

CONSULTANTS		ARCHITECT/ENGINEERS		Drawing Title		Project Title		Project Number	
				ELECTRICAL DETAILS		CORRECT PATIENT PRIVACY DEFICIENCIES VA MONTANA HEALTHCARE SYSTEM		436-110	
						Fort Harrison, Montana		154	
						Date		154-E0.3	
						Checked		Rev	
						J. HADLEY		M. SUTTELL	
						Sheet		of 100	

LUMINAIRE SCHEDULE														
TYPE	DESCRIPTION	MANUF.	CATALOG NUMBER	LOCATION	TYPE	HEIGHT	LAMP	NO. DUAL	EMERG.	DM	VOLTAGE	WA	FINISH	NOTES
A1	SHALLOW PLINUM VOLUMETRIC	CORELITE OR APPROVED EQUAL	Z1-W-D-2-N6-C-120-24-T1-AM	CEILING	RECESSED		F2815/835/ALTO	1			120	59	STANDARD	
A2	PATIENT ROOM EXAM	COOPER LIGHTING OR APPROVED EQUAL	MNE-154-1-1-120-0-1801-MNE-550-8C	CEILING	RECESSED		F54TH90/835/ALTO	1			120	61	STANDARD	
A3	2X4 2 LAMP 10-STEP DIM VOLUMETRIC	COOPER LIGHTING OR APPROVED EQUAL	Z1-W-D-2-N6-C-120-24-T1-AM	CEILING	RECESSED		F2815/835/ALTO	2	Y		120	61	STANDARD	
A4	2X4 16 LINE PERIMETRIC	COOPER LIGHTING OR APPROVED EQUAL	AC65-228-15-A124-PHT-L	CEILING	RECESSED		F2815/835/ALTO	2			120	59	STANDARD	
A5	2X4 16 LINE PERIMETRIC WITH FLANGE KIT	COOPER LIGHTING OR APPROVED EQUAL	AC65-228-15-A124-PHT-L-KIT	CEILING	RECESSED		F2815/835/ALTO	2			120	59	STANDARD	
A6	2X4 RECESSED VOLUMETRIC	COOPER LIGHTING OR APPROVED EQUAL	Z1-W-D-2-N6-C-120-24-T1-AM	CEILING	RECESSED		F2815/835/ALTO	2	Y		120	59	STANDARD	
A7	RECESSED ICU PATIENT EXAM LIGHT	COOPER LIGHTING OR APPROVED EQUAL	MNE-6-428-120-AC-1802-AM	CEILING	RECESSED		F2815/835/ALTO	4			120	120	STANDARD	1
A8	2X4 RECESSED VOLUMETRIC	COOPER LIGHTING OR APPROVED EQUAL	Z1-W-D-2-N6-C-120-24-T1-AM	CEILING	RECESSED		F2815/835/ALTO	2			120	59	STANDARD	
A9	2X4 2 LAMP 10-STEP DIM VOLUMETRIC	COOPER LIGHTING OR APPROVED EQUAL	Z1-W-D-2-N6-C-120-24-T1-AM	CEILING	RECESSED		F54TH90/835/ALTO	2	Y		120	124	STANDARD	
B1	PATIENT BED LIGHT	COOPER LIGHTING OR APPROVED EQUAL	MPRL-2/128-120-2-AM/PS4/LVCP-IR-NLR	WALL	SURFACE		F2815/835/ALTO	3			120	87	STANDARD	2
B2	PATIENT ROOM LOW LEVEL FICTURE LED	ALICO OR APPROVED EQUAL	WS2H-2-120-SHW	WALL	SURFACE	12"	AMBER LED				120	4	STANDARD	
D1	LED 6" EMBED DOWNLIGHT	COOPER LIGHTING OR APPROVED EQUAL	LD6-15-835-Q010-6L500-3H	CEILING	RECESSED		LED				120	24 R	STANDARD	
D2	6" WET LIT LED RECESSED DOWNLIGHT	COOPER LIGHTING OR APPROVED EQUAL	RL20R-8-30-WBS-AT500-T	CEILING	RECESSED		LED				120	14.5	STANDARD	
G1	PATIENT ROOM VANITY 2FT	SHAPIR OR APPROVED EQUAL	800-24-15/2/14-120-NA	WALL	SURFACE		F1415/835/ALTO	2			120	32	STANDARD	
X1	LED EXIT SINGLE FACE WITH BATTERY BACK UP	COOPER LIGHTING OR APPROVED EQUAL	CX7-1-1	UNIVERSAL			LED				120	1	STANDARD	
X2	LED EXIT DOUBLE FAC WITH BATTERY BACK UP	COOPER LIGHTING OR APPROVED EQUAL	CX7-2-1	UNIVERSAL			LED				120	1	STANDARD	

