ELECTRICAL LIGHTING SYMBOL LIST *

SYMBOL: DESCRIPTION:

REFER TO LUMINAIRE SCHEDULE FOR DIMENSIONS AND TYPES

SYMBOL	DESCRIPTION
S	SINGLE POLE SWITCH
S_2	2 POLE SWITCH
S_3	3–3-WAY SWITCH 4–4-WAY SWITCH
S_D	OCCUPANCY SENSOR, WALL MOUNTED
OC P	OCCUPANCY SENSOR, PASSIVE INFARED
OC U	OCCUPANCY SENSOR, ULTRASONIC
OC D	OCCUPANCY SENSOR, DUAL TECHNOLOGY
	2'X4' LUMINAIRE — SHADING DENOTES LUMINAIRE WITH EMERGENCY LIGHTING CAPABILITY.
	2'X2' LUMINAIRE
	1'x1' LUMINAIRE
	1'X4' LUMINAIRE
	6"X4" LUMINAIRE
	DOWN LIGHT
	4' INDUSTRIAL LUMINAIRE
	WALL MOUNTED LUMINAIRE
	WALL SCONCE LUMINAIRE
	EXTERIOR WALL-PACK LUMINAIRE
	SINGLE FACE EXIT SIGN — SHADING INDICATES ILLUMINATED FACE(S). ARROWS INDICATE DIRECTION TO EXIT
	DOUBLE FACE EXIT SIGN

ELECTRICAL POWER SYMBOL LIST *

SYMBOL: DESCRIPTION:

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE — SHADED DEVICE INDICATES EMERGENCY POWER.
	GROUND FAULT DUPLEX RECEPTACLE
	SIMPLEX RECEPTACLE
	ISOLATED GROUND DUPLEX RECEPTACLE
	FLOORBOX WITH TECHNOLOGY
	SURFACE RACEWAY W/DEVICES SHOWN
	SURFACE MULTI-OUTLET RACEWAY
E	ELECTRICAL CONNECTION, WALL MOUNTED
E	ELECTRICAL CONNECTION, CEILING OR FLOOR MOUNTED
	STARTER OR VARIABLE FREQUENCY DRIVE (VFD)
	MANUAL MOTOR STARTER
	DISCONNECT SWITCH
	COMBINATION STARTER / DISCONNECT
	TRANSFORMER
	SURFACE MOUNTED PANELBOARD
	FLUSH MOUNTED PANELBOARD

LUMINAIRE SYMBOL KEY

SYMBOL: DESCRIPTION:

SYMBOL	DESCRIPTION
	NORMAL BRANCH LUMINAIRE
	CRITICAL BRANCH LUMINAIRE
	LIFE SAFETY BRANCH LUMINAIRE UNSWITCHED FOR NIGHT LIGHT, UNLESS NOTED 'SE'

ELECTRICAL SYSTEMS SYMBOL LIST *

SYMBOL: DESCRIPTION:

WALL CLG FLOOR MOUNT

SYMBOL	DESCRIPTION
FAA	FIRE ALARM - ANNUNCIATOR
VF	FIRE ALARM - VISUAL DEVICE
F	FIRE ALARM - MANUAL PULL STATION
AF	FIRE ALARM - AUDIO/VISUAL DEVICE
H	FIRE ALARM - HEAT DETECTOR
SD	FIRE ALARM - DUCT TYPE SMOKE DETECTOR
AR	FIRE ALARM - ADDRESSABLE RELAY
MM	FIRE ALARM - MONITOR MODULE
FS	FIRE PROTECTION - FLOW SWITCH
MS	FIRE PROTECTION - VALVE MONITOR SWITCH
DH	DOOR HOLD OPEN
PP	PUSH PAD

* ALL SYMBOLS AND ABBREVIATIONS LISTED MAY NOT BE APPLICABLE TO THIS PROJECT. REFER TO GENERAL ELECTRICAL EQUIPMENT SCHEDULE FOR MORE COMPLETE DESCRIPTION AND ADDITIONAL SYMBOLS.

APPLICABLE CODES:

CONTRACTOR SHALL COMPLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS.

NATIONAL ELECTRIC CODE: NEC 2014 EDITION
NATIONAL FIRE CODE: 2012 EDITION
LIFE SAFETY CODE: NFPA 101 2006 EDITION
MODEL ENERGY CODE: IECC 2009

SYSTEM INPUTS \ SEQUENCE OF OPERATION	PANEL/ANNUNCIATOR ALARM INDICATION	PANEL/ANNUNCIATOR SUPERVISORY INDICATION	PANEL/ANNUNCIATOR TROUBLE INDICATION	AUDIBLE ALARMS SEQUENCE	VISUAL ALARMS SEQUENCE	SPRINKLER PREACTION ACTIVATION SEQUENCE (AR)	ALL SHUTDOWN SEQUENCE (AR)	DOOR HOLDER RELEASE SEQUENCE (AR)
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL LOW BATTERY		X						
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL BATTERY OR CHARGER FAILURE			X					
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL ABNORMAL SWITCH OR CONTROL POSITION.		X						
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL GROUND FAULT, OPEN CIRCUIT, SHORT CIRCUIT			X					
FIRE ALARM PANEL, TRANSPONDER, NAC PANEL, AC POWER LOSS OR IRREGULARITY			X					
NOTIFICATION APPLIANCE CIRCUIT OR SLC LOOP GROUND FAULT, OPEN CIRCUIT, SHORT CIRCUIT			X					
INITIATING DEVICE FAILURE OR COMMUNICATION ERROR			X					
FIRE ALARM PANEL MANUAL FIRE DRILL		X		X	X			
MANUAL PULL STATION (FT) (F)	X			X	X			
SMOKE DETECTOR (SD)	X			X	X			
HEAT DETECTOR (H)	X			X	X			
SPRINKLER SYSTEM FLOW SWITCH (FS) (MM)	X			X	X	X		
SPRINKLER SYSTEM MONITOR SWITCH (MS) (MM)		X						
SPRINKLER SYSTEM CABINET MONITOR (MS) (MM)		X						
SMOKE DETECTOR AT DOOR HOLD (SD) DH	X			X	X			X
SMOKE DETECTOR FOR HVAC CONTROL (SD) (SD) D		X					X	

1 FIRE ALARM OPERATION MATRIX

NO SCALE

NOTES:

1. ALL SYSTEM EVENTS SHALL BE LOGGED, PRINTED, AND DISPLAYED ON THE GRAPHICAL INTERFACE, IF APPLICABLE. SEE SPECIFICATIONS FOR MORE INFORMATION AND DESCRIPTIONS OF SEQUENCES OF OPERATION.

SUGGESTED MATRIX OF SCOPE RESPONSIBILITY

ITEM	SHOWN ON:	FURNISHED BY:	INSTALLED BY:	NOTES: (SEE BELOW)
TELECOMMUNICATIONS ROUGH-IN (REFER TO MATERIAL LIST AND SPECIFICATION SECTION 27 05 00 FOR DEFINITION)	T-SERIES	E.C.	E.C.	1
INFORMATION OUTLET FACEPLATE	T-SERIES	T.C.	T.C.	
INFORMATION OUTLET JACKS AND TERMINATIONS	T-SERIES	T.C.	T.C.	
CONDUIT SLEEVES (WHEN SHOWN ON DRAWINGS)	T-SERIES	E.C.	E.C.	
CONDUIT SLEEVES (NOT SHOWN BUT REQUIRED FOR PROPER INSTALLATION OF SYSTEM)	N/A	T.C.	E.C.	2,4
TECHNOLOGY SYSTEMS ROUGH-IN	T-SERIES	T.C.	E.C.	3,4
CABLE TRAY INCLUDING WIRE MESH TRAY (REFER TO MATERIAL LIST AND SPECIFICATION SECTION 27 05 28 FOR REQUIREMENTS)	T-SERIES	E.C.	E.C.	
LADDER RACK	T-SERIES	T.C.	T.C.	5
GROUNDING LUGS ON TECHNOLOGY EQUIPMENT	T-SERIES	T.C.	E.C.	6
GROUNDING SYSTEM FOR TECHNOLOGY SYSTEM	T-SERIES	E.C.	E.C.	7
CONNECTION OF TECHNOLOGY GROUND SYSTEM TO THE ELECTRICAL GROUND SYSTEM	T-SERIES	E.C.	E.C.	8
LINE VOLTAGE POWER (+120V OR GREATER)	E-SERIES	E.C.	E.C.	
LINE VOLTAGE POWER (NOT SHOWN BUT REQUIRED FOR PROPER INSTALLATION OF SYSTEM)	N/A	T.C.	E.C.	2,4
LINE VOLTAGE POWER FOR DOOR HARDWARE POWER SUPPLIES	ARCH SPEC	E.C.	E.C.	
LOW VOLTAGE CABLING FOR TECHNOLOGY SYSTEMS	T-SERIES	T.C.	T.C.	
BRIDLE RINGS/J-HOOKS OR OTHER CABLE ROUTING METHODS (OTHER THAN CONDUIT AND CABLE TRAY)	T-SERIES	T.C.	T.C.	5
WIRE MANAGEMENT (WITHIN EQUIPMENT RACKS AND FOR WALL MOUNTED FIELDS)	T-SERIES	T.C.	T.C.	

NOTES:

1. LOCATIONS OF TELECOMMUNICATIONS ROUGH-IN SHALL BE INDICATED BY THE INFORMATION OUTLET SYMBOL ( ) ON THE CONTRACT DOCUMENTS.
2. BASED ON THE INHERENT DIFFERENCES IN PRODUCTS FROM VARIOUS MANUFACTURERS, ALL REQUIRED EQUIPMENT MAY NOT BE SHOWN ON THE DRAWINGS FOR ALL ACCEPTABLE MANUFACTURERS.
3. INCLUDES BACKBOXES AND CONDUIT REQUIRED FOR THE TECHNOLOGY SYSTEMS INSTALLATION. THE E.C. SHALL BASE THE BID ON THE BASIS OF DESIGN SHOWN ON THE CONTRACT DOCUMENTS.
4. ALL CHANGES TO THE SLEEVES, BACKBOXES, CONDUITS AND POWER REQUIRED BECAUSE OF THE T.C.'S SELECTION OF AN ALTERNATE ACCEPTABLE MANUFACTURER (OR FROM SYSTEM CONFIGURATIONS THAT ARE LEFT TO THE CHOICE OF THE CONTRACTOR) SHALL BE INCLUDED IN THE T.C.'S BID. THIS BID SHALL INCLUDE INSTALLATION BY A LICENSED ELECTRICIAN. UNLESS TRADE RULES DICTATE OTHERWISE.
5. FURNISHED AS PART OF THE EQUIPMENT WHEN POSSIBLE, OR FURNISHED TO THE E.C. FOR INSTALLATION IN THE FIELD.
6. INCLUDES ALL CONDUCTORS, GROUND BARS, AND TERMINATION'S FOR THE COMPLETE GROUNDING SYSTEM REQUIRED BY THE SPECIFICATIONS INCLUDING CONNECTORS TO THE LUGS PROVIDED ON THE TECHNOLOGY EQUIPMENT.
7. REFER TO ELECTRICAL DRAWINGS FOR LOCATIONS OF PANELS AND SWITCHBOARDS SHOWN IN THE GROUNDING RISER.
8.

ELECTRICAL ABBREVIATIONS

ABBREVIATION:	DESCRIPTION:
E.C.	ELECTRICAL CONTRACTOR
F.P.C.	FIRE PROTECTION CONTRACTOR
G.C.	GENERAL CONTRACTOR
H.C.	HEATING CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
P.C.	PLUMBING CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
T.C.	TELECOMMUNICATIONS CONTRACTOR
V.C.	VENTILATION CONTRACTOR
AFF	ABOVE FINISHED FLOOR
CTs	CURRENT TRANSFORMERS
EWC	ELECTRIC WATER COOLER
N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
N.O.	NORMALLY OPEN
NC	NEW CONNECTION
SV	SOLENOID VALVE
+#"	MOUNTING HEIGHT FROM FINISHED FLOOR TO CENTERLINE

ELECTRICAL DEMOLITION NOTES

1. THE ELECTRICAL DRAWINGS INDICATE EXISTING ELECTRICAL ITEMS TO BE REMOVED. THE DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY BOX, CONDUIT, OR WIRE THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS.
2. ELECTRICAL ITEMS (i.e., LIGHTING FIXTURES, RECEPTACLES, SWITCHES, ETC.) REMOVED AND NOT RELOCATED REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF MATERIAL THE OWNER DOES NOT WANT TO REUSE OR RETAIN (i.e., FOR MAINTENANCE PURPOSES).
3. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER BEFORE TURNING OFF POWER TO CIRCUITS, FEEDERS, PANELS, ETC. COORDINATE ALL OUTAGES WITH OWNER. CONDUIT CONCEALED IN WALL CONSTRUCTION MAY BE ABANDONED IN PLACE IF NOT AFFECTED BY OTHER CONSTRUCTION.
4. WHERE LIGHTS, SWITCHES, RECEPTACLES, ETC., ARE BEING REMOVED ALL ASSOCIATED CONDUIT AND WIRE BACK TO THE PANELBOARD OR FEEDER JUNCTION BOX SERVING THE DEVICE SHALL ALSO BE REMOVED, UNLESS THE CONDUIT CAN BE REUSED FOR NEW CONDUCTORS.
5. ALL CONDUIT SHALL BE REMOVED WHERE WALLS ARE BEING REMOVED. WHERE CONDUIT IS IN THE CONCRETE SLAB, CUT OFF FLUSH, PULL OUT WIRE, AND PLUG. WHERE CONDUIT IS RUN EXPOSED, ALL ASSOCIATED CLAMPS, SUPPORTS, HANGERS, ETC., SHALL ALSO BE REMOVED.
6. THIS CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER CONTRACTORS AT THE JOB SITE BEFORE REMOVING EXISTING ELECTRICAL AND INSTALLING NEW ITEMS.
7. EXISTING CONDUIT IN GOOD CONDITION, MAY BE REUSED IN PLACE. RELOCATED EXISTING CONDUIT SHALL NOT BE ALLOWED. BONDING CONDUCTORS SHALL BE INSTALLED IN ALL REUSED CONDUIT TO ASSURE PROPER GROUND PATH.
8. EQUIPMENT REMOVAL IN CERTAIN LOCATIONS MAY REQUIRE THE INSTALLATION OF A JUNCTION BOX TO RECONNECT CIRCUITS THAT REMAIN IN OPERATION. EXTEND CONDUIT AND WIRING AS REQUIRED TO MAINTAIN POWER TO REMAINING EQUIPMENT.
9. CONTRACTOR SHALL REMOVE AND INSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF ELECTRICAL WORK THAT IS OUTSIDE THE CONTRACT LIMITS OF CONSTRUCTION. CONTRACTOR SHALL REPLACE CEILING TILES WITH IDENTICAL MATERIAL WHERE DAMAGED BY THIS CONTRACTOR.
10. BALLASTS MANUFACTURED PRIOR TO 1980 CONTAIN PCBs AND SHALL BE DISPOSED OF BY A FEDERAL OR STATE E.P.A. APPROVED METHOD AND IN ACCORDANCE WITH SPECIFICATIONS.
11. HID AND FLUORESCENT LAMPS CONTAIN MERCURY AND SHALL BE DISPOSED OF BY A FEDERAL OR STATE E.P.A. APPROVED METHOD AND IN ACCORDANCE WITH SPECIFICATIONS.

ELECTRICAL GENERAL NOTES

1. "1/E000" INDICATES DETAIL NUMBER/SHEET NUMBER.
2. ##-### INDICATES ELECTRICAL EQUIPMENT DEFINED IN ELECTRICAL SCHEDULES OR SPECIFICATION. REFER TO DRAWINGS CONTAINING ELECTRICAL SCHEDULES. PERMANENT NAMEPLATE SHALL MATCH FINAL EQUIPMENT NOMENCLATURE, NOT ELECTRICAL EQUIPMENT TAG NAME, REFER TO SPECIFICATIONS.
3. "#" INDICATES KEYED NOTE USED TO DESCRIBE ADDITIONAL INFORMATION OF WORK REQUIRED, SPECIFIC TO THE SHEET AND/OR DETAIL IT IS SHOWN WITH.
4. "NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT.
5. SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE IS CONNECTED TO AN EMERGENCY CIRCUIT.
6. LUMINAIRE KEY:
7. LUMINAIRE — F1 = FIXTURE TAG; 1 = CIRCUIT NUMBER; a = SWITCH NUMBER; NL = SUBSCRIPT (IF APPLICABLE)
   *IF LABEL IS ORIENTED HORIZONTALLY A / WILL SEPARATE THIS INFORMATION. EX: F1 / 1 / A / NL
8. DEVICE KEY:
   DEVICE — A = MOUNTING (IF APPLICABLE); 1 = CIRCUIT NUMBER
   *IF LABEL IS ORIENTED HORIZONTALLY A / WILL SEPARATE THIS INFORMATION. EX: A / 1
9. MOUNTING SUBSCRIPT KEY:
   RECEPTACLES AND TELECOMMUNICATIONS OUTLETS:
   A MOUNT ABOVE COUNTER (+6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH)
   L MOUNT IN LAB CASEWORK
   H MOUNT DEVICE IN A HORIZONTAL ORIENTATION
10. A SLASH IS USED BETWEEN TWO SUBSCRIPTS ie: A/H
    REFER TO SPECIFICATIONS FOR FULL DESCRIPTIONS AND MANUFACTURERS OF ALL DEVICES.
11. LINE TYPE KEY:
    - NEW WORK BY THIS CONTRACTOR (DARK SOLID LINE)
    - NEW WORK UNDERFLOOR OR UNDERGROUND BY THIS CONTRACTOR (DARK LONG DASHED LINE)
    - NEW WORK BY OTHERS AND/OR EXISTING TO REMAIN (LIGHT SOLID LINE)
    - EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK SHORT DASHED LINE)

ELECTRICAL INSTALLATION NOTES

1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADAAG (AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES).
2. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH PHASE.
3. CIRCUITS SERVING EMERGENCY AND EXIT LUMINAIRES WILL BE RUN IN SEPARATE RACEWAY FROM ALL OTHER CIRCUITS.
4. FLUSH MOUNT ALL TOGGLE SWITCHES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. TOGGLE SWITCHES MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.
5. TWO ADJACENT SWITCHES SHOWN WITH A SINGLE CIRCUIT CONNECTION INDICATES MULTI-LEVEL SWITCHING; INBOARD AND OUTBOARD LAMPS ARE TO BE SWITCHED SEPARATELY.
6. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TELECOMMUNICATION OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.
7. DUPLEX RECEPTACLES FOR ELECTRIC WATER COOLERS (EWC) SHALL BE CONCEALED BEHIND WATER COOLER ACCESS PLATE OR BE DIRECTLY BELOW AND CENTERED ON EWC. CONTRACTOR SHALL VERIFY TYPE OF EWC TO BE INSTALLED.
8. MOUNT RECESSED CLOCK RECEPTACLES AT +7'-0" (+84") FROM FLOOR EXCEPT WHERE OTHERWISE NOTED.
9. MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED.
10. INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE.
11. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL DETECTORS AND/OR SPEAKERS WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE.
12. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
13. ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF, OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
15. ALL WELDING SHALL BE ACCORDING TO AMERICAN WELDING SOCIETY STANDARDS. CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER CERTIFICATES QUALIFYING EACH WELDER, PRIOR TO START OF WORK. THE ARCHITECT/ENGINEER RESERVES THE RIGHT TO REQUIRE QUALIFYING DEMONSTRATION, AT THE CONTRACTOR'S EXPENSE, OF ANY WELDERS ASSIGNED TO THE JOB.
16. CONTRACTOR SHALL REMOVE AND REINSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF ELECTRICAL WORK THAT IS OUTSIDE THE CONTRACT LIMITS OF CONSTRUCTION. CONTRACTOR SHALL REPLACE CEILING TILES WITH IDENTICAL MATERIAL WHERE DAMAGED BY THIS CONTRACTOR.

