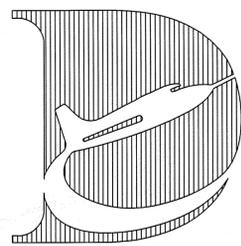


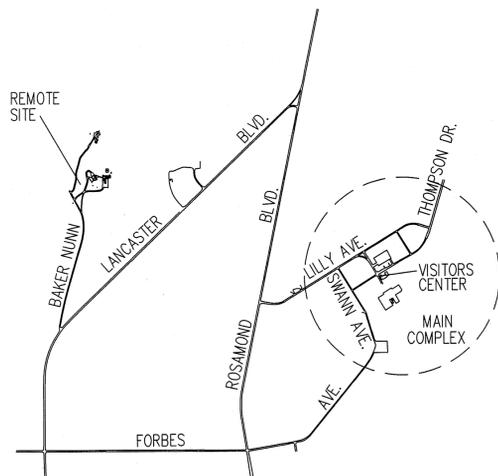
National Aeronautics and Space Administration



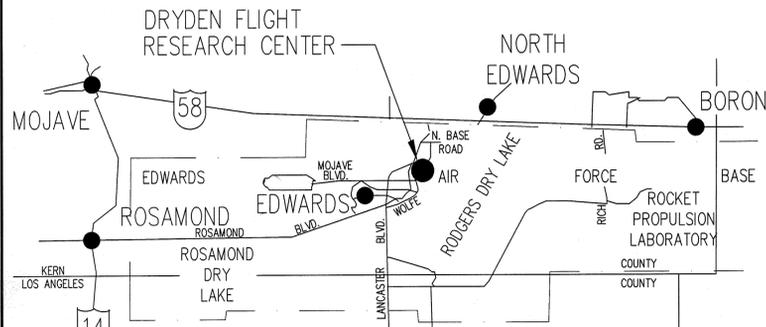
DRYDEN FLIGHT RESEARCH CENTER

PROJECT TITLE:

REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM – PHASE VII



AREA PLAN
NOT TO SCALE

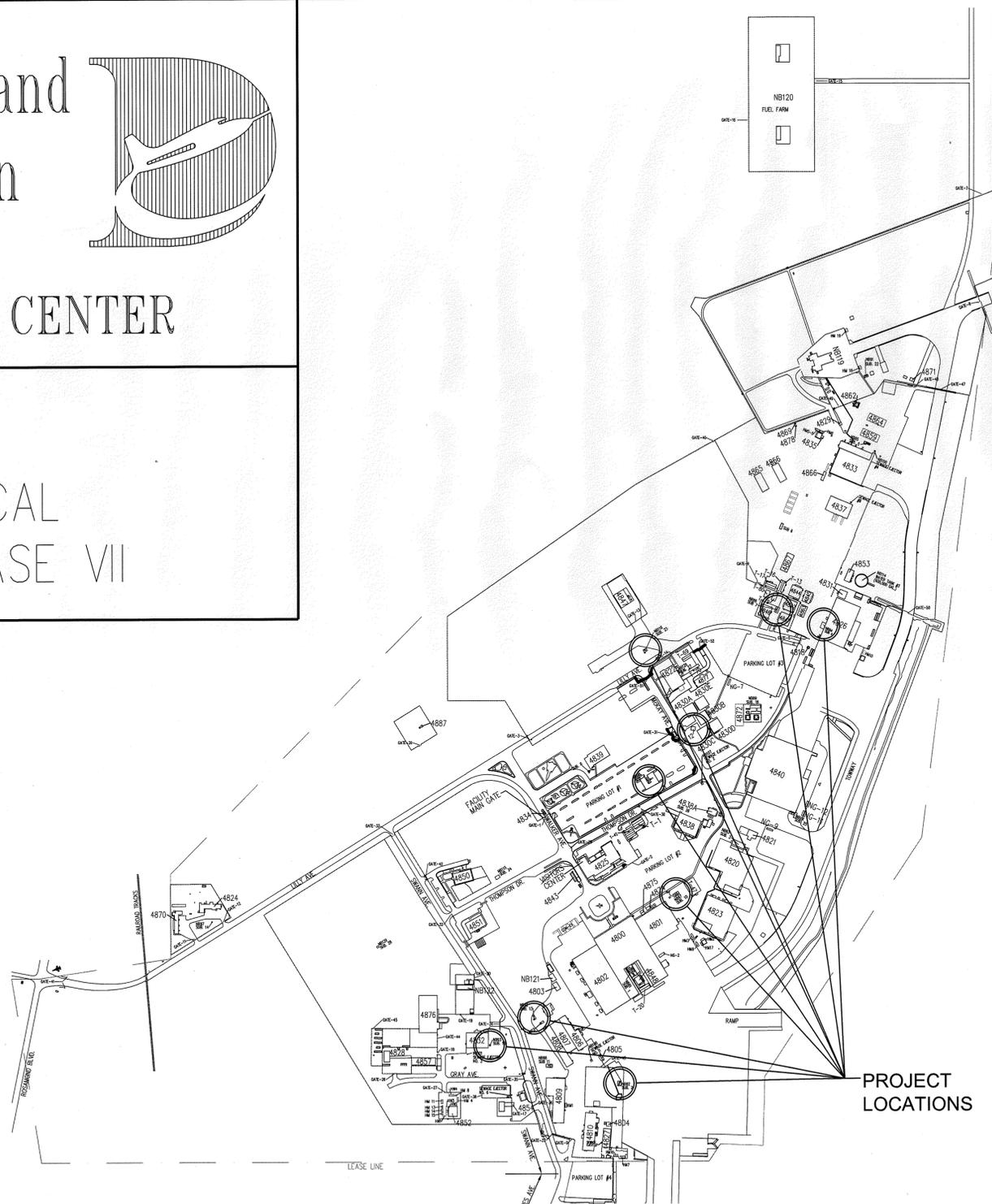
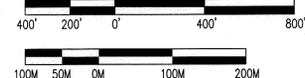


VICINITY MAP
NOT TO SCALE



DRYDEN FLIGHT RESEARCH CENTER MAIN COMPLEX SITE PLAN

SCALE: 1" = 400'



PROJECT LOCATIONS

DRAWING INDEX

SHT.NO	DWG.NO	SHEET TITLE
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4	C2	CIVIL SITE PLAN – SUBSTATION #2
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7	C5	CIVIL SITE PLAN – SUBSTATION #9
8	C6	CIVIL SITE PLAN – SUBSTATION #10
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20	E7	PARTIAL ELECTRICAL SITE PLAN – GRID 38
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23	E10	PARTIAL ELECTRICAL SITE PLAN – GRID 52
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44	E31	REMODEL ELEC. SINGLE LINE – SUB. 2 & 7
45	E32	REMODEL ELEC. SINGLE LINE – SUB. 4, 13 & 15
46	E33	REMODEL ELEC. SINGLE LINE – SUB. 9, 10 & 23
47	E34	EXISTING MANHOLE LAYOUTS
48	E35	EXISTING MANHOLE LAYOUTS
49	E36	EXISTING MANHOLE LAYOUTS
50	E37	ELECTRICAL DETAILS

DEVELOPMENT ONE, INC.
1611 East Fourth Street, Suite 250
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(714) 689-0298
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DATE	SYM	REVISION	BY	A'PD
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

APPROVALS	DATE
<i>[Signature]</i> Chief Facilities Engineering & Asset Mgmt. Office	2-7-12
<i>[Signature]</i> Facilities Project Manager	2-7-12
<i>[Signature]</i> Chief of Protective Services	2-1-12
<i>[Signature]</i> Chief Safety, Health & Environmental Office	4-16-11
<i>[Signature]</i> DFRC Chief Information Officer	11/7/11

DRAWING TITLE
TITLE AND INDEX SHEET

PROJECT TITLE
REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM – PHASE VII

DATE START: 7/22/10 DATE PRINT: 7/29/11

DRAWN BY: EDM-1705

SCALE: T1 TRADE: T1

FILE NAME: SHEET No. 1 of 50

EXISTING CONDITIONS LEGEND

	HORIZONTAL/VERTICAL CONTROL
oLP	LIGHT POLE
oPP	POWER POLE
oTS	TRAFFIC SIGNAL
+S, oS	SIGN
oSP	STAND PIPE
oMH	MANHOLE
oSMH	SEWER MANHOLE
oWH	WATER HANDHOLE
oV	VALVE WELL
PIV	POST INDICATOR VALVE
oFH	FIRE HYDRANT
oDI	DRAIN INLET
oCB	CATCH BASIN
oTB	TELEPHONE BOOTH
oFP	FLAG POLE
	TREE
x 1902.4	SPOT GRADE
IE 1992.3	INVERT ELEVATION
PRV	PRESSURE REDUCING VALVE ASSY
BPA	BACKFLOW PREVENTION ASSEMBLY
	PAINTED CROSSWALK
	PAINTED STOP LINE
	CANOPY/PATIO
	STRUCTURE OR BUILDING AND NUMBER
	FENCE
	MASONRY WALL
	RETAINING WALL
	CURB/GUTTER
	ASPHALT SURFACE
	DIRT SURFACE
	CONCRETE SURFACE
	GUARDRAIL
	TREE LINE
	INDEX CONTOUR (5' INTERVALS)
	INTERMEDIATE CONTOUR (1' INTERVALS)
	APPROXIMATE CONTOUR
	HEADWALL
A	COMPRESSED AIR
E	ELECTRICAL LINE-UNDERGROUND
E O/H	ELECTRICAL LINE-OVERHEAD
FUEL	FUEL LINE
T	TELECOMMUNICATIONS
S	SANITARY SEWER LINE
SFM	SANITARY SEWER FORCEMAIN LINE
SD	STORM DRAIN
W	POTABLE WATER LINE
F	NON-POTABLE WATER LINE USED EXCLUSIVELY FOR FIRE SUPPRESSION SYSTEMS AND FIRE HYDRANTS.
G	NATURAL GAS
AS	ABANDONED SEWER
AG	ABANDONED GAS
AA	ABANDONED AIR
AW	ABANDONED WATER

ABBREVIATIONS

A	ANGLE	N	NORTH, NORTHINGS
AA	ABANDONED COMP AIR	NAV	NORTH AMERICAN DATUM
AB	ABANDONED	NAVD	NORTH AMERICAN VERTICAL DATUM
ACP	ASBESTOS CEMENT PIPE	NAVFAC	NAVAL FACILITIES
AC	ASPHALTIC CONCRETE	N.I.C.	NOT IN CONTRACT
AG	ABANDONED GAS	NPW	NON-POTABLE WATER
ARV	AIR RELEASE VACUUM ASSY	NF	NOT FOUND
AS	ABANDONED SEWER	NS	NEAR SIDE
ASPH	ASPHALT	NO.#	NUMBER
ASSY	ASSEMBLY	O/C	ON CENTER
AVE.	AVENUE	OD	OUTSIDE DIAMETER
AW	ABANDONED WATER	OH, O/H	OVER HEAD
A/G	ABOVE GROUND	OPNG	OPENING
B	BELL	OS&Y, OSY	OUTSIDE STEM & YOKE
BC	BEGIN CURVE	P	POLE
BFP	BACKFLOW PREVENTER	PCC	PORTLAND CEMENT CONCRETE
BLDG	BUILDING	PE	PLAIN END
B/G	BELOW GROUND	PE	POLYETHYLENE
BOT	BOTTOM	PIV	POST INDICATOR VALVE
BOV	BLOW-OFF VALVE ASSY	PL	PLATE
CB	CATCH BASIN	POC	POINT OF CONNECTION
CICB	CURB INLET CATCH BASIN	PNL	PANEL
CI	CAST IRON	PRV	PRESSURE REDUCING VALVE
CL	CLASS, CENTER LINE	PSF	POUNDS PER SQUARE FOOT
CLR	CLEAR	PSI	POUNDS PER SQUARE INCH
CMU	CONCRETE MASONRY UNIT	PT	POST
CO	CLEANOUT	PWO	PUBLIC WORKS OFFICE
COM	COMMUNICATIONS	PP	POWER POLE
COMP	COMPRESSED	PVC	POLYVINYL CHLORIDE
COND	CONDUIT	PVMT	PAVEMENT
CONT	CONTINUOUS	R	RADIUS
CONC	CONCRETE	RD.	ROAD
CONN	CONNECT, CONNECTION	RED.	REDUCER
CPLG	COUPLING	REF	REFERENCE
C&G	CURB/GUTTER	REINF	REINFORCED
C	CENTER LINE	REQD	REQUIRED
DET	DETAIL	RJ	RESTRAINED JOINT
DBL	DOUBLE	RJ	REDUCED PRESSURE BACKFLOW PREVENTER
DIA, Ø	DIAMETER	S/C	CONC. LINED/COATED STEEL PIPE
DI	DUCTILE IRON	SS	SANITARY SEWER
D.I.P., DIP	DUCTILE IRON PIPE DRAWING	SCH	SCHEDULE
E	EAST, EASTINGS, ELECTRIC	S	SIGN, SLOPE
EQ	EQUAL	SFM	SEWER FORCE MAIN
EA	EACH	SIM	SIMILAR
EC	END CURVE	SMH	SEWER MANHOLE
EIC	ENGINEER IN CHARGE	SQ	SQUARE
EL	ELEVATION	SST	STAINLESS STEEL
ELEC	ELECTRICAL	ST.	STREET
EMH	ELECTRICAL MANHOLE	STA	STATION
ETC	ETCETERA	STL	STEEL
EW	EACH WAY	SP	STANDPIPE
EXP	EXPANSION	TAP.	TAPPING
EXST	EXISTING	TB	TOP OF BERM
FH	FIRE HYDRANT	TD	TRENCH DRAIN
FLG	FLANGE	TEL.	TELEPHONE
FIN.	FINISH	TG	TOP OF GRATE
FL	FLOOR	TMH	TELEPHONE MANHOLE
FF	FINISHED FLOOR	TP	TOP OF PAVEMENT
FO	FIBER OPTIC	TYP	TYPICAL
FS	FAR SIDE	T&B	TOP AND BOTTOM
FT	FEET	U/G	UNDERGROUND
FW	FIRE WATER	UL	UNDERWRITERS LABORATORIES
GAL	GALLON	UNK	UNKNOWN
GALV	GALVANIZED	U.O.N.	UNLESS OTHERWISE NOTED
GB	GRADE BREAK	UTIL	UTILITY
GP	GUARD POST	V	VALVE
GR	GUARD RAIL	VCP, V.C.P.	VITRIFIED CLAY PIPE
GIS	GEOGRAPHICAL INFORMATION SYSTEM	VERT	VERTICAL
GPM	GALLONS PER MINUTE	VLT	VAULT
GPS	GEOGRAPHICAL POSITIONING SYSTEM	W	WATER, WIDE, WIDTH
GR	GRADE	WH	WATER HANDHOLE
GUT.	GUTTER	WLS	WELDED STEEL
GV	GATE VALVE	W/	WITH
H	HIGH, HEIGHT	±	PLUS OR MINUS
HH	HANDHOLE	Δ	DELTA
HDPE	HIGH DENSITY POLYETHYLENE		
HDWL	HEADWALL		
HORIZ	HORIZONTAL		
HTHW	HIGH TEMPERATURE HOT WATER		
HWY	HIGHWAY		
I.D.	INTERIOR DIMENSION		
IE	INVERT ELEVATION		
INV	INVERT		
IRR	IRRIGATION		
L	ARC LENGTH, LENGTH		
LA	LANDSCAPED AREA		
MAX	MAXIMUM		
MIN	MINIMUM		
MH	MANHOLE		
MFR	MANUFACTURER		

HORIZONTAL AND VERTICAL CONTROL

MONUMENT #1:
 CONCRETE MONUMENT AT CORNER OF WALKER AVE AND THOMPSON DR (NAD 27)
 NORTHERN 528,183.086'
 EASTERN 2,033,650.182'
 ELEVATION 2,292.15'

MONUMENT #2:
 CONCRETE MONUMENT NEAR CORNER OF MCKAY AVE AND THOMPSON DR (NAD 27)
 NORTHERN 528,601.559'
 EASTERN 2,034,416.916'
 ELEVATION 2,280.85'

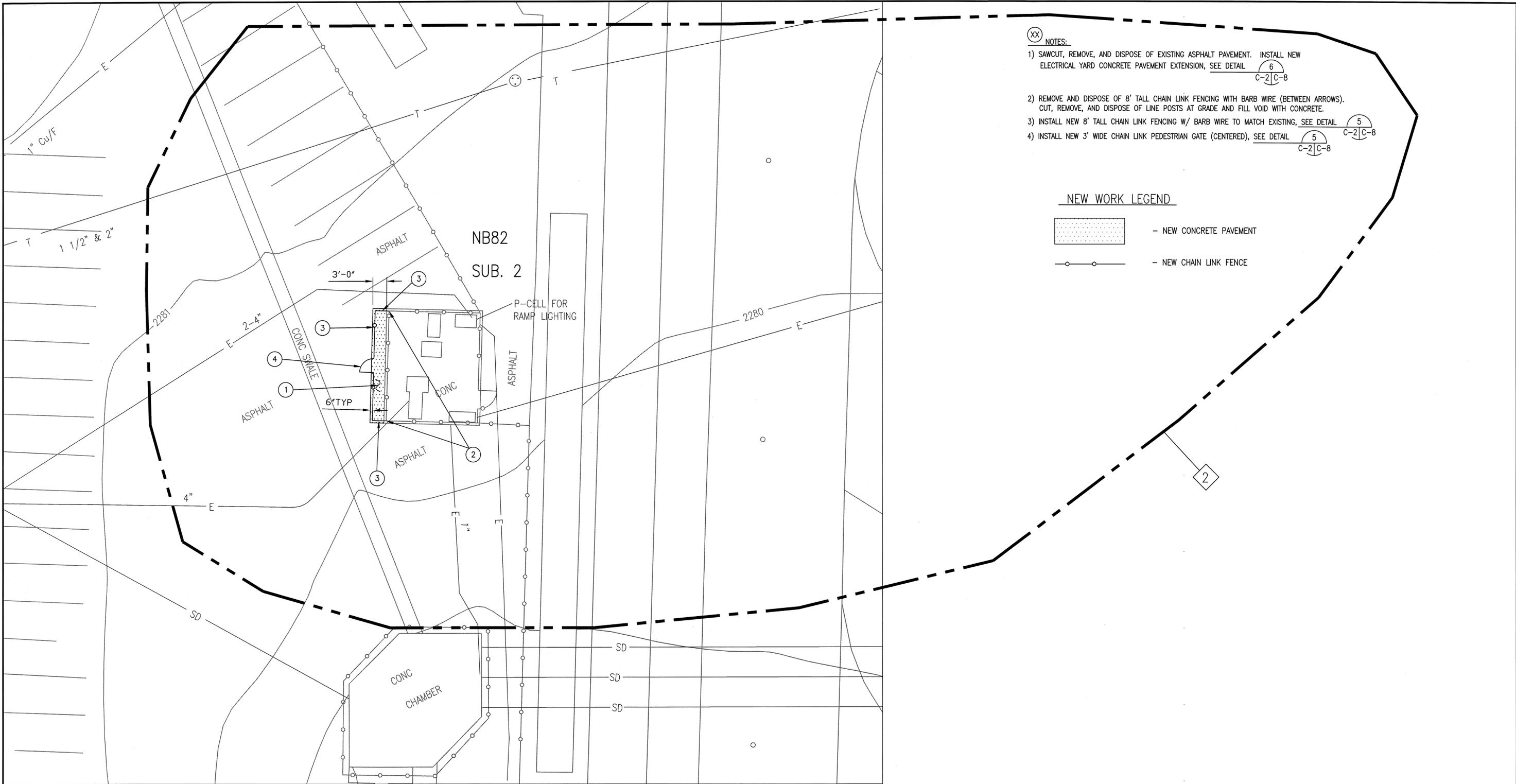
MONUMENT #3:
 CONCRETE MONUMENT AT CORNER OF WALKER AVE AND LILLY AVE (NAD 27)
 NORTHERN 528,717.766'
 EASTERN 2,033,320.393'
 ELEVATION 2,305.56'

GENERAL NOTES

- 1) CONTRACTOR SHALL POTHOLE ALL EXISTING UTILITY PIPES THAT CROSS NEW CONC EQUIPMENT PAD BEFORE ORDERING ANY CIVIL SITE MATERIALS. CONTRACTOR SHALL RECORD TOP AND BOTTOM OF PIPE / DUCT BANK ELEVATIONS AT EACH PIPE CROSSING. CONTRACTOR SHALL NOTIFY CONTRACTING OFFICER OF ANY POSSIBLE CONFLICTS. ALL POTENTIAL CONFLICTS SHALL BE RESOLVED BEFORE THE CONTRACTOR IS ALLOWED TO ORDER ANY CIVIL UTILITY MATERIALS.
- 2) ALL EXCAVATIONS SHALL FOLLOW THE NASA DIGGING AND TRENCHING STANDARDS.

	7/15/11	100% FINAL DESIGN							
	DATE	SYM	REVISION	BY	A'PD				
		NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA		APPROVALS Chief Facilities Engineering & Asset Mgmt. Office Project Director/Engineer Facilities Project Manager Chief Office of Protective Services Chief Safety, Health & Environmental Office ERRC Staff Information Officer		DATE STRD: 7/22/10 DATE PRNTD: 7/29/11		DATE: 2-1-12 DATE: 2-1-12 DATE: 2-1-12 DATE: 11-16-11 DATE: 11-16-11	
DRAWING TITLE CIVIL LEGEND AND ABBREVIATIONS								PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII	
DRAWN BY: JFB SCALE: GRAPHIC FILE NAME: C-1						TRADE SH. No.: EDM-1705 SHEET No.: 3 of 50			

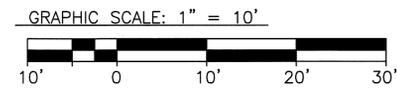
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 11440 Riverside Drive, Suite M
 Lakeside, California 92040
 (619) 448-9424
 (619) 448-4690 FAX



- XX NOTES:
- 1) SAWCUT, REMOVE, AND DISPOSE OF EXISTING ASPHALT PAVEMENT. INSTALL NEW ELECTRICAL YARD CONCRETE PAVEMENT EXTENSION, SEE DETAIL $\frac{6}{C-2|C-8}$
 - 2) REMOVE AND DISPOSE OF 8' TALL CHAIN LINK FENCING WITH BARB WIRE (BETWEEN ARROWS). CUT, REMOVE, AND DISPOSE OF LINE POSTS AT GRADE AND FILL VOID WITH CONCRETE.
 - 3) INSTALL NEW 8' TALL CHAIN LINK FENCING W/ BARB WIRE TO MATCH EXISTING, SEE DETAIL $\frac{5}{C-2|C-8}$
 - 4) INSTALL NEW 3' WIDE CHAIN LINK PEDESTRIAN GATE (CENTERED), SEE DETAIL $\frac{5}{C-2|C-8}$

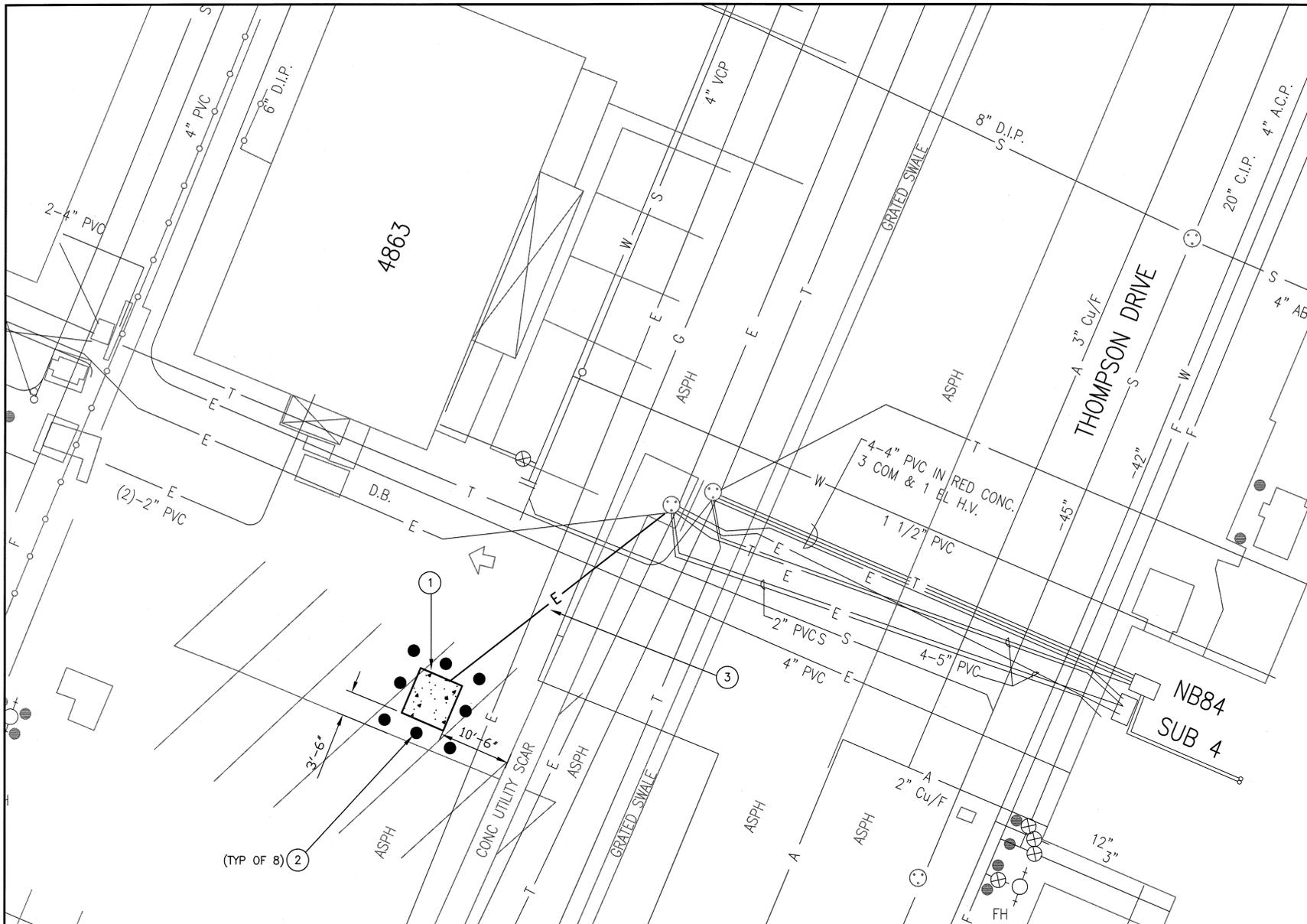
NEW WORK LEGEND

- NEW CONCRETE PAVEMENT
- NEW CHAIN LINK FENCE



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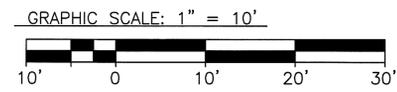
<p>NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA</p>	APPROVALS Chief, Facilities Engineering & Asset Mgmt. Office 2-1-12 Project Manager/Engineer 2-1-12 Training Project Manager 2-1-12 Chief, Office of Protective Services 11-16-11 Chief, Safety, Health & Environmental Office 4-16-11 Chief Information Officer 4/1/11		DATE
	DRAWING TITLE CIVIL SITE PLAN - SUBSTATION #2		
PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII		DATE STARTD	DATE PRINTD
DRAWN BY: JFB SCALE: GRAPHIC TRADE: SH. No. FILE NAME: C-2		7/22/10	7/29/11
		EDM-1705	
		SHEET No. 4 of 50	



- (XX) NOTES:
- 1) SAWCUT, REMOVE, AND DISPOSE OF EXISTING ASPHALT PAVEMENT. INSTALL NEW RAISED CONCRETE PAD FOR NEW ELECTRICAL EQUIPMENT, SEE DETAIL $\frac{1}{C-3|C-8}$
 - 2) INSTALL NEW 6" ϕ GUARD POST, SEE DETAIL $\frac{2}{C-3|C-8}$ EQUALLY SPACED. 24" CLEAR OF CONC PAD.
 - 3) NEW ELECTRICAL DUCT BANK, SEE ELECTRICAL DRAWINGS. SAWCUT, REMOVE, DISPOSE, AND REPLACE ASPHALT & CONCRETE PAVEMENT TO MATCH EXISTING. SEE DETAIL $\frac{5}{C-3|C-10}$

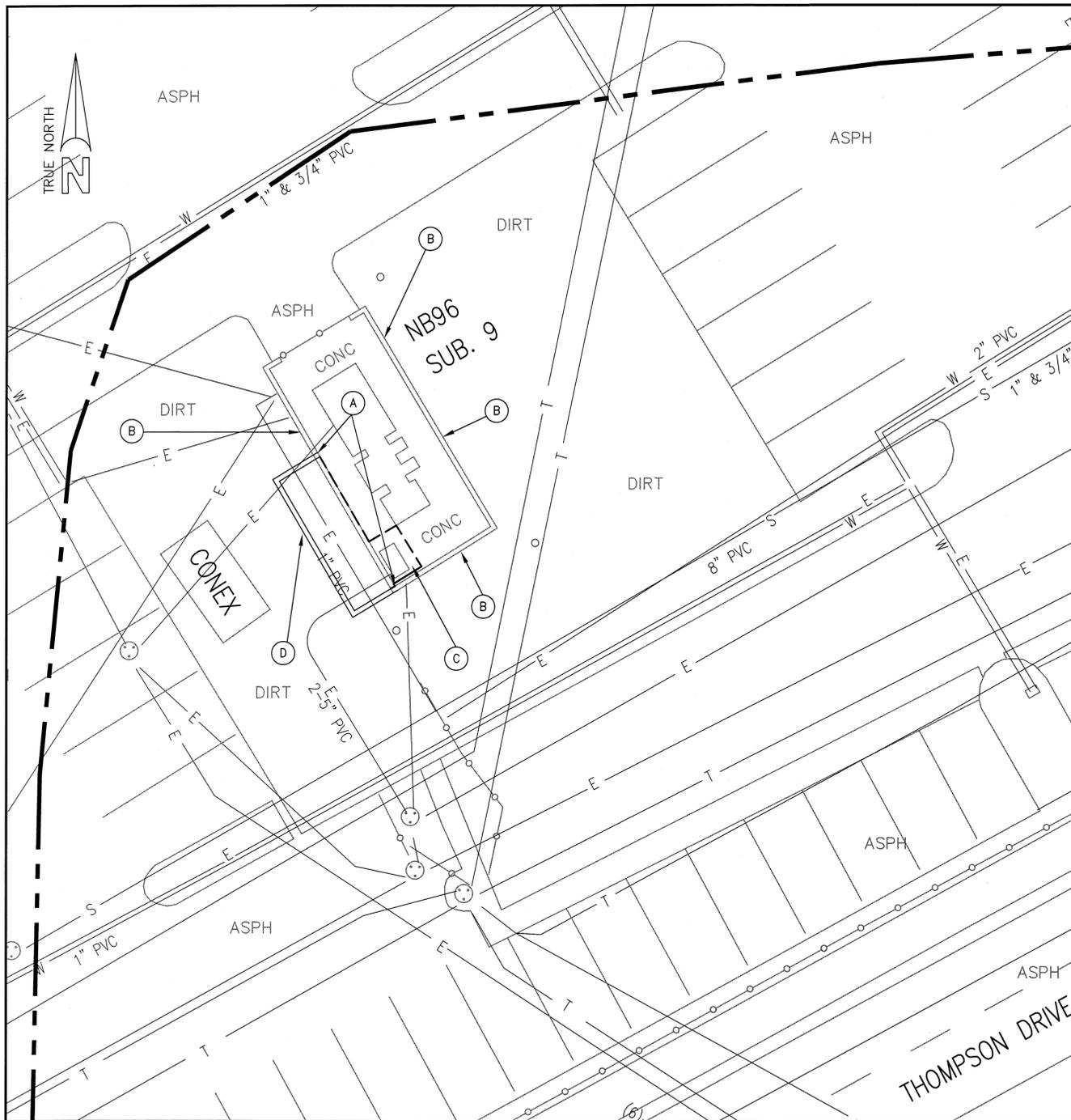
NEW WORK LEGEND

-  - NEW RAISED CONCRETE EQUIPMENT PAD
-  - NEW GUARD POST

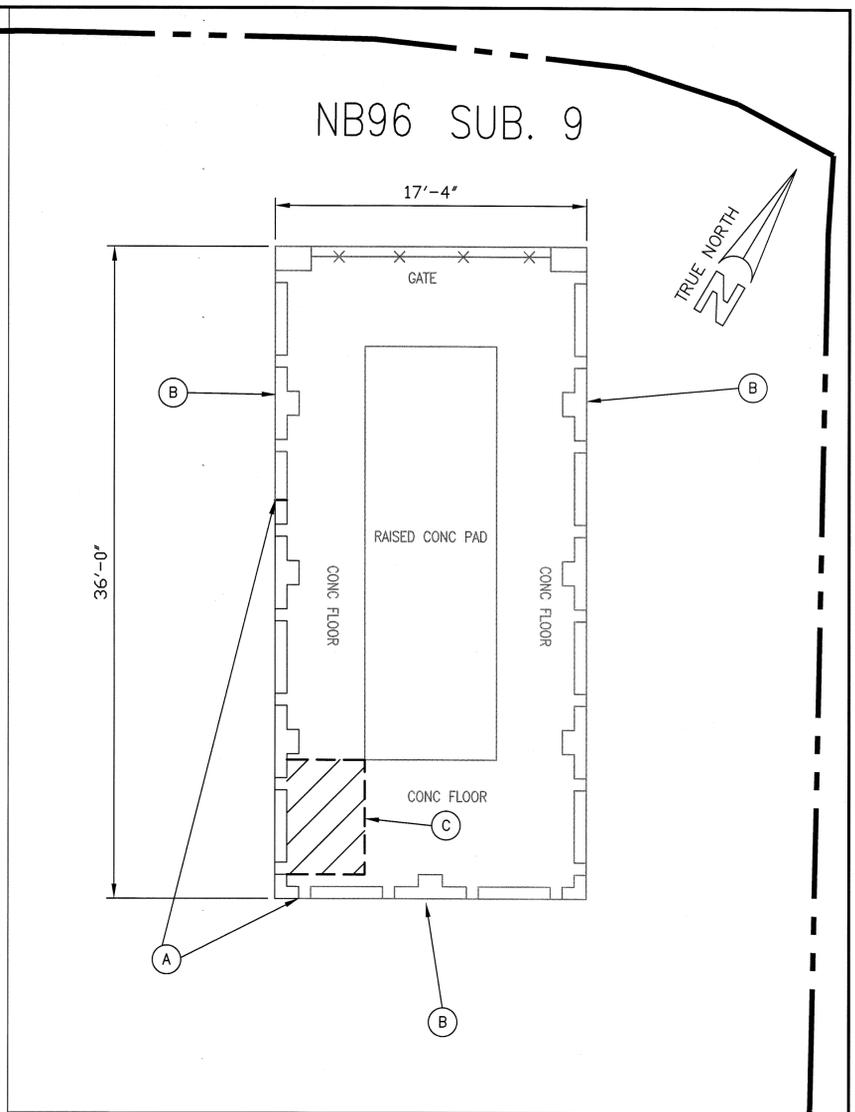


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 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA	APPROVALS <small>Chief, Facilities, Engineering & Asset Mgmt. Office</small> <small>Project Requestor</small> <small>Facilities Project Manager</small> <small>Chief, Office of Protective Services</small> <small>Chief, Safety, Health & Environmental Office</small> <small>Chief, Space Information Office</small>		DATE 2-1-12 2-1-12 2-1-12 11-16-11 11-16-11 11-17-11
	DRAWING TITLE CIVIL SITE PLAN - SUBSTATION #4		PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII
DATE STRD: 7/22/10 DRAWN BY: JFB SCALE: GRAPHIC FILE NAME: C-3	DATE PRINTD: 7/29/11 TRADE SH. No.: EDM-1705 SHEET No.: 5 of 50		



SITE PLAN
SCALE: 1" = 10'

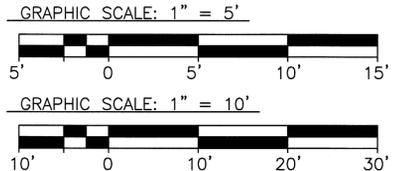


DEMOLITION FLOOR PLAN
SCALE: 1" = 5'

DEMO LEGEND

- REMOVE AND DISPOSE OF CONCRETE PAVEMENT
- SAWCUT LINE

- XX NOTES:
- A) SAWCUT, REMOVE, AND DISPOSE OF PORTION OF 10' TALL CMU BLOCK WALL A MINIMUM OF 12" BELOW EXISTING PAVEMENT ELEVATION, SEE DEMO FLOOR PLAN
 - B) EXISTING PORTION OF CMU BLOCK WALL TO REMAIN.
 - C) SAWCUT, REMOVE, AND DISPOSE OF EXISTING CONCRETE PAVEMENT.
 - D) INSTALL NEW CMU BLOCK WALLS, CONCRETE PAVEMENT, AND RAISED CONC PAD, SEE NEW WORK FLOOR PLAN



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Professional Engineer Seal: J. Young, No. 60229, Exp. 6-30-2012, State of California, Civil.

