

HVAC SYMBOLS					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	ACCESS DOORS, VERTICAL/HORIZONTAL		FLEXIBLE CONNECTION IN DUCT		MOTORIZED OPERATED DAMPER IN DUCT
	BASEBOARD RADIATION		FLOW MEASURING & BALANCING DEVICE		MEDIUM PRESSURE CONDENSATE
	BULLHEAD TEE WITH TURNING VANES		FLOW MEASURING & BALANCING DEVICE, WITH ISOLATION VALVE		MEDIUM PRESSURE STEAM SUPPLY
	CHILLED WATER SUPPLY		FREEZE STAT		NATURAL GAS
	CHILLED WATER RETURN		FUEL OIL SUPPLY		PIPE ANCHOR
	CONDENSATE DRAINAGE		FUEL OIL RETURN		PIPE GUIDES
	CONDENSER WATER SUPPLY		FUEL OIL VENT		PIPE CAP
	CONDENSER WATER RETURN		GAS METER		PIPE DOWN
	CONCENTRIC TRANSITION, 15° MAXIMUM ANGLE		GAS PRESSURE REGULATOR		PIPE UP
	CONNECT TO EXISTING		GRAVITY BACKDRAFT DAMPER IN DUCT		PRESSURE GAUGE
	CONTROL VALVE (2-WAY)		HIGH EFFICIENCY TAKE-OFF (45° ANGLE INLET)		QUICK CLOSING, FUSIBLE LINK VALVE
	CONTROL VALVE (3-WAY)		HIGH PRESSURE CONDENSATE		RELIEF/EXHAUST AIR (UP) (POSITIVE PRESSURE)
	EXHAUST AIR OR OUTSIDE AIR INTAKE (UP) (NEGATIVE PRESSURE)		HIGH PRESSURE STEAM SUPPLY		RECTANGULAR DUCT W/SIZE INDICATED
	EXHAUST AIR OR OUTSIDE AIR INTAKE (DOWN) (NEGATIVE PRESSURE)		HOT WATER HEATING SUPPLY		RECTANGULAR DUCT W/ACOUSTICAL LINING
	FINNED TUBE RADIATION		HOT WATER HEATING RETURN		REFRIGERANT LIQUID LINE
	FIRE DAMPER IN DUCT		HUMIDISTAT		REFRIGERANT SUCTION LINE
	FIRE/SMOKE DAMPER IN DUCT		LIQUID PROPANE GAS		RELIEF/EXHAUST AIR (UP) (POSITIVE PRESSURE)
	FLANGE		LOW PRESSURE CONDENSATE		RELIEF/EXHAUST AIR (DOWN) (POSITIVE PRESSURE)
	FLEXIBLE DUCT		LOW PRESSURE STEAM SUPPLY		RETURN DUCT (UP)
			MANUAL VOLUME DAMPER IN DUCT		RETURN DUCT (DOWN)

PLUMBING SYMBOLS					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	BACKFLOW PREVENTER		FLOOR CLEAN OUT		LIQUID PROPANE GAS
	BACK WATER VALVE		FLOOR DRAIN		OXYGEN PIPING
	BALL VALVE		FLOW MEASURING & BALANCING DEVICE		PIPE ANCHOR
	BUTTERFLY VALVE		FLOW MEASURING & BALANCING DEVICE, WITH ISOLATION VALVE		PIPE CAP
	CHECK VALVE W/DIRECTION INDICATED		GATE VALVE		PIPE DOWN
	COMPRESSED AIR LINE		GLOBE VALVE		PIPE GUIDES
	COLD WATER (ABOVE GRADE)		HOSE BIBB		PIPE UP
	COLD WATER (BELOW GRADE)		HOT WATER (120°) (ABOVE GRADE)		PLUG VALVE
	COLD WATER - HARD		HOT WATER (120°) (BELOW GRADE)		PRESSURE GAUGE
	CONNECT TO EXISTING		HOT WATER (140°) (ABOVE GRADE)		PRESSURE REDUCING VALVE WITH INLET AND OUTLET PRESSURE
	CONTROL VALVE (2-WAY)		HOT WATER (140°) (BELOW GRADE)		REDUCED PRESSURE BACKFLOW PREVENTER
	CONTROL VALVE (3-WAY)		HOT WATER RECIRCULATION PIPING (120°) (ABOVE GRADE)		SANITARY SEWER LINE (ABOVE GRADE)
	EXISTING (SAN, HW, CW, ETC.)		HOT WATER RECIRCULATION PIPING (120°) (BELOW GRADE)		SANITARY SEWER LINE (BELOW GRADE)
			HYDRANT		WATER METER

HVAC ABBREVIATIONS			
ABBR.	DESCRIPTION	ABBR.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	EA	EXHAUST AIR
AFG	ABOVE FINISHED GRADE	ERV	ENERGY RECOVERY VENTILATION
AD	ACCESS DOORS, VERTICAL/HORIZONTAL	ESP	EXTERNAL STATIC PRESSURE
BB	BASEBOARD RADIATION	E	EXISTING (SA, RA, EA, ETC.)
CWS	CHILLED WATER SUPPLY	FFE	FINISHED FLOOR ELEVATION
CWR	CHILLED WATER RETURN	FOS	FUEL OIL SUPPLY
CV	CONTROL VALVE	FOR	FUEL OIL RETURN
CFH	CUBIC FEET PER HOUR	FOV	FUEL OIL VENT
CFM	CUBIC FEET PER MINUTE	FTR	FINNED TUBE RADIATION
CD	CONDENSATE DRAIN	HPC	HIGH PRESSURE CONDENSATE
CO	CARBON MONOXIDE	HPS	HIGH PRESSURE STEAM SUPPLY
CO2	CARBON DIOXIDE	HWS	HOT WATER HEATING SUPPLY
CR	CONDENSER WATER RETURN	HWR	HOT WATER HEATING RETURN
CS	CONDENSER WATER SUPPLY	IG	INTERRUPTIBLE GAS PIPING
DB/WB	DRY BULB/WET BULB	IE	INVERT ELEVATION
EWT	ENTERING WATER TEMPERATURE	LAT	LEAVING AIR TEMPERATURE
EAT	ENTERING AIR TEMPERATURE	LWT	LEAVING WATER TEMPERATURE
		LPC	LOW PRESSURE CONDENSATE
		LPS	LOW PRESSURE STEAM SUPPLY
		LPG	LIQUID PROPANE GAS
		MPC	MEDIUM PRESSURE CONDENSATE
		MPS	MEDIUM PRESSURE STEAM SUPPLY
		M	MOTORIZED OPERATED DAMPER IN DUCT
		NO2	NITROGEN DIOXIDE
		NG	NATURAL GAS
		OA	OUTSIDE AIR
		OFCC	OWNER FURNISHED, CONTRACTOR INSTALLED
		PD	PRESSURE DROP
		RL	REFRIGERANT LIQUID LINE
		RS	REFRIGERANT SUCTION LINE
		RA	RETURN AIR
		SF	SQUARE FEET
		SA	SUPPLY AIR
		TYP.	TYPICAL

PLUMBING ABBREVIATIONS			
ABBR.	DESCRIPTION	ABBR.	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	GV	GATE VALVE
AFG	ABOVE FINISHED GRADE	GLV	GLOBE VALVE
BF	BUTTERFLY VALVE	GM	GAS METER
BV	BALL VALVE	H	HYDRANT
BWW	BACK WATER VALVE	HB	HOSE BIBB
CA	COMPRESSED AIR	HW	HOT WATER
CV	CONTROL VALVE	HWFU	HOT WATER FIXTURE UNITS
CW	COLD WATER	HW-H	HOT WATER - HARD
CW-H	COLD WATER - HARD	HWRC	HOT WATER RECIRCULATION PIPING
CWFRU	COLD WATER FIXTURE UNITS	HWV	HOT WATER VALVE
DFU	DRAINAGE FIXTURE UNITS	IE	INVERT ELEVATION
E	EXISTING (SAN, HW, CW, ETC.)	LPG	LIQUID PROPANE GAS
FD	FLOOR DRAIN	NG	NATURAL GAS
FFE	FINISH FLOOR ELEVATION	OFCC	OWNER FURNISHED, CONTRACTOR INSTALLED
G	GAS PIPING	OST	OVERFLOW STORM SEWER
		OX	OXYGEN PIPING
		R	GAS PRESSURE REGULATOR
		RH	ROOF HYDRANT
		RPZ	REDUCED PRESSURE BACKFLOW PREVENTOR
		SAN	SANITARY SEWER
		SF	SQUARE FEET
		SFU	SUPPLY FIXTURE UNITS
		ST	STORM SEWER
		TW	TEMPERED WATER
		TYP.	TYPICAL
		DN	DOWN
		V	VENT
		VA	VACUUM LINE
		VTR	VENT THRU ROOF
		WCO	WALL CLEAN OUT
		WM	WATER METER
		YCO	YARD CLEAN OUT

DIFFUSER & GRILLE LEGEND			
DIFFUSER/GRILLE TYPE (SEE SCHEDULE)	A	8	THROAT DIAMETER OR SIZE
CUBIC FEET PER MINUTE (CFM)	180	SA	TYPE OF AIR FLOW

DRAWING INDEX	
M0.1	MECHANICAL - ABBREVIATIONS, SYMBOLS AND DRAWING INDEX
M1.1	MECHANICAL - BASEMENT - DEMOLITION HVAC PLAN
M3.1	MECHANICAL - BASEMENT - HVAC PLAN
M4.1	MECHANICAL - REFRIGERANT PIPING PLAN
M5.1	MECHANICAL - DEMOLITION & ROOF HVAC PLAN
M7.1	MECHANICAL - DETAILS
M8.1	MECHANICAL - SCHEDULES

MECHANICAL SPECIFICATIONS

1.1 SCOPE:

- A. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR COMPLETE AND OPERATIONAL SYSTEMS DESCRIBED IN THIS SPECIFICATION OR SHOWN ON THE PLANS UNLESS INDICATED OR NOTED OTHERWISE. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS THAT ALL SYSTEMS BE COMPLETE AND READY FOR OPERATION.

1.2 SITE:

- A. EXAMINE PREMISE AND UNDERSTAND THE CONDITIONS THAT MAY AFFECT WORK OF THIS DIVISION BEFORE SUBMITTING BIDS. NO SUBSEQUENT ALLOWANCE FOR TIME OR MONEY WILL BE CONSIDERED FOR ANY CONSEQUENCE DUE TO A FAILURE TO EXAMINE SITE CONDITIONS.

1.3 LICENSE, FEES, AND PERMITS:

- A. CONTRACTOR MUST RETAIN AND PAY FOR ALL LICENSES REQUIRED BY VAMC. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGEMENT OF REQUIRED INSPECTIONS AND PAYMENT OF ALL INSPECTION FEES.
- B. OWNER SHALL PAY FOR ALL REVIEW AND PERMIT FEES.

1.4 CODE AND FRANCHISE COMPLIANCE:

- A. ALL MECHANICAL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE, OR LOCAL CODES; LAWS; ORDINANCES; REGULATIONS; AND/OR FRANCHISE REQUIREMENTS. IF CONTRACTORS ARE AWARE OF CONFLICTS BETWEEN PLANS

OR SPECIFICATIONS AND SUCH CODES OR REGULATIONS, THEY SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO COMMENCING APPLICABLE WORK. IF CONTRACTORS KNOWINGLY PERFORMS WORK IN VIOLATION OF SUCH CODES OR REGULATIONS, WHETHER OR NOT SUCH VIOLATION IS SHOWN OR SPECIFIED, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE CORRECTION OF THE VIOLATION AT NO ADDITIONAL CHARGE.

- B. CODE COMPLIANCE IS MANDATORY. NOTHING IN THESE DRAWINGS AND SPECIFICATIONS PERMITS WORK NOT CONFORMING TO THESE CODES. WHERE WORK IS SHOWN TO EXCEED MINIMUM CODE REQUIREMENTS, COMPLY WITH DRAWING AND SPECIFICATIONS.

1.5 DRAWINGS AND SPECIFICATIONS:

- A. MECHANICAL PLANS SHOW GENERAL ARRANGEMENT OF PIPING, DUCTWORK, EQUIPMENT, ETC. FOLLOW AS CLOSELY AS PERMITTED BY ACTUAL BUILDING CONSTRUCTION AND WORK OF OTHER TRADES. BECAUSE OF THE SMALL SCALE OF MECHANICAL PLANS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES THAT MAY BE REQUIRED. INVESTIGATE STRUCTURAL AND FINISH CONDITIONS AFFECTING THIS WORK AND ARRANGE WORK ACCORDINGLY, PROVIDING SUCH FITTINGS, VALVES, AND ACCESSORIES REQUIRED TO MEET THE CONDITIONS.

1.6 RECORD DRAWINGS:

- A. MAINTAIN ONE SET OF CLEAN WORKING DRAWINGS AT THE JOB SITE AND RECORD "AS-BUILT" INFORMATION FOR ANY CHANGE OR MODIFICATIONS TO THE CONSTRUCTION DOCUMENTS.

1.7 GUARANTEE:

- A. GUARANTEE THE INSTALLATION FREE FROM DEFECTS OF WORKMANSHIP AND MATERIALS OF A PERIOD OF ONE (1) YEAR AFTER DATE OF CERTIFICATE OF FINAL PAYMENT, AND PROMPTLY REMEDY AND DEFECTS DEVELOPING DURING THE PERIOD WITHOUT CHARGE.

1.8 SUBSTITUTIONS:

- A. WHEREVER POSSIBLE, MORE THAN ONE MANUFACTURER HAS BEEN LISTED FOR VARIOUS ITEMS OF EQUIPMENT, ANY ONE OF WHICH WILL BE ACCEPTABLE. BASE THE BID OR USE OF MATERIALS SPECIFIED. IF A SUBSTITUTE OF PROPOSED AFTER AWARD OF THE CONTRACT, THE REQUEST FOR PERMISSION TO SUBSTITUTE SHALL BE ACCOMPANIED WITH A STATEMENT OF THE MONEY TO BE RETURNED TO THE CONTRACT IF THE SUBSTITUTION IS PERMITTED. THE OWNER IS THE SOLE JUDGE OF ACCEPTABILITY OF SUBSTITUTIONS. IF A SUBSTITUTE ITEM IS PERMITTED, AND ANY REDESIGN EFFORT IS THEREBY NECESSITATED, THE REQUIRED REDESIGN SHALL BE AT THE CONTRACTOR'S EXPENSE.

1.9 COORDINATION:

- A. COORDINATE WORK WITH OTHER TRADES TO AVOID CONFLICT AND TO PROVIDE CORRECT ROUGH-IN AND CONNECTION FOR EQUIPMENT FURNISHED UNDER OTHER TRADES THAT REQUIRE MECHANICAL/PLUMBING CONNECTIONS. INFORM CONTRACTORS OF OTHER TRADES OF THE REQUIRED CLEARANCES AROUND ELECTRICAL

EQUIPMENT TO MAINTAIN SERVICEABILITY AND CODE COMPLIANCE.

- B. VERIFY EQUIPMENT DIMENSIONS AND REQUIREMENTS WITH PROVISIONS SPECIFIED UNDER THIS SECTION. CHECK ACTUAL JOB CONDITIONS BEFORE FABRICATION WORK. REPORT NECESSARY CHANGES IN TIME TO PREVENT NEEDLESS WORK. CHANGES OR ADDITIONS SUBJECT TO ADDITIONAL COMPENSATION THAT ARE MADE WITHOUT WRITTEN AUTHORIZATION AND PRICE AGREEMENT, SHALL BE AT CONTRACTOR'S RISK AND EXPENSE.

- C. ALL LOW VOLTAGE WIRING, WHICH IS RELATED TO MECHANICAL EQUIPMENT, SHALL BE BY THE MECHANICAL CONTRACTOR.

1.10 BASIC MATERIALS AND METHODS:

- A. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED DIGGING, CUTTING, AND PATCHING INCIDENT TO WORK OF THIS DIVISION AND MAKE REQUIRED REPAIRS AFTERWARDS TO SATISFACTION OF ENGINEER. CUT CAREFULLY TO MINIMIZE REPAIRS TO EXISTING WORK. DO NOT CUT BEAMS, COLUMNS, TRUSSES, OR ANY STRUCTURAL

MEMBER.

- B. PATCH AND REPAIR WALLS, FLOORS, CEILINGS, AND ROOFS WITH MATERIALS OF SAME QUALITY AND APPEARANCE AS ADJACENT SURFACES UNLESS OTHERWISE SHOWN. SURFACE FINISHES SHALL EXACTLY MATCH EXISTING FINISHES OF SAME MATERIALS.
- C. ADJUST LOCATIONS OF PIPES, EQUIPMENT, FIXTURES, ETC. TO ACCOMMODATE WORK FROM INTERFERENCE. DETERMINE EXACT ROUTE AND LOCATION OF EACH PIPE PRIOR TO FABRICATION.
- D. IF OTHER THAN SPECIFIED EQUIPMENT IS INSTALLED AND DOES NOT FIT JOB SITE CONDITIONS, THE MECHANICAL CONTRACTOR ASSUMES RESPONSIBILITY FOR REPLACEMENT WITH ITEMS NAMED IN THE RELEVANT SPECIFICATION.

NO.	REVISION	DATE

Design Tree
ENGINEERING AND
LAND SURVEYING

120 17th Avenue W.
Alexandria, MN 56308
(320) 762-1290

3339 W. St. Germain, Suite 250
St. Cloud, MN 56301
(320) 217-5557 (Phone)
(320) 217-5597 (Fax)

JLG
architects

Alexandria
525 Broadway Street
Alexandria, MN 56308
phone 320.759.9330
facsimile 320.759.9062

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Joshua D. Medel
JOSHUA D. MEDEL REG. NO. 51582

DATE: 03-21-2016

DRAWING TITLE:
MECHANICAL - ABBREVIATIONS,
SYMBOLS AND DRAWING INDEX

PROJECT TITLE:
REMODEL SITE FOR UPGRADED
CT SCANNER

BUILDING NO:
01

DESIGNED BY:
JDM

DRAWN BY:
NRW

CHECKED BY:
82215003

DATE:
03.21.2016

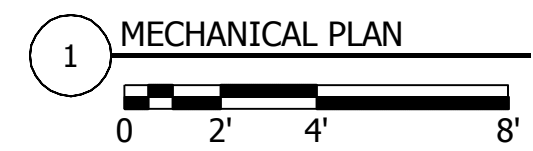
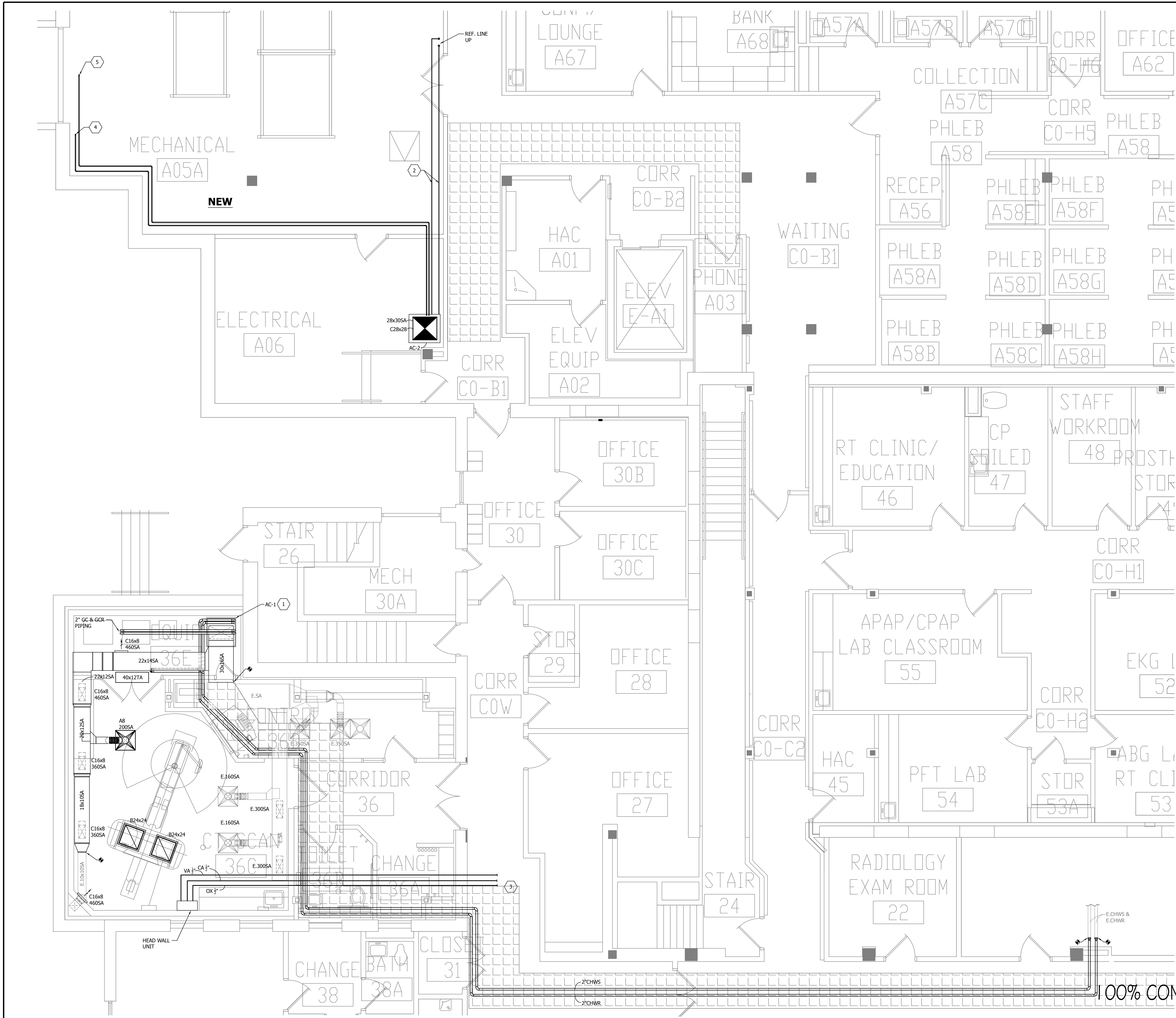
PROJECT NO:
656-15-836

SHEET NO:
82215003

DRAWING NO:
M0.1

VAMC SAINT CLOUD MN

- GENERAL NOTES**
- FIELD VERIFY ALL EXISTING CONDITIONS.
- KEYNOTES**
- CONNECT ALL NEW AND EXISTING DUCTWORK, PIPING AND DRAINS TO NEW AC-1.
 - REFRIGERATION PIPE SIZING AND ROUTING SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
 - CONNECT OXYGEN, COMPRESSED AIR AND VACUUM PIPING TO EXISTING PIPING LOCATED IN CORRIDOR. FIELD VERIFY EXACT LOCATIONS AND ROUTING.
 - CONNECT 3" CW LINE TO EXISTING DOMESTIC WATER SOURCE.
 - ROUTE CONDENSATE DRAIN LINE DOWN TO FLOOR DRAIN IN MECHANICAL ROOM.



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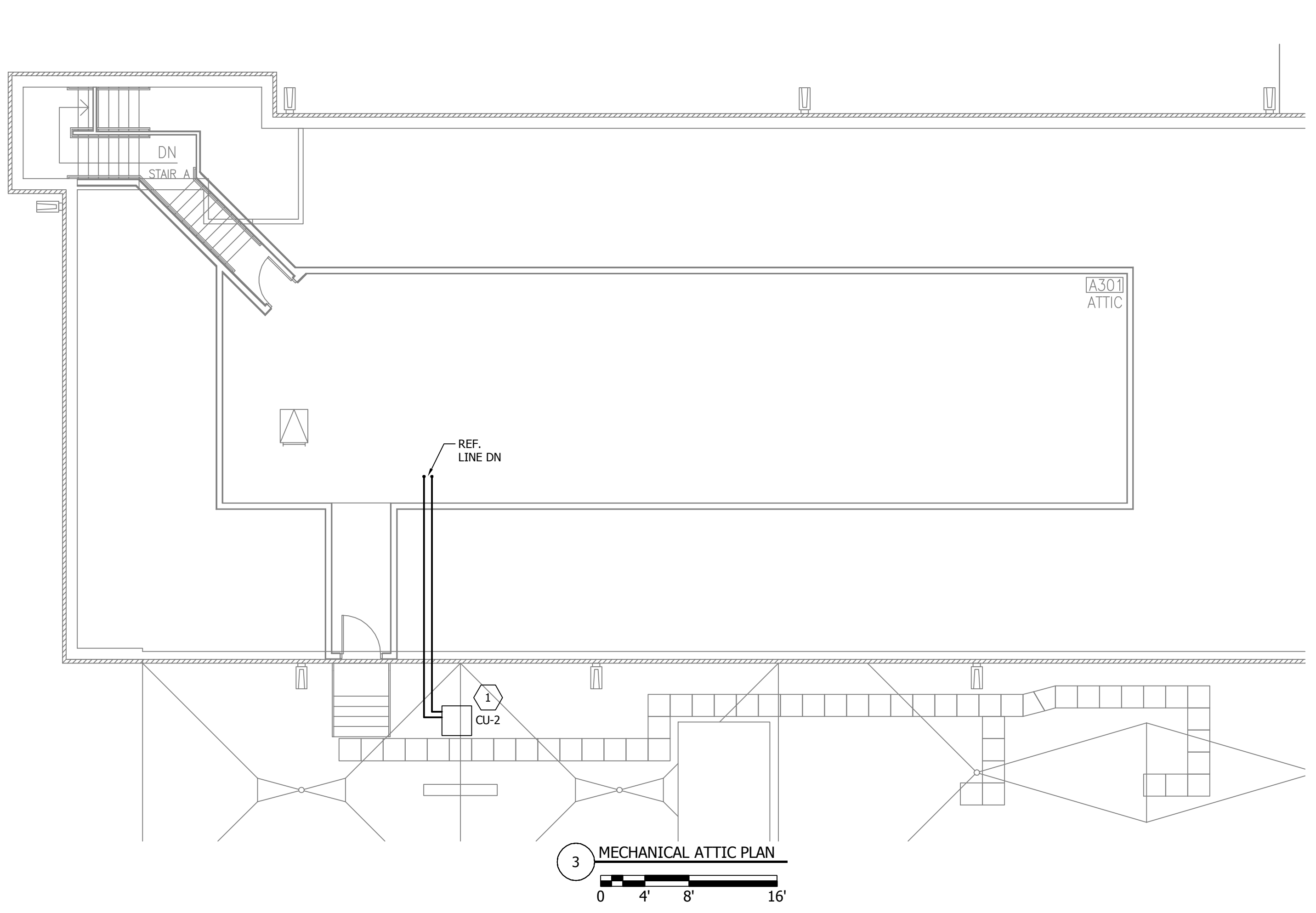
Joshua D. Medel
JOSHUA D. MEDEL REG. NO. 51522
DATE: 03-21-2016

PROJECT TITLE REMODEL SITE FOR UPGRADED CT SCANNER	DATE 03.21.2016
BUILDING NO. 01	PROJECT NO. E56-15-836
DRAWN BY JDM	DATE PLOTTED 02/21/2016
CHECKED BY NRW	DRAWING NO. M31

