

**TOWN OF ANGIER  
BOARD OF ADJUSTMENT  
AGENDA  
April 23, 2024  
6:30 P.M.  
Municipal Building  
28 North Raleigh Street  
Angier, North Carolina 27501**

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1. Opening
2. Pledge Of Allegiance
3. Invocation
4. Approval of Previous Meeting Minutes
5. Swearing in of Witnesses for Evidentiary Hearings
6. New Business

**A. Special Use Permit Application**

Applicant: Bleu Diamond Specialties LLC c/o Travis Bailey

Location of Property: 810 N Broad St E., Angier, NC

Special Use Request: Light Manufacturing – Cabinet Shop

7. Old Business
8. Adjournment



**Town of Angier**  
**BOARD OF ADJUSTMENT**  
**April 23, 2024**



Staff Contact: Jeff Jones (919) 639-2071 [jjones@angier.org](mailto:jjones@angier.org)

**Applicant:** **Bleu Diamond Specialties LLC c/o Travis Bailey**  
**Property Owner:** **Built to Last Family Investments LLC**  
**Location:** **350 S. Raleigh St., Angier, NC**  
**PIN #:** **0674-73-3894**

<b>Special Use Permit Request:</b>	<b>Light Manufacturing in General Commercial (GC) Zoning</b>
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### **PROJECT OVERVIEW**

The Town has received a request from Bleu Diamond Specialties LLC c/o Travis Bailey to operate a cabinet shop which is considered Light Manufacturing, located 810 N Broad St E.

A new commercial building is under construction. The property owner would like to lease this new space to cabinet manufacturing shop. The cabinet shop will comprise of a manufacturing are and a sales are for the public to buy cabinets from the shop.

*Special uses.* Board of adjustment review and approval of special use permit subject to district provisions, other applicable requirements, and conditions of approval. Some special uses may also be subject to special requirements outlined in chapter 4. There are no special requirements outlined in chapter 4 regarding light manufacturing in General Commercial zoning

*Special use permits.* The development and execution of this section is based on the division of the Town of Angier into districts within which the use of land and buildings and the bulk and location of buildings and structures in relation to the land are substantially uniform. Special uses may be established, under certain conditions and with the proper controls, in such as manner as to minimize any adverse effects. In granting approval of a special use permit, the board of adjustment shall impose such reasonable terms and conditions as it may deem necessary for the protection of the public health, general welfare, and public interest.

### **Town of Angier Comprehensive Plan**

Angier Comprehensive Plan designates these properties as ‘commercial.’

#### Commercial

Commercial land uses in the Angier planning area are concentrated in the Central Business District and in scattered commercial service areas along the existing NC 55 and NC 210 corridors. Future emphasis should be placed on:

- Preservation and development of the Central Business District.
- Control of strip development. Strip development is a mix of development, usually commercial, extending along both sides of a major street. Such areas normally include poor access management and a broad range of unrelated commercial uses.
- **In-fill development in existing commercial locations.**
- Prohibition of commercial encroachment on existing residential neighborhoods.
- Enhancement of transportation corridor appearance.

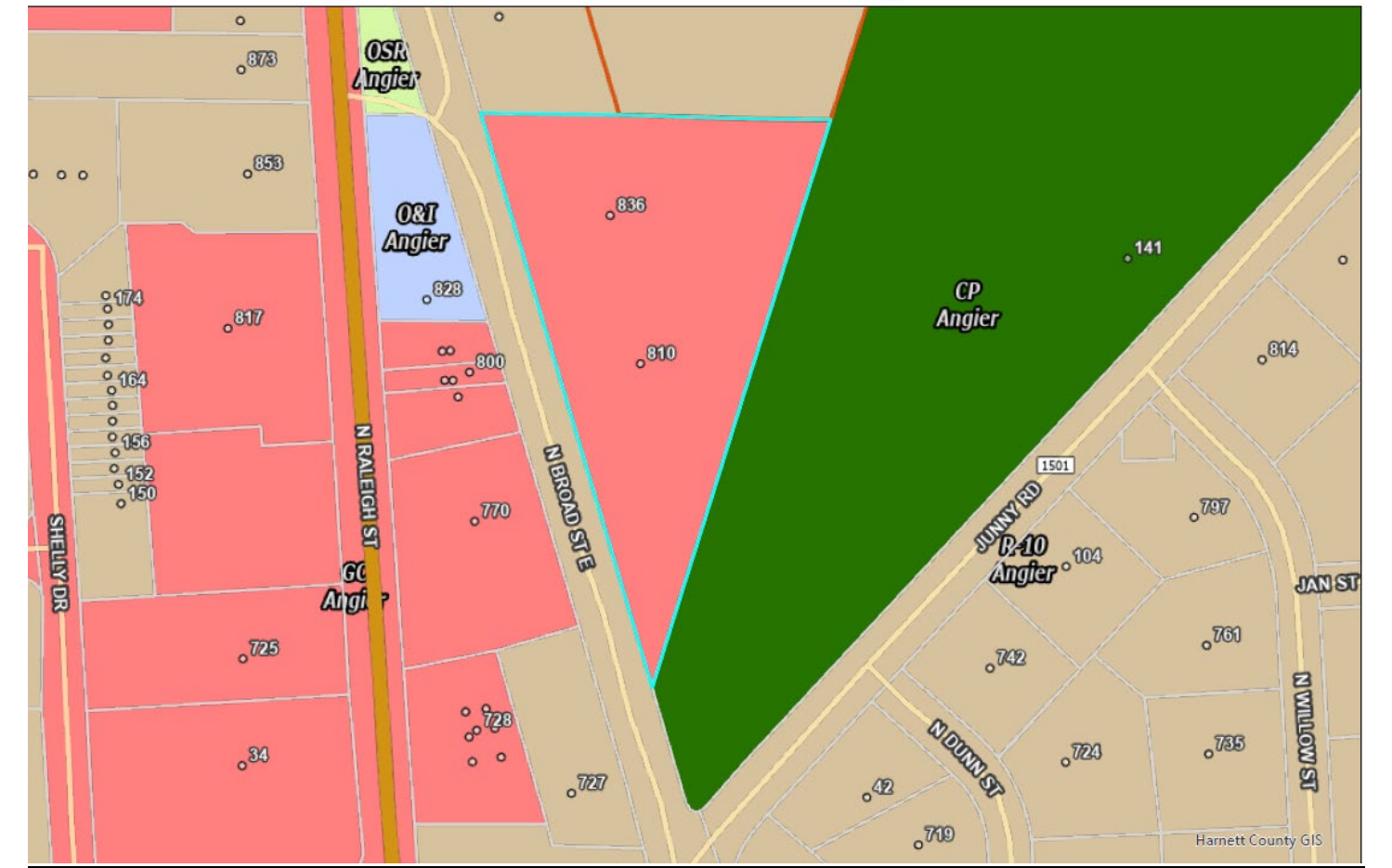
## Development Standards

No additional Development standards are listed in the Zoning Ordinance for Light Manufacturing in General Commercial Zoning District.

### Properties in Question – 3.1 Acres at 810 N Broad St. E.



## Zoning Map:



**Board Decision:**

**If Board approves Special Use Permit:**

Applicant will be allowed to proceed with upfitting commercial space with a cabinet shop. All Ordinance requirements and applicable State permitting will be required prior to construction.

### **If Board Denies Special Use Permit:**

Applicant will not be allowed to proceed with the cabinet shop





# Special Use Permit Application

Planning Department  
55 N. Broad Street W.  
P.O. Box 278, Angier, NC 27501  
Phone: (919) 639-2071 Fax: (919) 639-6130

Total Fee: **\$500.00**

Receipt: \_\_\_\_\_

Permit: \_\_\_\_\_

Date: \_\_\_\_\_

Case #: \_\_\_\_\_

## Applicant Information

### Owner of Record:

Name: BUILT TO LAST FAMILY ENVIRONMENT  
Address: 98 REGAL CREST DRIVE  
City/State/Zip: FUQUAY VARIAN NC 27526  
E-mail: Tbailey@localfirstbank.com  
Phone: 919-628-5500

### Applicant:

C/O TRAVIS B. BAILEY  
Name: BLEU DIAMOND SPECIALTIES LLC  
Address: 59 REGAL CREST DR.  
City/State/Zip: FUQUAY VARIAN NC 27526  
E-mail: Tbailey@localfirstbank.com  
Phone: 919-628-5500

## Property Description

PIN(s): 0674-73-3894 Acreage: 3.10 acres  
Address/SR No.: 836 N BRUND ST. ANGIER NC 27501  
Directions from Town Hall: LEFT ON BRUND STREET - PROPERTY ON RIGHT JUST BEFORE CONNECTION TO HWY 55  
Deed Book: 4155 Page: 2255-2258 Plat Book: \_\_\_\_\_ Page: \_\_\_\_\_  
Zoning District: \_\_\_\_\_ Township: \_\_\_\_\_  
Flood Plain & Panel: \_\_\_\_\_ Watershed Dist: NA  
Water: ☒ Public ☐ Private (Well) Sewer: ☒ Public ☐ Private (Septic Tank)

## Requested Use:

Special Use for: RESIDENTIAL + COMMERCIAL CAREER RETAIL + ASSEMBLY - LIGHT SHOP WORK WITH RETAIL SHOWROOM

## Required Information: (Applications will not be accepted without this information)

1. Is an Erosion and Sedimentation Control Plan required? ☐ No ☒ Yes  
If yes, is one on file? ☐ No ☒ Yes (Please attach a copy to your application)  
SITE PLAN APPROVED + ON FILE
2. It is recommended that all non-residential developments have preliminary discussions with NC DOT concerning driveways and other traffic issues for each project. Has this been done? ☐ No ☐ Yes  
Date of Meeting: \_\_\_\_\_ NCDOT Contact: \_\_\_\_\_  
SITE PLAN APPROVED + ON FILE
3. Is a Driveway Permit required? ☐ No ☐ Yes  
If yes, is one on file? ☐ No ☐ Yes (Please attach a copy to your application)  
SITE PLAN APPROVED + ON FILE
4. Have you contacted applicable local, state, and federal agencies regarding building, fire, and other possible code compliance issues? ☐ No ☒ Yes  
NEW CONSTRUCTION - SUBMITTING FULL BUILDING PLANS

**Sketch Plan Required:** Provide a sketch plan along with application. It is strongly encouraged that sketch plans be prepared by a NC Professional Land Surveyor and that it meet the following (as applicable):

Name of Project & Date (Including all Revision Dates)	<input checked="" type="checkbox"/>
Applicant/Owner(s) Contact Information (Name, Address, & Phone)	<input checked="" type="checkbox"/>
Surveyor/Engineer Contact Information (Name, Address, & Phone)	<input checked="" type="checkbox"/>
Parcel ID Number/Tax ID of Tract(s)	<input checked="" type="checkbox"/>
Deed Reference of Tract(s)	<input checked="" type="checkbox"/>
Zoning Classification of Tract(s)	<input checked="" type="checkbox"/>
Location (Including Township, County, & State)	<input checked="" type="checkbox"/>
Flood Plain Depicted & Noted (Zone, Map Number, & Effective Date)	<input checked="" type="checkbox"/>
Watershed District Noted & Extent of Coverage Depicted	<input checked="" type="checkbox"/>
Map Size 22" x 34" & Scale 1"=100' or Larger	<input checked="" type="checkbox"/>
North Point, Graphic Scale, & Vicinity Map	<input checked="" type="checkbox"/>
Name(s) & Location(s) of Adjacent Property Owner(s) & Use(s)	<input checked="" type="checkbox"/>
Existing Boundaries of Tract(s) Showing Bearings & Distances	<input checked="" type="checkbox"/>
Gross Acreage of Development	<input checked="" type="checkbox"/>
Name(s) & Right(s)-of-way of Streets & State Road Number(s), Including Notation of Public or Private	<input checked="" type="checkbox"/>
Name, Location, Width, & Acreage of Additional Easement(s) & Right(s)-of-way Within or Adjacent to Site	<input checked="" type="checkbox"/>
Building Envelope & Required Setbacks	<input checked="" type="checkbox"/>
Existing & Proposed Utilities	<input checked="" type="checkbox"/>
Signage Location, Easement, Type, & Size	<input checked="" type="checkbox"/>
Existing Structure(s) Located on Site	<input checked="" type="checkbox"/>
Fire Hydrant(s) & Street Light(s) Noted	<input checked="" type="checkbox"/>
Erosion Control Plan Submitted	<input checked="" type="checkbox"/>
Hours & Days of Operation	<input checked="" type="checkbox"/>
Impervious Surface (% Coverage of Lot)	<input checked="" type="checkbox"/>
Hazardous Materials to be Stored on Site	<input checked="" type="checkbox"/>
Existing & Proposed Mechanical Areas	<input checked="" type="checkbox"/>
Existing & Proposed Trash Containment Areas	<input checked="" type="checkbox"/>
Existing & Proposed Utility Areas	<input checked="" type="checkbox"/>
Parking Space Typical	<input checked="" type="checkbox"/>
Parking Lot Material	<input checked="" type="checkbox"/>
All parking areas on site (Based on Type of Business and/or Sq. Ft.)	<input checked="" type="checkbox"/>
Existing & Proposed Fencing, Screening, Gate(s) and/or Dock(s)	<input checked="" type="checkbox"/>
Spillage & Pollution Prevention & Response Methods	<input checked="" type="checkbox"/>
Buffering Regulations (Per Town of Angier Unified Development Ordinance)	<input checked="" type="checkbox"/>

## Signatures

I, as the landowner, hereby CERTIFY that the information contained herein is true to the best of my knowledge; and by accepting this Special Use Permit (if approved) shall in every respect conform to the terms of this application and to the provisions of the Statutes and Ordinances regulating development in the Town of Angier and its ETJ. Any VIOLATION of the terms above stated immediately REVOKES this Permit. I further understand this structure is not to be occupied until a CERTIFICATE OF OCCUPANCY is issued. This Permit expires 12 months (1 year) after the date the Permit is granted by the Town of Angier Board of Adjustment unless proper permits are obtained within this 12 month period.

Property Owner Signature

Date

03-28-24

## Written Statement

**\*\* Applicant is required to answer the following questions under oath at the Board of Adjustment Meeting – Please print answers \*\***

### Public Convenience & Welfare

1. Why are you requesting this use? The purpose of this use is to allow property located at 836 N Broad Street, Angier, also known as Paul Bailey Business Park, Building Pad #2 to operate as a Residential and Commercial Cabinet and Assembly Business.
2. How will this use benefit the citizens of the Town of Angier? In addition to comments referenced in section #13 on this application it is important to note that a cabinet showroom with ability to custom create selections is a business of high regard in affluent areas throughout Raleigh, Cary, Durham, etc. Other markets such as Wake County have many options related to this industry and as Angier has continued to grow, businesses such as Bleu Diamond Specialties has decided to relocate from its current location in Fuquay Varina. The benefit will allow builders working on local projects to have a resource outside of going to Wake County or Durham County. In addition citizens of Angier have the option to work with a local designer on their home or commercial building remodels.

### On-site & Surrounding Land Uses

3. How will the use you are requesting affect the surrounding properties, residents and businesses in the area? Describe in detail why and how it will or will not affect the surrounding areas? The use described in this application should only enhance the surrounding area. The building under construction in the Business Park will be formally designed for the cabinet retailer and assembly shop. There will be limited numbers of employee vehicles compared to many uses at this location so traffic will not be an issue. There will not be any overnight hours so disturbance will not be a problem for the area, and there will not be any need for large trailers or vehicles sitting around site overnight which would be an eye sore. This business will only improve on the visual view of the area and landscape along with lighting in the general area.

### Utilities, Access Roads, Drainage, etc...

4. Describe the driveway (width and surface) that you will be using to enter and exit the property. The ingress and egress was approved as a part of the site plan approval process with the planning department at the Town of Angier. (Overall Width is 24 ft. & 27.9 at the two entrance points)
5. Describe the drainage of this property. Site plan approval actually moved water from the front of the property to the rear in the process of improving flow from its current standing.
6. How is your trash and garbage going to get to the landfill? The building will have approved dumpster pad and full commercial trash service.



## **Traffic**

7. Describe the traffic conditions and sight distances at the road that serves the property. Building will be located on Broad Street at the connection of Highway 55. Site plan allows for new entrance on front side of building to control ingress and egress into site. There will be limited number of employee cars and retail traffic should mainly be based on appointment. Parking was approved as a part of site plan discussions based on flex space requirements.

8. What is the approximate distance between your driveway and the next nearest driveway or intersection? Approximately 300 ft. to Broad Street and Junny Road Intersection. Approximately same distance to secondary entrance to business park.

## **General**

9. How many employees will this development employ? The cabinet company will have 8-10 full time employees at this location.

10. What is the estimated investment of the development? The overall investment in the overall site is approximately \$1,156,209 in addition to updates to existing building in park such as painting and flooring to match new building being constructed. Total investment in excess of \$1.2 Million in property development in addition to \$200k - \$300k in equipment and showroom updates to be completed by the tenant.

11. What experience do you have in the proposed field? The owner of Bleu Diamond Specialties Mr. Jeremy Brock has 26 years in the residential and commercial cabinet field. Mr. Brock has operated his own business for over 16 years and formed Bleu Diamond Specialties in 2014.

## **Conditions**

12. State any conditions that you would be willing to consider as part of the approved Special Use Permit. Property Developer Built to Last Family Investments has agreed to work with the town in many concessions and requirements such as sidewalks from Junny Road all the way down front of property line to connection at 55 Highway. Town of Angier has agreement with site engineer, grading contractor and surveyor of the developer for reimbursement on sidewalk for land not owned by developer. Developer has worked with planning department on requirements related to brick and veneer of building as well as many site plan enhancements to improve the current condition of the site and visual aspects for the residents of Angier.

13. Additional comments the Board should consider in reviewing your application: There are a few additional comments the developer (Travis Bailey / P. Barry Bailey) & Tenant (Jeremy Brock) would like to mention. This site was formally Paul Bailey Chevrolet, then John Hiester Chevrolet and finally CCS Equipment Services. Over the years the need for the additional land related to this location as diminished given most equipment ordered at CCS is sold upon arrival. In addition the current building site just was not inviting to folks as they drove into town on 55 entering Broad Street towards the downtown district. The existing building needed updates such as paint, flooring and new HVAC units and it was time to make some decisions about the overall landscape of the site. The improvements that



were needed to be made to match the streetscape of the town were not financially feasible without adding an additional building to the site and developing what is now known as the Paul Bailey Business Park. In addition, without an additional structure the site would continue to look empty and unappealing to residents and visitors.

The current developers worked with Jeff Jones and the team in Angier to develop a site plan to meet and / or exceeds what the town was looking for to improve the overall area. This site plan will dramatically improve the ingress and egress into the town. In addition, both buildings will match in color and proximity to the street with sidewalk area making the entire area of Broad street walkable.

Lastly it was important for the developer to attract a single tenant to this location that would have a need for flex space but would add a benefit to the town that competition was not already present in addition to didn't have a need for a large laydown or storage area. Given the proximity to Broad Street it was the developers preference to not have a fenced in back yard area as ingress and egress around the building was more appealing to the visual eye coming down Broad Street. The tenant Jeremy Brock with Bleu Diamond Specialties meets or exceeds all those categories and will be a perfect neighbor to the already existing business of CCS Equipment Services. The proposed tenant will have an average cabinet job of just over \$200,000 which will bring high end client base to the Town of Angier in addition to having a cabinet line to showcase needs with a lessor budget.

It is also important to note that owner Jeremy Brock intends to get involved with the local Chamber of Commerce and the Town of Angier to help and volunteer time and efforts to continue to make this place as special as we all know that it is.

## Action by the Board of Adjustment

The Board of Adjustment shall approve, modify, or deny the Application for Special Use Permit following the Public Hearing. In granting a Special Use Permit, the Board of Adjustment shall make written findings that the applicable regulations of the district in which it is located are fulfilled. With due regard to the nature and state of all adjacent structures and uses, the district within which it is located and official plans for future development, the Board of Adjustment shall also make written findings that the following provisions are fulfilled:

- A. The requested use **will / will not** impair the integrity or character of the surrounding or adjoining districts;
- B. The requested use **will / will not** be detrimental to the health, morals or welfare;
- C. Adequate utilities, access streets, drainage, sanitation and/or other necessary facilities **have / have not** been made or are being provided;
- D. That adequate measures **have / have not** been or will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public streets; and
- E. That the Special Use **shall / shall not**, in all other respects, conform to the applicable regulations of the district in which it is located, except as such regulations may, in each instance, be modified by the Board of Adjustment .

**Note: There must be six (6) Board of Adjustment members present at the meeting to hear a request for a Special Use Permit. Six (6) out of the seven (7) board members must vote in favor of granting the Permit. If only six (6) board members are present at the meeting then all six (6) must vote in favor of granting the Permit. If five (5) or fewer members vote in favor of granting the Special Use Permit, the request is denied.**

**\*\* I have received and read the above statement:**

Signature

Date

BUILT TO LAST  
FAMILY INVESTMENTS, LLC.  
836 NORTH BROAD STREET  
ANGIER, NORTH CAROLINA 27501

CONSULTANTS:

CRUSE AND ASSOCIATES, P.A.  
414 EAST EDGERTON ST.  
DUNN, N.C. 28334  
TEL (910) 892-4429  
FAX (910) 892-5162

Index To Drawings

- CS-1 COVER SHEET & INDEX OF DRAWINGS
- BD-1 OF 1 APPENDIX B
- LS-1 OF 1 LIFE SAFETY PLAN
- F-1 OF 5 PROPOSED FLOOR PLAN & SCHEDULES
- F-2 OF 5 ELEVATIONS
- F-3 OF 5 EQUIPMENT LAYOUT PLAN
- F-4 OF 5 FOUNDATION PLAN
- F-5 OF 5 RATED PENETRATION DETAILS

PLUMBING

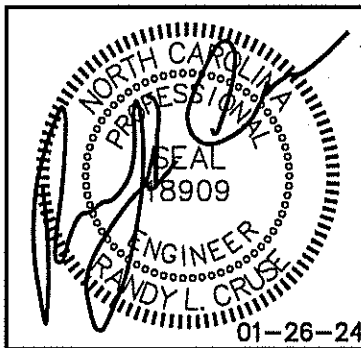
- P-1 OF 1 SUPPLY, WASTE & VENT PIPING PLAN; RISER  
DIAGRAM, NOTES, SCHEDULES

MECHANICAL

- M-1 OF 4 MECHANICAL HVAC PLAN (OFFICE)
- M-2 OF 4 MECHANICAL HVAC PLAN WAREHOUSE
- M-3 OF 4 MECHANICAL HVAC SCHEDULES & NOTES
- M-4 OF 4 MECHANICAL DETAILS, M.O.C.

ELECTRICAL

- E-1 OF 3 ELECTRICAL LIGHTING PLAN
- E-2 OF 3 ELECTRICAL POWER PLAN
- E-3 OF 3 ELECTRICAL NOTES. PANELS, RISER  
DIAGRAM



NEW BUILDING FOR:  
BUILT TO LAST FAMILY INVESTMENTS, LLC  
836 NORTH BROAD STREET  
ANGIER, NORTH CAROLINA 27501

REVISIONS	
NO.	

Cruse  
And  
Associates, P.A.

414 E. Edgerton St.  
Dunn, NC 28334  
TEL: (910) 892-4429  
FAX: (910) 892-5162

LICENSE NO.: C-1721

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DATE 01-26-24  
DRAWN BY BAM  
JOB NO. 22-61

SHEET NO.  
CS-1

2018 APPENDIX B  
BUILDING CODE SUMMARY  
FOR ALL COMMERCIAL PROJECTS  
(EXCEPT 1 AND 2 FAMILY DWELLINGS AND TOWNHOUSES)

NAME OF PROJECT: BUILT TO LAST FAMILY INVESTMENTS, LLC  
ADDRESS: 836 NORTH BROAD STREET, ANGIER, NORTH CAROLINA ZIP CODE: 27501  
OWNER/AUTHORIZED AGENT: ROBERT BAREFOOT PHONE #: (919) 237-4507 EMAIL: WRBAREFOOT@YAHOO.COM  
OWNED BY: ☐ CITY/COUNTY ☒ PRIVATE ☐ STATE  
CODE ENFORCEMENT JURISDICTION: ☒ CITY ANGIER ☐ COUNTY ☐ STATE

LEAD DESIGN PROFESSIONAL: CRUSE & ASSOCIATES, P.A.  
DESIGNER FIRM NAME LICENSE # TELEPHONE NO. E-MAIL  
ARCHITECTURAL BUILDING CRUSE & ASSOCIATES, P.A. RANDY CRUSE, PE 18909 (910) 892-4429 RCRUSE@CRUSEASSOCIATES.COM  
CIVIL CRUSE & ASSOCIATES, P.A. RANDY CRUSE, PE 18909 (910) 892-4429 RCRUSE@CRUSEASSOCIATES.COM  
ELECTRICAL CRUSE & ASSOCIATES, P.A. RANDY CRUSE, PE 18909 (910) 892-4429 RCRUSE@CRUSEASSOCIATES.COM  
FIRE ALARM CRUSE & ASSOCIATES, P.A. RANDY CRUSE, PE 18909 (910) 892-4429 RCRUSE@CRUSEASSOCIATES.COM  
MECHANICAL CRUSE & ASSOCIATES, P.A. RANDY CRUSE, PE 18909 (910) 892-4429 RCRUSE@CRUSEASSOCIATES.COM  
SPRINKLER-STANDPIPE CRUSE & ASSOCIATES, P.A. RANDY CRUSE, PE 18909 (910) 892-4429 RCRUSE@CRUSEASSOCIATES.COM  
STRUCTURAL (FOUNDATION) CRUSE & ASSOCIATES, P.A. RANDY CRUSE, PE 18909 (910) 892-4429 RCRUSE@CRUSEASSOCIATES.COM  
RETAINING WALLS >5' HIGH CRUSE & ASSOCIATES, P.A. RANDY CRUSE, PE 18909 (910) 892-4429 RCRUSE@CRUSEASSOCIATES.COM  
OTHER ASCENT BUILDINGS ROSS, RICHARDS, PE 34780 (615) 252-2880 JASON.SPEAGLE@ASCENTBUILDINGS.COM  
("OTHER" SHOULD INCLUDE FIRMS AND INDIVIDUALS SUCH AS TRUSS, PRECAST, PRE-ENGINEERED, INTERIOR DESIGNERS, ETC.)

