U.S. DEPARTMENT OF VETERANS AFFAIRS

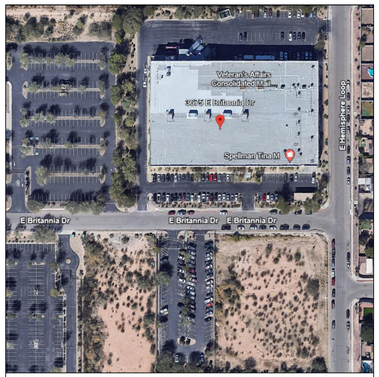
TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

CORRECT FCA & PHYSICAL SECURITY SYSTEMS

VA PROJECT NUMBER: 762-24-101

BID DOCUMENTS

LOCATION PLAN



AREA PLAN

PHASING DESCRIPTION:

PHASE 1:

- BEGIN CONSTRUCTION OF LOADING DOCK EXTENSION INCLUDING ANY NECESSARY DEMOLITION WORK.

PHASE 2:

- RELOCATE TRASH COMPACTORS
- CONSTRUCT NEW METAL RAMP AND PLATFORM
- ENSURE TRASH COMPACTORS ARE FULLY FUNCTIONING AND ACCESSIBLE AS SOON AS POSSIBLE

PHASE 3:

- BEGIN CONSTRUCTION OF GENERATOR AREA SCOPE INCLUDING NECESSARY DEMOLITION WORK AND ALL RELATED MEP COMPONENTS.
- BEGIN CONSTRUCTION OF HVAC SYSTEM.
- BEGIN CONSTRUCTION OF BACKFLOW PREVENTER (IF BID ALTERNATE 1 IS EXECUTED).
- BEGIN DEMOLITION AND CONSTRUCTION OF NEW ROOFING (IF BID ALTERNATE 2 IS EXECUTED).
- INSTALL AIR COMPRESSORS & DRYERS (IF BID ALTERNATE 3 IS EXECUTED).

GENERAL PHASING NOTES

1. CONTRACTOR TO SUBMIT COORDINATION DRAWINGS BEFORE CONSTRUCTION CAN START INCLUDING PLANS AND SCHEDULE FOR CRANE USE.
2. CONCTRACTOR TO VALIDATE CURRENT PHASING AND ANY PROPOSED ALTERNATIVES TO BE PRESENTED AND APPROVED BY THE VA, PRIOR TO CONSTRUCTION.
3. CONTRACTOR TO COORDINATE WITH VAMC COR FOR AFTER-HOURS AND WEEKEND WORK. CONTRACTOR TO CLEAN AND RESTORE ALL AREAS THAT ARE STILL OCCUPIED DURING REGULAR WORK HOURS THAT HAVE BEEN AFFECTED BY AFTER-HOURS AND WEEKEND WORK. REMOVE ALL MATERIALS AND TOOLS PRIOR TO NEXT WORKING DAY.
4. CONTRACTOR TO PROTECT EXISTING FINISHES AND FURNISHINGS.
5. MINIMIZE NOISE AND DUST LEVELS AND TEMPORARILY SUSPEND CONSTRUCTION ACTIVITIES INCLUDING BUT NOT LIMITED TO DEMOLITION ACTIVITIES AS REQUESTED BY THE VA AS NEEDED TO ACCOMMODATE ACTIVITIES PROCEEDING IN ADJACENT AREAS.

BASE BID AND BID ALTERNATES:

BASE BID

1. CONSTRUCT ENTIRE SCOPE OF ESSENTIAL ELECTRICAL SYSTEM (EES) INCLUDING BUT NOT LIMITED TO EMERGENCY GENERATORS, NEW FUEL TANK, LOADING DOCK EXTENSION, ALL RELATED ELECTRICAL COMPONENTS, AND ALL SITE WORK RELATED TO THIS SCOPE.
2. CONSTRUCT ENTIRE SCOPE OF HVAC SYSTEM.
3. CONSTRUCT ALL SCOPE NOT LISTED ABOVE THAT IS NOT PART OF THE BID ALTERNATES.

BID ALTERNATE 1

1. BACKFLOW PREVENTER
   A. ADD THIS SCOPE IN ITS ENTIRETY.

BID ALTERNATE 2

1. ROOF REPLACEMENT
   A. ADD THIS SCOPE IN ITS ENTIRETY.

BID ALTERNATE 3

1. AIR COMPRESSORS AND DRYERS
   A. ADD THIS SCOPE IN ITS ENTIRETY.

SHEET INDEX

SEQUENCE	NUMBER	SHEET NAME
[01] GENERAL		
01	GI000	COVER SHEET
02	GI001	GENERAL INFORMATION
2		
[02] CIVIL		
03	CS100	OVERALL SITE PLAN
04	CS101	DETAILED SITE LAYOUT AND DEMOLITION PLAN
05	CS102	DETAILED FIRELINE LAYOUT PLAN
06	CS103	GRADING AND DRAINAGE PLAN
07	CS104	STORM WATER POLLUTION PREVENTION PLAN
08	CS200	DETAILS
6		
[03] STRUCTURAL		
09	S-000	GENERAL NOTES AND SPECIAL INSPECTIONS
10	SB101	LEVEL 1 ENLARGED PLAN
11	SB301	FOUNDATION SECTIONS AND DETAILS
3		
[04] ARCHITECTURAL		
12	AS100	OVERALL ARCHITECTURAL SITE PLAN
13	AD101	ARCHITECTURAL DEMOLITION SITE PLAN
14	AD121	DEMOLITION ROOF PLAN
15	AS101	ARCHITECTURAL SITE PLAN
16	AS102	ARCHITECTURAL ENLARGED SITE PLANS
17	AE121	ROOF PLAN
18	AE601	DOOR SCHEDULE & DETAILS
7		
[05] FIRE PROTECTION		
19	FA001	FIRE ALARM GENERAL NOTES, LEGEND, AND DIAGRAMS
1		
[06] PLUMBING		
20	P-000	PLUMBING LEGEND
21	PJ100	COMPRESSED AIR PLUMBING PLAN - LEVEL 1
22	P-601	PLUMBING DETAILS AND SCHEDULES
3		
[07] MECHANICAL		
23	M-000	LEGEND AND ABBREVIATIONS
24	MH100	MECHANICAL HVAC DUCT DESIGN
25	MP100	GENERATOR FUEL SYSTEM PLAN
26	M-501	MECHANICAL DETAILS AND SCHEDULES
27	M-701	MECHANICAL CONTROLS
5		
[08] ELECTRICAL		
28	E-001	ELECTRICAL LEGEND AND ABBREVIATIONS
29	ED101	ELECTRICAL POWER DEMOLITION PLAN
30	EP101	ELECTRICAL POWER PLAN - ESSENTIAL ELECTRICAL GEAR
31	EP102	ELECTRICAL POWER PLAN - TRASH COMPACTOR AREA
32	EP103	ELECTRICAL POWER PLAN - ROOF
33	E-500	ELECTRICAL ONE-LINE DIAGRAM
34	E-601	ELECTRICAL PANEL SCHEDULES & DETAILS
35	E-602	ELECTRICAL DETAILS
8		
[09] TELECOM		
36	TN001	TELECOMMUNICATIONS COVER SHEET
37	TD001	ELECTRONIC SAFETY & SECURITY DEMOLITION SITE PLAN
38	TS001	ELECTRONIC SAFETY & SECURITY SITE PLAN
39	TY501	ELECTRONIC SECURITY SYSTEM DETAILS
40	TY601	ELECTRONIC SECURITY SYSTEM RISERS
5		

TOTAL SHEETS: 40

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/23/2025 12:16:23 PM

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

REGISTERED ARCHITECT
CERTIFICATE NO. 62918
SETH ANDREW CAVIN
4.25.25
Not Valid Without Signature
ARIZONA, U.S.A.

DRAWING TITLE
COVER SHEET

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/25** | CHECKED AJS | DRAWN JDM

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER **GI000**

DRAWING # 01 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

VA FORM 08-6231

ABBREVIATIONS

A	
ACB	ACOUSTIC CEILING BAFFLE
ACP	ACOUSTIC CEILING PANEL
ACST	ACOUSTIC
ADA	AMERICANS WITH DISABILITIES ACT
ACT	ACOUSTICAL CEILING TILE
ADDL	ADDITIONAL
ADDN	ADDITION
ADJ	ADJACENT, ADJOINING, OR ADJUSTABLE
ADMIN	ADMINISTRATION
AE	ARCHITECT/ENGINEER
AF	ACCESS FLOORING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIA	AMERICAN INSTITUTE OF ARCHITECTS
ALT	ALTERNATE
ALT NO	ALTERNATE NUMBER
ALUM	ALUMINIUM (TRIM)
AMT	AMOUNT
APPROX	APPROXIMATE
ARCH	ARCHITECT
ASC	ABOVE SUSPENDED CEILING
AT	ACOUSTIC CEILING TILE
AVG	AVERAGE
B	
BD	BOARD
BG	BUMPER GUARD
BLDG	BUILDING
BLKG	BLOCKING
BLT IN	BUILT-IN
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BRKT	BRACKET
BTWN	BETWEEN
C	
CAB	CABINET
CAV	CAVITY
CBB	CONCRETE BACKER BOARD
C/C	CONTRACTOR PROVIDED / CONTRACTOR INSTALLED
CD	CONSTRUCTION DOCUMENTS
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CG	CORNER GUARD
CH BD	CHALKBOARD
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTERLINE
CLG	CEILING
CLG HT	CEILING HEIGHT
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CONTRACTING OFFICER
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATE
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CP	CONTRACTOR PROVIDED
CPT	CARPET/CARPET TILE
CS	CONCRETE SEALED
CSWK	CASEWORK
CT	CERAMIC TILE
CTB	CERAMIC TILE BASE
CTR	CENTER
CU FT	CUBIC FEET

D	
DBL	DOUBLE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIR	DIRECTION
DIST	DISTANCE
DOC	DOCUMENT
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING
DWP	DIMENSIONAL WALL PANEL
E	
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
ELEV	ELEVATOR
ENTR	ENTRANCE
EPY	EPOXY FLOORING
EQ	EQUAL
ETR	EXISTING TO REMAIN
EX	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
F	
FAB	FABRIC
FED	FEDERAL
FF	FINISH FACE
FF EL	FINISH FLOOR ELEVATION
FIN	FINISH
FIN BS	FINISH BOTH SIDES
FIN FLR	FINISH FLOOR
FIN GR	FINISH GRADE
FIXT	FIXTURE
FLDG	FOLDING
FLEX	FLEXIBLE
FLG	FLOORING
FLMT	FLUSH MOUNT
FLR	FLOOR
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FP	FIRE PROTECTION
FR	FIRE RESISTANT
FT	FEET
FTG	FOOTING
FV	FIELD VERIFY
FWC	FABRIC WALL COVERING
G	
GDR	GUARDRAIL
GL	GLASS/GLAZING
GRAN	GRANITE
GR FL	GROUND FLOOR
GT	GROUT
GSM	GALVANIZED SHEET METAL
GYP BD	GYPSUM BOARD
H	
HDW	HARDWARE
HEPA	HIGH EFFICIENCY PARTICULATE AIR (FILTER)
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HANDRAIL
HT	HEIGHT
I	
IBC	INTERNATIONAL BUILDING CODE
INSUL	INSULATION
INT	INTERIOR
ILO	IN LIEU OF
J	
J-BOX	JUNCTION BOX

L	
LAV	LAVATORY
LBS	POUND
LDG	LANDING
LF	LINEAR FEET (FOOT)
LIN	LINEAR
LN	LINOLEUM
LOC	LOCATION
LT	LIGHT
LVR	LOUVER
LVT	LUXURY VINYL TILE
M	
MAT	CARPET MAT / WALK-OFF MAT
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MFR	MANUFACTURER
MID	MIDDLE
MIL STD	MILITARY STANDARD
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MOD	MODIFY
MTG	MOUNTING
MTL	METAL
MVBL	MOVABLE
N	
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
O	
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE
OPR	OPERABLE
ORD	OVERFLOW ROOF DRAIN
ORIG	ORIGINAL
P	
P	PAINT
PA	PUBLIC ADDRESS
PBD	PARTICLE BOARD
PCF	POUNDS PER CUBIC FOOT
PCT	PERCENT
PERF	PERFORATED
PERIM	PERIMETER
PERP	PERPENDICULAR
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PNL	PANEL
PR	PAIR
PRB	PROFILE BASE
PRKG	PARKING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PORCELAIN TILE
PWR	POWER
Q	
QA	QUALITY ASSURANCE
QC	QUALITY CONTROL
QTY	QUANTITY
QT	QUARRY TILE

R	
RAF	RESILIENT ATHLETIC FLOORING
RB	RUBBER BASE/RESILIENT BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REC	RECESSED
REF	REFERENCE
REM	REMOVABLE
REP	REPAIR
REPL	REPLACE
REQ	REQUIRE
REQD	REQUIRED
RES	RESINOUS FLOORING
RES-W	RESINOUS / EPOXY WALL / CEILING
RF	RUBBER FLOORING
RFG	ROOFING
RM	ROOM
RO	ROUGH OPENING
RP	RESIN PANEL
RSF	RESILIENT SHEET FLOORING
RV	ROOF VENT
RWC	RIGID VINYL WALLCOVERING
S	
SC	SPECIALTY COATING
SD	STATIC DISSIPATIVE FLOORING/TILE
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT (FEET)
SGL	SINGLE
SIM	SIMILAR
SJ	SCORED JOINT
SLNT	SEALANT
SM	SHEET METAL
SPEC	SPECIFICATION
SQ	SQUARE
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SS	SOLID SURFACE
ST	STONE
STD	STANDARD
STOR	STORAGE
SV	SHEET VINYL (ROLLED OR TILE)
SWC	STAINLESS STEEL WALLCOVERING
T	
TEL	TELEPHONE
TEMP	TEMPORARY
TER	TERRAZZO
TOF	TOP OF FOOTING/ FOUNDATION
TOM	TOP OF MASONRY
TOS	TOP OF SLAB/ STEEL
U	
UNO	UNLESS NOTED OTHERWISE
UTIL	UTILITY
V	
VAR	VARIES
V/C	VA PROVIDED / CONTRACTOR INSTALLED
VCT	VINYL COMPOSITION TILE
VFAT	VINYL-FACED ACOUSTICAL TILE
VP	VENEERED PLASTER
VT	VINYL TILE
VIV	VA PROVIDED / VA INSTALLED
VWC	VINYL WALLCOVERING
VWF	VINYL WALL FABRIC
W	
W	WITH
W/O	WITHOUT
W/C	WATER CLOSET
WC	WHEELCHAIR
WD	WOOD
WFAB	WALL FABRIC
WPM	WATERPROOF MEMBRANE
WSF	WELDED SHEET FLOOR
X	
X BRACE	CROSS BRACE

MATERIALS LEGEND

- FIBERGLASS BATT INSULATION
- RIGID INSULATION
- CONCRETE / PRECAST CONCRETE
- EARTH / SOIL
- SAND, EIFS FINISH, OR PLASTER FINISH
- GYPSUM BOARD FINISH
- BRICK
- CONCRETE MASONRY UNIT
- STONE / CAST STONE
- GYPSUM BOARD SECTION
- EXTERIOR SHEATHING BOARD SECTION
- PLYWOOD SECTION

CODES STANDARDS AND EXECUTIVE ORDERS

PURPOSE: THE PUBLIC BUILDINGS AMENDMENT ACT OF 1988, PUBLIC LAW (PUB. L.) 100-678 REQUIRES FEDERAL AGENCIES TO FOLLOW NATIONAL RECOGNIZED "MODEL" BUILDING CODES. THE FEDERAL PARTICIPATION IN THE DEVELOPMENT AND USE OF VOLUNTARY STANDARDS, OFFICE OF MANAGEMENT AND BUDGET (OMB) CIRCULAR A-119, REQUIRES ALL EXECUTIVE AGENCIES TO RELY ON VOLUNTARY STANDARDS, BOTH DOMESTIC AND INTERNATIONAL, WHENEVER FEASIBLE, AND TO PARTICIPATE IN VOLUNTARY STANDARD BODIES.

GENERAL: VA HAS ADOPTED THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS AS A MINIMUM FOR ALL PROJECTS PERFORMED IN THE MODERNIZATION, ALTERATION, ADDITION, OR IMPROVEMENT OF ITS REAL PROPERTY AND THE CONSTRUCTION OF NEW STRUCTURES. VA DESIGN MANUALS AND MASTER SPECIFICATIONS SPECIFY OTHER CODES AND STANDARDS THAT VA FOLLOWS ON ITS PROJECTS. REFERENCE RELEVANT ADDENDA FOR EACH OF THE ADOPTED CODES AND STANDARDS:

- VA DIRECTIVES, DESIGN MANUALS, MASTER SPECIFICATIONS, VA NATIONAL CAD STANDARD APPLICATION GUIDE, AND OTHER GUIDANCE ON THE TECHNICAL INFORMATION LIBRARY (TIL) (HTTP://WWW.CFM.VA.GOV/TIL/).
- 2024 INTERNATIONAL BUILDING CODE (IBC) (ONLY WHEN SPECIFICALLY REFERENCED IN VA DESIGN DOCUMENTS, SEE NOTES BELOW)
- 2024 INTERNATIONAL EXISTING BUILDING CODE (IEBC) (IF APPLICABLE)
- 2024 NFPA 101 LIFE SAFETY CODE (SEE NOTES BELOW)
- 2024 NATIONAL FIRE CODES (NFPA)
- OCCUPATIONAL, SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS.
- 2023 VA SEISMIC DESIGN REQUIREMENTS, H-18-8
- 2024 INTERNATIONAL MECHANICAL CODE
- 2023 NATIONAL ELECTRICAL CODE (NEC), NFPA 70
- 2024 INTERNATIONAL PLUMBING CODE (IPC)
- 2022 SAFETY CODE FOR ELEVATORS AND ESCALATORS, AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME) A 17.1.
- ARCHITECTURAL BARRIERS ACT (ABA) STANDARDS INCLUDING VA SUPPLEMENT, VA BARRIER FREE DESIGN STANDARD (PG-18-13)
- 2022 ANSI ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
- 2022 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY, AMERICAN CONCRETE INSTITUTE AND COMMENTARY (ACI 318-19)
- 2023 STEEL CONSTRUCTION MANUAL (16TH EDITION), AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
- ENERGY POLICY ACT OF 2005 (EPACT)
- 2007 DOE INTERIM FINAL RULE: ENERGY CONSERVATION STANDARDS FOR NEW FEDERAL, COMMERCIAL AND MULTI-FAMILY HIGH-RISE RESIDENTIAL BUILDINGS AND NEW LOW-RISE RESIDENTIAL BUILDINGS, 10 CFR PARTS 433, 434 AND 435.
- 2006 FEDERAL LEADERSHIP IN HIGH PERFORMANCE AND SUSTAINABLE BUILDINGS: MEMORANDUM OF UNDERSTANDING (MOU)
- 2018 EXECUTIVE ORDER 13834: EFFICIENT FEDERAL OPERATIONS
- 2021 THE PROVISIONS FOR CONSTRUCTION AND SAFETY SIGNS. STATED IN THE GENERAL REQUIREMENTS SECTION 010000 OF THE VA MASTER CONSTRUCTION SPECIFICATION.
- 2022 VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY – ASHRAE STANDARD 62.1
- 2022 SAFETY STANDARD FOR REFRIGERATION SYSTEMS – ASHRAE STANDARD 15
- 2020 PHYSICAL SECURITY AND RESILIENCY DESIGN MANUAL

LOCAL CODES: AS AN AGENCY OF THE FEDERAL GOVERNMENT, VA IS NOT SUBJECT TO LOCAL IMPOSITION OF CODE ENFORCEMENT PROCEDURES (DRAWING REVIEWS, BUILDING PERMITS, INSPECTIONS, FEES, ETC.). VA MUST FUNCTION AS THE AUTHORITY HAVING JURISDICTION (AHJ) AND THUS HAS THE RESPONSIBILITY TO GUARD PUBLIC HEALTH AND SAFETY THROUGH ENFORCING ITS ADOPTED CODES. HOWEVER, LOCAL AUTHORITIES SHOULD BE NOTIFIED ABOUT PLANNED PROJECTS AND GIVEN OPPORTUNITY TO REVIEW DRAWINGS PROVIDED THAT VA DOES NOT PAY FOR REVIEW OR INSPECTION FEES.

NOTES:

1. NFPA 101 PRIMARILY ADDRESSES LIFE SAFETY AND FIRE PROTECTION FEATURES WHILE THE IBC ADDRESSES A WIDE RANGE OF CONSIDERATIONS, INCLUDING, BUT NOT LIMITED TO, STRUCTURAL STRENGTH, SEISMIC STABILITY, SANITATION, ADEQUATE LIGHT AND VENTILATION, AND ENERGY CONSERVATION. VA BUILDINGS MUST MEET THE REQUIREMENTS OF NFPA 101 AND DOCUMENTS REFERENCED BY NFPA 101 IN ORDER TO COMPLY WITH THE ACCREDITATION REQUIREMENTS OF THE JOINT COMMISSION. THEREFORE, DESIGNS SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF NFPA 101 AND DOCUMENTS REFERENCED THEREIN. DESIGN FEATURES NOT ADDRESSED BY NFPA 101 OR DOCUMENTS REFERENCED THEREIN SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF THE IBC OR AS OTHERWISE ADDRESSED ABOVE IN THIS PROGRAM GUIDE. FOR DESIGN FEATURES THAT ARE ADDRESSED BY BOTH THE IBC AS WELL AS NFPA 101 OR A DOCUMENT REFERENCED BY NFPA 101, THE REQUIREMENTS OF NFPA 101 OR THE DOCUMENT REFERENCED BY NFPA 101 SHALL BE USED EXCLUSIVELY (THIS APPLIES EVEN IF THE IBC REQUIREMENTS ARE DIFFERENT).
2. CONFLICTS BETWEEN NATIONALLY RECOGNIZED CODES AND STANDARDS AND VA REQUIREMENTS – SHOULD A CONFLICT EXIST BETWEEN VA REQUIREMENTS AND VA ADOPTED NATIONALLY RECOGNIZED CODES AND STANDARDS, THE CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF VA. THE RESOLUTION OF THE CONFLICT SHALL BE MADE BY THE AUTHORITY HAVING JURISDICTION FOR VA TO ENSURE A CONSISTENCY SYSTEM WIDE.

ENERGY REQUIREMENTS

ASHRAE 90.1-2022 (I-P)

BUILDING LOCATION: TUCSON, AZ
CLIMATE ZONE (TABLE ANNEX 1-1): ZONE 2B

INTERIOR DESIGN CONDITIONS:
THE INTERIOR DESIGN TEMPERATURES FOR HEATING AND COOLING AS DEPCTED IN THE PROJECT DESIGN CONDITIONS SCHEDULE IN THE MECHANICAL CONTROL DRAWINGS SHALL BE THE MAXIMUM AND MINIMUM VALUES FOR THE ASSOCIATED TEMPERATURE CONTROL ZONES.

BUILDING ENVELOPE REQUIREMENTS (5.5-2)

BUILDING ENVELOPE REQUIREMENTS FOR CLIMATE ZONE 2 (A,B)

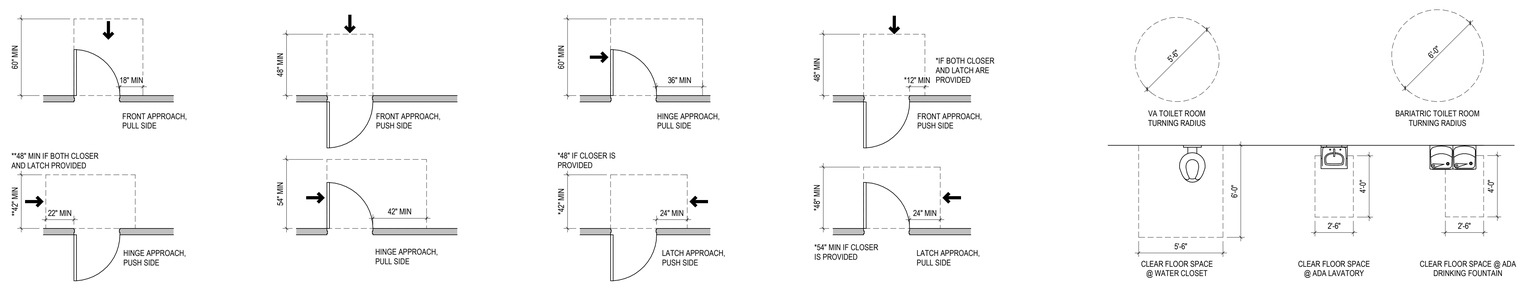
ROOFS	REQUIRED	DESIGNED
INSULATION:	R-25 c.i.	R-25 c.i.
METAL BUILDINGS:	R-10 + R-19 FC	EXISTING
ATTIC AND OTHER:	R-38	EXISTING
WALLS, ABOVE GRADE		
MASS:	R-5.7 c.i.	EXISTING
METAL BUILDING:	R-0 + R-9.8 c.i.	EXISTING
STEEL-FRAMED:	R-13 + R-3.8 c.i.	EXISTING
WOOD-FRAMED AND OTHER:	R-13	EXISTING
WALL, BELOW GRADE		
BELOW-GRADE WALL:	NR	EXISTING
FLOORS		
MASS:	R-6.3 c.i.	EXISTING
STEEL JOIST:	R-30	EXISTING
WOOD-FRAMED AND OTHER:	R-30	EXISTING
SLAB-ON-GRADE FLOORS		
UNHEATED SLABS:	NR	EXISTING
HEATED SLABS:	R-10 for 24 in.	EXISTING
OPAQUE DOORS		
SWINGING:	U-0.370	EXISTING
NONSWINGING:	U-0.310	EXISTING
FENESTRATION (TABLE 5.5-2):		
VERTICAL FENESTRATION, U-FACTOR		
FIXED:	U-0.45	EXISTING
OPERABLE:	U-0.60	EXISTING
ENTRANCE DOOR:	U-0.77	EXISTING

DEFINITIONS
c.i = CONTINUOUS INSULATION
Ls = LINEAR SYSTEM
NR = NO (INSULATION) REQUIREMENT

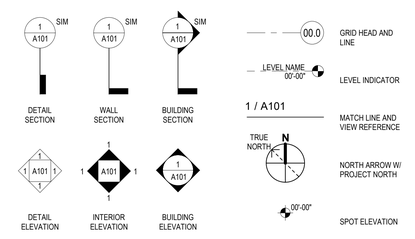
GENERAL NOTES

1. DRAWINGS ARE PART OF A COMPLETE DOCUMENTS SET. CONTRACTOR SHALL CONFIRM ALL ITEMS REQUIRED BASED UPON THE OVERALL DESIGN INTENT OF THE ENTIRE DOCUMENT SET.
2. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, PRIOR TO BEGINNING ANY WORK, TO CONFIRM THE ACCURACY OF THE DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT. DO NOT SCALE THE DRAWINGS. FIELD VERIFY ALL DIMENSIONS AND EXISTING STRUCTURAL CONDITIONS.
3. ALL AREAS NOT INVOLVED IN THE SCOPE OF WORK FOR THIS PROJECT SHALL BE KEPT CLEAN AND FREE OF OBSTRUCTIONS AT ALL TIMES.
4. ERECT BARRICADES AND WARNING SIGNS TO DIVERT AND WARN PASSERS-BY OF THE CONSTRUCTION WORK. PROVIDE DUST PROOFING ENCLOSURES TO SEPARATE WORK AREAS FROM THE EXISTING FACILITIES.
5. ALL TRASH AND DEBRIS TO BE REMOVED ON A DAILY BASIS.
6. PROVIDE PROTECTION FOR ALL EXISTING SURFACES AND CONDITIONS TO REMAIN IN PLACE DURING THE SCOPE OF WORK. SHOULD ANY DAMAGE OCCUR, PATCH AND REPAIR ANY DAMAGE TO ADJACENT FINISHES TO MATCH EXISTING.
7. ANY DAMAGE CAUSED TO THE BUILDING OR OWNER EQUIPMENT SHALL BE REPAIRED OR REPLACED BACK TO ITS ORIGINAL CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
8. COVER ALL RETURN AIR GRILLES WITHIN THE AREA OF CONSTRUCTION TO PREVENT PARTICULATE MATERIAL FROM EXHAUSTING INTO SURROUNDING SPACES.
9. APPROPRIATE LIGHT FIXTURES SHALL BE TEMPORARILY SUSPENDED TO PROVIDE ADEQUATE LIGHTING LEVELS FOR CONSTRUCTION.
10. CONTRACTOR AND SUBCONTRACTORS ARE REQUIRED TO COORDINATE WITH OTHER DISCIPLINES TO INSTALL COMPLETE AND OPERATIONAL SYSTEMS. DRAWINGS, AS A WHOLE, REPRESENT A COMPLETE SET AND DEPICT REQUIREMENTS FOR COMPLETE AND OPERATIONAL SYSTEMS. INDIVIDUAL DRAWINGS MAY NOT DEPICT COMPLETE AND ACCURATE INFORMATION TO COORDINATE COMPLETE AND OPERATIONAL SYSTEMS, BUT DO SO AS AN ENTIRE DOCUMENT TO BE REFERENCED WITH OTHER INDIVIDUAL DRAWINGS. CONTRACTOR AND SUBCONTRACTORS ARE REQUIRED TO REFERENCE OTHER SHEETS AND SPECIFICATIONS AS AN ENTIRE SET OF CONSTRUCTION DOCUMENTS THAT REFLECT WORK REQUIRED TO ACHIEVE A COMPLETE AND OPERATIONAL GOAL. LACK OF COORDINATION AND REVIEW OF DRAWINGS AND SPECIFICATIONS AS AN ENTIRE DOCUMENT TO INSTALL COMPLETE AND OPERATIONAL SYSTEMS, BEING OBVIOUS AND TYPICAL INDUSTRY STANDARD, IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS, SHALL NOT BE IN ANY WAY AN ADDITIONAL COST TO THE GOVERNMENT.
11. CONTRACTOR SHALL SUBMIT A REQUEST, IN WRITING, TO INTERRUPT ANY SUCH SERVICES TO COR (CONTRACTING OFFICER'S REPRESENTATIVE) 48 HOURS IN ADVANCE OF PROPOSED INTERRUPTION. REQUEST SHALL STATE REASON, DATE, EXACT TIME OF, AND APPROXIMATE DURATION OF SUCH INTERRUPTION. MAJOR INTERRUPTIONS OF ANY SYSTEM MUST BE REQUESTED, IN WRITING, AT LEAST 60 CALENDAR DAYS PRIOR TO THE DESIRED TIME AND SHALL BE PERFORMED AS DIRECTED BY THE COR. MAJOR INTERRUPTIONS SHALL BE COORDINATED WITH OTHER MAJOR INTERRUPTIONS AND MAY NOT BE SCHEDULED FOR ONE DISCIPLINE MORE THAN TWICE THROUGHOUT THE OVERALL CONSTRUCTION SCHEDULE UNLESS REQUESTED IN WRITING AND APPROVED BY THE COR. CONTRACTOR WILL BE ADVISED, IN WRITING, OF APPROVAL OF REQUEST, OR OF WHICH OTHER DATE AND/OR TIME SUCH INTERRUPTION WILL CAUSE THE LEAST INCONVENIENCE TO OPERATIONS OF THE MEDICAL CENTER. INTERRUPTION TIME APPROVED BY THE MEDICAL CENTER MAY OCCUR AT TIMES OTHER THAN CONTRACTOR'S NORMAL WORKING HOURS. SCHEDULE INTERRUPTION MAY BE ON WEEKENDS OR LATE HOURS AND MAY NOT BE AN ADDITIONAL COST TO THE GOVERNMENT. COORDINATE ALL INTERRUPTIONS THAT MAY AFFECT THE NORMAL OPERATION OF THE FACILITY WITH THE COR WHEN SUBMITTING THE CONSTRUCTION SCHEDULE OR UPDATES TO THE CONSTRUCTION SCHEDULE.
12. NO ASBESTOS CONTAINING MATERIALS ARE TO BE USED ON THIS PROJECT. SPUR DESIGN, THE A/E OF RECORD, CAN CERTIFY THAT NO ASBESTOS CONTAINING BUILDING MATERIALS (ACBM) OR LEAD BASED PAINT (LBP) PRODUCTS WERE DESIGNED/SPECIFIED AS BUILDING MATERIAL IN ANY OF THE CONSTRUCTION DOCUMENTS.
13. REFER TO THE DESIGN BINDER FOR THE ICRA INFORMATION DOCUMENTATION.

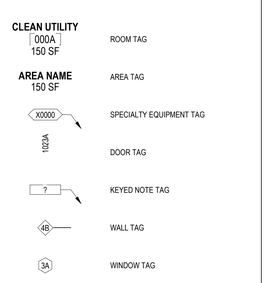
DOOR AND FIXTURE CLEARANCES



REFERENCE SYMBOLS

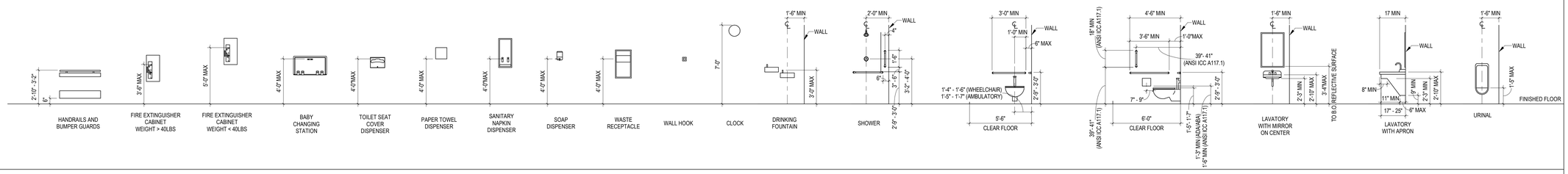


IDENTIFICATION TAGS



FIXTURE MOUNTING HEIGHTS AND CLEARANCES

1. GENERAL CONTRACTOR TO PROVIDE METAL SUPPORT BLOCKING FOR ALL WALL MOUNTED ACCESSORIES, FIXTURES, AND EQUIPMENT.
2. PROVIDE ADA SUPPORT BRACKETS PLACED AT ALL OPEN COUNTERTOPS @ 36"-48" MAX ON CENTER.
3. SPECIFIED MAXIMUMS ARE MEASURED FROM AFTER FINISHED FLOOR TO THE OPERABLE PART OF THE FIXTURE.
4. FIXTURES SHOWN ARE REPRESENTATIONAL ONLY. NOT ALL FIXTURES MAY BE USED. REFER TO SPECIFICATIONS FOR FIXTURE TYPES USED IN THIS PROJECT.
5. FIXTURES MAY OVERLAP WAINSCOT. WHERE APPLICABLE, BACKING TO BE PROVIDED AS SHIM FOR FLUSH APPLICATION. SHIM TO MATCH SCHEDULED WALL FINISH.



NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS WILL BE UTILIZED FOR THIS PROJECT.

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED ARCHITECT
CERTIFICATE NO. 62918
SETH ANDREW CAVIN
Date Signed 4.25.25
ARIZONA, U.S.A.

DRAWING TITLE
GENERAL INFORMATION

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

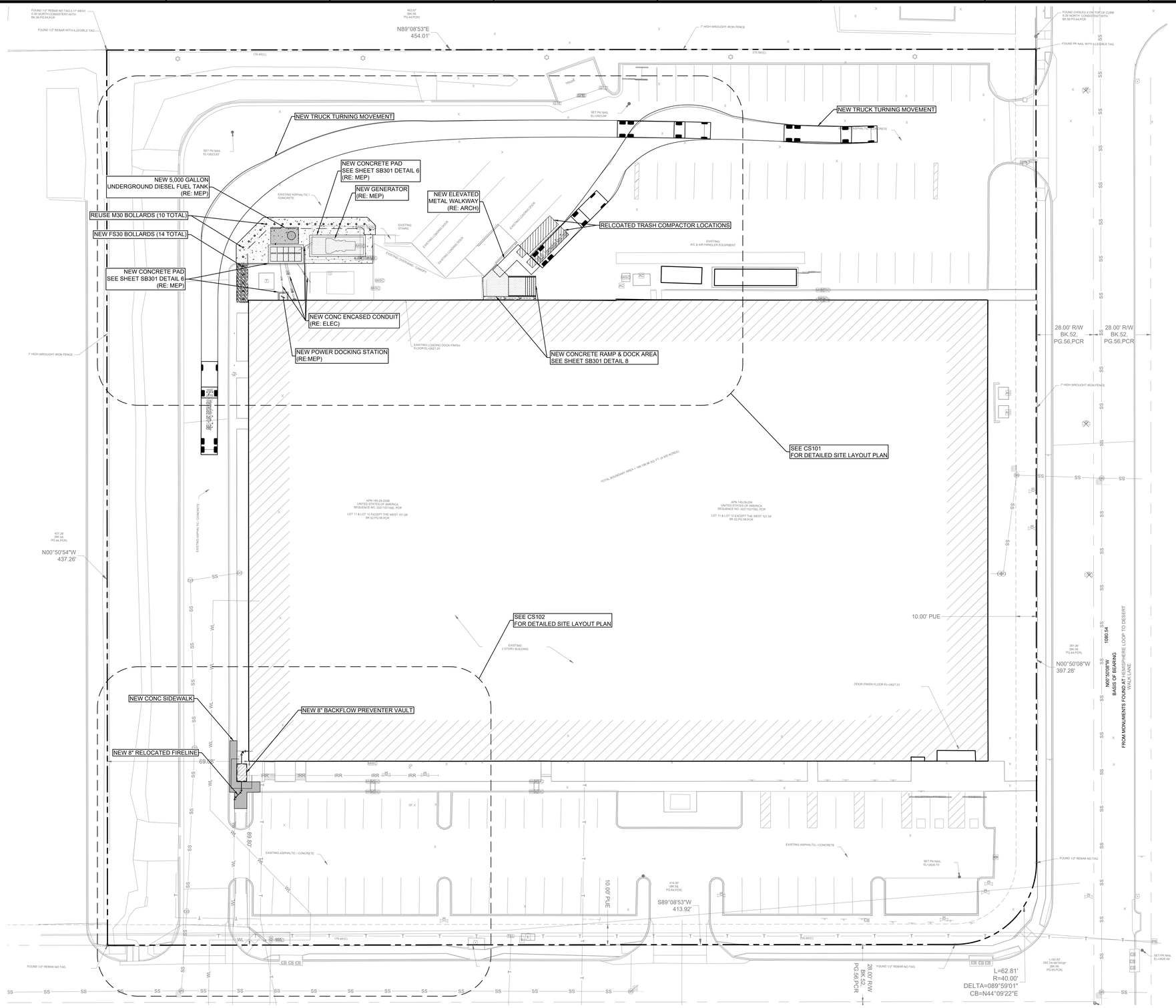
DATE **04/25/25** | CHECKED AJS | DRAWN JDM

PROJECT NUMBER **762-24-101**
BUILDING NUMBER CMOP
DRAWING NUMBER **GI001**
DRAWING # 02 OF 40

Veterans Health Administration
VA | U.S. Department of Veterans Affairs

4/23/2025 12:17:11 PM

VA FORM 08-6231



0 20' 40'
SCALE: 1" = 20'

BENCHMARK:

NGS PID CZ2397 - DESIGNATION "WR-53".
THE STATION IS A STANDARD USGS GAGING STATION DISK STAMPED WR-53 1987, SET INTO THE TOP OF AN IRREGULAR MASS OF CONCRETE RECESSED 2 CM BELOW GROUND.
(NAVD88) ELEVATION = 2601.94

LEGEND:

- PROPERTY LINE
- WL — NEW FIRE LINE
- UGE — NEW CONCRETE ENCASED UNDERGROUND CONDUIT
- NEW UNDERGROUND FUEL TANK
- NEW CONCRETE PAVEMENT
- NEW STRUCTURAL PAD
- NEW CONCRETE SIDEWALK

NOTES:

1. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY LOCAL UTILITY LOCATING SERVICES AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORMWATER LINES, AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
3. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
4. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS, AND TREES ALONG THE AREA OF EXCAVATION.
5. CONTRACTOR SHALL COMPLY WITH THE LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF ARIZONA LAWS CONCERNING EXCAVATION.

NOTE: LOADING DOCKS AND COMPACTORS MUST BE ACCESSIBLE THROUGHOUT THE DURATION OF THE PROJECT.

FULLY SPRINKLERED

BID DOCUMENTS

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT:

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

Registered Professional Engineer (Civil) CERTIFICATE NO. 71821 ALAN LANE LACKEY Date Signed 04-25-25 ARIZONA U.S.A.
EXPIRES ON 9/30/2026

DRAWING TITLE
OVERALL SITE PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

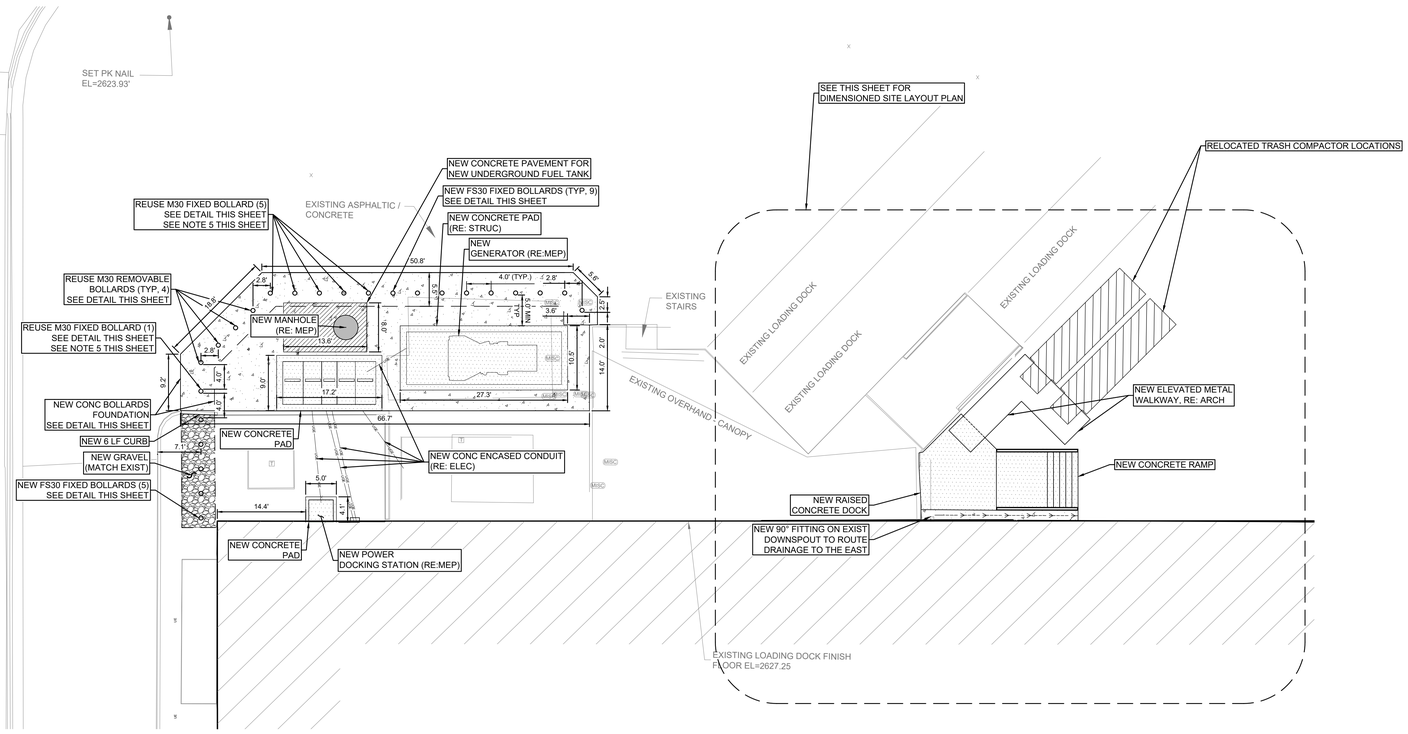
LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED FE | DRAWN RE/GS

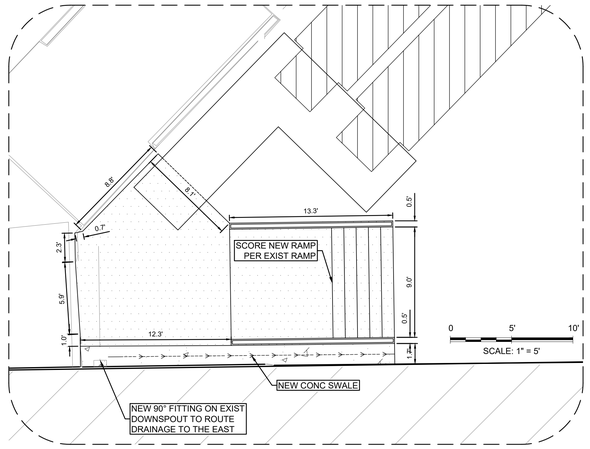
PROJECT NUMBER **762-24-101**
BUILDING NUMBER -
DRAWING NUMBER **CS100**
DRAWING # 03 OF 40

Veterans Health Administration
VA U.S. Department of Veterans Affairs

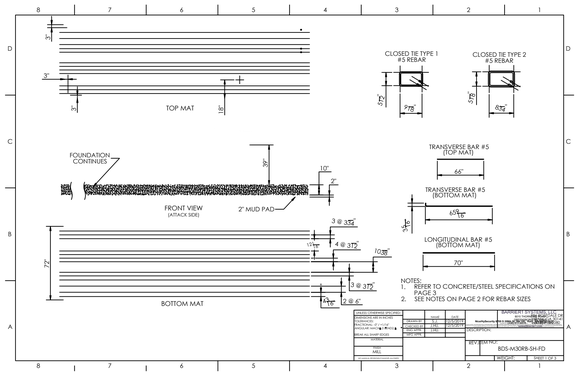
VA FORM 08-6231



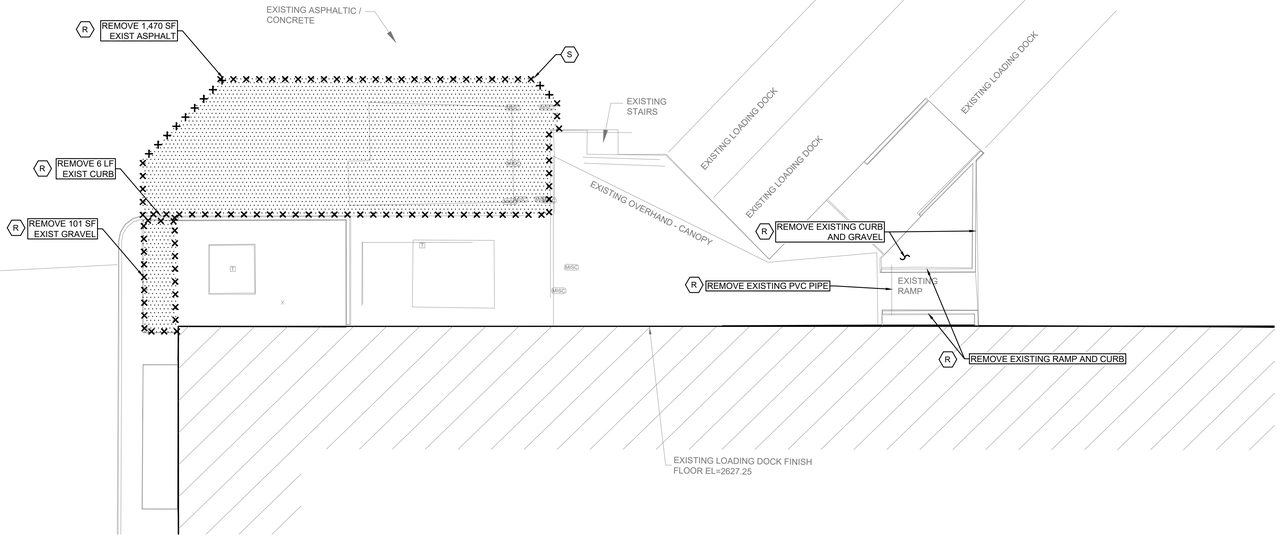
1 DETAILED SITE LAYOUT



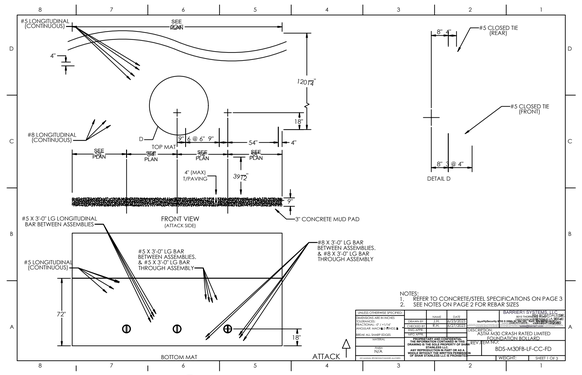
3 DIMENSIONED SITE LAYOUT



4 REMOVABLE BOLLARD DETAIL
(BASIS OF DESIGN: HYSECURITY BDS-M30RB-SH-FD)

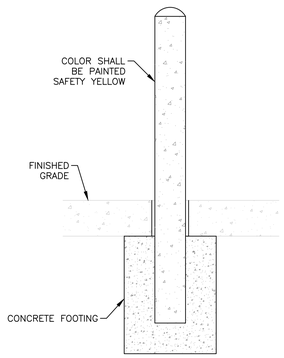


2 DEMOLITION PLAN



5 FIXED BOLLARD DETAIL
(BASIS OF DESIGN: HYSECURITY BDS-M30FB-LF-CC-FD)

NOTE: BOLLARDS TO BE ASTM F2656 FS30 ANTI-RAM RATING



6 FIXED BOLLARD DETAIL
(BASIS OF DESIGN: ASTM F2656 FS30)

0 10' 20'
SCALE: 1" = 10'

BENCHMARK:

NGS PID CZ2397 - DESIGNATION "WR-53"
THE STATION IS A STANDARD USGS GAGING STATION DISK STAMPED WR-53 1987, SET INTO THE TOP OF AN IRREGULAR MASS OF CONCRETE RECESSED 2 CM BELOW GROUND.
(NAVD88) ELEVATION = 2601.94

LEGEND:

- PROPERTY LINE
- UGE — NEW CONCRETE ENCASED UNDERGROUND CONDUIT
- NEW UNDERGROUND FUEL TANK
- NEW CONCRETE PAD
- NEW STRUCTURAL PAD
- NEW CONCRETE SIDEWALK
- FEATURE TO BE REMOVED
- REMOVE EXISTING UTILITY
- (R) REMOVE EXISTING FEATURE
- (S) SAWCUT (FULL DEPTH)

NOTES:

1. COORDINATE THIS PLAN WITH MEP AND STRUCTURAL DRAWINGS.
2. SIDEWALK SLOPES SHALL NOT EXCEED 5% AND CROSS-SLOPE SHALL NOT EXCEED 2%.
3. CONCRETE SLOPE SHALL BE NO LESS THAN 0.50% EXCEPT CONCRETE GUTTERS AND VALLEYS SHALL BE NO LESS THAN 0.35%.
4. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING.
5. REUSE VA PROVIDED BOLLARDS FROM PROJECT 762-301 FOR THE 15 NEW FIXED BOLLARDS.