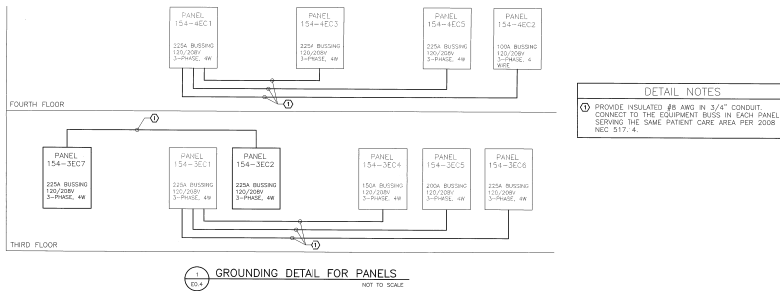
ABBREVIATIONS: RS = RAPID START, IS = INSTANT START, PS = PULSE START (METAL HALIDE) OR PROGRAMMED RAPID START (FLUORESCENT)  
 DUAL = DUAL LEVEL BALLAST OR DUAL BALLASTS AND WIRE FOR DUAL LEVEL SWITCHING, DM = 1% DIMMING BALLAST, MUST BE COMPATIBLE WITH DIMMER DEVICE OR MODULE  
 EMERG = EMERGENCY BALLAST - MINIMUM 1100 LUMENS FOR 4FT FLUORESCENT LAMPS - MINIMUM 600 LUMENS FOR COMPACT FLUORESCENTS

NOTES:  
 1. Luminaire shall be specially designed for suppressing radio frequency energy produced within the fixtures. The Rules and Regulations of FCC (CFR, Part 18) shall apply.  
 2. See specification section 265100.2.6 RADIO INTERFERENCE FREE FLUORESCENT FIXTURES - N ICU AREA ONLY.  
 3. TYPE B1 - TO BE CONTROLLED FROM THE PATIENT BED VIA THE PILLOW SPEAKER SYSTEM. COORDINATE WITH NURSE CALL SYSTEM INSTALLATION, SPECIFICATION AND DETAILS.

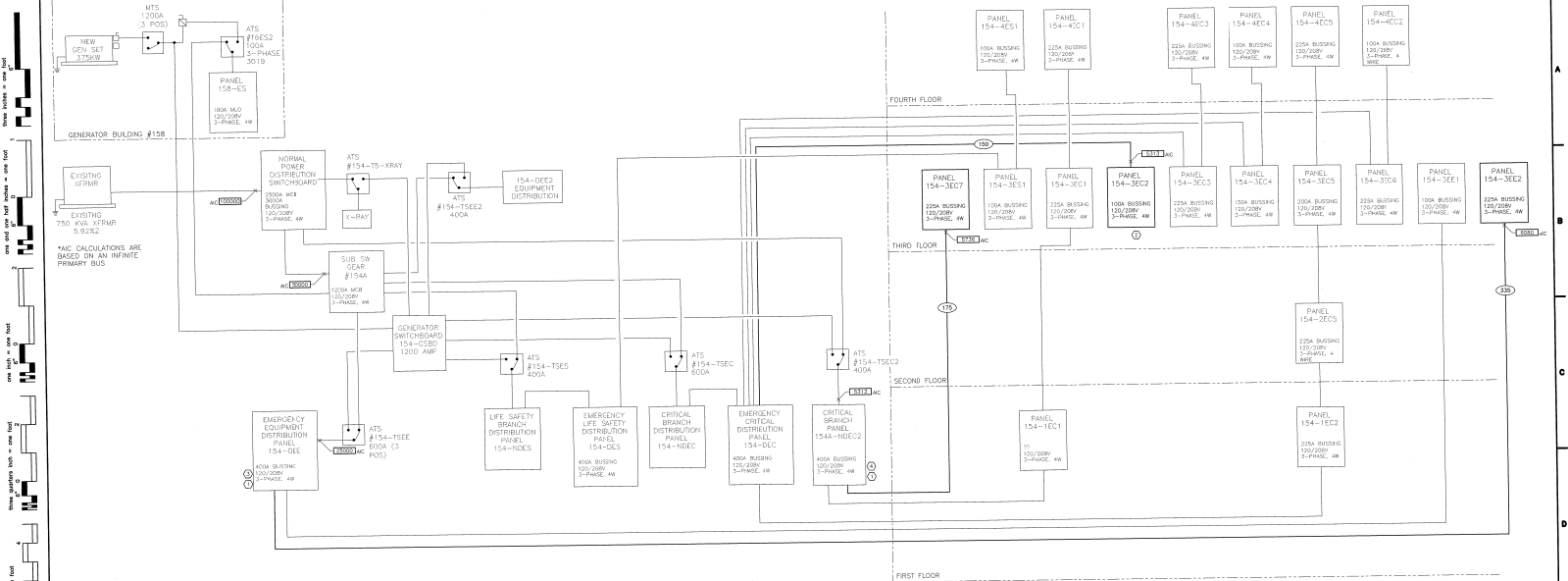
CONTROL EQUIPMENT SCHEDULE												
UNIT	DESCRIPTION	NO.	VOLTAGE	PHASE	MCA	KW	HP	STARTER	TERMINAL	INTERLOCK	W/CP	NOTES
AHU-1	SUPPLY FAN	374	208	3			5.0		REMA	ENCLOSURE		PROVIDED W/VPD
AHU-1	RETURN FAN	374	208	3			5.0		REMA	ENCLOSURE		PROVIDED W/VPD
AC-1	COND. UNIT	ROOF	208	3	6.3		3/4	COMB FVNR CB	0	3R	5ACB	ENCLOSED 100A3P
EF-1	EXHAUST FAN	ROOF	208	3			1/20	TOGGLE W/OL		3R		SEE STARTER
EF-2	EXHAUST FAN	ROOF	120	1			1/20	TOGGLE W/OL		3R		SEE STARTER
EF-3	EXHAUST FAN	ROOF	120	1			1/20	TOGGLE W/OL		3R		SEE STARTER
UH-1	UNIT HEATER	528	120	1		0.016		TOGGLE W/OL		3R		SEE STARTER
CUH-1	CAB UNIT HEATER	528	120	1	3.88							PROVIDED W/ UNIT
	RADIANT CEILING PANEL	47H FUR	120	1	0.375							LINE VOLTAGE THERMOSTAT

