

PLANS FOR CONSTRUCTION OF:

# MEA HVAC CONTROLS & VENTILATION UPGRADE PROJECT

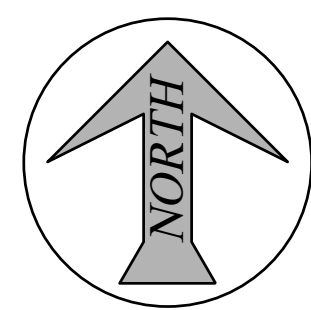
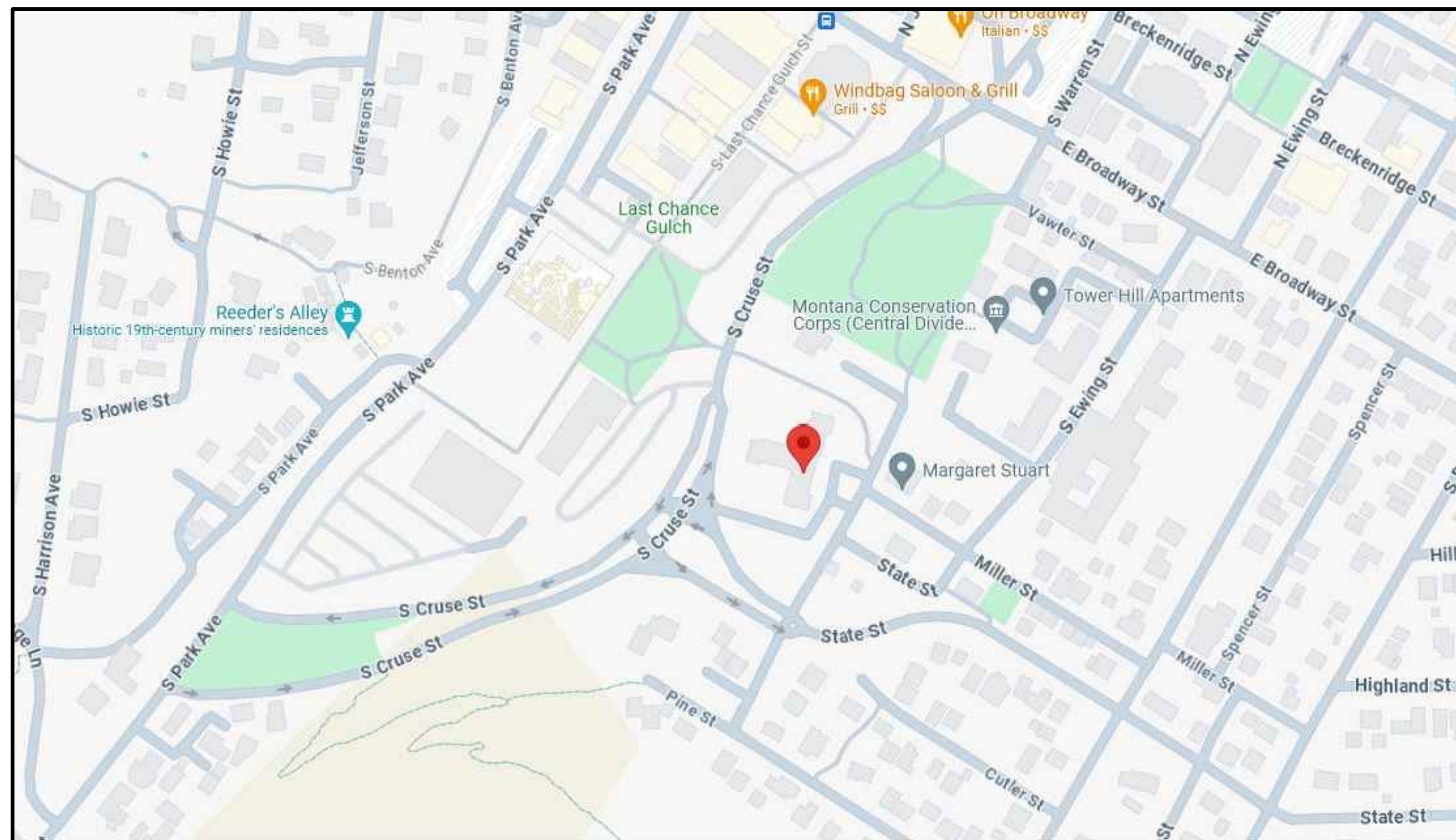
HHA PROJECT #: HHA-FY25-IFB-002

100 NORTH WARREN ST,  
HELENA, MONTANA 59601

## SHEET INDEX

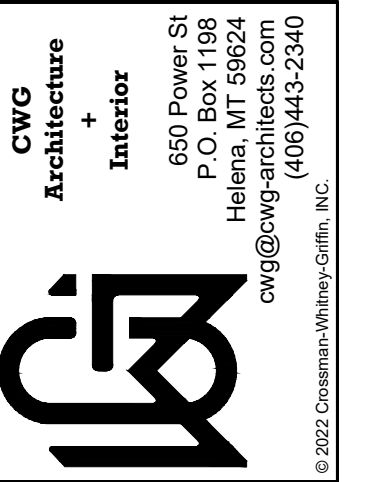
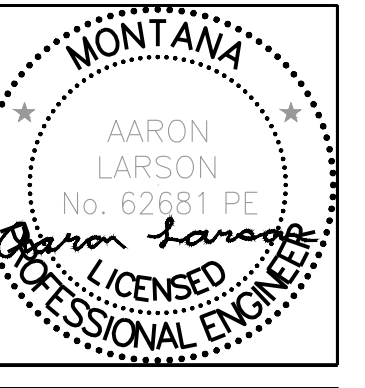
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FLOOR PLANS, LEGEND, SCHEDULES	M-2

- NOTE:
- CONTRACTOR TO COORDINATE ALL ACTIVITY WITH THE OWNER AND PROVIDE ALL NECESSARY PROTECTIVE COVERS, BARRIERS, ETC. TO PROTECT EXISTING EQUIPMENT, OWNER'S OPERATIONS, AND TENANT'S PROPERTY.
  - CONTRACTOR TO PROVIDE COMPLETE O&M MANUAL IN ELECTRONIC FORMAT AT PROJECT COMPLETION.
  - CONTRACTOR TO PROVIDE OWNER TRAINING SESSION AT PROJECT COMPLETION WITH CONTROLS SUPPLIER FACTORY TRAINING STAFF.



