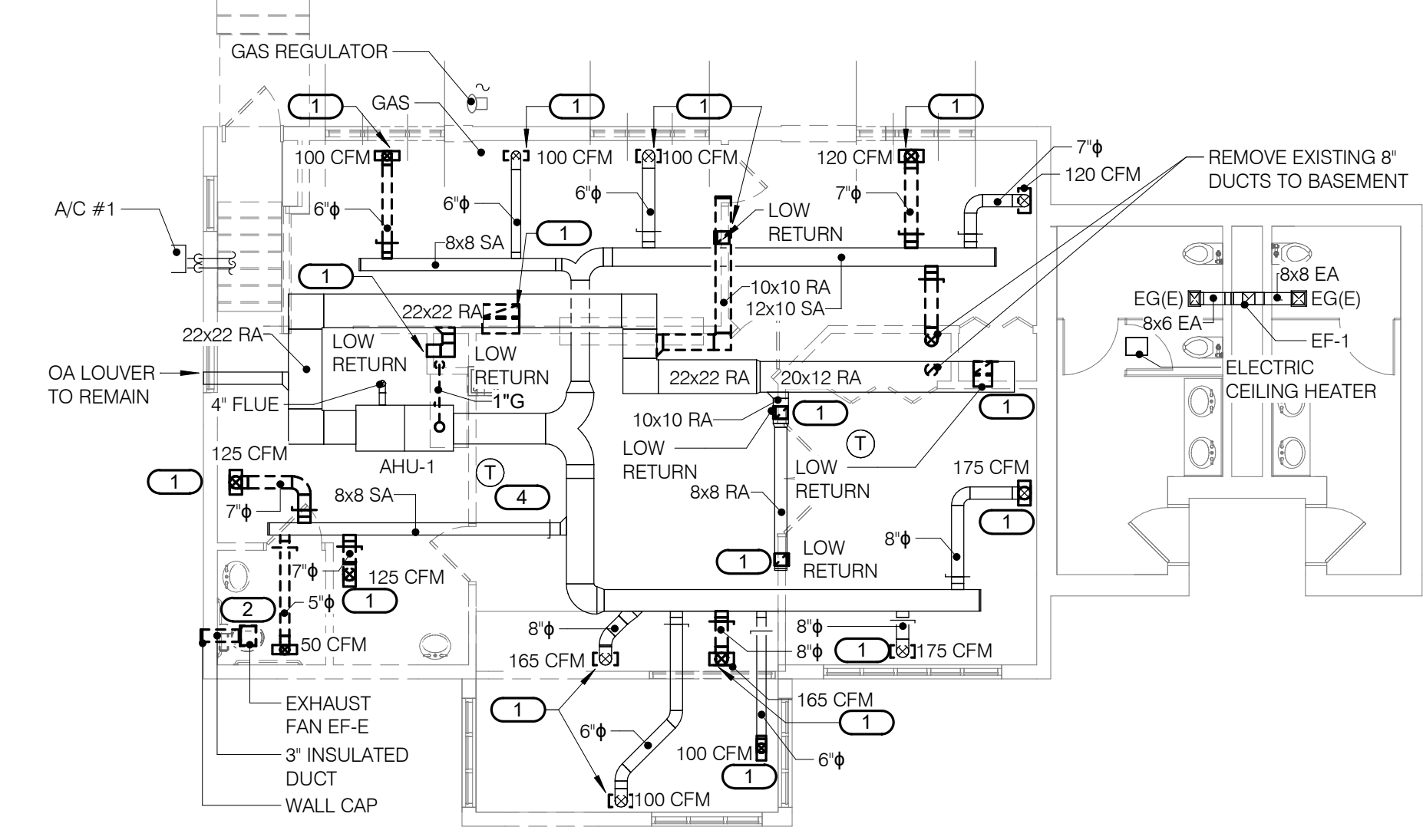
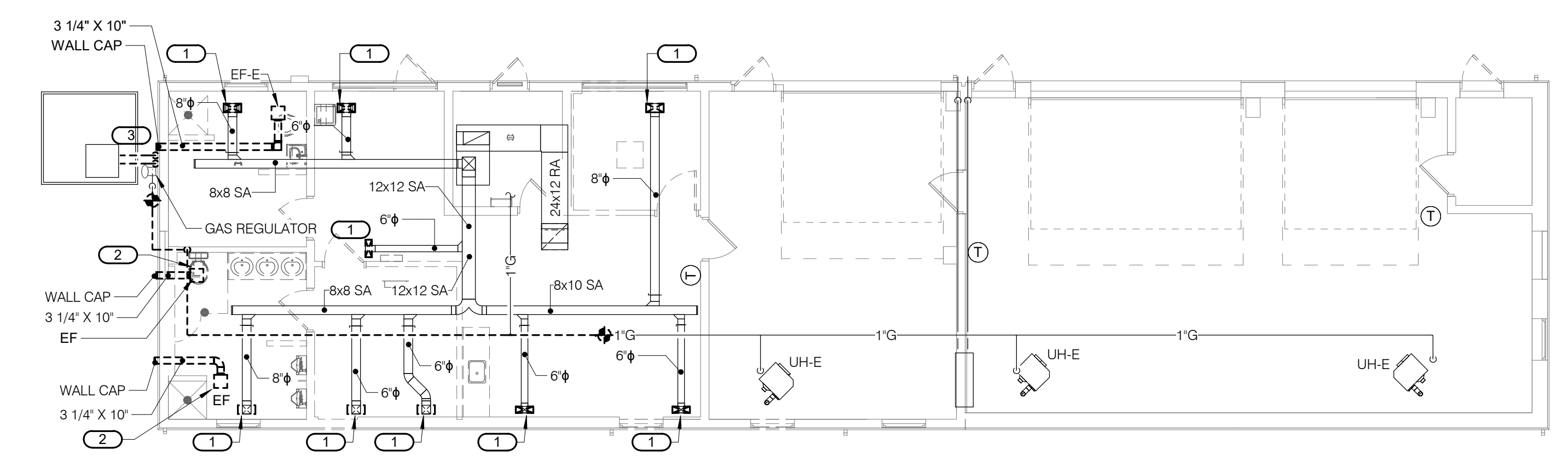


- KEYNOTES:**
1. REMOVE EXISTING GRILLE AND DUCT AS SHOWN. CAP OR PREPARE FOR NEW CONNECTION.
  2. REMOVE EXISTING FAN AND ASSOCIATED DUCTWORK AND WALL CAP.
  3. REMOVE EXISTING REFRIGERANT PIPING AND CONTROL WIRING FROM CONDENSING UNIT UP THE EXTERIOR WALL AND INTO ATTIC SPACE TO EXISTING FURNACE. PATCH WALL AS REQUIRED.
  4. RELOCATE EXISTING THERMOSTAT AND RE-WIRE.



**2 FIRST FLOOR DEMOLITION - MECHANICAL - ADMINISTRATION**  
1/8" = 1'-0"



**3 FIRST FLOOR DEMOLITION - MECHANICAL - MAINTENANCE**  
1/8" = 1'-0"

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 VA FORM 08 - 6231

Revisions:	Date:

CONSULTANT		
MECHANICAL, ELECTRICAL, TECHNOLOGY & STRUCTURAL: <b>IMEG CORP.</b> 14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075	GEOTECHNICAL: <b>AET</b> 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	COST ESTIMATING: <b>CPMI</b> 3265 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

**ARCHITECT/ENGINEER OF RECORD**

**ANDERSON**

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**STAMP**

Professional Engineer  
State of Minnesota  
No. 131-282  
10-31-2022

Office of Construction and Facilities Management

**VA** U.S. Department of Veterans Affairs

Drawing Title <b>FIRST FLOOR DEMOLITION - MECHANICAL - ADMINISTRATION &amp; MAINTENANCE</b>
Approved:

Phase <b>BID DOCUMENTS</b>
<b>NON-SPRINKLERED</b>

Project Title <b>BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS</b>		
Location <b>STURGIS, SOUTH DAKOTA</b>		
Issue Date <b>10/31/22</b>	Checked <b>IMEG</b>	Drawn <b>BRAGAR</b>

Project Number <b>884-CM-3015</b>
Building Number
Drawing Number <b>M101</b>
Dwg. 56 OF 84

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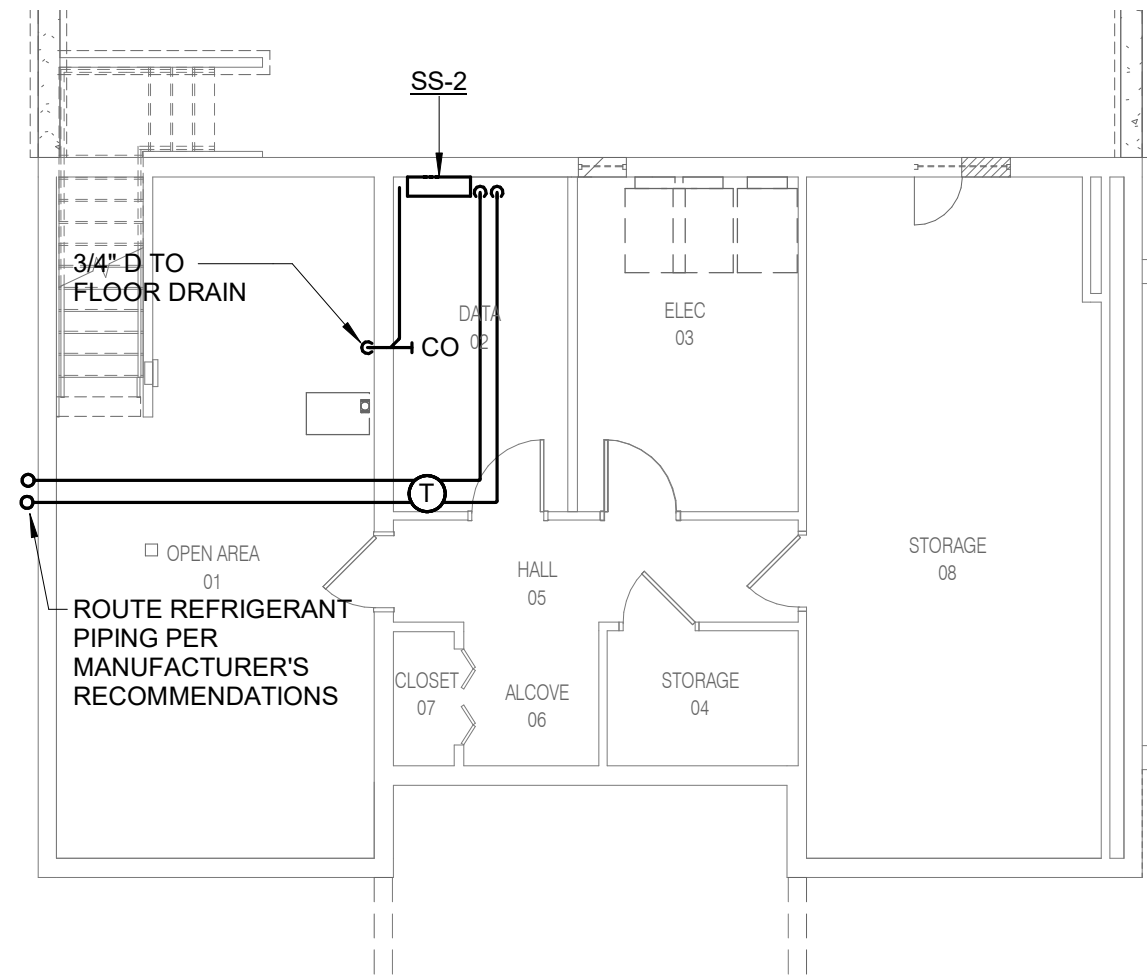
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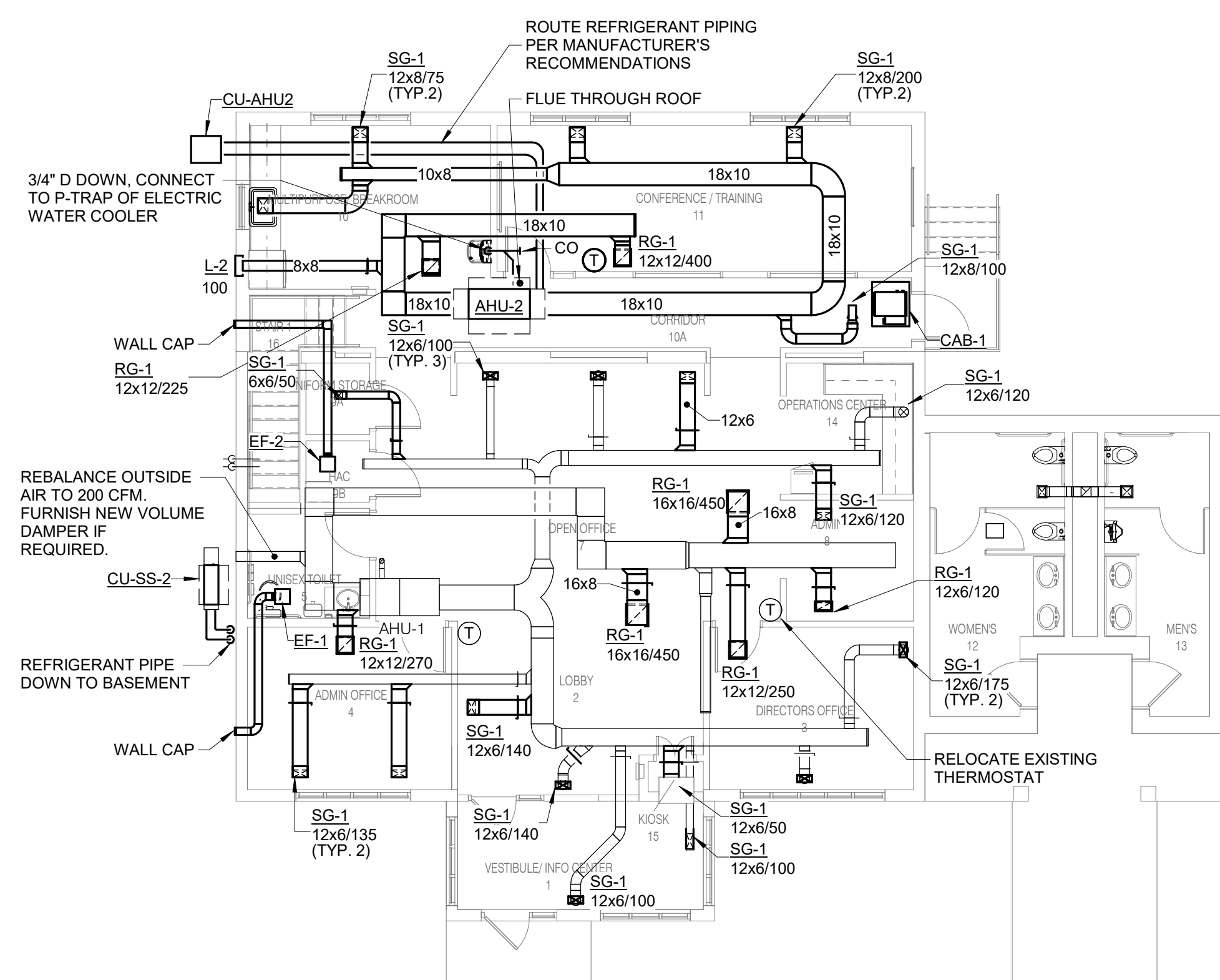
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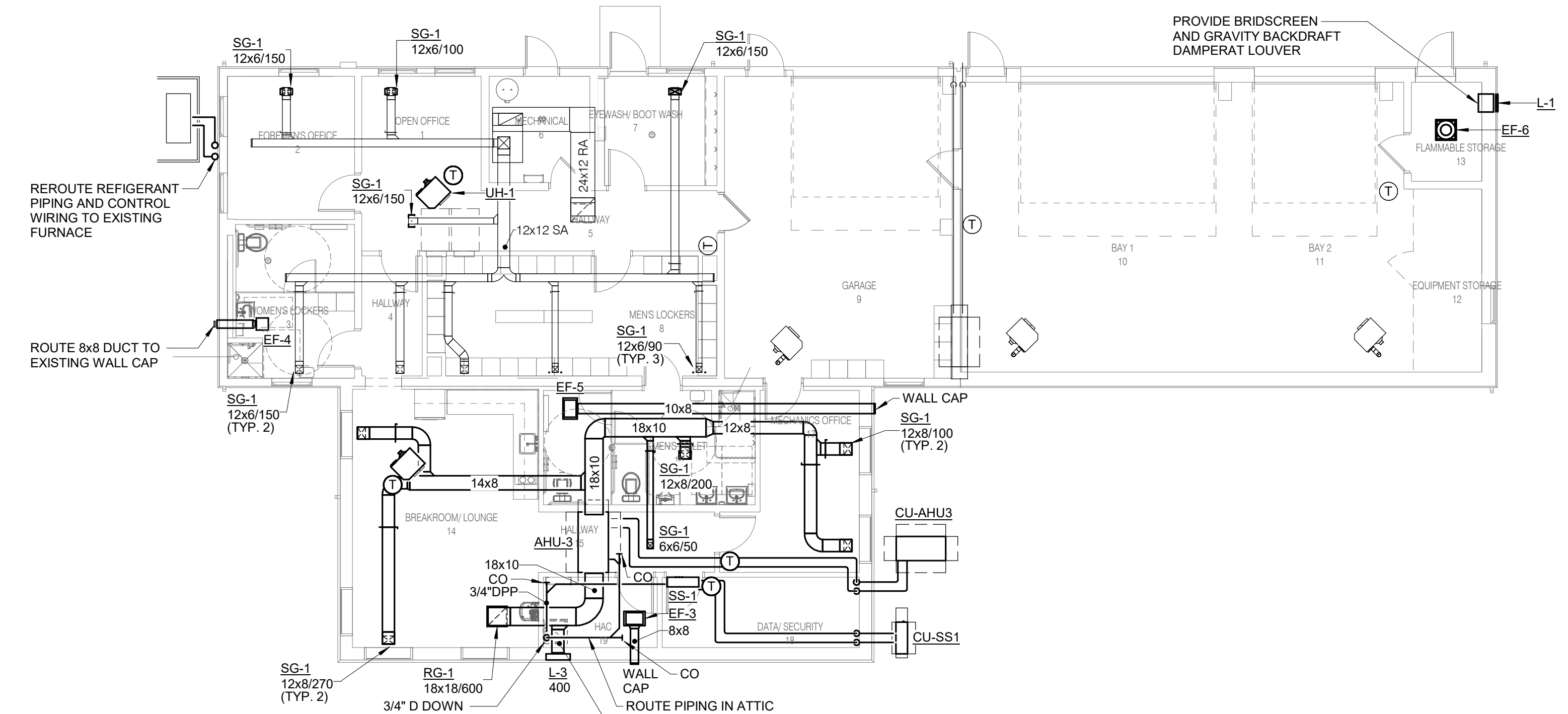
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**1 BASEMENT FLOOR - MECHANICAL - ADMINISTRATION**  
1/8" = 1'-0"



**2 FIRST FLOOR - MECHANICAL - ADMINISTRATION**  
1/8" = 1'-0"



**3 FIRST FLOOR - MECHANICAL - MAINTENANCE**  
1/8" = 1'-0"

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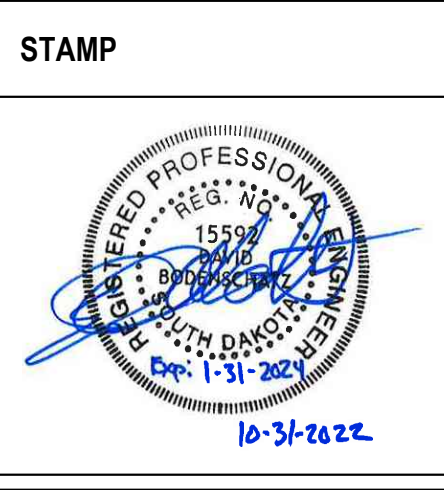
Revisions:	Date:

CONSULTANT		
<b>MECHANICAL, ELECTRICAL, TECHNOLOGY &amp; STRUCTURAL:</b>	<b>GEOTECHNICAL:</b>	<b>COST ESTIMATING:</b>
<b>IMEG CORP.</b>	<b>AET</b>	<b>CPMI</b>
14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075	1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	3285 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

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**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

<b>Drawing Title</b>	<b>Phase</b>
<b>FIRST FLOOR - MECHANICAL - ADMINISTRATION &amp; MAINTENANCE</b>	<b>BID DOCUMENTS</b>
<b>Approved:</b>	<b>NON-SPRINKLERED</b>

<b>Project Title</b>	<b>Project Number</b>
<b>BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS</b>	<b>884-CM-3015</b>
<b>Location</b>	<b>Drawing Number</b>
<b>STURGIS, SOUTH DAKOTA</b>	<b>M201</b>
<b>Issue Date</b>	<b>Checked</b>
<b>10/31/22</b>	<b>IMEG</b>
<b>Drawn</b>	<b>Dwg.</b>
<b>BRAGAR</b>	<b>57 OF 84</b>

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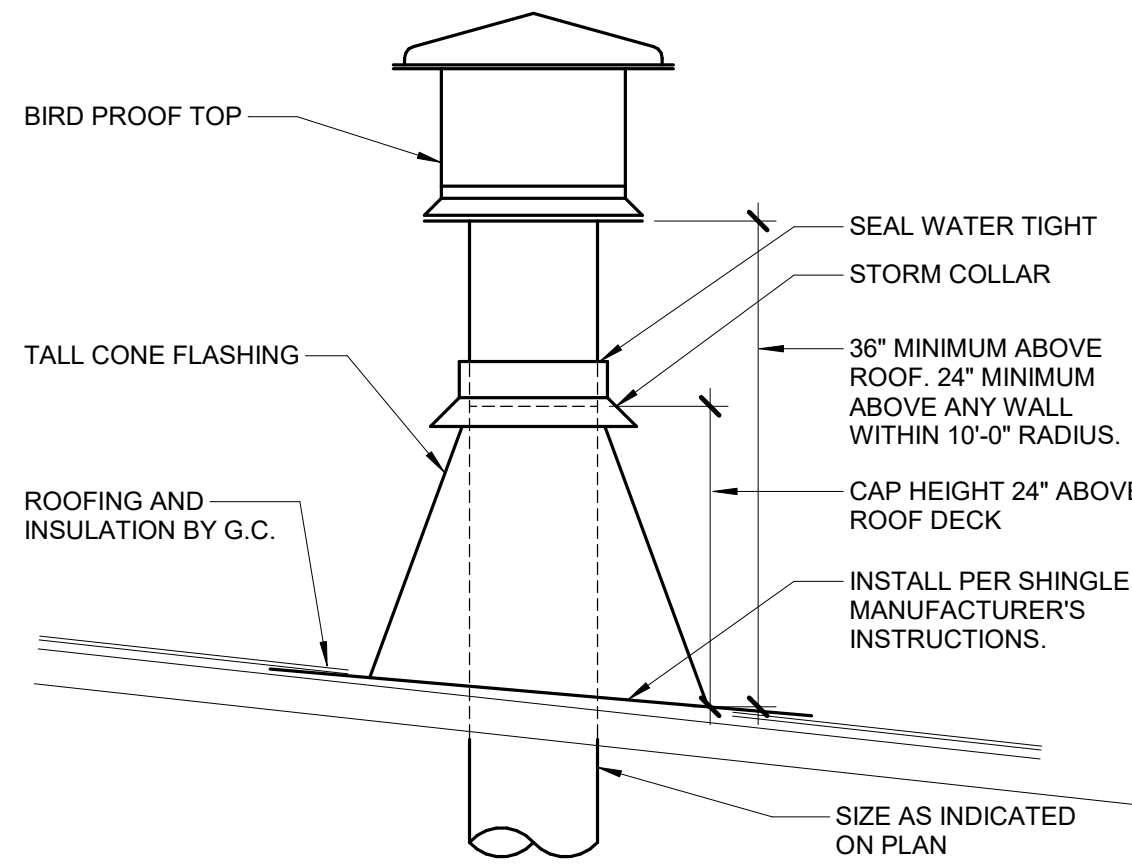
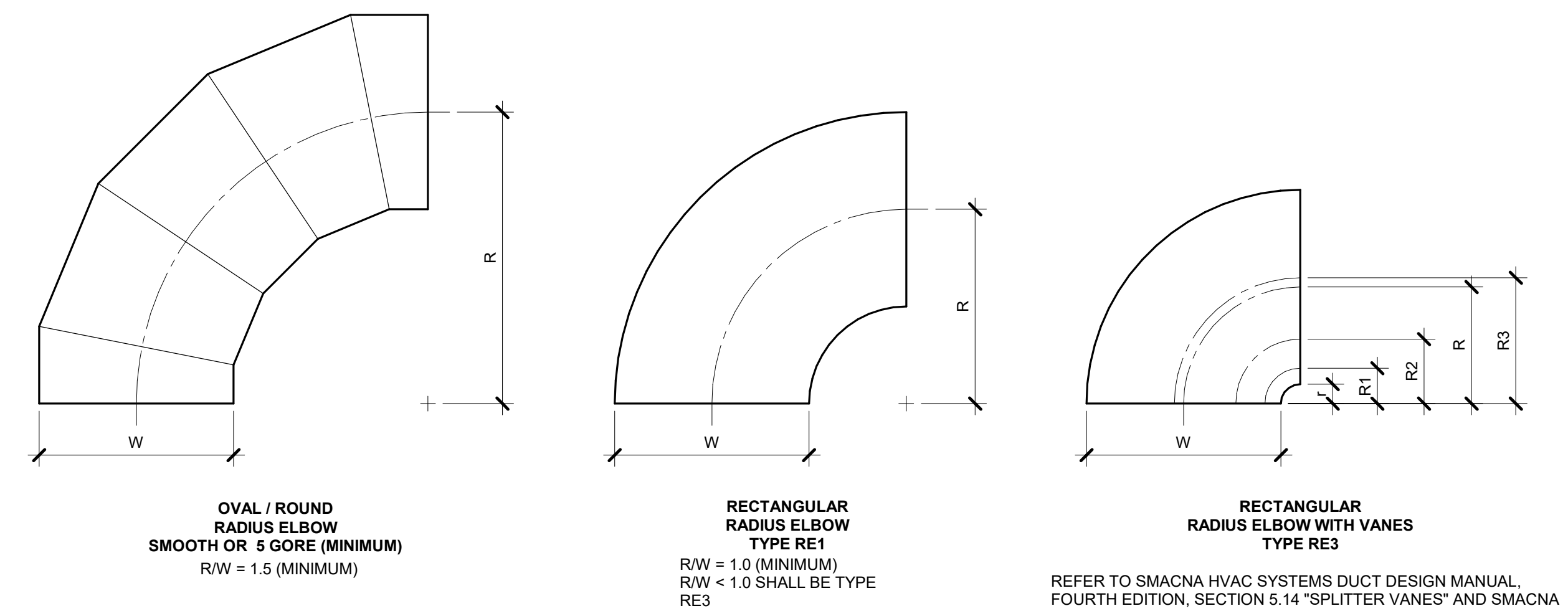
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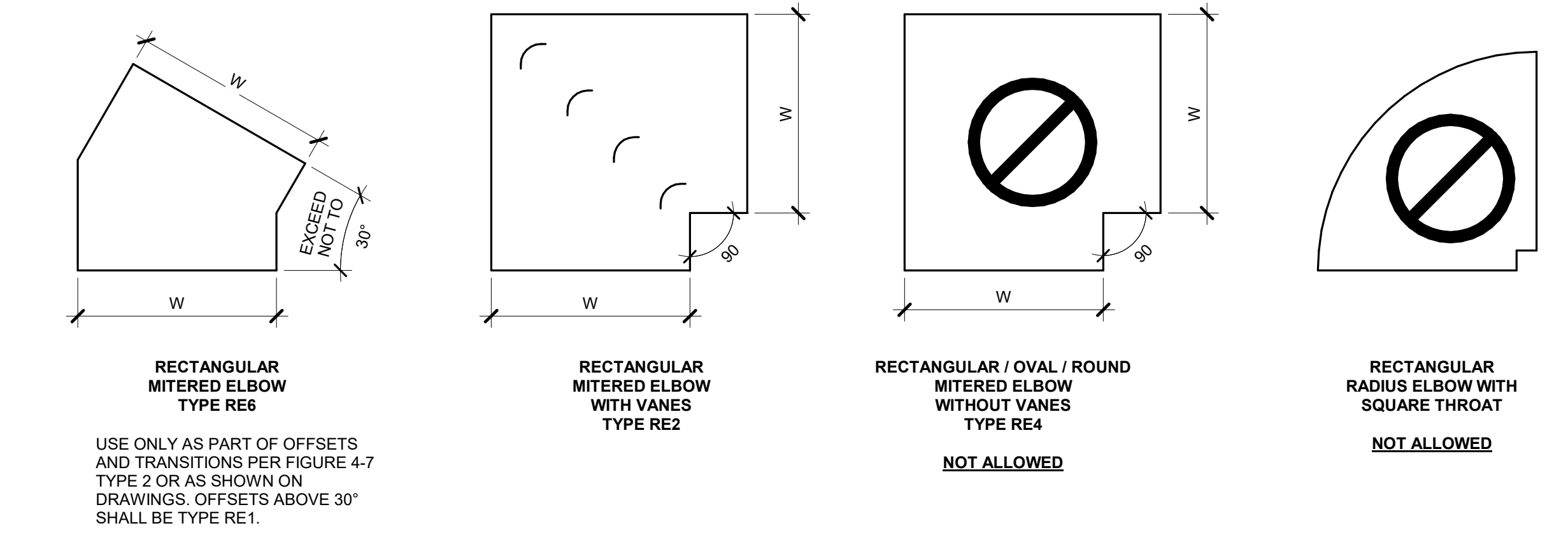
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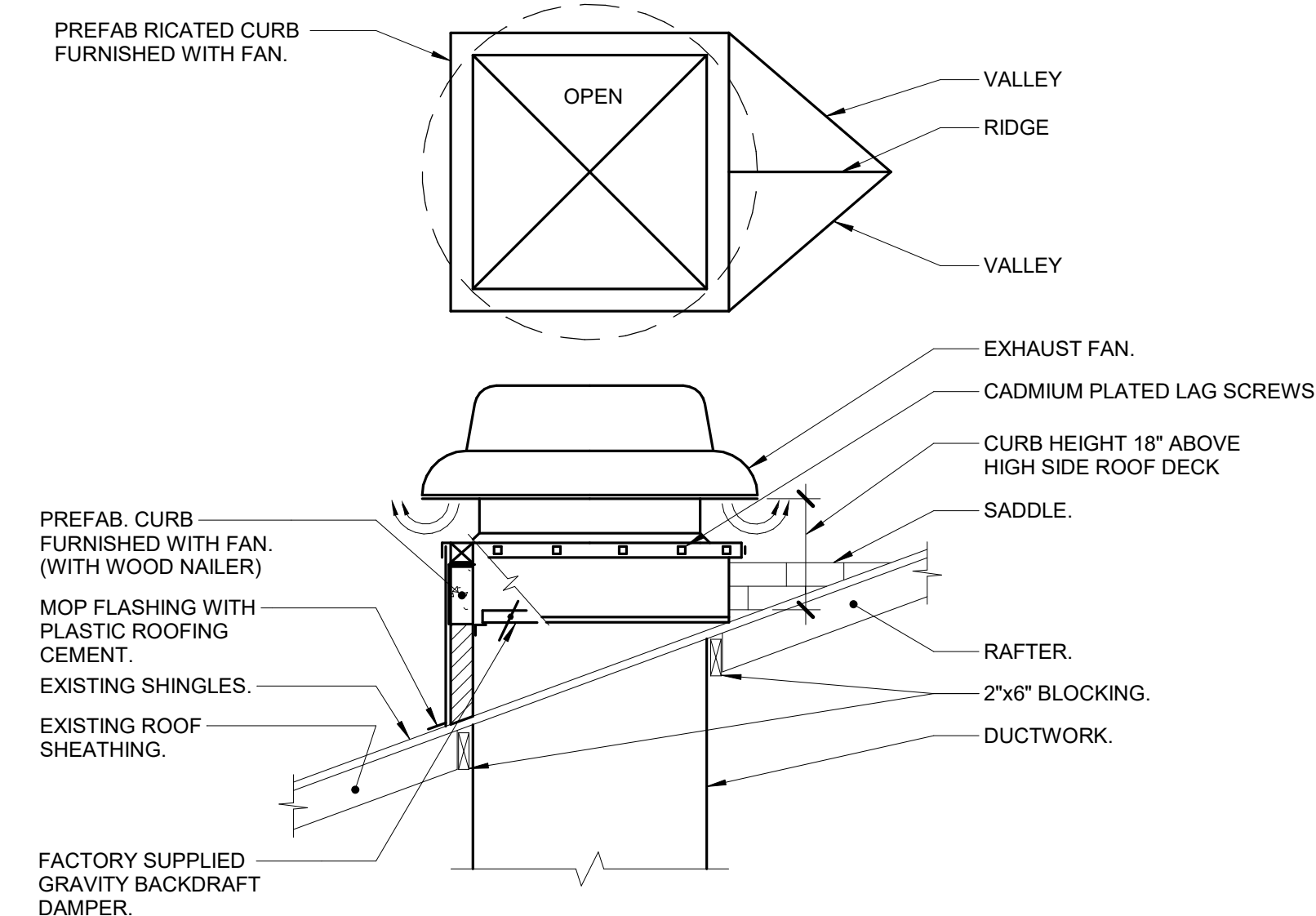


**1 GAS VENT THRU ROOF (SHINGLE ROOF)**  
NO SCALE



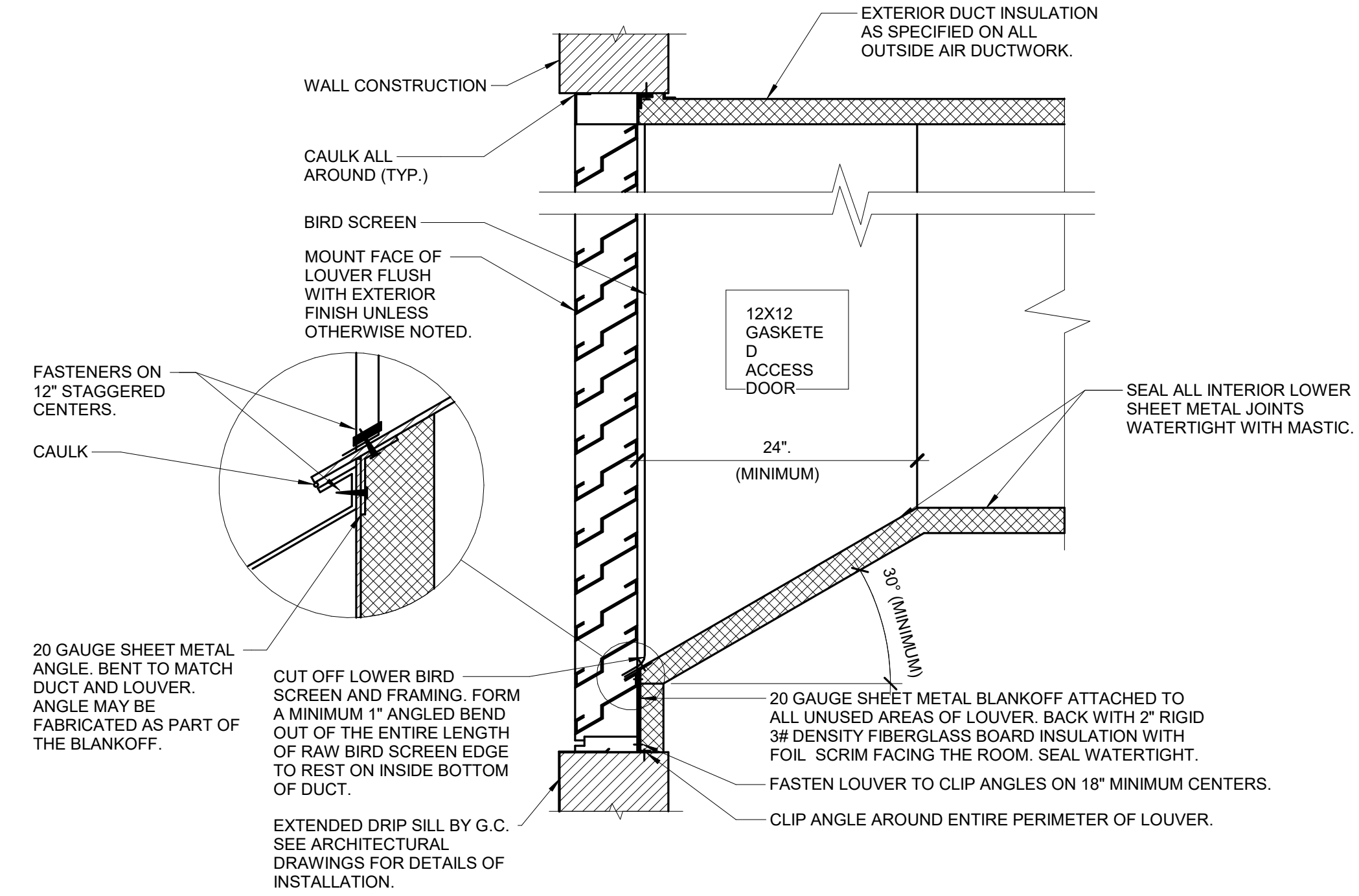
**2 ELBOW CONSTRUCTION**  
NO SCALE

- NOTES:
1. BEAD, CROSSBREAK, AND REINFORCE FLAT SURFACES AS IN STRAIGHT DUCT.
  2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  3. DEFAULT ELBOW SHALL BE TYPE "RE1".
  4. ELBOW TYPES SHALL BE INSTALLED AS SHOWN AND NOT BE SUBSTITUTED WITHOUT PERMISSION. EXCEPTION: RE1 OR RE3 MAY BE SUBSTITUTED FOR RE2.



**3 ROOF SUPPORT - FAN/HOOD CURB - SHINGLE ROOF**  
NO SCALE

- NOTES:
1. NEW SADDLE TO BE FABRICATED WITH 2X4 WOOD FRAMING AND 1/2" CDX PLYWOOD. SHINGLES TO MATCH EXISTING SHINGLES VALLEY TO BE SEMI-LACED SHINGLES.



**4 LOUVER INSTALLATION DETAIL**  
NO SCALE

- NOTES:
1. SEAL ALL JOING ON BOTTOM INTERIOR SURFACE OF DUCT WITHIN 6'-0" OF THE LOUVER WATER TIGHT.
  2. MOUNT BOTTOM OF INTAKE LOUVERS AT LEAST 40" ABOVE GRADE OR ROOF ELEVATION TO MINIMIZE CHANCES OF SNOW DRIFTING INTO THE LOUVER.
  3. CAULK SHEETMETAL SCREWS WHERE THEY PENETRATE METAL.

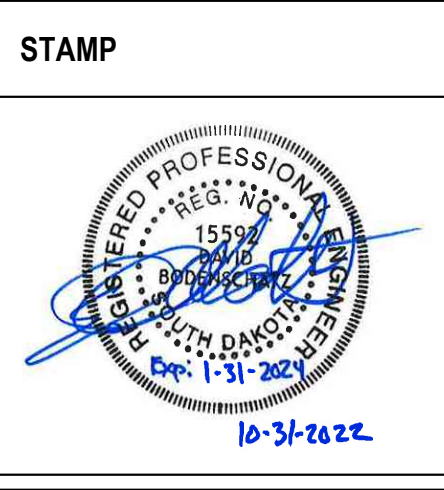
Revisions:	Date:

CONSULTANT		
MECHANICAL, ELECTRICAL, TECHNOLOGY & STRUCTURAL:	GEOTECHNICAL:	COST ESTIMATING:
IMEG CORP. 14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075	AET 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	CPMI 3265 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	MECHANICAL DETAILS
Approved:	

Phase	BID DOCUMENTS
	NON-SPRINKLERED

Project Title	BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS
Location	STURGIS, SOUTH DAKOTA
Issue Date	10/31/22
Checked	IMEG
Drawn	BRAGAR

Project Number	884-CM-3015
Building Number	
Drawing Number	M400
Dwg.	58 OF 84

**FAN SCHEDULE**

NOTES:  
 1. CABINET FAN WITH WALL CAP AND GRAVITY BACKDRAFT DAMPER.  
 2. FAN TO BE CONTROLLED WITH LIGHTS.  
 3. FAN TO RUN CONTINUOUSLY.  
 4. ROOF EXHAUST FAN WITH CUSTOM 18" CURB. FURNISH WITH GRAVITY BACKDRAFT DAMPER.  
 5. FAN SHALL BE SPARK RESISTANT.

TAG NAME	AREA SERVED	CFM	S.P. IN. W.C.	DRIVE TYPE	MAX. AMCA SONES	BACKDRAFT DAMPER TYPE	ELECTRICAL (NOTE 1)								WEIGHT	MANUFACTURER	MODEL	NOTES
							BHP (W)	MHP	VOLTAGE	PHASES	DISCONNECT		CONTROLLER/ STARTER					
											BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)				
EF-1	ADMIN TLT	100	0.25	DIRECT	0.7	GRAVITY	7.45	0.025	110	1	MFR	NF	MFR	FV	17	GREENHECK	SP-A125	NOTE 1, 2
EF-2	ADMIN HAC	100	0.25	DIRECT	0.7	GRAVITY	7.45	0.025	110	1	MFR	NF	MFR	FV	17	GREENHECK	SP-A125	NOTE 1, 2
EF-3	MAINT HAC	100	0.25	DIRECT	0.7	GRAVITY	7.45	0.025	110	1	MFR	NF	MFR	FV	17	GREENHECK	SP-A125	NOTE 1, 2
EF-4	MAINT. W TLT	200	0.25	DIRECT	2.5	GRAVITY	22.4	0.064	110	1	MFR	NF	MFR	FV	24	GREENHECK	SP-A200	NOTE 1, 2
EF-5	MAINT. M TLT	300	0.25	DIRECT	3	GRAVITY	45	0.16	110	1	MFR	NF	MFR	FV	31	GREENHECK	SP-A410	NOTE 1, 3
EF-6	STORAGE	300	0.25	DIRECT	5.6	GRAVITY	37	0.166667	110	1	MFR	NF	MFR	FV	49	GREENHECK	G-098-B	NOTE 3, 4, 5

**AIR TERMINAL SCHEDULE**

NOTES:  
 1. CONTRACTOR SHALL DETERMINE PROPER BORDER TYPE TO MATCH CEILING CONSTRUCTION.  
 2. REFER TO DRAWINGS FOR NECK SIZE. ALL BRANCH DUCTWORK TO AIR TERMINALS SHALL BE NECK SIZE UNLESS NOTED OTHERWISE.

TAG NAME	FACE SIZE (IN.) (NOTE 2)	TYPE	BORDER (NOTE 1)	MATERIAL	FINISH	VOLUME DAMPER REQUIRED	MANUFACTURER	MODEL	NOTES
EG-2	INLET +2	35 DEGREE DEFLECTION	1 1/4"	ALUMINUM	WHITE	NO	TITUS	350F	
RG-1	INLET +2	35 DEGREE DEFLECTION	1 1/4"	STEEL	WHITE	NO	TITUS	350R	
SG-1	INLET +2	DOUBLE DEFLECTION	1 1/4"	STEEL	WHITE	NO	TITUS	300R	FRONT BLADES VERTICAL UNLESS NOTED OTHERWISE

**CABINET HEATER SCHEDULE - ELECTRIC**

NOTES:  
 1. COORDINATE COLOR SELECTION WITH ARCHITECT.  
 2. PROVIDE WITH INTERNAL SPEED SELECTOR SWITCH AND THERMOSTAT.

TAG NAME	AREA SERVED	CONFIGURATION	NOMINAL CFM	HEIGHT	WIDTH	DEPTH	MHP	NUMBER OF STAGES	KW	VOLTAGE	PHASES	DISCONNECT		CONTROLLER/ STARTER		WEIGHT	MANUFACTURER	MODEL	NOTES
												BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE C)				
												TOTAL KW (QTY * KW)							
CAB-1	ENTRY	HORIZONTAL RECESSED	300	10'	36'	30'	0.04	2	6	240	1	MFR	NF	MFR	FV	80	TRANE	FFE030	NOTE 1, 2

**FURNACE SCHEDULE**

NOTES:  
 1. FURNISH WITH THERMOSTAT AND ASSOCIATED CONTROLS.  
 2. HORIZONTAL GAS FIRED UNIT WITH MATCHING DX COIL. LOCATED IN ATTIC SPACE.

TAG NAME	AREA SERVED	EXT. S.P. IN. W.C.	CFM (HIGH SPEED)	HP	VOLTAGE	PHASES	DISCONNECT		CONTROLLER/ STARTER	HEATING		EVAPORATOR				WEIGHT	MANUFACTURER	MODEL	EVAPORATOR COIL MODEL	NOTES
							BY (NOTE A)	TYPE (NOTE B)		MINIMUM EFFICIENCY AFUE	MINIMUM OUTPUT MBH	MAX. LAT 'F	EAT DB 'F	EAT WB 'F	TOTAL MBH					
							MBH	VOLTAGE		PHASES	BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE B)						
AHU-2	ADMIN ADD.	0.5	910	0.5	115 V	1	MFR	NF	MFR	96	38.4	54.6	73.5	62.9	22.1	189	DAIKIN	DM96VC	CHPE3	NOTE 1, 2
AHU-3	MAINT ADD.	0.5	1,010	0.5	115 V	1	MFR	NF	MFR	96	76.8	53.4	76.1	63.6	26.6	189	DAIKIN	DM96VC	CHPE3	NOTE 1, 2

**CONDENSING UNIT SCHEDULE**

NOTES:  
 1. REFER TO SPECIFICATION SECTION 23 62 13 FOR ADDITIONAL REQUIREMENTS.

TAG NAME	AREA SERVED	NOMINAL DESIGN TONS	REFRIGERANT	AMBIENT TEMP 'F	MBH	VOLTAGE	PHASES	MCA	MCCP	DISCONNECT		CONTROLLER/ STARTER		WEIGHT	MANUFACTURER	MODEL	NOTES
										BY (NOTE A)	TYPE (NOTE B)	BY (NOTE A)	TYPE (NOTE B)				
										OPERATING							
CU-AHU2	AHU-2	2	R-410A	100.0	22.1	208	1	17	20	MFR	NF	MFR	0	112	DAIKIN	DX1724	NOTE 1
CU-AHU3	AHU-3	2.5	R-410A	100.0	26.6	208	1	23	25	MFR	NF	MFR	0	121	DAIKIN	DX1730	NOTE 1

**LOUVER SCHEDULE**

NOTES:  
 1. FINISH TYPES: TYPE 1 - MILL FINISH. TYPE 2 - 204-R1 SATIN ANODIZED. TYPE 3 - BAKED ENAMEL FINISH ON PRETREATED PRIME PAINT. STANDARD COLOR - SELECTION BY ARCHITECT. TYPE 4 - BAKED EPOXY FINISH ON PRIME COATED METAL. STANDARD COLOR - SELECTION BY ARCHITECT. TYPE 5 - DURANODIG BRONZE - LIGHT, MEDIUM, DARK. TYPE 6 - PVD (KYNAR 500, HYLAR 5000, OR DURANAR). STANDARD COLOR - SELECTION BY ARCHITECT. TYPE 7 - REFER TO SPECIFICATIONS.

TAG NAME	AREA SERVED	CFM	WIDTH	HEIGHT	FREE AREA VELOCITY	S.P. IN. W.C.	FINISH (NOTE 1)	MANUFACTURER	MODEL	NOTES
L-1	STORAGE	365	16	16	339	0.06	TYPE 7	RUSKIN	ELF375	NONE
L-2	AHU-2	100	12	12	424	0.04	TYPE 7	RUSKIN	ELF375	NONE
L-3	AHU-3	400	16	16	591	0.06	TYPE 7	RUSKIN	ELF375	NONE

**SPLIT SYSTEM UNIT SCHEDULE**

NOTES:  
 1. WALL MOUNTED INDOOR UNIT. FURNISH WITH CONDENSATE PUMP.  
 2. FURNISH WITH THERMOSTAT AND ASSOCIATED CONTROLS.  
 3. INDOOR UNIT POWERED FROM OUTDOOR UNIT.

TAG NAME	AREA SERVED	CFM	COOLING MBH	HEATING MBH	INDOOR UNIT				OUTDOOR UNIT				ELECTRICAL						WEIGHT	MANUFACTURER	NOTES			
					MAX. DIMENSIONS			HEIGHT	WEIGHT	MODEL	SEER	MAX. DIMENSIONS			HEIGHT	MODEL	VOLTAGE	PHASE				MCA	MCCP	
					LENGTH	WIDTH	HEIGHT					LENGTH	WIDTH	HEIGHT										
SS-1	DATA	350	17000	1900	36	9	13	29	MSZ-FS18	21	2'-11"	2'-9"	1'-1"	120	MUZ-FS18	230	1	19.0	20	MFR	NF	MFR	MITSUBISHI	NOTE 1, 2, 3
SS-2	DATA	350	17000	1900	36	9	13	29	MSZ-FS18	21	2'-11"	2'-9"	1'-1"	120	MUZ-FS18	230	1	19.0	20	MFR	NF	MFR	MITSUBISHI	NOTE 1, 2, 3

**UNIT HEATER SCHEDULE - GAS FIRED**

NOTES:  
 1. FURNISH WITH INTEGRAL THERMOSTAT.

TAG NAME	AREA SERVED	CFM	INPUT	OUTPUT	HP	RPM	VOLTAGE	PHASES	DISCONNECT		CONTROLLER/ STARTER	GAS PRESSURE	MANUFACTURER	MODEL	NOTES
									BY (NOTE A)	TYPE (NOTE B)					
									HEATING (MBH)						
UH-1	ATTIC	740	60	50	1/12	1050	110	1	MFR	NF	MFR	7"	TRANE	GTNE006	NOTE 1

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Revisions: \_\_\_\_\_ Date: \_\_\_\_\_

**CONSULTANT**  
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 GEOTECHNICAL; COST ESTIMATING;  
**IMEG CORP.**  
 14755 PRESTON RD STE 845 DALLAS, TX 75254 (202) 786-5075  
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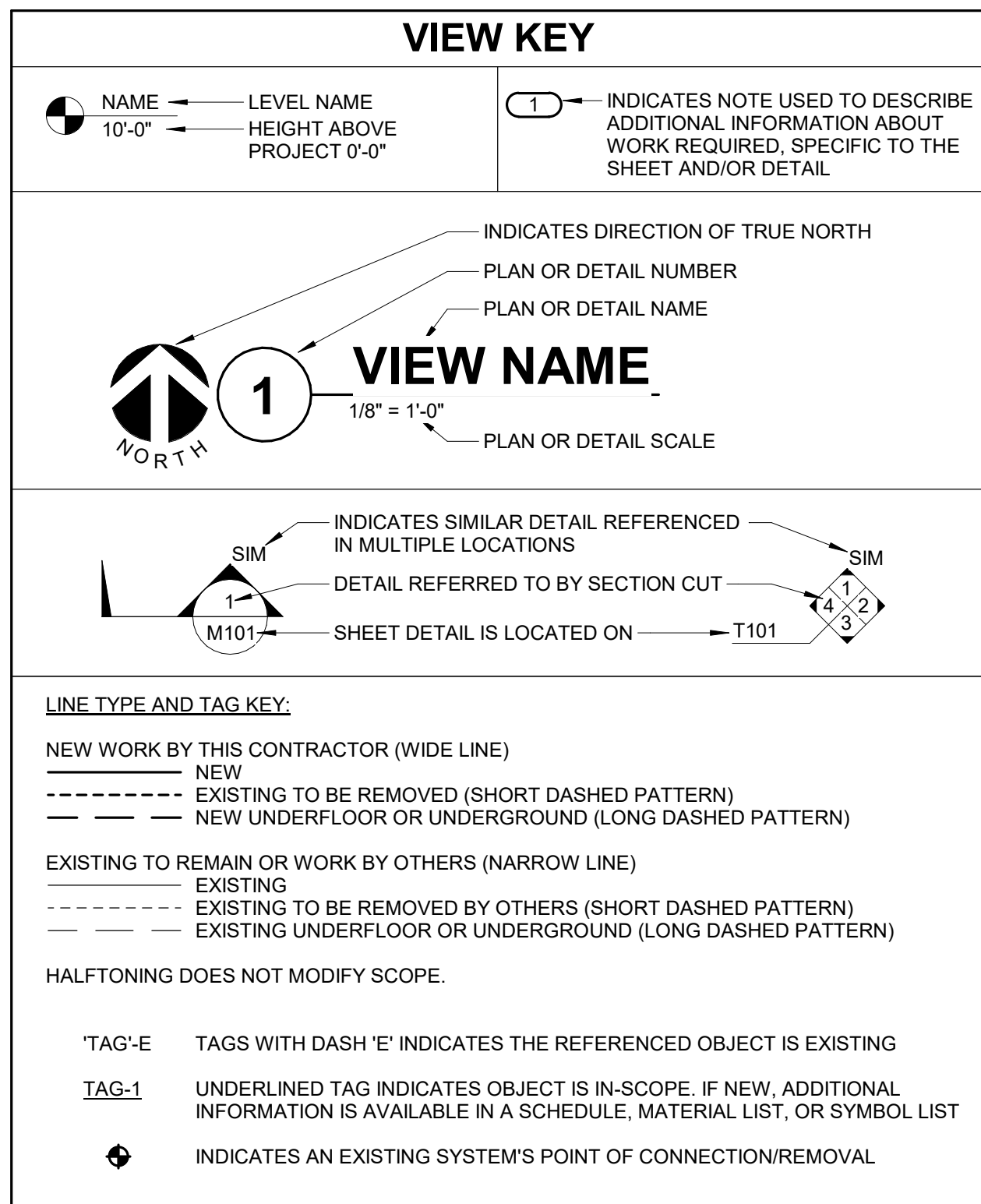
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**Office of Construction and Facilities Management**  
 U.S. Department of Veterans Affairs

Drawing Title: **MECHANICAL SCHEDULES**  
 Approved: \_\_\_\_\_

Phase: **BID DOCUMENTS**  
**NON-SPRINKLERED**

Project Title: **BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS**  
 Project Number: **884-CM-3015**  
 Building Number: \_\_\_\_\_  
 Location: **STURGIS, SOUTH DAKOTA**  
 Issue Date: **10/31/22**  
 Checked: **IMEG**  
 Drawn: **BRAGAR**  
 Drawing Number: **M600**  
 Dwg. 59 OF 84



### APPLICABLE CODES

CONTRACTOR SHALL COMPLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS.

