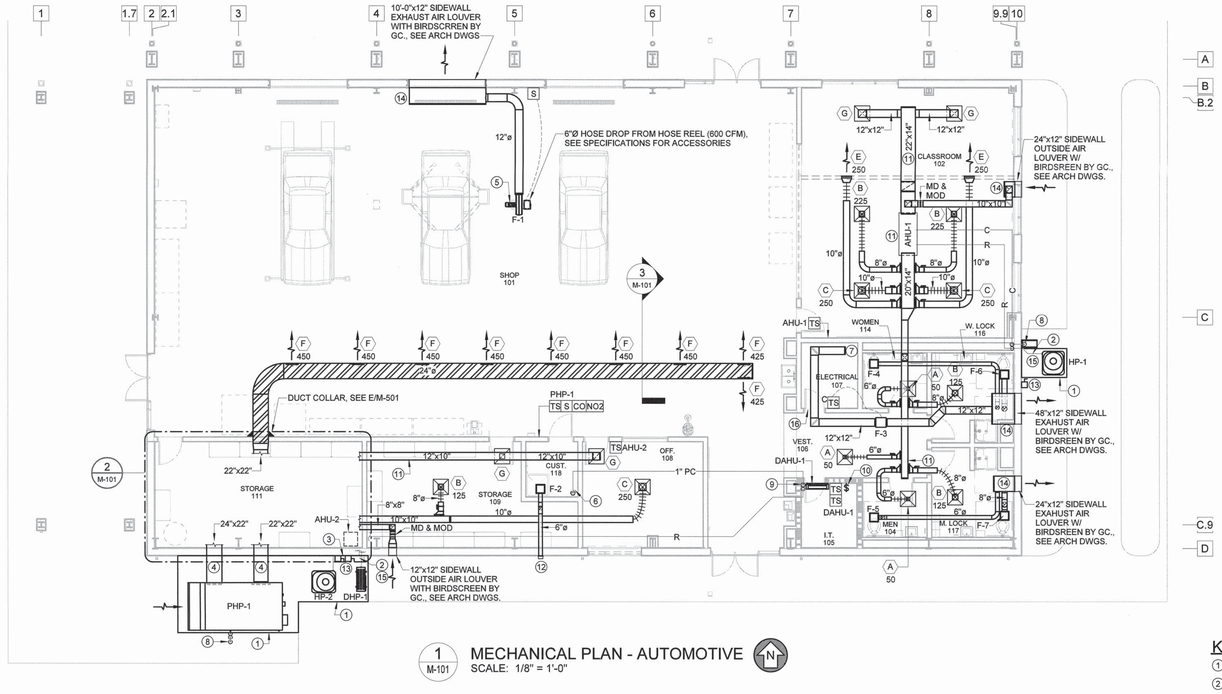
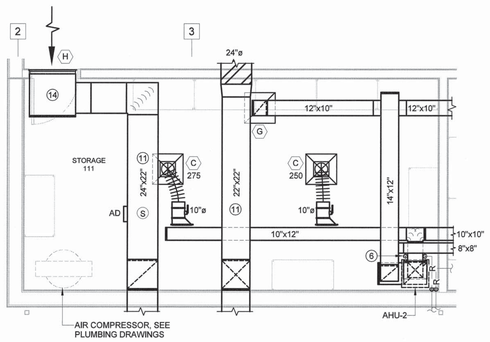


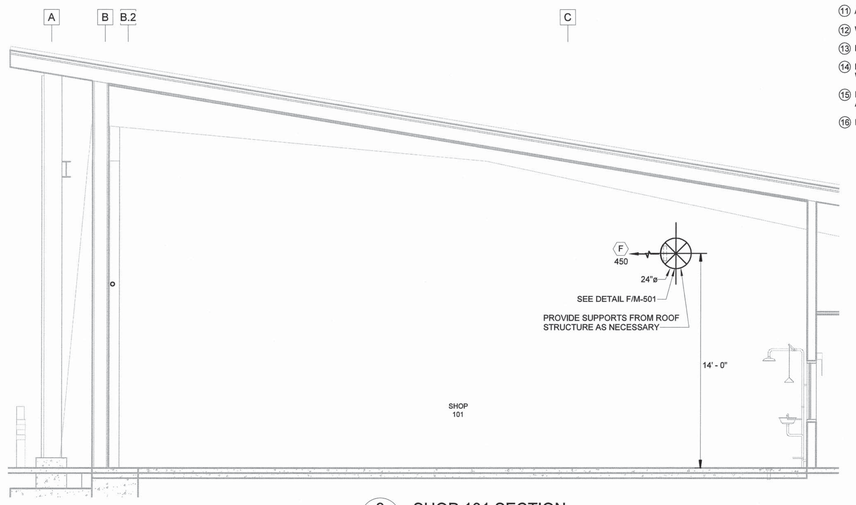
1 M-101 MECHANICAL PLAN - AUTOMOTIVE
SCALE: 1/8" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY

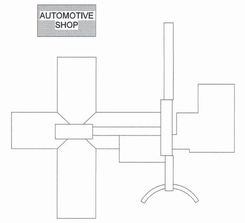
1. 6" THICK CONCRETE PAD (TYP.). SLOPE PAD AWAY FROM BUILDING.
2. SUPPORT REFRIGERANT PIPING FROM CONCRETE PAD.
3. RACK REFRIGERANT PIPING NEATLY ON WALL.
4. EXTERNALLY INSULATE AND COVER DUCTWORK AS SPECIFIED. CAULK DUCTWORK AT WALL WATERTIGHT.
5. FACTORY INTEGRATED FAN FOR HOSE REEL, SUPPORT FROM STRUCTURE PER MANUFACTUER'S INSTALLATION INSTRUCTIONS. MOUNT FAN AND REEL MIN. 16'-0" AFF.
6. SPILL CONDENSATE INTO HUB DRAIN, SEE DETAIL K/M-501.
7. COVER OPEN END OF DUCTWORK WITH 1/2" X 1/2" WIRE MESH.
8. SPILL CONDENSATE ON GRADE, PROVIDE CONCRETE SPLASH BLOCK.
9. PROVIDE CONDENSATE PUMP.
10. PROVIDE TOGGLE TYPE DISCONNECT SWITCH WITH LOCKABLE COVER FOR DAHU-1.
11. ABOVE CEILING, SEE DETAIL A/M-501.
12. WALLCAP WITH BACKDRAFT DAMPER AND BIRDSCREEN.
13. HEAVY DUTY DISCONNECT SWITCH.
14. PLENUM BOX FULL SIZE OF LOUVER, MIN. 18" DEEP. VERIFY DEPTH WITH DUCT CONNECTIONS.
15. INSULATION ON REFRIGERANT PIPING ON EXTERIOR SHALL HAVE ALUMINUM JACKET AS SPECIFIED.
16. LOUVERED DOOR BY GENERAL CONTRACTOR.



2 M-101 STORAGE 111
SCALE: 1/4" = 1'-0"



3 M-101 SHOP 101 SECTION
SCALE: 1/4" = 1'-0"



KEY PLAN
NO SCALE

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

- NON-RATED PARTITION TO CEILING
- NON-RATED PARTITION TO DECK
- 1 HR. RATED PARTITION TO DECK
- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

BRUNSWICK COUNTY

THE COAST ACADEMY

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NC LICENSE# C-1073

JOB # 19051

NORTH CAROLINA PROFESSIONAL SEAL 17051 ENGINEER KENNETH LYNCH

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: NAH
CHECKED BY: KL

MECHANICAL PLAN - AUTOMOTIVE

M-101 OF 1

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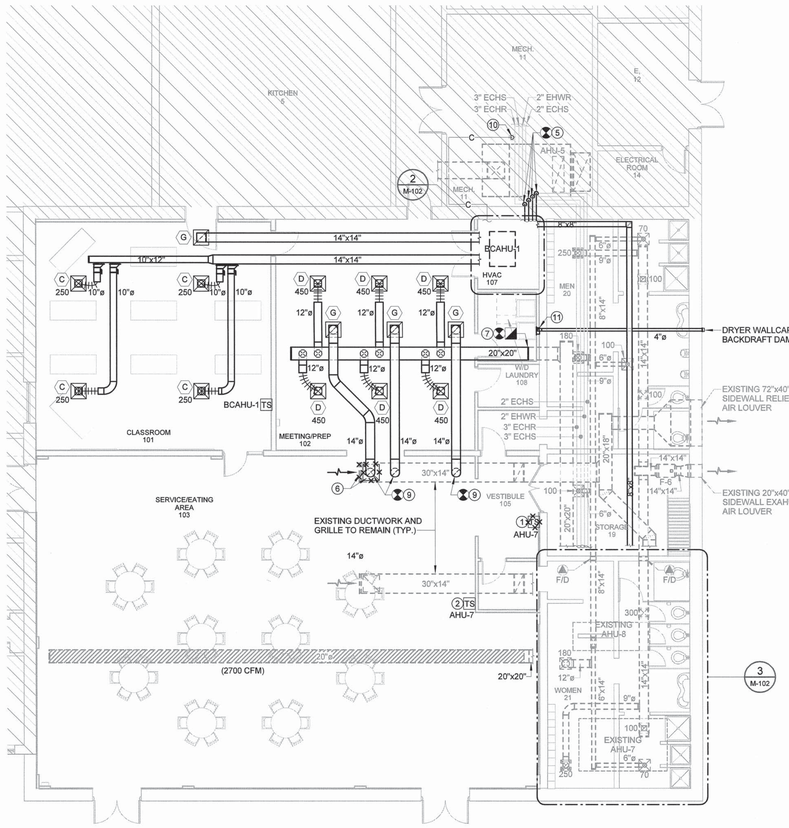
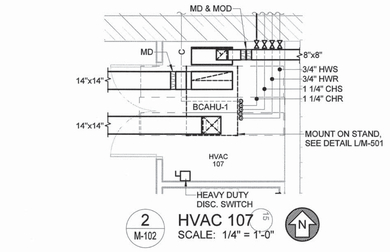
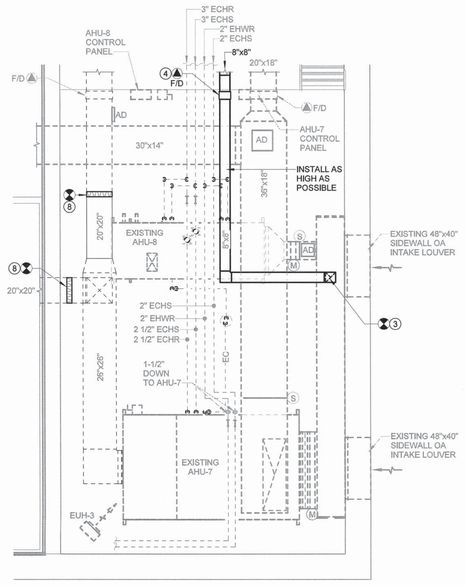


1 M-102 MECHANICAL PLAN - CULINARY
SCALE: 1/8" = 1'-0"



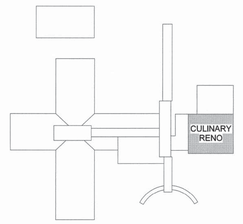
2 M-102 HVAC 107
SCALE: 1/4" = 1'-0"



3 M-102 ENLARGED MEZZANINE MECHANICAL ROOM
SCALE: 1/4" = 1'-0"

KEYED NOTES: (THIS SHEET ONLY)

1. REMOVE AND RELOCATE THERMOSTAT. GC TO PATCH AND PAINT WALL AS NECESSARY.
2. NEW LOCATION OF THERMOSTAT, EXTEND WIRING AS NECESSARY FOR NEW LOCATION.
3. CONNECT NEW OA DUCT TO EXISTING OA PLENUM.
4. NEW FIRE DAMPER IN EXISTING FIRE WALL. SEE DETAIL B/M-001.
5. CONNECT NEW PIPING TO EXISTING.
6. REMOVE AND CAP EXISITNG RETURN AIR GRILLES AIRTIGHT.
7. REMOVE FABRIC DUCTWORK TO POINT INDICATED AND TURN OVER TO OWNER. CONNECT NEW 20"x20" SUPPLY AIR DUCTWORK TO EXISTING AIRTIGHT.
8. INSTALL NEW MANUAL BALANCING DAMPER IN EXISTING 20"x20" SUPPLY AIR DUCTWORK.
9. CONNECT NEW RETURN AIR RUNOUTS TO EXISTING DUCTWORK.
10. SPILL CONDENSATE INTO EXISTING HUB DRAIN.
11. DRYER VENT BOX, SEE DETAIL J/M-501.



KEY PLAN
NO SCALE

PARTITION LEGEND

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JOB # 19051

NORTH CAROLINA PROFESSIONAL ENGINEER 17655 KENNETH LYNCH

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: NAH
CHECKED BY: KL

MECHANICAL PLAN - CULINARY

M-102

OF 1

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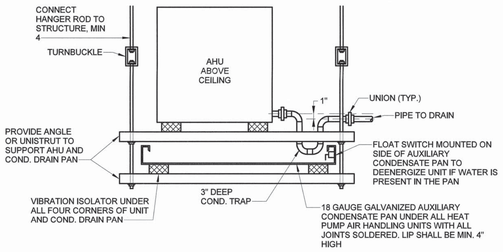
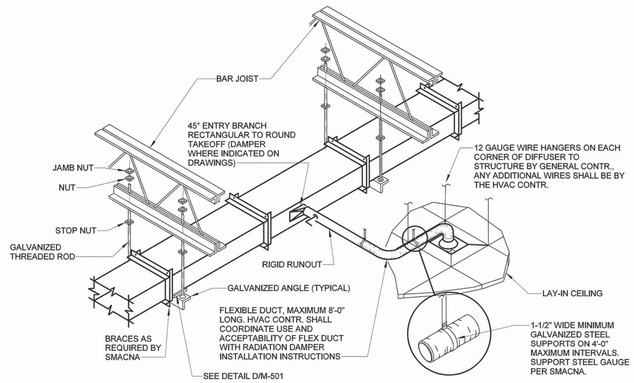
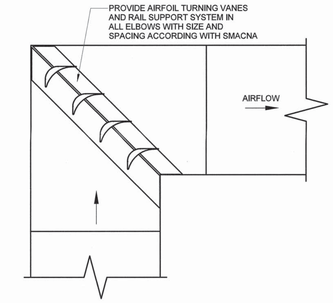


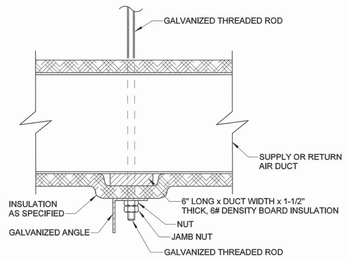
A M-501 AIR HANDLING UNIT SUPPORT AND CONDENSATE PIPING DETAIL
SCALE: NONE



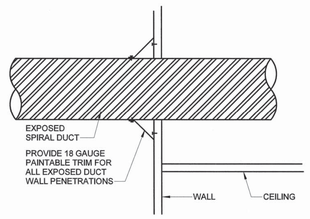
B M-501 TYPICAL SUPPLY DUCT DETAIL
SCALE: NONE



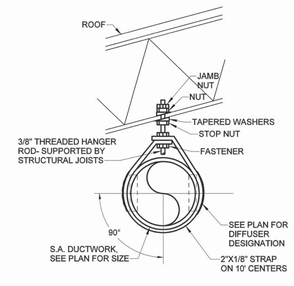
C M-501 TYPICAL DUCT ELBOW WITH TURNING VANES
SCALE: NONE



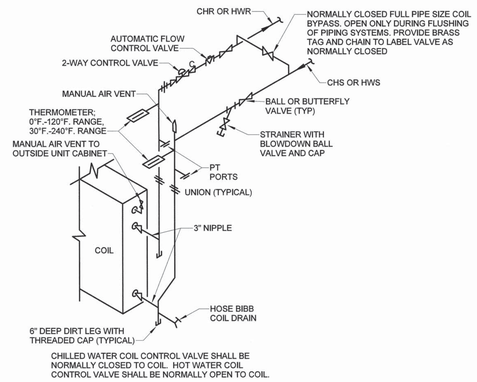
D M-501 TYPICAL DUCT HANGER DETAIL
SCALE: NONE



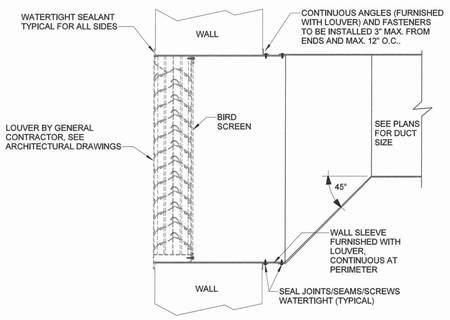
E M-501 ROUND DUCT COLLAR DETAIL
SCALE: 1/8" = 1'-0"



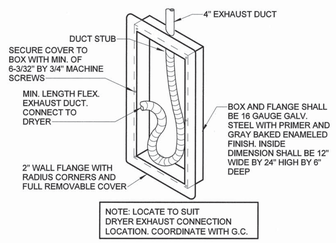
F M-501 SPIRAL DUCT DETAIL
SCALE: NONE



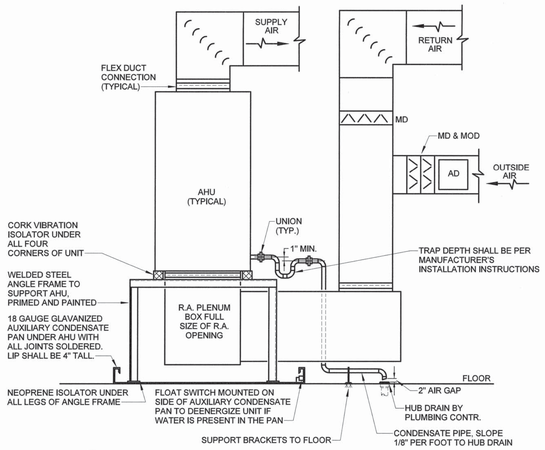
G M-501 TYPICAL COIL PIPING DETAIL (2-WAY)
SCALE: NONE



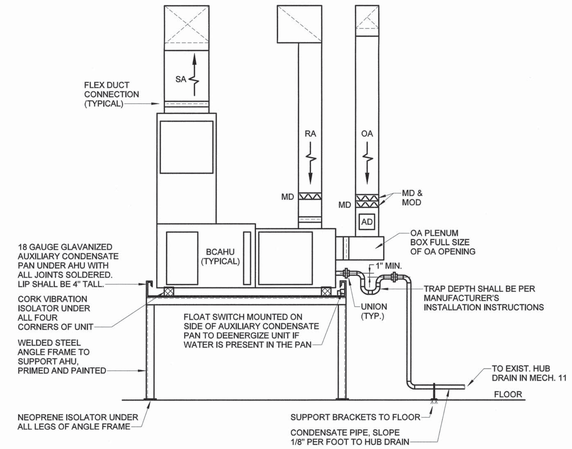
H M-501 TYPICAL WALL LOUVER DETAIL
SCALE: NONE



J M-501 DRYER VENT BOX DETAIL
SCALE: NONE



K M-501 TYPICAL VERTICAL SPLIT SYSTEM HEAT PUMP
SCALE: NONE



L M-501 TYPICAL BLOWER COIL UNIT
SCALE: NONE

BRUNSWICK COUNTY

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JOB # 19051

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17858 CHEATHAM & ASSOCIATES KENNETH LYNCH

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: NAH
CHECKED BY: KL

MECHANICAL DETAILS

M-501

OF 1

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BLOWER COIL AIR HANDLING UNIT SCHEDULE

SYMBOL	AIRFLOW		EXT SP "H20 (1)	ELECTRICAL		COOLING COIL (3)(4)							REHEAT COIL (2)				CONTROL VALVES	BASIS OF DESIGN	REMARKS
	SUPPY CFM	OA CFM		SUPPLY FAN HP	VOLTAGE & PHASE	EDB °F	EWB °F	LDB °F	LWB °F	GTH-MBH	GPM	PIPE SIZE	EAT °F	GTH-MBH	GPM	PIPE SIZE			
BCAHU-1	1000	200	1.00"	1	460V-3Ø	78.5	65.7	54.6	54.1	35.0	7.00	1"	61.2	39.0	4.00	1"	2-WAY	TRANE BCVD 036	CLASSROOM 101

(1) EXT. S.P. INCLUDES DUCTWORK & GRILLES. COMPONENTS INTERNAL TO THE AHU SUCH AS FILTERS, COILS AND DAMPERS ARE NOT INCLUDED IN THIS FIGURE.

(2) BASED ON 160°F EWT & 45°F DROP. MAXIMUM WATER PRESSURE DROP OF 10 FT FOR COIL PLUS CONTROL VALVE.

(3) BASED ON 45°F EWT & 10°F RISE. MAXIMUM WATER PRESURE DROP OF 15 FT. FOR COIL PLUS CONTROL VALVE.

(4) BASED ON MAXIMUM COIL FACE VELOCITY OF 500 FPM AND MAXIMUM AIRSIDE PRESSURE DROP OF 2.0" WATER COLUMN. COIL SHALL HAVE A MINIMUM OF 4 ROWS. UNIT'S FILTERS SHALL HAVE A MAXIMUM FACE VELOCITY OF 300 FPM.

PACKAGED HEAT PUMP UNIT SCHEDULE

SYMBOL	AIR QUANTITY		EXT SP "H20		COOLING CAPACITY MBH (2)	HEATING CAPACITY MBH	MIN EER	HOT GAS REHEAT COIL SADB °F (3)	AUXILIARY HEATING				ELECTRICAL			BASIS OF DESIGN	REMARKS
	TOTAL CFM	OUTSIDE CFM	SUPPLY (1)	RELIEF (1)					MBH INPUT	THERMAL EFFICIANCY MIN	GAS SUPPLY (5) SIZE	GAS SUPPLY (5) PRESSURE	MCA	MOCP	VOLTAGE & PHASE		
PHP-1	4000	1450 (4)	1.00"	0.60"	287.0 (6)	345.5	7.7	71.0	300 (7)	80%	1/2"	7" W.C.	71.6	90	480V-3Ø	TRANE HORIZON ASHP	AUTO SHOP

(1) EXT. S.P. INCLUDES SUPPLY & RETURN AIR DUCTWORK. MERV 8 FILTERS ARE NOT INCLUDED IN THIS FIGURE.

(2) CAPACITY AT 95°F AMBIENT AIR DB.

(3) VIA INTEGRAL MODULATING HOT GAS REHEAT COIL.

(4) MIN. OUTSIDE AIR CFM INDICATED IS FOR OCCUPIED MODE. MAX CFM SHALL INCREASE HIGHER AS NECESSARY BASED ON 100% OA ECONOMIZER CONTROL WITH RELIEF, OR 100% OA/ 100% EXHAUST/ 0% RA OPERATION PER CO, NO2, OR EMERGENCY EXHAUST SWITCH. SEE SPECIFIED SEQUENCE OF OPERATION FOR FURTHER DESCRIPTION OF OPERATION.

(5) NATURAL GAS

(6) DUAL REFRIGERATION CIRCUIT.

(7) 10:1 TURNDOWN MINIMUM.

DUCTLESS SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

SYMBOL	AIR QUANTITY		EXT SP "H20 (1)	ELECTRICAL		SYMBOL	ELECTRICAL			COOLING CAPACITY BTUH (2)	HEATING CAPACITY BTUH (3)	SEER	REMARKS
	TOTAL CFM	OUTSIDE CFM		FAN FLA	VOLTAGE & PHASE		MCA	MOCP	VOLTAGE & PHASE				
DAHU-1	350	-	-	1.0	208V-1Ø	DHP-1	11	15	208V-1Ø	8,000 - 18,000	11,300	18.5	IT 105

(1) EXT. S.P. INCLUDES SUPPLY & RETURN AIR DUCTWORK. FILTERS IN UNIT ARE NOT INCLUDED IN THIS FIGURE.

(2) MINIMUM AND MAXIMUM CAPACITY WHEN MATCHED WITH INDOOR HEAT PUMP SECTION AT AHRI CONDITIONS.