2018 EDITION NC BUILDING CODE: ☒ NEW BUILDING ☐ ADDITION ☐ RENOVATION  
☐ 1ST TIME INTERIOR COMPLETIONS  
☐ SHELL/CORE-CONTACT THE LEAD INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES & REQUIREMENTS  
☐ PHASED CONSTRUCTION-SHELL/CORE-CONTACT THE LEAD INSPECTION JURISDICTION FOR POSSIBLE ADDITIONAL PROCEDURES & REQUIREMENTS

2018 NC EXISTING BUILDING CODE: ☐ PRESCRIPTIVE ☐ REPAIR ☐ CHAPTER 14  
ALTERATION: ☐ LEVEL I ☐ LEVEL II ☐ LEVEL III  
☐ HISTORIC PROPERTY ☐ CHANGE OF USE

CONSTRUCTED: (DATE) CURRENT OCCUPANCY(S): (CH. 3)  
RENOVATED: (DATE) PROPOSED OCCUPANCY(S) (CH. 3):  
OCCUPANCY CATEGORY (TABLE 1604.5): CURRENT: ☐ I ☐ II ☐ III ☐ IV  
PROPOSED: ☐ I ☐ II ☐ III ☐ IV

BASIC BUILDING DATA:  
CONSTRUCTION TYPE: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A  
☐ I-B ☒ II-B ☐ III-B ☐ V-B  
SPRINKLERS: ☒ NO ☐ PARTIAL ☐ YES ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D  
STANDPIPES: ☒ NO ☐ YES CLASS ☐ I ☐ II ☐ III ☐ WET ☐ DRY  
PRIMARY FIRE DISTRICT: ☒ NO ☐ YES FLOOD HAZARD AREA: ☐ NO ☐ YES  
SPECIAL INSPECTIONS REQUIRED: ☒ NO ☐ YES (CONTACT THE LOCAL INSPECTION JURISDICTION FOR ADDITIONAL PROCEDURES & REQUIREMENTS)

GROSS BUILDING AREA:  
FLOOR EXISTING (SQ FT) NEW (SQ FT) SUB-TOTAL  
3RD FLOOR  
2ND FLOOR  
MEZZANINE  
1ST FLOOR N/A 10,125 10,125  
BASEMENT  
TOTAL GROSS AREA: 10,125

ALLOWABLE AREA  
PRIMARY OCCUPANCY CLASSIFICATION(S):  
ASSEMBLY ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5  
BUSINESS ☐  
EDUCATIONAL ☐  
FACTORY ☒ F-1 MODERATE ☐ F-2 LOW  
HAZARDOUS ☐ H-1 DETONATE ☐ H-2 DEFLAGRATE ☐ H-3 COMBUST ☐ H-4 HEALTH ☐ H-5 HPM  
INSTITUTIONAL ☐ I-1 CONDITION ☐ 1 ☐ 2  
☐ I-2 CONDITION ☐ 1 ☐ 2  
☐ I-3 CONDITION ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5  
☐ I-4  
MERCANTILE  
RESIDENTIAL ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4  
STORAGE ☐ S-1 MODERATE ☐ S-2 LOW ☐ HIGH-PILED  
☐ PARKING GARAGE ☐ OPEN ☐ ENCLOSED ☐ REPAIR GARAGE  
☐ UTILITY AND MISCELLANEOUS

ACCESSORY OCCUPANCY CLASSIFICATION(S):  
INCIDENTAL USES(TABLE 509):

SPECIAL USES(CHAPTER 4-LIST CODE SECTIONS):  
SPECIAL PROVISIONS(CHAPTER 5-LIST CODE SECTIONS):

MIXED OCCUPANCY: ☒ NO ☐ YES SEPARATION: \_\_\_\_ HR. EXCEPTION: \_\_\_\_\_

☒ NON-SEPARATED USE(508.3) THE REQUIRED TYPE OF CONSTRUCTION FOR THE BUILDING SHALL BE DETERMINED BY APPLYING THE HEIGHT AND AREA LIMITATIONS FOR EACH OF THE APPLICABLE OCCUPANCIES TO THE ENTIRE BUILDING. THE MOST RESTRICTIVE TYPE OF CONSTRUCTION, SO DETERMINED, SHALL APPLY TO THE ENTIRE BUILDING.

☐ SEPARATED USE (508.4) SEE BELOW FOR AREA CALCULATIONS FOR EACH STORY, THE AREA OF THE OCCUPANCY SHALL BE SUCH THAT THE SUM OF THE RATIOS OF THE ACTUAL FLOOR AREA OF EACH USE DIVIDED BY THE ALLOWABLE FLOOR AREA FOR EACH USE SHALL NOT EXCEED 1.

ACTUAL AREA OF OCCUPANCY A  
ALLOWABLE AREA OF OCCUPANCY A + ACTUAL AREA OF OCCUPANCY B  
ALLOWABLE AREA OF OCCUPANCY B ≤ 1

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 508.2 AREA	(C) AREA FOR FRONTAGE INCREASE <sup>1,5</sup>	(D) ALLOWABLE AREA PER STORY OR UNLIMITED <sup>2,3</sup>
1	F-1	10,125	15,500	-	15,500

<sup>1</sup>FRONTAGE AREA INCREASES FROM SECTION 508.2 ARE COMPUTED THUS:

- A. PERIMETER WHICH FRONTS A PUBLIC WAY OR OPEN SPACE HAVING 20 FEET MINIMUM WIDTH = \_\_\_\_ (F)  
B. TOTAL BUILDING PERIMETER = \_\_\_\_ (P)  
C. RATIO (F/P) = \_\_\_\_ (F/P)  
D. W = MINIMUM WIDTH OF PUBLIC WAY = \_\_\_\_ (W)  
E. PERCENT OF FRONTAGE INCREASE  $I_f = 100[F/P - 0.25] \times W/30 = \_\_\_\_\_\%$

<sup>2</sup>UNLIMITED AREA APPLICABLE UNDER CONDITIONS OF SECTION 507.

<sup>3</sup>MAXIMUM BUILDING AREA = TOTAL NUMBER OF STORIES IN THE BUILDING x D (MAXIMUM 3 STORIES) (508.2).

<sup>4</sup>THE MAXIMUM AREA OF OPEN PARKING GARAGES MUST COMPLY WITH 406.5.4.

<sup>5</sup>FRONTAGE INCREASE IS BASED ON THE UNSPRINKLERED AREA VALUE IN TABLE 508.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE <sup>1</sup>
BUILDING HEIGHT IN FEET (TABLE 504.3) <sup>2</sup>	FEET 55	21'-0"	
BUILDING HEIGHT IN STORIES (TABLE 504.4) <sup>3</sup>	STORIES 2	STORIES 1	

1. PROVIDE CODE REFERENCE IF THE "SHOWN ON PLANS" QUANTITY IS NOT BASED ON TABLE 504.3 OR 504.4.  
2. THE MAXIMUM HEIGHT OF AIR TRAFFIC CONTROL TOWERS MUST COMPLY WITH TABLE 412.3.1.  
3. THE MAXIMUM HEIGHT OF OPEN PARKING GARAGES MUST COMPLY WITH TABLE 406.5.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	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	-	-	-	-	-
BEARING WALLS	-	-	-	-	-	-	-
EXTERIOR	-	-	-	-	-	-	-
NORTH	-	0	-	-	-	-	-
EAST	-	0	-	-	-	-	-
WEST	-	0	-	-	-	-	-
SOUTH	-	0	-	-	-	-	-
INTERIOR	-	0	-	-	-	-	-
NONBEARING WALLS & PARTITIONS	-	-	-	-	-	-	-
EXTERIOR	-	0	-	-	-	-	-
NORTH	-	0	-	-	-	-	-
EAST	-	0	-	-	-	-	-
WEST	-	0	-	-	-	-	-
SOUTH	-	0	-	-	-	-	-
INTERIOR	-	0	-	-	-	-	-
FLOOR CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	-	0	-	-	-	-	-
FLOOR CEILING ASSEMBLY	-	-	-	-	-	-	-
COLUMNS SUPPORTING FLOORS	-	-	-	-	-	-	-
ROOF CONSTRUCTION INCLUDING SUPPORTING BEAMS AND JOISTS	-	0	-	-	-	-	-
ROOF CEILING ASSEMBLY	-	-	-	-	-	-	-
COLUMNS SUPPORTING ROOF	-	-	-	-	-	-	-
SHAFT ENCLOSURES-EXIT	-	-	-	-	-	-	-
SHAFT ENCLOSURES-OTHER	-	-	-	-	-	-	-
CORRIDOR SEPARATION	-	0	-	-	-	-	-
OCCUPANCY SEPARATION	-	3	-	-	-	U419	-
PARTY/FIRE WALL SEPARATION	-	-	-	-	-	-	-
SMOKE BARRIER SEPARATION	-	-	-	-	-	-	-
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 (%)
30'	UP, NS	NO LIMIT	25.8%

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 #, IF PROVIDED LS-1 OF 1

ACCESSIBLE DWELLING UNITS N/A (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

ACCESSIBLE PARKING-SEE SITE PLAN (SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH 13' ACCESS AISLE	8' ACCESS AISLE	
PARKING	19	19			1	1

PLUMBING FIXTURE REQUIREMENTS (TABLE 2902.1)

USE	WATERCLOSETS			LAVATORIES			SERVICE SINK	DRINKING FOUNTAINS	
	MALE	FEMALE	UNISEX	MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE REQUIRED	1	1	-	1	1	-	1	1	1
PROVIDED	1	1	-	1	1	-	1	1	1

SPECIAL APPROVALS

SPECIAL APPROVAL: (LOCAL JURISDICTION, DEPARTMENT OF INSURANCE, OSC, DPI, DHHS, ICC, ETC., DESCRIBE BELOW)

DESIGN LOADS: STRUCTURAL DESIGN-EXISTING

SNOW (I<sub>s</sub>) 1.0  
SEISMIC (I<sub>e</sub>) 1.0

LIVE LOADS: ROOF 20 PSF  
MEZZANINE N/A PSF  
FLOOR 100 PSF

GROUND SNOW LOAD: 15 PSF

WIND LOAD: BASIC WIND SPEED 118 U.L.T. MPH (ASCE-7)  
EXPOSURE CATEGORY B

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<sub>s</sub> 0.17 %g S<sub>1</sub> 0.08 %g  
SITE CLASSIFICATION (ASCE 7): ☐ 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

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 2,000 PSF  
PILE SIZE, TYPE, AND CAPACITY

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 THE 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 PROVIDE CODE OR STATUTORY REFERENCE: \_\_\_\_\_

CLIMATE ZONE: ☐ 3A ☒ 4A ☐ 5A

METHOD OF COMPLIANCE: ENERGY CODE ☐ PERFORMANCE ☒ PRESCRIPTIVE  
ASHRAE 90.1 ☐ PERFORMANCE ☐ PRESCRIPTIVE

OTHER: ☐ PERFORMANCE (SPECIFY SOURCE) \_\_\_\_\_

THERMAL ENVELOPE (PRESCRIPTIVE METHOD ONLY)

ROOF/CEILING ASSEMBLY (EACH ASSEMBLY):  
DESCRIPTION OF ASSEMBLY PRE-ENGINEERED METAL BUILDING ROOF R-30 WITH R-5 THERMAL BLOCKS  
U-VALUE OF TOTAL ASSEMBLY 0.033  
R-VALUE OF INSULATION: R-30  
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 METAL BUILDING WALL R-19  
U-VALUE OF TOTAL ASSEMBLY 0.052  
R-VALUE OF INSULATION: R-19  
OPENINGS (WINDOWS OR DOORS WITH GLAZING) DOUBLE PANE, METAL FRAME  
U-VALUE OF ASSEMBLY 0.80 SOLAR HEAT GAIN COEFFICIENT: N/A  
PROJECTION FACTOR N/A DOOR R-VALUES 1.6

WALLS BELOW GRADE (EACH ASSEMBLY):  
DESCRIPTION OF ASSEMBLY N/A  
U-VALUE OF TOTAL ASSEMBLY N/A R-VALUE OF INSULATION: N/A

FLOORS OVER UNCONDITIONED SPACE (EACH ASSEMBLY):  
DESCRIPTION OF ASSEMBLY N/A  
U-VALUE OF TOTAL ASSEMBLY N/A R-VALUE OF INSULATION: N/A

FLOOR SLAB ON GRADE:  
DESCRIPTION OF ASSEMBLY SLAB-ON-GRADE  
R-VALUE OF INSULATION: R-15  
U-VALUE OF TOTAL ASSEMBLY 0.067  
HORIZONTAL / VERTICAL REQUIREMENT -  
SLAB HEATED ? NO

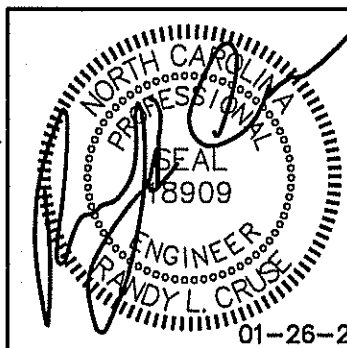
Summary:

ENERGY CODE: 2018 NORTH CAROLINA STATE BUILDING CODE: ENERGY CONSERVATION CODE  
BUILDING CODE: 2018 NORTH CAROLINA STATE BUILDING CODE: BUILDING CODE  
MECHANICAL CODE: 2018 NORTH CAROLINA STATE BUILDING CODE: MECHANICAL CODE  
PLUMBING CODE: 2018 NORTH CAROLINA STATE BUILDING CODE: PLUMBING CODE  
ELECTRICAL CODE: 2017 NATIONAL ELECTRIC CODE  
ACCESSIBILITY CODE: ICC/ANSI 117.1-2009 AMERICAN NATIONAL STANDARD ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES  
CONSTRUCTION: II-B  
OCCUPANCY: F-1

ELECTRICAL SUMMARY - SEE E SHEETS

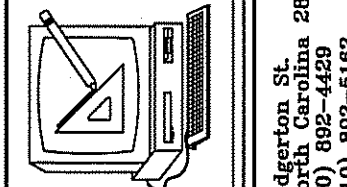
MECHANICAL SUMMARY - SEE M SHEETS

THIS FACILITY HAS NO STORAGE ABOVE 12' A.F.F. AND IS NOT INTENDED FOR USE AS VEHICLE STORAGE, PARKING GARAGE OR REPAIR GARAGE.



NEW BUILDING FOR:  
BUILT TO LAST FAMILY INVESTMENTS, LLC  
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DATE 01-26-24  
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JOB NO. 22-61

SHEET NO.  
BD-1 OF 1



EXIT REQUIREMENTS: NUMBER AND ARRANGEMENTS OF EXITS						
FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM <sup>2</sup> NO. OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS <sup>1,3</sup> (SECTION 1016-1021)	
	REQ'D.	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1017.2)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
F-1	2	2	200'	105'-5"	69'-10"	83'-5"
BUSINESS	1	1	100'	58'-3"	N/A	N/A

1. CORRIDOR DEAD ENDS (SECTION 1020.4)  
2. BUILDINGS W/SINGLE EXITS (TABLE 1006.3.2(2)), SPACES W/ONE EXIT OR EXIT ACCESS DOORWAY (TABLE 1006.2.1)  
3. COMMON PATH OF TRAVEL (SECTION 1029.8)

USE GROUP OR SPACE DESCRIPTION	(a)	(b)			(c)	EXIT WIDTH (in)			
	AREA <sup>1</sup> SQ. FT.	PER OCCUPANT (TABLE 1004.1.2)	CALCULATED OCCUPANT LOAD (a/b)		EGRESS WIDTH PER OCCUPANT (TABLE 1005.1)	REQUIRED WIDTH (SECTION 1005.1) (a/b) x c	STAIR	LEVEL	STAIR
F-1	8,725	100 GROSS	88		N/A	.2	N/A	3.6"	N/A
BUSINESS	1,400	100 GROSS	14		N/A	.2	N/A	2.8"	N/A
TOTAL	10,125		102						

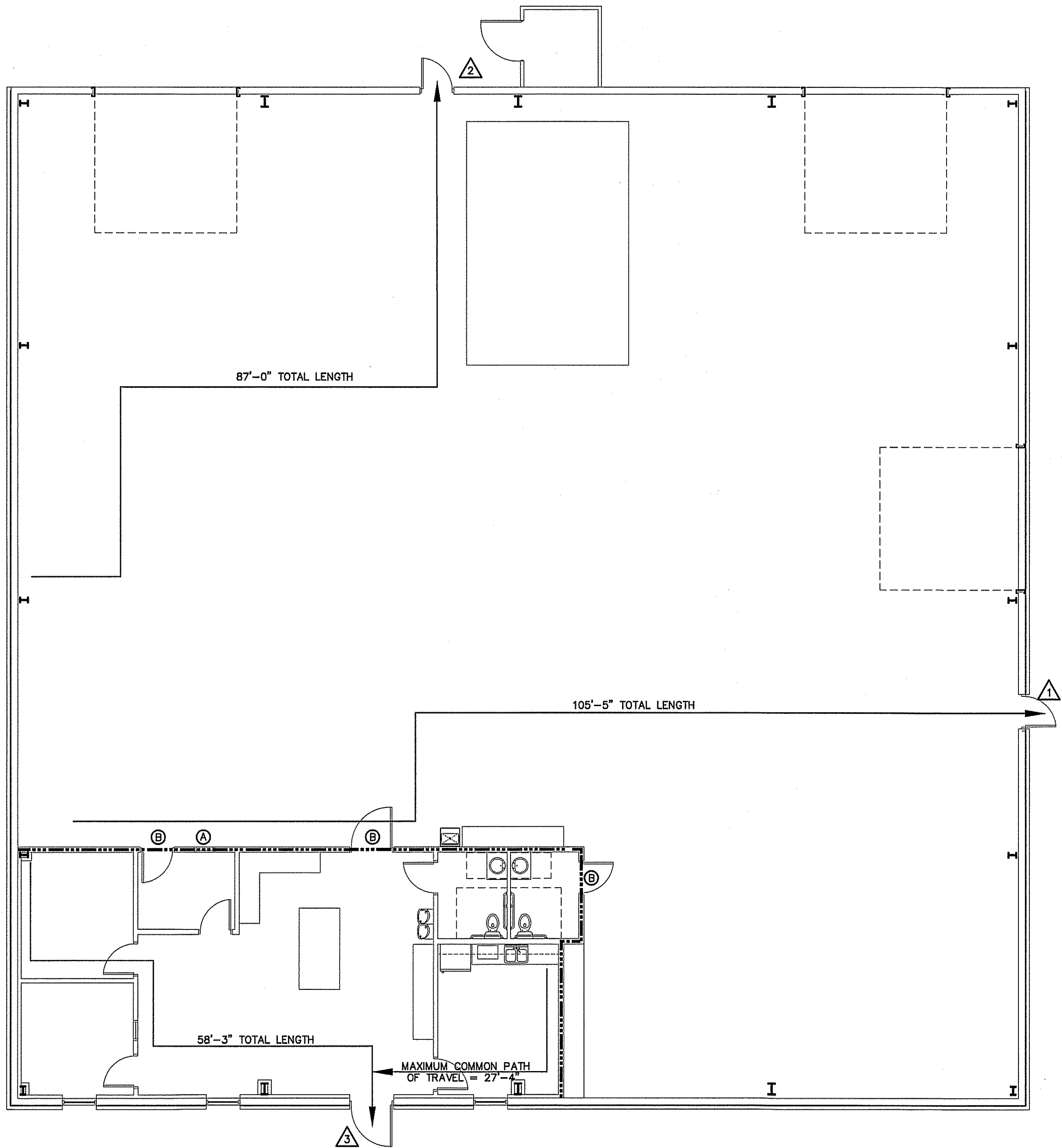
1. SEE TABLE 1004.1.2 TO DETERMINE WHETHER NET OR GROSS AREA IS APPLICABLE  
SEE DEFINITION "AREA, GROSS" AND "AREA, NET" (SECTION 1002, DEFINED IN CHAPTER 2)  
2. MINIMUM STAIRWAY WIDTH (SECTION 1011.2); MIN. CORRIDOR WIDTH (SECTION 1020.2); MIN. DOOR WIDTH (SECTION 1010.1.1)  
3. MINIMUM WIDTH OF EXIT PASSAGEWAY (SECTION 1024)  
4. SEE SECTION 1005.6 FOR CONVERGING EXITS.  
5. THE LOSS OF ONE MEANS OF EGRESS SHALL NOT REDUCE THE AVAILABLE CAPACITY TO LESS THAN 50% OF THE TOTAL REQUIRED (SECTION 1005.5)  
6. ASSEMBLY OCCUPANCIES (SECTION 1029)

- MAXIMUM CALCULATED OCCUPANT LOAD CAPACITY  
EACH EXIT DOOR CAN ACCOMMODATE BASED ON  
EGRESS WIDTH (1005.1)
- 1 35" CLEAR WIDTH DIVIDED BY .2" = 175 OCCUPANTS  
CALCULATED OCCUPANCY PER EXIT = 33 PEOPLE  
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM  
CAPACITY OF EXIT.
- 2 35" CLEAR WIDTH DIVIDED BY .2" = 175 OCCUPANTS  
CALCULATED OCCUPANCY PER EXIT = 34 PEOPLE  
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM  
CAPACITY OF EXIT.
- 3 47" CLEAR WIDTH DIVIDED BY .2" = 235 OCCUPANTS  
CALCULATED OCCUPANCY PER EXIT = 33 PEOPLE  
CALCULATED OCCUPANCY DOES NOT EXCEED MAXIMUM  
CAPACITY OF EXIT.

NOTE:  
AREA/ROOM/SPACE DESIGNATIONS USED ON  
LIFE SAFETY PLANS ARE EXCLUSIVE TO LIFE  
SAFETY PLAN ONLY, AND ARE NOT INDICATIVE  
OF ANY ACTUAL SPACE DESIGNATIONS USED  
ELSEWHERE.

