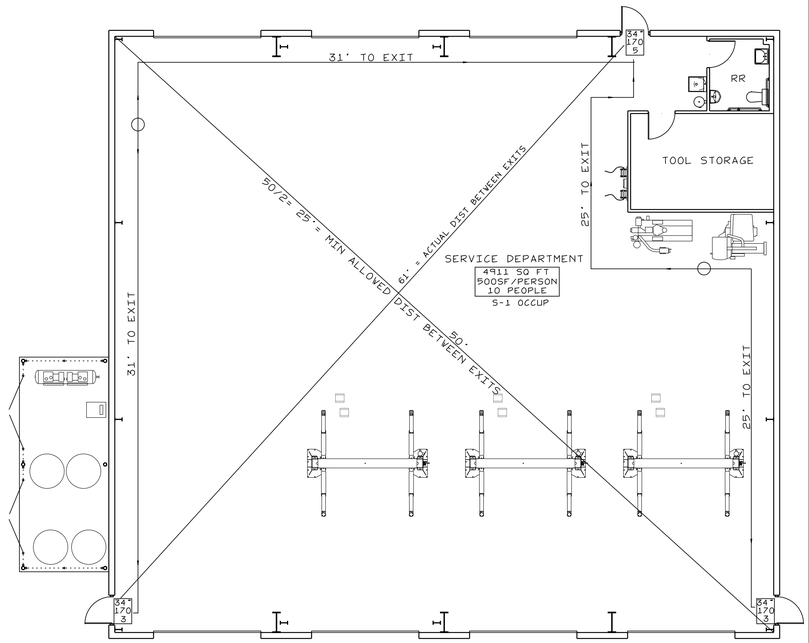
JOHN HIESTER CHEVROLET
COMMERCIAL TRUCK REPAIR GARAGE
LILLINGTON, N.C.

Reviewed for Fire Code Compliance
Harnett County North Carolina
Roger Sullivan
07/10/2024 3:41:33 PM



BUILDING CODE SUMMARY SHEET

PROJECT NAME: JOHN HIESTER CHEVROLET
ADDRESS: 105 W CORNELIUS HARNETT BLVD, LILLINGTON, NC
PROPOSED USE: COMMERCIAL TRUCK REPAIR GARAGE
OWNER/CONTACT PERSON: BRETT STRICKLAND PHONE NO: 919-805-0664
E-MAIL: bretts@si-nc.com
OWNED BY: [X] PRIVATE [ ] CITY/COUNTY [ ] STATE
CODE ENFORCEMENT JURISDICTION: LILLINGTON

2018 EDITION OF CODE FOR:
[X] NEW CONSTRUCTION
[ ] ADDITION
[ ] UPFIT
[ ] EXISTING BUILDING

DESIGNER OF RECORD:

DESIGNER:	FIRM NAME	NAME	LICENSE #	TELEPHONE #	E-MAIL
BUILDING	SMITH ENGINEERING & DESIGN	J.T. SMITH, JR	24916	(919)-736-2141	smithengineeringnc@hotmail.com
ELECTRICAL	SMITH ENGINEERING & DESIGN	J.T. SMITH, JR	24916	(919)-736-2141	smithengineeringnc@hotmail.com
PLUMBING	SMITH ENGINEERING & DESIGN	J.T. SMITH, JR	24916	(919)-736-2141	smithengineeringnc@hotmail.com
MECHANICAL	SMITH ENGINEERING & DESIGN	J.T. SMITH, JR	24916	(919)-736-2141	smithengineeringnc@hotmail.com
FOUNDATIONS	SMITH ENGINEERING & DESIGN	J.T. SMITH, JR	24916	(919)-736-2141	smithengineeringnc@hotmail.com
SPRINKLER-STANDPIPE	NA				
FIRE ALARM	NA				
METAL BUILDING	NUCOR CORPORATION	RAJESH H BHAGNARI	24064	(706)-562-8020	
OTHER	NA				

BUILDING DATA:

OCCUPANCY: S-1 STORAGE
CONSTRUCTION TYPE: [ ] I-A [ ] I-B [ ] II-A [X] II-B [ ] III-A [ ] III-B [ ] IV [ ] V-A [ ] V-B
MIXED CONSTRUCTION? [ ] YES [X] NO TYPE: NA
SPRINKLERS: [ ] YES [ ] PARTIAL [X] NO [ ] NFPA 13 [ ] NFPA 13R [ ] NFPA 13D
STANDPIPES: [ ] YES [X] NO CLASS: [ ] I [ ] II [ ] III [ ] WET [ ] DRY
FIRE DISTRICT: [ ] YES [X] NO FLOOD HAZARD AREA: [ ] YES [X] NO
BUILDING HEIGHT: 21 FT NO. OF STORIES: 1 [ ] UNLIMITED PER
MEZZANINE: [ ] YES [X] NO
SPECIAL INSPECTIONS: [ ] YES [X] NO

GROSS BUILDING AREA:

FLOOR:	EXISTING	NEW	SUB-TOTAL
BASEMENT	NA	NA	
1ST FLOOR	NA	4911 SF	4911 SF
MEZZANINE	NA	NA	NA
2ND FLOOR	NA	NA	NA
3RD FLOOR	NA	NA	NA
TOTAL GROSS AREA:		4911 SF	4911 SF

ALLOWABLE AREA:

PRIMARY OCCUPANCY: S-1 ACCESSORY USE: % OF FLOOR AREA:
INCIDENTAL USES: SPECIAL USES:
SPECIAL PROVISIONS:
MIXED OCCUPANCY: [X] NO [ ] YES SEPARATION: EXCEPTION:
[ ] NON-SEPARATED MIXED OCCUPANCY
[ ] SEPARATED MIXED OCCUPANCY

STORY #	DESCRIPTION & USE	BLDG AREA PER STORY (ACTUAL)	TABLE 506.2 AREA	AREA FOR OPEN SPACE INCREASE	AREA FOR SPRINKLER INCREASE	ALLOWABLE AREA PER STORY OR UNLIMITED
1	S-1	4911 SF	17,500 SF	NOT USED	NA	17,500 SF
2						
3						

ALLOWABLE HEIGHT:

	ALLOWABLE	INCREASE FOR SPRINKLERS	SHOWN ON PLANS	CODE REFERENCE
BLDG HT IN FEET	55 FT	NA	21 FT	
BLDG HT IN STORIES	1	NA	1	

PRECENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DIST FROM PROPERTY LINE	DEGREE OF OPNGS PROTECTION	ALLOWABLE AREA %	ACTUAL AREA %
30'+	UNPROTECTED	NO LIMIT	

FIRE RESISTANCE RATINGS:

	FIRE SEPARATION DISTANCE (FT)	RATING REQ'D	RATING PROVIDED	DETAIL # & SHEET #	DESIGN # FOR RATED ASSEMBLY	SHT # FOR RATED PENETRATION	SHT # FOR RATED JOINTS
STRUCTURAL FRAME including columns, girders, trusses		0 HR	0 HR				
BEARING WALLS EXTERIOR							
North	NA						
East	NA						
West	NA						
South	NA						
Interior bearing walls	NA						
NON-BEARING WALLS EXTERIOR							
North	30'+	0 HR	0 HR				
East	30'+	0 HR	0 HR				
West	30'+	0 HR	0 HR				
South	30'+	0 HR	0 HR				
Interior bearing walls		0 HR	0 HR				
FLOOR CONSTRUCTION incl supporting beams & joists		0 HR	0 HR				
FLOOR CEILING ASSEMBLY		NA					
COLUMNS SUPPORTING FLOORS		NA					
ROOF CONSTRUCTION incl supporting beams & joists		0 HR	0 HR				
ROOF CEILING ASSEMBLY		0 HR	0 HR				
COLUMNS SUPPORTING ROOFS		0 HR	0 HR				
SHAFTS - exit		NA					
SHAFTS - other		NA					
CORRIDOR SEPARATION		NA					
OCCUPANCY/FIRE BARRIER SEPARATION		NA					
PARTY/FIRE WALL SEPARATION		NA					
SMOKE BARRIER SEPARATION		NA					
TENANT SEPARATION		NA					
INCIDENTAL USE SEPARATION		NA					

• INDICATES SECTION # PERMITTING REDUCTION

LIFE SAFETY SYSTEMS REQUIREMENTS:

EMERGENCY LIGHTING [X] YES [ ] NO EXIT LIGHTING [X] YES [ ] NO FIRE ALARM [ ] YES [X] NO
SMOKE DETECTION SYSTEM [ ] YES [X] NO [ ] PARTIAL CARBON MONOXIDE DETECTION [X] YES [ ] NO

LIFE SAFETY PLAN REQUIREMENTS:

Life Safety Plan Sheet #:

- [X] Fire and/or smoke rated wall locations (Chapter 7)
- [X] Assumed and real property line locations (on the site plan)
- [X] Exterior wall opening area with respect to distance to assumed property lines (705.8)
- [X] Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
- [X] Occupant loads for each area
- [X] Exit access travel distances (1017)
- [X] Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
- [X] Dead end lengths (1020.4)
- [X] Clear exit widths for each exit door
- [X] Max. calculated occupant load capacity ea. exit door can accommodate based on egress width (1005.3)
- [X] Actual occupant load for each exit door
- [X] A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
- [X] Location of doors with panic hardware (1010.1.10)
- [X] Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
- [X] Location of doors with electromagnetic egress locks (1010.1.9.9)
- [X] Location of doors equipped with hold-open devices
- [X] Location of emergency escape windows (1030)
- [X] The square footage of each fire area (202)
- [X] The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
- [X] Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE PARKING: BY OTHERS

TOTAL # PARKING SPACES		TOTAL # ACCESSIBLE SPACES REQUIRED	# ACCESSIBLE SPACES PROVIDED		TOTAL # ACCESSIBLE PROVIDED
REQUIRED	PROVIDED		REGULAR	VAN	

STRUCTURAL DESIGN:

DESIGN LOADS
IMPORTANCE FACTORS: SNOW (I_S) 1.0
SEISMIC (I_E) 1.0
LIVE LOADS: ROOF 20 PSF
MEZZANINE NA
FLOOR 125 PSF
GROUND SNOW LOADS: 15 PSF
WIND LOADS: ULTIMATE WIND SPEED 115 MPH (ASCE-7)
EXPOSURE CATEGORY B
SEISMEIC DESIGN CATEGORY [ ] A [X] B [ ] C [ ] D
RISK CATEGORY (TABLE 1604.5) [ ] I [X] II [ ] III [ ] IV
SPECTRAL RESPONSE ACCELERATION S_S 16.5 %g S_1 8.0 %g
SITE CLASSIFICATION D [ ] Field test [X] Presumptive [ ] Historical data
BASIC STRUCTURAL SYSTEM
[ ] Bearing Wall [ ] Dual w/ Special Moment Frame
[X] Building Frame [ ] Dual w/ Intermediate R/C or Special Steel
[ ] Moment Frame [ ] Inverted Pendulum
ANALYSIS PROCEDURE [ ] Simplified [ ] Modal [X] Equivalent Lateral Force
ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? NO
LATERAL DESIGN CONTROL: EARTHQUAKE [ ] WIND [X]
SOIL BEARING CAPACITIES:
FIELD TEST
PRESUMPTIVE BEARING CAPACITY 2000 PSF
PILE SIZE, TYPE, AND CAPACITY

INDEX TO DRAWINGS

STRUCTURAL
S-1 FOUNDATION PLAN

GENERAL
G-1 FLOOR PLAN/ELEVS/SECTIONS

PLUMBING
P-1 PLUMBING PLAN

HVAC
M-1 HVAC/GAS PLAN

ELECTRICAL
E-1 POWER PLAN
E-2 LIGHTING PLAN

BUILDING IS EXEMPT FROM THE ENERGY CODE

C101.2 Scope. This code applies to *commercial buildings* and the buildings' sites and associated systems and equipment.