(3) CAPACITY AT 17° F OUTSIDE AIR TEMPERATURE.

POWER VENTILATOR SCHEDULE

SYMBOL	CFM	ESP	RPM	TIP SPEED	ELECTRICAL		TYPE	DRIVE	CONTROL	ROOF OPENING (1)	REMARKS
					HP	VOLTAGE					
F-1	600	1.00"	1500	-	1	208V-3Ø	VEHICLE EXHAUST FAN	DIRECT	SWITCH ON WALL	-	AUTO SHOP 101
F-2	100	0.50"	815	1695	128 (2)	115V-1Ø	CEILING EXHAUST	DIRECT	BAS	-	CUSTODIAN 118 - AUTO SHOP
F-3	800	0.50"	1350	3950	1/4	115V-1Ø	INLINE CENTRIFUGAL	DIRECT	COOLING THERMOSTAT	-	ELECTRICAL 107 - AUTO SHOP
F-4	75	0.50"	805	1665	80 (2)	115V-1Ø	CEILING EXHAUST	DIRECT	BAS	-	WOMEN 114 - AUTO SHOP
F-5	75	0.50"	805	1665	80 (2)	115V-1Ø	CEILING EXHAUST	DIRECT	BAS	-	MEN 104 - AUTO SHOP
F-6	175	0.50"	1055	2185	172 (2)	115V-1Ø	CEILING EXHAUST	DIRECT	BAS	-	WOMEN LOCKER 116 - AUTO SHOP
F-7	175	0.50"	1055	2185	172 (2)	115V-1Ø	CEILING EXHAUST	DIRECT	BAS	-	MEN 104 - AUTO SHOP

(1) FOR BIDDING PURPOSES ONLY.

(2) WATTS

(3) VIA LIGHTING CONTROL SYSTEM'S OCCUPANCY SENSOR.

SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE

AIR HANDLING UNIT SECTION							OUTDOOR HEAT PUMP SECTION							REMARKS
SYMBOL	AIR QUANTITY		EXT SP "H20 (1)	ELECTRICAL			SYMBOL	ELECTRICAL			COOLING CAPACITY BTUH (2)	HEATING CAPACITY BTUH (3)	SEER	
	TOTAL CFM	OUTSIDE CFM		STRIP HEAT (KW)	FAN HP	VOLTAGE & PHASE		MCA	MOCP	VOLTAGE & PHASE				
AHU-1	1900	400	0.50"	10.8	1	208V-3Ø	HP#1	9	15	460V-3Ø	57,500	34,600	14.5	AUTO SHOP CLASSROOM - HORIZONTAL - ABOVE CEILING
AHU-2	900	150	0.50"	10.8	1/3	208V-3Ø	HP#2	17	25	208V-1Ø	28,500	17,500	14.5	OFFICE 108/ STORAGE 109/ STORAGE 111/ CUST. 118 - VERTICAL

(1) EXT. S.P. INCLUDES SUPPLY & RETURN AIR DUCTWORK. MERV 8 FILTERS IN UNIT ARE NOT INCLUDED IN THIS FIGURE.

(2) CAPACITY WHEN MATCHED WITH INDOOR HEAT PUMP SECTION AT AHRI CONDITIONS.

(3) CAPACITY AT 17° F OUTSIDE AIR TEMPERATURE.

REGISTER, GRILLE & DIFFUSER SCHEDULE

SYMBOL	C.F.M.	NECK SIZE	TYPE	RUNOUT SIZE	REMARKS
A	50-100	6"X6"	2'X2' LAY-IN CEILING SA DIFFUSER	6"Ø	
B	125-225	9"X9"	2'X2' LAY-IN CEILING SA DIFFUSER	8"Ø	
C	250-400	12"X12"	2'X2' LAY-IN CEILING SA DIFFUSER	10"Ø	
D	425-475	12"X12"	2'X2' LAY-IN CEILING SA DIFFUSER	12"Ø	
E	250-400	16"X8"	SIDEWALL SA REGISTER	10"Ø	
F	425-600	18"X12"	SPIRAL DUCT SA REGISTER	12"Ø	
G	525-1000	22"X22"	2'X2' LAY-IN RA REGISTER	-	
H	3325-4000	36"X36"	SIDEWALL RA REGISTER	-	

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JOB # 19051

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17065 KENNETH LYNCH

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: NAH
CHECKED BY: KL

MECHANICAL SCHEDULES

M-601

OF 1

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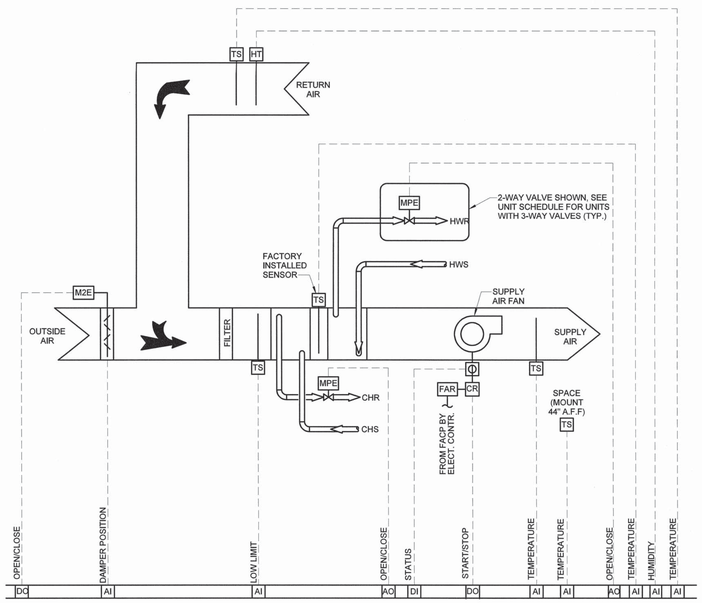
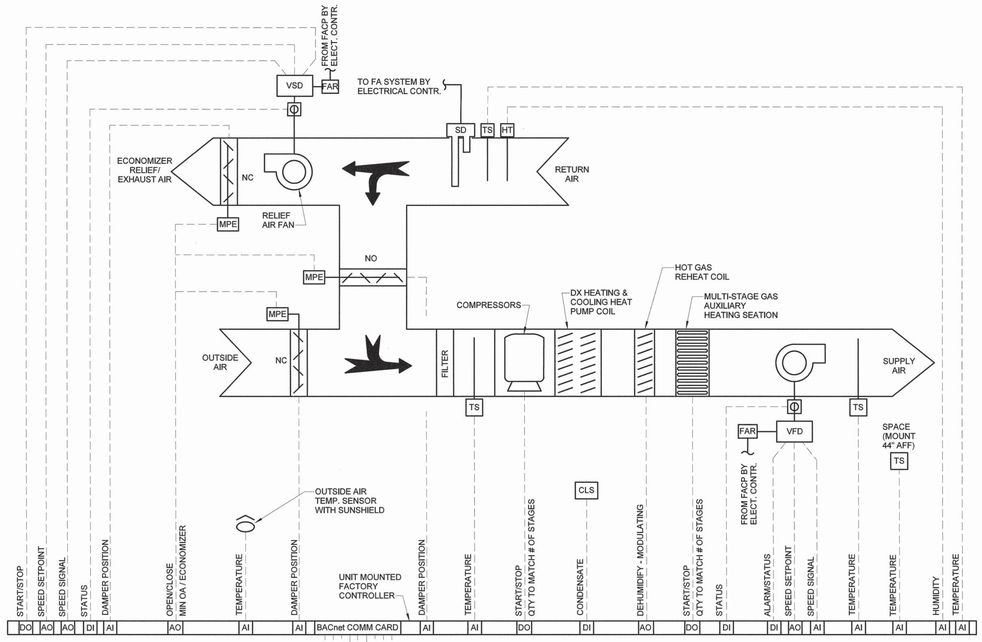


BLOWER COIL AIR HANDLING UNIT



PACKAGED HEAT PUMP

SEQUENCE OF OPERATION

AIR-HANDLING UNIT (BCAHU) WITH SPACE TEMPERATURE AND HIGH LIMIT HUMIDITY CONTROL. CONSTANT AIR VOLUME (CAV) SYSTEM, NO ECONOMIZER CYCLE.

DESCRIPTION : CONSTANT AIR VOLUME SYSTEM UTILIZING CHILLED WATER FOR PRIMARY COOLING AND HOT WATER FOR PRIMARY HEATING, SERVING ONE OR MORE SPACES AS A SINGLE CONTROL ZONE, UNDER CONTROL OF DDC SYSTEM.

UNIT UTILIZES A CONSTANT SPEED SUPPLY AIR FAN.

"ON" PERIOD: TEMPERATURE: 70-75°F COMFORT ZONE (ADJ.)
HUMIDITY: 60% RH HIGH LIMIT (ADJ.)

"OFF" PERIOD: MAX. TEMPERATURE: 80°F HIGH LIMIT (ADJ.)
MIN. TEMPERATURE:65°F LOW LIMIT (ADJ.)
MAX. HUMIDITY: 65% RH HIGH LIMIT (ADJ.)

SPACE TEMPERATURE SETPOINTS *MAY* BE ADJUSTABLE BY SPACE OCCUPANTS.

UNIT START/STOP CONTROL : START/STOP UNIT BASED ON (1) USER-DEFINED "ON/OFF" SCHEDULE, (2) OPTIMAL START TIME COMPUTATION, OR (3) OPERATOR COMMAND.

EMERGENCY STOP INTERLOCKS SHALL DE-ENERGIZE UNIT(S):

SIGNAL FROM FIRE ALARM SYSTEM.

FREEZE PROTECTION BY MONITORING LOW LIMIT TEMPERATURE SENSOR IN AHU'S MIXED AIR SECTION.

DURING "ON" PERIODS, COMMAND FANS "ON" UNLESS STOPPED BY THE DDC SYSTEM OR BY AN EMERGENCY STOP INTERLOCK.

DURING "OFF" PERIODS, COMMAND FANS "OFF" UNLESS THERE IS A NEED FOR HEATING, COOLING, OR DEHUMIDIFICATION INDICATED BY SPACE TEMPERATURE OR HUMIDITY EXCEEDING "OFF" PERIOD SETPOINT.

CONSTANT AIR VOLUME UNIT CONTROL:

VENTILATION AIR CONTROL: OUTDOOR AIR DAMPER SHALL OPEN AND CLOSE BASED ON USER-DEFINED "OCCUPIED/ UNOCCUPIED SCHEDULE".

DURING "OCCUPIED" PERIODS, THE UNIT FAN IS ENERGIZED, COMMAND OUTDOOR AIR DAMPER 100% OPEN.

DURING "UNOCCUPIED" PERIODS, THE OUTDOOR AIR DAMPER SHALL BE COMMANDED CLOSED.

SINGLE SENSOR SPACE TEMPERATURE CONTROL: DURING "ON" PERIODS:

ON A RISE IN SPACE TEMPERATURE TO ABOVE THE MAXIMUM COMFORT ZONE TEMPERATURE SETPOINT, MODULATE THE CHILLED WATER VALVE TO MAINTAIN SPACE TEMPERATURE AT THE MAXIMUM COMFORT ZONE TEMPERATURE SETPOINT.

ON A FALL IN SPACE TEMPERATURE TO BELOW THE MINIMUM COMFORT ZONE TEMPERATURE SETPOINT, MODULATE THE HOT WATER VALVE TO MAINTAIN SPACE TEMPERATURE AT THE MINIMUM COMFORT ZONE TEMPERATURE SETPOINT.

WHEN THE SPACE TEMPERATURE IS WITHIN THE LIMITS OF THE MINIMUM AND MAXIMUM ZONE TEMPERATURE SETPOINTS, BOTH CONTROL VALVES SHALL BE CLOSED

HIGH LIMIT HUMIDITY CONTROL: DURING "ON" PERIODS, ON A RISE IN SPACE HUMIDITY TO ABOVE HIGH LIMIT HUMIDITY SETPOINT, MODULATE THE CHILLED WATER VALVE OPEN TO MAINTAIN 55°F COOLING COIL LEAVING AIR TEMPERATURE AND MODULATE THE HOT WATER VALVE TO MAINTAIN SPACE TEMPERATURE AT THE MAXIMUM COMFORT ZONE TEMPERATURE.

"OFF" PERIOD OPERATION : DURING "OFF" PERIODS, COMMAND ALL FANS "OFF;" MODULATE CONTROL VALVES CLOSED.

IF A NEED FOR HEATING, COOLING, OR DEHUMIDIFICATION IS DICTATED BY SPACE CONDITION(S):

COMMAND SUPPLY AIR FAN "ON" AS FOLLOWS:

IF SPACE TEMPERATURE EXCEEDS THE HIGH LIMIT TEMPERATURE SETPOINT, COMMAND THE CHILLED WATER SYSTEM "ON" AND MODULATE COOLING COIL CHILLED WATER VALVE 100% OPEN.

IF SPACE TEMPERATURE FALLS BELOW THE LOW LIMIT TEMPERATURE SETPOINT, COMMAND THE HOT WATER SYSTEM "ON" AND MODULATE HOT WATER CONTROL VALVE 100% OPEN.

IF SPACE HUMIDITY EXCEEDS THE HIGH LIMIT TEMPERATURE SETPOINT, COMMAND BOTH CHILLED WATER SYSTEM AND HOT WATER SYSTEM "ON". MODULATE COOLING COIL CHILLED WATER CONTROL VALVE OPEN TO MAINTAIN 55°F COOLING COIL LEAVING AIR TEMPERATURE. MODULATE UNIT HOT WATER CONTROL VALVE TO MAINTAIN THE LOWEST SPACE TEMPERATURE AT LOW LIMIT SETPOINT CONDITION.

ONCE SPACE TEMPERATURE AND HUMIDITY CONDITIONS ARE WITHIN 5 % OF SETPOINT LIMITS FOR A PERIOD OF 15 MINUTES, COMMAND UNIT FANS "OFF", AND COMMAND CHILLED WATER SYSTEM AND/OR HOT WATER SYSTEM "OFF", AS APPLICABLE.

TREND LOG AND HISTORICAL DATA : LOG AND ARCHIVE THE FOLLOWING EVERY 15 MINUTES:

SPACE TEMPERATURE

RETURN AIR RELATIVE HUMIDITY

UNIT FAN'S STATUS

SEQUENCE OF OPERATION

PACKAGED AIR-SOURCE HEAT PUMP, CONSTANT AIR VOLUME, HOT GAS REHEAT, WITH ECONOMIZER CYCLE

DESCRIPTION: PACKAGED AIR-SOURCE, DIRECT EXPANSION (DX) HEAT PUMP UNIT CONSISTING OF CONSTANT AIR VOLUME, COOLING/HEATING, WITH ECONOMIZER CYCLE, UNDER CONTROL OF DDC SYSTEM.

UNIT START/STOP CONTROL: START/STOP UNIT SUPPLY FAN BASED ON (1) USER-DEFINED "ON/OFF" SCHEDULE, (2) OPTIMAL START TIME COMPUTATION, OR (3) OPERATOR COMMAND.

SPACE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS UNLESS MODIFIED BY USER:

"ON" PERIOD: TEMPERATURE: 70-75°F COMFORT ZONE
HUMIDITY: 60% RH HIGH LIMIT

"OFF" PERIOD: MAX. TEMPERATURE: 80°F HIGH LIMIT
MIN TEMPERATURE: 65°F LOW LIMIT
MAX. HUMIDITY: 65% RH HIGH LIMIT

SPACE TEMPERATURE SETPOINTS *MAY* BE ADJUSTABLE BY SPACE OCCUPANTS.

EMERGENCY STOP INTERLOCKS SHALL DE-ENERGIZE UNIT(S):

ON SIGNAL FROM FIRE ALARM SYSTEM.

HIGH LEVEL ALARM FROM DRAIN PAN CONDENSATE LEVEL SENSOR.

DURING "ON" PERIODS, COMMAND UNIT SUPPLY FAN "ON" UNLESS STOPPED BY THE DDC SYSTEM OR BY EMERGENCY STOP INTERLOCK.

DURING "OFF" PERIODS, COMMAND UNIT FANS "OFF" UNLESS THERE IS A CALL FOR COOLING, HEATING OR DEHUMIDIFICATION INDICATED BY SPACE SENSORS.

CONSTANT AIR VOLUME UNIT CONTROL:

VENTILATION AIR CONTROL: OUTDOOR AIR DAMPER SHALL OPEN AND CLOSE BASED ON USER-DEFINED "OCCUPIED/ UNOCCUPIED SCHEDULE..

DURING "OCCUPIED" PERIODS, THE UNIT FAN IS ENERGIZED, COMMAND OUTDOOR AIR DAMPER MINIMUM OA POSITION.

DURING "OCCUPIED" PERIODS WHEN THERE IS A CALL FOR COOLING AND OUTSIDE AIR DRY BULB TEMPERATURE IS 55°F (ADJ.) OR LESS, ECONOMIZER MODE SHALL BE ENABLED. UNIT SHALL USE OUTDOOR AIR DAMPER MODULATING OPEN TO 100% AND RETURN AIR DAMPER MODULATING TO 100% CLOSED TO SATISFY SPACE COOLING SETPOINT. IF OUTDOOR AIR DAMPER IS 100% OPEN AND SPACE TEMPERATURE RISES ABOVE MAXIMUM COMFORT ZONE TEMPERATURE SETPOINT, INTIATE COMPRESSORS (IN STAGES, AS APPLICABLE) FOR COOLING. RELEIF DAMPER AND RELEIF AIR FAN SHALL MODULATE TRACKING OUTDOOR AIR DAMPER TO RELIEVE EXCESS AIR AS NECESARY.

DURING "UNOCCUPIED" PERIODS OR ANY TIME THE UNIT FAN IS "OFF", THE OUTDOOR AIR DAMPER SHALL BE COMMANDED CLOSED.

"ON" PERIOD TEMPERATURE AND HIGH LIMIT HUMIDITY CONTROL: DURING "ON" PERIODS, IF THE SUPPLY FAN IS ENERGIZED, CONTROL SPACE TEMPERATURE AS FOLLOWS:

ON A RISE IN SPACE TEMPERATURE TO ABOVE THE MAXIMUM COMFORT ZONE TEMPERATURE SETPOINT, INITIATE COOLING (IN STAGES, AS APPLICABLE). INITIATE ECONIMIZER MODE AS APPLICABLE.

ON A RISE IN ANY SPACE HUMIDITY TO ABOVE THE HIGH LIMIT HUMIDITY SETPOINT, INITIATE COOLING (IN STAGES, AS APPLICABLE) AND HOT GAS REHEAT TO MAINTAIN SPACE TEMPERATURE AT THE MAXIMUM COMFORT ZONE TEMPERATURE.

ON A FALL IN SPACE TEMPERATURE TO BELOW THE MINIMUM COMFORT ZONE TEMPERATURE SETPOINT, INITIATE COMPRESSOR FOR HEATING (IN STAGES, AS APPLICABLE) TO MAINTAIN SPACE TEMPERATURE AT THE MINIMUM COMFORT ZONE TEMPERATURE SETPOINT.

IF COMPRESSOR STAGE(S) OF HEATING IS MAINTAINED FOR 15 MINUTES OR MORE, BUT THE SPACE TEMPERATURE CONTINUES TO FALL, ENERGIZE THE AUXILIARY GAS HEATER (IN STAGES, AS APPLICABLE) TO MAINTAIN SPACE TEMPERATURE AT THE MINIMUM COMFORT ZONE TEMPERATURE SETPOINT.

WHEN THE SPACE TEMPERATURE IS WITHIN THE LIMITS OF THE MINIMUM AND MAXIMUM ZONE TEMPERATURE SETPOINT AND SPACE HUMIDITY IS AT OR BELOW THE HIGH LIMIT HUMIDITY SETPOINT, UNIT FAN SHALL OPERATE AND NO COOLING OR HEATING SHALL BE INITIATED.

"OFF" PERIOD TEMPERATURE AND HUMIDITY CONTROL: DURING "OFF" PERIODS, THE UNIT SHALL BE COMMANDED "OFF" UNLESS HIGH LIMIT COOLING, LOW LIMIT HEATING OR DEHUMIDIFICATION IS DICTATED AS FOLLOWS:

ON A RISE IN SPACE TEMPERATURE TO ABOVE THE HIGH LIMIT SETPOINT TEMPERATURE, ENERGIZE THE UNIT FAN AND INITIATE COOLING "ON" (IN STAGES, AS APPLICABLE) UNTIL SPACE TEMPERATURE IS AT THE HIGH LIMIT TEMPERATURE SETPOINT LESS 3°F FOR THIRTY MINUTES, THEN SYSTEM IS "OFF".

ON A RISE IN ANY SPACE HUMIDITY TO ABOVE THE HIGH LIMIT HUMIDITY SETPOINT, INITIATE COOLING (IN STAGES, AS APPLICABLE) AND HOT GAS REHEAT TO MAINTAIN SPACE TEMPERATURE AT THE HIGH LIMIT TEMPERATURE SETPOINT UNTIL SPACE HUMIDITY IS AT THE HIGH LIMIT SETPOINT LESS 5% RH FOR THIRTY MINUTES, THEN SYSTEM IS "OFF".

ON A FALL IN SPACE TEMPERATURE TO BELOW THE LOW LIMIT SETPOINT TEMPERATURE, INITIATE HEATING "ON" (IN STAGES, AS APPLICABLE) UNTIL SPACE TEMPERATURE IS AT THE LOW LIMIT TEMPERATURE SETPOINT PLUS 3°F FOR THIRTY MINUTES, THEN SYSTEM IS "OFF".

IF COMPRESSOR STAGE(S) OF HEATING IS MAINTAINED FOR 15 MINUTES OR MORE, BUT THE SPACE TEMPERATURE CONTINUES TO FALL, ENERGIZE THE AUXILIARY GAS HEATER (IN STAGES, AS APPLICABLE) UNTIL SPACE TEMPERATURE IS AT THE LOW LIMIT TEMPERATURE SETPOINT PLUS 3°F FOR THIRTY MINUTES, THEN SYSTEM IS "OFF".

CO/NO2/MANUAL SWITCH CONTROL: BASED ON SIGNAL FROM CARBON MONOXIDE/ NITROGEN DIOXIDE CONTROL PANEL OR UPON ACTIVATION OF MANUAL SWITCH AND REGARDLESS OF UNIT BEING IN "ON", "OFF", "OCCUPIED" OR "UNOCCUPIED" PERIODS, UNITS OUTDOOR AIR DAMPER SHALL OPEN 100%, SUPPLY AND RELIEF/EXHAUST FANS SHALL BE ON, RELIEF/EXHAUST AIR DAMPER SHALL BE OPEN 100%, AND RETURN AIR DAMPER SHALL BE CLOSED 100% TO PROVIDE 100% OUTSIDE AIR TO THE SPACE WITH 100% RELIEF/EXHAUST AIR AND 0% RETURN AIR.

MODE SHALL CONTINUE UNTIL CARBON MONOXIDE/NITROGEN DIOXIDE PANEL IS CLEARED OF ALARMS OR ONE HOUR (ADJ.) ELAPSED TIME HAS PASSED UPON ACTICATION OF MANUAL SWITCH.

WHEN IN THIS MODE, UNIT'S COMPRESSOR'S, HOT GAS REHEAT, AND AUXILIARY HEAT SHALL COOL, DEHUMIDIFY, OR HEAT AS BEST AS POSSIBLE TO COMFORT ZONE SETPOINTS.

DRAIN PAN CONDENSATE LEVEL SHUTDOWN CONTROL: COMMAND UNIT FAN "OFF" AND INITIATE ALARM WHEN THE N.C. DRAIN PAN CONDENSATE LEVEL SWITCH OPENS TO INDICATE A HIGH WATER LEVEL CONDITION.