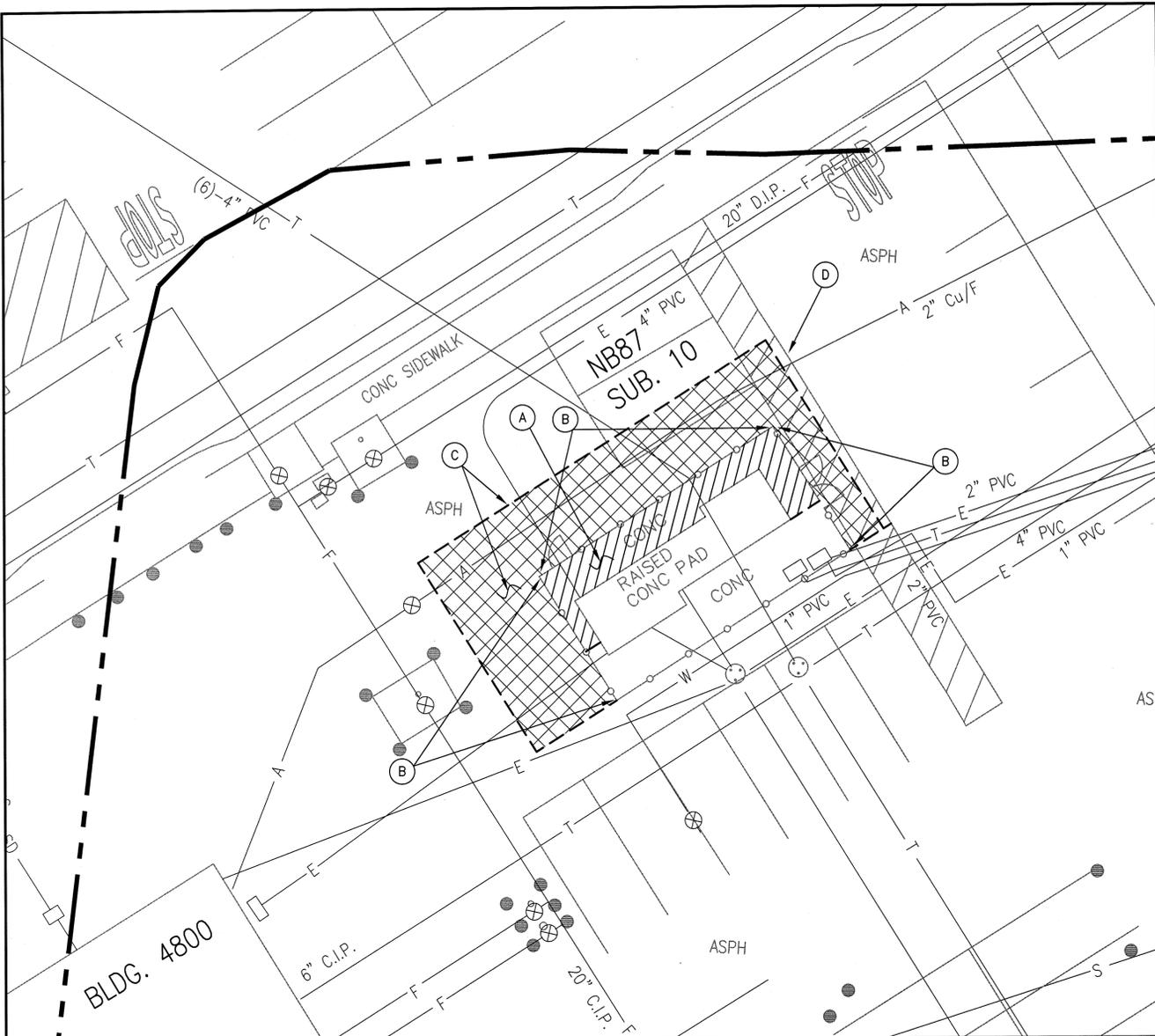
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DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
CIVIL SITE PLAN -
SUBSTATION #9

PROJECT TITLE
REPAIR PRIMARY ELECTRICAL
DISTRIBUTION SYSTEM - PHASE VII

APPROVALS	DATE
Chief, Facilities Engineering & Asset Mgmt. Office	2-1-12
Project Requestor/Customer	2-1-12
Facilities Project Manager	2-1-12
Chief, Office of Protective Services	11-16-11
Chief, Safety, Health & Environmental Office	11-16-11
Chief, Site Information Officer	11-17-11
DATE STRD	7/22/10
DATE PRINTD	7/29/11
DRAWN BY	JFB
SCALE	GRAPHIC
FILE NAME	C-5
TRADE SH. No.	EDM-1705
SHEET No.	7 of 50



DEMOLITION PLAN

DEMOLITION NOTES:

- A) SAWCUT, REMOVE, AND DISPOSE OF CONCRETE PAVEMENT. EXISTING CONCRETE RAISED EQUIPMENT PAD TO REMAIN.
- B) REMOVE AND DISPOSE OF EXISTING 6' TALL CHAIN LINK FENCE WITH BARB WIRE (BETWEEN ARROWS).
- C) SAWCUT, REMOVE, AND DISPOSE OF ASPHALT PAVEMENT.
- D) HYDROBLAST AND REMOVE REMAINING ADJACENT SIDEWALK STRIPING AS REQUIRED.

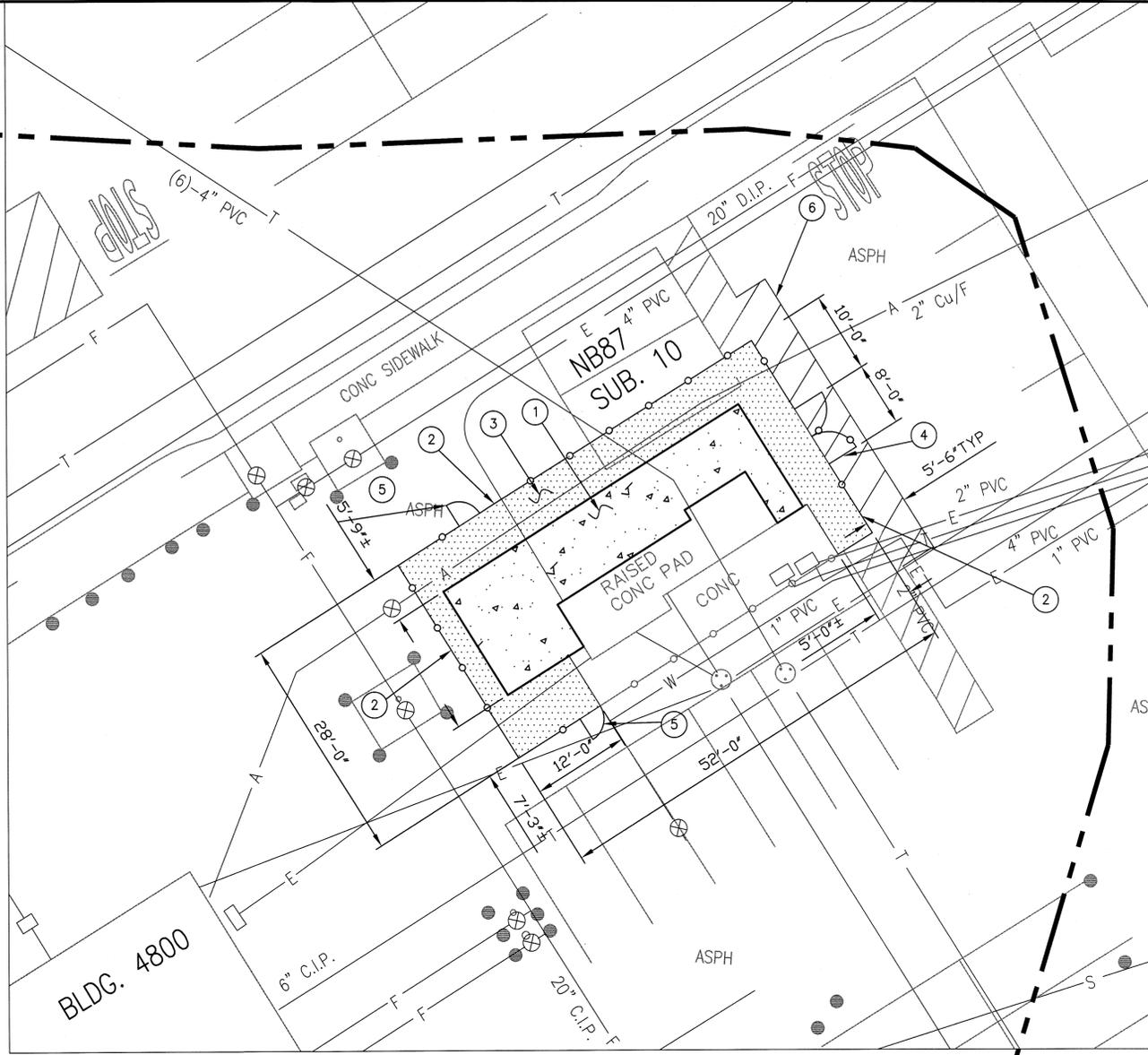
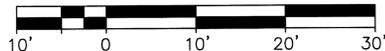
DEMO LEGEND

- REMOVE AND DISPOSE OF ASPHALT PAVEMENT
- REMOVE AND DISPOSE OF CONCRETE PAVEMENT
- SAWCUT LINE

NEW WORK LEGEND

- NEW CONCRETE PAVEMENT
- NEW RAISED CONCRETE EQUIPMENT PAD
- NEW CHAIN LINK FENCE

GRAPHIC SCALE: 1" = 10'



NEW WORK PLAN

NEW WORK NOTES:

- 1) INSTALL NEW CONCRETE RAISED EQUIPMENT PAD, SEE DETAIL MATCH TO EXST PAD. CONC PAD DIMENSION PER ELECTRICAL DRAWINGS.
- 2) INSTALL NEW 7' TALL CHAIN LINK FENCE TO MATCH EXISTING, SEE DETAIL
- 3) INSTALL NEW CONCRETE PAVEMENT, SEE DETAIL
- 4) INSTALL NEW 8' WIDE CHAIN LINK DOUBLE LEAF SWING GATE, SEE DETAIL
- 5) INSTALL NEW 3' WIDE CHAIN LINK PEDESTRIAN GATE, SEE DETAIL
- 6) INSTALL NEW 4' WIDE WHITE CROSS WALK STRIPING TO MATCH EXISTING.

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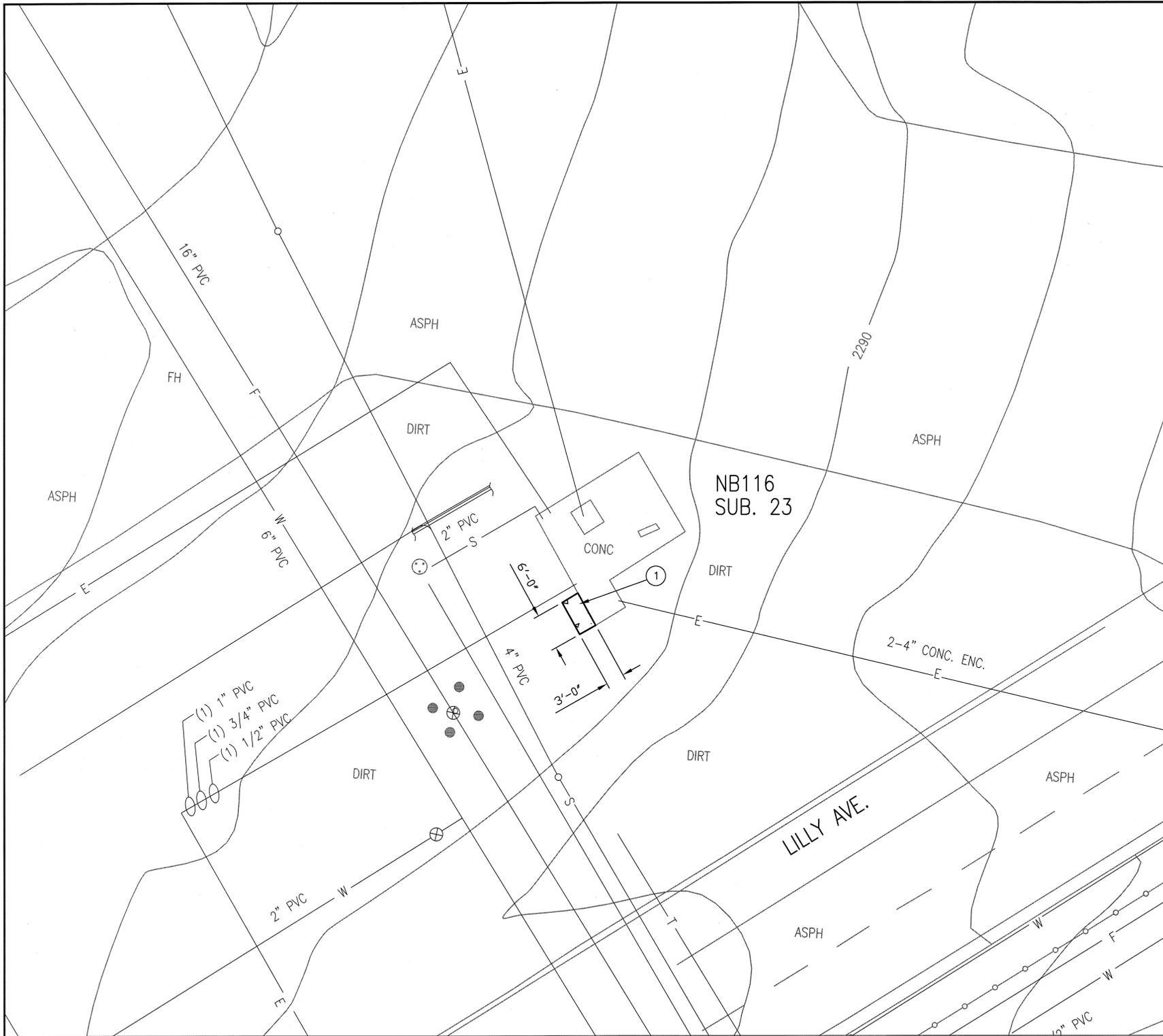
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 DRYDEN FLIGHT RESEARCH CENTER
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DRAWING TITLE
 CIVIL SITE PLAN - SUBSTATION #10

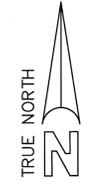
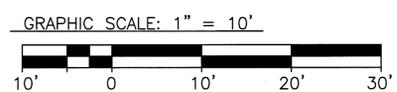
PROJECT TITLE
 REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII

APPROVALS	DATE
Chief Facilities Engineering & Asset Mgmt. Office	2-1-12
Project Requestor/Customer	2-1-12
Facilities Project Manager	2-1-12
Chief Office of Protective Services	11-16-11
Chief Office of Environmental Office	11-16-11
Structural Information Officer	11/17/11
DATE STRD: 7/22/10	DATE PRNTD: 7/29/11
DRAWN BY: JFB	EDM-1705
SCALE: GRAPHIC	TRADE: SHE No.
FILE NAME: C-6	SHEET No. 8 of 50



XX NEW WORK NOTES:
 1) INSTALL NEW CONCRETE RAISED EQUIPMENT PAD, SEE DETAIL 1 C-7[C-8] MATCH TO EXST PAD.

NEW WORK LEGEND
 - NEW RAISED CONCRETE EQUIPMENT PAD



JB# 0622-17

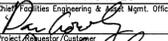
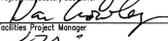
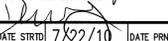
JB YOUNG & ASSOCIATES, LTD
 11440 Riverside Drive, Suite M
 Lakeside, California 92040
 (619) 448-9424
 (619) 448-4690 FAX

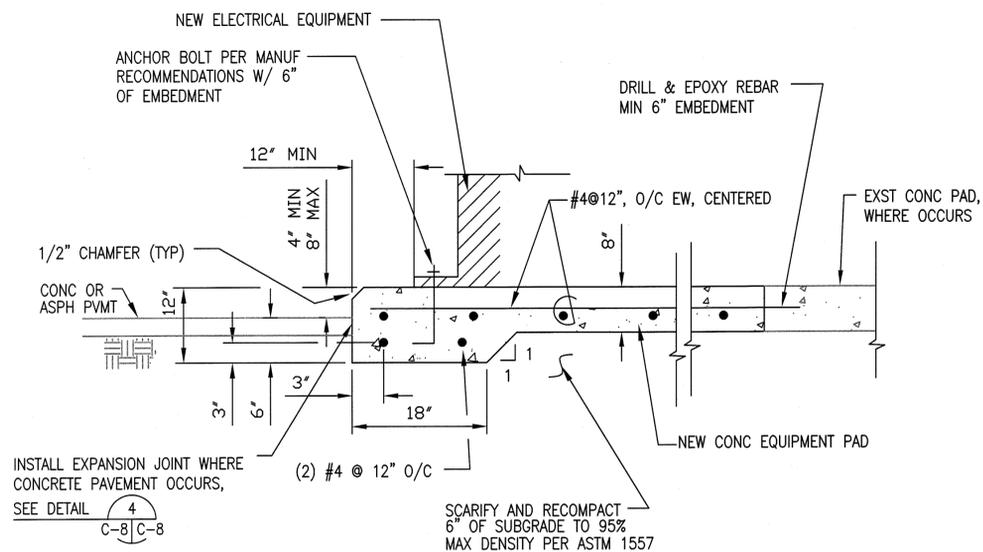
DATE	SYM	REVISION	BY	A'PD
7/15/11		100% FINAL DESIGN		

 **NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**
 DRYDEN FLIGHT RESEARCH CENTER
 EDWARDS, CA

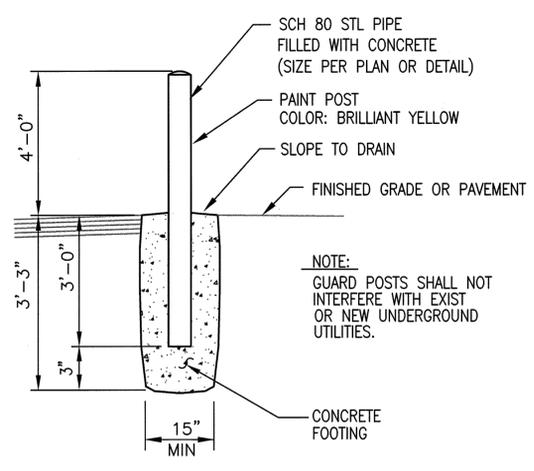
DRAWING TITLE
 CIVIL SITE PLAN -
 SUBSTATION #23

PROJECT TITLE
 REPAIR PRIMARY ELECTRICAL
 DISTRIBUTION SYSTEM - PHASE VII

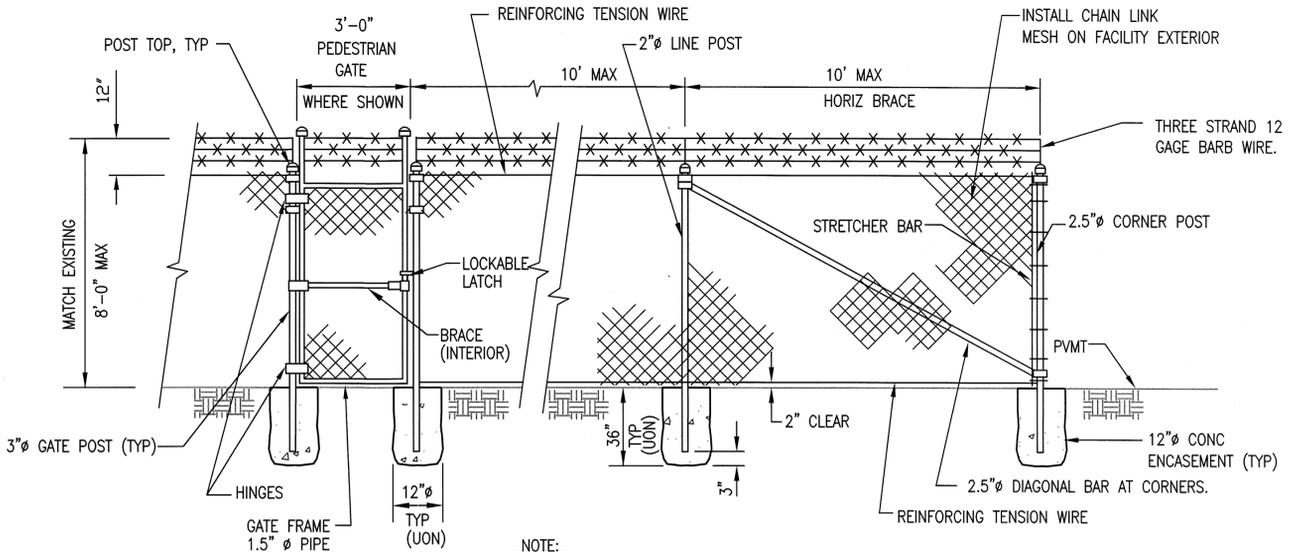
APPROVALS		DATE	
	Project Manager/Customer	2-1-12	
	Project Manager	2-1-12	
	Chief of Protective Services	2-1-12	
	Chief of Health & Environmental Office	11-16-11	
	Chief Information Officer	11-16-11	
DATE STRTD	7/22/10	DATE PRINTD	7/29/11
DRAWN BY	JFB	TRADE	EDM-1705
SCALE	GRAPHIC	SH. No.	
FILE NAME	C-7	SHEET No.	9 of 50



EQUIPMENT PAD
DETAIL 1
 NO SCALE
 C-3 | C-8
 C-4
 C-6
 C-7



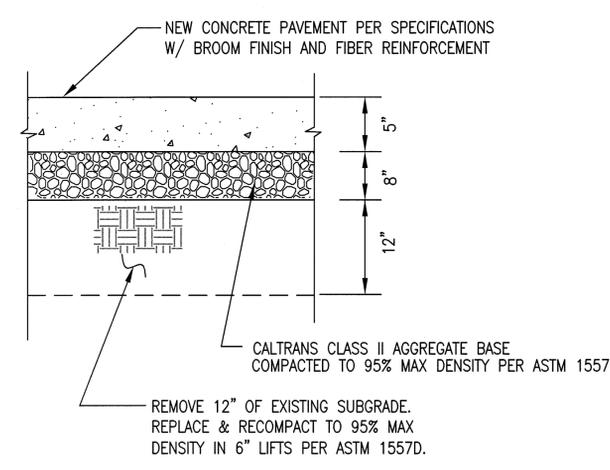
GUARD POST
DETAIL 2
 NO SCALE
 C-3 | C-8



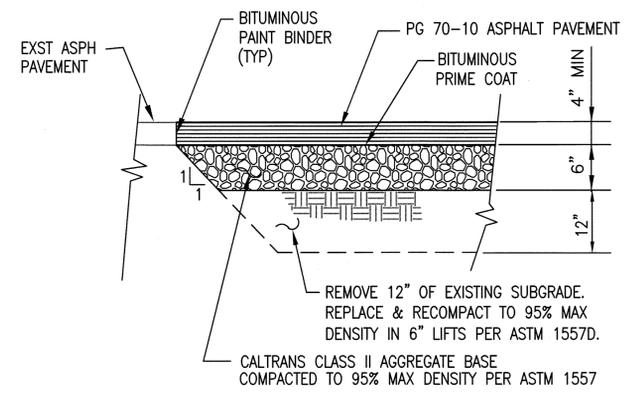
- NOTE:**
- 1) USE CLASS I GALV STEEL PIPE GRADE A OR B FOR POSTS, TOP RAILS, AND BRACES.
 - 2) USE TYPE I ZINC COATED STEEL 9 GAGE WIRE SIZE WITH 2\"/>

ELEVATION - FENCING AND PEDESTRIAN GATE

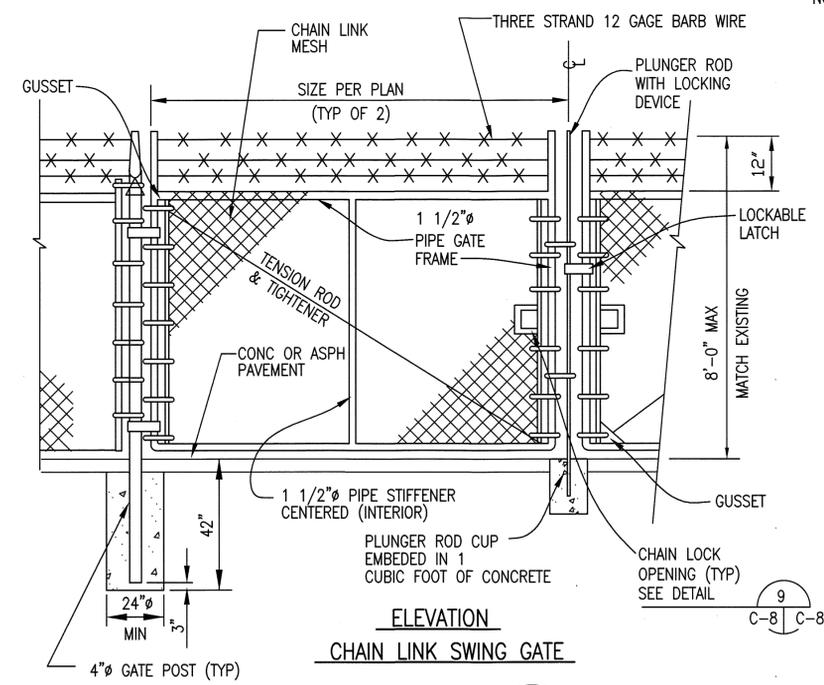
DETAIL 5
 NO SCALE
 C-2 | C-8
 C-4
 C-6



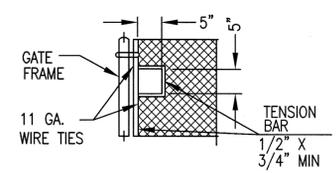
NEW CONCRETE PAVEMENT
DETAIL 6
 NO SCALE
 C-2 | C-8
 C-6



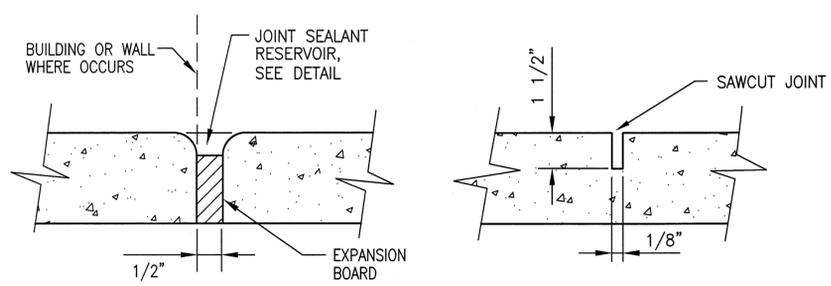
NEW ASPHALT PAVEMENT
DETAIL 7
 NO SCALE
 C-8 | C-8



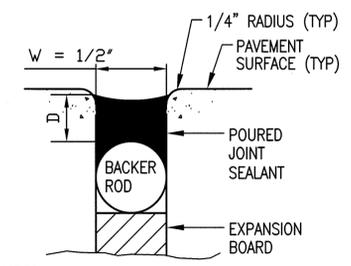
ELEVATION CHAIN LINK SWING GATE
DETAIL 8
 NO SCALE
 C-6 | C-8



CHAIN LOCK DETAIL
DETAIL 9
 NO SCALE
 C-8 | C-8



CONCRETE PAVEMENT CONTROL JOINTS
DETAIL 4
 NO SCALE
 C-8 | C-8



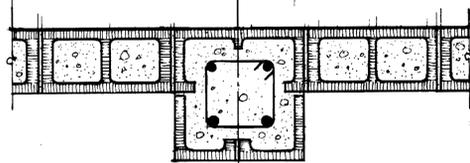
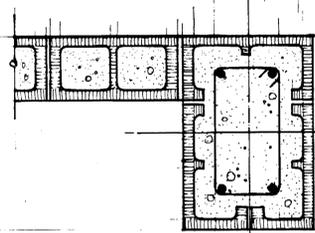
- NOTES:**
- 1) W = WIDTH OF SEALANT RESERVOIR.
 - 2) D = DEPTH OF SEALANT = 0.5 X W FOR SILICONE SEALANT.
 - 3) DIAMETER OF BACKER ROD = W + 1/8\"/>