AREA MAP

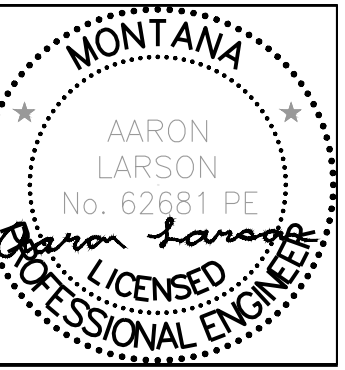
**MECHANICAL DESIGN BY:**  
MILLENIUM ENGINEERING, INC.



REVISIONS

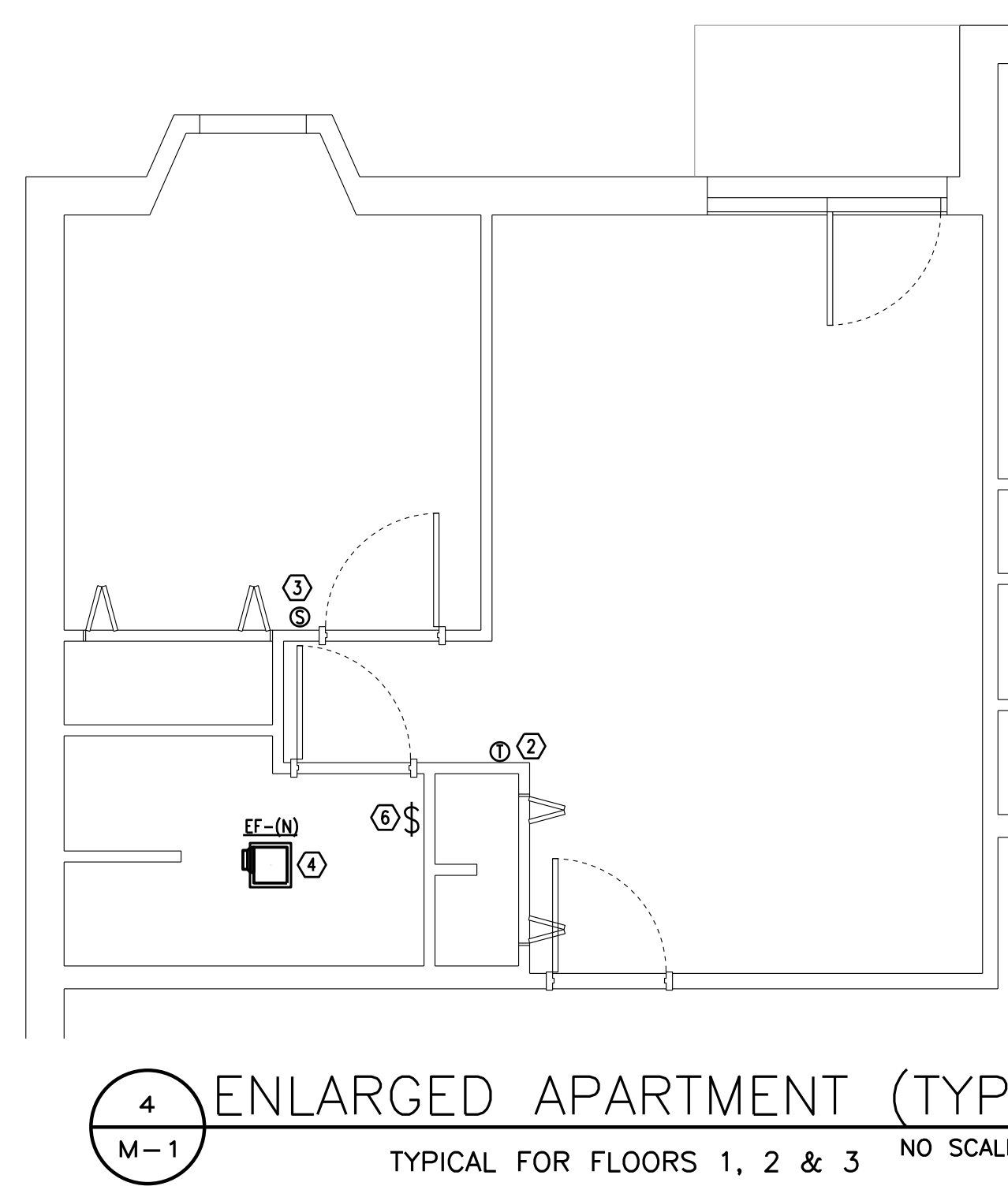
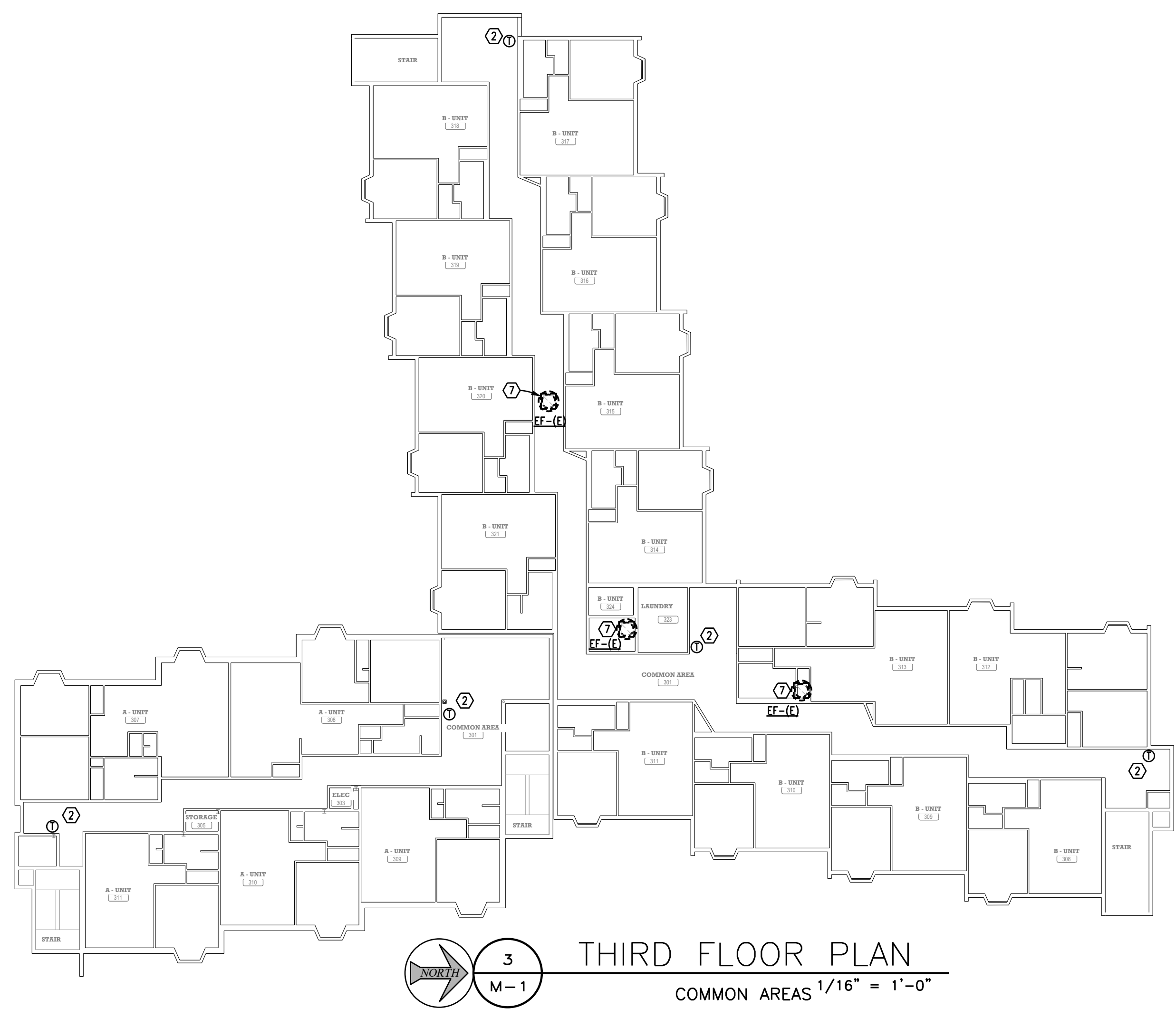
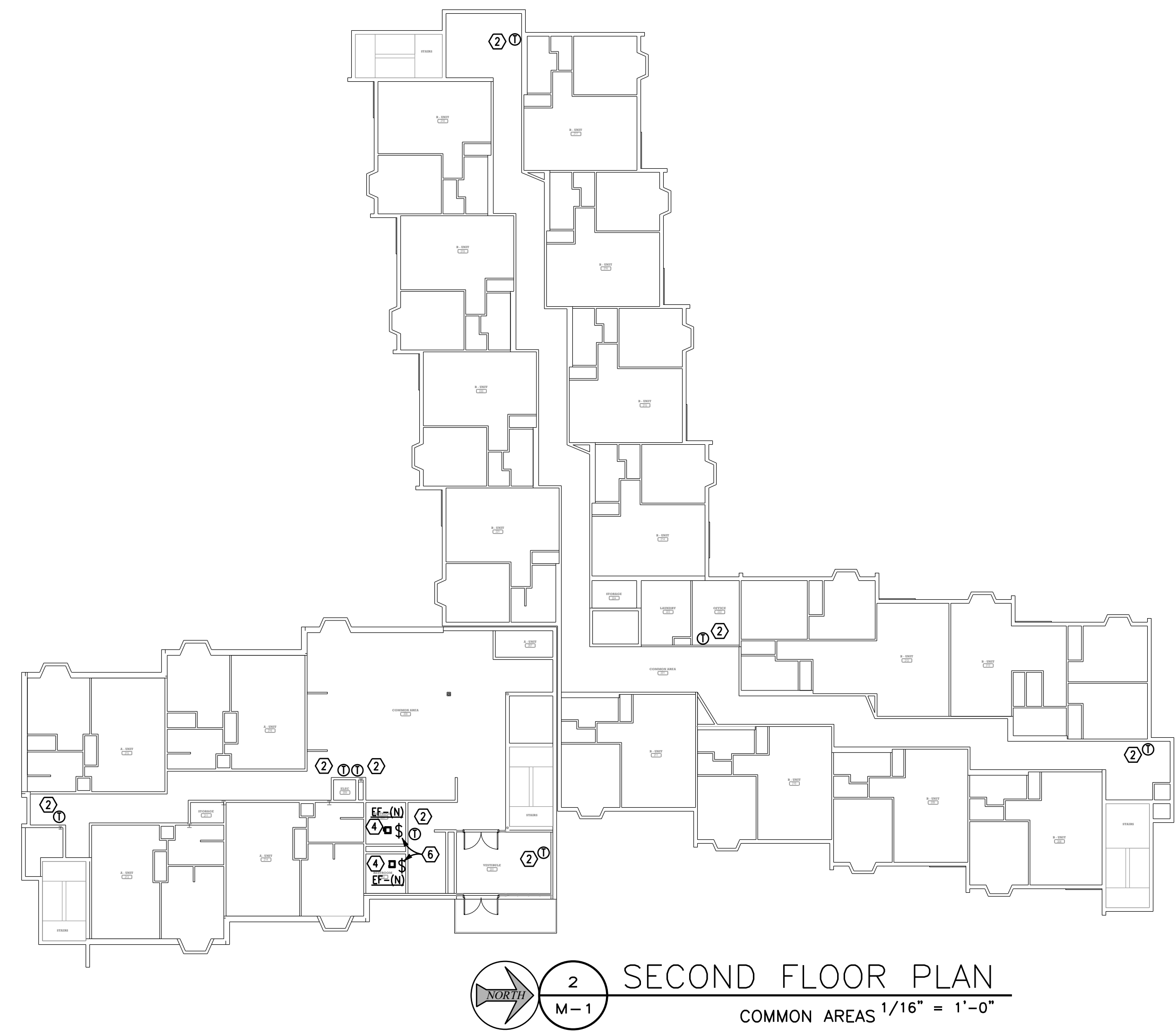
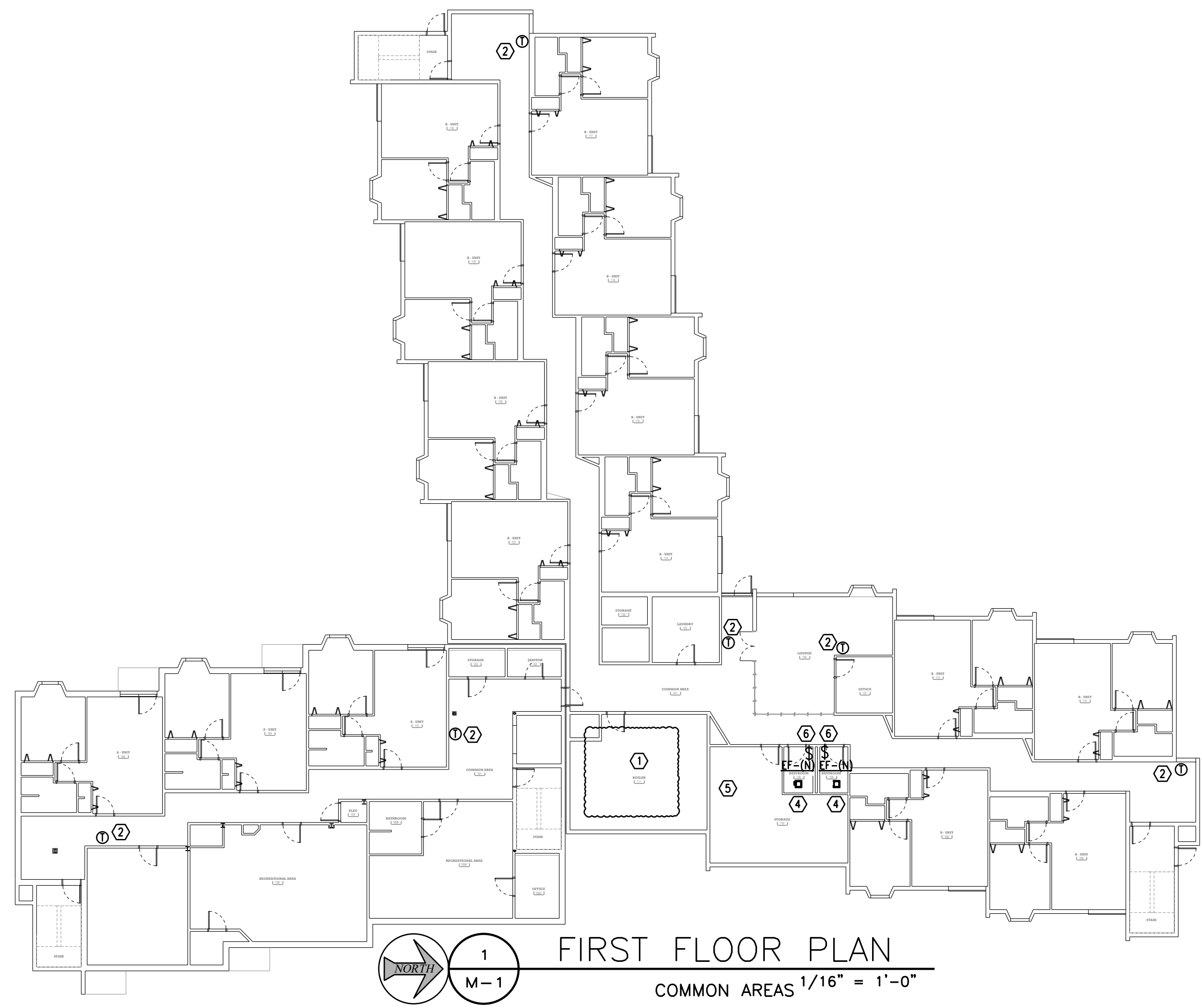
HELENA HOUSING AUTHORITY  
 MEA HVAC CONTROLS & VENTILATION UPGRADE PROJECT  
 100 North Warren St, Helena, MT 59601  
 TITLE PAGE