TREND LOG AND HISTORICAL DATA: LOG AND ARCHIVE THE FOLLOWING EVERY 15 MINUTES:

SPACE TEMPERATURE

RETURN AIR RELATIVE HUMIDITY

ALARM STATUSES

CO/NO2/S ALARMS

BRUNSWICK COUNTY

THE COAST ACADEMY

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JOB # 19051

NORTH CAROLINA PROFESSIONAL SEAL 17685 ENGINEER KENNETH LYNCH

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: NAH
CHECKED BY: KL

MECHANICAL CONTROL DIAGRAMS

M-701

OF 1

BID DOCUMENTS

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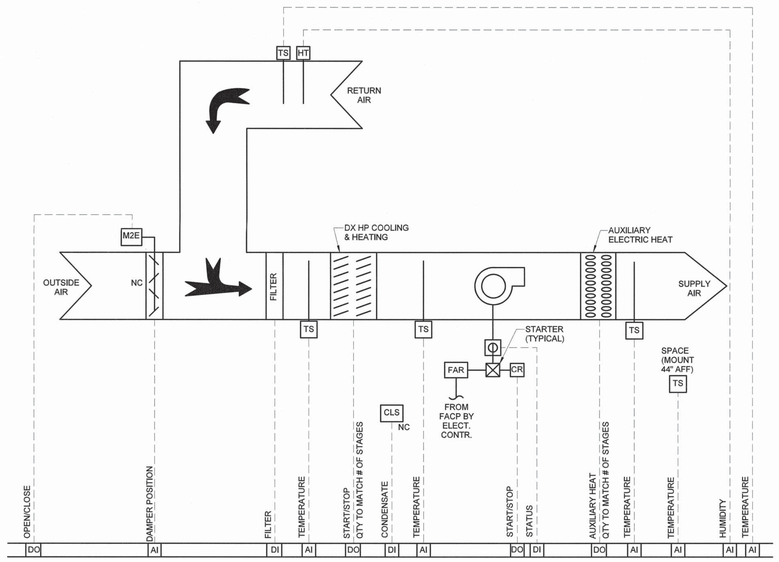


SPLIT SYSTEM HEAT PUMP

SEQUENCE OF OPERATION

SPLIT SYSTEM AIR-SOURCE HEAT PUMP, CONSTANT AIR VOLUME, NO ECONOMIZER CYCLE

DESCRIPTION: SPLIT SYSTEM AIR-SOURCE, DIRECT EXPANSION (DX) HEAT PUMP UNIT CONSISTING OF CONSTANT AIR VOLUME, COOLING/HEATING, AND NO ECONOMIZER CYCLE, UNDER CONTROL OF DDC SYSTEM.

UNIT START/STOP CONTROL: START/STOP UNIT FAN BASED ON (1) USER-DEFINED "ON/OFF" SCHEDULE, (2) OPTIMAL START TIME COMPUTATION, OR (3) OPERATOR COMMAND.

SPACE TEMPERATURE SETPOINTS SHALL BE AS FOLLOWS UNLESS MODIFIED BY USER:

"ON" PERIOD:	TEMPERATURE:	70-75°F COMFORT ZONE
	HUMIDITY:	60% RH HIGH LIMIT
"OFF" PERIOD:	MAX. TEMPERATURE:	80°F HIGH LIMIT
	MIN TEMPERATURE:	65°F LOW LIMIT
	MAX. HUMIDITY:	65% RH HIGH LIMIT

SPACE TEMPERATURE SETPOINTS *MAY* BE ADJUSTABLE BY SPACE OCCUPANTS.

EMERGENCY STOP INTERLOCKS SHALL DE-ENERGIZE UNIT(S):

ON SIGNAL FROM FIRE ALARM SYSTEM.

HIGH LEVEL ALARM FROM DRAIN PAN CONDENSATE LEVEL SENSOR.

DURING "ON" PERIODS, COMMAND UNIT FAN "ON" UNLESS STOPPED BY THE DDC SYSTEM OR BY EMERGENCY STOP INTERLOCK.

DURING "OFF" PERIODS, COMMAND UNIT FAN "OFF" UNLESS THERE IS A CALL FOR COOLING, HEATING OR DEHUMIDIFICATION INDICATED BY SPACE SENSORS.

CONSTANT AIR VOLUME UNIT CONTROL:

VENTILATION AIR CONTROL: OUTDOOR AIR DAMPER SHALL OPEN AND CLOSE BASED ON USER-DEFINED "OCCUPIED/ UNOCCUPIED SCHEDULE..

DURING "OCCUPIED" PERIODS, THE UNIT FAN IS ENERGIZED, COMMAND OUTDOOR AIR DAMPER 100% OPEN.

DURING "UNOCCUPIED" PERIODS OR ANY TIME THE UNIT FAN IS "OFF", THE MINIMUM OUTDOOR AIR DAMPER SHALL BE COMMANDED CLOSED.

"ON" PERIOD TEMPERATURE AND HIGH LIMIT HUMIDITY CONTROL: DURING "ON" PERIODS, IF THE SUPPLY FAN IS ENERGIZED, CONTROL SPACE TEMPERATURE AS FOLLOWS:

ON A RISE IN SPACE TEMPERATURE TO ABOVE THE MAXIMUM COMFORT ZONE TEMPERATURE SETPOINT, INITIATE COOLING.

ON A RISE IN ANY SPACE HUMIDITY TO ABOVE THE HIGH LIMIT HUMIDITY SETPOINT, INITIATE COOLING AND ENERGIZE TO AUXILIARY ELECTRIC RESISTANCE HEATER (IN STAGES, AS APPLICABLE) TO REHEAT TO MAINTAIN SPACE TEMPERATURE AT THE MAXIMUM COMFORT ZONE TEMPERATURE.

ON A FALL IN SPACE TEMPERATURE TO BELOW THE MINIMUM COMFORT ZONE TEMPERATURE SETPOINT, INITIATE COMPRESSOR FOR HEATING TO MAINTAIN SPACE TEMPERATURE AT THE MINIMUM COMFORT ZONE TEMPERATURE SETPOINT.

IF STAGE 1 OF HEATING IS MAINTAINED FOR 15 MINUTES OR MORE, BUT THE SPACE TEMPERATURE CONTINUES TO FALL, ENERGIZE THE AUXILIARY ELECTRIC RESISTANCE HEATER (IN STAGES, AS APPLICABLE) TO MAINTAIN SPACE TEMPERATURE AT THE MINIMUM COMFORT ZONE TEMPERATURE SETPOINT.

WHEN THE SPACE TEMPERATURE IS WITHIN THE LIMITS OF THE MINIMUM AND MAXIMUM ZONE TEMPERATURE SETPOINT AND SPACE HUMIDITY IS AT OR BELOW THE HIGH LIMIT HUMIDITY SETPOINT, UNIT FAN SHALL OPERATE AND NO COOLING OR HEATING SHALL BE INITIATED.

"OFF" PERIOD TEMPERATURE AND HUMIDITY CONTROL: DURING "OFF" PERIODS, THE UNIT SHALL BE COMMANDED "OFF" UNLESS HIGH LIMIT COOLING, LOW LIMIT HEATING OR DEHUMIDIFICATION IS DICTATED AS FOLLOWS:

ON A RISE IN SPACE TEMPERATURE TO ABOVE THE HIGH LIMIT SETPOINT TEMPERATURE, ENERGIZE THE UNIT FAN AND INITIATE COOLING "ON" UNTIL SPACE TEMPERATURE IS AT THE HIGH LIMIT TEMPERATURE SETPOINT LESS 3°F FOR THIRTY MINUTES, THEN SYSTEM IS "OFF".

ON A RISE IN ANY SPACE HUMIDITY TO ABOVE THE HIGH LIMIT HUMIDITY SETPOINT, INITIATE COOLING AND ENERGIZE TO AUXILIARY ELECTRIC RESISTANCE HEATER (IN STAGES, AS APPLICABLE) TO REHEAT TO MAINTAIN SPACE TEMPERATURE AT THE HIGH LIMIT TEMPERATURE SETPOINT UNTIL SPACE HUMIDITY IS AT THE HIGH LIMIT SETPOINT LESS 5% RH FOR THIRTY MINUTES, THEN SYSTEM IS "OFF".

ON A FALL IN SPACE TEMPERATURE TO BELOW THE LOW LIMIT SETPOINT TEMPERATURE, INITIATE HEATING "ON" UNTIL SPACE TEMPERATURE IS AT THE LOW LIMIT TEMPERATURE SETPOINT PLUS 3°F FOR THIRTY MINUTES, THEN SYSTEM IS "OFF".

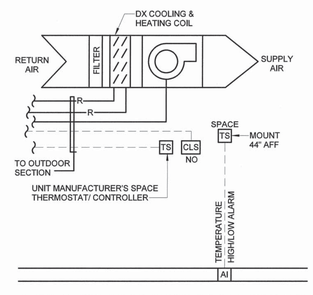
IF STAGE 1 OF HEATING IS MAINTAINED FOR 15 MINUTES OR MORE, BUT THE SPACE TEMPERATURE CONTINUES TO FALL, ENERGIZE THE AUXILIARY ELECTRIC RESISTANCE HEATER (IN STAGES, AS APPLICABLE) UNTIL SPACE TEMPERATURE IS AT THE LOW LIMIT TEMPERATURE SETPOINT PLUS 3°F FOR THIRTY MINUTES, THEN SYSTEM IS "OFF".

TREND LOG AND HISTORICAL DATA: LOG AND ARCHIVE THE FOLLOWING EVERY 15 MINUTES:

SPACE TEMPERATURE

RETURN AIR RELATIVE HUMIDITY

UNIT FAN STATUS



DUCTLESS SPLIT SYSTEM HEAT PUMP

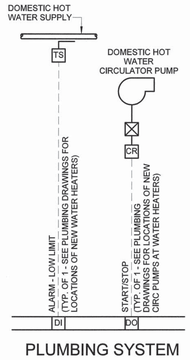
SEQUENCE OF OPERATION

SPLIT SYSTEM DUCTLESS HEAT PUMPS

DESCRIPTION: MANUFACTURER FURNISHED WALL MOUNTED HARD WIRED THERMOSTAT SHALL CONTROL UNIT.

CONDENSATE: UNIT SHALL BE DEENERGIZED ON HIGH CONDENSATE LEVELS.

DDC SYSTEM SPACE TEMPERATURE SENSOR: SHALL MONITOR SPACE TEMPERATURE AND ALARM TO BAS ON HIGH OR LOW SPACE TEMPERATURE.



PLUMBING SYSTEM

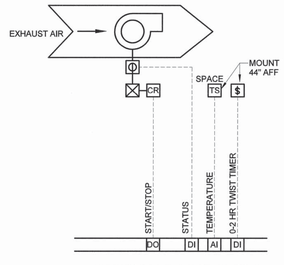
SEQUENCE OF OPERATION

DOMESTIC HOT WATER SYSTEM

WATER HEATER: SHALL BE CONTROLLED BY THERMOSTAT IN HOT WATER STORAGE TANK.

DOMNSTIC HOT WATER RECIRCULATING PUMPS: SHALL BE CONTROLLED BY SEPERATE DIGITAL OUTPUTS FOR COMMAND AND OVERRIDE BASED ON SCHEDULE.

DOMESTIC HOT WATER SUPPLY TEMPERATRE SHALL BE SENSED FOR MONITORING AND ALARM POINTS.



POWER VENTILATOR

SEQUENCE OF OPERATION

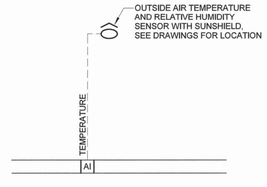
EXHAUST FANS

A. POWER VENTILATORS CONTROLLED BY THE ENERGY MANAGEMENT SYSTEM:

1. OCCUPIED PERIOD: FANS SHALL OPERATE.
2. UNOCCUPIED PERIOD: FANS ARE OFF.
3. PREPARATORY PERIOD: FANS ARE OFF.

B. REMAINING POWER VENTILATORS SHALL BE OCCUPANCY SENSOR CONTROLLED OR CONTROLLED BY LOCAL THERMOSTATS.

C. SEE POWER VENTILATOR SCHEDULE FOR DEFINITION OF POWER VENTILATOR CONTROL.



MISCELLANEOUS POINTS

CONTROL SYMBOL LEGEND

FS	FLOW SENSOR
TS	TEMPERATURE SENSOR
HT	HUMIDITY SENSOR
ES	EMERGENCY SWITCH
VSD	VARIABLE SPEED DRIVE
CR	CONTROL RELAY
CO	CARBON MONOXIDE SENSOR
NO2	NITROUS DIOXIDE SENSOR
S	SWITCH ON WALL
M2E	MOTOR OPERATED TWO POSITION ELECTRIC
MPE	MOTOR OPERATED PROPORTIONAL ELECTRIC
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FAR	FIRE ALARM RELAY
CLS	CONDENSATE LEVEL SENSOR
O/V	OCCUPANCY/VACANCY SENSOR
SA	SUPPLY AIR
RA	RETURN AIR
OA	OUTSIDE AIR
	CONTROL VALVE
	CURRENT SENSOR
	STARTER

BRUNSWICK COUNTY

THE COAST ACADEMY

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JOB # 19051

REVISIONS:

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: NAH
CHECKED BY: KL

MECHANICAL CONTROL DIAGRAMS

M-702

OF 1

BID DOCUMENTS

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ELECTRICAL NOTES

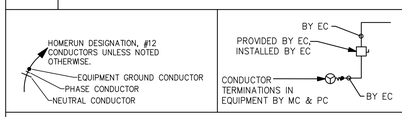
1. ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. PERMITS FOR ELECTRICAL WORK SHALL BE OBTAINED BY AND PAID BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR SHALL PAY FOR ANY ADDITIONAL FEES FOR INSPECTIONS, TESTS, AND OTHER SERVICES AS REQUIRED FOR THE COMPLETION OF THE WORK.
3. THE ELECTRICAL CONTRACTOR AND ANY OF HIS SUBCONTRACTORS SHALL VISIT THE PROJECT SITE TO WITNESS EXISTING CONDITIONS AND BECOME FAMILIAR WITH THE SCOPE OF THE WORK REQUIRED PRIOR TO SUBMITTING PROPOSALS. WORK REQUIRED BY EXISTING JOB CONDITIONS NOT INDICATED ON DRAWINGS SHALL BE INCLUDED IN THE BID.
4. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO RESULT IN THE PRODUCTION OF A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR, EQUIPMENT, AND OTHER SERVICES AS NECESSARY TO COMPLETE THE WORK.
5. DISCREPANCIES IN THE DRAWINGS AND SPECIFICATIONS THAT WILL AFFECT THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE **ARCHITECT,** ENGINEER, AND/OR OWNER PRIOR TO SUBMITTING PROPOSALS.
6. UNLESS NOTED OTHERWISE, ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND INCLUDE A 3RD PARTY LABEL (I.E.: UL, CSA, ETL, ETC.) LISTING APPROVAL FOR ITS INSTALLED APPLICATION.
7. REVIEW PLANS OF OTHER TRADES FOR COORDINATION OF WORK AND FOR RELATED AND ADJOINING WORK.
8. REVIEW COMPLETE PLAN SET FOR CONSTRUCTION TYPE, FINISHES, HEADROOM, ROOF FINISHES, CEILINGS, ETC. REVIEW COMPLETE PLAN SET FOR PROJECT PHASING AND STAGING. REVIEW COMPLETE PLAN SET FOR WORK COVERED BY ALTERNATE BID ITEMS.
9. COORDINATE DEVICE AND EQUIPMENT MOUNTING HEIGHTS WITH OTHER DISCIPLINE DRAWINGS, CASEWORK DETAILS & SUBMITTALS, EQUIPMENT DETAILS & SUBMITTALS, ETC.
10. PENETRATIONS OF FIRE-RATED WALLS, FLOORS, CEILINGS, AND PARTITIONS SHALL BE FIRE STOPPED IN ACCORDANCE WITH REQUIREMENTS OF THE STATE BUILDING CODE. COORDINATE WORK TO INSURE THAT FIRE STOPPING IS COMPLETED.
11. PENETRATIONS OF SMOKE PARTITIONS SHALL BE SEALED IN ACCORDANCE WITH REQUIREMENTS OF THE STATE BUILDING CODE. COORDINATE WORK TO INSURE THAT SMOKE PARTITION SEALING IS COMPLETED.
12. PENETRATIONS OF EXTERIOR BUILDING WALLS, FLOORS, OR ROOFS SHALL BE SEALED WATERTIGHT. INTERIORS OF RACEWAY PENETRATIONS THROUGH EXTERIOR WALLS SHALL BE SEALED WITH NON-HARDENING ELECTRICAL PUTTY.
13. CUTTING AND PATCHING TO INSTALL DEVICES AND EQUIPMENT SHALL BE PERFORMED WITH FINISHES RESTORED TO THEIR ORIGINAL CONDITION. SUCH WORK SHALL BE COMPLETED TO A DEGREE THAT IS ACCEPTABLE TO THE **ARCHITECT,** ENGINEER, AND/OR OWNER.
14. COORDINATE PRECISE LOCATION OF HVAC EQUIPMENT WITH THE MECHANICAL CONTRACTOR.
15. FOR HVAC EQUIPMENT, VERIFY CIRCUIT BREAKER RATINGS, FUSE RATINGS, AND WIRE SIZES. IF RATINGS DIFFER FROM THOSE INDICATED ON THE DRAWINGS, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR DIRECTION. PROVIDE OVERCURRENT PROTECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURER NAMEPLATE DATA. IF THE EQUIPMENT LISTING LABEL REQUIRES FUSED PROTECTION, ENSURE THAT FUSES IN A FUSED DISCONNECT SWITCH AT THE EQUIPMENT ARE SIZED AS INDICATED ON THE EQUIPMENT LABEL.
16. VERIFY PROPER SIZING OF OVERLOAD DEVICES IN STARTERS BASED ON EQUIPMENT NAMEPLATE DATA.
17. IF HORSEPOWER OR LOAD RATINGS OF EQUIPMENT DIFFER FROM THOSE INDICATED ON THE DRAWINGS, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR DIRECTION.
18. PROVIDE NATIONAL ELECTRICAL CODE REQUIRED CLEARANCES FOR ALL ELECTRICAL EQUIPMENT. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES.
19. RECEPTACLE, SWITCH, DATA/TELEPHONE OUTLETS SHALL BE FLUSH MOUNTED IN FINISHED SPACES UNLESS OTHERWISE NOTED.
20. WHERE INSTALLED IN PLENUM SPACES, CABLES SHALL BE PLENUM-RATED OR INSTALLED IN METAL RACEWAY.
21. PRIOR TO ORDERING LIGHT FIXTURES, CONTRACTOR SHALL VERIFY TYPE OF CEILING OR WALL BY REVIEW OF ARCHITECTURAL FINISH SCHEDULES AND PROVIDE SUITABLE TRIM AND APPURTENANCES TO MOUNT FIXTURES IN TYPE OF CEILING OR WALL INDICATED.
22. RECESSED LIGHT FIXTURES INSTALLED IN CEILINGS HAVING INSULATION INSTALLED OVER CEILING AND FIXTURES (AS INDICATED IN ARCHITECTURAL PLANS, OR FOUND AS EXISTING CONDITIONS) SHALL BE U.L. RATED FOR DIRECT CONTACT WITH INSULATION.
23. RECESSED LIGHT FIXTURES INSTALLED IN FIRE RATED CEILING SHALL BE U.L. RATED FOR USE IN FIRE RATED CEILINGS OR SHALL BE INSTALLED WITH "TENTING' IN ACCORDANCE WITH RATING REQUIREMENTS OF THE CEILING ASSEMBLY.
24. EXIT AND EMERGENCY LIGHTS SHALL BE CONNECTED TO THE NEAREST UNSWITCHED CIRCUIT THAT SERVES LIGHT FIXTURES WITHIN THE SAME SPACE.
25. NO MOUNTING HARDWARE SHALL BE ATTACHED TO ROOF DECKS. ATTACHMENTS SHALL BE MADE TO THE ROOF SUPPORTING STRUCTURE.
26. WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; PROTECT AND MAINTAIN IN OPERATION EXISTING LIFE SAFETY SYSTEMS, PUBLIC ADDRESS SYSTEMS, ELECTRICAL SYSTEMS, ETC. IF SHUTDOWNS ARE REQUIRED, NOTIFY THE ARCHITECT, ENGINEER, AND OWNER FOR COORDINATION WELL IN ADVANCE OF ANY SYSTEM SHUTDOWN. WHERE AN OUTAGE OF EXTENDED DURATION IS NOT ACCEPTABLE TO THE OWNER, PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
27. WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; WORK MAY BE REQUIRED TO BE PERFORMED WHILE REMAINING OCCUPIED BY OWNER STAFF. WORK SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION TO THE OWNER.
28. WHERE WORKING IN EXISTING BUILDINGS, FACILITIES, OR STRUCTURES; EXISTING ABANDONED CIRCUITS USED TO CONNECT NEW LOADS IN THE SAME AREA SHALL BE CLEARLY IDENTIFIED ON AS-BUILT MARK-UP DRAWINGS WITH REGARD TO PANEL-CIRCUIT AND CIRCUITRY ROUTING CONFIGURATION.
29. ABANDONED CIRCUITRY (RACEWAY & CONDUCTORS) SHALL BE REMOVED IN ITS ENTIRETY FROM ITS SOURCE. ABANDONED LOW VOLTAGE CABLING SHALL BE REMOVED IN ITS ENTIRETY UNLESS OTHERWISE NOTED.
30. PANEL BUS MATERIAL: COPPER.
31. SHARED NEUTRAL CONDUCTORS SHALL NOT BE USED UNLESS SPECIFICALLY INDICATED SO ON HOMERUN CIRCUITRY DESIGNATIONS.
32. PANEL BREAKER CONFIGURATIONS SHALL BE INSTALLED AS INDICATED ON THE PANEL SCHEDULES OR AS NOTED. BREAKER POSITION REVISIONS WILL NOT BE ACCEPTED UNLESS APPROVED IN WRITING BY THE ENGINEER.
33. LOAD CIRCUITS SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS. CIRCUITRY REVISIONS WILL NOT BE ACCEPTED UNLESS APPROVED IN WRITING BY THE ENGINEER.

