

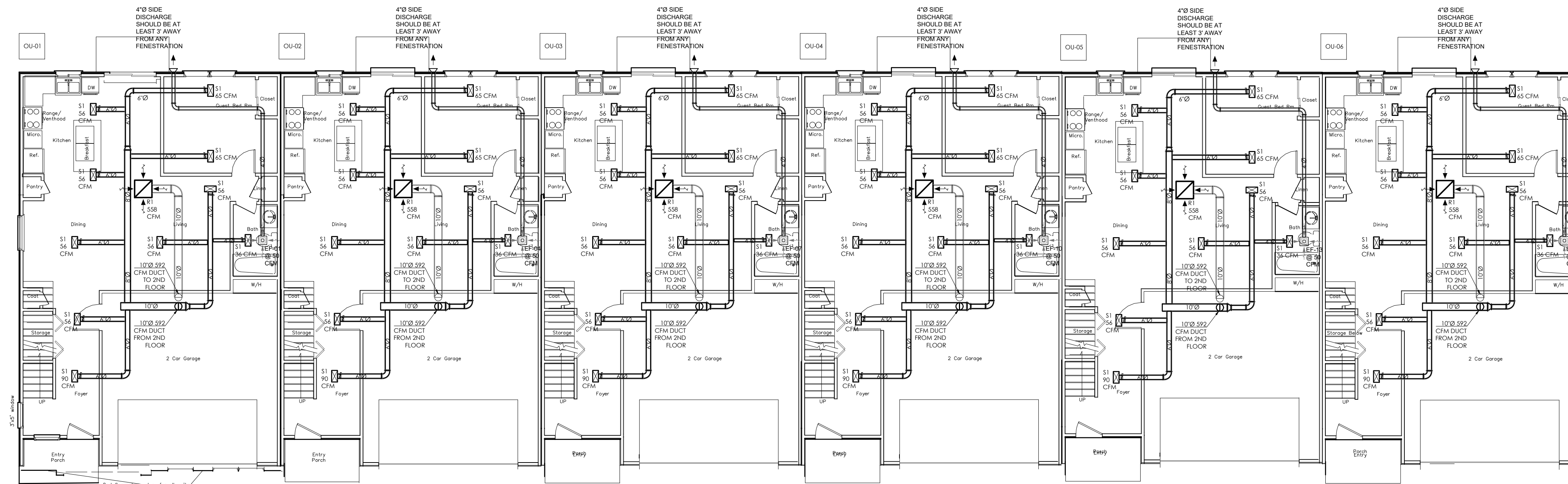
GDI ENGINEERING



6 Unit Townhome

Multifamily

Irving- Texas



1st. FLOOR PLAN UNIT F 2300 G 6 Units

PROJECT: 344 Varand Townhouses

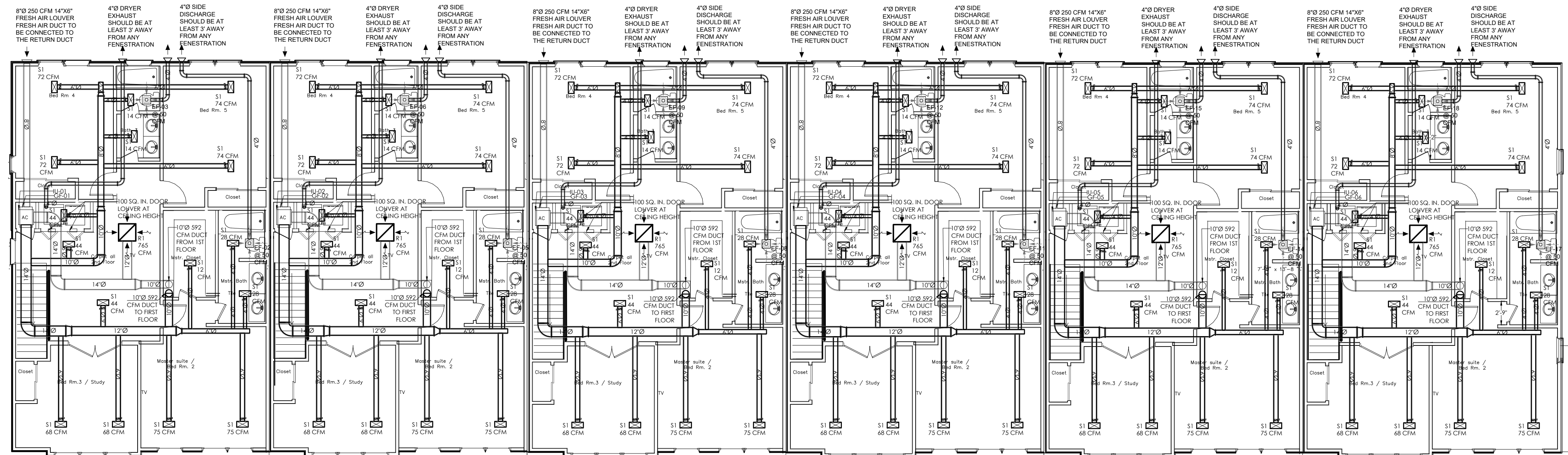
Ventilation Calculations:

One Townhouse								
S.N.	Space Name	AREA (FT ²)	CFM/FT ²	CFM-A	# OF PERS.	CFM/PERS.	CFM-B	TOTALCFM
1	Living & Kitchen	647	0.06	39	6	5.0	30	69
2	Laundry Room	21	0.06	1	0	5.0	0	1
3	Bedroom 1	143	0.06	9	2	5.0	10	19
4	Bedroom 2	217	0.06	13	2	5.0	10	23
5	Bedroom 3	159	0.06	10	2	5.0	10	20
6	Bedroom 4	143	0.06	10	2	5.0	10	20
7	Bedroom 5	184	0.06	11	2	5.0	10	21
8	Bathroom 1	40	0.06	2	0	5.0	0	2
9	Master Bathroom	90	0.06	5	0	5.0	0	5
10	Bathroom 3	55	0.06	3	0	5.0	0	3
11	Living Room - 2	211	0.06	13	6	5.0	30	43
12	Master Closet	69	0.06	4	0	5.0	0	4
13	TOTAL =	1,999	-	120	22	-	110	230

THE RETURN DIFFUSER IN EVERY APARTMENT IS TO BE AT LEAST 10' AWAY FROM THE STOVE.

CEILING RADIATION DAMPER OF MODEL CFD7(T) WILL BE INSTALLED AS A SUPPLY/RETURN AIR PLENUM AND CONNECTS TO THE AHU UNIT BELOW CEILING ASSEMBLY. CFD7(T) IS A UL APPROVED RADIATION DAMPER.

THE SELECTED FAN FOR OUTDOOR AIR VENTILATION PROVIDES 250 CFM.



2ND. FLOOR PLAN UNIT F 2300 G 6 units

PROJECT: 344 Varand Townhouses

Ventilation Calculations:

		One Townhouse						
S.N.	Space Name	AREA (FT ²)	CFM/FT ²	CFM-A	# OF PERS.	CFM/PERS.	CFM-B	TOTALCFM
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3	Bedroom 1	143	0.06	9	2	5.0	10	19
4	Bedroom 2	217	0.06	13	2	5.0	10	23
5	Bedroom 3	159	0.06	10	2	5.0	10	20
6	Bedroom 4	163	0.06	10	2	5.0	10	20
7	Bedroom 5	184	0.06	11	2	5.0	10	21
8	Bathroom 1	40	0.06	2	0	5.0	0	2
9	Master Bathroom	90	0.06	5	0	5.0	0	5
10	Bathroom 3	55	0.06	3	0	5.0	0	3
11	Living Room - 2	211	0.06	13	6	5.0	30	43
12	Master Closet	69	0.06	4	0	5.0	0	4
13	TOTAL =	1,999	-	120	22	-	110	230

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THE SELECTED FAN FOR OUTDOOR AIR VENTILATION PROVIDES 250 CFM.



Drw Title:
SECOND FLOOR -
MECHANICAL LAYOUT.

