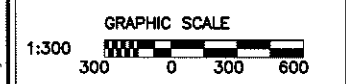




KEY PLAN



GRAPHIC SCALE(S)

DATE	03/22/06	PERCENT	95%
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REVISION 2			
REVISION 3			
REVISION 4			
REVISION 5			
REVISION 6			
REVISION 7			



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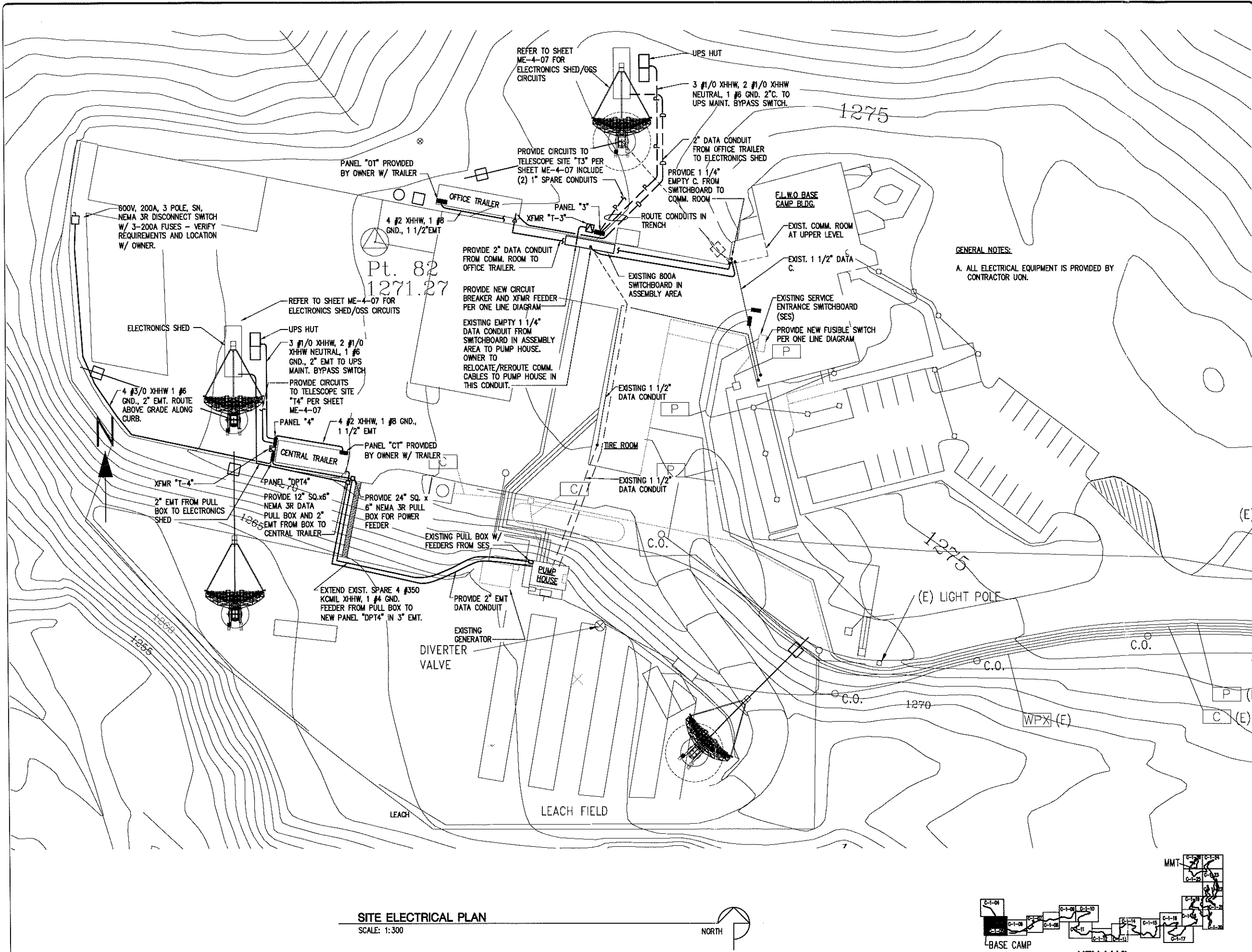
Office of Facilities Engineering and Operations
 750 9th Street N.W., Suite 5200
 Washington DC 20560-0908

PROJECT NAME: F.L. WHIPPLE OBSERVATORY
 670 MT. HOPKINS ROAD
 AMADO, ARIZONA

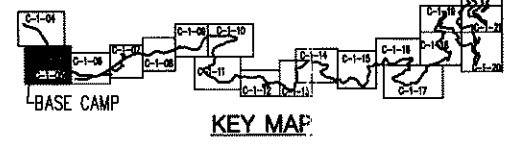
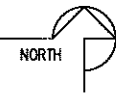
PROJECT FILE: VERITAS PROTOTYPE
 T3 & T4
 0382102
 M3 PN06037

