

SCHEDULE OF RESPONSIBILITY		LANDLORD		CONTRACTOR	
NOTE: SEE EQUIPMENT SCHEDULE FOR DIVISION OF EQUIPMENT ORDERS, SUPPLY AND INSTALLATION RESPONSIBILITY		REPAIR	REPLACE	INSTALL	REMOVE
DECK	REMOVE SLAB FOR NEW IN-FLOOR PLUMBING			X	
	REPAIR, LEVEL AND SLOPE FOR FINISHES AND TRANSITION			X	
	INSTALL NEW CONC. SLAB			X	
FLOOR	VINYL COMPOSITION TILE			X	
	CERAMIC TILE, BASE AND GROUT			X	
	QUARRY TILE, BASE AND GROUT			X	
CEILING	FRAMING			X	
	U.L. PENETRATION CAULKING AT RATED ASSEMBLIES			X	
	INSTALL GYPSUM BOARD ON EXISTING WALLS			X	
WALLS	FRAMING, FLYWOOD AND GYPSUM			X	
	F.P. PANELS, WAINSCOTS, AND TILE WALL			X	
	PAINTING AND STAINING			X	
PARTITIONS	GYPSUM BOARD CEILING AND SOFT			X	
	LAY-IN CEILING WITH SUSPENSION SYSTEM			X	
	DOORS, FRAMES AND HARDWARE			X	
DOORS	MENU BOARD SOFT			X	
	RELOCATE EXISTING DOOR/ADD NEW DOOR			X	
	NEW CANVAS AWWN			X	
FINISHES	PATCH AND REPAIR EXISTING/FINISH TO MATCH EXISTING			X	
	MILLWORK			X	
	COUNTERS			X	
FURNITURE	FURNITURE			X	
	KITCHEN EQUIPMENT			X	
	EXHAUST HOOD, FANS			X	
SIGNAGE	OUTDOOR TABLES / CHAIRS / UMBRELLAS			X	
	EXTERIOR SIGN (SEPERATE PERMIT)			X	
	MENI BOARD			X	
HVAC	INTERIOR WALL GRAPHICS			X	
	NEW A.C. UNIT, SUSPENSION AND MOUNTING SYSTEM			X	
	WIRING AND CONNECTION			X	
PLUMBING	DUCTWORK AND DAMPERS			X	
	HVAC GRILLS			X	
	THERMOSTATS AND CONTROLS			X	
ELECTRICAL	CONTROL WIRE (LOW VOLTAGE)			X	
	TILET EXHAUST FAN			X	
	EXTEND WATER SERVICE TO SPACE			X	
ELECTRICAL	EXISTING METER NOT TO SPACE			X	
	FINAL CONNECTION			X	
	HVAC CONNECTIONS			X	
ELECTRICAL	GAS PIPING A/C			X	
	WATER HEATER			X	
	RESTROOM PLUMBING FIXTURES			X	
ELECTRICAL	GREASE INTERCEPTOR			X	
	ELECTRICAL SERVICE FROM EXISTING POWER CO. LOCATION			X	
	NEW ELECTRICAL AND TELEPHONE PANELS			X	
ELECTRICAL	EQUIPMENT ROUGH-IN AND FINISH			X	
	LIGHT FIXTURES, MOUNTING, ACCESSORIES, AND LAMPS			X	
	MUSIC SYSTEM AND SPEAKERS			X	
ELECTRICAL	COV/EMERGENCY LIGHT SYSTEM			X	
	ALARM SYSTEM			X	
	P.O.S. CONDUIT, JACKS, & CABLES (CAT5e)			X	
ELECTRICAL	P.O.S. EQUIPMENT INSTALLATION			X	



 **Approved**
button 10/05/2018

INTERIOR UP-FIT FOR TEAM SUSLIK82, LLC.

BUFFOLA LAKE BUSINESS PARK
 80 AMARILLO LANE
 SANFORD, NORTH CAROLINA 27332
 FRANCHISEE: SAM SUSLIK

NATIONAL ACCOUNT CONTACTS:

CREASE INTERCEPTORS
 SCHIER PRODUCTS
 Sean Molen
 National Accounts Manager
 Phone 816-506-3203
 Email sean.molen@schierproducts.com
 *Engineered into plans. To be purchased by GC. GC to contact rep during bid for accurate pricing.

HVAC
 TRANE COMPANY
 Donna Lavon, Project Manager
 Phone 866-986-4822
 Email Donna.lavon@trane.com

JIM HOOVLER
 Phone 866-415-2499
 Email jhoovler@trane.com
 *To be purchased by GC. GC to contact rep during bid for accurate pricing.

AIR CURTAINS
 POWERE AIRE, INC.
 Phil Rodenbaugh
 RFQ | 888.321.2473
 General | 724.588.3305
 Cell | 724.301.7438
 e-mail phil@powereaire.com
 *Engineered into plans. To be purchased by GC. GC to contact rep during bid for accurate pricing.

FINISHES

FRP FOR KITCHEN / HALL
 MARLITE
 Tim Pinnow
 Business Development Manager
 Phone 234-380-1014
 Mobile 339-260-1731
 Email tpinnow@marlite.com
 *To be purchased by GC. GC to contact rep during bid for accurate pricing.

FLOOR & WALL TILE
 CREATIVE MATERIALS CORPORATION
 Allison Piche
 Phone 518.713.5395
 Email apiche@creativematerialscorp.com
 Phone 800.207.2967 ext. MARC (6272)
 marcos@creativematerialscorp.com
 *National account pricing is available nationwide.
 *To be purchased by GC. GC to contact rep during bid for accurate pricing.

TOILETS, SINKS, MOP SINKS
 HIC (Optional Partner or by GC)
 Latricia Allison
 Phone 800-459-7099
 Email lalison@hictinc.com
 *To be purchased by GC. GC to contact rep during bid for accurate pricing.

CEILING GRID & TILE (KITCHEN & DINING)
 LEW SUPPLY
 Deb Sottile
 Phone 773-704-7157
 Email dsottile@lwsupply.com
 *National account pricing is available nationwide.
 *To be purchased by GC. GC to contact rep during bid for accurate pricing.
RESTROOM DOORS, DOOR FRAMES, ALL DOOR HARDWARE, TOILET ACCESSORIES

LOCKNET
 Jon McKinney
 Phone 800-887-4307 X 163
 Cell 502-542-3348
 Email jon@locknet.com
 *To be purchased by GC. GC to contact rep during bid for accurate pricing.
 *Optional rear door security hardware available.

PAINT
 SHERWIN WILLIAMS
 Jennifer A. Applegate
 Sherwin-Williams
 Phone 419-346-8200
 Email: Jennifer.A.Applegate@sherwin.com
 Account Number: 5528-7463-8
 *National account pricing is available nationwide.
 *To be purchased by GC. GC to contact rep during bid for accurate pricing.

LIGHTING
 SPECIALTY LIGHTING
 Meghan Donoghue
 Project Manager
 P: (800) 767-0110 x232
 F: (860) 767-5008
 Email meghan.donoghue@slighting.com
 *National account pricing is available nationwide.
 *To be purchased by GC. GC to contact rep during bid for accurate pricing.

INDEX OF DRAWINGS			
NO.	DESCRIPTION	REVISION SET	DATE
○ ISSUED FOR REVIEW ● REVISED & REISSUED DRAWING			
GENERAL		09-26-2018	
G-1	COVER SHEET & INDEX OF DRAWINGS	○	
G-2	LIFE SAFETY & KEY PLAN PLAN	○	
G-3	APPENDIX B	○	
G-4	APPENDIX B	○	
G-5	COMCHECK	○	
G-6	UL DESIGN DETAILS	○	
ARCHITECTURAL			
A-0.1	DEMOLITION / SLAB PLAN	○	
A-1.0	FLOOR PLAN & SCHEDULE	○	
A-1.1	WALL TYPES	○	
A-2.0	REFLECTED CEILING PLAN	○	
A-3.0	FINISH PLAN & SCHEDULE	○	
A-5.0	RESTROOM ELEVATIONS	○	
A-5.1	CASEWORK DETAILS	○	
A-5.2	INTERIOR ELEVATIONS	○	
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A-6.0	EQUIPMENT PLAN & SCHEDULES	○	
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AP-4.0	PLUMBING SPECIFICATIONS	○	
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HVAC			
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AM-2.0	MECHANICAL NOTES	○	
AM-2.1	MECHANICAL DETAILS	○	
AM-2.2	MECHANICAL DETAILS	○	
AM-3.0	MECHANICAL SPECIFICATIONS	○	
AM-3.1	MECHANICAL SPECIFICATIONS	○	
AM-3.2	MECHANICAL SPECIFICATIONS	○	
AM-4.0	HOOD DETAILS	○	
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AE-1.0	POWER PLAN	○	
AE-1.1	MECHANICAL POWER PLAN	○	
AE-2	LIGHTING PLAN	○	
AE-3	ELECTRICAL SCHEDULES & NOTES	○	
AE-4.0	ELECTRICAL SPECIFICATIONS	○	
AE-4.1	ELECTRICAL SPECIFICATIONS	○	
AE-4.2	ELECTRICAL SPECIFICATIONS	○	

GENERAL NOTES:

- THESE DRAWINGS ARE AN INSTRUMENT OF CONDITIONAL SERVICES. THE ARCHITECT TAKES NO RESPONSIBILITY FOR ACTUAL FIELD CONDITIONS AND CONSTRUCTION. THESE DRAWINGS ARE TO CONVEY DESIGN INTENTIONS AND CODE COMPLIANCE ONLY. ACTUAL LOCATIONS AND DIMENSIONS TO BE FIELD VERIFIED.
- ALL WORK SHALL BE IN STRICT ACCORDANCE WITH ALL LOCAL CODES, ORDINANCES, ETC. INCLUDING 2012 NC BUILDING CODE, 2012 NC ENERGY CONSERVATION CODE, 2012 NC MECHANICAL CODE, 2012 NC PLUMBING CODE, 2014 NATIONAL ELECTRICAL CODE AND 2012 INTERNATIONAL FIRE CODE.
- ALL CONSTRUCTION MATERIAL AND INSTALLATION OF MECHANICAL, ELECTRICAL, & PLUMBING SHALL BE IN STRICT ACCORDANCE WITH ALL LOCAL CODES & ORDINANCES.
- ALL CONSTRUCTION MATERIAL AND INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE 2009 AMERICAN NATIONAL STANDARD INSTITUTE (ANSI) HANDICAP CODE AND THE (ADA) AMERICAN DISABILITIES ACT.
- COORDINATION OF ALL TRADES IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND IS ESSENTIAL TO THE COMPLETION OF THE PROJECT.
- BY EXECUTING THE CONTRACT, THE CONTRACTOR REPRESENTS THAT HE HAS VISITED THE SITE FAMILIARIZED HIMSELF WITH THE EXISTING CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- NO CHANGE ORDERS WILL BE ISSUED FOR CHANGES REQUIRED IN THE WORK DUE TO AN INCOMPLETE FIELD VISIT BY THE CONTRACTOR PRIOR TO BIDDING.
- NO CHANGE ORDERS WILL BE ISSUED FOR CHANGES REQUIRED IN THE WORK AFTER CONSTRUCTION HAS COMMENCED UNLESS SPECIFICALLY AUTHORIZED BY AN OWNERS REPRESENTATIVE.
- AN ERROR OR OMISSION IN THESE DOCUMENTS RESULTING IN A CHANGE ORDER FOR ADDITIONAL COST AND / OR TIME SHALL NOT BE CONSIDERED A HARDSHIP OR DAMAGE TO THE OWNER TO THE EXTENT THAT THE ADDITIONAL COST AND TIME WOULD HAVE INCREASED THE BASE BID PRICE AND / OR TIME HAD THERE BEEN NO ERROR OR OMISSION IN THE DOCUMENTS AD THE TIME BIDS WERE RECEIVED. THE OWNER ACKNOWLEDGES THAT THE WORK ASSOCIATED WITH THE ERROR OR OMISSION, HAD IT BEEN INCLUDED IN THE BASE BID, WOULD HAVE AFFECTED THE TIME AND COST OF THE ORIGINAL BASE BID PRICE. THE OWNER IN NOT ENTITLED TO BENEFIT FROM FREE OR REDUCED COST OR TIME FOR WORK THAT WOULD HAVE OTHERWISE INCREASED THE CONTRACT TIME AND OR COST OF THE BASE BID HAD NO ERROR OR OMISSION BEEN IN THE BID DOCUMENTS.

GENERAL CONSTRUCTION NOTES:

- GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS AT THE JOB SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECT. THE G.C. IS RESPONSIBLE FOR PROPER FIT AND INSTALLATION OF ALL WORK SHOWN ON THESE DRAWINGS. THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ANY FABRICATION OF INSTALLATION TECHNIQUES PROVIDED BY THE G.C. OR ANY OF HIS SUBCONTRACTORS.
- G.C. TO SECURE AND PAY FOR ALL PERMITS, TEMPORARY UTILITIES AND CARRY LIABILITY INSURANCE AS REQUIRED.
- ALL DIMENSIONS ARE TO THE FACE OF BLOCK, STUD OR CENTERLINE, UNLESS NOTED OTHERWISE.
- ALL INTERIOR STUD WALLS TO BE METAL STUDS AT 16" O.C. WITH GYPSUM BOARD AT EACH FACE AS DETAILED, UNLESS NOTED OTHERWISE.
- ALL FLOOR FINISHES TO BE LEVEL AND FLUSH AT INTERSECTIONS, UNLESS OTHERWISE NOTED
- CEILING SUSPENSION SYSTEM TO BE SECURED TO STRUCTURAL MEMBERS OR ADDITIONAL SUPPORTS ABOVE.
- G.C. TO PROVIDE COMPLETE SHOP DRAWINGS FOR ALL NECESSARY WORK AS SPECIFIED FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.



GERALD P. NOE
 ARCHITECT
 N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
 SPARTANBURG, SC 29302
 P: 864.583.2215 F: 864.583.2265
 mail@gpnarcht.com

CHECKED BY: DKH
 DRAWN BY: DKH

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
 546 PERTH DRIVE
 SANFORD, NORTH CAROLINA 27332

PROJECT NAME:

 **INTERIOR UP-FIT**
 BUFFOLA LAKE BUSINESS PARK
 80 AMARILLO LANE
 SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

COVER SHEET & INDEX OF DRAWINGS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

G-1.0

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

TYPICAL FIRE PENETRATION SIGNAGE:
FIRE AND SMOKE BARRIER, PROTECT ALL OPENINGS

GENERAL NOTES:
 1. EACH NEW/EXISTING FIRE WALL, FIRE BARRIER, FIRE PARTITION, SMOKE BARRIER, SMOKE PARTITION, OR ANY NEW/EXISTING WALL REQUIRED TO HAVE PROTECTED OPENINGS SHALL BE EFFECTIVELY AND PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING ABOVE ANY DECORATIVE CEILING AND IN ALL CONCEALED SPACES WITH THE WORDING "FIRE AND SMOKE BARRIER - PROTECT ALL OPENINGS" OR SIMILAR LANGUAGE. SUCH SIGNS OR STENCILING SHALL BE PROVIDED WITH 4" IN. HIGH LETTERS, AND IN. STROKE, AND NOT MORE THAN 15 FEET ON-CENTER. SUCH SIGNS OR STENCILING SHALL BE PROVIDED WITH RED LETTERING AND PROVIDED ON BOTH SIDES OF SAID ASSEMBLIES.

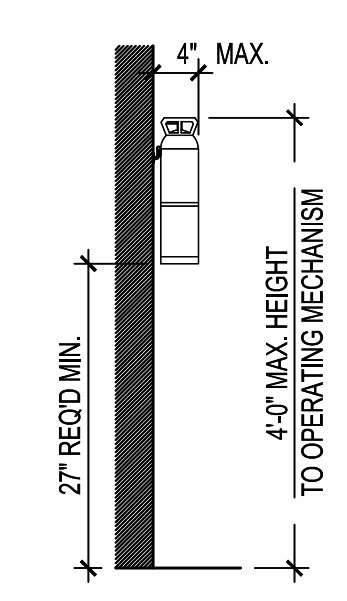
- KEY NOTES**
1. MAXIMUM DIFFERENCE IN FLOOR ELEVATION ON BOTH SIDES OF ALL EGRESS DOORS TO REMAIN AT 2" MAX. IN ACCORDANCE WITH THE CODE, TYP.
 2. 3'-0" CLEAR AREA IN FRONT OF ELECTRICAL PANELS
 3. NOT USED.
 4. NOT USED
 5. WALK-IN COOLER
 6. FIRE EXTINGUISHERS

NOTES

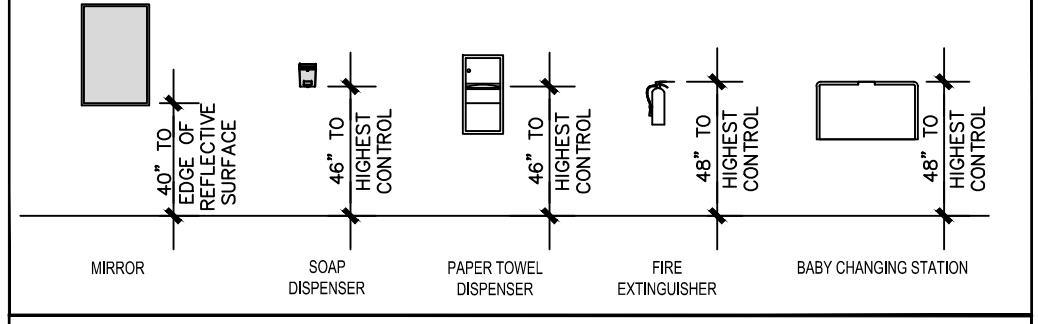
PER THE 2012 NORTH CAROLINA FIRE CODE, SECTION 1011.3 A TACTILE SIGN STATING "EXIT" AND COMPLYING WITH ICC A117.1 (RAISED LETTERING AND BRAILLE) IS TO BE PROVIDED ADJACENT TO EACH DOOR TO AN EGRESS STARWAY, AN EXIT PASSAGEWAY, THE EXIT DISCHARGE, AREA OF RESCUE, AND EXTERIOR AREA FOR ASSISTED RESCUE. SIGNS SHALL BE PLACED ON THE WALL, ON THE LATCH SIDE OF THE DOOR, 48 TO 60 INCHES OFF OF THE FLOOR.

FIRE EXTINGUISHER ANALYSIS

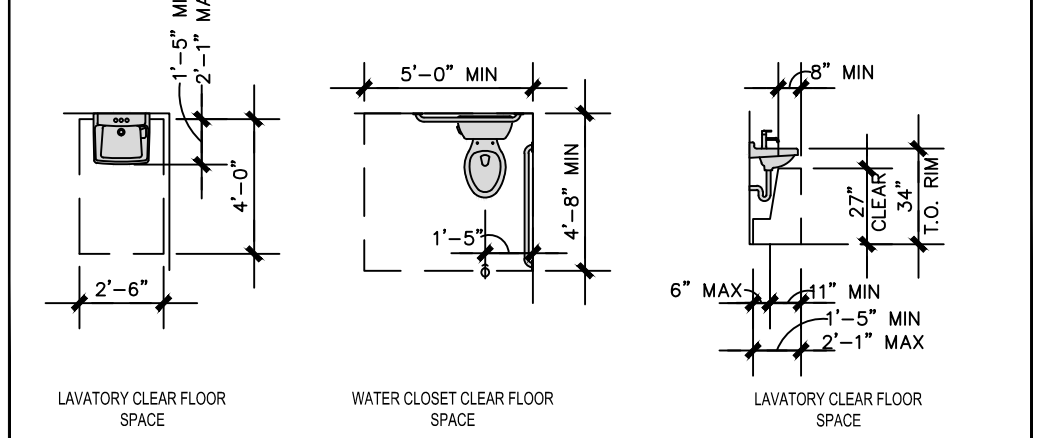
1. CLASSIFICATION OF HAZARD : (N.F.P.A 10 SECTION 1-5)
 LIGHT (LOW) HAZARD
 (N.F.P.A 10 SECTION 1-5.2)
 MINIMUM RATED SINGLE EXTINGUISHER = 2A
 (N.F.P.A 10 TABLE 3-2.1)
 MAXIMUM FLOOR AREA PER UNIT OF A = 3000 SF
 (N.F.P.A 10 TABLE 3-2.1)
 MAXIMUM FLOOR AREA FOR EXTINGUISHER = 11,250 SF
 (N.F.P.A 10 TABLE 3-2.1)
 MAXIMUM TRAVEL DISTANCE TO EXTINGUISHER = 75 FEET
 (N.F.P.A 10 TABLE 3-2.1)
2. FIRE EXTINGUISHER SPECIFICATION:
 MANUFACTURER : LARSENS
 SERIES : MP-SERIES/MULTI PURPOSE DRY CHEMICAL
 MODEL NO : MP5 (UL RATING 2A-10B:C)
 BRACKET : PROVIDE RECESSED CABINET



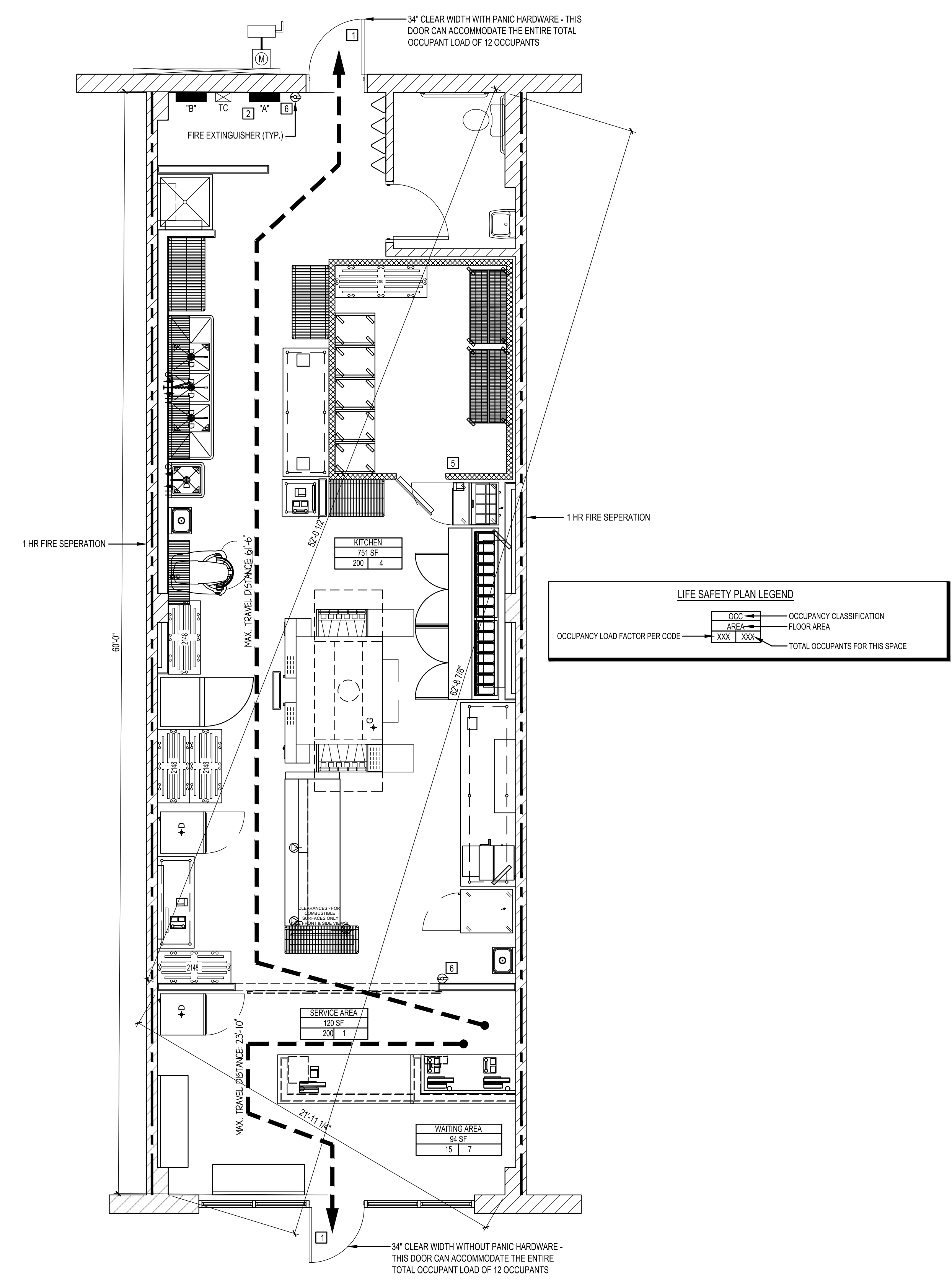
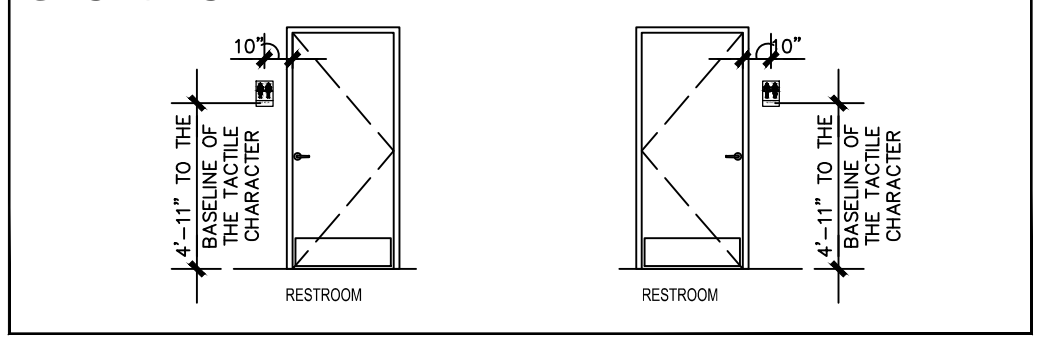
ACCESSORY MOUNTING LOCATIONS



TOILET FIXTURES



SIGNAGE



1 LIFE SAFETY PLAN
 1/4" = 1'-0"



GERALD P. NOE ARCHITECT
 N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
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 mail@gpnarcht.com

CHECKED BY: DKH
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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
 546 PERTH DRIVE
 SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
 80 AMARILLO LANE
 SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

LIFE SAFETY & KEY PLAN

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

G-2

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

2012 APPENDIX B BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS

(Includes: New Construction, Upfits, Renovations, Additions) (EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)

a. Project Information - (Required information for all projects)

Name of Project: Marco's Pizza
Address: 80 Amarillo Lane - Sanford, NC Zip Code 27332
Proposed Use: Take-out Pizza Restaurant
Owner/Authorized Agent: Kyle Henry

b. Project Summary/ Alternative Means of Compliance - (Required information for all projects)

Building description: existing single story building in which we are constructing a Marco's Pizza
Scope of work details: This scope will include new interior partitions, HVAC electrical connections, & new interior finishes.
Does this project have air rights, easements, an assumed or deeded property line, no build easements or other circumstances similar to the aforementioned? Yes No X If yes, please provide a copy of the official documents.

Renovation projects only: If you are using Chapter 34 (3412: Existing buildings) in the NCSBC or NFPA 101 as an alternative for Code compliance please schedule a preliminary review before submitting your project for review.

If applicable to your project: Alternative Means of Compliance/Engineering Judgment: (Approval needed from the Code Administrator is required before submitting)

c. Design Professional Information - (Required Information for all Projects)

Table with columns: DESIGNER, FIRM, NAME, LICENSE #, TELEPHONE #, E-MAIL. Lists Gerald P. Noe as the design professional for various disciplines.

d. Type of work being performed - (Required Information for all Projects)

What type of work is being performed?
[] New Construction
[] Addition: (An Existing Building that is adding heated or unheated space...)
[] Upfit: (First Time Interior Completion)
[] Alteration: (Previously Occupied Space) This includes Change of Use.

e. Code Information- NCSBC - (If using the REHAB code please go to section f.)

Building Code: [x] 2012 North Carolina State Building Code (NCSBC)
New Building: [] New building [] Shell building
Existing Building: [] Change of use/occupancy [x] Building/tenant space interior completion (Alteration / Renovation)

Alteration/Renovations projects: Please see 3411 NCSBC for compliance for Accessibility for Existing Buildings. A letter from the designer will be required to be reproduced on the plans to verify how compliance will be achieved.

f. REHAB Code (Existing Building Code)

[] 2009 NC REHAB CODE Information: Scope of work / work area must be listed and delineated on the plans.
Check all that apply: [] Repair [] Renovation [] Alteration [] Reconstruction [] Change of use [] Addition

[] Last known legal occupancy use Historic Property: Yes [] No []
Original Building Construction Date: _____ Date of Preliminary Meeting _____

Reviewers Notes for Field Inspector:

g. Basic Building Data -- (Required information for all projects)

Table with columns: FLOOR, EXISTING (SQ FT), NEW/RENOVATED (SQ FT), SUB-TOTAL. Lists floor areas from 6th to 1st floor and a basement.

h. Allowable Area / Occupancy Classification - (Required information for all projects)

Occupancy: (Chapter 3)
Assembly (303) [] A-1 [] A-2 [] A-3 [] A-4 [] A-5
Business (304) [] B
Educational (305) [] E
Factory (306) [] F-1 Moderate [] F-2 Low
Hazardous (307) [] H-1 Detonate [] H-2 Defflagrate [] H-3 Combust [] H-4 Health [] H-5 HPM

[] Parking Garage [] Open [] Enclosed [] Repair Garage
Utility and Miscellaneous [] U
Incidental Uses: If applicable: areas with additional requirements (Table 508.2.5):
[] Furnace room where any piece of equipment is over 400,000 Btu per hour input
[] Rooms with boilers where the largest piece of equipment is over 150 psi and 10 horsepower
[] Refrigerant machine room
[] Hydrogen cutoff rooms, not classified as Group H
[] Incinerator rooms
[] Paint shops, not classified as Group H, located in occupancies other than Group F
[] Laboratories and vocational shops, not classified as Group H, located in a Group E or I-2 occupancy
[] Laundry rooms over 100 square feet
[] Group I-3 cells equipped with padded surfaces
[] Group I-2 waste and linen collection rooms
[] Waste and linen collection rooms over 100 square feet
[] Stationary storage battery systems having a liquid electrolyte capacity of more than 50 gallons, or a lithium-ion capacity of 1,000 pounds used for facility standby power, emergency power or uninterrupted power supplies
[] Rooms containing fire pumps
[] Group I-2 storage rooms over 100 square feet
[] Group I-2 commercial kitchens
[] Group I-2 laundries equal to or less than 100 square feet
[] Group I-2 rooms or spaces that contain fuel-fired heating equipment
Special Uses: If Applicable [] 402 [] 403 [] 404 [] 405 [] 406 [] 407 [] 408 [] 409 [] 410 [] 411 [] 412 [] 413 [] 414 [] 415 [] 416 [] 417 [] 418 [] 419 [] 420 [] 421 [] 422 [] 423 [] 424
[] 425 [] 426 [] 427
Special Provisions: If Applicable [] 509.2 [] 509.3 [] 509.4 [] 509.5 [] 509.6 [] 509.7 [] 509.8 [] 509.9
Mixed Occupancy/Use: [] 506.5 If Applicable [] No [x] Yes Separation: 1 Hr. Exception: _____
[] Incidental Use Separation: (508.2.5)
This separation is not exempt as a Non-Separated Use (see exceptions).
[] Non-Separated Use (508.3)
The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.
[x] 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. If applicable to this project please provide a key plan with all occupancies identified with square footage.
Actual Area of Occupancy A + Actual Area of Occupancy B
Allowable Area of Occupancy A Allowable Area of Occupancy B <= 1
(5,313 / 40,250) + (3,187 / 16,625) = 0.324 <= 1.00

Table with columns: STORY NO., DESCRIPTION AND USE, (A) BLDG AREA PER STORY (ACTUAL), (B) TABLE 503.7 AREA, (C) AREA FOR FRONTAGE INCREASES, (D) AREA FOR SPRINKLER INCREASES, (E) ALLOWABLE AREA OR UNLIMITED, (F) MAXIMUM BUILDING AREA.

1 Frontage area increases from Section 508.2 are computed thus:
Page 4 of 12 Appendix B 9-29-14

a. Perimeter which fronts a public way or open space having 20 feet minimum width = 400' (F)
b. Total Building Perimeter = 400' (P)
c. Ratio (F/P) = 1 (F/P)
d. W = Minimum width of public way = 30' (W)
e. Percent of frontage increase L = 100 [(F/P - 0.25) x W/30] = 75 (%)
The sprinkler increase per Section 506.3 is as follows:
a. Multi-story building L = 200 percent
b. Single story building L = 300 percent
Unlimited area applicable under conditions of Section 507.
Maximum Building Area = total number of stories in the building x E (506.4).
The maximum area of open parking garages must comply with Table 406.3.5. The maximum area of air traffic control towers must comply with Table 412.1.2.

i. Allowable Height (Chapter 5) - (Required for Additions, New Construction)

Table with columns: Type of Construction, Type III, INCREASE FOR SPRINKLERS, Type III, SHOWN ON PLANS, CODE REFERENCE.

j. Fire Protection Requirements (Chapter 7) - (Required Information for all projects)

Table with columns: 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.

Table with columns: Shaft Enclosure - Exit, Shaft Enclosure - Other, Corridor Separation, Occupancy Separation, Party/Fire Wall Separation, Smoke Barrier Separation, Tenant Separation, Incidental Use Separation.

k. Percentage of Wall Opening Calculations - (New Construction, Addition and Change of Use)

Table with columns: FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES, DEGREE OF OPENINGS PROTECTION (TABLE 705.8), ALLOWABLE AREA (%), ACTUAL SHOWN ON PLANS (%).

http://ncodes.biz/ecodes_support/free_resources/2012NorthCarolinaBuildingPDFs/Chapter%207%20-%20Fire%20and%20Smoke%20Protection%20Features.pdf
http://ncodes.biz/ecodes_support/free_resources/2012NorthCarolinaBuildingPDFs/Chapter%207%20-%20Fire%20and%20Smoke%20Protection%20Features.pdf

l. Wall Legends - (Required for all Projects)

CHECK IF THE FOLLOWING ARE PRESENT AND INDICATED BY A WALL LEGEND ON ALL PLANS
[] Fire Walls 706 [] Fire Barriers 707 [] Shaft Enclosure 708 [] Fire Partitions 709 [] Smoke Barriers 710
[] Smoke Partitions 711 [] No rated walls are present
http://ncodes.biz/ecodes_support/free_resources/2012NorthCarolinaBuildingPDFs/Chapter%207%20-%20Fire%20and%20Smoke%20Protection%20Features.pdf

m. Life Safety Systems (Existing or new systems) - (Required for all Projects)

Emergency Lighting: (S1006) [] No [x] Yes
Exit Signs: (S1011) [] No [x] Yes
Fire Alarm: (S907, NFPA 72-07) [] No [x] Yes
Smoke Detection Systems: (S907) [] No [x] Yes [] Partial
Panic Hardware: (S1008.1.10) [] No [x] Yes
Life safety systems generator: (S2702.2) [] No [x] Yes

n. Life Safety Plan check list for compliance - (Required for all projects) Check items that are applicable to your project

[x] Fire and/or smoke rated wall locations (Chapter 7)
[] Assumed and real property line locations
[] Exterior wall opening area with respect to distance to assumed property lines (705.8)
[] Existing structures within 30' of the proposed building
[] Occupancy types for each area as it relates to occupant load calculation (Table 1004.1.1)
[] Occupant loads for each area
[] Exit access travel distances (1016)
[] Common path of travel distances (1014.3 & 1028.8)



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265 mail@gpnarcht.com

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09-26-2018 REVISIONS:

Table with columns: NO., DATE, DESCRIPTION, BY.

FRANCHISEE NAME: TEAM SUSLIK82, LLC.

SAM SUSLIK 546 PERTH DRIVE SANFORD, NORTH CAROLINA 27332

PROJECT NAME: INTERIOR UP-FIT

BUFFOLA LAKE BUSINESS PARK 80 AMARILLO LANE SANFORD, NORTH CAROLINA 27332

SHEET TITLE: APPENDIX B

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

G-3

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

- Dead end lengths (1018.4)
- Clear exit widths for each exit door
- Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.1)
- Actual occupant load for each exit door
- A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
- Location of doors with panic hardware (1008.1.10)
- Location of doors with delayed egress locks and the amount of delay (1008.1.9.7)
- Location of doors with electromagnetic egress locks (1008.1.9.8)
- Location of doors equipped with hold-open devices
- Location of emergency escape windows (1029)
- The square footage of each fire area (902)
- The square footage of each smoke compartment (407.4)
- Note any code exceptions or table notes that may have been utilized regarding the items above

o. Exit Requirements—(Required for all Projects)

NUMBER AND ARRANGEMENT OF EXITS

(TABLE 1021.1)

FLOOR, ROOM OR SPACE DESIGNATION	MINIMUM ¹ NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS ² (SECTION 1015.2)	
	REQUIRED T1021.1 (SINGLE EXIT 1021.2)	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1016.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
MARCO'S PIZZA	2	2	250'	61'-6"	31'4"	60'-0"

¹ Corridor dead ends (Section 1018.4)
² Buildings with single exits (Table 1021.2). Spaces with one means of egress (Table 1015.1)
³ Common Path of Travel (Section 1014.3)

OCCUPANT LOAD AND EXIT WIDTH

(TABLE 1004.1.1)

USE GROUP OR SPACE DESCRIPTION ¹	(a) AREA ¹ sq. ft.	(b) AREA ¹ PER OCCUPANT	(1004.1.1) CALCULATED OCCUPANT LOAD (a+b)	(c) EXIT WIDTH (in) ^{2,3,4,5,6}					
				EGRESS WIDTH PER OCCUPANT (SECTION 1005.1)		REQUIRED WIDTH (SECTION 1005.1) (a+b) x c		ACTUAL WIDTH SHOWN ON PLANS	
				STAIR	LEVEL	STAIR	LEVEL	STAIR	LEVEL
Marco's	1,246	See G-2	12	0.3	0.2	N/A	24"	N/A	68"

¹ See Table 1004.1.1 to determine whether net or gross area is applicable. See definition "Area, Gross" and "Area, Net" (Section 1002)
² Minimum stairway width (Section 1009.1); min. corridor width (Section 1018.2); min. door width (Section 1008.1.1)
³ Minimum width of exit passageway (Section 1023.2)
⁴ See Section 1004.5 for converging exits
⁵ The loss of one means of egress shall not reduce the available capacity to less than 50 percent of the total required (Section 1005.1)
⁶ Assembly occupancies (Section 1028)
⁷ Spaces within occupancies or use groups shall be calculated independently. (Ex. Lobbies, lounges, break rooms, conference rooms.)

p. Accessible Dwelling Units and sleeping units – (Only for R-1, R-2 occupancy)

ACCESSIBLE DWELLING UNITS

(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

q. Accessible Parking—(Projects that are New Construction, Additions, Change of Use)

(1106)

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

r. Structural Design – (Primarily for New Construction, Additions and Change of Use)

If adding dead loads or live loads to the building structural system information in any project will be required. This information may be located on the structural sheets. The structural sheet must be in the same format as noted in this section. If it is on the structural sheets, please indicate here. (Located on Structural Sheet Number ____: Yes ___ No ___)

IT-19 Special Cases

Check the above boxes for the special inspection required for this project and list below specific special inspections required under Chapter 17. For questions regarding Special Inspections please see www.Meck-SI.com.

i. Plumbing Fixtures Requirements (New Construction, Additions, Upfits, Alterations and Change of Use or if increasing occupant load)

See 2018 NC Building Code 2902.3 exception 2

OCCUPANCY USE GROUP AND/OR SPACE DESIGNATION	WATER CLOSETS		URINALS	LAVATORIES		SHOWERS/TUBS	DRINKING FOUNTAINS
	UNISEX			UNISEX			
Marco's	1			1			
Total Required	1			1			
Total Provided	1			1			

u. Special Approvals (If applicable to your project)

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

v. Energy Summary (New Construction, Additions, Change of use and upfits)

BUILDING ENVELOPE:

ENERGY REQUIREMENTS:

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

Climate Zone: (North Carolina Energy Conservation Code NCECC 301.1) 3a 4 5

Method of Compliance:

- Prescriptive (NCECC)
- Performance (NCECC or Com Check) Report must be reproduced on drawings
- Prescriptive (ASHRAE 90.1)
- Performance (ASHRAE 90.1)

THERMAL ENVELOPE: (NCECC Chapter 4 and or 5)

Roof/ceiling Assembly (each assembly)

Description of assembly: Existing with no changes
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Skylights in each assembly: _____
 U-Value of skylight: _____
 total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)

Description of assembly: Existing with no changes
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Openings (windows or doors with glazing)
 U-Value of assembly: _____
 Solar heat gain coefficient: _____
 projection factor: _____
 Door R-Values: _____

Walls below grade (each assembly)

Description of assembly: n/a
 U-Value of total assembly: _____
 R-Value of insulation: _____

Floors over unconditioned space (each assembly)

Description of assembly: n/a
 U-Value of total assembly: _____
 R-Value of insulation: _____

Floors slab on grade

Description of assembly: Existing to remain
 U-Value of total assembly: _____
 R-Value of insulation: _____
 Horizontal/vertical requirement:
 slab heated: _____

MECHANICAL SUMMARY (NCECC 503) This information may be located on the mechanical sheets. The mechanical sheet must be in the same format as noted in this section. If it is on the mechanical sheets, please indicate here. (Located on Mechanical Sheet Number M-4: Yes ___ No ___)

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone

winter dry bulb: _____
 summer dry bulb: _____

Interior design conditions

winter dry bulb: _____
 summer dry bulb: _____
 relative humidity: _____

Building heating load: _____

Building cooling load: _____

Mechanical Spacing Conditioning System

Unitary
 description of unit: _____
 heating efficiency: _____
 cooling efficiency: _____
 size category of unit: _____
 Boiler
 Size category. If oversized, state reason: N/A
 Chiller
 Size category. If oversized, state reason: N/A

List equipment efficiencies: N/A

ELECTRICAL SUMMARY (NCECC 505) This information may be located on the electrical sheets. The electrical sheet must be in the same format as noted in this section. If it is on the electrical sheets, please indicate here. (Located on Electrical Sheet Number E-4: Yes ___ No ___)

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance:

Energy Code: Prescriptive Performance
 ASHRAE 90.1: Prescriptive Performance

Lighting schedule (each fixture type)

lamp type required in fixture _____
 number of lamps in fixture _____
 ballast type used in the fixture _____
 number of ballasts in fixture _____
 total wattage per fixture _____
 total interior wattage specified vs. allowed (whole building or space by space) _____
 total exterior wattage specified vs. allowed _____

Additional 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



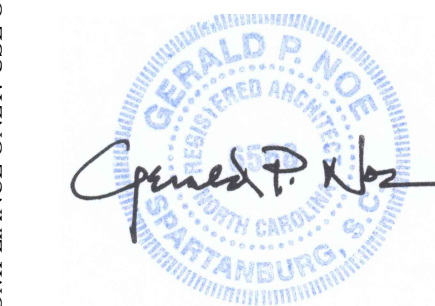
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 N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
 SPARTANBURG, SC 29302
 P: 864.583.2215 F: 864.583.2265
 mail@gpnarcht.com

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REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
 546 PERTH DRIVE
 SANFORD, NORTH CAROLINA 27332

PROJECT NAME:

marco's PIZZA INTERIOR UP-FIT
 80 AMARILLO LANE
 SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

APPENDIX B

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

G-4

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COMcheck Software Version 4.1.0.0
Interior Lighting Compliance Certificate

Section 1: Project Information

Energy Code: 2012 North Carolina Energy Conservation Code
 Project Title: Marco's Pizza - Buffalo Lake Business Park
 Project Type: Alteration

Construction Site: 80 Amarillo Lane, Sanford, NC 27332
 Owner/Agent: Sam Suslik, Team Suslik&2, LLC, 546 Perth Drive, Sanford, NC 27332
 Designer/Contractor: Kyle Henry, Gerald P. Noe, Architect, 399 Lucerne Drive, Spartanburg, SC 29302, 864.583.2215 ext. 473, kherry@gpnarcht.com

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B x C)
Dining: Family/Dining	1246	0.99	1234
Total Allowed Watts =			1234

Section 3: Interior Lighting Fixture Schedule

A Fixture ID / Description / Lamp / Wattage Per Lamp / Ballast	B Lamps / Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Dining: Family/Dining (1246 sq.ft.)				
Recessed LED-LT-3: Other	1	7	12	84
LED Track-LT-5a: Wattage based on current limiting device capacity	0	0	120	120
Lay-in LED Troffer-LT-7: Other	1	12	35	420
Total Proposed Watts =				624

Section 4: Requirements Checklist

Interior Lighting PASSES

Lighting Wattage:

- 1. Total proposed watts must be less than or equal to total allowed watts.

Allowed Watts	Proposed Watts	Complies
1234	624	PASSES

Controls, Switching, and Wiring:

- 2. Separate lighting controls present for: Display/Accent Lighting, Case Lighting, lighting for nonvisual applications (e.g., such as plant growth and food warming), lighting equipment that is for sale or for demonstrations in lighting education.
- 3. Hotel and motel guest rooms and guest suites have a master control device at the main room entry that controls all permanently installed luminaires and switched receptacles.
- 4. Supplemental task lighting has a control device integral to the luminaires or be controlled by a wall-mounted control device provided the control device is readily accessible and located so that the occupant can see the controlled lighting.
- 5. Independent controls for each space (switch/occupancy sensor).

Exceptions:

- Areas designated as security or emergency areas that must be continuously illuminated.

Project Title: Marco's Pizza - Buffalo Lake Business Park Report date: 09/25/18
 Data filename: D:\2018 Physical Year\18-A086 - Marco's Pizza - Buffalo Lakes Business Park - Sanford, North Carolina\18-A086 - 2012 NCECC COMcheck.cak Page 1 of 5

- Lighting in stairways or corridors that are elements of the means of egress.
- 6. Individual dwelling units separately metered.
- 7. Medical task lighting or advisory display lighting claimed to be exempt from compliance has a control device independent of the control of the nonexempt lighting.
- 8. Each space required to have a manual control also allows for reducing the connected lighting load by at least 50 percent by either controlling all luminaires, dual switching of alternate rows of luminaires, alternate luminaires, or alternate lamps, switching the middle lamp luminaires independently of other lamps, or switching each luminaire or each lamp.

Exceptions:

- Only one luminaire in space.
- An occupant-sensing device controls the area.
- The area is a corridor, storeroom, restroom, public lobby or sleeping unit.
- Areas that use less than 0.6 Watts/sq.ft.

- 9. Automatic lighting shutoff control in buildings larger than 5,000 sq.ft.

Exceptions:

- Sleeping units, patient care areas, and spaces where automatic shutoff would endanger safety or security.
- 10. Photocell/astromonial time switch on exterior lights.

Exceptions:

- Lighting intended for 24 hour use.
- 11. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

Exceptions:

- Electronic high-frequency ballasts; Luminaires on emergency circuits or with no available pair.
- 12. Lighting controls are tested to ensure that control devices, components, equipment, and systems are calibrated, adjusted and operate in accordance with approved plans and specifications. Sequences of operation shall be functionally tested to ensure they operate in accordance with approved plans and specifications.

Section 5: Compliance Statement

Compliance Statement: The proposed lighting alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting alteration project has been designed to meet the 2012 North Carolina Energy Conservation Code, Chapter 8, requirements in COMcheck Version 4.1.0.0 and to comply with the mandatory requirements in the Requirements Checklist.

GERALD P. NOE, ARCHITECT
 Signature: *Gerald P. Noe* Date: 07-24-2018

COMcheck Software Version 4.1.0.0
Mechanical Compliance Certificate

Section 1: Project Information

Energy Code: 2012 North Carolina Energy Conservation Code
 Project Title: Marco's Pizza - Buffalo Lake Business Park
 Project Type: Alteration

Construction Site: 80 Amarillo Lane, Sanford, NC 27332
 Owner/Agent: Sam Suslik, Team Suslik&2, LLC, 546 Perth Drive, Sanford, NC 27332
 Designer/Contractor: Kyle Henry, Gerald P. Noe, Architect, 399 Lucerne Drive, Spartanburg, SC 29302, 864.583.2215 ext. 473, kherry@gpnarcht.com

Section 2: General Information

Building Location (for weather data): Sanford, North Carolina
 Climate Zone: 4a

Section 3: Mechanical Systems List

Quantity System Type & Description

3 AHU-1, AHU-2 & AHU-3 (Single Zone) : Split System Heat Pump
 Heating Mode: Capacity = 8 kBtu/h;
 Proposed Efficiency = 7.70 HSPF, Required Efficiency = 7.70 HSPF
 Cooling Mode: Capacity = 47 kBtu/h;
 Proposed Efficiency = 14.00 SEER, Required Efficiency: 13.00 SEER
 Fan System: None

Section 4: Requirements Checklist

Requirements Specific To: AHU-1, AHU-2 & AHU-3 :

- 1. Equipment minimum efficiency: Heat Pump: 7.70 HSPF 13.00 SEER
- 2. In systems with a cooling capacity of less than 65,000 Btu/h, a heat strip outdoor temperature lockout is provided to prevent supplemental heat operation in response to the thermostat being changed to a warmer setting. The lockout is set no lower than 35°F and no higher than 40°F.

Generic Requirements: Must be met by all systems to which the requirement is applicable:

- 1. Plant equipment and system capacity no greater than needed to meet loads.
Exception(s):
 - Standby equipment automatically off when primary system is operating
 - Multiple units controlled to sequence operation as a function of load
- 2. Minimum one temperature control device per system
- 3. Minimum one humidity control device per installed humidification/dehumidification system
- 4. Load calculations per ASHRAE/ACCA Standard 183.
- 5. Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup
Exception(s):
 - Continuously operating zones
- 6. Outside-air source for ventilation: system capable of reducing OSA to required minimum
- 7. R-5 supply and return air duct insulation in unconditioned spaces.
 R-8 supply and return air duct insulation outside the building
 R-8 insulation between ducts and the building exterior when ducts are part of a building assembly

Project Title: Marco's Pizza - Buffalo Lake Business Park Report date: 09/25/18
 Data filename: D:\2018 Physical Year\18-A086 - Marco's Pizza - Buffalo Lakes Business Park - Sanford, North Carolina\18-A086 - 2012 NCECC COMcheck.cak Page 3 of 5

Exception(s):

- Ducts located within equipment.
- Ducts with interior and exterior temperature difference not exceeding 15°F.
- 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment
- 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts: UL 181A or 181B tapes and mastics
- 10. Hot water pipe insulation: 1.5 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in.
 Chilled water/refrigerant/brine pipe insulation: 1.5 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in.
 Steam pipe insulation: 1.5 in. for pipes <=1.5 in. and 3 in. for pipes >1.5 in.
Exception(s):
 - Piping within HVAC equipment.
 - Fluid temperatures between 55 and 105°F.
 - Fluid not heated or cooled with renewable energy.
 - Piping within room fan-coil (with AHRI440 rating) and unit ventilators (with AHRI840 rating).
 - Runouts <4 ft in length.
- 11. Operation and maintenance manual provided to building owner
- 12. Balancing devices provided in accordance with IMC 603.17
- 13. Ventilation systems in buildings over 10,000 ft² of conditioned area have demand controls. DCV systems are capable of reducing outside supply air to at least 50% below design ventilation rates. In all buildings, spaces larger than 500 ft² with a maximum occupant load of 40 or more people per 1,000 ft² of floor area control ventilation supply air flow by monitoring indoor air quality conditions.
Exception(s):
 - Systems with heat recovery.
 - Building spaces where the primary ventilation needs are for process loads, including laboratories and hospital.
 - Individual units with less than 65 kBtu/h of cooling capacity.
- 14. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings
Exception(s):
 - Gravity dampers acceptable in buildings <3 stories
- 15. Automatic controls for freeze protection systems present
- 16. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically exempted
Exception(s):
 - Hazardous exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International Mechanical Code prohibits the use of energy recovery systems.
 - Systems serving spaces that are heated and not cooled to less than 60°F.
 - Where more than 60 percent of the outdoor heating energy is provided from site-recovered or site solar energy.
 - Heating systems in climates with less than 3600 HDD.
 - Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F.
 - Systems requiring dehumidification that employ energy recovery in series with the cooling coil.
 - Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing exhaust and makeup air volume to 50 percent or less of design values or, a separate make up air supply meeting the following makeup air requirements: a) at least 75 percent of exhaust flow rate, b) heated to no more than 2°F below room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification added, e) no simultaneous heating and cooling.

Section 5: Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical alteration project has been designed to meet the 2012 North Carolina Energy Conservation Code, Chapter 8, requirements in COMcheck Version 4.1.0.0 and to comply with the mandatory requirements in the Requirements Checklist.

GERALD P. NOE, ARCHITECT
 Signature: *Gerald P. Noe* Date: 07-24-2018

Section 6: Post Construction Compliance Statement

- HVAC record drawings of the actual installation, system capacities, calibration information, and performance data for each equipment provided to the owner.
 - HVAC O&M documents for all mechanical equipment and system provided to the owner by the mechanical contractor.
 - Written HVAC balancing and operations report provided to the owner.
- The above post construction requirements have been completed.

Project Title: Marco's Pizza - Buffalo Lake Business Park Report date: 09/25/18
 Data filename: D:\2018 Physical Year\18-A086 - Marco's Pizza - Buffalo Lakes Business Park - Sanford, North Carolina\18-A086 - 2012 NCECC COMcheck.cak Page 4 of 5

Principal Mechanical Designer-Name _____ Signature _____ Date _____



GERALD P. NOE
 ARCHITECT
 N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
 SPARTANBURG, SC 29302
 P: 864.583.2215 F: 864.583.2265
 mail@gpnarcht.com

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY
-----	------	-------------	----

FRANCHISEE NAME:

TEAM SUSLIK&2, LLC.

SAM SUSLIK
 546 PERTH DRIVE
 SANFORD, NORTH CAROLINA 27332

PROJECT NAME:

marco's PIZZA INTERIOR UP-FIT
 80 AMARILLO LANE
 SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

COMCHECK

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

G-5

SHEET 5 OF 5

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

SLAB /
DEMO PLAN

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

A-0.1

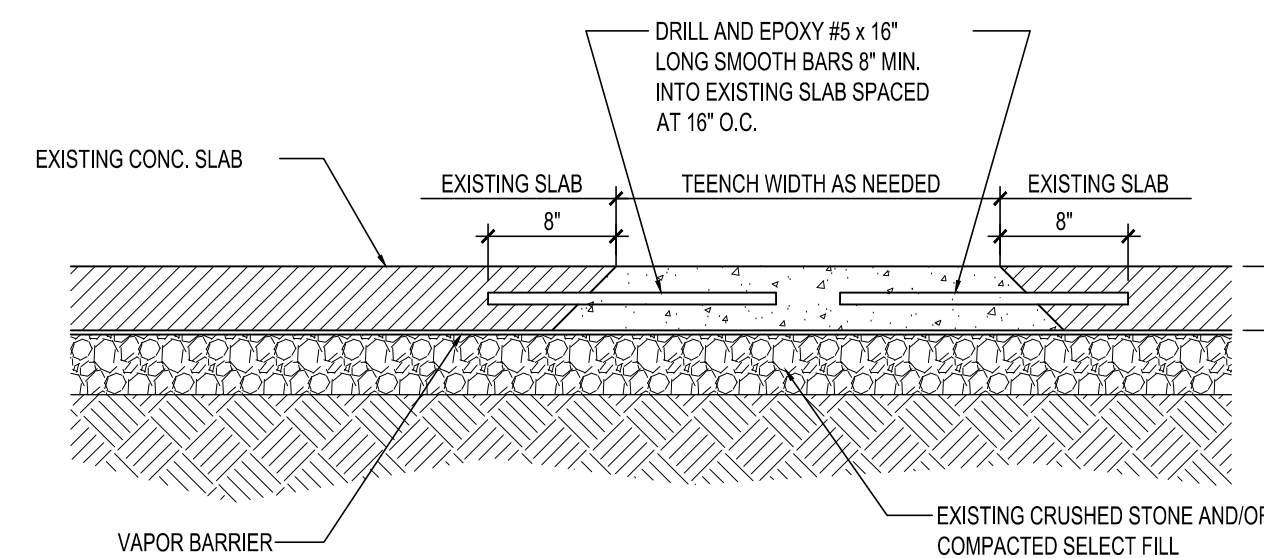
SHEET 1 OF 11

GENERAL DEMOLITION NOTES:

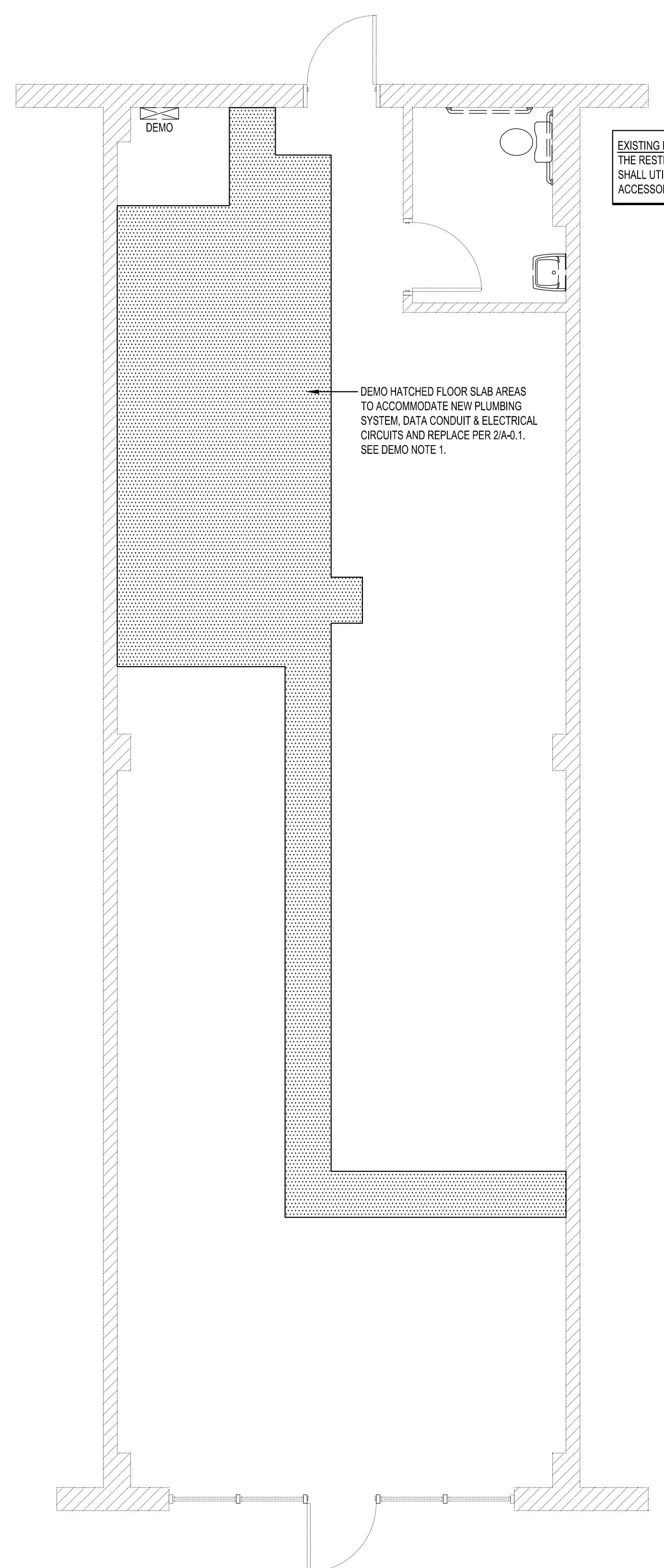
1. CONTRACTOR TO VERIFY ALL PLUMBING REQUIREMENTS BASED ON NEW EQUIPMENT PROVIDED. IDENTIFY EXTENT OF SLAB REMOVAL PRIOR TO CUTTING. INSTALL NEW PLUMBING FIXTURES TO COMPLY WITH ALL APPLICABLE LOCAL AND STATE CODES.
2. CUTTING OF EXISTING CONSTRUCTION FOR THE INSTALLATION OF ALL NEW WORK BY ALL TRADES, AND SUBSEQUENT PATCHED THEREOF, SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. WHETHER THE WORK IS DONE BY HIS OWN FORCES OR NOT. CUTTING SHALL BE TO A STRAIGHT LINE, UNWORKMANLIKE CUTTING, DAMAGE RESULTING FROM AND UNACCEPTABLE PATCHING SHALL REPAIRED AND/OR REPLACED TO AN ACCEPTABLE CONDITION APPROVED BY THE OWNER.
3. PATCHING MATERIAL SHALL MATCH EXISTING ADJACENT MATERIALS AND CLOSELY AS POSSIBLE IN COLOR, PATTERNS AND/OR TEXTURE.
4. ALL SALVAGE MATERIALS REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER U.N.O. ALL NON-SALVAGED CONSTRUCTION MATERIALS AND DEBRIS FROM DEMOLITION WORK SHALL BE REMOVED FROM THE SITE AS WORK PROGRESSES.
5. PROTECT ALL EXISTING FINISHES, WALLS, FIXTURES, AND DEVICES TO REMAIN.
6. THE CONTRACTOR SHALL COORDINATE THE SEQUENCE OF WORK WITH THE OWNER. THE SCHEDULE SHALL BE REVISED AT THE WEEKLY JOB SITE MEETINGS.
7. CONTRACTOR TO PATCH EXISTING FINISHES TO ORIGINAL CONDITION AND TO TOUCH-UP FINISHES AS REQUIRED PRIOR TO INSTALLATION.
8. ALL EXISTING ELECTRICAL OUTLETS, SWITCHES, JUNCTION BOXES, CLEAN-OUTS, PLUMBING ACCESS SHALL REMAIN ACCESSIBLE.
9. CONTRACTOR TO VERIFY LOCATION AND INVERT ELEVATION OF EXISTING SANITARY SEWER LINE AND ADJUST SYSTEM LAYOUT TO ACCOMMODATE.
10. CONTRACTOR SHALL REMOVE ALL INTERIOR PARTITIONS THAT ARE NOT SPECIFICALLY NOTED TO REMAIN, ALONG WITH THE EXISTING CEILINGS, LIGHTING, DUCTWORK & HVAC EQUIPMENT.

EXISTING RESTROOM NOTE:
THE RESTROOM FACILITIES ARE EXISTING AND THE G.C. SHALL UTILIZE THE EXISTING WALLS, FIXTURES AND ACCESSORIES.

DEMO HATCHED FLOOR SLAB AREAS TO ACCOMMODATE NEW PLUMBING SYSTEM, DATA CONDUIT & ELECTRICAL CIRCUITS AND REPLACE PER 2/A-0.1. SEE DEMO NOTE 1.



2 SLAB REPLACEMENT DETAIL
1" = 1'-0"



1 SLAB / DEMO PLAN
1/4" = 1'-0"

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DOOR SCHEDULE

MARK	TYPE	DOOR			FINISH	FRAME		HARDWARE		NOTES
		WIDTH	HEIGHT	THICKNESS		TYPE	FINISH	SET		
101	A	3'-0"	7'-0"	-	EXISTING	EXISTING	EXISTING	1 SIM.	1, 4	
102	B	3'-0"	7'-0"	1 3/4"	P-3	EXISTING	P-3	3 SIM.	1, 4, 5	
103	C	3'-0"	7'-0"	1 3/4"	P-3	EXISTING	P-3	2	2, 3	

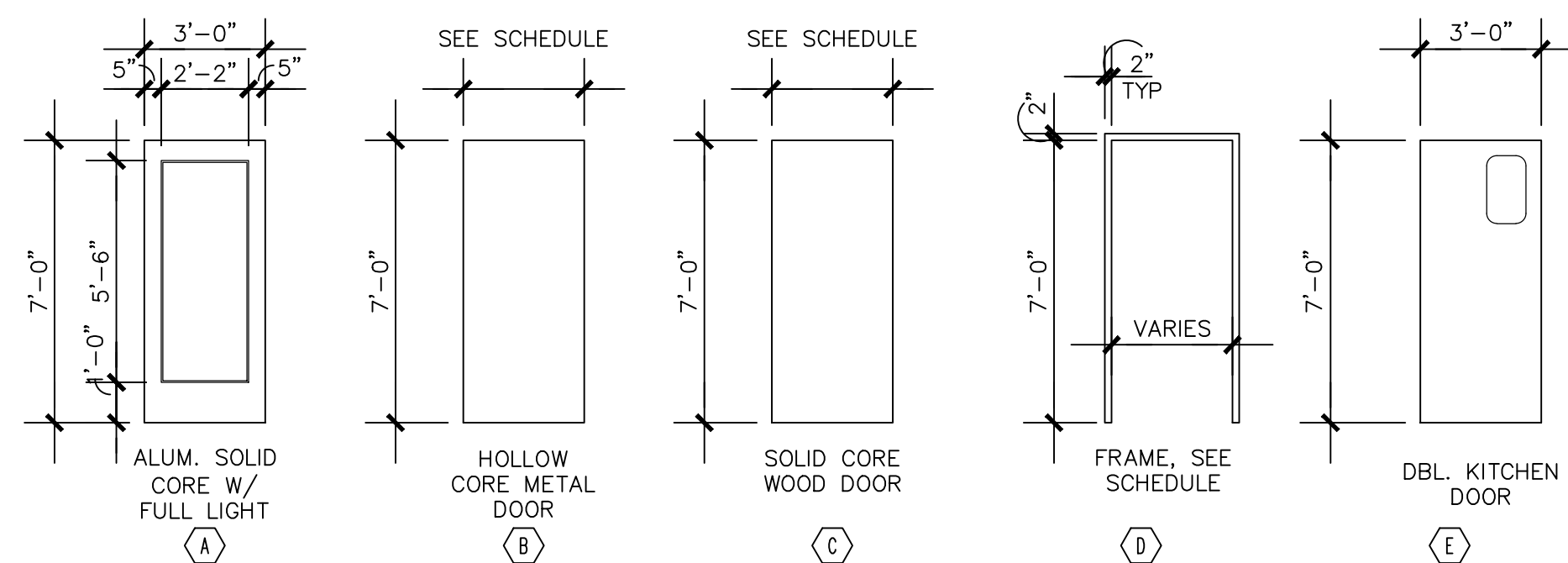
- NOTES:
 1. EXISTING DOOR TO REMAIN.
 2. PAINT DOOR, REFER TO INTERIOR ELEVATIONS.
 3. PAINT FRAME, REFER TO INTERIOR ELEVATIONS.
 4. PROVIDE LETTERING ON DOOR GLASS ABOVE HANDLE READING 'DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS.'
 5. 1" TEMPERED INSULATED GLAZING TO MATCH EXISTING & DOOR FRAME & FINISH TO MATCH EXISTING

DOOR HARDWARE SCHEDULE

SET NO. 1	EXTERIOR - FRONT	SET NO. 3	EXTERIOR - DRIVER'S DOOR
3 BUTT HINGES	EXISTING	3 BUTT HINGES	STANLEY FBB179 4 1/2" x 4 1/2" X NRP
CLOSER	EXISTING	CLOSER	CORBIN RUSSWIN DC2210
THRESHOLD	EXISTING	THRESHOLD	NATIONAL GUARD PRODUCTS 424 - 36" x 1/2" x 4"
WEATHER STRIPS	EXISTING	WEATHER STRIPS	NATIONAL GUARD PRODUCTS 134N5 - 3070
DOOR SWEEP	EXISTING	DOOR SWEEP	NATIONAL GUARD PRODUCTS 198N - 36
DRIP CAP	EXISTING	DRIP CAP	NATIONAL GUARD PRODUCTS 16AD - 40
LOCKSET	EXISTING	LOCKSET	
LATCH GUARD	EXISTING	LATCH GUARD	
SET NO. 2	RESTROOM	ALARM	DETEX EAX-500W
3 STANDARD HINGES	MCKINNY, MP879 4-1/2"x4-1/2" US10B		
SURFACE CLOSER	DORMA 38616 AF86P FC 690		
DOOR HANDLE	FALCON B101S GRADE 2 LEVER SET		
DEADBOLT	ARROW E50 - OCCUPANY INDICATOR	SET NO. 4	EXTERIOR - PUBLIC EXIT
KICK PLATE	ROCKWOOD #K1050 12"x34"	3 BUTT HINGES	STANLEY FBB179 4 1/2" x 4 1/2" X NRP
WALL DOOR STOP	ROCKWOOD #477 US26D	CLOSER	CORBIN RUSSWIN DC2210
DOOR SILENCER	ROCKWOOD #608 SILENCER	THRESHOLD	NATIONAL GUARD PRODUCTS 424 - 36" x 1/2" x 4"
		WEATHER STRIPS	NATIONAL GUARD PRODUCTS 134N5 - 3070
		DOOR SWEEP	NATIONAL GUARD PRODUCTS 198N - 36
		DRIP CAP	NATIONAL GUARD PRODUCTS 16AD - 40
		LOCKSET	
		LATCH GUARD	
		PANIC DEVICE	DETEX EOL-230X-TB
		KICK PLATE	ROCKWOOD #K1050 36"x36"
		PEEP HOLE	

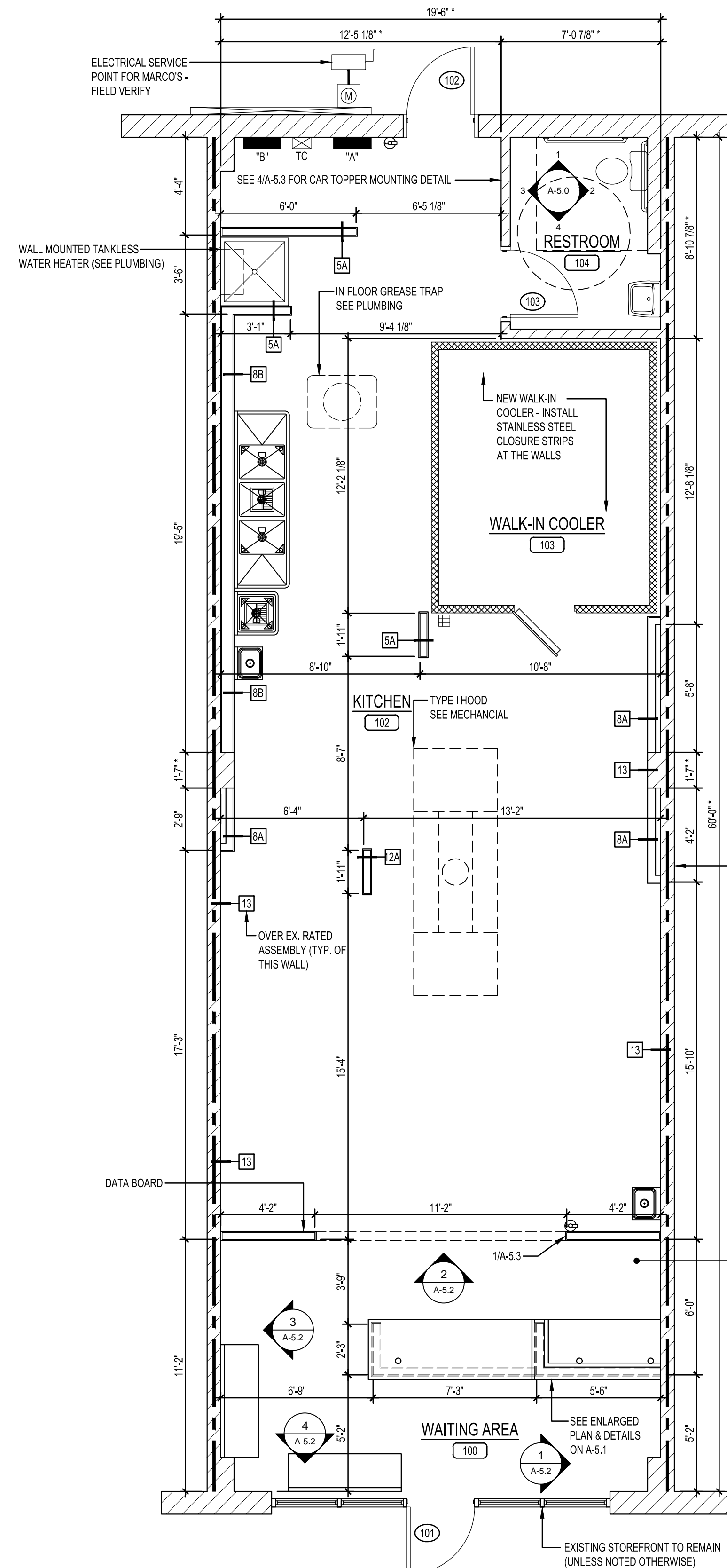
- NOTES:
 1. DOOR HARDWARE SCHEDULE FOR REFERENCE ONLY. SEE DOOR SCHEDULE FOR ADDITIONAL INFORMATION.
 2. ADJUST OPENING AND CLOSING FORCE FOR ALL CLOSERS TO MEET ADA REQUIREMENTS.
 3. DOORS SHALL MEET THE ADA REQUIREMENTS FOR THRESHOLDS AND DOOR HARDWARE.
 4. EXTERIOR DOOR SHALL BE MASTER KEYED.
 5. PROVIDE EXTRA HEAVY DUTY EXIT DEVICE & KICK PLATE AT DRIVER'S EXIT DOOR.

DOOR TYPES



DOOR SPECIFICATION

TYPE	DESCRIPTION	SPECIFICATION	FINISH
A	ALUMINUM SOLID CORE W/ FULL LIGHT	EXISTING ALUMINUM STOREFRONT	EXISTING
B	HOLLOW CORE METAL DOOR	EXISTING	EXISTING
C	SOLID CORE WOOD DOOR	EXISTING	P-3



A SIGN CLEARLY STATING THAT SMOKING IS PROHIBITED SHALL BE CONSPICUOUSLY POSTED BY THE BUILDING OWNER, AGENT, OPERATOR, PERSON IN CHARGE OR PROPRIETOR AT EACH ENTRANCE OR IN A POSITION CLEARLY VISIBLE UPON ENTRY INTO THE BUILDING. ACCEPTABLE SIGNS SHALL DISPLAY EITHER "NO SMOKING" OR THE INTERNATIONAL "NO SMOKING" SYMBOL (CONSISTING OF A PICTORIAL REPRESENTATION OF A BURNING CIGARETTE ENCLOSED IN A RED CIRCLE WITH A RED BAR ACROSS IT).

ALL BUSINESS TRANSACTION AREAS MUST MEET THE REQUIREMENTS OF THE ACCESSIBILITY CODE WITH A PORTION OF EACH TRANSACTION COUNTER CONSTRUCTED WITH A SECTION OF THE COUNTER HAVING A MAXIMUM HEIGHT OF 34" FOR A MINIMUM LENGTH OF 36". IT IS RECOMMENDED THAT THIS ISSUE IS DISCUSSED WITH THE BUILDING INSPECTOR PRIOR TO CONSTRUCTION AND/OR INSTALLATION.

INSULATION NOTE:
 CONTRACTOR SHALL INSULATE ALL FURRED OUT WALLS THAT ARE AGAINST INTERIOR AND EXTERIOR MASONRY / CONCRETE WALLS. CONTRACTOR SHALL ALSO INSULATE ALL RESTROOM WALLS AND CEILING.