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

Sheet Number:
M 1 . 0 2

Project Number:

ELECTRICAL SPECIFICATIONS

1. ELECTRICAL GENERAL NOTES

- A. GC SHALL VERIFY ANY THIRD PARTY INSPECTIONS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO BIDDING THIS PROJECT.
- B. ALL LOW VOLTAGE WIRING TO BE IN CONDUIT UNLESS APPROVED OTHERWISE BY AUTHORITY HAVING JURISDICTION.
- C. ALL EMERGENCY LIGHTS & EXIT SIGNS ARE TO BE CONNECTED TO THE UNSWITCHED PORTION OF THE ADJACENT LIGHTING CIRCUIT. ALL EMERGENCY FIXTURES TO REMAIN ACTIVE FOR 90 MINUTE MINIMUM.
- D. ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES, AND EQUIPMENT SHALL BE LABELED AND LISTED BY A CERTIFIED TESTING LABORATORY OR AGENCY.
- E. ALL LIGHTING, DUCTWORK, SOFFITS, AND CEILING COMPONENT HEIGHTS ARE TO BE COORDINATED WITH THE ARCHITECT.
- F. ATTENTION LIGHTING SUPPLIER AND CONTRACTOR: ENSURE ALL LIGHTING EXPOSED TO PLENUM IS PLENUM RATED.
- G. COORDINATE THE MOUNTING OF ALL HIGH-BAY FIXTURES AND CEILING FANS WITH ARCHITECT PRIOR TO INSTALLATION.
- H. VERIFY MOUNTING HEIGHTS OF ALL FIXTURES WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.
- I. FIRE ALARM CONTRACTOR SHALL VERIFY ALL BUILDING AND FIRE DEPARTMENT REQUIREMENTS REGARDING SHUT OFF OF ANY NECESSARY COMPONENTS UPON ACTIVATION OF THE FIRE ALARM. THIS INCLUDES, BUT IS NOT LIMITED TO:
 - a. AUDIO/MUSIC SYSTEM(S)
 - b. ROOFTOP UNITS
 - c. TANNING EQUIPMENT
 - d. EXERCISE FANS
- J. PROVIDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR (SIZE PER NEC) IN PVC TYPE CONDUIT, POWER CIRCUITS, ISOLATED GROUND CIRCUITS, OR AS SHOWN ON PLANS. CONDUIT SHALL BE SIZED PER NEC BASED ON THIN 600 VOLT COPPER SINGLE CONDUCTORS, PLUS THE EQUIPMENT GROUNDING CONDUCTOR.
- K. WIRING SHALL INCLUDE FINAL CONNECTION TO ALL EQUIPMENT IN CONFORMANCE WITH EQUIPMENT SUPPLIER WIRING DIAGRAMS.
- L. CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPLETE PANELBOARD IDENTIFICATION SCHEDULES.
- M. BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM #12 AWG UNLESS NOTED OTHERWISE IN SCHEDULES. WHERE 20A BRANCH CIRCUITS HAVE #8 AND LARGER WIRE SPECIFIED, #10 AWG WIRE SHALL BE USED FOR THE FINAL CONNECTION (15 FOOT MAXIMUM).
- N. WHERE BRANCH CIRCUITS ARE GROUPED, SIZE CONDUIT AND DERATE CURRENT CARRYING CONDUCTORS PER NEC.
- O. PROVIDE HANDLE TIES ON ALL MULTIWIRE BRANCH CIRCUITS TO MEET NEC REQUIREMENTS.
- P. SUPPORT FROM STRUCTURE: NO ATTACHMENT OF ANY TYPE SHALL BE MADE TO BRIDGING OR JOIST WEB MEMBERS. UTILIZE ONLY THE TOP AND BOTTOM CHORDS FOR SUPPORTING THE ELECTRICAL SYSTEM INSTALLATIONS. REFER TO STRUCTURAL PLANS.
- Q. WHERE GROUPED CONDUITS ARE INSTALLED WITHIN THE JOIST SPACE, COORDINATE WITH SPRINKLER CONTRACTOR PRIOR TO INSTALLATION IN ORDER TO MAINTAIN REQUIRED CLEARANCES FROM SPRINKLERS.
- R. SEAL PENETRATIONS IN FIRE RATED WALLS PER NEC 300.21.
- S. ELECTRICAL EQUIPMENT, FIXTURES, DEVICES, AND OTHER ITEMS SHOWN IN THESE PLANS IN GREY HALFTONE ARE EITHER EXISTING TO REMAIN OR PART OF LANDLORD SHELL PACKAGE.
- T. PROVIDE ARC-FLASH COORDINATION STUDY PER NEC.
- U. PROVIDE (1) 1/2" CONDUIT AND (1) 4" SQUARE BOX WITH SINGLE GANG DEVICE RING FOR ALL THERMOSTAT LOCATIONS INDICATED ON MECHANICAL DRAWINGS. ROUTE CONDUIT FROM BOX TO ACCESSIBLE CEILING CAVITY. PROVIDE PLASTIC BUSHING ON EXPOSED CONDUIT ENDS. PROVIDE PULL STRING IN ALL EMPTY CONDUIT SYSTEMS. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- V. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE LOW VOLTAGE CONTRACTOR TO CLARIFY SCOPE OF WORK BEFORE BID OR INSTALLATION.
- W. WIRING DEVICES: DEVICE MOUNTING HEIGHTS ARE FROM FINISHED FLOOR TO CENTER OF OUTLET BOX UNLESS NOTED OTHERWISE ON PLANS. COORDINATE THE STANDARD MOUNTING HEIGHTS WITH MASONRY:
 - a. SWITCHES 48" AFF
 - b. RECEPTACLES 18" AFF
 - c. VOICE/DATA 18" AFF

2. ELECTRICAL POWER NOTES

- A. ALL REQUIRED DOCUMENTATION REGARDING THE DESIGN OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS AND THE PROCEDURES FOR MAINTENANCE, INSPECTION, AND TESTING OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS SHALL BE MAINTAINED AT AN APPROVED, SECURED LOCATION FOR THE LIFE OF THE SYSTEM PER IFC 901.6.2.1.
- B. THE FIRE ALARM CONTROL PANEL DISCONNECTING MEANS SHALL HAVE A RED MARKING, SHALL ONLY BE ACCESSIBLE TO AUTHORIZED PERSONNEL, AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT". THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE IDENTIFIED AT THE FIRE ALARM CONTROL UNIT PER NFPA 72 4.4.1.4.2.2 AND 4.4.1.4.2.3.
- C. ROUTE ALL CONDUIT TIGHT TO DECK IN ACCORDANCE TO NEC 300.4(E)
- D. FIRE ALARM SYSTEM SHALL BE INSTALLED PER CURRENT NFPA STANDARDS.
- E. ALL ELECTRICAL THAT MAY NEED TO BE MAINTAINED WHILE ENERGIZED SHALL BE FIELD MARKED WITH ARC FLASH LABELING AND BE FULLY VISIBLE TO QUALIFIED PERSONNEL PRIOR TO EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF EQUIPMENT.
- F. SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. THE FIELD MARKINGS SHALL INCLUDE THE DATE THE FAULT CURRENT CALCULATIONS WERE PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.
- G. FIRE ALARM DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. THE ELECTRICAL CONTRACTOR SHALL INCLUDE A PRICE IN THE ELECTRICAL BID FOR A LANDLORD APPROVED FIRE ALARM SYSTEM, INCLUDING PLANS AND ALL ASSOCIATED DOCUMENTATION REQUIRED. THESE PLANS SHALL BE SUBMITTED TO THE LOCAL AUTHORITIES HAVING JURISDICTION BY A QUALIFIED AND LICENSED DESIGN-BUILD FIRE ALARM CONTRACTOR FOR A COMPLETE AND APPROVED FIRE ALARM SYSTEM. THE PLANS SHALL BE SIGNED AND SEALED BY THEIR LOCAL DESIGN ENGINEER AND SUBMITTED FOR PLAN REVIEW PRIOR TO RECEIVING SPECIFIC PERMITS FOR THIS WORK. THE FIRE ALARM CONTRACTOR SHALL ALSO SUBMIT ALL SHOP DRAWINGS, BATTERY CALCULATIONS, SPECIFICATION SHEETS, ETC. AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION TO THEIR LOCAL DESIGN ENGINEER FOR REVIEW AND APPROVAL.
- H. COORDINATE WITH MECHANICAL INSTALLER TO PROVIDE AND INSTALL CONDUIT AND JUNCTION BOXES FOR MECHANICAL THERMOSTATS.