PROJECT TYPE: SITE ELECTRICAL PLAN
 ELECTRICAL
 RG CLJ EBL

SHEET NO. OF: E 1 06



SITE ELECTRICAL PLAN
 SCALE: 1:300

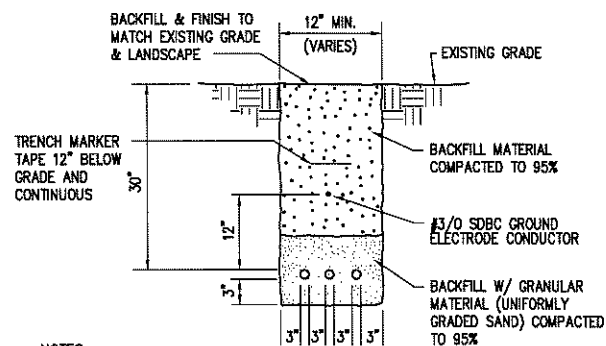


KEYNOTES

- 1 CONDUITS ROUTED ABOVE ASPHALT PAVING OR IN TRENCH AS APPLICABLE FROM SOURCE. SEE SHEET E-1-06 FOR CONTINUATION.
- 2 2" DATA CONDUIT.
- 3 NOT USED
- 4 NOT USED
- 5 FEEDER FROM UPS TO PANEL IN ELECTRONICS SHED: 3 #1/0 XHHW, 2 #1/0 XHHW NEUTRAL, #6 GROUND, 2" C.
- 6 EXOTHERMIC WELD (TYP.)
- 7 NOT USED
- 8 1#2/0 SDBC GROUND ELECTRODE CONDUCTOR-ROUTE ABOVE ASPHALT WHERE TRENCH IS NOT AVAILABLE (TYP.)
- 9 3/4" x 10' COPPER CLAD GROUND ROD (TYP.)
- 10 1#2/0 SDBC PIGTAIL BONDED TO GROUND ELECTRODE SYSTEM FOR FUTURE LIGHTNING PROTECTION SYSTEM FOR ELECTRONICS SHED.
- 11 REFER TO SHEET S-0-1 FOR GROUNDING SYSTEM AT OSS.
- 12 1#2/0 SDBC BOND TO BUILDING STEEL (TYP.)
- 13 PROVIDE CIRCUITS FROM PANEL "3" OR "4" AS APPLICABLE TO ELECTRONICS SHED, UPS HUT AND OSS PER PANEL SCHEDULE ON SHEET E-0-5. ROUTE IN EMT CONDUIT ABOVE GRADE OR IN SCHD. 40 PVC CONDUIT IN TRENCH AS APPLICABLE.
- 14 EXTEND CIRCUITS (KEY NOTE #13) TO APPROPRIATE LOCATIONS AS REQUIRED.
- 15 NOT USED
- 16 PROVIDE NEMA 6-20R RECEPTACLE FOR A/C UNIT. VERIFY WITH UNIT. PROVIDE CIRCUIT 16,18 FROM PANEL "3" OR "4" AS APPLICABLE.
- 17 DASHED LINE INDICATES EDGE OF PLATFORM.
- 18 PROVIDE 240V, 60A, 3 POLE, NEMA 3R DISCONNECT SWITCH, FUSED PER HVAC EQUIPMENT MANUFACTURER'S REQUIREMENTS. PROVIDE CIRCUIT FROM PANEL "3" OR "4" - 1, 3, 5. MOUNT TO MCF RACK, NEAR HEAT PUMP UNIT. CONNECT TO UNIT USING LTFC. COORDINATE FINAL LOCATION W/ COTR AND HP-001.
- 19 OWNER PROVIDED HEAT PUMP HP-001 ON CONCRETE MAINTENANCE PAD. COORDINATE FINAL LOCATION INCLUDING DISCONNECT SWITCH W/ COTR. (TYP. OF 2 SITES)
- 20 NOT USED
- 21 NOT USED
- 22 NOT USED
- 23 #2/0 SDBC BOND TO GROUND ELECTRODE SYSTEM.
- 24 NOT USED
- 25 PANEL PROVIDED WITH ELECTRONICS SHED. REFER TO ONE LINE DIAGRAM. SHEET E-0-5
- 26 PROVIDE 20A, WP GFCI DUPLEX RECEPTACLE MOUNTED AT 24" AFG.
- 27 VERIFY ELECTRONICS SHED EQUIPMENT LAYOUT PRIOR TO MAKING PENETRATIONS FOR AIR SUPPLY AND RETURN. COORDINATE FRAMING OF OPENINGS WITH GENERAL CONTRACTOR. FLASH AND SEAL AROUND DUCT PENETRATIONS.
- 28 PROVIDE FLEXIBLE DUCT CONNECTION.
- 29 OWNER FURNISHED CHILLER UNIT. MAINTAIN 36" MINIMUM CLEARANCE ALL SIDES.
- 30 PROVIDE 240V, 30A, 3 POLE NEMA 3R DISCONNECT FUSED PER CHILLER MANUFACTURER'S REQUIREMENTS. PROVIDE CIRCUIT FROM PANEL "3" OR "4" - 7,9,11. MOUNT TO MCF RACK NEAR CHILLER. CONNECT TO UNIT USING LTFC. COORDINATE FINAL LOCATION WITH COTR.

