

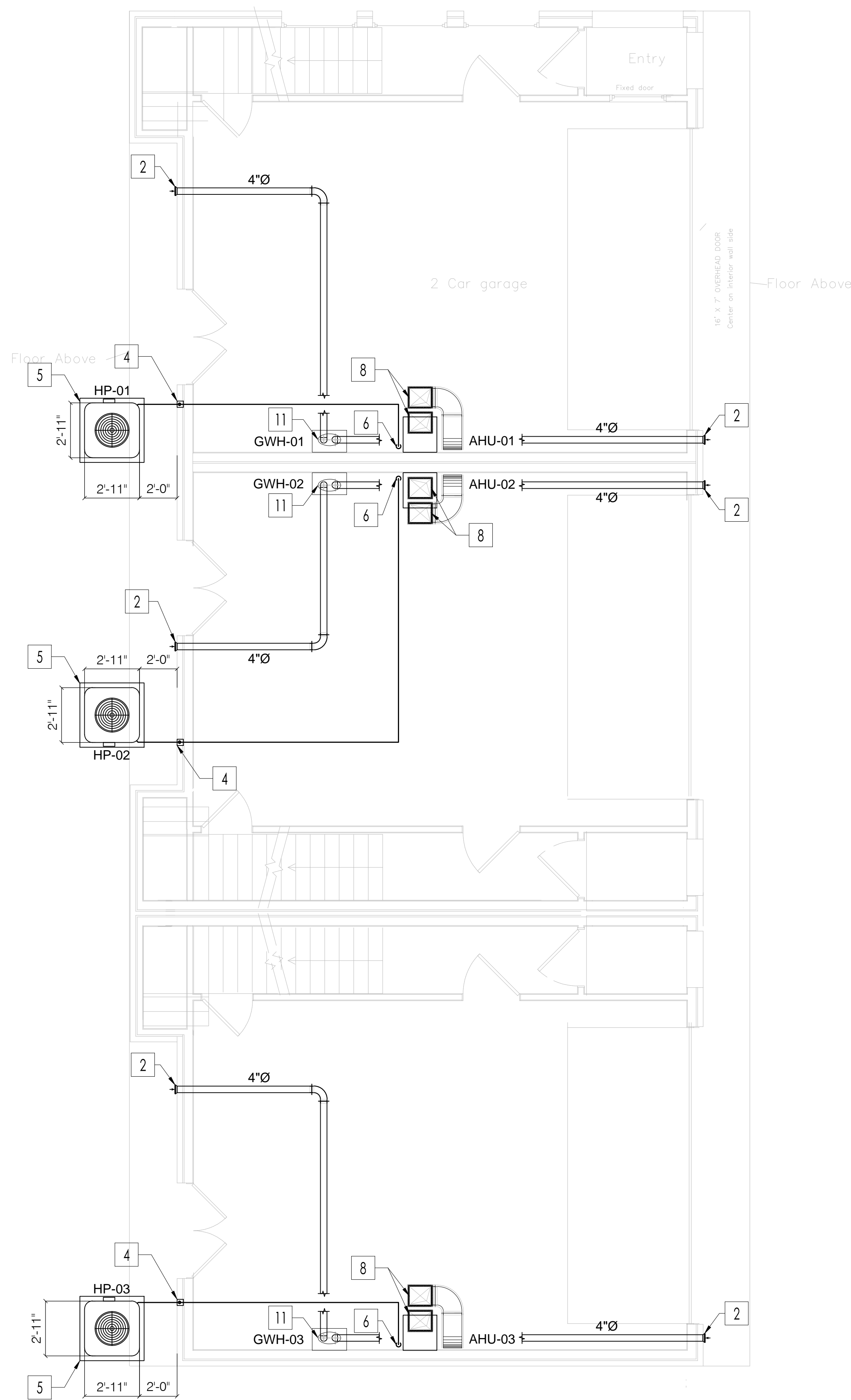
GDI ENGINEERING



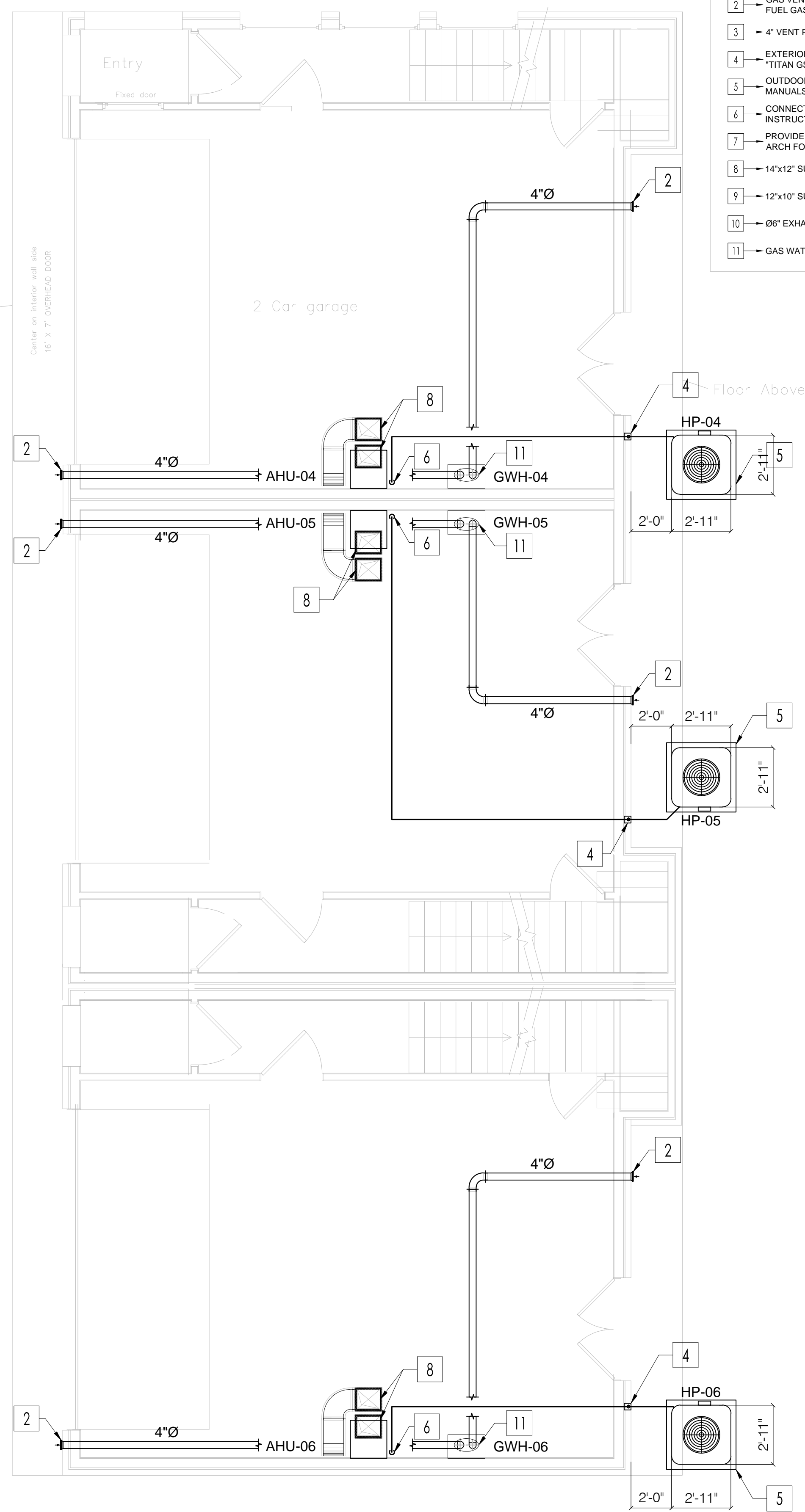
6 Unit Apartment

Multifamily

Fort Worth - Texas



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



- MECHANICAL KEYED NOTES:
- 1 → DRYER VENT BOX MODEL DB-480 WITH GAS PORT.
DRY WALL VENT ABOVE TOWARD THE OUTDOORS MODEL DWV4 / COLOR AS PER CLIENT'S CHOICE.
 - 2 → 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.
 - 4 → EXTERIOR WALL SEAL PENETRATION OUTLET WITH ELASTOMETRIC LINE-SET COMPRESSION SLEEVE TYPE "TITAN Q330" BY AIREX MANUFACTURING INC. & REFRIGERANT PIPE LINES TO ABOVE IN WALL.
 - 5 → 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.
 - 7 → 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.

A MULTI FAMILY PROJECT:
Normad Build One, LLC

Kashif Reaz
1104 Greer St
Fortworth, TX

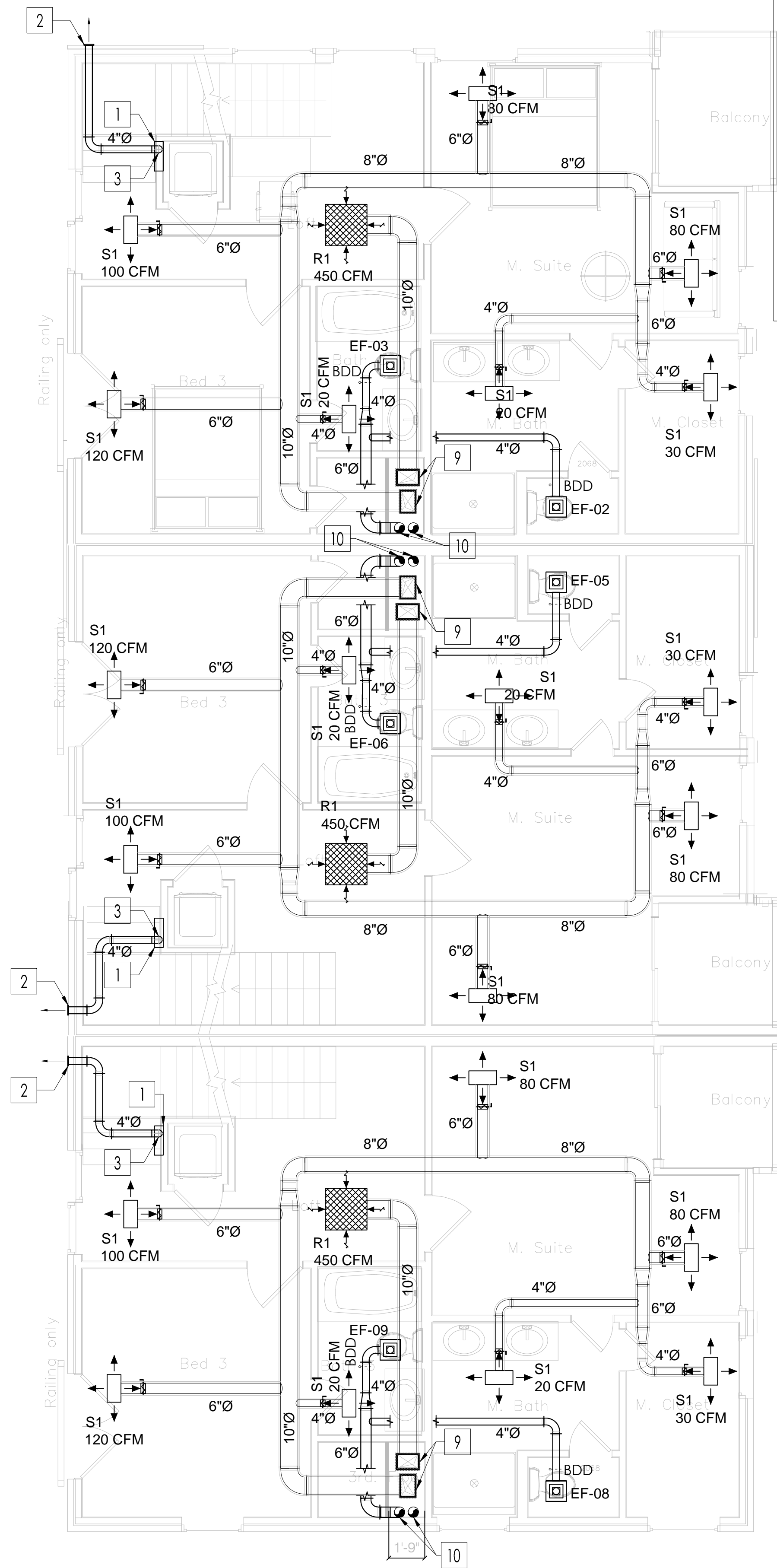
Kashif Reaz, 1104 Greer St
Fortworth, TX

MECHANICAL FIRST
FLOOR LAYOUT.