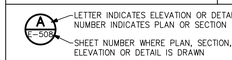
ABBREVIATIONS

ADA	AMERICAN DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLER UNIT
AIC	AMPS INTERRUPTING CAPABILITY
BCAHU	BLOWER COIL AIR HANDLER UNIT
BKR	BREAKER
C	CONDUIT
C/B	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CLG	CEILING
CKT	CIRCUIT
COMP	COMPRESSOR
CU	COPPER
DAHU	DUCTLESS AIR HANDLING UNIT
DHP	DUCTLESS HEAT PUMP
DIA	DIAMETER
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSED
ERRCS	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
EXSTG	EXISTING
FACP	FIRE ALARM CONTROL PANEL
FACU	FIRE ALARM CONTROL UNIT
G	EQUIPMENT GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
HP	HEAT PUMP
HP	HORSEPOWER
IMC	INTERMEDIATE METAL CONDUIT
K	KILO (THOUSAND)
LED	LIGHT EMITTING DIODE
LOC	LOCAL OPERATORS CONSOLE
LTG	LIGHTING
LTS	LIGHTS
MC	MECHANICAL CONTRACTOR
MCB	MAIN CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MLO	MAIN LUG ONLY
N/A	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
NTS	NOT TO SCALE
P	PHASE OR POLE
PC	PLUMBING CONTRACTOR
PH	PHASE
PHP	PACKAGED HEAT PUMP
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PVC	POLYVINYL CHLORIDE
RA	REMOTE ANNUNCIATOR
REC	RECEPTACLE
RECPT	RECEPTACLE
REQ.	REQUIRED
RGC	RIGID GALVANIZED CONDUIT
RGS	RIGID GALVANIZED STEEL
S.S.	STAINLESS STEEL
SLC	SIGNALING LINE CIRCUIT
SSAHU	SPLIT SYSTEM AIR HANDLING UNIT
SYS	SYSTEM
S/N	SOLID NEUTRAL
TSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VA	VOLT-AMPS
W	WATTS
W	WIRE
W/	WITH
WP	WEATHERPROOF
XFMR	TRANSFORMER

MISC. ELECTRICAL SYMBOL LEGEND

- EQUIPMENT CONNECTION
- SAFETY SWITCH DISCONNECT, HEAVY-DUTY, FUSED AT NAMEPLATE RATING OF EQUIPMENT SERVED, NEMA 1 INSIDE, NEMA 3R OUTSIDE (UNO), AMPERAGE AS INDICATED OR BASED ON SUPPLY CIRCUIT BREAKER RATING.
- PANELBOARD, SEE PANEL SCHEDULE
- T — TRANSFORMER, DRY TYPE, RATINGS INDICATED, NEMA 1 ENCLOSURE (UNO).
- GROUND ROD, 3/4" X 10' COPPER CLAD. WHERE TWO RODS ARE INDICATED, SPACE A MINIMUM OF 20' APART.
- SC — SWITCH CONTROLLER FOR COILING DOOR





FIRE ALARM LEGEND

SYMBOL	DESCRIPTION	MOUNTING
CM PA	CONTROL / RELAY MODULE FOR SOUND SYSTEM SHUNT. PROVIDE REMOTE POWER CONTROL DEVICE WITH PLUG, CORD, & RECEPTACLE FOR SOUND SYSTEM AMPLIFIER POWER. SEE SPECIFICATIONS.	CEILING / WALL
CM S	CONTROL / RELAY MODULE FOR SPEAKER BYPASS SEE DETAIL S/E-501	CEILING / WALL
F 30	HORN/STROBE, 30 CANDELA	CEILING
F 75	HORN/STROBE, 75 CANDELA	CEILING
CO	CARBON MONOXIDE DETECTOR	CEILING
CM	CONTROL / RELAY MODULE	
	DUCT DETECTOR - PROVIDED BY FIRE ALARM VENDOR	BY MECH CONTRACTOR
ERRCS	EMERGENCY RESPONDER RADIO COVERAGE SYSTEM	WALL
FCPS	FIELD CHARGING POWER SUPPLY	WALL
H	HEAT DETECTOR	CEILING
HR	HEAT DETECTOR	WALL
F 95	HORN/STROBE, 95 CANDELA	WALL
LOC	LOCAL OPERATOR CONSOLE	WALL
MM	MONITOR MODULE FOR MONITORING A DRY CONTACT CLOSURE DEVICE	
F	PULL STATION	WALL
RA ERRCS	REMOTE ANNUNCIATOR, EMERGENCY RESPONDER RADIO COVERAGE SYSTEM	WALL
RA FA	REMOTE ANNUNCIATOR, FIRE ALARM PANEL	WALL
	REMOTE INDICATOR WITH TEST SWITCH FOR DUCT DETECTOR	CEILING / WALL
S	SMOKE DETECTOR	CEILING
SR	SMOKE DETECTOR	WALL
S 30	STROBE, 30 CANDELA	WALL
SS	SURGE SUPPRESSOR	
VEP	VOICE EVACUATION FIRE ALARM PANEL	WALL

FIRE ALARM NOTIFICATION LEGEND FOR NEW BUILDING

SYMBOL	DESCRIPTION	MOUNTING
1/2-15	SPEAKER STROBE, 1/2 WATT, 15 CANDELA	CEILING MTD
1-15	SPEAKER STROBE, 1 WATT, 15 CANDELA	CEILING MTD
1-30	SPEAKER STROBE, 1 WATT, 30 CANDELA	CEILING MTD
1-75	SPEAKER STROBE, 1 WATT, 75 CANDELA	CEILING MTD
1-30	SPEAKER STROBE, 1 WATT, 30 CANDELA	WALL MTD
1-95	SPEAKER STROBE, 1 WATT, 95 CANDELA	WALL MTD
2-115	SPEAKER STROBE, 2 WATTS, 115 CANDELA	WALL MTD

PA & SECURITY LEGEND

SYMBOL	DESCRIPTION	MOUNTING	NOTES
P	PA SPEAKER	CEILING	INSTALL (1) 18/2C TSP CABLE TO PA RACK
INT	INTERCOM HANDSET	WALL, 42" AFF UNO	4" SQUARE, DEEP BOX; COORDINATE EXACT LOCATION OF HANDSET AND HEIGHT WITH OWNER. WHERE LOCATED IN CLASSROOMS - STUB 3/4"C TO 6" ABOVE ACCESSIBLE CEILING. INSTALL (1) CAT 6A CABLE TO PA RACK (BOGEN QUANTUM MULTICOM IP). WHERE LOCATED IN AUTOMOTIVE SHOP AREA - 3/4"C TO IT ROOM 105. INSTALL (1) CAT 6A CABLE TO PA RACK (BOGEN QUANTUM MULTICOM IP).
HP	PA SPEAKER	WALL	10' AFG UNO, WET LOCATION LISTED WHERE SHOWN OUTSIDE; STUB 3/4"C TO IT ROOM 105, INSTALL (1) 18/2C TSP CABLE TO PA RACK.
ACP	ACCESS CONTROL PANEL	WALL	CONTRACTOR PROVIDED ACCESS CONTROL PANEL. CONTRACTOR TO VERIFY SYSTEM AND VOLTAGE COMPATABILITY REQUIREMENTS WITH DOOR HARDWARE AND EXISTING ACCESS CONTROL SYSTEM. OWNER STANDARD: OPEN OPTIONS E2 SERIES
CR	SECURITY CAMERA	WALL; 12' AFG	-WALL MOUNTED, 12' AFG. INSTALL 4" SQUARE BOX RECESSED WITH SINGLE GANG COVER; FOR EXTERIOR LOCATIONS PROVIDE SS WEATHERPROOF COVER. ROUTE 3/4"C TO IT 105. INSTALL (1) CAT 6A CABLE TO IT ROOM CAMERA SWITCH.
CR D	DEMONSTRATON CAMERA	PEDESTAL/DOOR	CEILING MOUNTED, FIXED, BOX TYPE CAMERA FOR LIVE VIDEO STREAMING TO LOCAL VIDEO MONITOR OR SMART BOARD FOR DEMONSTRATION & TEACHING PURPOSES. INSTALL (1) CAT 6A CABLE TO DATA ROOM. COORDINATE LOCATION AND FIELD OF VIEW WITH OWNER.
CR	CARD READER	PEDESTAL/DOOR	- REMOTE MTD, MANUFACTURER'S BACK BOX MOUNTED TO REMOTE GOOSE NECK PEDESTAL FOR ADA MOTOR OPERATED DOOR. - DOOR MTD, COMBINATION CARD READER & ELECTRONIC STRIKE UNIT (DESIGN BASIS SCHLAGE AD300) SEE NOTES FOR ELECTRIC STRIKE. 3/4"C TO IT ROOM 105; INSTALL (1) CAT 6A OR MANUFACTURER'S RECOMMENDED CABLE BACK TO ACCESS CONTROL PANEL.
DCM	DOOR SWITCH / CONTACT FOR ACCESS CONTROL SYSTEM	RECESSED	PROVIDE 1/2" FLEXIBLE METALLIC CONDUIT CONCEALED IN DOOR FRAME TO JUNCTION BOX MTD ABOVE CEILING. 3/4"C TO IT ROOM 105. INSTALL (1) 22/2C NTP CABLE TO ACCESS CONTROL PANEL.
EH	ELECTRIC HINGE		FOR DOUBLE DOORS WITH REMOVEABLE CENTER MULLION, 1/2" FLEXIBLE METALLIC CONDUIT CONCEALED IN DOOR FRAME TO JUNCTION BOX MTD ABOVE DOOR. THEN ROUTE 3/4"C TO IT ROOM 105 ACCESS CONTROL PANEL. PROVIDE PATHWAY THROUGH DOOR TO ACCOMMODATE CONNECTION TO ASSOCIATED ELECTRIC STRIKE/CARD READER UNIT. INSTALL (1) 18/2C NTP CABLE TO ACCESS CONTROL PANEL FOR ELECTRIC LOCK CONTROL.
ES	ELECTRIC STRIKE		-FOR DOUBLE DOOR WITH PERMANENT CENTER MULLION, PROVIDE 1/2" FLEXIBLE METALLIC CONDUIT CONCEALED IN DOOR FRAME & CENTER MULLION TO JUNCTION BOX MTD ABOVE DOOR. THEN ROUTE 3/4"C TO IT ROOM 105 ACCESS CONTROL PANEL. INSTALL (1) 18/2C NTP CABLE TO ACCESS CONTROL PANEL FOR ELECTRIC LOCK CONTROL. -FOR DOUBLE DOOR WITH REMOVEABLE CENTER MULLION, SINGLE UNIT WITH INTEGRATED CARD READER AND ELECTRIC STRIKE. (DESIGN BASIS SCHLAGE AD300) SEE NOTES AT ELECTRIC HINGE FOR DOUBLE DOORS WITH REMOVEABLE CENTER MULLION.
K	KEYPAD	WALL	4" SQUARE BOX RECESSED WITH SINGLE GANG COVER; 3/4"C TO IT ROOM 105. INSTALL (1) 22/4C NTP CABLE TO SECURITY SYSTEM ZONE EXPANDER ENCLOSURE
M	MOTION DETECTOR, CORRIDOR COVERAGE	CEILING; 9' AFF UNO	3/4"C TO IT ROOM 105. INSTALL (1) 22/4C CABLE TO SECURITY SYSTEM ZONE EXPANDER ENCLOSURE
SREE	SECURITY SYSTEM ZONE EXPANDER ENCLOSURE		DESIGN BASIS ADEMCO 4229
	ADA PUSHBUTTON	PEDESTAL	ADA PUSH BUTTON FOR MOTOR OPERATED DOOR OPENER; MTD TO GOOSE NECK PEDESTAL. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH OWNER/ARCHITECT. NOTE: ADA PUSH BUTTON SHALL BE POWERED VIA THE CARD READER/ACCESS CONTROL SYSTEM OUTPUT. THIS PUSH BUTTON SHALL ONLY OPERATE AFTER A VALID CARD IS PRESENTED.

DATA & TELEPHONE OUTLET LEGEND

SYMBOL	DESCRIPTION	MOUNTING	NOTES
AP	DATA OUTLET FOR ACCESS POINT	4" SQUARE BOX MOUNTED 24" ABOVE CEILING	INSTALL (1) CAT 6A CABLE TO IT ROOM. MOUNT EQUIPMENT AT CEILING OR WALL MOUNTED IF INDICATED. PROVIDE PATCH CORD FROM OUTLET TO EQUIPMENT. IN AUTOMOTIVE SHOP AREA, PROVIDE 3/4"C TO IT ROOM 105.
	DATA / TELEPHONE OUTLET	WALL, 18" AFF UNO; 5" SQUARE, 2.875" DEEP BOX, 64 CUBIC INCHES, WITH CABLE MANAGEMENT POSTS. DESIGN BASIS: STEEL CITY #82181T SERIES	STUB 1"C TO 6" ABOVE CEILING INSTALL (2) CAT 6A CABLES TO IT ROOM UNLESS A DIFFERENT QUANTITY IS NOTED.
DDC	DATA OUTLET FOR MECHANICAL DDC	WALL, 18" AFF UNO; 5" SQUARE, 2.875" DEEP BOX, 64 CUBIC INCHES, WITH CABLE MANAGEMENT POSTS. DESIGN BASIS: STEEL CITY #82181T SERIES	STUB 1"C TO 6" ABOVE CEILING INSTALL (1) CAT 6A CABLE TO IT ROOM.
A	DATA / TELEPHONE OUTLET	WALL, 18" AFF UNO; 5" SQUARE, 2.875" DEEP BOX, 64 CUBIC INCHES, WITH CABLE MANAGEMENT POSTS. DESIGN BASIS: STEEL CITY #82181T SERIES	STUB 1"C TO IT ROOM 105. INSTALL (2) CAT 6A CABLES TO IT ROOM UNLESS A DIFFERENT QUANTITY IS NOTED.
	2 POST EQUIPMENT RACK FOR IT EQUIPMENT	FLOOR	
	FLOOR MOUNTED EQUIPMENT RACK FOR PA EQUIPMENT	FLOOR	

RECEPTACLE LEGEND

SYMBOL	NEMA	VOLTS	DESCRIPTION
	5-20R	120V 1P 2W	DUPLEX, MTD 18" AFF UNO
BL	5-20R	120V 1P 2W	DUPLEX GFCI FOR BRAKE LATHE, MTD 48" AFF UNO
CP	5-20R	120V 1P 2W	DUPLEX FOR CONDENSATE PUMP; COORDINATE LOCATION W/ MECH CONTRACTOR
CR	5-20R	120V 1P 2W	CORD REEL WITH DUPLEX GFCI; MOUNTED AT CEILING STRUCTURE; #12/3 SJEOOW CORD WITH CORD STOP TO KEEP RECEPTACLE AT 24" AFF MINIMUM. DESIGN BASIS: REELCRAFT #L-4545-123-7A.
G	5-20R	120V 1P 2W	DUPLEX GFCI, MTD 6" ABOVE COUNTER HEIGHT UNO
W/G	5-20R	120V 1P 2W	DUPLEX GFCI, MTD 18" AFG UNO; LISTED WEATHER-RESISTANT TYPE; PROVIDE CAST ALUMINUM WEATHERPROOF IN-USE COVER WITH CAST ALUMINUM FD WEATHERPROOF BOX
GS	5-20R	120V 1P 2W	DUPLEX GFCI, MTD 48" AFF UNO
W	5-20R	120V 1P 2W	DUPLEX FOR WASHER, MTD 30" AFF UNO
WD	5-20R	120V 1P 2W	WELDER OUTLET, MTD 48" AFF UNO
AC		120V 1P 2W	POWER FOR DOOR OPENER/ACCESS CONTROL, PROVIDE 12/24V TRANSFORMER; MOUNT 12" ABOVE DOOR FRAME UNO
DDC		120V 1P 2W	J-BOX FOR DDC OR MECHANICAL CONTROL POWER SOURCE, MOUNT ABOVE CLG LEVEL UNO
ERRCS		120V 1P 2W	POWER FOR EMERGENCY RESPONDER RADIO COVERAGE SYSTEM
FAP		120V 1P 2W	POWER FOR VEP AND OR FCPS
SEC		120V 1P 2W	POWER FOR SECURITY SYSTEM COMPONENT
CONTROL		120V 1P 2W	POWER FOR SHOP SAFETY DEVICE SYSTEM CONTROL POWER
S		208V 2P 2W	4" SQUARE BOX MOUNTED 48" AFF, SPARE 1"C WITH PULLSTRING TO PANEL "PB"
	5-20R	120V 1P 2W	QUAD, MTD 18" AFF UNO
G	5-20R	120V 1P 2W	QUAD GFCI, MTD 48" AFF UNO
EWC	5-20R	120V 1P 2W	QUAD FOR ELECTRIC WATER COOLER OUTLET; SUPPLY FROM GFCI TYPE C/B; COORDINATE MTG LOCATION TO CONCEAL OUTLET WHEN COOLER IS INSTALLED.
L6-20R	L6-20R	208V 2P 2W	DATA ROOM RECEPTACLE. MOUNT TO LADDER RACK OVER EQUIPMENT.
D		208/120V 2P 3W	DRYER OUTLET, MTD 30" AFF UNO, COORDINATE RECEPTACLE TYPE WITH OWNER.
B		208V 2P 2W	POWER FOR TIRE BALANCER MACHINE, MTD 48" AFF UNO, COORDINATE INSTALATION OF PLUG AND RECEPTACLE TYPE WITH OWNER.
TC		240V 3P 3W	POWER FOR TIRE CHANGER, MTD 48" AFF UNO, COORDINATE RECEPTACLE TYPE WITH OWNER.
		120V 1P 2W	EXHAUST FAN; SEE MECHANICAL SCHEDULE. CONNECT TO NEAREST ROOM CIRCUIT. CONTROL WITH LIGHTING SYSTEM'S OCCUPANCY SENSOR USING A SEPERATE POWER PACK, SEE DETAIL H/E-503

SWITCH LEGEND

SYMBOL	DESCRIPTION	NOTES
$ D	DIMMER SWITCH	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
$ D3	DIMMER SWITCH FOR 3-WAY CONTROL	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
$ EPO	EPO SWITCH, PUSHBUTTON, MUSHROOM HEAD, MAINTAINED; MANUAL RESET	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO;
$ 4	4-WAY SWITCH	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
$ OD	OCCUPANCY SENSOR WALL SWITCH, DIMMER; DUAL TECHNOLOGY	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
$ OI	OCCUPANCY SENSOR WALL SWITCH, SINGLE CKT, DUAL TECHNOLOGY	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO
OS	OCCUPANCY SENSOR, LOW VOLTAGE, DUAL TECHNOLOGY; CEILING MTD	INCORPORATE POWER PACK FOR CIRCUITRY SWITCHING, SEE WIRING DIAGRAMS
OS HB	OCCUPANCY SENSOR, LOW VOLTAGE, DUAL TECHNOLOGY; CEILING MTD; HIGH BAY	INCORPORATE POWER PACK FOR CIRCUITRY SWITCHING, SEE WIRING DIAGRAMS
PC	PHOTOCELL, EXTERIOR; MOUNT ON NORTH FACE OF BLDG, FACING NORTH	
$	TOGGLE SWITCH, SINGLE POLE	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO; WHERE USED AS AN EQUIPMENT DISCONNECT, PROVIDE LOCKABLE TYPE COVER.
$ 3	3-WAY SWITCH	RATED FOR VOLTAGE WHERE APPLIED, 20A; MTD 42" AFF UNO

APPENDIX B, BUILDING CODE SUMMARY ELECTRICAL SUMMARY

METHOD OF COMPLIANCE
-ENERGY CODE: ☒ PRESCRIPTIVE ☐ PERFORMANCE
-ASHRAE 90.1: ☐ PRESCRIPTIVE ☐ PERFORMANCE

LIGHTING SCHEDULE
Lamp Type Required In Fixtures
Number of Lamps in Fixtures
Ballast Types Used in Fixtures
Number of Ballasts Used in Fixtures
Total Wattage per Fixture
— SEE LIGHT FIXTURE / LUMINAIRE SCHEDULE

TOTAL WATTAGE SPECIFIED VERSUS ALLOWED
Interior Specified: **4150 Watts** Exterior Specified: **732 Watts**
Interior Allowed: **4653 Watts** Exterior Allowed: **1598 Watts**

ADDITIONAL METHOD OF COMPLIANCE:
- ☐ 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

DESIGNER STATEMENT
To the best of my knowledge and belief, the design of this building complies with the electrical systems and equipment requirements of the North Carolina State Building Code, Section 406 of the North Carolina Energy Conservation Code.

SIGNED: Mark A. Ciarrocca
NAME: Mark A. Ciarrocca, P.E.
TITLE: Engineer

ELECTRICAL LOAD SUMMARY

	CONN KVA	CALC KVA			CONN KVA	CALC KVA	
LIGHTING	5.34	6.68	(125%)	RECEPTACLES	22.1	16.1	(50%>10)
LARGEST MOTOR	11.6	2.91	(25%)	NONCONTINUOUS	15.3	15.3	(100%)
MOTORS	42.4	42.4	(100%)	HEATING	94.5	94.5	(100%)
				COOLING	7.65	0	(0%)
				TOTAL LOAD		178	
				BALANCED 3-PHASE AMPS		214	

JUNCTION BOX/MISC. SCHEDULE

SYMBOL	DESCRIPTION	NOTES
C	JUNCTION BOX FOR FUTURE CAMERA	WALL MOUNTED, 12' AFG. INSTALL 4" SQUARE BOX RECESSED WITH SS SINGLE GANG WEATHERPROOF BLANK COVER; STUB 3/4"C TO IT 105.
	WALL SLEEVE, RATED WALLS, COMMUNICATIONS CABLING	ABOVE CEILING, FOR LOW VOLTAGE CABLES; PRE-ENGINEERED FIRE-RATED PASS-THROUGH; DESIGN BASIS: STI EZ-PATH SERIES 44. MTD 10'-6" AFF.

BRUNSWICK CTY

THE COAST ACADEMY

LS3P
434 FAYETTEVILLE STREET SUITE 1700
RALEIGH, NORTH CAROLINA 27601
TEL. 919.829.2700 FAX 919.829.2730
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NC LICENSE# C-1073

JOB # 19051

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 17593 MARK A. CIARROCCA 22 APRIL 2020

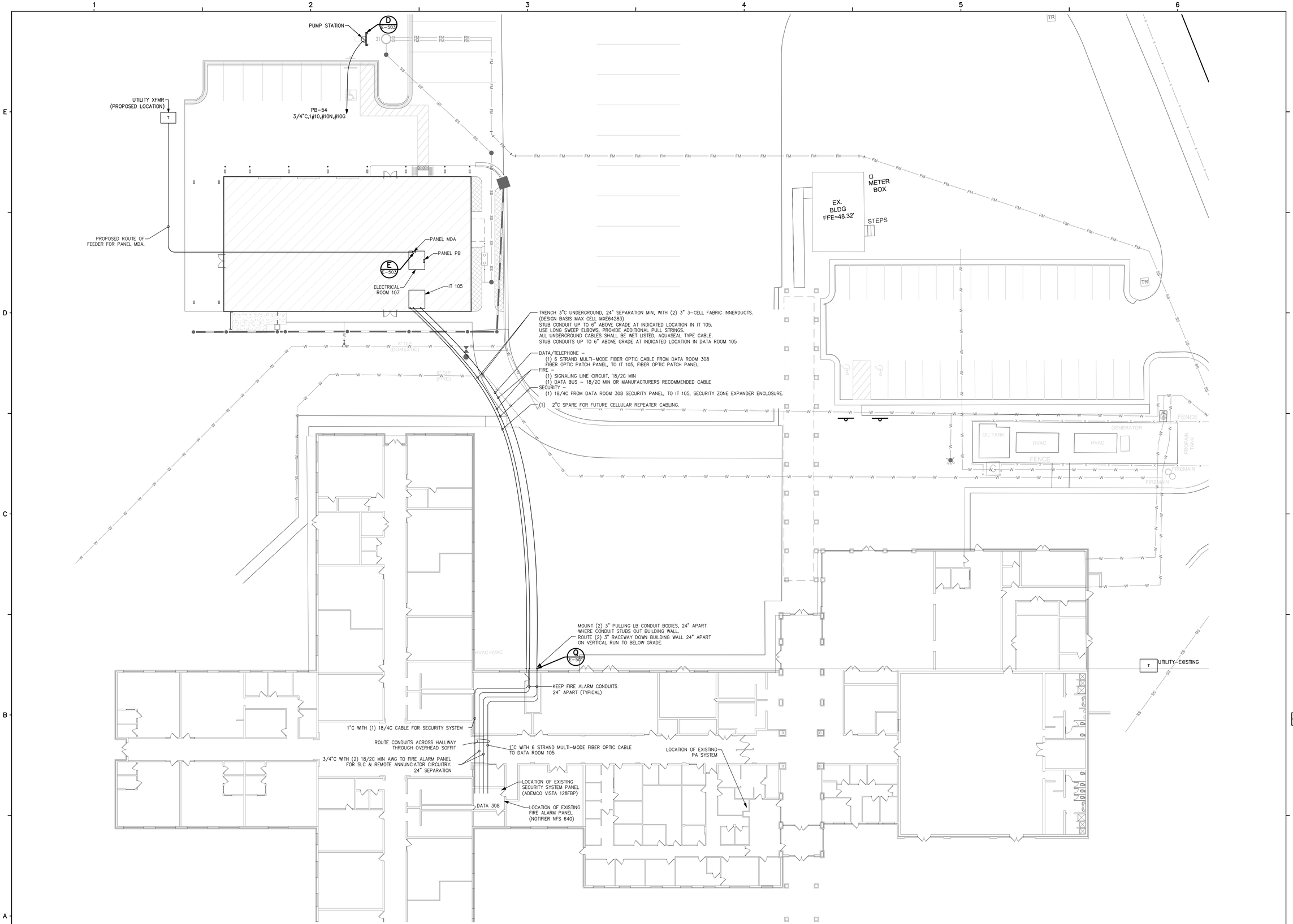
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL LEGENDS, NOTES, SCHEDULES, DETAILS

E-001

BID DOCUMENTS



NOTES:

1. CCTV SYSTEM WILL UTILIZE THE NEW BUILDING DATA NETWORK FOR BUILDING CONNECTIVITY BETWEEN EXISTING CCTV NETWORK SWITCH & THE NEW CCTV NETWORK SWITCH LOCATED IN DATA ROOM 105
2. PA SYSTEM WILL UTILIZE THE NEW BUILDING DATA NETWORK FOR BUILDING CONNECTIVITY BETWEEN EXISTING PA RACK & THE NEW PA NETWORK NODE LOCATED IN DATA ROOM 105.
3. ACCESS CONTROL SYSTEM WILL UTILIZE THE NEW BUILDING DATA NETWORK FOR BUILDING CONNECTIVITY BETWEEN EXISTING ACCESS CONTROL NETWORK SWITCH & THE NEW ACCESS CONTROL NETWORK NODE LOCATED IN DATA ROOM 105.
4. RATED WALLS ARE NOT INDICATED ON THIS PLAN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATION OF RATED WALLS PRIOR TO CONSTRUCTION FOR ROUTING OF AUXILIARY SYSTEMS RACEWAYS.