BUILDING CODE:	IBC 2015 EDITION
FIRE CODE:	IFC 2015 EDITION
PLUMBING CODE:	IPC 2015 EDITION
MECHANICAL CODE:	IMC 2015 EDITION
ELECTRICAL CODE:	NFPA 70 (NEC) 2011 EDITION
LIFE SAFETY CODE:	NFPA 101 2011 EDITION
ENERGY CONSERVATION CODE:	IECC 2015
HEALTH DEPARTMENT CODE:	CURRENT EDITION
LOCAL BUILDING CODE:	CURRENT EDITION

### CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
A.C.	ASBESTOS ABATEMENT CONTRACTOR
A.V.C.	AUDIO/VISUAL CONTRACTOR
C.C.	CIVIL CONTRACTOR
C.M.	CONSTRUCTION MANAGER
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
S.C.	SECURITY CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
V.C.	VENTILATION CONTRACTOR
R.E.	RESIDENT ENGINEER

### PLUMBING SYMBOL LIST

NOT ALL SYMBOLS MAY APPLY.

SYMBOL:	DESCRIPTION:
CW	COLD WATER - POTABLE
DRAIN	DRAIN
G	NATURAL GAS
GRV	GAS REGULATOR VENT
HW	HOT WATER - POTABLE
HWC	HOT WATER CIRCULATING - POTABLE
PD	PUMPED DISCHARGE
SAN	SANITARY DRAINAGE
ST(1,000)	STORM DRAINAGE (ROOF SQUARE FOOTAGE)
STS	STORM DRAINAGE (SECONDARY)
V	VENT
VAC	LAB VACUUM
W	SERVICE WATER - POTABLE
PIPE CONTINUATION	PIPE CONTINUATION
PIPE CAP	PIPE CAP
PIPE DOWN	PIPE DOWN
PIPE UP OR UP/DOWN	PIPE UP OR UP/DOWN
FLOOR FIXTURE ON FLOOR ABOVE (EXAMPLE: FD = FLOOR DRAIN)	FLOOR FIXTURE ON FLOOR ABOVE (EXAMPLE: FD = FLOOR DRAIN)
PITCH PIPE IN DIRECTION	PITCH PIPE IN DIRECTION
DIRECTION OF FLOW IN PIPE	DIRECTION OF FLOW IN PIPE
ROUTE TO DRAIN	ROUTE TO DRAIN
ROOF DRAIN PROPERTIES (SYMBOL SIZE (ROOF SQ. FT.))	ROOF DRAIN PROPERTIES (SYMBOL SIZE (ROOF SQ. FT.))
DIELECTRIC CONNECTION	DIELECTRIC CONNECTION
UNION/FLANGE	UNION/FLANGE
SHUTOFF VALVE NORMALLY OPEN	SHUTOFF VALVE NORMALLY OPEN
SHUTOFF VALVE NORMALLY CLOSED	SHUTOFF VALVE NORMALLY CLOSED
BALANCING VALVE (NUMBER INDICATES GPM)	BALANCING VALVE (NUMBER INDICATES GPM)
CHECK VALVE	CHECK VALVE
BACKFLOW PREVENTER	BACKFLOW PREVENTER
SOLENOID VALVE	SOLENOID VALVE
SAFETY/RELIEF VALVE	SAFETY/RELIEF VALVE
VACUUM BREAKER	VACUUM BREAKER
PRESSURE GAUGE (FURNISHED WITH BALL VALVE)	PRESSURE GAUGE (FURNISHED WITH BALL VALVE)
PRESSURE SENSOR (FURNISHED WITH BALL VALVE)	PRESSURE SENSOR (FURNISHED WITH BALL VALVE)
TEMPERATURE SENSOR WITH WELL	TEMPERATURE SENSOR WITH WELL
THERMOMETER WITH WELL (DIAL TYPE)	THERMOMETER WITH WELL (DIAL TYPE)
THERMOMETER WITH WELL (FILLED TYPE)	THERMOMETER WITH WELL (FILLED TYPE)
REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB	REDUCER - REFERENCE SPECIFICATION FOR CONCENTRIC/ECCENTRIC AND FOT/FOB
PRESSURE REDUCING VALVE (LIQUID/GAS)	PRESSURE REDUCING VALVE (LIQUID/GAS)
PUMP	PUMP
METER	METER
ALIGNMENT GUIDE	ALIGNMENT GUIDE
PIPE ANCHOR	PIPE ANCHOR
EXPANSION JOINT (#.# IS THE EXPANSION TRAVEL INCHES)	EXPANSION JOINT (#.# IS THE EXPANSION TRAVEL INCHES)
AIR ADMITTANCE VALVE	AIR ADMITTANCE VALVE

### PLUMBING ABBREVIATION KEY

ABBR:	DESCRIPTION:
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACKFLOW PREVENTER
BT	BATHTUB
CB	CATCH BASIN
CI	CAST IRON
CO	CLEANOUT
CS	CLINICAL SINK
DB	DIALYSIS BOX
DF	DRINKING FOUNTAIN
DI	DUCTILE IRON
E	EXISTING
EE	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
ESE	EMERGENCY SHOWER/EYEWASH
EWC	ELECTRIC WATER COOLER
FCD	FLOOR CLEANOUT
FD	FLOOR DRAIN
FM	FLOW METER
FS	FLOOR SINK
GD	GARBAGE DISPOSER
GI	GREASE INTERCEPTOR
HB	HOSE BIBB
IE	INVERT ELEVATION (FOR REFERENCE ONLY)
LAV	LAVATORY
MB	MOP BASIN
MH	MANHOLE
MV	MIXING VALVE
NIC	NOT IN CONTRACT
NT	NEUTRALIZATION TANK
OS	OIL SEPARATOR
RD	ROOF DRAIN
SCCR	SHORT CIRCUIT CURRENT RATING
SH	SHOWER
SK	SINK
SS	SERVICE SINK
TD	TRENCH DRAIN
TP	TRAP PRIMER
TYP	TYPICAL
UR	URINAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WF	WASH FOUNTAIN
WH	WATER HEATER
WMF	WASHING MACHINE FIXTURE
WM	WATER METER
WS	WATER SOFTENER
UB	UTILITY BOX
UON	UNLESS OTHERWISE NOTED
YCO	YARD CLEANOUT

- ### MECHANICAL RENOVATION NOTES:
- THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, VENTILATION, AND TEMPERATURE CONTROL.
- EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
  - NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK.
  - FIELD VERIFY THE AVAILABLE CLEARANCES FOR DUCTWORK AND PIPING BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
  - EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE GENERAL CONTRACTOR PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO THEIR AREA OF WORK.
  - EACH CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK.
  - THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
  - WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.
  - PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT REMAIN ACTIVE.
  - OBTAIN PERMISSION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW SYSTEMS ARE INSTALLED.
  - DISCONNECT AND REMOVE MECHANICAL DEVICES AND EQUIPMENT SERVING EQUIPMENT THAT HAS BEEN REMOVED.

- ### PLUMBING GENERAL NOTES:
- THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT.
  - CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NUMBER. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN.
  - CONTRACTOR SHALL VERIFY THAT FIXTURES SUPPLIED ARE APPROVED PER ALL APPLICABLE STATE, LOCAL, AND GOVERNING AUTHORITIES.
  - ALL FIXTURES SHALL CONFORM TO FEDERAL ACT S.3874
  - INVERT ELEVATIONS ARE FROM EXISTING DRAWINGS AND MAY NOT BE ACCURATE. VERIFY ALL ELEVATIONS BEFORE BEGINNING WORK.
  - VERIFY UNDERGROUND PIPE SIZES, INVERT ELEVATIONS, AND LOCATIONS PRIOR TO BEGINNING ANY WORK.
  - REFER TO THE PLUMBING ROUGH-IN SCHEDULE FOR THE SIZES OF BRANCH PIPES TO PLUMBING FIXTURES.
  - EXISTING CONDITIONS ON DEMOLITION PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED. REFER TO SPECIFICATION SECTION 22.05.05 FOR ADDITIONAL DEMOLITION INFORMATION.
  - P.C. SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK UNLESS NOTED OTHERWISE. REFER TO SPECIFICATION SECTION 22.05.05 FOR ADDITIONAL INFORMATION.

- ### MECHANICAL GENERAL NOTES:
- THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, VENTILATION, AND TEMPERATURE CONTROL.
- DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC. AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT.
  - DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES.
  - COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO OBTAINING NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
  - VERIFY SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
  - ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
  - EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF DESIGN.
  - REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
  - EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILING, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
  - IN AREAS WITH DRYWALL CEILING COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING.
  - SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. (PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.)
  - CALLK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS WITHIN ROOMS.
  - WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT.
  - EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
  - DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
  - MAINTAIN A MINIMUM WORKING CLEARANCE OF 3'-4" IN FRONT OF ALL ELECTRICAL EQUIPMENT REQUIRING MAINTENANCE, INSPECTION, AND TESTING INCLUDING BUT NOT LIMITED TO PANELS, DISTRIBUTION PANELS, SWITCHBOARDS, MOTOR CONTROL CENTERS, TRANSFORMERS, EQUIPMENT DISCONNECTS AND STARTERS.
  - MAINTAIN THE DEDICATED ELECTRICAL EQUIPMENT SPACE DEFINED BY THE WIDTH / DEPTH OF ELECTRICAL EQUIPMENT MEASURED FROM THE FLOOR TO A HEIGHT 6'-0" ABOVE THE EQUIPMENT OR THE STRUCTURAL CEILING, WHICHEVER IS LOWER. SYSTEMS FOREIGN TO THE ELECTRICAL DISTRIBUTION SYSTEM ARE NOT ALLOWED IN THE DEDICATED ELECTRICAL SPACE INCLUDING DUCTWORK, PIPING, ETC.
  - PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT.
  - DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

### PLUMBING SLOPE REQUIREMENTS:

BASED ON PLUMBING CODE: IPC-2015

<b>INTERIOR:</b>	
SANITARY WASTE:	1/4" PER FOOT
3/4" = 1/8" PER FOOT	
GREASE WASTE:	1/8" PER FOOT
STORM (GRAVITY):	1/8" PER FOOT
CONDENSATE AND INDIRECT DRAINAGE:	1/8" PER FOOT
SANITARY AND GREASE VENT:	NO SPECIFIC PITCH, PITCH TO FIXTURES
DOMESTIC WATER:	NO SPECIFIC PITCH, PITCH TO FIXTURES

### PLUMBING SHEET INDEX

P000	PLUMBING COVERSHEET
P101	FIRST FLOOR DEMOLITION - PLUMBING - ADMINISTRATION & MAINTENANCE
P201	FIRST FLOOR - PLUMBING - ADMINISTRATION & MAINTENANCE
P400	PLUMBING DETAILS
GRAND TOTAL:	4

### PLUMBING FIXTURE ROUGH-IN SCHEDULE

FIXTURE DESCRIPTION	DOMESTIC C.W. (NOTE 3)	DOMESTIC H.W. (NOTE 3)	SANITARY (NOTE 3)	VENT (NOTE 3)	REMARKS
WATER CLOSET	1 1/4"	-	4"	2"	
URINAL	1"	-	2"	1 1/2"	
LAVATORY	1/2"	1/2"	1 1/4"	1 1/4"	NOTE 1 & 2
KITCHEN SINK	1/2"	1/2"	1 1/2"	1 1/4"	NOTE 1 & 2
CLINICAL SINK	1"	3/4"	4"	2"	
MOP BASIN	3/4"	3/4"	3"	1 1/2"	
SHOWER	1/2"	1/2"	NOTE 4	NOTE 4	NOTE 2
ELECTRIC WATER COOLER	1/2"	-	1 1/2"	1 1/4"	NOTE 1 & 2
FLOOR DRAIN/FLOOR SINK	-	-	2"	1 1/2"	
HOSE BIBB	3/4"	-	-	-	
EMERGENCY EYEWASH	3/4"	3/4"	1/2"	1/2"	

**NOTES:**

- SANITARY RISER UP IN WALL TO FIXTURE SHALL BE A MINIMUM OF 2".
- 1/2" CW AND HW APPLIES ONLY TO THE FINAL VERTICAL RISE-DROP TO EACH FIXTURE. BRANCH PIPING TO VERTICAL RISE-DROP SHALL BE A MINIMUM OF 3/4" INCH UNLESS NOTED OTHERWISE.
- SIZES SHOWN ARE MINIMUMS. SIZES SHOWN ON THE DRAWING THAT ARE LARGER THAN THE SIZES LISTED IN THE SCHEDULE SHALL DICTATE THE ROUGH-IN SIZE.

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### CONSULTANT

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PLUMBING COVERSHEET

Approved:

Phase: BID DOCUMENTS

NON-SPRINKLERED

Project Title: BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS

Project Number: 884-CM-3015

Building Number:

Location: STURGIS, SOUTH DAKOTA

Issue Date: 10/31/22

Checked: IMEG

Drawn: BRAGAR

Drawing Number: P000

Dwg. 60 OF 84

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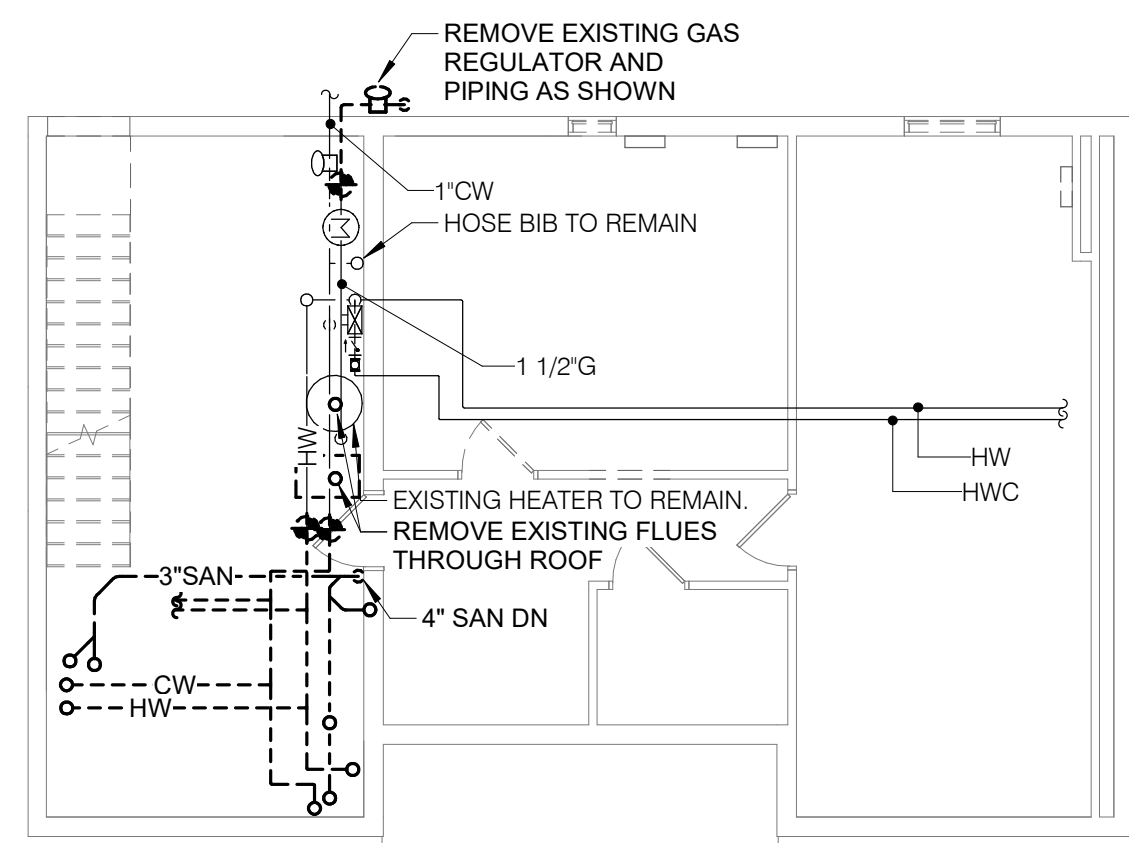
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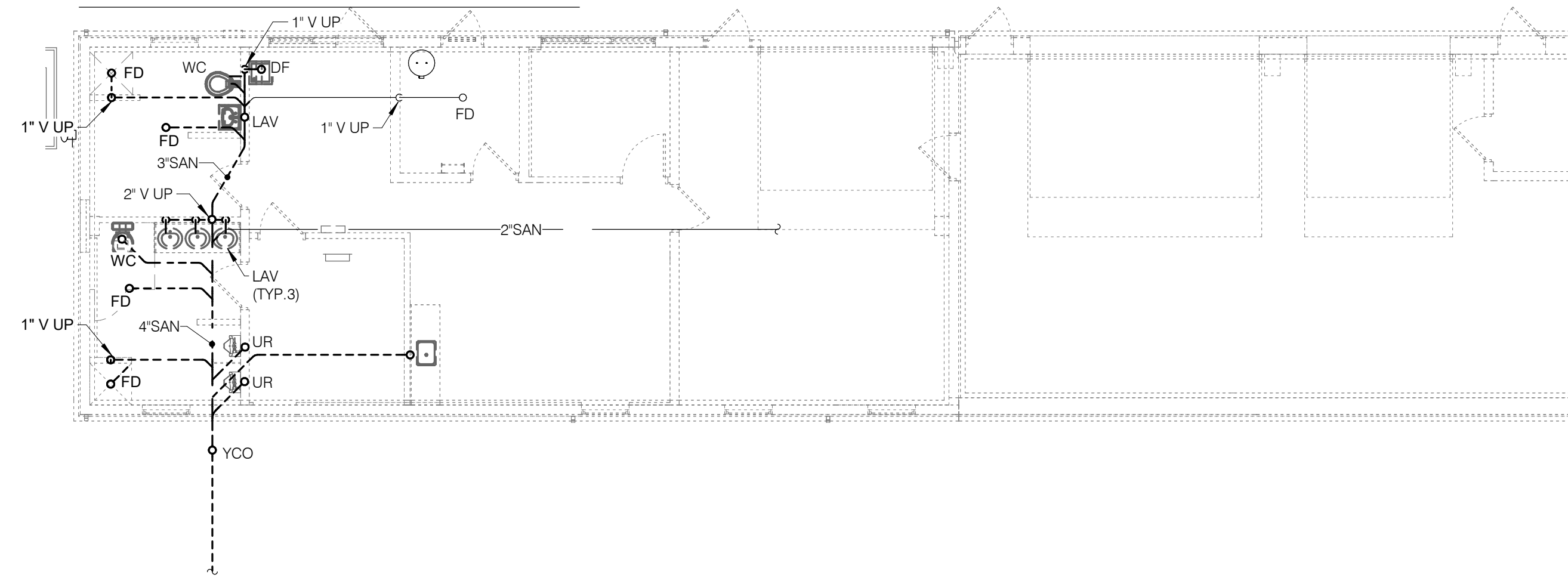
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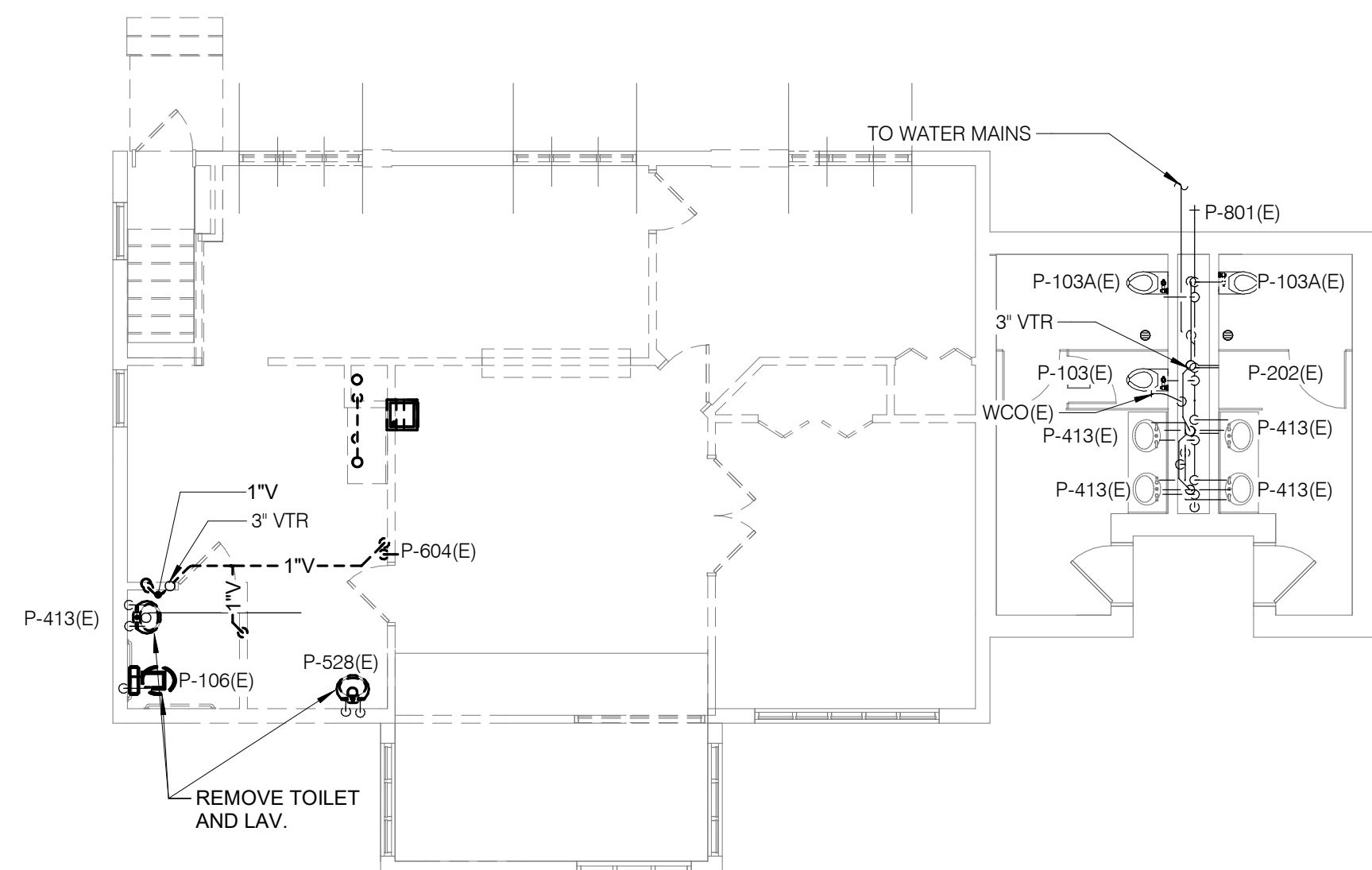
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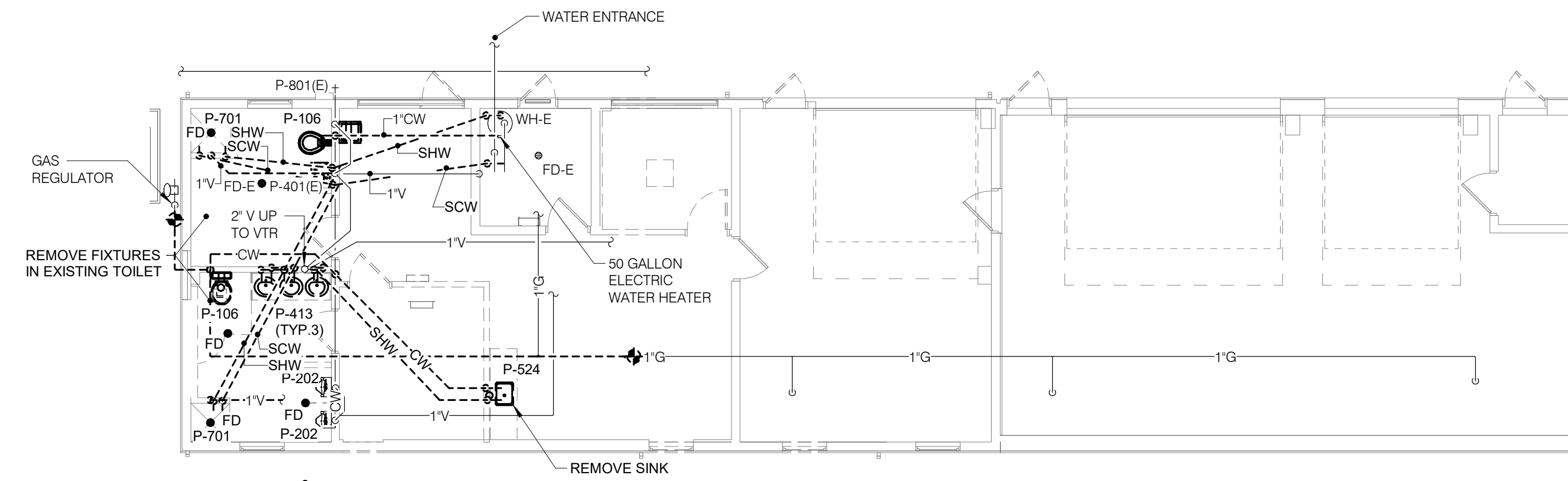
**1 BASEMENT FLOOR DEMOLITION - PLUMBING - ADMINISTRATION**  
1/8" = 1'-0"



**2 UNDERFLOOR DEMOLITION - PLUMBING - MAINTENANCE**  
1/8" = 1'-0"



**3 FIRST FLOOR DEMOLITION - PLUMBING - ADMINISTRATION**  
1/8" = 1'-0"



**4 FIRST FLOOR DEMOLITION - PLUMBING - MAINTENANCE**  
1/8" = 1'-0"

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CONSULTANT		
MECHANICAL, ELECTRICAL, TECHNOLOGY & STRUCTURAL: <b>IMEG CORP.</b> 14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075	GEO TECHNICAL: <b>AET</b> 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	COST ESTIMATING: <b>CPMI</b> 3285 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

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Drawing Title

**FIRST FLOOR DEMOLITION - PLUMBING - ADMINISTRATION & MAINTENANCE**

Approved: \_\_\_\_\_

Phase

**BID DOCUMENTS**

**NON-SPRINKLERED**

Project Title

**BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS**

Location

**STURGIS, SOUTH DAKOTA**

Issue Date

**10/31/22**

Checked

**IMEG**

Drawn

**BRAGAR**

Project Number

**884-CM-3015**

Building Number

Drawing Number

**P101**  
Dwg. 61 OF 84

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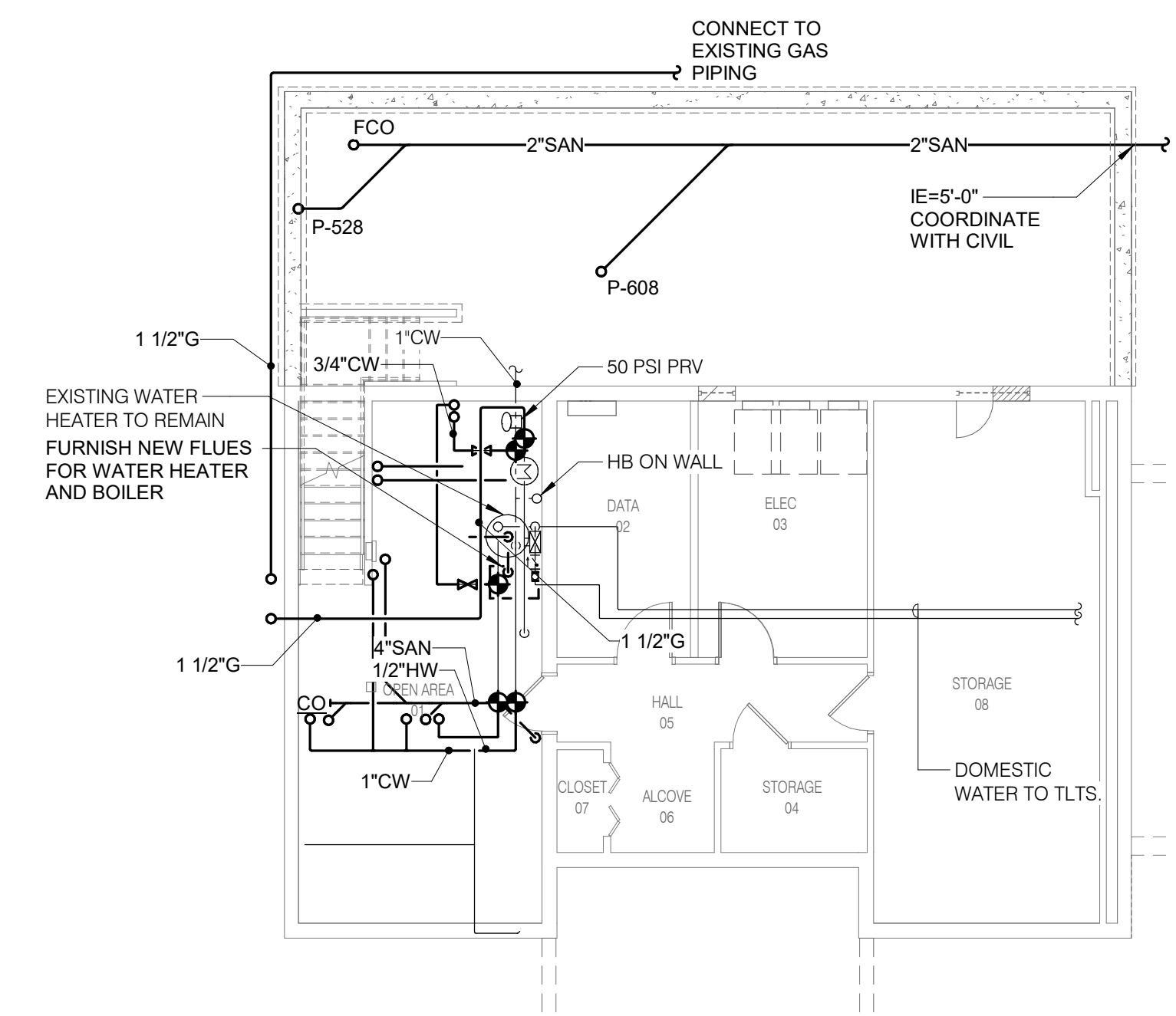
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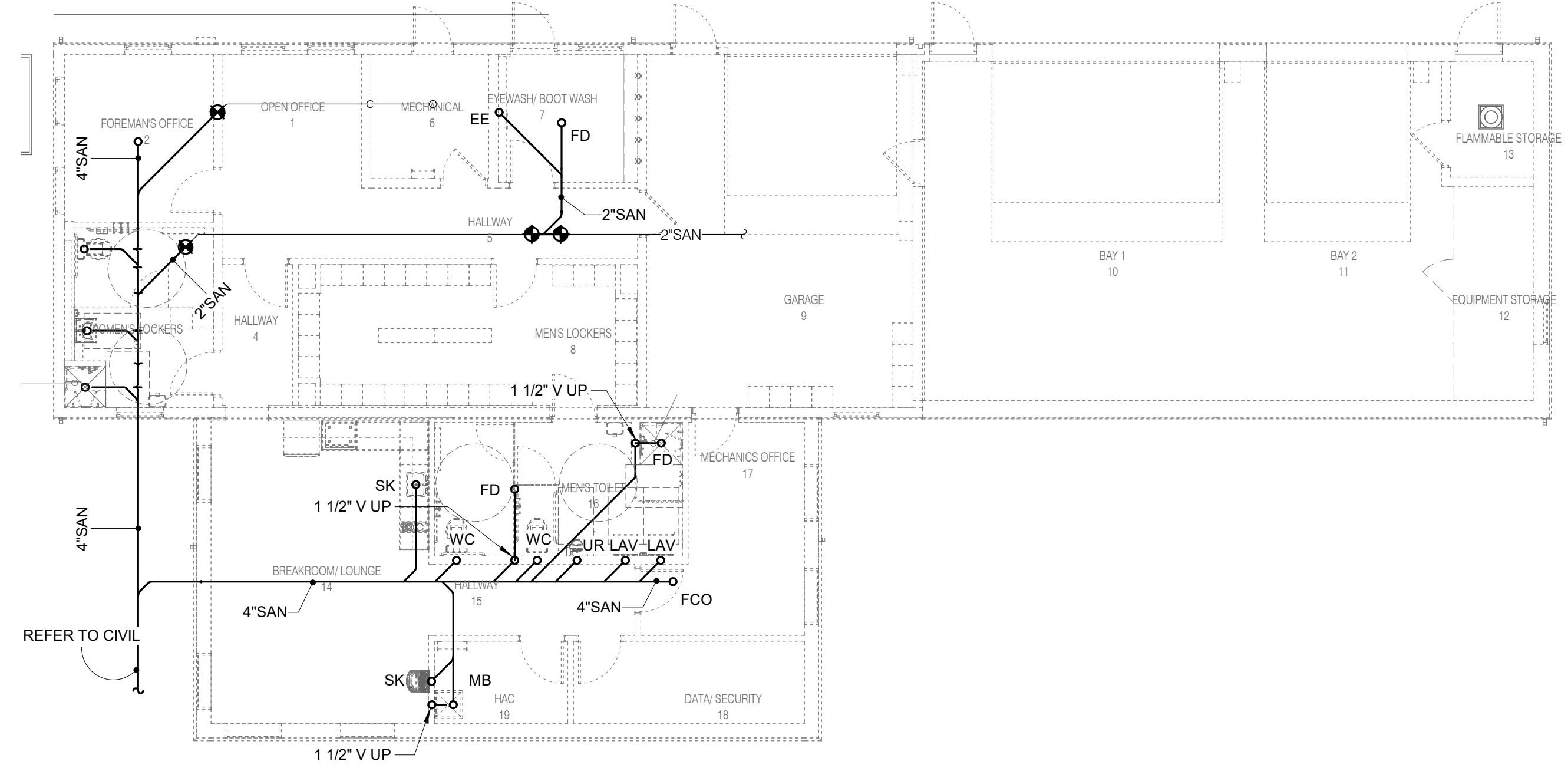
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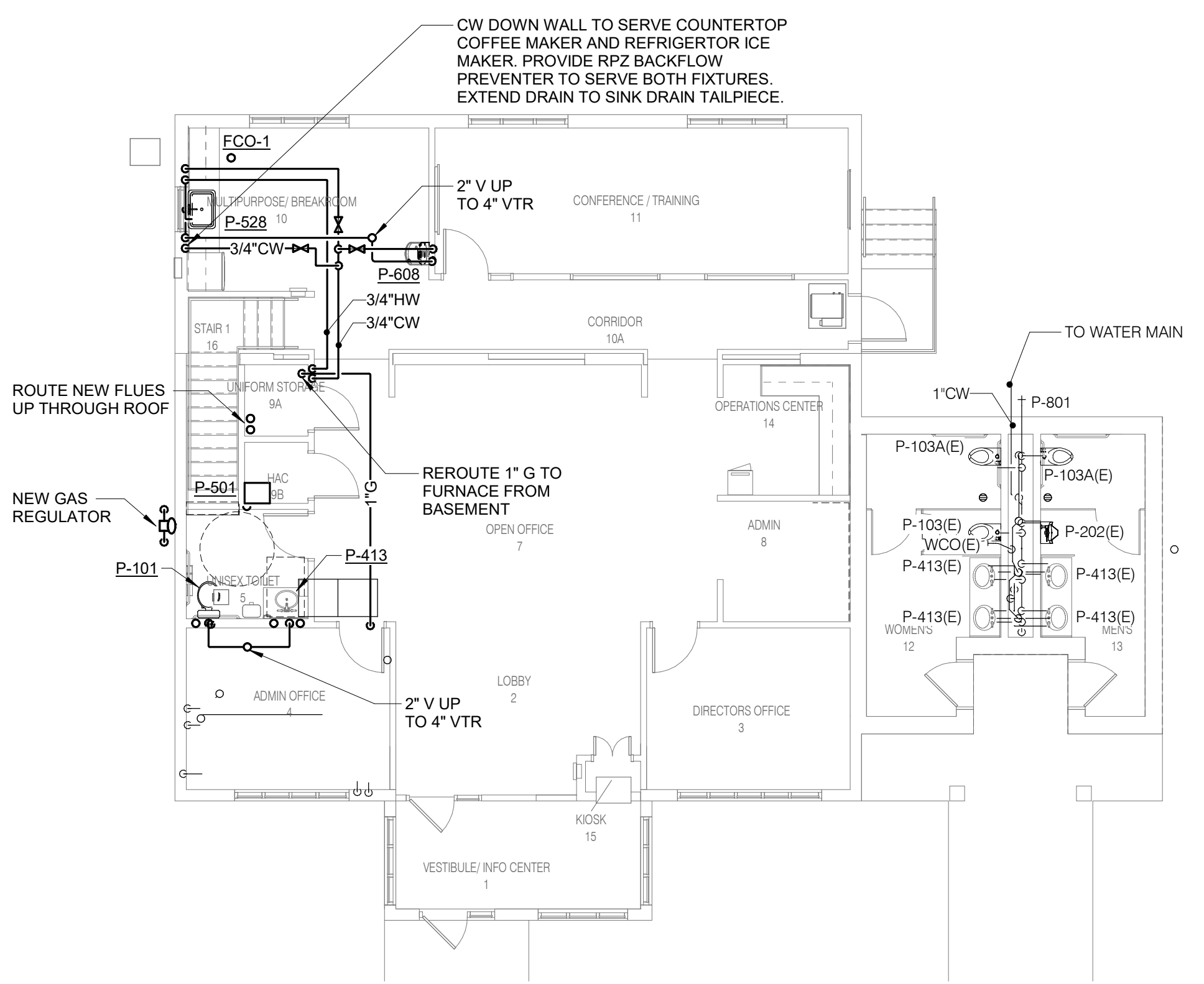
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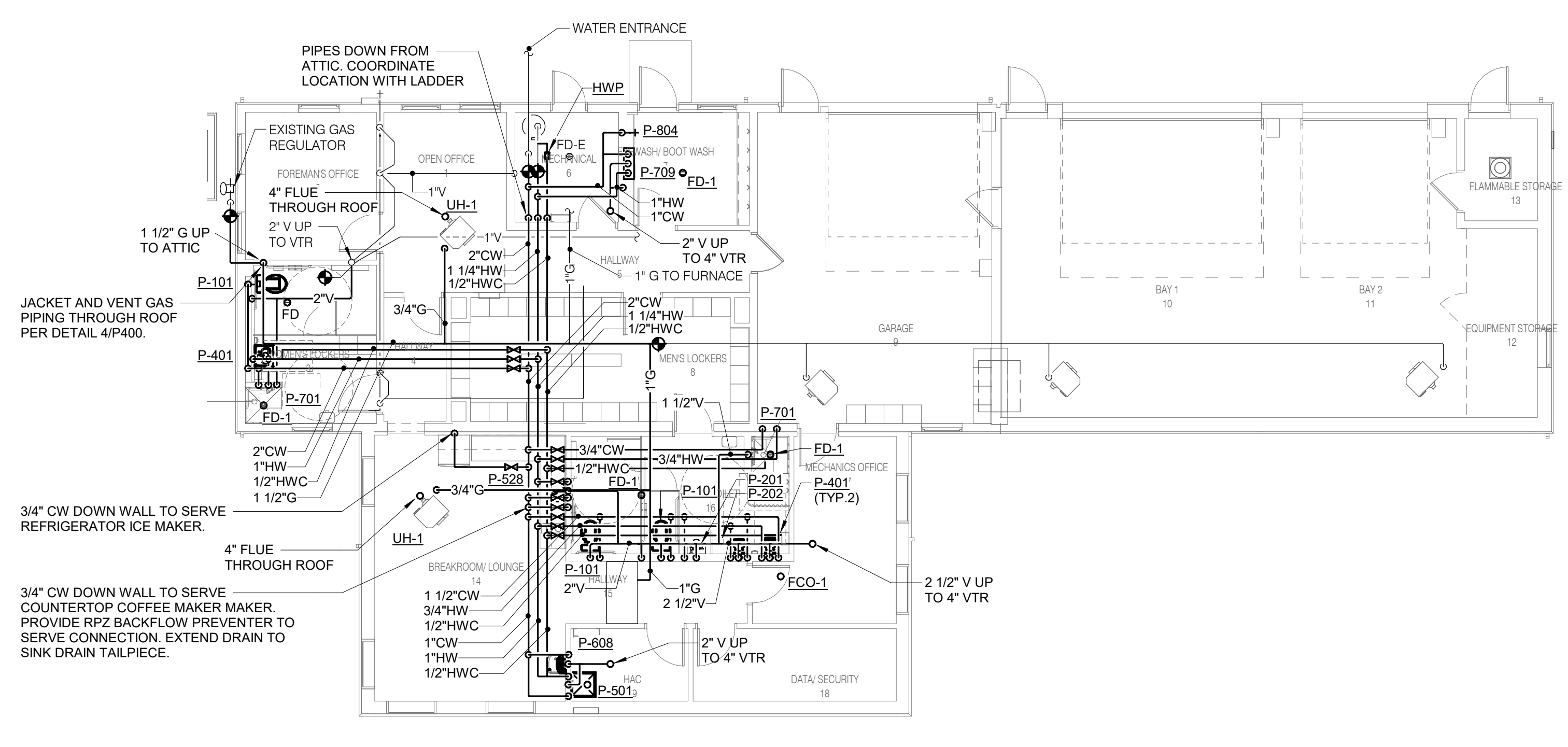
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1/8" = 1'-0"



**2 UNDERFLOOR - PLUMBING - MAINTENANCE**  
1/8" = 1'-0"



**3 FIRST FLOOR - PLUMBING - ADMINISTRATION**  
1/8" = 1'-0"



**4 FIRST FLOOR - PLUMBING - MAINTENANCE**  
1/8" = 1'-0"

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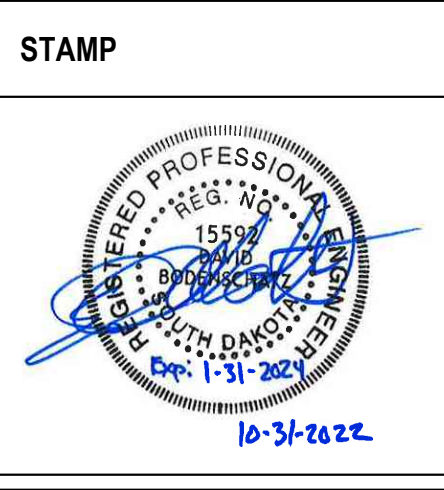
Revisions:	Date:

CONSULTANT		
MECHANICAL, ELECTRICAL, TECHNOLOGY & STRUCTURAL: <b>IMEG CORP.</b> 14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075	GEOTECHNICAL: <b>AET</b> 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	COST ESTIMATING: <b>CPMI</b> 3265 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

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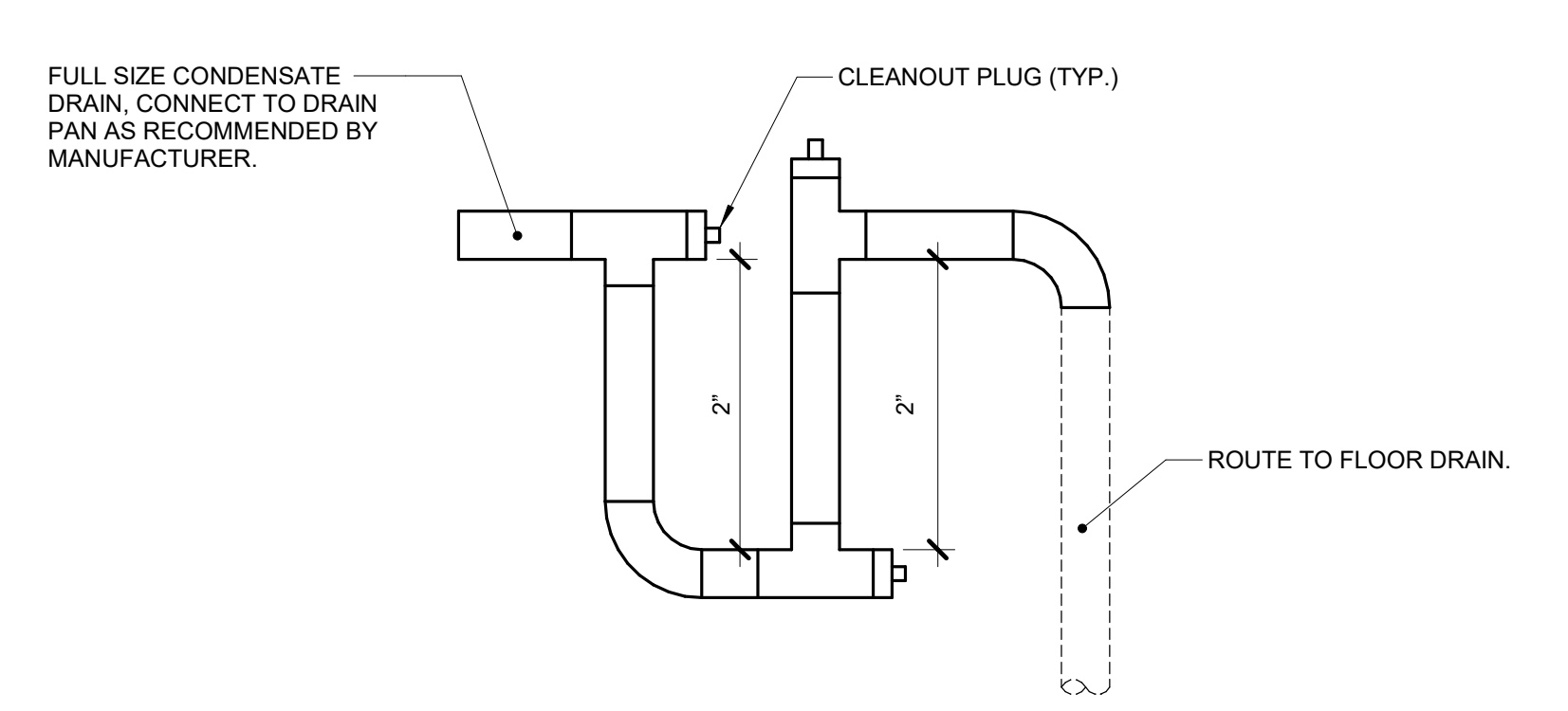
**VA** U.S. Department of Veterans Affairs

Drawing Title	<b>FIRST FLOOR - PLUMBING - ADMINISTRATION &amp; MAINTENANCE</b>
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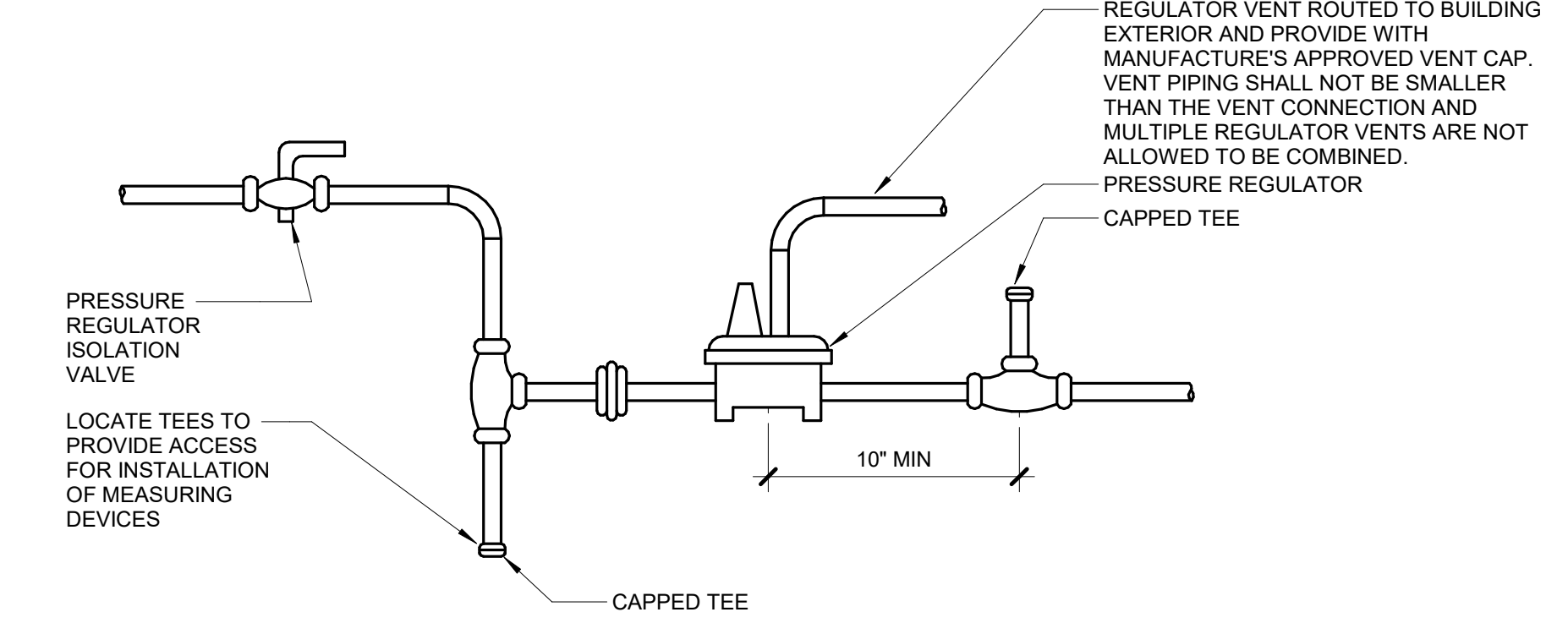
Phase	<b>BID DOCUMENTS</b>
	<b>NON-SPRINKLERED</b>

Project Title			Project Number		
BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS			884-CM-3015		
Location			Building Number		
STURGIS, SOUTH DAKOTA					
Issue Date	Checked	Drawn	Drawing Number		
10/31/22	IMEG	BRAGAR	P201		
			Dwg. 62 OF 84		

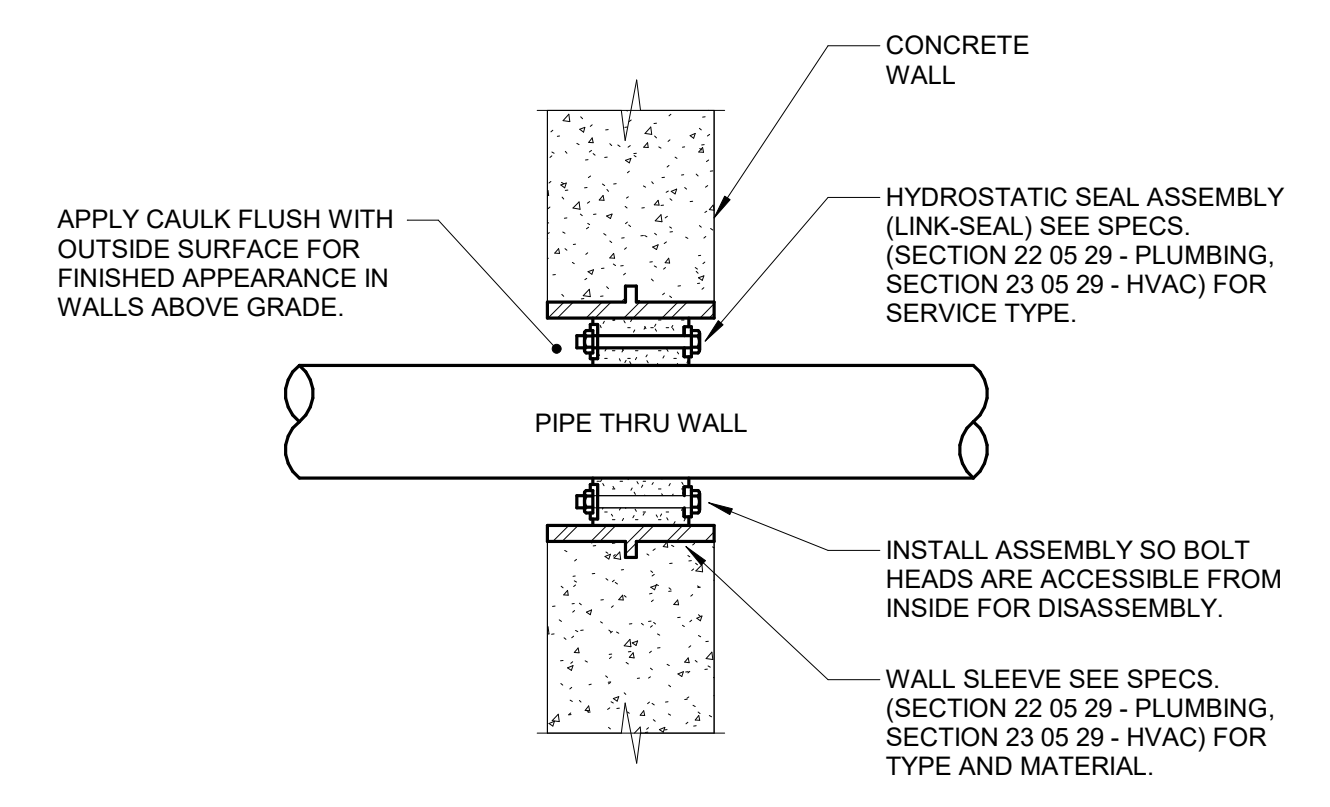
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**1 CONDENSATE TRAP DETAIL (BLOW-THROUGH)**  
NO SCALE

