ELECTRICAL SYMBOLS LEGEND

LIGHTING

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
A a	CEILING SURFACE MOUNTED LIGHT FIXTURE, CAPITAL LETTER INDICATES FIXTURE TYPE, SMALL LETTER INDICATES SWITCHING.	
	RECESSED CEILING MOUNTED LIGHT FIXTURE	
H	WALL MOUNTED INCAND. OR H.I.D. LIGHT FIXTURE, SURFACE OR, RECESSED MOUNTED	
	CEILING EXIT SIGN, SHADED SIDE INDICATES LIGHTED FACE, ARROWS INSTALLED AS SHOWN	
H	WALL EXIT SIGN	6 INCHES ABOVE DOOR FRAME TO BOTTOM
	SUSPENDED FIXTURE	
	SURFACE FLUORESCENT	
	RECESSED FLUORESCENT	
	FIXTURE CONNECTED TO EMERGENCY LIFE SAFETY POWER	
	FIXTURE CONNECTED TO EMERGENCY CRITICAL BRANCH POWER	
	EMERGENCY BATTERY LIGHT	7 FOOT 6 INCHES
	EMERGENCY REMOTE LAMP	7 FOOT 6 INCHES
H PC	PHOTO CELL	9 FOOT
M	CEILING MOUNTED MOTION SENSOR SWITCH	
H M	WALL MOUNTED MOTION SENSOR SWITCH	84 INCHES
M PP	MOTION SENSOR SWITCH POWER PACK	
C 2	CONTACTOR (NUMBER INDICATES NUMBER OF POLES)	
$	SINGLE POLE (HORSEPOWER RATED WHEN USED AS MOTOR DISCONNECT)	48 INCHES
$2	DOUBLE POLE	48 INCHES
$3	3-WAY	48 INCHES
$4	4-WAY	48 INCHES
$M	OCCUPANCY SENSOR SWITCH	48 INCHES
$K	KEY OPERATED	48 INCHES
$P	WITH PILOT LIGHT (CAN BE USED WITH OTHER SWITCH TYPES)	48 INCHES
$D	FLUORESCENT DIMMER	48 INCHES
$MC	MOMENTARY CONTACT	48 INCHES
	DIMMER (600 WATT UNLESS OTHERWISE NOTED)	48 INCHES
$I	LIGHTING INTENSITY SELECTOR PANEL	48 INCHES
$LV	LOW VOLTAGE SWITCH	48 INCHES

POWER

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
	DUPLEX RECEPTACLE ("C" INDICATES EMERGENCY CRITICAL BRANCH POWER)	18 INCHES
	DOUBLE DUPLEX RECEPTACLE ("C" INDICATES EMERGENCY CRITICAL BRANCH POWER)	18 INCHES
A	TYPE L14-30 RECEPTACLE	18 INCHES
B	TYPE L14-50 RECEPTACLE	18 INCHES
G	GFCI TYPE RECEPTACLE	18 INCHES
	MULTI-OUTLET ASSEMBLY - M.O.A., PROVIDE DEVICES AS SHOWN ON PLANS	18 INCHES
	DUPLEX RECEPTACLE, HALF SWITCHED	18 INCHES
R	FLOOR OUTLET, 'R' INDICATES RECESSED, 'F' INDICATES FLUSH, 'S' INDICATES SURFACE MOUNT	
H TS	TIME SWITCH	
T	DRY TYPE TRANSFORMER	
H PB	PUSH BUTTON	
H HC	POWER DOOR HANDICAP PUSH PAD	42 INCHES
H B	EMERGENCY BOILER SHUTDOWN PUSH BUTTON	48 INCHES
H T E	THERMOSTAT - PROVIDE BY DIVISION 16	48 INCHES
H T	THERMOSTAT - FURNISHED BY DIVISION 15, INSTALLED BY DIVISION 16	48 INCHES
$M	THERMAL SWITCH (MOTOR OVERLOAD TYPE)	48 INCHES
	POWER POLE	
1	MOTOR (NUMBER REFERS TO MOTOR AND EQUIPMENT SCHEDULE SEE SCHEDULE FOR WIRING AND CONTROLLER REQUIREMENTS)	
	SURFACE LIGHTING AND APPLIANCE PANELBOARD	
	RECESSED LIGHTING AND APPLIANCE PANELBOARD	
	SWITCHBOARD OR MOTOR CONTROL CENTER AS NOTED	
	SPECIAL EQUIPMENT CABINET AS NOTED	
H	ENCLOSED MOLDED CASE CIRCUIT BREAKER	
H V	VARIABLE FREQUENCY CONTROLLER WITH DISCONNECT	
H	NON-FUSED DISCONNECT	
H F	FUSED DISCONNECT	
	MAGNETIC STARTER	
H	COMBINATION STARTER-DISCONNECT	
H B	JUNCTION BOX WITH BLANK COVER	

SYSTEMS

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
S	CEILING MOUNTED RECESSED SPEAKER	
S	CEILING SURFACE MOUNTED SPEAKER	
H S	WALL MOUNTED SPEAKER	90 INCHES
H C	CLOCK	90 INCHES TO BOTTOM
C S	CLOCK/SPEAKER UNIT	90 INCHES TO BOTTOM
H	MICROPHONE OUTLET	18 INCHES
M F	MICROPHONE FLOOR OUTLET	
H	VOLUME CONTROL	48 INCHES
AMP	AMPLIFIER CABINET	
H	AUXILIARY INPUT OUTLET	18 INCHES
2	COMPUTER OUTLET (NUMBER INDICATES QUANTITY OF CABLES AND JACKS, NO NUMBER INDICATES ONE)	18 INCHES
2 2	COMBINATION COMPUTER/TELEPHONE OUTLET IN SINGLE GANG OPENING (NUMBER INDICATES QUANTITY OF CABLES AND JACKS, NO NUMBER INDICATES ONE)	18 INCHES
W	TELEPHONE OUTLET ("W" INDICATES WALL MOUNTED AT 48 INCHES)	18 INCHES
	COMPUTER/TELEPHONE OUTLET, PROVIDE ROUGH-IN AND CONDUIT ONLY	18 INCHES
	FLOOR MOUNTED COMMUNICATIONS OUTLET	
	COMMUNICTIONS FLOOR OUTLET WITH FURNITURE WHIP	
H TV	TELEVISION OUTLET	18 INCHES
R	REQUEST TO EXIT DEVICE	3 INCHES ABOVE DOOR FRAME
H R	DOOR POSITION SWITCH, RECESSED	
H S	DOOR POSITION SWITCH, SURFACE MOUNT	
H	DOOR POSITION SWITCH	
H CR	CARD READER	48 INCHES
	SURVEILLANCE CAMERA	
H	BLUE ALARM LIGHT	

FIRE ALARM

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
H F	MANUAL STATION	48 INCHES
H	FIXED TEMPERATURE DETECTOR	
S	DUCT PHOTOELECTRIC DETECTOR	
S	PHOTOELECTRIC DETECTOR ('S' INDICATES SLEEPING ROOM WITH AUX. CONTACT, 'G' INDICATES WITH GUARD,'E' INDICATES FOR ELEVATOR RECALL)	
C	COMBINATION FIRE/SMOKE DAMPER OR SMOKE DAMPER BY DIVISION 15	
H	HORN/STROBE WITH STROBE	BOTTOM OF LENS 80 INCHES
S	SPEAKER HORN WITH STROBE	BOTTOM OF LENS 80 INCHES
S X	EXPLOSION PROOF SPEAKER HORN WITH STROBE	BOTTOM OF LENS 80 INCHES
	STROBE LIGHT	BOTTOM OF LENS 80 INCHES
FA	FIRE ALARM SPEAKER	
H M	FIRE ALARM MODULE/RELAY	
H	MAGNETIC DOOR HOLD OPEN	
S	SUPERVISORY SWITCH (NUMBER INDICATES NUMBER OF DEVICES AT THIS LOCATION	
P	PRESSURE SWITCH	
F	FLOW SWITCH	
FACP	FIRE ALARM CONTROL PANEL	
ANN	FIRE ALARM ANNUNCIATOR	

NURSE CALL

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
N N	CORRIDOR CALL OR ZONE LIGHT, CEILING OR WALL MOUNT	
NMS	MASTER STATION	
H N E	PATIENT EMERGENCY STATION	48 INCHES
H N	SINGLE BED PATIENT STATION	
H N S	STAFF STATION	48 INCHES
H N D	DUTY STATION	48 INCHES
H N 2	DOUBLE BED PATIENT STATION	
H N CB	EMERGENCY (CODE ONE)	
H N L	NURSE LOCATOR	
H N SA	STAFF ASSIST	48 INCHES
H N P	EMERGENCY PUSH BUTTON	48 INCHES
FA	TELEMETRY ANTENNA	

MISC/ABBREVATIONS

SYMBOLS	DESCRIPTION	MOUNTING HEIGHT
J	CEILING-MOUNTED JUNCTION BOX	
H J	WALL JUNCTION BOX	18 INCHES
	DASHED LINES INDICATE EXISTING FIXTURES, DEVICES, OR EQUIPMENT	
	HASH MARKS INDICATE ITEM NOTED TO BE REMOVED	
	CONDUIT CONCEALED IN WALL OR CEILING, QUANTITY OF CONDUCTORS NOT SHOWN, PROVIDE AS REQUIRED FOR DEVICE/CIRCUIT NUMBERS SHOWN.	
	CONDUIT UP	
	CONDUIT DOWN	
	CONDUIT CONCEALED IN FLOOR	
UG	UNDERGROUND CONDUIT AT 24 INCHES MINIMUM	
L1-2,4,6 #10	HOME RUN TO PANELBOARD. QUANTITY OF CONDUCTORS REQUIRED NOT INDICATED, PROVIDE QUANTITY AS REQUIRED FOR CIRCUIT NUMBERS SHOWN. SWITCHING ARRANGEMENT, OR NUMBER OF HOME RUNS SHOWN. '#10' INDICATES WIRE SIZE, NO NUMBERS INDICATES #12, 3/4 INCH CONDUIT MINIMUM.	
	SURFACE CONDUIT OR SURFACE RACEWAY	
1	NOTE IDENTIFICATION	
	WIRE BASKET TYPE CABLE TRAY	
	COMMUNICATIONS CABLE SUPPORT HANGER	
A	AMPERE	
AC	ABOVE COUNTER	
AFF	ABOVE FINISHED FLOOR	
AFG	ABOVE FINISHED GRADE	
AHU	AIR HANDLING UNIT	
C	CONDUIT	
CUH	CABINET UNIT HEATER	
EF	EXHAUST FAN	
EWC	ELECTRIC WATER COOLER	
FA	FIRE ALARM	
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	
GR	GROUND	
PH	PHASE	
TV	TELEVISION	
W	WIRE	
WP	WEATHERPROOF	

NOTES:
1. THIS IS A COMPREHENSIVE SYMBOL SCHEDULE. NOT ALL SYMBOLS ARE APPLICABLE TO THESE DRAWINGS.
2. MOUNTING HEIGHT IS TO THE CENTER OF DEVICE UNLESS OTHERWISE INDICATED.
3. FOR DEVICES SHOWN AS 48 INCHES MOUNTING HEIGHT, WHEN INSTALLED IN MASONRY BLOCK WALLS, MOUNTING AT 48 INCHES TO THE TOP OF THE OUTLET BOX IS ACCEPTABLE.

LUMINAIRE SCHEDULE

TYPE	MANUFACTURERS	CATALOG INFORMATION	FIXTURE DESCRIPTION	LAMP DATA NO.	LAMP DATA TYPE	BALLAST DATA NO.	BALLAST DATA TYPE	INPUT WATTS	VOLTAGE	MOUNTING	REMARKS
A1	LITHONIA OR EQUAL	2SP8 SERIES	2' X 4' RECESSED FLUORESCENT FIXTURE, REGRESSED ALUMINUM DOOR FRAME HINGED AND LATCHED WITH 0.125 INCH THICK PATTERN #12 DIFFUSER.	3	28W T8 SP41	1	ELECTRONIC	85	120	RECESSED	
A2	LITHONIA OR EQUAL	2SP8 SERIES	2' X 4' RECESSED FLUORESCENT FIXTURE, REGRESSED ALUMINUM DOOR FRAME HINGED AND LATCHED WITH 0.125 INCH THICK PATTERN #12 DIFFUSER.	3	28W T8 SP41	2	ELECTRONIC	85	120	RECESSED	
A3	LITHONIA OR EQUAL	2SP8 SERIES	2' X 4' RECESSED FLUORESCENT FIXTURE, REGRESSED ALUMINUM DOOR FRAME HINGED AND LATCHED WITH 0.125 INCH THICK PATTERN #12 DIFFUSER.	2	28W T8 SP41	1	ELECTRONIC	58	120	RECESSED	
A4	MARK ARCHITECTURAL OR EQUAL	MP SERIES	1' X 4' RECESSED TELESCOPIC FIXTURE, WALL TO WALL. STEEL HOUSING WITH EXTRUDED ALUMINUM TRIM. MATTE WHITE FINISH. PARABOLIC LOUVER SHIELDING.	2	28W T8 SP41	1	ELECTRONIC	58	120	RECESSED	
B1	LITHONIA OR EQUAL	2AV	2' X 4' RECESSED BASKET FLUORESCENT FIXTURE, STRAIGHT BLADE WHITE LOUVER, ROUND HOLES DIFFUSER.	3	28W T8 SP41	1	ELECTRONIC	85	120	RECESSED	
B2	LITHONIA OR EQUAL	2AV	2' X 4' RECESSED BASKET FLUORESCENT FIXTURE, STRAIGHT BLADE WHITE LOUVER, ROUND HOLES DIFFUSER.	3	28W T8 SP41	2	ELECTRONIC	85	120	RECESSED	
C1	HALO OR EQUAL	H4 LED SERIES	4 INCH LED RECESSED DOWNLIGHT. ALUMINUM CONSTRUCTION, 4000 DEGREE COLOR TEMPERATURE, COLOR RENDERING INDEX OF 80, INITIAL LUMEN OUTPUT OF 600. WET LISTED. WHITE REFLECTOR WITH WHITE TRIM RING.		INCLUDED			30	120	RECESSED	
C2	PORTFOLIO OR EQUAL	LD620 SERIES	6 INCH LED DOWNLIGHT, CLEAR SPECULAR REFLECTOR, WHITE TRIM, 2000 DELIVERED LUMENS.		INCLUDED			35	120	RECESSED	
E1	LITHONIA OR EQUAL	LE SERIES	L.E.D EXIT LIGHT, SOLID, DIE-CAST ALUMINUM HOUSING, WHITE ALUMINUM FACING WITH WHITE HOUSING. UNIVERSAL MOUNTING. AC ONLY. RED LETTERING.		INCLUDED			1.5	120	UNIVERSAL	
E2	LITHONIA OR EQUAL	LE SERIES	L.E.D. EXIT LIGHT SOLID, DIE-CAST ALUMINUM HOUSING, WHITE ALUMINUM FACING WITH WHITE HOUSING. UNIVERSAL MOUNTING. DOUBLE FACE. AC ONLY. RED LETTERS.		INCLUDED			1.5	120	UNIVERSAL	
E3	LITHONIA OR EQUAL	LV SERIES	SINGLE FACE LED EXIT LUMINAIRE, DIE CAST ALUMINUM HOUSING, WHITE BODY AND CANOPY, POLYCARBONATE COVER, STENCIL FACE, RED LETTERS, AC ONLY.		INCLUDED			1.5	120	UNIVERSAL	
G1	SCOTT ARCHITECTURAL OR EQUAL	53780 SERIES	12 INCH WALL SCONCE, ADA COMPLIANT, BRUSHED ALUMINUM FINISH, SAND BLASTED ACRYLIC SHEILD.	2	26W DTT SP41	1	ELECTRONIC	58	120	WALL	

LUMINAIRE SCHEDULE

TYPE	MANUFACTURERS	CATALOG INFORMATION	FIXTURE DESCRIPTION	LAMP DATA NO.	LAMP DATA TYPE	BALLAST DATA NO.	BALLAST DATA TYPE	INPUT WATTS	VOLTAGE	MOUNTING	REMARKS
H1	LITHONIA OR EQUAL	VW SERIES	1'X4' ROUGH SERVICE LINEAR FLUORESCENT WRAP AROUND FIXTURE. ONE PIECE COLD ROLLED STEEL HOUSING. WHITE POLYESTER POWDER COAT PAINT ON ALL METAL PARTS, CORROSION RESISTANT FINISH. PROVIDE CHAIN HANGERS.	3	28W T8 SP41	1	ELECTRONIC	85	120	PENDANT	
H2	LITHONIA OR EQUAL	VW SERIES	1'X4' ROUGH SERVICE LINEAR FLUORESCENT WRAP AROUND FIXTURE. ONE PIECE COLD ROLLED STEEL HOUSING. WHITE POLYESTER POWDER COAT PAINT ON ALL METAL PARTS, CORROSION RESISTANT FINISH. PROVIDE CHAIN HANGERS.	2	28W T8 SP41	1	ELECTRONIC	58	120	PENDANT	
P1	LITHONIA OR EQUAL	WSQ SERIES	WALL MOUNTED QUARTERSPHERE SHAPED EXTERIOR HID LIGHT FIXTURE WITH DIE CAST ALUMINUM HOUSING, MEDIUM THROW DISTRIBUTION, DARK BRONZE FINISH. QUARTZ RESTRIKE.	1	70W HPS	1	HIGH POWER FACTOR	85	120	WALL	
S1	LITHONIA OR EQUAL	WP SERIES	4 FOOT WALL MOUNTED FIXTURE. SNAP-IN, ACRYLIC DIFFUSER WITH PRISMATIC PATTERN. GLOSS-WHITE ENAMEL FINISH ON ALL METAL PARTS.	2	28W T8 SP41	1	ELECTRONIC	58	120	WALL	
U1	LITHONIA OR EQUAL	N2S SERIES	2 FOOT UNDERCABINET LIGHT WITH SOLID FRONT AND PRISMATIC LENS, WHITE FINISH	1	17W T8 SP41	1	ELECTRONIC	20	120	SURFACE	
W1	LITHONIA OR EQUAL	WP SERIES	2 FOOT WALL MOUNTED FIXTURE. SNAP-IN, ACRYLIC DIFFUSER WITH PRISMATIC PATTERN. GLOSS-WHITE ENAMEL FINISH ON ALL METAL PARTS.	2	17W T8 SP41	1	ELECTRONIC	30	120	WALL	
W2	LITHONIA OR EQUAL	WP SERIES	4 FOOT WALL MOUNTED FIXTURE. SNAP-IN, ACRYLIC DIFFUSER WITH PRISMATIC PATTERN. GLOSS-WHITE ENAMEL FINISH ON ALL METAL PARTS.	2	28W T8 SP41	1	ELECTRONIC	58	120	WALL	

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

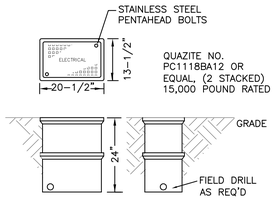
IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.476.6336
FAX: 701.476.6340

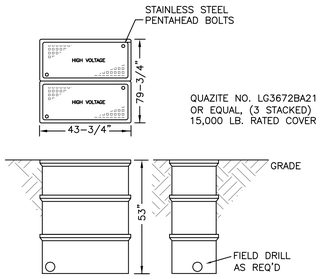
Drawing Title: ELECTRICAL SYMBOLS LEGEND AND LUMINAIRE SCHEDULE	Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE	Date: SEPTEMBER 19, 2011	
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB / Checked By: MB / Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E1.DWG	Location: VA MEDICAL CENTER FARGO, ND	Drawing No.: E1
			Dwg. 67 of 83