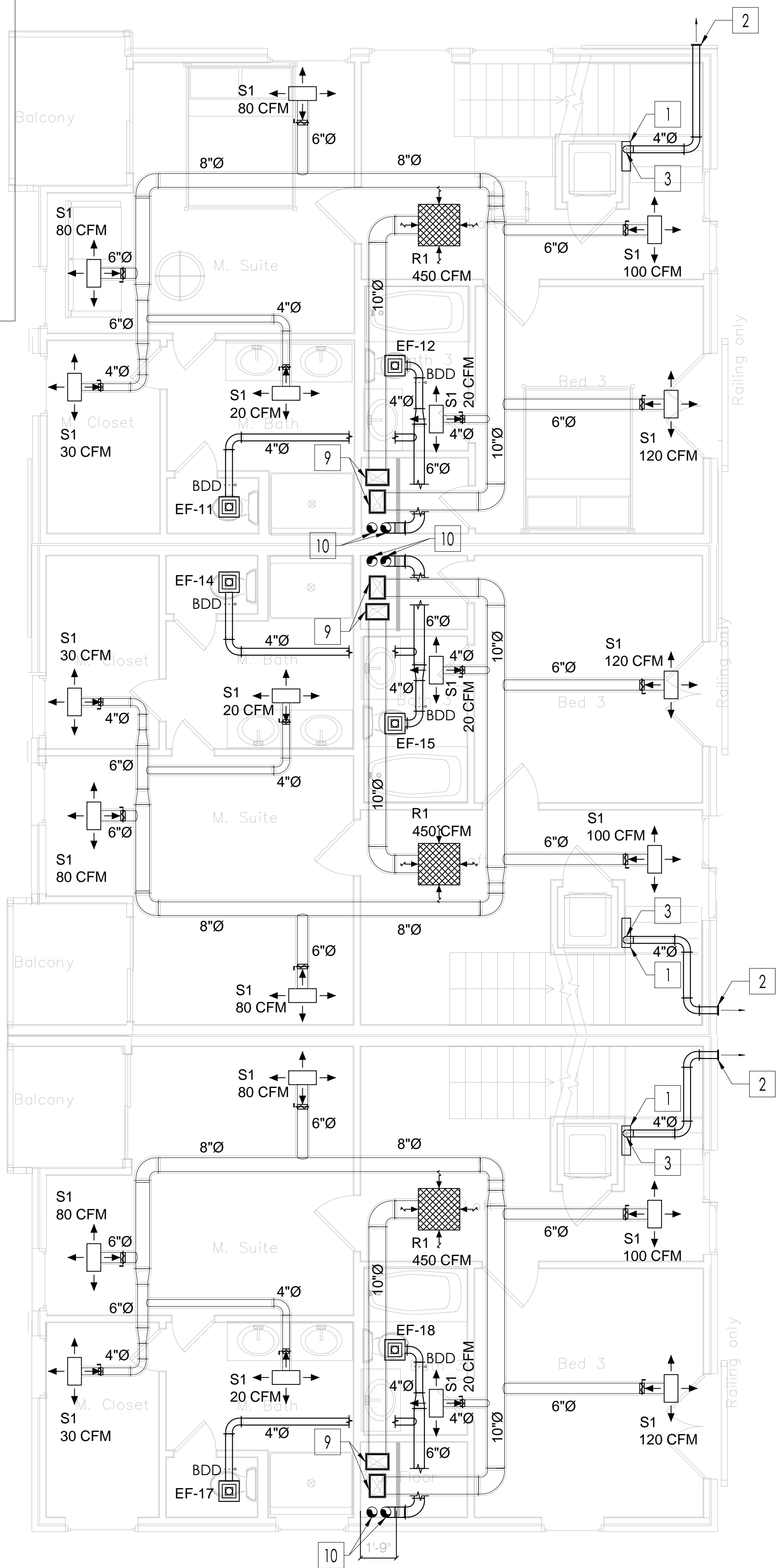
Drawn By: M.F | Scale: 1/4"= 1'-0"
Date: 06.22.2023 | PROJ.NO.:

M 2.00

SHEET NO.



- MECHANICAL KEYED NOTES:**
- 1 DRYER VENT BOX MODEL DB-480 WITH GAS PORT. DRY WALL VENT ABOVE TOWARD THE OUTDOORS MODEL DWV4 / COLOR AS PER CLIENT'S CHOICE.
 - 2 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.
 - 4 EXTERIOR WALL SEAL PENETRATION OUTLET WITH ELASTOMETRIC SLEEVE TYPE "TITAN GS30" BY AIREX MANUFACTURING INC. & REFRIGERANT PIPE LINES TO ABOVE IN WALL.
 - 5 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.
 - 7 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 6" EXHAUST AIR DUCTS TO ROOF.
 - 11 GAS WATER HEATER 4" ROUND INTAKE AND 4" ROUND VENT CONNECTIONS TO OUTDOORS.



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

A MULTI FAMILY PROJECT:
Normad Build One, LLC
Kashif Reaz
1104 Greer St
Fortworth, TX

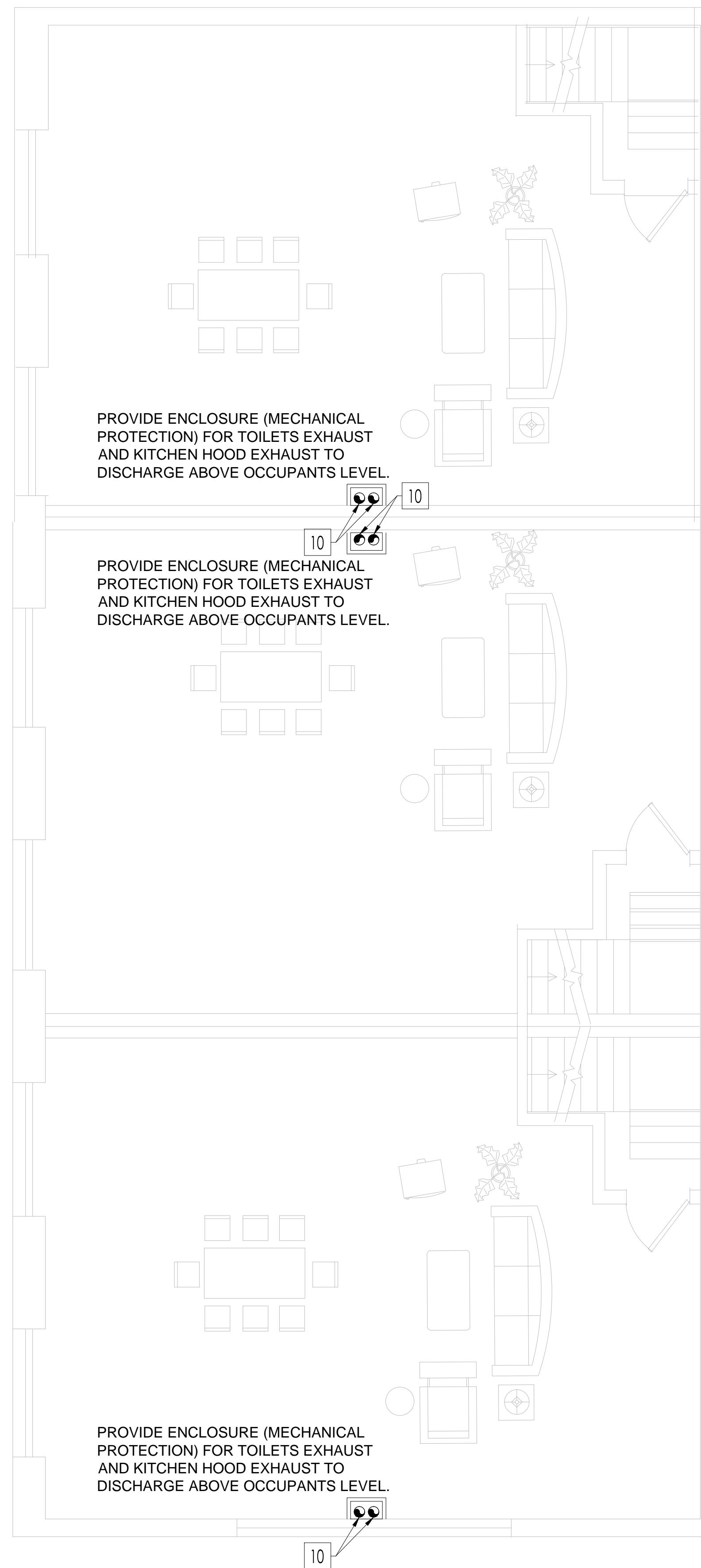
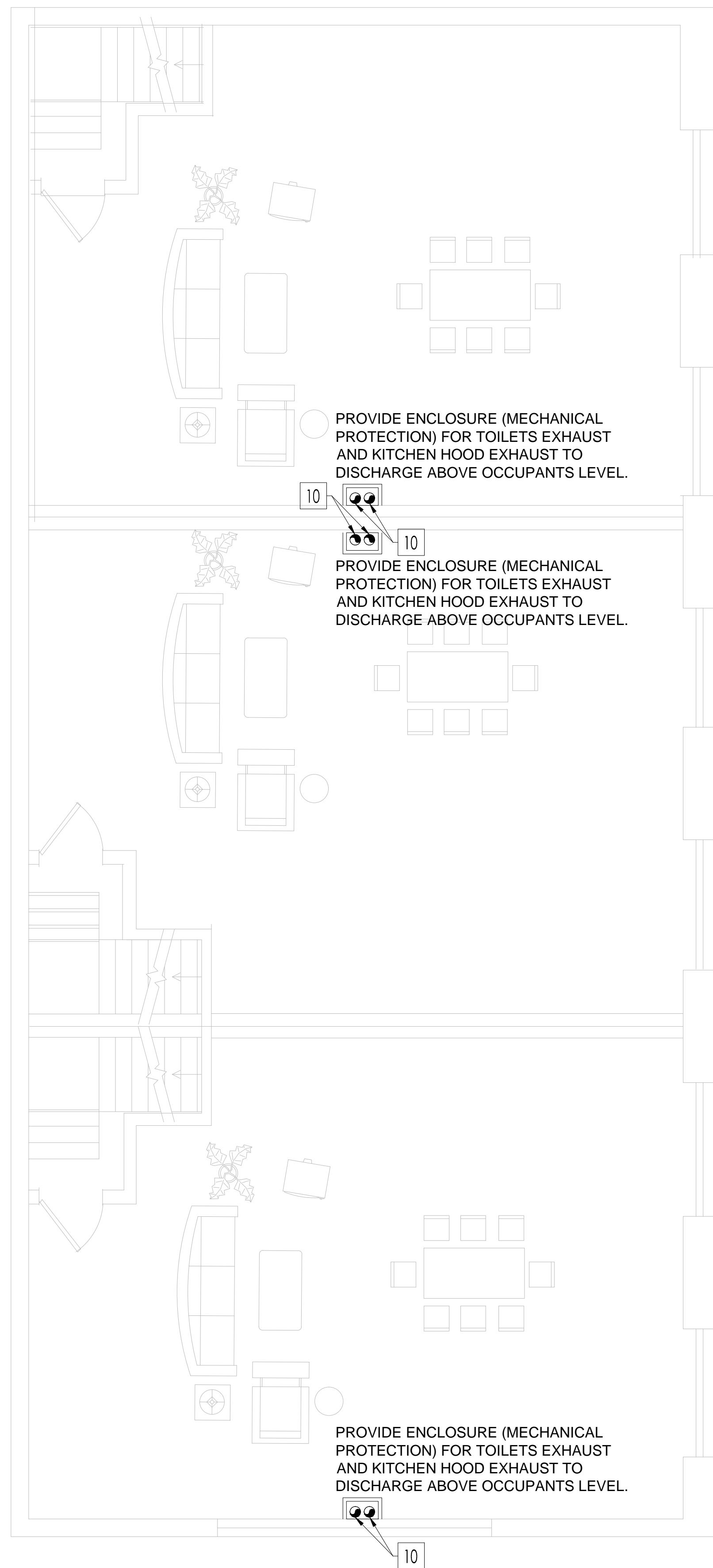
Kashif Reaz, 1104 Greer St
Fortworth, TX

MECHANICAL
THIRD FLOOR
LAYOUT.

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

M 4.00

SHEET NO.



- MECHANICAL KEYED NOTES:**
- 1 — DRYER VENT BOX MODEL DB-480 WITH GAS PORT. DRY WALL VENT ABOVE TOWARD THE OUTDOORS MODEL DWV4 / COLOR AS PER CLIENT'S CHOICE.
 - 2 — 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.
 - 4 — 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.
 - 5 — 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.
 - 7 — 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 — 06" EXHAUST AIR DUCTS TO ROOF.
 - 11 — GAS WATER HEATER 4" ROUND INTAKE AND 4" ROUND VENT CONNECTIONS TO OUTDOORS.