3. NETWORK CABLING REQUIREMENTS

- A. EACH CAT 5 CABLE RUN MUST BE KEPT TO A MAXIMUM OF 295 FEET (90 METERS), INCLUDING PATCH CORDS. ENTIRE CHANNEL MAXIMUM LENGTH NOT TO EXCEED 328 FEET (100 METERS).
- B. MAINTAIN PAIR TWISTING AS CLOSE AS POSSIBLE TO FINAL TERMINATION POINTS WITH MAXIMUM UNTWISTED SEGMENT OF 1/2".
- C. WHERE NECESSARY, GRADUALLY BEND CABLE TO MAINTAIN THE MINIMUM BEND RADIUS OF 4 TIMES THE CABLE DIAMETER (APPROX. 1").
- D. USE LOW TO MODERATE PRESSURE TO DRESS CABLES NEATLY WITH CABLE TIES.
- E. USE LOW TO MODERATE FORCE WHEN PULLING CABLE. DO NOT EXCEED MAXIMUM OF 25 POUNDS OF FORCE.
- F. USE CABLE PULLING LUBRICANT FOR CABLE RUNS THAT MAY EXCEED 25 POUNDS OF FORCE WHEN PULLING.
- G. MAINTAIN 12" OF SEPARATION FROM POWER CABLES THAT MAY BE SOURCES OF EMI (ELECTRICAL CABLES, TRANSFORMERS, LIGHT FIXTURES, ETC.)
- H. INSTALL PROPER CABLE SUPPORTS WITH MAXIMUM OF 5 FEET OF SEPARATION.
- I. LEAVE EXCESS WIRE COILED IN THE CEILING OR NEAREST CONCEALED SPACE. MAINTAIN 5 FEET OF SLACK AT WORK OUTLET AND 10 FEET OF SLACK AT PATCH PANEL END.
- J. FURNISH AND INSTALL GROMMETS WHEN PASSING THROUGH METAL STUDS AND OTHER POTENTIAL HAZARDS.
- K. CONTRACTOR IS RESPONSIBLE FOR MEETING BOTH NATIONAL FIRE AND BUILDING CODES AND ANY LOCAL AMENDMENTS BY THE AUTHORITIES HAVING JURISDICTION AND MAINTAIN FIRESTOPS AT ALL CABLES THAT PENETRATE FIREWALLS. PLENUM RATED CABLES SHALL BE INSTALLED WHERE REQUIRED.
- L. DO NOT SPLICE OR BRIDGE CABLE AT ANY POINT.
- M. DO NOT INSTALL CABLE SUPPORTED FROM CEILING TILES.
- N. DO NOT OVER TIGHTEN (25 POUNDS PER SQUARE INCH MAXIMUM) WITH USING CABLE OR PLASTIC TIES.
- O. DO NOT USE OIL OR OTHER LUBRICANT NOT SPECIFICALLY DESIGNED FOR NETWORK CABLE PULLING.
- P. DO NOT SUPPORT CABLES DIRECTLY FROM ELECTRICAL CONDUITS OR FIXTURES


























4. GENERAL FIRE ALARM NOTES

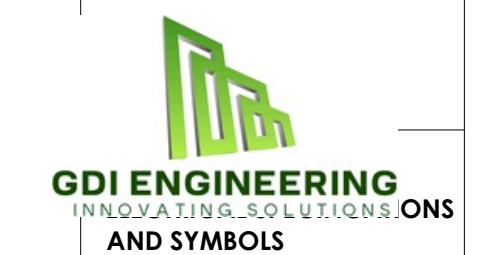
- A. THE INTENT OF THE FIRE ALARM SYSTEM DEVICES INDICATED ON THIS DRAWING ARE FOR PERFORMANCE SPECIFICATIONS AND LOCATIONS ONLY. THE SUCCESSFUL FIRE ALARM SYSTEM CONTRACTOR SHALL PROVIDE COMPLETE PERMIT DRAWINGS, INCLUDING WIRING MEANS AND METHODS, BATTERY CALCULATIONS, DEVICE CUT SHEETS, ETC. FOR THE EQUIPMENT THEY SHALL PROVIDE. PROVIDE 15% SPARE CAPACITY FOR NEW SYSTEMS. COORDINATE FINAL REQUIREMENTS WITH ALL AUTHORITIES HAVING JURISDICTION.
- B. THE FIRE ALARM SYSTEM SHALL BE MONITORED BY A UL LISTED CENTRAL STATION.
- C. FIRE ALARM CONTRACTOR SHALL SUBMIT FIRE ALARM SUBMITTALS TO THE OWNER'S REPRESENTATIVE WITHIN 30 DAYS AFTER CONTRACT IS AWARDED.
- D. WALL MOUNTED DEVICES SHALL BE 80" AFF TO BOTTOM OF DEVICE UNLESS NOTED OTHERWISE.
- E. SURFACE MOUNTING OF FIRE ALARM CONDUIT IS NOT PERMITTED IN FINISHED AREAS.
- F. BUILDING IS EQUIPPED WITH A FULLY AUTOMATIC SPRINKLER SYSTEM.
- G. REMOVE ALL EXISTING FIRE ALARM SYSTEMS FROM PREVIOUS TENANTS PRIOR TO INSTALLING NEW EQUIPMENT.
- H. ALL REQUIRED DOCUMENTATION REGARDING THE DESIGN OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS AND THE PROCEDURES FOR MAINTENANCE, INSPECTION, AND TESTING OF FIRE DETECTION, ALARM, AND COMMUNICATIONS SYSTEMS SHALL BE MAINTAINED AT AN APPROVED, SECURED LOCATION FOR THE LIFE OF THE SYSTEM PER IFC 901.6.2.1.
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- J. ROUTE ALL CONDUIT TIGHT TO DECK IN ACCORDANCE WITH NEC 300.4(E).
- K. FIRE ALARM SYSTEMS SHALL BE INSTALLED PER CURRENT NFPA STANDARDS. FIRE ALARM DEVICE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. THE ELECTRICAL CONTRACTOR SHALL INCLUDE A PRICE IN THE ELECTRICAL BID FOR A LANDLORD APPROVED FIRE ALARM SYSTEM, INCLUDING PLANS AND ALL ASSOCIATED DOCUMENTATION REQUIRED. THESE PLANS SHALL BE SUBMITTED TO THE LOCAL AUTHORITIES HAVING JURISDICTION BY A QUALIFIED AND LICENSED DESIGN-BUILD FIRE ALARM CONTRACTOR FOR A COMPLETE AND APPROVED FIRE ALARM SYSTEM. THE PLANS SHALL BE SIGNED AND SEALED BY THEIR LOCAL DESIGN ENGINEER AND SUBMITTED FOR PLAN REVIEW PRIOR TO RECEIVING SPECIFIC PERMITS FOR THIS WORK. THE FIRE ALARM CONTRACTOR SHALL ALSO SUBMIT ALL SHOP DRAWINGS, BATTERY CALCULATIONS, SPECIFICATION SHEETS, ETC. AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION TO THEIR LOCAL DESIGN ENGINEER FOR REVIEW AND APPROVAL.

5. ELECTRICAL ABBREVIATIONS:

ABC ABOVE COUNTER
 AFF ABOVE FINISHED FLOOR
 CF CEILING FAN
 CP CIRCULATING PUMP
 EC ELECTRICAL CONTRACTOR
 ECB ENCLOSED CIRCUIT BREAKER
 EDF ELECTRIC DRINKING FOUNTAIN
 EF EXHAUST FAN
 GC GENERAL CONTRACTOR
 GFCI GROUND FAULT CIRCUIT INTERRUPT
 GR GROUND
 HC HVAC CONTRACTOR
 JB JUNCTION BOX
 PC PLUMBING CONTRACTOR
 TTB TELEPHONE TERMINATION BOARD
 UC UNDERCOUNTER
 UH UNIT HEATER
 UNO UNLESS NOTED OTHERWISE
 VIF VERIFY IN FIELD
 WH WATER HEATER
 WP WEATHER PROOF DEVICE
 WR WEATHER RESISTANT DEVICE
 GFCI GROUND FAULT CIRCUIT INTERRUPT