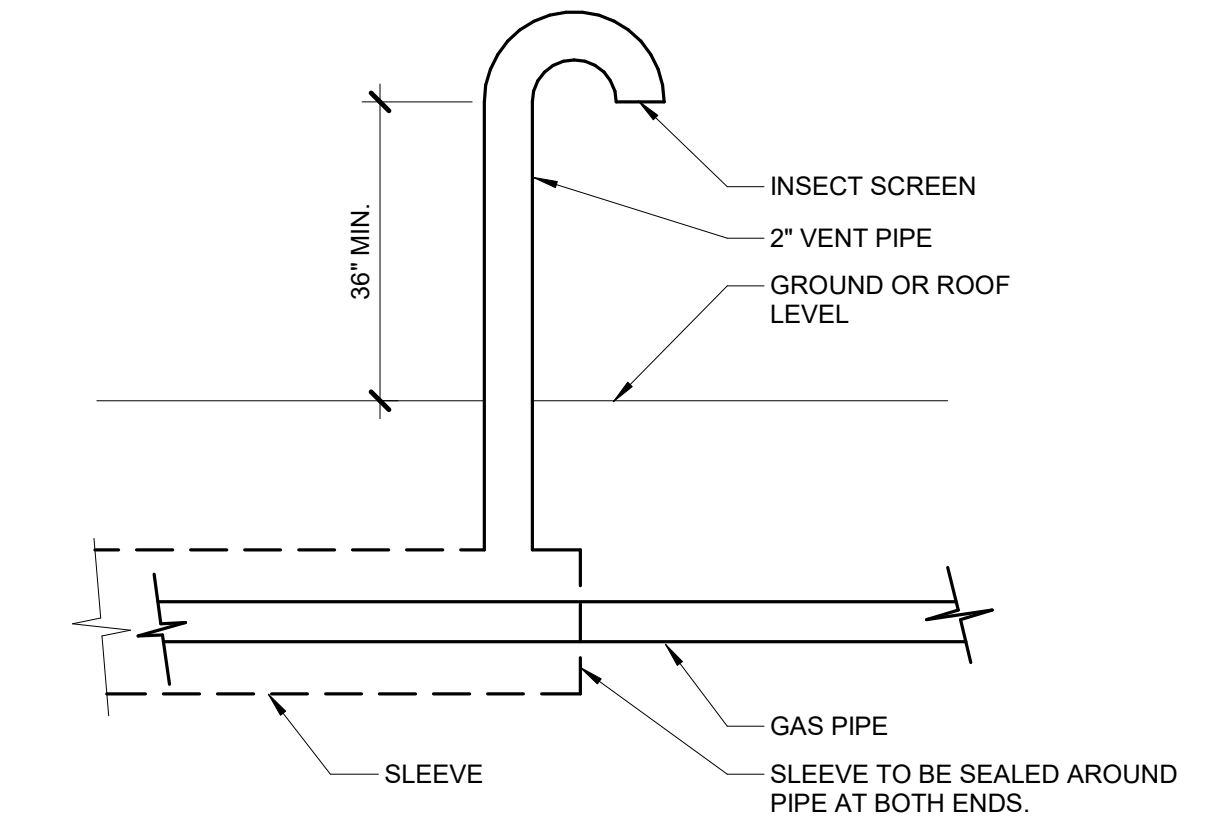


**2 GAS PRESSURE REGULATOR DETAIL**  
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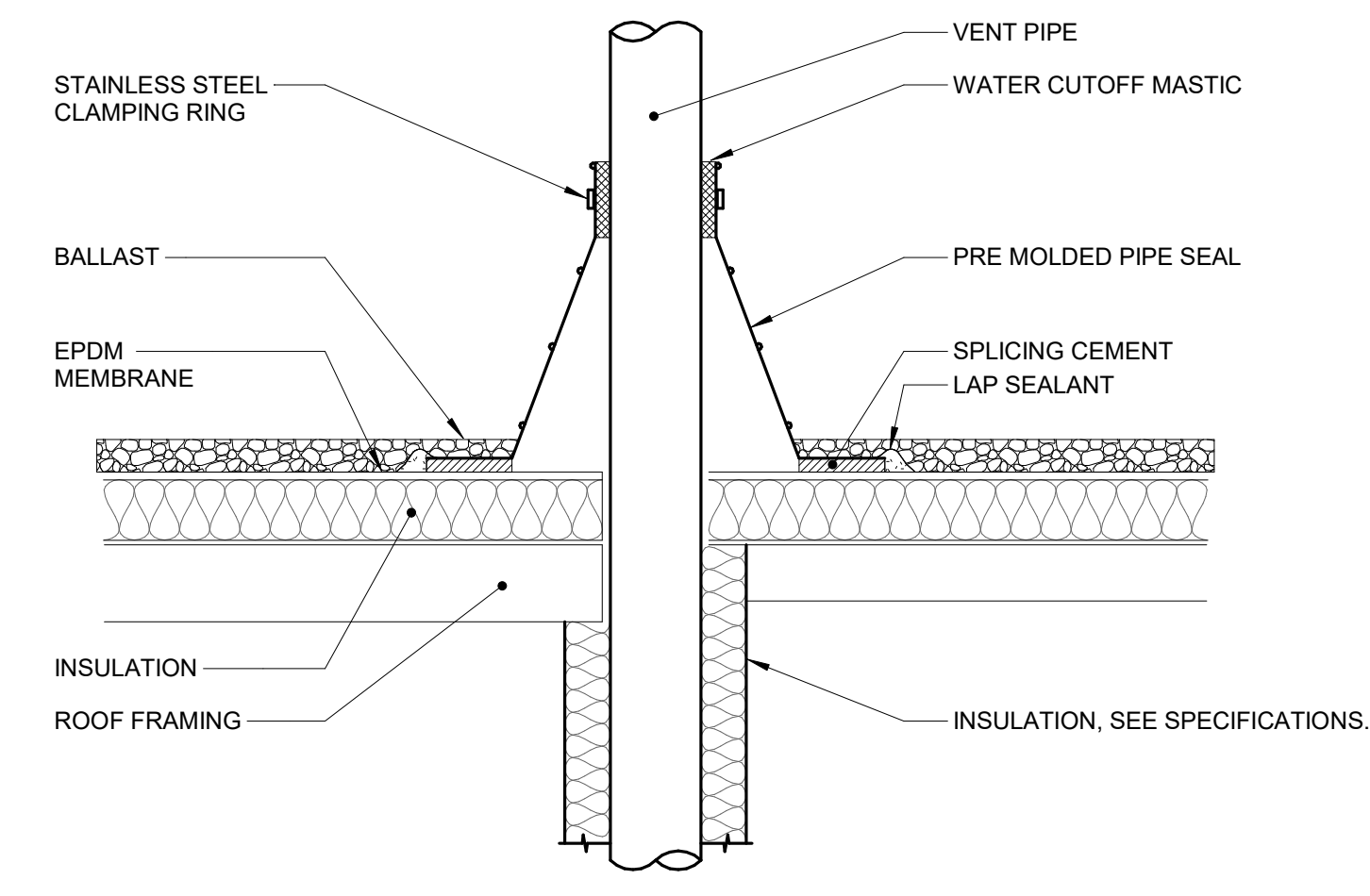


- NOTES:**
1. CONTRACTOR MAY FABRICATE PIPE SLEEVE.
  2. SEAL SELECTION BASED ON O.D. OF PIPE THRU WALL AND I.D. OF SLEEVE.
  3. SLEEVE NOT REQUIRED FOR CORE DRILLED PENETRATIONS.

**3 WALL PENETRATION - EXTERIOR - PIPING**  
NO SCALE



**4 GAS VENT DETAIL**  
NO SCALE



- NOTES:**
1. VENT PIPE SHALL BE A MINIMUM OF 3" DIAMETER UNLESS NOTED LARGER ON FLOOR PLANS. INCREASES, IF REQUIRED TO TRANSITION TO THE LARGER VTR SIZE, MUST BE INSTALLED AT LEAST 12 INCHES BELOW THE THERMAL ENVELOPE OF THE BUILDING.
  2. EXTEND VENT PIPE AT LEAST 7 FEET ABOVE ROOF LEVEL WHEN ROOF AREA IS INTENDED TO BE USED BY THE GENERAL PUBLIC. THIS INCLUDES PROMENADES, OBSERVATION DECKS, ETC. THIS IS NOT REQUIRED FOR ROOFS THAT ARE ACCESSIBLE BY MAINTENANCE PERSONNEL ONLY.

**5 VENT PIPE FLASHING**  
NO SCALE

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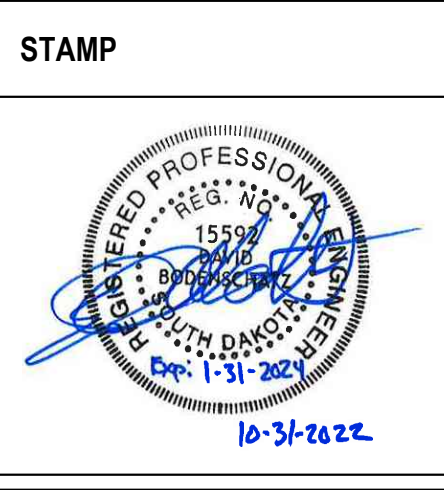
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CONSULTANT		
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VA U.S. Department of Veterans Affairs

Drawing Title	PLUMBING DETAILS
Approved:	

Phase	BID DOCUMENTS
	NON-SPRINKLERED

Project Title	BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS
Location	STURGIS, SOUTH DAKOTA
Issue Date	10/31/22
Checked	IMEG
Drawn	BRAGAR

Project Number	884-CM-3015
Building Number	
Drawing Number	P400
Dwg.	63 OF 84



### CONDUIT INSTALLATION SCHEDULE

THE FOLLOWING SCHEDULE SHALL BE ADHERED TO UNLESS THEY CONSTITUTE A VIOLATION OF APPLICABLE CODES OR ARE NOTED OTHERWISE ON THE DRAWINGS. THE INSTALLATION OF RMC CONDUIT WILL BE PERMITTED IN PLACE OF ALL CONDUIT SPECIFIED IN THIS SCHEDULE. REFER TO CONDUIT AND BOXES SPECIFICATION 26 05 33 FOR ADDITIONAL INFORMATION.

INSTALLATION TYPE	RMC	IMC	EMT	RTRC	PVC COATED RMC	PVC	PVC CONCRETE ENCASED	HDPE	ASR
FEEDERS: SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, MOTOR CONTROL CENTERS, ETC.		X	X						
BRANCH CIRCUITS: LIGHTING, RECEPTACLES, CONTROLS, ETC.		X	X						
MECHANICAL EQUIPMENT FEEDERS: PUMPS, CHILLERS, AIR HANDLING UNITS, ETC.		X	X						
FLOOR MOUNTED EQUIPMENT FEEDERS: PUMPS, ETC. (INCLUDE NO MORE THAN 6 FEET OF LFMC TO PUMP)		X	X						
CONTROLS (LIGHTING, POWER, BUILDING AUTOMATION, ETC.)		X	X						
FINISHED SPACES / CONCEALED				X					
WET AND DAMP LOCATIONS: (CONDUIT, BOXES, FITTINGS, INSTALLED AND EQUIPPED TO PREVENT WATER ENTRY)	X			X					
CORROSIVE LOCATIONS				X	X				
ELEVATED CONCRETE SLABS (ABOVE GRADE)	X					X			
INTERIOR LOCATIONS: CONCEALED			X						
INTERIOR LOCATIONS: EXPOSED		X	X						
INTERIOR LOCATIONS: EXISTING WALLS AND EXPOSED INSTALLATION (FINISHED SPACES)			X						X
<b>UNDERGROUND / SLABS ON GRADE (IN OR UNDER SLABS ON GRADE)</b>									
WITHIN 5' FROM THE PERIMETER OF THE BUILDING	X					X			
WITHIN 5' FROM THE PERIMETER OF THE BUILDING WHEN PASSING THROUGH THE PERIMETER OF THE BUILDING FOUNDATION	X			X			X		
<b>UNDERGROUND SITE CONDUITS:</b>									
WITHIN 5' FROM THE PERIMETER OF A BUILDING FOUNDATION	X			X			X		
5' OR GREATER FROM THE PERIMETER OF A BUILDING FOUNDATION	X			X		X			
UNDER ROADS, DRIVES, AND VEHICLE TRAVELED WAYS. WHEN HDPE DIRECTIONAL BORING IS ALLOWED: PROVIDE PRESSURIZED					X	X			X
<b>DUCTBANKS (REFER TO DUCTBANK DETAILS WHEN APPLICABLE)</b>									
REINFORCING SHALL CONSIST OF ONE-HALF INCH DEFORMED BARS SPACED 12 INCHES ON CENTER, PARALLEL TO THE DUCTS ON BOTTOM. WITH ONE-HALF INCH DEFORMED TIE BARS SPACED TWELVE INCHES ON CENTERS.							X		
BARS SHALL OVERLAP 40 DIAMETERS AND SHALL EXTEND 5' BEYOND ROADS, DRIVES, TRAVELED WAYS, ETC.							X		
PROVIDE MINIMUM 3" CONCRETE COVER ON ALL SIDES OF REINFORCING.							X		
ENTIRE DUCTBANK SHALL BE INSTALLED ON PRECAST CONCRETE PAVERS ON 3' CENTERS.							X		
HAZARDOUS (CLASSIFIED LOCATIONS AS DEFINED BY THE NATIONAL ELECTRICAL CODE)	X								
COMPLETE WITH SCREWED FITTINGS AND CONDUIT SEALS				X					
FIRE RATED ASSEMBLIES				X					
FIRE RATED ASSEMBLIES LISTED WITH PHENOLIC RTRC RACEWAY				X					
<b>DEFINITIONS:</b>									
CONCRETE ENCASEMENT: CONDUIT WITH A MINIMUM OF 3" THICKNESS BETWEEN THE SURFACE OF THE CONCRETE AND THE NEAREST CONDUIT. CONCRETE TO BE DOWELED INTO THE FOUNDATION.									

### ELECTRICAL SYMBOL LIST

SYMBOL:	SPEC SECTION:	DESCRIPTION:
	26 05 26	GROUND BUS
	26 05 26	INTERSYSTEM BONDING TERMINATION
	26 05 33	ELECTRICAL CONNECTION
	26 05 33	JUNCTION BOX
	26 27 26	FLOOR BOX or POKE THROUGH
	26 05 33	TECHNOLOGY OUTLET ROUGH-IN
	26 24 16	PANELBOARD - RECESS MOUNT
	26 24 16	PANELBOARD - SURFACE MOUNT
	26 22 00	TRANSFORMER
	26 28 16	DISCONNECT SWITCH
	ARCH	HAND DRYER
	26 27 26	DUPLEX GFI RECEPTACLE, 125V
	26 27 26	DUPLEX GFI RECEPTACLE, 125V
	26 27 26	GROUND FAULT DEVICE
	26 27 26	DUPLEX GFI WEATHERPROOF RECEPTACLE 125V
	26 27 26	QUAD RECEPTACLE, 125V
	26 27 26	QUAD GFI RECEPTACLE, 125V

### ELECTRICAL SYMBOL LIST

SYMBOL:	SPEC SECTION:	DESCRIPTION:
	26 09 33	SWITCH - SINGLE POLE
	26 09 33	SWITCH - LOCAL TIMER - USER ADJUSTABLE
	26 09 33	SWITCH - LOW VOLTAGE ON/OFF EQUAL TO ACUITY CONTROLS nPODM-WH
	26 09 33	SWITCH - LOW VOLTAGE OCCUPANCY SENSOR SWITCH EQUAL TO ACUITY CONTROLS WSX PDT-WH
	26 09 33	SWITCH - 2 CHANNEL LOW VOLTAGE OCCUPANCY SENSOR SWITCH EQUAL TO ACUITY CONTROLS WSX PDT-2P-WH
	26 09 33	SWITCH - LOW VOLTAGE VACANCY SENSOR SWITCH WITH DIMMING EQUAL TO ACUITY CONTROLS WSX PDT-SA-WH
	26 09 33	SWITCH - LOW VOLTAGE VACANCY SENSOR SWITCH WITH DIMMING EQUAL TO ACUITY CONTROLS WSX PDT-D-WH
	26 09 33	SWITCH - LOW VOLTAGE ON/OFF WITH DIMMING EQUAL TO ACUITY CONTROLS nPODM-WH
	26 09 33	VACANCY SENSOR - DUAL TECHNOLOGY (MANUAL ON, AUTO OFF)
	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY (AUTO ON, AUTO OFF)
	26 09 33	PHOTOCCELL

### ELECTRICAL RENOVATION NOTES:

- THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, AND SYSTEMS.
- EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
  - NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS WITH NEW WORK BEFORE STARTING WORK.
  - FIELD VERIFY THE AVAILABLE CLEARANCES FOR CABLE TRAY, BUSWAY AND CONDUITS BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
  - THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING.
  - THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILING, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
  - WHERE EXISTING ELECTRICAL SYSTEMS ARE INSTALLED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER REMOVE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

### ELECTRICAL PHASING NOTES:

- THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, AND SYSTEMS.
- REFER TO ARCHITECTURAL DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO ARCHITECT'S INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT DEPICT THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA.
  - REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. WITH AFFECTED ADJACENT AREAS.
  - PROVIDE TEMPORARY LIGHTING, POWER, SYSTEMS, ETC. AS NECESSARY TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF PROJECT.
  - INSTALL TEMPORARY LIGHTING, CIRCUITS, ETC. AS NECESSARY TO KEEP ALL OCCUPIED SPACES OPERATIONAL THROUGHOUT ALL PHASES OF THE PROJECT.
  - PHASE DEMOLITION WORK TO MINIMIZE DOWNTIME.

### ELECTRICAL GENERAL NOTES:

- "NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT.
- SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE IS CONNECTED TO AN EMERGENCY BATTERY.
- VACANCY/OCCUPANCY SENSOR LAYOUT: SENSORS ARE SHOWN ON THE PLANS FOR DESIGN INTENT. SENSORS MAY NOT REPRESENT EVERY SENSING MANUFACTURER. SPECIFIC FLOOR PLAN LAYOUTS SHOWING LOCATION, ORIENTATION, AND COVERAGE AREA OF EACH CONTROL DEVICE, SENSOR, AND CONTROLLER/INTERFACE AREAS REQUIRING MULTIPLE SENSORS DEVICES FOR APPROPRIATE COVERAGE. SUBMIT SPECIFIC MANUFACTURER-APPROVED SENSOR LAYOUT AS AN OVERLAY DIRECTLY ON THE PROJECT DRAWINGS, EITHER IN PRINT OR APPROVED ELECTRONIC FORM.

**LUMINAIRE KEY:**  

 E1 = FIXTURE TAG  
 T = CIRCUIT NUMBER  
 LUMINAIRE  
 a = SWITCH DESIGNATION  
 NL = SUBSCRIPT (IF APPLICABLE)  
 Z = ZONE DESIGNATION

**DEVICE KEY:**  

 A = MOUNTING (IF APPLICABLE)  
 1 = CIRCUIT NUMBER

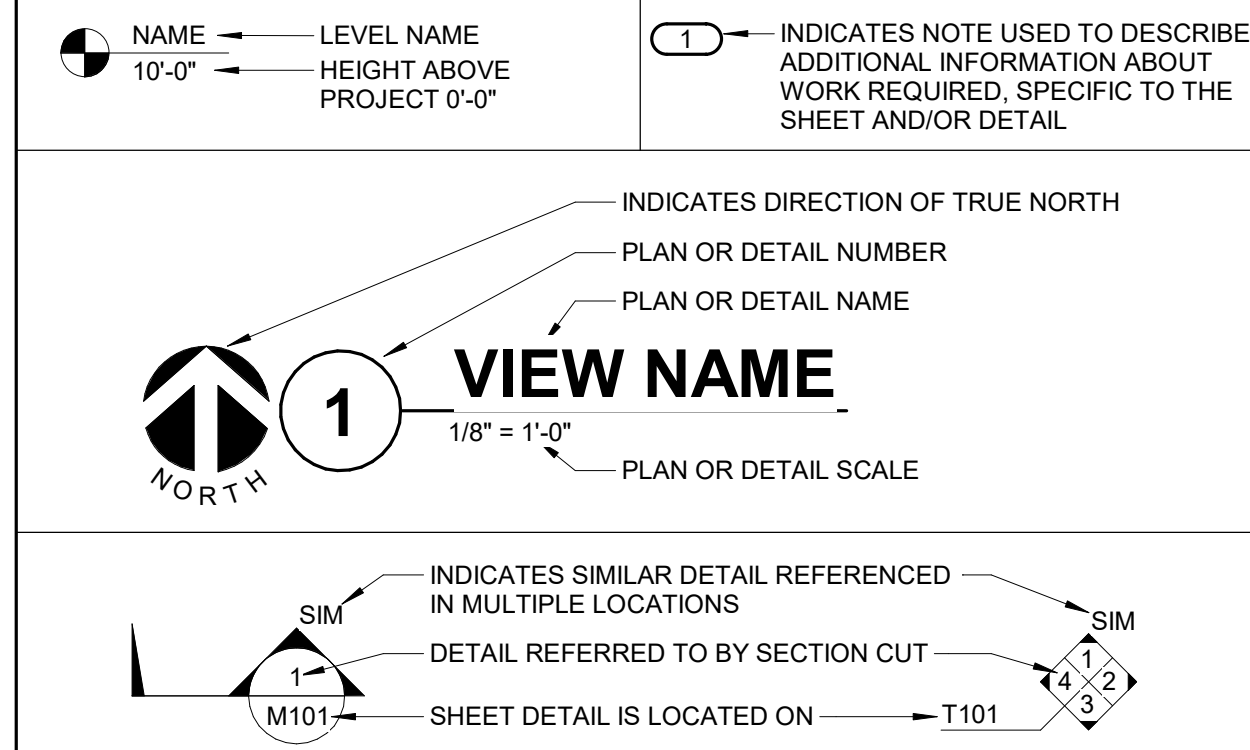
**PHASING:**  
 \*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: F1 / 1 / a / NL

**ELECTRICAL MOUNTING SUBSCRIPT KEY:**  
 A MOUNT AT 48" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH  
 C MOUNT AT CEILING  
 H MOUNT ORIENTED HORIZONTALLY  
 L MOUNT IN CASEWORK  
 M MOUNT IN MODULAR FURNITURE  
 R MOUNT IN SURFACE RACEWAY  
 EWC ELECTRIC WATER COOLER

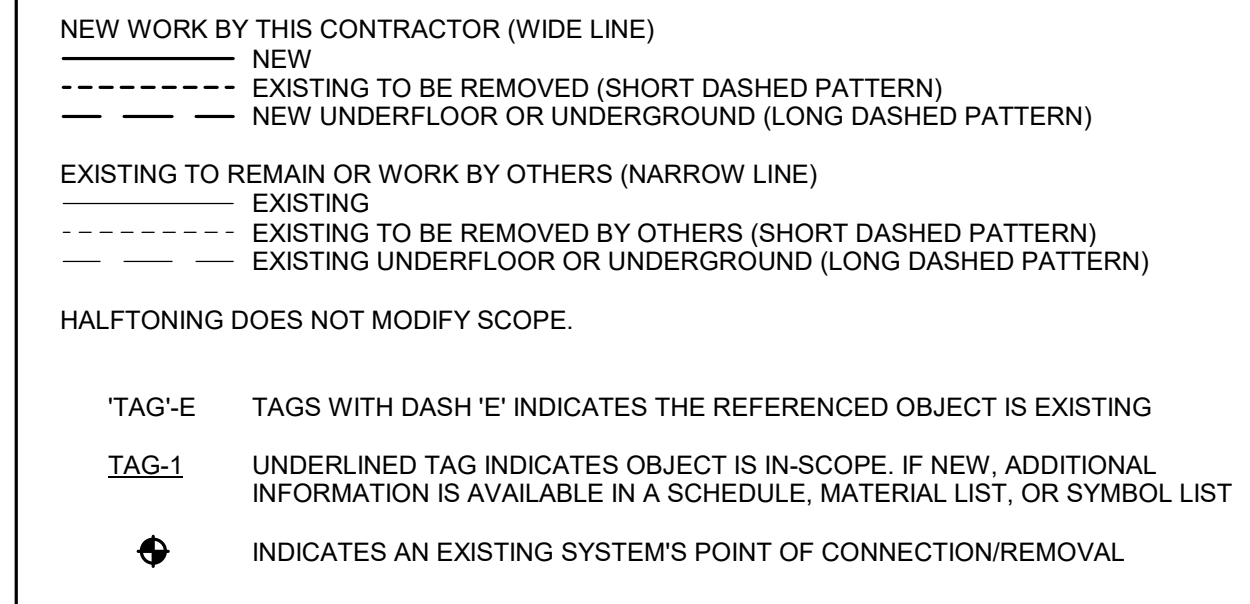
### ELECTRICAL INSTALLATION NOTES:

- THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
- 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.
- FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. DEVICES MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.
- FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. MOUNT EXTERIOR LOCATED RECEPTACLES WITH WHILE-IN-USE COVERS AT +20" FROM FINISHED GRADE (CENTER DIMENSIONS) TO MAINTAIN INSTALLATION ADA COMPLIANCE.
- ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO 26 05 03 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING.
- CONNECTION FOR ELECTRIC WATER COOLERS (EWC) SHALL BE A JUNCTION BOX CONCEALED BEHIND WATER COOLER ACCESS PLATE OR BE A GFI RECEPTACLE LOCATED DIRECTLY BELOW AND CENTERED ON EWC. CONTRACTOR SHALL VERIFY TYPE OF EWC TO BE INSTALLED.
- MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED.
- 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.
- CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE.
- 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.
- ELECTRICAL AND TECHNOLOGY 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, OR EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
- 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.
- 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.
- EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND FINISH.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
- ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

### VIEW KEY



### LINE TYPE AND TAG KEY



### ELECTRICAL ABBREVIATION KEY

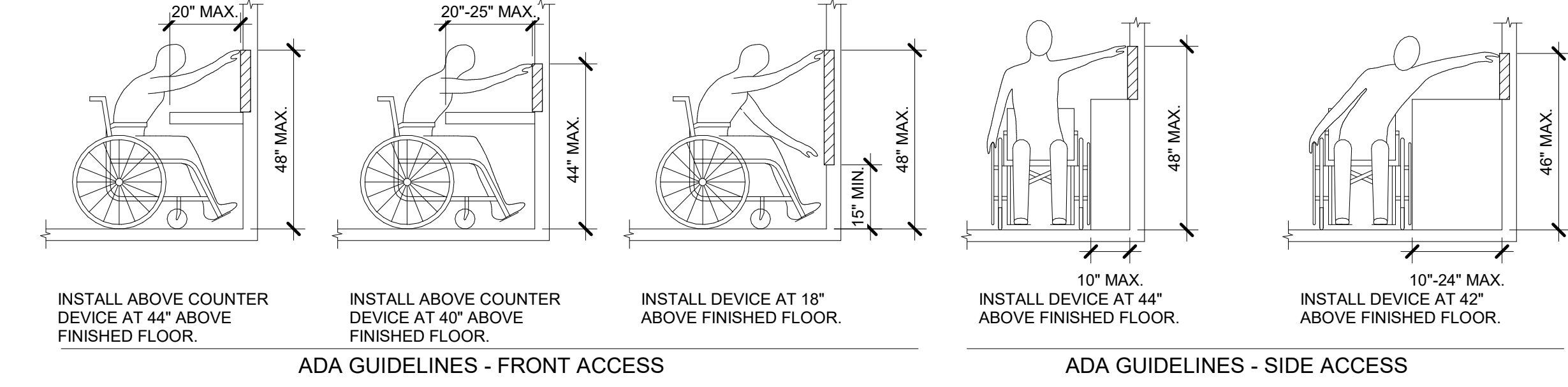
ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
GFI	GROUND FAULT INTERRUPTER
N.C.	NORMALLY CLOSED
NIC	NOT IN CONTRACT
N.O.	NORMALLY OPEN
SV	SOLENOID VALVE
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED

### LUMINAIRE SYMBOL KEY

SYMBOL:	DESCRIPTION:
	NORMAL BRANCH LUMINAIRE
	EMERGENCY BATTERY LUMINAIRE

### ELECTRICAL SHEET INDEX

E000	ELECTRICAL COVERSHEET
E100	SITE PLAN - ELECTRICAL - DEMOLITION
E101	SITE PLAN - ELECTRICAL
E200	FIRST FLOOR - DEMOLITION - ADMINISTRATION & MAINTENANCE
E300	FIRST FLOOR - LIGHTING - ADMINISTRATION & MAINTENANCE
E400	FIRST FLOOR - POWER - ADMINISTRATION & MAINTENANCE
E401	BLACK HILLS AUXILIARY BUILDINGS - POWER
E500	ELECTRICAL DETAILS
E600	ELECTRICAL SCHEDULES
GRAND TOTAL: 9	



### ADA STANDARDS FOR ACCESSIBLE DESIGN

**CONSULTANT**

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 Anderson Engineering of Minnesota, LLC | Proj # 16409

**STAMP**

14680 ALEXANDER QUAY  
 10/31/2022

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title  
**ELECTRICAL COVERSHEET**

Approved:

Phase  
**BID DOCUMENTS**

NON-SPRINKLERED

Project Title  
**BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS**

Project Number  
**884-CM-3015**

Building Number

Drawing Number  
**E000**  
 Dwg. 64 OF 84

Location  
**STURGIS, SOUTH DAKOTA**

Issue Date  
**10/31/22**

Checked  
 Checker

Drawn  
 Author

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REFERENCE SCALE IN INCHES  
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 VA FORM 08 - 6231

**KEYED NOTES:**  
 1. EXISTING UNDERGROUND COMMUNICATION CONDUITS TO BE DEMOLISHED. DISCONNECT AND REMOVE ALL ASSOCIATED WIRE AND CONDUIT AS TO NOT INTERFERE WITH NEW CONSTRUCTION. CONDUIT THAT DOES NOT INTERFERE WITH NEW CONSTRUCTION MAY BE ABANDONED.



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

BIM 360://10104823 - NCA-Black Hills - NC - Admin - Main/Electrical - Black Hills NCA Maintenance - Admin Bldg - Cnt  
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Revisions:	Date:

CONSULTANT		
<b>MECHANICAL, ELECTRICAL, TECHNOLOGY &amp; STRUCTURAL:</b>	<b>GEOTECHNICAL:</b>	<b>COST ESTIMATING:</b>
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 Anderson Engineering of Minnesota, LLC | Proj # 16409

**STAMP**

REGISTERED PROFESSIONAL ENGINEER  
 14680 ALEXANDER QUAY  
 SOUTH DAKOTA  
 10/31/2022

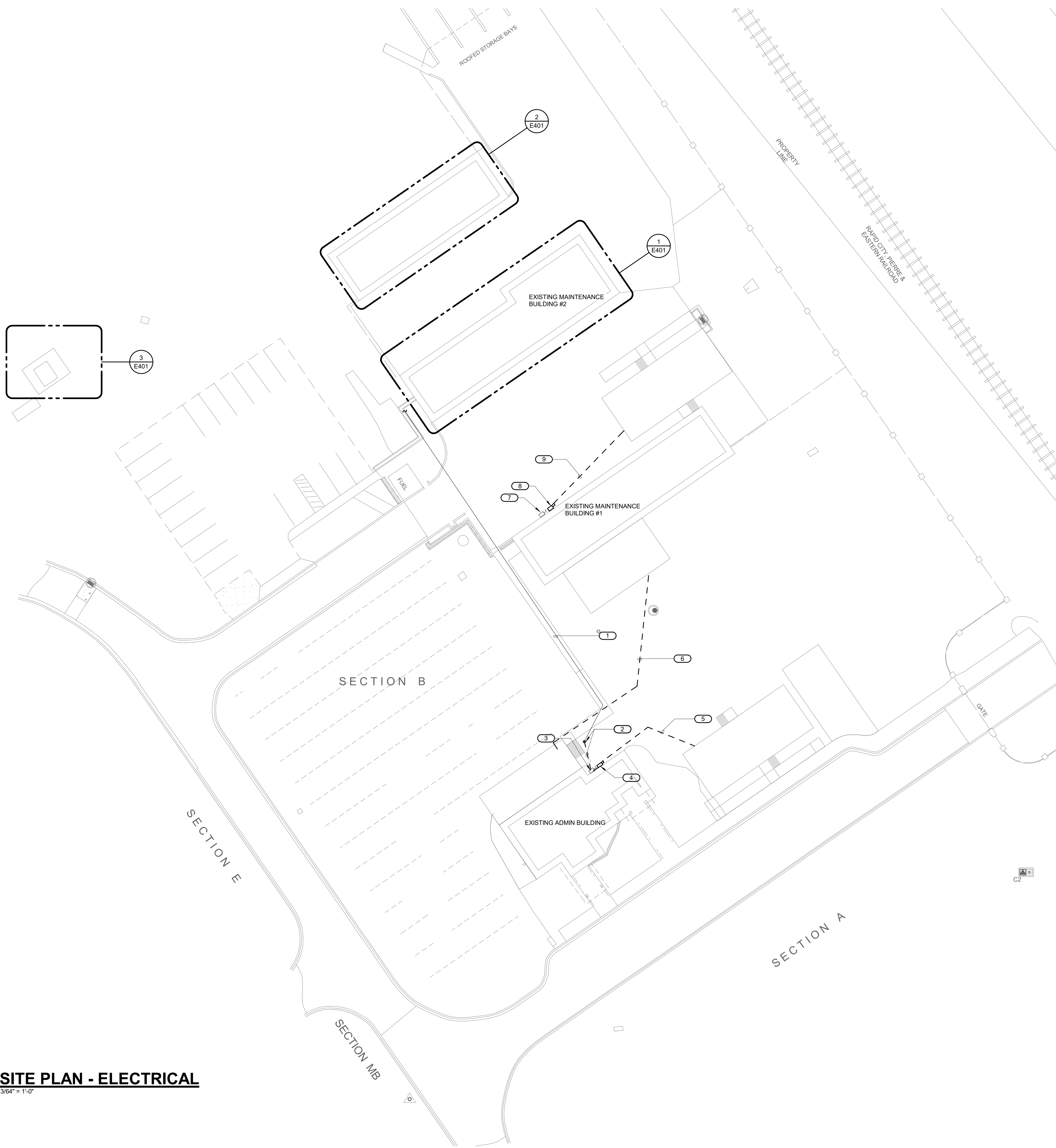
**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

<b>Drawing Title</b>	<b>Phase</b>
SITE PLAN - ELECTRICAL - DEMOLITION	BID DOCUMENTS
<b>Approved:</b>	NON-SPRINKLERED

<b>Project Title</b>	<b>Project Number</b>
BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS	884-CM-3015
<b>Location</b>	<b>Drawing Number</b>
STURGIS, SOUTH DAKOTA	E100
<b>Issue Date</b>	<b>Dwg.</b>
10/31/22	65 OF 84

<b>Checked</b>	<b>Drawn</b>
Checker	Author



- KEYED NOTES:**
- EXISTING UNDERGROUND ELECTRICAL SERVICE FOR ADMIN BUILDING TO REMAIN.
  - INTERCEPT EXISTING UNDERGROUND ELECTRICAL SERVICE AND EXTEND TO NEW LOCATION AS SHOWN.
  - NEW LOCATION OF EXISTING MAIN DISCONNECT SWITCH FOR ADMIN BUILDING. REFER TO 1/E400 FOR EXACT LOCATION.
  - NEW 2P/200AS/125AF/NEMA 3R DISCONNECT SWITCH FOR TEMPORARY TRAILER.
  - UNDERGROUND FEED TO NEW TEMPORARY TRAILER LOCATION. VERIFY TERMINATION LOCATION WITH PRE-FAB TRAILER MANUFACTURER. REFER TO 3/E500 FOR MORE INFORMATION.
  - 2" UNDERGROUND CONDUIT FOR FIRE ALARM CABLING FROM FIRE ALARM CONTROL PANEL IN ADMIN BUILDING TO DEVICES IN MAINTENANCE BUILDING. RE-CONNECT DEVICES TO EXISTING FIRE ALARM CONTROL PANEL IN ADMIN BUILDING.
  - EXISTING MAIN DISCONNECT FOR MAINTENANCE BUILDING #1.
  - NEW 2P/200AS/125AF/NEMA 3R DISCONNECT SWITCH FOR TEMPORARY TRAILER.
  - UNDERGROUND FEED TO NEW TEMPORARY TRAILER LOCATION. VERIFY TERMINATION LOCATION WITH PRE-FAB TRAILER MANUFACTURER. REFER TO 4/E500 FOR MORE INFORMATION.

**1 SITE PLAN - ELECTRICAL**  
3/8" = 1'-0"

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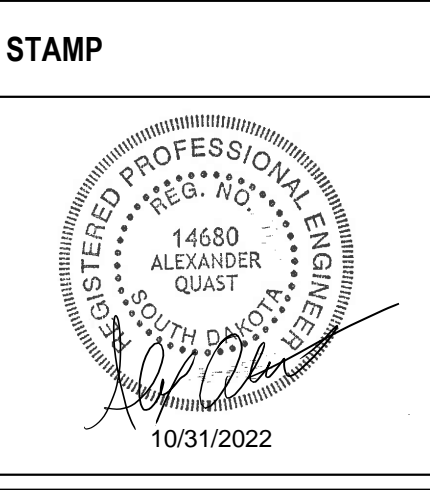
Revisions:	Date:

CONSULTANT		
<b>MECHANICAL, ELECTRICAL, TECHNOLOGY &amp; STRUCTURAL:</b>	<b>GEOTECHNICAL:</b>	<b>COST ESTIMATING:</b>
<b>IMEG CORP.</b> 14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075	<b>AET</b> 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	<b>CPMI</b> 3265 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

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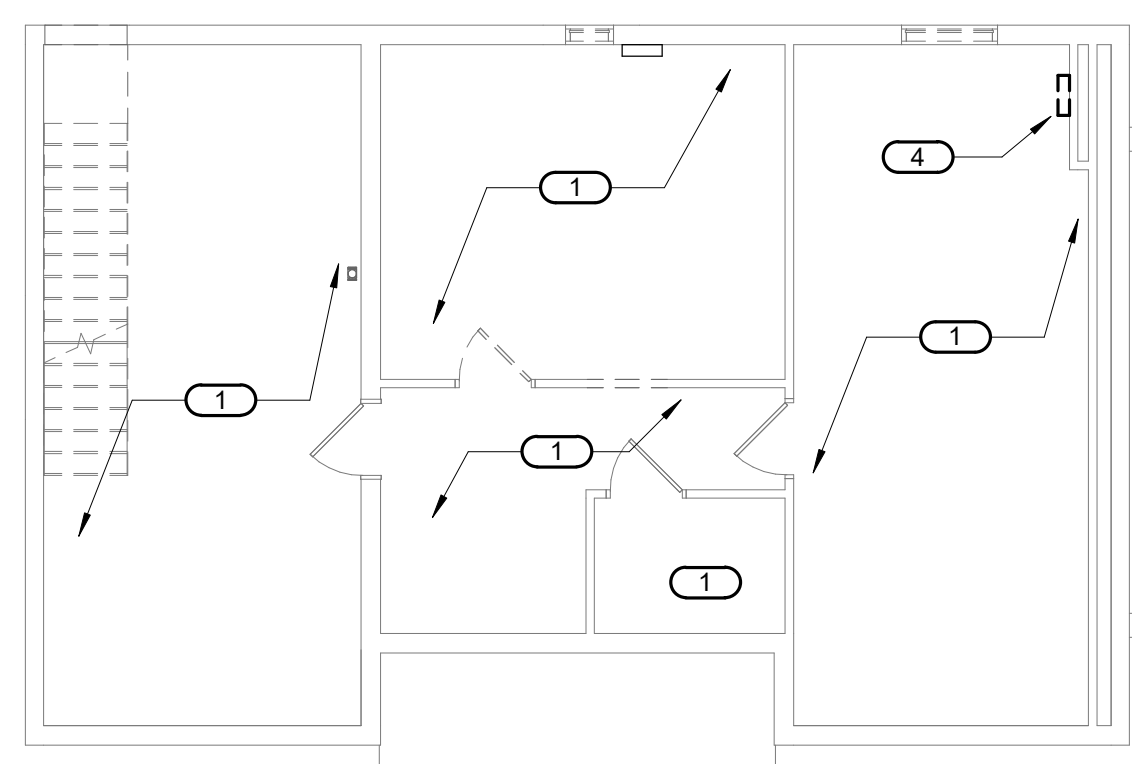


**Office of Construction and Facilities Management**

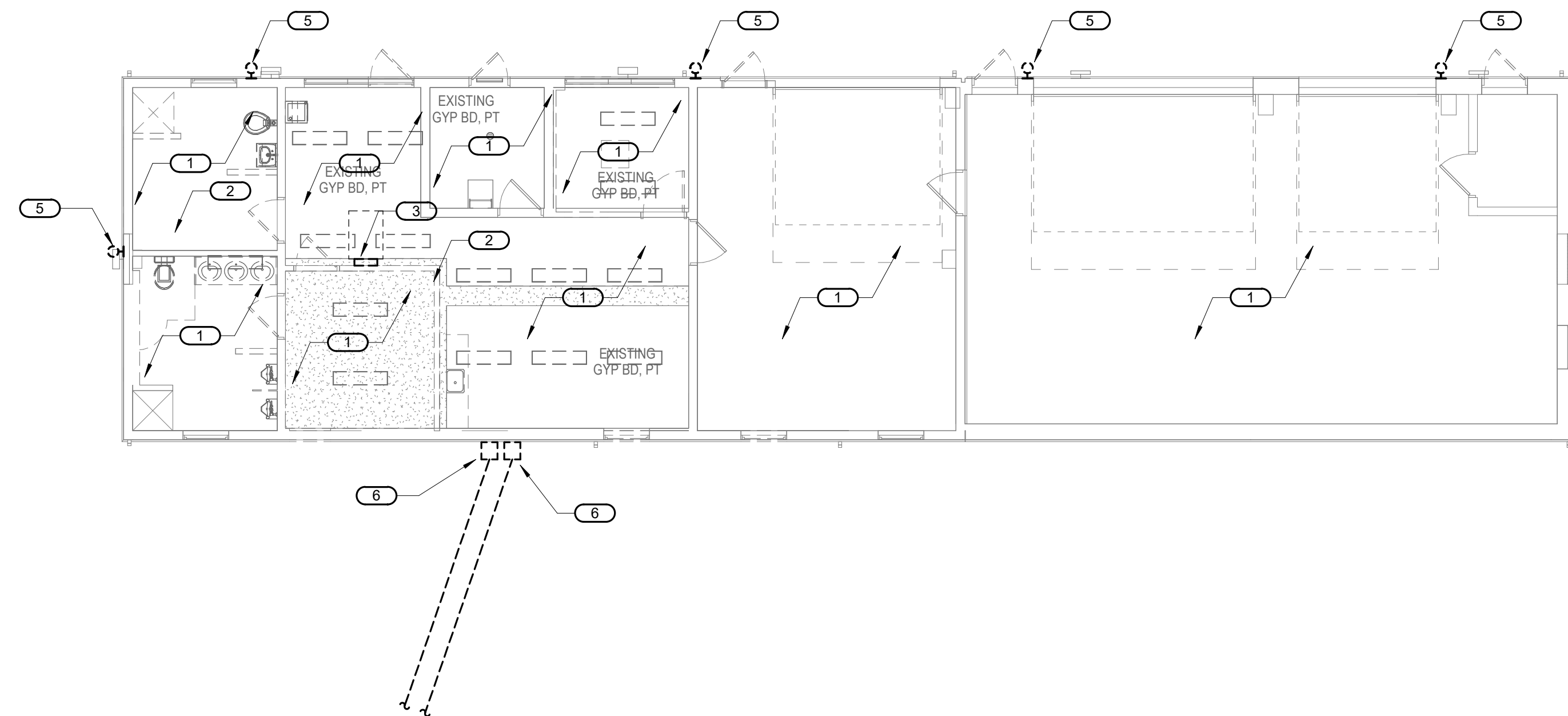
**VA** U.S. Department of Veterans Affairs

Drawing Title	Phase
<b>SITE PLAN - ELECTRICAL</b>	<b>BID DOCUMENTS</b>
Approved:	<b>NON-SPRINKLERED</b>

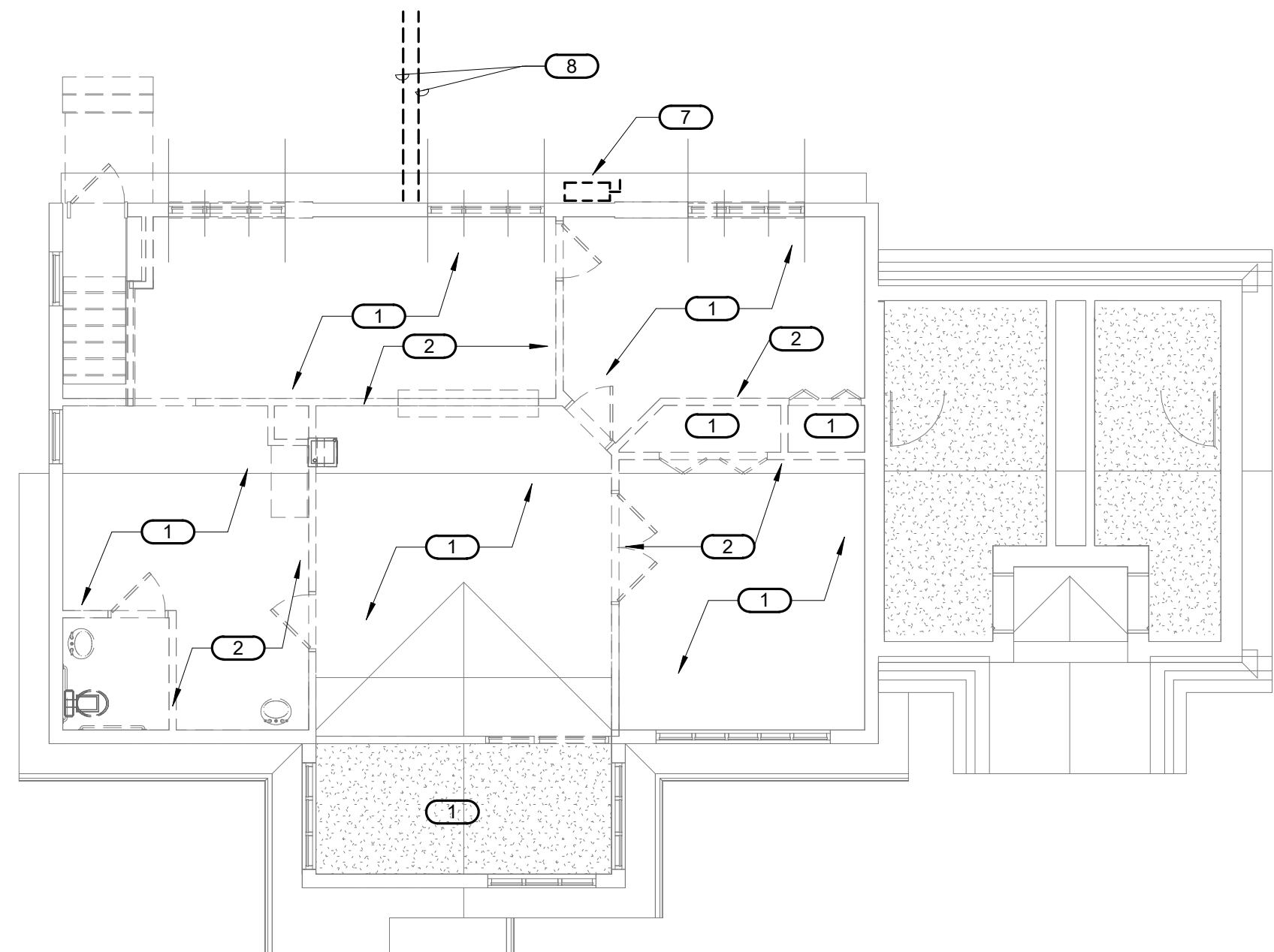
Project Title	Project Number
BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS	884-CM-3015
Location	Drawing Number
STURGIS, SOUTH DAKOTA	<b>E101</b>
Issue Date	Dwg. 66 OF 84
10/31/22	
Checked	Drawn
Checker	Author



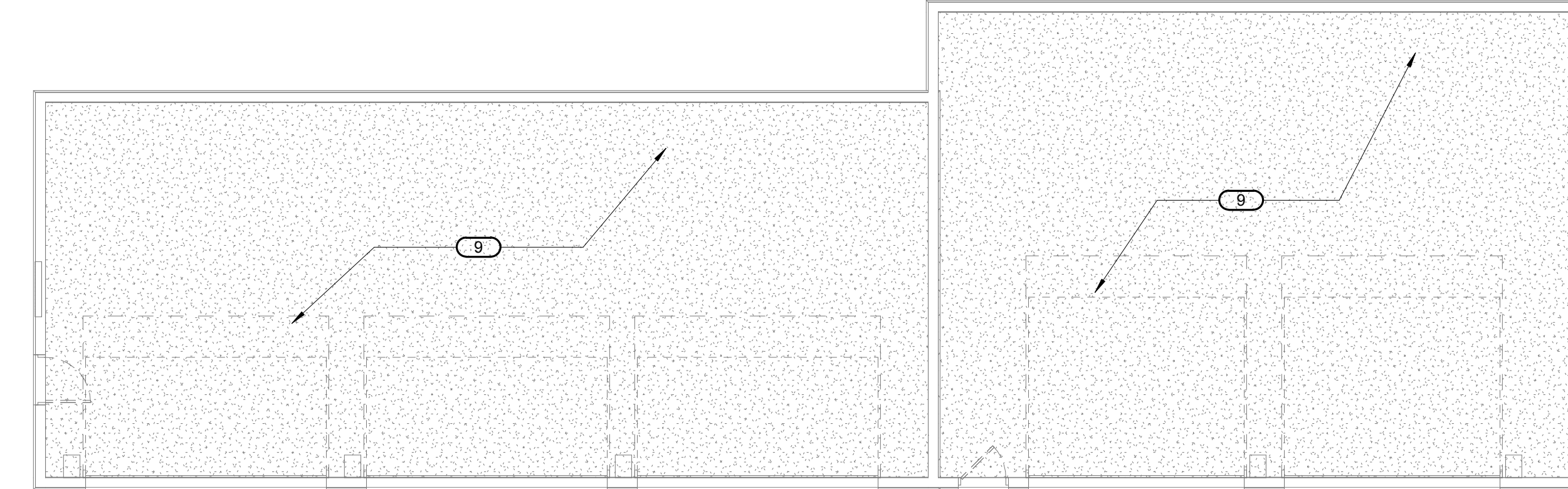
**3 BASEMENT FLOOR DEMOLITION - ELECTRICAL - ADMINISTRATION**  
1/8" = 1'-0"



**2 FIRST FLOOR DEMOLITION - ELECTRICAL - MAINTENANCE**  
1/8" = 1'-0"



**1 FIRST FLOOR DEMOLITION - ELECTRICAL - ADMINISTRATION**  
1/8" = 1'-0"

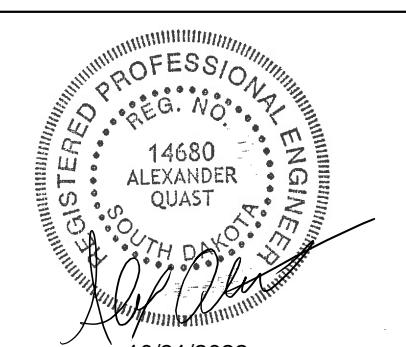


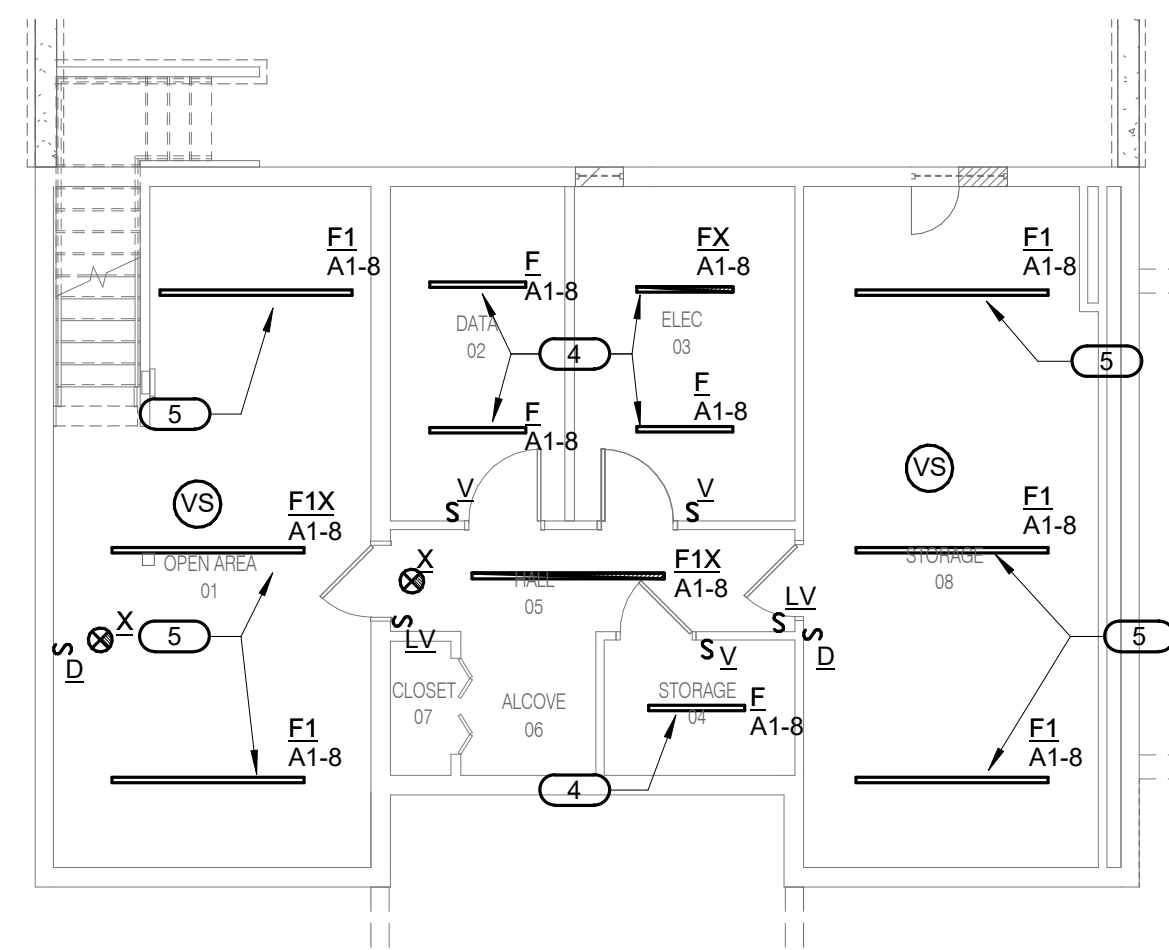
**4 FIRST FLOOR DEMOLITION - ELECTRICAL - MAINTENANCE 2**  
1/8" = 1'-0"

- DEMOLITION GENERAL NOTES:**
1. THE INFORMATION ON THE DEMOLITION DRAWINGS ARE FROM DOCUMENTS PROVIDED TO THE ENGINEER. CONTRACTOR WILL BE RESPONSIBLE FOR VISITING THE SITE PRIOR TO SUBMITTING A BID TO DETERMINE THE AMOUNT OF DEMOLITION THAT WILL BE REQUIRED. CONTRACTOR SHALL EXAMINE THE EXISTING BUILDING AND GENERALLY VERIFY THE LOCATION OF ALL EXISTING WORK AND BECOME INFORMED AS TO THE RELATION TO AND EFFECT ON THE WORK REQUIRED BEFORE SUBMITTING A BID. SUBMISSION OF A BID WILL CONSTITUTE EVIDENCE THAT THE CONTRACTOR HAS INSPECTED THE SITE OF THE PROPOSED WORK. DEVICES ON EXISTING WALLS TO REMAIN OR TO BE REMOVED MAY NOT APPEAR ON DRAWINGS DUE TO EXISTING FURNITURE, BOOKCASES, EQUIPMENT, ECT. BLOCKING VIEW DURING SITE VISIT.
  2. CONTRACTOR SHALL STUDY ALL PLANS AND UNDERSTAND THE FULL SCOPE OF CONSTRUCTION PRIOR TO BIDS AND BEGINNING ANY WORK. CONTRACTOR SHALL UNDERSTAND THAT THE BUILDING WILL BE RENOVATED IN PHASES AND THAT ELECTRICAL EQUIPMENT SERVING THOSE AREAS THAT WILL BE RENOVATED IN LATER PHASES SHALL BE RECONNECTED AND RE-ENERGIZED TO MAINTAIN POWER TO THOSE AREAS IF DISRUPTED DURING PHASED CONSTRUCTION. CONTRACTOR SHALL UNDERSTAND THAT THE ELECTRICAL EQUIPMENT SERVING PORTIONS OF THE BUILDING THAT ARE OUTSIDE OF THIS PROJECT'S SCOPE SHALL REMAIN AND BE RECONNECTED AND RE-ENERGIZED TO MAINTAIN POWER TO THOSE AREAS IF DISRUPTED DURING PHASED CONSTRUCTION.
  3. COORDINATE DEMOLITION WORK WITH THE BUILDING MAINTENANCE PERSONNEL AND OTHER TRADES PERFORMING WORK IN THE BUILDING PRIOR TO THE REMOVAL OF ANY ITEMS OF EQUIPMENT OR SYSTEMS THAT WILL AFFECT OTHER SYSTEMS WITHIN THE LIMIT OF NEW CONSTRUCTION OR OTHER AREAS OF THE BUILDING. CONTRACTOR SHALL VERIFY WITH THE OWNER IF THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION, AND THEREFORE UTILITIES MUST REMAIN IN OPERATION AT ALL TIMES. ANY REQUIRED OUTAGES MUST BE COORDINATED WITH THE OWNER.
  4. PRIOR TO THE REMOVAL OF ANY EQUIPMENT, CONTRACTOR MUST VERIFY THE ORIGIN AND TERMINATION OF THOSE SYSTEMS AND CONFIRM THAT THE ITEMS BEING REMOVED DO NOT SERVE ANY ITEMS THAT ARE TO REMAIN DOWNUP STREAM (INCLUDING THOSE IN AREAS OUTSIDE THE CONTRACTOR LIMITS). IF REMOVAL OF ANY ITEMS DOES DISRUPT OTHER SYSTEMS DOWNUP STREAM, CONTRACTOR SHALL EXTEND, RECONNECT TO NEW OR RELOCATED EQUIPMENT, AND MAINTAIN FULL FUNCTIONALITY OF SYSTEM.
  5. REFER TO HVAC & PLUMBING DRAWINGS FOR OTHER DEMOLITION INFORMATION. DISCONNECT AND REMOVE ALL WIRE, CONDUIT, AND DISCONNECT SWITCHES SERVING EQUIPMENT TO BE REMOVED AND LABEL CIRCUIT BREAKER 'SPARE'.
  6. REFER TO TECHNOLOGY DRAWINGS FOR EXISTING DATA AND TELEPHONE OUTLETS TO BE DISCONNECTED AND REMOVED.