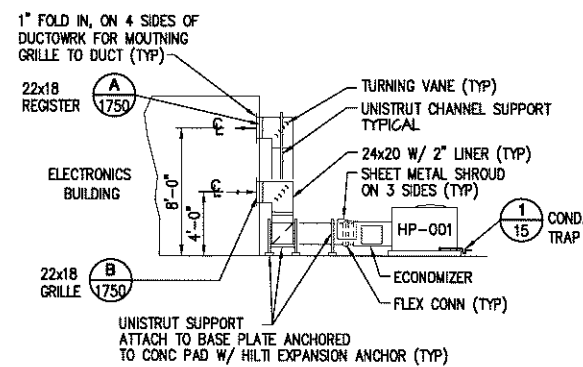
GENERAL NOTE

A. CONDUITS SHALL BE ROUTED ABOVE GRADE UNLESS OTHERWISE INDICATED. LOCATE AND SECURE TO PROVIDE ADEQUATE PROTECTION. SOME CONDUITS SHALL BE BURIED AT TELESCOPE SITE "T3". REFER TO SHEET E-1-06.

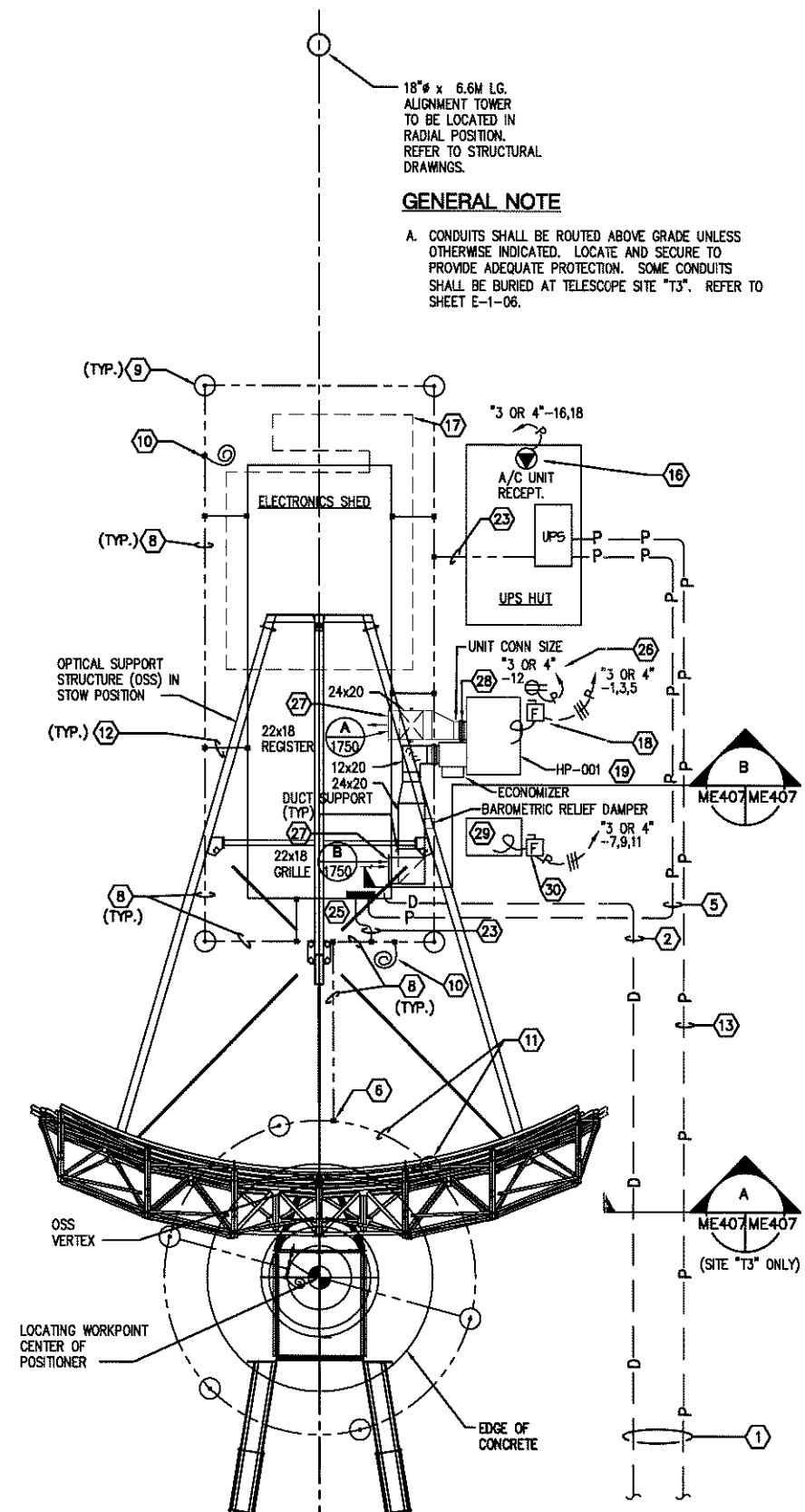


- NOTES:
- SINGLE CONDUIT TRENCH IS SIMILAR.
 - PROVIDE QUANTITY AND SIZE OF CONDUITS AS REQUIRED.

