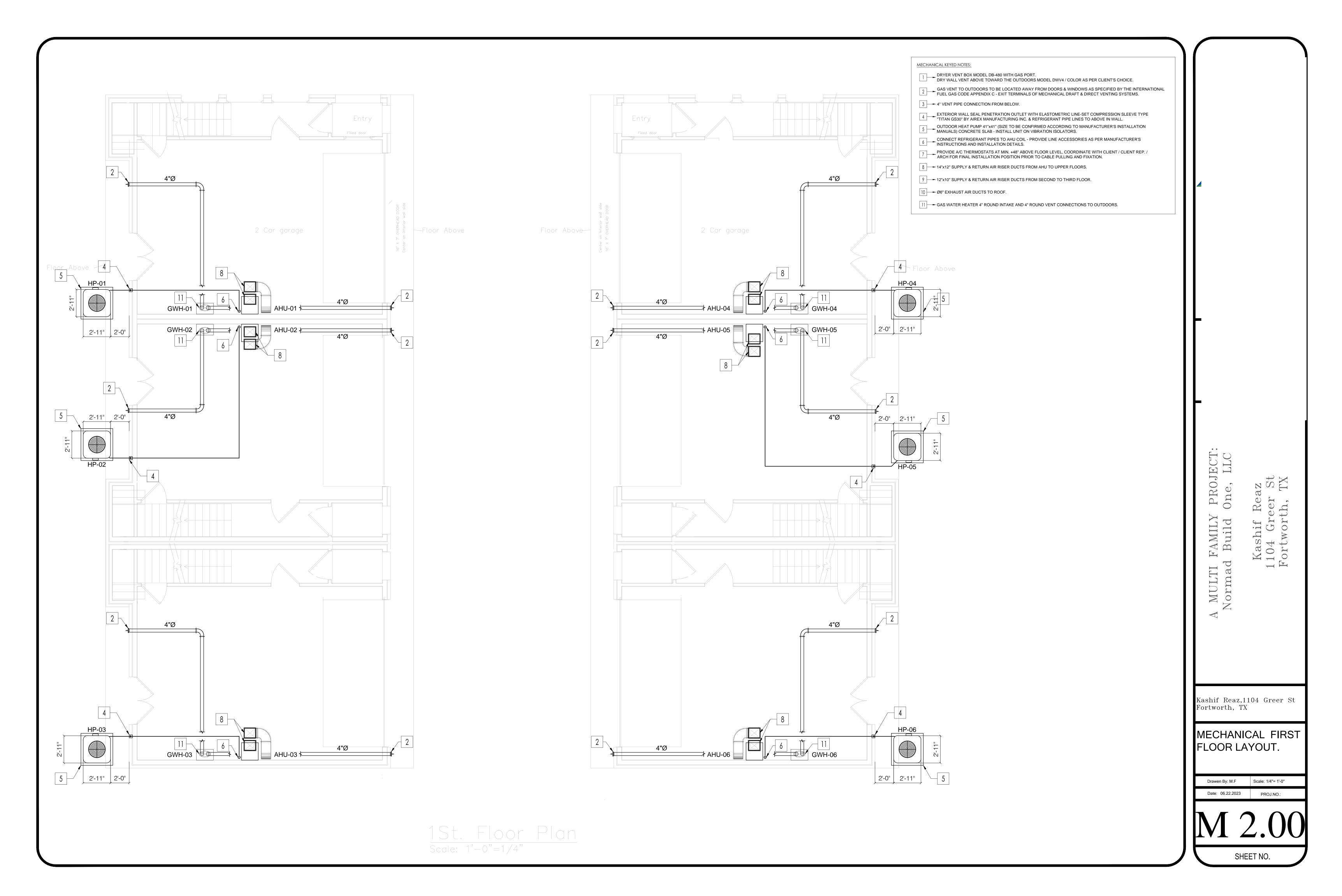
# GDI ENGINEERING

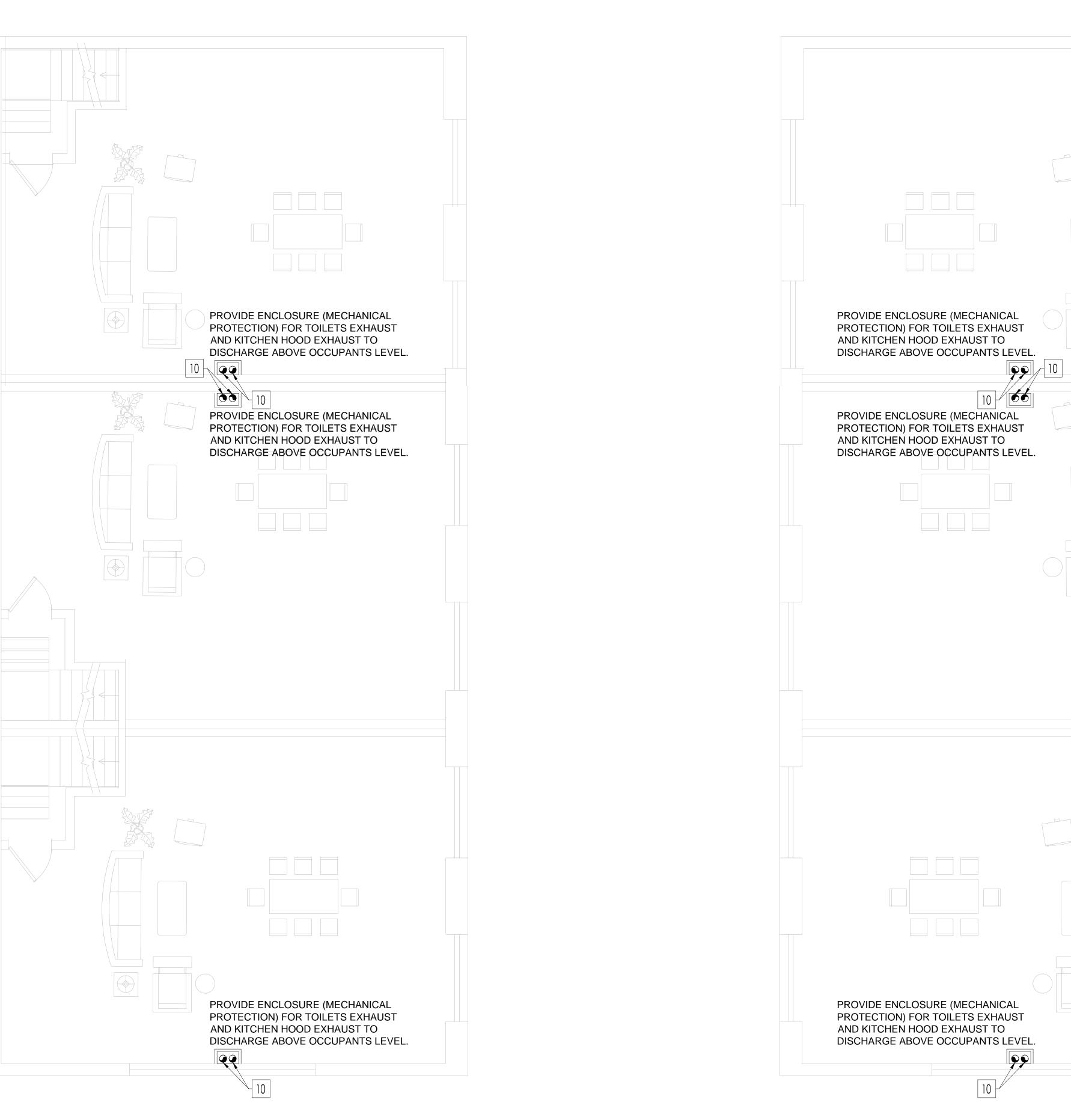


## **ACE Hardware Store Arkansas**

Retail

Osceola, Arkansas





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.

☐☐ — GAS WATER HEATER 4" ROUND INTAKE AND 4" ROUND VENT CONNECTIONS TO OUTDOORS.

A MULTI FAMILY PROJECT: Normad Build One, LLC

Kashif Reaz,1104 Greer St Fortworth, TX

MECHANICAL ROOF FLOOR.

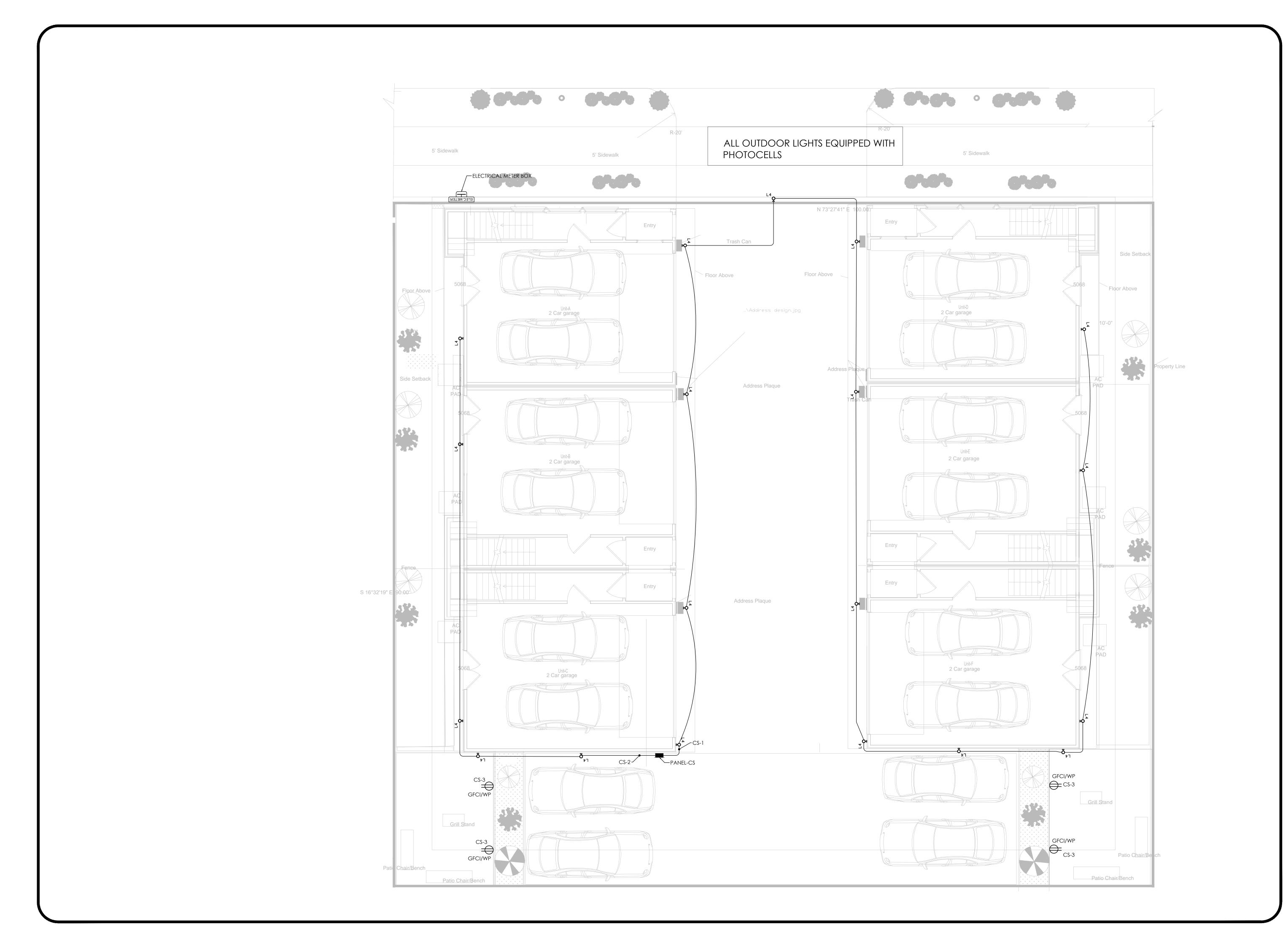
Drawen By: M.F Scale: 1/4"= 1'-0"