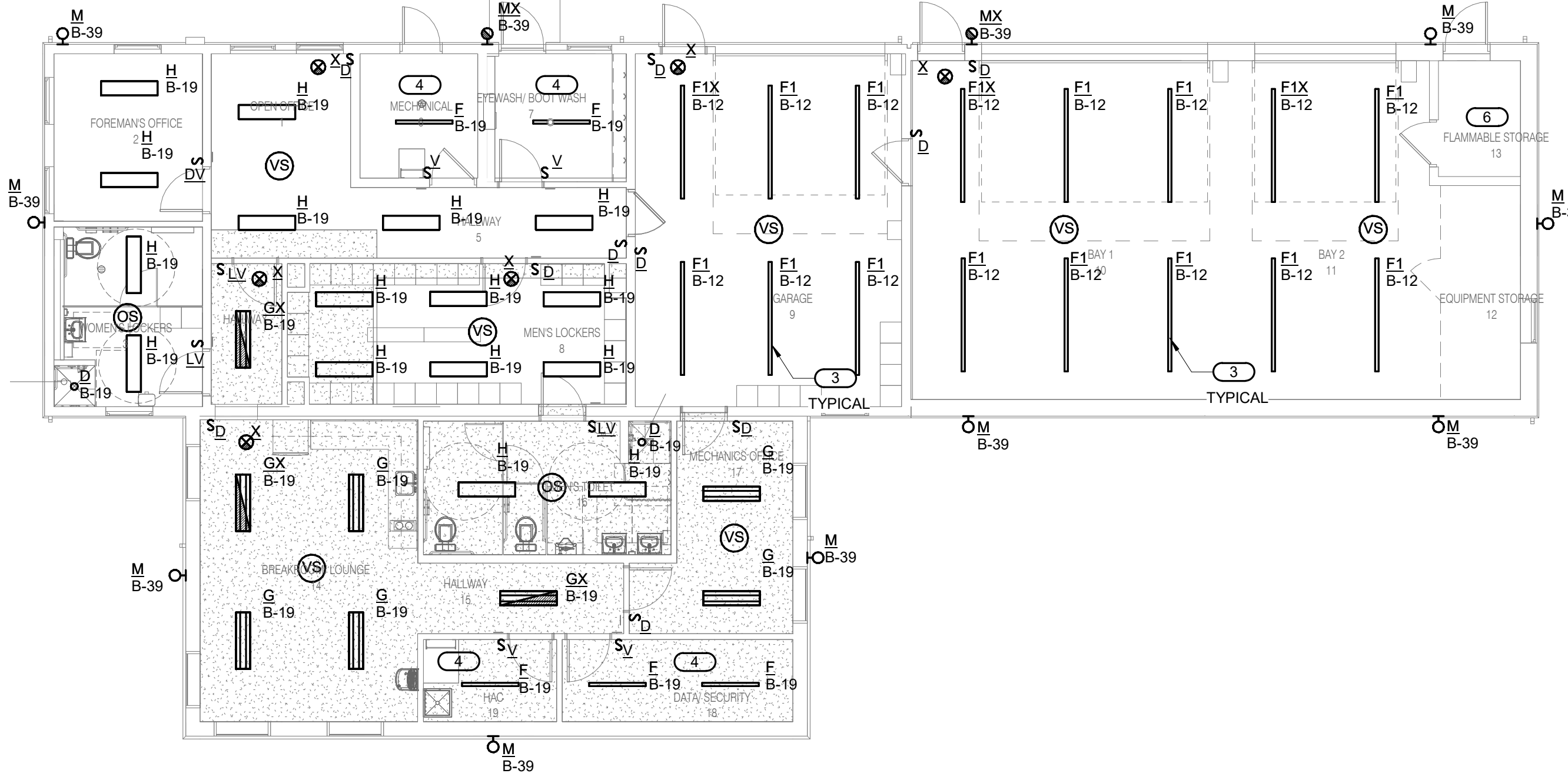
- DEMOLITION KEYED NOTES:**
1. EXISTING LIGHT FIXTURES THIS AREA TO BE DISCONNECTED AND REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED WIRE, CONDUIT, AND CONTROLS.
  2. ALL ELECTRICAL DEVICES IN PARTITIONS TO BE REMOVED SHALL BE DISCONNECTED AND REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED WIRE AND CONDUIT.
  3. EXISTING PANEL 'B' TO BE RELOCATED. REFER TO SHEET E211 FOR NEW LOCATION. EXTEND ALL LIVE EXISTING CIRCUITS TO NEW LOCATION AND RECONNECT.
  4. EXISTING BASEMENT PANEL TO BE DISCONNECTED. ALL LIVE EXISTING CIRCUITS TO BE EXTENDED TO NEW PANEL LOCATED IN MECHDATA ROOM. REFER TO 1/E400 FOR NEW LOCATION AND NOTE BY SYMBOL #1 SHEET E400 FOR MORE INFORMATION.
  5. EXISTING EXTERIOR LIGHT FIXTURES TO BE DISCONNECTED AND REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED WIRE AND CONDUIT. MAINTAIN CIRCUIT AND CONTROLS FOR RE-USE.
  6. EXISTING INCOMING CONDUITS AND PULL BOXES TO BE RELOCATED TO NEW LOCATION. REFER TO SHEET E211 FOR NEW LOCATION. DEMOLISH EXISTING CONDUITS LOCATED UNDER NEW ADDITION AS TO NOT INTERFERE WITH NEW CONSTRUCTION.
  7. EXISTING MAIN DISCONNECT SWITCH FOR ADMINISTRATIVE BUILDING TO BE RELOCATED. REFER TO SHEET E211 NOTE BY SYMBOL #7 FOR NEW LOCATION.
  8. EXISTING COMMUNICATION AND FIRE ALARM CONDUITS FROM ADMINISTRATIVE BUILDING TO BE DEMOLISHED.
  9. EXISTING SHOP LIGHTING THIS AREA TO BE DISCONNECTED AND REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED WIRE, CONDUIT, AND CONTROLS.

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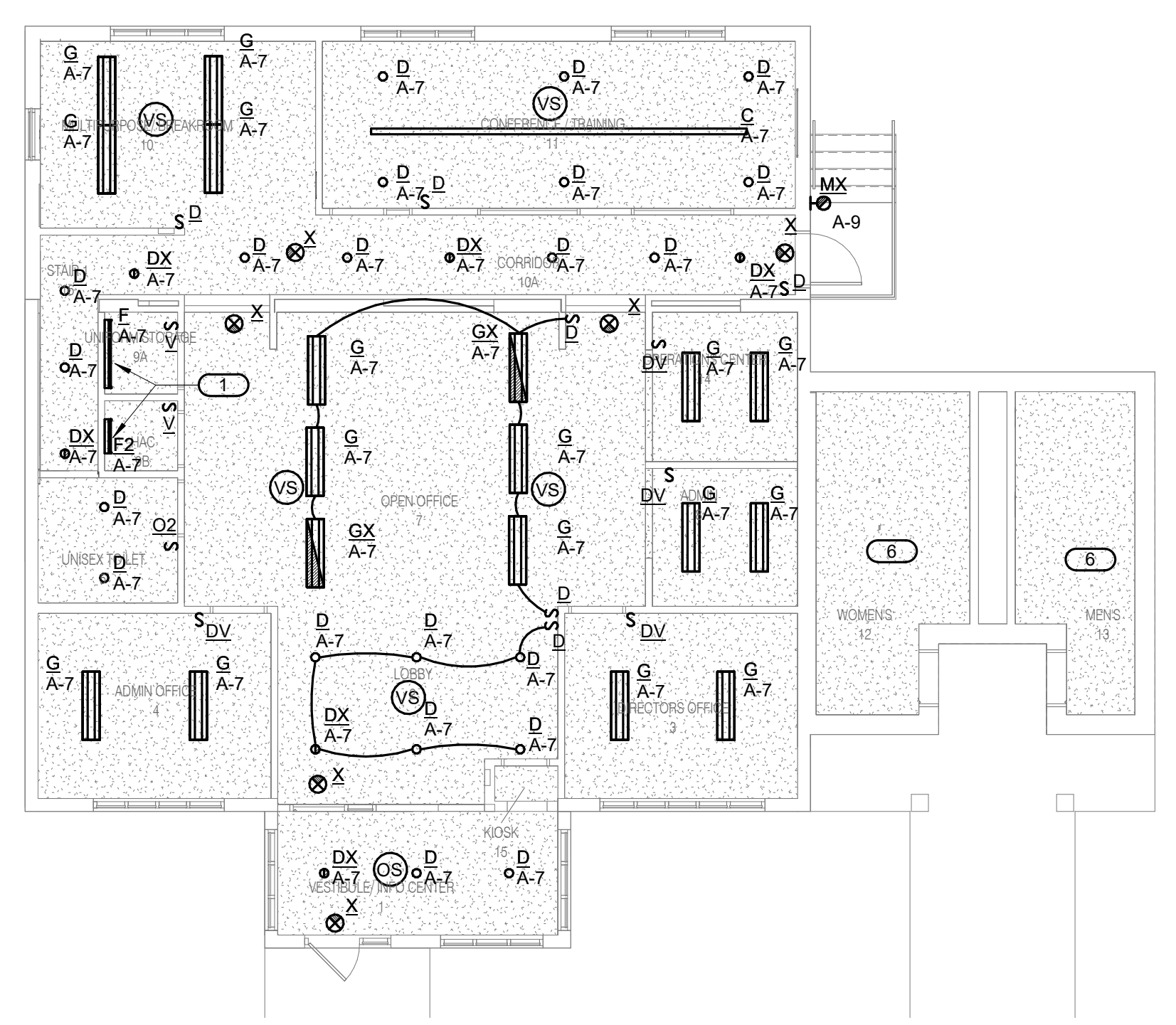
<b>CONSULTANT</b> MECHANICAL, ELECTRICAL, TECHNOLOGY & STRUCTURAL: <b>IMEG CORP.</b> 14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075		GEOTECHNICAL: <b>AET</b> 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397		COST ESTIMATING: <b>CPMI</b> 3265 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663		<b>ARCHITECT/ENGINEER OF RECORD</b>  <b>ANDERSON</b> 13605 1st Ave. N. #100 Plymouth, MN 55441 P 763.412.4000   F 763.412.4090   ae-mn.com Anderson Engineering of Minnesota, LLC   Proj # 16409		<b>STAMP</b> 		Office of Construction and Facilities Management  <b>VA</b> U.S. Department of Veterans Affairs		Drawing Title <b>FIRST FLOOR - DEMOLITION - ADMINISTRATION &amp; MAINTENANCE</b>		Phase <b>BID DOCUMENTS</b>		Project Title <b>BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS</b>		Project Number <b>884-CM-3015</b>	
Revisions:		Date:		Approved:		NON-SPRINKLERED		Location <b>STURGIS, SOUTH DAKOTA</b>		Issue Date <b>10/31/22</b>		Checked Checker		Drawn Author		Drawing Number <b>E200</b> Dwg. 67 OF 84			



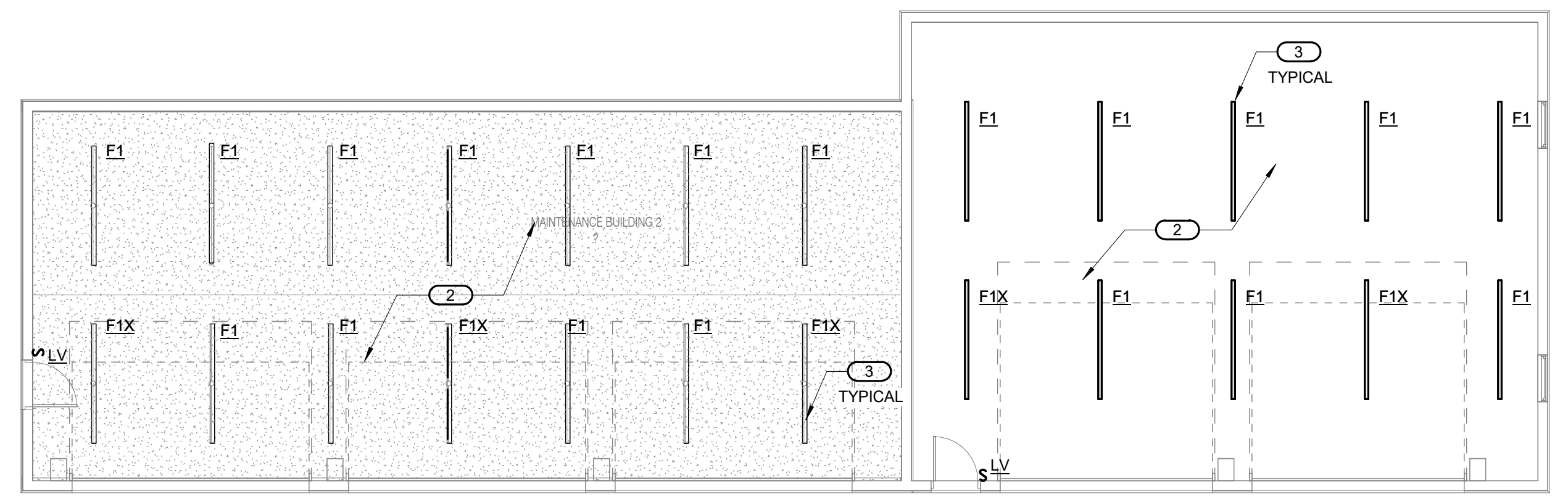
**1 BASEMENT FLOOR - LIGHTING - ADMINISTRATION**  
1/8" = 1'-0"



**3 FIRST FLOOR - LIGHTING - MAINTENANCE**  
1/8" = 1'-0"



**2 FIRST FLOOR - LIGHTING - ADMINISTRATION**  
1/8" = 1'-0"



**4 FIRST FLOOR - LIGHTING - MAINTENANCE BUILDING 2**  
1/8" = 1'-0"

**GENERAL NOTES:**  
1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LIGHT FIXTURES.  
2. ALL EMERGENCY BATTERY DRIVERS AND EMERGENCY LIGHTS I.E. FIXTURES DESIGNATED WITH AN 'X' SUFFIX (SUCH AS 'AX') AND TYPE 'EM' AND EXIT SIGNS SHALL BE CIRCUITED TO UNSWITCHED HOT LEG OF ADJACENT LIGHTING CIRCUIT PER N.E.C. ARTICLES 700 AND 701, UNLESS OTHERWISE NOTED.

**KEYED NOTES:**  
1. FIXTURE SHALL BE WALL MOUNTED AT 7'0" ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE.  
2. CONNECT TO EXISTING LIGHTING CIRCUIT SERVING AREA WITH (2)#12.# 12G-34°C.  
3. TYPE 'F1' LIGHT FIXTURES TO BE CHAIN HUNG AT 9'0" ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE.  
4. TYPE 'F' LIGHT FIXTURES TO BE CHAIN HUNG AT 9'0" ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE.  
5. TYPE 'F1' FIXTURES TO BE SURFACE MOUNTED.  
6. EXISTING DEVICES THIS AREA TO REMAIN.

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CONSULTANT		
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ALEXANDER  
QUANIT  
10/31/2022

Office of Construction and Facilities Management

**VA** U.S. Department of Veterans Affairs

Drawing Title <b>FIRST FLOOR - LIGHTING - ADMINISTRATION &amp; MAINTENANCE</b>
Approved:

Phase <b>BID DOCUMENTS</b>
<b>NON-SPRINKLERED</b>

Project Title BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS		
Location STURGIS, SOUTH DAKOTA		
Issue Date 10/31/22	Checked Checker	Drawn Author

Project Number <b>884-CM-3015</b>
Building Number
Drawing Number <b>E300</b>
Dwg. 68 OF 84

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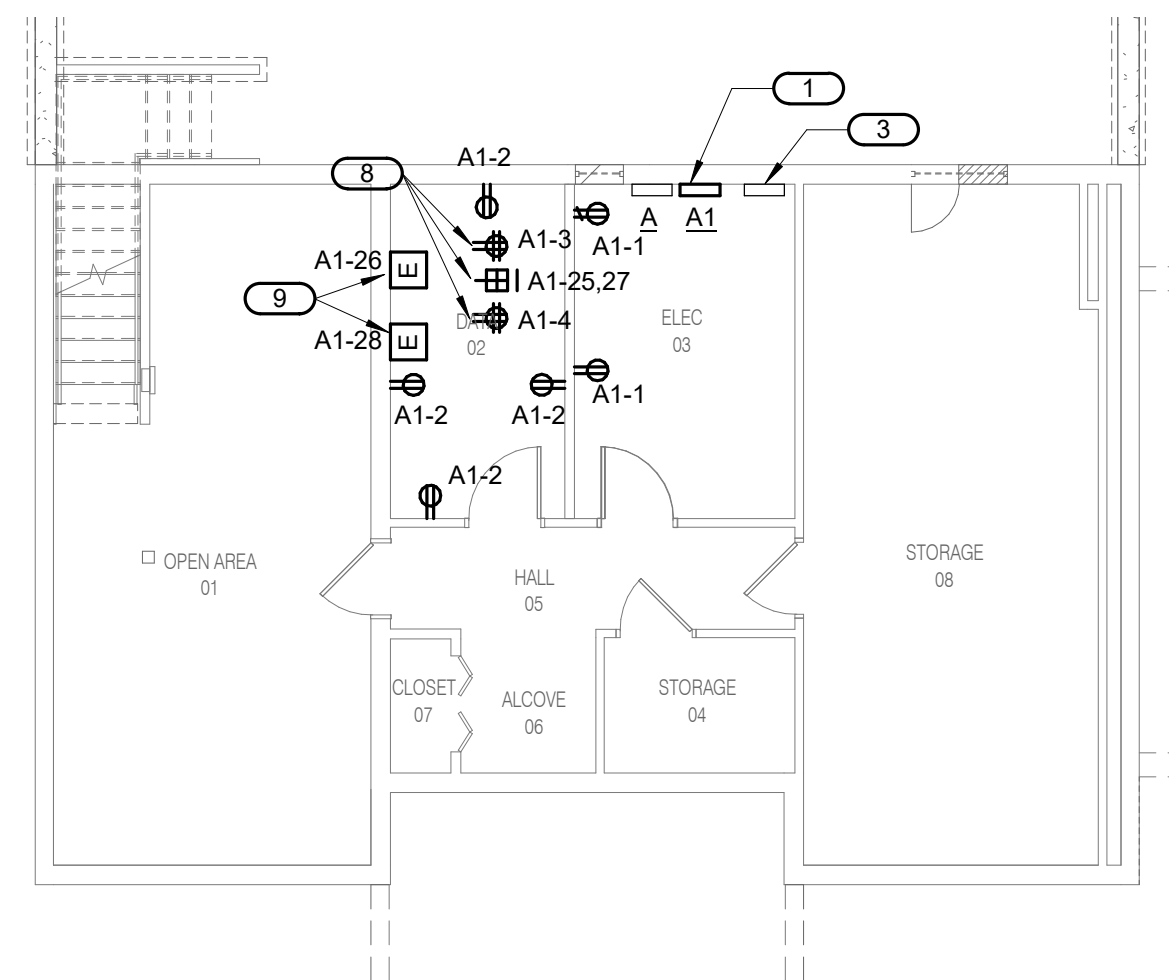
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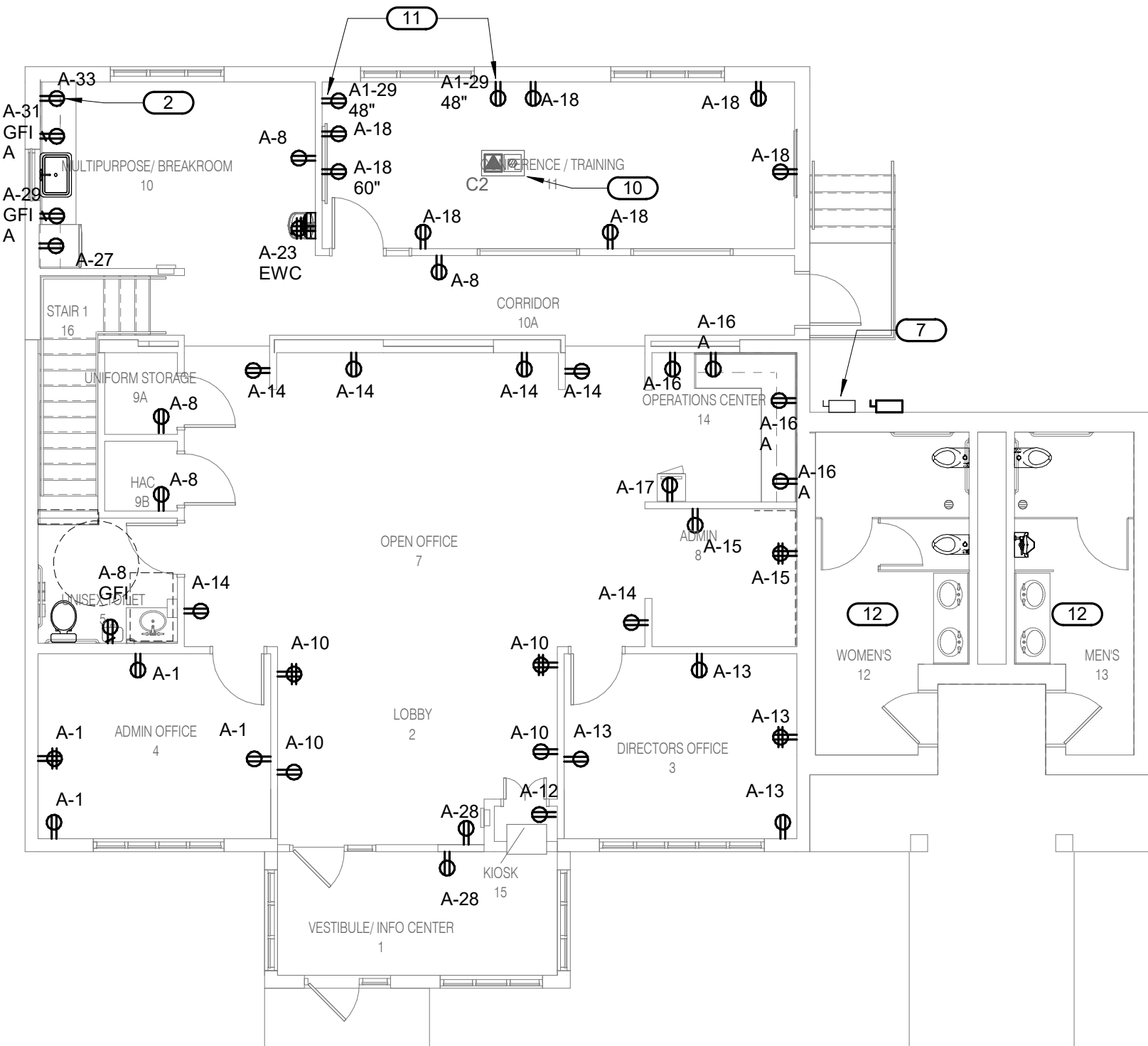
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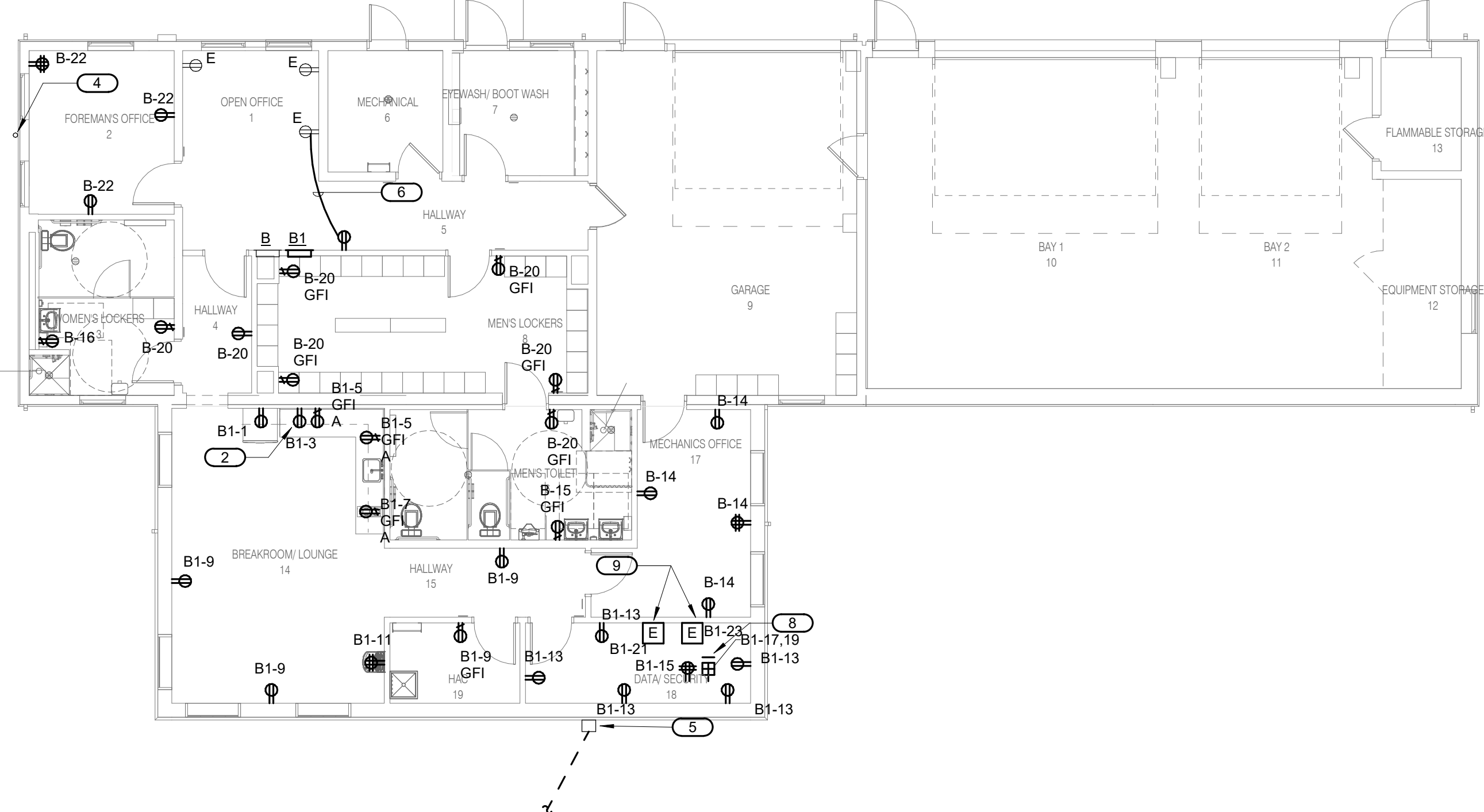
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**1 BASEMENT FLOOR - POWER - ADMINISTRATION**  
1/8" = 1'-0"



**2 FIRST FLOOR - POWER - ADMINISTRATION**  
1/8" = 1'-0"



**3 FIRST FLOOR - POWER - MAINTENANCE**  
1/8" = 1'-0"

- GENERAL NOTES:**
- REFER TO SHEET E000 FOR LEGEND, ABBREVIATIONS, AND PROJECT NOTES.
  - THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE GENERAL EXTENT OF WORK. THE CONTRACTOR SHALL PROVIDE ALL PULL BOXES, JUNCTION BOXES, AND ALL MATERIALS AND LABOR FOR A COMPLETE AND FUNCTIONAL SYSTEM.
  - REFER TO HVAC CIRCUITING SCHEDULE FOR MECHANICAL EQUIPMENT CONNECTIONS, DISCONNECT, AND BRANCH CIRCUIT REQUIREMENTS.
  - VERIFY REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH APPROVED SHOP DRAWING SUBMITTALS PRIOR TO ROUGH IN. NOTIFY ARCHITECT/ENGINEER OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND CONTRACT DRAWINGS.
  - COORDINATE MOUNTING HEIGHTS AND ROUGH IN REQUIREMENTS OF DEVICES MOUNTED OVER COUNTERTOPS, IN MILLWORK, AND PROVIDED TO POWER EQUIPMENT PROVIDED BY OTHERS WITH ARCHITECTURAL ELEVATIONS AND OTHER TRADES INSTALLING THE WORK.
  - CONTRACTOR SHALL DERATE CONDUCTORS AS REQUIRED BY N.E.C. WHEN GROUPED IN COMMON RACEWAY.
  - ALL DEVICES WITH GFI SHALL BE INDEPENDENT GFI DEVICES. WIRING THROUGH IS NOT PERMITTED.
  - REFER TO TECHNOLOGY DRAWINGS AND DETAILS FOR REQUIREMENTS FOR GROUNDING REQUIREMENTS, ADDITIONAL BACKBOXES AND SIZES, CONDUITS AND SIZES, CONDUIT SLEEVES AND SIZES FOR DATA CABLES, CABLE TRAYS AND ROUTING, AND ADDITIONAL INFRASTRUCTURE REQUIREMENTS FOR THE COMPLETE INSTALLATION OF THE DATA NETWORK SYSTEMS, PROJECTOR SYSTEMS, FLAT PANEL DISPLAYS, SURVEILLANCE CAMERAS SYSTEMS, DOOR ACCESS SYSTEMS, ETC.
  - ELECTRICAL DEVICES MOUNTED ABOVE COUNTERS SHALL BE MOUNTED ABOVE BACKSPLASH.
  - ALL RECEPTACLES WITHIN 6'-0" OF SINKS, IN RESTROOMS AND KITCHEN AREA SHALL BE GFI PROTECTED.
  - ALL LOW VOLTAGE WIRING IN EXPOSED CEILING AREAS SHALL BE IN CONDUIT.

- KEYNOTES:**
- NEW PANEL 'A1' - EXTEND ALL LIVE CIRCUITS IN BASEMENT PANEL TO BE DEMOLISHED AND RECONNECT.
  - RECEPTACLE MOUNTED IN CASEWORK FOR MICROWAVE. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS AND DETAILS PRIOR TO ROUGH IN.
  - EXISTING SIMPLEX 4007 FIRE ALARM CONTROL PANEL TO REMAIN.
  - EXISTING CONDUIT SERVING OUTDOOR CONDENSING UNIT TO BE RELOCATED TO NEW LOCATION. EXTEND WIRE AND CONDUIT AS REQUIRED AND RE-CONNECT.
  - NEW LOCATION OF RELOCATED CONDUIT AND PULLBOX FOR FIRE ALARM CABLING. EXTEND EXISTING WIRE AND CONDUIT CONTRACTOR TO VERIFY EXISTING LOAD NO MORE THAN 7 RECEPTACLE PER CIRCUIT.
  - CONNECT NEW RECEPTACLE TO EXISTING CIRCUIT SERVING RECEPTACLE TO REMAIN WITH (2) #12, #12G-3/4" C. CONTRACTOR TO VERIFY EXISTING LOAD NO MORE THAN 7 RECEPTACLE PER CIRCUIT.
  - EXISTING MAIN DISCONNECT FOR ADMINISTRATIVE BUILDING TO BE RE-LOCATED TO NEW LOCATION AS SHOWN. EXTEND ALL EXISTING WIRE AND CONDUIT TO NEW LOCATION AND RE-CONNECT.
  - QUAD RECEPTACLES AND NEMA L6-30R RECEPTACLE MOUNTED TO TOP OF LADDER RACK.
  - ELECTRICAL CONNECTIONS FOR INTRUSION PANEL AND ACCESS CONTROL PANEL. VERIFY FINAL LOCATION WITH RESIDENT ENGINEER.
  - FLOOR BOX WITH (1) DUPLEX RECEPTACLE. REFER TO TECHNOLOGY PLANS FOR DATA CONDUIT REQUIREMENTS.
  - RECEPTACLE MOUNTED AT 48" ABOVE FINISHED FLOOR FOR ADDITIONAL INFORMATION.
  - EXISTING DEVICES THIS AREA TO REMAIN.

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Revisions:	Date:

CONSULTANT		
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IMEG CORP. 14755 PRESTON RD STE 845 DALLAS, TX 75254 (209) 786-5075	AET 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	CPMI 3265 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title

**FIRST FLOOR - POWER - ADMINISTRATION & MAINTENANCE**

Approved:

Phase

**BID DOCUMENTS**

**NON-SPRINKLERED**

Project Title

**BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS**

Location

**STURGIS, SOUTH DAKOTA**

Issue Date

**10/31/22**

Checked

Author

Project Number

**884-CM-3015**

Building Number

Drawing Number

**E400**  
Dwg. 69 OF 84

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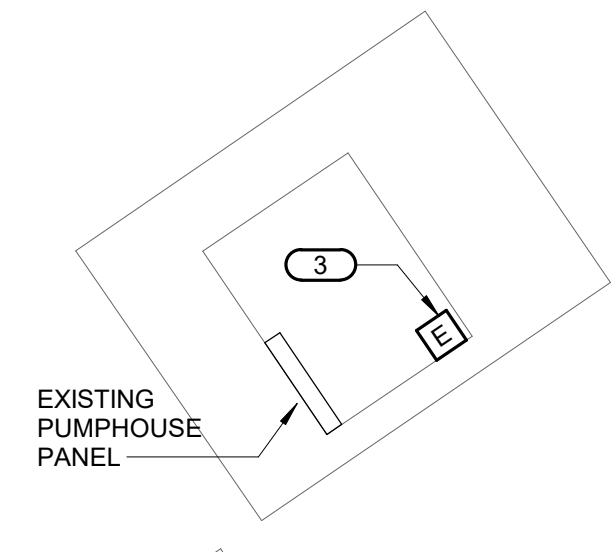
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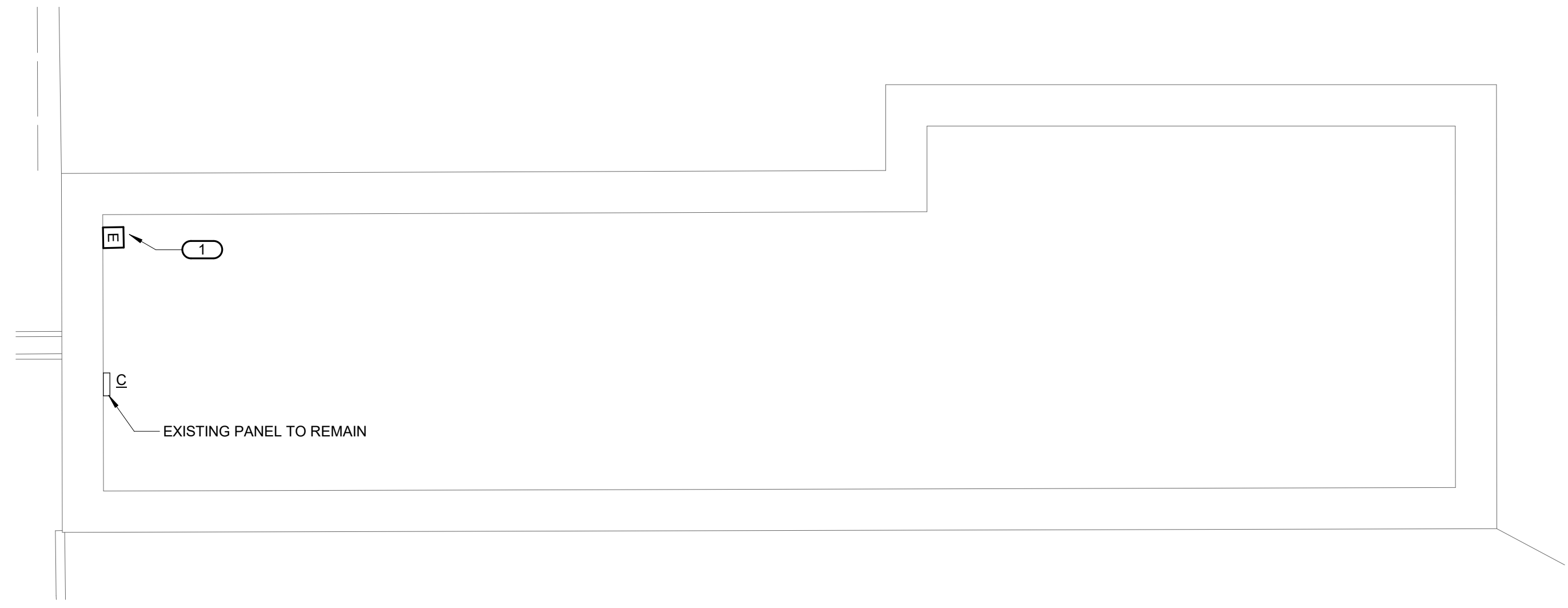
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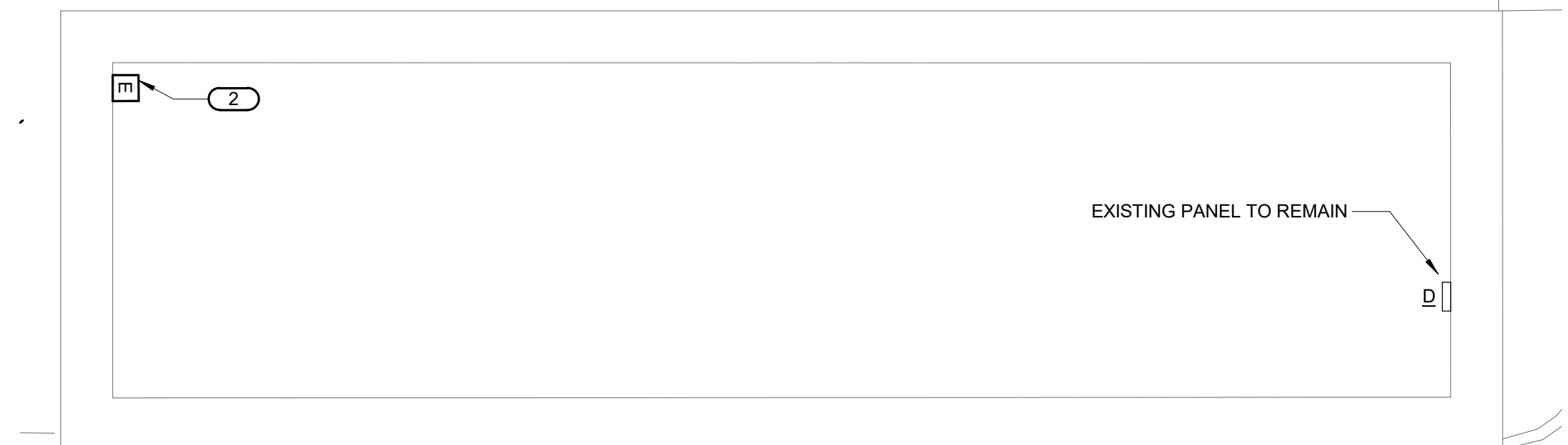
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**3 FIRST FLOOR - POWER - PUMP HOUSE**  
1/8" = 1'-0"



**1 FIRST FLOOR - POWER - MAINTENANCE BUILDING 2**  
1/8" = 1'-0"



**2 FIRST FLOOR - POWER - VEHICLE STORAGE**  
1/8" = 1'-0"

- KEYNOTES:**
- ELECTRICAL CONNECTIONS FOR SECURITY PANEL. VERIFY FINAL LOCATION WITH RESIDENT ENGINEER. CONNECT TO EXISTING SPARE 20A/1P CIRCUIT BREAKER IN PANEL 'C' WITH (2)#12,#12G-3/4"C.
  - ELECTRICAL CONNECTIONS FOR SECURITY PANEL. VERIFY FINAL LOCATION WITH RESIDENT ENGINEER. CONNECT TO NEW 20A/1P CIRCUIT BREAKER (MATCH EXISTING) IN PANEL 'D' WITH (2)#12,#12G-3/4"C.
  - ELECTRICAL CONNECTIONS FOR SECURITY PANEL. VERIFY FINAL LOCATION WITH RESIDENT ENGINEER. CONNECT TO NEW 20A/1P CIRCUIT BREAKER (MATCH EXISTING) IN EXISTING PUMPHOUSE PANEL WITH (2)#12,#12G-3/4"C.