FULLY SPRINKLERED

BID DOCUMENTS

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT:

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

Registered Professional Engineer (Civil) CERTIFICATE NO. 71821 ALAN LANE LACKEY Date Signed 04-25-25 ARIZONA U.S.A.
EXPIRES ON 9/30/2026

DRAWING TITLE
DETAILED SITE LAYOUT AND DEMOLITION PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED FE | DRAWN RE/GS

PROJECT NUMBER **762-24-101**

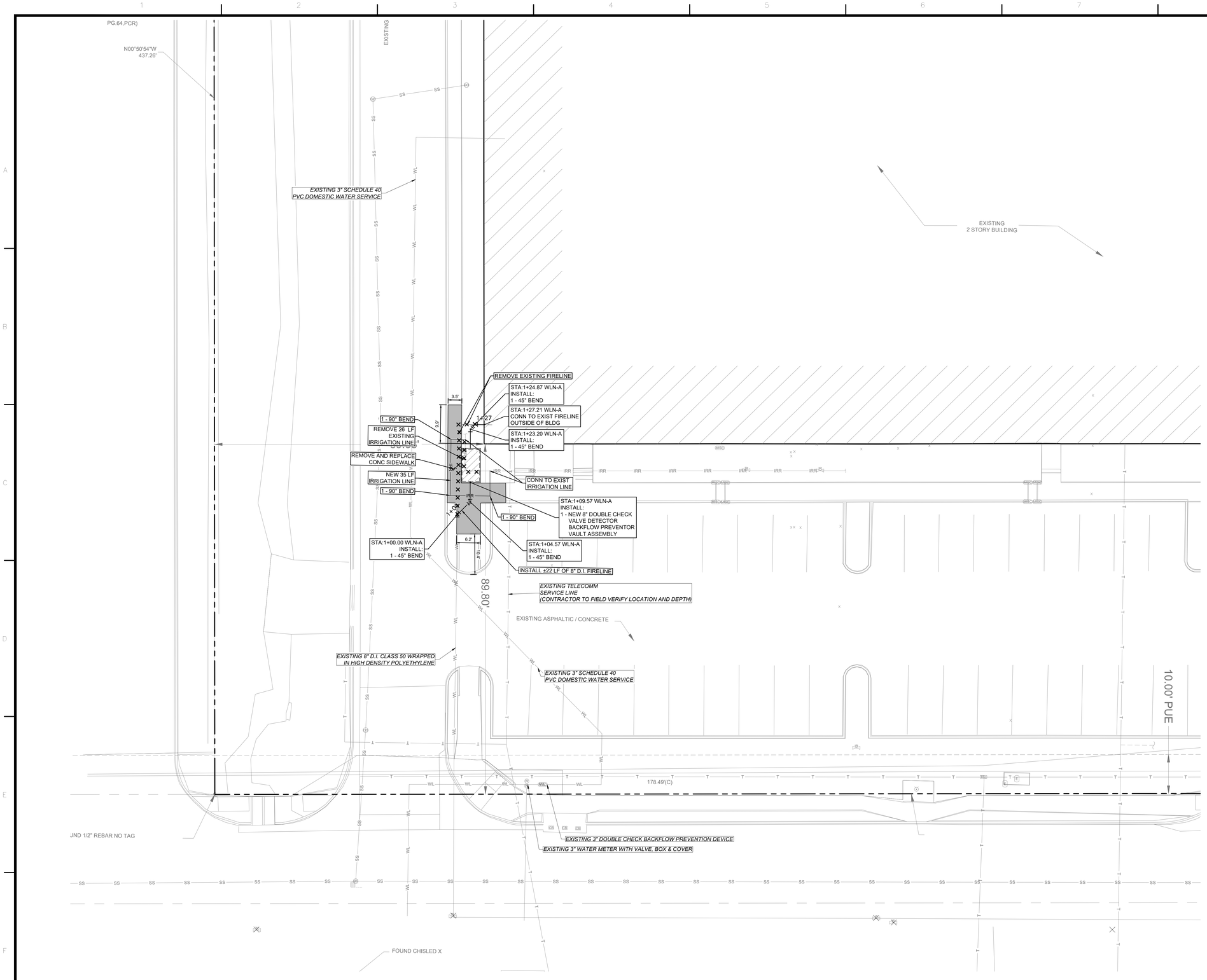
BUILDING NUMBER -

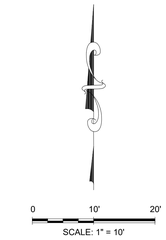
DRAWING NUMBER **CS101**
DRAWING # 04 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

VA FORM 08-6231





BENCHMARK:

NGS PID CZ2397 - DESIGNATION "WR-53"
THE STATION IS A STANDARD USGS GAGING STATION DISK STAMPED WR-53 1987, SET INTO THE TOP OF AN IRREGULAR MASS OF CONCRETE RECESSED 2 CM BELOW GROUND.
(NAVD88) ELEVATION = 2601.94

LEGEND:

- PROPERTY LINE
- WL — NEW FIRE LINE
- × × × × × × × × REMOVE EXISTING FEATURE

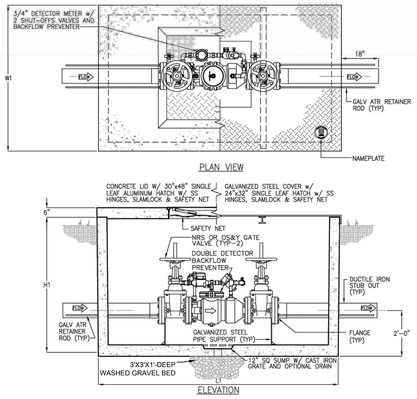
NOTES:

1. PROPOSED FIRE LINE SHALL BE DUCTILE IRON CLASS 50 WRAPPED IN HIGH DENSITY POLYETHYLENE.
2. PROPOSED WATER LINE MINIMUM COVER 42-INCHES.
3. MAINTAIN 2-FEET VERTICAL AND 9-FEET HORIZONTAL BETWEEN WATER AND NON-PRESSURE RATED SANITARY SEWER. MAINTAIN MINIMUM 9-FEET HORIZONTAL BETWEEN WATER LINE AND OUTSIDE WALL OF SANITARY SEWER MANHOLE.
4. COORDINATE THIS PLAN WITH PLUMBING DRAWINGS.
5. CONTRACTOR SHALL INSTALL CONTINUOUS UNDERGROUND WARNING TAPE 12" DIRECTLY OVER WATER LINE. WARNING TAPE SHALL BE STANDARD, 4 MIN POLYETHYLENE, 3-INCH WIDE TAPE, DETECTABLE TYPE, BLUE WITH BLACK LETTERS AND IMPRINTED WITH "CAUTION BURIED WATER LINE BELOW".
6. PROVIDE 2% MAX CROSS SLOPE AT EACH PEDESTRIAN DOOR.
7. SIDEWALK SLOPES SHALL NOT EXCEED 5% AND CROSS-SLOPE SHALL NOT EXCEED 2%.
8. CONCRETE SLOPE SHALL BE NO LESS THAN 0.50% EXCEPT CONCRETE GUTTERS AND VALLEYS SHALL BE NO LESS THAN 0.35%.
9. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING.

DOUBLE DETECTOR BACKFLOW PREVENTER SIZES

MODEL	SIZE	L1	W1	H1	WEIGHT
~~DDBP-03~~	~~3"~~	~~6'-0"~~	~~3'-6"~~	~~4'-0"~~	~~3,500 LBS~~
~~DDBP-04~~	~~4"~~	~~6'-0"~~	~~3'-6"~~	~~4'-0"~~	~~3,500 LBS~~
~~DDBP-06~~	~~6"~~	~~7'-10"~~	~~4'-4"~~	~~5'-6"~~	~~9,000 LBS~~
DDBP-08	8"	8'-8"	5'-0"	5'-6"	15,000 LBS
~~DDBP-10~~	~~10"~~	~~9'-0"~~	~~6'-0"~~	~~7'-0"~~	~~18,000 LBS~~
~~DDBP-12~~	~~12"~~	~~9'-0"~~	~~6'-0"~~	~~7'-0"~~	~~18,000 LBS~~

Domestic & Fire Water



DOUBLE CHECK VALVE DETECTOR BACKFLOW PREVENTOR DETAIL

FULLY SPRINKLERED

BID DOCUMENTS

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT:

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

Registered Professional Engineer (Civil)
CERTIFICATE NO. 71821
ALAN LANE LACKEY
Date Signed 04-25-25
ARIZONA U.S.A.
EXPIRES ON 6/30/2026

DRAWING TITLE
DETAILED FIRELINE LAYOUT PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED FE | DRAWN RE/GS

PROJECT NUMBER **762-24-101**

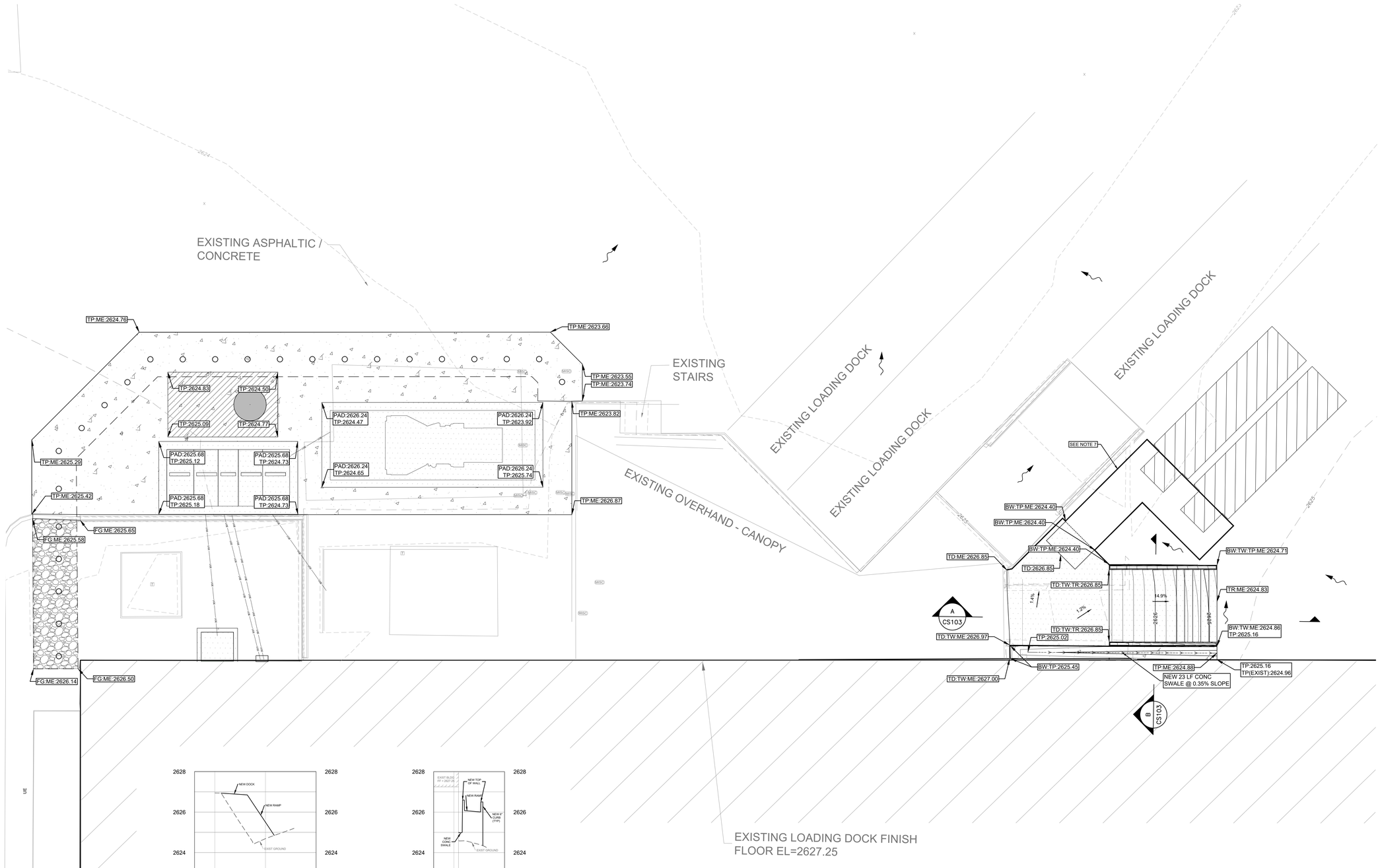
BUILDING NUMBER -

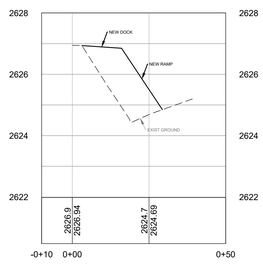
DRAWING NUMBER **CS102**
DRAWING # 05 OF 40

Veterans Health Administration

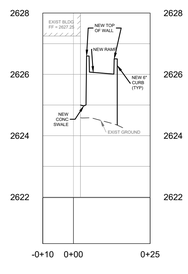
VA | U.S. Department of Veterans Affairs

VA FORM 08-6231





SECTION A
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=2'



SECTION B
HORIZ SCALE: 1"=20'
VERT SCALE: 1"=2'

0 5' 10'
SCALE: 1" = 5'

BENCHMARK:

NGS PID CZ2397 - DESIGNATION "WR-53"
THE STATION IS A STANDARD USGS GAGING STATION DISK STAMPED WR-53 1987, SET INTO THE TOP OF AN IRREGULAR MASS OF CONCRETE RECESSED 2 CM BELOW GROUND.
(NAVD88) ELEVATION = 2601.94

LEGEND:

	PROPERTY LINE
75	PROPOSED MAJOR CONTOUR (1')
	PROPOSED MINOR CONTOUR (0.2')
75	EXISTING MAJOR CONTOUR (5')
	EXISTING MINOR CONTOUR (1')
TP	TOP OF PAVEMENT
TD	TOP OF DECK
ME	MATCH EXISTING
TR	TOP OF RAMP
TW	TOP OF WALL
BW	BOTTOM OF WALL
FG	FINISHED GRADE
	FLOW ARROW
	PAVEMENT LOW POINT

NOTES:

1. HYDRO-MULCH ALL DISTURBED AREAS.
2. PROVIDE 2% MAX SLOPE AT EACH ADA ACCESSIBLE PARKING SPACE.
3. PROVIDE 2% MAX CROSS SLOPE AT EACH PEDESTRIAN DOOR.
4. ADA ACCESSIBLE RAMPS SHALL NOT EXCEED 5% GRADE AND SHALL HAVE 5' LEVEL LANDINGS AT TOP AND BOTTOM OF RAMP. RAMPS THAT HAVE CHANGE IN HEIGHT GREATER THAN 6" SHALL HAVE HANDRAILS IN ACCORDANCE WITH ADA ACCESSIBILITY STANDARDS. SIDEWALK SLOPES SHALL NOT EXCEED 5% AND CROSS-SLOPE SHALL NOT EXCEED 2%.
5. CONCRETE SLOPE SHALL BE NO LESS THAN 0.50% EXCEPT CONCRETE GUTTERS AND VALLEYS SHALL BE NO LESS THAN 0.35%.
6. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING.
7. CONTRACTOR TO FIELD VERIFY METAL DECK LOCATION AND ELEVATION. COORDINATE WITH CIVIL AND METAL DECK MANUFACTURER PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES IMMEDIATELY.

FULLY SPRINKLERED

BID DOCUMENTS

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT:

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Civil) CERTIFICATE NO. 71821 ALAN LANE LACKEY Date Signed 04-25-25 ARIZONA U.S.A.
EXPIRES ON 4/30/2026

DRAWING TITLE
GRADING AND DRAINAGE PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE	CHECKED	DRAWN
04/25/2025	FE	RE/GS

PROJECT NUMBER
762-24-101

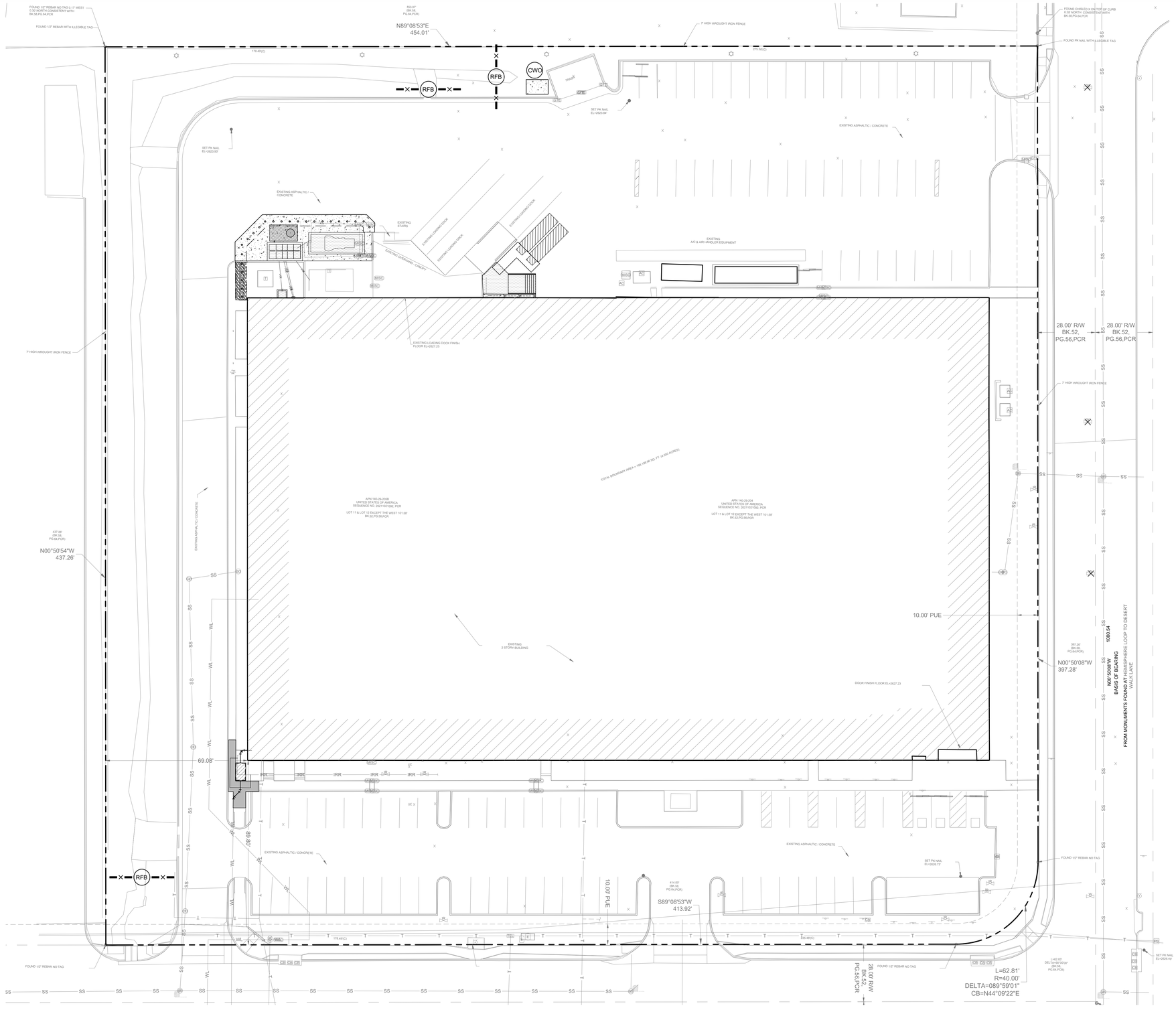
BUILDING NUMBER
-

DRAWING NUMBER
CS103
DRAWING # 06 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

VA FORM 08-6231



0 20' 40'

SCALE: 1" = 20'

BENCHMARK:

NGS PID CZ2397 - DESIGNATION "WR-53"
THE STATION IS A STANDARD USGS GAGING STATION DISK STAMPED WR-53 1987, SET INTO THE TOP OF AN IRREGULAR MASS OF CONCRETE RECESSED 2 CM BELOW GROUND.
(NAVD88) ELEVATION = 2601.94

LEGEND:

PROPERTY LINE

RFB — REINFORCED FABRIC BARRIER

CWC — CONCRETE WASHOUT AREA

NOTES:

1. IN AREAS WHERE THE PROJECT DESIGN INCORPORATE FILL ADJACENT TO NEIGHBORING LANDOWNERS, THE CONTRACTOR SHALL IMPLEMENT GRADING AND/OR PERIMETER RUNOFF CATCHMENT DEVICES (E.G. PERIMETER DITCHES) DURING CONSTRUCTION TO ENSURE THAT THE ADJACENT PARCELS BORDERING THE PROJECT SITE DO NOT EXPERIENCE INTERIM DRAINAGE FLOWS THAT EXCEED PRE-DEVELOPMENT CONDITIONS FOR STORM EVENTS UP TO AND INCLUDING THE CURRENT STORM DRAINAGE DESIGN CRITERIA AT THE TIME OF PERMIT OR CARRY SEDIMENT GENERATED AS PART OF CONSTRUCTION ACTIVITIES. WHERE APPLICABLE, THESE PRACTICES ARE IN ADDITION TO THE STANDARD STORM WATER POLLUTION PREVENTION DESIGN AND SHALL INCLUDE ADDITIONAL DITCHES REDIRECTING SITE DRAINAGE OR TEMPORARY PIPING.
2. ALL SUBCONTRACTORS WILL BE EDUCATED TO FOLLOW STORM WATER POLLUTION PREVENTION REQUIREMENTS.
3. ANY LAND CLEARING, CONSTRUCTION, DEVELOPMENT, OR OTHER ACTIVITIES INVOLVING THE MOVEMENT OF EARTH SHALL BE IN ACCORDANCE WITH THE SWPPP.
4. A SITE OPERATOR SHALL BE ON SITE ON ALL DAYS WHERE CONSTRUCTION OR GRADING ACTIVITY TAKES PLACE.
5. STRUCTURAL BMP's WILL BE INSPECTED AND MAINTAINED AT LEAST EVERY 14 DAYS AND AFTER ANY PRECIPITATION OR RUNOFF EVENT THAT CAUSES SURFACE EROSION, SEDIMENT TRANSPORT OR VEHICULAR TRACKING.
6. SCRAPING AND SWEEPING OF STREETS, SIDEWALKS AND FLOWLINES MUST BE CONDUCTED AT THE END OF EACH WORK DAY WHEN DIRT AND OTHER CONSTRUCTION MATERIAL HAS BEEN TRACKED ONTO STREETS.
7. EARTH MATERIALS AND LANDSCAPE MATERIALS SUCH AS SOD, ROCK AND MULCH SHALL NOT BE STOCKPILED, PLACED OR STORED ON DRIVEWAYS, STREETS, SIDEWALKS OR IN STORM WATER FLOWLINES.
8. CONSTRUCTION SUPPLIES (e.g., TRUSSES AND LUMBER), ROLL OFF CONTAINERS, DUMPSTERS, PORTABLE TOILETS, TRAILERS, ETC., SHALL NOT BE STORED ON STREETS OR SIDEWALKS OR OTHER IMPERVIOUS SURFACES. THESE ITEMS SHALL BE STORED ON THE CONSTRUCTION SITE OR STAGING AREAS.
9. SANITARY FACILITIES SHALL BE LOCATED ON NATURAL GROUND AND AT LEAST 25 FEET FROM ANY STORM SEWER INLET OR WATER BODY AND SHALL BE SERVICED REGULARLY AS NEEDED.

FULLY SPRINKLERED

BID DOCUMENTS

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD., STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT:

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

Registered Professional Engineer (Civil)
CERTIFICATE NO. 71821
ALAN LANE LACKEY
Date Signed 04-30-25
ARIZONA U.S.A.
EXPIRES ON 9/30/2026

DRAWING TITLE
STORM WATER POLLUTION PREVENTION PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED FE | DRAWN RE/GS

PROJECT NUMBER **762-24-101**

BUILDING NUMBER -

DRAWING NUMBER **CS104**

DRAWING # 07 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

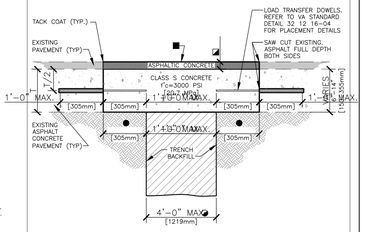
VA FORM 08-6231

GENERAL NOTES

1. MATERIAL AND COMPACTION REQUIREMENTS FOR PIPE BEDDING/SHADING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE APPLICABLE UTILITY PIPE.
2. TRENCH BACKFILL SHALL COMMENCE 1 FOOT [305mm] ABOVE THE TOP OF PIPE AND SHALL BE PER SECTION XXX.
3. BACKFILL COMPACTION REQUIREMENTS SHALL BE PER SECTION XXX.
4. THE 1 FOOT [305mm] TRENCH "SHOULDER" AREAS SHALL BE DELETED FOR TYPE 2 TRENCHES.
5. ABC SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX.
6. PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX.
7. ASPHALTIC TACK MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX.
8. ASPHALTIC CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX FOR THE TYPE SPECIFIED.
9. BITUMINOUS SURFACE TREATMENT (CHIP SEAL) SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX FOR THE TYPE SPECIFIED.
10. LOAD TRANSFER DOWELS FOR JOINTS TRANSVERSE TO THE ROADWAY CENTERLINE SHALL BE SMOOTH STEEL DOWELS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX. DOWELS SHALL BE SIZED AND SPACED AS FOLLOWS:

PCCP THICKNESS	DOWEL SIZE	DOWEL LENGTH	DOWEL SPACING
6" [150mm]	#5 [No. 16]	12" [305mm]	18" [455mm]
7" [180mm]	#6 [No. 19]	15" [380mm]	15" [380mm]
8" [180mm]	#8 [No. 19]	15" [380mm]	12" [305mm]
10" [180mm]	#10 [No. 19]	15" [380mm]	12" [305mm]

11. DEFORMED TIE BARS SHALL BE USED IN TRENCH PATCHES LONGITUDINAL TO THE ROADWAY CENTERLINE WHEN THE TRENCH LENGTH IS GREATER THAN 50 FEET [15240mm]. TIE BARS SHALL BE 24 INCHES [610mm] LONG, DEFORMED #4 [No. 13] BARS FOR PCCP LESS THAN 8 INCHES [205mm] THICK AND #5 [No. 16] BARS IF 8 INCHES [205mm] THICK OR MORE. TIE BARS SHALL BE PLACED 30 INCHES [760mm] CENTER-TO-CENTER.
12. HOLES SHALL BE DRILLED 1 FOOT [305mm] INTO THE EXISTING SLAB FOR TIE BARS AND 7 INCHES [180mm] FOR DOWELS. HOLES SHALL BE OF A DIAMETER SUFFICIENT TO ACCOMMODATE THE TIE BAR ANCHORAGE OR DOWEL CAP. TIE BARS SHALL BE ANCHORED WITH AN APPROVED HIGH VISCOSITY EPOXY.
13. IF THE CONCRETE SLAB REMAINING NEXT TO A LONGITUDINAL OR TRANSVERSE JOINT IS LESS THAN 6 FEET [1829mm] AT ITS NARROWEST WIDTH, REMOVE AND REPLACE THE EXISTING CONCRETE TO THE JOINT.

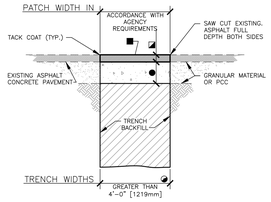


- ◓ FOR TRENCH WIDTHS EXCEEDING 4' [1219mm] DELETE LOAD TRANSFER DOWELS.
- ◪ 2" [50mm] MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.
- ■ BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6' [1829mm].
- ● REFER TO NOTE 13 ON VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES".

REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.

5 TYPE 3 UTILITY TRENCH PATCH
NTS

Department of Veterans Affairs | DETAIL TITLE / TITLE_1 TITLE_2 TITLE_3 | SCALE : SCALE | DATE ISSUED: DATE | CAD DETAIL NO.: | DETAIL_NO.

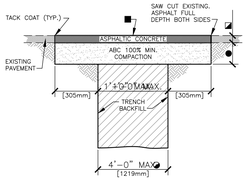


- ◓ FOR TRENCH WIDTHS 4' [1219mm] OR LESS REFER TO VA STANDARD DETAIL 32 12 16-01 "TYPE 1 UTILITY TRENCH PATCH". FOR TRENCH WHERE PORTLAND CEMENT CONCRETE (PCC) PAVEMENT EXISTS, REFER TO 32 12 16-03 "TYPE 3 UTILITY TRENCH PATCH".
- ◪ 2" [50mm] MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.
- ■ BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6' [1829mm].
- ● 4" [100mm] MINIMUM ABC OR THICKNESS OF EXISTING GRANULAR BASE COURSE MATERIALS (E.G. ABC & SELECT MATERIAL) WHICHEVER IS GREATER. PORTLAND CEMENT CONCRETE (PCC) THICKNESS EQUAL TO EXISTING.

REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.

3 TYPE 2 UTILITY TRENCH PATCH
NTS

Department of Veterans Affairs | DETAIL TITLE / TITLE_1 TITLE_2 TITLE_3 | SCALE : SCALE | DATE ISSUED: DATE | CAD DETAIL NO.: | DETAIL_NO.



- ◓ FOR TRENCH WIDTHS EXCEEDING 4' [1219mm] REFER TO VA STANDARD DETAIL 32 12 16-02 "TYPE 2 UTILITY TRENCH PATCH". FOR TRENCH WHERE PORTLAND CEMENT CONCRETE (PCC) PAVEMENT EXISTS, REFER TO 32 12 16-03 "TYPE 3 UTILITY TRENCH PATCH".
- ◪ 2" [50mm] MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.
- ■ BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6' [1829mm].
- ● 4" [100mm] MINIMUM ABC OR THICKNESS OF EXISTING GRANULAR BASE COURSE MATERIALS (E.G. ABC & SELECT MATERIAL) WHICHEVER IS GREATER.

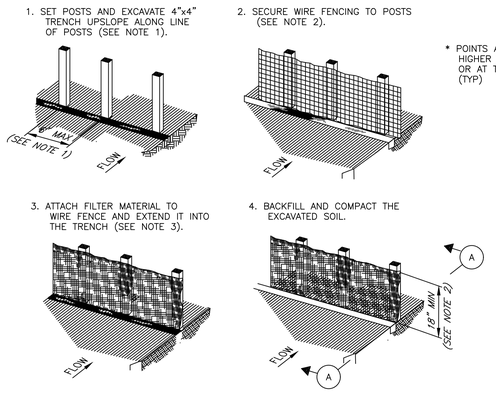
REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.

1 TYPE 1 UTILITY TRENCH PATCH
NTS

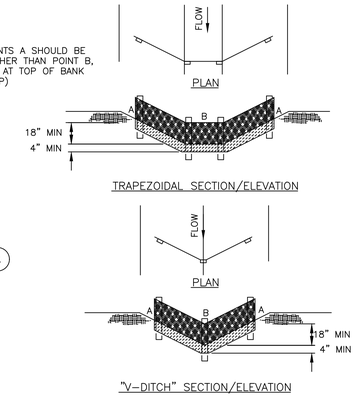
Department of Veterans Affairs | DETAIL TITLE / TITLE_1 TITLE_2 TITLE_3 | SCALE : SCALE | DATE ISSUED: DATE | CAD DETAIL NO.: | DETAIL_NO.

UTILITY TRENCH PATCH DETAIL — SCALE: NTS — **8**

1. SET POSTS AND EXCAVATE 4"x4" TRENCH UPSLOPE ALONG LINE OF POSTS (SEE NOTE 1).
2. SECURE WIRE FENCING TO POSTS (SEE NOTE 2).
3. ATTACH FILTER MATERIAL TO WIRE FENCE AND EXTEND IT INTO THE TRENCH (SEE NOTE 3).
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



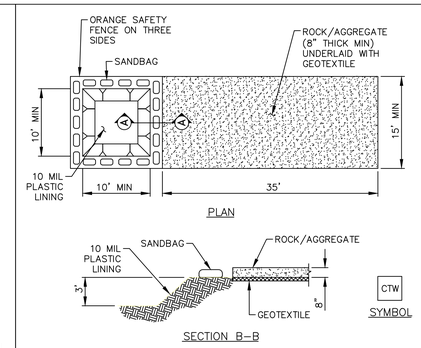
* POINTS A SHOULD BE HIGHER THAN POINT B, OR AT TOP OF BANK (TYP)



NOTES:

1. SET 2 INCH THICK BY 2 INCH WOODEN STAKES SPACED AT MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

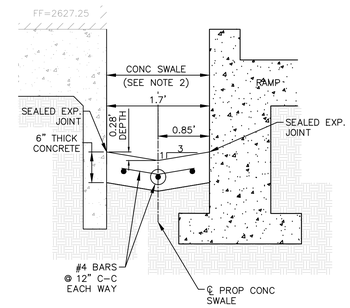
REINFORCED FILTER FABRIC FENCE DETAILS — SCALE: NTS — **6**



NOTES:

1. POST A SIGN READING "CONCRETE WASHOUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASHOUT THEIR TRUCKS IN THE PIT AND NOWHERE ELSE.
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASHOUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASHOUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.

CONCRETE TRUCK WASHOUT AREA — SCALE: NTS — **4**

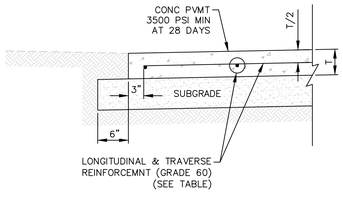


NOTES:

1. CONCRETE SHALL BE 3,000 psi AT 28 DAYS.
2. TYPICAL WIDTH SHALL BE 1.7-FEET, UNLESS SHOWN OTHERWISE ON PLANS.

CONC SWALE DETAIL — SCALE: NTS — **2**

T = THICKNESS

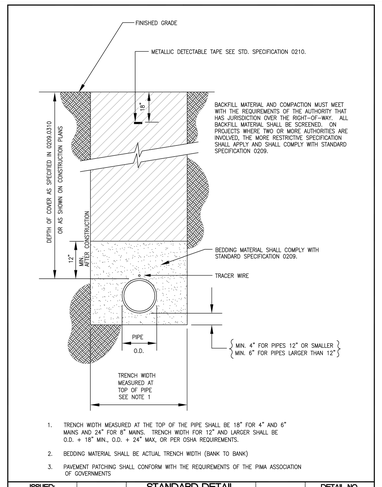


PAVEMENT		REINFORCING STEEL		
THICKNESS "T" (IN)	DUTY	LONGITUDINAL & TRAVERSE	L BAR "L1"	L BAR "L2"
5	LIGHT	#3 @ 18"	6"	10"
6	MEDIUM	#3 @ 12"	7"	10"
7	HEAVY	#4 @ 18"	8"	10"
8	DUMPSTER	#4 @ 12"	9"	10"

SUBGRADE NOTES:

1. PROOF ROLL & REMOVE SOFT SPOTS. SHAPE SCARIFY, AND STABILIZE SUBGRADE PER GEOTECHNICAL REPORT RECOMMENDATIONS.
2. COMPACT SUBGRADE SOIL TO 95% OF STANDARD PROCTOR DENSITY PER ASTM D 698.
3. MOISTURE CONTENT TO BE -2% TO +2% OF OPTIMUM AT TIME OF COMPACTION.

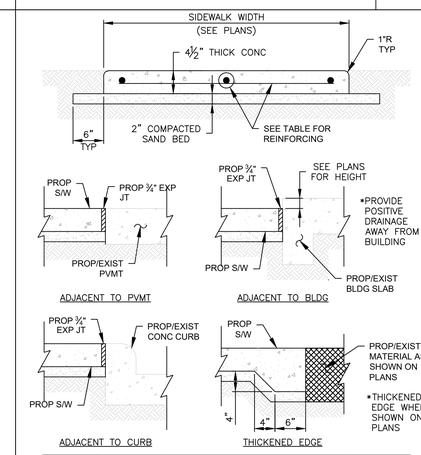
CONC PVMT (w/o CURB) DETAIL — SCALE: 1" = 1' — **7**



1. TRENCH WIDTH MEASURED AT THE TOP OF THE PIPE SHALL BE 18" FOR 4" AND 6" MAINS AND 24" FOR 8" MAINS. TRENCH WIDTH FOR 12" AND LARGER SHALL BE O.D. + 18" MIN., O.D. + 24" MAX, OR PER OSHA REQUIREMENTS.
2. BEDDING MATERIAL SHALL BE ACTUAL TRENCH WIDTH (BANK TO BANK)
3. PAVEMENT PATCHING SHALL CONFORM WITH THE REQUIREMENTS OF THE PIMA ASSOCIATION OF GOVERNMENTS

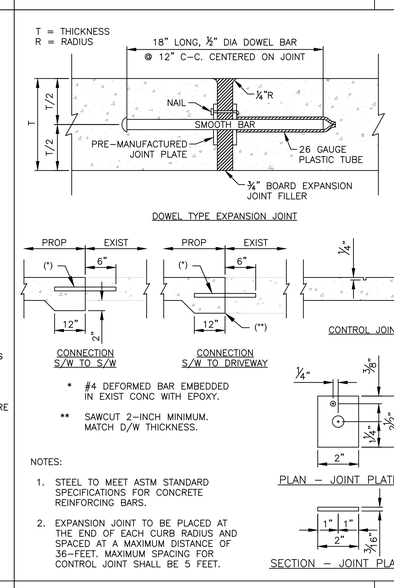
ISSUED:	STANDARD DETAIL	DETAIL NO.
6/97	PIPE BEDDING AND TRENCH BACKFILL	SD-115
REVISED: 2/16		SHEET 1 OF 1

PIPE BEDDING & TRENCH BACKFILL DETAIL — SCALE: NTS — **5**



SIDEWALK THICKNESS (IN)	SIDEWALK WIDTH (FT)	LONGITUDINAL STEEL #3 BARS NUMBER OF BARS	LONGITUDINAL STEEL #3 BARS SPACING (IN)	LONGITUDINAL STEEL #3 BARS END BAR SPACING (IN)	TRANSVERSE STEEL #3 BARS SPACING (IN)
4.5	4'-0"	3	21	3	18
4.5	5'-0"	3	27	3	18
4.5	6'-0"	4	22	3	18

4½" CONCRETE SIDEWALK DETAIL — SCALE: NTS — **3**



NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 36-FEET. MAXIMUM SPACING FOR CONTROL JOINT SHALL BE 5 FEET.

* #4 DEFORMED BAR EMBEDDED IN EXIST CONC WITH EPOXY.

** SAWCUT 2-INCH MINIMUM. MATCH D/W THICKNESS.

SIDEWALK JOINT DETAILS — SCALE: NTS — **1**

FULLY SPRINKLERED

BID DOCUMENTS

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT:

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 — EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 — EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 — EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Civil) CERTIFICATE NO. 71821 ALAN LANE LACKEY Date Signed 04-25-25 ARIZONA U.S.A. EXPIRES ON 6/30/2026

DRAWING TITLE
DETAILS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE	CHECKED	DRAWN
04/25/2025	FE	RE/GS

PROJECT NUMBER
762-24-101

BUILDING NUMBER
-

DRAWING NUMBER
CS200
DRAWING # 08 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

VA FORM 08-6231

STRUCTURAL ABBREVIATIONS

+/-	PLUS OR MINUS
ADDNL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ARCH	ARCHITECT OR ARCHITECTURAL
B/W	BETWEEN
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOD	BOTTOM OF DECK
BOS	BOTTOM OF STEEL
CF	COLD FORMED
CFMF	COLD-FORMED METAL FRAMING
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTERLINE
CLR	CLEAR/CLEARANCE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
CTR	CENTER
db	DIA OF REINF BAR, DIA OF BOLT
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DIA	DIAMETER
DIAG	DIAGONAL
DWL	DOWEL
EA	EACH
EJ	EXPANSION JOINT
EL	ELEVATION
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EW	EACH WAY
EXIST	EXISTING
EXT	EXTERIOR
FLR	FLOOR
FND	FOUNDATION
FS	FAR SIDE
FTG	FOOTING
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
IF	INSIDE FACE
INT	INTERIOR
JST	JOIST
K	KIPS (1000 LBS)
LCE	COMPRESSION EMBEDMENT LENGTH
LCS	COMPRESSION LAP SPLICE LENGTH
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LTE	TENSION EMBEDMENT LENGTH
LTS	TENSION LAP SPLICE LENGTH
LW	LIGHTWEIGHT
MANUF	MANUFACTURER
MTL	METAL
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OCEW	ON CENTER, EACH WAY
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OPP	OPPOSITE
PAF	POWDER ACTUATED FASTENER
PEMB	PRE-ENGINEERED METAL BUILDING
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
RE: OR REF	REFER TO
REINF	REINFORCING
REQD	REQUIRED
SIM	SIMILAR
SJ	SAW JOINT
SLV	SHORT LEG VERTICAL
SOG	SLAB ON GRADE
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
SW	SHEAR WALL
SYM	SYMMETRIC
T&B	TOP AND BOTTOM
TOC	TOP OF CONCRETE
TOD	TOP OF DECK
TOS	TOP OF STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WF	WIDE FLANGE
WP	WORK POINT
WWF	WELDED WIRE FABRIC

GENERAL NOTES

THE STRUCTURAL DRAWINGS DEPICT THE STRUCTURE IN ITS FINAL CONSTRUCTED CONFIGURATION. NEITHER CONSTRUCTION MEANS AND METHODS NOR CONSTRUCTION SAFETY ARE PART OF THE STRUCTURAL ENGINEER'S EXPERTISE OR SCOPE OF WORK. THE GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS ARE FULLY RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE STRUCTURE AND FOR FULL COMPLIANCE WITH ALL JOB SAFETY RELATED REGULATIONS AND CONDITIONS AT THE SITE. LIMITED SITE VISITS, IF ANY, BY THE STRUCTURAL ENGINEER ARE SOLELY TO OBSERVE COMPLETED PARTS OF THE STRUCTURE. THE STRUCTURAL ENGINEER IS NEITHER QUALIFIED TO OBSERVE NOR COMMENT ON CONSTRUCTION MEANS AND METHODS AND JOB SITE SAFETY.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO FABRICATION/CONSTRUCTION. NOTIFY STRUCTURAL ENGINEER AND ARCHITECT OF ANY DISCREPANCIES PRIOR TO FABRICATION/CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ALL WORK FITTING AS INTENDED BY THE DRAWINGS AND SPECIFICATIONS.

PRINCIPAL OPENINGS ARE SHOWN ON THE DRAWINGS. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, CURBS, INSERTS, DEPRESSIONS, ETC NOT SHOWN.

ALL DETAILS ARE TYPICAL UNLESS NOTED OTHERWISE. DETAILS SHALL APPLY TO SIMILAR AND LIKE CONDITIONS.

SHOP DRAWINGS SHALL BE NEW DRAWINGS PRODUCED BY THE CONTRACTOR, ILLEGIBLE REPRODUCTIONS OF THE DESIGN DRAWINGS WILL BE REJECTED. ELECTRONIC FILES MAY BE REQUESTED FROM THE ENGINEER OF RECORD FOR THE PURPOSE OF PREPARING SHOP DRAWINGS. THE CONTRACTOR WILL BE REQUIRED TO SIGN AN INDEMNITY STATEMENT PRIOR TO TRANSMISSION OF THE ELECTRONIC FILES TO THE CONTRACTOR. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES THEIR ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATES THEMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS OR OMISSIONS THAT MAY OCCUR HEREIN.

THIS PROJECT CONSISTS OF A MODIFICATION TO AN EXISTING BUILDING. INFORMATION ON EXISTING CONDITIONS HAS BEEN TAKEN FROM THE ORIGINAL DESIGN DRAWINGS AND SHOWN ON THESE DRAWINGS. THESE DRAWINGS WERE ASSUMED TO BE "AS-BUILT" DRAWINGS SINCE EXISTING CONDITIONS WERE NOT ACCESSIBLE OR SINCE FIELD OBSERVATION OF EXISTING CONDITION IS BEYOND THE ENGINEER'S SCOPE OF WORK DURING THE DESIGN PHASE OF THIS PROJECT. THE ACCURACY OF THIS INFORMATION HAS NOT BEEN VERIFIED.

BUILDING CODE: INTERNATIONAL BUILDING CODE, 2024 EDITION; MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-22.

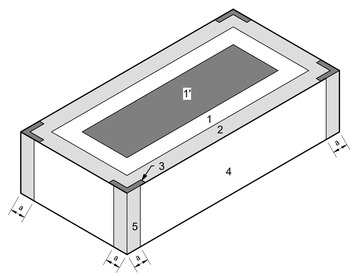
DEAD LOAD:
ANY CHANGES IN CONSTRUCTION MATERIALS FROM THOSE SHOWN ON THE ARCHITECTURAL OR STRUCTURAL DRAWINGS SHALL BE REPORTED BY THE CONTRACTOR TO THE STRUCTURAL ENGINEER FOR VERIFICATION OF LOAD CARRYING CAPACITY OF THE STRUCTURE.

LIVE LOAD:
ROOF: 20 PSF

LIVE LOAD REDUCTIONS HAVE BEEN APPLIED IN ACCORDANCE WITH THE BUILDING CODE, UNLESS NOTED OTHERWISE.

WIND LOAD:
INTERNATIONAL BUILDING CODE, 2024 EDITION

VELOCITY (ULT) : 110 MPH THREE SECOND GUST
EXPOSURE: C
RISK CATEGORY: III
INTERNAL PRESSURE COEFFICIENT, Gcpi: +/- 0.18



a = 11'-0"

ROOF DESIGN GROSS PRESSURES, WIND ONLY (PSF)			
ZONE	EFFECTIVE WIND AREA ft²		
	20 ft²	50 ft²	100 ft²
1	+/- 44	+/- 40	+/- 37
1'	+/- 27	+/- 27	+/- 27
2	+/- 58	+/- 53	+/- 49
3	+/- 58	+/- 53	+/- 49

WALL DESIGN GROSS PRESSURES, WIND ONLY (PSF)			
ZONE	EFFECTIVE WIND AREA ft²		
	20 ft²	50 ft²	100 ft²
4	+/- 28	+/- 27	+/- 25
5	+/- 34	+/- 31	+/- 28

SEISMIC LOAD:
RISK CATEGORY: III
SEISMIC IMPORTANCE FACTOR (I): 1.25
MAPPED SPECTRAL RESP ACCEL (Ss/S1): 0.280g/0.076g
SITE CLASS: D
SPECTRAL RESPONSE COEFF (Sds/Sd1): 0.280g/0.14g
SEISMIC DESIGN CATEGORY: C

RAIN LOAD:
RISK CATEGORY: III
15-MINUTE INTENSITY: 6.52 In/Hr
60-MINUTE INTENSITY: 2.72 In/Hr

CONCRETE

1. ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, EXCEPT WHERE NOTED. NO. 3 BARS SHALL CONFORM TO ASTM A615, GRADE 40. DEFORMED BAR ANCHORS SHALL CONFORM TO ASTM A496, GR 70.
2. ALL WELDED WIRE FABRIC SHALL BE SMOOTH WIRE FABRIC CONFORMING TO ASTM A1064 AND SHALL BE FURNISHED IN FLAT SHEETS ONLY. ROLLED WIRE FABRIC WILL BE REJECTED.
3. CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND SHALL BEAR THE WET SEAL OF A CIVIL ENGINEER IN THE STATE OF ARIZONA FOR REVIEW BY THE STRUCTURAL ENGINEER THROUGH THE COR. THE CONCRETE MIX SHALL COMPLY WITH ACI 318 FOR THE FOLLOWING EXPOSURE CLASSES: F1, S1, W2, C1.
4. CONCRETE SHALL BE AIR ENTRAINED. TOTAL AIR CONTENT (PERCENT BY VOLUME OF CONCRETE SHALL BE AS FOLLOWS:
   - CONCRETE WITH SIZE 67 AGGREGATE 5% +/- 1.5%
   - CONCRETE WITH SIZE 467 AGGREGATE 4.5% +/- 1.5%
5. CONCRETE IN THE FOLLOWING AREAS SHALL HAVE SAND AND CRUSHED CARBONATE AGGREGATE CONFORMING TO ASTM C33, ASTM C150 TYPE II PORTLAND CEMENT, FLYASH CONFORMING TO ASTM C618, CLASS 'C' UP TO 20 PERCENT REPLACEMENT BY VOLUME AND THE FOLLOWING DESIGNATED COMPRESSIVE STRENGTH (f'c) IN 28 DAYS:
   - ALL CONCRETE ---- 4000 PSI (w/c = 0.50 MAX)

   CONCRETE SUPPLIER SHALL BE AWARE OF CEMENTS THAT CAN CAUSE ETTRINGITE FORMATION IN THE CEMENT PASTE AND BE PREPARED TO SHOW THAT THE CEMENTS USED WILL NOT CAUSE THIS PROBLEM.
6. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS; SEE SEC 20.5 ACI 318, LATEST EDITION FOR CONDITIONS NOT NOTED. PROVIDE CHAIR SUPPORTS (AZTEC CASTLE CHAIR, WHC SERIES 'B' OR EQUAL) TO ADEQUATELY SUPPORT BARS FOR PROPER CLEARANCE AS RECOMMENDED BY THE AMERICAN CONCRETE INSTITUTE AND THE CONCRETE REINFORCING STEEL INSTITUTE. SLAB ON GRADE REINFORCEMENT SHALL BE SUPPORTED AT 42-INCH MAXIMUM INTERVALS OR EVERY THIRD BAR.
   - FOOTINGS ---- 3 IN
   - SLAB ON GRADE ---- 1½ IN TOP
7. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL BE IN ACCORDANCE WITH ACI PUBLICATION 315, LATEST EDITION. ALL HOOKED BARS SHOWN IN DETAILS SHALL HAVE STANDARD HOOKS UNLESS NOTED OTHERWISE.
8. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE, ACI 301, LATEST EDITION.
9. NO HORIZONTAL JOINTS WILL BE PERMITTED IN CONCRETE EXCEPT WHERE THEY NORMALLY OCCUR OR WHERE NOTED. VERTICAL JOINTS SHALL OCCUR AT CENTER SPANS OR AT LOCATIONS APPROVED BY THE STRUCTURAL ENGINEER.
10. REINFORCING BARS SHALL NOT BE WELDED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.
11. UNLESS NOTED OTHERWISE CONTINUOUS BOTTOM REINFORCING BARS SHALL BE SPLICED AT SUPPORTS AND CONTINUOUS TOP REINFORCING BARS SHALL BE SPLICED AT MID-SPAN.
12. ALL BASE PLATES AND ANCHOR RODS SHALL BE PROTECTED WITH 3" (MIN) OF CONCRETE. ANCHOR RODS SHALL BE FABRICATED FROM FULL BODIED STEEL RODS CONFORMING TO ASTM F1554 GR.36, WASHERS CONFORMING TO ASTM F884 AND NUTS CONFORMING TO ASTM A194 OR A563 AND HAVING THE SAME DIAMETER AS THE BOLT DIAMETER AND USING CUT THREADS. ROLLED THREADS ARE NOT ACCEPTABLE. BOLTS SHALL BE SET USING RIGID TEMPLATES.
13. PROVIDE (1) - #5 X 4'-0" AT RE-ENTRANT CORNERS AND AROUND RECTANGULAR HOLES IN SLABS UNLESS NOTED OTHERWISE. PLACE BAR DIAGONAL TO CORNER WITH 1" CLEARANCE FROM TOP AND THE SIDE OF THE SLAB AT THE CORNER.
14. WHERE FRESH CONCRETE IS DEPOSITED AGAINST HARDENED CONCRETE (GREATER THAN 8 HOURS OLD), CLEAN EXISTING SURFACE OF LAITANCE AND FOREIGN MATERIAL AND DAMPEN THE EXISTING SURFACE. IF REQUIRED, ROUGHEN EXISTING CONCRETE TO ¼" AMPLITUDE.
15. ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318, AND THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 301, LATEST EDITIONS, WITH MODIFICATIONS AS NOTED ON THE DESIGN DRAWINGS OR SPECIFICATIONS.
16. REINFORCED CONCRETE DESIGN IS BY THE ULTIMATE STRENGTH DESIGN METHOD.
17. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE II.
18. CONCRETE MIXES MAY CONTAIN FLY ASH AS NOTED PER SPECIFICATIONS.
19. USE SIZE 67 OR SIZE 467 AGGREGATE.
20. CONCRETE MIXING OPERATIONS, ETC., SHALL CONFORM TO ASTM C94.
21. PLACEMENT OF CONCRETE SHALL CONFORM TO ACI STANDARD 304 AND PROJECT SPECIFICATIONS.
22. PLACING OF CONCRETE SHALL CONFORM TO ACI 305 "GUIDE TO HOT WEATHER CONCRETING" AND ACI 306 "GUIDE TO COLD WEATHER CONCRETING" WHEN APPLICABLE.
23. ALL REINFORCING BARS, ANCHOR BOLTS, AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
24. MODULUS OF ELASTICITY OF CONCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C469, SHALL BE AT LEAST THE VALUE GIVEN BY THE EQUATIONS IN SECTION 8.5.1 OF ACI 318 FOR THE SPECIFIED CONCRETE 28-DAY STRENGTH.
25. MINIMUM STRENGTH FOR REMOVAL OF FORMS AND SHORING SHALL BE 75% OF SPECIFIED STRENGTH AT 28 DAYS.
26. ALL CONCRETE NOT SPECIFICALLY SHOWN WITH REINFORCEMENT SHALL BE REINFORCED IN THE SAME MANNER AS SIMILAR CONDITIONS OR WITH REINFORCEMENT MEETING THE MINIMUM REQUIREMENTS OF ACI 318.