Revisions: Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ELECTRICAL COVERSHEET

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: E000

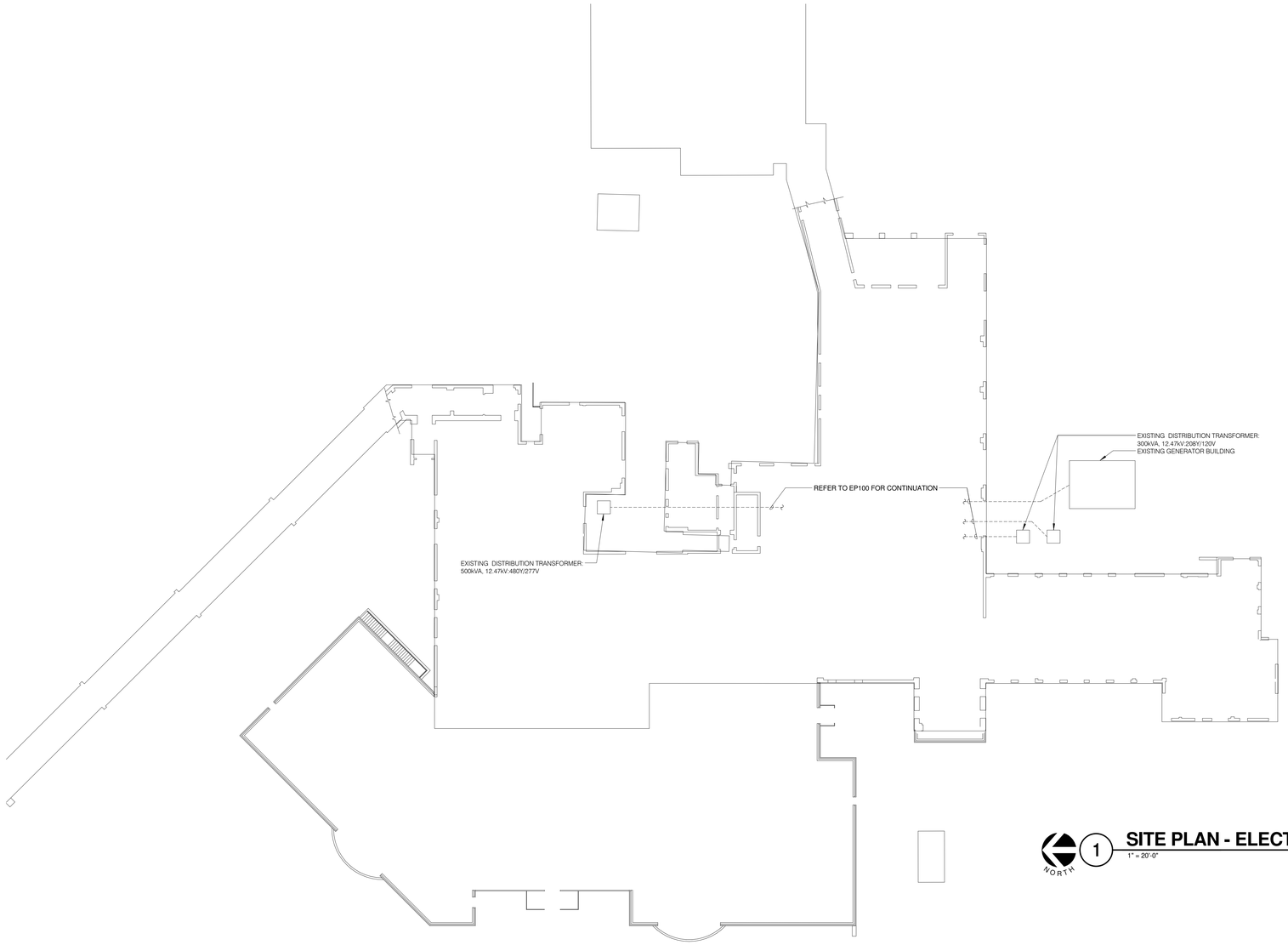
Dwg. 109 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

100% ISSUED FOR CONSTRUCTION



NORTH

1 **SITE PLAN - ELECTRICAL**
1" = 20'-0"

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: SITE PLAN - ELECTRICAL

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: E100

Dwg. 110 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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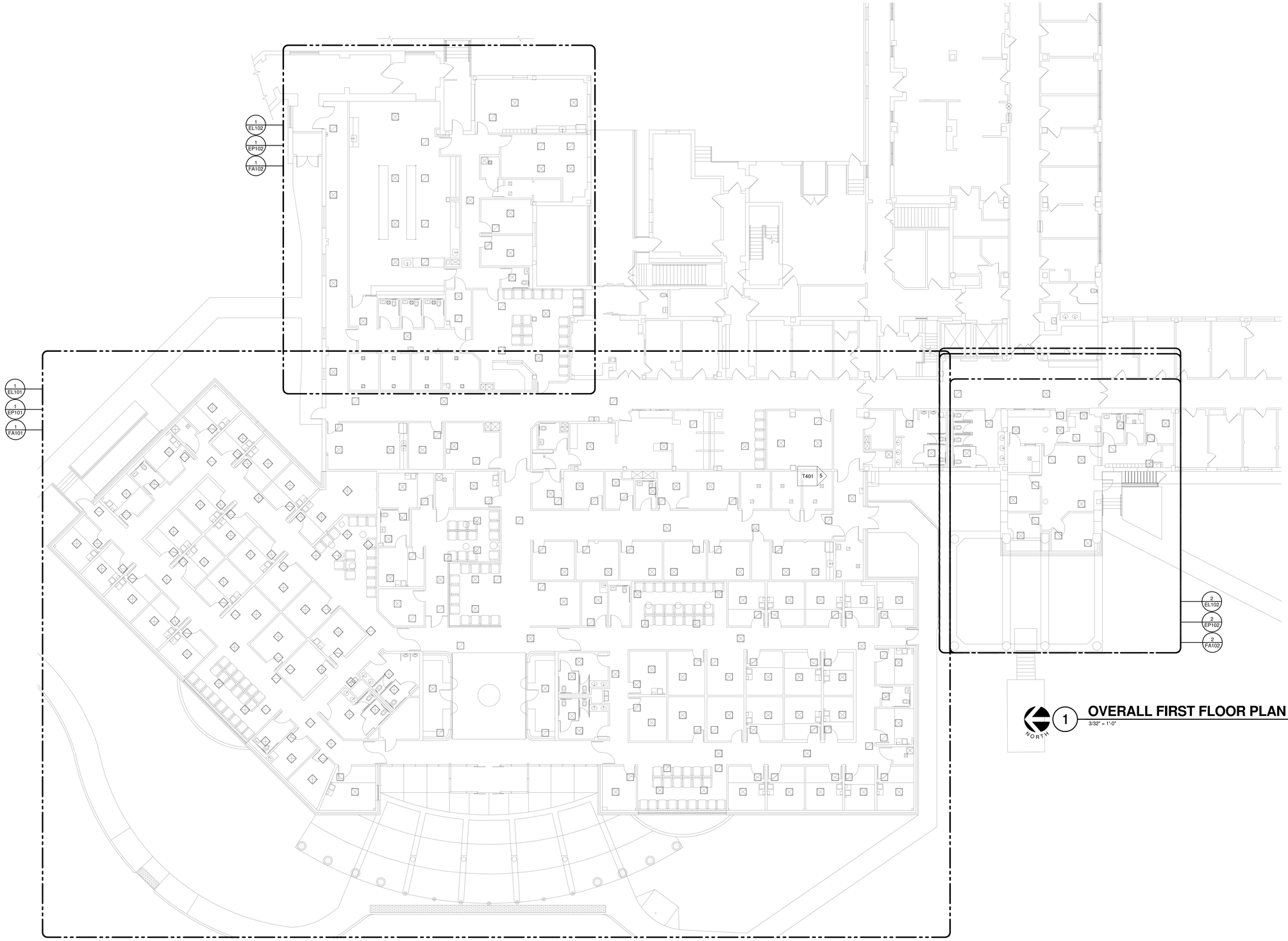

1 OVERALL FIRST FLOOR PLAN - ELECTRICAL

3/32" = 1'-0"

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: OVERALL FIRST FLOOR PLAN - ELECTRICAL

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: E101

Dwg. 111 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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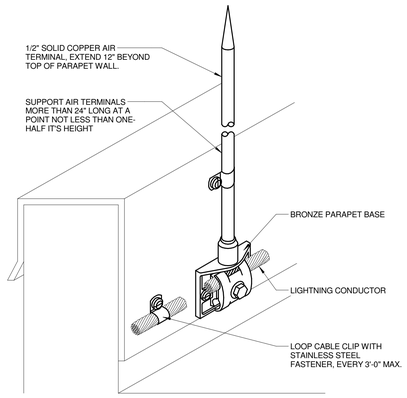
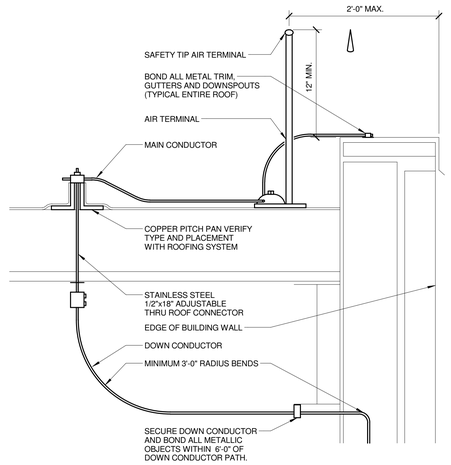
CLASS 1 MATERIAL REQUIREMENTS

TYPE OF CONDUCTOR		COPPER STANDARD	COPPER METRIC
AIR TERMINAL, SOLID	MIN. DIAMETER	3/8 IN.	9.5 MM
AIR TERMINAL, TUBULAR	MIN. DIAMETER MIN. WALL THICKNESS	5/8 IN. 0.033 IN.	15.9 MM 0.8 MM
MAIN CONDUCTOR, CABLE	MIN. SIZE EA. STRAND WGT. PER LENGTH CROSS SECT. AREA	17 AWG 187 LB/1000 FT. 57,400 CM	 278 MM 29 MM
MAIN CONDUCTOR, SOLID STRIP	THICKNESS WIDTH	0.051 IN. 1 IN.	1.30 MM 25.4 MM
BONDING CONDUCTOR, CABLE (SOLID OR STRANDED)	MIN. SIZE EA. STRAND CROSS SECT. AREA	17 AWG 26,240 CM	
BONDING CONDUCTOR, SOLID STRIP	THICKNESS WIDTH	0.051 IN. 1/2 IN.	1.30 MM 12.7 MM

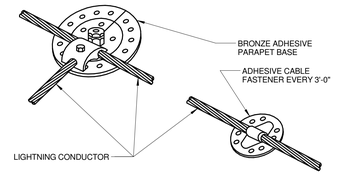
1 LIGHTNING PROTECTION MATERIAL REQUIREMENTS
12" = 1'-0"



2 PARAPET AIR TERMINAL DETAIL
12" = 1'-0"



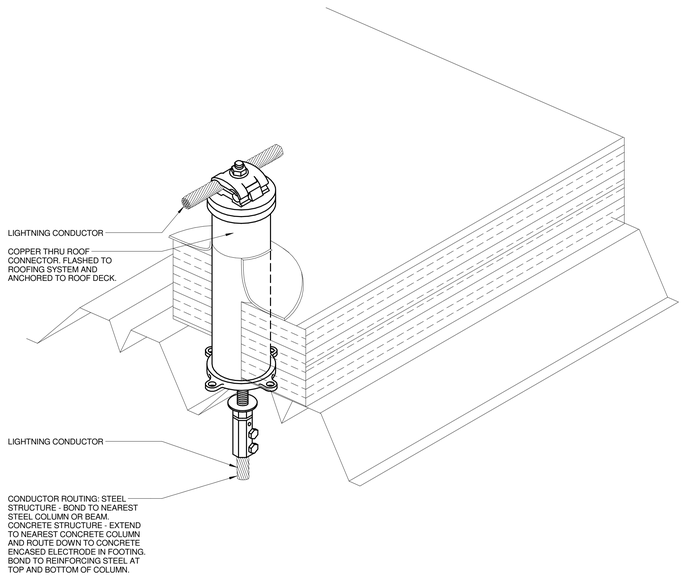
3 PERIMETER AIR TERMINAL DETAIL
12" = 1'-0"



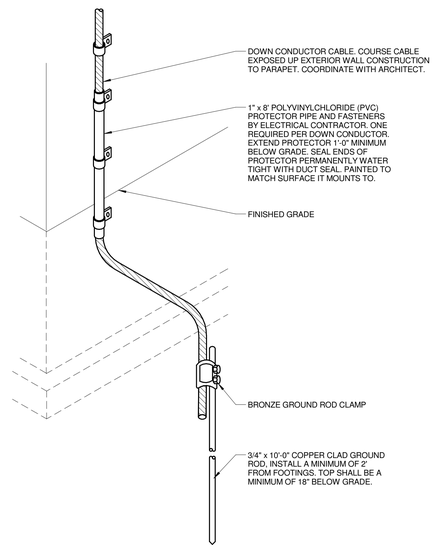
NOTES:

1. E.C. SHALL VERIFY COMPATIBILITY OF ADHESIVE WITH ROOFING SYSTEM MANUFACTURER PRIOR TO INSTALLATION.

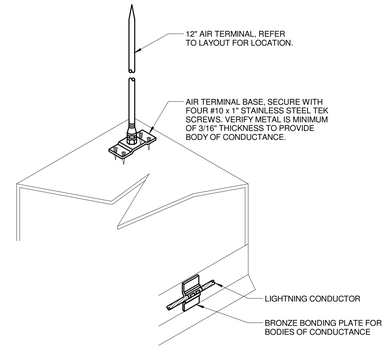
4 CABLE JUNCTION POINT
12" = 1'-0"



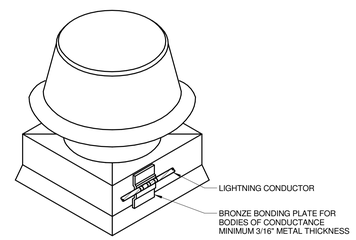
5 ROOF PENETRATION DETAIL
12" = 1'-0"



6 GROUNDING AT GRADE DETAIL
12" = 1'-0"



7 EQUIPMENT AIR TERMINAL
12" = 1'-0"



8 BONDING FOR METAL BODIES
12" = 1'-0"

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ELECTRICAL DETAILS

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: E300

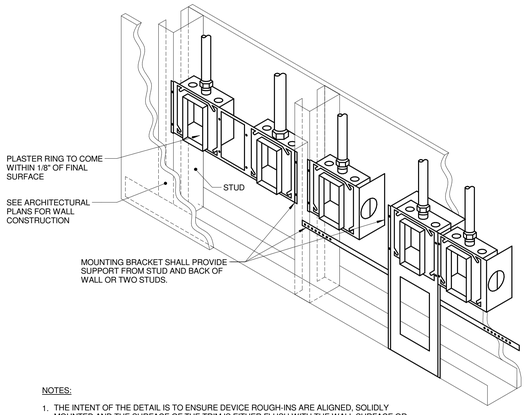
Dwg. 112 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

100% ISSUED FOR CONSTRUCTION

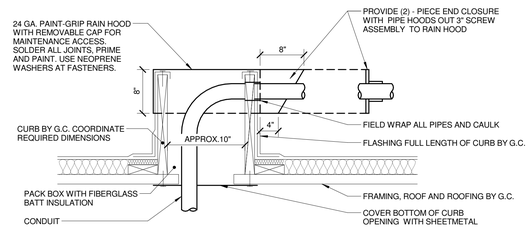


NOTES:

1. THE INTENT OF THE DETAIL IS TO ENSURE DEVICE ROUGH-INS ARE ALIGNED, SOLIDLY MOUNTED AND THE SURFACE OF THE TRIM IS EITHER FLUSH WITH THE WALL SURFACE OR WITHIN 1/8" OF THE WALL SURFACE. JUNCTION BOXES LARGER THAN 4" SQUARE SHALL BE MOUNTED IN A MANNER THAT IS SIMILAR TO THE SYSTEM NOTED ABOVE OR ACHIEVES THE SAME RESULTS.
2. PLASTER RINGS DEPTH SHALL BE 1/8" DEEPER THAN THE GYP BOARD APPLIED TO THE WALL. PLASTER RING SHALL BE 3/4" FOR USE WITH 5/8" GYP BOARD.
3. MOUNTING BRACKET FOR 2 1/2" OR 3 1/2" STUDS SHALL BE CADDY #H23, OR B-LINE BB4-23. MOUNTING BRACKET FOR FOR 4" OR 6" STUDS SHALL BE CADDY #H46TC OR B-LINE BB4-# . FOR MULTIPLE BOXES BETWEEN STUDS, BRACKET SHALL BE CADDY #RBS16/#RBS24 OR B-LINE BB8-# OR BBF# FLOOR MOUNT SUPPORT WITH BBFC.