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

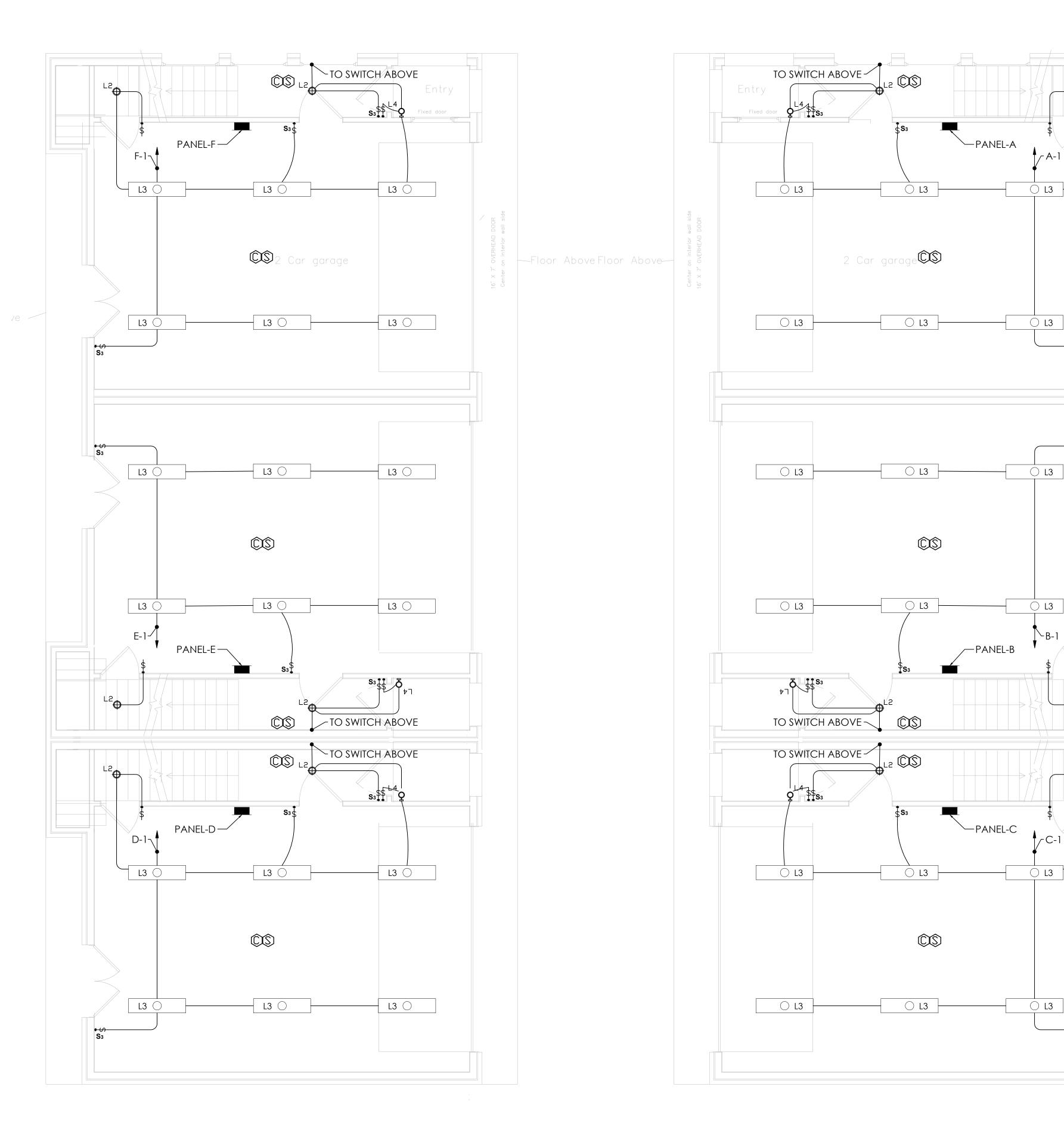
Kashif Reaz,1104 Greer St Fortworth, TX

SITE PLAN

Drawen By: A.B Scale: 3/16" = 1'-0"

Date: 06.16.2023 PROJ.NO.:

E2.00



NOT	ΓE-GEN-CENLE	FT						
TAG	SYMBOL	DESCRIPTION	TYPE	W	٧	MOUNT.	MANUF.	MODEL
L1	0	RECESSED DOWNLIGHT - 4"	LED	15W	120V	REC.	TBD	TBD
L2	igoplus	SUSPENDED PENDANT LAMP	LED	15W	120V	SUSP.	TBD	TBD
L3		1'x4' SURFACE MOUNTED	LED	33W	120V	SUSP.	TBD	TBD
L4	OH	OUTDOOR WALL SCONCE	LED	15W	120V	WALL	TBD	TBD
L5	$\times$	SUSPENDED CEILING FAN LIGHT COMBO	LED	75W	120V	SUSP.	WESTING- HOUSE	7205900

#### SHEET NOTES:

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

<u>E</u>	LECTRICAL LEGEND
<b>S</b>	JUNCTION BOX FOR EXHAUST FANS
\$os	OCCUPANCY SENSOR
\$	ONE WAY LIGHTING SWITCH
\$ • <b>S</b> <sub>3</sub>	TWO WAYS LIGHTING SWITCH
©	SELF CONTAINED SMOKE/CARBON MONOXIDE (120 W/BATTERY BACKUP) - CEILING MOUNTED
\$	SELF CONTAINED SMOKE DETECTOR/ANNUNCIATOR (120 W/BATTERY BACKUP) - CEILING MOUNTED SPECIFIED UL217

A MULTI FAMILY PROJECT: Normad Build One, LLC

Kashif Reaz,1104 Greer St Fortworth, TX

Kashif Reaz 1104 Greer St Fortworth, TX

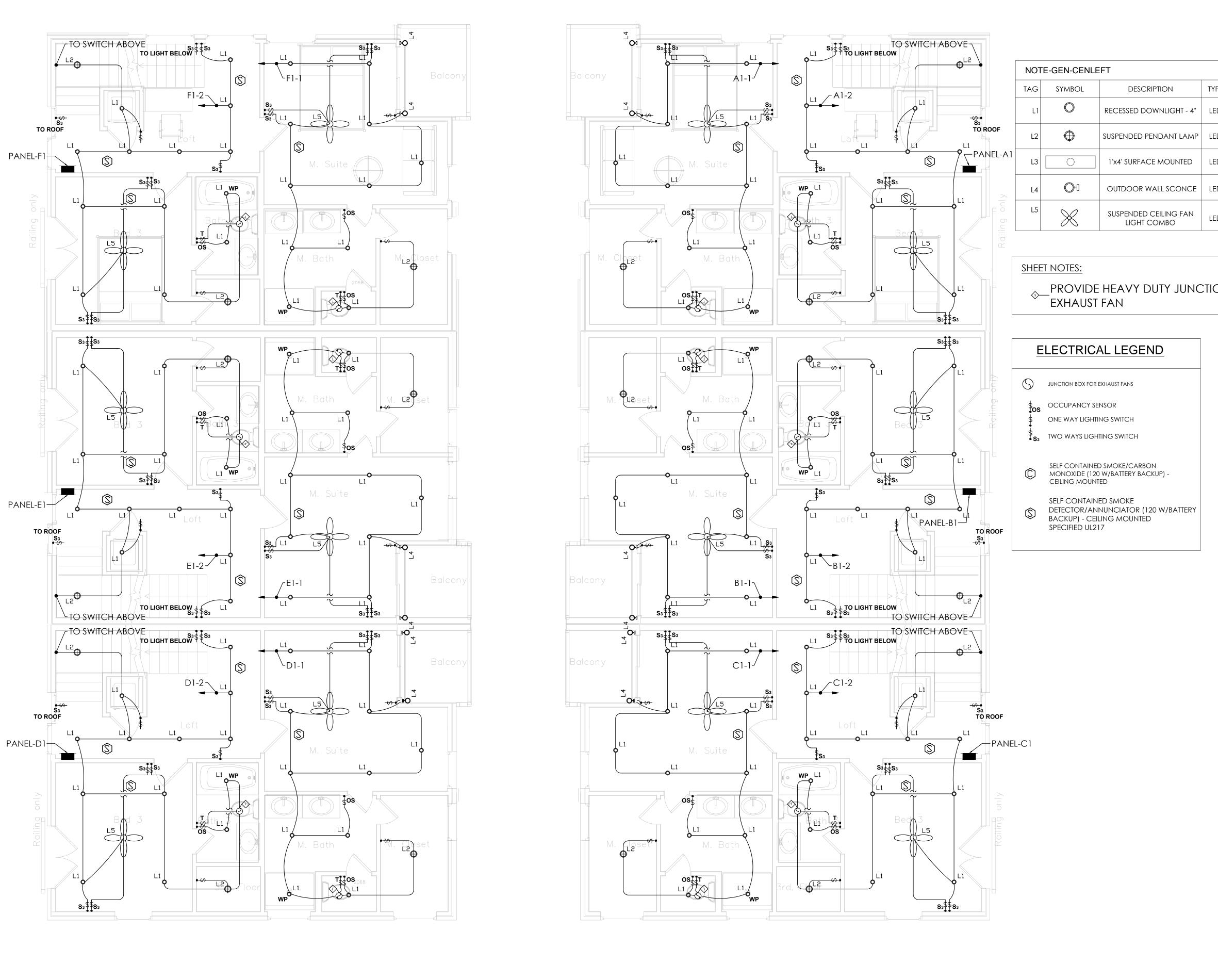
LIGHTING LAYOUT 1ST FLOOR

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

Date: 06.16.2023 PROJ.NO.:

SHEET NO.

