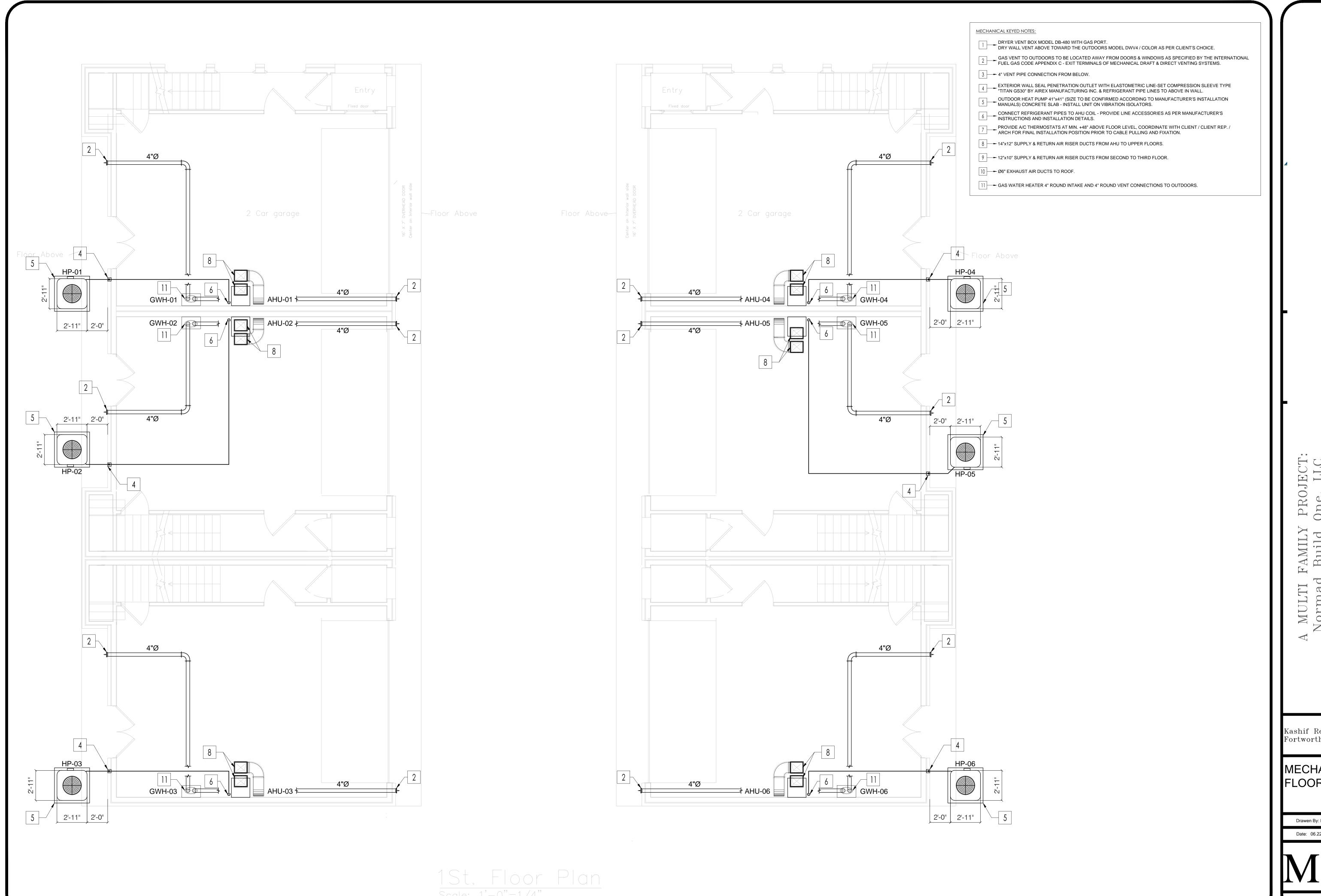
GDI ENGINEERING



6 Unit Apartment

Multifamily

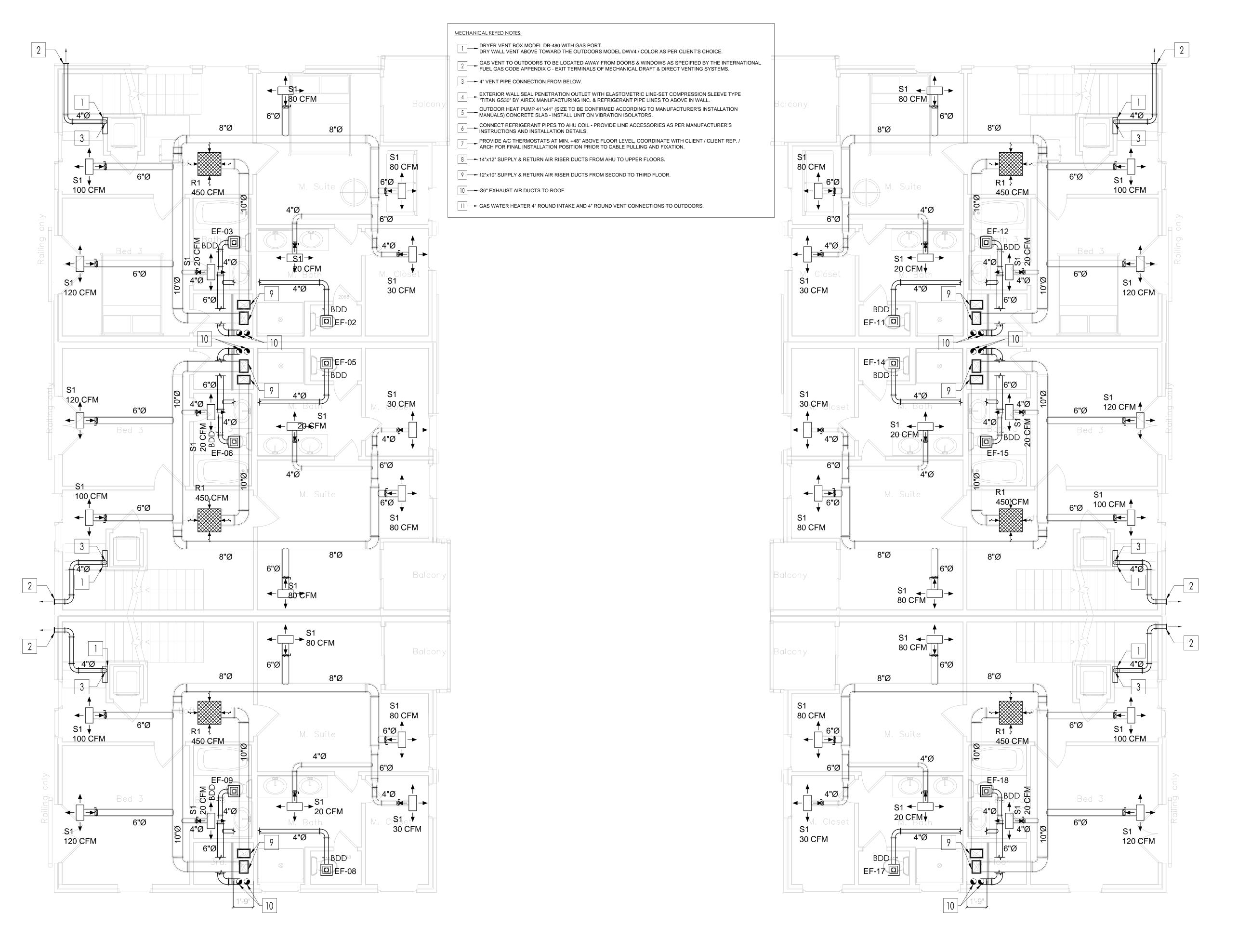
Fort Worth - Texas



Kashif Reaz,1104 Greer St Fortworth, TX

MECHANICAL FIRST FLOOR LAYOUT.

Drawen By: M.F Scale: 1/4"= 1'-0" Date: 06.22.2023 PROJ.NO.:



rd Floor Plan ale: 1'-0"=1/4" A MULTI FAMILY PROJE Normad Build One, L

Kashif Reaz 1104 Greer St Fortworth, TX

Kashif Reaz,1104 Greer St Fortworth, TX

MECHANICAL THIRD FLOOR LAYOUT.

Drawen By: M.F Scale: 1/4"= 1'-0"

Date: 06.22.2023 PROJ.NO.:

M 4.00

PROVIDE ENCLOSURE (MECHANICAL PROTECTION) FOR TOILETS EXHAUST AND KITCHEN HOOD EXHAUST TO DISCHARGE ABOVE OCCUPANTS LEVEL. PROVIDE ENCLOSURE (MECHANICAL PROTECTION) FOR TOILETS EXHAUST AND KITCHEN HOOD EXHAUST TO DISCHARGE ABOVE OCCUPANTS LEVEL. PROVIDE ENCLOSURE (MECHANICAL PROTECTION) FOR TOILETS EXHAUST AND KITCHEN HOOD EXHAUST TO DISCHARGE ABOVE OCCUPANTS LEVEL.

PROVIDE ENCLOSURE (MECHANICAL PROTECTION) FOR TOILETS EXHAUST AND KITCHEN HOOD EXHAUST TO DISCHARGE ABOVE OCCUPANTS LEVEL. PROVIDE ENCLOSURE (MECHANICAL PROTECTION) FOR TOILETS EXHAUST AND KITCHEN HOOD EXHAUST TO DISCHARGE ABOVE OCCUPANTS LEVEL. PROVIDE ENCLOSURE (MECHANICAL PROTECTION) FOR TOILETS EXHAUST AND KITCHEN HOOD EXHAUST TO DISCHARGE ABOVE OCCUPANTS LEVEL.

MECHANICAL KEYED NOTES:

DRYER VENT BOX MODEL DB-480 WITH GAS PORT.
DRY WALL VENT ABOVE TOWARD THE OUTDOORS MODEL DWV4 / COLOR AS PER CLIENT'S CHOICE.

GAS VENT TO OUTDOORS TO BE LOCATED AWAY FROM DOORS & WINDOWS AS SPECIFIED BY THE INTERNATIONAL FUEL GAS CODE APPENDIX C - EXIT TERMINALS OF MECHANICAL DRAFT & DIRECT VENTING SYSTEMS.

3 — 4" VENT PIPE CONNECTION FROM BELOW.

EXTERIOR WALL SEAL PENETRATION OUTLET WITH ELASTOMETRIC LINE-SET COMPRESSION SLEEVE TYPE "TITAN GS30" BY AIREX MANUFACTURING INC. & REFRIGERANT PIPE LINES TO ABOVE IN WALL.

OUTDOOR HEAT PUMP 41"x41" (SIZE TO BE CONFIRMED ACCORDING TO MANUFACTURER'S INSTALLATION MANUALS) CONCRETE SLAB - INSTALL UNIT ON VIBRATION ISOLATORS.

6 CONNECT REFRIGERANT PIPES TO AHU COIL - PROVIDE LINE ACCESSORIES AS PER MANUFACTURER'S INSTRUCTIONS AND INSTALLATION DETAILS.

PROVIDE A/C THERMOSTATS AT MIN. +48" ABOVE FLOOR LEVEL, COORDINATE WITH CLIENT / CLIENT REP. / ARCH FOR FINAL INSTALLATION POSITION PRIOR TO CABLE PULLING AND FIXATION.

8 - 14"x12" SUPPLY & RETURN AIR RISER DUCTS FROM AHU TO UPPER FLOORS.

9 -- 12"x10" SUPPLY & RETURN AIR RISER DUCTS FROM SECOND TO THIRD FLOOR.

10 - Ø6" EXHAUST AIR DUCTS TO ROOF.

11 - GAS WATER HEATER 4" ROUND INTAKE AND 4" ROUND VENT CONNECTIONS TO OUTDOORS.

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MECHANICAL ROOF FLOOR.

