

NY ENGINEERS

WHITE PAPER

Taco Bell



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OVERVIEW OF CHALLENGES IN THE PROJECT

Our Taco Bell franchise project in Springfield, Georgia came with several mechanical and electrical challenges based on the franchise owner's past experiences. The owner had previously faced significant issues with kitchen heat and smoke not being exhausted properly, causing discomfort for staff and affecting kitchen operations.

Another major concern was excessive indoor humidity in the dining area, which had led to sweating supply diffusers and unpleasant conditions for customers.

Additionally, the project site had limited available electrical service, as the space was part of a base building with restricted electrical capacity. Installing a new electrical service would have been extremely costly, creating the need for alternative low-demand solutions.

These issues created a complex design requirement where we needed to manage heat, humidity, and power limitations—while keeping the project aligned with Taco Bell's operational standards and cost expectations.



OUR CUSTOM SOLUTION

- To address the issue of heat and smoke, our team ran detailed calculations on the heat load and exhaust output expected from the kitchen equipment. Based on this data, we designed an exhaust system capable of effectively removing heat and smoke while supplying proper make-up air to maintain comfort and air balance in the kitchen.
- For the humidity problem in the dining area, we analyzed Georgia's outdoor temperatures and performed precise calculations to determine the latent load causing the spike in humidity. We then proposed an HVAC system with the correct coil capacity to maintain both temperature and humidity at optimal indoor levels, eliminating diffuser sweating and enhancing customer comfort.
- To handle the limited electrical service, our team strategically designed the MEP layout using gas-fired HVAC and water-heating systems. This approach significantly reduced the electrical load and prevented the need for expensive electrical service upgrades—keeping the project within budget while ensuring operational reliability.

The **project was completed within 2 weeks**, enabling Taco Bell's Springfield, Georgia franchise to start operations on schedule with reduced energy consumption and improved operational reliability.

Area - 2400 Sq. Ft.

Services Used - Electrical, Plumbing, HVAC

ARCHITECTURAL PAIN POINTS AND NY ENGINEERS' SOLUTIONS

01 Slow Turnaround Time

- ✓ 50% faster delivery as compared to other MEP's.
- ✓ Designs delivered within 2 weeks.
- ✓ Code complaint designs for faster approvals.



02 Cost and Equipment Estimation

- ✓ Value engineered designs to save cost.
- ✓ Equipment selection to satisfy code requirements.
- ✓ Coordination among stakeholders to smoothen supply chain.

03 Strict Energy Code Compliance

- ✓ Energy-efficient HVAC, lighting & plumbing system design.
- ✓ ASHRAE-based HVAC load calculations for accuracy.
- ✓ Value engineered designs to improve energy efficiency.



ARCHITECTURAL PAIN POINTS AND NY ENGINEERS' SOLUTIONS

04 Humidity Control and Mold Risk

- ✓ Right-sized HVAC and dehumidification system design.
- ✓ Optimized ventilation design layouts, ensuring proper air balance.
- ✓ Indoor air quality (IAQ) solutions preventing mold and condensation.



05 Responsiveness and Quality of Design

- ✓ Less than 24 hours of response time- best in the industry.
- ✓ Code compliant design that has 80% first time approval.
- ✓ RFI responses shared within 2 business days.

06 Coordination among trades and stakeholders

- ✓ Clash free MEP design under one roof.
- ✓ Georgia and 49 other state licenses to assist your all over US.
- ✓ Flawless coordination with GC and architect.



PLAN SET ISSUE / REVISION HISTORY

NO.	DATE	DESCRIPTION

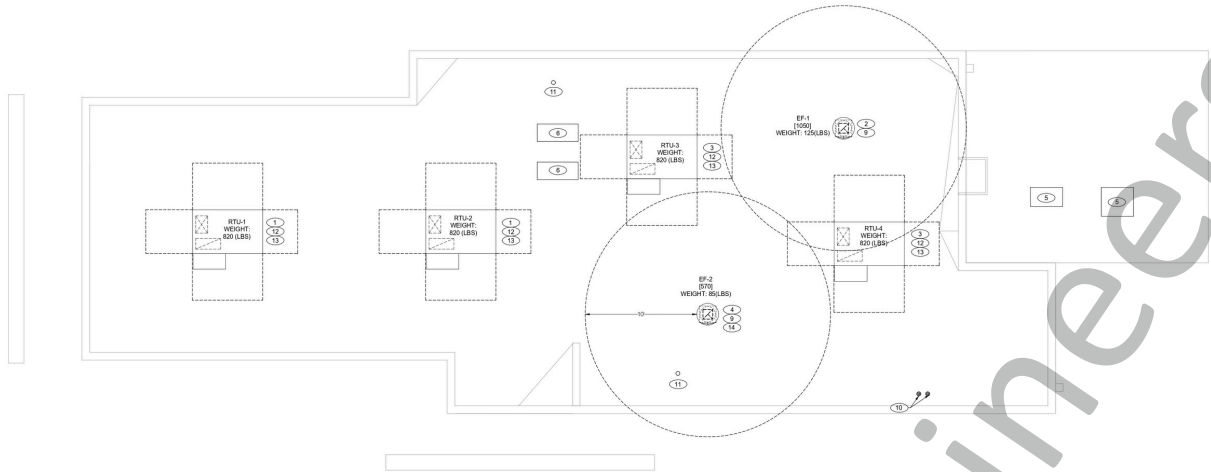
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JOB NO.: _____

SPRINGFIELD, GA 31329



M2.1

PLOT DATE: 10.3.2025



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

- CONTRACTOR TO REPLACE AND INSTALL NEW RTU-142 IN EXISTING LOCATION AS SHOWN ON PLANS. COORDINATE EXHAUST DUCT LOCATION AND DUCT BACKS WITH STRUCTURAL TRUSS LAYOUT. MAINTAIN A MINIMUM 10'-0" CLEARANCE BETWEEN OUTSIDE AIR INTAKE OF RTU AND ANY EXHAUST TERMINATIONS.
- CONTRACTOR TO PROVIDE AND INSTALL TYPE I EXHAUST FAN (EF-1) IN LOCATION AS SHOWN ON PLANS. CONNECT 10" DIA EXHAUST DUCT FROM EXHAUST FAN UP TO EF-1 ON ROOF. COORDINATE EXHAUST DUCT ROUTING WITH STRUCTURAL TRUSS LAYOUT.
- CONTRACTOR TO REPLACE AND INSTALL NEW RTU-344 IN EXISTING LOCATION AS SHOWN ON PLANS. COORDINATE EXHAUST DUCT LOCATION AND DUCT BACKS WITH STRUCTURAL TRUSS LAYOUT. MAINTAIN A MINIMUM 10'-0" CLEARANCE BETWEEN OUTSIDE AIR INTAKE OF RTU AND ANY EXHAUST TERMINATIONS.
- CONTRACTOR TO PROVIDE AND INSTALL EXHAUST FAN (EF-2) IN LOCATION AS SHOWN ON PLANS. CONNECT 10" DIA EXHAUST DUCT FROM EXHAUST FAN UP TO EF-2 ON ROOF. COORDINATE EXHAUST DUCT ROUTING WITH STRUCTURAL TRUSS LAYOUT.
- EXISTING CONDENSING UNIT SERVING WALK-IN COOLER/FREEZER.
- APPROXIMATE LOCATION OF CONDENSING UNIT SERVING ICE MAKER. COORDINATE EXHAUST LOCATION WITH PLUMBING CONTRACTOR TO FIELD VERIFY EXACT THERMOSTAT SPOTS. PROVIDE ALL NECESSARY PIPING ACCESSORIES INCLUDING PIPING INSULATION AND INSTALL ON APPROPRIATE EQUIPMENT SUPPORTS.
- NOT USED.
- NOT USED.
- COORDINATE EXHAUST FAN LOCATION WITH ROOF TOP UNIT. MAINTAIN ROOF TOP UNIT MANUFACTURER'S REQUIRED CLEARANCE AND MINIMUM 10'-0" TO ROOF TOP UNITS OUTSIDE AIR INTAKE.
- WATER HEATER VENT UP THROUGH ROOF. TERMINATE WITH MANUFACTURER RECOMMENDED VENT TERMINATION KIT.
- PLUMBING VENT. REFERENCE AP2.0.
- ROUTE 1" CD SLOPED AT 1/8" PER FOOT TO NEAREST ROOF DOWNPOUT OR AN APPROVED LOCATION OF CONDENSATE DISPOSAL BY CITY CODE OR ARI.
- ALL UTILITY PIPING FOR RTU SHALL RUN UP THROUGH ROOF INSIDE EACH UNIT'S ROOF CURB.
- INTERLOCK EF-2 FAN OPERATION WITH RTU-2.