DRAWN BY	BJB
APPROVED	AML
DATE	8/26/24
<b>T-1</b>	



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NO.	DATE	REVISIONS



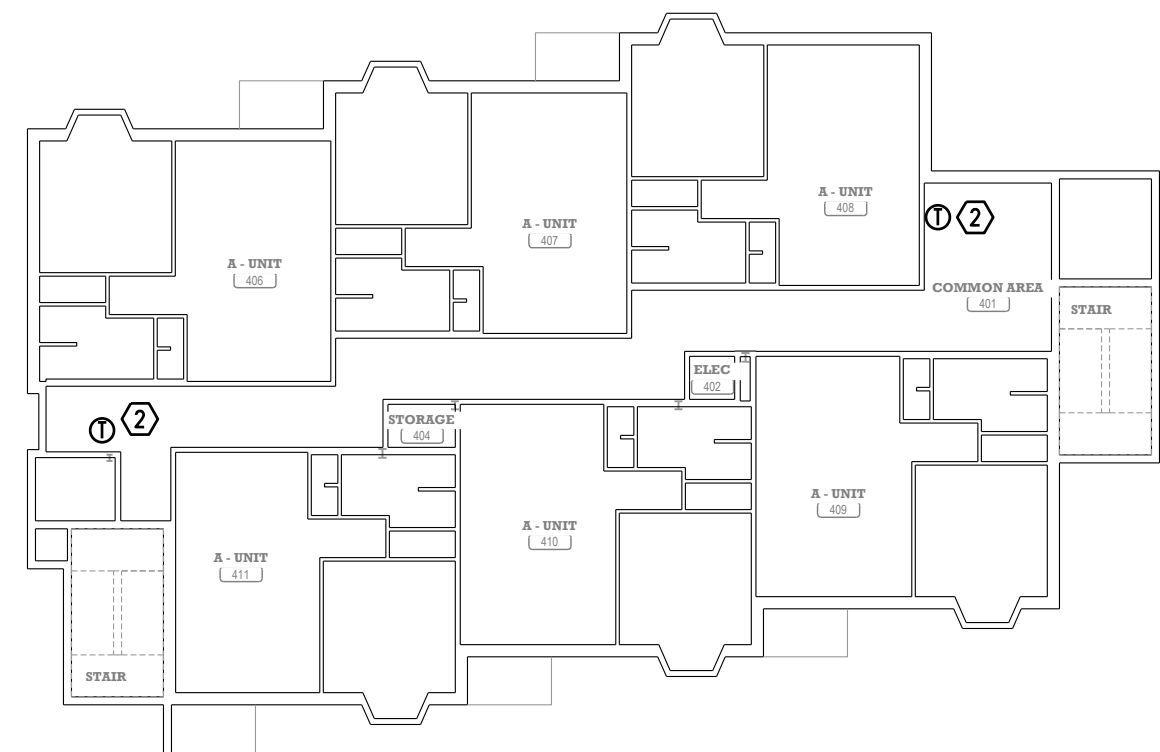
- WORK NOTES:
- EXISTING CONTROLS IN BOILER ROOM AND O/A SENSOR TO REMAIN IN SERVICE AT ALL TIMES.
  - FURNISH & INSTALL NEW VERDANT MODEL V43-TR-XMF WIRED THERMOSTAT WITH BUILT IN OCCUPANCY DETECTION AND WIRELESS NETWORK ACCESSIBILITY. RECONNECT TO EXISTING CONTROL WIRING.
  - BID ALTERNATE #1: FURNISH & INSTALL VERDANT MODEL ZX-AOS WIRELESS OCCUPANCY SENSOR IN BEDROOM
  - REMOVE EXISTING EXHAUST FAN. FURNISH & INSTALL NEW BATHROOM EXHAUST FAN EF-(N) IN LOCATION OF EXISTING FAN AND RECONNECT TO EXISTING POWER AND EXISTING EXHAUST DUCT. CONTRACTOR SHALL CLEAN EXHAUST DUCTWORK FROM FAN TO EXTERIOR WALL TO ENSURE THERE ARE NO OBSTRUCTIONS. MODIFY GYP. BOARD CEILING AS NECESSARY FOR NEW EXHAUST FAN.
  - FURNISH & INSTALL VERDANT MODEL ZX-OL-U ONLINE CONNECTION KIT. COORDINATE WITH OWNER AND VERDANT TO ENABLE REMOTE CONNECTION.
  - REMOVE EXISTING FAN SWITCH. FURNISH AND INSTALL NEW SINGLE POLE LOCKING SWITCH WITH KEY. CONTRACTOR TO VERIFY AMP RATING AND TRIM COLOR IN FIELD AND MATCH EXISTING.
  - DEMO EXISTING HALLWAY EXHAUST FANS (QTY: 3) LOCATED ON THE ROOF OF THE 3RD FLOOR WING. FILL EXISTING ROOF CURB WITH BATT INSULATION AND CAP WITH GALVANIZED STEEL CAP AND SEAL WATER TIGHT. BLANK OF EXHAUST GRILLES WITH BLACK PAINTED SHEET METAL ON 1ST, 2ND AND 3RD FLOOR.

HELENA HOUSING AUTHORITY  
MEGA HVAC CONTROLS & VENTILATION UPGRADE PROJECT  
100 North Warren St, Helena, MT 59601  
FLOORS ONE THROUGH THREE

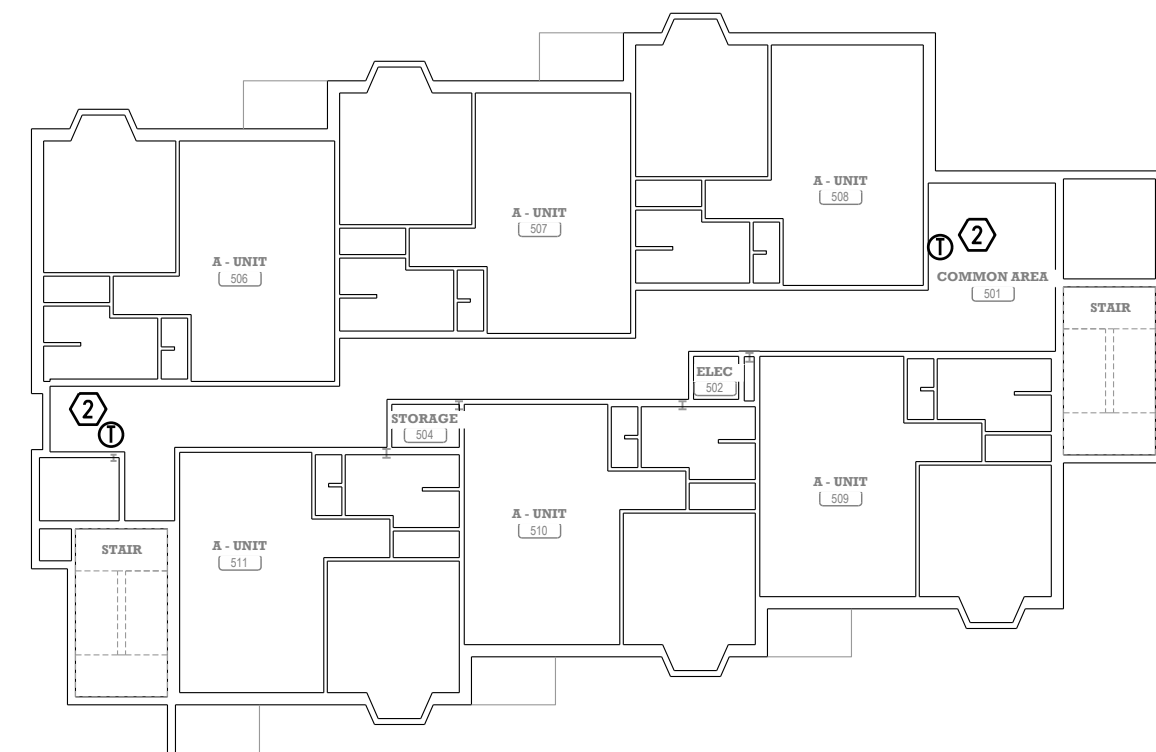
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DATE 8/26/24

