FIT-UP PLANS

BLACK RIVER EXCHANGE

61 BROAD STREET

ANGIER , NORTH CAROLINA 27526

Reviewed For Code Compliance By:
D. Banks Wallace
Chief Deputy Fire Marshal
02/11/2021 8:00:22 AM

PREPARED FOR

STEVE AND JULIE WILLS
825 WHEEER DRIVE
ANGIER , NC
TELEPHONE 919-218-5435

ENGINEER

GREG BAGLEY
805 COKESBURY ROAD
FUQUAY VARINA, NC
PHONE: (919) 609-0300

SHEET INDEX

NORTH CAROLINA PROFESSIONAL SEAL 12276 1-29-21 ENGINEER C. GREGORY BAGLEY

PLANNING DESIGN MAPPING SURVEYING
GREG BAGLEY ENGINEERING

2012 APPENDIX B
BUILDING CODE SUMMARY
FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: 61 BROAD STREET
Address: ANGIER HARNETT COUNTY NC Zip Code 283XX
Proposed Use: C. GREGORY BAGLEY 919-609-0300
Owner/Authorized Agent: GREG BAGLEY Phone # (919) 609 - 0300 E-Mail GDB.GREG@GMAIL.COM
Owned By: ☐ City/County ☒ Private ☐ State
Code Enforcement Jurisdiction: ☒ City ☐ County ☐ State
ANGIER, HARNETT COUNTY NC

LEAD DESIGN PROFESSIONAL: Greg Bagley

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural				( )	
Civil	C. Gregory Bagley, Engineer	Greg Bagley	12276	(919-609-0300	GDB.GREG@GMAIL.COM
Electrical	C. Gregory Bagley, Engineer	Greg Bagley	12276	(919-609-0300	GDB.GREG@GMAIL.COM
Fire Alarm				( )	
Plumbing	C. Gregory Bagley, Engineer	Greg Bagley	12276	(919-609-0300	GDB.GREG@GMAIL.COM
Mechanical	C. Gregory Bagley, Engineer	Greg Bagley	12276	(919-609-0300	GDB.GREG@GMAIL.COM
Sprinkler-Standpipe				( )	
Structural	C. Gregory Bagley, Engineer	Greg Bagley	12276	(919-609-0300	GDB.GREG@GMAIL.COM
Retaining Walls >5' High				( )	
Other				( )	

2012 EDITION OF NC CODE FOR: ☐ New Construction ☐ Addition ☐ Upfit
EXISTING: ☐ Reconstruction ☐ Alteration ☐ Repair ☒ Renovation
CONSTRUCTED: (date) _____ **ORIGINAL USE(S)** (Ch. 3): RETAIL
RENOVATED: (date) _____ **CURRENT USE(S)** (Ch. 3): _____
PROPOSED USE(S) (Ch. 3): RETAIL

BASIC BUILDING DATA
Construction Type: (check all that apply) ☐ I-A ☐ I-B ☐ II-A ☐ II-B ☐ III-A ☐ III-B ☐ IV ☐ V-A ☒ V-B
Sprinklers: ☐ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☐ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☐ No ☐ Yes (Primary) **Flood Hazard Area:** ☐ No ☐ Yes
Building Height: (feet) 1
Gross Building Area:

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
6th Floor			
5th Floor			
4th Floor			
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor	3000	3000	3000
Basement			
TOTAL			3000

ALLOWABLE AREA

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

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

Incidental Uses (Table 508.2.5):
☐ Furnace room where any piece of equipment is over 400,000 Btu per hour input
☐ Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower
☐ Refrigerant machine room
☐ Hydrogen cutoff rooms, not classified as Group H
☐ Incinerator rooms
☐ Paint shops, not classified as Group H, located in occupancies other than Group F
☐ Laboratories and vocational shops, not classified as Group H. located in a Group E or I-2 occupancy
☐ Laundry rooms over 100 square feet
☐ Group I-3 cells equipped with padded surfaces
☐ Group I-2 waste and linen collection rooms
☐ Waste and linen collection rooms over 100 square feet
☐ Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons, or a lithium-ion capacity of 1,000 pounds used for facility standby power, emergency power or uninterrupted power supplies
☐ Rooms containing fire pumps
☐ Group I-2 storage rooms over 100 square feet
☐ Group I-2 commercial kitchens
☐ Group I-2 laundries equal to or less than 100 square feet
☐ Group I-2 rooms or spaces that contain fuel-fired heating equipment

Special Uses: ☐ 402 ☐ 403 ☐ 404 ☐ 405 ☐ 406 ☐ 407 ☐ 408 ☐ 409 ☐ 410 ☐ 411 ☐ 412 ☐ 413 ☐ 414 ☐ 415 ☐ 416 ☐ 417 ☐ 418 ☐ 419 ☐ 420 ☐ 421 ☐ 422 ☐ 423 ☐ 424 ☐ 425 ☐ 426 ☐ 427
Special Provisions: ☐ 509.2 ☐ 509.3 ☐ 509.4 ☐ 509.5 ☐ 509.6 ☐ 509.7 ☐ 509.8 ☐ 509.9
Mixed Occupancy: ☒ No ☐ Yes Separation: NONE Hr. Exception: 509.2
☐ Incidental Use Separation (508.2.5)
This separation is not exempt as a Non-Separated Use (see exceptions).
This separation is not exempt as a Non-Separated Use (see exceptions).
☒ Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
☐ Separated Use (508.4) - See below for area calculations
For each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

_____ + _____ + ... = _____ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 503[3] AREA	(C) AREA FOR FRONTAGE INCREASE[1]	(D) AREA FOR SPRINKLER INCREASE[2]	(E) ALLOWABLE AREA OR UNLIMITED[3]	(F) MAXIMUM BUILDING AREA[4]
1	RETAIL	3000	23000	17250	0		23000

[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 = 160 (F)
b. Total Building Perimefer = 160 (P)
c. Ratio (F/P) = 1 (F/P)
d. W = Minimum width of public way = 30 (W)
e. Percent of frontage increase $I_f = 100\ [F/P - 0.25] \times W/30$ = .75 (%)
[2] The sprinkler increase per Section 506.3 is as follows:
a. Multi-story building I_s = 200 percent
b. Single story building I_s = 300 percent
[3] Unlimited area applicable under conditions of Section 507.
[4] Maximum Building Area = total number of stories in the building x E (506.4).
[5] The maximum area of open parking garages must comply with Table 406.3.5. The maximum area of air traffic control towers must comply with Table 412.1.2.