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

MECHANICAL ROOF FLOOR.

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

M 5.00

SHEET NO.

Project Information
 For: New Multiten - 6 Apt, GCR
 1104 Greer St, Fort Worth, TX 76102

Design Information
 Weather: Fort Worth Allaire AP, TX, US

Winter Design Conditions		Summer Design Conditions	
Outside db	25 °F	Outside db	90 °F
Inside db	65 °F	Inside db	75 °F
Design TD	43 °F	Design TD	25 °F
Wetbulb (F)	54	Wetbulb (F)	72
Relative humidity	50 %	Relative humidity	70 %
Mixture ratio	24 grlb	Mixture ratio	24 grlb

Heating Summary
 Structure: 17483 Btu/h
 Duct: 0 Btu/h
 Control vent (0 dm): 0 Btu/h
 Blower (none): 0 Btu/h
 Filtration: 0 Btu/h
 Equipment load: 17483 Btu/h

Cooling Summary
 Structure: 2262 Btu/h
 Duct: 0 Btu/h
 Control vent (0 dm): 0 Btu/h
 Blower (none): 0 Btu/h
 Filtration: 0 Btu/h
 Equipment load: 2334 Btu/h

Infiltration
 Method: Average
 Construction quality: Standard
 Filtration: 0 Btu/h

Latent Cooling Equipment Load Sizing
 Structure: 2860 Btu/h
 Duct: 0 Btu/h
 Control vent (0 dm): 0 Btu/h
 Blower (none): 0 Btu/h
 Filtration: 0 Btu/h
 Equipment latent load: 2860 Btu/h

Equipment Total Load (Sensible)
 Heating: 17483 Btu/h
 Cooling: 17483 Btu/h
 Latent: 0 Btu/h
 Total: 34966 Btu/h

Heating Equipment Summary
 Make: Carrier
 Model: CH79NAA0000GB
 Efficiency: 8.5 HSPFP
 Heating input: 27600 Btu/h @ 47°F
 Heat exchanger rise: 10 °F
 Air flow: 675 cfm
 Static pressure: 0.55 in H2O
 Capacity: 15.0 in 15°F

Cooling Equipment Summary
 Make: Carrier
 Model: CH79NAA0000GB
 Efficiency: 12.5 EER, 15.5 BEER
 Cooling output: 18600 Btu/h
 Heat exchanger rise: 10 °F
 Air flow: 675 cfm
 Static pressure: 0.55 in H2O
 Capacity: 15.0 in 15°F

Calculations approved by ACCA to meet all requirements of Manual J 9th Ed.

Project Information
 For: New Multiten - 6 Apt, GCR
 1104 Greer St, Fort Worth, TX 76102

Design Conditions
 Location: Fort Worth Allaire AP, TX US
 Indoor: Heating: 68 °F, Cooling: 75 °F
 Outdoor: 65 °F
 Lapse rate: 5.0 °F
 Relative humidity (%): 50
 Humidity ratio (gr/lb): 26.1

Test for Adequate Exposure Diversity
 Maximum hourly glazing load exceeds average by 26.9%.
 House has adequate exposure diversity (AED), based on AED limit of 30%.
 AED excursion: 0 Btu/h

Hourly Glazing Load graph showing solar heat gain (Btu/h) over 24 hours, peaking at approximately 14,000 Btu/h around 14:00.

Calculations approved by ACCA to meet all requirements of Manual J 9th Ed.

Right-JOB Worksheet
 Entire House

Room name	Construction	U-value (Btu/h-ft²-ft)	Area (ft²)	Heat Loss (Btu/h)	Cooling Loss (Btu/h)
8 GATED excursion				-	-
12 Infiltration				291	0
13 Internal gains	Occupants @ Appropriate	200	0	0	0
14 Solar radiation			1143	1143	2367
15 Latent loads			0	0	0
16 Duct loads			0	0	0
17 Total room load			1434	1434	2367
18 Air required (CFM)			0	0	15

Calculations approved by ACCA to meet all requirements of Manual J 9th Ed.

Right-JOB Worksheet
 Entire House

Room name	Construction	U-value (Btu/h-ft²-ft)	Area (ft²)	Heat Loss (Btu/h)	Cooling Loss (Btu/h)
8 GATED excursion				-	-
12 Infiltration				291	0
13 Internal gains	Occupants @ Appropriate	200	0	0	0
14 Solar radiation			1143	1143	2367
15 Latent loads			0	0	0
16 Duct loads			0	0	0
17 Total room load			1434	1434	2367
18 Air required (CFM)			0	0	15

Calculations approved by ACCA to meet all requirements of Manual J 9th Ed.

Right-JOB Worksheet
 Entire House

Room name	Construction	U-value (Btu/h-ft²-ft)	Area (ft²)	Heat Loss (Btu/h)	Cooling Loss (Btu/h)
8 GATED excursion				-	-
12 Infiltration				291	0
13 Internal gains	Occupants @ Appropriate	200	0	0	0
14 Solar radiation			1143	1143	2367
15 Latent loads			0	0	0
16 Duct loads			0	0	0
17 Total room load			1434	1434	2367
18 Air required (CFM)			0	0	15

Calculations approved by ACCA to meet all requirements of Manual J 9th Ed.

Right-JOB Worksheet
 Entire House

Room name	Construction	U-value (Btu/h-ft²-ft)	Area (ft²)	Heat Loss (Btu/h)	Cooling Loss (Btu/h)
8 GATED excursion				-	-
12 Infiltration				291	0
13 Internal gains	Occupants @ Appropriate	200	0	0	0
14 Solar radiation			1143	1143	2367
15 Latent loads			0	0	0
16 Duct loads			0	0	0
17 Total room load			1434	1434	2367
18 Air required (CFM)			0	0	15

Calculations approved by ACCA to meet all requirements of Manual J 9th Ed.

Right-JOB Worksheet
 Entire House

Room name	Construction	U-value (Btu/h-ft²-ft)	Area (ft²)	Heat Loss (Btu/h)	Cooling Loss (Btu/h)
8 GATED excursion				-	-
12 Infiltration				291	0
13 Internal gains	Occupants @ Appropriate	200	0	0	0
14 Solar radiation			1143	1143	2367
15 Latent loads			0	0	0
16 Duct loads			0	0	0
17 Total room load			1434	1434	2367
18 Air required (CFM)			0	0	15

Calculations approved by ACCA to meet all requirements of Manual J 9th Ed.

Second Floor

Job #: 2.2.548
 Performed by Omar F. for:
 New Multiten - 6 Apt, GCR
 1104 Greer St, Fort Worth, TX 76102

Scale: 1:110

Third Floor

Job #: 2.2.548
 Performed by Omar F. for:
 New Multiten - 6 Apt, GCR
 1104 Greer St, Fort Worth, TX 76102

Scale: 1:110

First Floor

Job #: 2.2.548
 Performed by Omar F. for:
 New Multiten - 6 Apt, GCR
 1104 Greer St, Fort Worth, TX 76102

Scale: 1:110

Duct System Summary
 Entire House

For: New Multiten - 6 Apt, GCR
 1104 Greer St, Fort Worth, TX 76102

Heating: 1434 Btu/h
 Cooling: 2367 Btu/h

External static pressure: 0.000 in H2O
 Pressure losses: 0.000 in H2O
 Available static pressure: 0.000 in H2O
 Supply return available pressure: 0.000 in H2O
 Lowest friction rate: 0.000 in H2O/100 ft
 Actual air flow: 0 cfm
 Total effective length (TEL): 0 ft

Supply Branch Detail Table

Name	Design Size (in)	Hg (in)	Cp (in)	Design TEL (ft)	Diag. (in)	HxW (in)	Duct Mat. (in)	Flt/air (in)	Fg/air (in)	Trunk
1	36	117	125	0	0	0	0	0	0	
2	36	117	125	0	0	0	0	0	0	
3	36	117	125	0	0	0	0	0	0	

Return Branch Detail Table

Name	Design Size (in)	Hg (in)	Cp (in)	Design TEL (ft)	Diag. (in)	HxW (in)	Duct Mat. (in)	Flt/air (in)	Fg/air (in)	Trunk
1	36	117	125	0	0	0	0	0	0	
2	36	117	125	0	0	0	0	0	0	
3	36	117	125	0	0	0	0	0	0	

Calculations approved by ACCA to meet all requirements of Manual J 9th Ed.

A MULTI FAMILY PROJECT:
 Normad Build One, LLC

Kashif Reaz
 1104 Greer St
 Fort Worth, TX

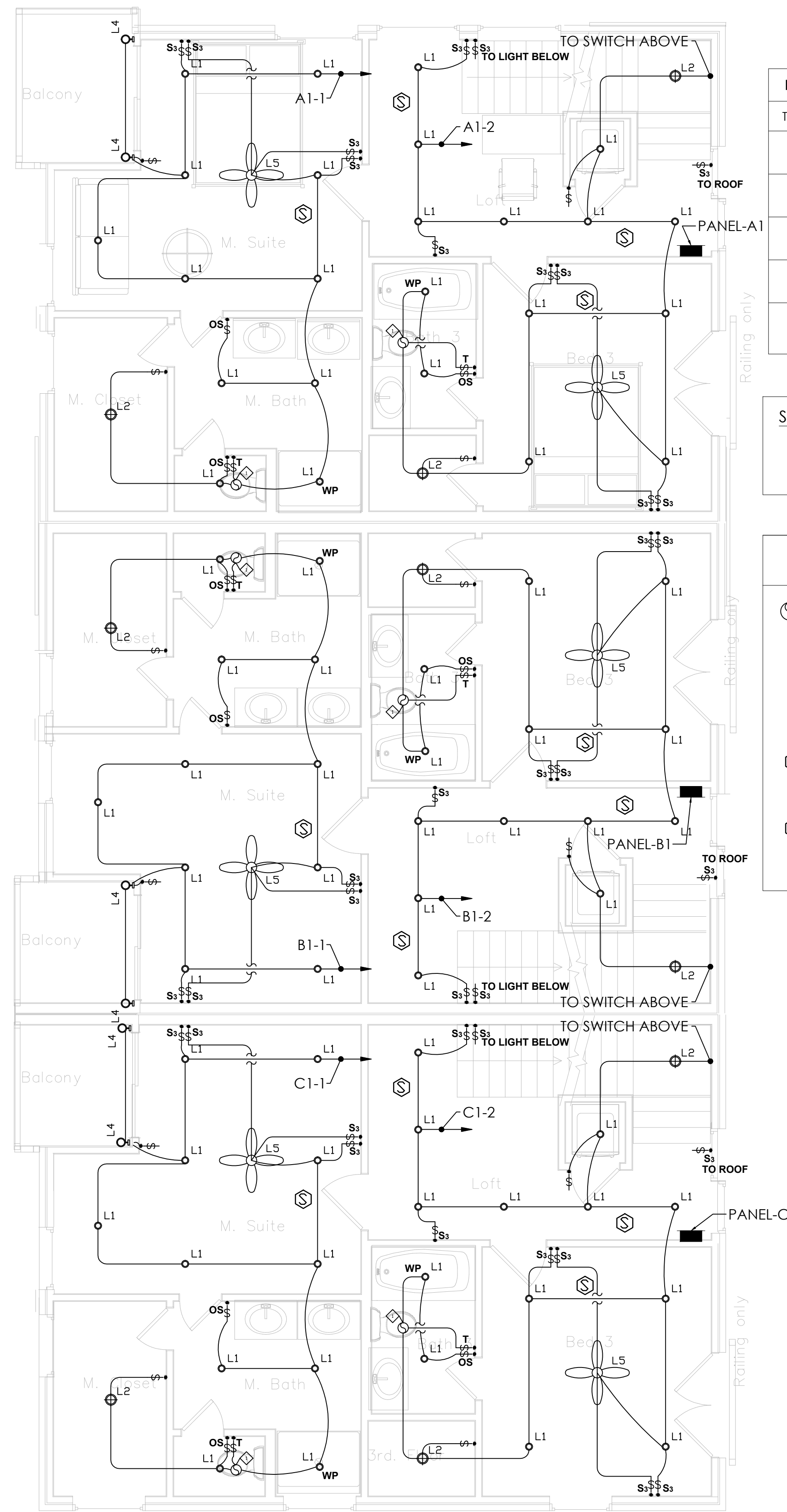
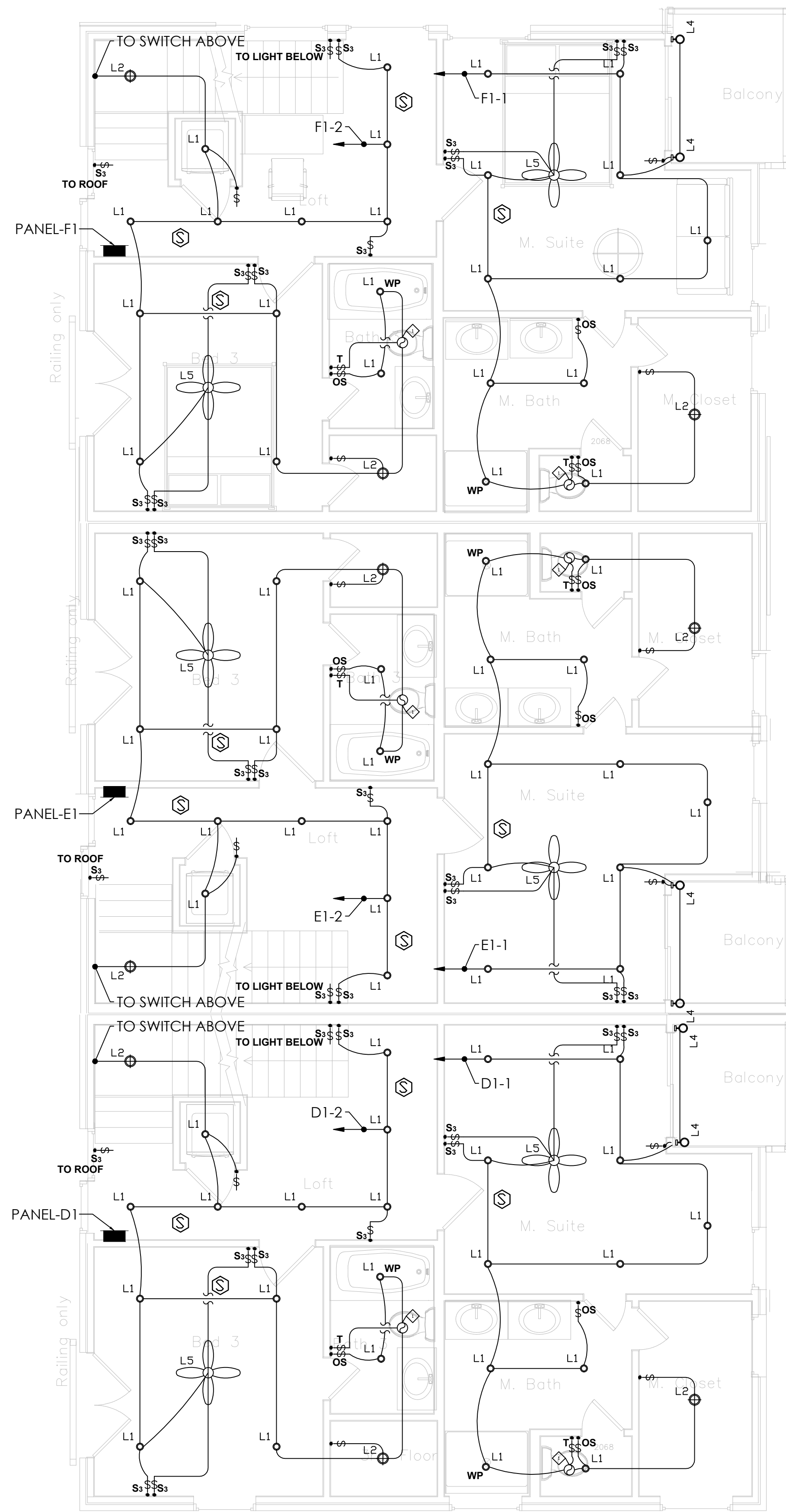
Kashif Reaz, 1104 Greer St
 Fort Worth, TX