Exceptions:

2. Per N.C.G.S. 143-138 (b18), no energy conservation code provisions shall apply to any structure for which the primary occupancy classification is Group F, S, or U pursuant to Chapter 3 of the 2018 *North Carolina Building Code*. This exclusion shall apply to the entire building area.

CHEVROLET
23005 JOHN HIESTER

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Goldsboro, N.C. 27534
Phone: 919.736.2141
Corporate license # C-2241

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024916 4-23-24 JOE T. SMITH JR.

STRUCTURAL NOTES

GENERAL

1. THESE DRAWINGS ARE TO BE COORDINATED WITH THE GENERAL CONSTR, MECHANICAL, PLUMBING, ELECTRICAL, AND CIVIL DRAWINGS.
2. THIS STRUCTURE AND ALL CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE SECTIONS OF THE CURRENT BUILDING CODE.

MISCELLANEOUS

1. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING, AND GUYING OF FRAMING AND WALLS AGAINST WIND, CONSTRUCTION LOADS, AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE FRAMING.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE DIMENSIONS OF THE STRUCTURAL DRAWINGS AND ADVISING THE ARCHITECT OF ANY DIFFERENCES IN DIMENSIONS BETWEEN THE CONSTRUCTION PLANS AND SECTIONS PRIOR TO COMMENCING CONSTRUCTION.
3. CONSTRUCTION SAFETY: THESE STRUCTURAL DRAWINGS DO NOT CONTAIN NECESSARY COMPONENTS FOR SAFETY DURING CONSTRUCTION.

FOUNDATIONS

1. THE STRUCTURAL ENGINEER HAS NOT PERFORMED A SUBSURFACE INVESTIGATION. THE FOOTINGS ARE BASED UPON AN ASSUMED SOIL BEARING CAPACITY OF 2000 PSF NET BEARING. VERIFICATION OF THIS ASSUMED VALUE IS THE RESPONSIBILITY OF THE OWNER OR CONTRACTOR. SHOULD ANY ADVERS SOIL CONDITIONS BE ENCOUNTERED, THE STRUCTURAL ENGINEER MUST BE CONTACTED BEFORE PROCEEDING.
2. THE BOTTOM OF ALL FOOTINGS SHALL EXTEND BELOW THE FROST LINE FOR THE REGION IN WHICH THE STRUCTURE IS TO BE CONSTRUCTED.
3. ANY FILL SHALL BE PLACED UNDER THE DIRECTION OR RECOMMENDATION OF A LICENSED PROFESSIONAL ENGINEER. THE RESULTING SOIL SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY.

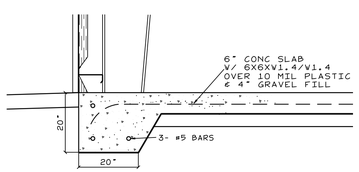
CONCRETE

1. REINFORCED CONCRETE WORK SHALL COMPLY WITH BOTH "SPECIFICATIONS FOR STRUCTURAL BUILDINGS" ACI 301 AND "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" ACI 318
2. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 304R.
3. DURING HOT WEATHER THE CONTROL OF CONCRETE PLACEMENT, PROTECTION AND CURING SHALL COMPLY WITH ACI 305R.
4. WHEN THE MEAN DAILY TEMPERATURE IS BELOW 40 DEGREES F THE CONTROL OF PLACEMENT, PROTECTION AND CURING SHALL COMPLY W/ ACI 306R.
5. CONCRETE SHALL HAVE NORMAL WEIGHT AGGREGATE AND A MINIMUM COMPRESSIVE STRENGTH (Fc) AT 28 DAYS AS LISTED BELOW.
   5.1 FOOTINGS 3000 PSI NO FLYASH
   5.2 SLABS-ON-GRADE 3000 PSI
6. ENTRAINED AIR MUST BE USED IN ALL CONCRETE THAT WILL BE EXPOSED TO FREEZING AND THAWING AND DEICING CHEMICALS. AMOUNT OF AIR ENTRAINMENT (PERCENT) SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE WITH A RANGE OF -1 TO +2 PERCENTAGE POINTS OF THE TARGET VALUE:
   6.1 FOOTINGS 5%
   6.2 INTERIOR SLABS 0%, SEE NOTE BELOW
   6.3 EXTERIOR SLABS 5%
   NOTE: IT IS RECOMMENDED THAT INTERIOR SLABS TO BE GIVEN A SMOOTH, DENSE, HARD-TROWELED FINISH NOT TO CONTAIN ENTRAINED AIR SINCE BLISTERING OR DELAMINATION MAY OCCUR. IF THE SLAB WILL BE EXPOSED TO DEICING OR OTHER AGGRESSIVE CHEMICALS, CONTACT STRUCTURAL ENGINEER FOR PROPER AIR ENTRAINMENT REQUIREMENTS.
7. CONCRETE SLABS ON GRADE SHALL BE CONSTRUCTED IN ACCORDANCE W/ ACI 302.1R-96 "GUIDE FOR CONCRETE SLAB AND SLAB CONSTR"
8. CONTROL JOINTS SHALL BE SPACED IN SLABS ON GRADE AT A MAXIMUM OF 20'-0" O.C. UNLESS OTHERWISE NOTED.

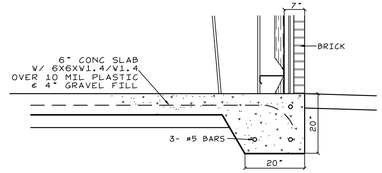
REINFORCING STEEL

1. REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 60. WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A185. WELDABLE REINFORCING BARS SHALL COMPLY WITH ASTM A706, GRADE 60.
2. CLEAR CONCRETE COVER ON REINFORCING STEEL: BOTTOM OF FOOTINGS= 3", SIDE AND TOP SURFACE OF FOOTINGS= 2", BOTTOM OF SLAB ON GRADE = 2 1/2", WALL SURFACE = 2", TOP OR BOTTOM SURFACE OF FLOOR SLABS = 3/4"
3. PROVIDE CLASS 3 BAR AND MESH SUPPORTS.
4. DETAILING, FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI 315 (LATEST EDITION) MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES.
5. HORIZONTAL FOOTING AND WALL REINFORCEMENT SHALL BE CONTINUOUS AND SHALL HAVE 90 BENDS OR CORNER BARS SHALL BE INSTALLED. THE CORNER BAR SHALL HAVE THE SAME SIZE AND SPACING AS THE HORIZONTAL REINFORCEMENT WITH A CLASS B TENSION SPLICE.
6. LAP REINFORCEMENT AS REQUIRED A MINIMUM OF 40 BAR DIAMETERS FOR TENSION OR COMPRESSION UNLESS NOTED OTHERWISE. SPLICES IN MASONRY SHALL BE A MINIMUM OF 48 BAR DIAMETERS.
7. WHERE REINFORCING DOWELS ARE REQUIRED THEY SHALL BE EQUIVALENT SIZE AND SPACING AS THE VERTICAL REINFORCEMENT. THE DOWEL SHALL EXTEND 48 BAR DIAMETERS VERTICALLY AND 20 BAR DIAMETERS INTO FOOTING.

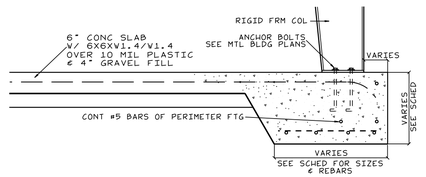
METAL BLDG FOOTING DETAILS



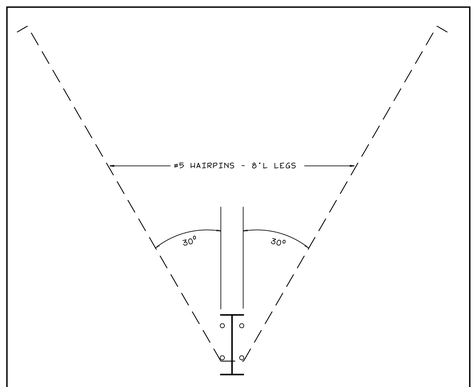
TYP PERIMETER FTG
SCALE: 1/2"=1'-0"



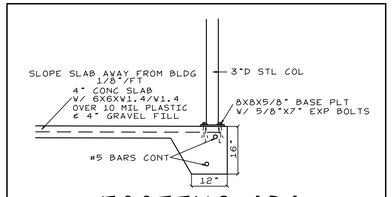
TYP PERIMETER FTG W/ BRICK
SCALE: 1/2"=1'-0"