ALLOWABLE HEIGHT 8160 8160

	ALLOWABLE (TABLE 503)	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
Type of Construction	Type V-B		Type V-B	
Building Height in Feet	21'	Feet = H + 20' = 41'		
Building Height in Stories	1	Stories + 1 = 2		

FIRE PROTECTION REQUIREMENTS NR = Not Required

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	DESIGN # FOR RATED PENETRATION	DESIGN # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses		0		0002	NR		
Bearing Walls		0		0002	NR		
Exterior		0		0002	NR		
North		0		0002	NR		
East		0		0002	NR		
West		0		0002	NR		
South		0		0002	NR		
Interior							
Nonbearing Walls and Partitions Exterior walls		0		0002	NR		
		0		0002	NR		
North		0		0002	NR		
East		0		0002	NR		
West		0		0002	NR		
South		0		0002	NR		
Interior walls and partitions							
Floor Construction Including supporting beams and joists		0		0002	NR		
Roof Construction Including supporting beams and joists		0		0002	NR		
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Tenant Separation							
Incidental Use Separation							

* Indicate section number permitting reduction

LIFE SAFETY SYSTEM REQUIREMENTS

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

LIFE SAFETY PLAN REQUIREMENTS
Life Safety Plan Sheet #: CODE SHEET
☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations
☒ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐ Existing structures within 30' of the proposed building
☒ Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.1)
☒ Occupant loads for each area
☐ Exit access travel distances (1016)
☒ Common path of travel distances (1014.3 & 1028.8)
☐ Dead end lengths (1018.4)
☐ Clear exit widths for each exit door
☒ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.1)
☒ 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 (1008.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1008.1.9.7)
☐ Location of doors with electromagnetic egress locks (1008.1.9.8)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1029)
☐ The square footage of each fire area (902)
☐ The square footage of each smoke compartment (407.4)
☐ 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
0							

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS AISLE	VAN SPACES WITH 8' ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED
Main Parking	10	10	1		1	1
TOTAL						

STRUCTURAL DESIGN

DESIGN LOADS:
Importance Factors: Wind (I_W) .87; Snow (I_S) .8; Seismic (I_E) 1
Live Loads: Roof 20 psf; Mezzanine _____ psf; Floor 125 psf
Ground Snow Load: 10 psf
Wind Load: Basic Wind Speed 110 mph (ASCE-7); Exposure Category C; Wind Base Shears (for MWFRS) Vx = -8.77 Vy = -7.38

SEISMIC DESIGN CATEGORY: ☒ A ☐ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Occupancy Category (Table 1604.5) ☒ I ☐ II ☐ III ☐ IV
Spectral Response Acceleration S_S 2.7 %g S_1 3.7 %g
Site Classification (Table 1613.5.2) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F
Data Source: ☐ Field Test ☒ Presumptive ☐ Historical Data
Basic structural system (check one)
☐ Bearing Wall ☐ Dual w/Special Moment Frame
☒ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Seismic base shear: V_X = _____ V_Y = _____
Analysis Procedure: ☒ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☒ Yes ☐ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☒

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity 2000 psf
Pile size, type, and capacity _____

SPECIAL INSPECTIONS REQUIRED: ☐ Yes ☒ No

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	SHOWERS/ TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXISTING								
	NEW	1	1	1	1	1		1	1
	REQUIRED	1	1		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.

Climate Zone: ☒ 3 ☐ 4 ☐ 5

Method of Compliance:
☒ Prescriptive (Energy Code)
☐ Performance (Energy Code)
☐ Prescriptive (ASHRAE 90.1)
☐ Performance (ASHRAE 90.1)

THERMAL ENVELOPE

Roof/ceiling Assembly (each assembly)
Description of assembly: TRUSS AND MEMBRANE
U-Value of total assembly: _____
R-Value of insulation: R-30
Skylights in each assembly: _____
U-Value of skylight: _____
total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
Description of assembly: 16" BRICK WALLS
U-Value of total assembly: N/A
R-Value of insulation: R-15
Openings (windows or doors with glazing)
U-Value of assembly: N/A
Solar heat gain coefficient: _____
projection factor: _____
Door R-Values: N/A

Walls below grade (each assembly) N/A
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly)
Description of assembly: CONCRETE 3000 LB
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade
Description of assembly: N/A
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/vertical requirement: _____
slab heated: _____

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: 20 F
summer dry bulb: 95 F

Interior design conditions
winter dry bulb: 70 F
summer dry bulb: 74 F
relative humidity: 50%

Building heating load: 32,800
Building cooling load: 34,720

Mechanical Spacing Conditioning System
Unitary
description of unit: SPLIT SYSTEM
heating efficiency: 14 SEER
cooling efficiency: 14 SEER
size category of unit: 36,000
Boiler 36,000
Size category. If oversized, state reason.: _____
Chiller
Size category. If oversized, state reason.: _____

List equipment efficiencies: 63%

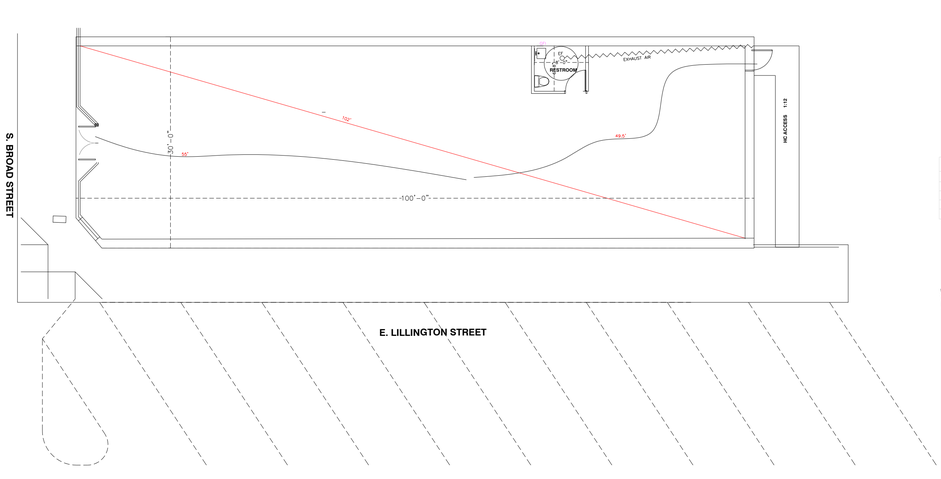
ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:
Energy Code: ☒ Prescriptive ☐ Performance
ASHRAE 90.1: ☐ Prescriptive ☐ Performance

Lighting schedule (each fixture type)
T-8 lamp type required in fixture
4 number of lamps in fixture
F96T8 ballast type used in the fixture
1 number of ballasts in fixture
40-60 total wattage per fixture
.48 vs. .40 total interior wattage specified vs. allowed (whole building or space by space)
250 total exterior wattage specified vs. allowed

Additional Prescriptive Compliance
☐ 506.2.1 More Efficient Mechanical Equipment
☐ 506.2.2 Reduced Lighting Power Density
☐ 506.2.3 Energy Recovery Ventilation Systems
☐ 506.2.4 Higher Efficiency Service Water Heating
☐ 506.2.5 On-Site Supply of Renewable Energy
☒ 506.2.6 Automatic Daylighting Control Systems



LIFE SAFETY
1/8" = 1'-0"

805 COKESBURY ROAD
ANGIER, NC 27526
PHONE: (919) 552-1600
FAX: (919) 552-6325

GREG BAGLEY ENGINEER
PLANNING DESIGN ENGINEERING MAPPING

REVISIONS | BY
CGB

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12276 1-29-21 C. GREGORY BAGLEY

APPENDIX B

BLACK RIVER EXCHANGE
DEVELOPED BY J&S WILLIS
HARNETT COUNTY N.C.
ANGIER

DATE 11-9-18
SCALE SHOWN
DESIGNED BY CGB
DRAWN BY
SHEET **CODE**

DEMO NOTES:

REMOVE ALL EXISTING INTERIOR WALLS
REMOVE ALL EXISTING HVAC EQUIPMENT
REMOVE ALL EXISTING ELECTRICAL
REMOVE DAMAGED FLOORING AS INSTRUCTED
REMOVE CEILING TILES AND CEILING GRIDS

DEMO PLAN
SCALE: 1/4" = 1'