WALL BLOCKING BACKING NOTE:
 ALL WALLS WITH SHELVING IN THE KITCHEN AREA AS WELL AS ANY WALL WITH A WALL MOUNTED T.V. AND ANY RESTROOM WALL WITH A MOUNTED FIXTURE SHALL HAVE BACKING AND BLOCKING. (U.N.O.)

DIMENSIONAL NOTE:
 * EXISTING DIMENSION TO BE FIELD VERIFIED - ALL DIMENSIONS PULLED FROM EXISTING BUILDING WALLS ARE FROM THE FACE EXISTING MATERIAL.

EXISTING 1 HR. - FIRE SEPARATION FINISHED AS SPECIFIED (UL U465). ALL PENETRATIONS SHALL BE IN ACCORDANCE WITH UL DETAILS. THE CONTRACTOR SHALL PERMANENTLY LABEL EACH SIDE OF THE DEMISING WALL ABOVE THE CEILING WITH 2" HIGH LETTERS AND SPACED EVERY 12'-0". THE FOLLOWING WORDING IS RECOMMENDED: "1 HOUR FIRE AND SMOKE BARRIER PROTECT ALL OPENINGS" (TYP. OF EACH SEPARATION WALL)

CONTRACTOR SHALL LABEL ALL EXTERIOR DOORS AND ELECTRICAL DISCONNECT WITH THE SUITE NUMBER IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.

TACTILE SIGNAGE:
 PROVIDE EXIT TACTILE SIGNAGE IN ACCORDANCE WITH NFPA-101:7.10.1.3, FFPC, 5TH EDITION AND ANSI A117.1, 2009 EDITION.

WALL BRACING NOTE:
 ALL FULL HEIGHT WALLS (OVER 8' IN HEIGHT) SHALL BE BRACED IN ACCORDANCE WITH A-1.1

EXISTING RESTROOM NOTE:
 THE RESTROOM FACILITIES ARE EXISTING AND THE G.C. SHALL UTILIZE THE EXISTING WALLS, FIXTURES AND ACCESSORIES.

1 DIMENSIONED FLOOR PLAN
 SCALE: 1/4" = 1'-0"



GERALD P. NOE
 ARCHITECT
 N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
 SPARTANBURG, SC 29302
 P: 864.583.2215 F: 864.583.2265
 mail@gpnarcht.com

CHECKED BY: DKH
 DRAWN BY: DKH

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY
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FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
 546 PERTH DRIVE
 SANFORD, NORTH CAROLINA 27332

PROJECT NAME:

marco's PIZZA INTERIOR UP-FIT
 BUFFOLA LAKE BUSINESS PARK
 80 AMARILLO LANE
 SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

FLOOR PLAN &
 SCHEDULE

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

A-1.0

SHEET 2 OF 11

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



SHEET TITLE:

WALL TYPES

PROJECT NUMBER 18-A086

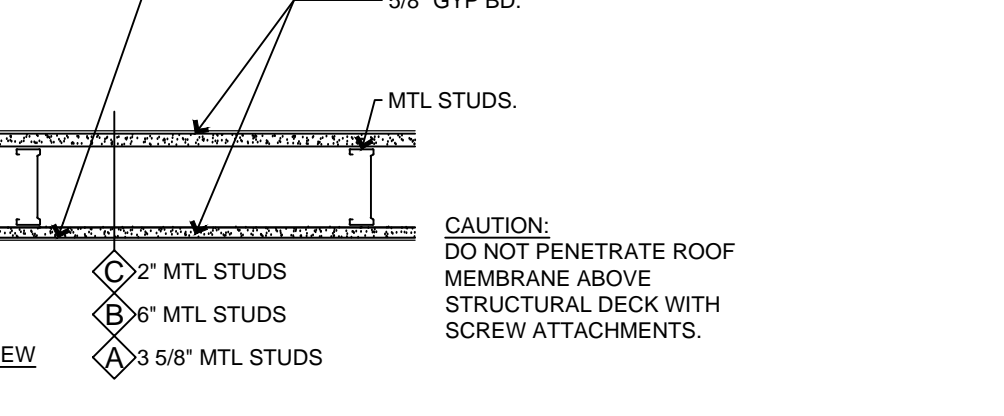
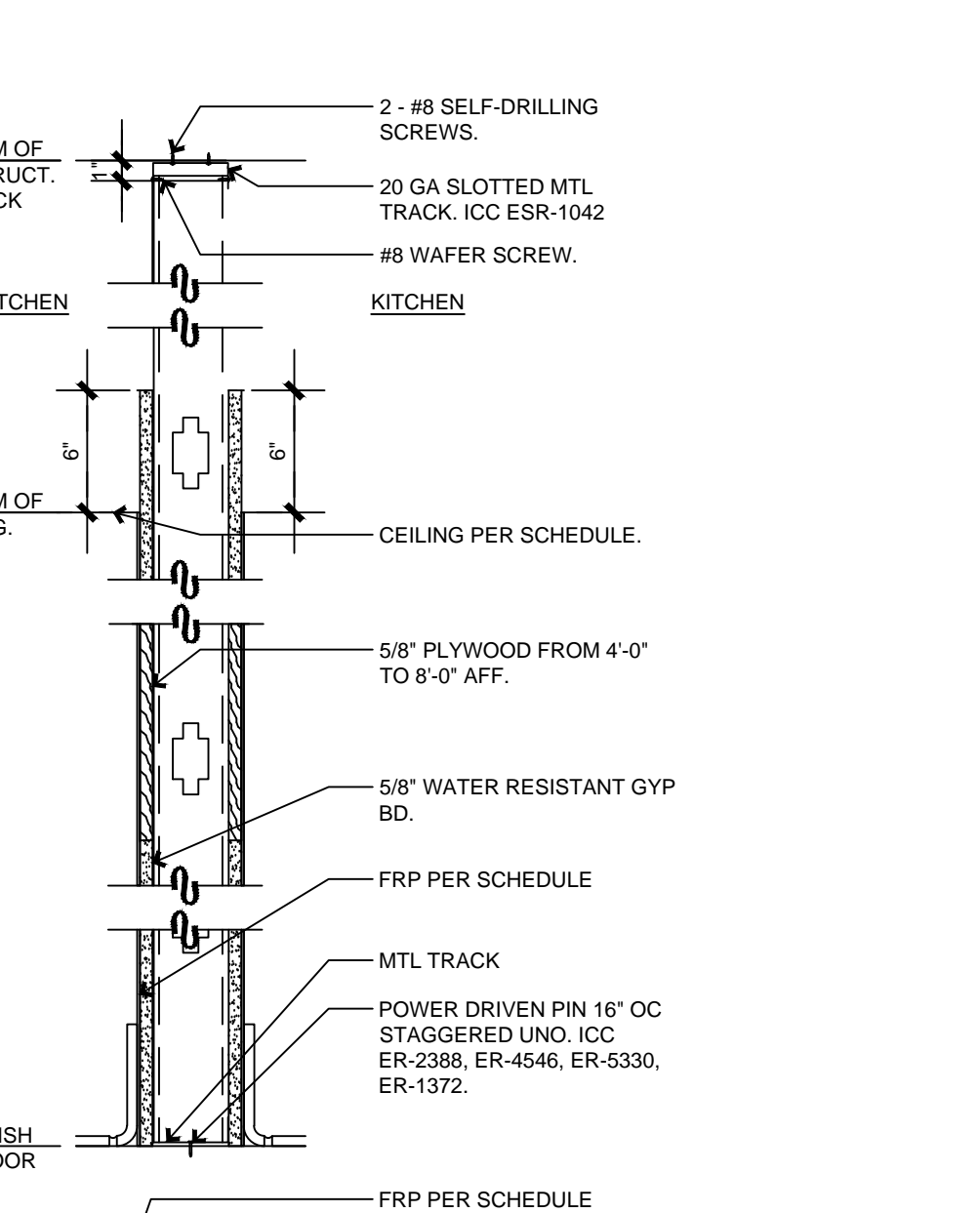
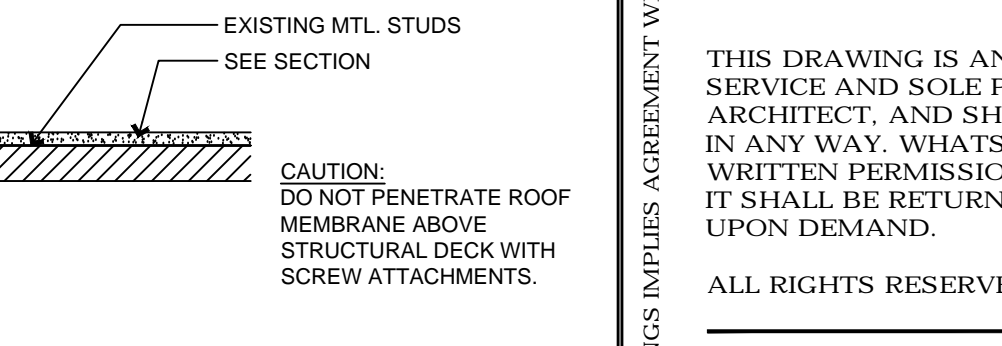
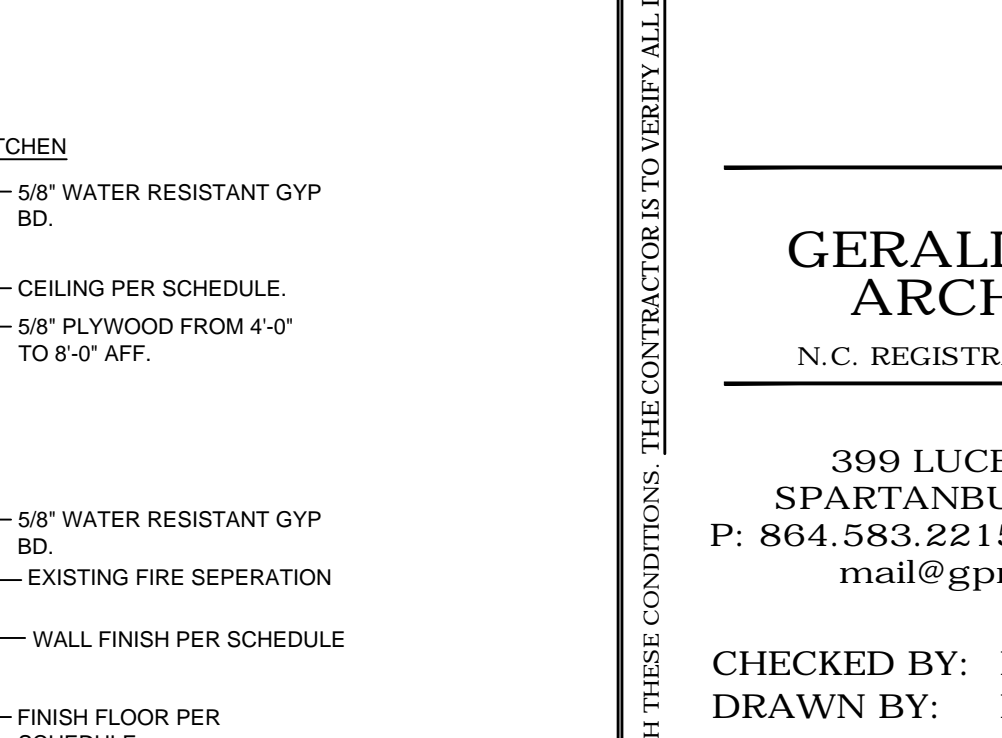
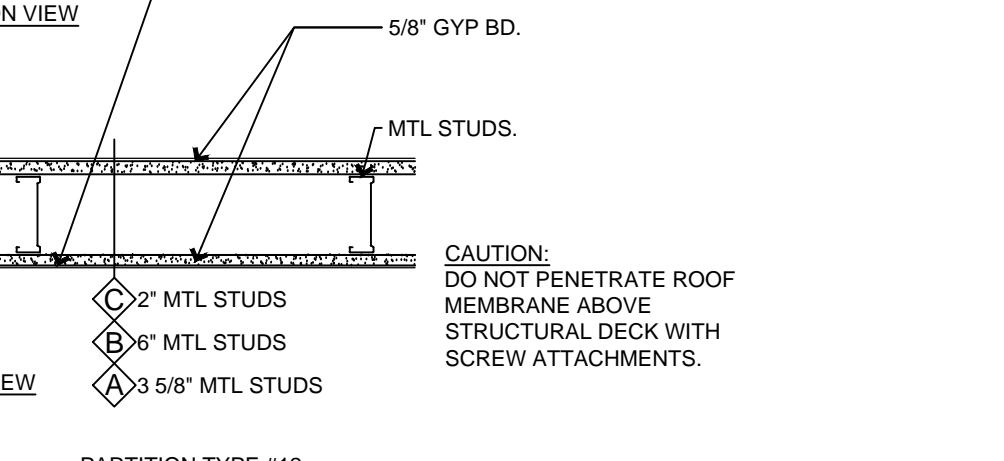
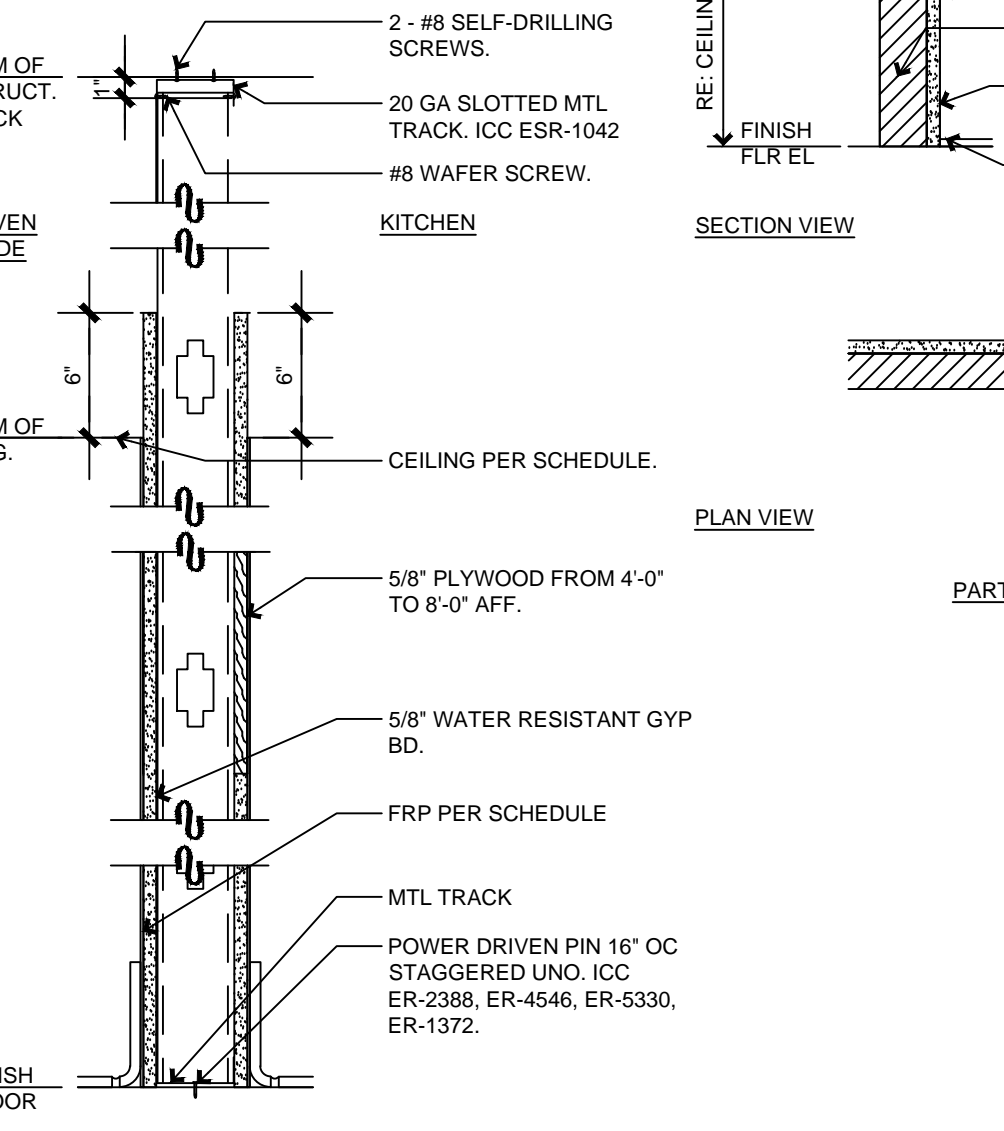
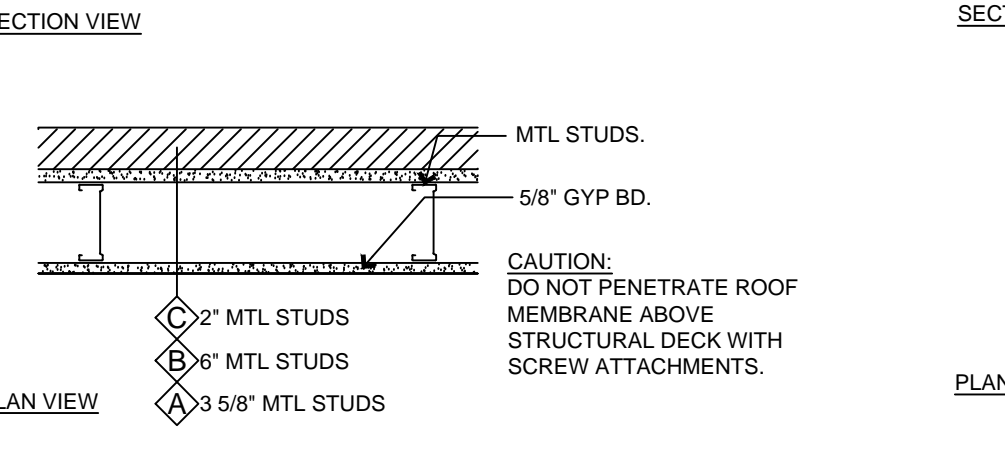
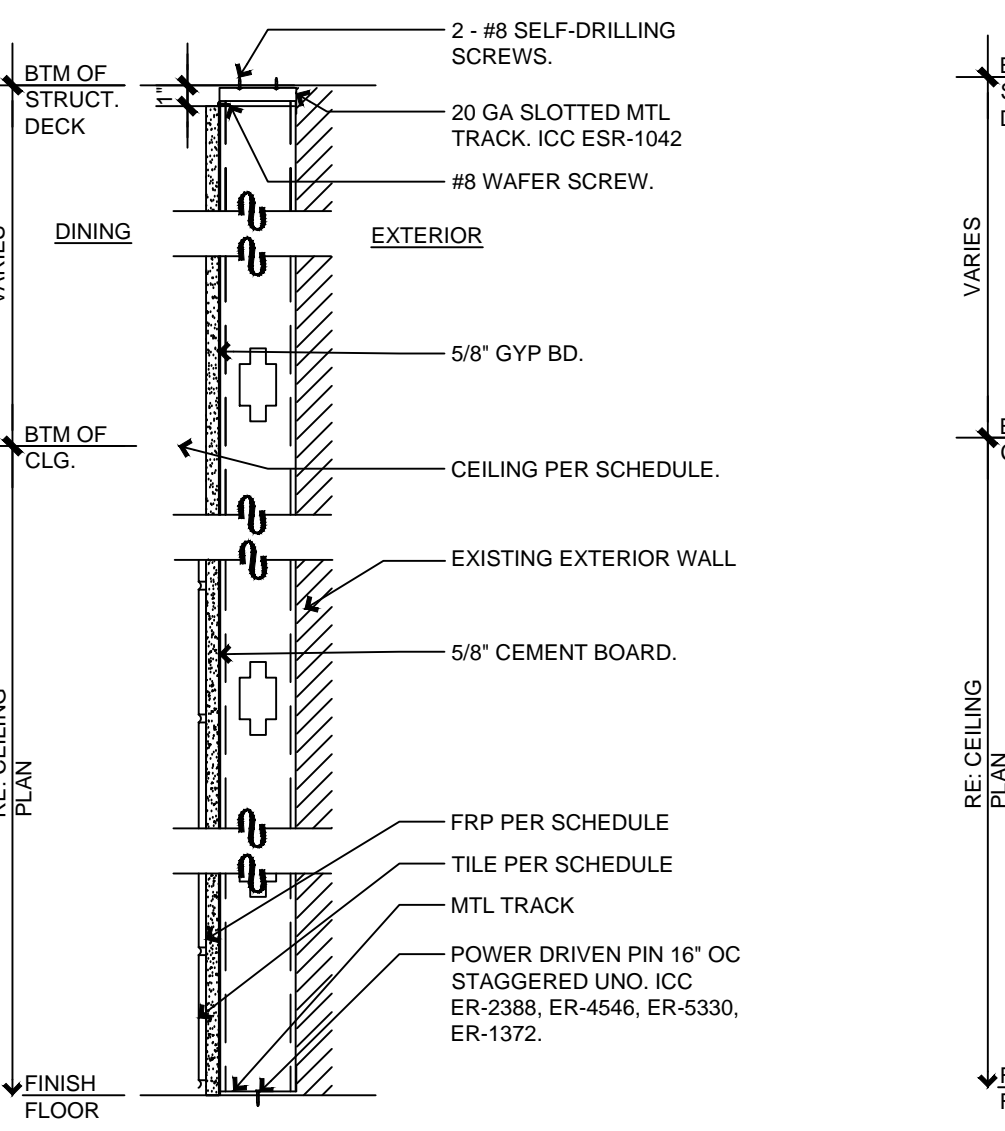
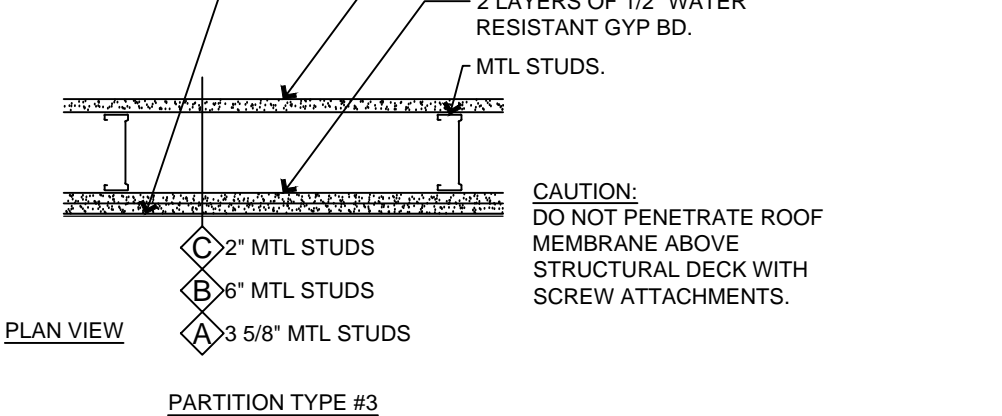
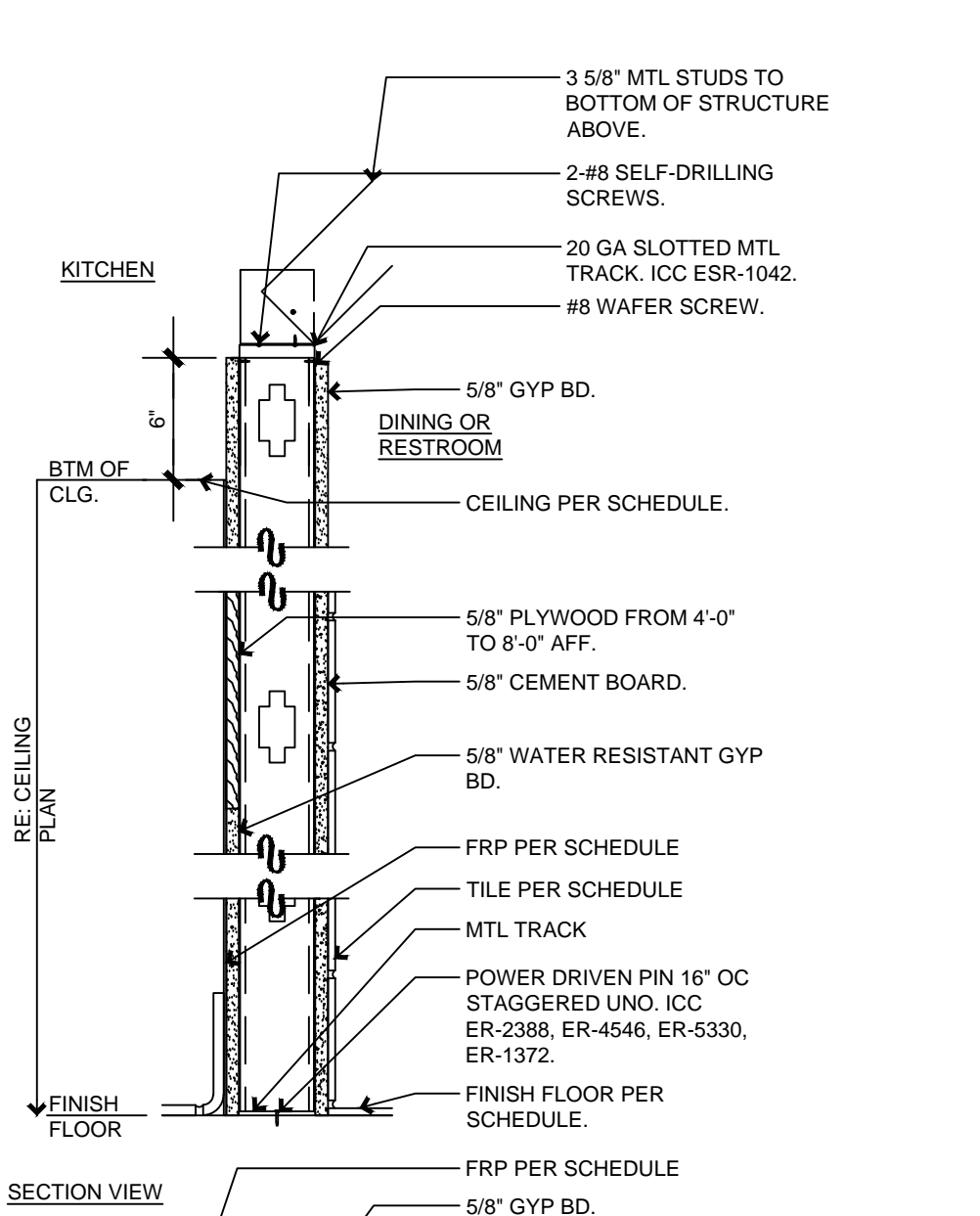
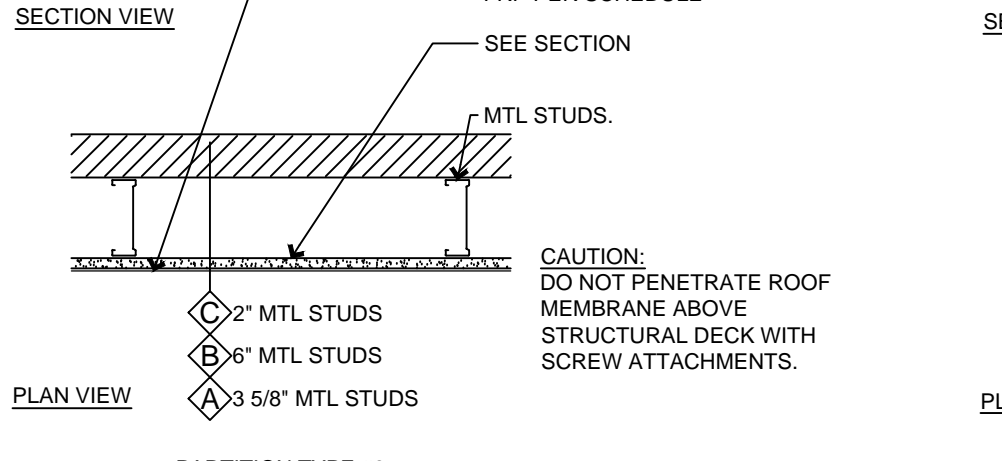
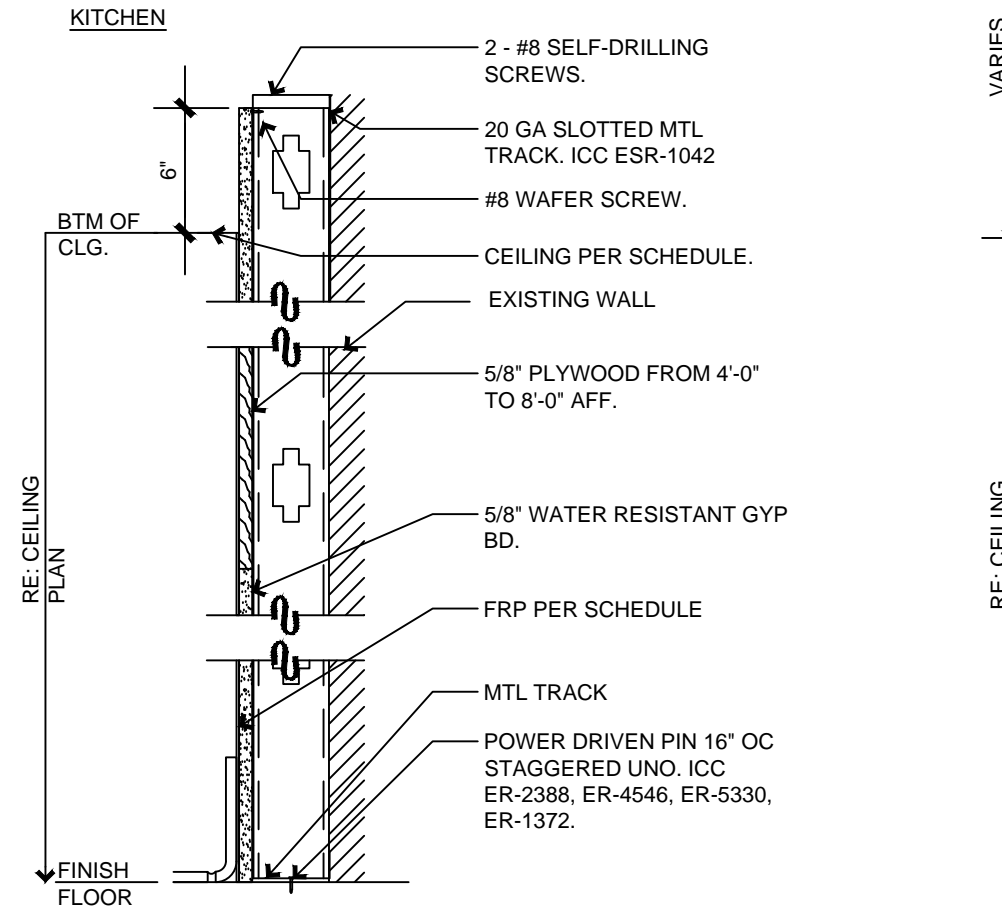
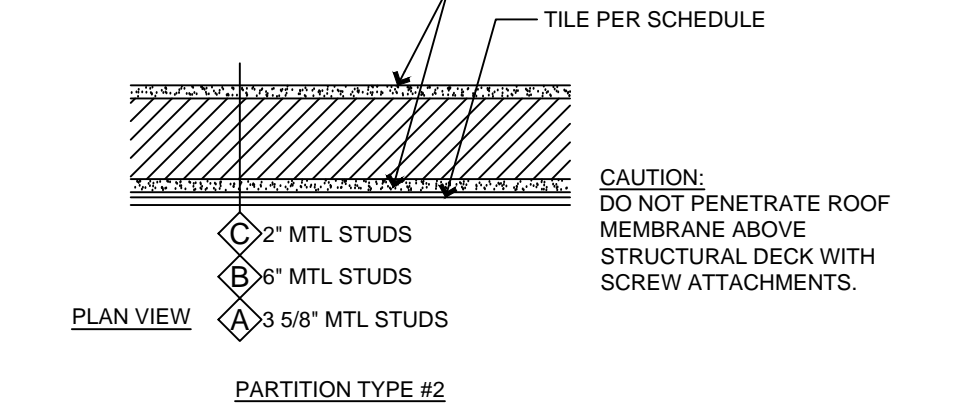
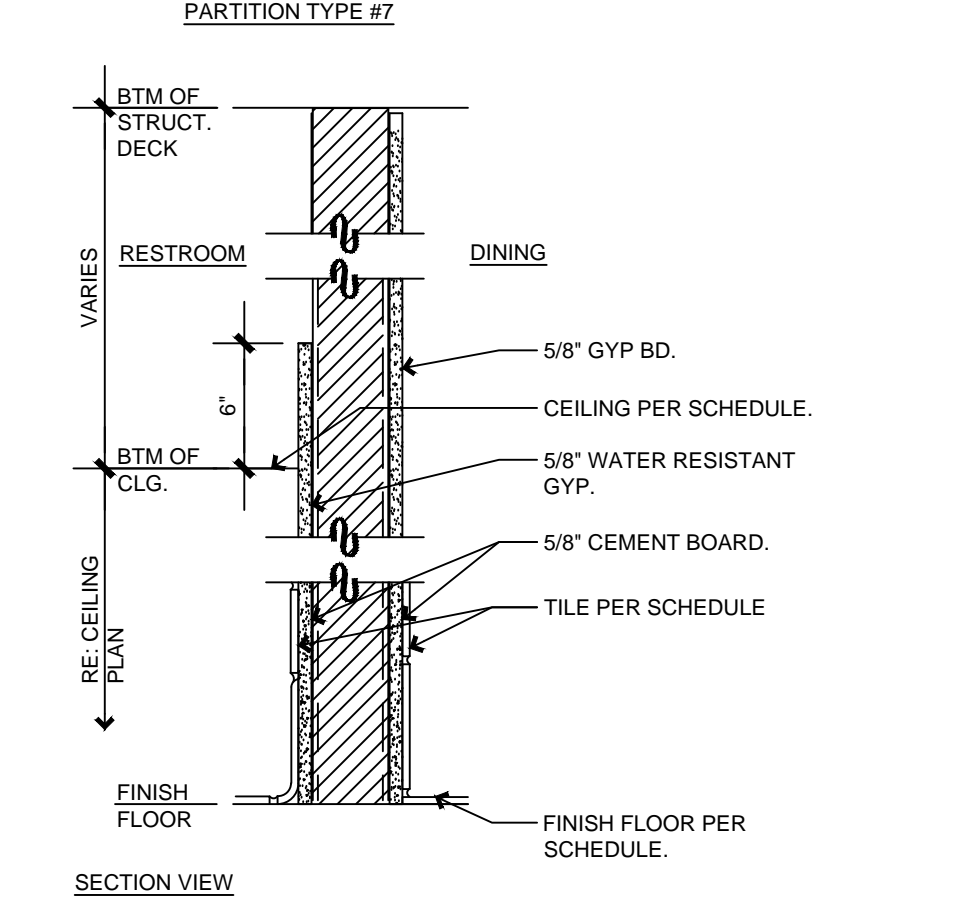
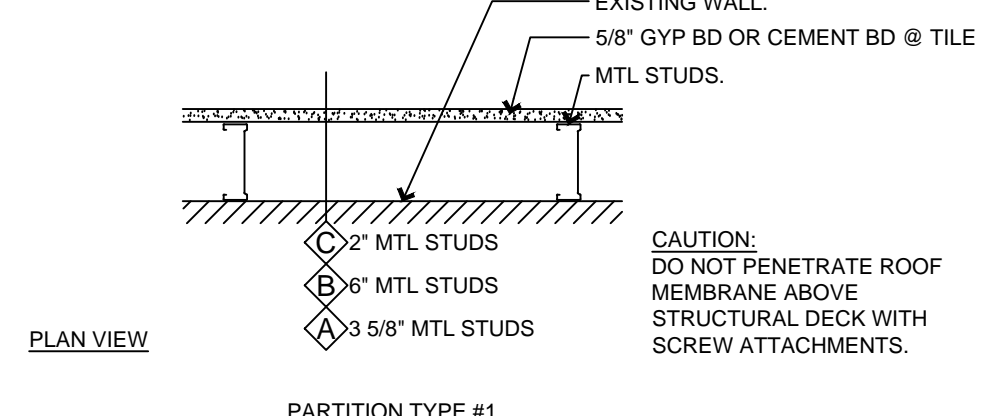
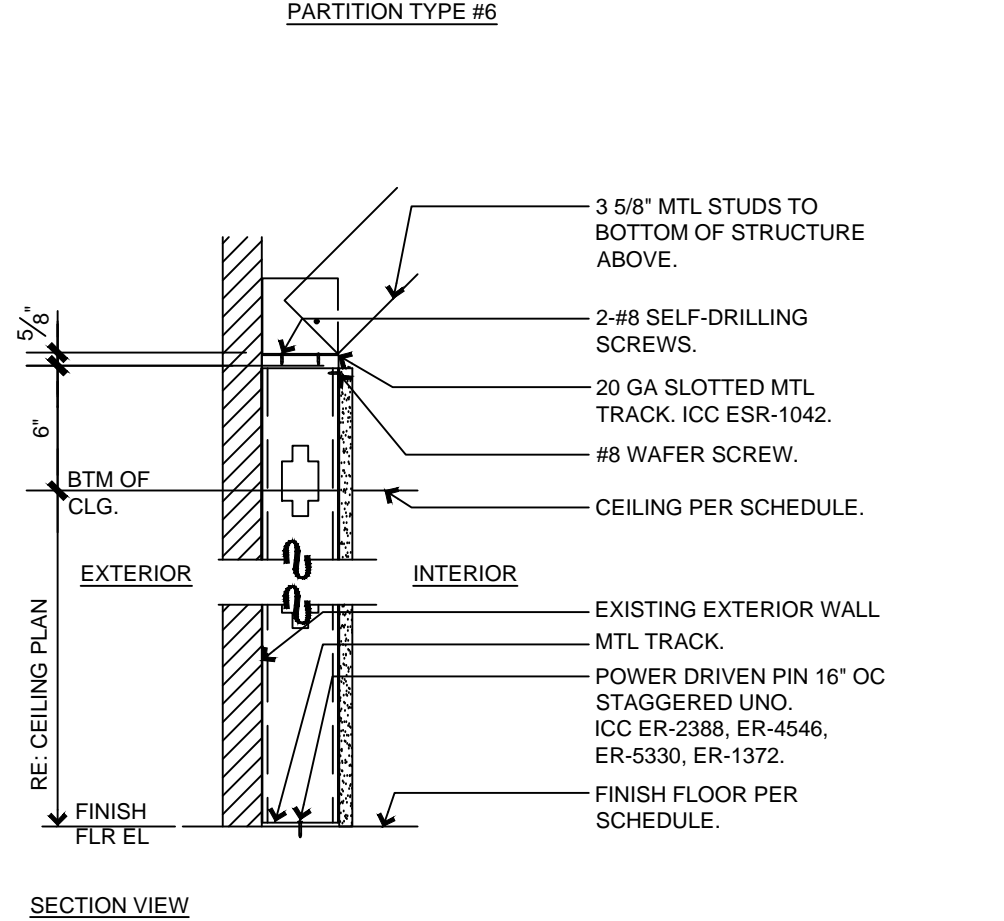
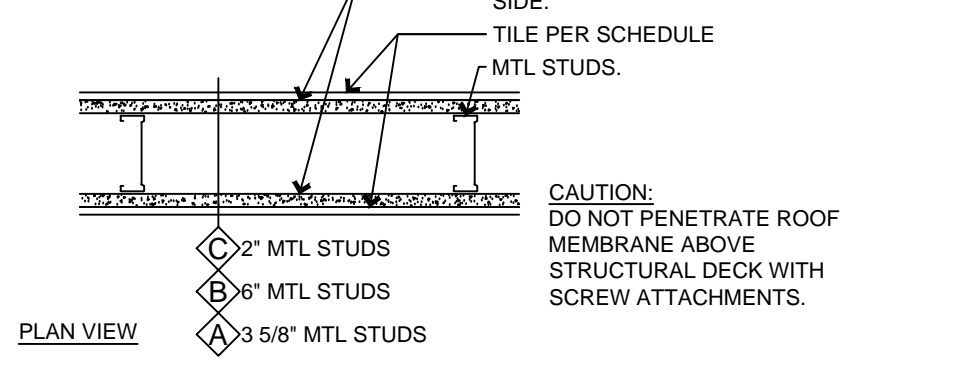
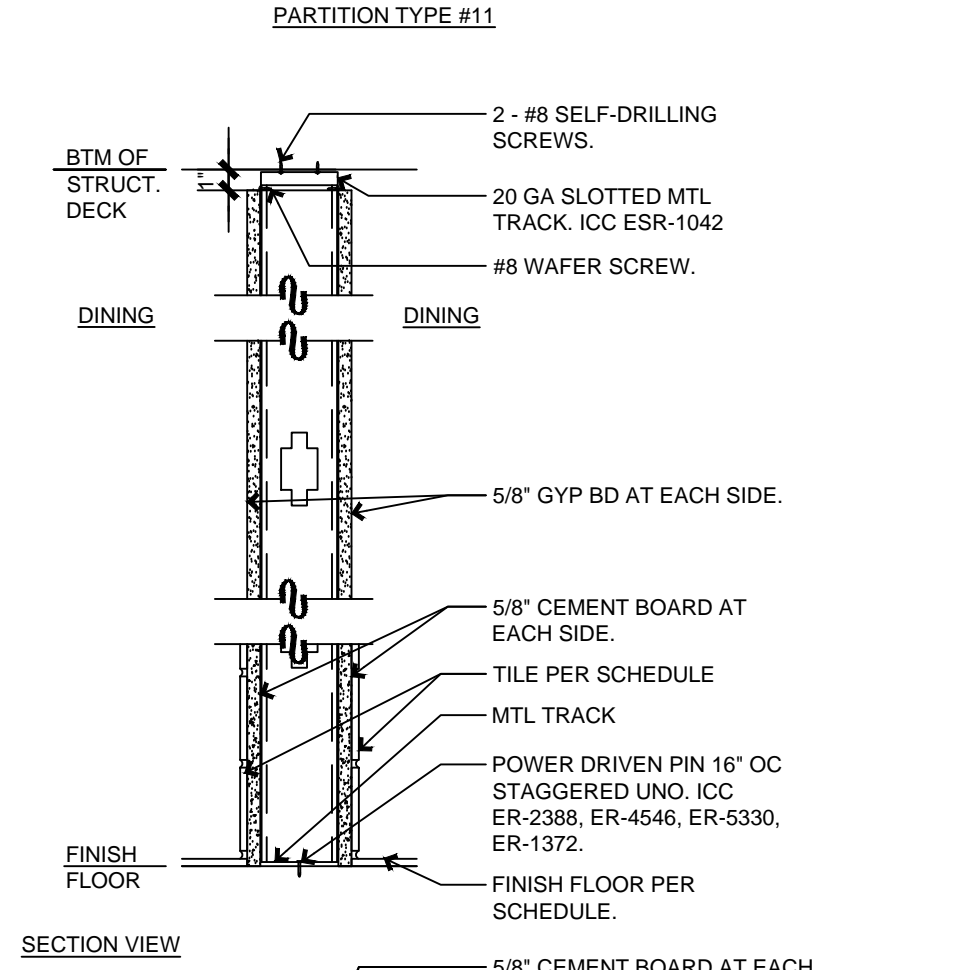
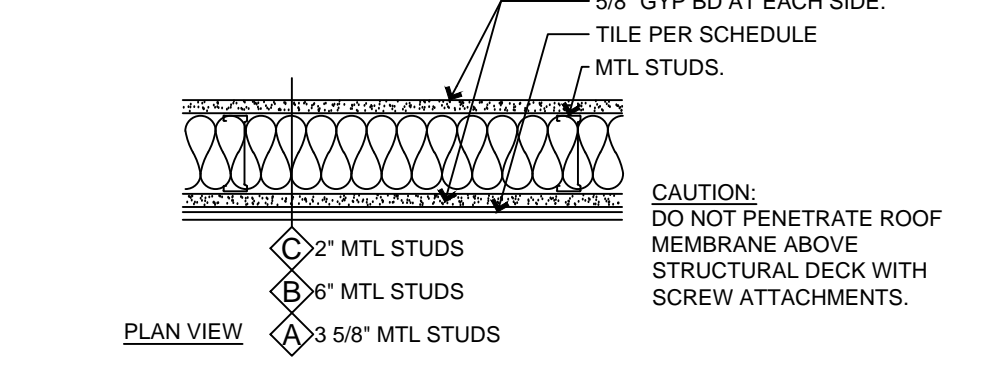
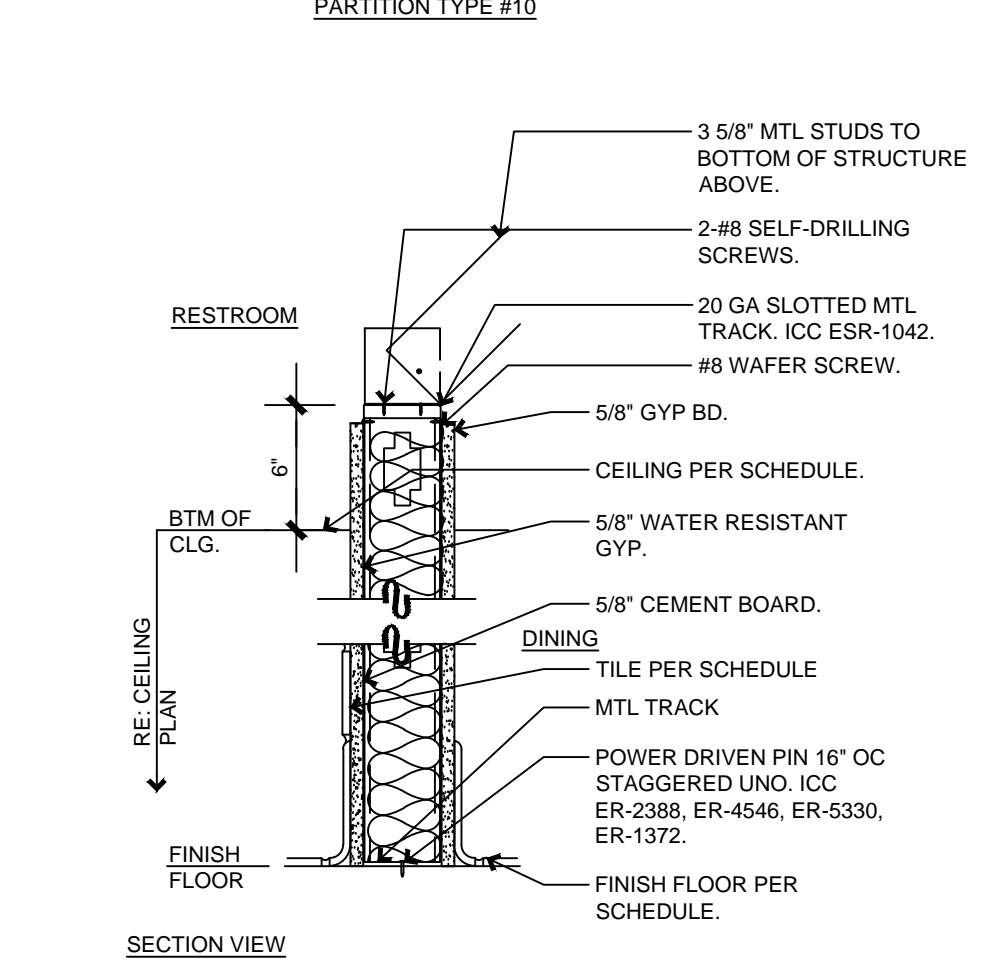
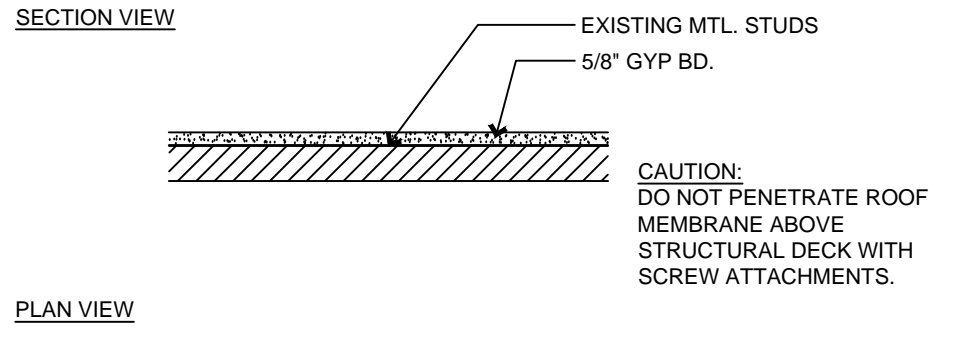
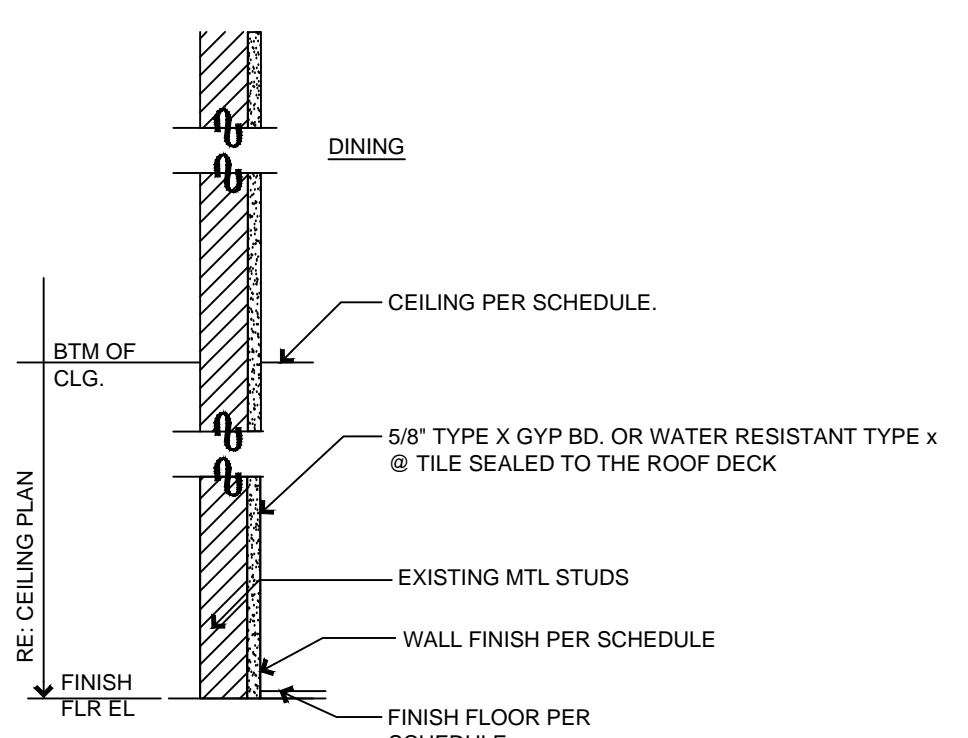
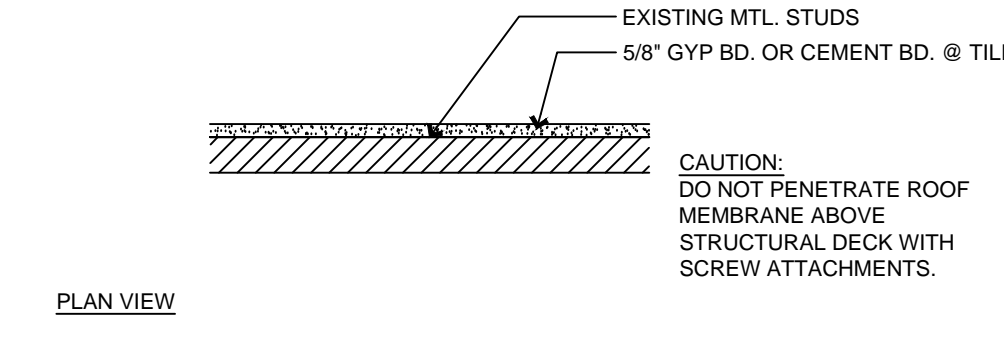
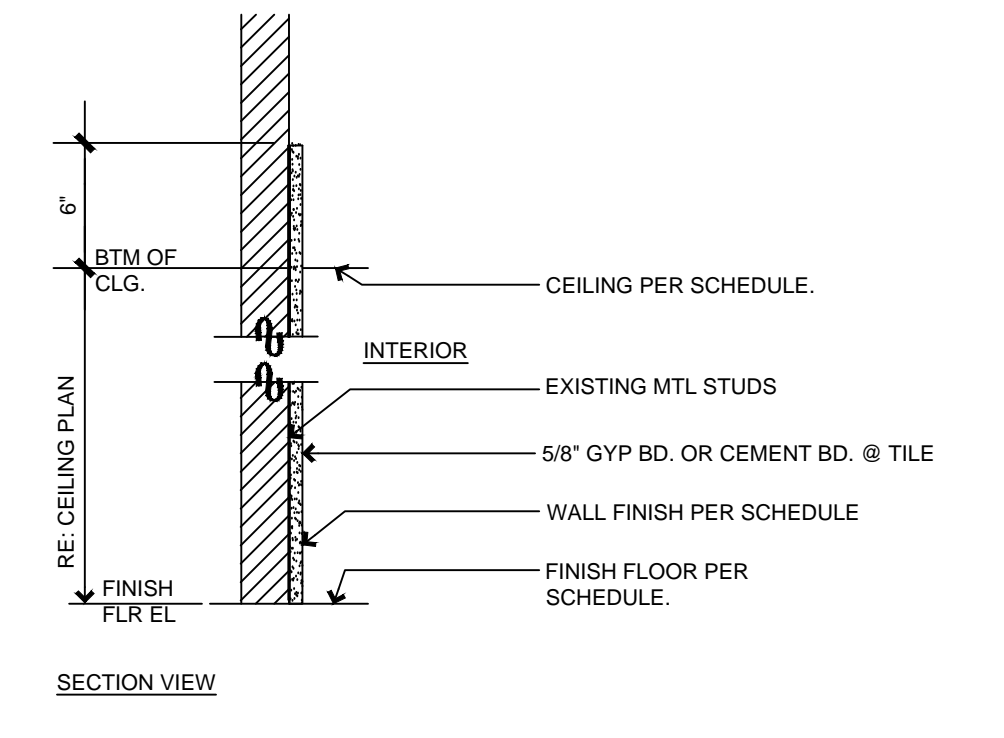
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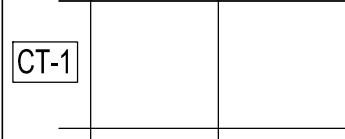
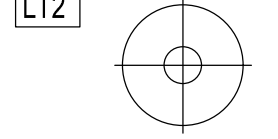
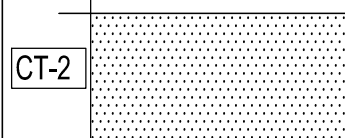
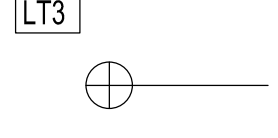
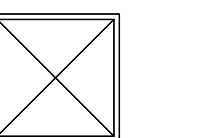
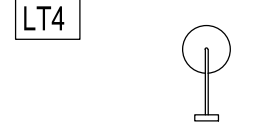
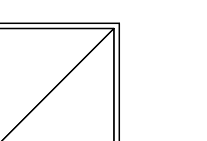
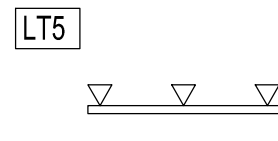
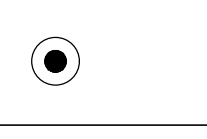
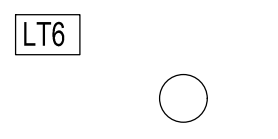
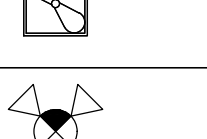
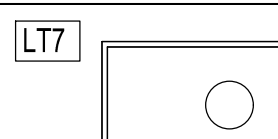
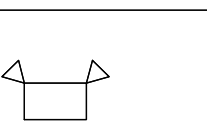
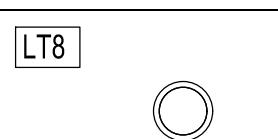
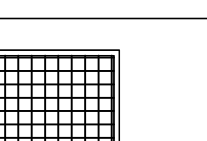
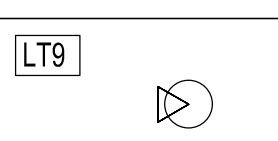
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SHEET 3 OF 11

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REFLECTED CEILING LEGEND

	USG FROST 534 "CHARCOAL" W/ SLB EDGE & DX GRID - 2x2 PAINT DIFFUSERS W/ RUSTOLEUM TO MATCH		16" DECORATIVE PENDENT FIXTURE (TABLE PENDANT)
	VINYL FACED GYP. BOARD PANELS WHITE - 2x4 (KITCHEN CEILING) STAINLESS STEEL PANELS AROUND EXHAUST DUCTS		LARGE BOOTH SCNCE
	2x2 (4-WAY) SUPPLY AIR GRILL SEE PLAN FOR FIXTURE DETAILS		RESTROOM WALL SCNCE
	2x2 RETURN AIR GRILL SEE PLAN FOR FIXTURE DETAILS		CEILING MOUNTED TRACK LIGHTING (MENU BOARD)
	PRELIMINARY SPRINKLER HEAD LOCATIONS		SUSPENDED DOWN LIGHT - BLACK
	EXHAUST FAN		2x4 FIXTURE LAY-IN FIXTURE (VIF)
	WALL OR CEILING MOUNTED EXIT SIGN SEE PLAN FOR FIXTURE DETAILS		RECESSED CAN LIGHT - WHITE SEE ELEC. LIGHTING PLAN FOR DETAILS
	2x2 (PERFORATED) SUPPLY AIR GRILL SEE PLAN FOR FIXTURE DETAILS		WALL WASHER FOR ARTWORK

CEILING NOTES

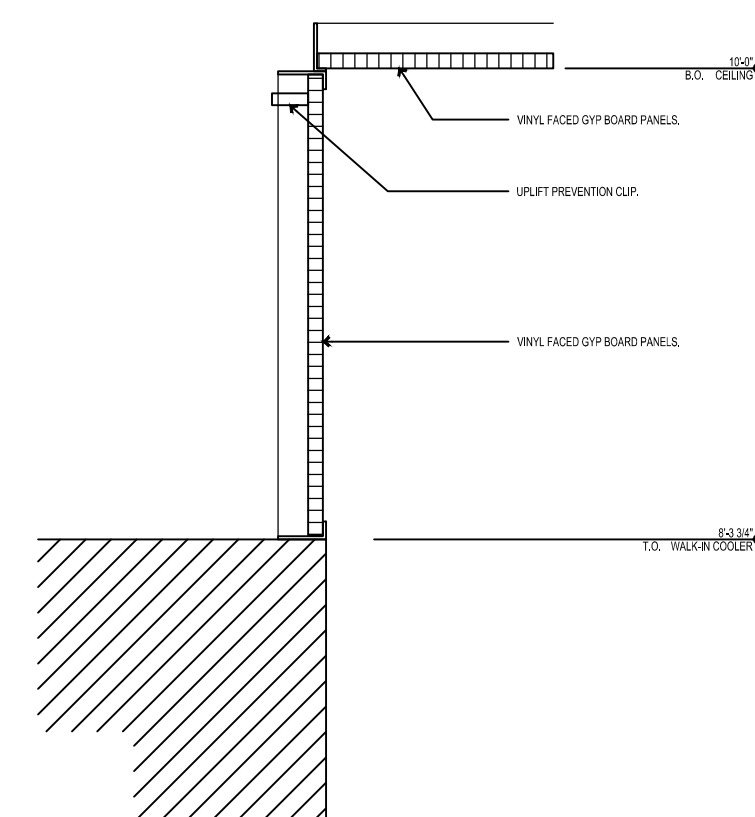
- WORK SHALL FULLY COMPLY WITH GOVERNING CODES, ORDINANCES, RESTRICTIONS, AND NATIONAL ELECTRIC CODE. TAKE ALL NECESSARY SAFETY MEASURES AND COMPLY WITH LOCAL BUILDING DEPARTMENT REQUIREMENTS FOR PUBLIC PROTECTION (BARRICADES, SIGNS, DUST BARRIERS, ETC.)
- REFERENCE EXTERIOR ELEVATIONS FOR FURTHER INFORMATION ON LIGHTING AND ACCESSORIES ON EXTERIOR OF BUILDING.
- IN ACCORDANCE WITH ASTM 84, GROUP A-2, INTERIOR WALL AND CEILING FINISHES TO MEET CLASS B FLAME SPREAD RATING OF 26-75, SMOKE DEVELOPED 0-450 FOR EXIT ENCLOSURES AND EXIT PASSAGEWAYS AND CORRIDORS IN SPRINKLERED BUILDINGS
- IN ACCORDANCE WITH ASTM 84, GROUP A-2, INTERIOR WALL AND CEILING FINISHES TO MEET CLASS C FLAME SPREAD RATING OF 76-200, SMOKE DEVELOPED 0-450 FOR ROOMS AND ENCLOSED SPACES IN SPRINKLERED BUILDINGS.
- GENERAL CONTRACTOR TO CONFIRM HEIGHTS AND COORDINATE WITH EXISTING CONDITIONS. NOTIFY OWNER AND ARCHITECT IF SPECIFIED HEIGHT CANNOT BE ACHIEVED.
- CEILING HEIGHTS ARE TO FINISHES SURFACE, GYPSUM BOARD OR CEILING TILE, AS APPLICABLE.
- GYPSUM BOARD CEILINGS AND SOFFIT TO HAVE A SMOOTH FINISH UNLESS NOTED OTHERWISE.
- PAINT HVAC GRILLES TO MATCH ADJACENT CEILING FINISH
- RELOCATE ANY HVAC GRILLES THAT CONFLICT WITH THE LOCATION OF A NEW LIGHT FIXTURE.
- THE SUSPENDED TILE CEILING PANELS IN KITCHEN AREAS ARE WASHABLE.
- RECESSED CAN LIGHT FIXTURES TO BE CENTERED WITHIN CEILING GRID/TILE UNLESS DIMENSIONED OTHERWISE.
- REFERENCE MECHANICAL AND ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION AND COORDINATION OF SYSTEMS NOT SHOWN ON THIS PLAN.
- THERE WILL BE NOT BE PROJECTIONS LESS THAN 6'-8" FROM THE CEILING. REFERENCE ALSO INTERIOR ELEVATIONS.

KITCHEN/FOOD PREP LIGHTING LEVELS:

ADJUST LIGHTING PER LOCAL COD

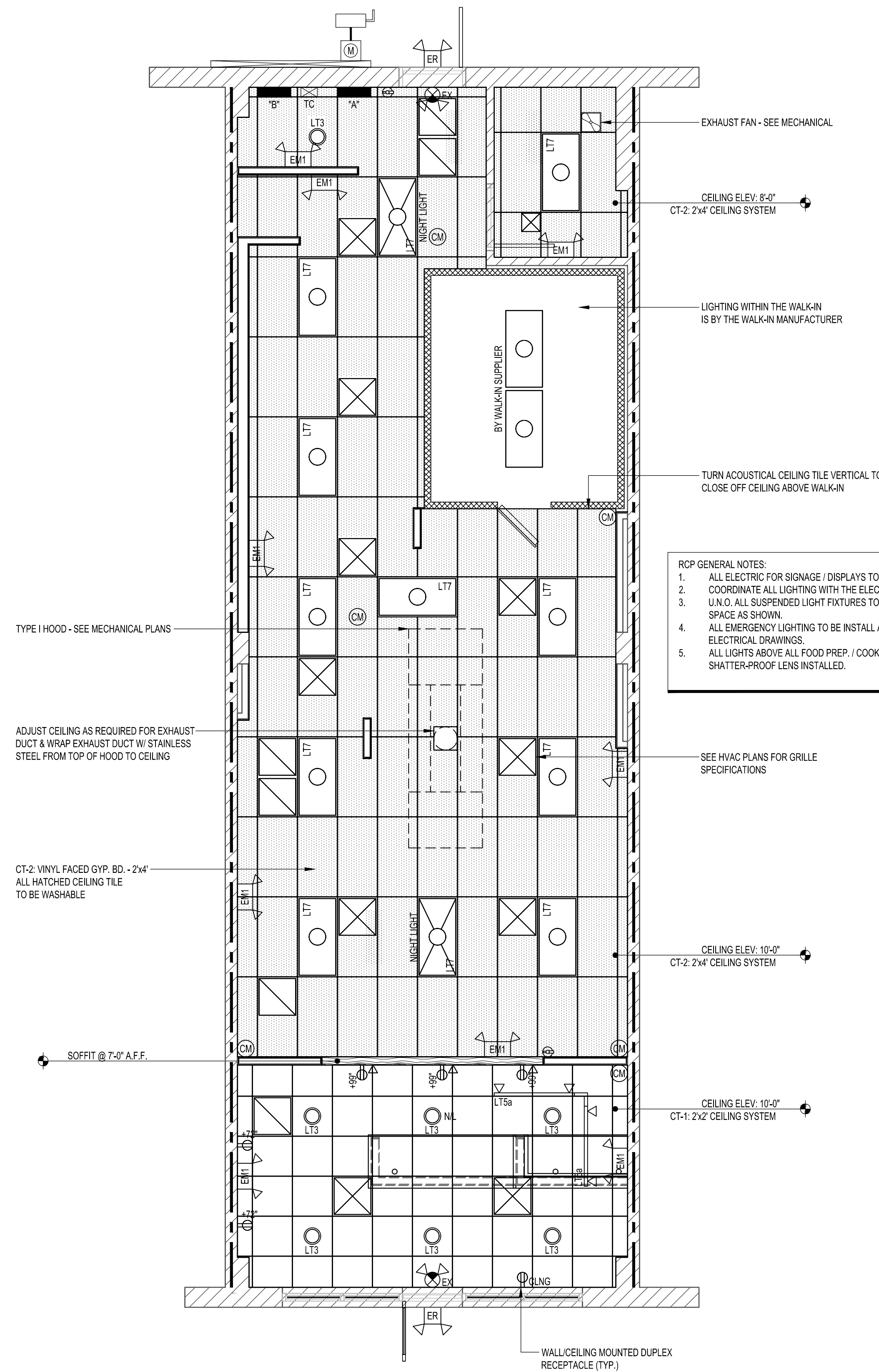
MINIMUM LIGHTING REQUIREMENTS ARE:

- AT LEAST 10 FOOT CANDLES (110 LUX) AT A DISTANCE OF 30 INCHES (75CM) ABOVE FLOOR, IN WALK-IN REFRIGERATION UNITS AND DRY FOOD STORAGE AREAS AND IN OTHER AREAS AND ROOMS DURING PERIODS OF CLEANING.
- AT LEAST 20 FOOT CANDLES (220 LUX): AT A SURFACE WHERE FOOD IS PROVIDED FOR CONSUMER SELF SERVICE SUCH AS BUFFETS AND SALAD BARS OR WHERE FRESH PRODUCE OR PACKAGED FOODS ARE SOLD OR OFFERED FOR CONSUMPTION; INSIDE EQUIPMENT SUCH AS REACH IN AND UNDER COUNTER REFRIGERATORS; AT A DISTANCE OF 30 INCHES (75CM) ABOVE FLOOR IN AREAS USED FOR HAND WASHING, WARE WASHING, AND EQUIPMENT AND UTENSI STORAGE, AND IN TOILET ROOMS
- AT LEAST 50 FOOT CANDLES (540 LUX) AT SURFACE WHERE A FOOD EMPLOYEE IS WORKING WITH FOOD OR WORKING WITH UTENSILS OR EQUIPMENT SUCH AS KNIVES, SLICERS, GRINDERS, OR SAWS WHERE EMPLOYEE SAFETY IS A FACTOR.



2 CEILING TO WALK-IN COOLER

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



1 REFLECTED CEILING PLAN

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

- RCP GENERAL NOTES:
- ALL ELECTRIC FOR SIGNAGE / DISPLAYS TO BE PROVIDED BY THE CONTRACTOR.
 - COORDINATE ALL LIGHTING WITH THE ELECTRICAL DRAWINGS.
 - U.N.O. ALL SUSPENDED LIGHT FIXTURES TO BE CENTERED ABOVE TABLES OR IN SPACE AS SHOWN.
 - ALL EMERGENCY LIGHTING TO BE INSTALL AT LOCATIONS INDICATED ON ELECTRICAL DRAWINGS.
 - ALL LIGHTS ABOVE ALL FOOD PREP / COOK / SERVE AREAS MUST HAVE A SHATTER-PROOF LENS INSTALLED.



09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:

 **INTERIOR UP-FIT**
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

REFLECTED
CEILING PLAN

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

A-2.0

SHEET 3 OF 11

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

FINISH SCHEDULE						
TAG	DESCRIPTION	MANUFACTURER	ITEM #	NAME/COLOR	SIZE TYPE	NOTES
F-1	FLOOR TILE	CREATIVE MATERIALS	---	TIDE BROWN	6"X36"	1, 5
F-2	FLOOR TILE	PROTECTALL	---	QUARRY GREY	6"X6"	2, 6
F-3	FLOOR TILE	CREATIVE MATERIALS	---	PATINA	12"X12"	3, 6
F-4	FLOOR TILE	PROTECT ALL	---	---	--	--
B-2	COVE TILE BASE	CREATIVE MATERIALS	---	QUARRY GREY	6"X6"	2, 13
B-3	COVE TILE BASE	CREATIVE MATERIALS	---	PATINA	6"X12"	3, 13
T-1	WALL TILE	CREATIVE MATERIALS	---	PRICELESS WHITE STAR GLOSSY	4"X8"	4
T-2	WALL TILE	CREATIVE MATERIALS	---	PRICELESS VERMILLION GLOSSY	4"X8"	4
T-3	WALL TILE	CREATIVE MATERIALS	---	PRICELESS BLUE GREY GLOSSY	4"X8"	4
TR-1	TRIM TILE	SCHLUTER	Q 100E	QUADEC - SS	3/8"	11
TR-2	TRIM TILE	SCHLUTER	Q 80E	QUADEC - SS	5/16"	12
P-1	PAINT	SHERWIN WILLIAMS	SW 7026	GRIFFIN	EGGSHELL	---
P-2	PAINT	SHERWIN WILLIAMS	SW 9168	ELEPHANT EAR	EGGSHELL	---
P-3	PAINT	SHERWIN WILLIAMS	SW 6868	REAL RED	EGGSHELL	---
P-4	PAINT	SHERWIN WILLIAMS	SW 7022	ALPACA	EGGSHELL	---
CT-1	CEILING TILE	---	534	USG FROST 534 "CHARCOAL"	2'X2'	7, 8
CT-2	CEILING TILE	---	---	VINYL FACED GYP BOARD PANELS	2'X4'	9
CT-3	PAINTED CEILING	---	---	GYPSUM W/ P-1	---	---
CT-4	PAINTED CEILING	---	---	DROP CEILING W/ P-1	---	---
SF-1	SURFACE	DUPONT	---	ZODIAQ QUARTZ, STRATUS WHITE	---	---
SF-2	SURFACE	MARLITE	P-199	FIBRE REINFORCED PLASTIC, BRITE WHITE	PEBBLE	---
SF-3	SURFACE	TIGER DRYLAC	RAL 7021	POWDER COATING, MT/SM	---	10
L-1	PLASTIC LAMINATE	WILSONART	7909-60	FUSION MAPLE	---	---
L-2	PLASTIC LAMINATE	NEVEMAR	PH700IT	WHITE PHANTASY	---	---

FINISH SCHEDULE KEY NOTES:

- GROUT FOR FLOOR TILE TO BE MAPEI ULTRACOLOR PLUS FA COCOA #79 (3/16" JOINT)
- GROUT FOR FLOOR TILE TO BE MAPEI KERAPOXY IEG CG CHARCOAL #58 (3/8" JOINT)
- GROUT FOR FLOOR TILE TO BE MAPEI KERAPOXY IEG CG CHARCOAL #47 (3/16" JOINT)
- GROUT FOR WALL TILE TO BE MAPEI KERACOLOR U COBBLESTONE #108 (1/8" JOINT)
- ORIENTATION TO BE HORIZONTAL TO THE FRONT COUNTER WITH 1/3 STAGGER
- ORIENTATION TO BE STACKED
- GRID TO HAVE FINELINE BEVEL EDGE
- PAINT DIFFUSERS WITH RUSTOLEUM TO MATCH CEILING GRID & TILE
- GRID TO BE 5/16" COMMERCIAL QUALITY
- POWDER COATING TO BE INTERIOR QUALITY
- TRIM FOR USE BETWEEN DIFFERENT ADJACENT TILES AND TILE TO GYP. BD. TRANSISTIONS
- TRIM FOR USE AT OUTSIDE CORNERS
- INSIDE AND OUTSIDE CORNERS TO BE USED.