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



	TAG	SYMBOL	DESCRIPTION	TYPE	W	V	MOUNT.	MANUF.	MODEL
	L1		RECESSED DOWNLIGHT - 4"	LED	15W	120V	REC.	TBD	TBD
	L2	igoplus	SUSPENDED PENDANT LAMP	LED	15W	120V	SUSP.	TBD	TBD
1	L3		1'x4' SURFACE MOUNTED	LED	33W	120V	SUSP.	TBD	TBD
	L4	OH	OUTDOOR WALL SCONCE	LED	15W	120V	WALL	TBD	TBD
	L5	$\times$	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

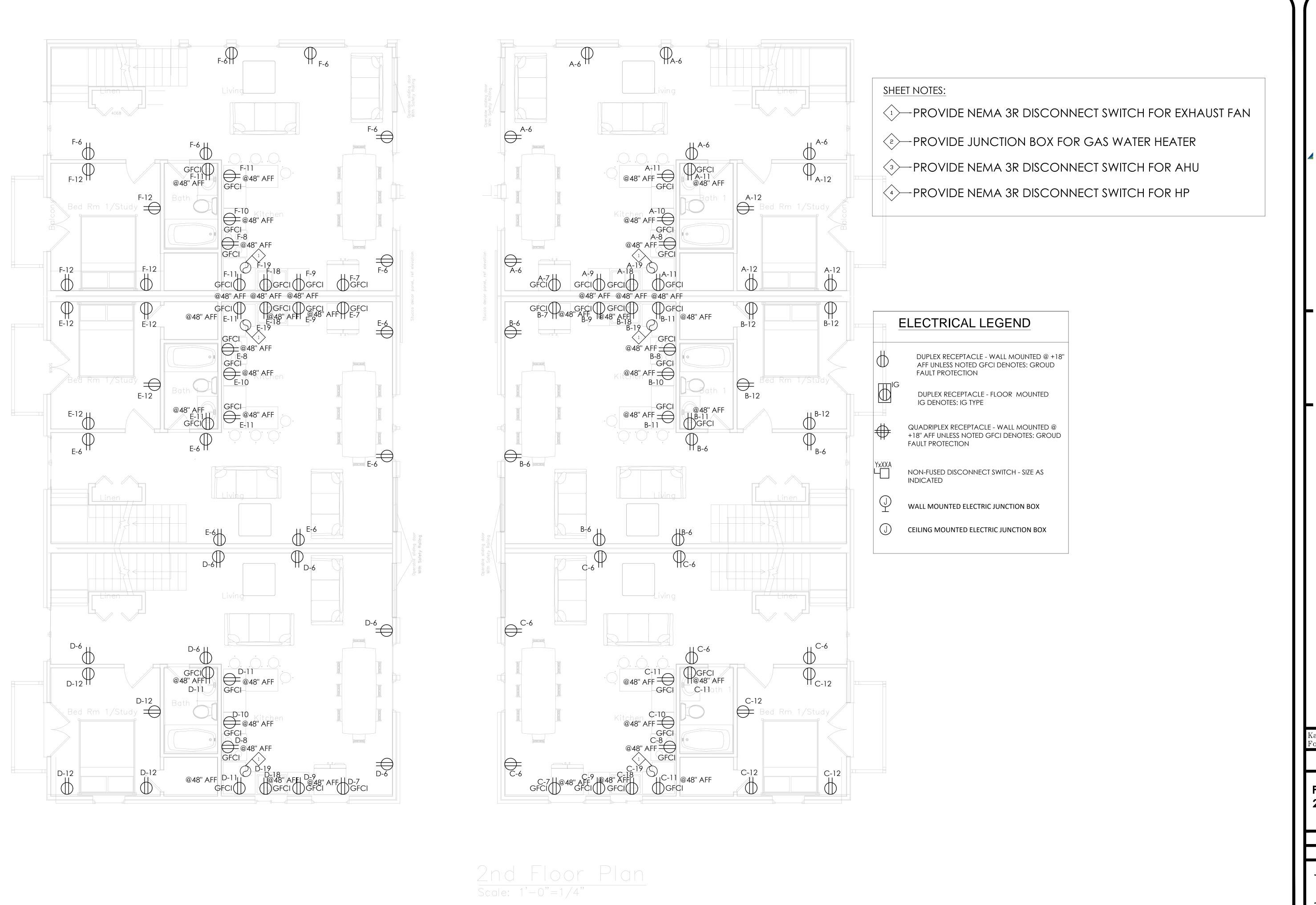
Drawen By: A.B Scale: 1/4" = 1'-0"

Date: 06.16.2023 PROJ.NO.:

E2.03

SHEET NO.

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



FAMILY PROJECT: Build One, LLC

MULTI Normad

Kashif Reaz 1104 Greer St Fortworth, TX

Kashif Reaz,1104 Greer St Fortworth, TX

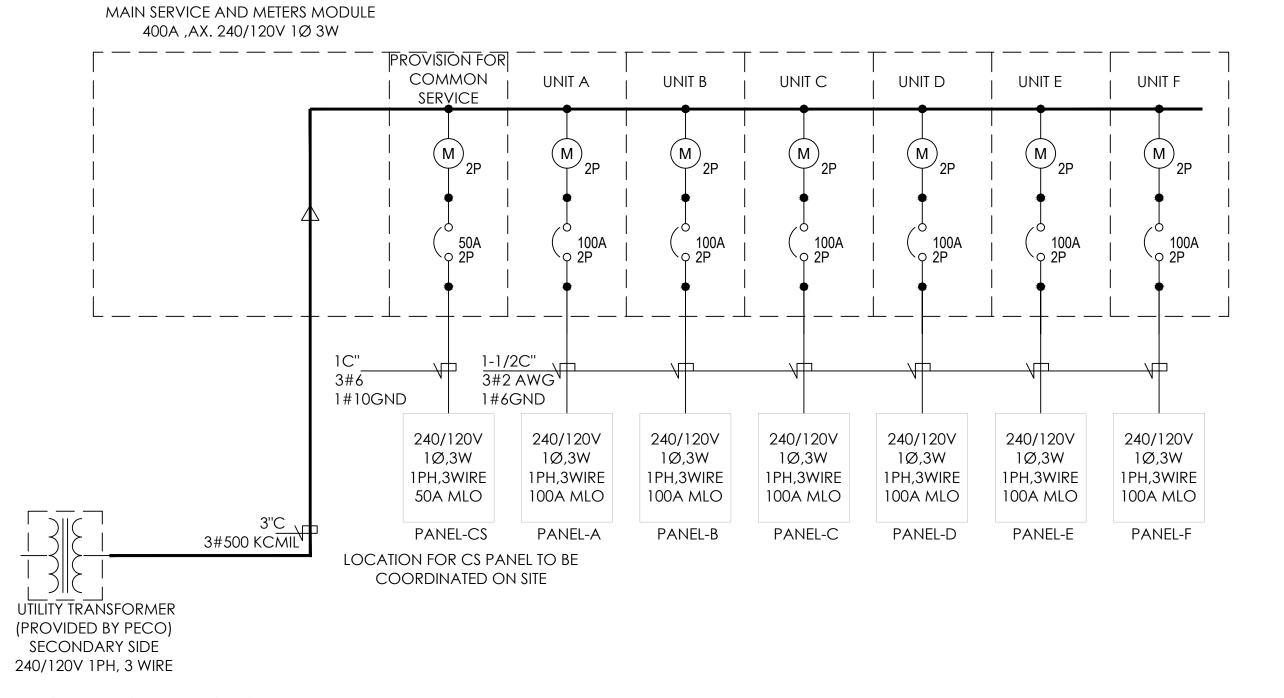
POWER LAYOUT 2ND FLOOR

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

Date: 06.16.2023 PROJ.NO.:

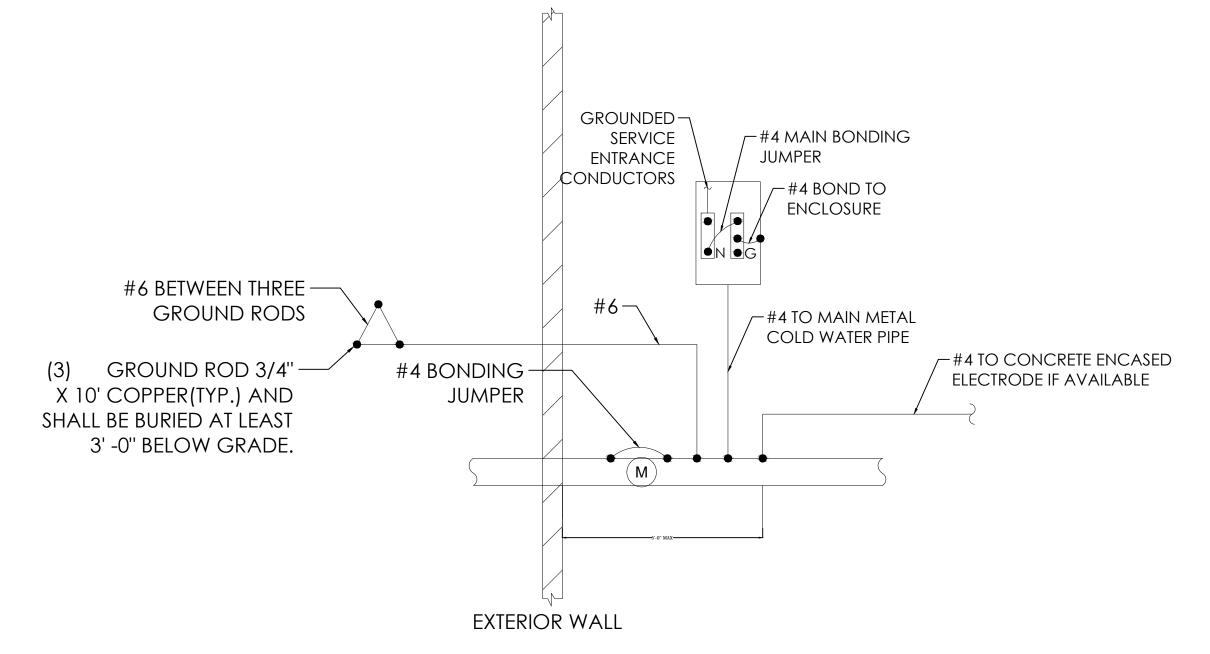
E3.02

					Multif	family Load Analy	sis - NEC 220.84					
						Loa	ads in VA - NEC 220	0.82				
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 Co	onnected Load (V	A)					144,720
					Demand Fact	tor - NEC 220.84 /	6-7 Apt					0.44
					Demand L	oad - Apartments	(VA)					63,677
					Demand Lo	ad - House Service	es (VA)					1,080
					Demand Lo	ad - 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 Ser	vice Conductor					269.8
				Each Main Ser	vice Conductor - NE	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: Normad Build One, LLC