ELECTRICAL LEGEND

-  High bay Lighting similar to Corvus UFO High Bay Light 100 Watt from RuggedGrade
-  Lithonia Lighting 4-ft x 2-ft Cool White LED Panel Light, 38W
-  120W LED Wall Pack Light similar to wall pack light (WPG Series) from superbrightleds (WPG-50K120W-S-Photocell)
-  RECESSED MOUNTED ROUND LED LIGHTING FIXTURE SIMILAR TO PHILIPS DN130B D165 1xLED 10S/840.
-  PENDANT LIGHT (ADDITIONAL SUPPORT STUDS WITH 2/8" PLYWOOD)
-  PULL STRING LIGHT
-  CHANDLER (ADDITIONAL SUPPORT STUDS WITH 5/8" PLYWOOD)
-  RECESSED MOUNTED SPOT SIMILAR TO DN140B PSED-E IP54 D162 1xLED10S/840 C WITH POWER 11.5 WATT
-  EMERGENCY ILLUMINATION FIXTURE. SHALL BE ON ALL TIME WITH 90 BACK UP MINUTES BATTERY BUILT IN
-  LIGHTING OUTLET FOR WALL .20W
-  HEAVY DUTY JUNCTION BOX. FLUSH IN CEILING FOR EXHAUST FANS
-  EXIT SIGN WITH EMERGENCY LIGHT SHALL BE ON ALL TIME WITH 90 BACK UP MINUTES BATTERY BUILT IN
-  ONE WAY LIGHTING SWITCH
-  TWO WAYS LIGHTING SWITCH
-  SWITCH WITH OCCUPANCY SENSOR
-  SWITCH WITH TIMER
-  SWITCH WITH OCCUPANCY SENSOR
-  TRACK LIGHT
-  SELF CONTAINED SMOKE/CARBON MONOXIDE (120 W/BATTERY BACKUP) - CEILING MOUNTED
-  SELF CONTAINED SMOKE DETECTOR/ANNUNCIATOR (120 W/BATTERY BACKUP) - CEILING MOUNTED
-  DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED GFCI DENOTES: GROUND FAULT PROTECTION
-  DUPLEX RECEPTACLE - FLOOR MOUNTED GFCI DENOTES: GROUND FAULT PROTECTION
-  NON-FUSED DISCONNECT SWITCH - SIZE AS INDICATED
-  NON-FUSED WEATHER PROOFED DISCONNECT SWITCH - SIZE AS INDICATED
-  DATA OUTLET - FLOOR MOUNTED WITH 4PAIRS CAT6A CABLE

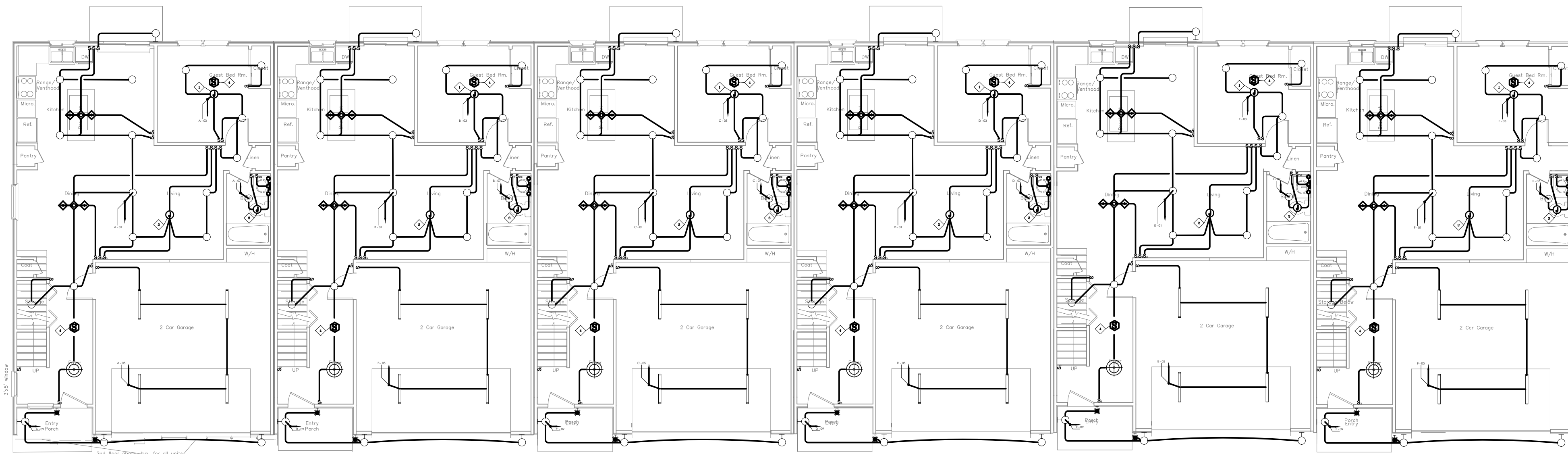


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1st. FLOOR PLAN UNIT F 2300 G 6 Units

SHEET NOTES:

- 1 — JUNCTION BOX FOR BEDROOM FAN
- 2 — JUNCTION BOX FOR LIVING ROOM FAN
- 3 — JUNCTION BOX FOR BATHROOM EXHAUST FAN SWITCHED INDEPENDENTLY WITH 5 MIN OFF TIMER
- 4 — SELF CONTAINED SMOKE DETECTOR/ANNUNCIATOR (WITH BATTERY BACKUP) - CEILING MOUNTED

GENERAL NOTES

1. ALL JUNCTION BOXES, CONDUITS, AND AIRS SHALL BE SIZED PER NEC.
2. CONNECT ALL EXIT LIGHTS AHEAD OF ANY LOCAL OR AUTOMATIC SWITCHING DEVICE.
3. PROVIDE A CONSTANT HOT FROM PANEL BOARD DIRECTLY TO ALL EMERGENCY BATTERY PACKS/BALLASTS IN EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS. EMERGENCY LIGHTING FIXTURES SHALL TURN ON TO FULL BRIGHTNESS IN CASE OF POWER LOSS.
4. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION & MOONING HEIGHTS OF ALL LIGHTING FIXTURES SHOWN ON THIS DRAWING.
5. REFER TO DETAIL SHEET FOR SYMBOLS, SPECIFICATIONS, ABBREVIATIONS, AND LIGHTING FIXTURE SCHEDULE.
6. ALL DEVICES AND EQUIPMENT OUTSIDE THE SCOPE OF WORK ARE EXISTING TO REMAIN U.O.N.
7. CONTRACTOR SHALL PROVIDE AN ACCURATELY TYPED PANEL BOARD SCHEDULE FOR EACH PANEL BOARD.
8. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY PROBLEMS PERTAINING TO CIRCUIT AVAILABILITY OR LOAD CAPACITY PRIOR TO INSTALLATION.
9. ALL EXTERIOR LUMINARIES AND ELECTRICAL DEVICES SHALL BE USED AS WEATHERPROOF TYPE.
10. ALL NEW CEILING OCCUPANCY SENSORS SHALL BE DUAL-TECHNOLOGY WITH 1000 SQFT COVERAGE AT 360 DEGREES U.O.N. ON THE DRAWING. COORDINATE EXACT LOCATION AND REQUIREMENTS OF ALL OCCUPANCY SENSORS SHOWN ON THIS DRAWING WITH MANUFACTURER REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO PROVIDE POWER PACKS AS REQUIRED.
11. CONTRACTOR SHALL CONFIRM COMPATIBILITY OF ALL LIGHTING CONTROL DEVICES/SWITCHES/DIMMERS WITH LIGHTING FIXTURES AND BALLASTS/DRIVERS PRIOR TO SUBMITTAL.
12. FIXTURE MARKED WITH SUBSCRIPT "(E)" IS EXISTING TO REMAIN, CONTRACTOR TO MAINTAIN CONTINUITY OF BRANCH CIRCUITS.
13. ALL CONDUIT RUNS IN OPEN PLENUM SPACE SHALL BE INSTALLED IN A NEAT MANNER PERPENDICULAR OR PARALLEL TO WALLS AND PAINTED AS DIRECTED BY OWNER.