1 E-011 ELECTRICAL SITE PLAN
SCALE: 1/16" = 1'-0"

GRAPHIC SCALE: 1/16"=1'-0"
0 4 8 16 32

PROJECT NORTH N
TRUE NORTH N

BRUNSWICK CTY

THE COAST ACADEMY

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NC LICENSE# C-1073

JOB # 19051

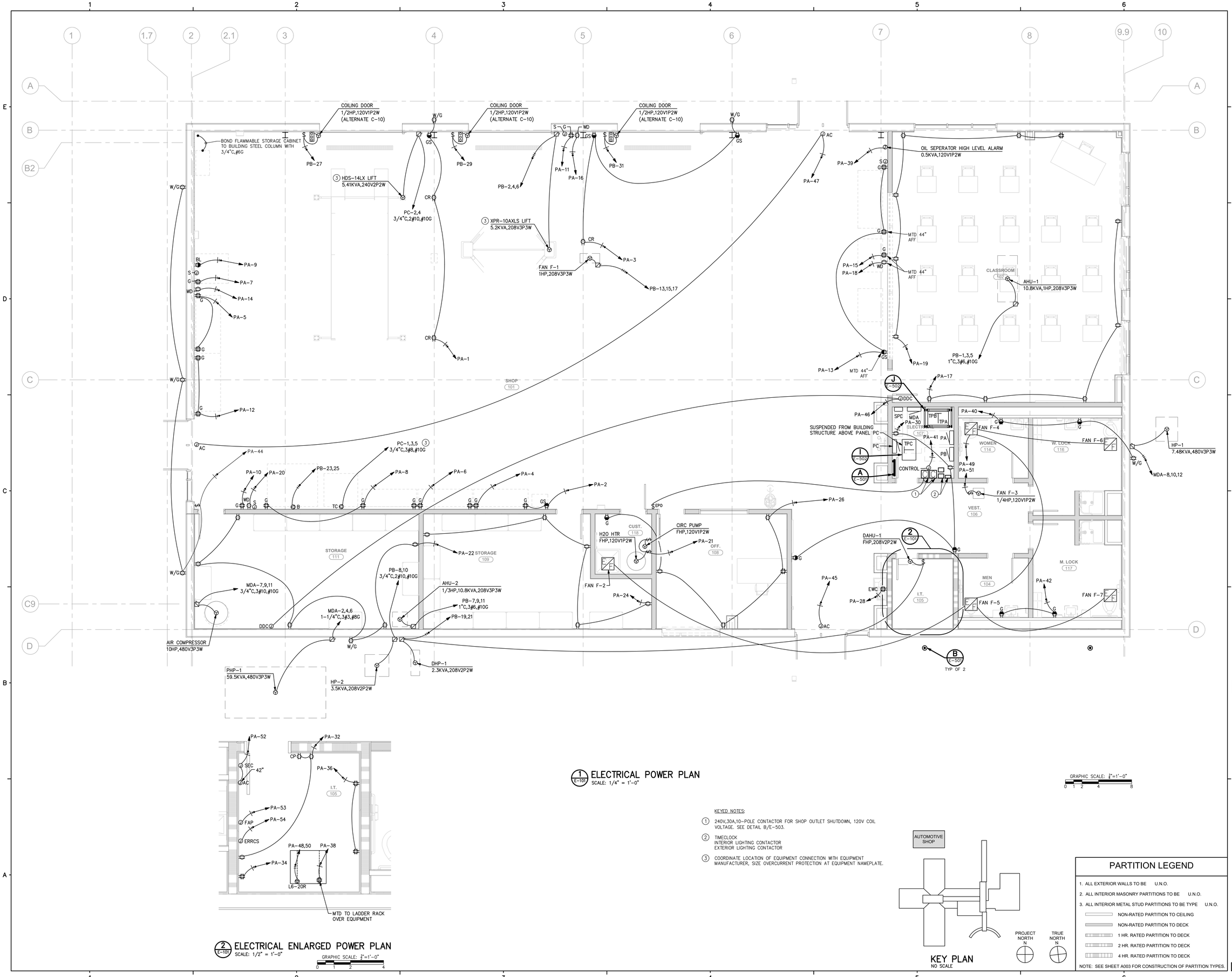
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL SITE PLAN

E-011

BID DOCUMENTS



2 E-101 ELECTRICAL ENLARGED POWER PLAN

SCALE: 1/2" = 1'-0"

GRAPHIC SCALE: 1/2"=1'-0"

0 1 2 4

1 E-101 ELECTRICAL POWER PLAN

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

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

0 1 2 4 8

KEYED NOTES:

1. 240V,30A,1Ø-POLE CONTACTOR FOR SHOP OUTLET SHUTDOWN, 120V COIL VOLTAGE. SEE DETAIL B/E-503.
2. TIMECLOCK
   INTERIOR LIGHTING CONTACTOR
   EXTERIOR LIGHTING CONTACTOR
3. COORDINATE LOCATION OF EQUIPMENT CONNECTION WITH EQUIPMENT MANUFACTURER, SIZE OVERCURRENT PROTECTION AT EQUIPMENT NAMEPLATE.

KEY PLAN

NO SCALE

PROJECT NORTH N

TRUE NORTH N

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.
   - NON-RATED PARTITION TO CEILING
   - NON-RATED PARTITION TO DECK
   - 1 HR. RATED PARTITION TO DECK
   - 2 HR. RATED PARTITION TO DECK
   - 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

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JOB # 19051

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER M. A. CIARROCCHI 17315 22 APRIL 2020

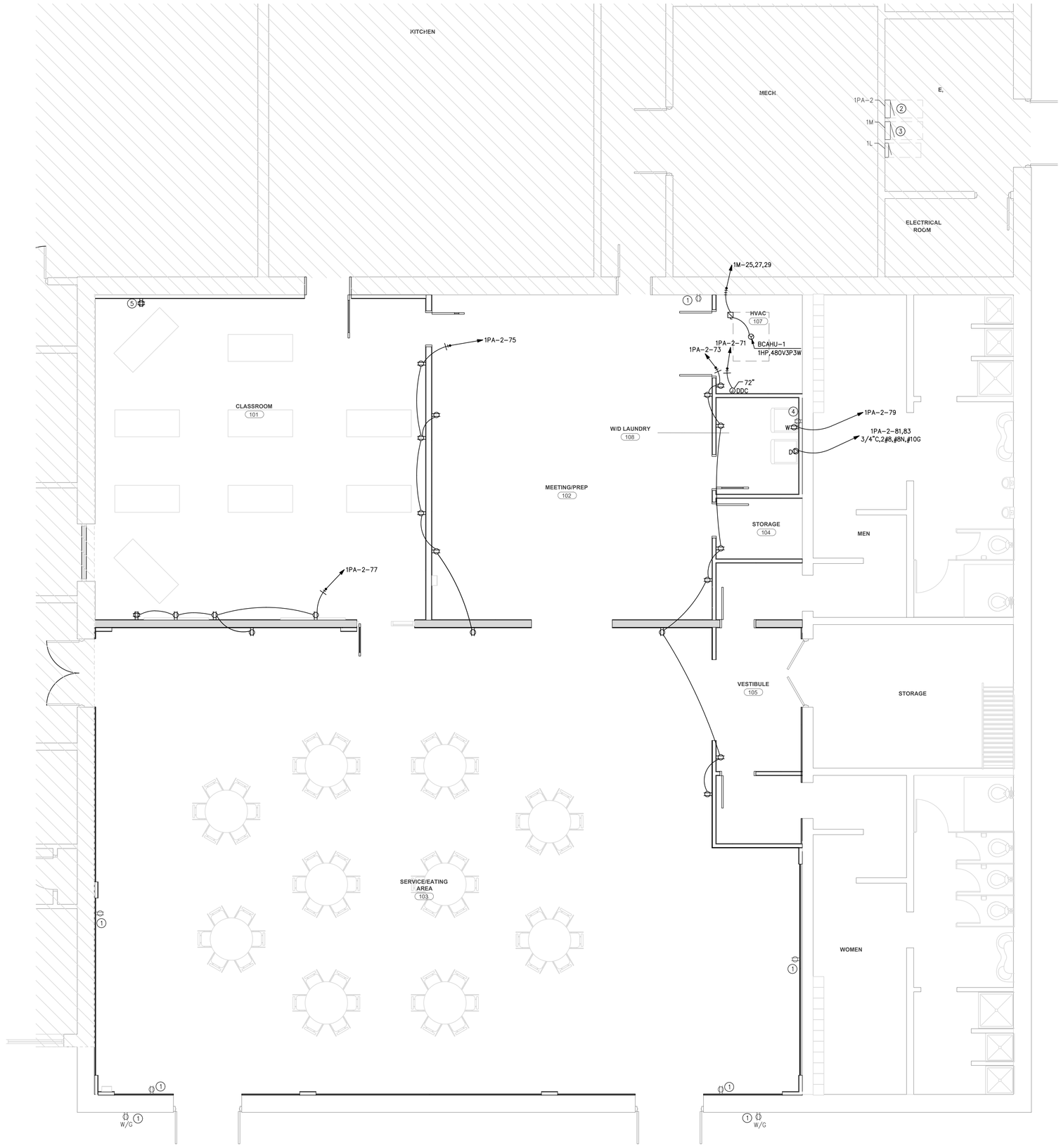
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL POWER PLAN - AUTOMOTIVE

E-101

BID DOCUMENTS



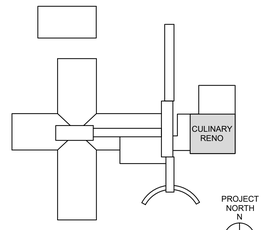
1 E-102 ELECTRICAL POWER PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE: 1"=1'-0"
0 1 2 4 8

NOTE:
REFER TO RECORD DRAWINGS BY HAAS & KENNEDY ENGINEERS, P.A. FOR EXTENT OF DEMOLITION REQUIREMENTS. SEE DRAWING E300.

KEYED NOTES:

1. EXISTING DEVICE TO REMAIN.
2. EXISTING PANEL "1PA (SEC 2)"; CUTLER HAMMER PRL1A, 208/120V 3P,4W. PROVIDE THE FOLLOWING BREAKERS:
   - (1) NEW 1P/ 20 AMP BREAKER IN SPACE 71 TO POWER DDC CONTROLS.
   - (4) NEW 1P/ 20 AMP BREAKERS IN SPACES 73, 75, 77, AND 79 TO POWER NEW RECEPTACLE CIRCUITS SHOWN.
   - (1) NEW 2P/ 35 AMP BREAKER IN SPACES 81,83 TO POWER NEW DRYER OUTLET.
3. EXISTING PANEL "1M"; CUTLER HAMMER PRL3A, 480/277V 3P,4W. REMOVE (3) 1P /20 AMP BREAKERS IN SPACES 25, 27, 29 & RETURN TO OWNER. INSTALL (1) 3P /15 AMP (65KAIC) CIRCUIT BREAKER FOR NEW LOAD BCAHU-1.
4. REMOVE EXISTING RECEPTACLE. EXTEND BOX TO NEW WALL AND REUSE BOX AS A JUNCTION BOX FOR EXISTING CIRCUITRY. PROVIDE BLANK COVER.
5. REMOVE EXISTING RECEPTACLE. EXTEND BOX TO NEW WALL AND CONVERT TO QUAD RECEPTACLE.



KEY PLAN
NO SCALE

PROJECT NORTH N

TRUE NORTH N

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

- NON-RATED PARTITION TO CEILING
- NON-RATED PARTITION TO DECK
- 1 HR. RATED PARTITION TO DECK
- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

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NC LICENSE# C-1073

JOB # 19051

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17022 22 APRIL 2020 JOSHUA M. SWINDELL MARK A. CHATROOP

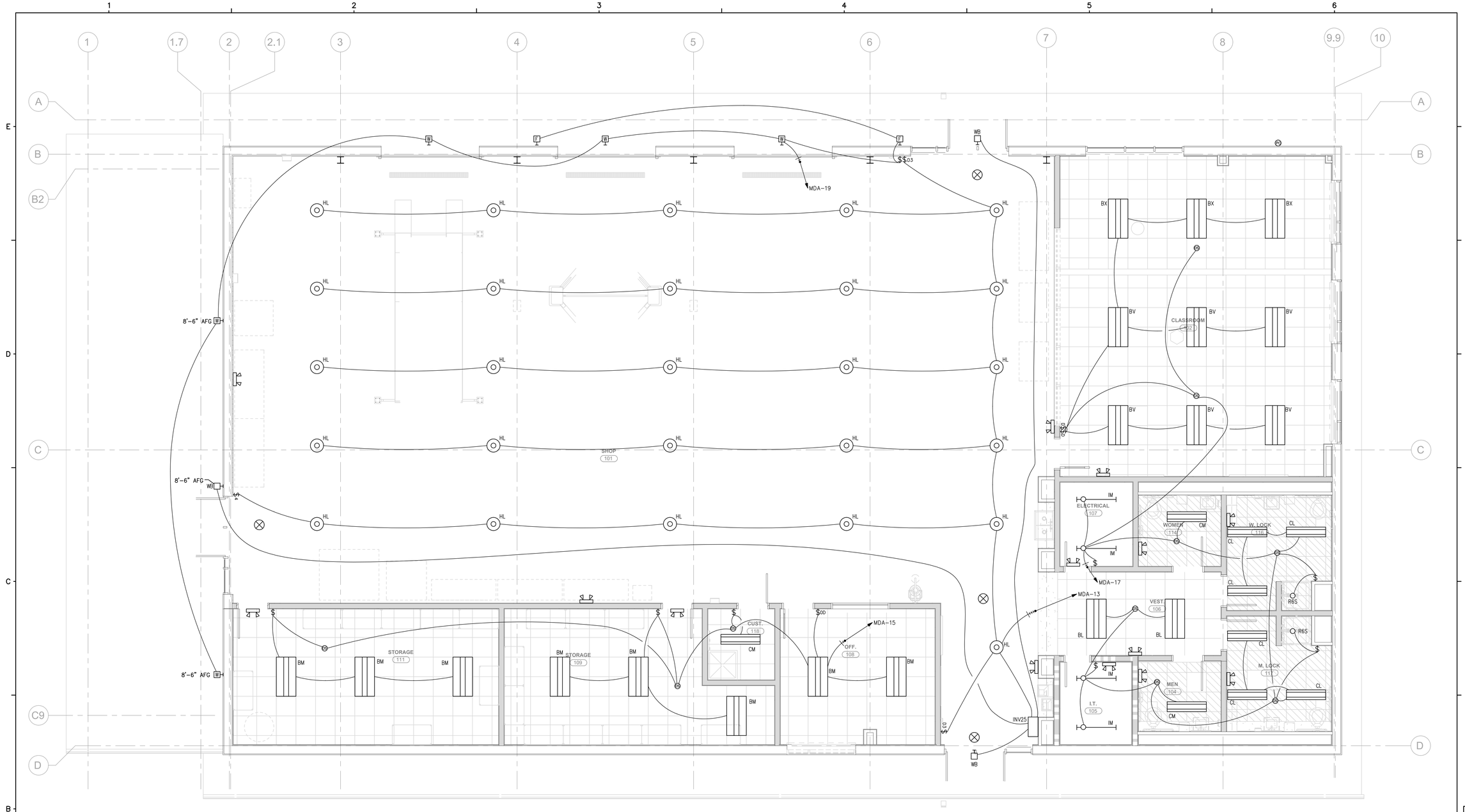
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

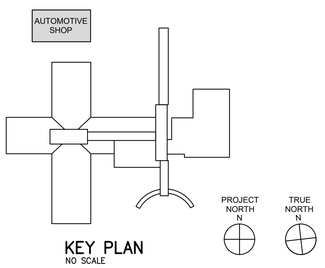
ELECTRICAL POWER PLAN - CULINARY

E-102

BID DOCUMENTS



1 E-111 ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"
GRAPHIC SCALE: 1/4"=1'-0"
0 1 2 4 8



KEY PLAN
NO SCALE

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

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- NON-RATED PARTITION TO DECK
- 1 HR. RATED PARTITION TO DECK
- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

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JOB # 19051

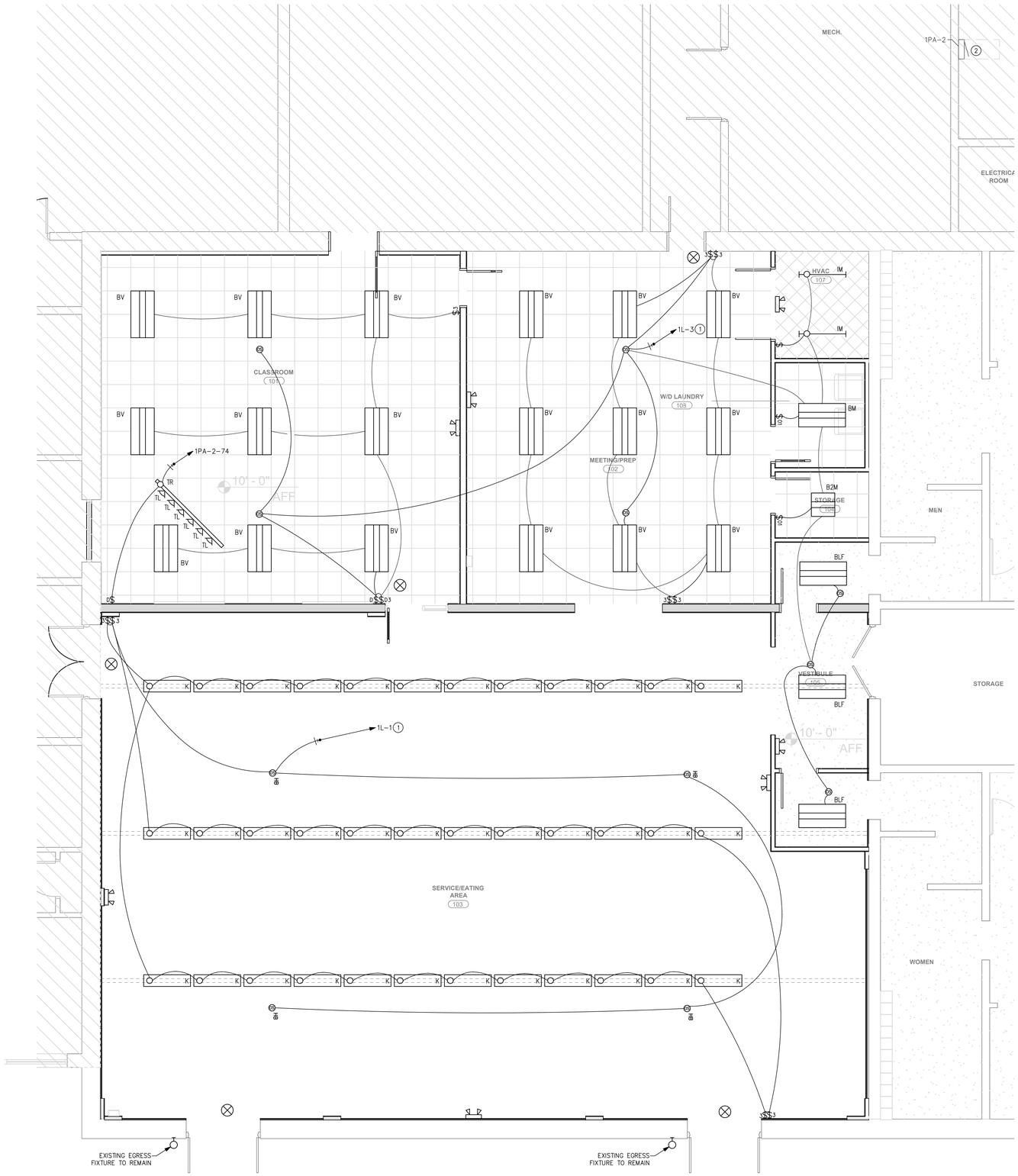
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL LIGHTING PLAN - AUTOMOTIVE

E-111

BID DOCUMENTS



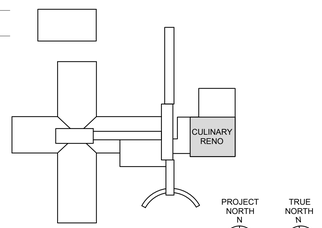
1 E-112 ELECTRICAL LIGHTING PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE: 1/4"=1'-0"
0 1 2 4 8

NOTE:
REFER TO RECORD DRAWINGS BY HAAS & KENNEDY ENGINEERS, P.A. FOR EXTENT OF DEMOLITION REQUIREMENTS. SEE DRAWING E400.

KEYED NOTES:

1. UTILIZE EXISTING CIRCUIT BREAKER PREVIOUSLY SERVING SPACE. UPDATE PANEL AND CIRCUIT NUMBER ON AS-BUILTS.
2. EXISTING PANEL "1PA (SEC 2)"; CUTLER HAMMER PRL1A, 208/120V 3P,4W. PROVIDE (1) 1P/ 20 AMP BREAKER IN SPACE 74 TO POWER TRACK LIGHT.