REVISIONS	BY
1-5-18 SECOND SUBMITTAL REV PER FV COMMENTS	CGB

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12276 1-29-21 C. GREGORY BAGLEY

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GREG BAGLEY ENGINEER
DESIGN SURVEYING PLANNING MAPPING

DEMO PLAN

BLACK RIVER EXCHANGE
DEVELOPED BY
J&S WILLS
HARNETT COUNTY N.C.
ANGIER

DATE 1-29-21
SCALE SHOWN
DESIGNED BY CGB
DRAWN BY
SHEET DP1-OF-1
DEMO PLAN

FLOOR PLAN
SCALE: 1/4" = 1'

REVISIONS	BY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12276 1-29-21 GREGORY BAGLEY

305 CORDOWAY ROAD
ANGIER, NC 27501
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FAX: (919) 552-5325

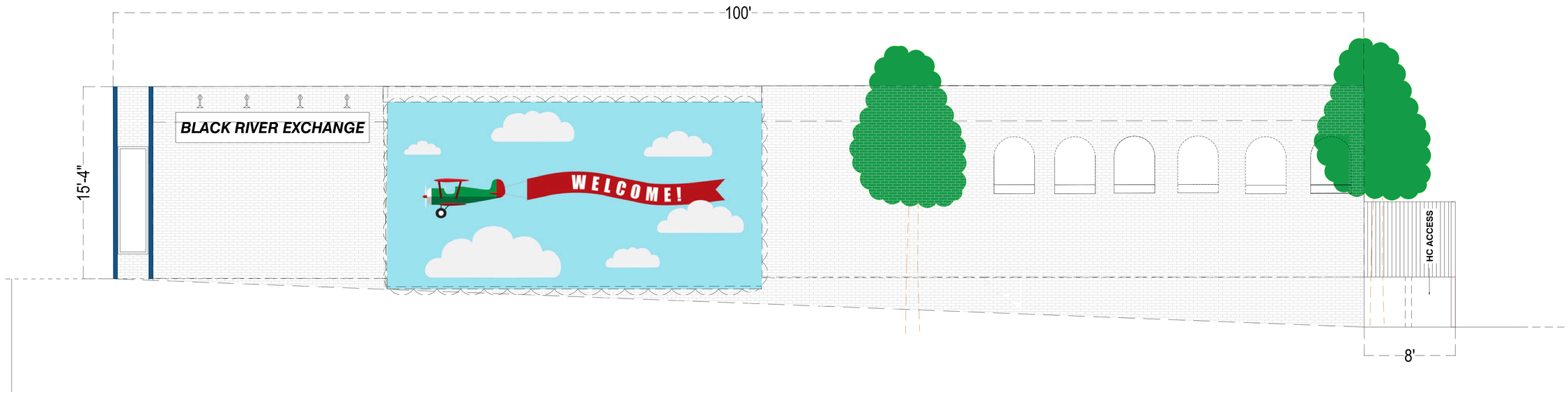
GREG BAGLEY ENGINEER

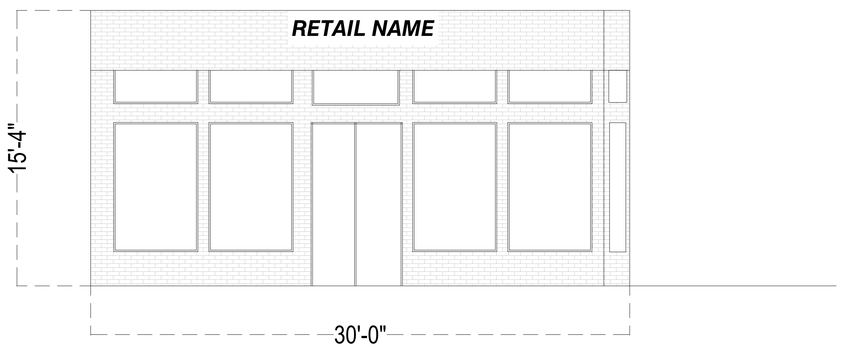
FLOOR PLAN

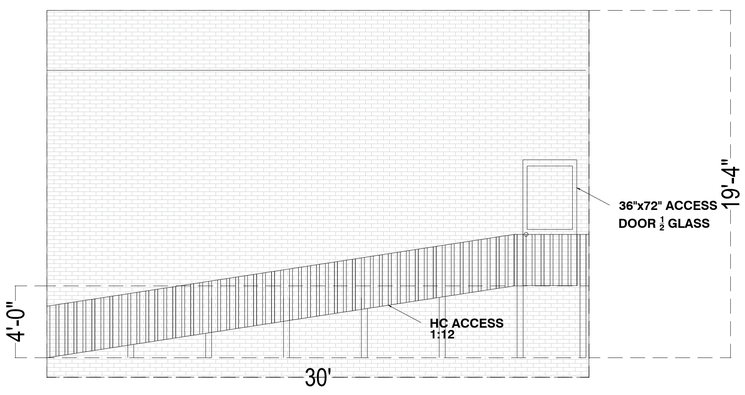
BLACK RIVER EXCHANGE
DEVELOPED BY
S & J WILLS
ANGIER HARNETT COUNTY N.C.

DATE 1-29-21
SCALE SHOWN
DESIGNED BY GBB
DRAWN BY

SHEET
FP1-OF-1
FLOOR PLAN







ELEVATIONS
SCALE: 1/4" = 1'

REVISIONS	BY
1-5-18 SECOND SUBMITTAL REV PER FV COMMENTS	CGB

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 12276 1-29-21 C. GREGORY BAGLEY