FOUNDATION

1. FOUNDATION:
   a. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL TECHNICAL REPORT PREPARED BY NINYO & MOORE, PROJECT NO. 607004001, DATED NOVEMBER 24, 2021 AND ADDENDUM #2 REPORT PREPARED BY NINYO & MOORE, PROJECT NO. 607004001, DATED APRIL 11, 2025.
2. ALLOWABLE NET BEARING PRESSURE IS AS FOLLOWS:

   SPREAD AND CONTINOUS WALL FOOTINGS ARE DESIGNED BASED ON AN ALLOWABLE NET SOIL BEARING PRESSURE OF 2500 PSF AT 18" MINIMUM BELOW FINISH FLOOR OR GRADE (THE LOWER). A ONE-THIRD INCREASE IN ALLOWABLE BEARING PRESSURE MAY BE APPLIED WHEN CONSIDERING SHORT-TERM LOADING DUE TO WIND OR SEISMIC FORCES.
3. CONTRACTOR SHALL PROVIDE FOR PROPER DEWATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER, SEEPAGE, ETC.
4. CONTRACTOR SHALL PROVIDE FOR THE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY AND ADEQUATELY RETAIN THE EARTH BANKS AND ANY EXISTING STRUCTURE.
5. ALL EARTHWORK, FOOTING DEPTHS, AND EXCAVATIONS FOR FOUNDATIONS SHALL BE INSPECTED BY THE SOILS ENGINEER TO VERIFY ASSUMED ALLOWABLE SOIL BEARING PRESSURE AND TO MAKE ANY ADDITIONAL RECOMMENDATIONS.
6. EXCAVATIONS FOR FOOTINGS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING THE CONCRETE AND REINFORCING. THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER WHEN THE EXCAVATIONS ARE READY FOR INSPECTION. THE GEOTECHNICAL ENGINEER SHALL SUBMIT A LETTER OF COMPLIANCE TO THE COR.
7. ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE CONCRETE OR MASONRY HAS ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING AND PROTECTION.
8. FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN THE BUILDING PERIMETER SHALL BE MECHANICALLY COMPACTED IN LAYERS, TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. FLOODING WILL NOT BE PERMITTED.
9. ALL ABANDONED FOOTINGS, UTILITIES, ETC., THAT INTERFERE WITH THE NEW CONSTRUCTION SHALL BE REMOVED.

SPECIAL INSPECTIONS

A. ALL CONCRETE WORK FOR STRENGTHS GREATER THAN 2500 PSI, EXCEPT FOR NON-STRUCTURAL CONCRETE.

B. ALL REINFORCING STEEL FOR CONCRETE STRENGTHS GREATER THAN 2500 PSI.

QUALITY ASSURANCE PLAN AND STATEMENT OF SPECIAL INSPECTION

1. SPECIAL INSPECTION, PER THE 2024 INTERNATIONAL BUILDING CODE CHAPTER 17, SECTION 1704 AND 1705. SEE PROJECT SPECIFICATIONS AND STATEMENT OF SPECIAL INSPECTIONS BELOW FOR SPECIFIED REQUIREMENTS.
2. STATEMENT OF SPECIAL INSPECTIONS THIS STATEMENT OF SPECIAL INSPECTIONS IS IN ACCORDANCE WITH SECTIONS 1704.3 OF THE IBC 2024 CODE. THE INTENT OF THIS SECTION IS THAT ALL SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 17 OF THE 2024 IBC UNLESS SPECIFICALLY NOTED OTHERWISE. SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING:
   a. CONCRETE CONSTRUCTION (IBC 1705.3, ACI 318)
   b. SOILS (IBC 1705.6)
   c. ANCHORAGE OF PLUMBING, MECHANICAL, AND ELECTRICAL EQUIPMENT (IBC 1705.13.6)
      i. PERIODIC PER IBC 1705.13.6
   d. VERIFY THAT THE COMPONENT LABEL, ANCHORAGE, AND MOUNTING CONFORMS TO THE CERTIFICATE OF COMPLIANCE FOR ELEMENTS OF THE DESIGNATED SEISMIC SYSTEMS REQUIRING SEISMIC QUALIFICATION (IBC 1705.13.4)
      i. PERIODIC PER IBC 1705.13.4
3. THE SPECIAL INSPECTOR (SI) SHALL BE RETAINED BY THE CONTRACTOR AND APPROVED BY THE CONTRACTING OFFICER AS HAVING THE COMPETENCE NECESSARY TO INSPECT A PARTICULAR TYPE OF CONSTRUCTION REQUIRING SPECIAL INSPECTIONS. THE SI MUST BE AN INDEPENDENT THIRD PARTY HIRED DIRECTLY BY THE PRIME CONTRACTOR.

REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS - REFERENCE 2024 IBC TABLE 1705.6

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. Verify materials below shallow foundations are adequate to achieve the design capacity.		X
2. Verify excavations are extended to proper depth and have reached proper material.		X
3. Perform classification and testing of compacted fill materials.		X
4. During fill placement, verify use of proper materials and procedures in accordance with the provisions of the approved geotechnical report. Verify densities and lift thickness during placement and compaction of compacted fill.	X	
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.		X

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION - REFERENCE 2024 IBC TABLE 1705.3

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCE STANDARD	IBC REFERENCE
1. Inspect reinforcement and verify placement.		X	ACI 318 CH. 20, 25.2, 25.3, 26.6.1, 26.6.3	
2. Inspect anchors cast in concrete.		X	ACI 318: 26.13.3.3	
3. Inspect anchors post-installed in hardened concrete members.	X		ACI 318: 26.13	
4. Verify use of required design mix.		X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2
5. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X		ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	
6. Inspect concrete placement for proper application techniques.	X		ACI 318: 26.5	
7. Verify maintenance of specified curing temperature techniques.		X	ACI 318: 26.5.3-26.5.5	

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 4:36:29 PM

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Structural) CERTIFICATE NO. 26024 GREGORY M. GORDON Date Signed 04/25/25 ARIZONA, U.S.A.
Gregory M Gordon

DRAWING TITLE
GENERAL NOTES AND SPECIAL INSPECTIONS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED GMG | DRAWN IG

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER
S-000
DRAWING # 09 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

GENERAL SHEET NOTES

A. REFERENCE SHEET S-000 FOR GENERAL NOTES.

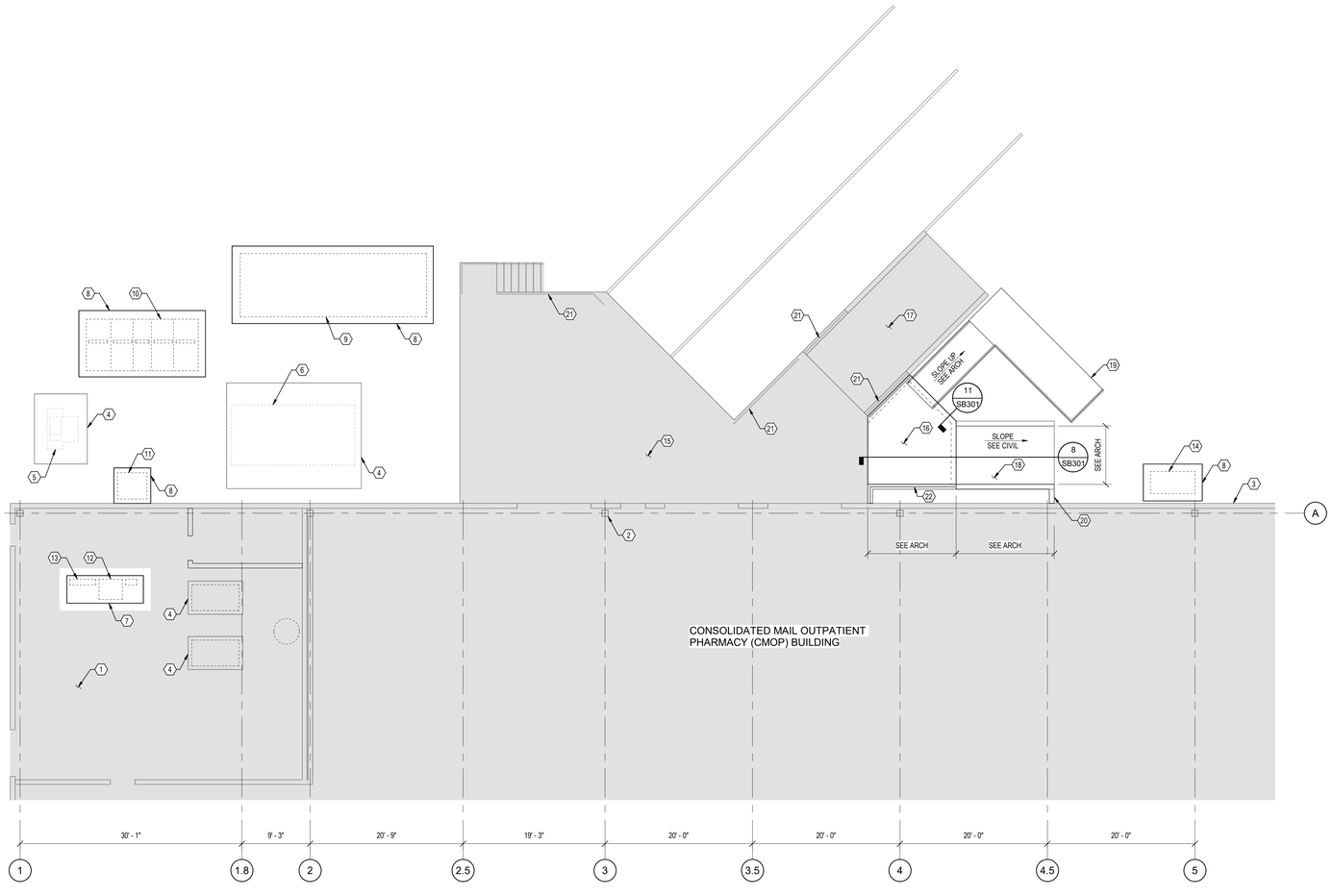
B. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

C. EXISTING CONDITIONS & DIMENSIONS SHALL BE CONFIRMED BY THE CONTRACTOR. CONTRACTOR SHALL CONTACT COR WITH ANY FIELD DISCREPANCIES.

D. CONTRACTOR SHALL DESIGN SEISMIC RESTRAINTS FOR ALL NON-STRUCTURAL COMPONENTS. CONTRACTOR SHALL SUBMIT STAMPED CALCULATIONS AND ENGINEERING DRAWINGS TO COR FOR SHOP DRAWINGS REVIEW. SEE SPECIFICATIONS SECTION 13 05 41.

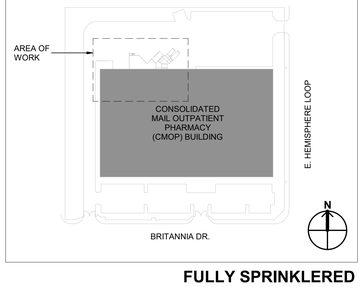
(#) FOUNDATION PLAN NOTES:

1. EXISTING 5" THICK UNREINFORCED CONCRETE SLAB.
2. EXISTING STEEL COLUMN, TYP.
3. EXISTING EXTERIOR TILT PANEL, TYP.
4. EXISTING CONCRETE PAD.
5. EXISTING XFMR "TPEC".
6. EXISTING GENERATOR '01'.
7. NEW CONCRETE PAD, SEE DETAIL 5 / SB301.
8. NEW CONCRETE BASE, SEE DETAIL 6 / SB301.
9. NEW DIESEL ENGINE GENERATOR, SEE ELECTRICAL.
10. NEW PARALLELING SWITCHGEAR, SEE ELECTRICAL.
11. NEW DUAL PURPOSE POWER DOCKING STATION, SEE ELECTRICAL.
12. NEW AUTOMATIC TRANSFER SWITCH, SEE ELECTRICAL.
13. NEW ATS 'S2' & PANELBOARD 'DB-S2', SEE ELECTRICAL.
14. NEW PACKAGING UNIT, SEE MECHANICAL.
15. EXISTING RAISED DOCK.
16. NEW 8" THICK EXTERIOR DOCK SLAB W/ #4 @ 12" OC EA WAY T&B, SEE ARCH AND CIVIL.
17. EXISTING RAMP.
18. NEW RAMP, SEE ARCH AND CIVIL.
19. NEW ELEVATED METAL RAMP BY CONTRACTOR, SEE ARCH.
20. NEW CURB, SEE CIVIL.
21. EXISTING HANDRAIL.
22. NEW HANDRAIL, SEE ARCH.



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

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Structural) CERTIFICATE NO. 26024 GREGORY M. GORDON Date Signed 04/25/25 ARIZONA, U.S.A.

DRAWING TITLE
LEVEL 1 ENLARGED PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED GMG | DRAWN IG

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

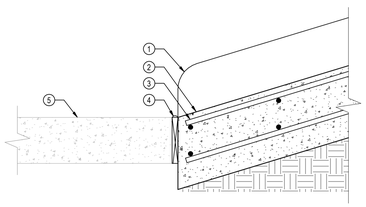
DRAWING NUMBER
SB101
DRAWING # 10 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

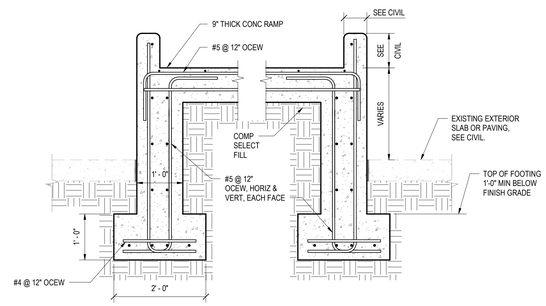
4/22/2025 4:36:31 PM

VA FORM 08-6231

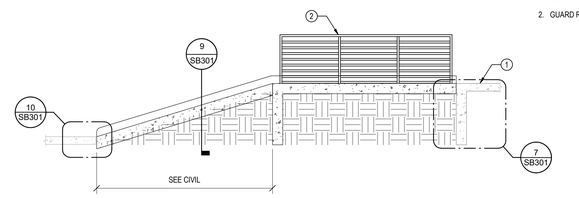


1. CURB BEYOND.
2. NEW RAMP.
3. SEE DETAIL 9 / SB301 SLAB FOR REINF.
4. 3/4" FIBER BOARD EXPANSION JOINT.
5. EXISTING PAVING.

10 RAMP TRANSITION DETAIL
NTS

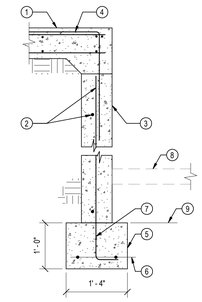


9 RAMP SECTION
NTS



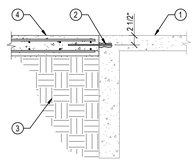
1. EXISTING DOCK.
2. GUARD RAIL, SEE ARCH.

8 RAMP ELEVATION
NTS



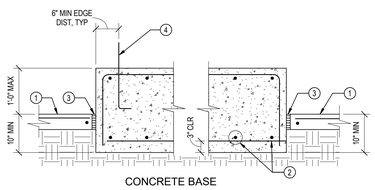
1. DOCK SLAB, SEE PLAN.
2. CONCRETE WALL REINFORCING, #5 AT 16" OC HORIZ. AND VERT.
3. 8" CONCRETE WALL, SHORE UNTIL CONNECTING SLABS HAVE REACHED DESIGN STRENGTH.
4. #4X AT 16" OC TO LAP WITH WALL AND SLAB REINFORCMENT.
5. CONT FOOTING CENTERED UNDER CONCRETE WALL.
6. (2) #5 CONT.
7. PROVIDE STD 90 DEG. HOOK, SKEW AS REQ'D.
8. EXISTING EXTERIOR SLAB OR PAVING, SEE CIVIL.
9. TOP OF FOOTING 1'-0" MIN BELOW FINISH GRADE.

11 SECTION AT DOCK WALL
NTS



1. EXISTING DOCK.
2. DRILL & EPOXY #4 DOWEL 4" INTO EXISTING WALL. LOCATE DOWELS AT 12" OC. LAP #4 BARS WITH SLAB REINF.
3. COMPACTED SELECT FILL.
4. 8" THICK DOCK SLAB, SEE PLAN FOR REINF.

7 DOCK SECTION
NTS

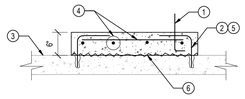


CONCRETE BASE

COORD. LOCATIONS, DIMENSIONS, ANCHORAGES & SUPPORTS REQUIREMENTS FOR MECHANICAL UNITS TO CONC BASES WITH EQUIP. MFR/ SUPPLIER, ARCH'L, MECH'L & ELECT'L DWGS. EQUIP MFR/ SUPPLIER TO PROVIDE ALL SUPPORTS NOT SHOWN.

1. SLAB ON GRADE OR PAVING, ETC., SEE ARCH/CIVIL DWGS.
2. #5 AT 12" EACH WAY TOP & BOTTOM WITH CORNER BARS.
3. 1 1/2" COMPRESSIBLE MATERIAL - 4 SIDES.
4. ANCHOR BOLTS AS REQ'D.

6 EQUIPMENT BASE DETAIL
NTS



CONCRETE PAD

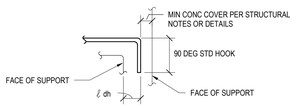
COORD. LOCATIONS, DIMENSIONS, ANCHORAGES & SUPPORTS REQUIREMENTS FOR MECHANICAL UNITS TO CONC BASES WITH EQUIP. MFR/ SUPPLIER, ARCH'L, MECH'L & ELECT'L DWGS. EQUIP MFR/ SUPPLIER TO PROVIDE ALL SUPPORTS NOT SHOWN.

1. ANCHOR BOLTS AS REQ'D.
2. #4 DOWELS AT 24" OC AROUND PERIMETER OF PAD, AND NOT LESS THAN ONE AT EACH CORNER OF PAD.
3. TOP OF EXISTING SLAB ON GRADE.
4. #4 AT 12" OC EACH WAY.
5. DOWEL MAY BE DRILLED & EPOXIED 3" INTO SLAB AT CONTRACTORS OPTION.
6. ROUGHEN SLAB PRIOR TO POURING NEW PAD.

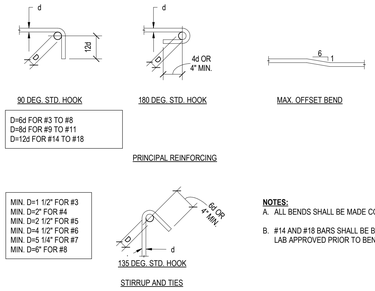
5 EQUIPMENT PAD
NTS

ℓ dh (IN INCHES)		
BAR SIZE	f'c (PSI) 3000	4000
#3	9	8
#4	11	10
#5	14	12
#6	17	15
#7	20	17
#8	22	19
#9	25	22
#10	28	25
#11	31	27

1. THIS TABLE FOR USE WITH NORMAL-WEIGHT HARDROCK CONCRETE AND GRADE 60 UNCOATED REINFORCING BARS.
2. FOR LIGHT-WEIGHT AGGREGATE USE 1.3 ℓ dh
3. FOR GRADE 40 BARS, USE 0.67 ℓdh
4. ℓ dh SHALL BE A MINIMUM OF 8 BAR DIAMETERS OR 6 INCHES, THE GREATER



4 TENSION DEVELOPMENT FOR HOOKED BARS
NTS



NOTES:
A. ALL BENDS SHALL BE MADE COLD.
B. #14 AND #18 BARS SHALL BE BEND TESTED AND LAB APPROVED PRIOR TO BENDING.

3 BAR BENDS
NTS

f'c = 3000 & 3500 PSI

BAR SIZE	LAP CLASS	TOP BARS CASE 1	TOP BARS CASE 2	OTHER BARS CASE 1	OTHER BARS CASE 2
#3	A	22	32	17	25
	B	28	42	22	32
#4	A	29	43	22	33
	B	37	56	29	43
#5	A	36	54	28	41
	B	47	70	36	54
#6	A	43	64	33	50
	B	56	84	43	64
#7	A	63	94	48	72
	B	81	122	63	94
#8	A	72	107	55	82
	B	93	139	72	107
#9	A	81	121	62	93
	B	105	157	81	121
#10	A	91	136	70	105
	B	118	177	91	136
#11	A	101	151	78	116
	B	131	196	101	151

f'c = 4000 & 4500 PSI

BAR SIZE	LAP CLASS	TOP BARS CASE 1	TOP BARS CASE 2	OTHER BARS CASE 1	OTHER BARS CASE 2
#3	A	19	28	15	22
	B	24	36	19	19
#4	A	25	37	19	29
	B	32	48	25	37
#5	A	31	47	24	36
	B	40	60	31	47
#6	A	37	56	29	43
	B	48	72	37	56
#7	A	54	81	42	63
	B	70	106	54	81
#8	A	62	93	48	71
	B	80	121	62	93
#9	A	70	105	54	81
	B	91	136	70	105
#10	A	79	118	61	91
	B	102	153	79	118
#11	A	87	131	67	101
	B	113	170	87	131

NOTES:
1. TABLE FOR USE WITH NORMAL WEIGHT HARDROCK CONCRETE AND GRADE 60 UNCOATED REINF. BARS. FOR LIGHTWEIGHT AGGREGATE USE 1.3 ℓ_d
2. ℓ_d = BASIC LAP LENGHT SHOWN AT THIS TABLE.

   CLASS A - HALF OR LESS OF THE BARS ARE SPLICED WITHIN A REQUIRED LAP LENGTH.

   CLASS B - MORE THAN HALF OF THE BARS ARE SPLICED WITHIN A REQUIRED LAP LENGTH.
3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST IN THE MEMBER BELOW THE BAR.
4. FOR BARS ENCLOSED IN STANDARD COL. SPIRALS, USE 0.75ℓ_d OR 12" MIN.
5. LAP SPLICES OF INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE 1.2 ℓ_d FOR THAT BAR IN A 3-BAR BUNDLE AND 1.3 ℓ_d FOR A 4-BAR BUNDLE. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED AT THE SAME LOCATION. SPLICES FOR INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE STAGGERED SUCH THAT THEY DO NOT OVERLAP.
6. COMPRESSION LAP SPLICE (ONLY WHERE INDICATED ON DRAWINGS) FOR GRADE 60 BARS USE 30 BAR DIA.
7. CASES 1 AND 2 ARE DEFINED AS FOLLOWS:

   BEAMS OR COLUMNS
   CASE 1: COVER AT LEAST 1.0 db AND CENTER TO CENTER SPACING AT LEAST 2.0 db

   CASE 2: COVER LESS THAN 1.0 db OR CENTER TO CENTER SPACING LESS THAN 2.0 dB

   ALL OTHER MEMBERS
   CASE 1: COVER AT LEAST 1.0 db AND CENTER TO CENTER SPACING AT LEAST 3.0 db

2 TENSION LAP SPLICE LENGTH ℓ (INCHES)
NTS

f'c = 3000 & 3500 PSI

BAR SIZE	TOP BARS CASE 1	TOP BARS CASE 2	OTHER BARS CASE 1	OTHER BARS CASE 2
#3	22	32	17	25
#4	29	43	22	33
#5	36	54	28	41
#6	43	64	33	50
#7	63	94	48	72
#8	72	107	55	82
#9	81	121	62	93
#10	91	136	70	105
#11	101	151	78	116
#14	121	181	93	139
#18	161	241	124	186

f'c = 4000 & 4500 PSI

BAR SIZE	TOP BARS CASE 1	TOP BARS CASE 2	OTHER BARS CASE 1	OTHER BARS CASE 2
#3	19	28	15	22
#4	25	37	19	29
#5	31	47	24	36
#6	37	56	29	43
#7	54	81	42	63
#8	62	93	48	71
#9	70	105	54	81
#10	79	118	61	91
#11	87	131	67	101
#14	105	157	81	121
#18	139	209	107	161

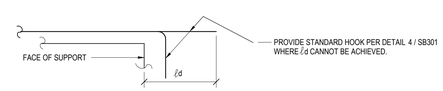
NOTES:
1. THIS TABLE FOR USE WITH NORMAL WEIGHT HARDROCK CONCRETE AND GRADE 60 UNCOATED REINFORCING BARS. FOR LIGHTWEIGHT AGGREGATE USE 1.3 ℓd. ℓd= TENSION DEVELOPMENT LENGTH SHOWN AT THIS TABLE.
2. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST IN THE MEMBER BELOW THE BAR.
3. FOR BARS ENCLOSED IN STANDARD COLUMN SPIRALS, USE 0.75 ℓd OR 12" MIN.
4. TENSION DEVELOPMENT LENGTH OF INDIVIDUAL BARS WITHIN A BUNDLE SHALL BE 1.2 ℓd FOR THAT BAR IN A 3-BAR BUNDLE AND 1.33 ℓd FOR A 4-BAR BUNDLE.
5. COMPRESSION DEVELOPMENT LENGTH (ONLY WHERE INDICATED ON DRAWINGS) FOR GRADE 60 BARS USE 22 BAR DIAMETERS.
6. CASES 1 AND 2 ARE DEFINED AS FOLLOWS:

   BEAMS OR COLUMNS
   CASE 1: COVER AT LEAST 1.0 db AND CENTER TO CENTER SPACING AT LEAST 2.0 db

   CASE 2: COVER LESS THAN 1.0 db OR CENTER TO CENTER SPACING LESS THAN 2.0 db

   ALL OTHER MEMBERS
   CASE 1: COVER AT LEAST 1.0 db AND CENTER TO CENTER SPACING AT LEAST 3.0 db

   CASE 2: COVER LESS THAN 1.0 dB OR CENTER TO CENTER SPACING LESS THAN 3.0 db



1 TENSION DEVELOPMENT LENGTH ℓd (INCHES)
NTS

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Structural) CERTIFICATE NO. 26024 GREGORY M. GORDON Date Signature 04/25/2025 ARIZONA, U.S.A.

DRAWING TITLE
FOUNDATION SECTIONS AND DETAILS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED GMG | DRAWN IG

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER **SB301**

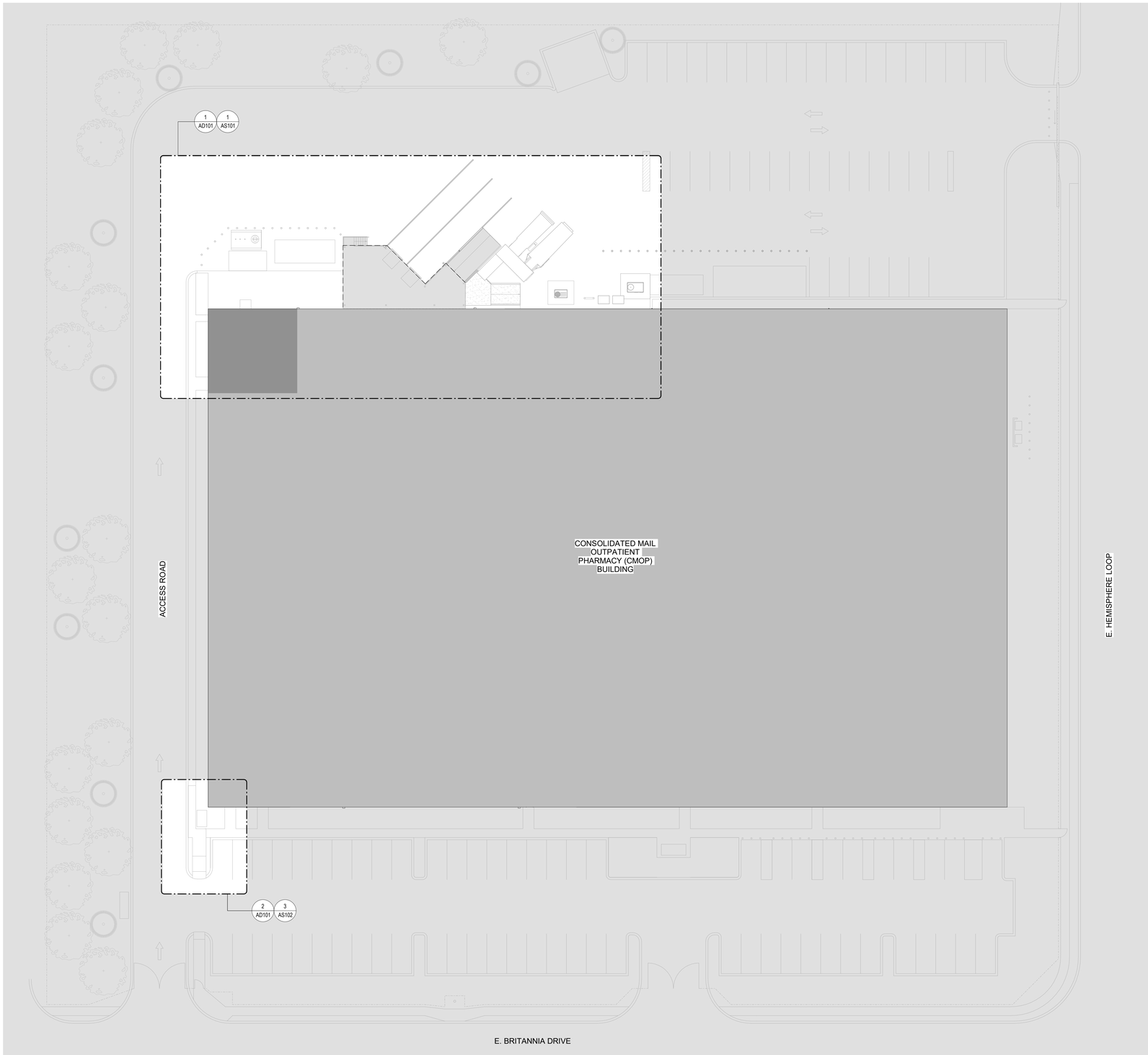
DRAWING # 11 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

VA FORM 08-6231

4/22/2025 4:36:36 PM



1 ARCHITECTURAL SITE PLAN
1" = 20'-0"

GENERAL SITE PLAN NOTES

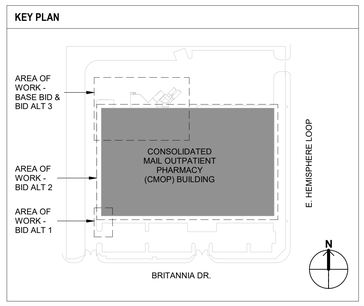
1. ALL EXISTING LANDSCAPING TO REMAIN. CONTRACTOR TO REPAIR OR RESTORE ANY DAMAGE CAUSED TO EXISTING LANDSCAPING ELEMENTS OUTSIDE OF PROJECT SCOPE OF WORK.
2. LOADING DOCKS AND TRASH COMPACTORS MUST BE ACCESSIBLE THROUGHOUT THE DURATION OF THE PROJECT.

SITE PLAN LEGEND

	SCOPE BOUNDARY		CONCRETE CURB
	25'-0" SAFETY SETBACK		NEW FS30 FIXED BOLLARD (QTY. 14)
	EXISTING BUILDING		M30 FIXED BOLLARD PROVIDED BY VA (QTY. 6)
	AREA NOT IN SCOPE		M30 REMOVABLE BOLLARD PROVIDED BY VA (QTY. 4)
	NEW CONCRETE DOCK AND RAMP; REF STRUCTURAL	**BOLLARD SUMMARY** (14) NEW FS30 FIXED BOLLARD (6) M30 FIXED BOLLARD PROVIDED BY VA (4) M30 REMOVABLE BOLLARD PROVIDED BY VA (24) TOTAL BOLLARDS	
	LANDSCAPED AREA		

NOTE: NOT ALL SYMBOLS MAY BE USED.

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/23/2025 12:15:23 PM

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED ARCHITECT
CERTIFICATE NO.
62918
SETH ANDREW CAVIN
4.25.25
Date Signed
ARIZONA, U.S.A.

DRAWING TITLE
OVERALL ARCHITECTURAL SITE PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/25** | CHECKED AJS | DRAWN JDM

PROJECT NUMBER **762-24-101**

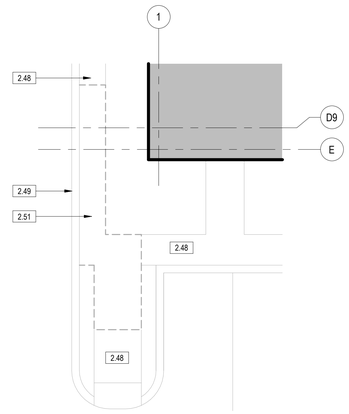
BUILDING NUMBER CMOP

DRAWING NUMBER
AS100
DRAWING # 12 OF 40

Veterans Health Administration

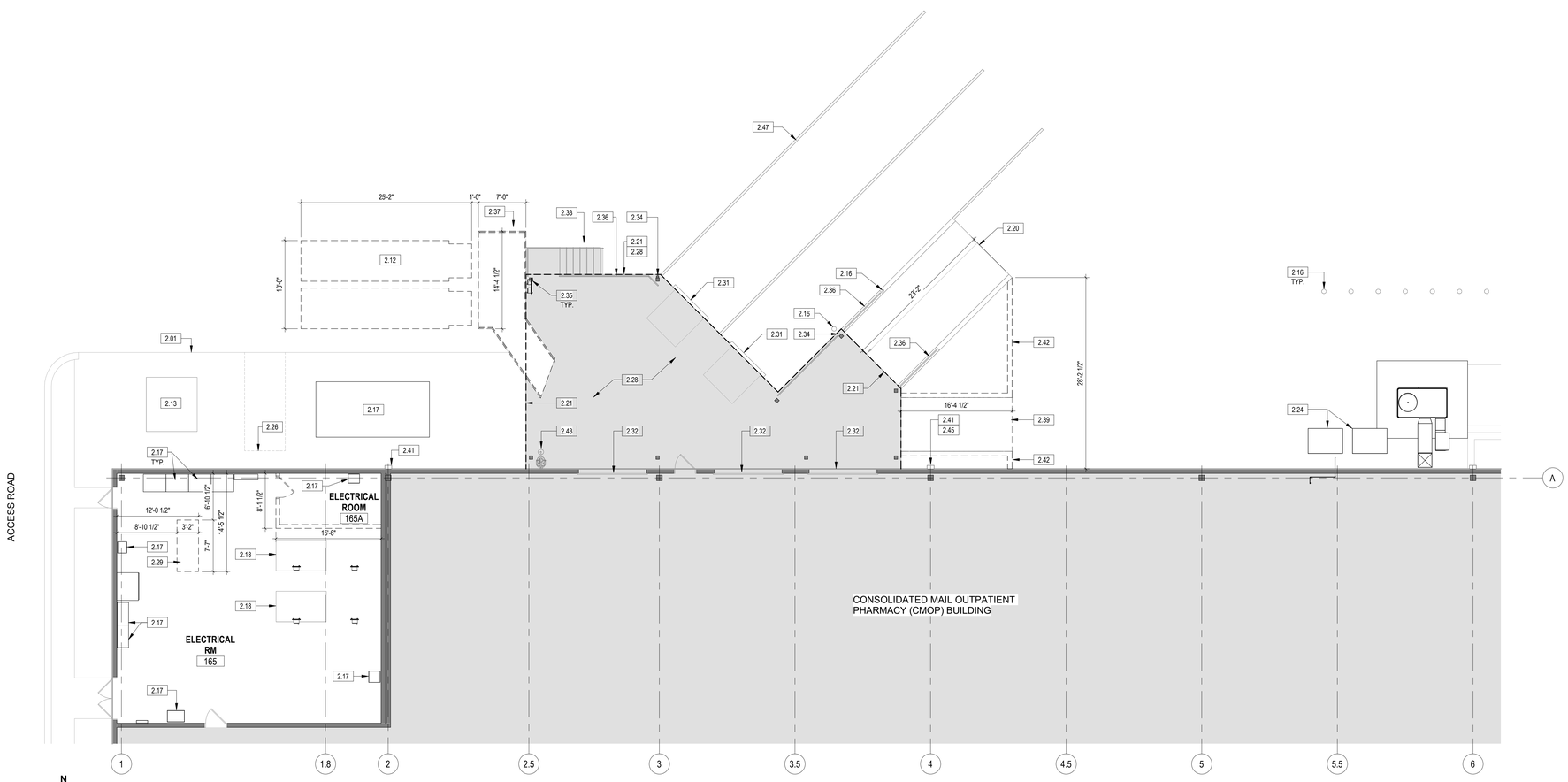
VA | U.S. Department of Veterans Affairs

VA FORM 08-6231



N

2 DEMOLITION SITE PLAN - BACKFLOW PREVENTOR
1/8" = 1'-0"



N

1 DEMOLITION SITE PLAN AND ELECTRICAL ROOM
1/8" = 1'-0"

GENERAL SITE PLAN NOTES

1. ALL EXISTING LANDSCAPING TO REMAIN. CONTRACTOR TO REPAIR OR RESTORE ANY DAMAGE CAUSED TO EXISTING LANDSCAPING ELEMENTS OUTSIDE OF PROJECT SCOPE OF WORK.
2. LOADING DOCKS AND TRASH COMPACTORS MUST BE ACCESSIBLE THROUGHOUT THE DURATION OF THE PROJECT.

SITE PLAN LEGEND

	SCOPE BOUNDARY		CONCRETE CURB
	25'-0" SAFETY SETBACK		NEW FS30 FIXED BOLLARD (QTY. 14)
	EXISTING BUILDING		M30 FIXED BOLLARD PROVIDED BY VA (QTY. 6)
	AREA NOT IN SCOPE		M30 REMOVABLE BOLLARD PROVIDED BY VA (QTY. 4)
	NEW CONCRETE DOCK AND RAMP; REF STRUCTURAL		**BOLLARD SUMMARY** (14) NEW FS30 FIXED BOLLARD (6) M30 FIXED BOLLARD PROVIDED BY VA (4) M30 REMOVABLE BOLLARD PROVIDED BY VA (24) TOTAL BOLLARDS
	LANDSCAPED AREA		

NOTE: NOT ALL SYMBOLS MAY BE USED.

DEMOLITION SITE PLAN LEGEND

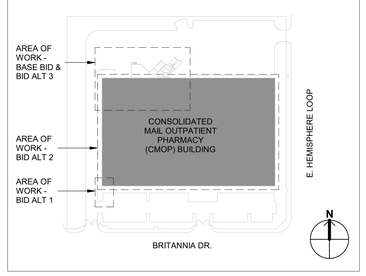
	AREA NOT IN CONTRACT		EXISTING DOOR & FRAME TO REMAIN
	EXISTING PARTITION TO REMAIN		EXISTING DOOR, FRAME AND HARDWARE TO BE DEMOLISHED
	EXISTING PARTITION TO BE DEMOLISHED		

NOTE: NOT ALL SYMBOLS MAY BE USED.

KEYNOTE LEGEND

2.01	EXISTING TO REMAIN
2.12	EXISTING TRASH COMPACTORS TO BE RELOCATED, SEE DWG AS001
2.13	EXISTING ELECTRICAL EQUIPMENT AND CONCRETE PAD TO REMAIN
2.16	EXISTING BOLLARD TO REMAIN
2.17	EXISTING ELECTRICAL EQUIPMENT TO REMAIN; FIELD-VERIFY
2.18	EXISTING CONCRETE PAD TO REMAIN
2.20	EXISTING CONCRETE RAMP TO REMAIN
2.21	EXISTING OVERHEAD CANOPY ABOVE DOCK AREA TO REMAIN
2.24	EXISTING MECHANICAL EQUIPMENT TO REMAIN
2.26	REMOVE PART OF EXISTING CURB TO EXTENTS SHOWN, SEE CIVIL DWGS
2.28	EXISTING RAISED DOCK AREA TO REMAIN
2.29	REMOVE EXISTING ELECTRICAL EQUIPMENT AND CONCRETE PAD, SEE ELEC DWGS
2.31	EXISTING DOCK LEVELER TO REMAIN
2.32	EXISTING OVERHEAD DOOR LOCATION TO REMAIN
2.33	EXISTING STAIRS TO REMAIN
2.34	EXISTING CANOPY DOWNSPOUT TO REMAIN
2.35	EXISTING CANOPY COLUMN TO REMAIN
2.36	EXISTING METAL HANDRAIL TO REMAIN
2.37	REMOVE EXISTING ELEVATED METAL WALKWAY
2.39	REMOVE EXISTING CONCRETE RAMP AND CURB IN THIS AREA
2.41	EXISTING SCUPPER AND DOWNSPOUT FROM ROOF TO REMAIN, SEE ROOF DWGS
2.42	REMOVE EXISTING CURB, SEE CIVIL DWGS
2.43	EXISTING EMERGENCY EYE WASH STATION ON DOCK TO REMAIN
2.45	EXISTING PIPE FROM DOWNSPOUT AT THIS LOCATION TO BE RELOCATED, SEE CIVIL DWGS
2.47	EXISTING STRIPING TO REMAIN
2.48	EXISTING CONCRETE WALK TO REMAIN
2.49	EXISTING CONCRETE CURB TO REMAIN
2.51	REMOVE PORTION OF EXISTING CONCRETE WALK, SEE CIVIL DRAWINGS

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/23/2025 12:14:22 PM

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

REGISTERED ARCHITECT
CERTIFICATE NO. 62918
SETH ANDREW CAVIN
4.25.25
Date Signed
ARIZONA U.S.A.

DRAWING TITLE
ARCHITECTURAL DEMOLITION SITE PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/25** | CHECKED AJS | DRAWN JDM

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER
AD101
DRAWING # 13 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

GENERAL ROOF PLAN NOTES

1. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE NEW ROOFING SYSTEM.
2. PROVIDE PIPE BOOTS FLASHED INTO EXISTING ROOF AT ALL SANITARY VENT LINES, ELECTRICAL SERVICE STANCHIONS AND WEATHERHEADS, CHILLED WATER LINES, AND OTHER MISCELLANEOUS PENETRATIONS NOT ILLUSTRATED ON ARCHITECTURAL ROOF PLAN. SEE MECHANICAL.
3. SUPPORTS ALLOWED TO SIT DIRECTLY ON ROOF SYSTEM FOR PIPING AND SIMILAR SHALL BE PURPOSE MADE BY MANUFACTURER FOR APPLICATION AND SUPPORT NEW ROOF SYSTEM WARRANTIES. SEE MECHANICAL.
4. CONTRACTOR TO CONFIRM INSULATION SLOPES TO ALL ROOF DRAINS AND SCUPPERS.
5. CONTRACTOR TO CONFIRM ALL ROOF WALKWAY STRIP FINAL DIMENSIONS.
6. ALL EXISTING LIGHTNING PROTECTION TO REMAIN. REMOVE AND REINSTALL IN SAME LOCATION AFTER ROOF REPLACEMENT. REFER ELECTRICAL DRAWINGS FOR LOCATIONS AND MORE INFORMATION.
7. CONTRACTOR TO FIELD VERIFY LOCATIONS OF ALL EQUIPMENT, CONDUITS, AND PENETRATIONS ON THE ROOF.
8. CONTRACTOR TO REMOVE AND REINSTALL ALL ITEMS THAT ARE TO REMAIN ON ROOF, AS NEEDED TO ACCOMMODATE ROOF REPLACEMENT.

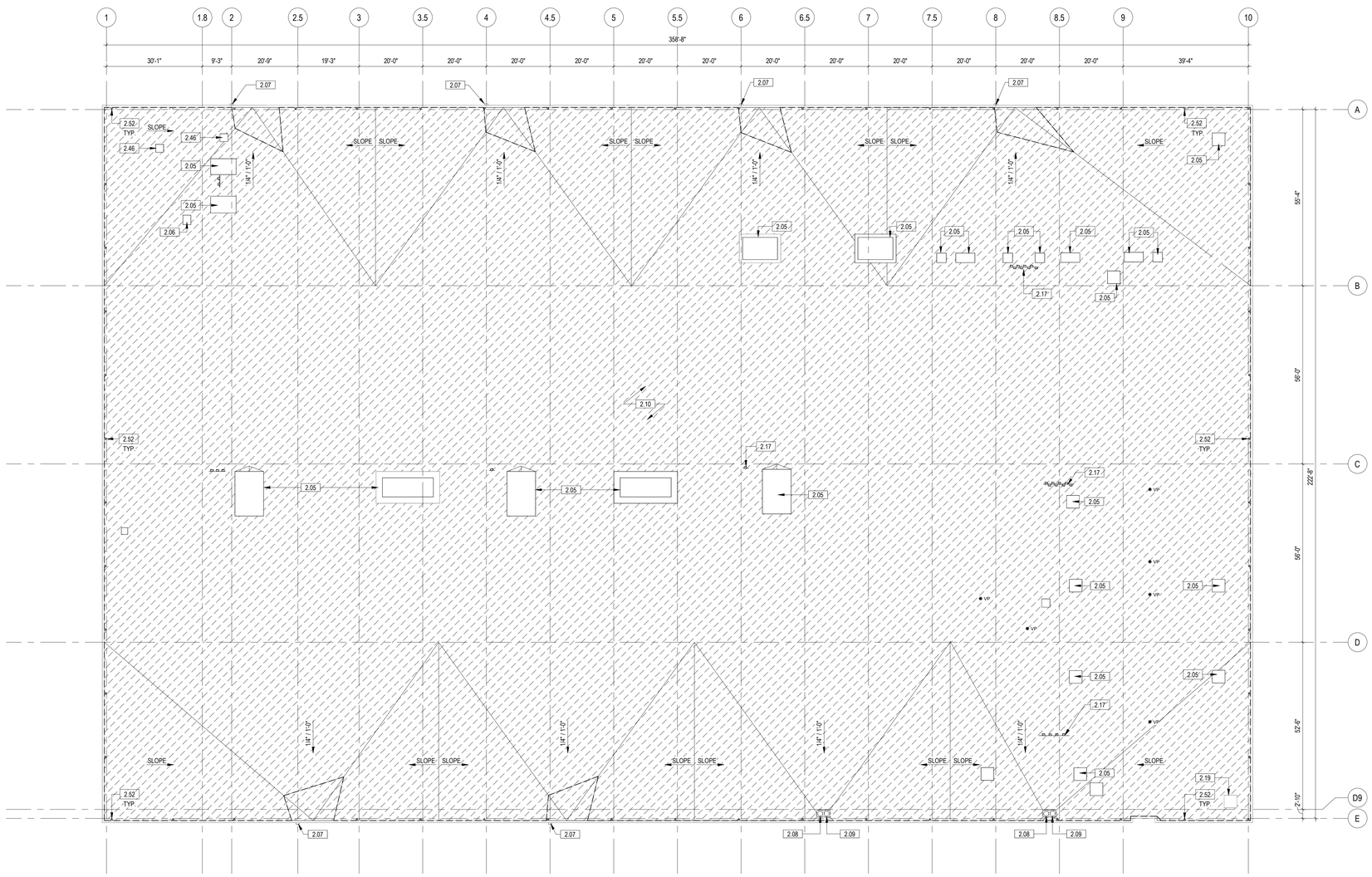
DEMOLITION ROOF PLAN PLAN LEGEND

	AREA NOT IN CONTRACT		ROOF WALKWAY PAD
	EXISTING ROOF TO BE DEMOLISHED	EF	EXISTING EXHAUST FAN
X:XX	ROOF PITCH		EXISTING ROOF DRAIN
	LIGHTENING PROTECTION, REF ELEC	VP	EXISTING VENT PIPE

NOTE: ALL SYMBOLS MAY NOT BE USED.

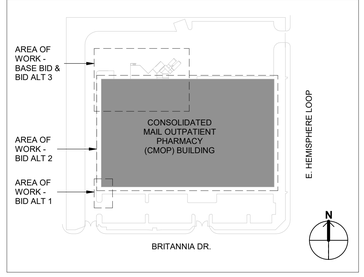
KEYNOTE LEGEND

2.05	EXISTING MECHANICAL EQUIPMENT AND ROOF CURB TO REMAIN; FIELD-VERIFY
2.06	EXISTING ROOF HATCH TO REMAIN; FIELD-VERIFY
2.07	EXISTING ROOF THRU WALL ROOF SCUPPER & DOWNSPOUT TO REMAIN; FIELD-VERIFY
2.08	EXISTING ROOF DRAIN TO REMAIN; FIELD-VERIFY
2.09	EXISTING OVERFLOW DRAIN TO REMAIN; FIELD-VERIFY
2.10	REMOVE EXISTING MOD-BIT MEMBRANE, FLASHING, COVER BOARD, AND RIGID INSULATION TO DECK
2.17	EXISTING ELECTRICAL EQUIPMENT TO REMAIN; FIELD-VERIFY
2.19	EXISTING TELECOM EQUIPMENT TO REMAIN; FIELD-VERIFY
2.46	REMOVE PORTION OF EXISTING ROOF, AND PREP FOR MECHANICAL EQUIPMENT (BID ALT 3)
2.52	EXISTING LIGHTNING PROTECTION TO REMAIN, SEE ELECTRICAL DRAWINGS



1 DEMOLITION ROOF PLAN - BID ALTERNATE 2
1/16" = 1'-0"

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/23/2025 12:17:35 PM

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED ARCHITECT
CERTIFICATE NO. 62918
SETH ANDREW CAVIN
Date Signed 4.23.25
ARIZONA U.S.A.

DRAWING TITLE
DEMOLITION ROOF PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/25** | CHECKED AJS | DRAWN JDM

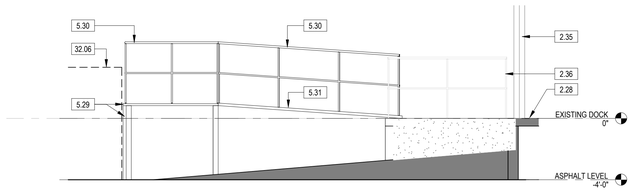
PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

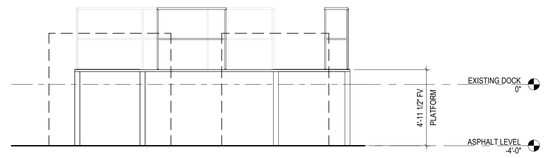
DRAWING NUMBER
AD121
DRAWING # 14 OF 40

Veterans Health Administration

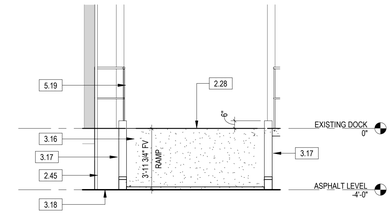
VA | U.S. Department of Veterans Affairs



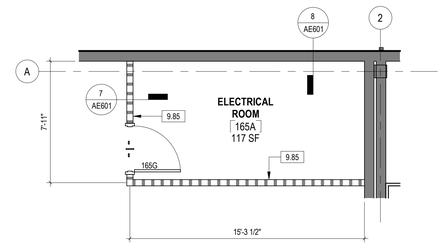
5 ELEVATION - NEW METAL RAMP AND PLATFORM
1/4" = 1'-0"



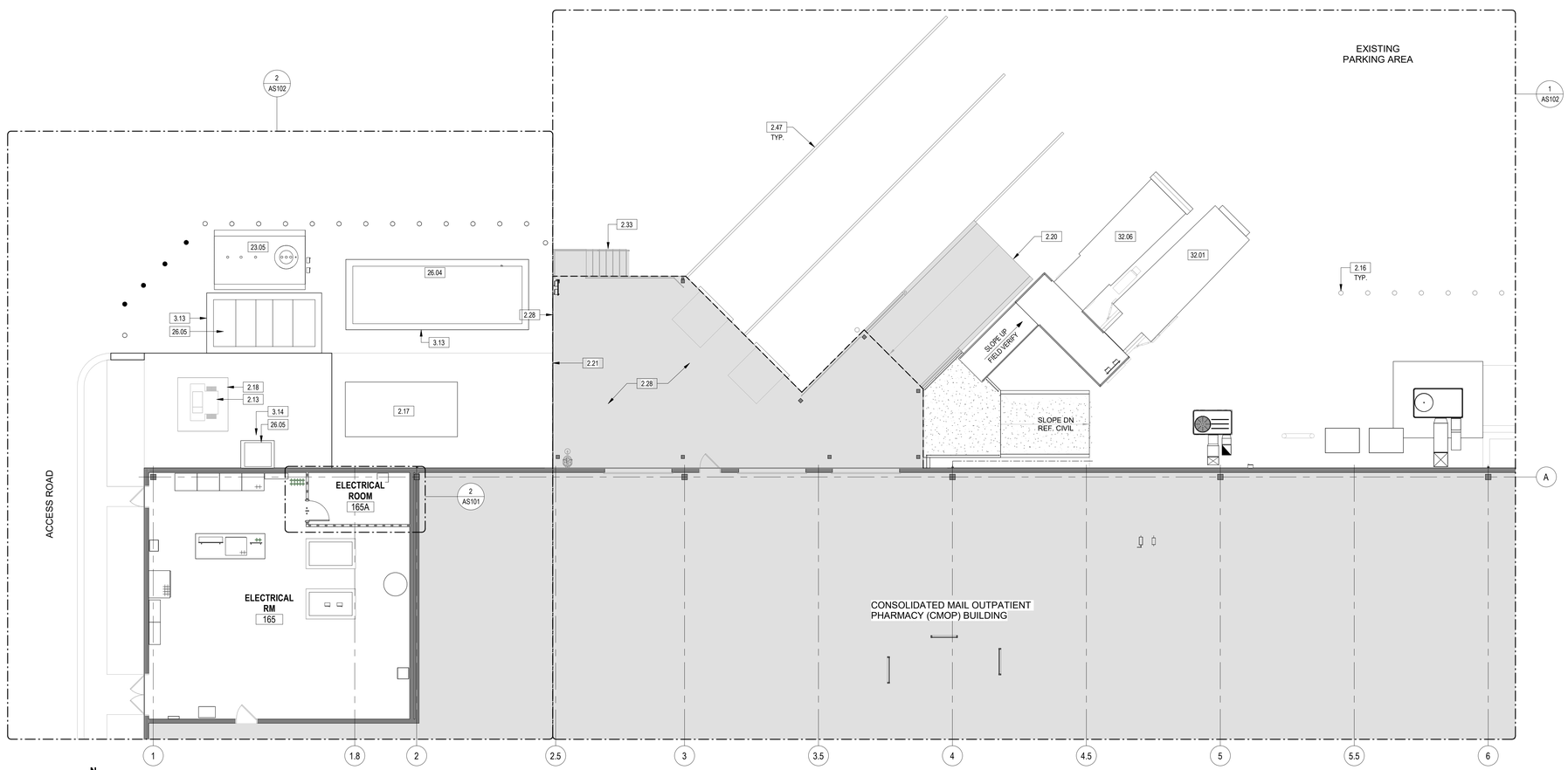
4 ELEVATION - NEW PLATFORM AT TRASH COMPACTORS
1/4" = 1'-0"



3 ELEVATION - NEW RAMP
1/4" = 1'-0"



2 ENLARGED PLAN - ELECTRICAL ROOM
1/4" = 1'-0"



1 ARCHITECTURAL SITE PLAN AND ELECTRICAL ROOM
1/8" = 1'-0"

GENERAL SITE PLAN NOTES

1. ALL EXISTING LANDSCAPING TO REMAIN. CONTRACTOR TO REPAIR OR RESTORE ANY DAMAGE CAUSED TO EXISTING LANDSCAPING ELEMENTS OUTSIDE OF PROJECT SCOPE OF WORK.
2. LOADING DOCKS AND TRASH COMPACTORS MUST BE ACCESSIBLE THROUGHOUT THE DURATION OF THE PROJECT.