1 BACKBOX MOUNTING DETAIL

12" = 1'-0"

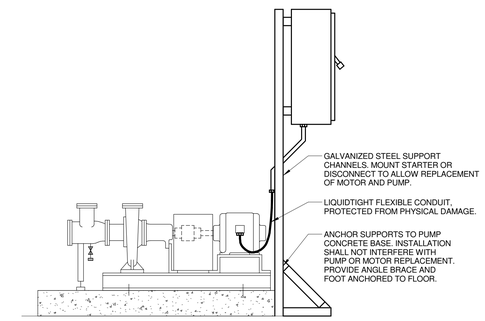


NOTES:

1. VERIFY FINAL REQUIREMENTS WITH GENERAL CONTRACTOR (G.C.) PRIOR TO INSTALLATION.

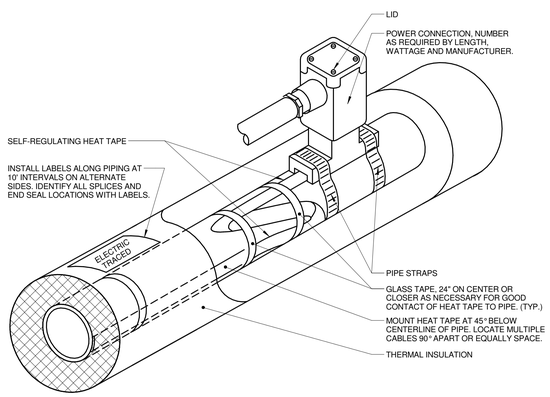
2 ROOF PENETRATION WITH HOOD

12" = 1'-0"



3 PUMP CONNECTION DETAIL

12" = 1'-0"



NOTES:

1. INSTALL HEATER CABLE AND POWER CONNECTION IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.

4 HEAT TAPE CONNECTION

12" = 1'-0"

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ELECTRICAL DETAILS

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: E301

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Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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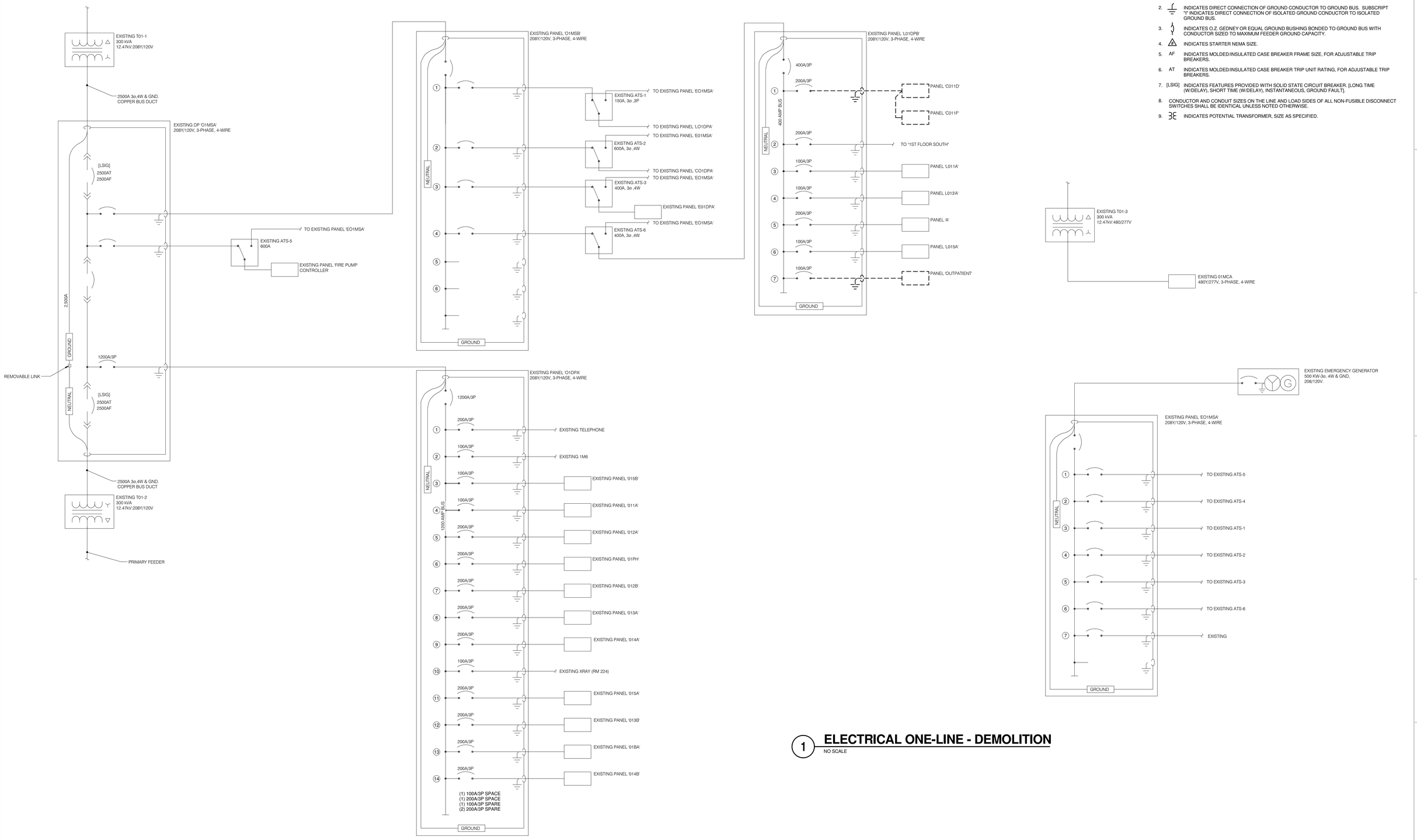
ONE LINE DIAGRAM NOTES

1. AIC RATINGS LISTED FOR EQUIPMENT ARE MINIMUM REQUIREMENTS FOR BUS BRACING AND DEVICE RATING. ALL EQUIPMENT SHALL BE FULLY RATED UNLESS SPECIFICALLY NOTED AS SERIES RATED.
2. INDICATES DIRECT CONNECTION OF GROUND CONDUCTOR TO GROUND BUS. SUBSCRIPT "I" INDICATES DIRECT CONNECTION OF ISOLATED GROUND CONDUCTOR TO ISOLATED GROUND BUS.
3. INDICATES O.Z. GEDNEY OR EQUAL GROUND BUSHING BONDED TO GROUND BUS WITH CONDUCTOR SIZED TO MAXIMUM FEEDER GROUND CAPACITY.
4. INDICATES STARTER NEMA SIZE.
5. AF INDICATES MOLDED/INSULATED CASE BREAKER FRAME SIZE, FOR ADJUSTABLE TRIP BREAKERS.
6. AT INDICATES MOLDED/INSULATED CASE BREAKER TRIP UNIT RATING, FOR ADJUSTABLE TRIP BREAKERS.
7. [LSIG] INDICATES FEATURES PROVIDED WITH SOLID STATE CIRCUIT BREAKER. [LONG TIME (W/DELAY), SHORT TIME (W/DELAY), INSTANTANEOUS, GROUND FAULT].
8. CONDUCTOR AND CONDUIT SIZES ON THE LINE AND LOAD SIDES OF ALL NON-FUSIBLE DISCONNECT SWITCHES SHALL BE IDENTICAL UNLESS NOTED OTHERWISE.
9. INDICATES POTENTIAL TRANSFORMER, SIZE AS SPECIFIED.



1 ELECTRICAL ONE-LINE - DEMOLITION

NO SCALE

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ELECTRICAL ONE-LINE DIAGRAM - DEMOLITION

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: E400

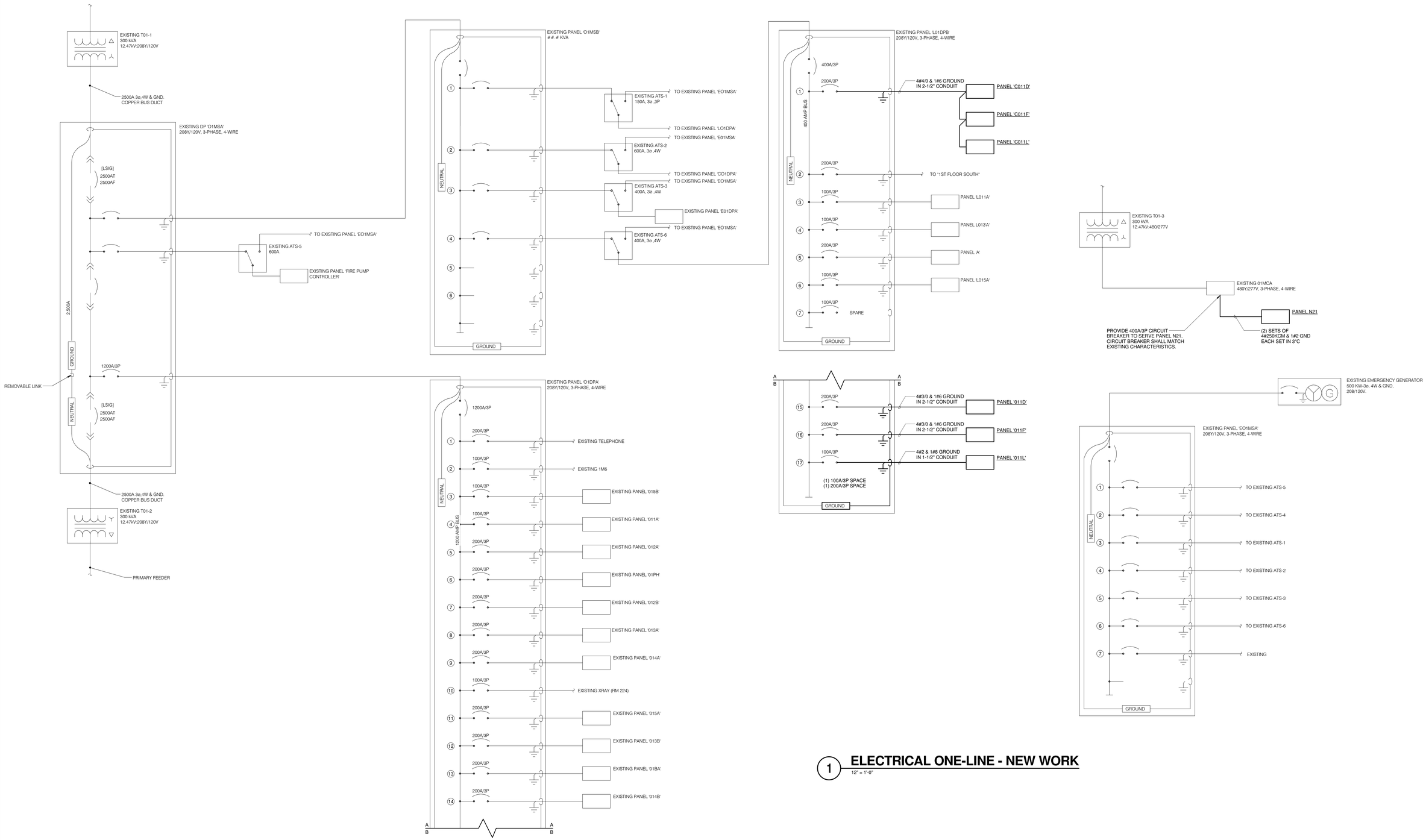
Dwg. 114 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

100% ISSUED FOR CONSTRUCTION



1 ELECTRICAL ONE-LINE - NEW WORK

12" = 1'-0"

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ELECTRICAL ONE-LINE DIAGRAM - NEW WORK

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: E401

Dwg. 115 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

100% ISSUED FOR CONSTRUCTION

PANEL NAME: 011D

TYPE: BOLT-ON
MOUNTING: SURFACE
FED FROM: 01DPA
SCCR: 22,000
LOCATION: ELEC ROOM

SOLID NEUTRAL
GROUND BUS

CONNECTED 65.9 kVA
MAIN: 225 A/MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
DEMAND: 65.95 kVA

Panel Notes:

CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.
1	Lighting (C102 thru C106)	20 A	1	1.47	1.08					1	20 A	Power (C102)	2
3	Lighting (C110 thru C115)	20 A	1			1.15	1.08			1	20 A	Power (C103)	4
5	Lighting (D101 thru D106)	20 A	1					1.15	1.08	1	20 A	Power (C104)	6
7	Lighting (D109 thru D113)	20 A	1	1.15	1.08					1	20 A	Power (C105)	8
9	Lighting (G127 thru G135)	20 A	1			1.23	1.08			1	20 A	Power (C106)	10
11	Lighting (G119 thru G122, G129 thru G132)	20 A	1					0.77	1.08	1	20 A	Power (C108)	12
13	Lighting (G111, G112)	20 A	1	0.99	1.08					1	20 A	Power (C110)	14
15	Lighting (G110, G113, G125)	20 A	1			0.54	1.08			1	20 A	Power (C111)	16
17	Lighting (C100, C109, D100, D114, D117)	20 A	1					1.53	1.08	1	20 A	Power (C112)	18
19	Lighting (G118, G126, G136)	20 A	1	0.98	1.08					1	20 A	Power (C113)	20
21	Lighting (South Exterior)	20 A	1			0.6	1.08			1	20 A	Power (C114)	22
23	SPARE	20 A	1					0	1.08	1	20 A	Power (C115)	24
25	SPARE	20 A	1	0	0.72					1	20 A	Power (D101)	26
27	SPARE	20 A	1			0	0.9			1	20 A	Power (D102)	28
29	SPARE	20 A	1					0	1.08	1	20 A	Power (D103)	30
31	SPARE	20 A	1	0	1.08					1	20 A	Power (D104)	32
33	SPARE	20 A	1			0	1.08			1	20 A	Power (D105)	34
35	SPARE	20 A	1					0	1.08	1	20 A	Power (D106)	36
37	SPARE	20 A	1	0	0.9					1	20 A	Power (D108)	38
39	SPARE	20 A	1			0	1.08			1	20 A	Power (D109)	40
41	SPARE	20 A	1					0	1.08	1	20 A	Power (D110)	42
43	SPARE	20 A	1	0	1.08					1	20 A	Power (D111)	44
45	SPARE	20 A	1			0	1.08			1	20 A	Power (D112)	46
47	SPARE	20 A	1					0	1.08	1	20 A	Power (D113)	48
49	SPARE	20 A	1	0	0.9					1	20 A	Power (D116)	50
51	SPARE	20 A	1			0	1.08			1	20 A	Power (G127)	52
53	Power (EWC) (G148)	20 A	1					0.5	1.08	1	20 A	Power (G128)	54
55	Power (G116)	20 A	1	0.54	1.08					1	20 A	Power (G130)	56
57	Power (G114, G117, G118, G148)	20 A	1			1.08	1.08			1	20 A	Power (G124)	58
59	Power (G137, G126, G134)	20 A	1					1.08	1.08	1	20 A	Power (G123)	60
*G 61	Vending (G138)	20 A	1	1.5	1.08					1	20 A	Power (G133)	62
*G 63	Vending (G138)	20 A	1			1.5	0.5			1	20 A	Power (G133)	64 *G
*G 65	Vending (G138)	20 A	1					1.5	0.54	1	20 A	Power (G135)	66
67	Power (G139)	20 A	1	0.72	0.72					1	20 A	Power (G121)	68
69	Power (G139)	20 A	1			0.72	0.72			1	20 A	Power (G122)	70
71	Power (G139)	20 A	1					0.86	0.36	1	20 A	Power (G129, G131)	72
*G 73	Power (EWC) (D117)	20 A	1	0.5	0.72					1	20 A	Power (G132)	74
75	Power (G140 thru G142)	20 A	1			0.72	0.36			1	20 A	Power (G110, G125)	76
77	Power (D100, D115)	20 A	1					0.54	0.9	1	20 A	Power (G111)	78
79	Power (D114)	20 A	1	0.72	0.72					1	20 A	Power (G112)	80
81	Power (C107, C109, D107)	20 A	1			1.08	1.08			1	20 A	Power (G113)	82
83	Power (C100)	20 A	1					1.08	0.54	1	20 A	Power (G115)	84
			Total Load:	21.89 kVA		21.91 kVA		22.15 kVA					
			Total Amps:	182.43		182.57		184.62					

[Key*:] *G=GROUND FAULT CIRCUIT INTERRUPTER

PANEL NAME: 011F

TYPE: Type 1
MOUNTING: SURFACE
FED FROM: 01DPA
SCCR: 22,000
LOCATION: ELEC ROOM

SOLID NEUTRAL
GROUND BUS

CONNECTED 68.9 kVA
MAIN: 225 A/MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
DEMAND: 68.88 kVA

Panel Notes:

CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.
1	Receptacles (B109)	20 A	1	1.08	1.54					1	20 A	Lighting (B109 thru B113, B116 thru B118)	2
3	Receptacles (B110)	20 A	1			1.08	1.15			1	20 A	Lighting (B101 thru B106)	4
5	Receptacles (B111)	20 A	1					1.08	1.15	1	20 A	Lighting (A110 thru A115)	6
7	Receptacles (B112)	20 A	1	1.08	1.15					1	20 A	Lighting (A103 thru A106, A108, B108)	8
9	Receptacles (B113)	20 A	1			1.08	0.38			1	20 A	Lighting (A102)	10
11	Receptacles (B114, B115)	20 A	1					1.44	1.79	1	20 A	Lighting (A100, A109, B100, B119)	12
13	Receptacles (B116)	20 A	1	0.93	1.34					1	20 A	Lighting (G100B)	14
15	Receptacles (B117)	20 A	1			1.08	1.28			1	20 A	Lighting (E100 thru E103, E104 thru E106)	16
17	Receptacles (B107, A109, A107)	20 A	1					1.08	1.04	1	20 A	Lighting (G137, G148)	18
19	Receptacles (B118)	20 A	1	0.72	1.23					1	20 A	Lighting (G107)	20
21	Receptacles (B108)	20 A	1			1.26	0.59			1	20 A	Lighting (Penthouse)	22
23	Receptacles (B106)	20 A	1					1.18	1.46	1	20 A	Lighting (Exterior, Porte Cochere)	24 *P
25	Receptacles (B105)	20 A	1	1.08	0.7					1	20 A	Lighting (Exterior, North)	26
27	Receptacles (B104)	20 A	1			1.08	0			1	20 A	SPARE	28
29	Receptacles (B103)	20 A	1					1.08	0	1	20 A	SPARE	30
31	Receptacles (B102)	20 A	1	1.08	0					1	20 A	SPARE	32
33	Receptacles (B101)	20 A	1			0.72	0			1	20 A	SPARE	34
35	Receptacles (G102-4)	20 A	1					0.72	0	1	20 A	SPARE	36
*G 37	Receptacle (EWC) (B119)	20 A	1	0.5	0					1	20 A	SPARE	38
39	Receptacles (A115)	20 A	1			0.72	0			1	20 A	SPARE	40
41	Receptacles (A114)	20 A	1					1.08	0	1	20 A	SPARE	42
43	Receptacles (A113)	20 A	1	1.08	0					1	20 A	SPARE	44
45	Receptacles (A112)	20 A	1			1.08	0			1	20 A	SPARE	46
47	Receptacles (A111)	20 A	1					1.08	0.5	1	20 A	Heat Tape	48 *H
49	Receptacles (A110)	20 A	1	1.08	0.18					1	20 A	WS-1	50
51	Receptacles (A108)	20 A	1			1.26	0.9			1	20 A	H-1 (Penthouse)	52
53	Receptacles (A106)	20 A	1					1.08	0.9	1	20 A	H-2 (Penthouse)	54
55	Receptacles (A105)	20 A	1	1.08	0.33					2	20 A	FCU-1	56
57	Receptacles (A104)	20 A	1			1.08	0.33			--	--	--	58 --
59	Receptacles (A103)	20 A	1					1.08	0.44	1	20 A	EF-1	60
61	Receptacles (A102)	20 A	1	1.26	0.44					1	20 A	EF-2	62
63	Receptacles (A101)	20 A	1			0.72	1.13			1	20 A	EF-3	64
65	Receptacles (G101)	20 A	1					0.72	0.44	1	20 A	EF-4	66
67	Receptacles (G101)	20 A	1	0.72	0.5					1	20 A	UH-1	68
69	Receptacles (G101)	20 A	1			0.86	0.5			1	20 A	UH-2	70
71	Receptacles (G105)	20 A	1					0.9	0.5	1	20 A	AHU-1 Lights	72
73	Receptacles (E106)	20 A	1	0.9	0.5					1	20 A	AHU-2 Lights	74
75	Receptacles (E105)	20 A	1			1.26	0.54			1	20 A	Receptacles (Roof/Penthouse)	76
77	Receptacles (E103)	20 A	1					1.08	0.54	1	20 A	Receptacles (G148)	78
79	Receptacles (G106)	20 A	1	1.08	1.08					1	20 A	Receptacles (G107)	80
81	Receptacles (E101A)	20 A	1			0.98	1			1	20 A	Receptacle (Frig.) (G107)	82 *G
83	Receptacles (G109)	20 A	1					0.72	1.08	1	20 A	Receptacles (G108)	84
			Total Load:	22.65 kVA		22.07 kVA		24.16 kVA					
			Total Amps:	189.54		183.88		202.06					