KEYNOTE - MECHANICAL ROOF PLAN NTS B

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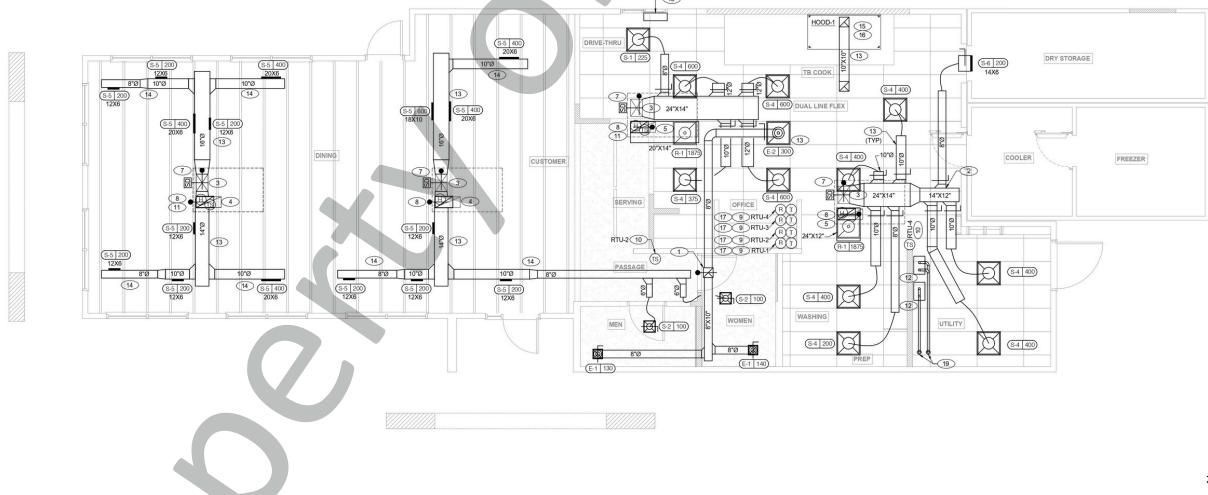
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M2.0

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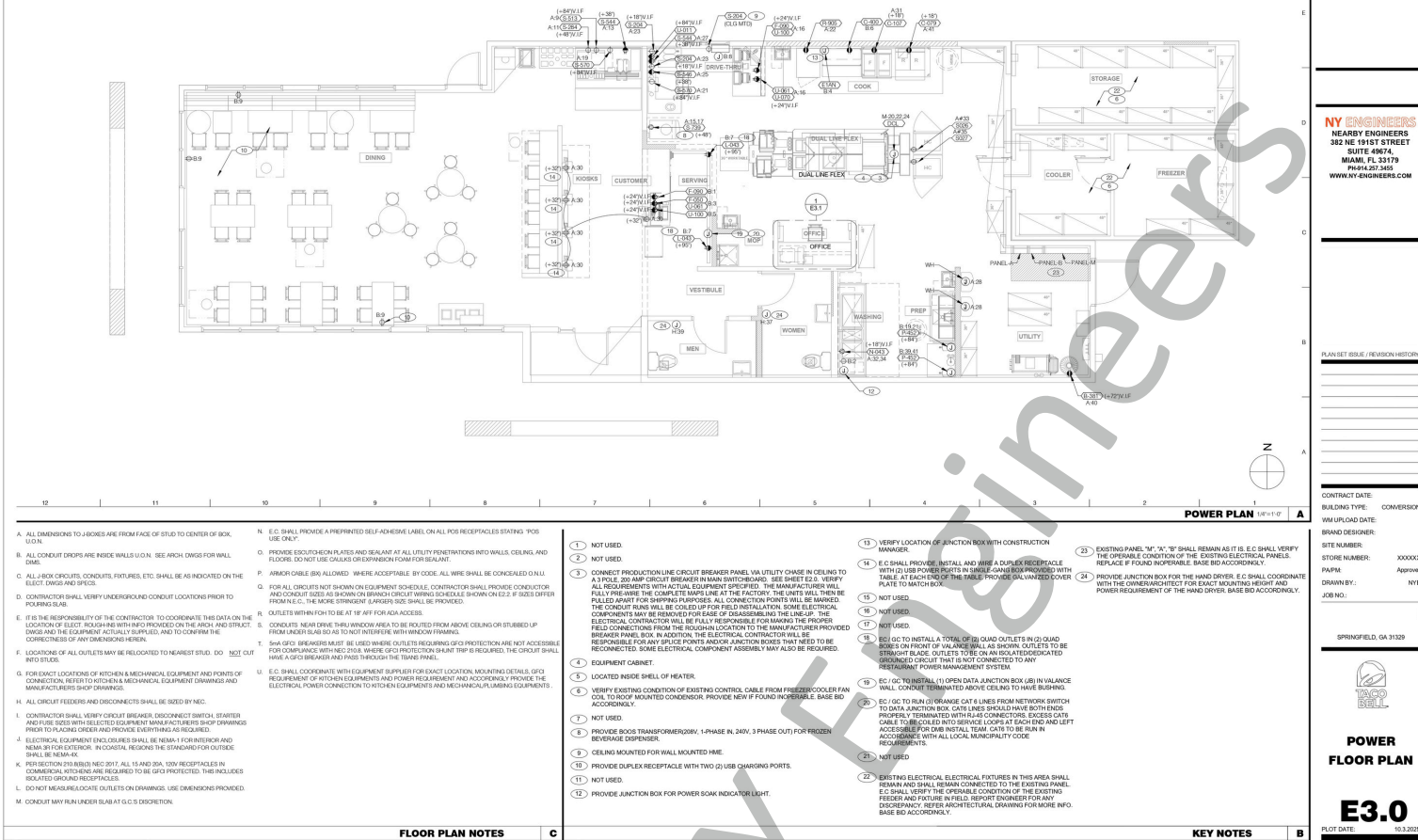
MECHANICAL DUCT AND DIFFUSER PLAN 1/4" = 1'-0" A

- A. THERMOSTATS SHALL BE PROGRAMMABLE THERMOSTATS WITH SUBBASE. THERMOSTATS SHALL BE PROGRAMMED TO MAINTAIN 72°F DURING THE DAYTIME AND 65°F DURING THE NIGHTTIME. HUMIDITY SENSORS SHALL BE PROGRAMMED TO MAINTAIN 45% HUMIDITY. HUMIDITY SENSORS APPLICATION IS VARIABLE PER SITE SPECIFIC REQUIREMENTS. REFER TO HVAC UNIT SCHEDULE, PART 1, FOR APPLICATION CONDITIONS.
- C. COORDINATE DUCTWORK LOCATIONS WITH LIGHTING AND STRUCTURAL.

