

SAN DIEGO GAS & ELECTRIC **SUNRISE POWERLINK PROJECT** **500KV/230KV OVERHEAD TRANSMISSION LINES**

230KV PLAN & PROFILE LEGEND AND NOTES **SECTIONS 4A, 5 & 7**

STRUCTURE CALLOUTS (TYPICAL)

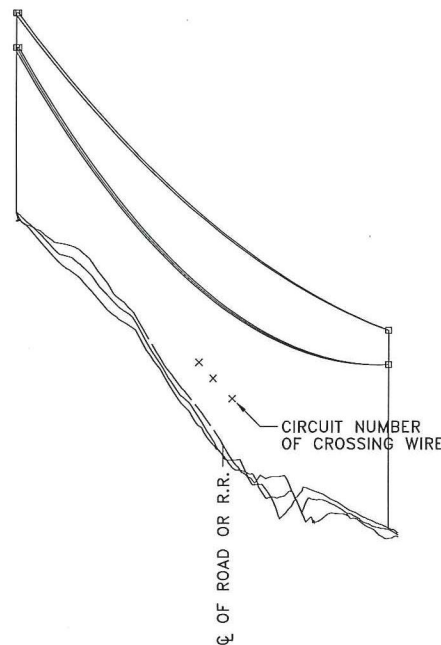
CP14 - STRUCTURE NUMBER
 CXRS - STRAIN LATTICE TOWER - STRUCTURE TYPE & DESCRIPTION
 STA=106+83.96 - STATIONING
 HT=145.50 ELE=1025.22 - STRUCTURE HEIGHT & STRUCTURE CENTER HUB GROUND ELEVATION

PROFILE LEGEND

CENTERLINE PROFILE ——— TANGENT ATTACHMENT ○
 12' LEFT PROFILE - - - - - DEADEND ATTACHMENT □
 12' RIGHT PROFILE - - - - - P.I. LOCATION ▲
 MARKER BALL REQUIRED •

PLAN LEGEND

ROW EDGE - - - - -
 NEW STRUCTURE •



TYPICAL ROAD, RAILROAD AND WIRE CROSSING CALLOUTS

OPGW INFORMATION

MANUFACTURER: AFL OPGW
 DESIGNATION: 72 FIBER, DNO-7995 AC-27/75/683
 OVERALL DIAMETER: 0.683 IN
 CROSS SECTION AREA: 0.2463 IN²
 RATED BREAKING STRENGTH: 24,014 LB
 UNIT WEIGHT: 0.511 LB/FT

CONDUCTOR INFORMATION

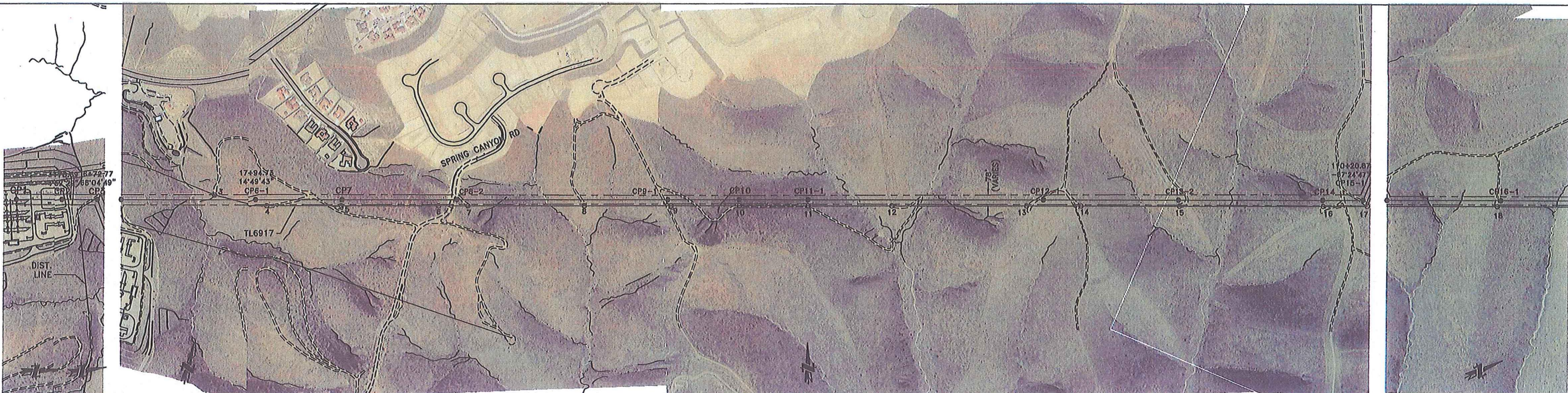
DESCRIPTION: 900 kcmil 54/7 Strands "CANARY" ACSS AW
 OVERALL DIAMETER: 1.162 IN
 CROSS SECTION AREA: 0.7985 IN²
 RATED BREAKING STRENGTH: 23,200 LB
 UNIT WEIGHT: 1.1106 LB/FT