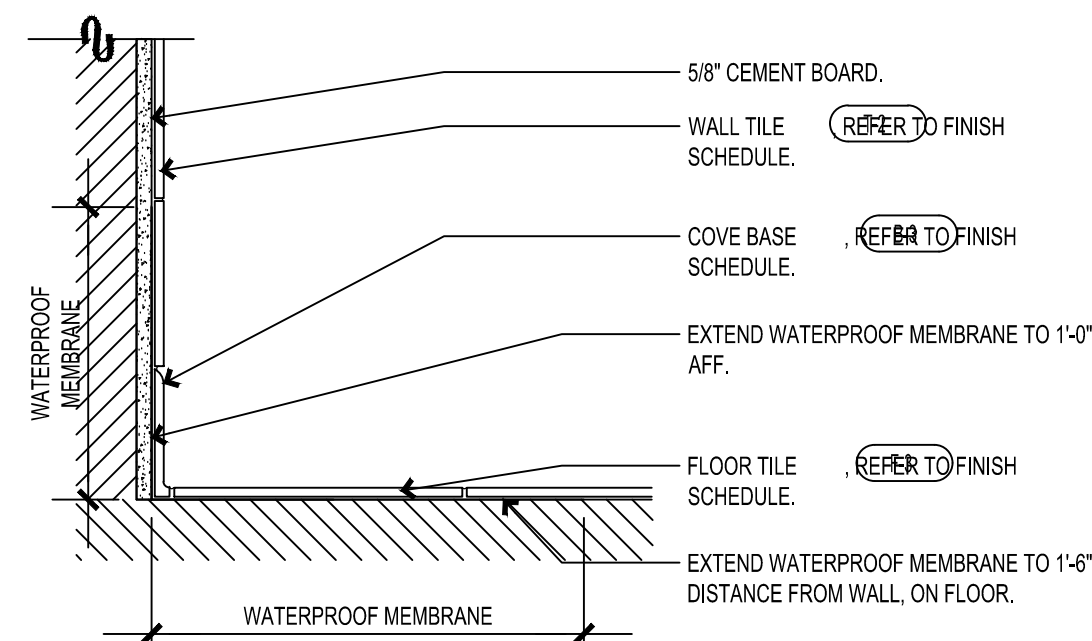
ROOM FINISH SCHEDULE							
	ROOM	FLOOR	BASE	WALLS	CEILING		NOTES
					MATERIAL	HEIGHT	
100	WAITING	F-1	F-1	F-1, P-1, P-2, P-3	CT-1	10'-0"	
101	SERVICE AREA	F-2	B-2	T-1, P-2, P-1	CT-1	10'-0"	
102	KITCHEN	F-2	B-2	SF-2	CT-2	10'-0"	
103	WALK-IN COOLER	F-2	B-2	--	--	8'-0"	1
104	RESTROOM	F-2	B-2	SF-2	CT-2	8'-0"	

ROOM FINISH SCHEDULE KEY NOTES:

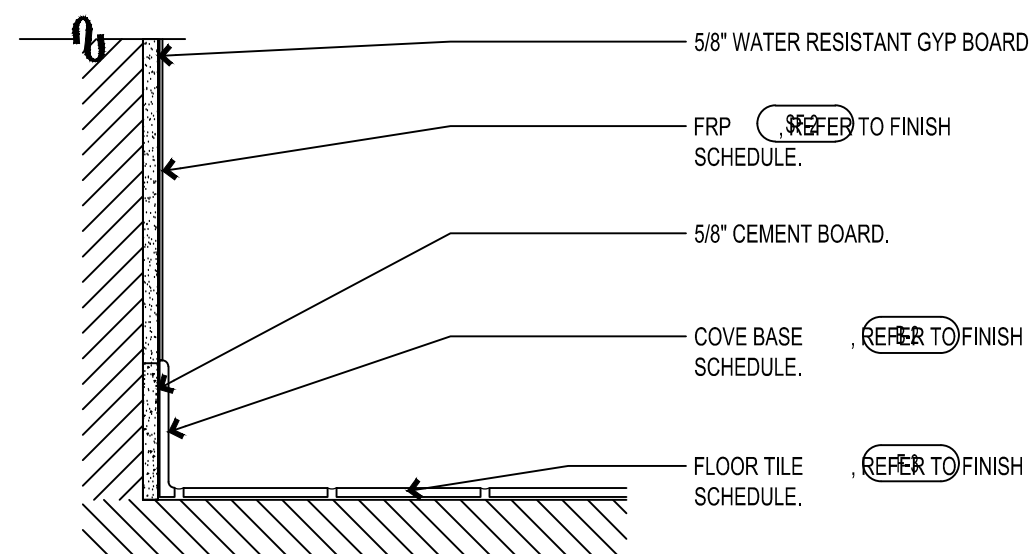
- TILE TO BE INSTALLED PRIOR TO INSTALLATION OF WALK-IN COOLER

PLAN NOTES

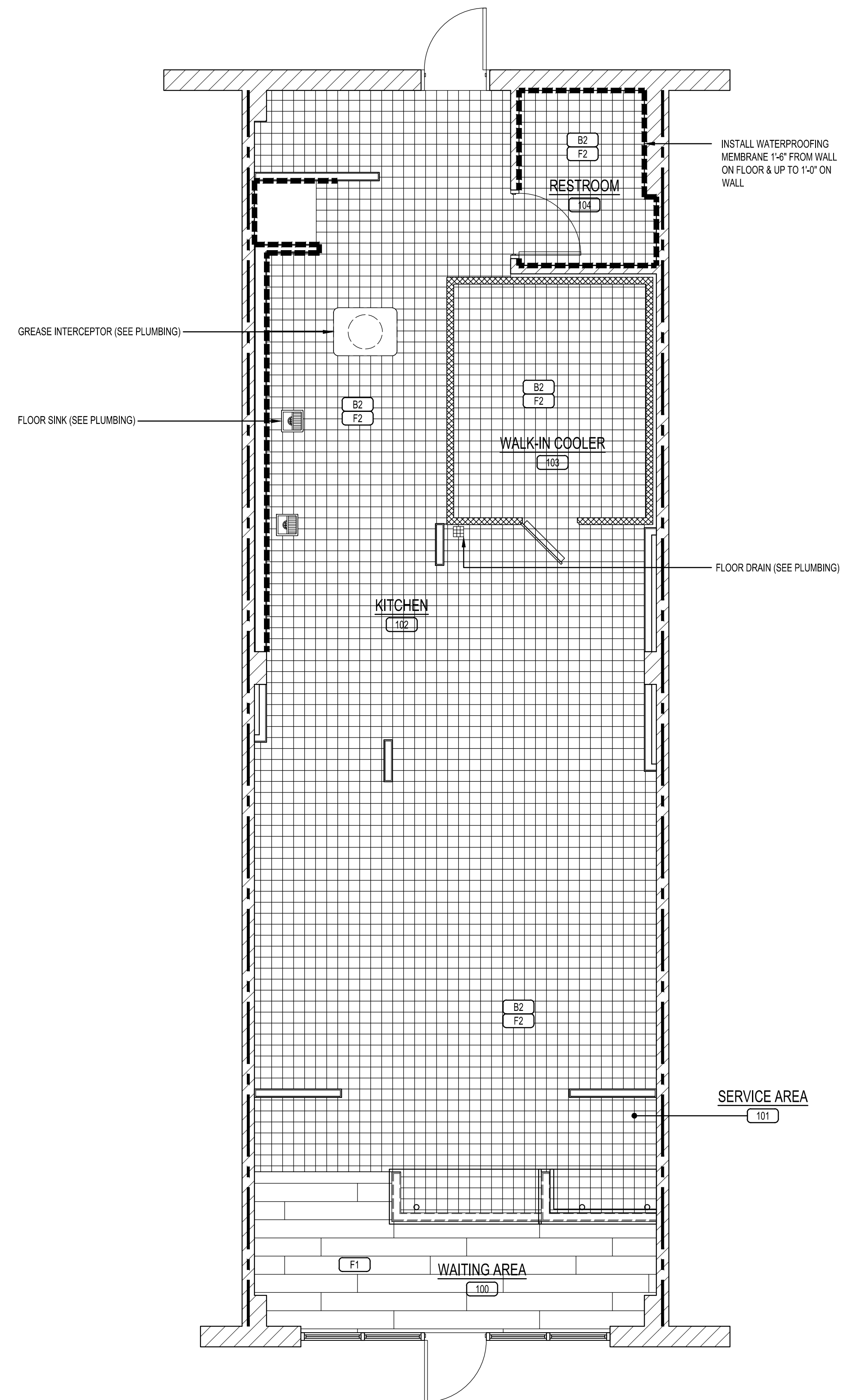
- REFERENCE MATERIAL RESOURCES AND SCHEDULE SHEET FOR FINISH SELECTIONS AND ADDITIONAL INFORMATION.
- PROVIDE THRESHOLDS, TRANSITION STRIPS, EDINGS, ETC. AT CHANGES IN FLOORING MATERIAL. USE ALUMINUM PROFILE BY SCHLUTER SYSTEMS AS DICTATED BY FIELD CONDITION.
- PRIOR FLOOR FINISH AND FLOOR COVERING MATERIALS SHALL NOT BE LESS THAN CLASS 'N' GROUPS A.
- CONTRACTOR TO GET OWNER AND ARCHITECT APPROVAL ON MATERIAL MATCH PRIOR TO PURCHASE AND INSTALLATION. PROVIDE SAMPLES.
- TILE EXPANSION JOINTS PER TCNA EJ171. ALIGN WITH SLAB CONTROL SILICONE SEALANT AND JOINT FILLER.
- INTERIOR FLOOR FINISHES SHALL BE DESIGNED WITH A CRACK CONTROL JOINT ALONG THE LENGTH OF EXISTING POUR STRIPS AT THE COLD JOINT WHERE THE POUR STRIPS CONNECT TO THE MAIN BUILDING SLAB.
- WALK-IN COOLER PROVIDED WITHOUT A FLOOR. REFERENCE WALK-IN COOLER SHOP DRAWINGS.
- FIELD VERIFY DIMENSIONS OF WALLS TO RECEIVE WALL COVERINGS, MURALS, OR WAINSCOT PRIOR TO INSTALLATION.
- IN ACCORDANCE WITH ASTM 84, GROUP B, INTERIOR WALL AND CEILING FINISHES TO MEET CLASS B FLAME SPREAD RATING OF 26-75; SMOKE DEVELOPED 0-450 FOR EXIT ENCLOSURES AND EXIT PASSAGEWAYS AND CORRIDORS IN SPRINKLERED BUILDINGS.
- IN ACCORDANCE WITH ASTM 84, GROUP B, INTERIOR WALL AND CEILING FINISHES TO MEET CLASS C FLAME SPREAD RATING OF 75-200; SMOKE DEVELOPED 0-450 FOR ROOMS AND ENCLOSED SPACES IN SPRINKLERED BUILDINGS.



3 RESTROOM TILE TO FLOOR
SCALE: 1 1/2" = 1'-0"



2 KITCHEN FLOOR TO WALL TILE
SCALE: 1 1/2" = 1'-0"



1 FLOOR FINISH PLAN
SCALE: 1/4" = 1'-0"



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

FLOOR FINISH PLAN & SCHEDULE

PROJECT NUMBER 18-A086

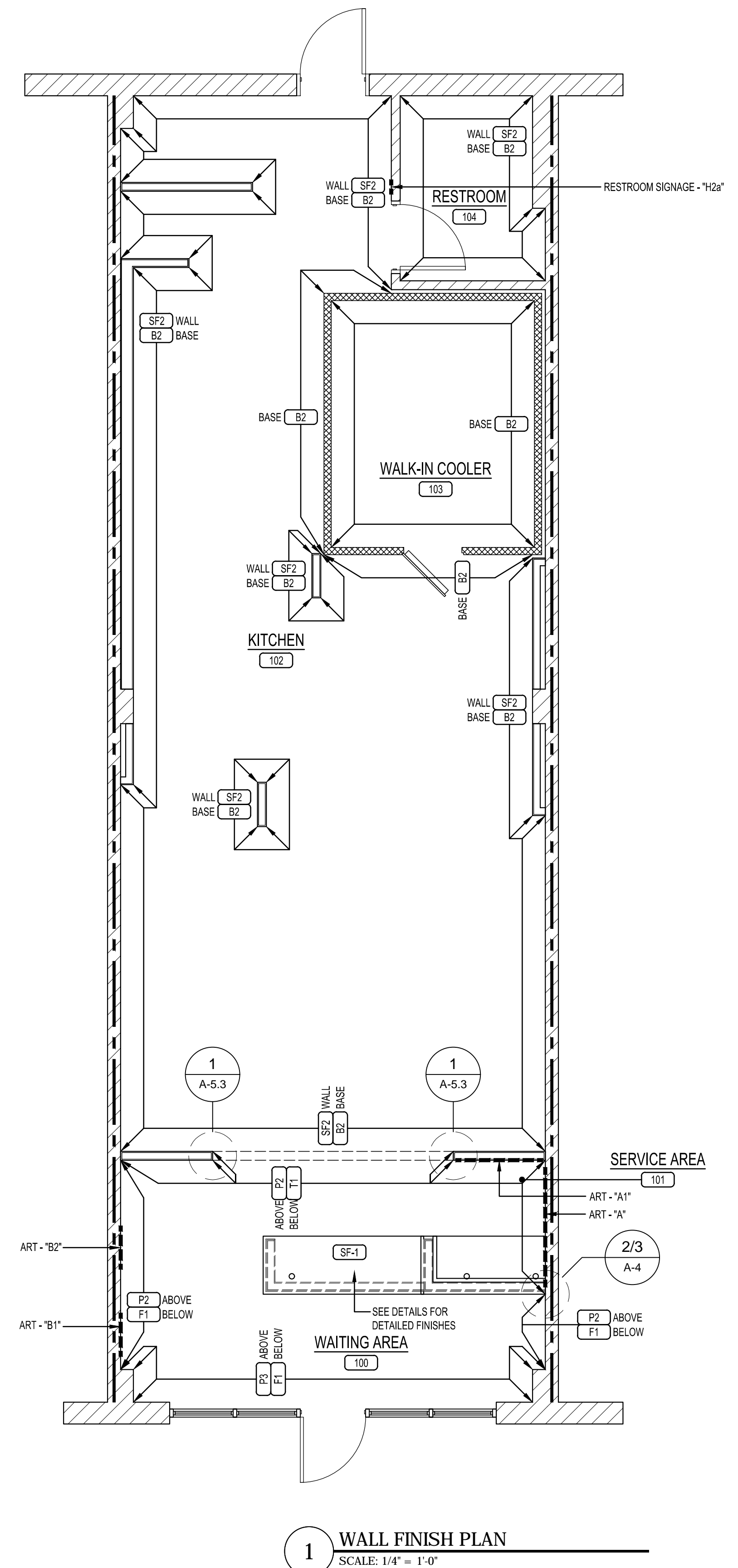
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SHEET NO.

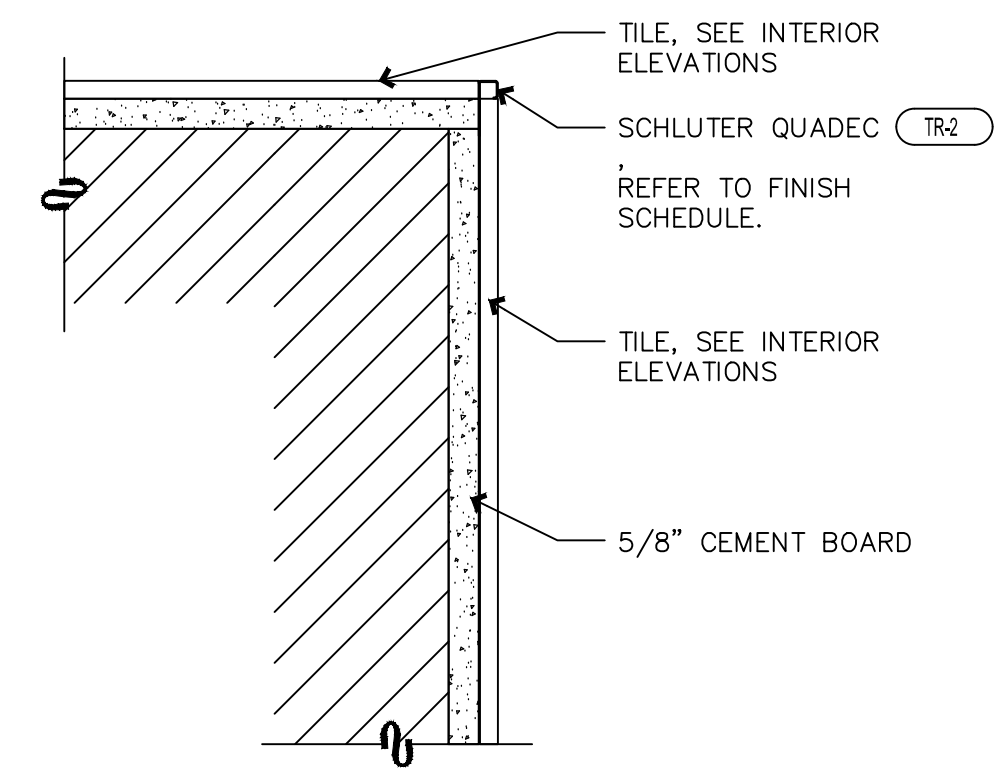
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SHEET 5 OF 11

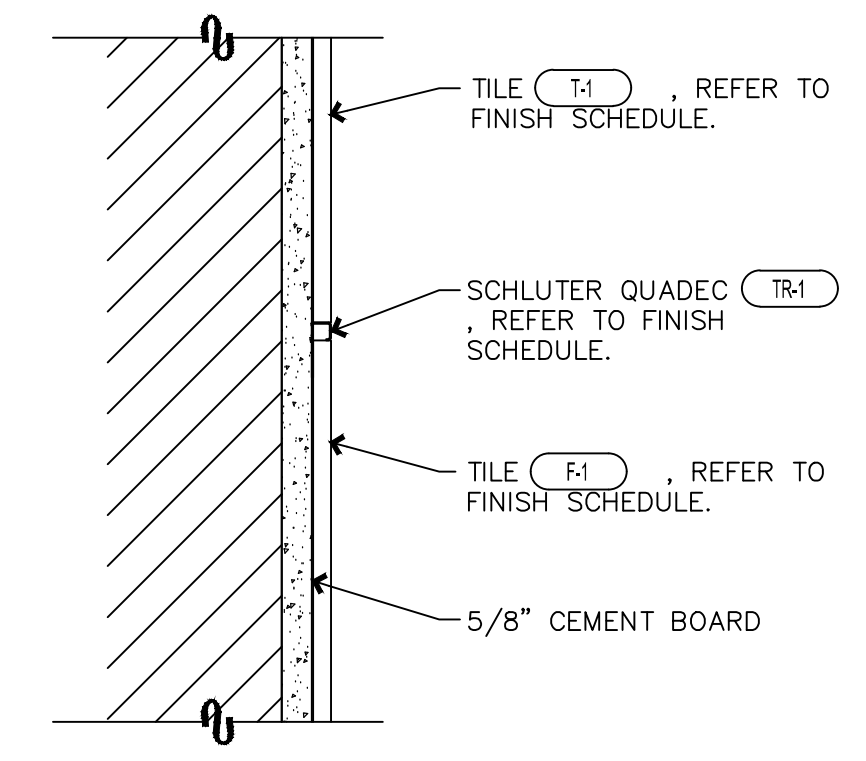
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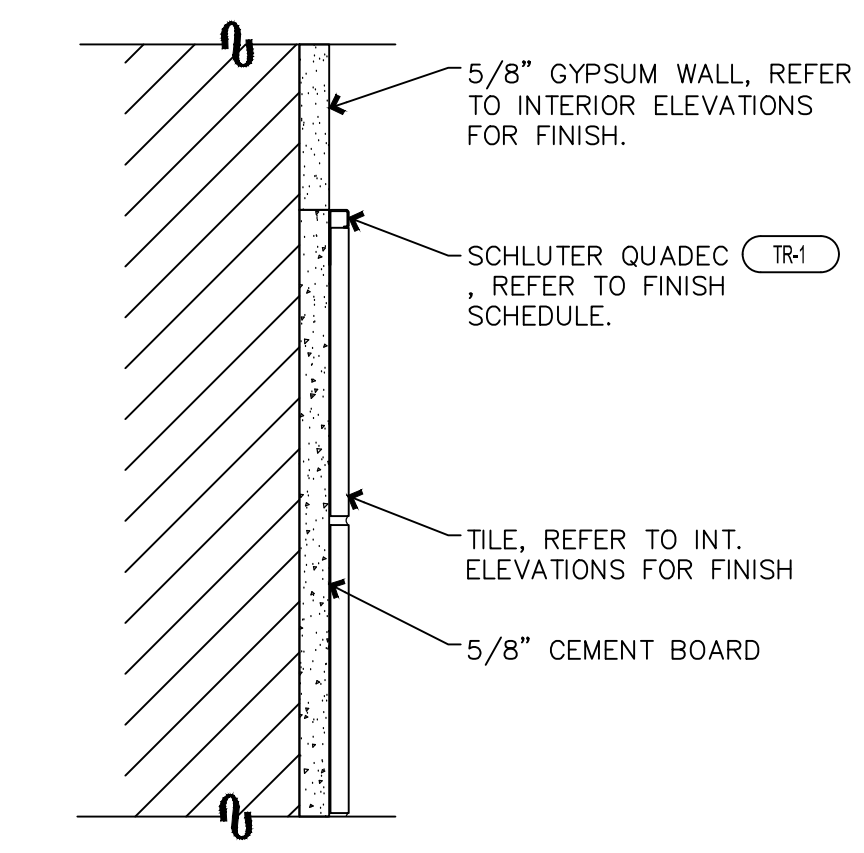
1 WALL FINISH PLAN
SCALE: 1/4" = 1'-0"



4 WALL TILE OUTSIDE CORNER
SCALE: 3" = 1'-0"



3 WALL TILE TRANSITION
SCALE: 3" = 1'-0"



2 WALL TILE SECTION
SCALE: 3" = 1'-0"



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

FINISH WALL & ARTWORK PLAN

PROJECT NUMBER 18-A086

DATE 09-26-2018

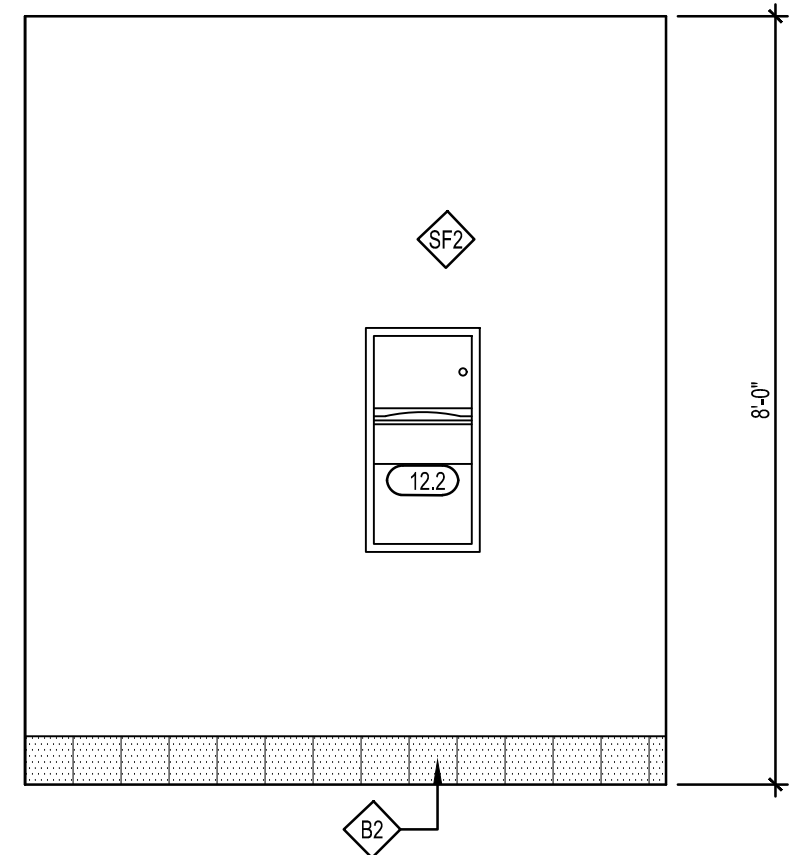
SHEET NO.

A-4.0

SHEET 6 OF 11

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

RESTROOM ACCESSORIES SCHEDULE				
TAG	QTY	DESCRIPTION	MFG.	MODEL
12.2	2	PAPER TOWEL DISPENSER	BOBRICK	B-4369 OR EXISTING
12.3	2	SOAP DISPENSER	BOBRICK	B-40 OR EXISTING
70	2	BABY CHANGING STATION	IMPACT PRODUCTS	1170 OR EXISTING
71	2	MIRROR	BOBRICK	B-165 1836 OR EXISTING
72	2	TOILET PAPER DISPENSER	KOHLER	B-253 OR EXISTING
73	2	FEM. NAPKIN DISPOSAL	KOHLER	B-270 OR EXISTING
74	2	TOILET	AMERICAN STANDARD	2467.100 OR EXISTING
74.1	2	36" GRAB BAR	BOBRICK	B-5806X36 OR EXISTING
74.2	2	42" GRAB BAR	BOBRICK	B-5806X42 OR EXISTING
74.3	2	18" GRAB BAR	BOBRICK	B-5806X18 OR EXISTING
75	2	LAVATORY	AMERICAN STANDARD	0355.012 OR EXISTING
75.1	2	FAUCET	AMERICAN STANDARD	2275.503 OR EXISTING

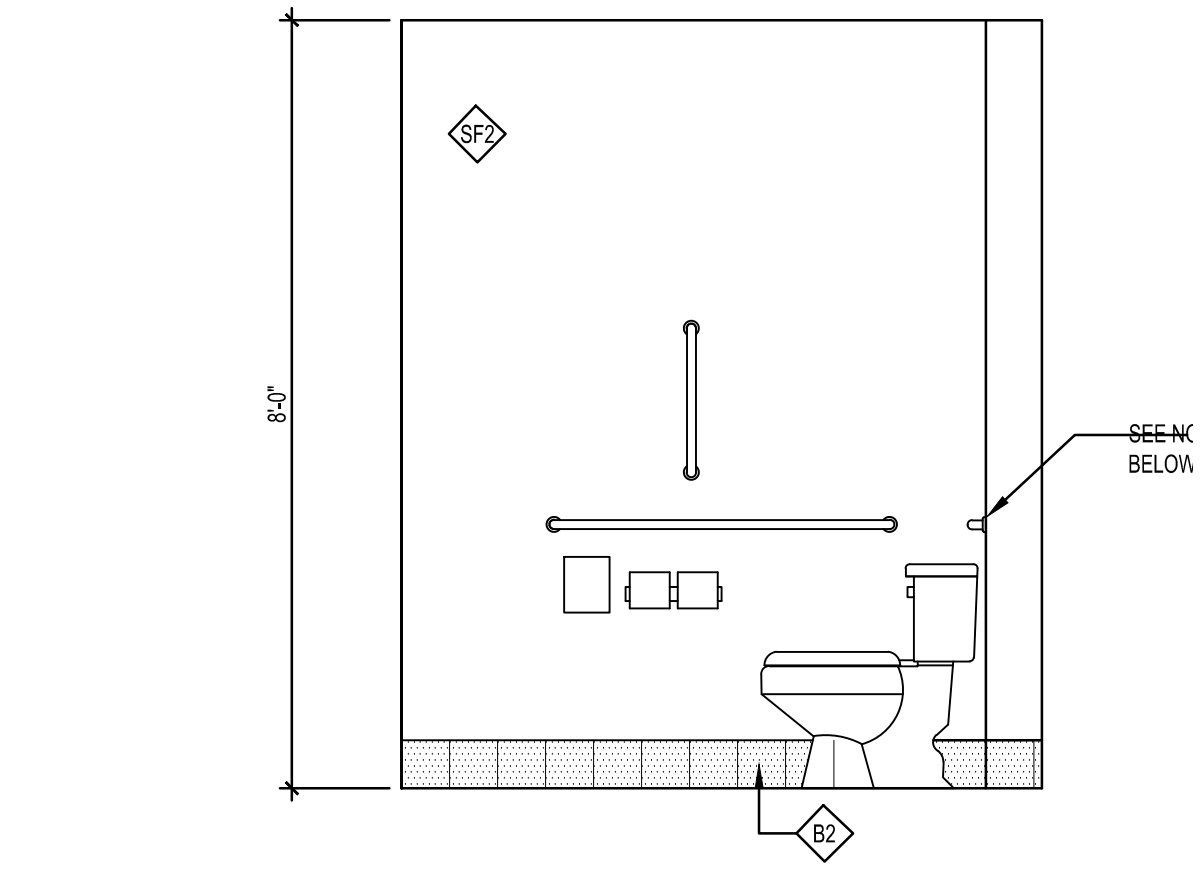


4 RR ELEVATION
SCALE: 1/2" = 1'-0"

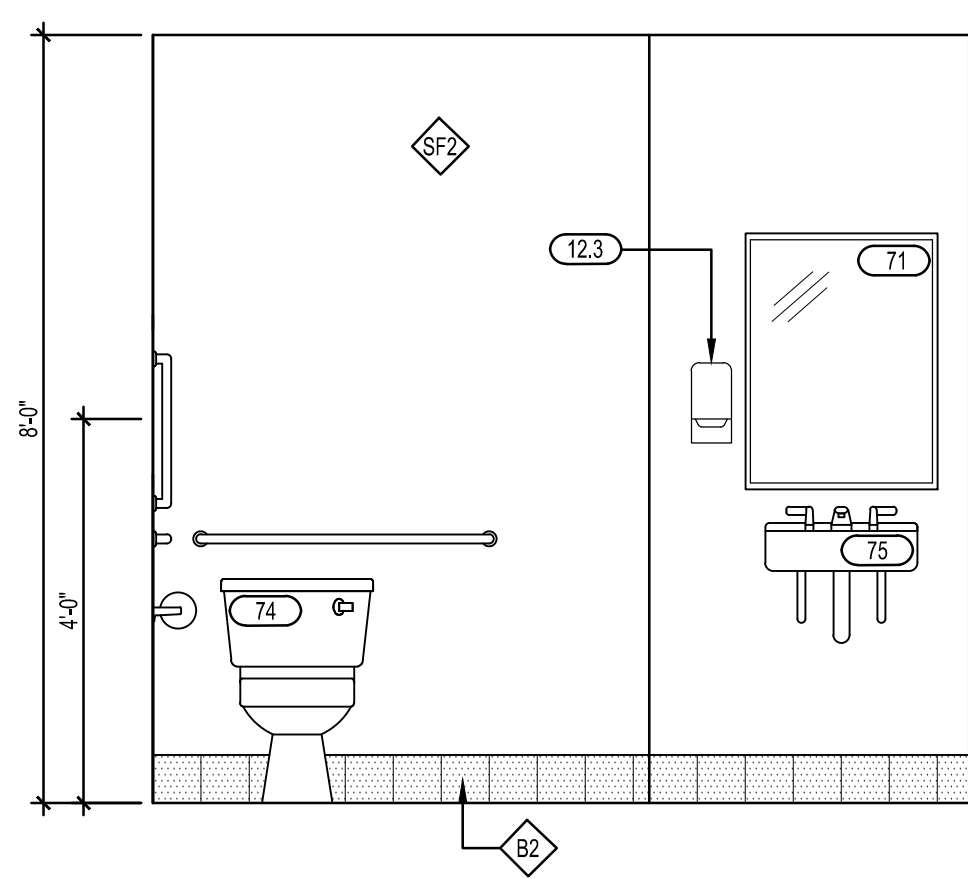
GENERAL NOTE:
1. PROVIDE DOUBLE 25 MSG GALV STEEL STUDS IN WALLS TO SUPPORT ALL WALL HUNG PLUMBING FIXTURES, TYPICAL.

RESTROOM NOTES

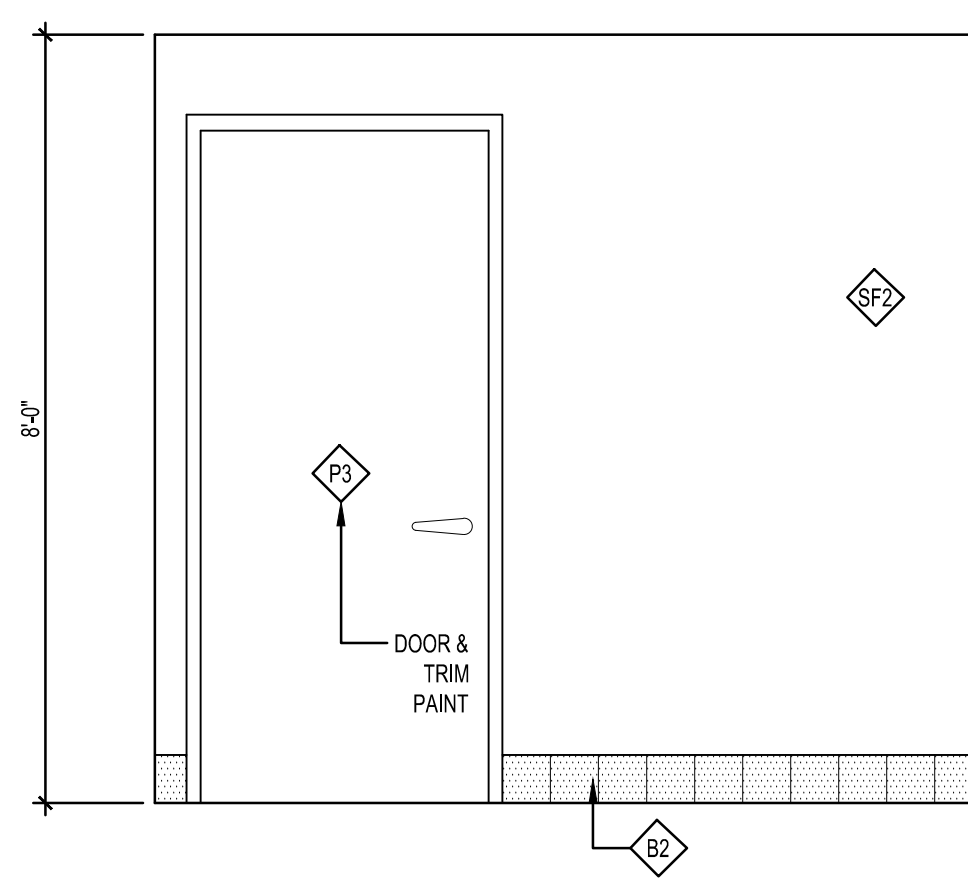
1. COMPLY WITH THE REQUIREMENTS OF IBC AND ANSI A117.1.
2. WATER CLOSETS AND URINAL FLUSH VALVE CONTROLS AND FAUCET AND OPERATING MECHANISM CONTROL SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING PINCHING OR TWISTING OF THE WRIST AND SHALL BE MOUNTED NO MORE THAN 44" AFF.
3. THE FORCE REQUIRED TO ACTIVATE WATER CLOSET AND URINAL FLUSH VALVE CONTROLS AND FAUCET AND OPERATING MECHANISM CONTROLS SHALL BE NO GREATER THAN 5 LBS.
4. SELF CLOSING FAUCET CONTROL VALVES ARE ALLOWED IF THE FAUCET REMAINS OPEN FOR AT LEAST 10 SECONDS.
5. WHERE TOWEL, SANITARY NAPKINS WASTE RECEPTACLES AND OTHER SIMILAR DISPENSING AND DISPOSAL FIXTURES ARE PROVIDED AT LEAST ONE OF EACH TYPE SHALL BE LOCATED WITH ALL OPERABLE PARTS INCLUDING COIN SLOTS WITHIN 40" FROM THE FINISHED FLOOR.
6. LAVATORIES SHALL BE MOUNTED WITH THE RIM OR COUNTER SURFACE NO HIGHER THAN 34" ABOVE THE FINISHED FLOOR AND WITH A CLEARANCE OF AT LEAST 29" FROM THE FLOOR TO THE BOTTOM OF THE APRON WITH KNEE CLEARANCE UNDER FRONT UP EXTENDING A MINIMUM OF 30" IN WIDTH AND 6" MINIMUM DEPTH AT THE TOP TOE CLEARANCE SHALL BE THE SAME WIDTH AND SHALL BE A MINIMUM OF 9" HIGH FROM THE FLOOR AND A MIN OF 17" DEEP FROM THE FRONT OF THE LAVATORY.



1 RR ELEVATION
SCALE: 1/2" = 1'-0"



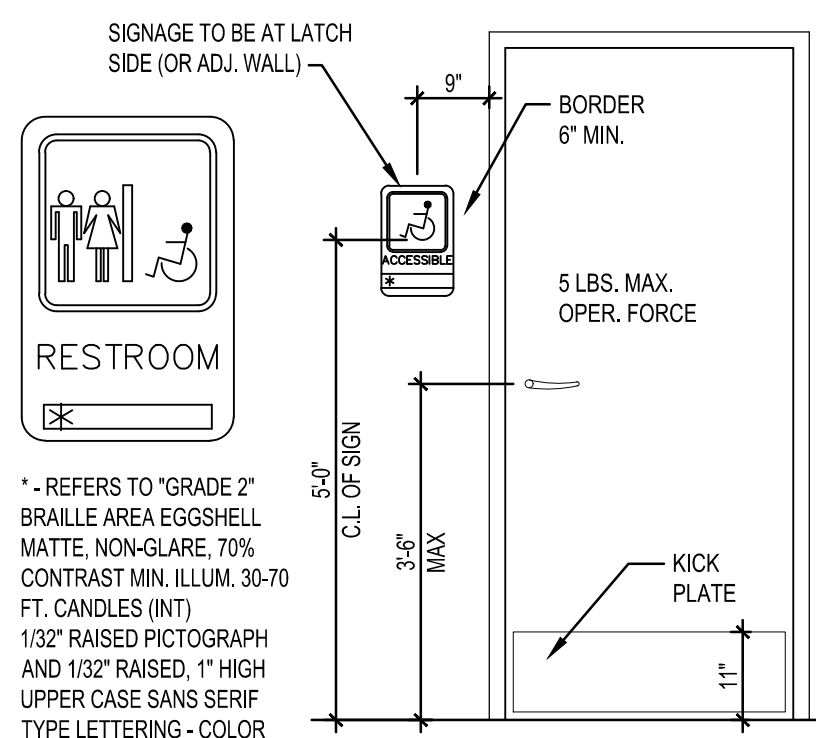
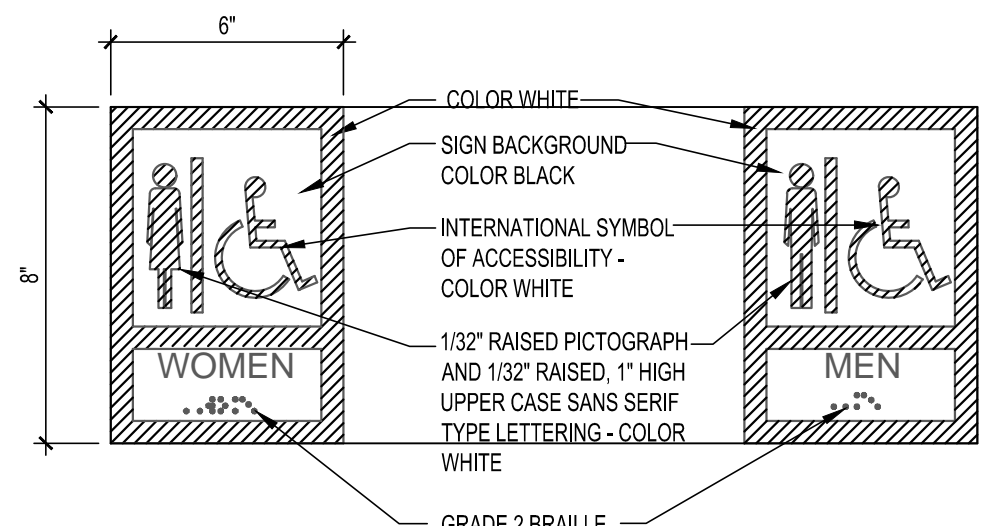
2 RR ELEVATION
SCALE: 1/2" = 1'-0"



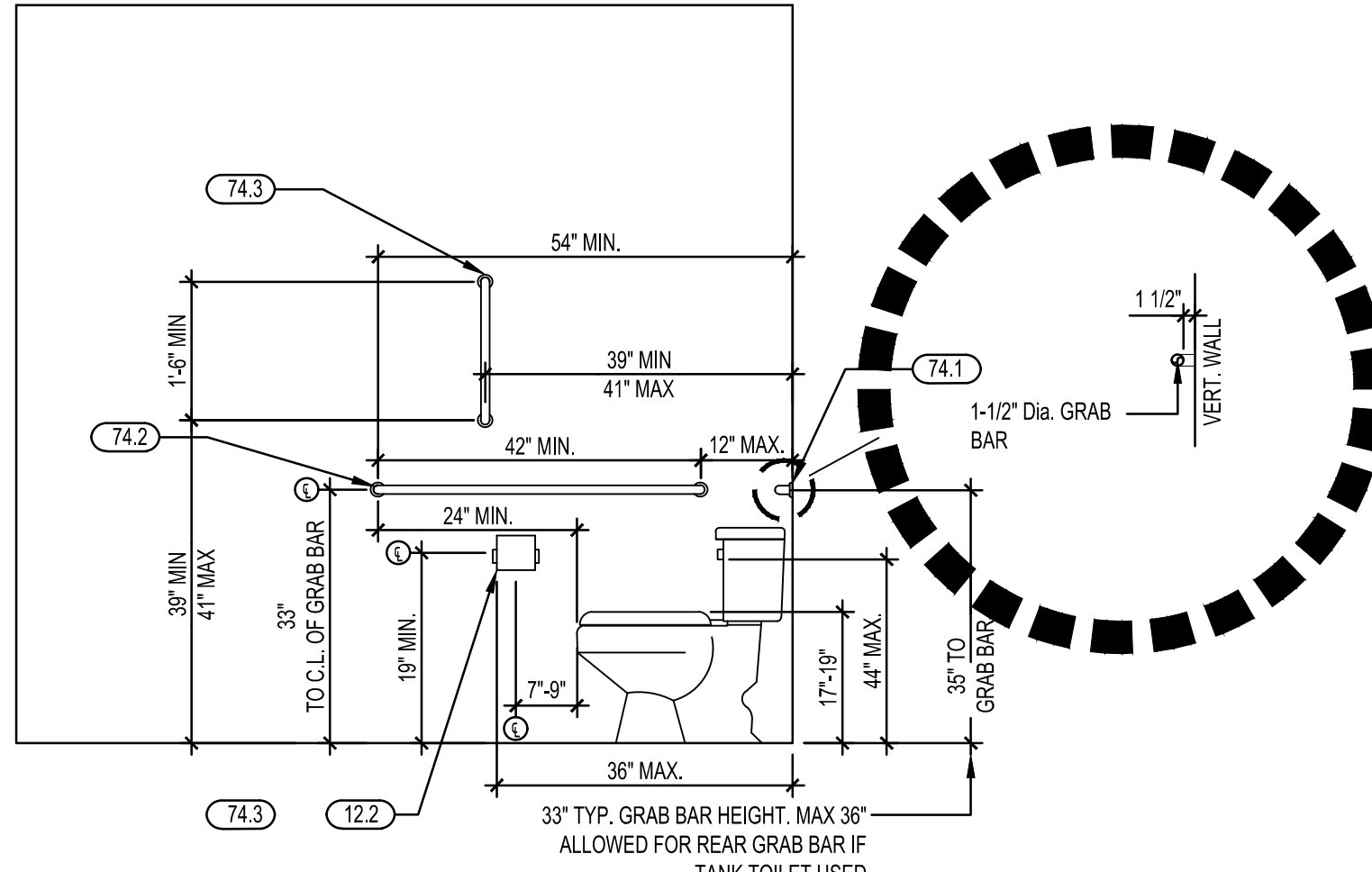
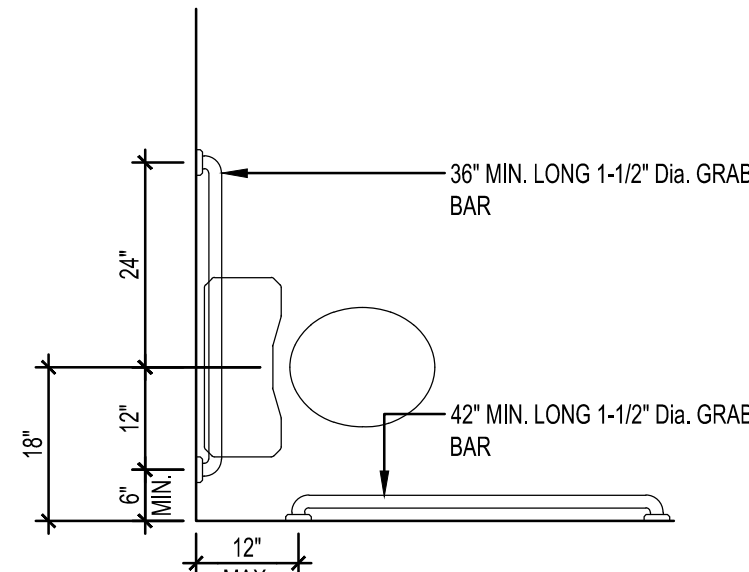
3 RESTROOM ELEVATION
SCALE: 1/2" = 1'-0"

ADA SIGNAGE TYPE DETAILS AND NOTES

WALL SIGNAGE (TYP.)



9 RESTROOM SIGN & DOOR
SCALE: 1/2" = 1'-0"



NOTES:

1. BENDING STRESS IN A GRAB BAR INDUCED BY THE MAXIMUM BENDING MOMENT FROM THE APPLICATION OF A 250 LB. POINT LOAD SHALL BE LESS THAN THE ALLOWABLE.
2. SHEAR STRESS INDUCED IN A GRAB BAR BY THE APPLICATION OF A 250 LB POINT LOAD SHALL BE LESS THAN THE ALLOWABLE SHEAR STRESS FOR THE MATERIAL OF THE GRAB BAR, AND ITS MOUNTING BRACKET OR OTHER SUPPORT IS CONSIDERED TO BE FULLY RESTRAINED, THEN DIRECT AND TORSIONAL SHEAR STRESSES SHALL NOT EXCEED THE ALLOWABLE SHEAR STRESS.
3. SHEAR FORCE INDUCED IN FASTENER OR MOUNTING DEVICES FROM THE APPLICATION OF A 250 LB. POINT LOAD SHALL BE LESS THAN THE ALLOWABLE WITHDRAWAL LOAD BETWEEN THE FASTENER AND SUPPORTING STRUCTURE.
4. TENSILE FORCE INDUCED IN A FASTENER BY A DIRECT TENSION FORCE OF A 250 LB. POINT LOAD, PLUS THE MAXIMUM MOMENT FROM THE APPLICATION OF A 250 LB. POINT LOAD, SHALL BE LESS THAN THE ALLOWABLE WITHDRAWAL LOAD BETWEEN THE FASTENER AND SUPPORTING STRUCTURE.
5. GRAB BARS AND WALL OR OTHER SURFACE ADJACENT TO THEM SHALL BE FREE OF ANY SHARP OR ABRASIVE ELEMENTS. EDGES SHALL HAVE A MINIMUM RADIUS OF 1/8"
6. GRAB BAR LENGTHS INDICATED SHALL NOT INCLUDE ANY MOUNTING CURVATURE, MINIMUM DIMENSIONS APPLY TO STRAIGHT LENGTH OF BAR.

ALL ADA SIGNS SHALL CONFORM WITH IBC ACCESSIBILITY GUIDELINES

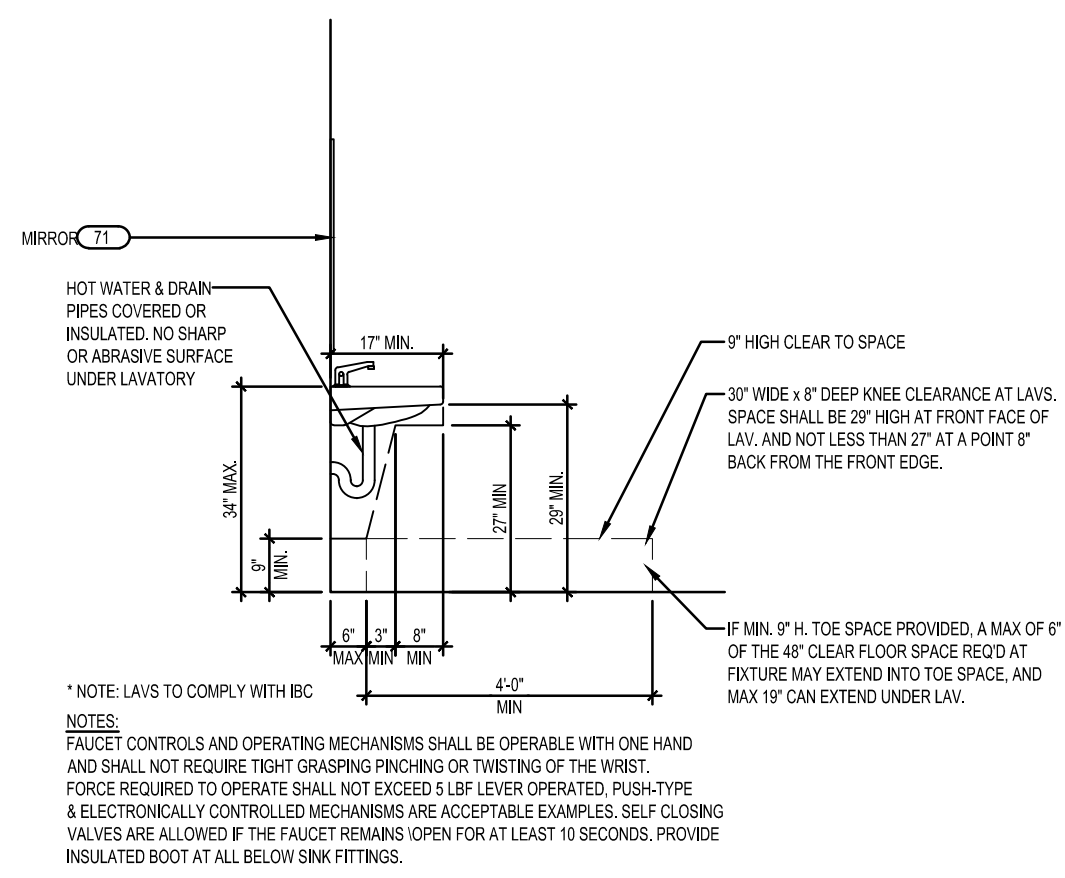
1. LETTERS AND NUMBERS MUST BE RAISED 1/32" FROM SIGNAGE SURFACE.
2. CHARACTER HEIGHT MUST BE AT LEAST 5/8" BUT NOT TO EXCEED 2". TYPE STYLE FOR LETTERS AND NUMBERS SHALL BE SANS SERIF OR SIMPLE SERIF.
3. PICTOGRAMS SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW PICTOGRAM DOOR MOUNTED ACCESSIBILITY SIGN.
4. PLASTIC LAMINATE SECURED TO CENTER OF DOOR FACE CENTER LINE AT 60" A.F.F.
5. WOMEN'S SYMBOL 1/4" THICK 12" DIAMETER.
6. MEN'S SYMBOL 1/4" THICK TRIANGLE 12" SIDES.
7. COLOR AND CONTRAST SHALL BE DISTINCTLY DIFFERENT FROM COLOR AND CONTRAS OF DOOR USE NEMA RATED SELF EXTINGUISHING ADHESIVE TO MOUNT.

DOOR MOUNTED ACCESSIBILITY SIGN

1. PLASTIC LAMINATE SECURED TO CENTER OF DOOR FACE CENTER LINE AT 60" A.F.F.
2. WOMEN'S SYMBOL 1/4" THICK 12" DIAMETER
3. MEN'S SYMBOL 1/4" THICK TRIANGLE 12" SIDES
4. COLOR AND CONTRAST SHALL BE DISTINCTLY DIFFERENT FROM COLOR AND CONTRAS OF DOOR USE NEMA RATED SELF EXTINGUISHING ADHESIVE TO MOUNT

ADA MOUNTING HEIGH NOTES

1. COMPLY WITH THE REQUIREMENTS OF IBC AND ANSI A117.1.
2. IT IS THE INTENT OF THE DESIGN THAT ALL ITEMS SHOWN AT TYPICAL HEIGHTS BE ACCESSIBLE TO PERSONS WITH DISABILITIES.
3. THE MOUNTING HEIGHTS CLEARANCES AND CONFIGURATIONS SHOWN ON THIS SHEET ARE TYPICAL AND SHALL APPLY TO ALL INSTANCES OF THE ITEM SHOWN. THE DIMENSIONS SHOWN ON THIS SHEET TAKE PRECEDENCE OVER TYPICAL DIMENSIONS SHOWN ON THE ELECTRICAL OR MECHANICAL DRAWINGS FOR THE MOUNTING OF ITEMS INSTALLED BY THE ELECTRICAL OR MECHANICAL TRADES.
4. TYPICAL MOUNTING HEIGHTS FOR ITEMS NOT SHOWN ON THIS SHEET MAY BE ILLUSTRATED BY OTHER SHEETS. REFER TO 'INDEX OF DRAWINGS' FOR ADDITIONAL INFORMATION.
5. CONTRACTOR SHALL VERIFY IN FIELD THAT EXISTING RESTROOMS FIXTURES AND ACCESSORIES TO REMAIN COMPLY WITH ADA MOUNTING HEIGHTS. IN CASE OF DISCREPANCIES GC SHALL RELOCATE FIXTURES AND PATCH IMPACTED AREAS TO MATCH ADJACENT FINISHES.
6. FOR LOCATION OF ACCESSORIES REFER TO RESTROOM INTERIOR ELEVATIONS.
7. FOR FIXTURES AND PLUMBING ACCESSORIES REFER TO PLUMBING SCHEDULE.



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
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FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

RESTROOM ELEVATIONS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

A-5.0

SHEET 7 OF 11

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546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

CASEWORK DETAILS

PROJECT NUMBER 18-A086

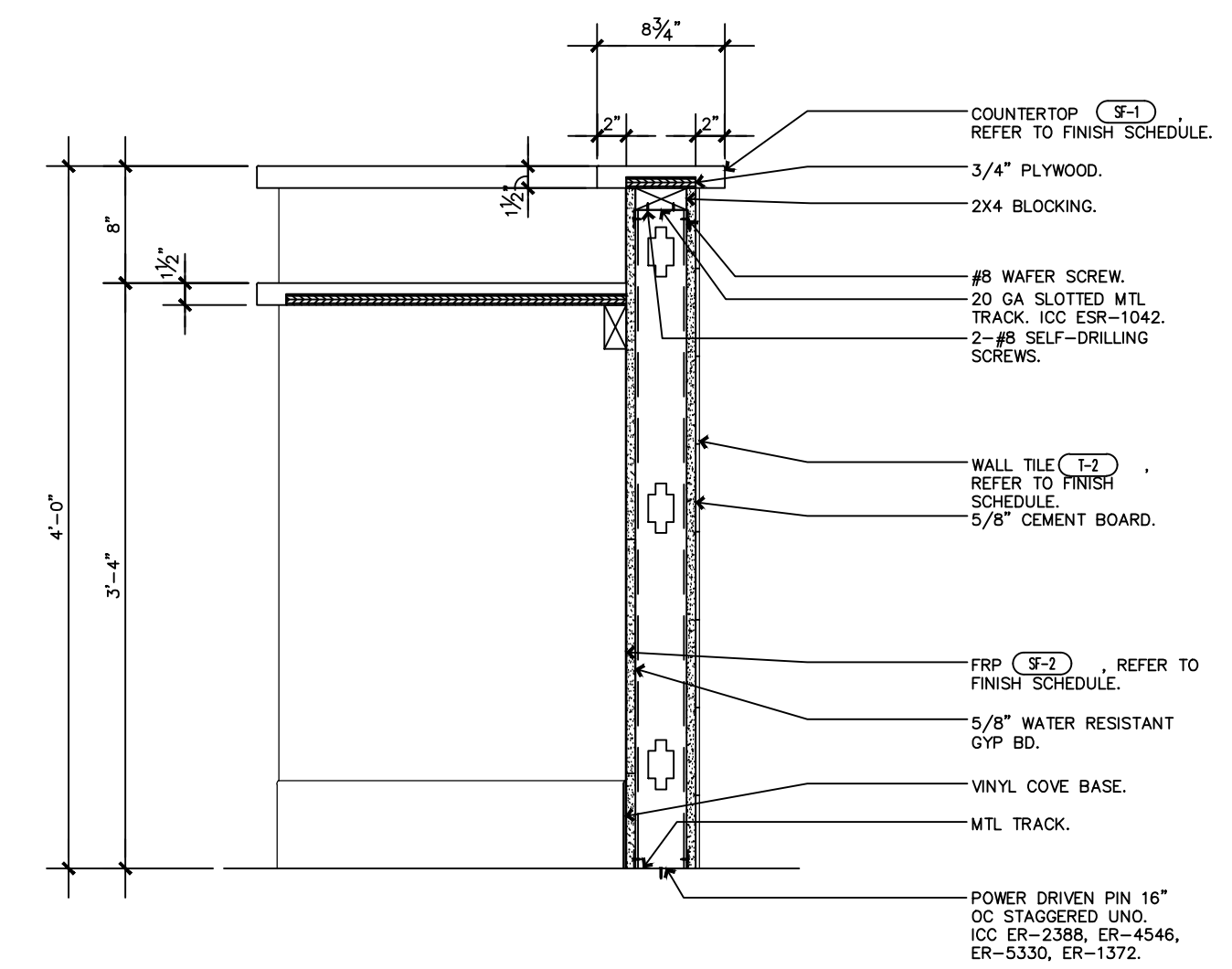
DATE 09-26-2018

SHEET NO.

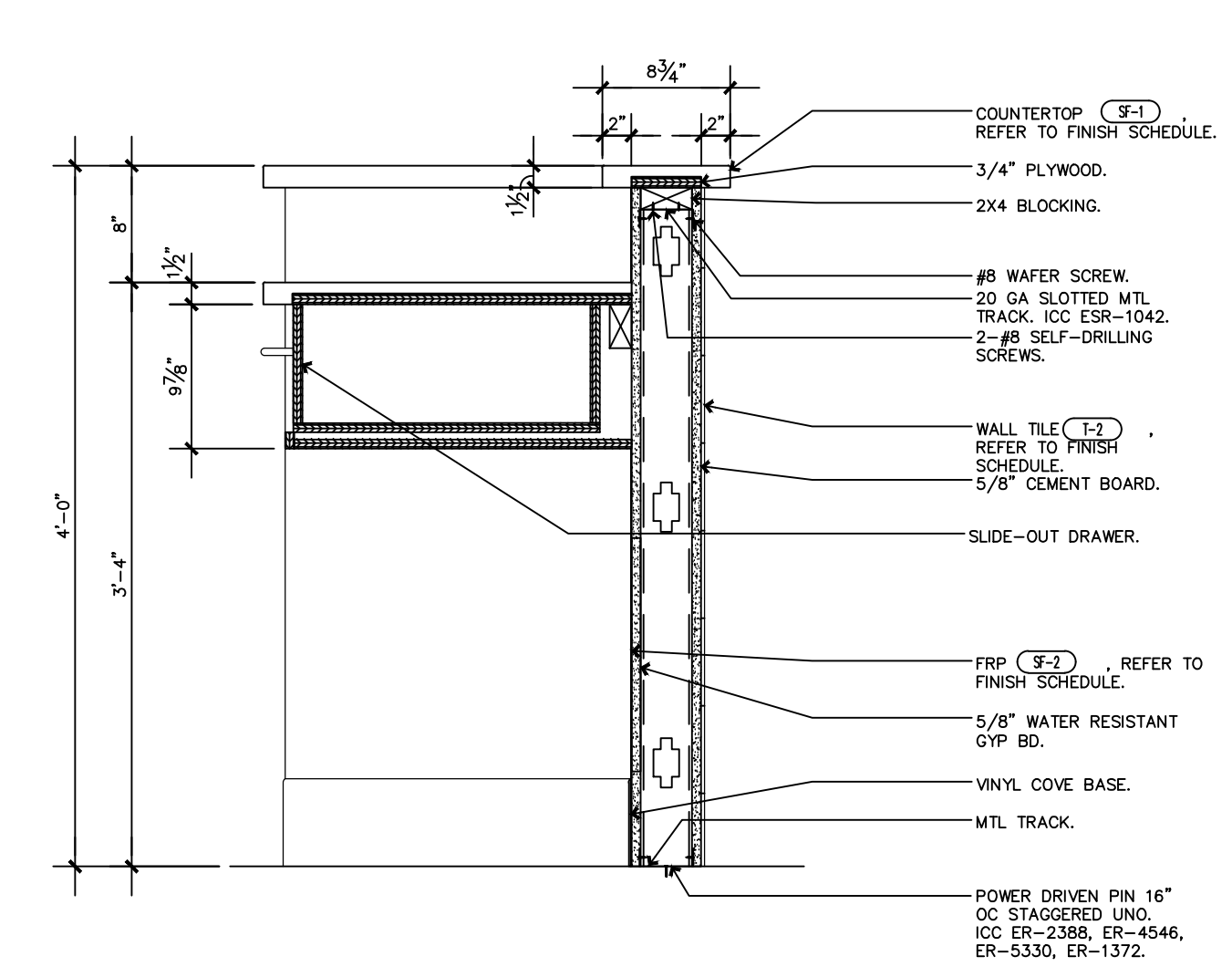
A-5.1

SHEET 8 OF 11

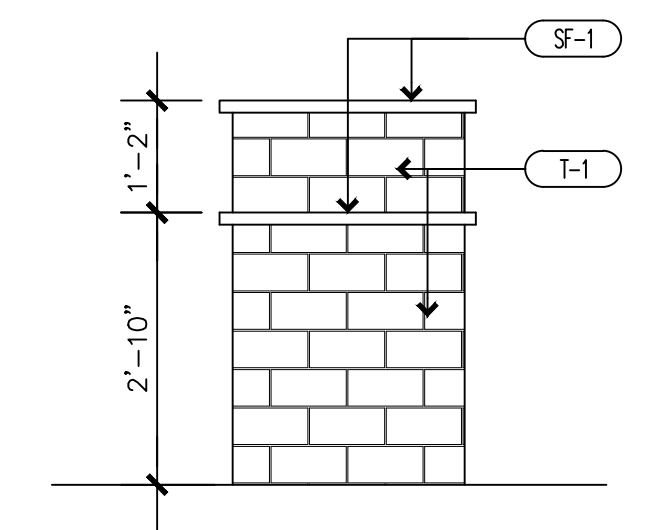
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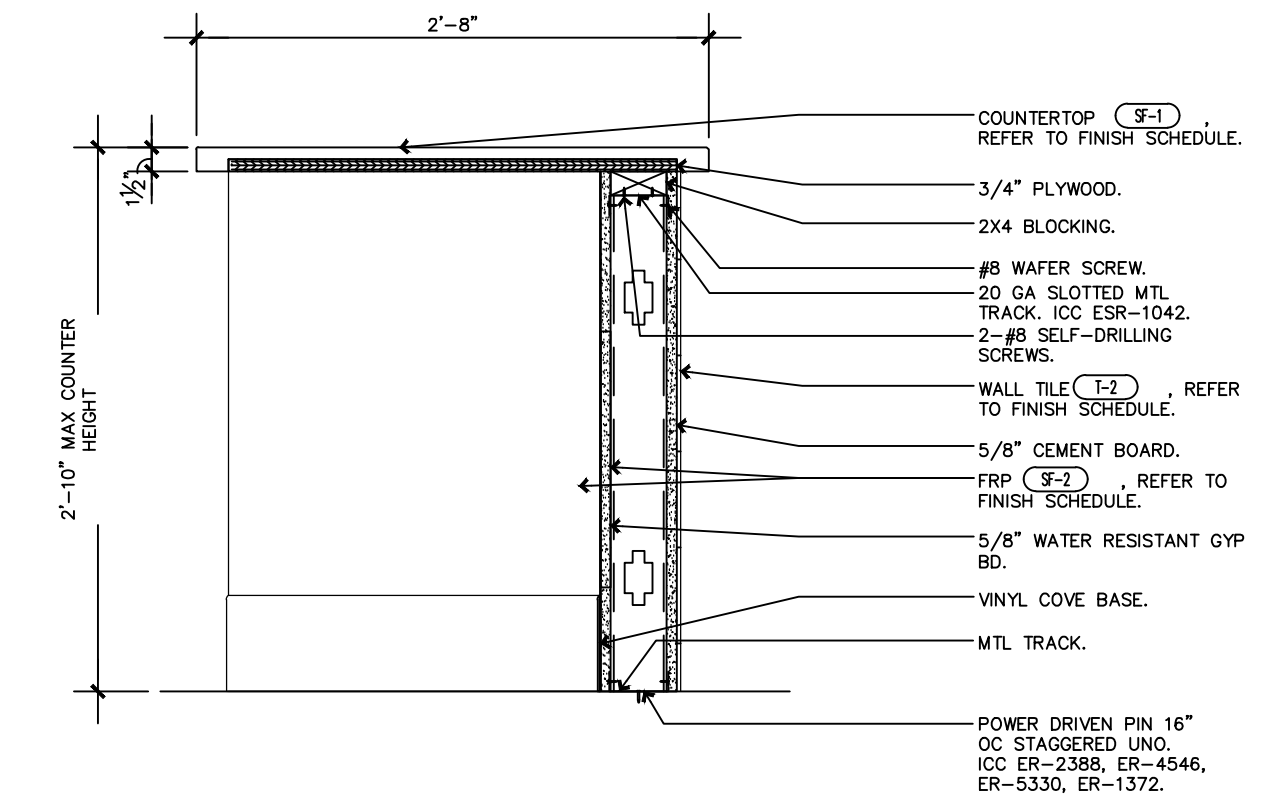
7 MILLWORK DETAIL (DRAWER)
SCALE: 1" = 1'-0"



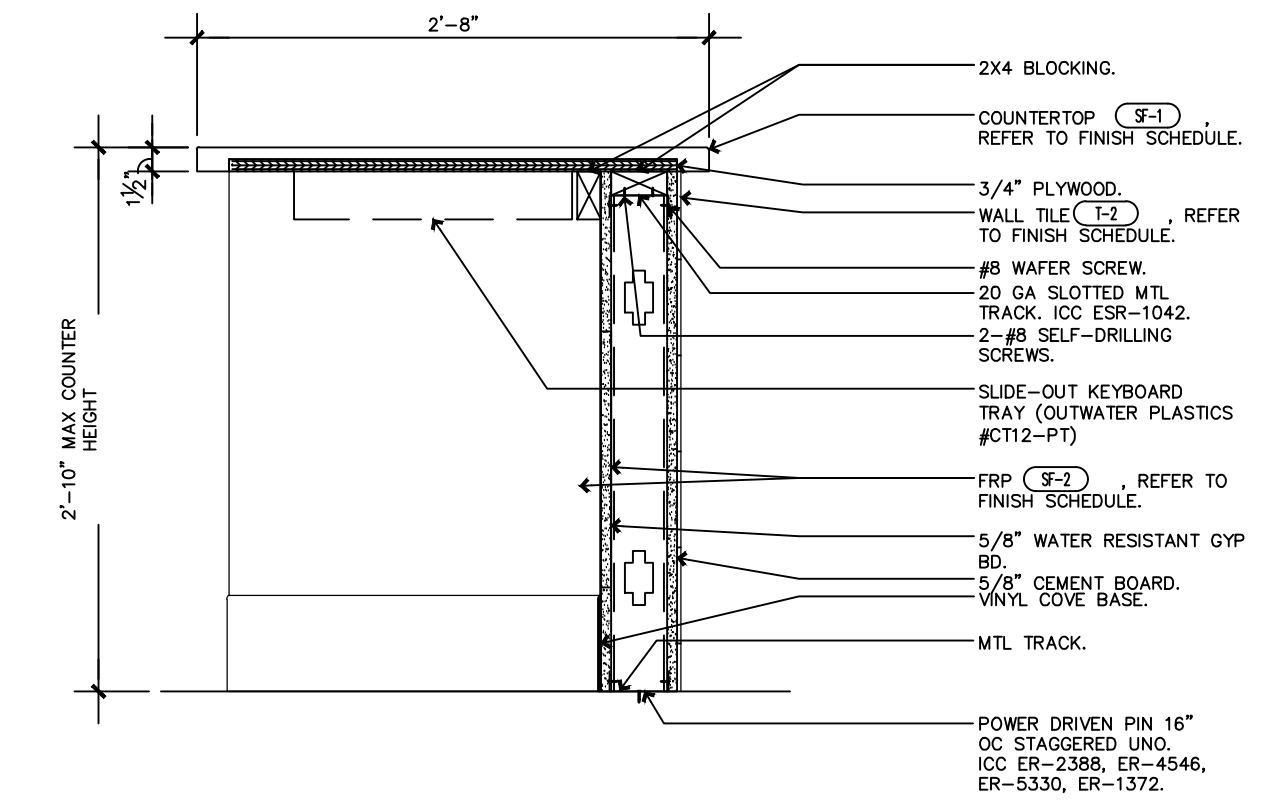
8 MILLWORK DETAIL (DRAWER)
SCALE: 1" = 1'-0"



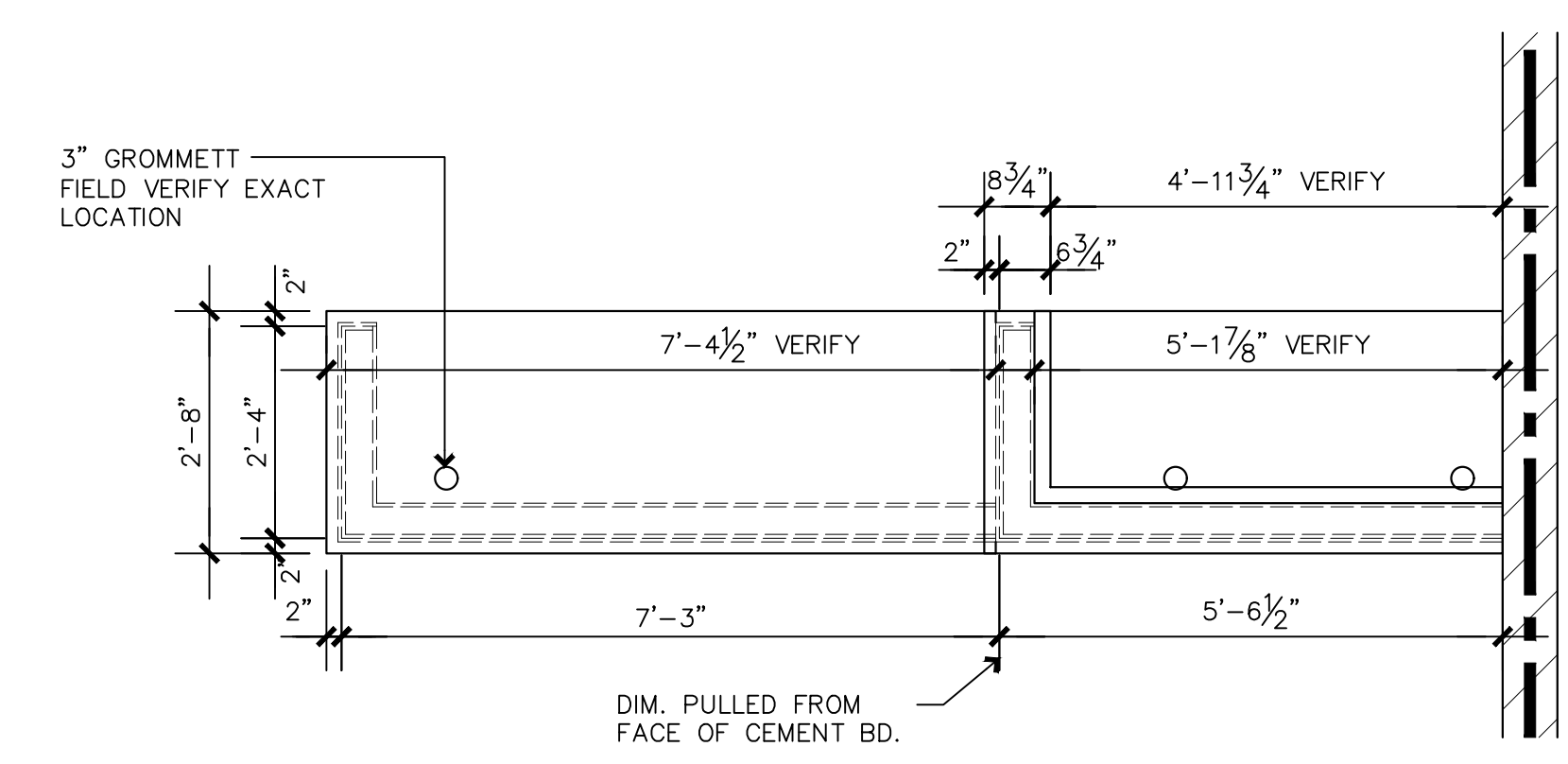
4 POS COUNTER ELEVATION (END)
SCALE: 1/2" = 1'-0"



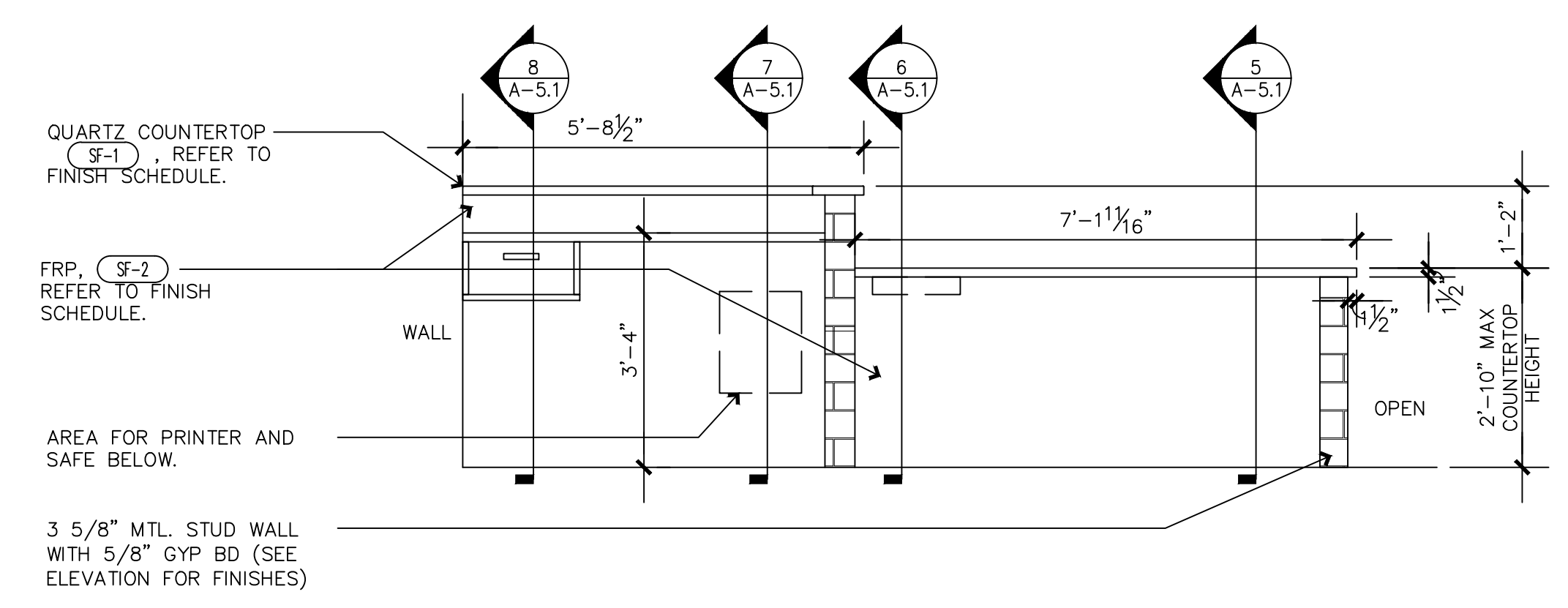
5 MILLWORK DETAIL (REGISTER COUNTER)
SCALE: 1" = 1'-0"



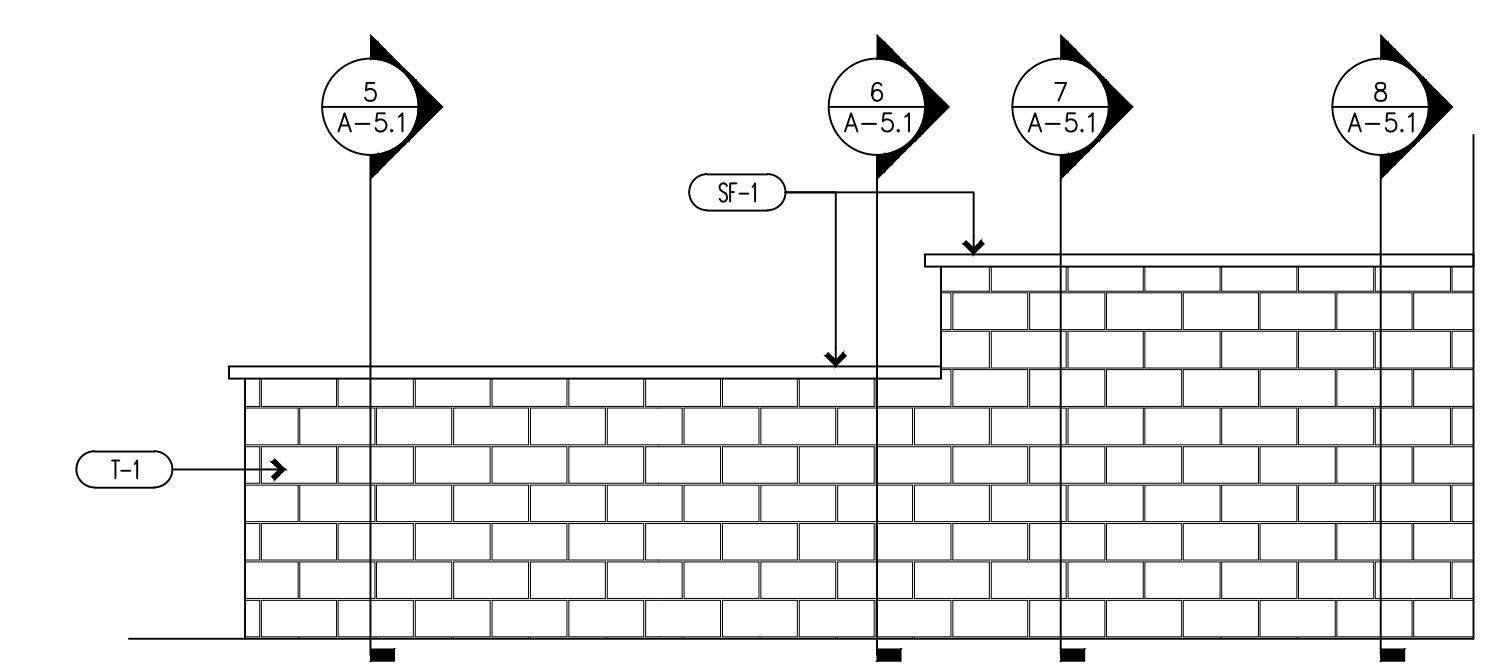
6 MILLWORK DETAIL (CASH DRAWER)
SCALE: 1" = 1'-0"



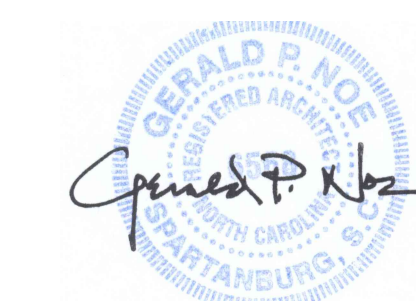
1 POS COUNTER ENLARGED PLAN
SCALE: 1/2" = 1'-0"



2 POS COUNTER ELEVATION (EMPLOYEE SIDE)
SCALE: 1/2" = 1'-0"



3 POS COUNTER ELEVATION (CUSTOMER SIDE)
SCALE: 1/2" = 1'-0"



09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY
-----	------	-------------	----

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

INTERIOR ELEVATIONS

PROJECT NUMBER 18-A086

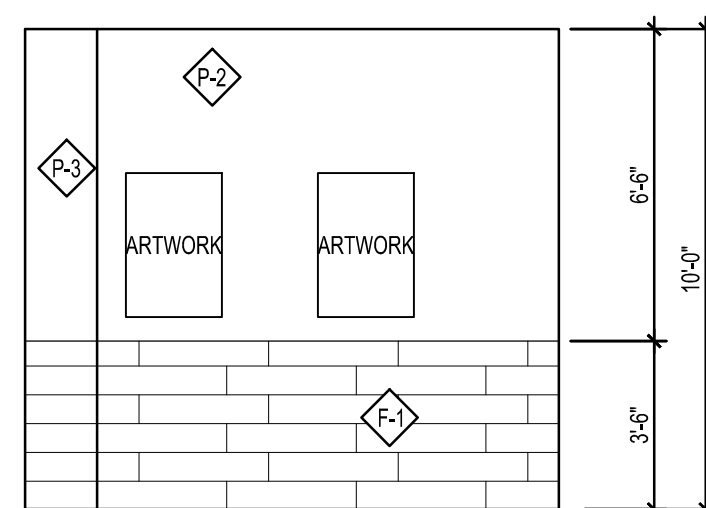
DATE 09-26-2018

SHEET NO.