- 10"x10" EXHAUST AIR DUCT UP THROUGH ROOF TO EXHAUST FAN.
- SEE DETAIL 4 ON DRAWING M4 FOR SUPPLY AIR TAKE-OFF TO CEILING DIFFUSERS. RETURN OR EXHAUST AIR TAKE-OFFS SHALL BE SIMILAR.
- 12"x16" SUPPLY AIR DUCT UP. CONNECT TO RETURN AIR PLENUM AT ROOF TOP UNIT.
- 11"x16" RETURN AIR DUCT UP. CONNECT TO RETURN AIR PLENUM AT ROOF TOP UNIT. TERMINATE RETURN AIR DUCT IN THE CEILING WITH WIRE MESH SCREEN.
- 11"x16" RETURN AIR DUCT UP. CONNECT TO RETURN AIR PLENUM AT ROOF TOP UNIT.
- NOT USED.
- SMOKE DETECTOR TO BE PART OF THE RTU AND INSTALLED IN THE SUPPLY SIDE OF THE UNIT.
- HUMIDITY SENSOR (RELATIVE). HUMIDITY SENSOR LOCATION SHALL BE PLACED IN RETURN AIR DUCTWORK. VERIFY EXACT LOCATION. SEE M4.0.
- LOCATE THERMOSTAT CONTROLS ON WALL IN OFFICE AT 48" A.F.F. COORDINATE LOCATION WITH PLUMBING CONTRACTOR. VERIFY THAT THE TEMPERATURE SENSOR IN THE DINING AREA IS NOT LOCATED ON A TILE WALL.
- MOUNT THERMOSTAT IN RETURN AIR MAIN BRANCH DUCT PER MANUFACTURER INSTALLATION INSTRUCTIONS. WIRE BACK TO RESPECTIVE THERMOSTAT.
- HWHT PROVIDED BY PLUMBING CONTRACTOR.
- RUN DUCTWORK BETWEEN TRUSSES AS HIGH AS POSSIBLE UNDER ROOF JOISTS.
- RUN DUCT THROUGH OPEN WEAVING OF ROOF JOISTS (WHERE POSSIBLE). COORDINATE EXHAUST ROUTING AS PER SITE CONDITIONS.
- 10"x10" EXHAUST AIR DUCT DOWN AND TRANSITION TO FIELD CUT EXHAUST CONNECTION AT ROOF.
- EXHAUST DUCT SHALL RUN BETWEEN ROOF JOISTS TO CONNECT TO ROOF EXHAUST FAN. SEE DETAIL 4 ON DRAWING M4 FOR SUPPLY AIR TAKE-OFF TO CEILING DIFFUSERS. MAINTAIN 10'-0" CLEARANCE BETWEEN OUTSIDE AIR INTAKE OF RTU AND ANY EXHAUST TERMINATIONS.
- NEW SMOKE DETECTOR RESET SWITCH WITH KEY. MFR. IS "SYSTEM SENSOR" MODEL # RTU155 KEY MOUNT NEXT TO THERMOSTATS @ 48" A.F.F. - INSTALL PER MFR. SPECIFICATIONS.
- CONTRACTOR TO PROVIDE AND INSTALL AIR CURTAIN IN LOCATION AS SHOWN ON PLAN. MOUNT AIR CURTAIN 6" BELOW SERVICE OPENING. OPENING DOORS AT DRIVE THRU WINDOW. PARALLEL BARRIER UNDER VEHICLE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR MORE DETAILS.
- FURNISH AND INSTALL PVC 2" DIA INTAKE & BLUE VENT DUCT & TERMINATE ON ROOF WITH MANUFACTURER RECOMMENDED CONCENTRIC VENT TERMINATION KIT. ROUTE VENT PIPING FROM RESPECTIVE UNIT TO LOCATION INDICATED ON ROOF PLAN. ROUTE DOWNS WITH MINIMUM 1/8" DIA OF BENDS AND MINIMUM LENGTH AS REQUIRED BY RESPECTIVE UNIT MANUFACTURER'S REQUIREMENTS. COORDINATE WITH PLUMBING CONTRACTOR.

GENERAL NOTES - MECHANICAL NTS C

KEYNOTE - MECHANICAL DUCT AND DIFFUSER PLAN NTS B



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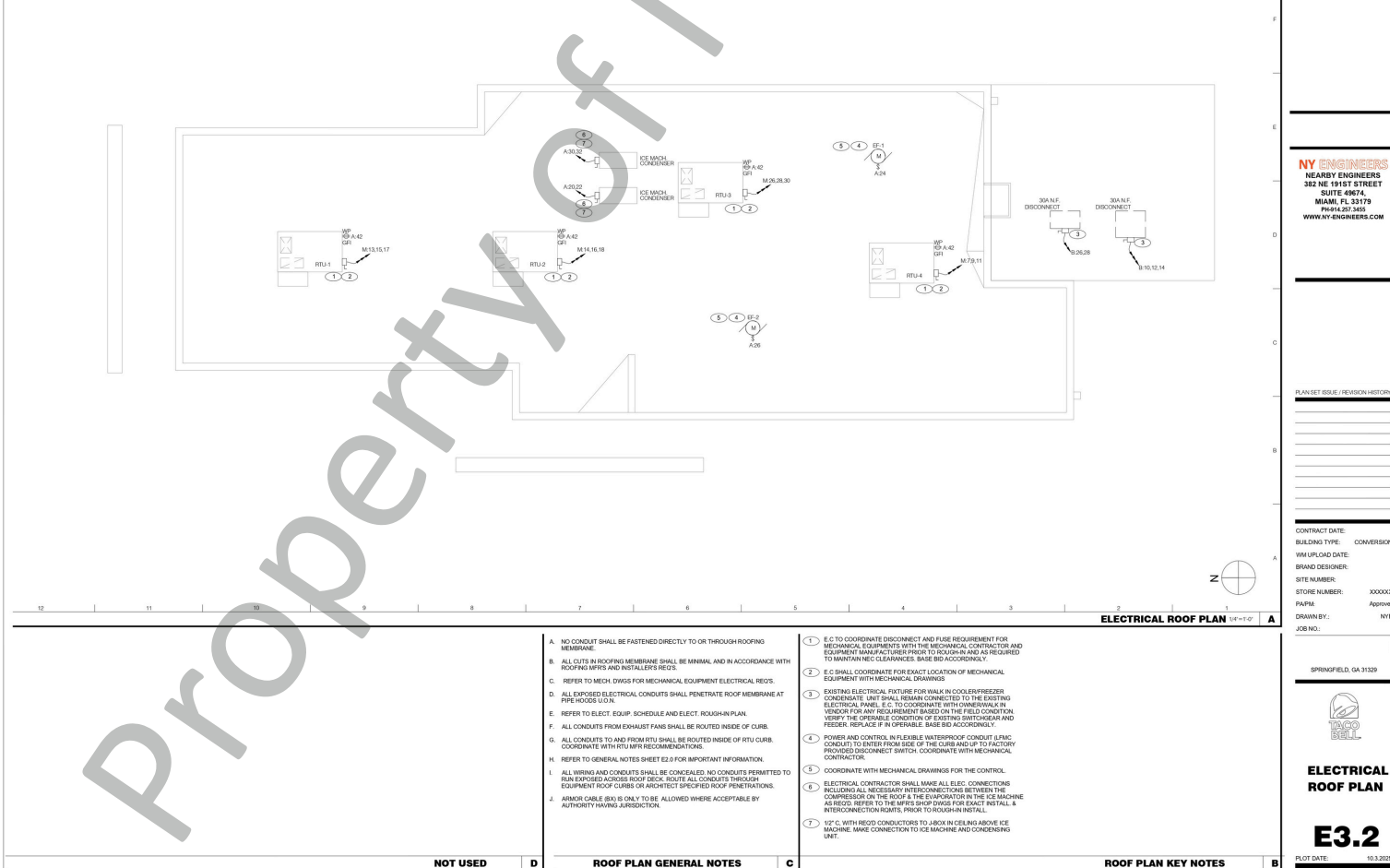
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SPRINGFIELD, GA 31201