GENERAL NOTES:

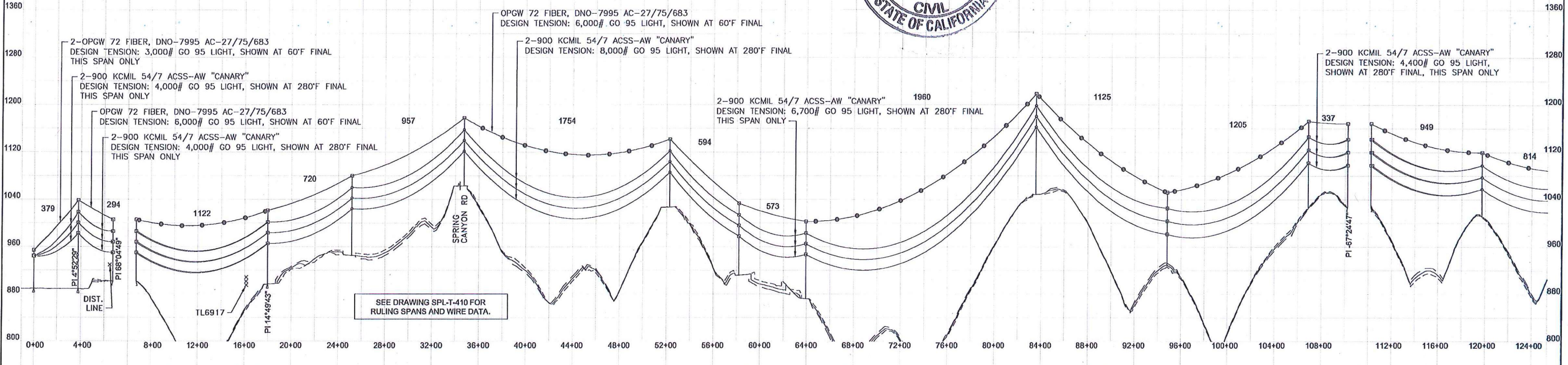
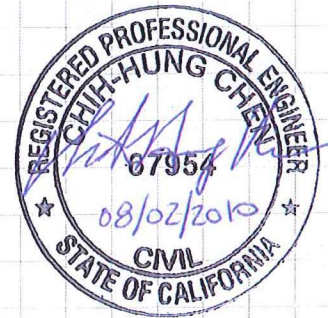
- CONDUCTOR SAGS ON PLAN & PROFILE SHEETS ARE SHOWN AS FOLLOWS UNLESS NOTED:
 - OPTICAL GROUND WIRES: 60' F. FINAL, NO WIND
 - 230KV CONDUCTORS: 280' F. FINAL, NO WIND
- STRUCTURE HEIGHTS ARE IN FEET AND ARE AS FOLLOWS:
 - TOWERS - REFERENCED FROM CENTER HUB ON GROUND.
 - POLES - REFERENCED FROM TOP OF BASEPLATE.
- STRUCTURE CENTERLINE GROUND ELEVATIONS ARE IN FEET AND REFERENCED FROM NAVD88.
- FOR MARKER BALL INSTALLATION DIAGRAM SEE DRAWING SPL-T-784.