**M-1**

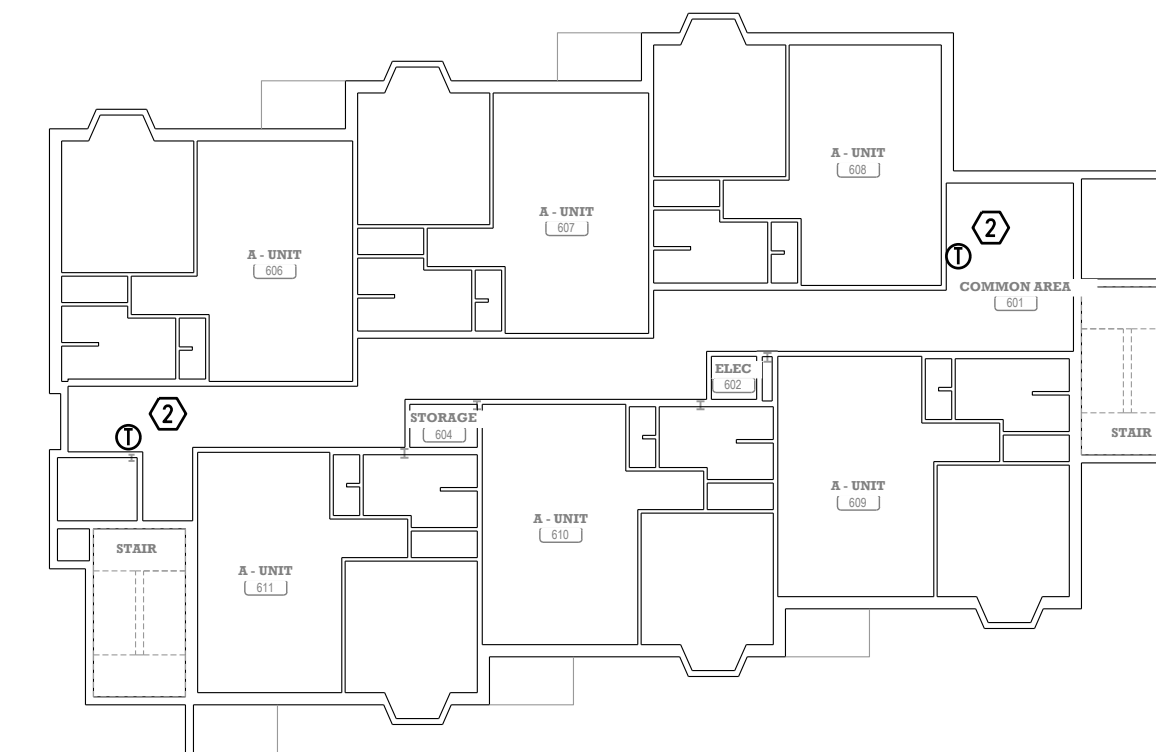




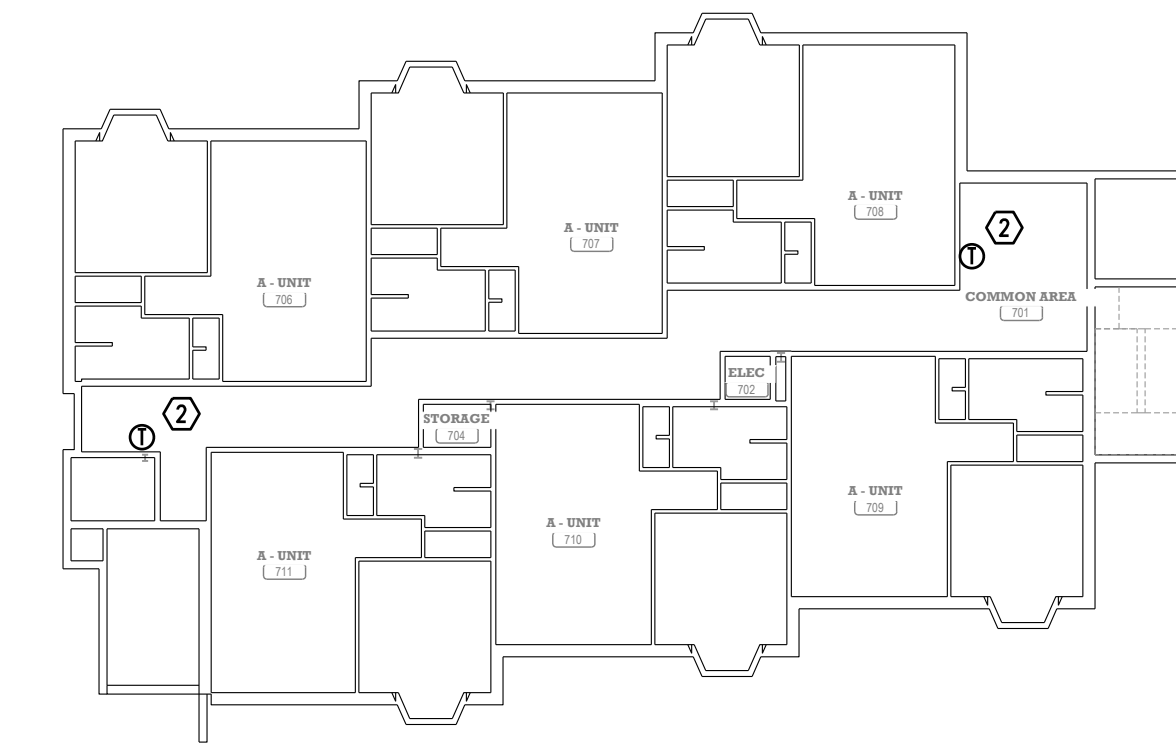
1 FORTH FLOOR PLAN  
COMMON AREAS 1/16" = 1'-0"