LEGEND

----- 3 HOUR FIRE BARRIER U419

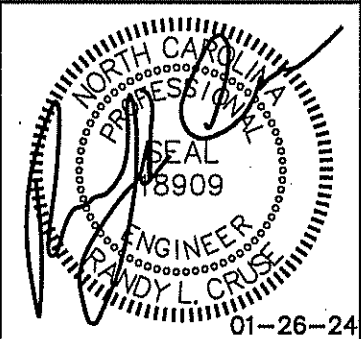


- KEYNOTE:
- A 3 HOUR FIRE SHUTTER  
B 3 HOUR RATED DOOR

LIFE SAFETY PLAN  
SCALE: 1/8" = 1'-0"

- LIFE SAFETY PLAN REQUIREMENTS:
- ☒ FIRE AND/OR SMOKE RATED WALL LOCATIONS (CHAPTER 7) - SEE NOTE 1  
☒ ASSUMED AND REAL PROPERTY LINE LOCATIONS - SEE NOTE 2  
☒ EXTERIOR WALL OPENING AREA WITH RESPECT TO DISTANCE TO ASSUMED PROPERTY LINES (705.8) - SEE NOTE 3  
☒ OCCUPANCY TYPES 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 (1006.2.1 & 1006.3.2(1))  
☒ DEAD END LENGTHS (1020.4) - SEE NOTE 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. SEE NOTE 5  
☒ LOCATION OF DOORS WITH PANIC HARDWARE (1010.1.10) - SEE NOTE 6  
☒ LOCATION OF DOORS WITH DELAYED EGRESS LOCKS AND THE AMOUNT OF DELAY (1010.1.9.7) - SEE NOTE 7  
☒ LOCATION OF DOORS WITH ELECTROMAGNETIC EGRESS LOCKS (1010.1.9.9) - SEE NOTE 7  
☒ LOCATION OF DOORS EQUIPPED WITH HOLD-OPEN DEVICES - SEE NOTE 7  
☒ LOCATION OF EMERGENCY ESCAPE WINDOWS (1030) - SEE NOTE 7  
☒ THE SQUARE FOOTAGE OF EACH FIRE AREA (202) - SEE NOTE 8  
☒ THE SQUARE FOOTAGE OF EACH SMOKE COMPARTMENT (407.5) - SEE NOTE 9  
☐ NOTE ANY CODE EXCEPTIONS OR TABLE NOTES THAT MAY HAVE BEEN UTILIZED REGARDING THE ITEMS ABOVE

- LIFE SAFETY PLAN NOTES:
1. SEE RATED WALL LEGEND.  
2. ALL ASSUMED PROPERTY LINES  $\geq 30'$   
3. ASSUMED PROPERTY LINE SEPARATION DISTANCE  $\geq 30'$ ; ALLOWED WALL OPENING AREA = UNLIMITED PER 705.8  
4. NO DEAD ENDS  
5. NO RATING REQUIRED THIS STRUCTURE  
6. PANIC HARDWARE NOT REQUIRED.  
7. NO DELAYED EGRESS LOCKS, ELECTROMAGNETIC LOCKS, HOLD OPEN DEVICES, OR EMERGENCY ESCAPE WINDOWS REQUIRED  
8. FIRE AREAS OF ADDITION DO NOT EXCEED CODE ALLOWANCE  
9. BUILDING MEETS CODE REQUIREMENTS WITHOUT SUBDIVISION INTO SMOKE COMPARTMENTS; NO SMOKE COMPARTMENTS



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SHEET NO.  
LS-1 OF 1

DOOR SCHEDULE				
DOOR NO.	DOOR SIZE			REMARKS
	WIDE	HIGH	THICK.	
001	4'-0"	7'-0"	1 3/4"	EXTERIOR METAL DOOR, HM FRAME
002	14'-0"	14'-0"	1 3/4"	OH DOOR WITH METAL FRAME
003	3'-0"	7'-0"	1 3/4"	EXTERIOR METAL DOOR, HM FRAME
004	14'-0"	14'-0"	1 3/4"	OH DOOR WITH METAL FRAME
005	14'-0"	14'-0"	1 3/4"	OH DOOR WITH METAL FRAME
006	3'-0"	7'-0"	1 3/4"	EXTERIOR METAL DOOR, HM FRAME
007	3'-0"	7'-0"	1 3/4"	INTERIOR WOOD DOOR, HM FRAME
008	3'-0"	7'-0"	1 3/4"	INTERIOR WOOD DOOR, HM FRAME
009	3'-0"	7'-0"	1 3/4"	INTERIOR METAL DOOR, HM FRAME; 3 HOUR RATED
010	3'-0"	7'-0"	1 3/4"	INTERIOR WOOD DOOR, HM FRAME
011	4'-0"	7'-0"	1 3/4"	INTERIOR METAL DOOR, HM FRAME; 3 HOUR RATED
012	3'-0"	7'-0"	1 3/4"	INTERIOR WOOD DOOR, HM FRAME
013	3'-0"	7'-0"	1 3/4"	INTERIOR METAL DOOR, HM FRAME; 3 HOUR RATED
014	3'-0"	7'-0"	1 3/4"	INTERIOR WOOD DOOR, HM FRAME
015	4'-0"	7'-0"	1 3/4"	EXTERIOR GLASS DOOR, HM FRAME

VERIFY TYPES AND SIZES WITH OWNER BEFORE ORDERING.  
PROVIDE ALL HARDWARE AS REQUIRED. ALL HARDWARE TO BE A.D.A. COMPLIANT.  
VERIFY HARDWARE FINISHES & STYLES WITH OWNER BEFORE ORDERING.  
PROVIDE CLOSERS ON ALL EXTERIOR DOORS.

#### KEY NOTES FOR SHEET F-1 OF 3:

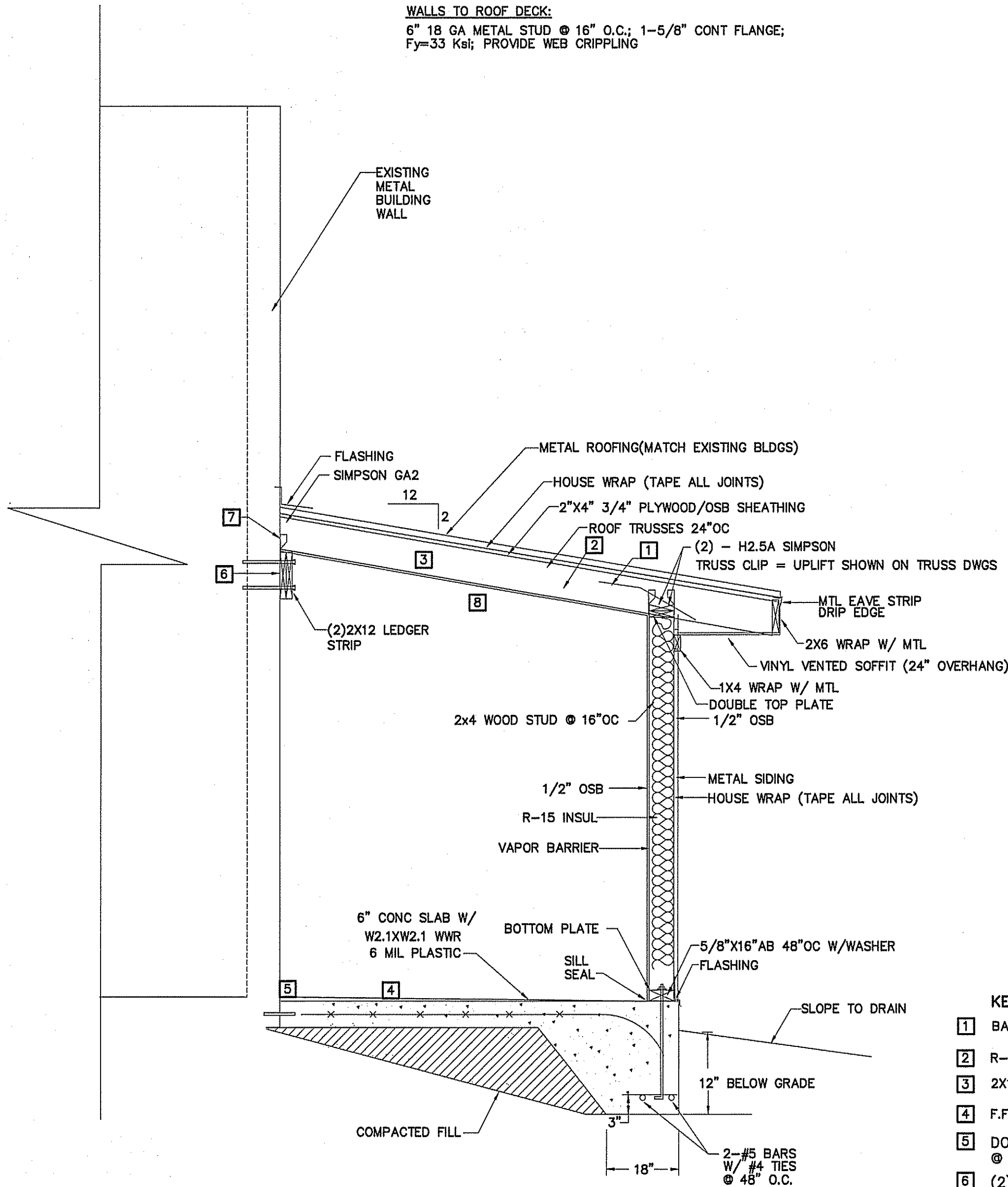
- 6" STUD WALLS EXTEND TO ROOF DECK (U419) SEE UL DETAIL. (3) LAYERS 1/2" GYPSUM
- INTERIOR OFFICE PARTITION WALLS TO BE WOOD 2"x4"x10' @ 16" O.C.
- WET WALL - 2"x6"x10' WOOD STUDS @ 16" O.C.
- INTERIOR OFFICE PARTITION WALL TO BE WOOD 2"x6"x10' @ 16" O.C.
- 2X4 FUR OUT

#### NOTES:

- PROVIDE TRACK OF SAME GAUGE AS WALL STUDS. TRACK TO BE FASTENED @ 24" O.C. MINIMUM BOTH TOP & BOTTOM.
- WALLS DESIGNED FOR MINIMUM OF 1/2" DRYWALL ON EACH SIDE OF STUD.
- RATED WALLS TO BE BUILT IN ACCORDANCE WITH UL DETAIL.
- PROVIDE LATERAL WALL BRACING/BRIDGING @ 4' O.C. VERTICALLY.
- PROVIDE AHU SERVICE PLATFORM - SHEET M-1 OF 4.

#### WALLS TO ROOF DECK:

6" 18 GA METAL STUD @ 16" O.C.; 1-5/8" CONT FLANGE;  
F<sub>y</sub>=33 Ksi; PROVIDE WEB CRIPPLING



#### BUILDING SECTION

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

#### KEY NOTES:

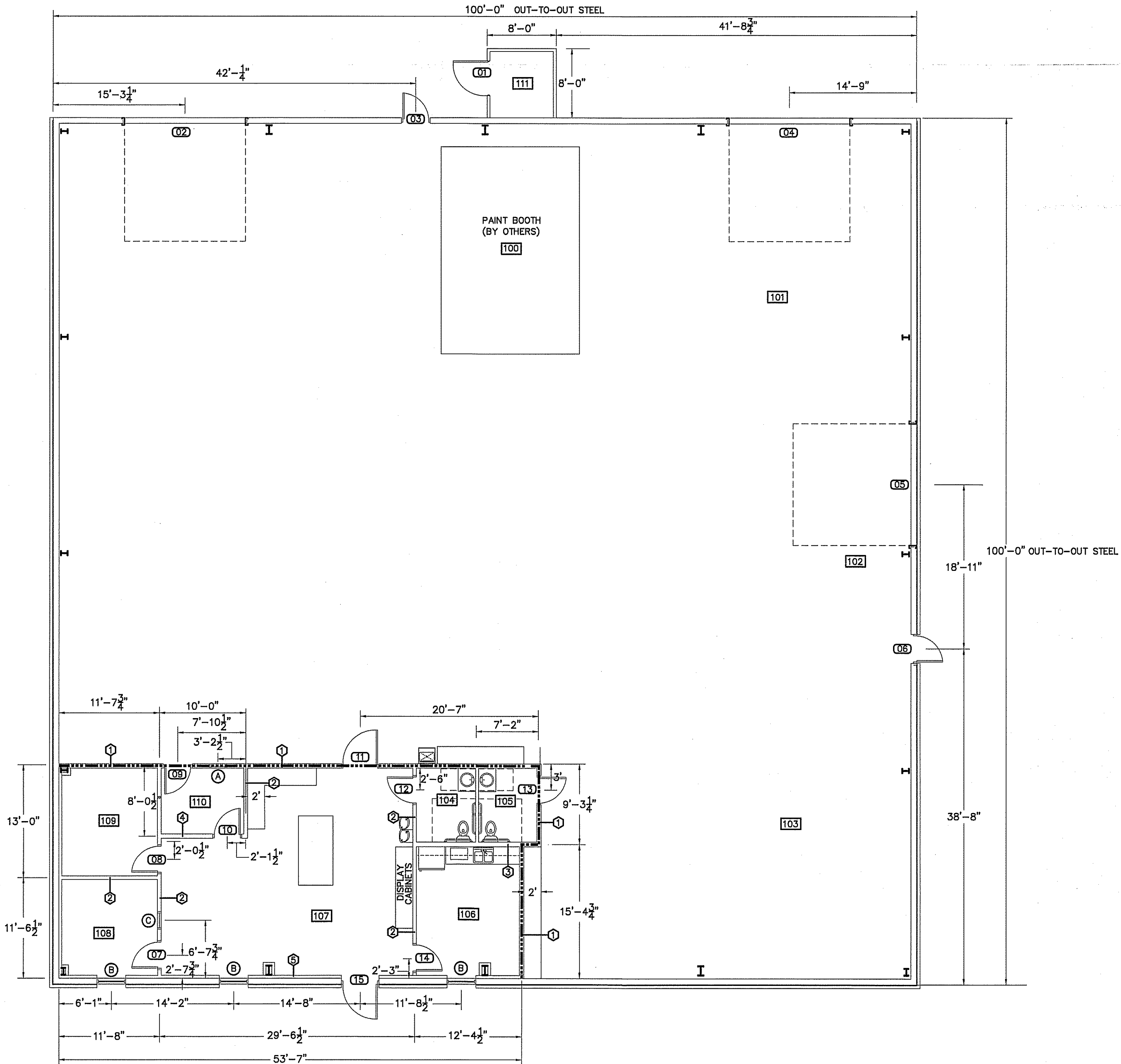
- BAFFLE
- R-30 INSULATION
- 2X10 RAFTERS @ 16" O.C.
- F.F.E. TO BE FLUSH WITH EXISTING FLOOR SLAB.
- DOWEL INTO EXISTING SLAB WITH 10", #5 BARS @ 48" O.C.
- (2) 2X12 BEAM SUPPORTED ON EACH END BY DOUBLE STUD COLUMN; BOLT THROUGH BRICK VENEER & INTO METAL BUILDING WALL WITH 1/2" DIAMETER BOLTS (2 PLACES BETWEEN END SUPPORTS)
- SIMPSON H2.5A HURRICANE CLIPS EACH RAFTER.
- 1/2" PLYWOOD CEILING

WINDOW SCHEDULE				
MARK	WINDOW SIZE		REMARKS	HEADERS
	WIDE	HIGH		
(A)	2'-0"	3'-0"	INTERIOR WINDOW WITH TEMPERED GLASS, H.M. FRAME WITH 3 HOUR RATED FIRE SHUTTER	
(B)	3'-4"	5'-4"	DOUBLE PANE WINDOW WITH TEMPERED GLASS, H.M. FRAME	
(C)	2'-0"	3'-0"	INTERIOR WINDOW WITH TEMPERED GLASS, H.M. FRAME	

VERIFY ALL SELECTION WITH OWNER BEFORE ORDERING

ROOM FINISH SCHEDULE												
ROOM		FLOOR		BASE		WALLS		CEIL. HT.		CLG.		REMARKS
		CONCRETE SEALED CONC. LVT RUBBER	CERAMIC TILE	WOOD	CERAMIC TILE	RUBBER BASE	PAINTED CHU CERAMIC TILE PAINTED 8'-0" A.F.F.	2'X2' CEILING TILE PLYWOOD 15/8" DRYWALL	PLYWOOD 15/8" DRYWALL	PLYWOOD 15/8" DRYWALL		
ROOM NO.	ROOM NAME											
100	PRE-FAB PAINT BOOTH	X										PRE-FAB UNIT BY OTHERS
101	DOOR & DRAWER DEPARTMENT	X				X					X	
102	LOADING AREA	X				X					X	
103	FINISHED CABINET STORAGE	X				X					X	
104	UNISEX RESTROOM	X				X						
105	UNISEX RESTROOM	X	X			X	X		8'-0"	X		
106	BREAKROOM					X	X		8'-0"	X		
107	SHOWROOM AREA		X			X	X		8'-0"	X		
108	OFFICE #1		X	X		X	X		8'-0"	X		
109	OFFICE #2		X	X		X	X		8'-0"	X		
110	OFFICE #3		X			X	X		8'-0"	X		
111	COMPRESSOR ROOM	X				X	X		VARIES	X		

OWNER TO VERIFY ALL FINISHES AND COLORS BEFORE PLACING ORDER.

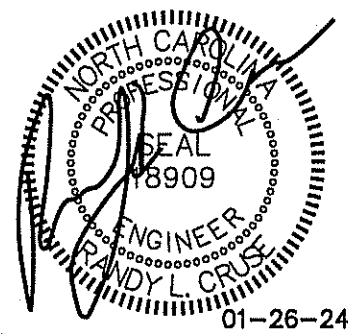


#### PROPOSED FLOOR PLAN

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

#### LEGEND

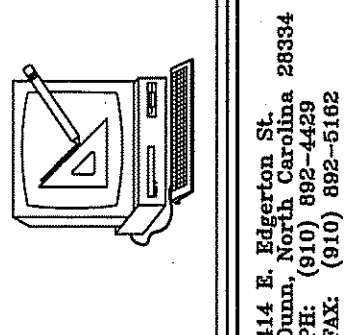
3 HOUR FIRE BARRIER U419



NEW BUILDING FOR:  
BUILT TO LAST FAMILY INVESTMENTS, LLC  
836 NORTH BROAD STREET  
ANGIER, NORTH CAROLINA 27501

#### REVISIONS

NO.	



Cruse And Associates, P.A.

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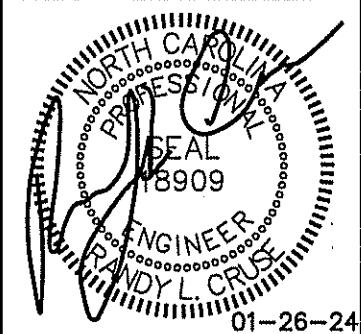
DATE 01-26-24

DRAWN BY BAM

JOB NO. 22-61

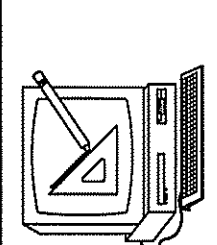
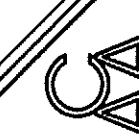
SHEET NO.

F-1 OF 5



NEW BUILDING FOR:  
BUILT TO LAST FAMILY INVESTMENTS, LLC  
836 NORTH BROAD STREET  
ANGIER, NORTH CAROLINA 27501

REVISIONS	
NO.	

  
Cruse  
And  
Associates, P.A.  


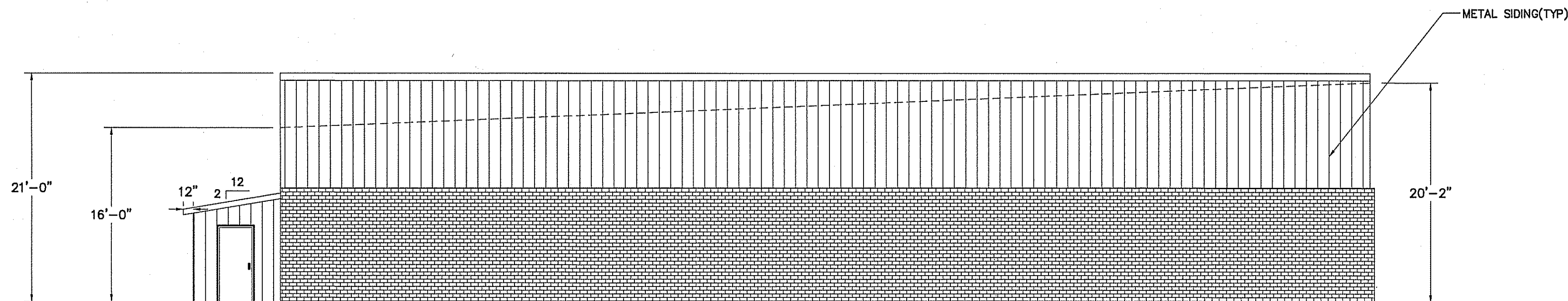
111 E. Main Street, 2nd Floor  
Durham, North Carolina 27601  
PH: (919) 892-4429  
FAX: (919) 892-0122

LICENSE NO.: C-1721

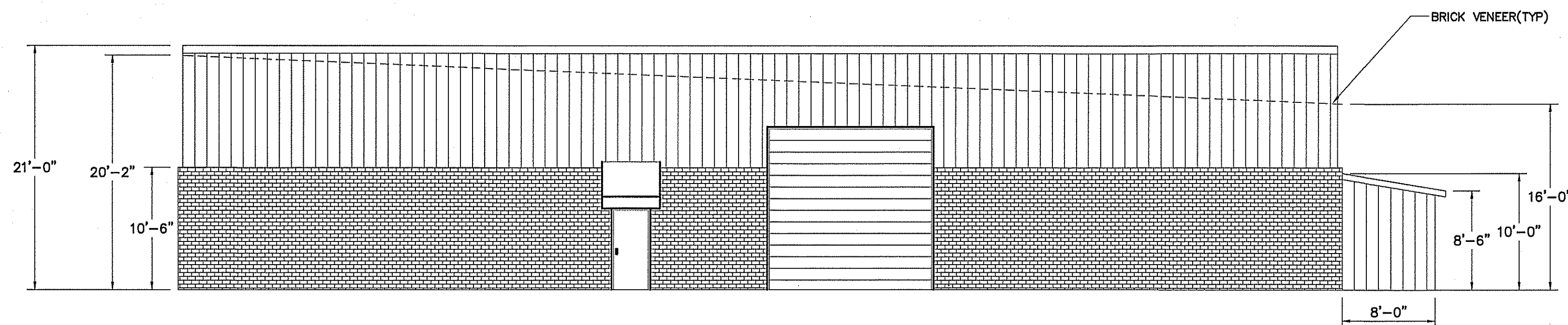
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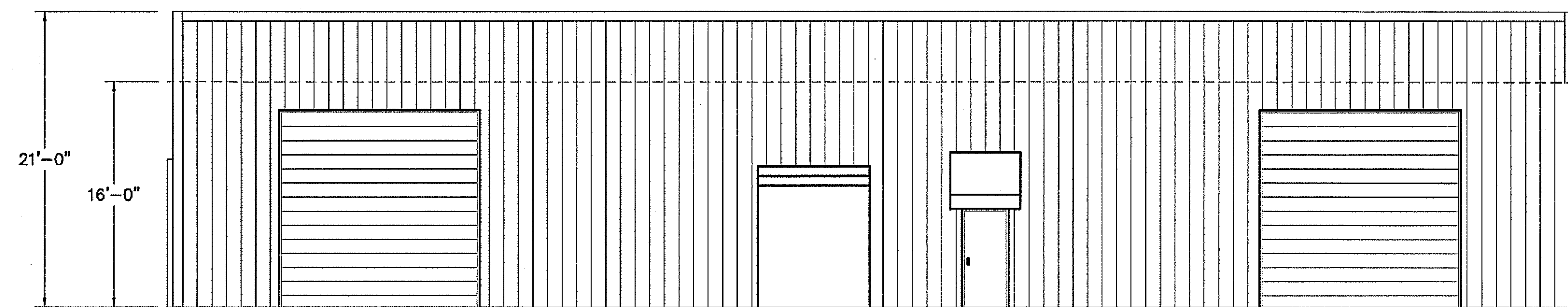
SHEET NO.  
F-2 OF 5



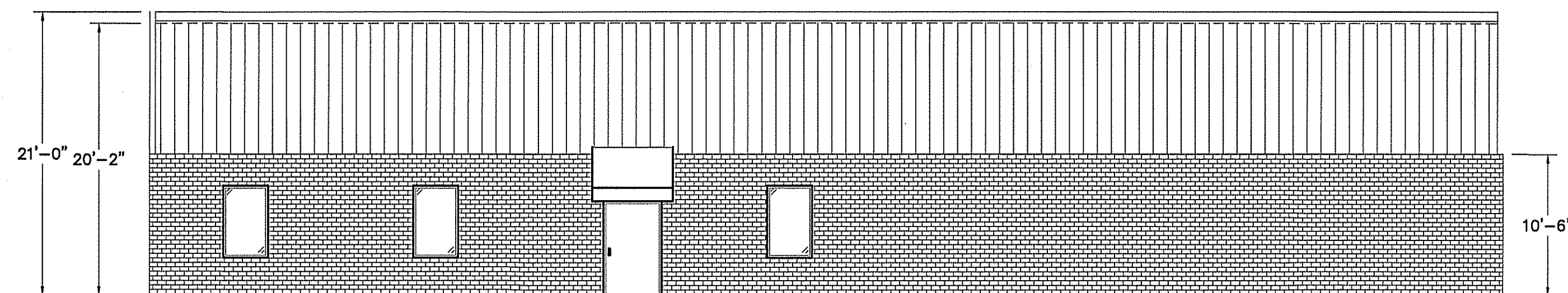
**NORTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**SOUTH ELEVATION**  
SCALE: 1/8" = 1'-0"



**EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

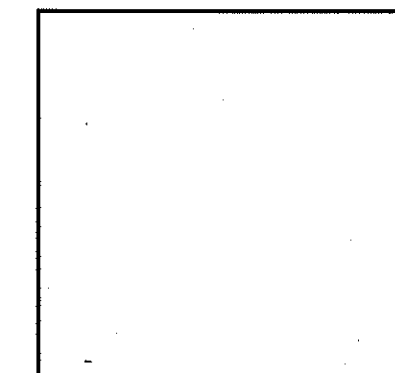
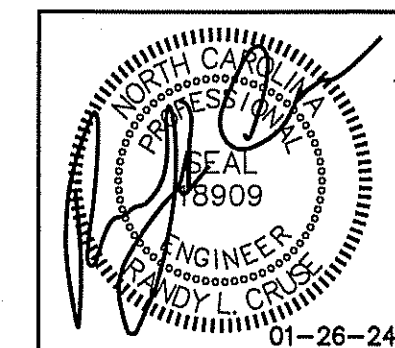


**WEST ELEVATION**  
SCALE: 1/8" = 1'-0"

NOTE:  
G.C. TO COORDINATE LOCATIONS OF SPANDREL BEAMS WITH METAL BUILDING SUPPLIER. COORDINATE HEIGHTS WITH CEILING HEIGHTS, EAVE HEIGHTS, ETC.