JOINT SEALANT RESERVOIR

<p>JB YOUNG & ASSOCIATES, LTD 11440 Riverside Drive, Suite M Lakeside, California 92040 (619) 448-9424 (619) 448-4690 FAX</p>	JBY# 0622-17 7/15/11 100% FINAL DESIGN	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA	APPROVALS Chief, Facilities Engineering & Asset Mgmt. Office Project/Program Manager Facilities Project Manager Chief, Office of Protective Services Chief, Security, Safety & Environmental Office Chief Information Officer	DATE 2-1-12 2-1-12 2-1-12 11-16-11 4-16-11
	DRAWING TITLE CIVIL DETAILS	PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII	DATE STRTD: 7/22/10 DATE PRINTD: 7/29/11 DRAWN BY: JFB SCALE: GRAPHIC TRADE SH. No.: EDM-1705 FILE NAME: C-8 SHEET No. 10 of 50	

NOTE:

1. PROVIDE FORMWORK AS REQD TO RESIST GROUTING PRESSURES
2. PROVIDE SPLIT FACE TEXTURE ON ALL EXTERIOR SURFACES.

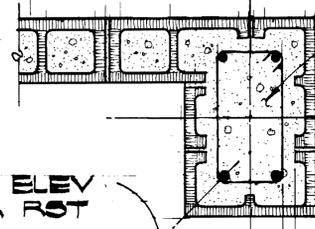


16" x 24" PILASTER ALTERNATE COURSE

16" x 16" PILASTER ALTERNATE COURSE

16" x 24" PILASTER

16" x 16" PILASTER



GROUT PILASTER SOLID IN 2'-0" MAX LIFTS

5x8x16 SPLIT FACE CMU AS SHOWN TO FORM PILASTER - SEE ABOVE FOR ALT COURSE

SEE ELEV FOR RST

SEE ELEV FOR RST

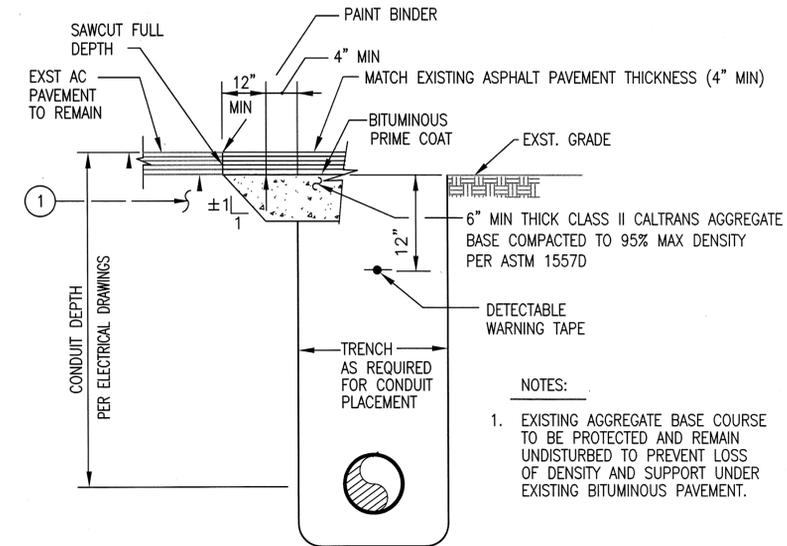
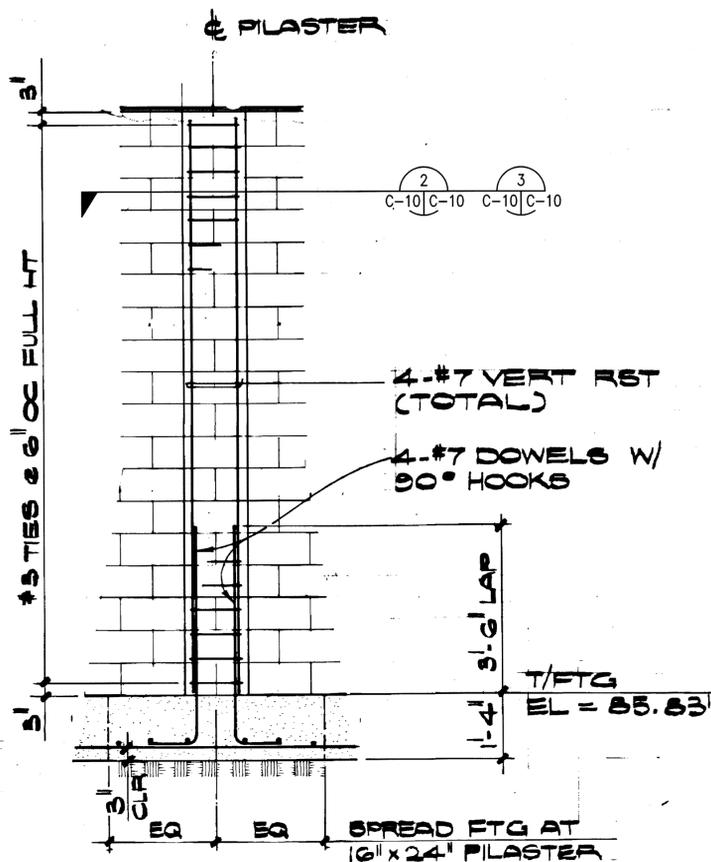
1/2" CLR TYP
2 1/2" TYP

1/2" CLR TYP
2 1/2" TYP

DETAIL NO SCALE **3** C-10 C-10

DETAIL NO SCALE **2** C-10 C-10

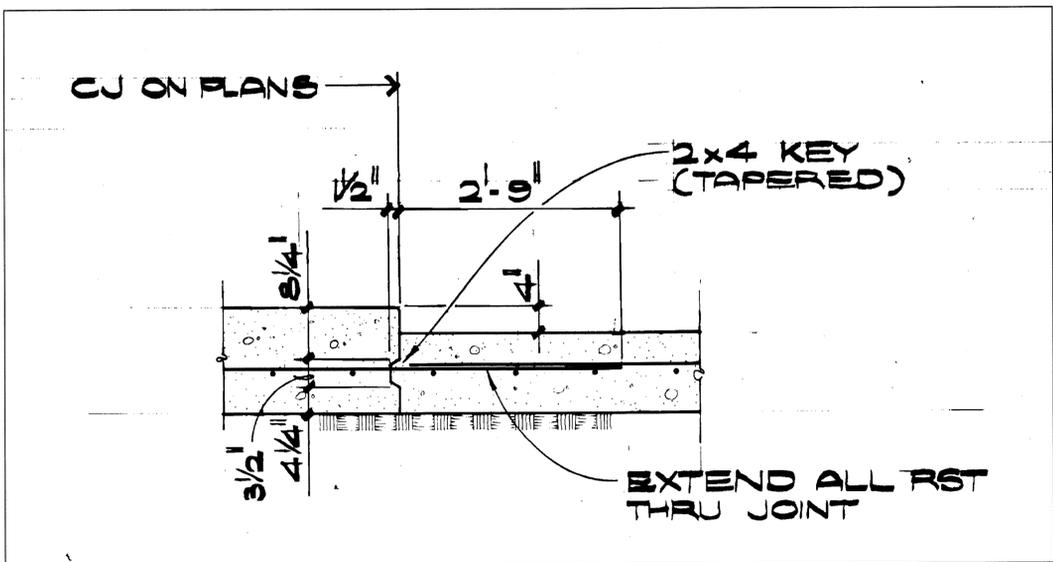
SECTION NO SCALE **1** C-9 C-10



- NOTES:
1. EXISTING AGGREGATE BASE COURSE TO BE PROTECTED AND REMAIN UNDISTURBED TO PREVENT LOSS OF DENSITY AND SUPPORT UNDER EXISTING BITUMINOUS PAVEMENT.

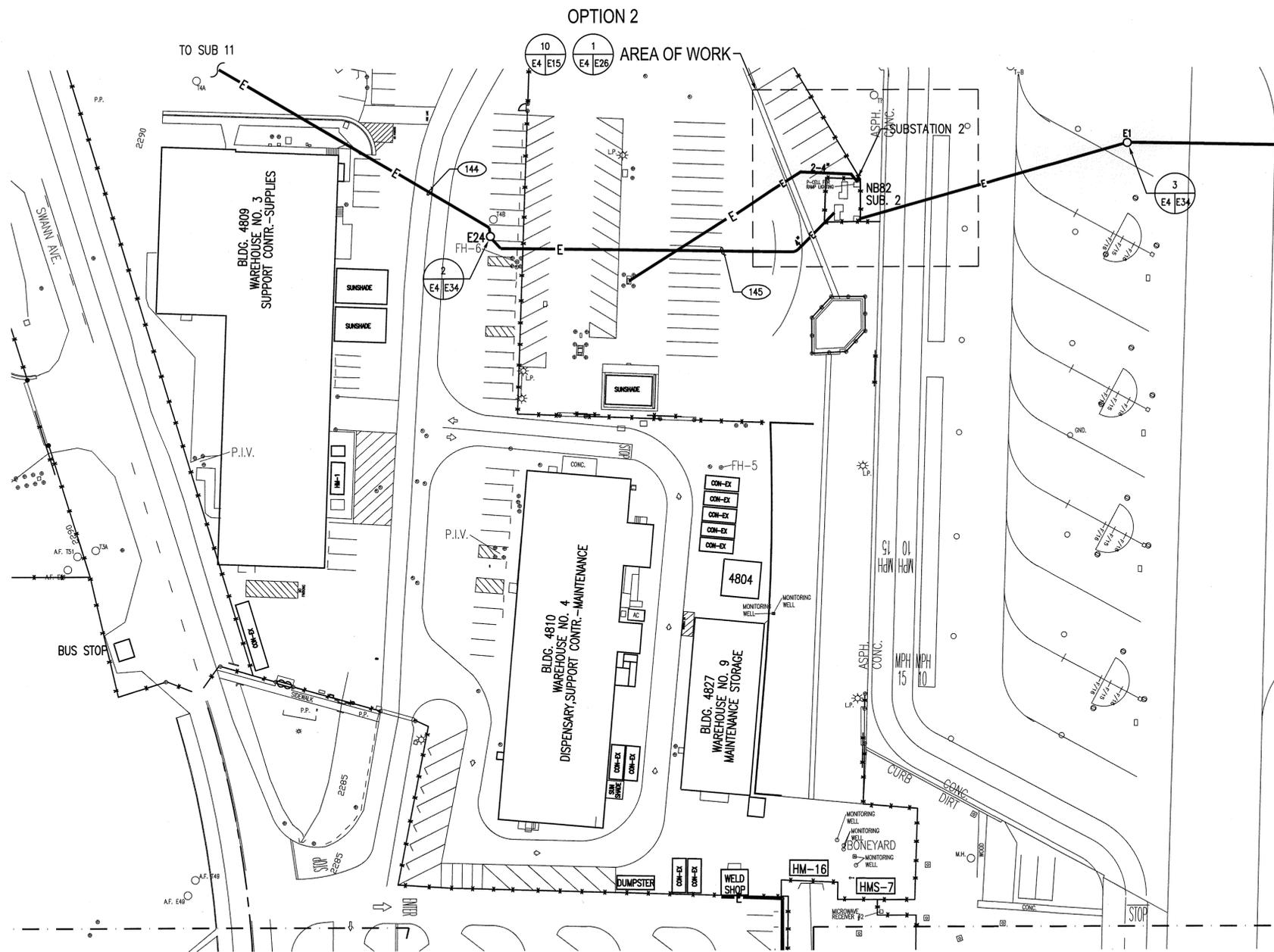
TYPICAL UTILITY TRENCH - PAVEMENT REPAIR

DETAIL NO SCALE **5** C-3 C-10



DETAIL NO SCALE **4** C-10 C-10

<p>JB YOUNG & ASSOCIATES, LTD 11440 Riverside Drive, Suite M Lakeside, California 92040 (619) 448-9424 (619) 448-4690 FAX</p>	<p>JBY# 0622-17 7/15/11 100% FINAL DESIGN</p>	<p>NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA</p>	<p>APPROVALS</p> <p>Chief, Facilities Engineering & Asset Mgmt. Office <i>[Signature]</i> 2-12</p> <p>Project Requestor/Assistant <i>[Signature]</i> 2-12</p> <p>Facilities Project Manager <i>[Signature]</i> 2-1-12</p> <p>Chief, Office of Protective Services <i>[Signature]</i> 11-16-11</p> <p>Chief, Safety & Health Engineering Office <i>[Signature]</i> 4-16-11</p> <p>Chief Information Officer <i>[Signature]</i> 11/17/11</p>	<p>DATE</p>
	<p>DATE</p>	<p>DRAWING TITLE</p> <p>CIVIL DETAILS</p>	<p>DATE STRTD: 7/22/10</p> <p>DATE PRNTD: 7/29/11</p>	<p>DATE</p>
<p>DATE</p>	<p>PROJECT TITLE</p> <p>REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII</p>	<p>DRAWN BY: JFB</p> <p>SCALE: GRAPHIC</p> <p>FILE NAME: C-10</p>	<p>DATE</p>	
<p>DATE</p>	<p>REVISION</p>	<p>TRADE: EDM-1705</p> <p>SHEET No. 12 of 50</p>	<p>DATE</p>	



PARTIAL ELECTRICAL SITE PLAN - GRID 56/57
SCALE: 1"=40'-0"



UTILITIES LEDEND

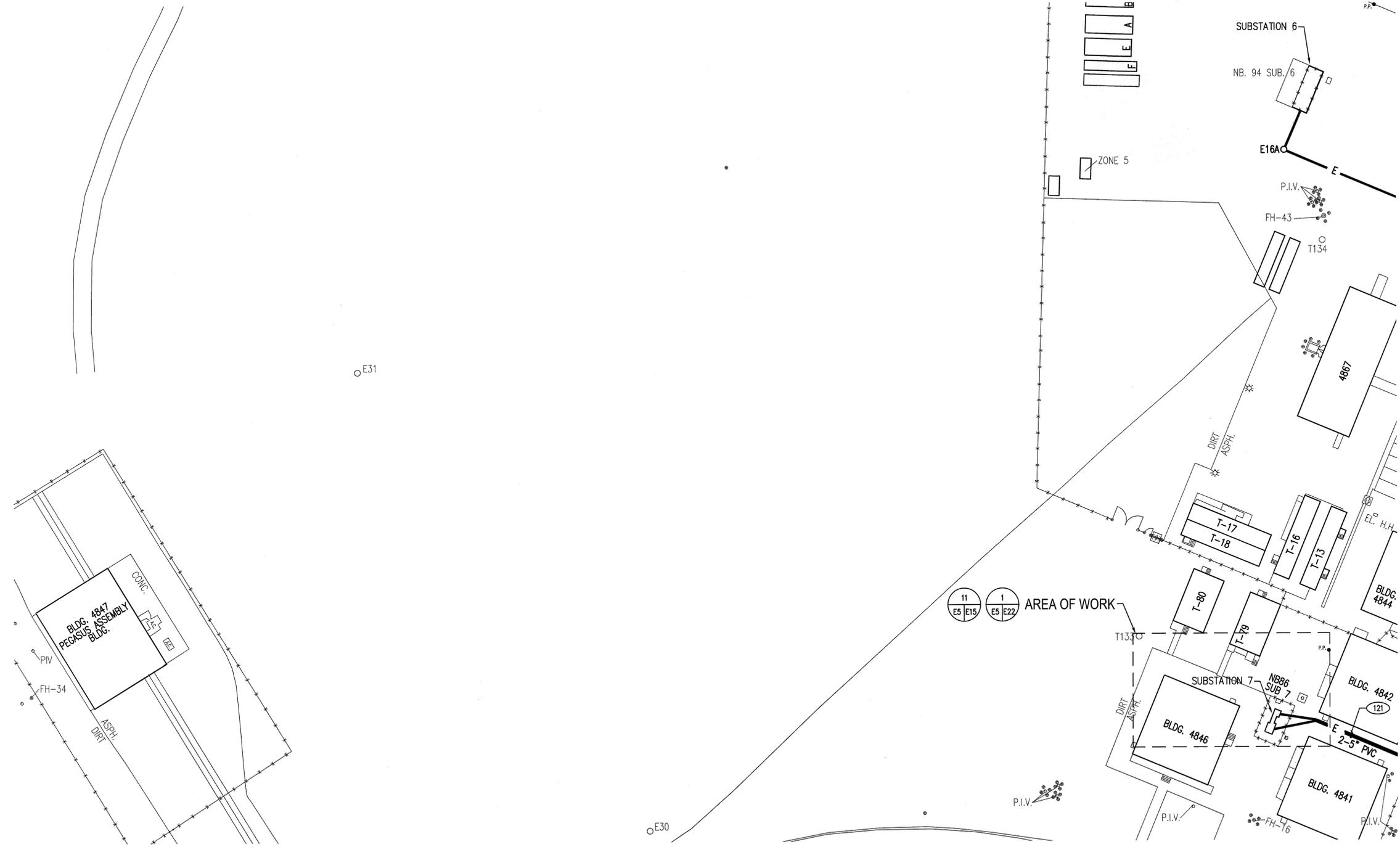
— E — EXISTING ELECTRICAL LINE

GENERAL NOTES:

1. ALL EQUIPMENT SHOWN IS EXISTING, FOR REFERENCE INFORMATION.

DWG: P110715 Phase 7 Substation/Plan/E10075 E4.dwg USER: hahway
 DATE: Jul 27, 2011 10:31am XREFS: NASA Title Block MS5 MS7 IMAGES:

 DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers DCGA 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.930.4291 Fax: 714.930.4925	7/15/11	100% FINAL DESIGN																		
	DATE	SYM	REVISION	BY	A'PD															
 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA											APPROVALS <small>Chief, Facilities Engineering & Support Mgmt. Office</small> <small>Project Engineer/Designer</small> <small>Facilities Project Manager</small> <small>Chief, Office of Protective Services</small> <small>Chief, Safety, Health & Environmental Office</small> <small>EPRC Chief Information Officer</small> 		DATE							
DRAWING TITLE PARTIAL ELECTRICAL SITE PLAN - GRID 56/57											DATE STRTD: 7/22/10 DATE PRNTD: 7/29/11									
PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII											DRAWN BY: EDM-1705									
SCALE: NONE TRADE: E4											SHEET No. 17 of 50									



UTILITES LEDEND
 — E — EXISTING ELECTRICAL LINE

GENERAL NOTES:
 1. ALL EQUIPMENT SHOWN IS EXISTING, FOR REFERENCE INFORMATION.

PARITAL ELECTRICAL SITE PLAN - GRID 33
 SCALE: 1"=40'-0"



<p>DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers DCGA 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.630.4291 Fax: 714.630.4805</p>	7/15/11	100% FINAL DESIGN				<p>NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA</p>	<p>APPROVALS</p> <p>Chief, Facilities Engineering & Maint. Mgmt. Office <i>[Signature]</i> 2-1-12</p> <p>Project Manager/Designer <i>[Signature]</i> 2-1-12</p> <p>Facilities Project Manager <i>[Signature]</i> 2-1-12</p> <p>Chief, Office of Protective Services <i>[Signature]</i> 11-16-11</p> <p>Chief, Safety, Health & Environmental Office <i>[Signature]</i> 11-16-11</p> <p>SRIC Staff Information Officer <i>[Signature]</i> 11/17/11</p>		DATE
	DATE	SYM	REVISION	BY	A'P'D		PROJECT TITLE	DATE STRD	DATE PRINTD
						<p>DRAWING TITLE</p> <p>PARTIAL ELECTRICAL SITE PLAN - GRID 33</p> <p>PROJECT TITLE</p> <p>REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII</p>	<p>SCALE: NONE</p> <p>TRADE: E5</p> <p>FILE NAME: EDM-1705</p>	<p>EDM-1705</p> <p>SHEET No. 18 of 50</p>	

DWG: P110075 Phase 7 Submittal/Drawings/10075_E5.dwg USER: harkov
 DATE: Jul 27, 2011 10:32am XREFS: NASA Title Block M33 IMAGES:



UTILITES LEDEND
 — E — EXISTING ELECTRICAL LINE

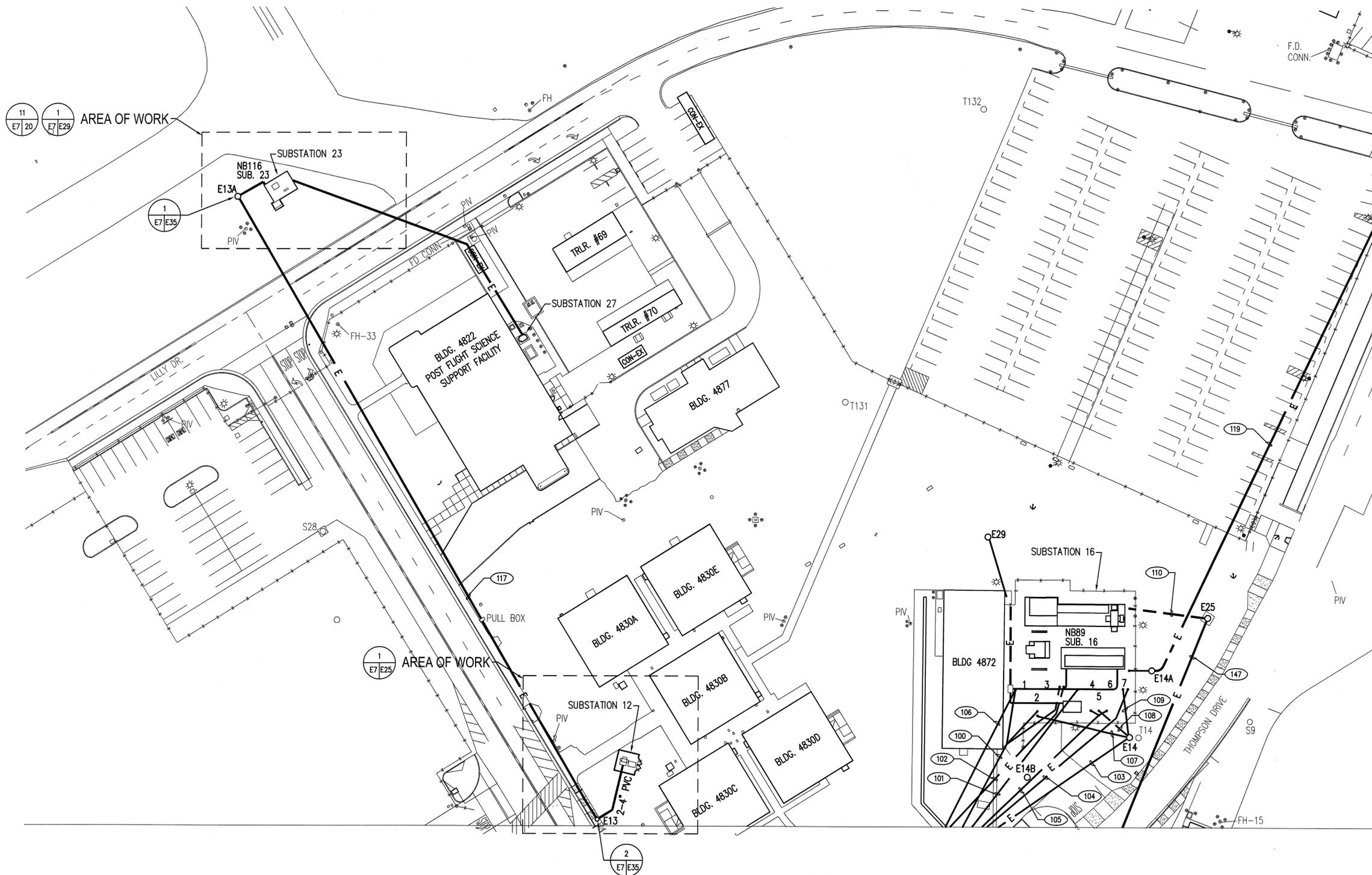
GENERAL NOTES:
 1. ALL EQUIPMENT SHOWN IS EXISTING, FOR REFERENCE INFORMATION.

PARTIAL ELECTRICAL SITE PLAN - GRID 34
 SCALE: 1"=40'-0"



DWG: P:\10075 Phase 7 Substation\Drawings\E10075 E6.dwg USER: bshahary
 DATE: Jul 27, 2011 10:33am XREFS: NASA Title Block, W2, IMAGES

 DCGA DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.630.4251 Fax: 714.630.4605	7/15/11	100% FINAL DESIGN																															
 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA										APPROVALS <table border="1"> <tr> <th>DATE</th> <th>OFFICE</th> </tr> <tr> <td>2-1-12</td> <td>Chief, Facilities Engineering & Maint. Mgmt. Office</td> </tr> <tr> <td>2-1-12</td> <td>Project/Resource Engineer</td> </tr> <tr> <td>2-1-12</td> <td>Facilities Project Manager</td> </tr> <tr> <td>11-16-11</td> <td>Chief, Office of Protective Services</td> </tr> <tr> <td>11-16-11</td> <td>Chief, Safety, Health & Environmental Office</td> </tr> <tr> <td>11-16-11</td> <td>Chief, Chief Information Office</td> </tr> </table>										DATE	OFFICE	2-1-12	Chief, Facilities Engineering & Maint. Mgmt. Office	2-1-12	Project/Resource Engineer	2-1-12	Facilities Project Manager	11-16-11	Chief, Office of Protective Services	11-16-11	Chief, Safety, Health & Environmental Office	11-16-11	Chief, Chief Information Office
DATE	OFFICE																																
2-1-12	Chief, Facilities Engineering & Maint. Mgmt. Office																																
2-1-12	Project/Resource Engineer																																
2-1-12	Facilities Project Manager																																
11-16-11	Chief, Office of Protective Services																																
11-16-11	Chief, Safety, Health & Environmental Office																																
11-16-11	Chief, Chief Information Office																																
DRAWING TITLE PARTIAL ELECTRICAL SITE PLAN - GRID 34										PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII																							
DATE 7/22/10 DATE PRINTED 7/29/11										SCALE NONE TRADE E6 SHEET No. 19 of 50																							
DATE 7/22/10 DATE PRINTED 7/29/11										SCALE NONE TRADE E6 SHEET No. 19 of 50																							



UTILITES LEDEND

— E — EXISTING ELECTRICAL LINE

GENERAL NOTES:

1. ALL EQUIPMENT SHOWN IS EXISTING, FOR REFERENCE INFORMATION.

PARTIAL ELECTRICAL SITE PLAN - GRID 38
SCALE: 1"=40'-0"

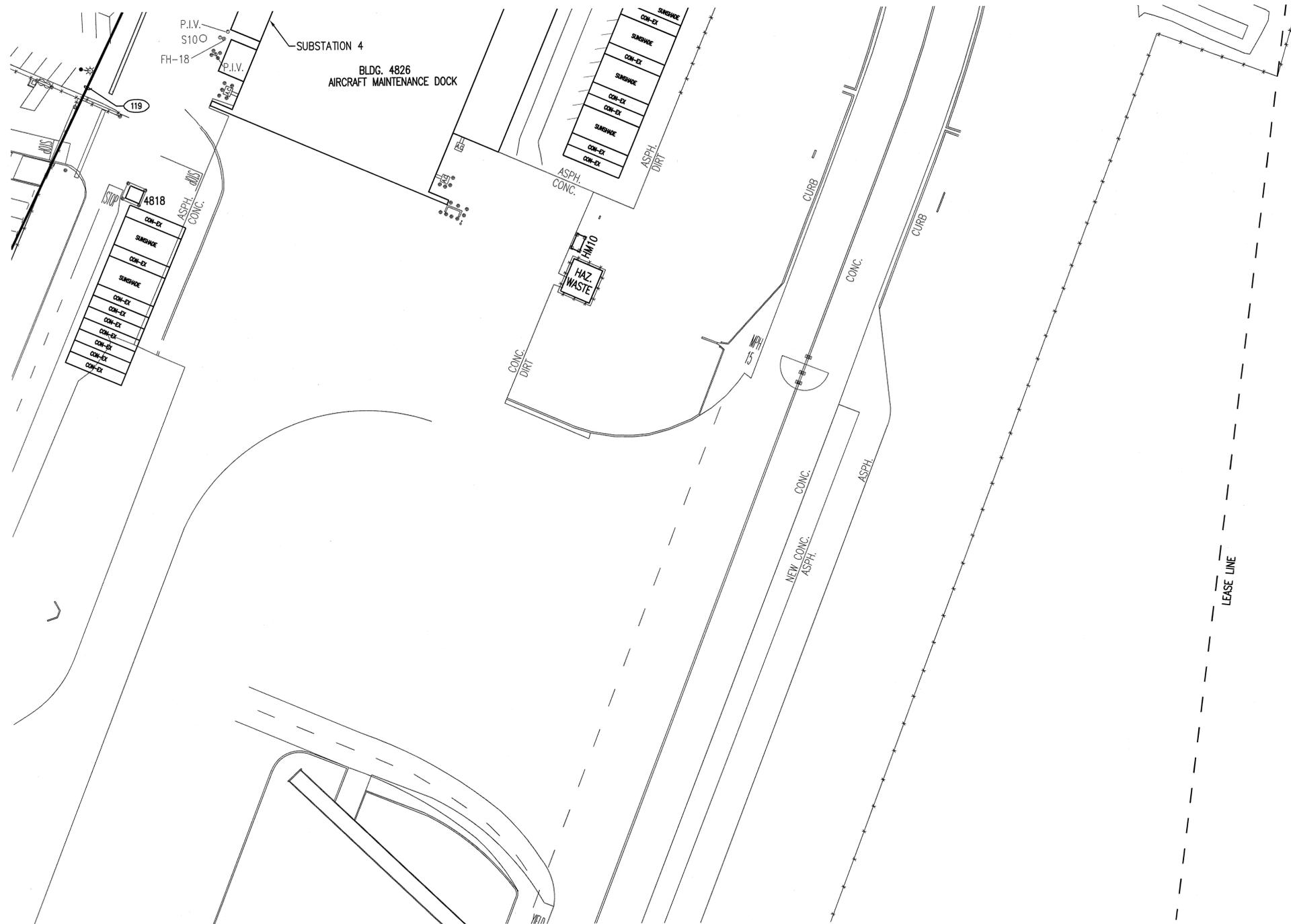


DCGA DONN C. GILMORE & ASSOCIATES, INC.
 Consulting Mechanical and Electrical Engineers
 4051 E. La Palma Ave., Ste. A
 Anaheim, CA 92807
 Ph.: 714.630.4201
 Fax: 714.630.4805

DATE	SYMBOL	REVISION	BY	A/P/D
7/15/11		100% FINAL DESIGN		

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA		APPROVALS DATE 2-1-12 2-1-12 2-1-12 11-16-11 11-16-11 11/2/11
DRAWING TITLE PARTIAL ELECTRICAL SITE PLAN - GRID 38		Chief, Facilities Engineering & Plant Maint. Office Project Manager/Systems Facilities Project Manager Chief, Office of Protective Services Chief, Safety, Health & Environmental Office DRSO Chief Information Officer
PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII		DATE STRTD: 7/22/10 DATE PRNTD: 7/29/11 DRAWN BY: [Signature] SCALE: NONE TRADE: EDM-1705 FILE NAME: E7 SHEET No. 20 of 50

DWG: P:\10075 Phase 7 Substation\DWG\E170075 E7.dwg USER: bshahov
 DATE: Jul 27 2011 10:24am XREFS: NUSA Title Block M38 IMAGES



UTILITIES LEGEND
 — E — EXISTING ELECTRICAL LINE

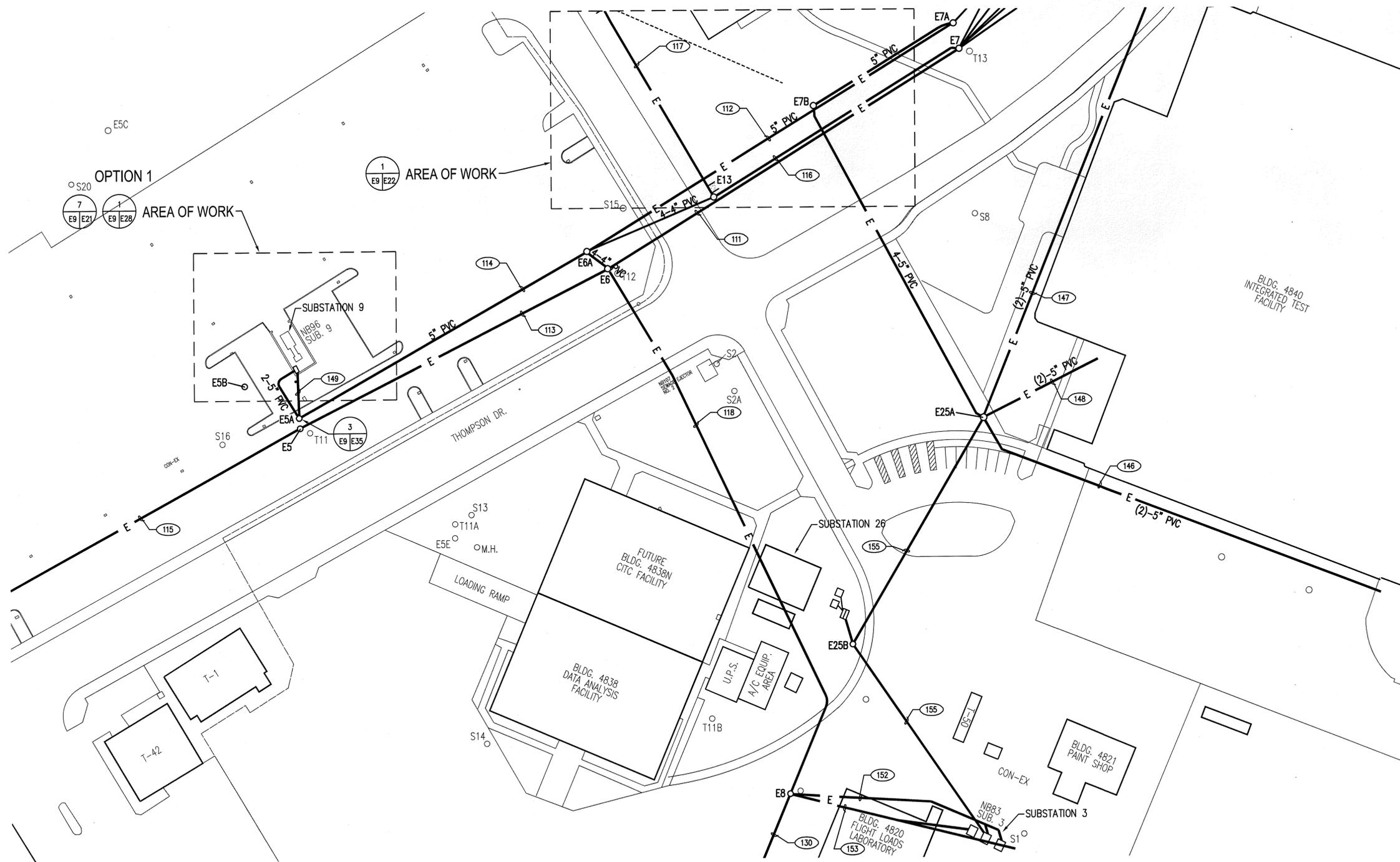
GENERAL NOTES:
 1. ALL EQUIPMENT SHOWN IS EXISTING, FOR REFERENCE INFORMATION.