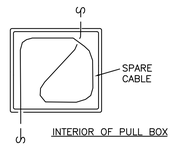
Department of Veterans Affairs



2/E2 METER CONDUIT PULL BOX DETAIL

NO SCALE



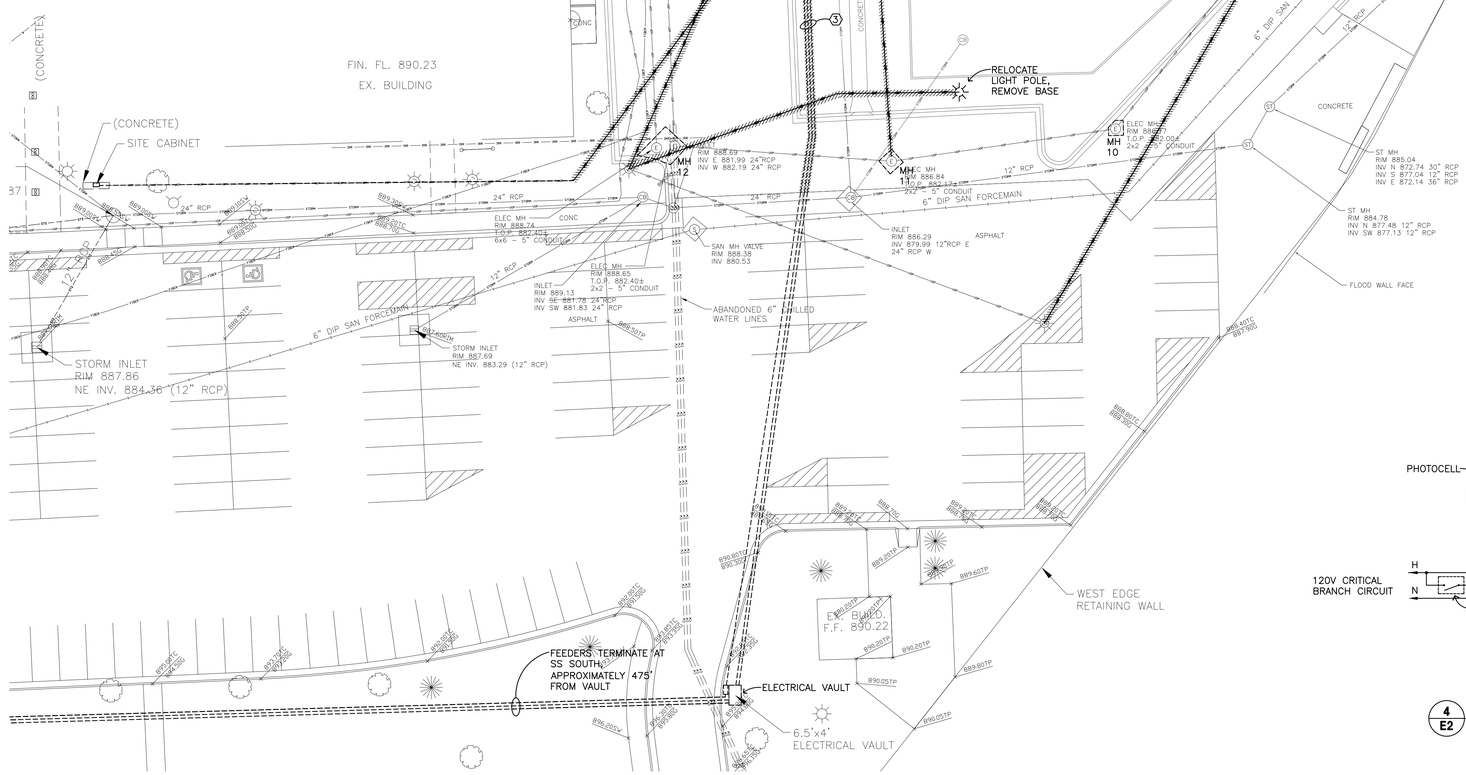


NOTES:

1. PROVIDE A LOOP OF 25KV CABLE AROUND THE INSIDE OF EACH PULL BOX FOR SLACK AND FUTURE CABLE MODIFICATIONS.

3/E2 MEDIUM VOLTAGE PULL BOX DETAIL

NO SCALE

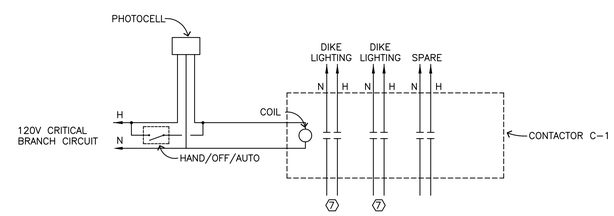


1/E2 SITE PLAN - ELECTRICAL DEMOLITION

0' 10' 20' 40'

PLAN NOTES:

1. DISCONNECT UNDERGROUND FUEL OIL STORAGE TANK MONITORING/ALARM, COORDINATE WITH MECHANICAL CONTRACTOR.
2. REMOVE 25KV FEED FROM HANDHOLES BACK TO SAC-1 AND REMOVE METERING CONDUIT AND WIRING.
3. REMOVE 25KV CONDUIT FROM HANDHOLES TO LOCATION SHOWN ON PLANS. REMOVE CONDUCTORS FROM SAC-1 TO SS-SOUTH. SEE 2/E15. REMOVE METERING CONDUIT AND WIRING.
4. DISCONNECT CHILLER FROM EQUIPMENT BRANCH SWITCHBOARD IN BUILDING 9. REMOVE CONDUIT AND CONDUCTORS TO SOURCE OF SUPPLY.
5. REMOVE 5KV FEED FROM MANHOLE #11 TO TRANSFORMER T38. SEE 1/E15.
6. REROUTE FEED FROM SITE CABINET TO NEW TRANSFORMER T38 LOCATION. SEE 1/E3 FOR LOCATION.
7. CIRCUIT TO CRITICAL BRANCH SWITCHGEAR, SEE ONE LINE ON SHEET E14.



4/E2 DIKE LIGHTING CONTROL DETAIL

NO SCALE

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

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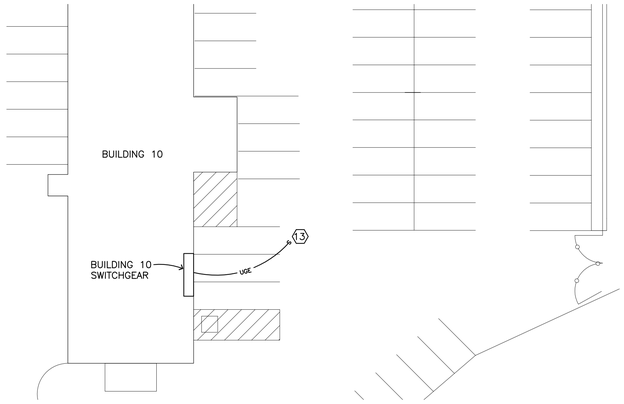
MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6286
FAX: 701.478.6340

REGISTERED PROFESSIONAL ENGINEER PE-4450 DATE 9-19-11 NORTH DAKOTA

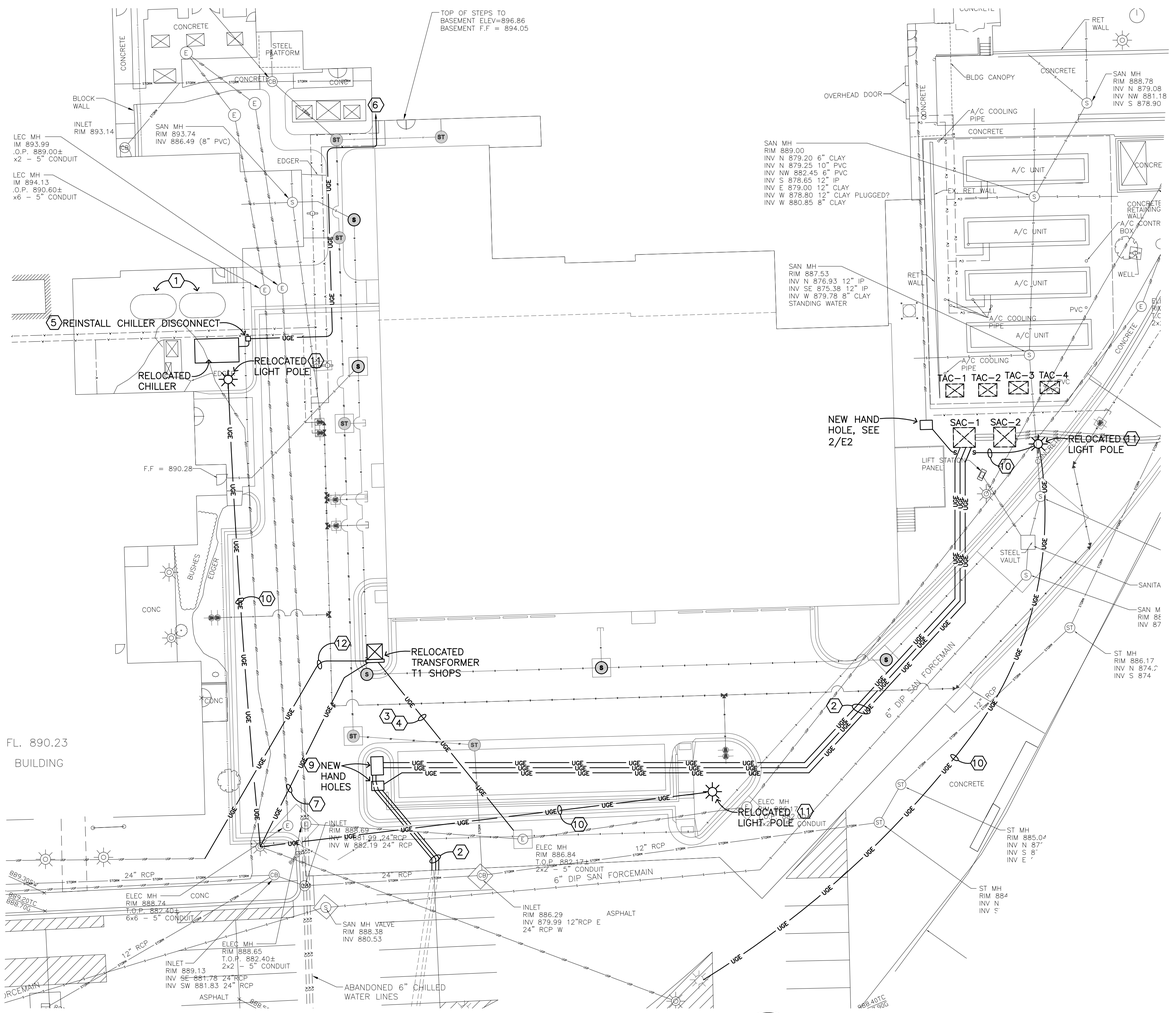
Drawing Title: SITE PLAN - ELECTRICAL DEMOLITION	Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE		Date: SEPTEMBER 19, 2011
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB / Checked By: MB / Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E2.DWG	Location: VA MEDICAL CENTER FARGO, ND	Drawing No.: E2 Dwg. 68 of 83

Department of Veterans Affairs



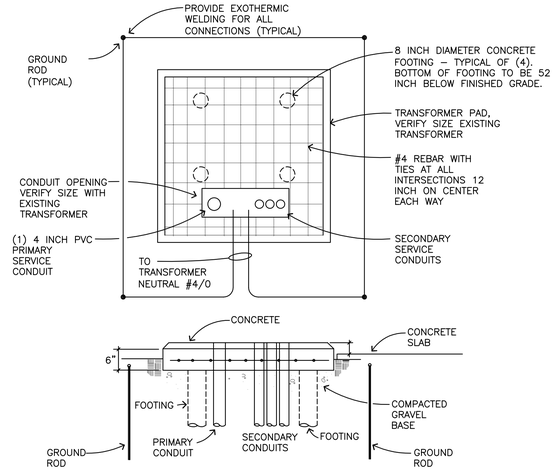
7 / E3 SITE PLAN - ELECTRICAL REMODELING

0' 10' 20' 40'



1 / E3 SITE PLAN - ELECTRICAL REMODELING

0' 10' 20' 40'

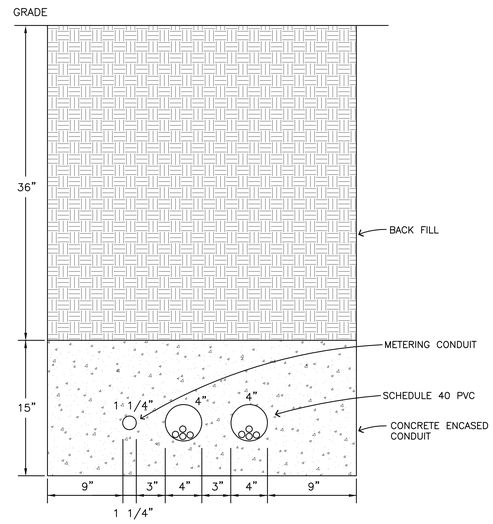


6 / E3 NEW TRANSFORMER T1 PAD DETAIL

NO SCALE

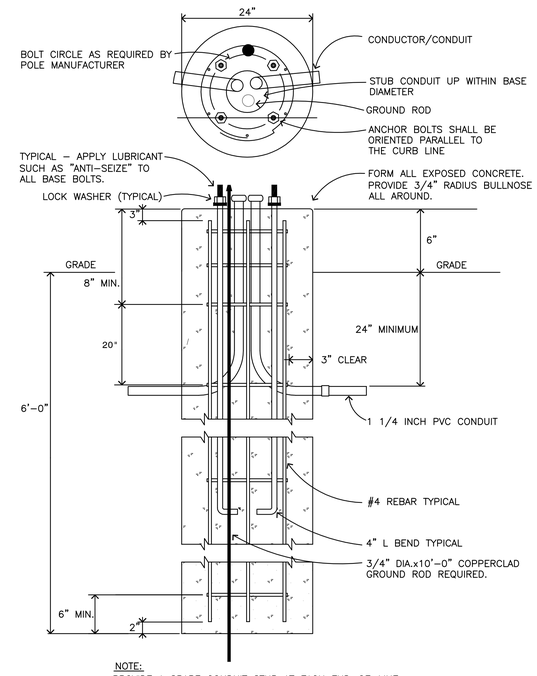
PLAN NOTES:

1. PROVIDE 1 INCH CONDUIT TO ROOM B45B. CONNECT UNDERGROUND FUEL OIL STORAGE TANK MONITORING/ALARM. COORDINATE WITH MECHANICAL CONTRACTOR.
2. SEE DUCT BANK DETAIL 5/E3 AND REVISED ELECTRICAL ONE LINE DIAGRAM 1/E14.
3. RE-FEED TRANSFORM T1 SHOPS (FORMERLY T38).
4. SEE 5KV ONE LINE DIAGRAM 1/E15 AND DUCT BANK DETAIL 2/E3 AND TRANSFORMER PAD DETAIL 6/E3.
5. MOUNT DISCONNECT ON NEW MOUNTING STRUCTURE. STRUCTURE TO MATCH EXISTING.
6. PROVIDE A 400/3 BREAKER IN 46-EBE IN ROOM 45A TO RE-FEED CHILLER, SEE 4/E3.
7. RE-FEED EXISTING LIGHT FIXTURE FROM RELOCATED T1 TRANSFORMER WITH 1 1/4 INCH CONDUIT PLUS 2#6 + #6 GROUND.
8. PROVIDE NEW 400/3 BREAKER IN EXISTING SWITCHGEAR.
9. PROVIDE NEW HAND HOLES TO MATCH EXISTING. QUAZITE PG SERIES. SEE DETAIL 2/E2 AND 3/E2.
10. 1 1/4 INCH CONDUIT WITH 2#6 + #6 GROUND.
11. SEE DETAIL 3/E3.
12. RECONNECT EXISTING SITE CABINET, EXTEND EXISTING CONDUCTORS IN NEW CONDUIT TO NEW TRANSFORMER LOCATION.
13. PROVIDE 100/3 PHASE BREAKER IN EXISTING BUILDING 10 SWITCHGEAR TO PROVIDE POWER TO TEMPORARY SHOPS TRAILER. ROUTE CONDUIT AND CONDUCTORS TO FROM SWITCHGEAR TO TRAILER AND PROVIDE SERVICE DISCONNECT AS REQUIRED. TRAILER TO BE LOCATED ON THE EAST SIDE OF BUILDING 10.



5 / E3 25 KV DUCT BANK DETAILS

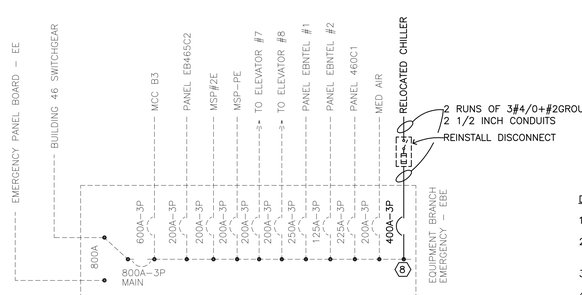
NO SCALE



NOTE:
PROVIDE A SPARE CONDUIT STUB AT EACH END-OF-LINE FIXTURE. SEE PLANS FOR ADDITIONAL SPARE STUBS.

3 / E3 CONCRETE BASE DETAIL

NO SCALE

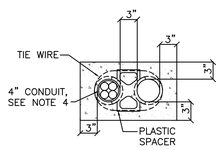


4 / E3 PARTIAL BUILDING 46 ONE LINE DIAGRAM

NO SCALE

DUCT BANK NOTES:

1. CONCRETE SHALL BE 3000 P.S.I. @ 28 DAYS, OR AS SPECIFIED.
2. PROVIDE REINFORCING RODS ON TOP AND BOTTOM OF DUCTS WHEN CROSSING OR PLACED IN ROADWAYS.
3. MINIMUM COVER TO TOP OF ENVELOPE SHALL BE 24".
4. CONDUIT QUANTITY AND SIZE AS INDICATED ON PLANS.