A
ME-45/ME-45 N.T.S.
MULTIPLE CONDUIT TRENCH DETAIL

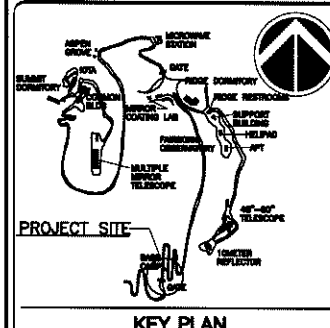


B
ME-45/ME-45 N.T.S.
SECTION



1
MECHANICAL/ELECTRICAL - TYPICAL OSS SITE UTILITY PLAN
N.T.S. NORTH

ARCHITECTURE
ENGINEERING
TECHNOLOGY
M3 Engineering & Technology Corporation
Tucson, Arizona
Tel. (520) 690-8208 FAX HQ. (520) 283-8177



KEY PLAN

GRAPHIC SCALE(S)

DATE	03/22/06	95%
REVISION 1		
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REVISION 5		
REVISION 6		
REVISION 7		

Smithsonian Institution
Office of Facilities Engineering and Operations
750 9th Street N.W., Suite 5200
Washington DC 20560-0908

PROJECT TITLE: 670 MT. HOPKINS ROAD AMADO, ARIZONA
PROJ. NO.: VERITAS PROTOTYPE T3 & T4
JOB NO.: 0382102
JOB NO.: M3 PN06037

TYPICAL OSS UTILITY PLAN
MECHANICAL, ELECTRICAL
RPG,CB RPG EBL,MF

SHEET NO. 7 OF
ME 4 07

ABBREVIATIONS

A	AMPERES	GFCI	GROUND FAULT CURRENT INTERRUPTER	PR	PAIR
ADA	AMERICANS WITH DISABILITIES ACT GUIDELINES (1990)	GND	GROUND	REM	REMARK
AFF	ABOVE FINISHED FLOOR	HP	HORSE POWER	RGS	RIGID GALVANIZED STEEL
AFG	ABOVE FINISHED GRADE	IMC	INTERMEDIATE METAL CONDUIT	SDBC	SOFT DRAWN BARE COPPER
AICS	AMPERES INTERRUPTING CAPACITY SYMMETRIC	KW	KILOWATTS	SHLD,SH	SHIELDED
AMP	AMPACITY	KVA	KILOVOLT AMPS	SP	SPARE
AC	ALTERNATING CURRENT	LTFC	LIQUID TIGHT FLEXIBLE CONDUIT	TYP	TYPICAL
ARS	AMPERES RMS SYMMETRICAL	MCB	MAIN CIRCUIT BREAKER	TTB	TELEPHONE TERMINAL BOARD
AWG	AMERICAN WIRE GAUGE	MCF	METAL CHANNEL FRAMING	UL	UNDERWRITERS LABORATORIES
#/C	NUMBER OF CONDUCTORS	MCP	MOTOR CIRCUIT PROTECTOR	UG	UNDERGROUND
BC	BARE COPPER	M	MOTOR	UPS	UNINTERRUPTIBLE POWER SOURCE
C	CONDUIT	MCC	MOTOR CONTROL CENTER	UON	UNLESS OTHERWISE NOTED
CB	CIRCUIT BREAKER	MFG	MANUFACTURER	V	VOLTS
COTR	CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE	MLO	MAIN LUGS ONLY	W	WATTS
CU	COPPER	NEC	NATIONAL ELECTRICAL CODE	WP	WEATHERPROOF
EM	EMERGENCY LIGHT	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	XFMR	TRANSFORMER
EWC	ELECTRIC WATER COOLER	NIC	NOT INCLUDED IN CONTRACT		
FU	FUSE	NL	NIGHT LIGHT		
GFI	GROUND FAULT INTERRUPTER	N, NEU	NEUTRAL		
		OHE	OVERHEAD ELECTRICAL		
		PB	PULL BOX		