PARTIAL ELECTRICAL SITE PLAN - GRID 39
 SCALE: 1"=40'-0"



DWG: 0110075 Phase 7 Submittal/Check/10075_EB.dwg USER: bauboy
 DATE: Jul 27, 2011 10:58am XREFS: NASA Title Block M39 IMAGES:

 DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph.: 714.630.4291 Fax: 714.630.4805	7/15/11	100% FINAL DESIGN				NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA	APPROVALS Chief Facilities Engineering & Asset Mgmt. Office <i>[Signature]</i> 2-1-12 Project Manager/Designer <i>[Signature]</i> 2-1-12 Facilities Project Manager <i>[Signature]</i> 2-1-12 Chief Office of Protective Services <i>[Signature]</i> 11-16-11 Chief Safety, Health & Environmental Office <i>[Signature]</i> 11-16-11 JREC Chief Information Officer <i>[Signature]</i> 11-16-11		DATE
	DATE	SYM	REVISION	BY	A'PD		DRAWING TITLE PARTIAL ELECTRICAL SITE PLAN - GRID 39	DATE STRTD	DATE PRNTD
						PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII	DRAWN BY	TRADE	EDM-1705
							SCALE	NONE	
							FILE NAME	E8	SHEET No. 21 of 50



UTILITES LEDEND

— E — EXISTING ELECTRICAL LINE

GENERAL NOTES:

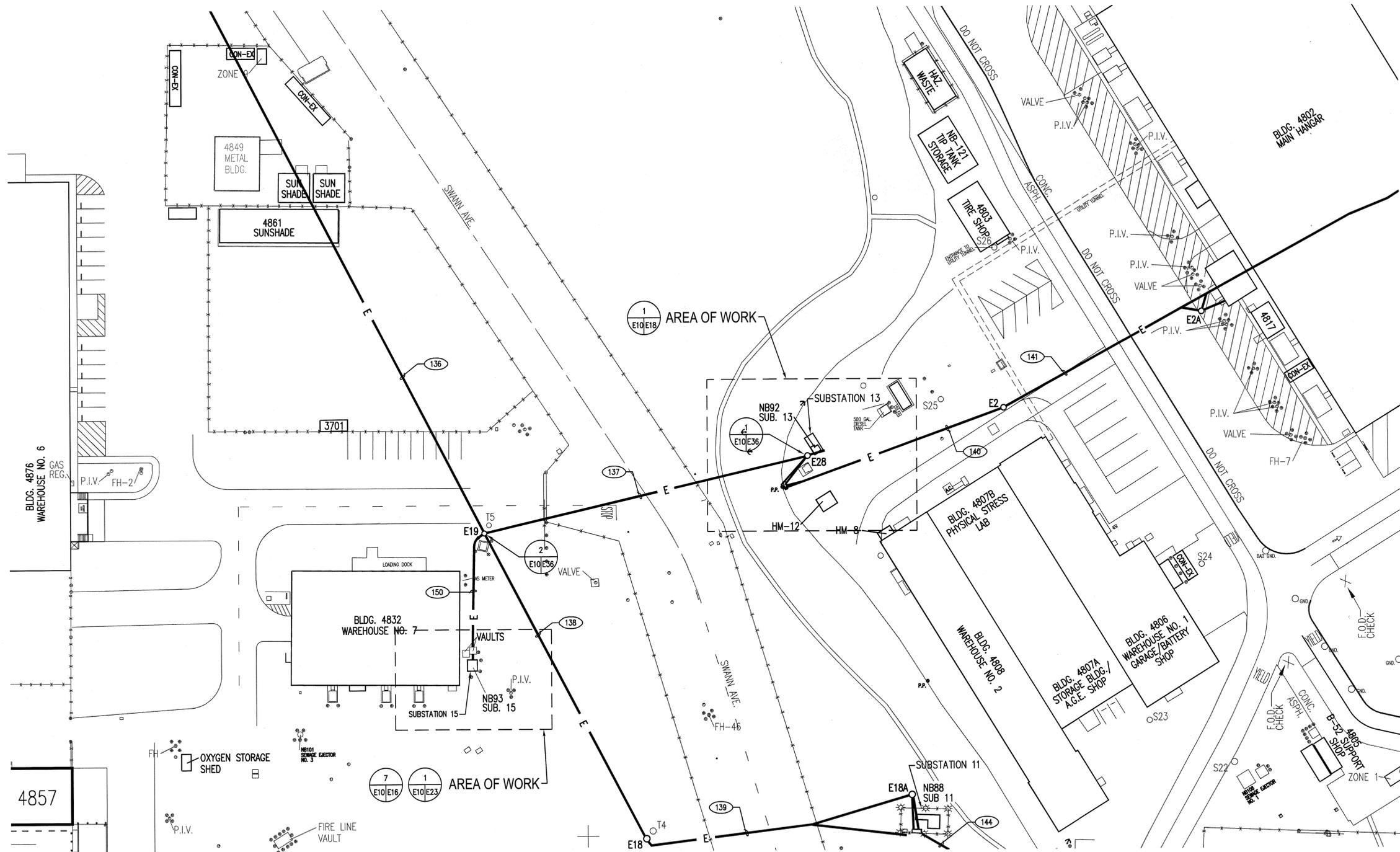
1. ALL EQUIPMENT SHOWN IS EXISTING, FOR REFERENCE INFORMATION.

PARTIAL ELECTRICAL SITE PLAN - GRID 43
SCALE: 1"=40'-0"



DWG: P11076 Phase 7 Substation/Utility/ED/07/07/11 E. Eding USER: kshrey
 DATE: 2/27/2011 10:37am AREA: 35 WASH THE BRICK HAS IMAGES

	7/15/11	100% FINAL DESIGN				<p>NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA</p>	<p>APPROVALS</p> <p>Chief, Facilities Engineering & Asset Mgmt. Office <i>[Signature]</i> 2-1-12</p> <p>Project Manager/Customer <i>[Signature]</i> 2-1-12</p> <p>Facilities Project Manager <i>[Signature]</i> 2-1-12</p> <p>Chief, Office of Project Services <i>[Signature]</i> 11-16-11</p> <p>Chief, Safety, Health & Environmental Office <i>[Signature]</i> 11-16-11</p> <p>DRR: Chief Information Officer <i>[Signature]</i> 11/17/11</p>		DATE
								DATE STRTD: 7/22/10	DATE PRINTD: 7/29/11
<p>DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph.: 714.630.4291 Fax: 714.630.4605</p>						<p>DRAWING TITLE</p> <p>PARTIAL ELECTRICAL SITE PLAN - GRID 43</p>			
						<p>PROJECT TITLE</p> <p>REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII</p>			
	DATE	SYM	REVISION	BY	A'PD	DRAWN BY	SCALE	TRADE	EDM-1705
						SCALE	NONE	SI. No.	
						FILE NAME	E9	SHEET No.	22 of 50



UTILITES LEDEND
 — E — EXISTING ELECTRICAL LINE

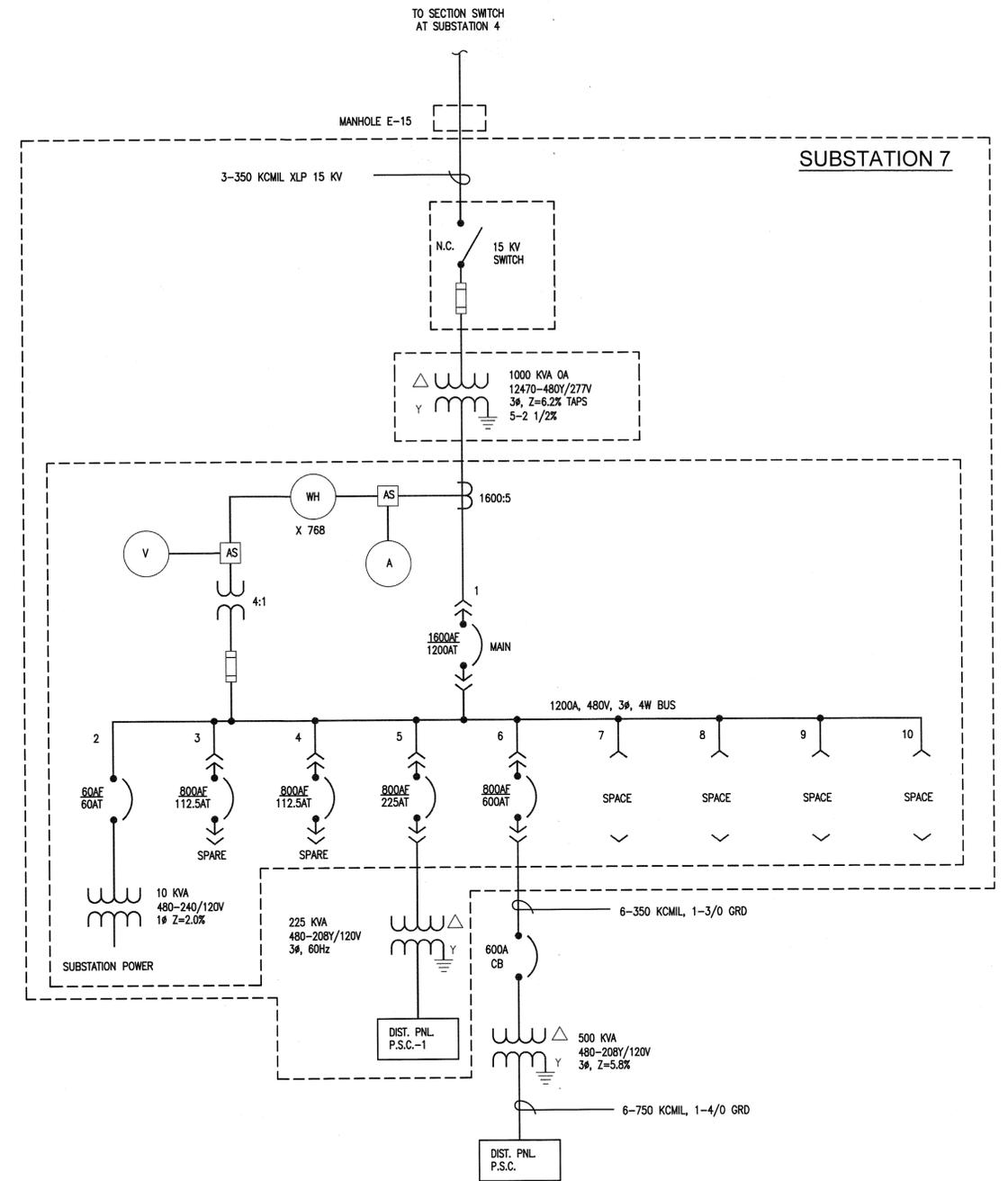
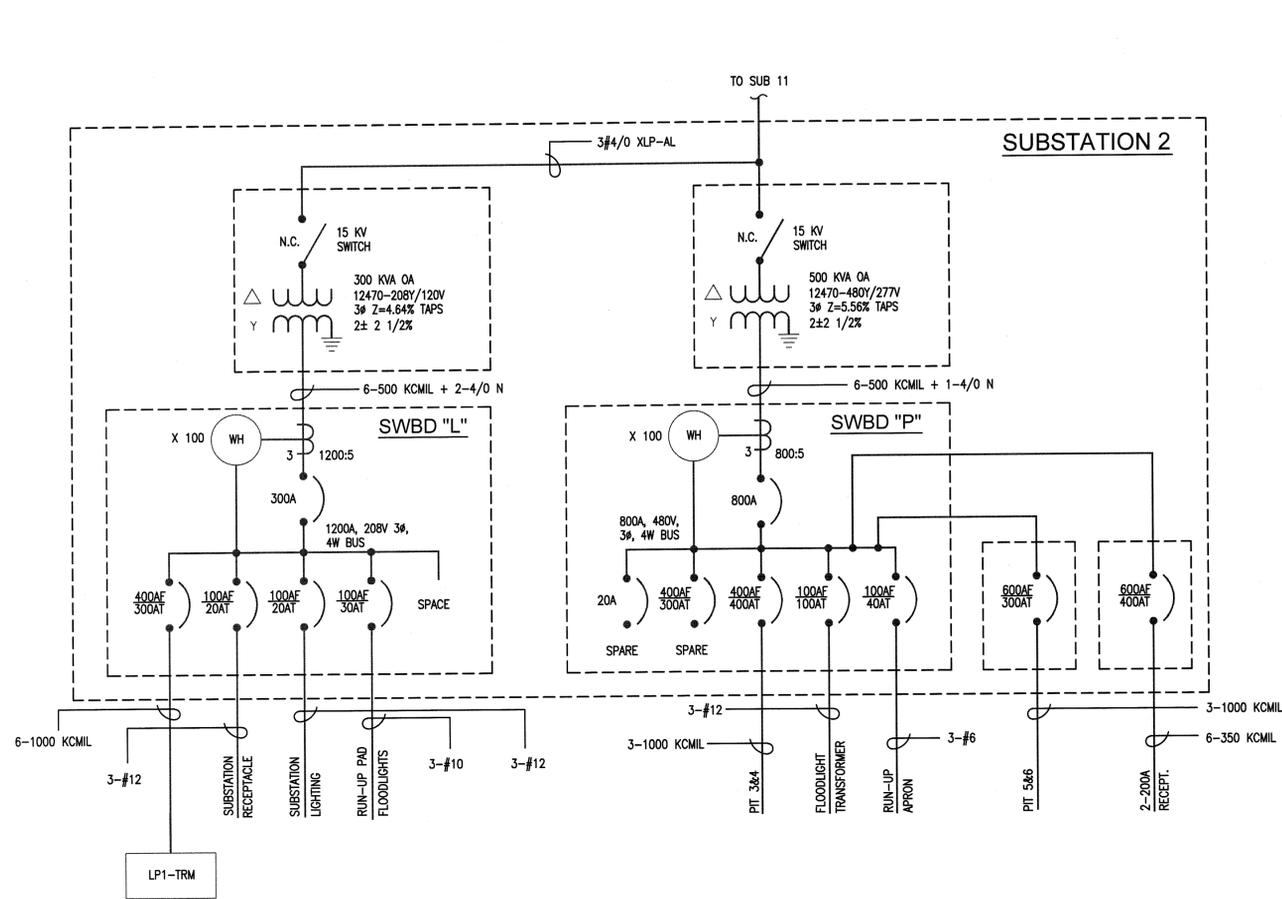
GENERAL NOTES:
 1. ALL EQUIPMENT SHOWN IS EXISTING, FOR REFERENCE INFORMATION.

PARTIAL ELECTRICAL SITE PLAN - GRID 52
 SCALE: 1"=40'-0"



DWG: P:\1007E Phase 7 Substation\DWG\007E E10.dwg USER: hachway
 DATE: Jul 27, 2011 10:38am XREFS: NASA Title Block MS2 IMAGES:

	7/15/11	100% FINAL DESIGN				 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA	APPROVALS		DATE
							Chief Electrical Engineering Asset Mgmt. Office <i>Kurt Kaiser</i> Project Manager/Designer <i>[Signature]</i> Facilities Project Manager Chief Office of Propulsion Services <i>[Signature]</i> Chief Safety Health & Environmental Office <i>[Signature]</i> SRRC Chief Information Officer <i>[Signature]</i>	2-1-12 2-1-12 11-16-11 11-16-11 11-16-11	2-1-12
 DCGA DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.630.4291 Fax: 714.630.4866						DRAWING TITLE PARTIAL ELECTRICAL SITE PLAN - GRID 52	PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII		DATE STRTD: 7/22/10 DATE PRNTD: 7/29/11
	DATE	SYM	REVISION	BY	A'PD	DRAWN BY: NONE SCALE: NONE FILE NAME: E10	TRADE: EDM-1705 SHEET No. 23 of 50		



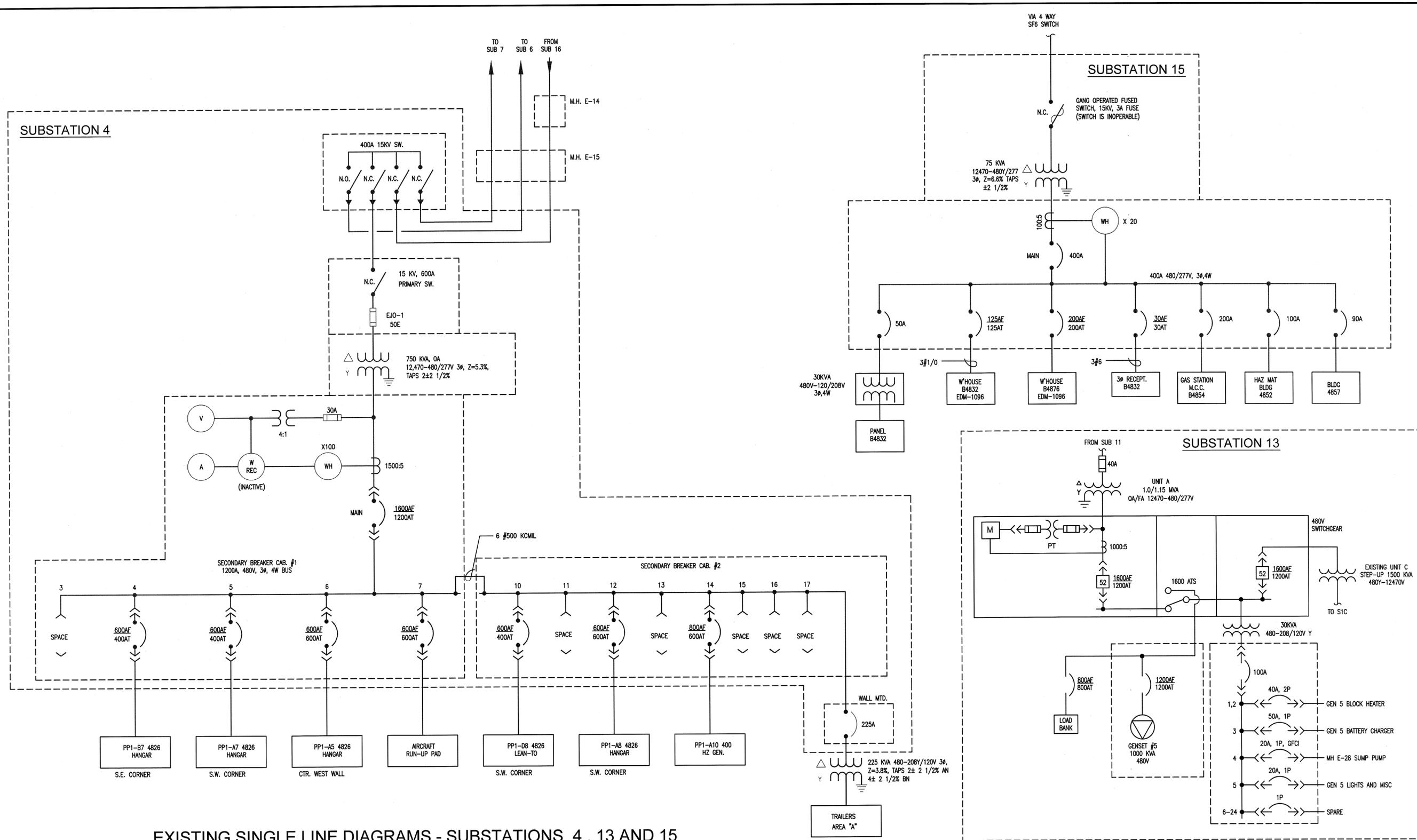
EXISTING SINGLE LINE DIAGRAMS - SUBSTATIONS 2 & 7

GENERAL NOTES:

- 1. SINGLE LINE DIAGRAM SHOWN FOR REFERENCE INFORMATION ONLY.

P:\NSA\Phase 7\Substation\DCGA\EDM-1705.dwg USER: bshahry
 DATE: Jul 27, 2011 10:42am XREFS: NASA Title Block IMAGES:

 DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.630.4291 Fax: 714.630.4805	7/15/11	100% FINAL DESIGN				 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA	APPROVALS Chief/Section Engineering & Asset Mgmt. Office Project Supervisor/Designer Facilities Project Manager Chief Office of Principal Services Chief Safety Health & Environmental Office Chief Information Officer		DATE
								2-1-12	
						DRAWING TITLE EXISTING ELECTRICAL SINGLE LINE DIAGRAM SUBSTATIONS 2 & 7	11-16-11 11-16-11		DATE
							7/22/10	7/29/11	
						PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII	DRAWN BY SCALE NONE FILE NAME		EDM-1705
							E12	SHEET No. 25 of 50	

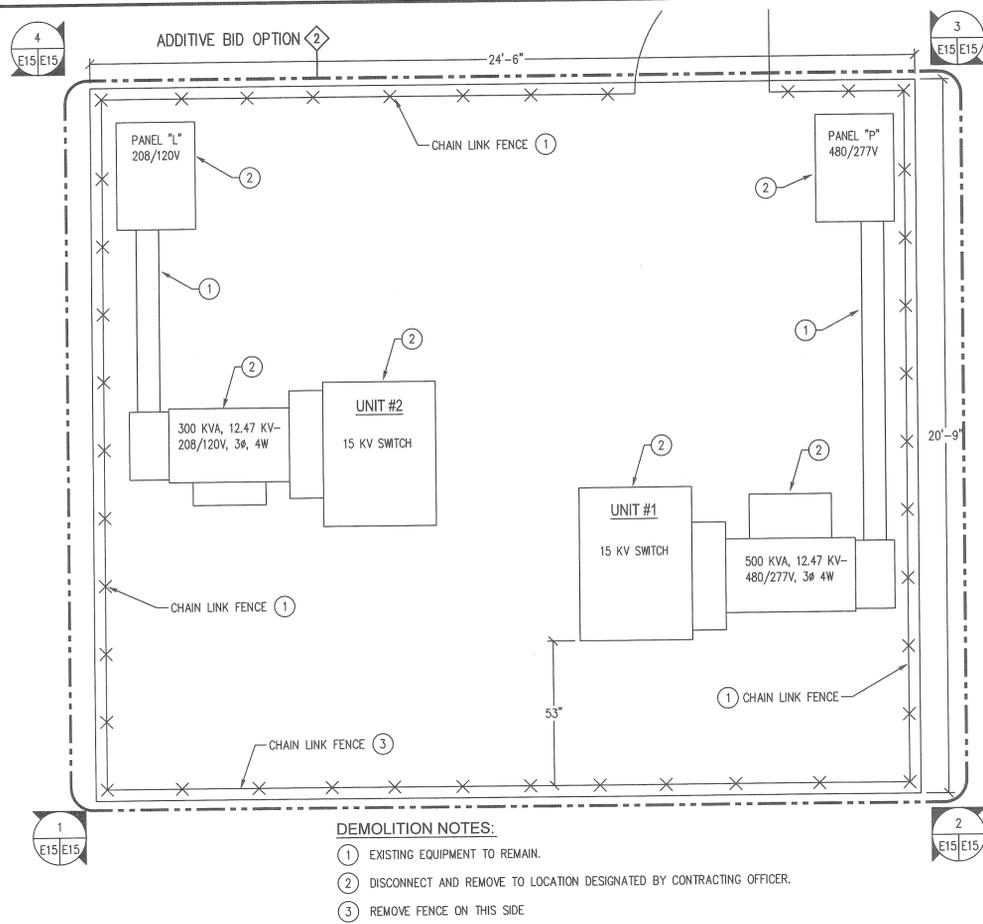


EXISTING SINGLE LINE DIAGRAMS - SUBSTATIONS 4, 13 AND 15

GENERAL NOTES:
 1. SINGLE LINE DIAGRAM SHOWN FOR REFERENCE INFORMATION ONLY.

	7/15/11	100% FINAL DESIGN				<p>NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA</p>	APPROVALS Chief, Facilities Engineering & Agent Mgmt. Office Project Requester/Customer Facilities Project Manager Chief, Office of Protective Services Chief, Safety, Health & Environmental Office Facility Support Information Officer		DATE
							DRAWING TITLE EXISTING ELECTRICAL SINGLE LINE DIAGRAM SUBSTATIONS 4, 13 AND 15	PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII	DATE STR/D 7/22/10 DATE PRINTED 7/29/11
<p>DCGA DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.630.4291 Fax: 714.630.4805</p>	DATE	SYM	REVISION	BY	A'PD	DRAWN BY SCALE NONE FILE NAME E13	TRADE SHEET No. EDM-1705 SHEET No. 26 of 50		

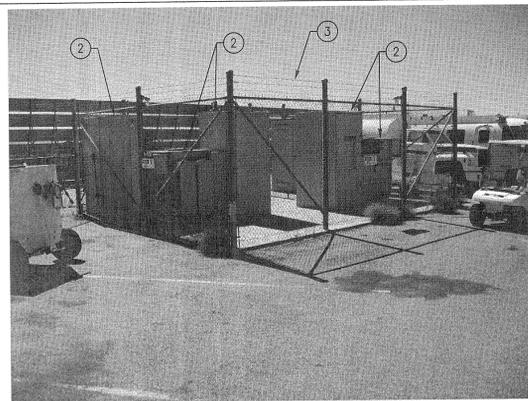
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 DATE: Jul 27, 2011 10:43am XREFS: NASA Title Block IMAGES:



DEMOLITION NOTES:
 ① EXISTING EQUIPMENT TO REMAIN.
 ② DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.
 ③ REMOVE FENCE ON THIS SIDE

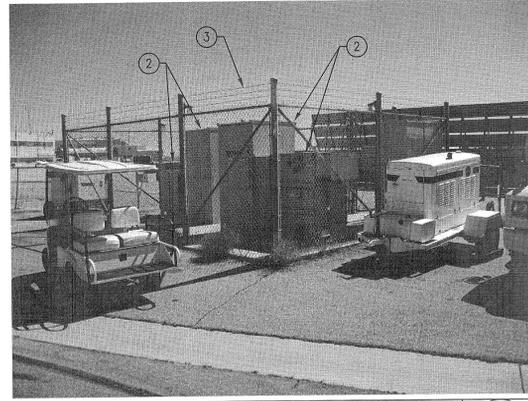
PARTIAL SITE PLAN, SUBSTATION #2 DEMOLITION

SCALE: 10
3/8"=1'-0" E4 E15



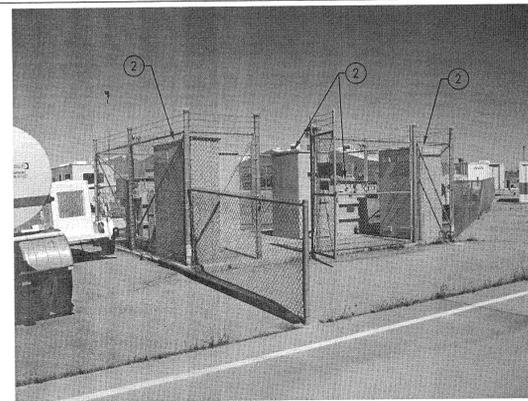
SUBSTATION 2

SCALE: 1
NTS E15 E15



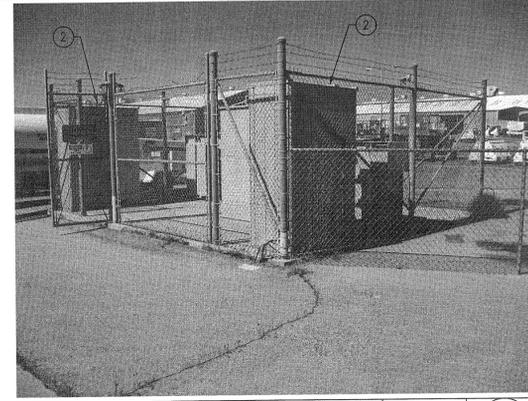
SUBSTATION 2

SCALE: 2
NTS E15 E15



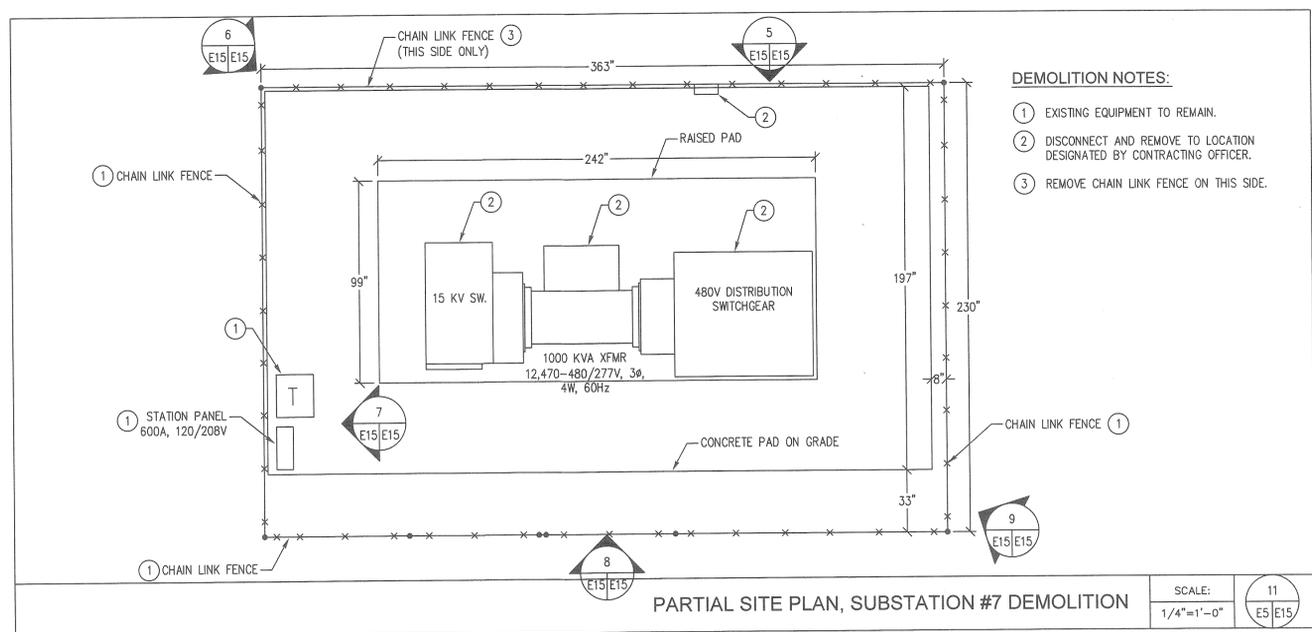
SUBSTATION 2

SCALE: 3
NTS E15 E15



SUBSTATION 2

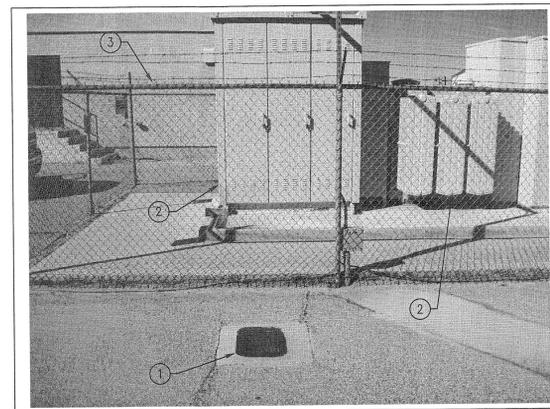
SCALE: 4
NTS E15 E15



DEMOLITION NOTES:
 ① EXISTING EQUIPMENT TO REMAIN.
 ② DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.
 ③ REMOVE CHAIN LINK FENCE ON THIS SIDE.