[Key*:] *P=VIA PHOTOCELL CONTROL *G=GROUND FAULT CIRCUIT INTERRUPTER *G=GROUND FAULT CIRCUIT INTERRUPTER *H=30mA GROUND FAULT CIRCUIT INTERRUPTER

PANEL NAME: 011L

TYPE: BOLT-ON
MOUNTING: SURFACE
FED FROM: 01DPA
SCCR: 22,000
LOCATION: ELEC ROOM - LAB

SOLID NEUTRAL
GROUND BUS

CONNECTED 16.8 kVA
MAIN: 100 A/MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
DEMAND: 16.81 kVA

Panel Notes:

CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.
1	Receptacles (H105)	20 A	1	0.9	0.77					1	20 A	Lighting (H102 thru H105)	2
3	Receptacles (H104)	20 A	1			0.9	0.52			1	20 A	Lighting (H100)	4
5	Receptacles (H103)	20 A	1					0.9	0.78	1	20 A	Lighting (G147, H111)	6
7	Receptacles (H102)	20 A	1	0.9	1.23					1	20 A	Lighting (H112, H115, H116, H117)	8
9	Receptacles (H101)	20 A	1			0.9	0.77			1	20 A	Lighting (H119)	10
*G 11	Receptacle (EWC) (H106)	20 A	1					0.18	0	1	20 A	SPARE	12
13	Receptacles (H101, H106)	20 A	1	0.36	0					1	20 A	SPARE	14
15	Receptacles (H108, H109, H110)	20 A	1			0.54	0			1	20 A	SPARE	16
17	Receptacles (H100)	20 A	1					0.72	0	1	20 A	SPARE	18
19	Receptacles (H111, H112, H113)	20 A	1	0.54	0					1	20 A	SPARE	20
21	Receptacles (H114)	20 A	1			1.08	0			1	20 A	SPARE	22
23	Receptacles (H115)	20 A	1					1.08	0	1	20 A	SPARE	24
25	Receptacles (H116, H117, H118)	20 A	1	0.72	0					1	20 A	SPARE	26
*G 27	Receptacle (Frig) (H118)	20 A	1			0.18	0			1	20 A	SPARE	28
*G 29	Receptacle (Frig) (H118)	20 A	1					0.18	0	1	20 A	SPARE	30
*G 31	Receptacle (Frig) (H118)	20 A	1	0.18	0					1	20 A	SPARE	32
*G 33	Receptacle (Frig) (H118)	20 A	1			0.18	0			1	20 A	SPARE	34
*G 35	Receptacle (Frig) (H119)	20 A	1					0.5	0	1	20 A	SPARE	36
37	Receptacles (H119)	20 A	1	0.9	0					1	20 A	SPARE	38
39	Receptacles (H119)	20 A	1			0.36	0			1	20 A	SPARE	40
41	Receptacles (G147)	20 A	1					0.54	0	1	20 A	SPARE	42
			Total Load:	6.5 kVA		5.43 kVA		4.88 kVA					
			Total Amps:	54.84		45.94		40.67					

[Key*:] *G=GROUND FAULT CIRCUIT INTERRUPTER

PANEL NAME: C011L

TYPE: BOLT-ON
MOUNTING: SURFACE
FED FROM: L01DPB
SCCR: 22,000
LOCATION: ELEC ROOM - LAB

SOLID NEUTRAL
GROUND BUS

CONNECTED 6.8 kVA
MAIN: 100 A/MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
DEMAND: 6.76 kVA

Panel Notes:

CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.
1	Receptacles (H102, H103, H104, H105)	20 A	1	0.72	0					1	20 A	SPARE	2
3	Receptacles (H122)	20 A	1			0.72	0			1	20 A	SPARE	4
5	Receptacles (H122)	20 A	1					1.08	0	1	20 A	SPARE	6
7	Receptacles (H122)	20 A	1	0.9	0					1	20 A	SPARE	8
9	Receptacles (H122)	20 A	1			0.36	0			1	20 A	SPARE	10
11	Receptacles (H122)	20 A	1					0.36	0	1	20 A	SPARE	12
13	Lighting (H122)	20 A	1	1.73	0					1	20 A	SPARE	14
15	Lighting (G147, H100, H108-H110, H113, H120)	20 A	1			0.72	0			1	20 A	SPARE	16
17	Printer (H122)	20 A	1					0.18	0	1	20 A	SPARE	18
19	SPARE	20 A	1	0	0					1	20 A	SPARE	20
21	SPARE	20 A	1			0	0			1	20 A	SPARE	22
23	SPARE	20 A	1					0	0	1	20 A	SPARE	24
25	SPARE	20 A	1	0	0					1	20 A	SPARE	26
27	SPARE	20 A	1			0	0			1	20 A	SPARE	28
29	SPARE	20 A	1					0	0	1	20 A	SPARE	30
31	SPARE	2 A	1	0	0					1	20 A	SPARE	32
33	SPARE	20 A	1			0	0			1	20 A	SPARE	34
35	SPARE	20 A	1					0	0	1	20 A	SPARE	36
37	SPARE	20 A	1	0	0					1	20 A	SPARE	38
39	SPARE	20 A	1			0	0			1	20 A	SPARE	40
41	SPARE	20 A	1					0	0	1	20 A	SPARE	42
			Total Load:	3.35 kVA		1.8 kVA		1.62 kVA					
			Total Amps:	28.12		15.18		13.5					

[Key*:]

PANEL NAME: C011D

TYPE: BOLT-ON
MOUNTING: SURFACE
FED FROM: L01DPB
SCCR: 22,000
LOCATION: ELEC ROOM

SOLID NEUTRAL
GROUND BUS

CONNECTED 15.1 kVA
MAIN: 100 A/MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
DEMAND: 15.1 kVA

Panel Notes: UNLESS OTHERWISE NOTED, ALL CIRCUITS SHALL HAVE 2#12 & 1#12 GND IN 3/4"C. USE #10 FOR 120V CIRCUITS OVER 75 FEET, 277V CIRCUITS OVER 150 FEET.

CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.
1	Power (F105)	20 A	1	0.72	0.7					1	20 A	Lighting (G140, G141)	2
3	Power (F104)	20 A	1			0.72	0.59			1	20 A	Lighting (C100, C109, D100, D114, D117)	4
5	Power (F103)	20 A	1					0.9	0.52	1	20 A	Lighting (G118, G126, G136)	6
7	Power (F102)	20 A	1	0.36	0.36					1	20 A	Power (IT)	8
9	Power (F101)	20 A	1			0.9	0.36			1	20 A	Power (IT)	10
11	Power (F110, F111)	20 A	1					0.72	0.36	1	20 A	Power (IT)	12
13	Power (F100)	20 A	1	0.54	0.36					1	20 A	Power (IT)	14
15	Lighting (G115, F101, F106 thru F111)	20 A	1			0.97	0.36			1	20 A	Power (IT)	16
17	Lighting (F100, F102 thru F105)	20 A	1					1.25	0.36	1	20 A	Power (IT)	18
19	Lighting (IT)	20 A	1	0.39	0.36					1	20 A	Power (IT)	20
21	SPARE	20 A	1			0	0.36			1	20 A	Power (IT)	22
23	SPARE	20 A	1					0	0.36	1	20 A	Power (IT)	24
25	SPARE	20 A	1	0	0.36					1	20 A	Power (IT)	26
27	SPARE	20 A	1			0	0.36			1	20 A	Power (IT)	28
29	SPARE	20 A	1					0	0.36	1	30 A	Power (IT) (B2)	30
31	SPARE	20 A	1	0	0.5					1	30 A	Power (IT) (B2)	32
33	SPARE	20 A	1			0	0.5			1	30 A	Power (IT) (B2)	34
35	SPARE	20 A	1					0	0.5	1	30 A	Power (IT) (B2)	36
37	SPARE	20 A	1	0	0					1	20 A	SPARE	38
39	SPARE	20 A	1			0	0			1	20 A	SPARE	40
41	SPARE	20 A	1					0	0	1	20 A	SPARE	42
			Total Load:	4.65 kVA		5.12 kVA		5.33 kVA					
			Total Amps:	38.75		43.24		45.03					

[Key*:]

PANEL NAME: C011F

TYPE: Type 1
MOUNTING: SURFACE
FED FROM: L01DPB
SCCR: 22,000
LOCATION: ELEC ROOM

SOLID NEUTRAL
GROUND BUS

CONNECTED 2.2 kVA
MAIN: 100 A/MCB
VOLTS: 120/208 Wye
PHASE: 3
WIRE: 4
DEMAND: 2.2 kVA

Panel Notes: UNLESS OTHERWISE NOTED, ALL CIRCUITS SHALL HAVE 2#12 & 1#12 GND IN 3/4"C. USE #10 FOR 120V CIRCUITS OVER 75 FEET, 277V CIRCUITS OVER 150 FEET.

CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.
1	Lighting (A100, A109, B100, B114, G102-G104)	20 A	1	1.06	0.59					1	20 A	Lighting (Penthouse)	2
3	Lighting (G100A, G100B, G137, G147, E100)	20 A	1			0.56	0			1	20 A	SPARE	4
5	SPARE	20 A	1					0	0	1	20 A	SPARE	6
7	SPARE	20 A	1	0	0					1	20 A	SPARE	8
9	SPARE	20 A	1			0	0			1	20 A	SPARE	10
11	SPARE	20 A	1					0	0	1	20 A	SPARE	12
13	SPARE	20 A	1	0	0					1	20 A	SPARE	14
15	SPARE	20 A	1			0	0			1	20 A	SPARE	16
17	SPARE	20 A	1					0	0	1	20 A	SPARE	18
19	SPARE	20 A	1	0	0					1	20 A	SPARE	20
21	SPARE	20 A	1			0	0			1	20 A	SPARE	22
23	SPARE	20 A	1					0	0	1	20 A	SPARE	24
25	SPARE	20 A	1	0	0					1	20 A	SPARE	26
27	SPARE	20 A	1			0	0			1	20 A	SPARE	28
29	SPARE	20 A	1					0	0	1	20 A	SPARE	30
31	SPARE	20 A	1	0	0					1	20 A	SPARE	32
33	SPARE	20 A	1			0	0			1	20 A	SPARE	34
35	SPARE	20 A	1					0	0	1	20 A	SPARE	36
37	SPARE	20 A	1	0	0					1	20 A	SPARE	38
39	SPARE	20 A	1			0	0			1	20 A	SPARE	40
41	SPARE	20 A	1					0	0	1	20 A	SPARE	42
			Total Load:	1.64 kVA		0.56 kVA		0 kVA					
			Total Amps:	14.41		5.34		0					

[Key*:]

PANEL NAME: N21

TYPE: TYPE 1
MOUNTING: SURFACE
FED FROM: 01MCA
SCCR: 42,000
LOCATION: PENTHOUSE

SOLID NEUTRAL
GROUND BUS

CONNECTED 651 kVA
MAIN: 600 A/MCB
VOLTS: 480/277 Wye
PHASE: 3
WIRE: 4
DEMAND: 651.02 kVA

Panel Notes:

CKT NO.	LOAD DESCRIPTION	AMP	POLES	A		B		C		POLES	AMP	LOAD DESCRIPTION	CKT NO.
1	ACC-1 (I3)	350 A	3	84.98	3.73					3	30 A	CWP-1 (B3)	2
-- 3	--	--	--			84.98	3.73			--	--	--	4 --
-- 5	--	--	--					84.98	3.73	--	--	--	6 --
7	ACC-2 (I3)	350 A	3	81.98	3.73					3	30 A	CWP-2 (B3)	8
-- 9	--	--	--			81.98	3.73			--	--	--	10 --
-- 11	--	--	--					81.98	3.73	--	--	--	12 --
13	HWP-1	20 A	3	2.93	11.32					3	20 A	AHU-1 (Supply)	14
-- 15	--	--	--			2.93	11.32			--	--	--	16 --
-- 17	--	--	--					2.93	11.32	--	--	--	18 --
19	HWP-2	20 A	3	2.93	3.68					3	20 A	AHU-1 (Return)	20
-- 21	--	--	--			2.93	3.68			--	--	--	22 --
-- 23	--	--	--					2.93	3.68	--	--	--	24 --
25	HWP-3	15 A	3	0.43	11.32					3	20 A	AHU-2 (Supply)	26
-- 27	--	--	--			0.43	11.32			--	--	--	28 --
-- 29	--	--	--					0.43	11.32	--	--	--	30 --
31	HWP-4	15 A	3	0.43	3.68					3	20 A	AHU-2 (Return)	32
-- 33	--	--	--			0.43	3.68			--	--	--	34 --
-- 35	--	--	--					0.43	3.68	--	--	--	36 --
37	CWP-3	20 A	3	2.93	2.93					3	20 A	CWP-4	38
-- 39	--	--	--			2.93	2.93			--	--	--	40 --
-- 41	--	--	--					2.93	2.93	--	--	--	42 --
			Total Load:	217.01 kVA		217.01 kVA		217.01 kVA					
			Total Amps:	783.42		783.42		783.42					

[Key*:]

BRANCH CIRCUIT WIRING KEY

WIRE ID	THHW/THWN COPPER CONDUCTORS 2 WIRE	3 WIRE	4 WIRE	EQUIPMENT GROUNDING CONDUCTOR	CONDUIT
A#	2#12	3#12	4#12	1#12	3/4"
B#	2#10	3#10	4#10	1#10	3/4"
C#	2#8	3#8	4#8	1#10	3/4"
D#	2#6	3#6	4#6	1#10	1"
E#	2#4	3#4	4#4	1#8	1 1/4"
F#	2#2	3#2	4#2	1#8	1 1/4"
G#	2#1	3#1	4#1	1#6	1 1/2"
H#	2#1/0	3#1/0	4#1/0	1#6	2"
I#	2#500KCM	3#500KCM	4#500KCM	1#3	4"

ALL BRANCH CIRCUITS SHALL INCLUDE THE EQUIPMENT GROUND CONDUCTOR

Revisions: Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ELECTRICAL SCHEDULES
Approved: Project Director
Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER
Location: BONHAM, TEXAS
Date: APRIL 13, 2015
Checked: JPM
Drawn: NWS
Project Number: 549-130
Building Number: 1
Drawing Number: E500
Dwg. 116 of 142

Office of Facilities Management
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

100% ISSUED FOR CONSTRUCTION

DISCONNECT AND STARTER SCHEDULE

STARTER TYPE:
- FV - FULL VOLTAGE
- YD - WYE - DELTA
- RE - REVERSING
- TW - 2 SPEED, 2 WINDING
- SW - 2 SPEED, 1 WINDING
- RV - REDUCED VOLTAGE AUTOXFMR
- SS - SOLID STATE
- MS - MANUAL STARTER
- MX - MANUAL SWITCH
- FS - FUSED SWITCH

REMARKS:
- SA - STANDARD ACCESSORIES (INCLUDES * ITEMS)
- *CT - CONTROL TRANSFORMER, FUSED 120V
- *EO - ELECTRONIC OVERLOAD
- *HA - HAND-OFF-AUTO IN DOOR
- *RP - RED (RUN) PILOT LIGHT IN DOOR
- *TA - TWO CONVERTIBLE AUXILIARY CONTACTS
- S/N - INSULATED NEUTRAL ASSEMBLY
- PF - PHASE FAILURE RELAY (5 HP OR GREATER)
- TO - MELTING THERMAL OVERLOADS
- TS - 2 SPEED SELECTOR SWITCH IN DOOR
- GP - GREEN (OFF) PILOT LIGHT IN DOOR
- FA - 4-CONVERTIBLE AUXILIARY CONTACTS
- EI - ELECTRICAL INTERLOCK (2)-N.O.& (2)-N.C
- SS - START-STOP PUSHBUTTON IN DOOR
- HL - HANDLE PADLOCK HASP

NOTE: ALL DISCONNECTS (EXCEPT MANUAL STARTERS) SHALL BE HEAVY DUTY TYPE.