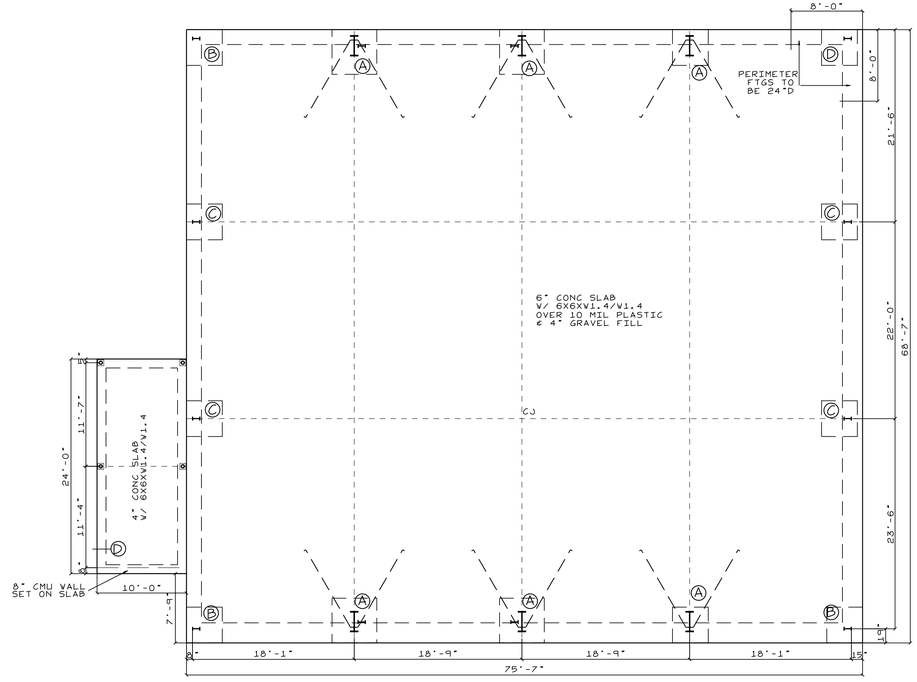
TYP COLUMN FTG
SCALE: 1/2"=1'-0"



TYPICAL HAIRPIN DETAIL



FOOTING 'D'
SCALE: 1/2"=1'-0"



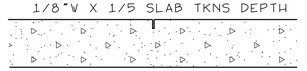
FOUNDATION PLAN
SCALE: 1/8"=1'-0"

FOOTING SIZES ARE PRELIMINARY
ACTUAL SIZES T.B.D. WHEN SEALED
COLUMN REACTIONS ARE FURNISHED

FOOTING SCHEDULE

FOOTING 'A' -	5'-0" X 5'-0" X 2'-0"D	W/ 6 #5 BARS E.W.
FOOTING 'B' -	4'-0" X 4'-0" X 2'-0"D	W/ 5 #5 BARS E.W.
FOOTING 'C' -	3'-0" X 3'-0" X 2'-0"D	W/ 4 #5 BARS E.W.
FOOTING 'D' -	4'-0" X 4'-0" X 3'-0"D	W/ 5 #5 BARS E.W.

SAWED JOINT
1/8"W X 1/5 SLAB TKNS DEPTH



CONTROL JOINT

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REVISIONS

JOHN HIESTER CHEVROLET
COMMERCIAL TRUCK
REPAIR GARAGE
LILLINGTON, N.C.

PROJECT NO: 23005
DRAWN BY: JL
DATE: 11/30/2023

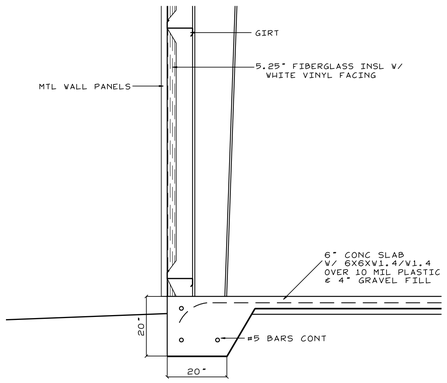
FOUNDATION PLAN & DETAILS

S-1

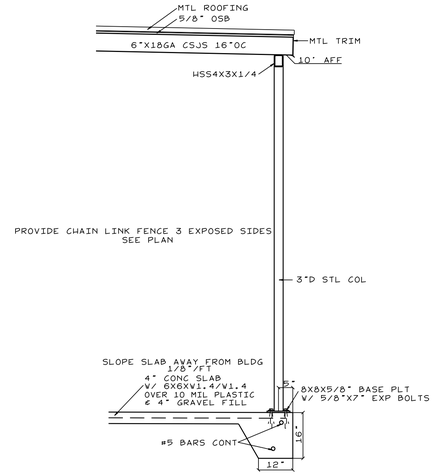
OVERHEAD DOOR SCHEDULE

OHDS 1-7	12'X14' OHD	'CHI' #3212 INSUL SECTIONAL DOOR W/ 1 ROWS OF FULL VISION LITES W/ 1/2" TEMP GREY TINTED I.G. - ELEC HOIST

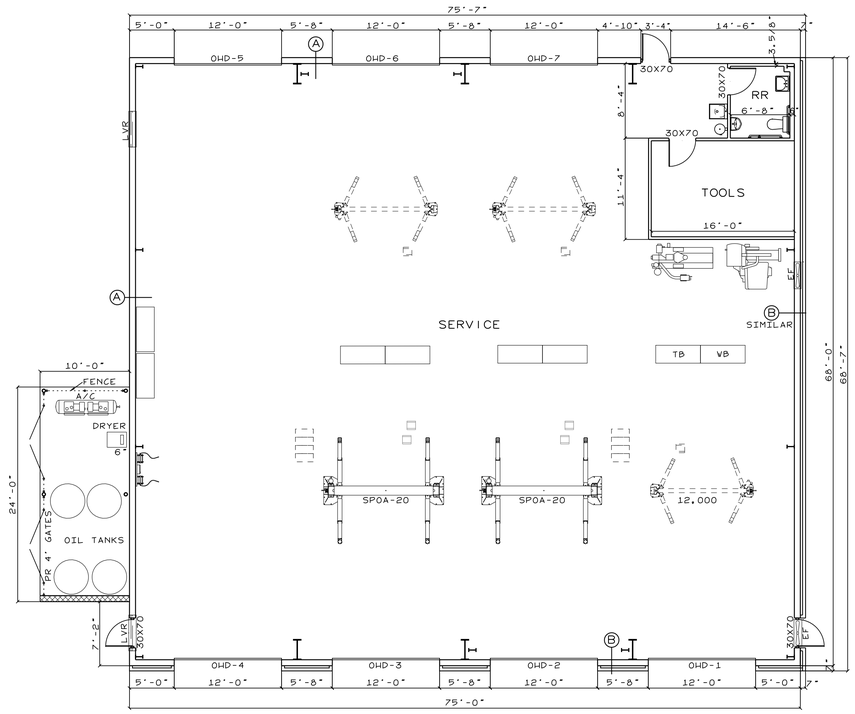
ALL OHDS TO RECEIVE HEAVY CYCLE SPRINGS (100,000) - HEAVY DUTY 3" 12GA TRACKS - 14GA WINDGES
PROVIDE 'LIFTMASTER' LOGIC 5.0 GT (3/4 HP 110/1P) ON ALL OHDS W/ 875301 HOIST OPERATOR & FRICTION CLUTCH
PROVIDE ALL OHDS W/ PUSH BUTTON CONTROL STATION
PROVIDE OPTICAL EDGE SENSORS ON ALL OHDS
PROVIDE HEADER & JAMB SEALS
PROVIDE 5" EXHAUST PORTS ON ALL OHDS
SET OVERHEAD TRACKS AS HIGH AS POSSIBLE - COORDINATE W/ OTHER TRADES



SECTION-A
SCALE: 1/2"=1'-0"

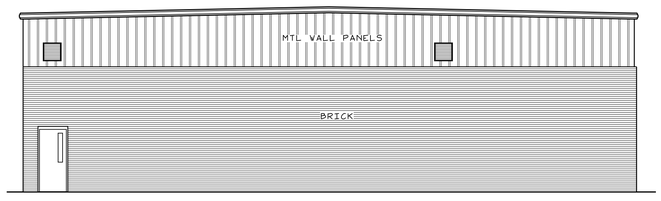


SECTION OIL/AC SHELTER
SCALE: 1/2"=1'-0"

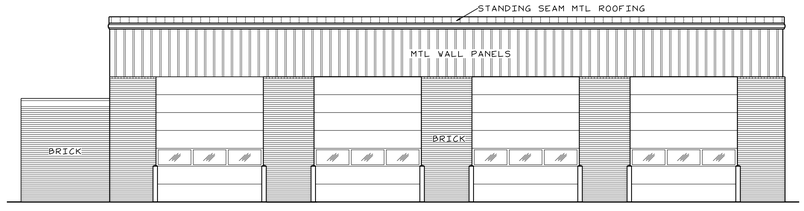


4911 SQ FT (INSIDE OF EXTERIOR WALLS)

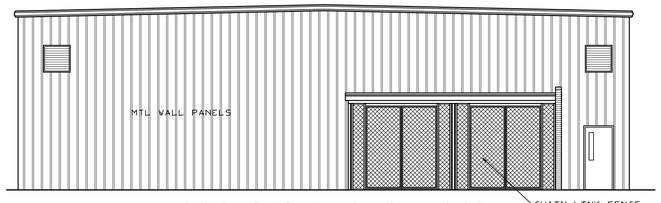
FLOOR PLAN
SCALE: 1/8"=1'-0"



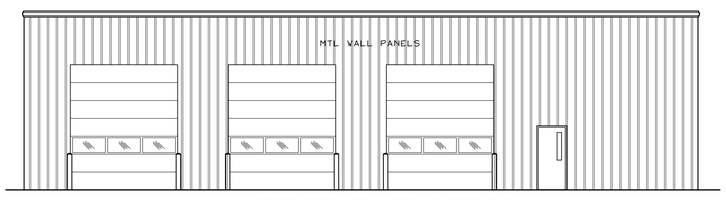
RIGHT SIDE ELEVATION
SCALE: 1/8"=1'-0"



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



LEFT SIDE ELEVATION
SCALE: 1/8"=1'-0"



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

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NORTH CAROLINA PROFESSIONAL SEAL 024916 4-23-24 ENGINEER JOEL T. SMITH JR.

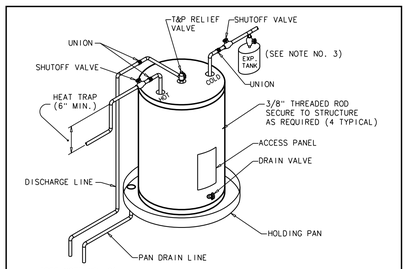
REVISIONS

JOHN HIESTER CHEVROLET COMMERCIAL TRUCK REPAIR GARAGE
LILLINGTON, N.C.