Kashif Reaz,1104 Greer St Fortworth, TX

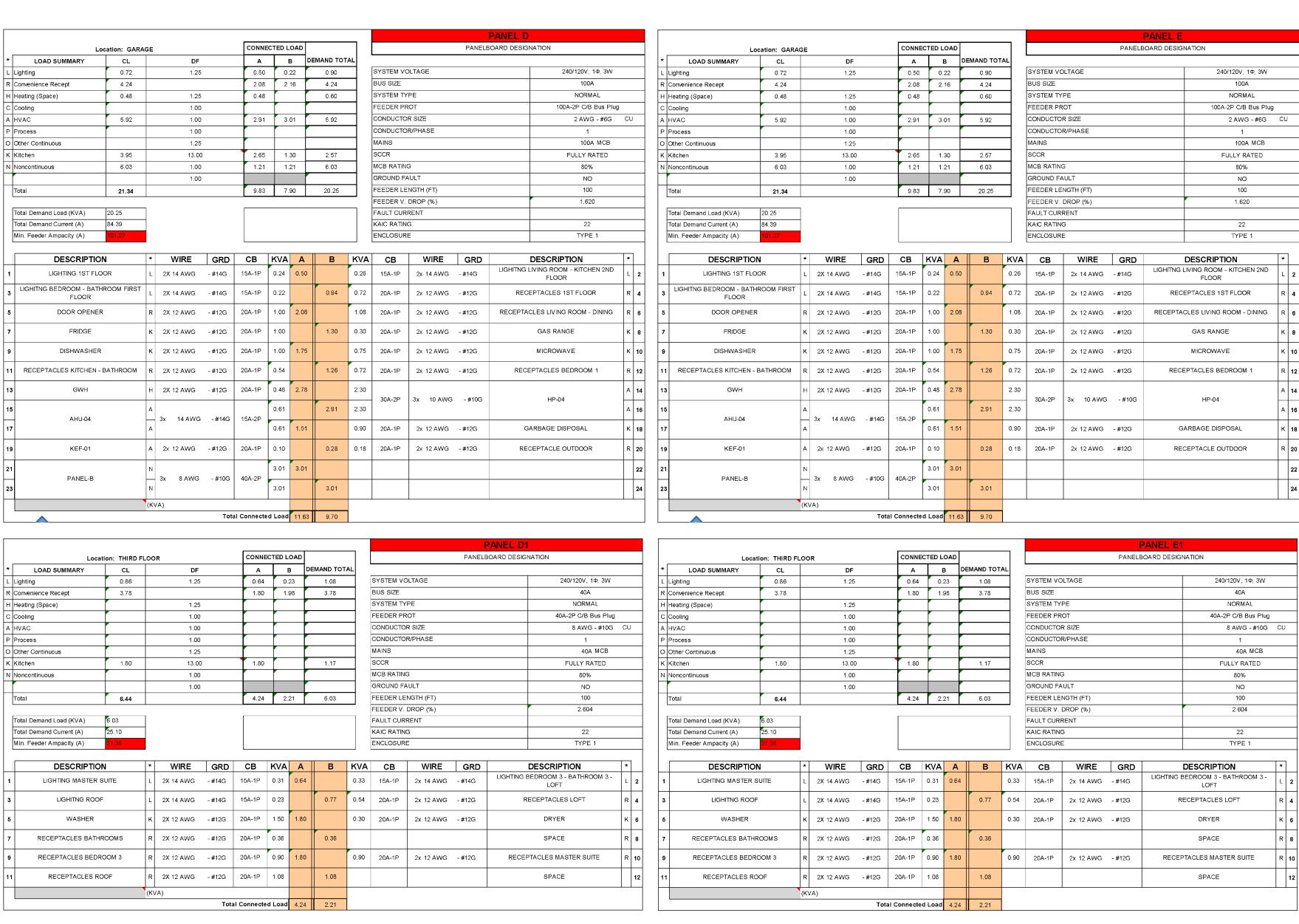
Kashif Reaz 1104 Greer St Fortworth, TX

SINGLE LINE DIAGRAM & GROUNDING DETAILS

Drawen By: A.B Scale: NTS

Date: 06.16.2023 PROJ.NO.:

E4.01



	Loc	ation: GARA	GE		CONNE	CTED L	OAD					PANELE	BOARD DESIG	NATION			
*	LOAD SUMMARY	CL	DF		A	T 6	В	DEMAND TOTA	니								_
LL	Lighting	0.72	1.25		0.50	0.:	22	0.90	7	SYSTEM VO	DLTAGE			240/120V, 1Ф, 3V	V		
R	Convenience Recept	4.24			2.08	2.	16	4.24		BUS SIZE				100A			
н	Heating (Space)	0.48	1.25		0.48			0.60		SYSTEM TY	PE.			NORMAL			
С	Cooling		1.00							FEEDER PF	ROT			100A-2P C/B Bus F	lug		
Αŀ	HVAC	5.92	1.00		2.91	3.	01	5.92		CONDUCTO	R SIZE			2 AWG - #60	; C	U	
P F	Process		1.00						_	CONDUCTO	R/PHASE			1			
0	Other Continuous		1.25						╛	MAINS				100A MCE			
K	Kitchen	3.95	13.00		2.65	1.3	30	2.57		SCCR				FULLY RATED			
ИГ	Noncontinuous	6.03	1.00		1.21	1.:	21	6.03	4	MCB RATIN				80%			_
_[			1.00						4	GROUND FA				NO			
1	Total	21.34			9.83	7.	90	20.25		FEEDER LE				100			_
Г			1						_	FEEDER V.				1.620			$\dashv$
⊢	Total Demand Load (KVA)	20.25								FAULT CUR						_	4
⊢	Total Demand Current (A)  Min. Feeder Ampacity (A)	84.39 101.27								KAIC RATIN				22 TYPE 1		—	_
Ľ	will. Feeder Allipacity (A)	101.27								ENCLOSOR				ITE		—	-
	DESCRIPTION	1	* WIRE	GRD	СВ	KVA	Α	В	KVA	СВ	WIRE	GRD		DESCRIPTION	- 4	*	
1	LIGHTING 1ST FLOO		L 2X 14 AWG	- #14G	15A-1P	0.24	0.50		0.26	15A-1P	2x 14 AWG			LIVING ROOM - KITCHEN 2N FLOOR	Dι	L :	2
3	LIGHITNG BEDROOM - BATHR FLOOR	OOM 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 4	4
5	DOOR OPENER		R 2X 12 AWG	- #12G	20A-1P	1.00	2.08	3	1.08	20A-1P	2x 12 AWG	- #12G	RECEPTA	CLES LIVING ROOM - DININ	3 F	R	6
7	FRIDGE		K 2X 12 AWG	- #12G	20A-1P	1.00		1.30	0.30	20A-1P	2x 12 AWG	- #12G		GAS RANGE	۲	K i	8
9	DISHWASHER		K 2X 12 AWG	- #12G	20A-1P	1.00	1.75	5	0.75	20A-1P	2x 12 AWG	- #12G		MICROWAVE	-	K 1	10
11	RECEPTACLES KITCHEN - B	ATHROOM	R 2X 12 AWG	- #12G	20A-1P	0.54		1.26	0.72	20A-1P	2x 12 AWG	- #12G	RECE	EPTACLES BEDROOM 1	F	R 1	12
13	GWH		H 2X 12 AWG	- #12G	20A-1P	0.48	2.78	3	2.30	30A-2P	3x 10 AWG	- #10G		HP-04		A 1	14
15			A			0.61		2.91	2.30	00/12/		<i>"</i> 100		51	£	A 1	16
17	AHU-04		A 3x 14 AWG	- #14G	15A-2P	0.61	1.51	1	0.90	20A-1P	2x 12 AWG	- #12G	G	ARBAGE DISPOSAL	-	K 1	18
19	KEF-01		A 2x 12 AWG	- #12G	20A-1P	0.10		0.28	0.18	20A-1P	2x 12 AWG	- #12G	RE	CEPTACLE OUTDOOR	F	R 2	20
21			N			3.01	3.01	1								Τ,	22
	PANEL-B		3x 8 AWG	- #10G	40A-2P	0.01	0.0								$\perp$	Ļ	_
23			N			3.01		3.01								2	24
			(KVA)														
				Total	Connecte	d Load	11.6	3 9.70									
												F	PANEL F1				
	Locati	on: THIRD FL	.OOR		CONNE	CTED L	OAD		7				OARD DESIGN				1
* [	LOAD SUMMARY	CL	DF		А	E	-	DEMAND TOTA								_	$\forall$
LL	Lighting	0.86	1.25		0.64	0.2	_	1.08	1	SYSTEM VO	DLTAGE			240/120V, 1Ф, 3W	<i></i>		$\forall$
-	Convenience Recept	3.78			1.80	1.9	98	3.78	1	BUS SIZE				40A			$\forall$
н	Heating (Space)		1.25						1	SYSTEM TY	PE			NORMAL	-	_	7