KEY PLAN
NO SCALE

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

- NON-RATED PARTITION TO CEILING
- NON-RATED PARTITION TO DECK
- 1 HR. RATED PARTITION TO DECK
- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

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JOB # 19051

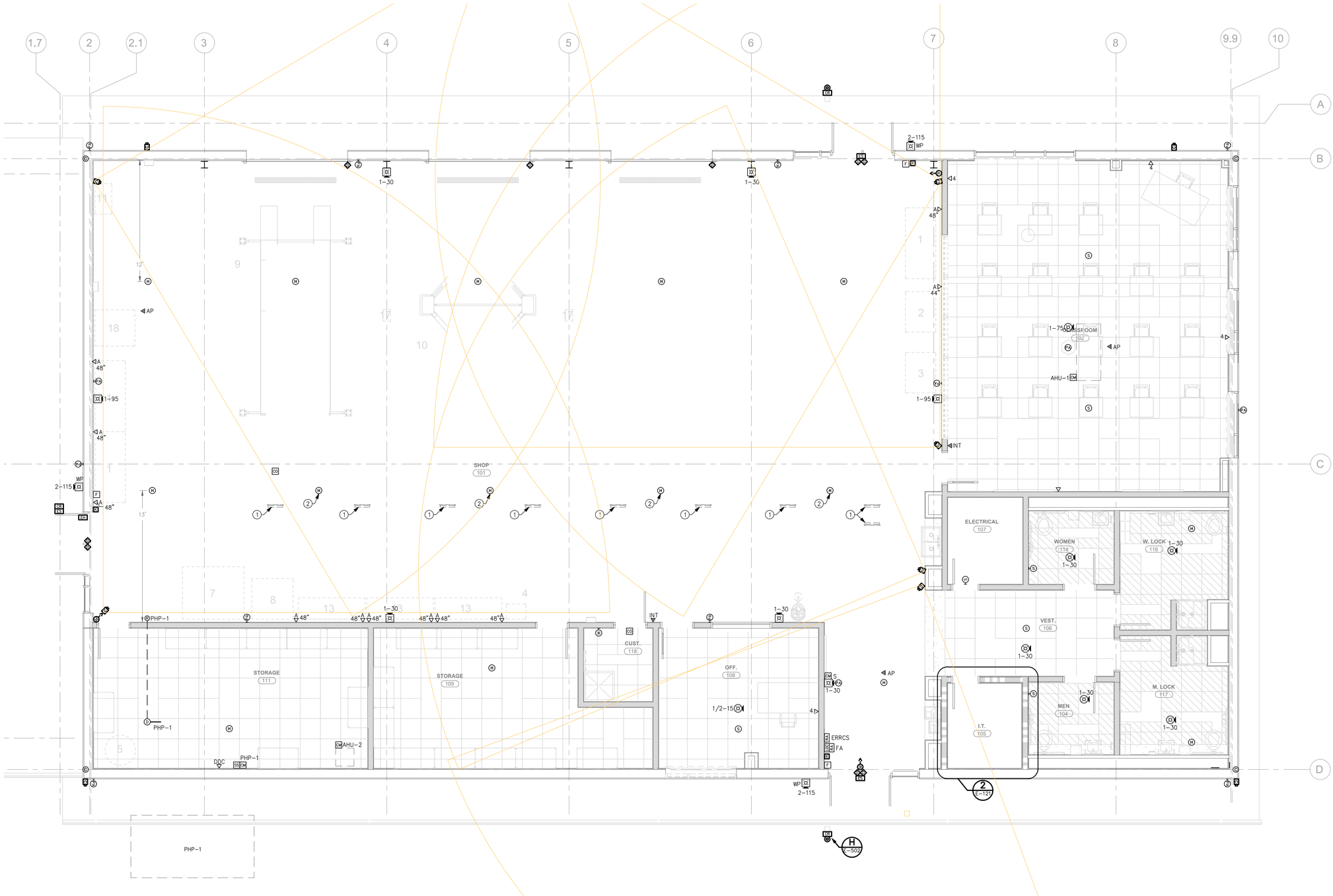
No.	Description	Date

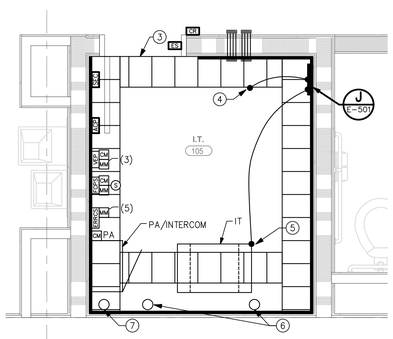
PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL LIGHTING PLAN - CULINARY

E-112

BID DOCUMENTS





2 E-121 ELECTRICAL ENLARGED IT ROOM

SCALE: 1/2" = 1'-0"

GRAPHIC SCALE: 1"=1'-0"

0 1 2 4

1 E-121 ELECTRICAL AUXILIARY SYSTEMS PLAN

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

GRAPHIC SCALE: 1"=1'-0"

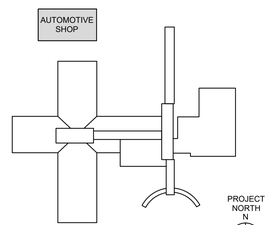
0 1 2 4 8

KEYED NOTES

1. 16"X8" HVAC SIDEWALL SUPPLY AIR REGISTER (SHOWN FOR HEAT DETECTOR PLACEMENT COORDINATION ONLY)
2. MOUNT HEAT DETECTORS TO STRUCTURE CEILING, CENTERED BETWEEN HVAC SIDEWALL SUPPLY AIR REGISTERS.
3. LADDER RACK, INSTALL 6" ABOVE TOP OF EQUIPMENT RACK. (TYPICAL)
4. BOND EACH LADDER RACK SECTION TO GROUND BAR WITH #6 STRANDED COPPER, GREEN INSULATED GROUND. ONE IS SHOWN; BOND ALL SECTIONS.
5. BOND IT RACK TO GROUND BAR WITH #6 STRANDED COPPER, GREEN INSULATED GROUND.
6. STUB UP LOCATION FOR (2) 3"C
7. STUB UP LOCATION FOR 2"C FOR FUTURE CELLULAR REPEATER CABLE.

GENERAL NOTES

1. CIRCUITRY IN AUTOMOTIVE SHOP AREA SHALL BE IN CONDUIT.
2. SECURITY AND ACCESS CONTROL CIRCUITRY MAY SHARE RACEWAYS.



KEY PLAN
NO SCALE

PROJECT NORTH N

TRUE NORTH N

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

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- NON-RATED PARTITION TO DECK
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- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

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JOB # 19051

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 17975 MARK A. CIARROCCA 4.22.2020

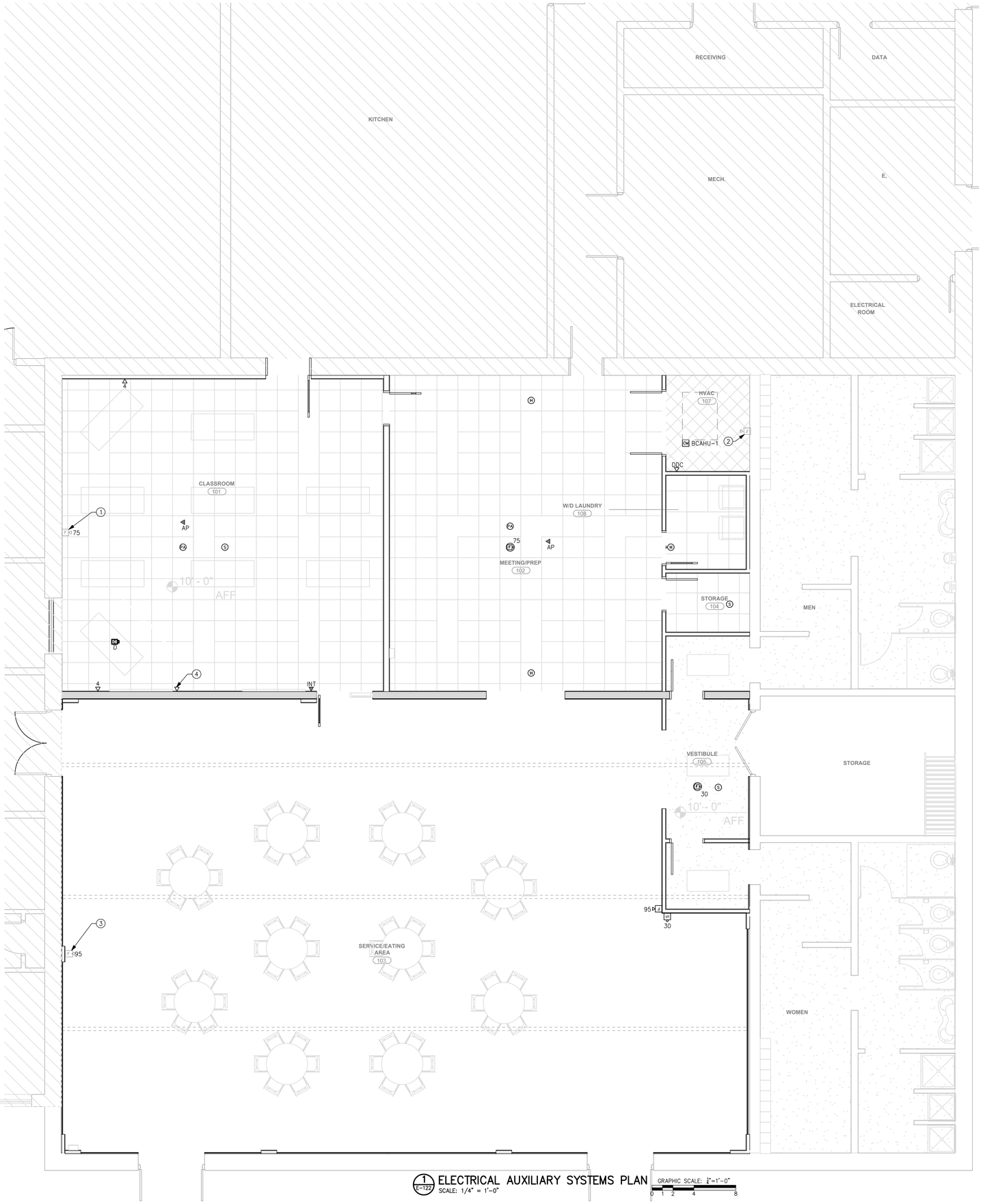
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL AUXILIARY SYSTEMS PLAN - AUTOMOTIVE

E-121

BID DOCUMENTS



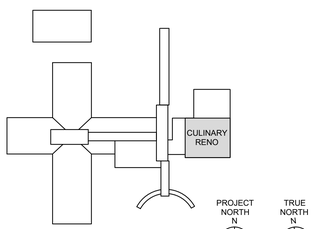
1 E-122 ELECTRICAL AUXILIARY SYSTEMS PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE: 1/4"=1'-0"
0 1 2 4 8

KEYED NOTES

1. ADJUST EXISTING NOTIFICATION DEVICE SETTINGS TO 75CD/HIGH VOLUME
2. ADJUST EXISTING NOTIFICATION DEVICE SETTINGS TO 15CD/LOW VOLUME
3. ADJUST EXISTING NOTIFICATION DEVICE SETTINGS TO 95CD/HIGH VOLUME
4. PROVIDE (1) ADDITIONAL 1-1/4"C STUBBED TO 6" ABOVE ACCESSIBLE CEILING FOR DEMONSTRATION CAMERA HDMI CABLE TO SMART BOARD.

NOTE:
REFER TO RECORD DRAWINGS BY HAAS & KENNEDY ENGINEERS, P.A. FOR EXTENT OF DEMOLITION REQUIREMENTS. SEE DRAWING E500.



KEY PLAN
NO SCALE

PARTITION LEGEND

1. ALL EXTERIOR WALLS TO BE U.N.O.
2. ALL INTERIOR MASONRY PARTITIONS TO BE U.N.O.
3. ALL INTERIOR METAL STUD PARTITIONS TO BE TYPE U.N.O.

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- NON-RATED PARTITION TO DECK
- 1 HR. RATED PARTITION TO DECK
- 2 HR. RATED PARTITION TO DECK
- 4 HR. RATED PARTITION TO DECK

NOTE: SEE SHEET A003 FOR CONSTRUCTION OF PARTITION TYPES.

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JOB # 19051

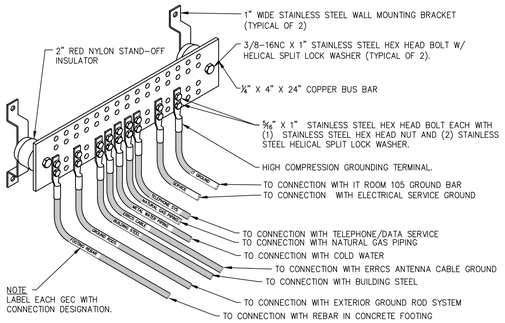
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

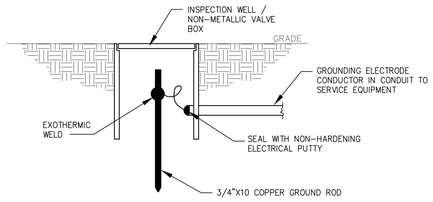
ELECTRICAL AUXILIARY SYSTEMS PLAN - CULINARY

E-122

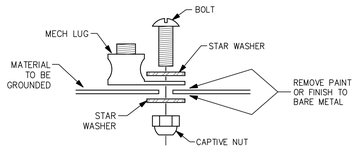
BID DOCUMENTS



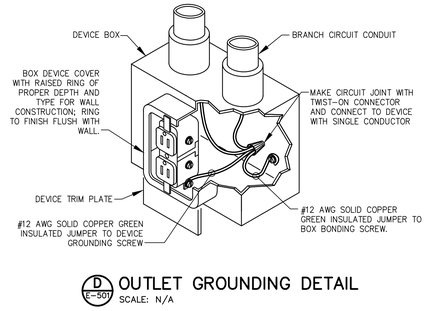
A E-501 MAIN GROUND BAR
NO SCALE



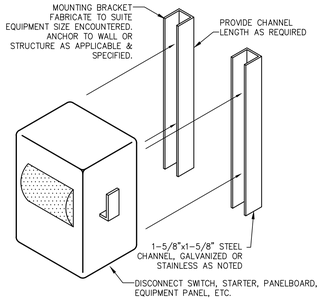
B E-501 GROUND ROD & INSPECTION WELL
NO SCALE



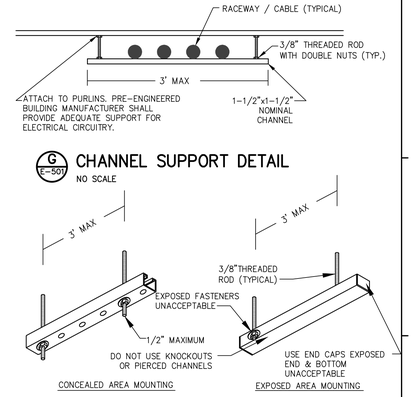
C E-501 GROUNDING LUG DETAIL
NO SCALE



D E-501 OUTLET GROUNDING DETAIL
SCALE: N/A

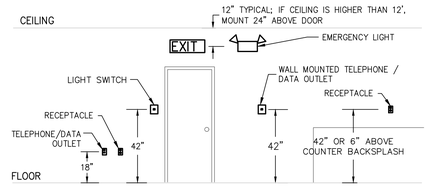


F E-501 EQUIPMENT MOUNTING DETAIL
NO SCALE

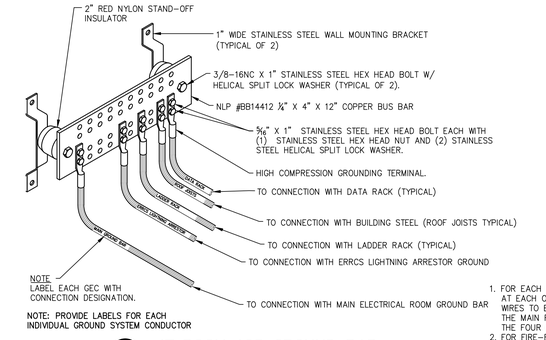


G E-501 CHANNEL SUPPORT DETAIL
NO SCALE

H E-501 CHANNEL MOUNTING DETAILS
NO SCALE

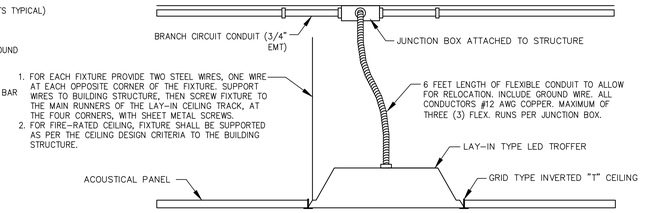


E E-501 MOUNTING HEIGHTS OF DEVICES
NO SCALE



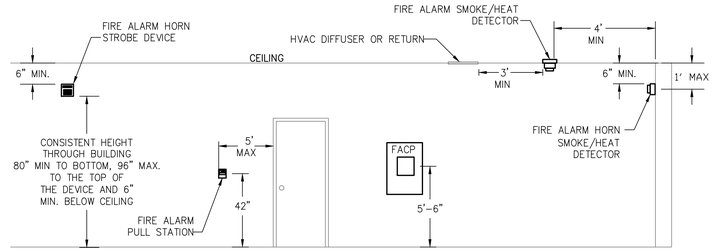
NOTE: PROVIDE LABELS FOR EACH INDIVIDUAL GROUND SYSTEM CONDUCTOR

J E-501 IT ROOM 105 GROUND BAR
NO SCALE



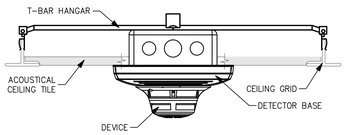
1. FOR EACH FIXTURE PROVIDE TWO STEEL WIRES, ONE WIRE AT EACH OPPOSITE CORNER OF THE FIXTURE. SUPPORT WIRES TO BUILDING STRUCTURE, THEN SCREW FIXTURE TO THE MAIN RUNNERS OF THE LAY-IN CEILING TRACK, AT THE FOUR CORNERS, WITH SHEET METAL SCREWS.
2. FOR FIRE-RATED CEILING, FIXTURE SHALL BE SUPPORTED AS PER THE CEILING DESIGN CRITERIA TO THE BUILDING STRUCTURE.

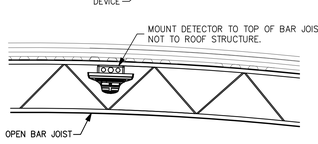
K E-501 LIGHTING FIXTURE MOUNTING DETAIL
SCALE: N/A



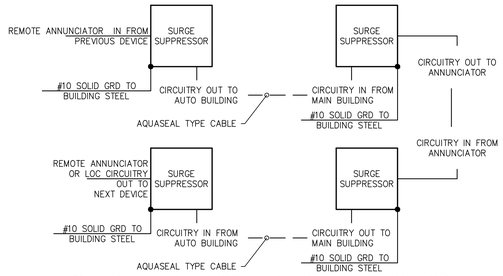
NOTES:
1. PROVIDE FLEXIBLE CONDUIT CONNECTION TO DEVICES THAT PROVIDES SUFFICIENT SLACK TO MOVE DEVICES UP TO 4' HORIZONTALLY IN ANY DIRECTION FROM WHERE DEVICES ARE INDICATED ON THE PLANS.
2. MOUNT DEVICES IN APPROVED BOXES.

L E-501 MOUNTING HEIGHTS OF DEVICES DETAIL – FIRE ALARM
NO SCALE

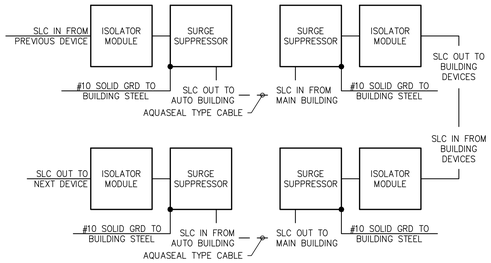




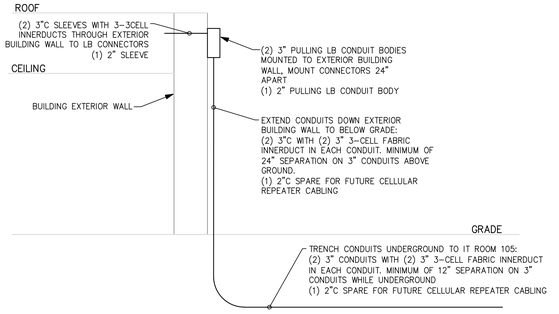
M E-501 DEVICE MOUNTING DETAIL
NO SCALE



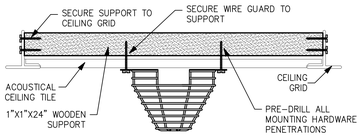
O E-501 FIRE ALARM SYSTEM REMOTE ANNUNCIATOR SURGE SUPPRESSION DETAIL
NO SCALE



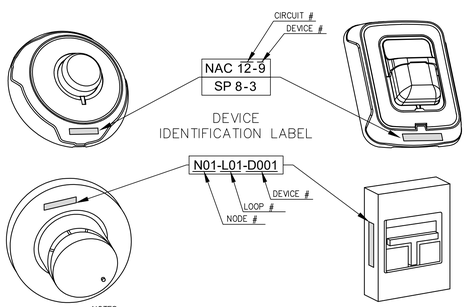
P E-501 FIRE ALARM SYSTEM SIGNALING LINE CIRCUIT SURGE SUPPRESSION DETAIL
NO SCALE



Q E-501 EXTERIOR WALL TRANSITION TO BELOW GRADE
NO SCALE

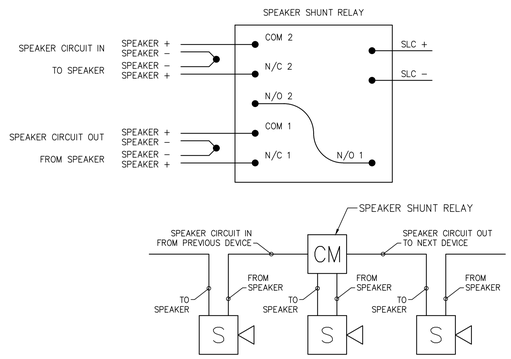


N E-501 CEILING MOUNTED GUARD DETAIL
NO SCALE



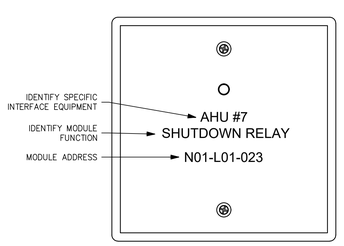
NOTES:
1. NODE DESIGNATION MAY BE OMITTED FOR SINGLE NODE APPLICATIONS.
2. ADDRESSABLE DEVICE ADDRESS NAMING CONVENTION SHALL EMULATE FACP DISPLAY.
3. NOTIFICATION DEVICE LABEL SHALL MATCH AS-BUILT DRAWING CIRCUITRY LABELS.
4. LABEL TEXT SHALL BE A SIZE WHERE EASILY READ FROM FLOOR LEVEL. (3/8" MIN)
5. BLACK ON CLEAR, BOLD FONT, P-TOUCH TYPE LABELS.
6. LABELS SHALL BE APPLIED STRAIGHT & LEVEL TO DEVICE ORIENTATION.
7. EXCESS LABEL MATERIAL SHALL BE TRIMMED.
8. MOUNT LABEL ON FLAT DEVICE BASE SURFACE.

R E-501 TYPICAL FIRE ALARM DEVICE IDENTIFICATION
NO SCALE



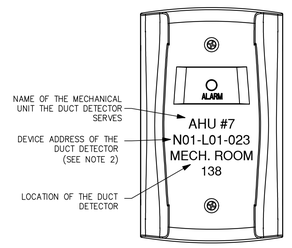
S E-501 SPEAKER SHUNT TRIP RELAY DETAIL
NO SCALE

NOTE:
ALL SHIELDS CONDUCTORS TERMINATED TOGETHER



NOTES:
1. NODE DESIGNATION MAY BE OMITTED FOR SINGLE NODE APPLICATIONS
2. NAMING CONVENTION SHALL EMULATE FACP DISPLAY
3. 3/8" HIGH BLACK ON CLEAR, BOLD FONT, P-TOUCH TYPE LABELS
4. LABELS SHALL BE APPLIED STRAIGHT & LEVEL TO DEVICE ORIENTATION
5. EXCESS LABEL MATERIAL SHALL BE TRIMMED

T E-501 CONTROL/RELAY MODULE LABELING DETAIL
NO SCALE



NOTES:
1. NODE DESIGNATION MAY BE OMITTED FOR SINGLE NODE APPLICATIONS
2. NAMING CONVENTION SHALL EMULATE FACP DISPLAY
3. PROVIDE PHENOLIC LABELS MOUNTED ON, ABOVE, OR BELOW EACH RAIL
4. LABELS SHALL BE APPLIED STRAIGHT & LEVEL TO DEVICE ORIENTATION
5. LABELS SHALL NOT BE MOUNTED TO CEILING TILES
6. SEE SPECIFICATION 260553 ELECTRICAL IDENTIFICATION

U E-501 REMOTE ALARM INDICATING LAMP LABELING DETAIL
NO SCALE

BRUNSWICK CTY

BRUNSWICK COUNTY SCHOOLS — A Community of Learners

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JOB # 19051

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17005 MARK A. CIARROCCA — 4.22.2020

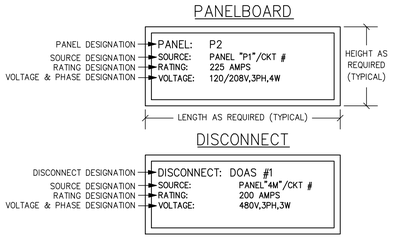
No.	Description	Date

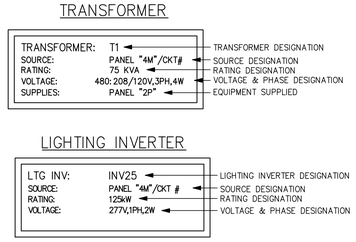
PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL DETAILS

E-501

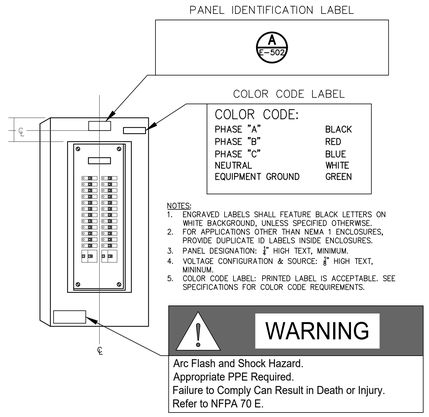
BID DOCUMENTS





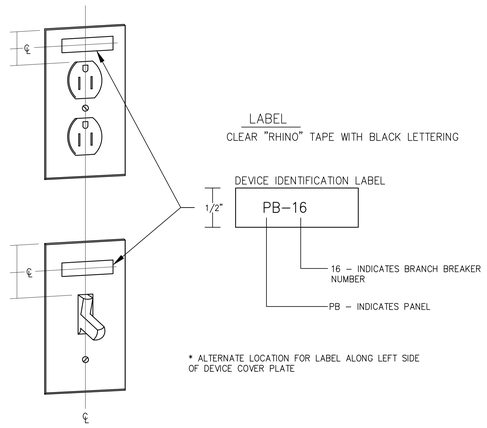
NOTES:
1. ENGRAVED PLASTIC FOR NAMEPLATE.
2. HIGH PERFORMANCE, DOUBLE COATED TAPE WITH ADHESIVE TO ATTACH LABELS. DESIGN BASIS: 3M #06383 OR APPROVED EQUIVALENT.
3. 3/8" ENGRAVED LETTERS EQUIPMENT NAME DESIGNATION AND 1/4" ENGRAVED LETTERS ON ALL OTHER DESIGNATIONS.