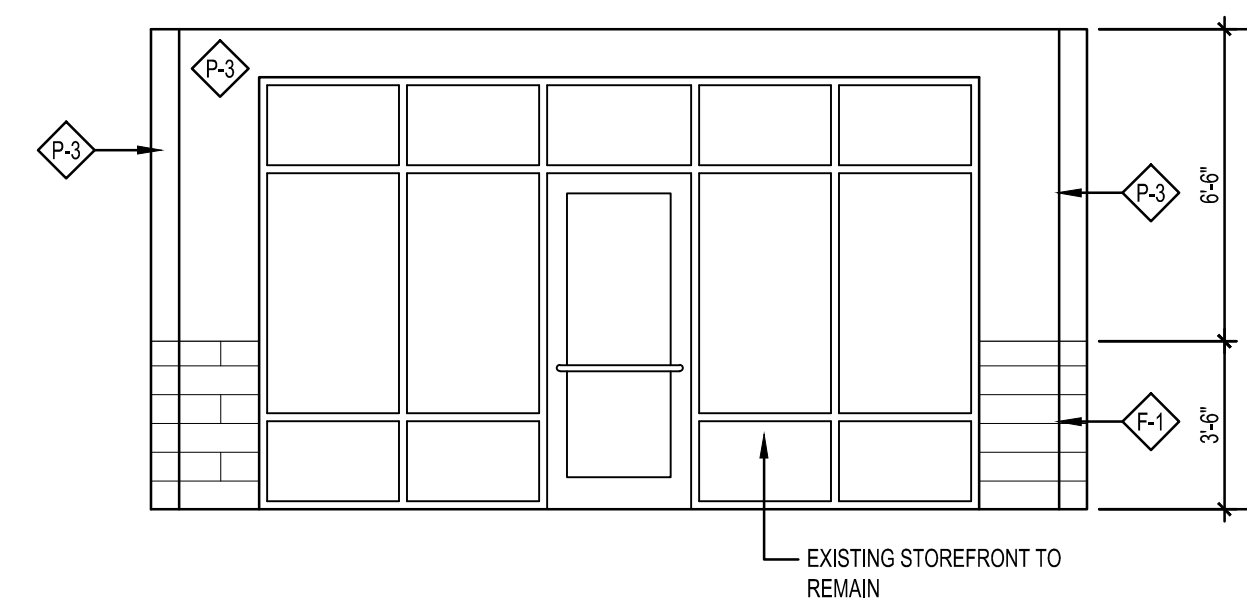
A-5.2

SHEET 9 OF 11

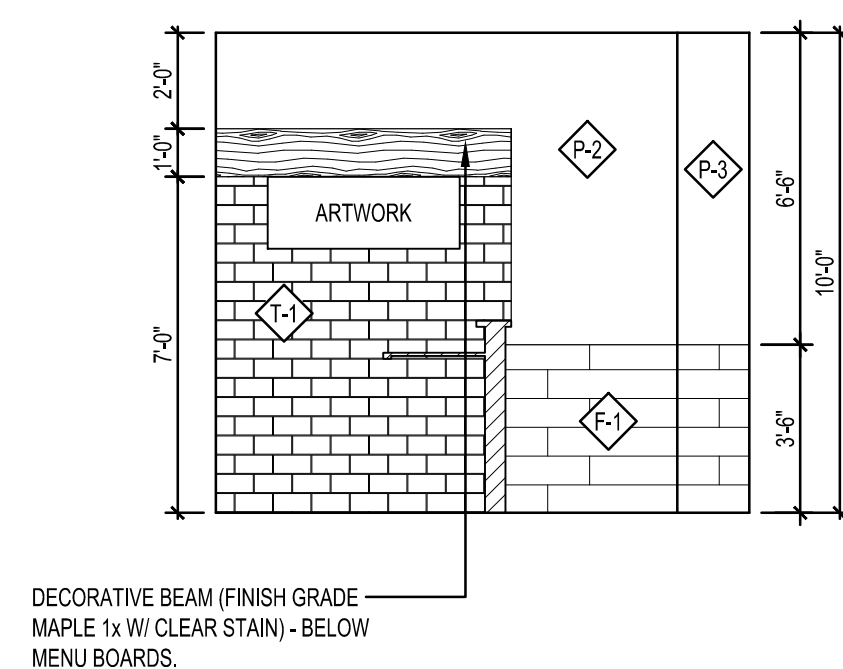
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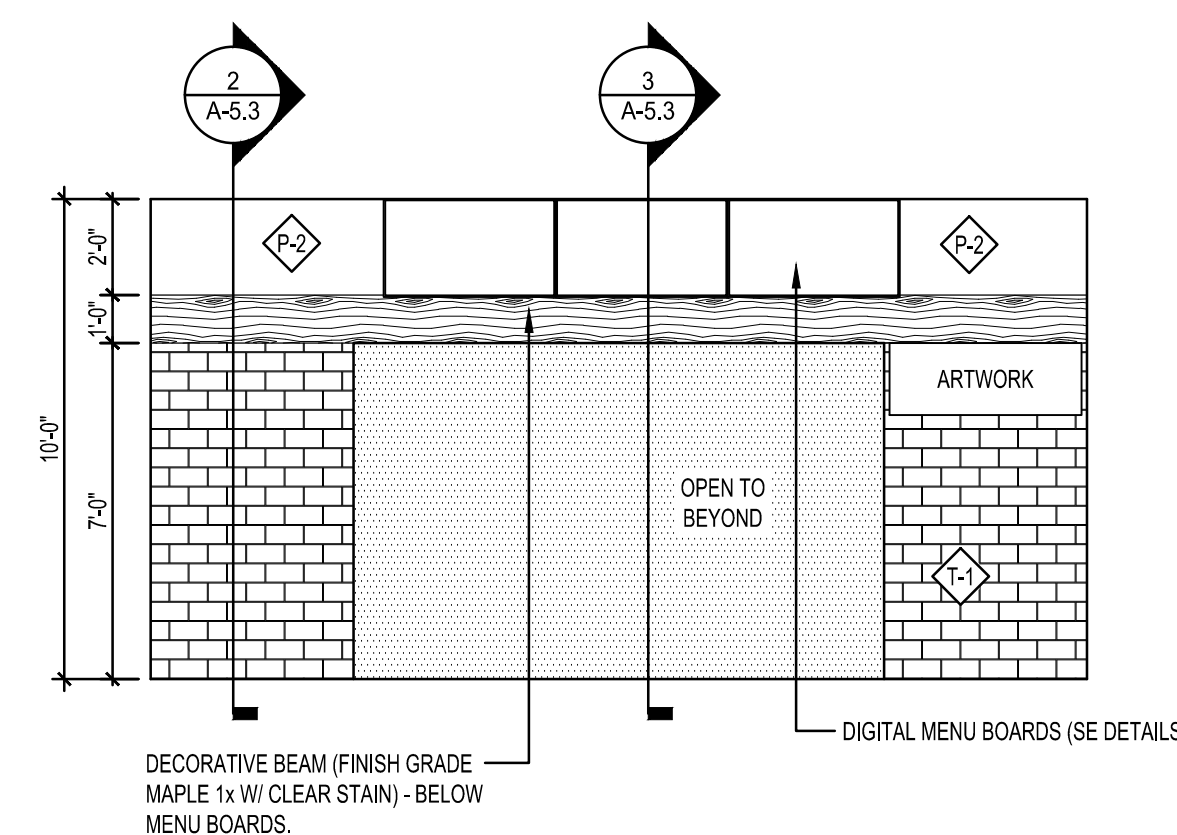
3 INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



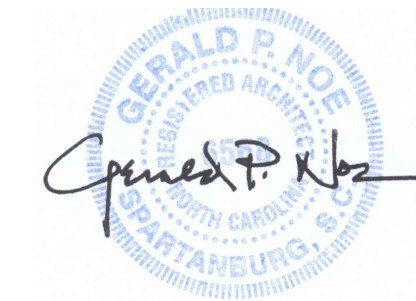
4 INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



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



2 INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:
marco's PIZZA INTERIOR UP-FIT
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:
MENU BOARD WALL DETAILS

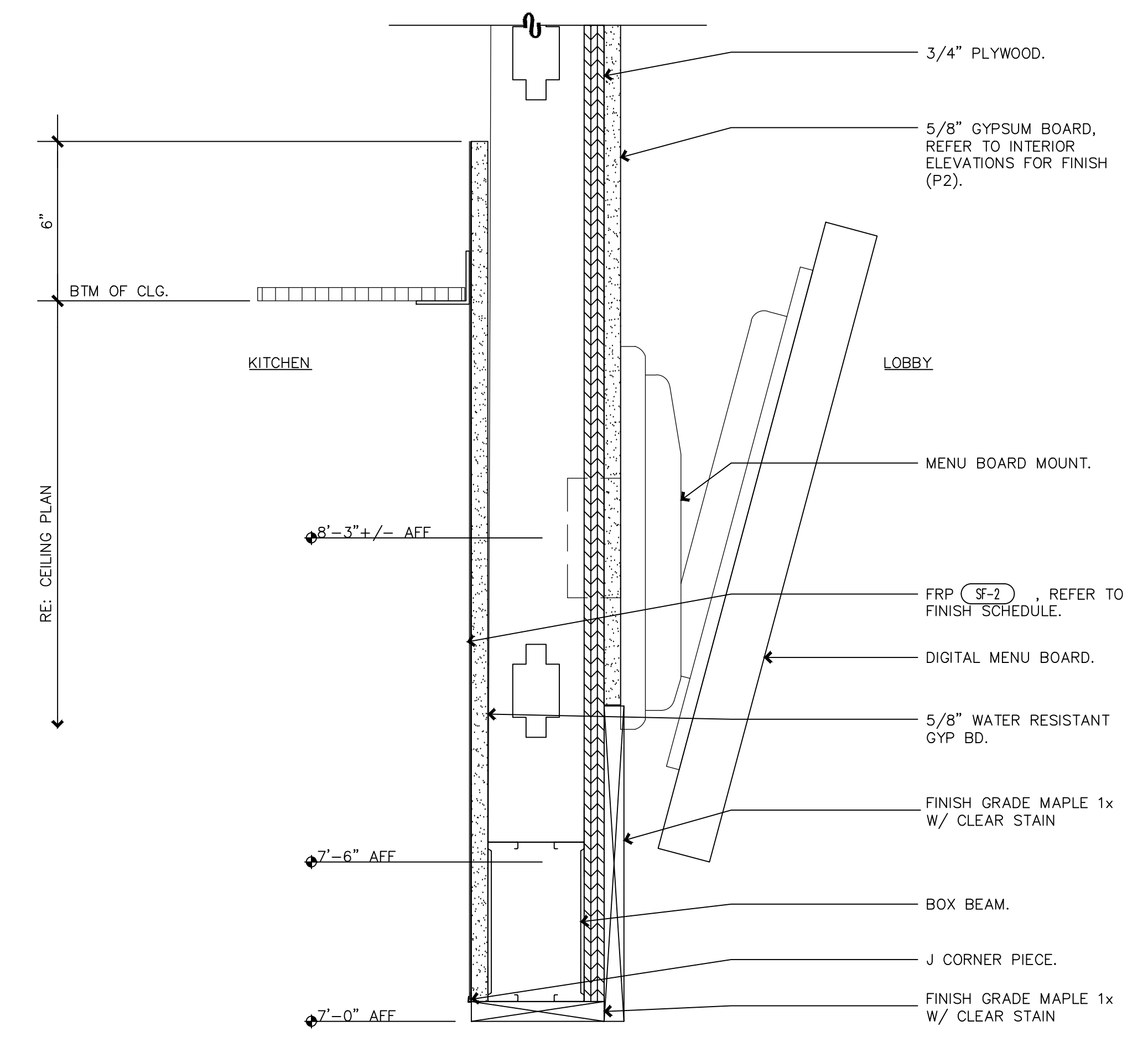
PROJECT NUMBER 18-A086

DATE 09-26-2018

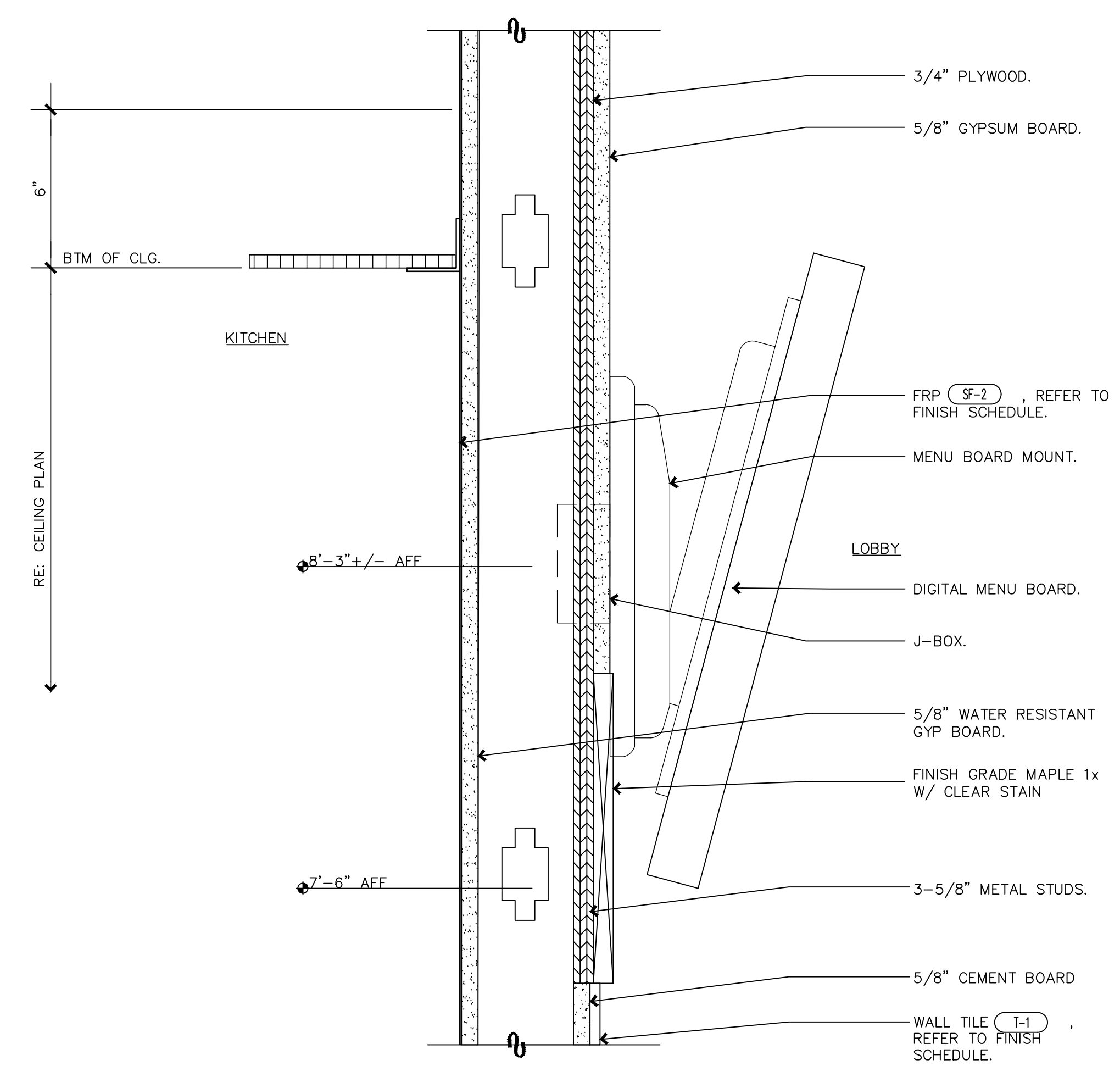
SHEET NO.

A-5.3

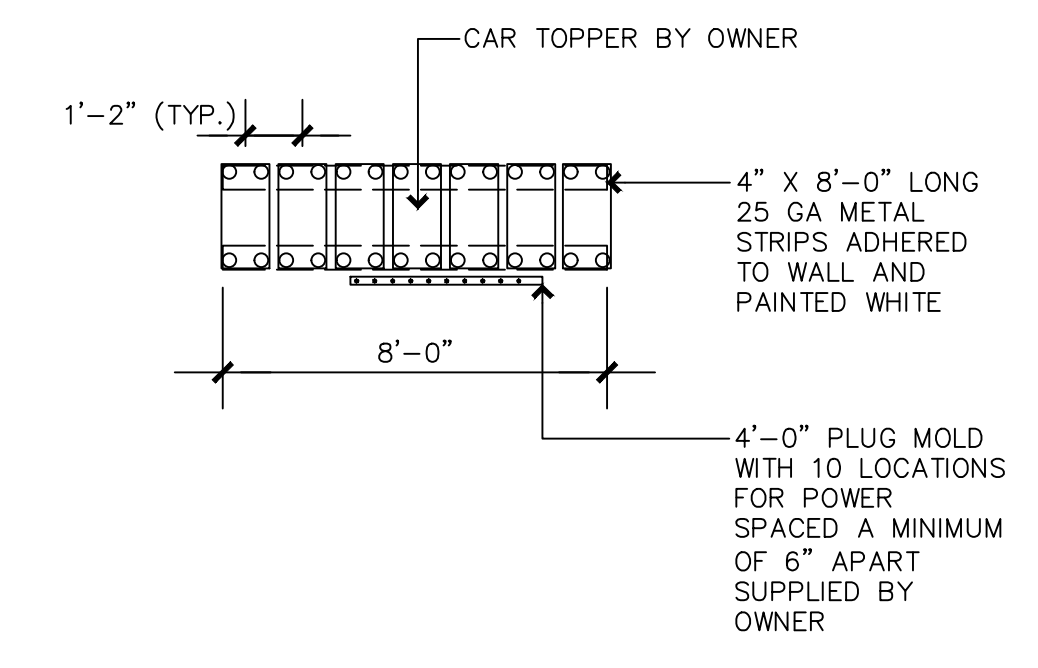
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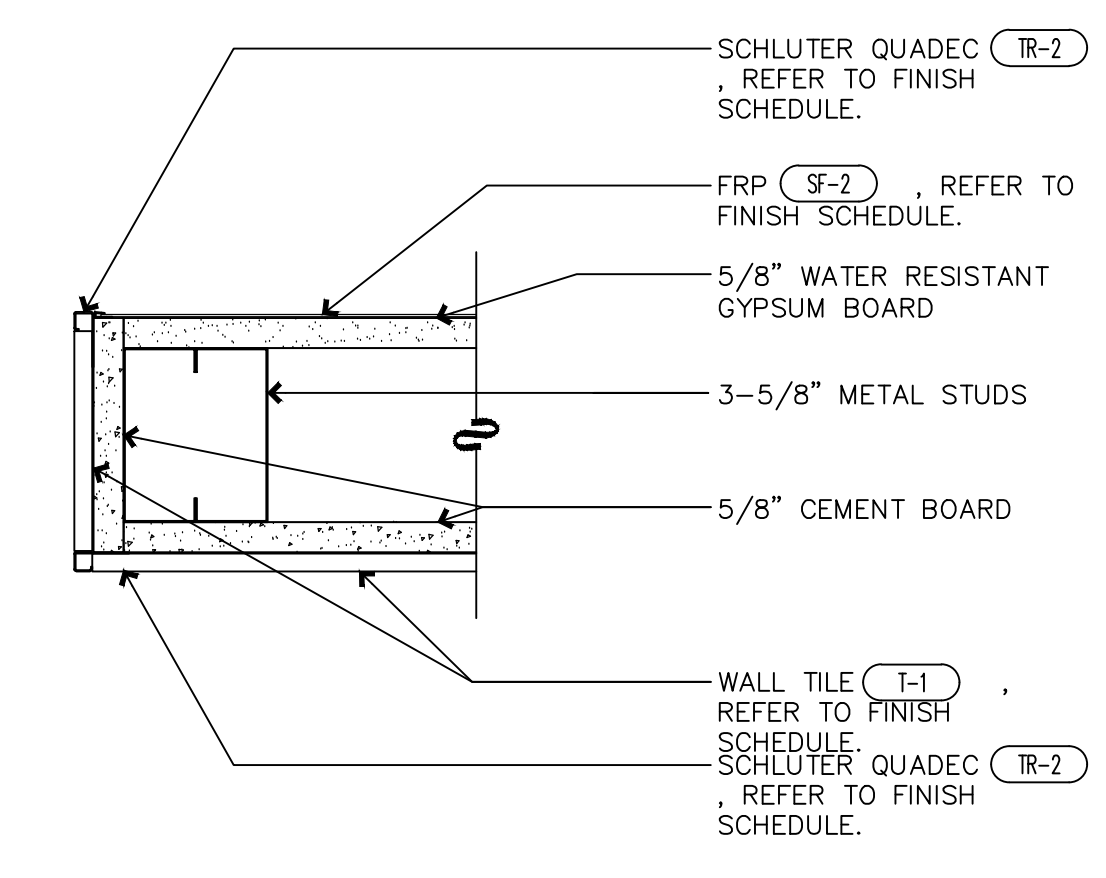
3 CASED OPENING HEAD
3" = 1'-0"



2 CASED OPENING WALL
3" = 1'-0"

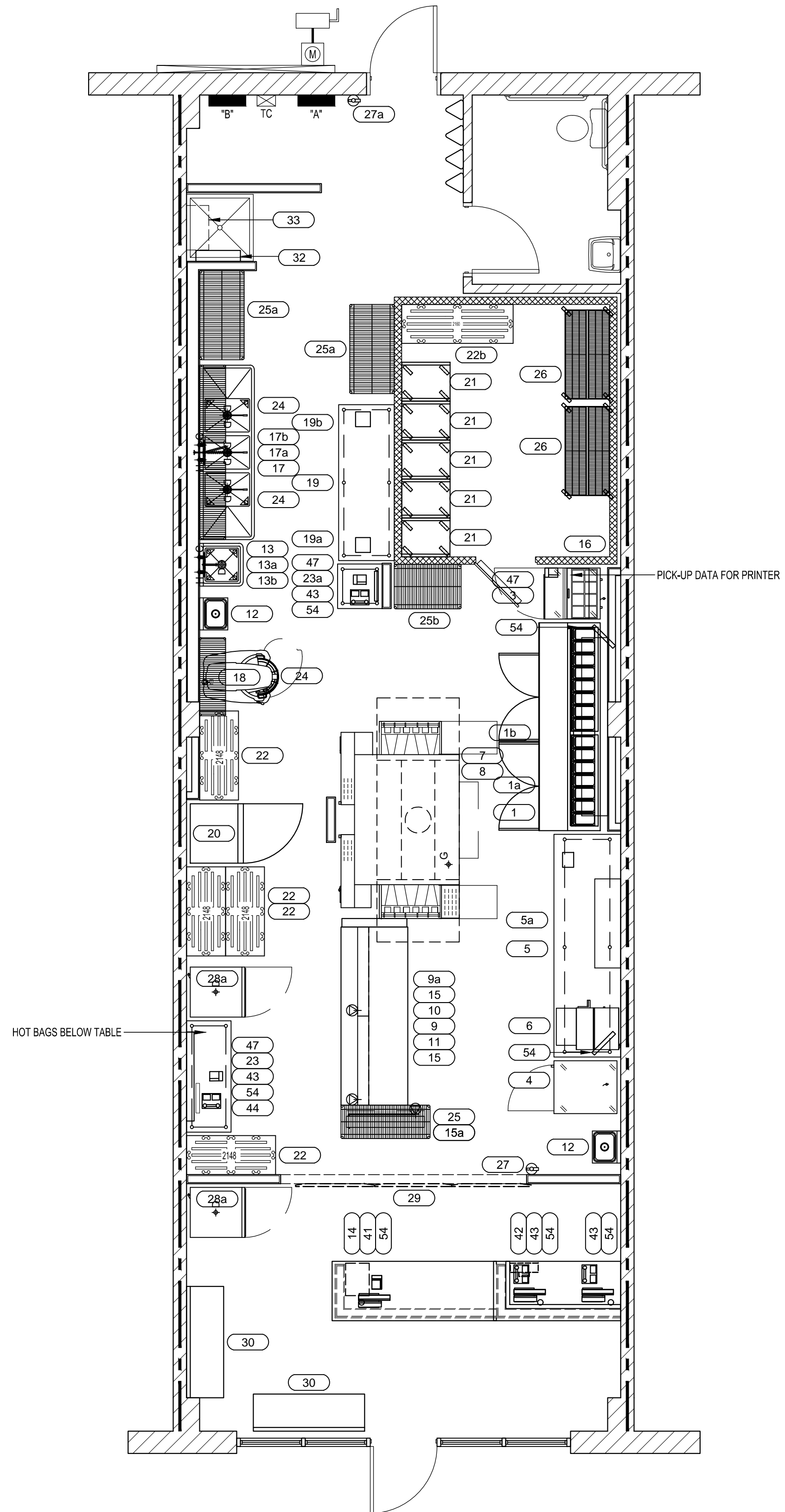


4 CAR TOPPER MOUNTING DETAIL
1/4" = 1'-0"



1 CASED OPENING JAMB
3" = 1'-0"

EQUIPMENT SCHEDULE				Amps	KW	HP	Volts	Phase	Cycle	Direct	Plug	NEMA	Electrical AFF (in)	Electrical Rough-in	Cold Water Size (in)	Cold Water AFF (in)	Hot Water Size (in)	Hot Water AFF (in)	Hot Water Size (in)	Hot Water AFF (in)	Direct Drain Size (in)	Direct Drain AFF (in)	Indir. Drain Size (in)	Indir. Drain AFF (in)	Gas Size (in)	MBTUH	Gas AFF (in)
Item No	Qty	Equipment Category	Manufacturer	Model Number																							
1	1	Scale, Portion, Digital	Doral Scale	7400																							
1a	1	Pizza Prep Table Refrigerated w/ Garnish Cheese G	Larosa	2510-PTB																							
1b	1	S/S Wall Shelf (16" x 96")	BK Resources	BKWS-1696																							
3	1	Refrigerator, Sandwich/Salad Prep	Continental Refrigerator	SW27-8	6.2		0.2	115	1	60	X	5-15P	7														
4	1	Display Case, Refrigerated	Continental Refrigerator	1RE-GD	6.9		0.2	120	1	60	X	5-15P	82.25														
5	1	Table, Work	Eagle Group/Metal Masters	UT36120B																							
5a	1	Shelf, Wall Mount	Eikay SSP	EWMS1448																							
6	1	Dough Roller	Somerset	CDR-500	6.8		0.5	115	1	60	X	5-15P												1.25	175	21	
7	1	Oven, Conveyor	Middleby Marshall	PS670G-2	20.0			208	1	60	X	L6-20P	39											1.25	175	41	
					20.0			208	1	60	X	L6-20P	57														
8	1	Hood System	Halton	Conveyor Oven Exhaust System - Type 1																							
9	1	Custom Pizza Table	Select Stainless Products	8MTC-36-L-CUSTOM																							
9a	1	SS Screen Catcher Box	Select Stainless Products	Custom																							
10	1	Maple Bakers Top (96" x 36")	Michigan Maple	???																							
11	1	Cutting Table Overshelf	Select Stainless Products	Custom																							
12	2	Sink, Hand, Wall Mount	Krowne Metal	HS-2																							
13	1	Sink, Scullery, 1 Compartment	Universal Stainless	1N18											0.5	38.5	0.5	38.5				1.5	22				
13a	1	Faucet, Wall Mount	Krowne Metal	14-801L																							
13b	1	Drain, Lever Handle	Krowne Metal	22-304																							
14	1	Safe	McGunn	OD1613P																							
15	2	Heat Lamp/Infrared Strip	Eagle Group/Metal Masters	RHHL-48-208	4.1	0.8		208	1	60	X																
15a	3	Warmer, Food Overhead	Hatco	GRA-42	5.6	0.7		120	1	60	X																
16	1	10'-0" x 12'-0" x 8'-4" (h) Self-Contained Walk-In	T.B.D.	Custom																							
17	1	Sink, Scullery, 3 Compartments	Universal Stainless	3N1824-2D18											0.5	38.5	0.5	38.5				1.5	22				
17a	1	Pre-Rinse Faucet, Wall Mount	Krowne Metal	17-109WL																							
17b	3	Drain, Lever Handle	Krowne Metal	22-304																							
18	1	Mixer, Floor	Hobart US Foodservice	HL600																							
19	1	Table, Work	Eagle Group/Metal Masters	T3084E W/ 2 Drawers																							
19a	1	Easy Slicer, Manual	Nemco	N55200AN-6																							
19b	1	Can Opener	Edlund	#1																							
20	1	Freezer	Kelvinator	KFS220LH	6.2		0.2	115	1	60	X	5-15P	7														
21	5	Bun Sheet Pack Rack	Kelmax	ARE25-182.5																							
22	4	Rack, Dunnage	Cambro	DRS480480																							
22b	1	Rack, Dunnage	Cambro	DRS600131																							
23	1	Table, Work	Eagle Group/Metal Masters	T2460E																							
23a	1	Table, Work	Eagle Group/Metal Masters	UT2424B																							
24	3	Wire Shelving, Epoxy Coated	Advance Tabco	EG-1442																							
25	1	Shelving, Wire	Metro	1848NC																							
25a	2	Shelving, Wire	Metro	2448NC																							
25b	1	Shelving, Wire	Metro	2436NC																							
26	2	Walk-In Shelving W/ Casters	SSP, Inc.	Custom																							
27	1	Wall Hung Dry Chemical Fire Extinguisher Per Code	Larsens	5 Lb.																							
27a	1	Wall Hung Dry Chemical Fire Extinguisher Per Code	Larsens	Type K																							
28a	2	Display Case, Refrigerated	True Manufacturing Co., Inc.	GDM-23-LD	5.2	0.6	0.3	115	1	60	X	5-15P															
29	1	Menu Board & Illuminated Logo	Howard Co	Menu Boards & Illuminated Logo																							
30	2	Seating	By Others	60" Bench Seat																							
32	1	Mop / Broom Rack	Rubbermade	RM1992																							
33	1	Tankless Water Heater	Nortiz	See Plumbing																							
41	1	Computer Equipment	By Vendor	Receipt Printer																							
42	1	Computer Equipment	By Vendor	Report Printer																							
43	4	Computer Equipment	By Vendor	PHONE																							
44	1	Computer Equipment	By Owner	TV (Wall Mounted)																							
47	3	Computer Equipment	By Vendor	DRIVERS PRINTER																							
54	7	Computer Equipment	By Vendor	Computer / POS Terminal																							



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

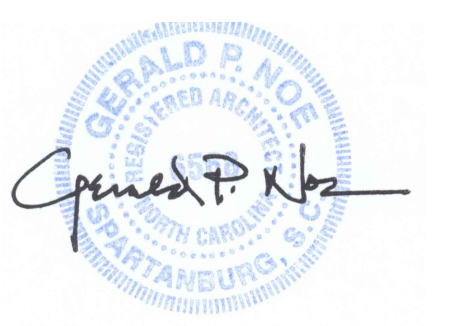


GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



SHEET TITLE:

EQUIPMENT PLAN & SCHEDULE

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

A-6.0

SHEET 11 OF 11

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.



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TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

SEWER PLAN

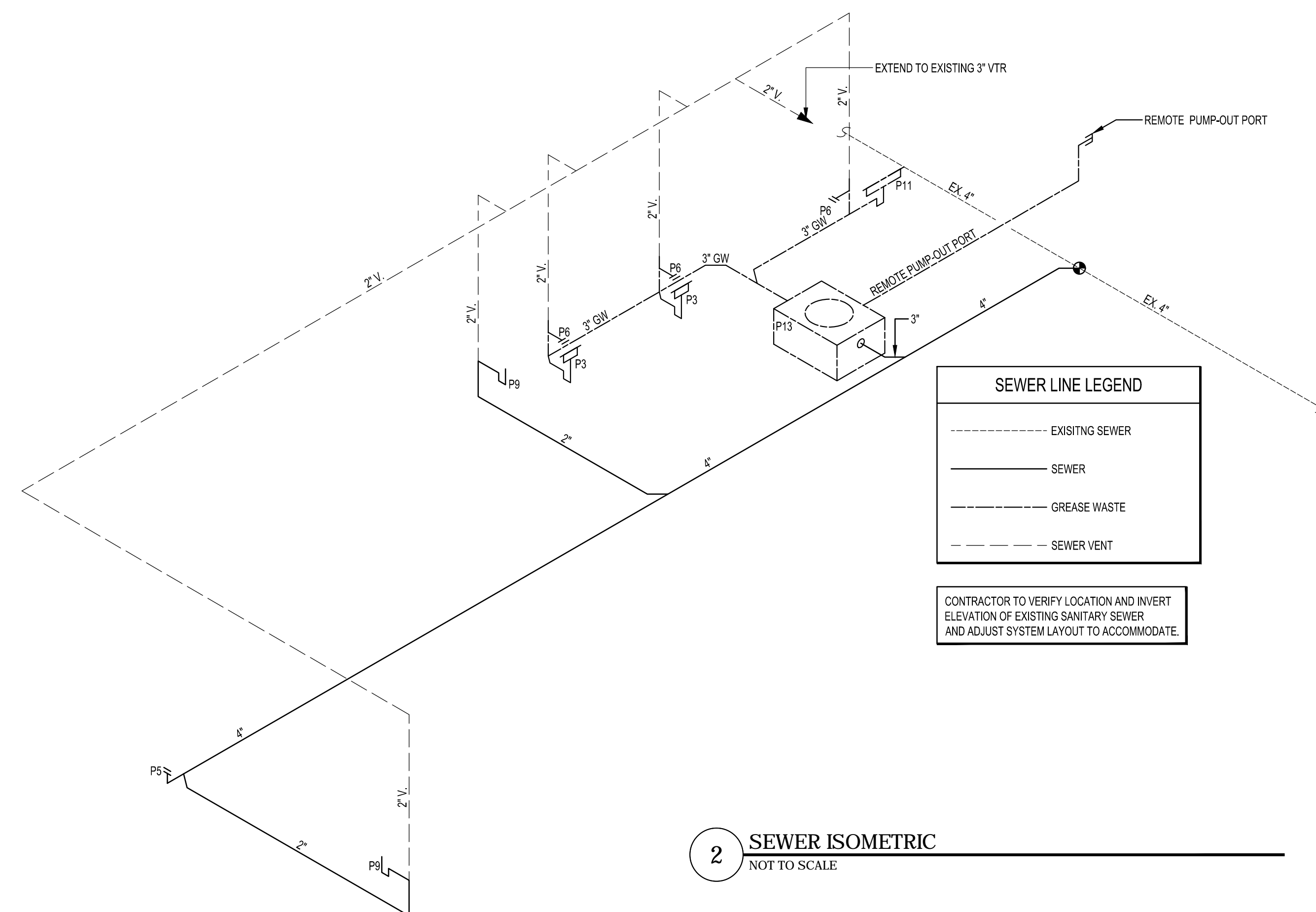
PROJECT NUMBER 18-A086

DATE 09-26-2018

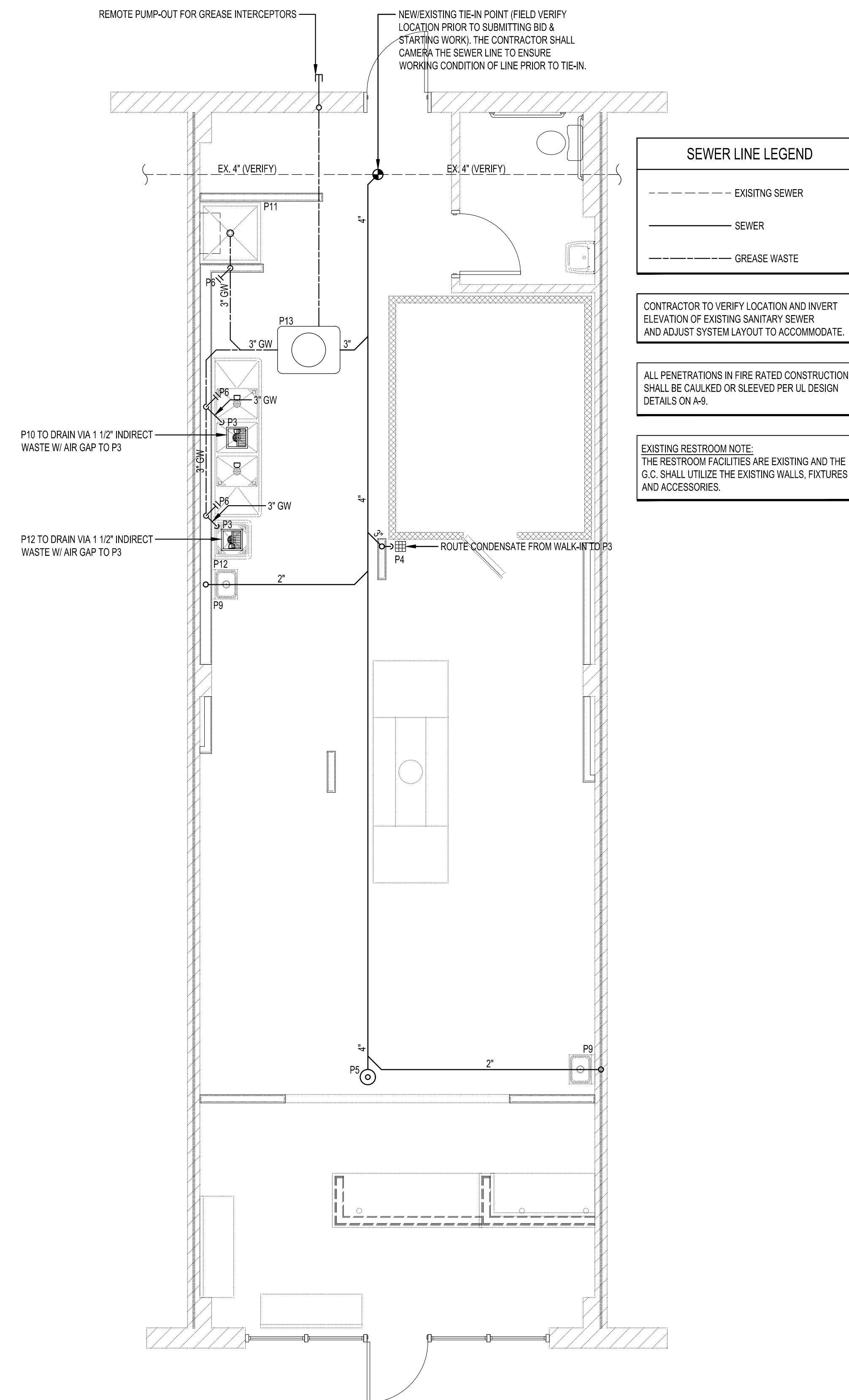
SHEET NO.

AP-1

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2 SEWER ISOMETRIC
NOT TO SCALE



1 SEWER PIPING PLAN
1/4" = 1'-0"

SEWER LINE LEGEND

- - - - - EXISTING SEWER
- SEWER
- - - - - GREASE WASTE
- - - - - SEWER VENT

CONTRACTOR TO VERIFY LOCATION AND INVERT ELEVATION OF EXISTING SANITARY SEWER AND ADJUST SYSTEM LAYOUT TO ACCOMMODATE.

ALL PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE CAULKED OR SLEEVED PER UL DESIGN DETAILS ON A-9.

EXISTING RESTROOM NOTE:
THE RESTROOM FACILITIES ARE EXISTING AND THE G.C. SHALL UTILIZE THE EXISTING WALLS, FIXTURES AND ACCESSORIES.



09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

SUPPLY & GAS PIPING PLANS

PROJECT NUMBER 18-A086

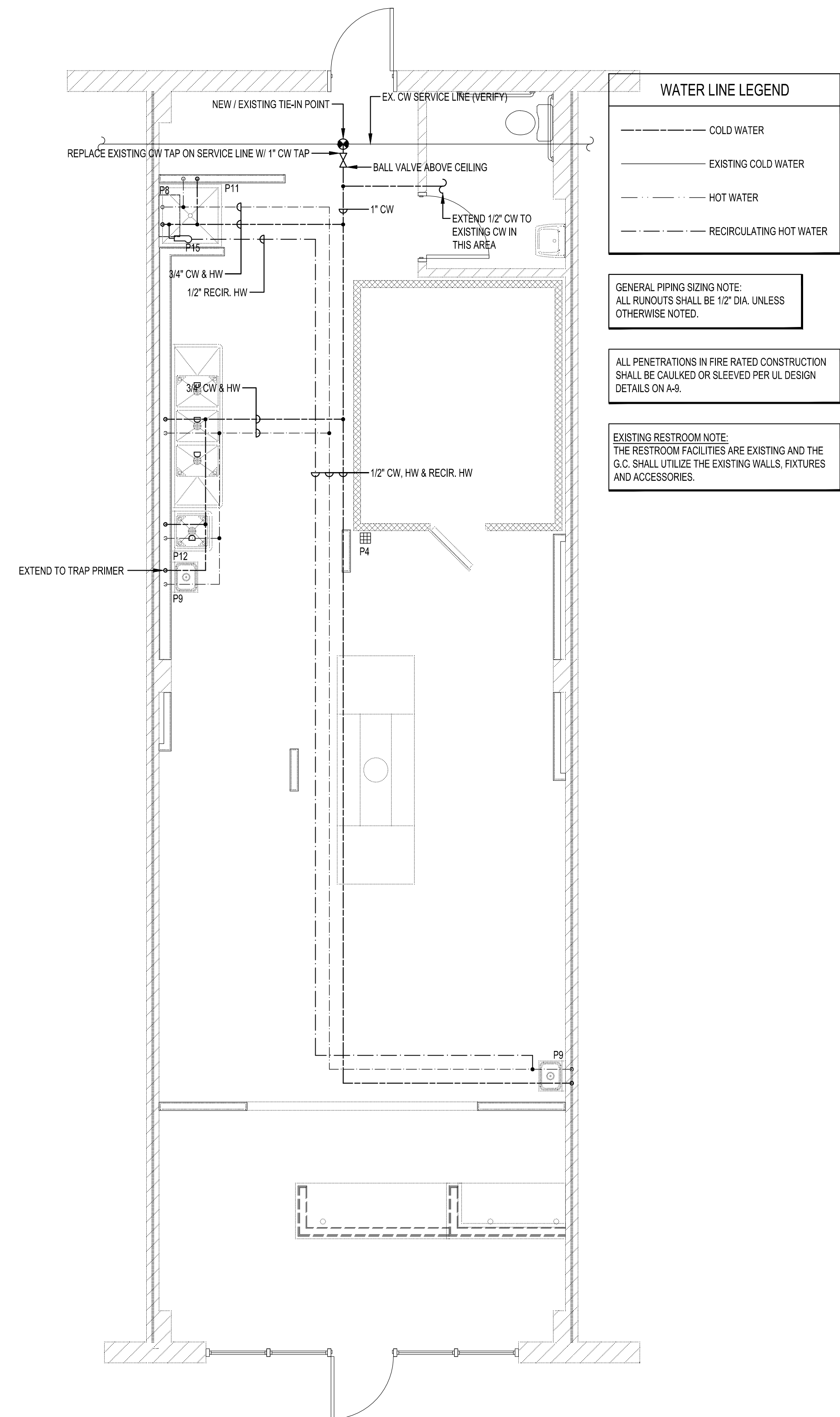
DATE 09-26-2018

SHEET NO.

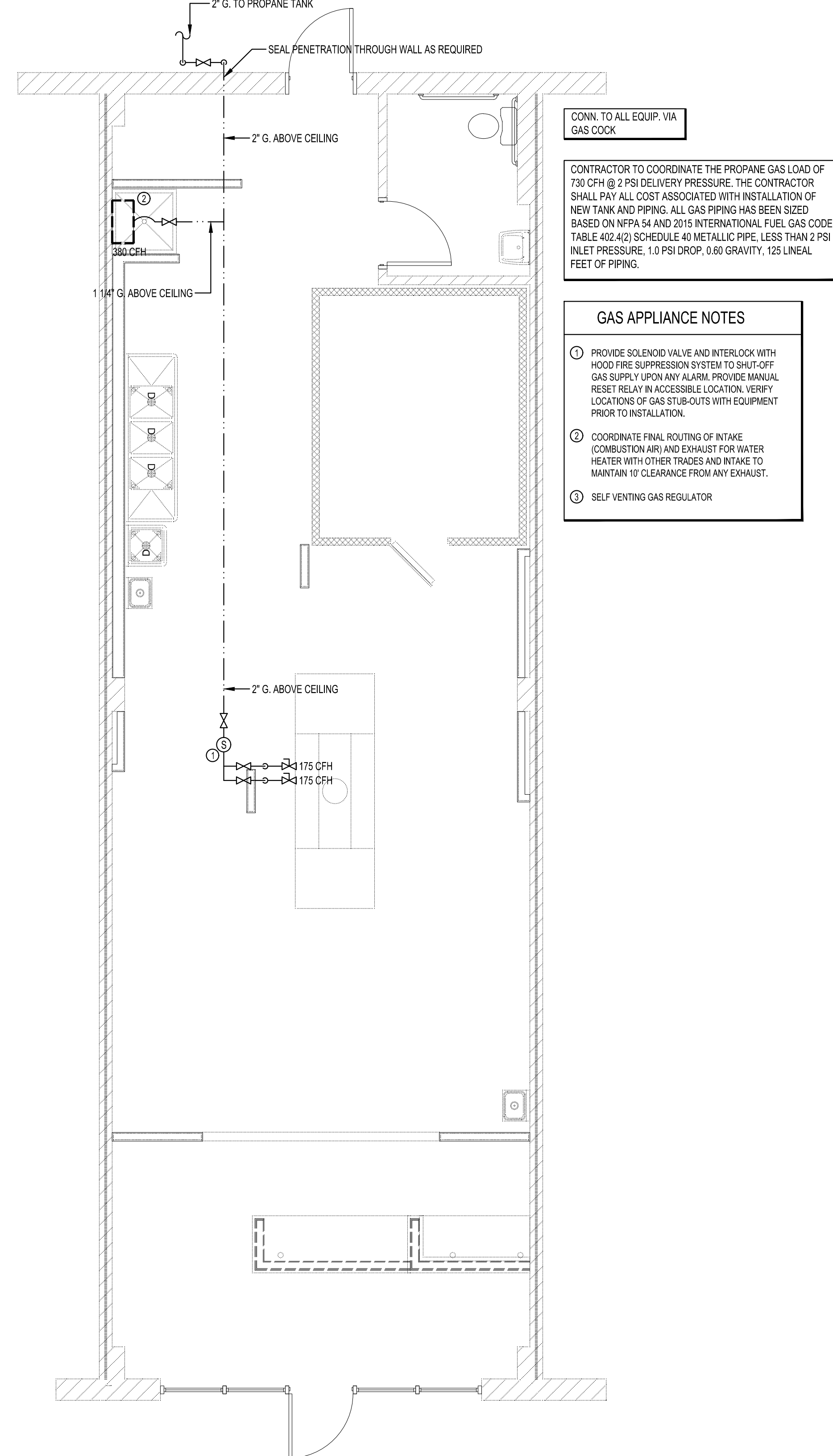
AP-2

SHEET 2 OF 5

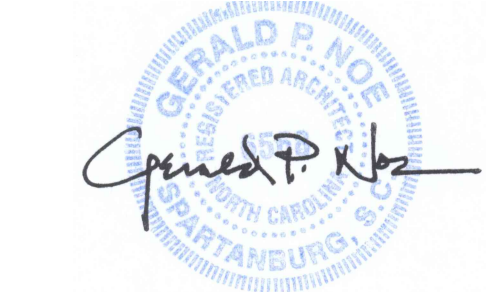
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1 SUPPLY PIPING PLAN
1/4" = 1'-0"



2 GAS PIPING PLAN
1/4" = 1'-0"



09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:
MARCO'S PIZZA INTERIOR UP-FIT
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

PLUMBING SCHEDULE & DETAILS

PROJECT NUMBER 18-A086

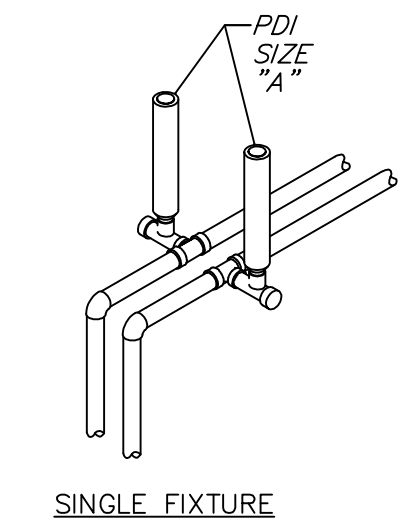
DATE 09-26-2018

SHEET NO.

AP-3

INSTALL PER PDI STANDARDS AND MANUFACTURER'S INSTRUCTIONS

FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
SHOWER/BATHTUB	2	2



PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	155-330

PLUMBING CONTRACTOR SHALL PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS AS SHOWN ON THE DRAWINGS AND/OR PER THE TABLES SHOWN ABOVE.

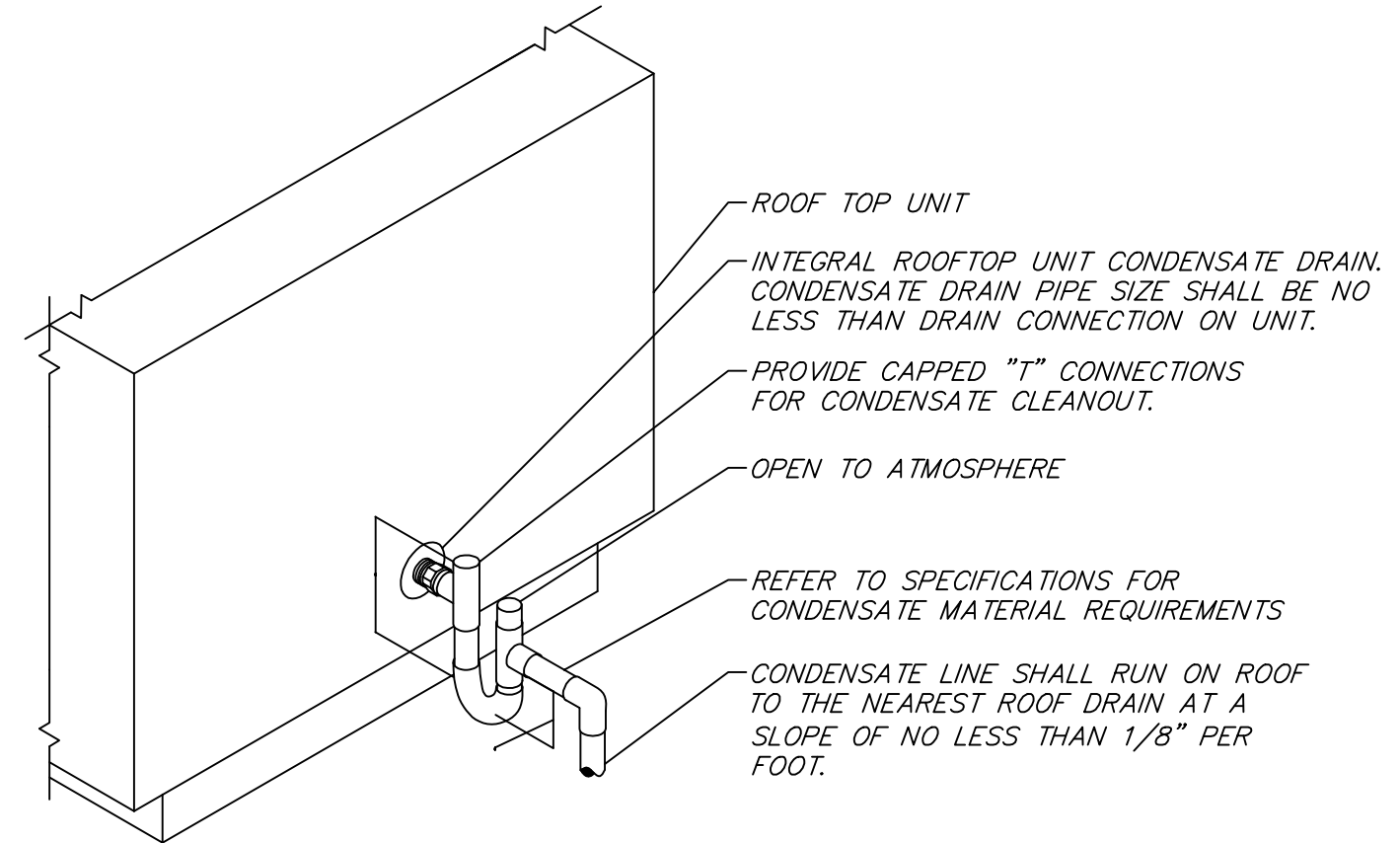
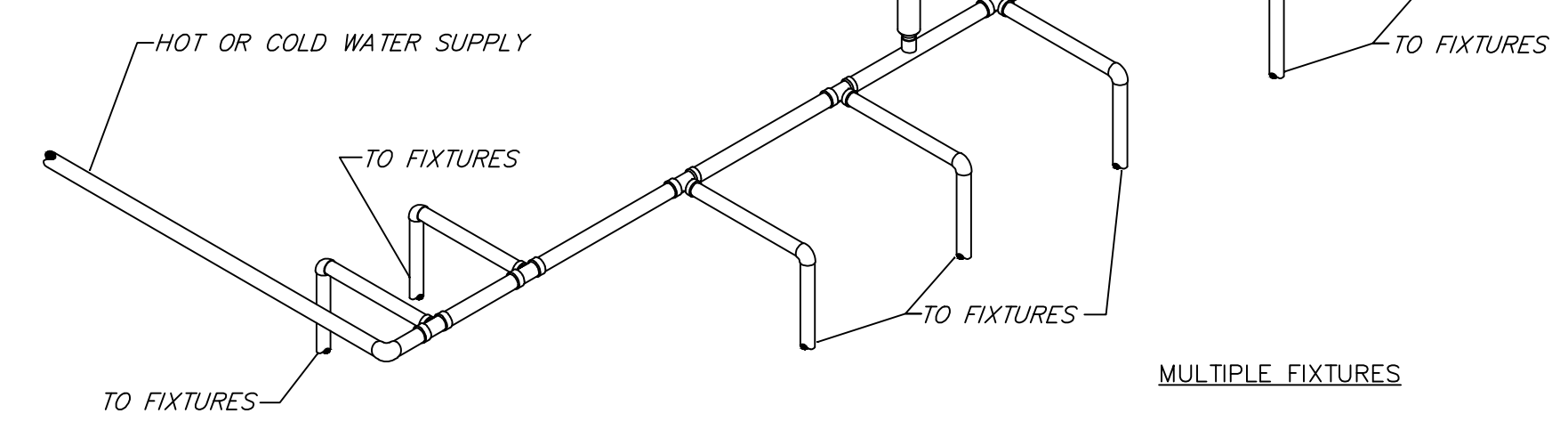
1 WATER HAMMER ARRESTOR DETAIL
NOT TO SCALE

MARK	ITEM	HW 140°	TW 105°	CW	FW	WASTE	WASTE GREASE	DESCRIPTION
P1	WATER CLOSET	-	-	1/2"	-	4"	-	PROFLO HIGH EFFICIENCY TOILET W/ PRESSURE ASSIST (BOWL - PF1603PAWH) (TANK - PF1612PAWH) FLOOR MOUNTED, 1.0 GAL./FLUSH, WHITE W/ SEAT, V.C., A.D.A. COMPLIANT OR APPROVED EQUAL.
P2	LAVATORY	-	1/2"	1/2"	-	1 1/2"	-	PROFLO WALL HUNG LAV. (PF5518WH) W/ PROFLO TWO HANDLE FAUCET (PF551002M), WHITE V.C., A.D.A. COMPLIANT OR APPROVED EQUAL.
P3	FLOOR SINK	-	-	-	-	LINE SIZE	LINE SIZE	JAY R. SMITH, #3110, 12" SQUARE TOP, 6" DEEP, DOME STRAINER, 3/4, 1/2" OR NO GRATE
P4	FLOOR DRAIN	-	-	-	-	LINE SIZE	LINE SIZE	JAY R. SMITH, 2010C-B-06, 6" SQUARE POLISHED BRONZE STRAINER, SEDIMENT BUCKET, VANDAL PROOF SCREWS & TRAP PRIMER CONNECTION
P5	CLEANOUT	-	-	-	-	LINE SIZE	LINE SIZE	JAY R. SMITH, 4020 SERIES W/ROUND, POLISHED BRONZE TOP.
P6	CLEANOUT	-	-	-	-	LINE	LINE	JAY R. SMITH WALL CLEANOUT AND PLUG
P7	NOT USED							
P8	WATER HEATER	34"	-	34"	-	-	-	NORITZ MODEL BC380-SV-ASME-LG 380,000 BTU/HR INPUT, 7.80 GAL./MIN. (468 GAL./HR. RECOVERY AT 80°F. RISE, 3" PVC DIRECT VENT W/ FORGED COMBUSTION - 80% EFFICIENCY (ECC 504.2), W/ THERMOSTAT (ECC 504.3), PROVIDE CONDENSATE NEUTRALIZATION KIT ON CONDENSATE DISCHARGE LINE, NSF APPROVED, ELECTRONIC IGNITION, POWERED EXHAUST (COORDINATE WITH ELECTRICIAN), 2.0 GALLON AMTROL ST-5 (BLADDER TYPE EXPANSION TANK) ON THE IN-COMING CW PER MANUFACTURER REQUIREMENTS.
P9	HAND SINK	-	1/2"	1/2"	-	1 1/2"	-	SEE ITEM "12" ON THE FOOD EQUIPMENT PLAN W/ MIXING VALVE - PROVIDED & INSTALLED BY PLUMBING CONTRACTOR, STUB OUT @ 16" A.F.F.
P10	3 COMPARTMENT SINK	12"	-	1/2"	-	-	2"	SEE ITEM "17" ON THE FOOD EQUIPMENT PLAN - SUPPLIED BY EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR, STUB OUT @ 16" A.F.F.
P11	MOP SINK	12"	-	1/2"	-	-	3"	FIAT SB3636 - 36"x36" TERRAZO MOP BASIN W/ FISHER FAUCET MO. NO. 2453 W/ ECCENTRIC STOPS (8" ADJ. SERVICE SINK FAUCET W/ SHORT SPOUT AND VACUUM BREAKER) & RPZA (REDUCED PRESSURE ZONE ASSEMBLY)
P12	1 COMPARTMENT SINK	12"	-	1/2"	-	-	2"	SEE ITEM "13" ON THE FOOD EQUIPMENT PLAN - SUPPLIED BY EQUIPMENT SUPPLIER, INSTALLED BY PLUMBING CONTRACTOR, STUB OUT @ 16" A.F.F.
P13	GREASE INTERCEPTOR	-	-	-	-	4"	4"	SCHIER GB-3 (175.6 LBS. GREASE CAPACITY & 75 GPM) W/ 3" INLET AND 3" OUTLET, INTEGRATED FLOW CONTROL, PUMP-OUT PORT - PROVIDED & INSTALLED BY PLUMBING CONTRACTOR.
P14	NOT USED							
P15	HOT WATER RECIRC. PUMP	-	1/2"	-	1/2"	-	-	BELL & GOSSETT PL-30-B - IN-LINE, 2.5 GPM (GALLONS PER MINUTE), 1/12 HP 115V 1PH 60 HZ. PROVIDE AQUA-STAT SET TO 10 DEGREE DELTA BELOW OUTLET TEMPERATURE, NIGHT TIMER & BALANCE VALVE / CHECK VALVE.

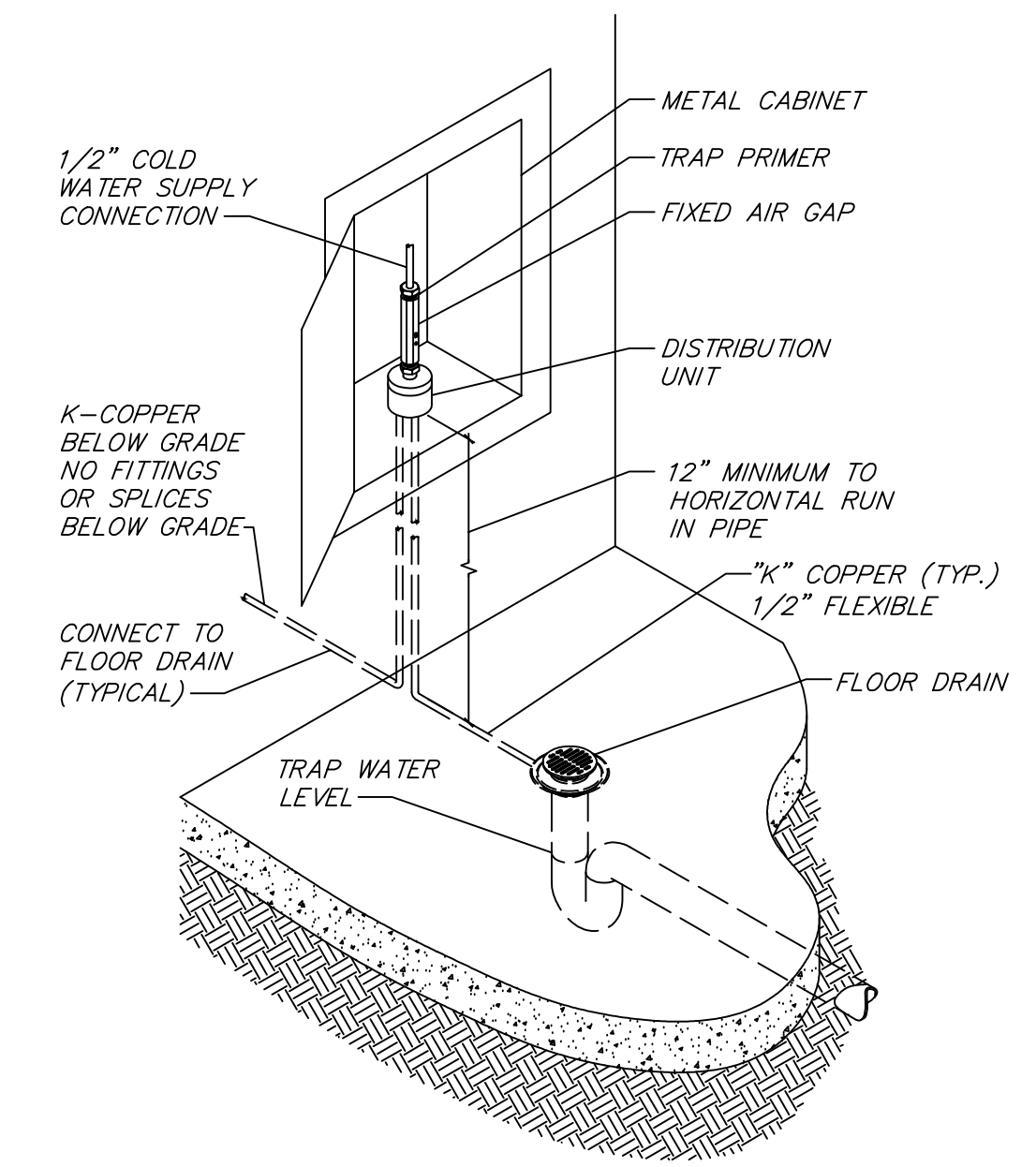
ALL BACKFLOW ASSEMBLIES ARE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR.

IF HORIZONTAL BRANCH IS LESS THAN 20' LONG, PROVIDE ONE WHA AT END OF LINE

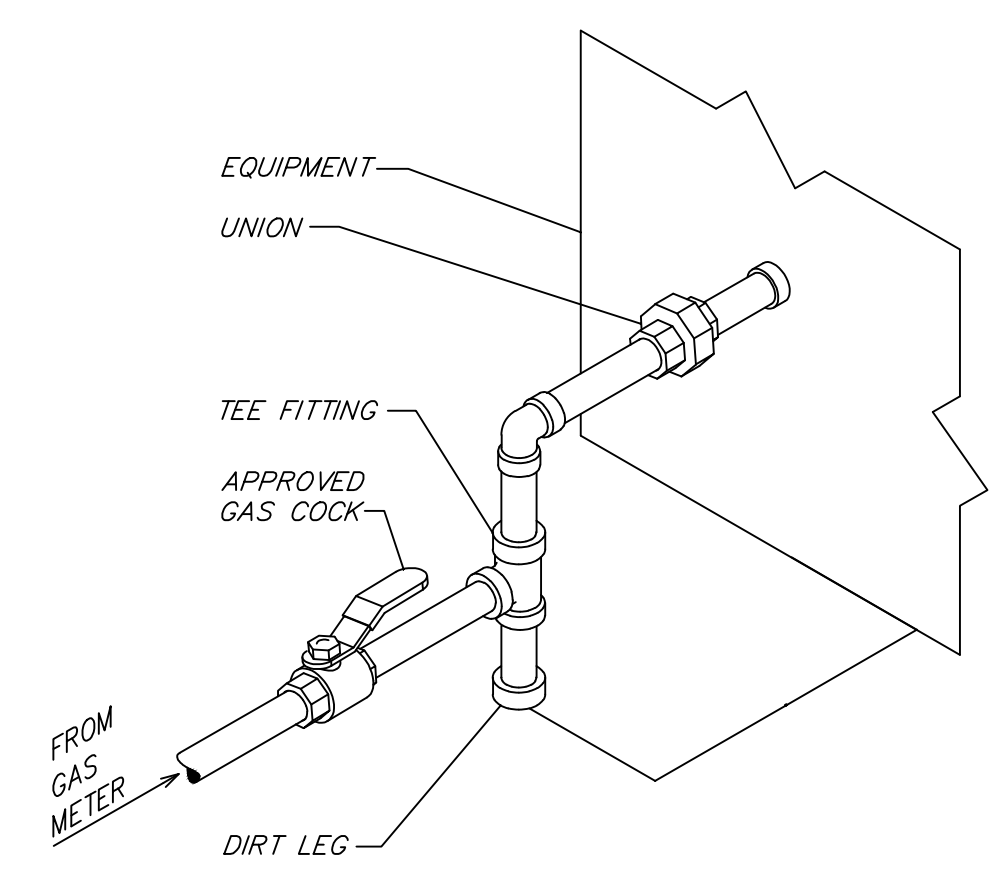
IF BRANCH IS GREATER THAN 20' LONG, PROVIDE ANOTHER WHA IN MIDDLE, EACH SIZED FOR HALF THE FIXTURE UNITS



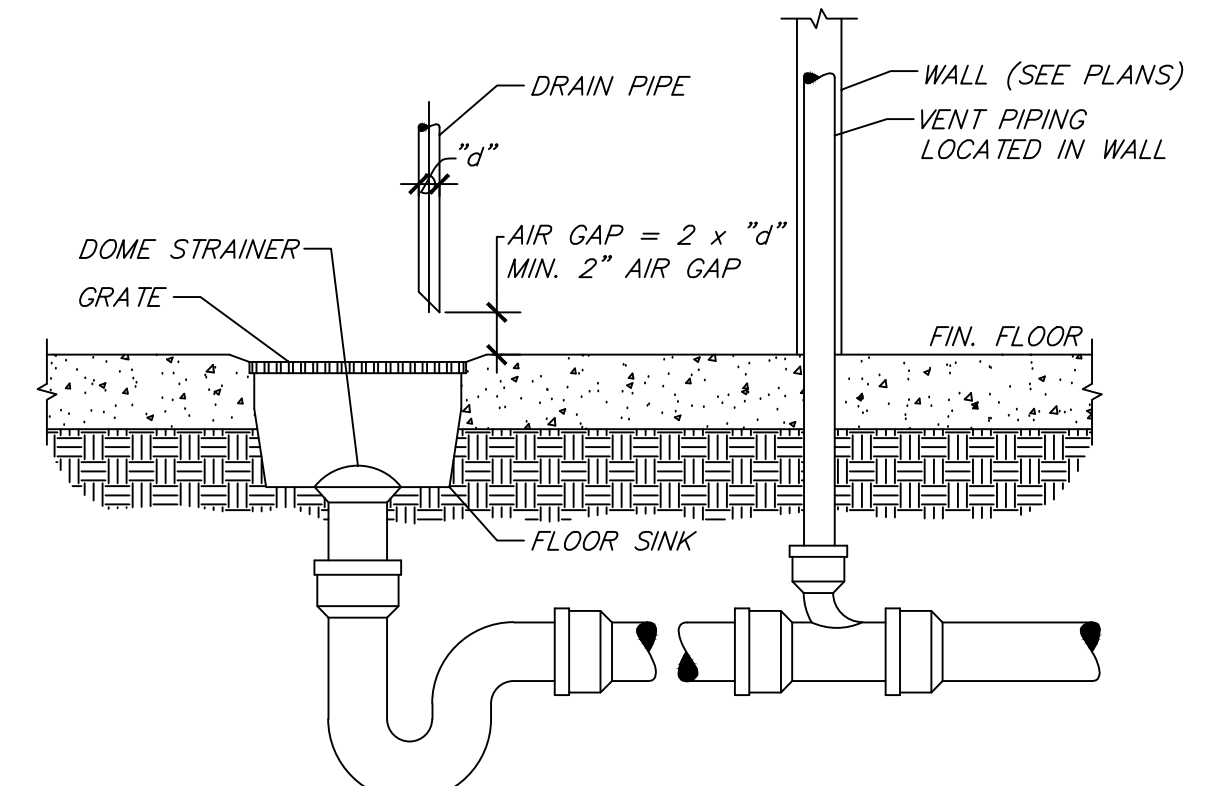
4 ROOFTOP UNIT CONDENSATE DETAIL
NOT TO SCALE



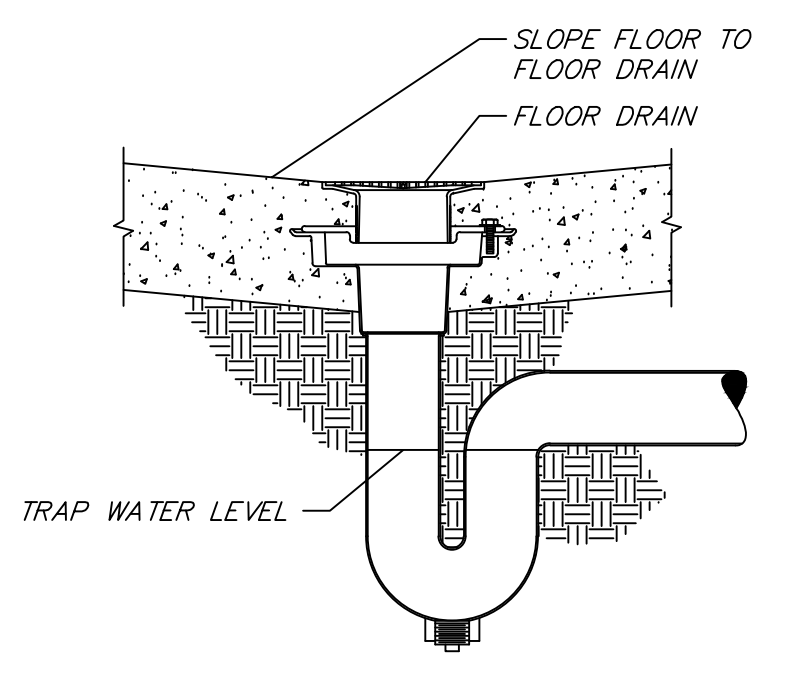
9 TRAP PRIMER DETAIL
NOT TO SCALE



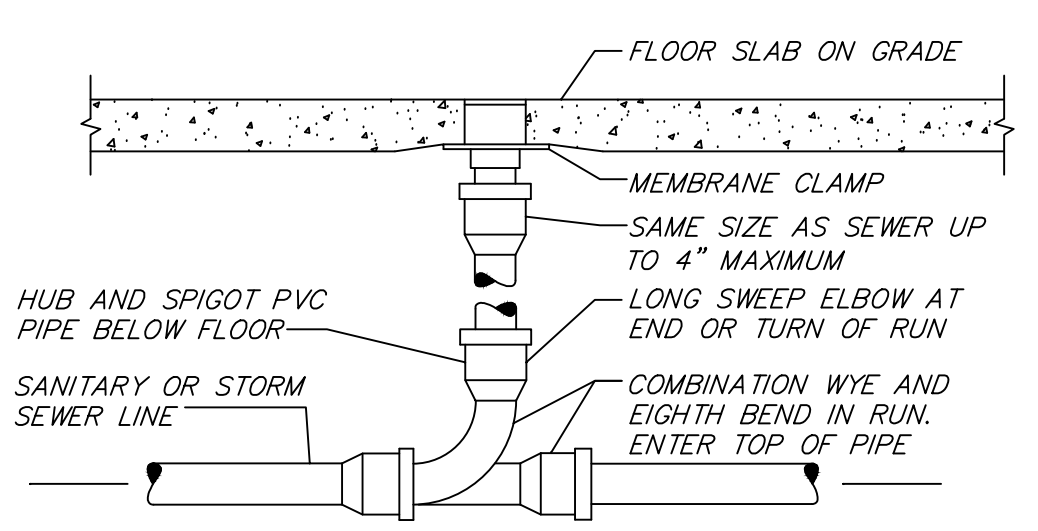
3 GAS PIPING RTU CONNECTION
NOT TO SCALE



7 FLOOR SINK DETAIL
NOT TO SCALE

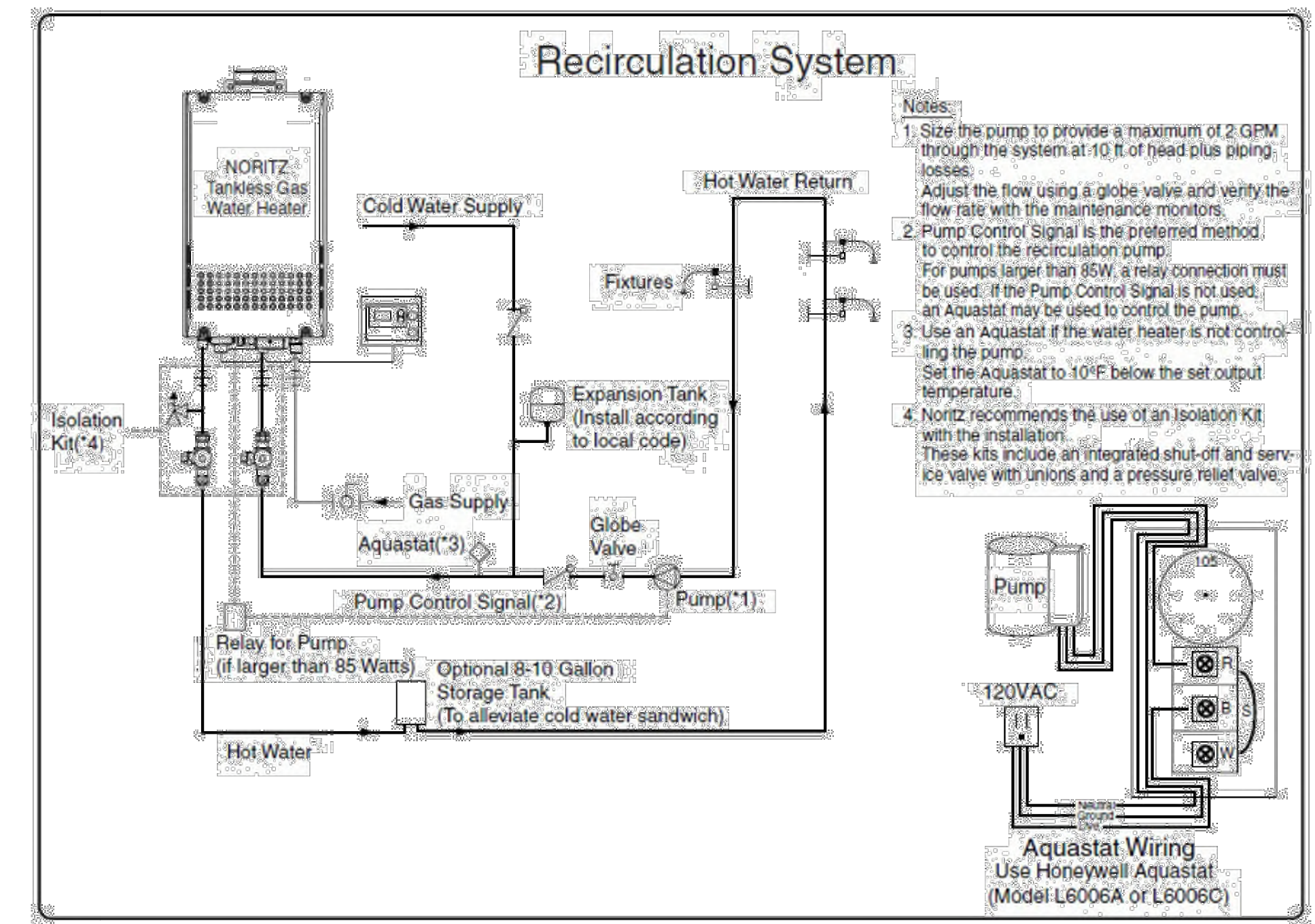


5 FLOOR DRAIN DETAIL
NOT TO SCALE

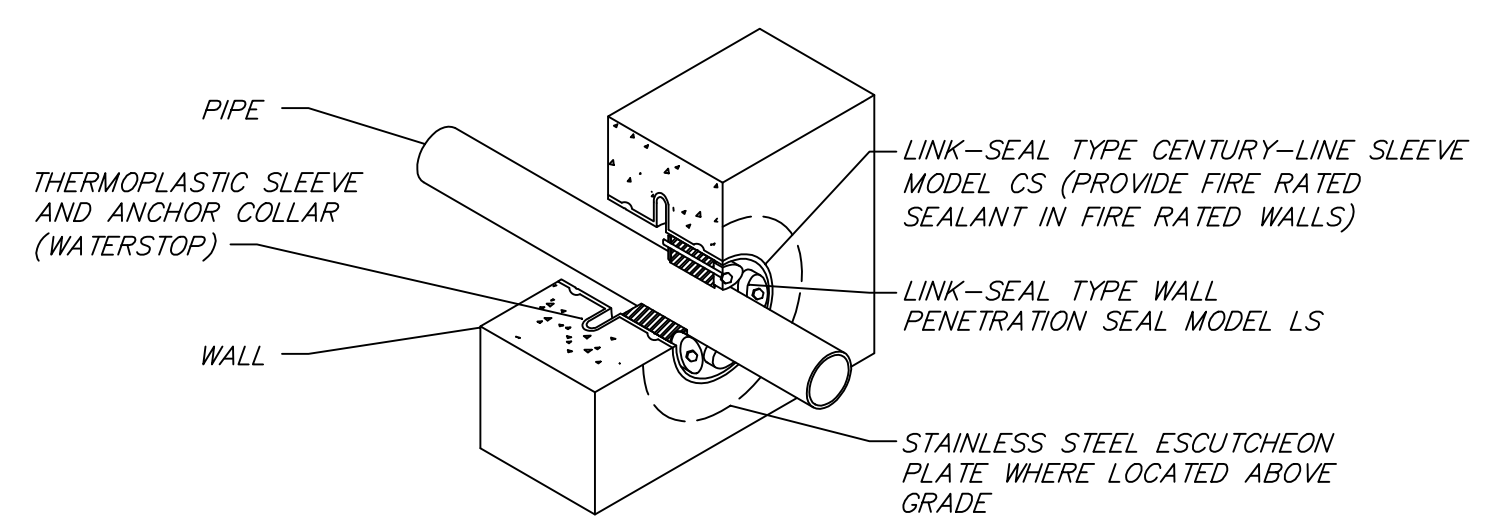


NOTES:
1. LOCATE AT BUILDING EXIT, AT ENDS OF RUNS, AT TURNS OF PIPE GREATER THAN 45 DEGREES, AT 50' INTERVALS ON STRAIGHT RUNS, AND WHERE SHOWN ON PLANS. PROVIDE BACKFILL PER ARCHITECTURAL SPECIFICATIONS. LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND. CONSULT LOCAL CODES FOR OTHER FOO REQUIREMENTS.
2. PROVIDE ROUND SECURED NICKEL BRONZE ADJUSTABLE TOP WITH "CO" CAST IN COVER. PROVIDE CLEANOUT TOP WITH VARIATIONS SUITABLE FOR FLOOR COVERING (CARPET MARKER, RECESSED FOR TILE, SCORIFIED FOR UNFINISHED FLOORS). PROVIDE BRONZE PLUG IN PVC BODY.