HEAT LOAD CALCULATION.

Drawn By: M.F | Scale: NTS
 Date: 06.22.2023 | PROJ.NO.:

M 8.00

SHEET NO.



NOTE-GEN-CENLEFT

TAG	SYMBOL	DESCRIPTION	TYPE	W	V	MOUNT.	MANUF.	MODEL
L1	○	RECESSED DOWNLIGHT - 4"	LED	15W	120V	REC.	TBD	TBD
L2	⊕	SUSPENDED PENDANT LAMP	LED	15W	120V	SUSP.	TBD	TBD
L3	○	1'x4' SURFACE MOUNTED	LED	33W	120V	SUSP.	TBD	TBD
L4	⊕	OUTDOOR WALL SCNCE	LED	15W	120V	WALL	TBD	TBD
L5	⊗	SUSPENDED CEILING FAN LIGHT COMBO	LED	75W	120V	SUSP.	WESTINGHOUSE	7205900

SHEET NOTES:

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

ELECTRICAL LEGEND

⊗	JUNCTION BOX FOR EXHAUST FANS
OS	OCCUPANCY SENSOR
↔	ONE WAY LIGHTING SWITCH
↔↔	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

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

A MULTI FAMILY PROJECT:
Normad Build One, LLC
Kashif Reaz
1104 Greer St
Fortworth, TX

Kashif Reaz, 1104 Greer St
Fortworth, TX

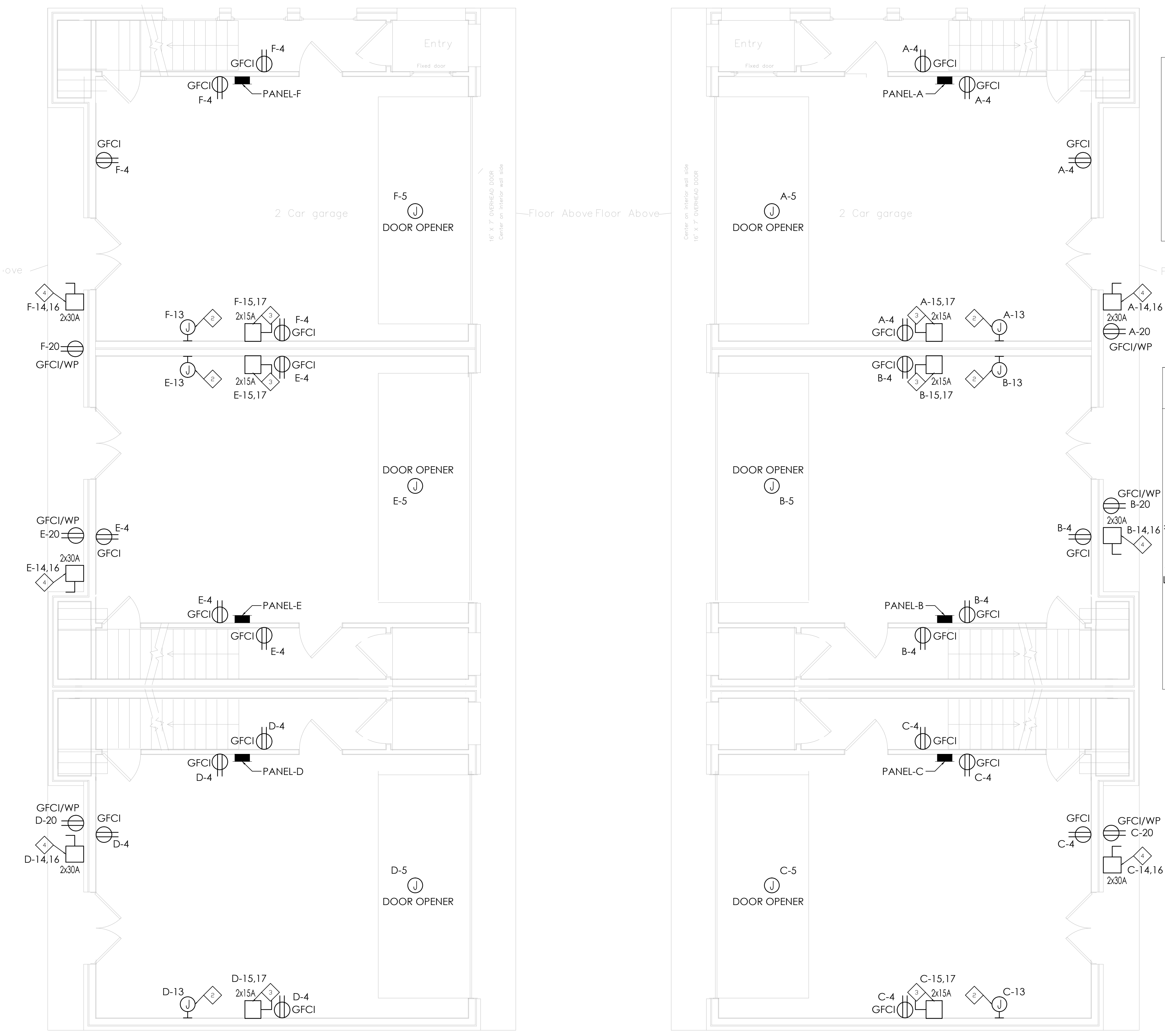
**LIGHTING LAYOUT
3RD FLOOR**

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

Date: 06.16.2023 PROJ.NO.:

E2.03

SHEET NO.



SHEET NOTES:

- 1 — PROVIDE NEMA 3R DISCONNECT SWITCH FOR EXHAUST FAN
- 2 — PROVIDE JUNCTION BOX FOR GAS WATER HEATER
- 3 — PROVIDE NEMA 3R DISCONNECT SWITCH FOR AHU
- 4 — 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 INDICATED
	WALL MOUNTED ELECTRIC JUNCTION BOX
	CEILING MOUNTED ELECTRIC JUNCTION BOX