ALL COMB FVNR STARTERS SHALL HAVE H0A AND (2) N/O AUX CONTACTS.  
 F = FUSIBLE 60A2P3 = 60 AMP, 2-POLE, FUSIBLE  
 COMB FVNR = COMBINATION, FULL LOAD NON-REVERSING  
 MC = MECHANICAL CONTRACTOR

NOTES:  
 1. SIZE FUSES PER MANUFACTURER'S RECOMMENDATIONS.  
 2. PROVIDE SMOKE DUCT DETECTORS IN THE SUPPLY AND RETURN DUCT PER DIVISION 28 AND FIRE ALARM RISER DETAIL ON SHEET E001. PROVIDE MONITORING AND RESET CAPABILITIES AT DUCT DETECTOR FOR FIRE ALARM.  
 3. PROVIDE (3#8 + #10G) 3/4"C.  
 4. PROVIDE (3#12 + #12G) 1/2"C.  
 5. PROVIDE (3#3 + #801) 1/4"C.  
 6. PROVIDE QMARK RADIANT CEILING PANEL CATALOG #CP371 OR EQUAL AND LINE VOLTAGE THERMOSTAT. PROVIDE AND INSTALL FIBERGLASS BLANKET INSULATION WITH A MINIMUM R VALUE OF 8 ABOVE ELECTRIC RADIANT PANELS.



<b>CONSULTANTS</b>  		<b>ARCHITECT/ENGINEERS</b> <b>CTA ARCHITECTS ENGINEERS</b> 13 N 23RD STREET BOX 1439 (59103) BILLINGS, MT 59101 PHONE (406) 248-7455 CTA Project Number: PHVACPPD		<b>Electrical Schedules</b>  		<b>Project Info</b> CORRECT PATIENT PRIVACY DEFICIENCIES (VIA MONTANA HEALTHCARE SYSTEM FORT HARRISON, MONTANA DATE: 4/26/2024 CHECKED: J. MURKLE DRAWN: M. BURELL		<b>Project Number</b> 436-110 <b>Estimating Number</b> 54 <b>Working Number</b> 154-E0.4 Dwg. 89 of 10	
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Three inches = one foot  
one inch = one foot  
one half inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot  
one sixteenth inch = one foot  
one thirty-second inch = one foot  
one sixty-fourth inch = one foot  
one one-hundredth inch = one foot  
one two-hundredth inch = one foot  
one four-hundredth inch = one foot  
one eight-hundredth inch = one foot  
one one-thousandth inch = one foot  
one two-thousandth inch = one foot  
one four-thousandth inch = one foot  
one eight-thousandth inch = one foot  
one sixteen-thousandth inch = one foot  
one thirty-two-thousandth inch = one foot  
one sixty-four-thousandth inch = one foot  
one one-hundred-thousandth inch = one foot  
one two-hundred-thousandth inch = one foot  
one four-hundred-thousandth inch = one foot  
one eight-hundred-thousandth inch = one foot  
one millionth inch = one foot

**GENERAL NOTES**

1. INFORMATION ON RISER DIAGRAM HAS BEEN ASCERTAINED FROM EXISTING DRAWINGS AND FIELD OBSERVATIONS. THIS INFORMATION IS AS ACCURATE AS CONDITIONS WOULD ALLOW. BRING DISCREPANCIES TO THE ENGINEER'S ATTENTION.