LOCATION VA MEDICAL CENTER ST. CLOUD, MN 56303	DATE 03.21.2016
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three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

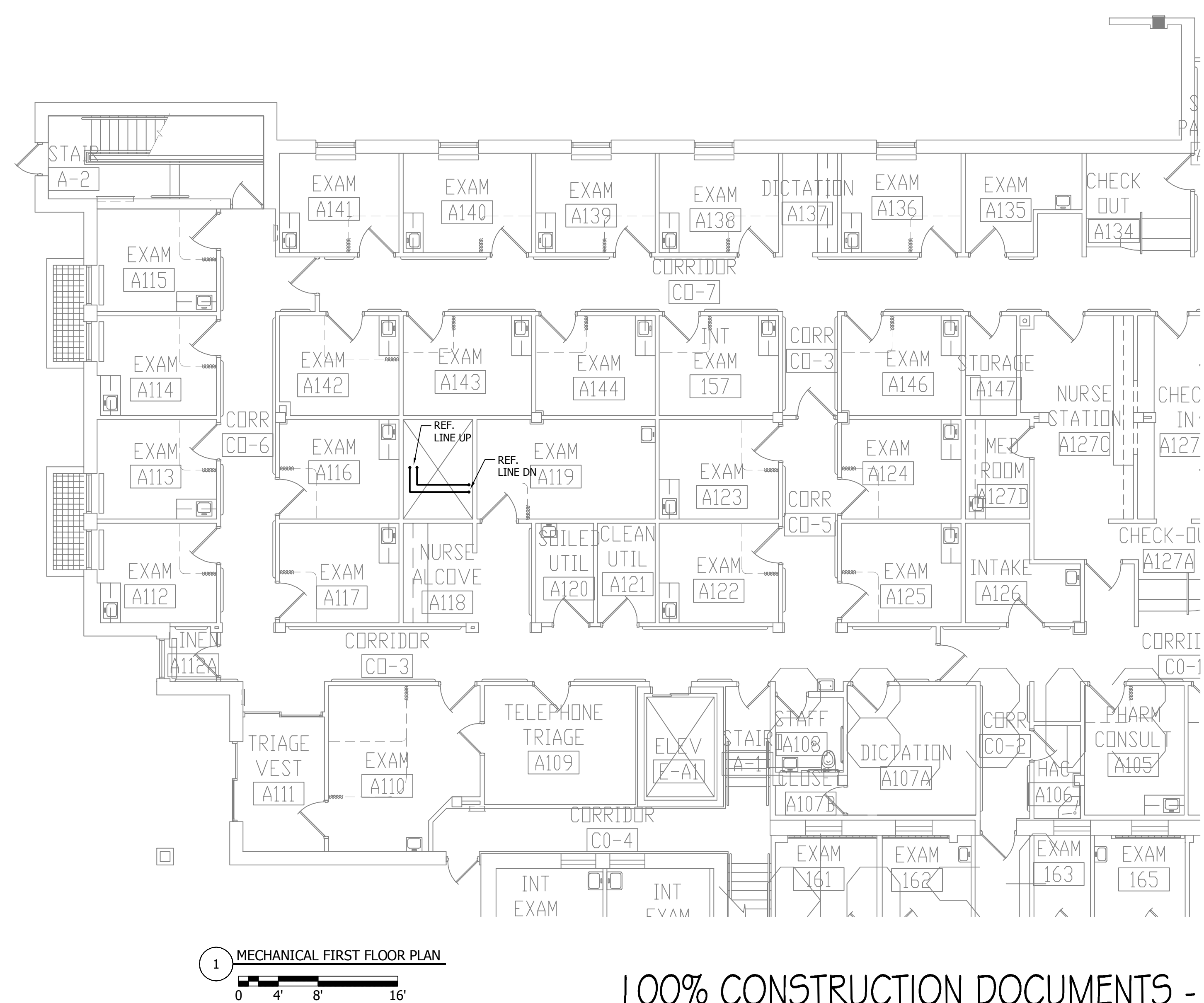
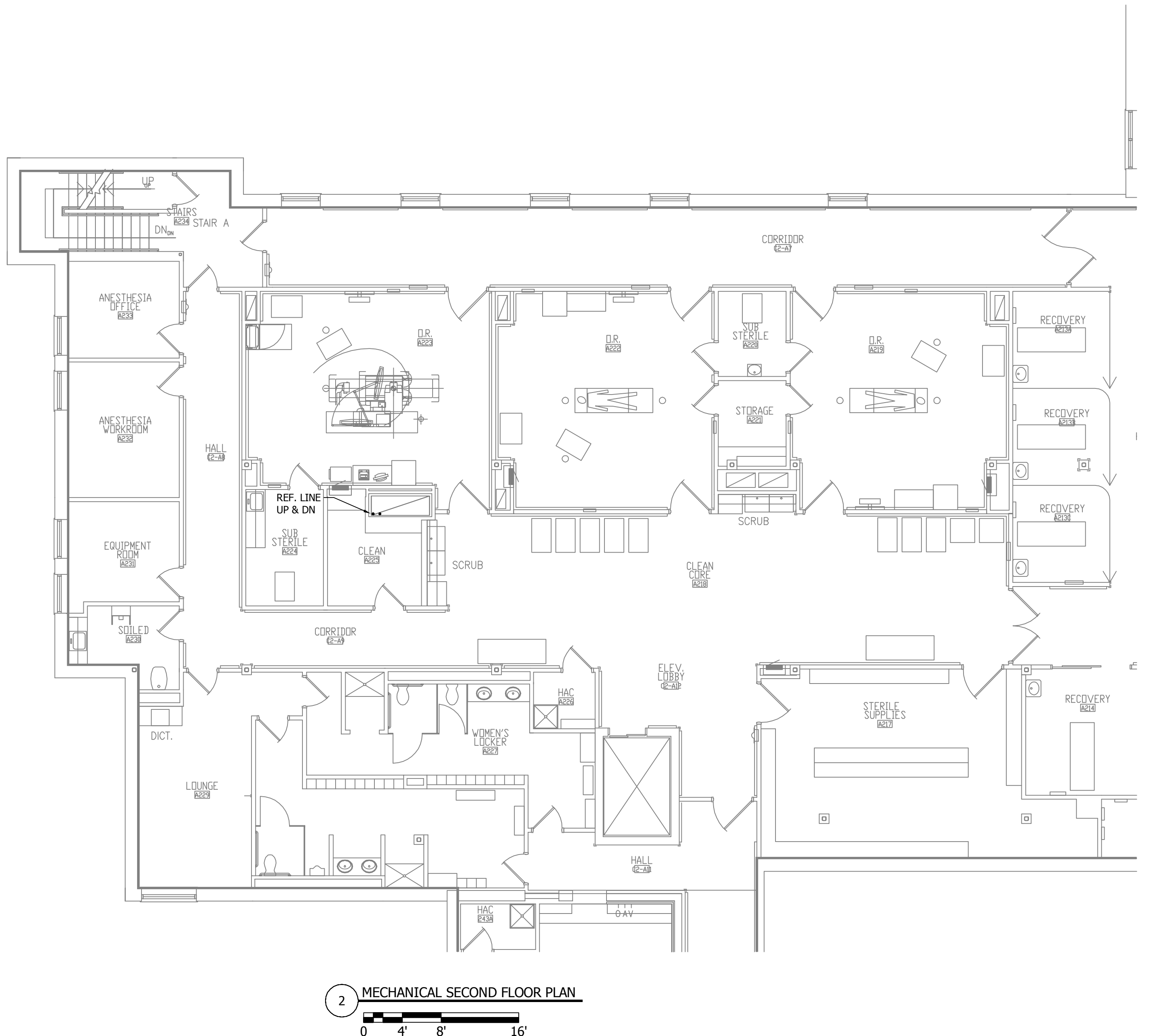


GENERAL NOTES

1. FIELD VERIFY ALL EXISTING CONDITIONS.
2. REFRIGERATION PIPE SIZING AND ROUTING SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.

KEYNOTES

1. MOUNT CU-2 ON EQUIPMENT HOUSE KEEPING PAD.



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 (320) 762-1290

3339 W. St. Germain, Suite 250
 St. Cloud, MN 56301
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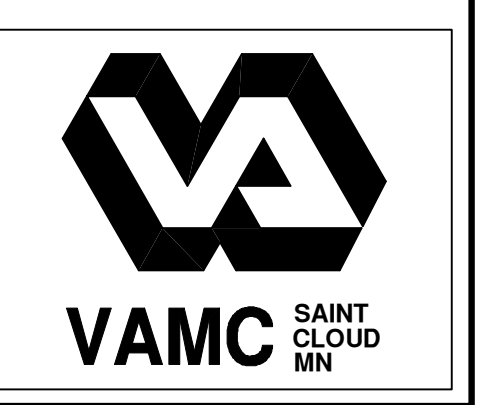
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Goshua D. Medhi
 GOSHUA D. MEDHI REG. NO. 51582
 DATE: 03-21-2016

PROJECT TITLE:
 MECHANICAL - REFRIGERANT PIPING
 PLAN

PROJECT NO:
 REMODEL SITE FOR UPGRADED
 CT SCANNER

DATE: 03/21/2016	PROJECT NO: E56-15-836
BUILDING NO: 01	ISSUED BY: JSM
LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303	ISSUED NO: M41



GENERAL DEMOLITION NOTES

1. DEMOLITION DRAWINGS ARE DIAGRAMMATIC ONLY AND BASED ON FIELD OBSERVATION AND EXISTING RECORD DRAWINGS. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE "AS-BUILT" CONDITIONS AND THESE DRAWINGS. PROVIDE ADDITIONAL DEMOLITION AS REQUIRED BASED ON FIELD CONDITIONS.
2. THIS CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REINSTALLING OF EXISTING CEILING TILE NOT REMOVED BY THE GENERAL CONTRACTOR FOR THE DEMOLITION OF EXISTING VENTILATION DUCTWORK, EQUIPMENT, ETC. VERIFY WITH ARCHITECTURAL PLANS FOR CEILING WORK BY THE GENERAL CONTRACTOR. ANY CEILING TILE OR GRID DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW BY THIS CONTRACTOR.
3. THIS CONTRACTOR SHALL OPEN ALL WALLS AND/OR CEILINGS FOR DEMOLITION OF EXISTING VENTILATION DUCTWORK, EQUIPMENT, ETC. AS REQUIRED.
4. THIS CONTRACTOR IS RESPONSIBLE FOR PATCHING ALL HOLES/WALLS AND OR CEILING FROM DEMOLISHED VENTILATION DUCTWORK, EQUIPMENT, ETC. IN FLOORS, WALLS, AND CEILING TO MATCH EXISTING.
5. ALL HATCHED ITEMS DENOTE REMOVAL OR RELOCATION.

DEMOLITION KEYNOTES 

1. REMOVE EXISTING CONDENSING UNIT AND ALL ASSOCIATED PIPING, PUMPS, INSULATION, AND ACCESSORIES.

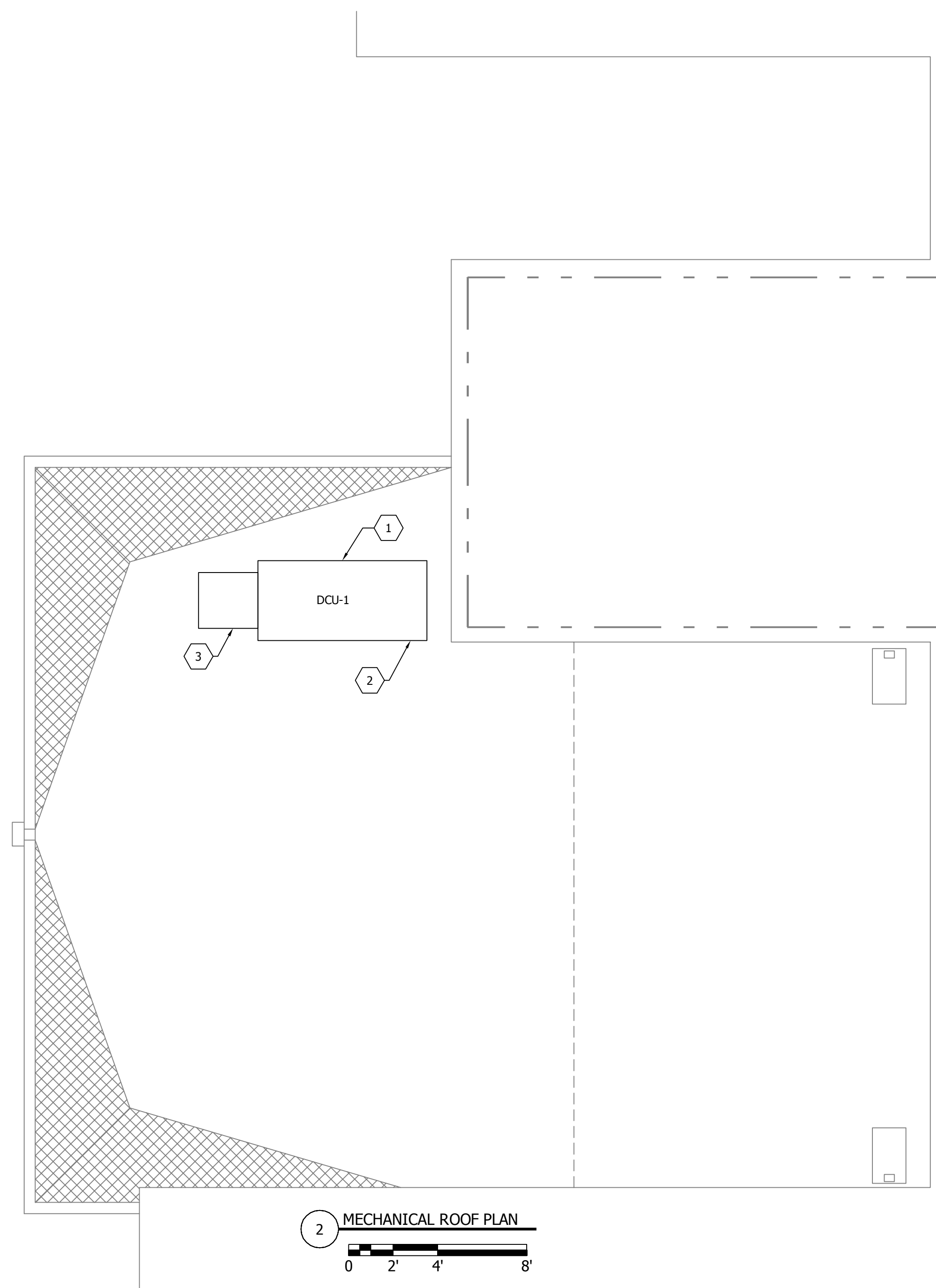
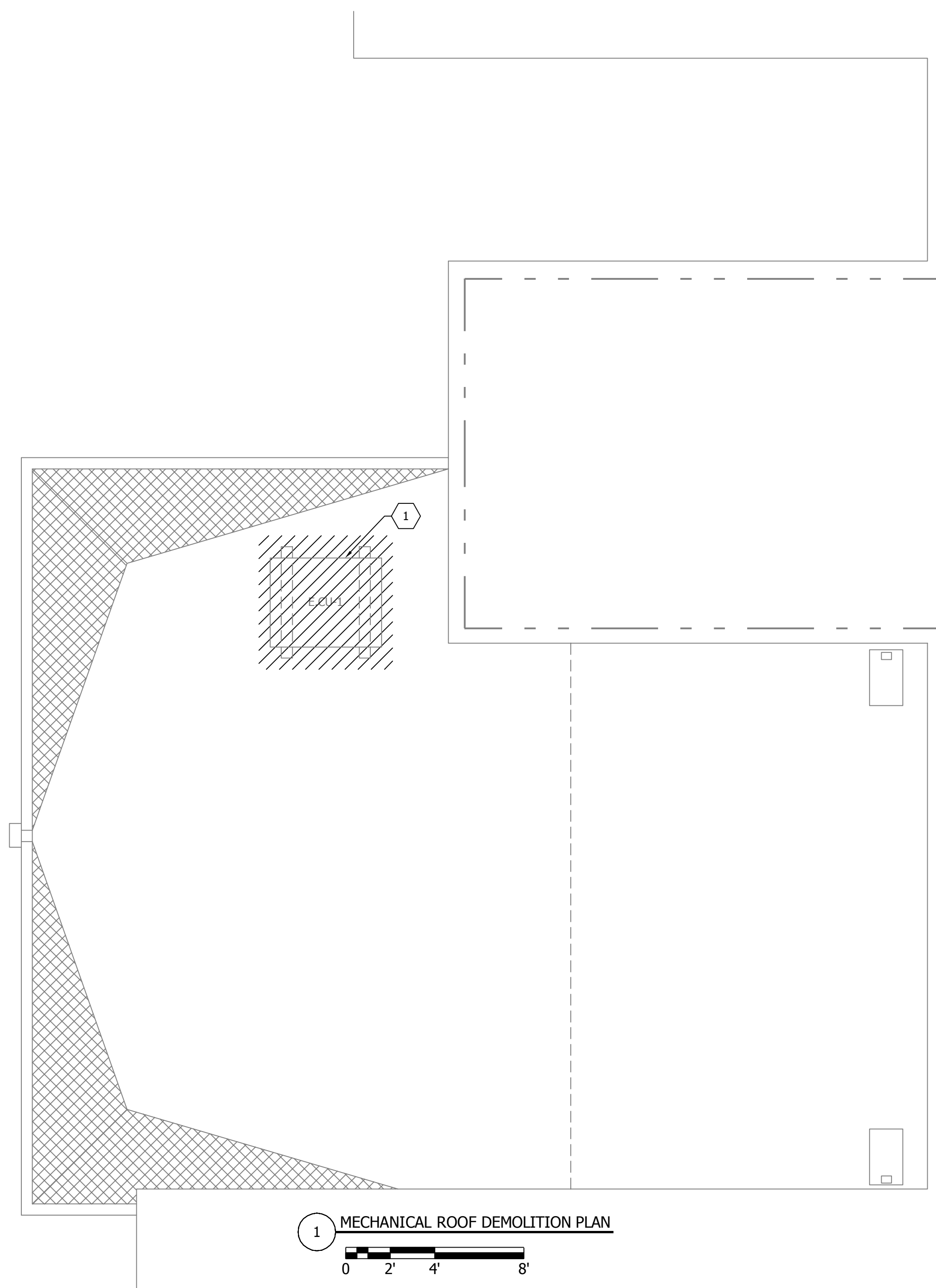
GENERAL NOTES

1. FIELD VERIFY ALL EXISTING CONDITIONS.

KEYNOTES 

1. PIPE SIZING AND ROUTING SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
2. MOUNT NEW DCU-1 ON EXISTING ROOF CURBS.
3. PROVIDE P-1, P-2 PUMP PACKAGE. PUMP PACKAGE TO BE MOUNTED AND SECURED TO DRYCOOLER FRAMING. MAKE ALL REQUIRED CONNECTIONS TO THE DRY COOLER.

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 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
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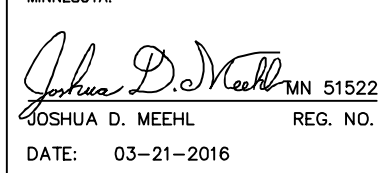


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Design Tree
 ENGINEERING AND
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 120 17th Avenue W. Alexandria, MN 56308 (320) 762-1290
 3339 W. St. Germain, Suite 250 St. Cloud, MN 56301 (320) 217-5553 (Phone) (320) 217-5597 (Fax)

JLG architects
 Alexandria
 525 Broadway Street
 Alexandria, MN 56308
 phone 320.755.9330
 facsimile 320.759.9062
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 DATE: 03-21-2016 REG. NO.

ISSUING TITLE
 MECHANICAL - DEMOLITION & ROOF HVAC PLAN

PROJECT TITLE
 REMODEL SITE FOR UPGRADED CT SCANNER

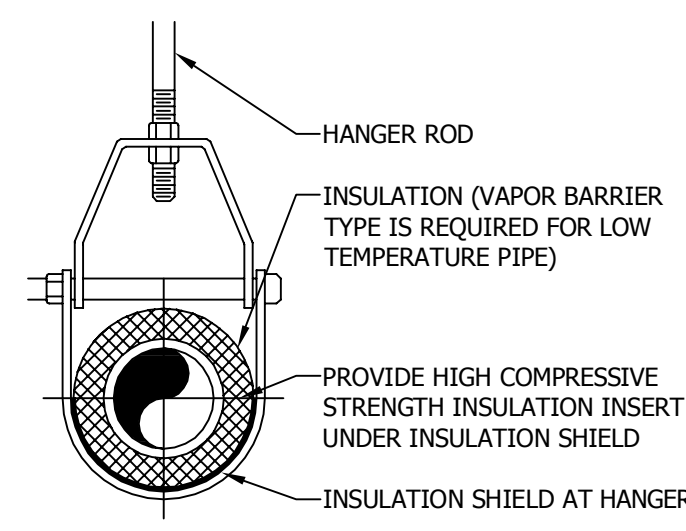
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 03.21.2016

PROJECT NO.
 656-15-836

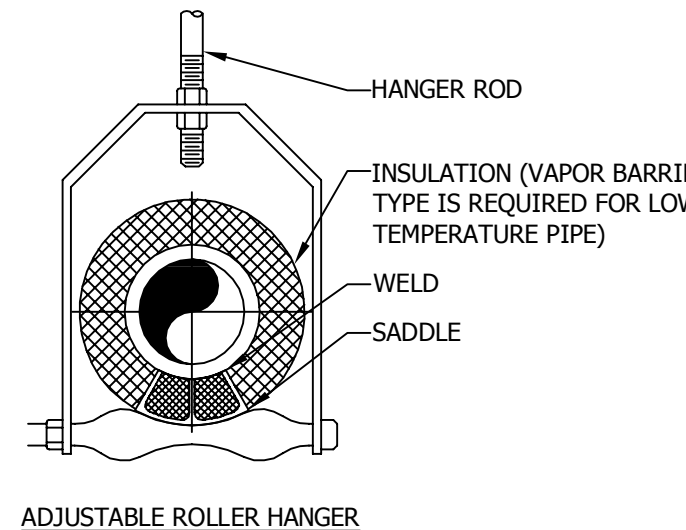
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 02/21/2016

DRAWING NO.
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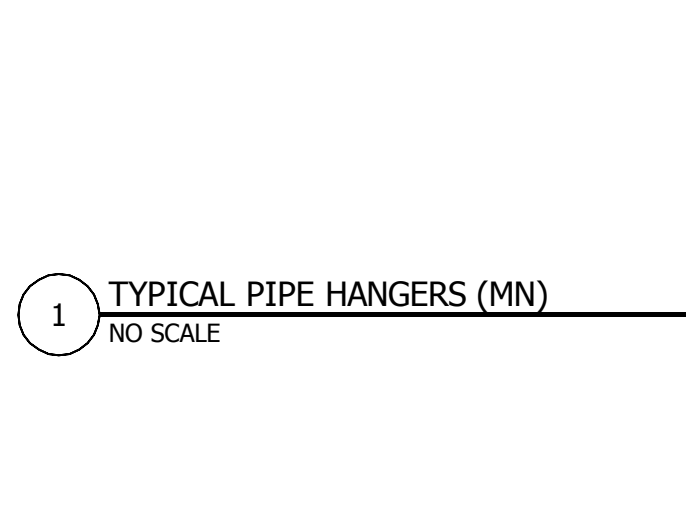
VAMC SAINT CLOUD MN



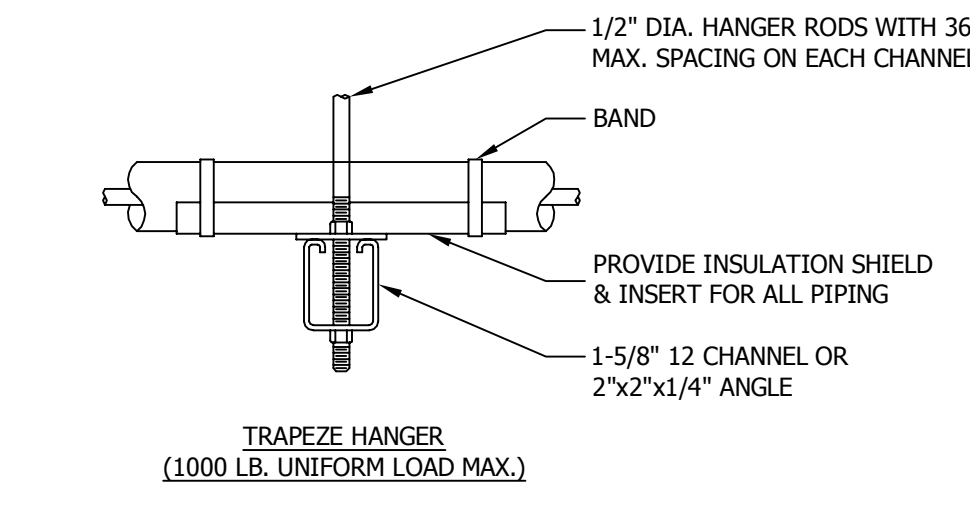
1 TYPICAL PIPE HANGERS (MN)
NO SCALE



ADJUSTABLE CLEVIS HANGER

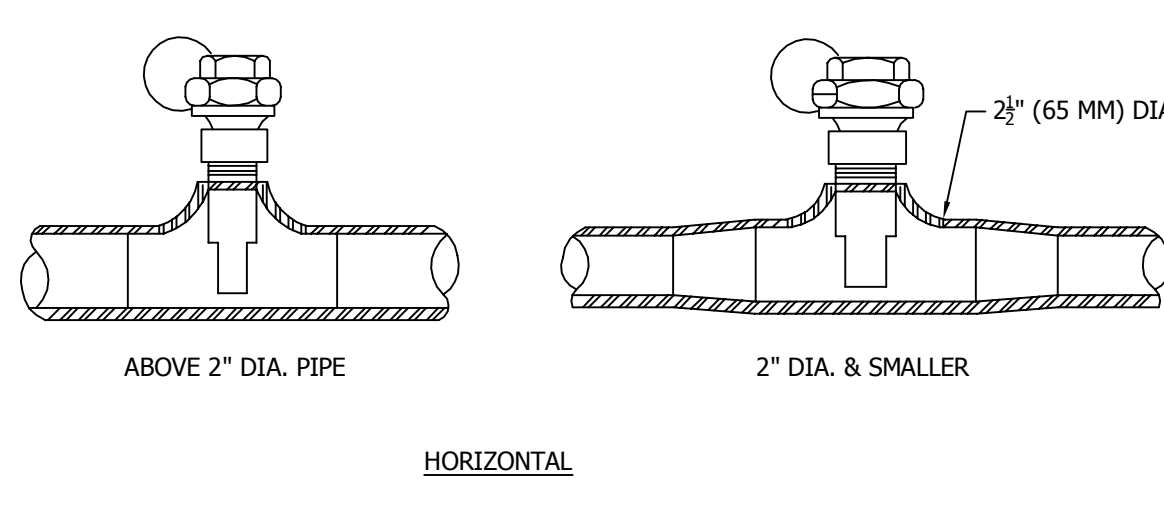


ADJUSTABLE ROLLER HANGER

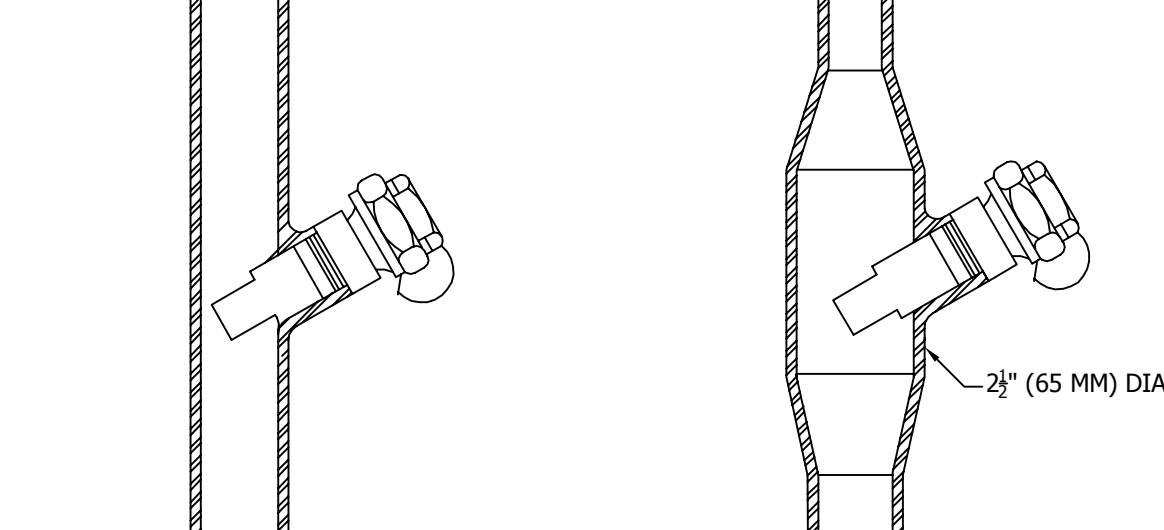


TRAPEZE HANGER (1000 LB. UNIFORM LOAD MAX.)