A E-502 TYPICAL NAMEPLATE DETAILS
NO SCALE

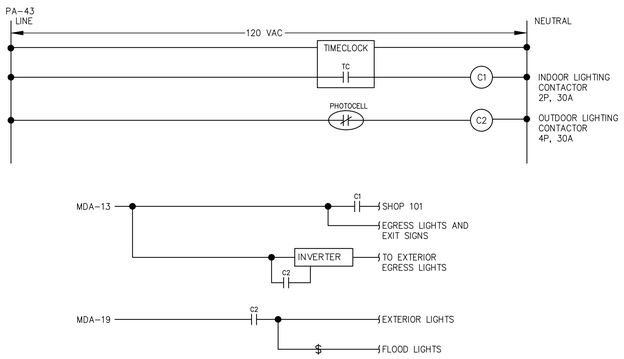


NOTES:
1. ENGRAVED LABELS SHALL FEATURE BLACK LETTERS ON WHITE BACKGROUND, UNLESS SPECIFIED OTHERWISE.
2. FOR APPLICATIONS OTHER THAN NEMA 1 ENCLOSURES, PROVIDE DUPLICATE ID LABELS INSIDE ENCLOSURES.
3. PANEL DESIGNATION: ¾" HIGH TEXT, MINIMUM.
4. VOLTAGE CONFIGURATION & SOURCE: ⅜" HIGH TEXT, MINIMUM.
5. COLOR CODE LABEL: PRINTED LABEL IS ACCEPTABLE. SEE SPECIFICATIONS FOR COLOR CODE REQUIREMENTS.

B E-502 TYPICAL PANELBOARD IDENTIFICATION
NO SCALE

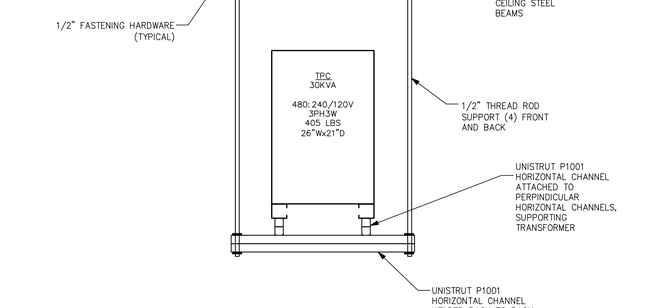


C E-502 WIRING DEVICE IDENTIFICATION LABEL
NO SCALE

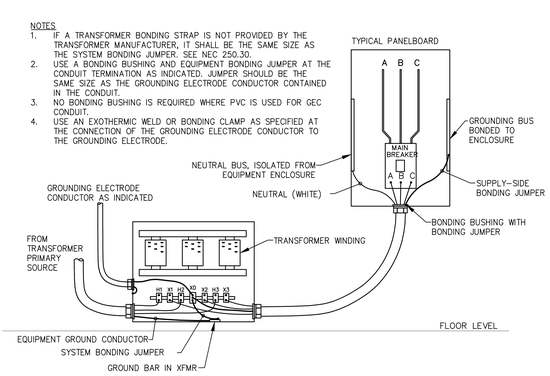


AUTO MODE CONTROL SCHEME
1. INTERIOR LIGHTS THAT ARE NOT UNDER OCCUPANCY SENSOR CONTROL SHALL TURN ON/OFF VIA TIMECLOCK.
2. EXTERIOR LIGHTS TURN ON/OFF VIA PHOTOCELL.
3. EXTERIOR EGRESS LIGHTS SHALL REMAIN ENERGIZED DURING POWER OUTAGES THROUGH THE INVERTERS AFTER DARK. THE SWITCHED INPUT TO THE INVERTER FROM THE CONTACTORS PREVENTS OPERATION OF THE INVERTER DURING DAYLIGHT.
4. INVERTER DESIGN BASIS: EMERGI-LITE #EMIU SERIES

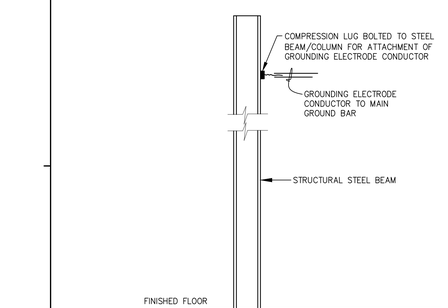
D E-502 TIMECLOCK & PHOTOCELL CONTROL SCHEMATIC
NO SCALE



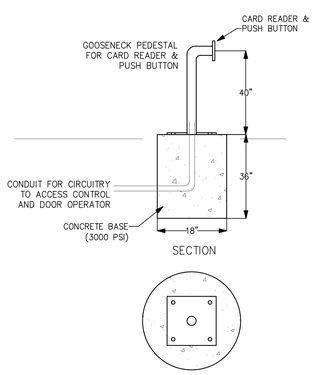
E E-502 ERRCS WEATHERHEAD DETAIL
NO SCALE



F E-502 DRY-TYPE TRANSFORMER GROUNDING DETAIL
NO SCALE

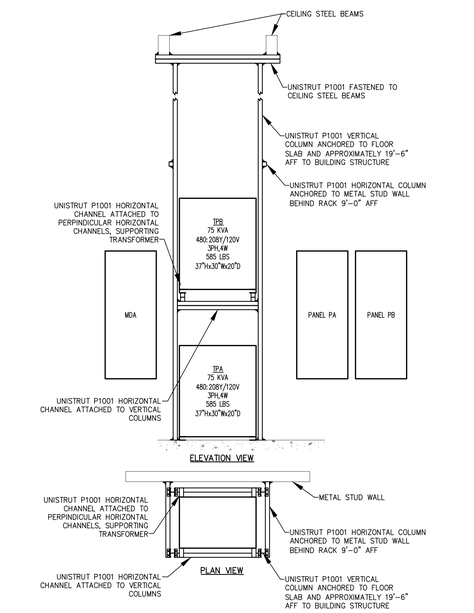


G E-502 STEEL COLUMN GROUNDING DETAIL
NO SCALE



H E-502 GOOSENECK PEDESTAL DETAIL
NO SCALE

J E-502 CEILING MOUNTED TRANSFORMER SUPPORT RACK DETAIL
NO SCALE



J E-502 TRANSFORMER SUPPORT RACK DETAIL
NO SCALE

BRUNSWICK CTY

THE COAST ACADEMY

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NC LICENSE# C-1073

JOB # 19051

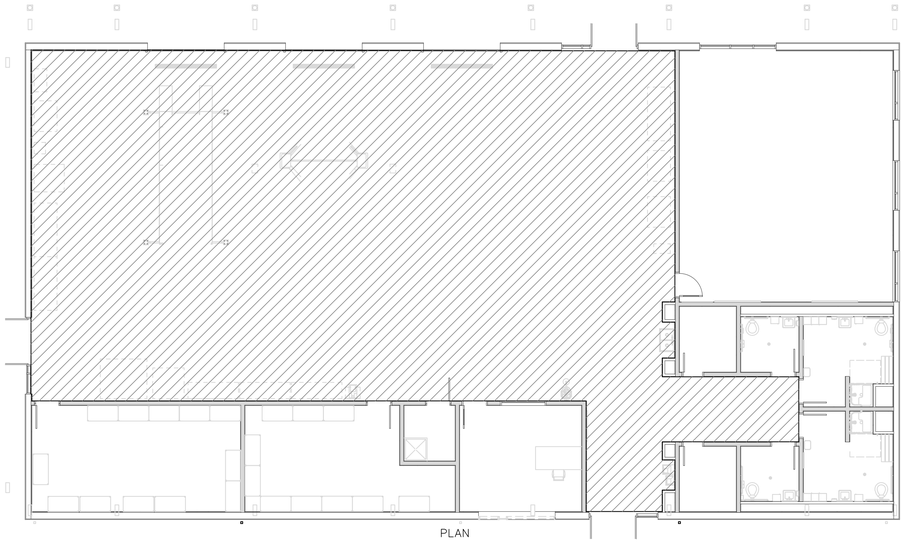
No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

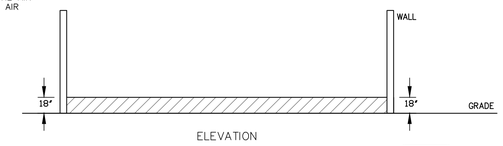
ELECTRICAL DETAILS

E-502

BID DOCUMENTS



NOTE:
1. THE DESIGN INTENT IS TO KEEP ALL EQUIPMENT, DEVICES, FIXTURES, AND CONDUIT FITTINGS OUTSIDE OF THE HAZARDOUS LOCATION NOTED.
2. THE DESIGN INTENT IS THAT ADJACENT SPACES TO HAZARDOUS LOCATION HAVE A VENTILATION RATE OF FOUR OR MORE AIR CHANGES PER HOUR OR ARE DESIGNED WITH POSITIVE AIR PRESSURE. REFERENCE NEC TABLE 511.3(C).

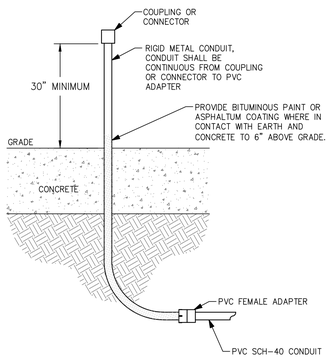


ELEVATION

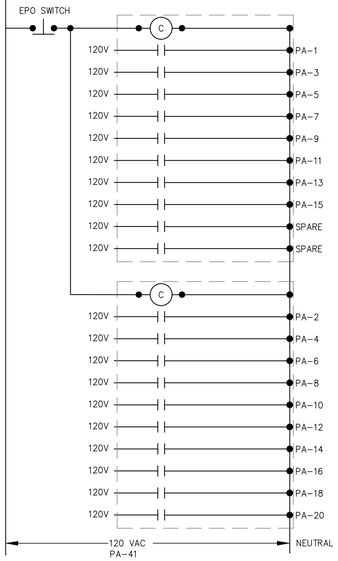
INDICATES NEC CLASS 1, DIVISION 2, GROUP D HAZARDOUS AREA

GRAPHIC SCALE: 1/8"=1'-0"
0 2 4 8 16

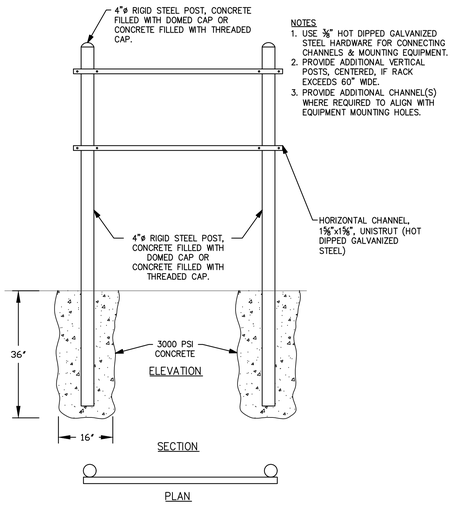
A E-503 HAZARDOUS LOCATION DETAIL
SCALE: 1/8" = 1'-0"



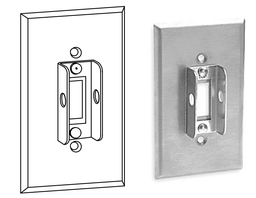
F E-503 HAZARDOUS LOCATION CONDUIT STUB-UP
NO SCALE



B E-503 SHOP EMERGENCY SHUT-OFF CONTROL SCHEMATIC
NO SCALE

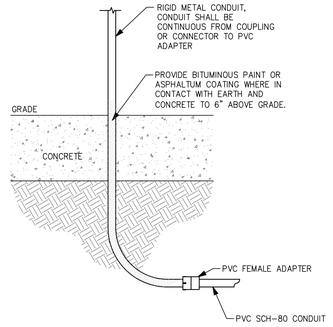


D E-503 EQUIPMENT RACK DETAIL
NO SCALE

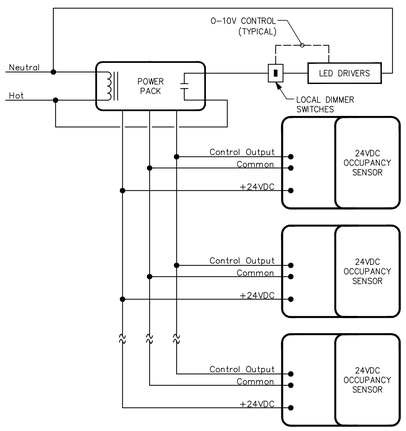


TYPICALLY USED FOR 120V EQUIPMENT DISCONNECTS INCLUDING, WATER HEATERS, CIRCULATION PUMPS, DAHU'S, ETC.

C E-503 LOCKABLE TOGGLE SWITCH COVER
NO SCALE

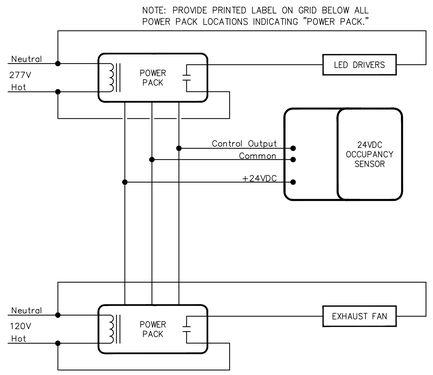


E E-503 CONDUIT STUB-UP
NO SCALE



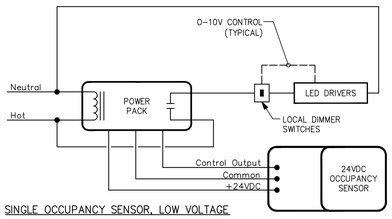
MULTIPLE OCCUPANCY SENSORS, SINGLE CIRCUIT CONTROL

G E-503 OCCUPANCY SENSOR WIRING FOR DUAL LEVEL LIGHTING CONTROL
NO SCALE



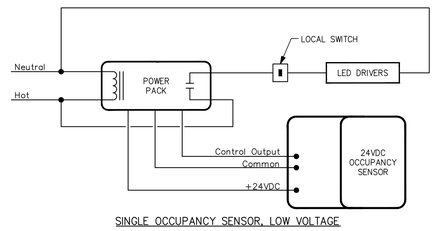
SINGLE OCCUPANCY SENSOR, LOW VOLTAGE

H E-503 OCCUPANCY SENSOR WIRING LIGHTING AND EXHAUST FAN CONTROL
NO SCALE



SINGLE OCCUPANCY SENSOR, LOW VOLTAGE

J E-503 OCCUPANCY SENSOR WIRING FOR DIMMING LEVEL LIGHTING CONTROL
NO SCALE



SINGLE OCCUPANCY SENSOR, LOW VOLTAGE

K E-503 OCCUPANCY SENSOR WIRING LIGHTING CONTROL
NO SCALE

BRUNSWICK CTY

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NC LICENSE# C-1073

JOB # 19051

NORTH CAROLINA PROFESSIONAL ENGINEER 17593 MARK A. CIARROCCA

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL DETAILS

E-503

BID DOCUMENTS

LUMINAIRE SCHEDULE

CALLOUT	SYMBOL	DESCRIPTION	LAMP	BALLAST	VOLTS	MOUNTING	MANUFACTURER / MODEL	NOTES
B2M		2x2, ARCHITECTURAL LENSED, INDIRECT	(1) 40W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #22CZ SERIES	4400 NOMINAL LUMENS. 4000K COLOR TEMPERATURE.
BL		2x4, ARCHITECTURAL LENSED, INDIRECT	(1) 40W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #24CZ SERIES	4300 NOMINAL LUMENS. 4000K COLOR TEMPERATURE.
BLF		2x4, ARCHITECTURAL LENSED, INDIRECT, FLANGED KIT	(1) 40W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #24CZ SERIES	4300 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. PROVIDE FLANGE KIT.
BM		2x4, ARCHITECTURAL LENSED, INDIRECT	(1) 47W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #24CZ SERIES	5300 NOMINAL LUMENS. 4000K COLOR TEMPERATURE.
BV		2x4, ARCHITECTURAL LENSED, INDIRECT	(1) 67W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #24CZ SERIES	6800 NOMINAL LUMENS. 4000K COLOR TEMPERATURE.
BX		2x4, ARCHITECTURAL LENSED, INDIRECT	(1) 74W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #2EV SERIES METALUX #24CZ SERIES	8500 NOMINAL LUMENS. 4000K COLOR TEMPERATURE.
CL		1x4, ARCHITECTURAL LENSED, INDIRECT	(1) 28W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #1EV SERIES METALUX #14CZ SERIES	3000 NOMINAL LUMENS. 4000K COLOR TEMPERATURE.
CM		1x4, ARCHITECTURAL LENSED, INDIRECT	(1) 42W LED	LED DIMMABLE DRIVER	277V 1P 2W	RECESSED	COLUMBIA #LCAT SERIES DAYBRITE #1EV SERIES METALUX #14CZ SERIES	4400 NOMINAL LUMENS. 4000K COLOR TEMPERATURE.
EG		EMERGENCY EGRESS, BATTERY	(2) 4W MR 16 LED	BATTERY	277V 1P 2W	WALL; MTD 8'-0" AFF	EMERGILITE #COMPACT PREMIER SERIES CHLORIDE #TPU SERIES LIGHTALARMS #COMPACT GRANDE SERIES	CONNECT TO NEAREST UNSWITCHED LIGHT CIRCUIT IN SAME SPACE. THESE FIXTURES ARE NOT TAGGED WITH "EG" ON THE DRAWINGS; ONLY THE SYMBOL IS USED. DESIGN CRITERIA: 80 FT SPACING, UTILIZING 6 FT WDE PATH, 80/50/20 REFLECTANCES, MAINTAINING 1 FC AVG AND 0.1 FC MININUM.
F		WALL MOUNTED SITE LIGHT	(1) 190W LED	LED DRIVER	277V 1P 2W	WALL; 17'-0" AFG	BEACON #VIPER L SERIES GARDCO #ECO FORM SERIES McGRAW-EDISON #GLEON SERIES	20,500 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. PROVIDE NEW MOUNTING HARDWARE NECESSARY FOR MOUNTING NEW LIGHT FIXTURE TO EXISTING POLE. TYPE IV DISTRIBUTION.
HL		ROUND HIGH BAY	(1) 100W LED	LED DIMMABLE DRIVER	277V 1P 2W	PENDANT; MTD AT 18' AFF	HE WILLIAMS #GC SERIES SOLAS RAY #BLOK SERIES SNOWBALL #HBV SERIES	12,000 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. 120 DEGREE BEAM SPREAD. MEDIUM FROSTED POLYCARBONATE LENS.
IM		4' INDUSTRIAL	(1) 44W LED	LED DRIVER	277V 1P 2W	PENDANT/SURFACE	COLUMBIA #LCL SERIES DAYBRITE #FSS SERIES METALUX #SNLED SERIES	5300 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. WIRE GUARD.
INV25		INVERTER, EGRESS LIGHTING	N/A	BATTERY	277V 1P 2W	WALL	EMERGI-LITE #EMIU SERIES IOTA #IIS SERIES LIGHTALARMS #LMIU SERIES	INVERTER FOR BATTERY BACKUP OF EGRESS LIGHTING; 250W FOR 90 MINUTES (MINIMUM). INCLUDE SELF-DIAGNOSTIC OPTION. LOCATE ON WALL. COORDINATE MOUNTING LOCATION WITH ARCHITECT.
K		4' SUSPENDED LED	(1) 49W LED	LED DRIVER	277V 1P 2W	PENDANT; MTD FROM STRUCTURAL BEAM AT 19'-3" AFF	FINELITE #S16 SERIES (4E) LEDALITE #SYNC SERIES AXIS LIGHTING #SLLED SERIES	4000 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. 25% UP / 75% DOWN DISTRIBUTION.
R6S		6" RECESSED CAN, SHOWER LIGHT	(1) 18W LED	ELECTRONIC	277V 1P 2W	RECESSED	PRESCOLITE #LF6LED SERIES LIGHTOLIER #L6R SERIES PORTFOLIO #LD6A SERIES	WET LOCATION LISTED. 1500 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. SELF-FLANGED LENSED REFLECTOR TRIM; LOW IRIDESCENT CLEAR FINISH.
TL		TRACK FIXTURE	30W LED	DIMMING	120V 1P 2W	TRACK	WAC LIGHTING #WTK SERIES LIGHTOLIER #L4AV SERIES HALO #L815 SERIES	1900 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. 40 DEGREE BEAM ANGLE. FINISH SELECTION BY ARCHITECT.
TR		TRACK	600W	DIMMING	120V 1P 2W	CEILING	WAC LIGHTING #WT SERIES LIGHTOLIER # ADVENT LYTESPAN SERIES HALO #TRAC SERIES	1-CIRCUIT TRACK; 8 FOOT LENGTH. MOUNTED 10' AFF. WHERE INDICATED MOUNTED TO GRID, SUPPORT WITH MANUFACTURER GRID ATTACHMENT HARDWARE. FINISH SELECTION BY ARCHITECT.
W		HALF CYLINDER WALL PACK	(1) 30W LED	LED DRIVER	277V 1P 2W	WALL; ABOVE COILING DOOR UNO	DECO LIGHTING #D440-LED SERIES GARDCO #104L SERIES TECH D #T650LED SERIES	3100 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. TYPE IV DISTRIBUTION. FINISH SELECTION BY ARCHITECT.
WB		HALF CYLINDER WALL PACK, BACKED UP BY BATTERY INVERTER	(1) 20W LED (1) 20W LED	LED DRIVER LED DRIVER	277V 1P 2W	WALL; ABOVE DOOR UNO	DECO LIGHTING #D440 SERIES GARDCO #104L SERIES RAYON #T650L SERIES	3800 NOMINAL LUMENS. 4000K COLOR TEMPERATURE. TYPE IV DISTRIBUTION. DUAL LED DRIVERS AND DUAL LED ARRAYS FOR EGRESS REQUIREMENTS. DOWNLIGHT ONLY. FINISH SELECTION BY ARCHITECT.
X		EXIT SIGN, BATTERY BACKUP	(2) 1W LED	BATTERY	277V 1P 2W	UNIVERSAL	DUAL-LITE #SE SERIES LIGHTALARMS #QLXN500R SURE-LITES #LPX SERIES	CONNECT TO NEAREST UNSWITCHED LIGHT CIRCUIT IN SAME SPACE. THESE FIXTURES ARE NOT TAGGED WITH "X" ON THE DRAWINGS; ONLY THE SYMBOL IS USED.