ľ	3.78			1.80	1.98	3.78		BUS SIZE			40A		R	Convenience Recept	3.78			1.8	0 1.	8	3.78		BUS SIZE				40A	
		1.2	5					SYSTEM T	YPE		NORMAL		F	Heating (Space)			1.25						SYSTEM T	PE			NORMAL	
		1.0	0					FEEDER PI	ROT		40A-2P C/B Bus Pluç	9	С	Cooling			1.00						FEEDER P	ROT			40A-2P C/B Bus Plug	
		1.0	0					CONDUCTO	OR SIZE		8 AWG - #10G	CU	А	HVAC			1.00						CONDUCTO	R SIZE			8 AWG - #10G	CU
		1.0	0					CONDUCTO	DR/PHASE		1		F	Process			1.00						CONDUCTO	R/PHASE			1	
		1.2	5					MAINS			40A MCB		С	Other Continuous			1.25						MAINS				40A MCB	
	1.80	13.0	00	1.80		1.17		SCCR			FULLY RATED		к	Kitchen	1.80		13.00	1.8	0		1.17		SCCR				FULLY RATED	
		1.0	0					MCB RATIN	IG		80%		N	Noncontinuous			1.00						MCB RATIN	G			80%	
		1.0	0					GROUND F	AULT		NO						1.00						GROUND F.	AULT			NO	
	6.44			4.24	2.21	6.03		FEEDER LE	ENGTH (FT)		100			Total	6.44			4.2	4 2.	21	6.03		FEEDER LE	NGTH (FT)			100	
								FEEDER V.	DROP (%)		2.604												FEEDER V.	DROP (%)			2.604	
6.	03							FAULT CUR	RRENT					Total Demand Load (KVA)	6.03								FAULT CUR	RENT				
25	5.10							KAIC RATIN	IG		22			Total Demand Current (A)	25.10								KAIC RATIN	IG .			22	
31	.38							ENCLOSUF	RE		TYPE 1			Min. Feeder Ampacity (A)	31.38								ENCLOSUR	E			TYPE 1	
TION		* WIRE	GRD	СВ	KVA /	\ В	K	VA CB	WIRE	GRD	DESCRIPTION	*		DESCRIPTIO	N :	WIR	E GRD	CB	KVA	Α	В	KVA	СВ	WIRE	GRD		RIPTION	*
ER SUN	E	L 2X 14 AWG	- #14G	15A-1P	0.31 0.6	54	0.	.33 15A-1P	2x 14 AWG	- #14G	LIGHTING BEDROOM 3 - BATHROOM 3 - LOFT	L 2		LIGHTING MASTER	SUITE	_ 2X 14 A	VG -#14G	15A-1P	0.31	0.64		0.33	15A-1P	2x 14 AW0	6 - #14G		OM 3 - BATHROOM 3 - LOFT	L
OOF		L 2X 14 AWG	- #14G	15A-1P	0.23	0.77	0.	.54 20A-1P	2x 12 AWG	- #12G	RECEPTACLES LOFT	R 4	3	LIGHITNG ROO	F	_ 2X 14 A	VG -#14G	15A-1P	0.23		0.77	0.54	20A-1P	2x 12 AW0	6 - #12G	RECEPT	ACLES LOFT	R
₹		K 2X 12 AWG	- #12G	20A-1P	1.50 1.8	80	0.	.30 20A-1P	2x 12 AWG	- #12G	DRYER	K 6	ŧ	WASHER		2X 12 A	VG -#12G	20A-1P	1.50	1.80		0.30	20A-1P	2x 12 AW0	i - #12G		RYER	к
THROC	DMS	R 2X 12 AWG	- #12G	20A-1P	0.36	0.36					SPACE	R 8	7	RECEPTACLES BATH	ROOMS	2X 12 A	VG - #12G	20A-1P	0.36		0.36					S	PACE	R
EDROO	мз	R 2X 12 AWG	- #12G	20A-1P	0.90 1.8	80	0.	.90 20A-1P	2x 12 AWG	- #12G	RECEPTACLES MASTER SUITE	R 10	\$	RECEPTACLES BEDF	ROOM 3	2X 12 A	VG -#12G	20A-1P	0.90	1.80		0.90	20A-1P	2x 12 AW0	- #12G	RECEPTACLE	ES MASTER SUITE	R
ROOF		R 2X 12 AWG	- #12G	20A-1P	1.08	1.08					SPACE	12	1	RECEPTACLES R	OOF	2X 12 A	VG -#12G	20A-1P	1.08		1.08					s	PACE	
	•	(KVA)							•						(	(VA)		'						•		•		
			Tot	al Connected	Lload 4	2.21											To	tal Connec	ted Load	404	2.21	1						

	Loca	ition: THIRD FL	LOO	PR		CONN	ECTED L	OAD.					PANELE	OARD DESIG	NATION		
* [	LOAD SUMMARY	CL		DF		А		В	DEMAND TOTA	-							•
L	Lighting	0.86		1.25		0.64	0.	23	1.08	1	SYSTEM VC	DLTAGE			240/120V, 1Ф, 3W		
R	Convenience Recept	3.78				1.80	1.	98	3.78	1	BUS SIZE				40A		
н	Heating (Space)			1.25				1		1	SYSTEM TY	PE			NORMAL		
С	Cooling			1.00							FEEDER PR	ОТ			40A-2P C/B Bus Plug		
A	HVAC			1.00					•		CONDUCTO	R SIZE			8 AWG - #10G	(	
РΙ	Process			1.00							CONDUCTO	R/PHASE			1		
0	Other Continuous			1.25							MAINS				40A MCB		
ĸ	Kitchen	1.80		13.00	ı	1.80			1.17		SCCR				FULLY RATED		
I N	Noncontinuous			1.00							MCB RATING	3			80%		
	·			1.00							GROUND FA	ULT			NO		
ŀ	Total	6.44				4.24	2.	21	6.03		FEEDER LE	NGTH (FT)			100		
_										_	FEEDER V.	DROP (%)			2.604		
	Total Demand Load (KVA)	6.03	1								FAULT CURI	RENT					
	Total Belliana Edda (1477)		4														
- 1	Total Demand Current (A)	25.10	1								KAIC RATING	3			22		
Ė	, ,	25.10 31.38									KAIC RATING				22 TYPE 1		-
Ė	Total Demand Current (A) Min. Feeder Ampacity (A)	31.38	*	WIRE	GRD	CB	ΚVΔ	Δ	l R	KVA	ENCLOSURI	Ξ	GPD		TYPE 1		_
- 1	Total Demand Current (A)  Min. Feeder Ampacity (A)  DESCRIPTIO	31.38	*	WIRE	GRD	СВ	KVA			KVA	CB	WIRE	GRD	LIGHTING	TYPE 1  DESCRIPTION	$\dashv$	
Ė	Total Demand Current (A) Min. Feeder Ampacity (A)	31.38	* L	WIRE 2X 14 AWG	<b>GRD</b> - #14G	<b>CB</b>	<b>KVA</b> 0.31	<b>A</b>		<b>KVA</b> 0.33	ENCLOSURI	Ξ		LIGHTING	TYPE 1	$\dashv$	
- 1	Total Demand Current (A)  Min. Feeder Ampacity (A)  DESCRIPTIO	31.38 N SUITE	* L								CB	WIRE	- #14G		TYPE 1  DESCRIPTION BEDROOM 3 - BATHROOM 3 -		
1	Total Demand Current (A)  Min. Feeder Ampacity (A)  DESCRIPTIO  LIGHTING MASTER	31.38 N SUITE	* L L	2X 14 AWG	- #14G	15A-1P	0.31		0.77	0.33	CB	WIRE 2x 14 AWG	- #14G - #12G		DESCRIPTION BEDROOM 3 - BATHROOM 3 - LOFT		
1 3	Total Demand Current (A)  Min. Feeder Ampacity (A)  DESCRIPTIO  LIGHTING MASTER :  LIGHITNG ROOF	31.38 N SUITE	L	2X 14 AWG 2X 14 AWG	- #14G - #14G	15A-1P	0.31	0.64	0.77	0.33	<b>CB</b> 15A-1P 20A-1P	WIRE  2x 14 AWG  2x 12 AWG	- #14G - #12G		DESCRIPTION BEDROOM 3 - BATHROOM 3 - LOFT RECEPTACLES LOFT		
1 3 5	Total Demand Current (A)  Min. Feeder Ampacity (A)  DESCRIPTIO  LIGHTING MASTER :  LIGHITNG ROOF  WASHER	31.38  N SUITE F	L	2X 14 AWG  2X 14 AWG  2X 12 AWG	- #14G - #14G - #12G	15A-1P 15A-1P 20A-1P	0.31 0.23 1.50	0.64	0.77	0.33	<b>CB</b> 15A-1P 20A-1P	WIRE  2x 14 AWG  2x 12 AWG	- #14G - #12G - #12G	F	DESCRIPTION BEDROOM 3 - BATHROOM 3 - LOFT RECEPTACLES LOFT DRYER		
1 3 5 7	Total Demand Current (A)  Min. Feeder Ampacity (A)  DESCRIPTIO  LIGHTING MASTER:  LIGHITNG ROOF  WASHER  RECEPTACLES BATH  RECEPTACLES BEDR	SUITE F ROOMS ROOM 3	L K R	2X 14 AWG  2X 14 AWG  2X 12 AWG  2X 12 AWG	- #14G - #14G - #12G - #12G	15A-1P 15A-1P 20A-1P	0.31 0.23 1.50 0.36	1.80	0.77	0.33 0.54 0.30	CB 15A-1P 20A-1P 20A-1P	WIRE  2x 14 AWG  2x 12 AWG  2x 12 AWG	- #14G - #12G - #12G	F	DESCRIPTION BEDROOM 3 - BATHROOM 3 - LOFT RECEPTACLES LOFT DRYER SPACE		
1 3 5 7 9	Total Demand Current (A)  Min. Feeder Ampacity (A)  DESCRIPTIO  LIGHTING MASTER:  LIGHITNG ROOF  WASHER  RECEPTACLES BATH  RECEPTACLES BEDR	SUITE F ROOMS ROOM 3	L K R R	2X 14 AWG  2X 14 AWG  2X 12 AWG  2X 12 AWG  2X 12 AWG	- #14G - #14G - #12G - #12G - #12G	15A-1P 15A-1P 20A-1P 20A-1P	0.31 0.23 1.50 0.36 0.90	1.80	0.77	0.33 0.54 0.30	CB 15A-1P 20A-1P 20A-1P	WIRE  2x 14 AWG  2x 12 AWG  2x 12 AWG	- #14G - #12G - #12G	F	DESCRIPTION BEDROOM 3 - BATHROOM 3 - LOFT RECEPTACLES LOFT DRYER SPACE PTACLES MASTER SUITE		

	LO	AD CALC	JLATIC	NS				
Step			irection	ns				
	LIGHTING & GENER	RAL USE R	ECEPTA	CLES: 220	.82(B)(1)			
1	Square footage	3,10	00 x		3 =		9,300 ر	⁄a
	SMALL APPLIANCES	S & LAUNE	ORY CIR	CUITS: 22	0.82(B)(2)			
2	Number of circuits		3 x		1500 =		4,500 ر	⁄a
	APPLIANCES & I	VIOTOR LC	ADS: 22	<b>20.82(B)(</b> 3	3) & (4)			
	Coffee Machines & Hot Beverage	N/A	va					
	Refrigerators	1,00	00 va					
	Dishwasher	1,00	00 va					
	Water Heater	50	00 va					
3	Washer	1,50	00 va					
3	Commercial Oven & Grills	50	00 va					
	Dryer	50	00 va					
	Cold Rooms	N/A	va					
	Miscellaneous	N/A	va					
	TOTAL	18,8	00 va					
	TOTA	AL STEPS 1	-3: 220.	.82(B)				
	1. Total of Loads	18,80	00 -		10,000 va	=		8,800
4	2. Line 1	8,80	00 x		40% =		3,520	
	3. Line 2	3,5	20 +		10,000 va	=		13,520
	HEATING & AIR	CONDITIO	NING LO	OADS: 220	).82(C )			
	A. Air-Conditioning Equipment	600	00 va					
	B. Heat Pump without Suppl. Heating	N/A	va					
5	C. Suppl. Heating for HP	N/A	va					
	D. Electrical Space Heating	N/A	va					
	E. Electric Thermal Storage	N/A	va					
	CALCULATE TOTAL	SERVICE C	R FEED	ER LOAD:	220.82(A)			
	Total of Line 3 from Step 4		1	.3,520 va				
6	Enter only the largers load from Step 5	+		6,000 va				
	Total Calculated Service or Feeder Load	<u> </u>	1	.9,520 va				
	CALCULAT	ED SERVIC	E OR FI	EEDER SIZ	E			
	Total Calculated Load	19,5	20 va/		240 volts	=	81 a	mps
7	This calculation resulted in a calculated	load of 86	amps, f	the existir	g feeder is de	esigned fo	or 100 am	ps load
	thus the current feeder should be able t	o serve Ur	nit 4.					