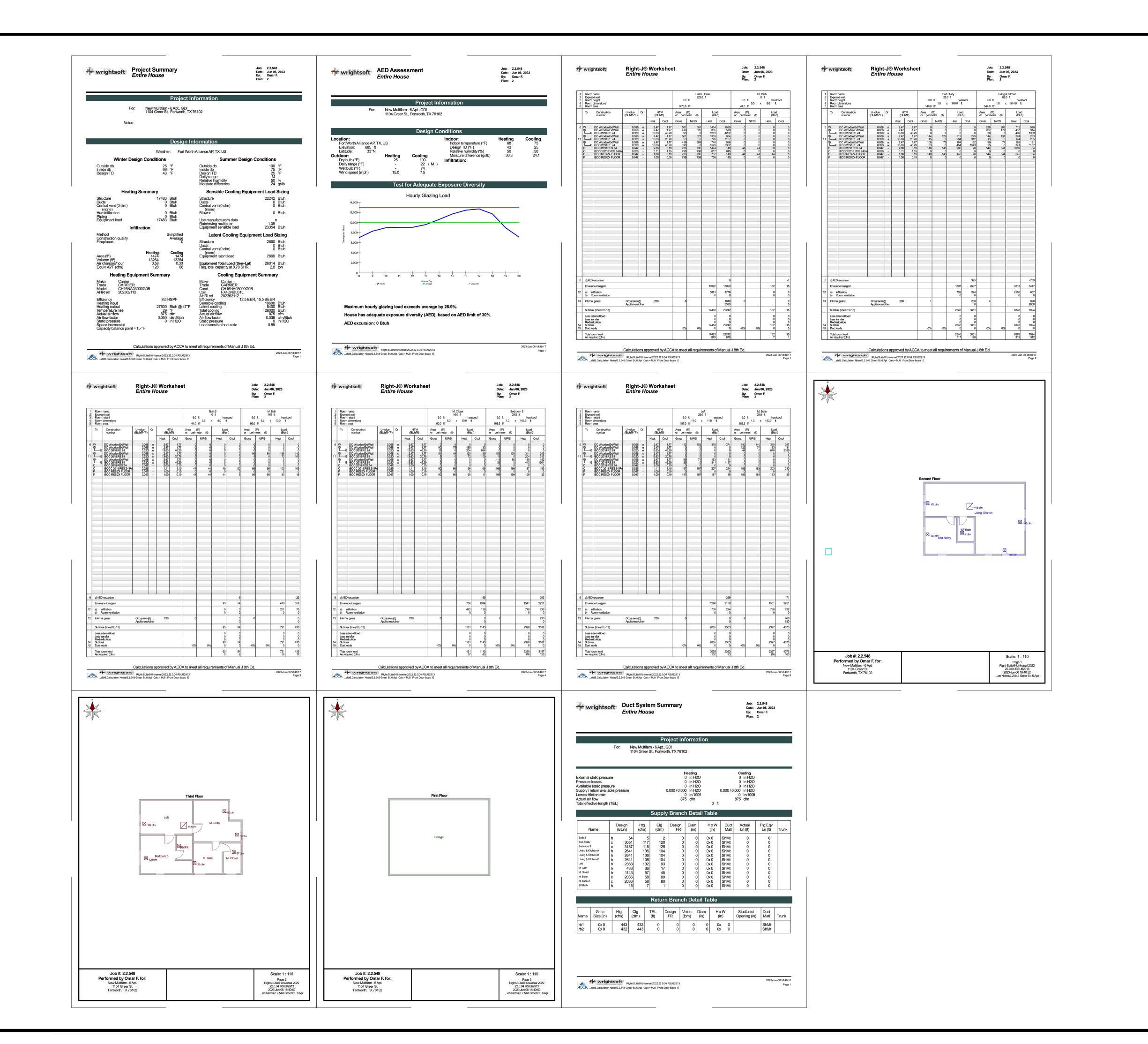
Drawen By: M.F Scale: 1/4"= 1'-0"

Date: 06.22.2023 PROJ.NO.:

M 5.00

SHEET NO.

Roof Top Plan
Scale: 1'-0"=3/16"



A MULTI FAMILY PROJECT: Normad Build One, LLC

Kashif Reaz 1104 Greer St Fortworth, TX

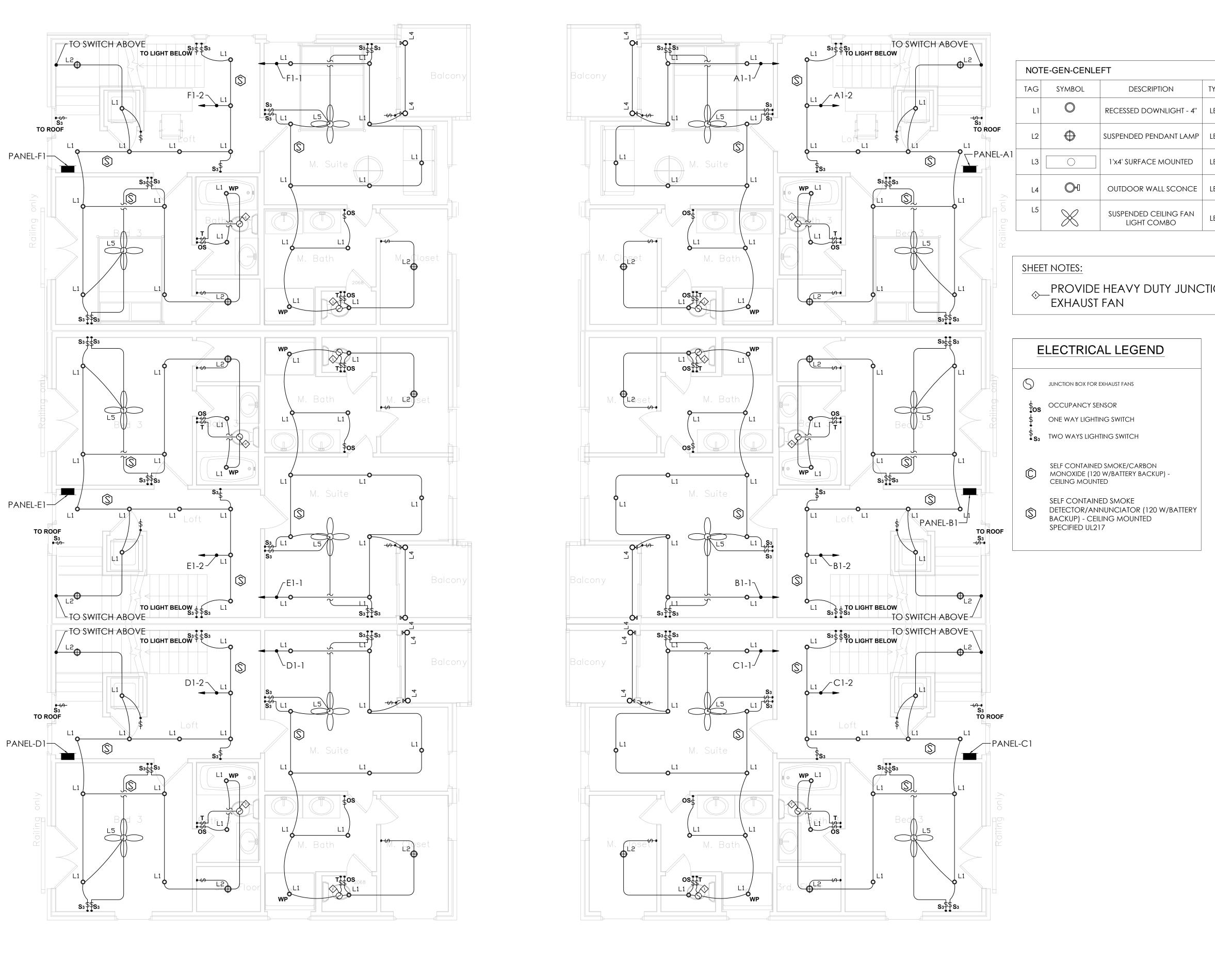
Kashif Reaz,1104 Greer St Fortworth, TX

HEAT LOAD CALCULATION.

Drawen By: M.F Scale: NTS

Date: 06.22.2023 PROJ.NO.:

M 8.00



	TAG	SYMBOL	DESCRIPTION	TYPE	W	V	MOUNT.	MANUF.	MODEL
-	L1	0	RECESSED DOWNLIGHT - 4"	LED	15W	120V	REC.	TBD	TBD
	L2	•	SUSPENDED PENDANT LAMP	LED	15W	120V	SUSP.	TBD	TBD
.1	L3		1'x4' SURFACE MOUNTED	LED	33W	120V	SUSP.	TBD	TBD
	L4	Øн	OUTDOOR WALL SCONCE	LED	15W	120V	WALL	TBD	TBD
	L5	X	SUSPENDED CEILING FAN LIGHT COMBO	LED	75W	120V	SUSP.	WESTING- HOUSE	7205900

PROVIDE HEAVY DUTY JUNCTION BOX, FLUSH IN CEILING (OR WALL) FOR

A MULTI FAMILY PROJECT: Normad Build One, LLC

Kashif Reaz,1104 Greer St Fortworth, TX

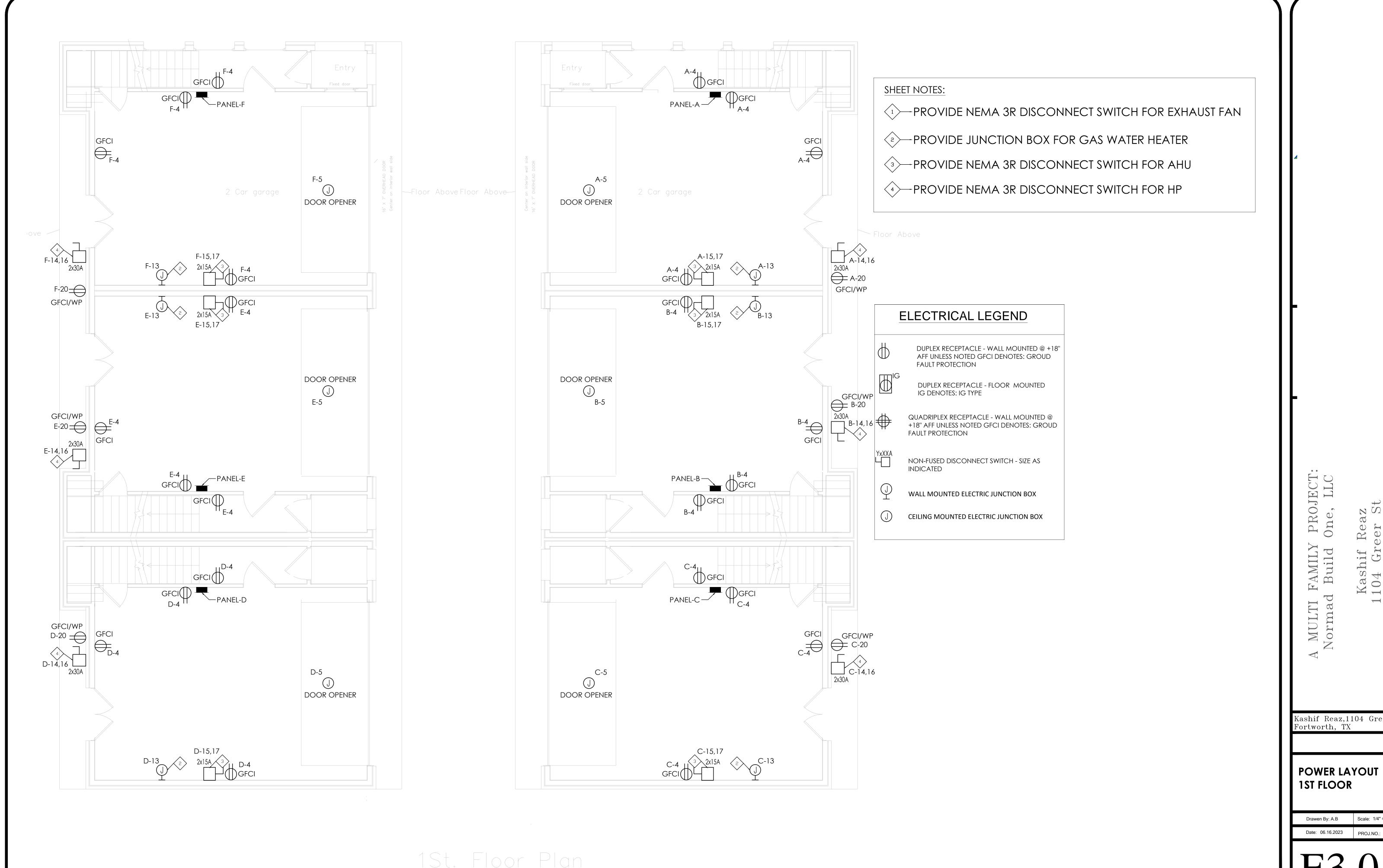
Kashif Reaz 1104 Greer St Fortworth, TX

LIGHTING LAYOUT 3RD FLOOR

Drawen By: A.B Scale: 1/4" = 1'-0"