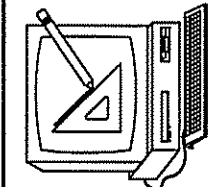
NOTE:  
ALL COLORS SELECTED BY OWNER





NEW BUILDING FOR:  
BUILT TO LAST FAMILY INVESTMENTS, LLC  
836 NORTH BROAD STREET  
ANGIER, NORTH CAROLINA 27501

REVISIONS	
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Angier, NC 28344  
PH: (910) 892-4439  
FAX: (910) 892-4162

LICENSE NO.: C-1721

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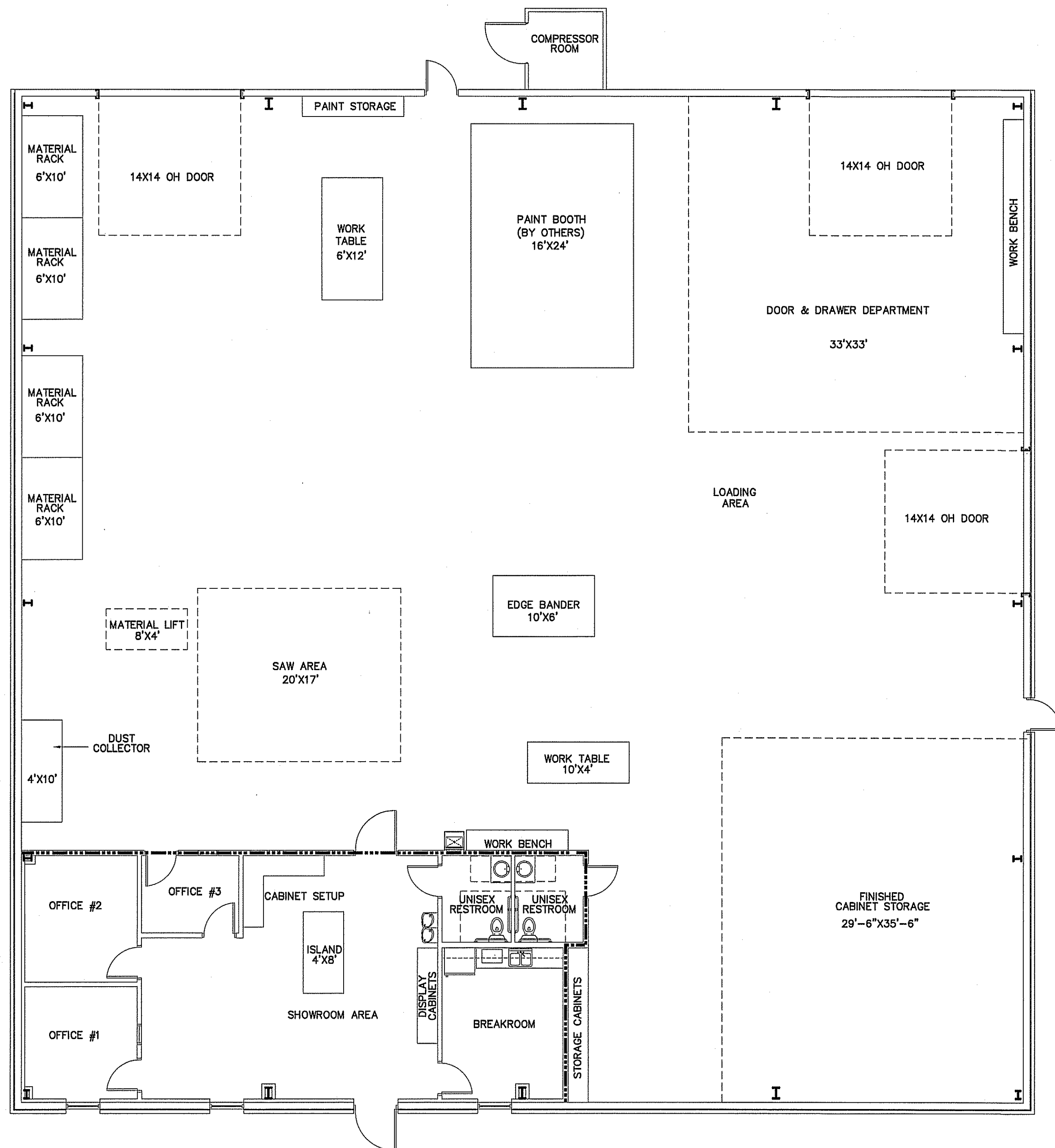
DATE 01-26-24  
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JOB NO. 22-61

SHEET NO.  
F-3 OF 5

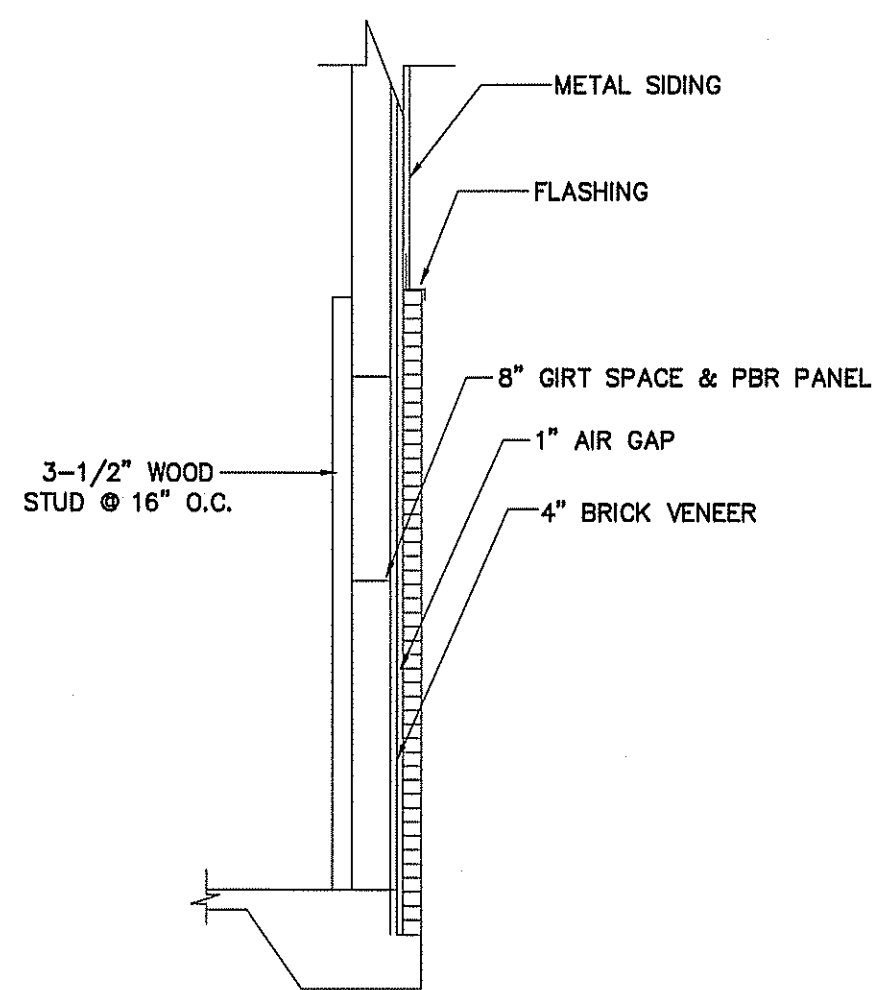
LINTEL SCHEDULE		
OPENING	LINTEL	BEARING
0'-0" TO 1'-4"	1 PL-3-1/2 X 3/8 *	8"
1'-4" TO 4'-0"	1 L-3-1/2 X 3-1/2 X 5/16 *	8"
4'-0" TO 6'-8"	1 L-4 X 3-1/2 X 5/16 *	8"
6'-8" TO 8'-0"	1 L-5 X 3-1/2 X 5/16 *	8"

\* PER 4" OF WALL THICKNESS

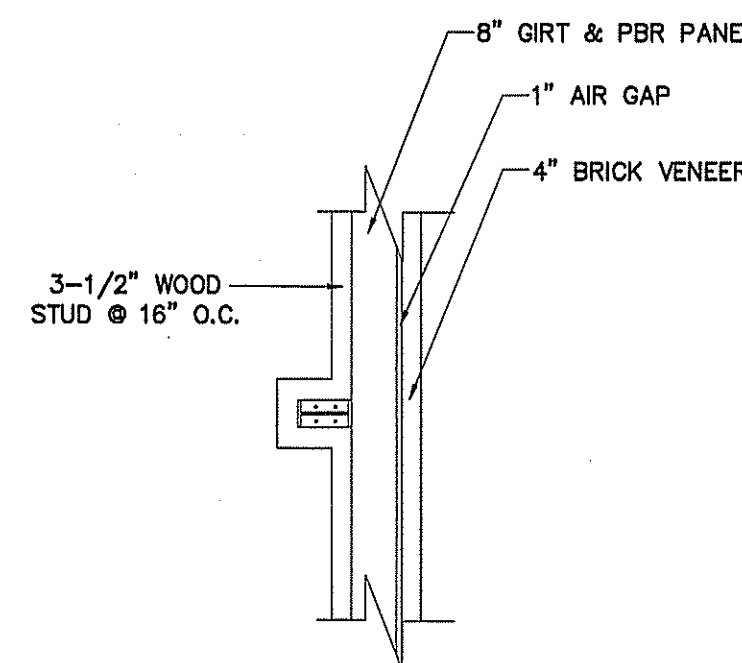
NOTE:  
ALL UNSCHEDULED OPENINGS INCLUDING OPENINGS FOR MECHANICAL WORK SHALL BE PROVIDED WITH LINTELS IN ACCORDANCE WITH THIS SCHEDULE.



EQUIPMENT LAYOUT PLAN  
SCALE: 1/8" = 1'-0"

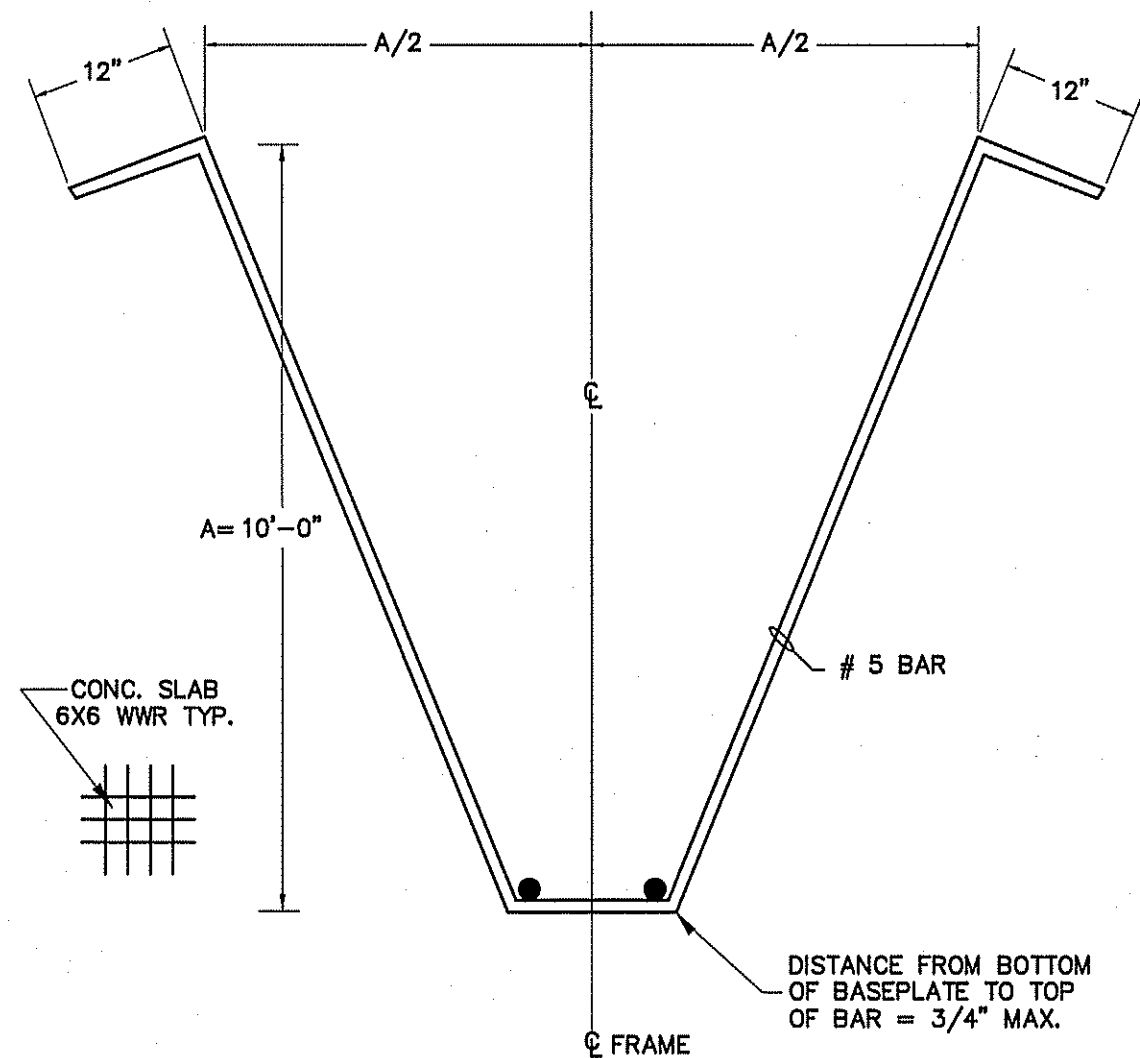


SECTION AT BRICK VENEER WALL  
SCALE: NOT TO SCALE  
(OFFICE AREA)



PROPOSED WALL DETAIL-PLAN VIEW  
SCALE: NOT TO SCALE  
(OFFICE AREA)





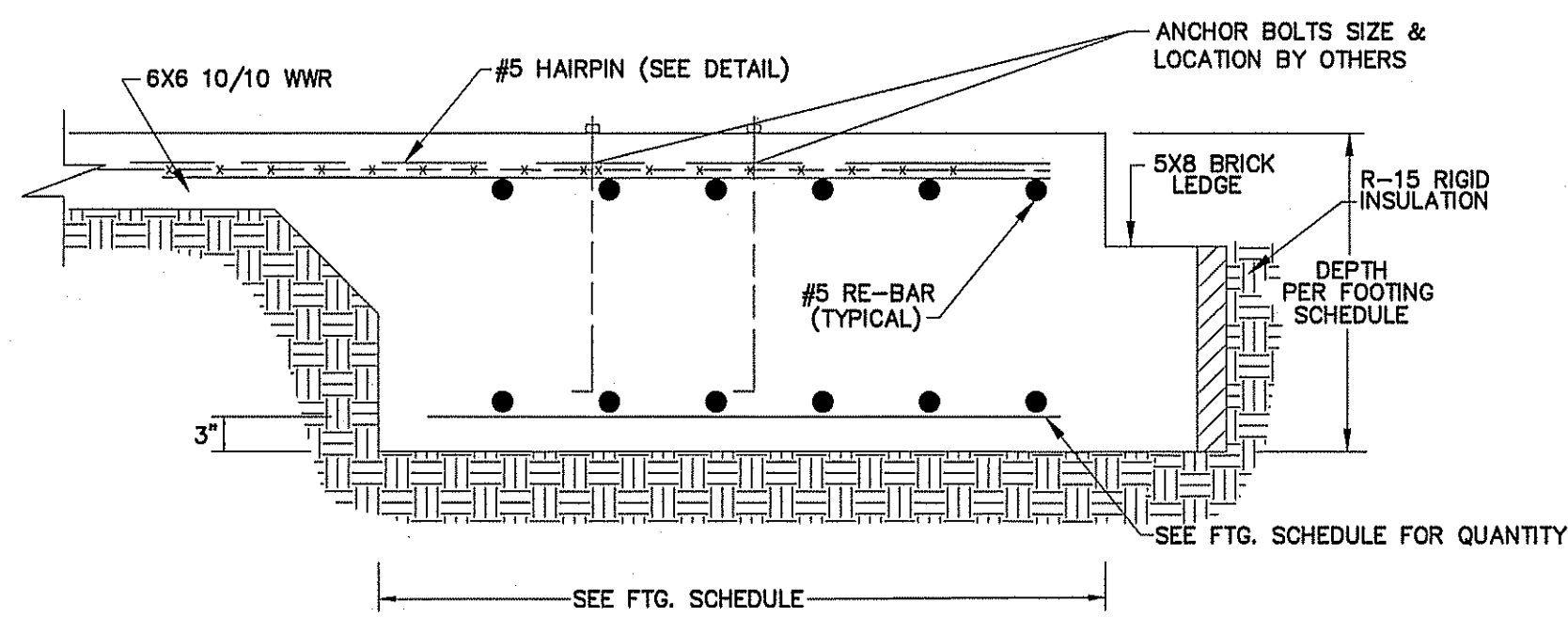
**DETAIL HAIRPIN BAR**  
NOT TO SCALE

- NOTES:**
1. ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF TO VERIFIED BY CONTRACTOR.
  2. CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS.
  3. CONTROL JOINTS TO BE PLACED AS SHOWN ON PLAN.
  4. SEE METAL BUILDING DRAWINGS FOR ACTUAL COLUMN LOCATIONS.

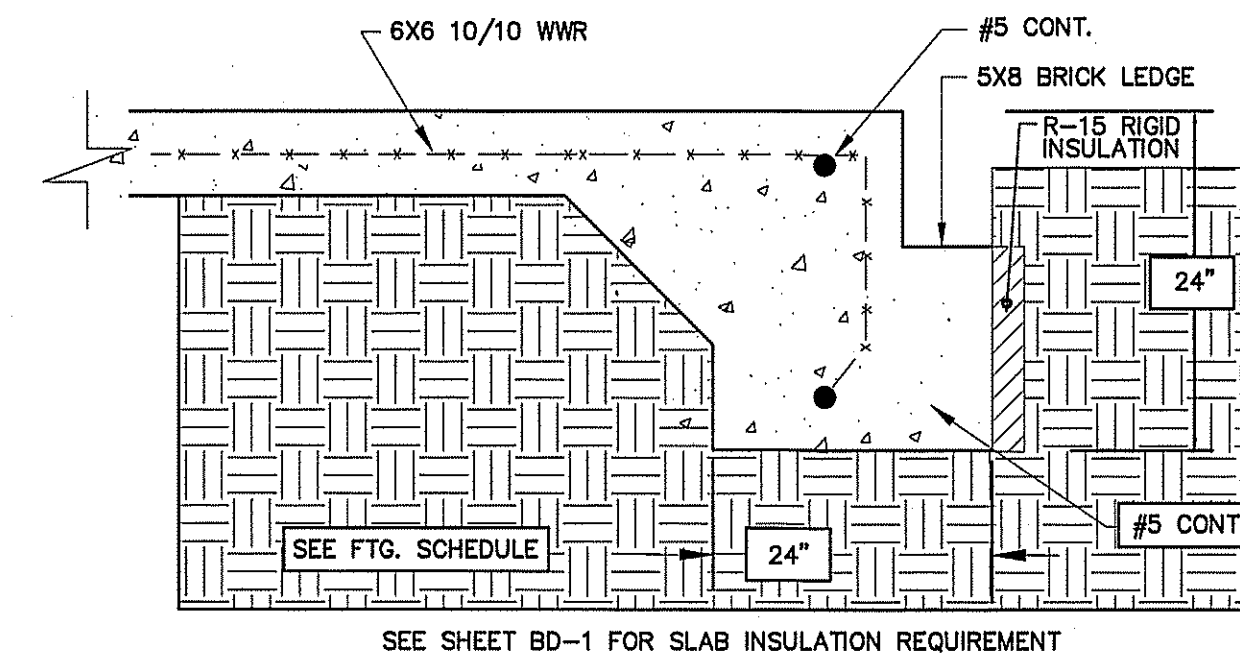
- NOTES:**
1. G.C. TO COORDINATE METAL BUILDING DRAWINGS W/ ENGINEER'S DRAWINGS BEFORE BEGINNING CONSTRUCTION.
  2. G.C. TO VERIFY ALL EQUIPMENT SIZES, ELECTRICAL, PLUMBING AND GAS REQUIREMENTS BEFORE BEGINNING CONSTRUCTION.

**FOUNDATION NOTES:**

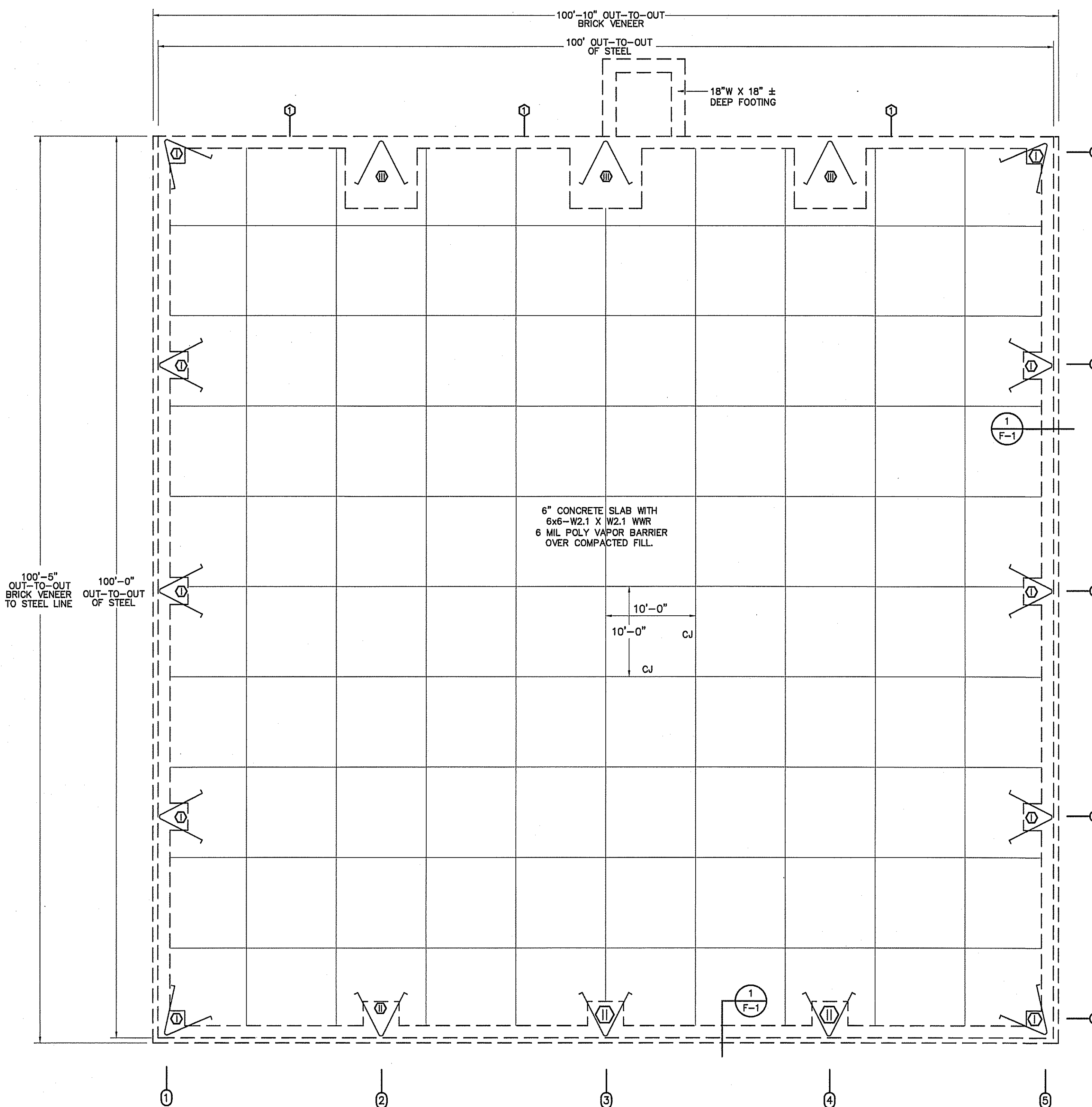
1. FIELD VERIFY THE SIZE, LOCATIONS, ELEVATIONS, AND DETAILS OF ALL EXISTING CONSTRUCTION AND CONDITIONS THAT AFFECT THE WORK AND INFORM THE ENGINEER OF ANY DISCREPANCIES IN DIMENSION SIZES, LOCATIONS AND CONDITIONS BEFORE PROCEEDING WITH THE WORK.
2. PROVIDE ALL SHORING, SHEETING, UNDERPINNING, AND OTHER MEANS REQUIRED TO PROTECT AND MAINTAIN THE SAFETY, INTEGRITY, AND STABILITY OF ALL EXISTING AND NEW CONSTRUCTION THAT MAY BE AFFECTED BY THE WORK.
3. CONCRETE SHALL DEVELOP COMPRESSIVE STRENGTHS (F'C) AT 28 DAYS AS FOLLOWS: FOUNDATIONS, WALLS, FOOTING, ETC.  $\frac{3000}{3000}$  PSI SLABS ON GRADE  $\frac{3000}{3000}$  PSI
4. ALL BUILDING FOOTINGS AND FOUNDATIONS ARE DESIGNED BASED UPON A MINIMUM ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF. IF SUITABLE SOIL CAPABLE OF SUSTAINING THIS CAPACITY IS NOT FOUND AT THE ELEVATIONS INDICATED, THE ENGINEER SHALL BE NOTIFIED AND THE FOUNDATIONS SHALL BE CHANGED IN ELEVATION AND/OR SIZE AS DETERMINED BY THE ENGINEER.
5. CONCRETE BAR REINFORCEMENT SHALL BE NEW BILLET STEEL CONFORMING TO THE STANDARD SPECIFICATION FOR DEFORMED BILLET STEEL BARS FOR CONCRETE REINFORCEMENT ASTM A-615, GRADE 60.
6. ALL STRUCTURAL FILL INSIDE THE BUILDING SHALL BE SELECTED FILL COMPACTED TO 96% MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT (ASTM D-698).
7. ALL DETAILING, FABRICATION AND ERECTION OF REINFORCING STEEL SHALL CONFORM TO ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" (ACI-315-80).
8. PROVIDE CORNER BARS AT ALL FOOTING CORNERS AND STEPS UNLESS OTHERWISE NOTED. BARS SHALL BE A MINIMUM OF 4'-0" LONG AND HAVE THE SAME SIZE AND SPACING AS HORIZONTAL REINFORCING.
9. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A-185 AND A-82.
10. CONTINUOUS REINFORCING BARS SHALL BE LAPPED 48 BAR DIAMETERS AT ALL SPLICES UNLESS OTHERWISE NOTED.
12. STANDARD CONSTRUCTION JOINTS AND EXPANSION JOINTS SHALL BE LOCATED AS SHOWN ON THE PLANS.
13. ALL CONCRETE SHALL BE PROTECTED AGAINST FREEZING FOR SEVEN DAYS AFTER POURING.
14. FLOOR SLAB TO BE POURED ON 6 MIL POLYETHYLENE FILM OVER 4" THICK DRAINAGE FILL, COMPACTED FILL, OR OVER EXISTING CONCRETE SLAB.
15. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND ARCHITECTURAL DRAWINGS AND CONSULT ALL AFFECTED SUBCONTRACTORS FOR LOCATIONS AND SIZES OF REQUIRED OPENINGS AND CAST-IN-ITEMS IN CONCRETE WORK. ALL OPENINGS ON THE STRUCTURAL DRAWINGS SHALL BE SHOWN ON SHOP DRAWINGS FOR APPROVAL.