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

A MULTI FAMILY PROJECT:
Normad Build One, LLC

Kashif Reaz, 1104 Greer St
Fortworth, TX

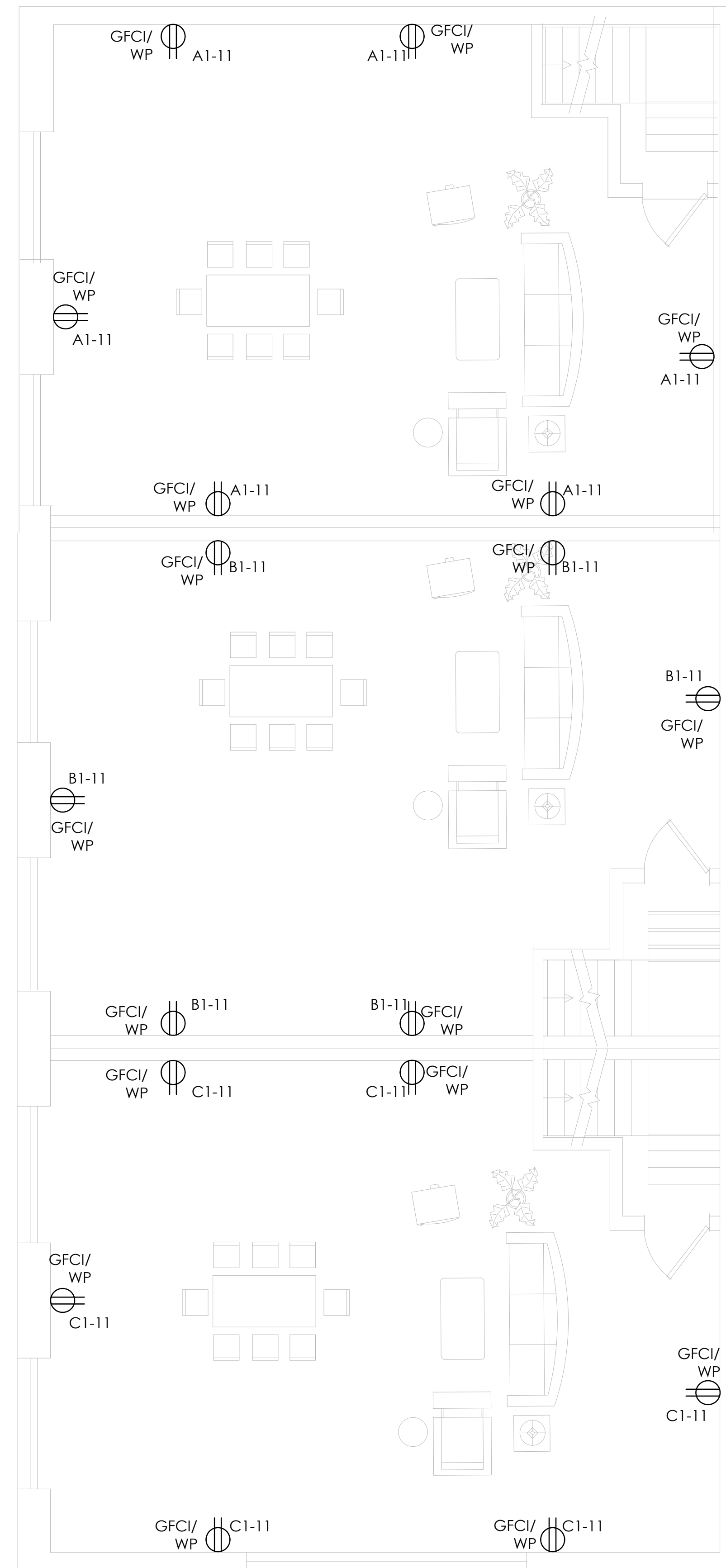
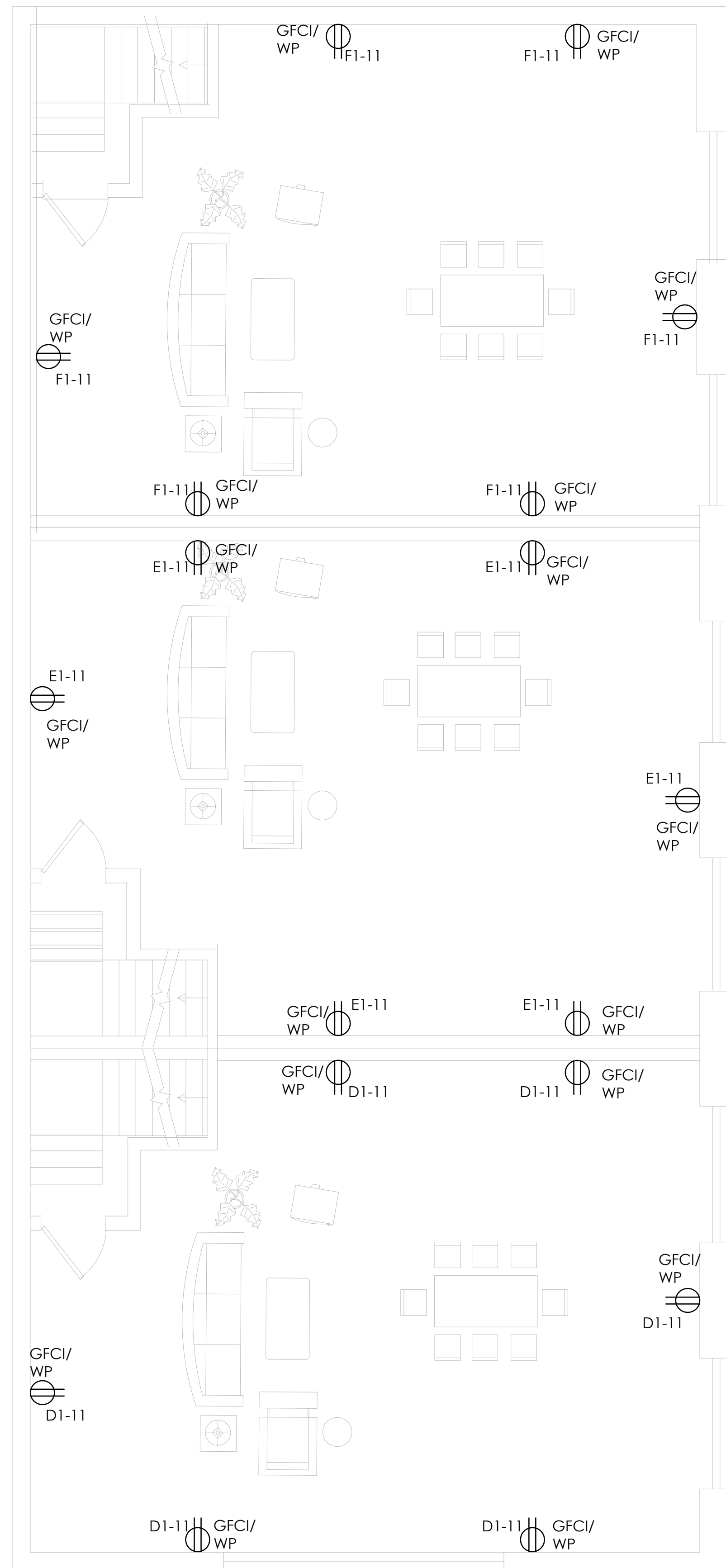
Kashif Reaz, 1104 Greer St
Fortworth, TX

**POWER LAYOUT
1ST FLOOR**

Drawn By: A.B Scale: 1/4" = 1'-0"
Date: 06.16.2023 PROJ.NO.:

E3.01

SHEET NO.



SHEET NOTES:

- 1 — PROVIDE NEMA 3R DISCONNECT SWITCH FOR EXHAUST FAN
- 2 — PROVIDE JUNCTION BOX FOR GAS WATER HEATER
- 3 — PROVIDE NEMA 3R DISCONNECT SWITCH FOR AHU
- 4 — 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 INDICATED
	WALL MOUNTED ELECTRIC JUNCTION BOX
	CEILING MOUNTED ELECTRIC JUNCTION BOX

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

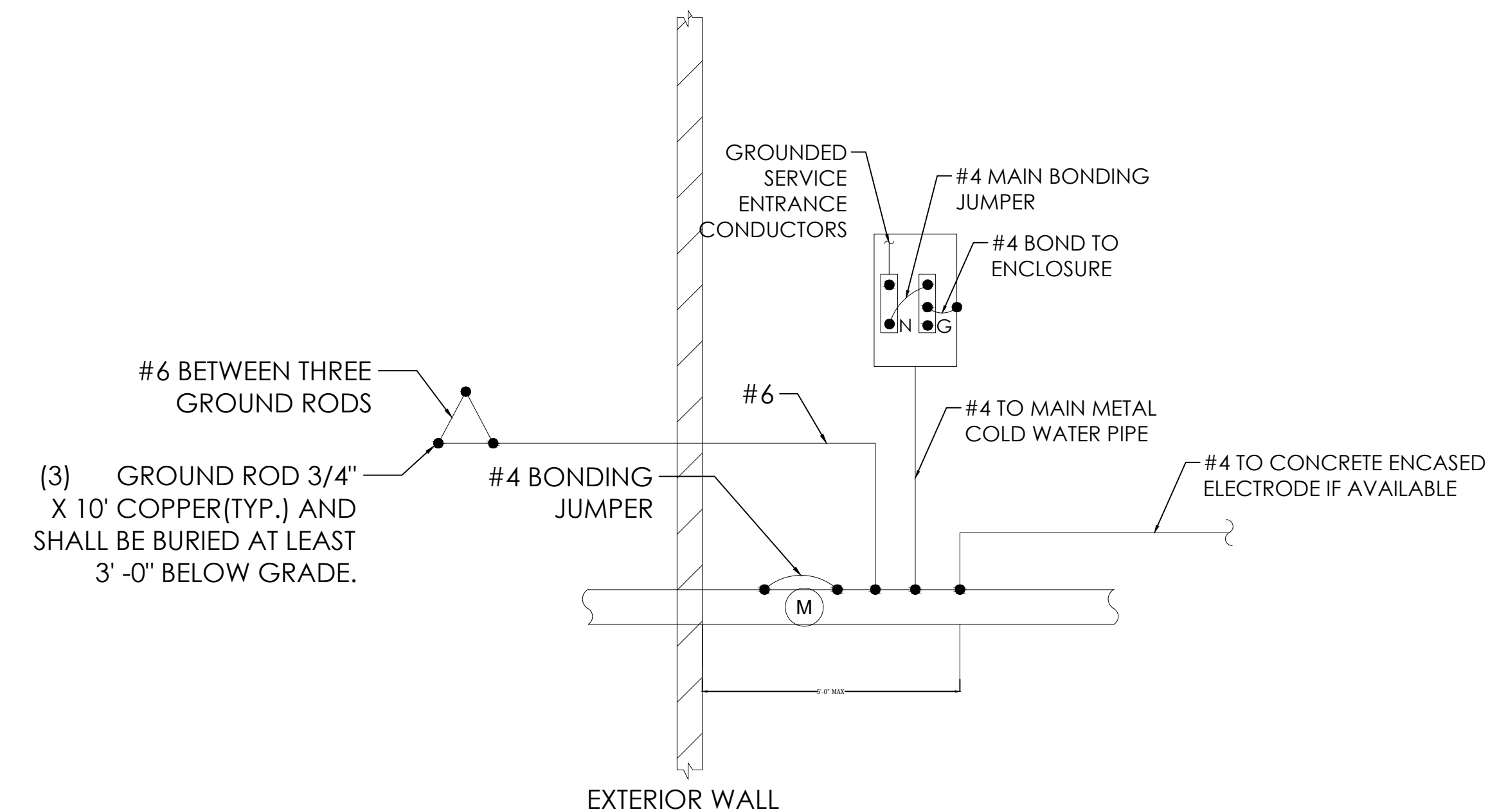
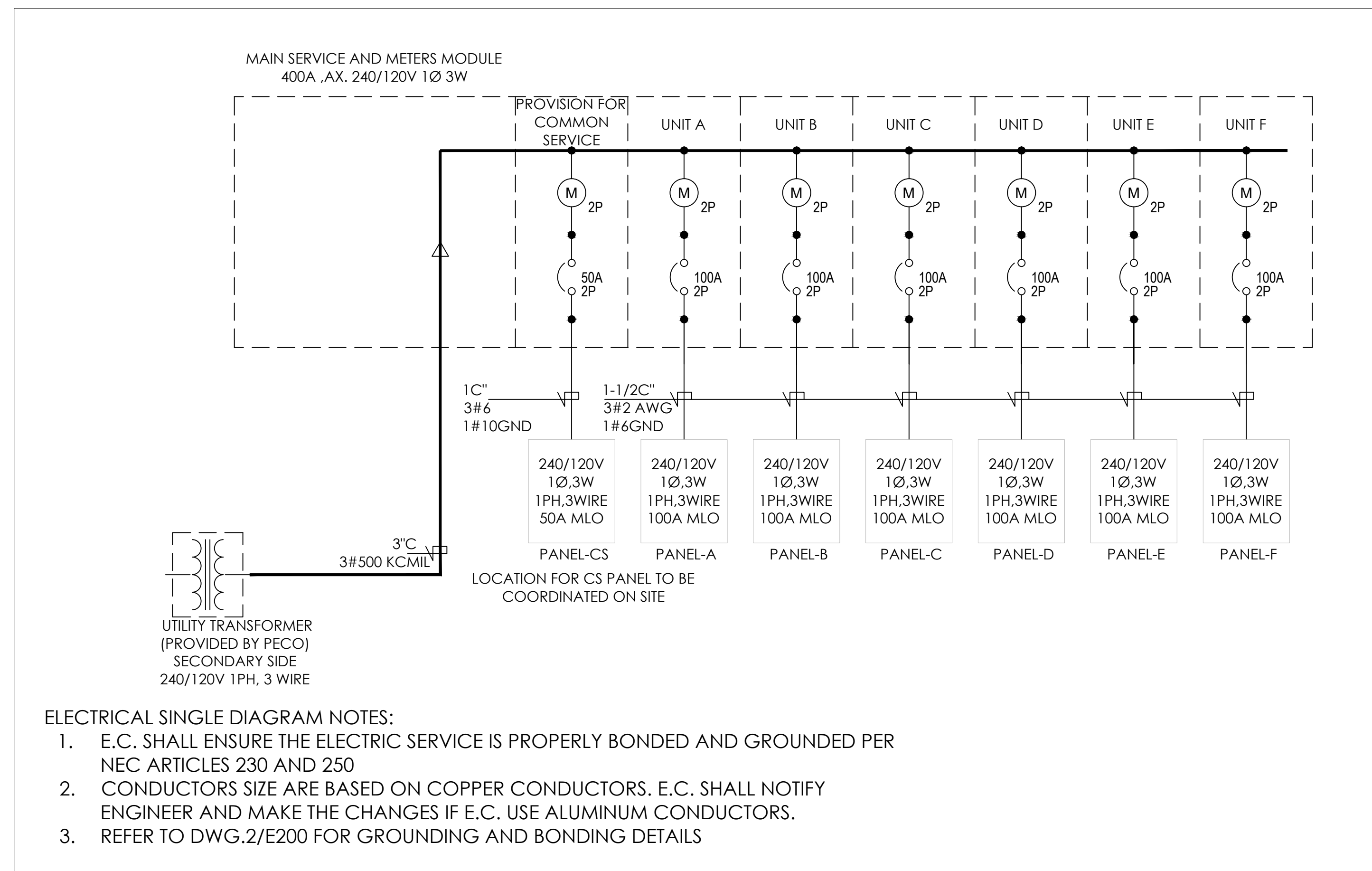
**POWER LAYOUT
ROOF FLOOR**

Drawn By: A.B Scale: 1/4" = 1'-0"
Date: 06.16.2023 PROJ.NO.:

E3.04

SHEET NO.