SITE PLAN LEGEND

	SCOPE BOUNDARY		CONCRETE CURB
	25'-0" SAFETY SETBACK		NEW FS30 FIXED BOLLARD (QTY. 14)
	EXISTING BUILDING		M30 FIXED BOLLARD PROVIDED BY VA (QTY. 6)
	AREA NOT IN SCOPE		M30 REMOVABLE BOLLARD PROVIDED BY VA (QTY. 4)
	NEW CONCRETE DOCK AND RAMP; REF STRUCTURAL		**BOLLARD SUMMARY** (14) NEW FS30 FIXED BOLLARD (6) M30 FIXED BOLLARD PROVIDED BY VA (4) M30 REMOVABLE BOLLARD PROVIDED BY VA
	LANDSCAPED AREA		(24) TOTAL BOLLARDS

NOTE: NOT ALL SYMBOLS MAY BE USED.

PARTITION LEGEND

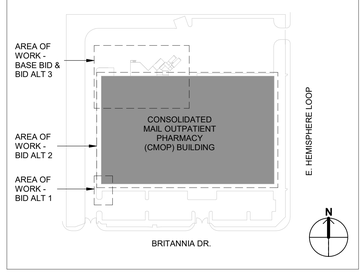
	1 HOUR FIRE RATED		EXISTING WALL TO REMAIN
	2 HOUR FIRE RATED		NEW NON-RATED WALLS
	3 HOUR FIRE RATED		EXISTING 1 HOUR FIRE
	SMOKE PARTITION/BARRIER		EXISTING 2 HOUR FIRE

NOTE: NOT ALL SYMBOLS MAY BE USED

KEYNOTE LEGEND

2.13	EXISTING ELECTRICAL EQUIPMENT AND CONCRETE PAD TO REMAIN
2.16	EXISTING BOLLARD TO REMAIN
2.17	EXISTING ELECTRICAL EQUIPMENT TO REMAIN; FIELD-VERIFY
2.18	EXISTING CONCRETE PAD TO REMAIN
2.20	EXISTING CONCRETE RAMP TO REMAIN
2.21	EXISTING OVERHEAD CANOPY ABOVE DOCK AREA TO REMAIN
2.28	EXISTING RAISED DOCK AREA TO REMAIN
2.33	EXISTING STAIRS TO REMAIN
2.35	EXISTING CANOPY COLUMN TO REMAIN
2.36	EXISTING METAL HANDRAIL TO REMAIN
2.45	EXISTING PIPE FROM DOWNSPOUT AT THIS LOCATION TO BE RELOCATED, SEE CIVIL DWGS
2.47	EXISTING STRIPING TO REMAIN
3.13	REMOVE FLOOR SLAB AS NEEDED TO INSTALL NEW CONCRETE EQUIPMENT PAD, SEE STRUCTURAL DRAWINGS
3.14	NEW CONCRETE EQUIPMENT PAD. SEE STRUCTURAL AND CIVIL DRAWINGS
3.16	NEW CONCRETE RAMP. TOP OF RAMP TO MATCH EXISTING DOCK ELEVATION (FIELD-VERIFY), SEE STRUCTURAL AND CIVIL DRAWINGS
3.17	NEW CONCRETE CURB, SEE CIVIL DRAWINGS
3.18	CENTERLINE OF NEW CONCRETE SWALE, SEE CIVIL DRAWINGS
5.19	PIPE AND TUBE RAILING
5.29	ELEVATED METAL PLATFORM. DIMENSIONS AND ELEVATIONS TO BE FIELD VERIFIED, SEE STRUCTURAL DRAWINGS
5.30	METAL HANDRAILS WELDED TO RAMP AND PLATFORM
5.31	METAL RAMP BETWEEN DOCK AREA AND METAL WALKWAY
9.85	1 HOUR FIRE RATED PARTITION, UL U419
23.05	UNDERGROUND STORAGE TANK AND CONCRETE PAD, SEE MECHANICAL DRAWINGS
26.04	GENERATOR, SEE ELECTRICAL DRAWINGS
26.05	ELECTRICAL EQUIPMENT, SEE ELECTRICAL DRAWINGS
32.01	RELOCATED STATIONARY TRASH COMPACTOR WITH PLATFORM
32.06	RELOCATED SELF-CONTAINED TRASH COMPACTOR

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED ARCHITECT
CERTIFICATE NO. 62918
SETH ANDREW CAVIN
4.25.25
Date Signed
ARIZONA, U.S.A.

DRAWING TITLE
ARCHITECTURAL SITE PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/25** | CHECKED AJS | DRAWN JDM

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

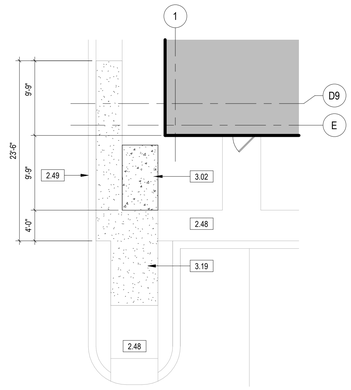
DRAWING NUMBER
AS101
DRAWING # 15 OF 40

Veterans Health Administration

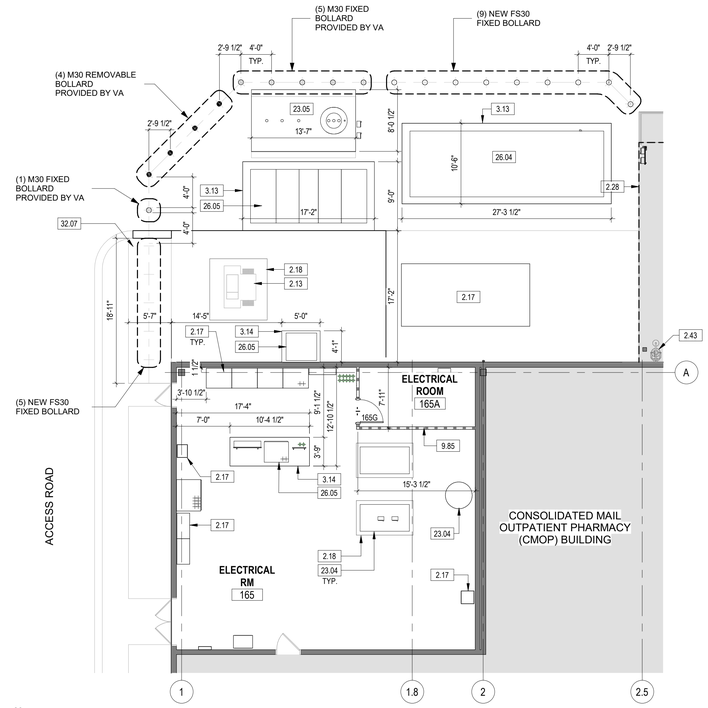
VA | U.S. Department of Veterans Affairs

4/23/2025 12:15:50 PM

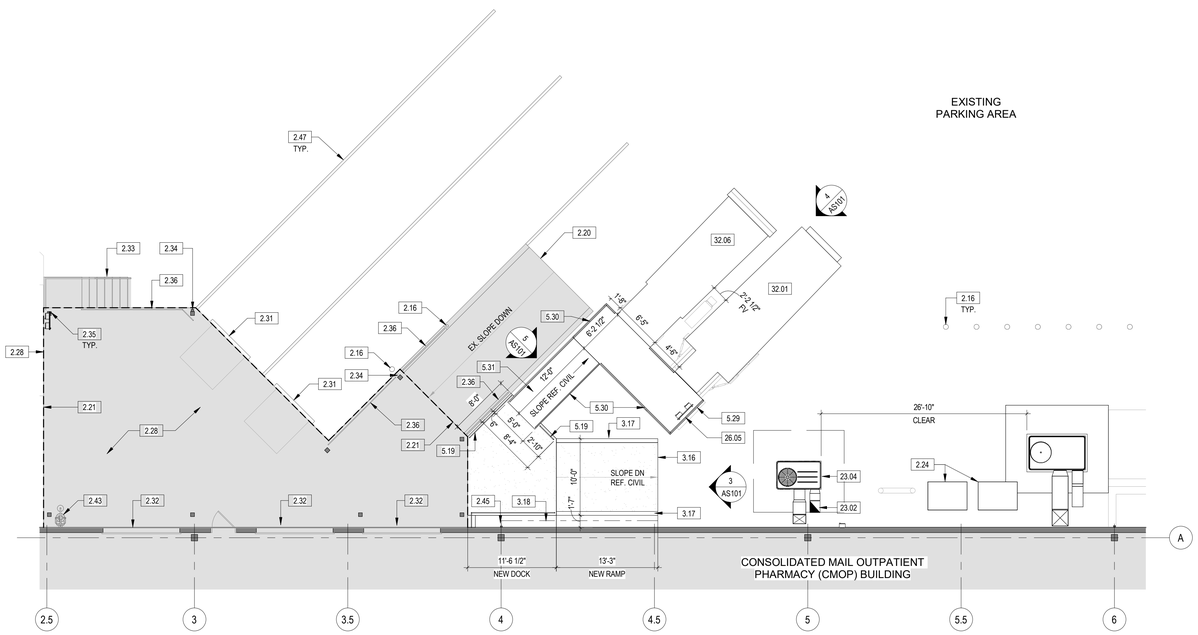
VA FORM 08-6231



3 BACKFLOW PREVENTER - BID ALTERNATE 1
1/8" = 1'-0"



2 ARCHITECTURAL ENLARGED SITE PLAN - SERVICE YARD AREA
1/8" = 1'-0"



1 ARCHITECTURAL ENLARGED SITE PLAN - DOCK AREA
1/8" = 1'-0"

GENERAL SITE PLAN NOTES

1. ALL EXISTING LANDSCAPING TO REMAIN. CONTRACTOR TO REPAIR OR RESTORE ANY DAMAGE CAUSED TO EXISTING LANDSCAPING ELEMENTS OUTSIDE OF PROJECT SCOPE OF WORK.
2. LOADING DOCKS AND TRASH COMPACTORS MUST BE ACCESSIBLE THROUGHOUT THE DURATION OF THE PROJECT.

SITE PLAN LEGEND

	SCOPE BOUNDARY		CONCRETE CURB
	25'-0" SAFETY SETBACK		NEW FS30 FIXED BOLLARD (QTY. 14)
	EXISTING BUILDING		M30 FIXED BOLLARD PROVIDED BY VA (QTY. 6)
	AREA NOT IN SCOPE		M30 REMOVABLE BOLLARD PROVIDED BY VA (QTY. 4)
	NEW CONCRETE DOCK AND RAMP; REF STRUCTURAL		**BOLLARD SUMMARY** (14) NEW FS30 FIXED BOLLARD (6) M30 FIXED BOLLARD PROVIDED BY VA (4) M30 REMOVABLE BOLLARD PROVIDED BY VA (24) TOTAL BOLLARDS
	LANDSCAPED AREA		

NOTE: NOT ALL SYMBOLS MAY BE USED.

PARTITION LEGEND

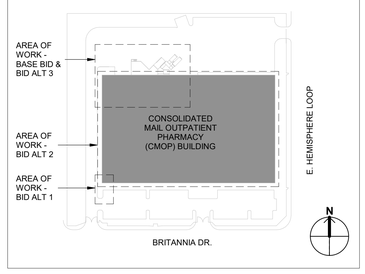
	1 HOUR FIRE RATED		EXISTING WALL TO REMAIN
	2 HOUR FIRE RATED		NEW NON-RATED WALLS
	3 HOUR FIRE RATED		EXISTING 1 HOUR FIRE
	SMOKE PARTITION/BARRIER		EXISTING 2 HOUR FIRE

NOTE: NOT ALL SYMBOLS MAY BE USED

KEYNOTE LEGEND

2.13	EXISTING ELECTRICAL EQUIPMENT AND CONCRETE PAD TO REMAIN
2.16	EXISTING BOLLARD TO REMAIN
2.17	EXISTING ELECTRICAL EQUIPMENT TO REMAIN; FIELD-VERIFY
2.18	EXISTING CONCRETE PAD TO REMAIN
2.20	EXISTING CONCRETE RAMP TO REMAIN
2.21	EXISTING OVERHEAD CANOPY ABOVE DOCK AREA TO REMAIN
2.24	EXISTING MECHANICAL EQUIPMENT TO REMAIN
2.28	EXISTING RAISED DOCK AREA TO REMAIN
2.31	EXISTING DOCK LEVELER TO REMAIN
2.32	EXISTING OVERHEAD DOOR LOCATION TO REMAIN
2.33	EXISTING STAIRS TO REMAIN
2.34	EXISTING CANOPY DOWNSPOUT TO REMAIN
2.35	EXISTING CANOPY COLUMN TO REMAIN
2.36	EXISTING METAL HANDRAIL TO REMAIN
2.43	EXISTING EMERGENCY EYE WASH STATION ON DOCK TO REMAIN
2.45	EXISTING PIPE FROM DOWNSPOUT AT THIS LOCATION TO BE RELOCATED, SEE CIVIL DWGS
2.47	EXISTING STRIPING TO REMAIN
2.48	EXISTING CONCRETE WALK TO REMAIN
2.49	EXISTING CONCRETE CURB TO REMAIN
3.02	CONCRETE SLAB-ON-GRADE, SEE STRUCTURAL AND CIVIL DRAWINGS
3.13	REMOVE FLOOR SLAB AS NEEDED TO INSTALL NEW CONCRETE EQUIPMENT PAD, SEE STRUCTURAL DRAWINGS
3.14	NEW CONCRETE EQUIPMENT PAD. SEE STRUCTURAL AND CIVIL DRAWINGS
3.16	NEW CONCRETE RAMP. TOP OF RAMP TO MATCH EXISTING DOCK ELEVATION (FIELD-VERIFY), SEE STRUCTURAL AND CIVIL DRAWINGS
3.17	NEW CONCRETE CURB, SEE CIVIL DRAWINGS
3.18	CENTERLINE OF NEW CONCRETE SWALE, SEE CIVIL DRAWINGS
3.19	CONCRETE WALK, SEE STRUCTURAL AND CIVIL DRAWINGS
5.19	PIPE AND TUBE RAILING
5.29	ELEVATED METAL PLATFORM. DIMENSIONS AND ELEVATIONS TO BE FIELD VERIFIED, SEE STRUCTURAL DRAWINGS
5.30	METAL HANDRAILS WELDED TO RAMP AND PLATFORM
5.31	METAL RAMP BETWEEN DOCK AREA AND METAL WALKWAY
9.85	1 HOUR FIRE RATED PARTITION, UL U419
23.02	MECHANICAL DUCT, SEE MECHANICAL DRAWINGS
23.04	MECHANICAL EQUIPMENT, SEE MECHANICAL DRAWINGS
23.05	UNDERGROUND STORAGE TANK AND CONCRETE PAD, SEE MECHANICAL DRAWINGS
26.04	GENERATOR, SEE ELECTRICAL DRAWINGS
26.05	ELECTRICAL EQUIPMENT, SEE ELECTRICAL DRAWINGS
32.01	RELOCATED STATIONARY TRASH COMPACTOR WITH PLATFORM
32.06	RELOCATED SELF-CONTAINED TRASH COMPACTOR
32.07	NEW GRAVEL BED AREA, SEE CIVIL DRAWINGS

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/23/2025 12:13:40 PM

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED ARCHITECT
CERTIFICATE NO. 62918
SETH ANDREW CAVIN
Date Signed 4.23.25
ARIZONA U.S.A.

DRAWING TITLE
ARCHITECTURAL ENLARGED SITE PLANS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/25** | CHECKED Checker | DRAWN Author

PROJECT NUMBER **762-24-101**

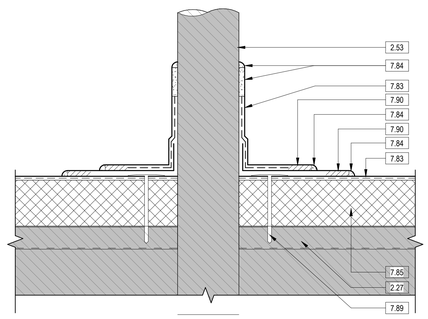
BUILDING NUMBER CMOP

DRAWING NUMBER
AS102
DRAWING # 16 OF 40

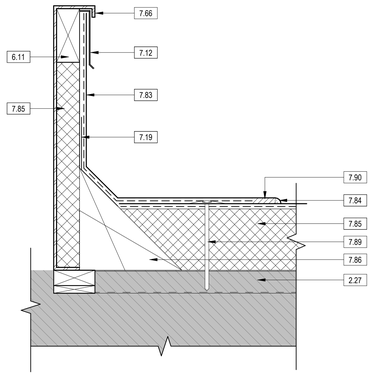
Veterans Health Administration

VA | U.S. Department of Veterans Affairs

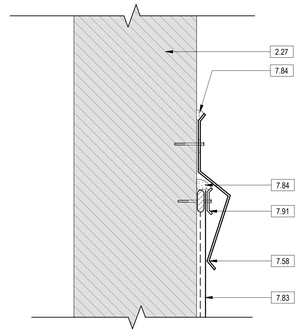
VA FORM 08-6231



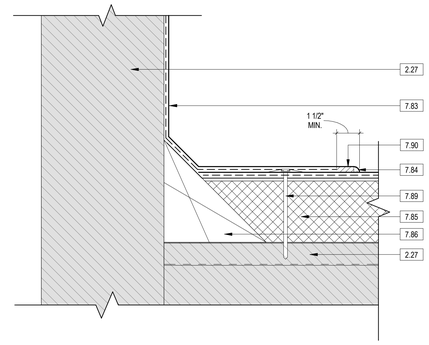
5 TYP. THRU-ROOF PIPE/CONDUIT DETAIL - BID ALTERNATE 2
3" = 1'-0"



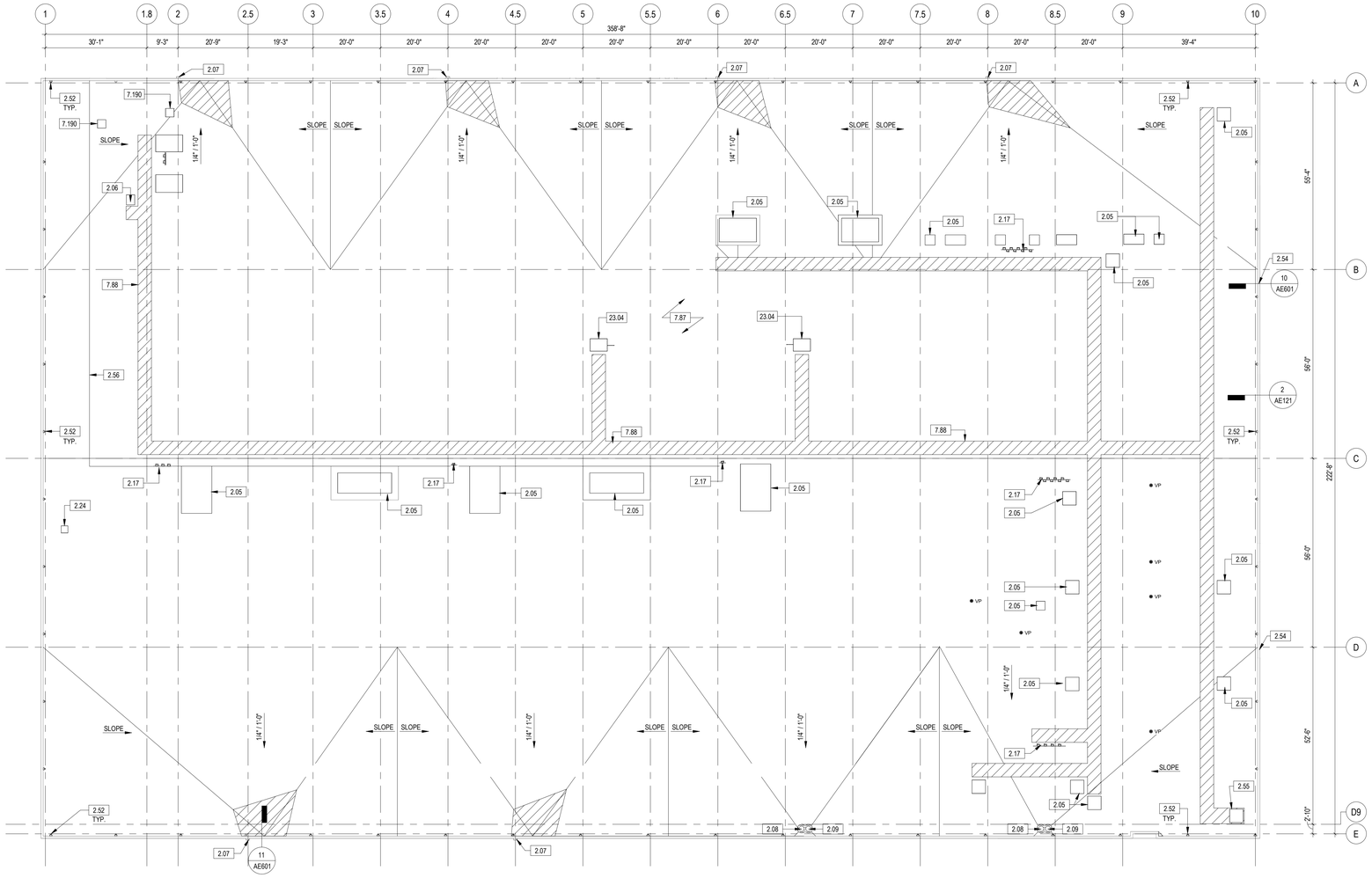
4 TYP. ROOF CURB & HATCH DETAIL - BID ALTERNATE 2
3" = 1'-0"



3 TYP. TPO TERMINATION - BID ALTERNATE 2
3" = 1'-0"



2 TYP. ROOF BASE DETAIL - BID ALTERNATE 2
3" = 1'-0"



1 ROOF PLAN - BID ALTERNATE 2
1/16" = 1'-0"

GENERAL ROOF PLAN NOTES

1. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE NEW ROOFING SYSTEM.
2. PROVIDE PIPE BOOTS FLASHED INTO EXISTING ROOF AT ALL SANITARY VENT LINES, ELECTRICAL SERVICE STANCHIONS AND WEATHERHEADS, CHILLED WATER LINES, AND OTHER MISCELLANEOUS PENETRATIONS NOT ILLUSTRATED ON ARCHITECTURAL ROOF PLAN. SEE MECHANICAL.
3. SUPPORTS ALLOWED TO SIT DIRECTLY ON ROOF SYSTEM FOR PIPING AND SIMILAR SHALL BE PURPOSE MADE BY MANUFACTURER FOR APPLICATION AND SUPPORT NEW ROOF SYSTEM WARRANTIES. SEE MECHANICAL.
4. CONTRACTOR TO CONFIRM INSULATION SLOPES TO ALL ROOF DRAINS AND SCUPPERS.
5. CONTRACTOR TO CONFIRM ALL ROOF WALKWAY STRIP FINAL DIMENSIONS.
6. ALL EXISTING LIGHTNING PROTECTION TO REMAIN, REMOVE AND REINSTALL IN SAME LOCATION AFTER ROOF REPLACEMENT. REFER ELECTRICAL DRAWINGS FOR LOCATIONS AND MORE INFORMATION.
7. CONTRACTOR TO FIELD VERIFY LOCATIONS OF ALL EQUIPMENT, CONDUITS, AND PENETRATIONS ON THE ROOF.
8. CONTRACTOR TO REMOVE AND REINSTALL ALL ITEMS THAT ARE TO REMAIN ON ROOF, AS NEEDED TO ACCOMMODATE ROOF REPLACEMENT.

ROOF PLAN PLAN LEGEND

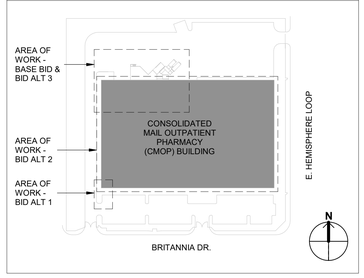
	AREA NOT IN CONTRACT		ROOF WALKWAY STRIP
	ROOF SLOPED TO SCUPPER	EF	EXISTING EXHAUST FAN
X:XX	ROOF PITCH		SECURITY CAMERA; REF. TELECOM
	LIGHTENING PROTECTION, REF ELEC	VP	EXISTING VENT PIPE

NOTE: ALL SYMBOLS MAY NOT BE USED.

KEYNOTE LEGEND

2.05	EXISTING MECHANICAL EQUIPMENT AND ROOF CURB TO REMAIN; FIELD-VERIFY
2.06	EXISTING ROOF HATCH TO REMAIN; FIELD-VERIFY
2.07	EXISTING ROOF THRU WALL ROOF SCUPPER & DOWNSPOUT TO REMAIN; FIELD-VERIFY
2.08	EXISTING ROOF DRAIN TO REMAIN; FIELD-VERIFY
2.09	EXISTING OVERFLOW DRAIN TO REMAIN; FIELD-VERIFY
2.17	EXISTING ELECTRICAL EQUIPMENT TO REMAIN; FIELD-VERIFY
2.24	EXISTING MECHANICAL EQUIPMENT TO REMAIN
2.27	EXISTING STRUCTURE
2.52	EXISTING LIGHTNING PROTECTION TO REMAIN, SEE ELECTRICAL DRAWINGS
2.53	EXISTING THRU-ROOF PIPE TO REMAIN
2.54	EXISTING OPENING TO REMAIN; TO RECEIVE NEW METAL SCUPPER, SEE ROOF DETAILS
2.55	EXISTING ANTENNA AND PLATFORM TO REMAIN; PROVIDE NEW ROOF MAT UNDER PLATFORM
2.56	EXISTING ELECTRICAL CONDUIT TO REMAIN
6.11	WOOD BLOCKING
7.12	SHEET METAL FLASHING
7.19	SHEET METAL WATERPROOFING
7.58	SHEET METAL FLASHING
7.66	EXISTING ROOF HATCH / ROOF CURB
7.83	TPO ROOFING MEMBRANE WITH APPROVED MEMBRANE ADHESIVE
7.84	CONTINUOUS SEALANT
7.85	TAPERED XPS INSULATION; MIN 4" (R-25)
7.86	CANT STRIP
7.87	CONTRACTOR TO PROVIDE NEW SINGLE-PLY MEMBRANE SYSTEM INCLUDING INSULATION, COVER BOARD, AND FLASHING
7.88	ROOF WALKING STRIPS. FIELD-VERIFY LOCATION WITH ROOF EQUIPMENT
7.89	METAL FASTENER
7.90	CONTINUOUS WELD, 1 1/2" WIDE MIN.
7.91	TPO TERMINATION BAR (8" MIN HEIGHT FROM FINISHED ROOF SURFACE)
7.190	30" X 30" ROOF PENETRATION FOR MECHANICAL EQUIPMENT (BID ALT 3)
23.04	MECHANICAL EQUIPMENT, SEE MECHANICAL DRAWINGS

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/23/2025 12:14:59 PM

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED ARCHITECT
CERTIFICATE NO. 62918
SETH ANDREW CAWN
4.25.25
Not Signed
ARIZONA, U.S.A.

DRAWING TITLE
ROOF PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/25** | CHECKED AJS | DRAWN JDM

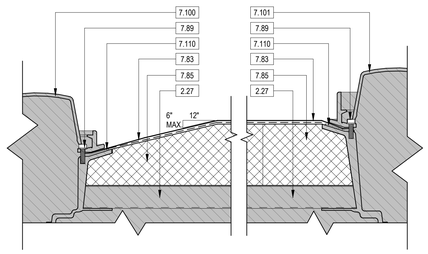
PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

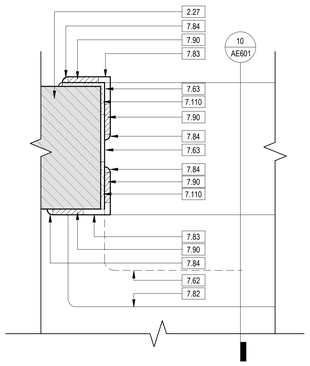
DRAWING NUMBER
AE121
DRAWING # 17 OF 40

Veterans Health Administration
U.S. Department of Veterans Affairs

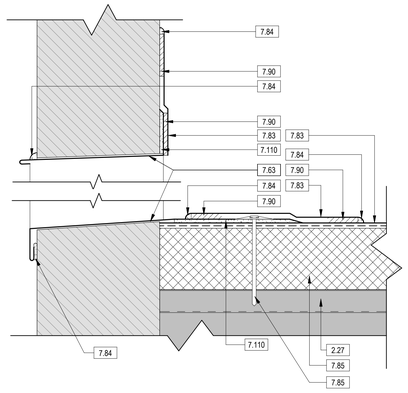
VA FORM 08-6231



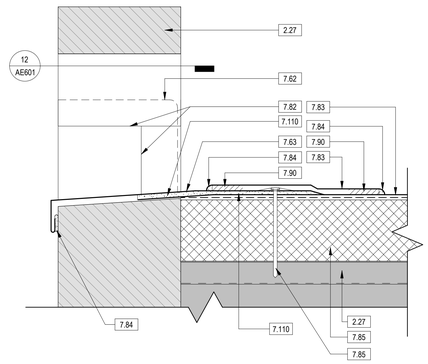
13 TYP. DRAIN DETAIL - BID ALTERNATE 2
3" = 1'-0"



12 PLAN DETAIL - SCUPPER, LOW-WALL - BID ALTERNATE 2
3" = 1'-0"



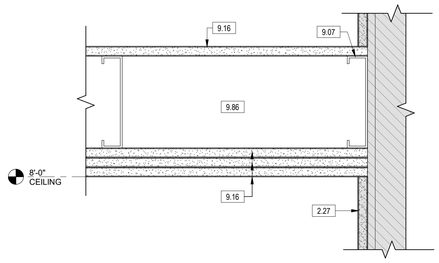
11 TYP. SCUPPER DETAIL - BID ALTERNATE 2
3" = 1'-0"



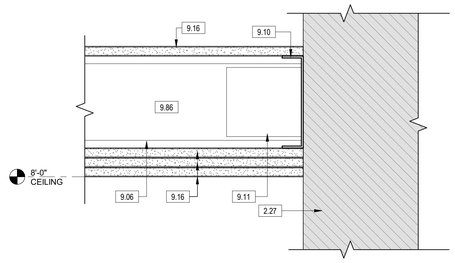
10 SCUPPER DETAIL, LOW-WALL - BID ALTERNATE 2
3" = 1'-0"

KEYNOTE LEGEND

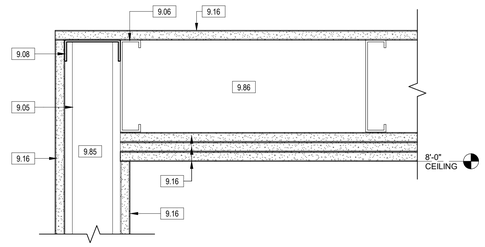
2.27	EXISTING STRUCTURE
7.01	SEALANT, COLOR MATCH TO WALL FINISH
7.62	TPO COATED METAL SCUPPER UNDER TPO MEMBRANE
7.63	TPO COATED METAL SCUPPER
7.82	TPO STRIP BEYOND ADHERED OVER METAL SCUPPER
7.83	TPO ROOFING MEMBRANE WITH APPROVED MEMBRANE ADHESIVE
7.84	CONTINUOUS SEALANT
7.85	TAPERED XPS INSULATION, MIN 4" (R-25)
7.89	METAL FASTENER
7.90	CONTINUOUS WELD, 1 1/2" WIDE MIN.
7.100	EXISTING PRIMARY ROOF DRAIN TO REMAIN
7.101	EXISTING OVERFLOW ROOF DRAIN TO REMAIN
7.110	SEALING MASTIC
8.12	HOLLOW METAL DOOR & FRAME
8.95	ACCESSIBLE THRESHOLD, HEIGHT NOT TO EXCEED 1/2"
8.96	DOOR SWEEP WITH INTEGRAL DRIP EDGE
9.05	3 5/8" C STUD
9.06	6" C STUD CEILING JOIST, 16" O.C., ATTACH TO TRACK FASTENED TO EXISTING STRUCTURE
9.07	6" C STUD CEILING JOIST, 16" O.C., ATTACH TO EXISTING FRAMING
9.08	METAL TRACK
9.10	6" METAL TRACK (14 GAUGE) FASTENED TO EXISTING STRUCTURE WITH CONCRETE FASTENERS
9.11	14 GAUGE BENT METAL CLIP ATTACHED TO CEILING JOIST AND TRACK
9.13	5/8" GYPSUM WALL BOARD
9.16	5/8" TYPE X GYPSUM WALLBOARD
9.32	METAL CEILING
9.85	1 HOUR FIRE RATED PARTITION, UL U419
9.86	1 HOUR FIRE RATED HORIZONTAL ASSEMBLY, UL 1504



9 ELECTRICAL ROOM - CEILING/EXIST. WALL DETAIL 2
3" = 1'-0"



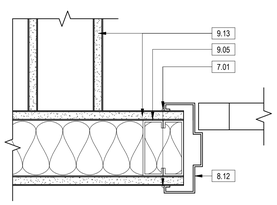
8 ELECTRICAL ROOM - CEILING/EXIST. WALL DETAIL 1
3" = 1'-0"



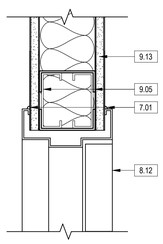
7 ELECTRICAL ROOM - WALL/CEILING DETAIL
3" = 1'-0"

DOOR SCHEDULE

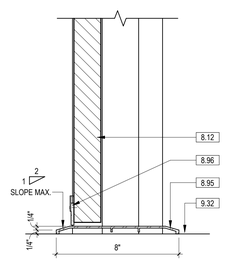
MARK	ROOM NAME	DOOR PANEL TYPE	DOOR PANEL MATERIAL	DOOR PANEL WIDTH	DOOR PANEL HEIGHT	FRAME TYPE	FIRE RATING 20 MIN	FIRE RATING 45 MIN	FIRE RATING 90 MIN	HARDWARE SET	TELECOM	COMMENTS
165G	ELECTRICAL RM	F	MTL	3'-0"	7'-0"	HM-1		•		SDO 109		



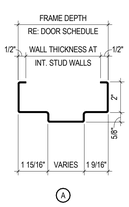
6 TYP. HM JAMB DETAIL - INTERIOR
3" = 1'-0"



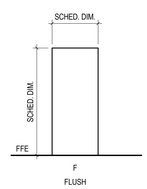
5 TYP. HM HEAD DETAIL - INTERIOR
3" = 1'-0"



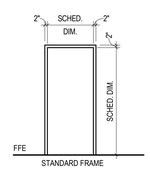
4 ACCESSIBLE DOOR THRESHOLD
3" = 1'-0"



3 DOOR FRAME TYPE
3" = 1'-0"



2 DOOR TYPE
1/4" = 1'-0"



INTERIOR DETAILS: HEAD: 5/AE601
JAMB: 3/AE601

1 HOLLOW METAL FRAME ELEVATION
1/4" = 1'-0"

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/23/2025 12:16:41 PM

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED ARCHITECT
CERTIFICATE NO. 62918
SETH ANDREW CAVIN
Date Signed 4.25.25
ARIZONA, U.S.A.

DRAWING TITLE
DOOR SCHEDULE & DETAILS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/25** | CHECKED AJS | DRAWN JDM

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER
AE601
DRAWING # 18 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

FIRE ALARM LEGEND

SYMBOL	DESCRIPTION
FACU	EXISTING FIRE ALARM CONTROL UNIT
SPD	EXISTING SURGE PROTECTIVE DEVICE
VS	NEW VALVE SUPERVISORY SWITCH
SPD	NEW SURGE PROTECTIVE DEVICE

FIRE ALARM GENERAL NOTES

GENERAL:
1. THE CONTRACTOR SHALL CAREFULLY REVIEW ALL APPLICABLE DESIGN CRITERIA AND THESE DRAWINGS. FOR IMPORTANT QUALIFICATION, SUBMITTAL, PRODUCT, INSTALLATION, AND TESTING REQUIREMENTS.
2. ALL SUBMITTALS, INSTALLATION, AND TESTING SHALL BE COMPLETED IN A NEAT, WORKMAN-LIKE MANNER.
3. PRODUCT, DESIGN, INSTALLATION, AND TESTING ALTERNATE APPROACHES AND/OR SUBSTITUTIONS WILL BE CONSIDERED BY THE PROJECT FIRE PROTECTION ENGINEER IF THE CONTRACTOR PROVIDES WRITTEN, WELL-DOCUMENTED, ENGINEERING-BASED SUBSTANTIATION FOR PROPOSED ALTERNATIVE.

APPLICABLE CODES AND STANDARDS:
1. VA FIRE PROTECTION DESIGN MANUAL NINTH EDITION – NOVEMBER 1, 2023
2. NFPA 70: NATIONAL ELECTRICAL CODE (2023)
3. NFPA 72: NATIONAL FIRE ALARM AND SIGNALING CODE (2022)

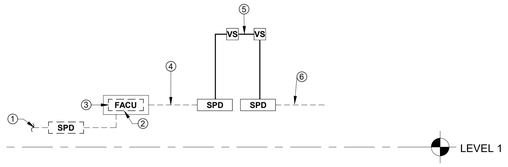
PROJECT SCOPE:
1. THE SCOPE FOR THIS PROJECT IS TO EXTEND THE EXISTING FIRE ALARM CIRCUIT TO THE NEW BACKFLOW PREVENTER TO MONITOR THE TAMPER SWITCH FOR EACH CONTROL VALVE.
2. THE EXISTING FIRE ALARM CONTROL UNIT WILL BE UTILIZED FOR THIS PROJECT.

DELEGATED DESIGN SUBMITTAL:
1. SHOP DRAWING DEVELOPMENT SHALL BE COMPLETED BY A QUALIFIED PERSON WHO HAS OBTAINED A NICET III OR IV IN FIRE ALARM SYSTEMS OR A PERSON WHO HAS OBTAINED A FIRE PROTECTION ENGINEERING LICENSE IN THE STATE OF ARIZONA.
2. SHOP DRAWINGS SHALL BE COMPLETED IN ACCORDANCE WITH NFPA 72.
3. DUE TO THE MINIMAL MODIFICATION OF THIS SYSTEM, CALCULATIONS ARE NOT REQUIRED TO BE COMPLETED.
4. ALL NEW EQUIPMENT SHALL BE FM APPROVED AS REQUIRED BY THE VA FIRE PROTECTION DESIGN MANUAL.
5. WORK SHALL BE COMPLETED BY A CONTRACTOR THAT HAS OBTAINED A FIRE ALARM LICENSE IN THE STATE OF ARIZONA.

INSTALLATION:
1. INSTALLATION SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 70 AND NFPA 72.
2. ALL EQUIPMENT SHALL BE INSTALLED TIGHT TO THE BUILDING STRUCTURE USING APPROVED METHODS. ALL EQUIPMENT SHALL BE LISTED OR APPROVED FOR FIRE PROTECTION USE BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
3. THE CONTRACTOR SHALL NOT APPRECIABLY DEVIATE FROM THE APPROVED DESIGN WITHOUT WRITTEN APPROVAL FROM THE PROJECT FIRE PROTECTION ENGINEER.
4. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL FIRE ALARM EQUIPMENT TO AVOID CONFLICTS WITH OTHER DISCIPLINES.

CIRCUITS AND PATHWAYS:
1. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN METAL RACEWAY SEPARATE FROM ALL OTHER SYSTEMS AS REQUIRED BY THE VA FIRE PROTECTION DESIGN MANUAL. METAL RACEWAY SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 70 AND THE MANUFACTURERS' LISTING.
2. WIRING SHALL BE INSTALLED AS FOLLOWS:
   INITIATING DEVICE CIRCUITS (IDC): CLASS B
   SIGNALING LINE CIRCUITS (SLC): CLASS B

SYSTEM TESTING:
1. THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING ALL REQUIRED ACCEPTANCE AND RE-ACCEPTANCE TESTING PER NFPA 72.
2. THE CONTRACTING OFFICERS' REPRESENTATIVE OR A DESIGNATED REPRESENTATIVE SHALL BE PRESENT TO WITNESS AND APPROVE THE TESTING.



NOTES:
1. TO EXISTING DEDICATED 120VAC BRANCH CIRCUIT
2. THIS RISER DIAGRAM IS INTENDED ONLY TO CAPTURE THE SYSTEM DESIGN INTENT, PANEL CONNECTIONS, AND GENERAL CIRCUIT ROUTING REQUIREMENTS. EXACT QUANTITIES AND TYPES OF DEVICES NECESSARY TO ACCOMPLISH THE DESIGN GOALS ARE NOT INDICATED. THE INTENT OF THIS RISER DIAGRAM IS TO INDICATE THE GENERAL SYSTEM CONFIGURATION AFTER SUCCESSFUL COMPLETION OF THE PROJECT.
3. EXISTING EDWARDS EST IO1000 FACU LOCATED IN STORAGE ROOM 204. THE AVAILABLE CAPACITY IS ASSUMED TO BE ADEQUATE FOR THE PROPOSED NEW WORK, CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL AVAILABLE CAPACITY. THE PROGRAMMING OF THE FIRE ALARM SYSTEM FOR ITEMS OUTSIDE OF THE SCOPE OF WORK AREA SHALL NOT BE MODIFIED AS PART OF THIS SCOPE OF WORK.
4. FROM EXISTING SIGNALING LINE CIRCUIT.
5. REFER TO THE CIVIL UTILITY PLAN FOR THE LOCATION OF THE NEW BACKFLOW PREVENTER.THE NEAREST SIGNALING LINE CIRCUIT CAN BE EXTENDED FROM THE EXISTING MANUAL PULL STATION IN THE FIRE RISER ROOM.
6. TO EXISTING SIGNALING LINE CIRCUIT.

1 FIRE ALARM RISER DIAGRAM
SCALE = 12" = 1'-0"

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 4:59:20 PM

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH REG. NO. AR12100034 EXP. 12/31/2021
MECH ENGR REG. NO. PE12100220 EXP. 07/31/2022
ELEC ENGR REG. NO. PE12100195 EXP. 07/31/2022

STAMP:
Registered Professional Engineer (Fire Protection)
CERTIFICATE NO.
ANDREW POOLE
04/25/2025
Date Signed
ARIZONA, U.S.A.

DRAWING TITLE
FIRE ALARM GENERAL NOTES, LEGEND, AND DIAGRAMS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED BLS | DRAWN ARS

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER
FA001
DRAWING # 19 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS WILL BE UTILIZED FOR THIS PROJECT.

A

A/E	ARCHITECT / ENGINEER
AD	AREA DRAIN
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AG	AIR GAP
AP	ACCESS PANEL
AS	AUTOMATIC SPRINKLER
ASD	ADJUSTABLE SPEED DRIVES
ASD	AUTOMATIC SPRINKLER DRAIN
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASR	AUTOMATIC SPRINKLER RISER
AV	ACID VENT
AW	ACID WASTE

B

BFP	REDUCED PRESSURE BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BSP	BLACK STEEL PIPE
BT	BATHTUB
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR

C

C	CENTIGRADE (CELSIUS)
CA	COMPRESSED AIR
CGA	COMPRESSED GAS ASSOCIATION
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CO	CLEANOUT
CS	CLINICAL SINK
CV	CONTROL VALVE

D

DCW	DOMESTIC COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DHWS	DOMESTIC HOT WATER SUPPLY
DI	DEIONIZED WATER
DN	DOWN
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
DWH	DOMESTIC WATER HEATER
DWR	DRINKING WATER RETURN
DWS	DRINKING WATER SUPPLY
DWV	DRAIN WASTE VENT

E

EL	ELEVATION
EMCS	ENERGY MONOSERRAT AND CENTRAL SYSTEM
EPA	ENVIRONMENTAL PROTECTION AGENCY
EPACT	ENERGY POLICY ACT
ESC	ESCUTCHEON
ESH	EMERGENCY SHOWER
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EWH	ELECTRIC WATER HEATER
EWS	EYE WASH STATION
EWS/SH	EYE WASH/ DRENCH SHOWER
EX.	EXISTING

F

F	FAHRENHEIT
FCO	FLOOR CLEANOUT
FCW	FILTERED COLD WATER
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT (HOSE) CONNECTION
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FM	FLOW METER
FOP	FUEL OIL PUMP
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FS	FLOOR SINK
FS	FLOW SWITCH
FU	FIXTURE UNITS

G

GAL	GALLONS
GCO	GRADE CLEANOUTS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GPS	GAS REGULATOR STATION
GT	GREASE TRAP
GVTR	GAS VENT THROUGH ROOF
GWH	GAS FIRED UNIT HEATER

H

H&CW	HOT & COLD WATER
HB	HOSE BIBB
HD	HUB DRAIN
HP	HORSEPOWER
HS	HAND SINK
HST	HOT WATER STORAGE TANK (DOMESTIC)
HWB	HOT WATER BOILER
HWCP	HOT WATER CIRCULATING PUMP
HWP	HOT WATER PUMP
HX	HEAT EXCHANGER
HYD	HYDRANT

I

ID	INSIDE DIAMETER
IE	INVERT ELEVATION
ICW	INDUSTRIAL COLD WATER
IHW	INDUSTRIAL HOT WATER
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
IRW	IRRIGATION WATER
IW	INDIRECT WASTE
IWH	INSTANTANEOUS WATER HEATER
IWR	INDUSTRIAL WATER RETURN
IWS	INDUSTRIAL WATER SUPPLY

J

J	INTENTIONALLY LEFT BLANK

K

kW	KILOWATT
kWh	KILOWATT HOUR

L

L/s	LITERS PER SECOND (OR LITERS/SECOND)
LA	LABORATORY AIR
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LCW	LABORATORY COLD WATER
LHW	LABORATORY HOT WATER
LNG	LIQUID NATURAL GAS
LOX	LIQUID OXYGEN
LV	LABORATORY VACUUM
LW	LOW WATER

M

M	METER, SI UNIT
MA	MEDICAL AIR
MAV	MANUAL AIR VENT
MBH	1000 BTUH
MED	MEDICAL
MER	MECHANICAL EQUIPMENT ROOM
MH	MANHOLE
MOU	MEMORANDUM OF UNDERSTANDING
MSB	MOP SERVICE BASIN
MV	MEDICAL VACUUM

N

N2	NITROGEN
N2O	NITROUS OXIDE
NC	NORMALLY CLOSED
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM.	NOMINAL
NPW	NON POTABLE WATER
NTS	NOT TO SCALE

O

O	OXYGEN
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFD	OVERFLOW DRAIN
OR	OPERATING ROOM
OVFL	OVERFLOW

P

PA	PASCAL
PD	PRESSURE DROP
PDI	PLUMBING AND DRAINAGE INSTITUTE
PG	PRESSURE GAGE
PP	PLUMBING PUMP
PPM	PARTS PER MILLION
PRS	PRESSURE REDUCING STATION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH – ABSOLUTE
PSIG	POUNDS PER SQUARE INCH – GAGE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
PO	POTABLE WATER

Q

Q	INTENTIONALLY LEFT BLANK

R

RD	ROOF DRAIN
RDL	ROOF DRAIN LEADER
RL	ROOF LEADER
RO	REVERSE OSMOSIS
RP	RECIRCULATION PUMP
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RWL	RAIN WATER LEADER

S

SAN	SANITARY SEWER
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SCFM	STANDARD CUBIC FEET PER MINUTE
SCW	SOFTENED COLD WATER
SDMH	STORM DRAIN MANHOLE
SMH	SANITARY MANHOLE
SP	SUMP PUMP
SPR	SPRINKLER LINE
SQ FT	SQUARE FOOT (FEET)
SS	SANITARY SEWER. STAINLESS STEEL
ST	STORM SEWER, STORAGE TANK
SW	STORM WATER

T

TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE, TRENCH DRAIN
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TMV	THERMOSTATIC MIXING VALVE
TP	TRAP PRIMER
TSTAT	THERMOSTAT
TWR	TEMPERED WATER RETURN
TWS	TEMPERED WATER SUPPLY
TYP	TYPICAL

U

U	INTENTIONALLY LEFT BLANK

V

V	VENT
VAC	VACUUM
VB	VACUUM BREAKER
VCO	VACUUM CLEANER OUTLET
VP	VACUUM PUMP
VS	VENT STACK
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF

W

W	WASTE
WC	WATER CLOSET
WCO	WALL CLEANOUT
WG	WATER GAGE
WH	WALL HYDRANT, WATER HEATER
WHA	WATER HAMMER ARRESTER
WL	WATER LINE
WM	WATER METER
WPD	WATER SIDE PRESSURE DROP
WS	WASTE STACK
WSFU	WATER SUPPLY FIXTURE UNITS

X

X	INTENTIONALLY LEFT BLANK

Y

YCO	YARD CLEANOUT
YH	YARD HYDRANT

Z

Z	INTENTIONALLY LEFT BLANK

GENERAL ANNOTATIONS

- Name 101 — ROOM TAG
- 1 — OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT DESIGNATION
- XX-1 — PLUMBING EQUIPMENT DESIGNATION
- 1 XX-XX — DETAIL NUMBER / SHEET NUMBER
- 1 PL-100 — SECTION NUMBER / SHEET NUMBER

GENERAL PIPING SYMBOLS

- EXISTING TO REMAIN
- EXISTING TO BE DEMOLISHED
- NEW PIPE
- CONNECT NEW TO EXISTING
- LIMIT OF DEMOLITION

PLUMBING PIPING TYPES

- ACD — AUXILIARY CONDENSATE DRAIN
- AI — MEDICAL AIR INTAKE
- AV — ACID VENT
- AW — ACID WASTE
- CA — COMPRESSED AIR
- CD — CONDENSATE DRAIN
- CO — CARBON DIOXIDE
- DCW — DOMESTIC COLD WATER
- DHW — DOMESTIC HOT WATER
- DHWR — DOMESTIC HOT WATER RECIRC.
- FCW — FILTERED COLD WATER
- FOD — FUEL OIL DISCHARGE
- FOS — FUEL OIL SUPPLY
- FOR — FUEL OIL RETURN
- FOV — FUEL OIL VENT
- G — NATURAL GAS
- GW — GREASE WASTE
- IA — INDUSTRIAL AIR
- LA — LABORATORY AIR
- LPG — LIQUIFIED PETROLEUM GAS
- LV — LABORATORY VACUUM
- MA — MEDICAL AIR
- MPG — MEDIUM PRESSURE NATURAL GAS
- MV — MEDICAL VACUUM
- N — NITROGEN
- NO — NITROUS OXIDE
- NPW — NON POTABLE WATER (NPW)
- OA — ORAL EVACUATION
- O — OXYGEN
- OST — OVERFLOW STORM DRAIN
- SCW — SOFTENED COLD WATER (SCW)
- SS — SANITARY SEWER
- ST — STORM DRAIN
- VE — MEDICAL VACUUM EXHAUST
- V — VENT
- 140° — 140° DOMESTIC HOT WATER (140°)

MEDICAL GAS SYMBOLS

O	WALL OUTLET - OXYGEN
MA	WALL OUTLET - MEDICAL AIR
MV	WALL OUTLET - MEDICAL VACUUM
N	WALL OUTLET - NITROGEN
NO	WALL OUTLET - NITROUS OXIDE
CO	WALL OUTLET - CARBON DIOXIDE
LA	WALL OUTLET - LABORATORY AIR
LV	WALL OUTLET - LABORATORY VACUUM
AAP-X	AREA ALARM PANEL (AAP-X)
MAP-X	MASTER ALARM PANEL (MAP-X)
ZVB-X	ZONE VALVE BOX (ZVB-X)

PLUMBING PIPING SYMBOLS

- ANCHOR
- BACKFLOW PREVENTER (BFP, RPBP)
- CAP
- DIRECTION OF FLOW
- DIRECTION OF PIPE PITCH (DOWN)
- FLANGE CONNECTION
- FLOAT & THERMOSTATIC STEAM TRAP
- FM — FLOW METER
- INVERTED BUCKET STEAM TRAP
- NONFREEZE WALL HYDRANT
- PIPE RISER
- PIPE DROP
- PRESSURE AND TEMPERATURE TEST PLUG
- PRESSURE GAUGE
- PUMP
- REDUCER (CONCENTRIC)
- REDUCER (ECCENTRIC)
- STRAINER
- TEE
- TEE UP
- TEE DOWN
- THERMOMETER
- UNION

PLUMBING VALVE SYMBOLS

- ANGLE GLOBE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GLOBE VALVE
- MV AV — MANUAL OR AUTOMATIC AIR VENT
- MODULATING CONTROL VALVE
- M — MOTOR OPERATED VALVE
- PRESSURE REDUCING VALVE
- SAFETY RELIEF VALVE
- THERMOSTATIC MIXING VALVE

PLUMBING CLEANOUT AND DRAIN SYMBOLS

- SQUARE FLOOR SINK (FS)
- SQUARE FLOOR DRAIN (FD)
- ROOF DRAIN (RD), SIZE & TYPE
- ROUND FLOOR DRAIN (FD)
- END OF LINE CLEANOUT
- FLOOR CLEANOUT (FCO)
- WALL CLEANOUT (WCO)

DEMOLITION GENERAL NOTES:

A. VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING WORK. NOTIFY GENERAL CONTRACTOR REGARDING CONFLICTS BEFORE PROCEEDING WITH WORK.