GENERAL NOTES

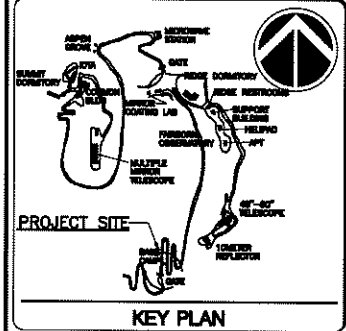
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL ELECTRICAL INSTALLATIONS WITH ALL OTHER TRADES TO AVOID ANY CONFLICTS WITH PIPING, STRUCTURE, ETC.
- ALL NEW WIRING SHALL BE INSTALLED IN CONDUIT WITHOUT EXCEPTION, SIZE PER 2002 N.E.C. AS A MINIMUM, OR AS INDICATED.
- ALL CONDUCTORS SHALL BE 75° C. THWN, XHHW INSULATION, COPPER, UON.
- DRAWINGS ARE DIAGRAMMATIC IN NATURE AND CANNOT SHOW EVERY CONNECTION, J-BOX, WIRE, CONDUIT, ETC. THE EXACT LOCATION AND ARRANGEMENT OF ALL PARTS SHALL BE DETERMINED AS THE WORK PROGRESSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE AND FUNCTIONAL ELECTRICAL SYSTEM.
- ALL CONDUCTORS INSTALLED IN CONDUIT EXPOSED TO THE SUN SHALL BE TYPE XHHW.
- ALL CONDUIT INSTALLED SHALL BE GROUNDED IN ACCORDANCE WITH ARTICLE 250 OF THE N.E.C. ALL CONDUITS SHALL CONTAIN AN INSULATED GROUND WIRE SIZED PER NEC 250.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LOSS OR DAMAGE CAUSED BY THE WORKERS TO THE FACILITY DURING THE COURSE OF CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING SUCH.
- ALL ELECTRICAL EQUIPMENT ON ROOF OR OUTSIDE BUILDING SHALL BE NEMA 3R OR 4.
- INCIDENTAL ITEMS NOT INDICATED ON DRAWINGS, NOR MENTIONED IN THE SPECIFICATIONS THAT CAN BE LEGITIMATELY AND REASONABLY INFERRED TO BELONG TO THE WORK DESCRIBED OR NECESSARY IN GOOD PRACTICE TO PROVIDE A COMPLETE SYSTEM, SHALL BE FURNISHED AND INSTALLED AS THOUGH ITEMIZED HERE IN EVERY DETAIL.
- CONTRACTOR SHALL FURNISH MATERIALS, TOOLS, SERVICES, LABOR, ETC., FOR A COMPLETE ELECTRICAL INSTALLATION UNLESS OTHERWISE NOTED ON PLANS.
- ALL WORK SHALL COMPLY WITH ALL APPLICABLE COUNTY AND STATE CODES, ORDINANCES RULES, REGULATIONS, ETC. THE ENTIRE ELECTRICAL INSTALLATION SHALL COMPLY WITH OR SURPASS THE 2002 EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.).
- ALL MATERIALS AND EQUIPMENT FURNISHED BY THE ELECTRICAL CONTRACTOR SHALL BE NEW OF FIRST-CLASS QUALITY, FREE FROM DEFECTS AND SHALL CONFORM WITH UNDERWRITERS LABORATORIES (UL) STANDARDS, WHERE APPLICABLE, UNLESS OTHERWISE NOTED ON PLANS.
- DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN AUTHORIZED. PROVIDE TEMPORARY SERVICES DURING INTERRUPTIONS TO EXISTING FACILITIES AS REQUIRED.
- CONTRACTOR SHALL VISIT THE JOB SITE, AND PRIOR TO SUBMITTING BID, VERIFY ALL EXISTING CONDITIONS, LOCATIONS, DIMENSIONS AND COUNTS AS SHOWN AND/OR NOTED ON THE DRAWINGS.
- ALL SWITCHES EXCEPT LIGHTING SWITCHES SHALL HAVE ENGRAVED NAMEPLATE TO DESCRIBE THE SWITCH FUNCTION.
- ALL HOMERUN J-BOXES SHALL BE IDENTIFIED WITH PANEL DESIGNATION AND CIRCUIT NUMBER.
- ALL EMPTY CONDUITS SHALL CONTAIN A PULL WIRE.
- TELEPHONE AND DATA WIRING, OUTLET, TERMINATIONS, EQUIPMENT, ETC., SHALL BE FURNISHED BY THE OWNER AND INSTALLED BY SEPARATE CONTRACTOR.
- PROVIDE NEW, TYPED, UPDATED PANEL SCHEDULE INDEX CARDS FOR ALL PANELS.
- VERIFY LOCATION AND SIZE OF ALL MECHANICAL EQUIPMENT PRIOR TO INSTALLATION.
- THE ELECTRICAL DRAWINGS SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT, BUT ACCURACY IS NOT GUARANTEED. VERIFY ALL EQUIPMENT LOCATIONS PRIOR TO INSTALLATIONS.
- VERIFY: VOLTAGE, PHASE ROTATION, NEUTRAL, AND GROUND CONNECTIONS TO ALL EQUIPMENT. NOTE: MATCH PHASE ROTATION OF EXISTING POWER SOURCE.
- ALL WIRING TO EQUIPMENT, SHALL COMPLY WITH THE MANUFACTURERS RECOMMENDATIONS, UON.
- ALL ELECTRICAL WORK, SHALL BE COORDINATED WITH ALL OTHER TRADES.
- LABEL ALL POWER PANELS, DISCONNECT SWITCHES, RECEPTACLES, ETC. WITH CIRCUIT NUMBERS.
- THE HORSEPOWER AND LOADS INDICATED ARE APPROXIMATE. MOTOR AND EQUIPMENT ARE SIZED IN ACCORDANCE WITH INFORMATION GIVEN IN OTHER PORTIONS OF THE PLANS AND SPECIFICATIONS. IF MOTORS OR ANY OTHER COMPONENTS ARE FURNISHED IN SIZES OTHER THAN INDICATED, IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO ADJUST THE INDICATED SIZES OF WIRING, CIRCUIT BREAKERS, THERMAL OVERLOADS, ETC. AND TO RE-CIRCUIT IF NECESSARY AT NO ADDITIONAL COST TO THE OWNER.
- BRANCH CIRCUIT CONDUCTORS FOR 120/208V WYE SYSTEM SHALL BE COLOR CODED AS FOLLOWS: BLACK FOR PHASE A, RED FOR PHASE B, BLUE FOR PHASE C, WHITE FOR NEUTRAL, AND GREEN FOR EQUIPMENT GROUND. BRANCH CIRCUIT CONDUCTORS FOR 277/480V WYE SYSTEM SHALL BE COLOR CODED AS FOLLOWS: BROWN FOR PHASE A, ORANGE FOR PHASE B, YELLOW FOR PHASE C, GRAY FOR NEUTRAL, AND GREEN FOR EQUIPMENT GROUND.