Step			Directi	ons				
	LIGHTING & GENER	RAL USE	RECEPT	ACLES: 220	0.82(B)(1)			
1	Square footage	3,	100 x		3 =		9,300 v	a
	SMALL APPLIANCES	& LAUI	NDRY C	IRCUITS: 22	20.82(B)(2)	·		
2	Number of circuits		3 x		1500 =		4,500 v	а
	APPLIANCES & N	/OTOR I	.OADS:	220.82(B)(	3) & (4)			
	Coffee Machines & Hot Beverage	N/A	va					
	Refrigerators	1,	.000 va					
	Dishwasher	1,	.000 va					
	Water Heater		500 va					
2	Washer	1,	.500 va					
3	Commercial Oven & Grills		500 va					
	Dryer		500 va					
	Cold Rooms	N/A	va					
	Miscellaneous	N/A	va					
	TOTAL	18,	800 va					
	TOTA	L STEPS	1-3: 22	0.82(B)				
	1. Total of Loads	18,	- 008		10,000 va	=		8,80
4	2. Line 1	8,	x 008		40% =		3,520	
	3. Line 2	3,	520 +		10,000 va	=		13,52
	HEATING & AIR (	CONDITI	ONING	LOADS: 22	0.82(C)			
	A. Air-Conditioning Equipment	6	000 va					
	B. Heat Pump without Suppl. Heating	N/A	va					
5	C. Suppl. Heating for HP	N/A	va					
	D. Electrical Space Heating	N/A	va					
	E. Electric Thermal Storage	N/A	va					
	CALCULATE TOTAL S	SERVICE	OR FEE	DER LOAD	: 220.82(A)			
	Total of Line 3 from Step 4			13,520 va				
6	Enter only the largers load from Step 5	+		6,000 va				
	Total Calculated Service or Feeder Load	=		19,520 va				
	CALCULAT	ED SERV	ICE OR	FEEDER SIZ				
	Total Calculated Load	19,	.520 va	/	240 volts	=	81 a	mps
7	This calculation resulted in a calculated	load of 8	36 amps	s, the existii	ng feeder is de	esigned f	or 100 am	ps load
	thus the current feeder should be able to	o serve l	Jnit 5.					

Step		D	recti	ons				
	LIGHTING & GENER	RAL USE RE	CEP1	ACLES: 220	.82(B)(1)			
1	Square footage	3,10	0 x		3 =		9,300 v	a
	SMALL APPLIANCES	S & LAUND	RY C	RCUITS: 220	D.82(B)(2)			
2	Number of circuits		3 x		1500 =		4,500 v	a
	APPLIANCES & N	MOTOR LO	ADS:	220.82(B)(3	) & (4)			
	Coffee Machines & Hot Beverage	N/A	va					
	Refrigerators	1,00	0 va					
	Dishwasher	1,00	0 va					
	Water Heater	50	0 va					
2	Washer	1,50	0 va					
3	Commercial Oven & Grills	50	0 va					
	Dryer	50	0 va					
	Cold Rooms	N/A	va					
	Miscellaneous	N/A	va					
	TOTAL	18,80	0 va					
	TOTA	L STEPS 1-	3: 22	0.82(B)				
	1. Total of Loads	18,80	0 -		10,000 va	=		8,80
4	2. Line 1	8,80	0 x		40% =		3,520	
	3. Line 2	3,52	0 +		10,000 va	=		13,52
	HEATING & AIR	CONDITION	IING	LOADS: 220	.82(C )			
	A. Air-Conditioning Equipment	600	0 va					
	B. Heat Pump without Suppl. Heating	N/A	va					
5	C. Suppl. Heating for HP	N/A	va					
	D. Electrical Space Heating	N/A	va					
	E. Electric Thermal Storage	N/A	va					
	CALCULATE TOTAL	SERVICE O	R FEE	DER LOAD:	220.82(A)			
	Total of Line 3 from Step 4			13,520 va				
6	Enter only the largers load from Step 5	+		6,000 va				
	Total Calculated Service or Feeder Load	l =		19,520 va				
	CALCULAT	ED SERVIC	OR	FEEDER SIZE	Ε			
	Total Calculated Load	19,52	0 va	/	240 volts =		81 a	mps
7	This calculation resulted in a calculated	load of 86	amps	, the existing	g feeder is desi	gned f	or 100 am	ps load
	thus the current feeder should be able t	o serve Un	t 6.					

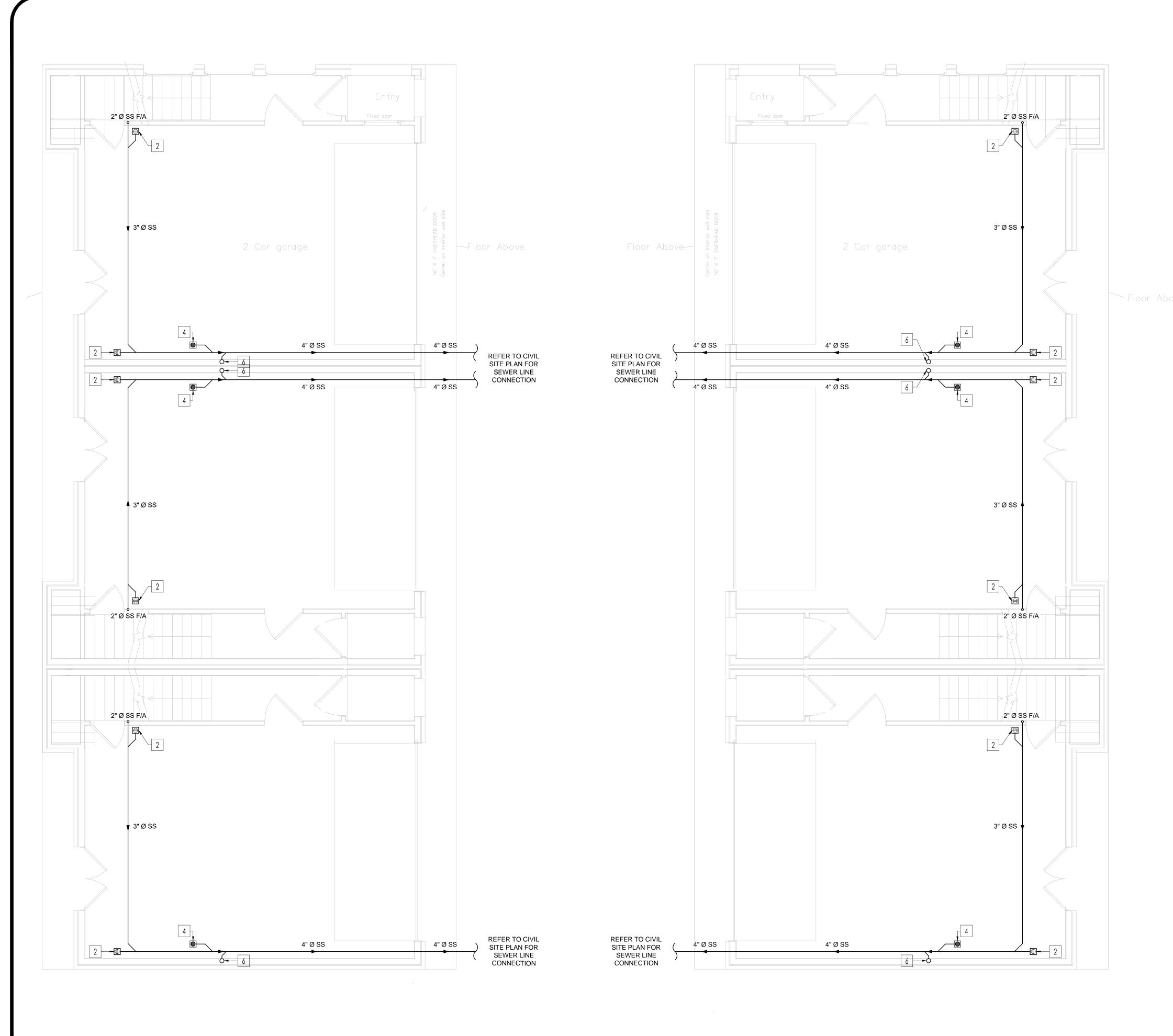
PROJECT: One, LLC FAMILY Build MULTI

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:

### 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	-

PLUME	BING PIPING I	MATERIAL SCHEDULE
PIPING SYSTEM	LOCATION	ACCEPTABLE PIPING MATERIAL
WASTE	BELOW AND ABOVE GRADE	ASTM D 2665 PVC SCHEDULE 40, SOCKET FITTINGS DWV
&		