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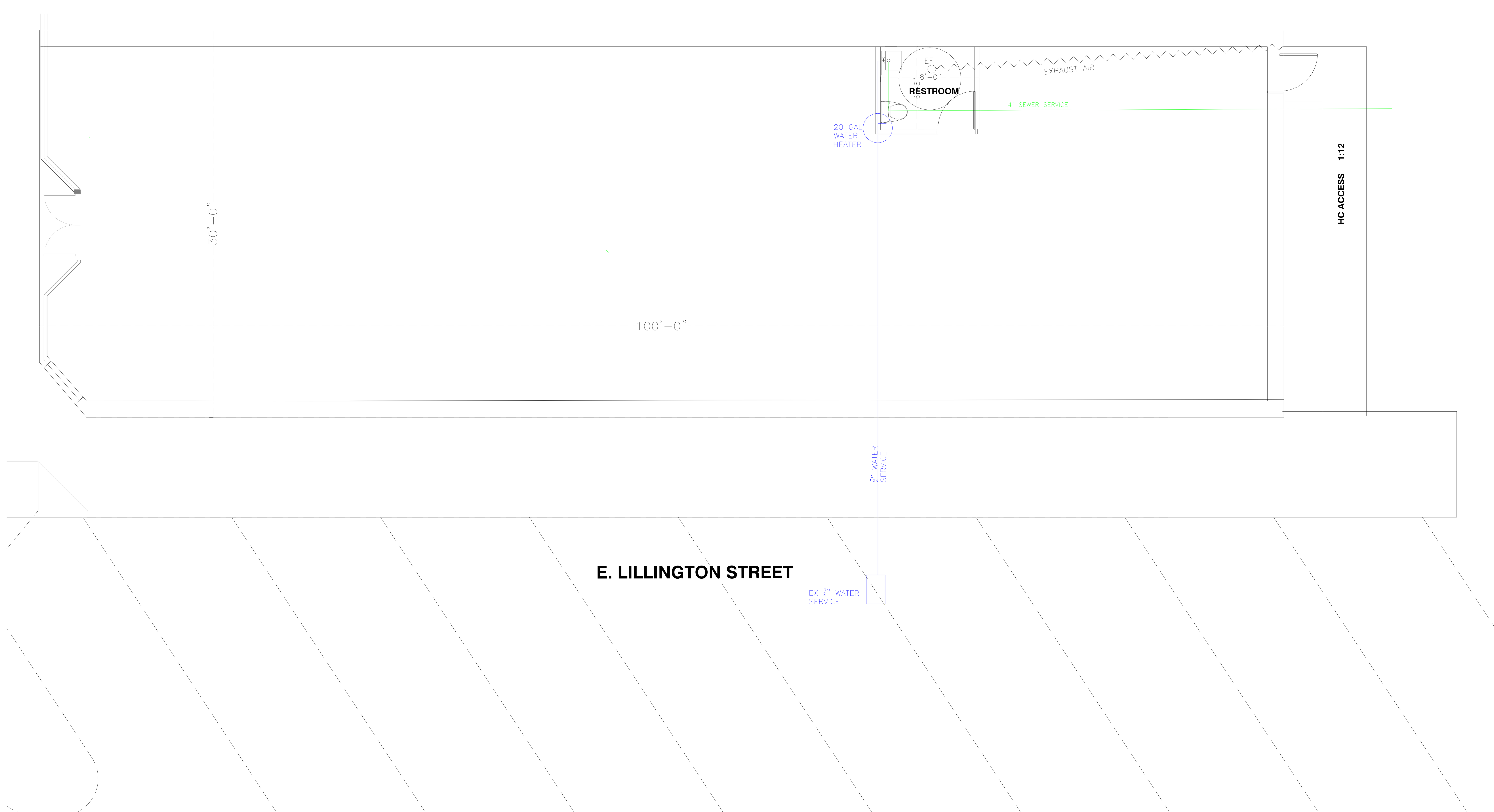
GREG BAGLEY ENGINEER — DESIGN · SURVEYING · PLANNING · MAPPING