**COPPER FEEDER SCHEDULE**

DESIGNATION	WIRE	CONDUCTOR	INSULATION	SIZE	LENGTH	WGT.
CTD-1	1	48/70 AMPS	#4 AWG	2"	2"	
CTD-2	1	48/70 AMPS	#4 AWG	2"	2"	
CTD-3	1	48/70 AMPS	#4 AWG	2"	2"	

\* = FEEDER & GROUND UPGRADE DUE TO VOLTAGE DROP

- SHEET WORK NOTES**
1. BEFORE THE EC STARTS ANY WORK, A 30 DAY MAXIMUM DEMAND (MD) METERING SHALL BE DONE IN ACCORDANCE WITH NEC 220.87 AT THE TRANSFER SWITCH FEEDING PANEL. PROVIDE RESULTS TO PROJECT ENGINEER PRIOR TO CONSTRUCTION TO VERIFY THAT THE ADDITIONAL LOAD PROPOSED WILL NOT OVERLOAD PANEL.
2. REPLACE PANEL WITH NEW. LOCATE PANEL TO NEW LOCATION SHOWN ON SHEET E3.1. NEW PANEL WILL BE FED FROM EXISTING 1000AMP CIRCUIT BREAKER, BUT NEW FEEDER WILL BE PULLED TO ALLOW FOR VOLTAGE DROP. EXISTING PANEL WILL STAY IN SERVICE UNTIL PHASE 1 IS COMPLETE.
3. INSTALL 2500AMP CIRCUIT BREAKER FOR PANEL 154-3EE2. 154-DEE IS A 50 D LINE HCN DISTRIBUTION PANELBOARD WITH AN 25K A/C RATING.
4. INSTALL 1500AMP CIRCUIT BREAKER FOR PANEL 154-3EE2. 154-DEE2 IS A 50 D H.C.P. DISTRIBUTION PANELBOARD. NEW BREAKER SHALL HAVE A/C RATING OF EXISTING BREAKERS.

**PARTIAL ELECTRICAL RISER DIAGRAM**  
NOT TO SCALE

**GENERATOR LOAD SUMMARY**

GENERATOR IS A 375KW / 459 KVA

BASED ON GENERATOR LOGS SUPPLIED BY OWNER FOR 5 CONSECUTIVE MONTHS - THE HIGHEST LOAD RECORDED WAS USED:

709 AMPS = 255,429 VA  
255,429 X 1.25% = 319,286 VA

LOAD ADDED:

PANEL 154-3EE2 = 33,565VA  
PANEL 154-3EE7 = 33,828VA

TOTAL LOAD: 386,679 VA

**MAIN SWITCHBOARD LOAD SUMMARY**

MAIN SWITCHBOARD IS A 2500 AMPS @ 208V 3-PHASE

BASED ON READINGS TAKEN ON VARIOUS TIMES OF DAY AND ON SEVERAL SITE VISITS - THE HIGHEST LOAD PER PHASE WAS USED:

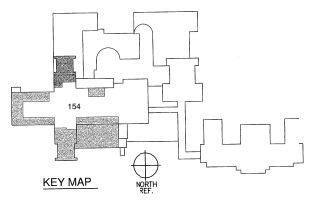
PHASE A: 1318 AMPS = 150,160 VA  
PHASE B: 1242 AMPS = 149,400 VA  
PHASE C: 1216 AMPS = 145,920 VA

TOTAL LOAD: 453,120 VA = 1259 AMPS  
453,120 X 1.25% = 566,400 VA

LOAD ADDED:

PANEL 154-3EE2 = 33,565VA  
PANEL 154-3EE7 = 33,828VA

TOTAL LOAD: 633,793 VA = 1759 AMPS



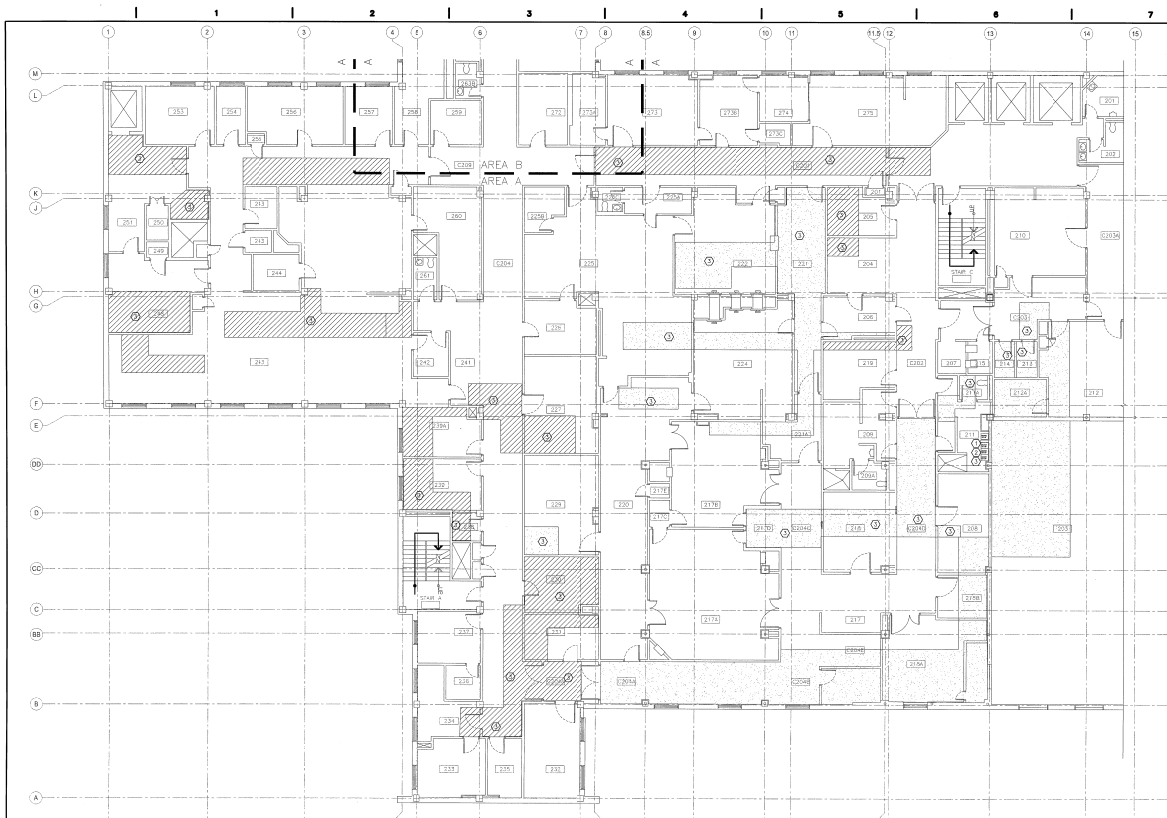
<b>CONSULTANTS</b>		<b>ARCHITECT/ENGINEERS</b> <b>CTA ARCHITECTS ENGINEERS</b> 13 N 23RD STREET BOX 1430 (59103) BILLINGS, MT 59101 PHONE (406) 248-7455 CTA Project Number: PHVACPPD	<b>Project Title</b> ELECTRICAL RISER DIAGRAM	<b>Project No.</b> 436-10	<b>Project Number</b> 436-10
				<b>Project Name</b> CORRECT PATIENT PRIVACY DEFICIENCIES VA MONTANA HEALTHCARE SYSTEM	<b>Project Name</b> FORT HARRISON, MONTANA
<b>Date</b> 4/20/2008	<b>Checked</b> J. HANLEY	<b>Drawn</b> M. BARTLETT	<b>Project Number</b> 154-E0.5	<b>Date</b> 08/09/08	<b>Scale</b> as shown

[illegible][illegible][illegible]Project Number  
406 110

CORRECT PATIENT		4330-110
PRIVACY DEFICIENCIES		Building Number
VA MONTANA HEALTHCARE SYSTEM		154
Location		Room Number
FORT HARRISON, MONTANA		
Date	Checked	Drawn
5/20/2011	J. HAIDLE	M. BURTELL
		154-E0.6
		Dwg 90 of 100

[illegible]

Fig No	Fig Title	Plant Number	
	ELECTRICAL PANEL SCHEDULES	436-110	
	CORRECT PATIENT PRIVACY DEFICIENCIES VA MONTANA HEALTHCARE SYSTEM	436-110	
	PROJECT	154	
	FORT HARRISON, MONTANA	Working Number	
Issued Chief Construction Engineer		Working Number	
		154-E.O.7	
Date	Checked by	Drawn	
5/20/09	J. HANDEL	M. HARTWILL	



SECOND FLOOR - AREA A  
ELECTRICAL DEMOLITION PLAN  
1/8"=1'-0"

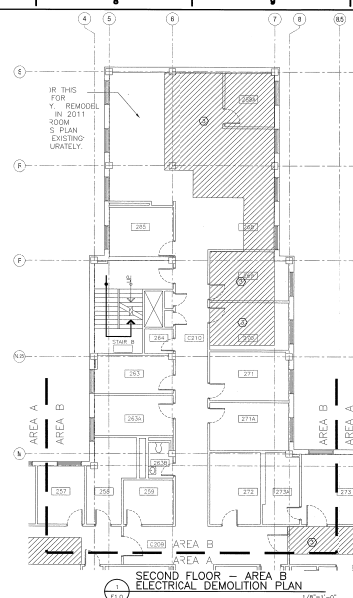
NOTE: AREAS SHOWN HATCHED REPRESENT APPROXIMATE LOCATIONS OF CEILING WORK NEEDED FOR PLUMBING REMOVAL AND INSTALLATION OF NEW PIPING. SEE SHEETS PD-12, PD-22, PD-2 & PD-22 FOR SPECIFIC DEMOLITION. SEE LEGEND BELOW FOR CEILING TYPES.

IN THE SURGERY DEPARTMENT, THERE IS RESTRICTED ACCESS. CONTRACTOR IS TO SCHEDULE ANY WORK WITHIN THIS DEPARTMENT WITH THE CHIEF ENGINEER. WORK MAY BE LIMITED TO SPECIFIC DAYS OR TIME.

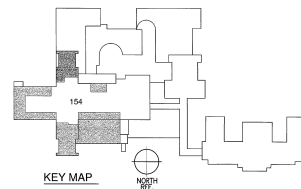
GYPSON BOARD CEILING. REMOVE AND REPLACE IN AREAS NEEDED FOR ACCESS. ONLY REPLACE TO AS-BUILT CONDITION. REMOVE AND REPLACE ANY ACCESS PANELS THAT ARE IN THE AREA OF WORK TO AS-BUILT CONDITIONS.