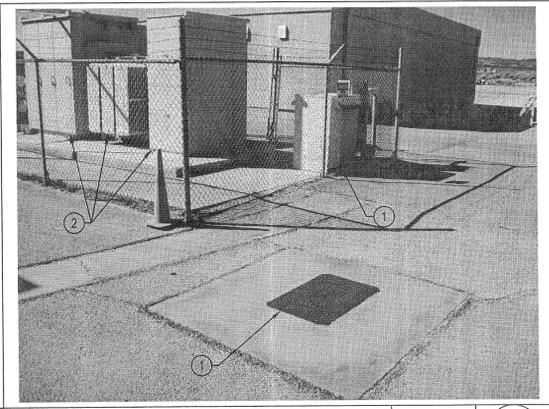
PARTIAL SITE PLAN, SUBSTATION #7 DEMOLITION

SCALE: 11
1/4"=1'-0" E5 E15



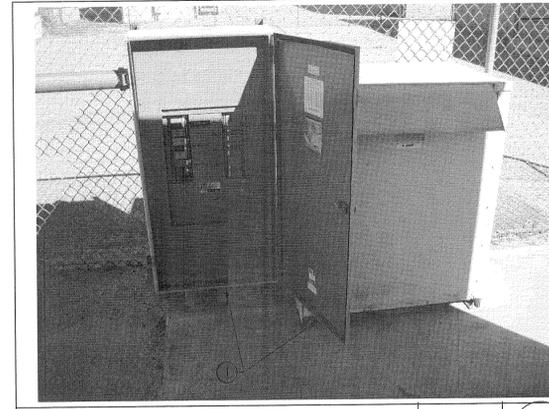
SUBSTATION 7 SOUTH FACE

SCALE: 5
NTS E15 E15



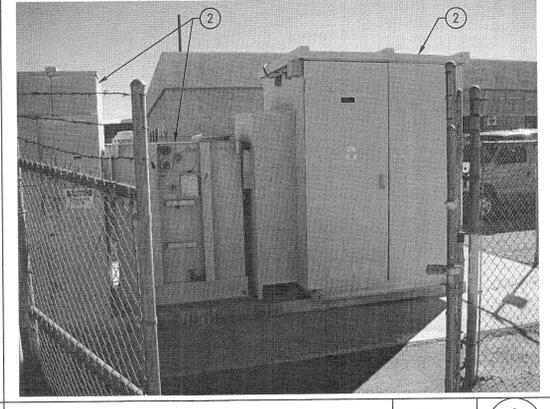
SUBSTATION 7 SOUTH FACE

SCALE: 6
NTS E15 E15



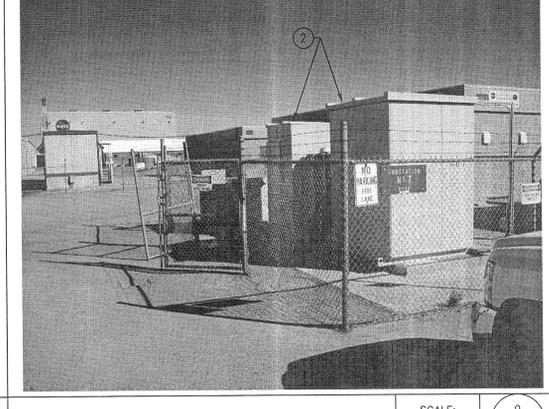
SUBSTATION 7 STATION TRANSFORMER

SCALE: 7
NTS E15 E15



SUBSTATION 7 NORTH FACE

SCALE: 8
NTS E15 E15



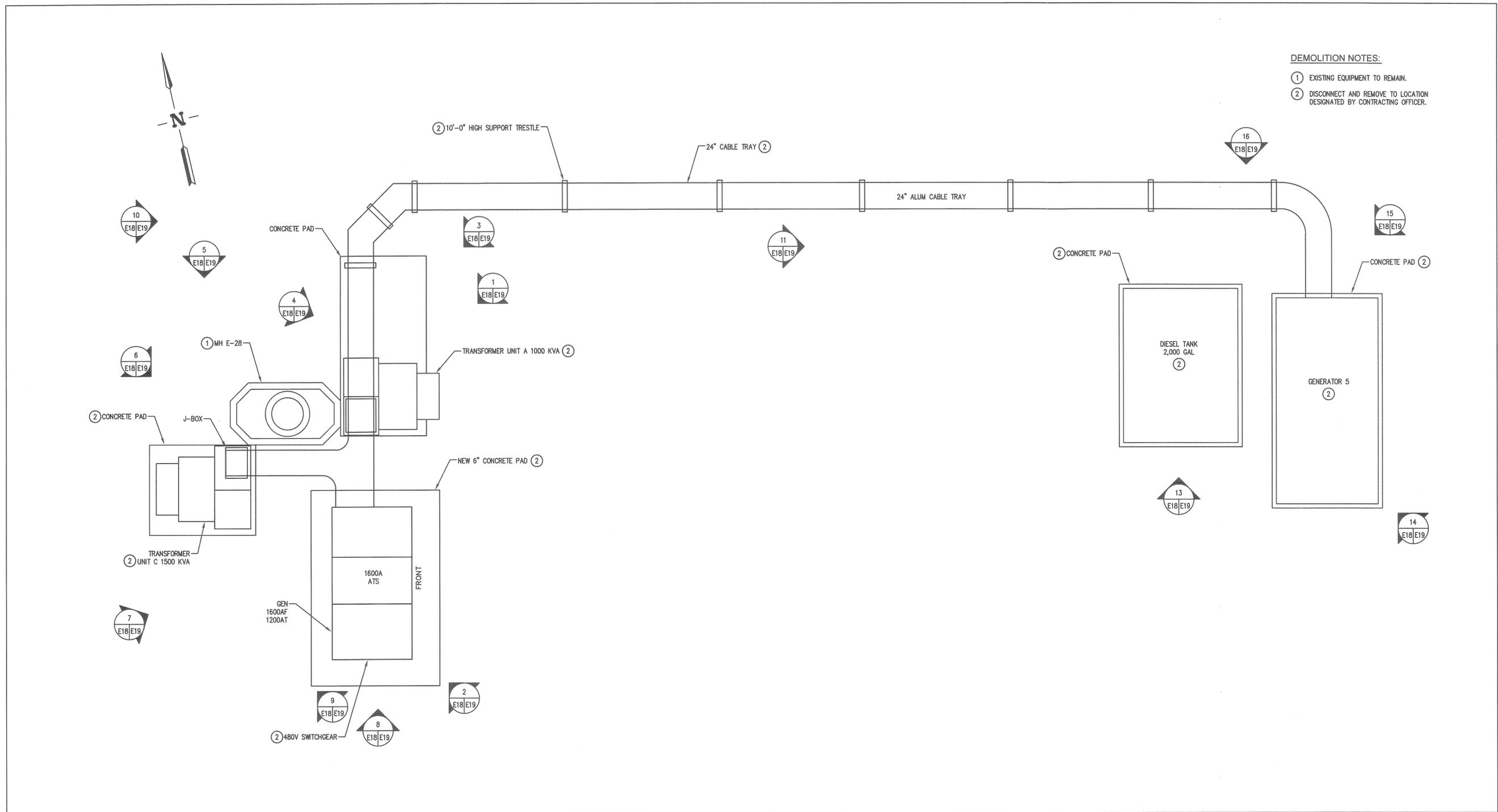
SUBSTATION 7 NORTHWEST FACE

SCALE: 9
NTS E15 E15

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	7/15/11	100% FINAL DESIGN							
	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA		APPROVALS Chief Facilities Engineering & Maint. Mgmt. Office <i>[Signature]</i> Project Requestor/Customer <i>[Signature]</i> Facilities Project Manager <i>[Signature]</i> Chief, Office of Protective Services <i>[Signature]</i> Chief, Safety, Health & Environmental Office <i>[Signature]</i> EPRC Chief Information Officer <i>[Signature]</i>		DATE				
	DRAWING TITLE PARTIAL SITE PLAN, SUBSTATIONS 2,7 DEMOLITION		DATE STRTD: 7/22/10 DATE PRNTD: 7/29/11		2-1-12	2-1-12	2-1-12	11-16-11	11-16-11
PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII		DRAWN BY NONE		EDM-1705					
FILE NAME E15		TRADE SH. No. NONE		28 of 50					

DWG: P110075 Phase 7 SubstationDEMOLITION E18.dwg USER: bahony
 DATE: Jul 27, 2011 10:50am XREFS: NASA Title Block IMAGES:



DEMOLITION NOTES:

- ① EXISTING EQUIPMENT TO REMAIN.
- ② DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.

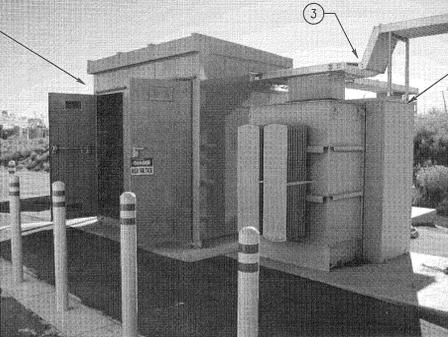
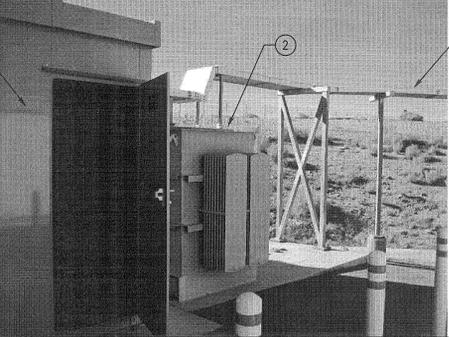
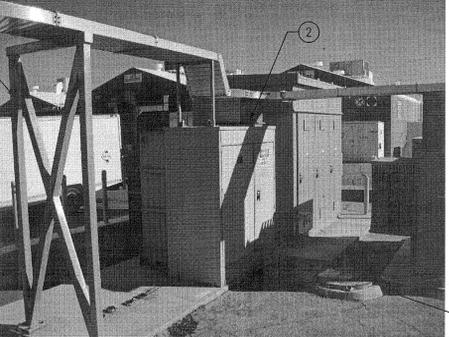
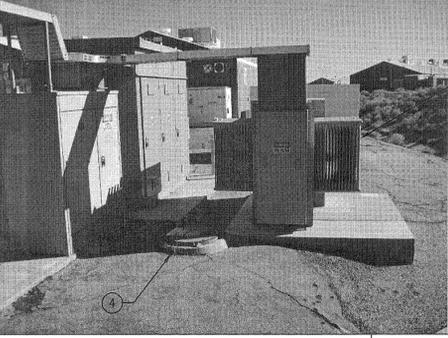
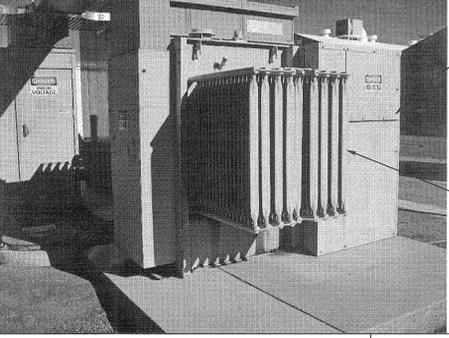
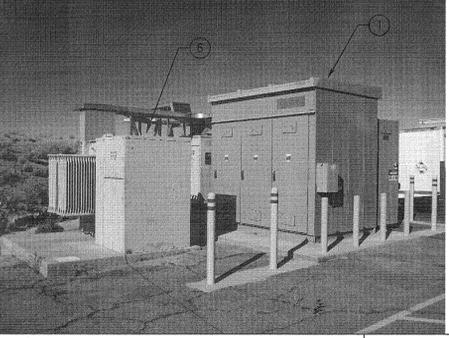
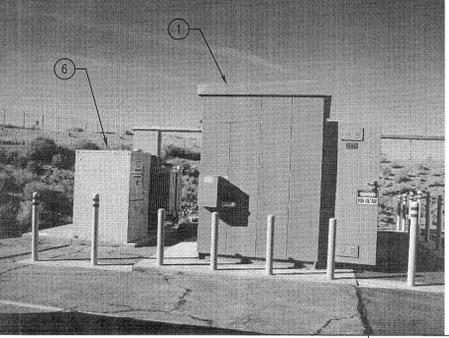
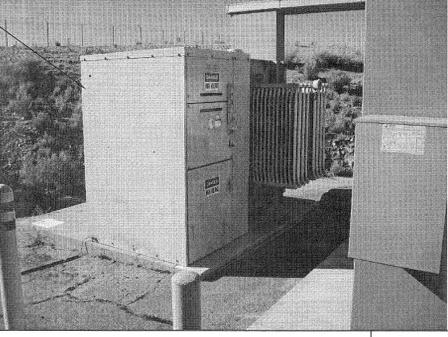
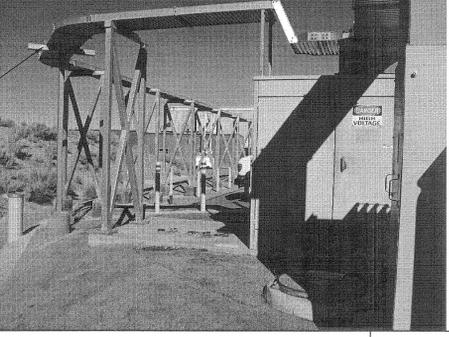
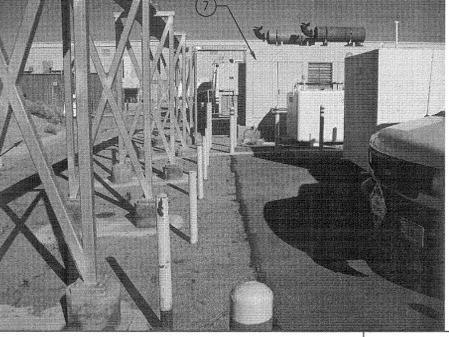
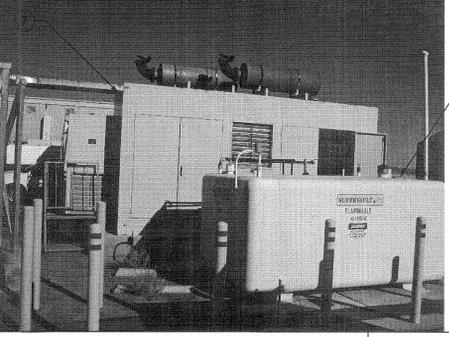
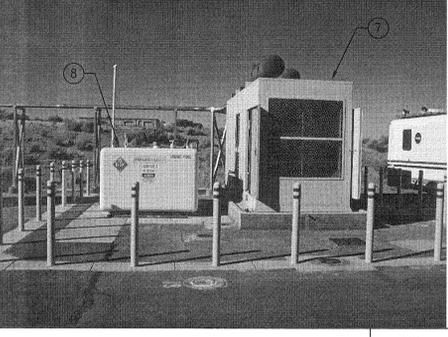
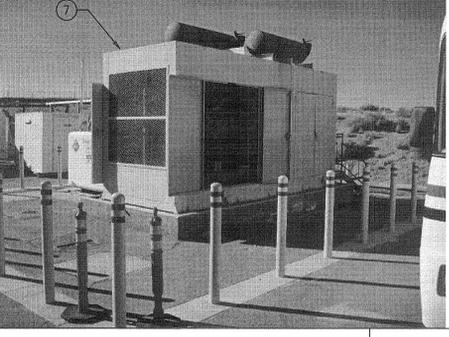
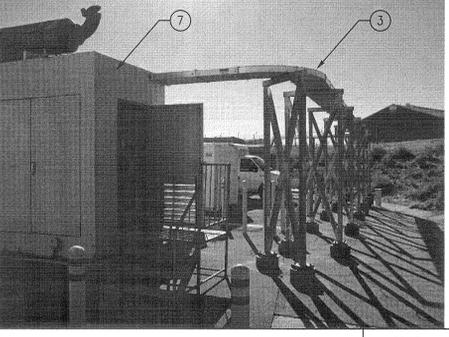
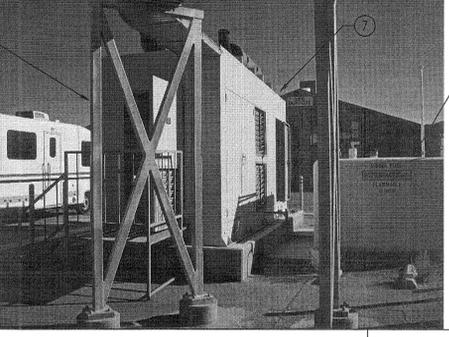
PARTIAL SITE PLAN, SUBSTATION #13 DEMOLITION

SCALE: 1/4"=1'-0" 1
E10/E18

 DCGA DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.630.4291 Fax: 714.630.4905	7/15/11	100% FINAL DESIGN								
	DATE	SYM	REVISION	BY	A'P'D					
	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA									
	DRAWING TITLE PARTIAL SITE PLAN, SUBSTATIONS #13 DEMOLITION									
PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII										
APPROVALS		DATE								
<small>Chief/Professional Engineering & Permit Mgmt. Office</small> <small>Project Registrar/Systems</small> <small>Facilities Project Manager</small> 		2-1-12 2-1-12 2-1-12								
<small>Chief, Office of Protective Services</small> <small>Chief, Safety, Health & Environmental Office</small> <small>AFRC Chief Information Officer</small> 		(1-16-11) 4-16-11 11/17/11								
DATE STRTD		7/22/10		DATE PRINTD		7/29/11				
DRAWN BY		SCALE		TRADE		SHEET No.				
EDM-1705		NONE		E18		31 of 50				

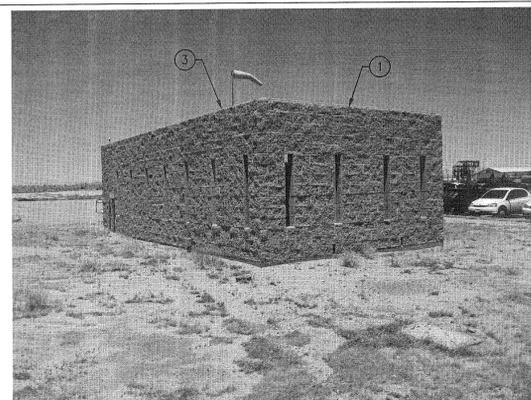
DEMOLITION NOTES:

- ① 480V SWITCHGEAR, 1600A, DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.
- ② 1.0MVA, 12470V-480/277V TRANSFORMER, DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.
- ③ OVERHEAD CABLE TRAY AND GROUND SUPPORT STRUCTURE, DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.
- ④ MANHOLE E28 TO REMAIN.
- ⑤ 1500KVA, 480V-12470V TRANSFORMER, DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.
- ⑥ 15KVA FUSED INTERRUPT SWITCH, DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.
- ⑦ 1000KW ENGINE-GENERATOR AND WEATHER PROOF ENCLOSURE, DISCONNECT AND REMOVE.
- ⑧ DIESEL FUEL TANK, DRAIN, DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.

			
SUBSTATION 13 DEMOLITION SCALE: NONE ① E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ② E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ③ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ④ E18/E19
			
SUBSTATION 13 DEMOLITION SCALE: NONE ⑤ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑥ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑦ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑧ E18/E19
			
SUBSTATION 13 DEMOLITION SCALE: NONE ⑧ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑩ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑪ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑫ E18/E19
			
SUBSTATION 13 DEMOLITION SCALE: NONE ⑬ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑭ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑮ E18/E19	SUBSTATION 13 DEMOLITION SCALE: NONE ⑯ E18/E19

 DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.830.4291 Fax: 714.830.4805	7/15/11	100% FINAL DESIGN			
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA		APPROVALS Chief, Facilities Engineering & Asset Mgmt. Office <i>[Signature]</i> 2-1-12 Project Requestor/Customer <i>[Signature]</i> 2-1-12 Facilities Project Manager <i>[Signature]</i> 2-1-12 Chief, Office of Acquisition Services <i>[Signature]</i> 11-16-11 Chief, Safety, Health & Environmental Office <i>[Signature]</i> 11-16-11 Chief Information Officer <i>[Signature]</i> 11-16-11		DATE STRTD: 7/22/10 DATE PRINTD: 7/29/11	
DRAWING TITLE SUBSTATIONS #13 DEMOLITION PHOTOS AND NOTES		PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII		DRAWN BY: EDM-1705 SCALE: NONE TRNG SH. No. E19 FILE NAME: SHEET No. 32 of 50	
DATE	SYM	REVISION	BY	A'PD	

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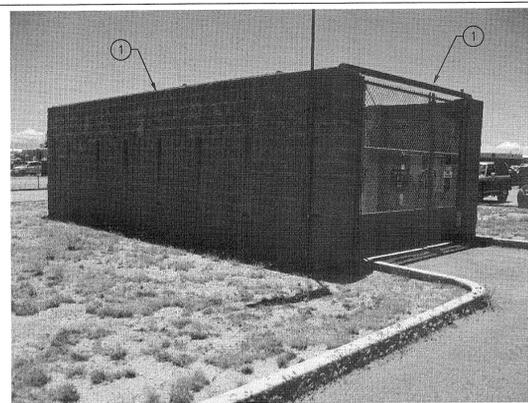
SUBSTATION 9

SCALE: 7
NTS E21 E21



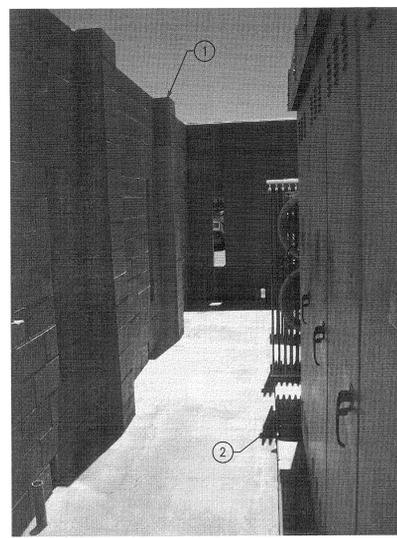
SUBSTATION 9

SCALE: 6
NTS E21 E21



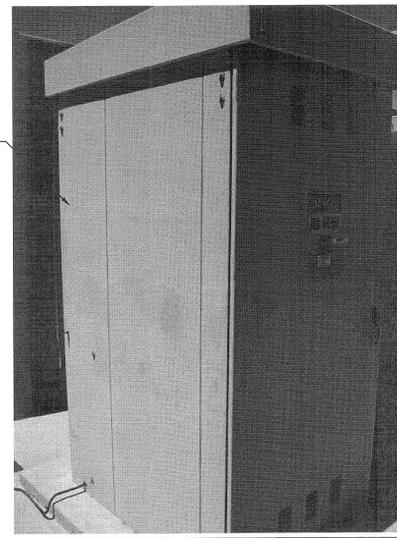
SUBSTATION 9

SCALE: 5
NTS E21 E21



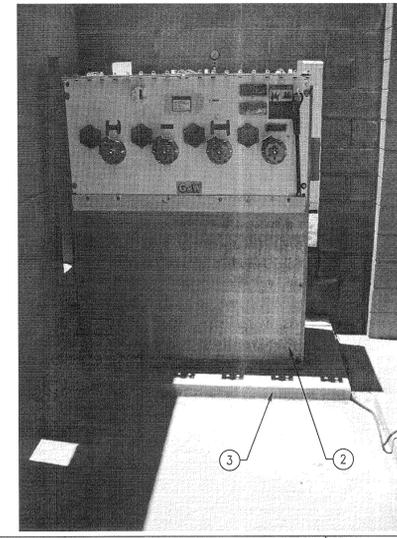
SUBSTATION 9

SCALE: 4
NTS E21 E21



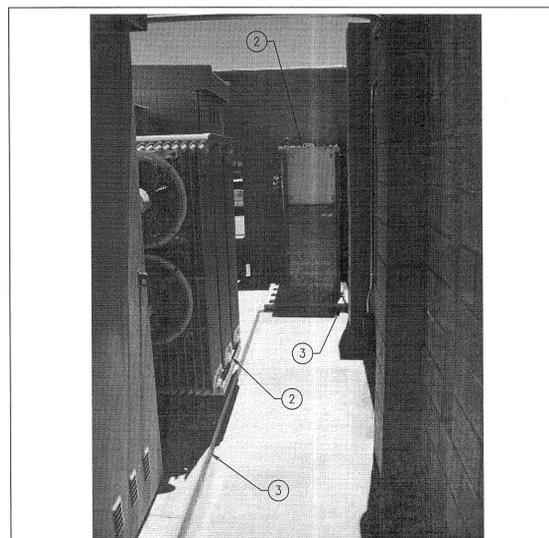
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SCALE: 3
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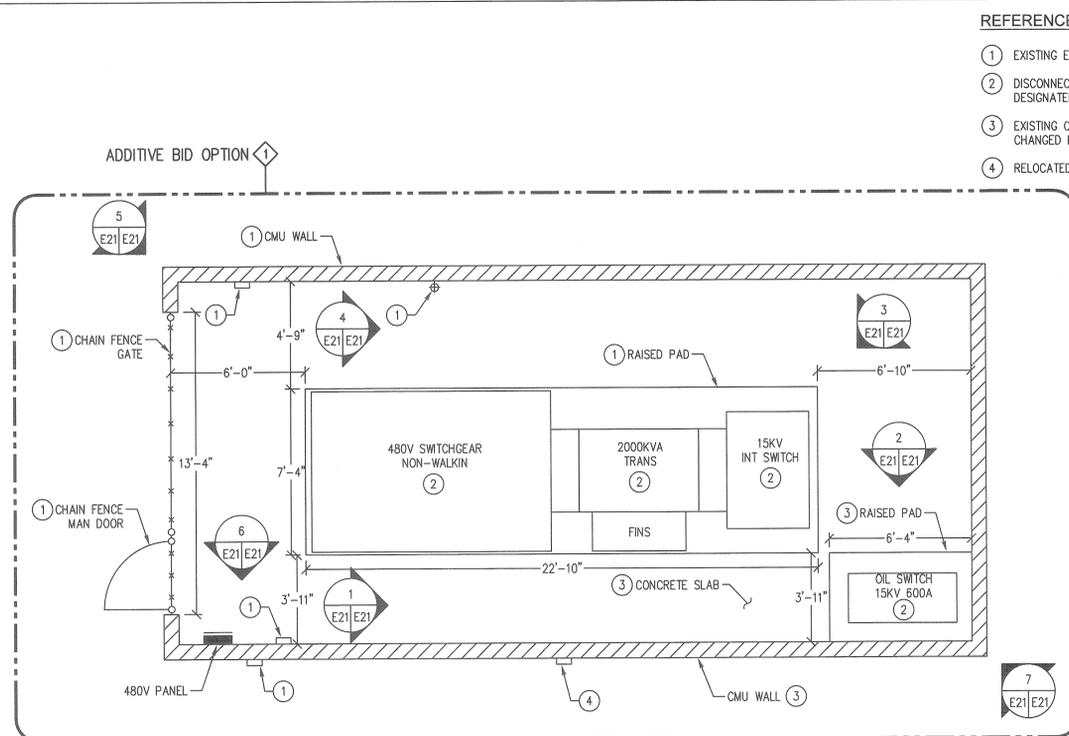
SUBSTATION 9

SCALE: 2
NTS E21 E21



SUBSTATION 9

SCALE: 1
NTS E21 E21



- REFERENCE NOTES:
- ① EXISTING EQUIPMENT TO REMAIN.
 - ② DISCONNECT AND REMOVE TO LOCATION DESIGNATED BY CONTRACTING OFFICER.
 - ③ EXISTING CONCRETE SLAB AND MASONRY TO BE CHANGED PER REMODEL PLAN.
 - ④ RELOCATED PER REMODEL PLAN.

PARTIAL SITE PLAN, SUBSTATION #9 DEMOLITION

SCALE: 7
1/4"=1'-0" E9 E21

DATE	SYM	REVISION	BY	A'PD
7/15/11		100% FINAL DESIGN		

REGISTERED PROFESSIONAL ENGINEER
 DONN C. GILMORE & ASSOCIATES, INC.
 Consulting Mechanical and Electrical Engineers
 4051 E. La Palma Ave., Ste. A
 Anaheim, CA 92807
 Ph: 714.630.4291
 Fax: 714.630.4805

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 DRYDEN FLIGHT RESEARCH CENTER
 EDWARDS, CA

DRAWING TITLE
 PARTIAL SITE PLAN, SUBSTATION 9
 DEMOLITION

PROJECT TITLE
 REPAIR PRIMARY ELECTRICAL
 DISTRIBUTION SYSTEM - PHASE VII

APPROVALS

NAME	DATE
Project Requestor/Customer	2-1-12
Facilities Project Manager	2-1-12
Chief, Office of Protective Services	11-16-11
Chief, Safety, Health, & Environmental Office	11-16-11
TRAC Chief Information Officer	

DATE STRTD 7/22/10 DATE PRNTD 7/29/11

DRAWN BY
 SCALE NONE TRADE SHEET No. EDM-1705
 FILE NAME E21 SHEET No. 34 of 50

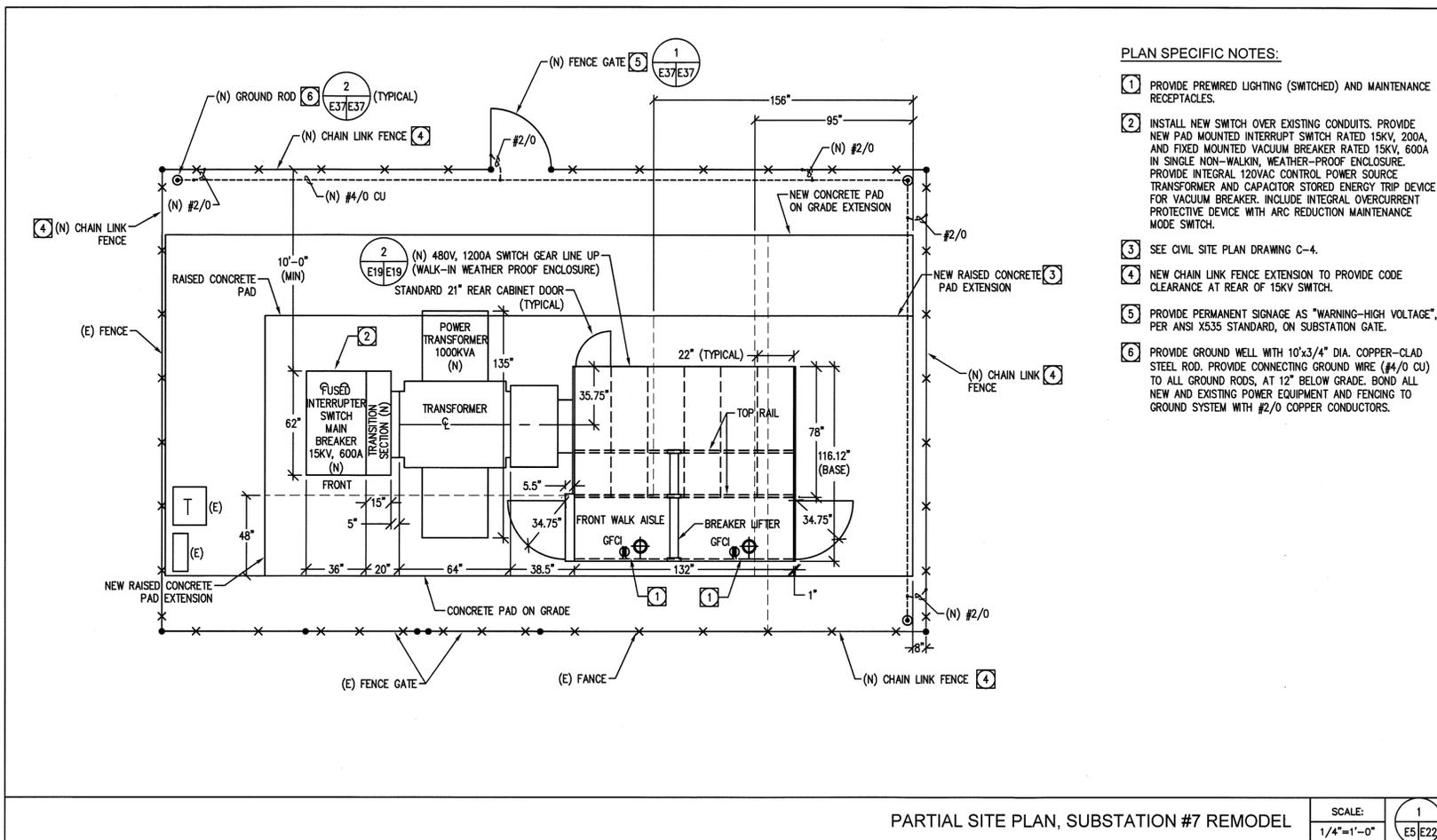
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 DATE: Jul 27, 2011 10:55am XREFS: NASA Title Block IMAGES: Elec 134.ppt
 Elec 136.ppt Elec 138.ppt Elec 140.ppt Elec 142.ppt Elec 161.ppt Elec 164.ppt

78" DEPTH (NOTE 1)					
DIGITAL METER	DIGITAL METER	DIGITAL METER	DIGITAL METER	SPACE	STATION POWER 10KVA XFMR
MAIN 1600AF 1200AT	FEEDER 2 800AF 600AT	SPARE FEEDER 4 800AF 100AT	SPARE FEEDER 6 800AF 600AT	SPACE	LOAD CENTER 120/208V 60A, 1PH
DIGITAL METER	DIGITAL METER	DIGITAL METER	SPACE	SPACE	SPACE
FEEDER 1 800AF 225AT	SPARE FEEDER 3 800AF 100AT	SPARE FEEDER 5 800AF 225AT	SPACE	SPACE	SPACE

NOTES:
1. PROVIDE WALK-IN ENCLOSURE WITH "TOP-OF-GEAR" BREAKER LIFTER AND FRONT ACCESS DOORS.