ELEVATION PLAN

BLACK RIVER EXCHANGE
DEVELOPED BY
S & J WILLS
HARNETT COUNTY N.C.
ANGIER

DATE 1-29-21
SCALE SHOWN
DESIGNED BY CGB
DRAWN BY

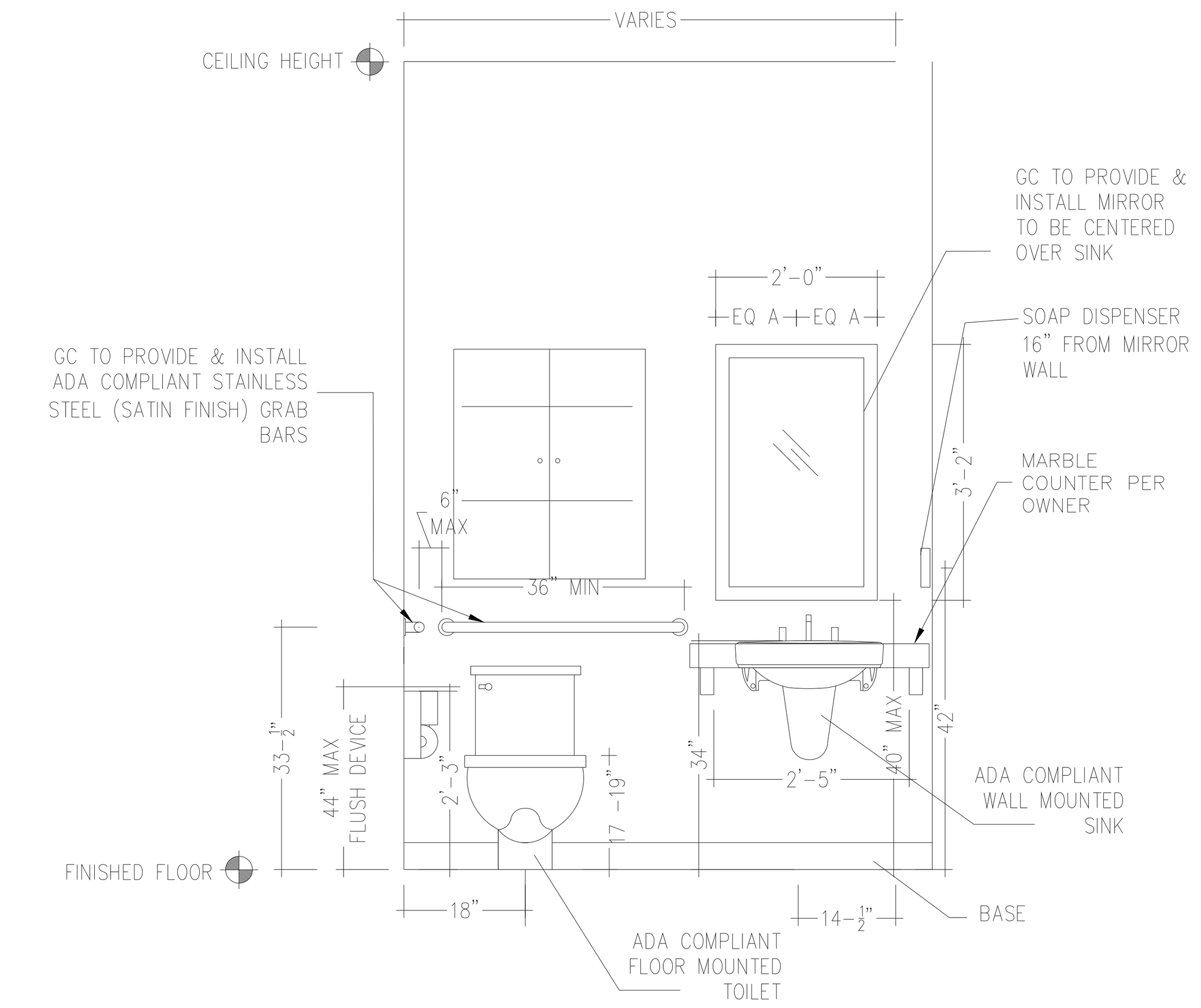
SHEET
EL1-OF-1
ELEV PLAN

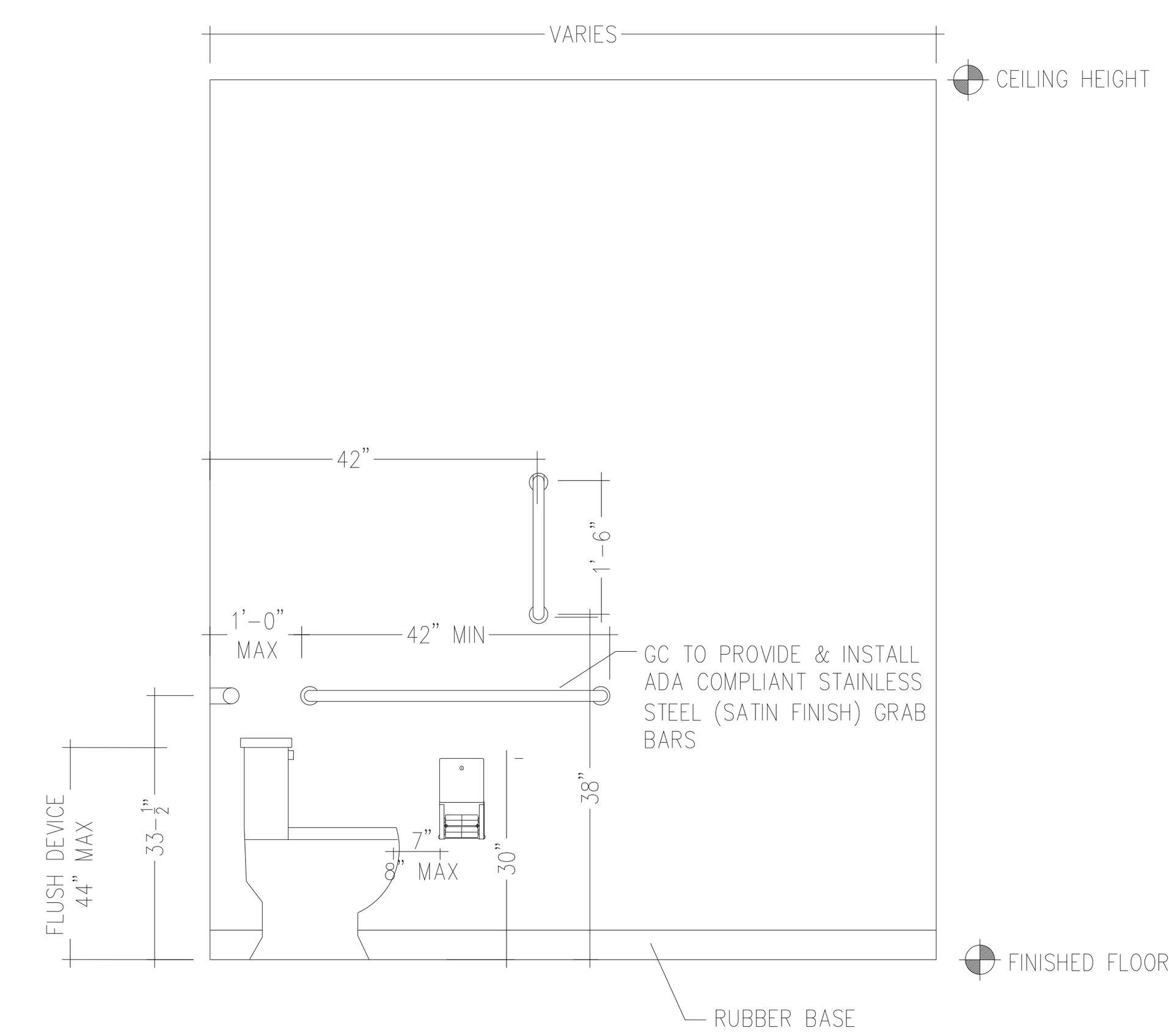


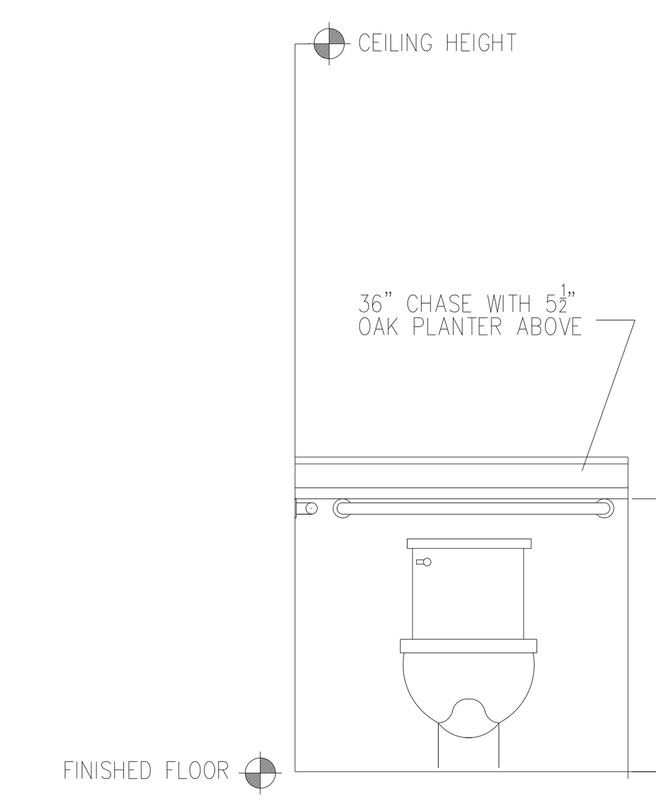
PLUMBING PLAN

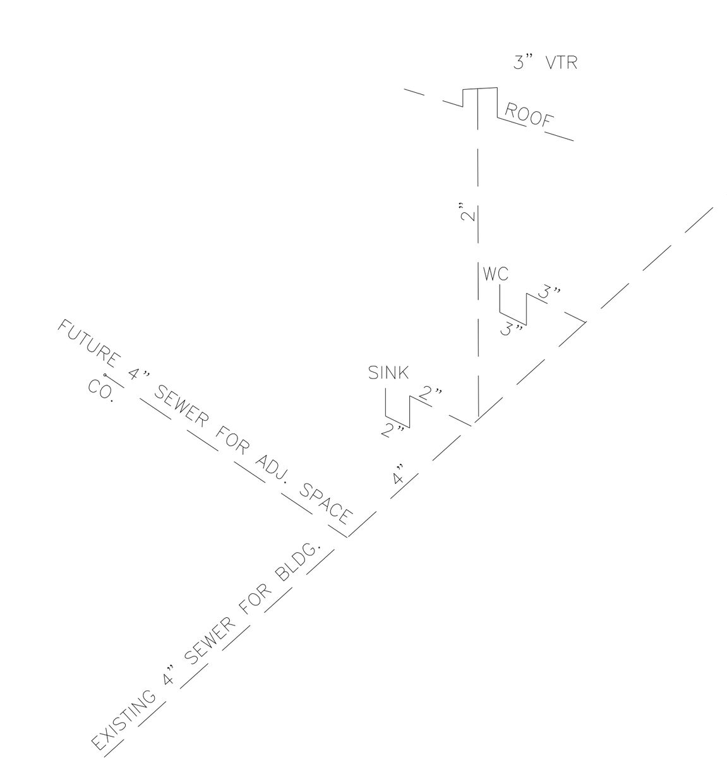
SCALE: 3/16" = 1'

GRAB BARS SHALL:
- HAVE GRIPPING SURFACE OF 1 1/4" - 1 1/2" IN WIDTH OR OUTSIDE DIAMETER
- 1 1/2" HAND CLEARANCE BETWEEN THE FACE OF THE BAR & THE FINISHED SURFACE OF THE WALL/ PARTITION
- BE CAPABLE OF SUPPORTING A 250 LB. LOAD APPLIED IN ANY DIRECTION ANYWHERE ALONG ITS LENGTH
- NOT ROTATE W/ IN THEIR FITTINGS
- BE FREE OF ANY SHARP/ ABRASIVE ELEMENTS
- EDGES SHALL HAVE A 1/8" MIN. RADIUS