SEE SHEET BD-1 FOR SLAB INSULATION REQUIREMENT  
**SECTION @ FOOTING**  
NOT TO SCALE



**SECTION @ EDGE OF SLAB**  
NOT TO SCALE

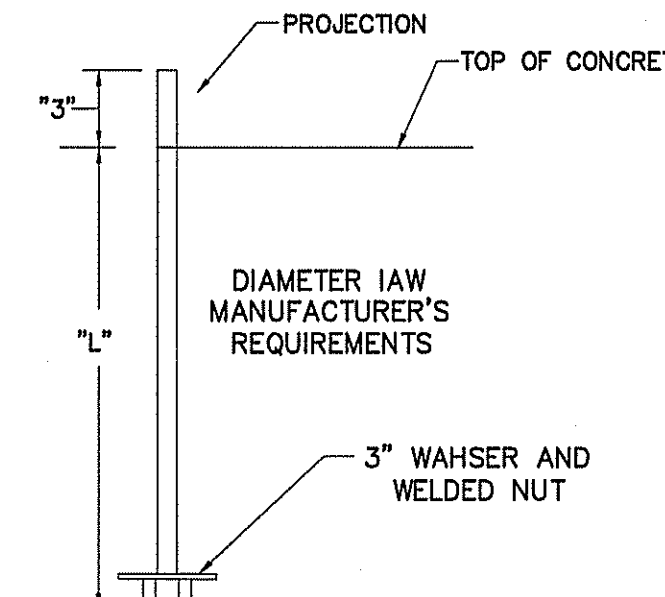


**FOUNDATION PLAN**  
SCALE:  $\frac{1}{8}'' = 1'-0''$

FOOTING SCHEDULE			
ALLOWABLE SOIL BEARING 2000 PSF CONCRETE: 3000 PSI @ 28 DAYS STEEL: GRADE 60			
TYPE	SIZE	FOOTING REINF.	REMARKS
①	3' X 3' X 2'	3 # 5 LW T & B 3 # 5 SW T & B	
②	4' X 4' X 2'	4 # 5 LW T & B 4 # 5 SW T & B	
③	8' X 8' X 2'-6"	8 # 5 LW T & B 8 # 5 SW T & B	

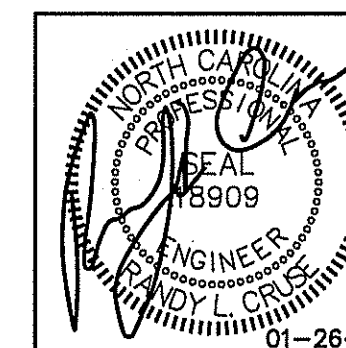
**KEY NOTE:**  
① NO BRICK LEDGE THIS SIDE.

ANCHOR BOLT LENGTHS		
DIAMETER	LENGTH ("L")	QTY.
5/8"	16"	52
1"	24"	24



DO NOT "RAM" ANCHOR BOLTS INTO FRESHLY POURED CONCRETE SLAB. ALL ANCHOR BOLTS ARE TO BE PLACED IN PRE DRILLED TEMPLATES & PROPERLY SUPPORTED, PRIOR TO CONCRETE POUR, BE SURE TO VIBRATE CONCRETE AROUND ANCHOR BOLTS.

**ANCHOR BOLT DETAIL**  
NOT TO SCALE



NEW BUILDING FOR:  
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836 NORTH BROAD STREET  
ANGIER, NORTH CAROLINA 27501

REVISIONS	
NO.	

**Cruse And Associates, P.A.**

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Fax: (910) 892-4422  
LICENSOR NO.: C-1721

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SHEET NO.  
**F-4 OF 5**



## UL Product IQ\*

## BXUV/U419 - Fire-resistance Ratings - ANSI/UL 263



- Design/System/Construction/Assembly/Details Database
- Automates listing jurisdiction should be completed in all cases as to the particular requirements covering the insulation and use of UL Certified products, equipment, system, devices, and materials.
  - Automates listing jurisdiction should be completed before construction.
  - Fire resistance assemblies and products are developed by the design submitters and have been investigated by UL for compliance with applicable requirements. The published information cannot always address every construction nuance encountered in the field.
  - When full traces exist, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer for the design. Lists of fire resistance assemblies are advanced to include the general Guide information for each product category and with group of assemblies. The Guide information includes specific concerning alternate materials and alternate methods of construction.
  - Only products which bear UL Mark are considered Certified.

## Fire-resistance Ratings - ANSI/UL 263

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

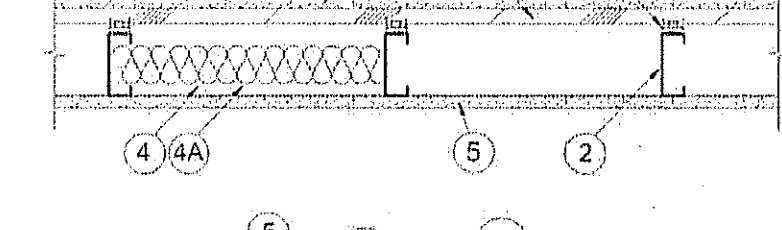
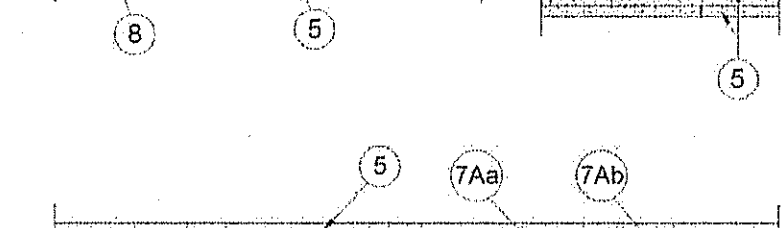
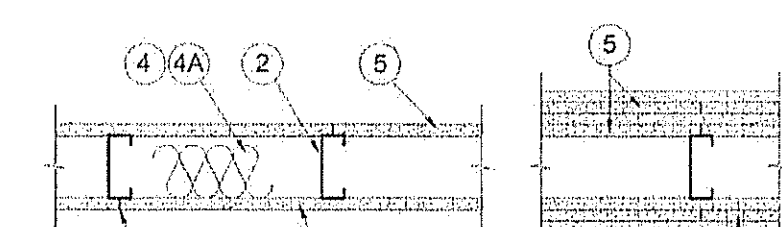
See General Information for Fire-Resistance Ratings - ANSI/UL 263 Certified for United States  
See General Information for Fire-Resistance Ratings - CAN/ULC-S101 Certified for Canada  
See California and Alaska Notices

## Design No. U419

September 5, 2022

## Nonbearing Wall Ratings - 1, 2, 3 or 4 Hr (See Items 4 &amp; 5 through 53)

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



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

1A. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2C, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.  
CALIFORNIA EXPANDED METAL PRODUCTS CO. - Viper20® track  
CRACK MESH INC. - SmartMesh20®  
MARINO/WARE, DIV OF WARE INDUSTRIES INC. - Viper20® track  
IMPERIAL MANUFACTURING GROUP INC. - Viper20® track

1B. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2C, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.  
CALIFORNIA EXPANDED METAL PRODUCTS CO. - Viper20® track  
CRACK MESH INC. - SmartMesh20®  
MARINO/WARE, DIV OF WARE INDUSTRIES INC. - Viper20® track  
IMPERIAL MANUFACTURING GROUP INC. - Viper20® track

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

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

1D. Floor and Ceiling Runners - (Not Shown) - For use with Item 2A - Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, min depth to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners spaced max 24 in. OC.

1E. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - As an alternate to Item 1 - For use with Items 2B, 2F or 5D or 5F only, channel shaped, fabricated from min 0.015 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC max.

CLARK/RETICOR BUILDING SYSTEMS - CR-Hot/STUD  
DANCOWS L.L.C. - Pro/STAK  
MMA METAL FRAMING - Pro/STAK  
RAM STEEL L.L.C. - Ram Pro/STAK  
STEEL STRUCTURAL PRODUCTS L.L.C. - Pro/STAK

1F. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2B, proprietary channel shaped runners, minimum width to accommodate stud size, with min 1-1/4 in. long legs fabricated from min 0.015 in. (min bare metal thickness) galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

STUCCO BUILDING SYSTEMS - CRCC/STUD

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

STUCCO BUILDING SYSTEMS - CRCC/STUD

1H. Floor and Ceiling Runners - (Not Shown) - Channel shaped, fabricated from min 0.02 in. galv steel, min width to accommodate stud size, with min 1-1/4 in. long legs, for use with Item 2B, proprietary channel shaped runners, minimum width to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.  
MARINO/WARE, DIV OF WARE INDUSTRIES INC. - Viper20® track V100  
IMPERIAL MANUFACTURING GROUP INC. - Viper20® track V100

1I. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - As an alternate to Item 1 - For use with Item 2H, channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.  
TELLING INDUSTRIES L.L.C. - TRUE-TRAC™

1J. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2I, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

1K. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2I, proprietary channel shaped runners, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC max.

1L. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2N, proprietary channel shaped runners, 1-1/4 in. wide by 3-1/2 in. deep fabricated from min 0.010 in. thick galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

1M. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - As an alternate to Item 1 - For use with Item 2O, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

RODOD BUILDING SERVICES PTY LTD. - Rodod Vinyl Wall

1N. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - As an alternate to Item 1 - For use with Item 2P, proprietary channel shaped runners, min width to accommodate stud size, galv steel, attached to floor and ceiling with fasteners spaced 24 in. OC max.

OSG BUILDING MATERIALS - OSG track

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

2A. Steel Studs - (As an alternate to Item 2, for use with Items 5B, 5C, 5H or 5I or Type U400) - Channel shaped, fabricated from min 20 MSG corrosion-protected or galv steel, 3-1/2 in. min depth, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

2B. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2B, proprietary channel shaped runners, min width to accommodate stud size, attached to floor and ceiling with fasteners 24 in. OC max.

CALIFORNIA EXPANDED METAL PRODUCTS CO. - Viper 2 track  
CRACK MESH INC. - SmartMesh 2 track  
MARINO/WARE, DIV OF WARE INDUSTRIES INC. - Viper20 track  
IMPERIAL MANUFACTURING GROUP INC. - Viper 2 track

2C. Framing Members\* - Floor and Ceiling Runners - (Not Shown) - In lieu of Item 1 - For use with Item 2B, proprietary channel shaped runners, min width to accommodate stud size, attached to floor and ceiling with fasteners 24 in. OC max.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2D. Framing Members\* - Steel Studs - (As an alternate to Item 2, for use with Items 5C, 5F or Type U400) - Proprietary channel shaped studs, 3-5/8 in. deep attached to floor and ceiling with fasteners 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

CALIFORNIA EXPANDED METAL PRODUCTS CO. - Viper20 track  
CRACK MESH INC. - SmartMesh20 track  
MARINO/WARE, DIV OF WARE INDUSTRIES INC. - Viper20 track  
IMPERIAL MANUFACTURING GROUP INC. - Viper20 track

2E. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Fabricated from min 0.010 in. (min bare metal thickness) galvanized steel, attached to floor and ceiling with fasteners 24 in. OC max.

CALIFORNIA EXPANDED METAL PRODUCTS CO. - Viper20 track  
CRACK MESH INC. - SmartMesh20 track  
MARINO/WARE, DIV OF WARE INDUSTRIES INC. - Viper20 track  
IMPERIAL MANUFACTURING GROUP INC. - Viper20 track

2F. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2G. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2H. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

CALIFORNIA EXPANDED METAL PRODUCTS CO. - Viper20 track  
CRACK MESH INC. - SmartMesh20 track  
MARINO/WARE, DIV OF WARE INDUSTRIES INC. - Viper20 track  
IMPERIAL MANUFACTURING GROUP INC. - Viper20 track

2I. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2J. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2K. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2L. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2M. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2N. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2O. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2P. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2Q. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2R. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2S. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2T. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

2U. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - Proprietary channel shaped steel studs, min depth as indicated under Item 5, spaced 2' max of 24 in. OC. Studs to be cut 3/8 to 3/4 in. less than assembly height.

ALUSTEX & OXYGEN PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
CONDUATED FABRICATORS CORP. BUILDING PRODUCTS DIV. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
DASHI IRON BUILDING MATERIALS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
SCARCO STEEL STUD MANUFACTURING CO. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
STEEL CONSTRUCTION SYSTEMS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
TELLING INDUSTRIES L.L.C. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D  
UNITED METAL PRODUCTS INC. - Type SUPREME D2A/D2C/D2D and Type SUPREME D2D

20. Framing Members\* - Steel Studs - (Not Shown) - In lieu of Item 2 - For use with Item 10, proprietary channel shaped steel studs, min width to accommodate stud size, with min 1-1/4 in. long legs, for use with Item 2B, proprietary channel shaped runners, minimum width to accommodate stud size, with min 1-1/4 in. long legs, attached to floor and ceiling with fasteners 24 in. OC max.

3. Wood Structural Panel Sheathing - (Optional, for use with Item 5 Only) - (Not Shown) - 4 ft wide, 7/16 in. thick oriented strand board (OSB) or 1/2 in. thick structural sheathing complying with ICC-ES E-1 or E-2, or AWS Standard PS-10R, manufactured with exterior glue, applied horizontally or vertically to the steel studs. Vertical joints centered on studs, and staggered one stud space from wallboard joints. Attached to studs with min head self-drilling tapping screws with a min. head diam of 0.025 in. OC in the perimeter and 12 in. OC in the field. Min. screw depth, gypsum panels attached over OSB or plywood panels and lagging lengths for gypsum panels increased by min. 1/2 in.

4. Batt and Blankets\* - (Required as indicated under Item 5) - Mineral wool batts, friction fitted between studs and runners. Min. min thickness as indicated under Item 5.

See Batt and Blankets (Batt or Blanket) Categories for names of Classified companies.

5A. Batt and Blankets\* - (Optional) - (Priced in steel cavity, any glass fiber or mineral wool insulation meeting the UL Classification Marking is in Surface Burning Characteristics and/or Fire Resistance.

See Batt and Blankets (Batt or Blanket) Categories for names of Classified companies.

5B. Fiberglass\* - (Optional, for use with Type U400) - (Priced in steel cavity) - Spray applied granulated mineral fiber material. The fiber is applied with adhesive at a minimum density of 4.0 lb/ft³ to completely fill the wall cavity in accordance with the application instructions supplied with the product. See Fiberglass (CG2).

AMERICAN ROCKWOOL MANUFACTURING, LLC - Type Rockwool Thermal Fiber

5C. Fiberglass\* - (Optional, for use with Item 5) - Spray applied, foamed plastic insulation, at any thickness from panel 60 to completely filling stud cavity, for 2 hour rated assemblies only. When foamed plastic is used, minimum stud depth shall be 1-1/2 in.

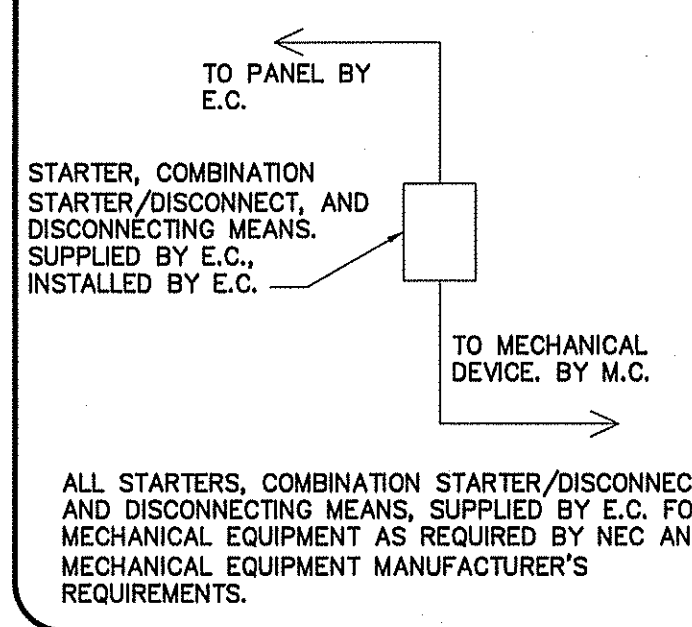
5D. Fiberglass\* - (Optional, for use with Item 5) - Spray applied, foamed plastic insulation, at any thickness from panel 60 to completely filling stud cavity





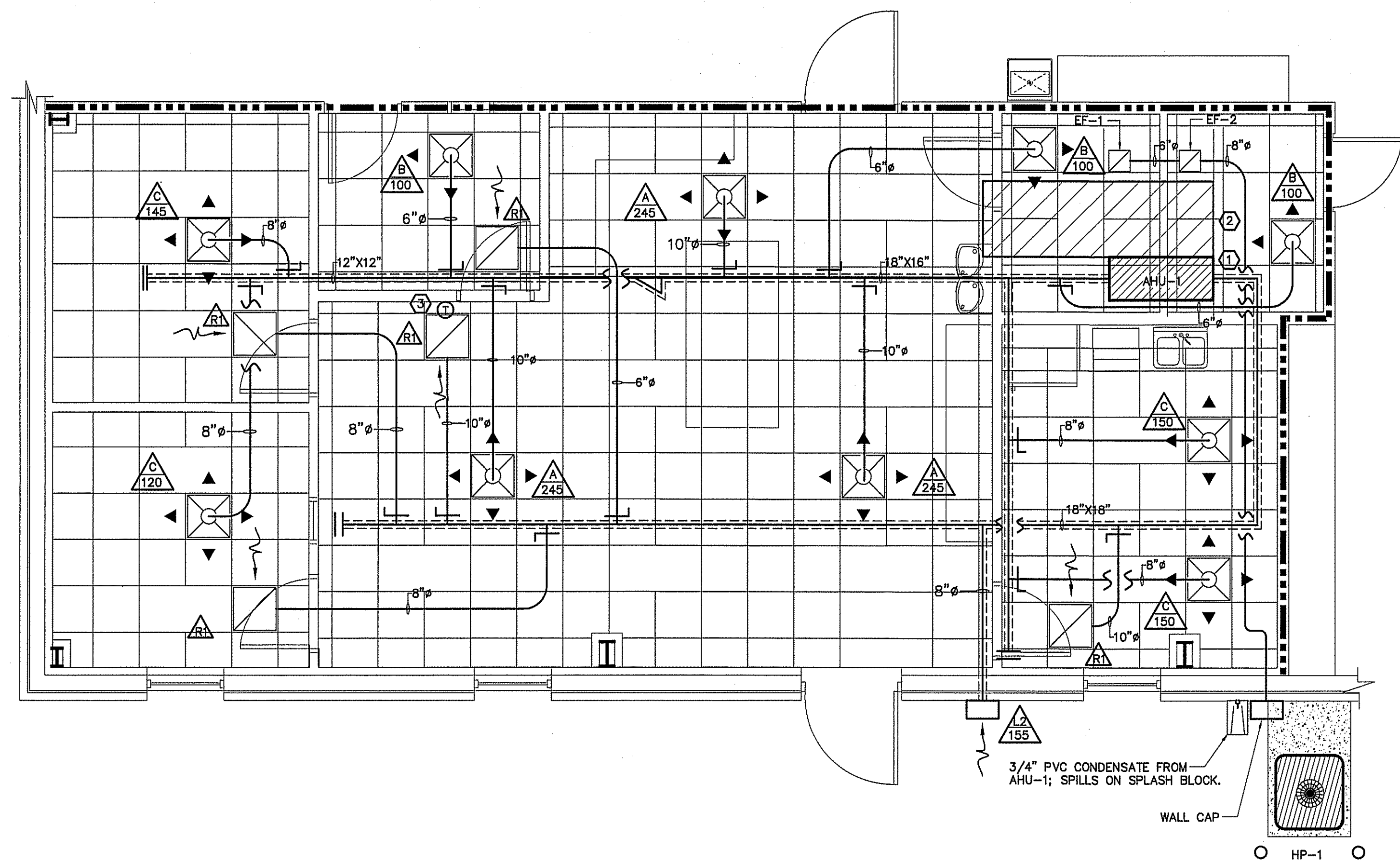
MECHANICAL SYMBOL LEGEND		
SINGLE LINE	DOUBLE LINE	DESCRIPTION
		TAKE OFF TO SUPPLY AIR REGISTER WITH EXT. INSUL. DUCTWORK
		BRANCH TAKEOFF FROM MAIN TRUNK DUCT WITH EXT. INSUL. DUCTWORK
		END CAP
		DUCT SMOKE DETECTOR
		ACCESS DOOR
		DOOR SIZE   DUCT HEIGHT
		8X8   10"
		10X10   12"
		12X12   14" & LARGER
		VOLUME CONTROL DAMPER (TYP)
		CEILING DIFFUSER
		FLEXIBLE DUCTWORK (14' MAX.)
		ONE SIDED REDUCING TRANSITION
		F.D.=FIRE DAMPER (1-1/2)=RATED FOR 1-1/2 HRS.
		RETURN AIR OR EXHAUST GRILLE
		SUPPLY AIR CEILING DIFFUSER, ARROW INDICATES DIRECTION OF BLOW & ACTIVE DIFFUSER SIDES
		(1)CUSHION HEAD @ BRANCH OR DIFFUSER RUNOUT (2)CUSHION HEAD IS EQUAL TO 1-1/2 WIDTH OF THE BRANCH DUCT OR DIFFUSER RUNOUT
		R.A. OR EXHAUST DUCT TURNS DOWN @ 90 DEGS.
		MANUAL VOLUME CONTROL DAMPER W/ QUADRANT LOCKING DEVICE
		TWO SIDED TRANSITION
		ELECT. DUCT INSERT HEATER WITH CONTROL PANEL
		AHU W/FLEXIBLE CONNECTION AT SUPPLY AND RETURN DUCT
		KEY NOTE
		MARK XXX CFM-DIFFUSER, REGISTER OR GRILLE (SEE SCHEDULE)
		EXHAUST FAN
		CARBON DIOXIDE SENSOR

### CONNECTION SCHEDULE



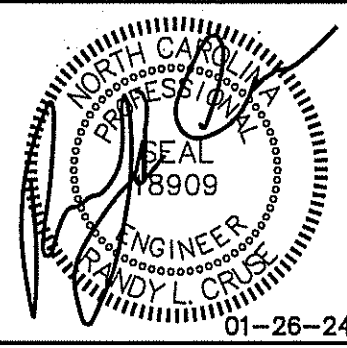
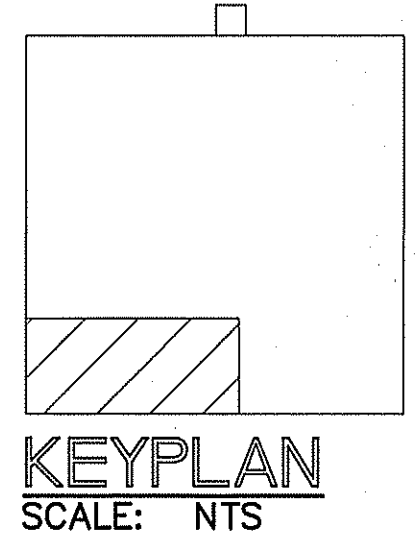
**LEGEND**

----- 3 HOUR FIRE BARRIER U419



- KEY NOTES:**
- ① AHU-1
  - ② SERVICE PLATFORM (3/4" PLYWOOD SHEATHING OVER 2X6 JOIST @ 16" ON CENTER.
  - ③ COORDINATE LOCATION OF T/S WITH ELECTRICAL PANEL

**MECHANICAL HVAC PLAN**  
SCALE: 1/4" = 1'-0"



NEW BUILDING FOR:  
**BUILT TO LAST FAMILY INVESTMENTS, LLC**  
836 NORTH BROAD STREET  
ANGIER, NORTH CAROLINA 27501

REVISIONS	
NO.	