B. VERIFY SIZE AND LOCATION OF EXISTING UTILITIES PRIOR TO START OF DEMOLITION. RELOCATE, REMOVE AND ADJUST MECHANICAL AND ELECTRICAL ITEMS AS NECESSARY TO COORDINATE WITH NEW WORK.

C. AFTER DEMOLITION IS COMPLETE, PATCH AND REPAIR FINISHES TO MATCH EXISTING CONDITIONS.

D. COORDINATE DEMOLITION WITH GENERAL CONTRACTOR. NOTIFY GENERAL CONTRACTOR AND OWNER IF A SHUDTOWN OF UTILITIES IS REQUIRED.

E. PROTECT EXISTING UTILITIES TO REMAIN FROM DAMAGE DURING DEMOLITION.

F. TEMPORARILY MOVE OR TAKE EQUIPMENT OUT OF SERVICE AS NECESSARY TO COMPLETE WORK.

G. SAWCUT CONCRETE FLOOR AS REQUIRED FOR DEMOLITION WORK INDICATED. COORDINATE WITH NEW PLUMBING BEFORE CUTTING ANY FLOOR. CONTRACTOR TO X-RAY FLOORS FOR ALL STRUCTURAL FLOORS.

GENERAL NOTES:

A. ALL PIPING SHALL BE COORDINATED WITH CIVIL UTILITY PIPING, FIRE PROTECTION, DUCTWORK, MECHANICAL PIPING, LIGHTING, STRUCTURAL AND ARCHITECTURAL SYSTEMS.

B. PIPE CLEANOUTS SHALL BE LINE SIZE (6" MAX.). LOCATE 100' APART MAXIMUM FOR SIZES UP THROUGH 6".

C. PLUMBING VENTS THROUGH ROOF (VTR) SHALL BE 3" MINIMUM. SMALLER VTR'S INDICATED SHALL INCREASE TO 3" PIPE, 12" BELOW ROOF.

D. ACCESS PANELS SHALL BE PROVIDED FOR ALL WATER HAMMER ARRESTORS LOCATED IN WALLS TO ACCESS EQUIPMENT. PANEL SHALL BE AS LARGE AS PRACTICAL FOR THE FUNCTION THEY ARE INTENDED.

E. DO NOT SCALE DRAWINGS, SEE ARCHITECTURAL FLOOR PLAN FOR DIMENSIONS.

F. ALL PLUMBING WORK SHALL COMPLY WITH THE 2009 INTERNATIONAL PLUMBING CODE.

G. PIPE ROUTING IS SCHEMATIC AS SHOWN AND IS NOT INTENDED TO INDICATE EXACT ROUTING. CONTRACTOR SHALL PROVIDE ANY ADDITIONAL OFFSET AND FITTINGS REQUIRED FOR PROPER INSTALLATION AND TO MAINTAIN CLEARANCES.

H. CONCEAL PIPING ABOVE CEILING AND WITHIN WALLS OR CHASES, EXCEPT IN MECHANICAL SPACES OR WHEN OTHERWISE NOTED.

I. SEE ARCHITECTURAL DRAWINGS FOR FIXTURE LOCATIONS AND MOUNTING HEIGHTS.

J. PROVIDE TRAP PROTECTION FOR ALL FLOOR DRAINS.

K. PROVIDE AN AIR GAP, WHEN REQUIRED BY CODE, SERVING INDIVIDUAL FIXTURES, DEVICES, APPLIANCES AND APPARATUS.

L. COORDINATE PIPING WITH ELECTRICAL EQUIPMENT PRIOR TO INSTALLATION. ROUTE PIPING TO AVOID ELECTRICAL EQUIPMENT AND CLEARANCE AREAS.

M. ANY DEVIATIONS IN ELECTRICAL REQUIREMENTS FROM THE BASIS OF DESIGN FOR THE PLUMBING EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE PLUMBING CONTRACTOR TO ENSURE COORDINATION WITH THE ELECTRICAL CONTRACTOR FOR PROPER SIZE ELECTRICAL MATERIAL AND EQUIPMENT AT NO ADDITIONAL COST.

N. PROVIDE SHOCK ARRESTORS PER STANDARD PDI-WH-201.

O. SEAL ALL FIRE AND SMOKE BARRIER PENETRATIONS IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE, SPECIFICATIONS, AND DETAILS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS OF FIRE AND SMOKE WALLS, BARRIERS, AND PARTITIONS.

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

COMMONWEALTH OF VIRGINIA
69943
J. ROSS MYLES
Date Signed 04/25/25
ARIZONA, U.S.A.

DRAWING TITLE
PLUMBING LEGEND

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE 04/25/25 | CHECKED JD | DRAWN JGH

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER **P-000**

DRAWING # 20 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

4/22/2025 4:02:14 PM

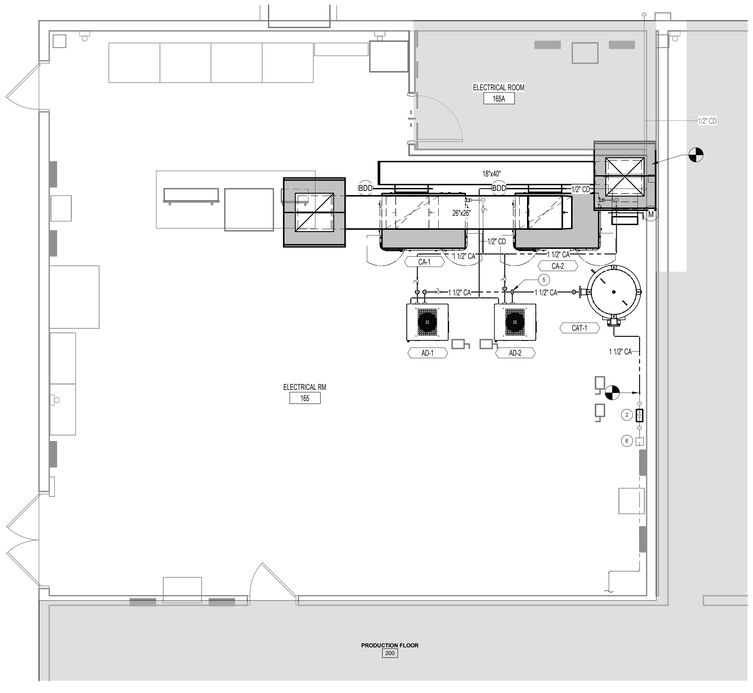
VA FORM 08-6231

PLUMBING GENERAL NOTES

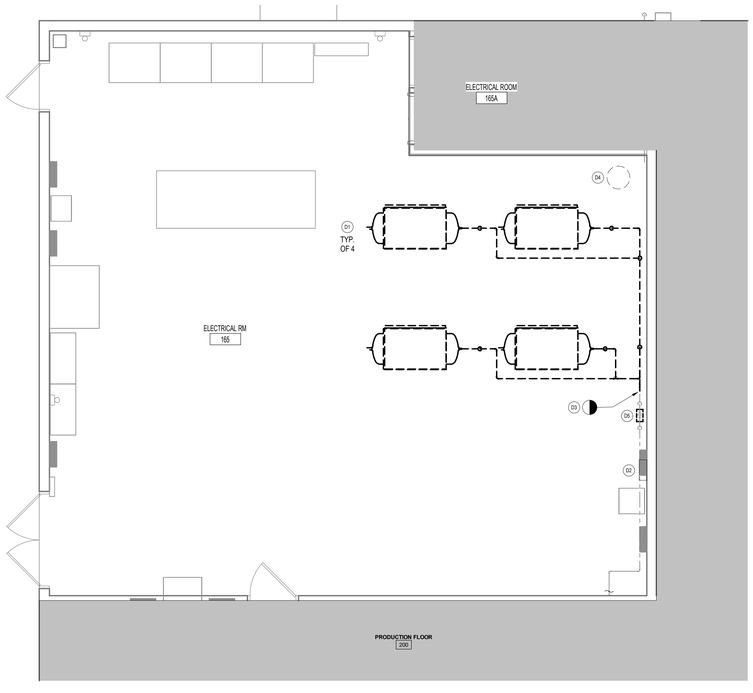
1. NEW COMPRESSORS SHALL BE MONITORED BY FACILITY BAS. TIE INTO THE EXISTING JOHNSON CONTROLS (JCI) FACILITY BAS. PROVIDE AND INSTALL UNIT WITH BAS CONTROLLER.
2. ALL VALVES ARE TO BE INSTALLED AT OR BELOW 6'-0" AFF.

KEYNOTE LEGEND

2	PROVIDE AND INSTALL A NEW PRESSURE REGULATOR IN EXISTING LOCATION.
5	PROVIDE AND INSTALL 1-1/2" ISOLATION VALVE IN VERTICAL PIPE FROM DRYER, MOUNT AT OR BELOW 6'-0".
6	PROVIDE AND INSTALL FLOW METER AFTER BYPASS AND REGULATOR. BAS CONTRACTOR SHALL BE RESPONSIBLE FOR TYING METER INTO EXISTING SYSTEM OR CONTROLLER INSIDE MAIN ELECTRICAL ROOM.
7	20" X 20" MOTORIZED DAMPER AND INTAKE MOUNTED 10'-0" AFF ON OUTSIDE AIR DUCT. SEE SHEET MH601 FOR AIR COMPRESSOR SEQUENCE OF OPERATIONS.
D1	DEMOLISH EXISTING COMPRESSOR.
D2	DEMOLISH EXISTING COMPRESSED AIR CONTROLLER.
D3	DEMOLISH EXISTING COMPRESSED AIR PIPE TO THIS POINT. PROVIDE AND INSTALL TEMPORARY CAP FOR TIE IN.
D4	DEMOLISH EXISTING OIL SEPARATOR.
D5	DEMOLISH THE EXISTING PRESSURE REGULATOR. EXISTING REGULATOR BYPASS AND VALVES ARE TO REMAIN AND BE REUSED.

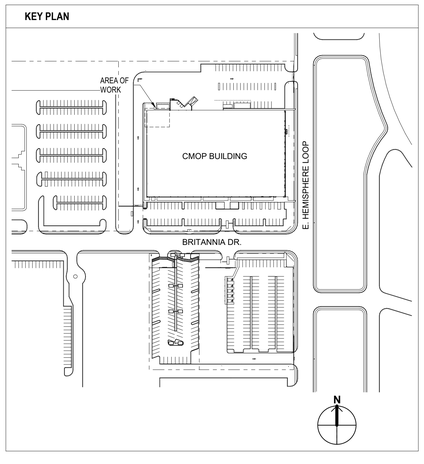


2 COMPRESSED AIR PLAN - LEVEL 1 - MAIN ELECTRICAL ROOM - BID ALTERNATE 3
1/4" = 1'-0"



1 COMPRESSED AIR DEMOLITION PLAN - LEVEL 1 - MAIN ELECTRICAL ROOM - BID ALTERNATE 3
1/4" = 1'-0"

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO. 69943
J. ROSS MYLES
ARIZONA, U.S.A.

DRAWING TITLE
COMPRESSED AIR PLUMBING PLAN - LEVEL 1

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE	CHECKED	DRAWN
04/25/25	JD	JGH

PROJECT NUMBER
762-24-101

BUILDING NUMBER
CMOP

DRAWING NUMBER
PJ100
DRAWING # 21 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

4/22/2025 4:02:15 PM

VA FORM 08-6231

AIR COMPRESSOR SCHEDULE (CA)

MARK	BASIS OF DESIGN (MANUFACTURER/MODEL)	LOCATION	SERVICE	MOTOR HP	CAPACITY (CFM)	OPERATING TIME (%)	MIN. NO. OF COMPRESSORS	DISCHARGE PRESSURE (PSIG)	RECIEVER (GAL)	ELECTRICAL		DIMENSIONS				NOTES
										MCA	VOLTS/PH	LENGTH (IN)	WIDTH (IN)	HEIGHT (IN)	WEIGHT (LB)	
CA-1	ELGI / EG 37-100 V	165 ELECTRICAL RM	SHOP / PACKAGING EQUIPMENT	50	212	125	1	131	660	70.8	460/3	67	44	62	2550	ALL LISTED
CA-2	ELGI / EG 37-100 V	165 ELECTRICAL RM	SHOP / PACKAGING EQUIPMENT	50	212	125	1	131	660	70.8	460/3	67	44	62	2550	ALL LISTED

1. ELECTRIC POWERED, OIL LUBRICATED SCREW AIR COMPRESSOR.
2. COMPRESSOR WITH INTEGRAL VARIABLE FREQUENCY DRIVE, CAPABLE OF 25% TURN DOWN.
3. USE MANUFACTURER RECOMMENDED OIL LUBRICANT, 5 GALLON TOTAL OIL FILL CAPACITY.
4. FACTORY NEURON IV CONTROLLERS AND COME STANDARD WITH MODBUS CAPABILITIES.

AIR DRYER SCHEDULE (AD)

MARK	BASIS OF DESIGN (MANUFACTURER/MODEL)	LOCATION	SERVICE	CAPACITY (CFM)	NOM WORKING PRESSURE (PSIG)	MIN WORKING PRESSURE (PSIG)	MAX WORKING PRESSURE (PSIG)	INLET DIA (IN)	ELECTRICAL			WEIGHT (LB)	NOTES
									MCA	MOCP	VOLTS/PH		
AD-1	MIKROPOR / MCY-US-250	165 ELECTRICAL RM	COMPRESSED AIR	250	100	60	230	2 - NPT	15.7	0	230/1	428	ALL LISTED
AD-2	MIKROPOR / MCY-US-250	165 ELECTRICAL RM	COMPRESSED AIR	250	100	60	230	2 - NPT	15.7	0	230/1	428	ALL LISTED

1. AIR COOLED CONDENSER, R513A REFRIGERANT.
2. HERMETIC/SCROLL TYPE COMPRESSOR.
3. AIR DRYER SELECTED AT 230 PSIG MAX WORKING PRESSURE, 375°F MAX AMBIENT (4°F MIN AMBIENT). MAX INLET TEMPERATURE IS 150°F.
4. PRE "X" AND POST "Y" FILTERS, WITH 1.0 AND 0.01 PARTS PER MILLION RESPECTIVELY. SEE MANUFACTURER DATA.

COMPRESSED AIR RECEIVER TANK (CAT)

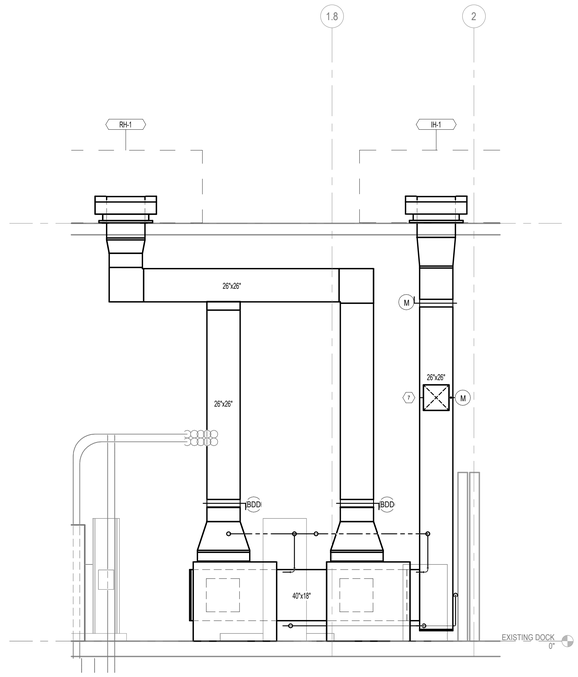
MARK	BASIS OF DESIGN (MANUFACTURER/MODEL)	LOCATION	SERVICE	TANK VOLUME (GAL)	TANK DIAMETER (IN)	TANK LENGTH (IN)	INLET DIAMETER (IN)	OUTLET DIAMETER (IN)	WEIGHT (LB)	NOTES
CAT-1	SAMUEL PRESSURE VESSEL GROUP	165 ELECTRICAL RM	COMPRESSED AIR	660	42	118	4 - 150# FLG	4 - 150# FLG	1400	ALL LISTED

1. VERTICAL AIR RECEIVER TANK TO BE MOUNTED ON FLOOR.
2. RECEIVER SELECTED AT 150 PSI MAX AT 400°F.
3. COORDINATE ALL CONNECTION LOCATIONS WITH MANUFACTURER.

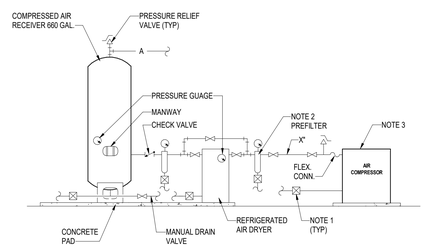
INTAKE/RELIEF HOOD SCHEDULE (IH/RH)

MARK	BASIS OF DESIGN (MANUFACTURER / MODEL)	SERVES	LOCATION	MODEL SIZE (IN)	DESIGN AIRFLOW (CFM)	PRESSURE DROP (INWC)	MAX PD (INWC)	THROAT VELOCITY (FPM)	DAMPER SIZE (IN)	WEIGHT (LB)	NOTES
IH-1	Greenheck / FGR	AC- & AC-2	ROOF	36	4600	0.04	0.04	511	36" x 36"	110	ALL LISTED
RH-1	Greenheck / FGR	AC- & AC-2	ROOF	36	4600	0.04	0.04	511	36" x 36"	110	ALL LISTED

1. PROVIDE WITH 12" ROOF CURB, BACKDRAFT DAMPER AND BIRDSCREEN.

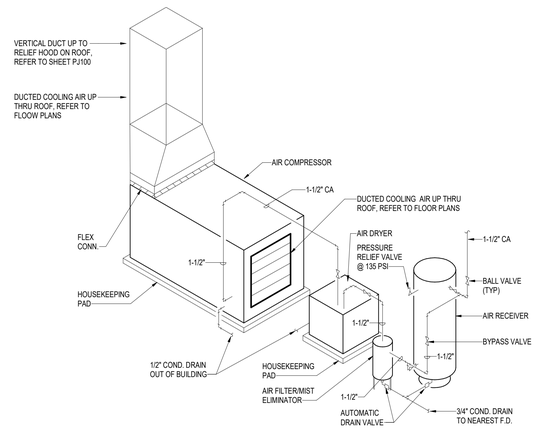


3 AIR COMPRESSOR ELEVATION
1/4" = 1'-0"



NOTES:
1. AUTOMATIC MOISTURE TRAPS.
2. PREFILTERS AND COALESCING FILTERS SHALL BE FURNISHED WITH AUTOMATIC DRAINS AND PRESSURE DIFFERENTIAL GAUGES.
3. AIR COMPRESSORS SHALL BE COMPLETE WITH SELF CONTAINED AFTERCOOLER AND INTAKE AIR FILTER.

2 TYPICAL AIR COMPRESSOR PIPING DETAIL
NTS



1 COMPRESSOR DRYER FILTER & ACCUMULATOR DETAIL
NTS

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 4:02:17 PM

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO.
69943
J. ROSS MYLES
Date Signed 04-22-25
ARIZONA, U.S.A.

DRAWING TITLE
PLUMBING DETAILS AND SCHEDULES

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE 04/25/25 | CHECKED JD | DRAWN JGH

PROJECT NUMBER
762-24-101

BUILDING NUMBER
CMOP

DRAWING NUMBER
P-601
DRAWING # 22 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

VA FORM 08-6231

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS WILL BE UTILIZED FOR THIS PROJECT.

A

A/E	ARCHITECT / ENGINEER
AAHX	AIR TO AIR HEAT EXCHANGER
AB	AIR BLENDER
AAV	AUTOMATIC AIR VENT
ACC	AIR COOLED CONDENSER
ACU	AIR CONDITIONING UNIT
AF	AFTER FILTER
AFCV	AIR FLOW CONTROL VALVE
AFF	ABOVE FINISHED FLOOR
AFW	AIR FOIL WHEEL (FAN)
AHU	AIR-HANDLING UNIT
AMP	AMPERAGE
AP	ACCESS PANEL
APD	AIR PRESSURE DROP
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE
AS	AIR SEPARATOR
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AW	AIR WASHER
AXF	AXIAL FLOW

B

B	BOILER
BD	BUTTERFLY DAMPER
BDD	BACKDRAFT DAMPER
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BHX	BOILER BLOWDOWN HEAT EXCHANGER
BW	BACKWARD INCLINED WHEEL (FAN)
BSC	BIOLOGICAL SAFETY CABINETS
BT	BLOWOFF TANK
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR

C

C	CENTIGRADE (CELSIUS)
CC	COOLING COIL
CCD	COOLING COIL CONDENSATE DRAIN
CENT	CENTRIFUGAL
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFT	CUBIC FEET
CFP	CHEMICAL FEED PUMP
CH	CHILLER
CHP	CHILLED WATER PUMP
CHW	CHILLER WATER
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CI	CAST IRON
CM	CUBIC METER
CM/S	CUBIC METER PER SECOND
CO	CARBON MONOXIDE
CO2	CARBON DIOXIDE
COMP	COMPRESSOR UNIT
COP	COEFFICIENT OF PERFORMANCE
CP	CONDENSATE PUMP
CS	CONDENSATE STORAGE TANK
CSG	CLEAN STEAM GENERATOR
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONSTANT VOLUME
CW	COLD WATER (POTABLE)
CC	CHILLED WATER COOLING COIL
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY

D

Db	DRY-BULB TEMPERATURE
DB	DECIBELS
DDC	DIRECT DIGITAL CONTROLS
DEG	DEGREE
DIA	DIAMETER
DIW	DEIONIZED WATER
DP	DEW POINT TEMPERATURE
DPA	DIFFERENTIAL PRESSURE ASSEMBLY
DPS	DIFFERENTIAL PRESSURE SENSOR
DSD	DUCT SMOKE DETECTOR
DX	DIRECT EXPANSION

E

EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	EVAPORATIVE COOLER
ECC	ENGINEERING CONTROL CENTER
ECU	EVAPORATIVE CONDENSER UNIT
EDH	ELECTRIC DUCT HEATER
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EGS	EMERGENCY GAS SHUTOFF
EGT	ENTERING GLYCOL TEMPERATURE
EH	EXHAUST HOOD
EJ	EXPANSION JOINT
EMD	END OF MAIN DRIP (STEAM)
ENT	ENTERING
ERC	ELECTRIC REHEAT COIL
ERP	ELECTRIC RADIANT PANEL
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETO	ETHYLENE OXIDE
ETR	EXISTING TO REMAIN
EUH	ELECTRIC UNIT HEATER
EWC	EVAPORATIVE WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EX.	EXISTING

F

F	FAHRENHEIT
F&T	FLOAT AND THERMOSTATIC
FA	FREE AREA
FC	FLEXIBLE CONNECTION
FCU	FAN COIL UNIT
FCUC	FAN COIL UNIT COOLING ONLY
FCUH	FAN COIL UNIT HEATING ONLY
FCW	FORWARD CURVED WHEEL (FAN)
FD	FIRE DAMPER
FSD	COMBINATION FIRE / SMOKE DAMPER
FF	FINAL FILTER
FHX	FLUE GAS/FEEDWATER HEAT EXCHANGER
FM	FLOW METER
FOP	FUEL OIL PUMP
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOT	FUEL OIL TANK
FOHX	FUEL OIL HEAT EXCHANGER
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPTU	FAN POWERED TERMINAL UNIT
FRP	FIBER REINFORCED POLYESTER
FS	FLOW SWITCH
FSTAT	FREEZESTAT
FT	FEET
FT-LB	FOOT-POUND
FTR	FIN TUBE RADIATION
FV	FACE VELOCITY

G

GA	GAUGE
GAL	GALLONS
GH	GRAVITY HOOD
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPR	GAS PRESSURE REGULATOR
GS	GALVANIZED STEEL

H

HU	HUMIDIFIER
H&CW	HOT & COLD WATER
HAC	HOUSEKEEPING AID CLOSET
HB	HOSE BIBB
HC	HEATING COIL
HD	HEAD
HOA	HAND/OFF/AUTOMATIC
HP	HEAT PUMP
HP	HORSEPOWER
HPC	HIGH PRESSURE STEAM CONDENSATE RETURN
HPDT	HIGH PRESSURE DRIP TRAP
HPS	HIGH PRESSURE STEAM (61-300 PSIG)
HRC	HEAT RECOVERY COIL
HRD	HEAT RECOVERY DEVICE
HRP	HYDRONIC RADIANT (CEILING) PANEL
HRW	HEAT RECOVERY WHEEL
HSTAT	HUMIDISTAT
HTM	HUMIDIFIER TERMINAL
HUM	HUMIDIFIER UNIT MOUNTED
HVU	HEATING AND VENTILATING UNIT
HW	HOT WATER
HC	HOT WATER HEATING COIL
HHP	HEATING HOT WATER PUMP
HHR	HEATING HOT WATER RETURN
HHS	HEATING HOT WATER SUPPLY
HHUH	HOT WATER UNIT HEATER
HX	HEAT EXCHANGER
HZ	HERTZ

I

I/O	INPUT/OUTPUT
IAQ	INDOOR AIR QUALITY
IBT	INVERTED BUCKET TRAP
ICF	IN-LINE CENTRIFUGAL FAN
ID	INSIDE DIAMETER
IFB	INTEGRAL FACE AND BYPASS
IN	INCHES
IN HG	INCHES OF MERCURY
IN WC	INCH WATER COLUMN
IN WG	INCH WATER GAUGE
IN-LB	INCH-POUND
IPLV	INTEGRATED PART LOAD VALUE
IRH	INFRARED HEATER
IS	INSECT SCREEN
IJ	INDUCTION UNIT
IV	INLET VANES

J

J	INTENTIONALLY LEFT BLANK

K

kg	KILOGRAM
kg/HR	KILOGRAM PER HOUR
kPa	KILOPASCAL
kW	KILOWATT
kWh	KILOWATT HOUR

L

L	LITER
L/h	LITERS PER HOUR (OR LITERS/HOUR)
L/m	LITERS PER MINUTE (OR LITERS/MINUTE)
L/s	LITERS PER SECOND (OR LITERS/SECOND)
LAT	LEAVING AIR TEMPERATURE
LBS/HR	POUNDS PER HOUR
LF	LINEAR FOOT (FEET)
LGT	LEAVING GLYCOL TEMPERATURE
LH	LATENT HEAT
LPC	LOW PRESSURE STEAM CONDENSATE RETURN
LPG	LIQUID PROPANE GAS
CLPC	LOW PRESSURE STEAM CONDENSATE (CLEAN)
LLHX	LIQUID TO LIQUID HEAT EXCHANGER
LPS	LOW PRESSURE STEAM (0-15 PSIG)
CLPS	LOW PRESSURE STEAM (CLEAN)
LSD	LINEAR SLOT DIFFUSER
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LVG	LEAVING
LVR	LOUVER
LWT	LEAVING WATER TEMPERATURE

M

M	METER, SI UNIT
M/s	METERS PER SECOND (OR METERS/SECOND)
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MB	MIXING BOX
MBH	1000 BTUH
MCA	MINIMUM BRANCH CIRCUIT AMPACITY
MERV	MINIMUM EFFICIENCY REPORTING VALUE
MH	MANHOLE
MHP	MOTOR HORSEPOWER
MIN	MINIMUM
MM	MILLIMETER
MOV	MOTOR OPERATED VALVE
MPC	MEDIUM PRESSURE STEAM CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM (16-60 PSIG)
MTD	MEAN TEMPERATURE DIFFERENCE
MVD	MANUAL VOLUME DAMPER
MZ	MULTI-ZONE

N

NA	NOT APPLICABLE
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
NG	NATURAL GAS
NGFM	NATURAL GAS FLOWMETER
N.O.	NORMALLY OPEN
NOAA	NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION
NOM	NOMINAL
NPLV	NON-STANDARD PART LOAD VALUE
NPSH	NET POSITIVE SUCTION HEAD
NTS	NOT TO SCALE

O

OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OD	OUTSIDE DIAMETER
OFM	OIL FLOWMETER
OSD	ORGANIC SOIL FILTER

P

P	PUMP
PA	PASCAL
PC	PUMPED CONDENSATE
PCF	POUNDS PER CUBIC FOOT (FEET)
PD	PRESSURE DROP
PF	PRE-FILTER
PG	PRESSURE GAGE
PGW	PROPYLENE GLYCOL-WATER (SOLUTION)
PHC	PREHEAT COIL
PPM	PARTS PER MILLION
PRS	PRESSURE REGULATING (VALVE) STATION
PRV	PRESSURE REGULATING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH – ABSOLUTE
PSIG	POUNDS PER SQUARE INCH – GAGE
PSS	PRIMARY SECONDARY SYSTEM
PSV	PRESSURE SAFETY VALVE
PTAC	PACKAGED TERMINAL AIR CONDITIONER

Q

Q	INTENTIONALLY LEFT BLANK

R

R/E	RETURN OR EXHAUST
RA	RETURN AIR
RAD	REFRIGERANT AIR DRYER
RAF	RADIO FREQUENCY
RAHX	ROTARY AIR HEAT EXCHANGER
RAT	RETURN AIR TEMPERATURE
RCCH	REMOTE CONDENSER CHILLER
RCU	RECIPROCATING CHILLER UNIT
RD	REFRIGERANT DISCHARGE
REA	RELIEF AIR
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID LINE
RLA	RUN LOAD AMPERE
RO	REVERSE OSMOSIS
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RTU	ROOF TOP UNIT
RV	RELIEF VALVE

S

SA	SUPPLY AIR
SAD	SOUND ATTENUATING DEVICE
SAT	SUPPLY AIR TEMPERATURE
SC	SHADING COEFFICIENT
SCFM	STANDARD CUBIC FEET PER MINUTE
SCR	SILICON CONTROLLED RECTIFIER
SD	SMOKE DAMPER
SEN	SENSIBLE HEAT
SF	SUPPLY FAN
SH	STEAM HUMIDIFIER
SHC	STEAM HEATING COIL
SI	SQUARE INCHES
SP	STATIC PRESSURE
SP GR	SPECIFIC GRAVITY
SPS	STATIC PRESSURE SENSOR
SQ FT	SQUARE FOOT (FEET)
SS	STAINLESS STEEL
SSHX	STEAM TO STEAM HEAT EXCHANGER
SSR	SOLID SEPARATOR
ST	STEAM TRAP
SUH	STEAM UNIT HEATER
SVS	STEAM VENT SILENCER
SWHX	STEAM TO WATER HEAT EXCHANGER

T

T&PCV	TEMPERATURE AND PRESSURE CONTROL VALVE
TAB	TESTING, ADJUSTING, BALANCE
TD	TEMPERATURE DIFFERENCE
TDH	TOTAL DYNAMIC HEAD
TDS	TOTAL DISSOLVED SOLIDS
TG	TRANSFER GRILLE
TP	TRAP
TSP	TOTAL STATIC PRESSURE
TSTAT	THERMOSTAT
TU	TERMINAL UNIT
TWU	THRU-WALL UNIT

U

UC	UNDER CUT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UL	UNDERWRITERS LABORATORY
URV	UPBLAST UNIT VENTILATOR
UST	UNDERGROUND STORAGE TANK

V

V	VALVE
VAF	VANE-AXIAL FAN
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER (MANUAL OPPOSED BLADE)
VFD	VARIABLE FREQUENCY DRIVE
VI	VIBRATION ISOLATOR
VIV	VARIABLE INLET VANES
VP	VACUUM PUMP
VPS	VARIABLE PRIMARY SYSTEM
VR	VACUUM (STEAM CONDENSATE) RETURN
VSD	VARIABLE SPEED DRIVE
VUH	VERTICAL UNIT HEATER

W

W	WATTS
WAG	WASTE ANESTHESIA GAS
Wb	WET-BULB (TEMPERATURE)
WC	WATER COOLED
WCCH	WATER COOLED CHILLER
WCCU	WATER COOLED CONDENSING UNIT
WCHP	WATER COOLED HEAT PUMPS
WCPU	WATER COOLED PACKAGED UNIT
WF	WATER FILTER
WFM	WATER FLOWMETER
WG	WATER GAGE
WPD	WATER SIDE PRESSURE DROP

X

X	INTENTIONALLY LEFT BLANK

Y

YR	YEAR

Z

Z	INTENTIONALLY LEFT BLANK

GENERAL ANNOTATIONS

SPACE NAME — B-100 — SPACE TAG

1 — OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT DESIGNATION

26-P-3 — BUILDING NUMBER WHERE EQUIPMENT IS LOCATED; EQUIPMENT ABBREVIATION (PUMP); PUMP NO. 3 IN BUILDING NO. 26 — **MECHANICAL EQUIPMENT TAG**

26-TU-1-1 — BUILDING NUMBER WHERE EQUIPMENT IS LOCATED; ITEM (TERMINAL UNIT); ITEM NUMBER (TERMINAL UNIT NO. 1); SERVED BY AIR HANDLER UNIT NO. 1 — **TERMINAL UNIT TAG**

1 / XX-XX — DETAIL NUMBER / SHEET NUMBER

1 / MH-100 — SECTION NUMBER / SHEET NUMBER

H — HUMIDISTAT

T — THERMOSTAT

H — HUMIDITY SENSOR

T — TEMPERATURE SENSOR

GENERAL PIPING SYMBOLS

- EXISTING TO REMAIN
- EXISTING TO BE DEMOLISHED
- NEW PIPE
- CONNECT NEW TO EXISTING
- LIMIT OF DEMOLITION

HVAC PIPING TYPES

BO	BOILER BLOWOFF	CHS	CHILLED WATER SUPPLY	FWPS	FEEDWATER PUMP SUCTION	MPC	MEDIUM PRESSURE STEAM CONDENSATE
CBD	CONTINUOUS BLOWDOWN	CWS	CONDENSER WATER SUPPLY	FOR	FEEDWATER PUMP SUCTION	HHR	HEATING HOT WATER RETURN
CD	CONDENSATE DRAIN	CWR	CONDENSER WATER RETURN	FOS	FEEDWATER PUMP SUCTION	HHS	HEATING HOT WATER SUPPLY
CF	CHEMICAL FEED	DR	DRIP RETURN	LPC	LOW PRESSURE STEAM CONDENSATE	HPC	HIGH PRESSURE STEAM CONDENSATE
CHR	CHILLED WATER RETURN	FWPD	FEEDWATER PUMP DISCHARGE	MPS	MEDIUM PRESSURE STEAM SUPPLY	HPS	HIGH PRESSURE STEAM SUPPLY
						PC	PUMPED CONDENSATE
						RL	REFRIGERANT LIQUID
						RS	REFRIGERANT SUCTION
						QV	CRYOGEN VENT
						VR	VACUUM RETURN

HVAC VALVE SYMBOLS

- ANGLE GLOBE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- CONTROL VALVE
- CONTROL VALVE, THREE WAY
- GATE VALVE
- GLOBE VALVE
- MV/AV — MANUAL OR AUTOMATIC AIR VENT
- M — MOTOR CONTROLLED VALVE
- PRESSURE REDUCING VALVE
- SAFETY RELIEF VALVE

HVAC PIPING SYMBOLS

- ANCHOR
- CAP
- DIRECTION OF FLOW
- DIRECTION OF PIPE PITCH (DOWN)
- EXPANSION JOINT
- FLANGE CONNECTION
- FLOAT & THERMOSTATIC STEAM TRAP
- FLEXIBLE CONNECTOR
- FM — FLOW METER
- INVERTED BUCKET STEAM TRAP
- PIPE RISER
- PIPE DROP
- PRESSURE AND TEMPERATURE TEST PLUG
- PRESSURE GAUGE
- PUMP
- QUICK-COUPLE HOSE CONNECTOR
- REDUCER (CONCENTRIC)
- REDUCER (ECCENTRIC)
- STRAINER
- STRAINER WITH BLOWOFF AND HOSE CONNECTION
- TEE
- TEE UP
- TEE DOWN
- THERMOMETER
- UNION

GENERAL DUCT SYMBOLS

- EXISTING TO REMAIN
- EXISTING TO BE DEMOLISHED
- NEW DUCT (INSIDE DIMENSIONS: W" X D")
- CONNECT NEW TO EXISTING
- LIMIT OF DEMOLITION
- ELBOW WITH TURNING VANES
- ROUND ELBOW
- EXHAUST, RELIEF, MAKE UP, OR OUTSIDE AIR DUCT UP
- EXHAUST, RELIEF, MAKE UP, OR OUTSIDE AIR DUCT DOWN
- RETURN DUCT UP
- RETURN DUCT DOWN
- SUPPLY AIR DUCT UP
- SUPPLY AIR DUCT DOWN
- BRANCH DUCT WITH CONICAL FITTING & MANUAL VOLUME DAMPER
- SQUARE TO ROUND TRANSITION
- BRANCH DUCT WITH HIGH EFFICIENCY TAKE-OFF (HETO) BRANCH FITTING & MANUAL VOLUME DAMPER
- BD — DAMPERS: (BD, FD, FSD, MD, SD, VD)
- SD-1 300 TYPE AIRFLOW (CFM)
- RG-1 300 TYPE AIRFLOW (CFM)
- EG-1 300 TYPE AIRFLOW (CFM)

GENERAL NOTES:

A. MECHANICAL PLANS AND SECTIONS ARE INTENDED TO ACCURATELY ILLUSTRATE THE SCOPE OF WORK BUT ARE STILL DIAGRAMMATIC IN NATURE.

B. MECHANICAL DRAWINGS DO NOT SHOW ALL ACCESSORIES TO BE INSTALLED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SYSTEMS ARE FULLY FUNCTIONAL AND COMPLIANT WITH APPLICABLE CODES.

C. THE EXISTING CONDITIONS DEPICTED IN THESE PLANS ARE BASED ON AS-BUILT DOCUMENTATION AND INFORMATION OBTAINED FROM FIELD SURVEYS AND ARE AS ACCURATE AS POSSIBLE. DUE TO OBSTRUCTIONS, CEILINGS, ETC., NOT ALL CONDITIONS COULD BE VERIFIED. THE CONTRACTOR SHALL SURVEY THE SITE PRIOR TO BID AND NOTIFY THE ARCHITECT/ENGINEER OF ANY CONFLICTS, OBSTRUCTIONS, OR INCONSISTENCIES PREVENTING INSTALLATION OF THE MECHANICAL SYSTEM.

D. ALL EXPOSED UNINSULATED PIPING SHALL BE PAINTED PER THE SPECIFICATION SECTION "PAINTING".

E. COORDINATE FAN COIL (FCU) AND TERMINAL UNIT (TU/VAV/CV) REHEAT COIL RIGHT OR LEFT HAND COIL CONNECTIONS WITH PIPING PLANS.

F. ALL FLUE AND COMBUSTION AIR PIPING FROM GAS-FIRED EQUIPMENT SHALL BE SIZED BY THE GAS-FIRED EQUIPMENT MANUFACTURER BASED ON THE SPECIFIC PIPE ROUTING AND ELEVATIONS FOR THIS PROJECT. REFER TO MANUFACTURERS INSTALLATION MANUAL AND LOCAL CODE REQUIREMENTS FOR REQUIRED FLUE AND COMBUSTION AIR PIPING MATERIALS.

G. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.

H. PROVIDE VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS CONNECTED TO AND WITHIN 50' OF ISOLATED EQUIPMENT (EXCEPT AT BASE ELBOW SUPPORTS AND ANCHOR POINTS) THROUGHOUT MECHANICAL EQUIPMENT ROOMS. DO THE SAME FOR SUPPORTS OF STEAM MAINS WITHIN 50' OF BOILER OR PRESSURE REDUCING VALVES.

I. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.

J. MAINTAIN A MINIMUM OF 6'-8" CLEARANCE TO UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.

K. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.

L. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.

M. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.

N. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY THE MECHANICAL CONTRACTOR. MINIMUM CONCRETE PAD THICKNESS SHALL BE 4". PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 4" ON EACH SIDE. CONCRETE HOUSEKEEPING PADS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE SIZE AND LOCATION OF CONCRETE HOUSEKEEPING PADS.

O. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, ETC.) IS SUB-CONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.

P. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.

Q. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

R. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS WHERE REQUIRED TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT.

S. ALL DUCTWORK, PIPING AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.

T. ALL ROOF MOUNTED EQUIPMENT CURBS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.

U. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.

V. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH AN APPROVED FIRE STOPPING MATERIAL.

W. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT AND ROOFTOP UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH P-TRAP, AND PIPED TO NEAREST DRAIN. SEE DETAILS AND SPECIFICATIONS FOR DEPTH OF AIR CONDITIONING CONDENSATE TRAP.

X. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.

PIPING GENERAL NOTES:

A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.

B. ELEVATIONS AS SHOWN ON THE DRAWINGS ARE TO THE CENTERLINE OF ALL PRESSURE PIPING AND TO THE INVERT OF ALL GRAVITY PIPING.

C. MAINTAIN A MINIMUM OF 3'-6" OF GROUND COVER OVER ALL UNDERGROUND HVAC PIPING (EDIT DEPTH OF GROUND COVER TO SUIT FROST LINE DEPTH AND PROJECT REQUIREMENTS).

D. UNLESS OTHERWISE NOTED, ALL CHILLED WATER AND HEATING WATER PIPING SHALL BE 3/4" SIZE (EDIT SYSTEM TYPE OR PIPE SIZE TO SUIT PROJECT REQUIREMENTS).

E. PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING WATER, CHILLED WATER, AND OTHER CLOSED WATER PIPING SYSTEMS (EDIT SYSTEM TYPES TO SUIT PROJECT REQUIREMENTS). ALL PIPING SHALL GRADE TO LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.

F. UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH SPACE FOR INSULATION IF REQUIRED.

G. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.

H. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.

I. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).

J. PROVIDE CHAINWHEEL OPERATORS FOR ALL VALVES IN EQUIPMENT ROOMS MOUNTED GREATER THAN 7'-0" ABOVE FLOOR LEVEL; CHAIN SHALL EXTEND TO 7'-0" ABOVE FLOOR LEVEL.

K. ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.

L. UNIONS AND/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES, AND IN LONG PIPING RUNS (100' OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.

M. PITCH STEAM PIPING DOWNWARD IN THE DIRECTION OF FLOW 1/4" IN 10' (1" IN 40') MINIMUM. PITCH ALL STEAM RETURN LINES DOWNWARD IN THE DIRECTION OF CONDENSATE FLOW 1/2" PER 10' (1" IN 20') MINIMUM. WHERE LENGTH OF BRANCH LINES ARE LESS THAN 8', PITCH BRANCH LINES TOWARD MAINS 1/2" PER FOOT MINIMUM.

N. PITCH UP ALL STEAM AND CONDENSATE RUNOUTS TO RISERS AND EQUIPMENT 1/2" PER FOOT. WHERE THIS PITCH CANNOT BE OBTAINED, RUNOUTS OVER 8' IN LENGTH SHALL BE ONE SIZE LARGER THAN NOTED.

O. TAP ALL BRANCH LINES FROM TOP OF STEAM MAINS (45° PREFERRED, 90° ACCEPTABLE).

P. PROVIDE AN END OF MAIN DRIP AT EACH RISE IN THE STEAM MAIN. PROVIDE CONDENSATE DRIPS AT THE BOTTOM OF ALL STEAM RISERS, DOWNFED RUNOUTS TO EQUIPMENT, RADIATORS, ETC., AT END OF MAINS AND LOW POINTS, AND AHEAD OF ALL PRESSURE REGULATORS, CONTROL VALVES, ISOLATION VALVES, AND EXPANSION JOINTS.

Q. ON STRAIGHT STEAM PIPING RUNS WITH NO NATURAL DRAINAGE POINTS, INSTALL DRIP LEGS AT INTERVALS NOT EXCEEDING 200' WHERE PIPE IS PITCHED DOWNWARD IN THE DIRECTION OF STEAM FLOW AND A MAXIMUM OF 100' WHERE THE PIPE IS PITCHED UP SO THAT CONDENSATE FLOW IS OPPOSITE OF STEAM FLOW.

R. STEAM TRAPS SHALL BE MINIMUM 3/4" IN SIZE.

S. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.

T. ALL PIPING SHALL CLEAR DOORS AND WINDOWS.

U. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.

V. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

W. PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS, CHILLERS, COOLING TOWERS, AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION EXCEPT WATER COILS. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE OR AS INDICATED ON THE DRAWINGS.

X. SLOPE REFRIGERANT PIPING ONE PERCENT IN THE DIRECTION OF OIL RETURN. LIQUID LINES MAY BE INSTALLED LEVEL.

Y. INSTALL HORIZONTAL REFRIGERANT HOT GAS DISCHARGE PIPING WITH 1/2" PER 10' DOWNWARD SLOPE AWAY FROM THE COMPRESSOR.

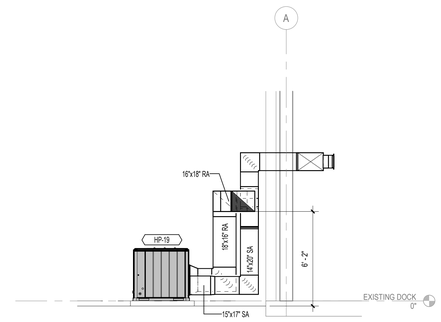
Z. INSTALL HORIZONTAL REFRIGERANT SUCTION LINES WITH 1/2" PER 10' DOWNWARD SLOPE TO THE COMPRESSOR, WITH NO LONG TRAPS OR DEAD ENDS WHICH MAY CAUSE OIL TO SEPARATE FROM

HVAC GENERAL NOTES

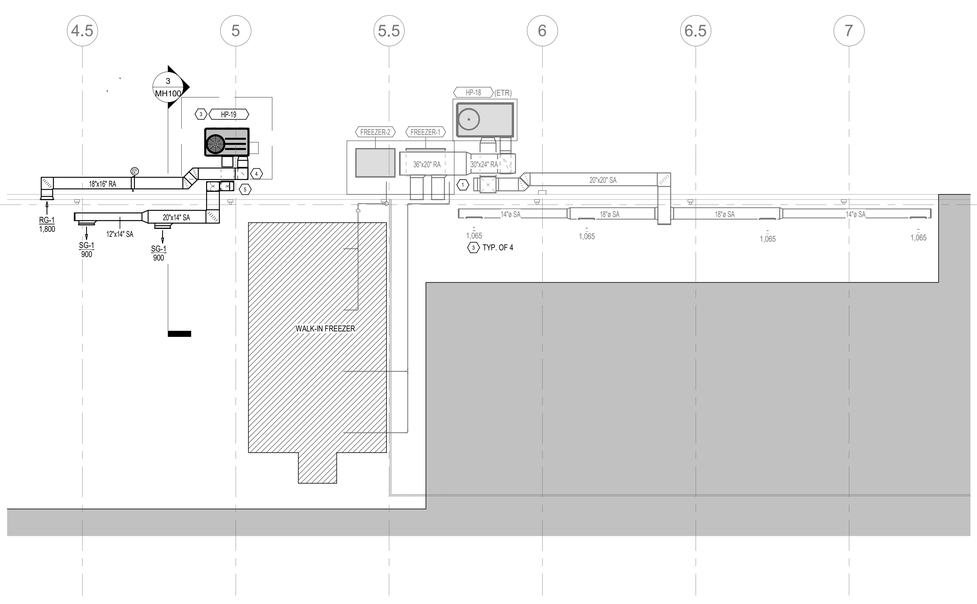
1. ALL NEW HVAC EQUIPMENT TO BE CONNECTED TO EXISTING JOHNSON CONTROLS (JCI) FACILITY BAS. PROVIDE AND INSTALL UNIT WITH BAS CONTROLLER.
2. ALL EQUIPMENT LOCATIONS ARE TO BE APPROVED BY FACILITY MANAGER PRIOR TO INSTALLATION.