Multifamily Load Analysis - NEC 220.84												
Apartment N°	Floor/s	Area (ft ²)	Loads in VA - NEC 220.82									Connected Load (VA)
			Lighting & Receptacles Load	Small Appliances Load	Laundry Circuit	Dishwasher Circuit	Water Heater Circuit	Range Circuit	Fridge	Disposal	Air Conditioning Circuit - Cooling	
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 Connected Load (VA)											144,720	
Demand Factor - NEC 220.84 / 6-7 Apt											0.44	
Demand Load - Apartments (VA)											63,677	
Demand Load - House Services (VA)											1,080	
Demand Load - Total Building (VA)											64,757	
Demand Load (Amps) @ 240V											270	
Main Breaker Rating - NEC 240.6 (A)											400	
Number of Raceways											1	
Demand Load (Amps) @ 240V per Service Conductor											269.8	
Each Main Service Conductor - NEC 310.15 (B) (16) - Copper @ 75°C - 310 Amps											500 Kcmil	
CONDUIT SIZE											1 SET OF 3" EMT CONDUIT	



ELECTRICAL GROUNDING AND BONDING NOTES:

- E.C. SHALL ENSURE THE ELECTRIC SERVICE IS PROPERLY BONDED AND WALL GROUNDED PER NEC ARTICLES 230 AND 250.
- CONDUCTORS SIZE ARE BASED ON COPPER CONDUCTORS.
- BONDING 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

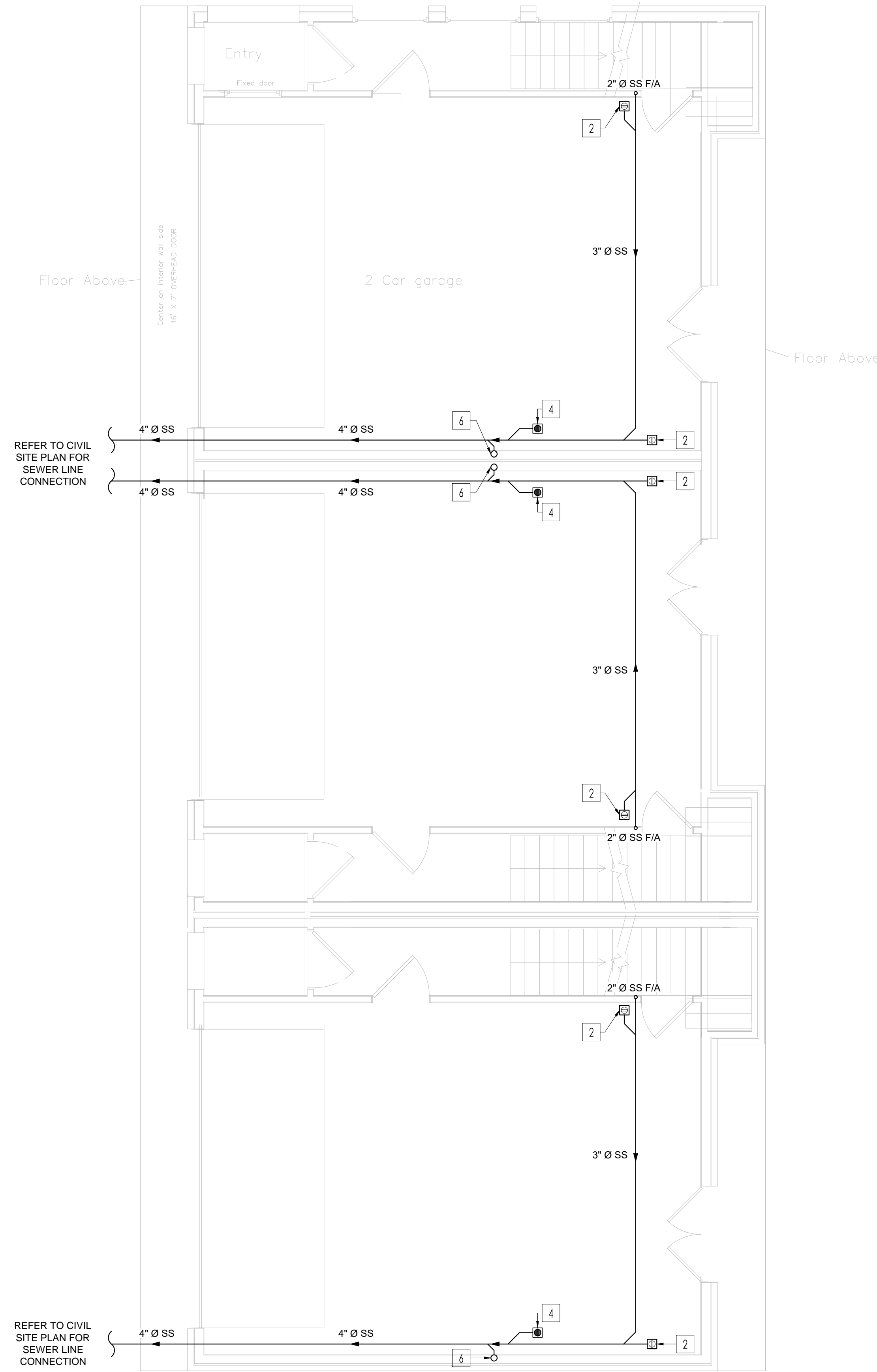
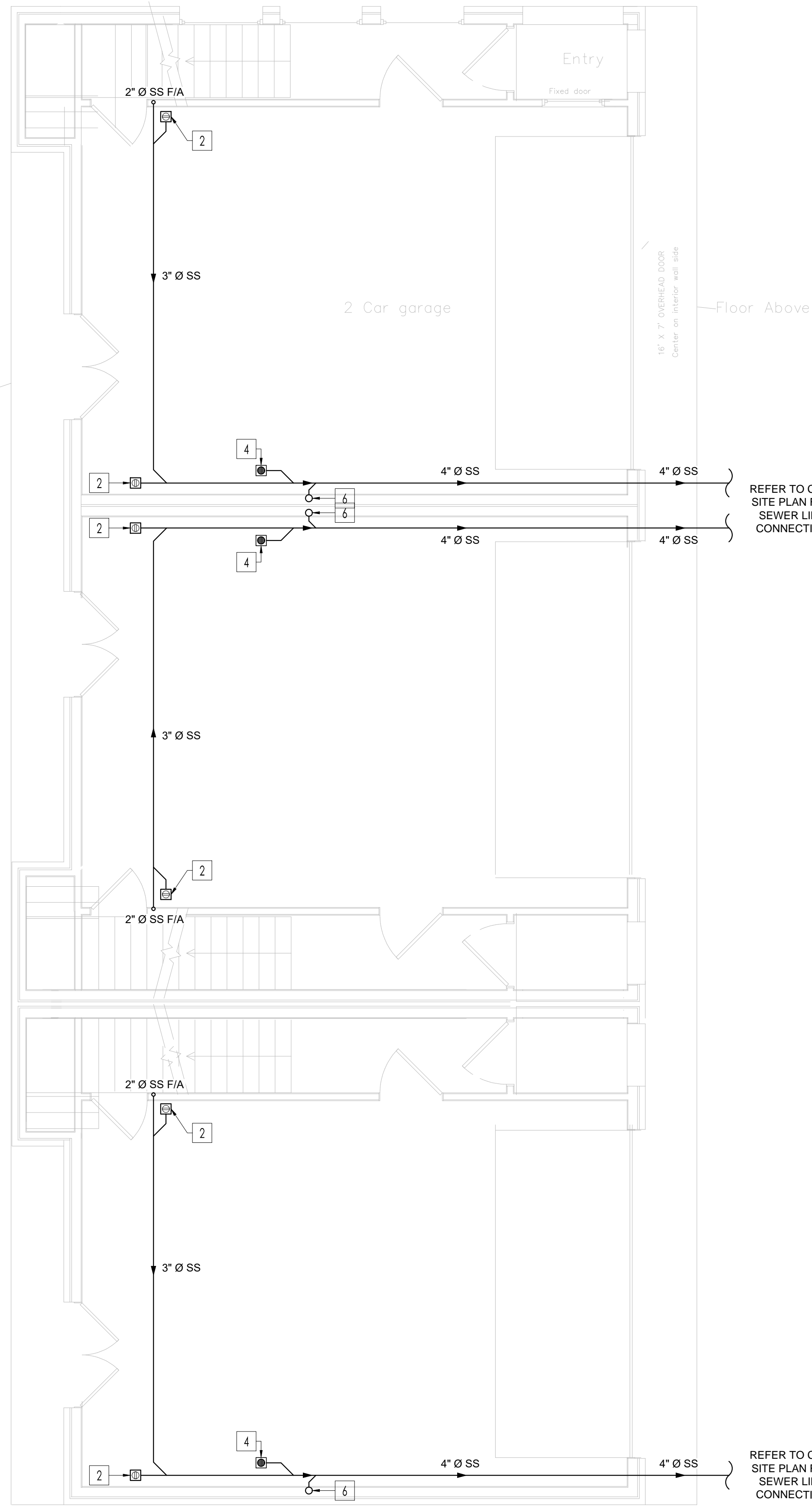
**SINGLE LINE DIAGRAM
& GROUNDING
DETAILS**

Drawn By: A.B Scale: NTS

Date: 06.16.2023 PROJ.NO.:

E4.01

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

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

A MULTI FAMILY PROJECT:
Normad Build One, LLC

Kashif Reaz
1104 Greer St
Fortworth, TX

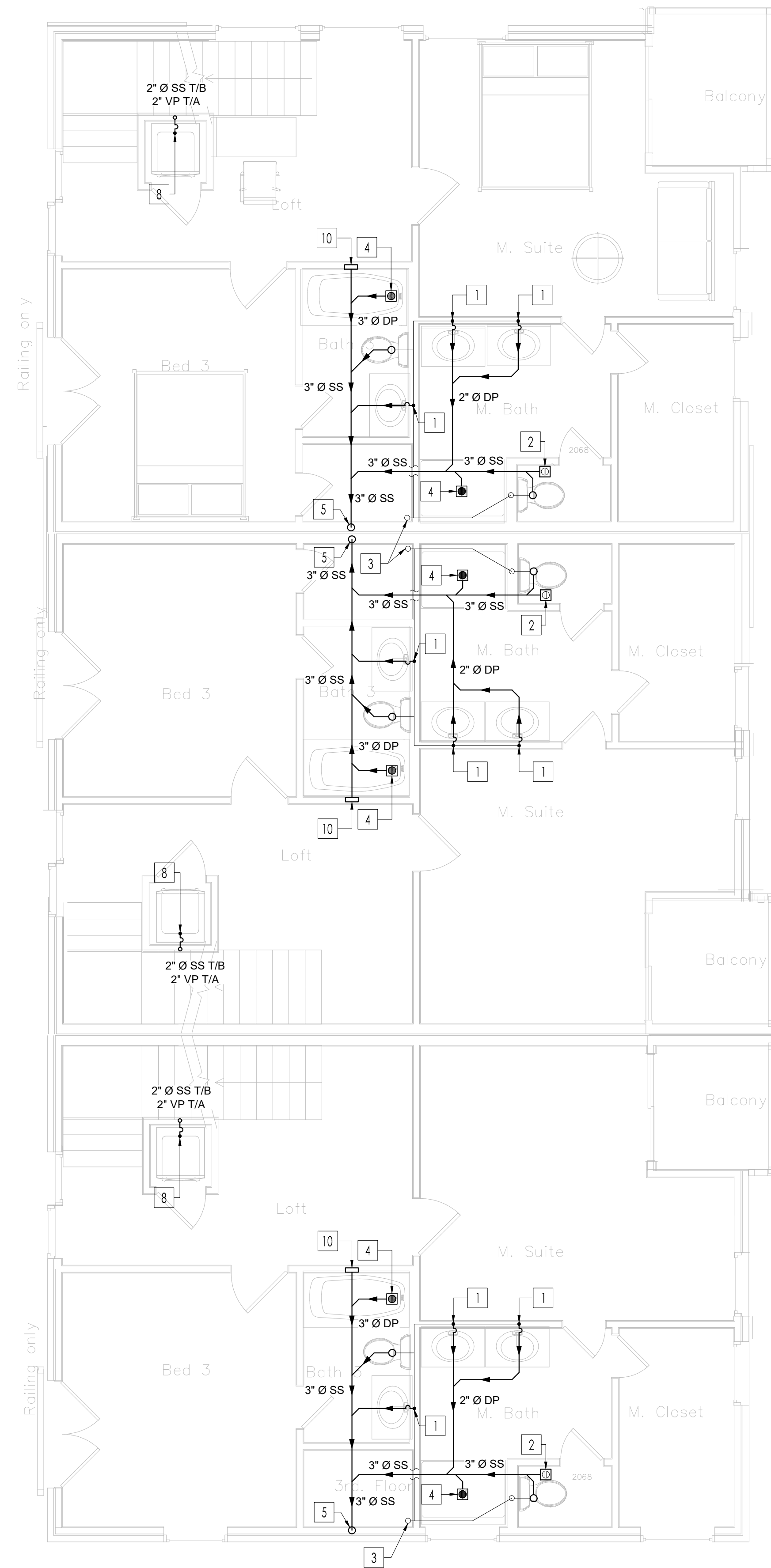
Kashif Reaz, 1104 Greer St
Fortworth, TX