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CONSULTANT		
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IMEG CORP. 14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075	AET 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	CPMI 3265 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

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Drawing Title	BLACK HILLS AUXILLARY BUILDINGS - POWER
Approved:	

Phase	BID DOCUMENTS
	NON-SPRINKLERED

Project Title	BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS
Location	STURGIS, SOUTH DAKOTA
Issue Date	10/31/22
Checked	
Drawn	

Project Number	884-CM-3015
Building Number	
Drawing Number	E401
Dwg.	70 OF 84

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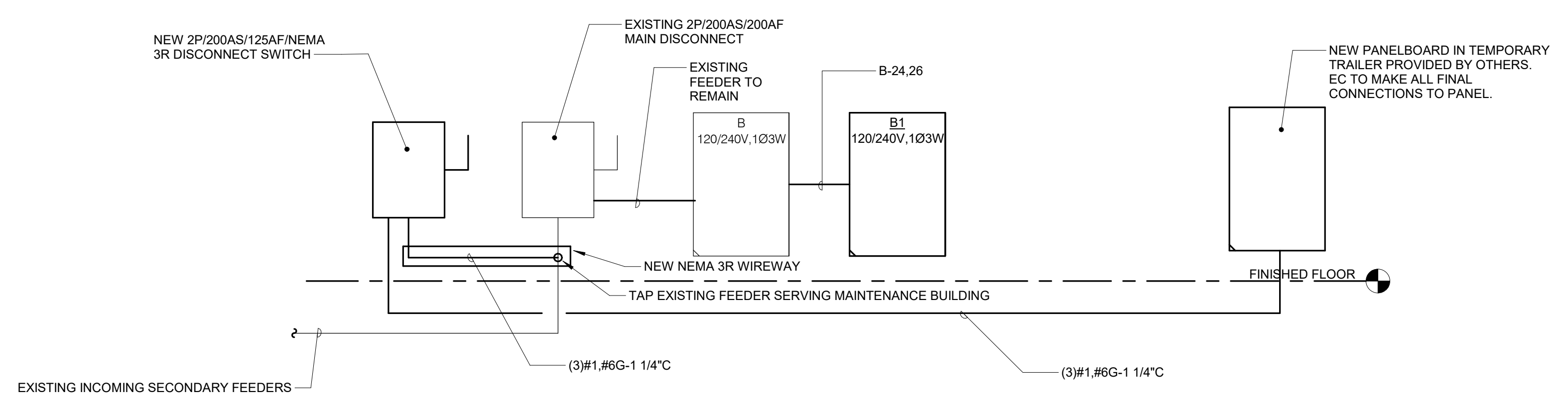
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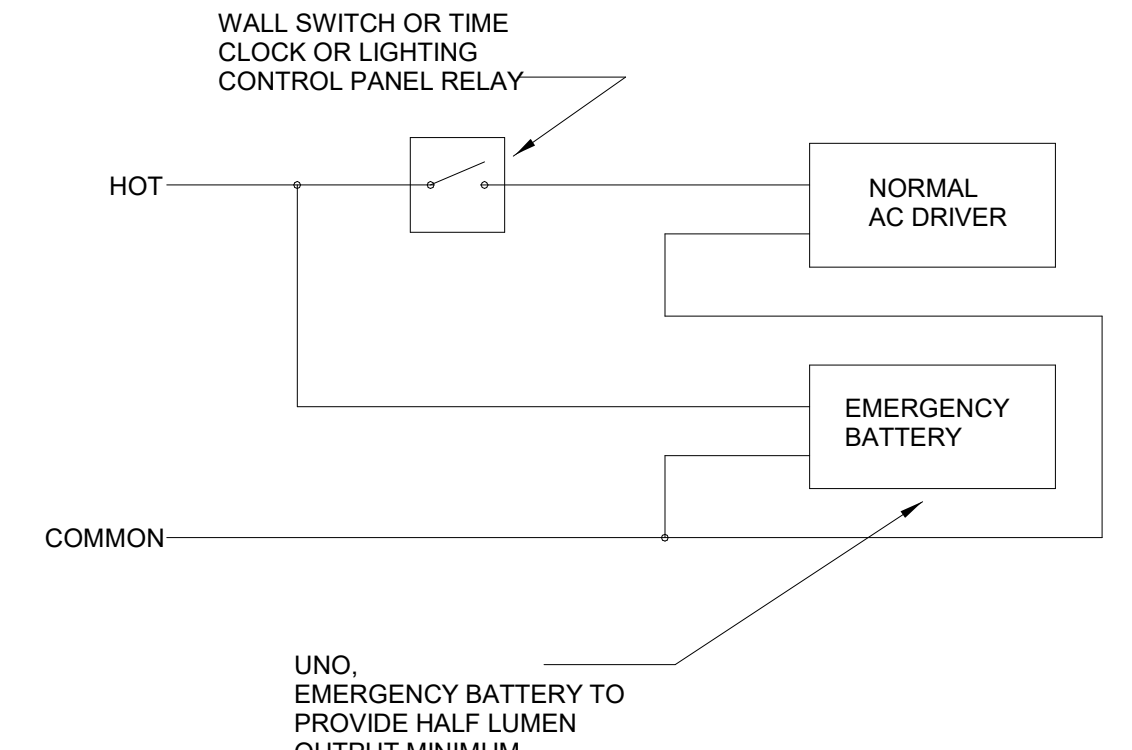
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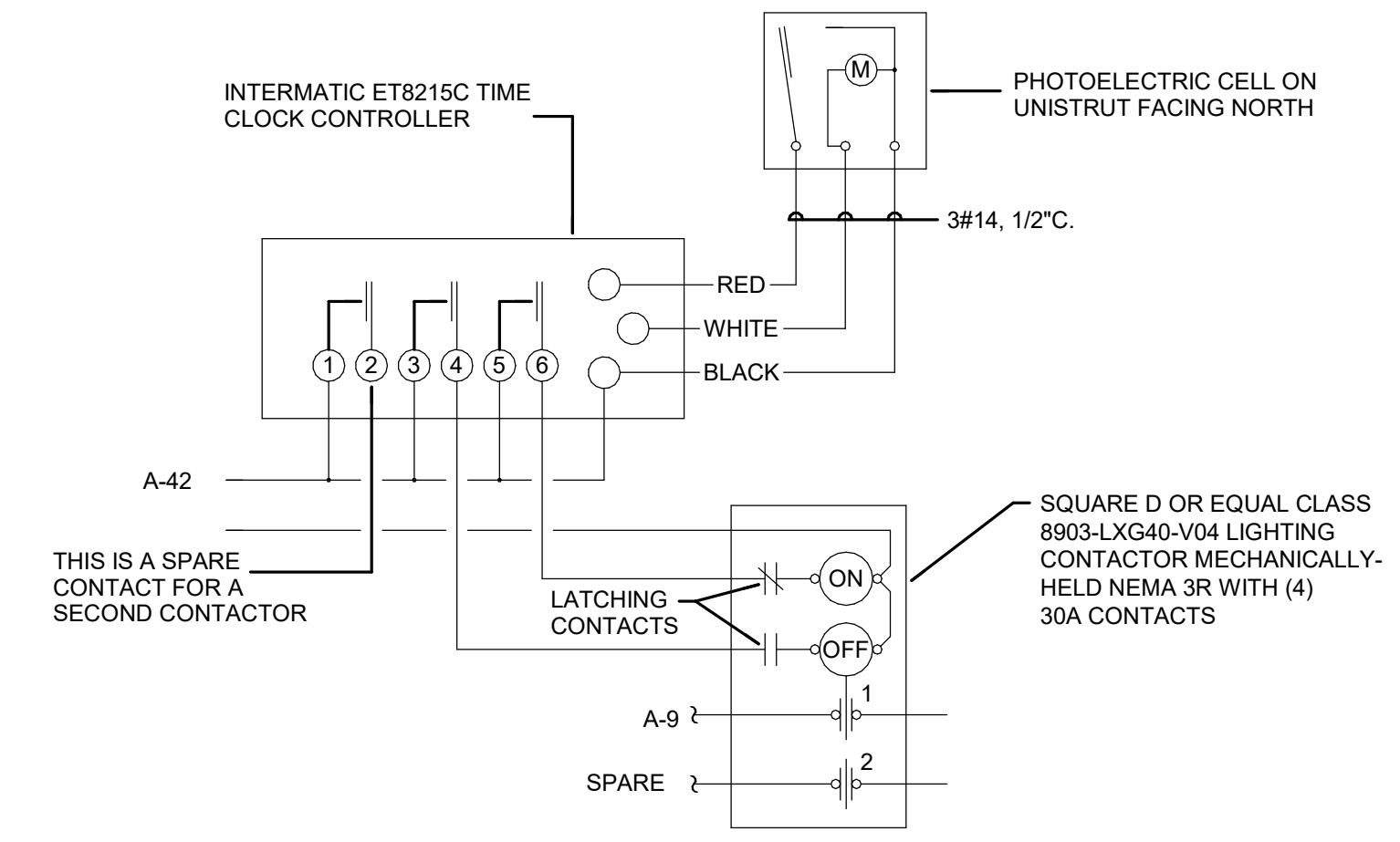
Revisions: Date:



**4 PARTIAL ELECTRICAL RISER DIAGRAM - MAINTENANCE BUILDING**  
12" = 1'-0"

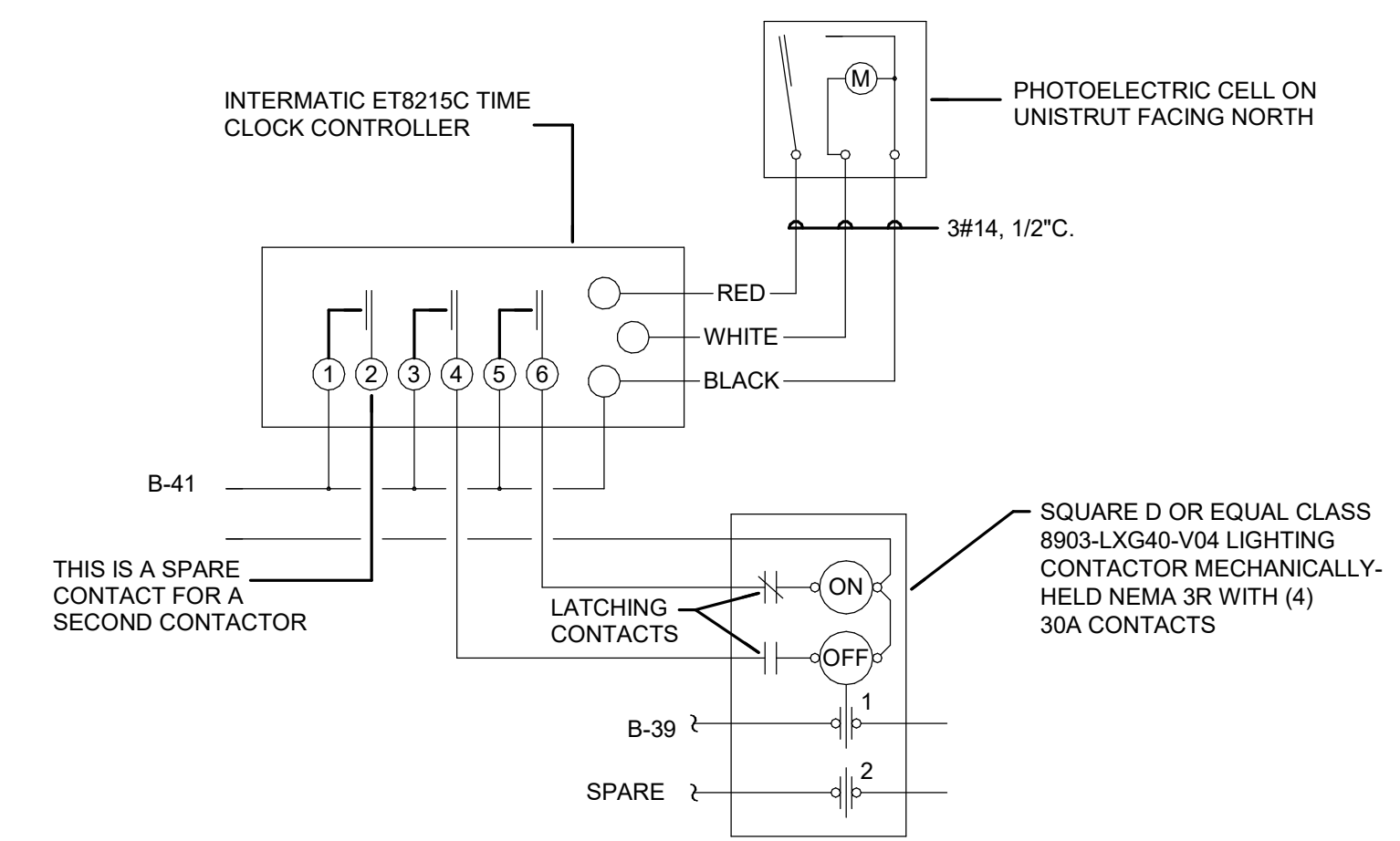


**1 EMERGENCY BATTERY WIRING DETAIL**  
NO SCALE



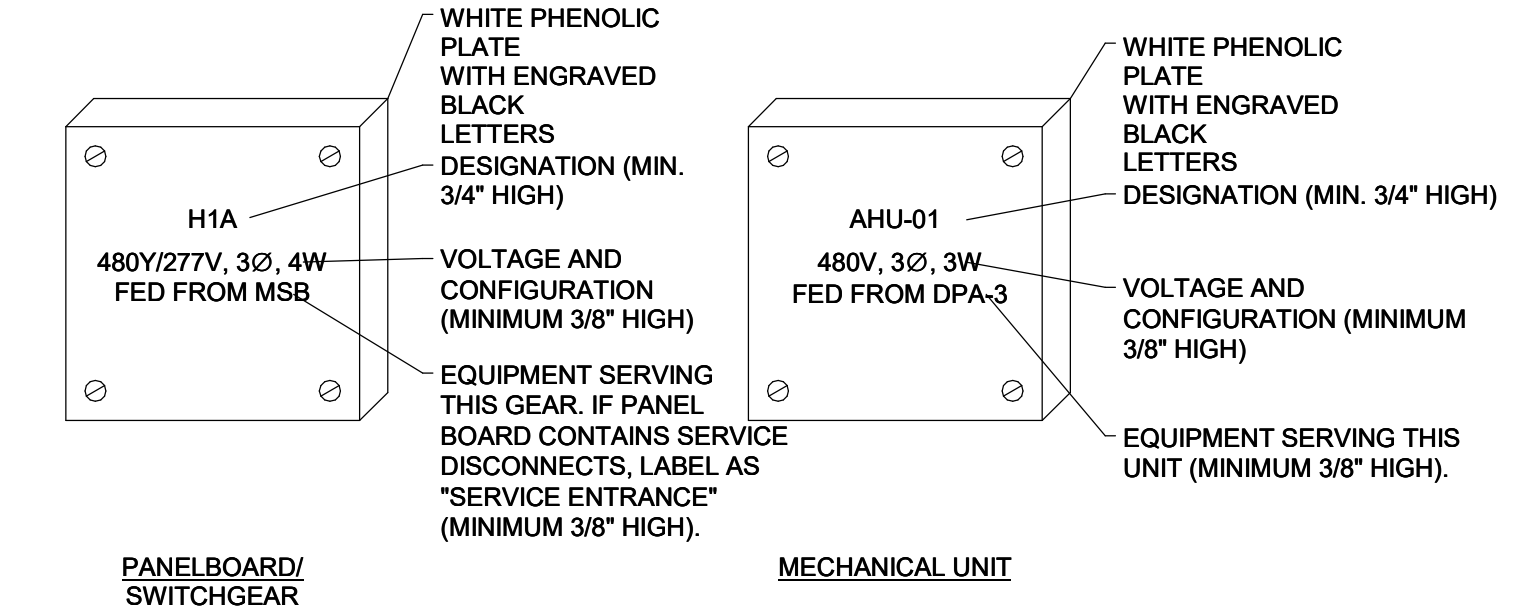
- NOTES:**
1. NEUTRALS AND GROUNDS NOT SHOWN FOR CLARITY
  2. CONTACTOR MOUNTED IN NEMA 3R ENCLOSURE
  3. PROVIDE OVERRIDE SWITCH TO OVERRIDE LIGHTS 'ON/OFF. LOCATION TO BE VERIFIED WITH OWNER.
  4. CONTACTOR CONTROLLED VIA PHOTO-CELL 'ON' AND TIMECLOCK OFF. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**5 LIGHTING CONTROL DETAIL ADMIN BUILDING**  
NO SCALE



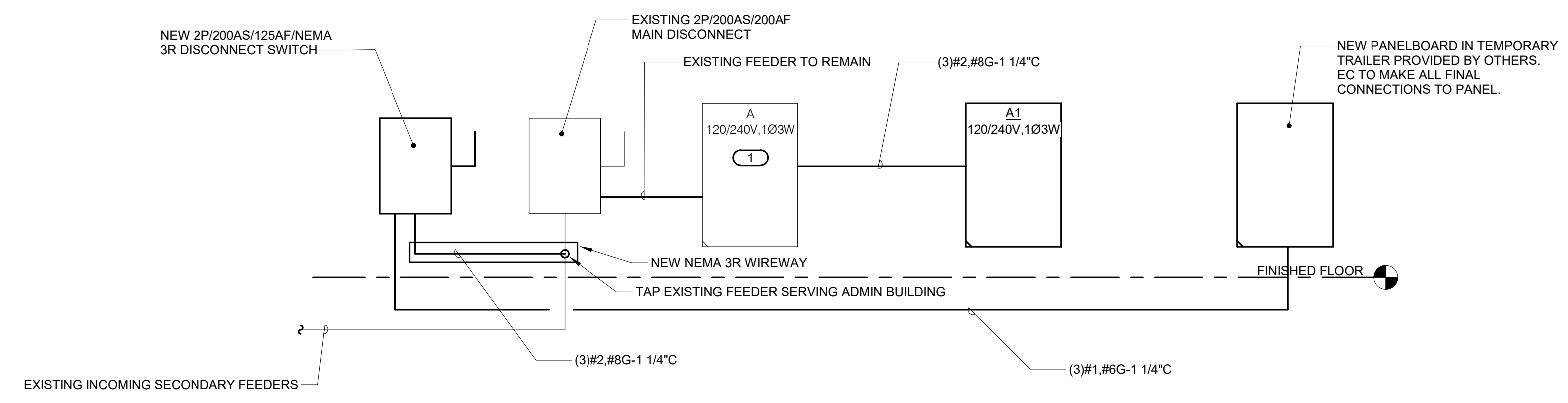
- NOTES:**
1. NEUTRALS AND GROUNDS NOT SHOWN FOR CLARITY
  2. CONTACTOR MOUNTED IN NEMA 3R ENCLOSURE
  3. PROVIDE OVERRIDE SWITCH TO OVERRIDE LIGHTS 'ON/OFF. LOCATION TO BE VERIFIED WITH OWNER.
  4. CONTACTOR CONTROLLED VIA PHOTO-CELL 'ON' AND TIMECLOCK OFF. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

**6 LIGHTING CONTROL DETAIL MAINT. BUILDING**  
NO SCALE



- NOTE:**  
ATTACH SECURELY WITH STAINLESS STEEL SCREWS. NON-CORROSIVE POP RIVETS ARE ACCEPTABLE. ADHESIVE ATTACHMENT IS NOT ACCEPTABLE.

**2 EQUIPMENT IDENTIFICATION DETAIL**  
NO SCALE



- KEYNOTES:**
1. CONNECT NEW PANEL 'A1' TO EXISTING 100A/2P CIRCUIT BREAKER MADE AVAILABLE THROUGH DEMOLITION OF EXISTING BASEMENT PANEL.

**3 PARTIAL ELECTRICAL RISER DIAGRAM - ADMIN BUILDING**  
NO SCALE

CONSULTANT		
MECHANICAL, ELECTRICAL, TECHNOLOGY & STRUCTURAL:	GEOTECHNICAL:	COST ESTIMATING:
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REGISTERED PROFESSIONAL ENGINEER  
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10/31/2022

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title  
**ELECTRICAL DETAILS**

Phase  
**BID DOCUMENTS**

Approved:

Project Title  
**BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS**

Location  
**STURGIS, SOUTH DAKOTA**

Issue Date  
**10/31/22**

Checked  
**Checker**

Drawn  
**Author**

Project Number  
**884-CM-3015**

Building Number

Drawing Number  
**E500**

Dwg. 71 OF 84



HVAC & PLUMBING CIRCUITING SCHEDULE			
DESIGNATION	CIRCUIT	DISCONNECT	
CAB-1	A-3436	NOTE #2	
AHU-2	A-3537	NOTE #2	
AHU-3	B-38	NOTE #2	
CU-AHU-2	A-3840	2P/30AS/NF/NEMA 3R & NOTE #3	
CU-AHU-3	B-4042	2P/30AS/NF/NEMA 3R & NOTE #3	
SS-1	B-3234	2P/30AS/NF/NEMA 3R & NOTE #3	
SS-2	A-3941	2P/30AS/NF/NEMA 3R & NOTE #3	
EF-1	A-30	NOTE #2	
EF-2	A-30	NOTE #2	
EF-3	B-18	NOTE #2	
EF-4	B-18	NOTE #2	
EF-5	B-18	NOTE #2	
EF-6	B-36	NOTE #2	
UH-1	B-37	NOTE #2	

NOTES:  
 1. REFER TO MECHANICAL PLANS FOR EXACT LOCATION OF ALL EQUIPMENT.  
 2. DISCONNECT SWITCH FURNISHED WITH UNIT.  
 3. ASSOCIATED FAN COIL CASSETTE UNIT BELOW SERVED VIA POWER FEED PROVIDED FOR CONDENSING UNIT HEAT PUMP. FROM CU/HP ROUTE 1" CONDUIT TO FCUCASSETTE BELOW AND INTERWIRE AS REQUIRED. VERIFY REQUIREMENTS WITH MECHANICAL CONTRACTOR AND REFER TO MECHANICAL PLANS FOR UNIT LOCATION BELOW.

BRANCH CIRCUIT SCHEDULE					
OCF	CIRCUIT	DISTANCE	OCF	CIRCUIT	DISTANCE
20/1	2 #12, #12G -3/4"C	55	70/1	2 #4, #8G -1"C	126
20/2	2 #12, #12G -3/4"C	97	70/2	2 #4, #8G -1"C	173
20/2N	3 #12, #12G -3/4"C	97	70/2N	3 #4, #8G -1"C	173
20/3	3 #12, #12G -3/4"C	112	70/3	3 #4, #8G -1"C	253
20/3N	4 #12, #12G -3/4"C	112	70/3N	4 #4, #8G -1 1/4"C	253
30/1	2 #10, #10G -3/4"C	59	80/1	2 #4, #8G -1"C	139
30/2	2 #10, #10G -3/4"C	64	80/2	2 #4, #8G -1"C	191
30/2N	3 #10, #10G -3/4"C	64	80/2N	3 #4, #8G -1"C	191
30/3	3 #10, #10G -3/4"C	119	80/3	3 #4, #8G -1"C	280
30/3N	4 #10, #10G -3/4"C	119	80/3N	4 #4, #8G -1 1/4"C	280
40/1	2 #8, #10G -3/4"C	71	90/1	2 #3, #8G -1"C	156
40/2	2 #8, #10G -3/4"C	77	90/2	2 #3, #8G -1 1/4"C	215
40/2N	3 #8, #10G -3/4"C	77	90/2N	3 #3, #8G -1 1/4"C	215
40/3	3 #8, #10G -3/4"C	143	90/3	3 #3, #8G -1 1/4"C	312
40/3N	4 #8, #10G -3/4"C	143	90/3N	4 #3, #8G -1 1/4"C	312
50/1	2 #8, #10G -3/4"C	88	100/1	2 #3, #8G -1"C	177
50/2	2 #8, #10G -3/4"C	99	100/2	2 #3, #8G -1 1/4"C	243
50/2N	3 #8, #10G -3/4"C	99	100/2N	3 #3, #8G -1 1/4"C	243
50/3	3 #8, #10G -3/4"C	176	100/3	3 #3, #8G -1 1/4"C	354
50/3N	4 #8, #10G -3/4"C	176	100/3N	4 #3, #8G -1 1/4"C	354
60/1	2 #6, #10G -3/4"C	116	100/3N	4 #3, #8G -1 1/4"C	354
60/2	2 #6, #10G -3/4"C	127			
60/2N	3 #6, #10G -1"C	127			
60/3	3 #6, #10G -1"C	233			
60/3N	4 #6, #10G -1"C	233			

NOTES:  
 1. ALL BRANCH CIRCUITS ARE COPPER.  
 2. VOLTAGE DROP IS BASED ON 3% FOR BRANCH CIRCUITS.  
 3. FOR OCFs NOT LISTED, USE NEXT LARGER SIZE.  
 4. 'N' DENOTES A NEUTRAL LINE.  
 5. ALL DISTANCES ARE CALCULATED AT 120/208V. FOR 277/480V, DOUBLE VALUES FOR AN ESTIMATED DISTANCE.

PANEL NAME: A1									
TYPE: NEMA PB 1 MOUNTING: SURFACE FED FROM: PANEL 'A' SCCR: 10 KA LOCATION: ELEC 03					CONNECTED 15.3 kVA MAIN: 100A MLO VOLTS: 120/240 Single PHASE: 1 WIRE: 3 DEMAND: 12.85 kVA				
Panel Notes: EXTEND ALL LIVE EXISTING LOADS TO REMAIN TO NEW PANEL LOCATION AND RE-CONNECT.									
CKT NO.	LOAD DESCRIPTION	OVERCURRENT PROTECTION AMPS	P	A	B	OVERCURRENT PROTECTION AMPS	P	LOAD DESCRIPTION	CKT NO.
1	RECEPT. ELEC ROOM	20 A	1		360	720		RECEPT. DATA ROOM	2
3	RECEPT. DATA RACK	20 A	1		360	360		RECEPT. DATA RACK	4
5	EXISTING RECEPTACLES	20 A	1	360	360			EXISTING RECEPTACLES	6
7	EXISTING RECEPTACLES	20 A	1		360	718		BASEMENT LIGHTING	8
9	EXISTING RECEPTACLES	20 A	1	360	500			EXISTING FIRE ALARM PANEL	10
11	EXISTING RECEPTACLES	20 A	1		540	540		EXISTING RECEPTACLES	12
13	EXISTING AIR HANDLER	20 A	2	2000	0			EXISTING SPARE	14
15					2000	0		EXISTING SPARE	16
17	EXISTING RECEPTACLE	20 A	1	360	540			EXISTING RECEPTACLES	18
19	EXISTING LEAD	20 A	1		330	360		EXISTING RECEPTACLES	20
21	EXISTING TELECOM EQUIPMENT	20 A	1	500	1500			EXISTING CONDENSING UNIT	22
23	EXISTING RECEPTACLES	20 A	1		360	1500			24
25	RACK TWIST LOCK	20 A	2	0	0	0		ACCESS CONTROL PANEL	26
27					0	0		INTRUSION PANEL	28
29	AV CONFERENCE ROOM	20 A	1	360	0	0		SPARE	30
31	SPARE	20 A	1		0	0		SPARE	32
33	SPARE	20 A	1	0	0	0		SPARE	34
35	SPARE	20 A	1	0	0	0		SPARE	36
37	SPARE	20 A	1	0	0	0		SPARE	38
39	SPARE	20 A	1	0	0	0		SPARE	40
41	SPARE	20 A	1	0	0	0		SPARE	42
Total Load:				7.92 kVA	7.43 kVA				
Total Amps:				66	61.9				

EXISTING PANEL NAME: B									
TYPE: NEMA PB 1 MOUNTING: RECESSED FED FROM: UTILITY SCCR: EXISTING LOCATION: MAINTENANCE					CONNECTED 16.9 kVA MAIN: 200A MLO VOLTS: 120/240 Single PHASE: 1 WIRE: 3 DEMAND: 16.87 kVA				
Panel Notes: PANELBOARD IS EXISTING TO REMAIN. PROVIDE NEW BREAKERS AS REQUIRED TO SERVE NEW LOADS. PROVIDE UPDATED TYPEWRITTEN PANEL SCHEDULE AT COMPLETION OF PROJECT.									
CKT NO.	LOAD DESCRIPTION	OVERCURRENT PROTECTION AMPS	P	A	B	OVERCURRENT PROTECTION AMPS	P	LOAD DESCRIPTION	CKT NO.
1	EXISTING LIGHTING	20 A	1	0	0	0		EXISTING LIGHTING	2
3	EXISTING UNIT HEATERS	20 A	1		0	0		EXISTING RECEPTACLES	4
5	EXISTING RECEPTACLES	20 A	1	0	0	0		EXISTING RECEPTACLES	6
7	EXISTING WELDER...	20 A	2		0	0		EXISTING OH DOOR	8
9				0	0	0		EXISTING OH DOOR	10
11	EXISTING RECEPTACLES	20 A	1		0	1209		LIGHTING	12
13	EXISTING OH DOOR	20 A	1	0	720			RECEPT. MECH OFFICE	14
15	RECEPT. MENS TOILET	20 A	1		180	180		RECEPT. WOMEN LOCKER	16
17	EXISTING RECEPTACLES	20 A	1	0	0	0		EF-3, EF-4, EF-5	18
19	LIGHTING	20 A	1		1460	1260		RECEPT. MENS LOCKER	20
21	SPARE	20 A	1	0	720			RECEPT. FOREMAN OFFICE	22
23	EXISTING AC UNIT	20 A	2		0	5566		PANEL 'B1'	24
25				0	4476				26
27	EXISTING FURNACE	20 A	1		0	0		EXISTING AIR COMPRESSOR	28
29	EXISTING WELDING HOOD	20 A	1	0	0	0			30
31	EXISTING OH DOOR RELAY	20 A	1		0	0			32
33	EXISTING WATER HEATER	20 A	2	0	0	0			34
35				0	0	0		EF-6	36
37	UH-1	20 A	1	500	0	0		AHU-3	38
39	EXTERIOR LIGHTING	20 A	1		367	0		CU-AHU3	40
41	LIGHTING CONTACTOR	20 A	1	360	0				42
Total Load:				6.72 kVA	10.21 kVA				
Total Amps:				55.97	85.1				

PANEL NAME: B1									
TYPE: NEMA PB 1 MOUNTING: RECESSED FED FROM: PANEL B SCCR: 10 KA/IC LOCATION: MAINTENANCE					CONNECTED 10 kVA MAIN: 100A MLO VOLTS: 120/240 Single PHASE: 1 WIRE: 3 DEMAND: 10.03 kVA				
Panel Notes:									
CKT NO.	LOAD DESCRIPTION	OVERCURRENT PROTECTION AMPS	P	A	B	OVERCURRENT PROTECTION AMPS	P	LOAD DESCRIPTION	CKT NO.
1	RECEPT. BREAK ROOM	20 A	1	180	0			SPARE	2
3	RECEPT. BREAK ROOM	20 A	1		180	0		SPARE	4
5	RECEPT. BREAK ROOM	20 A	1	360	0			SPARE	6
7	RECEPT. BREAK ROOM	20 A	1		180	0		SPARE	8
9	RECEPT. BREAK ROOM	20 A	1	720	0			SPARE	10
11	EWB (NOTE #1)	20 A	1		360	0		SPARE	12
13	RECEPT. DATA	20 A	1	900				SPACE	14
15	RECEPT. DATA RACK	20 A	1		360			SPACE	16
17	DATA RACK TWIST LOCK	30 A	2	2496				SPACE	18
19					2496			SPACE	20
21	INTRUSION PANEL	20 A	1	900				SPACE	22
23	ACCESS CONTROL PANEL	20 A	1		900			SPACE	24
Total Load:				5.56 kVA	4.48 kVA				
Total Amps:				46.3	37.3				

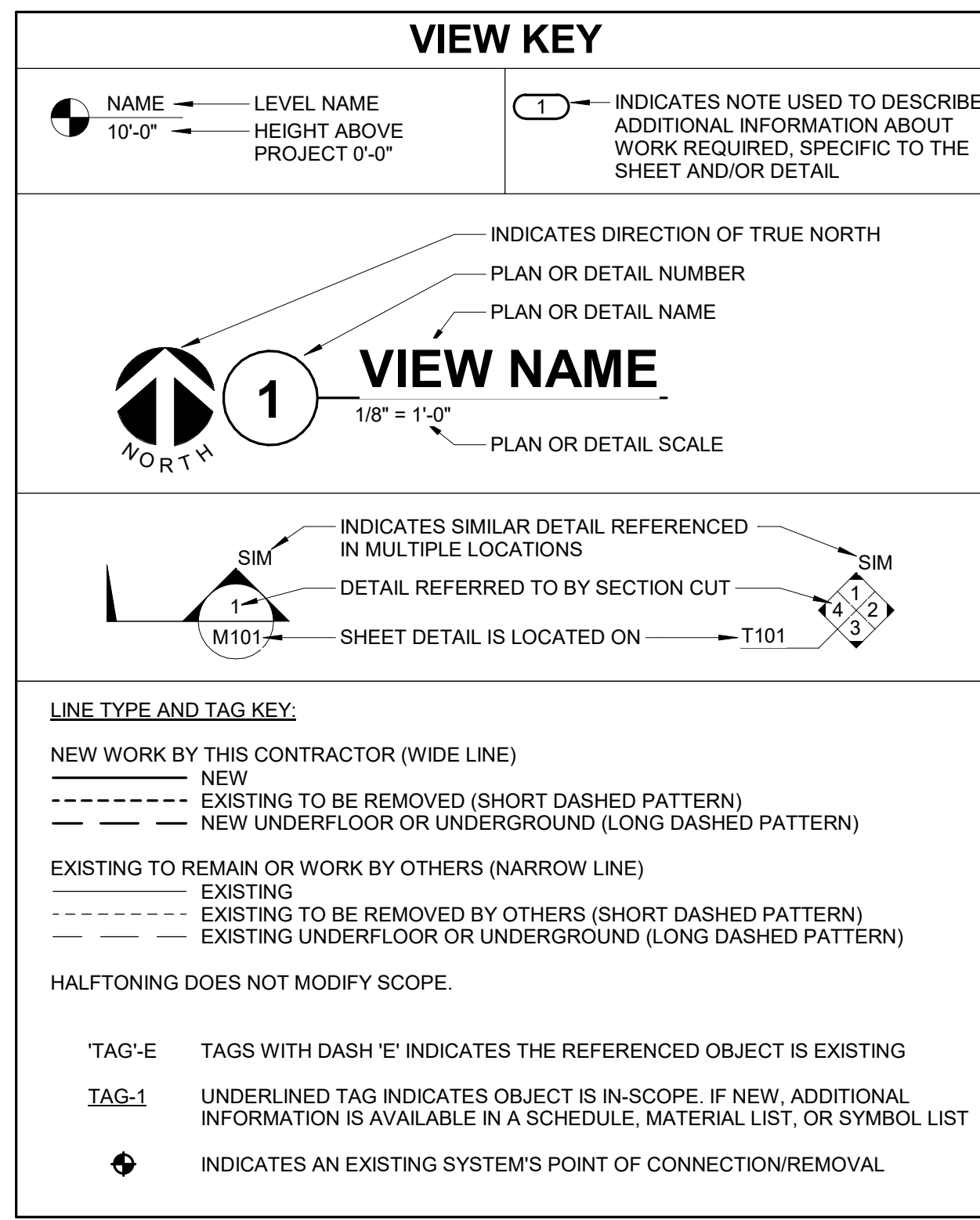
LED LUMINAIRE SCHEDULE			
(DESC) DOOR: FA - FLAT ALUMINUM FS - FLAT STEEL RA - REGRESSED ALUMINUM RS - REGRESSED STEEL FINISH: PAF - PAINT AFTER FABRICATION CFS-A - COLOR-FINISH SELECTION BY ARCHITECT	DISTRIBUTION: II - ANSI/IES TYPE 2 DISTRIBUTION III - ANSI/IES TYPE 3 DISTRIBUTION IV - ANSI/IES TYPE 4 DISTRIBUTION V - ANSI/IES TYPE 5 DISTRIBUTION	BEAMWIDTH: NSP - VERY NARROW SPOT SP - SPOT MD - MEDIUM WD - WIDE VWD - VERY WIDE WW - WALL WASH	(L/L) LENS/LOUVER: A - 1/2" ACRYLIC B - BAFFLE/LOUVER C - CLEAR ALZAK F - FROSTED ACRYLIC G - TEMPERED GLASS K - KSH12 1/2" ACRYLIC
(MTG) MOUNTING: CL - CEILING SURFACE CV - COVE FR - FLANGED RECESSED P - PERIMETER PL - POLE	RE - RECESSED SP - SUSPENDED UC - UNDER CABINET WL - WALL O - OTHER (SEE DESCRIPTION)	HL - HIGH/LOW (100%/50%) STEP DIM LINE - LINE VOLTAGE DIMMING ML - MULTILEVEL SWITCHING	(WATT) PER: FIX - FIXTURE, FT - FOOT, LAMP RGB - COLOR CHANGING LED RBBW - COLOR CHANGING + WHITE RBSA - COLOR CHANGING + AMBER RLED - RETROFIT LED WLED - WARM DIM LED
(TYPE) DRIVER: 0-10V - 0-10V DIMMING DALI - DIGITAL ADDRESSABLE DMX - DIGITAL MULTIPLEX	EB - ELECTRONIC ELV - ELECTRONIC LOW VOLTAGE EM - EMERGENCY BATTERY		MV - MULTI-VOLTAGE ELECTRONIC REM - REMOTE 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 OF DESIGN.

VERIFY AND COORDINATE ALL CEILING TYPES WITH LUMINAIRE MOUNTING AND TRIM REQUIREMENTS PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER. CONFIRM ALL COLORS AND FINISHES OF ALL LUMINAIRE COMPONENTS WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER. UNLESS INDICATED ON LIGHTING PLANS OR BELOW, REFER TO ARCHITECTURAL AND INTERIOR DESIGN ELEVATIONS, SECTIONS AND DETAILS FOR ALL SUSPENDED AND WALL MOUNTED LUMINAIRE MOUNTING HEIGHTS.

INTERIOR CORRELATED COLOR TEMPERATURE: 4000K, COLOR RENDERING INDEX (CRI) AT OR ABOVE 80, UNLESS NOTED OTHERWISE.  
 EXTERIOR CORRELATED COLOR TEMPERATURE: 4000K, COLOR RENDERING INDEX (CRI) AT OR ABOVE 80, UNLESS NOTED OTHERWISE.

ITEM	DESCRIPTION	L/L	MTG	DIMENSIONS			WATT	ANSI WATT S	PER	TYPE	DELIVERED LUMENS (MIN)	VOLTS	DRIVER		MANUFACTURER AND MODEL
				L	W	H							DIAM.	5 W	
C	RECESSED LINEAR LED, 479 LUMENS PER FOOT, FLUSH LENS, ALUMINUM HOUSING, FLANGE KIT FOR GYPSUM BOARD CEILING MOUNTING AND DIMMING LED DRIVER.	RE	22'-0"	4"	2"						479 LUMENS	120 V	0-10V		FINELITE #HP4R-DZ-8-840-F-120-SC-FC-10%-SF
D	6" DIAMETER RECESSED LED DOWNLIGHT, 2000 LUMEN OUTPUT, SEMI-SPECULAR ALZAK REFLECTOR, WHITE TRIM RING, ALUMINUM MOUNTING FRAME, AND DIMMABLE LED DRIVER.	RE		9 1/2"	6"		20 W	FIX	LED	2000	120 V	0-10V		GOTHAM #EV06-40/20-AR-MWD-LSS-MVOLT-EZ10	
DX	SIMILAR TO TYPE 'D' EXCEPT WITH EMERGENCY BATTERY PACK	RE		9 1/2"	6"		20 W	FIX	LED	2000	120 V	0-10V		GOTHAM #EV06-40/20-AR-MWD-LSS-MVOLT-EZ10-ELSD	
F	PENDANT MOUNTED LED LIGHT FIXTURE, FROSTED DIFFUSED LENS, STEEL HOUSING, WHITE FINISH, AIRCRAFT CABLE SUSPENSION AND DIMMABLE LED DRIVER.	SP	4'-0"	2 3/4"	2 3/4"		34 W	FIX	LED	5000	120 V	0-10V		LITHONIA #ZLN-L48-5000LM-FST-MVOLT-40K-80CRI-WH-ZACVH-M100	
F1	SIMILAR TO TYPE 'F' EXCEPT 8' LONG	SP	8'-0"	2 3/4"	2 3/4"		68 W	FIX	LED	10000	120 V	0-10V		LITHONIA #ZLN-L96-10000LM-FST-MVOLT-40K-80CRI-WH-ZACVH	
FIX	SIMILAR TO TYPE 'F1' EXCEPT WITH EMERGENCY BATTERY PACK	SP	8'-0"	2 3/4"	2 3/4"		68 W	FIX	LED	10000	120 V	0-10V		LITHONIA #ZLN-L96-10000LM-FST-MVOLT-40K-80CRI-E15WLCF-WH-ZACVH	
F2	SIMILAR TO TYPE 'F' EXCEPT 2' LONG	SP	2'-0"	2 3/4"	2 3/4"		17 W	FIX	LED	2500	120 V	0-10V		LITHONIA #ZLN-L24-2500LM-FST-MVOLT-40K-80CRI-E15WLCF-WH-ZACVH	
FX	SIMILAR TO TYPE 'F' EXCEPT WITH EMERGENCY BATTERY PACK	SP	4'-0"	2 3/4"	2 3/4"		34 W	FIX	LED	5000	120 V	0-10V		LITHONIA #ZLN-L48-5000LM-FST-MVOLT-40K-80CRI-E15WLCF-WH-ZACVH	
G	RECESSED 1X4 INDIRECT LIGHT FIXTURE, 4800 LUMEN, ACRYLIC DIFFUSER, STEEL HOUSING, FLANGE KIT FOR MOUNTING IN GYPSUM BOARD CEILING AND DIMMABLE LED DRIVER.	RE	4'-0"	1'-0"	5 1/2"		40 W	FIX	LED	4800	120 V	0-10V		LITHONIA #BLT4-RB-A-48L-ADP-EZ1-LP840-DGA	
GX	SIMILAR TO TYPE 'G' EXCEPT WITH EMERGENCY BATTERY PACK	RE	4'-0"	1'-0"	5 1/2"		40 W	FIX	LED	4800	120 V	0-10V		LITHONIA #BLT4-RB-A-48L-ADP-EZ1-LP840-DGA-EL14L	
H	SURFACE MOUNTED 1X4 LOW PROFILE WRAPAROUND FIXTURE, POLYCARBONATE DIFFUSER, STEEL HOUSING, 5000 LUMEN PACKAGE AND DIMMING LED DRIVER.	RE	4'-0"	1'-0"	4 1/2"		49 W	FIX	LED	5000	120 V	0-10V		LITHONIA #ML4W-48-ALOG-SEF-840-MVOLT	
M	LED WALL PACK, ACRYLIC LENS, DIE-CAST ALUMINUM HOUSING, 3000 LUMENS, LED DRIVER, BRONZE FINISH AND LED DRIVER.														

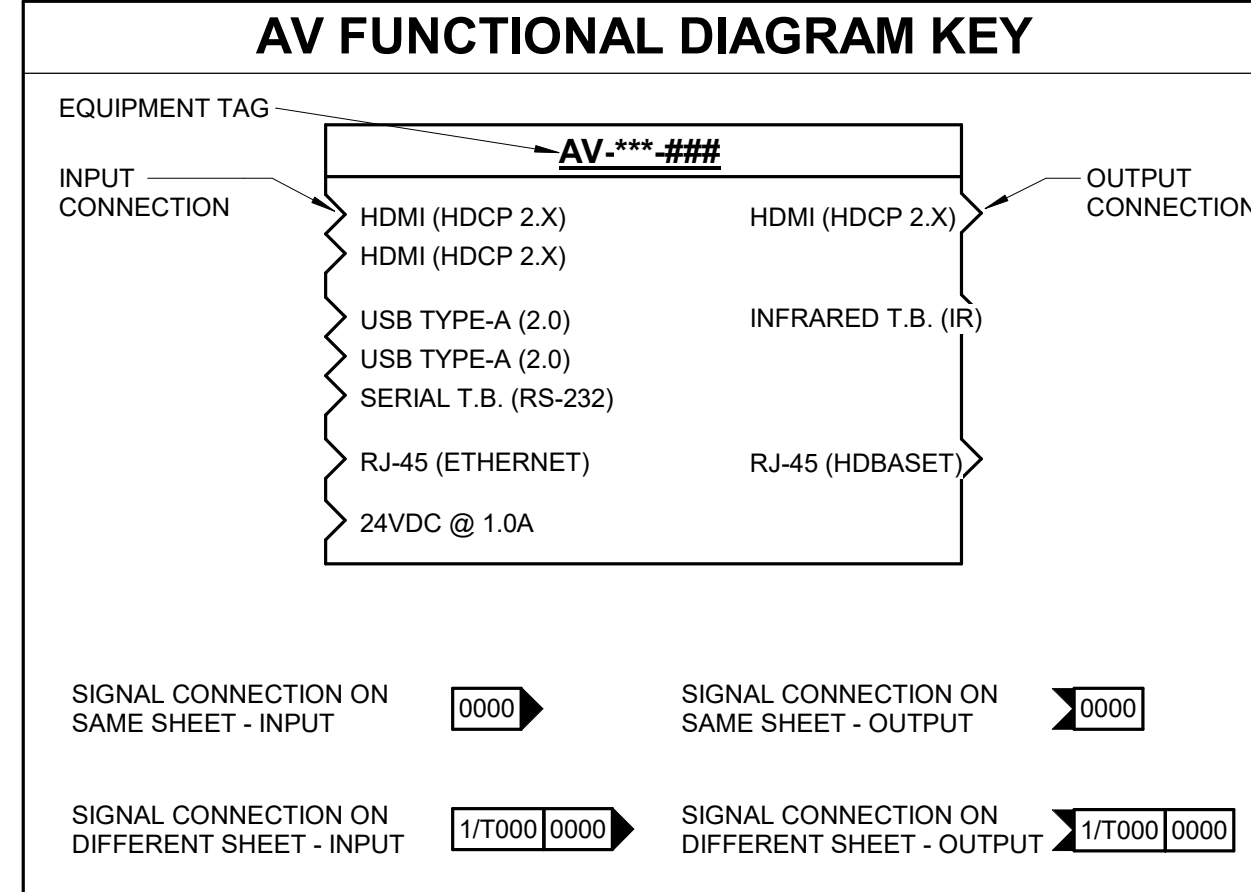


### CONTRACTOR ABBREVIATION KEY

ABBR:	DESCRIPTION:
A.C.	ASBESTOS ABATEMENT CONTRACTOR
A.V.C.	AUDIOVISUAL CONTRACTOR
C.C.	CIVIL CONTRACTOR
C.M.	CONSTRUCTION MANAGER
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
S.C.	SECURITY CONTRACTOR
T.C.	TECHNOLOGY CONTRACTOR
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR
V.G.	VENTILATION CONTRACTOR
R.E.	RESIDENT ENGINEER

### TELECOM ROOM REFERENCES

TELECOM ROOM	DETAIL / SHEET REFERENCE	FLOOR PLAN REFERENCE	ARCH ROOM NUMBER	BUILDING
IDF-1	3/T103	2/T103	DATA/SECURITY 1B	MAINTAINANCE BLDG
MDF-1	3/T101	2/T101	DATA 02	ADMINISTRATION BLDG



### TECHNOLOGY SHEET INDEX

T000	TECHNOLOGY COVERSHEET
T100	TECHNOLOGY SITE PLAN
T101	BASEMENT FLOOR ADMIN - DEMO AND NEW
T102	FIRST FLOOR ADMIN - DEMO AND NEW
T103	FIRST FLOOR MAINTENANCE - DEMO AND NEW
T104	PUMP HOUSE, VEHICLE STORAGE & SECONDARY MAINTENANCE BUILDINGS NEW
T400	TECHNOLOGY DETAILS
T500	TECHNOLOGY DIAGRAMS
T501	TECHNOLOGY DIAGRAMS
T502	TECHNOLOGY DIAGRAMS
T600	TECHNOLOGY SCHEDULES
T601	TECHNOLOGY SCHEDULES
GRAND TOTAL:	12

### TECHNOLOGY SYMBOL LIST

SYMBOL:	EQUIPMENT LIST ABBREV.:	DESCRIPTION:	NOTE:
[C#]	SC-IO-E	INFORMATION OUTLET IN FLOOR BOX	4, 5.
[C#]	SC-IO-W	INFORMATION OUTLET (WALL)	1.
[C#]	SC-IO-C	INFORMATION OUTLET (CEILING)	1.
[CSS]	N/A	CONTROLLED SECURITY SCHEME SCHEDULE IDENTIFIER	2.
[CR1]	AC-CR1-W	SECURITY CREDENTIAL READER (WALL) TYPE 1	.
[CM#]	VS-CM#	VIDEO SURVEILLANCE CAMERA 180° FOV (WALL/VERTICAL SURFACE)	3.
[CM#]	VS-CM#	VIDEO SURVEILLANCE CAMERA 270° FOV (WALL/VERTICAL SURFACE)	3.
[CM#]	VS-CM#	VIDEO SURVEILLANCE CAMERA 360° FOV (CEILING/HORIZONTAL SURFACE)	3.
[CM#]	VS-CM#	VIDEO SURVEILLANCE CAMERA SINGLE LENS FOV (CEILING/HORIZONTAL SURFACE)	3.
[CM#]	VS-CM#	VIDEO SURVEILLANCE CAMERA SINGLE LENS FOV (WALL/VERTICAL SURFACE)	3.
[AA]	AC-AA-1	INTRUSION DETECTION AUDIBLE ALARM (WALL)	.
[IKP]	ID-IKP-W	INTRUSION DETECTION SECURITY KEYPAD (WALL)	.
[MD]	ID-MD-C	INTRUSION DETECTION MOTION DETECTOR (CEILING)	.
[SB#]	AV-SB#-W	AV SOUND BAR (WALL)	.
[TP#]	AV-TP#-W	AV TOUCH PANEL (WALL)	.
[###]	AV-###-W	AV WALLPLATE/BACKBOX (WALL)	.
[W X H]		LADDER RACK	.
[D]		CONDUIT	.
[>]		CONDUIT DOWN	.
[O]		CONDUIT UP OR UP/DOWN	.
[E]		CONDUIT SLEEVE	.
[S]		CONTINUATION	.

### GENERAL NOTES:

- ALL SYMBOLS AND ABBREVIATIONS LISTED MAY NOT BE APPLICABLE TO THIS PROJECT. REFER TO THE TECHNOLOGY EQUIPMENT SCHEDULE FOR MORE COMPLETE DESCRIPTION AND ITEMS.
- ALL SYMBOLS AND ABBREVIATIONS REFER TO TECHNOLOGY SHEETS ONLY AS DEFINED ON THE SHEET INDEX. REFER TO THE GENERAL TECHNOLOGY NOTES FOR ADDITIONAL INFORMATION.
- ALL SYMBOLS LISTED ABOVE ARE FOR REFERENCE ONLY. REFER TO PLANS AND LINE TYPE KEY FOR NEW, EXISTING TO REMAIN AND TO BE REMOVED ITEMS FOR ADDITIONAL INFORMATION.
- REFER TO RISER DIAGRAMS ON SHEET(S) T500, T501 & T502.

### TECHNOLOGY SYMBOL NOTES:

- "C# INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION.
- REFER TO CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE ON T600 FOR ADDITIONAL INFORMATION.
- "CM#" ON FLOOR PLANS INDICATES CAMERA TYPE AND IS ASSOCIATED WITH THE CORRESPONDING "VS-CM#" EQUIPMENT SCHEDULE ABBREVIATION. "##" SUBSCRIPT INDICATES FLOOR NUMBER-CAMERA NUMBER. REFER TO INDIVIDUAL CAMERA REQUIREMENT SCHEDULE FOR ADDITIONAL INFORMATION.
- INFORMATION OUTLET INSTALLED IN E.C. PROVIDED FLOOR BOX. "C# INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. REFER TO THE ELECTRICAL FLOOR PLANS AND ELECTRICAL EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
- FLOOR BOX FOR INFORMATION OUTLET PROVIDED AS PART OF THE TECHNOLOGY DOCUMENTS. "C# INDICATES FLOOR BOX TYPE REFER TO INFORMATION OUTLET SCHEDULE

### TECHNOLOGY ABBREVIATION KEY

ABBR:	DESCRIPTION:
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFC	BELOW FINISHED CEILING
C	CONDUIT
DE	DELAYED EGRESS
DPDT	DOUBLE POLE DOUBLE THROW
FOV	FIELD OF VIEW
J-BOX	JUNCTION BOX
POE	POWER OVER ETHERNET
PTZ	PAN TILT ZOOM
SIM	SIMILAR
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
+#	MOUNTING HEIGHT ABOVE FINISHED FLOOR
EF-#	ENTRANCE FACILITY
MC-#	MAIN CROSS-CONNECT
MDF-#	MAIN TELECOMMUNICATION ROOM
IDF-#	TELECOMMUNICATION ROOM

### CONTACT PERSONS:

DESCRIPTION:	PERSON:
PROJECT MANAGER	WADE ROSS
MECHANICAL	WADE ROSS
ELECTRICAL	SCOTT KOCHAN
TECHNOLOGY	JAYSON STICKROD

### TECHNOLOGY GENERAL NOTES:

- ###-### INDICATES TECHNOLOGY EQUIPMENT SCHEDULE ITEM LABELED AS "EQUIPMENT LIST ABBREVIATION"
- REFER TO TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR FULL DESCRIPTIONS AND MANUFACTURERS OF ALL DEVICES.

**TECHNOLOGY MOUNTING SUBSCRIPT KEY:**  
 A MOUNT AT 4" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH  
 H MOUNT ORIENTED HORIZONTALLY  
 L MOUNT IN CASEWORK  
 M MOUNT IN MODULAR FURNITURE  
 S MOUNT IN SURFACE RACEWAY

A SLASH IS USED BETWEEN TWO SUBSCRIPTS, E.G., AH.

### TECHNOLOGY INSTALLATION NOTES:

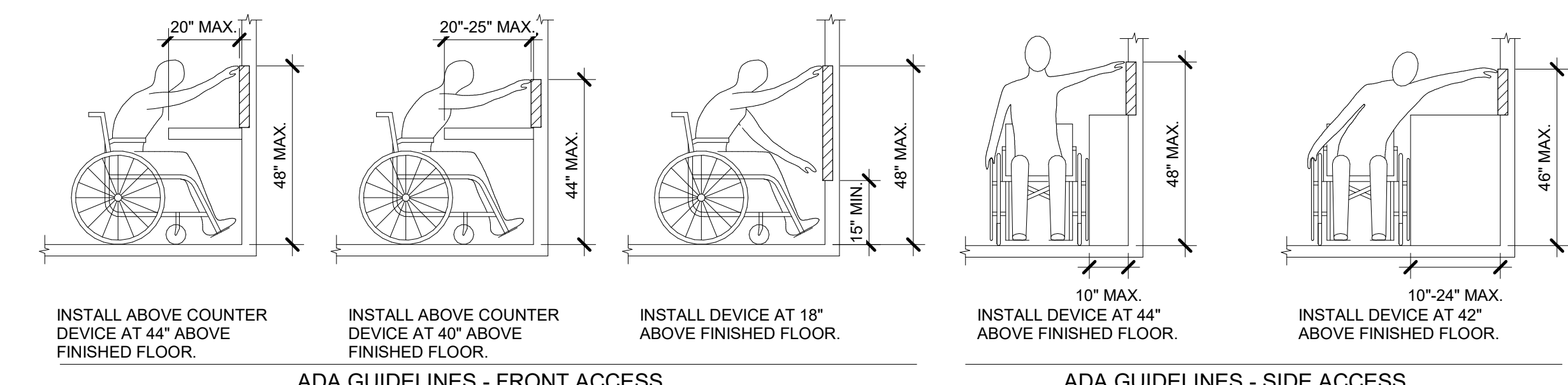
- THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
- CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, ABOVE CEILING, IN FLOOR SLAB, ETC. UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS. CONDUIT IN MECHANICAL ROOMS AND STORAGE ROOMS WITHOUT CEILINGS MAY BE EXPOSED ON BUILDING STRUCTURE.
- BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. "THRU-THE-WALL" BOXES SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
- VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL TELECOMMUNICATIONS INSTALLATION, ADJUST OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
- TELECOMMUNICATIONS EQUIPMENT SHALL BE MOUNTED TO ALLOW ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF TELECOMMUNICATION DEVICES ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR.
- 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.
- ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E914 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO DIVISION 7 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF THE CEILING, CEILING TILES, AND CEILING GRID ASSOCIATED WITH THE AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.

### TECHNOLOGY OUTSIDE PLANT NOTES

- THE LOCATION OF THE CONDUIT, HAND HOLES AND/OR MAINTENANCE HOLES SHOWN ARE APPROXIMATE LOCATIONS. FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIVATE AND/OR PUBLIC PRIOR TO THE INSTALLATION OF THE COMPONENT. FIELD COORDINATE THE FINAL LOCATION WITH THE OWNER AND ENGINEER PRIOR TO INSTALLATION.
- POTHOLING TO LOCATE EXISTING UNDERGROUND UTILITIES, IF APPLICABLE, SHALL BE INCLUDED IN THE CONTRACTOR'S BID. CONTRACTOR IS RESPONSIBLE FOR FINAL PLACEMENT OF HAND HOLES AND/OR MAINTENANCE HOLES AND SHALL NOTIFY THE ENGINEER OF FINAL LOCATIONS PRIOR TO INSTALLATION.
- HAND HOLES AND/OR MAINTENANCE HOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE FRAME WILL BE FLUSH WITH THE GROUND LINE.
- REMOVAL AND REPLACEMENT OF THE EXISTING UNDERGROUND UTILITIES THAT ARE REQUIRED TO COMPLETE THE INSTALLATION SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- CONTRACTOR SHALL INCLUDE IN THEIR BID ANY REMOVAL AND REPLACEMENT OF EXISTING SIDEWALK, PAVEMENT, GRASS, SHRUBS, TREES, ETC. THAT WILL BE IMPACTED BY THE INSTALLATION OF THE NEW CONDUITS SHOWN ON THE DRAWINGS. TREES ARE REQUIRED TO BE REMOVED THE CONTRACTOR SHALL CONTACT THE OWNER AND DISCUSS OPTIONS PRIOR TO CUTTING DOWN ANY TREE OR SHRUB OVER 6" IN HEIGHT.
- NO ADDITIONAL COST SHALL BE APPROVED FOR PLACING CONDUITS DEEPER THAN REQUIRED MINIMUM DEPTH TO AVOID EXISTING UNDERGROUND UTILITIES.
- PROVIDE A MINIMUM OF 25'-0" SLACK LOOP WITHIN EACH HAND HOLE AND/OR MAINTENANCE HOLES. SLACK LOOP SHALL BE SECURE SO COPPER OR FIBER IS NOT RESTING ON EARTH AFTER FINAL INSTALLATION.