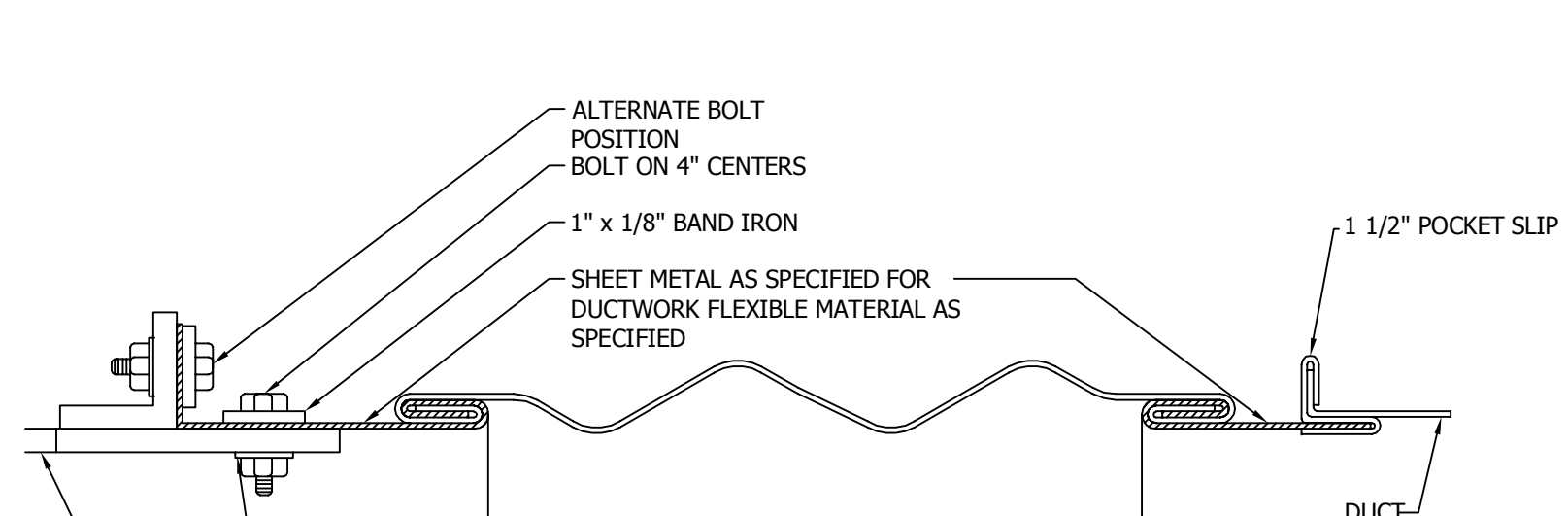
PIPE MATERIAL	MAXIMUM HANGER SPACING FEET	HANGER ROD DIAMETER INCHES
CAST IRON (ALL SIZES)	5	5/8
CAST IRON (ALL SIZES) WITH 10 FOOT LENGTH OF PIPE	10	5/8
CPVC, 1 INCH AND SMALLER	2.67	1/2
CPVC, 1-1/4 INCHES AND LARGER	2.67	1/2
COPPER TUBE, 1-1/4 INCHES AND SMALLER	6	1/2
COPPER TUBE, 1-1/2 INCHES AND LARGER	10	1/2
POLYBUTYLENE	2.67	3/8
POLYPROPYLENE	2.67	3/8
PVC (ALL SIZES)	2.67	3/8
STEEL, 3 INCHES AND SMALLER	12	1/2
STEEL, 4 INCHES AND SMALLER	12	5/8



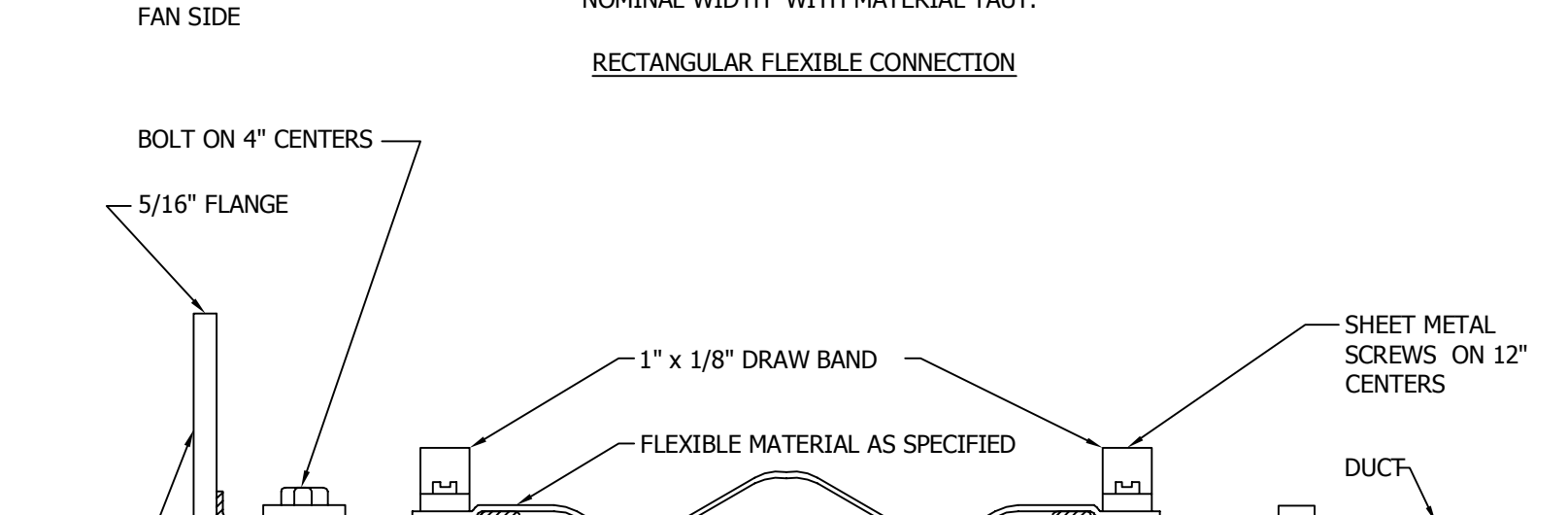
2 INSTALLATION OF THERMOMETER WELLS
NO SCALE



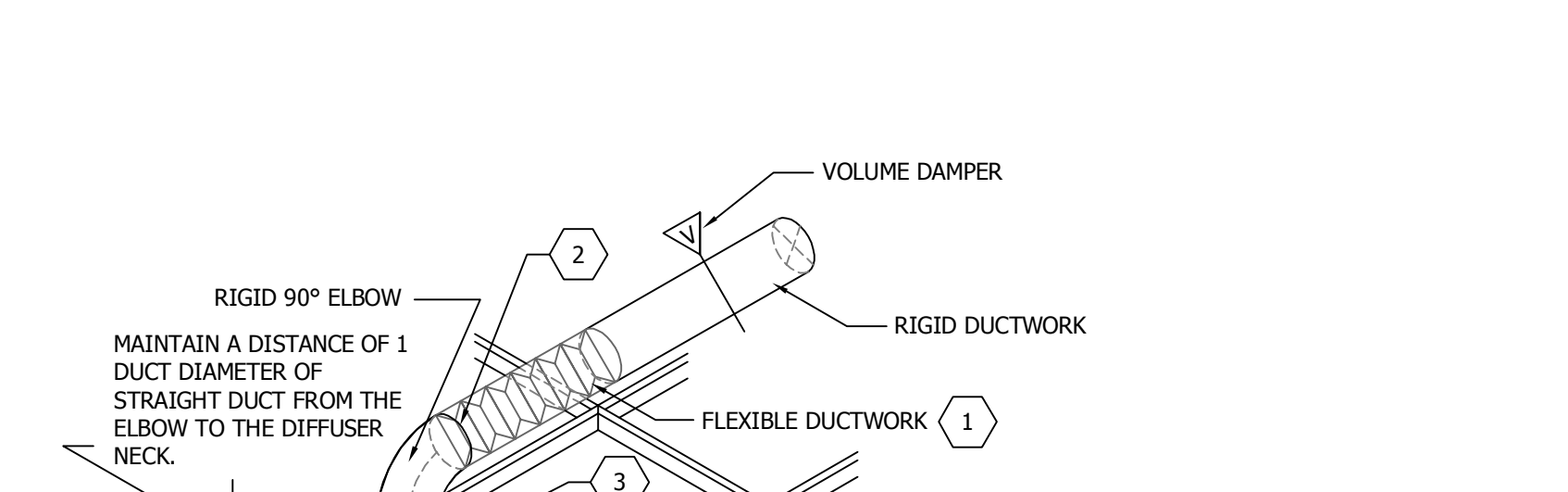
VERTICAL



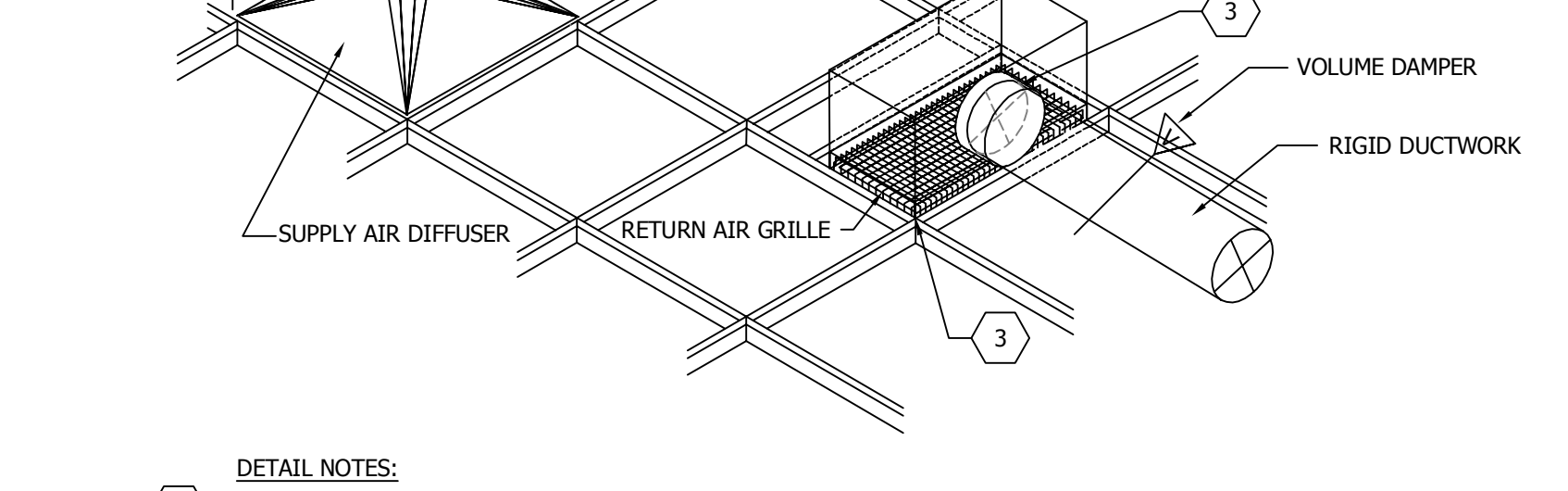
3 FLEXIBLE DUCT CONNECTION DETAIL
NO SCALE



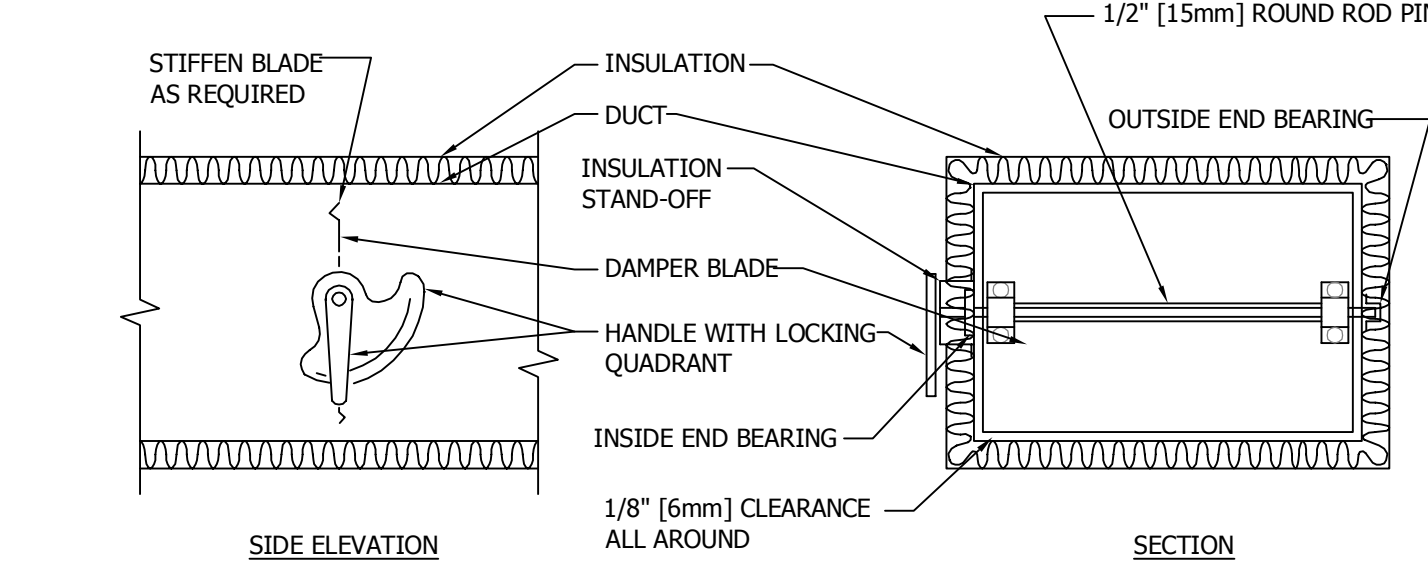
ROUND FLEXIBLE CONNECTION



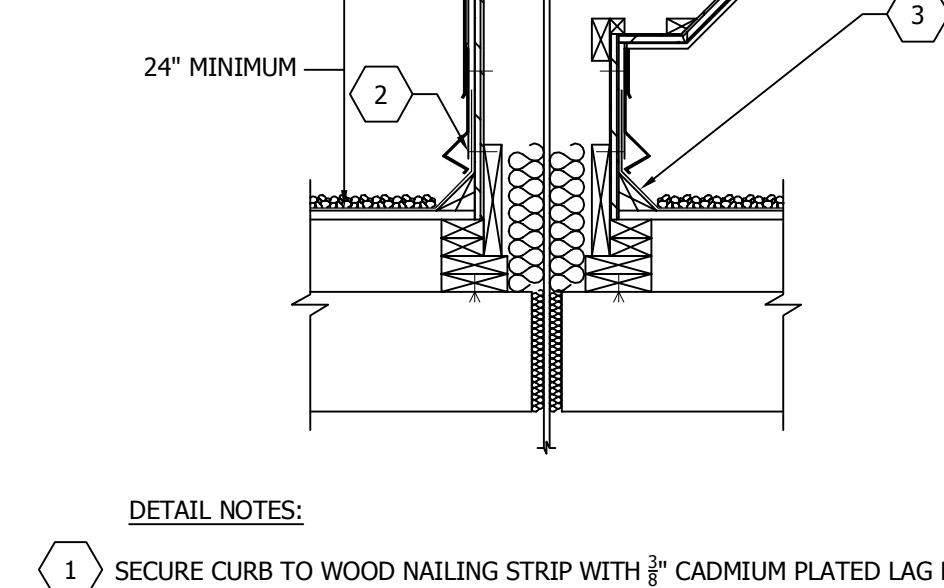
4 LAY-IN CEILING DIFFUSER/GRILLE ASSEMBLY DETAIL
NO SCALE



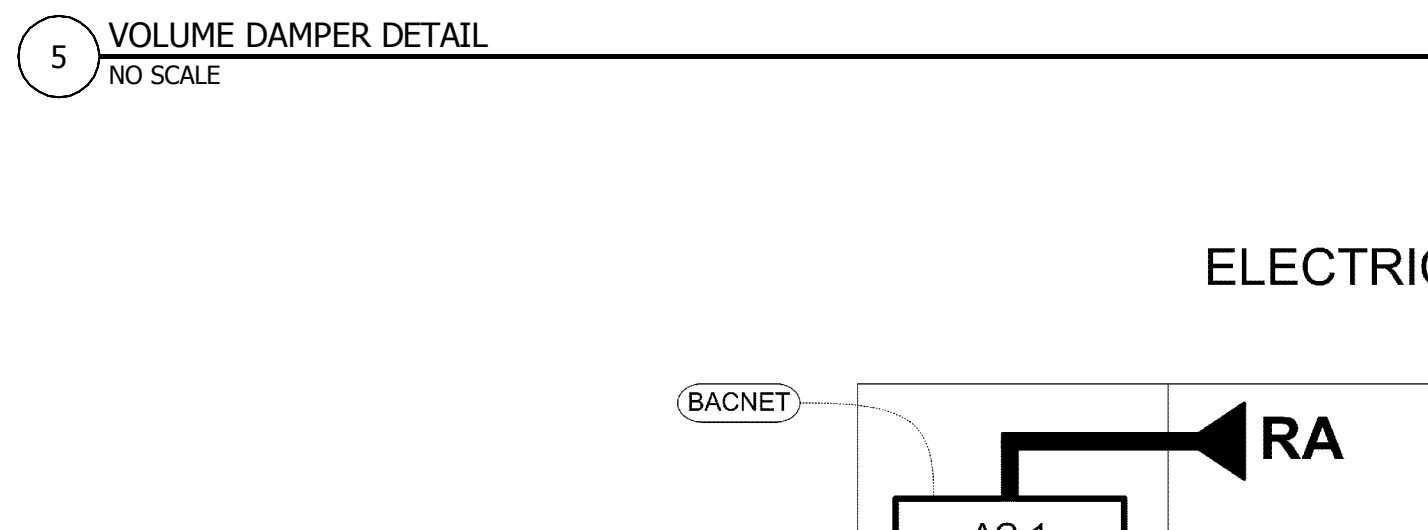
5 VOLUME DAMPER DETAIL
NO SCALE



6 ROOF PIPING PENETRATION DETAIL
NO SCALE

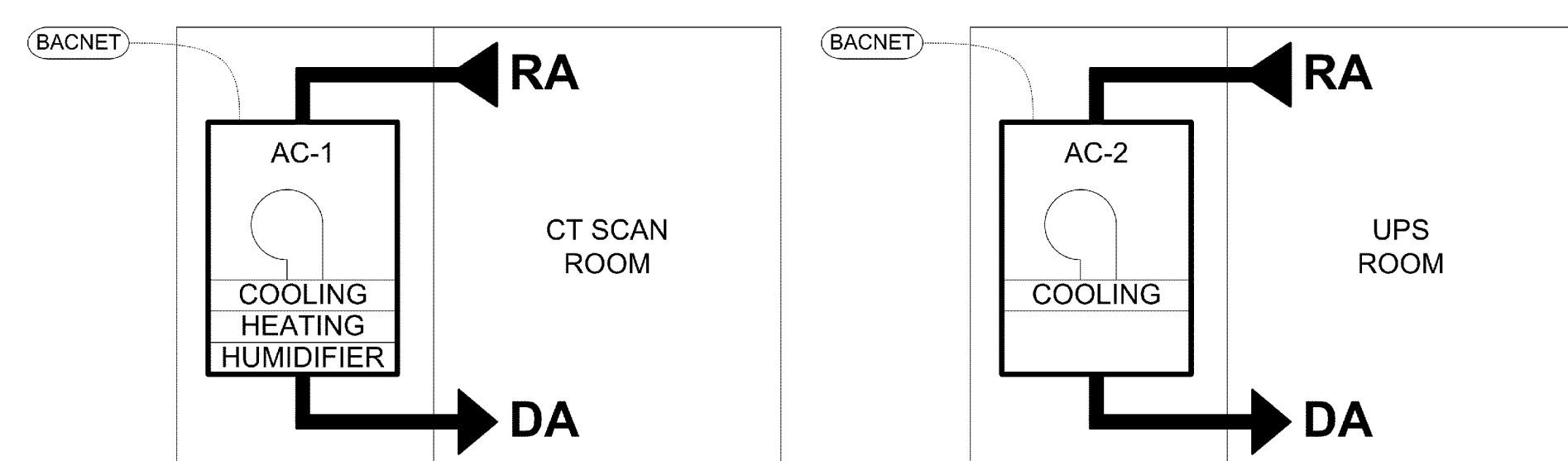


7 AIR CONDITIONER & FLUID COOLER PIPING DIAGRAM
NO SCALE



5 VOLUME DAMPER DETAIL
NO SCALE

ELECTRICAL ROOM AC UNIT (AC-1 & AC-2)



CT SCAN & UPS ROOM AIR CONDITIONING UNIT - SEQUENCE OF OPERATION

- A. FACTORY CONTROLS:** The unit's factory controls will operate the unit to maintain the space conditions in the space served. Setpoint adjustments shall only be made at the local equipment interface.
- B. BACNET INTERFACE:** The unit will come from the factory with a BACnet interface card to communicate to the Building Automation System. Through this connection, the BAS operator will be allowed to view system conditions (alarms, status, temperatures, etc.). All points that are viewable are dependent upon the configuration of the unit from the factory.

TAG	DESCRIPTION	TYPE	ALARM	GRAPHIC	TREND	NOTES
ZN-T	Zone Temperature	BACnet	X	X	X	VIEW ONLY - via BACnet Interface
ZNT-SP	Zone Temperature Setpoint	BACnet		X	X	VIEW ONLY - via BACnet Interface
ZN-H	Zone Humidity - AC-1 ONLY	BACnet	X	X	X	VIEW ONLY - via BACnet Interface
ZNH-SP	Zone Humidity Setpoint - AC-1 ONLY	BACnet		X	X	VIEW ONLY - via BACnet Interface
MISC COND	Miscellaneous System Conditions	BACnet		X	varies	VIEW ONLY - via BACnet Interface
MISC ALARMS	Miscellaneous System Alarms	BACnet	X	X	varies	VIEW ONLY - via BACnet Interface

UPS MONITORING POINTS

A. MISCELLANEOUS ALARMS: If any alarm point goes into an 'alarm' state, an alarm will be generated in the system and displayed on the user interface.

TAG	DESCRIPTION	TYPE	ALARM	GRAPHIC	TREND	NOTES
ACINFAIL-A	Input AC Power Source Failure Alarm	BI	X	X	X	via dry contact from UPS System
INPD-OPEN	Input Protective Device Open	BI	X	X	X	via dry contact from UPS System
OUTPD-OPEN	Output Protective Device Open	BI	X	X	X	via dry contact from UPS System
OVERLOAD-A	System Overload Alarm	BI	X	X	X	via dry contact from UPS System
OLSHDN-A	System Overload Shutdown Alarm	BI	X	X	X	via dry contact from UPS System
DCOVERVOLT-A	DC Overvoltage Alarm	BI	X	X	X	via dry contact from UPS System
DCGND-FAULT	DC Ground Fault	BI	X	X	X	via dry contact from UPS System
BATT-LOW	Low Battery Alarm	BI	X	X	X	via dry contact from UPS System
BATT-DISCH	Battery Discharged Alarm	BI	X	X	X	via dry contact from UPS System
CLGFAN-FAIL	Cooling Fan Failure	BI	X	X	X	via dry contact from UPS System
OVERTEMP-A	Equipment Overtemperature Alarm	BI	X	X	X	via dry contact from UPS System
CTLPOWER-FAIL	Control Power Failure	BI	X	X	X	via dry contact from UPS System
CHARGER-OFF	Charger Off	BI	X	X	X	via dry contact from UPS System
INVERTER-OFF	Inverter Off	BI	X	X	X	via dry contact from UPS System
EMERGENCY-OFF	Emergency Off	BI	X	X	X	via dry contact from UPS System
UPSonBATT	UPS running on Battery	BI	X	X	X	via dry contact from UPS System
LOADonBYP	Load on Static Bypass	BI	X	X	X	via dry contact from UPS System
BYPDISABLE-A	Static Bypass Transfer Switch Disabled Alarm	BI	X	X	X	via dry contact from UPS System
INVERTER-A	Inverter Output Alarm	BI	X	X	X	via dry contact from UPS System
BYPASS-A	Bypass Source Alarm	BI	X	X	X	via dry contact from UPS System
BS2ISYNC-A	Bypass Source to Inverter Out of Sync Alarm	BI	X	X	X	via dry contact from UPS System

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Design Tree
ENGINEERING AND
LAND SURVEYING
120 17th Avenue W.
Alexandria, MN 56308
(320) 762-1290

JLG
architects
Alexandria
525 Broadway Street
Alexandria, MN 56308
phone 320.759.9130
facsimile 320.759.9062
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MINNESOTA.
Joshua D. Medel
JOSHUA D. MEDEL REG. NO. 51592
DATE: 03-21-2016

PROJECT TITLE:
MECHANICAL - DETAILS
PROJECT NO:
656-15-836
SHEET NO:
82215003

DATE: 03/21/2016
PROJECT NO: 656-15-836
SHEET NO: 82215003
DRAWN BY: JDM
CHECKED BY: JDM
DATE: 03/21/2016

VAMC
SAINT CLOUD
MN

AIR CONDITIONING UNIT SCHEDULE

UNIT TAG	SERVES	LOCATION	MFGR.	MODEL	SUPPLY AIR (CFM)	SUPPLY FAN BHP	MINIMUM OUTDOOR AIR (CFM)	HUMIDIFIER (PPH)	FILTRATION	COOLING CAPACITY (MBH)	EAT db/°F WB	(°F db/°F WB)	LAT db/°F WB	REHEAT CAPACITY (MBH)	V/PH/HZ	FLA	MOP	DISCONNECT PROVIDED BY	STARTER PROVIDED BY	DIMENSIONS (LxWxH)	WEIGHT (LBS)	NOTES
AC-1	CT SCAN	EQUIP 36E	LIEBERT	PX023U31A8	3,500	2.33	0	7.7	MERV 8	78.0	75/61	51.2/50.7	47.5	460/3/60	32.5	50	MECHANICAL	MECHANICAL	34x34x78	800	1,2,3,4,6,7	
AC-2	UPS ROOM	ELECTRICAL ROOM	LIEBERT	PX029UA1A8A994	3,500	4.2	0	7.7	MERV 8	98.7	75/61	53.4/52.9	51.6	460/3/60	35.6	50	MECHANICAL	MECHANICAL	34x34x78	700	1,2,3,4,5,6,7	

NOTES:
 1. REHEAT TO BE STANDARD ELECTRICAL ELEMENT
 2. PROVIDE FILTER BOX WITH MERV 8 FILTER.
 3. PROVIDE MANUFACTURER SUPPLIED BACNET CARD TO COMMUNICATED WITH BUILDING AUTOMATION SYSTEM.
 4. SWEAT ADAPTERS TO BE PROVIDED BY MECHANICAL CONTRACTOR.
 5. PROVIDE OPTIONAL PLENUM.
 6. PROVIDE OPTIONAL DIGITAL SCROLL COMPRESSOR SOUND JACKET.
 7. UNIT TO BE SELECTED WITH CONDENSATE PUMP.