480V SWITCHGEAR FRONT ELEVATION

SCALE: 2/ E22/E22
NTS



PLAN SPECIFIC NOTES:

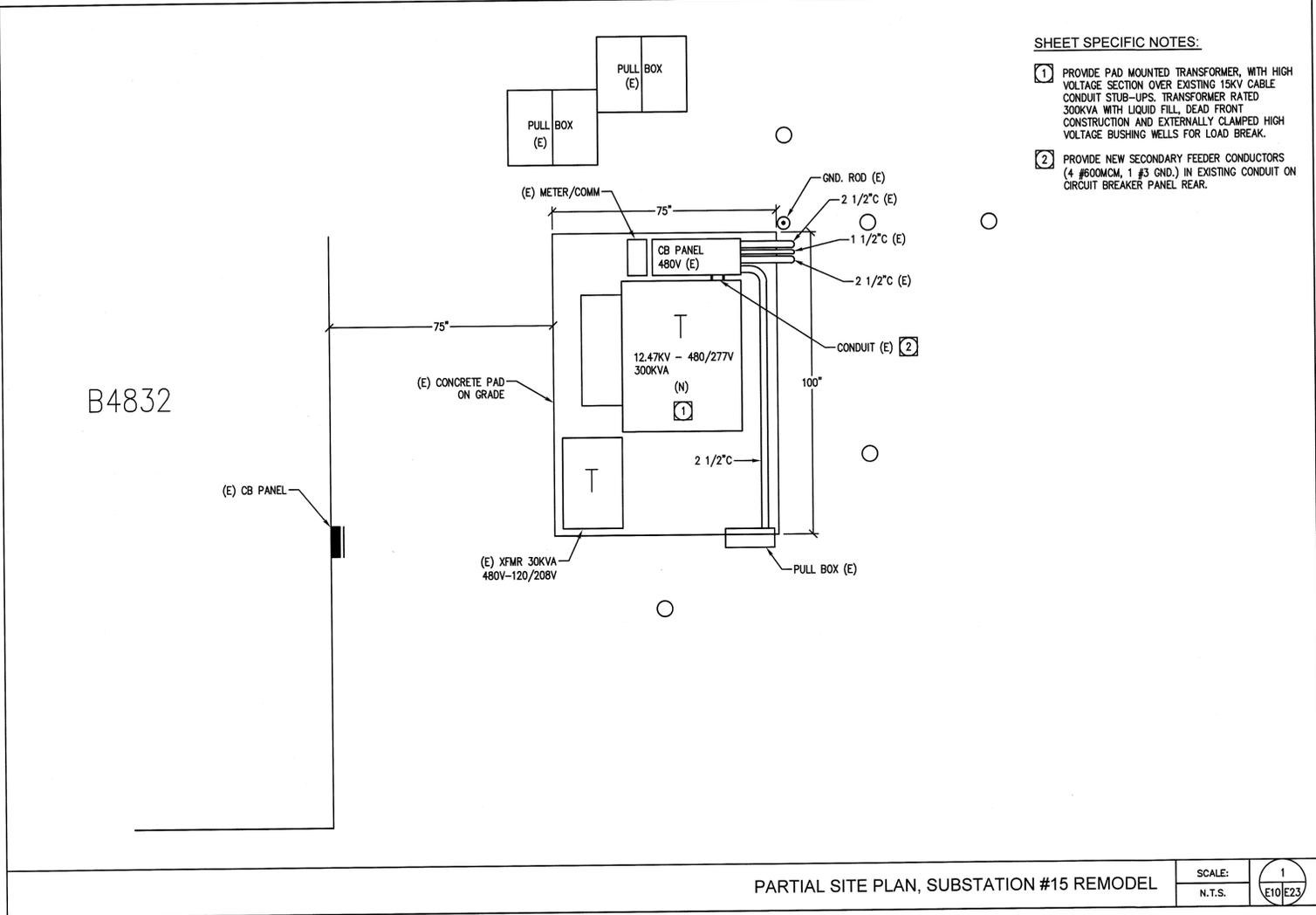
1. PROVIDE PREWIRED LIGHTING (SWITCHED) AND MAINTENANCE RECEPTACLES.
2. INSTALL NEW SWITCH OVER EXISTING CONDUITS. PROVIDE NEW PAD MOUNTED INTERRUPT SWITCH RATED 15KV, 200A, AND FIXED MOUNTED VACUUM BREAKER RATED 15KV, 600A IN SINGLE NON-WALKIN, WEATHER-PROOF ENCLOSURE. PROVIDE INTEGRAL 120VAC CONTROL POWER SOURCE TRANSFORMER AND CAPACITOR STORED ENERGY TRIP DEVICE FOR VACUUM BREAKER. INCLUDE INTEGRAL OVERCURRENT PROTECTIVE DEVICE WITH ARC REDUCTION MAINTENANCE MODE SWITCH.
3. SEE CIVIL SITE PLAN DRAWING C-4.
4. NEW CHAIN LINK FENCE EXTENSION TO PROVIDE CODE CLEARANCE AT REAR OF 15KV SWITCH.
5. PROVIDE PERMANENT SIGNAGE AS "WARNING-HIGH VOLTAGE", PER ANSI X535 STANDARD, ON SUBSTATION GATE.
6. PROVIDE GROUND WELL WITH 10"x3/4" DIA. COPPER-CLAD STEEL ROD. PROVIDE CONNECTING GROUND WIRE (#4/0 CU) TO ALL GROUND RODS, AT 12" BELOW GRADE. BOND ALL NEW AND EXISTING POWER EQUIPMENT AND FENCING TO GROUND SYSTEM WITH #2/0 COPPER CONDUCTORS.

PARTIAL SITE PLAN, SUBSTATION #7 REMODEL

SCALE: 1/4"=1'-0"
1/ E5/E22

DWG: P:\10075 Phase 7 Substation\DWG\10075 E22.dwg USER: bshohy DATE: Jul 27, 2011 10:55am XREFS: NASA Title Block IMAGES:

<p>DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph: 714.630.4291 Fax: 714.630.4805</p>	7/15/11	100% FINAL DESIGN				<p>NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA</p>	<p>APPROVALS</p> <p>DATE</p>	
								<p>DATE STRTD 7/22/10</p> <p>DATE PRNTD 7/29/11</p> <p>SCALE NONE</p> <p>FILE NAME E22</p>
						<p>DRAWING TITLE</p> <p>PARTIAL SITE PLAN, SUBSTATIONS #7 REMODEL</p>	<p>EDM-1705</p>	
						<p>PROJECT TITLE</p> <p>REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII</p>	<p>SHEET No. 35 of 50</p>	



- SHEET SPECIFIC NOTES:**
- 1 PROVIDE PAD MOUNTED TRANSFORMER, WITH HIGH VOLTAGE SECTION OVER EXISTING 15KV CABLE CONDUIT STUB-UPS. TRANSFORMER RATED 300KVA WITH LIQUID FILL, DEAD FRONT CONSTRUCTION AND EXTERNALLY CLAMPED HIGH VOLTAGE BUSHING WELLS FOR LOAD BREAK.
 - 2 PROVIDE NEW SECONDARY FEEDER CONDUCTORS (4 #600MCM, 1 #3 GND.) IN EXISTING CONDUIT ON CIRCUIT BREAKER PANEL REAR.

B4832

PARTIAL SITE PLAN, SUBSTATION #15 REMODEL

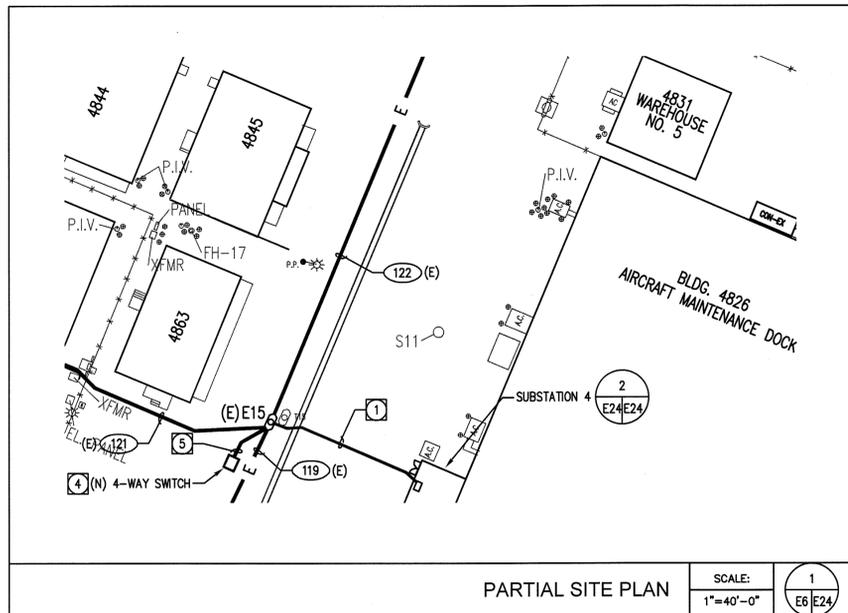
SCALE: 1/10 E10/E23
N.T.S.

DWG: P110075 Phase 7 Substation/E10075 E23.dwg USER: bshovoy DATE: Jul 27, 2011 10:56am XREFS: NASH Title Block IMAGES:

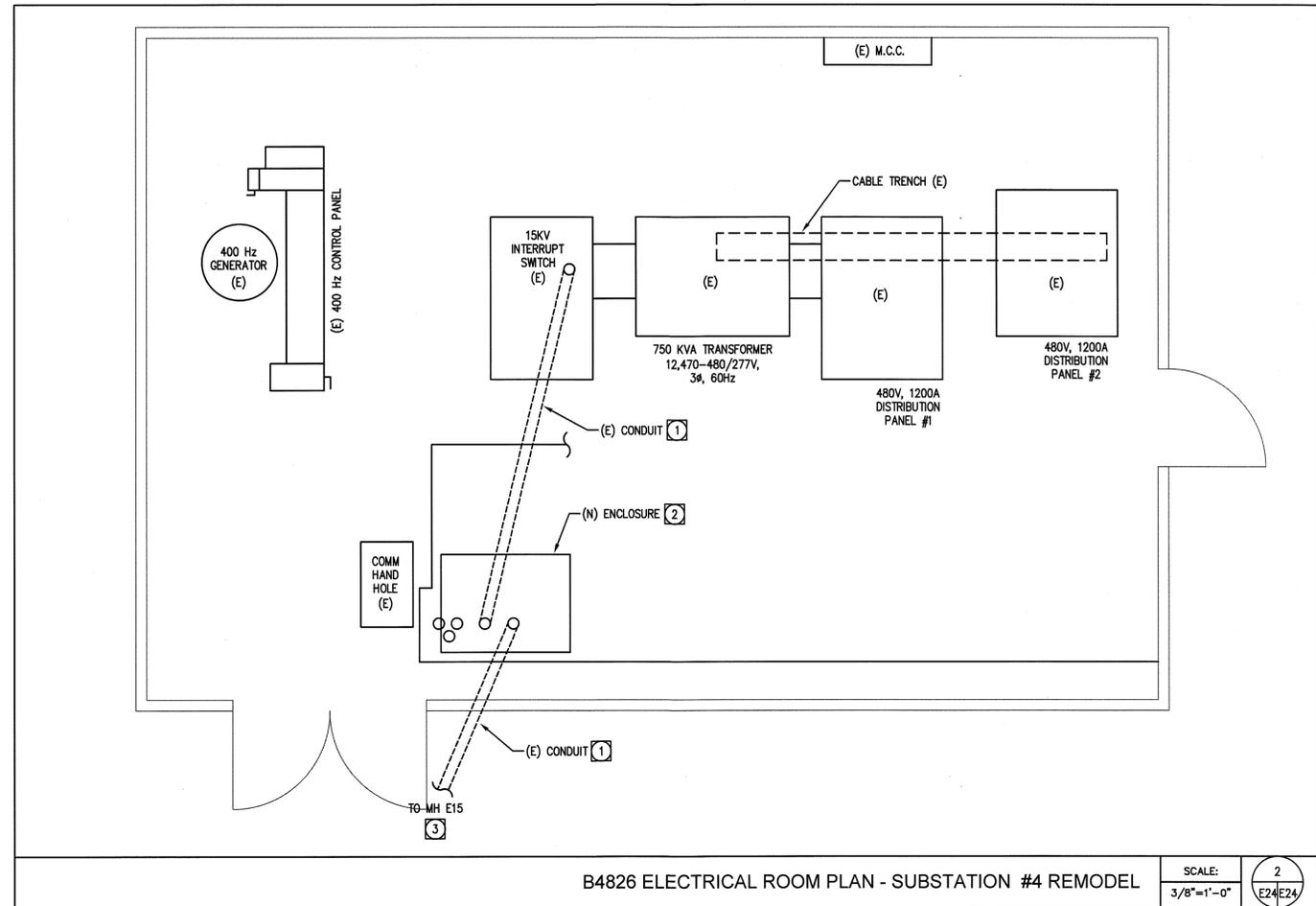
<p>DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph.: 714.630.4291 Fax: 714.630.4805</p>	7/15/11	100% FINAL DESIGN				<p>NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA</p>	APPROVALS		DATE
							<p>Chief, Facilities Engineering & Support Office <i>[Signature]</i></p>		2-1-12
							<p>Project Sponsor/Customer <i>[Signature]</i></p>		2-1-12
							<p>Facilities Project Manager <i>[Signature]</i></p>		2-1-12
							<p>Chief, Office of Engineering Services <i>[Signature]</i></p>		11-16-11
					<p>Chief, Safety, Health & Environmental Office <i>[Signature]</i></p>		11-16-11		
					<p>DRAC Chief Information Officer <i>[Signature]</i></p>		11-17-11		
						<p>DATE STARTD 7/22/10 DATE PRINTD 7/29/11</p>	DRAWN BY		TRACE
							SCALE NONE		SPL. No.
							FILE NAME E23		SHEET No. 36 of 50
	DATE	SYM	REVISION	BY	A'PD	PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII			

SHEET SPECIFIC NOTES:

- 1 PROVIDE NEW 15KV CONDUCTORS (3 #350MCM, 1 #4/0 GND.) TO NEW SECTIONALIZING SWITCH, THROUGH EXISTING CONDUIT TO MANHOLE E15, AND NEW 5" CONDUIT TO SWITCH.
- 2 PROVIDE ABOVE GROUND PULL BOX (48"Wx36"Dx48"H), WITH HINGED COVER AND CABLE SUPPORTS, FOR 15KV CONDUCTOR PASS THROUGH.
- 3 SEE PARTIAL SITE PLAN, THIS SHEET.
- 4 PROVIDE NEW 600A, 4-WAY, DEAD FRONT SF6, MANUAL SWITCH ON A 6" RAISED CONCRETE PAD, ADJACENT TO MANHOLE E15. FRONT ACCESS STYLE SWITCH RATED 25KAIC SYMMETRICAL (MINIMUM).
- 5 PROVIDE (5) 5" CONDUITS, (4) WITH 3-#350MCM, 1 #4/0 GND. ONLY NEW CONDUCTORS ARE 3-#350MCM FROM SUBSTATION 4 PER NOTE 1.



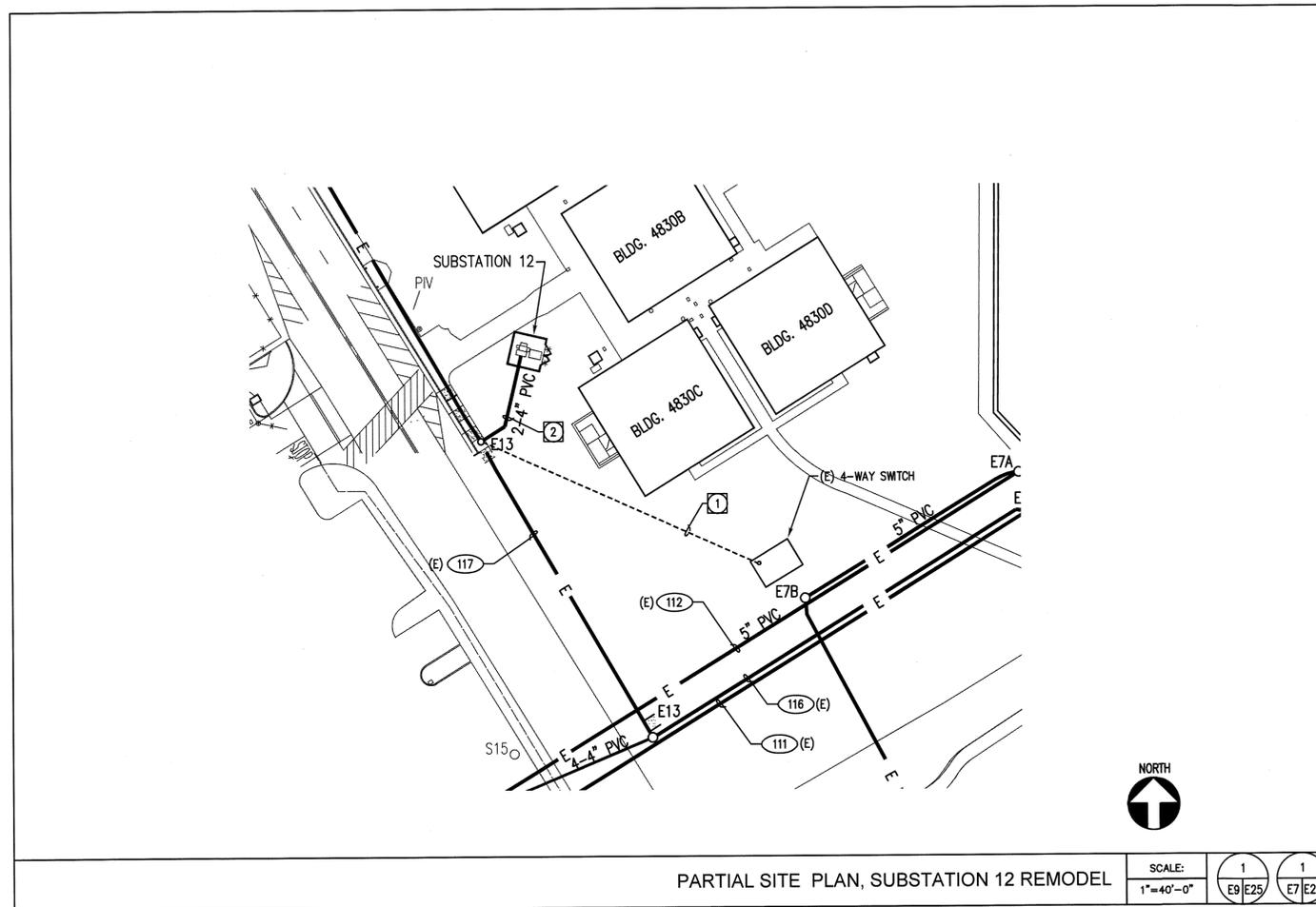
PARTIAL SITE PLAN SCALE: 1/4" = 40'-0" 1 E6 E24



B4826 ELECTRICAL ROOM PLAN - SUBSTATION #4 REMODEL SCALE: 3/8" = 1'-0" 2 E24 E24

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA										APPROVALS DATE 2-1-12 2-1-12 2-7-12 11-15-11 11-6-11										
DRAWING TITLE SUBSTATION #4 REMODEL										PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII										
DATE STARTD 7/22/10 DATE PRINTED 7/29/11										DRAWN BY SCALE NONE TRADE SH. No. EDM-1705 FILE NAME E24 SHEET No. 37 of 50										

DWG: P:\10075 Phase 7 Substation\DWG\E10075 E24.dwg USER: bshovoy
 DATE: Jul 27, 2011 10:57am XREFS: NASA Title Block M34 IMAGES:



UTILITES LEDEND

— E — EXISTING ELECTRICAL LINE

PLAN SPECIFIC NOTES:

- ① PROVIDE (2) 5" C-1 WITH 3 #350MCM, 1 #4/0 GND.
- ② PROVIDE 3 #350MCM TO SUBSTATION 12 TERMINATION, IN EXISTING CONDUIT FROM MANHOLE E13.

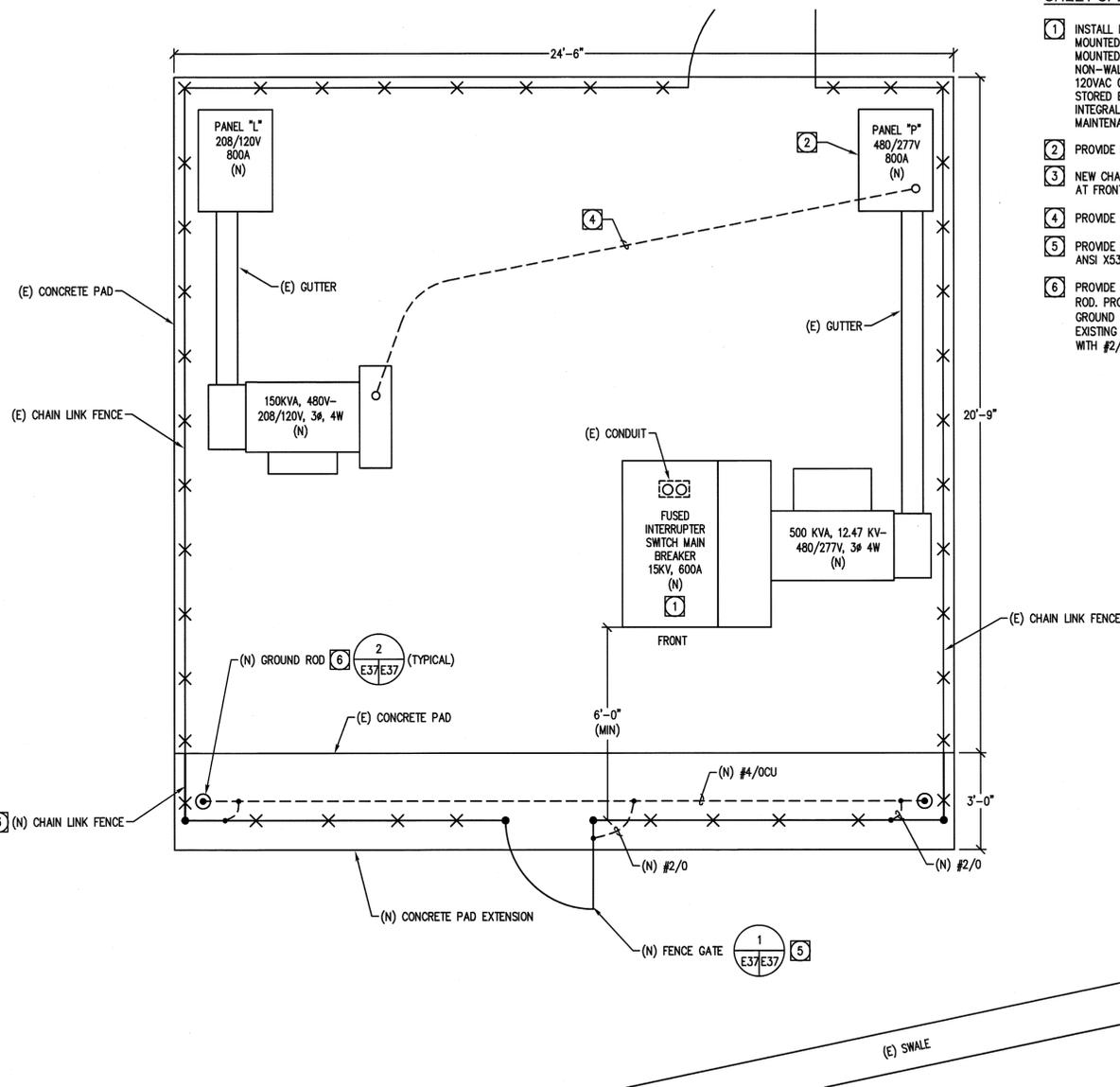
PARTIAL SITE PLAN, SUBSTATION 12 REMODEL

SCALE:	1	1
1"=40'-0"	E9/E25	E7/E25

PWS: P:\0875_Phas 7_Cad\dwg\DWG\EDM_1705.dwg USER: kshahy
 DATE: JUL 27, 2011 10:59am XREFS: NASA TAB Block M38 M43 IMAGES:

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	DATE	SYM	REVISION	BY	A'PD															
						 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA		APPROVALS Date: 2-1-12 Date: 2-1-12 Date: 2-1-12 Date: 11-16-11 Date: 11-16-11 Date: 11-17-11		DATE										
						DRAWING TITLE PARTIAL SITE PLAN, SUBSTATION 12 REMODEL		PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII		DATE STRD	7/22/10	DATE PRINTD	7/29/11	DRAWN BY		TRADE	EDM-1705			
										SCALE	NONE	FILE NAME	E25	SHEET No.	38	of	50			

ADDITIVE BID OPTION



SHEET SPECIFIC NOTES:

- 1 INSTALL NEW SWITCH OVER EXISTING CONDUITS. PROVIDE NEW PAD MOUNTED INTERRUPT SWITCH RATED 15KV, 200A, AND FIXED MOUNTED VACUUM BREAKER RATED 15KV, 600A IN SINGLE NON-WALKIN, WEATHER-PROOF ENCLOSURE. PROVIDE INTEGRAL 120VAC CONTROL POWER SOURCE, TRANSFORMER AND CAPACITOR STORED ENERGY TRIP DEVICE FOR VACUUM BREAKER. INCLUDE INTEGRAL OVERCURRENT PROTECTIVE DEVICE WITH ARC REDUCTION MAINTENANCE MODE SWITCH.
- 2 PROVIDE NEMA 3R ENCLOSURE.
- 3 NEW CHAIN LINK FENCE EXTENSION TO PROVIDE CODE CLEARANCE AT FRONT OF SWITCH.
- 4 PROVIDE 2" C-3 #4/0, 1 #6 GND.
- 5 PROVIDE PERMANENT SIGNAGE AS "WARNING-HIGH VOLTAGE", PER ANSI X535 STANDARD, ON SUBSTATION GATE.
- 6 PROVIDE GROUND WELL WITH 10"x3/4" DIA. COPPER-CLAD STEEL ROD. PROVIDE CONNECTING GROUND WIRE (#4/0 CU) TO ALL GROUND RODS, AT 12" BELOW GRADE. BOND ALL NEW AND EXISTING POWER EQUIPMENT AND FENCING TO GROUND SYSTEM WITH #2/0 COPPER CONDUCTORS.

PARTIAL SITE PLAN, SUBSTATION #2 REMODEL

SCALE: 1/8"=1'-0"
E4/E26

DWG: P:\10075 Phase 7 Substation\DWG\10075 E26.dwg USER: bshovoy
 DATE: Jul 27, 2011 11:00am XREFS: NASA Title Block

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 Consulting Mechanical and Electrical Engineers
 4051 E. La Palma Ave., Ste. A
 Anaheim, CA 92807
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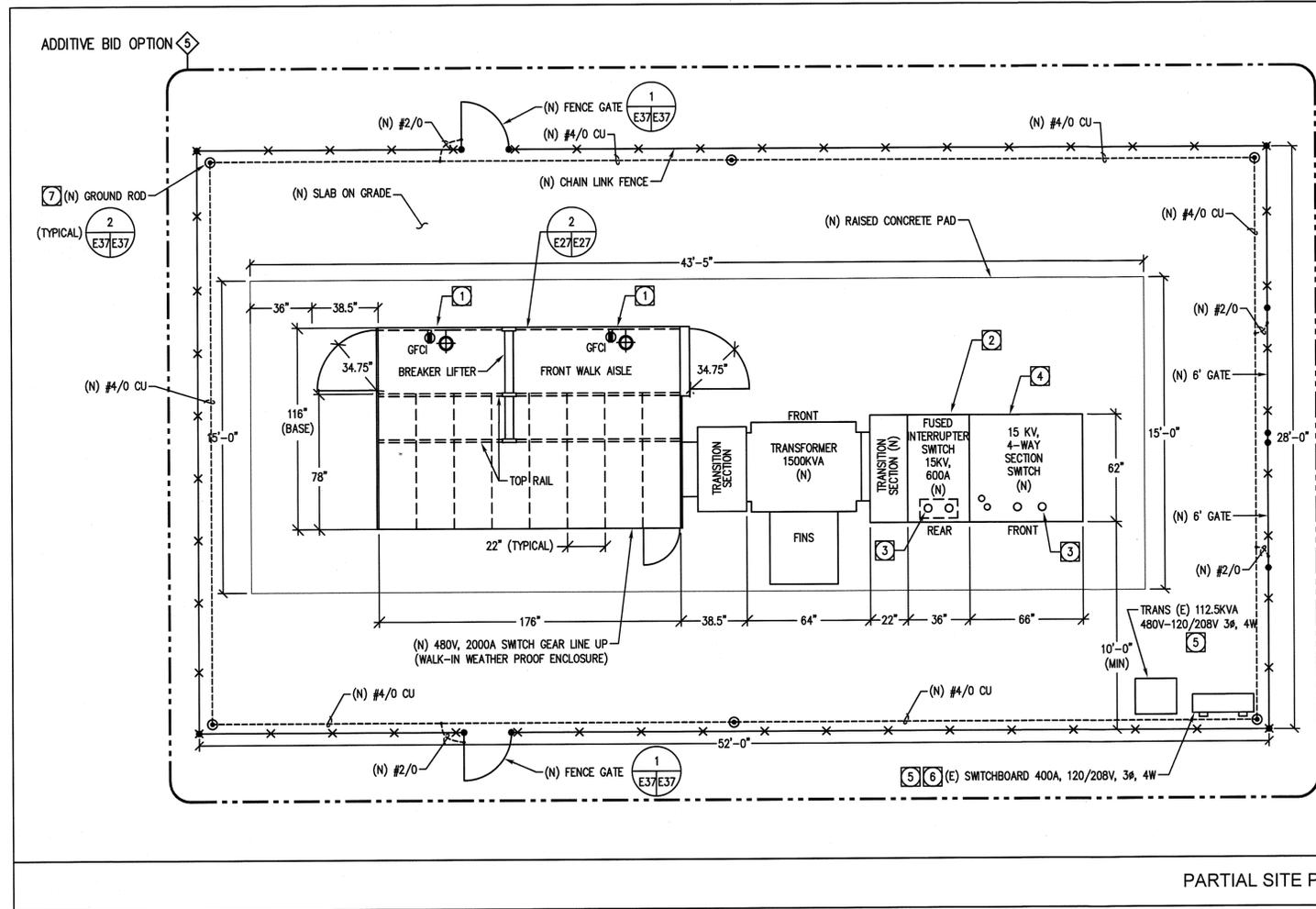
DATE	SYM	REVISION	BY	A'PD
7/15/11		100% FINAL DESIGN		

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA		APPROVALS Chief, Facilities Engineering & Appl. Mgmt. Office 2-1-12 Project Engineer/Designer 2-1-12 Facilities Project Manager 2-1-12		DATE 2-1-12 2-1-12 2-1-12
		DRAWING TITLE PARTIAL SITE PLAN, SUBSTATIONS 2 REMODEL		Chief, Office of Protective Services 11-16-11 Chief, Safety, Health & Environmental Office 11-16-11 DTRC Chief Information Officer 11/16/11
PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII		DATE STARTD 7/22/10 DATE PRINTED 7/29/11	EDM-1705	
DRAWN BY	SCALE NONE	TRADE SH. No.	E26 SHEET No. 39 of 50	

78" DEPTH (NOTE 1)							
DIGITAL METER	DIGITAL METER	DIGITAL METER	DIGITAL METER	DIGITAL METER	SPACE	SPACE	STATION POWER 10KVA XFMR
MAIN 3000AF 2000AT	FEEDER 2 1600AF 960AT	SPARE FEEDER 4 600AF 330AT	FEEDER 6 600AF 175AT	SPARE FEEDER 8 800AF 400AT	SPACE	SPACE	LOAD CENTER 120/208V 60A, 1PH
DIGITAL METER	DIGITAL METER	DIGITAL METER	DIGITAL METER	DIGITAL METER	SPACE	SPACE	SPACE
FEEDER 1 1600AF 1440AT	FEEDER 3 1600AF 960AT	FEEDER 5 600AF 550AT	SPARE FEEDER 7 600AF 600AT	SPARE FEEDER 9 800AF 400AT	SPACE	SPACE	SPACE
22"	22"	22"	22"	22"	22"	22"	22"

NOTES:
 1. PROVIDE WALK-IN ENCLOSURE WITH "TOP-OF-GEAR" BREAKER LIFTER AND FRONT ACCESS DOORS.