### TECHNOLOGY DEMOLITION NOTES

- THE DRAWINGS INDICATE EXISTING 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.
- ITEMS (i.e. SPEAKERS, 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).
- EXISTING TO REMAIN DEVICES WITHIN OR ADJACENT TO THE PATH OF CONSTRUCTION SHALL BE PROTECTED IN PLACE. DEVICES THAT MUST BE REMOVED SHALL BE TESTED PRIOR TO REMOVAL, PROTECTED FROM DAMAGE, AND REINSTALLED IN ITS ORIGINAL LOCATION DURING THE NEW CONSTRUCTION PHASE OF THE PROJECT.
- OBTAIN APPROVAL FROM THE OWNER BEFORE TURNING OFF THE POWER TO EQUIPMENT, SYSTEMS, PANELS, ETC. COORDINATE ALL OUTAGES WITH OWNER. CONDUIT CONCEALED IN WALL CONSTRUCTION MAY BE ABANDONED IN PLACE IF NOT AFFECTED BY OTHER CONSTRUCTION.
- 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.
- COORDINATE ALL WORK WITH OTHER CONTRACTORS AT THE JOB SITE BEFORE REMOVING EXISTING EQUIPMENT AND INSTALLING NEW ITEMS.
- EXISTING CONDUIT IN GOOD CONDITION, MAY BE REUSED IN PLACE. RELOCATING EXISTING CONDUIT SHALL NOT BE ALLOWED. BONDING CONDUCTORS SHALL BE INSTALLED IN ALL REUSED CONDUIT TO ASSURE PROPER GROUND PATH.
- 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.
- DEVICES TO BE REMOVED SHALL HAVE ALL CONNECTED WIRING REMOVED TO THE SOURCE.
- DEVICES NOT TO BE REMOVED SHALL BE PROTECTED FROM THE ENVIRONMENT, AND ALL ASSOCIATED CABLE/RACEWAYS ARE TO REMAIN AND BE PROTECTED. T.C. SHALL BE RESPONSIBLE FOR REPAIR OF ANY INTERRUPTIONS TO PROTECTED DEVICES.
- THE INTENT OF THIS PROJECT IS TO REMOVE AND REPLACE ALL ACCESS CONTROL, INTRUSION DETECTION, AND VIDEO SYSTEMS. ALL BUILDING SECURITY DEVICES SHALL BE DEMOLISHED INCLUDING BUT NOT LIMITED TO ROUGH IN, CONDUIT, PATHWAY, CABLING, AND ALL OTHER DEVICES BACK TO THE SOURCE. CONTRACTOR SHALL FIELD VERIFY QUANTITIES OF DEVICES FOR ACCESS CONTROL, INTRUSION DETECTION, AND VIDEO SURVEILLANCE PRIOR TO BIDDING AND INCLUDE THE DEMOLITION OF THESE SYSTEMS IN THEIR BID. CONTRACTOR SHALL PROVIDE BLANK PLATES FOR ALL UNUSED ROUGH-IN AND PATHWAY CAN BE USED FOR NEW SECURITY DEVICES WHERE APPROPRIATE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



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 Anderson Engineering of Minnesota, LLC | Proj # 16409

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Office of Construction and Facilities Management  
**VA** U.S. Department of Veterans Affairs

14680 ALEXANDER QUINN  
 10/31/2022

Drawing Title  
**TECHNOLOGY COVERSHEET**

Approved:

Phase  
**BID DOCUMENTS**

**NON-SPRINKLERED**

Project Title  
**BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS**

Project Number  
**884-CM-3015**

Building Number

Location  
**STURGIS, SOUTH DAKOTA**

Issue Date  
**10/31/22**

Checked  
**JAYSON**

Drawn  
**JOSHUA**

Drawing Number  
**T000**

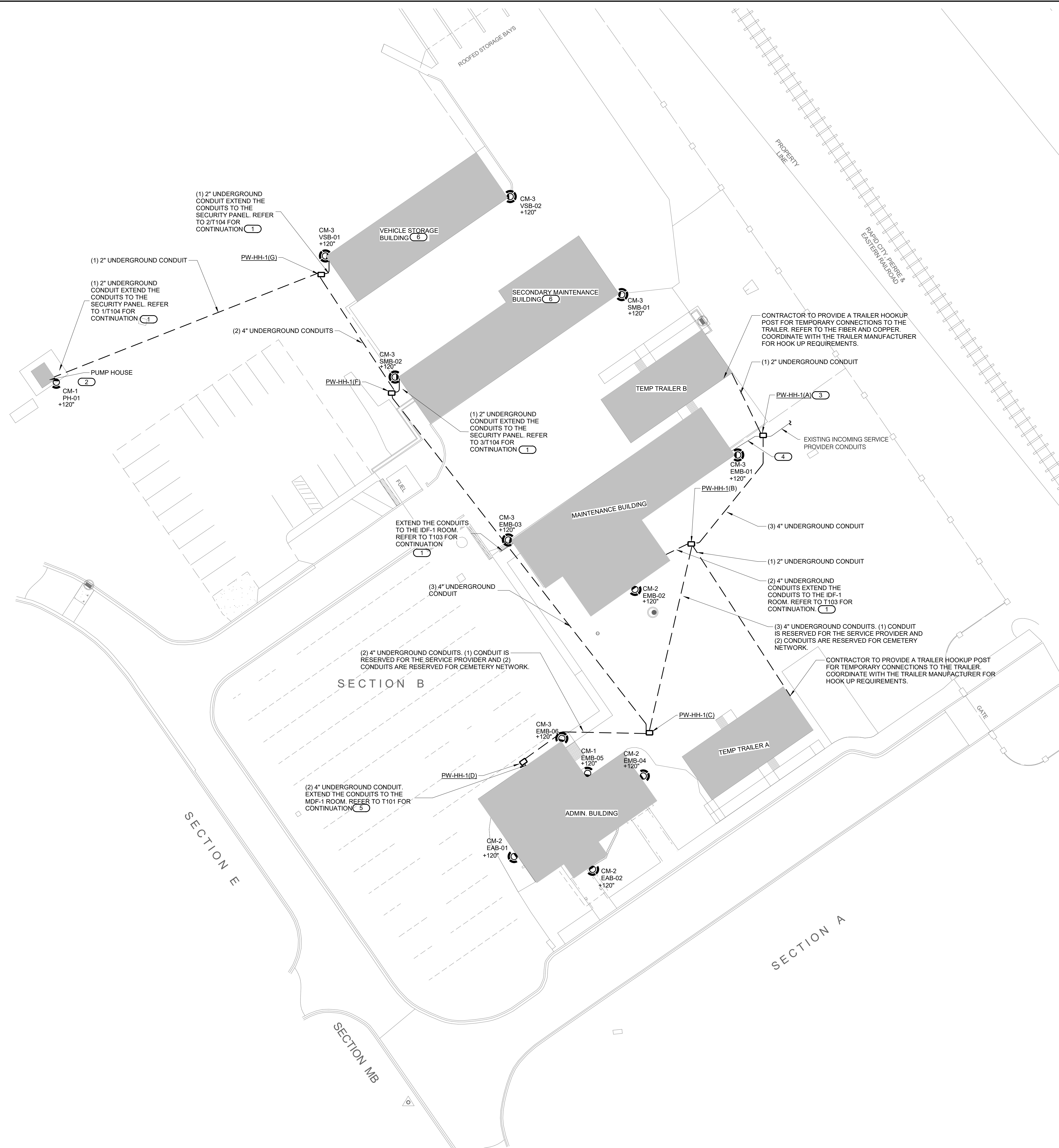
Dwg. 73 OF 84

**GENERAL SHEET NOTES:**

- THE SITE PLAN IS BASED ON INFORMATION BY OTHERS AND INTENDED TO CLARIFY SCOPE OF WORK AND INTENDED CONDUIT SIZE/QUANTITIES TO BE INSTALLED BY EACH LOCATION. THE CONTRACTOR SHALL COORDINATE WITH THE SITE UTILITIES PLAN, MECHANICAL PLAN, CIVIL PLANS, ARCHITECTURAL PLANS, ELECTRICAL PLANS, AND STRUCTURAL PLANS. FOR ADDITIONAL INFORMATION TO INSTALL CONDUITS AND ADDITIONAL SCOPE REQUIREMENTS, REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ALL CONDUITS SHALL BE INSTALLED AS CAST-IN-PLACE. REFER TO DETAIL 4/T400 FOR ADDITIONAL INFORMATION. ADJUST AS REQUIRED FOR THE QUANTITY.

**KEYNOTES:** (1) (2) (3) (4)

- CONDUITS SHALL ROUTE UP THE SIDE OF THE BUILDING TO ABOVE THE ACCESSIBLE CEILING ON THE FIRST LEVEL. SECURE CONDUITS TO THE WALL AND SEAL ALL PENETRATIONS WITH WEATHER PROOF SEALS AS REQUIRED. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- CAMERA IS INSTALLED ON THE DOOR SIDE OF THE BUILDING FOR COVERAGE ON APPROACH AND DOOR ACCESS. COORDINATE THE EXACT LOCATION OF THE CAMERA WITH THE RESIDENT ENGINEER (RE) PRIOR TO THE INSTALLATION OF THE CAMERA.
- NEW HANDHOLE WILL INTERCEPT THE INCOMING CONDUITS TO THE MAINTENANCE BUILDING. COORDINATE WITH THE SERVICE PROVIDER AND RESIDENT ENGINEER (RE) ON THE CONDUIT INTERCEPTION AND A PHASING PLAN TO BRING THE TEMPORARY TRAILERS AND NEW SERVICES THAT WILL BE SERVED FROM THE ADMINISTRATION BUILDING.
- ONCE THE CONTRACTORS HAVE ROUTED CONDUIT PATHWAY FOR INCOMING SERVICES TO THE TEMPORARY TRAILERS, EXISTING CONDUITS SHALL BE DEMOLISHED OR ABANDONED BASED ON THE LOCATION SHOWN.
- CONDUITS ROUTE UNDERGROUND DIRECTLY THROUGH THE WALL TO THE MDF-1 ON THE BASEMENT LEVEL. CONTRACTOR SHALL SEAL ALL PENETRATIONS WITH UNDERGROUND WATERPROOF SEALS AS REQUIRED. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ALL SECURITY DEVICES WITHIN THIS BUILDING SHALL BE DEMOLISHED INCLUDING BUT NOT LIMITED TO ROUGH-IN CONDUIT, PATHWAY, CABLING, AND ALL OTHER DEVICES BACK TO THE SOURCE. CONTRACTOR SHALL FIELD VERIFY QUANTITIES OF DEVICES FOR ACCESS CONTROL, INTRUSION DETECTION, AND VIDEO SURVEILLANCE PRIOR TO BIDDING AND INCLUDE THE DEMOLITION OF THESE SYSTEMS IN THEIR BID. CONTRACTOR SHALL PROVIDE BLANK PLATES FOR ALL UNUSED ROUGH-IN. EXISTING ROUGH-IN AND PATHWAY CAN BE USED FOR NEW SECURITY DEVICES WHERE APPROPRIATE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



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**1 TECHNOLOGY SITE PLAN**  
 3/64" = 1'-0"

Revisions:	Date:

CONSULTANT		
<b>MECHANICAL, ELECTRICAL, TECHNOLOGY &amp; STRUCTURAL:</b>	<b>GEOTECHNICAL:</b>	<b>COST ESTIMATING:</b>
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REGISTERED PROFESSIONAL ENGINEER  
 14680 ALEXANDER QUAY  
 SOUTH DAKOTA  
 10/31/2022

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

<b>Drawing Title</b>	TECHNOLOGY SITE PLAN
<b>Approved:</b>	

<b>Phase</b>	BID DOCUMENTS
<b>NON-SPRINKLERED</b>	

<b>Project Title</b>	BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS
<b>Location</b>	STURGIS, SOUTH DAKOTA
<b>Issue Date</b>	10/31/22
<b>Checked</b>	JAYSON
<b>Drawn</b>	JOSHUA

<b>Project Number</b>	884-CM-3015
<b>Building Number</b>	
<b>Drawing Number</b>	T100
<b>Dwg.</b>	74 OF 84

STICKRODLADESMA



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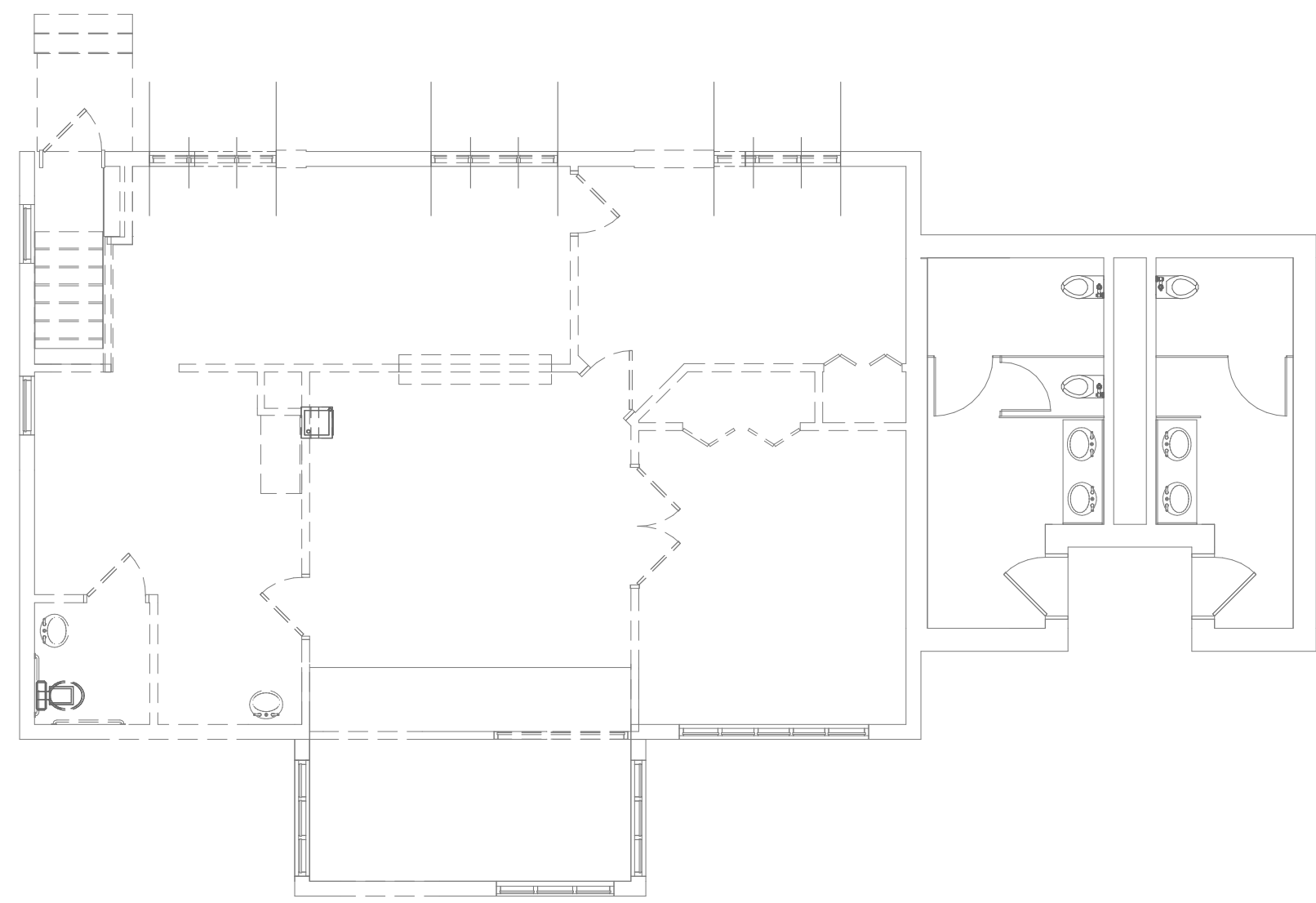
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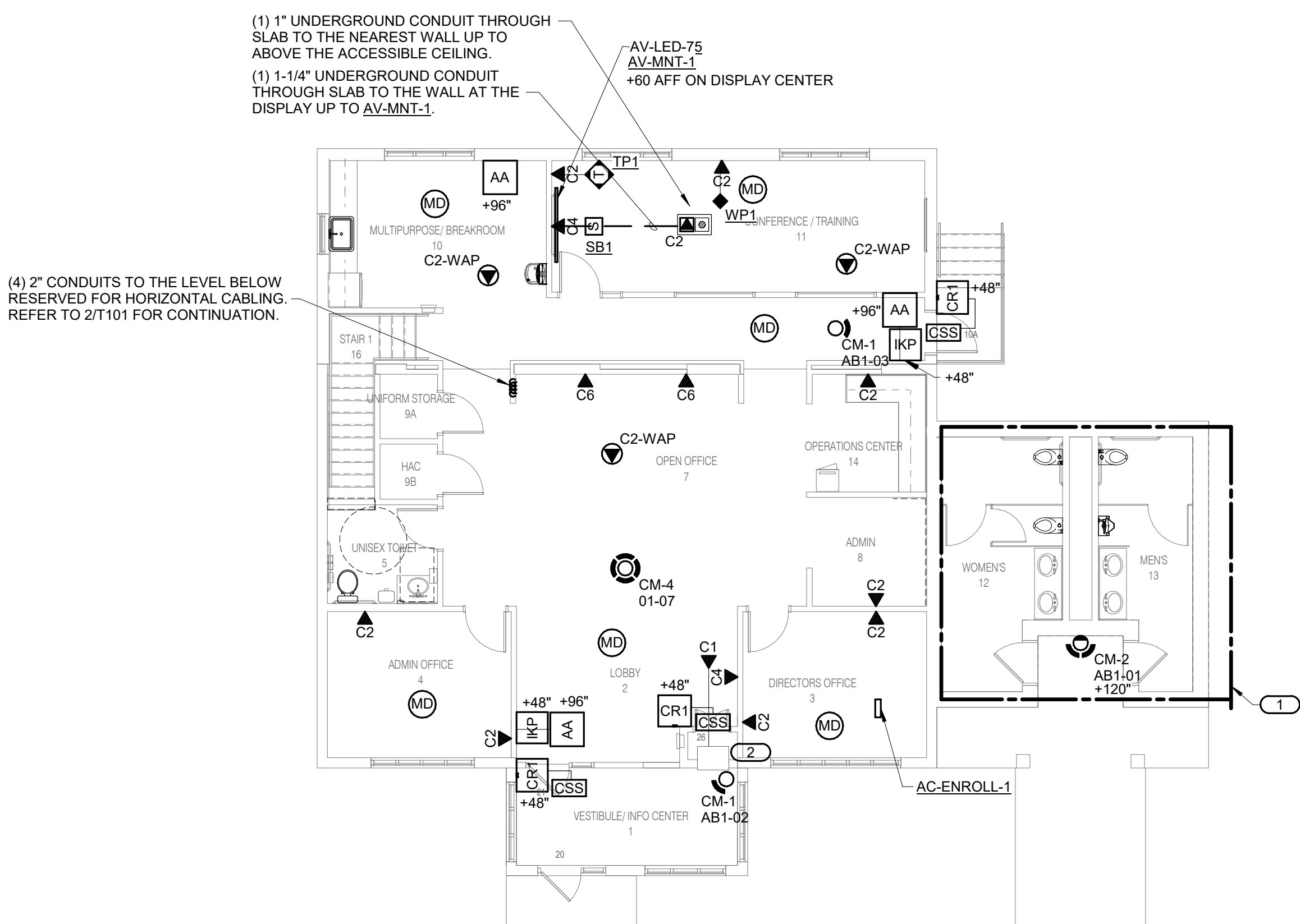
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**1 FIRST FLOOR DEMOLITION - TECHNOLOGY - ADMINISTRATION**  
1/8" = 1'-0"

- GENERAL NOTES:**
- ALL LOW VOLTAGE CABLING IN THIS AREA WILL BE DEMOLISHED. DEMOLITION WILL INCLUDE ALL CABLING, ROUGH-IN, CONDUIT, PATHWAY, AND ALL OTHER DEVICES BACK TO THE SOURCE. ALL ACTIVE COMPONENTS WILL BE RETURNED TO THE CEMETERY. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ALL SECURITY DEVICES INCLUDING BUT NOT LIMITED TO ROUGH IN, CONDUIT, PATHWAY, CABLING, AND ALL OTHER DEVICES BACK TO THE SOURCE SHALL BE DEMOLISHED. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



**2 FIRST FLOOR - TECHNOLOGY - ADMINISTRATION**  
1/8" = 1'-0"

- GENERAL NOTES:**
- ALL LOW VOLTAGE CABLING SHALL ROUTE TO THE TELECOM ROOM IDF-1 LOCATED ON THE LEVEL BELOW. REFER TO T101 FOR ADDITIONAL INFORMATION.
  - ALL SECURITY CABLING INCLUDING ACCESS CONTROL AND INTRUSION DETECTION SHALL ROUTE TO THE TELECOM ROOM IDF-1 LOCATED ON THIS FLOOR.

- KEYNOTES:**
- CONDUIT TO EXTEND TO OPEN OFFICE FOR ALL DEVICES IN THIS AREA.
  - RESERVE THE DATA FOR THE GRAVE SITE LOCATOR AND COORDINATE WITH THE GRAVE SITE LOCATOR CONTRACTOR FOR CONNECTION.

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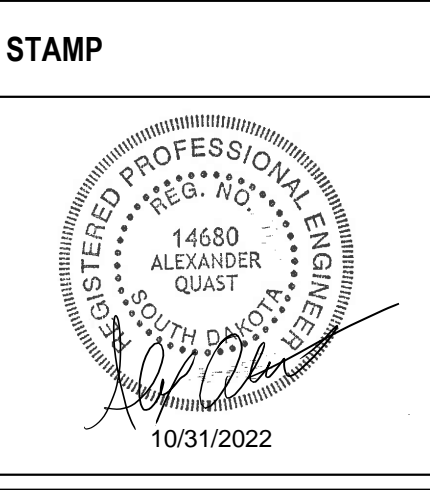
Revisions:	Date:

CONSULTANT		
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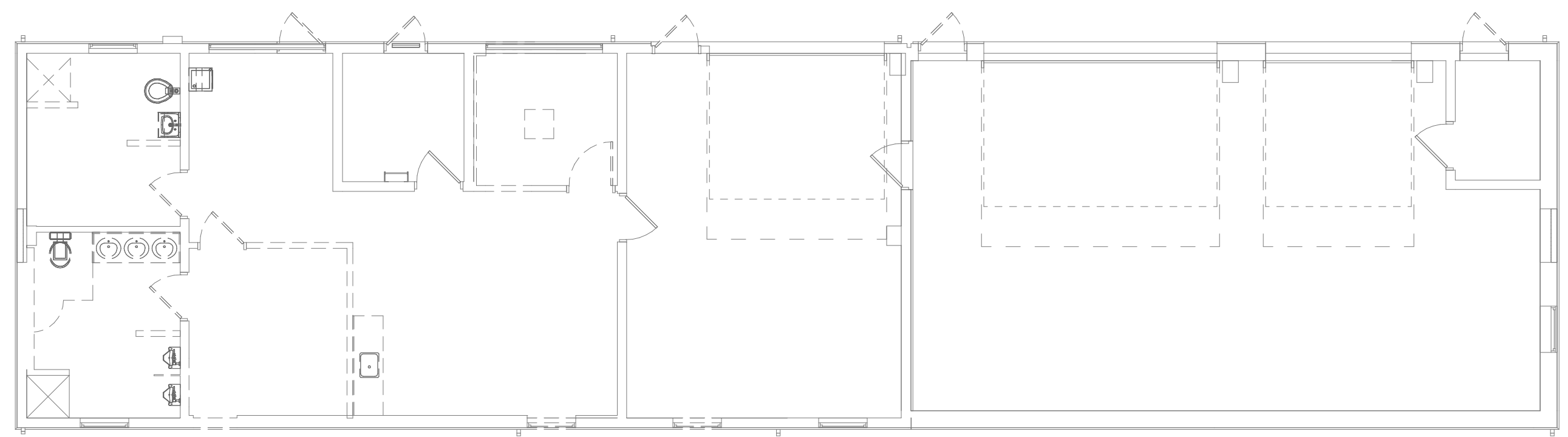
<b>Drawing Title</b>	FIRST FLOOR ADMIN. - DEMO AND NEW
<b>Approved:</b>	

<b>Phase</b>	BID DOCUMENTS
<b>NON-SPRINKLERED</b>	

<b>Project Title</b>	BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS
<b>Location</b>	STURGIS, SOUTH DAKOTA
<b>Issue Date</b>	10/31/22
<b>Checked</b>	JAYSON
<b>Drawn</b>	JOSHUA

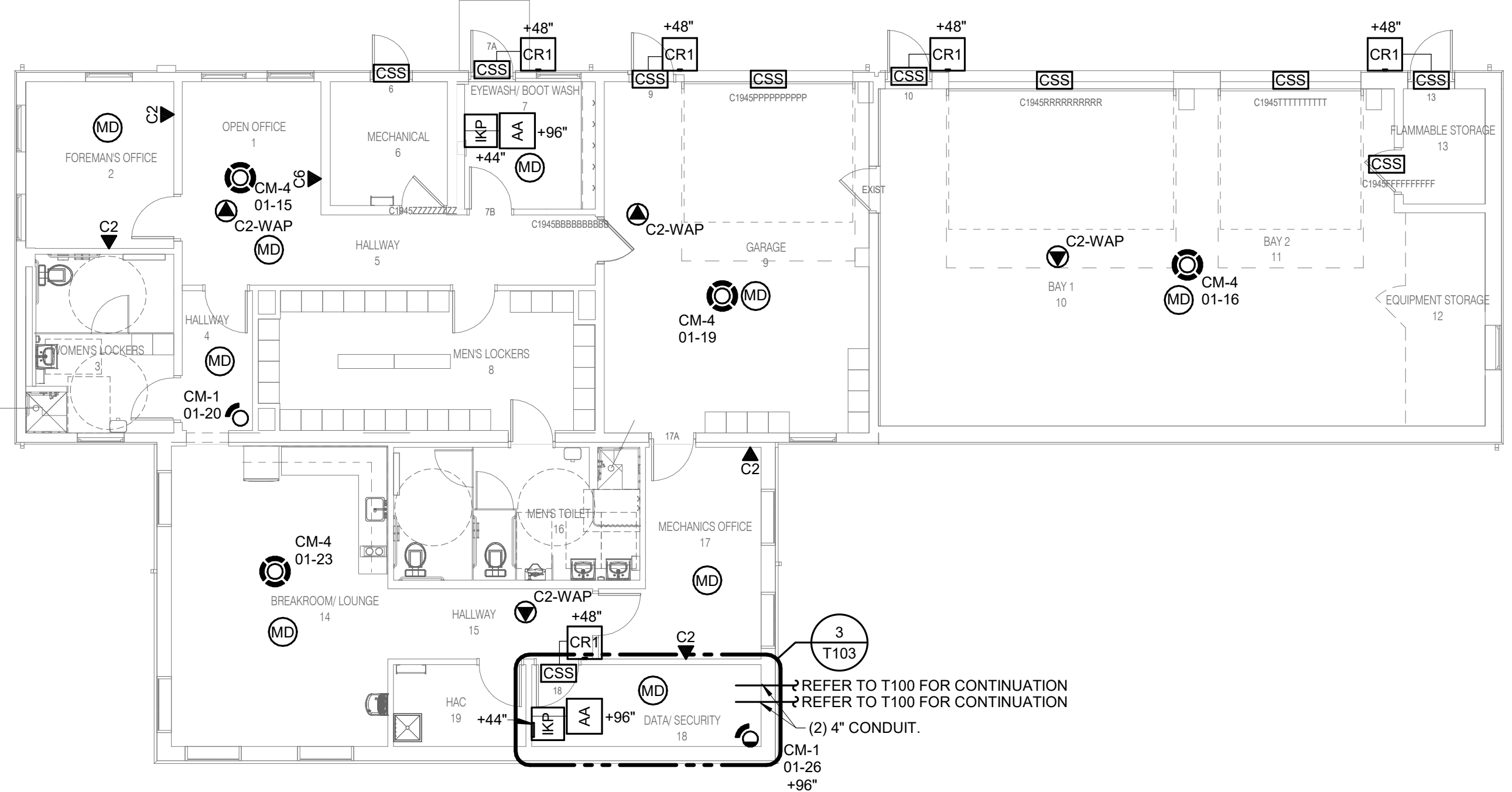
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<b>Building Number</b>	
<b>Drawing Number</b>	T102
<b>Dwg.</b>	76 OF 84

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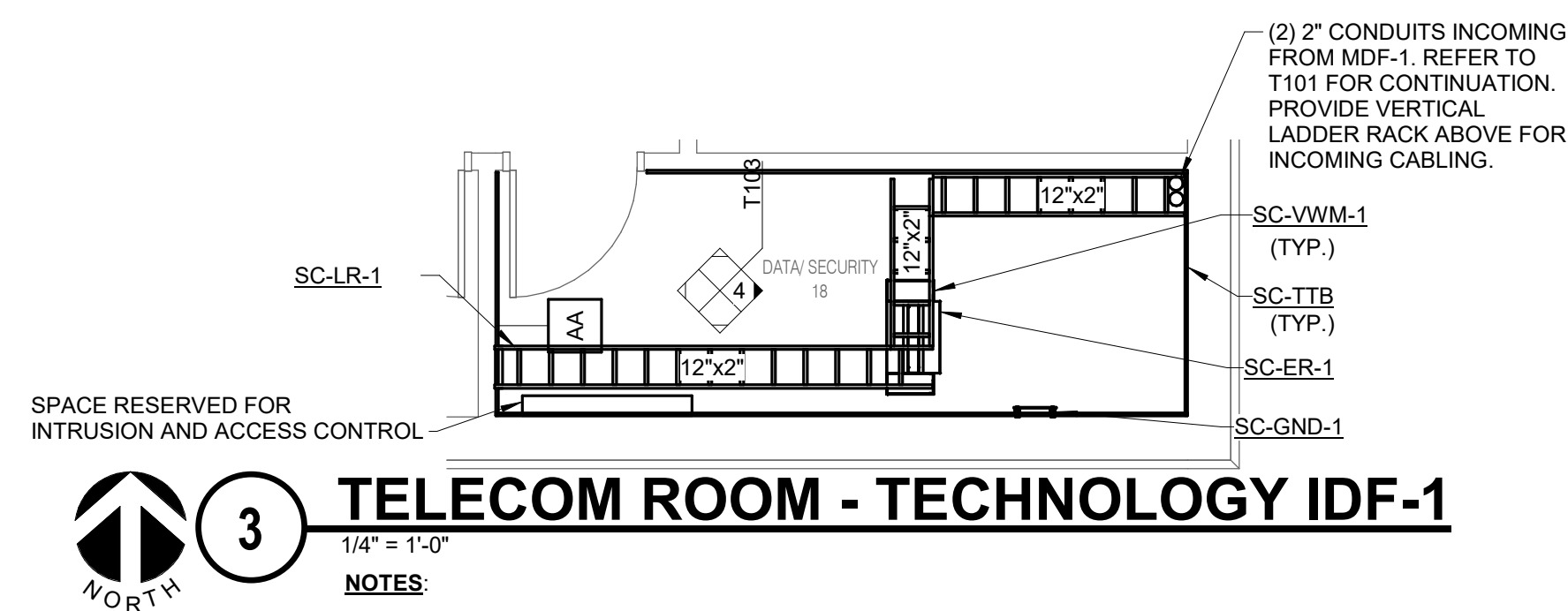
**1 FIRST FLOOR DEMOLITION - TECHNOLOGY - MAINTENANCE**  
1/8" = 1'-0"

- GENERAL NOTES**
- ALL LOW VOLTAGE CABLING IN THIS AREA WILL BE DEMOLISHED. DEMOLITION WILL INCLUDE ALL CABLING, ROUGH-IN, CONDUIT, PATHWAY, AND ALL OTHER DEVICES BACK TO THE SOURCE. ALL ACTIVE COMPONENTS WILL BE RETURNED TO THE CEMETERY. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ALL SECURITY DEVICES INCLUDING BUT NOT LIMITED TO ROUGH IN, CONDUIT, PATHWAY, CABLING, AND ALL OTHER DEVICES BACK TO THE SOURCE SHALL BE DEMOLISHED. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



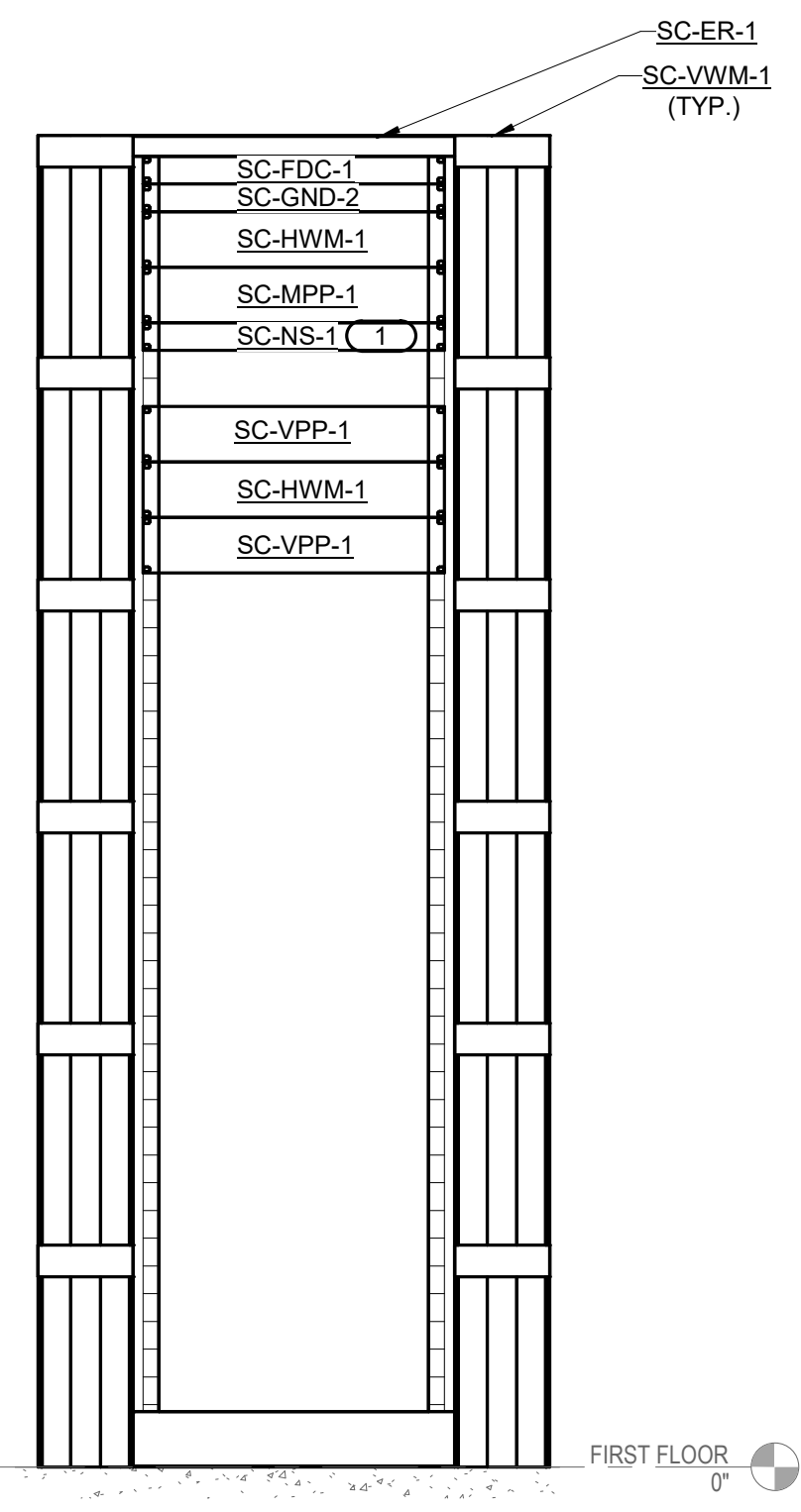
**2 FIRST FLOOR - TECHNOLOGY - MAINTENANCE**  
1/8" = 1'-0"

- GENERAL NOTES**
- ALL LOW VOLTAGE CABLING SHALL ROUTE TO THE TELECOM ROOM IDF-1 LOCATED ON THIS FLOOR.
  - ALL SECURITY CABLING INCLUDING ACCESS CONTROL AND INTRUSION DETECTION SHALL ROUTE TO THE TELECOM ROOM IDF-1 LOCATED ON THIS FLOOR.



**3 TELECOM ROOM - TECHNOLOGY IDF-1**  
1/4" = 1'-0"

- NOTES**
- ALL EQUIPMENT SHALL BE LOCATED IN ITS DESIGNATED SPOT AS DEFINED BY THIS LAYOUT UNLESS OTHERWISE NOTED. ALL EQUIPMENT IS SIZED (BY RACK UNITS) ACCORDING TO THE BASIS OF DESIGN MANUFACTURE AND MODEL. THE FINAL LAYOUT AND EQUIPMENT SIZE MAY VARY BASED ON THE FINAL SELECTION OF THE EQUIPMENT. ANY CHANGES TO THE LAYOUT SHOWN ABOVE SHALL BE COORDINATED WITH THE ENGINEER AND OWNER PRIOR TO INSTALLATION.
  - REFER TO 3T400 FOR LADDER RACK MOUNTING DETAIL.
  - REFER TO 2T400 FOR THE BONDING BUS BAR DETAIL SC-GND-1.



**4 EQUIPMENT RACK ELEVATION - IDF-1**  
1" = 1'-0"

- NOTES**
- ALL EQUIPMENT SHALL BE LOCATED IN ITS DESIGNATED SPOT AS DEFINED BY THIS LAYOUT UNLESS OTHERWISE NOTED. ALL EQUIPMENT IS SIZED (BY RACK UNITS) ACCORDING TO THE BASIS OF DESIGN MANUFACTURE AND MODEL. THE FINAL LAYOUT AND EQUIPMENT SIZE MAY VARY BASED ON THE FINAL SELECTION OF THE EQUIPMENT. ANY CHANGES TO THE LAYOUT SHOWN ABOVE SHALL BE COORDINATED WITH THE ENGINEER AND OWNER PRIOR TO INSTALLATION.
- KEYNOTES:** (#)
- NETWORK SWITCH RESERVED FOR SECURITY ONLY.

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CONSULTANT		
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10/31/2022

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

<b>Drawing Title</b>	<b>Phase</b>
FIRST FLOOR MAINTENANCE - DEMO AND NEW	BID DOCUMENTS
<b>Approved:</b>	<b>NON-SPRINKLERED</b>

<b>Project Title</b>	<b>Project Number</b>
BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS	884-CM-3015
<b>Location</b>	<b>Drawing Number</b>
STURGIS, SOUTH DAKOTA	T103
<b>Issue Date</b>	<b>Dwg.</b>
10/31/22	77 OF 84

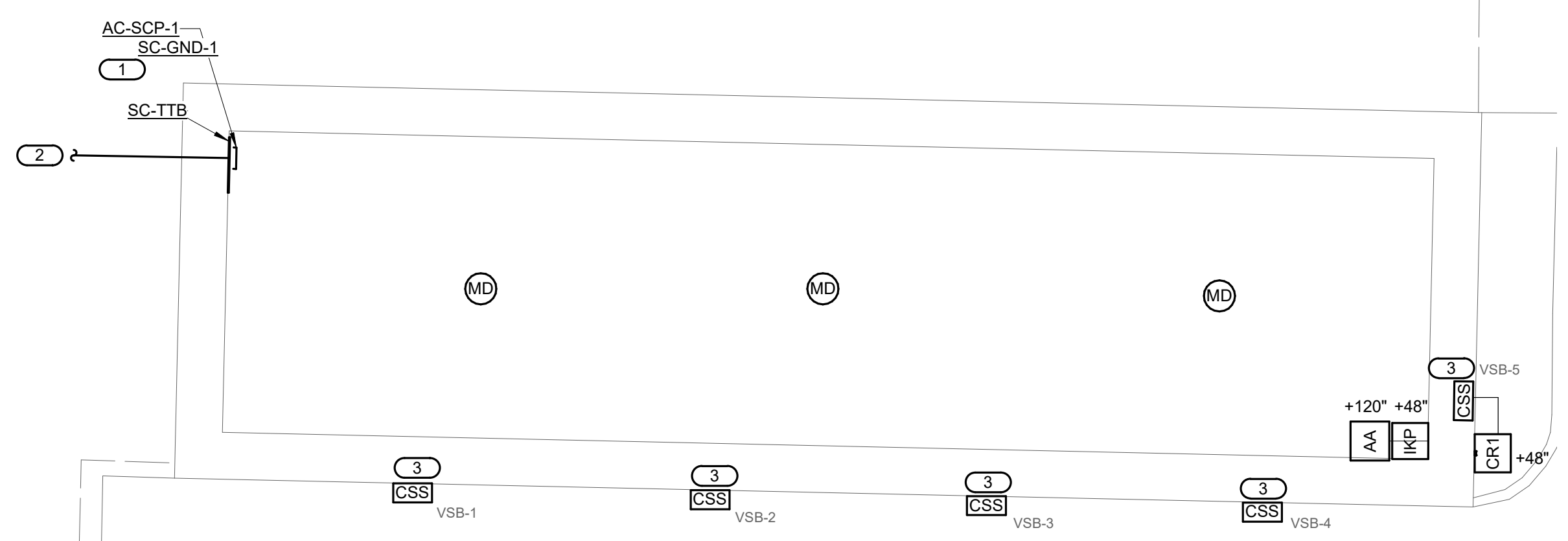
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10/31/22	JAYSON	JOSHUA

STICKRODLADESMA

### 1 PUMP HOUSE FLOOR PLAN

- 1/8" = 1'-0"  
**NOTES:**  
 1. ALL SECURITY CABLING FOR THIS BUILDING WILL ROUTE TO THE SECURITY PANEL.  
 2. ALL SECURITY CABLING WILL ROUTE IN CONDUIT FROM THE EDGE DEVICE BACK TO THE SECURITY PANEL.

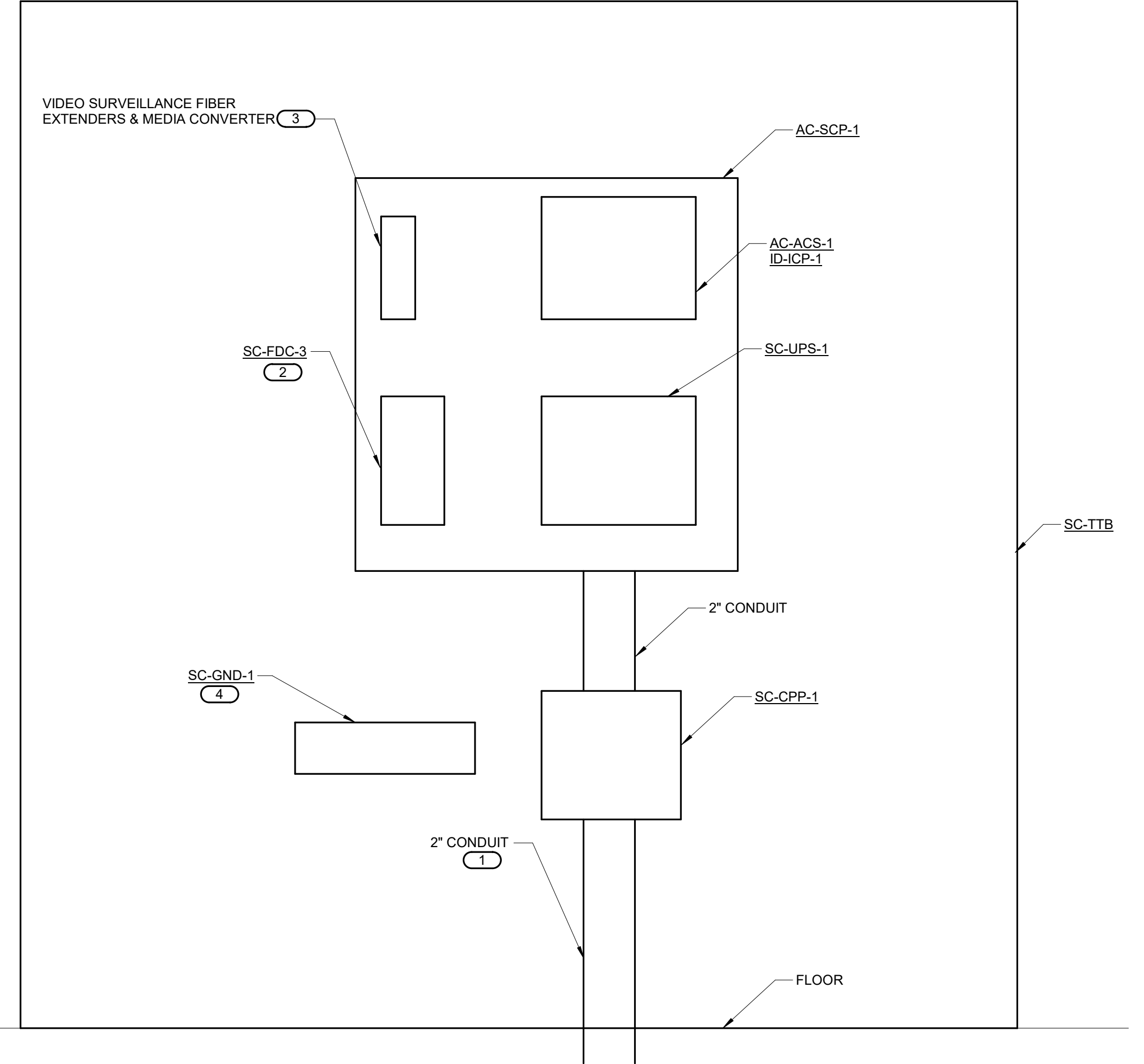
- KEYNOTES:** (#)  
 1. COORDINATE WITH THE LOCAL RE FOR THE FINAL LOCATION OF THE SECURITY PANEL PRIOR TO THE PURCHASE AND INSTALLATION OF THE SECURITY PANEL SECURITY PANEL WILL SIZED TO SUPPORT ALL ACCESS CONTROL, INTRUSION AND VIDEO SURVEILLANCE EQUIPMENT. REFER TO 4/T104 FOR ADDITIONAL INFORMATION.  
 2. (1) 2" CONDUIT FROM THE SECURITY PANEL TO THE HANDHOLE OUTSIDE THE BUILDING TO PW-HH-1 (G) LOCATED OUTSIDE THE MAINTENANCE BUILDING. REFER TO T100 FOR LOCATION OF THE HANDHOLE. CONDUIT IS RESERVED FOR BACKBONE CABLING ONLY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.  
 3. DOOR CONTACT CONNECTS TO THE INTRUSION SYSTEM ONLY. REFER TO SPECIFICATIONS FOR THE ADDITIONAL INFORMATION AND CONNECTIVITY REQUIREMENTS.



### 2 VEHICLE STORAGE BUILDING FLOOR PLAN

- 1/8" = 1'-0"  
**NOTES:**  
 1. ALL SECURITY CABLING FOR THIS BUILDING WILL ROUTE TO THE SECURITY PANEL.  
 2. ALL SECURITY CABLING WILL ROUTE IN CONDUIT FROM THE EDGE DEVICE BACK TO THE SECURITY PANEL.  
 3. CONTRACTOR SHALL FIELD VERIFY THE ALL DOOR LOCATIONS BEFORE BID. ACCESS CONTROL HARDWARE SHALL BE INSTALLED ON DOOR LOCATIONS ONCE VERIFIED.  
 4. ALL INTRUSION DETECTION DEVICES INCLUDING THE MOTION DETECTORS AND DOOR POSITION SWITCHES AT ROLL UP DOOR LOCATIONS SHALL ROUTE IN CONDUIT TO THE SUPPORTING INTRUSION SYSTEM. MOTION LOCATIONS ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL FIELD VERIFY FINAL QUANTITY OF MOTION DETECTORS BASED ON DETECTION COVERAGE. REFER TO THE ACCESS CONTROL & INTRUSION DETECTION DIAGRAM 2/T501 FOR ADDITIONAL INFORMATION.

- KEYNOTES:** (#)  
 1. COORDINATE WITH THE LOCAL RE FOR THE FINAL LOCATION OF THE SECURITY PANEL PRIOR TO THE PURCHASE AND INSTALLATION OF THE SECURITY PANEL SECURITY PANEL WILL SIZED TO SUPPORT ALL ACCESS CONTROL, INTRUSION AND VIDEO SURVEILLANCE EQUIPMENT. REFER TO 4/T104 FOR ADDITIONAL INFORMATION.  
 2. (1) 2" CONDUIT FROM THE SECURITY PANEL TO THE HANDHOLE OUTSIDE THE BUILDING TO PW-HH-1 (F) LOCATED OUTSIDE THE MAINTENANCE BUILDING. REFER TO T100 FOR LOCATION OF THE HANDHOLE. CONDUIT IS RESERVED FOR BACKBONE CABLING ONLY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.  
 3. DOOR HARDWARE IS INSTALLED ON ALL DOOR LOCATION. COORDINATE THE EXACT LOCATION OF THE DOOR HARDWARE WITH THE RESIDENT ENGINEER (RE) PRIOR TO THE INSTALLATION OF THE DOOR HARDWARE.



### 4 SECURITY PANEL ELEVATION

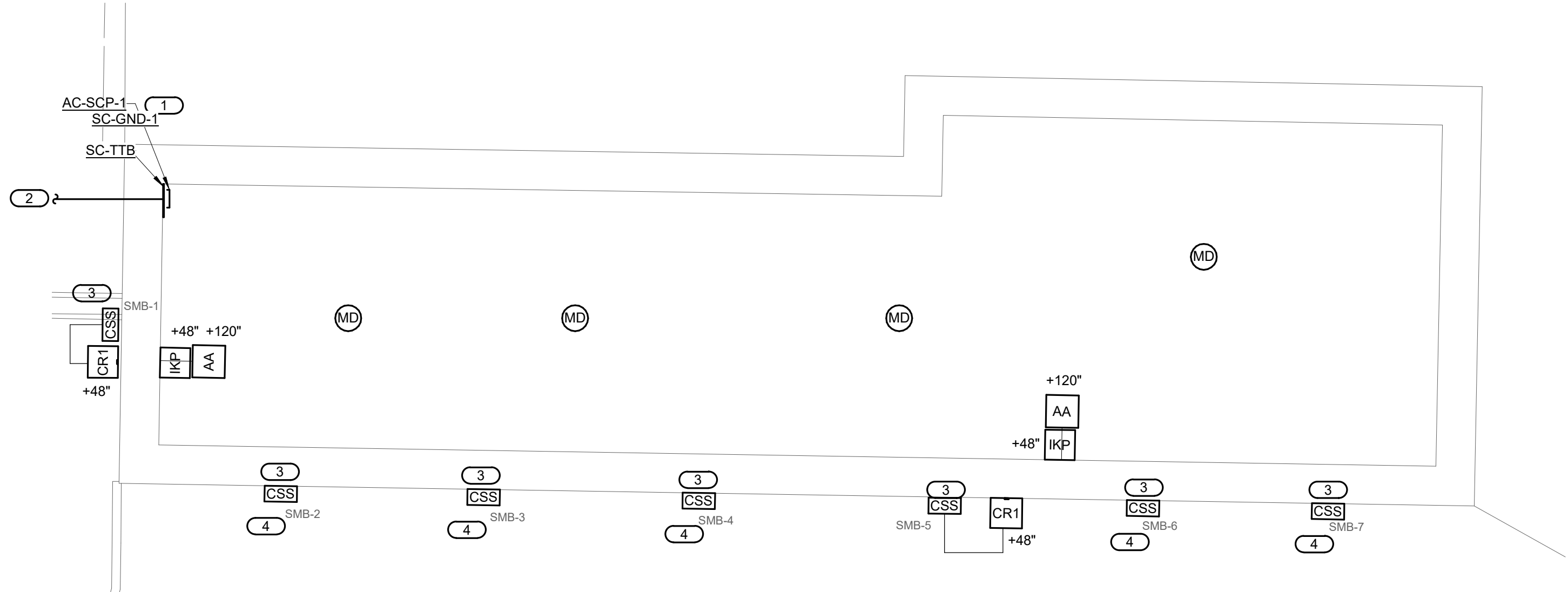
- 3" = 1'-0"  
**NOTES:**  
 1. THE ABOVE LAYOUT FOR THE SECURITY PANEL IS DIAGRAMMATIC AND DOES NOT REPRESENT THE FINAL LAYOUT. THE SECURITY CONTRACTOR SHALL PROVIDE A FINAL LAYOUT OF THE PANEL DURING THE SHOP DRAWING PROCESS TO VERIFY THE SIZE OF THE SECURITY PANEL. REFER TO THE ACCESS CONTROL AND INTRUSION DETECTION DIAGRAM FOR ADDITIONAL INFORMATION.