Date: 06.16.2023 PROJ.NO.:

E2.03

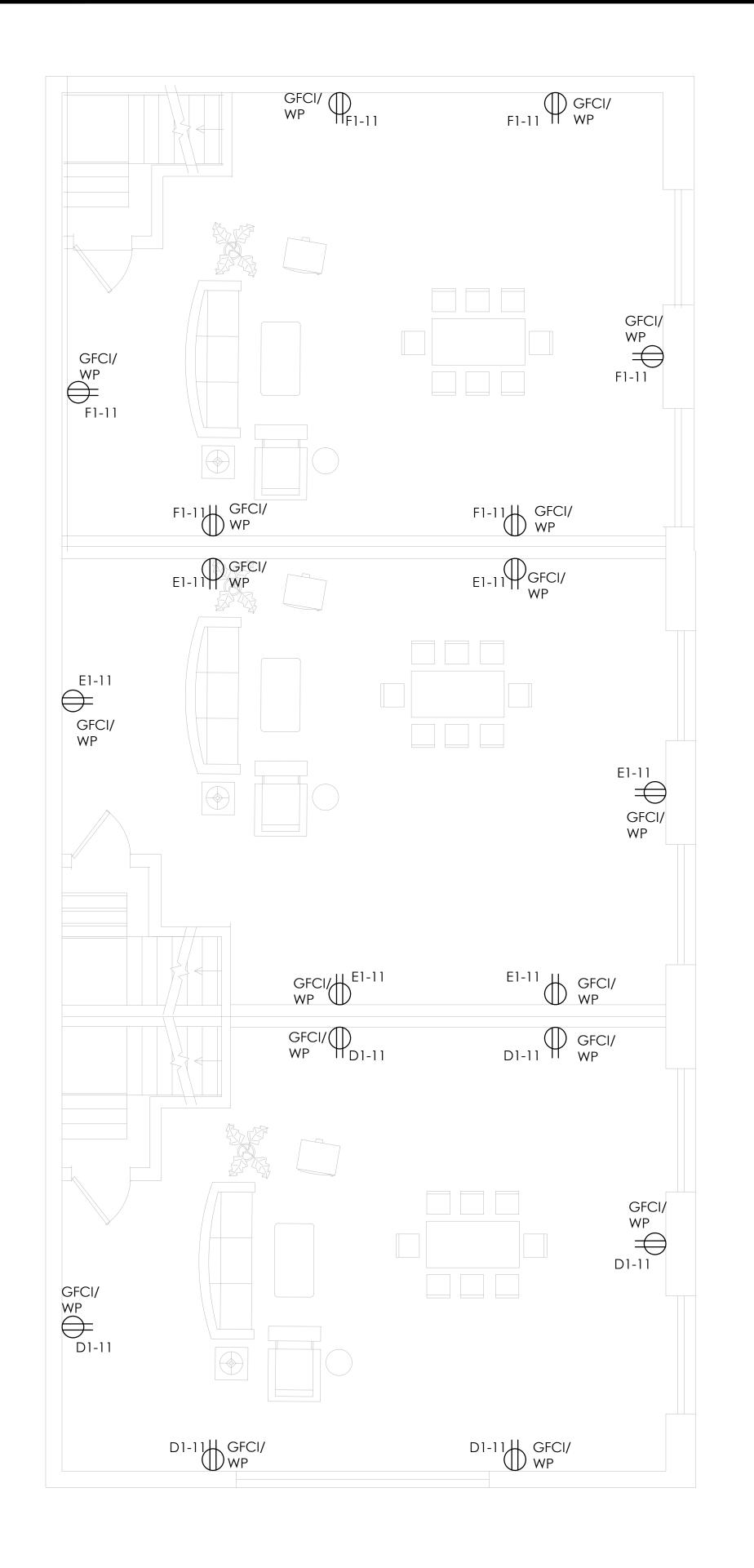


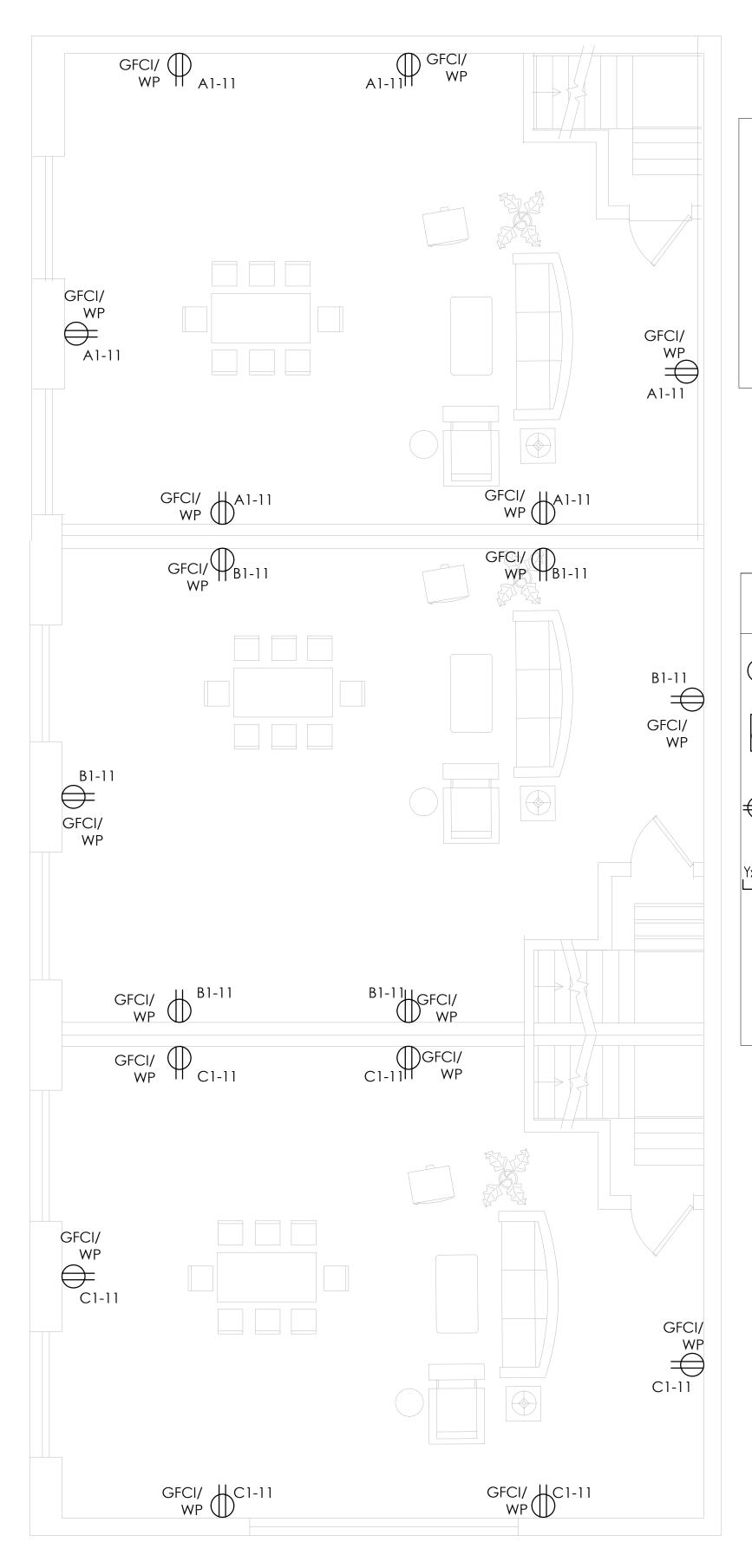
Kashif Reaz,1104 Greer St Fortworth, TX

Kashif Reaz 1104 Greer St Fortworth, TX

POWER LAYOUT 1ST FLOOR

Drawen By: A.B Scale: 1/4" = 1'-0"





SHEET NOTES:

- PROVIDE NEMA 3R DISCONNECT SWITCH FOR EXHAUST FAN
- PROVIDE JUNCTION BOX FOR GAS WATER HEATER
- PROVIDE NEMA 3R DISCONNECT SWITCH FOR AHU
- PROVIDE NEMA 3R DISCONNECT SWITCH FOR HP

ELECTRICAL LEGEND

DUPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED GFCI DENOTES: GROUD FAULT PROTECTION

DUPLEX RECEPTACLE - FLOOR MOUNTED IG DENOTES: IG TYPE

QUADRIPLEX RECEPTACLE - WALL MOUNTED @ +18" AFF UNLESS NOTED GFCI DENOTES: GROUD FAULT PROTECTION

NON-FUSED DISCONNECT SWITCH - SIZE AS

WALL MOUNTED ELECTRIC JUNCTION BOX

CEILING MOUNTED ELECTRIC JUNCTION BOX

A MULTI FAMILY PROJECT: Normad Build One, LLC

Kashif Reaz,1104 Greer St Fortworth, TX

Kashif Reaz 1104 Greer St Fortworth, TX

POWER LAYOUT ROOF FLOOR

Drawen By: A.B Scale: 1/4" = 1'-0"

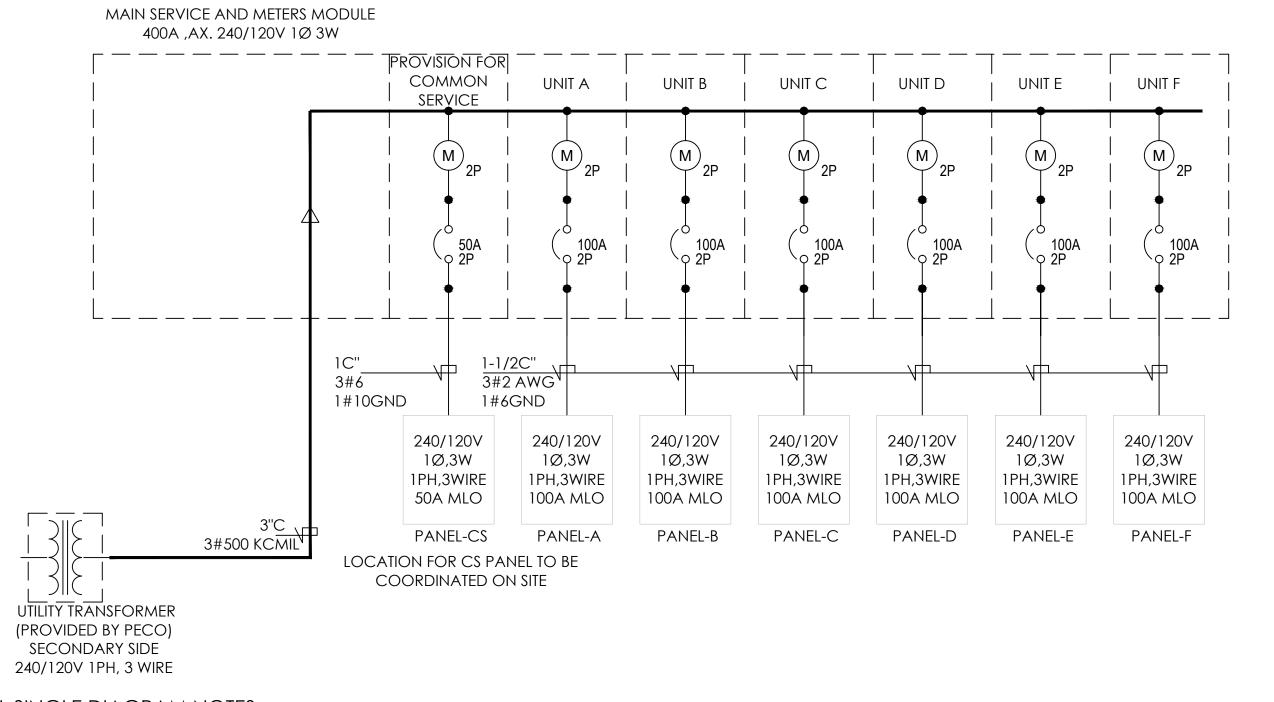
Date: 06.16.2023 PROJ.NO.:

E3.04

SHEET NO.