GENERAL NOTES  
1. COORDINATE WITH MECHANICAL AND PLUMBING CONTRACTOR AREAS NEEDING LIGHT FIXTURE REMOVAL. WHERE ACOUSTIC TILE IS CEILING TYPE, CONTRACTORS MAY BE ABLE TO WORK AROUND LIGHTS FOR GYPSON BOARD CEILING. DISCONNECT, REMOVE, AND REINSTALLATION OF FIXTURES IS LIKELY.

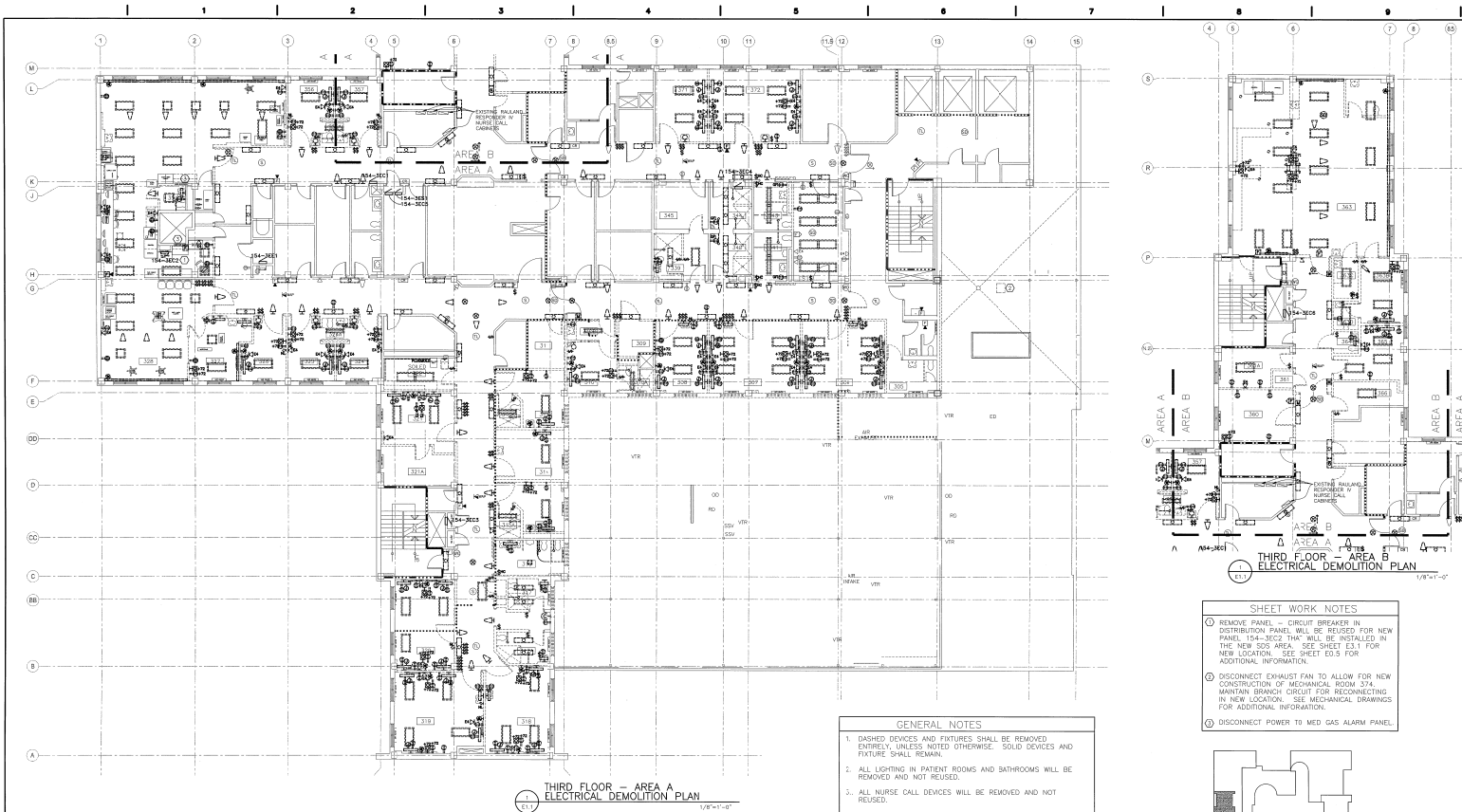
SHEET WORK NOTES  
① CEILING PATCHING REQUIRED BY GC.  
② RELOCATE EXISTING FIRE ALARM DEVICE TO NEW CHASE WALL. EXTEND CIRCUITRY AS REQUIRED.  
③ REMOVE AND REINSTALL EXISTING LIGHT FIXTURES IN THIS AREA. COORDINATE ALL CEILING PATCHING AND REPAIR WORK WITH GC.