6 FLOOR CLEANOUT DETAIL
NOT TO SCALE



2 WATER HEATER PIPING DTL.
NOT TO SCALE



8 PIPE SLEEVE AT EXTERIOR WALLS
NOT TO SCALE

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY
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FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



INTERIOR UP-FIT
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

PLUMBING SPECIFICATIONS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AP-4.1

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

color; Minimum Service Temperature: 0 degrees F; Maximum Service Temperature: 150 degrees F; Moisture Vapor Permeability: 0.002 perm inch maximum, when tested in accordance with ASTM E 96/E 98M; Thickness: 10 mil; Connections: Brush on welding adhesive; Covering Adhesive Mastic; Compatible with insulation.

B. ABS Plastic:
1. Jacket: One piece molded type fitting covers and sheet material, off-white color; Minimum Service Temperature: -40 degrees F; Maximum Service Temperature of 180 degrees F; Moisture Vapor Permeability: 0.012 perm inch, when tested in accordance with ASTM E 96/E 98M; Thickness: 30 mil; Connections: Brush on welding adhesive.

C. Aluminum Jacket: ASTM B 209 (ASTM B 209M) formed aluminum sheet; Thickness: 0.016 inch sheet; Finish: Embossed; Joining: Longitudinal slip joints and 2 inch laps; Fittings: 0.016 inch thick die shaped fitting covers with factory attached protective liner; Metal Jacket Bands: 1/8 inch wide; 0.015 inch thick aluminum; Metal Jacket Bands: 3/8 inch wide; 0.010 inch thick stainless steel.

D. Stainless Steel Jacket: ASTM A 666, Type 304 stainless steel; Thickness: 0.010 inch; Finish: Smooth; Metal Jacket Bands: 3/8 inch wide; 0.010 inch thick stainless steel.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping has been tested before applying insulation materials.
B. Verify that surfaces are clean and dry, with foreign material removed.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
B. Install in accordance with NAIMA National Insulation Standards.
C. Exposed Piping: Locate insulation and cover seams in least visible locations.
D. Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
E. Glass fiber insulated pipes conveying fluids below ambient temperature: Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic; Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
F. For hot piping conveying fluids 140 degrees F or less, do not insulate flanges and unions of equipment, but level and seal ends of insulation.
G. For hot piping conveying fluids over 140 degrees F, insulate flanges and unions of equipment.
H. Glass fiber insulated pipes conveying fluids above ambient temperature: Provide standard jackets, with or without vapor barrier, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure sensitive adhesive. Secure with outward clinch expanding staples; Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with glass cloth and adhesive or PVC fitting covers.
I. Inserts and Shields: Application: Piping 2 inches diameter or larger; Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts; Insert location: Between support shield and piping under the finish jacket; Insert configuration: Minimum 8 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated; Insert material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.
J. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, fire stop penetrations to meet local code requirements.

3.03 SCHEDULES

- A. The Contractor may use any of the following insulating materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected insulating material and thickness with all State and local codes and utility company requirements is the sole responsibility of the installing Contractor.
B. Plumbing Systems:
1. Domestic Hot and Tempered Water Supply and Recirculation:
a. Gases Fiber Insulation: All Pipe; Thickness: 1 inch.
b. Flexible Elastomeric Cellular Foam Insulation: Pipe Size Range: First 8 feet of pipe from fixture, up to 1 1/4 inch; Thickness: 1/2 inch; All Other Pipe; Thickness: 1 inch.
2. Domestic Cold Water:
a. Gases Fiber Insulation: Pipe Size Range: All Sizes; Thickness: 1/2 inch.
b. Flexible Elastomeric Cellular Foam Insulation: Pipe Size Range: All Sizes; Thickness: 1/2 inch.
C. Cooling Systems:
1. Cold Condensate Drains:
a. Gases Fiber Insulation: Pipe Size Range: All Sizes; Thickness: 1/2 inch.
b. Flexible Elastomeric Cellular Foam Insulation: Pipe Size Range: All Sizes; Thickness: 1/2 inch.

SECTION 220720 - PIPING SAFETY COVERS

1.01 GENERAL

1.01 SECTION INCLUDES

- A. Piping Safety Covers.

2.01 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers: Tueblo, Inc.
B. PIPING INSULATION ACCESSORIES:
A. Provide products that comply with the following: Americans With Disabilities Act (ADA), Article 419.4; ANS/ICC A117.1, American National Standard for Accessible Buildings and Facilities; Requirements of applicable building codes.
B. Piping Safety Covers: Tueblo Low-Guard; Characteristics: Three-piece molded assembly, minimum 1/8 inch wall thickness, with internal ribs to provide air space between piping and piping insulation jacket, molded to receive manufacturer's snap-on-clip fasteners; Vinyl Material: Impact-resistant and stain-resistant material closed-cell anti-microbial vinyl compound, UV-stable, non-fading, non-yellowing; having the following performance characteristics: Burning Characteristics: 0 seconds Average Time of Burning (ATB), 0 mm Area of Burning (ABE), when tested in accordance with ASTM D 635; Thermal Conductivity: k<value 1.17, when tested in accordance with ASTM C 177; indentation hardness: 60, minimum, when tested in accordance with ASTM D 2240, using Type A durometer; Trap Assembly Cover: Three-piece assembly, with removable clean-out nut enclosure; Angle Stop Covers: Formed with hinged cap for access to valve without requiring cover removal; Configurations: In accordance with manufacturer's product data for project piping configurations indicated on Drawings; Color: China White, glass finish; paintable; Fasteners: Manufacturer's standard re-useable snap-on-clip fasteners; wire-tie fasteners not permitted.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that piping configurations are correct type for piping cover component configurations specified.

3.02 INSTALLATION

- A. Install products of this section in accordance with manufacturer's printed installation instructions.

3.03 PROTECTION OF INSTALLED PRODUCTS

- A. Do not allow damage to installed products by subsequent construction activities; protect products until Substantial Completion. Replace any damaged products prior to occupancy.

END OF SECTION

1.01 GENERAL

1.01 SECTION INCLUDES

- A. Pipe, pipe fittings, valves, and connections for piping systems: Sanitary sewer, interior; Domestic water, interior; Natural gas, piping.
- 2.01 PRODUCTS
A. The Contractor may use any of the following piping materials, at his option, provided the selected material meets with the approval of all State and local authorities and utility company requirements. Verification of compliance of the selected piping material with all State and local codes and utility company requirements is the sole responsibility of the installing Contractor. Verify the use of plastic piping systems with the local jurisdiction. Non-metallic piping systems may not be used in any return air plenum ceiling spaces. No exceptions.
2.02 SANITARY SEWER PIPING, BURIED WITHIN 5 FEET OF BUILDING:
A. Cast Iron Pipe: ASTM A 74 service weight; Fittings: Cast iron; Joints: Hub-and-spigot, CISPI HSN compression type or ASTM C 564 neoprene gaskets or lead and oakum.
B. ABS Pipe: ASTM D 2751, ASTM F 628, ASTM D2661, or ASTM D2751; Fittings: ABS; Joints: Solvent welded with ASTM D 2235 cement.
2.03 SANITARY SEWER PIPING, ABOVE GRADE:
A. Cast Iron Pipe: ASTM A 74, service weight; Fittings: Cast iron; Joint Seal: ASTM C 564 neoprene gaskets, or lead and oakum.
B. Cast Iron Pipe: CISPI 301, hubless, service weight; Fittings: Cast iron; Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.
2.04 WATER PIPING, ABOVE GRADE:
A. Copper Tube: ASTM B 88 (ASTM B 88M), Type L (B), Drawn (H); Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze; Fittings: Cast iron, coated; Joints: ASTM B 32, alloy Sn95 solder; Joints: Grooved mechanical couplings.
2.05 NATURAL GAS PIPING, ABOVE GRADE:
A. Steel Pipe: ASTM A 53/A 53M Schedule 40 black; Fittings: 3" and larger shall be ASME B16.3, malleable iron, or ASTM A 234/A 234M, wrought steel welding type. Threaded fittings may be used on piping 2 1/2" and smaller, except where noted on

the drawings or required by code to be welded; Joints: NPSA 54, threaded or welded to ASME B31.1.

- B. Excavation: EX-1 or EX-2 (ASTM B 88M), Type K (A) or L (B) annealed; Fittings: ASME B16.26, cast bronze; Joints: Flared.

2.06 FLANGES, UNIONS, AND COUPLINGS

- A. Unions: Pipe Sizes 3 inches and Under: Ferrous pipe: Class 150 malleable iron threaded unions; Copper tube and pipe: Class 150 bronze unions with soldered joints.
B. Hangers for Pipe Size Over 1 inch: Ferrous pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets; Copper tube and pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.
C. Flange Hangers: Multiple or Trapeze Hangers: Steel channels with welded supports or spacers and hanger rods; Multiple or Trapeze Hangers for Hot Pipe Sizes 6 inches and Over: Steel channels with welded supports or spacers and hanger rods, cast iron pipe roll and stand.
D. Diaphragm Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.07 PIPE HANGERS AND SUPPORTS

- A. Plumbing Piping - Drain, Waste, and Vent: Conform to MSS SP-58; Hangers for Pipe Sizes 1/2 inch to 1-1/2 inches: Malleable iron, adjustable swivel, split ring; Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis; Multiple or Trapeze Hangers: Steel channels with welded supports and hanger rods; Wall Support for Pipe Sizes to 3 inches: Cast iron hook; Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket on wrought steel clamp; Vertical Support: Steel riser clamp; Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support; Copper Pipe Support: Carbon steel ring, adjustable, copper plated.
B. Plumbing Piping - Water and Gas: Conform to MSS SP-58; Hangers for Pipe Sizes 1/2 inch to 1-1/2 inches: Malleable iron, adjustable swivel, split ring; Hangers for Pipe Sizes 2 inches and Over: Carbon steel, adjustable, clevis; Hangers for Hot Pipe Sizes 2 inches to 4 inches: Carbon steel, adjustable, clevis; Hangers for Hot Pipe Sizes 6 inches and Over: Adjustable steel yoke, cast iron pipe roll, double hanger; Multiple or Trapeze Hangers: Steel channels with welded supports or spacers and hanger rods; Multiple or Trapeze Hangers for Hot Pipe Sizes 6 inches and Over: Steel channels with welded supports or spacers and hanger rods, cast iron pipe roll and stand.
C. 2 inches and Larger: MSS SP-70, Class 125, iron body, bronze trim, outside screw and yoke, handwheel, solid wedge disc, flanged ends. Provide extension to grade and valve box per local jurisdiction and utility company standards. Post-indicator type were used for fire protection service or when indicated on the Drawings.

2.08 GATE VALVES (Exterior Utility Service Only)

- A. Manufacturers: Conbraco Industries; Nibco, Inc; Milwaukee Valve Company.
B. Up to and including 3 inches: MSS SP-80, Class 125, bronze body, bronze trim, rising stem, handwheel, inside screw, solid wedge disc, solder or threaded ends.
C. 2 inches and Larger: MSS SP-70, Class 125, iron body, bronze trim, outside screw and yoke, handwheel, solid wedge disc, flanged ends. Provide extension to grade and valve box per local jurisdiction and utility company standards. Post-indicator type were used for fire protection service or when indicated on the Drawings.

2.09 BALL VALVES

- A. Manufacturers: Conbraco Industries; Nibco, Inc; Milwaukee Valve Company.
B. Construction: 4 inches and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze, two piece body, chrome plated brass ball, regular, port, teflon seats and stuffing box ring, blow-off proof stem, level handle, solder or threaded ends.

2.10 BUTTERFLY VALVES

- A. Manufacturers: Hammond Valve; Crane Co; Milwaukee Valve Company.
B. Construction: 1-1/2 inches and Larger: MSS SP-67, 200 psi CWP, cast or ductile iron body, nickel-plated ductile iron disc, resilient replaceable EPDM seat, water, lug, or grooved ends, extended neck, 10 position lever handle.
C. Provide gear operators for valves 8 inches and larger, and chain-wheel operators for valves mounted over 8 feet above floor.

2.11 FLOW CONTROLS

- A. Manufacturers: IIT Bell & Gossett; Grundfos Controls; Taco, Inc.
B. Construction: Class 125, Brass bronze body with union on inlet, temperature and pressure test plug on inlet and outlet.
C. Calibration: Automatically control flow within 5 percent of selected rating, over operating pressure range of 10 times minimum pressure required for control, maximum minimum pressure 3.5 psi.

2.12 SWING CHECK VALVES

- A. Manufacturers: Hammond Valve; Nibco, Inc; Milwaukee Valve Company.
B. Up to 3 inches: MSS SP-80, Class 125, bronze body and cap, bronze swing disc with rubber seal, solder or threaded ends.
C. Over 2 inches: MSS SP-71, Class 125, iron body, bronze swing disc, renewable disc seal and seat, flanged or grooved ends.

2.13 WATER PRESSURE REDUCING VALVES

- A. Manufacturers: Amtrol Inc; Clo-Val Co; Watts Regulator Company.
B. Up to 2 inches: MSS SP-80, bronze body, stainless steel and thermoplastic internal parts, fabric reinforced diaphragm, strainer, threaded union ends.
C. Over 2 inches: MSS SP-85, cast iron body, bronze fitted, elastomeric diaphragm and seat disc, flanged.

2.14 RELIEF VALVES

- A. Pressure Relief: Manufacturers: Clo-Val Co; Henry Technologies; Watts Regulator Company; AGA Z21.22 certified, bronze body, teflon seat, steel stem and springs, automatic, direct pressure actuated.
B. Temperature and Pressure Relief: Manufacturers: Clo-Val Co; Henry Technologies; Watts Regulator Company; AGA Z21.22 certified, bronze body, teflon seat, stainless steel stem and springs, automatic, direct pressure actuated; Provide relief maximum 210 degrees F, capacity ASME (BPV IV) certified and labeled.

2.15 STRAINERS

- A. Manufacturers: Armstrong International, Inc; Green County Filtration; WEAMCO.
B. Size 2 inch and Under: Threaded brass body for 175 psi CWP, 1 pattern with 1/32 inch stainless steel perforated screen.
C. Size 1-1/2 inch to 4 inch: Class 125, flanged iron body, Y pattern with 1/16 inch stainless steel perforated screen.
D. Size 5 inch and Larger: Class 125, flanged iron body, basket pattern with 1/8 inch stainless steel perforated screen.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that excavations are to required grade, dry, and not over-excavated.

3.02 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
B. Remove scale and dirt, on inside and outside, before assembly.
C. Prepare piping connections to equipment with flanges or unions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
B. Provide non-conducting dielectric connections wherever joining dissimilar metals.
C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
D. Install piping to maintain headroom, conserve space, and not interfere with use of space.
E. Group piping whenever practical at common elevations.
F. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
G. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
H. Locate all valves and control elements in accessible areas wherever possible to avoid access doors. Provide access where valves and fittings are not exposed or located in accessible areas: Provide ceiling access doors for access to all valves and control elements located above inaccessible ceiling areas. Provide minimum 12 x 12 inch size for hand access, 18 x 18 inch size for shoulder access, and so indicated. Provide 4 x 4 inch for shut off valves exposed above ceiling access doors where installed in fire rated construction. Review locations prior to fabrication.
I. Establish elevations of buried piping outside the building to ensure not less than the maximum local frost depth cover. Install tracer wire on all plastic piping outside the building.
J. Install vent piping penetrating roofed areas to maintain integrity of roof assembly.
K. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.
L. All sanitary vent system terminations shall be a minimum of ten feet from any fresh air intake and twenty-five feet from medical facilities (hospital, clinics, etc.)
M. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
N. Provide support for utility meters in accordance with requirements of utility companies.
O. Prepare exposed, unfinished pipe, fittings, supports, and accessories ready for finish painting.
P. Paint all exterior above grade piping with a minimum of two coats of paint, color to match roof or wall surface to which it is attached; Copper pipe Apply vinyl ethyl primer immediately following cleaning; EXT 5.4 Alkyd; Vinyl Acrylic Primer MFI 680, Alkyd MPI #8, 9 or 94, Semi-gloss; Steel pipe: Apply alkyd metal primer immediately

following cleaning; EXT 5.10 Alkyd; Alkyd Metal Primer MPI #79, Alkyd MPI # 94, semi-gloss; Plastic pipe: Apply alkyd bonding primer immediately following cleaning; EXT 6.85 Alkyd; Bonding Primer MPI #17 or 69, Alkyd MPI #8, 9 or 94.

- Q. Excavate, bedding and backfill shall be in accordance with applicable sections of this Specification.

R. Pipe vents from gas pressure reducing valves to outdoors and terminate in weather proof hood, and unless the ventless design and approved by the local jurisdiction and the local utility company regulates.

S. The use of sanitary tee fittings will not be permitted. Utilize wye fittings in lieu of tee fittings for all intersections of drainage piping.

T. Provide sleeves when penetrating footings, masonry walls and floors. Seal and fire stop pipe and sleeve penetrations to achieve fire resistance equivalent to fire separation required. All penetrations through footings and floors shall be sealed water tight.

U. Wherever piping is located within 1.5 inches of the nearest edge of studs, joists, rafters or similar members, provide minimum 0.052 inch thick steel protective shield plates extending 2" above and below the pipe being protected. Shield plates may be omitted on cast iron piping only.

V. Inserts: Provide inserts for placement in concrete formwork; Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams; Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches; Where concrete slabs form finished ceiling, locate inserts flush with slab surface; Where inserts are omitted, drill through concrete slab 2" below and provide through-bolt with recessed square steel plate and nut recessed into and grouted flush with slab.

W. Pipe Hangers and Supports: Install in accordance with ASME B31.3, ASTM F 708, and MSS SP-89; Support horizontal piping as scheduled; Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work; Place hangers within 12 inches of each horizontal elbow; Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe; Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping; Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers; Provide copper plated hangers and supports for copper piping; Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed; Provide hangers adjacent to motor driven equipment with vibration isolation; Support cast iron drainage piping at every joint.

X. APPLIANCE:
A. Install unions downstream of valves and at equipment or apparatus connections.
B. Install ball or butterfly valves for shut-off and to isolate equipment, part of systems, or for vertical riser to 4 inches; Cast iron adjustable pipe saddle, locknut, nipple, floor flange, and concrete pier or steel support; Floor Support for Hot Pipe Sizes 6 inches and Over: Adjustable cast iron pipe roll and stand.

C. Provide plug or butterfly valves adjacent to equipment when provided to isolate equipment.
E. Provide spring loaded check valves on discharge of water pumps.
F. Provide plug or gas service rated ball valves in natural gas systems for shut-off service.
G. Provide plug or gas service rated ball valves in propane gas systems for shut-off service.
H. Provide automatic flow controls valves in water recirculating systems where indicated.

I. Provide spring loaded check valves when located on the discharge of pumps.
3.05 TOLERANCES
A. Interior Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/4 inch per foot slope, unless noted otherwise on the Drawings.
B. Water Piping: Slope of minimum of 1/32 inch per foot and arrange to drain at low points.

C. DISINFECTION OF DOMESTIC WATER PIPING SYSTEM
A. Prior to starting work, verify system is complete, flushed and clean.
B. Ensure pH of water to be treated is between 7.4 and 7.8 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
C. Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 2.0 to 3.0 mg/L residual.
D. Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
E. Maintain disinfectant in system for 24 hours.
F. If find disinfectant residual tests less than 25 mg/L, repeat treatment.
G. Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
H. Take samples no sooner than 24 hours after flushing, from 10 percent of outlets and from wettest entry, and analyze in accordance with AWWA C651.

3.07 SERVICE CONNECTIONS
3.08 SCHEDULES
A. Pipe Hanger Spacing:
1. Metal Piping:
a. Pipe size: 1/2 inches to 1-1/4 inches: Maximum hanger spacing: 6.5 ft; Hanger rod diameter: 3/8 inches.
b. Pipe size: 1-1/2 inches to 2 inches: Maximum hanger spacing: 10 ft; Hanger rod diameter: 3/8 inch.
c. Pipe size: 2-1/2 inches to 3 inches: Maximum hanger spacing: 10 ft; Hanger rod diameter: 1/2 inch.
d. Pipe size: 4 inches to 6 inches: Maximum hanger spacing: 10 ft; Hanger rod diameter: 5/8 inch.
2. Plastic Piping:
a. Pipe size: 1/2 inches to 6 inches: Maximum hanger spacing: 6 ft; Hanger rod diameter: 3/8 inch.

END OF SECTION

SECTION 221006 - PLUMBING PIPING SPECIALTIES

1.01 GENERAL

1.01 SECTION INCLUDES

- A. Drains; Cleanouts; Backflow preventers; Water hammer arrestors; interceptors; Thermostatic mixing valves.

2.01 PRODUCTS

2.01 BACKFLOW PREVENTERS

- A. Manufacturers: Conbraco Industries; Watts Regulator Company; Zurn Industries, Inc.

2.02 WATER HAMMER ARRESTORS

- A. Manufacturers: Jay R. Smith Manufacturing Company; Watts Regulator Company; Zurn Industries, Inc.
B. Water Hammer Arrestors: Stainless steel or copper construction, bellows type sized in accordance with PDH-W01, precharged suitable for operation in temperature range 34 to 250 degrees F and maximum 150 psi working pressure.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for ridding of drainage system.
C. Encase exterior cleanouts in concrete flush grade.
D. Install floor cleanouts at elevation to accommodate finished floor for a completely flush installation.
E. Install approved potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, drink mixing stations, interior and exterior hose bibbs and all other locations required by Code.
F. Pipe relief from backflow preventer to nearest drain.
G. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to all fixtures and equipment.

END OF SECTION

SECTION 223000 - PLUMBING EQUIPMENT

1.01 GENERAL

1.01 SECTION INCLUDES

- A. Water Heaters; Commercial gas fired water heaters; Circulators.

2.01 WATER HEATER MANUFACTURERS

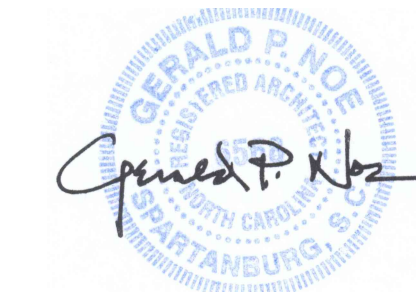
- A. A.O. Smith Water Products Co.; Bock Water Heaters, Inc.; Rheem Manufacturing Company; PV.

2.02 COMMERCIAL GAS FIRED WATER HEATERS

- A. Type: Automatic, natural gas-fired, vertical storage.
B. Performance: Maximum working pressure: 150 psig; Equipment performance and accessories shall be as scheduled on the Drawings and specified hereon. Equipment in both locations is not a prerequisite to inclusion in the Contract. Equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system.
C. Tank: Glass or copper lined welded steel ASME labeled when required by code; multiple flue passages; 4 inch diameter inspection port; thermally insulated with minimum 2 inches polyurethane, encased in corrosion-resistant steel jacket; baked-on enamel finish; floor shield and legs.
D. Accessories: Brass water connections and dip tube, drain valve, magnesium anode, and ASME rated temperature and pressure relief valve and heat trap fittings for hot and cold water connections; Water Connections: Brass; Dip tube: Crosslinked polyethylene (CPE) or brass; Drain Valve: Anode; Magnesium; Temperature and Pressure Relief Valve: ASME labeled.
E. Certification: As automatic storage water heater and for operation at 180 degrees F (82 degrees C) for operation on combustible floors.
F. Controls: Automatic water thermostat with temperature range adjustable from 110 to 180 degrees F (43 to 82 degrees C), automatic; reset high temperature limiting thermostat factory set at 195 degrees F; gas pressure regulator, multi-rubber or tubular burner, 100 percent safety shut-off pilot and thermocouple, fuel bluffer and draft hood.

2.03 IN-LINE CIRCULATOR PUMPS

- A. Manufacturers: Armstrong Pumps Inc; IIT Bell & Gossett; Sterling Fluid Systems;



09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

MECHANICAL PLAN & NOTES

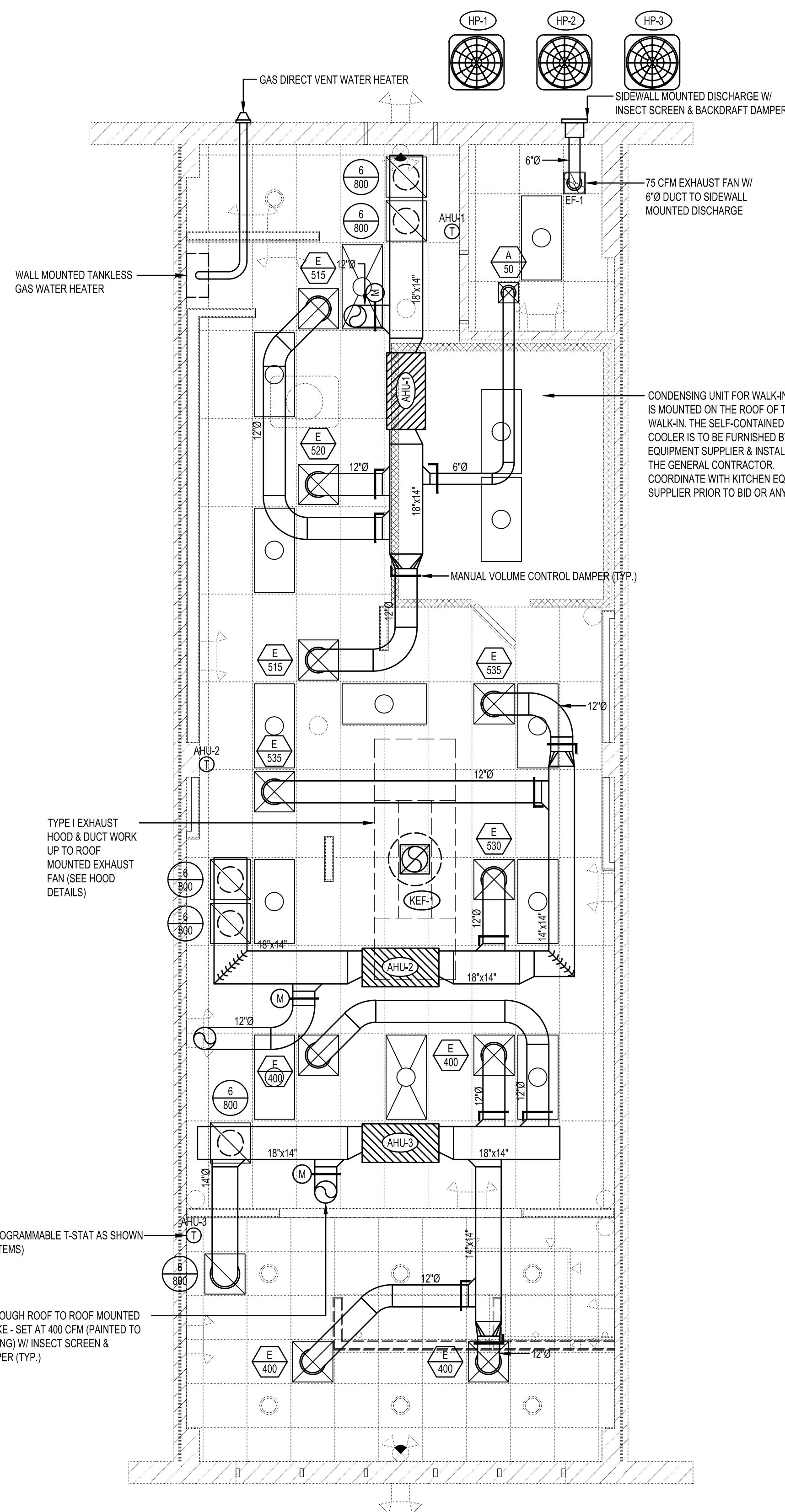
PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AM-1

SHEET 1 OF 8



GENERAL NOTES:

- EXISTING CONDITIONS ARE BASED ON RECORD DRAWINGS PROVIDED BY THE OWNER AND LIMITED FIELD VERIFICATION BY OTHERS. CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER FOR RESOLUTION.
- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH ALL APPLICABLE GOVERNMENT AND LOCAL CODES.
- MECHANICAL CONTRACTOR SHALL FIELD COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL POWER REQUIREMENTS.
- ALL CONTRACTORS SHALL REVIEW A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND COOPERATE WITH THE OTHER TRADES SO THAT THE INSTALLATION OF ALL EQUIPMENT MAY BE PROPERLY COORDINATED.
- ALL EQUIPMENT FURNISHED SHALL FIT THE SPACE AVAILABLE WITH CONNECTIONS IN THE REQUIRED LOCATIONS AND WITH ADEQUATE SPACE FOR OPERATING AND SERVICING. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATE THE INTENT OF THE INSTALLATION WHILE THE SPECIFICATIONS AND EQUIPMENT LIST DENOTE THE TYPE AND QUALITY OF MATERIAL AND WORKMANSHIP TO BE USED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE HIGHER AND/OR MORE COSTLY STANDARD WILL APPLY. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ENGINEER WHOSE DECISION SHALL BE FINAL. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY IN THIS REGARD ON BEHALF OF THE CONTRACTOR AFTER AWARD OF THE CONTRACT.
- COORDINATE DUCT ROUTING AND HEIGHTS WITH GENERAL CONTRACTOR. VERIFY ALL CLEARANCES BEFORE STARTING WORK.
- THE CONTRACTOR SHALL INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT AS REQUIRED TO CONFORM TO THE STRUCTURE. AVOID OBSTRUCTIONS, PRESERVE CEILING HEIGHTS AND HEADROOM AND MAKE ALL EQUIPMENT REQUIRING MAINTENANCE OR REPAIR ACCESSIBLE.
- ALL DUCT CONNECTIONS TO HVAC EQUIPMENT MUST BE MADE WITH FLEXIBLE CONNECTORS.
- DO NOT ATTACH ANYTHING TO DECK ABOVE. ATTACH TO STRUCTURE (i.e. BEAMS, JOISTS) ONLY. DUCT HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODE. ALL CONNECTIONS TO JOISTS SHALL BE MADE AT THE TOP CORNER.
- ALL DUCT DIMENSIONS INDICATED ARE CLEAR INSIDE DIMENSIONS. ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER OR WRAPPED WITH 1-1/2" THICK FIRE RETARDANT FIBERGLASS WITH A REINFORCED ALUMINUM FOIL JACKET AND SHALL BE APPROVED FOR USE BY SMACNA AND NAIMA. RETURN AIR TRANSFER DUCTS AND RETURN DUCTWORK WITHIN 10 FEET OF THE UNIT FAN SHALL BE LINED WITH 1" ACOUSTICAL DUCT LINER.
- ALL SUPPLY AND UNTEMPERED OUTDOOR AIR DUCTWORK VISIBLE TO THE PUBLIC SHALL BE INTERNALLY LINED AND PAINTED TO MATCH THE SURROUNDING AREA. DUCT WRAP INSULATION IS NOT PERMITTED IN THESE AREAS.
- EXPOSED SPIRAL DUCT TO BE GALVANIZED FINISH, FREE FROM SCRATCHES, DENTS OR BLEMISHES AND PAINTED TO MATCH THE SURROUNDING AREA. DUCT SHALL BE INTERNALLY LINED AND SEALED WITH DUCT SEALER COMPLETELY CONCEALED WITHIN THE DUCT JOINT. NO EXPOSED SEALER OR TAPE WILL BE ACCEPTED.
- ALL EXPOSED DUCTWORK SHALL BE INSTALLED TIGHT TO THE BOTTOM OF THE STRUCTURE.
- PROVIDE REMOTE VOLUME DAMPER CONTROL MANUFACTURED BY YOUNG REGULATOR OR UNITED ENERTECH FOR DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS. LOCATE CONTROLLER ABOVE ACCESSIBLE CEILING LOCATION.
- TENANT'S CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL UTILITY RUNS AND/OR OTHER IMPROVEMENTS LOCATED ON THE PREMISES PRIOR TO BIDDING. TENANT'S CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL COSTS RELATING TO THE RELOCATION OF, DAMAGE TO, REPAIR OF ANY EXISTING UTILITY RUNS AND/OR IMPROVEMENTS WHICH ARE DAMAGED AS A RESULT OF TENANT'S WORK IN OR AROUND THE PREMISES.
- ALL ROOFING WORK SHALL BE PERFORMED BY LANDLORD'S APPROVED ROOFING CONTRACTOR AT TENANT'S EXPENSE, IF REQUIRED IN LEASE OR TENANT CRITERIA MANUAL.
- ROOF MOUNTED EQUIPMENT SHALL BE LABELED WITH THE TENANT NAME AND SPACE NUMBER WITH 3" HIGH WEATHER PROOF LETTERS.
- ALL GREASE EXHAUST DUCTWORK SHALL BE PROVIDED WITH 3" FOIL FACED THERMAL-CERAMIC INSULATION FOR GREASE DUCTS. INSULATION SHALL MEET NFPA 96 AND ASTM E 2338 REQUIREMENTS. EXCEPTION FOR UL LISTED PRE-FABRICATED GREASE DUCTWORK.
- GREASE DUCT LEAKAGE TESTING MUST BE PERFORMED PRIOR TO CONCEALMENT OF THE DUCTWORK.
- MECHANICAL CONTRACTOR SHALL PROVIDE TENANT WITH A WRITTEN ONE (1) YEAR MANUFACTURER'S WARRANTY ON ALL HVAC EQUIPMENT PROVIDED AND/OR INSTALLED. THE WARRANTY SHALL INCLUDE ALL LABOR, MATERIALS AND THREE (3) ROUTINE SERVICES INCLUDING FILTER CHANGES DURING A ONE (1) YEAR PERIOD.
- AT THE COMPLETION OF CONSTRUCTION AN NEBB, AABC OR TABB CERTIFIED AIR BALANCE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND LANDLORD. THE BALANCING MUST BE COMPLETED BY AN INDEPENDENT, THIRD PARTY CONTRACTOR WITH NO TIES TO THE INSTALLING CONTRACTORS.

LANDLORD COORDINATION:

- THE CONTRACTOR SHALL OBTAIN A COPY OF THE LANDLORD'S TENANT CRITERIA MANUAL. TENANT CRITERIA MANUAL IS AN INTEGRAL PART OF THIS CONTRACT. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH LANDLORD REQUIREMENTS AT NO ADDITIONAL COST TO THE TENANT.
- PARTS OF THE BASE BUILDING SYSTEMS THAT FALL INTO LEASE LINE SHALL REMAIN UNDISTURBED UNLESS NOTED OTHERWISE.
- PROVIDE ALL NECESSARY WIRING, RELAYS, DETECTORS, COMPONENTS, ETC. FOR FIRE ALARM OR CONTROL SYSTEM INTERLOCK IF APPLICABLE. VERIFY WITH LANDLORD'S PERSONNEL BEFORE BID.

EXHAUST HOOD MECHANICAL NOTES (HOOD MUA DUCT, HOOD EXHAUST DUCT AND HOOD TESTING)

- KITCHEN HOOD MAKE-UP AIR (MUA) DUCT SERVED FROM THE MUA UNIT SHALL BE SHEET METAL PER SMACNA STANDARDS AND WRAPPED WITH 1 1/2" THICK FIBERGLASS DUCT WRAP WITH VAPOR BARRIER. ALL JOINTS SHALL BE TAPED.
- KITCHEN HOOD EXHAUST DUCT SHALL BE 16 GAUGE CARBON STEEL WITH LIQUID TIGHT CONTINUOUS EXTERNAL WELDS & CONSTRUCTED IN ACCORDANCE WITH NFPA 96. HORIZONTAL HOOD EXHAUST DUCT SHALL BE SLOPED 1" PER FOOT CONTINUOUSLY TOWARDS HOOD. GREASE CLEANOUTS SHALL BE PROVIDED AT ALL ELBOWS GREATER THAN 45° AND EVERY 20 FEET OF HORIZONTAL DUCT RUN.
- ALL HOOD EXHAUST DUCT IN CONTACT WITH COMBUSTIBLE MATERIALS SHALL BE WRAPPED WITH 2 LAYERS OF FIREMASTER THERMAL INSULATIONS BLANKET FOR A 2 HOUR RATING. THE 2-HOUR PROTECTION SHALL BE CONTINUOUS THRU PENETRATIONS OF ANY HORIZONTAL OR VERTICAL PARTITION.
- A PERFORMANCE HOOD TEST SHALL BE CONDUCTED UPON COMPLETION AND BEFORE FINAL APPROVAL OF THE INSTALLATION OF THE VENTILATION SYSTEM SERVING THE COMMERCIAL FOOD HEAT PROCESSING APPLIANCES. THE TEST SHALL VERIFY THE RATE OF AIRFLOW FOR PROPER OPERATION. THE PERMIT HOLDER SHALL FURNISH THE NECESSARY TEST EQUIPMENT AND DEVICES TO PERFORM THE TESTS.
- KEF-1 SHALL BE INTERLOCKED WITH AHU-1, AHU-2 & AHU-3.

ALL ROOF PENETRATIONS ARE TO BE MADE BY THE ORIGINAL ROOFING CONTRACTOR. CONTRACTOR IS TO INSTALL ROOF CRICKETS TO ENSURE PROPER DRAINAGE. ALL RTUS ARE TO BE MOUNTED ON CURBS SUPPLIED BY THE MANUFACTURER. ALL NEW AND EXISTING ROOF PENETRATIONS ARE TO BE SEALED AND FLASHED IN ACCORDANCE W/ MANUFACTURER'S RECOMMENDATIONS.

CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE NEW ROOF MOUNTED EXHAUST FAN. THE CONTRACTOR SHALL COMPLETE ROOF OPENING & PROVIDE ALL NECESSARY MISCELLANEOUS STEEL AS REQUIRED. COORDINATE ALL DETAILS WITH EXISTING ROOF CONSTRUCTION.

THE EXHAUST DUCT SHALL BE CONSTRUCTED AS FOLLOWS. THE MATERIAL SHALL BE WELDED 14 GA CARBON OR STAINLESS STEEL.

MAINTAIN 10'-0" MINIMUM CLEARANCE BETWEEN OUTSIDE AIR INTAKES ON AHU'S AND ANY VENTS, EXHAUST DISCHARGES, ETC.

PROVIDE MINIMUM OF 36" CLEARANCE BETWEEN ROOF MOUNTED HVAC EQUIPMENT AND ANY OBSTRUCTION PER I.M.C. 306.1. THERE IS AN EXISTING PERMANENT MEANS OF ACCESS TO THE ROOF MOUNTED HVAC EQUIPMENT PER I.M.C. 306.1.

1 MECHANICAL PLAN
1/4" = 1'-0"

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS. CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

SUPPLY DIFFUSER SCHEDULE				
DESIGNATES LABEL FOR DIFFUSER TYPE			ALL DIFFUSERS ARE TO BE PROVIDED WITH OPPOSED BLADE DAMPERS UNLESS OTHERWISE SPECIFIED ON PLANS.	
DESIGNATES CFM QUANTITY FOR DIFFUSER				
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
A	TITUS TMSA	6"	0 - 125	12x12 4-WAY LOUVERED
B	TITUS TMSA	6"	0 - 125	24x24 4-WAY LOUVERED
C	TITUS TMSA	8"	130 - 200	24x24 4-WAY LOUVERED
D	TITUS TMSA	10"	205 - 355	24x24 4-WAY LOUVERED
E	TITUS TMSA	12"	360 - 550	24x24 4-WAY LOUVERED
F	TITUS S300FL	-	205 - 500	16x6 COMMERCIAL SPIRAL DIFFUSER
G	TITUS PAS	12"	360 - 550	24x24 PERFORATED

PAINT DIFFUSERS IN THE DINING ROOM & RESTROOMS TO MATCH CEILING COLOR

RETURN GRILLE SCHEDULE				
DESIGNATES LABEL FOR DIFFUSER TYPE			DESIGNATES CFM QUANTITY FOR DIFFUSER	
LABEL	MANUFACTURER & MODEL NO.	NECK SIZE	CFM RANGE	REMARKS
1	TITUS 50F	6"	0 - 125	12X12 SINGLE DEFLECTION RETURN GRILLE
2	TITUS 50F	6"	0 - 125	12X12 SINGLE DEFLECTION RETURN GRILLE
3	TITUS 50F	8"	130 - 220	12X12 SINGLE DEFLECTION RETURN GRILLE
4	TITUS 50F	10"	225 - 360	12X12 SINGLE DEFLECTION RETURN GRILLE
5	TITUS 50F	12"	365 - 600	12X12 SINGLE DEFLECTION RETURN GRILLE
6	TITUS 50F	14"	605 - 850	12X12 SINGLE DEFLECTION RETURN GRILLE
7	TITUS 50F	16"	855 - 1395	12X12 SINGLE DEFLECTION RETURN GRILLE
8	TITUS 50F	16"x16"	1400 - 2000	12X12 SINGLE DEFLECTION RETURN GRILLE

PAINT DIFFUSERS IN THE DINING ROOM & RESTROOMS TO MATCH CEILING COLOR

AIR BALANCE CALCULATIONS									
ITEM	DESCRIPTION	MFG.	SUPPLY AIR (CFM)	RETURN AIR (CFM)	RELIEF AIR (CFM)	OUTSIDE AIR (CFM)	MAKE-UP AIR (CFM)	EXHAUST AIR (CFM)	REMARKS
AHU-1	AIR HANDLING UNIT	TRANE	1,600	1,200	--	400	--	--	NOTE 1
AHU-2	AIR HANDLING UNIT	TRANE	1,600	1,200	--	400	--	--	NOTE 1
AHU-3	AIR HANDLING UNIT	TRANE	1,600	1,200	--	400	--	--	NOTE 1
EF-1	TOILET EXH. FAN	GREENHECK	--	--	--	--	--	75	NOTE 2
KEF-1	HOOD EXHAUST FAN	HALTON	--	--	--	--	--	1,050	NOTE 2
TOTAL			4,800	3,600	--	1,200	--	1,125	

NET PRESSURE SUPPLIED TO TENANT SPACE = 1,200 (O.A.) - 1,125 (EXH) = +75 CFM (POSITIVE)

NOTES:

- OA CONTRIBUTES TO REMAINING MAKE-UP AIR FOR KITCHEN EXHAUST HOODS.
- EXHAUST AIR REQUIRING MAKE-UP THRU ROOF TOP UNITS

Building:	18-A086 - Marco's Pizza - Buffalo Lake
System Tag/Name:	AHU-1, AHU-2 & AHU-3
Operating Condition Description:	
Units (select from pull-down list)	IP

Inputs for System	Name	Units	w/o diversity		w/ diversity	
			System	Diversity	System	Diversity
Floor area served by system	As	sf	1,153			
Population of area served by system	Ps	P	83	100%		83
Design primary supply fan airflow rate	Vpsd	cfm	4,800	100%		4,800
OA req'd per unit area for system (Weighted average)	Ras	cfm/sf	0.12			
OA req'd per person for system area (Weighted average)	Rps	cfm/p	7.5			
Percent increase in Vbz over minimum required		%	0%			

Inputs for Potentially Critical Zones			
Zone Name	Zone tag	Zone title turns purple/italic for critical zones)	Potentially Critical Zones
			Seating Area
			Kitchen (cooking)
			Office Area
			enter tag
			Restaurant
			Kitchen
			dining rooms
			(cooking)
			94
			1069
			77
			6
			800
			4000
			0.50
			0.50
			0.50

Inputs for Operating Condition Analyzed			
Percent of total design airflow rate at conditioned analyzed	Ds	%	100%
Air distribution type at conditioned analyzed		Select from pull-down list:	
Zone air distribution effectiveness at conditioned analyzed	Ez		CSCRH
Primary air fraction of supply air at conditioned analyzed	Ep		0.80

Results			
System Ventilation Efficiency	Ev		0.23
Outdoor air intake required for system	Vot	cfm	3321
Outdoor air per unit floor area	Vot/As	cfm/sf	2.86
Outdoor air per person served by system (including diversity)	Vot/Ps	cfm/p	40.0
Outdoor air as a % of design primary supply air	Ypd	%	69%

EXHAUST FAN SCHEDULE									
NO.	SERVICE	LOCATION	TYPE	CFM	SP IN WG	AMPS	WATTS	REMARKS	
EF-1	TOILET EXHAUST	CEILING	CEILING FAN	75	0.125	0.34	29.4	GREENHECK SP-A90 NOTES: 1,4,7,10,13	

NOTES: 1) BIRDSCREENS, 2) PREFAB CURB, 3) DIRECT DRIVE, 4) DISCONNECT, 5) BACKDRAFT DAMPER, 6) MOTORIZED DAMPER, 7) INLET GRILLE 8) SOLID STATE VARIABLE SPEED SWITCH, 9) THERMOSTAT CONTROLLED, 10) CONTROLLED W/ LIGHT SWITCH, 11) ROOF VENT CAP (GREENHECK RDSP) 12) INTERLOCKED W/ RTU'S 13) WALL DISCHARGE LOUVER

AIR HANDLING UNIT SCHEDULE																		
TAG	AREA SERVED	S.A. CFM	O.A. CFM	E.S.P. (IN.WC)	COOLING CAPACITY			IFM	ELECT. HEAT	ELECTRICAL DATA			CONFIGURATION	OPERATING WEIGHT	MANUFACTURER TRANE & MODEL	NOMINAL TONS	ADDITIONAL OPTIONS	
					TC (MBH)	SC (MBH)	EFFICIENCY			MCA	MOCP	VOLTAGE						
AHU-1	-	1600	-	0.5	47.4	35.2	SEER 14.0	3/4	7.2	1	32	35	208V-3Ø	-	171 LBS	TEMA40C48S41	4	-
AHU-2	-	1600	-	0.5	47.4	35.2	SEER 14.0	3/4	7.2	1	32	35	208V-3Ø	-	171 LBS	TEMA40C48S41	4	-
AHU-3	-	1600	-	0.5	47.4	35.2	SEER 14.0	3/4	7.2	1	32	35	208V-3Ø	-	171 LBS	TEMA40C48S41	4	-

OPTIONS (ALL UNITS)

- 7-DAY PROGRAMMABLE DIGITAL THERMOSTAT
- FILTER KIT W/ 2' FILTERS
- CONDENSATE DRAIN PAN OVERFLOW SWITCH
- SINGLE POINT ELECTRICAL CONNECTION
- MANJAN O.A. DAMPER
- GALVANIZED CONDENSATE DRAIN PAN
- FACTORY INSTALLED ELECTRIC HEATER KIT

ADDITIONAL OPTIONS (UNITS AS NOTED)

A: CONDENSATE PUMP, DIVERSITECH CP-22 120V/1Ø
 B: 24V MOTORIZED O.A. DAMPER
 C: 120V/1Ø MOTORIZED O.A. DAMPER
 D: STAINLESS STEEL DRAIN PAN
 E: CO2 SENSOR, WALL MOUNTED

NOTES:

- ALL UNITS SHALL BE U.L. LABELED.
- ALL UNITS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
- NOT USED
- ELECTRIC HEATER SHALL BE BY UNIT MANUFACTURER.

HEAT PUMP SCHEDULE														
TAG	COOLING CAPACITY			COMPRESSOR			FAN	ELECTRICAL DATA			MANUFACTURER TRANE & MODEL	OPERATING WEIGHT	NOMINAL TONS	MATCHING INDOOR UNIT
	TC (MBH)	SC (MBH)	EFFICIENCY	OA DB (°F)	RLA	LRA		FLA	MCA	MOCP				
HP-1	47.1	34.8	SEER 14.0	95	-	-	-	18	30	208V-3Ø	4TWA4048A3	231 LBS	4	AHU-1
HP-2	47.1	34.8	SEER 14.0	95	-	-	-	18	30	208V-3Ø	4TWA4048A3	231 LBS	4	AHU-2
HP-3	47.1	34.8	SEER 14.0	95	-	-	-	18	30	208V-3Ø	4TWA4048A3	231 LBS	4	AHU-3

OPTIONS (ALL UNITS)

- 4" THICK PREFABRICATED PAD OR CONCRETE PAD
- PRE-CHARGED REFRIGERANT LINE SETS
- MANUFACTURER MINIMUM CLEARANCES
- COMPRESSOR CRANKCASE HEATER
- COMPRESSOR START ASSIST CAPACITOR AND RELAY (NOT REQUIRED FOR SCROLL COMPRESSORS OR 3 PHASE UNITS)
- OUTDOOR UNIT CYCLE PROTECTOR (5 MINUTE)
- WIND BAFFLES (UNITS MOUNTED ON ROOF)

FOR HORIZONTAL CONFIGURATION: PROVIDE LIQUID LINE SOLENOID WITHIN 2'-0" OF OUTDOOR UNIT WITH FLOW ARROW POINTING TOWARD OUTDOOR UNIT. VAPOR LINE SHOULD SLOPE TOWARD INDOOR UNIT.

FOR INDOOR UNIT LOCATED ABOVE HEAT PUMP (50'-0" MAX): A LIQUID LINE (B-FLOW) SOLENOID MUST BE INSTALLED WITHIN 2'-0" OF OUTDOOR UNIT WITH FLOW ARROW POINTING TOWARD OUTDOOR UNIT. AN INVERTED VAPOR LINE TRAP MUST BE INSTALLED AT INDOOR UNIT. THE TOP OF THE TRAP MUST BE GREATER THAN THE HEIGHT OF THE INDOOR COIL.

FOR INDOOR UNIT LOCATED BELOW HEAT PUMP (150'-0" MAX): A LIQUID LINE (B-FLOW) SOLENOID MUST BE INSTALLED WITHIN 2'-0" OF OUTDOOR UNIT.

NOTES:

- ALL UNITS SHALL BE U.L. LABELED.

- ### GENERAL MECHANICAL NOTES
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE APPLICABLE BUILDING CODE AND ALL OTHER APPLICABLE STATE, COUNTY AND LOCAL ORDINANCES AND THE LATEST ADDITION OF THE FOLLOWING PUBLICATIONS: SMACNA, ASHRAE, NFPA 90A, 90B, 91 & ANSI B-9.1 MECHANICAL REFRIGERATION. ALL DUCTWORK SHALL BE FABRICATED, INSTALLED AND SUPPORTED AS PER SMACNA STANDARDS.
 - THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.
 - THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WORK WITH OTHER TRADES TO INSURE AN ORDERLY PROGRESS OF THIS WORK.
 - THE CONTRACTOR SHALL SUPPLY THE ARCHITECT WITH "AS-BUILT" DRAWINGS UPON COMPLETION OF THIS PROJECT.
 - CONTRACTOR SHALL SUBMIT, FOR APPROVAL FIVE (5) COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT.
 - ALL MATERIAL SHALL BE NEW OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER BY SKILLED WORKMAN.
 - ALL SUPPLY AND RETURN AIR DUCTWORK SHALL BE EXTERNALLY INSULATED GALVANIZED SHEET STEEL. INSULATION SHALL BE A MINIMUM OF 2" THICK PROVIDING A R-6 VALUE OR HIGHER.
 - ALL EXHAUST DUCTS AND OUTSIDE AIR DUCTS SHALL BE GALVANIZED SHEET METAL WITH SEALED SEAMS AND JOINTS.
 - DUCT SIZES SHOWN ARE INSIDE DIMENSIONS. (FREE AREA) THE CONTRACTOR MAY, AT HIS OPTION USE ROUND DUCT OF EQUIVALENT SIZE (FREE AREA) WITH CONSTRUCTION OF SAME PER LATEST S.M.A.C.N.A. DUCT CONSTRUCTION STANDARDS. ALL FLEXIBLE DUCT SHALL BE LIMITED TO 8 FEET IN LENGTH AND USED ONLY FOR RUNOUTS TO DIFFUSERS. FLEX DUCT SHALL BE U.L. 181 LISTED.
 - ALL AIR DEVICES (DIFFUSERS, REGISTERS AND GRILLES) SHALL BE ALL ALUMINUM CONSTRUCTION WITH EXPOSED SURFACE OFF WHITE BAKED ENAMEL FINISH OR AS SPECIFIED BY OWNER. PROVIDE OPPOSED BLADE DAMPERS AT ALL DIFFUSERS AND REGISTERS. DIFFUSERS, REGISTERS AND GRILLES LOCATED IN FIRE RATED WALLS AND OR CEILINGS SHALL BE STEEL CONSTRUCTION.
 - THERMOSTAT SHALL BE 7 DAY PROGRAMMABLE TYPE, WITH SYSTEM "COOL-AUTO-HEAT-OFF" AND FAN "ON-AUTO" SELECTOR SWITCHES. PROVIDE HONEYWELL OR EQUAL.
 - ALL BRANCH TAKE-OFFS TO BE PROVIDED WITH MANUAL VOLUME DAMPERS. ALL ELBOWS AND TEES MUST BE FURNISHED WITH TURNING VANES. PROVIDE 45 BRANCH TAKE-OFF AS PER BRANCH DUCT TAKE-OFF DETAIL.
 - PROVIDE NEW FILTERS FOR ALL AIR CONDITIONING EQUIPMENT BEFORE STARTING THEM. REPLACE THEM PRIOR TO FINAL ACCEPTANCE BY OWNER.
 - PROVIDE SMOKE DETECTORS WITH ACCESS DOORS IN ALL RETURN AIR DUCTS FOR FANS AND AHUS SERVING A COMMON PLENUM OF 2000 CFM OR ABOVE. ALL SMOKE DETECTORS SHALL BE BY ONE MANUFACTURER, COORDINATE VOLTAGE ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHUT DOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVING THAT COMMON PLENUM.
 - PROVIDE TYPE "B" FIRE DAMPERS IN ALL DUCTS OR OPENINGS PENETRATING FIRE RATED WALLS, MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS, TENANT SEPARATION, PARTITIONS, FLOOR OR ROOF SLABS AND AT O/A INTAKES. PROVIDE RADIATION DAMPERS IN RATED CEILINGS FOR ALL CEILING OPENINGS, CEILING FANS, DIFFUSERS OR GRILLES RATED FOR USE IN THE CEILING ASSEMBLY.
 - HVAC CONTRACTOR SHALL PROVIDE A TEST AND BALANCE REPORT FOR ALL MECHANICAL EQUIPMENT, AIR DEVICES, DAMPERS, AHUS AND FANS. THE T & B SHALL BE IN ACCORDANCE WITH THE AIR BALANCE COUNCIL STANDARDS, AND SHALL INCLUDE AIR QUANTITIES FOR ALL SUPPLY GRILLS, RETURN GRILLS, AND EXHAUST GRILLS, AND THE LEAVING AND ENTERING AIR TEMPERATURE ("F) FROM SUPPLY GRILLS AND EVAPORATORS.
 - THERMOSTAT LOCATION SHALL BE APPROVED BY OWNER AND ARCHITECT BEFORE INSTALLATION.
 - ALL INSULATION WILL HAVE FIRE/SMOKE RATING LESS THAN 2550.
 - MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCH. PLUMBING, ELECTRICAL AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
 - NO COMBUSTIBLE MATERIALS ARE ALLOWED IN RETURN AIR PLENUMS OR ABOVE CEILINGS USED AS RETURN AIR PLENUM, IF SPACE WITH RETURN AIR PLENUM HAS ANY DECK TO DECK PARTITIONS, AIR TRANSFER DUCTS MUST BE INSTALLED.
 - REFER TO PLUMBING PLANS FOR ALL CONDENSATE PIPING.
 - CONTRACTOR SHALL INSTALL ALL OUTDOOR EQUIPMENT TO WITHSTAND SUSTAINED WIND LOADING FORCES AS REQUIRED BY LOCAL CODES.
 - PROVIDE ALL NECESSARY CONTACTORS, RELAYS, ETC., FOR A COMPLETE OPERATING A/C UNIT.
 - THROUGHOUT THE COURSE OF THE WORK, MINOR CHANGES AND ADJUSTMENTS TO THE PLANS AND SPECIFICATIONS MAY BE REQUESTED BY THE TENANT. THE CONTRACTOR SHALL MAKE SUCH ADJUSTMENTS WITHOUT ADDITIONAL COST TO THE TENANT, WHERE SUCH ADJUSTMENTS ARE NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE SYSTEMS, AND WITHIN THE INTENT OF THE CONTRACT DOCUMENTS.
 - IT IS THE INTENT OF THE PLANS AND SPECIFICATIONS TO FORM A GUIDE FOR A COMPLETE INSTALLATION. EVERYTHING NECESSARY FOR THE COMPLETION AND SUCCESSFUL OPERATION OF THE WORK, WHETHER OR NOT HEREIN DEFINITELY SPECIFIED OR INDICATED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED AS WELL AND AS FAITHFULLY AS IF SO SPECIFIED OR INDICATED WITHOUT ADDITIONAL COST TO THE TENANT. THE MECHANICAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND LENGTHS PRIOR TO INSTALLATION.
 - NOTWITHSTANDING ANY OTHER PROVISIONS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR BEARS ULTIMATE RESPONSIBILITY FOR COMPLIANCE OF THE INSTALLATION WITH THE REQUIREMENTS OF THE LANDLORD AND OF THE LOCAL AUTHORITY HAVING JURISDICTION.
 - IF ANY ERRORS, DISCREPANCIES OR OMISSIONS APPEAR IN THE DRAWINGS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF SUCH ERROR OR OMISSION. IN THE EVENT OF THE CONTRACTOR FAILING TO GIVE SUCH NOTICE BEFORE CONSTRUCTION AND/OR FABRICATION OF THE WORK, HE WILL BE HELD RESPONSIBLE FOR THE RESULTS OF ANY SUCH ERRORS, DISCREPANCIES OR OMISSIONS AND THE COST OF RECTIFYING SAME.