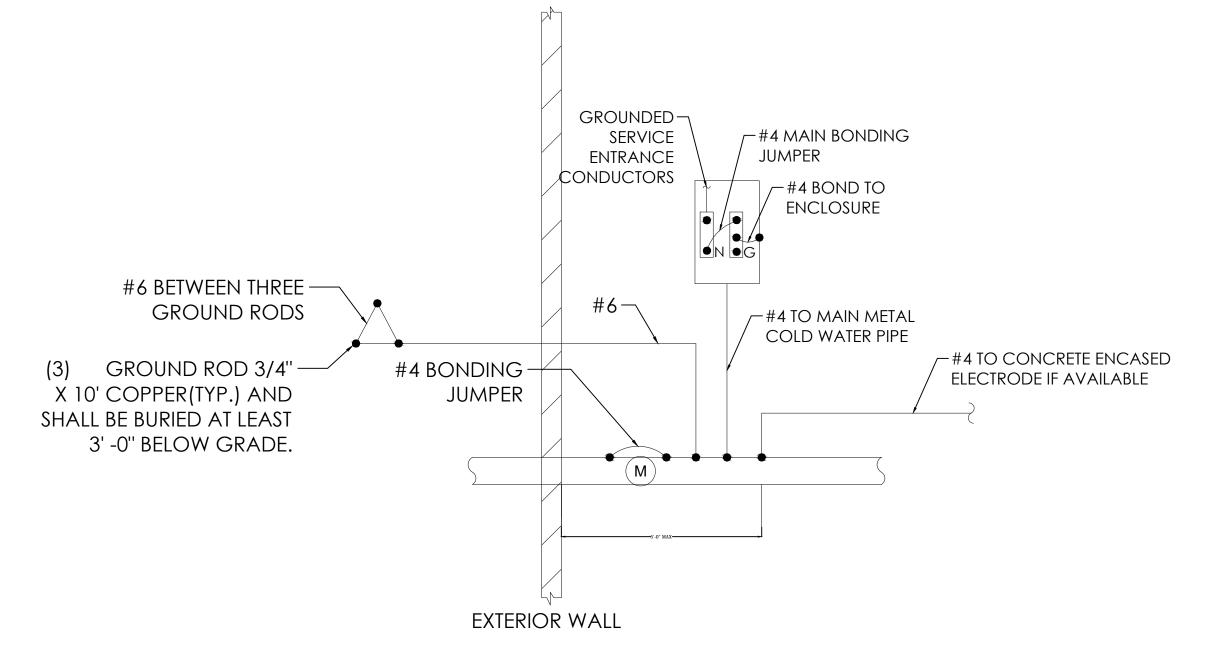
Roof Iop Plan Scale: 1'-0"=3/16"

					Multif	family Load Analy	rsis - NEC 220.84					
						Lo	ads in VA - NEC 220	D.82]
Apartment N°	Floor/s	Area (ft²)	Lighting & Receptacles Load	Small Appliances Load	Laundry Circuit	Dishwasher Circuit	Water Heater Circuit	Range Circuit	Fridge	Dsiposal	Air Conditioning Circuit - Cooling	Connected Load (VA)
Apt#1	4 FLOORS	3,100	9,300	3,000	2,000	1,000	500	500	1,000	900	5,920	24,120
Apt#2	4 FLOORS	3,100	9,300	3,000	2,000	1,000	500	500	1,000	900	5,920	24,120
Apt#3	4 FLOORS	3,100	9,300	3,000	2,000	1,000	500	500	1,000	900	5,920	24,120
Apt#4	4 FLOORS	3,100	9,300	3,000	2,000	1,000	500	500	1,000	900	5,920	24,120
Apt#5	4 FLOORS	3,100	9,300	3,000	2,000	1,000	500	500	1,000	900	5,920	24,120
Apt#6	4 FLOORS	3,100	9,300	3,000	2,000	1,000	500	500	1,000	900	5,920	24,120
					Total C	onnected Load (V	'A)					144,720
					Demand Fac	tor - NEC 220.84 /	6-7 Apt					0.44
					Demand L	oad - Apartments	(VA)					63,677
					Demand Lo	ad - House Servic	es (VA)					1,080
					Demand Lo	oad - Total Buildin	g (VA)					64,757
					Demand	Load (Amps) @ 2	40V					270
					Main Break	er Rating - NEC 24	0.6 (A)					400
					Num	ber of Raceways						1
				D	emand Load (Amp	s) @ 240V per Sei	vice Conductor					269.8
				Each Main Ser	vice Conductor - N	EC 310.15 (B) (16)	- Copper @ 75°C -	310 Amps				500 Kcmil
												1 SET OF 3"
					C	ONDUIT SIZE						EMT
												CONDUIT



ELECTRICAL SINGLE DIAGRAM NOTES:

- 1. E.C. SHALL ENSURE THE ELECTRIC SERVICE IS PROPERLY BONDED AND GROUNDED PER NEC ARTICLES 230 AND 250
- 2. CONDUCTORS SIZE ARE BASED ON COPPER CONDUCTORS. E.C. SHALL NOTIFY ENGINEER AND MAKE THE CHANGES IF E.C. USE ALUMINUM CONDUCTORS.
- 3. REFER TO DWG.2/E200 FOR GROUNDING AND BONDING DETAILS



ELECTRICAL GROUNDING AND BONDING NOTES:

1. E.C. SHALL ENSURE THE ELECTRIC SERVICE IS PROPERLY BONDED AND WALL GROUNDED PER NEC ARTICLES 230 AND 250.

- 2. CONDUCTORS SIZE ARE BASED ON COPPER CONDUCTORS.
- 3. BOUNDING JUMPER FOR WATER METER IS PERMITTED TO BE OMITTED IF NON-METALLIC WATER PIPE IS USED.

A MULTI FAMILY PROJECT:

Kashif Reaz 1104 Greer St Fortworth, TX

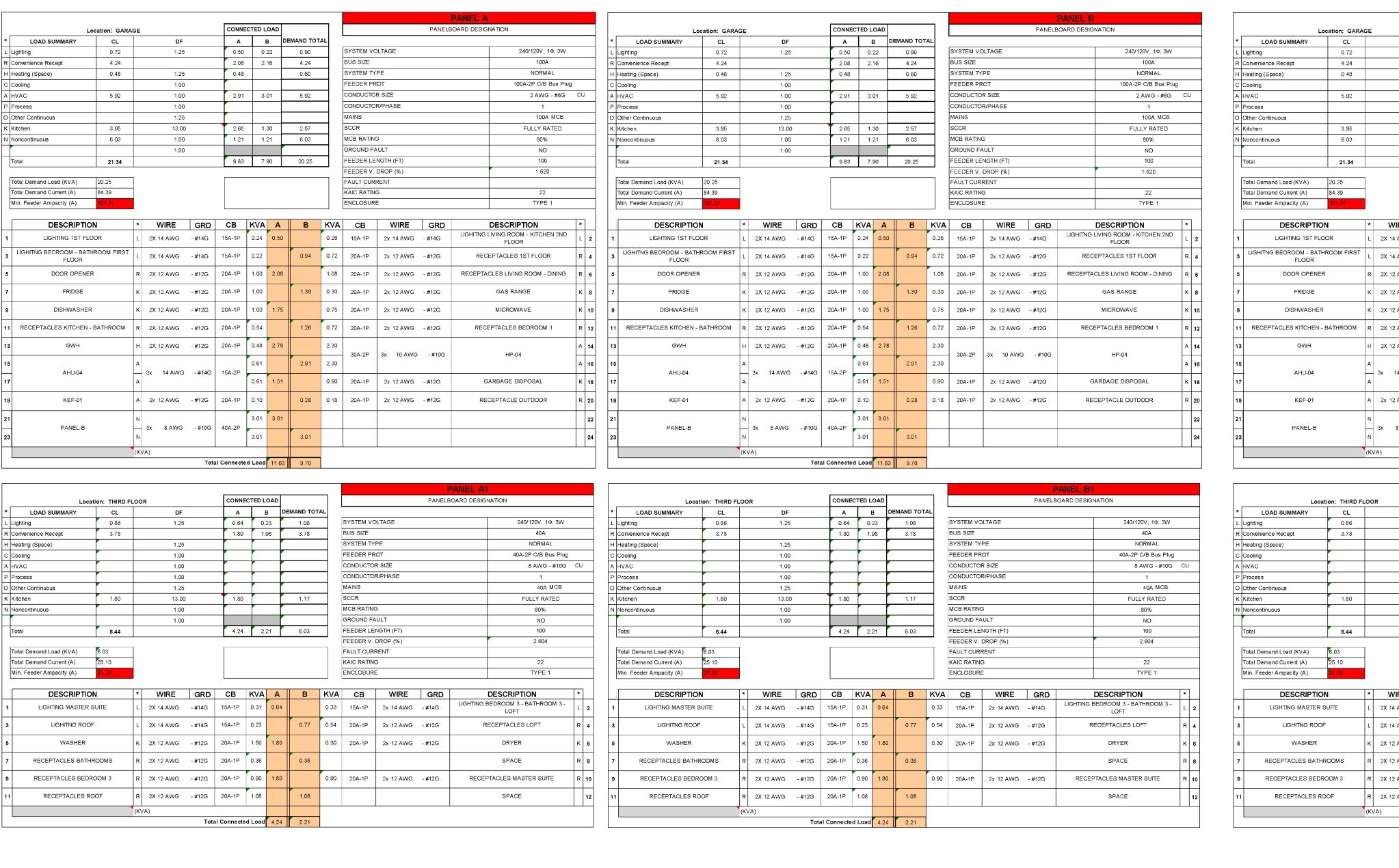
Kashif Reaz,1104 Greer St Fortworth, TX

SINGLE LINE DIAGRAM & GROUNDING DETAILS

Drawen By: A.B Scale: NTS

Date: 06.16.2023 PROJ.NO.:

E4.01



	Loc	ation: GARA				CONNE	CONNECTED LOAD						PANELE	BOARD DESIG	NATION		
*	LOAD SUMMARY	CL		DF		А		В	DEMAND TOTA	AL.						_	_
ļ	Lighting	0.72		1.25		0.50	0.	22	0.90		SYSTEM VO	DLTAGE			240/120V, 1Ф, 3W		
2 (Convenience Recept	4.24				2.08	2.	16	4.24	7	BUS SIZE				100A		_
1	Heating (Space)	0.48		1.25		0.48			0.60	7	SYSTEM TY	PΕ			NORMAL	_	_
5 0	Cooling			1.00						7	FEEDER PR	ROT			100A-2P C/B Bus Plug	_	_
4	HVAC	5.92		1.00		2.91	3.	01	5.92	7	CONDUCTO	R SIZE			2 AWG - #6G	С	CU
P	Process			1.00						٦.	CONDUCTO	R/PHASE			1	_	_
5 0	Other Continuous			1.25						7	MAINS				100A MCB	_	_
<	Kitchen	3.95		13.00		2.65	1.	30	2.57	7	SCCR				FULLY RATED	_	_
v l	Noncontinuous	6.03		1.00		1.21 1.21 6.03			6.03	7	MCB RATIN	G			80%	_	_
7				1.00						7	GROUND FA	AULT			NO	_	_
1	Total	21.34				9.83	7.	90	20.25	7	FEEDER LE	NGTH (FT)			100	_	_
L							-			_	FEEDER V.	DROP (%)			1.620	_	_
F	Total Demand Load (KVA)	20.25									FAULT CUR	RENT			1.020		
ŀ	Total Demand Current (A)	84.39									KAIC RATIN	G			22		
Ī	Min. Feeder Ampacity (A)	101.27									ENCLOSUR	E			TYPE 1		
	DESCRIPTION		*	WIRE	GRD	СВ	KVA	Α	В	K۷	4 СВ	WIRE	GRD		DESCRIPTION	1	*
1	LIGHTING 1ST FLOO	OR	L	2X 14 AWG	- #14G	15A-1P	0.24	0.50		0.28	3 15A-1P	2x 14 AWG	- #14G	LIGHITNG	LIVING ROOM - KITCHEN 2ND FLOOR	_l'	L
3	LIGHITNG BEDROOM - BATHF FLOOR	ROOM FIRST	L	2X 14 AWG	- #14G	15A-1P	0.22		0.94	0.72	20A-1P	2x 12 AWG	- #12G	REC	EPTACLES 1ST FLOOR	F	R
5	DOOR OPENER		R	2X 12 AWG	- #12G	20A-1P	1.00	2.08		1.08	3 20A-1P	2x 12 AWG	- #12G	RECEPTA	CLES LIVING ROOM - DINING	F	R
7	FRIDGE	FRIDGE K 2X 12 AV		2X 12 AWG	- #12G	20A-1P	1.00		1.30	0.30	20A-1P	2x 12 AWG	- #12G		GAS RANGE	Ţ	ĸ
9	DISHWASHER		K	2X 12 AWG	- #12G	20A-1P	1.00	1.75		0.75	20A-1P	2x 12 AWG	- #12G		MICROWAVE	ŀ	ĸ
11	RECEPTACLES KITCHEN - E	BATHROOM	R	2X 12 AWG	- #12G	20A-1P	0.54		1.26	0.72	2 20A-1P	2x 12 AWG	- #12G	REC	EPTACLES BEDROOM 1	F	R
13	GWH		Н	2X 12 AWG	- #12G	20A-1P	0.48	2.78		2.30	30A-2P	3x 10 AWG	- #10G		HP-04	1	A
15			Α				0.61		2.91	2.30						/	Α
17	AHU-04		A	3x 14 AWG	- #14G	15A-2P	0.61	1.51		0.90	20A-1P	2x 12 AWG	- #12G	G	GARBAGE DISPOSAL	1	ĸ
19	KEF-01		A	2x 12 AWG	- #12G	20A-1P	0.10		0.28	0.18	3 20A-1P	2x 12 AWG	- #12G	RE	CEPTACLE OUTDOOR	+	R
21			N				3.01	3.01								+	
23	PANEL-B		N	3x 8 AWG	- #10G	40A-2P	3.01		3.01							†	
_			(K	⊥ VA)													_
					Tota	I Connecte	d Load	11.63	9.70								
									II								_
																_	_
										_			F	PANEL C1			
	Locati	on: THIRD F	LOC	DR		CONNE	CTED L	OAD					PANELE	OARD DESIG	NATION		
*	LOAD SUMMARY	CL		DF		Α	E	3 [DEMAND TOTA	L							
L	Lighting	0.86		1.25		0.64	0.:	23	1.08		SYSTEM VC	DLTAGE			240/120V, 1Ф, 3W		
R	Convenience Recept	3.78				1.80	1.3	98	3.78		BUS SIZE				40A		
н	Heating (Space)			1.25				 		1	SYSTEM TY	PE			NORMAL		
+			_					_	,	_						_	-

PANELBOARD DESIGNATION

	Loca	tion: THIRD F	LOO	R		CONNE	CTED L	OAD					PANEL	BOARD DESIG	NATION		
* [LOAD SUMMARY	CL		DF		А		в	DEMAND TOTA	니							
LL	ighting	0.86		1.25		0.64	0.	23	1.08	7	SYSTEM VO	DLTAGE			240/120V, 1Φ, 3W		
R C	Convenience Recept	3.78				1.80	1.	98	3.78	7	BUS SIZE				40A		
нн	Heating (Space)			1.25						7	SYSTEM TY	PE			NORMAL		
СС	Cooling			1.00						7	FEEDER PR	ют			40A-2P C/B Bus Plug		
АН	IVAC			1.00						7	CONDUCTO	R SIZE			8 AWG - #10G	Cl	Ū
P P	Process			1.00						7	CONDUCTO	R/PHASE			1		
0 0	Other Continuous			1.25						7	MAINS				40A MCB		
кк	Citchen	1.80		13.00	ı	1.80			1.17	7	SCCR				FULLY RATED		
N N	Voncontinuous			1.00						7	MCB RATING	3			80%		
1				1.00						7	GROUND FA	AULT			NO		
Т	otal	6.44				4.24	2.	21	6.03	7	FEEDER LE	NGTH (FT)			100		
		·				•		•		_	FEEDER V.	DROP (%)		2.604			
Т	otal Demand Load (KVA)	6.03									FAULT CUR	RENT					
Т	otal Demand Current (A)	25.10									KAIC RATIN	G			22		
N	nin. Feeder Ampacity (A)	31.38									ENCLOSUR	E			TYPE 1		
ıΓ	DESCRIPTIO	N	*	WIRE	GRD	СВ	KVA	Α	В	KVA	СВ	WIRE	GRD		DESCRIPTION	*	7
-			H											LIGHTING	BEDROOM 3 - BATHROOM 3 -	+	+
1	LIGHTING MASTER S	SUITE	L	2X 14 AWG	- #14G	15A-1P	0.31	0.64		0.33	15A-1P	2x 14 AWG	- #14G		LOFT	L	- :
3	LIGHITNG ROOF	=	L	2X 14 AWG	- #14G	15A-1P	0.23		0.77	0.54	20A-1P	2x 12 AWG	- #12G	F	RECEPTACLES LOFT	R	
5	WASHER		к	2X 12 AWG	- #12G	20A-1P	1.50	1.80		0.30	20A-1P	2x 12 AWG	AWG - #12G		DRYER	к	
7	RECEPTACLES BATHI	ROOMS	R	2X 12 AWG	- #12G	20A-1P	0.36		0.36						SPACE	R	2
9	RECEPTACLES BEDR	OOM 3	R	2X 12 AWG	- #12G	20A-1P	0.90	1.80		0.90	20A-1P	2x 12 AWG	- #12G	RECE	PTACLES MASTER SUITE	R	٠
- 1	RECEPTACLES RO	DOF	R	2X 12 AWG	- #12G	20A-1P	1.08		1.08						SPACE		
11			1 1								1	I .		1			_
11			(KV	'A)													

	L	OAD CALCULATION	is					LOAD CALCULATIONS					LOAD CALCULATIONS			
Step		Directions				Step		Directions			Step		Directions			
-	LIGHTING & GEN	ERAL USE RECEPTACL	LES: 220.82(B)(1)				LIGHTING & GE	NERAL USE RECEPTACLES	S: 220.82(B)(1)			LIGHTING & GE	NERAL USE RECEPTACLE	S: 220.82(B)(1)		
1	Square footage	3,100 x	3 =	9,300	va L	1	Square footage	3,100 x	3 =	9,300 va	1	Square footage	3,100 x	3 =	9,3	300 va
	SMALL APPLIANC	ES & LAUNDRY CIRCL	JITS: 220.82(B)(2)				SMALL APPLIAN	ICES & LAUNDRY CIRCUIT	TS: 220.82(B)(2)			SMALL APPLIAN	ICES & LAUNDRY CIRCUIT	S: 220.82(B)(2)		
2	Number of circuits	3 x	1500 =	4,500	va	2	Number of circuits	3 x	1500 =	4,500 va	2	Number of circuits	3 x	1500 =	4,5	500 va
	APPLIANCES 8	MOTOR LOADS: 220	.82(B)(3) & (4)				APPLIANCES	& MOTOR LOADS: 220.8	32(B)(3) & (4)			APPLIANCES	& MOTOR LOADS: 220.8	2(B)(3) & (4)		
	Coffee Machines & Hot Beverage	N/A va					Coffee Machines & Hot Beverage	N/A va				Coffee Machines & Hot Beverage	N/A va			ļ
	Refrigerators	1,000 va					Refrigerators	1,000 va				Refrigerators	1,000 va			ļ
	Dishwasher	1,000 va					Dishwasher	1,000 va				Dishwasher	1,000 va			ļ
	Water Heater	500 va					Water Heater	500 va				Water Heater	500 va			ļ
	Washer	1,500 va				3	Washer	1,500 va			3	Washer	1,500 va			ļ
3	Commercial Oven & Grills	500 va				3	Commercial Oven & Grills	500 va				Commercial Oven & Grills	500 va			ļ
	Dryer	500 va					Dryer	500 va				Dryer	500 va			ļ
	Cold Rooms	N/A va					Cold Rooms	N/A va				Cold Rooms	N/A va			ļ
	Miscellaneous	N/A va					Miscellaneous	N/A va				Miscellaneous	N/A va			ļ
	TOTAL	18,800 va					TOTAL	18,800 va				TOTAL	18,800 va			
	TO	ΓAL STEPS 1-3: 220.82	2(B)				Te	OTAL STEPS 1-3: 220.82(E	В)			T	OTAL STEPS 1-3: 220.82(E	3)		ļ
	1. Total of Loads	18,800 -	10,000 va	=	8,800		1. Total of Loads	18,800 -	10,000 va	= 8,	300	1. Total of Loads	18,800 -	10,000 va	=	8,800
4	2. Line 1	8,800 x	40% =	3,520		4	2. Line 1	8,800 x	40% =	3,520	4	2. Line 1	8,800 x	40% =	3,5	520
	3. Line 2	3,520 +	10,000 va	=	13,520		3. Line 2	3,520 +	10,000 va	= 13,	520	3. Line 2	3,520 +	10,000 va	=	13,520
	HEATING & AII	R CONDITIONING LOA	DS: 220.82(C)					AIR CONDITIONING LOADS	S: 220.82(C)			HEATING & A	AIR CONDITIONING LOAD	S: 220.82(C)		ļ
	A. Air-Conditioning Equipment	6000 va					A. Air-Conditioning Equipment	6000 va				A. Air-Conditioning Equipment	6000 va			ļ
	B. Heat Pump without Suppl. Heating	N/A va					B. Heat Pump without Suppl. Heatin	• .				B. Heat Pump without Suppl. Heatin	-			ļ
5	C. Suppl. Heating for HP	N/A va				5	C. Suppl. Heating for HP	N/A va			5	C. Suppl. Heating for HP	N/A va			ļ
	D. Electrical Space Heating	N/A va					D. Electrical Space Heating	N/A va				D. Electrical Space Heating	N/A va			ļ
	E. Electric Thermal Storage	N/A va					E. Electric Thermal Storage	N/A va			_	E. Electric Thermal Storage	N/A va			
	CALCULATE TOTA	L SERVICE OR FEEDER	₹ LOAD: 220.82(A)					TAL SERVICE OR FEEDER L	LOAD: 220.82(A)			CALCULATE TO	TAL SERVICE OR FEEDER L	OAD: 220.82(A)		ļ
	Total of Line 3 from Step 4	13,	,520 va				Total of Line 3 from Step 4	,	20 va			Total of Line 3 from Step 4	13,52	0 va		ļ
6	Enter only the largers load from Step	5 + 6,0	,000 va			6	Enter only the largers load from Ste	•	00 va		6	Enter only the largers load from Ste		0 va		ļ
	Total Calculated Service or Feeder Lo	ad = 19,5	,520 va				Total Calculated Service or Feeder L	· · · · · · · · · · · · · · · · · · ·				Total Calculated Service or Feeder L	.oad = 19,52	0 va		
	CALCULA	ATED SERVICE OR FEE	DER SIZE				CALCU	LATED SERVICE OR FEEDE	ER SIZE			CALCU	LATED SERVICE OR FEEDE	R SIZE		ļ
	Total Calculated Load	19,520 va /	240 volts =	81	amps		Total Calculated Load	19,520 va/	240 volts =	į.		Total Calculated Load	19,520 va /	240 volts		81 amps
7	This calculation resulted in a calculate	ed load of 86 amps, the	e existing feeder is des	igned for 100 a	mps load	7	This calculation resulted in a calcula	' '	existing feeder is desi	igned for 100 amps loa	d	This calculation resulted in a calcula	ted load of 86 amps, the e	existing feeder is de	esigned for 10	0 amps load
	thus the current feeder should be able						thus the current feeder should be ab	ole to serve Unit 2.				thus the current feeder should be al	ole to serve Unit 3.			