ASTM A 888 CAST IRON, NO HUB SYSTEM

Normad

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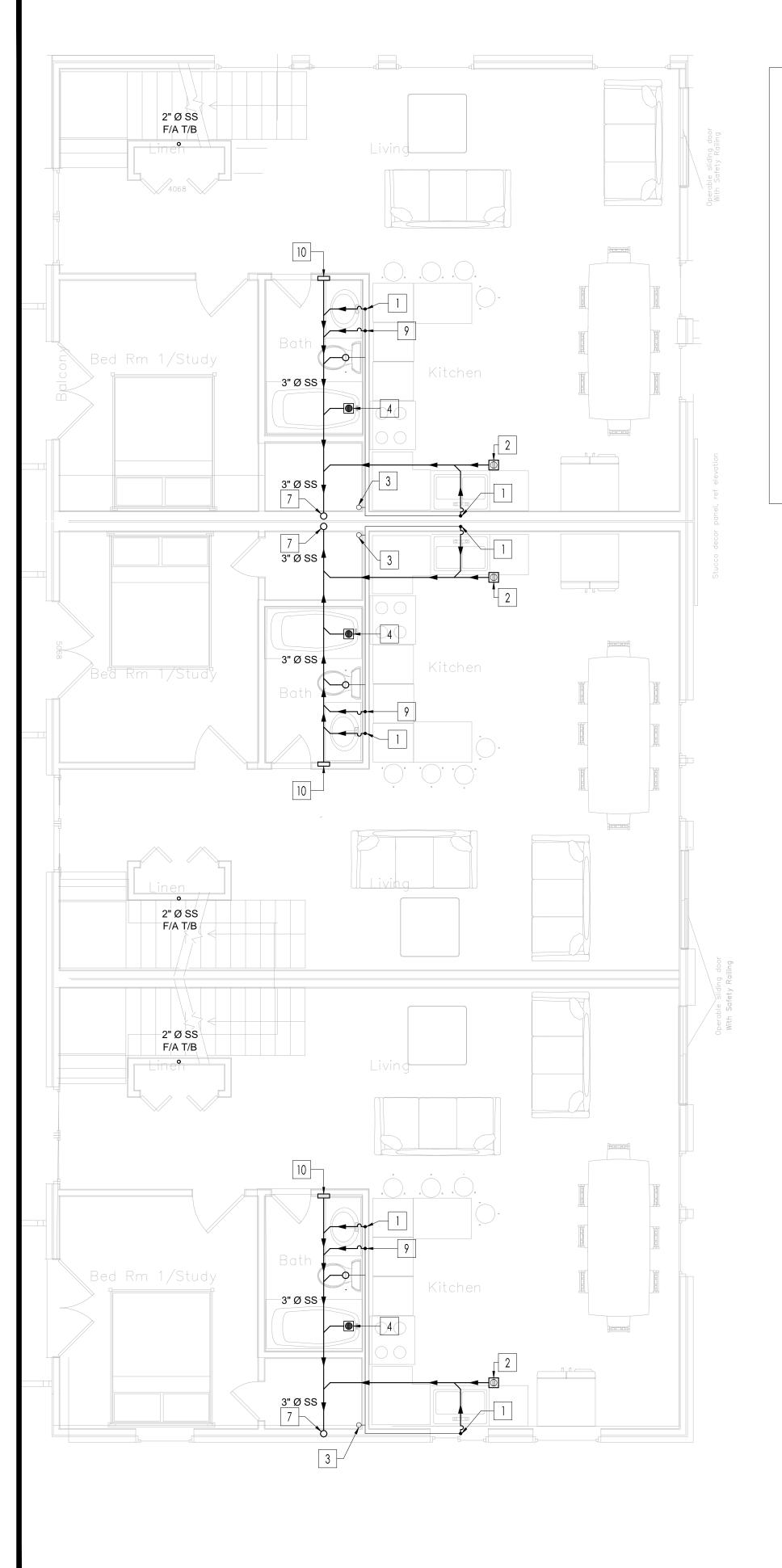
DRAINAGE FIRST FLOOR LAYOUT.

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

P 2.00

SHEET NO.

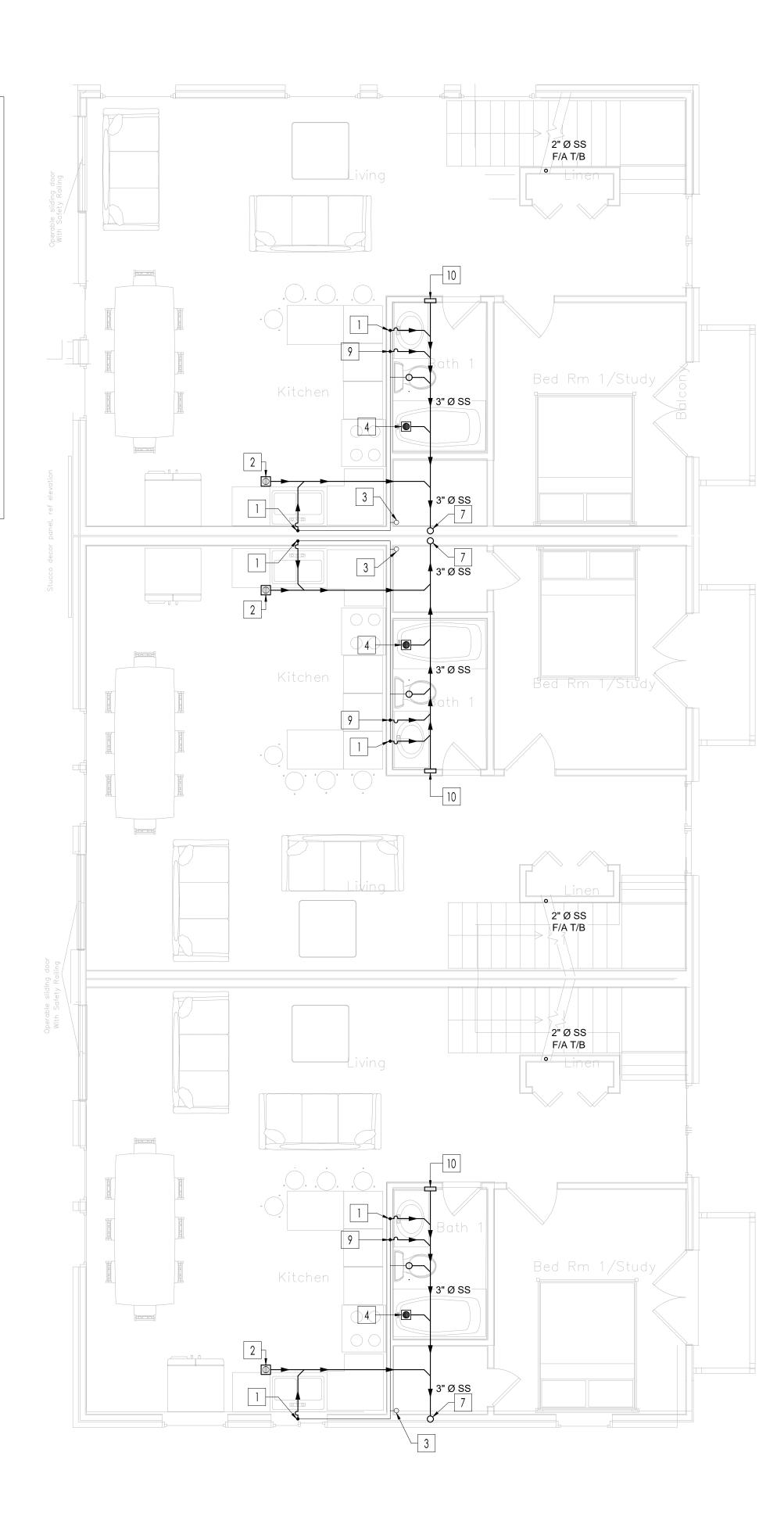
St. Floor Plan
Scale: 1'-0"=1/4"



### 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.



<u>2nd Floor Plan</u> Scale: 1'-0"=1/4" A MULTI FAMILY PROJECT: Normad Build One, LLC

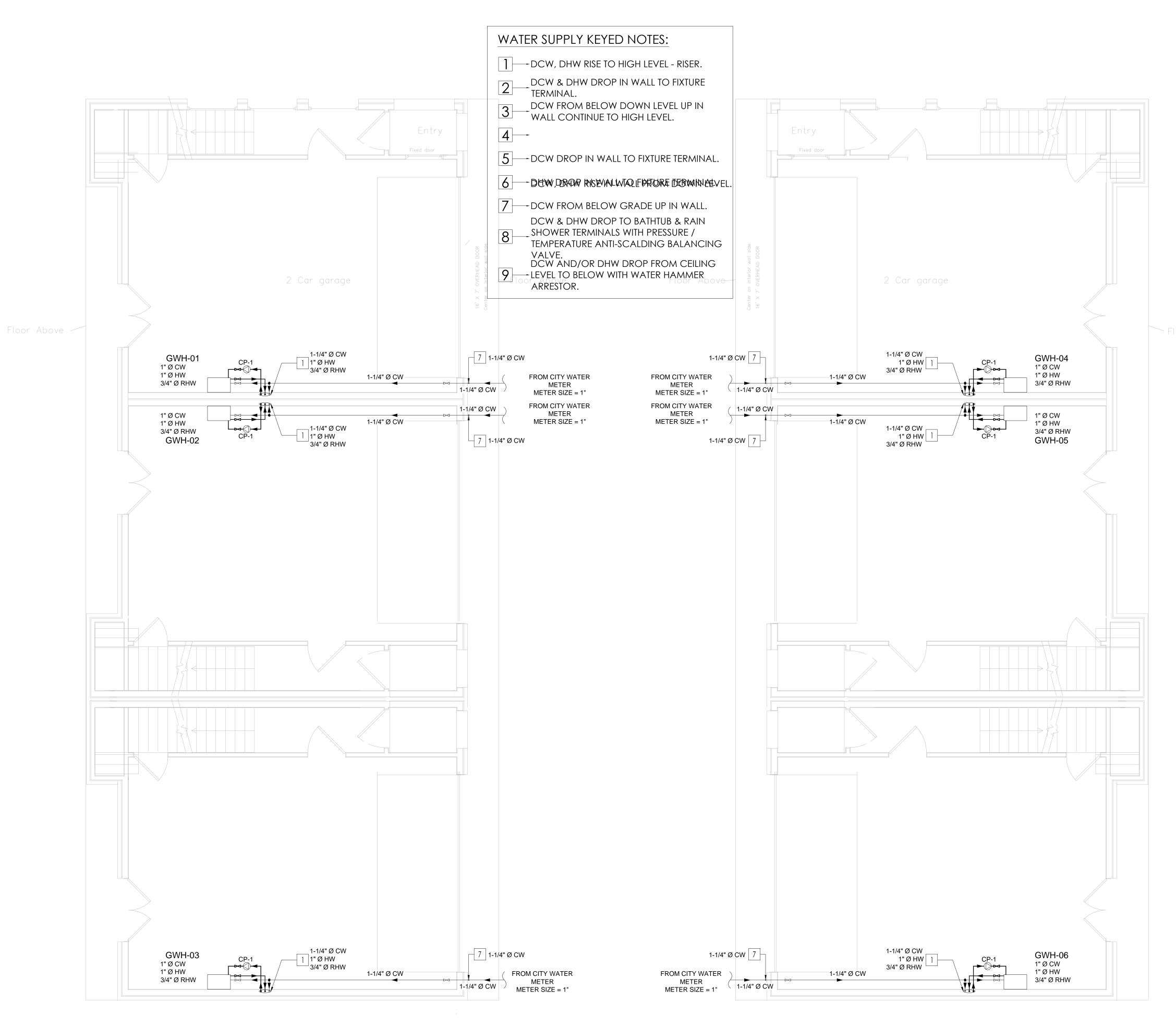
Kashif Reaz,1104 Greer St Fortworth, TX

DRAINAGE SECOND FLOOR LAYOUT.