POWER
FLOOR PLAN

E3.0
PLOT DATE: 10.3.2025



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JOB NO.:

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ELECTRICAL
ROOF PLAN

E3.2
PLOT DATE: 10.3.2025

PLAN SET 04/01 / REVISION HISTORY

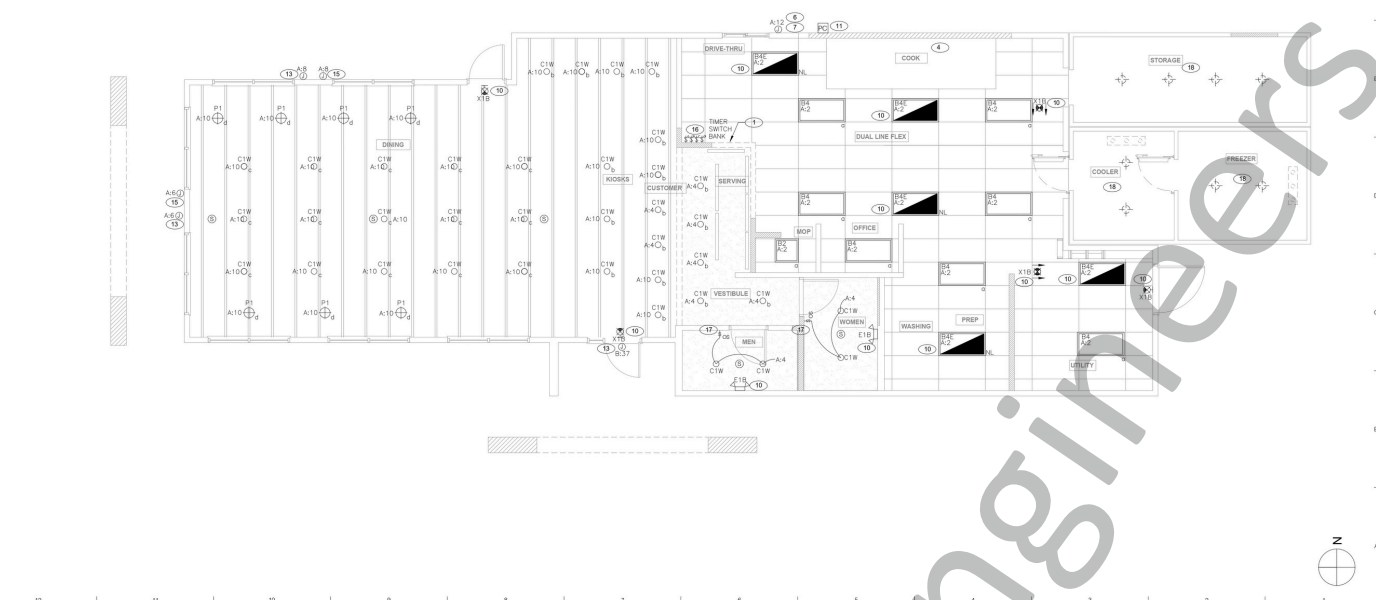
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SPRINGFIELD, GA 31329

ELECTRICAL
LIGHTING
PLAN

E4.0

PLAT DATE: 10.3.2025



NO.	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	MOUNTING	LEAD TYPE	REMARKS
A1	LS INDUSTRIES	MR4LED-24/35-47-40-700R	LED POLE LIGHT	POLE LIGHT MOUNTED AT 20'	LED	
A2	LS INDUSTRIES	450B3-S070-25-BR2	LED POLE LIGHT	POLE LIGHT MOUNTED AT 20'	LED	
B2	OREE	C-TR-C-PD2-37L-40K-WH-20 WATTS	2X4 LED TROFFER		LED	
B4	OREE	C-TR-C-PD2-37L-40K-WH-40 WATTS	2X4 LED TROFFER		LED	
B4E	OREE	C-TR-C-PD2-37L-40K-WH-40 WATTS	2X4 LED TROFFER		LED	
CTW	MAXLITE	86C-AT-36-LED-HDR5000000	LED T8B 120" 18W RECESSED 86W BROW WHITE TRIM W/ ELITE 86C-AT-4W 4" IC AIR SHIRT MOUNTING		LED	
D1	TROY	82772	17"x14" WALL MOUNT SCONCE, OLD DIALER PENDING, MEDIUM BASE SCENE, 100 WATT MAX		LED	
E18	ELITE	ELM LED 800-B	LED T8B 120" 18W RECESSED 86W BROW WHITE TRIM W/ ELITE 86C-AT-4W 4" IC AIR SHIRT MOUNTING		LED	
E3	ELITE	ELM LED 800-SOT	LED T8B 120" 18W RECESSED 86W BROW WHITE TRIM W/ ELITE 86C-AT-4W 4" IC AIR SHIRT MOUNTING		LED	
E7	TBO	43850Z	9" T9 GLASS PENDANT AVERY WITH MED BASE SOCKET (W/ 100W MAX GLOBE) BRONZE FINISH		LED	
F6	TBO	43850Z	9" T9 GLASS PENDANT AVERY WITH MED BASE SOCKET (W/ 100W MAX GLOBE) BRONZE FINISH		LED	
F1	TBO	43850Z	9" T9 GLASS PENDANT AVERY WITH MED BASE SOCKET (W/ 100W MAX GLOBE) BRONZE FINISH		LED	
F18C	SPECTRUM LIGHTING	SPC000MNC-MW-L25W-PAR50-CA-180-AMB	LED PENDANT, 3"		LED	
V18	ELITE	ELM LED 800-B	LED UNIVERSAL MOTO THERMOPLASTIC EXIT, RED LETTERS, BLACK HINGE		LED	

LIGHTING FIXTURE SCHEDULE D

GENERAL NOTES

A. CONFIRM LIGHTING FIXTURE QUANTITIES WITH SUPPLIER.

B. EMERGENCY AND NORMAL LIGHTING MARKED WITH "N" (EMERGENCY) SHALL OPERATE CONTINUOUSLY. PROVIDE UNINTERRUPTED HOT TO NORMAL AND EMERGENCY LIGHTING.

C. EMERGENCY LIGHTING NOT MARKED WITH "N" (EMERGENCY) SHALL OPERATE UNDER CONTROL OF LIGHTING SWITCH RELOCATION. PROVIDE UNINTERRUPTED HOT TO NORMAL AND EMERGENCY LIGHTING.

D. ALL COXCATS EXISTING OR DRAINING COOLER/FREEZER SHALL BE PROVIDED WITH SEAL-OFF FITTING WITH COMPLIANCE PER REC 305.04.