2-WAY DUCT LINE

2 / E3 DUCT BANK DETAILS

NO SCALE

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

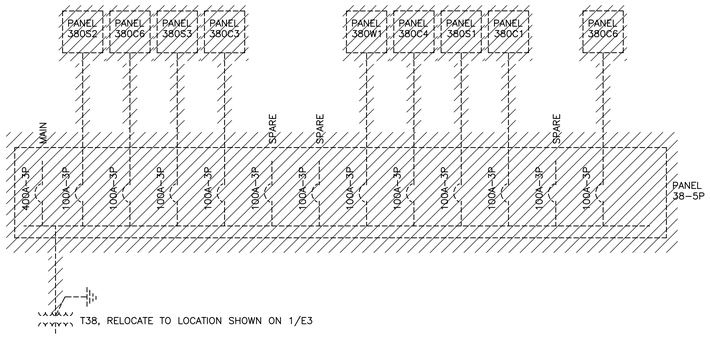
PE-4445 DATE 7-19-11

Drawing Title	Project Title	Date
SITE PLAN - ELECTRICAL REMODELING	VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE	SEPTEMBER 19, 2011
		AS NOTED

VA Project No.	Contract No.	Designed By	Checked By	Drawn By	Drawing No.
437-310	VA263-P-0967 VA263-C-	MB	MB	TP	E3

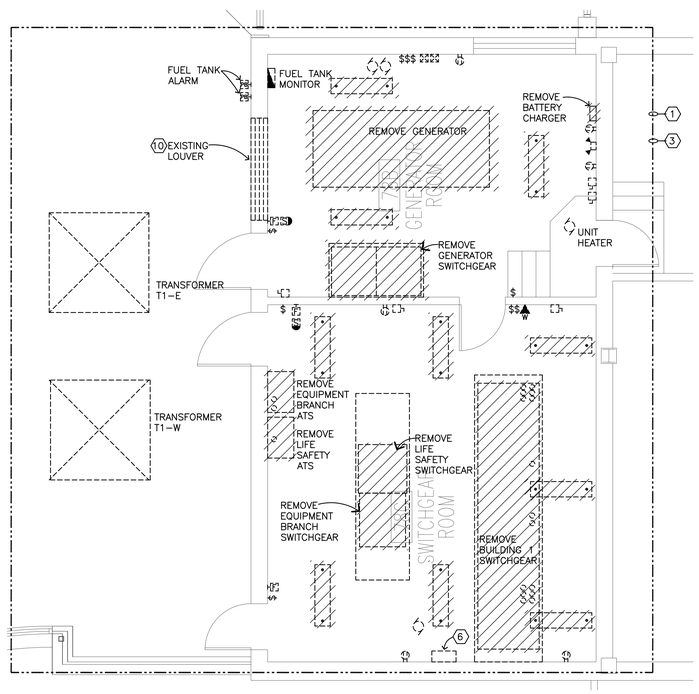
Building No.	AutoCAD File Name	Location	Dwg. 69 of 83
1	10-084 E3.DWG	VA MEDICAL CENTER FARGO, ND	

Department of Veterans Affairs



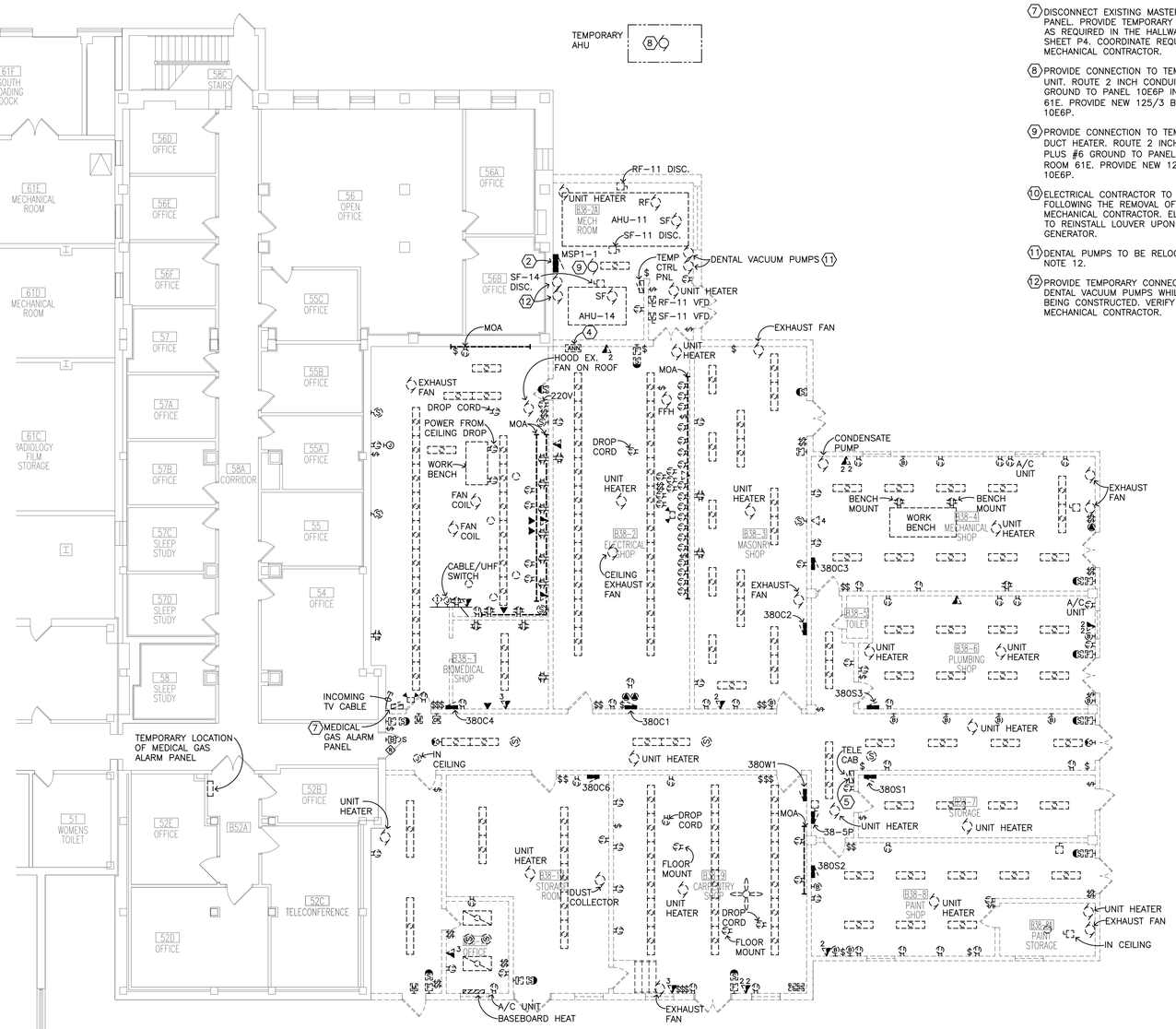
3/E4 EXISTING ELECTRICAL ONE-LINE DIAGRAM - BUILDING 38

NO SCALE



2/E4 BASEMENT DEMOLITION PLAN - ELECTRICAL

0' 2' 4' 8'



1/E4 BASEMENT DEMOLITION PLAN - ELECTRICAL

0' 4' 8' 16'

GENERAL NOTES:

1. ALL EQUIPMENT, DEVICES, FIXTURES, ETC. SHOWN ON THE DEMOLITION PLANS SHALL BE REMOVED UNLESS NOTED OTHERWISE.

PLAN NOTES:

1. ITEMS WITHIN BOUNDARY SHOWN HATCHED ARE TO BE DEMOLISHED, ALL OTHER ITEMS WITHIN BOUNDARY ARE TO REMAIN. SEE 2/E8 FOR ELECTRICAL REVISIONS IN THIS AREA.
2. DISCONNECT AND REMOVE PANEL AND CONDUCTORS BACK TO MCC-3B IN BUILDING 46.
3. SEE SPECIFICATION SECTION 26 05 12 FOR PHASING REQUIREMENTS IN THIS AREA.
4. SALVAGE F/A ANNUNCIATOR PANEL, TURN OVER TO OWNER.
5. REMOVE BACKBONE CABLE BACK TO SOURCE OF SUPPLY.
6. DISCONNECT METER FROM EXISTING SWITCHGEAR AND RECONNECT TO NEW SWITCHGEAR.
7. DISCONNECT EXISTING MASTER MEDICAL GAS ALARM PANEL. PROVIDE TEMPORARY CONNECTION TO PANEL AS REQUIRED IN THE HALLWAY TO THE NORTH, SEE SHEET P4. COORDINATE REQUIREMENTS WITH MECHANICAL CONTRACTOR.
8. PROVIDE CONNECTION TO TEMPORARY AIR HANDLING UNIT. ROUTE 2 INCH CONDUIT WITH 3#1 PLUS #6 GROUND TO PANEL 10E6P IN MECHANICAL ROOM 61E. PROVIDE NEW 125/3 BREAKER IN PANEL 10E6P.
9. PROVIDE CONNECTION TO TEMPORARY ELECTRICAL DUCT HEATER. ROUTE 2 INCH CONDUIT WITH 3#1 PLUS #6 GROUND TO PANEL 10E6P IN MECHANICAL ROOM 61E. PROVIDE NEW 125/3 BREAKER IN PANEL 10E6P.
10. ELECTRICAL CONTRACTOR TO REMOVE LOUVER FOLLOWING THE REMOVAL OF DUCTWORK BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO REINSTALL LOUVER UPON SETTING OF NEW GENERATOR.
11. DENTAL PUMPS TO BE RELOCATED, SEE PLAN NOTE 12.
12. PROVIDE TEMPORARY CONNECTION TO RELOCATED DENTAL VACUUM PUMPS WHILE THE NEW ADDITION IS BEING CONSTRUCTED. VERIFY LOCATIONS WITH MECHANICAL CONTRACTOR.

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

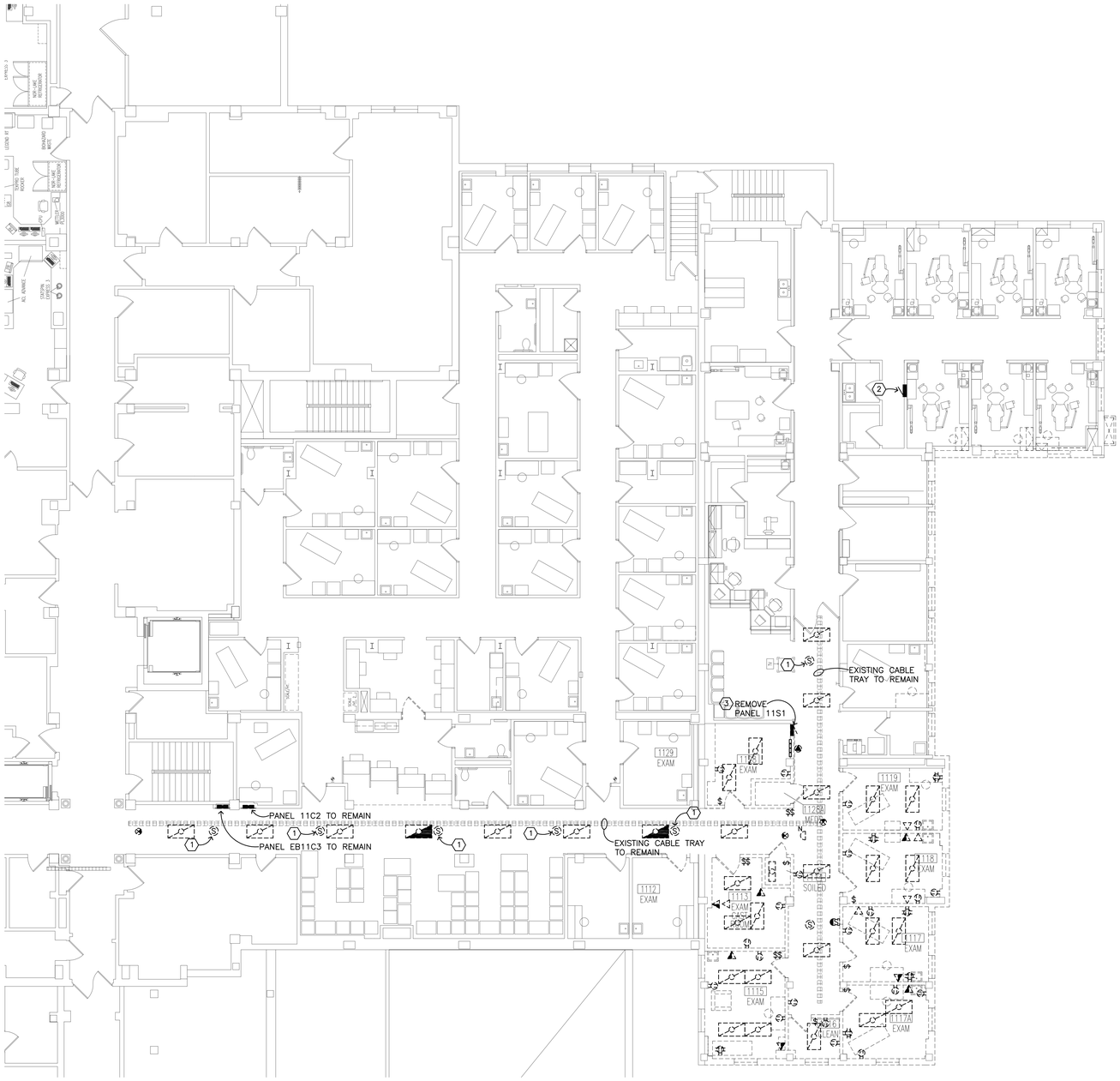
MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

PE-14
DATE 2-19-11
NORTH DAKOTA

KEY PLAN: B C A D

Drawing Title: BASEMENT DEMOLITION PLAN - ELECTRICAL	Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE			Date: SEPTEMBER 19, 2011
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB	Checked By: MB	Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E4.DWG	Location: VA MEDICAL CENTER FARGO, ND		Drawing No.: E4 Dwg. 70 of 83

Department of Veterans Affairs



GENERAL NOTES:

1. ALL EQUIPMENT,DEVICES, FIXTURES, ETC. SHOWN ON THE DEMOLITION PLANS SHALL BE REMOVED UNLESS NOTED OTHERWISE.

PLAN NOTES:

1. SALVAGE DEVICE NOTED FOR REINSTALLATION IN NEW CEILING.
2. PANEL '11S2' TO REMAIN. CHANGE PANEL NAME TO '11S7'. PROVIDE NEW LABEL.
3. EXTEND REMAIN CIRCUITING TO NEW PANEL '11S6'.

1/E5 FIRST FLOOR DEMOLITION PLAN - ELECTRICAL

0' 4' 8' 16'

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.8286
FAX: 701.478.8340

PE-14487
DATE 9-19-11

KEY PLAN

Drawing Title: FIRST FLOOR DEMOLITION PLAN - ELECTRICAL	Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE			Date: SEPTEMBER 19, 2011
				AS NOTED
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB	Checked By: MB	Drawn By: TP
Building No.: 1	AutoCAD File Name: 10-084 E5.DWG	Location: VA MEDICAL CENTER FARGO, ND		Drawing No.: E5
				Dwg. 71 of 83

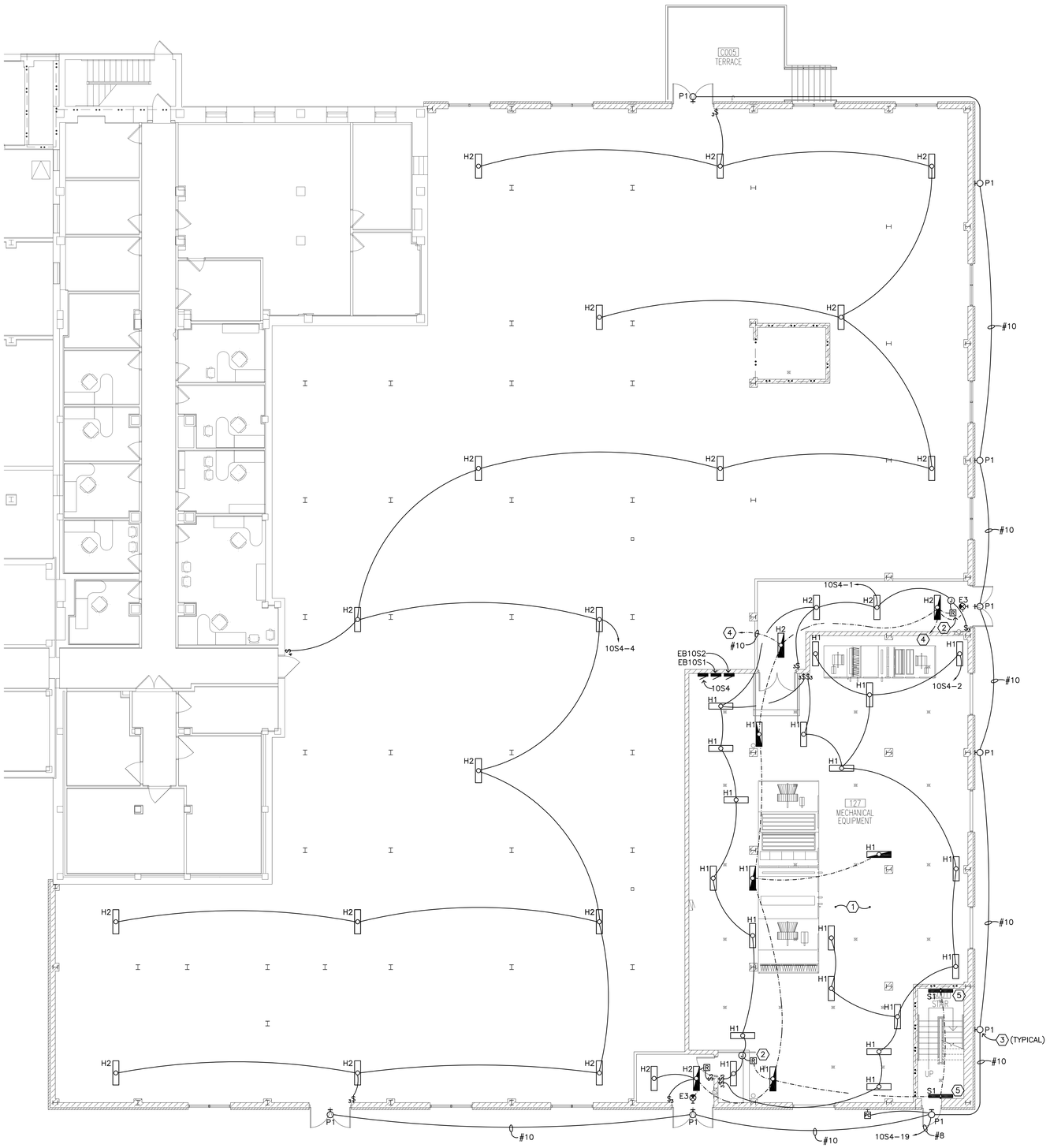
Department of Veterans Affairs

GENERAL NOTES:

1. MOUNT ALL SURFACE MOUNTED FIXTURES (TYPES H1, H2, AND H3) AT 9'-0" AFF TO THE BOTTOM OF THE FIXTURES UNLESS NOTED OTHERWISE.

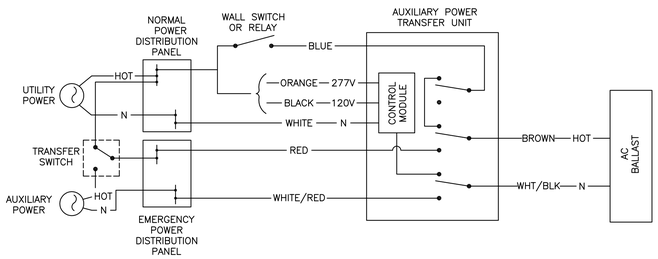
PLAN NOTES:

1. COORDINATE FIXTURE LOCATIONS WITH MECHANICAL EQUIPMENT. ADDITIONAL FIXTURES MAY BE REQUIRED TO PROVIDE ADEQUATE LIGHT.
2. EMERGENCY LIGHTING RELAY, SEE DETAIL 2/E6.
3. SEE ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHTS AND LOCATIONS.
4. CONNECT TO NEAREST ADEQUATE LIFE SAFETY CIRCUIT.
5. LIGHT FIXTURE TO BE UNSWITCHED AND REMAIN ON AT ALL TIMES.



1 E6 BASEMENT REMODELING PLAN - LIGHTING

0' 4' 8' 16'



NOTE:
THE WALL SWITCH IS WIRED TO THE RELAY TO CONTROL WHETHER THE FIXTURE IS ON OR OFF. THE RELAY IS INTENDED TO PROVIDE THE FIXTURE POWER FROM A NORMAL PANEL DURING NORMAL OPERATING CONDITIONS. IN THE EVENT OF LOSS OF POWER, THE RELAY IS TO PROVIDE POWER FROM A LIFE SAFETY PANEL NO MATTER THE POSITION OF THE WALL SWITCH. WHEN NORMAL POWER RETURNS, THE RELAY IS TO RETURN NORMAL POWER TO THE FIXTURE.

2 E6 EMERGENCY RELAY ONE-LINE DIAGRAM
NO SCALE

Revisions	Date

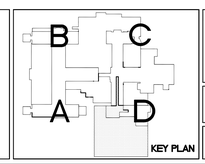
Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
502 7th St S, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6230
FAX: 701.478.5400

REGISTERED PROFESSIONAL ENGINEER
MICHAEL BOSTROM
PE-14437
NORTH DAKOTA
DATE 2-19-11



KEY PLAN

Drawing Title: BASEMENT REMODELING PLAN - LIGHTING		Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE		Date: SEPTEMBER 19, 2011
VA Project No. 437-310	Contract No. VA263-P-0967 VA263-C-	Designed By MB	Checked By MB	Drawn By TP	AS NOTED
Building No. 1	AutoCAD File Name 10-084 E6.DWG	Location VA MEDICAL CENTER FARGO, ND		Drawing No. E6 Dwg. 72 of 83

Department of Veterans Affairs

PLAN NOTES:

1. CONNECT TO NEAREST RECEPTACLE CIRCUIT.
2. EMERGENCY LIGHTING RELAY, SEE DETAIL 2/E6.
3. LIGHT FIXTURE IS TO BE UNSWITCHED AND REMAIN ON AT ALL TIMES.
4. PROVIDE ROUGH IN (DOUBLE GANG BOX) FOR FUTURE LIGHT SWITCHES. PROVIDE BLANK COVER PLATE.
5. CONNECT TO EXISTING SWITCHING AND EXISTING LIFE SAFETY CIRCUIT.
6. CONNECT TO EXISTING SWITCHING AND NORMAL POWER CIRCUIT.