KEYNOTE LEGEND

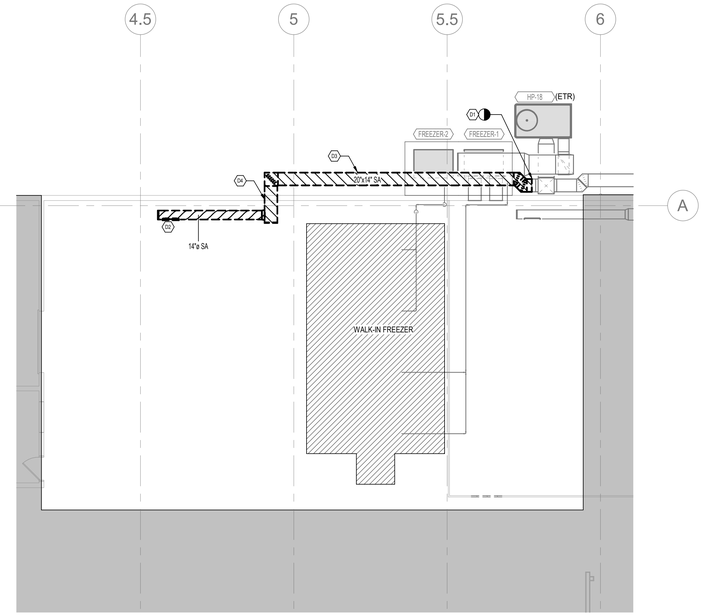
1	CAP EXISTING DUCTWORK.
3	BALANCE EXISTING GRILLE TO 1,065 CFM.
4	18" X 16" RETURN AIR DUCT DOWN.
5	20" X 14" SUPPLY AIR DUCT UP. ROUTE NEW DUCT THROUGH EXISTING WALL PENETRATION, FIELD VERIFY EXISTING PENETRATION SIZE AND LOCATION.
D1	DEMOLISH EXISTING DUCTWORK TO THIS POINT AND CAP.
D2	DEMOLISH EXISTING DUCT MOUNTED GRILLE.
D3	DEMOLISH EXISTING DUCTWORK.
D4	EXISTING WALL PENETRATION TO REMAIN AND BE REUSED.



3 HVAC SECTION - HP-19 W-E
1/4" = 1'-0"

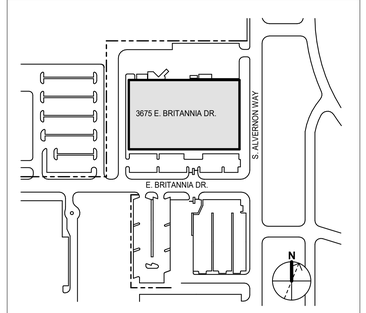


2 HVAC DUCT PLAN - LEVEL 1 - FREEZER AREA
1/8" = 1'-0"



1 HVAC DUCT DEMOLITION PLAN - LEVEL 1 - FREEZER AREA
1/8" = 1'-0"

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

REGISTERED PROFESSIONAL ENGINEER (MECHANICAL) CERTIFICATE NO. 69943 J. ROSS MYLES Date Signed 4/22/25 ARIZONA, U.S.A.

DRAWING TITLE
MECHANICAL HVAC DUCT DESIGN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE 04/25/25 | CHECKED JD | DRAWN JGH

PROJECT NUMBER
762-24-101

BUILDING NUMBER
CMOP

DRAWING NUMBER
MH100
DRAWING # 24 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

4/22/2025 3:51:38 PM

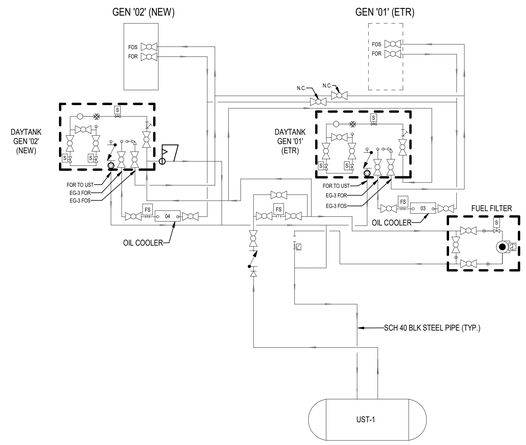
VA FORM 08-6231

HVAC GENERAL NOTES

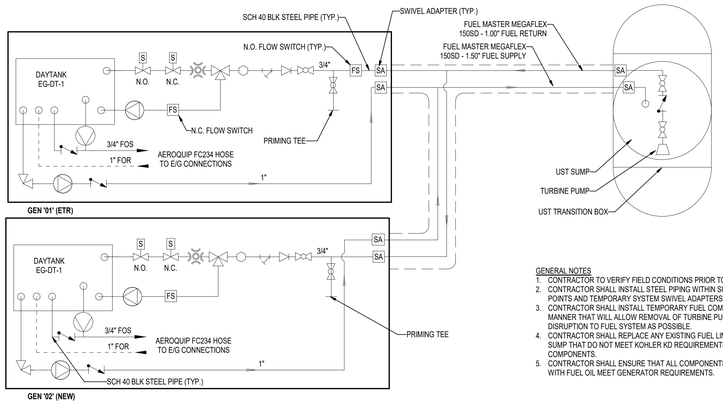
1. ALL DIESEL GENERATOR FUEL SYSTEM COMPONENTS AND SIZES ARE SHOWN FOR REFERENCE PURPOSES ONLY. FINAL DESIGN SHALL BE THE RESPONSIBILITY OF THE FUEL SYSTEM PROVIDER. REFER TO GENERATOR PROVIDER SHOP DRAWINGS.
2. GENERATORS SHALL BE MONITORED BY BAS. PROVIDE MANUFACTURER CONTROLS WITH BACNET INTERFACE.
3. LEAK DETECTION CONTROL PANEL TO BE LOCATED IN MAIN ELECTRICAL ROOM. REFER TO ELECTRICAL PLANS. LEAK DETECTION SYSTEM SHALL CONNECT INTO EXISTING BAS AND BE CAPABLE OF PRODUCING A LEAK DETECTION ALERT USING THE BAS MONITORING SYSTEM.

KEYNOTE LEGEND

6	NEW GENERATOR WITH INTEGRAL FUEL DAY TANK, REFER TO ELECTRICAL FOR DETAILS.
7	EXISTING GENERATOR WITH INTEGRAL FUEL DAY TANK.
8	INSTALL UNDERGROUND STORAGE TANK PER MANUFACTURER. PROVIDE AND INSTALL LEAK DETECTION SYSTEM PER MANUFACTURER RECOMMENDATIONS.
9	ROUTE FUEL SUPPLY AND RETURN PIPING UP ABOVE EXISTING SLAB AND TIE INTO EXISTING GENERATOR FUEL TANK. FIELD VERIFY EXISTING CONNECTIONS WITH EXISTING FUEL TANK.
10	ROUTE UNDERGROUND FUEL OIL SUPPLY AND RETURN PIPING UNDERGROUND. FINAL FUEL LINE SIZES AND ROUTING TO BE PROVIDED IN GENERATOR SHOP DRAWINGS. ROUTE PIPING A MINIMUM OF 12" BELOW REGIONAL FROST LINE.
11	PROVIDE AND INSTALL FUEL TRANSFER SYSTEM MOUNTED TO UNISTRUT. FINAL LOCATION TO BE APPROVED BY COR.
12	ROUTE VENT PIPE UP FROM TANK ABOVE GRADE TO VENT CAP. REFER TO 1/M-501 FOR MORE DETAILS. SIZE PIPE PER MANUFACTURER'S INSTRUCTIONS.

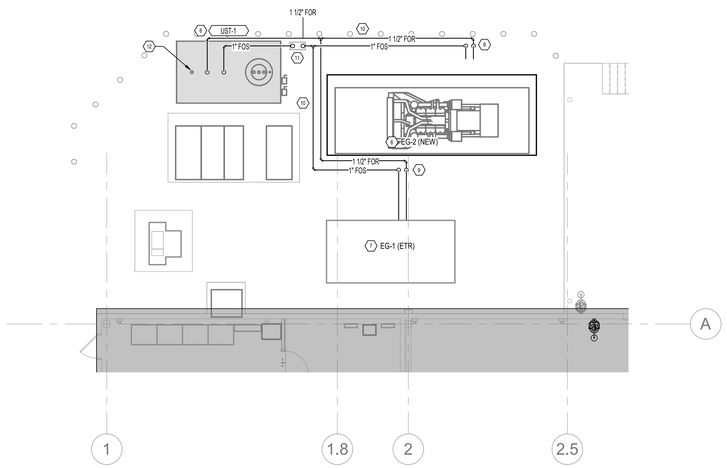


3 FUEL FLOW SCHEMATIC DIAGRAM
1/2" = 1'-0"



GENERAL NOTES
1. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL INSTALL STEEL PIPING WITHIN SUMPS, BETWEEN TIE-IN POINTS AND TEMPORARY SYSTEM SWIVEL ADAPTERS.
3. CONTRACTOR SHALL INSTALL TEMPORARY FUEL COMPONENTS IN SUMPS IN A MANNER THAT WILL ALLOW REMOVAL OF TURBINE PUMPS WITH AS LITTLE DISRUPTION TO FUEL SYSTEM AS POSSIBLE.
4. CONTRACTOR SHALL REPLACE ANY EXISTING FUEL LINE COMPONENTS WITHIN SUMP THAT DO NOT MEET KOHLER XD REQUIREMENTS WITH STAINLESS STEEL COMPONENTS.
5. CONTRACTOR SHALL ENSURE THAT ALL COMPONENTS THAT COME INTO CONTACT WITH FUEL OIL MEET GENERATOR REQUIREMENTS.

2 FUEL FLOW DIAGRAM
1/2" = 1'-0"



1 GENERATOR FUEL SYSTEM SITE PLAN
1/8" = 1'-0"

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED PROFESSIONAL ENGINEER
CERTIFICATE NO. 69943
J. ROSS MYLES
Date Signed 04/25/25
ARIZONA, U.S.A.

DRAWING TITLE
GENERATOR FUEL SYSTEM PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE 04/25/25 | CHECKED JD | DRAWN JGH

PROJECT NUMBER
762-24-101

BUILDING NUMBER
CMOP

DRAWING NUMBER
MP100
DRAWING # 25 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

4/22/2025 3:51:40 PM

VA FORM 08-6231

EXISTING PACKAGED HEAT PUMP SCHEDULE (HP)

MARK	BASIS OF DESIGN (MANUFACTURER / MODEL)	LOCATION	SUPPLY FAN DATA			MIN SEER	COOLING COIL DATA					HEATING COIL DATA			HTG. OSA DESIGN (°F)	ELECTRICAL				SUPPLEMENTAL HEAT			WEIGHT (LBS)	NOTES
			AIRFLOW (CFM)	OUTSIDE AIRFLOW (CFM)	ESP (“WC)		TOTAL (BTUH)	SENSIBLE (BTUH)	EAT DB (°F)	EAT WB (°F)	CLG. OSA DESIGN	CAPACITY (BTUH)	EAT DB (°F)	LAT DB (°F)		MCA (A)	MOCP	VOLTAGE	PHASE	KW	VOLT	PHASE		
HP-18	AMERICAN STANDARD / WSC120H4	GROUND	4,260	1,100	0.5	11.2	110	101	83	63	104	92	57	87	32	67	0	480	3	27.0	480	3		ALL LISTED

1. UNIT PROVIDED WITH MOTORIZED DRYBULB ECONOMIZER SECTION COMPLETE WITH POWER EXHAUST. DRYBULB HIGH LIMIT TO BE SET IN ACCORDANCE WITH 2012 IECC FOR CLIMATE ZONE 2B.
2. UNIT PROVIDED WITH MICROPROCESSOR CONTROL.
3. UNIT PROVIDED WITH REMOTE TEMPERATURE SENSOR WITH DISPLAY.
4. UNIT EQUIPPED WIHT DUCT MOUNTED SMOKE DETECTOR.

PACKAGED HEAT PUMP SCHEDULE (HP)

MARK	BASIS OF DESIGN (MANUFACTURER / MODEL)	LOCATION	SUPPLY FAN DATA			MIN SEER	COOLING COIL DATA					HEATING COIL DATA		HTG. OSA DESIGN (°F)	ELECTRICAL				SUPPLEMENTAL HEAT			WEIGHT (LBS)	NOTES
			AIRFLOW (CFM)	OUTSIDE AIRFLOW (CFM)	ESP (“WC)		TOTAL (MBH)	SENSIBLE (MBH)	EAT DB (°F)	EAT WB (°F)	CLG. OSA DESIGN	CAPACITY (MBH)	EAT (°F)		MCA (A)	MOCP	VOLTAGE	PHASE	KW	VOLT	PHASE		
HP-19	TRANE / WSC060H4	GROUND	1,800	200	0.5	14.30	55.7	42.6	81	67	106	57	65	47	33	35	480	3	12	480	3	818	ALL LISTED

1. PROVIDE FACTORY CURB
2. PROVIDE HAIL GUARD
3. HEAT PUMP CAPACITIES ARE BASED ON 47F DEGREES OUTDOOR AMBIENT TEMPERATURE.
4. PROVIDE HINGED ACCESS DOORS
5. PROVIDE SINGLE POINT POWER CONNECTION
6. PROVIDE THERMOSTAT AND HUMIDITY ZONE SENSORS
7 TWO-STAGE COMPRESSOR

DUCT CONSTRUCTION SCHEDULE

SMACNA HVAC Duct Construction Standards w/ith VA overrides. Refer to Specification section 233100 HVAC Ducts and Casings for gage and joint requirements

DUCTS CONNECTED TO	DUCT MATERIAL	PRESSURE CLASS	SEAL CLASS	LEAKAGE CLASS (RECT)	LEAKAGE CLASS (RND)
SUPPLY					
FAN COIL UNITS, FURNACES, HEAT PUMPS, AND TERMINAL UNITS	GALVANIZED SHEETMETAL	2	A	16	8
CONSTANT VOLUME AIR HANDLING UNITS	GALVANIZED SHEETMETAL	2	A	8	4
EQUIPMENT NOT LISTED	GALVANIZED SHEETMETAL	2	A	8	4
OUTSIDE AIR					
EQUIPMENT NOT LISTED	GALVANIZED SHEETMETAL	2	A	16	8
RETURN					
FAN COIL UNITS, FURNACES, HEAT PUMPS, AND TERMINAL UNITS	GALVANIZED SHEETMETAL	2	A	16	8
CONSTANT VOLUME AIR HANDLING UNITS	GALVANIZED SHEETMETAL	2	A	16	8
EQUIPMENT NOT LISTED	GALVANIZED SHEETMETAL	2	A	16	8
EXHAUST					
GENERAL CLEAN EXHAUST (ASHRAE 62.1 CLASS 1 OR 2)	GALVANIZED SHEETMETAL	2	A	16	8
AIR HANDLING UNITS	GALVANIZED SHEETMETAL	2	A	8	4
EQUIPMENT NOT LISTED	GALVANIZED SHEETMETAL	2	A	16	8

1. CLASSES REFER TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

UNDERGROUND STOR. TANK SCHEDULE (UST)

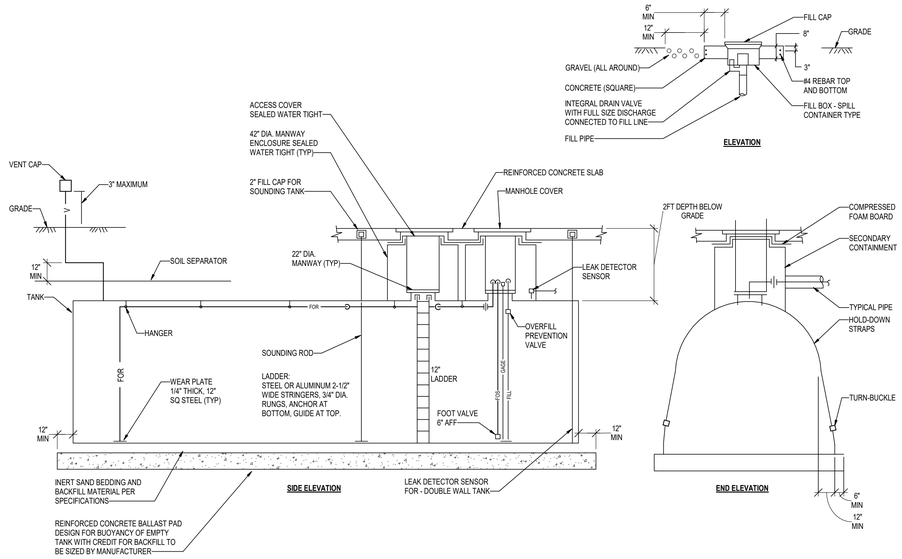
MARK	BASIS OF DESIGN (MANUFACTURER / MODEL)	MATERIAL	CAPACITY (GAL)	DIAMETER	LENGTH	NOTES
UST-1	MODERN / GLASTEEL II	STAINLESS STEEL	5000	8'-0"	13' - 7"	ALL LISTED

1. PROVIDE WITH SUMP AND COLLAR.
2. PROVIDE DOUBLE WALL STORAGE TANK WITH LEAK DETECTION SYSTEM.

DIFFUSER, REGISTER, AND GRILLE SCHEDULE

MARK	BASIS OF DESIGN (MANUFACTURER / MODEL)	MOUNTING	TYPE	FACE SIZE	NECK SIZE	MAX NC	MAX PD (IN/WC)	NOTES
SUPPLY								
SG-1	TITUS / 300FS	DUCT	DBL DEFL GRILLE 3/4" SPACING	24"X10"	23 1/4"X9 1/4"	40	0.20	ALL LISTED
RG-1	TITUS / 350FL	WALL	LOUVERED GRILLE 3/4" SPACING	20"X20"	19 1/4"X19 1/4"	30	0.14	ALL LISTED

1. PROVIDE MANUAL BALANCING DAMPER AT TAP TO MAIN DUCT. IF TAP IS ABOVE INACESSIBLE CEILING, PROVIDE OPPOSED BLADE DAMPER FOR GRILLES AND RADIAL DAMPERS IN DIFFUSERS WITH ROUND NECK AT FACE OF DEVICE.
2. MOUNT DEVICE ON DUCT EITHER VERTICALLY DOWN OR AT 15° DOWN FROM HORIZONTAL. REFER TO PLANS FOR ORIENTATION.
3. FRAME TYPE TO MATCH CEILING OR WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL PLANS AND REFLECTED CEILING PLAN.
4. PROVIDE FACTORY OR SHOP BUILT PLENUM WITH TAP. REFER TO PLANS FOR RUN-OUT SIZE.
5. BRANCH DUCT SIZE SHALL BE SAME AS NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS. 10"x10"-6"Ø = SQUARE TO ROUND FITTING DIMENSIONS.
6. PROVIDE INSULATED PLENUM AND NECK.
7. LINEAR SLOT (2-SLOTS) DIFFUSER. PROVIDE WITH MANUFACTURERS PLENUM AND NECK SIZE AS SCHEDULED.
8. PROVIDE OMNI-AA (ALUMINUM) MODEL IN LOCKER ROOMS.



1 UNDERGROUND FUEL OIL STORAGE TANK 5,000 GALLONS AND LARGER
NOT TO SCALE

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 3:51:40 PM

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED PROFESSIONAL ENGINEER
69943
J. ROSS MYLES
Date Signed 4/22/25
ARIZONA, U.S.A.

DRAWING TITLE
MECHANICAL DETAILS AND SCHEDULES

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE 04/25/25 | CHECKED JD | DRAWN JGH

PROJECT NUMBER
762-24-101

BUILDING NUMBER
CMOP

DRAWING NUMBER
M-501
DRAWING # 26 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

VA FORM 08-6231

POINTS LIST - STANDARD TRENDING INTERVALS

POINT NAME	TREND INTERVAL	OPERATIONAL TREND DURATION	TESTING TREND DURATION
AI	15 MIN.	24 HOURS	3 DAYS
BI	CHANGE OF VALUE	24 HOURS	3 DAYS
AO	15 MIN.	24 HOURS	3 DAYS
BO	CHANGE OF VALUE	24 HOURS	3 DAYS
CALC	1 HOUR	30 DAYS	N/A

NOTES:
1. SEE EQUIPMENT POINT LISTS FOR EQUIPMENT SPECIFIC TRENDING REQUIREMENTS.

PROJECT DESIGN CONDITIONS

CLIMATE CONDITIONS	
WEATHER STATION	2023 HVAC Design Manual / Tucson Intl AP
ASHRAE CLIMATE ZONE	2B
HEATING 99.6% (F DB)	31.6 °F (99.6% F DB)
HUMIDIFICATION 99.6% (DP / HR / MCDB)	-1.2°F / 5.6 / 62.2 °F
COOLING 0.4% (DB / MCWB)	106.0 °FDb / 66.2 °FWb
DEHUMIDIFICATION 0.4% (DP / HR / MCDB)	69.3 °FDb / 118.0 / 76.7 °FWb
MAX. AMBIENT DB TEMP (50 YRS)	110.1 °F
MIN. AMBIENT DB TEMP (50 YRS)	26.1 °F
BUILDING OPERATING HOURS (VERIFY WITH STATION)	
MONDAY - FRIDAY	6:00 a.m. - 12:00 a.m.
SATURDAY	CLOSED
SUNDAY	CLOSED

NOTES:
1. ZONE LEVEL OCCUPANCY HOUR SCHEDULE SHALL BE PER BUILDING OPERATING HOURS UNLESS OTHERWISE SCHEDULED.
2. ZONE LEVEL SET POINT CONDITIONS SHALL BE AS SCHEDULED UNLESS OTHERWISE SCHEDULED OR NOTED FOR ROOM SPECIFIC SPACE CONDITIONS.
3. ZONE LEVEL SET POINT CONDITIONS SHALL RESET TO UNOCCUPIED UNTIL PATIENT ROOM SETPOINTS ARE SATISFIED.
4. DIVISION 23 CONTRACTOR TO PROVIDE ROOM AIR BALANCE WHERE POSSIBLE. AIR BALANCE SHALL BE NEUTRAL FOR NON-CRITICAL SPACES NOT SHOWN IN SCHEDULE.
5. SEE UPS 797 AND UPS 800 FOR ROOM AIR BALANCE INFORMATION.

HVAC DESIGN MANUAL

SPACE / UNIT DESCRIPTIONS	COOLING OCC. °F Db	COOLING UNOCC. °F Db	HEATING OCC. °F Db	HEATING UNOCC. °F Db	HUMIDIFICATION MAX. %RH	HUMIDIFICATION MIN. %RH	MAX. NOISE LEVEL NC	ROOM AIR BALANCE (o) (+) (-) (- -) (+ +)	NOTES
NON-PATIENT ROOMS - MISCELLANEOUS AREAS									
STANDBY GENERATOR ROOM	80	NA	40	NA	NA	NA	NA	(o)	1-4
WALK-IN REFRIGERATOR AND FREEZERS	NA	NA	NA	NA	NA	NA	NA	NA	1-4
WAREHOUSE (CENTRAL) WITH PHARMACY	80	NA	68	NA	60%	NA	45	(o)	1-4

POINTS LIST SCHEDULE - VARIABLE SPEED AIR COMPRESSOR

POINTS NAME	HARDWARE POINTS AI	AO	BI	BO	SOFTWARE POINTS AV	BV	LOOP	SCHED	TREND	ALARM	SHOWN ON GRAPHIC	NOTES
COMPRESSOR												
CA-1 STATUS				X								
CA-2 STATUS				X								
OUTSIDE AIR TEMP		X							X			3,6
MIXED AIR TEMP		X							X			3,4
OUTSIDE AIR DAMPER STATUS				X								
BYPASS AIR DAMPER STATUS				X								
BAS INTERFACE COMM LINK											X	5
DRYER												
AD-1 STATUS				X								
AD-2 STATUS				X								
SYSTEM INFO												
SYSTEM PRESSURE												
SYSTEM AIRFLOW												
SETPOINTS												
EMERGENCY SHUTDOWN					NA							3
SYSTEM PRESSURE SETPOINT					NOTE 2						X	3,6

ALARMS	DESCRIPTION	ALARM	ALARM DELAY	
COMPRESSOR RUNTIME EXCEEDED	COMPRESSOR RUNTIME HAS EXCEEDED A USER DEFINABLE LIMIT.	X	30 MIN.	1,3,6
HIGH DISCHARGE AIR TEMPERATURE	IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 120 F (ADJ.).	X	10 MIN.	1,3
LOW DISCHARGE AIR TEMPERATURE	IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 45 F (ADJ.).	X	10 MIN.	1,3

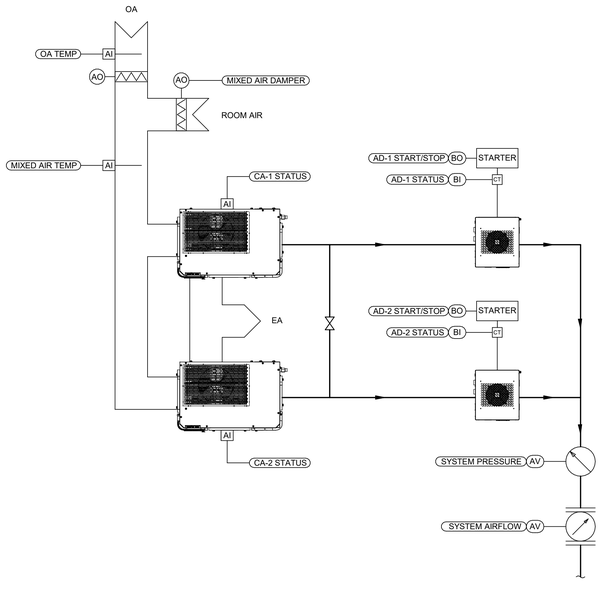
NOTES:
1. SEE STANDARD TRENDING POINTS LIST SCHEDULE ON THIS SHEET FOR APPLICABLE TREND INTERVALS.
2. BACNET BTL INTERFACE COMMUNICATION LINK PROVIDED WITH EQUIPMENT. COORDINATE REQUIREMENTS WITH SECTION 230923 AND TEMPERATURE CONTROL CONTRACTOR.
3. MAPPED CONTROL AND MONITORING THROUGH BACNET COMMUNICATION LINK TO BUILDING MANAGEMENT SYSTEM.
4. VARIABLE SPEED COMPRESSOR TO BE FURNISHED WITH FACTORY INSTALLED CONTROLS. PROVIDE MASTER CONTROLLER WITH BAS INTERFACE.

POINTS LIST SCHEDULE - PACKAGED HEAT PUMP

POINTS NAME	HARDWARE POINTS AI	AO	BI	BO	SOFTWARE POINTS AV	BV	LOOP	SCHED	TREND	ALARM	SHOWN ON GRAPHIC	NOTES
ACU												
FAN SPEED				X					X			3,6
FAN STATUS			X						X			3,6
SA LAT	X								X			3
ZONE TEMPERATURE	X								X		X	3,4
SMOKE DETECTOR			X						X	X		3,6
COMPRESSOR												
COMPRESSOR STAGE 1				X					X			3,6
COMPRESSOR STAGE 2				X					X			3,6
REVERSING VALVE				X					X			3,6
REMOTE START/STOP				X					X			3,4
BAS INTERFACE COMM LINK											X	5
SUPPLEMENTAL HEATING												
SUPP. HTG. STAGE 1				X								
SUPP. HTG. STAGE 2				X								
SETPOINTS												
EMERGENCY SHUTDOWN					NA							3
ZONE HEATING SETPOINT					NOTE 2						X	3,6
ZONE COOLING SETPOINT					NOTE 2						X	3,6

ALARMS	DESCRIPTION	ALARM	ALARM DELAY	
FAN FAILURE	COMMANDED ON, BUT THE STATUS IS OFF.	X	10 MIN.	1,3,6
FAN IN HAND	COMMANDED OFF, BUT THE STATUS IS ON.	X	10 MIN.	1,3
FAN RUNTIME EXCEEDED	FAN RUNTIME HAS EXCEEDED A USER DEFINABLE LIMIT.	X	10 MIN.	1,3,6
COMPRESSOR RUNTIME EXCEEDED	COMPRESSOR RUNTIME HAS EXCEEDED A USER DEFINABLE LIMIT.	X	10 MIN.	1,3,6
HIGH DISCHARGE AIR TEMPERATURE	IF THE DISCHARGE AIR TEMPERATURE IS GREATER THAN 115 F (ADJ.).	X	10 MIN.	1,3
LOW DISCHARGE AIR TEMPERATURE	IF THE DISCHARGE AIR TEMPERATURE IS LESS THAN 45 F (ADJ.).	X	10 MIN.	1,3
HIGH ZONE TEMPERATURE	IF THE ZONE TEMPERATURE IS GREATER THAN THE COOLING SETPOINT BY 5 F (ADJ.).	X	10 MIN.	1,3,6
LOW ZONE TEMPERATURE	IF THE ZONE TEMPERATURE IS LESS THAN THE HEATING SETPOINT BY 5 F (ADJ.).	X	10 MIN.	1,3,6
FILTER CHANGE REQUIRED	FILTER USE HAS EXCEEDED A USER DEFINABLE LIMIT.	X	10 MIN.	1,3,6

NOTES:
1. SEE STANDARD TRENDING POINTS LIST SCHEDULE ON THIS SHEET FOR APPLICABLE TREND INTERVALS.
2. SEE PROJECT DESIGN CONDITIONS SCHEDULE ON THIS SHEET FOR APPLICABLE SETPOINTS.
3. UNIT FURNISHED WITH FACTORY INSTALLED CONTROLS. COORDINATE CONTROLLER WITH UNIT MANUFACTURER.
4. TCC FIELD INSTALLED DEVICE. SEE PLANS FOR LOCATION.
5. BACNET BTL INTERFACE COMMUNICATION LINK PROVIDED WITH EQUIPMENT. COORDINATE REQUIREMENTS WITH SECTION 230923 AND TEMPERATURE CONTROL CONTRACTOR.
6. MAPPED CONTROL AND MONITORING THROUGH BACNET COMMUNICATION LINK TO BUILDING MANAGEMENT SYSTEM.



NOTES:
1. PRESSURE SENSOR TO BE INSTALLED DOWNSTREAM OF NEW REGULATOR.
2. BAS CONTROLLER INTERFACE TO EXISTING SYSTEM BY CONTROLS CONTRACTOR.
3. ALL CONTROL WIRING AND SENSORS NOT INTEGRAL TO EQUIPMENT BY CONTROLS CONTRACTOR.

2 VARIABLE SPEED COMPRESSORS (N+1) CONTROLS DIAGRAM
NTS

SEQUENCE OF OPERATIONS
VARIABLE SPEED COMPRESSOR (N+1)

GENERAL DESCRIPTION
The two (2) variable speed air compressors shall maintain the system pressure of the facility's compressed air system with . Outside air will be ducted to each air compressor for compressor ventilation. Exhaust from each air compressor will be routed up and out of the building.

VENTILATION AIR CONTROLS

DAMPERS
The outside air damper shall be normally close and open when CA-1 or CA-2 are in operation. At outside air temperatures exceeding 95°F, the emergency bypass damper shall open to 50%.

SAFETIES, OVERRIDES, AND INTERLOCKS
REMOTE SHUTDOWN
The unit shall shut down and generate an alarm upon receiving a remote shutdown signal indicating the unit has been taken offline.

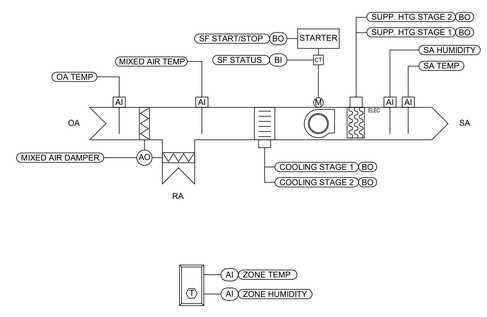
COMPONENT CONTROLS

Each compressor shall operate subject to the integrated factory digital controls (DDC) system.

AIR COMPRESSOR: A single variable speed compress shall maintain the user's pressure setpoint at a given time. Compressors shall be programmed for run times as set by the owner. Factory controller and sequences provided by manufacturer to meet demand the airflow.

AIR DRYER: Provide status for each dryer. Factory controller and sequences provided by manufacturer to meet demand the airflow.

VENTILATION TEMPERATURE MONITORING
The building automation system shall monitor the entering air temperature into the air compressors thru temperature sensor with adjustable alarm settings for high limit and low limit temperature settings. The alarm shall be annunciated at the operator's workstation with graphical interface or send an alert to the COR thru the BAS.



NOTES:
1. WALL MOUNTED WIRELESS THERMOSTAT PROVIDED WITH UNIT
2. PROVIDE BACNET INTERFACE ADAPTER WITH FAN COIL UNIT
3. BAS CONTROLLER INTERFACE TO OPERATOR'S WORK STATION PROVIDED BY TEMP. CONTROL CONTRACTOR
4. FAN COIL CONTROL WIRING (PROVIDED WITH UNIT INSTALLED BY MECHANICAL CONTRACTOR)

1 PACKAGED HEAT PUMP TYPICAL CONTROL DIAGRAM
NTS

SEQUENCE OF OPERATIONS
PACKAGED HEAT PUMP

GENERAL DESCRIPTION
The packaged heat pump consists of an indoor fan coil unit (ACU) and outdoor condensing unit (CU). The fan coil unit with 3-speed fan motor, a direct expansion (DX) coil and supplemental electric heater provides cooling and heating for the conditioned space shown on the drawings. The unit shall operate subject to a space temperature sensor with digital display.

OPERATING MODES

HEATING MODE
A call for heating from the zone level establishes a call for heating. Initial setpoints are as scheduled in the points list unless otherwise shown on the project design conditions schedule. At temperatures below 47 °F, two stage supplemental electric heat shall be used for heating.

COOLING MODE
A call for cooling from the zone level establishes a call for cooling. Initial setpoints are as scheduled in the points list unless otherwise shown on the project design conditions schedule.

SAFETIES, OVERRIDES, AND INTERLOCKS
REMOTE SHUTDOWN
The unit shall shut down and generate an alarm upon receiving a remote shutdown signal indicating the unit has been taken offline.

COMPONENT CONTROLS

The condenser shall operate subject to the integrated factory digital controls (DDC) system.

FAN: The fan switch shall be set to auto with the fan speed shall be auto or as note in the equipment schedule.

FILTER MONITORING: The controller shall monitor the fan runtime to provide maintenance reminder at 50% of filter elapsed time (1100 hours) and an alarm at 100% elapsed time (2200 hours).

DAMPERS: The outside air damper shall be set to minimum outside air position per TAB and open when the fan is energizes. Outside damper shall remain closed when the fan is off.

SPACE TEMPERATURE MONITORING (TS-X)
The building automation system shall monitor the spaces served with a space temperature sensor with adjustable alarm settings for high limit and low limit temperature settings. The alarm shall be annunciated at the operator's workstation with graphical interface.

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 3:51:40 PM

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED PROFESSIONAL ENGINEER
69943
J. ROSS MYLES
ARIZONA, U.S.A.

DRAWING TITLE
MECHANICAL CONTROLS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE 04/25/25 | CHECKED JD | DRAWN JGH

PROJECT NUMBER
762-24-101

BUILDING NUMBER
CMOP

DRAWING NUMBER
M-701
DRAWING # 27 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

VA FORM 08-6231

ABBREVIATIONS

#	
1P	SINGLE-POLE
1PH	SINGLE-PHASE
3P	THREE-POLE
3PH	THREE-PHASE
3W	THREE-WIRE
4W	FOUR-WIRE
A	
A OR AMP	AMPERE
A/C	AIR CONDITIONING
A/E	ARCHITECT/ENGINEER
AAP	ALARM ANNUNCIATOR PANEL
AC	ALTERNATING CURRENT OR ARMORED CABLE
ACC	ACCESSIBLE
ADDL	ADDITIONAL
ADJ	ADJACENT, ADJOINING
ADO	AUTOMATIC DOOR OPENER
AF	AMPERE FRAME OR AMP FUSE
AFC	ABOVE FINISHED COUNTER, OR AUTOMATIC FREQUENCY CONTROL, OR AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AH	AMPERE HOUR
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
AIP	ABANDONED IN PLACE
ALT	ALTERNATE
AMB	AMBIENT
ARCH	ARCHITECT
ASC	AMPS SHORT CIRCUIT
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AV	AUDIO VISUAL
B	
BAT	BATTERY
BC	BARE COPPER
BD	BOARD
BFF	BELOW FINISH FLOOR
BIL	BASIC INSULATION LEVEL
BLDG	BUILDING
BLK	BLOCK
BPIP	BOILER PLANT INSTRUMENTATION PANEL
BRKR	BREAKER
BYP	BY-PASS
C	
C	CONDUIT
CAP	CAPACITY
CAT	CATALOG
CATV	COMMUNITY ANTENNA TELEVISION
CCR	CONTROL CONTACTOR
CCTV	CLOSED CIRCUIT TELEVISION
CD	CONSTRUCTION DOCUMENTS OR CANDELA
CF	CONTRACTOR FURNISHED
CF/CI	CONTRACTOR FURNISHED / CONTRACTOR INSTALLED
CF/OI	CONTRACTOR FURNISHED / OWNER INSTALLED
CFE	CONTRACTOR FURNISHED EQUIPMENT
CHW	CHILLED WATER
CHWP	CHILLED WATER PUMP
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COAX	COAXIAL CABLE
COMM	COMMUNICATION
CONC	CONCRETE
CONT	CONTINUED
CONTR	CONTRACTOR
COORD	COORDINATE
CPT	CONTROL POWER TRANSFORMER
CRI	COLOR RENDERING INDEX
CT	CURRENT TRANSFORMER
CTV	CABLE TELEVISION
CU	COPPER
CU FT	CUBIC FEET
CVD	CUMULATIVE VOLTAGE DROP
D	
DB	DECIBEL OR DIRECT BURIAL
DC	DIRECT CURRENT
DCP	DIMMER CONTROL PANEL
DEG C	DEGREES CELSIUS
DEG F	DEGREES FAHRENHEIT
DEMO	DEMOLITION
DIAG	DIAGRAM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DN	DOWN
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DRSW	DOOR SWITCH
DS	DISCONNECT SWITCH
DWG	DRAWING
E	
EC	EMPTY CONDUIT
EG	EQUIPMENT GROUND
EL	ELEVATION

E (CONTINUED)	
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EMCP	EMER. MONITORING CONTROL PANEL
EMER	EMERGENCY
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
ESMT	EASEMENT
ETD	EXISTING TO BE DEMOLISHED
ETR	EXISTING TO REMAIN
ETL	EXISTING TO BE RELOCATED
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
F	
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FABL	FIRE ALARM BELL
FABX	FIRE ALARM BOX
FACP	FIRE ALARM CONTROL PANEL
FC	FOOTCANDLE
FI	FILM ILLUMINATOR
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLEX	FLEXIBLE METALLIC CONDUIT
FLUOR	FLUORESCENT
FO	FIBER-OPTIC
FP	FIRE PROTECTION
FT	FEET OR FOOT
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
G	
G	GROUND OR GENERATOR
GND	GROUND
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GTB	GROUND TERMINAL BOX
H	
HCM	HORIZONTAL CABLE MANAGER
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HT	HEIGHT
HZ	HERTZ
I	
IC	INSULATION CONTACT
IESNA	ILLUMINATION ENGINEERING SOCIETY OF NORTH AMERICA
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
INCAND	INCANDESCENT
IR	INFRARED
IWH	INSTANTANEOUS WATER HEATER
J	
JB OR J-BOX	JUNCTION BOX
K	
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KVAH	KILOVOLT-AMPERE-HOUR
KVAR	KILOVOLT-AMPERE-REACTIVE
KW	KILOWATT
KWH	KILOWATT-HOUR
KWHM	KILOWATT-HOUR METER
L	
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET (FOOT)
LM	LUMEN
LP	LIGHT POLE
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPS
LT	LIGHT
LTCP	LOCAL TEMPERATURE CONTROL PANEL
LTG	LIGHTING
LTNG	LIGHTNING
LV	LOW VOLTAGE
M	
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MC	METAL-CLAD
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MECH	MECHANICAL
MG	MOTOR GENERATOR
MH	MANHOLE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MT	MOUNT
MTD	MOUNTED
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH

M (CONTINUED)	
MV	MEDIUM VOLTAGE
MVA	MEGAVOLT-AMPERE
MW	MEGAWATT
N	
N	NEUTRAL
NA	NOT APPLICABLE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NS	NO SCALE
NTS	NOT TO SCALE
O	
OC	ON CENTER
OD	OUTSIDE DIAMETER
OL	OVERLOAD
P	
P	POLE
PA	PUBLIC ADDRESS
PB	PANELBOARD, OR PULL BOX, OR PUSHBUTTON
PBPU	PREFABRICATED BEDSIDE PATIENT UNIT
PCB	POLYCHLORINATED BIPHENYL
PEC	PHOTOELECTRIC CELL
PED	PEDESTAL
PEND	PENDANT
PF	POWER FACTOR
PH	PHASE
PNL	PANEL
PNLBD	PANELBOARD
POD	POWER OPERATED DAMPER
POE	POWER OVER ETHERNET
PP	PATCH PANEL
PT	POTENTIAL TRANSFORMER
PTRV	POWER TYPE ROOF VENTILATION
PVC	POLYVINYL CHLORIDE (PLASTIC)
PWR	POWER
R	
RCP	REFLECTED CEILING PLAN
RCPT	RECEPTACLE
REC	RECESSED
RELO	RELOCATED
REQD	REQUIRED
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMS	ROOT MEAN SQUARE
RU	RACK UNIT
S	
SCC	SHORT CIRCUIT CAPACITY
SD	SMOKE DETECTOR
SES	SERVICE ENTRANCE SECTION
SF	SQUARE FEET (FOOT)
SHT	SHEET
SI	INTERNATIONAL SYSTEM OF UNITS
SPEC	SPECIFICATION
SPST	SINGLE POLE, SINGLE THROW
SURF	SURFACE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
T	
TC	TIME CLOCK
TEL	TELEPHONE
TP	TWISTED PAIR
TPS	TWISTED PAIR SHIELDED
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
U	
UFD	UNDERFLOOR DUCT
UGND	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
V	
V	VOLT
VA	VOLT-AMPERE
VAR	VOLT-AMPERE-REACTIVE
VCM	VERTICAL CABLE MANAGER
VFD	VARIABLE FREQUENCY DRIVE
W	
W	WATT
WH	WATER HEATER
WP	WEATHERPROOF
X	
XFER	TRANSFER
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

ANNOTATION

- 1 — MECHANICAL OR FIRE SPRINKLER PLAN NOTE CALL OUT
- 1 — PLUMBING PLAN NOTE CALL OUT
- 1 — ELECTRICAL, TECHNOLOGY, OR FIRE ALARM PLAN NOTE CALL OUT
- 1 — OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT DESIGNATION
- 1 — PLUMBING EQUIPMENT DESIGNATION
- 1 — EQUIPMENT DESIGNATION TAG
- NEW WORK TO EXISTING WORK CONNECTION POINT
- 1 EP-101 — DETAIL REFERENCE
- 1 EP-101 — SECTION CUT DESIGNATION

STANDARD MOUNTING HEIGHTS

ELECTRICAL: (AFF, AFG UNLESS NOTED OTHERWISE)

AUDIBLE APPLIANCES (CENTERLINE)	84"
ALARMS (TOP)	48"
ANNUNCIATOR PANELS (TOP)	48"
CLOCK OUTLETS (CENTERLINE)	84"
CONTROLS (TOP)	48"
EXIT SIGNS (WALL-MOUNTED, BOTTOM)	80"
FIRE ALARM ANNUNCIATOR PANEL (DISPLAY)	60"
FIRE ALARM BELL (EXTERIOR)	120"
FIRE ALARM CONTROL PANEL/UNIT (DISPLAY)	60"
GROUND BAR	72"
INTERCOM (AFEA ONLY)	36"
INTERCOMS (TOP)	48"
PANELS & PANELBOARDS (TOP)	72"
PULL STATIONS (TOP)	48"
PHOTOCELLS	144"
RECEPTACLES (BOTTOM)	18"
RECEPTACLES, EXTERIOR (BOTTOM)	24"
RECEPTACLES, GARAGES (BOTTOM)	26"
RECEPTACLES IN EQUIPMENT ROOMS (TOP)	48"
RECEPTACLES ABOVE COUNTERTOPS (TOP)	44"
REMOTE INDICATING LIGHT, EQUIPMENT ROOMS (TOP)	48"
REMOTE INDICATING LIGHT, FINISHED AREAS (TOP)	CEILING
SAFETY SWITCHES & STARTERS	48"
SWITCHES (TOP)	48"
TELEPHONE/DATA/TV OUTLETS (BOTTOM)	18"
VISIBLE APPLIANCES (CENTERLINE)	84"

CIRCUITING SYMBOLS

- L P1 1,3,5 — HOMERUN TO PANELBOARD. TICK MARKS INDICATE NUMBER OF CONDUCTORS. DESIGNATIONS ARE PANELBOARD AND CIRCUIT NUMBERS.
- UNSWITCHED HOT CONDUCTORS SHOWN LEADING NEUTRAL CONDUCTOR
- NEUTRAL CONDUCTOR
- SWITCHED HOT CONDUCTORS SHOWN TRAILING GROUND CONDUCTOR
- EQUIPMENT GROUNDING CONDUCTOR IN RACEWAY
- ISOLATED GROUNDING CONDUCTOR IN RACEWAY
- CONCEALED RACEWAY
- EXPOSED RACEWAY
- RACEWAY TURNING UP
- RACEWAY TURNING DOWN
- EQUIPMENT TERMINATION
- LOW VOLTAGE CABLE (NOT ROUTED IN CONDUIT)
- UE — UNDERGROUND ELECTRIC LINE
- OE — OVERHEAD ELECTRIC LINE

WIRING DEVICE SYMBOLS

- RECEPTACLE, SIMPLEX, NEMA 5-20R, UNO
- RECEPTACLE, DUPLEX, NEMA 5-20R, UNO
- RECEPTACLE, DOUBLE-DUPLEX, NEMA 5-20R, UNO
- RECEPTACLE, MOUNTED 6" ABOVE COUNTER, TYPE AS INDICATED ABOVE
- OR GF — RECEPTACLE, DUPLEX, GROUND-FAULT CIRCUIT INTERRUPTER, NEMA 5-20R, UNO
- RECEPTACLE, DUPLEX, CEILING MOUNTED, NEMA 5-20R, UNO
- RECEPTACLE, DUPLEX, DROP CORD, NEMA 5-20R, UNO
- RECEPTACLE, DUPLEX, FLOOR MOUNTED, NEMA 5-20R, UNO
- RECEPTACLE, TWIST-LOCK
- RECEPTACLE, SPECIAL PURPOSE
- MULTI-OUTLET, SURFACE RACEWAY, 24" ON CENTER, NEMA 5-20R, UNO
- # — RECEPTACLE DESIGNATIONS AS FOLLOWS:
  - C = CLOCK HANGER
  - E = EMERGENCY POWER
  - GF = GROUND FAULT CIRCUIT INTERRUPTER
  - IG = ISOLATED GROUND
  - S = SWITCHED
  - TR = TAMPER RESITANT
  - WP = WEATHER PROOF COVER
  - WR = WEATHER RESISTANT
  - XP = EXPLOSION PROOF
- # — MULTI-SERVICE POWER POLE WITH POWER/DATA, TYPE AS NOTED AND/OR SCHEDULED
- # — MULTI-SERVICE FLOOR BOX/POKE-THRU WITH POWER/DATA, TYPE AS NOTED AND/OR SCHEDULED
- RECEPTACLE ON EMERGENCY POWER
- RECEPTACLE, ISOLATED GROUND TYPE
- $ — SWITCH, SINGLE POLE
- $# — SWITCH DESIGNATIONS AS FOLLOWS:
  - 2 = TWO-POLE WALL SWITCH
  - 3 = THREE-WAY WALL SWITCH
  - 4 = FOUR-WAY WALL SWITCH
  - D = DIMMER SWITCH
  - OS# = OCCUPANCY SENSOR WALL SWITCH, REFER TO OCCUPANCY SENSOR AND SWITCH SCHEDULE
  - P = SINGLE-POLE, SINGLE-THROW PILOT LIGHT WALL SWITCH
  - K = KEYED WALL SWITCH
  - M = MOTOR RATED SWITCH
  - WP = WEATHER PROOF SWITCH AND COVER
- # — OCCUPANCY SENSOR, CEILING MOUNTED
  - OS# = CEILING MOUNTED OCCUPANCY SENSOR, REFER TO OCCUPANCY SENSOR AND SWITCH SCHEDULE
- PP # — POWER PACK FOR LIGHTING CONTROL
- ES — EMERGENCY SHUNT RELAY
- J — JUNCTION BOX
- PUSH BUTTON, TYPE AS NOTED
- EPO — MUSHROOM TYPE PUSH BUTTON, TYPE AS NOTED

POWER EQUIPMENT SYMBOLS

- SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION PANELBOARD ON HOUSEKEEPING PAD
- PANELBOARD, RECESS MOUNTED
- PANELBOARD, SURFACE MOUNTED
- CABINET, RECESS MOUNTED
- CABINET, SURFACE MOUNTED
- TRANSFORMER
- T — LOW-VOLTAGE TRANSFORMER
- 100/3 — DISCONNECT SWITCH, NON-FUSED, 100/3 INDICATES AMPERES/POLES, CB = CIRCUIT BREAKER TYPE
- 100/3/70 — DISCONNECT SWITCH, FUSED, 100/3/70 INDICATES AMPERES/POLES/FUSE, CB = CIRCUIT BREAKER TYPE
- 100/3/70/1 — COMBINATION DISCONNECT SWITCH WITH MOTOR STARTER 100/3/70/1 INDICATES AMPERES/POLES/FUSE/ NEMA STARTER SIZE, NF = NON-FUSED, CB = CIRCUIT BREAKER TYPE
- 100/3/CB — VARIABLE FREQUENCY DRIVE WITH DISCONNECT SWITCH 100/3/70 INDICATES AMPERES/POLES/FUSE SIZE, NF = NON-FUSED, CB = CIRCUIT BREAKER TYPE
- 2 — MAGNETIC MOTOR STARTER, NEMA SIZE AS NOTED, 3-POLE, UNO
- C — CONTACTOR
- PC — PHOTOCELL
- R — RELAY
- TS — TIME SWITCH
- 600AF 500AT 3P — CIRCUIT BREAKER, RATINGS AS INDICATED

LIGHTING SYMBOLS

- A1 a — LIGHT FIXTURE, CEILING MOUNTED
  - A1 = LIGHT FIXTURE TYPE "A1E" REFER TO LIGHT FIXTURE SCHEDULE
  - a = SWITCHED BY SWITCH "a"
  - NL = NIGHT LIGHT
  - = ARROW INDICATES AIMING DIRECTION
- A1 a — LIGHTING TRACK WITH TRACK LIGHT FIXTURES
  - A1E = LIGHT FIXTURE TYPE "A1E" REFER TO LIGHT FIXTURE SCHEDULE
  - a = SWITCHED BY SWITCH "a"
- A1E a — EMERGENCY LIGHT FIXTURE, CEILING MOUNTED
  - A1E = LIGHT FIXTURE TYPE "A1E" REFER TO LIGHT FIXTURE SCHEDULE
  - a = SWITCHED BY SWITCH "a"
  - NL = NIGHT LIGHT
- X1E — EXIT SIGN, CEILING MOUNTED, FACE/ARROWS AS INDICATED
  - X1E = LIGHT FIXTURE TYPE "X1E" REFER TO LIGHT FIXTURE SCHEDULE
- X1E — EXIT SIGN, WALL MOUNTED, FACE/ARROWS AS INDICATED
  - X1E = LIGHT FIXTURE TYPE "X1E" REFER TO LIGHT FIXTURE SCHEDULE
- Y1E — EMERGENCY BATTERY PACK LIGHT FIXTURE, CEILING MOUNTED
  - Y1E = LIGHT FIXTURE TYPE "Y1E" REFER TO LIGHT FIXTURE SCHEDULE
- Y1E — EMERGENCY BATTERY PACK LIGHT FIXTURE, WALL MOUNTED
  - Y1E = LIGHT FIXTURE TYPE "Y1E" REFER TO LIGHT FIXTURE SCHEDULe
- A1 — LIGHT FIXTURE, WALL MOUNTED
  - A1 = LIGHT FIXTURE TYPE "A1" REFER TO LIGHT FIXTURE SCHEDULE
- OR A1 — LIGHT FIXTURE, BOLLARD
  - A1 = LIGHT FIXTURE TYPE "A1" REFER TO LIGHT FIXTURE SCHEDULE
- OR A1 — LIGHT FIXTURE, POLE MOUNTED
  - A1 = LIGHT FIXTURE TYPE "A1" REFER TO LIGHT FIXTURE SCHEDULE

LIGHTNING PROTECTION SYMBOLS

- LIGHTNING PROTECTION AIR TERMINAL
- LIGHTNING PROTECTION CABLE CONNECTION
- LIGHTNING PROTECTION GROUND ROD
- LIGHTNING PROTECTION CONDUCTOR

ELECTRICAL ONE-LINE DIAGRAM SYMBOLS

- 275KW STANDBY 480Y/277V, 3PH, 4W 400A/3P E/G — GENERATOR, SEPARATELY DERIVED SOURCE, TYPE AND RATINGS AS INDICATED
- 275KW STANDBY 480Y/277V, 3PH, 4W 400A/3P E/G — GENERATOR, NON-SEPARATELY DERIVED SOURCE, TYPE AND RATINGS AS INDICATED
- ATS# 200A 3P — TRANSFER SWITCH, RATINGS AS INDICATED
  - ATS = AUTOMATIC TRANSFER SWITCH
  - MTS = MANUAL TRANSFER SWITCH
- ATS# 200A 3P — AUTOMATIC TRANSFER SWITCH WITH BYPASS TYPE AND RATINGS AS INDICATED
- TX# — TRANSFORMER
- TX# — TRANSFORMER, SHIELDED
- PANELBOARD, SINGLE-SECTION, RATINGS PER SCHEDULES
- PANELBOARD, MULTI-SECTION, RATINGS PER SCHEDULES
- 600AF 500AT 3P — DRAWOUT CIRCUIT BREAKER, RATINGS AS INDICATED
- 600AF 500AT 3P — CIRCUIT BREAKER, RATINGS AS INDICATED
- 400AS 3P 225AF LPS-R — FUSED DISCONNECT SWITCH, RATINGS AS INDICATED
- 400AS 3P 225AF LPS-R NEMA 1 — COMBINATION FUSED SWITCH AND STARTER, RATINGS AS INDICATED
- 225A 3P NEMA 1 — COMBINATION CIRCUIT BREAKER AND STARTER, RATINGS AS INDICATED
- 225A 3P — VARIABLE FREQUENCY DRIVE WITH DISCONNECT, RATINGS AS INDICATED
- CAPACITOR
- #### — FEEDER TAG
- CONTACT, CLOSED
- GFR — GROUND-FAULT RELAY
- CONTACT, OPEN
- KK — KIRK-KEY INTERLOCK
- CURRENT TRANSFORMER
- ST — SHUNT-TRIP RELAY
- HEATER
- SPD — SURGE PROTECTION DEVICE
- SURGE ARRESTER
- AM — AMMETER
- POTENTIAL TRANSFORMER
- DM — COMBINATION DIGITAL AMMETER/VOLTMETER
- GROUND CONNECTION
- M — UTILITY METER
- GROUND CONNECTION WITH TEST WELL
- VM — VOLTMETER
- # — MOTOR
- R — RELAY
- 200A DEAD-FRONT ELBOW
- DEAD-FRONT SPLITTER
- 600A DEAD-FRONT ELBOW
- FAULT INDICATOR

GENERAL NOTES

A. ELECTRICAL PLANS AND SECTIONS ARE INTENDED TO ACCURATELY ILLUSTRATE THE SCOPE OF WORK, BUT ARE STILL DIAGRAMMATIC IN NATURE.