**DRAINAGE FIRST
FLOOR LAYOUT.**

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

P 2.00

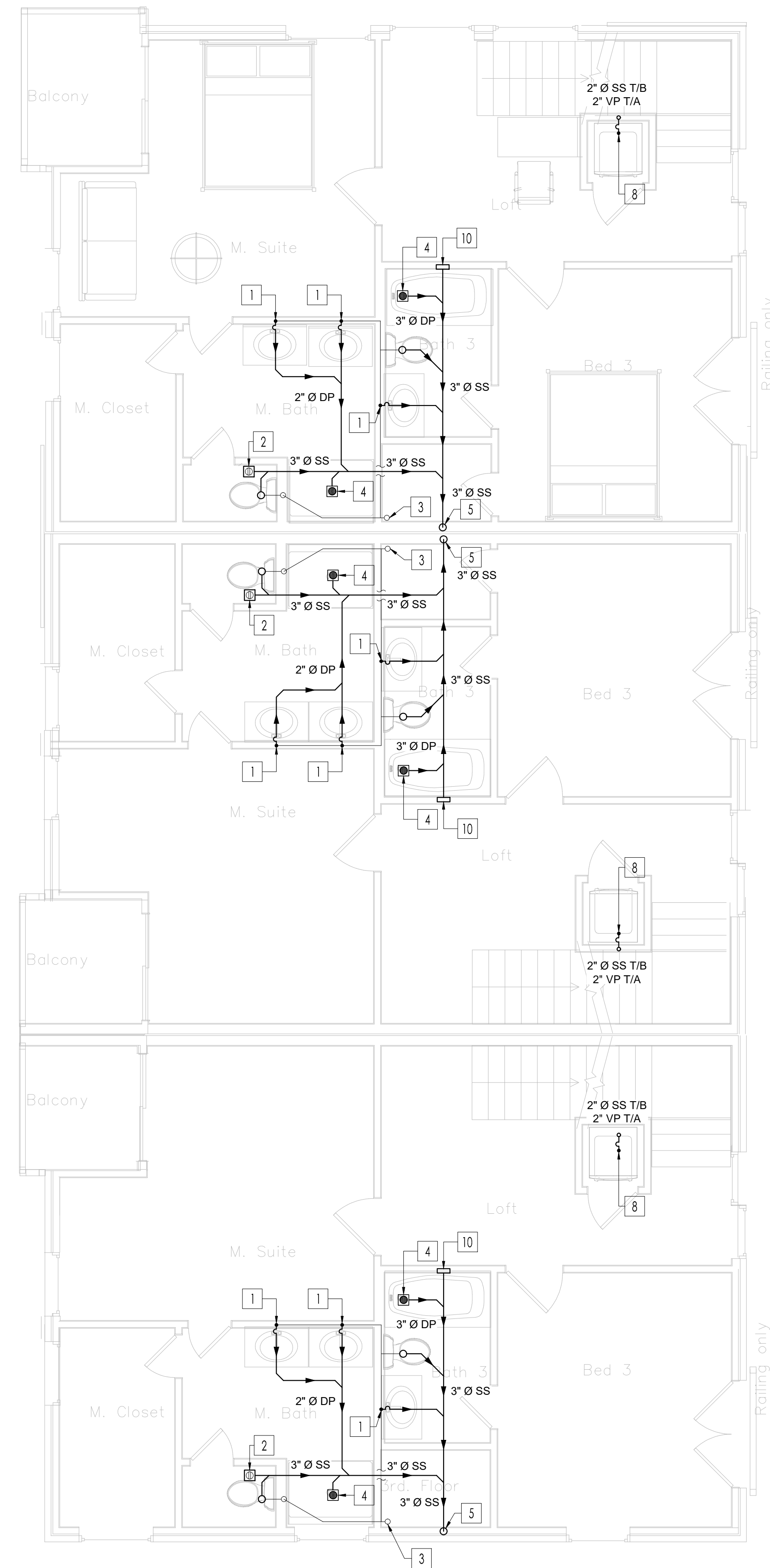
SHEET NO.



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.



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

A MULTI FAMILY PROJECT:
Normad Build One, LLC

Kashif Reaz
1104 Greer St
Fortworth, TX

Kashif Reaz, 1104 Greer St
Fortworth, TX

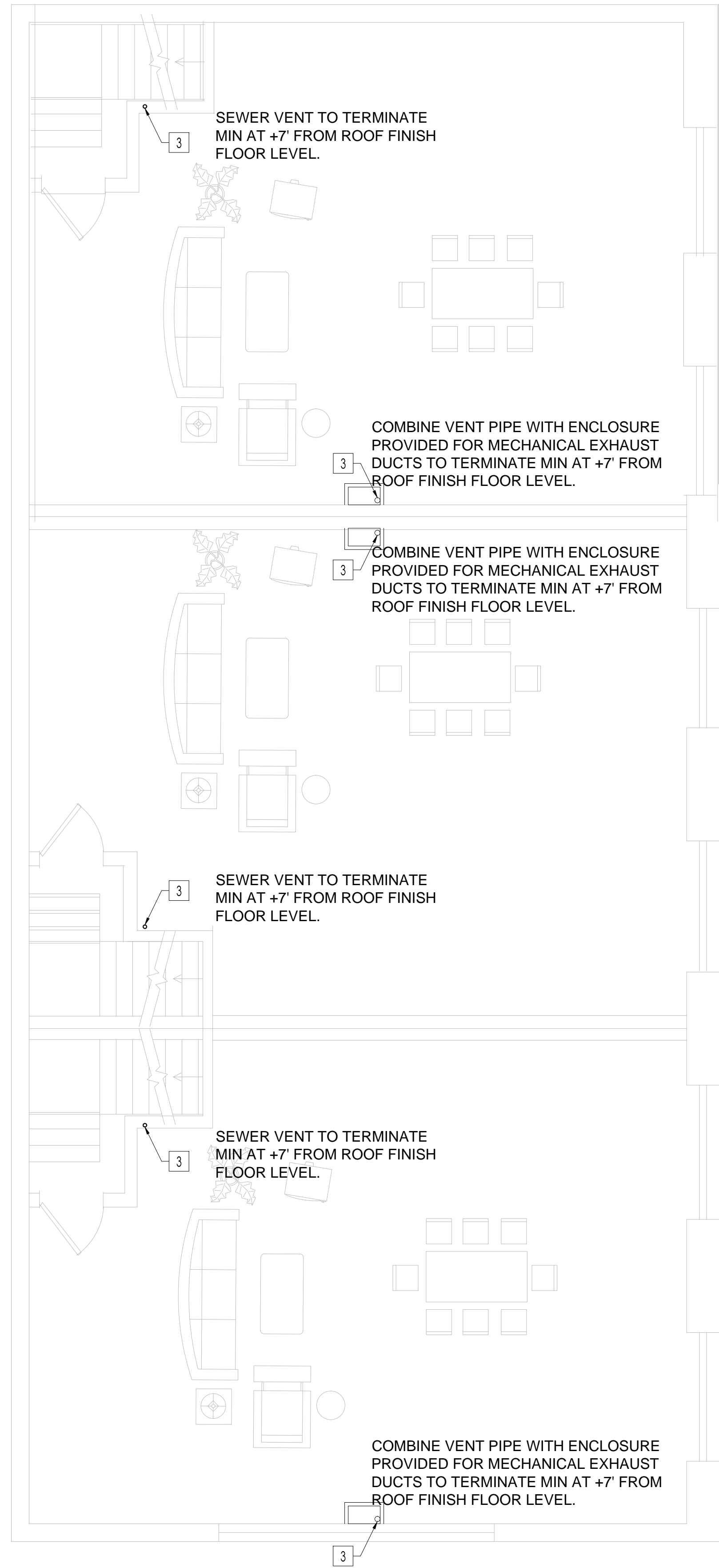
**DRAINAGE THIRD
FLOOR LAYOUT.**

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

Date: 06.22.2023 PROJ.NO.:

P 4.00

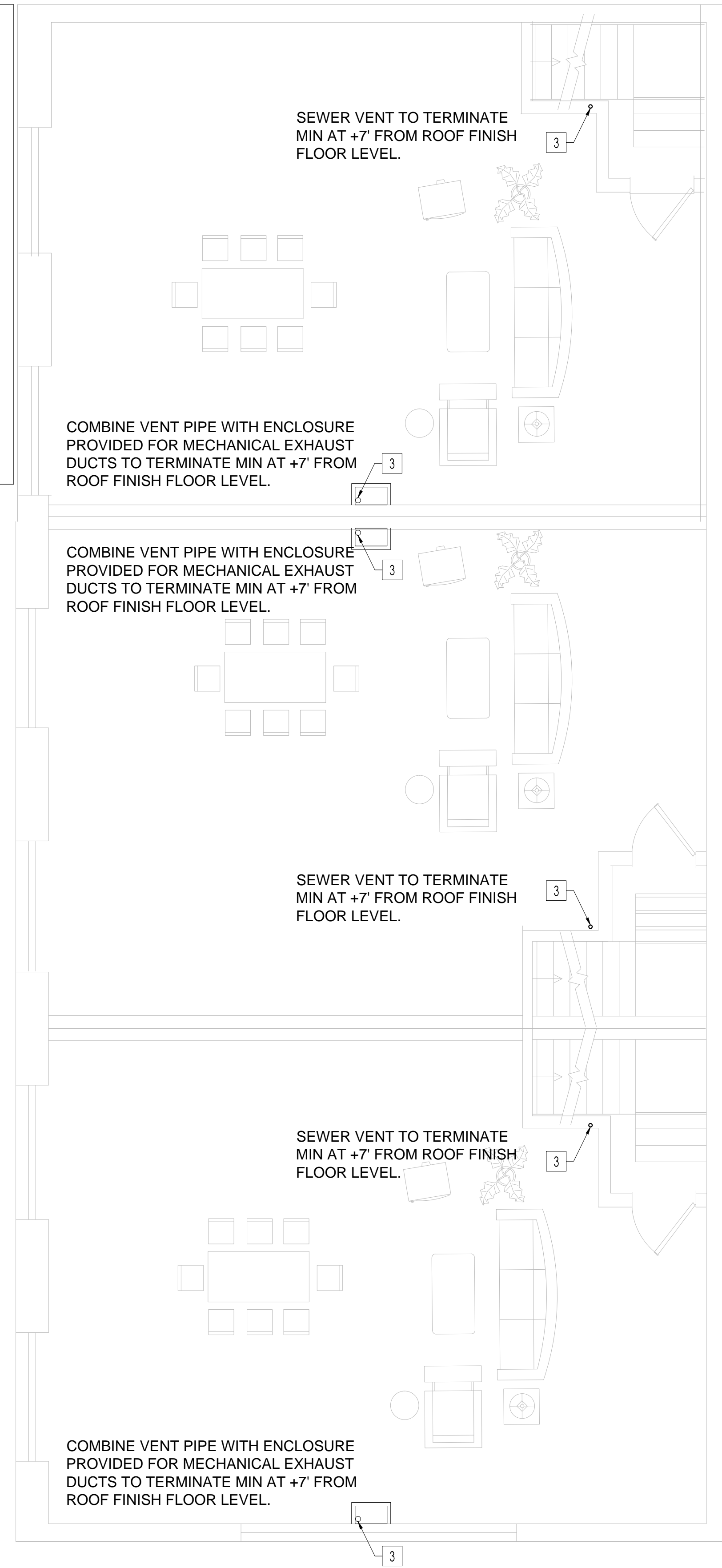
SHEET NO.



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.