ITEM	DISCONNECT SWITCH TYPE & RATING: FUSED	NON-FUSED	CIRCUIT BREAKER	VOLTAGE	POLES	STARTER: NEMA SIZE	TYPE	NEMA ENCLOSURE	REMARKS	APPROVED MANUFACTURERS
CS-1		30A		480	3	1	FV	1	SA	SQUARE D 8538 SCG11 CUTLER-HAMMER TYPE ECN GENERAL ELECTRIC CR308 SIEMENS CLASS 17
CS-3		30A		480	3	3	FV	1	SA	SQUARE D 8538 SEW11 CUTLER-HAMMER TYPE ECN GENERAL ELECTRIC CR308 SIEMENS CLASS 17

VARIABLE FREQUENCY DRIVE SCHEDULE

STARTER TYPE:
- PWM - PULSE WIDTH MODULATED
- 6SV - 6 STEP VOLTAGE SOURCE

LINE DISCONNECT
- DS - DISCONNECT SWITCH
- CB - CIRCUIT BREAKER

REMARKS:
- SA - STANDARD ACCESSORIES (INCLUDES * ITEMS)
- *MA - MANUAL SPEED ADJUSTMENT
- *ET - ELECTRONIC THERMAL OVERLOADS
- *CT - CONTROL TRANSFORMER, FUSED, 120V
- *HA - HAND-OFF-AUTO DOOR SWITCH
- TO - MELTING THERMAL OVERLOADS
- LR - INTEGRAL LINE REACTOR
- TA - TWO CONVERTIBLE AUXILIARY CONTACTS
- ISO - ISOLATION TRANSFORMER
- SHZ - SKIP FREQUENCY CAPABILITY
- RSS - REMOTE START-STOP
- RDR - REMOTE DRIVE RUN
- RFT - REMOTE FAULT TRIP

CONTROL:
- PN - 3-15 PSI PRESSURE TRANSDUCER
- 420 - 4-20mA FOLLOWER INPUT

ITEM	LINE DISC.	DRIVE BYPASS	CONTROL	VOLTAGE: INPUT	OUTPUT	DRIVE: PH.	H.P. RATING	TYPE	NEMA ENCLOSURE	REMARKS	APPROVED MANUFACTURERS
VFD-7.5	CB	N/A	420	460	460	3	7.5	PWM	1	SA* LR VARIABLE TORQUE	TOSHIBA O9 SERIES ABB ACH 550 SERIES ALLEN BRADLEY POWERFLEX 40 SERIES POWERFLEX 400 SERIES G.E. AF300 P11 SERIES CUTLER HAMMER ECS SERIES YASKAWA E7

LUMINAIRE SCHEDULE

(MTG) MOUNTING:
- RE - RECESSED
- SP - SUSPENDED
- CL - CEILING SURFACE
- WL - WALL
- UC - UNDER CABINET
- CV - COVE
- PL - POLE
- FR- FLANGED RECESSED
- O - OTHER (SEE DESCRIPTION)

DOOR:
- FA - FLAT ALUMINUM
- FS - FLAT STEEL
- RA - REGRESSED ALUMINUM
- RS - REGRESSED STEEL

FINISH:
- PAF - PAINT AFTER FABRICATION
- CSA - FINISH SELECTION BY ARCHITECT

(Type) LAMP TECHNOLOGY:
- FL - FLUORESCENT
- CF - COMPACT FLUORESCENT
- HL - HALOGEN
- IN - INCANDESCENT
- LED - LIGHT EMITTING DIODE
- HS - HIGH PRESSURE SODIUM
- MH - METAL HALIDE
- SMH - SUPER METAL HALIDE
- PSMH - PULSE START METAL HALIDE
- CMH - CERAMIC METAL HALIDE
- O - OTHER (SEE DESCRIPTION)
- XL - EXTENDED LIFE
- XLP - EXTENDED LIFE & OUTPUT

(TYPE) BALLAST:
- DIM07- LINE DIMMING BALLAST
- DIM10- 0-10V DIMMING BALLAST
- HL- HIGH / LOW LEVEL BALLAST
- ML- MULTI-LEVEL SWITCHING
- HP- HIGH PERFORMANCE / LBF

(TYPE) BALLAST:
- EB- ELECTRONIC BALLAST
- EM- EMERGENCY BATTERY/BALLAST
- DALI- DIGITAL DIMMING BALLAST
- MV- MULTI-VOLTAGE ELECTRONIC 120V-277V
- #BF- BALLAST FACTOR

(L/L) LENS/LOUVER:
- A- .125" ACRYLIC
- B- BLACK BAFFLE
- C- CLEAR ALZAK
- D- PARABOLIC
- F- FRESNEL
- G- TEMPERED GLASS
- H- WALL WASHER
- P- POLY CARBONATE
- K- KSH12 .125" ACRYLIC
- K19- KSH19 .156" ACRYLIC
- L- LOW IRIDESCENT SPECULAR ALUM.
- N- NONE
- R- HIGH IMPACT OR ACRYLIC
- O- OTHER (SEE DESCRIPTION)

CATALOG NUMBER SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. THE COMPLETE DESCRIPTION AND THE SPECIFICATION SHALL BE COORDINATED WITH THE CATALOG NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE FIRST MANUFACTURER LISTED IS THE BASIS FOR DESIGN.

REFER TO SPECIFICATION SECTIONS LIGHTING 26 51 00 AND EMERGENCY LIGHTING 26 52 00 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

ALL LAMPS FOR THIS PROJECT SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
FLUORESCENT LAMP CORRELATED COLOR TEMPERATURE 4100°K, COLOR RENDERING INDEX (CRI) AT OR ABOVE 80, UNLESS NOTED OTHERWISE.
LED LAMP COLOR RENDERING INDEX (CRI) AT OR ABOVE 85 FOR INTERIOR APPLICATIONS.

ITEM	DESCRIPTION	DIMENSIONS: L	W	H	DIA	MTG	LAMPS: TYPE	QTY	MODEL	BALLAST: VOLTS	TYPE	L/L	APPROVED MANUFACTURER
F1	RECESSED STATIC GRID TROFFER WITH FS DOOR	48"	24"	4.5"		RE	FL	4	32WATT T32T8	120V		K	LITHONIA 2SPBG DAY-BRITE 2SPG H.E.WILLIAMS 50G-S24 COLUMBIA STB524-G METALUX 2GC8
F2	RECESSED INDIRECT/DIRECT, PERFORATED METAL LAMP SHIELD WITH ACRYLIC DIFFUSER.	48"	24"			RE	FL	3	32WATT T32T8	120V	ML	N	LIGHTOLIER CFS2PP232 LITHONIA 24VG METALUX 2RD1 DAY-BRITE 24VG FOCAL POINT FLU24B
F3	PENDANT, CLEAR FROSTED GLASS, PENDANT LENGTH SPECIFIED BY ARCHITECT.				36"	SP	LED		3000 LUMEN, 2700K	120V		O	AMERICAN GLASS LIGHT COMPANY PRANA 20D-P-36 OR APPROVED EQUIVALENT
F4	WALLBRACKET WITH UP AND DOWN LIGHT. 4-SIDED INJECTION MOLDED PRISMATIC LENS, WHITE STEEL HOUSING	36"	7.5"	3.5"		WL	FL	2	25WATT T25T8	120V		A	DAY-BRITE CB225W VISTA WT3833-2 UD NULITE BW-225-OCT-UP METALUX BIU-225
F5	COMPACT FLUORESCENT OPEN DOWNLIGHT, HORIZONTAL TRIPLE LAMP, SELF TRIM REFLECTOR BALLAST SUITABLE FOR 32 WATT TRIPLE TUBE LAMP			6.5"	6"	RE	CF	1	32W FM32W/TRT GX24Q-3	120V		CL	PRESCOLITE CFTBHEB-STF602 PORTFOLIO C6132-6151 LITHONIA LF6 1/26-42TRT MVOLT
F6	48" INDUSTRIAL WITH 10% UPLIGHT, BAKED ENAMEL FINISH	48"	12"			SP	FL	2	32WATT T32T8	120V		N	LITHONIA EJSA232 DAY-BRITE IA232 H.E.WILLIAMS 80-4-232 COLUMBIA CSR4-232-U METALUX IA-232
F7	24" UNDER CABINET UNIT WITH SOLID FRONT & PRISMATIC LENS, PAINTED STEEL HOUSING.	24"	6"	1.5"		UC	FL	1	17WATT F17T8	120V EB		A	ALKCO SF317 FAIL-SAFE MTS-17 LITHONIA NZS-17
F7B	36" UNDER CABINET UNIT WITH SOLID FRONT & PRISMATIC LENS, PAINTED STEEL HOUSING.	36"	6"	1.5"		UC	FL	1	25WATT F25T8	120V EB		A	ALKCO SF325 FAIL-SAFE MTS-25 LITHONIA NZS-25
F7C	48" UNDER CABINET UNIT WITH SOLID FRONT & PRISMATIC LENS, EXTRUDED ALUMINUM OR STAINLESS STEEL HOUSING, WHITE FINISH	50"	6"	2"		UC	FL	1	32WATT F32T8	120V EB		A	ALKCO SFLINCS150-O48 FAIL-SAFE MTS-32-W12-SSP
F8	SURFACE MOUNTED DOWNLIGHT. MARINE GRADE DIE-CAST ALUMINUM,				17"	CL	LED	1	50WATT 4000K 5000 LUMENS	120V		O	TEKDEK TD17 OR APPROVED EQUIVALENT
F9	WALL SCONCE, FULL SPHERE, ACRYLIC DIFFUSER WITH MATTE FINISH. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.		4"	18.5"		WL	CF	1	26WATT GX24q-3	120V		O	VISA LIGHTING CB1102 OR APPROVED EQUIVALENT
F10	WALL SCONCE, HALF SPHERE, WHITE GLASS DIFFUSER, ACRYLIC POWDER COAT FINISH. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.		18"	7.375"		WL	CF	1	26WATT G24q-3	120V		O	VISA LIGHTING CB1102 OR APPROVED EQUIVALENT
F11	COLUMN MOUNTED, CYLINDERICAL UP/DOWN LIGHT, 50 DEGREE BEAM.		8"	18"		WL	LED	1	2000 LUMEN, 4000K, 58 WATTS	120V		O	VISA LIGHTING OW2204-LCW OR APPROVED EQUIVALENT
F11B	COLUMN MOUNTED, CYLINDERICAL UP/DOWN LIGHT, 50 DEGREE BEAM.		8"	18"		WL	LED	1	550 LUMEN, 4000K, 8 WATTS	120V		O	VISA LIGHTING OW2204-LCW OR APPROVED EQUIVALENT
EX1	EDGE-LIT SINGLE FACED EXIT SIGN, RED LETTERS, INJECTION MOLDED ACRYLIC MIRROR LENS AND EXTRUDED ALUMINUM HOUSING. HOUSING FINISH AND COLORS SELECTED BY ARCHITECT. VERIFY RECESSED END, BACK OR CEILING MOUNTING AND ARROWS WITH PLANS.	13"	1"	8"		CL/ WL	LED	1	3.5 WATT L.E.D.	120V	EM	O	LITHONIA LRP 1 DUAL-LITE LE S McPHILBEN 45V 1 EVENLITE SOV 1C
EX2	EDGE-LIT DOUBLE FACED EXIT SIGN, RED LETTERS, INJECTION MOLDED ACRYLIC MIRROR BACKGROUND AND EXTRUDED ALUMINUM HOUSING. HOUSING FINISH AND COLORS SELECTED BY ARCHITECT. VERIFY RECESSED END, BACK OR CEILING MOUNTING AND ARROWS WITH PLANS.	13"	1"	8"		CL/ WL	LED	2	4.5 WATT L.E.D.	120V	EM	O	LITHONIA LRP 2 DUAL-LITE LS D McPHILBEN 45V 2 EVENLITE SOV 2M
S1	WALL SCONCE, GLASS LENS, DIE-CAST ALUMINUM HOUSING, GASKETED, COLOR SELECTION BY ARCHITECT, PROVIDE WITH INTEGRAL PHOTOCELL, LISTED WET LOCATION. MINIMUM 61 LUMEN PER WATT EFFICACY, SEALED LED	8"	4"	7"		WL	LED		30W 5000K 1800 LUMENS	120V		G	LUMARK XTOR3AN RAB WPLED26

GENERAL ELECTRICAL EQUIPMENT SCHEDULE

THE SYMBOLS AND THE EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM.

CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

ITEM NO.	SYMBOL	DESCRIPTION	APPROVED MANUFACTURERS
1	DEVICE COLOR	ALL SWITCH, RECEPTACLE, OUTLET, AND COVERPLATE COLORS SHALL BE IVORY, UNLESS INDICATED OTHERWISE.	HUBBELL LEVITON PASS & SEYMOUR COOPER
2	COVER PLATES	ALL SWITCHES, RECEPTACLES, AND OUTLETS SHALL BE COMPLETE WITH UNBREAKABLE THERMOPLASTIC COVERPLATES IN FINISHED SPACES WHERE WALLS ARE FINISHED; #302 STAINLESS STEEL COVERPLATES IN UNFINISHED SPACES FOR FLUSH BOXES, AND GALVANIZED STEEL COVERPLATES IN UNFINISHED SPACES FOR SURFACE MOUNTED BOXES. WHERE SEVERAL DEVICES ARE GANGED TOGETHER, THE COVER PLATE SHALL BE OF THE GANGED STYLE FOR THE NUMBER OF DEVICES USED.	HUBBELL LEVITON PASS & SEYMOUR COOPER
3	S	SWITCH, SINGLE POLE, SINGLE THROW, 120/277 VOLT, 20 AMP. TOGGLE HANDLE, MAINTAINED CONTACT. SIDE AND BACK WIRED.	HUBBELL HBL1221 LEVITON 1221-2 PASS & SEYMOUR PS20AC1 COOPER 2221
4	S_O	OCCUPANCY SENSOR WALL SWITCH, PASSIVE INFRARED, ZERO CROSSING CIRCUITRY, ADJUSTABLE SENSITIVITY AND TIME DELAY, NO MINIMUM LOAD REQUIREMENTS, MANUAL OR AUTO ON OPERATION, INITIAL SETTINGS: 10 MINUTES, AMBIENT SENSOR 40 FC.	WATT STOPPER PW-100 SERIES SENSOR SWITCH WSD HUBBELL INC. LHRS1 OR AP1277 LEVITON ODS15 GREENGATE OSW-P-0451
5	S_{O2}	OCCUPANCY SENSOR AND DUAL SWITCHES WALL SWITCH, PASSIVE INFRARED, ZERO CROSSING CIRCUITRY. SWITCHES CONTROL TWO SEPARATE CIRCUITS OR RELAYS, ADJUSTABLE SENSITIVITY AND TIME DELAY, NO MINIMUM LOAD REQUIREMENTS, MANUAL OR AUTO ON OPERATION, INITIAL SETTINGS: 10 MINUTES, AMBIENT SENSOR 40 FC.	WATT STOPPER PW-200 SERIES SENSOR SWITCH WSD-2 HUBBELL INC. LHRD2 OR AP1277/2 LEVITON ODS GREENGATE OSW-P-0451
6	S_3	SWITCH, THREE WAY, 120/277 VOLT 20 AMP. TOGGLE HANDLE, SIDE AND BACK WIRED,	HUBBELL HBL1223 LEVITON 1223-2 PASS & SEYMOUR PS20AC3 COOPER 2223
7	S_4	SWITCH, FOUR WAY, 120/277 VOLT 20 AMP. TOGGLE HANDLE, SIDE AND BACK WIRED.	HUBBELL HBL1224 LEVITON 1224-2 PASS & SEYMOUR PS20AC4 COOPER 2224
8	OC D	OCCUPANCY SENSOR, CEILING MOUNTED 360 DEGREE, DUAL TECHNOLOGY PASSIVE INFRARED/ULTRASONIC FREQUENCY GREATER THAN 40 KHz, DUAL SENSING VERIFICATIONS (REQUIRES BOTH TECHNOLOGIES TO ACTIVATE), EITHER TECHNOLOGY MAINTAINS ON STATUS, INTEGRATED AMBIENT LIGHT LEVEL SENSOR (2-200 FC RANGE), ADJUSTABLE SENSITIVITY AND TIME DELAY, 5 YEAR WARRANTY. SENSOR SHALL CONTROL ALL CIRCUITS IN AREA, UNLESS NOTED OTHERWISE. INITIAL SETTINGS: TIME DELAY 10 MINUTES, AMBIENT SENSOR 40FC. CONTRACTOR SHALL SUBMIT MANUFACTURER SUPPLIED SENSOR COVERAGE DRAWING FOR SHOP DRAWING REVIEW.	WATT STOPPER DT 300 SERIES HUBBELL INC. OMNI-DT200 OR ATD2000C LEVITON OSC##-MOW
9	OC U	OCCUPANCY SENSOR, ULTRASONIC CEILING MOUNTED, 360 DEGREE 20'X20' HAND MOTION COVERAGE PATTERN, FREQUENCY GREATER THAN 32 KHz SOLID STATE, ADJUSTABLE SENSITIVITY AND TIME DELAY, TEMPERATURE AND HUMIDITY RESISTANT RECEIVERS, 5 YEAR WARRANTY. SENSOR SHALL CONTROL ALL CIRCUITS IN AREA, UNLESS NOTED OTHERWISE. INITIAL SETTINGS: TIME DELAY 10 MINUTES. CONTRACTOR SHALL SUBMIT MANUFACTURER SUPPLIED SENSOR COVERAGE DRAWING FOR SHOP DRAWING REVIEW.	WATT STOPPER WT-1100 SERIES HUBBELL INC. OMNI-US OR ATU SERIES LEVITON OSC SERIES GREENGATE OCC-U SERIES
10		RECEPTACLE, DUPLEX, HOSPITAL GRADE, 125 VOLT, 20 AMP, 3 WIRE GROUNDING TYPE, N.E.M.A. 5-20R, IMPACT RESISTANT THERMOPLASTIC FACE, ONE PIECE NICKEL-PLATED BRASS BACK STRAP WITH INTEGRAL GROUND CONTACTS. DOUBLE DUPLEX, CONSIST OF TWO DUPLEX RECEPTACLES, DOUBLE GANG BOX, PLASTER RING AND FACEPLATE.	HUBBELL HBL8300 LEVITON 8300 PASS & SEYMOUR 8300 COOPER 8300
11		RECEPTACLE, GROUND FAULT DUPLEX, HOSPITAL GRADE, 125 VOLT, 20 AMP, 3 WIRE GROUNDING TYPE, NEMA 5-20R, TEST AND RESET BUTTONS IN IMPACT RESISTANT THERMOPLASTIC FACE. DOUBLE DUPLEX, CONSIST OF TWO DUPLEX RECEPTACLES, DOUBLE GANG BOX, PLASTER RING AND FACEPLATE.	HUBBELL GFR-8300HL LEVITON 7899-HG PASS & SEYMOUR 2095-HG COOPER VGFH20
12	W	RECEPTACLE, GROUND FAULT DUPLEX, WEATHER RESISTANT, WEATHERPROOF COVERPLATE, 125 VOLT, 20 AMP, 3 WIRE GROUNDING TYPE, N.E.M.A. 5-20R. TEST AND RESET BUTTONS IN IMPACT RESISTANT THERMOPLASTIC FACE, NEMA 3R RATED WHILE IN USE, CLEAR, NON-LOCKING, STANDARD DEPTH, VERTICAL MOUNT.	HUBBELL GFTR20/RWS7300 LEVITON W7899-TR/5977-CL PASS & SEYMOUR 2095TRWR/WIUC10-C COOPER TWRVGF20/ WIU-1
13		RECEPTACLE, DUPLEX, 125 VOLT, 30 AMP, 2 POLE, 3 WIRE GROUNDING TYPE, NEMA L5-30R, LOCKING TYPE. THERMOPLASTIC FACE.	HUBBELL HBL2610 LEVITON 2610 PASS & SEYMOUR L530R COOPER CWL530R
14	FB-#	FULLY ADJUSTABLE CAST IRON FLOOR BOX, DUAL COMPARTMENT, FLUSH MOUNT, BRASS CARPET FLANGE, ONE COMPARTMENT WITH BRASS 2 1/8" x 3/4" COMBINATION COVER FOR POWER CONNECTIONS TO PARTITIONS BY OTHERS, CONNECTION WIRED BY E.C., ONE COMPARTMENT WITH BRASS 1 1/2" x 1 1/2" DUPLEX THREAD COVER AND TWO (2) 3/4" CONDUITS STUBBED TO ABOVE THE LAY-IN CEILING/ ROUTED TO THE CORRIDOR CABLE TRAY. REFER TO SPECIFICATIONS FOR WIRING REQUIREMENTS FROM THE COMPARTMENT TO THE TERMINAL BOARD, U.L. LISTED.	HUBBELL B4233 BOX SB3084 FLANGE S2425 COVER S3625 COVER WALKER 880CS2 STEEL CITY 642
15	PP-#	STEEL TELE/POWER POLE WITH SEPARATE TELECOMMUNICATION, DATA AND POWER RACEWAY, TWO (2) DUPLEX RECEPTACLES, 125 VOLT, 20 AMP, INDUSTRIAL SPECIFICATION GRADE, STRAIGHT BLADE, N.E.M.A. 5-20R, U.L. LISTED.	WIREMOLD 30TP HUBBELL PP12 THOMAS & BETTS PP102
16		PANELBOARD, SURFACE MOUNT, 208/120 VOLT, 3 PHASE, 4 WIRE, S/N, GROUND BUS, COPPER BUS, BOLT-ON BREAKERS, NEMA 1 ENCLOSURE. REFER TO SCHEDULES FOR SIZE AND CONFIGURATION, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.	SQUARE D NQ
17		PANELBOARD, SURFACE MOUNT, 480/277 VOLT, 3 PHASE, 4 WIRE, S/N, GROUND BUS, COPPER BUS, BOLT-ON BREAKERS, NEMA 1 ENCLOSURE. REFER TO SCHEDULES FOR SIZE AND CONFIGURATION, REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.	SQUARE D NF
18	E E	ELECTRICAL CONNECTION TO EQUIPMENT AND MOTORS, SIZE PER N.E.C. COORDINATE REQUIREMENTS WITH CONTRACTOR FURNISHING EQUIPMENT OR MOTOR. REFER TO SPECIFICATIONS AND GENERAL INSTALLATION NOTES FOR TERMINATIONS TO MOTORS.	REFER TO SPECIFICATIONS
19	V1 V3 V7 VH	FIRE ALARM VISUAL NOTIFICATION APPLIANCE, HIGH-INTENSITY STROBE, RED HOUSING WITH WHITE LETTERING OR PICTOGRAM, SEMI-FLUSH WALL MOUNT; 24 VDC. CANDELA RATINGS: V1=15, V3=30, V7=75, AND VH=110. CANDELA RATING SHALL BE VISIBLE FROM THE OUTSIDE OF THE DEVICE.	SIEMENS UMCS
20	A1 A3 A7 AH	FIRE ALARM AUDIO/VISUAL NOTIFICATION APPLIANCE, ELECTRONIC HORN WITH SELECTABLE OR TEMPORAL TONE, SELECTABLE SOUND OUTPUT AND HIGH-INTENSITY STROBE, RED HOUSING WITH WHITE LETTERING OR PICTOGRAM, SEMI-FLUSH WALL MOUNT; 24 VDC. CANDELA RATINGS: A1=15, A3=30, A7=75, AND AH=110. CANDELA RATING SHALL BE VISIBLE FROM THE OUTSIDE OF THE DEVICE.	SIEMENS UMHST