1 / E7 FIRST FLOOR REMODELING PLAN - LIGHTING

0' 4' 8' 16'

Revisions	Date

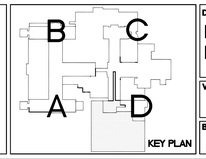
Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

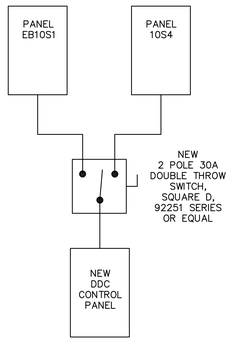
REGISTERED PROFESSIONAL ENGINEER
PE-4436
DATE 9-19-11
NORTH DAKOTA



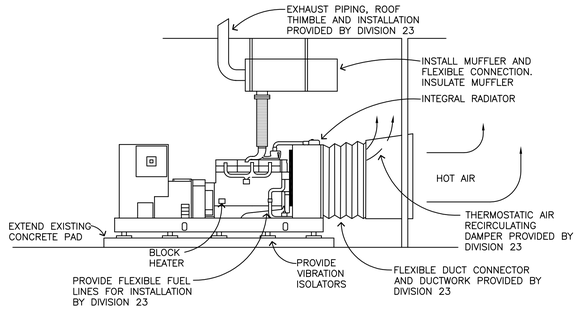
KEY PLAN

Drawing Title: FIRST FLOOR REMODELING PLAN - LIGHTING	Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE		Date: SEPTEMBER 19, 2011
			AS NOTED
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB / Checked By: MB / Drawn By: TP	Drawing No.: E7
Building No.: 1	AutoCAD File Name: 10-084 E7.DWG	Location: VA MEDICAL CENTER FARGO, ND	Dwg. 73 of 83

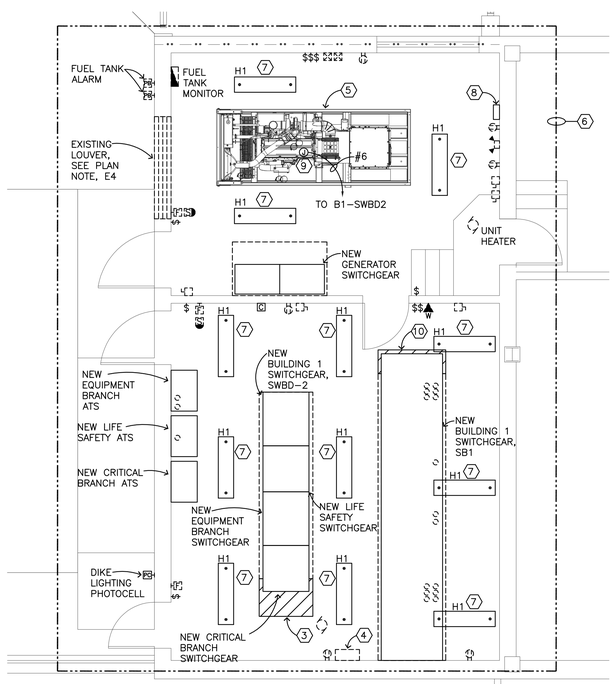
Department of Veterans Affairs



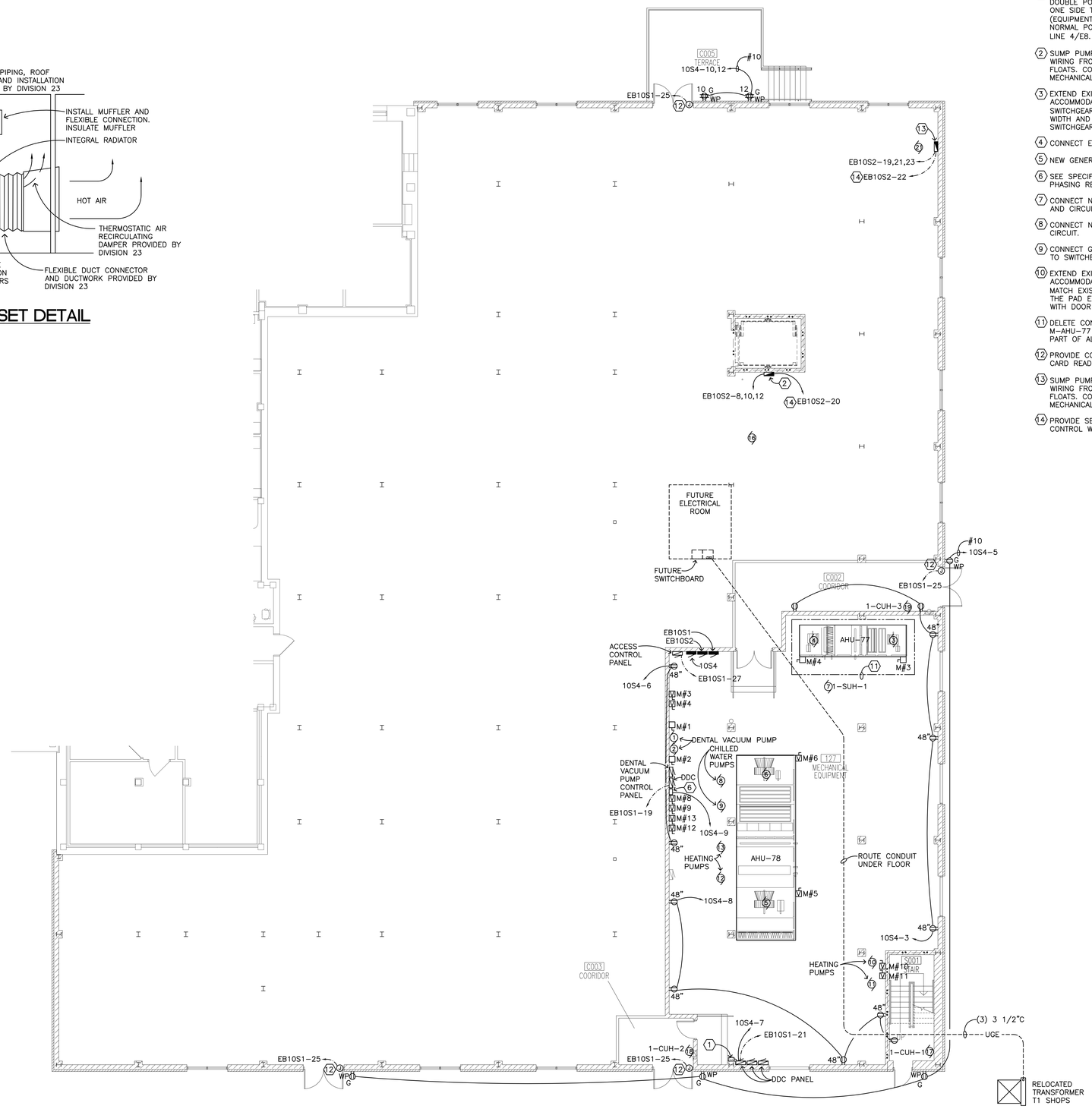
4 E8 PARTIAL ONE-LINE DIAGRAM
NO SCALE



3 E8 GENERATOR SET DETAIL
NO SCALE



2 E8 BASEMENT REMODELING PLAN - POWER
0' 4' 8' 16'



1 E8 BASEMENT REMODELING PLAN - POWER
0' 4' 8' 16'

PLAN NOTES:

1. PROVIDE AND INSTALL NEW 2 POLE 30A DOUBLE POLE TRANSFER SWITCH AND CONNECT ONE SIDE TO THE EMERGENCY CIRCUIT (EQUIPMENT BRANCH) AND OTHER SIDE TO NORMAL POWER CIRCUIT. SEE PARTIAL ONE LINE 4/E8.
2. SUMP PUMP (M#16) CONTROL PANEL. PROVIDE WIRING FROM CONTROL PANEL TO PUMPS AND FLOATS. COORDINATE REQUIREMENTS WITH MECHANICAL CONTRACTOR.
3. EXTEND EXISTING CONCRETE PAD TO ACCOMMODATE NEW CRITICAL BRANCH SWITCHGEAR. PAD TO MATCH EXISTING PAD'S WIDTH AND EXTEND 6 INCHES BEYOND SWITCHGEAR LENGTH.
4. CONNECT EXISTING METER TO NEW SWITCHGEAR.
5. NEW GENERATOR, SEE DETAIL 3/E8.
6. SEE SPECIFICATION SECTION 26 05 12 FOR PHASING REQUIREMENTS IN THIS AREA.
7. CONNECT NEW FIXTURE TO EXISTING SWITCHING AND CIRCUITING IN ROOM.
8. CONNECT NEW BATTERY CHARGER TO EXISTING CIRCUIT.
9. CONNECT GENERATOR WATER JACKET HEATER TO SWITCHBOARD SWBD-2.
10. EXTEND EXISTING CONCRETE PAD TO ACCOMMODATE NEW SWITCHGEAR. PAD TO MATCH EXISTING PAD'S WIDTH. THE LENGTH OF THE PAD EXTENSION SHALL NOT INTERFERE WITH DOOR SWING.
11. DELETE CONNECTION TO AIR HANDLER M-AHU-77 AND ASSOCIATED DISCONNECTS AS PART OF ALTERNATE BID 3.
12. PROVIDE CONNECTION TO POWER SUPPLY FOR CARD READER.
13. SUMP PUMP (M#21) CONTROL PANEL. PROVIDE WIRING FROM CONTROL PANEL TO PUMPS AND FLOATS. COORDINATE REQUIREMENTS WITH MECHANICAL CONTRACTOR.
14. PROVIDE SEPARATE DEDICATED CIRCUIT FOR CONTROL WIRING.

Revisions	Date

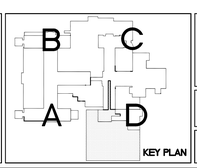
Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERS
MECHANICAL • ELECTRICAL • CIVIL
803 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6330
FAX: 701.478.6340

REGISTERED PROFESSIONAL ENGINEER STATE OF NORTH DAKOTA
DONALD J. MOSER
PE-4435
DATE 9-19-11

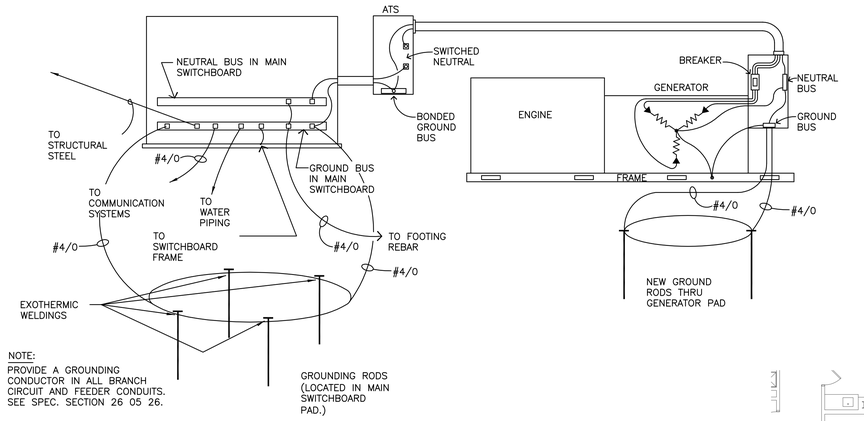


KEY PLAN

Drawing Title	Project Title	Date
BASEMENT REMODELING PLAN - POWER	VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE	SEPTEMBER 19, 2011
		AS NOTED

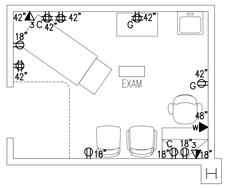
VA Project No.	Contract No.	Designed By	Checked By	Drawn By	Drawing No.
437-310	VA263-P-0967 VA263-C-	MB	MB	TP	E8
Building No. 1	AutoCAD File Name 10-084 E8.DWG	Location VA MEDICAL CENTER FARGO, ND			Dwg. 74 of 83

Department of Veterans Affairs

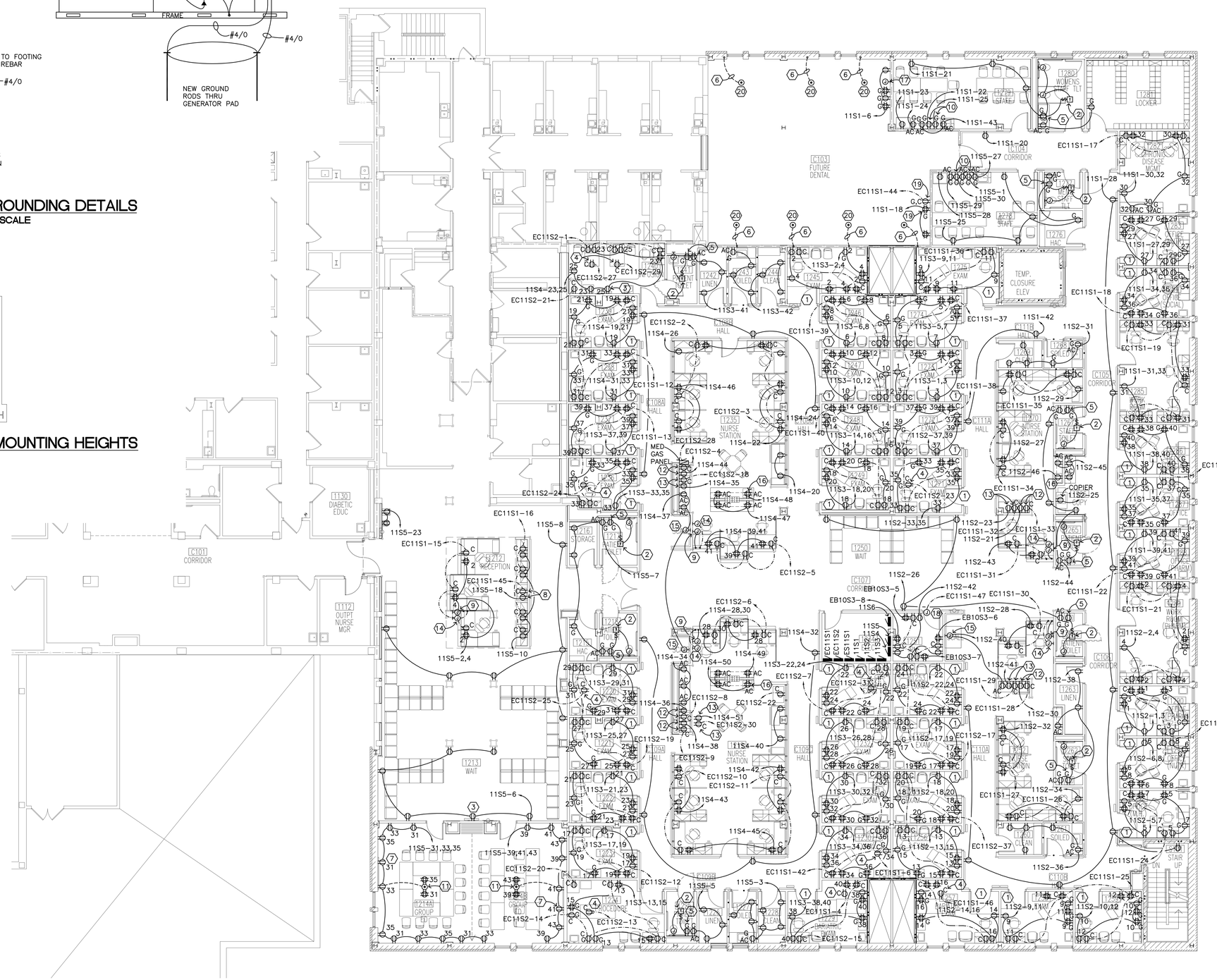


NOTE:
PROVIDE A GROUNDING CONDUCTOR IN ALL BRANCH CIRCUIT AND FEEDER CONDUITS. SEE SPEC. SECTION 26 05 26.

3/E9 GROUNDING DETAILS
NO SCALE



2/E9 TYPICAL EXAM ROOM DEVICE MOUNTING HEIGHTS
0' 2' 4' 8'



1/E9 FIRST FLOOR REMODELING PLAN - POWER
0' 4' 8' 16'

POWER PLAN NOTES:

1. SEE 2/E9 FOR MOUNTING HEIGHTS OF RECEPTACLES IN THIS ROOM.
2. PROVIDE CONNECTION FROM TRANSFORMER(S) BY DIVISION 22 TO PLUMBING SENSORS. MOUNT TRANSFORMERS ABOVE CEILING.
3. PROVIDE RECEPTACLE FOR OWNER PROVIDED TELEVISION, VERIFY LOCATION AND MOUNTING HEIGHT WITH VA ENGINEER.
4. PROVIDE CEILING MOUNTED RECEPTACLE FOR PATIENT LIFT, VERIFY MOUNTING LOCATION.
5. PROVIDE RECEPTACLE BELOW SINK FOR HANDWASH SENSOR. COORDINATE MOUNTING LOCATION WITH MECHANICAL CONTRACTOR.
6. STUB (3) 3/4 INCH CONDUIT INTO CEILING SPACE, (1) FOR FUTURE POWER, (1) FOR FUTURE DATA, (1) FOR FUTURE XRAY CONTROLS.
7. PROVIDE RECEPTACLE FOR VTEL DISPLAY, MOUNT AT 60".
8. PROVIDE RECEPTACLE IN CABINET FOR PRINTER.
9. PROVIDE FLEXIBLE CONNECTION (LIQUIDTITE FLEX) TO MODULAR FURNITURE FOR NORMAL POWER.
10. PROVIDE RECEPTACLE FOR MICROWAVE, SEE ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT.
11. FLOOR BOXES TO BE WALKER RFB SERIES WITH FLUSH ALUMINUM COVER OR EQUAL.
12. PROVIDE NORMAL POWER AND CRITICAL POWER RECEPTACLES TO UNDER CABINET REFRIGERATOR/FREEZER. PROVIDE DEDICATED CIRCUITS AS SHOWN.
13. PROVIDE NORMAL POWER AND CRITICAL POWER RECEPTACLES TO COUNTER TOP MOUNTED OMNICELL. PROVIDE DEDICATED CIRCUITS AS SHOWN. MOUNT BOTH NORMAL POWER AND CRITICAL POWER RECEPTACLES ABOVE COUNTER.
14. PROVIDE FLEXIBLE CONNECTION (LIQUIDTITE FLEX) TO MODULAR FURNITURE FOR CRITICAL POWER.
15. MOUNT WALL BOX PROVIDED WITH SCALE AT 53 INCHES AFF. RUN CONDUIT WITH CABLE CONNECTOR FROM BOX TO FLOOR AND STUB INTO PIT. PROVIDE CONNECTION TO WALL DISPLAY.
16. PROVIDE RECEPTACLE FOR PRINTER, SEE ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT.
17. PROVIDE ROUGH IN FOR FUTURE CONNECTION TO INTRAORAL X-RAY. VERIFY ROUGH IN REQUIREMENTS AND PENETRATIONS WITH VA PROJECT ENGINEER.
18. PROVIDE CONNECTION TO POWER SUPPLY FOR CARD READER.
19. VERIFY MOUNTING HEIGHT WITH VA PROJECT ENGINEER.
20. PROVIDE HUBBELL BA2423 SERIES, 3 COMPARTMENT FLOOR BOX AND ALL NECESSARY ACCESSORIES AND DEVICES. VERIFY FINISH WITH VA PROJECT ENGINEER.