										_			PAI	VEL C3	
	Lo	cation: OUTD	OOR			CONNE	CTED L	OAD					PANELBOAR	RD DESIGNATION	
	LOAD SUMMARY	CL		DF		Α	-	3	DEMAND TOTAL						
.ight	ing	0.29		1.25		0.29			0.36		SYSTEM VO	OLTAGE		240/120V, 1Ф, 3W	
onv	enience Recept	0.72					0.	72	0.72		BUS SIZE			50A	
leati	ing (Space)			1.25							SYSTEM TY	'PE		NORMAL	
ooli	ing			1.00							FEEDER PF	ROT		50A-2P C/B Bus Plug	
VΑ	С			1.00							CONDUCTO	R SIZE		6 AWG - #10G C	U
roc	ess			1.00							CONDUCTO	R/PHASE		1	
)the	r Continuous			1.25							MAINS			50A MCB	
itch	nen			13.00							SCCR			FULLY RATED	
iono	ontinuous			1.00							MCB RATIN	G		80%	
				1.00							GROUND FA	4ULT		NO	
otal		1.01				0.29	0.	72	1.08		FEEDER LE	NGTH (FT)		100	
		·									FEEDER V.	DROP (%)			
otal	Demand Load (KVA)	1.08									FAULT CUR	RENT			
otal	Demand Current (A)	4.48									KAIC RATIN	G		22	
in.	Feeder Ampacity (A)	5.38									ENCLOSUR	E		TYPE 3R	
	DESCRIPTIO	N	*	WIRE	GRD	СВ	KVA	Α	В	KVA	СВ	WIRE	GRD	DESCRIPTION *	-
	LIGHTING OUTDO	OR	L	2X 14 AWG	- #14G	15A-1P	0.21	0.29)	0.08	15A-1P	2x 14 AWG	- #14G	LIGHTING OUTDOOR L	
	RECEPTACLES OUT	DOOR	R	2X 12 AWG	- #12G	20A-1P	0.72		0.72					SPACE	T.
	SPACE	A												SPACE	
			(KV	/A)										L	
					Tota	I Connecte	d Load	0.29	0.72						

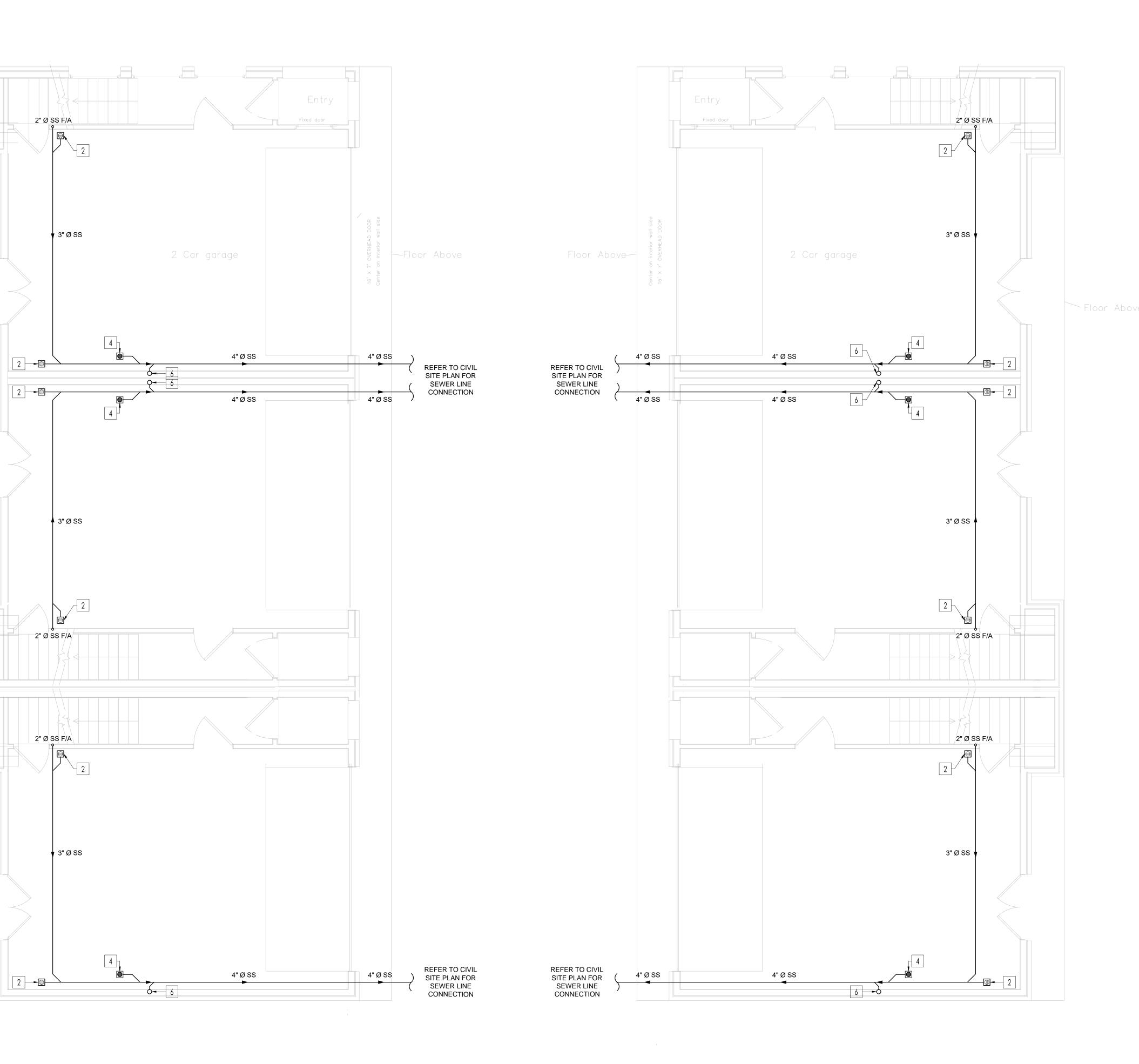
PROJECT: One, LLC FAMILY Build MULTI

Kashif Reaz,1104 Greer St Fortworth, TX

Kashif Reaz 1104 Greer St Fortworth, TX

PANEL BOARDS **SCHEDULES & LOAD CALCULATION**

Drawen By: A.B Scale: NTS Date: 06.16.2023 PROJ.NO.:



PLUMBING SHEET NOTES

SHEET NOTES:

1 -- WASTE DROP AND 2" VENT RISE.

2 - 4" FLOOR CLEAN-OUT.

3 → 3" VENT STACK TO ABOVE.

4 - 3" FLOOR DRAIN.

5 SEWER DROP TO BELOW.

6 SEWER DROP FROM ABOVE.

7 - SEWER DROP FROM ABOVE TO BELOW.

8 — WASHING MACHINE DRAIN - INDIRECT WASTE.

9 - DISHWASHER DRAIN - INDIRECT WASTE.

10 → 3" WALL CLEAN OUT.

FROM 2018 IPC - TABLE 709.1: DRAINAGE FIXTURE UNIT VALUES (DFU) PER APARTMENT

FIXTURE	D.F.U	QTY.	TOTAL D.F.U
WATER CLOSET	3.0	3	9.0
BATHTUB	2.0	2	4.0
LAVATORY	1.0	4	4.0
SHOWER HEAD	2.0	1	2.0
CLOTHES WASHER	2.0	1	2.0
KITCHEN SINK	2.0	1	2.0
DISHWASHING MACHINE	2.0	1	2.0
TOTAL DFU =			25.0

AS PER 2018 IPC - TABLE 710.1(1): - MAIN SEWER PIPE: 4"Ø

FROM 2018 IPC - TABLE 709.1:

PIPE SIZE PER FIXTURE

FIXTURE	DR (INCH)	VENT (INCH)
WATER CLOSET	4	3
LAVATORY	2	2
SHOWER	3	-
CLOTHES WASHER	2	2
KITCHEN SINK	2	2
DISHWASHING MACHINE	2	2
BATHTUB	3	-

	PLUMBING PIPING MATERIAL SCHEDULE	
--	-----------------------------------	--

PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
WASTE	BELOW AND ABOVE GRADE	ASTM D 2665 PVC SCHEDULE 40, SOCKET FITTINGS DWV
& VENT	FROM FIRST TO ROOF	ASTM A 888 CAST IRON, NO HUB SYSTEM

No

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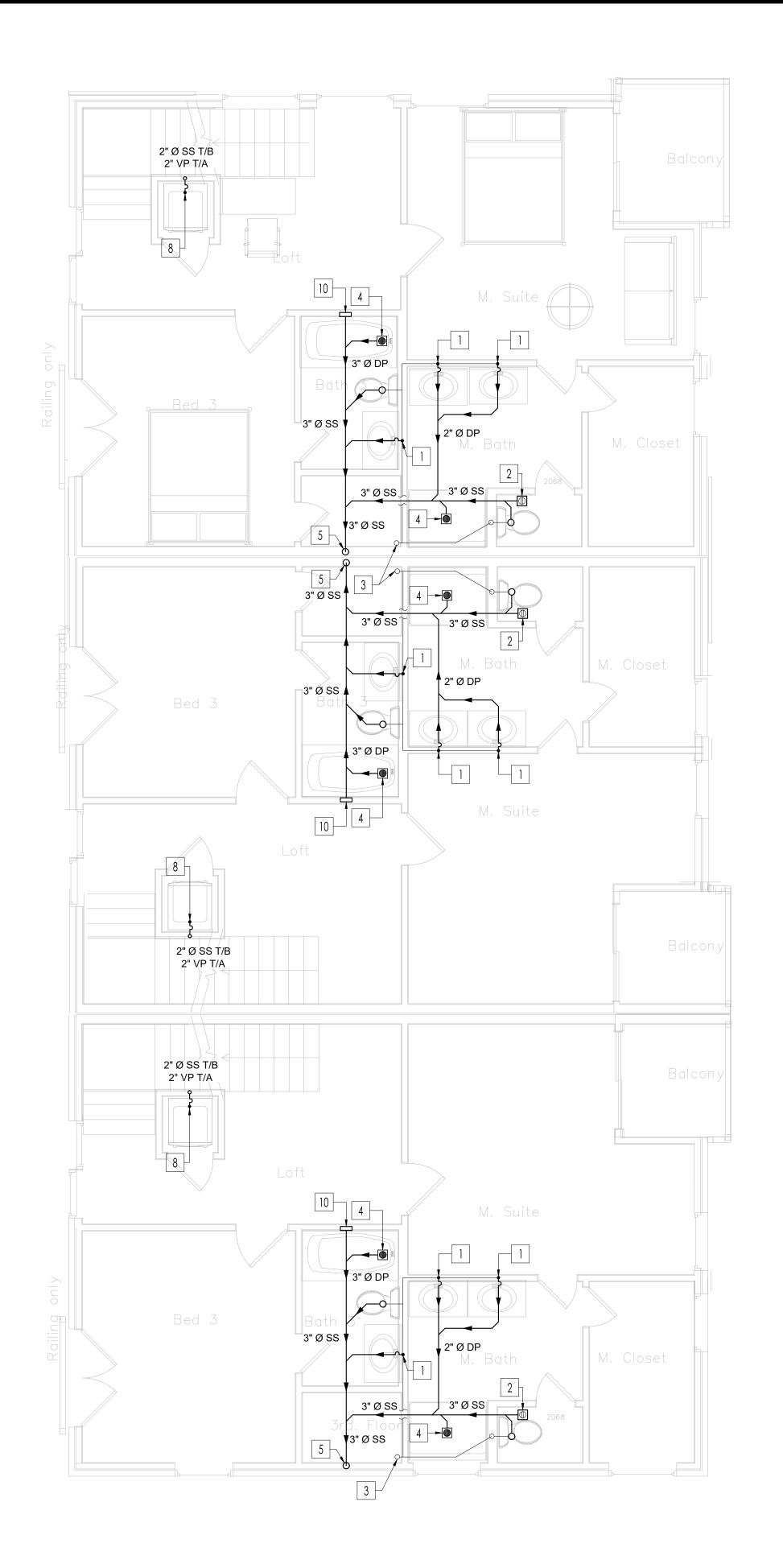
DRAINAGE FIRST FLOOR LAYOUT.

Drawen By: M.F	Scale: 1/4"= 1'-0"
Date: 06.22.2023	PROJ.NO.:

P 2.00

SHEET NO.

1St. Floor Plan Scale: 1'-0"=1/4"



PLUMBING SHEET NOTES

SHEET NOTES:

■ WASTE DROP AND 2" VENT RISE.