480V SWITCHGEAR FRONT ELEVATION
 SCALE: 2/ E27/E27
 NTS



- SHEET SPECIFIC NOTES:**
- 1 PROVIDE PREWIRED LIGHTING (SWITCHED) AND MAINTENANCE RECEPTACLES.
 - 2 INSTALL NEW SWITCH OVER EXISTING CONDUITS. PROVIDE NEW PAD MOUNTED INTERRUPT SWITCH RATED 15KV, 200A, AND FIXED MOUNTED VACUUM BREAKER RATED 15KV, 600A IN SINGLE NON-WALK-IN WEATHER-PROOF ENCLOSURE. PROVIDE INTEGRAL 120VAC CONTROL POWER SOURCE TRANSFORMER AND CAPACITOR STORED ENERGY TRIP DEVICE FOR VACUUM BREAKER. INCLUDE INTEGRAL OVERCURRENT PROTECTIVE DEVICE WITH ARC REDUCTION MAINTENANCE MODE SWITCH.
 - 3 EXISTING 15KV CONDUIT STUB-UPS.
 - 4 PROVIDE NEW 600A, 15KV, 4-WAY, SF6 SECTIONALIZING SWITCH, PAD MOUNTED OVER EXISTING CONDUITS.
 - 5 EXISTING ELECTRICAL EQUIPMENT. RELOCATE TO APPROXIMATE LOCATION SHOWN, BOLTED TO SLAB. PROVIDE UNISTRUT STAND FOR SWITCHBOARD.
 - 6 RELOCATE EXISTING CONDUIT STUB-UPS TO SWITCHBOARD AND, PROVIDE NEW CONDUCTORS FROM SWITCHBOARD TO F-16 TRAILER PER SINGLE-LINE DIAGRAM ON SHEET E33.
 - 7 PROVIDE GROUND WELL WITH 10"x3/4" DIA. COPPER-CLAD STEEL ROD. PROVIDE CONNECTING GROUND WIRE (#4/0 CU) TO ALL GROUND RODS, AT 12" BELOW GRADE. BOND ALL NEW AND EXISTING POWER EQUIPMENT AND FENCING TO GROUND SYSTEM WITH #2/0 COPPER CONDUCTORS.

PARTIAL SITE PLAN, SUBSTATION #10 REMODEL
 SCALE: 1/4"=1'-0"
 1/ E37/E27

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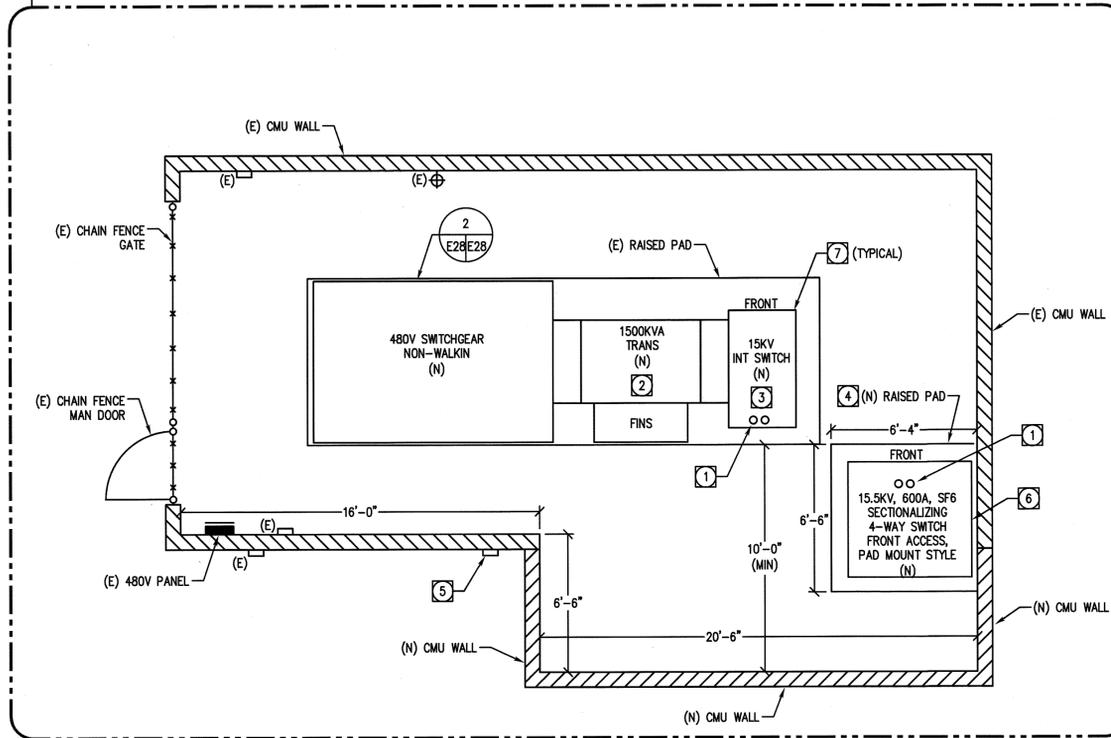
 DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph.: 714.630.4291 Fax: 714.630.4805	7/15/11	100% FINAL DESIGN																		
	DATE	SYM	REVISION	BY	A'PD															
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA										APPROVALS Chief, Facilities Engineering & Asset Mgmt. Office Project Manager/Contractor Facilities Project Manager Chief, Office of Project Services Chief Safety, Health & Environmental Office SPC Chief Information Officer										
DRAWING TITLE PARTIAL SITE PLAN, SUBSTATION #10 REMODEL										DATE STRD: 7/22/10 DATE PRNTD: 7/29/11 DRAWN BY: [Signature] SCALE: NONE TRACE SH. NO. EDM-1705 FILE NAME: E27 SHEET No. 40 of 50										
PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII																				

85" DEPTH				
DIGITAL METER	DIGITAL METER	DIGITAL METER	DIGITAL METER	STATION POWER 2KVA XFMR
MAIN 4000AF 4000AT	FEEDER 2 1600AF 1120AT	FEEDER 4 800AF 720AT	FEEDER 6 100AF 20AT	SPACE
DIGITAL METER	DIGITAL METER	DIGITAL METER	DIGITAL METER	SPACE
FEEDER 1 800AF 720AT	FEEDER 3 1600AF 1600AT	FEEDER 5 800AF 720AT	SPACE	SPACE
22"	22"	22"	22"	22"

480V SWITCHGEAR FRONT ELEVATION

SCALE: 2
NTS E28/E28

ADDITIVE BID OPTION 1



SHEET SPECIFIC NOTES:

- EXISTING 15KV CONDUIT STUB-UPS LOCATE NEW SWITCH OVER CONDUITS PER ENCLOSURE BOTTOM OPENING.
- TRANSFORMER TO BE PROVIDED WITH FORCED AIR RATING INCREASE PROVISION TO 2000KVA.
- INSTALL NEW SWITCH OVER EXISTING CONDUITS. PROVIDE NEW PAD MOUNTED INTERRUPT SWITCH RATED 15KV, 200A, AND FIXED MOUNTED VACUUM BREAKER RATED 15KV, 600A IN SINGLE NON-WALK-IN, WEATHER-PROOF ENCLOSURE. PROVIDE INTEGRAL 120VAC CONTROL POWER SOURCE TRANSFORMER AND CAPACITOR STORED ENERGY TRIP DEVICE FOR VACUUM BREAKER. INCLUDE INTEGRAL OVERCURRENT PROTECTIVE DEVICE WITH ARC REDUCTION MAINTENANCE MODE SWITCH.
- PROVIDE EXTENSION OF EXISTING RAISED EQUIPMENT PAD TO DIMENSION SHOWN.
- PROVIDE RELOCATION OF EXISTING BOX TO APPROXIMATE LOCATION SHOWN, WITH SPLICED CONDUCTORS.
- PROVIDE NEW 600A, 15KV, 4-WAY, SF6 SECTIONALIZING SWITCH, PAD MOUNTED OVER EXISTING CONDUITS.
- PROVIDE BOND, WITH #2/0 COPPER CONDUCTOR, OF ALL NEW EQUIPMENT TO EXISTING GROUND GRID.

PARTIAL SITE PLAN, SUBSTATION #9 REMODEL

SCALE: 1
1/4"=1'-0" E9 E28

DWG: P:\10075 Phase 7 Substation\DWG\E28.dwg USER: bshahy DATE: Jul 27, 2011 11:02am XREFS: NASA Title Block IMAGES:

REGISTERED PROFESSIONAL ENGINEER
KURT KAISER
ELECTRICAL
STATE OF CALIFORNIA
EST. 6-30-12

DCGA
DONN C. GILMORE & ASSOCIATES, INC.
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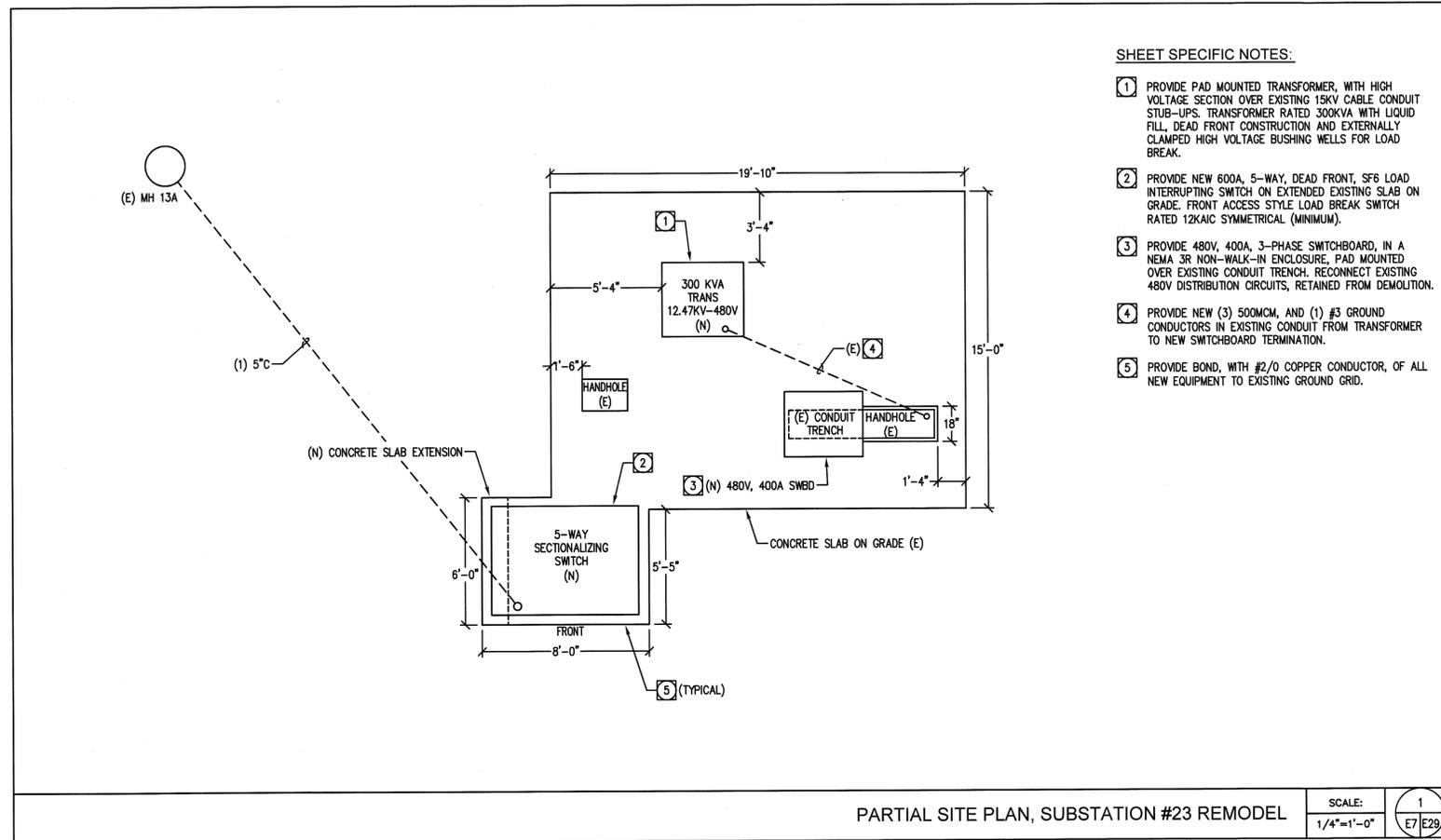
7/15/11	100% FINAL DESIGN			
DATE	SYM	REVISION	BY	A'PD

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
PARTIAL SITE PLAN, SUBSTATION 9
REMODEL

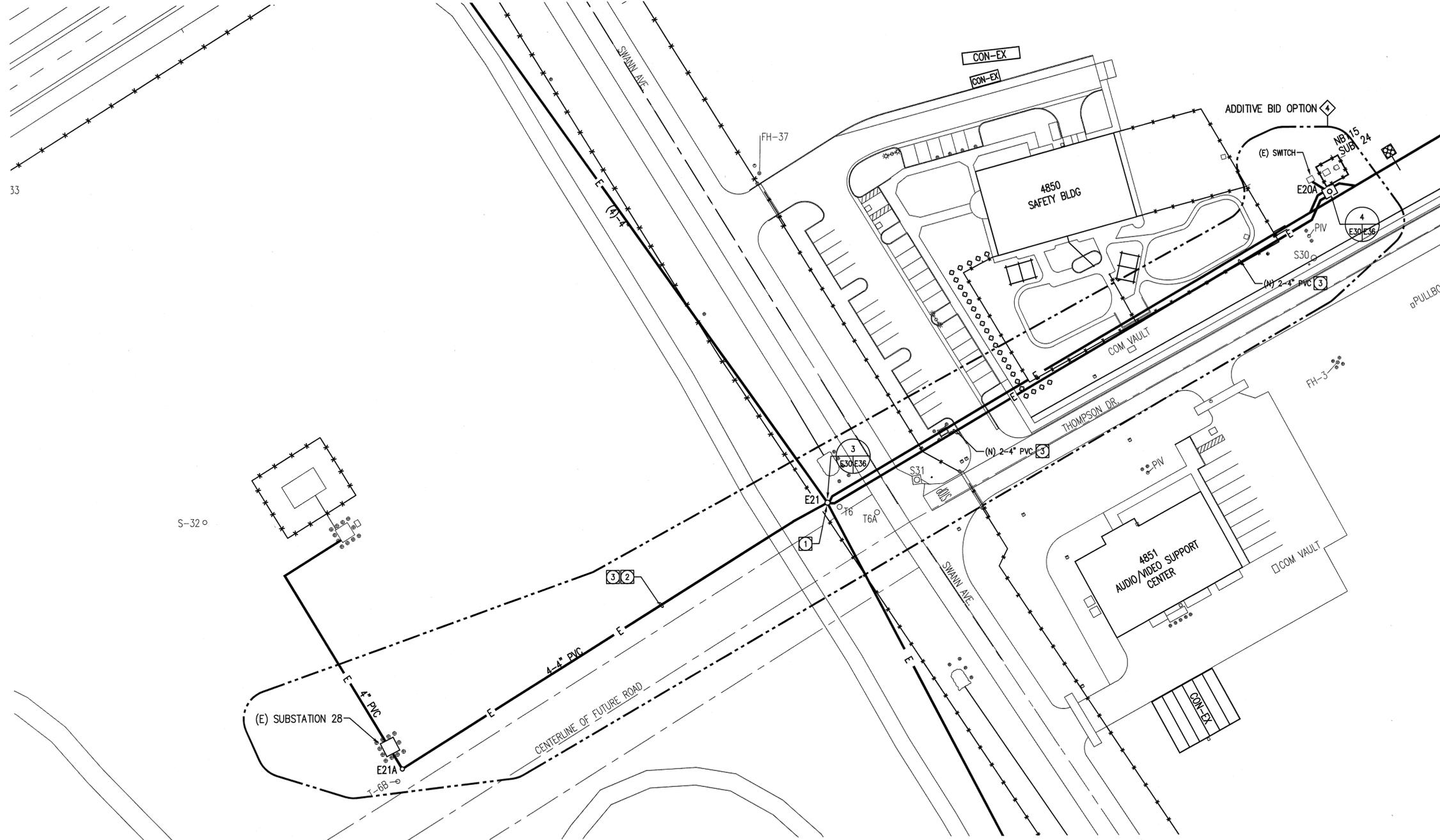
PROJECT TITLE
REPAIR PRIMARY ELECTRICAL
DISTRIBUTION SYSTEM - PHASE VII

APPROVALS		DATE	
Chief, Facilities Engineering & Asset Mgmt. Office	<i>[Signature]</i>	2-1-12	
Project Manager/Designer	<i>[Signature]</i>	2-1-12	
Facilities Project Manager	<i>[Signature]</i>	2-1-12	
Chief, Office of Protective Services	<i>[Signature]</i>	11-6-11	
Chief, Safety, Health & Environmental Office	<i>[Signature]</i>	11-6-11	
TRAC Clear Information Officer	<i>[Signature]</i>	11/17/11	
DATE STRD	7/22/10	DATE PRINTD	7/29/11
DRAWN BY		EDM-1705	
SCALE	NONE	TRADE SH. No.	
FILE NAME	E28	SHEET No. 41 of 50	



DWG: P:\10075 Phase 7 Substation\DWG\10075 E29.dwg USER: bshovoy
 DATE: Jul 27, 2011 11:03am XREFS: N/A, Title Block IMAGES:

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	DATE	SYM	REVISION	BY	A'PD																										
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA										APPROVALS <table border="1"> <tr> <td>Chief, Facilities Engineering & Maint. Mgmt. Office</td> <td>2-1-12</td> </tr> <tr> <td>Project Approver/Contractor</td> <td>2-1-12</td> </tr> <tr> <td>Facilities Project Manager</td> <td>2-1-12</td> </tr> <tr> <td>Chief, Office of Protective Services</td> <td>11-16-11</td> </tr> <tr> <td>Chief, Safety, Health & Environmental Office</td> <td>11-16-11</td> </tr> <tr> <td>AFRC Clear Information Officer</td> <td>11/17/11</td> </tr> </table>										Chief, Facilities Engineering & Maint. Mgmt. Office	2-1-12	Project Approver/Contractor	2-1-12	Facilities Project Manager	2-1-12	Chief, Office of Protective Services	11-16-11	Chief, Safety, Health & Environmental Office	11-16-11	AFRC Clear Information Officer	11/17/11
Chief, Facilities Engineering & Maint. Mgmt. Office	2-1-12																														
Project Approver/Contractor	2-1-12																														
Facilities Project Manager	2-1-12																														
Chief, Office of Protective Services	11-16-11																														
Chief, Safety, Health & Environmental Office	11-16-11																														
AFRC Clear Information Officer	11/17/11																														
DRAWING TITLE PARTIAL SITE PLAN, SUBSTATIONS 23 REMODEL										PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII																					
DATE STRUCK 7/22/10 DATE PRINTED 7/29/11										DRAWN BY SCALE NONE TRADE SH. No. EDM-1705 FILE NAME E29 SHEET No. 42 of 50																					



UTILITES LEDEND

— E — EXISTING ELECTRICAL LINE

SHEET NOTES:

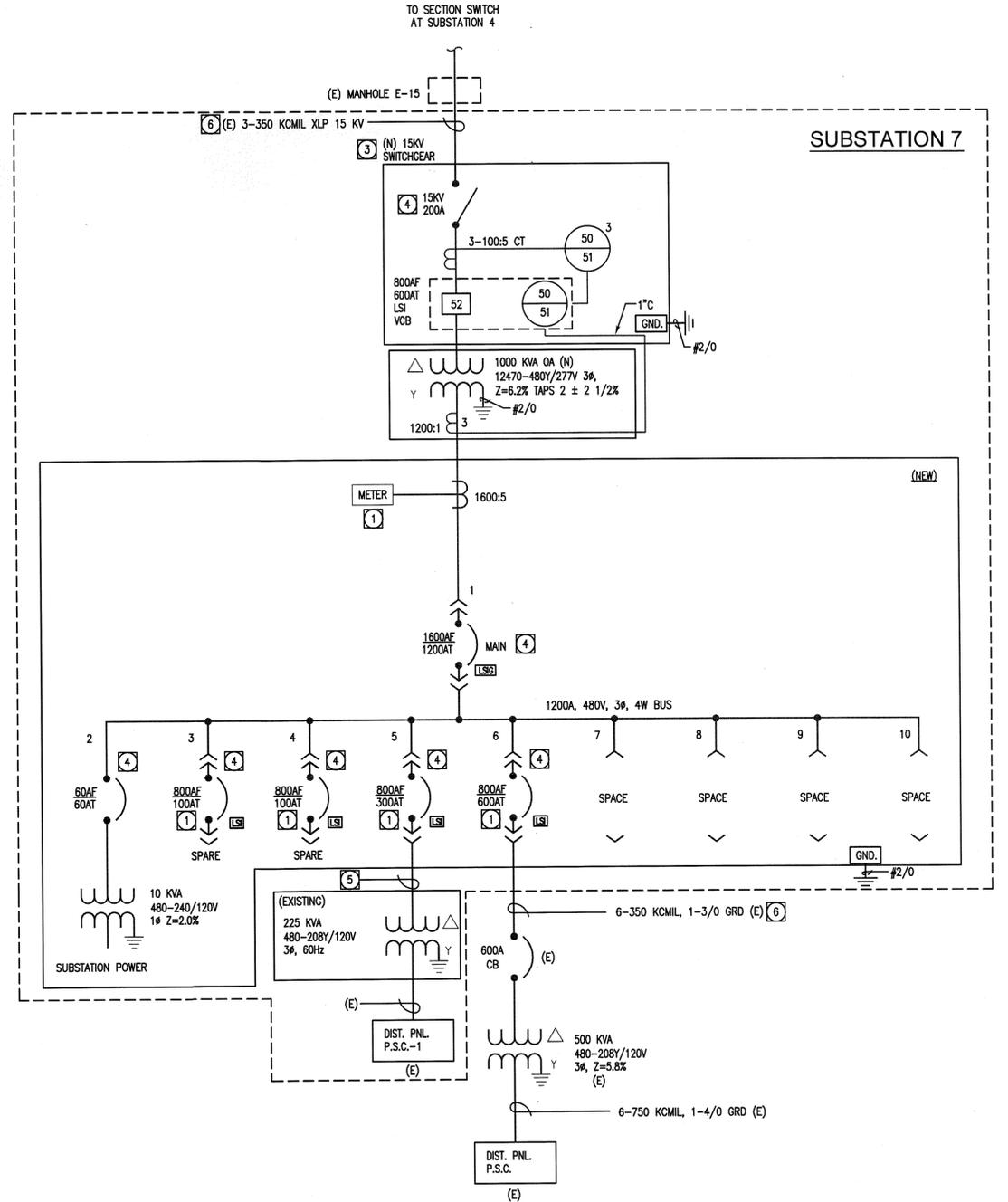
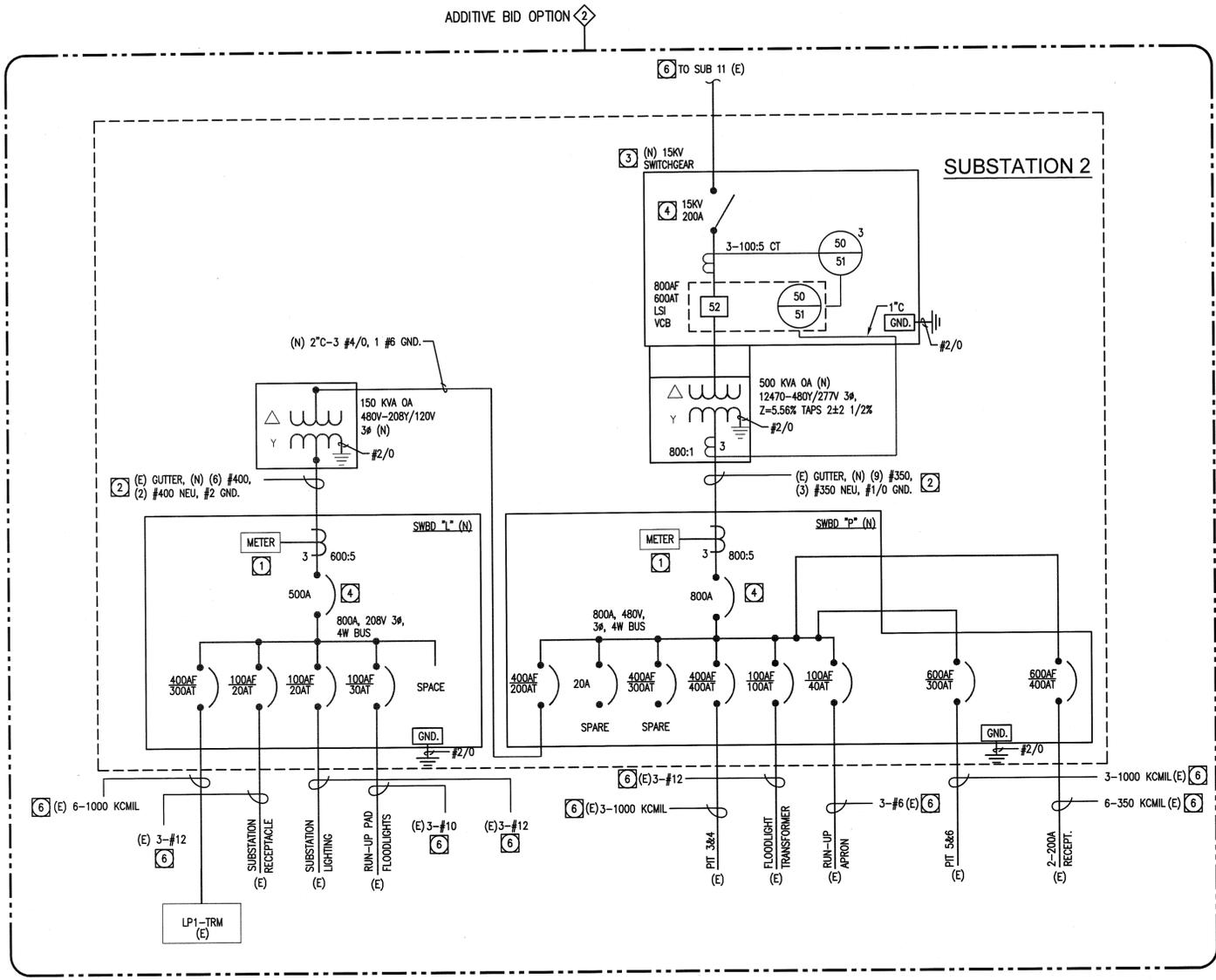
- 1 DISCONNECT EXISTING SUBSTATION 28 15KV SUPPLY FEEDER FROM T-SPLICE AT MANHOLE E21. REPLACE WITH WATER-PROOF 15KV BUTT-SPLICE ON REMAINING CONDUCTORS FOR CONTINUATION OF 15KV FEEDER LOOP.
- 2 REMOVE EXISTING 15KV FEEDER CONDUCTORS FROM MANHOLE E21 TO SUBSTATION 28. RETAIN CONDUIT FOR REUSE.
- 3 PROVIDE NEW CONDUCTORS AS (3) #4/0 AWG, 1 #1/0 GND., RATED 15KV, 133% INSULATION, IN EXISTING CONDUIT FROM SUBSTATION 28 TO MANHOLE E21, AND NEW 4" CONDUIT TO MANHOLE E20A, AND SECTIONALIZING SWITCH AT SUBSTATION 24.