GENERAL ELECTRICAL EQUIPMENT SCHEDULE (CONTINUED)

21	AW	WEATHERPROOF FIRE ALARM AUDIO/VISUAL NOTIFICATION APPLIANCE, ELECTRONIC HORN WITH HIGH-INTENSITY STROBE, SQUARE HOUSING, SEMI-FLUSH WALL MOUNT, RED WITH WHITE LETTERING, 75 CANDELA RATING, 24 VDC FOR WET LOCATIONS, PROVIDE WITH WEATHERPROOF BACK BOX. CONDUIT SHALL NOT BE EXPOSED.	SIEMENS
22	SD	SMOKE DETECTOR, ADDRESSABLE, ANALOG PHOTOELECTRIC SENSOR, 24 VDC, 2-PIECE DESIGN, LOW-PROFILE MOUNTING BASE WITH MULTI-FUNCTION LED INDICATOR. COMPLETE WITH MOUNTING HARDWARE AND BACKBOX. PROVIDE A REMOTE LED INDICATOR DEVICE IF DETECTOR IS NOT VISIBLE FROM A FLOOR-STANDING POSITION. [A SUBSCRIPT IS USED TO IDENTIFY THE DEVICE WITH A SPECIFIC SEQUENCE OF OPERATION AS FOLLOWS: D = FOR HVAC CONTROL, SD = SMOKE DAMPERS, DH = DOOR HOLD RELEASE	SIEMENS FIRE SAFETY
23	H	HEAT DETECTOR, ADDRESSABLE, ANALOG SENSOR, COMBINATION RATE OF RISE AND 135 DEGREE FAHRENHEIT FIXED TEMPERATURE, 2-WIRE OPERATION, 24 VDC, 2-PIECE DESIGN, LOW-PROFILE MOUNTING BASE WITH MULTI-FUNCTION LED INDICATOR, COMPLETE WITH MOUNTING HARDWARE AND BACKBOX. PROVIDE A REMOTE LED INDICATOR DEVICE IF DETECTOR IS NOT VISIBLE FROM A FLOOR-STANDING POSITION.	SIEMENS FIRE SAFETY
24	F	FIRE ALARM MANUAL PULL STATION, SINGLE ACTION, RESET KEY LOCK, SEMI-FLUSH MOUNT, RED HIGH-ABUSE PLASTIC OR CAST METAL CONSTRUCTION WITH WHITE LETTERING.	SIEMENS FIRE SAFETY
25	AR	FIRE ALARM ADDRESSABLE RELAY CONSISTING OF AN ADDRESSABLE CONTROL MODULE AND SLAVE RELAY WITH CONTACTS SUITABLE FOR CONTROLLING THE DESIGNATED AUXILIARY LOAD, 24 VDC, 4-WIRE OPERATION, FLUSH MOUNT ENCLOSURE. PROVIDE A SURFACE ENCLOSURE WHERE LOCATED ABOVE CEILING OR IN UNFINISHED SPACE. PROVIDE A FLUSH ENCLOSURE IN FINISHED SPACE.	SIEMENS FIRE SAFETY
26	MM	FIRE ALARM ADDRESSABLE MONITOR MODULE FOR CONVENTIONAL CLASS B CIRCUITS, 24 VDC, 4-WIRE OPERATION, INTEGRAL END-OF-LINE RESISTOR/RELAY. PROVIDE A SURFACE ENCLOSURE WHERE LOCATED ABOVE CEILING OR IN UNFINISHED SPACE. PROVIDE A FLUSH ENCLOSURE IN FINISHED SPACE.	SIEMENS FIRE SAFETY
27	FS	CONNECTION TO FLOW SWITCH TO MONITOR FIRE PROTECTION FLOW SWITCH OR DISCHARGE OUTPUT CONTACTS. NORMALLY-OPEN DRY CONTACTS FOR FIRE ALARM INTERFACE, FURNISHED AND INSTALLED BY M.C., WIRED BY E.C.	BY M.C.
28	DH	FLOOR MOUNTED FIRE ALARM ELECTROMAGNETIC DOOR HOLDER, 24VDC, COMPLETE WITH ARMATURE CONTACT PLATE WITH ADJUSTABLE PIVOT MOUNTING FOR INSTALLATION IN THE DOOR; AND HEAVY-DUTY ELECTROMAGNET, IN DURABLE ENCLOSURE. UL AND ULC LISTED.	SIEMENS
29	FAA	FIRE ALARM ANNUNCIATOR PANEL, POWERED FROM FIRE ALARM CONTROL PANEL, FLUSH MOUNT. REFER TO SPECIFICATIONS FOR COMPLETE REQUIREMENTS.	SIEMENS FIRE SAFETY
30	HT-3	HEAT TAPE, SELF-LIMITING, 3 WATTS PER FOOT, 120 VOLT. HEAT TAPE SUITABLE FOR FREEZE PROTECTION OF EXTERIOR PIPING.	RAY-CHEM CHROMALOX
31	HT	HEAT TAPE CONTROL, AMBIENT SENSING THERMOSTAT SET A 40 DEGREES F., 120 VOLT.	RAY-CHEM AMC-1A CHROMALOX

Revisions: | Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ELECTRICAL SCHEDULES

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: E600

Dwg. 117 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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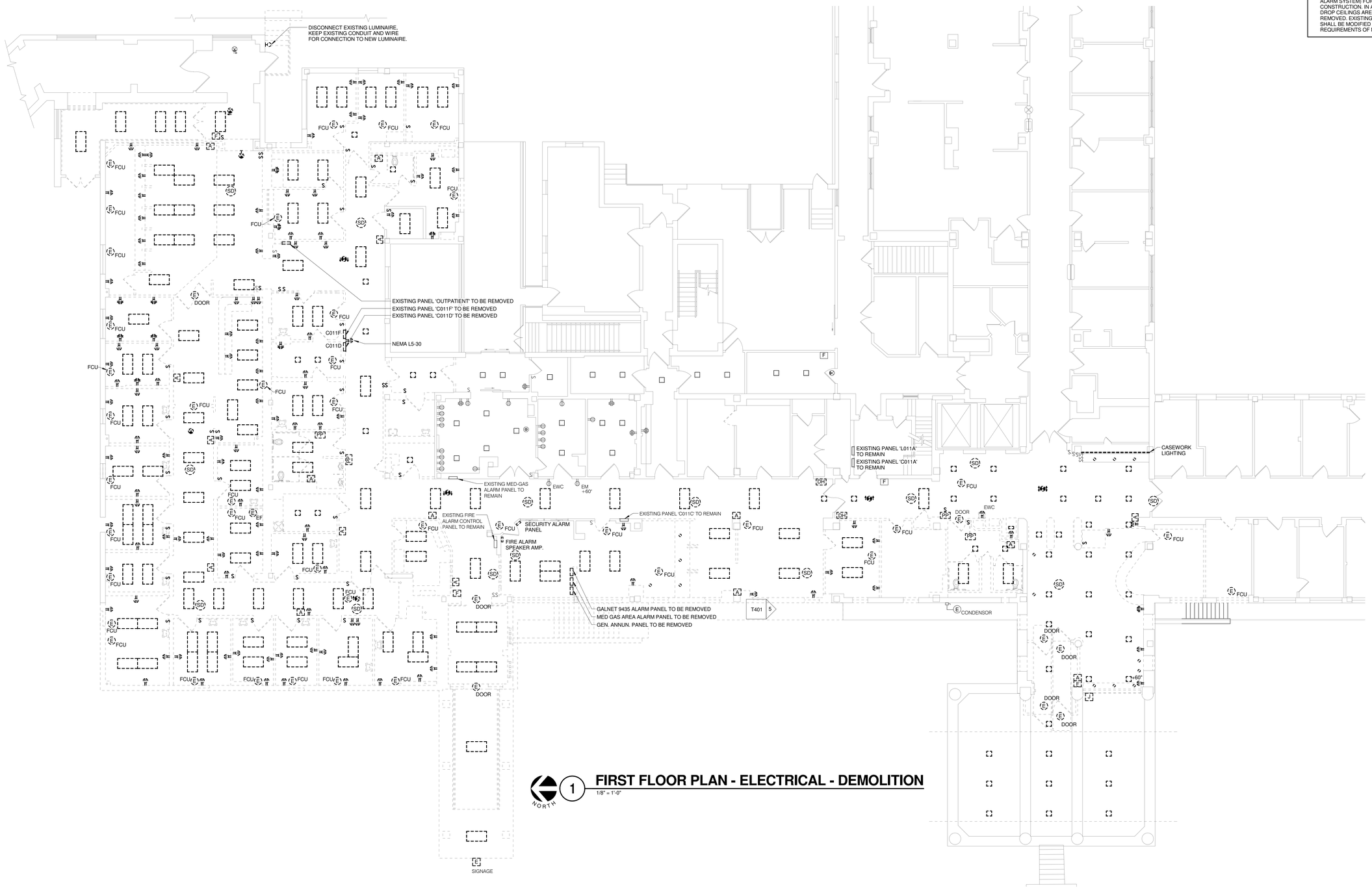
SHEET NOTES :

1. CONTRACTOR SHALL MAINTAIN FIRE PROTECTION SYSTEMS PROTECTION (FIRE ALARM SYSTEM) FOR THE DURATION OF CONSTRUCTION. IN AREAS WHERE EXISTING DROP CEILINGS ARE SCHEDULED TO BE REMOVED. EXISTING FIRE ALARM SYSTEM SHALL BE MODIFIED TO MEET THE REQUIREMENTS OF NFPA 72.



1 FIRST FLOOR PLAN - ELECTRICAL - DEMOLITION

1/8" = 1'-0"

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: FIRST FLOOR PLAN - ELECTRICAL - DEMOLITION

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: ED101

Dwg. 118 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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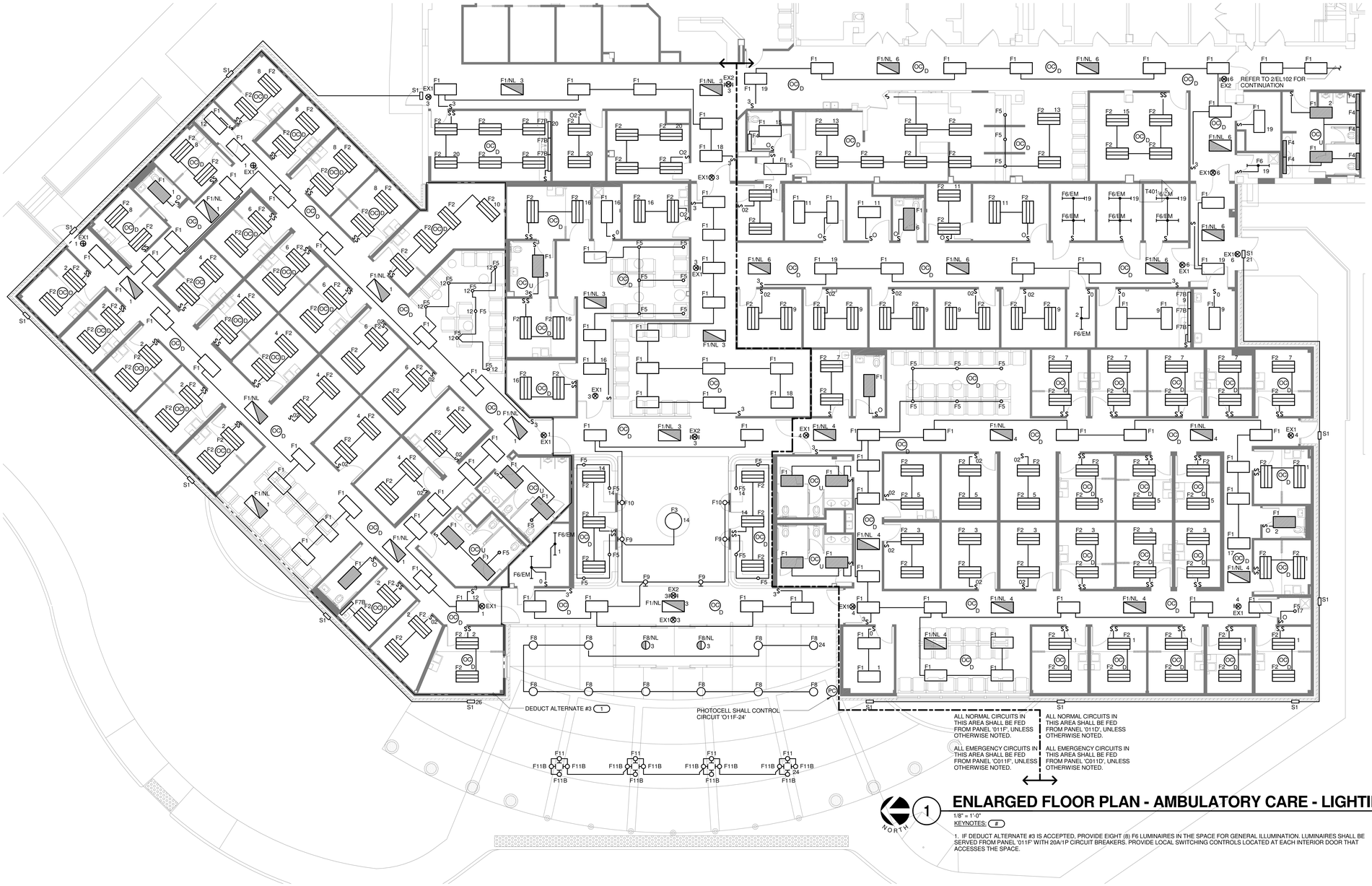

1 ENLARGED FLOOR PLAN - AMBULATORY CARE - LIGHTING

1/8" = 1'-0"

KEYNOTES: (#)

1. IF DEDUCT ALTERNATE #3 IS ACCEPTED, PROVIDE EIGHT (8) F6 LUMINAIRES IN THE SPACE FOR GENERAL ILLUMINATION. LUMINAIRES SHALL BE SERVED FROM PANEL '011F' WITH 20A/1P CIRCUIT BREAKERS. PROVIDE LOCAL SWITCHING CONTROLS LOCATED AT EACH INTERIOR DOOR THAT ACCESSES THE SPACE.

Revisions: Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ENLARGED PLAN - AMBULATORY CARE - LIGHTING

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: EL101

Dwg. 119 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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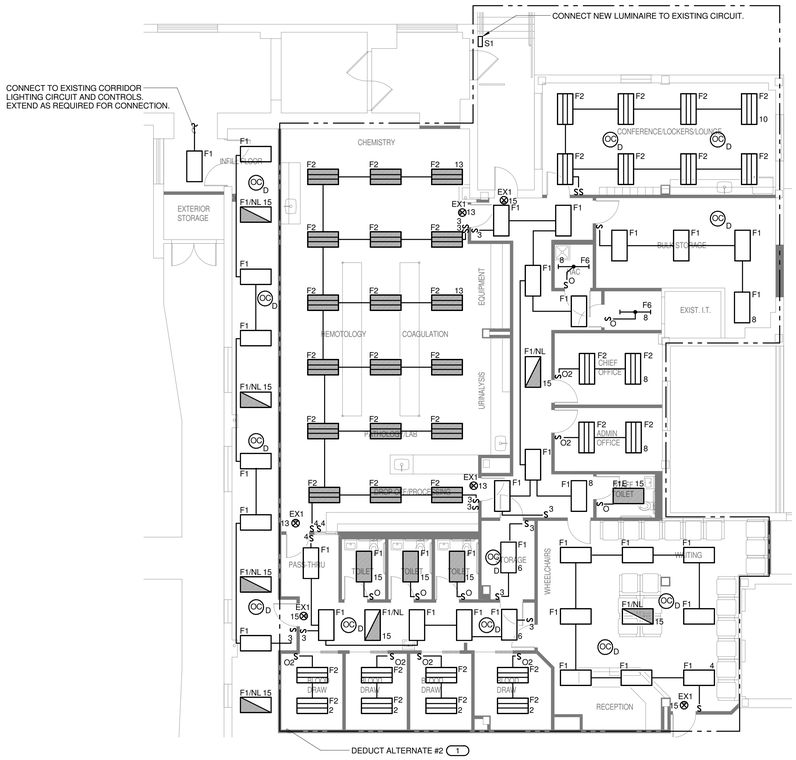


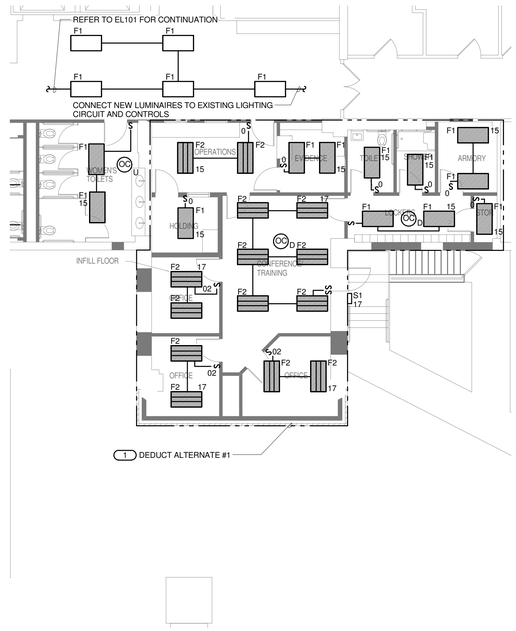
1 ENLARGED FLOOR PLAN - LABORATORY - LIGHTING

1/8" = 1'-0"

KEYNOTES: #

1. IF DEDUCT ALTERNATE #2 IS ACCEPTED, PROVIDE (11) F6 LUMINAIRES IN THE SPACE FOR GENERAL ILLUMINATION. LUMINAIRES SHALL BE SERVED FROM PANEL '011L' WITH 20A/1P CIRCUIT BREAKER. PROVIDE LOCAL SWITCHING CONTROLS, LOCATED AT EACH INTERIOR DOOR THAT ACCESSES THE SPACE.