PROJECT NO: 23005
DRAWN BY: JL
DATE: 11/30/2023

FLOOR PLAN ELEVATIONS SECTION

G-1



NOTES:
1. PAN SHALL BE CONSTRUCTED OF A MIN. OF 24 GA. GALV. METAL OR 1/16 INCH HIGH IMPACT PLASTIC AND SUFFICIENT SIZE & SHAPE TO RECEIVE ALL DRIPPINGS.
2. DISCHARGE & PAN DRAIN SHALL BE FULL-SIZE OF RELIEF VALVE BUT NOT LESS THAN 1 INCH, TERMINATING OVER A SUITABLY LOCATED DRAIN (SINK OR SHOWER) OR EXT OF BUILDING 6 INCHES ABOVE DRAIN/GRADE.
3. PROVIDE PRECHARGED DIAPHRAGM EXPANSION TANK ON SYSTEMS HAVING CHECK VALVES OR BACKFLOW PREVENTERS ON SUPPLY WATER LINE. TANK SHALL BE 2 GALLON CAPACITY U.N.O. AND APPROVED FOR POTABLE WATER SYSTEMS.

ABOVE CEILING MOUNTED ELECTRIC WATER HEATER

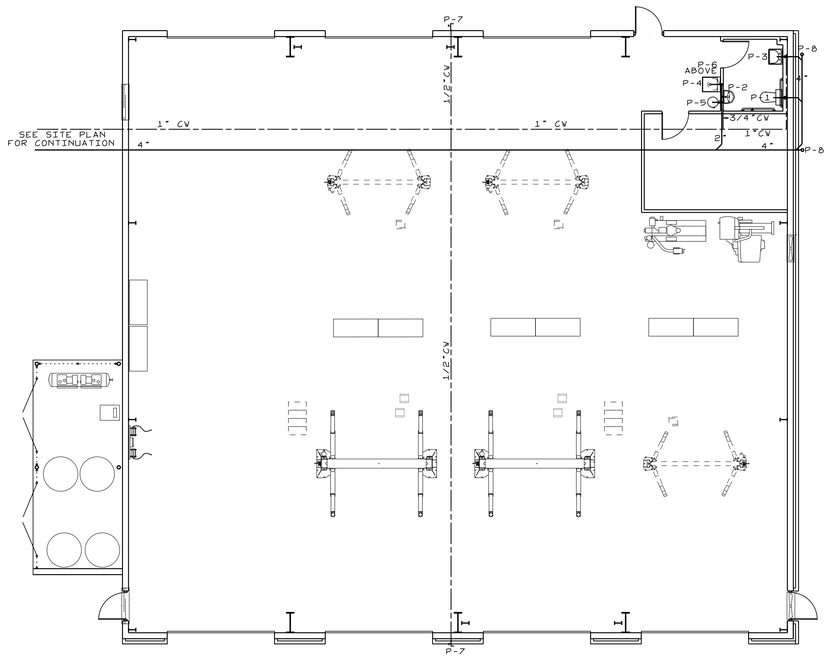
PLUMBING NOTES

1. PLUMBING PLANS ARE INTENDED TO PROVIDE INFORMATION FOR INSTALLATION OF A COMPLETE PLUMBING SYSTEM. PROVIDE ALL ESSENTIAL LABOR, MATERIALS & DEVICES REQUIRED TO PRODUCE A QUALITY END PRODUCT. ALL WORK TO MEET 2018 NCSPC.
2. CONTRACTOR SHALL REVIEW & BECOME FAMILIAR WITH THE WORK OF ALL TRADES FOR PURPOSES OF COORDINATION AND ROUTING. CONTRACTOR SHALL PROVIDE REQUIRED PLANNING, COORDINATION AND SEQUENCING OF PLUMBING INSTALLATION WITH BUILDING COMPONENTS AND OTHER TRADES.
3. COORDINATE CONNECTION OF PLUMBING SYSTEMS WITH SITE UTILITIES AND SERVICES. P.C. SHALL EXTEND WATER SUPPLY LINE 5-FEET OUTSIDE OF BUILDING AND EXTEND BUILDING DRAIN 10-FEET OUTSIDE OF BUILDING & PROVIDE 2-WAY CLEANOUT.
4. COORDINATE ROOF VENT LOCATIONS WITH OUTSIDE AIR INTAKES OF HVAC UNITS TO MAINTAIN A MINIMUM CLEARANCE OF 10 FEET.
5. COORDINATE INSTALLATION OF PLUMBING LINES WITH BLOCK WALLS SO THAT ALL LINES ARE PLACED WITHIN WALLS DURING WALL CONSTRUCTION. CUTTING AND PATCHING OF WALLS IN PLACE IS NOT PERMITTED.
6. ALL WORK SHALL COMPLY WITH LOCAL, STATE & ADA CODES. WORKMANSHIP SHALL MEET OR EXCEED INDUSTRY STANDARDS.
7. PROTECT ALL NEW MATERIALS FROM THE WEATHER IN STORAGE TRAILERS OR PROVIDE SUITABLE COVERING.
8. DRAIN, WASTE & VENT (DWV) PIPING SHALL BE ASTM D 1784, SOLID-WALL, SCHEDULE 40 PVC WITH SOCKET TYPE FITTINGS AND SOLVENT-WELDED JOINTS. FOAM CORE PIPING IS NOT ACCEPTABLE.
9. ABOVE GRADE WATER PIPING SHALL BE ASTM F 877 CROSS-LINKED POLYETHYLENE (PEX) PLASTIC TUBING.
10. WATER SERVICE PIPING SHALL BE ASTM D 1784 PRESSURE-RATED SCHEDULE 40 PVC WITH PVC FITTINGS AND SOLVENT-WELDED JOINTS.
11. INDIVIDUAL SUPPLY AND DRAIN CONNECTIONS SIZES ARE NOT INDICATED ON PLANS FOR CLARITY. SIZE EACH TO SUIT RESPECTIVE FIXTURE.
12. WATER PIPING INSTALLED IN UNCONDITIONED SPACE SHALL BE INSULATED WITH FIBERGLASS INSULATION WITH A MINIMUM R VALUE OF 6.5.
13. DOMESTIC HOT WATER, HOT WATER RETURN & COLD WATER PIPING SHALL BE INSULATED WITH FIBERGLASS AND FOIL & PAPER JACKET AS FOLLOWS:
    RUNOUTS 3/4" OR LESS: 1/2" THICK
    PIPING 3/4" TO 2": 1" THICK
    PIPING 2 1/2" & LARGER: 1 1/2" THICK
    ALL HWR PIPING: 1" THICK
14. WATER PIPING ON OUTSIDE WALLS AND IN CEILING SHALL BE LOCATED BETWEEN BUILDING INSULATION AND CONDITIONED SPACE.
15. PROVIDE SHUTOFF VALVES AT EACH MAIN BRANCH LINE. VALVES SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION. PROVIDE CEILING ACCESS DOORS WHERE REQUIRED TO ACCESS SERVICABLE VALVES LOCATED ABOVE GYPBOARD CEILINGS.
16. PIPING PASSING THROUGH CONCRETE/MASONRY WALLS OR FLOORS SHALL BE PROTECTED AGAINST EXTERNAL CORROSION BY PROTECTIVE SHEATHING OR WRAPPING.
17. INSTALL SCHEDULE 40 PIPE SLEEVE TWO SIZES LARGER AT PENETRATIONS THROUGH FOUNDATION WALLS. SEAL SLEEVE TIGHT TO FOUNDATION WALL.
18. INSTALL UL LISTED FIRE SEAL AT PENETRATIONS THROUGH FIRE-RATED WALLS, FLOORS AND CEILINGS.
19. PROVIDE INSULATION EQUAL TO MCGUIRE PROWRAP ON P-TRAP ASSEMBLIES AND HOT & COLD WATER PIPING FOR LAVATORIES WITH EXPOSED PIPING.
20. VERIFY FINAL LOCATIONS FOR ROUGH-INS WITH FIELD MEASUREMENTS AND WITH THE REQUIREMENTS OF THE ACTUAL EQUIPMENT TO BE CONNECTED.
21. INSTALL PLUMBING FIXTURES AND EQUIPMENT LEVEL & PLUMB. ROUTE PIPING PARALLEL & PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS.
22. INSTALL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE & REPAIR IN ACCORDANCE WITH MFG'S WRITTEN INSTALLATION INSTRUCTIONS AS WELL AS SPECIFIC INSTRUCTIONS ON PLANS.
23. ALL FIXTURES & EXPOSED SURFACES SHALL BE WASHED & CLEANED AND PAINTED SURFACES SHALL BE TOUCHED UP TO MATCH FACTORY APPLIED FINISHES.
24. DWV AND WATER DISTRIBUTION PIPING SHALL BE TESTED IN ACCORDANCE WITH NC PLUMBING CODE.
25. ALL PENETRATIONS OF EXTERIOR WALLS, ROOFS & CEILINGS SHALL BE SEALED TO PREVENT AIR INFILTRATION.
26. PROVIDE P-TRAPS AN ALL FLOOR DRAINS.
27. GUARANTEE ALL EQUIPMENT, MATERIALS AND INSTALLATION FREE OF DEFECTS FOR A PERIOD OF 1-YEAR AFTER DATE OF ACCEPTANCE.
28. THE INTENT OF THESE PLANS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE OPERABLE WATER & SEWER SYSTEM. THE PLUMBING CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO BIDDING IF UNABLE TO PROVIDE A COMPLETE SYSTEM DUE TO CONFLICTS, ERRORS, OR OMMISSIONS. FURTHER, IF THERE ARE CONFLICTS W/ LOCAL, STATE OR NATIONAL CODES, SUCH CODES SHALL HAVE PRECEDENCE OVER THE PLANS & SPECS, AND THE PLUMBING CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO BIDDING. ALL NOTIFICATIONS IN WRITING.