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

Date: 06.22.2023 PROJ.NO.:

P 3.00



#### SCHEDULE No. 1

#### GAS TANKLESS WATER HEATER SCHEDULE

TAG	GWH-01
LOCATION	OUTDOORS - SEE PLAN
SERVES	FIRST FLOOR
MANUFACTURER	RINNAI
MODEL	RSC-199e
TYPE	NATURAL GAS
GPM RANGE	0.26 - 9.8
GAS INPUT (BTU/hr)	199,000
UNIFORM ENERGY FACTOR (UEF)	0.93
APPROX. WEIGHT (lbs)	68
DIMENSIONS WxHxD	18.5" x 26.4" x 11.4"
HOT & COLD WATER CONX. SIZE	3/4" & 3/4"
GAS CONX. SIZE	3/4"

- 1. PROVIDE ASME APPROVED T&P RELIEF VALVE WITH DRAIN.
- 2. PROVIDE ISOLATION VALVES ON BOTH THE COLD-WATER SUPPLY AND THE HOT-WATER PIPE LEAVING THE INSTANTANEOUS WATER HEATERS, AND PROVIDE HOSE BIB OR OTHER FITTINGS ON EACH VALVE FOR FLUSHING.
- 3. PROVIDE 110V RECEPTACLE W/WATER-RESISTANT ENCLOSURE/COVER FOR TANKLESS W/H.
- 4. PROVIDE INTERNAL RE-CIRCULATION PUMP.
- 5. FOR POWER SUPPLY, SEE ELECTRICAL SHEETS.

#### FROM 2018 IPC - TABLE E 103.3 (2):

#### WATER SUPPLY FIXTURE UNITS LOADS (PER APARTMENT):

FIXTURE	OCCUPANCY	W.S.F.U	QTY.	TOTAL W.S.F.U	
WACHING MACHINE	PRIVATE	1.4	1	1.4	
KITCHEN SINK	PRIVATE	1.4 1		1.4	
DISHWASHING MACHINE	PRIVATE	1.4	1	1.4	
WATER CLOSET	PRIVATE	2.0	3	6.0	
LAVATORY	PRIVATE	0.7	4	2.8	
BATHTUB	PRIVATE	1.4	2	2.8	
SHOWER HEAD	PRIVATE	1.4	1	1.4	
	1	1	TOTAL :	= 17.2 WFU	

EQUIVALENT FLOW (IPC TABLE E103.3(3))= 18.4 GPM

Ø1-1/4" MAIN CW PIPE WILL OPERATE AT APPROX. 5 FT/s

#### FROM 2018 IPC - TABLE E 103.3 (2): WATER SUPPLY FIXTURE UNITS LOADS (ALL APARTMENTS):

FIXTURE	OCCUPANCY	W.S.F.U	QTY.	TOTAL W.S.F.U	
WACHING MACHINE	PRIVATE	1.4	6	8.4	
KITCHEN SINK	PRIVATE	1.4	6	8.4	
DISHWASHING MACHINE	PRIVATE	1.4 6		8.4	
WATER CLOSET	PRIVATE	2.0	18	36.0	
LAVATORY	PRIVATE 0.7 24			16.8	
BATHTUB	PRIVATE	1.4	12	16.8	
SHOWER HEAD	PRIVATE	1.4	6	8.4	
	ı		TOTAL =	= 103.2 WFU	

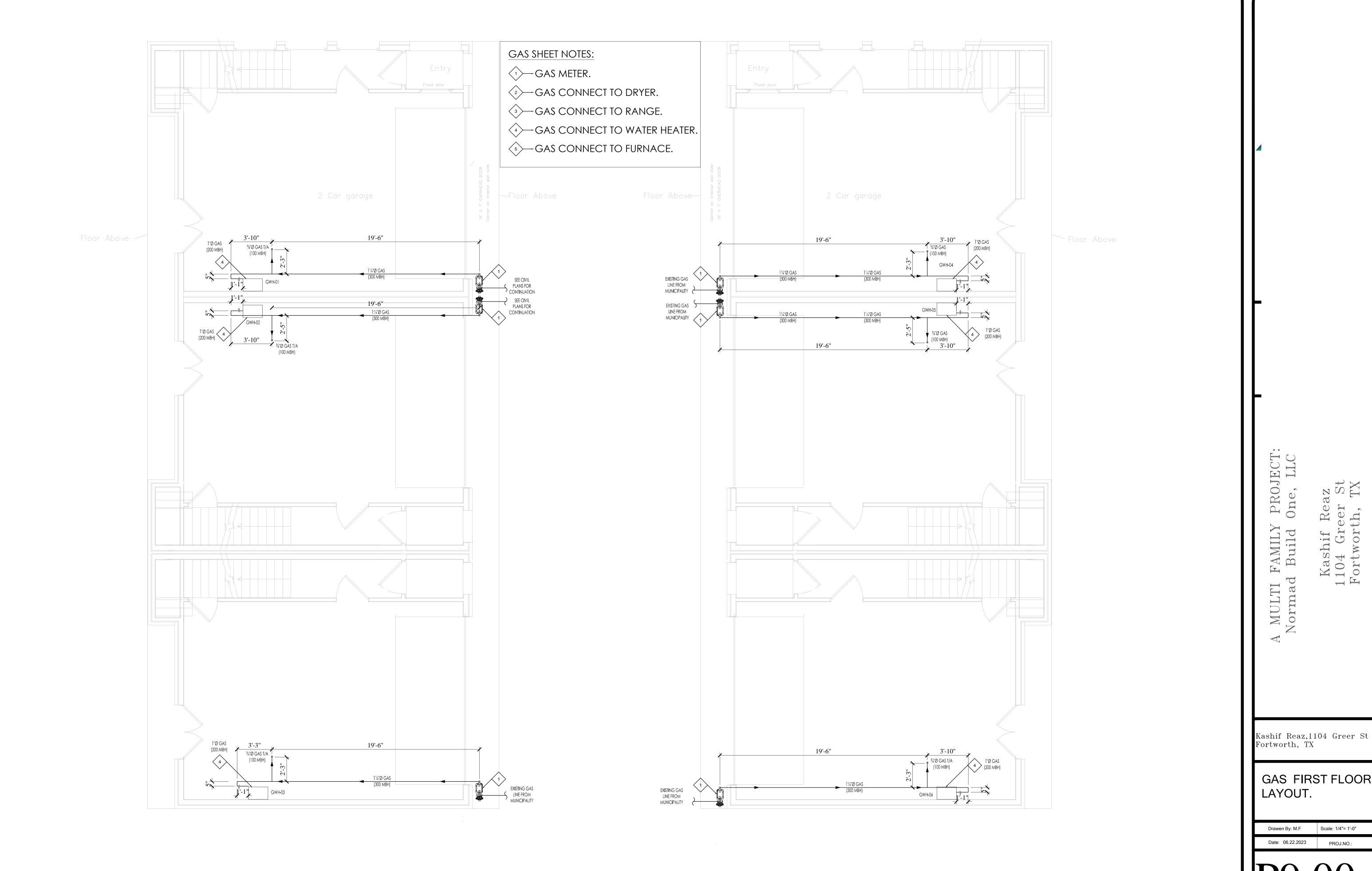
EQUIVALENT FLOW (IPC TABLE E103.3(3))= 84.2 GPM

Ø2" MAIN CW PIPE WILL OPERATE AT APPROX. 5 FT/s

Kashif Reaz,1104 Greer St Fortworth, TX

WATER SUPPLY FIRST FLOOR LAYOUT.

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



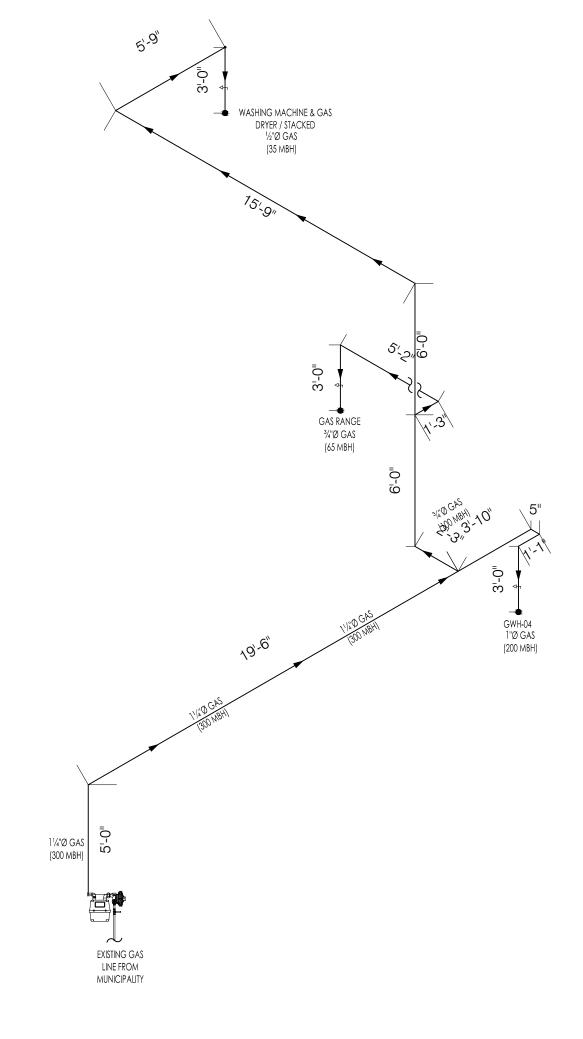
LAYOUT.

SHEET NO.

GAS FIRST FLOOR

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

Date: 06.22.2023 PROJ.NO.:



#### 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.
- 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.
- AND PROVIDE ACCESSIBLE CLEANOUTS AT ALL CHANGES OF DIRECTION.

11. ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT  $\frac{1}{8}$ " PER FOOT

- 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:

- 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.
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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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- 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.

ALL GAS PIPES ARE METALLIC SCHD. 40

	T	ABLE 402.4	(2)													
	SCHEDU	LE 40 META	LLIC PIPE													
	Gas		Nat	ural												
In	let Pressui	re	Less than 2 psi		Less than 2 psi											
Pr	essure Dro	р	0.5 in	0.5 in. w.c.												
Sp	ecific Grav	ity	0.6													
						PII	PE SIZE (inc	ch)								
Nom inal	1/2 *	3 / 4 -	1"	1 1/4"	1 1/2"	2	<b>2</b> <sup>1</sup> / <sup>2</sup>	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		
Length (ft) Capacity in Cubic Feet 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:
GAS METER.
GAS CONNECT TO DRYER.
GAS CONNECT TO RANGE.
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