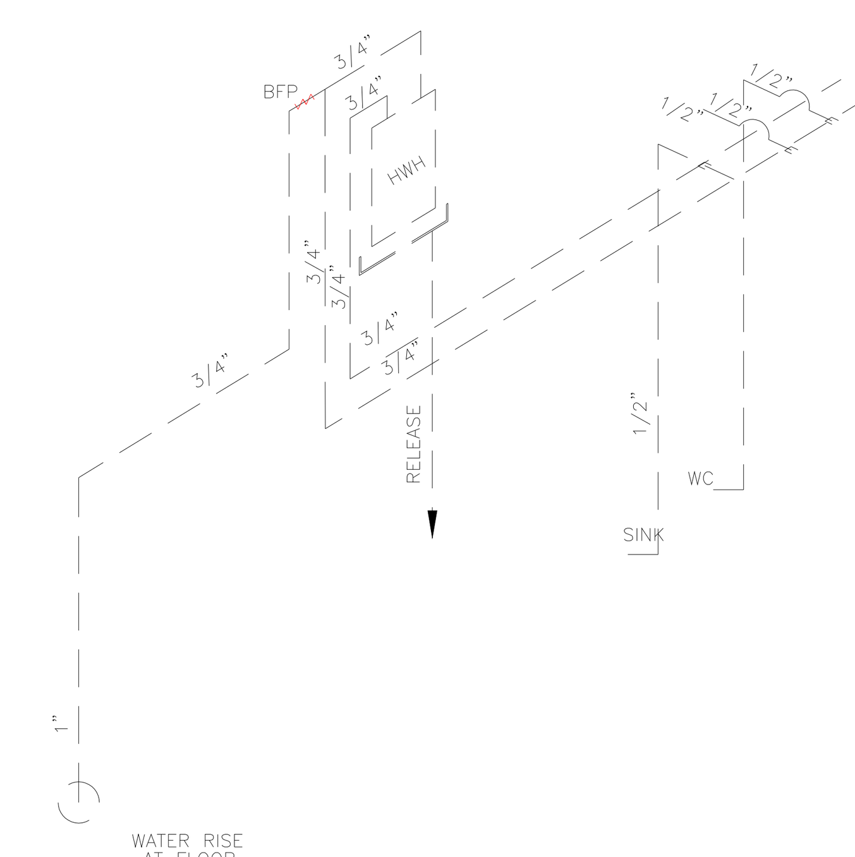






SEWER RISER DETAIL

NO SCALE



WATER RISER DETAIL

NO SCALE

REVISIONS	BY
1-5-18 SECOND SUBMITTAL REV PER FV COMMENTS	CGB

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GREG BAGLEY ENGINEER
DESIGN SURVEYING

PLUMBING DESIGNS

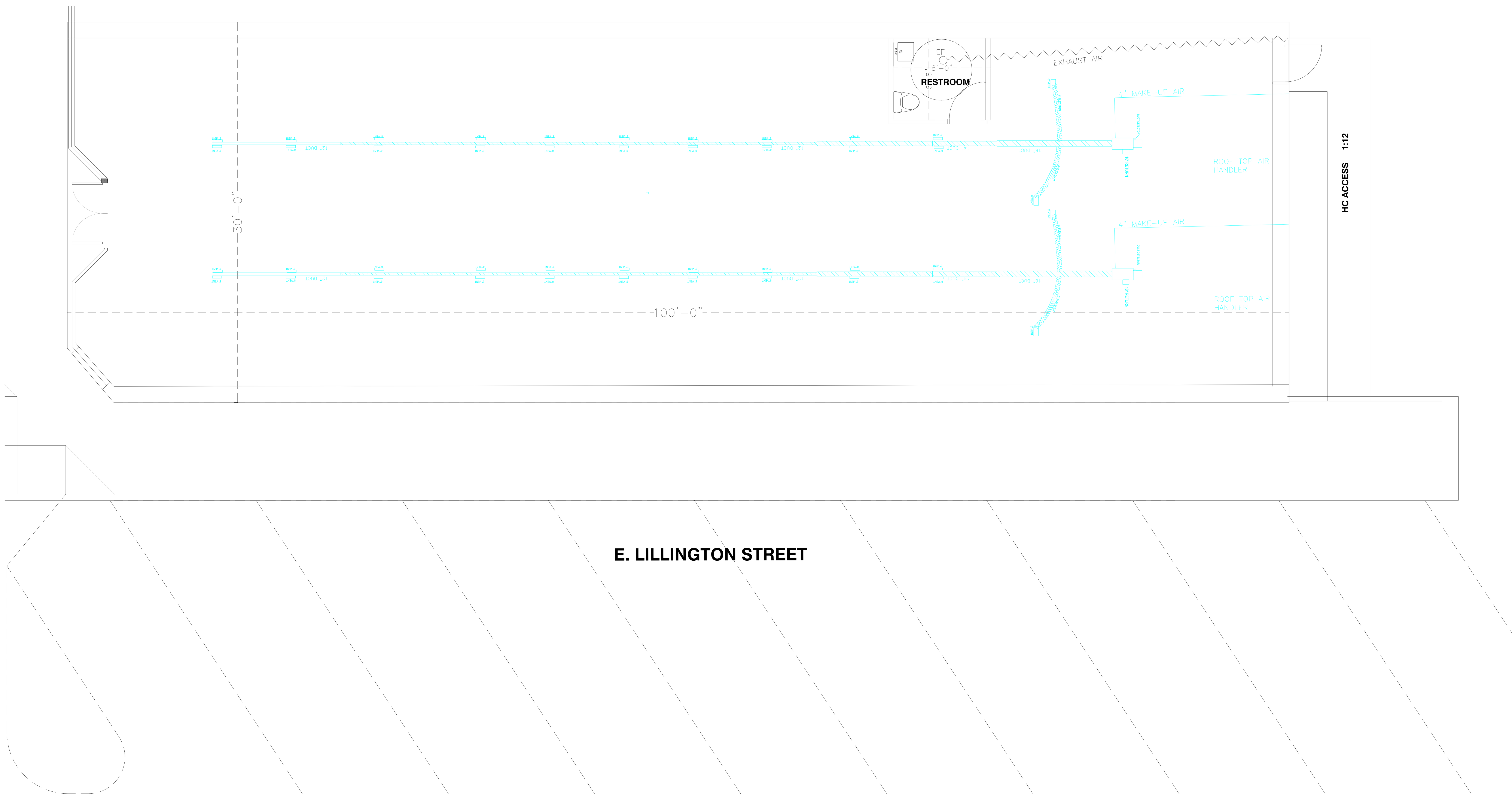
BLACK RIVER EXCHANGE

DEVELOPED BY S & J WILLS

ANGIER HARNETT COUNTY N.C.