PLUMBING FIXTURE CONNECTION SCHEDULE
MINIMUM SIZES

FIXTURE TYPE	CW	HW	WASTE	VENT
WATER CLOSET	1"		3"	2"
URINAL	3/4"		2"	1 1/2"
SINK	1/2"	1/2"	2"	1 1/2"
UTILITY SINK	1/2"	1/2"	2"	1 1/2"
WATER HEATER	3/4"	3/4"		
HOSE BIBB	1/2"			

ALL FIXTURES TO BE VENTED PER SCHEDULE



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

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	MANUFACTURER	CATALOGUE NO.	ACCESSORIES & REMARKS
P-1	WATER CLOSET	AMER STANDARD	2854.111 WHITE	INCLUDES FLUSH VALVE
P-2	URINAL	AMER STANDARD	6590.501	24" RIM HT UNLESS 2 URINALS IN RESTROOM IF 2 - ONE TO BE 17" RIM HT AND ONE TO BE 24"
P-3	WALL SINK	AMER STANDARD	0355.012	DELTA 500-MPU-DST W/ 155A GRID / CP STOPS & TRAP
P-4	UTILITY SINK	GRIFFEN	LT.118.228	W/ FAUCET
P-5	EYE WASH STATION	SPEAKMAN	SE-495	
P-6	WATER HTR	STATE	P6 10 10MSK 1650 W - 120V	1650W/120V - WOLDRITE 40-SVHP-V EQ STAND FLOODSTOP FS 3/4-NPT LEAK ALARM SHUTOFF
P-7	HOSE BIBB	WOODFORD	MOD 65	ANTI-SIPHONING W/ VACUUM BRKR, SELF DRAINING
P-8	CLEAN OUT - GRADE	ZURN	ZN-1403	
P-9				

PLUMBING FIXTURE REQUIREMENTS

OCCUPANCY	OCCUPANCY LOAD					WATER CLOSETS	URINALS	LAVATORIES	SHOWERS/ TUBS	DRINKING FOUNTAINS	
	TOTAL	%MEN	%WOMEN	MALE	FEMALE					REGULAR	ACCESSIBLE
SHOP	10	80	20	8	2	1	0	1	0	0	0

PROVIDED 1 UNISEX RESTROOM

Smith Engineering and Design, P.A.
1103 Gracie Place - Suite A
Goldsboro, N.C. 27534
Phone: 919.736.2141
Corporate license # C-2241

NORTH CAROLINA PROFESSIONAL SEAL 024916 4-23-24 ENGINEER JOEL T. SMITH JR.

REVISIONS

JOHN HIESTER CHEVROLET
COMMERCIAL TRUCK
REPAIR GARAGE
LILLINGTON, N.C.

PROJECT NO: 23005
DRAWN BY: JL
DATE: 11/30/2023

PLUMBING PLAN

P-1

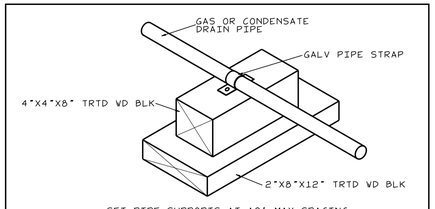
GENERAL NOTES – GAS

1. GAS PIPING SHALL BE A-53 SCHED 40 BLACK STEEL WITH MALLEABLE FITTINGS. PIPING BELOW GRADE SHALL HAVE FRP COATING AND ABOVE GRADE SHALL BE PRIMED AND PAINTED. GROUND ALL GAS PIPING ABOVE GRADE & WITHIN BUILDING. PROVIDE GAS COCK, DRIP LEG AND UNION AT EACH HOOKUP.
2. ALL WORK SHALL COMPLY WITH LOCAL AND STATE BUILDING CODES.
3. PIPING SHALL BE SUPPORTED IN COMPLIANCE WITH NCSBC-GAS. SUPPORT & SECURE W/ SUITABLE HANGERS, STRAPS OR PIPE STANDS. NO DROOPS OR SAGS. ALL HANGES & ATTACHMENTS TO BE PLATED, GALV OR PAINTED. PROVIDE ISOLATION OF PIPING OF DISSIMILAR MATERIALS. MAX SPACING FOR SUPPORTS TO BE 12'.
4. CONTRACTOR TO COORDINATE CONNECTION OF GAS SERVICE W/ GAS COMPANY BEFORE INSTALLATION.
5. PROVIDE GAS COCK & REGULATOR AT EACH UNIT

GAS PIPING DESIGN SCHEDULE

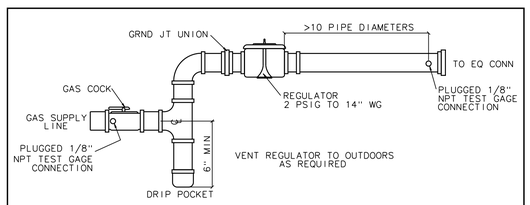
SERVICE TYPE	SYSTEM PRESSURE	PRESSURE DROP	INPUT CAPACITY	
LP	11.0 IN. W.C.	0.5 IN. W.C.	200 MBH	79 CFH

PIPING MATERIAL: SCHED 40 BLK STL
DEVELOPED LENGTH: 91'
SIZING METHOD: BRANCH LENGTH METHOD
REQ'D HEADER SIZE: 1/2"
SPACE HTG LOAD: 200 MBH
WATER HTR LOAD: –