NOTES:
1. ALL NORMAL CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL '011L', UNLESS OTHERWISE NOTED.
2. ALL EMERGENCY CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL 'C011L', UNLESS OTHERWISE NOTED.



2 ENLARGED FLOOR PLAN - SECURITY - LIGHTING

1/8" = 1'-0"

KEYNOTES: #

1. IF DEDUCT ALTERNATE #1 IS ACCEPTED, PROVIDE SEVEN (7) F6 LUMINAIRES IN THE SPACE FOR GENERAL ILLUMINATION. LUMINAIRES SHALL BE SERVED FROM PANEL '011D' WITH 20A/1P CIRCUIT BREAKER. PROVIDE LOCAL SWITCHING CONTROLS, LOCATED AT EACH INTERIOR DOOR THAT ACCESSES THE SPACE.

NOTES:
1. ALL NORMAL CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL '011D', UNLESS OTHERWISE NOTED.
2. ALL EMERGENCY CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL 'C011D', UNLESS OTHERWISE NOTED.

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ENLARGED FLOOR PLAN - LABORATORY AND SECURITY - LIGHTING

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: EL102

Dwg. 120 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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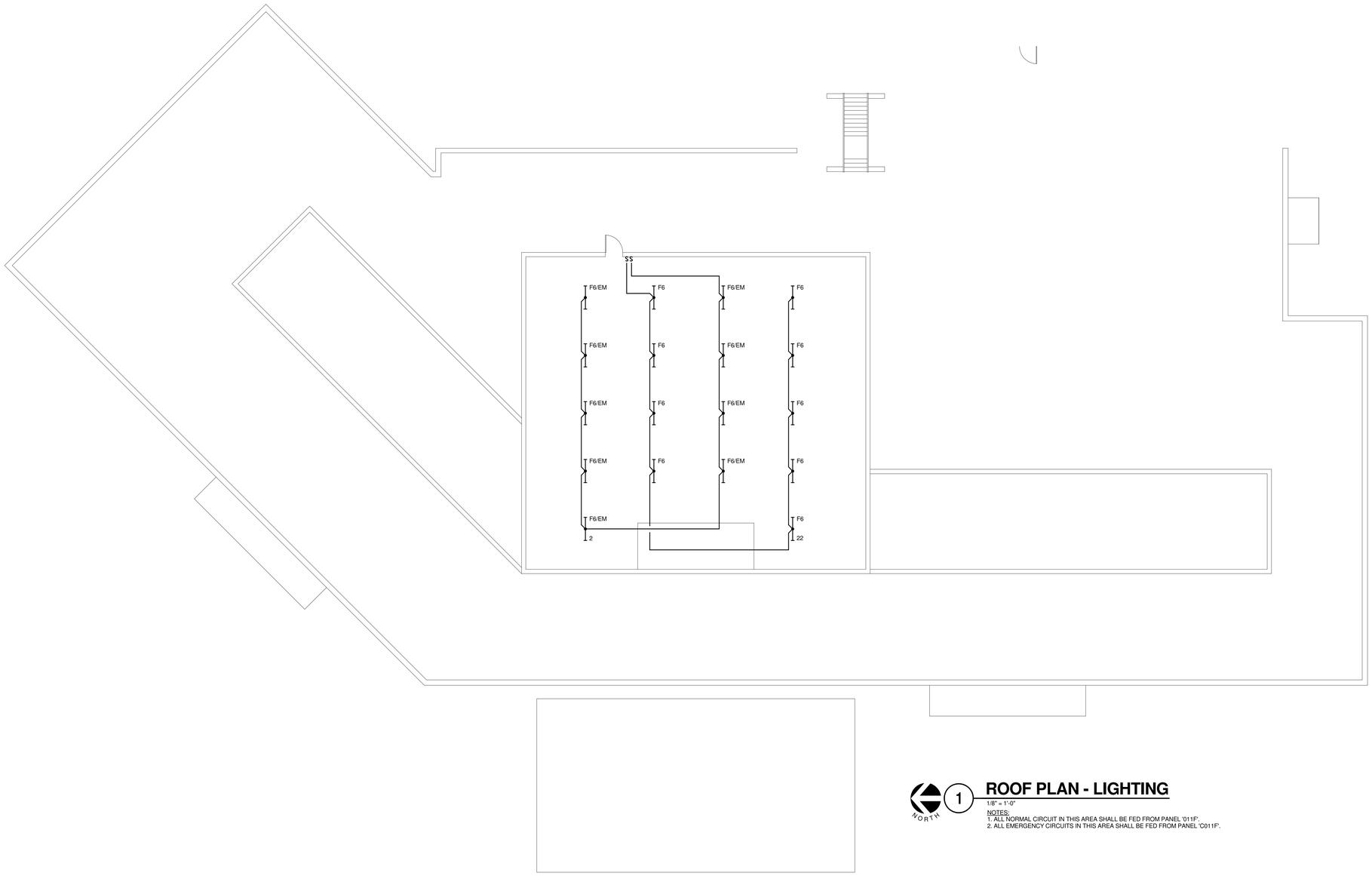

1 ROOF PLAN - LIGHTING

1/8" = 1'-0"

NORTH

NOTES:
1. ALL NORMAL CIRCUIT IN THIS AREA SHALL BE FED FROM PANEL '011F'.
2. ALL EMERGENCY CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL 'C011F'.

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.

200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: PENTHOUSE PLAN - LIGHTING

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: EL103

Dwg. 121 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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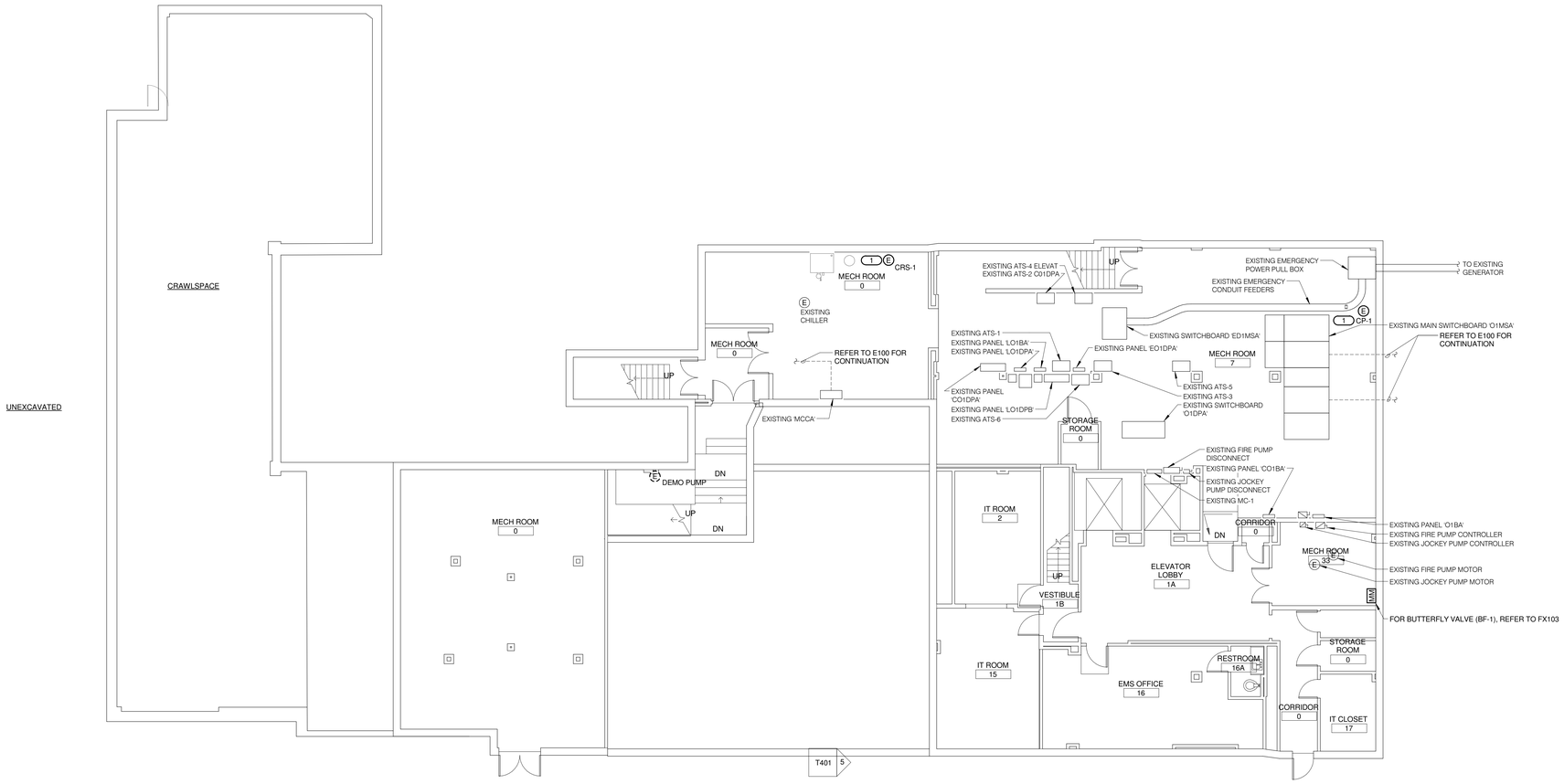

NORTH

1 BASEMENT FLOOR PLAN - ELECTRICAL

1/8" = 1'-0"

KEYNOTES:

1. CONNECT TO EXISTING PANEL '01BA' WITH 2#12 & 1#12 GROUND IN 3/4" CONDUIT WITH 20A/1P CIRCUIT BREAKER. NEW CIRCUIT BREAKERS SHALL MATCH EXISTING CHARACTERISTICS.

Revisions: | Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.

200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: BASEMENT FLOOR PLAN - ELECTRICAL

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: EP100

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Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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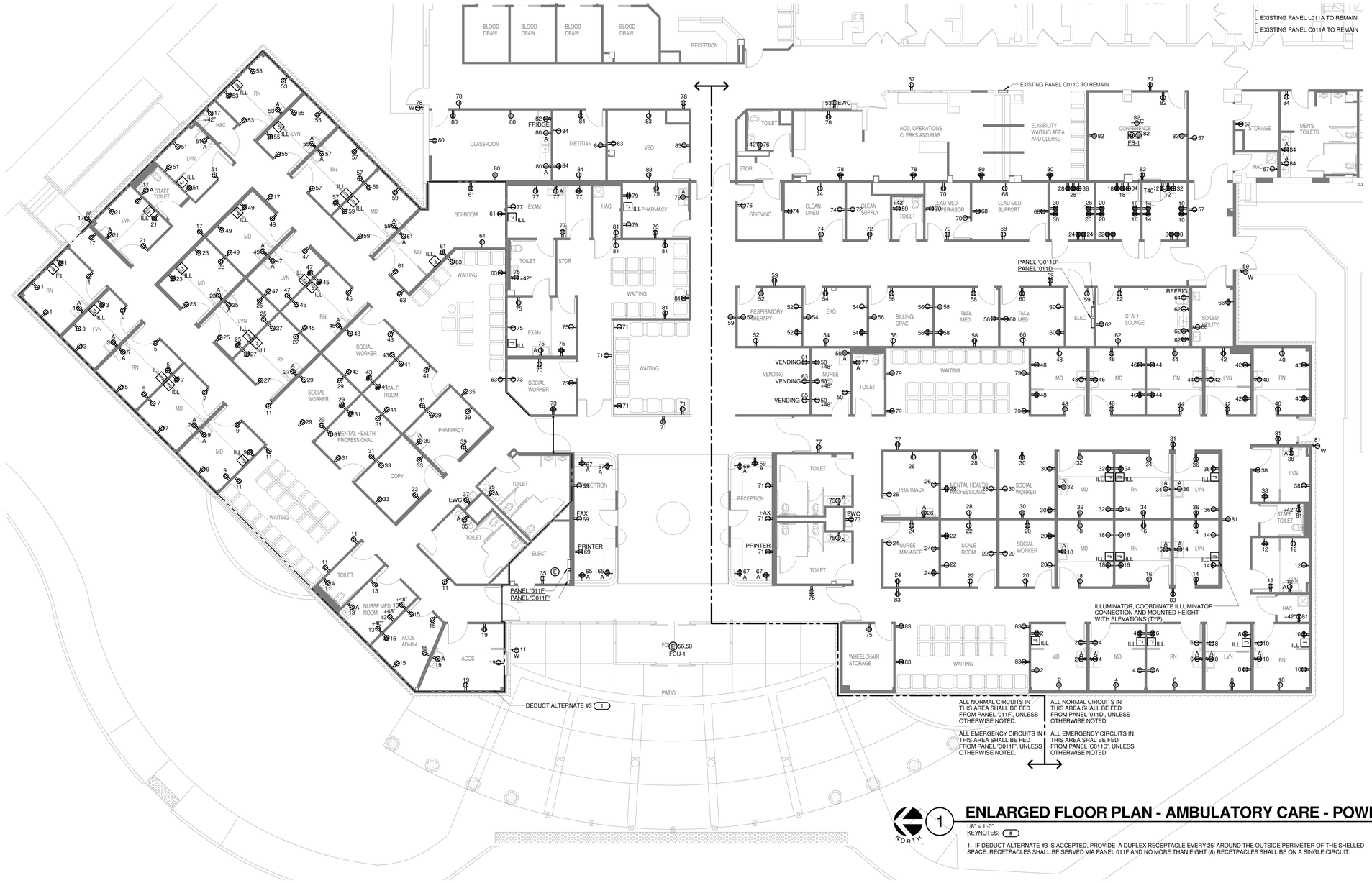

1 ENLARGED FLOOR PLAN - AMBULATORY CARE - POWER

1/8" = 1'-0"

KEYNOTES: (#)

1. IF DEDUCT ALTERNATE #3 IS ACCEPTED, PROVIDE A DUPLEX RECEPTACLE EVERY 25' AROUND THE OUTSIDE PERIMETER OF THE SHELLED SPACE. RECETPACLES SHALL BE SERVED VIA PANEL 011F AND NO MORE THAN EIGHT (8) RECETPACLES SHALL BE ON A SINGLE CIRCUIT.

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ENLARGED PLAN - AMBULATORY CARE - POWER

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: EP101

Dwg. 123 of 142

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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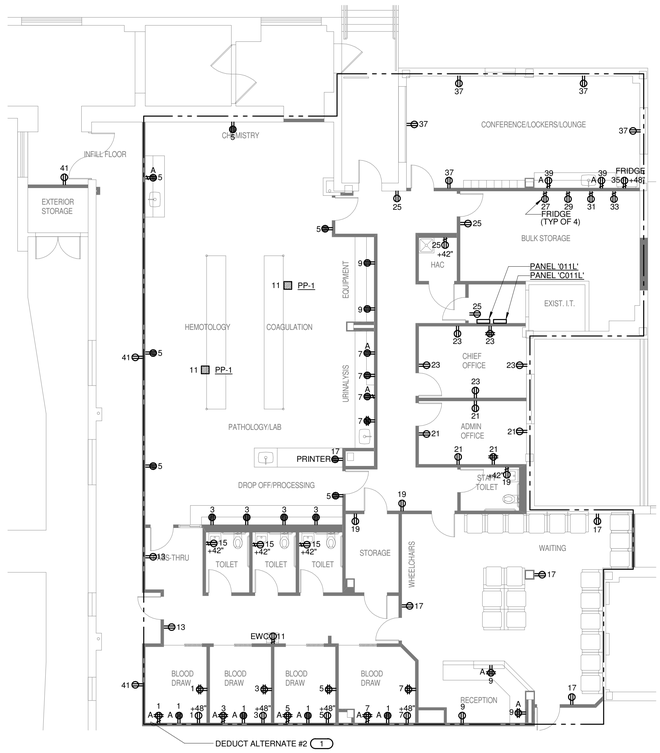


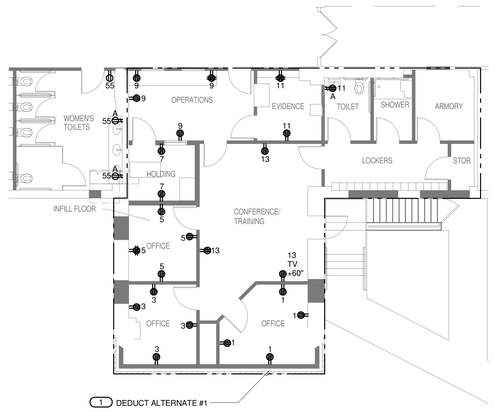
1 ENLARGED FLOOR PLAN - LABORATORY - POWER

1/8" = 1'-0"

KEYNOTES: #

1. IF DEDUCT ALTERNATE #2 IS ACCEPTED, PROVIDE A DUPLEX RECEPTACLE EVERY 25' AROUND THE OUTSIDE PERIMETER OF THE SHELLED SPACE. RECEPTACLES SHALL BE SERVED VIA PANEL '011L' AND NO MORE THAN EIGHT (8) RECEPTACLES SHALL BE ON A SINGLE CIRCUIT.

NOTES:
1. ALL NORMAL CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL '011L', UNLESS OTHERWISE NOTED.
2. ALL EMERGENCY CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL 'C011L', UNLESS OTHERWISE NOTED.



2 ENLARGED FLOOR PLAN - SECURITY - POWER

1/8" = 1'-0"

KEYNOTES: #

1. IF DEDUCT ALTERNATE #1 IS ACCEPTED, PROVIDE A DUPLEX RECEPTACLE EVERY 25' AROUND THE OUTSIDE PERIMETER OF THE SHELLED SPACE. RECEPTACLES SHALL BE SERVED VIA PANEL '011D' AND NO MORE THAN EIGHT (8) RECEPTACLES SHALL BE ON A SINGLE CIRCUIT.

NOTES:
1. ALL NORMAL CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL '011D', UNLESS OTHERWISE NOTED.
2. ALL EMERGENCY CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL 'C011D', UNLESS OTHERWISE NOTED.