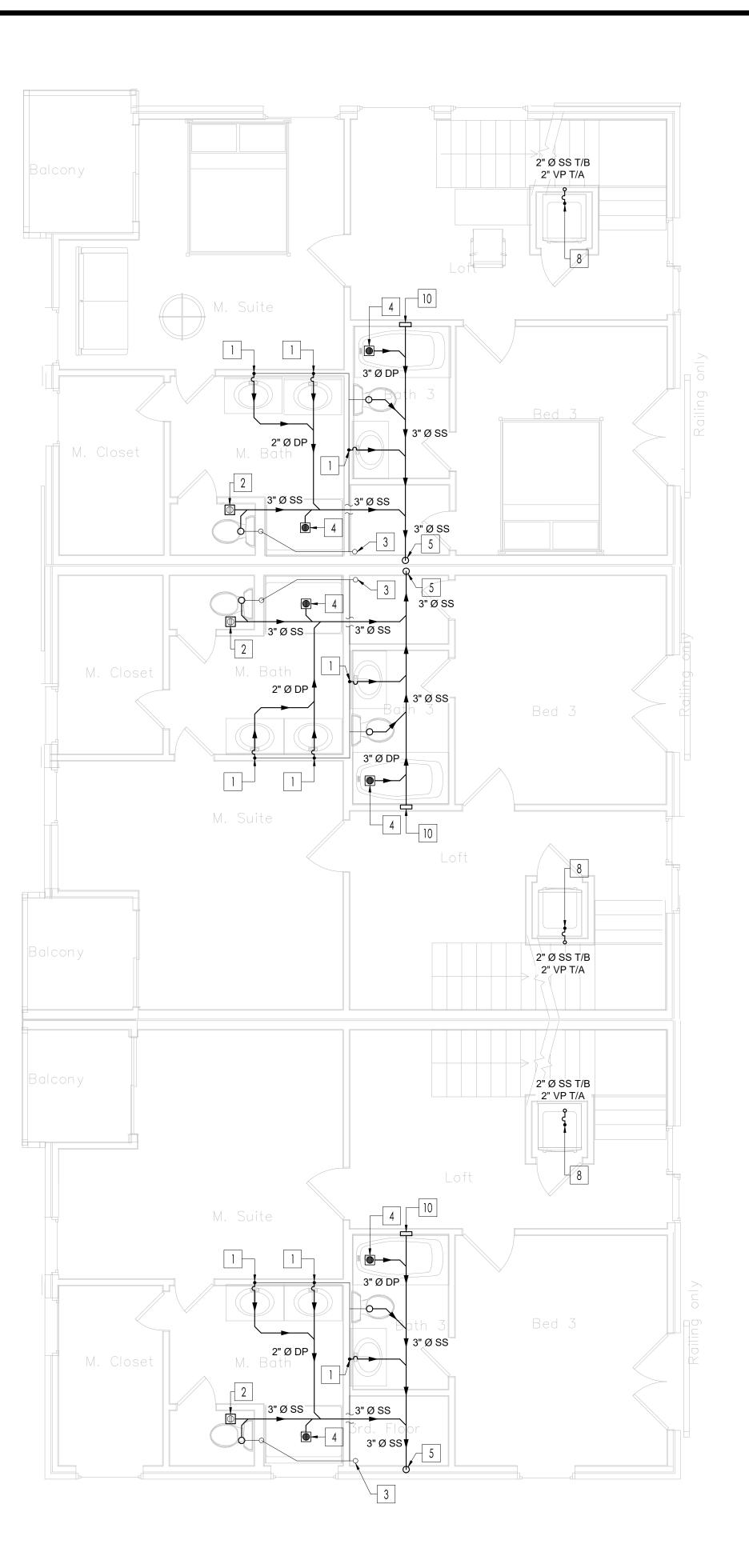
2 - 4" FLOOR CLEAN-OUT.

3" VENT STACK TO ABOVE.

4 - 3" FLOOR DRAIN.

5 SEWER DROP TO BELOW.

6 SEWER DROP FROM ABOVE. 7 SEWER DROP FROM ABOVE TO BELOW. 8 - WASHING MACHINE DRAIN - INDIRECT WASTE. 9 DISHWASHER DRAIN - INDIRECT WASTE. 10 → 3" WALL CLEAN OUT.



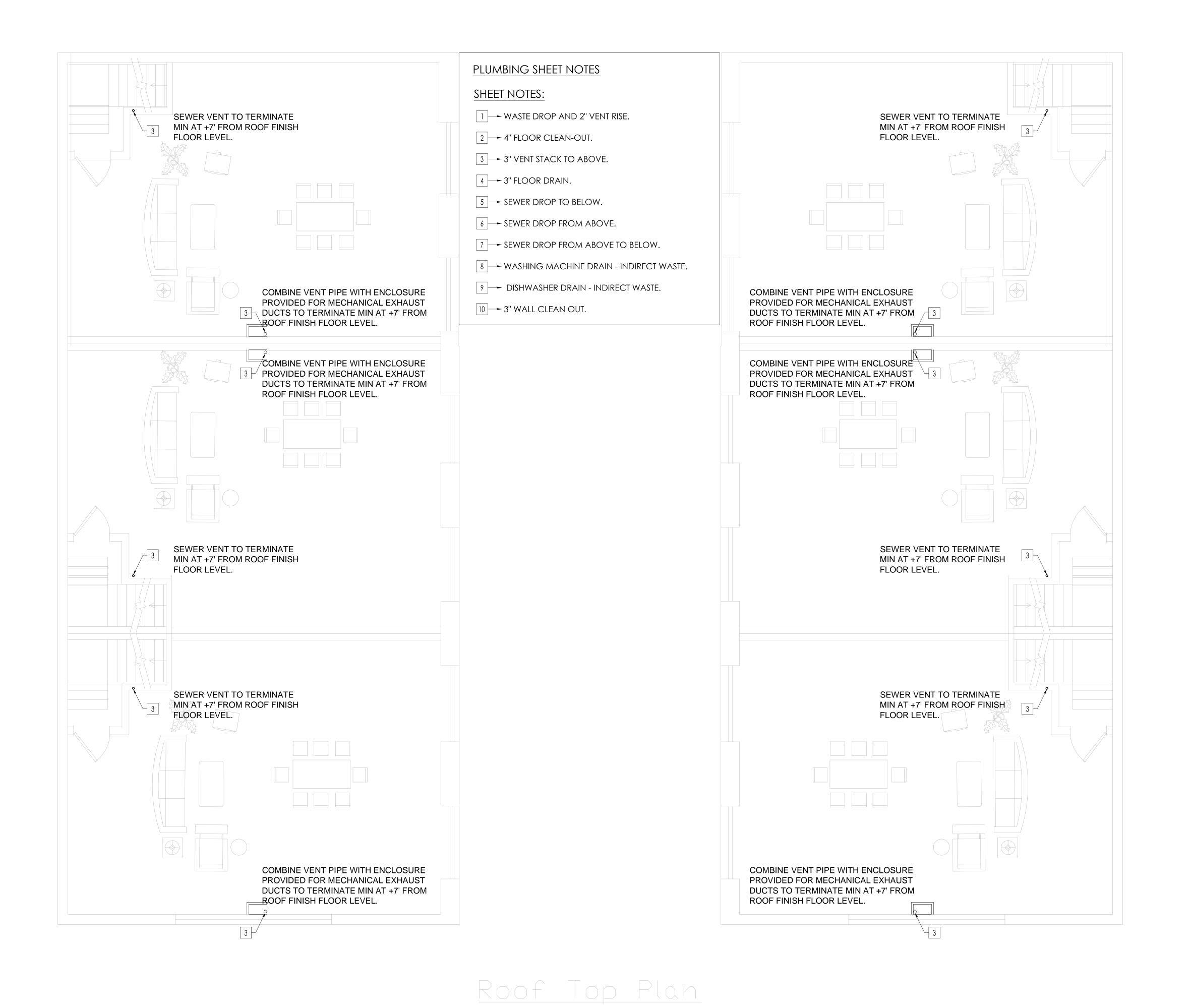
MULTI I Normad

Kashif Reaz 1104 Greer St Fortworth, TX

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DRAINAGE THIRD FLOOR LAYOUT.

Drawen By: M.F Scale: 1/4"= 1'-0" Date: 06.22.2023 PROJ.NO.:



A MULTI FAMILY PROJECT: Normad Build One. LLC

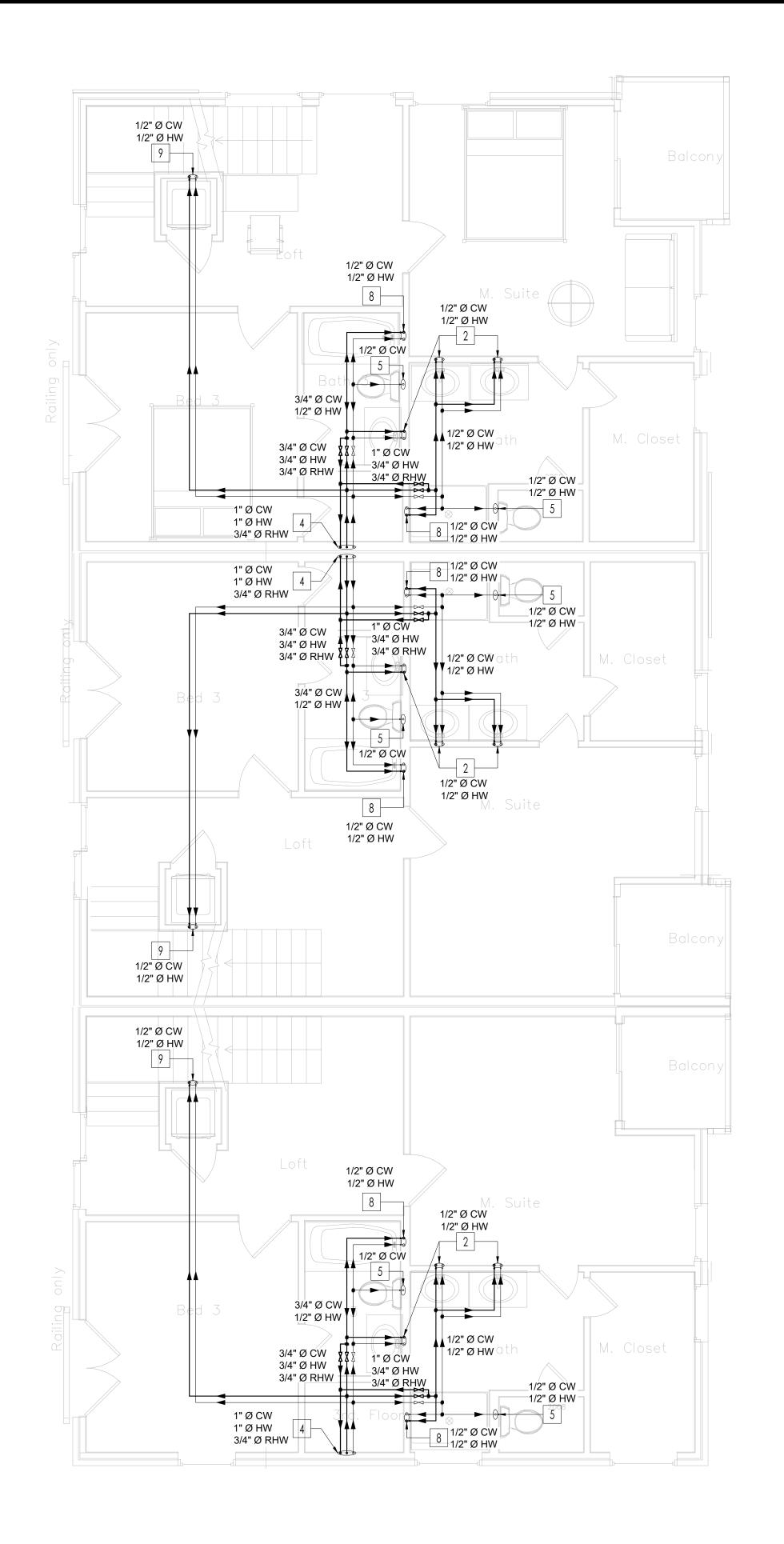
Kashif Reaz,1104 Greer St Fortworth, TX

DRAINAGE ROOF FLOOR.