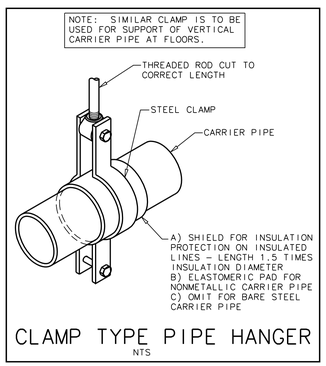


SET PIPE SUPPORTS AT 10' MAX SPACING

ROOFTOP PIPE SUPPORT DETAIL



EQUIPMENT GAS CONNECTION

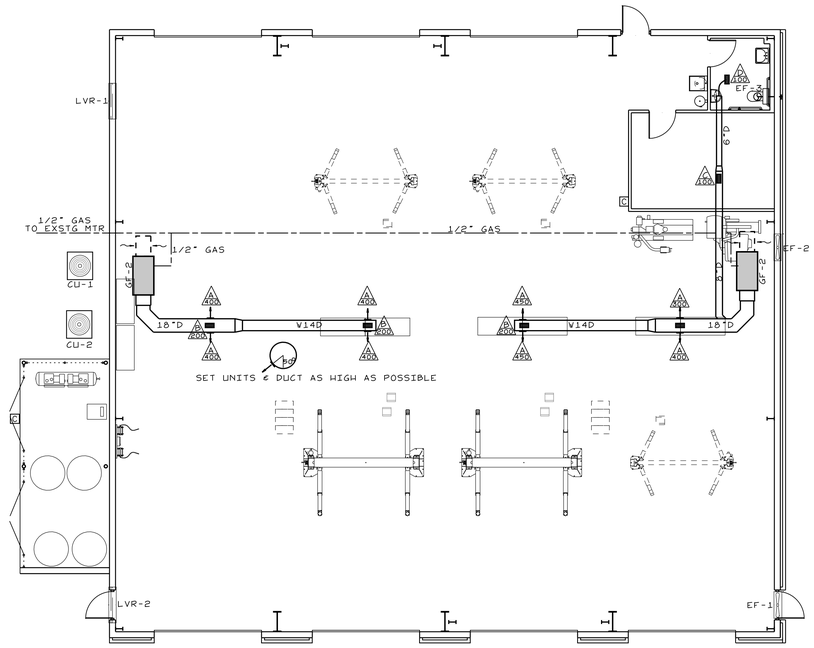


CLAMP TYPE PIPE HANGER

NTS

MECHANICAL NOTES

1. MECHANICAL PLANS ARE INTENDED TO PROVIDE INFORMATION FOR INSTALLATION OF A COMPLETE OPERATING MECHANICAL SYSTEM. PROVIDE ALL ESSENTIAL LABOR, MATERIALS & DEVICES REQUIRED TO PRODUCE A QUALITY END PRODUCT.
2. CONTRACTOR SHALL REVIEW & BECOME FAMILIAR WITH THE WORK OF ALL TRADES FOR PURPOSES OF COORDINATION AND ROUTING. CONTRACTOR SHALL PROVIDE REQUIRED PLANNING, COORDINATION AND SEQUENCING OF HVAC INSTALLATION WITH BUILDING COMPONENTS AND OTHER TRADES.
3. ALL WORK SHALL COMPLY WITH LOCAL, STATE & NATIONAL CODES. WORKMANSHIP SHALL MEET OR EXCEED INDUSTRY STANDARDS.
4. THE M.C. IS RESPONSIBLE FOR COORDINATION OF ALL COMPONETS OF THE SYSTEMS W/ ALL TRADES & BUILDING COMPONENTS. PROVIDE ALL BENDS, OFFSETS, ELBOWS ETC. AS REQUIRED.
5. FABRICATE AND INSTALL DUCT PER SMACNA STANDARDS FOR 2-INCH WC WITH GALVANIZED METAL (26 GAUGE MINIMUM). ALL RADIUS ELBOWS & TEES SHALL HAVE CENTERLINE RADIUS OF 1.5 X DUCT WIDTH. ALL SQUARE ELBOWS & TEES SHALL HAVE TURNING VANES. PRIOR TO FABRICATION, MECHANICAL CONTRACTOR SHALL FIELD VERIFY STRUCTURAL OBSTRUCTIONS & CEILING SPACE LIMITATIONS AND MAKE NECESSARY DUCT MODIFICATIONS INCLUDING CHANGING OF ASPECT RATIOS, ADDING OFFSETS, AND SHIFTING LOCATIONS. PROTECT DUCT BY STORING IN A CLEAN AND DRY ENVIRONMENT PRIOR TO INSTALLATION. COVER ENDS OF EXPOSED WORK AT THE END OF EVERY SHIFT.
6. ALL DUCT JOINTS, SEAMS & BRANCH TAKEOFFS SHALL BE SEALED AIR-TIGHT WITH DUCT SEALANT EQUAL TO HARDCAST IRON-GRIP OR FOIL-GRIP TAPE EQUAL TO HARDCAST AFG-1402.
7. ROUND RUNOUTS SHALL HAVE SPIN-INS WITH DAMPERS, RECTANGULAR BRANCH DUCTS SHALL HAVE 45 DEGREE TAPS WITH AIR EXTRACTORS AND ALL TEES SHALL HAVE SPLITTER DAMPERS. PROVIDE ANY OTHER DEVICES REQUIRED TO BALANCE AIR SYSTEM.
8. FLEX DUCT SHALL HAVE METALIZED VAPOR BARRIER WITH MIN. R-VALUE OF 6.5. BOTH ENDS SHALL BE SECURED WITH NYLON BANDS AND METALIZED DUCT TAPE PER MFG'S RECOMMENDATIONS & IN ACCORDANCE WITH U.L. 181B. ALL BENDS ARE TO BE GREATER OR EQUAL TO ONE DUCT DIAMETER. PROVIDE 1.5" WIDE STAPS AT A MAX OF 4'OC. LIMIT SAG TO 1/2" PER FOOT. MAXIMUM LENGTH TO BE 8'.
9. RIGID ROUND AND RECTANGULAR DUCT SHALL BE EXTERNALLY INSULATED WITH 2-INCH THICK 3/4 LB. DENSITY FIBERGLASS BLANKET WITH FSK VAPOR BARRIER AND A MIN. R-VALUE OF 6.5. STAPLE AND SEAL ALL JOINTS WITH 4-INCH WIDE METALIZED DUCT TAPE EQUAL TO SHURTAPE SF-683
10. EXPOSED DUCTWORK TO BE INSULATED DOUBLE WALL SPIRAL DUCT W/ PAINT GRIP – PAINT WHITE
11. INSULATE & SEAL ALL GRILLE & DIFFUSER NECKS TO MAINTAIN VAPOR BARRIER AND ELIMINATE CONDENSATION.
12. CONDENSATE TRAPS FOR ALL AC UNITS SHALL BE SIZED AS RECOMMENDED BY UNIT MFG. CONDENSATE PIPING AND TRAPS SHALL BE SCHEDULE 40 PVC ROUTED TO DRYWELL OR STORM DRAIN. INSULATE INTERIOR PIPING WITH 1/2 INCH THICK UNICELLULAR INSULATION.
13. REFRIGERANT PIPING SHALL BE TYPE ACR COPPER WITH SILVER SOLDERED JOINTS. INSTALL PER EQUIPMENT INSTALLATION INSTRUCTIONS. INSULATION SHALL BE 1-INCH THICK MINIMUM.
14. ALL PIPING SHALL BE SUPPORTED & SECURED WITH SUITABLE HANGERS, STRAPS OR PIPE STANDS. SUPPORT WITH NO DROOPS OR SAGS. ALL HANGERS AND ATTACHMENTS SHALL BE PLATED, GALVANIZED OR PAINTED. PROVIDE ISOLATION ON PIPING OF DISSIMILIAR MATERIALS.
15. PIPE INSULATION SHALL BE FIBERGLASS WITH FOIL AND PAPER JACKET. INSULATION ON PIPING 1" & SMALLER SHALL BE 1-INCH THICK; 1 1/4" TO 2" SHALL BE 1 1/2-INCH THICK & 2 1/2" & LARGER SHALL BE 2-INCH THICK. MAINTAIN VAPOR BARRIER ON ALL COLD PIPING.
16. POWER WIRING, DISCONNECTS & STARTERS NOT FURNISHED WITH HVAC EQUIPMENT AND FINAL CONNECTIONS SHALL BE BY THE E.C.
17. CONTROL WIRING, RELAYS AND INTERLOCKING DEVICES SHALL BE PROVIDED BY THE M.C.
18. PROVIDE HVAC UNITS W/ HONEYWELL TH8320R1003 VISIONPRO HEAT/COOL DIGITAL THERMOSTAT.
19. INSTALL EQUIPMENT TO FACILITATE SERVICING, MAINTENANCE & REPAIR IN ACCORDANCE WITH MANUFACTURE'S INSTALLATION INSTRUCTIONS AS WELL AS SPECIFIC INSTRUCTIONS ON PLANS.
20. PROVIDE FLEX CONNECTORS AT ALL DUCT TO EQUIPMENT CONNECTIONS NOT HAVING INTERNALLY ISOLATED FANS.
21. CONTRACTOR SHALL BALANCE AIR SYSTEM TO QUANTITIES INDICATED ON PLANS AND PROVIDE TYPE WRITTEN REPORT WITH O&M MANUALS.
22. ALL EQUIPMENT & SYSTEMS SHALL BE WASHED, MECHANICAL AREAS CLEANED AND PAINTED SURFACES TOUCHED UP TO MATCH FACTORY APPLIED FINISHES. ALL DUCT SYSTEMS AND AIR HANDLERS SHALL BE VACUUM AND WIPED CLEAN ON THE INSIDE PRIOR TO TURNING THE PROJECT OVER TO THE OWNER. SYSTEMS THAT HAVE NOT BEEN ADEQUATELY PROTECTED DURING INSTALLATION WILL REQUIRE CLEANING AGAIN AT THE END OF THE PROJECT.
23. CONTRACTOR SHALL INSTALL A NEW SET OF PLEATED FILTERS BEFORE TURNING BUILDING OVER TO OWNER.
24. CONTRACTOR SHALL PROVIDE BUILDING OWNER WITH A COMPLETE OPERATING & MAINTENANCE MANUAL INCLUDING EQUIPMENT BASIC DATA, CONTROL INFORMATION, ROUTINE MAINTENANCE ACTIONS AND SERVICE AGENCIES NAME, PHONE NUMBER & ADDRESS.
25. GUARANTEE ALL EQUIPMENT, MATERIALS AND INSTALLATION FREE OF DEFECTS FOR A PERIOD OF 1-YEAR AFTER DATE OF ACCEPTANCE. EXTENDED GUARANTEES ON EQUIPMENT SHALL BE AS PUBLISHED ON MANUFACTURER'S EXTENDED WARRANTIES.
26. THE INTENT OF THESE PLANS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE OPERABLE HVAC SYSTEM. THE HVAC CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO BIDDING IF UNABLE TO PROVIDE A COMPLETE SYSTEM DUE TO CONFLICTS, ERRORS, OR OMMISIONS. IF THERE ARE CONFLICTS W/ LOCAL, STATE OR NATIONAL CODES, SUCH CODES SHALL HAVE PRECEDENCE OVER THE PLANS & SPECS & THE HVAC CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO BIDDING. ALL NOTIFICATIONS IN WRITING.



HVAC/GAS PLAN

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

OUTDOOR AIR VENTILATION REQUIREMENTS – REPAIR GARAGE
5000 SF @ .75 CFM/SF = 3750 MIN CFMS
TIE EACH EF TOGETHER W/ 1 MOTORIZED LOUVER & 1 CO DETECTOR
PROVIDE CARBON MONOXIDE SENSORS SET TO ACTIVATE FANS UPON CO LEVELS ABOVE 25 PPM. CARBON MONOXIDE SENSORS INSTALLED IN ACCORDANCE W/ MANUFACTURER'S RECOMMENDATIONS.
EXHAUST FANS TO HAVE MANUAL ON/OFF SWITCHES
MAINTENANCE SHOP SHALL BE EQUIPPED WITH AN EXHAUST PORTS IN OHDS

EXHAUST FAN SCHEDULE

UNIT #	MANUF	MOD #	CFMS	NOTES
EF-1,2	DAYTON	1HLA8	2450	115V - 1/4 HP
EF-3	BROAN	QTXE080	80	115V

EF-1,2 W/ INSECT SCREEN & HOUSING
LVRS TO BE 30X36

C CARBON MONOXIDE DETECTOR ACME ENG. - UNISET STAND-ALONE GAS MONITOR

HVAC EQUIPMENT & ELECTRICAL SCHEDULE

UNIT #	DESCRIPTION	COOLING EFFICIENCY	HEATING EFFICIENCY	CLG OUTPUT	HTG OUTPUT	CFMS AT 0.5 ESP	O.S. AIR	MANUF	MODEL #	M.C.A.	FUSE SIZE	VOLTAGE AMPS
GF-1,2	5 TON GAS FURNACE W/ COOLING COIL		AFUE=96		96,000	2000	200	TRANE	TUH2C100A9V5VB	17	20	110/1
CU-1,2	5 TON COND UNIT	14 SEER		60,000				TRANE	4TT4060L1000A	31	50	208/1

VENT GFS THRU WALL

AIR DISTRIBUTION SCHEDULE

MARK	TYPE	FACE	PATTERN	MTRL	FINISH	MFG	MODEL
A	SPIRAL SUPPLY	18X8	4-WAY	STL	WHITE	H&C	SVH
B	SPIRAL SUPPLY	14X8	4-WAY	STL	WHITE	H&C	SVH
C	SPIRAL SUPPLY	12X8	4-WAY	STL	WHITE	H&C	SVH
D	CLG GRILLE	12X6	4-WAY	ALUM	WHITE	H&C	VH

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Phone: 919.736.2141
Corporate license # C-2241

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024916 4-23-24 JOEL T. SMITH JR.

REVISIONS

JOHN HIESTER CHEVROLET
COMMERCIAL TRUCK
REPAIR GARAGE
LILLINGTON, N.C.