E. ALL INTERIOR LIGHTING CIRCUITS TO BE WIRED THROUGH THE LIGHTING CONTROL RELAYS, SEE 155.1.

F. CONTRACTOR TO FIELD VERIFY CEILING TYPE AND PROVIDE PROPER MOUNTING HANGERS.

G. ALL FIXTURES SUPPLIED WITH LAMPS.

H. ALL EXTERIOR NON-EMERGENCY LIGHT FIXTURES, BUILDING BOMB, AND EXTERIOR DRINK WALL BE CONTROLLED THROUGH PHOTOCELL AND LIGHTING CONTROL. PROVIDE PHOTOCELL FOR EXTERIOR LIGHTING.

I. REFER TO ARCHITECTURAL DRAWINGS FOR THE LIGHT FIXTURE DETAILS INCLUDING WIRING, QUANTITIES AND FINISHES.

J. CONTRACTOR SHALL VERIFY ALL QUANTITIES OF LIGHT FIXTURES. NOT ALL FIXTURE TYPES MARKED "USED" FINISHED FOR LIGHTING PURPOSES ARE INDICATED FOR REFERENCE ONLY. THIS SHALL BE CONFIRMED BY ARCHITECT PRIOR TO ORDERING FIXTURES.

KEY NOTES

1. PRE-EMERGENCY AND PRE-EMERGENCY CIRCUIT, REFER TO A1 FOR DETAILS.

2. NOT USED.

3. NOT USED.

4. EXISTING LIGHT FIXTURES SUPPLIED WITH HOOD AND MOUNTED IN PRE-WIRED JOCK. COMPLETE CIRCUITING PER DETAILS.

5. NOT USED.

6. CANOPY DOWN LIGHTS FINISHED WITH CANOPY.

7. PROVIDE POWER CONNECTION TO CANOPY AT FACTORY INSTALLED JUNCTION BOX FOR CANOPY LIGHTS. LIGHTS ARE FURNISHED WITH CANOPY. PROVIDE ALL REQUIRED FIELD WIRING. COORDINATE REQUIREMENTS WITH MANUFACTURER.

8. NOT USED.

9. NOT USED.

10. CONNECT EMERGENCY BALLAST OR BATTERY BACKUP OF EMERGENCY LIGHT OR BATTERY BACKUP TO UNINTERRUPTED POWER SOURCE. PROVIDE PHOTOCELL FOR EXTERIOR LIGHTING.

11. ALL EXTERIOR LIGHTS TO BE CIRCUITED THROUGH PHOTOCELL. COORDINATE THE EXACT LOCATION OF PHOTOCELL ON SITE WITH THE CONSTRUCTION MANAGER/ ARCHITECT OWNER.

12. NOT USED.

13. VERIFY MOUNTING HEIGHT FOR SIGN POWER WITH ARCHITECTURAL, ELEVATIONS AND SIGN VENDOR.

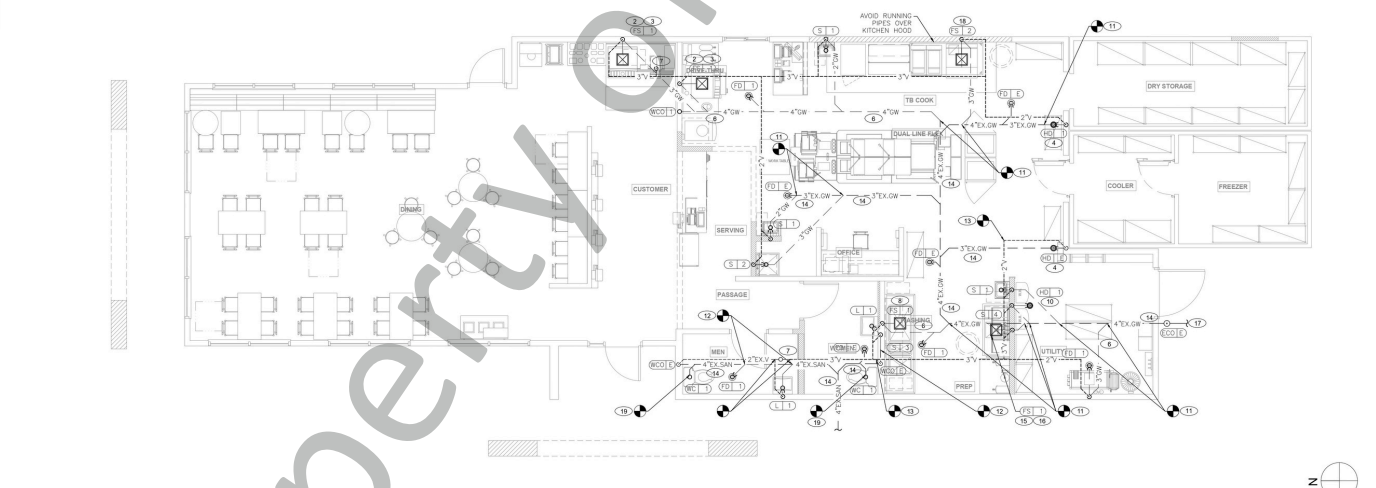
14. NOT USED.

15. PROVIDE POWER CONNECTION TO PUBLIC WALLWASH LIGHTS FURNISHED BY SIGN VENDOR. PROVIDE ALL REQUIRED FIELD WIRING. COORDINATE EXACT LOCATIONS WITH ARCHITECTURAL, ELEVATIONS. COORDINATE REQUIREMENTS WITH VENDOR.

16. TO VERIFY FINAL LOCATION OF SWITCH BANK WITH ARCHITECT OWNER.

17. PROVIDE WALL MOUNTED OCCUPANCY SENSORS IN RESTROOMS.

18. EXISTING COOLER AND FREEZER IN THE LIGHT FIXTURE SHALL REMAIN AND REMAIN CONNECTED TO EXISTING ELECTRICAL PANEL. E.C. SHALL FIELD VERIFY THE OPERABLE CONDITION OF THE EXISTING ELECTRICAL CONNECTION. PROVIDE NEW IF FOUND INOPERABLE. REPORT ENGINEER ON RECORD FOR ANY DISCREPANCY. SEE REC 305.04.



MARK	FIXTURE OR EQUIPMENT	QUANTITY	WASTE F.U. TOTAL F.U. PER FIX.
FD-E	EX FLOOR DRAIN	1	5.0
FD-1	FLOOR DRAIN	2	5.0
WC-1	ADA WATER CLOSET	2	4.0
L-1	LAVATORY	2	1.0
TOTALS			20.0
MAX. WASTE DEMAND AT 20.0 F.U. = 4" SANITARY SEWER WASTE			

MARK	FIXTURE OR EQUIPMENT	QUANTITY	WASTE F.U. TOTAL F.U. PER FIX.
FD-E	EX FLOOR DRAIN	3	2.0
HD-E	EX HUB DRAIN	1	6.0
FD-1	FLOOR DRAIN	3	2.0
HD-1	HUB DRAIN	2	6.0
FS-1	FLOOR SINK	4	6.0
FS-2	FLOOR SINK	1	6.0
S-2	MOP SINK	1	5.0
S-1	HAND SINK	3	2.0
TOTALS			71.0
MAXIMUM WASTE DEMAND AT 63.0 F.U. = 4" GREASE WASTE			