DRYCOOLER UNIT SCHEDULE

UNIT TAG	UNIT SERVES	MFGR.	MODEL	NOMINAL COOLING CAPACITY (MBH)	ENTERING FLUID TEMP (DEG F)	LEAVING FLUID TEMP (DEG F)	GPM	PD (FT WATER)	V/PH/HZ	FLA	MOP	DISCONNECT PROVIDED BY	STARTER PROVIDED BY	DIMENSIONS (LxWxH)	WEIGHT (LBS)	NOTES
DCU-1	AC-1	LIEBERT	DDO 174A8	109	114.7	102.6	21.1	34.8	460/3/60	6.4	15	MECHANICAL	MECHANICAL	43x91x44	700	1,2

NOTES:
 1. CONDENSING UNIT LOCATION SHALL BE BASED ON MANUFACTURERS CLEARANCE REQUIREMENTS.
 2. LEGS TO BE FASTENED TO ROOF SUPPORTS VIA ANCHOR BOLTS.

CONDENSING UNIT SCHEDULE

UNIT TAG	UNIT SERVES	MFGR.	MODEL	NOMINAL COOLING CAPACITY (MBH)	V/PH/HZ	FLA	MOP	DISCONNECT PROVIDED BY	STARTER PROVIDED BY	DIMENSIONS (LxWxH)	WEIGHT (LBS)	NOTES
CU-1	AC-2	LIEBERT	MCM040	99	460/3/60	1.4	15	MECHANICAL	MECHANICAL	48x46x44	231	1

NOTES:
 1. CONDENSING UNIT LOCATION SHALL BE BASED ON MANUFACTURERS CLEARANCE REQUIREMENTS.

PUMP SCHEDULE

UNIT TAG	UNIT SERVED	MFGR.	MODEL	V/PH/HZ	FLA	HP	MOP	DISCONNECT PROVIDED BY	STARTER PROVIDED BY	DIMENSIONS (LxWxH)	WEIGHT (LBS)	NOTES
P-1	DCU-1	LIEBERT	D1.5A	460/3/60	3	1.5	-	MECHANICAL	MECHANICAL	32x30x19	150	1
P-2	DCU-1	LIEBERT	D1.5A	460/3/60	3	1.5	-	MECHANICAL	MECHANICAL	32x30x19	150	1

NOTES:
 1. PUMPS SHALL BE PART OF A SINGLE PUMP PACKAGE.

DIFFUSER, REGISTER, AND GRILLE SCHEDULE

UNIT TAG	TYPE	MFGR.	MODEL	DESCRIPTION	MATERIAL	FINISH	ACCESSORIES	NOTES
A	CEILING DIFFUSER	PRICE	SCD	LAY-IN STEEL SQUARE CONE	STEEL	WHITE	-	
B	RETURN GRILLE	PRICE	SPD	LAY-IN PLAQUE DIFFUSER	STEEL	WHITE	-	
C	SUPPLY GRILLE	PRICE	S20D	DOUBLE DEFLECTION LOUVERED FACE	STEEL	WHITE	-	
D	RETURN/EXHAUST GRILLE	PRICE	S30D	LOUVERED FACE	STEEL	WHITE	-	
E	LINEAR DIFFUSER	PRICE	TBD1-4100	LINEAR DIFFUSER 4'-0" LONG W/ (2) 1" SLOTS	STEEL	WHITE	INS. PLENUM	
F	CEILING DIFFUSER	PRICE	RCD	ROUND CONE	STEEL	WHITE	-	
G	SUPPLY GRILLE	TITUS	S300FL	SPIRAL MOUNTED DOUBLE DEFLECTION	STEEL	WHITE	-	
H	CEILING DIFFUSER	PRICE	SPD	SQUARE PLAQUE	STEEL	WHITE	-	
I	SUPPLY GRILLE	TITUS	CT-480	LINEAR DIFFUSER 1'-0" LONG x 0'-4" WIDE	STEEL	WHITE	-	

NOTES:

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 one and one half inches = one foot
 one inch = one foot
 one and one half inches = one foot
 three quarters inch = one foot
 one inch = one foot
 one and one half inches = one foot
 one half inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot
 one eighth inch = one foot

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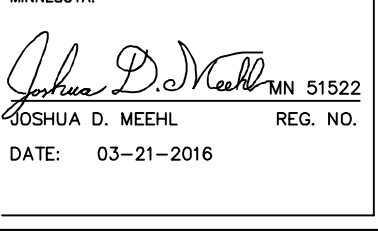
NO.	REVISION	DATE



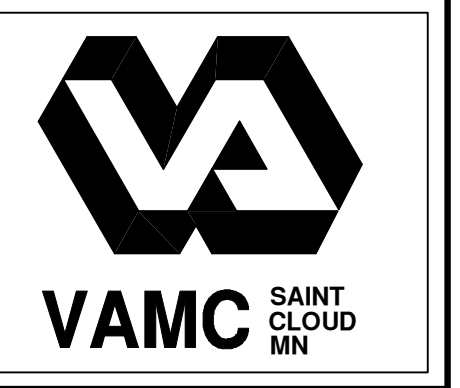
Design Tree
 ENGINEERING AND
 LAND SURVEYING
 120 17th Avenue W.
 Alexandria, MN 56308
 (320) 762-1290
 3339 W. St. Germain, Suite 250
 St. Cloud, MN 56301
 (320) 217-5553 (Phone)
 (320) 217-5597 (Fax)



JLG architects
 Alexandria
 525 Broadway Street
 Alexandria, MN 56308
 phone 320.755.9030
 facsimile 320.759.9062
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 GOSHUA D. MEDH,
 DATE: 03-21-2016 REG. NO. 51522

DRAWING TITLE: MECHANICAL - SCHEDULES
 PROJECT TITLE: REMODEL SITE FOR UPGRADED CT SCANNER
 DATE: 03.21.2016
 PROJECT NO: 656-15-836
 BUILDING NO: 01
 DESIGNED BY: JDM
 DRAWN BY: NRW
 DATE PLOTTED: 02/21/2016
 DRAWING NO: M8.1
 LOCATION: V.A. MEDICAL CENTER
 ST. CLOUD, MN 56302



VAMC SAINT CLOUD MN




three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

LIGHTING	COMMUNICATIONS	CONTROL	ONE-LINE SYMBOLS (CONTINUED)
LUMINAIRE LEGEND -E- DESIGNATES EMERGENCY LIGHT -C- CIRCULATING PUMP -S- SWITCH CIRCUIT ID	DATA OUTLET VOICE (TELEPHONE) OUTLET VOICE/DATA OUTLET TELEVISION (TV) OUTLET CLOCK OUTLET INTERCOM STATION SPEAKER, WALL MOUNT SPEAKER, CEILING MOUNT MICROPHONE OUTLET AUDIO/VIDEO OUTLET VOLUME CONTROL PROJECTOR PROJECTOR CONTROL OUTLET BELL/CHIME/AUDIBLE NOTIFICATION DEVICE CABLE TRAY WIRELESS ACCESS POINT	LEVEL TRANSDUCER FLOW METER/FLOW TUBE TEMPERATURE TRANSDUCER LIMIT SWITCH PRESSURE SWITCH TEMPERATURE SWITCH/THERMOSTAT FLOOD SWITCH LEVEL (FLOAT) SWITCH MOTORIZED DAMPER SOLENOID EMERGENCY PUSHBUTTON STATION CORD AND PLUG ENERGY STATION EMERGENCY LIGHTING UNIT PUSH TO TEST PILOT LIGHT (COLOR DENOTED) PILOT LIGHT (COLOR DENOTED) PUSH BUTTON - NORMALLY CLOSED PUSH BUTTON - NORMALLY OPEN JUNCTION BOX - CEILING MOUNT JUNCTION BOX - WALL MOUNT JUNCTION BOX - FLOOR MOUNT ALARM HORN/STROBE ALARM STROBE SMOKE DETECTOR/CO DETECTION ALARM PULL STATION SMOKE DETECTOR HEAT DETECTOR OCCUPANCY SENSOR, CEILING MOUNTED OCCUPANCY SENSOR, WALL MOUNTED COMBINATION PHOTOCELL, DAYLIGHT SENSOR/OCCUPANCY SENSOR, CEILING MOUNTED FIRE ALARM CONTROL PANEL MAGNETIC DOOR HOLD OPEN FIRE ALARM CONTROL RELAY FIRE ALARM FLOW SWITCH FIRE ALARM TAMPER SWITCH FIRE ALARM TAMPER SWITCH NURSE CALL STAFF STATION/TONE STATION - WALL MOUNTED NURSE CALL TONE STATION - CEILING MOUNTED CARD READER KEY PAD DOOR CONTACT REQUEST TO EXIT MOTION DETECTOR GLASS BREAK DETECTOR FIRE ALARM TAMPER SWITCH ELECTRIFIED/MAGNETIC DOOR LOCK MECHANISM CCTV CAMERA (FIXED) CCTV CAMERA (PAN-TILT-ZOOM) KEYNOTE/LEGEND SYMBOLS KEYED NOTE (NUMBER DENOTED) EQUIPMENT DESCRIPTION EQUIPMENT TAG (REFER TO SCHEDULE) EQUIPMENT NUMBER EQUIPMENT NAME IDENTIFIER CONDUIT/WIRE TAG (REFER TO SCHEDULE) CONDUIT IDENTIFIER REVISION (NUMBER DENOTED) STARTER COMPLETE W/OVERLOADS (NEMA SIZE DENOTED) VARIABLE FREQUENCY DRIVE (VFD)	SOLID STATE REDUCED VOLTAGE STARTER POWER MONITOR METER HIGH VOLTAGE CIRCUIT BREAKER DRAW OUT/BUSS STABS LIGHTNING ARRESTOR SCHEMATIC SYMBOLS RELAY COIL (NUMBER DENOTED) NORMALLY OPEN CONTACT NORMALLY CLOSED CONTACT THREE POSITION SELECTOR SWITCH (HAND-OFF-AUTO DENOTED) TWO POSITION SELECTOR SWITCH (RUN-OFF DENOTED) PUSH TO TEST PILOT LIGHT (COLOR DENOTED) PILOT LIGHT (COLOR DENOTED) PUSH BUTTON - NORMALLY CLOSED PUSH BUTTON - NORMALLY OPEN TIMING RELAY CLOSED SWITCH - TIME DELAY OPEN OPEN SWITCH - TIME DELAY CLOSED CLOSED SWITCH - TIME DELAY CLOSED OPEN SWITCH - TIME DELAY OPEN TEMPERATURE SWITCH - CLOSE ON RISING TEMPERATURE TEMPERATURE SWITCH - OPEN ON RISING TEMPERATURE SOLENOID CONTROL POWER TRANSFORMER GROUND OVERLOAD HEATER TERMINAL BLOCK CONNECTION NODE SECURITY SYSTEMS SECURITY SYSTEMS ONE-LINE SYMBOLS INCOMING LINE CIRCUIT BREAKER TRANSFORMER SINGLE THROW SWITCH DISCONNECTING FUSE SWITCH AND FUSE FUSE CURRENT TRANSFORMER MOTOR (HORSEPOWER DENOTED) SURGE PROTECTION DEVICE GENERATOR AUTOMATIC TRANSFER SWITCH (ATS) CAPACITOR CONTACTOR STARTER COMPLETE W/OVERLOADS (NEMA SIZE DENOTED) VARIABLE FREQUENCY DRIVE (VFD) SYMBOL LEGEND WP = WEATHER PROOF AC = ABOVE COUNTER

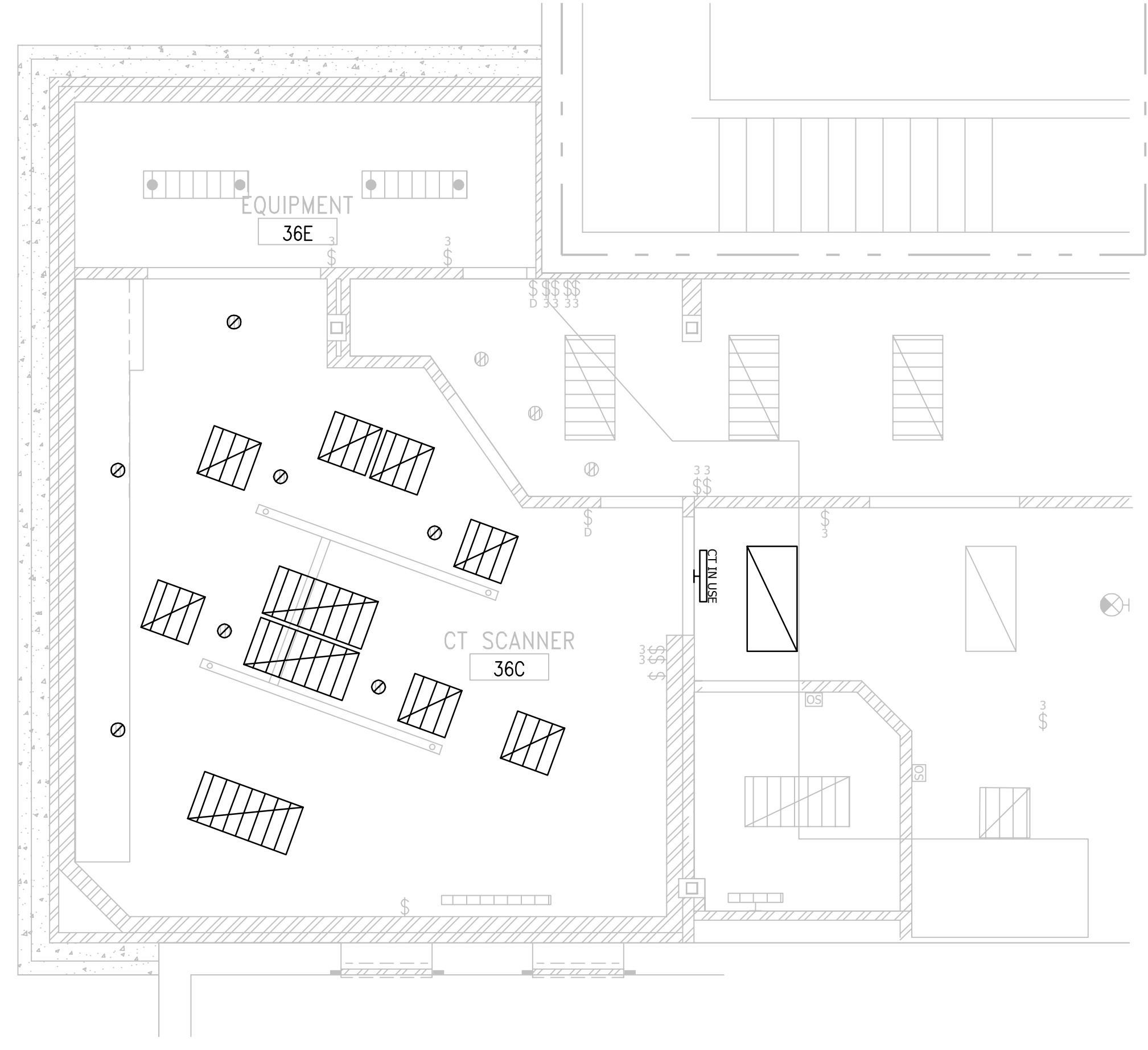
ELECTRICAL ABBREVIATIONS LIST

IP 1 POLE (2P, 3P, 4P, ETC.)	DOP DOMESTIC WATER CIRCULATING PUMP	HT HEIGHT	NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	SWBD SWITCHBOARD
A AMPERE	DEPT DETAIL	HTR HEATER	NFDS NON-FUSED SAFETY DISCONNECT SWITCH	SYM SYMMETRICAL SYSTEM
AC ABOVE COUNTER OR AIR CONDITIONER	DIA DIAPHRAGM	HV HIGH VOLTAGE	NIC NIGHT LIGHT	TEL TELEPHONE
ADO ABOVE CEILING	DISC DISCONNECT	HVAC HEATING, VENTILATING AND AIR CONDITIONING	N.O. NORMALLY OPEN	TEL/DATE TELEPHONE/DATE
ADO AMP FRAME	DIST DISTRIBUTION	HWP HYDRONIC WATER PUMP	NPF NORMAL POWER FACTOR	TERM TERMINAL
AF ABOVE FINISHED FLOOR	DN DOWN	IC INTERRUPTING CAPACITY	N.S. NOT TO SCALE	TL TWIST LOCK
AFG ABOVE FINISHED GRADE	DPR DAMPER	IG ISOLATED GROUND	OH OVERHEAD OVERLOADS	TR TAMPER RESISTANT
AFI ARC FAULT CIRCUIT INTERRUPTER	DT DOUBLE THROW	IMC INTERMEDIATE METAL CONDUIT	OL OVERLOADS	T-STAT THERMOSTAT
AHU AIR HANDLING UNIT	DWG DRAWING	IR INFRARED	PA PUBLIC ADDRESS	TTC TELEPHONE TERMINAL CABINET
AL ALUMINUM	EC ELECTRICAL CONTRACTOR	I/W INTERLOCK WITH	PB PULL BOX OR PUSHBUTTON	TV TELEVISION TERMINAL CABINET
ALT ALTERNATE	ELEC ELECTRIC, ELECTRICAL	J-BOX JUNCTION BOX	PE PNEUMATIC ELECTRIC	TYP TYPICAL
AMP AMPERE	ELEV ELEVATOR	KV KILOVOLT	PF POWER FACTOR	UC UNDER COUNTER
AMPL AMPLIFIER	EM EMERGENCY	KVA KILOVOLT-AMPERE	PH PHASE	UE UNDERGROUND ELECTRICAL
ANUN ANNUNCIATOR	EMS ENERGY MANAGEMENT SYSTEM	KVAR KILOWATT-AMPERE REACTIVE	PIV POST INDICATING VALVE	UG UNDERGROUND
APPROX APPROXIMATELY	EMT ELECTRICAL METALLIC TUBING	KWH KILOWATT HOUR	PIN PANEL	UH UNIT HEATER
ARCH ARCHITECT, ARCHITECTURAL	EP ELECTRIC PNEUMATIC EQUIPMENT	LOC LOCATE OR LOCATION	PP POWER POLE	UNO UNLESS NOTED OTHERWISE
AQ-STAT AQUASTAT	EWC ELECTRIC WATER COOLER	LT LIGHT	PR PAIR	UT UNDERGROUND TELEPHONE
AS AMP SWITCH	EXIST EXISTING	LTG LIGHTING	PRE PRIMARY	UV UNIT VENTILATOR OR ULTRAVIOLET
AT AUTOMATIC TRANSFER SWITCH	EXH EXHAUST	LV LOW VOLTAGE	PROJ PROJECTION	
AUTO AUTOMATIC	EXP EXPLOSION PROOF	MAX MAXIMUM	PRV POWER ROOF VENTILATOR	V VOLT
AUX AUXILIARY	ESPC ENERGY SAVINGS PERFORMANCE CONTRACT	MCBS MAGNETIC STARTER	POT POTENTIAL TRANSFORMER	VA VOLT-AMPERES
AV AUDIO VISUAL	FA FIRE ALARM	MC MECHANICAL CONTRACTOR	PVC POLYVINYL CHLORIDE (CONDUIT)	VDF VARIABLE FREQUENCY DRIVE
AWG AMERICAN WIRE GAUGE	FAA FIRE ALARM REMOTE ANNUNCIATOR	MCB MAIN CIRCUIT BREAKER	QUAN QUANTITY	W WATT
BATT BATTERY	FABP FIRE ALARM BOOSTER POWER SUPPLY PANEL	MCC MOTOR CONTROL CENTER	RCPT RECEPTACLE	WG WIRE GUARD
BD BOARD	FACP FIRE ALARM CONTROL PANEL	MDC MAIN DISTRIBUTION CENTER	RQD REQUIRED	WH WATER HEATER
BLDG BUILDING	FCU FAN COIL UNIT	MDF MAIN DISTRIBUTION PANEL	RH ROOM	WO WITHOUT
BMS BUILDING MANAGEMENT SYSTEM	FIXT FIXTURE	MFR MANUFACTURER	RTU ROOF TOP UNIT	WP WEATHERPROOF
C CONDUIT	FLR FLOOR	MFS MAIN FUSED DISCONNECT SWITCH	SC SURFACE CONDUIT	XFMR TRANSFORMER
CAB CABINET	FLR FLUORESCENT	MIS MISCELLANEOUS	SEC SECONDARY	XFR TRANSFER
CAT CATALOG	FUSE FUSE	MLO MAIN LUGS ONLY	SHT SHEET	
CATV CABLE TELEVISION	FUS FUSED SAFETY DISCONNECT SWITCH	MMA MANUAL MOTOR STARTER	SIM SIMILAR	
CB CIRCUIT BREAKER	GAL GALLON	MND MAIN SWITCHBOARD	SPEC SPECIFICATION	
CBG CIRCUIT BREAKER	GALV GALVANIZED	MNT MOUNT	SP SPARE	
CCG CEILING	GEN GENERAL CONTRACTOR	MTS MANUAL TRANSFER SWITCH	SR SURFACE RACKWAY	
COMB COMBINATION	GEN GENERATOR	MTR MOTOR, MOTORIZED	SS STAINLESS STEEL	
CMR COMPRESSOR	GFI GROUND FAULT CIRCUIT INTERRUPTER	N.C. NORMALLY CLOSED	SSW SELECTOR SWITCH	
CONN CONNECTION	GFP GROUND FAULT PROTECTOR	NEC NATIONAL ELECTRICAL CODE	STD STANDARD	
CONST CONSTRUCTION	GND GROUND		STD STANDARD	
CONT CONTINUOUS	GRS GALVANIZED RIGID STEEL (CONDUIT)		STD STANDARD	
CONTR CONTRACTOR	GYP BOARD		STD STANDARD	
CONV CONVECTOR	HOA HANDS-OFF-AUTOMATIC SWITCH		STD STANDARD	
CP CIRCULATING PUMP	HRZ HORIZONTAL		STD STANDARD	
CRT CATHODE-RAY TUBE	HP HORSEPOWER		STD STANDARD	
CT CENTER	CU COPPER		STD STANDARD	
CTR CENTER			STD STANDARD	
CU COPPER			STD STANDARD	

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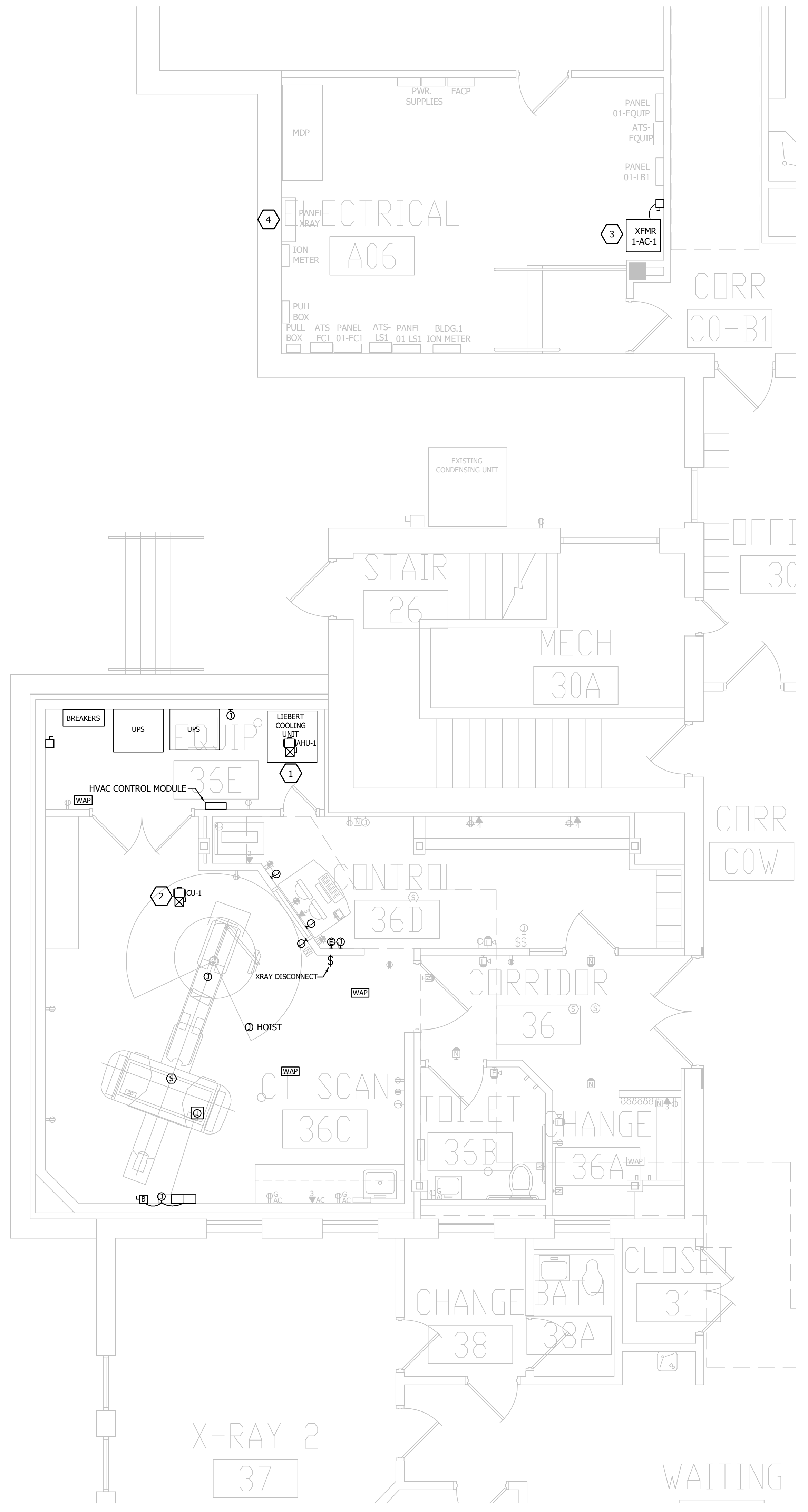
 <p>Design Tree ENGINEERING AND LAND SURVEYING</p> <p>120 17th Avenue W. Alexandria, MN 56308 (320) 762-1290</p>	 <p>JLG architects</p> <p>3339 W. St. Germain, Suite 250 St. Cloud, MN 56301 (320) 217-5557 (Phone) (320) 217-5597 (Fax)</p>	<p>Alexandria 525 Broadway Street Alexandria, MN 56308 phone 320.759.9030 facsimile 320.759.9062</p> <p>www.jlgarchitects.com copyright © 2015</p>	<p>STAMP/SEAL: I, THE UNDERSIGNED, HAVE THIS PLAN SPECIFICATION OR REPORT PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.</p> <p>DATE: 03-21-2016</p>	<p>DRAWING TITLE: ELECTRICAL - SYMBOLS LEGEND AND ABBREVIATIONS</p>	<p>PROJECT TITLE: REMODEL SITE FOR UPGRADED CT SCANNER</p> <p>BLDG No: 01 DESIGNED BY: ARM DRAWN BY: ARM</p>	<p>DATE: 03.21.2016</p> <p>PROJECT NO: 656-15-836</p> <p>DWG FILE: E01</p> <p>DRAWING NO: E01</p>	 <p>VAMC VA MEDICAL CENTER ST. CLOUD, MN 56301</p>
---	---	--	--	---	--	---	---

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 one quarter inch = one foot
 three eighths inch = one foot
 one eighth inch = one foot
 one eighth inch = one foot



GENERAL NOTES:
 1. LUMINAIRES SHOWN IN LIGHT OR GRAY LINES ARE TO REMAIN AS IS. LUMINAIRES SHOWN IN DARK OR BLACK LINES SHALL BE REMOVED, SALVAGED AND REINSTALLED.