- KEYNOTES:** (#)  
 1. CONDUIT PW-HH-1 (I). REFER TO 6/T400 FOR ADDITIONAL INFORMATION.  
 2. FIBER WILL EXTEND THROUGH THE 2" CONDUIT WITH THE COPPER BACKBONE CABLE. REFER TO 1/T501 FOR ADDITIONAL INFORMATION.  
 3. VIDEO SURVEILLANCE IS SERVED OUT OF THE DATA ROOM IN THE P.I.C. BUILDING AND EXTENDED OVER FIBER. CONTRACTOR SHALL PROVIDE A MEDIA CONVERTER TO EXTEND THE NETWORK CONNECTIVITY FROM THE MAINTENANCE BUILDING TO THE P.I.C. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.  
 4. REFER TO 2/T400 & 2/T500 FOR ADDITIONAL GROUNDING REQUIREMENTS.

### 3 SECONDARY MAINTENANCE BUILDING FLOOR PLAN

- 1/8" = 1'-0"  
**NOTES:**  
 1. ALL SECURITY CABLING FOR THIS BUILDING WILL ROUTE TO THE SECURITY PANEL.  
 2. ALL SECURITY CABLING WILL ROUTE IN CONDUIT FROM THE EDGE DEVICE BACK TO THE SECURITY PANEL.  
 3. CONTRACTOR SHALL FIELD VERIFY THE ALL DOOR LOCATIONS BEFORE BID. ACCESS CONTROL HARDWARE SHALL BE INSTALLED ON DOOR LOCATIONS ONCE VERIFIED.  
 4. ALL INTRUSION DETECTION DEVICES INCLUDING THE MOTION DETECTORS AND DOOR POSITION SWITCHES AT ROLL UP DOOR LOCATIONS SHALL ROUTE IN CONDUIT TO THE SUPPORTING INTRUSION SYSTEM. MOTION LOCATIONS ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL FIELD VERIFY FINAL QUANTITY OF MOTION DETECTORS BASED ON DETECTION COVERAGE. REFER TO THE ACCESS CONTROL & INTRUSION DETECTION DIAGRAM 2/T501 FOR ADDITIONAL INFORMATION.

- KEYNOTES:** (#)  
 1. COORDINATE WITH THE LOCAL RE FOR THE FINAL LOCATION OF THE SECURITY PANEL PRIOR TO THE PURCHASE AND INSTALLATION OF THE SECURITY PANEL SECURITY PANEL WILL SIZED TO SUPPORT ALL ACCESS CONTROL, INTRUSION AND VIDEO SURVEILLANCE EQUIPMENT. REFER TO 4/T104 FOR ADDITIONAL INFORMATION.  
 2. (1) 2" CONDUIT FROM THE SECURITY PANEL TO THE HANDHOLE OUTSIDE THE BUILDING TO PW-HH-1 (G) LOCATED OUTSIDE THE MAINTENANCE BUILDING. REFER TO T100 FOR LOCATION OF THE HANDHOLE. CONDUIT IS RESERVED FOR BACKBONE CABLING ONLY. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.  
 3. DOOR HARDWARE IS INSTALLED ON ALL DOOR LOCATION. COORDINATE THE EXACT LOCATION OF THE DOOR HARDWARE WITH THE RESIDENT ENGINEER (RE) PRIOR TO THE INSTALLATION OF THE DOOR HARDWARE.  
 4. DOOR CONTACT CONNECTS TO THE INTRUSION SYSTEM ONLY. REFER TO SPECIFICATIONS FOR THE ADDITIONAL INFORMATION AND CONNECTIVITY REQUIREMENTS.



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Revisions:	Date:

CONSULTANT		
MECHANICAL, ELECTRICAL, TECHNOLOGY & STRUCTURAL: <b>IMEG CORP.</b> 14755 PRESTON RD STE 845 DALLAS, TX 75254 (309) 786-5075	GEOTECHNICAL: <b>AET</b> 1745 SAMCO RD RAPID CITY, SD 57702 (605) 223-4397	COST ESTIMATING: <b>CPMI</b> 3265 NORTHWOOD CIR STE 170 EAGAN, MN 55121 (952) 854-3663

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 14680 ALEXANDER QUAY  
 SOUTH DAKOTA  
 10/31/2022

Office of Construction and Facilities Management

**VA** U.S. Department of Veterans Affairs

Drawing Title  
**PUMP HOUSE, VEHICLE STORAGE & SECONDARY MAINTENANCE BUILDINGS NEW**

Phase  
**BID DOCUMENTS**

**NON-SPRINKLERED**

Project Title  
**BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS**

Location  
**STURGIS, SOUTH DAKOTA**

Issue Date  
**10/31/22**

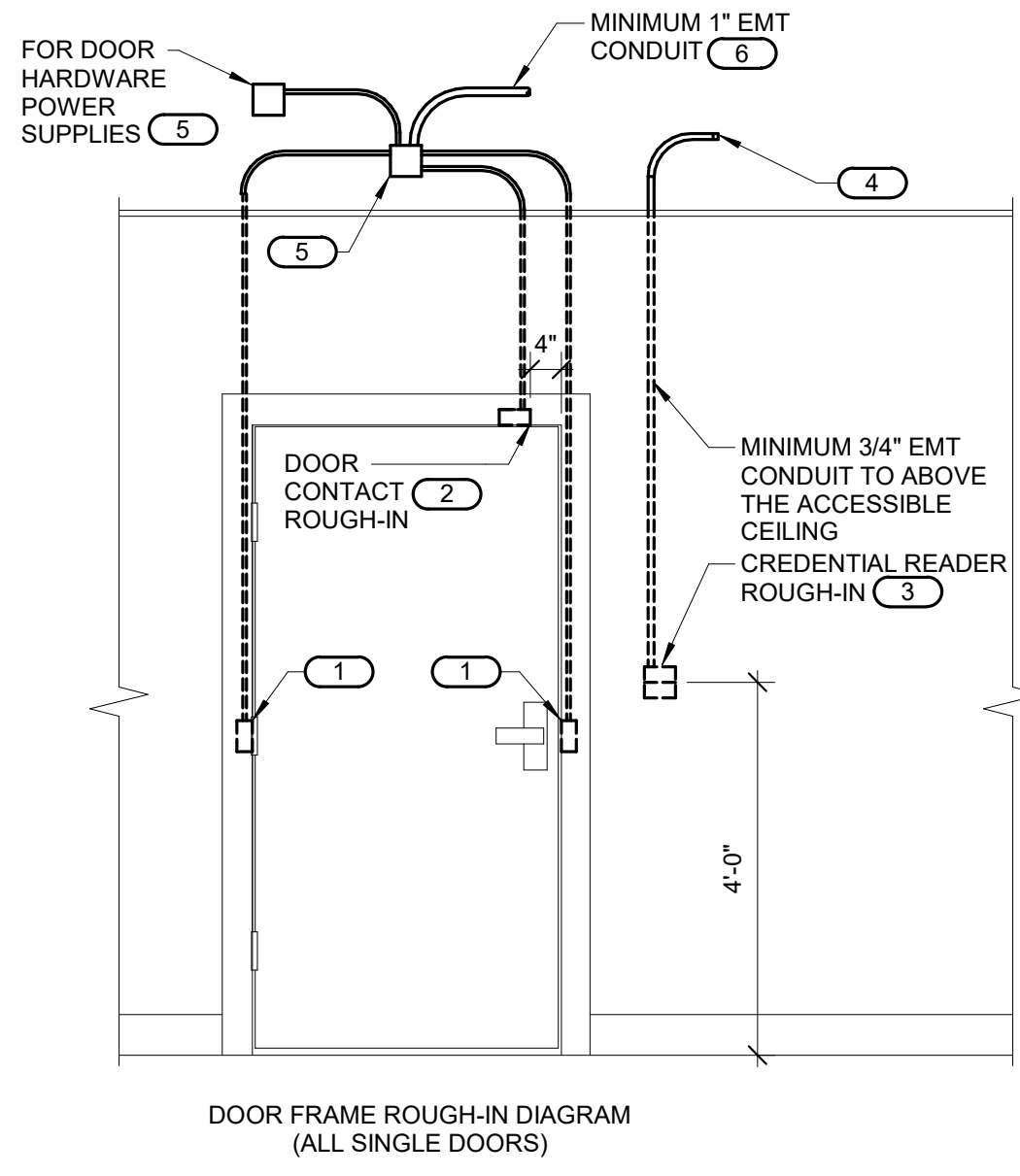
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 Checker

Drawn  
 Author

Project Number  
**884-CM-3015**

Building Number

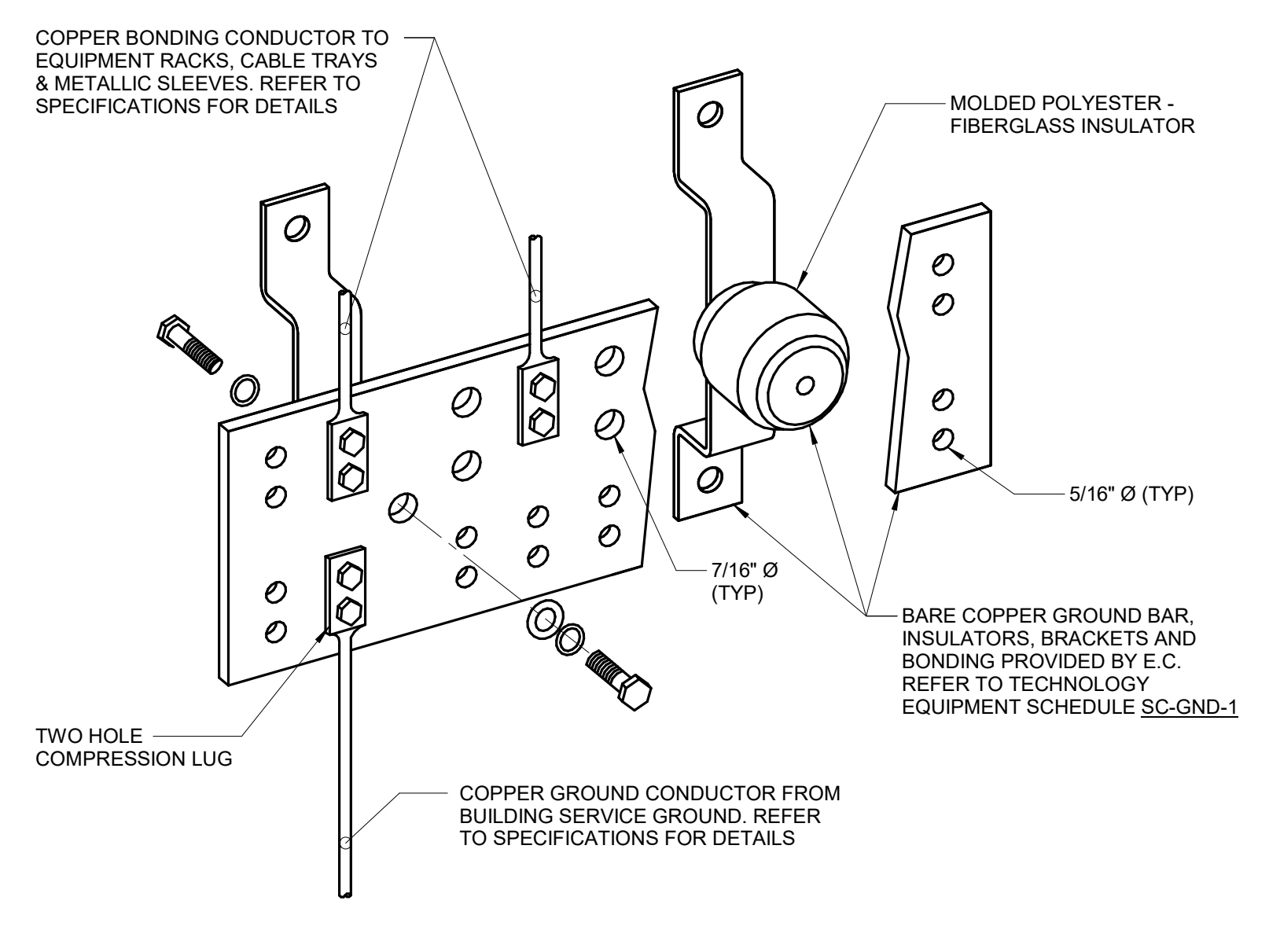
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**T104**  
 Dwg. 78 OF 84



**1 CONTROLLED SECURITY SCHEME DOOR ROUGH-IN DETAIL**  
NO SCALE

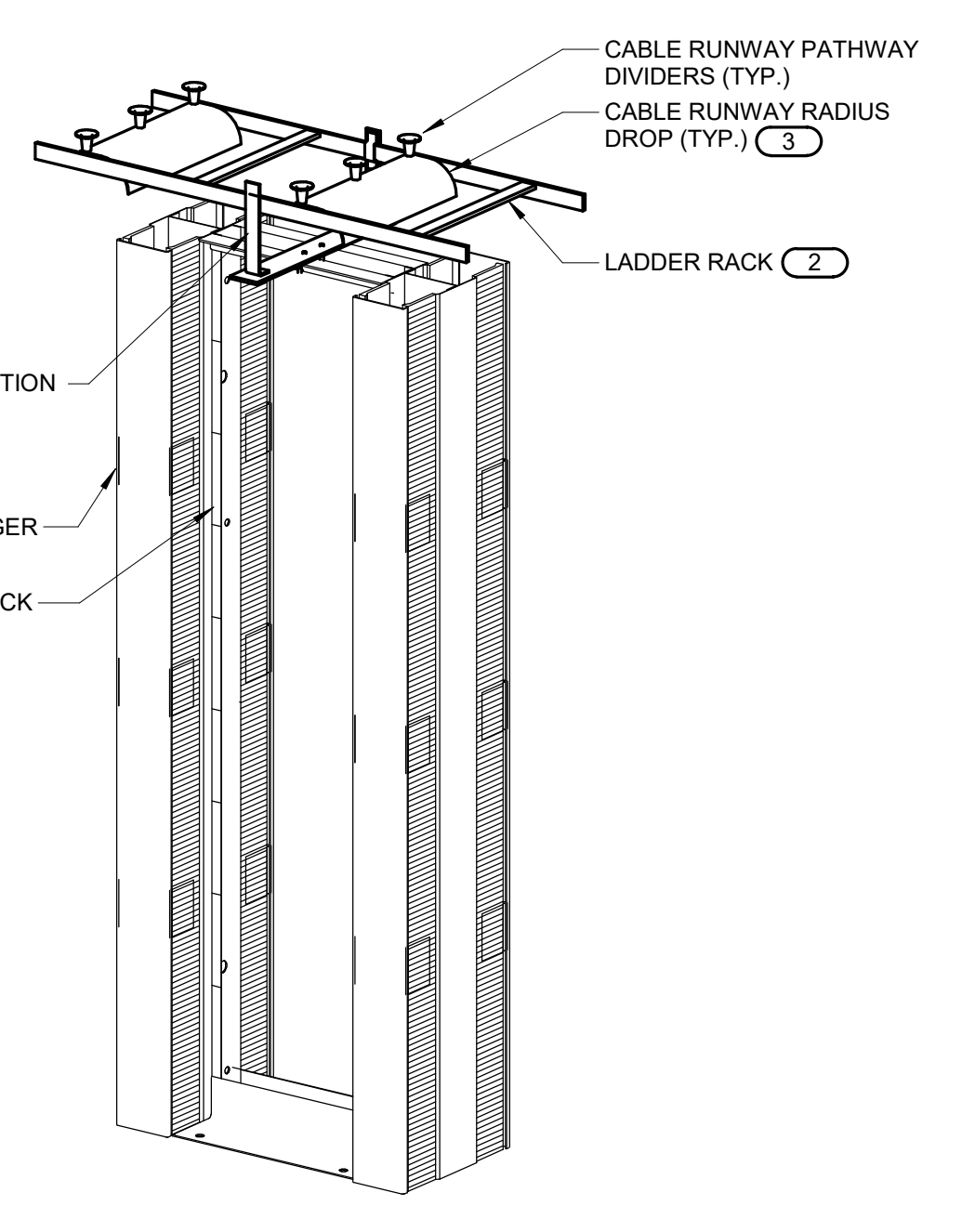
- NOTES:**
1. CONFIGURATIONS SHOWN IN THE DETAIL ABOVE ARE DIAGRAMMATIC, INTENDED TO DESCRIBE THE CONTROLLED SECURITY SCHEME ROUGH-IN REQUIREMENTS OF THE DOORS. DETAILS ABOVE MAY NOT ACCURATELY REPRESENT DOOR SIZE, DOOR SWING, DOOR HARDWARE, OR DOOR FUNCTIONALITY. REFER TO ARCHITECTURAL DOOR HARDWARE SCHEDULE, DOOR HARDWARE GROUPS AND DOOR HARDWARE SPECIFICATIONS FOR COMPLETE INFORMATION. MIRROR THE DETAIL AS REQUIRED.
  2. ROUGH IN SHOWN IN THE DETAIL ABOVE REPRESENTS THE MINIMUM REQUIREMENTS FOR ALL CONTROLLED SECURITY SYSTEM DEVICES AND CABLING UNLESS OTHERWISE NOTED. COORDINATE EXACT REQUIREMENTS WITH SELECTED DOOR MATERIALS, DOOR HARDWARE, AND CONTROLLED SECURITY DEVICES AND CABLING PRIOR TO INSTALLATION.
  3. ALL CABLING IN WALLS AND WHERE EXPOSED ON VERTICAL SURFACES SHALL BE INSTALLED IN EMT CONDUIT OR SURFACE MOUNT RACEWAY. CABLING ROUTED HORIZONTALLY ABOVE THE ACCESSIBLE CEILING WILL BE INSTALLED IN CONDUIT FROM THE DOOR TO THE NEAREST SECURITY PANEL.
  4. THE CONTRACTOR SHALL NOT MODIFY ANY FIRE RATED DOOR AND/OR DOOR FRAME. REFER TO THE ARCHITECTURAL DOOR SCHEDULE, DOOR HARDWARE SCHEDULE, AND DOOR HARDWARE SPECIFICATION FOR ADDITIONAL INFORMATION. MODIFICATION TO ANY FIRE RATED DOOR AND/OR FRAME WILL REQUIRE A RE-CERTIFICATION OF THE DOOR AND FRAME WITH THE LOCAL AUTHORITY HAVING JURISDICTION (LAHJ).
  5. INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR ALL CONTROLLED SECURITY SCHEME ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
  6. REFER TO THE ACCESS CONTROL AND INTRUSION DETECTIN CONNECTIVITY DIAGRAM ON FOR CABLING REQUIREMENTS FOR ADDITIONAL INFORMATION.
  7. INSTALLATION SHALL INCLUDE ALL POWER REQUIRED FOR SYSTEM OPERATION INCLUDING +120VAC. REFER TO THE SUGGESTED MATRIX OF SCOPE RESPONSIBILITY FOR ADDITIONAL INFORMATION.

- KEYNOTES:**
1. PROVIDE JUNCTION BOXES IN THE DOOR FRAME WHERE SHOWN ON THIS DETAIL. ROUGH-IN SHALL BE PROVIDED WHETHER THE CURRENT SECURITY SCHEME UTILIZES THEM OR NOT. ALL CONDUITS SHALL BE EMT CONDUIT UNLESS OTHERWISE NOTED. FLEXIBLE CONDUIT OF ANY TYPE WILL NOT BE ACCEPTED. COORDINATE INSTALLATION WITH ON-SITE DOOR FRAME INSTALLATION CONTRACTOR.
  2. ALL DOOR POSITION SWITCHES ARE REQUIRED TO BE RECESSED UNLESS OTHERWISE NOTED. ELECTRIC HINGE MONITORS ARE NOT AN ACCEPTABLE REPLACEMENT FOR THE RECESSED DOOR POSITION SWITCH.
  3. REFER TO FLOOR PLAN(S) FOR ACTUAL CREDENTIAL READER TYPE AND ROUGH-IN LOCATIONS. REFER TO THE FLOOR PLANS AND GENERAL TECHNOLOGY EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
  4. CONDUIT SHALL ROUTE FROM THE CREDENTIAL READER TO THE SECURE SIDE OF THE DOOR. CONDUIT SHALL ROUTE TO THE NEAREST SECURITY PANEL.
  5. MOUNT A MINIMUM 4" SQUARE 2-1/8" DEEP JUNCTION BOX WITH BLANK COVER PLATE ON THE SECURE SIDE OF THE DOOR ABOVE ACCESSIBLE CEILING. INSTALLING CONTRACTOR SHALL SIZE THE JUNCTION BOXES PER SYSTEM INSTALLATION REQUIREMENTS AND APPLICABLE CODES. MAINTAIN ACCESS TO THE JUNCTION BOX.
  6. CONDUIT SHALL ROUTE TO THE NEAREST SECURITY PANEL TELECOM ROOM.



**2 BONDING BUS BAR DETAIL**  
NO SCALE

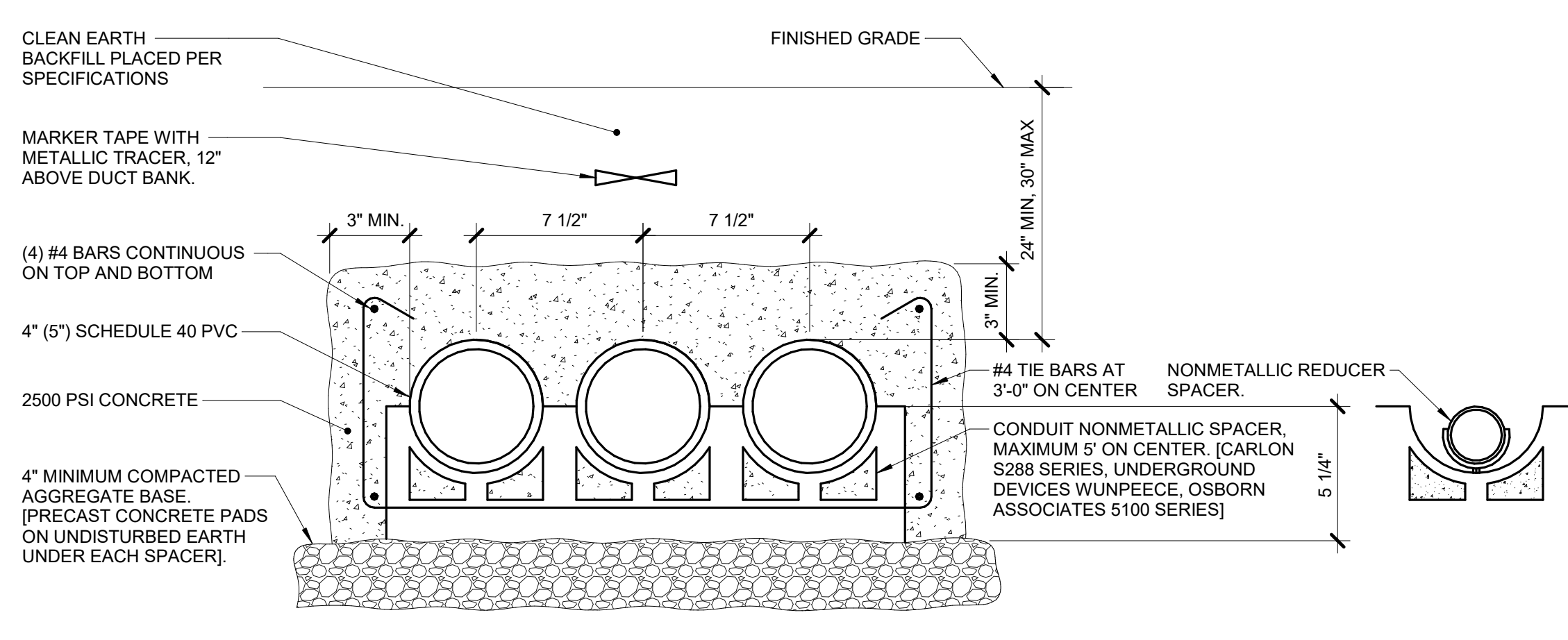
- NOTES:**
1. REFER TO TECHNOLOGY EQUIPMENT SCHEDULE SC-GND-1 FOR WIDTH REQUIREMENTS.



**3 LADDER RACK MOUNTING DETAIL**  
NO SCALE

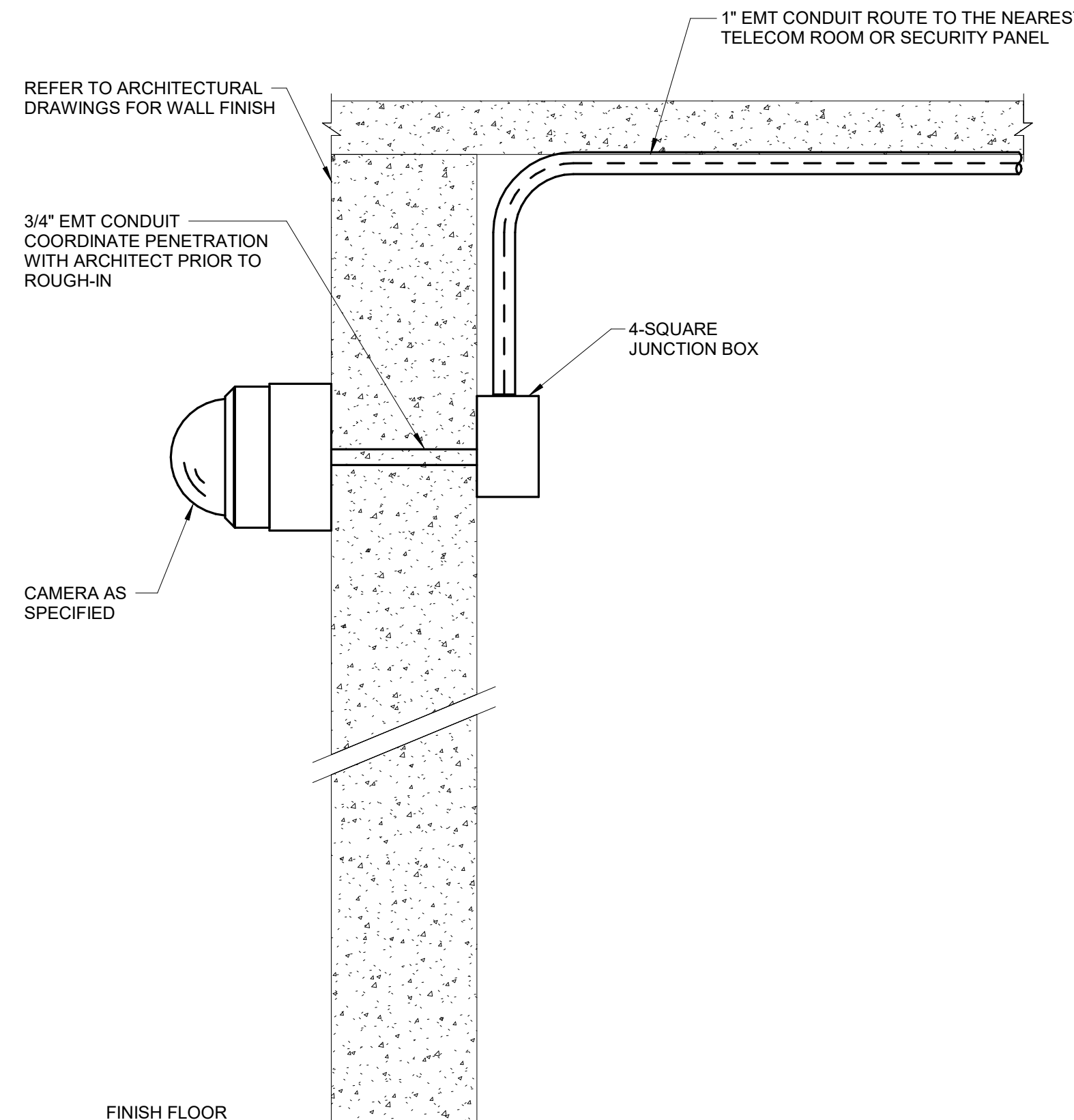
- NOTES:**
1. ALL LADDER RACK AND ACCESSORIES TO BE INSTALLED FOR A COMPLETE INSTALLATION SHALL BE FROM THE SAME MANUFACTURER.

- KEYNOTES:**
1. MOUNT THE LADDER RACK NO MORE THAN 4" ABOVE THE FLOOR MOUNTED RACK. ADJUST THE CABLE RUNWAY ELEVATION KIT AS REQUIRED.
  2. REFER TO THE INDIVIDUAL PATHWAY DRAWINGS FOR THE LADDER RACK SIZE.
  3. A MINIMUM OF (1) RADIUS DROP INTO EACH VERTICAL WIRE MANAGER. REFER TO THE INDIVIDUAL TELECOM ROOM LAYOUTS, PATHWAY LAYOUTS, AND RACK ELEVATIONS FOR QUANTITY OF WIRE MANAGERS AND ADDITIONAL INFORMATION.



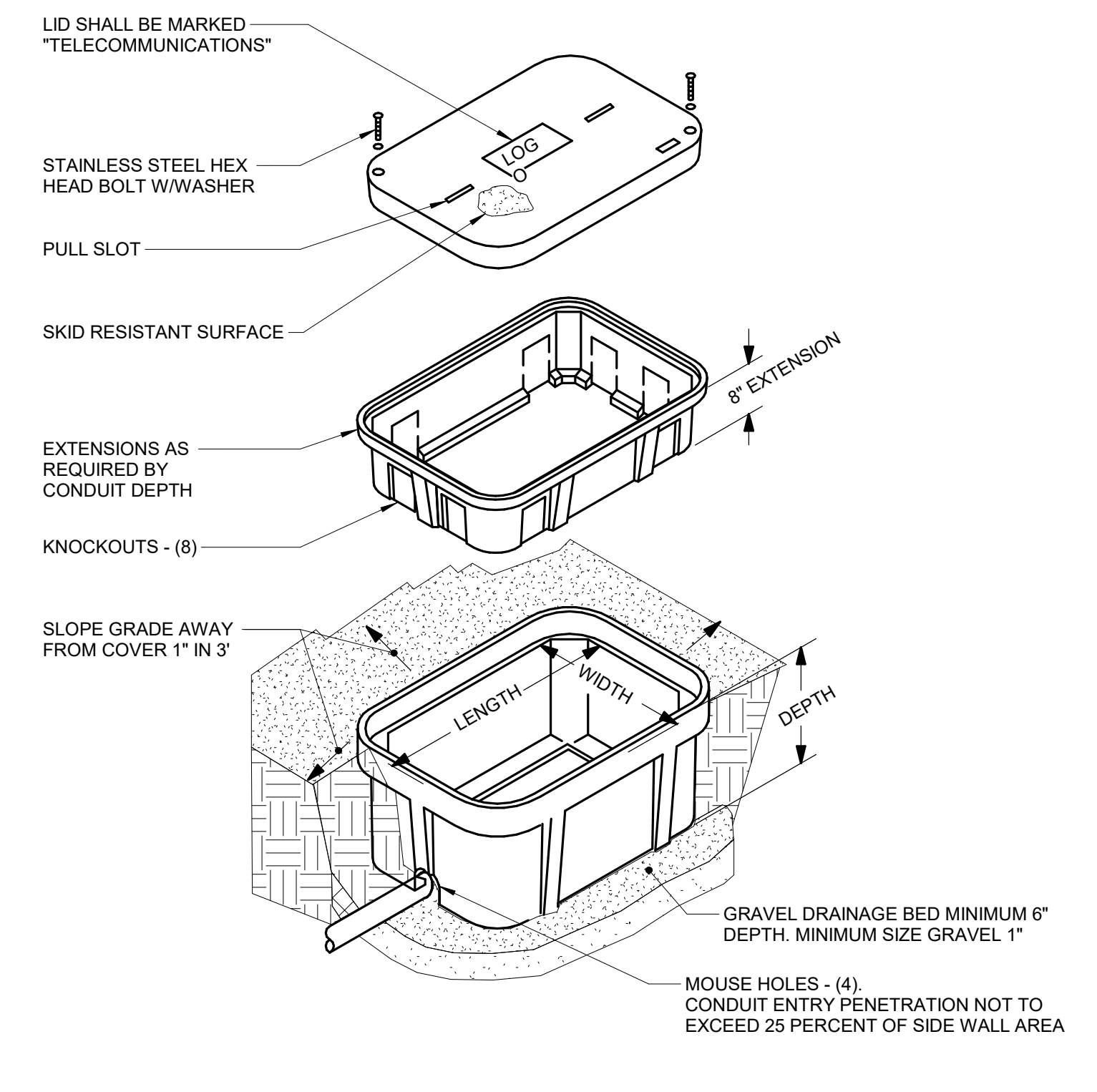
**7 DUCT BANK DETAIL (3x1)**  
NO SCALE

- NOTES:**
1. INSTALL 2000 lb TENSILE STRENGTH BRAIDED POLYPROPYLENE PULL CORD IN ALL CONDUITS.
  2. TRENCHING AND BACKFILL ACCORDING TO SPECIFICATIONS.
  3. MINIMUM OF 4" CLEAR BETWEEN ADJACENT DUCTBANKS.
  4. DOWEL ENDS OF DUCTBANK TO FOUNDATION OR MANHOLE WITH A MINIMUM OF (4) #4 DOWELS.
  5. THE DETAIL ABOVE REPRESENTS 3 CONDUITS. CONTRACTOR SHALL ADJUST THE SPACER AS NECESSARY. REFER TO THE SITE PLAN FOR CONDUIT QUANTITY.



**5 EXTERIOR WALL MOUNT CAMER ROUGH-IN DETAIL**  
NO SCALE

- NOTES:**
1. COORDINATE EXACT LOCATION ON SITE WITH WORK BY OTHER TRADES TO ENSURE DESIRED VIEWING AREA AND SERVICE ACCESS AFTER COMPLETION OF PROJECT AND TO MINIMIZE ANY POSSIBLE DAMAGE TO INSTALLED CAMERA OR ASSOCIATED CABLING.
  2. INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR CAMERA ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRESTOP REQUIREMENTS.
  3. PROVIDE CAMERA MOUNTING ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION FROM THE SAME MANUFACTURER OF THE CAMERA AND APPROVED BY THE MANUFACTURER FOR USE WITH THE SPECIFIC MODEL NUMBER OF CAMERA INSTALLED.
  4. SEAL WALL MOUNT BASE PLATE TO FACADE TO PREVENT WATER INFILTRATION.



**6 EXTERIOR HAND HOLE DETAIL**  
NO SCALE

- NOTES:**
1. ALL DIMENSIONS ARE NOMINAL INSIDE CLEARANCES.
  2. ANY SPLICES OR DEVICES IN HANDHOLE SHALL BE SUBMERGIBLE.

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Revisions:	Date:

<b>CONSULTANT</b>		
<b>MECHANICAL, ELECTRICAL, TECHNOLOGY &amp; STRUCTURAL:</b>	<b>GEOTECHNICAL:</b>	<b>COST ESTIMATING:</b>
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<b>Office of Construction and Facilities Management</b>	<b>VA</b> U.S. Department of Veterans Affairs
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<b>Drawing Title</b>	<b>Phase</b>
TECHNOLOGY DETAILS	BID DOCUMENTS
<b>Approved:</b>	<b>NON-SPRINKLERED</b>

<b>Project Title</b>	<b>Project Number</b>
BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS	884-CM-3015
<b>Location</b>	<b>Drawing Number</b>
STURGIS, SOUTH DAKOTA	T400
<b>Issue Date</b>	<b>Checked</b>
10/31/22	JAYSON
<b>Drawn</b>	<b>Dwg.</b>
JOSHUA	79 OF 84

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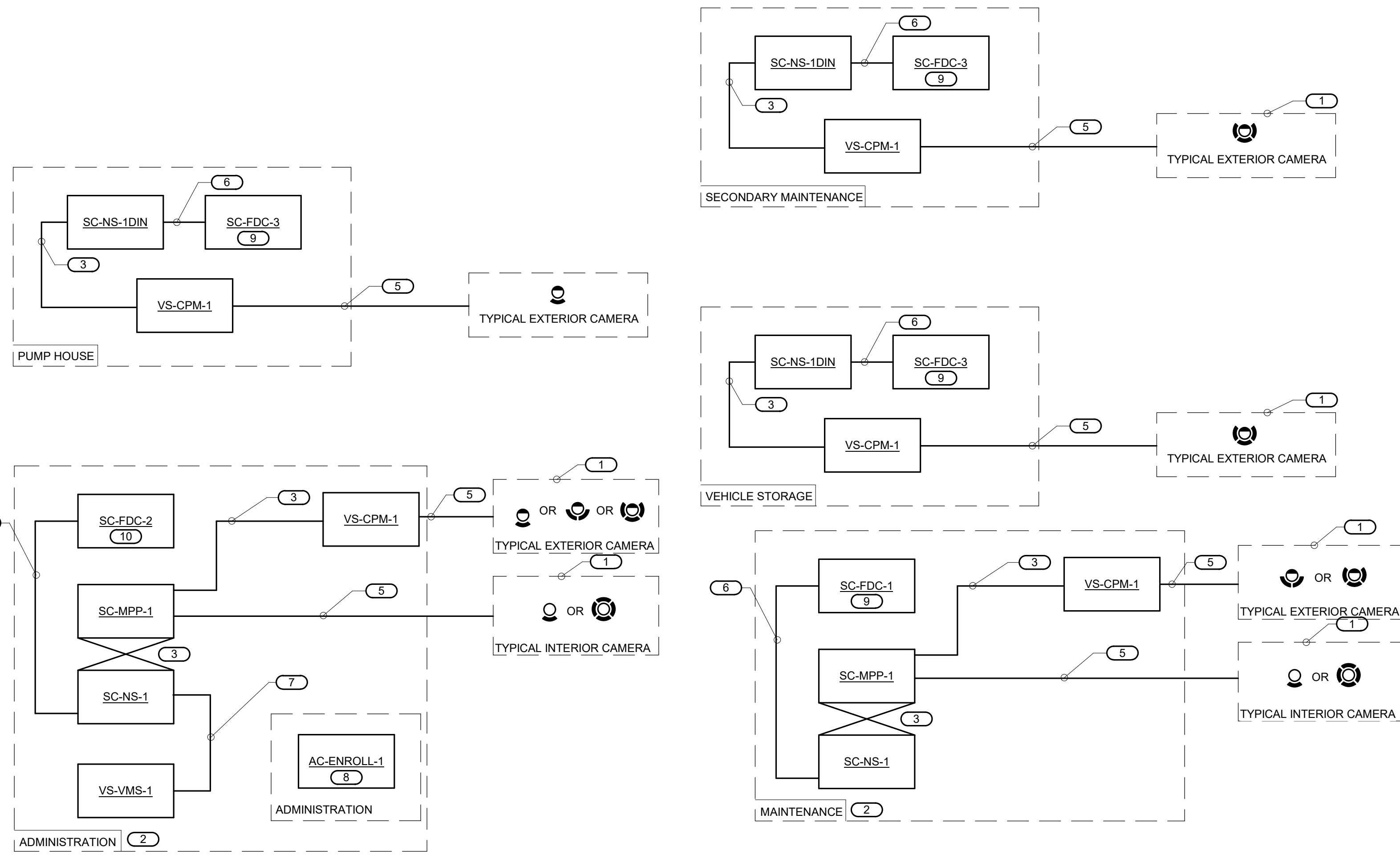
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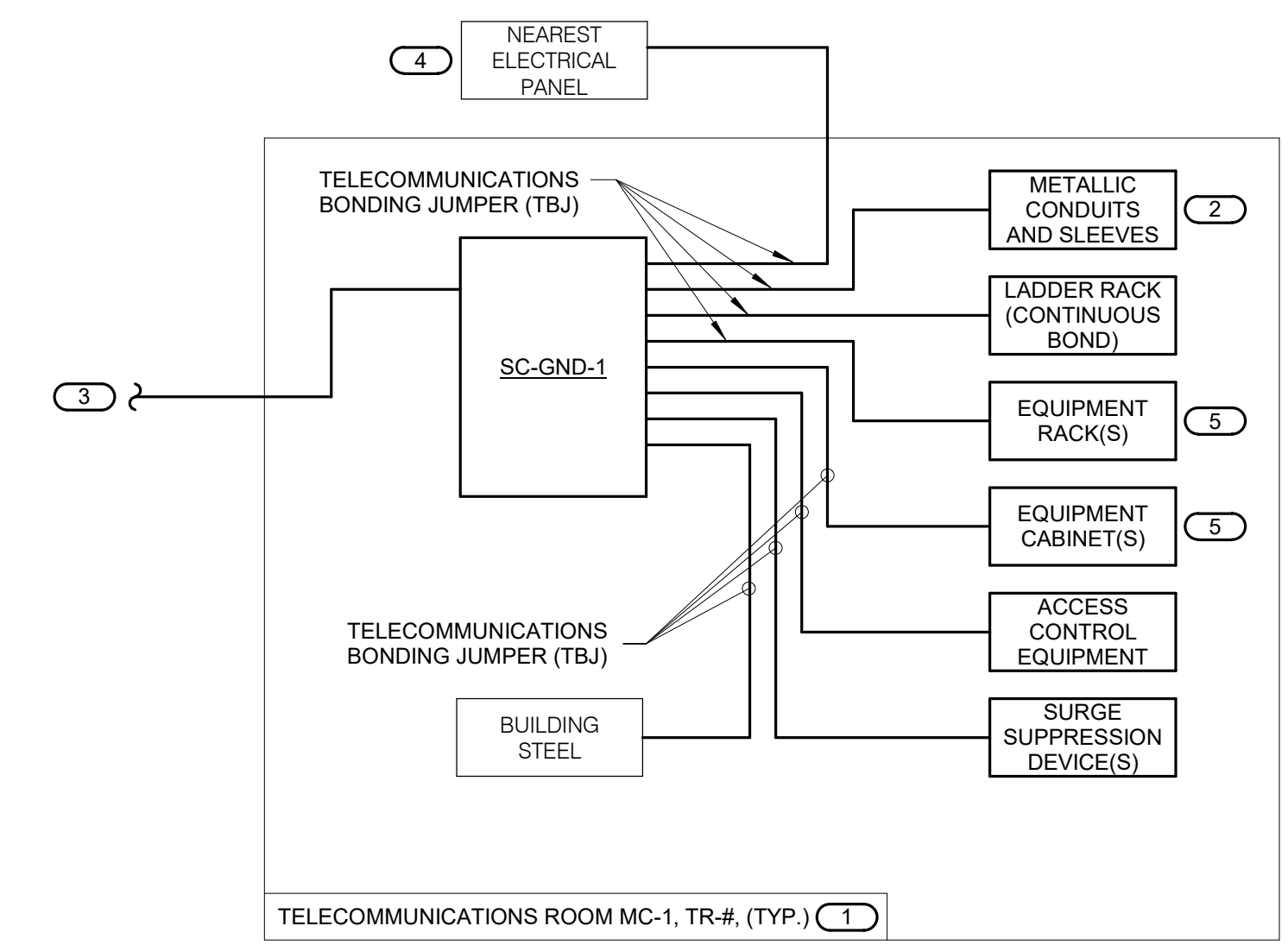
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CONDUCTOR LENGTH IN FEET	MINIMUM ACCEPTABLE SIZE - AWG
LESS THAN 13'	6
14' - 20'	4
21' - 26'	3
27' - 33'	2
34' - 41'	1
42' - 52'	1/0
53' - 66'	2/0
67' - 84'	3/0
85' - 105'	4/0
106' - 125'	250 kcmil
126' - 150'	300 kcmil
151' - 175'	350 kcmil
176' - 250'	500 kcmil
251' - 300'	600 kcmil
GREATER THAN 301'	750 kcmil

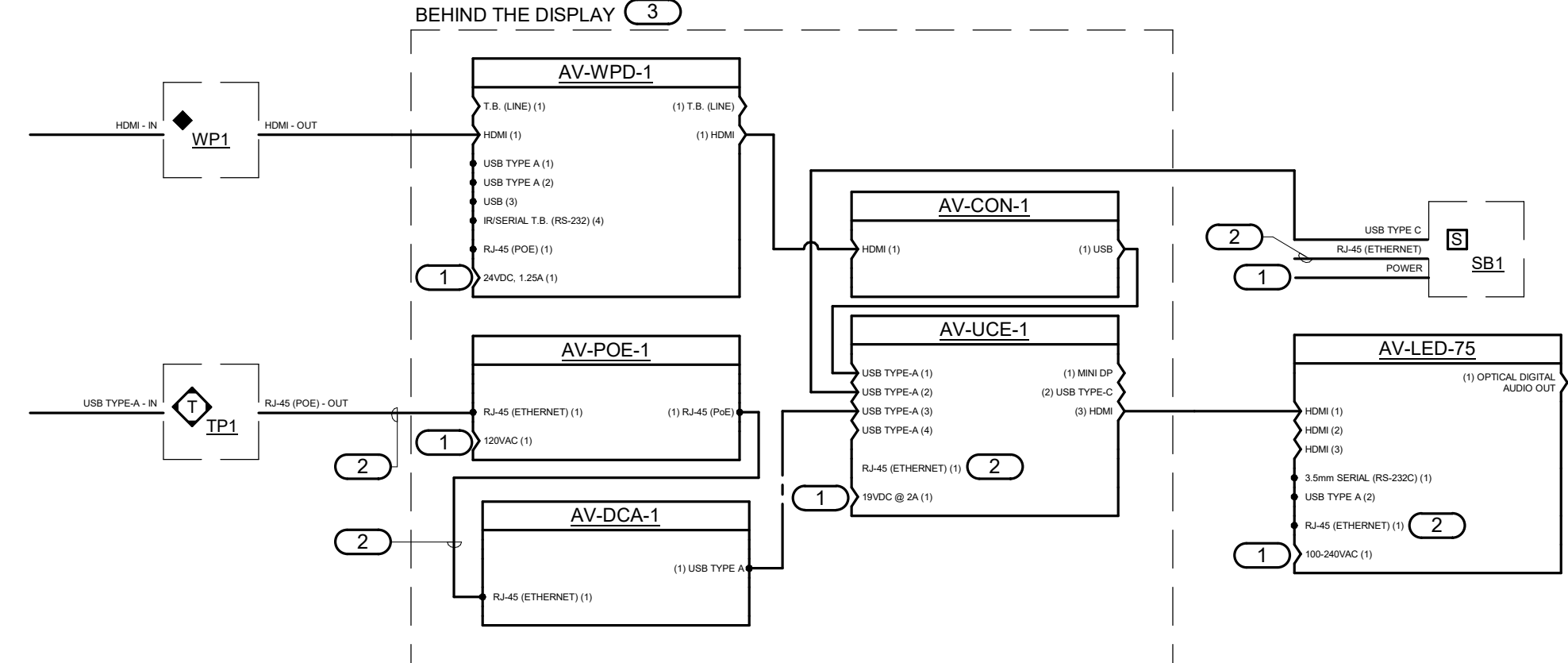


**2 TYPICAL TELECOM ROOM BONDING FLOW DIAGRAM**

- NO SCALE
- NOTES:
- THIS FLOW DIAGRAM IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS. THIS FLOW DIAGRAM IS SHOWN FOR CLARIFICATION OF CONNECTION LOCATIONS AND CONDUCTOR TYPE. ALL CONNECTIONS AND SYSTEM DEVICES SHOWN ARE TYPICAL AND NOT REPRESENTATIVE OF ACTUAL PROJECT QUANTITIES. REFER TO FLOOR PLANS AND ENLARGED FLOOR PLANS FOR ACTUAL QUANTITIES AND LOCATIONS OF DEVICES AND MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
  - ALL CONDUCTORS IN THE TECHNOLOGY BONDING SYSTEM SHALL BE MINIMUM SIZE OF 30 AWG PLENUM RATED COPPER (GREEN OR MARKED WITH A DISTINCTIVE GREEN COLOR) UNLESS CONDUCTOR LENGTH IS LESS THAN 66 FEET. REFER TO BONDING CONDUCTOR SIZING SCHEDULE FOR SIZING CRITERIA FOR CONDUCTORS LESS THAN 66 FEET IN LENGTH. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
  - ALL BONDING CONDUCTORS AND BONDING JUMPERS SHALL BE CONNECTED BY COMPRESSION LUGS, EXOTHERMIC WELDING, OR IRREVERSIBLE COMPRESSION CONNECTORS. SOLDER IS NOT AN ACCEPTABLE MEANS OF CONNECTION. SHEET METAL SCREWS SHALL NOT BE USED TO CONNECT COMMUNICATIONS BONDING CONDUCTORS TO EQUIPMENT. WHERE NECESSARY, REMOVE PAINT AND/OR USE PAINT-PIERCING WASHERS TO PROVIDE PROPER ELECTRICAL BOND AT ALL CONNECTIONS.
  - REFER TO 2/T400 FOR BONDING BUS BAR DETAIL AND ADDITIONAL INFORMATION AND REQUIREMENTS FOR SC-GND-1.
- KEYNOTES:
- REFER TO TELECOM ROOM REFERENCES SCHEDULE ON DRAWING T000 FOR TELECOMMUNICATIONS ROOM NUMBER AND LOCATION INFORMATION.
  - INCLUDES HORIZONTAL AND VERTICAL CONDUIT SLEEVES FOR TECHNOLOGY CABLING.
  - BONDING CONDUCTOR FOR TELECOMMUNICATIONS (BCT), TO EXISTING ELECTRICAL ENTRANCE INTERSYSTEM BONDING TERMINATION.
  - REFER TO THE ELECTRICAL DRAWINGS FOR LOCATION.
  - PROVIDE SC-GND-2 RACK MOUNT TELECOMMUNICATIONS BONDING BUSBAR AT EACH EQUIPMENT RACK AND CABINET.

**1 VIDEO SURVEILLANCE CONNECTIVITY DIAGRAM**

- 12" = 1'-0"
- NOTES:
- THIS RISER IS A DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIAL SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION(S), LOCATIONS, AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO THE FLOOR PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
  - REFER TO THE FLOOR PLANS FOR QUANTITY OF CABLES AND JACKS TO BE INSTALLED FOR EACH INFORMATION OUTLET.
  - VIDEO SURVEILLANCE CAMERAS WILL BE CONNECTED TO PROVIDED NETWORK SWITCHES. CONTRACTOR IS RESPONSIBLE TO PROVIDE LIST OF IP ADDRESSES AND ASSIST WITH PROGRAMMING OF CAMERAS.
- KEYNOTES: (#)
- REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND INSTALLATION REQUIREMENTS.
  - CABINET AS DEFINED ON THE TELECOM ROOM LAYOUT. REFER TO THE TELECOM ROOM REFERENCES MATRIX ON THE COVERPAGE FOR LOCATION.
  - CONTRACTOR PROVIDED AND INSTALLED PATCH CABLE.
  - FIBER OPTIC CABLE. REFER TO THE SPECIFICATIONS FOR REQUIREMENTS.
  - CATEGORY 6 UNSHEATHED, OSP CABLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - CONTRACTOR PROVIDED AND INSTALLED FIBER PATCH CORD. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - (2) CATEGORY 6 PATCH CORDS FROM NETWORK SWITCH TO VMS SERVER.
  - CONTRACTOR PROVIDED AND INSTALLED WORKSTATION FOR THE ACCESS CONTROL AND VIDEO SURVEILLANCE SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - REFER TO THE BACKBONE COPPER/FIBER DIAGRAM ON 1/T501 AND THE FLOOR PLANS FOR ADDITIONAL INFORMATION AND NETWORK CONNECTIVITY REQUIREMENTS.



**4 HUDDLE AND TEAM AV DIAGRAM**

- NO SCALE
- NOTES:
- THIS ROOM UTILIZES AN ALL-IN-ONE TEAMS ROOM SYSTEM THAT PROVIDES FULL CONTROL OF ALL EQUIPMENT TO SUPPORT AUDIO AND VIDEO THROUGH A COMMON VIDEO CONFERENCING PLATFORM. THIS INCLUDES A TOUCH INTERFACE TO CONTROL THE SYSTEM, AN HDMI CONNECTION, FLAT PANEL DISPLAY, WIRELESS PRESENTATION AND WIRELESS VIDEO CONFERENCING UC PLATFORM, WITH AN IN ROOM SOUND BAR TO SUPPORT PROGRAM AUDIO, MICROPHONE AND CAMERA.
  - THIS FUNCTIONAL DIAGRAM IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING, QUANTITIES, OR ALL CABLING REQUIRED FOR A COMPLETE TURN KEY INSTALLATION. THIS DIAGRAM IS SHOWN FOR CLARIFICATION OF CONNECTIONS, LOCATIONS AND CABLING TYPE AND REQUIREMENTS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - THE INTENT OF THIS DIAGRAM IS TO SHOW CONNECTION REQUIREMENTS AND DOES INCLUDE ALL CABLING AS SHOWN FOR A COMPLETE TURN KEY SYSTEM. ALL STRUCTURED (DATA) CABLING SHALL BE PROVIDED BY THE STRUCTURED CABLING CONTRACTOR AND BE FROM THE SAME MANUFACTURE. ALL OTHER CABLING (HDMI, USB, ETC.) SHALL BE APPROVED BY THE AV VENDOR (I.E. CRESTRON).
  - AV CONTRACTOR SHALL VERIFY POWER REQUIREMENTS, CONNECTIONS, AND LOCATIONS FOR ALL AV DEVICES WITH THE ELECTRICAL CONTRACTOR.
- KEYNOTES: (#)
- PLUG DEVICE(S) INTO E.C. PROVIDED POWER RECEPTACLE.
  - CONTRACTOR PROVIDED AND INSTALLED PATCH CABLE. REFER TO THE FLOOR PLANS FOR ADDITIONAL INFORMATION.
  - MOUNT ALL EQUIPMENT IN THE IN-WALL DISPLAY MOUNT AV-MNT-1. PROVIDE WITH MOUNTING BRACKETS AS REQUIRED TO SECURE THE EQUIPMENT TO THE DISPLAY MOUNT.