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
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TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

PE-14
DATE 2-18-11

KEY PLAN

Drawing Title	Project Title	Date
FIRST FLOOR REMODELING PLAN - POWER	VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE	SEPTEMBER 19, 2011
		AS NOTED

VA Project No.	Contract No.	Designed By	Checked By	Drawn By	Drawing No.
437-310	VA263-P-0967 VA263-C-	MB	MB	TP	E9
Building No.	AutoCAD File Name	Location			Dwg. 75 of 83
1	10-084 E9.DWG	VA MEDICAL CENTER FARGO, ND			

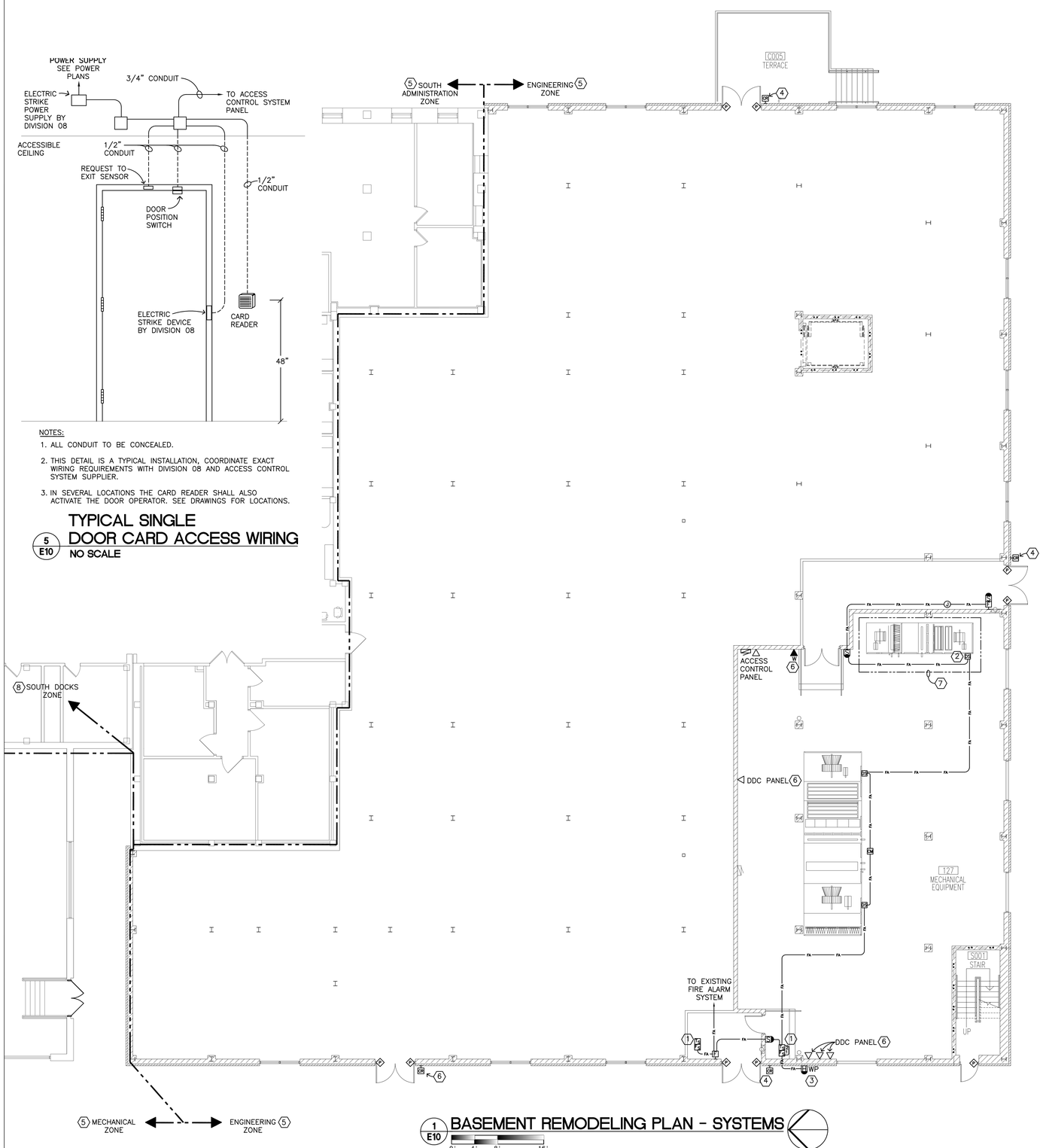
Department of Veterans Affairs

NOTES:

1. ALL CONDUIT TO BE CONCEALED.
2. THIS DETAIL IS A TYPICAL INSTALLATION, COORDINATE EXACT WIRING REQUIREMENTS WITH DIVISION 08 AND ACCESS CONTROL SYSTEM SUPPLIER.
3. IN SEVERAL LOCATIONS THE CARD READER SHALL ALSO ACTIVATE THE DOOR OPERATOR. SEE DRAWINGS FOR LOCATIONS.

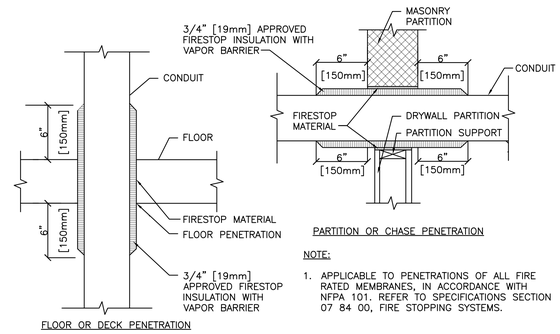
5/E10 TYPICAL SINGLE DOOR CARD ACCESS WIRING

NO SCALE



1/E10 BASEMENT REMODELING PLAN - SYSTEMS

0' 4' 8' 16'



NOTE:

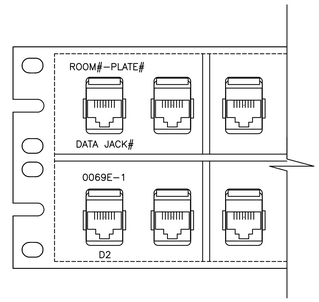
1. APPLICABLE TO PENETRATIONS OF ALL FIRE RATED MEMBRANES, IN ACCORDANCE WITH NFPA 101. REFER TO SPECIFICATIONS SECTION 07 84 00, FIRE STOPPING SYSTEMS.

4/E10 CONDUIT PENETRATION OF SMOKE/FIRE BARRIERS

NO SCALE

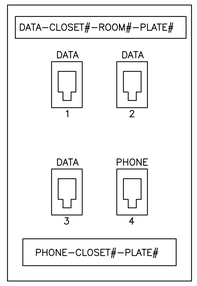
PLAN NOTES:

1. PROVIDE SUPERVISORY CONNECTIONS TO THE FIRE PROTECTION SYSTEM FLOW AND TAMPER SWITCHES. COORDINATE EXACT QUANTITY WITH FIRE PROTECTION CONTRACTOR.
2. MOUNT DUCT SMOKE DETECTOR ON SUPPLY SIDE OF AIR HANDLING UNIT.
3. MOUNT HORN/STROBE AT 9'-0" ABOVE GRADE AT FIRE DEPARTMENT CONNECTION FOR FIRE SUPPRESSION SYSTEM.
4. SEE DOOR ACCESS DETAIL 3/E11.
5. REPROGRAM EXISTING FIRE ALARM VOICE COMMUNICATION BASED ON NEW ZONE ILLUSTRATED.
6. ROUTE DATA/TELEPHONE CABLING TO NEW IRM ROOM 1251 ON 1ST FLOOR.
7. DELETE DUCT SMOKE DETECTOR AND CONNECTION TO FIRE ALARM SYSTEM AS PART OF ALTERNATE BID 3.



3/E10 PATCH PANEL SAMPLE LABELS

NO SCALE

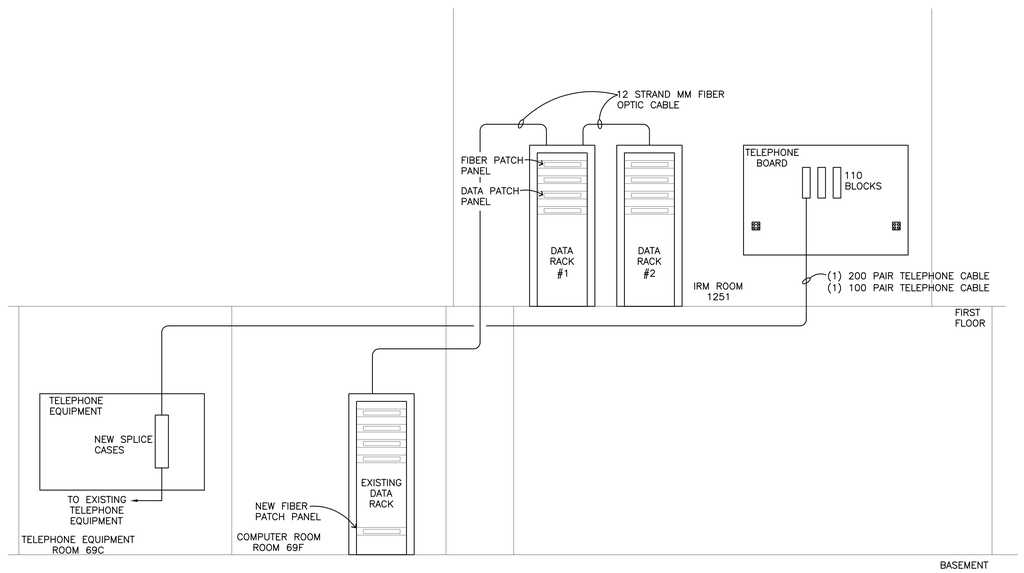


NOTES:

1. 3 = (3) DATA, (1) PHONE JACK.
2. SEE SECTION 27 1005 FOR PLATE AND JACK REQUIREMENTS.
3. DATA JACKS TO BE ORANGE COLOR, PHONE JACKS TO BE IVORY.
4. PLATES ARE LABELED AS SHOWN, NUMBER PLATES ARE CLOCKWISE FROM THE DOOR.
5. LABEL ALL VOICE AND DATA CABLES AT BOTH ENDS WITH "DATA CLOSET# - ROOM# - PLATE# - JACK#"
6. ALL (4) JACKS TO BE CATEGORY 6e CABLES.
7. DATA JACKS ARE NUMBERED LEFT TO RIGHT, TOP TO BOTTOM

2/E10 TYPICAL COMMUNICATIONS DETAIL

NO SCALE



6/E10 DATA RISER DIAGRAM

NO SCALE

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

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403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

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MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

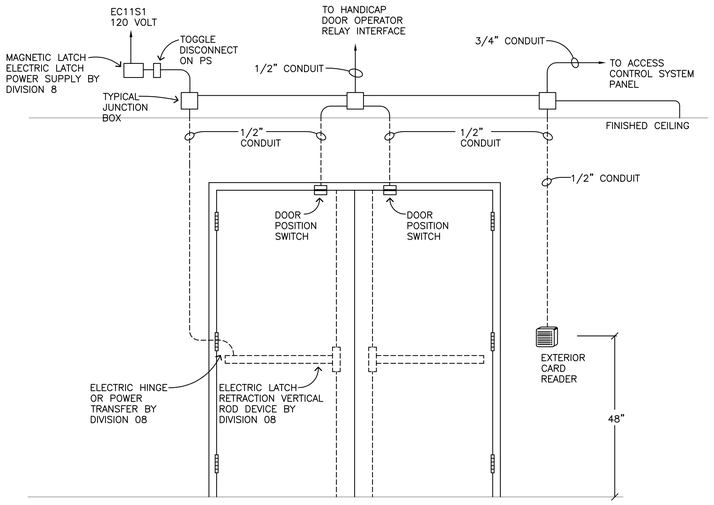
MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6266
FAX: 701.478.6340

REGISTERED PROFESSIONAL ENGINEER PE-14451 NORTH DAKOTA DATE 9-19-11

KEY PLAN: B C A D

Drawing Title: BASEMENT REMODELING PLAN - SYSTEMS	Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE		Date: SEPTEMBER 19, 2011
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB / Checked By: MB / Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E10.DWG	Location: VA MEDICAL CENTER FARGO, ND	Drawing No.: E10 Dwg. 76 of 83

Department of Veterans Affairs

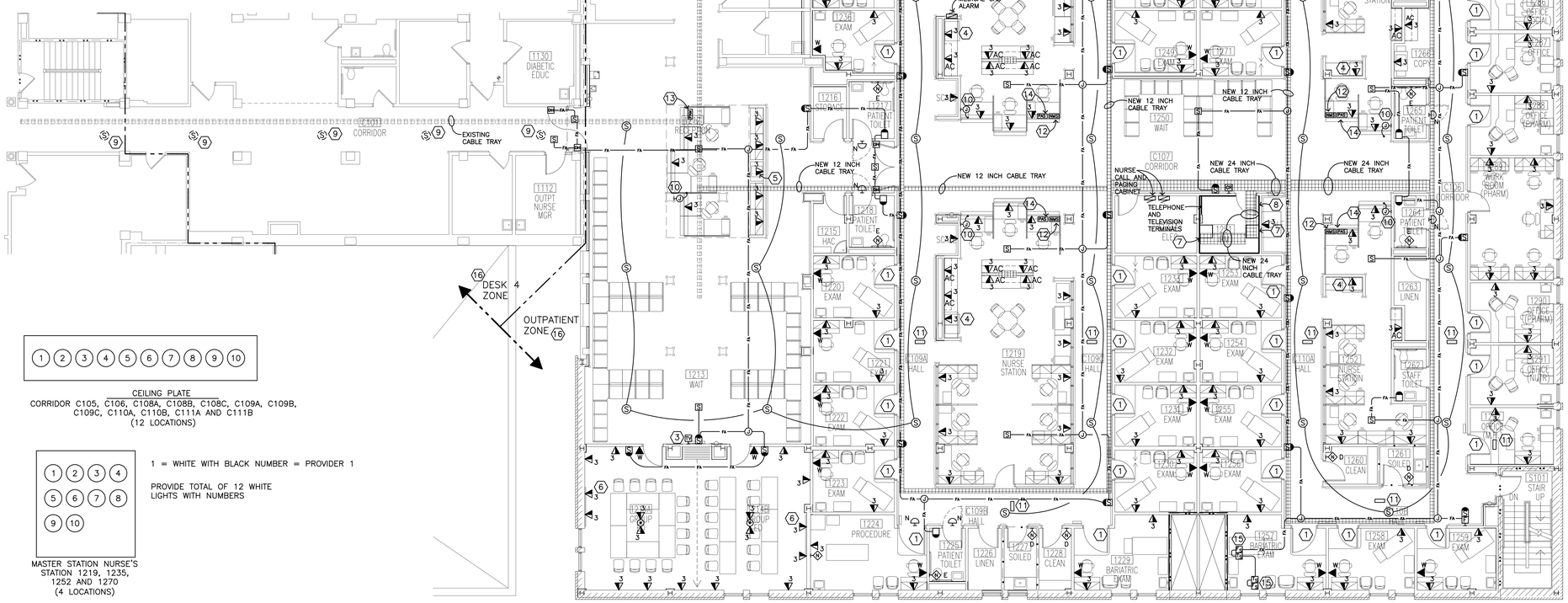


NOTES:

1. ALL CONDUIT TO BE CONCEALED.
2. THIS DETAIL IS A TYPICAL INSTALLATION, COORDINATE EXACT WIRING REQUIREMENTS WITH DIVISION 08 AND ACCESS CONTROL SYSTEM SUPPLIER.
3. IN SEVERAL LOCATIONS THE CARD READER SHALL ALSO ACTIVATE THE DOOR OPERATOR. SEE DRAWINGS FOR LOCATIONS.

3/E11 TYPICAL DOUBLE DOOR CARD ACCESS WIRING

NO SCALE



CEILING PLATE
CORRIDOR C105, C106, C108A, C108B, C108C, C109A, C109B, C109C, C110A, C110B, C111A AND C111B
(12 LOCATIONS)

1 = WHITE WITH BLACK NUMBER = PROVIDER 1

PROVIDE TOTAL OF 12 WHITE LIGHTS WITH NUMBERS

MASTER STATION NURSE'S STATION 1219, 1235, 1252 AND 1270
(4 LOCATIONS)

2/E11 PATIENT ANNUNCIATOR DETAIL

NO SCALE

1/E11 FIRST FLOOR REMODELING PLAN - SYSTEMS

0' 4' 10' 16'

POWER PLAN NOTES:

1. SEE 2/E9 FOR MOUNTING HEIGHTS OF DATA/COMMUNICATIONS OUTLETS IN THIS ROOM.
2. PROVIDE CONNECTION FROM TRANSFORMER(S) BY DIVISION 22 TO PLUMBING SENSORS. MOUNT TRANSFORMERS ABOVE CEILING.
3. PROVIDE TV RECEPTACLE FOR OWNER PROVIDED TELEVISION, VERIFY LOCATION AND MOUNTING HEIGHT WITH VA ENGINEER.
4. PROVIDE DATA OUTLET FOR OMNICELL. OUTLET TO BE MOUNTED ABOVE COUNTER.
5. DATA OUTLET TO BE INSTALLED INSIDE OF CABINET.
6. PROVIDE DATA RECEPTACLE FOR VTEL DISPLAY, MOUNT AT 60 INCHES.
7. PROVIDE 24" X 24" FLOOR MOUNT DATA RACK.
8. PROVIDE 4' X 8' 3/4 INCH THICK PLYWOOD BOARD, GRAY PAINTED, FIRE RATED ON ALL WALLS.
9. INSTALL DEVICE SALVAGED DURING DEMOLITION AND CONNECT TO EXISTING CIRCUIT.
10. PROVIDE FLEXIBLE CONNECTION TO MODULAR OFFICE FURNITURE. INSTALL DATA/PHONE OUTLETS WITHIN MODULAR FURNITURE. PROVIDE BEZELS AS REQUIRED.
11. PATIENT ANNUNCIATOR SYSTEM LIGHTS. SEE DETAIL 2/E11.
12. NURSE CALL MASTER STATION.
13. PATIENT ANNUNCIATION MASTER STATION.
14. PATIENT ANNUNCIATION MASTER SUBSTATION.
15. PROVIDE SUPERVISORY CONNECTIONS TO THE FIRE PROTECTION SYSTEM FLOW AND TAMPER SWITCHES. COORDINATE EXACT QUANTITY WITH FIRE PROTECTION CONTRACTOR.
16. REPROGRAM EXISTING FIRE ALARM VOICE COMMUNICATION BASED ON NEW ZONE ILLUSTRATED.
17. SEE DOOR ACCESS DETAIL 5/E10.
18. PROVIDE ROUGH IN FOR FUTURE CONNECTION TO EXAM ROOM COMPUTER AND PACS SYSTEM. COORDINATE ROUGH IN REQUIREMENTS WITH VA PROJECT ENGINEER.
19. VERIFY MOUNTING HEIGHT WITH VA PROJECT ENGINEER.

Revisions	Date

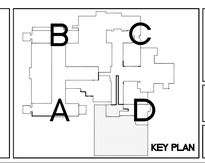
Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERS
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

PE-4430



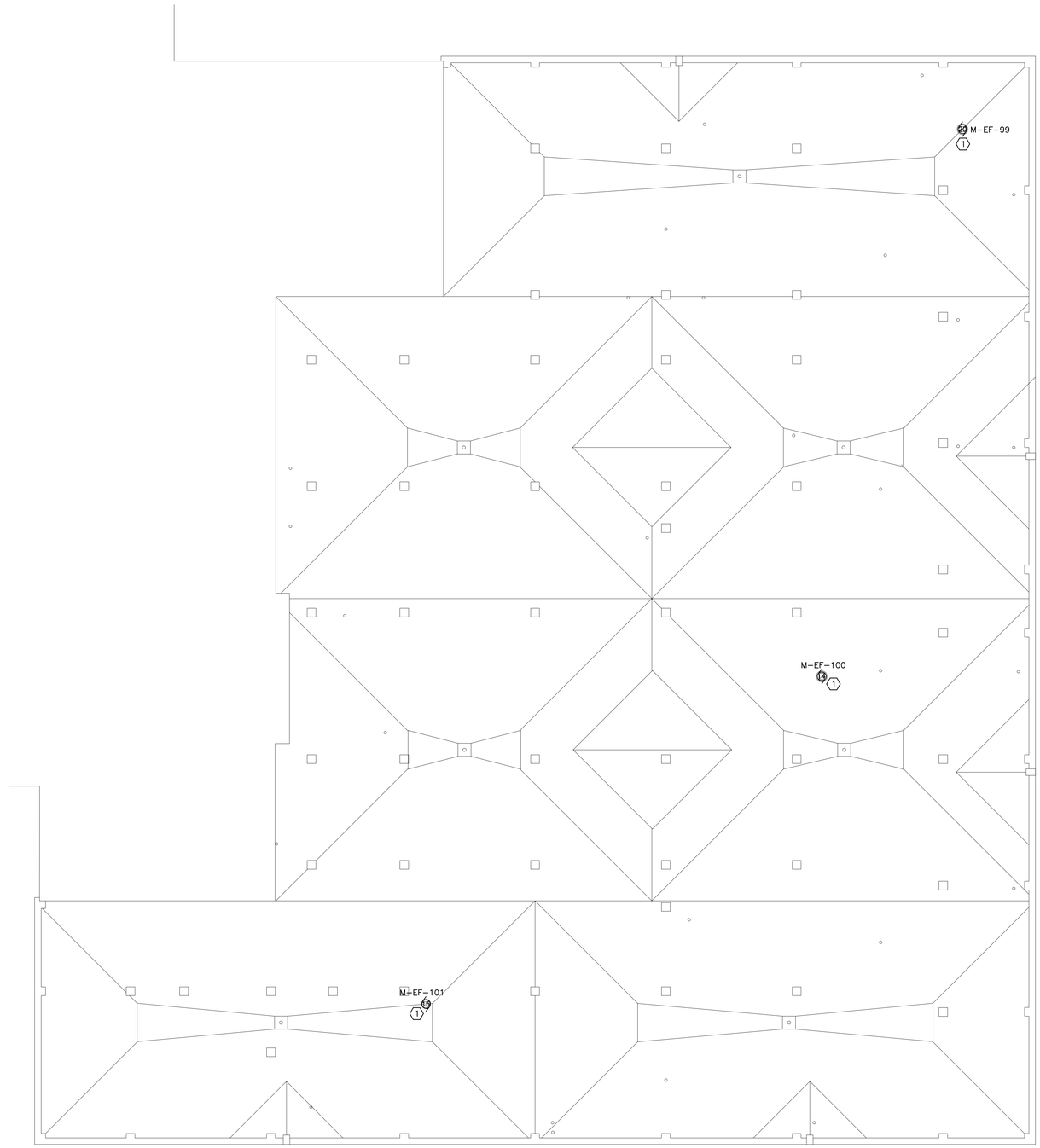
KEY PLAN

Drawing Title: FIRST FLOOR REMODELING PLAN - SYSTEMS	Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE		Date: SEPTEMBER 19, 2011
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB / Checked By: MB / Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E11.DWG	Location: VA MEDICAL CENTER FARGO, ND	Drawing No.: E11 Dwg. 77 of 83

Department of Veterans Affairs

POWER PLAN NOTES:

1. CONNECTION OF EXHAUST FANS PART OF BASE BID. DELETE CONNECTIONS UNDER ALTERNATE BID NO. 2.



1 / E12 ROOF REMODELING PLAN - ELECTRICAL

0' 4' 8' 16'

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

REGISTERED PROFESSIONAL ENGINEER
PE-4435
DATE 9-19-11
NORTH DAKOTA

B C A D
KEY PLAN

Drawing Title: ROOF REMODELING PLAN - ELECTRICAL		Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE	Date: SEPTEMBER 19, 2011
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB / Checked By: MB / Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E12.DWG	Location: VA MEDICAL CENTER FARGO, ND	Drawing No.: E12 Dwg. 78 of 83

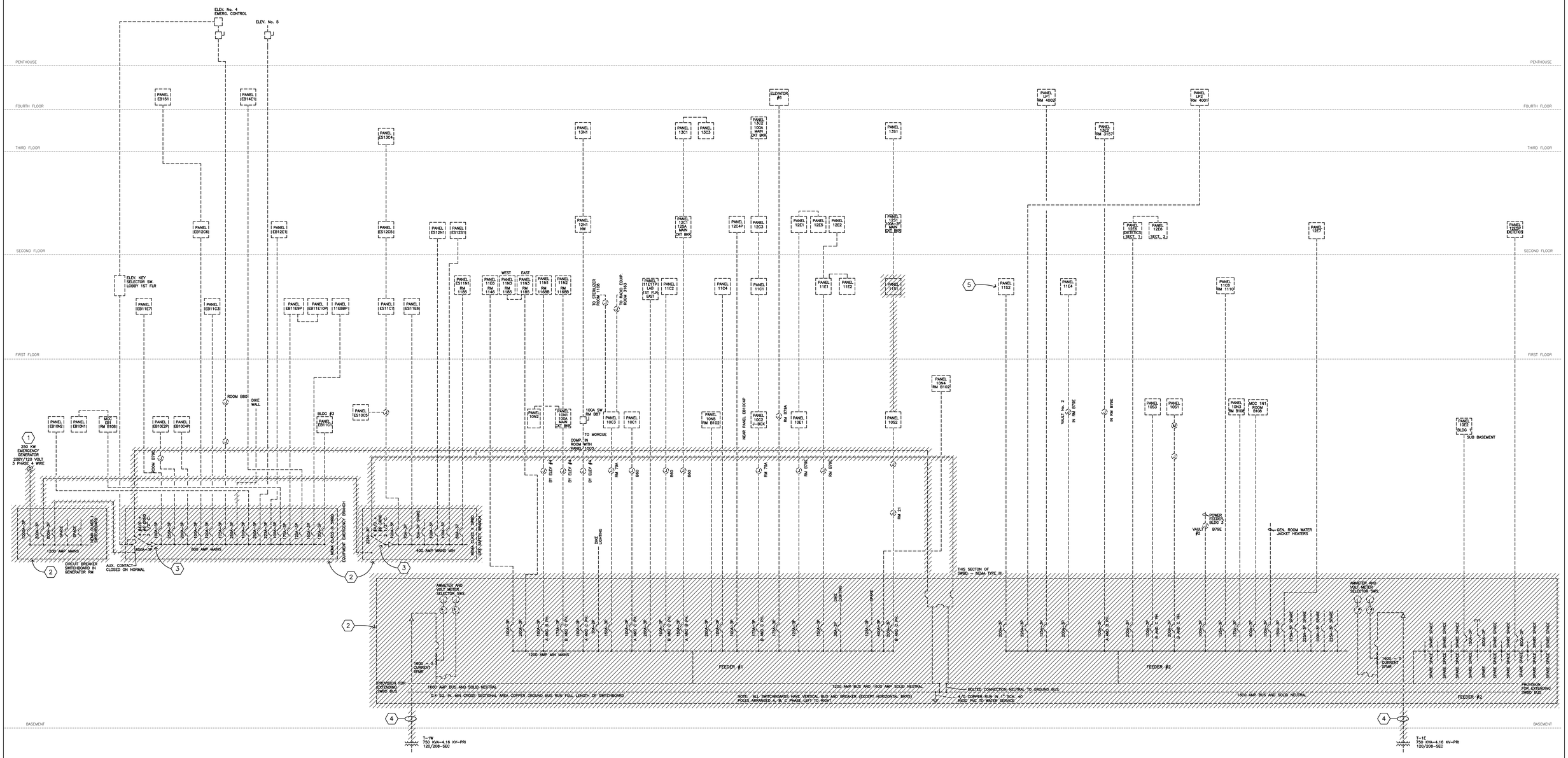
Department of Veterans Affairs

GENERAL NOTES:

1. EXTEND ALL REMAINING EXISTING FEEDER CONDUITS AND CONDUCTORS TO THE NEW PANELBOARDS AND RECONNECT.
2. SEE SPECIFICATION SECTION 26 05 12 FOR PHASING REQUIREMENTS.

PLAN NOTES:

1. REMOVE EXISTING GENERATOR.
2. REMOVE EXISTING SWITCHBOARD.
3. REMOVE TRANSFER SWITCH.
4. REMOVE EXISTING CONDUCTORS, CONDUIT TO REMAIN.
5. CHANGE PANEL NAME FROM '11S2' TO '11S7'.



1 E13 EXISTING ELECTRICAL ONE-LINE DIAGRAM - BUILDING 1
NO SCALE

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
903 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

Drawing Title: EXISTING ELECTRICAL ONE-LINE DIAGRAM - BUILDING 1	Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE			Date: SEPTEMBER 19, 2011
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB	Checked By: MB	Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E13.DWG	Location: VA MEDICAL CENTER FARGO, ND		Drawing No.: E13 Dwg. 79 of 83

Department of Veterans Affairs

FEEDER SCHEDULE

FEEDER NUMBER	AMPERE RATING	PHASE CONDUCTORS PER CONDUIT QUANTITY	PHASE CONDUCTORS PER CONDUIT SIZE	NEUTRAL CONDUCTOR SIZE QUANTITY	NEUTRAL CONDUCTOR SIZE SIZE	GROUND CONDUCTOR SIZE	CONDUIT SIZE	NUMBER OF PARALLEL SETS	REMARKS
50N	50	3	6 AWG	1	6 AWG	8 AWG	1-1/4"	1	
100N	100	3	2/0 AWG	1	2/0 AWG	6 AWG	2"	1	
200N	200	3	250 KCMIL	1	250 KCMIL	6 AWG	2-1/2"	1	
200	200	3	3/0 AWG			6 AWG	2"	1	
250N	250	3	300 KCMIL	1	300 KCMIL	4 AWG	2-1/2"	1	
300N	300	3	4/0 AWG	1	4/0 AWG	4 AWG	2-1/2"	2	
400N	400	3	4/0 AWG	1	4/0 AWG	4 AWG	2-1/2"	2	
800N	800	3	300 KCMIL	1	300 KCMIL	2 AWG	3"	3	
1600N	1600	3	300 KCMIL	1	300 KCMIL	1/0 AWG	3"	5	
2000S	2000	3	400 KCMIL	1	400 KCMIL		4"	6	EXISTING CONDUIT

TRANSFER SWITCH SCHEDULE

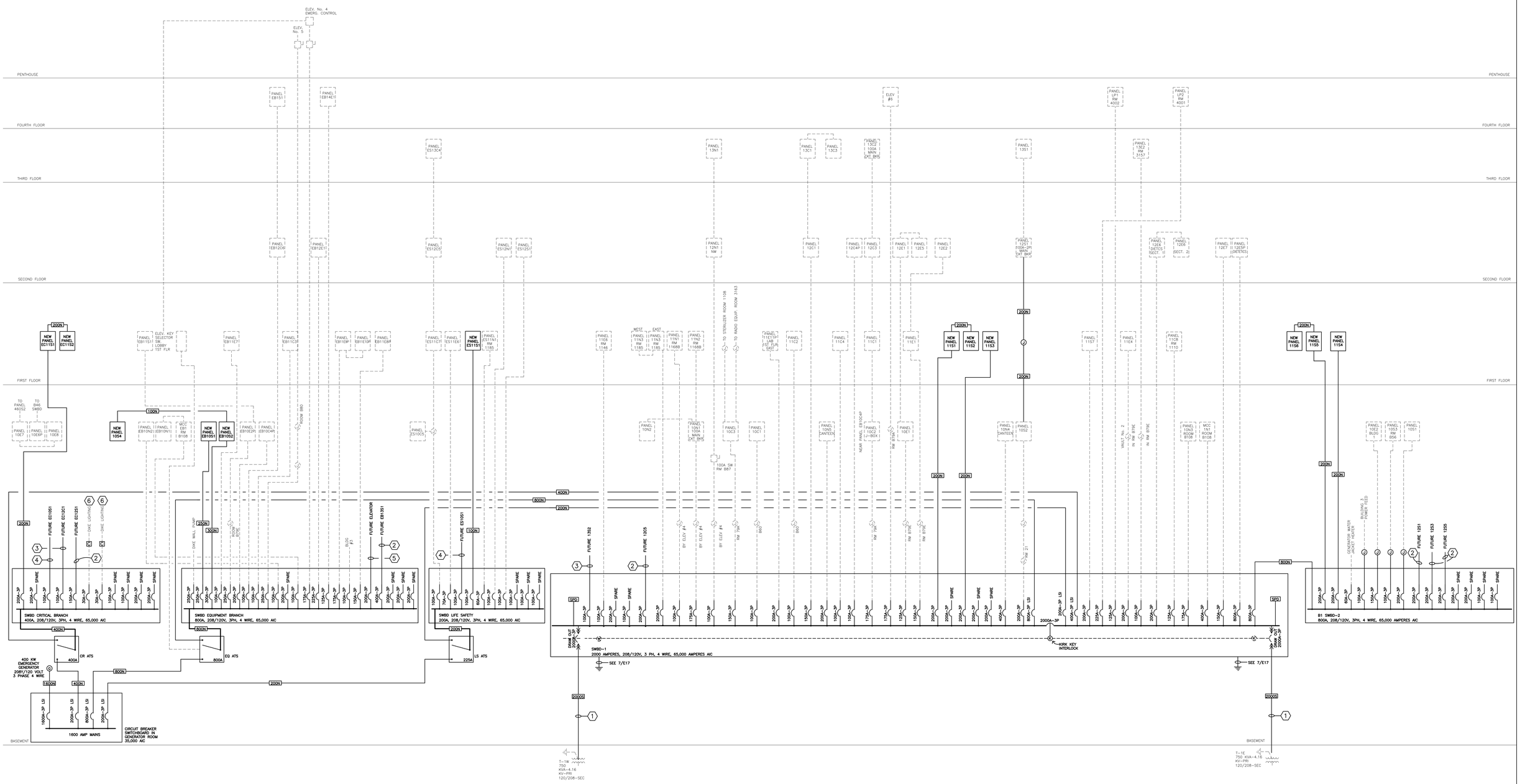
NUMBER	TYPE	TRANSITION TYPE	VOLTAGE	SWITCHED POLES	AMPERAGE	BY-PASS ISOLATION	ENCLOSURE	REMARKS
ATS-LS	LIFE SAFETY BRANCH	OPEN	208/120, 3 PH, 4W	4	200	NO	NEMA 1	40,000 AIC WITH CB
ATS-CR	CRITICAL BRANCH	OPEN	208/120, 3 PH, 4W	4	400	NO	NEMA 1	40,000 AIC WITH CB
ATS-EB	EQUIPMENT BRANCH	OPEN	208/120, 3 PH, 4W	4	800	NO	NEMA 1	40,000 AIC WITH CB

GENERAL NOTES:

1. SEE SPECIFICATION SECTION 26 05 12 FOR PHASING REQUIREMENTS.
2. PROVIDE CIRCUIT BREAKERS THAT ARE SELECTIVELY COORDINATED FOR THE LIFE SAFETY BRANCH, CRITICAL BRANCH AND EQUIPMENT BRANCH TO MEET NEC REQUIREMENTS.

PLAN NOTES:

1. REUSE EXISTING CONDUIT FOR NEW CONDUCTORS.
2. STUB 2 1/2" CONDUIT TO ELECTRICAL ROOM 1234 FOR FUTURE PANEL.
3. STUB 2" CONDUIT TO ELECTRICAL ROOM 1234 FOR FUTURE PANEL.
4. STUB 2" CONDUIT TO CEILING ABOVE FUTURE ELECTRICAL ROOM 124 FOR FUTURE PANEL.
5. STUB 2 1/2" CONDUIT TO CEILING ABOVE FUTURE ELEVATOR MECHANICAL ROOM 122.
6. PROVIDE CONTACTOR AND PHOTOCELL FOR EXISTING DIKE LIGHTING. SEE DETAIL 4/E2.



1 / E14 REVISED ELECTRICAL ONE-LINE DIAGRAM - BUILDING 1
NO SCALE

Revisions	Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP
IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

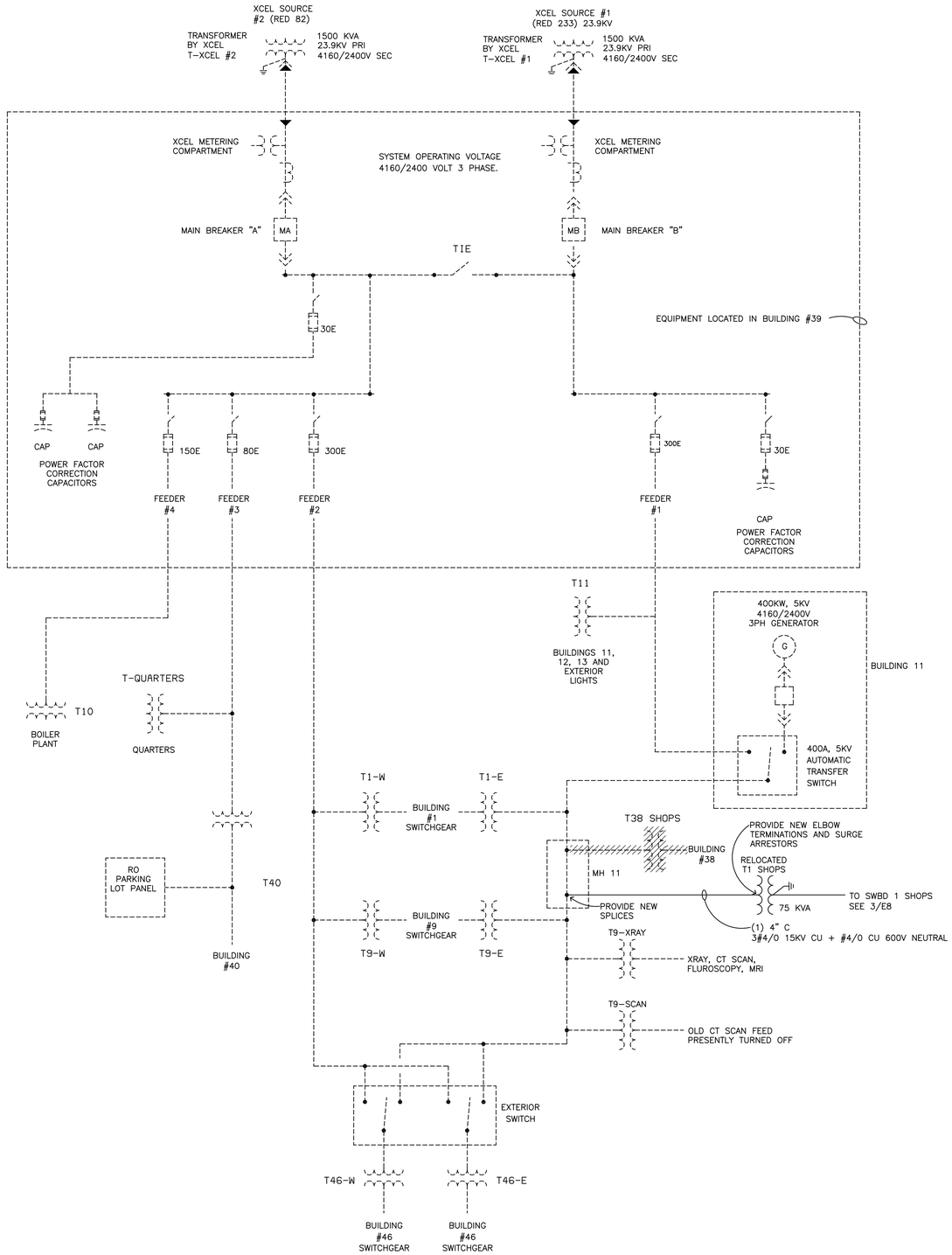
IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERS
MECHANICAL * ELECTRICAL * CIVIL
903 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.8236
FAX: 701.478.8340

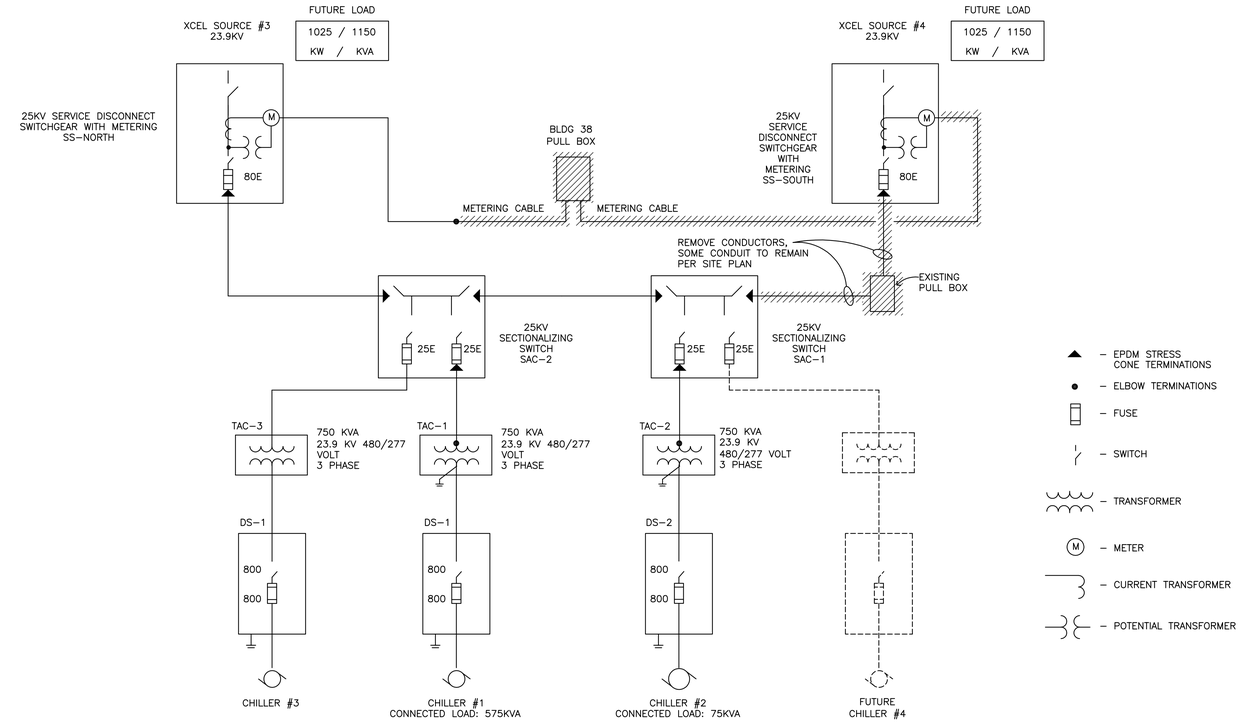
PE-14

Drawing Title: REVISED ELECTRICAL ONE-LINE DIAGRAM - BUILDING 1		Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE			Date: SEPTEMBER 19, 2011
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB	Checked By: MB	Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E14.DWG	Location: VA MEDICAL CENTER FARGO, ND			Drawing No.: E14 Dwg. 80 of 83

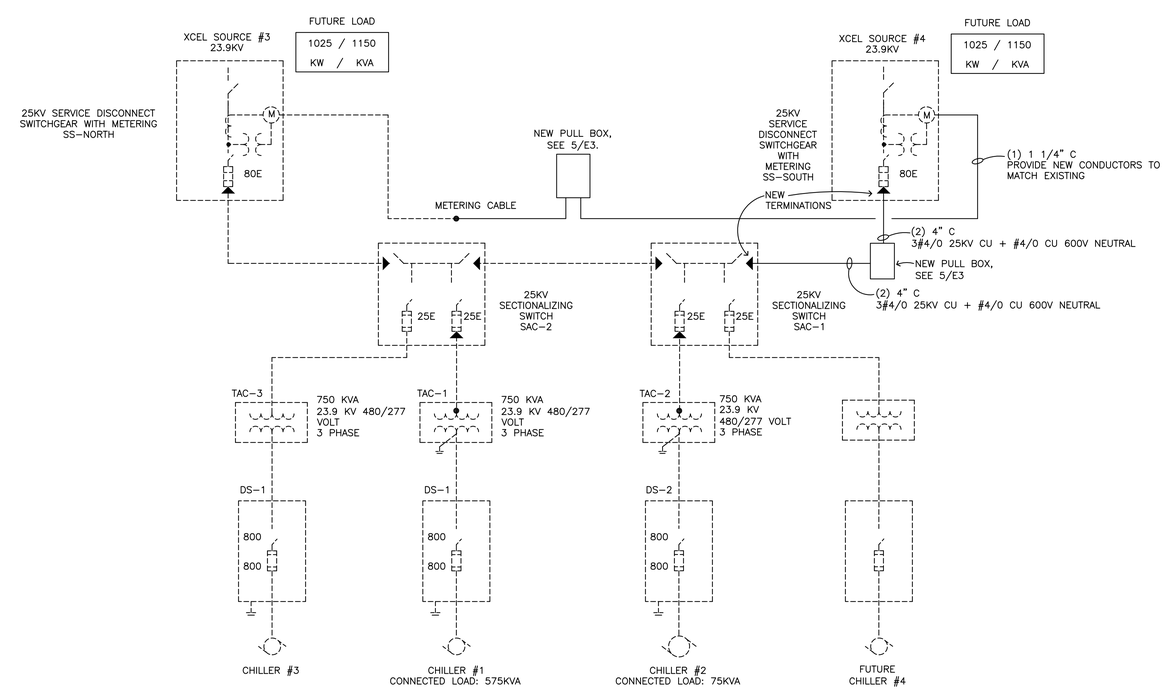
Department of Veterans Affairs



1 E15 4.16KV ONE LINE DIAGRAM
NO SCALE



2 E15 EXISTING 25KV ONE LINE DIAGRAM
NO SCALE



3 E15 REVISED 25KV ONE LINE DIAGRAM
NO SCALE

Revisions	Date

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Fargo, ND 58102

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IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

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SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL • ELECTRICAL • CIVIL
903 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

REGISTERED PROFESSIONAL ENGINEER
MICHAEL BOLTZ
PE-14437
NORTH DAKOTA
DATE 7-19-11

Drawing Title: ELECTRICAL ONE LINE DIAGRAMS		Project Title: VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE	Date: SEPTEMBER 19, 2011
VA Project No.: 437-310	Contract No.: VA263-P-0967 VA263-C-	Designed By: MB / Checked By: MB / Drawn By: TP	AS NOTED
Building No.: 1	AutoCAD File Name: 10-084 E15.DWG	Location: VA MEDICAL CENTER FARGO, ND	Drawing No.: E15
			Dwg. 81 of 83

Department of Veterans Affairs

PANELBOARD LOAD SCHEDULE

PANEL: 10S4 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 127
RATING: 100 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: EB10S2

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1	1750					127	A	127					1020	20	1	2
3	20	1		1000				127	B	SHELL SPACE					1000	20	1	4
5	20	1		800				EXTERIOR RECEPTACLES	C	127				400		20	1	6
7	20	1			1500			DDC PANELS	A	127				1000		20	1	8
9	20	1			500			DDC PANEL	B	C005				400		20	1	10
11	20	1			200			1-SUH-1	C	C005				400		20	1	12
13	80				5800			CHILLED WATER	A	CHILLED WATER						80		14
15					5800			M-CWP-19	B	M-CWP-18								16
17		3			5800				C								3	18
19	20	1	800					EXTERIOR LIGHTING	A	SPARE						20	1	20
21	20	1						SPARE	B	SPARE						20	1	22
23	20	1						SPARE	C	SPARE						20	1	24
25	20	1						SPARE	A	SPARE						20	1	26
27	20	1						SPARE	B	SPARE						20	1	28
29	20	1						SPARE	C	SPARE						20	1	30
31	20	1						SPARE	A	SPARE						20	1	32
33	20	1						SPARE	B	SPARE						20	1	34
35	20	1						SPARE	C	SPARE						20	1	36
37	125							FUTURE AHU-76	A	FUTURE AHU-76						70		38
39								SF-76	B	RF-76								40
41		3							C								3	42

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	3570	1000	0	4570	1.00	4570
RECEPTACLES	1000	1400	1600	4000	0.50	2000
MOTORS	7300	6300	6000	19600	0.90	17640
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:		67		TOTAL VA:		24210

NOTES:

PANELBOARD LOAD SCHEDULE

PANEL: EB10S1 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 127
RATING: 400 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: BLDG 1 SWBD EB

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	50				3035			HEATING	A	HEATING						50		2
3					3035			PUMP	B	PUMP								4
5		3			3035			M-HWP-34	C	M-HWP-35							3	6
7	60				3864			AHU-77	A	AHU-77			2100			30		8
9					3864			SF-77	B	RF-77			2100					10
11		3			3864				C				2100				3	12
13	80				5800			HEATING	A	HEATING						80		14
15					5800			PUMP	B	PUMP								16
17		3			5800			M-HWP-32	C	M-HWP-33							3	18
19	20	1			500			DDC PANEL	A	VACUUM			2000			30		20
21	20	1			1500			DDC PANELS	B	DDC PANEL VP-1			2000				2	22
23	20	1					1200	CUH'S	C	SPARE						20	1	24
25	20	1			1200			CARD READERS	A	VACUUM			2000			30		26
27	20	1			500			ACCESS CTRL PNL	B	PUMP VP-2			2000				2	28
29	20	1						SPARE	C	SPARE						20	1	30
31	20	1						SPARE	A	SPARE						20	1	32
33	20	1						SPARE	B	SPARE						20	1	34
35	20	1						SPARE	C	SPARE						20	1	36
37	20	1						SPARE	A	SPARE						20	1	38
39	20	1						SPARE	B	SPARE						20	1	40
41	20	1						SPARE	C	SPARE						20	1	42

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	0	0	0	0	1.00	0
RECEPTACLES	0	0	0	0	0.50	0
MOTORS	20499	20799	14799	56097	0.90	50487
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	1200	1200	0.90	1080
TOTAL AMPS:		143		TOTAL VA:		51567

NOTES:

PANELBOARD LOAD SCHEDULE

PANEL: EB10S2 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 127
RATING: 400 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: BLDG 1 SWBD EB

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	200				14400			AHU-78	A	AHU-78			5800			80		2
3					14400			SF-78	B	RF-78			5800					4
5	3				14400				C				5800				3	6
7	20							SPARE	A	SUMP PUMPS			300			20		8
9									B	1-SP-1			300					10
11	3								C	1-SP-2			300				3	12
13	70							SPARE	A	SPARE						50		14
15									B									16
17	3								C								3	18
19	20			300				1-SP-3	A	CONTROL WIRING			300			20	1	20
21				300				1-SP-4	B	CONTROL WIRING			300			20	1	22
23	3			300					C	SPARE						20	1	24
25	20	1						SPARE	A	SPARE						20	1	26
27	20	1						SPARE	B	SPARE						20	1	28
29	20	1						SPARE	C	SPARE						20	1	30
31	20	1						SPARE	A	SPARE						20	1	32
33	20	1						SPARE	B	SPARE						20	1	34
35	20	1						SPARE	C	SPARE						20	1	36
37	20	1						SPARE	A	PANEL		7300	1000	3570	80			38
39	20	1						SPARE	B	10S4		6300	1400	1100				40
41	20	1						SPARE	C	FEED		6000	1600				3	42

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	3570	1100	0	4670	1.00	4670
RECEPTACLES	1000	1400	1600	4000	0.50	2000
MOTORS	28400	27400	26800	82600	0.90	74340
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:		225		TOTAL VA:		81010

NOTES:
1. PROVIDE FEED THRU LUGS.

PANELBOARD LOAD SCHEDULE

PANEL: 11S1 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 1234
RATING: 225 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: BLDG 1 SWBD 1

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1						SPARE	A	SPARE						20	1	2
3	20	1						SPARE	B	SPARE						20	1	4
5	20	1						SPARE	C	C103				1200		20	1	6
7	20	1						1126	A	SPARE						20	1	8
9	20	1						1125	B	SPARE						20	1	10
11	20	1						SPARE	C	SPARE						20	1	12
13	20	1						SPARE	A	SPARE						20	1	14
15	20	1						SPARE	B	SPARE						20	1	16
17	20	1						SPARE	C	C103				800		20	1	18
19	20	1						SPARE	A	C104				800		20	1	20
21	20	1		1400				1279,1280	B	1279 MICROWAVE			1200			20	1	22
23	20*	1			1800			1279 REFRIG	C	1279 COFFEE			1000			20	1	24
25	20	1			1200			1279 MICRO	A	SPARE						20	1	26
27	20	1		1200				1283	B	C105,C106				1600		20	1	28
29	20	1		800				1283	C	1282				800		20	1	30
31	20	1		1200				1285	A	1282				800		20	1	32
33	20	1		800				1285	B	1284				1200		20	1	34
35	20	1		1200				1287	C	1284				800		20	1	36
37	20	1		800				1287	A	1286				1200		20	1	38
39	20	1		1200				1288	B	1286				800		20	1	40
41	20	1		800				1288	C	C111A,C111B				600		20	1	42
43	20	1		400				1279	A	SPARE						20	1	44
45	20	1						SPARE	B	SPARE						20	1	46
47	20	1						SPARE	C	SPARE						20	1	48
49	20	1						SPARE	A	PANEL		1200	14600			20	1	50
51	20	1						SPARE	B	11S2		1600	11800			20	1	52
53	20	1						SPARE	C	FEED THRU		2000	11400			20	1	54

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	0	0	0	0	1.00	0
RECEPTACLES	19800	20000	18400	58200	0.50	29100
MOTORS	2400	2800	4800	10000	0.90	9000
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:		106		TOTAL VA:		38100

NOTES:
1. BREAKERS NOTED WITH * TO BE GFCI
2. PROVIDE FEED THRU LUGS

PANELBOARD LOAD SCHEDULE

PANEL: 11S2 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 1234
RATING: 225 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: 11S1

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1		1200				1290	A	1289				1200		20	1	2
3	20	1		800				1290	B	1289				1000		20	1	4
5	20	1		1000				1292	C	1291				1200		20	1	6
7	20	1		1000				1292	A	1291				800		20	1	8
9	20	1		800				1258	B	1259				800		20	1	10
11	20	1		1000				1258	C	1259				1000		20	1	12
13	20	1		1200				1256	A	1257				800		20	1	14
15	20	1		1000				1256	B	1257				1000		20	1	16
17	20	1		1200				1254	C	1255				1200		20	1	18
19	20	1		800				1254	A	1255				800		20	1	20
21	20*	1			1200			1270 REFRIG	B	1253				1200		20	1	22
23	20	1			400			1270 OMNICELL	C	1253				800		20	1	24
25	20	1			1200			1266 COPIER	A	C107,1264				1000		20	1	26
27	20	1		400				1270	B	1252				800		20	1	28
29	20	1		1200				1270	C	1252 REFRIG			1200			20*	1	30
31	20	1		1000				1268,1269	A	1252				800		20	1	32
33	20	1		1000				1271	B	1252				1000		20	1	34
35	20	1		1000				1271	C	1260,1261				1000		20	1	36
37	20	1		1000				1272	A	1262,1263				800		20	1	38
39	20	1		1000				1272	B	1252 SCALE				400		20	1	40
41	20	1			400			1252 OMNICELL	C	1251				800		20	1	42
43	20	1		800				1270	A	1265-1267				1400		20	1	44
45	20	1		600				1266,1270	B	1266 PRINTER			400			20	1	46
47	20	1						SPARE	C	SPARE						20	1	48
49	20	1						SPARE	A	SPARE						20	1	50
51	20	1						SPARE	B	SPARE						20	1	52
53	20	1						SPARE	C	SPARE						20	1	54

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	0	0	0	0	1.00	0
RECEPTACLES	14600	11800	11400	37800	0.50	18900
MOTORS	1200	1600	2000	4800	0.90	4320
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:		65		TOTAL VA:		23220

NOTES:
1. BREAKERS NOTED WITH * TO BE GFCI

PANELBOARD LOAD SCHEDULE

PANEL: 11S3 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 1234
RATING: 225 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: BLDG 1 SWBD 1

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1		1000				1273	A	1245				800		20	1	2
3	20	1		1000				1273	B	1245				1000		20	1	4
5	20	1		1000				1274	C	1246				1200		20	1	6
7	20	1		1000				1274	A	1246				800		20	1	8
9	20	1		1000				1275	B	1247				1200		20	1	10
11	20	1		800				1275	C	1247				800		20	1	12
13	20	1		600				1224	A	1248				1200		20	1	14
15	20	1		800				1224	B	1248				800		20	1	16
17	20	1		1000				1223	C	1249				1000		20	1	18
19	20	1		1000				1223	A	1249				1000		20	1	20
21	20	1		1000				1222	B	1233				1200		20	1	22
23	20	1		1000				1222	C	1233				800		20	1	24
25	20	1		1000				1221	A	1232				1200		20	1	26
27	20	1		1000				1221	B	1232				800		20	1	28
29	20	1		1000				1220	C	1231				1200		20	1	30
31	20	1		1000				1220	A	1231				800		20	1	32
33	20	1		1000				1236	B	1230				1200		20	1	34
35	20	1		1000				1236	C	1230				800		20	1	36
37	20	1		1000				1237	A	1229				800		20	1	38
39	20	1		1000				1237	B	1229				1000		20	1	40
41	20	1		1000				1241,1242	C	1243,1244				1400		20	1	42
43	20	1						SPARE	A	SPARE						20	1	44
45	20	1						SPARE	B	SPARE						20	1	46
47	20	1						SPARE	C	SPARE						20	1	48
49	20	1						SPARE	A	SPARE						20	1	50
51	20	1						SPARE	B	SPARE						20	1	52
53	20	1						SPARE	C	SPARE						20	1	54

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	0	0	0	0	1.00	0
RECEPTACLES	13400	14000	14000	41400	0.50	20700
MOTORS	0	0	0	0	0.90	0
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:		58		TOTAL VA:		20700

NOTES:
1. BREAKERS NOTED WITH * TO BE GFCI

PANELBOARD LOAD SCHEDULE

PANEL: 11S4 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 1234
RATING: 225 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: BLDG 1 SWBD 2

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1	1390					1279-1281	A	1282-88					1530	20	1	2
3	20	1	1790					1257-59,1289-92	B	1251-56,1229-33					510	20	1	4
5	20	1	1190					1225-28,1215-23	C	C103-C105					1530	20	1	6
7	20	1	1795					1212-1213	A	1213-1214					1450	20	1	8
9	20	1						SPARE	B	C109A-C					935	20	1	10
11	20	1	860					1276-78,1267-69	C	1246-49,1271-75					1550	20	1	12
13	20	1	1320					1236-39,1241-45	A	C108,C111					1105	20	1	14
15	20	1	935					C107	B	C106,C110					945	20	1	16
17	20	1						SPARE	C	1111-1113,C102					1550	20	1	18
19	20	1		1200				1239	A	1235				800		20	1	20
21	20	1		800				1239	B	1235				800		20	1	22
23	20	1		800				1240	C	C108A-C				800		20	1	24
25	20	1		600				1240	A	1235				1200		20	1	26
27	20	1		1200				SPARE	B	1219				800		20	1	28
29	20	1		800				SPARE	C	1219				400		20	1	30
31	20	1		1000				1238	A	C109A-C				1000		20	1	32
33	20	1		1000				1238	B	1219				600		20	1	34
35	20	1			400			1235 OMNICELL	C	1219 FRZR			1200			20*	1	36
37	20	1		800				C108/C109	A	1219 FRZR			1200			20*	1	38
39	20	1		400				1235	B	1219				800		20	1	40
41	20	1		800				1235	C	1219				800		20	1	42
43	20	1		800				1219	A	1235 REFRIG			1200			20*	1	44
45	20	1		800				1219	B	1235				800		20	1	46
47	20	1		1200				1235	C	1235 PRINTER			400			20	1	48
49	20	1			400			1219 PRINTER	A	1219				1200		20	1	50
51	20	1			400			1219 OMNICELL	B	SPARE						20	1	52
53	20	1						SPARE	C	SPARE						20	1	54

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	8590	5115	6680	20385	1.00	20385
RECEPTACLES	7600	8000	5600	21200	0.50	10600
MOTORS	2800	400	2000	5200	0.90	4680
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:		99		TOTAL VA:		35665

NOTES:
1. BREAKERS NOTED WITH * TO BE GFCI

PANELBOARD LOAD SCHEDULE

PANEL: 11S5 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 1234
RATING: 225 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: BLDG 1 SWBD 2

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1			1200			1278 MICROWAVE	A	1212				800		20	1	2
3	20	1		1600				1227,1228	B	1212				400		20	1	4
5	20	1		1200				1225,1226	C	1213				1000		20	1	6
7	20	1		1600				1216,1217	A	1212				1200		20	1	8
9	20	1						SPARE	B	1212				800		20	1	10
11	20	1						SPARE	C	1109A,1109B				400		20	1	12
13	20	1						SPARE	A	1110				1000		20	1	14
15	20	1						SPARE	B	SPARE						20	1	16
17	20	1						SPARE	C	1212 COPIER			1200			20	1	18
19	20	1						SPARE	A	SPARE						20	1	20
21	20	1						SPARE	B	SPARE						20	1	22
23	20	1			1200			EWC - 1212	C	SPARE						20	1	24
25	20	1		1600				1278	A	SPARE						20	1	26
27	20	1		400				1278	B	1278 REFRIGERATOR			1800			20*	1	28
29	20*	1			1000			1278 COFFEE	C	1278 MICROWAVE			1200			20	1	30
31	20	1		1200				1214A	A	SPARE						15		32
33	20	1		800				1214A	B									34
35	20	1		1000				1214A	C								3	36
37	20	1						SPARE	A	SPARE						20	1	38
39	20	1		1000				1214B	B	M-EF-99			300			20	1	40
41	20	1		600				1214B	C	M-EF-100			300			20	1	42
43	20	1		1000				1214B	A	M-EF-101			300			20	1	44
45	20	1						SPARE	B	SPARE						20	1	46
47	20	1						SPARE	C	SPARE						20	1	48
49	20	1						SPARE	A	SPARE						20	1	50
51	20	1						SPARE	B	SPARE						20	1	52
53	20	1						SPARE	C	SPARE						20	1	54

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	0	0	0	0	1.00	0
RECEPTACLES	8400	5000	4200	17600	0.50	8800
MOTORS	1500	2100	4900	8500	0.90	7650
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:		46		TOTAL VA:		16450

NOTES:
1. BREAKERS NOTED WITH * TO BE GFCI
2. PROVIDE FEED-THRU LUGS

PANELBOARD LOAD SCHEDULE

PANEL: 11S6 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | EN

PANELBOARD LOAD SCHEDULE

PANEL: EC11S1 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 1234

RATING: 225 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: BLDG 1 SWBD CB

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1						SPARE	A	SPARE						20	1	2
3	20	1						SPARE	B	1229 PATIENT LIFT			400			20	1	4
5	20	1		1200				1125	C	1230 PATIENT LIFT			400			20	1	6
7	20	1						SPARE	A	SPARE						20	1	8
9	20	1						SPARE	B	SPARE						20	1	10
11	20	1						SPARE	C	1238-1239				1200		20	1	12
13	20	1		1200				1236-1237	A	SPARE						20	1	14
15	20	1		600				1212	B	1212				800		20	1	16
17	20	1		400				1282	C	1283-1284				1200		20	1	18
19	20	1		1000				1285	A	1286-1287				1200		20	1	20
21	20	1		1000				1289	B	1288				600		20	1	22
23	20	1		600				1290	C	1291-1292				1200		20	1	24
25	20	1		1200				1258-1259	A	1252				400		20	1	26
27	20	1		400				1252	B	1252 REFRIGERATOR			1200			20*	1	28
29	20	1			1200			1252 OMNICELL	C	1252 NURSE STATION				400		20	1	30
31	20	1		400				1270 NURSE STATION	A	1270 OMNICELL			1200			20	1	32
33	20*	1			1200			1270 REFRIGERATOR	B	1270				400		20	1	34
35	20	1		400				1270 NURSE STATION	C	1245-1275				1200		20	1	36
37	20	1		1200				1273-1274	A	1271-1272				1200		20	1	38
39	20	1		1200				1246-1247	B	1248-1249				1200		20	1	40
41	20	1						SPARE	C	1230-1231				1200		20	1	42
43	20	1						SPARE	A	C103				200		20	1	44
45	20	1			1200			1212 PRINTER/COPIER	B	1257 PATIENT LIFT			400			20	1	46
47	20	1			400			CARD READER	C	SPARE						20	1	48
49	20	1						SPARE	A	PANEL				7400	1500	20	1	50
51	20	1						SPARE	B	EC11S2				7300	1635	20	1	52
53	20	1						SPARE	C	FEED THRU				7800	950	20	1	54

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	1500	1635	950	4085	1.00	4085
RECEPTACLES	15400	13500	16800	45700	0.50	22850
MOTORS	1200	4400	2000	7600	0.90	6840
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:	94		TOTAL VA:	33775		

NOTES:
1. PROVIDE FEED THRU LUGS

PANELBOARD LOAD SCHEDULE

PANEL: EC11S2 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 1234

RATING: 225 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: EC11S1

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1		600				1240	A	1235				600		20	1	2
3	20	1		600				1235	B	1235 REFRIGERATOR			1200			20*	1	4
5	20	1		600				1235	C	1219				600		20	1	6
7	20	1		1200				1232-1233	A	1219 FRZR			1200	1200		20*	1	8
9*	20	1		1200				1219 FRZR	B	1219				600		20	1	10
11	20	1		600				1219	C	1222-1223				1200		20	1	12
13	20	1			400			1224 BED LIFT	A	1224				800		20	1	14
15	20	1		1200				1229-1257	B	1255-1256				1200		20	1	16
17	20	1		1200				1253-1254	C	1235 OMNICELL			400			20	1	18
19	20	1		1200				1220-1221	A	1224 CRASH CART			200			20	1	20
21	20	1			200			1240 CRASH CART	B	1219 CRASH CART			200			20	1	22
23	20	1			400			1271 PATIENT LIFT	C	1236 PATIENT LIFT			400			20	1	24
25	20	1			400			1220 PATIENT LIFT	A	1229 PATIENT LIFT			400			20	1	26
27	20	1			400			1240 PATIENT LIFT	B	1235 MED GAS PANEL			500			20	1	28
29	20	1			400			1240 PATIENT LIFT	C	1219 OMNICELL			400			20	1	30
31	20	1			400			1233 PATIENT LIFT	A	1219					1500	20	1	32
33	20	1	275					1240	B	1235					1360	20	1	34
35	20	1						SPARE	C	1252,1270					950	20	1	36
37	20	1		1200				1255-1256	A	SPARE						20	1	38
39	20	1						SPARE	B	SPARE						20	1	40
41	20	1						SPARE	C	SPARE						20	1	42
31	20	1						SPARE	A	SPARE						20	1	32
33	20	1						SPARE	B	SPARE						20	1	34
35	20	1						SPARE	C	SPARE						20	1	36
37	20	1						SPARE	A	SPARE						20	1	38
39	20	1						SPARE	B	SPARE						20	1	40
41	20	1						SPARE	C	SPARE						20	1	42

LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	1500	1635	950	4085	1.00	4085
RECEPTACLES	6800	4800	4200	15800	0.50	7900
MOTORS	3000	2500	2000	7500	0.90	6750
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:	52		TOTAL VA:	18735		

NOTES:

PANELBOARD LOAD SCHEDULE

PANEL: ES11S1 | MAIN: MLO | VOLTS: 208Y/120, 3 PH., 4W. | ENCLOSURE: NEMA 1 | LOCATION: 1234

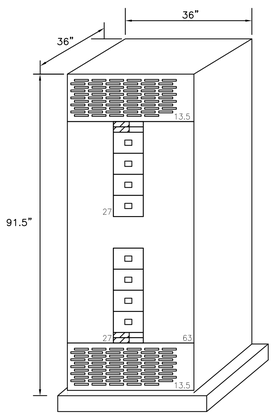
RATING: 100 AMP | AIC RATING: 10,000 | MOUNTING: SURFACE | FED FROM: BLDG 1 SWBD LS

CKT #	TRIP AMPS	POLE	LOAD IN VOLT-AMPERES LIGHTING	RECPT	MOTORS	KITCHEN	HEAT/AC	LOAD DESCRIPTION	PH	LOAD DESCRIPTION	HEAT/AC	KITCHEN	MOTORS	RECPT	LIGHTING	TRIP AMPS	POLE	CKT #
1	20	1	300					C104-C105	A	WEST CORRIDOR					1360	20	1	2
3	20	1						SPARE	B	SPARE						20	1	4
5	20	1						SPARE	C	SPARE						20	1	6
7	20	1						SPARE	A	SPARE						20	1	8
9	20	1						SPARE	B	SPARE						20	1	10
11	20	1						SPARE	C	SPARE						20	1	12
13	20	1						SPARE	A	SPARE						20	1	14
15	20	1						SPARE	B	SPARE						20	1	16
17	20	1						SPARE	C	SPARE						20	1	18
19	20	1							A							20	1	20
21	20	1							B							20	1	22
23	20	1							C							20	1	24
25	20	1							A							20	1	26
27	20	1							B							20	1	28
29	20	1							C							20	1	30

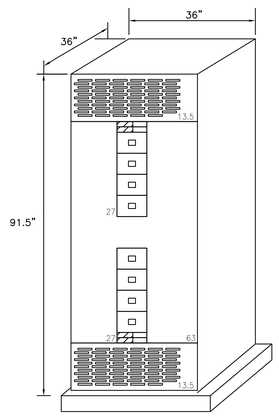
LOAD CALCULATIONS

LOAD TYPE	VA / PHASE A	B	C	TOTAL VA	DEMAND FACTOR	DIVERSIFIED LOAD
LIGHTING	1660	0	0	1660	1.00	1660
RECEPTACLES	0	0	0	0	0.50	0
MOTORS	0	0	0	0	0.90	0
KITCHEN EQUIP.	0	0	0	0	0.65	0
HEAT / AC	0	0	0	0	0.90	0
TOTAL AMPS:	5		TOTAL VA:	1660		

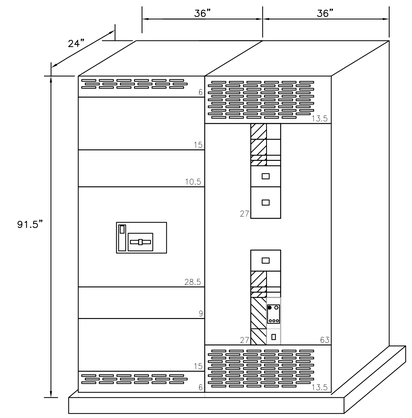
NOTES:



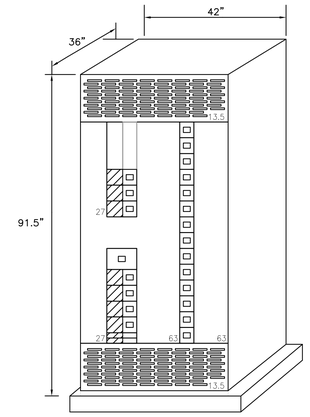
1 E17 CRITICAL BRANCH SWBD ELEVATION
NO SCALE



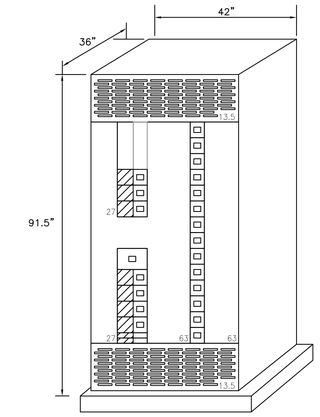
2 E17 LIFE SAFETY BRANCH SWBD ELEVATION
NO SCALE



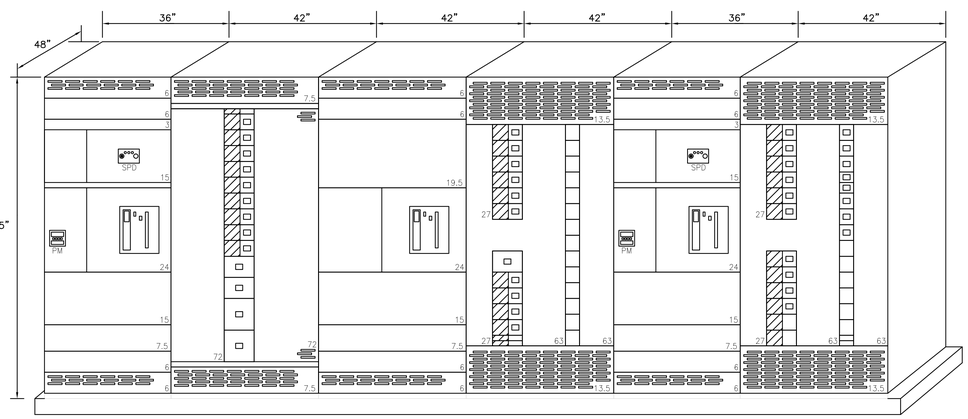
3 E17 GENERATOR SWBD ELEVATION
NO SCALE



4 E17 EQUIPMENT BRANCH SWBD ELEVATION
NO SCALE



5 E17 SWITCHBOARD SWBD-2 ELEVATION
NO SCALE



6 E17 SWITCHBOARD SWBD-1 ELEVATION
NO SCALE

MOTOR AND EQUIPMENT SCHEDULE

MOTOR NO	DESCRIPTION OF MOTOR OR EQUIPMENT	LOCATION (ROOM NO)	LOAD IN HORSEPOWER (HP) OR FULL LOAD AMPS (FLA)	VOLTAGE, PHASE	PANEL AND CIRCUIT NUMBER OR MCC NUMBER	CONDUCTOR SIZE AND QUANTITY	GROUND CONDUCTOR SIZE	CONDUIT SIZE	CONTROLLER: MAGNETIC STARTER/DISCONNECT	STARTER SIZE	VARIABLE FREQUENCY DRIVE	MANUAL MOTOR CONTROLLER	TOGGLE SWITCH	PILOT TOGGLE SWITCH	CONTROLLER BY (DIV. NO.)	CONTROLLER LOCATION (ROOM NO.)	DISCONNECT: DISCONNECT SIZE	FUSIBLE / NON FUSIBLE	NEMA RATING	DISCONNECT BY (DIV. NO.)	CONTROL OR AUXILIARY DEVICE (SEE NOTES): VFD	DEFINITE PURPOSE RELAY	TIME SWITCH	THERMOSTAT	AQUASTAT	FLOAT SWITCH	FIRE ALARM CONTROL RELAY	FIRE ALARM DUCT DETECTORS (SUPPLY AND RETURN)	INTERLOCK WITH
1	DENTAL VACUUM PUMPS 1-VP-1	127	3 HP	208, 1	EB10S1-20,22	2#10	#10	3/4"							23	127	30A	F 30	1	26									
2	DENTAL VACUUM PUMPS 1-VP-2	127	3 HP	208, 1	EB10S1-26,28	2#10	#10	3/4"							23	127	30A	F 30	1	26									
3	AHU-77 SF-77 (ALTERNATE BID 3)	127	10 HP	208, 3	EB10S1-7,9,11	3 #8	#8	3/4"		X					23	127	60A	NF	1	26	2					4	4		
4	AHU-77 RF-77 (ALTERNATE BID 3)	127	5 HP	208, 3	EB10S1-8,10,12	3 #10	#10	3/4"		X					23	127	30A	NF	1	26	2					4	4		
5	AHU-78 SF-78	127	40 HP	208, 3	EB10S2-1,3,5	3 #1/0	#6	2"		X					23	127				ON VFD	2					4	4		
6	AHU-78 RF-78	127	15 HP	208, 3	EB10S2-2,4,6	3 #6	#6	1"		X					23	127				ON VFD	2					4	4		
7	1-SUH-1	127	1/15 HP	120, 1	10S4-11	2#12	#12	3/4"				X			23	ON UNIT	20A	NF	1	26									
8	CHILLED WATER PUMP M-CWP-18	127	15 HP	208, 3	10S4-14,16,18	3 #6	#8	1"		X					23	127				ON VFD	2								
9	CHILLED WATER PUMP M-CWP-19	127	15 HP	208, 3	10S4-13,15,17	3 #6	#8	1"		X					23	127				ON VFD	2								
10	HEATING PUMP M-HWP-33	127	15 HP	208, 3	EB10S1-14,16,18	3 #6	#8	1"		X					23	127				ON VFD	2								
11	HEATING PUMP M-HWP-32	127	15 HP	208, 3	EB10S1-13,15,17	3 #6	#8	1"		X					23	127				ON VFD	2								
12	HEATING PUMP M-HWP-34	127	7 1/2 HP	208, 3	EB10S1-1,3,5	3 #10	#10	3/4"		X					23	127				ON VFD	2								
13	HEATING PUMP M-HWP-35	127	7 1/2 HP	208, 3	EB10S1-2,4,6	3 #10	#10	3/4"		X					23	127				ON VFD	2								
14	M-EF-100 (ALTERNATE BID 2)	SEE PLANS	1/4 HP	120, 1	11S5-42	2 #12	#12	3/4"							23	BAS				ON UNIT									
15	M-EF-101 (ALTERNATE BID 2)	SEE PLANS	1/6 HP	120, 1	11S5-44	2 #12	#12	3/4"							23	BAS				ON UNIT									
16	SUMP PUMPS 1-SP-1 AND 1-SP-2	126	(2) 1/2 HP	208, 3	SEE PLANS	3 #12	#12	3/4"	IN CONTROL PANEL						23	C PNL	ON CONTROL PANEL												
17	1-CUH-1	S001	1/7 HP	120, 1	EB10S1-23	2#12	#12	3/4"							23	ON UNIT	20A	NF	1	26									
18	1-CUH-2	C003	1/10 HP	120, 1	EB10S1-23	2#12	#12	3/4"							23	ON UNIT	20A	NF	1	26									
19	1-CUH-3	C002	1/10 HP	120, 1	EB10S1-23	2#12	#12	3/4"							23	ON UNIT	20A	NF	1	26									
20	M-EF-99 (ALTERNATE BID 2)	SEE PLANS	1/4 HP	120, 1	11S5-40	2 #12	#12	3/4"							23	BAS				ON UNIT									
21	SUMP PUMPS 1-SP-1 AND 1-SP-2	126	(2) 1/2 HP	208,																									

JL DEVICE FURNISHED AND SET BY OTHERS
4. PROVIDE DUCT DETECTOR IN SUPPLY AND RETURN DUCTS AND CONNECT TO FA SYSTEM

Revisions | Date

Dept. of Veterans Affairs
Medical Center
2101 Elm Street North
Fargo, ND 58102

IMAGE GROUP INC.
403 CENTER AVENUE, SUITE 300
MOORHEAD, MN 56560

IMAGE GROUP INC., Architecture & Interiors
SOLIEN & LARSON ENGINEERING, Structural Engineers
OBERMILLER NELSON ENGINEERING, Mechanical Engineers
MBN ENGINEERS, Civil & Electrical Engineers
TRIO ENVIRONMENTAL, Environmental Consultants

MBN ENGINEERING
MECHANICAL * ELECTRICAL * CIVIL
503 7th St N, SUITE 200
FARGO, ND 58102
PHONE: 701.478.6336
FAX: 701.478.6340

PE-4445 DATE 2-10-12

Drawing Title	ELECTRICAL SCHEDULES AND ELECTRICAL DETAILS
Project Title	VA MEDICAL CENTER BUILDING 1 ADDITIONAL OUTPATIENT TREATMENT SPACE
Date	SEPTEMBER 19, 2011
	AS NOTED
VA Project No.	437-310
Contract No.	VA263-P-0967 VA263-C-
Designed By	MB
Checked By	MB
Drawn By	TP
Building No.	1
AutoCAD File Name	10-084 E17.DWG
Location	VA MEDICAL CENTER FARGO, ND
Drawing No.	E17
	Dwg. 83 of 83

Department of Veterans Affairs