1 ELECTRICAL - BASEMENT - LIGHTING DEMOLITION PLAN
 SCALE = 1/4"=1'-0"



KEYNOTES:
 1. EXISTING AIR HANDLING UNIT TO BE REMOVED UNDER DIVISION 23. ELECTRICAL CONTRACTOR TO REMOVE DISCONNECT, STARTER, RACEWAY AND FEEDER COMPLETELY BACK TO PANEL. REMOVE EXISTING BREAKER AT PANEL.
 2. EXISTING CONDENSING UNIT LOCATED ON THE ROOF IS TO BE REMOVED UNDER DIVISION 23. ELECTRICAL CONTRACTOR TO REMOVE EXISTING DISCONNECT, STARTER, RACEWAY AND FEEDER COMPLETELY BACK TO PANEL. REMOVE EXISTING BREAKER AT PANEL.
 3. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING 1-AC-1 TRANSFORMER, DISCONNECT, RACEWAY AND FEEDER COMPLETELY.
 4. ELECTRICAL CONTRACTOR SHALL MODIFY EXISTING PANELBOARD AS INDICATED ON THE PANEL SCHEDULE.

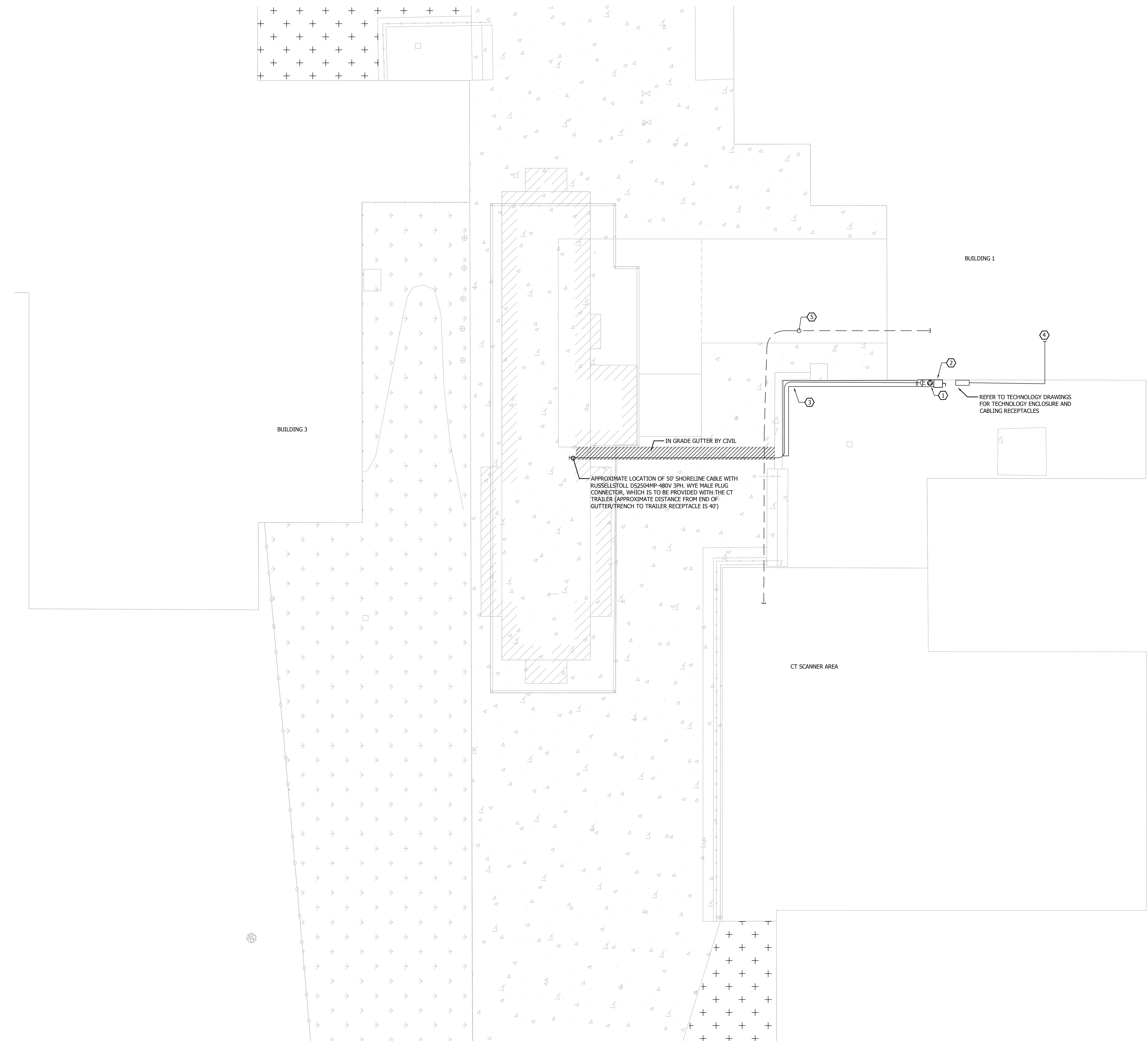
2 ELECTRICAL - BASEMENT - POWER DEMOLITION PLAN
 SCALE = 1/4"=1'-0"

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three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot
 one eighth inch = one foot

- KEYNOTES:**
1. PROVIDE A RUSSELL-STOLL DF2504FRAB RECEPTACLE, ANGLE ADAPTER AND SPRING COVER TO MATCH THE CT SCANNER TRAILER SHORELINE CORD AND RUSSELL-STOLL DS2504MP PLUG FURNISHED WITH TRAILER. PROVIDE A NEMA 3R ENCLOSURE SIZED TO ACCEPT MOUNTING THE RECEPTACLE WITH-IN ENCLOSURE. ENCLOSURE SHALL HAVE CONTINUOUS HINGED COVER PLATE WITH PADLOCK FRONT COVERPLATE. ENCLOSURE SHALL BE CUSTOM MANUFACTURED OPENING TO ACCEPT THE WIREWAY CALLED OUT AT NOTE 3 ATTACHED TO IT, AND TO ACCEPT THE TRAILER CABLE/PLUG CONNECTOR. PROVIDE A CUSTOM HOFFMAN PAINTED STEEL #40H3216HCR SERIES ENCLOSURE WITH 3 POINT LATCHING THAT CAN BE PADLOCKED. SEE DETAIL J166.1.
 2. PROVIDE A LOCKABLE DISCONNECT SWITCH. PROVIDE HANDLE PROVISIONS TO LOCK IN THE ON OR CLOSED POSITION. ENCLOSURE DOOR SHALL NOT BE OPERABLE UNLESS THE SWITCH IS IN THE OPEN POSITION. LABEL DISCONNECT PER DETAIL ON DRAWINGS AND PER THE 'VA' STANDARDS.
 3. PROVIDE (2) RUNS OF NEMA 3R WIREWAY WITH A CONTINUOUS LOCKABLE HINGED FRONT COVER. ONE 12"x12" FOR THE CT SCANNER TRAILER POWER CABLE, AND ONE 6"x6" FOR LOW VOLTAGE CABLES. REFER TO SPECIFICATIONS.
 4. PROVIDE (4) 2" CONDUITS FROM WIREWAY INTO TECHNOLOGY ENCLOSURE.
 5. PROPOSED ROUTE FOR CONDUITS FROM ELECTRICAL ROOM TO CT SCANNER AREA. ROUTE CONDUITS UNDER GRADE LEVEL.



ELECTRICAL - SITE PLAN
 SCALE: 1"=50'

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Design Tree
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120 17th Avenue W.
 Alexandria, MN 56308
 (320) 762-1290

3339 W. St. Germain, Suite 200
 St. Cloud, MN 56301
 (320) 217-5557 (Phone)
 (320) 217-5597 (Fax)

JLG
 architects

Alexandria
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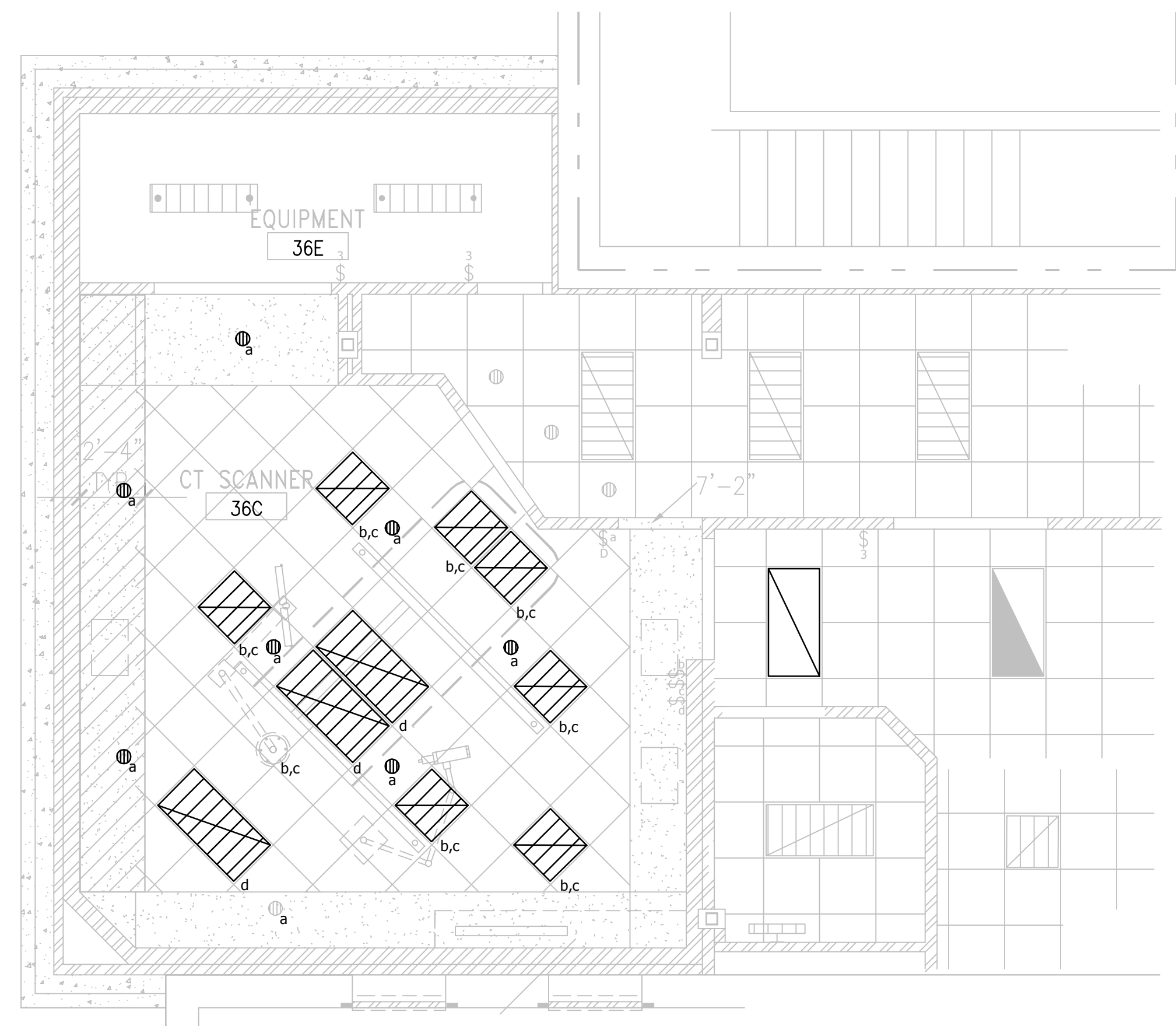
AARON R. MUELLER, P.E. REG. NO. 458584
 DATE: 03-21-2016

DRAWING TITLE ELECTRICAL - SITE PLAN	
BUILDING No. 01	DESIGNED BY ARM
DRAWN BY ARM	DATE FILE
LOCATION VA. MEDICAL CENTER ST. CLOUD, MN 56303	DRAWING NO. E21

PROJECT TITLE REMODEL SITE FOR UPGRADED CT SCANNER	DATE 03.21.2016
PROJECT NO. 656-15-836	PROJ SCALE
DATE FILE	DRAWING NO. E21

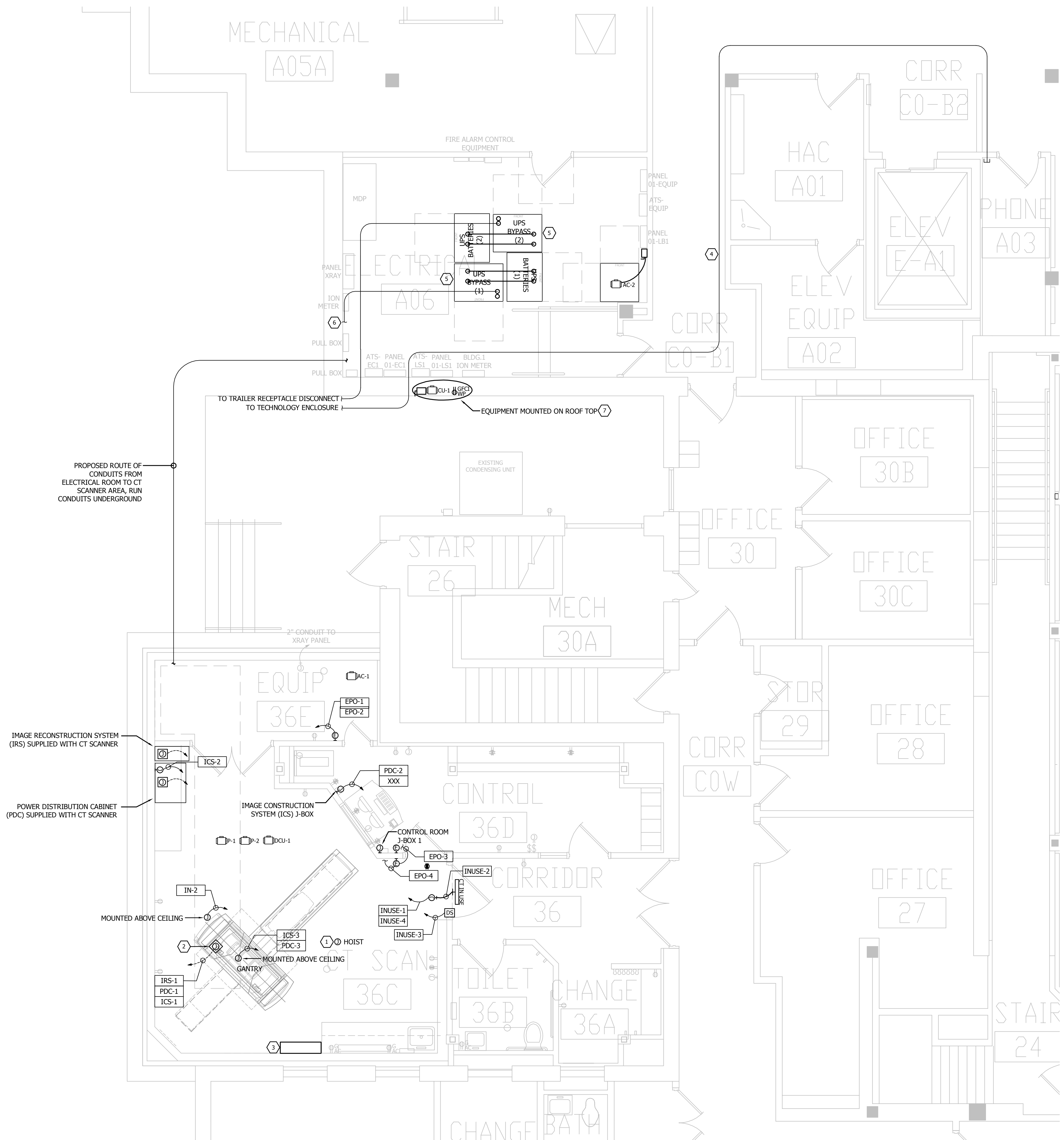
VAMC SAINT CLOUD MN

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 one half inch = one foot
 one quarter inch = one foot
 three eighths inch = one foot
 one eighth inch = one foot
 one sixteenth inch = one foot



- GENERAL NOTES:**
- REINSTALL THE EXISTING LUMINAIRES IN THE LOCATIONS AS SHOWN.
 - REUSE EXISTING HOME RUN POWER CIRCUITS. PROVIDE NEW FIXTURE WHIPS AND MODIFY CONDUIT RUNS ABOVE CEILING TO MATCH NEW LUMINAIRE LAYOUT. REUSE EXISTING CONTROL DEVICES AND WIRING UP TO CEILING. PROVIDE NEW SWITCH CONTROL WIRING FROM NEAREST SWITCH CIRCUIT JUNCTION BOX FROM CONDUIT STUB OUT FROM WALL ABOVE CEILING TO THE LUMINAIRE(S).
 - LUMINAIRES AND DEVICES SHOWN IN GRAY SCALE OR LIGHT LINE WORK ARE EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.

ELECTRICAL - BASEMENT - LIGHTING PLAN
 SCALE = 1/4"=1'-0"



- KEYNOTES:**
- RECONNECT EXISTING HOIST CIRCUIT. MODIFY CONDUIT AND CONDUCTORS TO EXTEND TO NEW TERMINATION LOCATION.
 - MINIMUM BOX DIMENSIONS: 24"W X 24"L X 12"D WITH 6" ROUND GROMMET OPENING IN FLOOR COVER.
 - APPROXIMATE LOCATION OF 'BED WALL UNIT' PROVIDED UNDER ARCHITECTURAL SPECIFICATIONS. PROVIDE (1) 20A/1 CRITICAL BRANCH CIRCUIT FROM PANEL EC-1 AND (1) 20A/1 NORMAL POWER CIRCUIT FROM PANEL 01-LB1 AND CONNECT RECEPTACLES FURNISHED WITH UNIT.
 - PROVIDE (2) 1.25" CONDUITS ABOVE CEILING TO PHONE ROOM A03 FOR TECHNOLOGY CABLING.
 - CONDUITS RUN BETWEEN BYPASS AND BATTERY CABINETS SHALL BE PLACED TO NOT CONFLICT WITH HEAT VENTS ON TOP OF UNITS. COORDINATE CABLING AND CONDUIT REQUIREMENTS WITH UPS MANUFACTURER.
 - APPROXIMATE LOCATION TO INTERCEPT EXISTING 2" CONDUIT TO THE CT SCANNER EQUIPMENT ROOM 36E.
 - RUN CONDUITS ON SAME ROUTE AS REFRIGERANT PIPING, REFER TO MECHANICAL DOCUMENTS FOR PROPOSED PATH AND FINAL LOCATION OF CONDENSING UNIT. POWER RECEPTACLE FROM A SPARE 20A/1P BREAKER AT PANEL 01-EQUIP.

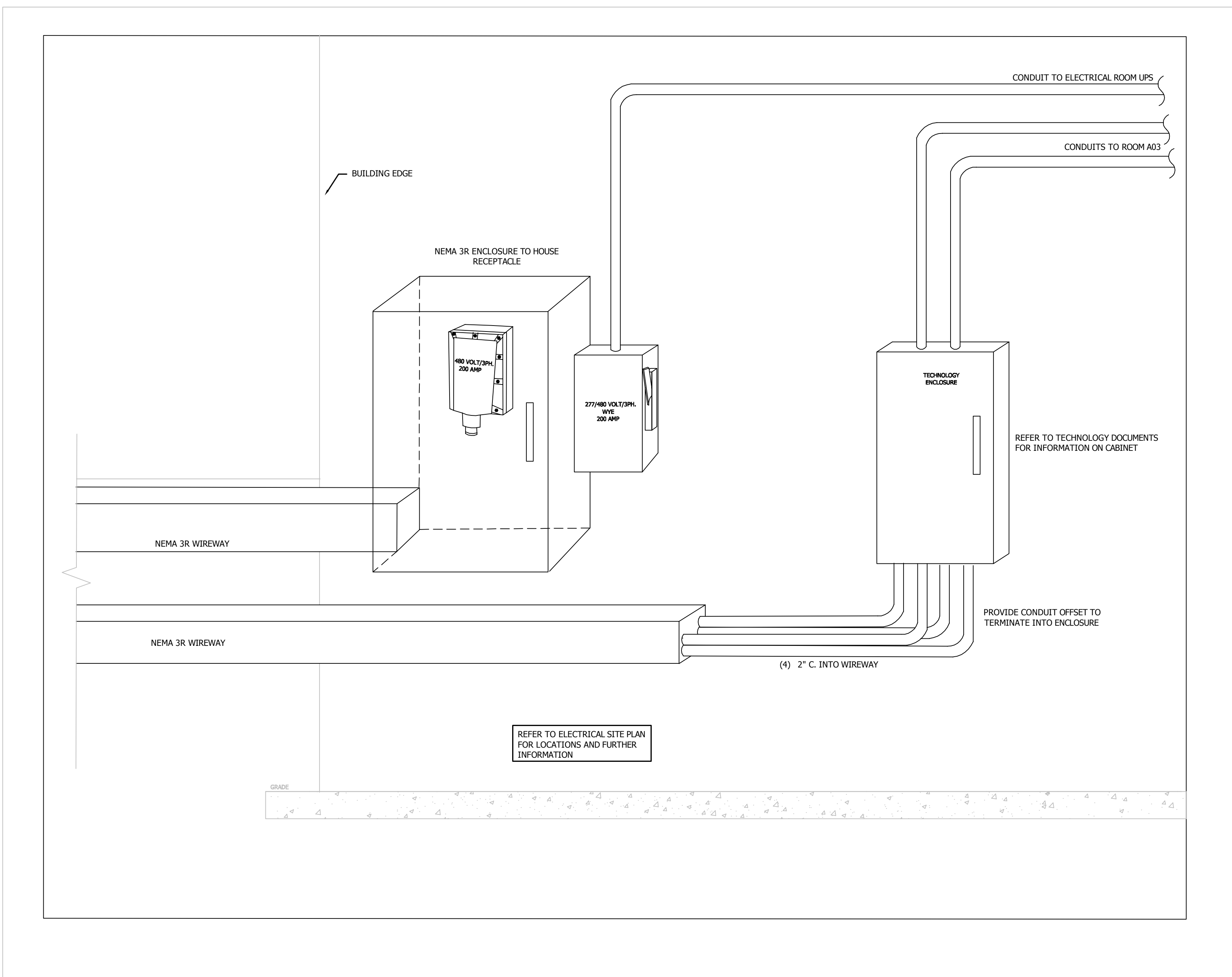
- GENERAL NOTES:**
- EMERGENCY STOP PUSHBUTTONS SHALL BE PROVIDED WITH A FLIP OPEN COVER TO PREVENT ACCIDENTAL ACTIVATION. EACH BUTTON SHALL BE OF THE LATCHING TYPE AND SHALL BE CIRCUITED IN PARALLEL TO THE UPS DEVICE TO SHUT DOWN THE UPS UPON ACTIVATION. COORDINATE WIRE TERMINATIONS WITH THE UPS EQUIPMENT SUPPLIER.
 - FIELD COORDINATE ALL DEVICE AND PROPOSED JUNCTION BOX LOCATIONS, CONDUIT SIZING AND CONTROL CONDUCTORS WITH THE FINAL OWNER PROVIDED CT SCANNER EQUIPMENT DRAWINGS PRIOR TO PERFORMING ROUGH-INS.
 - COORDINATE FLOOR SAW CUTTING AND PATCHING WITH THE ARCHITECTURAL DOCUMENTS.
 - UPS BYPASS (1) AND BATTERY CABINET (1) IS TO BE SUPPLIED WITH THE CT SCANNER EQUIPMENT AND INSTALLED UNDER THIS CONTRACT. ALL CONDUIT AND WIRING TO THE UPS IS TO BE PROVIDED UNDER THIS CONTRACT.