Address:
 Villas of Cordova
 Lots 1, 2, 3, 4, 5 and 6
 1400 Herd Rock Rd-Lot 1-6
 Irving, TX 75061

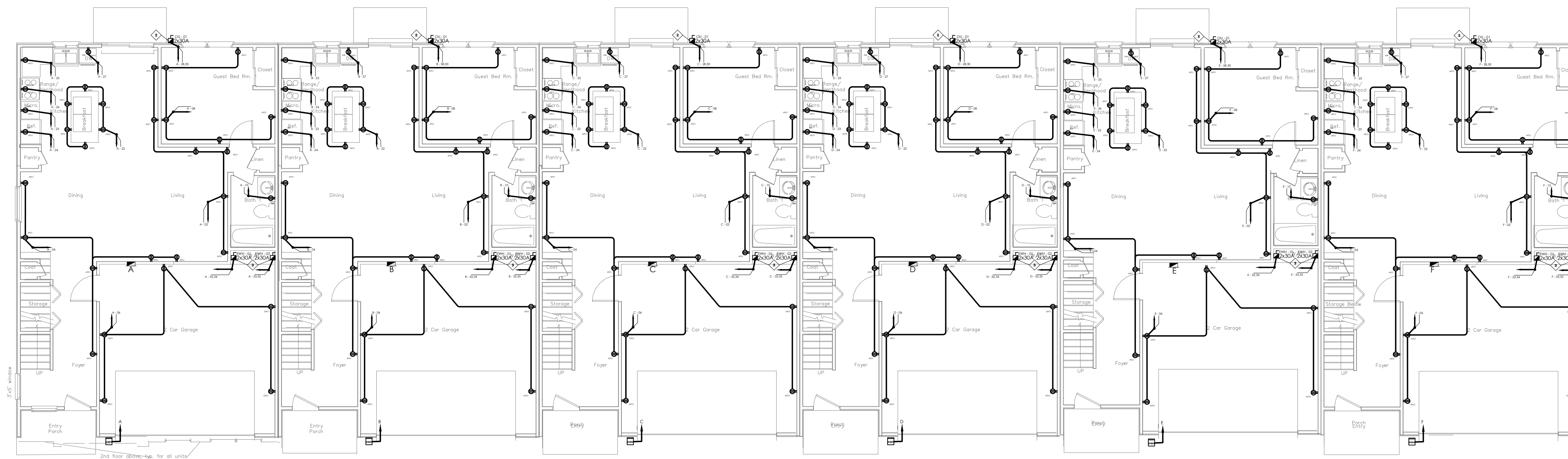
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Scale: 1/8" = 1'-0"

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1st. FLOOR PLAN UNIT F 2300 G 6 Units

SHEET NOTES:

- 1 — DISCONNECT SWITCH FOR GAS FURNANCE UNIT
- 2 — DISCONNECT SWITCH FOR HVAC OUTDOOR UNIT
- 3 — DISCONNECT SWITCH FOR ELECTRIC WATER HEATER

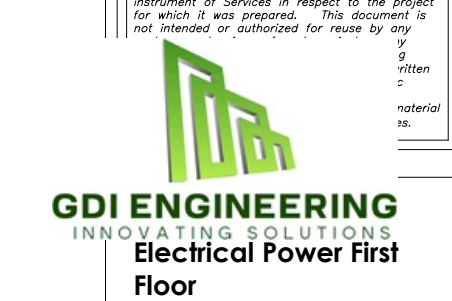
GENERAL NOTES

1. ALL 120 VOLT, SINGLE PHASE 15 AMPERE BRANCH CIRCUIT SUPPLY INSTALLED IN DWELLING UNIT FAM DINING ROOMS, LIVING ROOMS, LIBRARIES, DENS, BEDROOMS, SUN RECREATION ROOMS, CLOSETS, H SIMILAR AREAS SHALL BE PROTEC LISTED ARC-FAULT CIRCUIT INTERR COMBINATION TYPE INSTALLED TQ PROTECTION OF THE BRANCH CIR ARTICLE 210.12(A))
2. IN EVERY KITCHEN, FAMILY ROOM ROOM, LIVING ROOM, PARLOR, L SUNROOM, BEDROOM, RECREATI SIMILAR ROOM OR AREA OF DWE RECEPTACLE OUTLETS SHALL BE IN ACCORDANCE WITH THE GENER SPECIFIED IN THE FOLLOWING ART
 - a. NEC ARTICLE 210.52(A) (1) SPACII RECEPTACLES SHALL BE INSTALLE POINT ALONG THE FLOOR LINE OF MORE THAN 6- FEET FROM A RECE
 - b. NEC article 210.52(a) (2) AS AME SPACE. ANY WALL 24-INCHES OR LENGTH SHALL BE PROVIDED WITH RECEPTACLE OUTLET. WALL SPACI INCLUDE AROUND CORNERS, THE PANEL OF A SLIDING DOOR, FIXE DIVIDERS SUCH AS A FREESTANDI COUNTER. WALL SPACE NED NOT SPACE BEHIND OPERABLE DOORS NOT INCLUDE ENTRIES, HALLWAYS THAN 5- FEET WIDE LOCATED IN BE NEC ARTICLE 210.52(A) (3) AS AM RECEPTACLES.
3. IN EVERY KITCHEN, FAMILY ROOM ROOM, LIVING ROOM, PARLOR, L SUNROOM, BEDROOM, RECREATI SIMILAR ROOM OR AREA OF DWE ALL 125 VOLT 15 AND 20 AMP REC SHALL BE LISTED TAMPER-RESISTAN RECEPTACLES NEC 406.12)

ING

— 9/2/23 2:7
— AX (9/2) 23 2 83

Address:
Villas of Cordova
Lots 1, 2, 3, 4, 5 and 6
1400 Hard Rock Rd-Lot 1-6
Irving, TX 75061



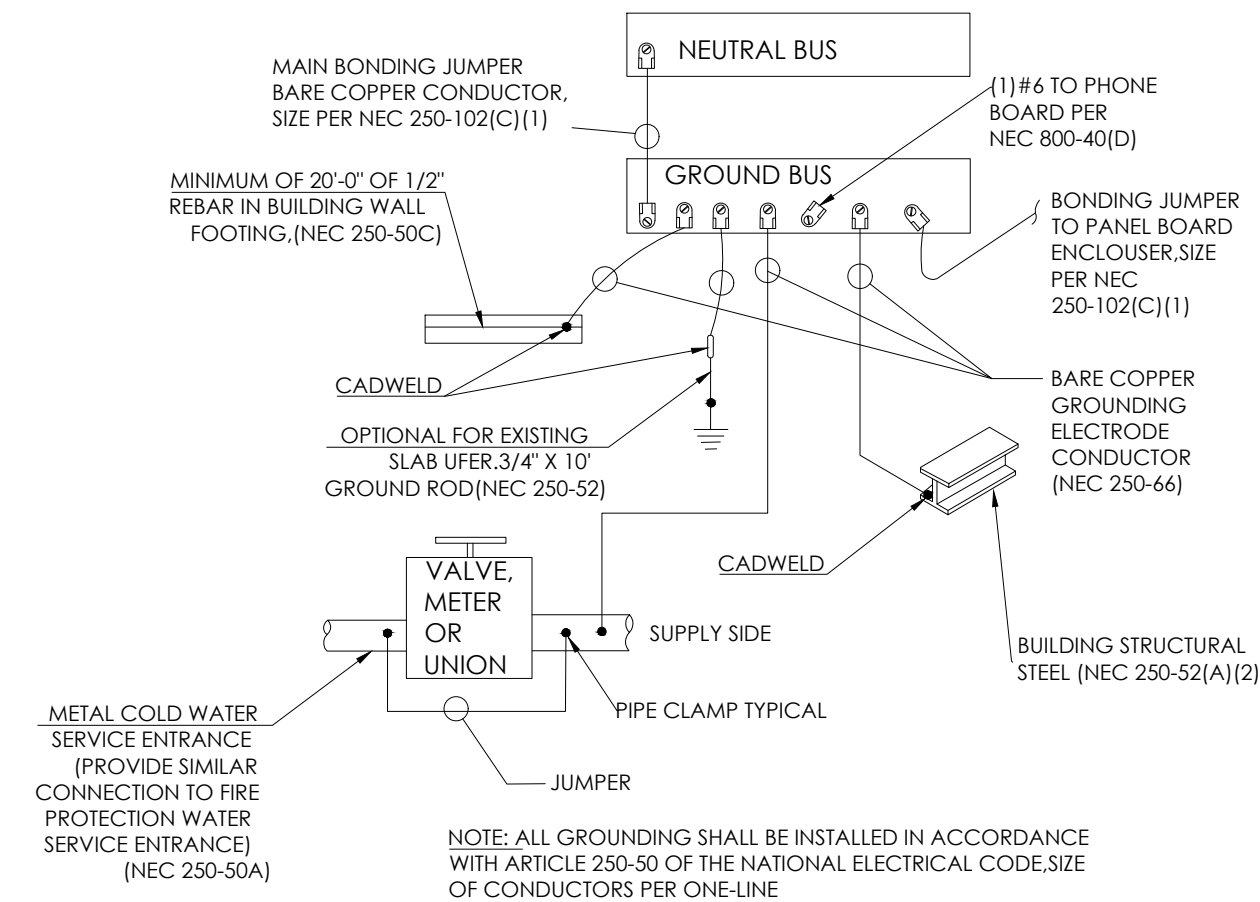
Scale: 1/8" = 1'-0"

Sheet Number:
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Project Number:

GENERAL NOTES

- A. ALL EXISTING COMPONENTS OF THIS ELECTRICAL DIAGRAM ARE TO REMAIN AS INSTALLED AND ARE SHOWN FOR REFERENCE ONLY.
- B. ALL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70, NATIONAL ELECTRICAL CODE. ALL ITEMS ARE ON AN OR EQUAL BASIS.
- C. ALL SINGLE PHASE BRANCH CIRCUITS (RECEPTACLES, LIGHTING, ETC.) ARE 1/2" CONDUIT OR EMT WITH THIN, 90C WIRING, UNLESS NOTED OTHERWISE. ALL OTHER CONDUIT AND WIRING SHALL BE AS INDICATED ON THE PLANS. ACTUAL ROUTING AND HOME RUN GROUPINGS ARE TO BE DETERMINED IN THE FIELD.
- D. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC EXCEPT FOR DETAILS AND ELEVATIONS. DO NOT SCALE FROM DIAGRAMMATIC DRAWINGS. EXACT LOCATIONS OF DEVICES AND PANELS ARE TO BE DETERMINED AND ROUGHED-IN DURING CONSTRUCTION TO AVOID INTERFERENCE. TO MEET USER REQUIREMENTS, TO PROVIDE ADEQUATE MOUNTING, AND TO MEET NEC LINEAR ACCESS AND CLEARANCE REQUIREMENTS.
- E. BACK TO BACK MOUNTING OF RECEPTACLES IS NOT PERMITTED.
- F. IN ADDITION TO THE NEC REQUIREMENTS FOR GFCI PROTECTION FOR RECEPTACLES, THE FOLLOWING RECEPTACLES SHALL ALSO HAVE GFCI PROTECTION: (1)-ALL RECEPTACLES LOCATED WITHIN 8 FEET OF A SINK. (2)-ALL RECEPTACLES WHICH ARE PROVIDED FOR CONVENIENCE IN SERVICING HVAC EQUIPMENT REGARDLESS OF LOCATION AS REQUIRED TO ACCOMMODATE CONDUCTOR PULLING EASE, FIELD LIFE SAFETY.
- G. PROVIDE A LAMICOID NAMEPLATE (WHITE LETTERS ON BLACK BACKGROUND; ON EACH PANELBOARD, MOTOR STARTER, CONTACTOR, TRANSFORMER, ETC. LETTERS SHALL BE 0.75 INCH MAINIMUM.
- H. CONTRACTOR SHALL CUT AS REQUIRED TO INSTALL ELECTRICAL EQUIPMENT REPAIR OF FLOOR OR WALLS SHALL BE COORDINATED WITH GENERAL CONTRACTOR CONTRACTOR SHALL ALSO REPAIR ALL OPENINGS LEFT DUE TO EQUIPMENT REMOVAL.
- I. CONDUCTORS ARE COPPER UNLESS OTHERWISE SHOWN. ALL CONDUCTORS LARGER THAN #10 SHALL BE STRANDED.
- J. PANELBOARDS SHALL CONTAIN A TYPED DIRECTORY WITH A PLASTIC COVER AFFIXED TO THE INSIDE DOOR.
- K. ALL FIXTURES, DEVICES, CONDUIT, AND EQUIPMENT SHALL BE SECURED WITH APPROVED HANGERS AND ANCHORS AND IN ACCORDANCE WITH APPROVED STANDARDS OF INSTALLATION.
- L. ALL BREAKERS SHOWN IN THE PANELBOARD SCHEDULE SHALL BE RATED AS SHOWN FOR BOTH CIRCUIT CAPACITY AND FAULT CURRENT INTERRUPTING CAPACITY.
- M. ALL PANELBOARDS, DISCONNECT SWITCHES, MOTOR STARTERS, AND CONTACTORS SHALL BE NEMA 1, UNLESS OTHERWISE NOTED.
- N. ELECTRICAL CONTRACTOR MUST BE AVAILABLE AT TIME OF DBS INSPECTION. COORDINATE WITH GENERAL CONTRACTOR.
- O. FIELD VERIFY THE AVAILABLE FAULT CURRENT AT THE LANDLORD'S EXISTING PANEL AND PROVIDE A NEW, FULLY RATED, PANEL TO MATCH EXISTING.
- P. CONTRACTOR TO MAKE FINAL CONNECTIONS IN EMS PANEL FOR LANDLORD PROVIDED LIGHTING CIRCUITS. 50% OF THE GENERAL LIGHTING CIRCUITS SHOULD BE ROUTED THROUGH THE CUSTOMER CONTROL ZONE.



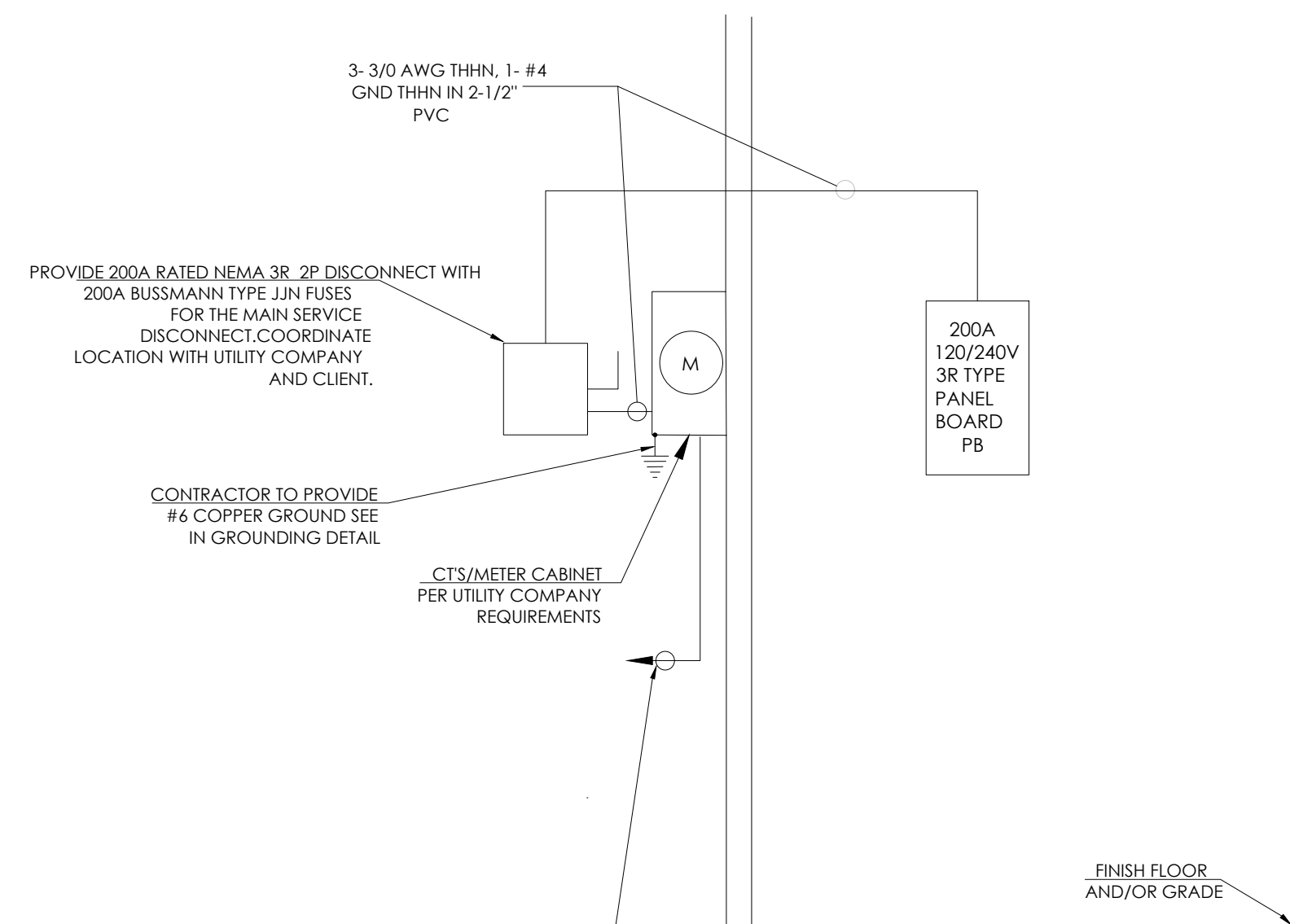
GROUNDING DETAIL

TABLE 250.122 MINIMUM SIZE EQUIPMENT GROUNDING CONDUCTORS FOR GROUNDING RACEWAY AND EQUIPMENT

RATING OR SETTING OF AUTOMATIC OVERCURRENT DEVICE IN CIRCUIT AHEAD OF EQUIPMENT, CONDUIT, ETC., NOT EXCEEDING (AMPERE)	SIZE (AWG OR KCMIL)	
	COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM*
15	14	12
20	12	10
30	10	8
40	8	6
60	6	4
75	4	3
100	3	2
150	2	1
200	1	1/0
250	1/0	2/0
300	2/0	3/0
350	3/0	4/0
400	4/0	250
500	250	350
600	350	400
700	400	500
800	500	700
1000	700	800
1200	800	1200

NOTE: WHERE NECESSARY TO COMPLY WITH 250.4(A) (5) OR (B) (4), THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE SIZED LARGER THAN GIVEN IN THIS TABLE.