**Cruise And Associates, P.A.**

1415 S. BAYVIEW ST.  
DURHAM, NORTH CAROLINA 27834  
PH: (919) 892-4439  
FAX: (919) 892-3126

LICENSER NO.: C-1721

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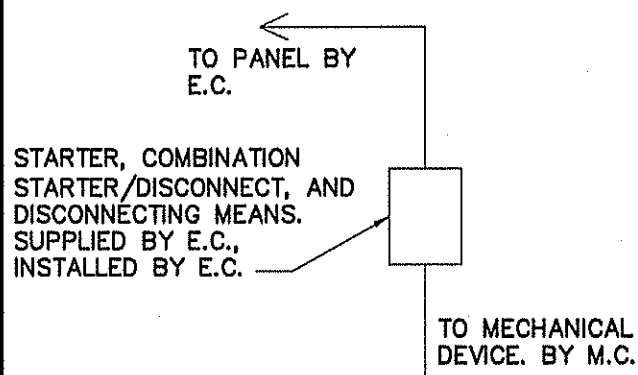
DATE 01-26-24  
DRAWN BY BAM  
JOB NO. 22-61

SHEET NO.  
**M-1 OF 4**



MECHANICAL SYMBOL LEGEND		
SINGLE LINE	DOUBLE LINE	DESCRIPTION
		TAKE OFF TO SUPPLY AIR REGISTER WITH EXT. INSUL. DUCTWORK
		BRANCH TAKEOFF FROM MAIN TRUNK DUCT WITH EXT. INSUL. DUCTWORK
		END CAP
		DUCT SMOKE DETECTOR
		ACCESS DOOR
		DOOR SIZE   DUCT HEIGHT
		8X8   10"
		10X10   12"
		12X12   14" & LARGER
		VOLUME CONTROL DAMPER (TYP)
		CEILING DIFFUSER
		FLEXIBLE DUCTWORK (14' MAX.)
		ONE SIDED REDUCING TRANSITION
		F.D.=FIRE DAMPER (1-1/2)=RATED FOR 1-1/2 HRS.
		RETURN AIR OR EXHAUST GRILLE
		SUPPLY AIR CEILING DIFFUSER, ARROW INDICATES DIRECTION OF BLOW & ACTIVE DIFFUSER SIDES
		(1)CUSHION HEAD (2)CUSHION HEAD IS EQUAL TO 1-1/2 OR DIFFUSER RUNOUT WIDTH OF THE BRANCH DUCT OR DIFFUSER RUNOUT
		R.A. OR EXHAUST DUCT TURNS DOWN @ 90 DEGS.
		MANUAL VOLUME CONTROL DAMPER W/ QUADRANT LOCKING DEVICE
		TWO SIDED TRANSITION
		ELECT. DUCT INSERT HEATER WITH CONTROL PANEL
		AHU W/FLEXIBLE CONNECTION AT SUPPLY AND RETURN DUCT
		KEY NOTE
		MARK
		CFM-DIFFUSER, REGISTER OR GRILLE (SEE SCHEDULE)
		EXHAUST FAN
		CARBON DIOXIDE SENSOR

### CONNECTION SCHEDULE



ALL STARTERS, COMBINATION STARTER/DISCONNECTS, AND DISCONNECTING MEANS, SUPPLIED BY E.C. FOR MECHANICAL EQUIPMENT AS REQUIRED BY NEC AND MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.

### LEGEND

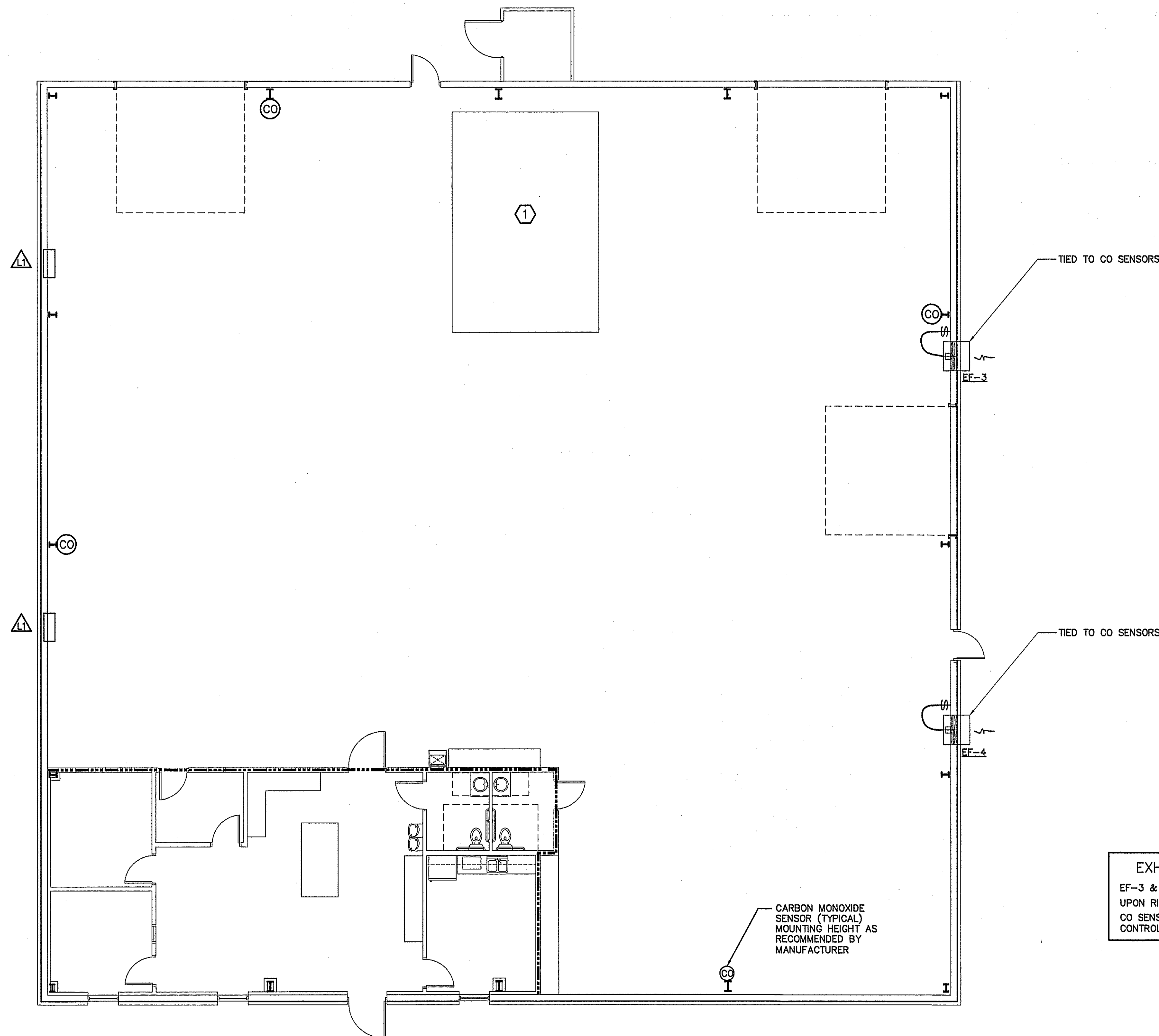
3 HOUR FIRE BARRIER U419

WHEN CO/NO2 SENSOR GOES INTO ALARM, START EF-3 AND EF-4, LOUVERS (L1) TO OPEN SIMULTANEOUSLY TO PROVIDE FRESH AIR INTAKE. SET CO ALARM AT 25 PPM AND NO2 ALARM AT 5 PPM IN ACCORDANCE WITH 2018 NC MECHANICAL CODE.

PROVIDE WITH MOTORIZED DAMPER INTERLOCKED WITH EXHAUST EF-3 & EF-4.

THIS FACILITY IS DESIGNED AS A WAREHOUSE FACILITY FOR VENTILATION PURPOSES. IT IS NOT INTENDED TO BE USED AS VEHICLE PARKING, STORAGE OR REPAIR.

NOTE: MAINTAIN 10' HORIZONTAL MINIMUM SEPARATION BETWEEN INTAKE AND EXHAUST LOUVERS.



### KEYNOTE:

1 PAINT BOOTH VENTILATION BY OTHERS

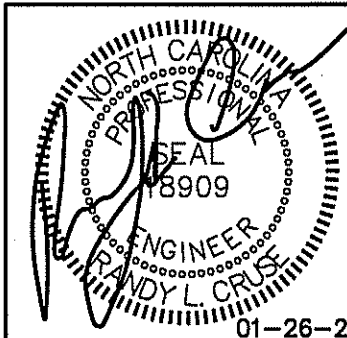
NOTE: DUST COLLECTION SYSTEM BY OTHERS.

### EXHAUST FAN SEQUENCE OF OPERATION:

EF-3 & 4 TO BE TIED TO CO SENSORS. UPON RISE IN CO, EF-3 & 4 TO OPERATE. CO SENSOR CONTROL SHALL OVERRIDE THE MANUAL SWITCH CONTROL OF EF-3 & 4.

## MECHANICAL HVAC PIPING PLAN

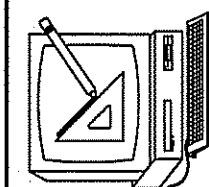
SCALE: 1/8" = 1'-0"



NEW BUILDING FOR:  
BUILT TO LAST FAMILY INVESTMENTS, LLC  
836 NORTH BROAD STREET  
ANGIER, NORTH CAROLINA 27501

### REVISIONS

NO.	



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And  
Associates, P.A.

414 E. 1st Street  
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TEL: (910) 892-4429  
FAX: (910) 892-5162

LICENSE NO.: C-1721

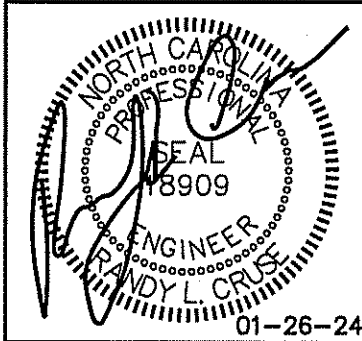
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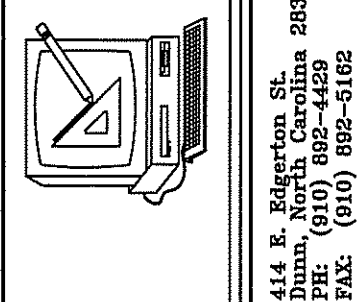
JOB NO. 22-61

SHEET NO.  
M-2 OF 4



NEW BUILDING FOR:  
BUILT TO LAST FAMILY INVESTMENTS, LLC  
836 NORTH BROAD STREET  
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JOB NO. 22-61

SHEET NO.  
M-3 OF 4

AIR HANDLER UNIT																			SPLIT SYSTEM HEAT PUMP UNITS								
AHU NO.	MANUFACTURER	MODEL	VOLTAGE	E.S.P.	OUTSIDE AIR (CFM)	CFM	UNIT FLA	REF LINES		SEER	HTR KW (240)	COOLING CAPACITY (MBH)		HEATING CAPACITY (MBH)		HSPF	MIN. CIRC. AMPACITY	M.O.C.P.	MARK	MANUF.	MODEL	VOLTAGE	# COMP.	MIN. CIRC. AMPACITY	M.O.C.P.	UNIT FLA.	ACCESSORIES
								GAS	LIQ.			TOTAL	SENS.	HIGH	LOW												
AHU-1	TRANE	TEM4A0C48S41	240/1/60	.46	154	1600	32.0	7/8	3/8	15.2	7.68	46.6	34.6	44.4	29.1	8.5	48	50	HP-1	TRANE	4TTR5048N1000A	240/1/60	1	24	40	19.4	EXCLUDE 8,18

- ACCESSORIES
- |                               |   |  |
|-------------------------------|---|--|
| 1 TIME-DELAY RELAY            | 7 LIQUID SOLENOID VALVE                                 | 13 DISCHARGE LINE MUFFLER                  |
| 2 CYCLE PROTECTOR             | 8 LOW-AMBIENT CONTROLLER                                | 14 SUCTION AND LIQUID LINE SHUT OFF VALVES |
| 3 EVAPORATOR FREEZE PROTECTOR | 9 FILTER DRIER (LIQUID LINE)                            | 15 THERMOSTAT (SEE NOTE)                   |
| 4 ISOLATION RELAY             | 10 OUTDOOR TSTAT TO LOCK OUT AUX. HT. (SET @ 40° F ADJ) | 16 SUPPORT FEET                            |
| 5 TXV                         | 11 LOW PRESSURE CONTROL                                 | 17 COIL GUARDS                             |
| 6 HIGH PRESSURE SWITCH        | 12 CRANKCASE HEATER                                     | 18 HUMIDISTAT                              |

COOLING CAPACITY @ 80 DEG. F DB/67 DEG WB AIR ENTERING INDOOR UNIT & 95 DEG. F DB AIR ENTERING OUTDOOR UNIT  
HEATING CAPACITY: HIGH TEMP = 70 DEG F DB INDOOR EAT & 47 DEG F DB/43 DEG F WB AIR ENTERING OUTDOOR UNIT  
LOW TEMP = 70 DEG F DB INDOOR EAT & 17 DEG F DB/?? DEG F WB ENTERING OUTDOOR UNIT

T-STAT: THE NUMBER OF STAGES OF HEATING/COOLING SHALL MATCH THE NUMBER OF STAGES OF HEAT AVAILABLE IN THE HPIU OR THE NUMBER OF STAGES OF COOLING AVAILABLE IN THE HPOU. PROVIDE WITH T-STAT; 7 DAY PROGRAMMABLE, DIGITAL.

#### REGISTER, GRILLE, & DIFFUSER SCHEDULE\*

MARK	DESCRIPTION	MAX. NC	NECK	BORDER TYPE	MATERIAL	FINISH	MANUFACTURER	MODEL NUMBER	ACCESSORIES / NOTES
A	DIFFUSER-4-WAY	30	9"X9"	LAY-IN	STEEL	WHITE	TITUS	TDC 9X9 3 26 4	SQ-TO-RND
B	DIFFUSER-2-WAY	30	6"X6"	LAY-IN	STEEL	WHITE	TITUS	TDC 6X6 3 26 2	SQ-TO-RND
C	DIFFUSER-4-WAY	30	6"X6"	LAY-IN	STEEL	WHITE	TITUS	TDC 6X6 3 26 4	SQ-TO-RND
R1	RETURN GRILLE	30	14"X14"	LAY-IN	STEEL	WHITE	TITUS	23RFL 24X24 3 26	SQ-TO-RND

\* VERIFY CEILING TYPE BEFORE ORDERING, NARROW TEE REQUIREMENTS, PLASTER FRAMES ETC. TO BE INCLUDED WITH DIFFUSERS AT NO ADDITIONAL COST TO OWNER

#### EXHAUST FAN SCHEDULE

MARK	MAKE	MODEL	TYPE	CFM	EXTERNAL S.P. IN (W.G.)	WATTS	ELECTRICAL			NOTES
							VOLT	PH	HZ	
EF-1,2	GREENHECK	SP-B90	CEILING FAN	75	.25	49.7	115	1ø	60	WC-8 WALL CAP

#### EXHAUST FAN SCHEDULE

MARK	MAKE	MODEL	TYPE	CFM	EXTERNAL S.P. IN (W.G.)	WATTS	ELECTRICAL			NOTES
							VOLT	PH	HZ	
EF-3 & 4	GREENHECK	SE1-B-440-D	DIRECT DRIVE	260	.15	75	115	1ø	60	MODEL WD-320 MOTORIZED EXHAUST DAMPER, BIRD SCREEN WEATHERHOOD, & WALL COLLAR GALVANIZED FINISH

#### LOUVER SCHEDULE

MARK	DESCRIPTION	CFM	APPROXIMATE OUTSIDE DIMENSIONS ( W X H )	FREE AREA(SF)	MAXIMUM VELOCITY OR S.F. DROP	MATERIAL	FINISH	MANUFACTURER	MODEL NO.	NOTES
L1	WALL LOUVER	300	18"W X 18"H	1.4	500 FPM	ALUMINUM	COLOR ANODIZED MATCH METAL PANELS*	HART & COOLEY	1530ZF	PROVIDE WITH MOTORIZED DAMPER SEQUENCE DAMPER TO OPEN WHEN FAN IS RUNNING.
L2	WALL LOUVER	154	12"W X 12"H	0.6	400 FPM	ALUMINUM	COLOR ANODIZED MATCH METAL PANELS*	HART & COOLEY	1530ZF	

\* VERIFY COLOR WITH OWNER

MECHANICAL-HVAC SCHEDULES/DETAILS  
NO SCALE

#### MECHANICAL NOTES (GENERAL)

- DUCTWORK LAYOUTS ARE SCHEMATIC. ALL RISES, DROPS, OFFSETS, AND TRANSITIONS REQUIRED BUT ARE NOT SHOWN SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- DUCTWORK SHALL BE GALVANIZED STEEL AND SHALL BE CONSTRUCTED IN COMPLIANCE WITH SMAGNA STANDARDS FOR LOW VELOCITY DUCTWORK. DUCT SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE RUNOUTS SHALL NOT EXCEED 15' AND SHALL NOT BE USED TO FORM ELBOWS. CONNECTIONS FROM RECTANGULAR TO ROUND DUCT SHALL BE MADE WITH MANUFACTURED 45 DEG. LATERAL TAPS.
- SUPPLY AND RETURN DUCTWORK SHALL BE INSULATED WITH FIBERGLASS INSULATION WITH A MINIMUM THERMAL RESISTANCE OF R-5.0 (IN UNCONDITIONED AREAS) AND AN "FSK" VAPOR BARRIER. DIFFUSERS SHALL BE INSULATED WITH FIBERGLASS INSULATION WITH VAPOR BARRIER. ALL JOINTS SHALL BE TAPED WITH A FOIL BACKED TAPE TO PROVIDE A CONTINUOUS VAPOR BARRIER.
- ALL DUCTWORK SHALL BE SEALED AIR TIGHT WITH SEALING COMPOUND.
- THIS CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF OTHER TRADES PRIOR TO INSTALLATION OF ANY OF HIS PIPING, DUCTWORK, OR EQUIPMENT.
- THE MECHANICAL CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE MECHANICAL PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION OF THE MECHANICAL SYSTEMS AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.
- IT WILL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT ITEMS TO BE FURNISHED UNDER HIS CONTRACT WILL FIT THE SPACE AVAILABLE. HE SHALL MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS AND SHALL FURNISH AND INSTALL SUCH SIZES AND SHAPES OF EQUIPMENT THAT ARE THE TRUE AND INTENT MEANING OF THE PLANS AND SPECIFICATIONS. HE SHALL PROVIDE THE ENGINEER SCALED DRAWINGS OF ALL MECHANICAL DRAWINGS.
- ALL EQUIPMENT SHALL BE LOCATED AND INSTALLED TO PROVIDE MAXIMUM SPACE FOR MAINTENANCE AND SERVICE.
- ALL ELBOWS IN DUCTWORK SHALL BE RADIUS ELBOWS, UNLESS NOTED OTHERWISE. WHERE SQUARE ELBOWS ARE SHOWN, INSTALL TURNING VANES.
- MECHANICAL CONTRACTOR TO FIELD COORDINATE LOCATION OF MECHANICAL SYSTEMS WITH ELECTRICAL AND PLUMBING SYSTEMS. COORDINATE WITH ALL OTHER SYSTEMS AS NECESSARY.
- MECHANICAL WORK INCLUDES DEMOLITION, RELOCATION, IN EXISTING & NEW WORK AS APPLICABLE. MECHANICAL CONTRACTOR TO SUPPLY A COMPLETE SYSTEM IN EACH AREA.
- DUCT SIZES SHOWN ARE NET DIMENSIONS.

METHOD OF COMPLIANCE:

PRESCRIPTIVE ☒ ENERGY COST BUDGET

THERMAL ZONE 4A - HARNETT COUNTY, NC

EXTERIOR DESIGN CONDITIONS

WINTER DRY BULB 16 DEG. F.

SUMMER DRY BULB 93 DEG. F.

INTERIOR DESIGN CONDITIONS

WINTER DRY BULB 65 DEG. F.

SUMMER DRY BULB 80 DEG. F.

RELATIVE HUMIDITY 55%

BUILDING HEATING LOAD 24,852 MBH

BUILDING COOLING LOAD 4 TONS(OFFICE ONLY)

MECHANICAL SPACE CONDITIONING SYSTEM

UNITARY—COOLING — 15.20 SEER

HEATING — 8.5 HSPF

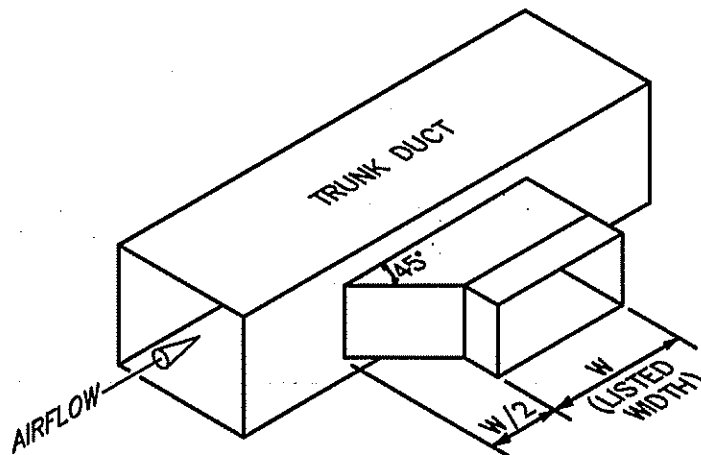
BOILER—NOT APPLICABLE IN THIS PROJECT

CHILLER—NOT APPLICABLE IN THIS PROJECT

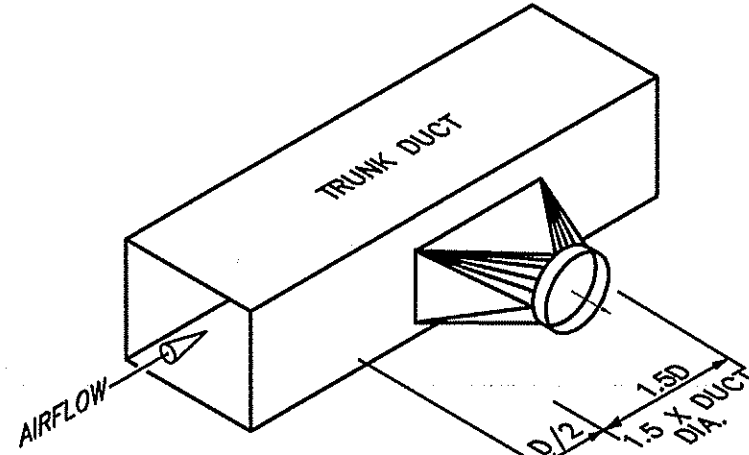
LIST EQUIPMENT EFFICIENCIES

EQUIPMENT SCHEDULES WITH MOTORS (MECHANICAL SYSTEMS)

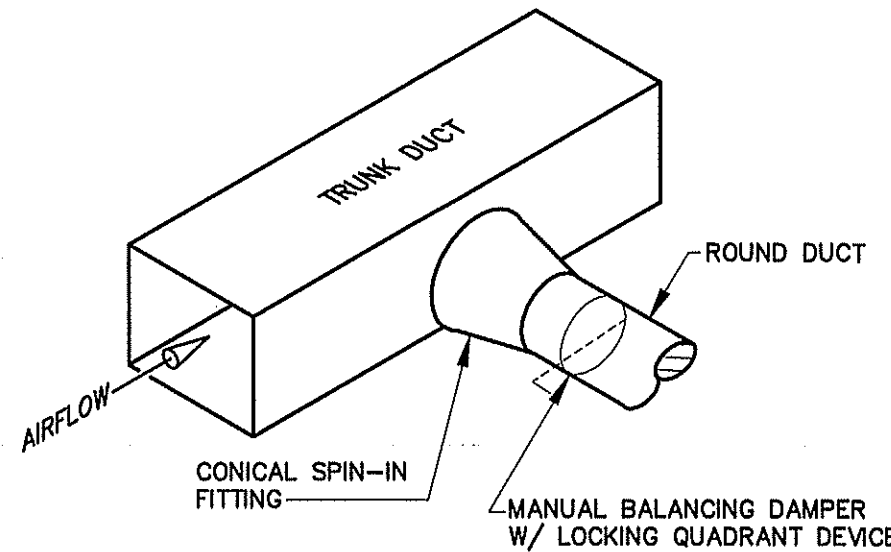
MOTORS USED ON THIS PROJECT ARE INCLUDED IN THE EFFICIENCY RATING OF THE UNIT. SEE PLANS FOR EFFICIENCIES.