ELECTRICAL - BASEMENT - POWER PLAN
 SCALE = 1/4"=1'-0"

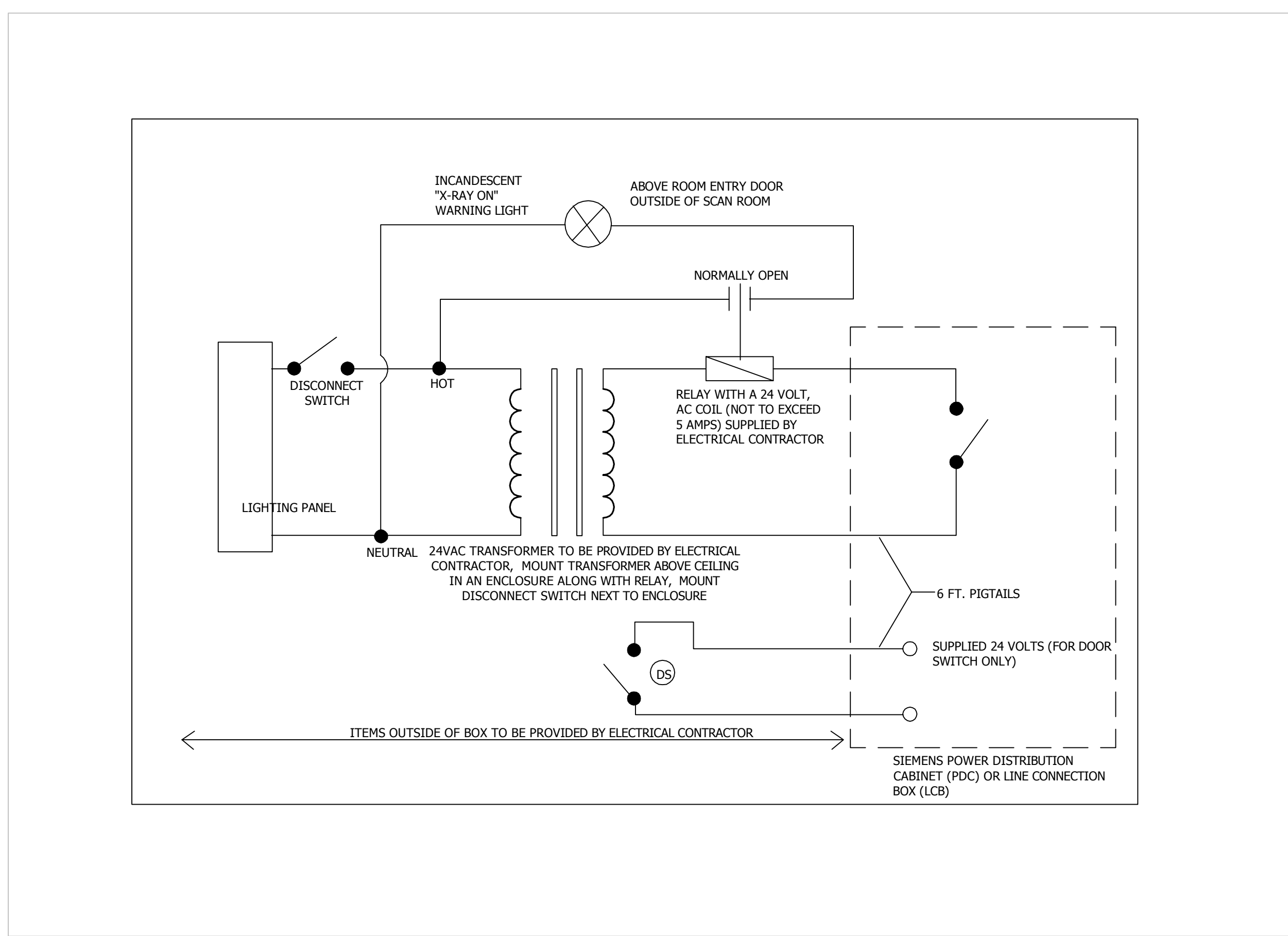
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						PROJECT NO: 656-15-836
REVISION No. DATE		DRAWING NO: E41	LOCATION: V.A. MEDICAL CENTER ST. CLOUD, MN 56303	DRAWING NO: E41	 VAMC SAINT CLOUD MN	

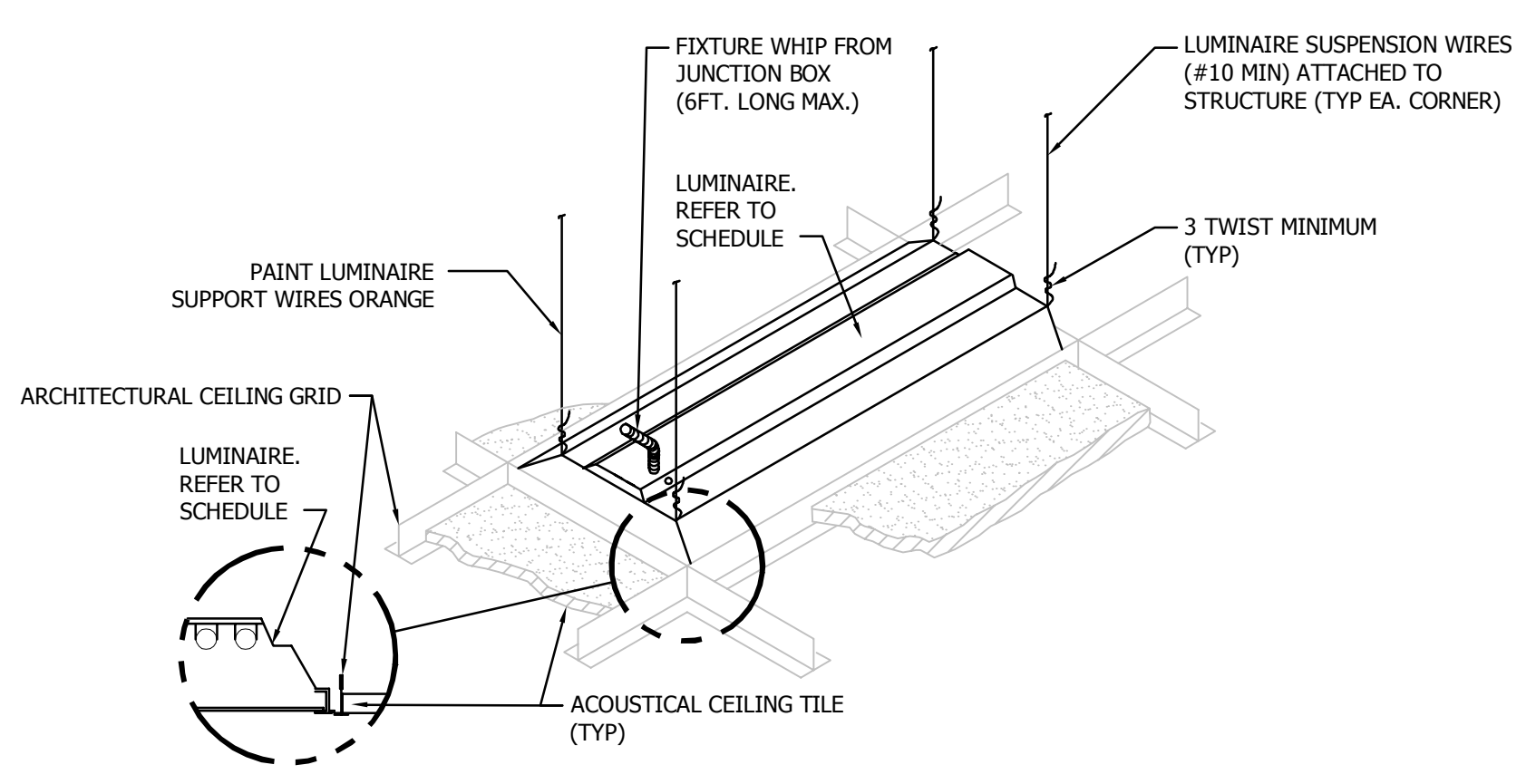
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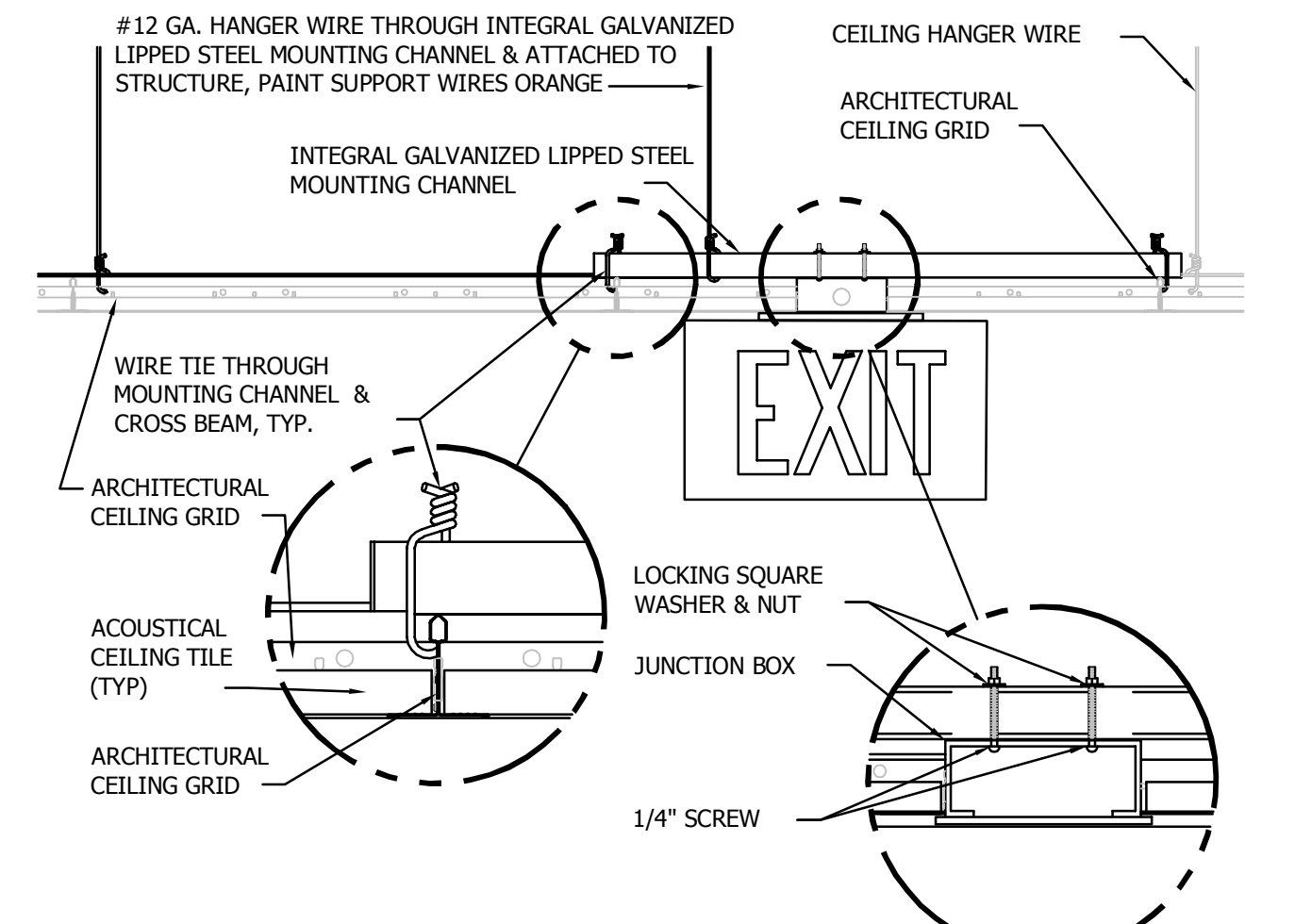
1 ELECTRICAL ELEVATION DIAGRAM
 E6.1 NOT TO SCALE



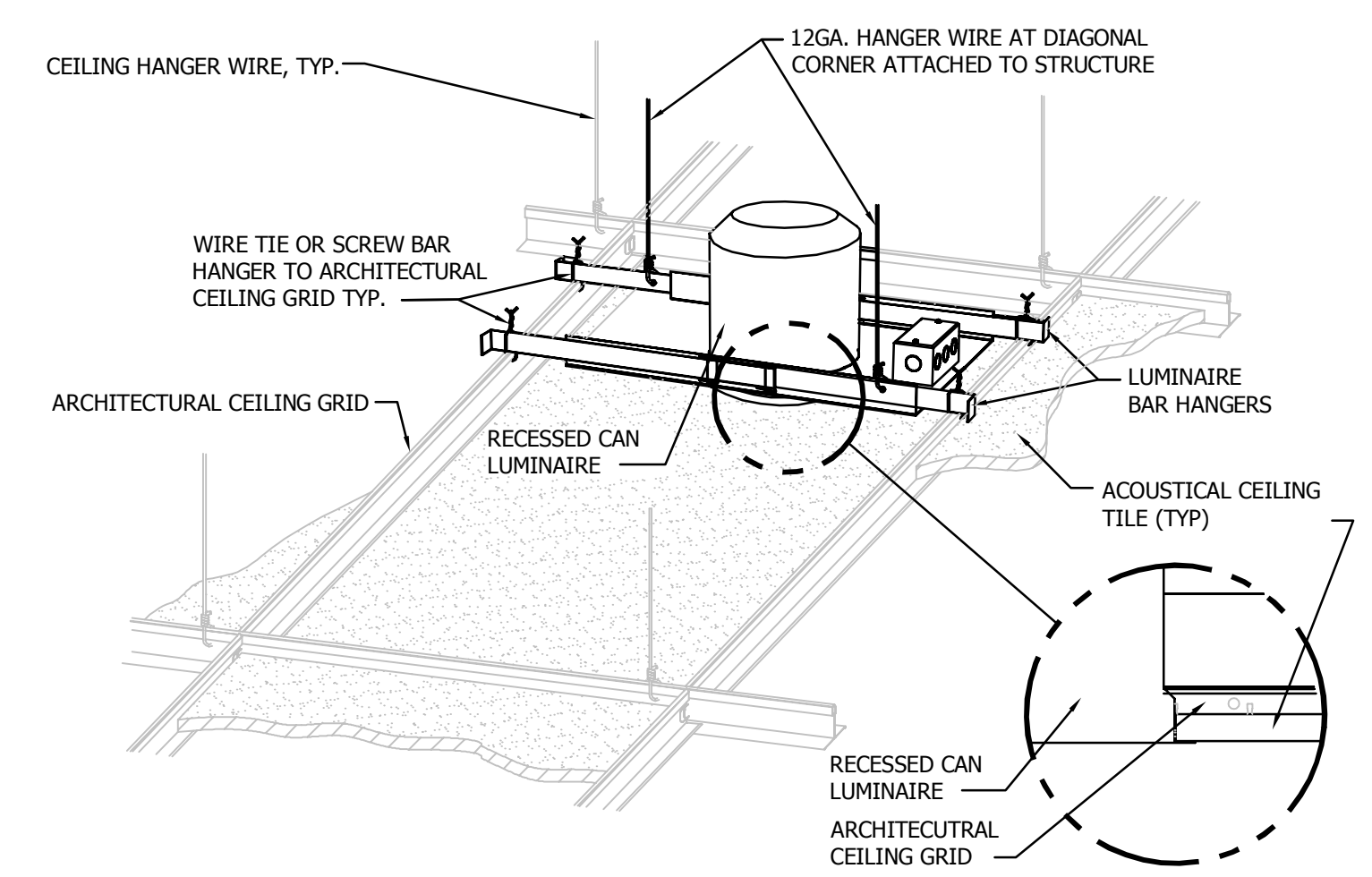
8 WARNING LIGHT AND DOOR SWITCH SCHEMATIC
 E6.1 NOT TO SCALE



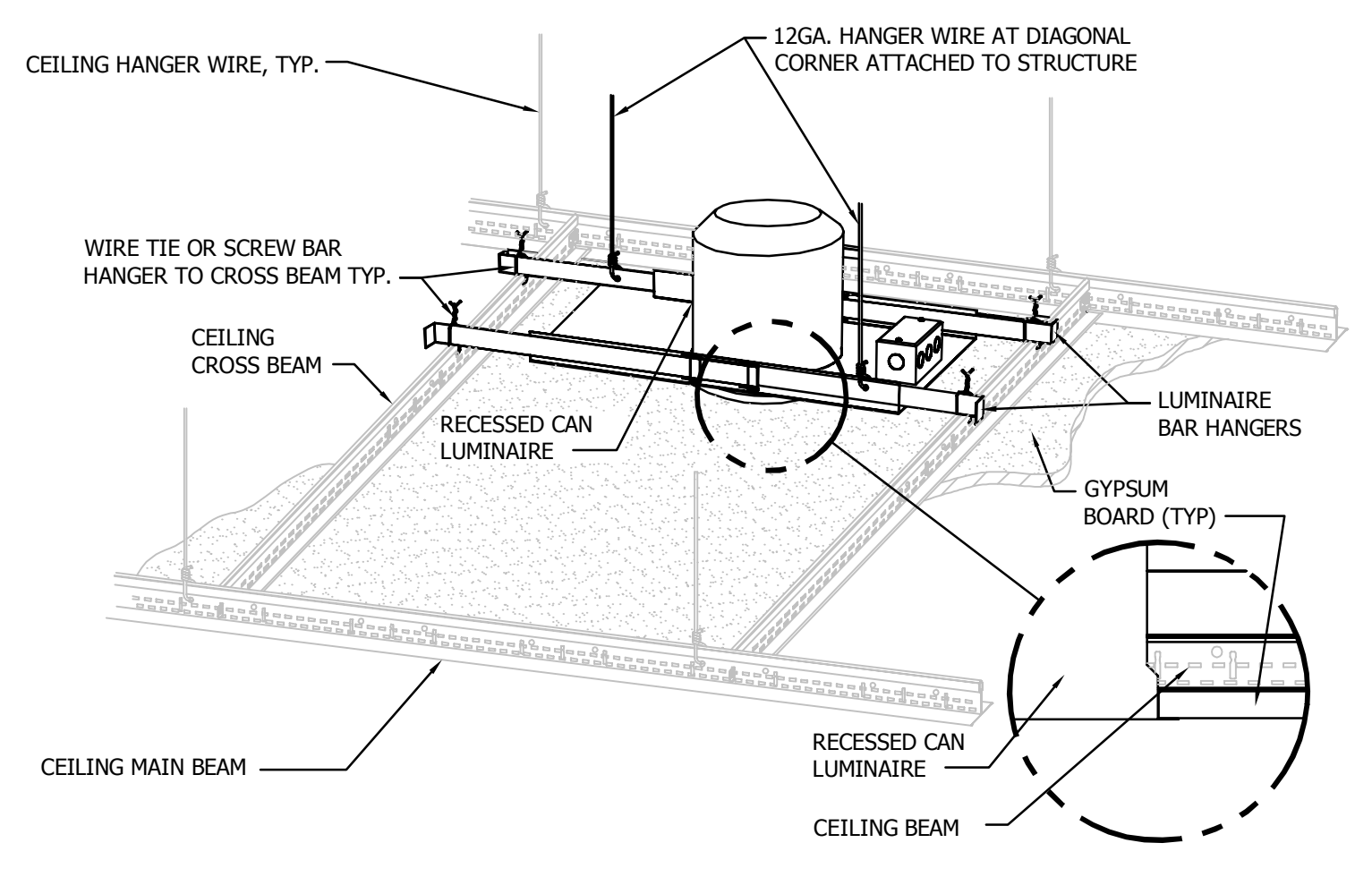
1 LUMINAIRE MOUNTING - LAY-IN CEILING
 E6.1 NOT TO SCALE



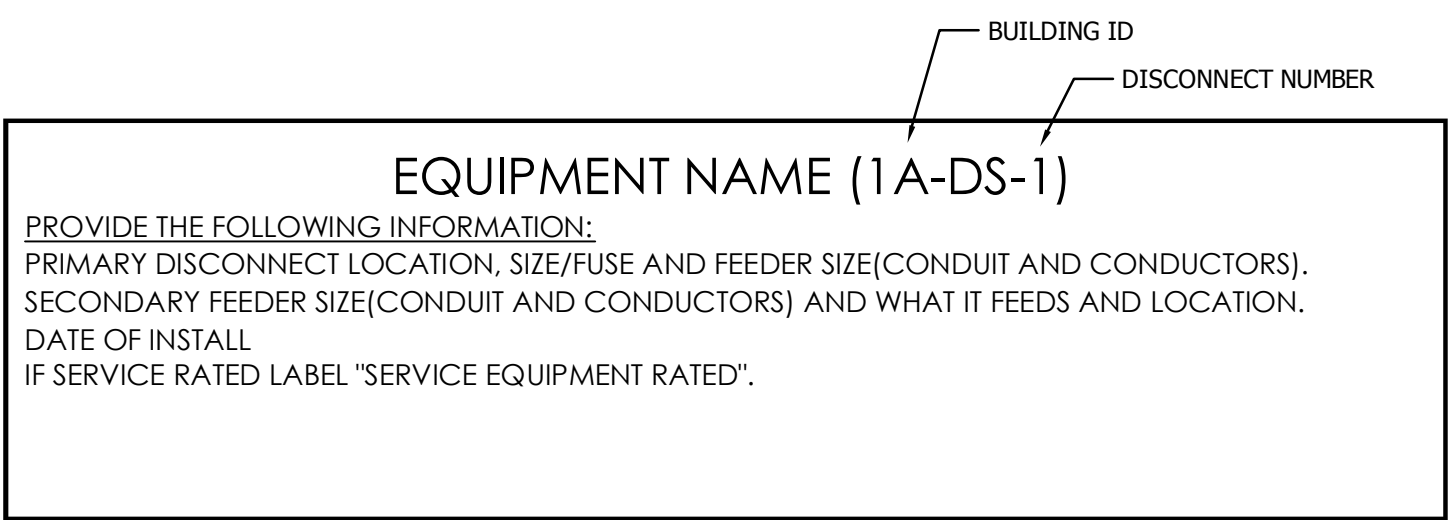
3 EXIT SIGN MOUNTING - LAY-IN CEILING
 E6.1 NOT TO SCALE



4 DOWNLIGHT MOUNTING - LAY-IN CEILING
 E6.1 NOT TO SCALE

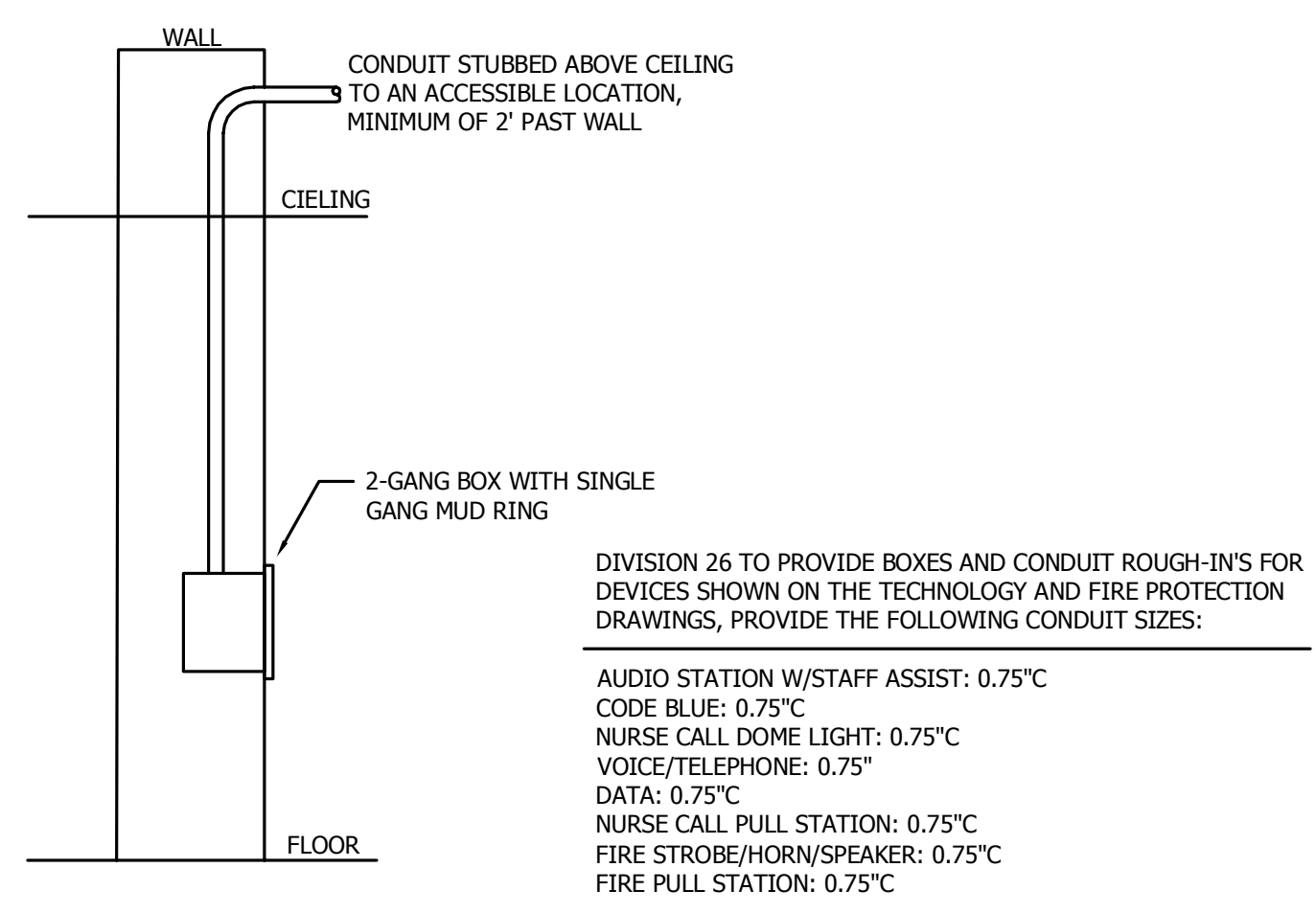


5 DOWNLIGHT MOUNTING - GYPBOARD CEILING
 E6.1 NOT TO SCALE

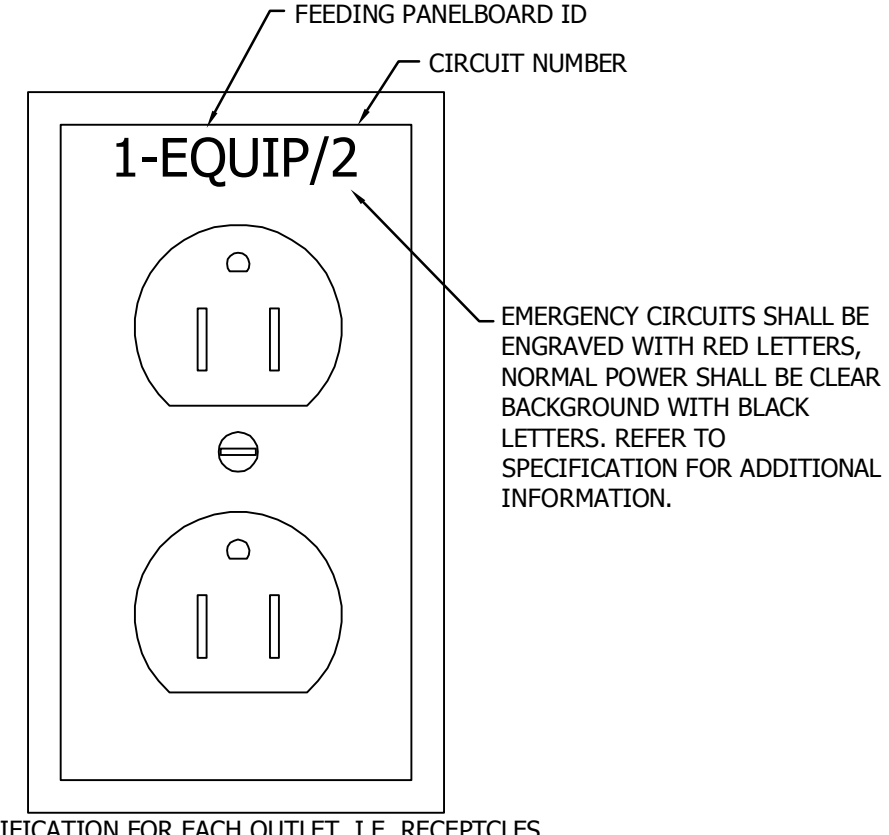


- GENERAL NOTES:
1. PROVIDE SIGNS ON EXTERIOR OF ALL ENCLOSURES CONTAINING CONDUCTORS OPERATING AT POTENTIALS UNDER 600 VOLTS.
 2. THE ABOVE LABELING IS MINIMUM REQUIRED. ALSO ADD ALL LABELING PER NEC.
 3. LABEL SHALL BE ATTACHED TO THE FRONT OF EQUIPMENT SO IT'S IN SIGHT.
 4. LABEL SHALL BE ENGRAVED PHENOLIC AND FASTENED TO THE EQUIPMENT WITH BOLTS OR RIVETS.