B. ELECTRICAL DRAWINGS DO NOT SHOW ALL ACCESSORIES TO BE INSTALLED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SYSTEMS ARE FULLY FUNCTIONAL AND COMPLIANT WITH APPLICABLE CODES.

C. ELECTRICAL DRAWINGS REFLECT COORDINATION EFFORTS WITH BUILDING DISCIPLINES. HOWEVER, COORDINATION WITH OTHER TRADES IS REQUIRED.

D. REFERENCE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING SCHEDULE AND PHASING REQUIREMENTS. SCHEDULE WORK TO MINIMIZE DISRUPTION OF SERVICES.

E. COORDINATE WITH SCHEDULE WITH THE CONTRACTING OFFICER'S REPRESENTATIVE BEFORE THE START OF WORK.

F. PANELBOARDS AND OTHER ELECTRICAL EQUIPMENT REQUIRE SHUTDOWN. COORDINATE SERVICE SHUTDOWN FOR ALL EQUIPMENT WITH THE CONTRACTING OFFICER'S REPRESENTATIVE.

G. MULTI-GANG BACKBOXES FOR DIFFERENT VOLTAGES AND TYPES OF EMERGENCY AND NORMAL BRANCH WIRING DEVICES SHALL HAVE DIVIDERS BETWEEN DEVICES.

H. UPDATE ALL PANELBOARD SCHEDULES AFFECTED AT THE COMPLETION OF THE PROJECT.

I. IF FIELD CONDITIONS VARY FROM THE DRAWINGS, THE CONTRACTOR SHALL DOCUMENT THE VARIATION AND REPORT IT TO THE GENERAL CONTRACTOR FOR RESOLUTION WITH THE ENGINEER OF RECORD.

PROJECT CODES AND STANDARDS

A. ARCHITECTURAL BARRIERS ACT (ABA) STANDARDS 2015

B. VA PG-18-13 VA BARRIER FREE DESIGN STANDARD 2018 (SUPPLEMENT TO ABA STANDARDS)

C. ASHRAE STANDARD 90.1-2019 – ENERGY STANDARD FOR BUILDINGS EXCEPT LOW RISE RESIDENTIAL BUILDINGS

D. IBC 2024 – INTERNATIONAL BUILDING CODE

E. IEBC 2024 – INTERNATIONAL EXISTING BUILDING CODE

F. IECC 2021 – INTERNATIONAL ENERGY CONSERVATION CODE

G. JCAHO EC 7.40 – EMERGENCY ELECTRICAL POWER SYSTEM INSPECTION, MAINTENANCE, AND TESTING

H. NFPA 70-2023 - NATIONAL ELECTRICAL CODE (NEC)

I. NFPA 99-2024 – HEALTH CARE FACILITIES CODE

J. NFPA 101-2024 – LIFE SAFETY CODE

K. NFPA 110-2022 – STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS

L. VA PG-18-10 ELECTRICAL DESIGN MANUAL, DECEMBER 2019

M. VA H-18-8 SEISMIC DESIGN REQUIREMENTS

N. VA PHYSICAL SECURITY & RESILIENCY DESIGN MANUAL 2020 (1 MAY 24 REVISION)

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 2:00:24 PM

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

Registered Professional Engineer (Electrical) CERTIFICATE NO. 78600 SORDIASHE Date Signed 4-25-2025 ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL LEGEND AND ABBREVIATIONS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED ES | DRAWN IGM

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER **E-001**

DRAWING # 28 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

GENERAL NOTES:

A. ELECTRICAL DRAWINGS DO NOT SHOW ALL ACCESSORIES TO BE INSTALLED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SYSTEMS ARE FULLY FUNCTIONAL AND COMPLIANT WITH APPLICABLE CODES.

B. ELECTRICAL DRAWINGS REFLECT COORDINATION EFFORTS WITH OTHER DISCIPLINES. HOWEVER, COORDINATION WITH OTHER TRADES ARE REQUIRED.

C. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW GENERAL NOTES AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY THE CONTRACTING OFFICER'S REPRESENTATIVE (COR) OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

D. REFER TO ONE-LINE DRAWING SHEETS FOR ADDITIONAL NOTES.

E. SHADED AREAS ARE OUT OF PROJECT SCOPE.

F. NO WORK ON ENERGIZED EQUIPMENT IS PERMITTED BY VA DIRECTIVE.

G. REFER TO SHEET GI000 FOR CONTRACT ADD/DEDUCT ITEMS

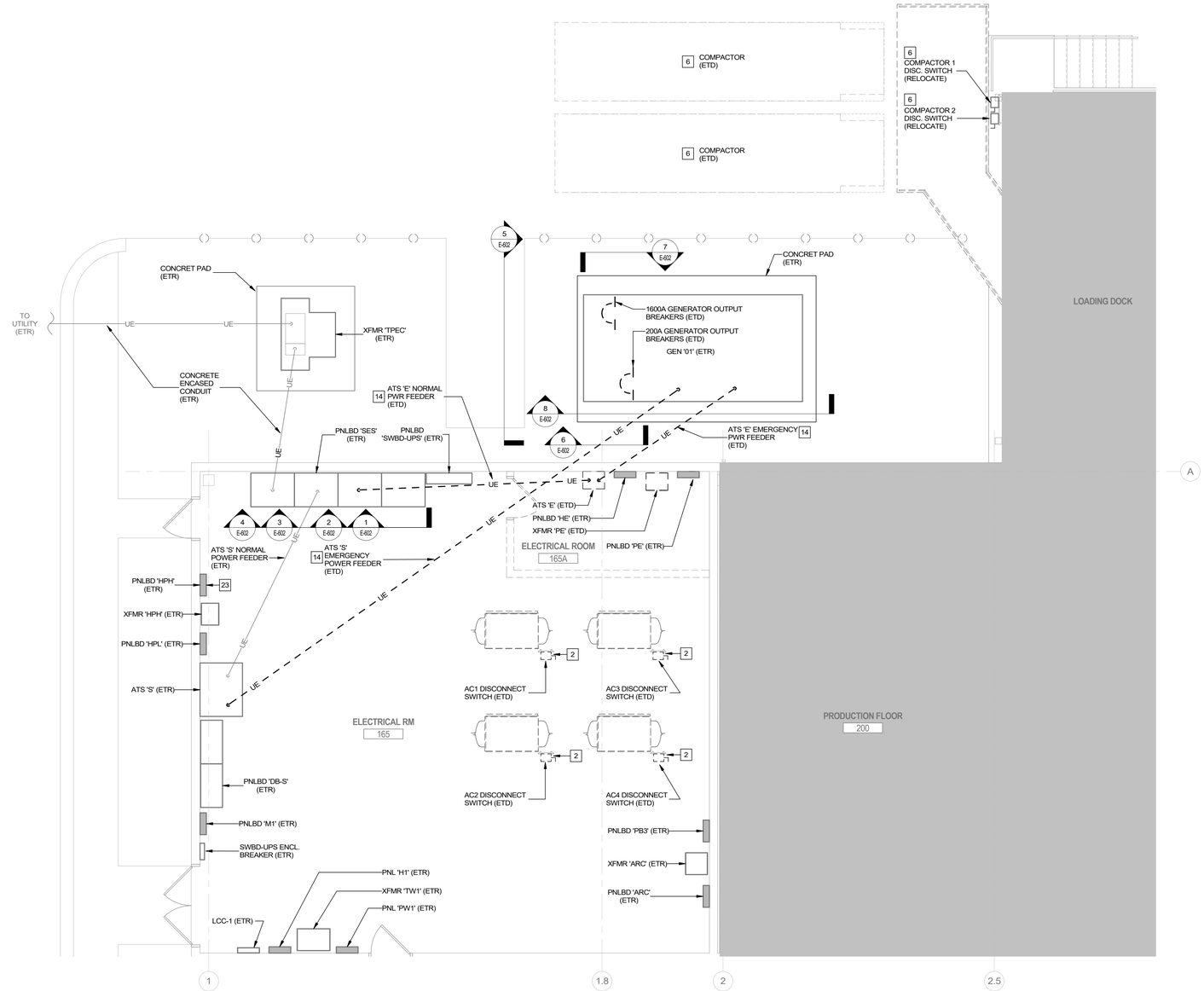
ELECTRICAL KEYNOTES

2 DE-ENERGIZE, DISCONNECT, AND REMOVE EXISTING DISCONNECT SWITCH FOR AIR COMPRESSOR. REMOVE ASSOCIATED UPSTREAM CONDUIT AND CONDUCTORS BACK TO PANELBOARD PB3. THIS WORK IS PART OF BID ALT #3.

6 DE-ENERGIZE, DISCONNECT, AND REMOVE 30A, 480V, 3PH DISCONNECT SWITCH ES FOR TRASH COMPACTORS. REMOVE CONDUCTORS AND CONDUIT TO THE NEAREST ACCEPTABLE POINT (J-BOX/COUPLING). REINSTALL EXISTING DISCONNECT SWITCHES AS SHOWN ON EP102.

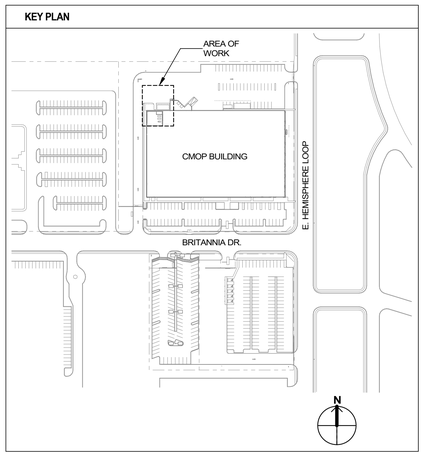
14 EXISTING EES CIRCUITS, CONTROLS, AND EQUIPMENT SHALL REMAIN IN PLACE UNTIL NEW OR TEMPORARY EMERGENCY POWER HAS BEEN PROVIDED. ELECTRICAL CONTRACTOR SHALL SUBMIT CUT OVER PLAN TO THE VA FOR APPROVAL. REMOVE ALL CABLES, CUT CONDUITS FLUSH WITH CONCRETE, GROUT FULL.

23 REMOVE EXISTING CONDUCTORS AND CONDUIT FROM PNLBD 'HPH' TO EXISTING SWBD SES.



1 ENLARGED ELECTRICAL POWER DEMOLITION PLAN
1/4" = 1'-0"

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 2:00:26 PM

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Electrical) CERTIFICATE NO. 78600 SUDHAKAR SORDIASHIE Date Signed 4-25-25 ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL POWER DEMOLITION PLAN

VA HEALTH CARE SYSTEM APPROVAL:

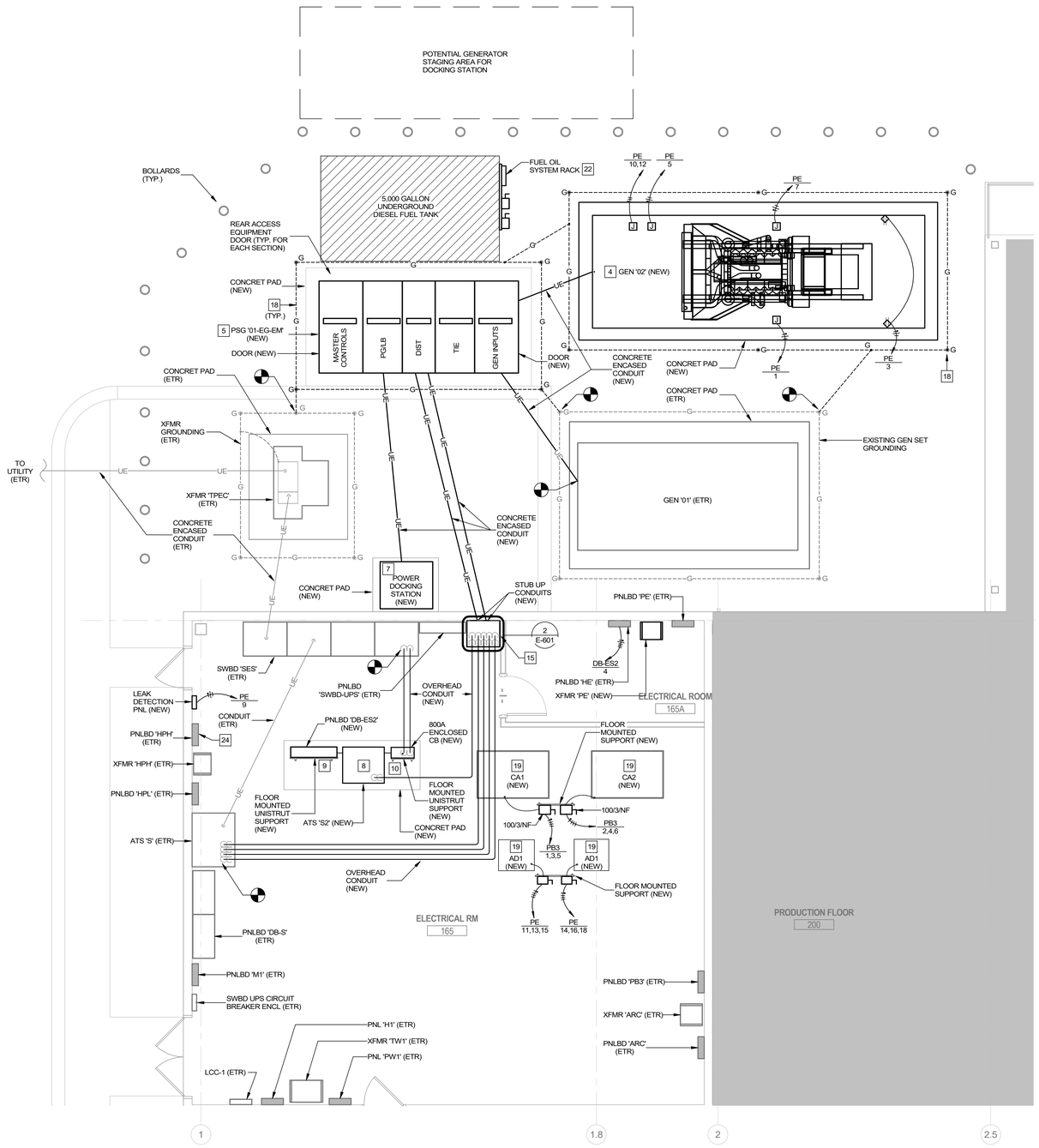
PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED ES | DRAWN IGM

PROJECT NUMBER **762-24-101**
BUILDING NUMBER CMOP
DRAWING NUMBER **ED101**
DRAWING # 29 OF 40

Veterans Health Administration
VA U.S. Department of Veterans Affairs



1 ENLARGED ELECTRICAL POWER PLAN - ESSENTIAL ELECTRICAL GEAR
1/4" = 1'-0"

GENERAL NOTES:

A. ELECTRICAL DRAWINGS DO NOT SHOW ALL ACCESSORIES TO BE INSTALLED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SYSTEMS ARE FULLY FUNCTIONAL AND COMPLIANT WITH APPLICABLE CODES.

B. ELECTRICAL DRAWINGS REFLECT COORDINATION EFFORTS WITH OTHER DISCIPLINES. HOWEVER, COORDINATION WITH OTHER TRADES ARE REQUIRED.

C. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW GENERAL NOTES AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY THE CONTRACTING OFFICER'S REPRESENTATIVE (COR) OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

D. FIELD VERIFY EXISTING UTILITY LINES. COORDINATE WITH CIVIL PRIOR TO CONSTRUCTION.

E. REFER TO ONE-LINE DRAWING SHEETS FOR ADDITIONAL NOTES.

F. SHADED AREAS ARE OUT OF PROJECT SCOPE.

G. NO WORK ON ENERGIZED EQUIPMENT IS PERMITTED BY VA DIRECTIVE.

H. COORDINATE ALL NEW EXTERIOR ELECTRICAL UG WORK WITH NEW FUELING LINES FROM NEW UST TO NEW AND EXISTING EG'S.

ELECTRICAL KEYNOTES

4 PROVIDE NEW 1000KW, 480Y/277V, 3-PHASE, 4-WIRE DIESEL ENGINE GENERATOR (GEN '02') WITH WEATHER PROOF ENCLOSURE. PROVIDE NEW CONCRETE PAD FOR GEN '02' (NEW). SEE STRUCTURAL FOR CONCRETE PAD INFORMATION.

5 PROVIDE NEW 2500A, 480Y/277V, 3-PHASE, 4-WIRE, PARALLELING SWITCHGEAR (PSG '1-EG-EM') BEFORE DEMOLITION. PROVIDE NEW CONCRETE PAD FOR PSG '1-EG-EM'. SEE STRUCTRUAL FOR CONCRETE PAD INFORMATION.

7 PROVIDE NEW 2000A, 480Y/277V, 3-PHASE, 4-WIRE, DUAL PURPOSE POWER DOCKING STATION (BASIS OF DESIGN: TRYSTAR DBDS-5) WITH MALE AND FEMALE CAMLOCKS TO CONNECT A PORTABLE LOAD BANK AND A TEMPORARY GENERATOR. PROVIDE NEW CONCRETE PAD FOR POWER DOCKING STATION. SEE STRUCTURAL FOR CONCRETE PAD INFORMATION.

8 PROVIDE NEW 4-POLE, 800A, 480Y/277V, 3-PHASE AUTOMATIC TRANSFER SWITCH WITH MAINTENANCE BYPASS PRIOR TO DEMOLITION.

9 PROVIDE NEW 800A, 480Y/277V, 3-PHASE, 4-WIRE DISTRIBUTION PANELBOARD (PNLBD DB-S2) PRIOR TO DEMOLITION.

10 PROVIDE NEW CONCRETE PAD FOR ATS 'S2' (NEW), PNLBD 'DB-S2' (NEW), AND NEW 800A ENCLOSED CB. SEE STRUCTURAL FOR CONCRETE PAD INFORMATION.

15 PROVIDE 30"W X 48"H X 24"D (MIN.) PULLBOX.

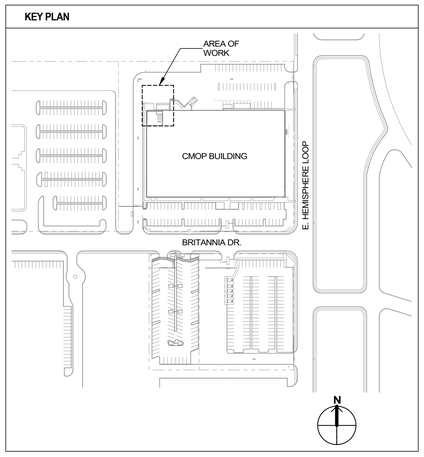
18 PROVIDE #4/0, 600V INS GROUND CABLE AND GROUND RODS AS INDICATED. CONNECT TO EXISTING GROUNDING ELEMENTS IN SERVICE/ ESS AREA.

19 CIRCUITS TO NEW AIR COMPRESSORS, AC-1, AC-2, AND ASSOCIATED AIR DRYERS SHALL BE PART OF BID ALTERNATE #3.

22 PROVIDE NEW FREESTANDING UNISTRUT RACK AND CONCRETE PAD FOR FUEL OIL CONTROL PANEL AND UNIT DISCONNECTS FOR FOP AND FOP CONTROLS.

24 EXISTING PNLBD 'HPH' TO BE RECIRCUITED TO NEW PNLBD 'DB-ES2' IN ELECTRICAL ROOM 165. REFER TO SHEET E-500, ONE-LINE DIAGRAM.

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP: Registered Professional Engineer (Electrical) CERTIFICATE NO. 78600 EVERARD SORDIASHIE Date Signed 4-25-2025 ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL POWER PLAN - ESSENTIAL ELECTRICAL GEAR

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE 04/25/2025 | CHECKED ES | DRAWN IGM

PROJECT NUMBER 762-24-101

BUILDING NUMBER CMOP

DRAWING NUMBER EP101

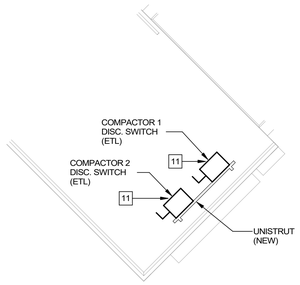
DRAWING # 30 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

VA FORM 08-6231

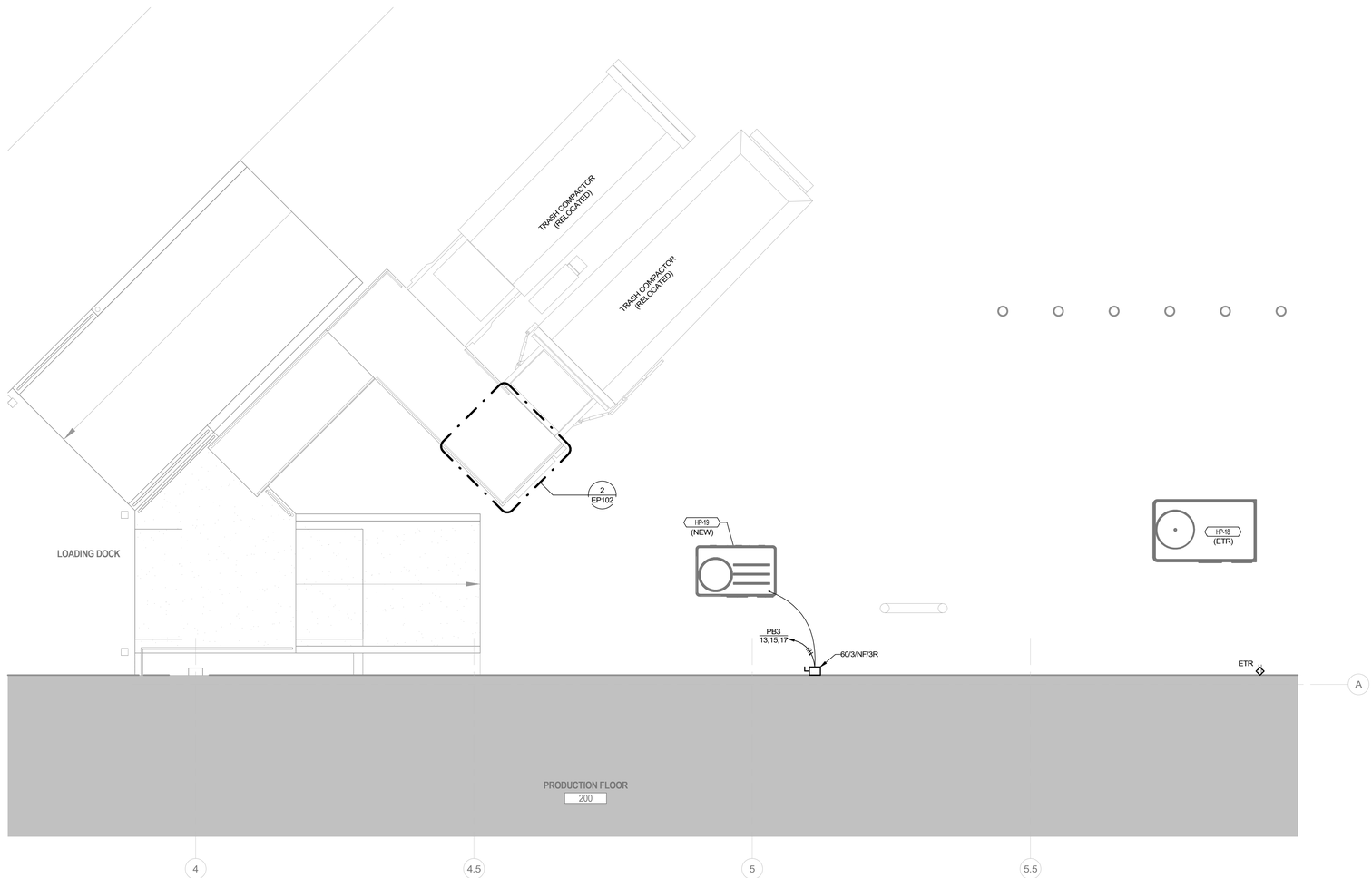
4/22/2025 2:00:27 PM



2 ENLARGED ELECTRICAL POWER PLAN - TRASH COMPACTOR DISCONNECT SWITCHES

1/2" = 1'-0"

REF: 1/ EP102



1 ENLARGED ELECTRICAL POWER PLAN - TRASH COMPACTOR AREA

1/4" = 1'-0"

GENERAL NOTES:

A. ELECTRICAL DRAWINGS DO NOT SHOW ALL ACCESSORIES TO BE INSTALLED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SYSTEMS ARE FULLY FUNCTIONAL AND COMPLIANT WITH APPLICABLE CODES.

B. ELECTRICAL DRAWINGS REFLECT COORDINATION EFFORTS WITH OTHER DISCIPLINES. HOWEVER, COORDINATION WITH OTHER TRADES ARE REQUIRED.

C. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW GENERAL NOTES AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY THE CONTRACTING OFFICER'S REPRESENTATIVE (COR) OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

D. FIELD VERIFY EXISTING UTILITY LINES. COORDINATE WITH CIVIL PRIOR TO CONSTRUCTION.

E. REFER TO ONE-LINE DRAWING SHEETS FOR ADDITIONAL NOTES.

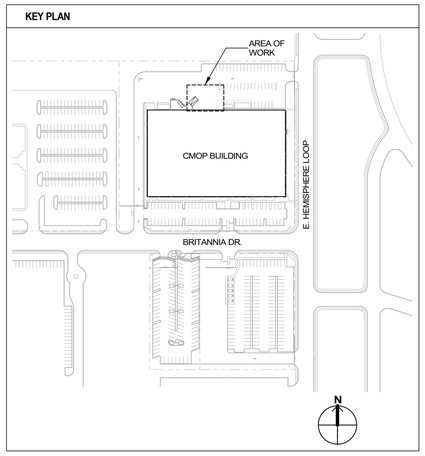
F. SHADED AREAS ARE OUT OF PROJECT SCOPE.

G. NO WORK ON ENERGIZED EQUIPMENT IS PERMITTED BY VA DIRECTIVE.

ELECTRICAL KEYNOTES

11 RELOCATE 30A, 480V, 3PH DISCONNECT SWITCH ES FOR TRASH COMPACTORS. PROVIDE NEW CONDUCTORS AND CONDUIT FROM DEMOLITION DEMARK POINT TO NEW SWITCH LOCATIONS. VERIFY LOCATION WITH COR PRIOR TO INSTALLATION.

KEY PLAN



FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:

Registered Professional Engineer (Electrical)
CERTIFICATE NO. 78600
ZACHARY S. SORDIASHIE
Date Signed 4-25-2025
ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL POWER PLAN - TRASH COMPACTOR AREA

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED ES | DRAWN IGM

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

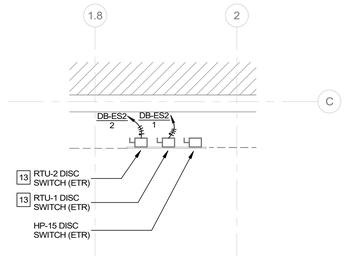
DRAWING NUMBER
EP102
DRAWING # 31 OF 40

Veterans Health Administration

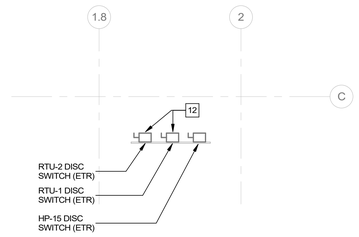
VA | U.S. Department of Veterans Affairs

4/22/2025 2:00:28 PM

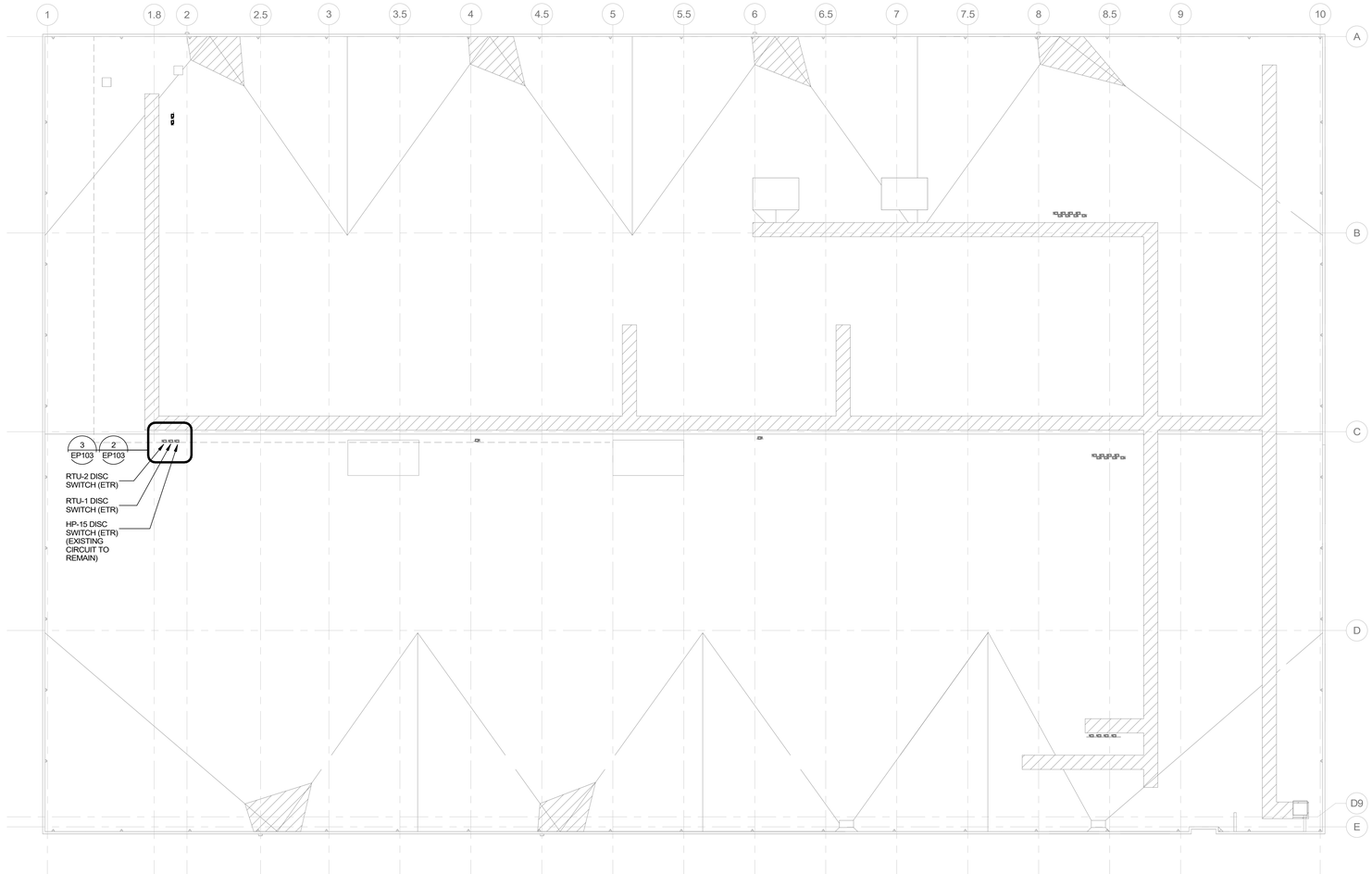
VA FORM 08-6231



3 ENLARGED ELECTRICAL POWER PLAN - ROOF
1/4" = 1'-0"
REF: 1/ EP103



2 ENLARGED ELECTRICAL DEMO PLAN - ROOF
1/4" = 1'-0"
REF: 1/ EP103



1 ELECTRICAL POWER PLAN - ROOF
1/16" = 1'-0"

GENERAL NOTES:

A. ELECTRICAL DRAWINGS DO NOT SHOW ALL ACCESSORIES TO BE INSTALLED. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SYSTEMS ARE FULLY FUNCTIONAL AND COMPLIANT WITH APPLICABLE CODES.

B. ELECTRICAL DRAWINGS REFLECT COORDINATION EFFORTS WITH OTHER DISCIPLINES. HOWEVER, COORDINATION WITH OTHER TRADES ARE REQUIRED.

C. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF WORK. REVIEW GENERAL NOTES AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY THE CONTRACTING OFFICER'S REPRESENTATIVE (COR) OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

D. FIELD VERIFY EXISTING UTILITY LINES. COORDINATE WITH CIVIL PRIOR TO CONSTRUCTION.

E. REFER TO ONE-LINE DRAWING SHEETS FOR ADDITIONAL NOTES.

F. SHADED AREAS ARE OUT OF PROJECT SCOPE.

G. NO WORK ON ENERGIZED EQUIPMENT IS PERMITTED BY VA DIRECTIVE.

ELECTRICAL KEYNOTES

12 REMOVE EXISTING CONDUCTORS AND CONDUIT FROM RTU DISCONNECT SWITCH TO EXISTING SWBD SES. RTU DISCONNECT SWITCH TO REMAIN FOR CONNECTION TO NEW PANEL. VERIFY AND PRESERVE EXISTING LIGHTNING PROTECTION CONNECTION TO EXISTING EQUIPMENT.

13 EXISTING RTU DISCONNECT SWITCH TO BE RECIRCUITED TO NEW PNLBD 'DB-ES2' IN ELECTRICAL ROOM 165. REFER TO SHEET E-500, ONE-LINE DIAGRAM.

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Electrical)
CERTIFICATE NO. 78600
SORDIASHIE
Date Signed 4-25-2025
ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL POWER PLAN - ROOF

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED ES | DRAWN IGM

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

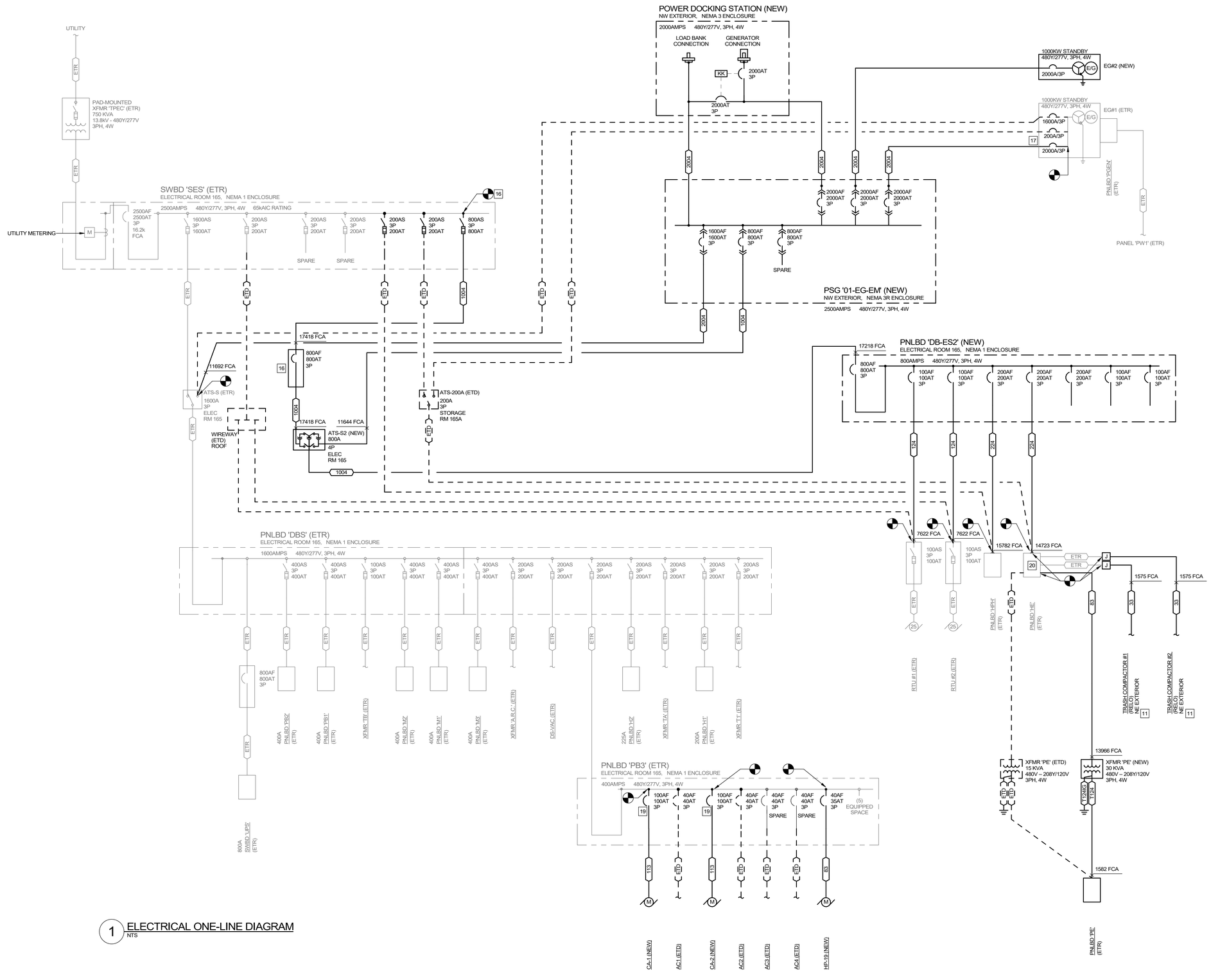
DRAWING NUMBER
EP103
DRAWING # 32 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

4/22/2025 2:00:28 PM

VA FORM 08-6231



1 ELECTRICAL ONE-LINE DIAGRAM
NTS

FEEDER/BRANCH CIRCUIT SCHEDULE

TAG	AMPS	DESCRIPTION
33	30A	(3)#10, (1)#10G, 3/4 IN. C
43	40A	(3)#8, (1)#10G, 3/4 IN. C
83	80A	(3)#4, (1)#8G, 1 IN. C
113	110A	(3)#2, (1)#6G, 1-1/4 IN. C
124	125A	(4)#1, (1)#6G, 1-1/2 IN. C
153	150A	(3)#1/0, (1)#6G, 1-1/2 IN. C
224	225A	(4)#4/0, (1)#4G, 2-1/2 IN. C
1004	1000A	(3) 3 1/2" C EACH W/ (4) 500KCMIL, (1) 4/0G
2004	2000A	(6) 3 1/2" C EACH W/ (4) 500KCMIL, (1) 250KCMIL G
ETD	N/A	EXISTING TO DEMO
ETR	N/A	EXISTING TO REMAIN
G300	GND	#2 COPPER GROUND, 3/4 IN. C
T124	125A	(4)#1, (1)#6G, 1-1/2 IN. C
T124IG	125A	(4)#1, (1)#6IG, 1-1/2 IN. C

NOTE:
ALL CONDUCTOR SIZES ARE BASED ON 75 DEGREE C RATED TERMINATION AND COPPER CONDUCTORS WITH TYPE THHN/THWN-2 INSULATION. FOR TERMINATION OR INSULATION TYPES RATED LESS THAN 75 DEGREE C, MODIFY SIZES ACCORDING TO NFPA 70.

ELECTRICAL KEYNOTES

11 RELOCATE 30A, 480V, 3PH DISCONNECT SWITCH ES FOR TRASH COMPACTORS. PROVIDE NEW CONDUCTORS AND CONDUIT FROM DEMOLITION DEMARK POINT TO NEW SWITCH LOCATIONS. VERIFY LOCATION WITH COR PRIOR TO INSTALLATION.

16 IF SPACE IS NOT AVAILABLE IN EXISTING EATON SWITCHGEAR FOR A NEW 800A FUSED SWITCH OR MOLDED CASE CB WITH ELECTRONIC TRIPS MODIFY EXISTING SWITCHGEAR BUS TO ACCEPT NEW 800A FEEDERS FOR NEW 800A ATS AND PROVIDE STAND ALONE 800A CB NEXT TO NEW 800A ATS.

17 REPLACE EXISTING OUTPUT CB'S IN EXISTING GENERATOR EG#1 WITH NEW 2000A/3P, 480V CB.

19 CIRCUITS TO NEW AIR COMPRESSORS, AC-1, AC-2, AND ASSOCIATED AIR DRYERS SHALL BE PART OF BID ALTERNATE #3.

20 REMOVE EXISTING CIRCUIT BREAKER FOR XFMR 'PE.' REPLACE WITH NEW 60 AMP 3 POLE BREAKER. MATCH AIC RATING AND VOLTAGE WITH EXISTING PANEL.

ESS SYSTEM PROPOSED CONSTRUCTION SEQUENCE

1. INSTALL NEW UST, NEW PARALLELING GEAR PSG, NEW EG SET #2, DOCKING STATION AND ASSOCIATED CONDUITS AND AUX SYSTEMS. STUB OUT CONDUITS TO EXISTING EG SET FROM PSG FOR EXTENSION TO EXISTING EG SET IN LATER PHASE.
2. INSTALL NEW 800A CB, ATS-S2, NEW OUTPUT SWITCHBOARD ES2, NEW FEED FROM SWITCHBOARD SES TO ATS-S2, CONDUITS AND CONDUCTORS TO THE LOCATIONS OF EXISTING LOADS TO BE REFED FROM ES2.
3. COMMISSION PSG, EG#2 AND AUX SYSTEMS. CUT OVER LOADS TO ATS-S AND ES2.
4. TAKE EG#1 OUT OF COMMISSION. MODIFY OUTPUT BREAKERS, FEEDERS, CONTROLS & FUEL SYSTEM CONNECTIONS TO NEW CONFIGURATION.
5. COMMISSION REVISED ESS SYSTEM WITH BOTH GENERATORS AND NEW ATS CONFIGURATION.

ESS SYSTEM PROPOSED OPERATIONAL SEQUENCE

1. LOSS OF NORMAL POWER: TRANSFER SWITCH CONTROL WIRE OUTPUTS TO BE WIRED IN SERIES SUCH THAT A LOSS OF POWER DETECTED AT EITHER ATS WILL CALUSE BOTH EG SETS TO START. PSG SWITCHGEAR WILL CLOSE IN BREAKER IN PSG GEAR FOR FIRST EG SET TO REACH STABLE FREQUENCY AND VOLTAGE. PSG GEAR WILL SEND SIGNAL TO 2ND EG SET TO GO INTO SHUTDOWN MODE AFTER STD COOL DOWN TIME.
2. RETURN OF NORMAL POWER: WHEN BOTH ATS's DETECT A STABLE NORMAL POWER SOURCE THEY WILL TRANSFER BACK TO NORMAL SUPPLY. PSG GEAR WILL SIGNAL EG SET(s) TO GO INTO SHUTDOWN COOL DOWN MODE AFTER STD COOL DOWN TIME.
3. LOAD BANK TESTING: EG#1 TO BE PLACED INTO "TEST MODE". PSG OUTPUT BREAKERS TO BE PLACED IN "OPEN" MODE. CONNECT LOAD BANK TO PSG CONNECTION GEAR. START EG#1, RUN FOR PRESCRIBED TEST DURATION. RECORD DATA. SHUT DOWN EG#1. DUPLICATE TEST MODE FOR EG#2. PLACE PSG OUTPUT BREAKERS IN "ON" MODE. RETURN EG SETS TO "NORMAL MODE".
4. PORTABLE EG SET HOOKUP: OPEN PSG EG#1 AND EG#2 INPUT BREAKERS. CONNECT PORTABLE EG SET. OPEN MAIN SWITCHGEAR MAIN SWITCH. CLOSE PORTABLE EG SET INPUT BREAKER. START EG SET. NOTE- APPLICABLE ON DEAD NORMAL BUS SCENARIO ONLY.

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 2:00:29 PM

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Electrical) CERTIFICATE NO. 78600 EVERARDO SORDIASHIE Date Signed 4-25-2025 ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL ONE-LINE DIAGRAM

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE	CHECKED	DRAWN
04/25/2025	ES	IGM

PROJECT NUMBER
762-24-101

BUILDING NUMBER
CMOP

DRAWING NUMBER
E-500
DRAWING # 33 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

PANELBOARD 'PB3' (ETR)

BUS SIZE: 400 A
MAIN SIZE/TYPE: MLO
VOLTS/PHASE: 480Y/277V, 3PH, 4W
MOUNTING: SURFACE
A.I.C RATING: EXISTING
SECTIONS: 1

FAULT CURRENT: EXISTING
LOCATION: ELECTRICAL RM 165
SERVES: COMPRESSOR LOADS
FED FROM: DB-S

EQUIPMENT GROUND BUS

VOLT-AMPS/PHASE

CKT NO.	DESCRIPTION	LOAD TYPE	NOTE	WIRE SIZE	GND SIZE	BRKR AMP	P	A	B	C	A	B	C	P	BRKR AMP	GND SIZE	WIRE SIZE	NOTE	LOAD TYPE	DESCRIPTION	CKT NO.
1								**15038**			**15038**										**2**
3	**CA1-COMPRESSOR** 19	**M**		**1L**	**1L**	**100**	**3**		**15038**			**15038**		**3**	**100**	**1L**	**1L**		**M**	**CA2-COMPRESSOR** 19	**4**
5										**15038**			**15038**								**6**
7								0			0										8
9	SPARE	--		--	--	40	3		0			0		3	40	--	--		--	SPARE	10
11										0			0								12
13								**7011**			--			1	--	--	--		--	EQUIPPED SPACE	14
15	**HP-19**	**M**		**1L**	**1L**	**35**	**3**		**7011**			--		1	--	--	--		--	EQUIPPED SPACE	16
17										**7011**			--	1	--	--	--		--	EQUIPPED SPACE	18
19	EQUIPPED SPACE	--		--	--	--	1	--			--			1	--	--	--		--	EQUIPPED SPACE	20
21	EQUIPPED SPACE	--		--	--	--	1		--			--		1	--	--	--		--	EQUIPPED SPACE	22
23	EQUIPPED SPACE	--		--	--	--	1			--			--	1	--	--	--		--	EQUIPPED SPACE	24
25	EQUIPPED SPACE	--		--	--	--	1	--			--			1	--	--	--		--	EQUIPPED SPACE	26
27	EQUIPPED SPACE	--		--	--	--	1		--			--		1	--	--	--		--	EQUIPPED SPACE	28
29	EQUIPPED SPACE	--		--	--	--	1			--			--	1	--	--	--		--	EQUIPPED SPACE	30

	PHASE A	PHASE B	PHASE C
TOTAL PHASE LOAD (VA)	37087 VA	37087 VA	37087 VA
TOTAL PHASE LOAD (A):	134 A	134 A	134 A

LOAD TYPE	CONNECTED LOAD	NEC DEMAND	DEMAND LOAD
EXISTING LOAD (E):	0 VA	125.00%	0 VA
COOLING (C):	0 VA	100.00%	0 VA
HEATING (H):	0 VA	100.00%	0 VA
LIGHTING (L):	0 VA	125.00%	0 VA
RECEPTACLES (R):	0 VA	100.00%	0 VA
MOTORS (M):	111260 VA	110.14%	122539 VA
KITCHEN (K):	0 VA	100.00%	0 VA
MISC. EQUIPMENT (Z):	0 VA	100.00%	0 VA

	TOTAL CONNECTED	TOTAL DEMAND
PANELBOARD	111260 VA	122539 W
TOTALS:	134 A	147 A

NOTES:

1L: REFER TO ELECTRICAL ONE-LINE DIAGRAM FOR CABLE AND CONDUIT SIZES.
BOLD TEXT INDICATES NEW LOADS BEING ADDED.

PANELBOARD 'PE' (ETR)

BUS SIZE: 100 A
MAIN SIZE/TYPE: 100 A MCB 21
VOLTS/PHASE: 208Y/120V, 3PH, 4W
MOUNTING: SURFACE
A.I.C RATING: EXISTING
SECTIONS: 1

FAULT CURRENT: EXISTING
LOCATION: ELECTRICAL ROOM 165A
SERVES: GEN LOADS
FED FROM: XFMR PE

EQUIPMENT GROUND BUS

VOLT-AMPS/PHASE

CKT NO.	DESCRIPTION	LOAD TYPE	NOTE	WIRE SIZE	GND SIZE	BRKR AMP	P	A	B	C	A	B	C	P	BRKR AMP	GND SIZE	WIRE SIZE	NOTE	LOAD TYPE	DESCRIPTION	CKT NO.
1	**GEN '02" BATTERY CHARGER**	**Z**		**12**	**12**	**20**	**1**	**1500**			0			2	30	--	--		--	FREEZER 1 OUTSIDE NORTH	2
3	**GEN '02" LTG & RCPT**	**R**		**12**	**12**	**20**	**1**		**360**			0									4
5	**GEN '02' FUEL PUMP**	**Z**		**12**	**12**	**20**	**1**			**1500**			0	2	30	--	--		--	FREEZER 2 OUTSIDE NORTH	6
7	**GEN '02' OIL HEATER**	**Z**		**12**	**12**	**20**	**1**	**300**			0										8
9	**UST LEAK DETECTION PANEL**	**Z**		**12**	**12**	**20**	**1**		**300**			**2500**		**2**	**40**	**10**	**10**		**Z**	**GEN '02' JACKET HEATER**	**10**
11										**1617**			**2500**								**12**
13	**AD-1**	**M**		**12**	**12**	**20**	**3**	**1617**			**1617**			**3**	**20**	**12**	**12**		**M**	**AD-2**	**14**
15									**1617**			**1617**									**16**
17	SPARE	--		--	--	20	1			0			**1617**								**18**
19	SPARE	--		--	--	20	1	0			--			1	--	--	--		--	EQUIPPED SPACE	20
21	SPARE	--		--	--	20	1		0			--		1	--	--	--		--	EQUIPPED SPACE	22
23	SPARE	--		--	--	20	1			0			--	1	--	--	--		--	EQUIPPED SPACE	24
25	SPARE	--		--	--	20	1	0			--			1	--	--	--		--	EQUIPPED SPACE	26
27	SPARE	--		--	--	20	1		0			--		1	--	--	--		--	EQUIPPED SPACE	28
29	SPARE	--		--	--	20	1			0			--	1	--	--	--		--	EQUIPPED SPACE	30
31	SPARE	--		--	--	20	1	0			--			1	--	--	--		--	EQUIPPED SPACE	32
33	SPARE	--		--	--	20	1		0			--		1	--	--	--		--	EQUIPPED SPACE	34
35	SPARE	--		--	--	20	1			0			--	1	--	--	--		--	EQUIPPED SPACE	36

	PHASE A	PHASE B	PHASE C
TOTAL PHASE LOAD (VA)	4796 VA	6065 VA	6866 VA
TOTAL PHASE LOAD (A):	40 A	52 A	59 A

LOAD TYPE	CONNECTED LOAD	NEC DEMAND	DEMAND LOAD
EXISTING LOAD (E):	0 VA	125.00%	0 VA
COOLING (C):	0 VA	100.00%	0 VA
HEATING (H):	0 VA	100.00%	0 VA
LIGHTING (L):	0 VA	125.00%	0 VA
RECEPTACLES (R):	360 VA	100.00%	360 VA
MOTORS (M):	9699 VA	112.50%	10912 VA
KITCHEN (K):	0 VA	100.00%	0 VA
MISC. EQUIPMENT (Z):	8600 VA	100.00%	8600 VA

	TOTAL CONNECTED	TOTAL DEMAND
PANELBOARD	17703 VA	18862 W
TOTALS:	49 A	52 A

NOTES:

BOLD TEXT INDICATES NEW LOADS BEING ADDED.