DATE 1-29-21
SCALE SHOWN
DESIGNED BY CGB
DRAWN BY

SHEET P1-OF-1 PLUMBING



MECHANICAL PLAN

SCALE: 1/4" = 1'

MECHANICAL SYSTEMS, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE	PRESCRIPTIVE
THERMAL ZONE	III
EXTERIOR DESIGN CONDITIONS	
winter dry bulb	16 F
summer dry bulb	92 F
INTERIOR DESIGN CONDITIONS	
winter dry bulb	70 F
summer dry bulb	74 F
relative humidity	50 %
BUILDING HEATING LOAD	43,300 BTU
BUILDING COOLING LOAD	44,009 BTU
MECHANICAL SPACE CONDITIONING SYSTEMS	
Unitary	
description of unit	DX COOLING/HEAT
heating efficiency	13 SEER
cooling efficiency	13 SEER
heating output of units	44,500 BTU
cooling output of units	47,000 BTU
LIST EQUIPMENT EFFICIENCIES	SEE SCHEDULE
	SEE SCHEDULE

OUTSIDE AIR CALCULATION

		CFM/PERSON	TOTAL CFM
5	EMPLOYEES =	20	100
5	CLIENTS	5	25
			125

USE 4" FLEX FOR OUTSIDE DUCT TO UNIT

TOTAL CFM PRODUCED = 2000
(10) 8" VENTS
10 VENTS @ 220 CFM / VENT
= 2200 CFM OUTPUT
STATIC PRESSURE = 0.1in-wg

HVAC EQUIPMENT NOTES

USE 2 14 SEER UNITS SPLIT SYSTEM
UNITS TO BE ON TOP OF BUILDING .
3/4" CONDENSATE LINE WITH P-TRAP ROUTED TO OUTSIDE AND FASTENED TO WALL.
OUTSIDE AIR INTAKE TO BE ROUTED UP WALL FRAMING AND TERMINATED ABOVE ROOF.
INTAKE MUST BE A MINIMUM OF 10' FROM OUTLET OR EXHAUST.
MOUNT THERMOSTAT ON WALL 54" GAFF. AS PER ADA REQUIREMENTS
BATHROOM FANS TO BE 125 CFM WITH 4" DUCT.
DISCHARGE EXHAUST OUTSIDE OF BUILDING.
USE 4" FLEX FOR OUTSIDE AIR INTAKE DUCT

GENERAL HVAC NOTES

PROVIDE COMPLETE UNIT
MIN REQUIREMENTS TO BE MET AS NOTED ABOVE
RELOCATE THERMOSTATS AS NEEDED FOR PROPER EFFECT
FANS SHALL RUN CONTINUOUSLY DURING OCCUPANCY TO PROVIDE OUTIDE AIR.
DUCT DETECTORS REQUIRED ON ALL UNITS
REMOTE ALARM INDICATOR DEVICES (RAIDS) REQUIRED FOR EACH UNIT AND TO BE INSTALLED
NEAR UNIT NO MORE THAN 72" GAFF

HVAC EQUIPMENT SCHEDULE

2-5 TON UNITS ON ROOF

EXHAUST FAN SCHEDULE

BATHROOM FANS = NUTONE LPN 80 OR EQUAL MEETS ASHRAE 62.2

REVISIONS	BY
1-5-18 SECOND SUBMITTAL REV PER FV COMMENTS	CGB

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 12276 1-29-21 GREGORY BAGLEY

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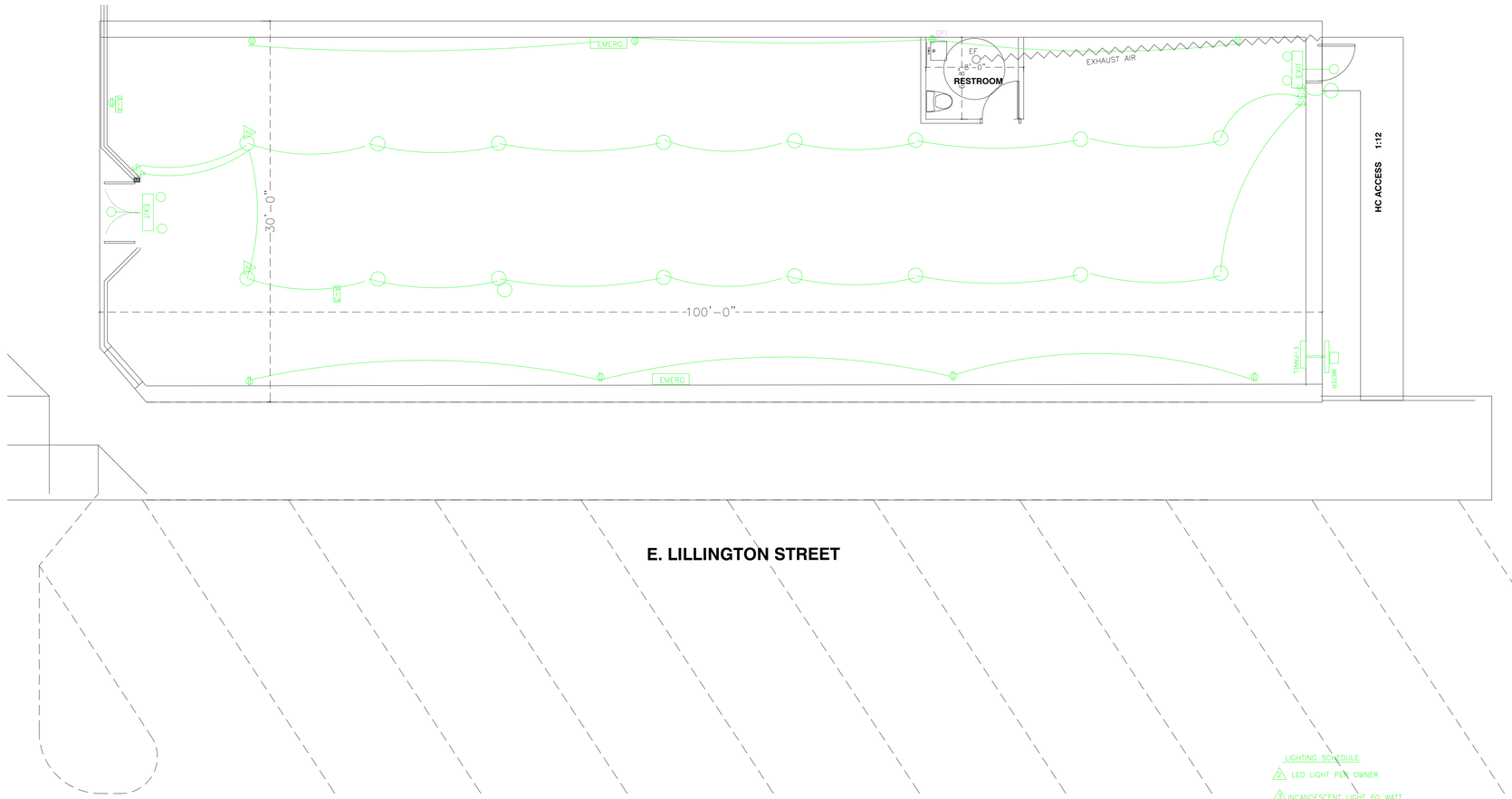
GREG BAGLEY ENGINEER

MECHANICAL DESIGNS

BLACK RIVER EXCHANGE
DEVELOPED BY S&J WILLS
HARNETT COUNTY N.C.
ANGIER

DATE 1-29-21
SCALE SHOWN
DESIGNED BY CGB
DRAWN BY

SHEET M1-OF-1
HVAC



ELECTRICAL

200 AMP SERVICE
VOLTAGE 220/120V 1 PHASE : 4 WIRE

DEVICE SIZE	DEVICE AMPS TRIP	DEVICE POLES	BRANCH CIRCUIT DESCRIPTION	CKT	PH A	PH B	PH C	PH A	PH B	PH C	CKT	BRANCH CIRCUIT DESCRIPTION	DEVICE POLES	DEVICE AMPS TRIP	DEVICE SIZE
12	20	1	LIGHTING	1				10			2	LIGHTING	1	20	12
10	20	1	RECEPT	3	7				10		4	RECPT. SIGN	1	20	12
10	20	1	RECEPT	5		7					6		1		
12		1		7							8		1		12
12		1		9							10		1		10
12		1		11							12		1		10
12		1		13							14		1		12
12		1		15							16		1		12
10		1		17						11	18		1		10
12		1		19			15				20	AIR HANDLER	2	40	12
10	40	2	HVAC	21	15						22	AIR HANDLER	2	40	10
12	40	2	HVAC	23			25		29		24		1		10
12		1		25							26		1		10
12		1		27							28		1		10
12		1		29							30		1		10
12		1		31							32		1		10
10		1		21							22		1		12
12		1		23							24		1		12
12		1		25							26		1		12
12		1		27							28		1		12
12		1		29							30		1		12
12		1		31							32		1		12
12		1		33							34		1		12
12		1		35							36		1		12
12		1		37							38		1		12
			TOTAL		22	7	40	10	39	10					