SYMBOLS

---	BURIED POWER CONDUIT AS NOTED ON DRAWINGS	NEUT / HOT	CONCEALED CONDUIT - NUMBER OF SLASHES INDICATE NUMBER OF WIRES (WHEN MORE THAN TWO) PROVIDE GROUND WIRE IN ALL CONDUITS (SIZE PER NEC 250-122 UNLESS NOTED OTHERWISE); GROUNDS ARE NOT SHOWN BY SLASHES. SLASHES WHERE SHOWN ARE FOR CONVENIENCE OF THE CONTRACTOR ONLY; PROVIDE NUMBER OF CONDUCTORS AS REQUIRED BY CIRCUIT FUNCTION.
---	BURIED DATA/COMMUNICATIONS CONDUIT AS NOTED ON DRAWINGS	LS-1,3,5	HOME RUN TO PANELBOARD - 'LS'-INDICATES PANEL DESIGNATION 1,3,5-INDICATES CIRCUIT NO.
---	NEW CONDUIT	---	BURIED GROUNDING CONDUCTOR BARE COPPER
⊕	JUNCTION BOX	⊗	LIGHTNING PROTECTION SYSTEM AIR TERMINAL
⊕	DUPLEX RECEPTACLE OUTLET, NEMA 5-20R, MTD 18" AFF	⊕	GROUND ROD WITH EXOTHERMIC TYPE CONNECTION TO GROUNDING CONDUCTOR
⊕	DUPLEX RECEPTACLE ABOVE COUNTER, 42" A.F.F. NEMA 5-20R.	⊕	EQUIPMENT CONNECTION
⊕	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE GFCI 20 AMP FEED THROUGH TYPE.	⊕	METER, UTILITY
⊕	QUADRAPLEX OUTLET WITH SINGLE DEVICE EQUAL TO HUBBELL 415 SERIES. 20A, 120V, 2P+G CONFIGURATIONS	⊕	EXOTHERMIC TYPE CONNECTION TO GROUNDING CONDUCTOR
⊕	SPECIAL PURPOSE RECEPTACLE AS NOTED	⊕	TRANSFORMER, AS NOTED ON ONE LINE DIAGRAM
⊕	FLEXIBLE CONDUIT	⊕	TRANSFORMER, AS NOTED ON SITE PLAN
⊕	MOTOR	⊕	CIRCUIT BREAKER
⊕	WIREWAY	⊕	FUSED SWITCH, LOAD BREAK
⊕	EXTERNALLY OPERATED DISCONNECT SWITCH, F INDICATES FUSIBLE, NF INDICATES NON-FUSIBLE TYPE.	⊕	CURRENT TRANSFORMER/POWER TRANSFORMER
⊕	COMBINATION MOTOR STARTER DISCONNECT, FUSED		
⊕	PUSH BUTTON CONTROL STATION		
⊕	RECESSED PANELBOARD & CABINET		
⊕	SURFACE MOUNTED PANELBOARD & CABINET		
⊕	IN GROUND PULL BOX, SIZE AS INDICATED		
---	OVERHEAD ELECTRICAL LINES AND POWER POLES		

NOTE: NOT ALL SYMBOLS SHOWN ARE USED FOR THIS PROJECT.

MS Engineering & Technology Corporation
Tucson, Arizona
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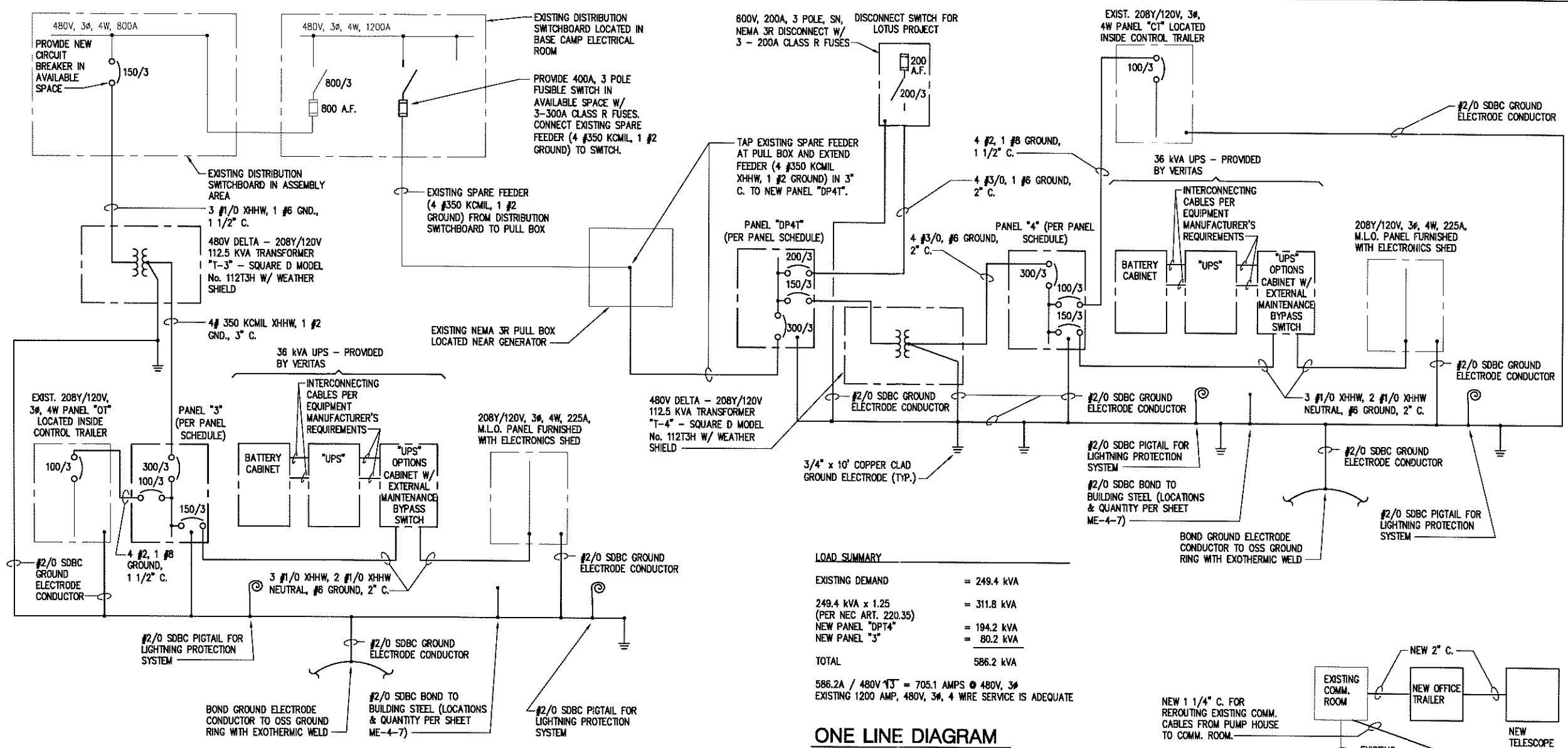
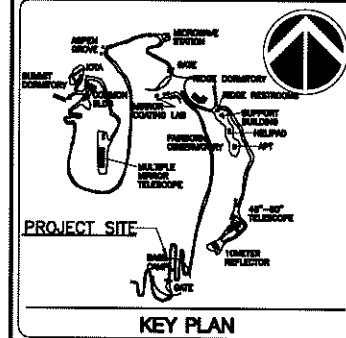
Smithsonian Institution