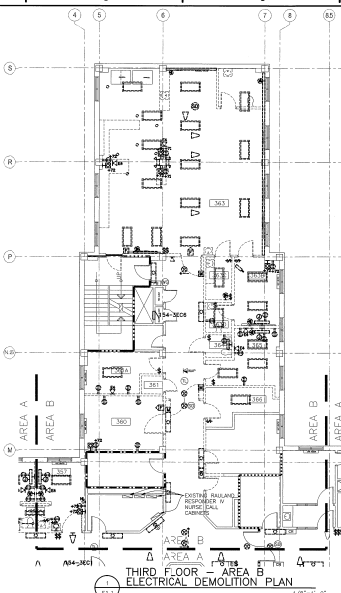
SECOND FLOOR - AREA B  
ELECTRICAL DEMOLITION PLAN  
1/8"=1'-0"



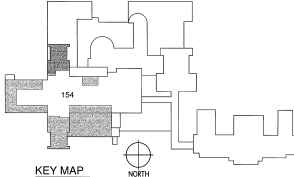
CONSULTANTS		ARCHITECT/ENGINEERS		Drawing No.		Project Title		Project Number	
		CTA ARCHITECTS ENGINEERS		SECOND FLOOR ELECTRICAL DEMOLITION PLAN		CORRECT PATIENT PRIVACY DEFICIENCIES VIA MONTANA HEALTHCARE SYSTEM		436-110	
		13 N 23RD STREET BOX 1439 (59103) BILLINGS, MT 59101 PHONE (406) 248-7455		316 N LAST CHANGE GULCH HELENA, MT 59601 PHONE (406) 495-9400		Location		Drawing Number	
		CTA Project Number: PHVACPPD		Approved Chief Construction Engineer		FORT HARRISON, MONTANA		154-E10	
						Date		Dwg. No. of 100	
						Drawn			
						Checked			
						In Charge			



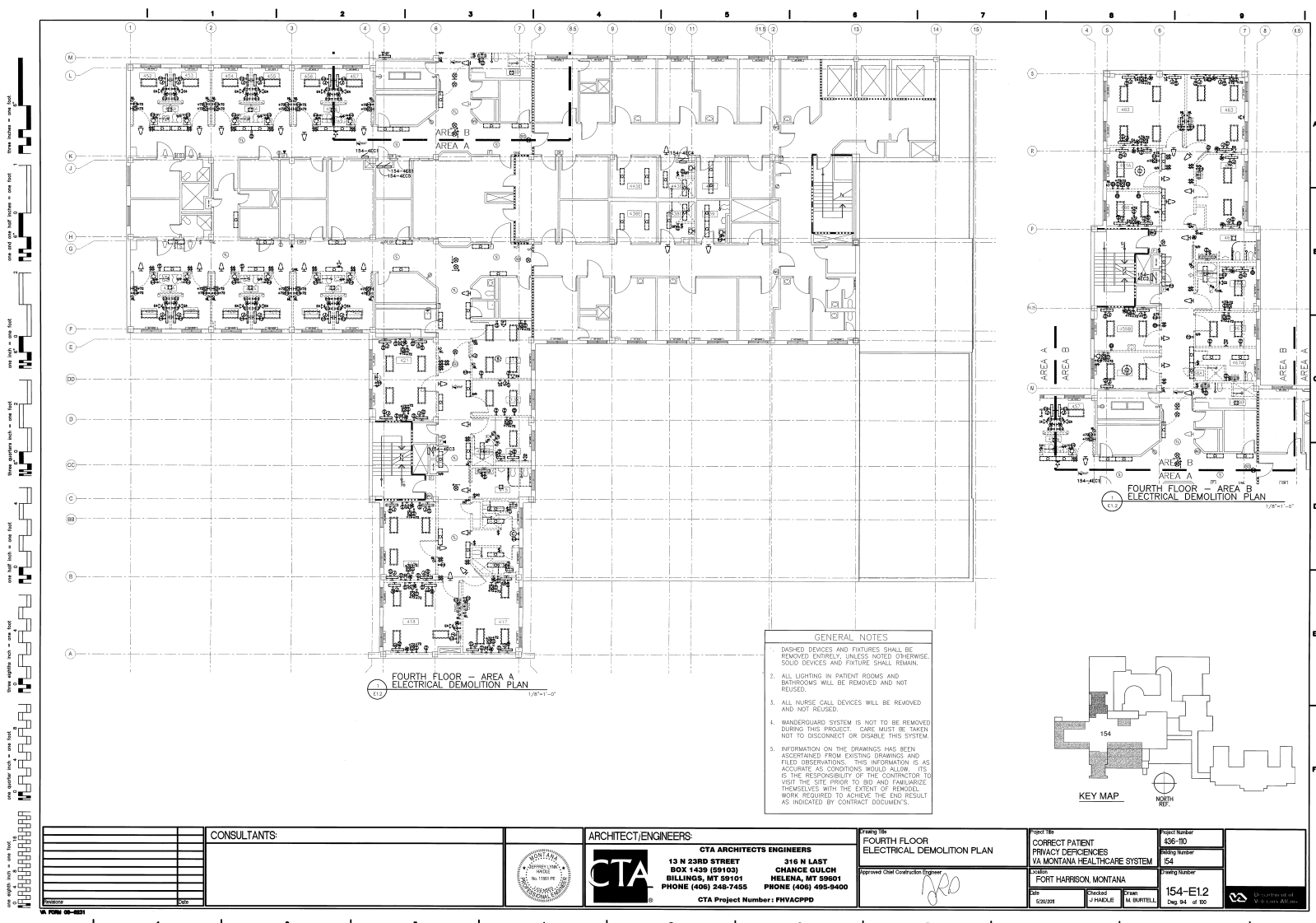
- GENERAL NOTES**
1. DASHED DEVICES AND FIXTURES SHALL BE REMOVED ENTIRELY, UNLESS NOTED OTHERWISE. SOLID DEVICES AND FIXTURES SHALL REMAIN.
  2. ALL LIGHTING IN PATIENT ROOMS AND BATHROOMS WILL BE REMOVED AND NOT REUSED.
  3. ALL NURSE CALL DEVICES WILL BE REMOVED AND NOT REUSED.
  4. WANDERGUARD SYSTEM IS NOT TO BE REMOVED DURING THIS PROJECT. CARE MUST BE TAKEN NOT TO DISCONNECT OR DISABLE THIS SYSTEM.
  5. INFORMATION ON THE DRAWINGS HAS BEEN ASCERTAINED FROM EXISTING DRAWINGS AND FIELD OBSERVATIONS. THIS INFORMATION IS AS ACCURATE AS CONDITIONS WOULD ALLOW. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE PRIOR TO BID AND FAMILIARIZE THEMSELVES WITH THE EXTENT OF REMODEL WORK REQUIRED. NO EXTRAS WILL BE ALLOWED FOR ALTERATIONS OF A FORESEEABLE NATURE REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY CONTRACT DOCUMENTS.