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

A MULTI FAMILY PROJECT:
Normad Build One, LLC

Kashif Reaz
1104 Greer St
Fortworth, TX

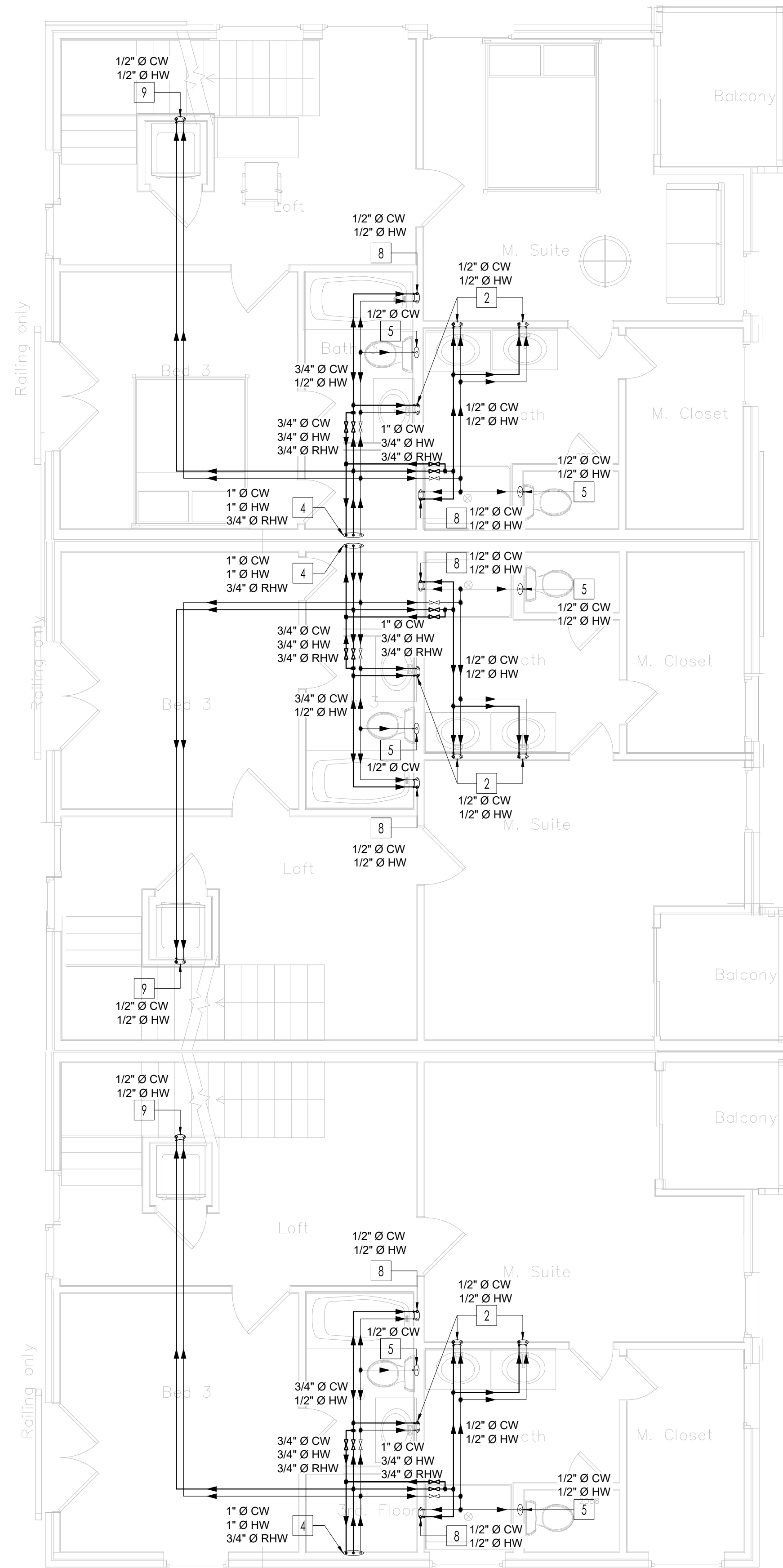
Kashif Reaz, 1104 Greer St
Fortworth, TX

DRAINAGE ROOF FLOOR.

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

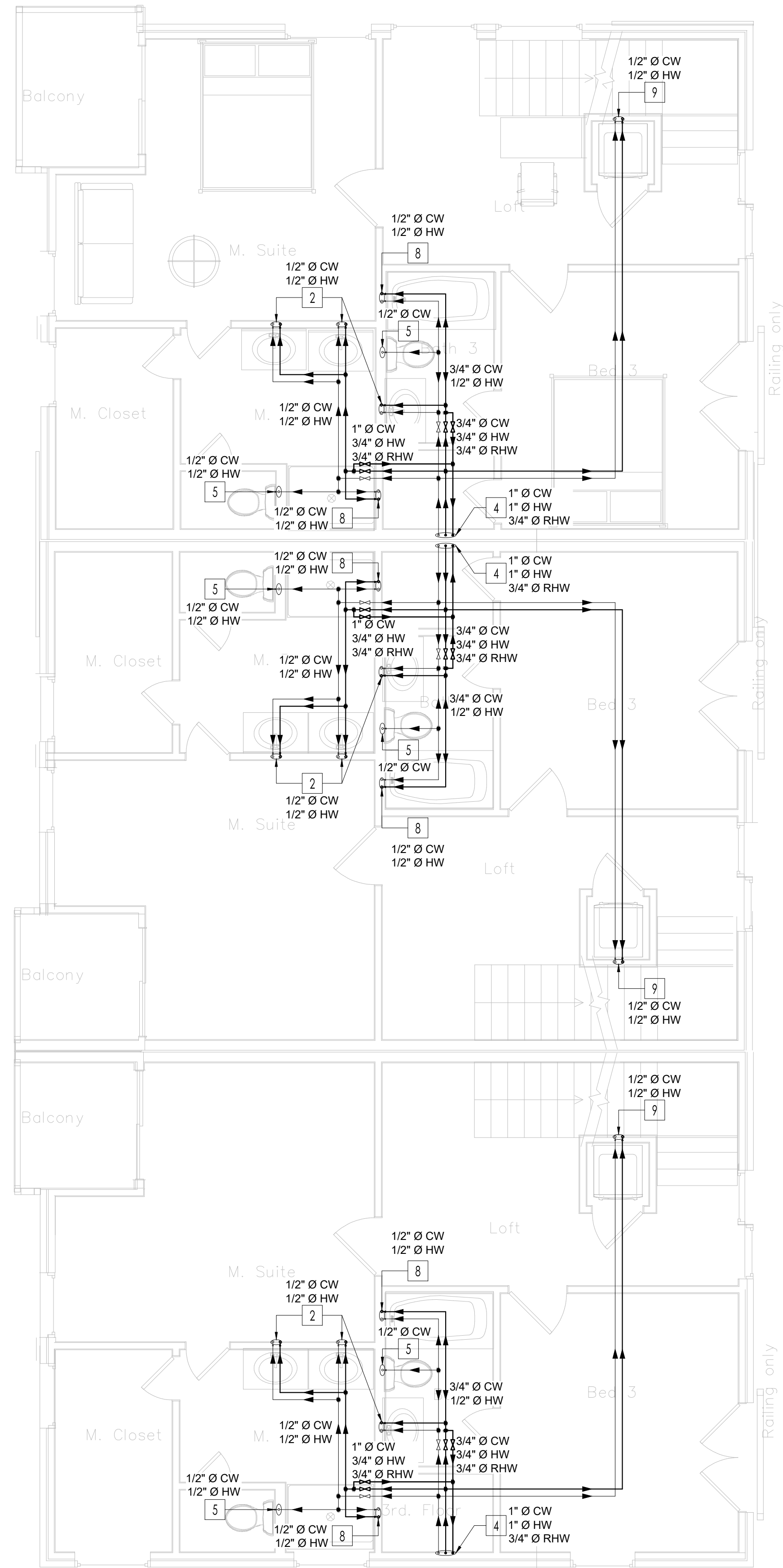
P 5.00

SHEET NO.



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.
- 7 — DCW FROM BELOW GRADE UP IN WALL.
DCW & DHW DROP TO BATHTUB & RAIN SHOWER TERMINALS WITH PRESSURE / TEMPERATURE ANTI-SCALDING BALANCING VALVE.
- 8 — DCW AND/OR DHW DROP FROM CEILING LEVEL TO BELOW WITH WATER HAMMER ARRESTOR.
- 9 —



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

A MULTI FAMILY PROJECT:
Normad Build One, LLC

Kashif Reaz
1104 Greer St
Fortworth, TX

Kashif Reaz, 1104 Greer St
Fortworth, TX

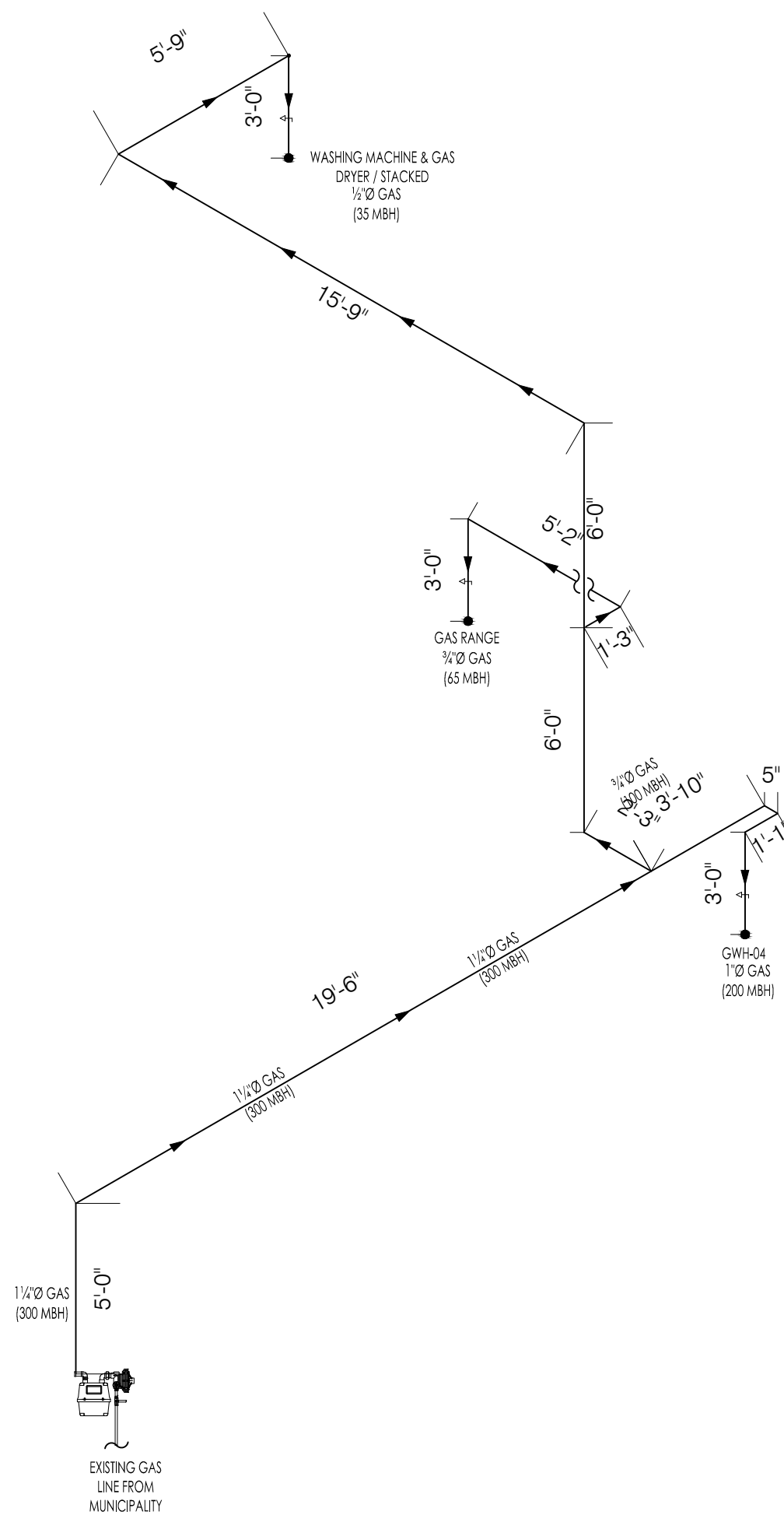
**WATER SUPPLY
THIRD FLOOR
LAYOUT.**

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

Date: 06.22.2023 PROJ.NO.:

P 8.00

SHEET 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.
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.
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.
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 1/8" PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT 1/16" PER FOOT.
11. ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT 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:

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.
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.
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 1/4" PER FOOT. PIPING 4" AND LARGER SHALL BE SLOPED AT 1/8" PER FOOT.
11. ALL CONDENSATE DRAIN PIPING SHALL BE SLOPED AT 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

TABLE 402.4(2)														
SCHEDULE 40 METALLIC PIPE														
Gas		Natural												
Inlet Pressure		Less than 2 psi												
Pressure Drop		0.5 in. w.c.												
Specific Gravity		0.6												
PIPE SIZE (inch)														
Nominal	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
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:

- 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	MBH
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

Kashif Reaz, 1104 Greer St
Fortworth, TX

**GAS CODE CHECK
AND PIPE SIZING
TABLE**

Drawn By: M.F Scale: NTS

Date: 06.22.2023 PROJ.NO.:

P12.00

SHEET NO.