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REGISTERED PROFESSIONAL ENGINEER  
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 10/31/2022

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

**Drawing Title**

**TECHNOLOGY DIAGRAMS**

Approved: \_\_\_\_\_

**Phase**

**BID DOCUMENTS**

**NON-SPRINKLERED**

**Project Title**

**BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS**

**Location**

**STURGIS, SOUTH DAKOTA**

**Issue Date**

**10/31/22**

**Checked**

**JAYSON**

**Drawn**

**JOSHUA**

**Project Number**

**884-CM-3015**

**Building Number**

**Drawing Number**

**T500**

**Dwg. 80 OF 84**

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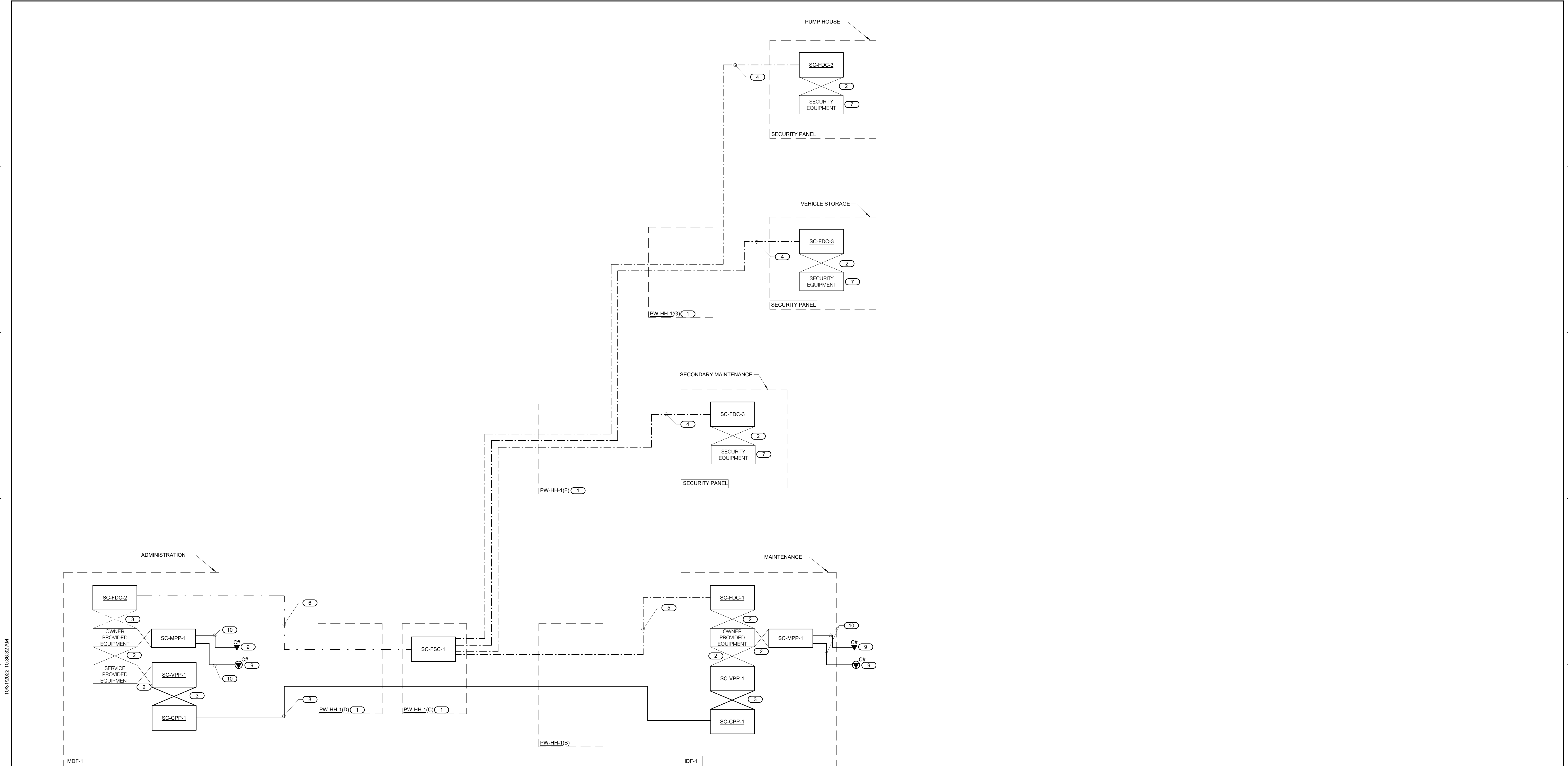
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**1 BACKBONE COPPER/FIBER CONNECTIVITY & NETWORK CABLING DIAGRAM**

NO SCALE

- NOTES:**
- THIS RISER IS A DIAGRAMATIC ND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIAL SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION(S), LOCATIONS, AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO THE FLOOR PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
  - REFER TO THE FLOOR PLANS FOR QUANTITY OF CABLES AND JACKS TO BE INSTALLED FOR EACH INFORMATION OUTLET.
  - ALL FIBER OPTIC CABLES SHALL TERMINATE ON LC CONNECTORS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- KEYNOTES:** (#)
- PROVIDE A 25'-0" COIL SLACK LOOP COIL SLACK LOOP FOR BOTH FIBER AND COPPER IN THE HANDLE.
  - COPPER OR FIBER PATCH CABLE BY OTHERS.
  - CONTRACTOR PROVIDED AND INSTALLED 25-PAIR CROSS CONNECT COPPER CABLE. TERMINATE ONE PAIR PER PORT ON PORTS 1-24 AND COIL THE 25TH PAIR TO BE TERMINATED ON ANY PORT.
  - 6 STRAND SINGLE MODE FIBER OPTIC CABLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - 12 STRAND SINGLE MODE FIBER OPTIC CABLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - 72 STRAND SINGLE MODE FIBER OPTIC CABLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - REFER TO THE ACCESS CONTROL DIAGRAM AND VIDEO SURVEILLANCE DIAGRAM FOR ADDITIONAL INFORMATION.
  - 25-PAIR CATEGORY 3 COPPER BACKBONE CABLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - CATEGORY 6A PLENUM RATED HORIZONTAL CABLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - REFER TO THE INFORMATION OUT SCHEDULE ON T800 AND THE FLOOR PLANS FOR THE QUANTITY OF CABLES AND JACKS TO BE INSTALLED AT EACH LOCATION.

BIM 360/IT/01/04/23 - NCA-Black Hills NC-Admin - Main/BigBlg/EPR1\_720104/23 - Black Hills NCA Maintenance - Admin/Big\_Cnt  
 10/31/2022 10:38:32 AM

Revisions:	Date:

<b>CONSULTANT</b>		
<b>MECHANICAL, ELECTRICAL, TECHNOLOGY &amp; STRUCTURAL:</b>	<b>GEOTECHNICAL:</b>	<b>COST ESTIMATING:</b>
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REGISTERED PROFESSIONAL ENGINEER  
 14680 ALEXANDER QUAY  
 STURGIS, SOUTH DAKOTA  
 10/31/2022

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

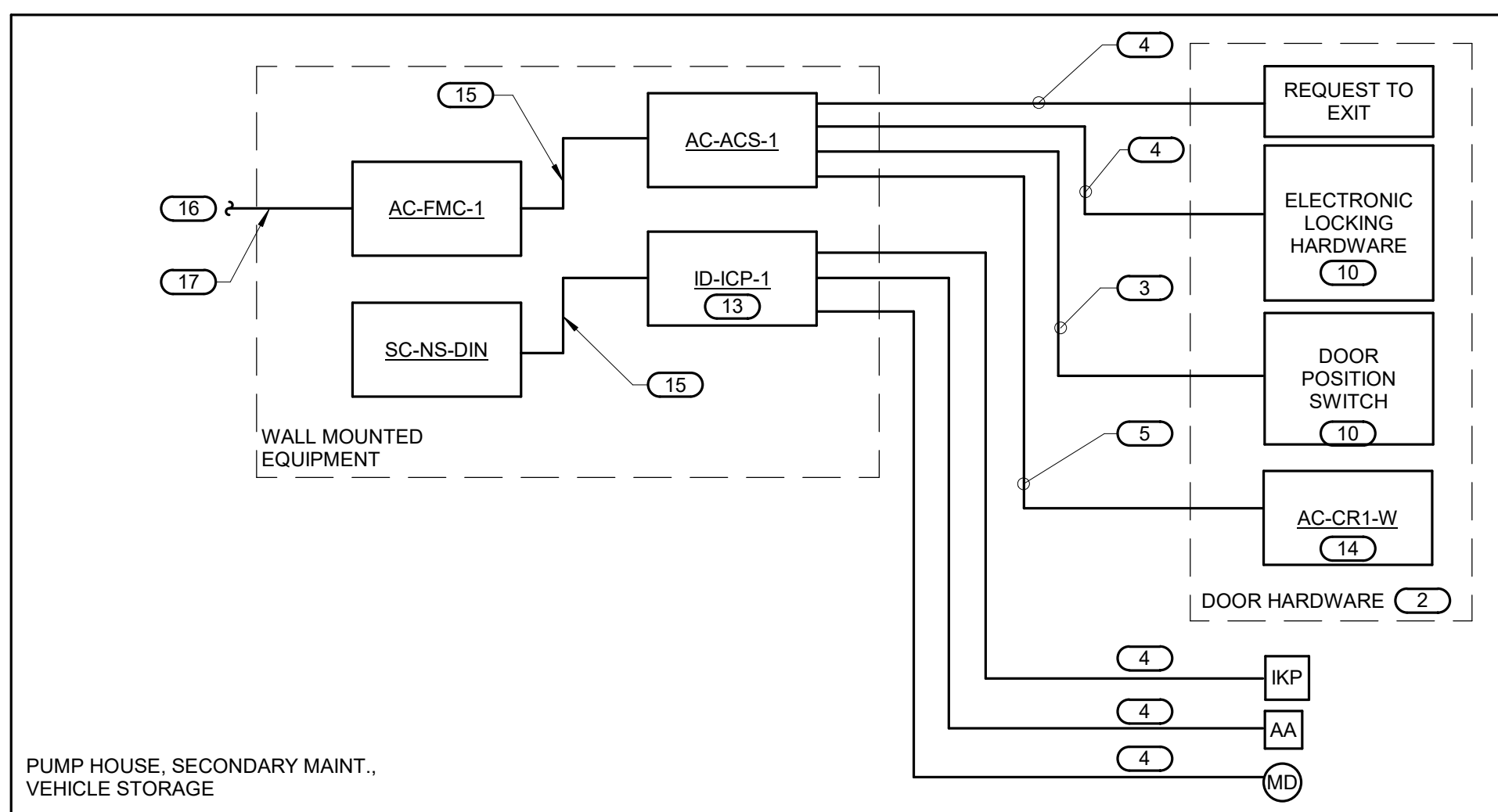
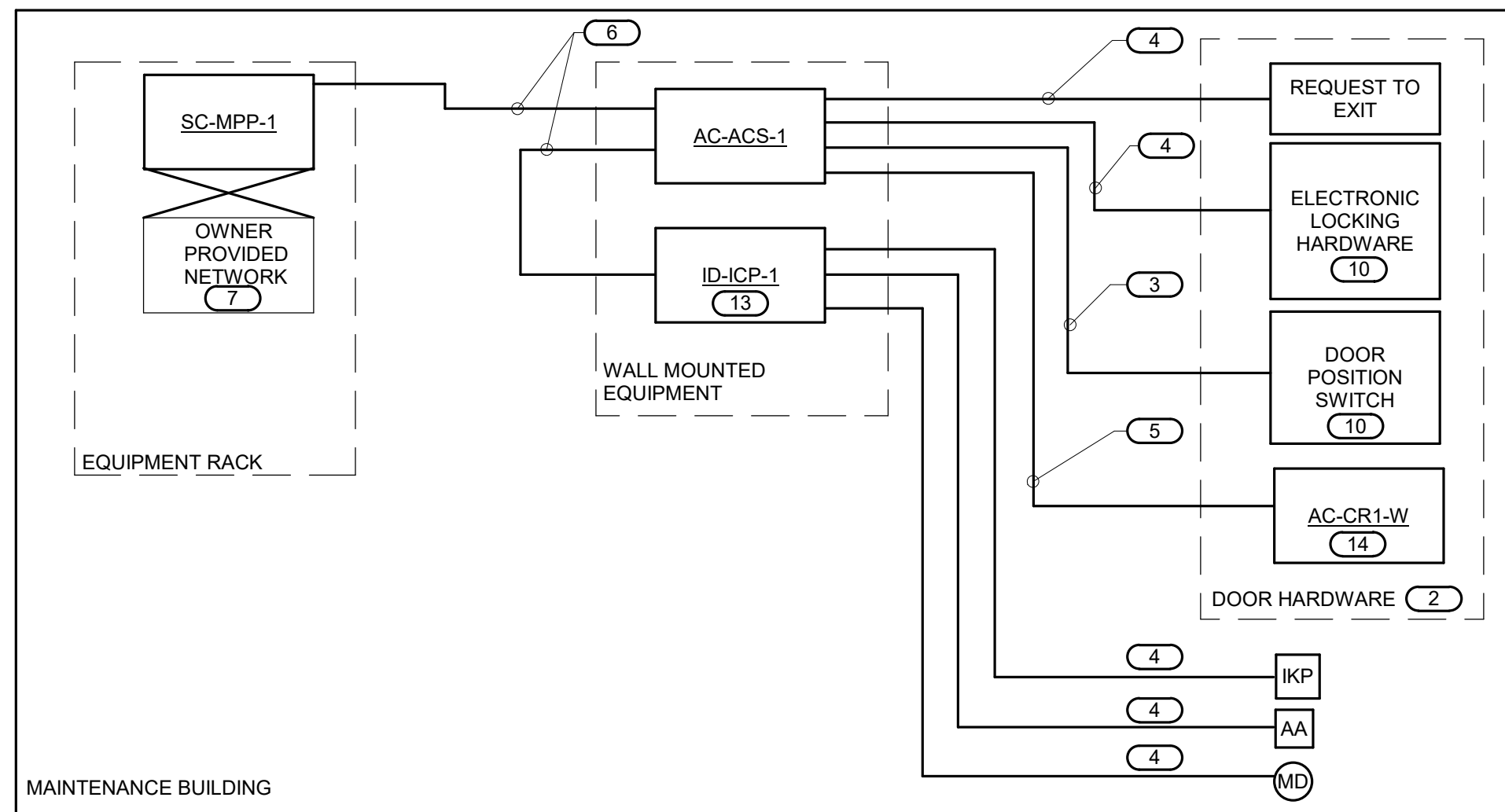
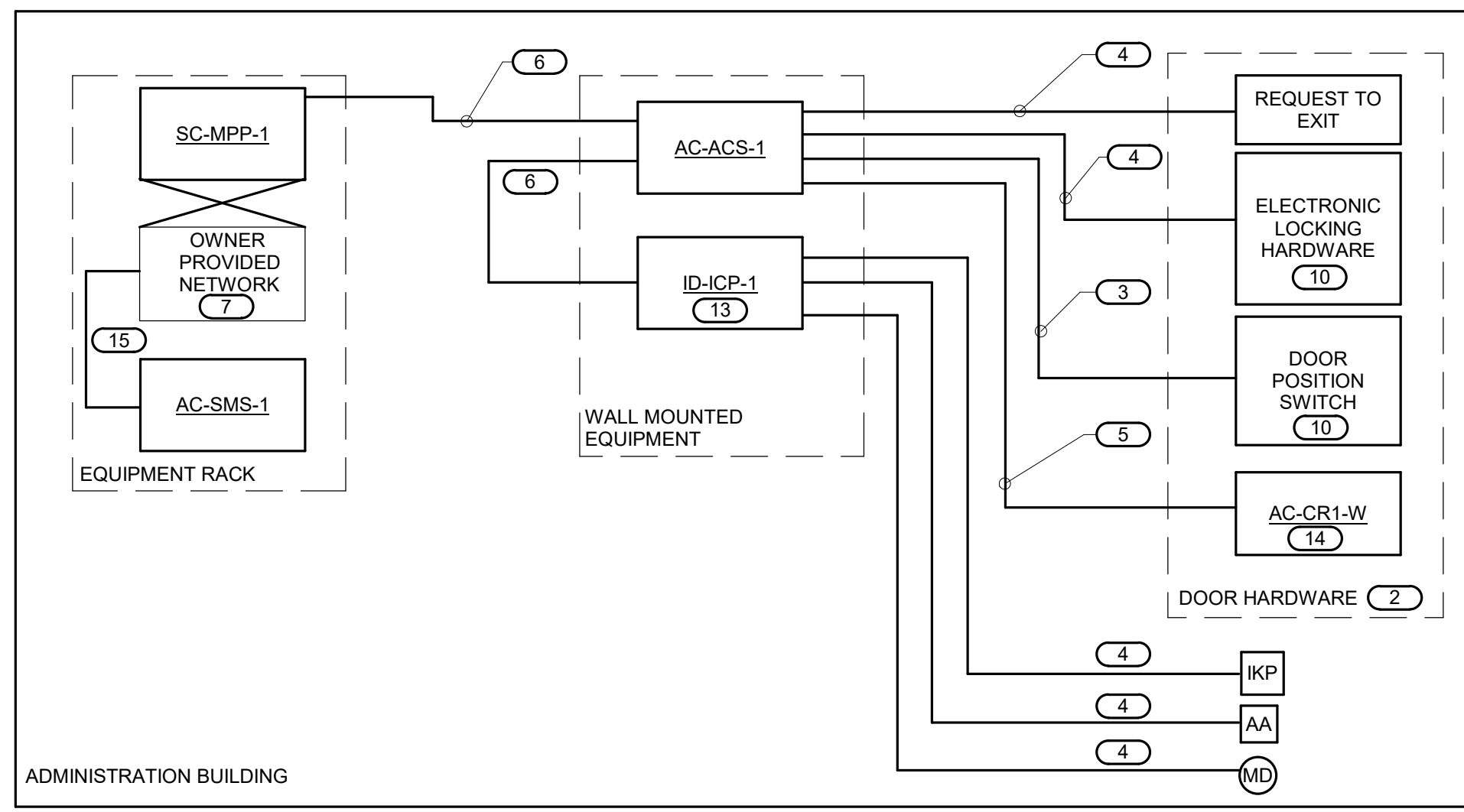
**Drawing Title**  
 TECHNOLOGY DIAGRAMS

**Approved:**

**Phase**  
 BID DOCUMENTS

**NON-SPRINKLERED**

<b>Project Title</b> BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS		<b>Project Number</b> 884-CM-3015	
<b>Location</b> STURGIS, SOUTH DAKOTA		<b>Building Number</b>	
<b>Issue Date</b> 10/31/22	<b>Checked</b> JAYSON	<b>Drawn</b> JOSHUA	<b>Dwg. 81 OF 84</b>
<b>Drawing Number</b> T501			



**1 ACCESS CONTROL & INTRUSION DETECTION CONNECTIVITY DIAGRAM**

- NO SCALE  
NOTES:
- THIS RISER IS A DIAGRAMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIAL SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION(S), LOCATIONS, AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO THE FLOOR PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
  - THIS INTEGRATED SYSTEM INCLUDES DEVICES FOR AN INTRUSION DETECTION SYSTEM AND AN ACCESS CONTROL SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ALL CABLING LISTED HERE ARE MINIMUM REQUIREMENTS. FINAL GAUGE AND QUANTITY IS BASED ON THE DISTANCE FROM THE NEAREST CONTROL PANEL AND THE NUMBER OF DOORS AT EACH LOCATION. CREDENTIAL READERS WILL OPEN A SINGLE DOOR WITH THE SECOND DOOR BEING MONITORED BY THE SYSTEM.
  - ALL ACCESS CONTROL EQUIPMENT AND DOOR HARDWARE WILL REQUIRE TO BE ON A MINIMUM OF 8 HOURS OF BATTERY TIME IN THE EVENT OF A POWER FAILURE. THIS INCLUDES ALL OF THE INPUT/OUTPUT CARDS, DOOR CONTROLLERS, ENDPOINTS (SUCH AS CARD READERS, MOTION DETECTIONS, AND DOOR POSITIONS SWITCHES), DOOR POWER SUPPLIES AND ALL OTHER DEVICES REQUIRED TO SUPPORT THE SYSTEM FUNCTIONALITY. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - ALL DOORS REQUIRE ROUGH-IN AT ALL LOCATIONS. REFER TO 1/1400 FOR ROUGH-IN REQUIREMENTS.
  - THIS SYSTEM INCLUDES A SINGLE SYSTEM THAT IS CAPABLE OF PROVIDING CARD ACCESS AND INTRUSION DETECTION. COORDINATE WITH THE CONTRACTOR FOR PROGRAMMING REQUIREMENTS TO DISABLE THE ALARM SYSTEM. THE ALARM SYSTEM WILL BE DISABLED VIA A DEDICATED KEYPAD AND THE KEYPAD ON NAV CREDENTIAL READER.
- KEYNOTES: #
- REFER TO THE FLOOR PLANS FOR SECURITY PANEL LOCATIONS.
  - TYPICAL OF ALL DOORS AS SHOWN ON THE DRAWINGS. REFER TO THE CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE AND SPECIFICATIONS FOR QUANTITY OF DEVICES AT EACH LOCATION.
  - A MINIMUM OF 18 AWG 4-CONDUCTOR, UNSHIELDED CABLE. 2 CONDUCTORS WILL CONNECT TO THE ACCESS CONTROL SYSTEM AND THE REMAINING 2 CONDUCTORS WILL CONNECT TO THE INTRUSION DETECTION SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - A MINIMUM OF 18 AWG 4-CONDUCTOR, SHIELDED CABLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - A MINIMUM OF 18 AWG 6-CONDUCTOR, UNSHIELDED CABLE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - CATEGORY 6 PATCH CABLE FROM THE ACCESS CONTROL SYSTEM TO THE SECURITY NETWORK. PATCH PANEL INSTALLED IN THE NEAREST TELECOM ROOM. REFER TO TELECOM ROOM LAYOUTS ON 3/1101 AND 3/103 FOR PATCH PANEL DEDICATED TO THE ACCESS CONTROL SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - OWNER PROVIDED NETWORK SWITCH SHARED WITH THE VIDEO SURVEILLANCE SYSTEM. REFER TO THE VIDEO SURVEILLANCE SYSTEM DIAGRAM ON 3/1500 FOR ADDITIONAL INFORMATION.
  - COORDINATE WITH THE CONTRACTOR FOR THE LOCATION OF THE ENROLLMENT STATION.
  - THE SECURITY MANAGEMENT SERVER WILL BE INSTALLED IN THE MDF-1 IN THE ADMINISTRATION BUILDING. COORDINATE FOR CONNECTION AND INSTALLATION REQUIREMENTS.
  - PROVIDED AND INSTALLED BY THE DOOR HARDWARE CONTRACTOR.
  - THE CONTRACTOR IS TO PROVIDE AND INSTALL SOFTWARE ON A NEW CONTRACTOR PROVIDED AND INSTALLED PC FOR AN ENROLLMENT STATION. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. REFER TO THE DRAWINGS FOR QUANTITY OF DOORS AND PROVIDE ONE CONNECTION FOR EACH LEAF DOOR.
  - CONTRACTOR SHALL ADD ALL ADDITIONAL EXPANSION MODULES REQUIRED TO EXPAND THE INTRUSION DETECTION SYSTEM TO EACH BUILDING. THE ADMINISTRATION BUILDING WILL BE THE MAIN INTRUSION PANEL. EXPANSION CAN UTILIZE THE COPPER AND FIBER BACKBONE. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
  - CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER (RE) ON THE CONNECTION TO THE MONITORING SERVICE. PROVIDE ALL REQUIRED DEVICES TO NOTIFY THE MONITORING SERVICE PER THE MONITORING SERVICE REQUIREMENTS.
  - REFER TO THE FLOOR PLANS FOR CREDENTIAL READER TYPE AND LOCATIONS.
  - CATEGORY 6 PATCH CORD. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - REFER TO BACKBONE COPPER/FIBER CONNECTIVITY RISER, 1/1501, FOR CONTINUATION.
  - 2 STRAND LC-LC FIBER OPTIC PATCH CORD.

BIM 360/1701048.23 - NC-Admin - Main/Biggs/EPF1\_1701048.23 - Black Hills NCA Maintenance - Admin/Biggs\_Cvrt 10/31/2022 10:38:33 AM

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**STAMP**

REGISTERED PROFESSIONAL ENGINEER  
14680 ALEXANDER  
QUART  
SOUTH DAKOTA  
10/31/2022

**Office of Construction and Facilities Management**

**VA** U.S. Department of Veterans Affairs

**Drawing Title**  
TECHNOLOGY DIAGRAMS

**Approved:**

**Phase**  
BID DOCUMENTS

**NON-SPRINKLERED**

**Project Title**  
BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS

**Location**  
STURGIS, SOUTH DAKOTA

**Issue Date**  
10/31/22

**Checked**  
Checker

**Drawn**  
Author

**Project Number**  
884-CM-3015

**Building Number**

**Drawing Number**  
T502  
Dwg. 82 OF 84



**TECHNOLOGY EQUIPMENT SCHEDULE.**

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EQUIPMENT LIST ABBREVIATION	EQUIPMENT LIST DESCRIPTION	EQUIPMENT LIST MANUFACTURER AND MODEL
AC-AA-1	WALL MOUNTED AUDIBLE SIREN TO NOTIFY OF A BREACH. INSTALL DEVICE IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING. INSTALL A 1" EMT CONDUIT TO THE NEAREST SUPPORTING SECURITY PANEL.	WBOX LA-1-GANGSIRN OR PRE-APPROVED EQUAL
AC-ACS-1	ELECTRONIC ACCESS CONTROL SECURITY PANEL. PROVIDE ALL SOFTWARE, DOOR CONTROLLERS, CARD READER MODULES, INPUT MODULES, OUTPUT MODULES, POWER SUPPLIES AND BATTERIES TO SUPPORT A MINIMUM OF 8 HOURS OF DOWN TIME. REFER TO THE SPECIFICATION FOR ADDITIONAL INFORMATION.	GENETEC OR PRE-APPROVED EQUAL
AC-CR1-W	CARD READER, PROVIDED AS INTEGRAL PART OF SECURITY MANAGEMENT SYSTEM. REFER TO CONTROLLED SECURITY SCHEME (CSS) TYPE SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. CARD READERS SHOWN ON PLANS TO IDENTIFY INTENDED MOUNTING LOCATION. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	HID PIN CLASS: RK40 SERIES
AC-ENROLL-1	LAPTOP WITH KEYBOARD AND 16" 1080P MONITOR. INCLUDE WITH A CREDENTIAL READER ENROLLER. THE LAPTOP WILL BE SIZED TO SUPPORT THE VIEWING OF ALL VIDEO SURVEILLANCE CAMERAS ON THE PROJECT. BE USED FOR THE ENROLLMENT STATION, AND SUPPORT THE MONITORING AND ENROLLMENT ON THE ACCESS CONTROL SYSTEM. PROVIDE WITH THE LAPTOP WITH AN ENROLLER. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. COORDINATE WITH THE RESIDENT ENGINEER ON THE EXACT LOCATION OF THE WORKSTATION PC PRIOR TO INSTALLATION.	LAPTOP: DELL HP ENROLLER: RFIDeas PC PROX ENROLL FIPS201 OR PRE-APPROVED EQUAL
AC-FMC-1	FIBER MEDIA CONVERTER SUITABLE FOR RS-232 OR RS-422/485 INTERFACES. POWER: 12V-48V.	HONEYWELL TOP-142-M NEMA 4X ENCLOSURE
AC-SCP-1	SECURITY PANEL, PROVIDED AS AN ENCLOSURE FOR LOW VOLTAGE SUPPORTING DEVICES. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	DELL HP
AC-SMS-1	ELECTRONIC ACCESS CONTROL SERVER. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	CRESTRON HD-CONV-USB-200
AV-CON-1	AV HDMI TO USB CONVERTER	CRESTRON PROVIDED WITH FLEX KIT
AV-DCA-1	DIRECT CONNECTION ADAPTER	SAMSUNG QM75R CHRISTIE LG
AV-LED-75	75" LED FLAT PANEL DISPLAY, 4K RESOLUTION, 24/7 OPERATION. INPUTS: DVI-D DISPLAY PORT 1 (2), HDMI 2.0 (2), HDCP2.2, STEREO MINI JACK, USB 2.0 X 2, OUTPUTS: HDMI 2.0 (LOOP OUT), STEREO MINI JACK. EXTERNAL CONTROL: RS-232C(NOUT) THRU STEREO JACK, RJ45, POWER SUPPLY: VAC 100-240V ~ (±10%), 50/60 HZ, MOUNT AT 60" AFF TO CENTER. DIMENSION: 37"Wx66"Hx2"D. WEIGHT: 85" lbs.	RVISUAL WALLMATE32, FLEX PLATE
AV-MNT-1	AV X-RAM FLAT PANEL MOUNT WITH BUILT-IN BACK BOX, WALL MOUNTED. DIMENSIONS: 30.38" X 23.34" X 3.81", PROVIDE CRESTRON FLEX PLATE, PROVIDE 1-1/4" CONDUIT STUBBED UP ABOVE CEILING FOR AV CABLING. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	CRESTRON 6502429
AV-PDE-1	1 PORT POWER OVER ETHERNET INJECTOR	JABRA PANAACAST 50 VIDEO BAR
AV-SB1-W	AV SOUNDBAR WITH BUILT-IN CAMERA FOR VIDEO CONFERENCEING.	CRESTRON TSW-1070
AV-TP1-W	AV TOUCH PLATE, WALL MOUNTED. PROVIDE 2-GANG BOX WITH 1" CONDUIT STUBBED UP ABOVE THE CEILING FOR AV CABLING. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	CRESTRON UC-BRKT-200-S-T-ASSY CRESTRON MP-WP152
AV-UCE-1	UNIFIED COMMUNICATIONS ENGINE FOR TEAMS	CRESTRON MP-WP152
AV-WP1-W	AV WALL PLATE/BACKBOX, WALL MOUNTED. PROVIDE 1 GANG BOX WITH 1-1/4" CONDUIT STUBBED UP ABOVE THE CEILING FOR AV CABLING. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	CRESTRON AXIS-200
AV-WPD-1	WIRELESS PRESENTATION DEVICE	HONEYWELL VISTA 128BPT SERIES OR PRE-APPROVED EQUAL HONEYWELL VISTA 6160 OR PRE-APPROVED EQUAL
ID-ICP-1	INTRUSION DETECTION CONTROLLER, PROVIDES UP TO 40 POINTS INCLUDING MOTION DETECTORS, KEYPADS, GLASS BREAKS, ETC. PROVIDE WITH INPUT CARDS AS REQUIRED TO SUPPORT THE CONNECTED DEVICES. PROVIDE AN INTERFACE MODULE FOR UP TO (2) TELEPHONE LINES, A LOCKABLE CABINET, AND BATTERY BACKUP FOR A MINIMUM OF 8 HOURS.	BOSCH ISD-C01-1WA15G OR PRE-APPROVED EQUAL
ID-ICP-W	INTRUSION DETECTION KEYPAD, ILLUMINATED 4-LINE PANEL DISPLAY LCD SHOWS ZONE INFORMATION, ECP BUS COMPATIBLE. INSTALL KEYPAD IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING WITH (1) 1" CONDUIT TO NEAREST TELECOM ROOM.	HUBBELL QUAZITE: PQ2424B924 PQ2424HA00
ID-MD-C	INTRUSION DETECTION MOTION SENSOR, CEILING MOUNTED. DIMENSION: 3.5" X 5.25" (H X Dia.) REQUIRE INPUT POWER 6-15 VDC; 8mA STANDBY; 60mA IN ALARM WITH LEDs ENABLED. DEVICE COMPLIES WITH PART 15 OF THE FCC RULES.	CIRCA PANEL: 1800CCA10100 PROTECTOR UNITS: 483S-75 OR PRE-APPROVED EQUAL
PW-HH-1	HANDHOLE COMPOSITE POLYMER CONCRETE BODY AND COVER. STAINLESS STEEL HARDWARE BOLTED NON-SKID COVER RATED FOR 15,000LB. DESIGN LOAD. OCCASIONAL, NON-DILIBERATE VEHICULAR TRAFFIC. STACK UNITS TO ACHIEVE DEPTH SHOWN ON PLANS. UNITS IN LANDSCAPED AREAS SHALL BE GREEN IN COLOR. COMMUNICATIONS LOGO ON HANDHOLE COVER. CONTRACTOR SHALL FIELD VERIFY QUANTITY AND LOCATIONS. REFER TO 6T400 FOR DETAIL. PW-HH-1 = 24"W X 24"L COPPER PROTECTOR PANEL, UP TO 100-PAIR SURGE PROTECTION MODULE, 110 TYPE INPUT/OUTPUT TERMINATIONS. PROVIDE WITH FIBER GLASS HOUSING AND POPULATE WITH DIGITAL SOLID STATE PROTECTOR UNITS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	CHATS WORTH PRODUCTS 483S-503
SC-CP-1	REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	CORNING ENCLOSURE: CCH-01U CASSETTE: CCH LC CASSETTE OR PRE-APPROVED EQUAL
SC-ER-1	STANDARD 19" EQUIPMENT RACK, 84"H X 19"W X 15"D, FEATURING PASS-THRU HOLES ON FRONT AND SIDES FOR CABLE MANAGEMENT (CHATS WORTH 11374-503), DURABLE BLACK POWDER COAT FINISH, MEETS EIA-310-E REQUIREMENT AND PROVIDES (45) 19" X 1.75" MOUNTING SPACES. PROVIDE WITH TOP CENTER WATERFALL, TOP CHANNEL PATHWAY FOR LADDER RACK, AND ANY ADDITIONAL HARDWARE FOR COMPLETE INSTALLATION. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	CHATS WORTH PRODUCTS 483S-503
SC-FDC-1	OPTICAL FIBER DISTRIBUTION CABINET, 24 FIBER MAXIMUM CAPACITY FOR LC CONNECTORS, FRONT LOCKING DOOR, SLIDE OUT RAILS TO FACILITATE FRONT ACCESS, JUMPER TROUGHS IN CONNECTOR PANELS TO REDUCE MOUNTING SPACE. REQUIRES (4) 19" X 1.75" RACK MOUNTING SPACES. PROVIDE WITH CLAMP AND GROUNDING KIT, COUPLING PANEL(S), LC CONNECTOR, COUPLINGS, JUMPERS, AND REAR MOUNTED CLOSET HOUSING PANEL(S). REFER TO SPECIFICATIONS SECTION FOR ADDITIONAL INFORMATION	CORNING ENCLOSURE: CCH-01U CONNECTOR PANEL: CCH LC DUPLEX 24 OR APPROVED EQUAL
SC-FDC-2	OPTICAL FIBER DISTRIBUTION CABINET, 144 FIBER MAXIMUM CAPACITY FOR LC CONNECTORS, FRONT LOCKING DOOR, SLIDE OUT RAILS TO FACILITATE FRONT ACCESS, JUMPER TROUGHS IN CONNECTOR PANELS TO REDUCE MOUNTING SPACE. REQUIRES (1) 19" X 1.75" RACK MOUNTING SPACES. PROVIDE WITH CLAMP AND GROUNDING KIT, COUPLING PANEL(S), LC CONNECTOR, COUPLINGS, JUMPERS, AND REAR MOUNTED CLOSET HOUSING PANEL(S). REFER TO SPECIFICATIONS SECTION FOR ADDITIONAL INFORMATION	CORNING ENCLOSURE: CCH-01U CONNECTOR PANEL: CCH LC CASSETTE OR PRE-APPROVED EQUAL
SC-FDC-3	DIN MOUNTED SINGLE PANEL HOUSING FOR DIN RAIL MOUNTABLE SPLICE PANEL. HOLDS A SINGLE CONNECTOR PANEL. PROVIDE WITH CLAMP AND GROUNDING	CORNING ENCLOSURE: CCH-01U CONNECTOR PANEL: CCH LC DUPLEX 24 OR APPROVED EQUAL
SC-FSC-1	FIBER OPTIC SPLICE CASE FOR EXTERIOR USE. PROVIDES UP TO (3) FIBER ENTRANCE PORTS FOR FIBER SPLICING OF UP TO 36 SINGLE FUSION SPLICES AND 72 WITH AN EXPANDED OPTION. INCLUDES MOUNTING IN HANDHOLES, LOCK-TAPE SEALING SYSTEM, PERMANENT NEOPRENE GASKET SYSTEM, STANDARD COVER AND INTEGRATED AIR VALVE. PROVIDE FUSION SPLICING AND SPLICE TRAYS FOR THE QUANTITY OF INSTALLED FIBER OPTIC CABLES. PROVIDE BONDING AS REQUIRED PER THE LATEST NEC REQUIREMENTS	PREFORMED LINE PRODUCTS COYOTE RUNT CLOSURE KIT OR PRE-APPROVED EQUAL
SC-GND-1	GROUNDING BUSBAR, WALL MOUNT, 4" H X 12" L X 1/4" D COPPER, ELECTRICALLY ISOLATED BY INSULATORS INTEGRAL TO MOUNTING BRACKETS. COPPER GROUND BAR IS 1/4" THICK AND STAND OFF 2.75" FROM WALL. THE 12" BUSBAR PROVIDES CONNECTION FOR EIGHTEEN (18) 2-HOLE COMPRESSION LUGS RESPECTIVELY WITH 5/8" OR 1" CENTERS. ANSIVIA-607 AND BICSI COMPLIANT. UL LISTED. REFER TO GROUND BAR DETAIL ON 2T400 AND THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	CHATS WORTH 40133-012
SC-GND-2	GROUNDING BUSBAR, HORIZONTAL RACK-MOUNT, 1/4" H X 19" L X 3/4" D SOLID COPPER, ELECTRICALLY ISOLATED BY INSULATORS INTEGRAL TO STAINLESS STEEL MOUNTING BRACKETS. PROVIDE UNIT CONFIGURED WITH 15 SETS OF 5/16" HOLES SPACED 5/8" ON CENTER TO ACCOMMODATE "A" SPACED TWO-HOLE COMPRESSION LUGS AND 3 SETS OF 7/16" HOLES SPACED 1" ON CENTER TO ACCOMMODATE "C" SPACED TWO-HOLE COMPRESSION LUGS. ANSIVIA-607 AND BICSI COMPLIANT. UL LISTED. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	PANDUIT ERICO HANGER HUBBELL HBBHR19
SC-HWM-1	HORIZONTAL WIRE MANAGEMENT, 2" X 3" RIGID FRONT FINGERS WITH FLEXIBLE RETENTION TABS, 2" X 5" FLEXIBLE REAR FINGERS. REMOVABLE FRONT COVER HINGES 180 UP OR DOWN. INTEGRAL BEND RADIUS CONTROL. PASS THROUGH HOLES ALLOW FRONT TO REAR CABLING. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL HM27C
SC-IO-C	INFORMATION OUTLET, CEILING MOUNT, 2-PORT COVERPLATE AS INDICATED ON DRAWINGS AND INFORMATION OUTLET SCHEDULE. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR PIN CONFIGURATION INFORMATION. * # * INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE DRAWINGS. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. INSTALL INFORMATION OUTLET IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING. ---MOUNT TO CLOSEST STRUCTURE ELEMENTS (EX. COLUMN). INSTALL A DELUXE CORD GRIP FOR STRAIN RELIEF ON UTP CABLE. INSTALL A 1" EMT CONDUIT TO THE NEAREST TELECOM ROOM AS INDICATED ON THE DRAWINGS OR UNLESS OTHERWISE NOTED. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	HUBBELL COVER PLATE: IFP1 SERIES JACK: (CAT6) HXJ6 SERIES OR PRE-APPROVED EQUAL
SC-IO-F	FLOORBOX, 2-COMPARTMENT BOX FOR USE IN EITHER CONCRETE OR WOOD FLOORS	HUBBELL COVER PLATE: IFP1 SERIES
SC-IO-W	INFORMATION OUTLET, WALL MOUNT, 1-, 2-, 4-, 6-PORT COVERPLATE AS INDICATED ON DRAWINGS AND INFORMATION OUTLET SCHEDULE. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR PIN CONFIGURATION INFORMATION. * # * INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE DRAWINGS. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. * W * PROVIDE (1) RJ-45 JACK FOR VOICE AT 48" AFF FOR WALL HUNG PHONE. PROVIDE WITH STAINLESS STEEL FACEPLATE, MATING LUGS. REFER TO INFORMATION OUTLET SCHEDULE ON T600 FOR ADDITIONAL INFORMATION. INSTALL INFORMATION OUTLET IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING. INSTALL A 1" EMT CONDUIT TO THE NEAREST TELECOM ROOM OR UNLESS OTHERWISE NOTED. PROVIDE REMOVABLE BLANK INSERTS FOR UNUSED PORTS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	HUBBELL COVER PLATE: IFP1 SERIES JACK: (CAT6) HXJ6 SERIES OR PRE-APPROVED EQUAL

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EQUIPMENT LIST ABBREVIATION	EQUIPMENT LIST DESCRIPTION	EQUIPMENT LIST MANUFACTURER AND MODEL
SC-LR-1	LADDER RACK, (12"W x 1.5"H x 9'7") TUBULAR STEEL CONSTRUCTION. RUST RESISTANT ENAMEL FINISH. REMOVE SHARP BURRS FROM LADDER RACK AND REPAINT ALL AREAS THAT HAVE BEEN FIELD MODIFIED, CUT, OR EXPOSED. UL LISTED. PROVIDE WITH ALL NECESSARY MOUNTING BRACKETS, RACK ELEVATION KITS, AND (2) CABLE RADIUS DROPS PER RACK.	CHATS WORTH LADDER RACK: 11275-712 RACK ELEVATION KIT: 10506-706 CABLE RADIUS DROP: 12100-712
SC-MPP-1	MODULAR PATCH PANEL, 48 MODULAR RJ-45 TERMINATIONS, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK, PORT IDENTIFICATION NUMBERS, PROVIDED WITH COLOR CODING AND LABEL HOLDER KITS, U.L. LISTED. REQUIRES (2) 1.75" MOUNTING SPACES.	HUBBELL CAT6A HP6A48
SC-NS-1	48-PORT LAYER 2/3/4 10/100/1000 GIGABIT SWITCH - POE, 48 RJ-45 CONNECTORS FOR 10BASE - T/100BASE-TX/1000 BASE-T WITH 4 GIGABIT COMBO PORTS SHARED BETWEEN MINI-GBC PORTS. CONSOLE PORT: AUTO MEDIUM DEPENDENT INTER FACE (MDI) AND MDI CROSSOVER (MDI-X); AUTO	CISCO 5500 SERIES OR PRE-APPROVED EQUAL
SC-NS-1DIN	EXTERIOR DIN-MOUNTED INDUSTRIAL RATED SWITCH, DIN MOUNTED, LAYER 2/3 SWITCH, (4) PORTS 10/100, (2) DUAL PORT SFP MODULES, POE, POE+, PROVIDE WITH SINGLE MODE SFP MODULE, POWER SUPPLY, AND ALL ACCESSORIES FOR A COMPLETE INSTALLATION. PROVIDE ADDITIONAL EXP	CISCO IE-3000 SERIES OR PRE-APPROVED EQUAL
SC-PDU-1	20A POWER CONDITIONER, SURGE PROTECTION, NOISE FILTRATION, VOLTAGE PROTECTION, DELIVERS 120V OF AC POWER, INPUT VOLTAGE, 97V-137V AND CONSTANT OUTPUT VOLTAGE 120V, +/-5V. REQUIRES (2) RACK UNIT OF MOUNTING SPACE. REFER TO THE SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION.	FURMAN P-2400 AR OR PRE-APPROVED EQUAL
SC-TTB	TELECOMMUNICATIONS TERMINAL BOARD, 4"X8"X3/4" A-C GRADE FIRE-RATED PLYWOOD. EXPOSED SIDE SHALL BE SMOOTH. MOUNT VERTICALLY WITH TOP OF PLYWOOD AT 8'-6" AFF. IN THE EVENT THE MANUFACTURER'S RATING STAMP IS NOT VISIBLE ON THE SMOOTH SIDE, THE CONTRACTOR SHALL PROVIDE A LAMINATED LETTER FROM THE MANUFACTURER OR SUPPLIER CERTIFYING THAT THE PLYWOOD IS FIRE-RATED AND ATTACH THE LETTER WITH A PICTURE OF THE RATING STAMP. TO THE PLYWOOD. FIRE RATED PLYWOOD SHALL NOT BE PAINTED OR TREATED WITH ANY TYPE OF SEALANT THAT WOULD LESSEN THE INTEGRITY OF THE FIRE RATING.	*
SC-UPS-1	48-PORT LAYER 2/3/4 10/100/1000 GIGABIT SWITCH - POE, 48 RJ-45 CONNECTORS FOR 10BASE - T/100BASE-TX/1000 BASE-T WITH 4 GIGABIT COMBO PORTS SHARED BETWEEN MINI-GBC PORTS. CONSOLE PORT: AUTO MEDIUM DEPENDENT INTER FACE (MDI) AND MDI CROSSOVER (MDI-X); AUTO	APC UPS: SMART-UPS SRT 3000VA BATTERIES: APC SMART-UPS SRT 96V 39VA BP OR PRE-APPROVED EQUAL
SC-VPP-1	MODULAR PATCH PANEL, 24 MODULAR RJ-45 TERMINATIONS, MOUNTS DIRECTLY TO EIA/TIA STANDARD 19" RELAY RACK, PORT IDENTIFICATION NUMBERS, PROVIDED WITH COLOR CODING AND LABEL HOLDER KITS, U.L. LISTED. REQUIRES (2) 1.75" MOUNTING SPACES.	COMMSCOPE "SYSTEMAX" CAT 6 1100AGS3-24 OR PRE-APPROVED EQUAL
SC-VVM-1	DOUBLE-SIDED VERTICAL WIRE MANAGER, 7H X 8"W X 24.5"D. REMOVABLE FRONT COVER HINGES ON LEFT OR RIGHT. SPOOLS FOR INTEGRAL BEND RADIUS CONTROL.	CHATS WORTH 3522-703 OR PRE-APPROVED EQUAL
VS-CM-1	SINGLE LENS FIXED SINGLE VARIFOCAL LENS, INTERIOR IP CAMERA. CEILING MOUNTED. 2 MEGAPIXEL, VARIFOCAL: 3.4-8.9 mm. (MIN ILLUMINATION: COLOR: 0.10 LUX, B/W: 0.00 LUX. CAMERA: AXIS P3265-LVE TERMINATION: CAT6: HXJ6 SERIES OR PRE-APPROVED EQUAL	FEATURES: FORENSIC WIDE DYNAMIC RANGE, LIGHTFINDER 2.0, AND OPTIMIZED IR. VIDEO COMPRESSION: H.264, H.265, MOTION JPEG, CASING: IP66-IP67-RATED; IK RATING: IK10 IMPACT-RESISTANT CASING WITH HARD-COATED DOME. POWER: TYPICAL 4.8W, MAX 10.7W. OPERATING CONDITIONS: 0-50 DEG C.; INCLUDES VANDAL RESISTANT SCREWS. CAMERA COLOR: WHITE. INFORMATION OUTLET FOR CAMERA SHALL BE TERMINATED IN AN RJ-45 PLUG. REFER TO THE INFORMATION OUTLET SCHEDULE ON SHEET T600 FOR ADDITIONAL INFORMATION PIN CONFIGURATION.
VS-CM-2	REFER TO T400 FOR CAMERA MOUNTING AND ROUGH-IN DETAIL REQUIREMENTS.	OR PRE-APPROVED EQUAL
VS-CM-3	MULTI-DIRECTIONAL 180 DEG. EXTERIOR CORNER MOUNTED CAMERA. 270° OVERVIEW IN CHALLENGING LIGHT CONDITIONS. THREE SENSORS, ONE CAMERA AND ONE IP ADDRESS. 3 X QUAD HD AT 30 FPS OR 15 MP AT 20 FPS. ADJUST THE CAMERA TO 270 DEGREE AND A CORNER MOUNT. PROVIDE A PROPER MOUNT BASED ON THE INSTALLED APPLICATIONS ON THE WALL OR CEILING. FOR WALL APPLICATIONS, PROVIDE A 4" SQUARE BACKBOX WITH CONDUIT TO ABOVE THE NEAREST ACCESSIBLE CEILING. ALL CABLING SHALL BE EITHER ABOVE THE ACCESSIBLE CEILING OR INSTALLED IN CONDUIT. NO CABLING SHALL BE EXPOSED. FOR OPEN CEILINGS, INSTALL IN CONDUIT. REFER TO THE DRAWINGS 5T400 FOR ADDITIONAL INFORMATION	CAMERA: AXIS COMMUNICATIONS P3719-PL6 OR PRE-APPROVED EQUAL
VS-CM-4	MULTI-DIRECTIONAL 360 DEG MULTI-SENSOR MULTI-LENS VARIFOCAL LENS INTERIOR IP CAMERA. CEILING MOUNTED. 4 x 2.5 MEGAPIXEL SENSORS, VARIFOCAL: 3-6 mm. MIN ILLUMINATION: COLOR: 0.20 LUX, B/W: 0.00 LUX. FEATURES: WIDE DYNAMIC RANGE AND IR ILLUMINATION. VIDEO COMPRESSION: H.264, H.265, CASING: IP66-IP67-RATED; IK RATING: IK09 IMPACT-RESISTANT CASING WITH HARD-COATED DOME. POWER: TYPICAL 16.3W, MAX 25.5W. OPERATING CONDITIONS: -30-50 DEG C.; INCLUDES VANDAL RESISTANT SCREWS. CAMERA COLOR: WHITE. INFORMATION OUTLET FOR CAMERA SHALL BE TERMINATED IN AN RJ-45 PLUG. REFER TO THE INFORMATION OUTLET SCHEDULE ON SHEET T600 FOR ADDITIONAL INFORMATION PIN CONFIGURATION. REFER TO T4T00 FOR CAMERA MOUNTING AND ROUGH-IN DETAIL.	CAMERA: AXIS P3719-PL6 TERMINATION: CAT6: HXJ6 SERIES OR PRE-APPROVED EQUAL
VS-CPM-1	SINGLE CHANNEL ETHERNET SURGE PROTECTOR, PROVIDES SURGE PROTECTION FOR (1) ETHERNET 10/100/1000 CONNECTION AND SEPARATE 12V OR 24V @ 5AMPS POWER CONNECTION. PoE+, SINGLE POINT GROUND WIRE 0.9'X 2.5'X 1.8"(H X W X D).	NETEK IPFWR1 OR PRE-APPROVED EQUAL
VS-KVM-1	17" LCD RACK MOUNT SLIDE OUT MONITOR WITH KEYBOARD AND TWO BUTTON TOUCH PAD MOUSE AND BUILT IN 8 PORT DVI/USB KVM. COORDINATE WITH OWNER ON MONITOR HEIGHT IN RACK. REQUIRES (1) 1.75 MOUNTING SPACE. PROVIDE WITH ALL NECESSARY CABLES TO CONNECT TO ALL CCTV EQUIPMENT. PROVIDE WITH CHATS WORTH 4-POST.	NTI RACKMUX-D17-N-8DVIHD OR PRE-APPROVED EQUAL
VS-VMS-1	VIDEO MANAGEMENT SERVER, REQUIRES (2) RACK UNITS. REFER TO THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	MILESTONE XPROTECT PROFESSIONAL OR PRE-APPROVED EQUAL

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Revisions:	Date:

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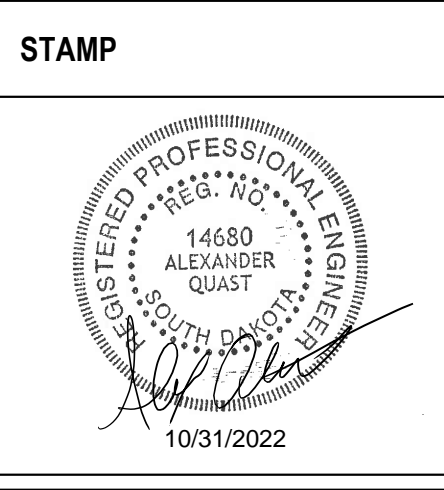
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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: TECHNOLOGY SCHEDULES

Phase: BID DOCUMENTS

Approved: \_\_\_\_\_

Project Title: BLACK HILLS NATIONAL CEMETERY RENOVATE AND EXPAND ADMINISTRATION AND MAINTENANCE BUILDINGS

Project Number: 884-CM-3015

Location: STURGIS, SOUTH DAKOTA

Issue Date: 10/31/22

Checked: \_\_\_\_\_

Drawn: \_\_\_\_\_

Drawing Number: T601

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