DFU & PIPE SIZING CALC. E

GREASE INTERCEPTOR SIZING

Step 1: Flow rate to grease interceptor	Flow rate: (cu ft / 231) ÷ gal x 0.75 / 2 min = 2 min flow rate	Flow rate
EX-HD	Flow Sink	N/A
FD-1	Floor Drain Emergency	N/A
FS-1 & 2	Floor Sink	N/A
S-1	Hand Sink	10' x 14' x 10' 3 2.100 3.40 GPM
S-2	Mop Basin	22' x 22' x 10' 1 4.840 7.86 GPM
S-3	3 Compartment Sink	28' x 22' x 14' 1 32.500 52.45 GPM
S-4	Prep Sink One Bowl	21' x 14' x 14' 1 4.764 7.64 GPM
Total		77.86 GPM

Flow rate used to size interceptor (less of fixture or pipe size)
Pipe size (4 in.)
Pipe Size Flow rate per Manning's Formula

Step 2: Grease Production	Number of Seats x 4 turns per seat x Grease Production Value x Days between pump-out + Grease output	Grease production value: 0.025 lbs per serving (Fast Food - Limited Prep Medium / No Rawbars)	Days between pump-outs: 90 days
52 x 4 x 0.025 x 90 = 468 lbs of FOG			

MINIMUM 75 GPM/100 GALLON CAPACITY INTERCEPTOR REQUIRED.
CAPACITY OF EXISTING GREASE INTERCEPTOR = 100 GALLONS.

GREASE INTERCEPTOR CALC. D

A. NOTIFY GENERAL CONTRACTOR OF PENETRATIONS THROUGH ROOF MEMBRANE. REFER TO ROOF PLAN FOR LOCATIONS.

B. REFER TO RISER DRAWING ON SHEET P5.0 FOR ALL WASTE.

C. VERIFY WITH THE LOCAL BUILDING AUTHORITY THAT CONDENSATE DRAINAGE CAN BE ROUTED TO FLOOR SINK AND/OR MOP SINK.

1. UNDERGROUND GREASE WASTE PIPE SHALL BE HUB CAST IRON PIPE FOR THE FIRST 10 FEET FROM CONNECTION TO FLOOR SINK FS-2, OUTWARD.

2. PROVIDE CONDENSATE LINE AND DRAIN LINE FROM ICE MACHINE TO FLOOR SINK.

3. PROVIDE WASTE LINES FROM REVERSE UNIT TO FLOOR SINK. PROVIDE AIR GAP PER LOCAL CODE. SEE DETAIL 11A.80.

4. PROVIDE 3/4" COPPER CONDENSATE FROM COOLER/FREEZER EVAPORATION DRAIN PROVIDED BY VENDOR TO OUTFALL AT FLOOR DRAIN. REAR HOSE IS SUPPLIED WITH FREEZER CONDENSATE. CONCEAL CONDENSATE PIPING IN WALL.

5. NOT USED.

6. ENTER RUN OF DRAIN LINES TO INLET OF EXTERIOR GREASE INTERCEPTOR AND OUTLET OF INTERCEPTOR TO CONNECTION AT SANITARY MAN SHALL BE SCHEDULE 40 PVC ON OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION, UNLESS NOTED OTHERWISE.

7. PROVIDE NEW 2" VTS. COORDINATE LOCATION OF VTS WITH MECHANICAL CONTRACTOR. ENSURE THAT VTS IS AT LEAST 1' AWAY FROM ANY FRESH AIR INTAKE INTAKE.

8. PIPE WASTE FROM COMPARTMENT SINK TO FLOOR SINK WITH PROPER AIR GAP.

9. 1" CONDENSATE DRAIN DOWN FROM ITU LINES. SEE DETAIL 13 ON SHEET P5.0. ROUTE DOWN IN WALL AND ROUTE TO MOP SINK WITH PROPER AIR GAP.

10. ROUTE MOP SINK WASTE FROM WATER HEATERS TO HD-1 WITH PROPER AIR GAP.

11. CONNECT NEW GREASE WASTE PIPE TO EXISTING GREASE WASTE PIPE.

12. CONNECT NEW SANITARY PIPE TO EXISTING SANITARY PIPE.

13. NOT USED.

14. EXISTING NETWORK SHOWN IS TENTATIVE. BASED ON OLD MEP FLOOR PLANS. CONTRACTOR TO DETERMINE EXACT ROUTING ON SITE. CONNECT NEW DRAINAGE PIPING ACCORDINGLY.

15. 3/4" DRAIN FOR REVERSE OSMOSES.

WASTE AND VENT PIPING PLAN 1/4" = 1'-0" A

1. PIPE WASTE FROM PREP SINK TO FLOOR SINK WITH AIR GAP PER CODE.

2. GREASE LINE TO EXTERIOR GREASE INTERCEPTOR. SEE CIVIL DRAWINGS FOR EXACT LOCATION AND CAPACITY. BEFORE COMMENCING CONSTRUCTION, CONTRACTOR TO VERIFY THAT EXISTING GREASE INTERCEPTOR HAS ADEQUATE CAPACITY TO RECEIVE WASTE.

3. ALL PIPING INSTALLED BEHIND THE HOOD MUST BE COPPER OR CAST IRON PIPING AS REQUIRED BY LOCAL JURISDICTION. CONNECT NEW WATER CLOSET TO SANITARY CONNECTION FOR EXISTING WATER CLOSET.

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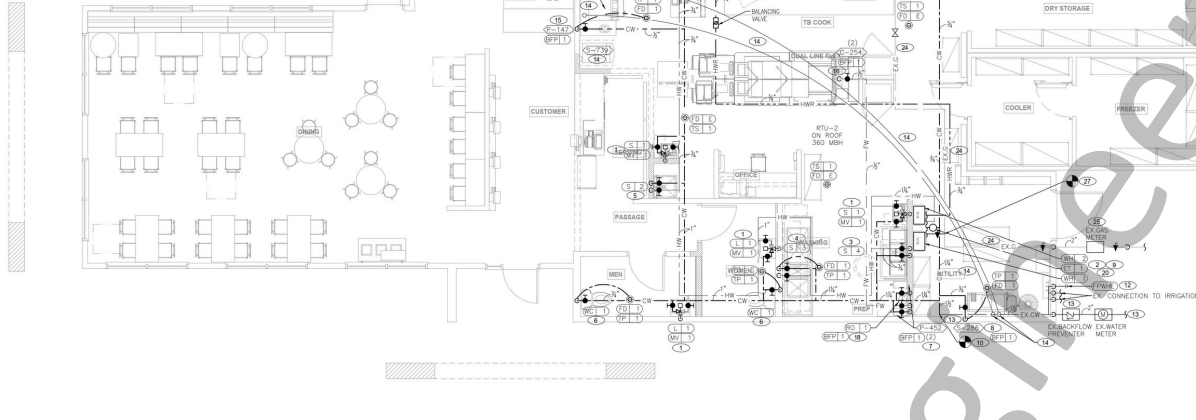
PLUMBING
WASTE
AND
VENT PLAN

P2.0

PLAT DATE: 10.3.2025

GAS DEMAND LOAD CALCULATIONS						
MARK	FIXTURE/EQUIPMENT	QTY	UNIT DEMAND BTU/H	TOTAL DEMAND BTU/H	TOTAL CFH	CONNECTION PIPE SIZE
C-079	DUAL FRYER	1	160,000	160,000	160.0	3/4"
C-107	REHEATER	1	110,000	110,000	110.0	3/4"
WH-142	WATER HEATER	2	190,900	380,800	380.8	1"
TOTAL				650,800	650.8	2"

NOTES:
1. SIZING BASED ON GEORGIA GAS CODE TABLE 402.4.3, 150' OF DEVELOPED LENGTH.
2. CONTRACTOR TO VERIFY THAT GAS METER CAN HANDLE MINIMUM 1000 CFH @ 10" W.C.