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

MECHANICAL NOTES

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AM-2.0

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NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:
MARCO'S PIZZA INTERIOR UP-FIT
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

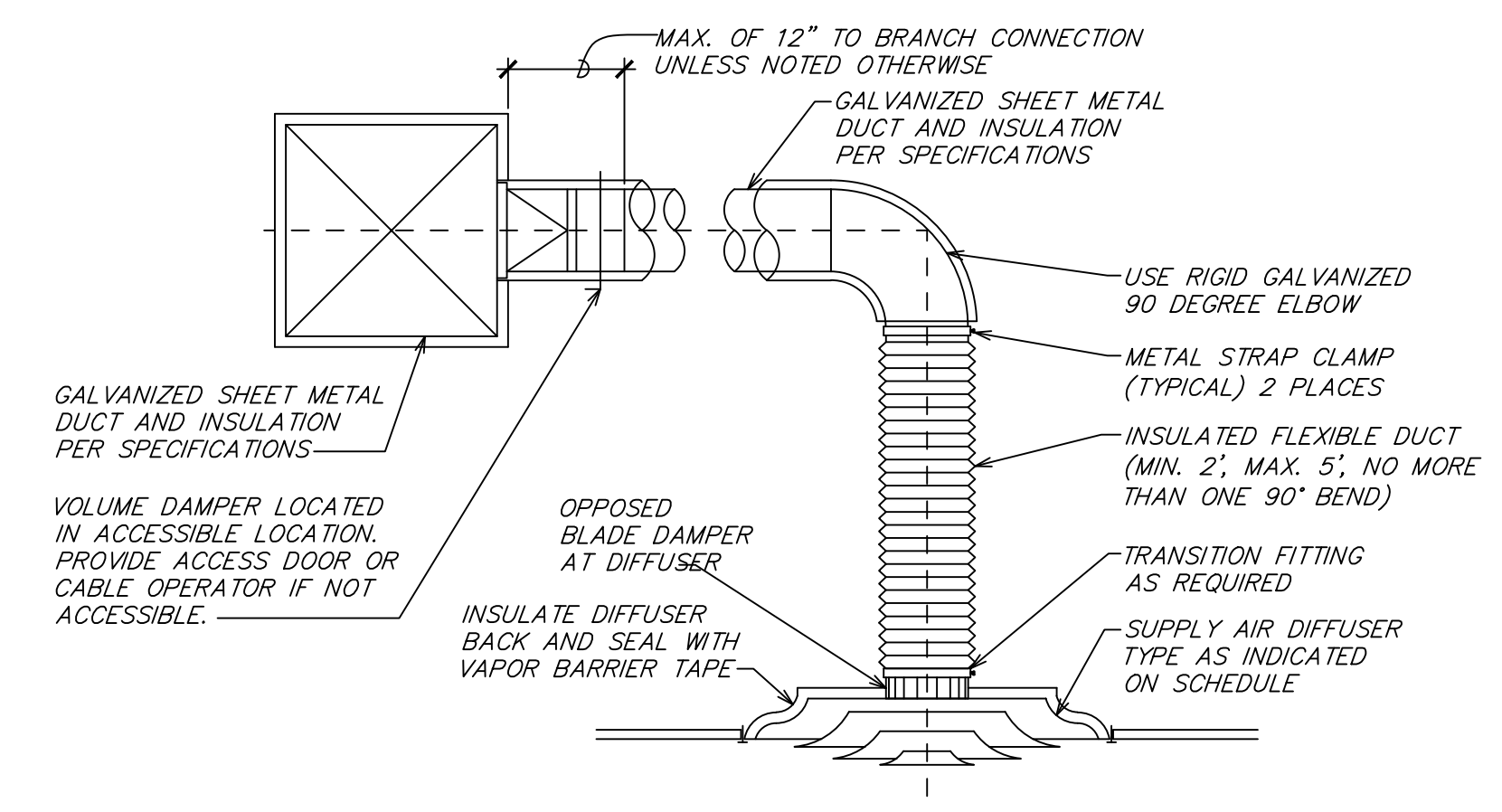
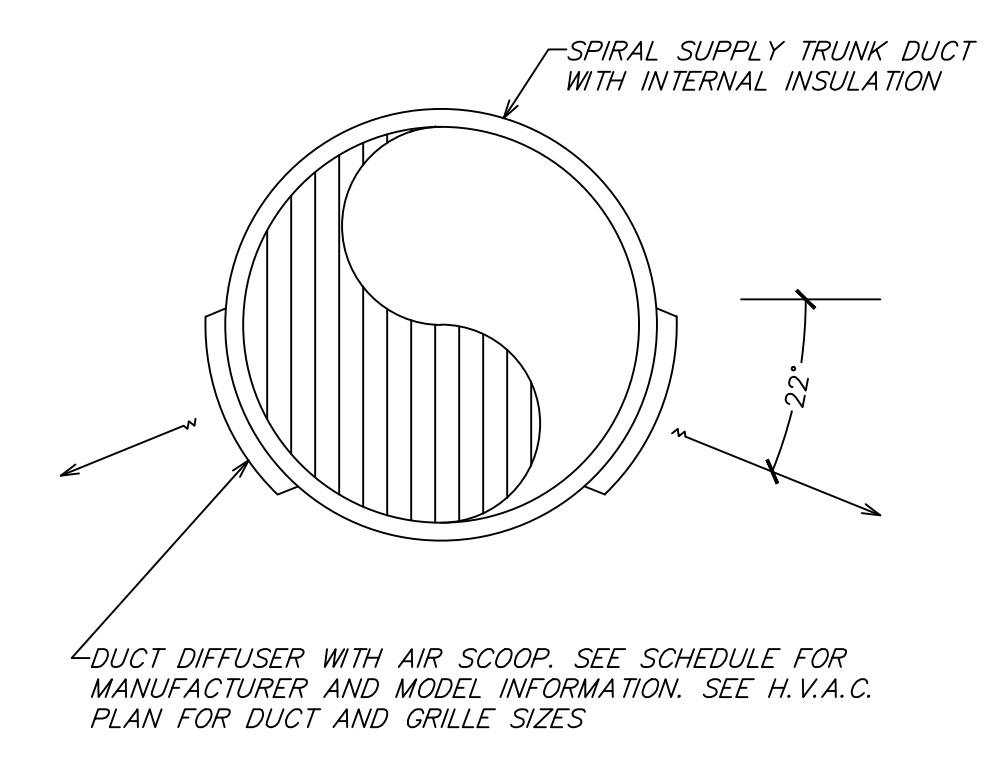
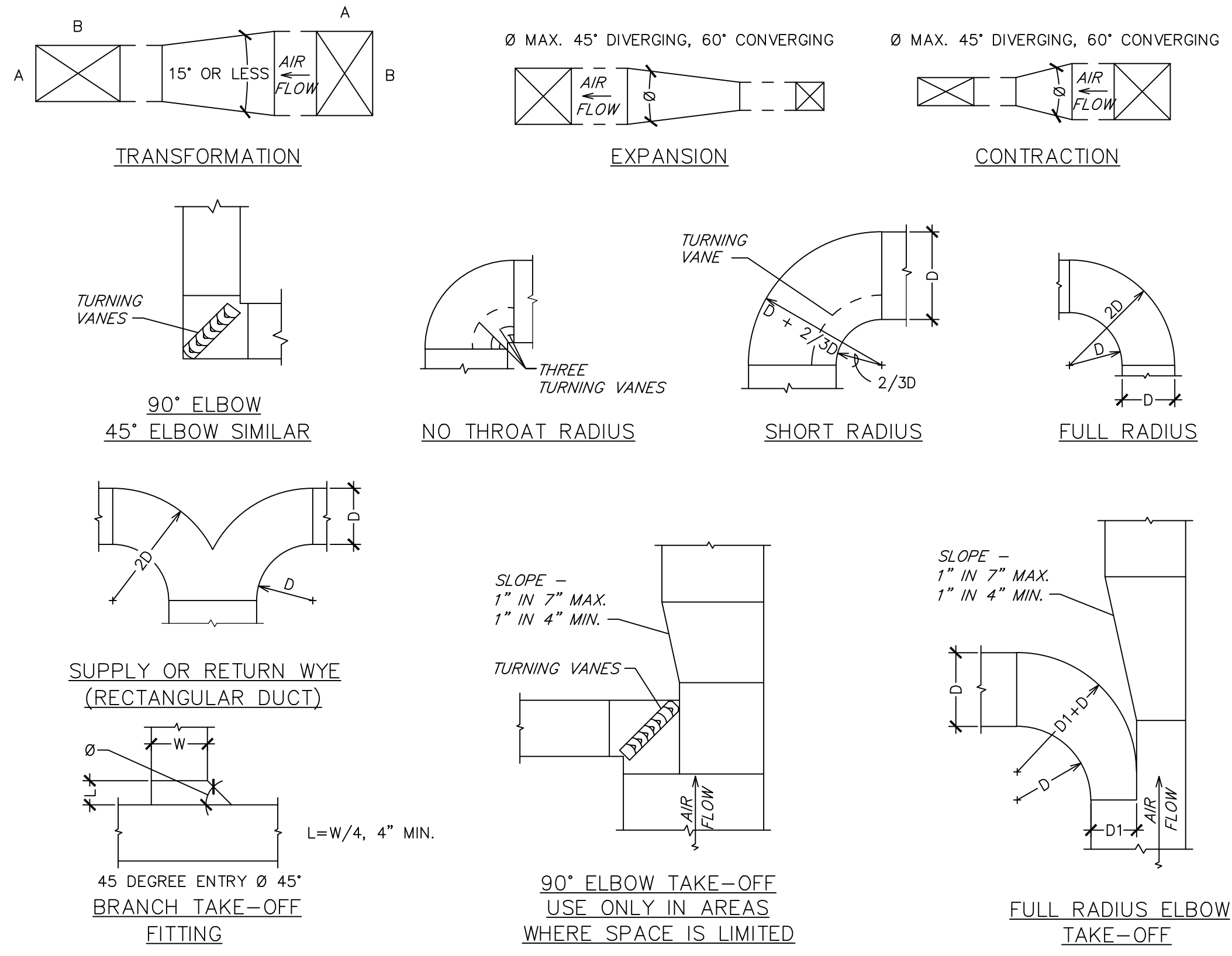
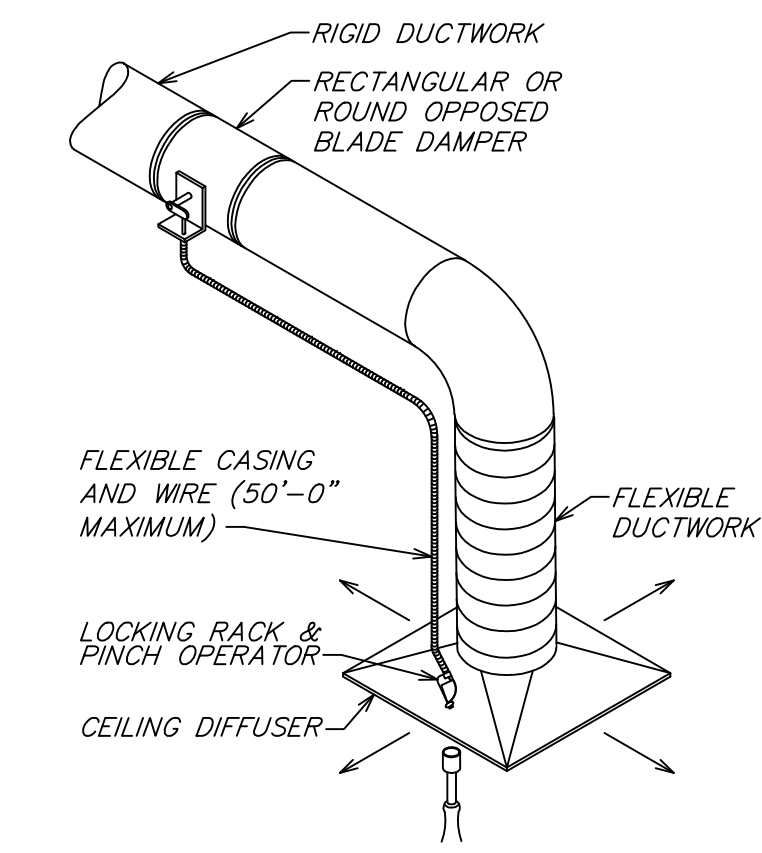
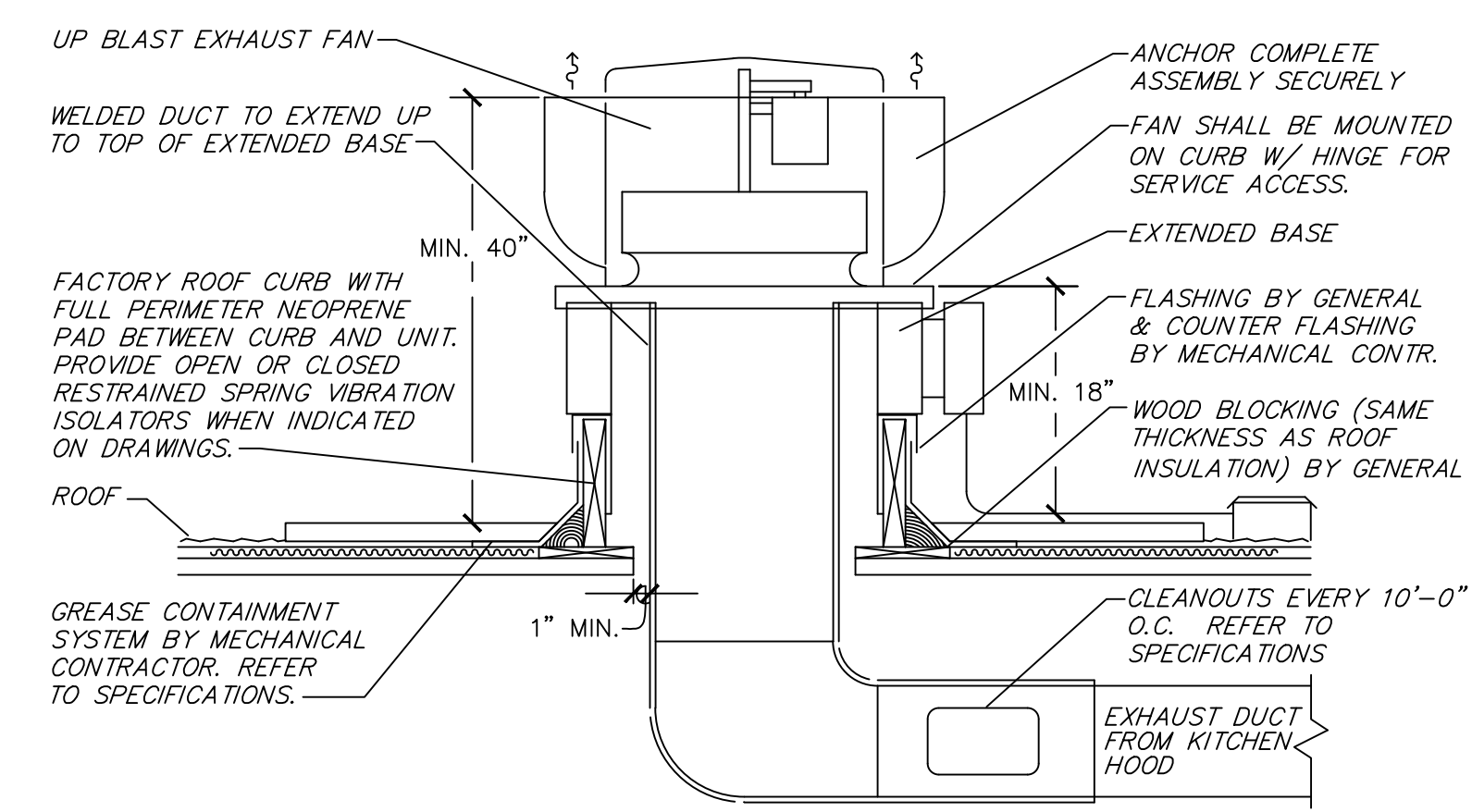
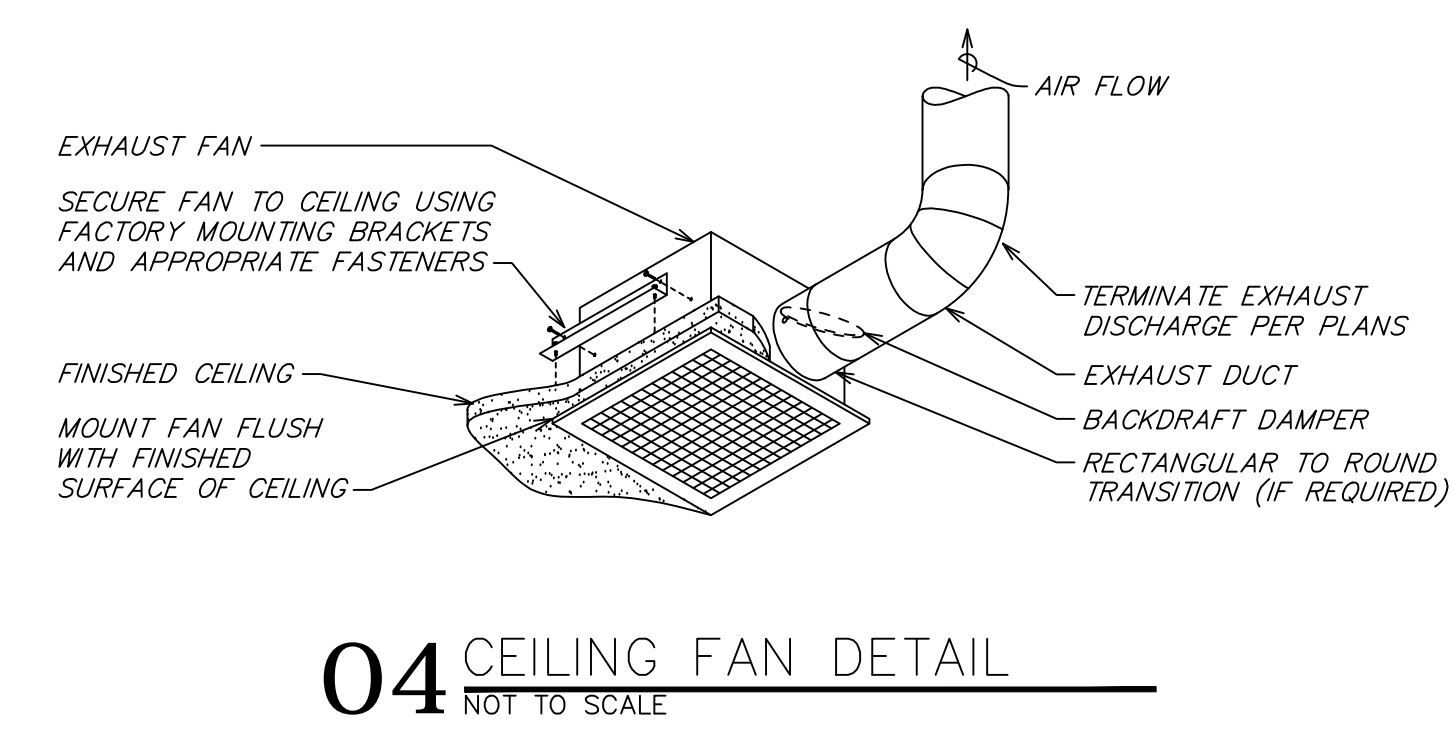
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MECHANICAL DETAILS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

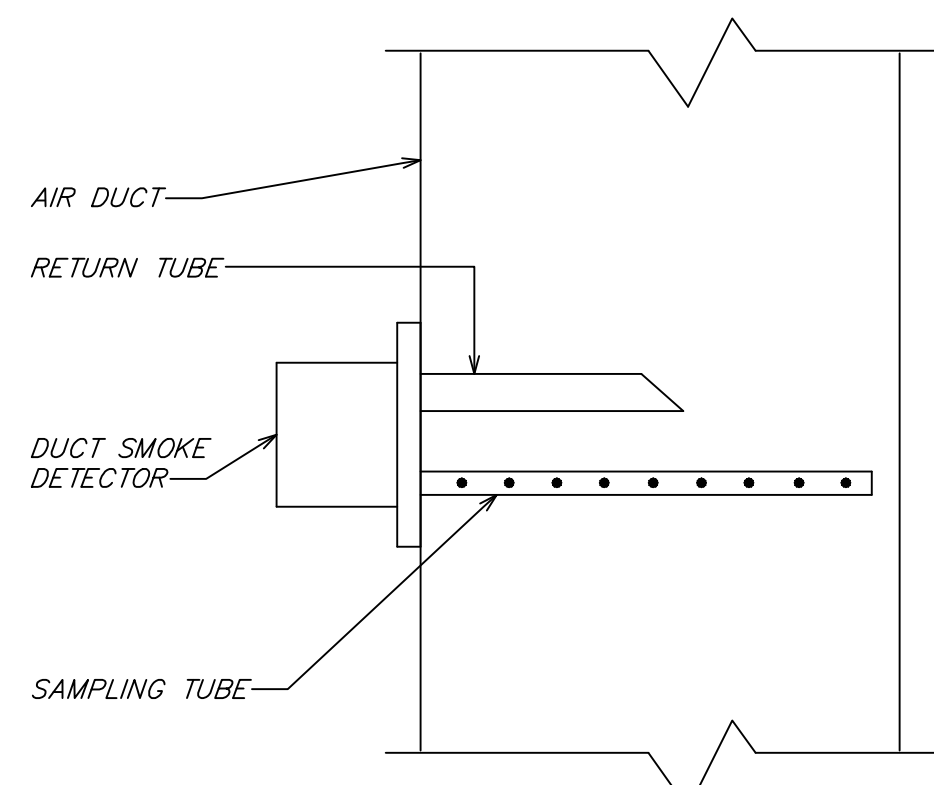
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02 DUCT MOUNTED DIFFUSER DETAIL NOT TO SCALE

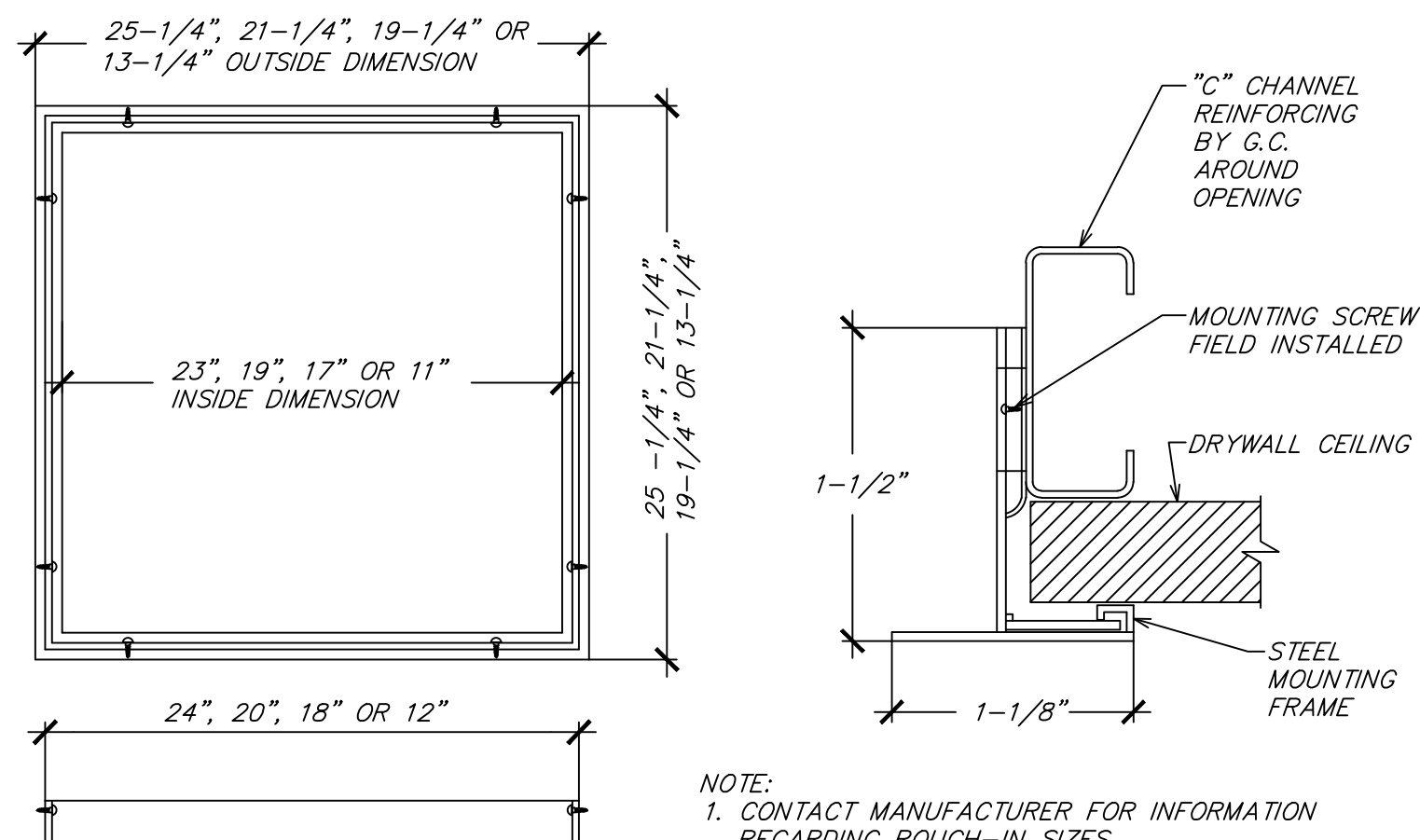
03 TYPICAL DIFFUSER CONNECTION NOT TO SCALE

01 DUCTWORK DETAILS NOT TO SCALE



NOTE:
1. DUCT SMOKE DETECTOR ON RETURN AND/OR SUPPLY SIDE DUCT AND SHUTDOWN RELAY SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR FOR INSTALLATION BY THE MECHANICAL CONTRACTOR. ALL WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR.

07 DUCT SMOKE DETECTOR DETAIL
NOT TO SCALE

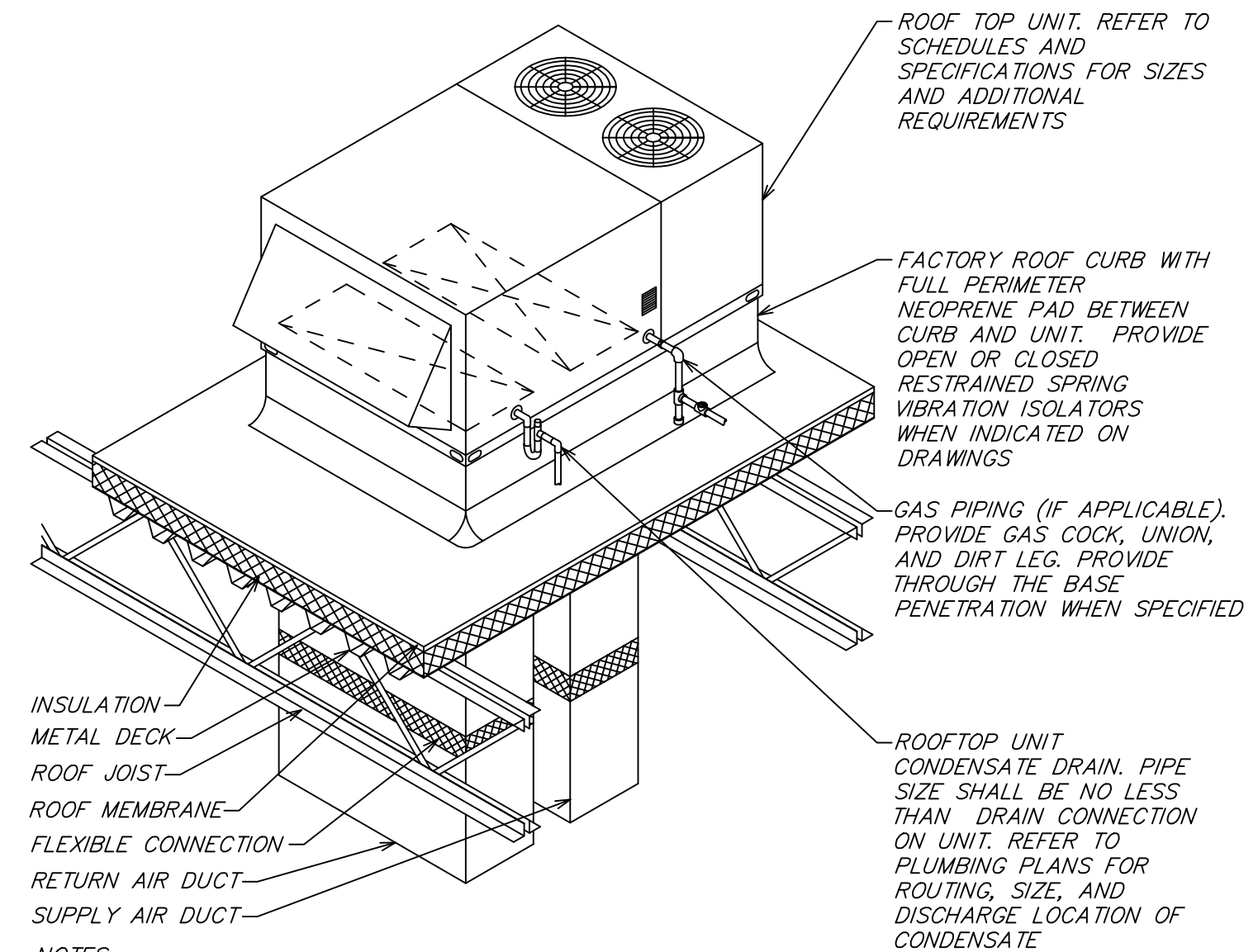


NOTE:
1. CONTACT MANUFACTURER FOR INFORMATION REGARDING ROUGH-IN SIZES.

05 TYPICAL DRYWALL MOUNTING FRAME DETAIL
NOT TO SCALE

DIA.	WIRE DIA.	ROD	STRAP
10" DN	ONE 12 GA.	1/4"	1" x 22 GA.
11-18"	TWO 12 GA. OR ONE 8 GA.	1/4"	1" x 22 GA.
19-24"	TWO 10 GA.	1/4"	1" x 22 GA.
25-36"	TWO 8 GA.	3/8"	1" x 20 GA.
37-50"	-	TWO 3/8"	TWO 1" x 20 GA.
51-60"	-	TWO 3/8"	TWO 1" x 18 GA.
61-84"	-	TWO 3/8"	TWO 1" x 16 GA.
85-96"	-	TWO 1/2"	TWO 1 1/2" x 16 GA.

NOTES:
1. STRAPS ARE GALVANIZED STEEL; RODS ARE UNCOATED OR GALVANIZED STEEL; WIRE IS BLACK ANNEALED, BRIGHT BASIC OR GALVANIZED STEEL. ALL ARE ALTERNATIVES.
2. TABLE ALLOWS FOR CONVENTIONAL WALL THICKNESS, AND JOINT SYSTEMS PLUS ONE LB/SF OF INSULATION WEIGHT. IF HEAVIER DUCTS ARE TO BE INSTALLED, ADJUST HANGER SIZES TO BE WITHIN THEIR LOAD LIMITS.



NOTES:
1. PROVIDE THROUGH CURB ELECTRICAL CONNECTIONS. NO ROOF PENETRATIONS OF ELECTRICAL CONDUITS WILL BE ACCEPTABLE.
2. DUCT SMOKE DETECTOR SHALL BE MOUNTED AND INSTALLED PER LOCAL CODES.

02 TYPICAL ROOF TOP UNIT DETAIL
NOT TO SCALE

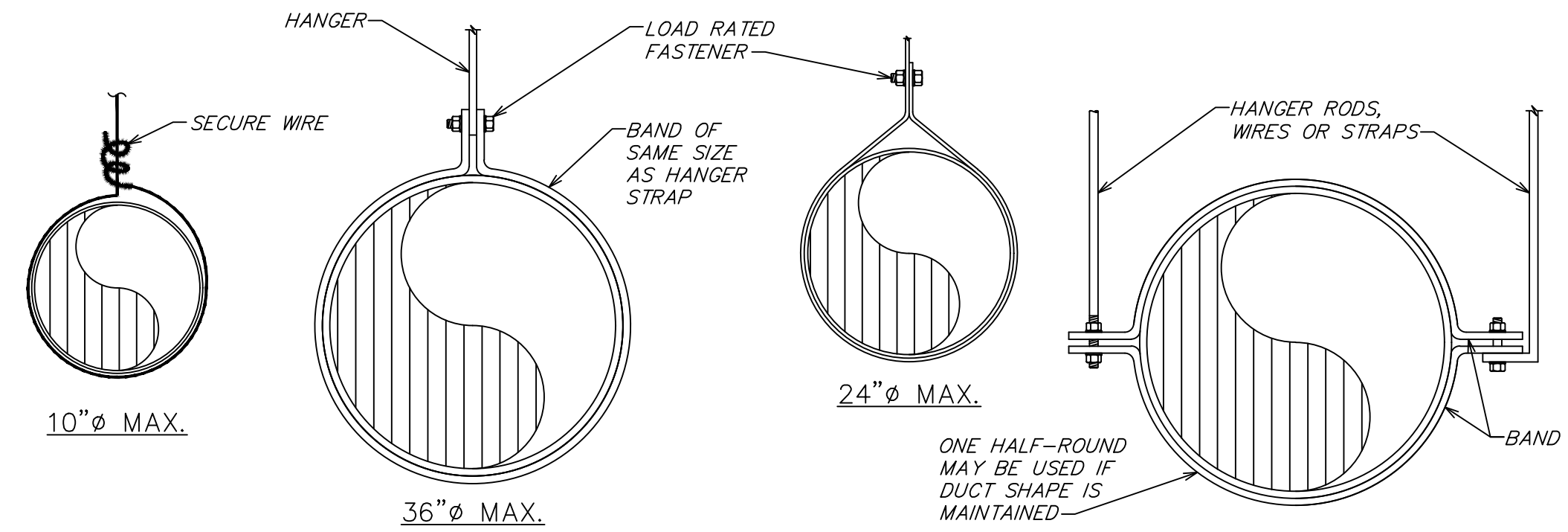
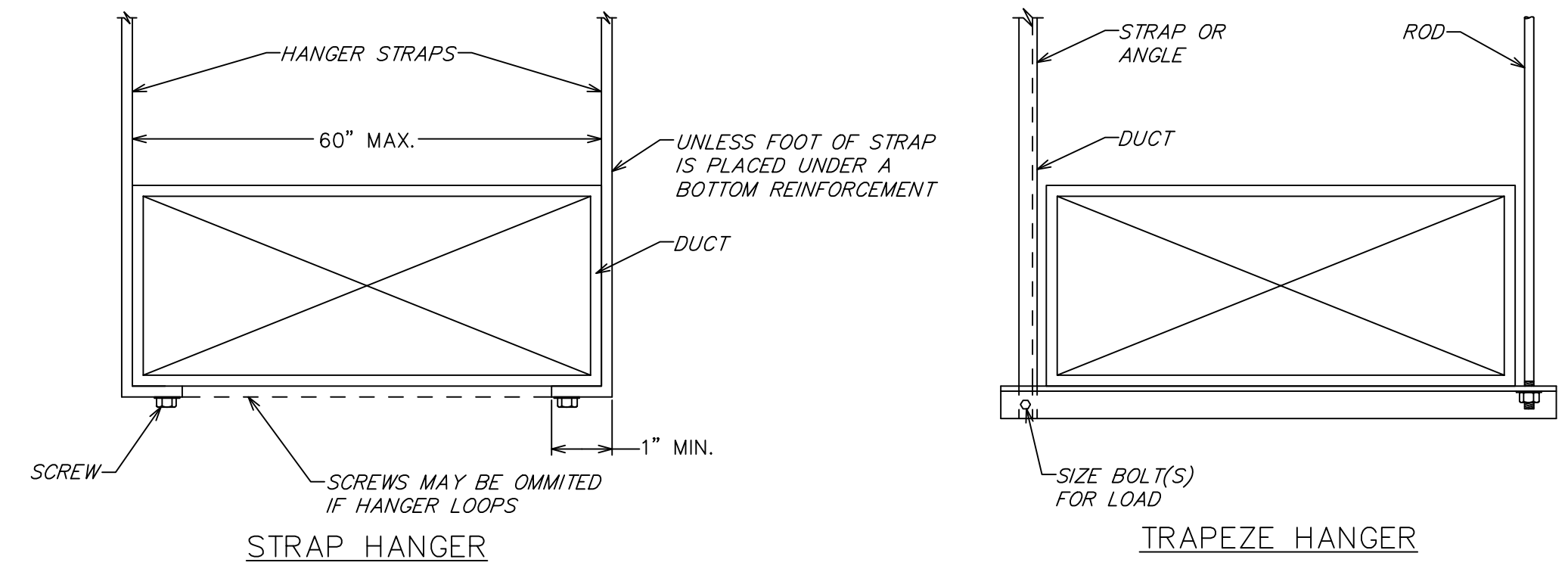
03 ROUND DUCT HANGER TABLE
NOT TO SCALE

MAXIMUM HALF OF DUCT PERIMETER	PAIR AT 10 FT. SPACING		PAIR AT 8 FT. SPACING		PAIR AT 5 FT. SPACING		PAIR AT 4 FT. SPACING	
	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD	STRAP	WIRE/ROD
P/2 = 30"	1" x 22 GA.	10 GA. (.135")	1" x 22 GA.	10 GA. (.135")	1" x 22 GA.	12 GA. (.106")	1" x 22 GA.	12 GA. (.106")
P/2 = 72"	1" x 18 GA.	3/8"	1" x 20 GA.	1/4"	1" x 22 GA.	1/4"	1" x 22 GA.	1/4"
P/2 = 96"	1" x 16 GA.	3/8"	1" x 18 GA.	3/8"	1" x 20 GA.	3/8"	1" x 22 GA.	1/4"
P/2 = 120"	1 1/2" x 16 GA.	1/2"	1" x 16 GA.	3/8"	1" x 18 GA.	3/8"	1" x 20 GA.	1/4"
P/2 = 168"	1 1/2" x 16 GA.	1/2"	1 1/2" x 16 GA.	1/2"	1" x 16 GA.	3/8"	1" x 18 GA.	3/8"
P/2 = 192"	---	1/2"	1 1/2" x 16 GA.	1/2"	1" x 16 GA.	3/8"	1" x 16 GA.	3/8"
P/2 = 193" UP	SPECIAL ANALYSIS REQUIRED							

WHEN STRAPS ARE LAP JOINED USE THESE MINIMUM FASTENERS:	SINGLE HANGER MAXIMUM ALLOWABLE LOAD	
	STRAP	WIRE OR ROD (DIA.)
1" x 18, 20, 22 GA. - TWO #10 OR ONE 1/4" BOLT	1" x 22 GA. - 260 LBS.	0.106" - 80 LBS.
1" x 16 GA. - TWO 1/4" DIA.	1" x 20 GA. - 320 LBS.	0.135" - 120 LBS.
1" x 16 GA. - TWO 3/8" DIA.	1" x 18 GA. - 420 LBS.	0.162" - 160 LBS.
PLACE FASTENERS IN SERIES, NOT SIDE BY SIDE.	1" x 16 GA. - 700 LBS.	1/4" - 270 LBS.
	1 1/2" x 16 GA. - 1100 LBS.	3/8" - 680 LBS.
		1/2" - 1250 LBS.
		5/8" - 2000 LBS.
		3/4" - 3000 LBS.

NOTES:
1. DIMENSIONS OTHER THAN GAUGE ARE IN INCHES.
2. TABLES ALLOW FOR DUCT WEIGHT, 1 LB./SF INSULATION WEIGHT AND NORMAL REINFORCEMENT AND TRAPEZE WEIGHT, BUT NO EXTERNAL LOADS.
3. STRAPS ARE GALVANIZED STEEL; OTHER MATERIALS ARE UNCOATED STEEL.
4. ALLOWABLE LOADS FOR P/2 ASSUME THAT DUCTS ARE 16 GA. MAXIMUM, EXCEPT THAT WHEN MAXIMUM DUCT DIMENSION (W) IS OVER 60" THEN P/2 MAXIMUM IS 1.25 W.
5. 12, 10 OR 8 GA. WIRE IS STEEL OF BLACK ANNEALED, BRIGHT BASIC OR GALVANIZED TYPE.
6. DUCTS SHALL BE SUPPORTED AT INTERVALS NOT EXCEEDING 10 FEET.

04 RECTANGULAR DUCT HANGER TABLE
NOT TO SCALE



NOTE: HANGERS MUST NOT DEFORM DUCT SHAPE

01 DUCT HANGER DETAIL
NOT TO SCALE



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
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FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



SHEET TITLE:

MECHANICAL DETAILS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AM-2.2

SHEET 4 OF 8

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GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

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FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



INTERIOR UP-FIT
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

MECHANICAL SPECIFICATIONS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AM-3.0

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SECTION 230000 – HVAC GENERAL CONDITIONS

PART 1 GENERAL

1.01 **APPLICABILITY**

A. This section supplements all sections of the Specifications for Division 23 and shall apply to all phases of work hereinafter specified, shown on the Drawings, or required to provide a complete installation of approved HVAC systems.

1.02 **DEFINITIONS**

A. "Work" is hereby defined as, "The construction and services required by the Contract Documents whether completed or partially completed or materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project."

B. "Furnish" is hereby defined as, "To supply and deliver, unload, and inspect for damage."

C. "Install" is hereby defined as, "To unpack, assemble, erect, apply, place, finish, cure, protect, clean, connect, and place into operation into the work."

D. "Provide" is hereby defined as, "To furnish and install."

E. "Connect" is hereby defined as, "To bring service to the equipment and make final attachment including necessary ductwork, piping, wiring, etc."

F. "Concealed" is hereby defined as, "Hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction, in crawl spaces, or buried."

G. "Exposed" is hereby defined as, "Not installed underground nor concealed as defined by the Specifications."

H. "Drawings" is hereby defined as, "All plans, details, equipment schedules, diagrams, sketches, etc. issued for the construction of the work."

1.03 **CODES AND STANDARDS**

A. Perform work in accordance with the applicable Building Code, Electrical Code, Fire Code, Mechanical Code, Plumbing Code, Energy Code, and all other applicable codes, amendments, and ordinances. Also perform all work in accordance with the Americans with Disabilities Act (ADA) and the Authority Having Jurisdiction (AHJ) including Fire Marshal(s).

B. Perform work in accordance with Landlord requirements, including any Tenant Criteria Manuals and Lease Exhibits, where applicable.

C. Perform work in accordance with the applicable utility companies serving the project. Make all arrangements with the utility companies for proper coordination of the work.

D. Recognized Standards: Design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these Specifications shall conform to the latest publications or standard rules of Underwriters Laboratories, Inc. (U.L.), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), and National Electrical Code (NEC), National Fire Protection Association (NFPA), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and the Sheet Metal and Air Conditioning Contractors' National Association (SMACNA).

E. The Contract Documents shall take precedence where the Contract Documents exceed code, Landlord, utility, or recognized standards requirements.

1.04 **PERMITS AND FEES**

A. Fees, licenses, fees, inspections and arrangements required for the work under this Contract shall be obtained by the Contractor at his expense, unless otherwise indicated.

1.05 **CONTRACT DRAWINGS**

A. The Contractor is responsible to obtain, fully understand, and coordinate the work with the complete set of Contract Documents. Any required corrections, including all associated costs, arising from issues caused by the Contractor's failure to understand and/or coordinate the work with the complete set of Contract Documents are the Contractor's sole responsibility.

B. Work under these sections is diagnostic unless indicated otherwise and is intended to convey the scope of work and indicate the general arrangement of ductwork, piping, equipment, and accessories. Follow these drawings in laying out the work and installation of the installation of the equipment.

C. Wherever a question exists as to the exact intended location of ductwork, piping, or equipment, obtain instructions from the Architect before proceeding with the work.

C. Notify the Architect for resolution if a discrepancy is discovered within the Contract Documents. Failure of the Contractor to notify the Architect of discrepancies shall result in the resolution becoming the Contractor's responsibility and subject to the Architect's review and possible rejection. Should the Architect reject a discrepancy resolution of which they were not notified, the Contractor is fully responsible for the installation of the equipment including all associated costs, until approval of the installation is given by the Architect.

1.06 **EXISTING CONDITIONS**

A. Verify all existing conditions prior to beginning work.

B. Any existing conditions indicated in the Contract Documents are based on information provided by others including but not limited to field verification. The Contractor shall adjust for actual field conditions at no additional expense to the Owner.

C. The Contractor shall visit the project site, review existing conditions against the Contract Documents, and familiarize himself with the work prior to bidding and start of the work. By signing the Contract, the Contractor acknowledges the site visit has been completed and the existing conditions are acceptable.

D. The Contractor shall notify the Architect of major discrepancies in writing so the appropriate modifications to the design can be made without delay to the project. The Contractor assumes full responsibility of adjusting for discrepancies of which the Architect is not informed.

1.07 **SUBMITTALS**

A. Shop Drawings:

- Furnish the Architect shop drawing portfolios containing names of manufacturer and cut sheets of equipment to be used on the project. Use manufacturer's specification sheets identified by number indicated on drawings or schedules. Indicate catalog number on the cut sheets. As applicable, provide construction data, weight and dimensional data, voltage ratings, performance data, listing data, pump curves, fan curves and sound data as part of the shop drawing submittal.
- Submittals are reviewed only for general compliance with the Contract Documents. Dimensions, quantities and details are not checked during submittal review. Review of the submittals does not relieve the Contractor of the responsibility for providing all materials, equipment and accessories necessary for a complete and operational system meeting the requirements of the project and the intent of the Contract Documents. The responsibility for coordination of substituted materials and equipment lies solely with the substituting Contractor.
- Electrical Characteristics: Verify that proper power supply is available prior to ordering equipment. Verify proper voltage, phase and current rating of power supply and any deviations prior to order. Responsibility for verification of proper power supply voltage and any product returns or damage resulting from incorrect connections shall rest with this Contractor.

B. Project Record Documents: Provide as specified.

C. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listing.

D. Test Reports: Provide as specified.

1.08 **QUALITY ASSURANCE**

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum five years experience.

B. Installer Qualifications: Company specializing in performing the work of this section, with minimum five years experience.

C. Products:

- Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

D. All equipment and components shall be free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced without any change in the Contract amount.

E. Equipment performance and accessories shall be as scheduled on the Drawings and specified herein. Inclusion in both locations is not a prerequisite to inclusion in the Contract. Equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system, including all required components reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents.

F. Code or utility company requirements shall supersede any conflicting requirements of this section.

1.09 **DELIVERY, STORAGE, AND HANDLING**

A. Rooftop Equipment: Protect units from physical damage by storing off site until roof mounting curbs are in place, ready for immediate installation of units.

B. Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

C. Protect dampers and accessories from damage to operating linkages, blades and finishes.

D. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

E. Protect motors stored on site from weather and moisture by maintaining factory covers and suitable weather-proof covering. For extended outdoor storage, remove motors from equipment and store separately.

1.10 **WARRANTY AND GUARANTEE**

A. Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.

B. Provide one year manufacturer warranty for pumps.

C. Provide three year manufacturer warranty for solid state ignition modules.

D. Provide five year manufacturer warranty for compressors, heat exchangers, condensing units, and electronic air cleaners.

PART 2 PRODUCTS

2.01 **SUBSTITUTIONS**

A. The manufacturers listed are listed to set minimum standards for quality, design, and functionality. The products of other manufacturers may be submitted, at the Contractor's option, during shop drawing review unless indicated otherwise. The

products of other manufacturers shall meet or exceed all requirements of the Contract Documents. The Contractor accepts all responsibility for costs and coordination issues arising out of the substitution of materials or equipment, and the coordination of such substitutions with all other contractors and subcontractors.

B. The Contractor may use any of the following ductwork, piping or insulation materials at his option, provided the selected material meets with the approval of all State, local authorities and any utility company requirements. Verification of compliance of the selected material is the sole responsibility of the installing Contractor.

PART 3 EXECUTION

3.01 **COORDINATION OF WORK**

A. Examine the Contract Documents as a whole for the work of other trades. Coordinate all work accordingly.

B. Promptly report to the Architect any delay or difficulties encountered in the installation of the work, which might prevent prompt and proper installation, or make it unsuitable to connect with or receive the work of others. Failure to so report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.

C. Plan, lay out, and coordinate the work with all trades well enough in advance so that it proceeds with a minimum of interference to work that has not been completed and work that is in progress. Inform all trades of openings required for the work and provide all special frames, sleeves, and anchor bolts required. The HVAC system layout may be altered to suit the conditions with engineer approval, prior to the installation of any work and without additional cost to the Owner. Conflicts arising from lack of coordination shall be this Contractor's responsibility.

D. Perform all work in conformity with the Contract Documents and afford other trades reasonable opportunity for the execution of their work. Properly connect and coordinate this work with the work of other trades at such time and in such a manner as not to delay or interfere with their work.

E. All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.

F. All temperature control wiring, thermostat wiring, damper interlock wiring, control panel interlock wiring and miscellaneous low voltage wiring associated with the equipment furnished or installed under this contract shall be furnished and installed by the mechanical contractor or his sub-contractor. All wiring installed under this contract shall be in full compliance with the National Electrical Code, all State and local codes and requirements of the Electrical Specifications for this project.

3.02 **EXAMINATION**

A. Verify field measurements are as indicated on the Drawings.

B. Verify all equipment locations prior to rough-in. Maintain adequate equipment service clearance per manufacturer and code.

C. Verify routing of all ductwork and piping in field prior to fabrication or installation. Verify adequate clearance with structure, light fixtures, and ceiling heights.

D. Verify that proper fuel and power supply is available for connection.

3.03 **INTERFACE WITH OTHER PRODUCTS**

A. Install ductwork, pipe, equipment, and accessories to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

3.04 **FIELD QUALITY CONTROL**

A. Provide tests as necessary to establish the adequacy, quality, safety, completed status, and suitable operation of each system. Tests shall be conducted under the supervision of the Architect.

3.05 **CLEANING AND REPAIR**

A. Clean fire suppression parts to remove harmful materials.

B. Clean exposed surfaces of all ductwork pipe, equipment, and accessories of all dirt, debris, splatter, and other deleterious materials. Follow the manufacturer's recommendations for cleaning as applicable.

C. Repair or replace damaged ductwork, pipe, equipment, and accessories, as directed by and to the satisfaction of the Architect, where marring or disfigurement has occurred. All pipe, equipment, and accessories shall be new.

3.06 **PROJECT CLOSEOUT**

A. Project Record Documents: At project closeout, provide one printed copy and one electronic copy of project record drawings to the Owner. Information contained on project record drawings shall include, as a minimum:

- Actual locations of all equipment, ductwork, air inlets/outlets, accessories, etc.
- Actual routing of ductwork with sizes and elevations.
- Actual locations of control devices including valves and volume dampers.

B. Operation and Maintenance Data: At project closeout, submit to the Architect two copies of descriptive literature, maintenance and operation data for all hvac equipment, control systems, accessories, and materials used. Include maintenance procedures, intervals, and parts list of each item installed under this contract.

C. Maintenance Materials: At project closeout, furnish to the Owner the following:

- One set of replacement filters for all hvac equipment.
- The maintenance contract for the hvac system, if applicable.

D. Test Reports: At project closeout, submit to the Architect two copies of the following:

- Testing, Adjusting and Balancing Report

END OF SECTION

SECTION 230548 – VIBRATION AND SEISMIC CONTROLS FOR HVAC PIPING AND EQUIPMENT

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Vibration Isolators.

B. Equipment:

- Fans, axial and centrifugal
- Packaged roof top equipment

1.02 **SUBMITTALS**

A. Product Data: Provide schedule of vibration isolator type with location and load on each.

PART 2 PRODUCTS

2.01 **MANUFACTURERS**

Isolation Technology, Inc.; Kinetics Noise Control, Inc.; Mason Industries.

2.02 **VIBRATION ISOLATORS**

A. Restrained Open Spring Isolators:

- Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection. Color code springs for load carrying capacity.
- Spring Mounts: Provide with leveling devices, minimum 0.25 inch thick neoprene sound pads, and zinc chromate plated hardware.
- Sound Pads: Size for minimum deflection of 0.05 inch; meet requirements for neoprene pad isolators.
- Restraint: Provide heavy mounting frame and limit stops.
- For Exterior and Humid Areas: Hot dipped galvanized housings and neoprene coated springs.

B. Spring Hanger:

- Springs: Minimum horizontal stiffness equal to 75 percent vertical stiffness, with working deflection between 0.3 and 0.6 of maximum deflection. Color code springs for load carrying capacity.
- Housings: Incorporate neoprene isolation pad meeting requirements for neoprene pad isolators or rubber hanger with threaded insert.
- Misalignment: Capable of 20 degree hanger rod misalignment.
- For Exterior and Humid Areas: Hot dipped galvanized housings and neoprene coated springs.

C. Neoprene Pad Isolators:

- Rubber or neoprene waffle pads.
- Hardness: 30 durometer.
- Thickness: Minimum 1/2 inch.
- Maximum Loading: 50 psi.
- Rib Height: Maximum 0.7 times width.
- Configuration: Single layer.

D. Rubber Mount or Hanger: Molded rubber designed for 0.4 inch deflection with threaded insert.

E. Glass Fiber Pads: Neoprene jacketed pre-compressed molded glass fiber.

PART 3 EXECUTION

3.01 **INSTALLATION**

A. Install in accordance with manufacturer's instructions.

B. On closed spring isolators, adjust so side stabilizers are clear under normal operating conditions.

C. Prior to making piping connections to equipment with operating weights substantially different from installed weights, block up equipment with temporary shims to final height. When full load is applied, adjust isolators to load to allow shim removal.

D. Support piping connections to equipment mounted on isolators using isolators or resilient hangers to nearest flexible pipe connector.

E. Provide flexible connections on all piping and ductwork connections to equipment. Refer to other sections of this Specification for the acceptable types of flexible connectors to be used.

F. Selection of type, thickness and deflection of vibration isolation shall be by the vibration control manufacturer based on the specific equipment type and size, as scheduled on the Drawings and indicated below.

3.02 **SCHEDULES**

A. Equipment Isolation Schedule: (Minimum deflection as sized by the isolation equipment manufacturer.)

- Fans, axial and centrifugal.
 - Small fans up to 22" diameter wheel:
 - Rubber Mount or Hanger
 - Packaged roof top equipment.
 - Above grade roof structures:
 - Base: Roof Curb.
 - Isolation: Full perimeter Neoprene Pad between curb and units.
 - Provide restrained spring vibration isolation curbs when indicated on the Drawings.

END OF SECTION

SECTION 230593 – TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 GENERAL

1.01 **SECTION INCLUDES**

A. Testing, adjustment, and balancing of air systems.

B. Measurement of final operating condition of HVAC systems.

C. Independent agency requirements.

1.02 **SUBMITTALS**

A. Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract. Provide TAB Agency qualifications.

B. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.

- Submit to the Construction Manager within two weeks after completion of testing, adjusting, and balancing, where applicable.
- Provide reports in bound manuals, complete with index page and indexing tabs, with cover identification at front and side. Include set of reduced drawings with air outlets and equipment identified to correspond with data sheets, and indicating thermostat and equipment locations.
- Include actual instrument list, with manufacturer name, serial number, and date of calibration.
- Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
- Include the following on the title page of each report:
 - Name, address and telephone number of Testing, Adjusting, and Balancing Agency.
 - Project: Name; location; Engineer; Contractor; Report date.

1.03 **WARRANTY**

A. The Balancing Contractor shall be prepared to return to the site at no additional cost to re-adjust air quantities as required to provide uniform temperatures, eliminate drafts and objectionable noises during the first year of occupancy, including one full heating and one full cooling season, after the acceptance of the final balancing report.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 **GENERAL REQUIREMENTS**

A. Perform total system balance in accordance with one of the following:

- AABC WN-1, AABC National Standards for Total System Balance.
- ASHRAE Std 111, Practice for Measurement, Testing, Adjusting and Balancing of Building Heating, Ventilation, Air-Conditioning, and Refrigeration Systems.
- NEB Procedural Standards for Testing Adjusting Balancing of Environmental Systems.
- SMACNA HVAC Systems Testing, Adjusting, and Balancing.

B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the Project.

C. Where HVAC systems and/or components interface with life safety systems, including fire and smoke detection, alarm, and control, coordinate scheduling and testing and inspection procedures with the authorities having jurisdiction.

D. TAB Agency Qualifications:

- Company specializing in the testing, adjusting, and balancing of systems specified in this Section with a minimum of five years experience.
- Certified by one of the following:
 - AABC, Associated Air Balance Council; upon completion submit AABC National Performance Guaranty.
 - NEBB, National Environmental Balancing Bureau.
 - TABB, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute.
- The TAB Agency must be a completely independent, third party balancing contractor with no financial, common owners or other ties to the installing contractors.

E. TAB Supervisor and Technician Qualifications: Certified by some organization as TAB operators.

3.02 **ADJUSTMENT TOLERANCES**

A. Air Handling Systems; Air Outlets and Inlets; Hydronic Systems: Adjust to within plus or minus 15 percent of design.

3.03 **RECORDING AND ADJUSTING**

A. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

B. Mark on the Drawings the locations where traverse and other critical measurements were taken and cross reference the location in the final report.

3.04 **AIR SYSTEM PROCEDURES**

A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities.

B. Make air quantity measurements in ducts by Pitot tube traverse of entire cross sectional area of duct.

C. Measure air quantities at air inlets and outlets.

D. Adjust distribution system to obtain uniform space temperatures free from objectionable drafts and noise.

E. Use volume control devices to regulate air quantities only to extend that adjustments do not create objectionable air motion or sound levels. Effect volume control by duct internal devices such as dampers and splitters. Do not use diffuser, grille or register integral dampers for balancing adjustments unless the plans do not indicate duct mounted devices.

F. Vary total system air quantities by adjustment of fan speeds. Provide drive changes required at no additional expense to the Owner. Vary branch air quantities by damper regulation.

G. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50 percent loading of filters.

H. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions in all operating modes as indicated in the sequence of control.

I. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.

J. Where modulating dampers are provided, take measurements and balance at extreme conditions and at all intermediate operating conditions specified in the sequence of control. Balance variable volume systems at maximum air flow rate, full cooling, and at minimum air flow rate, full heating.

3.05 **SCOPE**

A. Equipment Requiring Testing, Adjusting, and Balancing (if present on the project):

- HVAC Pumps; Boilers; All Air Handling Equipment; All Packaged Heating and/or Cooling Equipment; All Coil; All Heat Exchangers; Terminal Heat Transfer Units; Air Terminal Units; Air inlets and Outlets

3.06 **MINIMUM DATA TO BE REPORTED**

A. Report (as applicable to the project):

- Summary Comments:
 - Design versus final performance
 - Notable characteristics of system
 - Summary of outdoor and exhaust flows to indicate amount of building pressurization
 - Nomenclature used throughout report and test conditions.
- Electric Motors and drives:
 - Manufacturer; Model/Frame; HP/BHP; Phase, voltage, amperage; nameplate, actual, no load; RPM; Service factor; Sheave Make/Size/Bore.
 - V-Belt Drives: Identification/location; Required driven RPM; Driven sheave, diameter and RPM; Belt, size and quantity.
- Cooling and Heating Coils:
 - Identification/number; Manufacturer
 - Air flow, design and actual
 - Air pressure drop, design and actual
 - Entering and leaving air DB and WB temperature, design and actual
 - Water flow, design and actual (if applicable)
 - Water pressure drop, design and actual (if applicable)
 - Entering and leaving water temperature, design and actual (if applicable)
- Air Moving Equipment:
 - Manufacturer; Model number; Serial number; Arrangement/Class/Discharge
 - Air flow, specified and actual
 - Inlet; Discharge; Total static pressure (total external), specified and actual
- Air Distribution Tests:
 - Air terminal number
 - Room number/location
 - Terminal type
 - Terminal size
 - Area factor
 - Design velocity
 - Design air flow



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
540 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

MECHANICAL SPECIFICATIONS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AM-3.1

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

8. Test (final) velocity
9. Test (final) air flow
10. Percent of design air flow

END OF SECTION

SECTION 230595 – FIRE STOPPING FOR HVAC SYSTEMS

PART 1 GENERAL

- 1.01 SECTION INCLUDES
- A. Firestopping materials. Firestopping of all penetrations and interruptions to fire rated assemblies, whether indicated on drawings or not, and other openings indicated.
- 1.02 QUALITY ASSURANCE
- A. Fire Testing: Provide firestopping assemblies of designs which provide the scheduled or specified fire ratings when tested in accordance with ASTM E 814 and ASTM E 119.
 1. Listing in the current classification or certification books of UL or FM will be considered as constituting an acceptable test report.
 2. Current evaluation reports published by CABO, ICBO, or BOCA will be considered as constituting an acceptable test report.
 3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.
 - B. Installer Qualifications: Company specializing in performing the work of this section and:
 1. Approved by Factory Mutual Research under FM Standard 4991, Approval of Firestop Contractors, or meeting any two of the following requirements:
 - a. With minimum five years documented experience installing work of this type.
 - b. Where required, licensed by authority having jurisdiction.
 - c. Approved by firestopping manufacturer.
 - C. Code requirements shall supersede any conflicting requirements of this section. The Contractor shall examine the drawings for the architectural work to identify all fire rated, partitions, floors and assemblies and apply the appropriate fire stopping materials and systems to maintain the fire rating of the partition, floor or assembly penetrated based on the construction conditions depicted.

PART 2 PRODUCTS

- 2.01 MANUFACTURERS
- A. A/D Fire Protection Systems Inc.; 3M Fire Protection Products; Specified Technologies, Inc.; USS; Pecora Corporation; Grace Construction Products; Nelson Firestop Products.
- 2.02 FIRESTOPPING ASSEMBLIES
- A. Fire Ratings: Use any system listed by UL or FM or tested in accordance with ASTM E 814 or ASTM E 119 that has F Rating equal to fire rating of penetrated assembly and minimum I Rating Equal to F Rating and that meets all other specified requirements.
- 2.03 MATERIALS
- A. Elastomeric Silicone Firestopping: Single or multiple component silicone elastomeric compound and compatible silicone sealant; conforming to the following:
 1. Durability and Longevity: Permanent.
 2. Color: Manufacturer's standard color.
 - B. Foam Firestopping: Single or multiple component foam compound; conforming to the following:
 1. Durability and Longevity: Permanent.
 2. Color: Manufacturer's standard color.
 - C. Fibered Compound Firestopping: Formulated compound mixed with incombustible non-cabstic fibers; conforming to the following:
 1. Durability and Longevity: Permanent.
 2. Color: Manufacturer's standard color.
 - D. Fiber Packing Material: Mineral or ceramic fiber packing insulation; conforming to the following:
 1. Durability and Longevity: Permanent.
 - E. Firestop Devices: Mechanical device with incombustible or silicone elastomer filler and sheet stainless steel jacket, collar, and flanged stops; conforming to the following:
 1. Durability and Longevity: Permanent; suitable for pedestrian traffic or vehicular traffic where necessary.
 - F. Intumescent Putty: Compound which expands on exposure to surface heat gain; conforming to the following:
 1. Potential Expansion: Minimum 1000 percent.
 2. Durability and Longevity: Permanent.
 3. Color: Manufacturer's standard color.
 - G. Firestop Pillows: Formed mineral fiber pillows; conforming to the following:
 1. Durability and Longevity: Permanent.
 - H. Primers, Sleeves, Forms, and Accessories: Type required for tested assembly design.

PART 3 EXECUTION

- 3.01 INSTALLATION
- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
 - B. Do not cover installed firestopping until inspected by authority having jurisdiction.
 - C. Install labeling required by code.
 - D. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.
 - E. Provide ventilation in areas where solvent-cured materials are being installed.

END OF SECTION

SECTION 230713 – DUCT INSULATION

PART 1 GENERAL

- 1.01 SECTION INCLUDES
- A. Duct insulation.
 - B. Duct liner.
 - C. Insulation jackets.
 - D. Supply, return or exhaust ducts in ceiling spaces.
 - E. Supply, return or exhaust ducts in interior unconditioned areas.
 - F. Supply, return or exhaust ducts in exposed locations.
- 1.02 FIELD CONDITIONS
- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics, and insulation cements.
 - B. Maintain temperature during and after installation for minimum period of 24 hours.

PART 2 PRODUCTS

- 2.01 REQUIREMENTS FOR ALL PRODUCTS OF THIS SECTION
- A. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E 84, NFPA 255, or UL 723.
 - B. Manufacturer: Knauf Fiber Glass; Johns Manville Corporation; Owens Corning Corp.; CertainTeed Corporation.
- 2.02 GLASS FIBER, FLEXIBLE
- A. Insulation: ASTM C 553; flexible, noncombustible blanket.
 1. "K" value: 0.31 at 75 degrees F, when tested in accordance with ASTM C 518.
 2. Maximum Service Temperature: 450 degrees F.
 3. Maximum Water Vapor Sorption: 5.0 percent by weight.
 - B. Vapor Barrier Jacket:
 1. Kraft paper with glass fiber yarn and bonded to aluminumized film.
 2. Moisture Vapor Permeability: 0.029 ng/Pa s m (0.02 perm inch), when tested in accordance with ASTM E 96/E 96M.
 3. Secure with pressure sensitive tape.
 - C. Vapor Barrier Tape:
 1. Kraft paper reinforced with glass fiber yarn and bonded to aluminumized film, with pressure sensitive rubber based adhesive.
 - D. Outdoor Vapor Barrier Mastic:
 1. Vit-e-mulsion type acrylic or mastic, compatible with insulation, black color.
 - E. Tie Wire: Annealed steel, 16 gage.
- 2.03 DUCT LINER
- A. Insulation: Incombustible glass fiber complying with ASTM C 1071; flexible blanket, rigid board, and preformed round liner board; impregnated surface and edges coated with acrylic polymer shown to be fungus and bacteria resistant by testing to ASTM G 21.
 1. Apparent Thermal Conductivity: Maximum of 0.31 at 75 degrees F.
 2. Service Temperature: Up to 250 degrees F.
 3. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.
 4. Minimum Noise Reduction Coefficients:
 - a. 1/2 inch Thickness: 0.30.
 - b. 1 inch Thickness: 0.45.
 - c. 1-1/2 inches Thickness: 0.60.
 - d. 2 inch Thickness: 0.70.
 - B. Adhesive: Waterproof, fire-retardant type.
 - C. Liner Fasteners: Galvanized steel, self-adhesive pad or impact applied with integral, or press-on head.

PART 3 EXECUTION

- 3.01 INSTALLATION
- A. Install in accordance with manufacturer's instructions and NAIMA National Insulation Standards.
 - B. Insulated ducts conveying air below ambient temperature:

1. Provide insulation with vapor barrier jackets.
 2. Finish with tape and vapor barrier jacket.
 3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
 4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.
- C. Insulated ducts conveying air above ambient temperature:
1. Provide with or without standard vapor barrier jacket.
 2. Insulate fittings and joints. Where service access is required, bevel and seal ends of insulation.
- D. External Duct Insulation Application:
1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
 2. Secure insulation without vapor barrier with staples, tape, or wires.
 3. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.
 4. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
 5. Stop joint insulation around access doors and damper operators to allow operation without disturbing wrapping.
- E. Duct and Plenum Liner Application:
1. Adhere insulation with adhesive for 90 percent coverage.
 2. Secure insulation with mechanical liner fasteners. Refer to SMACNA HVAC Duct Construction Standards – Metal and Flexible for spacing.
 3. Seal and smooth joints. Seal and coat transverse joints.
 4. Seal liner surface penetrations with adhesive.
 5. Duct dimensions indicated are net inside dimensions required for air flow. Increase duct size to allow for insulation thickness.

3.02 SCHEDULES

- A. The Contractor may use any of the following insulating materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected insulating material and thickness with all State and local codes and utility company requirements is the sole responsibility of the installing Contractor.
- B. Supply air ducts in ceiling spaces:
1. Flexible Glass Fiber Duct Insulation: 1-1/2 inches thick.
 2. Flexible Glass Fiber Duct Liner Insulation: 1 inches thick.
- C. Supply, return or exhaust air ducts in crawl spaces, attics or other unconditioned areas:
1. Flexible Glass Fiber Duct Insulation: 3 inches thick.
- D. Supply air ducts exposed in finished areas:
1. Flexible Glass Fiber Duct Liner Insulation: 1 inches thick.
- E. Return or exhaust air ducts exposed in finished areas: None.

END OF SECTION

SECTION 230713.13 – GREASE DUCT FIREPROOFING

PART 1 GENERAL

- 1.01 SECTION INCLUDES
- A. Fire resistant duct wrap for kitchen hood exhaust ventilation ducts (grease ducts).
 - B. Firestopping at duct penetrations through fire rated walls and floors.
- 1.02 SUBMITTALS
- A. Product Data: Manufacturer's data sheets on each product to be used.
 - B. Certification: Evidence that the proposed fireproofing and firestopping are acceptable to the authorities having jurisdiction.

PART 2 PRODUCTS

- 2.01 MANUFACTURERS
- A. Acceptable Manufacturer: 3M Fire Protection Products, Inc.; Unifrax FyreWrap; Morgan Thermal Ceramics.
- 2.02 MATERIALS
- A. Grease Duct Fireproofing: Material applied directly to metal ducts and achieving two-hour fire rated separation when tested in accordance with UL 2221 or ASTM E2336 by independent testing agency.
 1. Surface Burning Characteristics: Flame spread index of 0 and smoke developed index of 0, when tested in accordance with ASTM E 84, both blanket and foil.
 2. Combustibility: Non-combustible, when tested in accordance with ASTM E 136.
 3. Flexibility: Capable of being formed around corners and shapes by hand.
 4. Surface: Foil or other damage resistant surface; fiber not exposed after installation.
 5. Accommodation For Duct Access Doors and Panels: Capable of being installed to achieve fire rating without impeding access.
 6. Acceptable Product: 3M Fire Barrier Duct Wrap; fire resistant inorganic blanket encapsulated with scrim-reinforced foil facing.
 - B. Fasteners: Non-combustible; use one or both of the following to attach fireproofing to ducts:
 1. Bondable steel or stainless steel, 1/2 inch wide, minimum, and 0.015 inch thick, minimum; with steel banding clips.
 2. Insulation Pins: Copper-coated steel impalement pins, minimum 12 gage, for welded attachment, with galvanized steel self-locking washers, 1-1/2 inch square or diameter, or equivalent sized cup-head pins.
 - C. Access Panel Hardware: Galvanized threaded rods, sleeves, washers, and wing nuts as specified in manufacturer's instructions.
 - D. Tape: Aluminum foil tape for sealing exposed fiber edges and repairing tears in facing.
 - E. Firestopping: Material tested in conjunction with fireproofing, in accordance with ASTM E 814, to achieve fire rated penetration seal at duct penetrations through fire rated assemblies.
 1. Fire Rating: Same or greater than rating of penetrated assembly.
 2. Acceptable Products: 3M Fire Barrier 1000 N/S, 1003 S/L, and 2000+ Silicone Sealants, as required by tested assembly.

PART 3 EXECUTION

- 3.01 EXAMINATION
- A. Do not begin installation until substrates have been properly prepared.
 - B. If substrate preparation is the responsibility of another installer, notify Engineer of unsatisfactory preparation before proceeding.
- 3.02 PREPARATION
- A. Clean surfaces thoroughly prior to installation.
 - B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- 3.03 INSTALLATION
- A. Install in strict accordance with manufacturer's instructions and as indicated on the Drawings.
 - B. Perform all required regulatory duct leakage and weld tests in the presence of the code official, including but not limited to light tests and smoke tests, to demonstrate the integrity of the duct construction prior to the installation of any insulation that prevents visual inspection of the ductwork on all sides.
 - C. Install fireproofing on entire surface of ducts indicated, except where Contract Documents explicitly indicate 3-sided or 2-sided installation.
 - D. At penetrations of ducts through fire rated assemblies (walls, floors, roofs), extend fireproofing through the opening and seal annular space between fireproofing and edge of opening with firestopping.
 - E. Fasten fireproofing to ducts using either banding or insulation pins welded directly to surface of duct; do not use adhesives.
 - F. Install fireproofing on supports and hangers unless hanger rods are at least 3/8 inch in diameter, spaced not more than 60 inches on center along length of duct, and horizontal supports are at least 2 by 2 by 1/4 inch steel angle or equivalent SMACNA support system.
 - G. Access Panels: Do not block access; install fireproofing so that panel can be removed and reinstated without damaging fireproofing.
 - H. Seal all cut edges and ends and repair tears in facing using aluminum foil tape.

END OF SECTION

SECTION 233100 – HVAC DUCTS AND CASINGS

PART 1 GENERAL

- 1.01 SECTION INCLUDES
- A. Metal ductwork.
 - B. Nonmetal ductwork.
 - C. Round spiral ductwork.
 - D. Double wall insulated round ductwork.
 - E. Kitchen hood ductwork, Type 1 grease hoods.
 - F. Duct cleaning.
- 1.02 PERFORMANCE REQUIREMENTS
- A. No variation of duct configuration or sizes permitted except by written permission. Size round ducts installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular air round ducts, only after approval of the Engineer. Sizes shown on design drawings are air dimensions. Contractor may increase duct size without engineer approval, provided all ceiling and shaft clearances can be maintained. Additional charges for increased duct size will not be accepted by the owner.
 - B. Report all conflicts with structure or other obstructions, prior to fabrication of any ductwork. Suitable adjustments in the sizes of ducts shall be accommodated without any additional expense to the Owner.
- 1.03 SUBMITTALS
- A. Shop Drawings: Indicate duct fittings, particulars such as gages, sizes, welds, and configuration prior to start of work for all systems. No ductwork shall be fabricated until engineer approved shop drawings have been received by the Contractor. Identify on ductwork shop drawings any deviations in sizes or shapes made necessary by the obstructions of other trades.

- B. Test Reports: Indicate pressure tests performed. Include date, section tested, test pressure, and leakage rate, following SMACNA (LEAK) – HVAC Air Duct Leakage Test Manual.
- 1.04 REGULATORY REQUIREMENTS
- A. Construct ductwork to NFPA 90A, NFPA 90B, and NFPA 96 standards.
 - B. Code or utility company requirements shall supersede any conflicting requirements of this Section.
- 1.05 FIELD CONDITIONS
- A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
 - B. Maintain temperatures within acceptable range during and after installation of duct sealants.

PART 2 PRODUCTS

- 2.01 MATERIALS
- A. Galvanized Steel Ducts: Hot-dipped galvanized steel sheet, ASTM A 653/A 653M FS Type B, with G90/Z275 coating.
 - B. Steel Ducts: ASTM A 1008/A 1008M, Designation C5, cold-rolled commercial steel.
 - C. Aluminum Ducts: ASTM B 209 (ASTM B 209M); aluminum sheet, alloy 3003-H14, Aluminum Connectors and Bar Stock: Alloy 6061-T651 or of equivalent strength.
 - D. Insulated Flexible Ducts:
 1. The Contractor may use any of the following ductwork materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected ductwork material is the sole responsibility of the installing Contractor.
 - a. Two ply vinyl film supported by helically wound spring steel wire; fiberglass insulation; aluminumized vapor barrier film.
 1. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
 2. Maximum Velocity: 4000 fpm.
 3. Temperature Range: -10 degrees F to 160 degrees F.
 4. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 - b. Block polymer film supported by helically wound spring steel wire; fiberglass insulation; aluminumized vapor barrier film.
 1. Pressure Rating: 4 inches WG positive and 0.5 inches WG negative.
 2. Maximum Velocity: 4000 fpm.
 3. Temperature Range: -20 degrees F to 175 degrees F.
 4. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 2. Multiple layers of aluminum laminate supported by helically wound spring steel wire; fiberglass insulation; aluminumized vapor barrier film.
 - a. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
 - b. Maximum Velocity: 4000 fpm.
 - c. Temperature Range: -20 degrees F to 210 degrees F.
 - d. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 3. UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire; fiberglass insulation; aluminumized vapor barrier film.
 - a. Pressure Rating: 10 inches WG positive and 1.0 inches WG negative.
 - b. Maximum Velocity: 4000 fpm.
 - c. Temperature Range: -20 degrees F to 210 degrees F.
 - d. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 4. UL 181, Class 0, interlocking spiral of aluminum foil; fiberglass insulation; aluminumized vapor barrier film.
 - a. Pressure Rating: 8 inches WG positive or negative.
 - b. Maximum Velocity: 5000 fpm.
 - c. Temperature Range: -20 degrees F to 250 degrees F.
 - d. Minimum R-Value: 4.2 or greater as required by the applicable energy codes.
 - E. Joint Sealers and Sealants: Non-hardening, water resistant, mildew and mold resistant.
 1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
 2. VOC Content: Not more than 250 g/L, excluding water.
 3. Surface Burning Characteristics: Flame spread of zero, smoke developed of zero, when tested in accordance with ASTM E 84.
 4. For Use With Flexible Ducts: UL labeled.
 - F. Hanger Rods: ASTM A 36/A 36M; steel; threaded both ends, threaded one end, or continuously threaded.
- 2.02 DUCTWORK FABRICATION
- A. Fabricate, support and seal in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
 - B. Construct T's, bends, and elbows with radius of not less than 1-1/2 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide turning vanes. Where accessible lining is indicated, provide turning vanes of galvanized metal with glass fiber insulation.
 - C. Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degree divergence upstream of equipment and 45 degrees convergence downstream.
 - D. Fabricate continuously welded round and oval duct fittings two gages heavier than duct gages indicated in SMACNA Standard. Joints shall be minimum 4 inch cemented slip joint, brazed or electric welded. Prime coat welded joints.
 - E. Provide standard 45 degree lateral wye takeoffs unless otherwise indicated where 90 degree conical tee connections may be used.
 1. Where ducts are connected to exterior wall louvers and duct outlet is smaller than louver frame, provide blank-out panels sealing louver area around duct. Use same material as duct, painted black on exterior side; seal to louver frame and duct.
- 2.03 DUCT MANUFACTURERS
- A. Metal-Fab, Inc.; SEMCO Incorporated; United McGill Corporation.
- 2.04 MANUFACTURED METAL DUCTWORK AND FITTINGS
- A. Manufacture in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
 - B. Round Spiral Ducts: Machine made from round spiral lockseam duct with light reinforcing corrugations; fittings manufactured of at least two gages heavier metal than duct.
 - C. Double Wall Insulated Round Ducts: Round spiral lockseam duct with galvanized steel outer wall, 1 inch thick fiberglass insulation, perforated galvanized steel inner wall; fitting with solid inner wall.
 - D. Transverse Duct Connection Systems: SMACNA "E" rated rigidly class connection, interlocking angle and duct edge connection system with sealant, gasket, cleats, and corner clips.
- 2.05 KITCHEN HOOD EXHAUST DUCTWORK, TYPE 1
- A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible, and NFPA 96.
 - B. Construct of 16 gage carbon steel or 18 gage stainless steel, using continuous external welded joints.

PART 3 EXECUTION

- 3.01 EXAMINATION
- A. Examine drawings for the Architectural, Structural, Electrical and all other trades prior to preparation of ductwork shop drawings and prior to the fabrication of any ductwork.
 - B. Resolve any conflicts encountered with the Engineer prior to fabrication.
 - C. Identify on ductwork shop drawings any deviations in sizes or shapes made necessary by the obstructions of other trades.
- 3.02 INSTALLATION
- A. Install in accordance with manufacturer's instructions.
 - B. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
 - C. Install and seal metal and flexible ducts in accordance with SMACNA HVAC Duct Construction Standards – Metal and Flexible.
 - D. Provide openings in ductwork where required to accommodate thermometers and controllers. Provide pilot tube openings where required for testing of systems, complete with metal can with spring device or screw to ensure against air leakage. Where openings are provided in insulated ductwork, install insulation material inside a metal ring.
 - E. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
 - F. Use crimp joints with or without bead for joining round duct sizes 8 inch and smaller with crimp in direction of air flow.
 - G. Use double nuts and lock washers on threaded rod supports.
 - H. Connect flexible ducts to metal ducts with draw bands.
 - I. Support flexible duct runs every five feet in the horizontal direction to avoid dips and sags.
 - J. Connect terminal units to supply ducts with one foot maximum length of flexible duct. Do not use flexible duct to change direction.
 - K. Connect diffusers to low pressure ducts directly or with 5 feet maximum length of flexible duct held in place with strap or clamp. Longer duct lengths are acceptable if depicted on the design drawings and allowed per local code. A maximum of one 90 degree bend, or equivalent, will be allowed in flexible duct runs.
 - L. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
 - M. All exposed ducts in finished areas must be completely free from all dents or imperfections in the galvanized coating and shall be sealed CAREFULLY AND NEATLY with duct sealer completely contained within the joint. Duct wrap will not be permitted in exposed locations. If round duct is indicated in exposed locations, it must be spiral. No exposed duct sealer, tape or longitudinal ducts will be accepted in exposed finished areas. Line all exposed supply air ductwork.



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHANGED BY: DKH
DRAWN BY: DKH

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:

 **INTERIOR UP-FIT**
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

MECHANICAL SPECIFICATIONS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AM-3.2

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

Structural members shall be minimum 18 gage, with access doors or panels of minimum 20 gage.
Insulation: one inch thick neoprene coated glass fiber with edges protected from erosion.
Heat Exchangers: Aluminumized steel or stainless steel where indicated on the Drawings, of welded construction.
Supply Fan: Forward curved centrifugal type, resiliently mounted with V-belt drive, adjustable variable pitch motor pulley, and rubber isolated hinge mounted motor or direct drive as indicated. Isolate complete fan assembly.
Air Filters: 2 inch thick disposable media in metal frames.
Roof Mounting Curb: Galvanized steel, channel-iron, insulated with gaskets, nailer strips. Provide roof curb of adequate height to provide a unit mounting height of 12" or greater above the top of the roof surface with the curb mounted to the building structure. Roof curb height must compensate for the roof insulation thickness to meet this requirement.
Vibration Isolation Curb: Only when indicated on the Drawings.

BURNER
A. Gas Burner: Induced draft or forced draft type burner with adjustable combustion air supply, pressure regulator, gas valves, manual shut-off, intermittent spark or glow coil ignition, flame sensing device, and automatic 100 percent shut-off pilot.
B. Gas Burner Safety Controls: Energize ignition, limit time for establishment of flame, prevent opening of gas valve until pilot flame is proven, stop gas flow on ignition failure, energize blow motor, and after air flow proven and slight delay, allow gas valve to open.
C. High Limit Control: Temperature sensor with fixed set at maximum permissible setting, de-energize burner on excessive bonnet temperature and energize burner when temperature drops to lower safe value.
D. Supply Fan Control: Temperature sensor sensing bonnet temperatures and independent of burner controls, with provisions for continuous fan operation.

2.05 EVAPORATOR COIL
A. Provide copper tube aluminum fin coil assembly with galvanized drain pan and connection.
B. Provide capillary tubes or thermostatic expansion valves for units of 6 tons capacity and less, and thermostatic expansion valves and alternate row circuiting for units 7.5 tons cooling capacity and larger.

2.06 COMPRESSOR
A. Provide hermetic or semi-hermetic compressors, 3600 rpm maximum, resiliently mounted with positive lubrication, crankcase heater, high and low pressure safety controls, motor overload protection, suction and discharge service valves and gage ports, and filter drier.
B. Five minute timed off circuit to delay compressor start.
C. Outdoor thermostat to energize compressor above 35 degrees F ambient.

2.07 CONDENSER COIL
A. Provide copper tube aluminum fin coil assembly with subcooled rows and coil guard.
B. Provide direct drive propeller fans, resiliently mounted with fan guard, motor overload protection, wired to operate with compressor.

2.08 MIXED AIR CASING
A. Dampers: Provide outside, return, and relief dampers with damper operator and control package to automatically vary outside air quantity. Outside air damper to fall to closed position. Relief dampers may be gravity balanced.
B. Gaskets: Provide tight fitting dampers with edge gaskets maximum leakage 5 percent at 2 inches pressure differential.
C. Damper Operator: 24 volt with gear train sealed in oil.
D. Damper Operator, Units 7.5 Ton Cooling Capacity and Larger: 24 volt with gear train sealed in oil with spring return on.
E. Mixed Air Controls: Maintain selected supply air temperature and return dampers to minimum position on call for heating and above 75 degrees F ambient, or when ambient air temperature exceeds return air temperature.

2.09 INTEGRATED ECONOMIZER:
A. Economizer shall be furnished and installed complete with outside air and relief dampers and controls.
B. Provide low-leakage, opposed blade dampers
C. Economizer shall be capable of introducing up to 100% outdoor air for minimum ventilation as well as free cooling.
D. Damper actuator shall be electronic, fully modulating design.
E. Economizer outdoor hood shall be pre-painted and fully integrated with the unit.
F. Dry Bulb Control: Provide dry bulb sensor capable of measuring temperature of outdoor air and controlling economizer cut-in point at the most economical level. High level cutoff shall be set per applicable energy code.
1. Provide economizer Fault Detection and Diagnostics (FDD).