Drawen By: M.F Scale: 1/4"= 1'-0"

Date: 06.22.2023 PROJ.NO.:

P 5.00

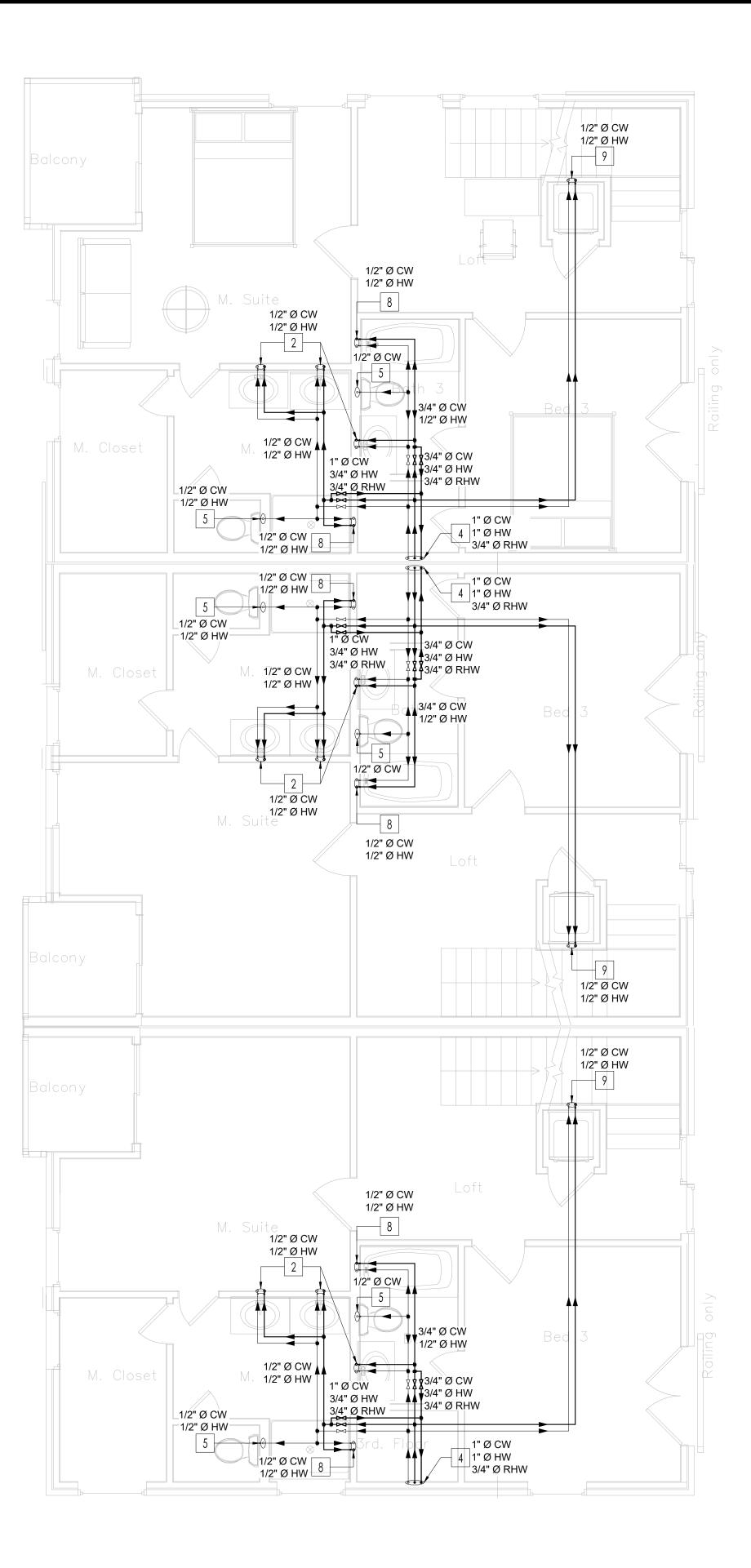


WATER SUPPLY KEYED NOTES:

- 1 DCW, DHW RISE TO HIGH LEVEL RISER.
- 2 DCW & DHW DROP IN WALL TO FIXTURE TERMINAL.
- 3 DCW FROM BELOW DOWN LEVEL UP IN WALL CONTINUE TO HIGH LEVEL.
- 4—DCW, DHW RISE IN WALL FROM DOWN LEVEL.
- 5 DCW DROP IN WALL TO FIXTURE TERMINAL.
- 6 DHW DROP IN WALL TO FIXTURE TERMINAL.
- DCW & DHW DROP TO BATHTUB & RAIN
- 8 SHOWER TERMINALS WITH PRESSURE / TEMPERATURE ANTI-SCALDING BALANCING VALVE.
- DCW AND/OR DHW DROP FROM CEILING

 1 LEVEL TO BELOW WITH WATER HAMMER

 ARRESTOR.



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WATER SUPPLY THIRD FLOOR LAYOUT.

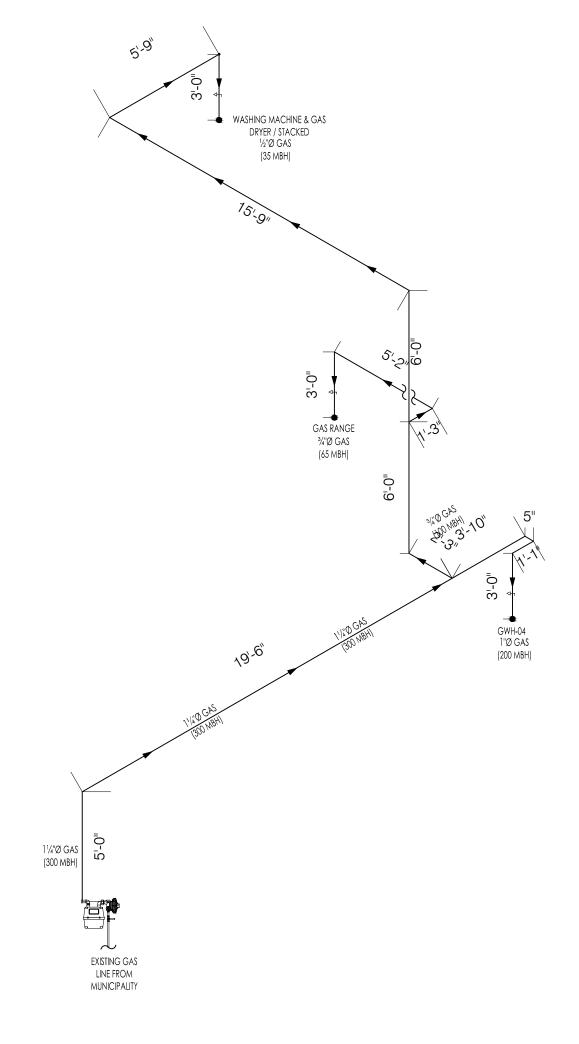
Drawen By: M.F Scale: 1/4"= 1'-0"

Date: 06.22.2023 PROJ.NO.:

P 8.00

SHEET NO.

3rd Floor Plan Scale: 1'-0"=1/4"



GENERAL NOTES:

- 1. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE EXACT PIPE SIZES, INVERT ELEVATIONS, PRESSURES FOR LOCATIONS OF ANY SEWER, WATER PIPING AND WATER METER WITH CIVIL UTILITIES DRAWINGS, AND ANY OTHER ENGINEER AS APPLICABLE.
- 2. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS.
- 3. REFER TO MECHANICAL PLANS FOR PLUMBING SPECIFICATION OF MATERIAL, INSULATION AND INSTALLATION REQUIREMENTS.
- 4. CONTRACTOR IS RESPONSIBLE FOR ROUGH-IN COORDINATION AND LOCATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS AND FIXTURES.
- 5. CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED CUTTING AND PATCHING.
- AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST ADOPTED AND APPROVED EDITION OF THE BUILDING CODE.

6. ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS

- 7. ALL PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- 8. ALL WATER PIPING SHALL BE INSTALLED ON INTERIOR SIDE OF THE BUILDING WALL INSULATION.
- 9. CONTRACTOR SHALL PROVIDE VALVES LOCATED ABOVE LAY-IN CEILING OR 24"x24" CEILING ACCESS PANEL COORDINATE FINAL LOCATION AND SIZE WITH ARCHITECT. PROVIDE BALANCING VALVES FOR HOT WATER RETURN SYSTEM AS REQUIRED.
- 10. ALL SANITARY DRAINAGE PIPING 3" AND SMALLER SHALL BE SLOPED AT $\frac{1}{4}$ " PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT.
- 11. ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT $\frac{1}{8}$ " PER FOOT AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES OF DIRECTION.
- 12. VENTS THAT TERMINATE AT THE ROOF SHALL BE A MINIMUM OF 10' FROM ANY FRESH AIR INTAKE.
- 13. REFER TO THE PLUMBING DIAGRAMS FOR GUIDANCE OF INSTALLATION INTENT. CONTRACTOR IS TO PROVIDE ALL COMPONENTS NECESSARY TO MEET THE DESIGN INTENT, WHETHER SHOWN IN DIAGRAM OR NOT.

GENERAL NOTES:

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- 2. PRIOR TO PERFORMING WORK, CONTRACTOR TO COORDINATE PIPE ROUTING WITH ALL OTHER TRADES AND EXISTING FIELD CONDITIONS.
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- 6. ALL NOTCHING, BORING, AND CUTTING OF HOLES IN WALL STUDS AND FLOOR JOISTS SHALL BE PERFORMED BASED ON THE LATEST ADOPTED AND APPROVED EDITION OF THE BUILDING CODE.
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ALL GAS PIPES ARE METALLIC SCHD. 40

	T	ABLE 402.4	(2)											
	SCHEDUI	LE 40 META	ALLIC PIPE											
	Gas		Nat	ural										
In	let Pressur	·e	Less th	ıan 2 psi										
Pr	essure Dro	р	0.5 in	ı. w.c.										
Sp	ecific Gravi	ity	0	.6										
						PI	PE SIZE (inc	ch)						
Nominal	1/2 *	3 / 4 -	1"	1 1/4"	1 1/2"	2	2 ¹ / ²	3	4	5	6	8	10	12
Actual ID	0.622	0.824	1.049	1.38	1.61	2.067	2.469	3.068	4.026	5.047	6.065	7.981	10.02	11.938
ength (ft)						Capacity	in Cubic F	eet of Gas	Per Hour					
10	172	360	678	1,390	2,090	4,020	6,400	11,300	23,100	41,800	67,600	139,000	252,000	399,000
20	118	247	466	957	1,430	2,760	4,400	7,780	15,900	28,700	46,500	95,500	173,000	275,000
30	95	199	374	768	1,150	2,220	3,530	6,250	12,700	23,000	37,300	76,700	139,000	220,000
40	81	170	320	657	985	1,900	3,020	5,350	10,900	19,700	31,900	65,600	119,000	189,000
50	72	151	284	583	873	1,680	2,680	4,740	9,660	17,500	28,300	58,200	106,000	167,000
60	65	137	257	528	791	1,520	2,430	4,290	8,760	15,800	25,600	52,700	95,700	152,000
70	60	126	237	486	728	1,400	2,230	3,950	8,050	14,600	23,600	48,500	88,100	139,000
80	56	117	220	452	677	1,300	2,080	3,670	7,490	13,600	22,000	45,100	81,900	130,000
90	52	110	207	424	635	1,220	1,950	3,450	7,030	12,700	20,600	42,300	76,900	122,000
100	50	104	195	400	600	1,160	1,840	3,260	6,640	12,000	19,500	40,000	72,600	115,000
125	44	92	173	355	532	1,020	1,630	2,890	5,890	10,600	17,200	35,400	64,300	102,000
150	40	83	157	322	482	928	1,480	2,610	5,330	9,650	15,600	32,100	58,300	92,300

GAS SHEET NOTES: ① GAS METER. ② GAS CONNECT TO DRYER. ③ GAS CONNECT TO RANGE. ④ GAS CONNECT TO WATER HEATER. ⑤ GAS CONNECT TO FURNACE.

GAS UNITS AND MBH:

ITEM	МВН
GWH-01 / WATER HEATER	200
RANGE	65
DRYER	35
TOTAL =	300

A MULTI FAMILY PROJECT: Normad Build One, LLC

Kashif Reaz,1104 Greer St Fortworth, TX

GAS CODE CHECK AND PIPE SIZING TABLE

Drawen By: M.F	Scale: NTS
Date: 06.22.2023	PROJ.NO.:

P12.00