Office of Facilities Engineering and Operations
750 9th Street N.W. Suite 5200
Washington DC 20560-0908

ADDRESS	670 MT. HOPKINS ROAD AMADO, ARIZONA
PROJECT TITLE	VERITAS PROTOTYPE T3 & T4
DATE	M3 PN06037

TITLE	& GENERAL NOTES SYMBOLS, ABBREVIATIONS ELECTRICAL		
REVISION	RPG	CI	EBL
DATE			

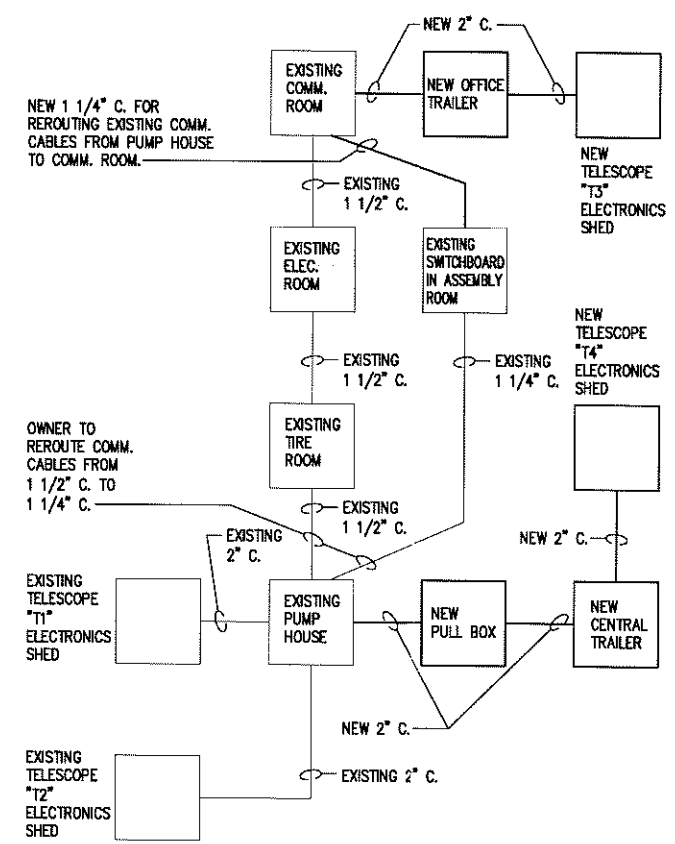
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LOAD SUMMARY

EXISTING DEMAND	= 249.4 KVA
249.4 KVA x 1.25 (PER NEC ART. 220.35)	= 311.8 KVA
NEW PANEL "DPT4"	= 194.2 KVA
NEW PANEL "3"	= 80.2 KVA
TOTAL	586.2 KVA

586.2A / 480V 1.73 = 705.1 AMPS @ 480V, 3Ø
EXISTING 1200 AMP, 480V, 3Ø, 4 WIRE SERVICE IS ADEQUATE



(TYPICAL FOR PANEL "3" AND "4")

TYPE, SQ. D. NOOD W/ BOLT-ON BREAKERS
SERVICE, 120/208V, 3Ø, 4W
POLES, 42
LOCATION, OUTSIDE UPS TRAILER
SURFACE, FLUSH

PANEL "3 & 4"