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ENLARGED FLOOR PLAN - LABORATORY AND SECURITY - POWER

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: EP102

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Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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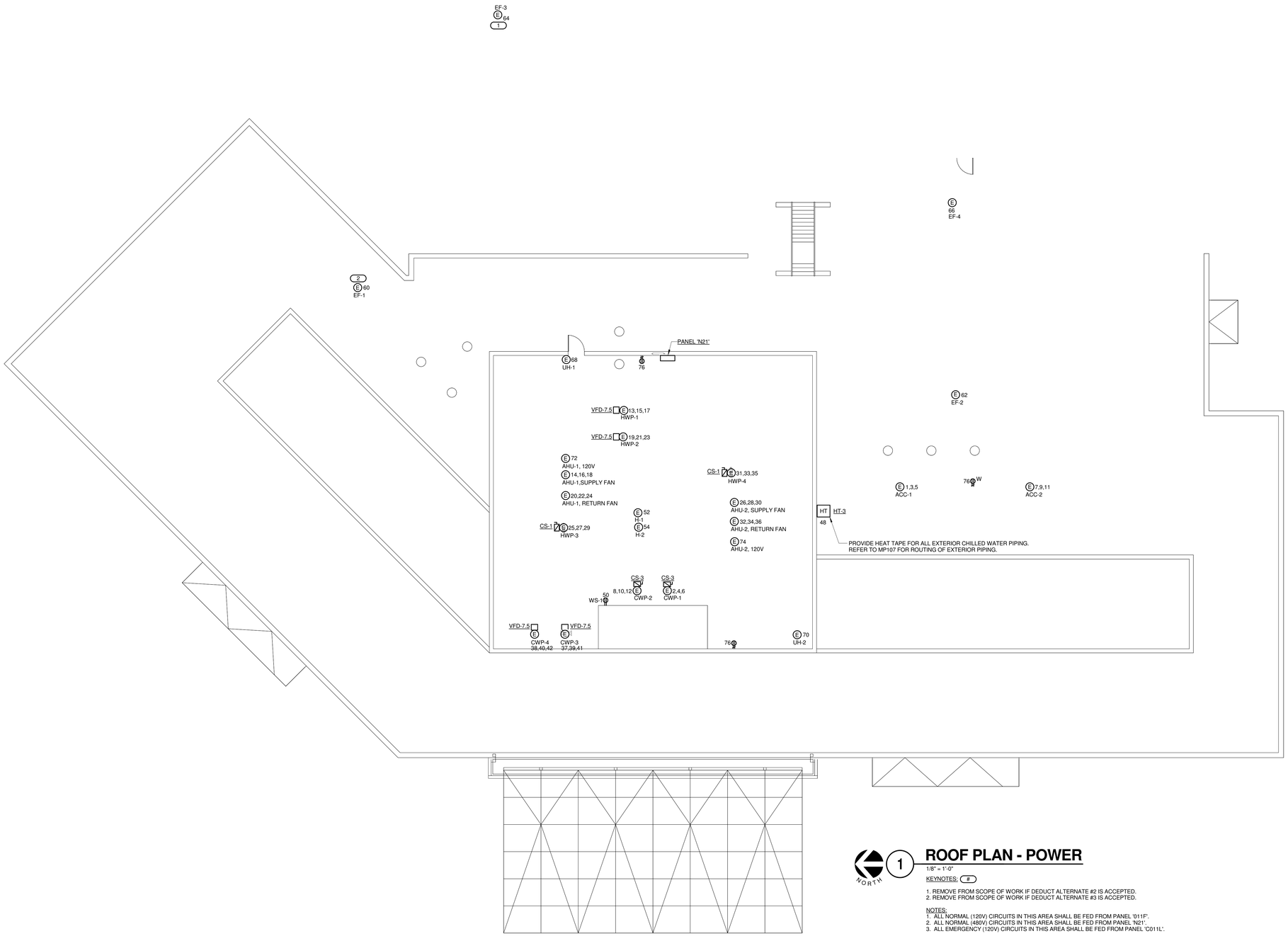

1 ROOF PLAN - POWER

1/8" = 1'-0"

KEYNOTES: #

1. REMOVE FROM SCOPE OF WORK IF DEDUCT ALTERNATE #2 IS ACCEPTED.
2. REMOVE FROM SCOPE OF WORK IF DEDUCT ALTERNATE #3 IS ACCEPTED.

NOTES:
1. ALL NORMAL (120V) CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL '011F'.
2. ALL NORMAL (480V) CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL 'N21'.
3. ALL EMERGENCY (120V) CIRCUITS IN THIS AREA SHALL BE FED FROM PANEL 'C011L'.

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: PENTHOUSE PLAN - POWER

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: EP103

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Department of Veterans Affairs

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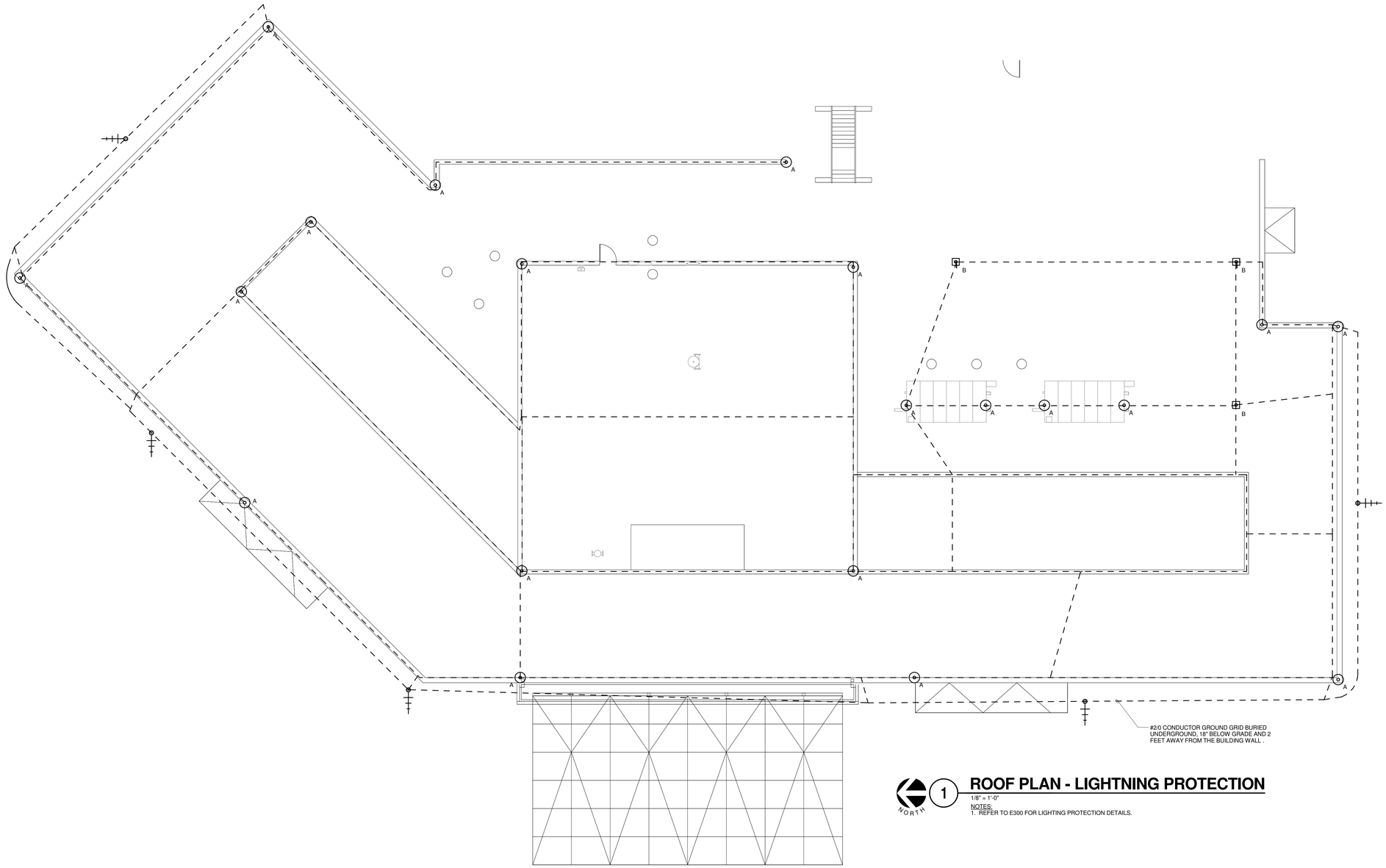
LIGHTNING PROTECTION SYMBOL KEY

SYMBOL:	DESCRIPTION:
A	AIR TERMINAL, PARAPET MOUNTED. SUBSCRIPT 'A'=18" ABOVE SURFACE
B	AIR TERMINAL, FLAT ROOF
C	AIR TERMINAL, FLAT ROOF
T	LIGHTNING PROTECTION THROUGH PENETRATION
D	EXPOSED DOWN CONDUCTOR
G	EXPOSED DOWN CONDUCTOR
	LIGHTNING PROTECTION CONDUCTOR



NORTH

1 ROOF PLAN - LIGHTNING PROTECTION

1/8" = 1'-0"

NOTES:
1. REFER TO E300 FOR LIGHTING PROTECTION DETAILS.

Revisions: Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ROOF PLAN - LIGHTNING PROTECTION

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: EY103

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Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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SHEET NOTES :

1. CONTRACTOR SHALL MAINTAIN FIRE PROTECTION SYSTEMS PROTECTION (FIRE ALARM SYSTEM) FOR THE DURATION OF CONSTRUCTION. IN AREAS WHERE EXISTING DROP CEILINGS ARE SCHEDULED TO BE REMOVED. EXISTING FIRE ALARM SYSTEM SHALL BE MODIFIED TO MEET THE REQUIREMENTS OF NFPA 72.

1 ENLARGED FLOOR PLAN - AMBULATORY CARE - FIRE ALARM

1/8" = 1'-0"

KEYNOTES: #

1. IF DEDUCT ALTERNATE #3 IS ACCEPTED, PROVIDE SMOKE DETECTION ON A 30'x30' GRID THROUGHOUT THE SHELLED SPACE.

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.

200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: ENLARGED PLAN - AMBULATORY CARE - FIRE ALARM

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: FA101

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Office of Facilities Management

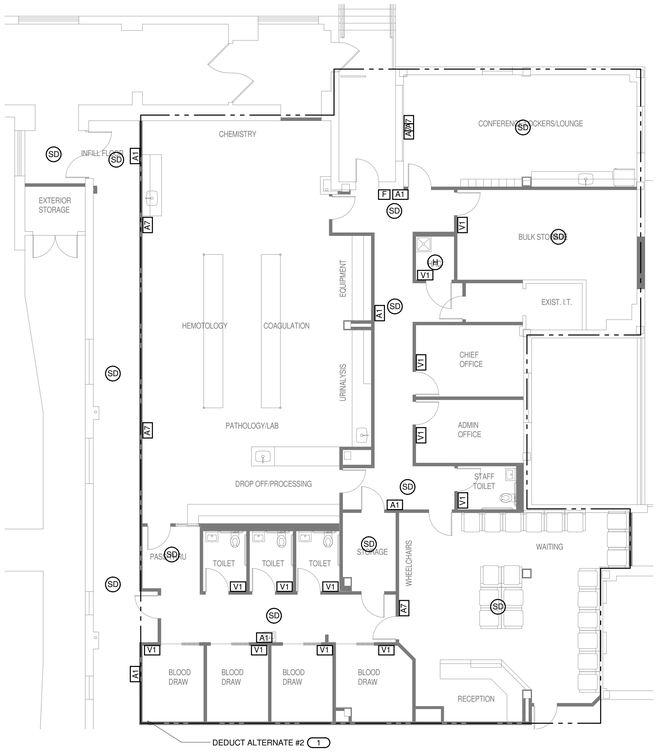
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

100% ISSUED FOR CONSTRUCTION

SHEET NOTES :

1. CONTRACTOR SHALL MAINTAIN FIRE PROTECTION SYSTEMS PROTECTION (FIRE ALARM SYSTEM) FOR THE DURATION OF CONSTRUCTION. IN AREAS WHERE EXISTING DROP CEILINGS ARE SCHEDULED TO BE REMOVED. EXISTING FIRE ALARM SYSTEM SHALL BE MODIFIED TO MEET THE REQUIREMENTS OF NFPA 72.

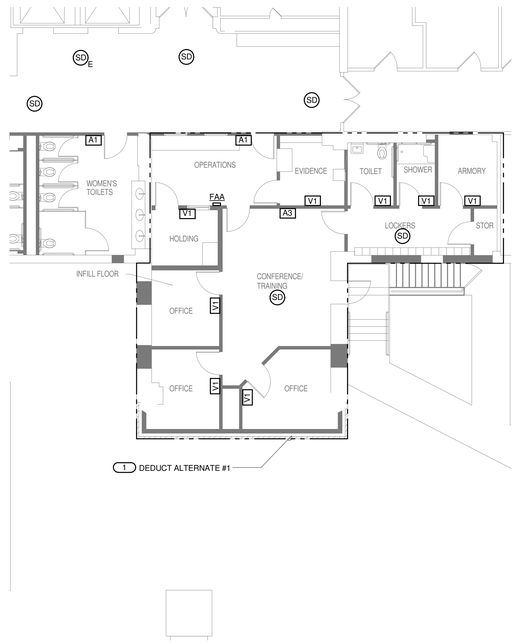


1 ENLARGED FLOOR PLAN - LABORATORY - FIRE ALARM

1/8" = 1'-0"

KEYNOTES: #

1. IF DEDUCT ALTERNATE #2 IS ACCEPTED, PROVIDE SMOKE DETECTION ON A 30'x30' GRID THROUGHOUT THE SHELLED SPACE.



2 ENLARGED FLOOR PLAN - SECURITY - FIRE ALARM

1/8" = 1'-0"

KEYNOTES: #

1. IF DEDUCT ALTERNATE #1 IS ACCEPTED, PROVIDE SMOKE DETECTION ON A 30'x30' GRID THROUGHOUT THE SHELLED SPACE.

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: OVERALL FIRST FLOOR PLAN - ADDITION AND RENOVATION - FIRE ALARM

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: FA102

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Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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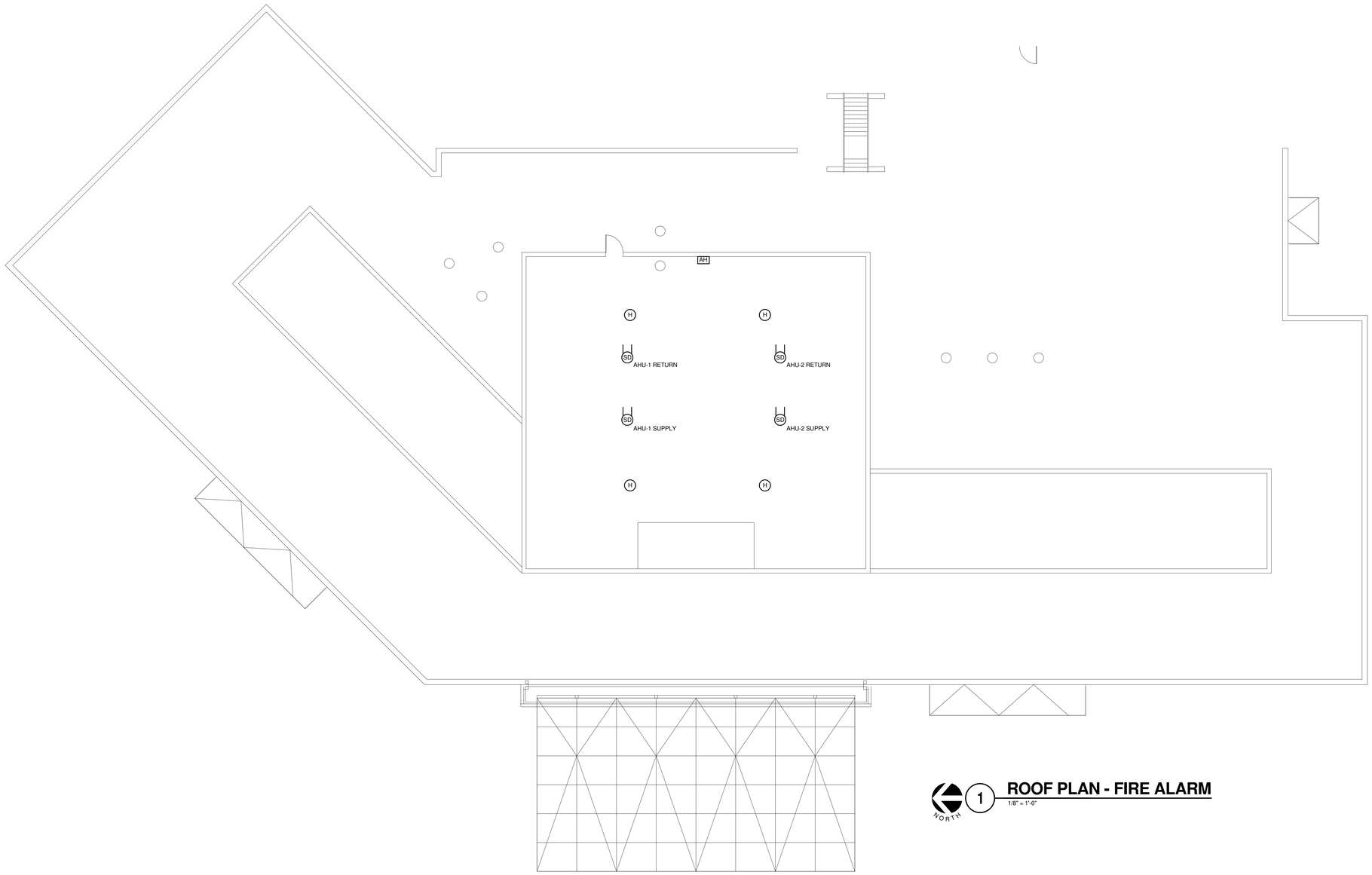

NORTH

1 **ROOF PLAN - FIRE ALARM**

1/8" = 1'-0"

Revisions:	Date

CONSULTANTS:

HEALTHCARE PLANNERS: VOA ARCHITECTS
MEPFP + TECH + STRUCT: KJWW CONSULTING ENGINEERS
CIVIL ENGINEER: JD ENGINEERING
COST ESTIMATING: MOSS CONSTRUCTION COST MANAGEMENT
INDUSTRIAL HYGIENE: JOHN A. JURGIEL & ASSOCIATES, INC.

ARCHITECT:

MICHAEL ROTH & ASSOCIATES, ARCHITECTS & PLANNERS, INC.
200 SOUTH HANLEY ROAD, STE. 1105, CLAYTON, MISSOURI 63105, 314-862-2112

Drawing Title: PENTHOUSE PLAN - FIRE ALARM

Approved: Project Director

Project Title: RENOVATE AND EXPAND AMBULATORY CARE AND LAB. SAM RAYBURN MEMORIAL VETERANS CENTER

Location: BONHAM, TEXAS

Date: APRIL 13, 2015 | Checked: JPM | Drawn: NWS

Project Number: 549-130

Building Number: 1

Drawing Number: FA103

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Office of Facilities Management

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