TOTAL CONNECTED AMPS A -32 B-46 C- 50

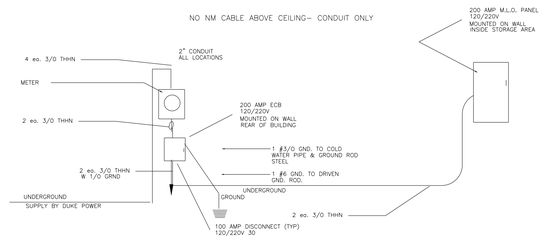
LOAD CALCS.

LOAD	CONN (KVA)	DEMAND FACTOR	DEMAND LOAD
LIGHTING	5	125% ****	6.25
RECEPT.	8.4	1ST 10 KV-100% REM-50%	8.4
HVAC	42.5	100%	42.5
SIGN	1.2	125% ****	1.5
TANKLESS WH	30	125%	37.5
TOTAL	87.1	TOTAL	96.4

LIGHTING LOAD CALCS.

AREA TYPE	MIN. WATTS	SQ. FT	REQUIRED	PROVIDED
BATHROOM	.99	485	480	500
OFFICE	1.4	725	1015	980
TOTAL		1210	1495	1480

NO NM CABLE ABOVE CEILING- CONDUIT ONLY



ELECTRICAL DIAGRAM

NOT TO SCALE

Lighting Requirements:
RETAIL .99x 900 Sq ft = 899 watts
BATH: 1.40x 84 Sq ft =118 watts

Provided:
RETAIL: 1000 watts
BATH: 200 watts

LIGHTING SCHEDULE
2 LED LIGHT PER OWNER
3 INCANDESCENT LIGHT 60 WATT
4 70 CFM EXHAUST FAN

ELECTRICAL PLAN
SCALE: 3/16" = 1'

REVISIONS	BY
1-5-18 SECOND SUBMITTAL REV PER FV COMMENTS	CGB

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GREG RAGLEY ENGINEER — PLANNING · ENGINEERING · MAPPING

ELECTRICAL DESIGNS

BLACK RIVER EXCHANGE
DEVELOPED BY
S & J WILLS
HARNETT COUNTY N.C.
ANGIER

DATE 1-29-21
SCALE SHOWN
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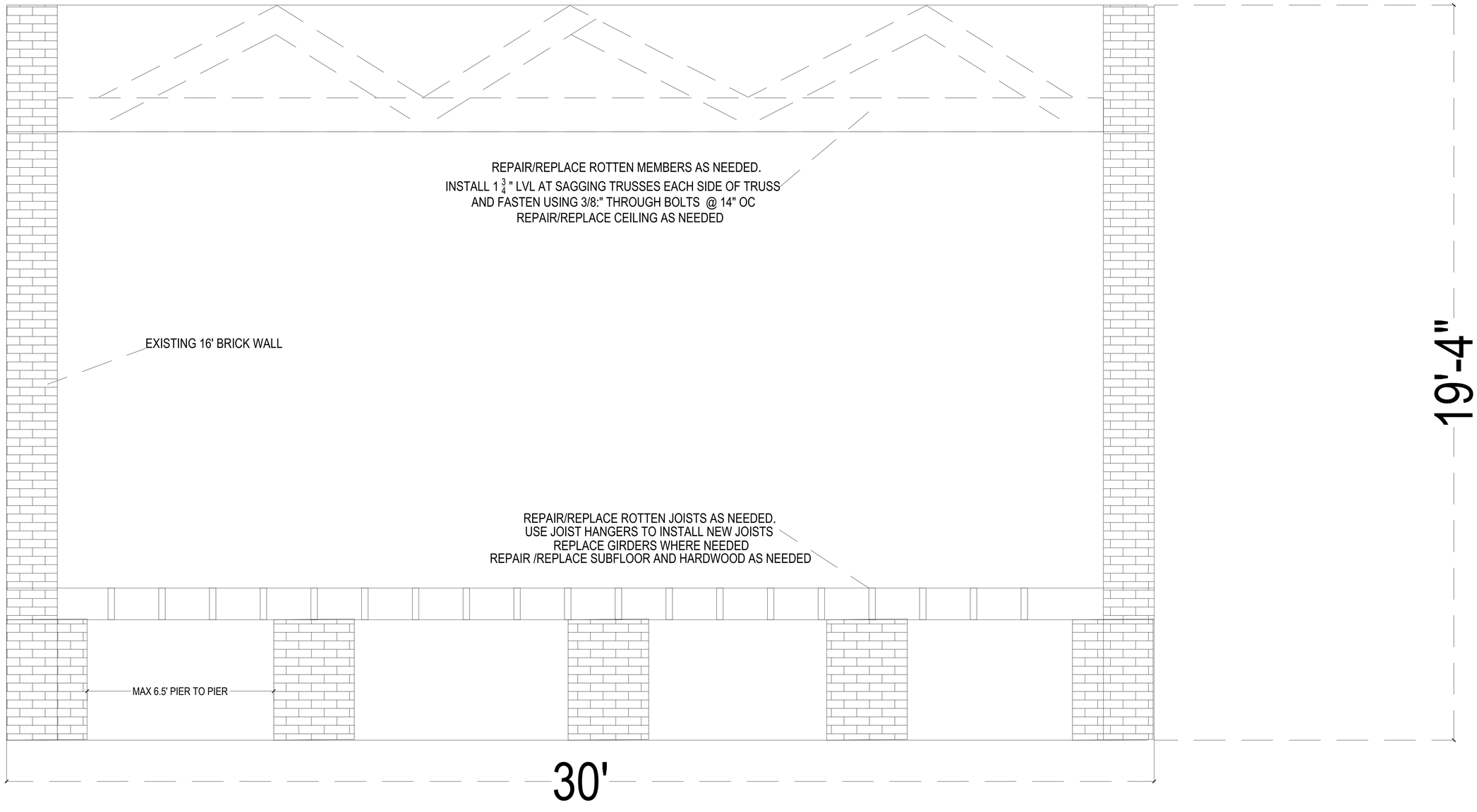
DRAWN BY
SHEET E1-OF-1
ELECTRICAL



STRUCTURAL
SCALE: 1/4" = 1'

REVISIONS	BY
1-5-18 SECOND SUBMITTAL REV PER FV COMMENTS	CGB

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
SEAL
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1-29-21
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GREG BAGLEY ENGINEER
DESIGN · PLANNING · SURVEYING · MAPPING

STRUCTURAL PLAN

BLACK RIVER EXCHANGE
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