2 FIFTH FLOOR PLAN  
COMMON AREAS 1/16" = 1'-0"



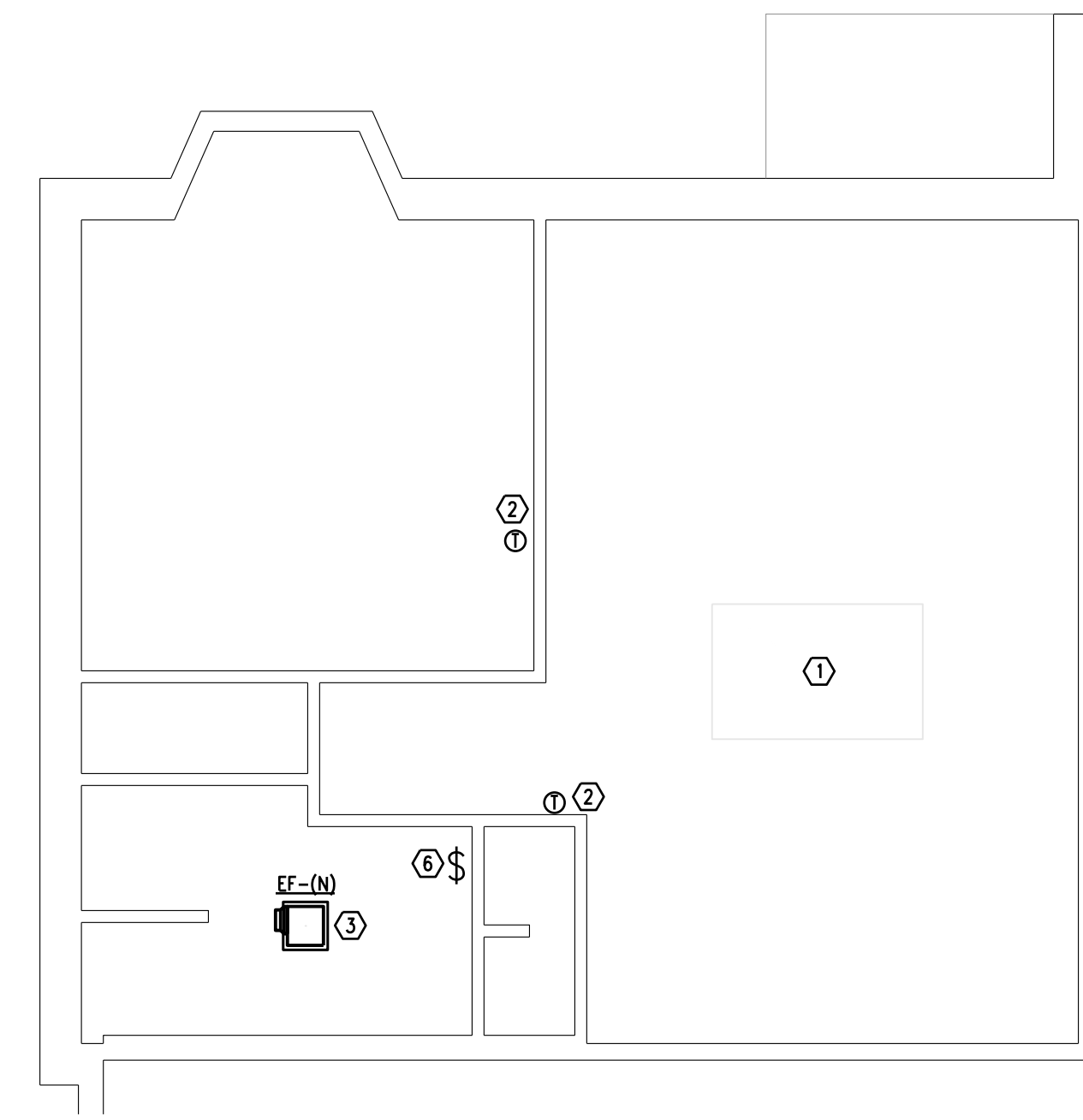
3 SIXTH FLOOR PLAN  
COMMON AREAS 1/16" = 1'-0"



4 SEVENTH FLOOR PLAN  
COMMON AREAS 1/16" = 1'-0"

**NOTE:**  
ALL WORK SHALL BE IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES & STANDARDS, INCLUDING, BUT NOT LIMITED TO, 2021 IMC, 2021 UPC, 2021 IBC, 2021 IFGC, 2021 IECC.

**NOTE:**  
ALL NEW WASTE PIPING SHALL BE SCHEDULE 40 PVC OR CAST IRON WHERE NOTED.  
ALL NEW DOMESTIC WATER PIPING SHALL BE TYPE L COPPER PIPING.  
ALL NEW DOMESTIC WATER PIPING SHALL BE INSULATED WITH 1" THICK FIBERGLASS INSULATION WITH ASJ.  
ALL GAS PIPING SHALL BE SCHEDULE 40 STEEL PIPE.  
ALL DUCT SHALL BE GALVANIZED DUCT AS PER SMACNA STANDARDS.  
ALL NEW SUPPLY DUCT SHALL BE INSULATED WITH 1 1/2" THICK FIBERGLASS INSULATION WITH FSK.



5 ENLARGED APARTMENT (TYP)  
M-2 TYPICAL FOR FLOORS 4, 5, 6, & 7 NO SCALE

- WORK NOTES:**
- ① ALL APARTMENTS ON FLOORS 4, 5, 6, AND 7 HAVE 2 EXISTING THERMOSTATS AND WILL REQUIRE 2 NEW THERMOSTATS.
  - ② FURNISH & INSTALL NEW VERDANT MODEL VX3-TR-XMF WIRED THERMOSTAT WITH BUILT IN OCCUPANCY DETECTION AND WIRELESS NETWORK ACCESSIBILITY. RECONNECT TO EXISTING CONTROL WIRING.
  - ③ REMOVE EXISTING EXHAUST FAN. FURNISH & INSTALL NEW BATHROOM EXHAUST FAN EF-(N) IN LOCATION OF EXISTING FAN AND RECONNECT TO EXISTING POWER AND EXISTING EXHAUST DUCT. CONTRACTOR SHALL CLEAN EXHAUST DUCTWORK FROM FAN TO EXTERIOR WALL TO ENSURE THERE ARE NO OBSTRUCTIONS. MODIFY GYP. BOARD CEILING AS NECESSARY FOR NEW EXHAUST FAN.
  - ④ REMOVE EXISTING FAN SWITCH. FURNISH AND INSTALL NEW SINGLE POLE LOCKING SWITCH WITH KEY. CONTRACTOR TO VERIFY AMP RATING AND TRIM COLOR IN FIELD.