PARTIAL ELECTRICAL SITE PLAN - GRID 46, 47
SCALE: 1"=40'-0"



DWG: P:\10075 Phase 7 Substation\DWG\10075_E30.dwg USER: jbrunow
 DATE: JUN 27 2011 11:04am XREFS: N:\SP\10075.dwg I:\P\10075

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	DATE	SYM	REVISION	BY	A'PD		<p>DRAWING TITLE PARTIAL ELECTRICAL SITE PLAN - GRID 46, 47</p> <p>PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII</p>	DATE START	DATE PRINT
						<p>SCALE NONE TRADE SH. No. EDM-1705</p> <p>FILE NAME E30 SHEET No. 43 of 50</p>			



REMODEL SINGLE LINE DIAGRAMS - SUBSTATIONS 2 & 7

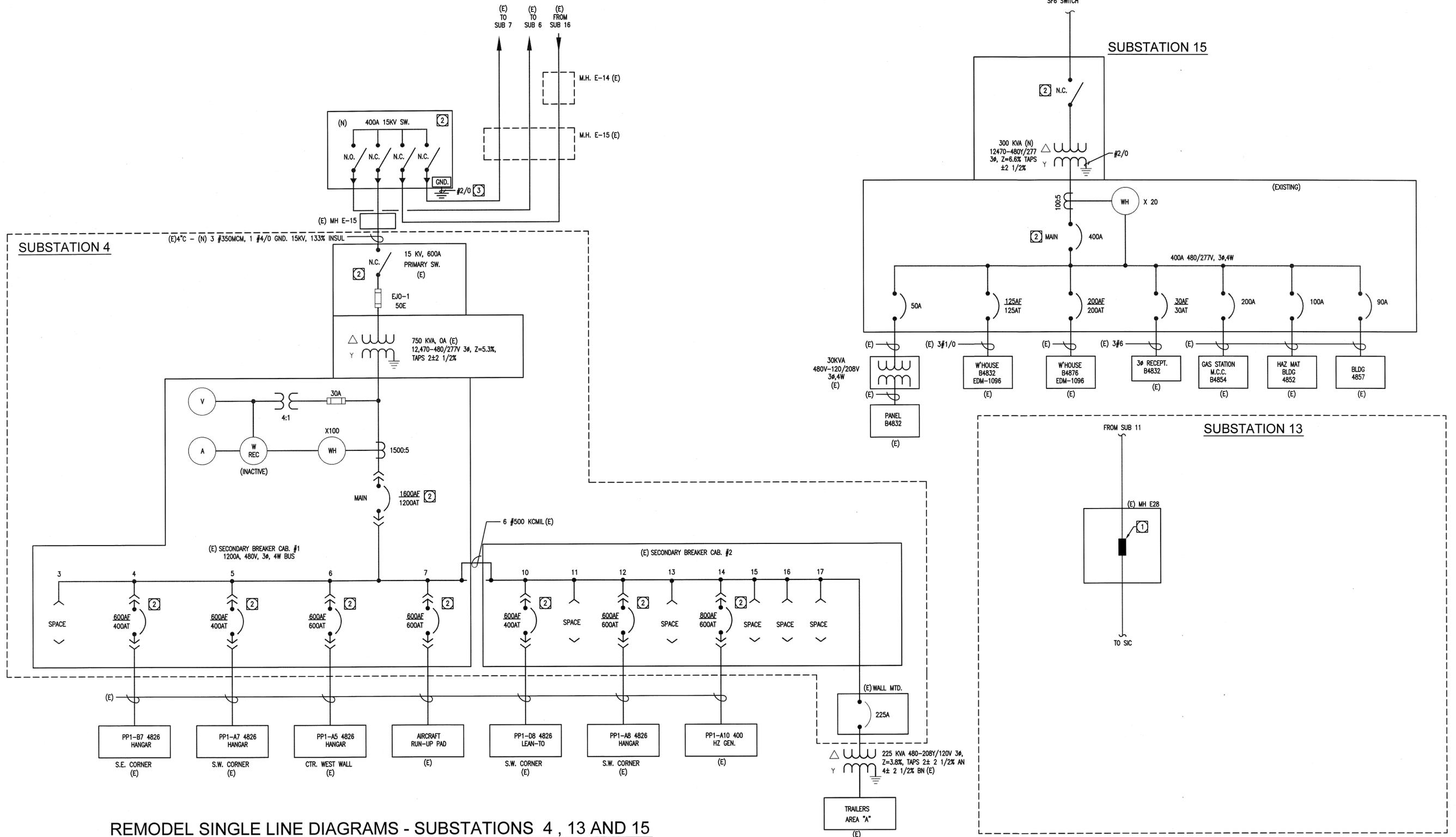
SINGLE LINE DIAGRAM NOTES:

- 1 PROVIDE SQUARE D POWER LOGIC SERIES 4000 CIRCUIT MONITOR MODEL CM4250, WITH MODEL CMDVF VACUUM FLUORESCENT DISPLAY AND MODEL ECC21 ETHERNET COMMUNICATIONS CARD. NO EXCEPTIONS OR EQUIVALENT HARDWARE WILL BE ALLOWED.
- 2 CONDUCTOR AMPACITY DERATED FOR 122F AMBIENT TEMPERATURE.
- 3 PROVIDE NEW PAD MOUNTED INTERRUPT SWITCH RATED 15KV, 200A, WITH FIXED MOUNTED VACUUM BREAKER RATED 15KV, 600A, IN A SINGLE NON-WALK-IN, WEATHER-PROOF ENCLOSURE. PROVIDE INTEGRAL 120VAC CONTROL POWER SOURCE TRANSFORMER AND CAPACITOR STORED ENERGY TRIP DEVICE FOR VACUUM BREAKER. INCLUDE OVERCURRENT PROTECTIVE DEVICE WITH ARC REDUCTION MAINTENANCE MODE SWITCH.
- 4 PROVIDE SHORT CIRCUIT STUDY, COORDINATION STUDY, ARC FLASH ANALYSIS AND ARC FLASH LABELS PER NFPA 70E, FOR 15KV, 480V, AND 208V CIRCUIT BREAKERS INDICATED. SEE LEVEL LYN ARC FLASH STUDY, DATED 9/8/2009, FOR AVAILABLE SHORT CIRCUIT CURRENT AT SUBSTATION 12.47KV BUS.
- 5 PROVIDE (3) 350MCM, 1 #4 GND. IN EXISTING CONDUIT.
- 6 RECONNECT EXISTING CONDUCTORS TO NEW CIRCUIT BREAKER.

ADDITIVE BID OPTION 3

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							<p>DRAWING TITLE</p> <p>REMODEL ELECTRICAL SINGLE LINE DIAGRAM SUBSTATIONS 2 & 7</p>	<p>Chief, Office of Regulatory Services Chief, Safety, Health & Environmental Office DRC Chief Information Officer</p>
						<p>PROJECT TITLE</p> <p>REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII</p>	<p>DRAWN BY</p> <p>SCALE NONE</p> <p>FILE NAME</p>	<p>TRADE SH. No. EDM-1705</p> <p>SHEET No. 44 of 50</p>

DWG: P:\MSTR_Planes\Substation\Substation_001.dwg USER: bshirley
 DATE: Jul 27, 2011 11:08am XREFS: NASA Title Block IMAGES:



REMODEL SINGLE LINE DIAGRAMS - SUBSTATIONS 4, 13 AND 15

SINGLE LINE DIAGRAM SPECIFIC NOTES:

- 1 PROVIDE WATER-PROOF SPLICE ON EXISTING 15KV CONDUCTORS.
- 2 PROVIDE SHORT CIRCUIT STUDY, COORDINATION STUDY, ARC FLASH ANALYSIS AND ARC FLASH LABELS PER NFPA 70E, FOR 15KV, 480V, AND 208V CIRCUIT BREAKERS INDICATED. SEE LEVEL LYN ARC FLASH STUDY, DATED 9/8/2009, FOR AVAILABLE SHORT CIRCUIT CURRENT AT SUBSTATION 12.47KV BUS.
- 3 PROVIDE GROUND ROD (3/4"x10'L COPPER-CLAD STEEL) ADJACENT TO SWITCH.

ADDITIVE BID OPTION 3

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Ph: 714.830.4291
Fax: 714.830.4805

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
REMODEL ELECTRICAL SINGLE LINE DIAGRAM
SUBSTATIONS 4, 13 AND 15

PROJECT TITLE
REPAIR PRIMARY ELECTRICAL
DISTRIBUTION SYSTEM - PHASE VII

APPROVALS

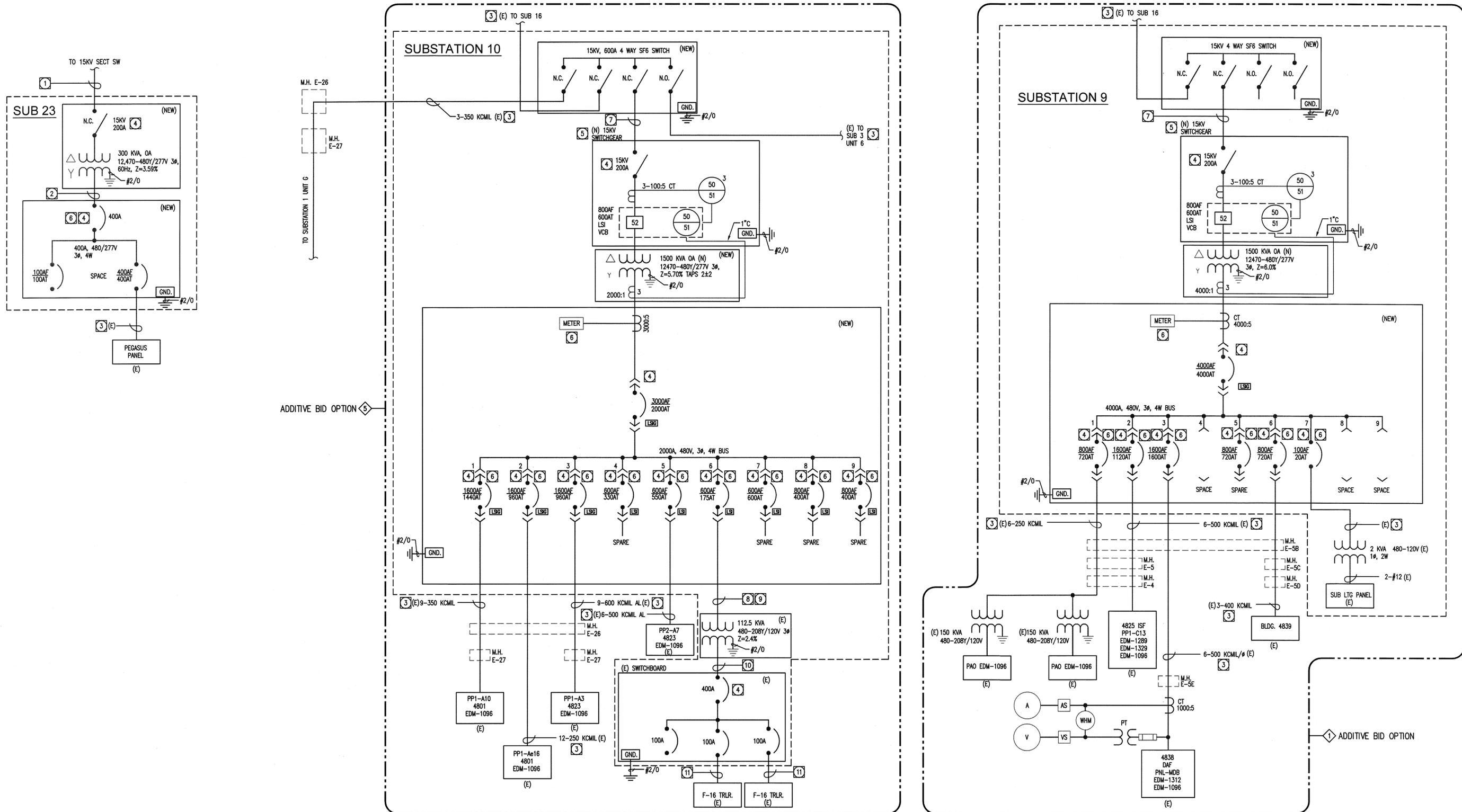
Chief, Facilities Engineering & Asset Mgmt. Office	DATE
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Project Engineer/Customer	DATE
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Facilities Project Manager	DATE
<i>[Signature]</i>	2-1-12
Chief, Office of Regulatory Services	DATE
<i>[Signature]</i>	11-16-11
Chief, Safety, Health & Environmental Office	DATE
<i>[Signature]</i>	11-16-11
Chief, Civil Information Office	DATE
<i>[Signature]</i>	11/16/11

DATE START: 7/22/10 DATE PRINT: 7/29/11

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 DATE: Jul 27, 2011 11:07am XREFS: NASA Title Block



REMDEL SINGLE LINE DIAGRAMS - SUBSTATIONS 9, 10 AND 23

- SINGLE LINE DIAGRAM NOTES:**
- 1 PROVIDE NEW (3) #1/0, 1 #2 GND., 15KV, 133% INSULATION, IN EXISTING CONDUIT.
 - 2 PROVIDE NEW (4) #500MCM, 1 #3 GND.
 - 3 RECONNECT EXISTING CONDUCTORS TO NEW BREAKER OR SWITCH.
 - 4 PROVIDE SHORT CIRCUIT STUDY, COORDINATION STUDY, ARC FLASH ANALYSIS AND ARC FLASH LABELS PER NFPA 70E, FOR 15KV, 480V, AND 208V CIRCUIT BREAKERS INDICATED. SEE LEVEL LYN ARC FLASH STUDY, DATED 9/8/2009, FOR AVAILABLE SHORT CIRCUIT CURRENT AT SUBSTATION 12.47KV BUS.
 - 5 PROVIDE NEW PAD MOUNTED INTERRUPT SWITCH RATED 15KV, 200A, WITH FIXED MOUNTED VACUUM BREAKER RATED 15KV, 600A, IN A SINGLE NON-WALK-IN, WEATHER-PROOF ENCLOSURE. PROVIDE INTEGRAL 120VAC CONTROL POWER SOURCE TRANSFORMER AND CAPACITOR STORED ENERGY TRIP DEVICE FOR VACUUM BREAKER. INCLUDE OVERCURRENT PROTECTIVE DEVICE WITH ARC REDUCTION MAINTENANCE MODE SWITCH.

- 6 PROVIDE SQUARE D POWER LOGIC SERIES 4000 CIRCUIT MONITOR MODEL CM4250, WITH MODEL CMDVF VACUUM FLUORESCENT DISPLAY AND MODEL ECC21 ETHERNET COMMUNICATIONS CARD. NO EXCEPTIONS OR EQUIVALENT HARDWARE WILL BE ALLOWED.
- 7 PROVIDE 2 1/2" C-3 #250MCM, 1 #6 GND.
- 8 CONDUCTOR AMPACITY DERATED FOR 122F AMBIENT.
- 9 PROVIDE (2) 2" C-4 #4/0, 1 #3 GND. (EACH).
- 10 PROVIDE NEW 3 #4/0, 1 #1/0 GND., 15KV, 133% INSULATION, IN EXISTING CONDUIT.
- 11 PROVIDE NEW 4 #1, 1 #8 GND. IN EXISTING AND EXTENDED CONDUIT.

REGISTERED PROFESSIONAL ENGINEER
 FLUENT KAISER
 ELECTRICAL
 STATE OF CALIFORNIA
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DATE	SYM	REVISION	BY	A'PD
7/15/11		100% FINAL DESIGN		

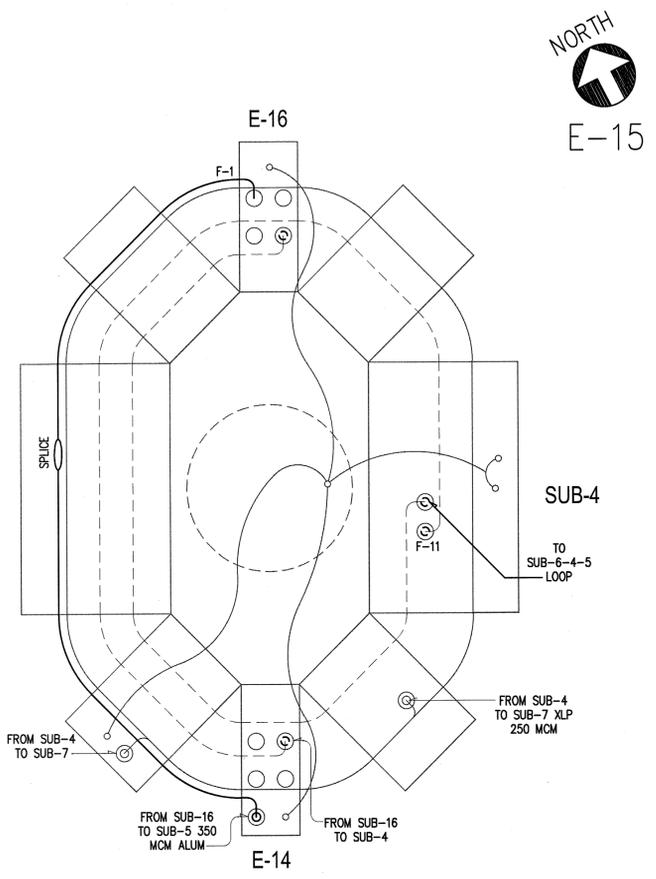
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
 DRYDEN FLIGHT RESEARCH CENTER
 EDWARDS, CA

DRAWING TITLE
 REMDEL ELECTRICAL SINGLE LINE DIAGRAM
 SUBSTATIONS 9, 10 AND 23

PROJECT TITLE
 REPAIR PRIMARY ELECTRICAL
 DISTRIBUTION SYSTEM - PHASE VII

APPROVALS	DATE
Chief/Project Engineering & Asset Mgmt. Office	2-1-12
Project Engineer/Contracting	2-1-12
Facilities Project Manager	2-1-12
Chief, Office of Protective Services	11-16-11
Chief, Safety, Health, & Environmental Office	11-16-11
TRC Chief Information Officer	11-16-11
DATE STRTD	7/22/10
DATE PRINTD	7/29/11
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SHEET No.	46 of 50

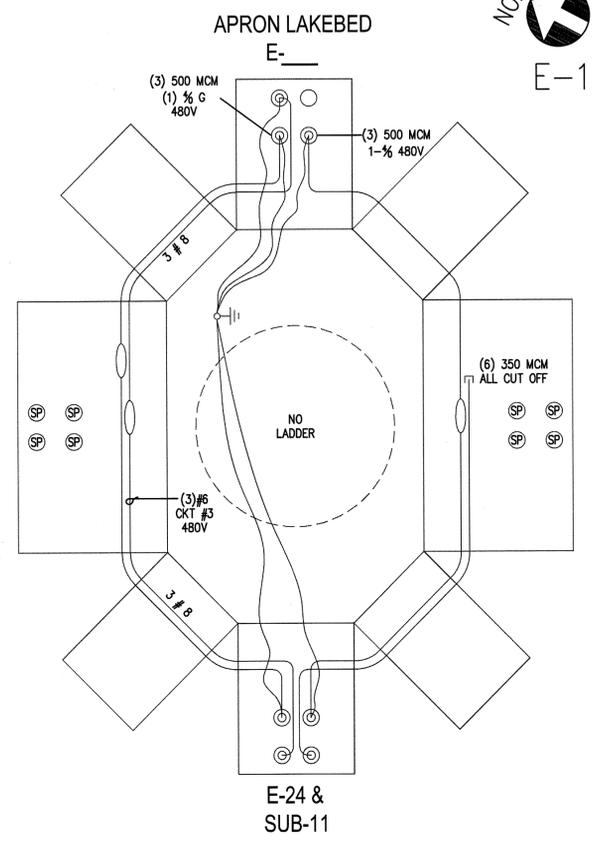
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MANHOLE E-15

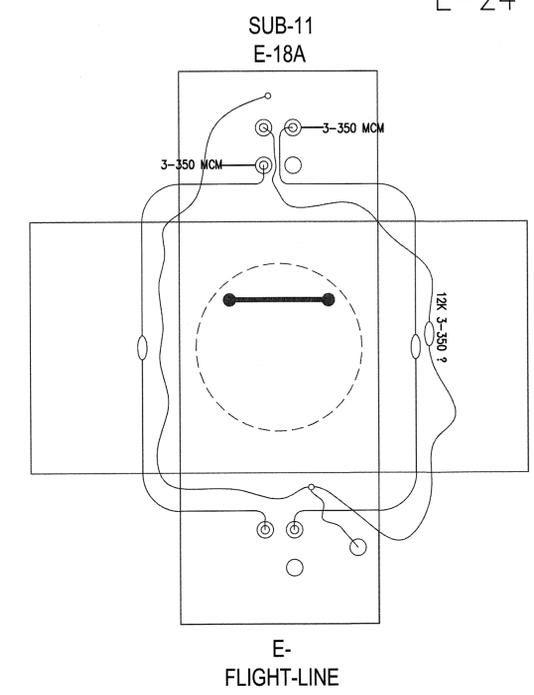
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NORTH
E-1

MANHOLE E-1

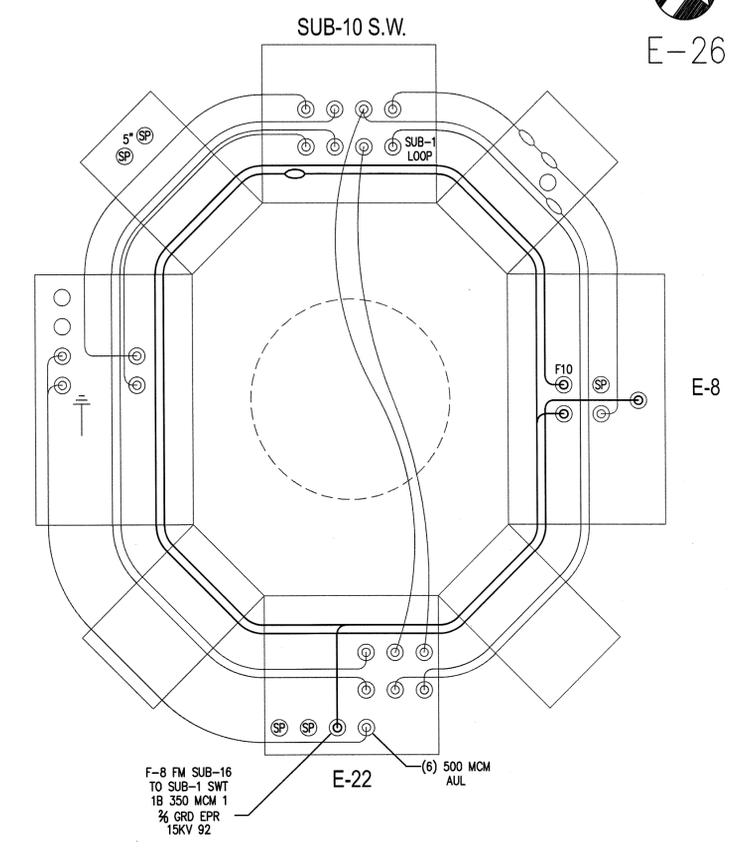
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NTS E4 E34



NORTH
E-24

MANHOLE E-24

SCALE: 2
NTS E4 E34



NORTH
E-26

MANHOLE E-26

SCALE: 1
NTS E3 E34

REFERENCE NOTES:

- MANHOLE LAYOUT INFORMATION COPIED FROM NASA RECORDS PROVIDED FOR PROJECT. CONFIRM EXISTING MANHOLE CONDUCTOR LAYOUT AND DOCUMENT CHANGES BEFORE DEMOLITION WORK.

Professional Engineer seal for Kurt Kaistner, State of California, License No. 44891.

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DATE	SYM	REVISION	BY	A'PD
7/15/11		100% FINAL DESIGN		

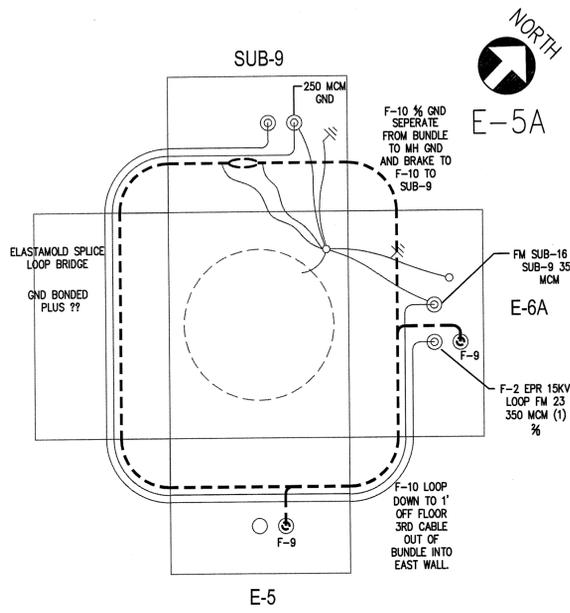
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
DRYDEN FLIGHT RESEARCH CENTER
EDWARDS, CA

DRAWING TITLE
EXISTING MANHOLE LAYOUTS

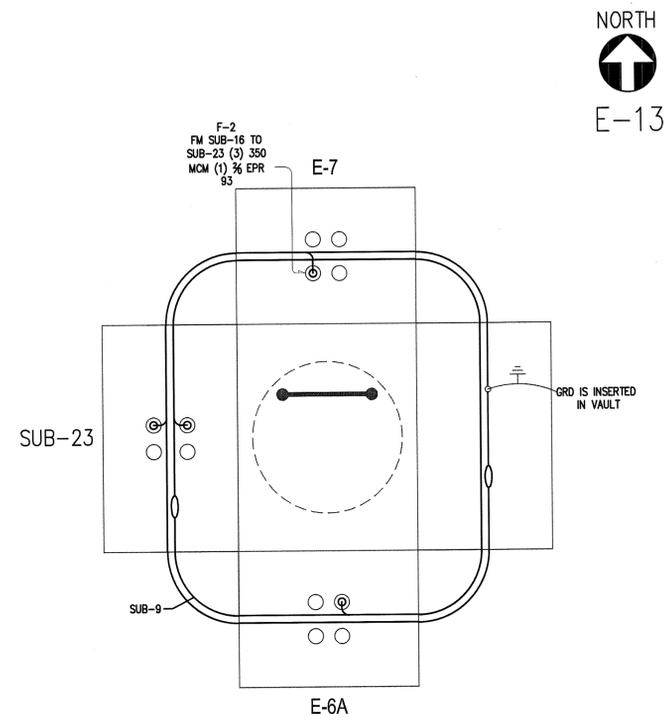
PROJECT TITLE
REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII

APPROVALS		DATE	
Chief Facilities Engineering & Asset Mgmt. Office	<i>[Signature]</i>	2-1-12	
Project Inspector/Designer	<i>[Signature]</i>	2-1-12	
Facilities Project Manager	<i>[Signature]</i>	2-1-12	
Chief, Office of Production Services	<i>[Signature]</i>	11-16-11	
Chief Safety Health & Environmental Office	<i>[Signature]</i>	1-16-11	
ISRC Chief Information Officer	<i>[Signature]</i>	11/17/10	
DATE STRTD	7/22/10	DATE PRNTD	7/29/11
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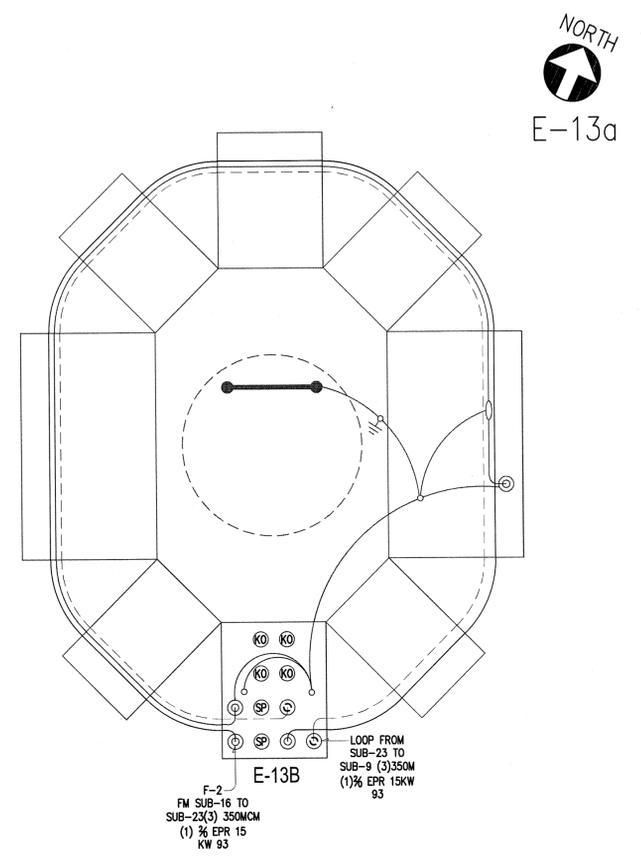
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MANHOLE E-5A SCALE: 3/8" = 1'-0" (E9 E35) NTS



MANHOLE E-13 SCALE: 2/8" = 1'-0" (E7 E35) NTS

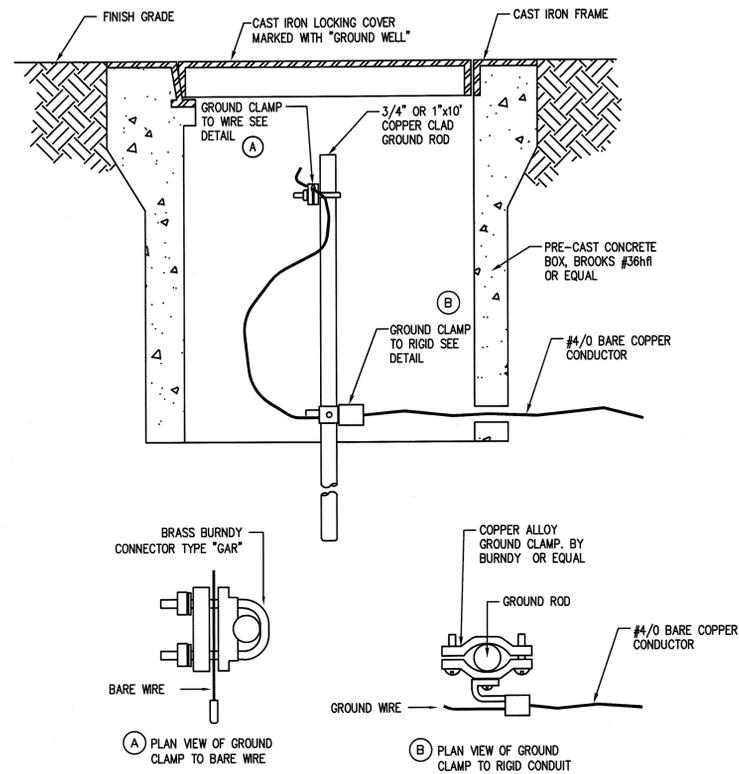


MANHOLE E-13A SCALE: 1/8" = 1'-0" (E7 E35) NTS

REFERENCE NOTES:
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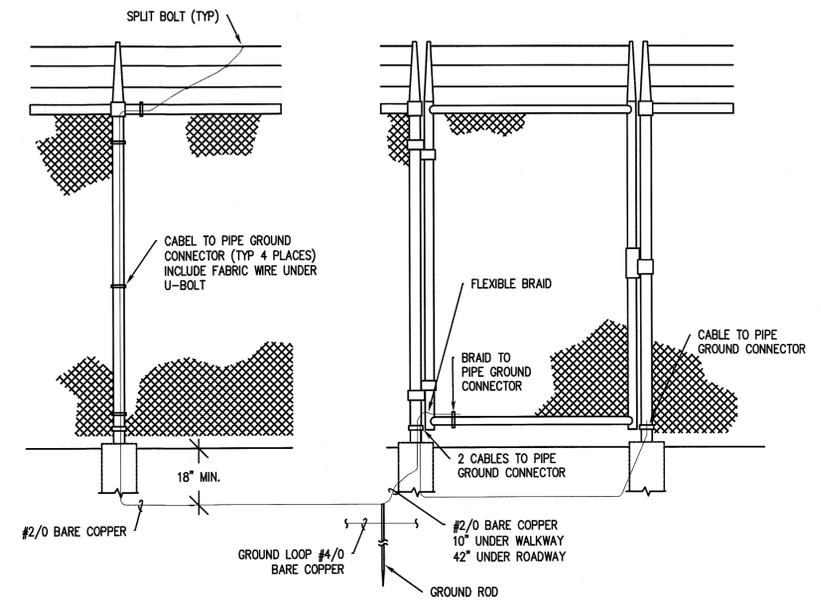
<p>DONN C. GILMORE & ASSOCIATES, INC. Consulting Mechanical and Electrical Engineers 4051 E. La Palma Ave., Ste. A Anaheim, CA 92807 Ph.: 714.630.4281 Fax: 714.630.4805</p>	7/15/11	100% FINAL DESIGN																															
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<p>NATIONAL AERONAUTICS AND SPACE ADMINISTRATION DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CA</p>										<p>DRAWING TITLE EXISTING MANHOLE LAYOUTS</p>																							
<p>PROJECT TITLE REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII</p>										<p>APPROVALS</p> <table border="1"> <tr> <th>NAME</th> <th>DATE</th> </tr> <tr> <td><i>[Signature]</i></td> <td>2-1-12</td> </tr> <tr> <td><i>[Signature]</i></td> <td>2-1-12</td> </tr> <tr> <td><i>[Signature]</i></td> <td>2-1-12</td> </tr> <tr> <td><i>[Signature]</i></td> <td>11-6-11</td> </tr> <tr> <td><i>[Signature]</i></td> <td>11-16-11</td> </tr> <tr> <td><i>[Signature]</i></td> <td>11-17-11</td> </tr> </table>										NAME	DATE	<i>[Signature]</i>	2-1-12	<i>[Signature]</i>	2-1-12	<i>[Signature]</i>	2-1-12	<i>[Signature]</i>	11-6-11	<i>[Signature]</i>	11-16-11	<i>[Signature]</i>	11-17-11
NAME	DATE																																
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GROUND WELL DETAIL

SCALE: 2
NTS E37/E37



FENCE AND GATE GROUNDING DETAIL

SCALE: 1
NTS E37/E37

DWG: E110075 Phase 7 Submittal/Design/E37.dwg USER: bshahry
DATE: Jul 27, 2011 11:33am XREFS: NASA Title Block IMAGES:

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 EDWARDS, CA
 DRAWING TITLE
ELECTRICAL DETAILS
 PROJECT TITLE
REPAIR PRIMARY ELECTRICAL DISTRIBUTION SYSTEM - PHASE VII

APPROVALS		DATE
Chief/Engineer	<i>[Signature]</i>	2-7-12
Project Manager	<i>[Signature]</i>	2-1-12
Facilities Project Manager	<i>[Signature]</i>	2-7-12
Chief, Office of Protective Services	<i>[Signature]</i>	11-16-11
Chief, Safety, Health & Environmental Office	<i>[Signature]</i>	11-16-11
AFM/Chief Information Officer	<i>[Signature]</i>	11-16-11
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E37		50 of 50