PROJECT NO: 23005
DRAWN BY: JL
DATE: 11/30/2023

HVAC/GAS PLAN

M–1

PANEL A

POLES	AMP RATE	WIRE SIZE	BRANCH CIRCUIT	VOLT AMPS	CKT	L-1	L-2	L-3	CKT	VOLT AMPS	BRANCH CIRCUIT	WIRE SIZE	AMP RATE	POLES
2	30	10	LIFT-1	2540	1	3840			2	1300	LGTS- INTERIOR	12	20	1
			|	2540	3		4040		4	1500	LGTS- INTERIOR	12	20	1
2	30	10	LIFT-2	2540	5			3690	6	1150	LGTS- INTERIOR	12	20	1
			|	2540	7	3480			8	940	LGTS- EXTERIOR	12	20	1
2	20	12	LIFT-3 - FUTURE	1350	9		1710		10	360	RCTS- LIFT 1,2	12	20	1
			|	1350	11			1710	12	360	RCTS- LIFT 3,4	12	20	1
2	20	12	LIFT-4 - FUTURE	1350	13	2250			14	900	RCTS- SHOP/EXT	12	20	1
			|	1350	15		2250		16	900	RCTS- SHOP/EXT	12	20	1
2	20	12	LIFT-5 - FUTURE	1350	17			2070	18	720	RCTS- SHOP	12	20	1
			|	1350	19	1890			20	540	RCTS- SHOP/TOOLS	12	20	1
2	20	12	TIRE CHANGER	1670	21		2210		22	540	RCTS- TOOLS/OIL	12	20	1
			|	1670	23			2990	24	1320	OHD-1	12	20	1
2	20	12	WHEEL BALANCER	1040	25	2360			26	1320	OHD-2	12	20	1
			|	1040	27		2360		28	1320	OHD-3	12	20	1
3	50	6	AIR COMPRESSOR	6000	29			7320	30	1320	OHD-4	12	20	1
			|	6000	31	7320			32	1320	OHD-5	12	20	1
			|	6000	33		7320		34	1320	OHD-6	12	20	1
3	50	6	AIR COMPRESSOR	6000	35			7320	36	1320	OHD-7	12	20	1
			|	6000	37	7060			38	1060	EF-1&2 + LVRS	12	20	1
			|	6000	39		6000		40		SPARE		20	1
1	20	12	DRYER	1080	41			1480	42	400	TANK MONITOR	12	15	1
					43	1650			44	1650	WATER WTR	12	20	1
					45				46					
					47				48					
					49				50					
					51				52					
					53				54					
					55				56					
					57				58					
					59				60					
2	50		CU-1	3230	61	3230			62					
			|	3230	63		3230		64				
2	50		CU-2	3230	65			3230	66					
			|	3230	67	3230			68				
1	20	12	GF-1	1500	69		7300		70	5800	EV CHARGING STATION	6	60	2
1	20	12	GF-2	1500	71			7300	72	5800				
						36310	37050	37110						

BUS RATING	400A
MAINS	400A
VOLTS	120/208
PHASE	3
WIRE	4
	COPPER BUSES
	COPPER NEUTRALS
	AIC = 22,000

DESCRIPTION	DEMAND FACTOR	CONNECTED KVA	DEMAND KVA
LIGHTS	125%	4.9	6.2
RECEPT	100%/50%	4.3	4.3
SHOP EQUIP	65%	61.2	39.8
EV CHARGER	80%	11.6	9.3
MOTORS	100%	10.3	10.3
HVAC	100%	19.9	19.9
WATER WTR	100%	1.7	1.7
DIVERSIFIED MAX LOAD =			87.5 KVA
MAX AMPERAGE =			242.9 AMPS

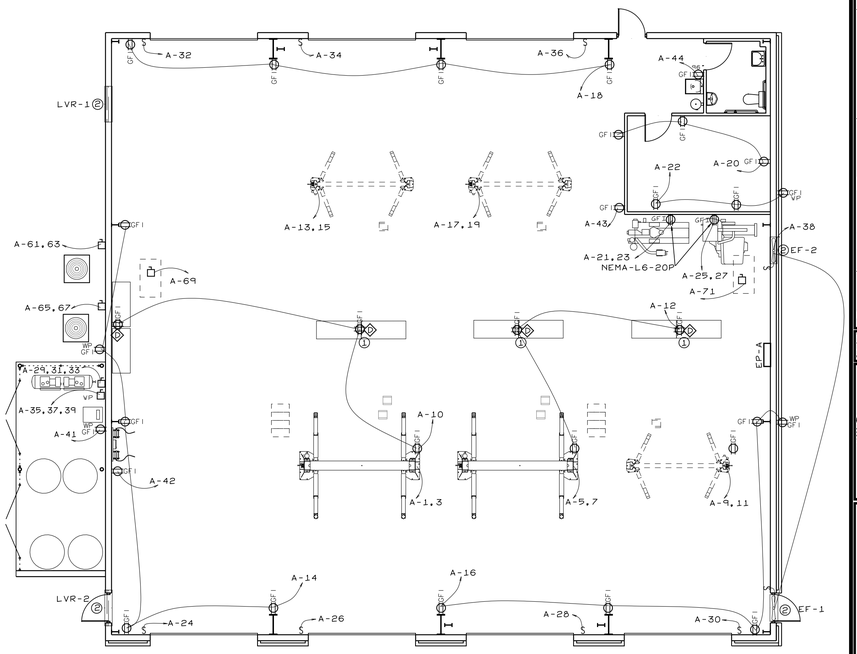
SURFACE MTD	X
FLUSH MTD	
S/N BAR	X
GRND BAR	X

MANUFACTURER	SQUARE D
MODEL NO.	NQOB
EQUAL MFR.	GE OR WESTINGHOUSE

VERIFY BREAKER SIZE FOR SHOP EQUIP W/ OWNERS EQUIP SUPPLIER

ELECTRICAL NOTES

1. ELECTRICAL PLANS ARE INTENDED TO PROVIDE INFORMATION FOR INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM. PROVIDE ALL ESSENTIAL LABOR, MATERIALS & DEVICES REQUIRED TO PRODUCE A QUALITY END PRODUCT.
2. CONTRACTOR SHALL REVIEW & BECOME FAMILIAR WITH THE WORK OF ALL TRADES FOR PURPOSES OF COORDINATION AND ROUTING. CONTRACTOR SHALL PROVIDE REQUIRED PLANNING, COORDINATION AND SEQUENCING OF ELECTRICAL INSTALLATION WITH BUILDING COMPONENTS AND OTHER TRADES.
3. ALL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC). WORKMANSHIP SHALL MEET OR EXCEED INDUSTRY STANDARDS.
4. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL DISCONNECTS, STARTERS, DEVICES AND ELECTRICAL COMPONENTS UNLESS SPECIFICALLY NOTED AS PROVIDED BY OTHERS.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LINE AND LOAD SIDE WIRING INCLUDING ALL TERMINATIONS TO EQUIPMENT PROVIDED UNDER OTHER TRADES. POWER WIRING TO CONTROL DEVICES SHALL BE PROVIDE BY E.C.. INTERLOCK WIRING SHALL BE PROVIDED BY THE CONTRACTOR INSTALLING THE CONTROL DEVICE.
6. ALL WIRING, PANELBOARDS, DEVICES AND OTHER LIKE MATERIALS SHALL BE UL LISTED & LABELED. ALL MATERIALS SHALL MEET THE NEC FOR THE INTENDED USE AND INSTALLED IN ACCORDANCE WITH THE NEC.
7. PROVIDE THHN/THWN COPPER WIRE. PROVIDE A MINIMUM WIRE SIZE OF #12. ALL WIRE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS AND CONDUIT ON PLANS AND SCHEDULES REFLECT AMPACITIES PER NEC 310-16 75C RATING. CONTRACTOR SHALL VERIFY ALL TERMINATIONS, LUGS, ETC. ARE RATED FOR USE PER NEC 110-4C. OTHERWISE PROVIDE CONDUCTOR AND CONDUIT SIZED PER LOWEST TEMPERATURE RATING OF ANY TERMINATION WITHIN A CIRCUIT. A SEPERATE INSULATED EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED FOR ALL CIRCUITS. MC CABLE PERMITTED IN CONCEALED SPACES.
9. PROVIDE 3/4-INCH EMPTY CONDUITS EXTENDING ABOVE CEILING FOR ALL TELEPHONE AND DATA OUTLETS SHOWN ON PLANS. PROVIDE PROTECTIVE BUSHINGS ON ENDS OF CONDUIT. ALL CABLING IS PROVIDED BY OTHERS.
10. PROVIDE 3/4-INCH EMPTY CONDUITS TERMINATING ABOVE THE CEILING FOR ALL HVAC THERMOSTATS. JUNCTION BOXES SHALL MATCH ORIENTATION OF THERMOSTATS PROVIDED BY M.C.. MOUNT JUNCTION BOXES 48-INCHES A.F.F. UNLESS NOTED OTHERWISE. PROVIDE PROTECTIVE BUSHINGS ON ENDS OF CONDUIT. ALSO
11. PANELBOARDS FOR SERVICE ENTRANCE SHALL BE SERVICE ENTRANCE RATED. PROVIDE NEMA 3R PANELBOARDS WHERE LOCATED OUTSIDE. PROVIDE NEUTRAL AND GROUNDING BARS IN ALL PANELBOARDS UNLESS NOTED OTHERWISE. GROUND ALL SERVICE ENTRANCE PANELS IN ACCORDANCE WITH THE NEC. PROVIDE BOLT-IN BREAKERS UNLESS NOTED OTHERWISE.
12. PROVIDE TYPE WRITTEN PANEL SCHEDULES IN EACH PANEL INDICATING THE LOAD DESCRIPTION FOR EACH BREAKER. LABEL PANELS ON PANEL FACE WITH PHENOLIC LABELS INDICATING PANEL NUMBER OR LETTER DESIGNATION, VOLTAGE AND PHASE.
13. PROVIDE HEAVY DUTY FUSED AND NON-FUSED DISCONNECT SWITCHES AS INDICATED ON PLANS. DISCONNECTS LOCATED OUTSIDE SHALL BE NEMA-3R. PROVIDE REJECTION CLIPS IN FUSED DISCONNECTS.
14. PROVIDE LIGHTING AS SCHEDULED IN THE FIXTURE SCHEDULE OR OTHERWISE NOTED ON PLANS. LIGHTING INSTALLED IN SUSPENDED CEILINGS SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING GRID SYSTEM.
15. PROVIDE EMERGENCY AND EXIT LIGHTS AS SHOWN ON PLANS. POWER SHALL BE PROVIDED FROM LIGHTING CIRCUITS ON THE UNSWITCHED LEG OF THE CIRCUIT SUCH THAT POWER TO THE EMERGENCY AND EXIT LIGHTS IS NOT DISCONNECTED WHEN NORMAL LIGHTING IS OFF. EXTERIOR EMERGENCY LIGHTS SHALL BE WIRED SUCH THAT PHOTOCELL AND/OR TIME CLOCK OPERATION DOES NOT DISCONNECT POWER TO BATTERIES.
16. RECEPTACLES SHALL BE 20 AMP, 120V UNLESS NOTED OTHERWISE.
17. RECEPTACLES ABOVE COUNTERTOPS AND ADJACENT TO SINKS, LAVATORIES & EWCS SHALL BE GROUND FAULT. KITCHEN, SERV DEPT, WASH BAYS & SERV DRIVE THRU RECEPTACLES SHALL BE GROUND FAULT.
18. RECEPTACLES INSTALLED OUTSIDE SHALL BE GROUND FAULT WITH "IN USE" WEATHERPROOF COVERS.
19. PROVIDE STANDARD SIZE WALL PLATES FOR ALL DEVICES AND BLANK WALL PLATES FOR JUNCTION BOXES. ALL DEVICE PLATES TO BE BRUSHED ALUMINUM FINISH.
20. ALL ELECTRICAL COMPONENTS AND FIXTURES SHALL BE CLEANED & POLISHED. PAINTED SURFACES SHALL BE TOUCHED UP TO MATCH FACTORY APPLIED FINISHES.
21. RACEWAYS SHALL BE CONCEALED IN WALL CONSTRUCTION, ABOVE CELINGS OR BELOW FLOORS TO THE GREATEST EXTENT POSSIBLE. WHERE EXPOSED MINIMIZE VERTICLE & HORIZONTAL RUNS. SET NEAT & ORDERLY.
22. ALL EXPOSED WIRING TO BE IN IMC, RMC OR EMT. ALL WIRING TO BE IN IMC, RMC, EMT OR MC FLEX.
23. PROVIDE PULL WIRES IN ALL EMPTY CONDUITS.
24. PROVIDE ADJUSTABLE LENGTH BARS FOR MOUNTING RECEPTACLES & DATA BOXES IN METAL STUD WALLS.
25. 2 OR MORE ADJACENT POWER OR COMMUNICATION RCPTS ARE TO BE GANGED W/ A COMMON FACEPLATE - IF NOT APPLICABLE, INSTALL AS CLOSE TOGETHER AS POSSIBLE.
26. ALL PENETRATIONS OF EXTERIOR WALLS, ROOFS & CEILINGS SHALL BE SEALED TO PREVENT AIR INFILTRATION
27. GUARANTEE ALL EQUIPMENT, MATERIALS AND INSTALLATION FREE OF DEFECTS FOR A PERIOD OF 1-YEAR AFTER DATE OF ACCEPTANCE.
28. E.C. TO PROVIDE ELECTRICAL HOOKUPS FOR ALL 120V OR GREATER EQUIPMENT & FIXTURES REGUARDLESS OF WHO FURNISHES THE EQUIPMENT OR FIXTURES.
29. THE INTENT OF THESE PLANS AND SPECIFICATIONS IS TO PROVIDE A COMPLETE OPERABLE ELECTRICAL DISTRIBUTION SYSTEM. THE ELECTRICAL CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO BIDDING IF UNABLE TO PROVIDE A COMPLETE SYSTEM DUE TO CONFLICTS, ERRORS, OR OMMISSIONS. FURTHER, IF THERE ARE CONFLICTS W/ LOCAL, STATE OR NATIONAL CODES, SUCH CODES SHALL HAVE PRECEDENCE OVER THE PLANS & SPECS, AND THE ELECTRICAL CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO BIDDING. ALL NOTIFICATIONS IN WRITING.