*SEE INSTALLATION RESTRICTIONS IN 250.120



NOTES

1. CONTRACTOR TO INCLUDE IN THE CONTRACT ALL ONE TAP CHARGERS AND FEES FROM THE POWER COMPANY AND COORDINATE WITH THE POWER COMPANY.
2. PROVIDE PLAQUE STATING LOCATION OF DISCONNECTING MEANS.
3. PANEL BOARD TO HAVE FULLY RATED BREAKERS UNLESS NOTED OTHERWISE.

ONE LINE DIAGRAM



Drw Title: Single Line Diagram

Scale: NTS

Sheet Number:

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Location: Garage						CONNECTED LOAD		DEMAND TOTAL	
* LOAD SUMMARY	CL	DF	A	B					
L Lighting	2.02	1.25	1.44	1.09					
R Convenience Recept	9.54	0.40	2.30	1.51					
H Heating (Space)		1.25							
C Cooling		1.00							
A HVAC	6.67	1.00	2.81	3.86					
P Process	12.00	0.80	4.80	4.80					
O Other Continuous		1.25							
K Kitchen	13.70	0.65	4.36	4.55					
N Noncontinuous		1.00							
Total	43.93	1.00	15.70	15.81				31.52	

Total Demand Load (KVA)	31.52
Total Demand Current (A)	131.33
Min. Feeder Ampacity (A)	164.16

TYPICAL UNIT PANEL BOARD : A												
PANELBOARD DESIGNATION												
SYSTEM VOLTAGE		240/120V, 1Φ, 3W										
BUS SIZE		200A										
SYSTEM TYPE		NORMAL										
FEEDER PROT		200A-1P C/B Bus Plug										
CONDUCTOR SIZE		3/0 AWG - #4G										
CONDUCTOR/PHASE		1										
MAINS		200A MCB										
SCOR		SERIES RATED										
MCB RATING		80%										
GROUND FAULT		NO										
FEEDER LENGTH (FT)		100										
FEEDER V. DROP (%)		1.281										
FAULT CURRENT		14.060										
KAIC RATING		22										
ENCLOSURE		TYPE 1										

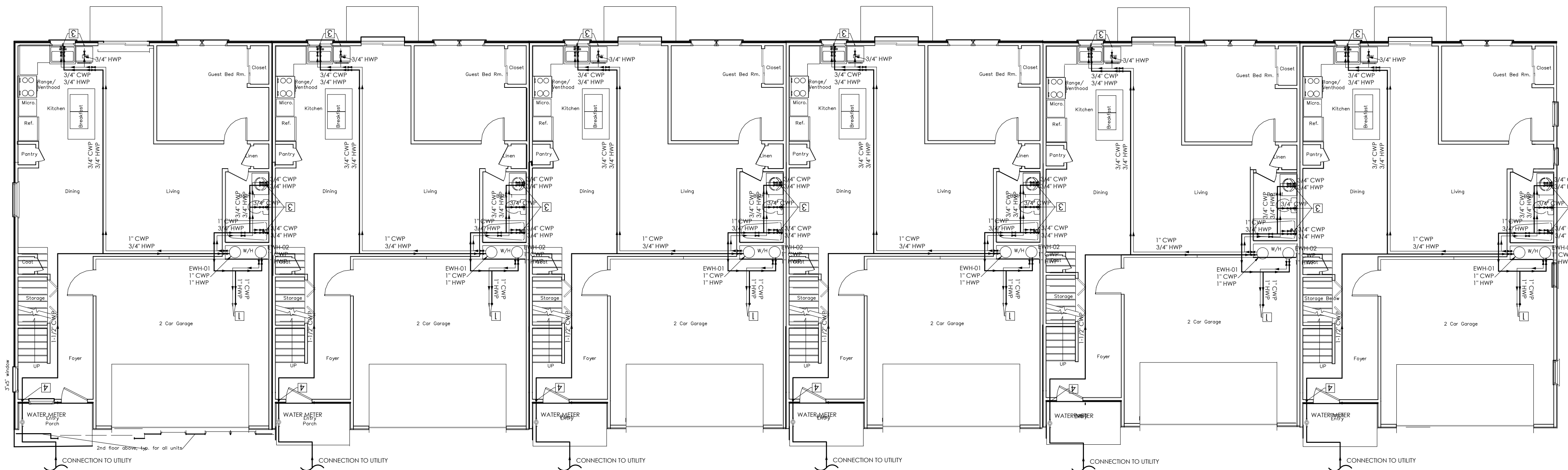
DESCRIPTION	*	WIRE	GRD	CB	KVA	A	B	KVA	CB	WIRE	GRD	DESCRIPTION	*
LIGHTING ENTRANCE + LIVING + DINNING + KITCHEN	L	2x 12 AWG - #12G		15A-1P	0.40	1.30	0.90	0.90	20A-1P	2x 10 AWG - #12G		RECEPTACLES LIVING ROOM FIRST FLOOR - 01	R 2
LIGHTING GUEST BEDROOM	L	2x 12 AWG - #12G		15A-1P	0.18	1.26	1.08	1.08	20A-1P	2x 10 AWG - #12G		RECEPTACLES LIVING ROOM - 02 + ENTRANCE	R 4
LIGHTING GARAGE	L	2x 12 AWG - #12G		15A-1P	0.20	1.10	0.90	0.90	20A-1P	2x 10 AWG - #12G		RECEPTACLES GARAGE	R 6
LIGHTING BATHROOMS	L	2x 12 AWG - #12G		15A-1P	0.24	1.14	0.90	0.90	20A-1P	2x 10 AWG - #12G		RECEPTACLES GUEST BEDROOM	R 8
LIGHTING OUTDOOR	L	2x 12 AWG - #12G		15A-1P	0.15	0.87	0.72	0.72	20A-1P	2x 10 AWG - #12G		RECEPTACLES BATHROOMS	R 10
LIGHTING SECOND FLOOR LIVING	L	2x 12 AWG - #12G		15A-1P	0.20	1.10	0.90	0.90	20A-1P	2x 10 AWG - #12G		RECEPTACLES LIVING SECOND FLOOR	R 12
LIGHTING BEDROOM 3 + MASTER BEDROOM	L	2x 12 AWG - #12G		15A-1P	0.40	1.48	1.08	1.08	20A-1P	2x 10 AWG - #12G		RECEPTACLES MASTER BEDROOM	R 14
LIGHTING BEDROOM 4 + 5	L	2x 12 AWG - #12G		15A-1P	0.25	1.15	0.90	0.90	20A-1P	2x 10 AWG - #12G		RECEPTACLES BEDROOM 3	R 16
RECEPTACLES BEDROOM 4	R	2x 10 AWG - #12G		20A-1P	1.08	2.58	1.50	1.50	20A-1P	2x 10 AWG - #12G		WASHING MACHINE	K 18
DRYING MACHINE	K	2x 10 AWG - #12G		30A-2P	2.50	2.50						SPACE	20
MICROWAVE	K	2x 10 AWG - #12G		20A-1P	1.50	3.40	0.90	0.90	20A-1P	2x 10 AWG - #12G		RECEPTACLES ISLAND	K 22
RECEPTACLE KITCHEN	K	2x 10 AWG - #12G		20A-1P	1.50	1.80	0.30	0.30	20A-1P	2x 10 AWG - #12G		REFRIGERATOR	K 24
DISHWASHER	K	2x 10 AWG - #12G		20A-1P	1.50	4.31	2.81	2.81	30A-2P	2x 10 AWG - #12G		GAS RANGE	K 26
SPACE	K					2.81	2.81					OUTDOOR UNIT - 01	A 28
GAS FURNANCE - 01	A	2x 10 AWG - #10G		20A-1P	1.06	4.06	3.00	3.00	30A-2P	2x 10 AWG - #12G		SPACE	A 30
EW - 02	P	2x 8 AWG - #10G		30A-2P	3.00	6.00	3.00	3.00				EW - 01	P 32
SPACE	P				3.00	3.00						SPACE	P 34
SPACE				20A-1P		1.08	1.08	1.08	20A-1P	2x 10 AWG - #12G		RECEPTACLES BEDROOM 5	R 36
SPACE												SPACE	R 38
SPACE												SPACE	R 40
SPACE												SPACE	R 42
(KVA)						Total Connected Load		22.42	21.51	Updated 12.9.2022			