BUS AMPACITY, 400A
MAINS, 300A M.C.B.
NEUTRAL, FULL
AIC, 10,000
CINEMA I BINEMA SR/O

CKT. KVA	CB TRIP	WIRE	LOAD NAME	POLE	LOAD NAME	WIRE	CB TRIP	CKT. KVA
4.5	60	3/4"	HP-1	1	POSITIONER	10	30	2.6
4.5	60	3/4"	HP-1	2	POSITIONER	10	30	2.6
2.1	30	3/8"	WATER CHILLER	1	POSITIONER CONTROLLER	12	3/4"	0.6
2.1	30	3/8"	WATER CHILLER	2	POSITIONER CONTROLLER	12	3/4"	0.6
7.0	150	2"	1/0 UPS	1	RECEPTS - EXTERIOR	12	1/2"	0.4
7.0	150	2"	1/0 UPS	2	RECEPTS - EXTERIOR	12	1/2"	0.4
8.0	100	3"	PANEL "01" OR "02" FEEDER	1	RECEPTS - UPS TRAILER	20	2"	1.4
8.0	100	3"	PANEL "01" OR "02" FEEDER	2	RECEPTS - UPS TRAILER	20	2"	1.4
8.0	100	3"	SPACE	1	A/C UNIT (UPS TRAILER)	2	2"	1.4
8.0	100	3"	SPACE	2	A/C UNIT (UPS TRAILER)	2	2"	1.4
22.2	22.2	22.2	TOTAL CONNECTED KVA:					

LOAD SUMMARY PER NEC ART 220

CONTINUOUS KVA @ 125%	25.8	26.2	26.4
NON-CONTINUOUS KVA (SEE DF @ RIGHT)	0.6	0.6	0.6
25% OF HP-1 COMPRESSOR	26.4	26.8	27.0
TOTAL PHASE KVA PER NEG	220	223	225
TOTAL PHASE AMPS PER NEG			
TOTAL LOAD PER NEG	80.2		KVA

DEMAND FACTORS AS NOTED:

- 220-II (LIGHTING)
- 220-15 (RECEPT)
- 220-15 (HEAT)
- 220-35 (EXIST. BLDG.)

VERIFY POWER REQUIREMENTS FOR A/C UNIT

TYPE, SQ. D. I-LINE W/ BOLT-ON BREAKERS
SERVICE, 277/480V, 3Ø, 4W
POLES, 42
LOCATION, OUTSIDE UPS TRAILER
SURFACE, FLUSH

PANEL "DPT4"

BUS AMPACITY, 400A
MAINS, 300A M.C.B.
NEUTRAL, FULL
AIC, 10,000
CINEMA I BINEMA SR/O

CKT. KVA	CB TRIP	WIRE	LOAD NAME	POLE	LOAD NAME	WIRE	CB TRIP	CKT. KVA
38.0	200	2"	3/0 LOTUS PROJECT	1	112.5 KVA XFRM "T-4" / PANEL "4"	1/0	1/2"	26.4
38.0	200	2"	3/0 LOTUS PROJECT	2	112.5 KVA XFRM "T-4" / PANEL "4"	1/0	1/2"	26.4
38.0	200	2"	SPACE	3	SPACE	3	3"	27.0
38.0	200	2"	SPACE	4	SPACE	3	3"	27.0
38.0	200	2"	SPACE	5	SPACE	3	3"	27.0
38.0	200	2"	SPACE	6	SPACE	3	3"	27.0
38.0	200	2"	SPACE	7	SPACE	3	3"	27.0
38.0	200	2"	SPACE	8	SPACE	3	3"	27.0
38.0	200	2"	SPACE	9	SPACE	3	3"	27.0
38.0	200	2"	SPACE	10	SPACE	3	3"	27.0
38.0	200	2"	SPACE	11	SPACE	3	3"	27.0
38.0	200	2"	SPACE	12	SPACE	3	3"	27.0
38.0	200	2"	SPACE	13	SPACE	3	3"	27.0
38.0	200	2"	SPACE	14	SPACE	3	3"	27.0
38.0	200	2"	SPACE	15	SPACE	3	3"	27.0
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38.0	200	2"	SPACE	38	SPACE	3	3"	27.0
38.0	200	2"	SPACE	39	SPACE	3	3"	27.0
38.0	200	2"	SPACE	40	SPACE	3	3"	27.0
38.0	200	2"	SPACE	41	SPACE	3	3"	27.0
38.0	200	2"	SPACE	42	SPACE	3	3"	27.0
38.0	200	2"	TOTAL CONNECTED KVA:					

LOAD SUMMARY PER NEC ART 220

CONTINUOUS KVA @ 125%	64.4	64.8	65.0
NON-CONTINUOUS KVA (SEE DF @ RIGHT)	0.6	0.6	0.6
25% OF HP-1 COMPRESSOR	64.4	64.8	65.0
TOTAL PHASE KVA PER NEG	232	234	235
TOTAL PHASE AMPS PER NEG			
TOTAL LOAD PER NEG	194.2		KVA

DEMAND FACTORS AS NOTED:

- 220-II (LIGHTING)
- 220-15 (RECEPT)
- 220-15 (HEAT)
- 220-35 (EXIST. BLDG.)

GRAPHIC SCALE(S)

DATE: 03/22/06
SCALE: 85%

Smithsonian Institution

Office of Facilities Engineering and Operations
750 9th Street N.W. Suite 5200
Washington DC 20560-0908

670 MT. HOPKINS ROAD
AMADO, ARIZONA

VERITAS PROTOTYPE
T3 & T4

M3 PNO6037

ONE LINE DIAGRAM,
SCHEDULES & DETAILS
ELECTRICAL

RPG	RPG	EBL
DESIGNED BY	DRAWN BY	CHECKED BY

SHEET NO. E 5 08
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