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**PLUMBING
WATER AND
GAS PLAN**

P3.0
PLOT DATE: 10.3.2025

WATER FIXTURE LOAD CALCULATIONS						
MARK	FIXTURE OR EQUIPMENT	QUANTITY	CUF.F.U. PER FIXTURE	WATER PER TYPE	TOTAL F.U. PER TYPE	TOTAL F.U. PER FIXTURE
WC-1	WATER CLOSET	2	5.0	-	5.0	10.0
L-1	LAVATORY	2	1.5	1.5	2.0	4.0
S-1	HAND SINK	3	1.5	1.5	2.0	6.0
S-2	MOP SINK	1	3.0	3.0	4.0	4.0
S-3	3 COMP. SINK	1	3.0	3.0	4.0	4.0
S-4	PREP SINK	1	1.5	1.5	2.0	2.0
FPWH-E	EXPOSED PROOF HOSE BIBB	2	3.0	-	3.0	6.0
C-107	REHEATER	1	-	1.0	1.0	1.0
P-452	HOT WATER FILTER	2	1.0	-	1.0	2.0
RD-1	REVERSE OSMOSIS	1	1.0	-	1.0	1.0
S-286	WATER FILTER	1	5.0	-	5.0	5.0
TOTALS						46.0

MAXIMUM WATER DEMAND AT 150' U. = 28.0 GPM @ 1.5" MIN. WATER MAIN SUPPLY
F.U. VALUES PER GEORGIA PLUMBING CODE TABLE E103.30, P.U. TO GPM CONVERSION PER TABLE E103.33, PIPE SIZING PER CHART FIGURE E103.30 FOR 5 FEET/SEC MAXIMUM VELOCITY.

WATER FU & PIPE SIZING CALC. E

1. INSULATION REQUIREMENT SHOULD COMPLY SECTION C404.4 REFER WITH 2015 GEORGIA ENERGY CODE TABLE C402.19

MINIMUM PIPE INSULATION THICKNESS

FLUID TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY (BTU IN/FT-HR-°F)	NOMINAL PIPE OR TUBE SIZE (INCHES)
CONDUCTIVITY (BTU IN/FT-HR-°F)	MEAN RATING TEMPERATURE (°F)	1 1/2" < 3 1/2" 4" < 8"
111-200	0.024-0.03	10 15 20 24 30 36
105-140	0.024-0.03	100 10 10 15 15 15

2. WATER-HEATING EQUIPMENT AND HOT WATER STORAGE TANKS SHALL MEET THE MINIMUM PERFORMANCE REQUIREMENTS GIVEN IN THE 2015 GEORGIA ENERGY CODE, SECTION C404.2, TABLE C404.2. THE EFFICIENCY SHALL BE VERIFIED THROUGH DATA FURNISHED BY THE MANUFACTURER OF THE EQUIPMENT OR THROUGH CERTIFICATION UNDER AN APPROVED CERTIFICATION PROGRAM.

3. HW SYSTEM PIPING IS DESIGNED AS PER MAXIMUM ALLOWED PIPE LENGTH METHOD AS PER 2015 GEORGIA ENERGY CODE C404.5.1. THE HW PIPE LENGTH PROVIDES NEAREST SOURCE OF HEATED WATER TO THE TERMINATION OF THE PIPE. THE PIPE SHALL BE A DEMAND REGULATOR WATER SYSTEM PIPING SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:

1. THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE.

2. THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F (40°C).

4. AS PER ICC 2015 EDITION, C404.7 WATER DISTRIBUTION SYSTEM HAVING ONE OR MORE RECIRCULATION PUMPS THAT PUMP WATER FROM A HEATED-WATER SUPPLY PIPE BACK TO THE HEATED-WATER SOURCE THROUGH A COLD-WATER SUPPLY PIPE SHALL BE A DEMAND REGULATOR WATER SYSTEM PIPING SHALL HAVE CONTROLS THAT COMPLY WITH BOTH OF THE FOLLOWING:

1. THE CONTROL SHALL START THE PUMP UPON RECEIVING A SIGNAL FROM THE ACTION OF A USER OF A FIXTURE SENSING THE PRESENCE OF A USER OF A FIXTURE OR SENSING THE FLOW OF HOT OR TEMPERED WATER TO A FIXTURE.

2. THE CONTROL SHALL LIMIT THE TEMPERATURE OF THE WATER ENTERING THE COLD-WATER PIPING TO 104°F (40°C).

5. AS PER ICC 2015 C404.8.1 CONTROLS ARE INSTALLED THAT LIMIT OPERATION OF A RECIRCULATION PUMP INSTALLED TO MAINTAIN TEMPERATURE OF A STORAGE TANK. SYSTEM RETURN PIPE IS A DEDICATED RETURN PIPE OR A COLD WATER SUPPLY PIPE.

6. AS PER ICC 2015 C404.8.1 AUTOMATIC TIME SWITCHES MUST BE INSTALLED TO AUTOMATICALLY SWITCH OFF THE RECIRCULATING HOT WATER SYSTEM ON HEAT TRIP.

ENERGY CONSERVATION NOTES D

A. REFER TO SHEET P-102.00 FOR ROUGH-IN LOCATIONS.

B. REFER TO SHEET P-400.00 FOR WATER AND GAS ISOMETRIC DRAWINGS.

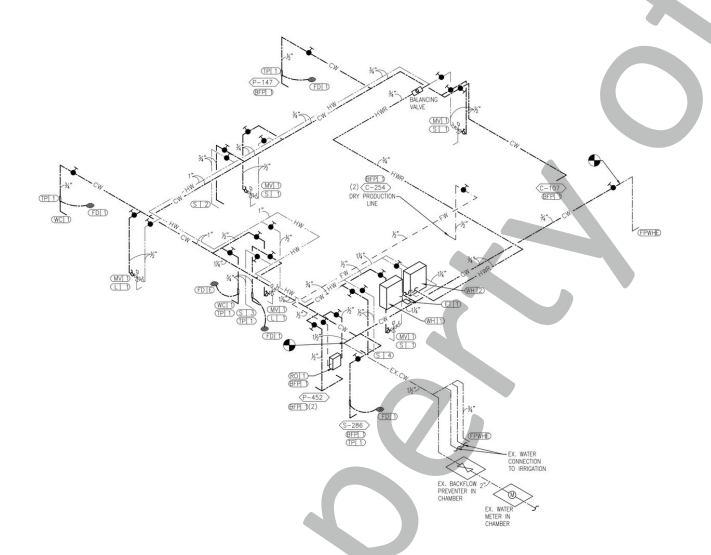
C. FLUSH ALL WATER SUPPLY LINES OF ALL DEBRIS AND IMPURITIES PRIOR TO CONNECTING TO WATER FILTERS.