2.10 OPERATING CONTROLS
A. Provide low voltage, adjustable thermostat to control heater stages in sequence with delay between stages, compressor and condenser fan, and supply fan to maintain temperature setting.
1. Include system selector switch (off-heat-auto-cool) and fan control switch (auto-on).
2. The Mechanical Contractor shall provide all control wiring between thermostat and unit control panel and any required remote sensors.
3. Locate thermostat in room as shown.
4. Electric solid state microcomputer based room thermostat, located as indicated. Provide remote sensors when indicated on the Drawings.
a. Room thermostat shall incorporate:
1) Automatic switching from heating to cooling.
2) Preferential rate control to minimize overshoot and deviation from set point.
3) Automatic Start Capabilities: Controls shall be capable of automatically adjusting the daily start time of the HVAC system in order to bring each space to the desired occupied temperature immediately prior to scheduled occupancy.
4) Set-up for four separate temperatures per day.
5) Instant override of set point for continuous or timed period from one hour to 31 days.
6) Short cycle protection.
7) Programming based on weekdays, Saturday and Sunday.
8) Switch selection features including imperial or metric display, 12 or 24 hour clock, keyboard disable, remote sensor, fan on-out.
b. Room thermostat display shall include:
1) Time of day.
2) Actual room temperature.
3) Programmed temperature.
4) Day of week.
5) System mode indication: heating, cooling, auto, off, fan auto, fan on.
6) Stage (heating or cooling) operation.

END OF SECTION

resilient mounted motor; 1/2 inch mesh, 0.62 inch thick aluminum wire birdscreen; secure base to suit roof curb with continuous curb gaskets.
Roof Curb: 20 inch high above the finished roof surface (compensate for roof insulation thickness at fan location) self-flashing of galvanized steel or aluminum construction with continuously welded seams, built-in cant strips, insulation and curb bottom, and factory installed nailer strip.
Disconnect Switch: Factory wired, non-fusible, in housing for thermal overload protected motor.
Backdraft Damper: Motor actuated (or gravity damper if depicted on design drawings), aluminum multiple blade construction, felt edged with offset hinge pin, nylon bearings, blades linked, and line voltage motor drive, power open, spring return.
Shaft: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheave selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.
Kitchen hood exhausters shall be upblast with grease tray, ventilated double wall curb and hinged curb adapter base for cleaning. Hood exhausters shall comply with requirements of NFPA 96.

2.04 CABINET AND CEILING FANS
A. Centrifugal Fan Unit: V-belt or direct driven with galvanized steel housing lined with acoustic insulation, resilient mounted motor, gravity backdraft damper in discharge.
B. Disconnect Switch: Cord and plug in housing for thermal overload protected motor.
C. Grille: Aluminum with baked white enamel finish or molded white plastic as specified on the Drawings.
D. Backdraft Damper: Gravity actuated, aluminum blade construction, felt edged with offset hinge pin, nylon bearings, blades linked.
E. Shaft: Cast iron or steel, dynamically balanced, bored to fit shafts and keyed; variable and adjustable pitch motor sheaves selected so required rpm is obtained with sheaves set at mid-position; fan shaft with self-aligning pre-lubricated ball bearings.

END OF SECTION

SECTION 233700 - AIR OUTLETS AND INLETS

1.01 SECTION INCLUDES
A. Rectangular ceiling diffusers.
B. Spiral duct mounted diffusers.
C. Grid core exhaust and return grilles.

1.02 SUBMITTALS
A. Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, accessories, and noise level.

1.03 QUALITY ASSURANCE
A. Test and rate air outlet and inlet performance in accordance with ASHRAE Std 70.
B. Test and rate lower performance in accordance with AMCA 500-L.
C. Code requirements shall supersede any conflicting requirements of this Section.

1.04 QUALIFICATIONS
A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this Section, with minimum five years of documented experience.

END OF SECTION

2.01 MANUFACTURERS
A. Titus; Krueger; Price Industries; Nailor Industries Inc.; Hart & Cooley Ruskin, Greenheck.

2.02 RECTANGULAR CEILING DIFFUSERS
A. Type: Square, adjustable pattern, stamped, multi-core, or architectural plaque diffuser to discharge air in 360 degree pattern with sectorizing baffles where indicated.
B. Frame: Inverted T-bar type. In plaster ceilings, provide plaster frame and ceiling frame. (To allow lift-out removal of the diffuser without removal of the plaster frame.)
C. Fabrication: Steel with baked enamel off-white finish.
D. Accessories: Opposed blade damper and multi-louvered equalizing grid with damper adjustable from diffuser face.

2.03 SPIRAL DUCT MOUNTED DIFFUSERS
A. Type: Streamlined and individually adjustable blades, 3/4 inch minimum depth, 3/4 inch maximum spacing with spring or other device to set blades, horizontal face, double deflection.
B. Frame: 1-1/8 inch margin with countersunk screw mounting and gasket.
C. Fabrication: Heavy duty extruded aluminum, with factory off-white enamel finish.
D. Damper: Air scoop damper/extractor shall be constructed of heavy duty aluminum. The air scoop damper to be operable from the face with a screwdriver.
E. Rough Service: Provide front pivoted or welded in place blades, securely fastened to be immovable.
F. Mount flush to duct surface. Confirm duct diameter with the sheet metal contractor (including internal insulation, if specified). Air dimensions are shown on the design drawings.

2.04 GRID CORE EXHAUST AND RETURN GRILLES
A. Type: Fixed grilles of 1/2 x 1/2 x 1 inch louvers.
B. Fabrication: Aluminum with factory off-white enamel finish.
C. Frame: 1-1/4 inch margin with countersunk screw mounting.
D. Frame: Channel lay-in frame for suspended grid ceilings where face size exceeds 18 x 18 inch.
E. Damper (if specified on drawings): Integral, gang-operated, opposed blade type with removable key operator, operable from face.

END OF SECTION

3.01 INSTALLATION
A. Install in accordance with manufacturer's instructions.
B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
C. Install diffusers to ductwork with air tight connection.
D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.
E. Paint ductwork visible behind air outlets and inlets matte black.

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A. Install in accordance with manufacturer's instructions.
B. Check location of outlets and inlets and make necessary adjustments in position to conform with architectural features, symmetry, and lighting arrangement.
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D. Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.
E. Paint ductwork visible behind air outlets and inlets matte black.

Kitchen hood exhaust, Type 1: Use stainless steel for ductwork exposed to view and stainless steel or carbon steel for ducts where concealed.
For all hood systems, perform all required regulatory duct leakage and weld tests in the presence of the code official, including but not limited to light tests and smoke tests, to demonstrate the integrity of the duct construction prior to the installation of any insulation that prevents visual inspection of the ductwork on all sides.
Provide residue traps in kitchen hood exhaust ducts at base of vertical risers with provisions for clean out.
All roofing penetrations shall be flashed and weather sealed by the roofing manufacturer's authorized roofing contractor at this Contractor's expense. This Contractor shall contract with the factory authorized roofing contractor for the specific roofing system applicable to this Project. The use of an unauthorized roofing contractor may result in removal and replacement of the penetration systems at this Contractor's expense.

3.03 CLEANING
A. Clean duct system and force air at high velocity through duct to remove accumulated dust or clean with high power vacuum machines. To obtain sufficient air, clean half the system at a time. Protect equipment which may be harmed by excessive dirt with temporary filters, or bypass during cleaning.

3.04 SCHEDULES
A. Ductwork Material:
B. The Contractor may use any of the following ductwork materials, at his option, provided the selected material meets with the approval of all State, local authorities and utility company requirements. Verification of compliance of the selected piping material is the sole responsibility of the installing Contractor.
1. Low Velocity Supply (Heating Systems): Galvanized Steel, Aluminum.
2. Low Velocity Supply (System with Cooling Coils): Galvanized Steel, Aluminum.
3. Return and Relief: Galvanized Steel, Aluminum.
4. General Exhaust: Galvanized Steel, Aluminum.
5. Outside Air Intake: Galvanized Steel.
6. Kitchen Hood Exhaust, Type 1: Carbon Steel, Stainless Steel, Constructed per NFPA 96.
C. Ductwork Pressure Class:
1. Low Velocity Supply (Heating Systems): Scheduled System ESP+0.25", round up to next higher pressure class.
2. Low Velocity Supply (Systems with Cooling): Scheduled System ESP +0.5", round up to next higher pressure class.
3. Return and Relief: 1 inch.
4. General Exhaust: Scheduled System ESP +1.0", round up to next higher pressure class.
5. Outside Air Intake: 1 inch.
6. Kitchen Hood Exhaust: See drawings for maximum fan static pressure plus 50% additional.

END OF SECTION

SECTION 233300 - AIR DUCT ACCESSORIES

1.01 SECTION INCLUDES
A. Air turning devices/extractors.
B. Volume control dampers.
C. Flexible duct connections.
D. Duct access doors.

2.01 AIR TURNING DEVICES/EXTRACTORS
A. Manufacturers: Krueger; Ruskin Company; Titus.
B. Multi-blade device with blades aligned in short dimension; steel or aluminum construction; with individually adjustable blades, mounting straps.

2.02 VOLUME CONTROL DAMPERS
A. Manufacturers: Louvers & Dampers, Inc.; Nailor Industries Inc.; Ruskin Company; Prefco Inc.
B. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
C. Single Blade Dampers: Fabricate for duct sizes up to 6 x 30 inch.
D. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8 x 72 inch. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
E. End Bearings: Except in round ducts 12 inches and smaller, provide end bearings. On multiple blade dampers, provide oil-impregnated nylon or sintered bronze bearings.
F. The contractor shall provide either a mechanical or electrical cable operated system wherever dampers are located in non-accessible areas.
1. Mechanical cable operator system shall be similar and equal to Young Regulator Company, "Bowden Cable Control" system including damper, flexible cable with casing and concealed ceiling regulator control.
2. Electrically operated damper control system shall be similar and equal to Unitek Electronic Corporation, "Power Balance" system including motor operated damper, RJ-11 plenum rated cabling and flush ceiling or wall mounted RJ-11 jack in remote plate. Include one hand held battery pack operator pack to be delivered to the Owner upon completion of the balancing.

2.03 FLEXIBLE DUCT CONNECTIONS
A. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
B. Flexible Duct Connections: Fabric crimped into metal edging strip.
1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd.
a. Net Fabric Width: Approximately 2 inches wide.
2. Metal: 3 inches wide, 24 gage thick galvanized steel.

2.04 DUCT ACCESS DOORS
A. Manufacturers: Acudor Products Inc.; Nailor Industries Inc.; Ruskin Company; SEMCO Incorporated.
B. Fabricate in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated.
C. Fabrication: Rigid and close-fitting of galvanized steel with sealing gaskets and quick fastening locking devices. For insulated ducts, install minimum 1 inch thick insulation with sheet metal cover.
1. Less Than 12 inches Square: Secure with sash locks.
2. Up to 18 inches Square: Provide two hinges and two sash locks.
D. Access doors with sheet metal screw fasteners are not acceptable.

END OF SECTION

SECTION 233423 - HVAC POWER VENTILATORS

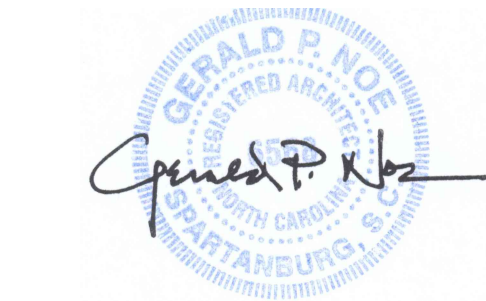
1.01 SECTION INCLUDES
A. Roof exhausters.
B. Kitchen range hood exhausters.
C. Cabinet and ceiling fans.

2.01 MANUFACTURERS
A. Greenheck; Loren Cook Company; PennBarry; CaptiveAir.

2.02 POWER VENTILATORS - GENERAL
A. Performance Ratings: Determined in accordance with AMCA 210 and bearing the AMCA Certified Rating Seal.
B. Sound Ratings: AMCA 301, tested to AMCA 300, and bearing AMCA Certified Sound Rating Seal.
C. Fabrication: Conform to AMCA 99.
D. UL Compliance: UL listed and labeled, designed, manufactured, and tested as suitable for the purpose specified and indicated.

2.03 ROOF EXHAUSTERS AND VENTILATORS
A. Fan Unit: V-belt or direct driven as indicated, with spun aluminum housing;

END OF SECTION



09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:

marco's PIZZA INTERIOR UP-FIT
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

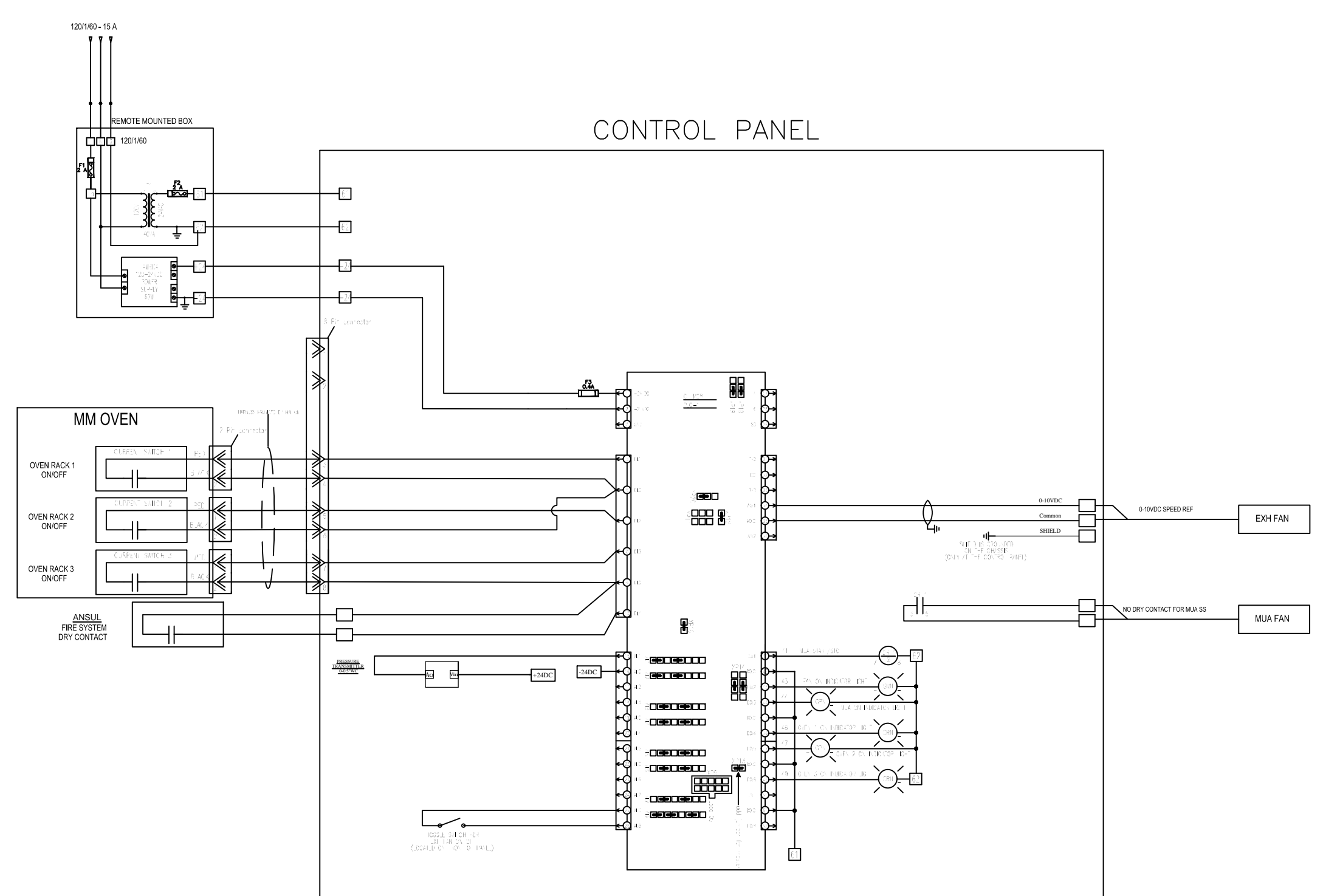
SHEET TITLE:

HOOD DETAILS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

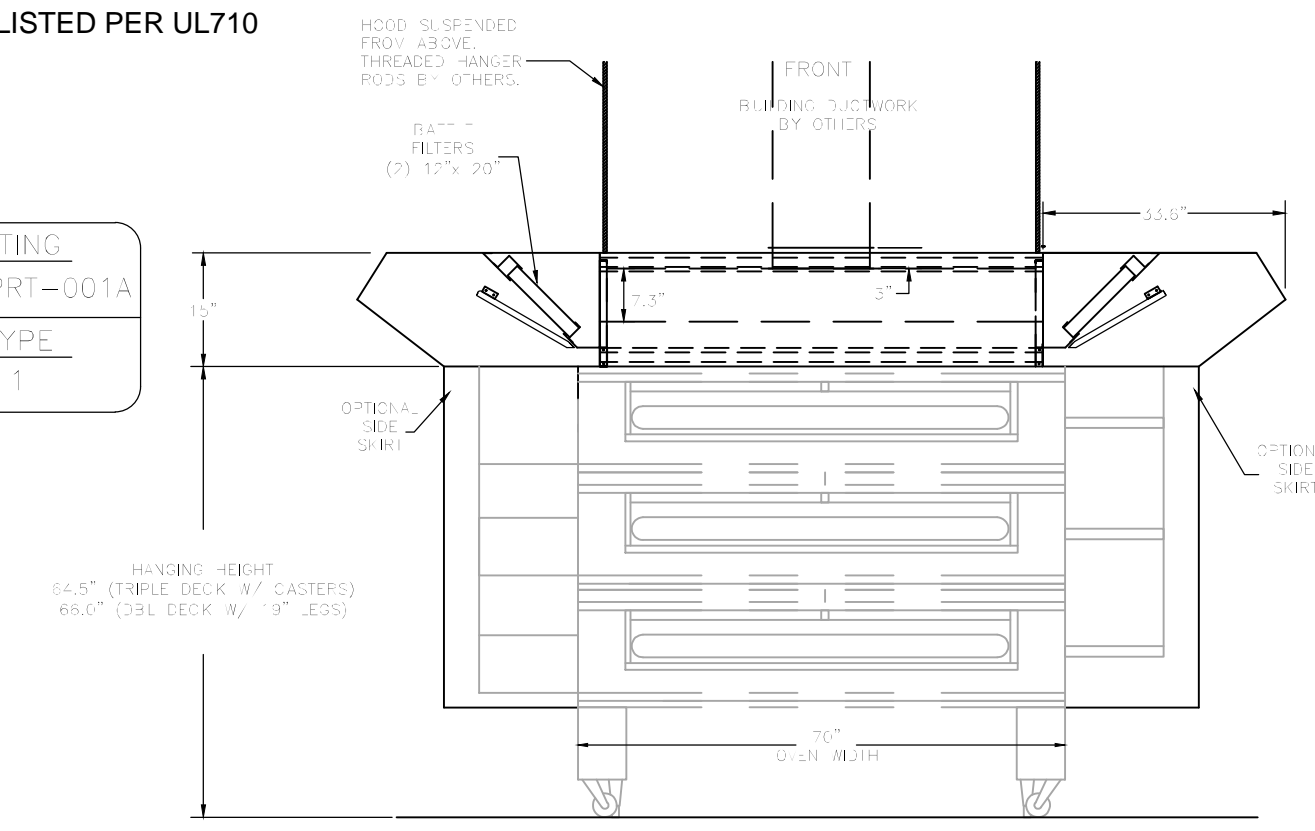


NOTE:

- 120V/1PH REQUIRED FOR CONTROL PANEL.
- LOW VOLTAGE WIRING (0-10VDC PLUS SHIELD) MUST BE FIELD INSTALLED FROM CONTROL PANEL TO THE EXHAUST FAN AND TERMINATED AT BOTH ENDS. 2 STRANDS, 18 GAUGE MINIMUM SHIELDED, PLENUM RATED CABLE IS SUGGESTED.

MM1 EXHAUST HOOD

- CONSTRUCTED OF 18 GA. 430 STAINLESS STEEL WHERE EXPOSED
- INCLUDES (2) 12X16 AND (2) 12X20 ALUMINUM BAFFLE STYLE GREASE FILTERS
- LISTED PER UL710



U.L. LISTING
101530594PRT-001A
HOOD TYPE
TYPE 1

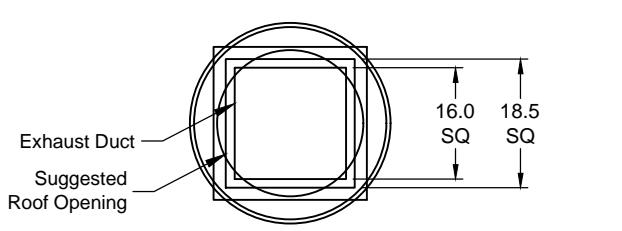
OVEN TYPE	OVEN MODEL	OVEN SERIAL	OVEN WEIGHT	OVEN HEIGHT	OVEN DEPTH



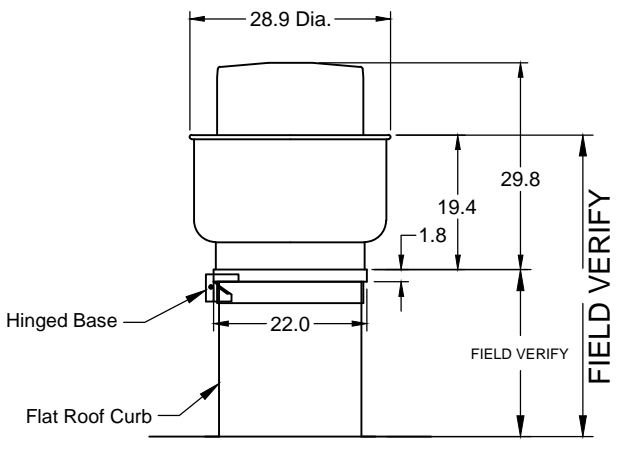
Halton

XRUD-141-VG EXHAUST FAN

- ALUMINUM HOUSING
- BACKWARD INCLINED ALUMINUM WHEEL
- ALUMINUM CURB CAP WITH PRE-PUNCHED MOUNTING HOLES
- DRAIN TROUGH
- MOTOR ISOLATED ON SHOCK MOUNTS
- CORROSION RESISTANT FASTENERS



TOP VIEW



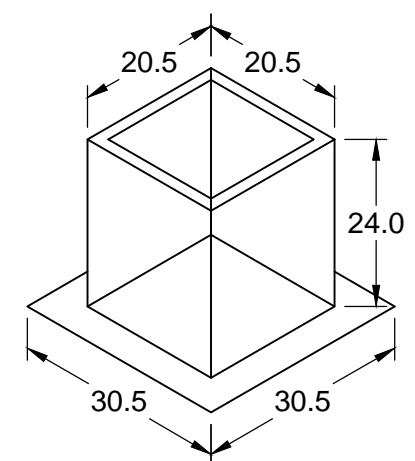
FRONT VIEW

(KEF-1) EQUIPMENT SCHEDULE

Direct Drive Upblast Centrifugal Roof Exhaust Fan										MARK: EF-675		
Qty	Accurate Model	Volume (CFM)	Motor SF Total HP (hp)	FRPM	Operating Power (hp)	Weight (Lb.)	Size (hp)	V/C/P	End.	Motor RPM	Windings	FLA
1	XRUD-141-VG	1,050	1	1,261	0.29	126	0.75	115/60/1	OP	1550	1	13.8

OPTIONS AND ACCESSORIES

UL/cUL 762 Listed - "Power Ventilators for Rest. Exh. Appliances"
Switch, NEMA-3R, Toggle, Junction Box Mounted & Wired
Hinged Base (Attached)
Curb Seal (Attached)
Grease Trap (PN 475538)

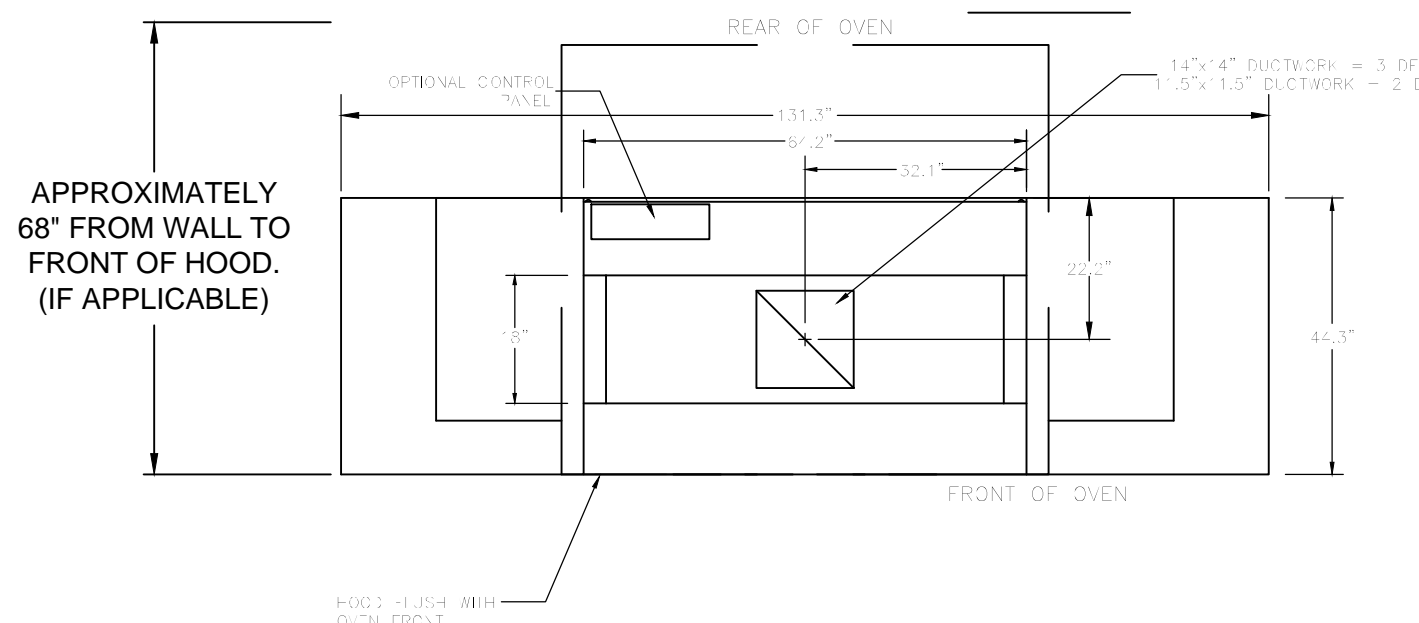


ISOMETRIC VIEW

GPF ROOF CURB

- WELDED 18 GA. GALVANIZED CONSTRUCTION
- ROOF OPENING - THE MAXIMUM ROOF OPENING DIMENSION SHOULD NOT BE GREATER THAN THE ACTUAL TOP OUTSIDE DIMENSION MINUS 2".
- THE ROOF OPENING MAY NOT BE THE STRUCTURAL OPENING DIMENSION.

NOTE: CONTROL PANEL ON REAR OF OVEN



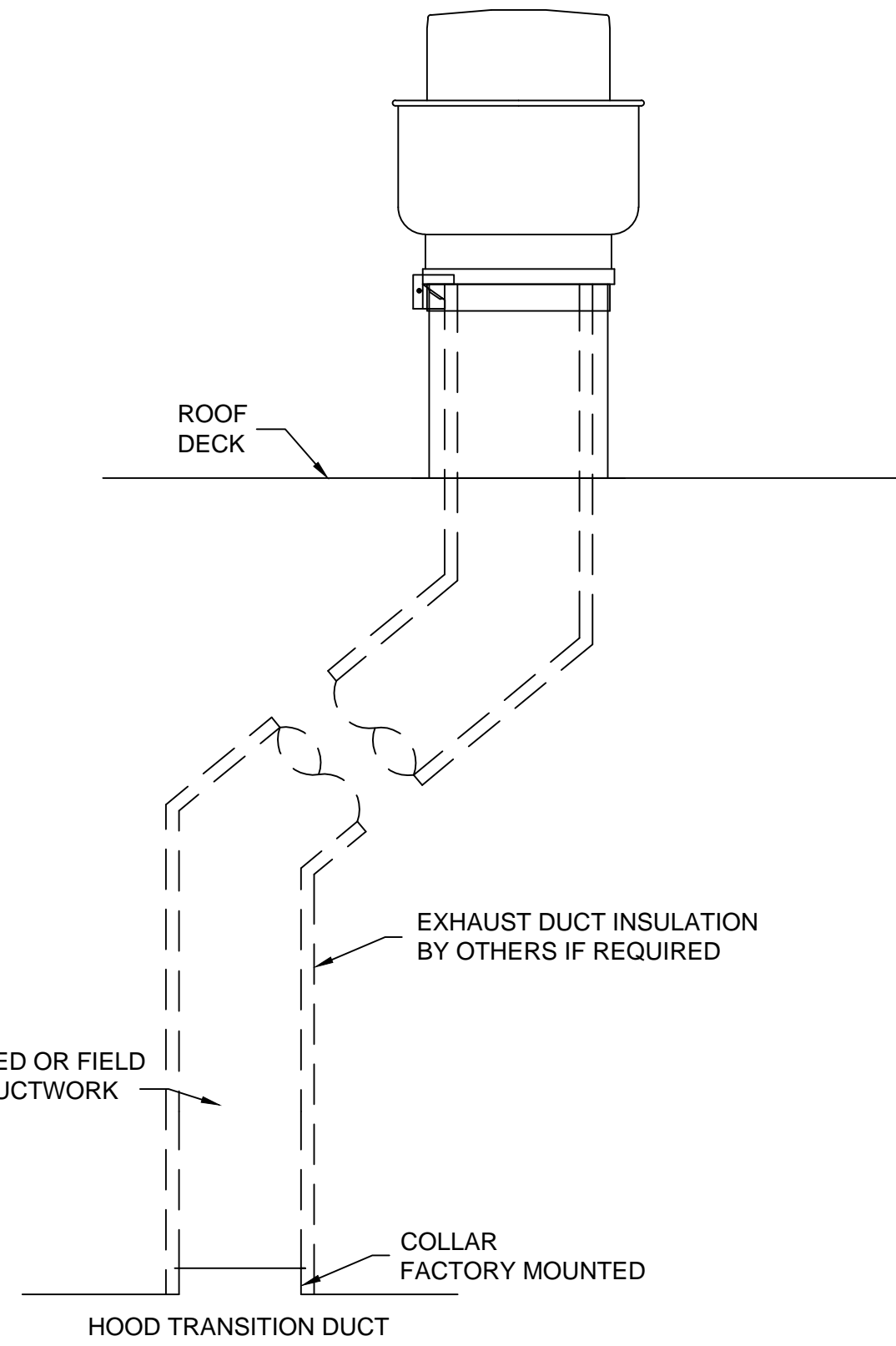
APPROXIMATELY 68" FROM WALL TO FRONT OF HOOD. (IF APPLICABLE)

INSTALLATION

- SUSPEND HOOD 1/2" ABOVE OVEN HEIGHT USING HANGER RODS.
- MOVE OVEN INTO PLACE.
- MAKE FINAL EXHAUST DUCT CONNECTIONS.

GENERAL NOTES:

- DO NOT SCALE DRAWING, USE DIMENSIONS AS INDICATED.
- IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS FROM ALL STATE AND LOCAL OFFICIALS PRIOR TO PROCEEDING WITH INSTALLATION. THESE DRAWINGS ARE TO SERVE AS BASIC DESIGN ONLY AND ANY STATE OR LOCAL ORDINANCE WHICH IS MORE RESTRICTIVE SHALL PREVAIL.
- IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR TO CHECK BUILDING ACCESS AND FIELD CONDITIONS TO ALLOW FOR ADEQUATE CLEARANCES FOR THE EQUIPMENT TO BE BROUGHT IN AND INSTALLED.
- AIR INTAKES MUST BE NO CLOSER THAN 10 FEET FROM ANY EXHAUST OR VENT OUTLET.
- EXHAUST DUCTWORK TO BE CONSTRUCTED OF 16 GA. B.I. OR 18 GA STAINLESS STEEL AND CONTINUOUSLY WELDED. DUCT CLEAN OUTS SHALL BE PROVIDED AT EVERY CHANGE IN DIRECTION. INSTALLING CONTRACTOR SHALL VERIFY ANY REQUIREMENTS FOR INSULATION OF THE EXHAUST DUCT. EXHAUST FAN(S) SHALL EXTEND A MINIMUM OF 40 INCHES ABOVE ROOF SURFACE AND BE PROPERLY FLASHED TO ADJOINING MATERIAL.
- VERIFY ALL STRUCTURAL LOADS WITH ARCHITECT OF RECORD.
- THESE DRAWINGS ARE TO SERVE AS A BASIC DESIGN ONLY AND ANY STATE OR LOCAL ORDINANCE WHICH IS MORE RESTRICTIVE SHALL PREVAIL.
- IT IS THE RESPONSIBILITY OF THE OWNER/ARCHITECT TO ENSURE THE HOOD CLEARANCE FROM COMBUSTIBLES (AND NON OR LIMITED COMBUSTIBLES) IS IN COMPLIANCE WITH THE LATEST EDITION OF THE NATIONAL FIRE PROTECTION ASSOCIATION BULLETIN #96.
- FIRE SUPPRESSION SYSTEM, PROVIDED AND INSTALLED BY OTHERS.



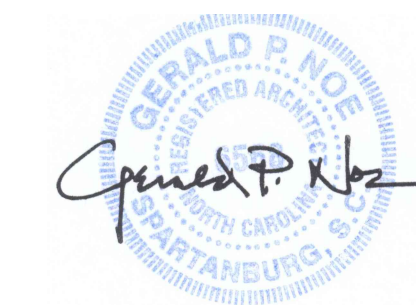
HOOD DRAWINGS INDICATED ON THIS SHEET ARE FOR REFERENCE ONLY. FINAL HOOD AND FAN DETAILS SHALL BE COORDINATED WITH KITCHEN EQUIPMENT SUPPLIER AND MARCO'S PIZZA DISTRIBUTING.

PROJECT NAME:

SCALE: NONE
DATE: 2-26-16
SHEET NUMBER
H-1

MIDDLEBY MARSHALL
PS-570 / PS-670
DOUBLE DECK

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.



09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

POWER PLAN

PROJECT NUMBER 18-A086

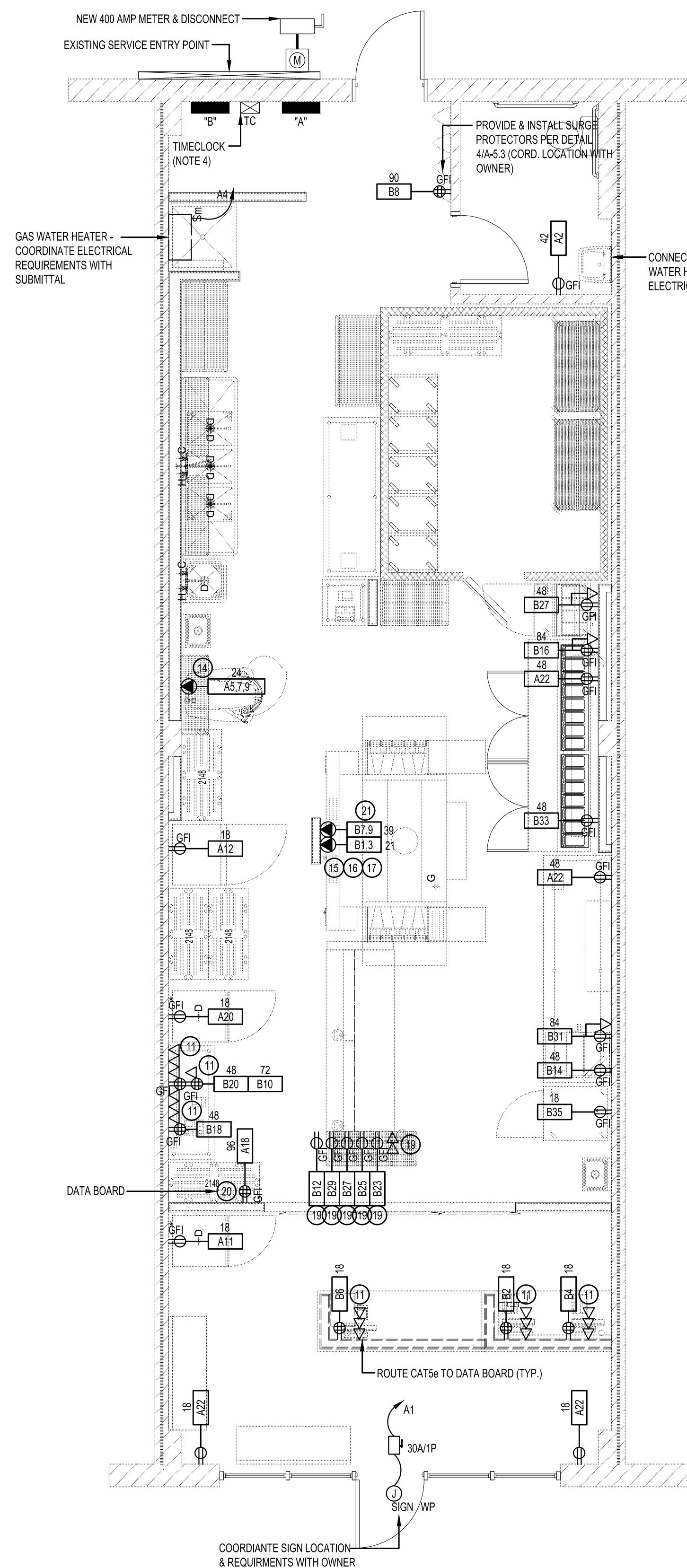
DATE 09-26-2018

SHEET NO.

AE-1.0

SHEET 1 OF 7

ELECTRICAL SYMBOLS LEGEND	
SYMBOLS	DESCRIPTION
	DUPLEX RECEPTACLE
	QUAD RECEPTACLE
	SINGLE POLE SWITCH
	JUNCTION BOX
	TELEPHONE JACK
	COMPUTER DATA TERMINAL OUTLET
	FUSIBLE DISCONNECT SWITCH
	NON-FUSED DISCONNECT SWITCH
	CABLE CONNECTION
	DUCT SMOKE DETECTOR
	208V CONNECTION
	TELEPHONE BOARD
EX.	EXISTING
WR.	WEATHER RESISTANT
WP.	WEATHER PROOF



- FOOD EQUIPMENT / POS KEYED NOTES:**
1. NOT USED.
 2. NOT USED.
 3. NOT USED.
 4. NOT USED.
 5. MOUNT MONITOR OUTLETS @ 84" AFF.
 6. NOT USED.
 7. EXHAUST FAN TO BE POWERED FROM LOCAL LIGHTING CIRCUIT AND SWITCHED WITH LIGHTS.
 8. NOT USED.
 9. INSTALL OUTLET ABOVE STOREFRONT WINDOW.
 10. NOT USED.
 11. REFER TO OWNER FOR NUMBER AND TYPE OF RECEPTACLES AT ALL POS/COMPUTER LOCATIONS.
 12. FULL HEIGHT POWER POLE FOR OUTLET.
 13. NOT USED.
 14. MIXER DISCONNECT TO BE MOUNTED AT 48" AFF. MIXER TO BE WIRED DIRECTLY. REFER TO MANUFACTURER'S INSTRUCTIONS FOR MORE INFORMATION.
 15. PIZZA OVEN REQUIRES A NEUTRAL AND GROUND WIRE GOING BACK TO PANEL.
 16. THE COOKING EQUIPMENT UNDER THE HOOD IS TO BE INTERLOCKED WITH THE KITCHEN HOOD EXHAUST FANS SO THE KITCHEN EQUIPMENT CANNOT OPERATE UNLESS THE HOOD EXHAUST FAN IS OPERATING.
 17. ALL ELECTRICAL EQUIPMENT LOCATED UNDER A TYPE 1 EXHAUST HOOD IS TO BE INTERLOCKED WITH THE ANSUL SYSTEM. WHEN THE ANSUL SYSTEM IS ACTIVATED THE ELECTRICAL EQUIPMENT LOCATED UNDER THE HOOD IS TO BE TURNED OFF (DE-ENERGIZED).
 18. FULL HEIGHT POWER POLE FOR OUTLET.
 19. CEILING MOUNTED
 20. MOUNT FIRE RATED TELEPHONE BOARD. BOARD EXTENDS PARTIALLY ABOVE THE CEILING. PROVIDE #6 GND.
 21. COORDINATE THE LOCATION OF THE OVEN OUTLETS.

- GENERAL NOTES:**
1. OUTLETS ON OPPOSITE SIDE OF WALL SHALL HAVE MINIMUM OF 24 INCHES OF HORIZONTAL SEPARATION.
 2. THE MAXIMUM ALLOWABLE AREA OF PENETRATIONS IN THE OCCUPANCY SEPARATION IS 100 SQUARE INCHES IN 100 SQUARE FEET OF WALL PER SECTION 711.3.2 OF THE 2015 INTERNATIONAL BUILDING CODE.
 3. THE CONTRACTOR SHALL VERIFY THE EXISTING OR PROVIDE NEW PLAQUES THAT IDENTIFY THE AIC RATING ON THE EXISTING SERVICE DISCONNECT PER NEC 110.24.
 4. DENOTES LOCATION OF TIME CLOCK FOR EXTERIOR SIGNAGE. TIME CLOCK TO BE INTERMATIC TYPE GM40 OR EQUAL. TIME CLOCK WIRED TO PANEL PANEL "A" CIRCUIT 6 WITH (2) #12, (1) #12 G. IN (1) 34"C.

- GENERAL PANEL LABELING NOTE:**
- EVERY CIRCUIT SHALL BE LEGIBLY IDENTIFIED WITH A TYPE WRITTEN PANEL SCHEDULE AS TO ITS CLEAR, EVIDENT AND SPECIFIC PURPOSE OR USE. THE IDENTIFICATION SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS. SPARE POSITIONS THAT CONTAIN UNUSED OVER CURRENT DEVICES OR SWITCHES SHALL BE DESCRIBED ACCORDINGLY. THE IDENTIFICATION SHALL BE INCLUDED IN A CIRCUIT DIRECTORY THAT IS LOCATED ON THE FACE OR INSIDE OF THE PANEL DOOR IN CASE OF A PANEL BOARD, AND LOCATED AT EACH SWITCH ON A SWITCHBOARD. THE UPDATED PANEL SCHEDULE IS REQUIRED ON ALL PANEL BOARDS INVOLVED IN THE REMODEL OR TENANT IMPROVEMENTS.

1 POWER PLAN
1/4" = 1'-0"

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY
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FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

MECHANICAL POWER PLAN

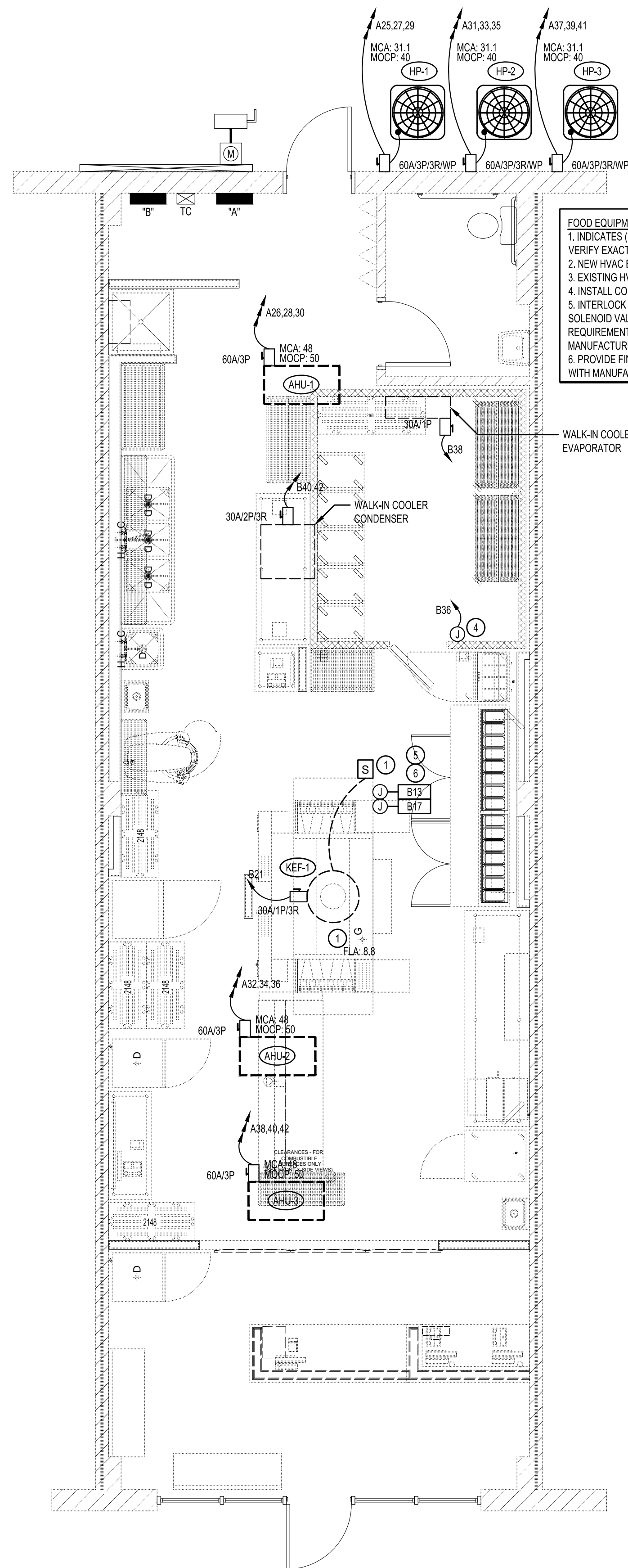
PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AE-1.1

SHEET 1 OF 7



- FOOD EQUIPMENT / POS KEYED NOTES:
- INDICATES (1) SWITCH FOR HOOD EXHAUST CONTROL AND (1) SWITCH FOR HOOD LIGHTING CONTROL. VERIFY EXACT LOCATION.
 - NEW HVAC EQUIPMENT. COORDINATE EXACT LOCATION WITH MECHANICAL.
 - EXISTING HVAC EQUIPMENT. COORDINATE EXACT LOCATION WITH EXISTING LOCATION.
 - INSTALL CONDUITS AT WALK-IN COOLER AND FREEZER PER NEC 300-7.
 - INTERLOCK GAS SOLENOID VALVE WITH GREASE HOOD FIRE SUPPRESSION SYSTEM SUCH THAT GAS SOLENOID VALVE CLOSURES UPON GREASE HOOD FIRE SUPPRESSION SYSTEM DISCHARGE. COORDINATE ALL REQUIREMENTS WITH PLUMBING CONTRACTOR AND GREASE HOOD FIRE SUPPRESSION SYSTEM MANUFACTURER PRIOR TO ROUGH-IN.
 - PROVIDE FINAL CONNECTION TO HOOD CONTROL PANEL. COORDINATE EXACT LOCATION AND REQUIREMENT WITH MANUFACTURER PRIOR TO ROUGH-IN.

1 MECHANICAL POWER PLAN
1/4" = 1'-0"

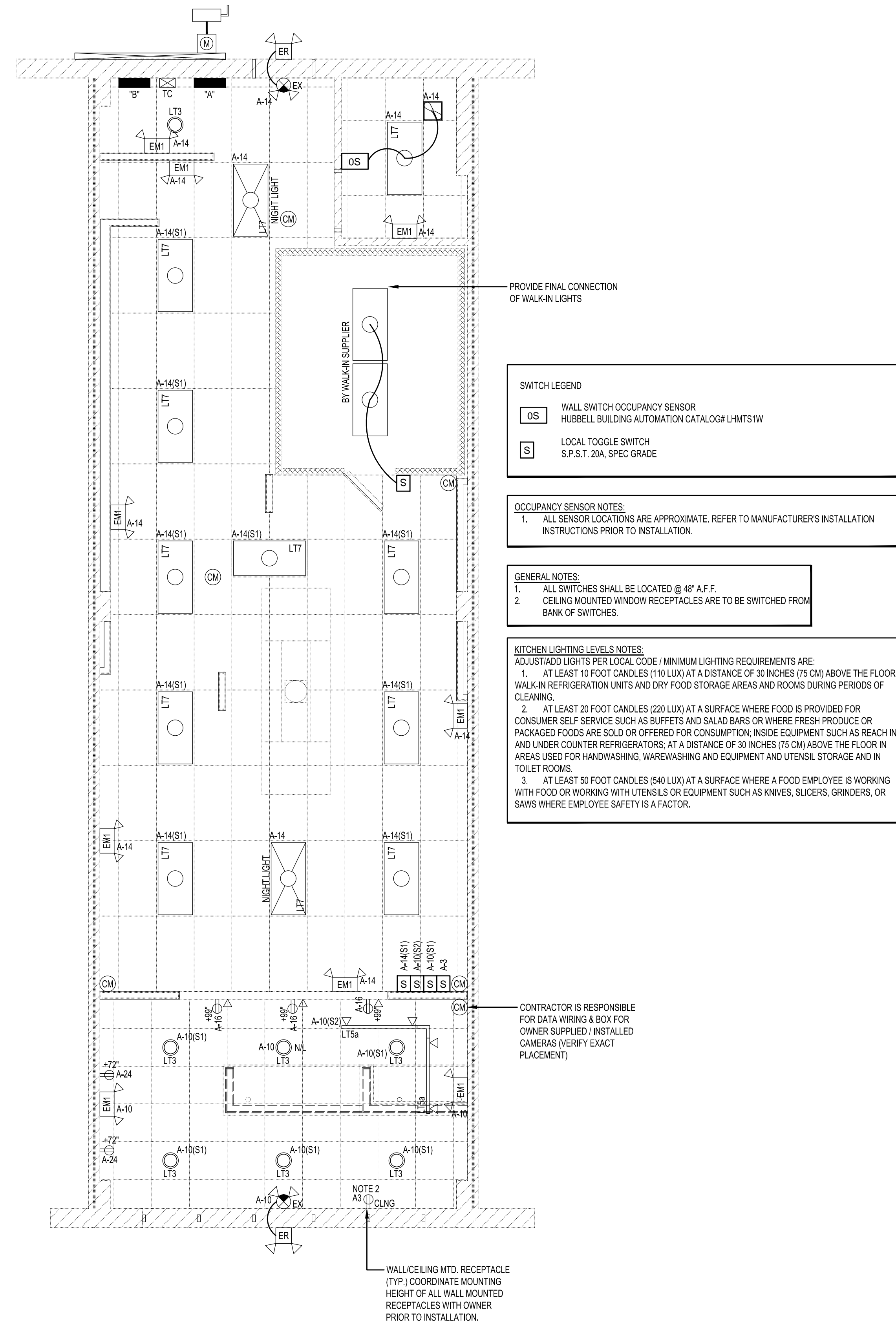
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LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	LOAD (VA)	VOLTAGE (V)	LAMP NO.	LAMP TYPE
LT1	EXTERIOR SURFACE MOUNTED LED STRIP LIGHT W/ ONBOARD PHOTOCELL	LITHONIA OR EQUAL	CONTRACTOR SELECTED	45	120	1	LED
LT2	12" DIAMETER GLOSSY BLACK PENDANT FIXTURE WITH LACQUERED STEEL SHADE. FIXTURE TO BE CENTERED AT 5'-0" A.F.F. ABOVE SMALL BOOTH TABLE AND 6'-0" A.F.F. ABOVE CUSTOM TABLES.	HH-LITE MFG.	H-16112-91/CB8-91	12	120	1	LED
LT3	6" INCANDESCENT UNIVERSAL NEW CONSTRUCTION RECESSED DOWNLIGHT W/ LED RETROFIT	CONTECH LIGHTING TOPAZ	RL38/CTR3002-B-BLK RTL-630WH/E/C/D	12	120	1	LED
LT4	8" DIAMETER GLOSSY BLACK WALL SCONCE - FIXTURE TO BE MOUNTED AT 7'-0" A.F.F.	HH-LITE MFG.	H-16008-91/B-7-91	10	120	2	LED
LT5	ADJUSTABLE LED TRACK HEAD & 8'-0" TRACK	ATTAIN LED	AT-TR-WD-10-27-90-24-BK-J W/ WATTAGE LIMITER	10W/HEAD	120	SEE PLAN	LED
LT6	6" ARCHITECTURAL INCANDESCENT CYLINDER DOWNLIGHT	MAXI LUME	SC8INC-SM-NQLAMP-BK-120/6101-MB-BK	60	120	1	INCANDESCENT
LT7	2x4' NEW CONSTRUCTION LED PANEL	ATTAIN LED	AT-PN-24-45-40-W	45	120	1	LED
LT8	6" INCANDESCENT UNIVERSAL NEW CONSTRUCTION RECESSED DOWNLIGHT W/ LED RETROFIT	CONTECH LIGHTING TOPAZ	RL38/70688 RTL-630WH/E/C/D	12	120	1	LED
LT9	ADJUSTABLE LED TRACK HEAD W/ MONO-POINT	ATTAIN LED CONTECH LIGHTING	AT-TR-WD-10-27-90-24-BK-J L18-B	10W/HEAD	120	1	LED
ER	REMOTE DUAL-HEAD EMERGENCY FIXTURE. THERMOPLASTIC HOUSING, WET LOCATION LISTED. POWER VIA EXIT SIGN WITH REMOTE CAPABILITY AND 90 MINUTE EMERGENCY BACKUP.	BEST LIGHTING PRODUCTS	RH2-WP-6V5.4W	5.4	6	2	INCANDESCENT
EX	THERMOPLASTIC EXIT SIGN, SINGLE FACE, 90 MINUTE EMERGENCY BATTERY AND 6V REMOTE CAPABILITY.	BEST LIGHTING PRODUCTS	CXTEL-RC	15	120	2	INCANDESCENT
EM1	EMERGENCY LIGHT - 90 MINUTE EMERGENCY BATTERY	BEST LIGHTING PRODUCTS	LEDR1	1	120	2	LED

LUMINAIRE SCHEDULE GENERAL NOTES:

- A. LUMINAIRE SYMBOLS THAT ARE SHOWN HALF-SHADED ON THE PLAN(S) INDICATE LUMINAIRES THAT SERVE AS EMERGENCY LIGHTING. UNLESS SERVED BY A CIRCUIT ORIGINATING AT AN EMERGENCY PANELBOARD OR CENTRAL LIGHTING INVERTER, EMERGENCY LIGHTING LUMINAIRES SHALL BE PROVIDED WITH AN EMERGENCY BATTERY TO PROVIDE EMERGENCY ILLUMINATION FOR A MINIMUM OF 90 MINUTES. EMERGENCY BATTERIES SHALL BE:
 1. LINEAR FLUORESCENT LUMINAIRES: BODINE #B50 OR EQUAL
 2. COMPACT FLUORESCENT LUMINAIRES: BODINE #B4CF2P OR EQUAL
 3. LED LUMINAIRES: BODINE BSL-SERIES OR EQUAL
- B. ANY PROPOSED SUBSTITUTIONS FOR LUMINAIRES THAT ARE SELECTED BY OTHERS REQUIRE THE APPROVAL OF THE SPECIFYING ENTITY.
- C. FIXTURES AND LAMPS FURNISHED BY LANDLORD'S CONTRACTOR, CONTACT SPECIALTY LIGHTING - MEGHAN DONOGHUE (PROJECT MANAGER) P: (860) 767-0110 X232 F: (860) 767-5008 EMAIL: MEGHAN.DONOGHUE@SSLIGHTING.COM



1 LIGHTING PLAN
1/4" = 1'-0"



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:

marco's PIZZA INTERIOR UP-FIT
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

LIGHTING PLAN

PROJECT NUMBER 18-A086

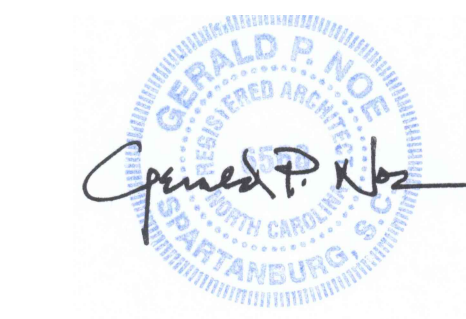
DATE 09-26-2018

SHEET NO.

AE-2

SHEET 3 OF 7

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:

TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



SHEET TITLE:

ELECTRICAL NOTES & PANEL SCHEDULES

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AE-3

SHEET 4 OF 7

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

GENERAL ELECTRIC NOTES:

- CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING A PROPOSAL.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE 2017 EDITION OF THE NATIONAL ELECTRIC CODE.
- ALL CONDUCTORS SHALL BE COPPER #12 MINIMUM.
- ALL CONDUITS SHALL HAVE PROPERLY SIZED EQUIPMENT GROUNDING CONDUCTORS.
- PROVIDE THE NECESSARY PULL/JUNCTION BOXES, SUPPORTS AND MISC. ITEMS FOR A COMPLETE INSTALLATION.
- PROPERLY SEAL ALL PENETRATIONS OF FIRE RATED CONSTRUCTION AREAS.
- PROVIDE TYPE WRITTEN PANEL DIRECTORIES.
- ALL WIRING SHALL BE IN CONTINUOUS CONDUIT SYSTEMS.
- ALL LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF SUSPENDED CEILING.
- ELECTRICAL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES.
- SWITCHES AND RECEPTACLES SHALL BE 20 AMP COMMERCIAL GRADE.
- CONCEAL ALL CONDUITS AND BOXES UNLESS OTHERWISE NOTED.
- COORDINATE ALL POWER REQUIREMENTS WITH LOCAL POWER COMPANY ENGINEER.
- PROVIDE AND MAINTAIN TEMPORARY POWER AND LIGHTING SYSTEM FOR DURATION OF THE PROJECT.
- EMT FITTINGS SHALL BE DIE CAST SET SCREW.
- MAKE FINAL CONNECTIONS TO EQUIPMENT WITH FLEXIBLE METAL CONDUIT, LIQUID TIGHT WHERE EXPOSED TO WEATHER.
- THIS PROJECT TO MEET NFPA 72 AND ADA REQUIREMENTS REGARDING MOUNTING HEIGHTS OF ELECTRICAL DEVICES.
- ALL PRE-WIRED EQUIPMENT MUST BE LISTED AND LABELED BY AN APPROVED TESTING AGENCY PER ARTICLE 110.3 (A) AND (B) OF THE 2017 NEC.
- INDIVIDUAL UNIT EQUIPMENT USED FOR EXIT SIGNS AND EMERGENCY LIGHTS THAT USES RECHARGEABLE BATTERIES SUPPLIED BY THE CIRCUIT THAT SUPPLIES THE NORMAL LIGHTING FOR THAT AREA PER ARTICLE 700.12(F) AND 700.17 OF THE 2017 NEC.

WIRING METHODS:

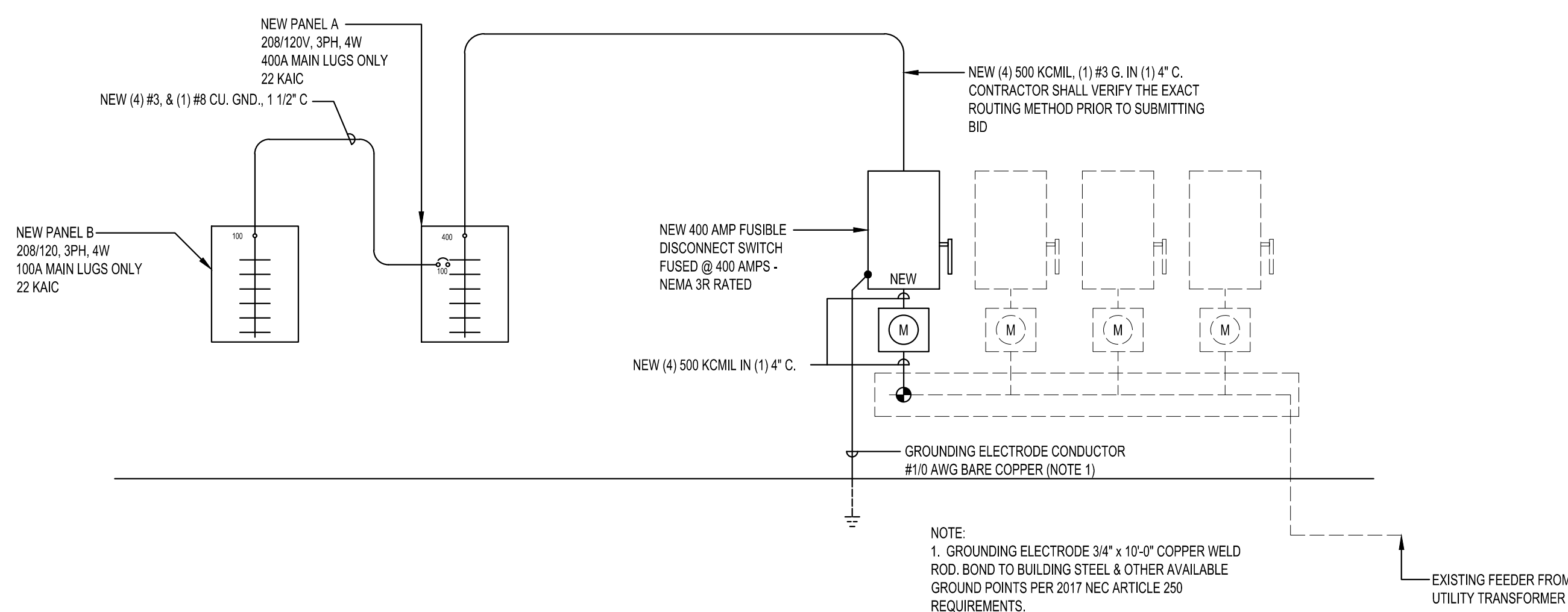
ALL CONDUIT AND WIRING SIZES ARE SHOWN ON THE PANEL SCHEDULES AND RISER DIAGRAM. TYPES APPROVED ARE AS FOLLOWS:
 OUTDOORS: USE THE FOLLOWING TYPES OF CONDUIT:
 1. EXPOSED: RIGID STEEL OR IMC
 2. CONCEALED: RIGID STEEL OR IMC
 3. UNDERGROUND: RNC
 INDOORS: USE THE FOLLOWING WIRING METHODS:
 1. EXPOSED: IMC OR RIGID STEEL
 2. CONCEALED: EMT
 WIRING CONDUCTORS SHALL BE SOFT-ANNEALED 98% COPPER. ALL CONDUCTORS LARGER THAN #8 AWG SHALL BE STRANDED. MINIMUM SIZE CONDUCTOR SHALL BE #12 AWG UNLESS OTHERWISE SPECIFIED. NO ALUMINUM CONDUCTORS WILL BE PERMITTED. TYPE THHN SHALL NOT BE USED UNDERGROUND, OUTSIDE, AT SERVICE ENTRANCES OR IN WET LOCATION. ALL INSULATION SHALL BE RATED AT 600 VOLTS.
 THE FOLLOWING INSULATION TYPES ARE PERMITTED:
 #10 AWG AND SMALLER THW, THWN
 #8 AWG TO #40 AWG THW, THWN
 SERVICE ENTRANCE USE RHW
 WIRE THROUGH FLUORESCENT FIXTURE OR WITHIN 3' OF HEATING EQUIPMENT THHN
 TERMINATION PROVISIONS OF EQUIPMENT FOR CIRCUITS OF 100 AMPERES OR LESS SHALL UTILIZE CONDUCTOR AMPACITIES BASED ON 60 DEGREES CELSIUS TEMPERATURE RATINGS - SEE 2017 NEC TABLE 310.16 FOR AMPACITY RATINGS.

PANEL "A"														
120/208 VOLTS		3 PHASE			4 WIRE			AIC RATING 22,000 FULLY RATED			NEMA RATING: 1			
MOUNTING: SURFACE		MAINS: 400A M.L.O.			TOTAL CONNECTED LOAD 110.51 KVA									
LOAD SERVED	TRIP	PIPE	CIR.	GND.	LOAD-KVA	CKT. NO.	CKT. NO.	LOAD-KVA	GND.	CIR.	PIPE	TRIP	LOAD SERVED	
						A B C								
TENANT SIGNAGE **	20	1/2	12	12	1.2	1	2	0.4	12	12	1/2	20	REC. - RESTROOMS	
REC. - SHOW WINDOWS	20	1/2	12	12	1.2	3	4	0.5	12	12	1/2	20	WATER HEATER CONTROLS	
DOUGH MIXER ***	10	3/4	12	12	1.0	7	8	0.3	12	12	1/2	20	TIMECLOCK	
REF. (BOTTLE COOLER)	20	1/2	12	12	0.3	11	12	0.8	12	12	1/2	20	TYS	
INSTANT WATER HEATER *	20	1/2	12	12	1.0	13	14	0.5	12	12	1/2	20	LTS - DINING AREA / GENERAL	
SPARE	20	-	-	-	-	15	16	1.2	12	12	1/2	20	FREEZER	
SPARE	20	-	-	-	-	17	18	1.0	12	12	1/2	20	LTS - KITCHEN	
PANEL "B" *	100	1 1/2	(4)	8	9.42	21	22	1.2	12	12	1/2	20	TYS - MENU BOARDS	
HP-1 *	40	3/4	8	10	2.99	25	26	4.62	10	6	3/4	40	DATA BOARD *	
MCA: 31.1 / MOCP: 40					2.99	27	28	4.62	10	6	3/4	40	REF. (BOTTLE COOLER)	
HP-2 *	40	3/4	8	10	2.99	31	32	4.62	10	6	3/4	40	REC. - WALL ART	
MCA: 31.1 / MOCP: 40					2.99	33	34	4.62	10	6	3/4	40		
HP-3 *	40	3/4	8	10	2.99	35	36	4.62	10	6	3/4	40		
MCA: 31.1 / MOCP: 40					2.99	37	38	4.62	10	6	3/4	40		
					2.99	39	40	4.62	10	6	3/4	40		
					2.99	41	42	4.62	10	6	3/4	40		

* - VERIFY REQUIREMENTS PRIOR TO ORDERING EQUIPMENT
 ** - CONTROLLED VIA TIMECLOCK (INTERMATIC GM-40 OR EQUAL)
 *** - GFI BREAKER
 PHASE "A": 36.93 KVA
 PHASE "B": 38.55 KVA
 PHASE "C": 35.03 KVA
 CONNECTED LOAD SUMMARY FOR PANEL "A": 110.51 KVA @ 120/208/3 PHASE = 307 AMPERS
 PANEL LOCATED IN KITCHEN

PANEL "B"														
120/208 VOLTS		3 PHASE			4 WIRE			AIC RATING 22,000 FULLY RATED			NEMA RATING: 1			
MOUNTING: SURFACE		MAINS: 100A M.L.O.			TOTAL CONNECTED LOAD 26.72 KVA									
LOAD SERVED	TRIP	PIPE	CIR.	GND.	LOAD-KVA	CKT. NO.	CKT. NO.	LOAD-KVA	GND.	CIR.	PIPE	TRIP	LOAD SERVED	
						A B C								
OVEN OUTLET *	20	3/4	12	12	1.5	1	2	0.4	12	12	1/2	20	POS	
SHUNT TRIP					1.5	3	4	0.4	12	12	1/2	20	POS	
OVEN OUTLET *	20	3/4	12	12	1.5	7	8	0.5	12	12	1/2	20	REC. - CAR TOPPERS	
SHUNT TRIP					1.5	9	10	0.4	12	12	1/2	20	TRACKING BOARD	
SHUNT TRIP					1.5	11	12	0.4	12	12	1/2	20	PRINTER	
HOOD CONTROLS	20	1/2	12	12	0.9	13	14	0.4	12	12	1/2	20	POS	
SHUNT TRIP					1.5	15	16	0.4	12	12	1/2	20	POS	
HOOD LIGHTS	20	1/2	12	12	1.0	17	18	0.4	12	12	1/2	20	PHONE STATION	
SHUNT TRIP					1.5	19	20	0.4	12	12	1/2	20	PHONE STATION	
REF-1 *	25	1/2	12	12	1.42	21	22	-	-	-	-	-	SPARE	
FOOD WARMER	20	1/2	12	12	1.5	23	24	-	-	-	-	-	SPARE	
FOOD WARMER	20	1/2	12	12	1.5	25	26	-	-	-	-	-	SPARE	
FOOD WARMER	20	1/2	12	12	1.5	27	28	-	-	-	-	-	SPARE	
FOOD WARMER	20	1/2	12	12	1.5	29	30	-	-	-	-	-	SPARE	
DOUGH ROLLER	20	1/2	12	12	0.6	31	32	-	-	-	-	-	SPARE	
PIZZA PREP TABLE	20	1/2	12	12	0.5	33	34	-	-	-	-	-	SPARE	
DOUGH RE-PROOFER	20	1/2	12	12	1.3	35	36	0.5	12	12	1/2	20	WALK-IN LIGHTS *	
SPARE	20	-	-	-	-	37	38	0.4	12	12	1/2	20	WALK-IN COOLER EVAPORATOR *	
SPARE	20	-	-	-	-	39	40	1.3	10	10	3/4	30	WALK-IN COOLER CONDENSER *	
SPARE	20	-	-	-	-	41	42	1.3	10					

* - VERIFY REQUIREMENTS PRIOR TO ORDERING EQUIPMENT
 PHASE "A": 8.5 KVA
 PHASE "B": 9.42 KVA
 PHASE "C": 8.8 KVA
 CONNECTED LOAD SUMMARY FOR PANEL "B": 26.72 KVA @ 120/208/30 = 74 AMPERES
 PANEL LOCATED IN KITCHEN



1 ELECTRICAL RISER DIAGRAM
NOT TO SCALE

SECTION 260000 - ELECTRICAL GENERAL CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

- A. This Section supplements all Sections of the Specifications for Division 26, Division 27, and Division 28 and shall apply to all phases of work hereinafter specified, shown on the Drawings, or required to provide a complete installation of approved electrical systems.
- B. The Drawings, General Conditions and General Provisions of the Contract apply to this Section and the Sections of Division 26, Division 27, and Division 28 of the specifications. Where conflicts arise between these documents, the more stringent provision will be applicable, subject to the interpretation of the Engineer.
- C. Furnish all labor, materials, services, and skilled supervision necessary for the construction, erection, installation, connections, testing, and adjustment of all materials and electrical equipment specified herein, or shown or noted on the Drawings, and its conveyance to the Owner, complete in all respects and ready for use.
- D. Where plans indicate fixtures or equipment will be furnished by this Contractor for installation by other Contractors, this Contractor shall furnish all such equipment, complete in all respects and ready for installation. Drawings, instructions, and manuals supplied with equipment shall be carefully preserved and turned over to the installing Contractor.
- E. Where plans indicate fixtures or equipment will be furnished by others, this Contractor shall provide all rough-in and supplies and shall connect such equipment to the electrical system. Drawings, instructions, and manuals supplied with equipment shall be carefully preserved and turned over to the Architect.

1.02 DEFINITIONS

- A. Work: The construction and services required by the Contract Documents whether completed or partially completed and includes all labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The work may constitute the whole or a part of the project.
- B. Furnish: To supply and deliver, unload, and inspect for damage.
- C. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, connect, and place into operation into the work.
- D. Provide: To furnish and install.
- E. Connect: To bring service to the equipment and make final attachment including necessary switches, outlets, boxes, terminations, etc.
- F. Concealed: Hidden from sight in chases, furred spaces, shafts, hung ceilings, embedded in construction, in crawl spaces, or buried.
- G. Exposed: Not installed underground nor concealed as defined.
- H. Drawings: All plans, details, equipment schedules, diagrams, sketches, etc. issued for the construction of the work.
- I. Conduit: Conduit, and all required fittings, pull boxes, hangers, and other supports and accessories related to conduit.

1.03 CODES AND STANDARDS

- A. Perform work in accordance with the applicable Building Code, Electrical Code, Fire Code, Mechanical Code, Plumbing Code, and applicable codes, amendments, and ordinances. Also perform all work in accordance with the Occupational Safety and Health Administration (OSHA) Regulations, Americans with Disabilities Act (ADA), the Authority Having Jurisdiction, Landlord requirements including Tenant Criteria Minimum company requirements.
- B. Recognized Standards: Design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these Specifications shall conform to the latest publications on standard electrical and Electronic Engineering (IEEE), National Electrical Manufacturers Association (NEMA), Underwriters Laboratories, Inc. (UL), National Fire Protection Association (NFPA), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), National Electrical Code (NEC), National Fire Protection Association (NFPA), National Electrical Contractors Association (NECA), and American Institute of Steel Construction (AISC).
- C. Code or utility company requirements supersede any requirements of the Drawings and/or Specifications. The Contract Documents take precedence where the Contract Documents exceed code, Landlord, utility, or recognized standards requirements.

1.04 PERMITS AND FEES: Permits, licenses, fees, inspections and arrangements required for the work under this Contract shall be obtained by the Contractor at his expense.

1.05 TEMPORARY SERVICES FOR CONSTRUCTION

- A. Provide a temporary electrical service, including all required equipment such as transformers, generators and fuel, panelboards, etc. as required by all trades. Coordinate power requirements for the temporary service with the General Contractor and the utility company prior to the start of construction. The Contractor is responsible to develop all temporary service plans and specifications as required by the Authority Having Jurisdiction, submit these plans and specifications as required by the Authority Having Jurisdiction, and to pay for all temporary service energy consumption.
- B. Provide all temporary lighting necessary to provide lighting levels in compliance with OSHA Regulations and as required by all trades.

1.06 CONTRACT DRAWINGS

- A. Obtain, fully understand, and coordinate the work with the complete set of Contract Documents. Any prepared corrections, including all associated costs, arising from lack of coordination with the complete set of Contract Documents is the Contractor's sole responsibility.
- B. Work under these Sections is diagrammatic and is intended to convey the scope of work and indicate the general arrangement of equipment, conduits, and outlets. Obtain instructions from the Architect/Engineer prior to rough-in wherever a question exists as to the exact intended location of outlets or equipment.
- C. Promptly report and discrepancies discovered within the Contract Documents. Failure of the Contractor to report discrepancies shall result in the resolution becoming the Contractor's responsibility and subject to the Architect/Engineer's review and possible rejection. Should the Architect/Engineer reject a discrepancy resolution of which they were not notified, the Contractor is fully responsible to correct the installation, including all associated costs, until approval of the installation is given by the Architect/Engineer.

1.07 SHOP DRAWINGS: Furnish the Architect shop drawing portfolios containing names of manufacturer and cut sheets of equipment to be used on the project. Provide shop drawings for metering equipment, panelboards, luminaires, wiring devices, lighting controls, enclosed switches, surge protection devices, and fire detection and alarm systems, including fully engineered drawings, voltage drop calculations, and battery calculations. Fire detection and alarm shall bear the review stamp of the Authority Having Jurisdiction. Approval shall not relieve the Contractor from responsibility for errors on the shop drawings.