6 DISCONNECT LABEL
 E6.1 NOT TO SCALE



7 LOW VOLTAGE DEVICE ROUGH-IN
 E6.1 NOT TO SCALE



8 DEVICE COVER LABEL (TYPICAL)
 E6.1 NOT TO SCALE

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 ENGINEERING AND
 LAND SURVEYING
 120 17th Avenue W
 Alexandria, MN 56308
 (320) 762-1290

JLG architects
 Alexandria
 525 Broadway Street
 Alexandria, MN 56308
 phone 320.759.9130
 facsimile 320.759.9062
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 REG. NO. 14448-0804
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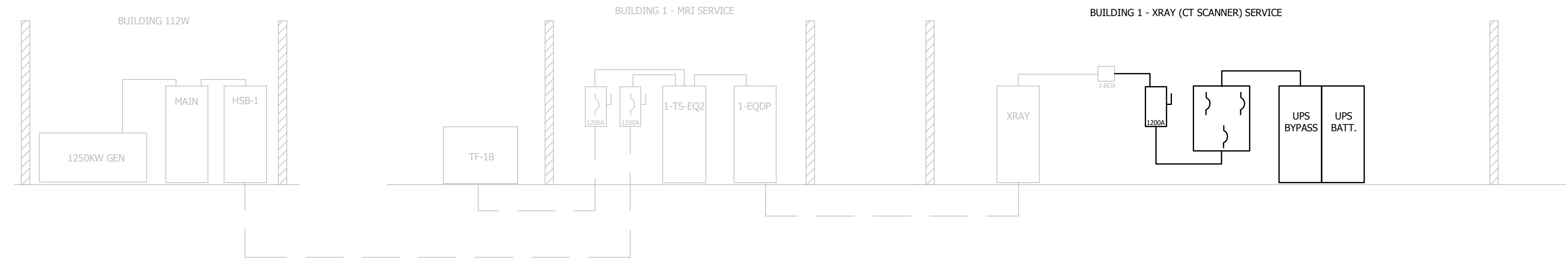
DRAWING TITLE
ELECTRICAL DETAILS

PROJECT TITLE
 REMODEL SITE FOR UPGRADED CT SCANNER
 SHEET NO.
 03.21.2016
 PROJECT NO.
 656-15-836
 DRAWING NO.
 E6.1

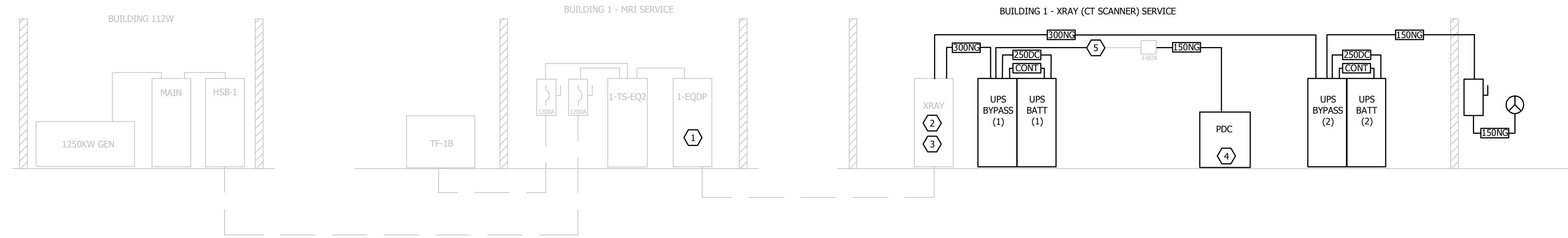
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A
 B
 C
 D
 E
 F



1 RISER DIAGRAM - DEMOLITION
 NOT TO SCALE



POWER FEEDER SCHEDULE				
TAG	AMP RATING	SETS	CONDUCTORS (AWG OR KCMIL)	
			QNTY/TY/PSZ	CONDUIT SIZE (IN)
100NG	110	1	4#1/0, 1#6G	1.25
150NG	150	1	4#1/0, 1#6G	2
200NG	200	1	4#3/0, 1#1/0G	2
300NG	285	1	4#300KCMIL, 1#4G	2.5
250DC*	----	2	2#250KCMIL, 1#1/0G	2
CONT*	----	1	6#14, 1#14G	0.75

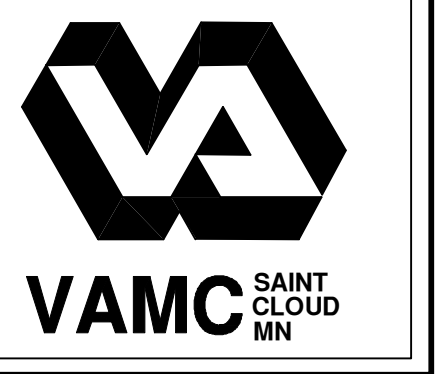
*FEEDER SIZE AND QUANTITY IS BASED ON MANUFACTURER LISTED IN SPECIFICATION. CONTRACTOR SHALL COORDINATE SPECIFIC REQUIREMENTS WITH UPS MANUFACTURER PROVIDED AND INCLUDE ALL COSTS IN BASE BID.

2 RISER DIAGRAM - NEW CONSTRUCTION
 NOT TO SCALE

- KEYNOTES:**
- REPLACE EXISTING 600A SQUARE D MAIN BREAKER WITH NEW 600A SQUARE D BREAKER WITH TEST INJECTION PORT AND LSI TRIP SETTINGS. SQUARE D POWER PACT P-FRAME, OR EQUAL.
 - REPLACE EXISTING 600A SIEMENS MAIN BREAKER WITH NEW 600A SIEMENS BREAKER WITH TEST INJECTION PORT AND LSI TRIP SETTINGS. SIEMENS SHLD6 SENSITRIP III, OR EQUAL.
 - REPLACE EXISTING 100A CT SCANNER BREAKER WITH A NEW 100% RATED 250A/3P FOR CT SCANNER UPS. PROVIDE A NEW 100% RATED 250A/3P BREAKER FOR TRAILER RECEPTACLE UPS.
 - POWER DISTRIBUTION CABINET SUPPLIED WITH CT SCANNER EQUIPMENT.
 - CONTRACTOR MAY REUSE EXISTING 2" CONDUIT FROM EQUIPMENT ROOM 36E TO XRAY PANEL. CONTRACTOR WILL BE RESPONSIBLE FOR MODIFYING CONDUIT RUN TO TERMINATE TO NEW UPS UNIT. PULL 150NG CONDUCTORS IN CONDUIT.

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MOTOR AND EQUIPMENT SCHEDULE																
EQUIPMENT ID	LOCATION	EQUIPMENT DATA					DISCONNECT			STARTER DATA			FEEDER SIZE	NOTES		
		HP	FLA	KW	MOP	VOLTS	PHASE	PROVIDED BY	AMPS/POLES	FUSES	LOCATION	PROVIDED BY			TYPE/SIZE	LOCATION
AIR CONDITIONING UNIT SCHEDULE																
AC-1	EQUIP 36E	----	33	----	50A	480	3	MECH	----	----	AT UNIT	MECH	----	AT UNIT	1" C-3#6, 1#6G	2
AC-2	ELECTRICAL RM A06	----	36	----	50A	480	3	MECH	----	----	AT UNIT	MECH	----	AT UNIT	1" C-3#6, 1#6G	
DRYCOOLER UNIT SCHEDULE																
DCU-1	CT SCANNER RM ROOF	----	6.4	----	15A	480	3	MECH	----	----	AT UNIT	MECH	----	AT UNIT	0.75" C-3#12, 1#12G	2
CONDENSING UNITS																
CU-1	BUILDING 1A ROOF	----	1	----	15A	480	3	MECH	----	----	AT UNIT	MECH	----	AT UNIT	0.75" C-3#12, 1#12G	
PUMPS																
P-1	CT SCANNER RM ROOF	2	3.0	----	----	480	3	MECH	----	----	AT UNIT	MECH	----	AT UNIT	0.75" C-3#12, 1#12G	1,2
P-2	CT SCANNER RM ROOF	2	3.0	----	----	480	3	MECH	----	----	AT UNIT	MECH	----	AT UNIT	0.75" C-3#12, 1#12G	1,2

NOTES:
1. FED FROM DCU-1. REFER TO MANUFACTURER'S WIRING DIAGRAMS.
2. PROVIDE A 1.5" CONDUIT BETWEEN UNITS AC-1, DCU-1, AND P1/P2 FOR CONTROL WIRING BY DIV. 23.
3.

LEGEND:
FRAC = FRACTIONAL HORSEPOWER
MS = MANUAL MOTOR STARTER
VFD = VARIABLE FREQUENCY DRIVE
SSRV = SOLID STATE REDUCED VOLTAGE STARTER
FVNR = FULL VOLTAGE NON-REVERSING STARTER
M = MOTOR RATED SWITCH
MANUF = PROVIDE PER MANUFACTURER RECOMMENDATIONS
MECH = PROVIDED UNDER DIVISION 23
ELEC = PROVIDED UNDER DIVISION 26

CONTROL WIRING SCHEDULE					
TAG	SETS	CONDUCTORS (AWG OR KCMIL)	CONDUIT SIZE (IN)	DESTINATION	NOTES
IRS-1	1	1-PULLCORD	1.5	IMAGE RECONSTRUCTION SYSTEM FLOOR BOX	
PDC-1	3	1-PULLCORD	3	POWER DISTRIBUTION CABINET FLOOR BOX	MINIMUM 6" BEND RADIUS
PDC-2	1	1-PULLCORD	2.5	POWER DISTRIBUTION CABINET WALL BOX	
ICS-1	1	1-PULLCORD	3	POWER DISTRIBUTION CABINET FLOOR BOX	
ICS-2	1	1-PULLCORD	3	IMAGE CONSTRUCTION SYSTEM WALL BOX	
IN-2	1	1-PULLCORD	2.5	CONTROL ROOM J-BOX 1	
EPO-1	1	4#12, 1#12G	0.75	CT SCANNER UPS	
EPO-2	1	4#12, 1#12G	0.75	CONTROL ROOM EMERGENCY STOP BUTTON	
EPO-3	1	4#12, 1#12G	0.75	CT ROOM EMERGENCY STOP BUTTON	
EPO-4	1	4#12, 1#12G	0.75	POWER DISTRIBUTION CABINET WALL BOX	
ICS-3	1	1-PULLCORD	2.5	IMAGE CONSTRUCTION SYSTEM WALL BOX	
PDC-3	1	1-PULLCORD	2.5	POWER DISTRIBUTION CABINET WALL BOX	
INUSE-1	1	2#12, 1#12G	0.75	POWER DISTRIBUTION CABINET WALL BOX	24VDC CIRCUIT
INUSE-2	1	2#12, 1#12G	0.75	CT IN USE LIGHT	24VDC CIRCUIT
INUSE-3	1	2#12, 1#12G	0.75	POWER DISTRIBUTION CABINET	24VDC CIRCUIT
INUSE-4	1	2#12, 1#12G	0.75	ROOM LIGHTING CIRCUIT (UNSWITCHED)	120V CIRCUIT

SWITCHBOARD SCHEDULE										
NAME: XRAY PANEL - EXISTING SCHEDULE		CIRCUIT BREAKER: X		MAIN RATING: 600 AMPS						
LOCATION: ELECTRICAL ROOM A06		FUSEABLE SWITCH		VOLTAGE: 480 VOLT						
MOUNTING: SURFACE		WIRES		PHASE 3						
CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1	SPARE	20A	1				1	20A	SPARE	2
3	SPARE	20A	1				1	20A	SPARE	4
5	SPARE	20A	1				1	20A	SPARE	6
7	SPARE	20A	1							8
9	SPARE	20A	1				3	60A	EXISTING LOAD - XFMR 1-AC-1	10
11	SPARE	20A	1							12
13	SPARE	20A	1							14
15	SPARE	20A	1				3	15A	EXISTING LOAD - RM. 30 COND. UNIT	16
17	SPARE	20A	1							18
19										20
21	EXISTING LOAD - X-RAY - 1 RM. 33	30A	3				3	25A	EXISTING LOAD - RM. 30A AHU	22
23										24
25										26
27	EXISTING LOAD - CONDENSATE PUMP	20A	3				3	20A	EXISTING LOAD - CFI-CF2	28
29										30
31										32
33	EXISTING LOAD - AHU CIRC. PUMP	20A	3				3	30A	EXISTING LOAD - AC	34
35										36
37										38
39	EXISTING LOAD - XRAY-2 RM. 37/XRAY-1 RM. 33	150A	3				3	100A	EXISTING LOAD - XRAY-1 RM. 33	40
41										42
43										44
45	EXISTING LOAD - CT SCANNER	100A	3				3	100A	SPARE	46
47										48
49										50
51	SPACE									52
53										54
55										56
57	SPACE									58
59										60
TOTAL CONNECTED LOAD:		0		TOTAL CALCULATED DEMAND:		0		TOTAL CALCULATED AMPS:		0

GENERAL NOTES:
1. PEAK LOAD ON EXISTING PANEL IS RECORDED AT 50 AMPS.
2. ...
3. ...
4. ...

KEY NOTES:
* = GFCI RATED BREAKER
** = ISOLATED GROUND CIRCUIT
L = LIGHTING
R = RECEPTACLE

SWITCHBOARD SCHEDULE										
NAME: XRAY PANEL - MODIFIED SCHEDULE		CIRCUIT BREAKER: X		MAIN RATING: 600 AMPS						
LOCATION: ELECTRICAL ROOM A06		FUSEABLE SWITCH		VOLTAGE: 480 VOLT						
MOUNTING: SURFACE		WIRES		PHASE 3						
CKT	CIRCUIT DESCRIPTION	TRIP	POLES	A	B	C	POLES	TRIP	CIRCUIT DESCRIPTION	CKT
1							1	20A	SPARE	2
3	AC-2	50A	3	9865		9865		1	20A	SPARE
5						9865		1	20A	SPARE
7				1773	9003					8
9	DCU-1 AND ASSOCIATED PUMPS	15A	3		1773	9003		3	50A	AC-1
11						1773	9003			12
13				388						14
15	CU-1	15A	3		388			3	15A	EXISTING LOAD - RM. 30 COND. UNIT
17						388				18
19										20
21	EXISTING LOAD - X-RAY - 1 RM. 33	30A	3					3	25A	EXISTING LOAD - RM. 30A AHU
23										24
25										26
27	EXISTING LOAD - CONDENSATE PUMP	20A	3					3	20A	EXISTING LOAD - CFI-CF2
29										30
31										32
33	EXISTING LOAD - AHU CIRC. PUMP	20A	3					3	30A	EXISTING LOAD - AC
35										36
37										38
39	EXISTING LOAD - XRAY-2 RM. 37/XRAY-1 RM. 33	150A	3					3	100A	EXISTING LOAD - XRAY-1 RM. 33
41										42
43				20667	20667					44
45	CT SCANNER	300A	3		20667	20667		3	300A	TRAILER - CT SCANNER
47						20667	20667			48
49										50
51	SPACE									52
53										54
55										56
57	SPACE									58
59										60
TOTAL CONNECTED LOAD:		187,089		TOTAL CALCULATED DEMAND:		520		TOTAL CALCULATED AMPS:		520

GENERAL NOTES:
1. ...
2. ...
3. ...
4. ...

KEY NOTES:
* = GFCI RATED BREAKER
** = ISOLATED GROUND CIRCUIT
L = LIGHTING
R = RECEPTACLE

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Design Tree
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Alexandria, MN 56308
(320) 762-1290

3339 W. St. Germain, Suite 250
St. Cloud, MN 56301
(320) 217-5557 (Phone)
(320) 217-5597 (Fax)

JLG
architects

Alexandria
525 Broadway Street
Alexandria, MN 56306
phone 320.759.9330
facsimile 320.759.9062

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AARON R. MUELLER, PE
REG. NO. 144684
DATE: 03-21-2016

DRAWING TITLE:
ELECTRICAL SCHEDULES

DRAWING NO. 01
DESIGNED BY: ARM
DRAWN BY: ARM

PROJECT TITLE:
REMODEL SITE FOR UPGRADED CT SCANNER

DATE: 03/21/2016
PROJECT NO.: 656-15-836
DRAWING NO.: E91

VAMC
SAINT CLOUD, MN

three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot

Sheet List Table	
Sheet Number	Sheet Title
T000	INDEX SHEET
T200	TECHNOLOGY - BASEMENT DEMOLITION PLAN
T201	TECHNOLOGY - NEW CT SCANNER PLAN

STRUCTURED CABLING LEGEND	
SYMBOL	DESCRIPTION
# ▽	VOICE TELECOMMUNICATIONS OUTLET, # =NUMBER OF CAT 5E CABLES
# ▽	DATA TELECOMMUNICATIONS OUTLET, # =NUMBER OF CAT 5E DATA CABLES/JACKS
N ▽	NURSE CALL CABLE OUTLET, ONE CAT 5 E CABLE
S ▽	SPEAKER CABLE OUTLET, ONE 18 AWG CABLE




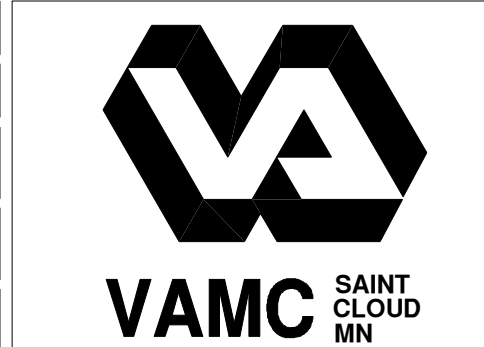
AUDIO/VISUAL MULTIMEDIA LEGEND	
SYMBOL	DESCRIPTION
Ⓢ	LOUD SPEAKER, CEILING MOUNTED
WAP	WIRELESS ACCESS POINT ONE CATEGORY 6 CABLE
N	NURSE CALL DOME LIGHT
AS N	NURSE CALL AUDIO STATION RAULAND R4K14SA
CB N	NURSE CALL CODE BLUE RAULAND R4KCB13

GENERAL SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
## ###	DETAIL REFERENCE (TOP = DETAIL NUMBER, BOTTOM = SHEET NUMBER)
##	VIEWPORT/DETAIL NOTATION
↑	NORTH ARROW
00	KEYNOTES

TECHNOLOGY - GENERAL NOTES

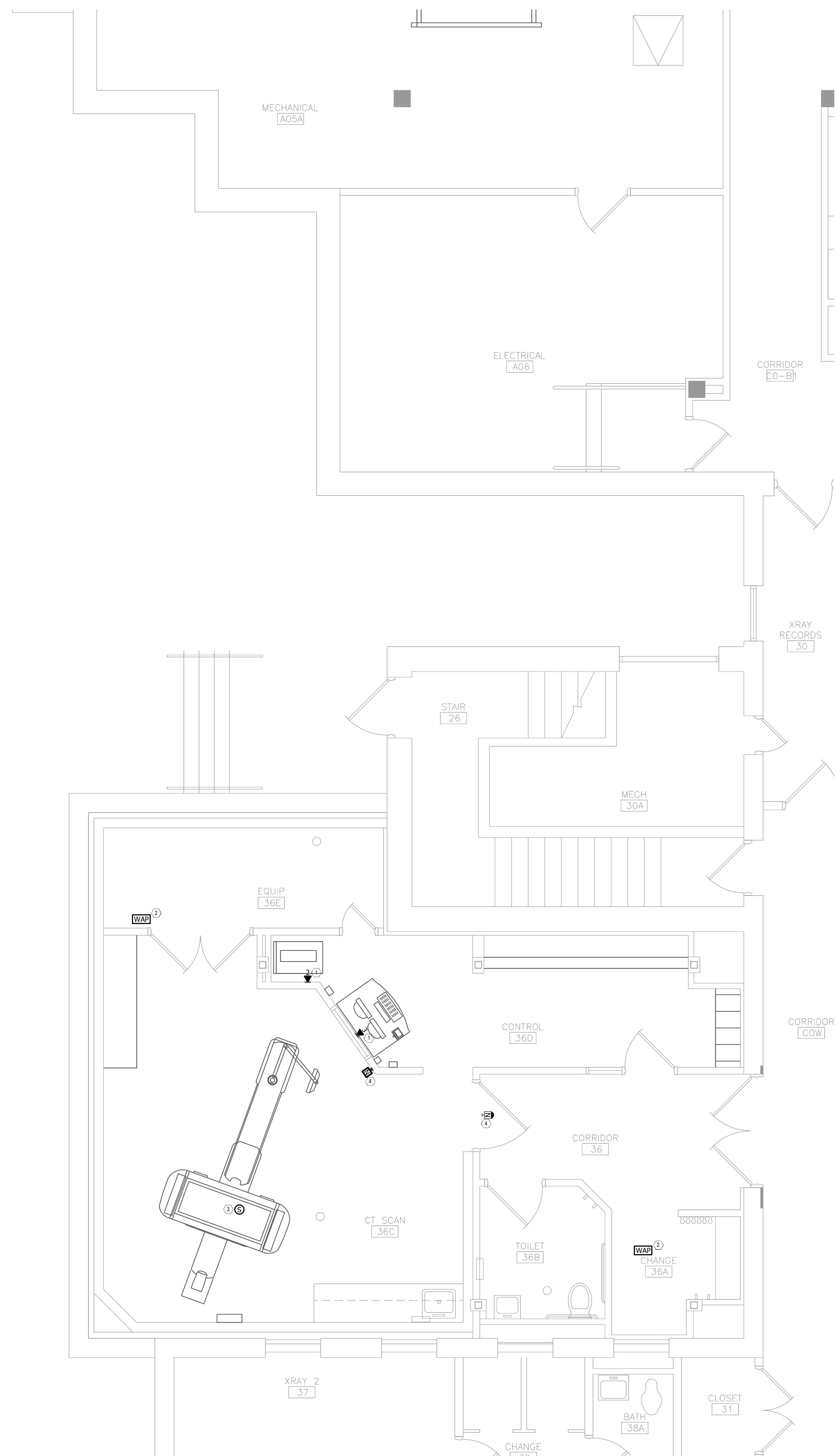
- FURNISH = TO SUPPLY AND DELIVER TO PROJECT SITE, READY FOR INSTALLATION.
- INSTALL = TO PLACE IN POSITION OF SERVICE OR USE.
- PROVIDE = TO FURNISH AND INSTALL, COMPLETE READY FOR INTENDED USE.
- ALL CABLES SHALL BE CONCEALED.
- ALL CONDUIT MEASUREMENTS REFER TO STANDARD CONDUIT TRADE SIZES.
- NOT ALL KEYNOTES MAY BE UTILIZED ON EVERY SHEET.
- IT IS THE INTENT THAT EACH CONTRACTOR INCLUDE ALL REQUIRED MATERIALS FOR A NEATLY DRESSED CABLING PATHWAY SYSTEM AS INDICATED ON THESE DRAWINGS AND SPECIFICATIONS. ALL REQUIRED MATERIALS SHALL BE INCLUDED IN BID.
- ALL CONDUIT ENDS TO HAVE NYLON BUSHING AND PULL STRING.
- EACH CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY SLEEVES, WHETHER OR NOT SPECIFICALLY NOTED ON PROJECT DRAWINGS. ALL SLEEVES SHALL BE 1-1/4" UNLESS NOTED OTHERWISE ON THE DRAWINGS. CABLE FILL PERCENTAGE SHALL COMPLY WITH NEC.
- EACH CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS IN J-HOOK SUPPORT PATHS TO AVOID CONFLICTS WITH HVAC AND ELECTRICAL DEVICES/EQUIPMENT AND WORK OF OTHER TRADES.
- EVERYTHING SHOWN ON THE DRAWINGS SHALL BE PROVIDED AND INSTALLED BY THE APPROPRIATE CONTRACTOR UNLESS NOTED OTHERWISE. ALL CONDUIT, BACKBOXES, JUNCTION BOXES, FLOOR BOXES AND IN-WALL BOXES SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR (EC) UNLESS NOTED OTHERWISE.
- DIV. 26 EC SHALL PROVIDE ALL CONDUIT, BACK BOXES, JUNCTION BOXES AND CUSTOM BOXES AS NOTED ON INFRASTRUCTURE DETAILS SHEET.
- VA WILL DO ALL THE NECESSARY PROGRAMING OF THE NURSE CALL HEAD END UNIT.