- SHEET WORK NOTES**
1. REMOVE PANEL - CIRCUIT BREAKER IN DISTRIBUTION PANEL WILL BE REUSED FOR NEW PANEL. 154-1002 THRU WILL BE INSTALLED IN THE NEW SDS AREA. SEE SHEET E3.1 FOR NEW LOCATION. SEE SHEET E3.5 FOR ADDITIONAL INFORMATION.
  2. DISCONNECT EXHAUST FAN TO ALLOW FOR NEW CONSTRUCTION OF MECHANICAL ROOM 374. MAINTAIN BRANCH CIRCUIT FOR RECONNECTING IN NEW LOCATION. SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
  3. DISCONNECT POWER TO MED GAS ALARM PANEL.



		CONSULTANTS:				ARCHITECT/ENGINEERS:		Drawing Title		Project Title		Project Number			
								THIRD FLOOR ELECTRICAL DEMOLITION PLAN		CORRECT PATIENT PRIVACY DEFICIENCIES VA MONTANA HEALTHCARE SYSTEM		436-110			
										Location		54			
								Approved Chief Construction Engineer		FORT HARRISON, MONTANA		Drawing Number			
															
										Date		Checked HANDLE		Drawn M. BUFFETT	
										02/02/21				154-E1.1 Dep 90 of 100	
														 Department of Professional Engineers	



- GENERAL NOTES
1. DASHED DEVICES AND FIXTURES SHALL BE REMOVED ENTIRELY, UNLESS NOTED OTHERWISE. SOLID DEVICES AND FIXTURES SHALL REMAIN.
  2. ALL LIGHTING IN PATIENT ROOMS AND BATHROOMS WILL BE REMOVED AND NOT REUSED.
  3. ALL NURSE CALL DEVICES WILL BE REMOVED AND NOT REUSED.
  4. WANDERGROUND SYSTEM IS NOT TO BE REMOVED DURING THIS PROJECT. CARE MUST BE TAKEN NOT TO DISCONNECT OR DISABLE THIS SYSTEM.
  5. INFORMATION ON THE DRAWINGS HAS BEEN ASCERTAINED FROM EXISTING DRAWINGS AND FIELD OBSERVATIONS. THIS INFORMATION IS AS ACCURATE AS CONDITIONS WOULD ALLOW. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE PRIOR TO BID AND FAMILIARIZE THEMSELVES WITH THE EXTENT OF REMODEL WORK REQUIRED TO ACHIEVE THE END RESULT AS INDICATED BY CONTRACT DOCUMENTS.

CONSULTANTS		ARCHITECT/ENGINEERS		Drawing Title		Project Title		Project Number	
		CTA ARCHITECTS ENGINEERS		FOURTH FLOOR ELECTRICAL DEMOLITION PLAN		CORRECT PATIENT PRIVACY DEPENDENCIES VIA MONTANA HEALTHCARE SYSTEM		406-110	
		13 N 23RD STREET BILLINGS, MT 59103 PHONE (406) 248-7455		316 N LAST HELENA, MT 59601 PHONE (406) 495-9400		Fort Harrison, Montana		154	
		CTA Project Number: FHVACPPD		Approved Chief Construction Engineer		Drawing Number		154-E12	
						Sheet		Page 94 of 100	