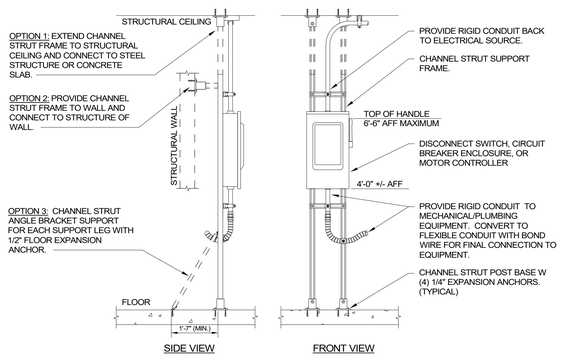
ELECTRICAL KEYNOTES

19 CIRCUITS TO NEW AIR COMPRESSORS, AC-1, AC-2, AND ASSOCIATED AIR DRYERS SHALL BE PART OF BID ALTERNATE #3.

21 REMOVE EXISTING 100A MAIN CIRCUIT BREAKER. REPLACE WITH NEW 100 AMP 3 POLE BREAKER. MATCH AIC RATING AND VOLTAGE WITH EXISTING PANEL.

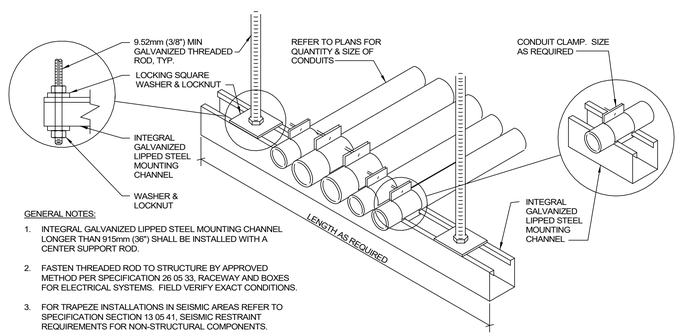
PANEL SCHEDULE LEGEND

PB3	PE	-



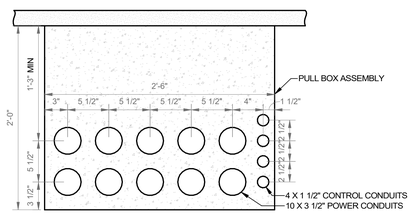
NOTE:
1. DISCONNECT SWITCHES, CIRCUIT BREAKER ENCLOSURES, MOTOR CONTROLLERS & VARIABLE FREQUENCY DRIVES, AND CONTROL CABINETS MAY BE DIRECTLY MOUNTED TO STRUCTURAL WALLS, OR TO MECHANICAL EQUIPMENT WHEN PERMITTED BY THE MECHANICAL EQUIPMENT MANUFACTURER AND WHERE IT DOES NOT BLOCK ACCESS OR OPERATION OF THE EQUIPMENT. WHERE A SUITABLE STRUCTURAL WALL IS NOT AVAILABLE, PROVIDE SUPPORT FRAME AND CONNECT THE SUPPORT FRAME WITH A MINIMUM OF (4) POINTS OF CONTACT TO THE BUILDING STRUCTURE TO PROVIDE A RIGID ASSEMBLY. OPTION 1, 2, OR 3 MAY BE UTILIZED TO PROVIDE THE ADDITIONAL (2) POINTS OF CONTACT IN ADDITION TO THE (2) POINTS OF CONTACT AT THE FLOOR.

4 ELECTRICAL EQUIPMENT MOUNTING DETAIL
NTS

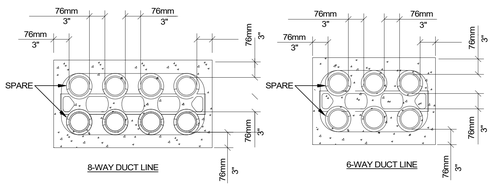


GENERAL NOTES:
1. INTEGRAL GALVANIZED LIPPED STEEL MOUNTING CHANNEL LONGER THAN 915mm (36") SHALL BE INSTALLED WITH A CENTER SUPPORT ROD.
2. FASTEN THREADED ROD TO STRUCTURE BY APPROVED METHOD PER SPECIFICATION 26 05 33, RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS. FIELD VERIFY EXACT CONDITIONS.
3. FOR TRAPEZE INSTALLATIONS IN SEISMIC AREAS REFER TO SPECIFICATION SECTION 13 05 41, SEISMIC RESTRAINT REQUIREMENTS FOR NON-STRUCTURAL COMPONENTS.

3 CONDUIT TRAPEZE MOUNTING DETAIL
NTS



2 CONTROL AND POWER CONDUIT DUCTBANK STUB UP DETAIL
NTS REF: 1/ EP101



1. CONCRETE SHALL BE 2000 P.S.I. @ 28 DAYS, OR AS SPECIFIED.
2. PROVIDE #4 REINFORCING RODS ON TOP AND BOTTOM OF DUCTS WHEN CROSSING OR PLACED IN ROADWAYS.
3. MINIMUM COVER TO TOP OF ENVELOPE SHALL BE 610mm (24") OR AS OTHERWISE SPECIFIED IN SECTION 26 05 41.
4. PROVIDE MINIMUM 152mm (6") SPACE BETWEEN POWER AND TELECOMMUNICATION DUCTS. INCREASE SIZE AS REQUIRED.
5. INNERDUCT QUANTITY AND SIZE AS INDICATED ON PLANS.

N

1 DUCT BANK DETAIL
1" = 400'-0"

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/22/2025 2:00:30 PM

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP: Registered Professional Engineer (Electrical) CERTIFICATE NO. 78600 SORDIASHIE Date Signed 4-25-2025 ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL PANEL SCHEDULES & DETAILS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

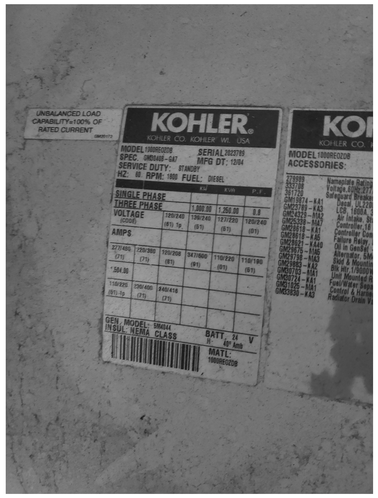
LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED ES | DRAWN IGM

PROJECT NUMBER **762-24-101**
BUILDING NUMBER CMOP
DRAWING NUMBER **E-601**
DRAWING # 34 OF 40

Veterans Health Administration
VA U.S. Department of Veterans Affairs

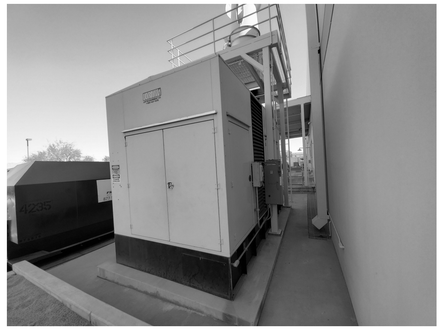
VA FORM 08-6231



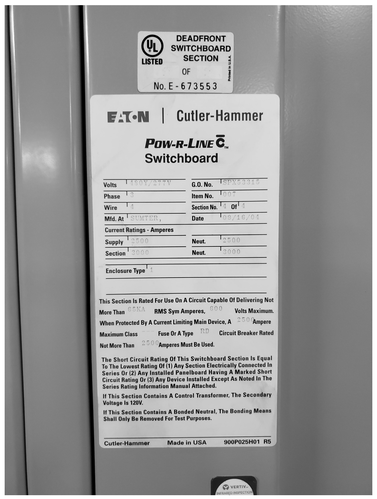
8 P8 - EXISTING EG SET NAMEPLATE
NTS REF: 1/ ED101

7 P7 - EXISTING EG SET 1600A OUTPUT CB
NTS REF: 1/ ED101

6 P6 - EXISTING EG SET 200A OUTPUT CB
NTS REF: 1/ ED101



5 P5 - EXISTING EG SET
NTS REF: 1/ ED101



4 P4 - EXISTING SWBD S1 DISTRIBUTION SECTION RATINGS
NTS REF: 1/ ED101

3 P3 - EXISTING SWBD S1 DISTRIBUTION SECTION - BUS
NTS REF: 1/ ED101

2 P2 - EXISTING SWBD S1 DISTRIBUTION SECTION - BUS
NTS REF: 1/ ED101

1 P1 - EXISTING SWBD S1 DISTRIBUTION SECTION
NTS REF: 1/ ED101

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
10910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
Registered Professional Engineer (Electrical)
CERTIFICATE NO. 78600
SORDIASHIE
Date Signed 4-25-2025
ARIZONA, U.S.A.

DRAWING TITLE
ELECTRICAL DETAILS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED ES | DRAWN IGM

PROJECT NUMBER **762-24-101**
BUILDING NUMBER CMOP
DRAWING NUMBER **E-602**
DRAWING # 35 OF 40

Veterans Health Administration
VA U.S. Department of Veterans Affairs

4/22/2025 2:00:31 PM

VA FORM 08-6231

PLAN LEGEND	
SYMBOL	DESCRIPTION
	OUT OF SCOPE AREA

TELECOMMUNICATIONS SYMBOLS	
SYMBOL	DESCRIPTION
IC M	INTERCOM, "M" DENOTES MASTER STATION
J	JUNCTION BOX

ELECTRONIC SECURITY SYMBOLS	
SYMBOL	DESCRIPTION
AP	ANTI-PROP LOCAL AUDIBLE ALARMING SOUNDER
CR WP CR:X:XX	ACCESS CONTROL CARD READER/KEYPAD COMBINATION DEVICE CR-X:XX = CARD READER TYPE: SEQUENTIAL NUMBER WP = WEATHERPROOF
DC	DOOR CONTACT SWITCH - WIRED TO ACCESS CONTROL SYSTEM ONLY UNLESS OTHERWISE NOTED
ML	MAGNETIC LOCKING DEVICE
DM	ELECTRONIC MORTISE LOCK
XX:XX:XX	SINGLE VIEW SECURITY CAMERA XX:XX:XX = BUILDING ID:TYPE:SEQUENTIAL NUMBER

ABBREVIATIONS	
8P8C	EIGHT POSITION, EIGHT CONTACT
A	
AAP	ALARM ANNUNCIATOR PANEL
AFG	ABOVE FINISHED GRADE
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
ANSI	THE AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH	ARCHITECT
B	
BATT	BATTERY
BOCT	BOTTOM OF CABLE TRAY
BICSI	BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL
C	
C	CONDUIT
CATV	COMMUNITY ANTENNA TELEVISION
CCTV	CLOSED CIRCUIT TELEVISION
CFCI	CONTRACTOR FURNISHED / CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED / OWNER INSTALLED
CLG	CEILING
CM	CEILING MOUNTED
CMR	COMPUTER MACHINE ROOM
COAX	COAXIAL CABLE
COMM	COMMUNICATION
CONT	CONTINUE/ CONTINUOUS
CTR	CENTER
CU	COPPER
D	
DB	DECIBEL OR DIRECT BURIAL
DC	DATA CENTER
DEMO	DEMOLISH/ DEMOLITION
DEMARC	DEMARCATION POINT OR ROOM
DIA	DIAMETER
DIM	DIMENSION
DL	DOME LIGHT
DWG	DRAWING
E	
EA	EACH
EH	EXTRA HAZARD
EL	ELEVATION
ELEV	ELEVATOR
EMER	EMERGENCY
EMI	ELECTROMAGNETIC INTERFERENCE
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EQPM	EQUIPMENT
ETR	EXISTING TO REMAIN
EX	EXISTING
F	
FA	FIRE ALARM
FFE	FINISHED FLOOR ELEVATION
FLEX	FLEXIBLE METALLIC CONDUIT
FLR	FLOOR
FT	FEET
FO	FIBER-OPTIC
G	
GA	GAUGE
GC	GENERAL CONTRACTOR
GND	GROUND
H	
HCM	HORIZONTAL CABLE MANAGER
HGT	HEIGHT
HH	HANDHOLE
HKLB	HOUSE KEY LOCK BOX
HLS	HOMELAND SECURITY
HZ	HERTZ
I	
ICT	INFORMATION AND COMMUNICATIONS TECHNOLOGY
ID	INSIDE DIAMETER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IR	INFRARED
ISP	INSIDE PLANT
J	
JB	JUNCTION BOX
K	
KW	KILOWATT

L	
LED	LIGHT EMITTING DIODE
LF	LINEAR FEET (FOOT)
LH	LIGHT HAZARD
LOC	LOCAL OPERATING CONSOLE
LV	LOW VOLTAGE
M	
MM	MULTI-MODE
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MC	METAL-CLAD
MDF	MAIN DISTRIBUTION FRAME
MH	MANHOLE
MIN	MINIMUM
MTD	MOUNTED
MTG	MOUNTING
N	
NA	NOT APPLICABLE
NCS	NATIONAL CONTRACT SERVICE
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NOC	NETWORK OPERATION CENTER
NTS	NOT TO SCALE
O	
OC	ON CENTER
O.D.	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED OWNER INSTALLED
OH	ORDINARY HAZARD
OSP	OUTSIDE PLANT
P	
PA	PUBLIC ADDRESS
PACS	PHYSICAL ACCESS CONTROL SYSTEM
PC	PULL CORD
POE	POWER OVER ETHERNET
PP	PATCH PANEL
PSIM	PHYSICAL SECURITY INFORMATION MANAGMENT
PWR	POWER
R	
RCDD	REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
RCP	REFLECTED CEILING PLAN
RCPT	RECEPTACLE
REC	RECESSED
REQD	REQUIRED
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMS	ROOT MEAN SQUARE
RU	RACK UNIT
S	
S	SUPPLY
SCC	SECURITY CONTROL CENTER
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SIM	SIMILAR
SM	SINGLE-MODE
SMS	SECURITY MANAGMENT SYSTEM
SOC	SECURITY OPERATIONS CENTER
SP	SPEAKER
SPEC	SPECIFICATION
SP/ST	SPEAKER/ STROBE
SQ	SQUARE
SSTV	SECURITY SURVEILLANCE SYSTEM TELEVISION
ST	STROBE
STP	SHIELDED TWISTED PAIR
SURF	SURFACE
SYST	SYSTEM
T	
TE	TELECOMMUNICATIONS ENCLOSURE
TEF	TELECOMMUNICATIONS ENCLOSURE FACILITY
TEL	TELEPHONE
TEMP	TEMPERATURE
TER	TELECOMMUNICATIONS EQUIPMENT ROOM
TGB	TELECOMMUNICATIONS GROUNDING BUSSBAR
TIA	TELECOMMUNICATIONS INDUSTRY ASSOCIATION
TMGB	TELECOMMUNICATIONS MAIN GROUNDING BUSSBAR
TR	TELECOMMUNICATIONS ROOM
TP	TWISTED PAIR
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL

U	
UFD	UNDERFLOOR DUCT
UGND	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
UTP	UNSHIELDED TWISTED PAIR
V	
VCM	VERTICAL CABLE MANAGER
VSS	VIDEO SURVEILLANCE SYSTEM
W	
W/	WITH
WM	WALL MOUNTED
W/O	WITHOUT
X	
XP	EXPLOSION PROOF

STANDARD MOUNTING HEIGHTS	
TELECOMMUNICATIONS: (TO CENTER OF DEVICE UON)	(AFF / AFG UNLESS NOTED OTHERWISE)
INTERCOM (AREA ONLY)	36"
INTERCOM (TOP)	48"
DATA	18"
VOICE (TOP)	48"
DATA/VOICE	18"
TV	52"

PROJECT CODES AND STANDARDS

A. VA OFFICE OF INFORMATION & TECHNOLOGY (OIT) INFRASTRUCTURE STANDARDS FOR TELECOMMUNICATIONS SPACES, JUNE 1 2023

B. INFRASTRUCTURE STANDARDS FOR TELECOMMUNICATIONS SPACES, AUGUST 2020

C. VA PG-18-10 TELECOMMUNICATIONS AND SPECIAL TELECOMMUNICATIONS SYSTEMS DESIGN MANUAL, FEBRUARY 2016

D. BICSI AND EIA/TIA STANDARDS AS DEFINED IN VA-18-10

E. VA-PSRDM - PHYSICAL SECURITY AND RESILIENCY DESIGN MANUAL 2020, 1 MAY 2024 REVISION

GENERAL NOTES

1. DRAWING IS DIAGRAMMATIC IN NATURE AND IS NOT TO BE CONSTRUED AS ALL INCLUSIVE; FIELD VERIFY EXISTING CONDITIONS AND ADJUST WORK AS REQUIRED TO EXECUTE SPECIFIED WORK.
2. FINAL LOCATION OF ALL DEVICES SHALL BE COORDINATED WITH FINAL ROOM FURNITURE CONFIGURATIONS, ACCESSORIES, SPACE INDICATED FOR SPECIFIC DUTY.
3. FILL CAPACITIES: CATEGORY FILL CAPACITIES SHALL BE BASED ON AN O.D. OF .25" OR AN AREA OF .04909 SQ. IN./CABLE; MAINTAIN A MINIMUM 25% SPARE CAPACITY IN ALL PATHWAYS; CONDUIT FILL CAPACITIES MAXIMUM FILL = 30%; NON-CONTINUOUS (J-HOOK) AND CONTINUOUS (CABLE TRAY) SUPPORTS MAXIMUM FILL = 35.5% FILL (INCLUDING SPARE CAPACITIES); SLEEVES <24" IN LENGTH MAXIMUM FILL = 75%; IF CABLE IS PROVIDED WITH LARGER O.D. ADJUST PATHWAYS ACCORDINGLY, ROUNDED UP TO THE NEXT TRADE SIZE.
4. ALL CABLING SHALL HAVE A MINIMUM 10' SERVICE-LOOP AT THE TELECOMMUNICATION ROOM.
5. ALL CABLING SHALL HAVE A MINIMUM 3' SERVICE LOOP AT THE OUTLET OR DEVICE.
6. ALL CABLING SHALL BE LABELED ON BOTH ENDS.
7. MOUNTING HEIGHTS FOR DEVICES SHALL BE MEASURED FROM FINAL FINISH FLOOR TO CENTER OF BOX, UNO.
8. VERIFY MOUNTING HEIGHT OF ALL COMMUNICATIONS DEVICES WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN. WHERE CONFLICTS EXIST, CONTRACTOR SHALL NOTIFY ENGINEER AND ARCHITECT FOR RESOLUTION.
9. VERIFY THE LOCATIONS OF ALL FIREPROOFING PRIOR TO THE INSTALLATION OF CONDUIT AND BACKBOXES.
10. IF FIELD CONDITIONS VARY FROM THE DRAWINGS, THE CONTRACTOR SHALL DOCUMENT THE VARIATION AND REPORT IT TO THE GENERAL CONTRACTOR FOR RESOLUTION WITH THE ENGINEER OF RECORD.
11. COORDINATE THE INSTALLATION REQUIREMENTS OF SYSTEM DEVICES, EQUIPMENT, PATHWAYS, AND OTHER COMPONENTS WITH THE GENERAL CONTRACTOR AND OTHER BUILDING TRADES PRIOR TO INSTALLATION
12. COORDINATE GROUNDING REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR AND ENSURE THE COMMUNICATIONS GROUNDING MEETS SYSTEM REQUIREMENTS AND TIA J-STD-607A STANDARDS PRIOR TO ENERGIZING AND SYSTEMS EQUIPMENT.
13. THIS SITE IS AN ACTIVE WORKING ENVIRONMENT; SYSTEMS SHALL NOT BE SHUTDOWN WITHOUT WRITTEN AUTHORIZATION; ALL REQUESTS SHALL BE SUBMITTED IN WRITING A MINIMUM OF TEN (10) WORKING-DAYS PRIOR TO PROPOSED ACTIVITY DATE OR NEED UNLESS DIRECTED OTHERWISE.
14. THE WORD "PROVIDE" SHALL BE UNDERSTOOD TO MEAN CONTRACTOR FURNISHED - CONTRACTOR INSTALLED (CFCI) INCLUDING, BUT NOT LIMITED TO, ALL REQUIRED INTEGRATION WITH OTHER BUILDING ENTITIES, PROGRAMMING AND CONFIGURATION, AND ALL REQUIRED INSTALLATION AND NETWORK HARDWARE AND SOFTWARE AND LICENSING/CLIENTS.
15. ALL ITEMS SPECIFIED OR NOTED ARE CFCI AND SHALL BE PROVIDED UNLESS SPECIFICALLY OTHERWISE NOTED.

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/21/2025 15:29:16

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
KRISTOPHER G HETLAGE
BICSI ID # 228601
EXPIRES 12-31-27
RCDD
4/25/25

DRAWING TITLE
TELECOMMUNICATIONS COVER SHEET

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED KGH | DRAWN MDT

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER **TN001**

DRAWING # 36 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

ELECTRONIC SAFETY & SECURITY SYSTEM GENERAL DEMOLITION NOTES

A. DRAWING IS DIAGRAMMATIC IN NATURE AND IS NOT TO BE CONSTRUED AS ALL INCLUSIVE; FIELD VERIFY EXISTING CONDITIONS AND ADJUST WORK AS REQUIRED TO EXECUTE SPECIFIED WORK.

B. EXISTING CONDITIONS INDICATED ARE BASED ON GENERAL FIELD NOTES AND HISTORICAL DATA AND DOCUMENTATION AND ARE FOR REFERENCE PURPOSES ONLY TO DEFINE SCOPE OF WORK; FIELD VERIFY ALL CONDITIONS.

C. THIS SITE IS AN ACTIVE WORKING ENVIRONMENT; SYSTEMS SHALL NOT BE SHUTDOWN WITHOUT WRITTEN AUTHORIZATION; ALL REQUESTS SHALL BE SUBMITTED IN WRITING A MINIMUM OF TEN (10) WORKING-DAYS PRIOR TO PROPOSED ACTIVITY DATE OR NEED UNLESS DIRECTED OTHERWISE.

D. SEE T-001 TELECOMMUNICATIONS COVER SHEET FOR SYMBOLS DEFINITION:
1. SYMBOLS GRAYED/ HALFTONE: INDICATED FOR REFERENCE AND/OR INDICATING EXISTING UNLESS SPECIFICALLY NOTED OTHERWISE.
2. SYMBOLS DASHED OR SPECIFICALLY KEYED NOTED: INDICATES DEMOLITION WORK.

E. LOCATE EXISTING COMMUNICATIONS CABLE AND PATHWAYS THAT MAY BE AFFECTED BY DEMOLITION AND CONSTRUCTION PRIOR TO DEMOLITION, INCLUDING BUT NOT LIMITED TO SYSTEMS PATHWAYS AND SERVICE ENTRANCES.

F. REFER TO ARCHITECTURAL PLANS FOR MORE INFORMATION REGARDING THE SCOPE OF DEMOLITION WORK.

G. FIELD VERIFY ALL EXISTING DEVICES, EQUIPMENT, CABLING, AND OTHER COMPONENTS TO REMAIN OPERATIONAL PRIOR TO DEMOLITION. WHERE CIRCUITS REMAIN OPERATIONAL IN THE CONSTRUCTION AREA, DOCUMENT PLAN ROUTES AND PROVIDE A CABLE SCHEDULE INDICATING THE AFFECTED SYSTEMS. REVIEW REQUIREMENTS FOR ACTIVE CABLING WITH THE OWNER AND GENERAL CONTRACTOR PRIOR TO DEMOLITION.

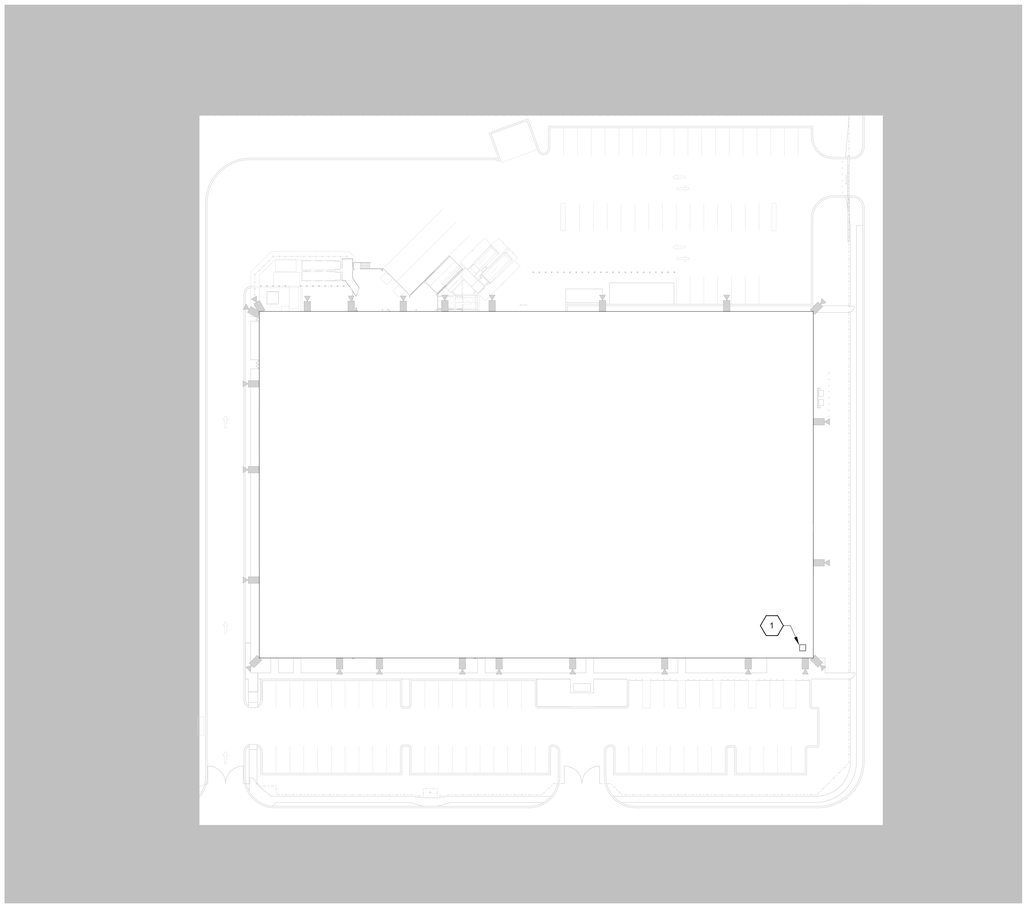
H. LOCATE EXISTING COMMUNICATIONS CABLE AND PATHWAYS THAT MAY BE AFFECTED BY DEMOLITION AND CONSTRUCTION PRIOR TO DEMOLITION, INCLUDING BUT NOT LIMITED TO SYSTEMS PATHWAYS AND SERVICE ENTRANCES.

I. VERIFY ACTUAL QUANTITIES AND LOCATIONS OF EXISTING EQUIPMENT TO BE DEMOLISHED WITH THE OWNER AND GENERAL CONTRACTOR PRIOR TO COMMENCEMENT OF DEMOLITION WORK.

J. PROVIDE BLANK COVER PLATES MATCHING THE SURROUNDING SURFACES ON ALL BACKBOXES TO REMAIN IN PLACE.

ELECTRONIC SAFETY & SECURITY SYSTEM DEMOLITION KEYNOTES

#	
1	EXISTING RADIO ANTENNA ON NON-PENETRATING SLED ROOF MOUNT, TO REMAIN. CARE SHALL BE TAKEN DURING ROOF REPLACEMENT TO ENSURE SYSTEM FUNCTIONALITY. COORDINATE WITH VA STAFF PRIOR TO ANY MOVEMENT OF ANTENNA FOR ROOF REPLACEMENT TO AVOID SERVICE INTERRUPTIONS. REFER TO ARCHITECTURAL PLANS FOR EXTENT OF ROOF REPLACEMENT SCOPE OF WORK.



N

1 ELECTRONIC SAFETY & SECURITY DEMOLITION SITE PLAN
1" = 40'-0"

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/21/2025 15:29:16

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
KRISTOPHER G HETLAGE
BICSI ID # 328601
EXPIRES 12-31-27
RCDD
4/25/25

DRAWING TITLE
ELECTRONIC SAFETY & SECURITY DEMOLITION SITE PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED KGH | DRAWN MDT

PROJECT NUMBER **762-24-101**

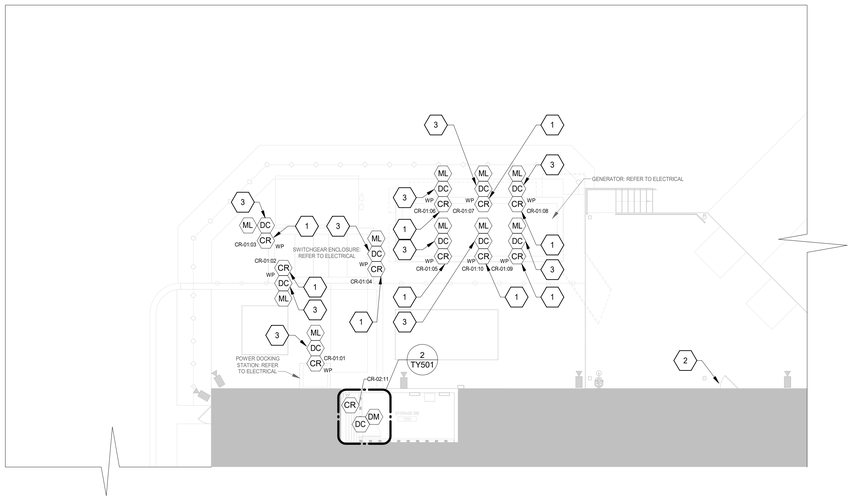
BUILDING NUMBER CMOP

DRAWING NUMBER **TD001**

DRAWING # 37 OF 40

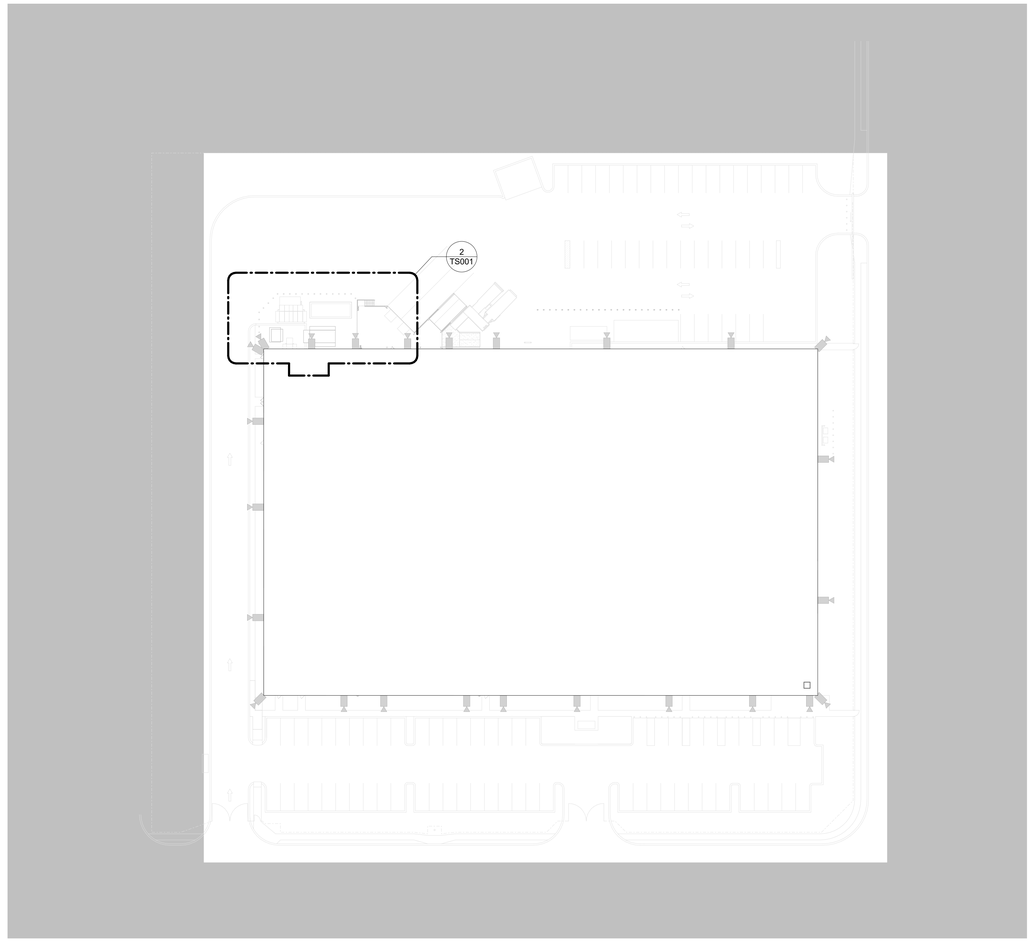
Veterans Health Administration

VA | U.S. Department of Veterans Affairs



N

2 ELECTRONIC SAFETY & SECURITY ENLARGED SITE PLAN
1" = 10'-0"



N

1 ELECTRONIC SAFETY & SECURITY SITE PLAN
1" = 40'-0"

ELECTRONIC SAFETY & SECURITY GENERAL NOTES

A. DRAWING IS DIAGRAMMATIC IN NATURE AND IS NOT TO BE CONSTRUED AS ALL INCLUSIVE; FIELD VERIFY EXISTING CONDITIONS AND ADJUST WORK AS REQUIRED TO EXECUTE SPECIFIED WORK.

B. EXISTING CONDITIONS INDICATED ARE BASED ON GENERAL FIELD NOTES AND HISTORICAL DATA AND DOCUMENTATION AND ARE FOR REFERENCE PURPOSES ONLY TO DEFINE SCOPE OF WORK; FIELD VERIFY ALL CONDITIONS.

C. THIS SITE IS AN ACTIVE WORKING ENVIRONMENT; SYSTEMS SHALL NOT BE SHUTDOWN WITHOUT WRITTEN AUTHORIZATION; ALL REQUESTS SHALL BE SUBMITTED IN WRITING A MINIMUM OF TEN (10) WORKING-DAYS PRIOR TO PROPOSED ACTIVITY DATE OR NEED UNLESS DIRECTED OTHERWISE.

D. SEE T-001 TELECOMMUNICATIONS COVER SHEET FOR SYMBOLS DEFINITION:
1. SYMBOLS GRAYED/ HALFTONE: INDICATED FOR REFERENCE AND/OR INDICATING EXISTING UNLESS SPECIFICALLY NOTED OTHERWISE.
2. SYMBOLS DASHED OR SPECIFICALLY KEYED NOTED: INDICATES DEMOLITION WORK.

E. OWNER SHALL HAVE FIRST SALVAGE RIGHTS FOR ANY DEMOLISHED DEVICES OR MATERIAL.

F. ALL EXTERIOR SECURITY PATHWAYS SHALL BE IN CONCRETE ENCASED CONDUIT.

G. ALL ELECTRONIC SECURITY SYSTEMS WILL BE INTEGRATED WITH EXISTING CAMPUS SECURITY CONTROL CENTER. SYSTEM COMPATIBILITY WILL BE SPECIFIED TO BE VERIFIED. EXISTING VMS: GENETEC SYNERGIS IX AND SECURITY MANAGEMENT SYSTEM: TYCO C-CURE 9000.

H. COORDINATE FIBER OPTIC AND COPPER CABLING REQUIREMENTS FOR EQUIPMENT CONNECTED TO THE BAS WITH THE CONTROLS CONTRACTOR. WHERE NECESSARY, PROVIDE PATHWAYS FOR NEW CABLING TO SUPPORT EQUIPMENT MONITORED AND CONTROLLED BY THE BAS.

ELECTRONIC SAFETY & SECURITY SYSTEM KEYNOTES

#	
1	PROVIDE SURFACE MOUNTED DUAL-AUTHENITICATION (PIV AND PIN-CODE) CARD READER. REFER TO DETAIL 1/TY501 FOR MORE INFORMATION.
2	EXISTING VIDEO-INTERCOM MASTER STATION: UPDATE FEATURES TO INCLUDE NEW DOCK STATION CONTROLS FOR VIDEO, INTERCOM, AND REMOTE DOOR RELEASE.
3	ENCLOSURE HAS MULTIPLE ACCESS/PANELS/DOORS; PROVIDE POSITION/STATUS SWITCHES ON EACH ACCESS/PANEL/DOOR.

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/21/2025 15:42:18

VA FORM 08-6231

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
KRISTOPHER O HETLAGE
BICSI ID # 325601
EXPIRES 12-31-27
RCDD
4/15/25

DRAWING TITLE
ELECTRONIC SAFETY & SECURITY SITE PLAN

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED KGH | DRAWN MDT

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER
TS001
DRAWING # 38 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

ELECTRONIC SECURITY SYSTEM GENERAL NOTES

A. DRAWING IS DIAGRAMMATIC IN NATURE AND IS NOT TO BE CONSTRUED AS ALL INCLUSIVE; FIELD VERIFY EXISTING CONDITIONS AND ADJUST WORK AS REQUIRED TO EXECUTE SPECIFIED WORK.

B. EXISTING CONDITIONS INDICATED ARE BASED ON GENERAL FIELD NOTES AND HISTORICAL DATA AND DOCUMENTATION AND ARE FOR REFERENCE PURPOSES ONLY TO DEFINE SCOPE OF WORK; FIELD VERIFY ALL CONDITIONS.

C. THIS SITE IS AN ACTIVE WORKING ENVIRONMENT; SYSTEMS SHALL NOT BE SHUTDOWN WITHOUT WRITTEN AUTHORIZATION; ALL REQUESTS SHALL BE SUBMITTED IN WRITING A MINIMUM OF TEN (10) WORKING-DAYS PRIOR TO PROPOSED ACTIVITY DATE OR NEED UNLESS DIRECTED OTHERWISE.

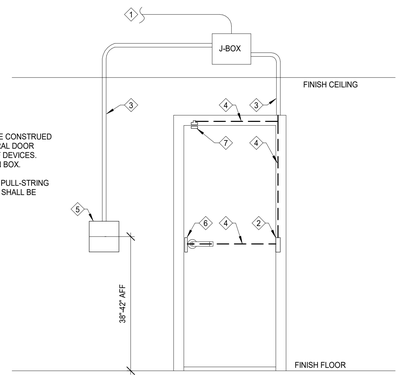
D. SEE TN001 TELECOMMUNICATIONS COVER SHEET FOR SYMBOLS DEFINITION:
1. SYMBOLS GRAYED/ HALFTONE: INDICATED FOR REFERENCE AND/OR INDICATING EXISTING UNLESS SPECIFICALLY NOTED OTHERWISE.
2. SYMBOLS DASHED OR SPECIFICALLY KEYED NOTED: INDICATES DEMOLITION WORK.

E. OWNER SHALL HAVE FIRST SALVAGE RIGHTS FOR ANY DEMOLISHED DEVICES OR MATERIAL.

F. SECURITY CONTRACTOR SHALL PROVIDE ALL POWER REQUIREMENTS ASSOCIATED WITH ELECTRONIC SECURITY SYSTEMS.

ELECTRONIC SAFETY & SECURITY SYSTEM KEYNOTES

1	TO HEAD-END EQUIPMENT ENCLOSURE, DOOR CONTROLLERS AND POWER SUPPLIES. REFER TO ELECTRICAL FOR DEDICATED 120V POWER.
2	POWER TRANSFER HINGE.
3	MINIMUM 1-1/4" CONDUIT. FIELD VERIFY ROUTING AT JOB SITE.
4	MULTI-CONDUCTOR CABLE(S). COORDINATE REQUIREMENTS WITH MANUFACTURERS' RECOMMENDATIONS.
5	DUAL AUTHENTICATION CARD READER AND KEYPAD DEVICE. CONNECT NEW CARD READER AND KEYPAD TO NEW CIRCUIT AND PATHWAY. CARD READER AND KEYPAD MOUNTED ON NON-SECURED SIDE OF DOOR.
6	ELECTRIC MORTISE LOCK WITH INTEGRAL ELECTRIC STRIKE AND REQUEST TO EXIT. FIELD VERIFY MOUNTING AND CABLING REQUIREMENTS.
7	INTEGRATED DOOR CONTACT AND ANTI-PROP/FORCED ENTRY ALARM. FIELD VERIFY MOUNTING AND CABLING REQUIREMENTS.



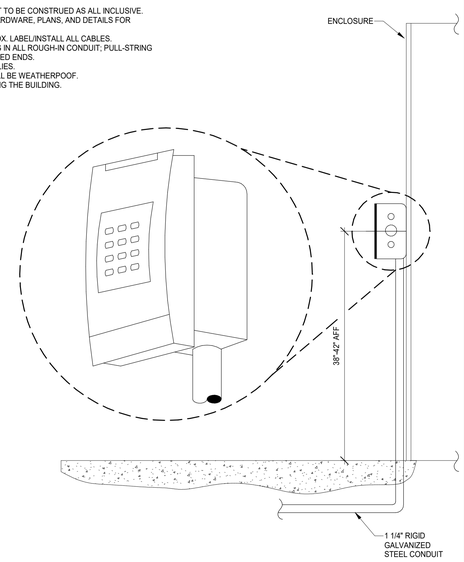
NOTES:

1. ELEVATION VIEW FROM SECURED SIDE OF DOOR.
2. DETAIL IS DIAGRAMMATIC IN NATURE AND NOT TO BE CONSTRUED AS ALL INCLUSIVE. COORDINATE WITH ATCHITECTURAL DOOR HARDWARE, PLANS, AND DETAILS FOR LOCATION OF DEVICES.
3. PROVIDE 18" SERVICE LOOP WITHIN EACH ROUGH-IN BOX. LABEL/INSTALL ALL CABLES.
4. PROVIDE ROUGH-IN BOXES AND CONDUIT. PROVIDE PULL-STRING IN ALL ROUGH-IN CONDUIT; PULL-STRING IN FRAMES SHALL BE PROVIDED WITH WEIGHTED ENDS.
5. UL RATED BOXES IN ALL FIRE RATED ASSEMBLIES.

2 SECURITY DOOR HARDWARE ELEVATION SINGLE DOOR
NTS REF: 2/ TS001

NOTES:

1. DETAIL IS DIAGRAMMATIC IN NATURE AND NOT TO BE CONSTRUED AS ALL INCLUSIVE. COORDINATE WITH ARCHITECTURAL DOOR HARDWARE, PLANS, AND DETAILS FOR LOCATION OF DEVICES.
2. 18" SERVICE LOOP WITHIN EACH ROUGH-IN BOX. LABEL/INSTALL ALL CABLES.
3. ROUGH-IN BOXES AND CONDUIT. PULL-STRING IN ALL ROUGH-IN CONDUIT; PULL-STRING IN FRAMES SHALL BE PROVIDED WITH WEIGHTED ENDS.
4. UL RATED BOXES IN ALL FIRE RATED ASSEMBLIES.
5. CARD READER, BACKBOX, AND CONDUIT SHALL BE WEATHERPOOF.
6. SLOPE CONDUIT 3-6 DEGREES WHEN ENTERING THE BUILDING.



1 DUAL-AUTHENTICATION (PIV & PIN CODE) CARD READER MOUNTING DETAIL
NTS

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/21/2025 15:29:19

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
KRISTOPHER Q HETLAGE
BICSI ID # 325601
EXPIRES 12-31-27
RCDD
4/15/25

DRAWING TITLE
ELECTRONIC SECURITY SYSTEM DETAILS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED KGH | DRAWN MDT

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER
TY501
DRAWING # 39 OF 40

Veterans Health Administration

VA U.S. Department of Veterans Affairs

VA FORM 08-6231

PHYSICAL ACCESS CONTROL SYSTEM (PACS) CARD READER SCHEDULE

NOTES:
1. PROVIDE ALL ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM COMPATIBLE WITH THE EXISTING CAMPUS PACS SYSTEM. PROVIDE ALL UPGRADES TO THE EXISTING PACS SYSTEM TO INCORPORATE NEW DEVICES.

TYPE	DESCRIPTION	MOUNTING	MOUNTING HEIGHT	LOCATION	MODELS	READ RANGE	POWER	COLOR	COMMENTS	NOTES
CR-01	CARD READER	SURFACE	38"-42" FROM CENTER AFF/ABOVE GRADE	OUTDOOR	MATCH EXISTING VA CARD READER SYSTEM	4" MAXIMUM	85mA AVG/ 116mA PEAK AT 12VDC	BLACK	DUAL AUTHENTICATION CARD READER WITH KEYPAD COMPATIBLE WITH EXISTING CAMPUS CARD READER SYSTEM. CARD READER SHALL BE FIPS-201, FICAM, AND US BADGE COMPLIANT. CONTRACTOR SHALL PROVIDE ALL ADDITIONAL REQUIRED MOUNTING EQUIPMENT NECESSARY FOR INSTALLATION.	WEATHER PROOF
CR-02	CARD READER	SURFACE	38"-42" FROM CENTER AFF	INDOOR	MATCH EXISTING VA CARD READER SYSTEM	4" MAXIMUM	85mA AVG/ 116mA PEAK AT 12VDC	BLACK	DUAL AUTHENTICATION CARD READER WITH KEYPAD COMPATIBLE WITH EXISTING CAMPUS CARD READER SYSTEM. CARD READER SHALL BE FIPS-201, FICAM, AND US BADGE COMPLIANT. CONTRACTOR SHALL PROVIDE ALL ADDITIONAL REQUIRED MOUNTING EQUIPMENT NECESSARY FOR INSTALLATION.	N/A.

ELECTRONIC SECURITY SYSTEM GENERAL NOTES

A. DRAWING IS DIAGRAMMATIC IN NATURE AND IS NOT TO BE CONSTRUED AS ALL INCLUSIVE; FIELD VERIFY EXISTING CONDITIONS AND ADJUST WORK AS REQUIRED TO EXECUTE SPECIFIED WORK.

B. EXISTING CONDITIONS INDICATED ARE BASED ON GENERAL FIELD NOTES AND HISTORICAL DATA AND DOCUMENTATION AND ARE FOR REFERENCE PURPOSES ONLY TO DEFINE SCOPE OF WORK; FIELD VERIFY ALL CONDITIONS.

C. THIS SITE IS AN ACTIVE WORKING ENVIRONMENT; SYSTEMS SHALL NOT BE SHUTDOWN WITHOUT WRITTEN AUTHORIZATION; ALL REQUESTS SHALL BE SUBMITTED IN WRITING A MINIMUM OF TEN (10) WORKING-DAYS PRIOR TO PROPOSED ACTIVITY DATE OR NEED UNLESS DIRECTED OTHERWISE.

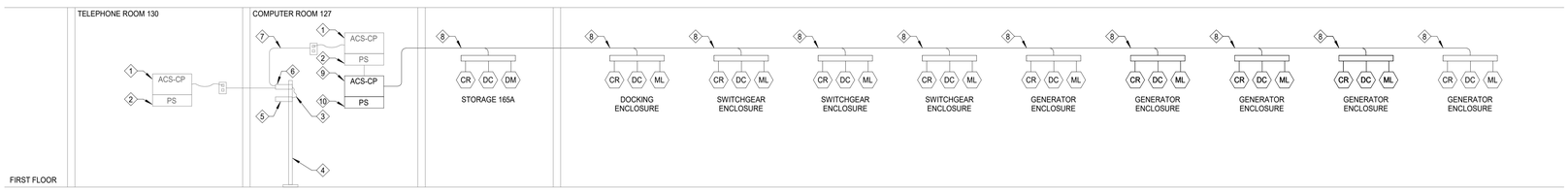
D. SEE TN001 TELECOMMUNICATIONS COVER SHEET FOR SYMBOLS DEFINITION:
1. SYMBOLS GRAYED/ HALFTONE: INDICATED FOR REFERENCE AND/OR INDICATING EXISTING UNLESS SPECIFICALLY NOTED OTHERWISE.
2. SYMBOLS DASHED OR SPECIFICALLY KEYED NOTED: INDICATES DEMOLITION WORK.

E. OWNER SHALL HAVE FIRST SALVAGE RIGHTS FOR ANY DEMOLISHED DEVICES OR MATERIAL.

F. SECURITY CONTRACTOR SHALL PROVIDE ALL POWER REQUIREMENTS ASSOCIATED WITH ELECTRONIC SECURITY SYSTEMS.

ELECTRONIC SECURITY SYSTEM RISER KEYNOTES

1	EXISTING ACS CONTROL PANEL VERIFY SPARE CAPACITY, EXPAND SYSTEM AS NECESSARY FOR FULLY FUNCTIONAL SYSTEM.
2	EXISTING ACS POWER SUPPLY.
3	EXISTING CATEGORY PATCH CORDS.
4	EXISTING RACK/CABINET.
5	EXISTING PHYSICAL SECURITY INFORMATION MANAGEMENT SYSTEM.
6	EXISTING LAN PATCH PANEL. VERIFY SPARE CAPACITY, EXPAND SYSTEM AS NECESSARY FOR FULLY FUNCTIONAL SYSTEM.
7	EXISTING CATEGORY CABLE.
8	MULTICONDUCTOR CABLE.
9	ACS CONTROL PANEL.
10	ACS POWER SUPPLY.



1 ACCESS CONTROL RISER DIAGRAM
NTS

FULLY SPRINKLERED

BID DOCUMENTS

NUMBER	REVISION DESCRIPTION	DATE

4/21/2025 15:29:20

CONSULTANTS:

CIVIL/STRUCTURAL ENGINEER
H2B
1225 N. LOOP WEST, STE 800
HOUSTON, TX 77008
(713) 864-2900

MEP/TELECOM ENGINEER
SPUR DESIGN
2519 MADISON AVE, STE 100
KANSAS CITY, MO 64108
(913) 369-7200

FIRE PROTECTION ENGINEER
POOLE FIRE PROTECTION
19910 WEST 161ST STREET
OLATHE, KANSAS 66062
(913) 829-8690

PHYSICAL SECURITY
FORCE PROTECT
10901 FRONT BEACH RD, STE 1415
PANAMA CITY BEACH, FL 32407
(502) 836-4232

ARCHITECT: SPUR #: 2091.06

SPUR

SPUR DESIGN, LLC
312 SW 25TH STREET
Oklahoma City, OK 73109
(405) 842-6100

ARCH COA NO. 20013-0 EXP. 10/11/2025
MECH ENGR COA NO. 20013-0 EXP. 10/11/2025
ELEC ENGR COA NO. 20013-0 EXP. 10/11/2025

STAMP:
REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER
BICSI
KRISTOPHER G HETLAGE
BICSI ID # 328601
EXPIRES 12-31-27
RCDD
4/25/25

DRAWING TITLE
ELECTRONIC SECURITY SYSTEM RISERS

VA HEALTH CARE SYSTEM APPROVAL:

PROJECT TITLE
CORRECT FCA & PHYSICAL SECURITY SYSTEMS

LOCATION TUCSON VA CMOP
3675 E. BRITANNIA DRIVE
TUCSON, AZ 85706

DATE **04/25/2025** | CHECKED KGH | DRAWN MDT

PROJECT NUMBER **762-24-101**

BUILDING NUMBER CMOP

DRAWING NUMBER **TY601**

DRAWING # 40 OF 40

Veterans Health Administration

VA | U.S. Department of Veterans Affairs

VA FORM 08-6231