RECTANGULAR

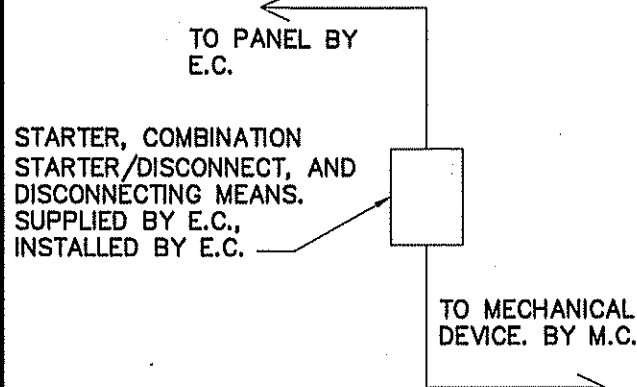


ROUND



DIFFUSER

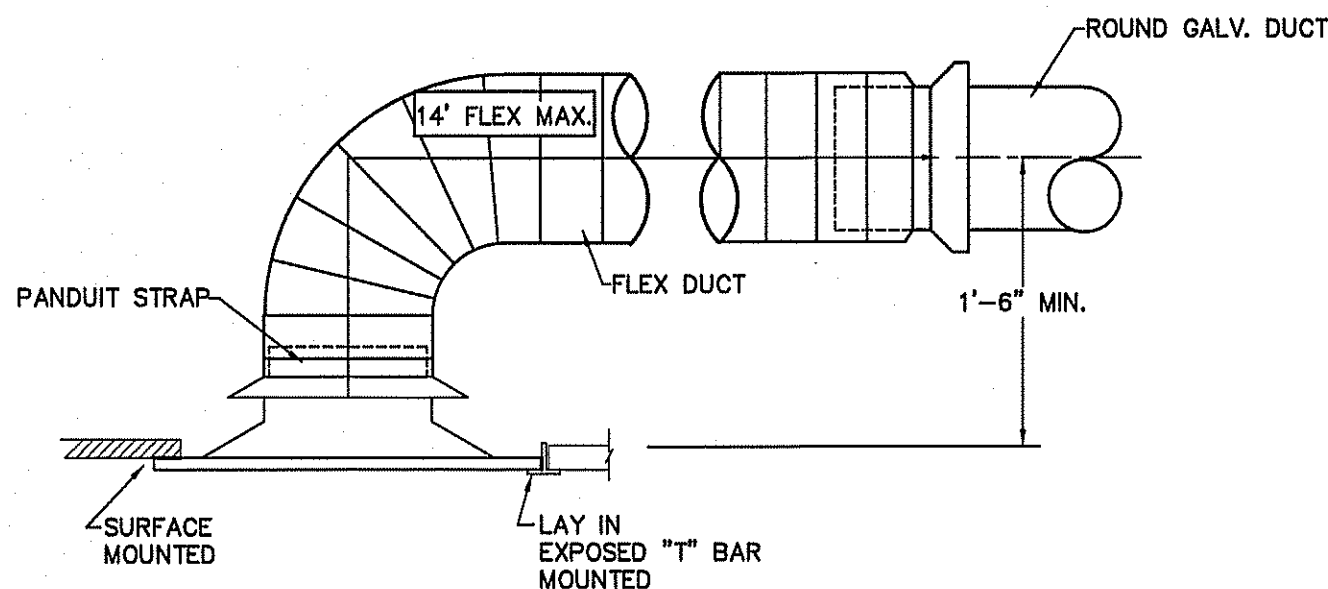
CONNECTION SCHEDULE



ALL STARTERS, COMBINATION STARTER/DISCONNECTS, AND DISCONNECTING MEANS, SUPPLIED BY E.C. FOR MECHANICAL EQUIPMENT AS REQUIRED BY NEC AND MECHANICAL EQUIPMENT MANUFACTURER'S REQUIREMENTS.

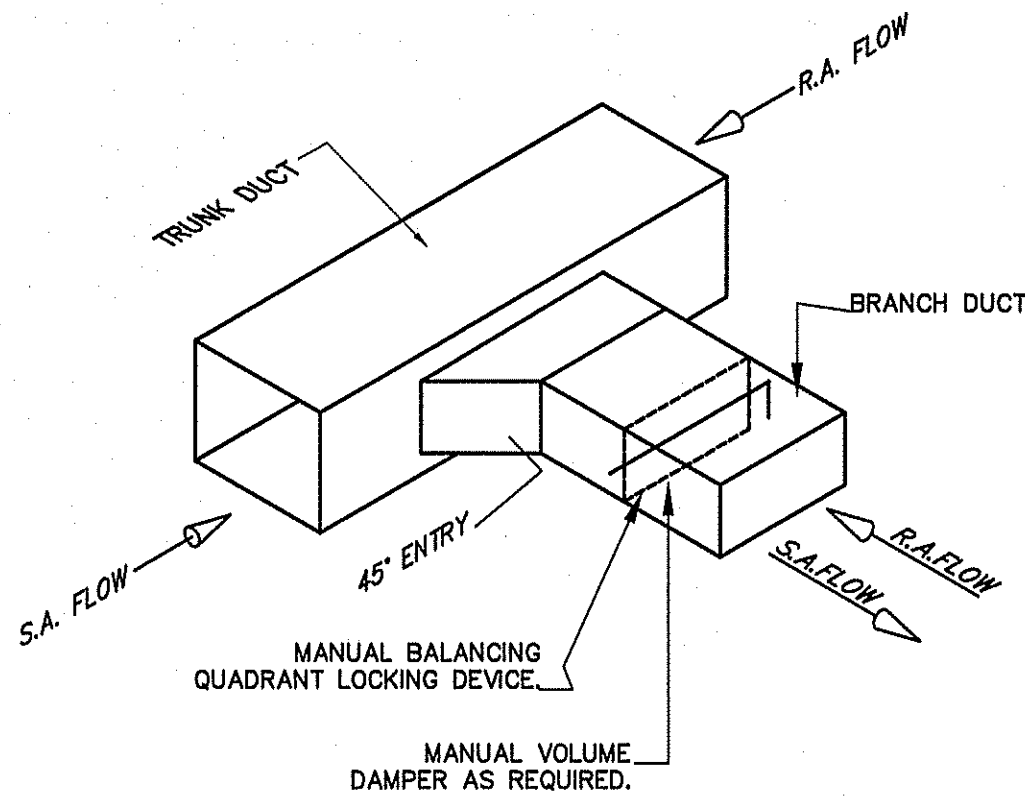
TYPICAL LATERAL TO REGISTER OR BRANCH DUCT

NOT TO SCALE



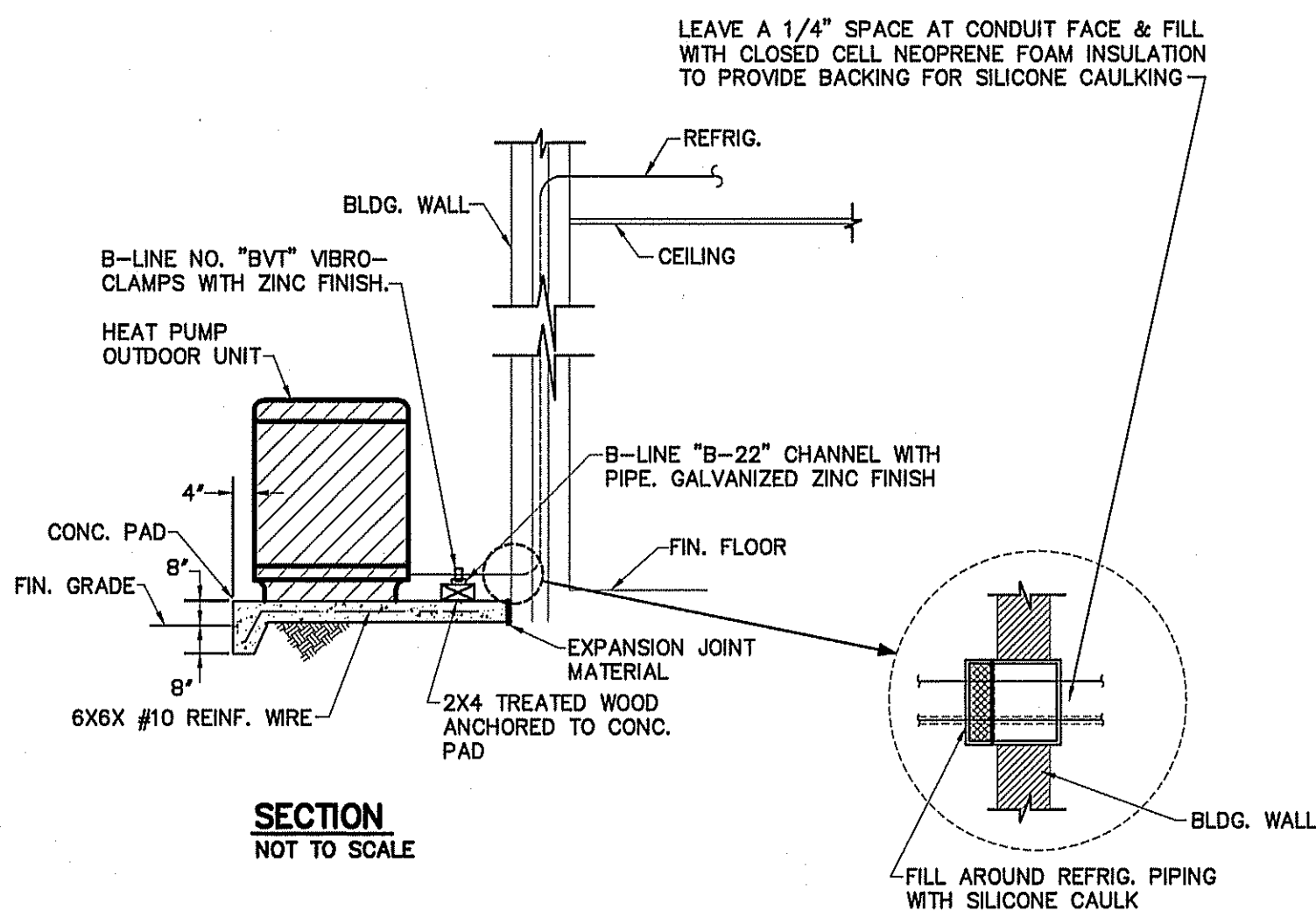
DETAIL—CEILING DIFFUSER CONNECTION

NOT TO SCALE



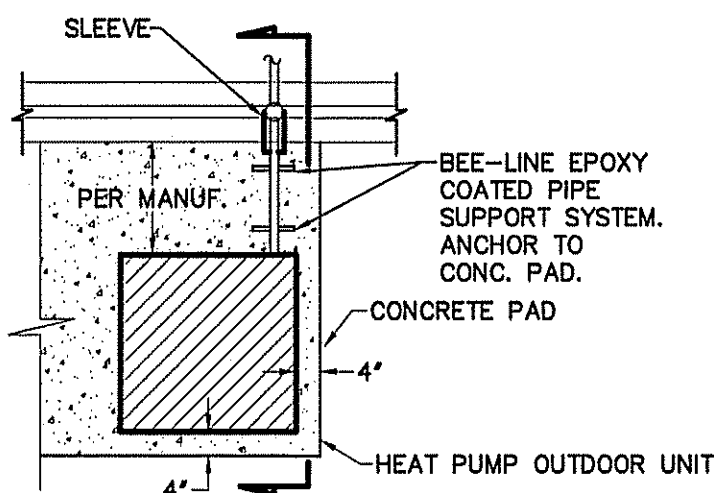
BRANCH DUCT TAKE-OFF DETAIL

NOT TO SCALE



SECTION

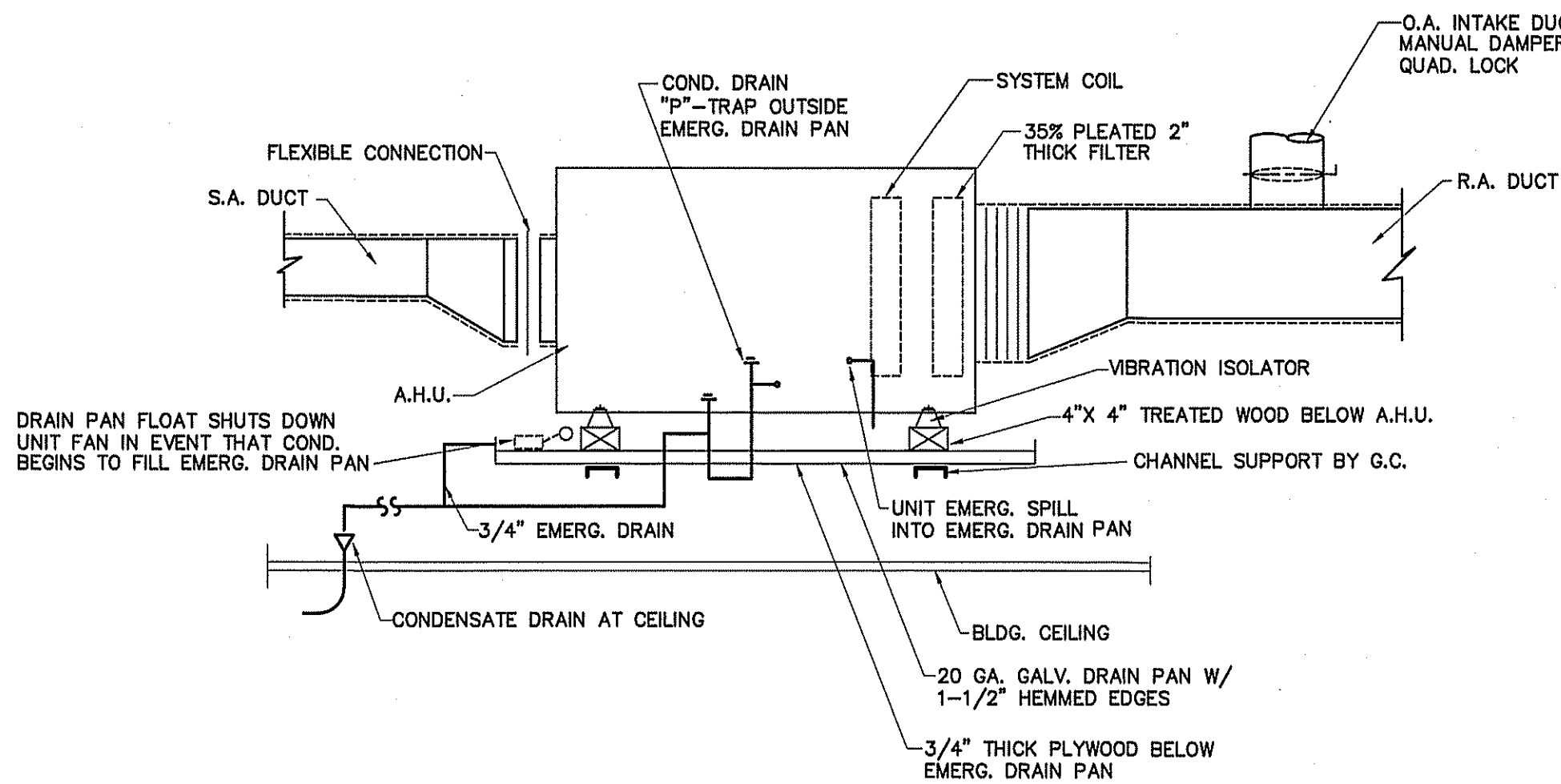
NOT TO SCALE



PLAN VIEW

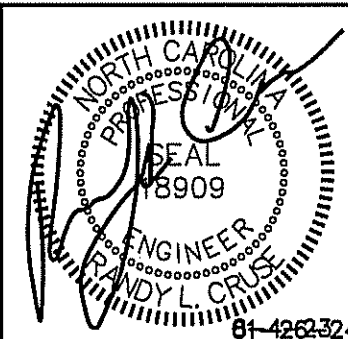
NOT TO SCALE

DETAIL—TYPICAL HEAT PUMP OUTDOOR UNIT



TYPICAL DETAIL AT AIR HANDLING UNITS

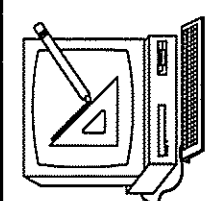
NOT TO SCALE



NEW BUILDING FOR:  
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JOB NO. 22-61

SHEET NO.

M-4 OF 4

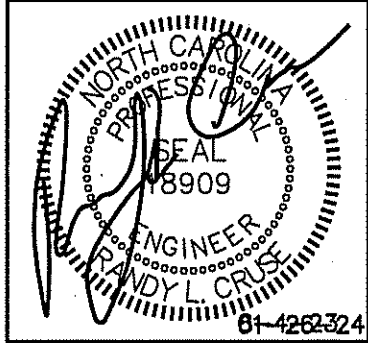


LIGHT FIXTURE SCHEDULE							
MARK	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LAMPS	BALLASTS	WATTAGE	REMARKS
A	SURFACE MOUNTED 2X4 LED FLAT PANEL	LITHONIA	CPANL 2X4 40/50/60LM 35K-40LM	LED		42.0	INCLUDE WSX D DIMMING OCCUPANCY WALL SWITCH
B	SURFACE MOUNTED 2X4 LED FLAT PANEL	LITHONIA	CPANL 2X4 40/50/60LM 35K-40LM	LED		32.0	INCLUDE WSX D DIMMING OCCUPANCY WALL SWITCH
C	8' LED STRIPLIGHT	LITHONIA	TZL1D L96 14000LM FST MVOLT 50K 90CRI WH	LED		121.0	INCLUDE HC36 HANGER CHAIN ON TIMECLOCK
D	KEYLESS FIXTURE WITH WIREGUARD AND LED BULB	-	-	LED A19	-	13	WITH WIRE GUARD
WP	OUTDOOR LED WALL LIGHT	LSI	TWR1 LED 3 50K MVOLT	LED	LED	58.4	MOUNTED @ 11" WITH CUTOFF GUARD
EM	EMERGENCY LIGHT WITH BATTERY BACKUP	SURE-LITES	CC8MRT2142SM				
EX	LED TYPE EXIT LIGHT WITH BATTERY BACKUP	SURE-LITES					
EM2	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)	SURE-LITES	12T-12-WWH OR 12T-12-DWWH OR EQUAL				

FIXTURES SELECTED BY OWNER AND PURCHASED BY CONTRACTOR  
 \* BEFORE PURCHASING, VERIFY EXTERIOR FIXTURES MEET ZONING ORDINANCE

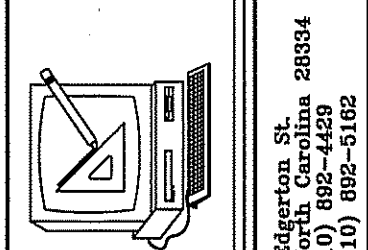
LIGHTING DATA FOR N.C. ENERGY CODE					
AREA USE	AREA FT <sup>2</sup>	WATTS PER FT <sup>2</sup> ALLOWED	TOTAL WATTS ALLOWED	TOTAL WATTS USED	TOTAL WATTS LEFT OVER
WORKSHOP	8,720	1.3	11,336	2,904	8,432
OFFICE	1,405	1.3	1,827	694	1,133
TOTAL	10,125		13,163	3,598	9,565

ELECTRICAL LEGEND	
MARK	DESCRIPTION
	'GF' DUPLEX WITH WEATHERPROOF COVER
	GROUND FAULT INTERRUPTING RECEPTACLE
	208V OR 240 V RECEPTACLE
	JUNCTION BOX
	SWITCHED BRANCH CIRCUIT
	UNSWITCHED BRANCH CIRCUIT
	120/208 VOLT CIRCUIT
	CEILING MOUNTED DUPLEX RECEPTACLE
	LIGHT FIXTURE (WALL/CEIL.)
	FLUORESCENT FIXTURE
	UNSWITCHED FLUOR. FIXT. WITH BATTERY STANDBY (SECURITY/ EMERGENCY LT.)
	'EXIT' LIGHT FIXTURE, TYPE 'EX'
	BATTERY OPERATED EMERG. LT. (2-HEAD, WALL MTD.)
	SINGLE-POLE SWITCH
	SINGLE-POLE SWITCH W/ OCCUPANCY SENSOR
	3-WAY SWITCH (4-WAY SWITCH)
	DUPLEX RECEPTACLE
	CEILING MOUNTED RECEPTACLE
	EMERGENCY LIGHT REMOTE WEATHERHEAD(S)
	QUAD RECEPTACLE
	PHONE
	INTERNET/DATA



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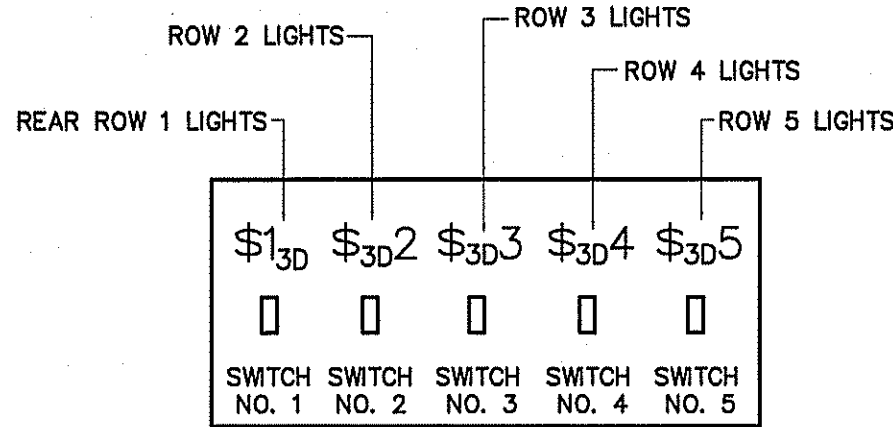


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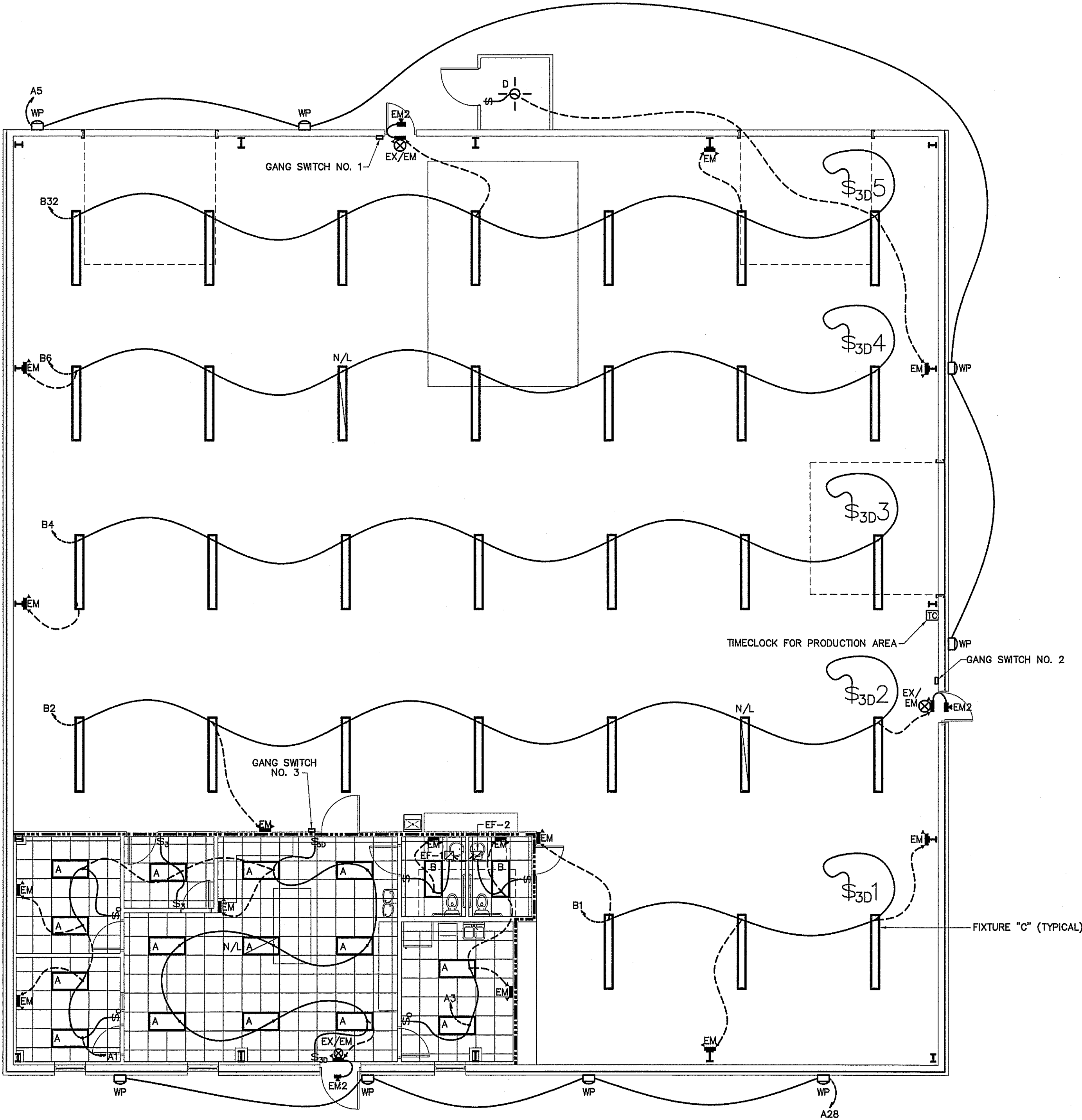
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 JOB NO. 22-61

SHEET NO.  
 E-1 OF 3



DETAIL-GANG SWITCH NO. 1, 2 & 3  
 NOT TO SCALE



ELECTRICAL LIGHTING PLAN  
 SCALE: 1/8" = 1'-0"

OFFICE

PANEL: A

SCHEDULE: \_\_\_\_\_

VOLTS: 120/240

AMPS: 200

ENCLOSURE: NEMA 1

Ø: 3

MANUFACTURER: SQ. D

NO. OF SPACES: 42

TYPE: 'NQOD'