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Scale: NTS
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1st. FLOOR PLAN UNIT F 2300 G 6 Units

SCHEDULE No. 1
ELECTRIC WATER HEATERS

TAG	EW-01 TO EW-12
LOCATION	ABOVE CEILING OF GARAGE
MANUFACTURER	A.O SMITH
MODEL	EJCS-10
TYPE	ELECTRIC - TANK
MAX. POWER (KW) / NB OF ELEMENTS	6 / 1
VOLTAGE (V / PH / HZ)	240 / 1 / 60
NOMINAL TANK CAPACITY (GAL)	10
RATED STORAGE VOLUME (GAL)	9
APPROXIMATE WEIGHT (LBS)	41
WIDTH x DEPTH x HEIGHT (in.)	18 - 1/4" X 12 - 1/4" X 16"

WATER SUPPLY SHEET NOTES:

- 1 — DCW AND DHW RISE TO FLOOR ABOVE.
- 2 — DCW AND DHW RISE FROM FLOOR BELOW TO CEILING LEVEL.
- 3 — DCW AND/OR DHW TO FIXTURE CONNECTION.
- 4 — DCW RISES TO CEILING LEVEL.

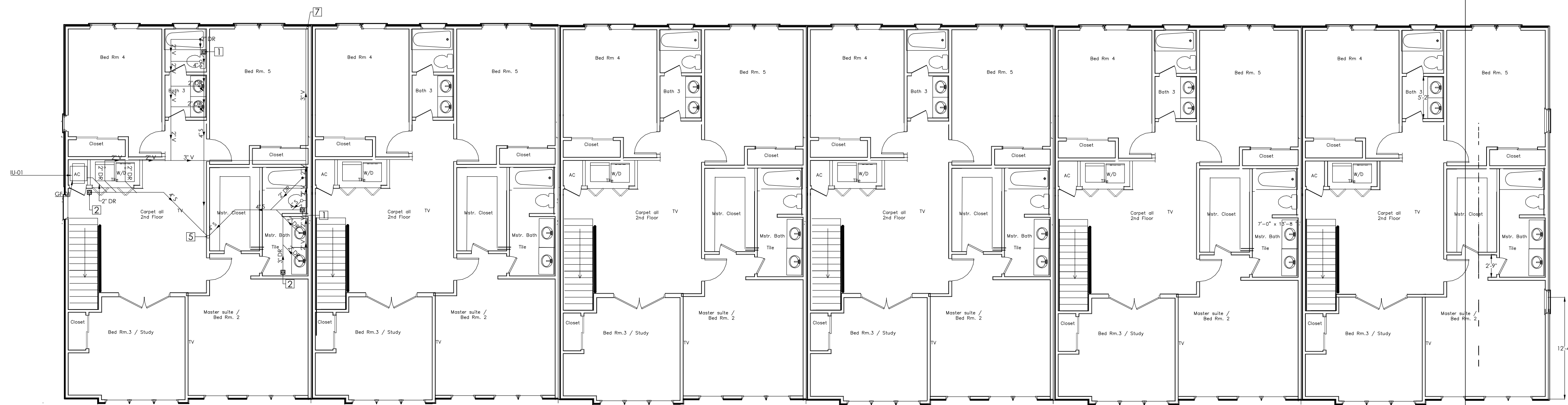
DESCRIPTION	LOAD		PIPE SIZE
	FU	GPM	
DCW	81	-	2"
DHW	53.4	-	1-1/2"
TOT. COMBINED	107.4	-	2"

DESCRIPTION	LOAD		PIPE SIZE
	FU	GPM	
DCW	13.5	-	1-1/2"
DHW	8.9	-	1"
TOT. COMBINED	17.9	-	1-1/2"

DESCRIPTION	LOAD		PIPE SIZE
	FU	GPM	
DCW	4.5	-	1"
DHW	3.9	-	1"



1/8" = 1'-0"



2ND. FLOOR PLAN UNIT F 2300 G 6 units

PLUMBING SHEET NOTES

SHEET NOTES:

- 1 — 4" FLOOR CLEAN-OUT.
- 2 — 3" FLOOR DRAIN.
- 3 — 4" EXTERIOR CLEAN-OUT.
- 4 — 4" SOIL AND WASTE DROP FROM ABOVE.
- 5 — 4" SOIL AND WASTE DROP TO BELOW.
- 6 — 3" VENT STACK TO ABOVE.
- 7 — 3" VENT STACK FROM BELOW TO ABOVE.
- 8 — 1-1/4" CONDENSATE DRAIN PIPE DROP IN WALL.

MINIMUM PIPE SIZE PER FIXTURE

FIXTURE UNIT	DR (INCH)	VENT (INCH)
SHOWER	2	2
WATER CLOSET	4	2
LAVATORY	2	2
KITCHEN SINK	2	2
DISHWASHER	2	2
BATHTUB	2	2
LAUNDRY MACHINE	2	2

SECOND FLOOR DRAINAGE LOAD PER 1 UNIT

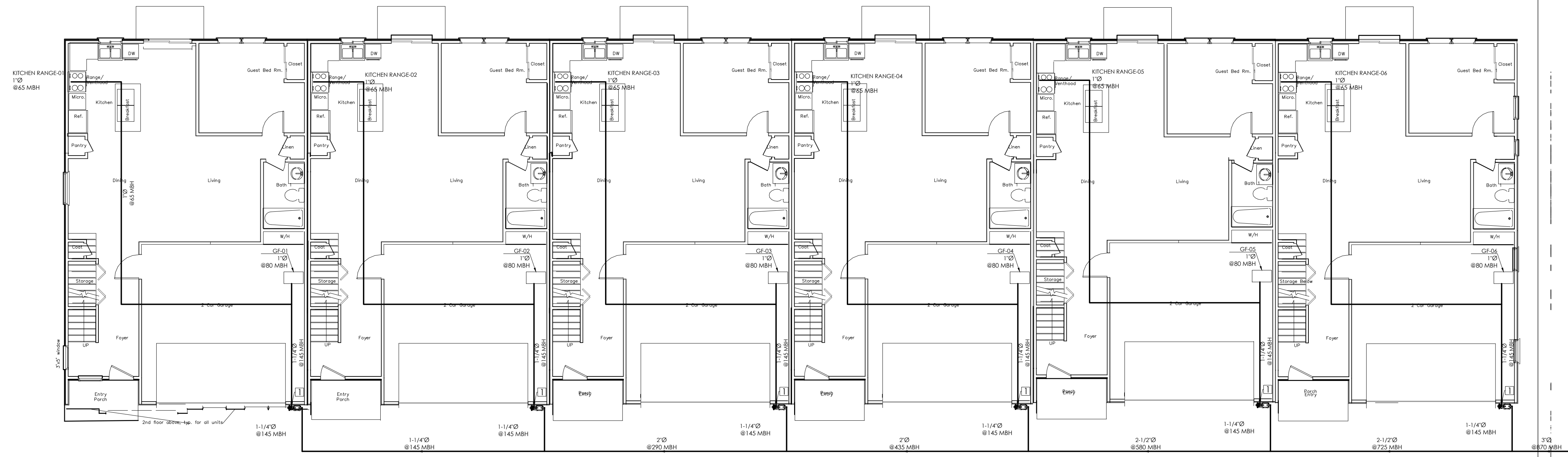
DESCRIPTION	LOAD		PIPE SIZE
	FU	GPM	
TOTAL DFU	24	-	4"



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

Sheet Number:
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Project Number:



1st. FLOOR PLAN UNIT F 2300 G 6 Units

PLUMBING SHEET NOTES
 SHEET NOTES:
 1 — GAS PIPE RISES TO CEILING LEVEL.

G



Scale: 1/8" = 1'-0"
 Sheet Number:
P 3 . 0 1
 Project Number:

