PLUMBING CALCULATIONS

FIXTURE	QUANTITY	VALUES PER FIXTURE			TOTAL		
		COLD WSFU	HOT WSFU	DFU	COLD WSFU	HOT WSFU	DFU
Eye Wash	1	0.5	0.5	1	0.5	0.5	1
Drinking Fountain	1	0.25	0	0.5	0.25	0	0.5
Floor Drain	6	0	0	2	0	0	12
Floor Sink	4	0	0	4	0	0	16
Jan sink, Hose Bibb	4	2.25	2.25	2	9	9	8
Kitchen Sink	3	3	3	2	9	9	6
Lavatory	5	1.5	1.5	1	8	8	5
Sink	15	2.25	2.25	2	34	34	30
Shower	2	3	3	3	6	6	6
Wall hydrant	3	2.25	0	0	6.75	0	0
Water Closet FV	5	10	0	6	50	0	30
			Total WSFU/ DFU	0	124	66	115
			Total GPM	0	77	58	
			Peak GPM	0	135		

WATER MONITORING SYSTEM

MARK	MANUFACTURER & MODEL OR EQUAL	GSA PART#	DESCRIPTION	QUANTITY
WMS-1	PHIGENICS PWA VA MONITOR AND DISINFECTION SYSTEM	WME-1175	PWA Advanced Monitoring System 2.0 with second CLX and Sample Cooler for hot water	2
		WME-1899	CALCIUM HARDNESS ANALYZER	1
		WME-2910	WATER TEMPERATURE SENSOR WITH 4-20mA AND THERMOWELL	2

PLUMBING SPECIALTY SCHEDULE

MARK	SPEC REF	DESCRIPTION	MANUFACTURER & MODEL OR EQUAL	TYPE	WASTE	VENT	HOT WATER	COLD WATER	NOTES
DS-1		DOWNSPOUT LAMBS TONGUE	ZURN Z-199	ROUND	-	-	-	-	1,2
FD-1	FD-C	FLOOR DRAIN	ZURN Z415BZ OR EQUAL	ROUND	2"	2"	-	-	1,2
FD-2	FD-Z	TRENCH DRAIN	ZURN ZS880-1	LINEAR	2"	2"	-	-	1,2
FCO-1		FLOOR CLEANOUT	ZURN ZN1400-S OR EQUAL	ROUND	2"	-	-	-	1,2
FS-1	FS-S	FLOOR SINK	ZURN Z1900	12"X12"	3"	2"	-	-	1,2
HR-1		HOSE REEL SYSTEM	T&S B-2339-02	CLOSED	-	-	1/2"	1/2"	1,2

NOTES:

1. SIZE LISTED ON SCHEDULES APPLY TO ALL FIXTURES ON PROJECT UNLESS OTHERWISE NOTED.
2. SEE PLUMBING SPECIFICATIONS FOR ADDITIONAL INFORMATION.

PUMP SCHEDULE

TAG	MANUFACTURER & MODEL	TYPE	SYSTEM	FLUID	GPM	PUMP FT.HEAD	TEMP °F	VOLT/ Ph/ A	NOTES
CP-1	GRUNDFOS UPS 1535 SFC OR EQUAL	INLINE	DHW	WATER	1	2	140	110/ 1/ 0.95	1

NOTES:

1. MANUFACTURER IS FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURER ARE ALLOWED

HEAT EXCHANGER SCHEDULE

EQUIP TAG	MANUFACTURER & MODEL	FLUID	GPM	TEMP IN (°F)	TEMP OUT (°F)	PRESSURE DROP (TUBES)	MODULATING CONTROL V (LBS/HR)	MAX. STEAM PRESSURE (PSIG)	L X W H	NOTES
HX-1	ARMSTRONG DFS90DW80BS OR EQUAL	WATER	58	45	140	4.35	2755	15	58"X66"X92"	1

NOTES:

1. MANUFACTURER IS FOR BASIS OF DESIGN ONLY. OTHER MANUFACTURER ARE ALLOWED

PLUMBING FIXTURE SCHEDULE

DY	VA NUMBER	DESCRIPTION	MANUFACTURER & MODEL OR EQUAL	TYPE	WASTE	VENT	HOT WATER	COLD WATER	NOTES
EEW-1	P-708	EMERGENCY EYE WASH	SPEAKMAN SE-582 PROVIDE WITH LEONARD TA-350-LF MIXING VALVE AND 1/4 TURN STOPS	WALL MOUNT	-	-	1/2"	1/2"	1,2,3,5
HB-1	P-802	HOSE BIBB	WOODFORD MODEL 122	WALL MOUNT	-	-	3/4"	3/4"	1,2,3
LAV-1	P-420	LAVATORY	KOHLER K-2202-1 PROVIDE WITH CHICAGO FAUCETS 116.102.AB.1, WATTS LFMMV LEAD FREE THERMOSTATIC MIXING VALVE, TEMP GAUGE, ZURN Z8743 PO PLUG, ZURN Z8700-PC P-TRAP AND TRUEBRO 102 E-Z ADA INSULATION KIT	DROP IN	1-1/2"	1-1/2"	1/2"	1/2"	1,2,3,5
LAV-2	P-418	LAVATORY	KOHLER K-2084 WITH WALL SUPPORT SYSTEM PROVIDE WITH CHICAGO FAUCETS 116.102.AB.1, WATTS LFMMV LEAD FREE THERMOSTATIC MIXING VALVE, TEMP GAUGE, ZURN Z8743 PO PLUG, ZURN Z8700-PC P-TRAP AND TRUEBRO 102 E-Z ADA INSULATION KIT	WALL HUNG	1-1/2"	1-1/2"	1/2"	1/2"	1,2,3,5
S-1	P-528	SINGLE BOWL	KOHLER K-2202-1 PROVIDE WITH CHICAGO FAUCETS 116.102.AB.1, WATTS LFMMV LEAD FREE THERMOSTATIC MIXING VALVE, TEMP GAUGE, ZURN Z8743 PO PLUG, ZURN Z8700-PC P-TRAP AND TRUEBRO 102 E-Z ADA INSULATION KIT	DROP IN	1-1/2"	1-1/2"	1/2"	1/2"	1,2,3,5
S-2	P-502	JANITOR SINK	FIAT TSB3013 PROVIDE UNIT SHALL COME COMPLETE WITH HOSE, HOSE BRACKET AND MOP HANGER. PROVIDE WITH WALL MOUNTED MANUAL FAUCET WITH INTEGRAL VACUUM BREAKER, PAIL HOOK, AND WALL SUPPORT ROD CHICAGO FAUCET MODEL 540-L8975WXF317CP, WATTS LFMMV LEAD FREE THERMOSTATIC MIXING VALVE, AND TEMP GAUGE	DROP IN	1-1/2"	1-1/2"	3/4"	3/4"	1,2,3,5
S-3	P-524	DUAL KITCHEN SINK	ELKAY LRAD332265PD PROVIDE WITH CHICAGO FAUCETS 895-317RGD2ABCP, WATTS LFMMV LEAD FREE THERMOSTATIC MIXING VALVE, TEMP GAUGE, ZURN Z8743 PO PLUG, ZURN Z8700-PC P-TRAP AND TRUEBRO 102 E-Z ADA INSULATION KIT	DROP IN	1-1/2"	1-1/2"	1/2"	1/2"	1,2,3,5
WC-1	P-103	WATER CLOSET	AMERICAN STANDARD AFWALL 2257101.020 PROVIDE WITH SLOAN ECOS 111-1.28-HW, HARDWIRED FLUSH VALVE, BEMIS 1655SSCT OPEN FRONT SEAT LESS COVER, AND ZN1201-ND-3 FOR BACK-TO-BACK ZN1201-N_3 FOR SINGLE WALL CARRIER	WALL MOUNT	4"	2"	-	1"	1,2,3,4
WC-2	P-114	WATER CLOSET BARIATRIC	AMERICAN STANDARD HURON 3312001.020 PROVIDE WITH SLOAN G2 8113-1.28 BATTERY FLUSH VALVE AMERICAN STANDARD 5901.100 HEAVY DUTY OPEN FRONT LESS COVER, AND ZN1201-N-XB WALL CARRIER	WALL AND FLOOR MOUNT	4"	2"	-	1"	1,2,3,4
WD-1	P-608	DRINKING WATER DISPENSER	ELKAY EZWS-EDFP217K	WALL MOUNT	1-1/2"	1-1/2"	-	1/2"	1,2,3
WH-1	P-801	WALL HYDRANT	WOODFORD MODEL 67	WALL MOUNT	-	-	-	3/4"	1,2,3

NOTES:

1. SIZE LISTED ON SCHEDULES APPLY TO ALL FIXTURES ON PROJECT UNLESS OTHERWISE NOTED.
2. SEE PLUMBING SPECIFICATIONS FOR ADDITIONAL INFORMATION.
3. INSTALL WITH INLET SHUT-OFF VALVE.
4. PROVIDE EL-386 TRANSFORMER FOR FLUSHOMETER. WIRING BY ELECTRICAL CONTRACTOR.
5. ALL DOMESTIC WATER FIXTURES THAT HAVE HOT AND COLD WATER SHALL HAVE A THERMOSTATIC MIXING VALVE AND AUTOMATIC FLUSHING CAPABILITIES TO PURGE HOT AND COLD WATER BRANCH LINES.

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER — REG. NO 13179 — MATTHEW R. KOSCAK — SOUTH DAKOTA — 11/16/2021

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title	PLUMBING SCHEDULES
Approved: Project Director	FARGO VAHCS
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Location	2101 ELM STREET FARGO, ND 58102
Date	11/16/2021
Checked	MK
Drawn	BM
Project Number	437-315
Building Number	1
Drawing Number	P-601
Dwg.	90 of 128

Office of Construction and Facilities Management

Department of Veterans Affairs

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VA FORM 08-6231

ELECTRICAL LEGEND (FLOORPLAN)

SYMBOL	DESCRIPTION
	MOTOR, SINGLE-PHASE
	MOTOR, THREE-PHASE
T	TRANSFORMER
	WYE CONNECTION
	DUCT, CELL FLOOR HEADER
T T	DUCT, TROLLEY
	DUCT, UNDERFLOOR JUNCTION BOX
	EARTH GROUND
J	JUNCTION BOX
C C	LADDER CABLE TRAY
	BRANCH CIRCUIT HOMERUN. LINES INDICATE NUMBER OF CIRCUITS, NEUTRAL, AND SWITCH LEG CONDUCTORS. ONE SEPARATE GREEN GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH HOMERUN; NOT SHOWN
PB	PULL BOX
W W	WIREWAY
RC	RIGID CONDUIT LINE = RC
DB	DIRECT BURIAL CABLE = DB
P	POWER DUCT = P
AV	AUDIO VISUAL LINE = AV
CATV	CABLE TELEVISION LINE = CATV
CCTV	CLOSED CIRCUIT TELEVISION LINE = CCTV
FO	FIBEROPTICS LINE = FO
COM	COMMUNICATIONS LINE = COM
I	INTERCOM LINE = I
NC	NURSE CALL LINE = NC
S	SUBSTATION
HVS	HI VOLTAGE SWITCH ON CONCRETE PAD
LVS	LOW VOLTAGE SWITCH ON CONCRETE PAD
P T	DUAL POWER AND TELECOMMUNICATIONS MANHOLE
B B	BUSWAY
DP	DISTRIBUTION PANEL
LP	LIGHTING PANEL
	PANELBOARD CABINET, FLUSH MOUNTED
	PANELBOARD CABINET, SURFACE MOUNTED
C	RECEPTACLE, CLOCK HANGER
	RECEPTACLE, DUPLEX
	RECEPTACLE, DUPLEX ON EMERGENCY POWER
	RECEPTACLE, GFCI DUPLEX
	RECEPTACLE, QUADRAPLEX
Φ_A	RECEPTACLE, SPECIAL PURPOSE 120V, 20A, 1 PHASE, 2-POLE, 3W, NEMA 5-20R.
Φ_B	RECEPTACLE, SPECIAL PURPOSE 208V, 20A, 1 PHASE, 2-POLE, 3W, NEMA 6-20R.
Φ_C	RECEPTACLE, SPECIAL PURPOSE 120V, 30A, 1 PHASE, 2-POLE, 3W, NEMA 5-30R.
Φ_D	RECEPTACLE, SPECIAL PURPOSE 208V, 30A, 1 PHASE, 2-POLE, 3W, NEMA 6-30R.
Φ_E	RECEPTACLE, SPECIAL PURPOSE 208V, 60A, 1 PHASE, 3-POLE ,4W, NEMA 14-60R.
Φ_F	RECEPTACLE, SPECIAL PURPOSE 208V, 30A, 3 PHASE, 3-POLE 4W, NEMA 15-30R.
Φ_G	RECEPTACLE, SPECIAL PURPOSE 208V, 50A, 3 PHASE, 3 POLE, 4W, NEMA 15-50R.
Φ_H	RECEPTACLE, SPECIAL PURPOSE 208V, 60A, 3 PHASE, 3 POLE, 4W, NEMA 15-60R.
Φ_I	RECEPTACLE, SPECIAL PURPOSE 208V, 20A, 3 PHASE, 3 POLE, 4W, NEMA 15-20R.
Φ_S	RECEPTACLE, SWITCHED DUPLEX
	DROP CORD, SINGLE CONVENIENCE OUTLET, 3-WIRE, GROUNDING TYPE, 20A, 1W12 CONDUCTORS IN FLEXIBLE CORD (CENTER LINE OF OUTLET: 6'-6" [1981mm] AFF. MINIMUM).
	ELECTRICAL STRIP MOLD (OUTLETS ON 2'-0" [610mm] CENTERS OR AS DESIGNATED ON DRAWINGS), MTD 3'-6" [1067mm] AFF OR AS INDICATED.

SYMBOL	DESCRIPTION
B_{50}	INSTANTANEOUS OVERCURRENT RELAY
B_{51}	AC-TIME OVERCURRENT RELAY
B_{67}	AC-DIRECTIONAL OVERCURRENT RELAY
B	LOCKING OUT RELAY
J^1	DISCONNECT SWITCH, FUSED
J^2	DISCONNECT SWITCH, UNFUSED
	STARTER, COMBINATION WITH DISCONNECT SWITCH
	STARTER OR MOTOR CONTROLLER
VFD	VARIABLE FREQUENCY DRIVE
TC	TIME CLOCK
R	RECTIFIER, CATHODIC PROTECTION SANITARY
	VENTILATOR OR FAN COIL UNIT OUTLET
	CONDUIT TERMINATED 6" [152mm] AFF IN STANDARD BOX FOR EXTENSION TO EQUIPMENT AS DIRECTED.
	CONDUIT TERMINATED W/COUPLING (FLUSH W/FINISHED FLOOR) FOR EXTENSION TO EQUIPMENT AS DIRECTED.
$	SWITCH, SPST
$2	SWITCH, DPST
$3	SWITCH, THREE WAY
$3D	SWITCH, THREE WAY DIMMER
$3OS	SWITCH, THREE WAY OCCUPANCY SENSOR
$4	SWITCH, FOUR WAY
$D	SWITCH, DIMMER
$DOOR	SWITCH, DOOR JAMB
$4OS	SWITCH, FOUR WAY OCCUPANCY SENSOR
$F	SWITCH, FUSED
$K	SWITCH, KEY OPERATED
$L	SWITCH, LOCK
$LM	SWITCH, LOW VOLTAGE MASTER
$M	SWITCH, MANUAL MOTOR STARTING
$MC	SWITCH, MOMENTARY CONTACT
$MP	SWITCH, MOTOR SNAP WITH PILOT LIGHT (THERMAL TYPE)
$OS	SWITCH, OCCUPANCY SENSOR
$OSD	SWITCH, OCCUPANCY SENSOR DIMMER
$P	SWITCH, WITH PILOT LIGHT
$PB	SWITCH, PUSH BUTTON
$PH	SWITCH, PHOTOCELL
$RC	SWITCH, REMOTE CONTROL
$WP	SWITCH, WEATHER PROOF
$X	SWITCH, EXPLOSION PROOF
	TELECOMMUNICATIONS MANHOLE
	COMMUNICATIONS FLOOR RECEPTACLE
	COMMUNICATIONS WALL RECEPTACLE
	COMMUNICATIONS CEILING RECEPTACLE
M	TELEVISION FLOOR RECEPTACLE C = CAMERA (CCTV SYSTEM) M = MONITOR (CATV SYSTEM). AV= AUDIO VISUAL (CONFERENCE ROOM CONNECTION RECEPTACLES)
M	TELEVISION WALL RECEPTACLE C = CAMERA (CCTV SYSTEM) M = MONITOR (CATV SYSTEM). AV= AUDIO VISUAL (CONFERENCE ROOM CONNECTION RECEPTACLES)
M	TELEVISION CEILING RECEPTACLE C = CAMERA (CCTV SYSTEM) M = MONITOR (CATV SYSTEM). AV= AUDIO VISUAL (CONFERENCE ROOM CONNECTION RECEPTACLES)
S	PAGING SPEAKER, CEILING MOUNTED
S	PAGING SPEAKER, WALL MOUNTED
NCS	NURSE'S CALL MASTER STATION
NCT	NURSE CALL TERMINAL CABINET.
N D	NURSE CALL STATION. D = DUTY STATION. MTD 5' AFF E = MTD 6' AFF FOR SHOWER LOCATION MTD 4'-6" AFF FOR TUB LOCATION MTD 3' AFF FOR TOILET LOCATION P = PSYCHIATRIC CORRIDOR STATION WITH KEY SWITCH S = AUDIO VISUAL STAFF STATION MTD 5' AFF U = UTILITY CALL STATION, MTD 5' AFF

SYMBOL	DESCRIPTION
D	NURSE CALL STATION. D = CORRIDOR DOME LIGHT MTD 6" ABOVE DOOR I = AUXILIARY INTERSECTIONAL DOME LIGHT
	TELECOMMUNICATIONS TERMINAL CABINET
TTB	TELECOMMUNICATIONS BACKBOARD (WALL MTD)
EH	ELECTRIC POWER HINGE
DC	DOOR CONTACT
MD	MOTION INTRUSION DETECTOR
SSTV	SECURITY SURVEILLANCE TELEVISION
C	CAMERA
C	360 CAMERA
M T	CARD ACCESS READER; LETTER INDICATES AS FOLLOWS: M=MOUNT C-CEILING D-DESK F-FLUSH H-HIDDEN M-MULLION P-PEDESTAL R-RACK S-SURFACE W-WALL T=TECHNOLOGY/TYPE B-BARCODE M-MAG.STRIP F-ELEVATOR FLOOR CALL P-PROXIMITY H-ELEVATOR HALL CALL S-SMART CARD T-TOKEN
M T	ELECTRONIC LOCK; LETTER INDICATES AS FOLLOWS: M=MOUNT C-CEILING D-DESK F-FLUSH H-HIDDEN M-MULLION P-PEDESTAL R-RACK S-SURFACE W-WALL T=TECHNOLOGY/TYPE D-DEADBOLT H=HYBRID L-LATCH SET M-MAGNETIC S-STRIKE
M T	INTERCOM; LETTER INDICATES AS FOLLOWS: M=MOUNT C-CEILING D-DESK F-FLUSH H-HIDDEN M-MULLION P-PEDESTAL R-RACK S-SURFACE W-WALL T=TECHNOLOGY/TYPE M-MASTER S-SUBSTATION
	DURESS/PANIC ALARM PUSH BUTTON
	ELECTROMAGNETIC TYPE DOOR HOLDER OUTLET

ELECTRICAL LEGEND (DETAILS)

SYMBOL	DESCRIPTION
	DELTA CONNECTION
	MOTOR, SINGLE-PHASE
	MOTOR, THREE-PHASE
	TRANSFORMER
	WYE CONNECTION
	EARTH GROUND
J	JUNCTION BOX
PB	PULL BOX
	PRESSURE SWITCH-CLOSE ON INCREASE
	PRESSURE SWITCH-OPEN ON INCREASE
	SWITCH, MULTIPOSITION
	SWITCH, NORMALLY CLOSED FLOAT
	SWITCH, NORMALLY CLOSED FOOT OPERATED
	SWITCH, NORMALLY CLOSED LIMIT
	SWITCH, NORMALLY CLOSED TEMPERATURE ACTIVATED
	SWITCH, NORMALLY CLOSED TIME DELAY
	SWITCH, NORMALLY OPEN FLOAT
	SWITCH, NORMALLY OPEN LIMIT
	SWITCH, NORMALLY OPEN TEMPERATURE ACTIVATED
	SWITCH, NORMALLY OPEN TIME DELAY
	SWITCH, SINGLE BREAK
	NORMALLY CLOSED RELAY CONTACT
	NORMALLY OPEN RELAY CONTACT
	FUSE WITH RATING
	MOLDED CASE CIRCUIT BREAKER
	LOW-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
C.B	HIGH-VOLTAGE OIL CIRCUIT BREAKER
	HIGH-VOLTAGE DRAWOUT AIR CIRCUIT BREAKER
	SWITCH AND FUSE UNIT
	FUSED DRAWOUT POTENTIAL TRANSFORMER
B_{50}	INSTANTANEOUS OVERCURRENT RELAY
B_{51}	AC-TIME OVERCURRENT RELAY
B_{67}	AC-DIRECTIONAL OVERCURRENT RELAY
B	LOCKING OUT RELAY
J^1	DISCONNECT SWITCH, FUSED
J^2	DISCONNECT SWITCH, UNFUSED
	FUSIBLE LINK
	STARTER, COMBINATION WITH DISCONNECT SWITCH
	STARTER OR MOTOR CONTROLLER
TC	TIME CLOCK
G	GENERATOR, POWER
	BATTERY
	CAPACITOR
	POTHEAD
	STRESS CONE
	LIGHTNING ARRESTOR
R	RECTIFIER, CATHODIC PROTECTION SANITARY
M	METER
A	AMMETER
V	VOLTMETER
W	WATTMETER
WH	WATT-HOUR METER

ELECTRICAL ABBREVIATIONS

1PH	SINGLE-PHASE	ELEC	ELECTRIC OR ELECTRICAL	MW	MEGAWATT MICROWAVE
1P	SINGLE POLE	ELEV	ELEVATOR		
2/C	TWO-CONDUCTOR	EMCP	EMERGENCY MONITORING CONTROL	NA	NOT APPLICABLE
3/C	THREE-CONDUCTOR		PANEL	NEC	NATIONAL ELECTRICAL CODE
3PH	THREE-PHASE	EMER	EMERGENCY	NEMA	NATIONAL ELECTRICAL
4/C	FOUR-CONDUCTOR	EMI	ELECTROMAGNETIC INTERFERENCE		MANUFACTURERS ASSOCIATION
4W	FOUR-WIRE	EMT	ELECTRICAL METALLIC TUBING	NEUT OR N	NEUTRAL
		ENCL	ENCLOSURE	NFPA	NATIONAL FIRE PROTECTION
AAP	ALARM ANNUNCIATOR PANEL	EPO	EMERGENCY POWER OFF		ASSOCIATION
AC	ALTERNATING CURRENT OR ARMORED CABLE	EPRF	EXPLOSION PROOF	NIC	NOT IN CONTRACT
		ESMT	EASEMENT	NL	NIGHT LIGHT
ACC	ACCESSIBLE	EWC	ELECTRIC WATER COOLER	NO	NORMALLY OPEN
ADO	AUTOMATIC DOOR OPENER	EWH	ELECTRIC WATER HEATER	NS	NO SCALE
AFC	ABOVE FINISHED COUNTER, AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT	EXIST	EXISTING	NTS	NOT TO SCALE
		FA	FIRE ALARM	OC	ON CENTER
AFF	ABOVE FINISHED FLOOR	FAAP	FIRE ALARM ANNUNCIATOR PANEL	OD	OUTSIDE DIAMETER
AFG	ABOVE FINISHED GRADE	FABL	FIRE ALARM BELL	OF	OWNER FURNISHED
AH	AMPERE HOUR	FABX	FIRE ALARM BOX	OF/CI	OWNER FURNISHED/CONTRACTOR
AHJ	AUTHORITY HAVING JURISDICTION	FACP	FIRE ALARM CONTROL PANEL		INSTALLED
AIC	AMPERE INTERRUPTING CAPACITY	FC	FOOTCANDLE	OF/OI	OWNER FURNISHED/OWNER INSTALLED
AMP	AMPERE	FIXT	FIXTURE	OL	OVERLOAD
ASC	AMPS SHORT CIRCUIT	FLA	FULL LOAD AMPS	OS	OCCUPANCY SENSOR
AT	AMPERE TRIP	FLEX	FLEXIBLE METALLIC CONDUIT		
ATS	AUTOMATIC TRANSFER SWITCH	FLT	FLOODLIGHT	P	POLE
AUTO	AUTOMATIC	FLUOR	FLUORESCENT	PA	PUBLIC ADDRESS
AV	AUDIO VISUAL	FLUOR FIX	FLUORESCENT FIXTURE	PB	PANELBOARD, PULL BOX, OR PUSHBUTTON
		FOUTT	TELEPHONE FLOOR OUTLET		
BAS	BUILDING AUTOMATION SYSTEM	FP	FIRE PROTECTION	PBPU	PREFABRICATED BEDSIDE PATIENT UNIT
BFF	BELOW FINISH FLOOR	FT	FEET OR FOOT	PCB	POLYCHLORINATED BIPHENYL
BLDG	BUILDING	FU SW	FUSED SWITCH	PEC	PHOTOELECTRIC CELL
BPIP	BOILER PLANT INSTRUMENTATION PANEL	FVNR	FULL VOLTAGE NON-REVERSING	PED	PEDESTAL
BRKR	BREAKER	FVR	FULL VOLTAGE REVERSING	PEND	PENDANT
BYP	BY PASS			PF	POWER FACTOR
		G OR GND	GROUND	PH	PHASE
C	CONDUIT	GEN	GENERATOR	PNL	PANEL
CAB	CABINET	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	POD	POWER OPERATED DAMPER
CALC	CALCULATE	GTB	GROUND TERMINAL BOX	PT	POTENTIAL TRANSFORMER
CAP	CAPACITY			PTRV	POWER TYPE ROOF VENTILATION
CAT	CATALOG	HID	HIGH INTENSITY DISCHARGE	PVC	POLYVINYL CHLORIDE (PLASTIC)
CATV	COMMUNITY ANTENNA TELEVISION	HOA	HAND-OFF-AUTOMATIC	PWR	POWER
CCR	CONTROL CONTACTOR	HP	HORSEPOWER		
CCTV	CLOSED CIRCUIT TELEVISION	HT	HEIGHT	RCP	REFLECTED CEILING PLAN
cd	CANDELA	HZ	HERTZ	REC	RECESSED
CD	CONSTRUCTION DOCUMENTS			RECPT	RECEPTACLE
CF	CONTRACTOR FURNISHED	IESNA	ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA	RGS	RIGID GALVANIZED STEEL
CF/CI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED	IMC	INTERMEDIATE METAL CONDUIT	RM	ROOM
		INCAND	INCANDESCENT	RMS	ROOT MEAN SQUARE
CF/OI	CONTRACTOR FURNISHED/OWNER INSTALLED	IR	INFRARED	REQD	REQUIRED
CHW	CHILLED WATER	IWH	INSTANTANEOUS WATER HEATER	SCC	SHORT CIRCUIT CAPACITY
CHWP	CHILLED WATER PUMP			SES	SERVICE ENTRANCE SECTION
CKT	CIRCUIT	J-BOX	JUNCTION BOX	SD	SMOKE DETECTOR
CKT BRKR	CIRCUIT BREAKER			SF	SQUARE FOOT (FEET)
CLF	CURRENT LIMITING FUSE	kV	KILOVOLT	SHT	SHEET
CLG	CEILING	kVA	KILOVOLT AMPERE	SI	INTERNATIONAL SYSTEM OF UNITS
CMU	CONCRETE MASONRY UNIT	kVAH	KILOVOLT AMPERE PER HOUR	SPEC	SPECIFICATION
COAX	COAX CABLE	kVAR	KILOVOLT AMPERE REACTIVE	SPST	SINGLE POLE, SINGLE THROW
COMM	COMMUNICATION	kW	KILOWATT	SPDT	SINGLE POLE, DOUBLE THROW
CONC	CONCRETE	kWH	KILOWATT HOUR	SURF	SURFACE
CONT	CONTINUE	kWHM	KILOWATT HOUR METER	SW	SWITCH
CONTR	CONTRACTOR			SWBD	SWITCHBOARD
COORD	COORDINATE	LED	LIGHT EMITTING DIODE	SWGR	SWITCHGEAR
CPT	CONTROL POWER TRANSFORMER	LF	LINEAR FEET (FOOT)		
CRI	COLOR RENDERING INDEX	LM	LUMEN	TC	TIME CLOCK
CT	CURRENT TRANSFORMER	LP	LIGHT POLE	TEL	TELEPHONE
CTV	CABLE TELEVISION	LPS	LOW PRESSURE SODIUM	TP	TWISTED PAIR
CU	COPPER	LRA	LOCKED ROTOR AMPS	TPS	TWISTED PAIR SHIELDED
CU FT	CUBIC FEET	LTCP	LOCAL TEMPERATURE CONTROL PANEL	TPSB	TWISTED PAIR SHIELDED
CUR	CURRENT	LT	LIGHT	TTB	TELEPHONE TERMINAL BOARD
		LTG	LIGHTING	TV	TELEVISION
DAS	DISTRIBUTED ANTENNA SYSTEM	LTG PNL	LIGHTING PANEL	TYP	TYPICAL
DB	DECIBEL	LTNG	LIGHTNING		
DC	DIRECT CURRENT	LV	LOW VOLTAGE	UFD	UNDERFLOOR DUCT
DCP	DIMMER CONTROL PANEL			UGND	UNDERGROUND
DEG C	DEGREES CELSIUS	MATV	MASTER ANTENNA TELEVISION SYSTEM	UL	UNDERWRITERS LABORATORY
DEG F	DEGREES FAHRENHEIT	MAX	MAXIMUM	UON	UNLESS OTHERWISE NOTED
DEMO	DEMOLITION	MC	METAL-CLAD	UPS	UNINTERRUPTIBLE POWER SUPPLY
DIAG	DIAGRAM	MCA	MINIMUM CIRCUIT AMPS	UTIL	UTILITY
DISC	DISCONNECT	MCB	MAIN CIRCUIT BREAKER	V	VOLT
DISTR	DISTRIBUTION	MCC	MOTOR CONTROL CENTER	VA	VOLT AMPERE
DISTR PNL	DISTRIBUTION PANEL	MDP	MAIN DISTRIBUTION PANEL	VAR	VOLT AMPERE REACTIVE
DMR SW	DIMMER SWITCH	MECH	MECHANICAL	VFD	VARIABLE FREQUENCY DRIVE
DN	DOWN	MG	MOTOR GENERATOR	VOLT	VOLTAGE
DPDT	DOUBLE POLE, DOUBLE THROW	MH	MANHOLE	VS	VACANCY SENSOR
DPST	DOUBLE POLE, SINGLE THROW	MIN	MINIMUM		
DRSW	DOOR SWITCH	MOCP	MAXIMUM OVERCURRENT PROTECTION	W	WATT
DS	DISCONNECT SWITCH	MLO	MAIN LUGS ONLY	WH	WATER HEATER
DWG	DRAWING	MT	MOUNT	WP	WEATHERPROOF
		MTD	MOUNTED		
EC	EMPTY CONDUIT	MTG	MOUNTING	XFER	TRANSFER
EG	EQUIPMENT GROUND	MTS	MANUAL TRANSFER SWITCH	XFMR	TRANSFORMER
EL	ELEVATION	MVA	MEGAVOLT-AMPERE		

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE-9886
NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title: ELECTRICAL LEGENDS AND ABBREVIATIONS

Approved: Project Director: FARGO VAHCS

Project Title: EXPAND BLDG. 1 FOR PRIMARY CARE

Location: 2101 ELM STREET FARGO, ND 58102

Date: 11/16/2021 | Checked: RD | Drawn: JS

Project Number: 437-315

Building Number: 1

Drawing Number: E-000

Dwg. 91 of 128

Office of Construction and Facilities Management

Department of Veterans Affairs

12/2/2009 10:11:29 AM

VA FORM 08-6231

PANEL "1055"

PANEL LOCATION: ELECTRICAL BD-130A
MFR/MODEL: SQUARE D NQ OR APPROVED EQUAL
AIC: 10,000

L-L VOLT: 208 | PHASE: 3 | MAIN: LUG N | BREAKER Y
L-N VOLT: 120 | WIRES: 4 | WIRE SIZE: (8) 3/0 THHN + (2) 1/0 CU | FED FROM: SWBD-1
RATED AMP: 200 | NEURAL 100% | COND. SIZE: (2) 3" EMT | MOUNT: SURFACE

DESCRIPTION	BREAKER TYPE	POLE	AMP	BRANCH WIRE SIZE	INSULATION	GND	L-LOAD	R-LOAD	O-LOAD	T/S/O/M A/E/H	PHASE			T/S/O/M A/E/H	O-LOAD	R-LOAD	L-LOAD	BRANCH WIRE SIZE	INSULATION	GND	BREAKER AMP	POLE	TYPE	DESCRIPTION
BSMNT CONFERENCE RECPS 1		1	20	(2)#12	THHN	#12		720			1	A	2			1080		(2)#12	THHN	#12	20	1		ELEC, TOILET, OFFICE RECPS
BSMNT CONFERENCE RECPS 2		1	20	(2)#12	THHN	#12		720			3	B	4			720		(2)#12	THHN	#12	20	1		WET ROOM/NORTH RECPS
BD-129 RECPS		1	20	(2)#12	THHN	#12		900			5	C	6			900		(2)#12	THHN	#12	20	1		WET ROOM SOUTH RECPS
BD-128 RECPS		1	20	(2)#12	THHN	#12		900			7	A	8			900		(2)#12	THHN	#12	20	1		BD-127 RECPS
BD-126 RECPS		1	20	(2)#12	THHN	#12		1440			9	B	10			1080		(2)#12	THHN	#12	20	1		BD-125 RECPS
BD-124 RECPS		1	20	(2)#12	THHN	#12		1080			11	C	12	A	1800			(2)#12	THHN	#12	20	1		BASEMENT BD-123 FRIDGE
BD-123 MICROWAVE 1 RECP		1	20	(2)#12	THHN	#12			1100	A	13	A	14			720		(2)#12	THHN	#12	20	1		BD-123 RECPS
BD-123 MICROWAVE 2 RECP		1	20	(2)#12	THHN	#12			1100	A	15	B	16			1080		(2)#12	THHN	#12	20	1		BD-122 EAST RECPS
BD122 WEST RECPS		1	20	(2)#12	THHN	#12		1080			17	C	18			1080		(2)#12	THHN	#12	20	1		BD-122 EAST RECPS
BD-120 RECPS		1	20	(2)#12	THHN	#12		900			19	A	20			900		(2)#12	THHN	#12	20	1		WOMENS LOCK RECPS
MENS LOCER RECPS		1	20	(2)#12	THHN	#12		720			21	B	22			720		(2)#12	THHN	#12	20	1		BD-116 WEST RECPS
BD-116 EAST RECPS		1	20	(2)#12	THHN	#12		900			23	C	24			720		(2)#12	THHN	#12	20	1		BD-115 WEST RECPS
BD-115 EAST RECPS		1	20	(2)#12	THHN	#12		720			25	A	26			900		(2)#12	THHN	#12	20	1		BD-114 RECPS
BD-113 RECPS		1	20	(2)#12	THHN	#12		1080			27	B	28			1080		(2)#12	THHN	#12	20	1		BD-112 RECPS SOUTH
BD-110 SOUTH RECPS		1	20	(2)#12	THHN	#12		900			29	C	30			1080		(2)#12	THHN	#12	20	1		BD-112 RECPS NORTH
BD-117 RECPS		1	20	(2)#12	THHN	#12		900			31	A	32			540		(2)#12	THHN	#12	20	1		BD-110 NORTH RECPS
BASEMENT LIGHTING 1		1	20	(2)#12	THHN	#12	1587				33	B	34			540		(2)#12	THHN	#12	20	1		CORRIDOR C003 RECPS
BASEMENT LIGHTING 2		1	20	(2)#12	THHN	#12	1510				35	C	36								20	1		SPARE
SPARE		1	20								37	A	38	S	13700									SPACE
SPARE		1	20								39	B	40	S	12600			(3)2/0	THHN	#4	125	3		PANEL 11S5
SPARE		1	20								41	C	42	S	13648									SPACE
SPARE		1	20								43	A	44								20	1		SPARE
SPARE		1	20								45	B	46								20	1		SPARE
SPARE		1	20								47	C	48								20	1		SPARE
SPARE		1	20								49	A	50								20	1		SPARE
SPARE		1	20								51	B	52								20	1		SPARE
SPARE		1	20								53	C	54								20	1		SPARE
SUMMARY CONNECTED LOADS							3097	12960	0 2200 0 0 0 0 0	M A S E H T O	LOAD (VOLT-AMPERES)	M A S E H T O	0 1800 39648 0 0 0 0	14040	0			SUMMARY CONNECTED LOADS						SUMMARY CONNECTED LOADS

DESCRIPTION	CONN. KVA	D.F	DEM. KVA	
LIGHTING	3.1	1.25	3.9	
RECEPTACLES (FIRST 10KW)	10.0	1.0	10.0	
RECEPTACLES (REMAINDER)	17.0	0.5	8.5	
MOTORS	0.0	1.0	0.0	
LARGEST MOTOR	0.0	1.25	0.0	
APPLIANCES	4.0	1.0	4.0	
SUBFEED	39.9	0.8	32.0	
EQUIPMENT	0.0	1.0	0.0	
HEATING	0.0	1.0	0.0	
TRANSFORMER	0.0	1.0	0.0	
OTHER	0.0	1.0	0.0	
TOTAL KVA	74.0 KVA		58.3 KVA	
TOTAL AMP	205.5 AMP		161.9 AMP	
DESIGN (MAX)			200 AMP	
SPARE			38.1 AMP	

AMPERAGE FED TO PANEL	200 AMP	
TOTAL CONNECTED LOAD	205.5 AMP	74.0 KVA
TOTAL DEMAND LOAD	161.9 AMP	58.3 KVA
DESIGN (MAX)	200 AMP	72.1 KVA
SPARE LOAD	38 AMP	13.7 KVA
CONNECTED LOAD BALANCE SUMMARY		
PHASE A	199.8 AMP	23.98 KVA
PHASE B	203.9 AMP	24.467 KVA
PHASE C	213.3 AMP	25.598 KVA
A TO B	-2 %	
B TO C	-5 %	
C TO A	6 %	

NOTE: ALL BRANCH WIRE SIZING IS BASED ON CIRCUIT SHOWN BEING THE ONLY CIRCUIT WITHIN THE CONDUIT. AT CONTRACTOR OPTION UP TO 3 CIRCUITS MAY BE RUN TOGETHER IN A SINGLE CONDUIT AS LONG AS THEY DO NO SHARE A NEUTRAL AND CONDUCTORS ARE DERATED BASED ON 2016 NEC TABLE 310.15(B)(3)(a)

LEGEND/KEY	
T=TRANSFORMER	
S=SUBFEED	
O=OTHER	
M=MOTOR	
A=APPLIANCE	
E=EQUIPMENT	
H=HEATING	
R=RECEPTACLES	
L=LIGHTING	
CONN.=CONNECTED	
DEM.=DEMAND	
SPR=SPARE	
SPC=SPACE	
D.F.=DEMAND FACTOR	
GFCI=GROUND FAULT CIRCUIT	
ST-SHUNT TRIP	

PANEL "ES1055"

PANEL LOCATION: ELECTRICAL BD-130A
MFR/MODEL: SQUARE D NQ OR APPROVED EQUAL

L-L VOLT: 208 | PHASE: 3 | MAIN: LUG N | BREAKER Y
L-N VOLT: 120 | WIRES: 4 | WIRE SIZE: (4) 3/0 THHN + #2 CU | FED FROM: SWBD-EQ BRANCH
RATED AMP: 100 | NEURAL 100% | COND. SIZE: 2-1/2" EMT | MOUNT: SURFACE

DESCRIPTION	BREAKER TYPE	POLE	AMP	BRANCH WIRE SIZE	INSULATION	GND	L-LOAD	R-LOAD	O-LOAD	T/S/O/M A/E/H	PHASE			T/S/O/M A/E/H	O-LOAD	R-LOAD	L-LOAD	BRANCH WIRE SIZE	INSULATION	GND	BREAKER AMP	POLE	TYPE	DESCRIPTION
NE WORK STATION EM RECPS		1	20	(2)#12	THHN	#12			1080		1	A	2			1080		(2)#12	THHN	#12	20	1		CENTRAL WORK STN. EM RECPS
SE WORK STATION EM RECPS		1	20	(2)#12	THHN	#12			1080		3	B	4								20	1		SPARE
DOOR HOLD OPENS		1	20	(2)#12	THHN	#12		500			5	C	6								20	1		SPARE
BASEMENT LEVEL EM LIGHTING		1	20	(2)#12	THHN	#12	1744				7	A	8								20	1		SPARE
EXTERIOR EGRESS LIGHTING		1	20	(2)#12	THHN	#12	49				9	B	10								20	1		SPARE
SPACE											11	C	12											SPACE
SPACE											13	A	14											SPACE
SPACE											15	B	16											SPACE
SPACE											17	C	18											SPACE
SPACE											19	A	20											SPACE
SPACE											21	B	22											SPACE
SPACE											23	C	24											SPACE
SPACE											25	A	26											SPACE
SPACE											27	B	28											SPACE
SPACE											29	C	30											SPACE
SPACE											31	A	32											SPACE
SPACE											33	B	34											SPACE
SPACE											35	C	36											SPACE
PANEL ES11S5		1	50	#6	THHN	#8			2718	S	37	A	38											SPACE
									2538	S	39	B	40											SPACE
									3502	S	41	C	42											SPACE
SUMMARY CONNECTED LOADS									0 0 8758 0 0 0 0	M A S E H T O	LOAD (VOLT-AMPERES)	M A S E H T O	0 0 0 0 0 0 0	1080	0			SUMMARY CONNECTED LOADS						SUMMARY CONNECTED LOADS

DESCRIPTION	CONN. KVA	D.F	DEM. KVA	
LIGHTING	1.8	1.25	2.2	
RECEPTACLES (FIRST 10KW)	3.7	1.0	3.7	
RECEPTACLES (REMAINDER)	0.0	0.5	0.0	
MOTORS	0.0	1.0	0.0	
LARGEST MOTOR	0.0	1.25	0.0	
APPLIANCES	0.0	1.0	0.0	
SUBFEED	8.8	0.8	7.0	
EQUIPMENT	0.0	1.0	0.0	
HEATING	0.0	1.0	0.0	
TRANSFORMER	0.0	1.0	0.0	
OTHER	0.0	1.0	0.0	
TOTAL KVA	14.3 KVA		13.0 KVA	
TOTAL AMP	39.7 AMP		36.1 AMP	
DESIGN (MAX)			100 AMP	
SPARE			63.9 AMP	

AMPERAGE FED TO PANEL	100 AMP	
TOTAL CONNECTED LOAD	39.7 AMP	14.3 KVA
TOTAL DEMAND LOAD	36.1 AMP	13.0 KVA
DESIGN (MAX)	100 AMP	36.0 KVA
SPARE LOAD	64 AMP	23.0 KVA
CONNECTED LOAD BALANCE SUMMARY		
PHASE A	55.2 AMP	6.622 KVA
PHASE B	30.6 AMP	3.667 KVA
PHASE C	33.4 AMP	4.002 KVA
A TO B	-45 %	
B TO C	-9 %	
C TO A	-55 %	

NOTE: ALL BRANCH WIRE SIZING IS BASED ON CIRCUIT SHOWN BEING THE ONLY CIRCUIT WITHIN THE CONDUIT. AT CONTRACTOR OPTION UP TO 3 CIRCUITS MAY BE RUN TOGETHER IN A SINGLE CONDUIT AS LONG AS THEY DO NO SHARE A NEUTRAL AND CONDUCTORS ARE DERATED BASED ON 2016 NEC TABLE 310.15(B)(3)(a)

LEGEND/KEY	
T=TRANSFORMER	
S=SUBFEED	
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M=MOTOR	
A=APPLIANCE	
E=EQUIPMENT	
H=HEATING	
R=RECEPTACLES	
L=LIGHTING	
CONN.=CONNECTED	
DEM.=DEMAND	
SPR=SPARE	
SPC=SPACE	
D.F.=DEMAND FACTOR	
GFCI=GROUND FAULT CIRCUIT	
ST-SHUNT TRIP	

PANEL "EB1055"

PANEL LOCATION: ELECTRICAL BD-130A
MFR/MODEL: SQUARE D NQ OR APPROVED EQUAL
AIC: 10,000

L-L VOLT: 208 | PHASE: 3 | MAIN: LUG N | BREAKER Y
L-N VOLT: 120 | WIRES: 4 | WIRE SIZE: (6) 4/0 THHN + (2) 2/0 CU | FED FROM: SWBD-EQ BRANCH
RATED AMP: 225 | NEURAL 100% | COND. SIZE: (2) 3" EMT | MOUNT: SURFACE

DESCRIPTION	BREAKER TYPE	POLE	AMP	BRANCH WIRE SIZE	INSULATION	GND	L-LOAD	R-LOAD	O-LOAD	T/S/O/M A/E/H	PHASE			T/S/O/M A/E/H	O-LOAD	R-LOAD	L-LOAD	BRANCH WIRE SIZE	INSULATION	GND	BREAKER AMP	POLE	TYPE	DESCRIPTION
AHU-1 SUPPLY		3	80	#2	THHN	#8			4350	M	1	A	2	M	2688									
									4350	M	3	B	4	M	2688			(4)#6	THHN	#8	50	3		M-AHU-85 RETURN
									4350	M	5	C	6	M	2688									
BASEMENT TERMINAL UNITS		1	20	(2)#12	THHN	#12			1100	M	7	A	8	M	734									
UH-1		1	20	(2)#12	THVN	#12			98	M	9	B	10	M	734			(4)#12	THHN	#12	20	3		HWP-1
HX-1, HX-2, VMS-1		1	20	(2)#12	THVN	#12			1920	O	11	C	12	M	734									
CP-1		1	20	(2)#12	THVN	#12			114	M	13	A	14	M	734									
EF-B08		1	20	(2)#12	THVN	#12			792	M	15	B	16	M	734			(4)#12	THHN	#12	20	3		HWP-2
MAN HOLE #10 RECPS		1	20	(2)#8	THVN	#8		180			17	C	18	M	734									
MANHOLE #11 RECPS		1	20	(2)#8	THVN	#8		180			19	A	20	M	3600			(2)#4	THWN	#8	75	1		EXT. ACCESS CONTROL GATE
NEW MANHOLE RECPS		1	20	(2)#8	THVN	#8		180			21	B	22								20	1		SPARE
SPARE		1	20								23	C	24								20	1		SPARE
SPARE		1	20								25	A	26								20	1		SPARE
SPARE		1	20								27	B	28								20	1		SPARE
SPARE		1	20								29	C	30								20	1		SPARE
SPARE		1	20								31	A	32								20	1		SPARE
SPARE		1	20								33	B	34								20	1		SPARE
SPARE		1	20								35	C	36								20	1		SPARE
SPARE		1	20								37	A	38	S	1568									
SPARE		1	20								39	B	40	S	1200			#1	THHN	#6	100	3		PANEL EB11S5
SPARE		1	20								41	C	42	S	1200									
SUMMARY CONNECTED LOADS									15152 0 0 0 0 0 1920	M A S E H T O	LOAD (VOLT-AMPERES)	M A S E H T O	16068 0 3968 0 0 0 0	0	0			SUMMARY CONNECTED LOADS						SUMMARY CONNECTED LOADS

DESCRIPTION	CONN. KVA	D.F	DEM. KVA	
LIGHTING	0.0	1.25	0.0	
RECEPTACLES (FIRST 10KW)	0.5	1.0	0.5	
RECEPTACLES (REMAINDER)	0.0	0.5	0.0	
MOTORS	26.9	1.0	26.9	
LARGEST MOTOR	4.4	1.25	5.4	
APPLIANCES	0.0	1.0	0.0	
SUBFEED	4.0	0.8	3.2	
EQUIPMENT	0.0	1.0	0.0	
HEATING	0.0	1.0	0.0	
TRANSFORMER	0.0	1.0	0.0	
OTHER	1.9	1.0	1.9	
TOTAL KVA	37.6 KVA		37.9 KVA	
TOTAL AMP	104.5 AMP		105.3 AMP	
DESIGN (MAX)			225 AMP	
SPARE			119.7 AMP	

AMPERAGE FED TO PANEL	225 AMP	
TOTAL CONNECTED LOAD	104.5 AMP	37.6 KVA
TOTAL DEMAND LOAD	105.3 AMP	37.9 KVA
DESIGN (MAX)	225 AMP	81.1 KVA
SPARE LOAD	120 AMP	43.1 KVA
CONNECTED LOAD BALANCE SUMMARY		
PHASE A	125.6 AMP	15.068 KVA
PHASE B	89.8 AMP	10.774 KVA
PHASE C	98.4 AMP	11.806 KVA
A TO B	28 %	
B TO C	-10 %	
C TO A	-28 %	

NOTE: ALL BRANCH WIRE SIZING IS BASED ON CIRCUIT SHOWN BEING THE ONLY CIRCUIT WITHIN THE CONDUIT. AT CONTRACTOR OPTION UP TO 3 CIRCUITS MAY BE RUN TOGETHER IN A SINGLE CONDUIT AS LONG AS THEY DO NO SHARE A NEUTRAL AND CONDUCTORS ARE DERATED BASED ON 2016 NEC TABLE 310.15(B)(3)(a)

LEGEND/KEY	
T=TRANSFORMER	
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A=APPLIANCE	
E=EQUIPMENT	
H=HEATING	
R=RECEPTACLES	
L=LIGHTING	
CONN.=CONNECTED	
DEM.=DEMAND	
SPR=SPARE	
SPC=SPACE	
D.F.=DEMAND FACTOR	
GFCI=GROUND FAULT CIRCUIT	
ST-SHUNT TRIP	

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE-9881
NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title: ELECTRICAL PANEL SCHEDULES BASEMENT LEVEL
Approved: Project Director: FARGO VAHCS
Project Title: EXPAND BLDG. 1 FOR PRIMARY CARE
Location: 2101 ELM STREET FARGO, ND 58102
Date: 11/16/2021 | Checked: RD | Drawn: JS
Project Number: 437-315
Building Number: 1
Drawing Number: E-001
Dwg. 92 of 128

Office of Construction and Facilities Management
Department of Veterans Affairs

12/2/2009 10:11:29 AM
VA FORM 08-6231

PANEL "1155"

PANEL LOCATION: ELECTRICAL 1D-195 | L-L VOLT: 208 | PHASE: 3 | MAIN: LUG N | BREAKER Y
MFR/MODEL: SQUARE D NQ OR APPROVED EQUAL | L-N VOLT: 120 | WIRES: 4 | WIRE SIZE: (4) 2/0 THHN + #4 CU | FED FROM: PANEL 1055
AIC: 10,000 | RATED AMP: 250 | NEURAL: 100% | COND. SIZE: 2" EMT | MOUNT: SURFACE

DESCRIPTION	BREAKER TYPE	POLE	AMP	BRANCH WIRE SIZE	INSULATION	GND	L-LOAD	R-LOAD	O-LOAD	T/S/O/M /AE/H	PHASE			T/S/O/M /AE/H	O-LOAD	R-LOAD	L-LOAD	BRANCH WIRE SIZE	INSULATION	GND	BREAKER AMP	POLE	TYPE	DESCRIPTION
1D-193 WAITING AREA RECPS	1	20	(2)#12	THHN	#12		540				1	A	2			720		(2)#12	THHN	#12	20	1		1D-193 OFFICE RECPS
1D-193 RECEPTION RECPS	1	20	(2)#12	THHN	#12		1080				3	B	4			540		(2)#12	THHN	#12	20	1		CORRIDOR C008 RECPS
1D-199 RECPS	1	20	(2)#12	THHN	#12		900				5	C	6			1080		(2)#12	THHN	#12	20	1		1D-198 RECPS
1D-197 RECPS	1	20	(2)#12	THHN	#12		900				7	A	8			900		(2)#12	THHN	#12	20	1		1D-196 RECPS
1D-194 & 1D-195 RECPS	1	20	(2)#12	THHN	#12		1080				9	B	10			1080		(2)#12	THHN	#12	20	1		1D-192 RECPS
1D-191 WEST RECPS	1	20	(2)#12	THHN	#12		900				11	C	12			720		(2)#12	THHN	#12	20	1		1D-191 EAST RECPS
1D-191A RECPS	1	20	(2)#12	THHN	#12		720				13	A	14			1080		(2)#12	THHN	#12	20	1		1D-190 RECPS
1D-189 RECPS	1	20	(2)#12	THHN	#12		1080				15	B	16			1080		(2)#12	THHN	#12	20	1		1D-187 RECPS
1D-186 RECPS	1	20	(2)#12	THHN	#12		1080				17	C	18			1080		(2)#12	THHN	#12	20	1		1D-185 RECPS
1D-184 RECPS	1	20	(2)#12	THHN	#12		1260				19	A	20			1080		(2)#12	THHN	#12	20	1		1D-181 RECPS
1D-179 RECPS	1	20	(2)#12	THHN	#12		1080				21	B	22			1080		(2)#12	THHN	#12	20	1		1D-177 RECPS
1D-178 & AD-180 RECPS	1	20	(2)#12	THHN	#12		1080				23	C	24			900		(2)#12	THHN	#12	20	1		1D-182 & 1D-183 RECPS
1D-173 WEST RECPS	1	20	(2)#12	THHN	#12		1080				25	A	26			720		(2)#12	THHN	#12	20	1		1D-173 RECPS CENTER 1 RECPS
1D-173 RECPS CENTER 2 RECPS	1	20	(2)#12	THHN	#12		1080				27	B	28			900		(2)#12	THHN	#12	20	1		1D-173 NORTH RECPS
1D-173 SOUTH RECPS	1	20	(2)#12	THHN	#12		1080				29	C	30			720		(2)#12	THHN	#12	20	1		CORRIDOR C005 & AD-188A RECPS
1D-188 MICROWAVE	1	20	(2)#12	THHN	#12			1100	A		31	A	32	A	1800			(2)#12	THHN	#12	20	1		1D-188 FRIDGE
1D-188 NORTH RECPS	1	20	(2)#12	THHN	#12		720				33	B	34			540		(2)#12	THHN	#12	20	1		1D-188 SOUTH RECPS
1D-171 RECPS	1	20	(2)#12	THHN	#12		1080				35	C	36			1080		(2)#12	THHN	#12	20	1		1D-172 RECPS
1D-174 RECPS	1	20	(2)#12	THHN	#12		720				37	A	38			1080		(2)#12	THHN	#12	20	1		1D-175 RECPS
1D-176 RECPS	1	20	(2)#12	THHN	#12		1080				39	B	40			180		(2)#12	THHN	#12	20	1		1D-176 PATENT LIFT
BLANKET WARMER C005	1	20	(2)#12	THHN	#12		800				41	C	42									1		SPARE
SPARE	1	20									43	A	44								20	1		SPARE
LEVEL 1 LIGHTING 1	1	20	(2)#12	THHN	#12	660					45	B	46			1288	(2)#12	THHN	#12		20	1		LEVEL 1 LIGHTING 2
SPARE	1	20									47	C	48								20	1		SPARE
SPARE	1	20									49	A	50								20	1		SPARE
SPARE	1	20									51	B	52								20	1		SPARE
SPARE	1	20									53	C	54								20	1		SPARE
SPACE											55	A	56											SPACE
SPACE											57	B	58											SPACE
SPACE											59	C	60											SPACE
SPACE											61	A	62											SPACE
SPACE											63	B	64											SPACE
SPACE											65	C	66											SPACE
SUMMARY CONNECTED LOADS							660	19340	0 1100 0 0 0 0 0	M A S E H T O	LOAD (VOLT-AMPERES)			M A S E H T O	0 1800 0 0 0 0 0	16560	1288							SUMMARY CONNECTED LOADS

DESCRIPTION	CONN. KVA				D.F	DEM. KVA	AMPERAGE FED TO PANEL	125 AMP		
LIGHTING	1.9				1.25	2.4	TOTAL CONNECTED LOAD	113.1 AMP	40.7 KVA	
RECEPTACLES (FIRST 10KW)	10.0				1.0	10.0	TOTAL DEMAND LOAD	78.5 AMP	28.3 KVA	
RECEPTACLES (REMAINDER)	25.9				0.5	13.0	DESIGN (MAX)	125 AMP	45.0 KVA	
MOTORS	0.0				1.0	0.0	SPARE LOAD	46 AMP	16.7 KVA	
LARGEST MOTOR	0.0				1.25	0.0				
APPLIANCES	2.9				1.0	2.9	CONNECTED LOAD BALANCE SUMMARY			
SUBFEED	0.0				0.8	0.0	PHASE A	114.2 AMP	13.7 KVA	
EQUIPMENT	0.0				1.0	0.0	PHASE B	121.2 AMP	14.548 KVA	
HEATING	0.0				1.0	0.0	PHASE C	104.2 AMP	12.5 KVA	
TRANSFORMER	0.0				1.0	0.0				
OTHER	0.0				1.0	0.0	A TO B	-6 %		
							B TO C	14 %		
							C TO A	-10 %		
TOTAL KVA	40.7	KVA				28.3	KVA	NOTE: ALL BRANCH WIRE SIZING IS BASED ON CIRCUIT SHOWN BEING THE ONLY CIRCUIT		
TOTAL AMP	113.1	AMP				78.5	AMP	WITHIN THE CONDUIT. AT CONTRACTOR OPTION UP TO 3 CIRCUITS MAY BE RUN TOGETHER IN		
DESIGN (MAX)						125	AMP	A SINGLE CONDUIT AS LONG AS THEY DO NO SHARE A NEUTRAL AND CONDUCTORS ARE		
SPARE						46.5	AMP	DERATED BASED ON 2016 NEC TABLE 310.15(B)(3)(a)		

LEGEND/KEY
T=TRANSFORMER
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A=APPLIANCE
E=EQUIPMENT
H=HEATING
R=RECEPTACLES
L=LIGHTING
CONN.=CONNECTED
DEM=DEMAND
SPR=SPARE
SPC=SPACE
D.F =DEMAND FACTOR
GFCI=GROUND FAULT CIRCUIT
ST-SHUNT TRIP

PANEL "ES115S"

PANEL LOCATION: ELECTRICAL 1D-195 | L-L VOLT: 208 | PHASE: 3 | MAIN: LUG N | BREAKER Y
MFR/MODEL: SQUARE D NQ OR APPROVED EQUAL | L-N VOLT: 120 | WIRES: 4 | WIRE SIZE: (4) #6 THHN +#8 CU | FED FROM: PANEL ES105S
AIC: 10,000 | RATED AMP: 50 | NEURAL: 100% | COND. SIZE: 1" EMT | MOUNT: SURFACE

DESCRIPTION	BREAKER TYPE	POLE	AMP	BRANCH WIRE SIZE	INSULATION	GND	L-LOAD	R-LOAD	O-LOAD	T/S/O/M /AE/H	PHASE			T/S/O/M /AE/H	O-LOAD	R-LOAD	L-LOAD	BRANCH WIRE SIZE	INSULATION	GND	BREAKER AMP	POLE	TYPE	DESCRIPTION
WEST EXAM EM RECPS	1	20	(2)#12	THHN	#12			540			1	A	2			1080		(2)#12	THHN	#12	20	1		SOUTH EXAM EM RECPS
NORTH EXAM EM RECPS	1	20	(2)#12	THHN	#12			900			3	B	4			1080		(2)#12	THHN	#12	20	1		NW OFFICES EM RECPS
RECEPTION EM RECPS	1	20	(2)#12	THHN	#12			540			5	C	6			900		(2)#12	THHN	#12	20	1		WORK ROOM EM RECPS 1
PAGING SYSTEM RECP #1	1	20	(2)#12	THHN	#12			198			7	A	8			900		(2)#12	THHN	#12	20	1		WORK ROOM EM RECPS 2
PAGING SYSTEM RECP #2	1	20	(2)#12	THHN	#12			198			9	B	10			360		(2)#12	THHN	#12	20	1		WORK ROOM EM RECPS 3
LEVEL 1 EMERGENCY LIGHTING	1	20	(2)#12	THHN	#12		1562				11	C	12			500		(2)#12	THHN	#12	20	1		DOOR HOLD OPENS
SPARE	1	20									13	A	14								20	1		SPARE
SPARE	1	20									15	B	16								20	1		SPARE
SPARE	1	20									17	C	18								20	1		SPARE
SPARE	1	20									19	A	20								20	1		SPARE
SPARE	1	20									21	B	22								20	1		SPARE
SPACE											23	C	24											SPACE
SPACE											25	A	26											SPACE
SPACE											27	B	28											SPACE
SPACE											29	C	30											SPACE
SPACE											31	A	32											SPACE
SPACE											33	B	34											SPACE
SPACE											35	C	36											SPACE
SPACE											37	A	38											SPACE
SPACE											39	B	40											SPACE
SPACE											41	C	42											SPACE
SUMMARY CONNECTED LOADS							1562	2376	0 0 0 0 0 0 0	M A S E H T O	LOAD (VOLT-AMPERES)			M A S E H T O	0 0 0 0 0 0 0	4820	0							SUMMARY CONNECTED LOADS

DESCRIPTION	CONN. KVA				D.F	DEM. KVA	AMPERAGE FED TO PANEL	50 AMP		
LIGHTING	1.6				1.25	2.0	TOTAL CONNECTED LOAD	24.3 AMP	8.8 KVA	
RECEPTACLES (FIRST 10KW)	7.2				1.0	7.2	TOTAL DEMAND LOAD	25.4 AMP	9.1 KVA	
RECEPTACLES (REMAINDER)	0.0				0.5	0.0	DESIGN (MAX)	50 AMP	18.0 KVA	
MOTORS	0.0				1.0	0.0	SPARE LOAD	25 AMP	8.9 KVA	
LARGEST MOTOR	0.0				1.25	0.0				
APPLIANCES	0.0				1.0	0.0	CONNECTED LOAD BALANCE SUMMARY			
SUBFEED	0.0				0.8	0.0	PHASE A	22.7 AMP	2.718 KVA	
EQUIPMENT	0.0				1.0	0.0	PHASE B	21.2 AMP	2.538 KVA	
HEATING	0.0				1.0	0.0	PHASE C	29.2 AMP	3.502 KVA	
TRANSFORMER	0.0				1.0	0.0				
OTHER	0.0				1.0	0.0	A TO B	7 %		
							B TO C	-38 %		
							C TO A	22 %		
TOTAL KVA	8.8	KVA				9.1	KVA	NOTE: ALL BRANCH WIRE SIZING IS BASED ON CIRCUIT SHOWN BEING THE ONLY CIRCUIT		
TOTAL AMP	24.3	AMP				25.4	AMP	WITHIN THE CONDUIT. AT CONTRACTOR OPTION UP TO 3 CIRCUITS MAY BE RUN TOGETHER IN		
DESIGN (MAX)						50	AMP	A SINGLE CONDUIT AS LONG AS THEY DO NO SHARE A NEUTRAL AND CONDUCTORS ARE		
SPARE						24.6	AMP	DERATED BASED ON 2016 NEC TABLE 310.15(B)(3)(a)		

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L=LIGHTING
CONN.=CONNECTED
DEM=DEMAND
SPR=SPARE
SPC=SPACE
D.F =DEMAND FACTOR
GFCI=GROUND FAULT CIRCUIT
ST-SHUNT TRIP

PANEL "EB115S"

PANEL LOCATION: ELECTRICAL 1D-195 | L-L VOLT: 208 | PHASE: 3 | MAIN: LUG N | BREAKER Y
MFR/MODEL: SQUARE D NQ OR APPROVED EQUAL | L-N VOLT: 120 | WIRES: 4 | WIRE SIZE: (4) #1 THHN + #6 CU | FED FROM: PANEL EB105S
AIC: 10,000 | RATED AMP: 100 | NEURAL: 100% | COND. SIZE: 2" EMT | MOUNT: SURFACE

DESCRIPTION	BREAKER TYPE	POLE	AMP	BRANCH WIRE SIZE	INSULATION	GND	L-LOAD	R-LOAD	O-LOAD	T/S/O/M /AE/H	PHASE			T/S/O/M /AE/H	O-LOAD	R-LOAD	L-LOAD	BRANCH WIRE SIZE	INSULATION	GND	BREAKER AMP	POLE	TYPE	DESCRIPTION
LEVEL 1 TERMINAL UNITS	1	1	20	(2)#12	THHN	#12			1040	E	1	A	2	M	528			(2)#12	THHN	#12	20	1		EF-120
SPARE	1	1	20								3	B	4	M	1200			(2)#12	THHN	#12	20	1		DOOR OPENER 1 - RECPT.
SPARE	1	1	20								5	C	6	M	1200			(2)#12	THHN	#12	20	1		DOOR OPENER 2 - RECPT.
SPARE	1	1	20								7	A	8								20	1		SPARE
SPARE	1	1	20								9	B	10								20	1		SPARE
SPARE	1	1	20								11	C	12								20	1		SPARE
SPARE	1	1	20								13	A	14								20	1		SPARE
SPARE	1	1	20								15	B	16								20	1		SPARE
SPACE											17	C	18											SPACE
SPACE											19	A	20											SPACE
SPACE											21	B	22											SPACE
SPACE											23	C	24											SPACE
SPACE											25	A	26											SPACE
SPACE											27	B	28											SPACE
SPACE											29	C	30											SPACE
SPACE											31	A	32											SPACE
SPACE											33	B	34											SPACE
SPACE											35	C	36											SPACE
SPACE											37	A	38											SPACE
SPACE											39	B	40											SPACE
SPACE											41	C	42											SPACE
SUMMARY CONNECTED LOADS							0	0	0 0 0 0 0 0 0	M A S E H T O	LOAD (VOLT-AMPERES)			M A S E H T O	2928 0 0 0 0 0 0	0	0							SUMMARY CONNECTED LOADS

DESCRIPTION	CONN. KVA				D.F	DEM. KVA	AMPERAGE FED TO PANEL	100 AMP		
LIGHTING	0.0				1.25	0.0	TOTAL CONNECTED LOAD	11.0 AMP	4.0 KVA	
RECEPTACLES (FIRST 10KW)	0.0				1.0	0.0	TOTAL DEMAND LOAD	11.8 AMP	4.3 KVA	
RECEPTACLES (REMAINDER)	0.0				0.5	0.0	DESIGN (MAX)	100 AMP	36.0 KVA	
MOTORS	1.7				1.0	1.7	SPARE LOAD	88 AMP	31.8 KVA	
LARGEST MOTOR	1.2				1.25	1.5				
APPLIANCES	0.0				1.0	0.0	CONNECTED LOAD BALANCE SUMMARY			
SUBFEED	0.0				0.8	0.0	PHASE A	13.1 AMP	1.568 KVA	
EQUIPMENT	1.0				1.0	1.0	PHASE B	10.0 AMP	1.2 KVA	
HEATING	0.0				1.0	0.0	PHASE C	10.0 AMP	1.2 KVA	
TRANSFORMER	0.0				1.0	0.0				
OTHER	0.0				1.0	0.0	A TO B	23 %		
							B TO C	0 %		
							C TO A	-31 %		
TOTAL KVA	4.0	KVA				4.3	KVA	NOTE: ALL BRANCH WIRE SIZING IS BASED ON CIRCUIT SHOWN BEING THE ONLY CIRCUIT		
TOTAL AMP	11.0	AMP				11.8	AMP	WITHIN THE CONDUIT. AT CONTRACTOR OPTION UP TO 3 CIRCUITS MAY BE RUN TOGETHER IN		
DESIGN (MAX)						100	AMP	A SINGLE CONDUIT AS LONG AS THEY DO NO SHARE A NEUTRAL AND CONDUCTORS ARE		
SPARE						88.2	AMP	DERATED BASED ON 2016 NEC TABLE 310.15(B)(3)(a)		

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L=LIGHTING
CONN.=CONNECTED
DEM=DEMAND
SPR=SPARE
SPC=SPACE
D.F =DEMAND FACTOR
GFCI=GROUND FAULT CIRCUIT
ST-SHUNT TRIP

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE-9896
NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title: ELECTRICAL PANEL SCHEDULES LEVEL 1
Approved: Project Director: FARGO VAHCS
Project Title: EXPAND BLDG. 1 FOR PRIMARY CARE
Location: 2101 ELM STREET FARGO, ND 58102
Date: 11/16/2021 | Checked: RD | Drawn: JS
Project Number: 437-315
Building Number: 1
Drawing Number: E-002
Dwg. 93 of 128

Office of Construction and Facilities Management
Department of Veterans Affairs

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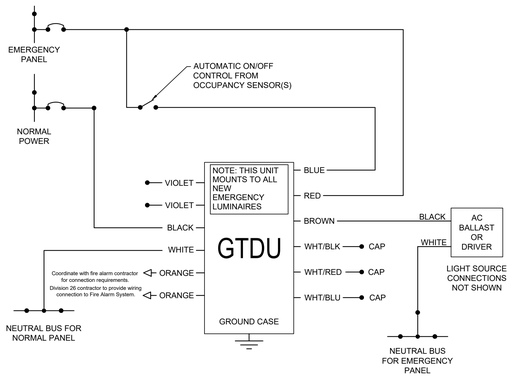
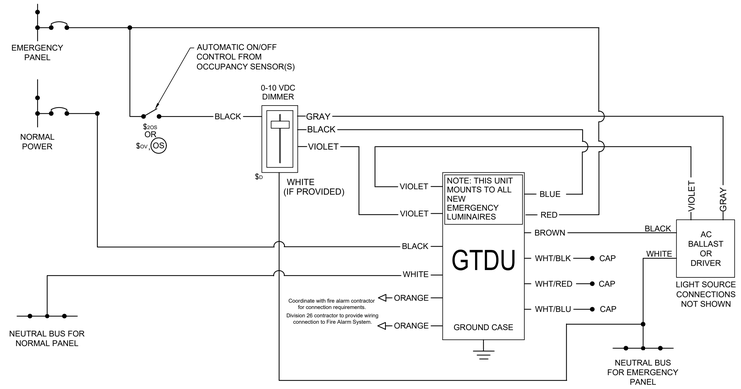
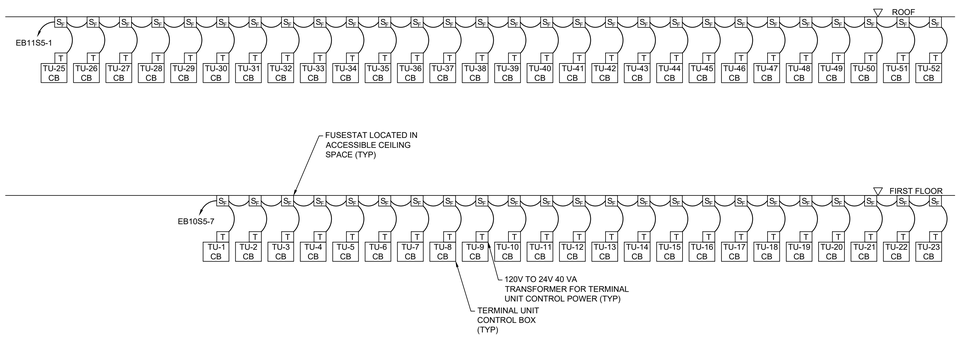


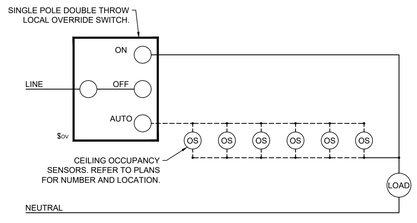
1 NON-DIMMING EMERGENCY SWITCH BYPASS WIRING DIAGRAM
SCALE: NTS



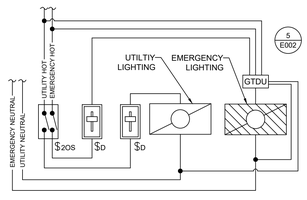
2 DIMMING EMERGENCY SWITCH BYPASS WIRING DIAGRAM
SCALE: NTS



3 TERMINAL UNIT POWER SCHEMATIC
SCALE: NTS



4 OVERRIDE SWITCH WIRING DIAGRAM
SCALE: NTS



5 EXAM ROOM SWITCHING SCHEMATIC
SCALE: NTS

LIGHTING FIXTURE SCHEDULE

SYMBOL	LETTER DESIG.	FIXTURE						LAMP			NOTES		HYPERLINK
		MANUFACTURER	DESCRIPTION	CATALOG NO.	LOCATION	TYPE	HEIGHT	TYPE	NO.	WATTS	LUMEN			
	A	NEW STAR LIGHTING	2X4 TROFFER	AACG24-HC20-IC20/CA12-L2351C-RW	CEILING	RECESSED	-	LED	-	50	5950	1	-	SPEC
	AE	NEW STAR LIGHTING	2X4 TROFFER EMERGENCY	AACG24-HC20-IC20/CA12-L2351C-RW	CEILING	RECESSED	-	LED	-	50	5950	1	E	SPEC
	B	NEW STAR LIGHTING	LOW LUMEN 2X4 TROFFER	AACG24-HC20-IC20/CA12-CL351C-RW	CEILING	RECESSED	-	LED	-	34	4000	1	-	SPEC
	BE	NEW STAR LIGHTING	LOW LUMEN 2X4 TROFFER EMERGENCY	AACG24-HC20-IC20/CA12-CL351C-RW	CEILING	RECESSED	-	LED	-	34	4000	1	E	SPEC
	C	NEW STAR LIGHTING	4' LED LINEAR	VIC-4-N-L2-35-1C-RW-UN-WH	CEILING	SURFACE	-	LED	-	50	5400	-	-	
	CE	NEW STAR LIGHTING	4' LED LINEAR EMERGENCY	VIC-4-N-L2-35-1C-RW-UN-WH	CEILING	SURFACE	-	LED	-	50	5400	-	E	SPEC
	D	NEW STAR LIGHTING	LOW LUMEN 4' LED LINEAR	VIC-4-N-CL-35-1C-RW-UN-WH	CEILING	SURFACE	-	LED	-	37	4000	-	-	SPEC
	DE	NEW STAR LIGHTING	LOW LUMEN 4' LED LINEAR EMERGENCY	VIC-4-N-CL-35-1C-RW-UN-WH	CEILING	SURFACE	-	LED	-	37	4000	-	E	SPEC
	F	NEW STAR LIGHTING	6" LED DOWNLIGHT	DLM-6-D-L135-A-A-B-3-UNV	CEILING	RECESSED	-	LED	-	11	847	-	-	SPEC
	G	WAC LIGHTING	2' BATHROOM VANITY LIGHT	WS-41125-3500K-19W-1421-821-AL	WALL	SURFACE	7' 6"	LED	-	19	1421	1	E	SPEC
	H	COMPASS LIGHTING	OUTDOOR WALL SCONCE	CUSO DB-H	WALL	SURFACE	7' 6"	LED	-	7	1600	1	B,E	SPEC
	J	-	EXISTING RECESSED LUMINAIRE	-	CEILING	RECESSED	-	-	-	-	-	-	-	
	X	DUAL-LITE	EXIT SIGN	LE-__-__-G-__-C-E-I	CEILING	SURFACE	7' 6"	LED	-	3.3 - 4.5	-	1,2,3	E	SPEC

LUMINAIRE NOTES:
1. PROVIDE ALL NECESSARY HARDWARE OR KITS FOR MOUNTING LUMINAIRE AS NOTED BY LOCATION AND TYPE.
2. CONNECT TO NEAREST UNSWITCHED CIRCUIT.
3. REFER TO PLANS FOR DIRECTIONAL ARROWS, SINGLE OR DOUBLE SIDED, AND MOUNTING TYPE WILL BE WALL MOUNTED UNLESS OTHERWISE NOTED ON PLANS.
4. DISABLE ONBOARD MOTION DETECTOR.

CONTROL NOTES:
A. ON BOARD OCCUPANCY SENSING.
B. ON BOARD PHOTO CONTROL.
C. 0-10 V DIMMING.
D. TRIAC DIMMING.
E. LUMINAIRE TO BE ON LIFE SAFETY POWER

GENERAL LUMINAIRE NOTES:
1. MODEL & MANUFACTURERS ARE LISTED AS BASIS OF DESIGN. EQUAL PRODUCTS WILL BE CONSIDERED. CONTRACTOR TO REFER TO SPECIFICATION, AND SALIENT FEATURES LISTED BOTH ON PLANS AND SPECIFICATIONS WHEN OFFERING EQUAL PRODUCTS.

LIGHTING CONTROL SCHEDULE

AON = AUTO ON | AOF = AUTO OFF | MON = MANUAL ON | MOF = MANUAL OFF | MOMO = MANUAL OFF WHILE OCCUPIED | TOO = TIME DELAY OFF | DLO = DAY LIGHT DETECTION | 3W = THREE WAY | 4W = 4 WAY | E = ENABLED | D = DISABLED

SWITCH SYMBOL	DESCRIPTION	MANUFACTURER	MODEL	LIGHTING RATING	FAN AMP RATING	FLOW/HEAT RATING	CONTROL OPTIONS									NOTES	HYPERLINK
							AON	AOF	MON	MOF	MOMO	TOO	DLO	3W	4W		
$	WALL SWITCH	HUBBELL	CS120	20	20	20	-	-	E	E	-	-	-	-	-	2	SPEC
$D	DIMMER SWITCH	LUTRON	NTSTV-DV	8	8	8	-	-	-	-	-	-	-	-	E	2	SPEC
$OS	WALL OCCUPANCY SENSOR SWITCH	LUTRON	MS-A102	6	4.4	4.4	E	E	D	E	E	30m	D	-	-	2	SPEC
$2OS	DPDT WALL OCCUPANCY SENSOR SWITCH	LUTRON	MS-A202	6	4.4	4.4	E	E	D	E	E	30m	D	-	-	1,2	SPEC
$OV	SPDT OVERRIDE SWITCH W/ CENTER OFF	LUTRON	MS-Z101	8	4.4	4.4	E	E	D	E	E	30m	D	-	E	2	SPEC
OS	CEILING OCCUPANCY SENSOR SWITCH	HUBBELL	OMNI-DT-500	.033	.033	.033	E	E	-	-	-	30m	-	-	-	3	SPEC

NOTES:
1. SWITCH TO BE DUAL POLE. ONE POLE FOR STANDARD ROOM LIGHTING AND THE OTHER POLE FOR EMERGENCY ROOM LIGHTING
2. COORDINATE COLOR WITH OWNER/ARCHITECT.
3. PROVIDE SENSOR WITH UVPP POWER PACK(S) AS NECESSARY FOR A COMPLETE INSTALLATION. PROVIDE SEPARATE POWER PACKS FOR NORMAL AND EMERGENCY LIGHTING
4. SET DAYTIME LIGHTING HOURS FOR BETWEEN 6 AM AND 10 PM. SET NIGHTTIME LIGHTING HOURS BETWEEN 10 PM AND 6 AM.

MODEL & MANUFACTURERS ARE LISTED AS BASIS OF DESIGN. EQUAL PRODUCTS WILL BE CONSIDERED. CONTRACTOR TO REFER TO SPECIFICATION, AND SALIENT FEATURES LISTED BOTH ON PLANS AND SPECIFICATIONS WHEN OFFERING EQUAL PRODUCTS.

SCHEDULE OF DISCONNECTS

EQUIPMENT	CONNECTED LOAD						DISCONNECT			FUSE			FEEDER			NOTES
	HP	W	FLA	MCA	PH	VOLTS	TYPE	MFR.	CATALOG NO.	TYPE	SIZE	POLES	SIZE	TYPE	GRND	
M-AHU-85 SUPPLY MOTOR	-	-	62.8	66.7	3	208	GENERAL DUTY FUSED	SCHNEIDER ELECTRIC	D323N	CARTRIDGE CLASS R	80A	3	#3	THHN	#8	-
M-AHU-85 RETURN MOTOR	-	-	38.8	41.2	3	208	GENERAL DUTY FUSED	SCHNEIDER ELECTRIC	D322N	CARTRIDGE CLASS R	50A	3	#6	THHN	#8	-
DOOR OPENER 1 & 2	1/2	-	-	-	1	120	FUSESTAT	COOPER	BP/SSU	EDISON BASE CLASS T	20A	1	#12	THHN	#12	-
EF-B08	1/2	-	6.6	-	1	120	FUSESTAT	COOPER	BP/SSU	EDISON BASE CLASS T	15A	1	#12	THHN	#12	-
EF-120	1/3	-	4.8	-	1	120	FUSESTAT	COOPER	BP/SSU	EDISON BASE CLASS T	10A	1	#12	THHN	#12	-
UH-1	-	-	.8	-	1	120	FUSESTAT	COOPER	BP/SSU	EDISON BASE CLASS T	2A	1	#12	THHN	#12	-
HWP-1	3	-	-	-	3	208	GENERAL DUTY FUSED	SCHNEIDER ELECTRIC	D323N	CARTRIDGE CLASS R	20A	2	#12	THHN	#12	-
HWP-2	3	-	-	-	3	208	GENERAL DUTY FUSED	SCHNEIDER ELECTRIC	D322N	CARTRIDGE CLASS R	20A	2	#12	THHN	#12	-
CP-1	-	-	.95	-	1	120	FUSESTAT	COOPER	BP/SSU	EDISON BASE CLASS T	2A	1	#12	THHN	#12	-
TU-1,2,3,4,5,6,7,8,9,10,11,12, 13,14,15,16,17,18,19,20,21, 22,23	-	40	-	-	1	120	FACTORY PROVIDED CONTRACTOR INSTALLED				-	-	-	-	-	-
TU-25,26,27,28,29,30,31,32, 33,34,35,36,37,38,39,40,41, 42,43,44,45,46,47,48,49,50, 51,52	-	40	-	-	1	120	FACTORY PROVIDED CONTRACTOR INSTALLED				-	-	-	-	-	-

MODEL & MANUFACTURERS ARE LISTED AS BASIS OF DESIGN. EQUAL PRODUCTS WILL BE CONSIDERED. CONTRACTOR TO REFER TO SPECIFICATION, AND SALIENT FEATURES LISTED BOTH ON PLANS AND SPECIFICATIONS WHEN OFFERING EQUAL PRODUCTS.

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE 9884
NORTH DAKOTA

ARCHITECT

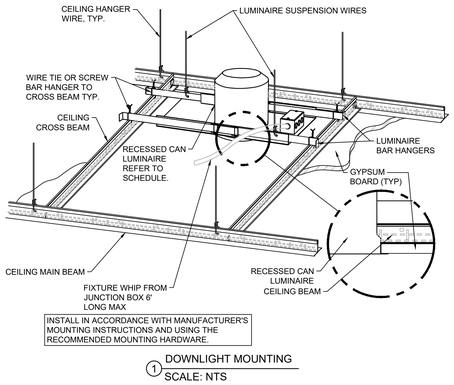
FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title: ELECTRICAL SCHEMATICS & SCHEDULES
Approved: Project Director: FARGO VAHCS
Project Title: EXPAND BLDG. 1 FOR PRIMARY CARE
Location: 2101 ELM STREET FARGO, ND 58102
Date: 11/16/2021
Checked: RD
Drawn: JS
Project Number: 437-315
Building Number: 1
Drawing Number: E-003
Dwg. 94 of 128

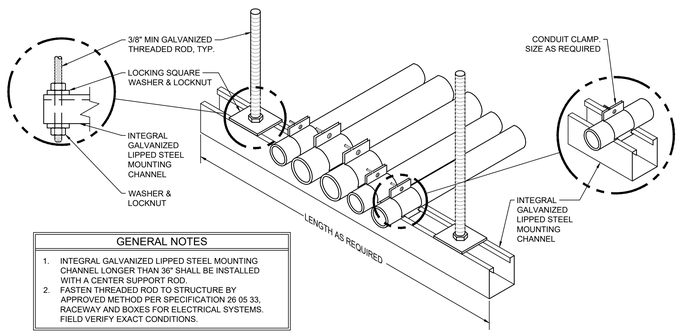
Office of Construction and Facilities Management
Department of Veterans Affairs

12/2/2009 10:11:29 AM

VA FORM 08-6231



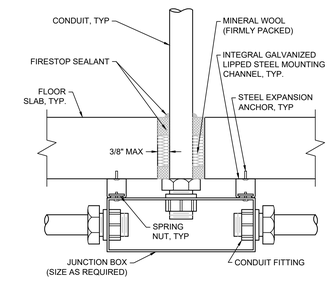
1 DOWNLIGHT MOUNTING
SCALE: NTS



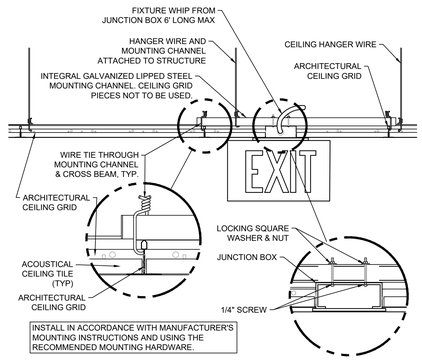
GENERAL NOTES

1. INTEGRAL GALVANIZED LIPPED STEEL MOUNTING CHANNEL LONGER THAN 36" SHALL BE INSTALLED WITH A CENTER SUPPORT ROD.
2. FASTEN THREADED ROD TO STRUCTURE BY APPROVED METHOD PER SPECIFICATION 26 05 33, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS. FIELD VERIFY EXACT CONDITIONS.

2 CONDUIT TRAPEZE MOUNTING DETAIL
SCALE: NTS



3 FLOOR SLAB PENETRATION DETAIL
SCALE: NTS



4 EXIT SIGN MOUNTING
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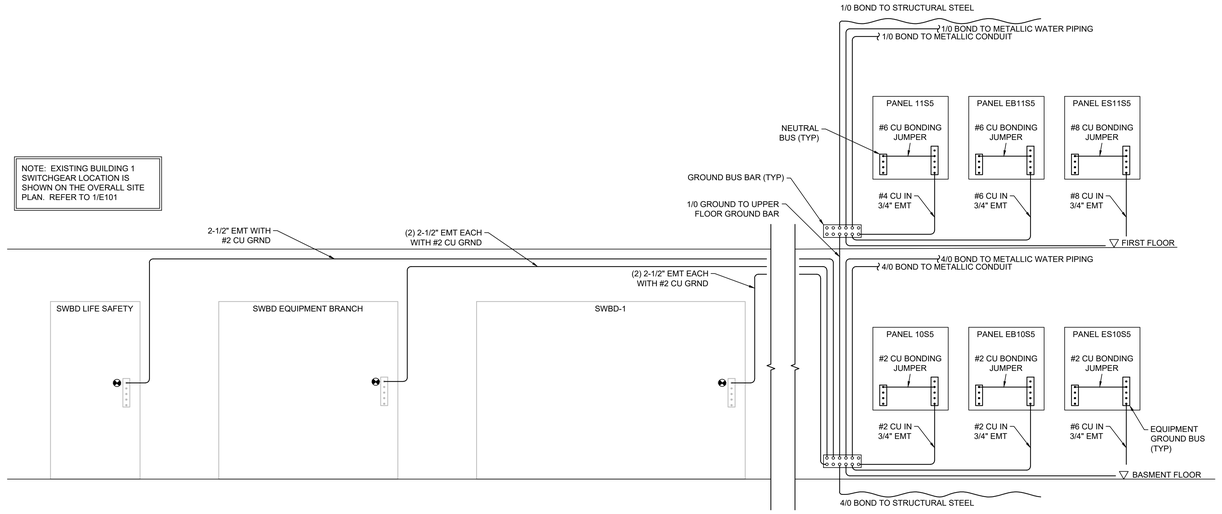
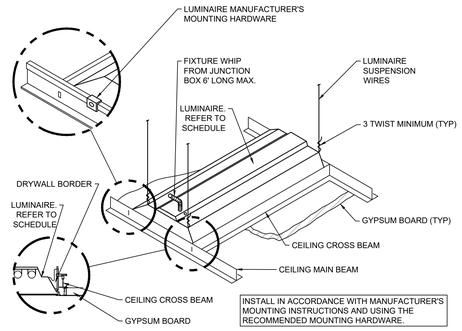
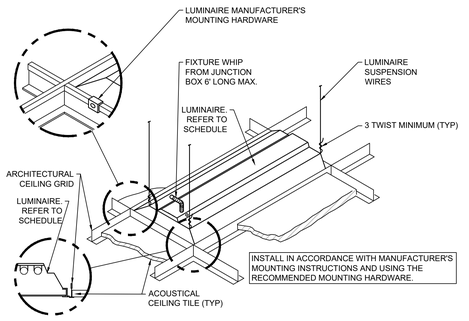


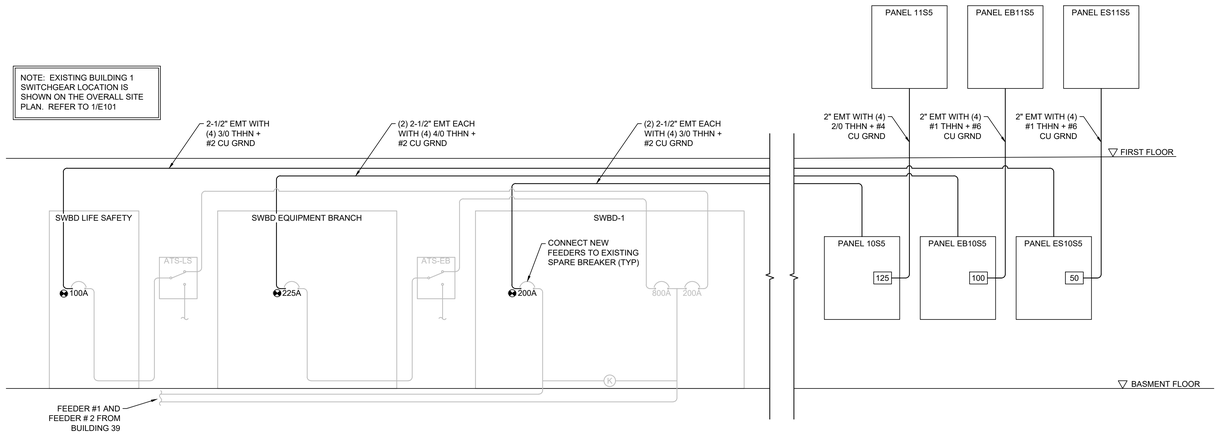
5 POWER SERVICE GROUNDING DETAIL
SCALE: NTS



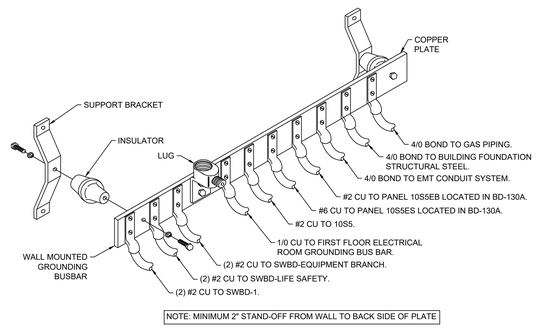
6 LUMINAIRE MOUNTING - GYPBOARD CEILING
SCALE: NTS



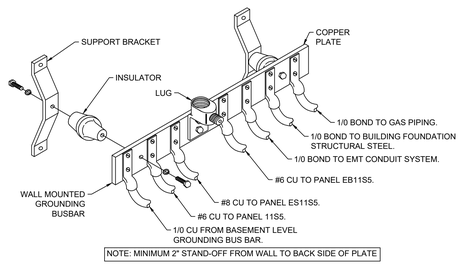
7 LUMINAIRE MOUNTING - LAY-IN CELING
SCALE: NTS



8 POWER SERVICE SCHEMATIC
SCALE: NTS



9 BASEMENT LEVEL ELECTRICAL BUS BAR GROUNDING DETAIL
SCALE: NTS



10 LEVEL 1 ELECTRICAL BUS BAR GROUNDING DETAIL
SCALE: NTS

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

Albertson Engineering Inc.
ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE PROTECTION
SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE-9886
NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title: ELECTRICAL DETAILS

Approved: Project Director: FARGO VAHCS

Project Title: EXPAND BLDG. 1 FOR PRIMARY CARE

Location: 2101 ELM STREET FARGO, ND 58102

Date: 11/16/2021 | Checked: RD | Drawn: JS

Project Number: 437-315

Building Number: 1

Drawing Number: E-004

Dwg. 95 of 128

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Department of Veterans Affairs

12/2/2009 10:11:29 AM

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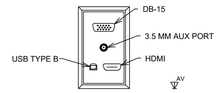
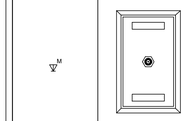
AUDIO/VISUAL FACEPLATE DETAILS



GENERAL NOTES:
G1. CONDUIT AND BACKBOX PROVIDED BY DIVISION 26 CONTRACTOR.
G2. COORDINATE EXACT CONFIGURATION AND OUTLETS IN FACE PLATE WITH A/V VENDOR.
G3. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECTURAL WALL ELEVATIONS.

FACE PLATE, BACK BOX, & CONDUIT REQUIREMENTS



INITIAL CAPACITY: 1 CATV CONNECTION;

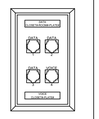
QTY	DESCRIPTION
1	RG6 COAX OUTLET
1	2 PORT COVER PLATE (COVER PLATE PROVIDED BY ELECTRICAL CONTRACTOR)

1 UL LISTED COAX CABLE PULLED TO EACH COAX OUTLET FROM TELECOM ROOM FOR CATV TERMINATION. TO BE INSTALLED BY CATV CONTRACTOR.

PULL CABLE IN 1" EMT WITHIN 12" OF CABLE TRAY.

* COORDINATE ALL DEVICE MOUNTING HEIGHTS WITH ARCHITECTURAL WALL ELEVATIONS AND POWER MOUNTING HEIGHTS ON ELECTRICAL DRAWINGS.

FACE PLATE, BACK BOX, & CONDUIT REQUIREMENTS



INITIAL CAPACITY: 4 CONNECTIONS
MAXIMUM CAPACITY: 4 CONNECTIONS

QTY	DESCRIPTION
4	CAT 6A OUTLET
1	4 PORT COVER PLATE

1 UL LISTED CATEGORY 6A, 4PR CABLE, PULLED FROM EACH OUTLET TO TELECOM ROOM FOR TERMINATION.

JACK 4 TO BE RJ 45/11 FOR VOICE.

DATA JACKS TO BE ORANGE COLOR. PHONE JACKS TO BE IVORY.

PLATES ARE LABELED AS SHOWN, NUMBER PLATES ARE CLOCKWISE FROM THE DOOR.

DATA JACKS ARE NUMBERED LEFT TO RIGHT, TOP TO BOTTOM.

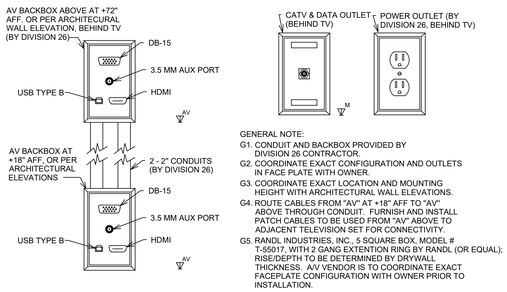
LABEL ALL VOICE AND DATA CABLES AT BOTH ENDS WITH "DATA CLOSET# - ROOM # - PLATE# - JACK#"

PULL CABLE IN 1-1/4" EMT WITHIN 12" OF CABLE TRAY.

* COORDINATE ALL VOICE/DATA LOCATIONS, SPECIAL MOUNTING HEIGHT (SMH) DEVICES WITH ARCHITECTURAL WALL ELEVATIONS AND/OR MOUNTING HEIGHTS OF POWER DEVICES ON ELECTRICAL DRAWINGS. REFER TO DETAIL 2/E-004.

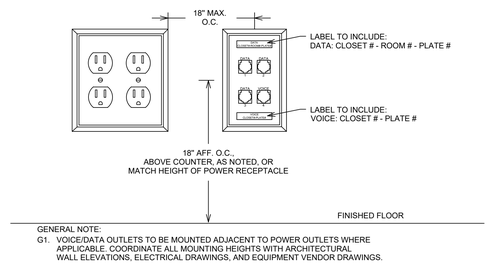
CABLE JACKET COLOR LEGEND

VOICE	-	WHITE	VIDEO SURVEILLANCE	-	VIOLET
DATA	-	YELLOW	NURSE CALL	-	BLUE
DATA	-	GREEN	FIRE ALARM	-	RED
DATA	-	GREY	BAS & DAS	-	BLACK
WIRELESS	-	ORANGE			



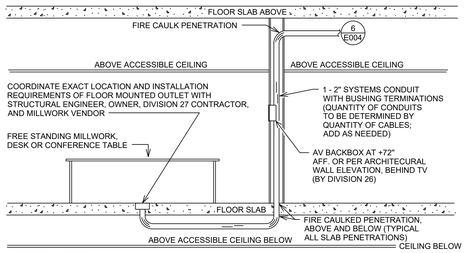
GENERAL NOTE:
G1. CONDUIT AND BACKBOX PROVIDED BY DIVISION 26 CONTRACTOR.
G2. COORDINATE EXACT CONFIGURATION AND OUTLETS IN FACE PLATE WITH OWNER.
G3. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECTURAL WALL ELEVATIONS.
G4. ROUTE CABLES FROM "AV" AT +18" AFF TO "AV" ABOVE THROUGH CONDUIT. FURNISH AND INSTALL PATCH CABLES TO BE USED FROM "AV" ABOVE TO ADJACENT TELEVISION SET FOR CONNECTIVITY.
G5. RANDL INDUSTRIES, INC., 5 SQUARE BOX, MODEL # T-55017, WITH 2 GANG EXTENTION RING BY RANDL (OR EQUAL); RISE/DEPTH TO BE DETERMINED BY DRYWALL THICKNESS. A/V VENDOR IS TO COORDINATE EXACT FACEPLATE CONFIGURATION WITH OWNER PRIOR TO INSTALLATION.

1 AUDIO/VISUAL RECEPTACLE ROUTING REQUIREMENTS
SCALE: NTS



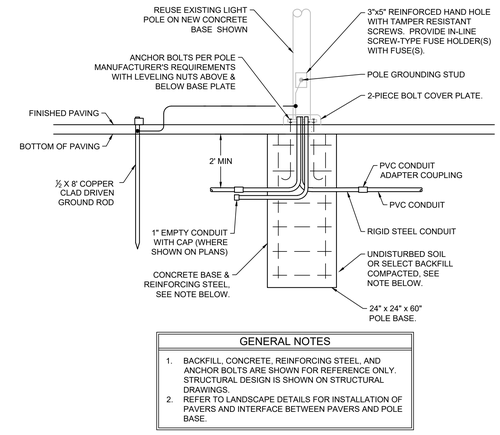
GENERAL NOTE:
G1. VOICE/DATA OUTLETS TO BE MOUNTED ADJACENT TO POWER OUTLETS WHERE APPLICABLE. COORDINATE ALL MOUNTING HEIGHTS WITH ARCHITECTURAL WALL ELEVATIONS, ELECTRICAL DRAWINGS, AND EQUIPMENT VENDOR DRAWINGS.

2 RECEPTACLE COORDINATION REQUIREMENTS
SCALE: NTS



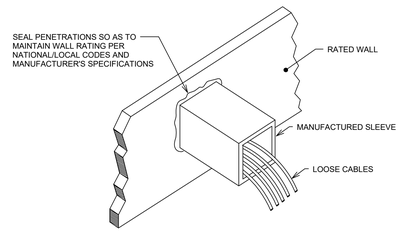
GENERAL NOTES:
G1. ALL CONDUITS AND BACKBOXES TO BE INSTALLED BY DIVISION 26 CONTRACTOR.
G2. ALL CONDUITS IN PATIENT CARE AREAS ARE TO TERMINATE IN CORRIDOR WITH BUSHING TERMINATION.

3 AV RECEPTACLE ROUTING DETAIL
SCALE: NTS

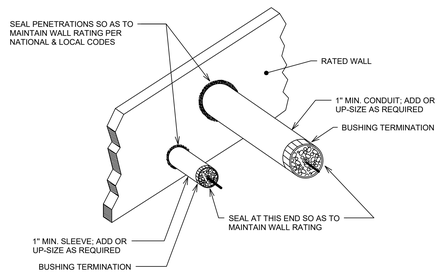


GENERAL NOTES
1. BACKFILL, CONCRETE, REINFORCING STEEL, AND ANCHOR BOLTS ARE SHOWN FOR REFERENCE ONLY. STRUCTURAL DESIGN IS SHOWN ON STRUCTURAL DRAWINGS.
2. REFER TO LANDSCAPE DETAILS FOR INSTALLATION OF PAVERS AND INTERFACE BETWEEN PAVERS AND POLE BASE.

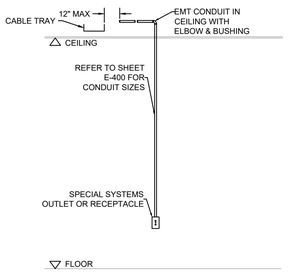
4 POLE BASE DETAIL
SCALE: NTS



5 MANUFACTURED SLEEVE WALL PENETRATION
SCALE: NTS



6 RATED WALL CONDUIT AND SLEEVE PENETRATIONS
SCALE: NTS



7 CONDUIT TO CABLE TRAY DETAIL
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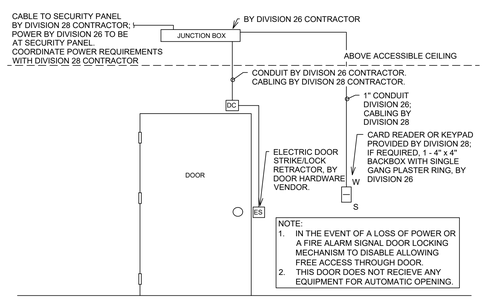
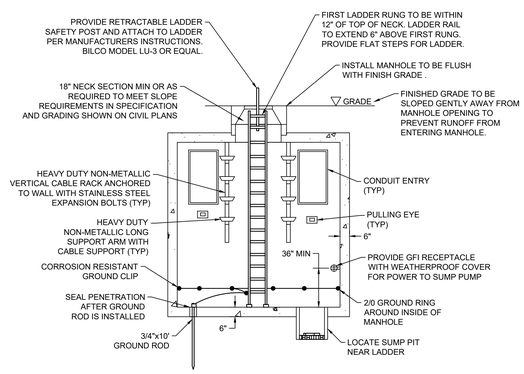


8 DOOR ACCESS CONTROL DETAIL
SCALE: NTS



9 MANHOLE DETAIL
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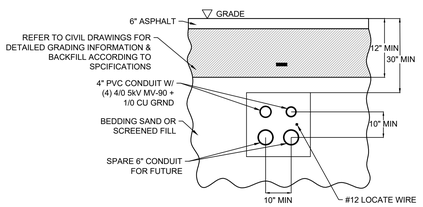
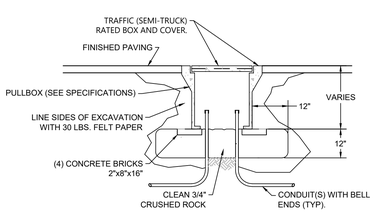


10 BURIED DUCT BANK DETAIL
SCALE: NTS



11 UNDERGROUND PULLBOX DETAIL
SCALE: NTS

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

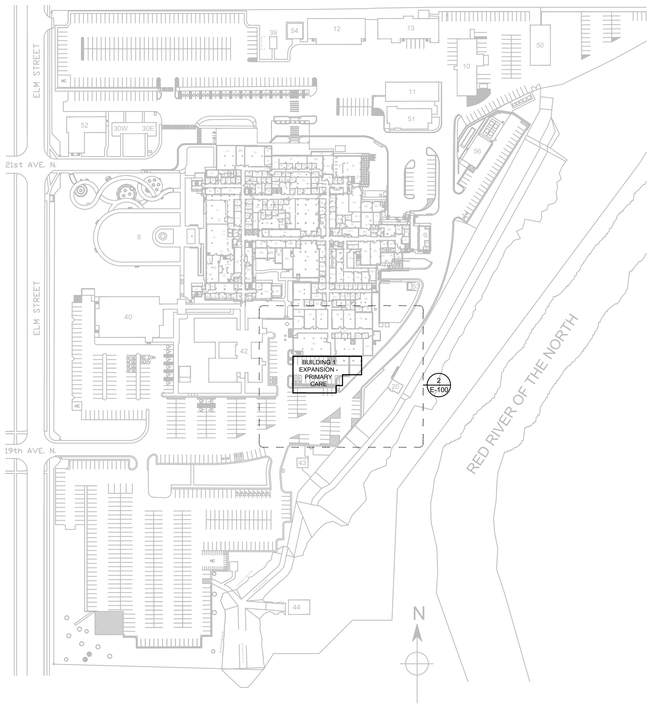
REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE-9884
NORTH DAKOTA

ARCHITECT
FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

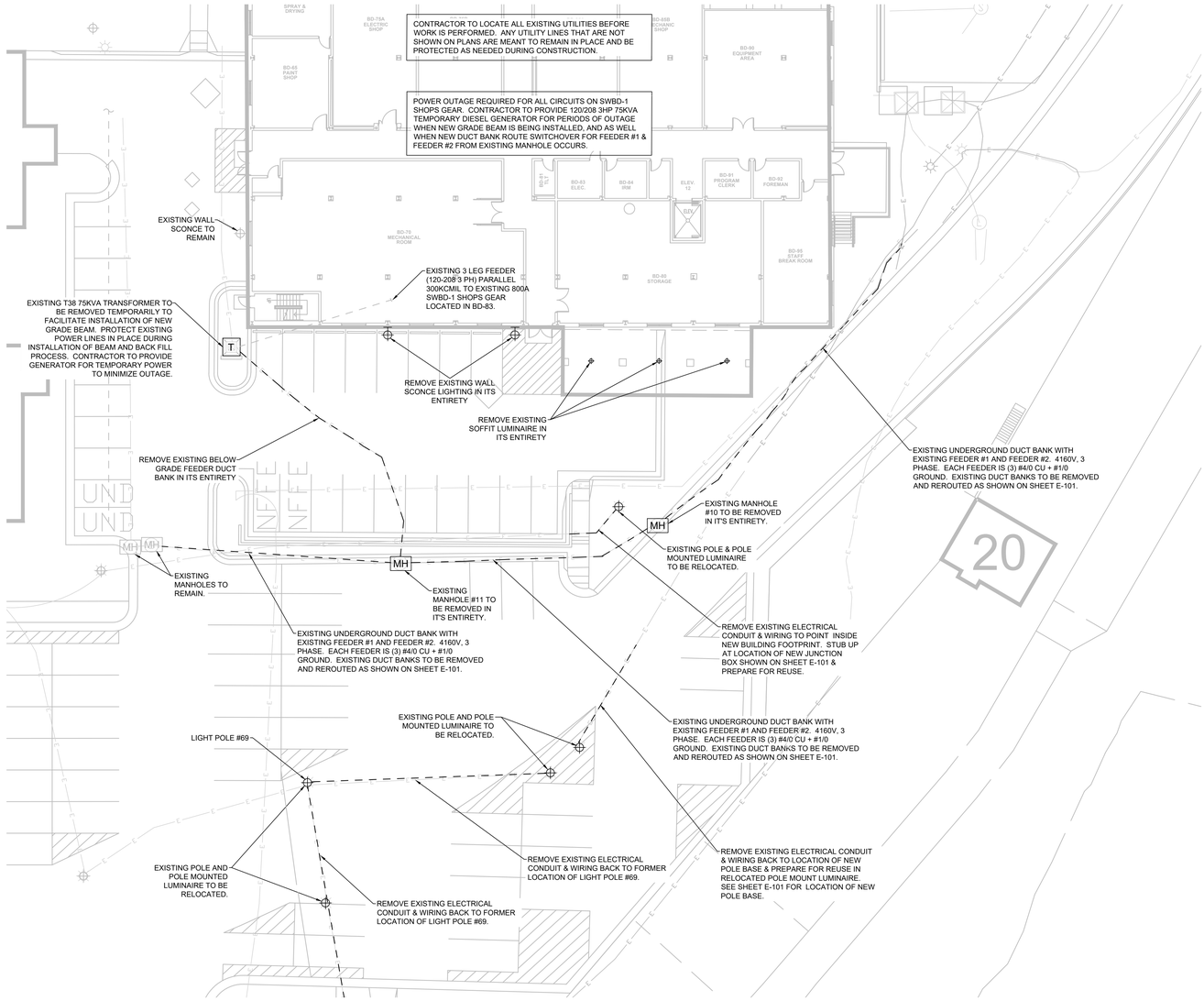
Drawing Title: SPECIAL SYSTEMS DETAILS
Approved: Project Director: FARGO VAHCS
Project Title: EXPAND BLDG. 1 FOR PRIMARY CARE
Location: 2101 ELM STREET FARGO, ND 58102
Date: 11/16/2021
Checked: RD
Drawn: JS
Project Number: 437-315
Building Number: 1
Drawing Number: E-005
Dwg. 96 of 128

Office of Construction and Facilities Management
Department of Veterans Affairs

12/2/2009 10:11:29 AM
VA FORM 08-6231



1 OVERALL SITE PLAN
SCALE: 1/128" = 1'



2 EXPANDED SITE POWER DEMOLITION PLAN
SCALE: 1/16" = 1'

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE-9884
NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title	ELECTRICAL SITE DEMOLITION PLAN
Approved: Project Director	FARGO VAHCS
Project Title	EXPAND BLDG. 1 FOR PRIMARY CARE
Location	2101 ELM STREET FARGO, ND 58102
Date	11/16/2021
Checked	RD
Drawn	JS
Project Number	437-315
Building Number	1
Drawing Number	E-100
Dwg.	97 of 128

Office of Construction and Facilities Management

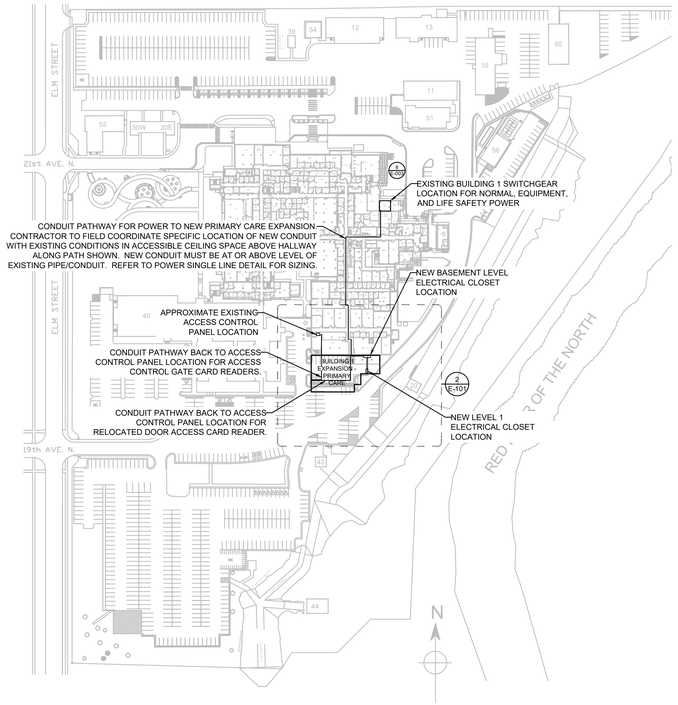
Department of Veterans Affairs

12/2/2009 10:11:29 AM

VA FORM 08-6231

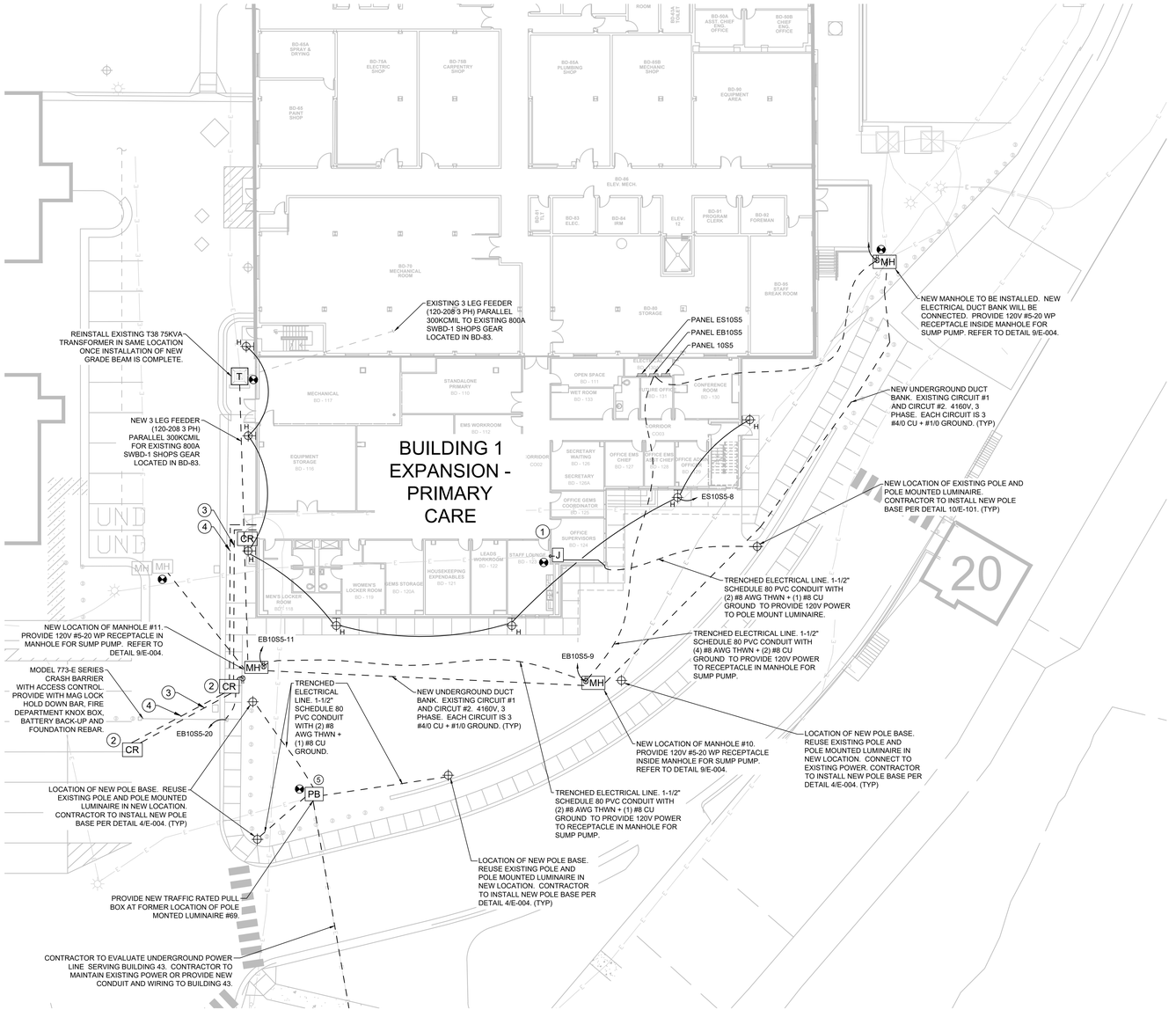
KEYED ELECTRICAL NOTES

1. 2 NEW JUNCTION BOXES TO BE INSTALLED IN THIS LOCATION. EXISTING BURIED UTILITY LINE TO BE STUBBED UP INTO NEW JUNCTION BOX IN FLOOR. EXTENDED EXISTING POWER FROM FLOOR BOX, ROUTING INSIDE INTERIOR WALL, TO SECOND JUNCTION BOX INSTALLED ABOVE ACCESSIBLE CEILING. POWER WILL BE UTILIZED FOR EXTERIOR POLE MOUNTED LUMINAIRE.
2. INSTALL NEW CARD READER TO CONTROL ACCESS GATE.
3. 3/4" PVC CONDUIT BFG WITH (3) #12 AWG THWN TO PROVIDE 120V POWER TO CONTROLLED ACCESS GATE AND ASSOCIATED CARD READERS.
4. 1" PVC CONDUIT BFG WITH CAT 6A CABLING FROM SECURITY PANEL TO CARD READER FOR ACCESS GATE.
5. NEW PULL BOX TO BE INSTALLED IN FORMER LOCATION OF LIGHTPOLE #69. EXISTING POWER IS TO BE REUSED. NEW WIRE AND CONDUIT TO BE INSTALLED FROM JUNCTION BOX EXTENDING EXISTING POWER TO NEW LIGHT POLE LOCATIONS.



1 OVERALL SITE PLAN
SCALE: 1/128" = 1'

BASE BID TO INCLUDE CONTROLLED ACCESS GATE AND ALL ASSOCIATED WIRING, CONDUIT AND BACK BOXES.
BID ALTERNATE #2 DOES NOT INCLUDE CONTROLLED ACCESS GATE AND ALL ASSOCIATED WIRING CONDUIT AND BACK BOXES.



2 EXPANDED SITE POWER PLAN - NEW CONSTRUCTION
SCALE: 1/16" = 1'

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE-9884
NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

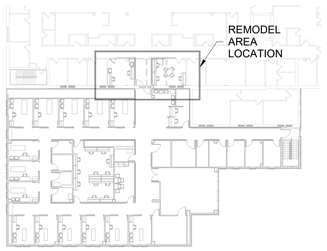
Drawing Title	ELECTRICAL SITE PLAN NEW CONSTRUCTION
Approved: Project Director	FARGO VAHCS
Project Title	EXPAND BLDG. 1 FOR PRIMARY CARE
Location	2101 ELM STREET FARGO, ND 58102
Date	11/16/2021
Checked	RD
Drawn	JS
Project Number	437-315
Building Number	1
Drawing Number	E-101
Dwg.	98 of 128

Office of Construction and Facilities Management

Department of Veterans Affairs

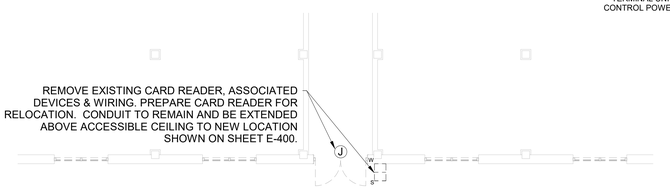
12/2/2009 10:11:29 AM

VA FORM 08-6231



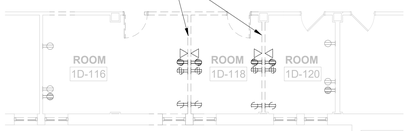
1 REMODEL AREA LOCATION
1" = 30'-0"

REMOVE EXISTING CARD READER, ASSOCIATED DEVICES & WIRING. PREPARE CARD READER FOR RELOCATION. CONDUIT TO REMAIN AND BE EXTENDED ABOVE ACCESSIBLE CEILING TO NEW LOCATION SHOWN ON SHEET E-400.

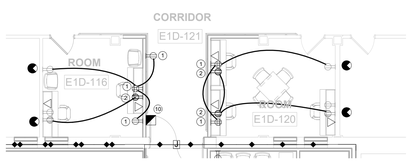


2 BASEMENT LEVEL - ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

REMOVE EXISTING RECEPTACLES, DATA CONNECTIONS AND ASSOCIATED WIRING FROM EXISTING WALLS TO BE DEMOLISHED IN THEIR ENTIRETY.

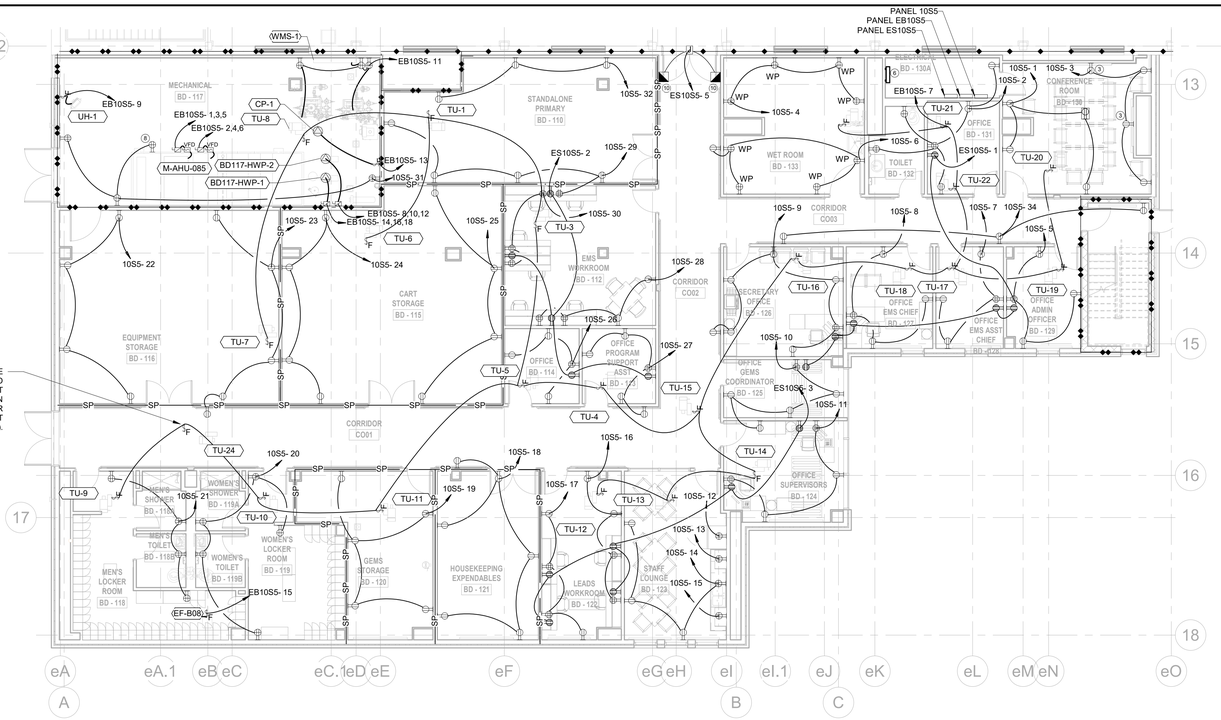


3 LEVEL 1 - ELECTRICAL DEMOLITION PLAN
1/8" = 1'-0"

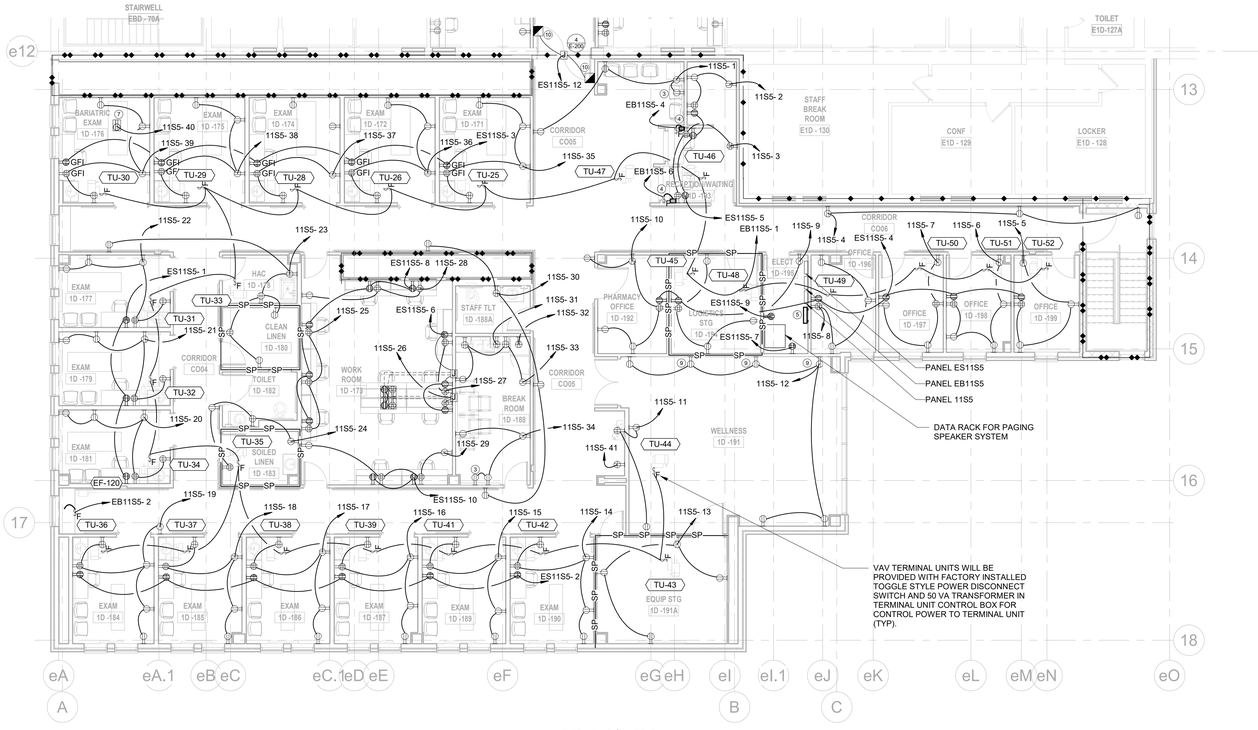


4 LEVEL 1 - ELECTRICAL REMODEL PLAN
1/8" = 1'-0"

VAV TERMINAL UNITS WILL BE PROVIDED WITH FACTORY INSTALLED TOGGLE STYLE POWER DISCONNECT SWITCH AND 50 VA TRANSFORMER IN TERMINAL UNIT CONTROL BOX FOR CONTROL POWER TO TERMINAL UNIT (TYP).



5 BASEMENT LEVEL - POWER PLAN
1/8" = 1'-0"



8 LEVEL 1 - POWER PLAN
1/8" = 1'-0"

RATED WALL SYMBOLS

- 1-HOUR FIRE BARRIER
- SP—SP SMOKE PARTITION
- 2-HOUR FIRE BARRIER

KEYED ELECTRICAL NOTES

1. INSTALL RECEPTACLE AND TIE INTO EXISTING POWER CIRCUIT.
2. INSTALL NEW RECEPTACLE AND TIE INTO EXISTING EMERGENCY POWER CIRCUIT.
3. INSTALL RECEPTACLE FOR POWER BEHIND WALL MOUNT TV PER DETAIL 1/E-004.
4. CONTRACTOR TO INSTALL FUSTAT ABOVE ACCESSIBLE CEILING AND RMX MEDIUM DUTY COMMERCIAL DOOR OPENER FOR ROLLING COUTERTOP GATE. PROVIDE WALL MOUNT KIT #AAA011.0001S, AND BOTTOM SENSING EDGE.
5. LEVEL 1 ELECTRICAL GROUNDING BUS BAR LOCATION. SEE DETAIL 10/E-003. BUS BAR NOT RATED FOR OIT SERVICE.
6. BASEMENT LEVEL ELECTRICAL GROUNDING BUS BAR LOCATION. SEE DETAIL 9/E-003. BUS BAR NOT RATED FOR OIT SERVICE.
7. PROVIDE DUPLEX RECEPTACLE AT LIFT DOCKING STATION TO POWER BARIATRIC PATIENT LIFT. RECEPTACLE HEIGHT TO BE COORDINATED WITH LIFT MANUFACTURER.
8. RECEPTACLE IS FACTORY PROVIDED. POWER FOR INTERNAL AHU LIGHTING TO BE PROVIDED BY THIS CIRCUIT.
9. RECEPTACLE TO BE MOUNTED 18" AFF. COORDINATE RECEPTACLE BOX INSTALLATION DEPTH SO THAT COVER PLATE WILL BE FLUSH AGAINST MIRROR SURFACE. MIRROR INSTALLER TO FIELD COORDINATE AND PROVIDE OPENING IN MIRROR TO ACCOMMODATE RECEPTACLE INSTALLATION.
10. MAGNETIC DOOR HOLD OPEN BY DOOR HARDWARE VENDOR MOUNTED ON WALL AT LOCATION TO MEET DOOR SWING.

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER — RAYMOND DAWES PEGGAU — NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title	POWER PLANS
Approved: Project Director	FARGO VAHCS
Project Title	EXPAND BLDG. 1 FOR PRIMARY CARE
Location	2101 ELM STREET FARGO, ND 58102
Date	11/16/21
Checked	RD
Drawn	JS
Project Number	437-315
Building Number	1
Drawing Number	E-200
Dwg.	99 of 128

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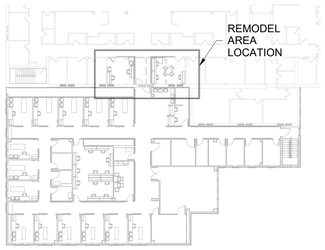
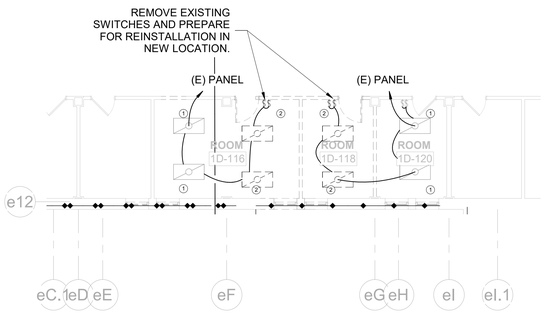
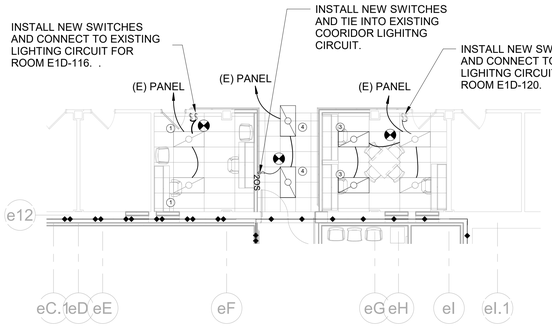


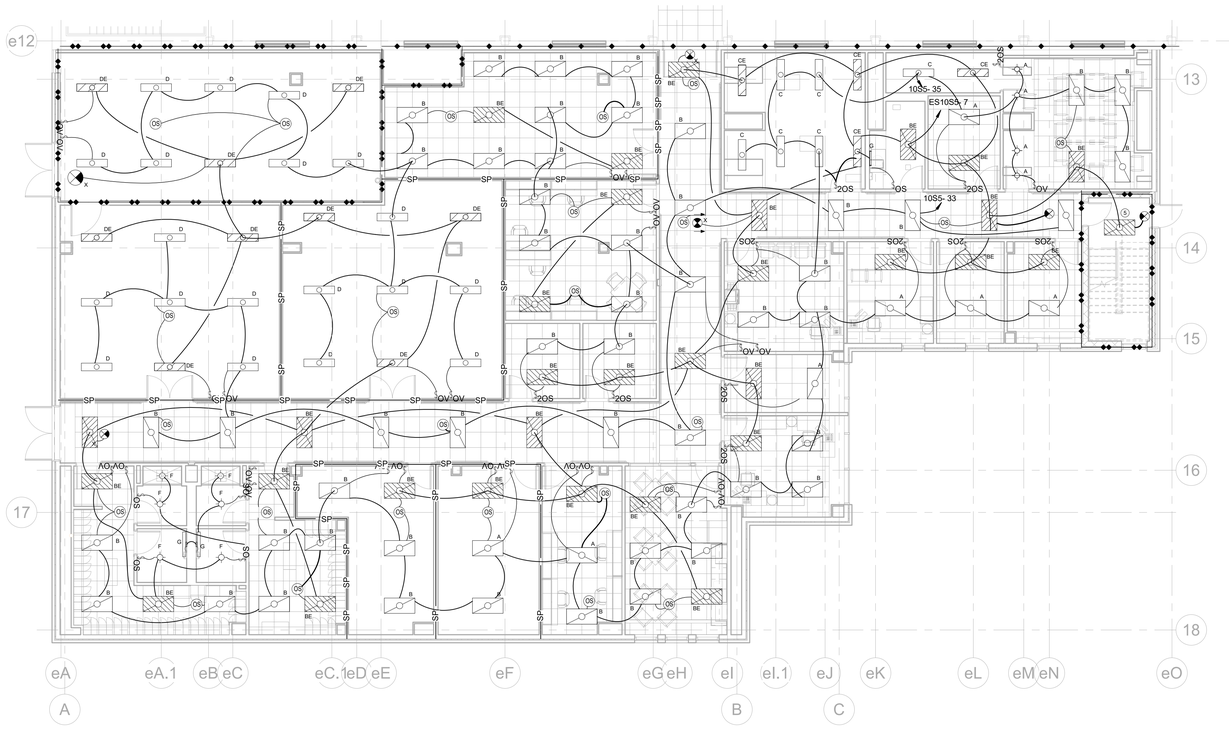
1 REMODEL AREA LOCATION
1" = 30'-0"



2 FIRST LEVEL - LIGHTING DEMOLITION PLAN
1/8" = 1'-0"



3 FIRST LEVEL - LIGHTING REMODEL PLAN
1/8" = 1'-0"



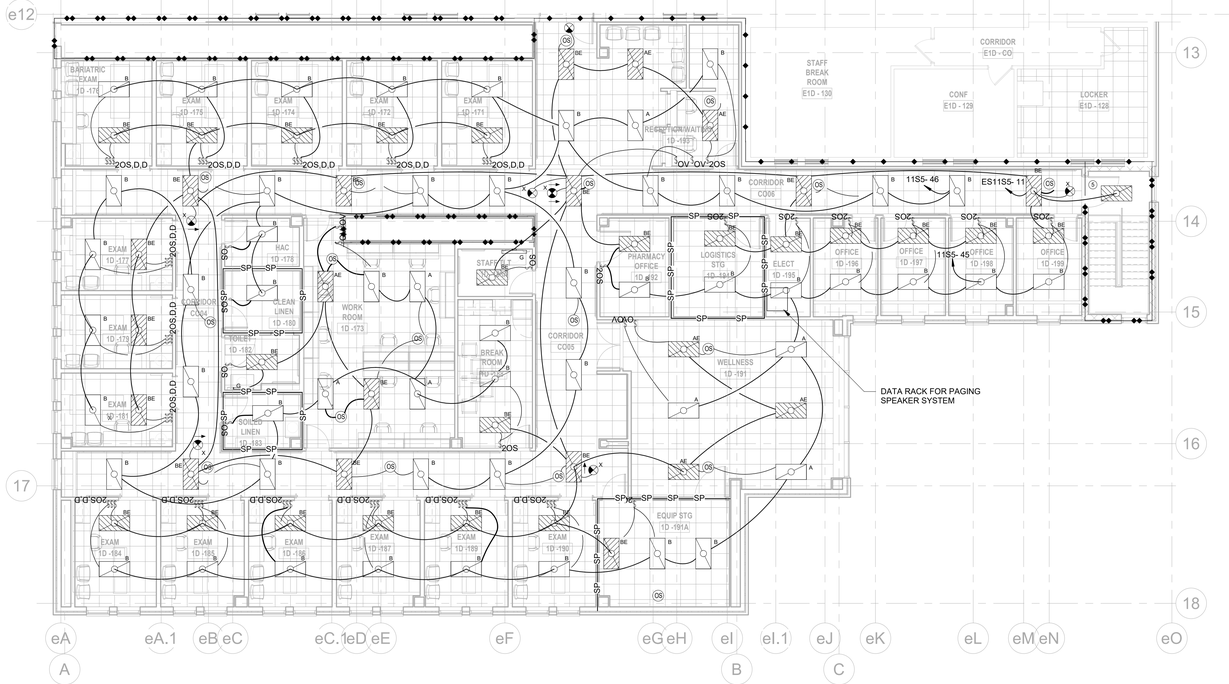
4 BASEMENT LEVEL - LIGHTING PLAN
1/8" = 1'-0"

RATED WALL SYMBOLS

- 1-HOUR FIRE BARRIER
- SP SP SMOKE PARTITION
- 2-HOUR FIRE BARRIER

KEYED ELECTRICAL NOTES

1. EXISTING LUMINAIRE TO REMAIN.
2. REMOVE EXISTING LUMINAIRE AND PREPARE FOR REUSE IN NEW LOCATION.
3. INSTALL EXISTING LUMINAIRE FROM ROOM 1D-118 IN NEW LOCATION SHOWN. CONNECT TO EXISTING LIGHTING CIRCUIT FROM ROOM 1D-120. CONNECT SWITCH LEG TO EXISTING SWITCH BANK REINSTALLED IN NEW LOCATION SHOWN.
4. INSTALL EXISTING LUMINAIRE FROM ROOM 1D-116 IN NEW LOCATION SHOWN. CONNECT TO EXISTING LIGHTING CIRCUIT IN CORRIDOR 1D-121. CONNECT SWITCH LEG TO NEW SWITCH BANK IN LOCATION SHOWN.
5. LUMINAIRE TO BE ON UNSWITCHED EMERGENCY POWER TO PROVIDE ALWAYS-ON LIGHTING IN STAIRWELL.