1.08 QUALITY ASSURANCE

- A. All components shall be listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose and free of all rust/corrosion or any visible damage. All items not complying with this requirement shall be replaced without any change in the Contract amount.
- B. Unless otherwise specified, all equipment, devices, luminaires, and materials of the same type or classification and used for the same purpose shall be products of the same manufacturer. Use only new, un-weathered, and unused material, except as specifically noted.
- C. Equipment performance and accessories shall be as indicated on the Drawings and/or specified herein. Inclusion in both locations is not a prerequisite to inclusion in the Contract; equipment and accessories specified in either location shall be included in the Contract. Provide all necessary accessories and connections as required for a complete, functional system, including all required components reasonably inferred to as necessary although such components may or may not be specifically indicated in the Contract Documents.
- D. DELIVER, STORE, AND HANDLING: Accept all materials on site and inspect for damage and protect from corrosion and entrance of debris. Handle all materials in accordance with manufacturer's instructions to avoid damage to internal components, enclosures, and finishes.
- E. WARRANTY AND GUARANTEE: Provide a complete parts and labor warranty and guarantee on all systems for a period of one year from Owner acceptance of the completed facility. This warranty and guarantee shall cover all failures unless such failure is directly attributable to vandalism or causes other than defects in material or workmanship.

PART 2 PRODUCTS

- 2.01 CONDUCTOR TERMINATIONS: Provide conductor terminations rated at a minimum of 75 degrees C in all equipment.
- 2.02 SUBSTITUTIONS: The products specified in the Contract Documents constitute the Basis of Design for the Construction Documents and set minimum standards for quality, design, and functionality. Other products are permitted to be substituted at the Contractor's option, during shop drawing review unless indicated otherwise. Any substitute products shall meet or exceed all requirements specified. Any costs and coordination issues arising out of any substitution, including coordination with all other contractors and subcontractors and any associated costs, is the substituting contractor's sole responsibility.

PART 3 EXECUTION

- 3.01 COORDINATION OF WORK
 - A. Work lines and established heights shall be in strict accordance with architectural drawings and specifications. Verify all dimensions shown and establish all elevations and detailed dimensions not shown prior to rough-in.
 - B. Promptly report any difficulties encountered in the installation of the work which might prevent prompt and proper installation. Failure to report shall constitute an acceptance of the work of other trades as being fit and proper for the execution of this work.
 - C. Coordinate the work with all trades so that it proceeds without delay and minimizes interference to work that is in progress or has not been completed. Conflicts arising from lack of coordination shall be this Contractor's responsibility. The Electrical Contractor shall pay for all extra cutting and patching necessary by any lack of coordination.
 - D. Arrange all conduit runs in such a manner that it does not interfere with gylles, diffusers, outlet boxes, luminaires, or other items while providing for maximum headroom. Maintain access to equipment requiring service when selecting mounting elevations.
 - E. Afford other trades reasonable opportunity for the execution of their work and connect the work of other trades so as not to delay or interfere with their work.
 - F. Explicitly follow all manufacturer's instruction instructions and promptly report any conflicts between the manufacturer's installation instructions and the Contract Documents.
 - G. Provide all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure and complete installation.
 - H. Install and coordinate all requirements and installation details of all materials and equipment prior to rough-in. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other Sections. Determine connection locations and requirements, sequence rough-in electrical connections to coordinate with installation of equipment, sequence electrical connections to coordinate with start-up of equipment, and verify that proper power supply is available prior to subcontractor's ordering equipment. Verify proper voltage, phase, and current rating of power supply against any discrepancies prior to order, connection of equipment, or start-up. Responsibility for verification of proper power supply voltage and any damage resulting from incorrect connections shall rest with this Contractor and any conflicts arising from lack of coordination shall be this Contractor's responsibility.
- 3.02 ACCESS TO EQUIPMENT: Install all equipment, starters, switches, receptacles, and boxes so that all parts are easily accessible for inspection, operation, maintenance, and repair. Provide access doors, fire rated where required, for concealed equipment.
- 3.03 CUTTING, PATCHING, AND PIERCING
 - A. Cut all openings in a neat workmanlike manner, only as large as required for the installation, and leave surfaces around openings smooth and finished to match surrounding surface.
 - B. Patch existing finished surfaces and building components using new materials matching existing materials.
 - C. Fire and/or Smoke Rated Assemblies: Become familiar with all fire and/or smoke rated construction and install work to maintain the integrity of those ratings.
 - D. Roof Penetrations: Coordinate with the Roofing Contractor to provide any required roof penetrations.
- 3.04 FIELD QUALITY CONTROL
 - A. Install all equipment, devices, luminaires, and materials plumb, level, securely, and in a neat and workmanlike manner in accordance with NFPA 70 and all applicable NECA and NEMA standards.
 - B. Adjust all flush mounted equipment, boxes, cabinets, and enclosures such that they are flush with finished walls or floors.
 - C. Replace or refinish damaged equipment, devices, luminaires, materials, and surfaces where marring or disfigurement has occurred.
 - D. Clean electrical parts to remove harmful materials. Clean exposed surfaces of all equipment, devices, luminaires, and materials and the interior of all boxes, enclosures, and cabinets of all foreign materials.

- E. Paint all electrical equipment and materials located on exterior walls, on the roof where exposed to view, where visible from 6'-0" above grade from any property line, and all exposed conduit to match the surrounding surfaces. Coordinate paint color with the Architect.

3.05 TESTING AND INSPECTION

- A. Testing: Test the entire system under operating conditions over a sufficient period of time to establish the adequacy, quality, safety, completed status, and suitable operation of all equipment, devices, systems, etc.
- B. Inspection: Obtain all required certificates of inspection and approval.

3.06 PROJECT CLOSEOUT

- A. Project Record Documents: Provide one printed copy and one electronic copy of project record drawings to the Owner. Project record drawings shall reflect the actual "as-built" conditions and shall include locations of all equipment, devices, and luminaires, circuiting arrangements, routing of all underfloor conduits, routing of conduits longer than 2 inches, locations and mounting heights of all outlet, pull, and junction boxes, locations of all items requiring maintenance and inspection, and locations of components and circuiting and switching arrangements of lighting controls.
- B. Operation and Maintenance Data: Provide one printed copy and one electronic copy of operation and maintenance data for all equipment, devices and luminaires to the Owner. Operation and maintenance data shall include manufacturer's cut sheets, maintenance procedures, recommended maintenance intervals, wiring diagrams, parts lists, manufacturers' warranties, certificates, and test reports of each item installed.
- C. Maintenance Materials: Provide to the Owner two spare keys for each different enclosure and cabinet, including panelboards, two spare fuses of each type and size, and one fuse puller.
- D. Test Reports: Provide one printed copy and one electronic copy of all completed test reports to the Owner.

SECTION 260501 - ELECTRICAL DEMOLITION

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

- 2.01 MATERIALS AND EQUIPMENT: Materials and equipment for patching and extending work as specified in individual Sections.

PART 3 EXECUTION

- 3.01 EXAMINATION
 - A. Visit the project site, review existing conditions against the Contract Documents, and familiarize himself with the work prior to bidding and start of the work. Verify existing conditions, field measurements, and circuiting arrangements are as indicated and that abandoned wiring and equipment serve only abandoned facilities. By signing the Contract, the Contractor acknowledges the site visit has been completed and the existing conditions are accepted.
 - B. Promptly report any field discrepancies. The Contractor assumes full responsibility for adjusting for discrepancies of which the design team is not informed.
 - C. Any demolition work indicated on the Drawings is intended to convey the scope of the demolition work and the Contractor shall be responsible for the demolition work and equipment removal. The Contractor is responsible to demolish existing as required to allow for installation and construction of the work.
 - D. Commencement of work means Contractor accepts existing conditions.
- 3.02 PREPARATION
 - A. Disconnect electrical systems in walls, floors, and ceilings that are removed.
 - B. Protect and safeguard any existing service lines and utility structures.
 - C. Coordinate utility work with the utility company and the Owner.
 - D. Provide temporary wiring and connections to maintain existing systems in service as required for the sequencing of the work or the Owner's need for continued operations.
 - E. Maintain all existing electrical fire alarm systems in service until new system is fully operational, tested, and ready for service. Notify all stakeholders (Owner, Authority Having Jurisdiction, utility company, Landlord, etc.) at least 48 hours before partially or completely disabling system, disable systems only to make switchboards or minimize all outage durations.
- 3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK
 - A. Maintain continuity of circuits as needed to provide power to remaining devices, fixtures, or equipment not being removed.
 - B. Remove, relocate, and extend existing installations as required to accommodate new construction. Extend existing installations using materials and methods compatible with existing electrical installations or as specified and required by code.
 - C. Remove all abandoned wiring, including all abandoned telecommunications and other low voltage cabling, to source of supply.
 - D. Remove exposed abandoned conduit and abandoned conduit above accessible ceilings. Cut abandoned concealed conduit flush with walls and floors.
 - E. Disconnect and remove all devices, boxes, distribution equipment, luminaires, and all associated mounting hardware and appurtenances. Clean exposed surfaces, remove all foreign material from interiors.
 - F. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.
 - G. Dispose of all equipment not reused as part of the work. The Owner shall have first salvage rights on all materials and equipment.
- 3.04 CLEANING AND REPAIR
 - A. Repair construction and finishes damaged during demolition and extension work.
 - B. Patch all openings resulting from the installation or removal of electrical equipment or materials.
 - C. Clean and repair existing materials and equipment that remain or that are to be reused.
 - D. Existing and Relocated Switchboards: Clean exposed surfaces, remove all foreign material from interiors, check tightness of electrical connections, replace damaged circuit breakers, and provide closure plates for vacant positions.
 - E. Existing and Relocated Luminaires: Clean luminaire reflectors and lenses per manufacturer's recommendations, replace all lamps with new, replace any expired ballasts, and repair any broken electrical parts. Replace any existing luminaires with identical luminaires for any existing luminaires that are damaged beyond repair.

SECTION 260519 - CONDUCTORS AND CABLES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

- 2.01 BUILDING WIRE AND CABLES
 - A. Provide single conductor building wire installed in raceway unless indicated otherwise, otherwise permitted, or otherwise required.
 - B. All conductors shall be copper conductors with 600V insulation; type THHN for dry and damp locations and type THWN-2 for wet locations.
 - C. Metal Clad Cable (Type MC): Permitted only for branch circuits in concealed locations and only when approved by applicable codes and amendments and the Authority Having Jurisdiction. Exposed MC Cable is not permitted, except as follows:
 - 1. All MC Cable sheaths shall be listed and identified for grounding.
 - 2. All MC Cable shall be equipped with copper equipment grounding conductor. No exceptions.
 - D. Nonmetallic-Sheathed Cable (Type NM): Type NM-B permitted only for branch circuits in concealed locations within individual dwelling units and only when approved by applicable codes and amendments and the Authority Having Jurisdiction. Exposed NM Cable and NM Cable used outside individual dwelling units is not permitted, except as follows:
 - 1. All conductors 12 AWG and smaller shall be solid. Conductor size 10 AWG is permitted to be solid or stranded. Use stranded conductors for all conductors 8 AWG and larger.
 - 2. Use 12 AWG conductors for all circuits unless indicated otherwise or as modified as follows:
 - 1. 20A, 120V circuits longer than 75 feet: 10 AWG to offset voltage drop.
 - 2. 20A, 120V circuits longer than 150 feet: 8 AWG to offset voltage drop.
 - 3. 20A, 277V circuits longer than 150 feet: 10 AWG to offset voltage drop.
- 2.02 CONTROL CABLES
 - A. All control cable conductor sizes, quantities, stranding, and shielding as recommended by the manufacturer and required for the application, but no smaller than 18 AWG.
 - B. Horizontal Applications in Conduit: Type CL2 unless otherwise required.
 - C. Horizontal Applications not in Conduit: Type CL2P unless otherwise required.
 - D. Riser Applications: Type CL2R unless otherwise required.
 - E. Communications Cables: See Section 271005.
- 2.03 COMMUNICATIONS CABLES: See Section 271005.
- 2.04 WIRING CONNECTORS
 - A. Use twist-on insulated spring connectors, mechanical connectors, or compression connectors for conductor sizes 8 AWG and smaller. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.
 - B. Use mechanical connectors or compression connectors for conductor sizes 6 AWG and larger.
 - C. Use crimped terminals for all control circuit conductor connections.

PART 3 EXECUTION

- 3.01 PREPARATION: Clean raceways thoroughly to remove foreign materials before installing conductors and cables.
- 3.02 COLOR CODING
 - A. Color code conductors as follows and maintain consistent color coding throughout project including branch circuit conductors:
 - 1. 480Y/277 V, 3 Phase, 4 Wire System
 - a. Phase A: Brown
 - b. Phase B: Orange
 - c. Phase C: Yellow
 - d. Neutral/Grounded: Gray
 - 2. 208Y/120 V, 3 Phase, 4 Wire System
 - a. Phase A: Black
 - b. Phase B: Red
 - c. Phase C: Blue
 - d. Neutral/Grounded: White
 - 3. 240/120 V High-Leg Delta, 3 Phase, 4 Wire System
 - a. Phase A: Black
 - b. Phase B (High-Leg): Orange
 - c. Phase C: Blue
 - d. Neutral/Grounded: White
 - 4. 240/120 V, 1 Phase, 3 Wire System
 - a. Phase A: Black
 - b. Phase B: Red
 - c. Neutral/Grounded: White
 - d. Equipment Ground: Green
 - e. Isolated Ground: Green with yellow stripe
- 3.03 INSTALLATION
 - A. Circuit routing indicated is diagrammatic. Arrange circuiting to minimize splices and include circuit lengths required to install connected devices within 10 feet of location shown.
 - B. Combining branch circuits in a single raceway is permitted under the following conditions:
 - 1. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
 - 2. Increase size of conductors as required to account for ampacity derating.
 - 3. Size raceways, boxes, etc. to accommodate conductors.
 - C. Neutral Conductors:
 - 1. Provide separate neutral conductors for:
 - a. Branch circuits protected by ground fault circuit interrupter (GFCI) circuit breakers.
 - b. Branch circuits protected by arc fault circuit interrupter (AFCI) circuit breakers.
 - c. Branch circuits protected by ground fault circuit breakers.
 - d. Branch circuits fed from feed-through protection of GFCI receptacles.
 - e. Branch circuits with dimming controls.
 - f. Branch circuits that serve emergency lighting equipment such as emergency batteries or emergency lighting unit equipment.

- g. Where indicated by the wire counts shown on the Drawings.
 - a. Circuit breaker handle ties to simultaneously disconnect all ungrounded circuit conductors.
- D. Pull all conductors together into raceway at same time, do not damage conductors or exceed manufacturer's recommended maximum pulling tension or sidewall pressure, and use suitable wire pulling lubricant where recommended by the manufacturer.
- E. Support and protect conductors and cables in accordance with NFPA 70 using supports and methods approved by the Authority Having Jurisdiction. Provide independent support from building structure; do not support from raceways, piping, ductwork, suspended ceiling support systems, or other systems and do not allow conductors or cables to lay on ceiling tiles.
- F. Cut all cables per the manufacturer's recommendations and terminate using suitable fittings including anti-short, insulated bushings where applicable.
- G. Provide a minimum of 12 inches of slack at each outlet. Provide a minimum of 5 feet of slack where conductors are installed in enclosures for future termination by others.
- H. Neatly trim and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- I. Make wiring connections using specified wiring connectors and make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies.
- J. Do not remove conductor strands to facilitate insertion into connector. Provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device, where conductors are larger than the equipment terminations can accommodate.
- K. Insulate splices and taps that are made with uninsulated connectors using insulating covers specifically designed for the connectors, or electrical tape for dry or damp locations. Use heat shrink tubing for wet locations.
- L. Provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.
- M. Provide all control wiring and communications cabling, whether or not shown on the Drawings, per manufacturer's recommendations and as required for a complete and operational system.

SECTION 260526 - GROUNDING AND BONDING

PART 1 GENERAL

- 1.01 MAXIMUM GROUNDING SYSTEM RESISTANCE: 5 ohms.
- PART 2 PRODUCTS
 - 2.01 ROD ELECTRODES: Copper, 3/4 inch diameter, 10 foot long solid rods. Sectional rods are not permitted.
 - 2.02 CONCRETE ENCASED ELECTRODES: 4 AWG, 20 foot long bare copper wire.
 - 2.03 WIRE: Copper wire sized to meet NFPA 70 requirements.
 - 2.04 CONNECTORS AND ACCESSORIES: Copper, copper alloy, or bronze mechanical connectors.

PART 3 EXECUTION

- 3.01 INSTALLATION OF GROUNDING ELECTRODE SYSTEM
 - A. As applicable to the project, provide all components required for a complete grounding electrode system including bonding of metal underground water pipe, metal frame of the building, concrete-encased electrode, metal aboveground water piping system, and metal aboveground gas piping system, and rod electrode(s) per NFPA 70 requirements.
- 3.02 INSTALLATION OF EQUIPMENT GROUNDING SYSTEM
 - A. With exception, provide insulated equipment grounding conductor sized per NFPA 70 requirements within each feeder and branch circuit raceway and terminate each end on suitable lug, bus, or bushing.
- 3.03 INSTALLATION OF ISOLATED GROUNDING SYSTEM
 - A. Install an optional isolated ground conductor for circuits serving isolated ground receptacles. Isolated grounding conductors shall be isolated from the isolated grounding receptacle to the isolated ground bus in the upstream panelboard.
- 3.04 TESTING
 - A. Measure grounding resistance using Fall of Potential Method or Signal Injection Method. Provide additional rod electrodes as required to reduce grounding resistance to less than the specified maximum permitted value.

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

- 2.01 HANGERS AND SUPPORTS
 - A. Provide hangers and supports of materials of size and type adequate to carry the supported weight, including the weight of wire in conduit; do not use perforated pipe straps as a means of support.
- 2.02 ANCHORS AND FASTENERS
 - A. Use precast inserts, preset inserts, expansion anchors, or self-drilling anchors as approved by the Structural Engineer for concrete elements.
 - B. Use beam clamps, steel spring clips, steel ratchet fasteners, or welded fasteners for steel elements.
 - C. Use toggle bolts or hollow wall fasteners for hollow masonry, plaster, and gypsum board partitions.
 - D. Use expansion anchors or preset inserts for solid masonry walls.
 - E. Use sheet metal screws for sheet metal elements and wood screws for wood elements.

PART 3 EXECUTION

- 3.01 INSTALLATION
 - A. Provide all required blocking and supplemental framing required to securely support all materials.
 - B. Fasten supports to building structure and surfaces only. Do not fasten supports to pipes, ducts, mechanical equipment, conduit, or ceiling suspension wires.
 - C. Obtain permission from the Structural Engineer before drilling or cutting structural members or before using powder-actuated anchors.
 - D. Rigidly weld support members or use hex-bolts to present neat appearance with adequate strength and rigidity. Provide lock washers and nuts where required.
 - E. Install surface-mounted cabinets and panelboards with minimum of four anchors.
 - F. Provide steel channel supports behind all cabinets and panelboards located in damp or wet locations to stand enclosures 1 inch off wall.
 - G. Provide supports for all low voltage wiring not routed in conduit.

SECTION 260534 - CONDUIT AND WIREWAYS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

- 2.01 CONDUIT
 - A. Size: As required by NFPA 70 for the conductors installed but no smaller than specified.
 - B. Underground: 3/4 inch minimum rigid metal conduit, intermediate metal conduit, Schedule 80 PVC, or Schedule 40 PVC. Metal conduits shall be galvanized or PVC coated.
 - C. Outdoor Locations above Grade: 1/2 inch minimum rigid metal conduit or intermediate metal conduit. Nonmetallic conduit is not permitted above grade. Conduits shall be galvanized or PVC coated.
 - D. Within Slabs above Grade: 3/4 inch minimum rigid metal conduit, intermediate metal conduit, or Schedule 80 PVC. Metal conduits shall be galvanized or PVC coated. Coordinate with the Structural Engineer for restrictions and limitations on conduits installed in slabs above grade.
 - E. Exposed Wet and Damp Locations: 1/2 inch minimum rigid metal conduit or intermediate metal conduit. Conduits shall be galvanized or PVC coated.
 - F. Connections to Vibrating Equipment and Luminaires in Dry Locations: 1/2 inch minimum flexible metal conduit.
 - G. Connections to Vibrating Equipment and Luminaires in Damp and Wet Locations: 1/2 inch minimum liquidtight flexible metal conduit.
 - H. Connections to Other Dry Locations: 1/2 inch minimum rigid metal conduit, intermediate metal conduit, or electrical metallic tubing.
- 2.02 FITTINGS: Provide listed fittings identified for use with the conduit.
- 2.03 WIREWAYS: Source D Class S100 Type LDR for dry locations and Source D Class S100 Type LDR for damp and wet locations unless indicated otherwise; size as required by NFPA 70 based on conductor fill and bending radius requirements.

PART 3 EXECUTION

- 3.01 INSTALLATION
 - A. Conceal all conduit in all interior and exterior areas, including exposed structure areas, unless the Architect provides specific approval permitting the use of exposed conduit.
 - B. Route any exposed conduit parallel and perpendicular to walls.
 - C. Subject to the Architect's approval, conduit located above ceilings is permitted to be routed point-to-point provided it is secured and supported per NFPA 70 requirements and complies with all applicable Codes and other requirements of the specifications.
 - D. Do not embed conduit in slabs-on-grade. Locate conduit a minimum of 2 inches below the bottom surface of the slab to avoid future damage from cutting of the floor slab.
 - E. Route conduit in slabs-above-grade from point-to-point. Do not cross conduits embedded in slabs.
 - F. Route underground conduit from point-to-point and at a burial depth in compliance with NFPA 70, local code, and utility company requirements.
 - G. Arrange conduit to maintain headroom and present neat appearance and arrange supports to prevent misalignment during wiring installation.
 - H. Secure and support all conduit in compliance with NFPA 70 requirements and group adjacent conduits on steel channel racks and trapezes.
 - I. Provide 12 inches of clearance between conduit and piping or surfaces with temperatures exceeding 104 degrees F.
 - J. Install no more than equivalent of three 90 degree bends between boxes.
 - K. Provide sleeves when penetrating footings, masonry walls and floors and seal all penetrations through footings and floors water tight.
 - L. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic, control, and expansion joints.
 - M. Provide suitable pull string in each empty conduit except sleeves and nipples.
 - N. Provide caps to prevent installed conduit against entrance of dirt and moisture.
 - O. Secure wireway to building surfaces and close ends of wireway and unused conduit openings.
 - P. Ground and bond conduit and wireways as required by NFPA 70.

SECTION 260537 - BOXES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS

- 2.01 ALL BOXES
 - A. Nonmetallic boxes are not permitted unless indicated otherwise or without specific written approval from the Architect.
 - B. Provide all required box hangers and supports, extension rings, mud rings, etc. for a complete and secure installation.
 - C. Use gang boxes where more than one device is mounted together; do not use sectional boxes.
- 2.02 OUTLET AND SMALL JUNCTION BOXES
 - A. Dry and Damp Locations: Galvanized NEMA OS 1 stamped steel box rated for the weight of the equipment supported for the device(s) and conductors installed within.
 - B. Wet Locations: Galvanized cast metal NEMA FB 1 Type FD box with gasketed cover and threaded hubs and sized per NFPA 70 requirements for the device(s) and conductors installed within.



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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09-26-2018

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:
 INTERIOR UP-FIT
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AE-4.0

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY
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FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



INTERIOR UP-FIT
BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

AE-4.1

THE ARCHITECT SHALL NOT BE RESPONSIBLE FOR ACTUAL CONDITIONS, CONSTRUCTION AND/OR USE THEREOF. THIS DRAWING IS TO CONVEY DESIGN INTENTIONS AND/OR CODE COMPLIANCE ONLY. USE OF THESE DRAWINGS IMPLIES AGREEMENT WITH THESE CONDITIONS. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS.

- d. Provide shunt trip were denoted as "ST" or otherwise required.
- 3. Amp Interrupting Current (AIC) Rating: No less than the available fault current; fully rated or manufacturer tested series combination. The Contractor shall determine the available fault current where not indicated on the Drawings.
- 4. Do not use multi-pole circuit breakers that mount in a 1-pole circuit breaker space (i.e. half-size circuit breakers).

PART 3 EXECUTION
3.01 **INSTALLATION**
A. Install panelboards 6 feet to top of panelboard but no less than 4 inches above floor.
B. Provide 4 inch thick concrete housekeeping pad for surface-mounted panelboards installed within 4 inches of the floor.
C. Provide filler plates for unused spaces in panelboards.
D. Provide typed circuit directory and nameplate for each panelboard. Revise directory to reflect circuiting changes required to balance phase loads.
E. Provide five 1/2 inch spare conduits out of each flush-mounted panelboard to an accessible location above ceiling. Identify each as SPARE.
F. Measure steady state load currents at each panelboard feeder and rearrange circuits as required to balance the phase loads to within 10 percent maximum imbalance. Maintain proper phasing for multiwire branch circuits.
G. Provide nameplate indicating panelboard equipment designation for each panelboard.
END OF SECTION

SECTION 262717 - EQUIPMENT WIRING

PART 1 GENERAL
1.01 **COORDINATION WITH OTHER TRADES**
A. Meet with all other trades before commencing any work and obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other Sections.
1. Determine all equipment connection locations and requirements and verify that proper power supply is available prior to subcontractor's ordering equipment.
2. Sequence rough-in of electrical connections to coordinate with installation of equipment.
3. Sequence to coordinate with start-up of equipment.
B. Verify and coordinate all requirements and installation details of all materials and equipment prior to rough-in.
C. Verify proper voltage, phase, and current rating of power supply and immediately report any discrepancies.
D. Responsibility for verification of proper power supply voltage and any damage resulting from incorrect connections shall rest with this Contractor.
E. Any conflicts arising from lack of coordination shall be this Contractor's responsibility.

PART 2 PRODUCTS
2.01 **CORDS**
A. Description: Multi-conductor flexible cord Type SO for dry and damp locations or Type SOW in wet locations.
B. Conductor Quantity: As required for the load served; include identified equipment grounding conductor.
C. Conductor Insulation Rating: As required for the voltage of the load served.
D. Conductor Ampacity: No less than the rating of the overcurrent protection device protecting the circuit.
2.02 **CORD CAPS:** Manufacturer's standard configuration for equipment.
2.03 **OTHER MATERIALS:** Provide all disconnect switches, wiring devices, conduit, wire and cable, and boxes required.

PART 3 EXECUTION
3.01 **ELECTRICAL CONNECTIONS**
A. Make electrical connections in accordance with equipment manufacturer's instructions.
B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
D. Provide receptacle outlet to accommodate connection with attachment plug.
E. Provide cord and cap where field-supplied attachment plug is required.
F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring in accordance with manufacturer's instructions.
H. Install terminal block jumpers to complete equipment wiring requirements.
I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.
J. Cut and seal conduit openings in freezer and cooler walls, floors, and ceilings where applicable.
END OF SECTION

SECTION 262726 - WIRING DEVICES

PART 1 GENERAL
1.01 **PREPARATION:** Contact the Architect to determine colors of all wiring devices, cover plates, and carpet and tile flanges, locations where stainless steel cover plates are required, and locations where carpet and tile flanges are required.

PART 2 PRODUCTS
2.01 **RECEPTACLES**
A. All Receptacles:
1. Color as selected by Architect.
2. Provide tamper-resistant receptacles where denoted "TR" on the Drawings and otherwise required.
3. Provide ground-fault circuit interrupter receptacles where denoted "GFCI" on the Drawings and otherwise required.
4. Provide receptacles with controlled receptacle marking where denoted "CR" on the Drawings and where controlled by automatic shutoff controls.
5. Provide identified weather-resistant receptacles for receptacles installed outdoors.
B. Standard NEMA 5-15R Duplex: Hubbell #BR15 unless indicated otherwise.
C. Standard NEMA 5-20R Duplex: Hubbell #BR20 unless indicated otherwise.
D. Interior GFI Duplex: Hubbell #GFTR20 unless indicated otherwise.
E. Exterior GFI Duplex: Hubbell #GFTR20 unless indicated otherwise.
F. Isolated Ground Duplex: Hubbell #IGDGR unless indicated otherwise.
G. Surge Protection Receptacles: Hubbell #BLS325A unless indicated otherwise.
H. Clock Hanger Receptacles: Hubbell #BLS235 unless indicated otherwise.
I. Other NEMA Configurations: As required by the load served.

2.02 **FACELESS GFI:** Hubbell #GFTR20, color as selected by Architect.
2.03 **MULTI-OUTLET ASSEMBLY:** Wiremold Plugmold 2000 Series with receptacles at 6 inches on center unless indicated otherwise. Provide all fittings required for a complete installation. Coordinate device and channel finish color with the Architect.
2.04 **WALL SWITCHES**
A. All Switches:
1. Color as selected by Architect.
2. Horsepower rated when used as motor disconnecting means.
B. Single Pole Toggle: Hubbell #T221 unless indicated otherwise.
C. Three-Way Toggle: Hubbell #T223 unless indicated otherwise.
D. Four-Way Toggle: Hubbell #T224 unless indicated otherwise.
E. Single Pole Toggle with Pilot Light: Hubbell #HL1221PLC unless indicated otherwise.
F. Single Pole Keyed: Hubbell #HL1221LK unless indicated otherwise.
G. Three-Way Keyed: Hubbell #HL1223LK unless indicated otherwise.
H. Four-Way Keyed: Hubbell #HL1224LK unless indicated otherwise.

2.05 **WALLBOX DIMMERS**
A. All Wallbox Dimmers: Color as selected by Architect.
B. Incandescent Dimmers:
1. Up to 600 Watts: Lutron Maestro #MA-600 unless indicated otherwise.
2. Between 600 and 1000 Watts: Lutron Maestro #MA-1000 unless indicated otherwise.
3. Between 1000 and 1920 Watts: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-120-WH power interface unless indicated otherwise.
C. Fluorescent 2-Wire Dimmers:
1. 120 Volts, Up to 5 Amps: Lutron Diva #DVFU-5A3P unless indicated otherwise.
D. Fluorescent 3-Wire Dimmers:
1. 120 Volts, Up to 6 Amps: Lutron Maestro #MAF-6AM unless indicated otherwise.
2. 120 Volts, Between 6 and 16 Amps: Lutron Maestro #MAF-6AM with Lutron #PHPM-3F-120-WH power interface unless indicated otherwise.
3. 277 Volts, Up to 6 Amps: Lutron Maestro #MAF-6AM-277 unless indicated otherwise.
4. 277 Volts, Between 6 and 16 Amps: Lutron Maestro #MAF-6AM with Lutron #PHPM-3F-DV-WH power interface unless indicated otherwise.
E. Fluorescent 0-10 Volt Dimmers:
1. Up to 16 Amps: Lutron Maestro #MAF-6AM with Lutron #GRX-TV power interface unless indicated otherwise.

F. Magnetic Low Voltage Dimmers:
1. Up to 450 Watts: Lutron Maestro #MALV-600 unless indicated otherwise.
2. Between 450 and 800 Watts: Lutron Maestro #MALV-1000 unless indicated otherwise.
3. Between 800 and 1920 Watts: Lutron Maestro #MALV-6AM with Lutron #PHPM-WBX-DV-WH power interface unless indicated otherwise.
G. Electronic Low Voltage Dimmers:
1. Up to 800 Watts: Lutron Maestro #MAELV-600 unless indicated otherwise.
2. Between 600 and 1920 Watts: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-DV-WH power interface unless indicated otherwise.
H. LED Dimmers:
1. All LED Dimmers: Dimmer utilized shall be tested and listed by the LED manufacturer as a compatible dimmer.
2. 0-10 Volt Dimmers:
a. Up to 16 Amps: Lutron Maestro #MAF-6AM with Lutron #GRX-TV power interface unless indicated otherwise.
3. Electronic Low Voltage Dimmers:
a. Up to 16 Amps: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-DV-WH power interface unless indicated otherwise.
4. Magnetic Low Voltage Dimmers:
a. Up to 16 Amps: Lutron Maestro #MAF-6AM with Lutron #PHPM-WBX-DV-WH power interface unless indicated otherwise.

2.06 **ABOVE-FLOOR SERVICE FITTINGS:** Hubbell #SC3098A housing with plates as required for the wiring device installed or otherwise required.
2.07 **POKE-THROUGH FITTINGS:** Wiremold Evolution 6AT series unless indicated otherwise with wiring devices indicated; color as selected by Architect.
2.08 **POWERPOLES:** Wiremold AMDT series unless indicated otherwise with wiring devices indicated. Provide lengths, device covers, ceiling trim plates, and mounting feet as required for a complete installation.
2.09 **COVER PLATES**
A. All Cover Plates:
1. Color and material as selected by Architect.
2. Provide cover plates appropriate for the wiring devices installed within the box.
a. Use combination plates when wiring devices are ganged together.
B. Wall Plates:
1. Provide standard-size nylon wall plates unless indicated otherwise; mid-size or jumbo wall plates are not permitted.

- C. Wall-Mounted:
1. Sensor: Wattstopper #DT-200 unless indicated otherwise.
2. Power Pack: Wattstopper #BZ-150 unless indicated otherwise.
3. Finish: White.
- D. Ceiling-Mounted:
1. Sensor: Wattstopper #DT-300 unless indicated otherwise.
2. Power Pack: Wattstopper #BZ-150 unless indicated otherwise.
3. Finish: White.
- E. Accessories: Provide heavy duty coated steel wire protective guards compatible with specified occupancy sensors where subject to impact.

2.03 OCCUPANCY MOTION SENSORS
A. Wall-Mounted for Switching:
1. Sensor: Wattstopper #EW-200 unless indicated otherwise.
2. Finish: As selected by the Architect.
B. Wall-Mounted for 0-10 Volt Dimming:
1. Sensor: Wattstopper #SP-211 unless indicated otherwise.
2. Lens: Wattstopper #FSP-L* as required for the application.
3. Finish: White.
4. Configuration Tool: Wattstopper #FSR-100 unless indicated otherwise.

2.04 **TIMECLOCKS**
A. Torq D2S series unless indicated otherwise.
B. Input Voltage: Coordinate with the voltage of the control circuit.
C. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the timeclock is installed.
2.05 **TIMER SWITCHES:** Torq #S403 unless indicated otherwise.
2.06 **OUTDOOR PHOTOCELLS:** Torq #2101 unless indicated otherwise.
2.07 **INDOOR SWITCHING PHOTOSENSORS**
A. Sensor: Wattstopper #LS-102 unless indicated otherwise.
B. Power Pack: Wattstopper #BZ-150 unless indicated otherwise.
C. Finish: White.

2.08 **INDOOR 0-10 VOLT DIMMING PHOTOSENSORS**
A. Sensor: Wattstopper #LS-301 unless indicated otherwise.
B. Power Pack: Wattstopper #BZ-150 unless indicated otherwise.
C. Finish: White.
D. Configuration Tool: Wattstopper #LSR-301-S unless indicated otherwise.
E. Remote Control: Wattstopper #LSR-301-P unless indicated otherwise.

2.09 **DISTRIBUTED LIGHTING CONTROL SYSTEMS**
A. Room Controllers:
1. Switching:
a. Single-Relay: Wattstopper #LMRC-101 unless indicated otherwise.
b. Dual-Relay: Wattstopper #LMRC-102 unless indicated otherwise.
2. 0-10 Volt Dimming:
a. Single-Relay: Wattstopper #LMRC-211 unless indicated otherwise.
b. Dual-Relay: Wattstopper #LMRC-212 unless indicated otherwise.
c. Three-Relay: Wattstopper #LMRC-213 unless indicated otherwise.
3. Forward Phase Dimming:
a. Single-Relay: Wattstopper #LMRC-201 unless indicated otherwise.
b. Dual-Relay: Wattstopper #LMRC-222 unless indicated otherwise.
C. Occupancy Sensors:
1. 1-Button Wall Switch: Wattstopper #LMDW-101 unless indicated otherwise; color as selected by the Architect.
2. 2-Button Wall Switch: Wattstopper #LMDW-102 unless indicated otherwise; color as selected by the Architect.
3. Corner-Mount: Wattstopper #LMDX-100 unless indicated otherwise.
4. Ceiling-Mount: Wattstopper #LMDC-100 unless indicated otherwise.

D. Wall Switches:
1. Multi-Button: Wattstopper LMSW-100 series unless indicated otherwise with number of buttons as required for the application; color as selected by the Architect.
2. Dimming: Wattstopper #LMDM-101 unless indicated otherwise; color as selected by the Architect.
3. Scene Selection: Wattstopper #LMSW-105 unless indicated otherwise; color as selected by the Architect.
E. Dimming Photosensors:
1. For Sidelit Daylight Zones: Wattstopper #MLLS-400 unless indicated otherwise.
2. For Toplit Daylight Zones: Wattstopper #MLLS-500 unless indicated otherwise.
F. Accessories:
1. Cable: Wattstopper #LMRJ in lengths required unless indicated otherwise; plenum rated when not installed in conduit.
2. Wireless Configuration Tool: Wattstopper #LMCT-100 unless indicated otherwise.

PART 3 EXECUTION
3.01 **GENERAL INSTALLATION REQUIREMENTS**
A. Provide all control wiring and communications cabling, whether or not shown on the Drawings, per manufacturer's recommendations and as required for a complete and operational system.
B. Program the entire system as established in meeting with the Owner.

3.02 **INSTALLATION OF TIMELOCKS**
A. Install timeclocks adjacent to panelboard serving controlled circuits and make electrical wiring interconnections.
B. Provide all relays, contactors, interposing relays, and controls that are required but may not be shown to switch the loads in the manner indicated on the Drawings.
C. Provide nameplate for timeclocks indicating timeclock number.

3.03 **INSTALLATION OF OCCUPANCY SENSORS AND MOTION SENSORS**
A. Location Adjustments: Locations indicated are diagrammatic and only intended to indicate which rooms or areas require devices. Provide quantity and locations as required for complete coverage of respective room or area based on manufacturer's recommendations for installed devices.
B. Install ultrasonic and dual technology occupancy sensors a minimum of 4 feet from air supply ducts or other sources of heavy air flow and as per manufacturer's recommendations, in order to minimize false triggers.
C. Program occupancy sensor as MANUAL-OFF, AUTOMATIC-OFF unless indicated otherwise.
D. Mask sensor lenses using the manufacturer's masking material as required to prevent false triggers.
E. Adjust position of directional occupancy sensors and outdoor motion sensors to achieve optimal coverage as required.

3.04 **INSTALLATION OF INDOOR PHOTOSENSORS**
A. Location Adjustments: Locations indicated are diagrammatic and only intended to indicate which rooms or areas require devices. Provide quantity and locations as required for complete coverage of respective room or area based on manufacturer's recommendations for installed devices.
B. Install closed-loop photosensors to accurately measure the light level at the designated task location while minimizing the measured amount of direct light from natural or artificial sources.
C. Install open-loop photosensors to accurately measure the level of daylight coming into the space while minimizing the measured amount of lighting from artificial sources.
D. Calibrate dimming photosensors such that 100% artificial light output is provided only when completely dark outside and the controlled lighting dims commensurately with the amount of natural daylight contribution to the satisfaction of the Owner. Calibration shall occur after all room finishes, furniture, and window treatments have been installed.

3.05 **INSTALLATION OF POWER PACKS**
A. Install power packs on junction box in accessible location above ceiling of the associated sensor.
B. Do not switch power serving power packs. All required switching shall occur on the load side of the power pack relay.
3.06 **INSTALLATION OF OUTDOOR PHOTOCELLS**
A. Install photocell facing north with unobstructed view.
B. Install such that photocell does not face artificial light sources including light sources controlled by the photocell itself.
C. Weatherproof all connections. Do not install photocell with conduit stem facing up to prevent infiltration of water.
D. Adjust external sliding shields under optimum lighting conditions to achieve desired turn-on and turn-off activation.
3.07 **INSTALLATION OF ROOM CONTROLLERS AND PLUG LOAD CONTROLLERS**
A. Install controllers in concealed accessible locations above ceilings.
B. Do not switch power serving control devices.
C. Provide nameplate for each controller indicating room(s) controlled.
D. Install room controller wall-mounted switches 46 inches above finished floor to the centerline of the box unless indicated otherwise.

3.08 **CLOSE-OUT**
A. Demonstrate proper operation of lighting control devices to the Owner and correct deficiencies or make adjustments as directed.
B. Train Owner's personnel on operation, adjustment, programming, and maintenance of lighting control devices.
C. Provide a written report of all program settings and photosensor settings to the Owner.
END OF SECTION

SECTION 262416 - PANELBOARDS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS
2.01 **LIGHTING AND APPLIANCE PANELBOARDS**
A. Description: Square D Type NQ for 240 Volt Class and Square D Type NF for 600 Volt Class unless indicated otherwise.
B. Voltage, Phase, and Current Ratings: As indicated or otherwise required.
C. Short-Circuit Current Rating (SCCR): No less than the available fault current. The Contractor shall determine the available fault current where not indicated on the Drawings.
D. Bussing: As indicated.
E. Bonded Equipment Ground Bar: Provide for each panelboard.
F. Isolated Ground Bar: Provide for each panelboard that serves isolated ground loads.
G. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the panelboard is installed; 5.75 inches deep, 20 inches wide unless indicated otherwise; surface or flush mounted as indicated.
H. Cabinet Front: Surface or flush type as indicated with hinged door, flush lock, metal directory frame and finished in manufacturer's standard enamel.
I. Circuit Breakers:
1. Bolt-on thermal-magnetic molded case circuit breakers with common trip handle for all poles.
a. Provide Type SWD for lighting circuits.
b. Provide Type HACR for heating, air-conditioning, and refrigeration equipment circuits.
c. Provide Class A ground-fault circuit interrupter (GFCI) where indicated or otherwise required.
d. Provide ground-fault protection of equipment (GFPE) where serving heat tracing or otherwise required.
e. Provide combination type arc-fault circuit interrupter (AFCI) where indicated or otherwise required.
f. Provide dual-rated combination type arc-fault circuit interrupter (AFCI) and Class A ground-fault circuit interrupter (GFCI) where indicated or otherwise required.
2. Accessories:
a. Provide handle ties for circuit breakers serving multiwire branch circuits.
b. Provide Square D #11 handle clamps for circuit breakers denoted as "HLO" and for all fire protection and fire alarm equipment and all circuits serving emergency lighting.
c. Provide Square D #00PAP fixed handle padlock attachment for circuit breakers denoted as "HPL" and for appliances without a local disconnecting means.

- 2.03 **PULL AND LARGE JUNCTION BOXES**
A. Dry and Damp Locations: Galvanized NEMA OS 1 stamped steel box sized per NFPA 70 requirements for the conductors installed within.
B. Wet Locations: Galvanized NEMA 250 Type 4 cast iron or cast aluminum box with ground flange, neoprene gasket, and stainless steel cover screws and sized per NFPA 70 requirements for the conductors installed within.

2.04 **FLOOR BOXES**
A. All Floor Boxes: Nonmetallic floor boxes are permitted. All metal floor boxes located in slabs on grade shall be cast metal. Metal floor boxes installed in elevated slabs are permitted to be stamped steel.
B. Indoor Flush Floor Boxes for Concrete Floors:
1. Nonmetallic: Wiremold Modulink 880MP2 Series unless indicated otherwise with number of gangs as required for the devices installed within.
2. Metal: Wiremold Omnibox Series unless indicated otherwise with number of gangs as required for the devices installed within.
C. Indoor Flush Floor Boxes for Wood Floors:
1. Nonmetallic: Wiremold WMPF Series unless indicated otherwise with number of gangs as required for the devices installed within.
2. Metal: Wiremold 880W Series unless indicated otherwise with number of gangs as required for the devices installed within.
D. Indoor Recessed Floor Boxes: Wiremold RFB Series unless indicated otherwise with number of compartments as required for the devices installed within.
E. Exterior Floor Boxes: Wiremold Outdoor Ground Box Series or equal as manufactured by Combined Utilities Box Systems (CUBS) unless indicated otherwise with wiring devices indicated.

PART 3 EXECUTION
3.01 **INSTALLATION**
A. Install in locations indicated and as required for splices, taps, wire pulling, equipment connections, and as required by NFPA 70.
B. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
C. Install outlet boxes for all wall-mounted wiring devices at heights indicated in Section 262726 unless indicated otherwise. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes prior to rough-in.
D. Use flush boxes in finished areas. Do not install flush boxes back-to-back in walls; provide minimum 6 inches on one side separation.
E. Locate flush boxes in masonry walls to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
F. Install all wall-mounted boxes level and oriented parallel with building lines and ceiling grid ties where applicable.
G. Install all ceiling-mounted boxes level and oriented parallel with building lines and ceiling grid ties where applicable.
H. Install all floor boxes level and oriented parallel with building lines and tile grout lines where applicable.
I. Vertically align adjacent wall mounted outlet boxes for switches, thermostats, similar devices, or as required by NFPA 70.
J. Install concealed boxes within 1/8 inches from ceiling access panels, air distribution diffusers, or removable recessed luminaires.
K. Support boxes independently of conduit; do not support boxes from ceiling support wires.
L. Install knockout closures in unused box openings.
M. Install cover plates on boxes; see Section 262726 for cover plate specifications.
N. Ground and bond boxes as required by NFPA 70.
END OF SECTION

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS
2.01 **NAMEPLATES:** Engraved laminated plastic with 1/8 inch letters on contrasting background.
2.02 **LABELS:** As required by regulatory agencies.
2.03 **WIRE MARKERS:** Cloth, tape, split sleeve, or tubing type.

PART 3 EXECUTION
3.01 **NAMEPLATES:** Provide nameplates with the unique equipment designation at each electrical distribution and control equipment enclosure, communication cabinet, and control device station.
3.02 **WARNING LABELS:** Provide all regulatory required and industry standard warning labels on all electrical equipment, including high-voltage, tested series rated combination, and arc flash hazard labeling.
3.03 **WIRE MARKERS:** Provide wire and cable markers at panelboard gutters, pull boxes, outlet boxes, and junction boxes for each load connection. Indicate branch circuit or feeder number indicated on Drawings and control wire number indicated on shop drawings.
3.04 **COLOR CODE LEGEND:** Provide identification label identifying conductor color codes at each piece of feeder or branch-circuit distribution equipment.
3.05 **INSTALLATION**
A. Install nameplates and labels parallel to equipment lines.
B. Secure nameplates for distribution equipment visible to the public to the inside surface of door.
C. Secure nameplates for distribution equipment not visible to the public to the front of the enclosure using screws, rivets, or adhesive.
END OF SECTION

SECTION 260595 - FIRE STOPPING

PART 1 GENERAL
1.01 **PREPARATION:** Examine the complete set of Drawings and identify all fire rated partitions, floors and assemblies and identify appropriate firestopping method for the assembly.

PART 2 PRODUCTS
2.01 **FIRESTOPPING ASSEMBLIES:** Use only systems listed by UL or FM or tested in accordance with ASTM E 814 or ASTM E 119 that have listed equal fire rating of penetrated assembly and minimum I Rating Equal to F Rating.
2.02 **MATERIALS:** Elastomeric silicone firestopping, foam firestopping, fibered compound firestopping, fiber packing material, mechanical firestop devices, intumescent putty, and firestop pillows are permitted.

PART 3 EXECUTION
3.01 **INSTALLATION**
A. Comply with firestopping manufacturer's recommendations for temperature and other environmental conditions before, during, and after installation. Provide ventilation in areas where solvent-cured materials are being installed.
B. Protect adjacent surfaces from damage by material installation.
C. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material. Remove incompatible materials which may affect bond. Install backing materials to arrest liquid material leakage.
D. Apply the appropriate fire stopping materials and systems to maintain the fire rating of the partition, floor, or ceiling assembly being penetrated.
E. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
F. Do not cover installed firestopping until inspected by Authority Having Jurisdiction.
G. Install any labeling required by code.
H. Clean adjacent surfaces of firestopping materials.
END OF SECTION

SECTION 260919 - CONTACTORS AND RELAYS

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS
2.01 **CONTACTORS**
A. Description: Square D Class 8903, Type L or Type S unless indicated otherwise or otherwise required.
B. Contacts:
1. Provide with quantity of normally open and normally closed contacts as required and a minimum of two spare poles.
a. Provide multiple contactors connected in parallel with one another when the number of contacts required exceeds the maximum capability of a single contactor.
2. Coordinate contact rating to match branch circuit overcurrent protection, considering derating for continuous loads, but no less than 30 amps.
C. Coil: Coordinate with the voltage of the control circuit.
D. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the contactor is installed.

2.02 **RELAYS**
A. Description: Square D Class 8501 Type C unless indicated otherwise or otherwise required.
B. Contacts: Form C contacts rated at 30 amperes unless indicated otherwise.
C. Coil: Coordinate with the voltage of the control circuit.
D. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the relay is installed.

PART 3 EXECUTION
3.01 **INSTALLATION**
A. Install individual controls and relays in enclosures adjacent to panelboard serving controlled circuits and make electrical wiring interconnections.
B. Provide all relays, contactors, interposing relays, and controls that are required but may not be shown to switch the loads in the manner indicated on the Drawings.
C. Provide nameplate for contactors indicating contactor number.
END OF SECTION

SECTION 260923 - LIGHTING CONTROL DEVICES

PART 1 GENERAL
1.01 **PREPARATION**
A. Hold meeting with the Owner prior to commencing work.
1. Review zoning and other adjustments requested by the Owner.
2. Determine all timeclock settings such as ON and OFF times for each day of the week, holiday settings, latitude and longitude of the project site for astronomical features, etc.
3. Determine all control settings such as on and off triggers, blink warnings, sweep settings, switch programming, etc.

PART 2 PRODUCTS
2.01 **ALL LIGHTING CONTROL DEVICES**
A. Provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.
B. All sensors shall be suitable for the geometrical and environmental characteristics of the associated space and be suitable for the floor area to be covered. Provide multiple sensors when necessary to meet the required room coverage.

2.02 **INDOOR OCCUPANCY SENSORS**
A. Wall Switch:
1. Single-Relay: Wattstopper #DSW-301 unless indicated otherwise.
2. Dual-Relay: Wattstopper #DSW-302 unless indicated otherwise.
3. Finish: As selected by the Architect.
B. Combination Wall Switch/Dimmer:
1. 0-10V Dimming: Wattstopper #DW-311 unless indicated otherwise; finish as selected by the Architect.

2. Provide stainless steel coverplates where requested by the Architect.
 3. Provide galvanized steel cover plates on outlet boxes and junction boxes located in unfinished areas, above accessible ceilings, and on surface mounted outlets.
 4. Provide gasketed, cast metal, hinged cover plates for all exterior locations, where denoted "WP" on the Drawings, and where otherwise required.
 5. Provide weatherproof white-in-use covers which are listed and identified as "extra-duty" for all receptacles installed in wet locations.
- C. Floor Box Cover Plates:**
1. Flush Floor Boxes:
 - a. Carpet and Tile Flanges: Wiremold Omnibox Series for metal floor boxes and Wiremold Modulink 880MP2 Series for nonmetallic floor boxes; with number of gangs as required for the floor box.
 - b. Receptacle Cover Plates: Wiremold Omnibox Series for metal floor boxes and Wiremold Modulink 880MP2 Series for nonmetallic floor boxes; with flip lids unless indicated otherwise.
 - c. Communications Cover Plates: Wiremold Omnibox Series for metal floor boxes and Wiremold Modulink 880MP2 Series for nonmetallic floor boxes; combination concentric threaded plug with 1-inch inner plug unless indicated otherwise.
 - d. Hardwired Connection Cover Plates: Wiremold Omnibox Series for metal floor boxes and Wiremold Modulink 880MP2 Series for nonmetallic floor boxes; combination concentric threaded plug with 3/4-inch inner plug unless indicated otherwise.
 2. Recessed Floor Boxes:
 - a. Internal Brackets: As required for the wiring devices installed within.
 - b. Cover Assemblies: Gasket cover type to accommodate carpet or tile insert; flanged or flangeless as selected by the Architect.
 3. Wood Floor Boxes:
 - a. Carpet and Tile Flanges: Wiremold 880W Series for metal floor boxes and Wiremold WMFB Series for nonmetallic floor boxes; with number of gangs as required for the floor box.
 - b. Receptacle Cover Plates: Wiremold 880W Series for metal floor boxes and Wiremold WMFB Series for nonmetallic floor boxes; with flip lids unless indicated otherwise.
 - c. Communications Cover Plates: Wiremold 880W Series for metal floor boxes and Wiremold WMFB Series for nonmetallic floor boxes; combination concentric threaded plug with 1-inch inner plug unless indicated otherwise.
 - d. Hardwired Connection Cover Plates: Wiremold 880W Series for metal floor boxes and Wiremold WMFB Series for nonmetallic floor boxes; combination concentric threaded plug with 3/4-inch inner plug unless indicated otherwise.

- PART 3 EXECUTION**
- 3.01 EXAMINATION: Verify that outlet boxes are installed at proper heights and that openings are neatly cut and will be completely covered by the coverplates or flanges.
- 3.02 PREPARATION
- A. Provide extension rings to bring wall-mounted outlet boxes flush with finished surface.
 - B. Adjust floor boxes to bring floor boxes flush with finished floor.
- 3.03 MOUNTING HEIGHTS
- A. General: All mounting heights are to the centerline of the outlet box.
 - B. Receptacles:
 1. Install receptacles at 18 inches above finished floor unless indicated otherwise.
 2. Install receptacles at counter tops at the lesser of 44 inches above finished floor or 3 inches above any sidesplashes or backsplashes unless indicated otherwise.
 - C. Wall Switches: Install wall switches including wallbox dimmers, wall switch occupancy sensors, and low voltage switches associated with programmable relay panels and room controllers at 46 inches above finished floor unless indicated otherwise.
 - D. Telecommunications Outlets:
 1. Install telecommunications outlets including telephone, data, and television outlets 18 inches above finished floor unless indicated otherwise.
 2. Install telephone outlets for side-reach and forward-reach wall telephone 46 inches maximum above finished floor unless indicated otherwise.
 - E. Modify mounting heights in masonry walls as required to locate the outlet box at the joint in the masonry unit to avoid multiple or split-cut masonry units.

- 3.04 INSTALLATION
- A. Install wall switches with OFF position down.
 - B. Install receptacles vertically with ground pin on bottom unless indicated otherwise.
 - C. Ground-Fault Circuit Interrupter (GFCI) Receptacles:
 1. Provide a separate GFCI receptacle for every instance where denoted "GFCI" on the Drawings and otherwise required by Code; do not GFCI-protect receptacles from the load side of an upstream GFCI receptacle.
 2. Install all GFCI receptacles in a readily accessible location.
 - a. Provide faceless GFCI device in a readily accessible location when the receptacle will not be readily accessible and connect receptacle to load side of faceless GFCI.
 - D. Wallbox Dimmers:
 1. Install wallbox dimmers to achieve full rating; do not break heatsink fins off.
 2. Install power interfaces in concealed accessible location.
 3. Provide a separate neutral conductor for each branch circuit serving wallbox dimmers; do not connect wallbox dimmers to multiwire branch circuits.
 4. Provide all control wiring and communications cabling including all 0-10V control wiring, whether or not shown on the Drawings, per manufacturer's recommendations and as required for a complete and operational system.
 - E. Install wiring devices in outlet boxes and connect wiring device grounding terminal to branch circuit equipment grounding conductor.
 - F. Connect wiring devices by wrapping conductor around screw terminal; do not use back-wired push-in terminals.
 - G. Install cover plates on all outlet boxes including blank outlets.
 - H. Use flat-head screws, clips, and straps to fasten multi-outlet assembly channel to surfaces and use suitable insulating bushings and inserts at connections to outlets and corner fittings.

SECTION 262813 - FUSES

- PART 1 GENERAL - NOT USED**
- PART 2 PRODUCTS**
- 2.01 FUSES:
- A. Up to 600 Amps: Dual-element time-delay Class RK1 unless indicated otherwise or otherwise required for the switch in which the fuse is installed.
 - B. Greater than 600 Amps: Dual-element time-delay Class L unless indicated otherwise indicated otherwise or otherwise required for the switch in which the fuse is installed.
 - C. Site Lighting: Class CC with in-line fuseholder.
- 3.01 EXECUTION
- 3.01 INSTALLATION
- A. Install fuses with label oriented such that manufacturer, type, and size are easily read.

SECTION 262818 - ENCLOSED SWITCHES

- PART 1 GENERAL - NOT USED**
- PART 2 PRODUCTS**
- 2.01 SAFETY SWITCHES
- A. 240 Volt Class: Square D Class 3130 general duty unless indicated otherwise.
 - B. 600 Volt Class: Square D Class 1110 heavy duty unless indicated otherwise.
 - C. Voltage, Phase, and Current Ratings: As indicated or otherwise required.
 - D. Fuse Clips: Class R cartridge fuse clips where fuses are installed.
 - E. Enclosure: Manufacturer's standard enclosure suitable for the environment in which the switch is installed.
 - F. Accessories: Provide grounding kit for all enclosed switches.
- 2.02 BOX COVER UNITS: Busmann 65SU unless indicated otherwise.
- 3.01 EXECUTION
- 3.01 INSTALLATION
- A. All Enclosed Switches:
 1. Install in locations that provide all working space required by NFPA 70.
 2. Install 5 feet to the operating handle.
 3. Install fuses in fusible disconnect switches.
 4. Provide nameplate indicating equipment designation, NEMA fuse class, and fuse size installed.

SECTION 265100 - INTERIOR LIGHTING

- PART 1 GENERAL**
- 1.01 QUALITY ASSURANCE
- A. Verify all ceiling systems for proper coordination of luminaires and accessories including any drywall frames, bar hangers, flanges, trim rings, etc. required for a complete, finished installation.
 - B. Provide only luminaires that are listed for the environment in which they are installed.
 1. Luminaires shall carry damp location and/or wet location ratings as required.
 2. Luminaires shall be insulated ceiling (IC) rated when recessed into insulated ceilings; coordinate locations of all insulated ceilings with the Architectural plans.
 - C. Coordinate exact locations of all luminaires with the Architectural Reflected Ceiling Plan(s); luminaire locations on the Architectural Reflected Ceiling Plan(s) take precedence over locations indicated on the electrical lighting plans.
 - D. Coordinate mounting heights of all wall-mounted luminaires with the Architect prior to rough-in.
 - E. Confirm all luminaire and accessory finishes with the Architect prior to ordering.
 - F. Coordinate luminaire dimensions with the wall and/or ceiling thickness prior to ordering.
 - G. Coordinate mounting location, number of faces, and directional arrows of exit signs as required to mark paths of egress to the satisfaction of the Authority Having Jurisdiction.
- PART 2 PRODUCTS**
- 2.01 LUMINAIRES
- A. Provide as indicated on the Drawings.
 - B. The acceptability of any substitute fixtures lies solely with the Architect and Engineer.
 - C. The specified luminaire shall be provided at no additional cost where a substitute fixture is not accepted by the Architect or Engineer.
- 2.02 NON-DIMMING BALLASTS, TRANSFORMERS, AND DRIVERS
- A. All Ballasts, Transformers, and Drivers
 1. Provide low-temperature ballasts when installed in locations where ambient temperature can fall below 10 degrees C (50 degrees F).
 - B. Electronic Linear Fluorescent Ballasts:
 1. Description: Osram Sylvania Quicktronic High Efficiency series unless indicated otherwise.
 2. Voltage: Universal (120 through 277 volts).
 3. Ballast Factor: Normal (0.88).
 4. Total Harmonic Distortion: Less than 10 percent.
 5. Sound Level Rating: Class A.
 6. Starting: Programmed rapid start unless indicated otherwise.
 7. Accessories: Provide disconnecting means that opens all supply conductors including the neutral conductor.
 - C. Electronic Compact Fluorescent Ballasts:
 1. Description: Osram Sylvania Quicktronic Professional DULUX series unless indicated otherwise.

2. Voltage: Universal (120 through 277 volts).
 3. Ballast Factor: Greater than 0.95.
 4. Total Harmonic Distortion: Less than 10 percent.
 5. Sound Level Rating: Class A.
 6. Starting: Programmed rapid start unless indicated otherwise.
- D. Electronic Metal Halide Ballasts:**
1. Provide all metal halide luminaires rated at 100 watts or less with electronic ballast with matched ANSI code to the associated lamp.
 2. Description: Osram Sylvania Quicktronic Metal Halide Professional series unless indicated otherwise.
 3. Voltage: Universal (120 through 277 volts).
 4. Ballast Factor: 1.0.
 5. Power Factor: Greater than 0.98.
 6. Total Harmonic Distortion: Less than 10 percent.
 7. Sound Level Rating: Class A.
- E. Magnetic Metal Halide Ballasts:**
1. Permitted only for metal halide luminaires rated greater than 100 watts.
 2. Description: Osram Sylvania Metalarc series unless indicated otherwise with matched ANSI code to the associated lamp.
 3. Voltage: Multi-tap (120, 208, 240, 277, and 480 volts).
 4. Circuit Type: Constant Wattage Autotransformer (CWA).
 5. Power Factor: Greater than 0.90.
- F. Low Voltage Transformers:**
1. Description: Electronic or magnetic low voltage transformer as required for and compatible with the associated luminaires.
 2. Primary Voltage: Coordinate with the circuit(s) serving the luminaires.
 3. Secondary Voltage: As required for the associated luminaires.
 4. Power Rating: As required for the total wattage of the luminaires served plus a minimum of 25 percent.
- G. LED Drivers:** As required for and compatible with the associated LED module.

- 2.03 DIMMING BALLASTS AND DRIVERS
- A. All Dimming Ballasts and Drivers:
 1. Provide appropriate dimming ballasts/drivers in all fluorescent and LED luminaires controlled by wallbox dimmer switches or dimming systems whether or not specifically indicated within the specified luminaire's catalog or drivers.
 2. All dimming ballasts/drivers shall be compatible with associated wallbox dimmer switches or centralized dimming system control units.
 3. Dimming Range: As indicated on the Drawings.
 4. Voltage: Universal (120 through 277 volts).
 5. Power Factor: Greater than 0.95.
 6. Total Harmonic Distortion: Less than 10 percent.
 7. Sound Level Rating: Class A.
 - B. Fluorescent Dimming Ballasts:
 1. Three-Wire Linear: Lutron HI-Lume 3D unless indicated otherwise; 1.0 ballast factor.
 2. Three-Wire Compact Fluorescent: Lutron EcoSystem series unless indicated otherwise; ballast factor greater than or equal to 0.95.
 3. 0-10 Volt: Advance Mark 7 series unless indicated otherwise; ballast factor greater than or equal to 0.95.
 - C. LED Dimming Drivers: Advance Titanium series unless indicated otherwise.
- 2.04 EMERGENCY POWER SUPPLIES
- A. All Emergency Power Supplies:
 1. Provide appropriate emergency battery in all fluorescent and LED luminaires indicated as emergency fixtures whether or not specifically indicated within the specified luminaire's catalog number.
 2. Battery: Sealed nickel calcium (NiCad) with 10-year life expectancy.
 3. Illumination Time: 90 minutes minimum.
 4. Voltage: Universal (120 through 277 volts).
 5. Test Switch: Two-wire with remote LED.
 - B. Linear Fluorescent Emergency Batteries: Bodine #B50 unless indicated otherwise; wired for two-lamp operation for luminaires with more than one lamp.
 - C. Compact Fluorescent Emergency Batteries: Bodine #B4CF2P unless indicated otherwise; wired for two-lamp operation for luminaires with more than one lamp.
 - D. LED Emergency Batteries: Bodine BSL series unless indicated otherwise.

- 2.05 LAMPS
- A. All Lamps:
 1. Provide all incandescent lamps from the same manufacturer.
 2. Provide all fluorescent lamps from the same manufacturer.
 3. Provide all metal halide lamps from the same manufacturer.
 - B. Incandescent: As indicated on the Drawings.
 - C. Linear T8 Fluorescent: Osram Sylvania OCTRON series extended life Ecologic lamps unless indicated otherwise.
 - D. Linear T5 Fluorescent: Osram Sylvania PENTRON series extended life Ecologic lamps unless indicated otherwise.
 - E. Compact Fluorescent: Osram Sylvania DULUX series Ecologic lamps unless indicated otherwise.
 - F. Metal Halide: As required for the specified luminaire with matched ANSI code to the associated ballast.
 - G. LED: As indicated on the Drawings.
- 2.06 ACCESSORIES
- A. Provide all supplementary items, appurtenances, and devices incidental to or necessary for a sound, secure, and complete installation including, but not limited to:
 1. Dimming ballasts for fluorescent and LED luminaires that are served by wallbox dimmer switches or dimming systems.
 2. Emergency power supplies for fluorescent and LED luminaires indicated as emergency fixtures.
 3. Multiple ballasts for fluorescent luminaires where necessary to have multi-level switching.
 4. All trim rings, extensions, stems, canopies, cords, pendant feeds, connectors, bar hangers, fittings, hold-down clips, alignment clips/joiners, etc. necessary to mount the luminaires in a proper and approved method.
 5. All necessary low-voltage transformers, connectors, mounting hardware, fittings, etc. for a complete low-voltage lighting system.
 6. All necessary connectors, feeds, end caps, pendants, mounting hardware, fittings, etc. for a complete track lighting system.
 7. Chain hangers for all suspended luminaires in unfinished areas.
 8. Drywall frames for all linear fluorescent luminaires that are recessed into drywall ceilings.
 9. Wireguards for any wall-mounted luminaires, including emergency lighting unit equipment and exit signs, located in gymnasiums or where otherwise exposed to physical damage.
 10. Fire-rated luminaire covers (tents) for luminaires installed in fire-rated ceiling assemblies; coordinate locations of fire-rated ceiling assemblies with the Architectural plans.
 11. Any seismic bracing and/or restraints required by the Authority Having Jurisdiction.
 12. Provide Bodine #01D2DA lighting relay control device for each circuit serving luminaires that are used for both normal and emergency lighting where a generator or central lighting inverter is used for emergency power and the luminaires are controlled by local switching, contactors, or relays.

- PART 3 EXECUTION**
- 3.01 INSTALLATION
- A. Install luminaires in locations shown on the Architectural Reflected Ceiling Plan(s); luminaire locations on the Architectural Reflected Ceiling Plan(s) take precedence over locations indicated on the electrical lighting plans.
 - B. Install luminaires plumb and level and align with building lines and adjacent luminaires.
 - C. Support all luminaires completely independent of any suspended ceiling system.
 - D. Connect luminaires to branch circuit.
 1. Circuit all exit signs, emergency lights, and nightlights ahead of any switching.
 2. Do not use multi-wire branch circuits for circuits serving emergency lighting unit equipment such as emergency batteries or emergency lighting unit equipment.
 - E. Provide all additional emergency lighting and/or exit signs determined necessary by the Authority Having Jurisdiction during inspections.
 - F. Install all remote ballasts, low voltage transformers, and drivers in concealed accessible areas in close proximity to the associated luminaires and connect to the associated luminaires per the manufacturer's recommendations, including adjusting wire sizes for voltage drop if required.
 - G. Prevent insulation from being installed above or within 3 inches away from any luminaire that is recessed into an insulated ceiling but is not insulated ceiling (IC) rated.
 - H. Install fire-rated luminaire covers (tents) for luminaires installed in fire-rated ceiling assemblies; provide fire-rated boxes around luminaires when fire-rated luminaire covers (tents) are not available.
 - I. Burn-in all fluorescent lamps controlled by wallbox dimmers or dimming systems for a minimum of 100 hours prior to connecting to dimmer.
- 3.02 CLOSEOUT
- A. Replace any lamps and ballasts that expire before the Owner's acceptance of the project.
 - B. Aim and adjust all luminaires to provide illumination levels, focusing, and distribution patterns to the Owner's satisfaction.


SECTION 271005 - TELEPHONE AND DATA SYSTEMS

- PART 1 GENERAL**
- 1.01 PREPARATION
- A. Coordinate all demarcation locations with the serving utility and/or the Landlord.
 - B. Hold meeting with the Owner prior to commencing work.
 1. Determine Scope of Work and Division of Responsibility.
 2. Determine quantities of phone drops and data drops are required at each outlet box.
 3. Confirm all cabling, termination, cross-connection equipment, enclosure, and jack requirements.
- PART 2 PRODUCTS**
- 2.01 ENCLOSURES
- A. Backboards: Provide 3/4 inch thick UL-labeled, fire-retardant, interior grade plywood; size as indicated on the Drawings.
 - B. Equipment Racks: Only if required pursuant to meeting with the Owner:
 1. Wall-Mounted Racks: Chatsworth Products Standard Swing Gate series; 19 inches wide, depth as required for installed equipment; height as required for installed components plus 50 percent.
 2. Floor-Mounted Racks: Chatsworth Products 50120 QuadRack series with vertical and horizontal cable management, top and bottom cable troughs, and grounding lug; 19 inches wide, 29 inches deep, and height as required for installed components plus 50 percent.
- 2.02 OUTLET BOXES
- A. Wall: 4-square by 2-1/8 inch deep outlet box with single gang mud ring and cover plate unless indicated otherwise or otherwise required.
 - B. Floor: As indicated on the Drawings or within Section 260537 unless indicated otherwise or otherwise required.
 - C. Wall Plates:
 1. Provide standard-size nylon blank wall plates unless indicated otherwise; color as selected by the Architect. Mid-size or jumbo wall plates are not permitted.
 2. When cabling is to be provided by this Contractor, provide standard-size nylon modular keystone jack cover plates compatible with the associated modular keystone jacks and with appropriate number of jacks unless indicated otherwise; color as selected by the Architect.
- 2.03 PATHWAYS
- A. All Pathways:
 1. See Section 260534 for permitted conduit types.
 2. Provide pulling in each conduit.
 - B. Service Entrance: Conduit with extended radius sweeps; size as indicated or otherwise required.
 - C. Branch Wiring: Provide 3/4 inch minimum conduit from all outlet boxes to accessible ceiling space unless indicated otherwise.

- 2.04 COPPER CABLES, PLUGS, AND JACKS: Only if required pursuant to meeting with the Owner:
- A. Data:
 1. All Data Cabling: Unshielded twisted pair (UTP) Category 5e unless indicated otherwise or otherwise required.
 2. Backbone (Riser) Cabling: Type CMR when installed in conduit and Type CMP when not installed in conduit; gray jacket unless indicated otherwise or otherwise required.
 3. Horizontal Cabling: Type CM when installed in conduit and Type CMP when not installed in conduit; blue jacket unless indicated otherwise or otherwise required.
 4. Plugs: Category 5e UTP non-keyed 8-wire modular plugs unless indicated otherwise or otherwise required.
 5. Jacks: Category 5e UTP non-keyed 8-wire RJ45 modular keystone jack unless indicated otherwise or otherwise required; color as selected by the Owner.
- B. Telephone:
 1. All Telephone Cabling: Unshielded twisted pair (UTP) Category 3 unless indicated otherwise or otherwise required.
 2. Horizontal Cabling: Type CM when installed in conduit and Type CMP when not installed in conduit; blue jacket unless indicated otherwise or otherwise required.
 3. Plugs: Category 3 UTP non-keyed 8-wire modular plugs unless indicated otherwise or otherwise required.
 4. Jacks: Category 3 UTP non-keyed 8-wire RJ45 modular keystone jack unless indicated otherwise or otherwise required; color as selected by the Owner.
- 2.05 CROSS-CONNECTION EQUIPMENT: Only if required pursuant to meeting with the Owner:
- A. Connector Blocks for Category 3 Cabling: Type 66 insulation displacement connectors unless indicated otherwise or otherwise required with capacity sufficient for cables to be terminated plus 25 percent spare.
- B. Connector Blocks for Category 5e Cabling: Type 110 insulation displacement connectors unless indicated otherwise or otherwise required with capacity sufficient for cables to be terminated plus 25 percent spare.
- C. Patch Panels for Copper Cabling: Panduit DP5e series UTP patch panel unless indicated otherwise or otherwise required with quantity of ports sufficient for cables to be terminated plus 25 percent spare.
- D. Patch Cords: Provide one Category 5e patch cord for each pair of patch panel ports.

- PART 3 EXECUTION**
- 3.01 INSTALLATION OF ENCLOSURES
- A. Backboards: Install at locations indicated on the Drawings.
 - B. If required pursuant to meeting with the Owner:
 1. Mounting Heights: See Section 260537.
 2. Floor-Mounted Racks: Permanently anchor to floor in accordance with manufacturer's recommendations at locations directed by the Owner, connect adjacent racks together, and remove interior side panels.
- 3.02 INSTALLATION OF OUTLET BOXES
- A. Install in compliance with Section 260537.
- 3.03 INSTALLATION OF PATHWAYS
- A. All Pathways:
 1. Install all pathways with the following minimum clearances:
 - a. 48 inches from motors, generators, frequency converters, transformers, x-ray equipment, and uninterruptible power systems.
 - b. 12 inches from power conduits and cables and panelboards.
 - c. 5 inches from fluorescent and high frequency lighting fixtures.
 - d. 6 inches from flues, hot water pipes, and steam pipes.
 2. Install conduit in compliance with Section 260534 unless indicated otherwise.
 - a. Do not install more than two 90 degree bends in a single horizontal cable run.
 - b. Leave pull cords in place where cables are not initially installed.
 - c. Under floor slabs, locate conduit at 12 inches minimum below vapor retarder and seal penetrations of vapor retarder around conduit.
 - d. Underground Service Entrance: Install conduit at least 18 inches below finish grade and encase in at least 3 inches thick concrete for at least 60 inches out from the building line.
 - C. Grounding and Bonding: Perform in accordance with ANSI/J-STD-607 and NFPA 70.
- 3.04 INSTALLATION OF CABLES, PLUGS, AND JACKS
- A. Only if required pursuant to meeting with the Owner:
 1. Install cables from outlet to cross-connection equipment as directed by the Owner.
 2. Do not exceed 300 feet from outlet to switch.
 3. Do not bend cable tighter than the greater of the manufacturer's recommended bend radius or 4 times the cable diameter.
 4. Do not exceed the greater of the manufacturer's recommended cable pull tension or 25 pounds.
 5. Use only lubricants approved by cable manufacturer when installing cables in conduit and do not chafe or damage outer jacket.
 6. Install plugs and jacks as required.
 7. Provide the following minimum extra length of cable, looped neatly:
 - a. At Patch Panels: 10 feet.
 - b. At Outlets: 12 inches.
 8. Install labels complying with TIA/EIA-606 using coded identifiers:
 - a. Cables: Color coded labels on each end.
 - b. Outlets: Label each jack on its cover plate with a unique numerical identifier as to its type and function.
 - c. Patch Panels: Label each jack with a unique numerical identifier as to its type and function.
 - d. Patch Cords: Label with jack identifier corresponding to initial installation.
 - B. Only if required pursuant to meeting with the Owner:
 1. Install connector blocks at backboards as directed by the Owner.
 2. Install patch panels in equipment racks as directed by the Owner.
 3. Install labels complying with TIA/EIA-606 using coded identifiers:
 - a. Patch Panels: Label each jack with a unique numerical identifier as to its type and function.
 - b. Patch Cords: Label with jack identifier corresponding to initial installation.

END OF SECTION



GERALD P. NOE ARCHITECT
N.C. REGISTRATION NO. 6568

399 LUCERNE DRIVE
SPARTANBURG, SC 29302
P: 864.583.2215 F: 864.583.2265
mail@gpnarcht.com

CHECKED BY: DKH
DRAWN BY: DKH

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GERALD P. NOE ARCHITECT

09-26-2018

REVISIONS:

NO.	DATE	DESCRIPTION	BY

FRANCHISEE NAME:
TEAM SUSLIK82, LLC.

SAM SUSLIK
546 PERTH DRIVE
SANFORD, NORTH CAROLINA 27332

PROJECT NAME:



INTERIOR UP-FIT

BUFFOLA LAKE BUSINESS PARK
80 AMARILLO LANE
SANFORD, NORTH CAROLINA 27332

SHEET TITLE:
ELECTRICAL SPECIFICATIONS

PROJECT NUMBER 18-A086

DATE 09-26-2018

SHEET NO.

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