COORDINATE ALL ELECTRICAL CONNECTIONS FOR EQUIP W/ SUPPLIER

THE SERVICE DEPT IS CLASSIFIED AS CLASS 1 DIV. 2 HAZ. LOCATION FROM FLOOR LEVEL TO 18"AFF & FROM THE ROOF DECK TO 18" BELOW. ALL ELEC DEVICES IN THESE AREAS TO BE LISTED FOR SUCH USE. ANY CONDUITS PASSING THRU THESE AREAS TO WAVE SEAL OFF ASSEMBLIES.

ALL RCPTS IN SERVICE DEPT TO BE GFI
ALL RCPTS IN SERVICE DEPT TO BE 48"AFF UNLESS NOTED OTHERWISE
ALL WIRING TO BE CONCEALED IN WALL
UNLESS NOTED OTHERWISE

POWER PLAN

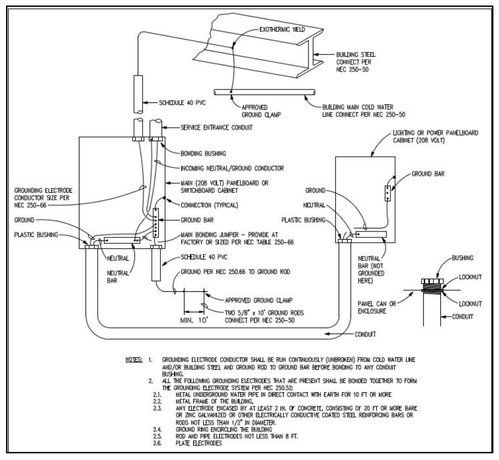
SCALE: 1/8"=1'-0"

① DROP FROM ROOF STRUCTURE
COORDINATE LOCATIONS W/ OWNER

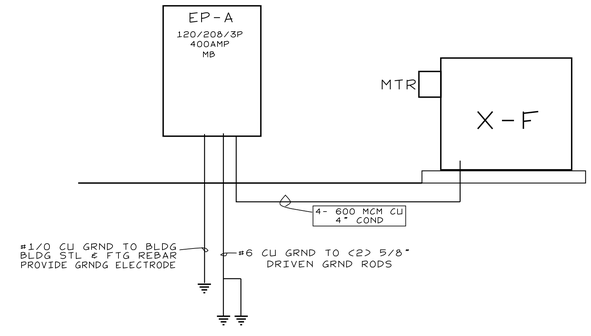
② EXHAUST FANS & LOUVERS FURNISHED & INSTALLED BY M.C. - ELEC HOOKUPS BY E.C. - WIRE LOUVERS TO EXHAUST FANS

LEGEND

- DUPLEX RECPT
- GFI DUPLEX RECPT GROUND FAULT
- VP GFI DUPLEX RECPT GROUND FAULT WEATHERPROOF COVER
- GFI 240V-208V RECPT GROUND FAULT
- J JUNCTION BOX
- HOMERUN TO PANEL
- DISCONNECT
- D DATA
- C CARBON MONOXIDE SENSOR
- S SWITCH
- S_3 3 WAY SWITCH
- OS OCUPANCY SENSOR



NOTES:
1. GROUNDING ELECTRODE CONDUCTOR SHALL BE RUN CONTINUOUSLY (UNBROKEN) FROM COLD WATER LINE AND/OR BUILDING STEEL AND GROUND ROD TO GROUND BAR BEFORE BONDING TO ANY CONDUIT BUSHING.
2. ALL THE FOLLOWING GROUNDING ELECTRODES THAT ARE PRESENT SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM PER NEC 250.52:
   2.1. METAL UNDERGROUND WATER PIPE IN DIRECT CONTACT WITH EARTH FOR 10 FT OR MORE
   2.2. METAL FRAME OF THE BUILDING.
   2.3. ANY ELECTRODE ENCASED BY AT LEAST 2 IN. OF CONCRETE, CONSISTING OF 20 FT OR MORE BARE OR ZINC GALVANIZED OR OTHER ELECTRICALLY CONDUCTIVE COATED STEEL REINFORCING BARS OR RODS NOT LESS THAN 1/2" IN DIAMETER.
   2.4. GROUND RING ENCIRCLING THE BUILDING
   2.5. ROD AND PIPE ELECTRODES NOT LESS THAN 8 FT.
   2.6. PLATE ELECTRODES



RISER DIAGRAM

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Corporate license # C-2241

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 024916 4-23-24 JOEL T. SMITH JR.

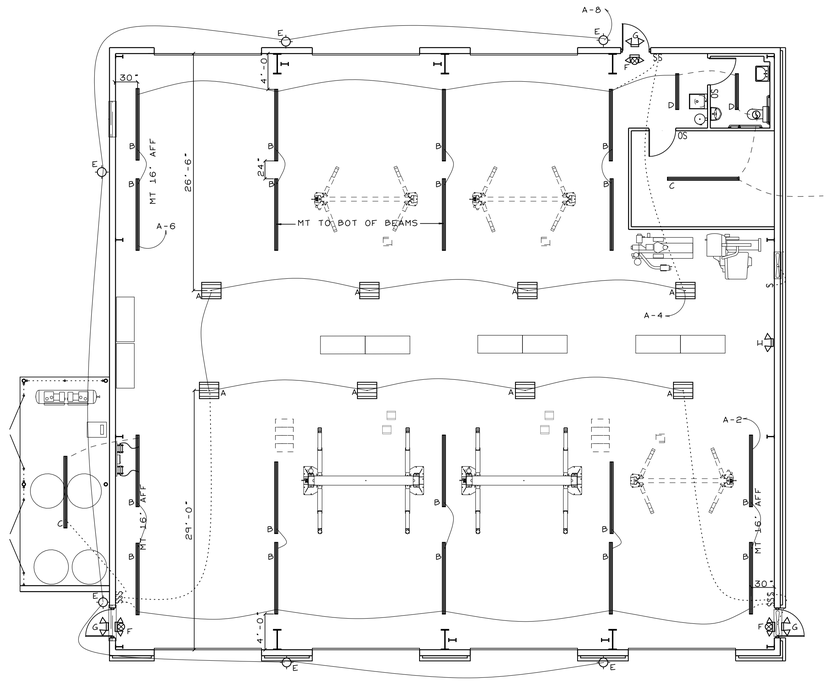
REVISIONS

JOHN HIESTER CHEVROLET
COMMERCIAL TRUCK
REPAIR GARAGE
LILLINGTON, N.C.

PROJECT NO: 23005
DRAWN BY: JL
DATE: 11/30/2023

POWER PLAN

E-1



LIGHTING PLAN

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

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUF	CATALOG NO.	LAMPS	FIXTURE WATTAGE
A	LED HIGH BAY	LITHONIA	IBG 30000LM SEF L/LENS WD MVOLT 35K 80CRI DWH	LED	188W
B	8' LED STRIP	LITHONIA	CLX L96 18000LM SEF RDL WD MVOLT 50K 80CRI WH	LED	129W
C	8' LED STRIP	LITHONIA	CLX L96 6000LM SEF RDL WD MVOLT 50K 80CRI WH	LED	38W
D	4' LED STRIP	LITHONIA	CLX L48 3000LM SEF RDL WE MVOLT 50K 80CRI WH	LED	21W
E	LED WALL PACK	LITHONIA	WDGE4LED-P5-40K-70CRI-R4-MVOLT-DNATXD	LED	156W
F	EMER/EXIT LGT	LITHONIA	ECBG LED M6		3W
G	EXT EMER LGT - REMOTE HEAD	LITHONIA	ELA LED T WP M12		1W
H	EMERGENCY LIGHT	LITHONIA	ELM2 LED		2W
I					

ALL EXT LIGHTING TO BE CONTROLLED BY PHOTOCELL & TIME CLOCK

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LIGHTING PLAN

E-2