100% CONSTRUCTION DOCUMENTS - FOR CONSTRUCTION

No. REVISION DATE	 elert & associates 140 Third Street South Stillwater, MN 55082 651.430.2772 fax: 651.430.2661		 Design Tree ENGINEERING AND LAND SURVEYING 120 17th Avenue W. Alexandria, MN 56308 (320) 762-1200 3339 W. St. Germain, Suite 250 St. Cloud, MN 56301 (320) 217-5557 (Phone) (320) 217-5597 (Fax)		 JLG architects Alexandria 525 Broadway Street Alexandria, MN 56308 phone 320.759.9030 facsimile 320.759.9062 www.jlgarchitects.com copyright © 2015		STAMP (SEAL): I HEREBY CERTIFY THAT THE PLAN, SPECIFICATIONS, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSURED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. AARON R. MUELLER, PE REG. NO. 1444 DATE: 03-21-2016		DRAWN BY: INEX SHEET PROJECT TITLE: REMODEL SITE FOR UPGRADED CT SCANNER SHEET NO: 03.21.2016 PROJECT NO: 656-15-836		 VAMC SAINT CLOUD MN	
	REGION: 01 ORDER BY: FF DRAWN BY: MA DATE: 03-21-2016		LOCATION: VA MEDICAL CENTER ST. CLOUD, MN 56303		SHEET NO: 1000							




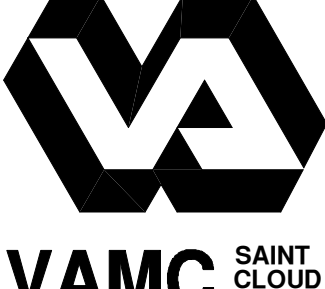
KEYNOTES:

- ① EXISTING VOICE AND DATA CABLES SHALL BE DISCONNECTED FROM THE EXISTING OUTLET AND REMOVED BACK TO SOURCE IN A03.
- ② EXISTING CABLE FOR WAP TELECOMMUNICATION OUTLET TO BE DEMOLISHED BACK TO SOURCE IN A03 BY THIS CONTRACTOR. EXISTING WAP WILL BE REMOVED BY THE OWNER. CONTRACTOR SHALL COORDINATE DEMOLITION WORK FOR WAP WITH THE OWNER.
- ③ EXISTING CABLE FOR SPEAKER TO BE DISCONNECTED FROM THE DEVICE AND PULLED BACK FROM THE AREA TO CONTROL ROOM 36D BY THIS CONTRACTOR. THIS CABLE SHALL BE COILED UP AND STORED IN ACCESSIBLE CEILING DURING CONSTRUCTION. EXISTING SPEAKER SHALL BE DISCONNECTED AND GIVEN TO THE OWNER. IN ORDER TO MAINTAIN PAGING SERVICES IN ALL AREAS OF THE FLOOR THROUGHOUT THE ENTIRE PROJECT DURATION, CONTRACTOR SHALL INSTALL TEMPORARY CABLE FOR THE OTHER SPEAKERS ON THE FLOOR AS NEEDED.
- ④ EXISTING NURSE CALL DEVICE AND CATEGORY 5E CABLING SHALL BE DISCONNECTED AND REMOVED. CABLE SHALL BE DEMOLISHED BACK TO THE SOURCE IN ROOM A03.

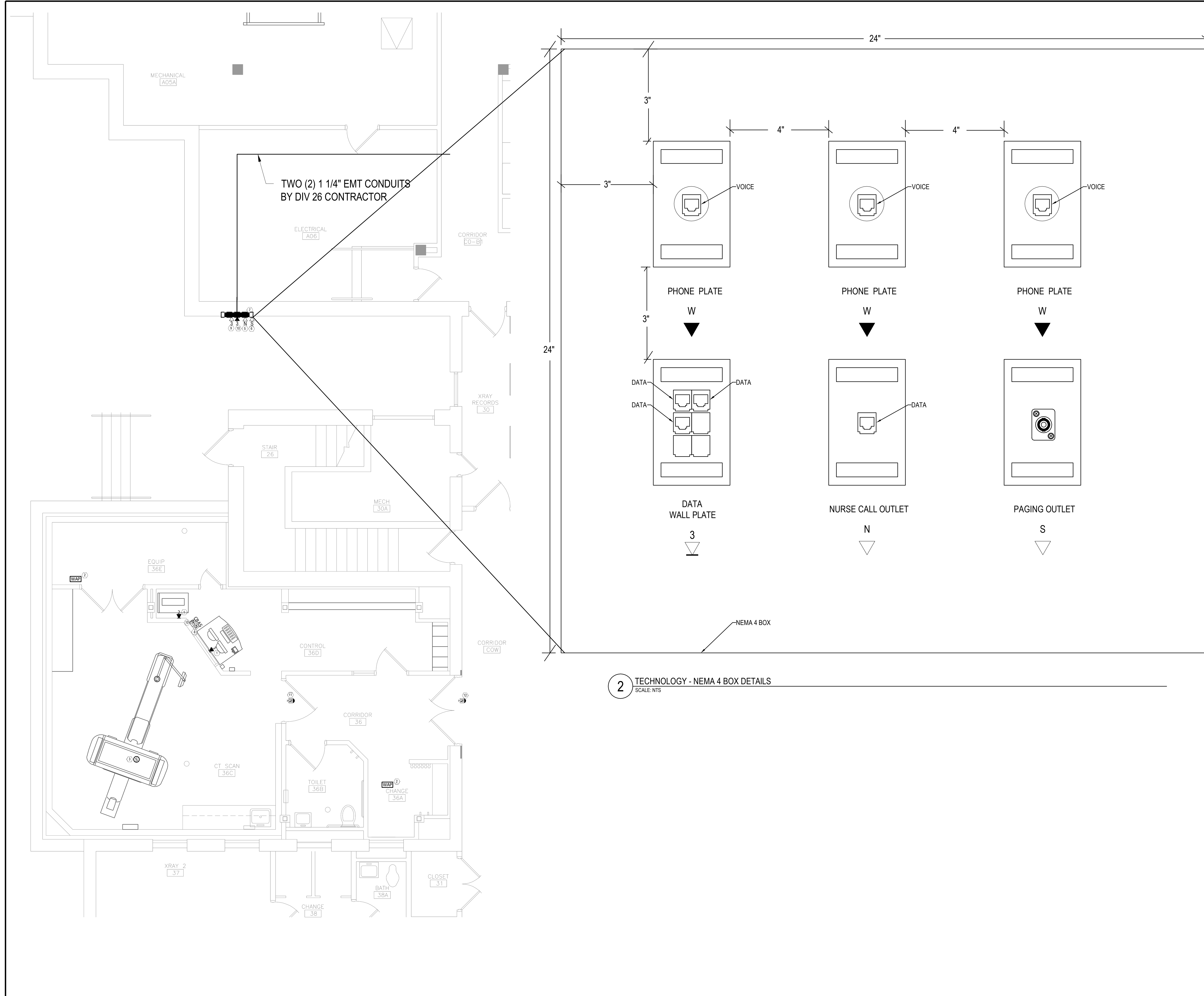


1 TECHNOLOGY - BASEMENT DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

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three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot
 one eighth inch = one foot



KEYNOTES:

- 1 NEW CABLES AND TERMINATION HARDWARE FOR VOICE AND DATA OUTLETS SHALL BE PROVIDED AND INSTALLED FROM ROOM A03.
- 2 NEW CABLES AND TERMINATION HARDWARE FOR WAP OUTLETS SHALL BE PROVIDED AND INSTALLED FROM ROOM A03. THE OWNER WILL INSTALL AND CONNECT WAP TO THE CEILING MOUNTED OUTLET
- 3 EXISTING CABLE FOR SPEAKER SHALL BE PULLED OUT FROM CONTROL ROOM 36D. EXISTING SPEAKER SHALL BE INSTALLED AT THE LOCATION SHOWN ON THE DRAWING AND BE RE-CONNECTED TO EXISTING CABLE.
- 4 PROVIDE AND INSTALL TWO (2) NEW CATEGORY 5E CABLES FROM RAULAND AUDIO STATION (R4K14SA) TO RAULAND DOME LIGHT (CLA - 244) LOCATED IN ROOM 36. TERMINATE CABLES ON RJ-45 PLUGS.
- 5 PROVIDE AND INSTALL NEW CATEGORY 5E CABLE FROM NURSE CALL HEADEND IN ROOM A03 TO THIS LOCATION. CONNECT CABLE WITH EXISTING NURSE CALL SYSTEM IN ROOM A03. TERMINATE CABLE ON RJ-45 CATEGORY 5E JACK IN THIS LOCATION.
- 6 PROVIDE AND INSTALL NEW 18 AWG STRANDED SPEAKER CABLE FROM ROOM 36C TO THIS LOCATION. TERMINATE CABLE ON NEUTRIK NLJ2MD-H (OR EQUIVALENT) CONNECTOR. CONNECT CABLE WITH EXISTING SPEAKER SYSTEM IN ROOM 36C.
- 7 PROVIDE AND INSTALL 24' X 24" X 8" NEMA 4 SURFACE MOUNT "J-BOX" HOFFMAN PART # A24H2408SS6LP OR EQUIVALENT AND 3/4" PLYWOOD ON BACK WALL OF THE NEMA 4 BOX. PROVIDE AND INSTALL SIX (6) SINGLE HANG SURFACE MOUNTED METAL ELECTRICAL OUTLETS ON PLYWOOD, NEMA BOX SHALL BE INSTALLED AT 3' ABOVE GROUND.
- 8 PROVIDE AND INSTALL THREE (3) RJ-45 CATEGORY 5E HUBBLE DATA JACKS INSIDE NEMA 4 BOX. TERMINATE CATEGORY 5E DATA CABLES ON NEW CATEGORY 5E 24 PORT HUBBLE PATCH PANEL IN ROOM A03.
- 9 PROVIDE AND INSTALL THREE (3) WEATHER PROOF TELEPHONE OULETS HUBBLE PART # PH-6597 INSIDE NEMA 4 BOX TERMINATE CATEGORY 5E VOICE CABLES ON EXISTING PATCH PANELS IN ROOM A03
- 10 PROVIDE AND INSTALL ONE (1) CATEGORY 5E CABLES FROM RAULAND DOME LIGHT (CLA - 244) LOCATED IN ROOM 36 TO RAULAND DOME LIGHT (CLA - 244) LOCATED IN CORRIDOR COW. TERMINATE CABLES ON RJ-45 PLUGS.
- 11 PROVIDE AND INSTALL ONE (1) NEW CATEGORY 5E CABLE FROM RAULAND CODE BLUE (R4KCB13) TO RAULAND DOME LIGHT (CLA - 244) LOCATED IN ROOM 36. TERMINATE CABLE ON RJ-45 PLUGS.
- 12 PROVIDE AND INSTALL ONE (1) NEW CATEGORY 5E CABLE FROM RAULAND DOME LIGHT (CLA - 244) LOCATED IN CORRIDOR COW TO EQUIPMENT ROOM A03. TERMINATE CABLE ON RJ-45 PLUGS.

2 TECHNOLOGY - NEMA 4 BOX DETAILS
 SCALE: NTS

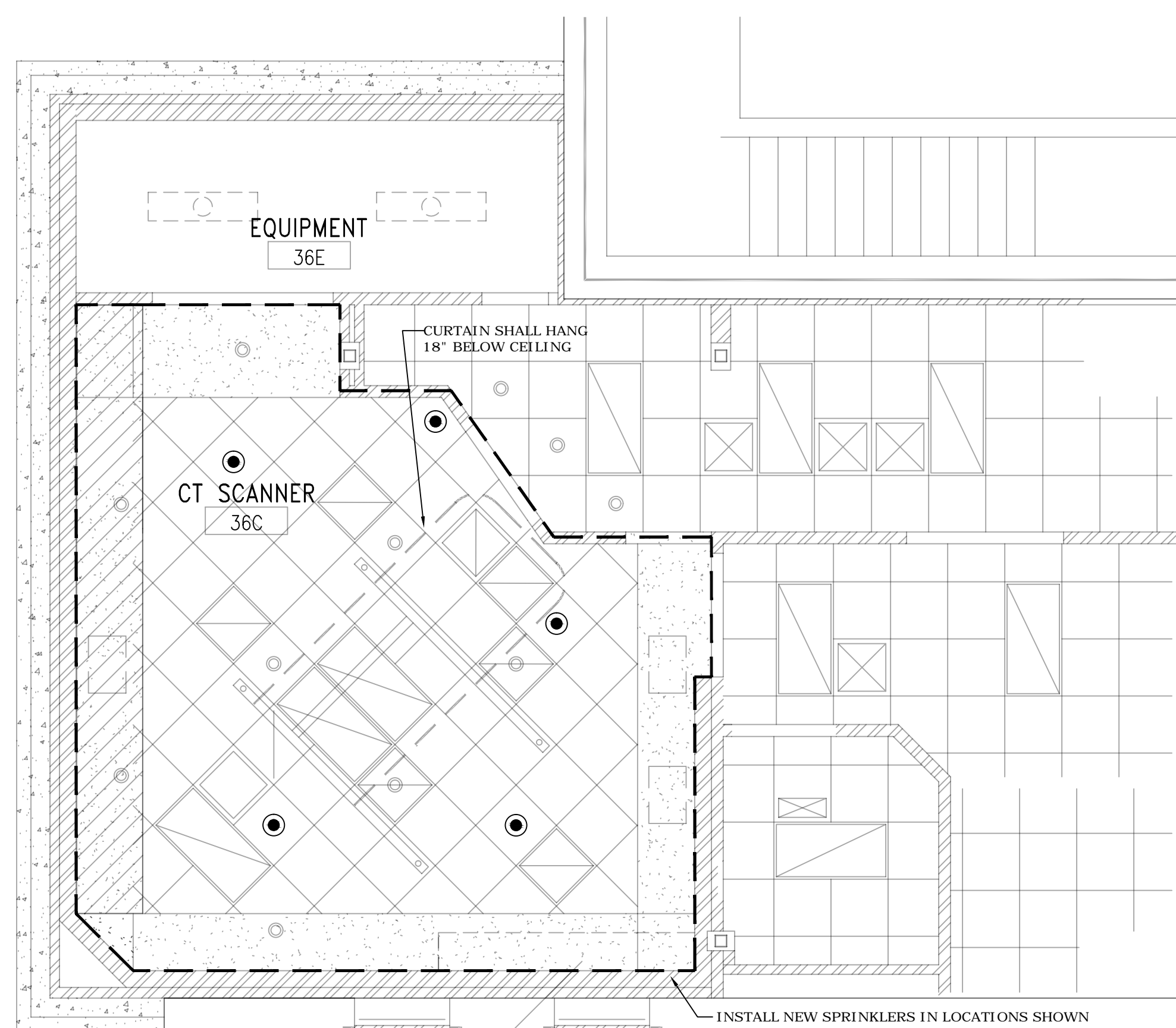
1 TECHNOLOGY - NEW CT SCANNER PLAN
 SCALE: 1/4"=1'-0"

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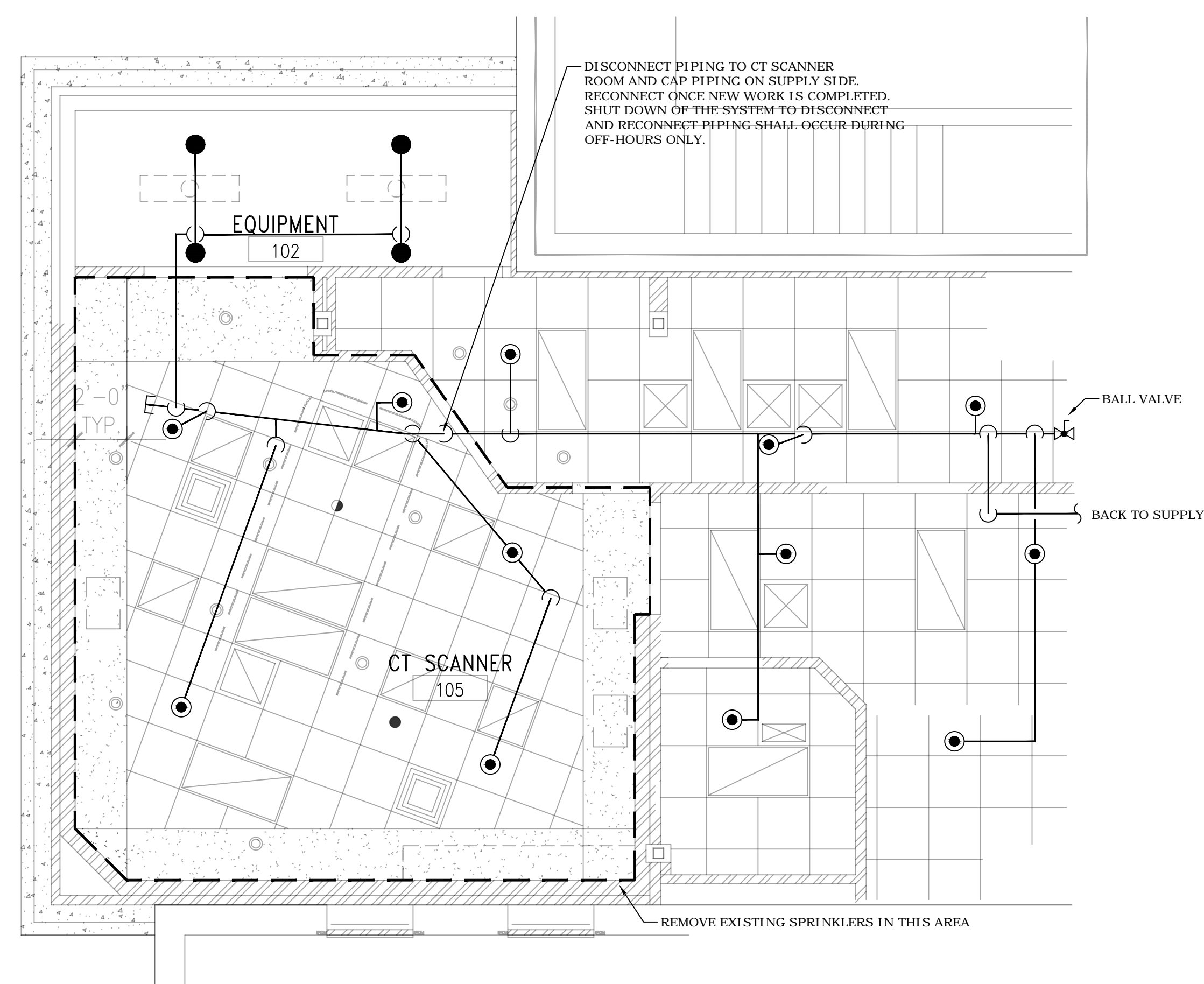
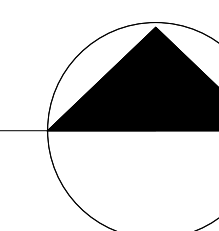
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			REVISION NO. DATE	PROJECT NO: 656-15-836	DRAWN: FF	CHECKED: MA

LEGEND

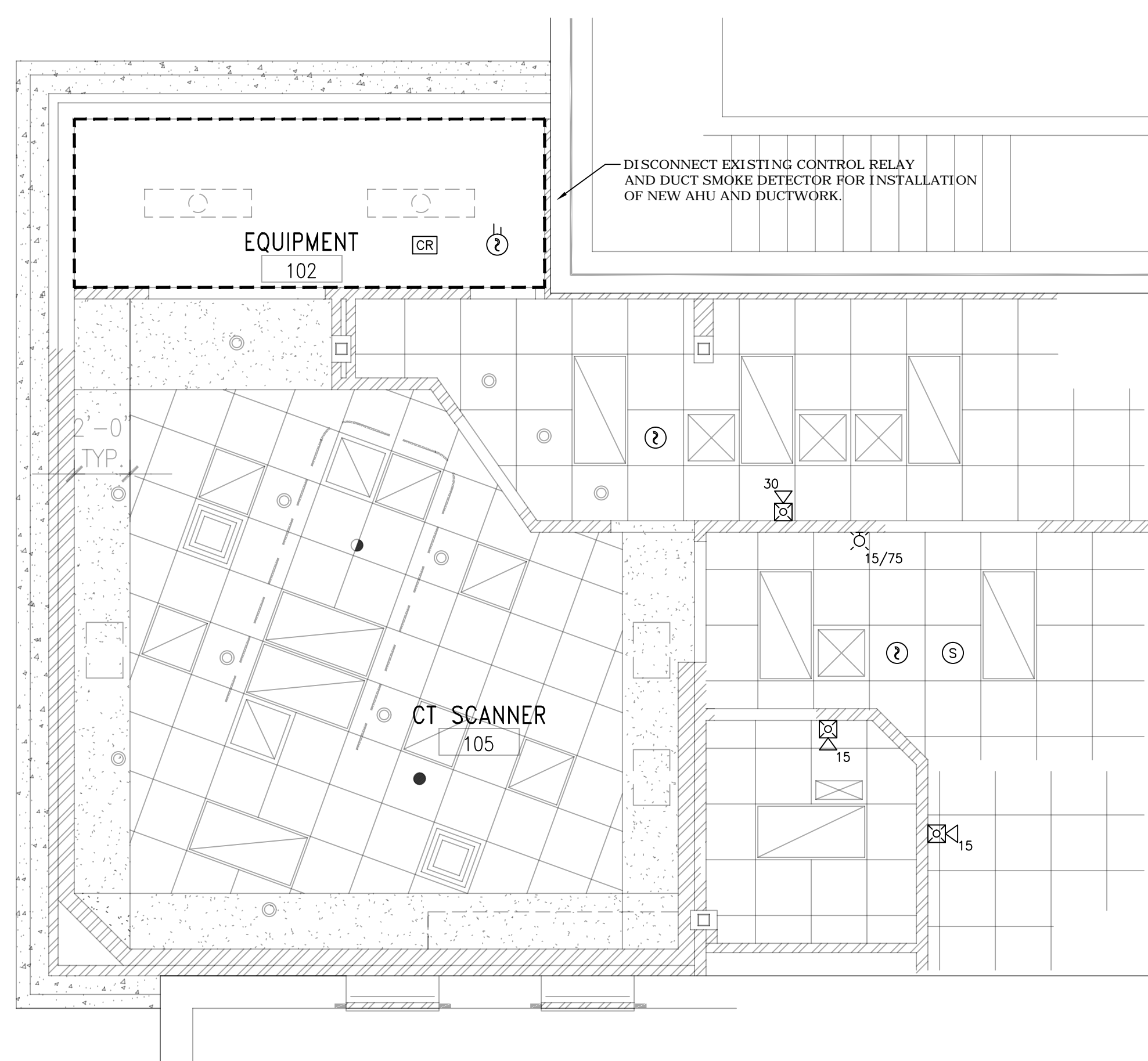
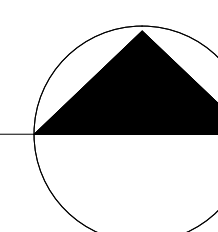
- STANDARD SPRAY PENDENT SPRINKLER
- RECESSED PENDENT SPRINKLER
- ② SMOKE DETECTOR
- Ⓜ DUCT SMOKE DETECTOR
- CR CONTROL RELAY
- WS WALL MOUNTED SPEAKER/STROBE
- SUPERScript INDICATES DESIGN INTENSITY
- WS WALL MOUNTED STROBE
- SUPERScript INDICATES DESIGN INTENSITY
- Ⓢ CEILING SPEAKER
- AREA OF WORK



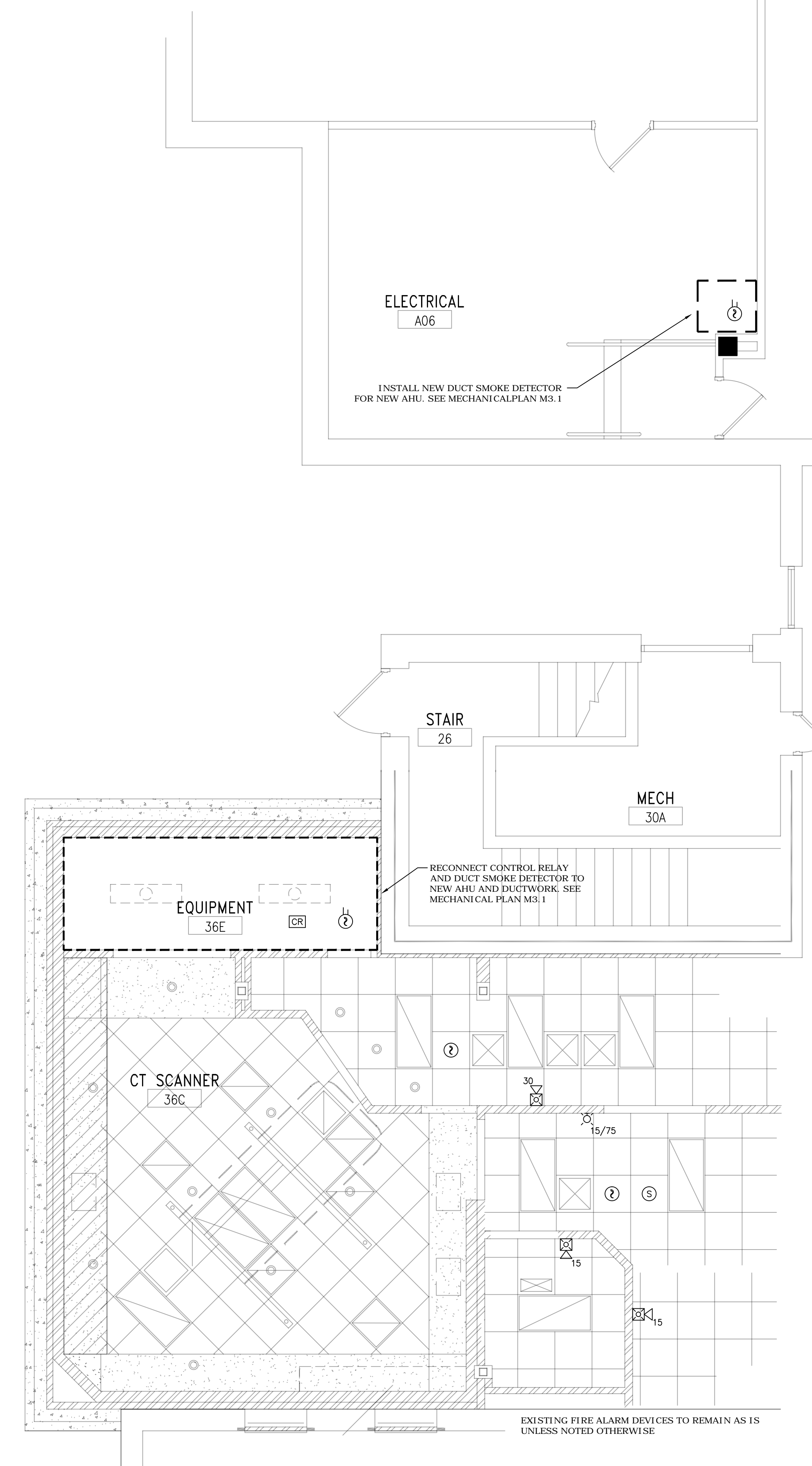
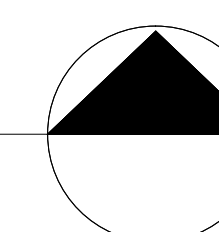
2 ENLARGED NEW FIRE SPRINKLER PLAN
FP1 SCALE = 1/4" = 1'-0"



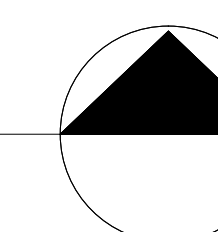
1 ENLARGED EXISTING FIRE SPRINKLER PLAN
FP1 SCALE = 1/4" = 1'-0"



3 ENLARGED EXISTING FIRE ALARM PLAN
FP1 SCALE = 1/4" = 1'-0"



4 ENLARGED NEW FIRE ALARM PLAN
FP1 SCALE = 1/4" = 1'-0"



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Christopher Leaver
CHRISTOPHER LEAVER, PE, REG. NO. 48021
DATE: 03-21-2016

DRAWING TITLE		PROJECT TITLE		DATE
CT SCANNER FIRE PROTECTION PLANS		REMODEL SITE FOR UPGRADED CT SCANNER		03.21.2016
BUILDING NO.	CHECKED BY	DRAWN	CAD FILE	PROJ SCALE
01	CL	RV		AS SHOWN
LOCATION	DRAWING NO.	SHEET NO.		
V.A. MEDICAL CENTER ST. CLOUD, MN 56302	FP1	016 of 1		

VAMC SAINT CLOUD MN