MOUNTING: FLUSH

SHORT CIRCUIT RATING: 22K

MAIN ☒ MLO ☐ TOP FEED ☒ BOTTOM FEED ☐ COPPER BUS ☒ GROUND BAR KIT: ☒ NEUTRAL BAR KIT: ☒

L1	L2	L3	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2	L3
4.6	*	*	1	1	20	OFFICE/SHOWROOM LIGHTING	o	SPARE	20	1	2	X	*	*
*	1.9	*	3	1	20	BREAKROOM/RESTROOM LTS.	o	SPARE	20	1	4	*	*	X
*	*	2.4	5	1	20	WALLPACKS	o	SPARE	20	1	6	*	*	X
6.0	*	*	7	1	20	OFFICE #2 RECEPTACLES	o	SHOWROOM RECEPTACLES	20	1	8	3.0	*	*
*	6.0	*	9	1	20	OFFICE #1 RECEPTACLES	o	SHOWROOM RECEPTACLES	20	1	10	*	4.5	*
*	*	6.0	11	1	20	OFFICE #3 RECEPTACLES	o	DISPLAY CASE RECEPTACLES	20	1	12	*	*	3.0
1.5	*	*	13	1	20	BREAKROOM COUNTER REC.	o	DRINKING FOUNTAIN	20	1	14	5.6	*	*
*	4.5	*	15	1	20	BREAKROOM RECEPTACLES	o	REFRIGERATOR	20	1	16	*	8.0	*
*	*	X	17	1	20	SPARE	o	MICROWAVE	20	1	18	*	*	10.0
3.0	*	*	19	2	20	HVAC CONV. RECEPTACLE	o	HEAT PUMP UNIT # 1	40	2	20	19.4	*	*
*	18.8	*	21	2	30	WATER HEATER	o				22	*	19.4	*
*	*	18.8	23				o	AIR HANDLING UNIT # 1	50	2	24	*	*	32.0
X	*	*	25	1	20	SPARE	o				26	32.0	*	*
*	X	*	27	1	20	SPARE	o	WALLPACKS	20	1	28	*	2.0	*
*	*	X	29	1	20	SPARE	o	SPARE	20	1	30	*	*	X
X	*	*	31	1	20	SPARE	o	SPARE	20	1	32	X	*	*
*	X	*	33	1	20	SPARE	o	SPARE	20	1	34	*	X	*
*	*	X	35	1	20	SPARE	o	SPARE	20	1	36	*	*	X
X	*	*	37	1	20	SPARE	o	SPARE	20	1	38	X	*	*
*	X	*	39	1	20	SPARE	o	SPARE	20	1	40	*	X	*
*	*	X	41	1	20	SPARE	o	SPARE	20	1	42	*	*	X

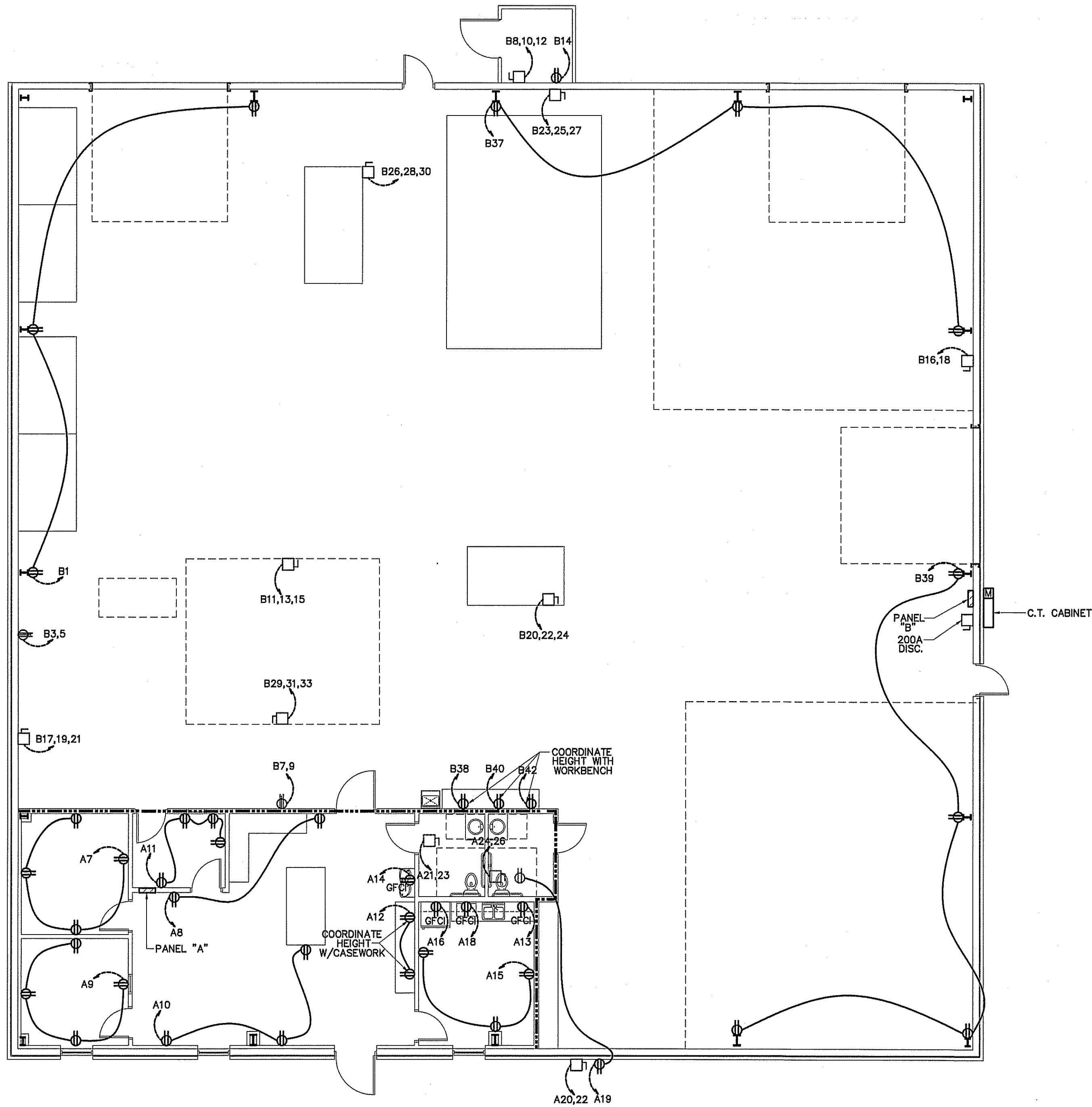
L1 = 75.1 A  
 L2 = 65.1 A  
 L3 = 72.2 A



SHOP														
PANEL: B			SCHEDULE:			MANUFACTURER: SQ. D.			NO. OF SPACES: 42					
VOLTS: 120/240			AMPS: 400			TYPE: 'NGOOD'			MOUNTING: SURFACE					
ENCLOSURE: NEMA 1			Ø: 3			SHORT CIRCUIT RATING: 22K								
MAIN Ⓜ			MLO Ⓜ			TOP FEED Ⓜ			BOTTOM FEED Ⓜ			COPPER BUS Ⓜ		
												GROUND BAR KIT Ⓜ		
												NEUTRAL BAR KIT Ⓜ		
L1	L2	L3	CIRCUIT	POLES	TRIP	ASSIGNMENT	PHASE	ASSIGNMENT	TRIP	POLES	CIRCUIT	L1	L2	L3
3.0	*	*	1	1	20	ROW #1 SHOP LIGHTING	o	ROW #2 SHOP LIGHTING	20	1	2	7.1	*	*
*	6.0	*	3	2	20	BLUM	o	ROW #3 SHOP LIGHTING	20	1	4	*	7.1	*
*	*	6.0	5				o	ROW #4 SHOP LIGHTING	20	1	6	*	*	7.1
9.0	*	*	7	2	20	AIR COMPRESSOR	o	ELGI AIR COMPRESSOR	70	3	8	42.0	*	*
*	9.0	*	9				o				10	*	*	42.0
*	*	29.0	11	3	40	SI400 NOVA TABLE SAW	o				12	*	*	42.0
29.0	*	*	13				o	AIR COMPRESSOR DRYER	20	1	14	10.0	*	*
*	29.0	*	15				o	DOOR HINGER	20	2	16	*	9.0	*
*	*	26.3	17	3	30	DUST COLLECTOR	o				18	*	*	9.0
26.3	*	*	19				o	MAX 340 (EDGE BANDER)	30	3	20	14.0	*	*
*	26.3	*	21				o				22	*	14.0	*
*	*	52.0	23	3	70	PAINT BOOTH	o				24	*	*	14.0
52.0	*	*	25				o	WOOD BORING MACHINE	20	3	26	8.0	*	*
*	52.0	*	27				o				28	*	8.0	*
*	*	15.2	29	3	30	POWERMATIC 20 INCH SAW	o				30	*	*	8.0
15.2	*	*	31				o	ROW #5 SHOP LIGHTING	20	1	32	7.2	*	*
*	15.2	*	33				o	SPARE	20	1	34	*	X	*
*	*	X	35	1	20	SPARE	o	SPARE	20	1	36	*	*	X
4.5	*	*	37	1	20	SHOP RECEPTACLES	o	WORKBENCH RECEPTACLE	20	1	38	1.5	*	*
*	6.0	*	39	1	20	SHOP RECEPTACLES	o	WORKBENCH RECEPTACLE	20	1	40	*	1.5	*
*	*	X	41	1	20	SPARE	o	WORKBENCH RECEPTACLE	20	1	42	*	*	1.5

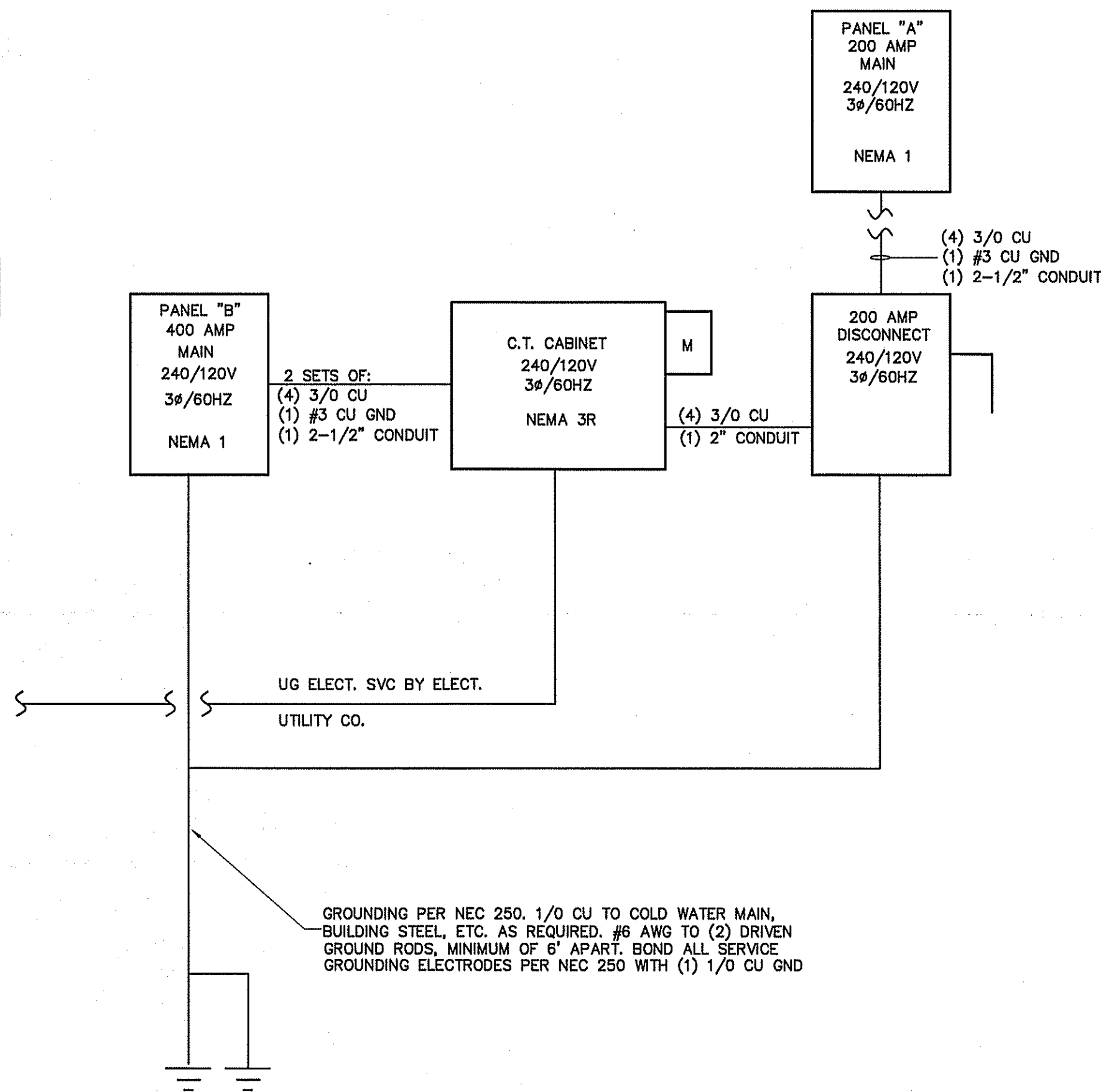
L1 = 228.8 A  
L2 = 225.1 A  
L3 = 210.1 A

- NOTES:
- ELECTRICAL CONTRACTOR TO VERIFY ALL EQUIPMENT LOADS & REQUIREMENTS WITH OWNER BEFORE ORDERING MATERIAL & BEFORE BEGINNING CONSTRUCTION.
  - ELECTRICAL CONTRACTOR TO VERIFY LOCATION OF ALL EQUIPMENT WITH OWNER BEFORE BEGINNING CONSTRUCTION.
  - THE ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH NEC 500.
  - UPON REVIEW BY OWNER AND ELECTRICAL CONTRACTOR, SHOULD LOCATION OF EQUIPMENT CHANGE FROM LOCATIONS SHOWN ON DRAWING, CONTACT ENGINEER BEFORE BEGINNING CONSTRUCTION.



NOTE:  
VERIFY AIC RATING & LUG SPACE  
WITH UTILITY COMPANY BEFORE  
ORDERING PANELS.

NOTE:  
MATCH NUMBER OF LUGS IN PANEL  
WITH NUMBER OF CONDUCTORS  
SHOWN.



ELECTRICAL RISER DIAGRAM  
NOT TO SCALE

#### ELECTRICAL LOAD CALCULATIONS

10,125 SQUARE FEET VA

#### NONCONTINUOUS LOADS:

38 RECEPTACLES @ 180 VA EA. 6840  
1ST 10000  
REMAINDER @ 50% 0  
TOTAL 6840

#### CONTINUOUS LOADS:

GENERAL LIGHTING LOAD VA/SQ. FT.

1405 SQ. FT. (OFFICE) 1.3 1827  
1827 X 1.25 2284

8720 SQ. FT. 2.2 19184  
19184 X 1.25 23980

AIR HANDLING UNIT 7680  
HEAT PUMP UNITS 4656

EQUIPMENT: 91727

25% OF LARGEST MOTOR 5398

GRAND TOTAL 142565

343 AMPS @ 120/240V, 3ø, 60HZ

#### FEEDER SCHEDULE

UNIT	FEEDERS	FUSED DISCONNECT	CONDUIT
AHU-1	(2)#8CU,(1)#10CU GND	60	3/4"
HP-1	(2)#10CU,(1)#12CU GND	60	3/4"
WATER HEATER	(2)#10CU,1#10CU GND	30	3/4"
BLUM	(2)#12CU,1#12CU GND	30	1"
AIR COMPRESSOR	(2)#10CU,1#10CU GND	30	1-1/4"
SI400	(3)#8CU,1#8CU GND	60	1-1/4"
DUST COLLECTOR	(3)#8CU,1#8CU GND	30	1-1/4"
PAINT BOOTH	(3)#6CU,1#6CU GND	100	1-1/2"
POWERMATIC	(3)#10CU,1#10CU GND	30	1"
ELGI AIR COMP.	(3)#6CU,1#6CU GND	100	1-1/2"
DOOR HINGER	(2)#12CU,1#12CU GND	30	1"
MAX 340	(3)#10CU,1#10CU GND	30	1"
WOOD BORING	(3)#12CU,1#12CU GND	30	1"

#### ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE:

ENERGY CODE: ☐ PRESCRIPTIVE ☒ PERFORMANCE ☐  
ASHRAE 90.1: ☐ PRESCRIPTIVE ☐ PERFORMANCE ☐

REFER TO DRAWINGS FOR RISER DIAGRAM AND PANEL SCHEDULES

#### LIGHTING SCHEDULE

LAMP TYPE REQUIRED IN FIXTURE: SEE SCHEDULE

NUMBER OF LAMPS IN FIXTURE:

BALLASTS TYPE USED IN FIXTURE:

NUMBER OF BALLASTS IN FIXTURE:

TOTAL WATTAGE PER FIXTURE:

TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED:

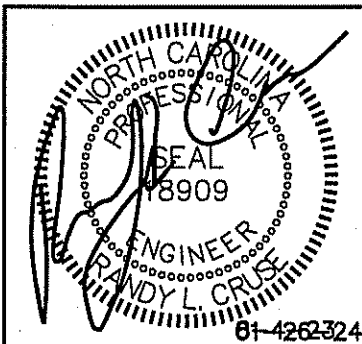
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED:

#### 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 ☐

#### ELECTRICAL NOTES (GENERAL)

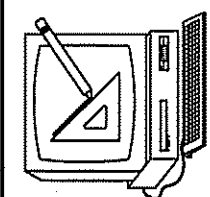
- THE ELECTRICAL INSTALLATION, EQUIPMENT, MATERIALS, AND WORKMANSHIP SHALL, AS A MINIMUM, BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA), ALL APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL CODES, LAWS, AND ORDINANCES, AND RULINGS OF THE INSPECTION AUTHORITIES HAVING JURISDICTION. ALL FEES, PERMITS, ETC., ASSOCIATED WITH THE ELECTRICAL WORK SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- THE DRAWINGS GENERALLY INDICATE THE WORK TO BE INSTALLED, BUT DO NOT SHOW ALL BENDS, BOXES, FITTINGS, AND SPECIALTIES WHICH MAY BE REQUIRED FOR A COMPLETE INSTALLATION. ALL SUCH ITEMS REQUIRED TO COMPLETE THE INSTALLATION ACCORDING TO INDUSTRY ACCEPTED PRACTICES SHALL BE INCLUDED IN THE BID.
- ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND LISTED AND LABELED BY UNDERWRITERS LABORATORIES, INC.
- ALL PENETRATIONS OF FIRE WALLS SHALL BE SEALED WITH APPROVED SEALING MATERIALS TO MAINTAIN THE FIRE RATING OF THE WALLS.
- THE CONTRACTOR SHALL VERIFY WIRE AND FUSE/CIRCUIT BREAKER SIZING FOR ALL MECHANICAL EQUIPMENT PRIOR TO PURCHASING MATERIALS AND INSTALLING BRANCH CIRCUITS.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INTERFERENCES AND CONFLICTS. APPARENT INTERFERENCES OR CONFLICTS SHALL BE REPORTED TO THE PRIME CONTRACTOR AND RESOLVED PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
- THE ELECTRICAL CONTRACTOR SHALL CONNECT BRANCH CIRCUITS TO THE MAIN LINE TERMINALS OF EQUIPMENT FURNISHED BY OTHER CONTRACTORS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY NECESSARY SWITCHES, DISCONNECTS, OR OVERCURRENT PROTECTION AHEAD OF SUCH EQUIPMENT.
- RACEWAYS ARE SHOWN SCHEMATICALLY AND MAY BE REROUTED IN THE FIELD. THEY SHALL BE INSTALLED AT RIGHT ANGLES TO OR PARALLEL WITH BUILDING LINES. THEY SHALL BE RUN CONCEALED WITHIN WALLS OR BUILDING STRUCTURES WHEREVER POSSIBLE.
- ALL RACEWAYS, EQUIPMENT, ETC., ABOVE A SUSPENDED CEILING SHALL BE MOUNTED A MINIMUM OF 18" ABOVE THE CEILING SO AS NOT TO BLOCK ANY TILE OR FIXTURE ACCESS.
- THE MINIMUM ALLOWABLE SIZE FOR ANY CONDUIT, IMC, OR EMT SHALL BE 1/2" AND MAY BE USED FOR 2#12 WIRE SWITCHLEGS ONLY. A SWITCHLEG SHALL BE DEFINED AS THE RUN OF CONDUIT FROM THE SWITCH OUTLET BOX TO THE FIRST OUTLET BEING SWITCHED.
- FULL WEIGHT GALVANIZED RIGID STEEL CONDUIT SHALL BE USED IN THE FOLLOWING AREAS:
  - ON THE EXTERIOR OF THE BUILDING OR ROOF,
  - VERTICAL DROPS WHERE THE CONDUIT CANNOT BE ANCHORED TO WALLS OR OTHER SUPPORT STRUCTURES,
  - WHERE SUBJECT TO MECHANICAL DAMAGE.
- ALL WIRE AND CABLE SHALL BE COPPER AND HAVE 600 VOLT THHN-THWN INSULATION. ALUMINUM WIRING SHALL NOT BE PERMITTED.
- THE MINIMUM WIRE SIZE SHALL BE #12 AWG EXCEPT FOR CONTROL WIRING, WHICH MAY BE #14 AWG. CONTROL WIRING SHALL USE STRANDED CONDUCTORS UNLESS OTHERWISE NOTED.
- ALL METAL RACEWAY SYSTEMS SHALL BE MADE ELECTRICALLY CONTINUOUS. THE RACEWAY SYSTEM SHALL NOT BE THE SOLE GROUNDING METHOD. AN INSULATED COPPER GROUNDING CONDUCTOR SHALL BE INSTALLED FOR ALL FEEDERS AND BRANCH CIRCUITS. AT RECEPTACLES, A GREEN GROUND CONDUCTOR SHALL BE CONNECTED TO THE GROUND TERMINAL OF THE RECEPTACLE.
- THE ELECTRICAL CONTRACTOR SHALL COORDINATE FUSE AND DISCONNECT SWITCH SIZES WITH THE MECHANICAL EQUIPMENT SUPPLIER PRIOR TO PURCHASE AND INSTALLATION OF BRANCH CIRCUIT EQUIPMENT. IF EQUIPMENT SIZING CHANGES FROM DESIGN SIZES, CIRCUITS SHALL BE RESIZED ACCORDINGLY.
- LIGHT FIXTURES FOR INSTALLATION IN A SUSPENDED CEILING SHALL BE SECURELY FASTENED TO THE CEILING SUSPENSION SYSTEM IN A MANNER TO PREVENT FIXTURES FROM FALLING. IN ADDITION, 16 GAGE WIRE HANGERS SHALL BE FASTENED TO THE FOUR CORNERS OF THE FIXTURES.
- CONNECTIONS TO FIXTURES INSTALLED IN SUSPENDED CEILINGS SHALL BE MADE WITH FLEXIBLE METAL CONDUIT TO ALLOW THE FIXTURE TO BE LIFTED OUT OF THE GRID AND MOVED TO AN ADJACENT GRID LOCATION.
- BREAKERS SUPPLYING HVAC OR REFRIGERATION EQUIPMENT SHALL BE HACR TYPE.
- 3/4" CONDUIT IS MINIMUM ALLOWABLE SIZE EXCEPT AS INDICATED IN #10. CONDUIT FILL NOT TO EXCEED 40% AS PERMITTED BY THE NATIONAL ELECTRIC CODE.
- ALL CONDUCTORS TO BE INSTALLED IN CONDUIT (EXCEPT WHERE ROMEX IS INSTALLED). EMT FITTINGS TO BE COMPRESSION TYPE, INSULATED THROAT.
- NOT USED
- DATA, SECURITY, THEATRICAL, AND VIDEO SYSTEMS TO BE PROVIDED BY OWNER. ROUGH-IN OF OUTLETS AND CONDUIT WILL BE BY CONTRACTOR AS SHOWN ON DRAWINGS.
- NOT USED
- NO. 10 AWG CONDUCTORS SHALL BE USED FOR 20 AMP BRANCH CIRCUIT HOME RUNS EXCEEDING 50 FT. TO THE JUNCTION POINT. 20 AMP BRANCH CIRCUIT WIRING SHALL BE NO. 10 AWG THROUGHOUT IF THE CIRCUIT IS LONGER THAN 100 FEET TOTAL LENGTH.
- CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET. SPLICES WILL NOT BE MADE EXCEPT WITHIN ACCESSIBLE OUTLET OR JUNCTION BOXES, TROUGHS, OR GUTTERS.
- MAKE CONDUCTOR LENGTHS FOR PARALLEL CIRCUITS EQUAL.
- INSTALL TELEPHONE OUTLETS WITH 3/4" EMPTY CONDUIT AND PULL CORD. STUB OUT ABOVE CEILING. PHONE SYSTEM INSTALLED BY OWNER.
- ALL CONDUIT WITHOUT CONDUCTORS SHALL HAVE NYLON PULLCORDS INSTALLED.
- THE CONTRACTOR SHALL MAKE A COMPLETE REVIEW OF THE PLANS, SCHEDULES, AND DETAILS PRIOR TO INSTALLATION, AND REVIEW ANY CONFLICTS THAT ARE NOTED WITH THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES FOR PERMITS AND INSPECTIONS. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR ELECTRIC UTILITY CONNECTION FEES AND LINE EXTENSION FEES.
- ELECTRICAL CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION WHICH DEVELOPS OBJECTIONABLE NOISES SHALL BE MADE FROM THE CONDUIT SYSTEM WITH SHORT LENGTHS OF FLEXIBLE "LIQUID-TITE" CONDUIT.
- ALL WIRE TERMINATIONS AND EQUIPMENT TO BE RATED FOR 75° C MINIMUM.
- ELECTRICAL CONTRACTOR TO MAINTAIN 2' OF SEPARATION ON RECEPTACLES ON OPPOSITE SIDES OF ANY FIRE RATED WALL PER 2017 N.E.C. 300.21.
- WIRING TO DISCONNECT SWITCH AND DISCONNECT SWITCH SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR. WIRING FROM THE DISCONNECT TO THE EQUIPMENT SHALL BE BY THE MECHANICAL CONTRACTOR.



NEW BUILDING FOR:  
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ANGIER, NORTH CAROLINA 27501

#### REVISIONS

NO.	



Cruse  
and  
Associates, P.A.

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E-3 OF 3