5 FIRST LEVEL - LIGHTING PLAN
1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD. SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES PEGGAU
NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

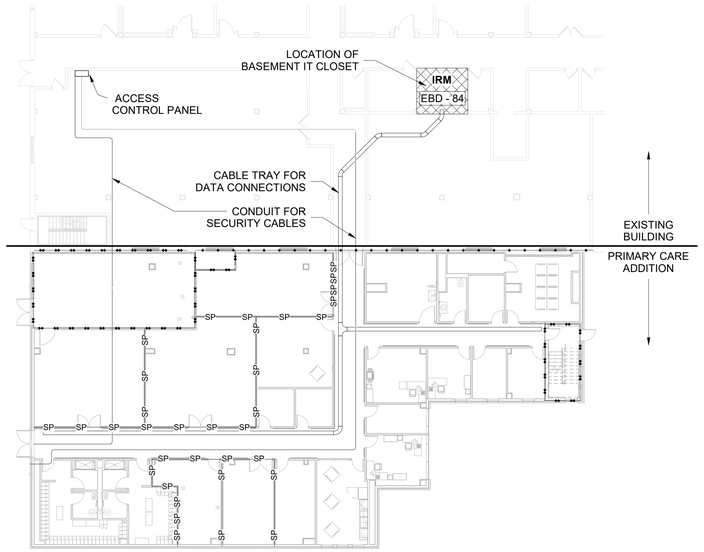
Drawing Title	LIGHTING PLANS
Approved: Project Director	FARGO VAHCS
Project Title	EXPAND BLDG. 1 FOR PRIMARY CARE
Location	2101 ELM STREET FARGO, ND 58102
Date	11/16/21
Checked	RD
Drawn	JS
Project Number	437-315
Building Number	1
Drawing Number	E-300
Dwg.	100 of 128

Office of Construction and Facilities Management

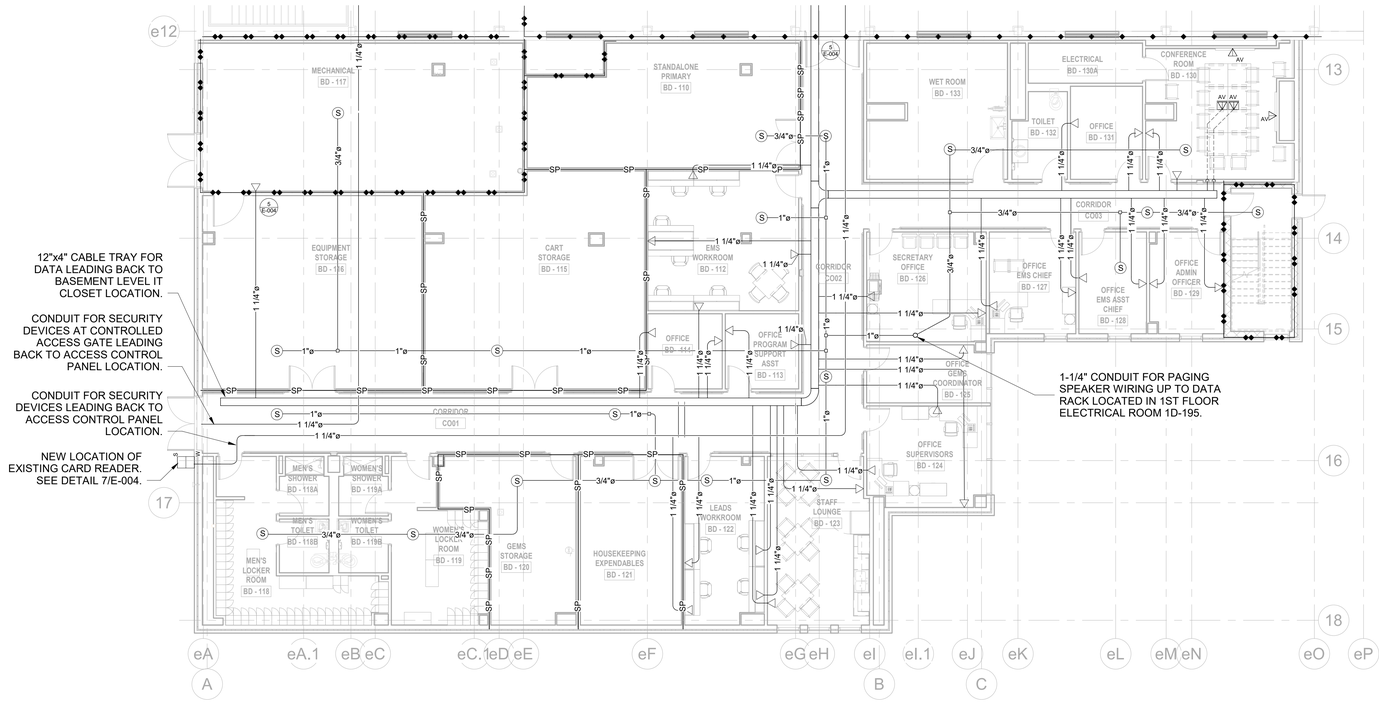
Department of Veterans Affairs

11/16/2021 6:49:21 PM

VA FORM 08-6231



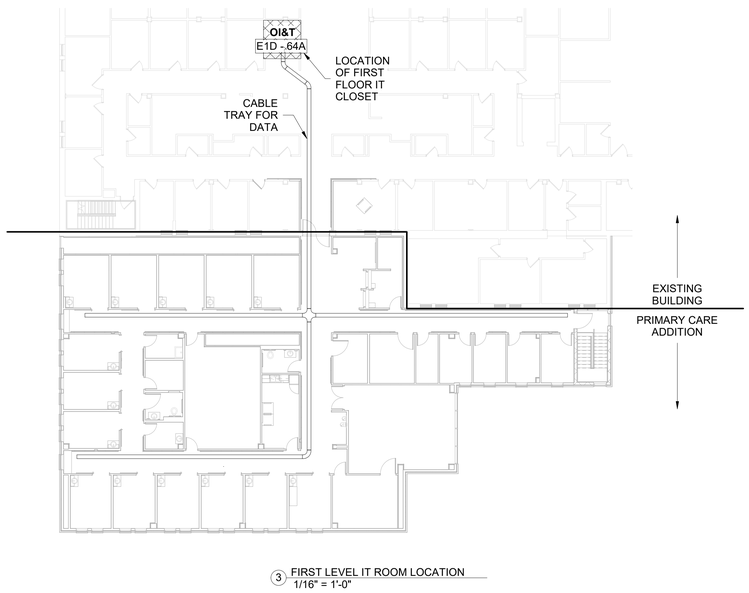
1 BASEMENT LEVEL IT CLOSET LOCATION
1/16" = 1'-0"



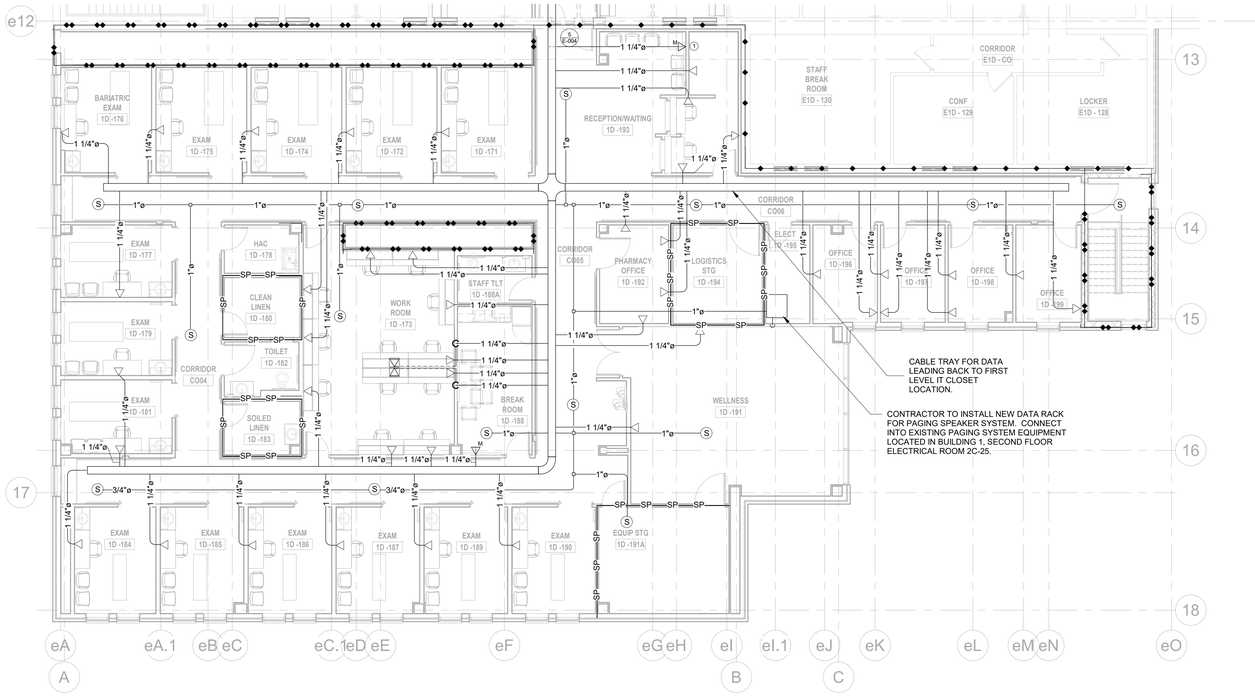
2 BASEMENT LEVEL - SPECIAL SYSTEMS PLAN
1/8" = 1'-0"

KEYED ELECTRICAL NOTES

1. TELEVISION WALL RECEPTACLE. SEE FACE PLATE, BACK BOX AND CONDUIT REQUIREMENT DETAIL ON SHEET E-004.



3 FIRST LEVEL IT ROOM LOCATION
1/16" = 1'-0"



4 FIRST LEVEL - SPECIAL SYSTEMS PLAN
1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
RAYMOND DAWES
PE9818
NORTH DAKOTA

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title	SPECIAL SYSTEMS PLAN
Approved: Project Director	FARGO VAHCS
Project Title	EXPAND BLDG. 1 FOR PRIMARY CARE
Location	2101 ELM STREET FARGO, ND 58102
Date	11/16/21
Checked	RD
Drawn	JS
Project Number	437-315
Building Number	1
Drawing Number	E-400
Dwg.	101 of 128

Office of Construction and Facilities Management

Department of Veterans Affairs

11/16/2021 6:35:33 PM

VA FORM 08-6231

ABBREVIATIONS:

AC	ALTERNATING CURRENT
ADJ.	ADJUSTABLE
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
BHP	BRAKE HORSEPOWER
BMS	BUILDING MANAGEMENT SYSTEM
CALC	CALCULATED
CC	CHILLED WATER COOLING COIL - AHU
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
C/L	CENTERLINE
CO	CLEANOUT
COEF	COEFFICIENT
COMLINK	COMMUNICATION LINK
COND	CONDENSATION
CONFIG	CONFIGURED
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CNTRL.	CONTROL
CP	CONDENSATE PUMP
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CONDENSATE RETURN
CV	CONTROL VALVE
CV	FLOW COEFFICIENT
DAMP.	DAMPER
DAT	DISCHARGE AIR TEMPERATURE
DB	DRY BULB
DC	DIRECT CURRENT
DCW	DOMESTIC COLD WATER
DEG	DEGREES
DHR	DOMESTIC HOT WATER RETURN
DHW	DOMESTIC HOT WATER
DIFF.	DIFFERENTIAL
DIST	DISTRUBUTION
DS	DOWNSPOUT
DSP	DEHUMIDIFICATION SET POINT
DWV	DRAIN, WASTE AND VENT
(E)	EXISTING
EA	EXHAUST AIR
ECC	ENERGY CONTROL CENTER
ELECT.	ELECTRICAL
ELEV	ELEVATION
ENT	ENTERING
ERC	ENERGY RECOVERY COIL - AHU
ES	END SWITCH
EWC	ELECTRIC WATER COOLER
F	FAHRENHEIT
FD	FLOOR DRAIN
FILT.	FILTER
FPM	FEET PER MINUTE
FT	FEET
FT	FIN TUBE BASEBOARD RADIATOR
GAL	GALLONS
GALV	GALVANIZED
G.C.	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GT	GLYCOL TANK
H	HEIGHT
H	HUMIDIFIER - AHU
HP	HORSEPOWER
HPS	HIGH PRESSURE STEAM
HR	HOUR
HRCR	HEAT RECOVERY RETURN
HRCS	HEAT RECOVERY SUPPLY
HRP	HEAT RECOVERY PUMP
HSP	HUMIDIFICATION SET POINT
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HX	HEAT EXCHANGER
Hz	HERTZ
IBC	INTERNATIONAL BUILDING CODE
ICVAMC	IOWA CITY VETERANS AFFAIRS MEDICAL CENTER
IECC	INTERNAIONAL ENERGY CONSERVATION CODE
IFB	INTEGRAL FACE AND BYPASS
IMC	INTERNATIONAL MECHANICAL CODE
I/O	INPUT/OUTPUT
IPC	INTERNATIONAL PLUMBING CODE
K.O.	COMMANDING OFFICER
L	LENGTH
LBS	POUNDS
LPS	LOW PRESSURE STEAM
LWA	SOUND POWER LEVEL
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MC	MECHANICAL CONTRACTOR
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MFG	MANUFACTURER
MIN	MINIMUM
MIN	MINUTE
mm	MILLIMETER
MPS	MEDIUM PRESSURE STEAM
MT	MOISTURE (HUMIDITY) TRANSMITTER
MV	MANUAL VENT
N.C.	NORMALLY CLOSED
NC	NOISE CRITERIA LEVEL
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GAS
N.O.	NORMALLY OPEN
NPT	NATIONAL PIPE THREAD
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
ORD	OVERFLOW ROOF DRAIN
OSA	OUTSIDE AIR
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
Pa	PASCAL
PC	PUMPED CONDENSATE
PC	PREHEAT STEAM COIL - AHU
PD	PRESSURE DROP
PDS	PRESSURE DIFFERENTIAL SENSOR
PH	PHASE
PHWR	PERIMETER HEAT WATER RETURN
PHWS	PERIMETER HEAT WATER SUPPLY
PI	PROPORTIONAL INTEGRAL
PID	PROPORTIONAL INTEGRAL DERIVATIVE
PRESS.	PRESSURE
PSH	HIGH PRESSURE SWITCH
PSIG	POUNDS PER SQUARE INCH - GAUGE
PSL	LOW PRESSURE SWITCH
QUANT.	QUANTITY
R	RADIUS
R	RETURN
RA	RETURN AIR
RC	REHEAT STEAM COIL - AHU
RD	ROOF DRAIN
RE	RESIDENT ENGINEER
REQ'D	REQUIRED
RH	RELATIVE HUMIDITY
RHWR	RE-HEAT WATER RETURN
RHWS	RE-HEAT WATER SUPPLY
RP	RADIANT PANEL - CEILING
RPM	REVOLUTIONS PER MINUTE
S	SUPPLY
SA	SUPPLY AIR
SAN	SANITARY
SD	SMOKE DAMPER
SF	FAN SECTION - AHU
SF	SQUARE FEET
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS ASSOCIATION
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SS	STAINLESS STEEL
SST	START/STOP
STM-HP	STEAM - HIGH PRESSURE
STM-LP	STEAM - LOW PRESSURE
STM-MP	STEAM - MEDIUM PRESSURE
SUH	STEAM UNIT HEATER
SV	STEAM VALVE
SV	STEAM VENT
T	THERMOSTAT
TEMP.	TEMPERATURE
TSP	TOTAL STATIC PRESSURE
TT	TEMPERATURE SENSOR/TRANSMITTER
TU	TERMINAL UNIT
TYP	TYPICAL
UH	UNIT HEATER
V	VENT
V	VOLTS
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VSMC	VARIABLE SPEED MOTOR CONTROLLER
VTR	VENT THROUGH ROOF
W	WIDTH
W/	WITH
WB	WET BULB
WG	INCHES OF WATER
ZAT	ZONE AIR TEMPERATURE
ZC	VALVE OR DAMPER CONTROLLER

HVAC / MECHANICAL SYMBOLS

- SA — SUPPLY AIR DUCT FROM AHU
- S/A — SUPPLY AIR DUCT FROM VAV
- F/A — FRESH AIR DUCT FROM EXTERIOR
- RA — RETURN AIR DUCT
- EA — EXHAUST AIR DUCT
- HWS — HOT WATER SUPPLY
- HWR — HOT WATER RETURN
- RHWS — REHEAT HOT WATER SUPPLY
- RHWR — REHEAT HOT WATER RETURN
- HRWS — HEAT RECOVERY WATER SUPPLY
- HRWR — HEAT RECOVERY WATER RETURN
- CHS — CHILLED WATER SUPPLY
- CHR — CHILLED WATER RETURN
- RL — REFRIGERANT - LIQUID
- RS — REFRIGERANT - SUCTION
- STM-LP — LOW PRESSURE STEAM
- STM-MP — MEDIUM PRESSURE STEAM
- STM-HP — HIGH PRESSURE STEAM
- CDR-L — LOW PRES. STEAM CONDENSATE RETURN
- CDR-M — MEDIUM PRES. STEAM CONDENSATE RETURN
- CDR-H — HIGH PRES. STEAM CONDENSATE RETURN
- PC — PUMPED STEAM CONDENSATE RETURN
- STEAM BUCKET TRAP
- FLOAT & THERMOSTATIC TRAP
- STEAM THERMOSTATIC TRAP
- STRAINER
- UNION
- BALL VALVE
- GATE VALVE (N.O. N.C.)
- GLOBE VALVE
- CHECK VALVE
- MODULATING CONTROL VALVE
- PRESSURE REDUCING VALVE
- MANUAL BALANCING / SHUT-OFF VALVE
- CONCENTRIC PIPE REDUCER
- ECCENTRIC PIPE REDUCER
- TEE
- PRESSURE GAUGE
- TEMPERATURE GAUGE
- SHELL AND TUBE HEAT EXCHANGER
- STEAM CONDENSATE PUMP
- STEAM FLASH TANK
- EXPANSION TANK
- LIQUID FLOW DIRECTION
- DIRECTION OF AIR FLOW

- VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)
- VANED RADIUS ELBOW (SHORT RADIUS)
- RADIUS ELBOW (SHORT RADIUS)
- 10/8 — NEW DUCT (INSIDE DIMENSIONS: WIDTH / DEPTH)
- 10/8 — SUPPLY DUCT UP
- 10/8 — SUPPLY DUCT DOWN
- 10/8 — RETURN/EXHAUST/RELIEF DUCT UP
- 10/8 — RETURN/EXHAUST/RELIEF DUCT DOWN
- M — MOTORIZED DAMPER W/ ACCESS DOOR
- FD — FIRE DAMPER W/ ACCESS DOOR
- FSD — FIRE AND SMOKE DAMPER W/ ACCESS DOOR
- SD — SMOKE DAMPER W/ ACCESS DOOR
- BD — BACK DRAFT DAMPER W/ ACCESS DOOR
- MANUAL VOLUME DAMPER
- MODULATING CONTROL VALVE
- PIPE ELBOW
- PIPE DOWN
- PIPE UP
- PIPE TEE DOWN
- WALL MOUNTED EXHAUST FAN
- VARIABLE AIR VOLUME BOX
- DUCT HOT WATER REHEAT COIL
- HYDRONIC RADIANT HEATING PANEL
- S-1 / 575 — GRILLE, REGISTER, DIFFUSER TAG WITH CFM
- AHU-6 — EQUIPMENT TAG WITH NUMBER DESIGNATION
- T — THERMOSTAT
- TS — TEMPERATURE SENSOR
- P — PRESSURE SENSOR
- SP — DIFFERENTIAL PRESSURE SENSOR
- H — HUMIDITY SENSOR
- SUPPLY DIFFUSER
- LINEAR SLOT SUPPLY DIFFUSER
- RETURN GRILLE
- EXHAUST GRILLE
- 2 — MECHANICAL PLAN NOTE
- DUCT FLEX CONNECTOR
- FLEX DUCT
- POINT OF CONNECTION
- POINT OF DISCONNECTION
- TO BE DEMOLISHED
- ONE HOUR FIRE BARRIER
- SP — SP — SMOKE PARTITION
- TWO HOUR FIRE BARRIER

MECHANICAL SHEET INDEX

GENERAL MECHANICAL NOTES:

ALL WORK SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL MECHANICAL CODE (IMC), THE VHA HVAC AND MECHANICAL DESIGN MANUAL 2018 SPECIFICATIONS AND GUIDELINES, AND THE AUTHORITIES HAVING JURISDICTION (AHJ).

PRIOR TO BIDDING WORK, CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS. THESE DRAWINGS WERE DEVELOPED FROM PREVIOUS PROJECT RECORD DRAWINGS AND THROUGH SITE INVESTIGATION. ALTHOUGH EVERY ATTEMPT HAS BEEN MADE TO INDICATE THE EXACT ROUTING AND LOCATION OF PROPOSED SYSTEMS, NOT ALL OFFSETS, REQUIRED FITTINGS, CONNECTIONS, AND/OR CONDITIONS COULD BE VERIFIED. THE CONTRACTOR SHALL COORDINATE WORK AND MAKE REQUIRED CHANGES TO THE ROUTING IN ORDER TO AVOID CONFLICTS WITHOUT ANY INCREASED COST TO THE OWNER.

CONTRACTOR IS TO VERIFY ALL DRAWING INFORMATION PRIOR TO STARTING WORK. MINOR CHANGES IN ROUTING ARE EXPECTED. WHERE EXISTING CONDITIONS VARY GREATLY FROM THE PLANS CONTRACTOR SHALL CONTACT THE CONTRACTING OFFICER'S REPRESENTATIVE (COR) IMMEDIATELY BEFORE STARTING WORK. NO EXTRA CONSIDERATION WILL BE GIVEN FOR IGNORANCE OF EXISTING CONDITIONS.

CONTRACTOR IS TO COORDINATE WITH THE COR FOR DIRECTION AND HANDLING OF ANY DEMOLISHED ITEMS OR EQUIPMENT. CONTRACTOR IS TO VERIFY WITH COR WHICH ITEMS OR EQUIPMENT SHALL BE TURNED OVER TO THE VA OR SHALL BECOME PROPERTY OF THE CONTRACTOR TO BE REMOVED FROM JOB SITE.

EXCEPT WHERE INDICATED, ALL EQUIPMENT, MATERIALS, AND ARTICLES INCORPORATED IN THE WORK SHALL BE NEW AND OF COMPARABLE QUALITY AS SPECIFIED. ALL WORKMANSHIP SHALL BE FIRST-CLASS AND SHALL BE PERFORMED BY PERSONNEL SKILLED AND REGULARLY EMPLOYED IN THEIR RESPECTIVE TRADES. ITEMS REUSED AND/OR RELOCATED SHALL BE BROUGHT TO LIKE NEW CONDITION PRIOR TO BEING PLACED INTO SERVICE.

ALL WORK SHALL BE COORDINATED WITH ALL AFFECTED TRADES PRIOR TO STARTING WORK. REWORK REQUIRED DUE TO COORDINATION ISSUES SHALL BE DONE BY THE INSTALLATION CONTRACTOR WITHOUT INCREASED COST TO THE OWNER.

SYSTEMS DESIGNATED TO BE PROVIDED AND INSTALLED WITHIN THESE CONTRACT DOCUMENTS ARE INTENDED TO BE COMPLETE AND OPERATIONAL. PROVIDE EVERYTHING ESSENTIAL FOR THE COMPLETION OF THE WORK TO MAKE THE SYSTEM READY FOR NORMAL AND PROPER OPERATION. THIS INCLUDES ALL WORK OR MATERIALS NOT DIRECTLY SHOWN ON THE DRAWINGS OR IN THE SPECIFICATIONS, BUT NECESSARY FOR THE PROPER OPERATION OF THE SYSTEM.

THE PROJECT IS REQUIRED TO BE PHASED AND AREAS MUST BE KEPT IN OPERATION THROUGHOUT THE PROJECT. SEE APPROPRIATE SECTIONS OF DIVISION 1.