**MECHANICAL LEGEND**

(NOTE: NOT ALL SYMBOLS MAY BE USED)

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
---	LIGHT, EXISTING TO REMAIN	○	ELBOW UP AND ELBOW DOWN	⊠	PNEUMATIC THERMOSTAT
---	DARK, NEW	⊠	MANUAL AIR VENT	⊠	ELECTRIC THERMOSTAT
- - - - -	DARK DASHED, ITEMS TO REMOVE	⊠	SEWER CLEAN OUT	⊠	THERMOSTAT GUARD
---	DOMESTIC COLD WATER (CW)	⊠	UNION	⊠	AQUASTAT
---	DOMESTIC HOT WATER (HW)	⊠	REDUCER	⊠	SENSOR
---	DOMESTIC RECIRCULATING WATER	⊠	STRAINER	⊠	FLOW SWITCH
---	SANITARY SEWER (ABOVE GRADE)	⊠	DRAIN VALVE	⊠	SUPPLY DUCT (NEW)
---	SANITARY SEWER (BELOW GRADE)	⊠	HOSE BIBB	⊠	FLEX DUCT
---	STORM SEWER (ABOVE GRADE)	⊠	AIR OUTLET	⊠	RETURN DUCT
---	STORM SEWER (BELOW GRADE)	⊠	CIRCUIT SETTER	⊠	EXHAUST DUCT
---	NATURAL GAS	⊠	BACKFLOW PREVENTER	⊠	OUTSIDE & MIXED AIR DUCT
---	LPG	⊠	AUTOMATIC FLOW CONTROL VALVE	⊠	RELIEF AIR DUCT
---	DRAIN	⊠	BUTTERFLY VALVE	⊠	ELBOW UP
---	HWS	⊠	GATE VALVE	⊠	ELBOW DOWN
---	HWR	⊠	LUBRICATED PLUG VALVE	⊠	RISE IN DUCT (OR DROP "D")
---	RS	⊠	GLOBE VALVE	⊠	BALANCING DAMPER
---	RL	⊠	MOTORIZED VALVE (ELECTRIC OPERATOR)	⊠	FIRE DAMPER
---	STM	⊠	MOTORIZED VALVE (PNEUMATIC OPERATOR)	⊠	FIRE/SMOKE DAMPER
---	CR	⊠	BALL VALVE	⊠	ACCESS DOOR
---	PC	⊠	CHECK VALVE	⊠	MOTORIZED DAMPER
---	CWS	⊠	TRIPLE DUTY/MULTIPURPOSE VALVE	⊠	BACKDRAFT DAMPER
---	CWR	⊠	THREE WAY MIXING VALVE	⊠	CEILING RADIATION DAMPER
---	A	⊠	MANUAL BALANCING VALVE	⊠	LOUVER
---	V	⊠	PRESSURE RELIEF	⊠	SUPPLY AIR IN SECTION
---	BY	⊠	PRESSURE REDUCING VALVE	⊠	RETURN, OUTDOOR OR EXHAUST IN SECTION
⊠	KEYED WORK NOTES	⊠	RECIRCULATING PUMP	⊠	DUCT MOUNTED SMOKE DETECTOR
⊠	POINT OF CONNECTION (NEW TO EXISTING)	⊠	PRESSURE GAUGE		
⊠	TEE UP AND TEE DOWN	⊠	THERMOMETER		

**FAN SCHEDULE**

MARK	AREA SERVING	MANUFACTURER	MODEL	TYPE	DRIVE	CFM	ESP (IN WG)	RPM	HP	VOLT/PHASE	BDD	DISCONNECT	NOTES
EF-(N)	BATHROOM	PANASONIC	FV-0511VK3	CEILING	DIRECT	30-100	0.5	1260	2.3W	120V	YES	NO	① QTY: 77

① WITH EC MOTOR, CEILING GRILLE, 4" DUCT COLLAR WITH BACK DRAFT DAMPER, WITH FV-DMK3 FAN SPEED CONTROL AND CONDENSATION SENSOR. RECONNECT TO EXISTING POWER WIRING. CONTRACTOR SHALL VERIFY EXACT QUANTITY OF REQUIRED EXHAUST FANS AND REPORT FINDINGS TO ENGINEER.

**VERDANT ACCESSORIES SCHEDULE**

MARK	MANUFACTURER	MATERIAL	FEATURES	NOTES
THERMOSTAT (1)	VERDANT	MODEL VX3-TR-XMF	INTEGRAL WIFI NETWORKING, WITH INTEGRAL OCCUPANCY SENSOR.	QUANTITY: 126 CONTRACTOR SHALL VERIFY EXACT NUMBER REQUIRED AND REPORT FINDINGS TO ENGINEER.
BID ALTERNATE 1: OCCUPANCY SENSOR	VERDANT	MODEL ZX-AOS WIRELESS OCCUPANCY SENSOR	INTEGRAL WIFI NETWORKING, REQUIRED IN ALL APARTMENT BEDROOMS ON FLOORS 1, 2 AND 3.	QUANTITY: 53 CONTRACTOR SHALL VERIFY EXACT NUMBER REQUIRED AND REPORT FINDINGS TO ENGINEER.
ONLINE CONNECTION KIT	VERDANT	MODEL ZX-OL-U ONLINE CONNECTION KIT.	NETWORK CONNECTION HUB	QUANTITY: 1 VERIFY WITH OWNER FOR EXACT LOCATION.

⊠ PRODUCT OF VERDANT OR PRIOR APPROVED EQUAL. SUBMIT ALL PRIOR REQUESTS TO ENGINEER.



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**REVISIONS**

NO.	DESCRIPTION

**HELENA HOUSING AUTHORITY**  
**MECA HVAC CONTROLS & VENTILATION UPGRADE PROJECT**  
 100 North Warren St, Helena, MT 59601  
**FLOORS FOUR THROUGH SEVEN AND SCHEDULES**

DRAWN BY: BJB  
APPROVED: AML  
DATE: 8/26/24

**M-2**