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JOB # 19051

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 17393 MARK A. CIARROCCA 04.22.2020

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL LUMINAIRE SCHEDULE

E-601

BID DOCUMENTS

MDA

ROOM: ELEC RM#107 | VOLTS: 480Y/277V 3P 4W | AIC: 10,000
MOUNTING: SURFACE | BUS AMPS: 400 | MAIN BKR: 400
FED FROM: UTILITY XFMR | NEUTRAL: 100% | LUGS: STANDARD
NOTE: ULSE

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	60/3	SPD	0			2	90/3	PHP-1	19.8		
3	|			0		4	|			19.8	
5	|				0	6	|				19.8
7	25/3	AIR COMPRESSOR	3.88			8	15/3	HP-1	2.49		
9	|			3.88		10	|			2.49	
11	|				3.88	12	|				2.49
13	20/1	EGRESS, EXIT, INVERTER, LIGHTING, LTG-WALLPACK	2.96			14	20/3	SPACE ONLY	0		
15	20/1	EGRESS, LTG		0.462		16	|			0	
17	20/1	EGRESS, LTG			1.28	18	|				0
19	20/1	LTG, LTG-WALLPACK	0.55			20	20/3	SPACE ONLY	0		
21	20/1	SPARE		0		22	|			0	
23	20/1	SPARE			0	24	|				0
25	20/1	SPARE	0			26	125/3	XFMR TPA	13.8		
27	20/1	SPARE		0		28	|			13.2	
29	20/1	SPARE			0	30	|				12.7
31	20/3	SPACE	0			32	125/3	XFMR TPB	15.4		
33	|			0		34	|			15.1	
35	|				0	36	|				14.8
37	20/3	SPACE	0			38	50/3	XFMR TPC	5.07		
39	|			0		40	|			5.07	
41	|				0	42	|				2.37
								TOTAL CONNECTED KVA BY PHASE	64	60	57.4
								TOTAL CONNECTED AMPS BY PHASE	231	217	207

	CONN KVA	CALC KVA	
LIGHTING	5.35	6.69	(125%)
LARGEST MOTOR	11.6	2.91	(25%)
MOTORS	42.4	42.4	(100%)

	CONN KVA	CALC KVA	
RECEPTACLES	22.1	16.1	(50%>10)
NONCONTINUOUS	15.3	15.3	(100%)
HEATING	94.5	94.5	(100%)
COOLING	7.65	0	(0%)
TOTAL LOAD		178	
BALANCED 3-PHASE AMPS		214	

PB

ROOM: ELEC RM#107 | VOLTS: 208Y/120V 3P 4W | AIC: 10,000
MOUNTING: SURFACE | BUS AMPS: 225 | MAIN BKR: 225
FED FROM: TPB | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	45/3	AHU-1	4.18			2	20/3	2 POST LIFT	1.73		
3	|			4.18		4	|			1.73	
5	|				4.18	6	|				1.73
7	45/3	AHU-2	3.89			8	25/2	HP-2	1.75		
9	|			3.89		10	|			1.75	
11	|				3.89	12	20/1	SPARE			0
13	15/3	FAN F-1	0.582			14	20/1	SPARE	0		
15	|			0.582		16	20/1	SPARE		0	
17	|				0.582	18	20/1	SPARE			0
19	15/2	DAHU-1, DHP-1	1.2			20	20/1	SPARE	0		
21	|			1.2		22	20/1	SPARE		0	
23	20/2	TIRE BALANCER			1.15	24	20/1	SPARE			0
25	|		1.15			26	20/1	SPARE	0		
27	20/1	COILING DOOR		1.18		28	20/1	SPARE		0	
29	20/1	COILING DOOR			1.18	30	20/1	SPARE			0
31	20/1	COILING DOOR	1.18			32	20/1	SPARE	0		
33	20/1	SPARE		0		34	20/1	SPARE		0	
35	20/1	SPARE			0	36	20/1	SPARE			0
37	20/1	SPARE	0			38	20/1	SPARE	0		
39	20/1	SPARE		0		40	20/1	SPARE		0	
41	20/1	SPARE			0	42	20/1	SPARE			0
43	20/1	SPARE	0			44	20/1	SPARE	0		
45	20/1	SPARE		0		46	20/1	SPARE		0	
47	20/1	SPARE			0	48	20/1	SPARE			0
49	20/1	SPARE	0			50	20/1	SPARE	0		
51	20/1	SPARE		0		52	20/1	SPARE		0	
53	20/1	SPARE			0	54	30/1	PUMP STATION			2.4
								TOTAL CONNECTED KVA BY PHASE	15.7	14.5	15.1
								TOTAL CONNECTED AMPS BY PHASE	131	122	126

	CONN KVA	CALC KVA	
LARGEST MOTOR	5.2	1.3	(25%)
MOTORS	16	16	(100%)
HEATING	27.5	27.5	(100%)
COOLING	7.65	0	(0%)

	CALC KVA
TOTAL LOAD	44.8
BALANCED 3-PHASE AMPS	124

PA

ROOM: ELEC RM#107 | VOLTS: 208Y/120V 3P 4W | AIC: 10,000
MOUNTING: SURFACE | BUS AMPS: 225 | MAIN BKR: 225
FED FROM: TPA | NEUTRAL: 100% | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	20/1	REC, REC-CORD REEL, REC-EXT GFCI	0.72			2	20/1	REC	0.54		
3	20/1	REC, REC-CORD REEL, REC-EXT GFCI		0.72		4	20/1	REC		0.72	
5	20/1	REC			0.72	6	20/1	REC			0.72
7	20/1	REC	1.56			8	20/1	REC	0.72		
9	20/1	REC - BRAKE LATHE		0.75		10	20/1	REC		1.56	
11	20/1	REC			1.56	12	20/1	REC			0.72
13	20/1	REC	0.9			14	20/1	REC-WELDER	1.92		
15	20/1	REC		1.56		16	20/1	REC-WELDER		1.92	
17	20/1	REC			0.9	18	20/1	REC-WELDER			1.92
19	20/1	REC	1.26			20	20/1	REC-WELDER	1.92		
21	20/1	CIRC PUMP, H2O HTR		0.2		22	20/1	REC, REC-EXT GFCI		1.08	
23	20/1	SPARE			0	24	20/1	REC			0.9
25	20/1	SPARE	0			26	20/1	REC	1.08		
27	30/1	SPARE		0		28	20/1	(*) REC-EWC		0.6	
29	20/1	SPARE			0	30	20/1	REC			0.72
31	20/1	SPARE	0			32	20/1	REC, REC-COND. PUMP	0.46		
33	20/1	SPARE		0		34	20/1	REC		0.36	
35	20/1	SPARE			0	36	20/1	REC			0.72
37	20/1	SPARE	0			38	20/1	REC	0.36		
39	20/1	OIL SEPERATOR HIGH LEVEL ALARM		0.5		40	20/1	REC, REC-EXT GFCI		0.54	
41	20/1	SHOP OUTLET SHUTDOWN CONTROL			0.2	42	20/1	REC			0.36
43	20/1	LTG CONTROL	0.1			44	20/1	REC-EXT GFCI	0.54		
45	20/1	ACCESS CONTROL		0.2		46	20/1	DDC J-BOX		0.3	
47	20/1	ACCESS CONTROL			0.4	48	20/2	REC-DATA			1.5
49	20/1	FAN F-2, FAN F-4, FAN F-5, FAN F-6, FAN F-7	0.75			50	|		1.5		
51	15/1	FAN F-3		0.696		52	20/1	(#) SECURITY SYSTEM, ACCESS CONTROL		0.4	
53	20/1	(#) FIRE ALARM PANEL, FA-AUDIO AMP			1	54	20/1	(#) EMERGENCY RESPONDER RADIO			1
								TOTAL CONNECTED KVA BY PHASE	14.3	12.1	13.3
								TOTAL CONNECTED AMPS BY PHASE	120	101	111

	CONN KVA	CALC KVA	
LIGHTING	0.1	0.125	(125%)
LARGEST MOTOR	0.696	0.174	(25%)

	CONN KVA	CALC KVA	
MOTORS	2.25	2.25	(100%)
RECEPTACLES	22.1	16.1	(50%>10)
NONCONTINUOUS	15.3	15.3	(100%)
TOTAL LOAD		33.9	
BALANCED 3-PHASE AMPS		94.2	

(*) PROVIDE GFCI BREAKER
(#) PROVIDE BREAKER LOCK

PC

ROOM: ELEC RM#107 | VOLTS: 240V 3P 3W | AIC: 10,000
MOUNTING: SURFACE | BUS AMPS: 100 | MAIN BKR: 100
FED FROM: TPC | NEUTRAL: NONE | LUGS: STANDARD
NOTE:

CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C	CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA A	LOAD KVA B	LOAD KVA C
1	35/3	TIRE CHANGER	2.37			2	25/2	4 POST LIFT	2.71		
3	|			2.37		4	|			2.71	
5	|				2.37	6	20/1	SPARE			0
7	20/1	SPARE	0			8	20/1	SPARE	0		
9	20/1	SPARE		0		10	20/1	SPARE		0	
11	20/1	SPARE			0	12	20/1	SPARE			0
13	20/1	SPARE	0			14	20/1	SPARE	0		
15	20/1	SPARE		0		16	20/1	SPARE		0	
17	20/1	SPARE			0	18	20/1	SPARE			0
19	20/1	SPARE	0			20	20/1	SPARE	0		
21	20/1	SPARE		0		22	20/1	SPARE		0	
23	20/1	SPARE			0	24	20/1	SPARE			0
25	20/1	SPARE	0			26	20/1	SPARE	0		
27	20/1	SPARE		0		28	20/1	SPARE		0	
29	20/1	SPARE			0	30	20/1	SPARE			0
31	20/1	SPARE	0			32	20/1	SPARE	0		
33	20/1	SPARE		0		34	20/1	SPARE		0	
35	20/1	SPARE			0	36	20/1	SPARE			0
37	20/1	SPARE	0			38	20/1	SPARE	0		
39	20/1	SPARE		0		40	20/1	SPARE		0	
41	20/1	SPARE			0	42	20/1	SPARE			0
								TOTAL CONNECTED KVA BY PHASE	5.07	5.07	2.37
								TOTAL CONNECTED AMPS BY PHASE	38.3	38.3	17.1

	CONN KVA	CALC KVA	
LARGEST MOTOR	7.1	1.78	(25%)
MOTORS	12.5	12.5	(100%)

	CALC KVA
TOTAL LOAD	14.3
BALANCED 3-PHASE AMPS	34.4

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JOB # 19051

NORTH CAROLINA PROFESSIONAL SEAL 17935 ENGINEER MARK A. CIARROCCA — 22 APRIL 2020

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL PANEL SCHEDULES

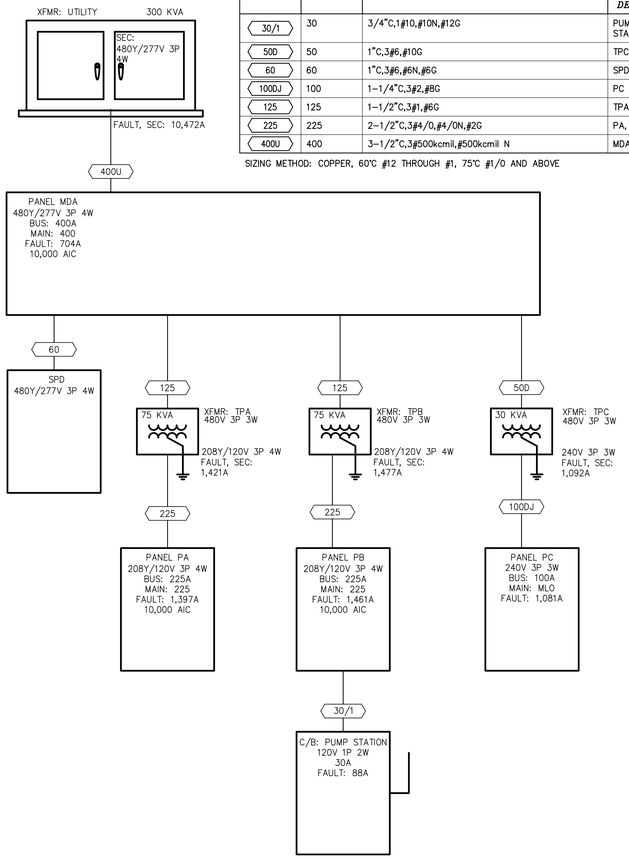
E-602

BID DOCUMENTS

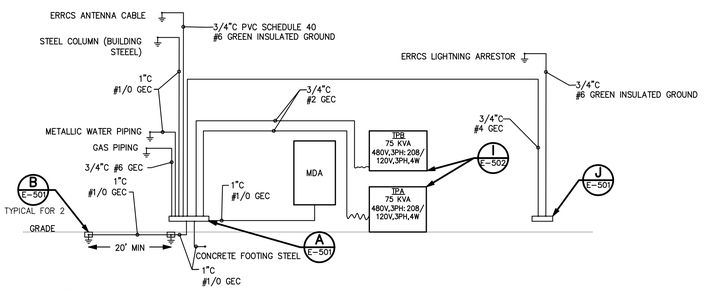
FEEDER SCHEDULE

ID	FEEDER AMPS	CONDUIT AND FEEDER	FEEDING THESE DEVICES
30/1	30	3/4"C,1#10,#10N,#12G	PUMP STATION
50D	50	1"C,3#6,#10G	TPC
60	60	1"C,3#6,#6N,#6G	SPD
100DJ	100	1-1/4"C,3#2,#8G	PC
125	125	1-1/2"C,3#1,#6G	TPA, TPB
225	225	2-1/2"C,3#4/0,#4/0N,#2G	PA, PB
400U	400	3-1/2"C,5#500kcmil,#500kcmil N	MDA

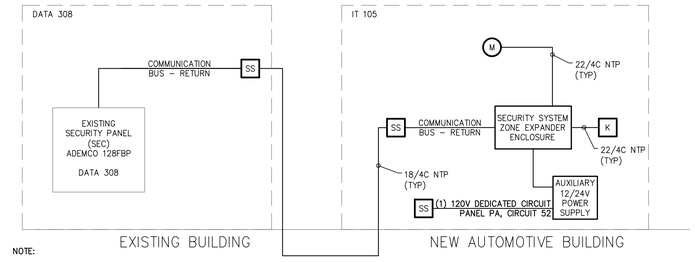
SIZING METHOD: COPPER, 60°C #12 THROUGH #1, 75°C #1/0 AND ABOVE



1 E-701 ELECTRICAL POWER RISER DIAGRAM
NO SCALE

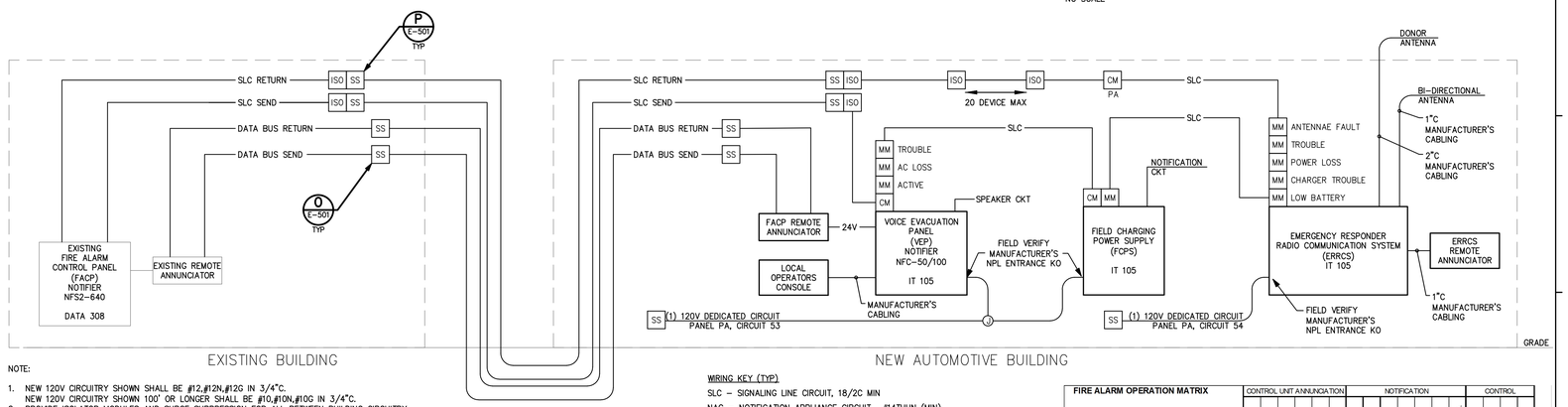


2 E-701 ELECTRICAL GROUNDING SYSTEM RISER DIAGRAM
SCALE: N/A



NOTE:
1. NEW 120V CIRCUITRY SHOWN SHALL BE #12,#12N,#12G IN 3/4"C.
   NEW 120V CIRCUITRY SHOWN 100' OR LONGER SHALL BE #10,#10N,#10G IN 3/4"C.
2. PROVIDE SURGE SUPPRESSION FOR ALL BETWEEN BUILDING CIRCUITRY.
3. NOT ALL CIRCUITRY REQUIRED MAY BE REFLECTED IN THIS RISER.
4. UTILIZE MANUFACTURERS RECOMMENDED CABLING FOR ALL CIRCUITRY.
5. PROVIDE SEPARATE RACEWAYS FOR ALL SEND AND RETURN CIRCUITRY.
6. ALL UNDERGROUND CABLING SHALL BE WET LISTED, AQUASEAL TYPE CABLE.

3 E-701 SECURITY SYSTEM RISER DIAGRAM
NO SCALE



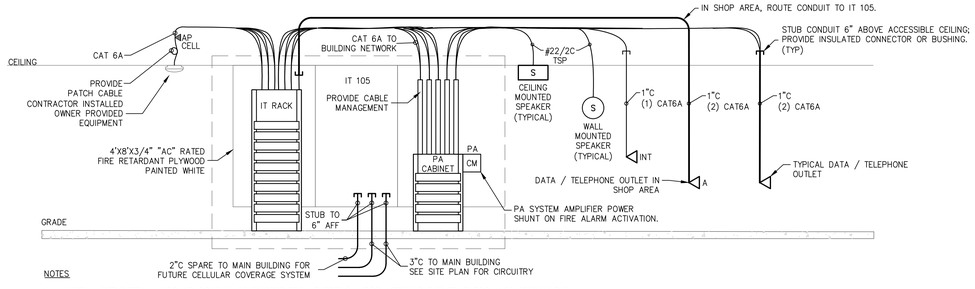
NOTE:
1. NEW 120V CIRCUITRY SHOWN SHALL BE #12,#12N,#12G IN 3/4"C.
   NEW 120V CIRCUITRY SHOWN 100' OR LONGER SHALL BE #10,#10N,#10G IN 3/4"C.
2. PROVIDE ISOLATOR MODULES AND SURGE SUPPRESSION FOR ALL BETWEEN BUILDING CIRCUITRY.
3. NOT ALL CIRCUITRY REQUIRED MAY BE REFLECTED IN THIS RISER.
4. UTILIZE MANUFACTURERS RECOMMENDED CABLING FOR ALL CIRCUITRY.
5. PROVIDE SEPARATE RACEWAYS FOR ALL SEND AND RETURN CIRCUITRY.
6. ALL UNDERGROUND CABLING SHALL BE WET LISTED, AQUASEAL TYPE CABLE.

4 E-701 FIRE ALARM SYSTEM RISER DIAGRAM
NO SCALE

WIRING KEY (TYP)
SLC – SIGNALING LINE CIRCUIT, 18/2C MIN
NAC – NOTIFICATION APPLIANCE CIRCUIT, #14THHN (MIN)
AUDIO RISER – #18TSP (MIN) OR MANUFACTURERS RECOMMENDED CABLE
DATA BUS – 18/2C MIN OR MANUFACTURERS RECOMMENDED CABLE.
POWER – #12,#12N,#12G (MIN)
24V – 18/2C MIN
SPEAKER CKT – #18TSP (MIN)

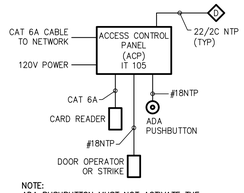
FIRE ALARM OPERATION MATRIX

SYSTEM INPUTS	ACTIVATE COMMON ALARM SIGNAL INDICATOR (A)	ACTIVATE AUDIBLE ALARM SIGNAL (B)	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR (C)	ACTIVATE AUDIBLE SUPERVISORY SIGNAL (D)	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR (E)	ACTIVATE AUDIBLE COMMON TROUBLE SIGNAL (F)	ACTIVATE BUILDING FIRE EVAC MESSAGE (G)	ACTIVATE BUILDING CARBON MONOXIDE EVAC MESSAGE (H)	ACTIVATE BUILDING VISUAL EVAC SIGNALS (J)	TRANSMIT FIRE ALARM SIGNAL TO SUPERVISING STA. (K)	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION (L)	TRANSMIT TROUBLE SIGNAL TO SUPERVISING STA. (M)	TRANSMIT CARBON MONOXIDE SIGNAL TO SUPERVISING STA. (N)	SHUT DOWN ALL BUILDING AIR HANDLERS (O)	ACTIVATE EXTERIOR SPEAKERS & STROBES (P)	SHUNT ADJACET AREA SPEAKERS (Q)	SHUNT BUILDING PA SYSTEM AND ROOM SOUND SYSTEMS (R)	
1 MANUAL PULL STATIONS	X	X					X		X	X				X	X		X		1
2 SMOKE/HEAT DETECTORS	X	X					X		X	X				X	X		X		2
3 DUCT SMOKE DETECTORS	X	X					X			X				X	X		X		3
4 CARBON MONOXIDE DETECTORS	X	X						X	X				X	X	X		X		4
5 VEP ACTIVE			X	X							X				X				5
6 VEP AC LOSS					X	X						X							6
7 VEP TROUBLE					X	X						X							7
8 GROUND FAULT					X	X						X							8
9 NOTIFICATION APPLICANCE CIRCUIT SHORT					X	X						X							9
10 AHU SHUTDOWN DEFEAT SWITCH					X	X						X							10
11 LOC MIC ACTIVATION															X	X	X		11
12 ERRCS - POWER FAILURE					X	X						X							12
13 ERRCS - SIGNAL BOOSTER TROUBLE					X	X						X							13
14 ERRCS - BATTERY CHARGER FAILURE					X	X						X							14
15 ERRCS - LOW BATTERY					X	X						X							15
16 ERRCS - ANTENNA FAILURE					X	X						X							16
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R		



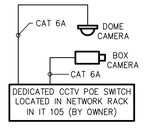
NOTES
1. INSTALL DEDICATED #4 GROUND BONDING CONDUCTOR FROM ELECTRICAL ROOM GROUND BAR TO IT ROOM 105 GROUND BAR.
2. INSTALL 4'X8'X3/4" "AC" RATED FIRE RETARDANT PLYWOOD, MTD. VERTICALLY 12" AFF, WHERE INDICATED ON THE DRAWINGS.

5 E-701 DATA/TELEPHONE & PA SYSTEMS RISER DIAGRAM
NO SCALE



NOTE:
ADA PUSHBUTTON MUST NOT ACTIVATE THE DOOR OPERATOR UNTIL A VALID CARD IS PRESENTED TO THE CARD READER.

6 E-707 ACCESS CONTROL SYSTEM RISER DIAGRAM
NO SCALE



7 E-707 CCTV SYSTEM RISER DIAGRAM
NO SCALE

BRUNSWICK CTY

THE COAST ACADEMY

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JOB # 19051

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 17705 MICHAEL A. CIARROCCA 4.22.2020

No.	Description	Date

PROJECT: 8201-191241
DATE: 04.22.2020
DRAWN BY: MPS/KAF/FM/CB
CHECKED BY: MAC

ELECTRICAL RISER DIAGRAMS

E-701

BID DOCUMENTS