IN GENERAL IT IS THE INTENT OF THESE DRAWINGS:
ITEMS INSTALLED WHERE THE STRUCTURE IS EXPOSED - INSTALLED AS HIGH AS POSSIBLE. ALL VALVES AND CONTROL DEVICES SHOULD BE INSTALLED AS LOW AS POSSIBLE OR WHERE IT WILL BE MAINTAINABLE FROM A LADDER OR LIFT. CLOSE COORDINATION WILL BE REQUIRED IN ORDER TO AVOID ALL CONFLICTS. NEW INSTALLATIONS SHALL NOT BE LOWER THAN EXISTING UTILITIES.

ALL SUPPLY DUCTWORK BETWEEN AHU AND VAV'S SHALL BE 4" STATIC PRESSURE CLASS. ALL DUCT TO BE GALVANIZED STEEL.

ALL NEW MECHANICAL PIPING SHALL MATCH EXISTING SYSTEMS AND BE MADE OF BLACK IRON OR COPPER. NOTIFY COR AND ENGINEER FOR ANY DEVIATION FROM THESE MATERIALS. ALL NEW MECHANICAL PIPING SHALL BE INSULATED AND THICKNESS SHALL MATCH THE EXISTING SYSTEMS. CORE DRILLING WILL BE REQUIRED. CONTRACTOR IS TO IDENTIFY ANY LOCATIONS AND IS REPONSIBLE FOR CORE DRILLING.

ALL SQUARE THROAT DUCT ELBOWS WITH ANY DIMENSIONS LARGER THAN 6" SHALL HAVE TURNING VANES, WHETHER SHOWN ON THE PLANS OR NOT.

COORDINATE WITH GC AND COR FOR WORK WITHIN SPACES SO AS TO NOT DISRUPT OCCUPIED AREAS DURING CONSTRUCTION.

MANUFACTURERS/MODEL NUMBERS INDICATED ON DRAWINGS ARE BASIS OF DESIGN. OTHER MANUFACTURERS/MODEL NUMBERS WILL BE ACCEPTED PROVIDING THEY MEET SPECIFICATIONS AND PERFORMANCE REQUIREMENTS OF THE BASIS OF DESIGN.

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER — REG. NO. 13178 — MATTHEW R. KOSCAK — SOUTH DAKOTA — 11/16/2021

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title	SYMBOLS, LEGENDS AND ABBREVIATIONS
Approved: Project Director	FARGO VAHCS
Project Title	EXPAND BLDG. 1 FOR PRIMARY CARE
Location	2101 ELM STREET FARGO, ND 58102
Date	11 / 16 / 2021
Checked	MK
Drawn	JB
Project Number	437-315
Building Number	1
Drawing Number	M 0.00
Dwg.	102 of 128

Office of Construction and Facilities Management

Department of Veterans Affairs

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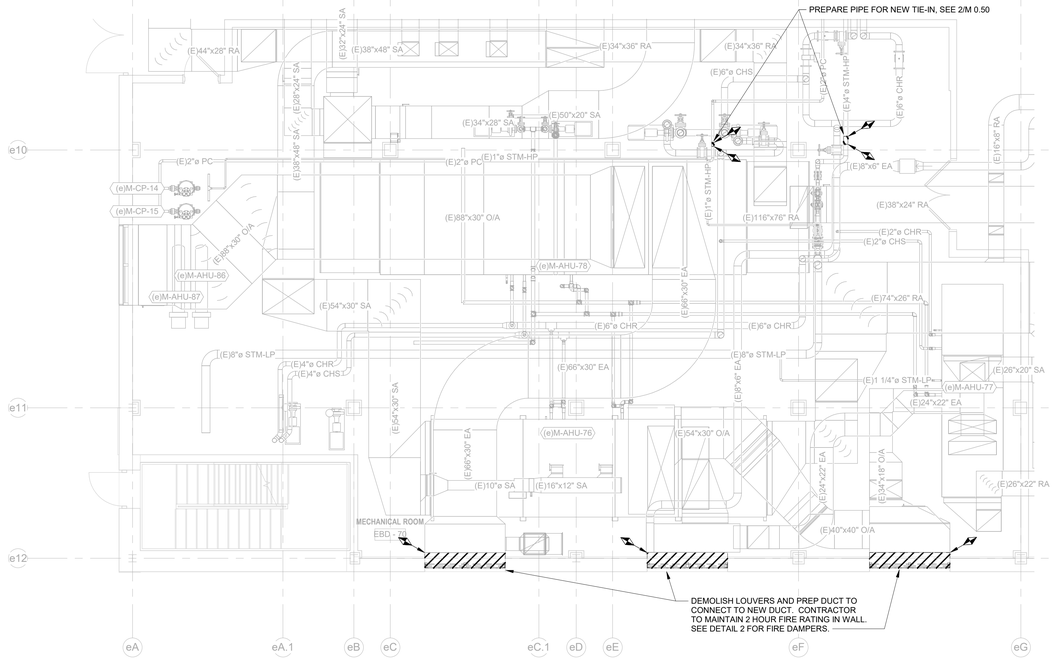
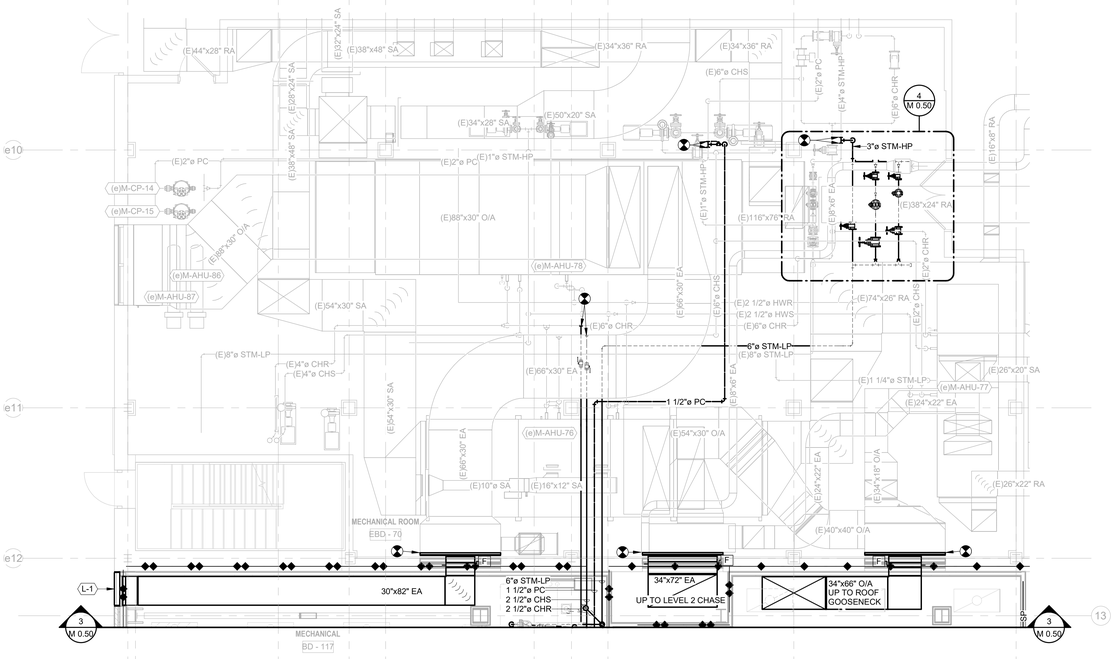
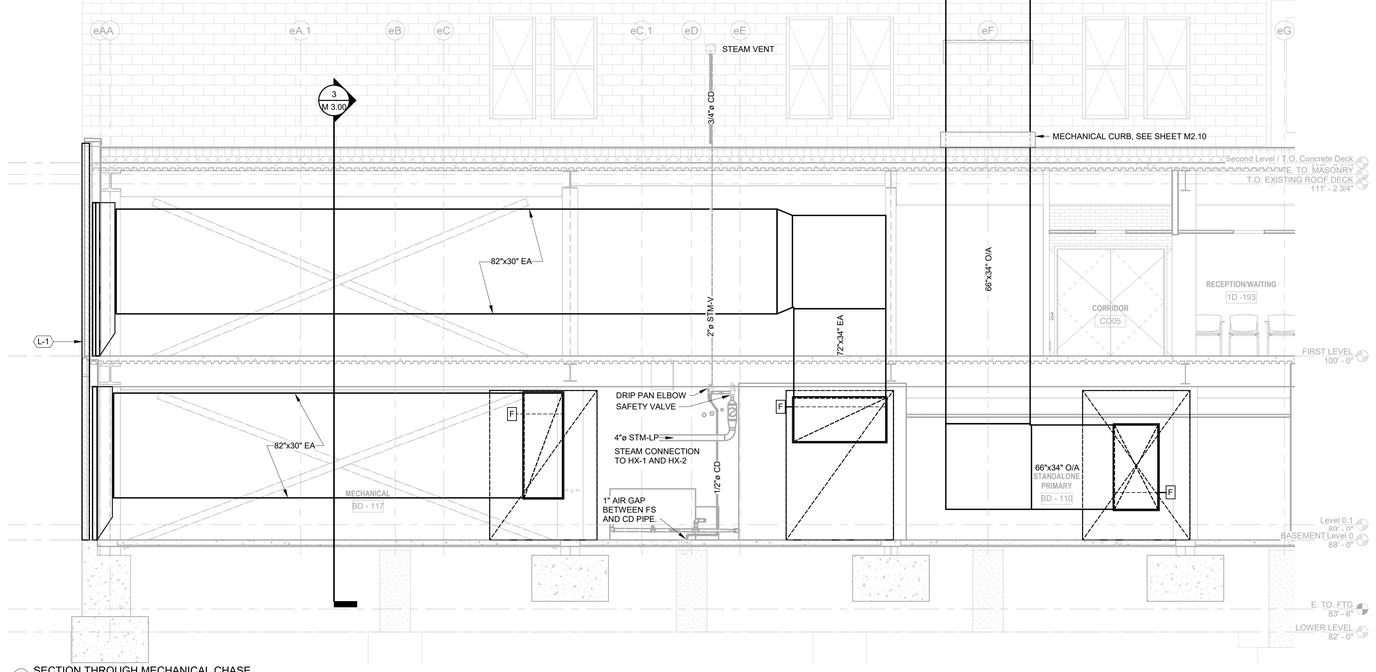
VA FORM 08-6231



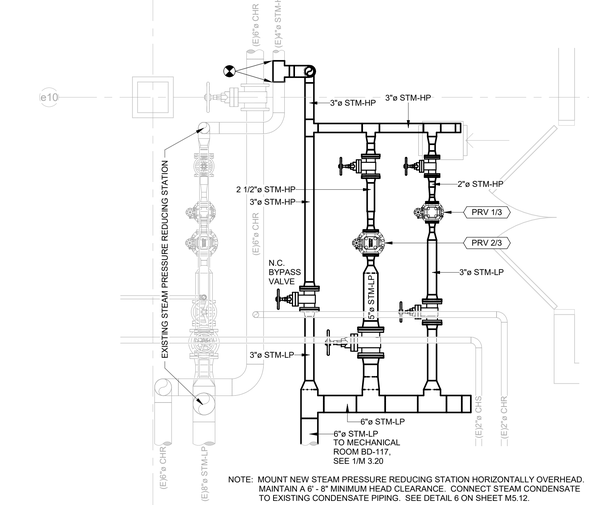
1 ENLARGED EXSITING MECHANICAL ROOM DEMOLITION PLAN
3/16" = 1'-0"



2 ENLARGED EXSITING MECHANICAL ROOM REMODEL PLAN
3/16" = 1'-0"



3 SECTION THROUGH MECHANICAL CHASE
1/4" = 1'-0"



NOTE: MOUNT NEW STEAM PRESSURE REDUCING STATION HORIZONTALLY OVERHEAD. MAINTAIN A 6" - 8" MINIMUM HEAD CLEARANCE. CONNECT STEAM CONDENSATE TO EXISTING CONDENSATE PIPING. SEE DETAIL 6 ON SHEET M5.12.

4 ENLARGED STEAM PRESSURE REDUCING STATION PLAN
1/2" = 1'-0"

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

Albertson Engineering Inc.

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE PROTECTION

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
REG. NO.
13170
MATTHEW
R. KOSCAK
SOUTH DAKOTA
11/16/2021

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title: Existing Mechanical Room Plans	Project Title: EXPAND BLDG. 1 FOR PRIMARY CARE
Approved: Project Director: FARGO VAHCS	Location: 2101 ELM STREET FARGO, ND 58102
Date: 11 / 16 / 2021	Checked: MK
Drawn: JB	Project Number: 437-315
Building Number: 1	Drawing Number: M 0.50
Dwg. 103 of 128	

Office of Construction and Facilities Management

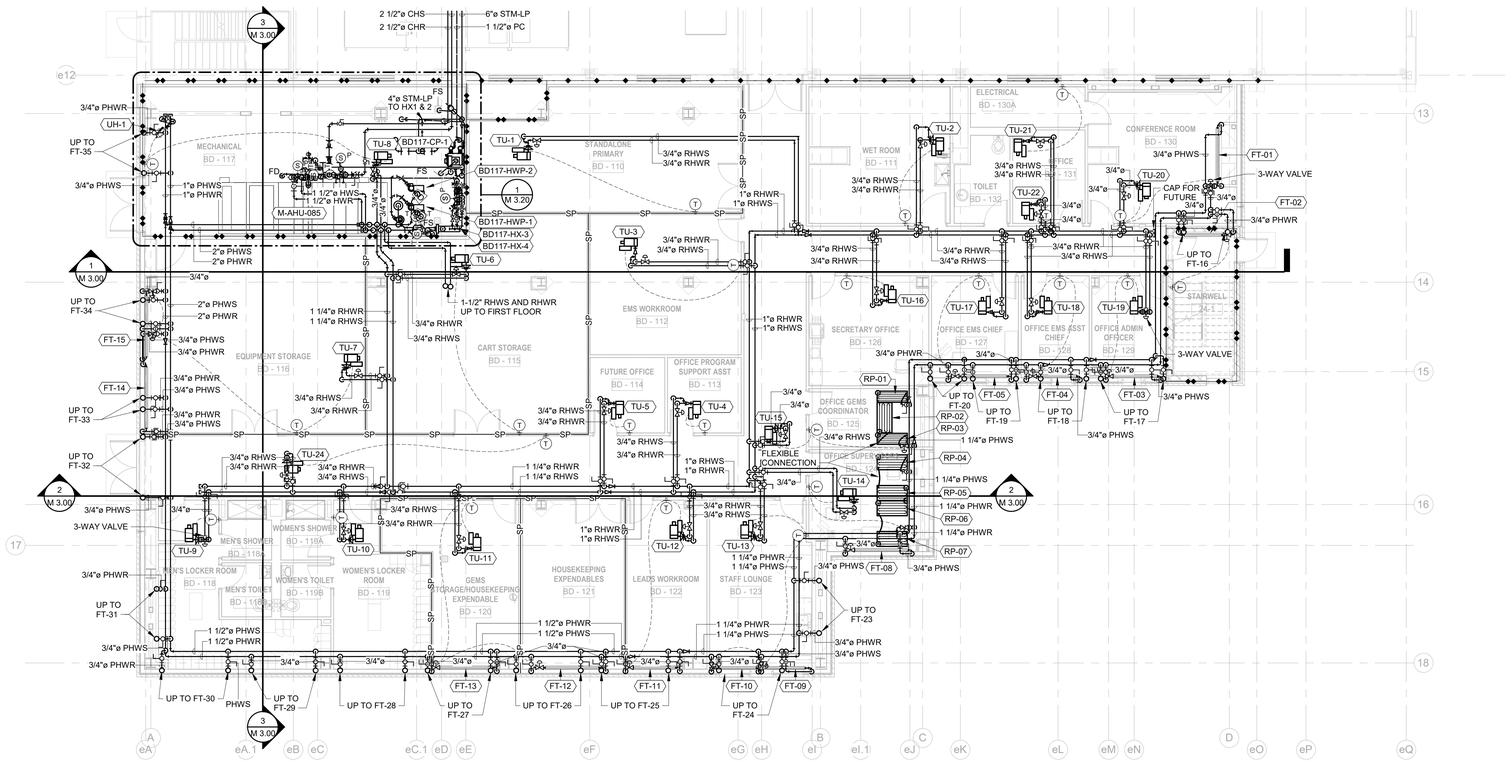
Department of Veterans Affairs

11/16/2021 11:08:06 AM

VA FORM 08-6231

GENERAL NOTES

A. ALL BRANCH PIPE SIZES TO FIN-TUBE RADIATORS, RADIANT CEILING PANELS AND TERMINAL UNITS ARE 3/4"ø PIPE, UNLESS NOTED OTHERWISE.



1 BASEMENT HYDRONIC PIPING PLAN
1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13170
MATTHEW R. KOSCAK
SOUTH DAKOTA
11/16/2021

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title	Basement Hydronic Piping Plan
Approved: Project Director	FARGO VAHCS
Project Title	EXPAND BLDG. 1 FOR PRIMARY CARE
Location	2101 ELM STREET FARGO, ND 58102
Date	11 / 16 / 2021
Checked	MK
Drawn	JB
Project Number	437-315
Building Number	1
Drawing Number	M 1.00
Dwg.	104 of 128

Office of Construction and Facilities Management

Department of Veterans Affairs

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VA FORM 08-6231

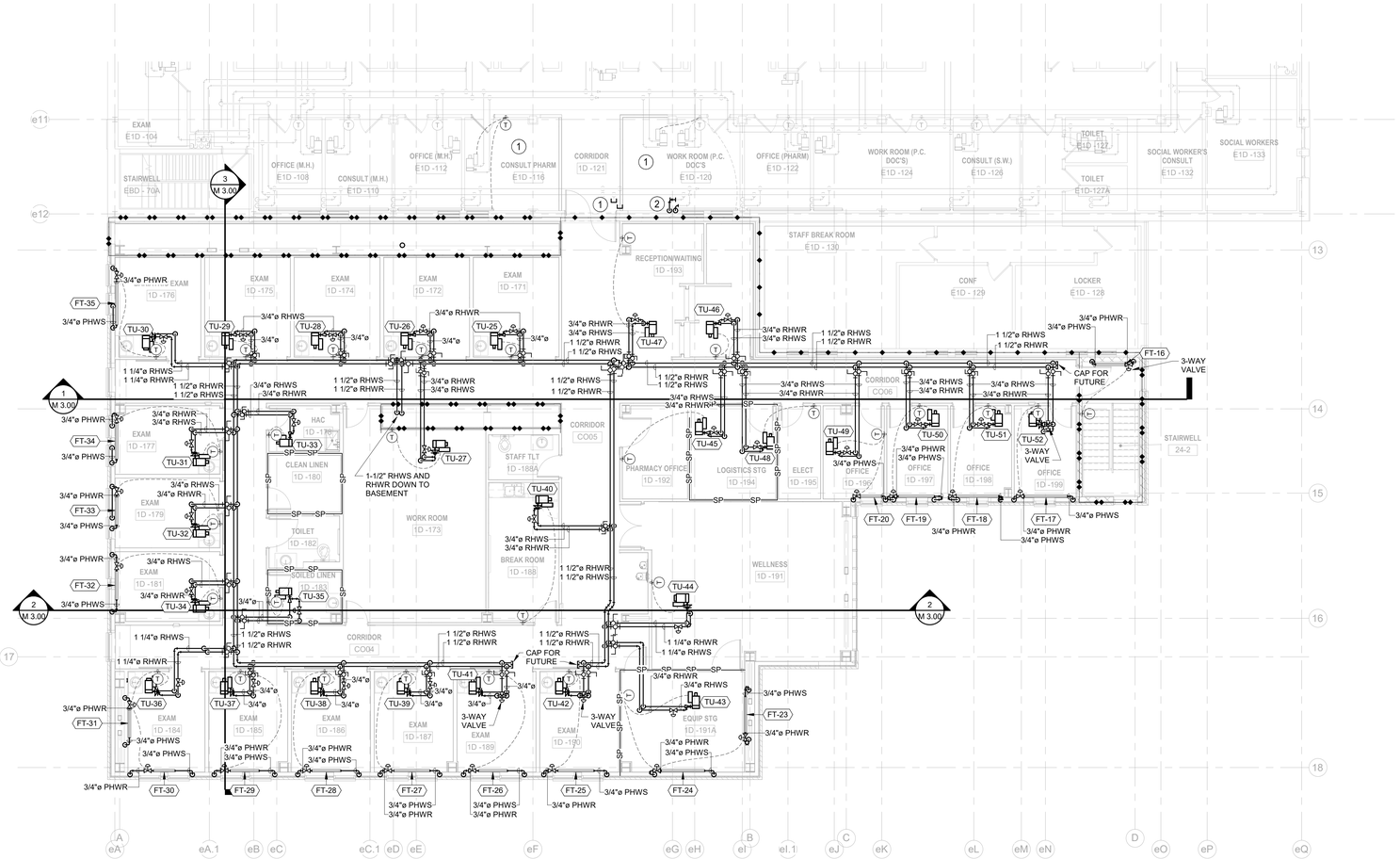
GENERAL NOTES

A. ALL BRANCH PIPE SIZES TO FIN-TUBE RADIATORS AND TERMINAL UNITS ARE 3/4"ø PIPE, UNLESS NOTED OTHERWISE.

SPECIFIC NOTES

(1) SEE 2/M 2.01 FOR DEMOLITION OF BASEBOARD, PIPING AND THERMOSTATS FOR THIS AREA.

(2) REROUTE PIPES AS NEEDED TO RECONNECT EXISTING FIN-TUBE RADIATOR.



1 Level 1 Pipe Plan DOC
1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

Revisions:	Date

CONSULTANTS:

CALIBRE
9090 S RIDGELINE BLVD, SUITE 105
HIGHLANDS RANCH COLORADO 80129
PHONE (303) 730-0434

ALBERTSON ENGINEERING, INC.
315 NORTH MAIN AVENUE, SUITE 200
SIOUX FALLS, SOUTH DAKOTA 57104
PH: (605) 274-0880

SUMMIT FIRE CONSULTING
575 MINNEHAHA AVE WEST
ST. PAUL, MINNESOTA 55103
(612) 387-7050

REGISTERED PROFESSIONAL ENGINEER
REG. NO. 13170
MATTHEW R. KOSCAK
SOUTH DAKOTA
11/16/2021

ARCHITECT

FOURFRONT DESIGN, INC.
517 7TH STREET
RAPID CITY, SOUTH DAKOTA 57701
PH: (605) 342-9470
FAX: (605) 342-2377
WWW.FOURFRONTDESIGN.COM

Drawing Title: First Floor Hydronic Piping Plan	Project Title: EXPAND BLDG. 1 FOR PRIMARY CARE	Project Number: 437-315	Office of Construction and Facilities Management
Approved: Project Director: FARGO VAHCS	Location: 2101 ELM STREET FARGO, ND 58102	Building Number: 1	Department of Veterans Affairs
	Date: 11 / 16 / 2021 · Checked: MK · Drawn: JB	Drawing Number: M 1.01	
		Dwg. 105 of 128	

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