D. PROVIDE REDUCED PRESSURE BACKFLOW PREVENTER TO SERVE CHIBOWATER SHAM RELIEF TO FLOOR SINK WITH AIR GAP.

WATER AND GAS PLAN NOTES C

- WATER AND GAS PLAN 1/4" = 1'-0" A**
- 1/2" TEMPERED WATER TO LAVATORY (L-1) & HAND SINK (S-1).
 - 1" HOT AND 1" COLD WATER LINES TO EACH WATER HEATER (WH-142).
 - 3/4" HOT AND COLD WATER LINES DOWN IN WALL TO PREP SINK (S-4).
 - 3/4" HOT AND COLD WATER LINES DOWN IN WALL TO 3-COMP SINK (S-3).
 - 1/2" COLD AND HOT WATER DOWN IN THE WALL TO THE MOP SINK (S-2).
 - 3/4" COLD WATER DOWN IN WALL TO WATER CLOSET FLUSH TANK (WC-1).
 - 1/2" COLD WATER 2" A.F.F. CONNECT TO WATER FILTER (S-286) HOT WATER SYSTEM FUSE PROVIDE SHUT-OFF VALVE AND BACKFLOW PREVENTER TO CONNECTION TO WATER FILTER.
 - 3/4" COLD WATER DOWN IN WALL TO WATER FILTER (S-286) PROVIDE SHUT-OFF VALVE AND BACKFLOW PREVENTER PRIOR TO CONNECTION TO WATER FILTER.
 - WATER HEATERS (WH-142) SEE DETAIL 2.179 FOR PIPING SCHEMATIC.
 - CONNECT NEW 1/2" COLD WATER PIPE TO 1/2" EXISTING COLD WATER PIPE.
 - CONNECT NEW 3/4" COLD WATER PIPE TO EXISTING 3/4" COLD WATER PIPE.
 - EXISTING FROST PROOF HOSE BIBB TO REMAIN.
 - EXISTING WATER NETWORK SHOWN ON FLOOR PLAN IS TENTATIVE. CONTRACTOR TO VERIFY EXACT NETWORK ROUTING IN FIELD AND CONNECT ACCORDINGLY.
 - 3/4" NPS 1/2" NPS LINE DOWN IN UTILITY CHASE OF 3RD PRODUCTION LINE. CONNECT TO PRESSURE METER (C-254). PROVIDE SHUT-OFF VALVE AND BACKFLOW PREVENTER ON PW PIPING IN CEILING NEAR CHASE.
 - NOT USED.
 - 1/2" COLD WATER TO REVERSE OSMOSIS FILTER (RD-1) AND 1/2" FILTER WATER FROM REVERSE OSMOSIS FILTER. PROVIDE SHUT-OFF VALVE AND BACKFLOW PREVENTER ON CW PIPE PRIOR TO CONNECTION TO FILTER. SEE DETAIL 2.179 CONNECTION TO IRRIGATION.
 - 1/2" COLD WATER DOWN IN WALL TO REHEATER. PROVIDE BACKFLOW PREVENTER AND SHUT-OFF VALVE OUTSIDE OF WALL FOR CONNECTION TO REHEATER.
 - 1/2" GAS DOWN TO WATER HEATERS (WH-142). VERTICAL GAS PIPING IN WALL SHALL BE PROPERLY SECURED AND ADEQUATE PIPE PROTECTION SHALL BE PROVIDED.
 - 1" GAS PIPE AT 1" A.F.F. WITH DIRT LEGS FOR GAS HOSE KITS TO RUN COOKING EQUIPMENT. GAS LINE BEHIND COOKING EQUIPMENT SHALL NOT BE MORE THAN 8" MAX. FROM THE WALL SURFACE.
 - CONNECT NEW 1/2" GAS PIPE TO 1/2" EXISTING GAS PIPE.
 - EXISTING EMERGENCY GAS SHUT-OFF VALVE LOCATED TO REMAIN.
 - EXISTING GAS NETWORK SHOWN ON FLOOR PLAN IS TENTATIVE. CONTRACTOR TO VERIFY EXACT NETWORK ROUTING IN FIELD AND CONNECT ACCORDINGLY.
 - CONTRACTOR TO VERIFY THAT EXISTING GAS METER HAS MINIMUM 750 CFH CAPACITY @ 10" W.C. GAS PRESSURE AT OUTLET. INFORM OWNER/ARCHITECT IF OTHERWISE.
 - NOT USED.
 - CONNECT NEW GAS PIPE TO EXISTING GAS PIPE.

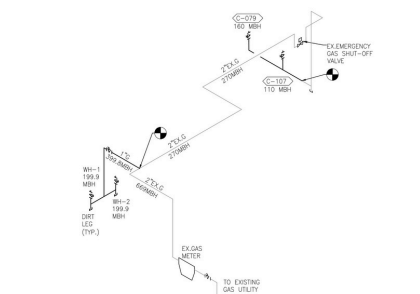
KEYNOTES - WATER AND GAS B



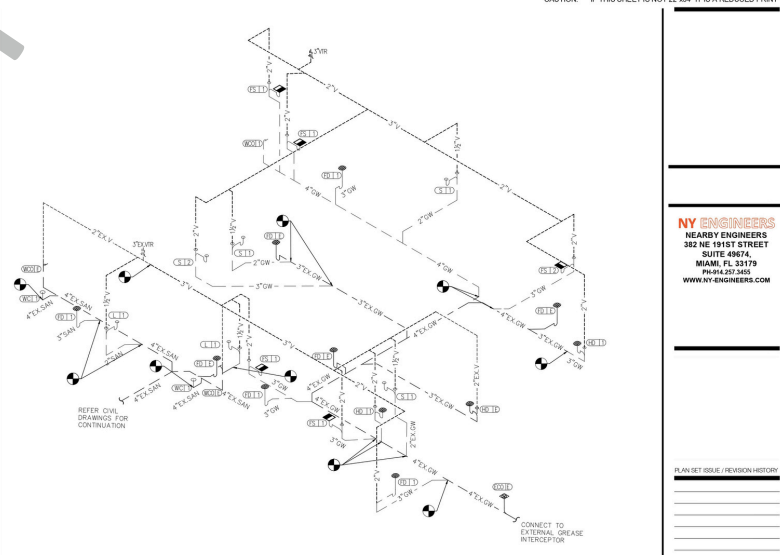
WATER ISOMETRIC 1/4" A

GAS DEMAND LOAD CALCULATIONS						
MARK	FIXTURE/EQUIPMENT	QTY	UNIT DEMAND BTU/H	TOTAL DEMAND BTU/H	TOTAL CFH	CONNECTION PIPE SIZE
C-079	DUAL FRYER	1	160,000	160,000	160.0	3/4"
C-107	REHEATER	1	110,000	110,000	110.0	3/4"
WH-142	WATER HEATER	2	190,900	380,800	380.8	1"
TOTAL				650,800	650.8	2"

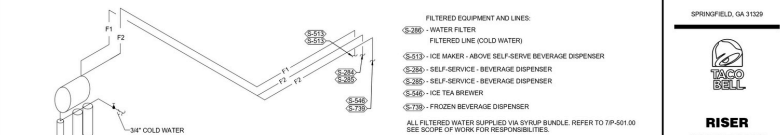
NOTES:
1. SIZING BASED ON GEORGIA GAS CODE TABLE 402.4.3, 150' OF DEVELOPED LENGTH.
2. CONTRACTOR TO VERIFY THAT GAS METER CAN HANDLE MINIMUM 1000 CFH @ 10" W.C.



GAS ISOMETRIC 1/4" C



WASTE AND VENT ISOMETRIC 1/4" B



FILTERED WATER ISOMETRIC 1/4" D

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET
SUITE 4874,
MIAMI, FL 33179
PH: 954.257.3455
WWW.NY-ENGINEERS.COM

PLAN SET (DATE / REVISION HISTORY)

CONTRACT DATE: _____
BUILDING TYPE: CONVERSION
VIM UPLOAD DATE: _____
BRAND DESIGNER: _____
SITE NUMBER: _____
STORE NUMBER: XXXXXX
PAPER: Approver
DRAWN BY: NYE
JOB NO.: _____

SPRINGFIELD, GA 31329



**RISER
DIAGRAMS**

P6.0
PLOT DATE: 10.3.2025