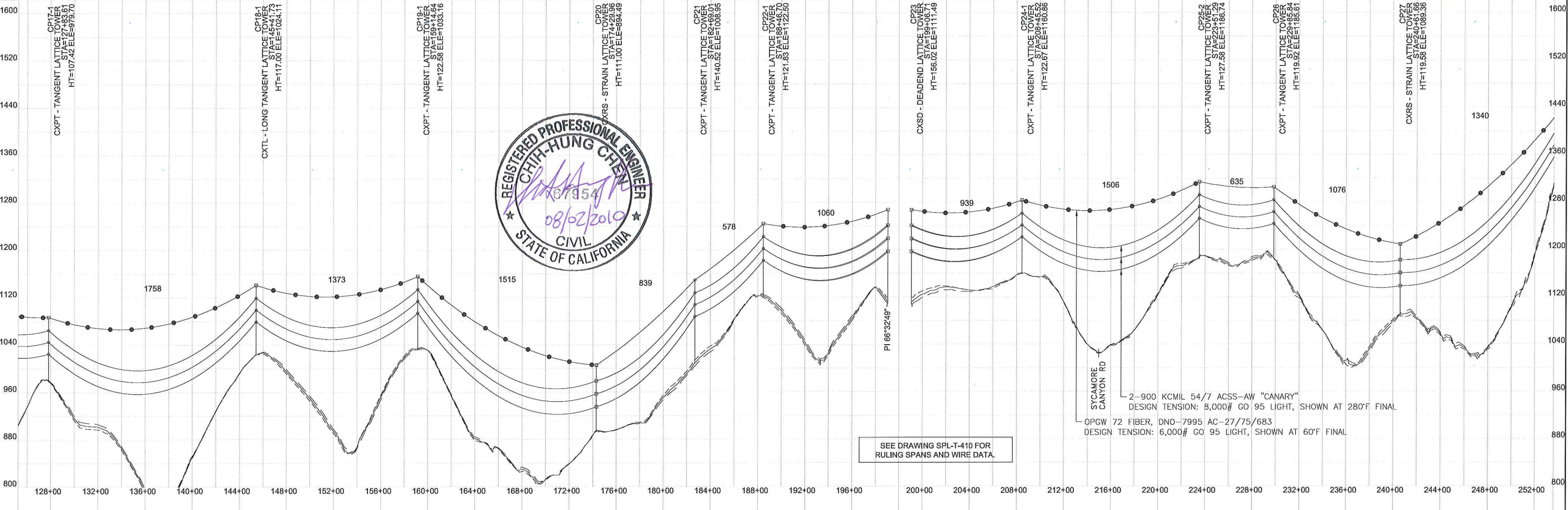
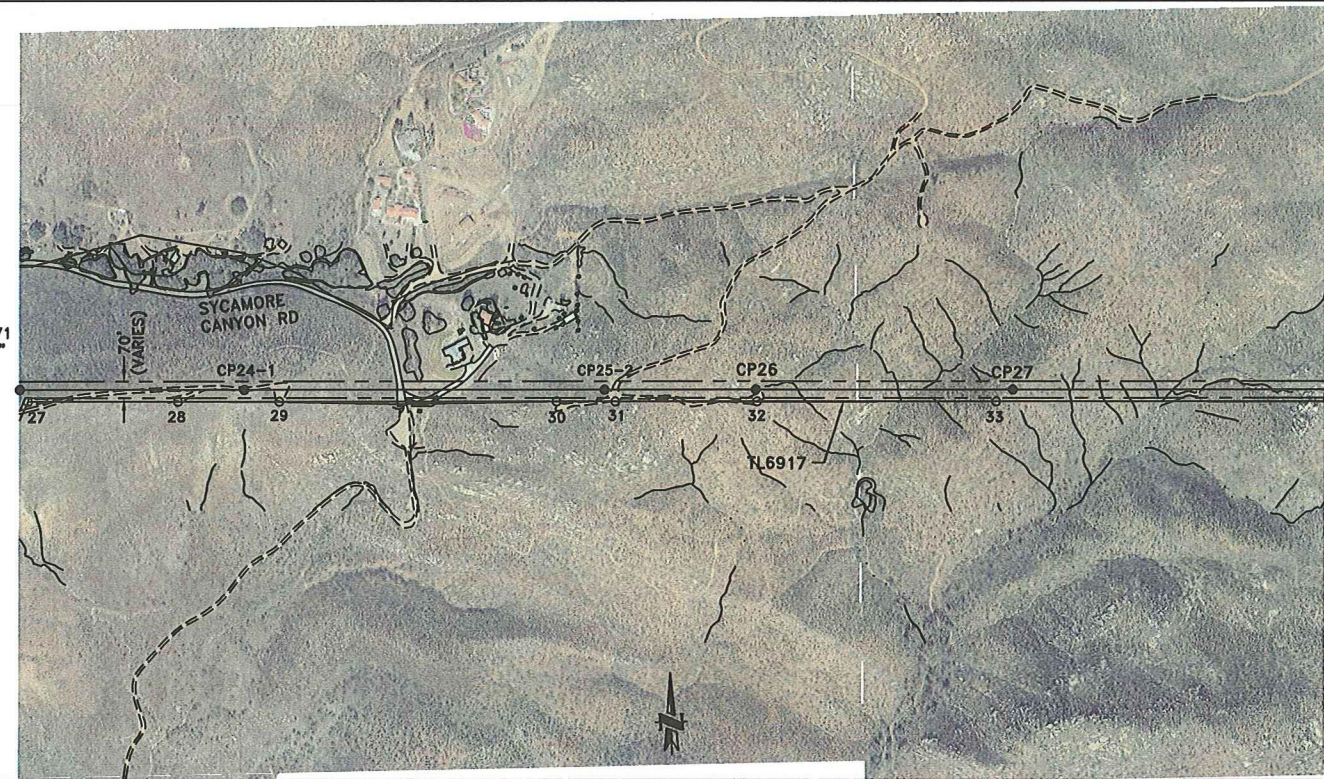
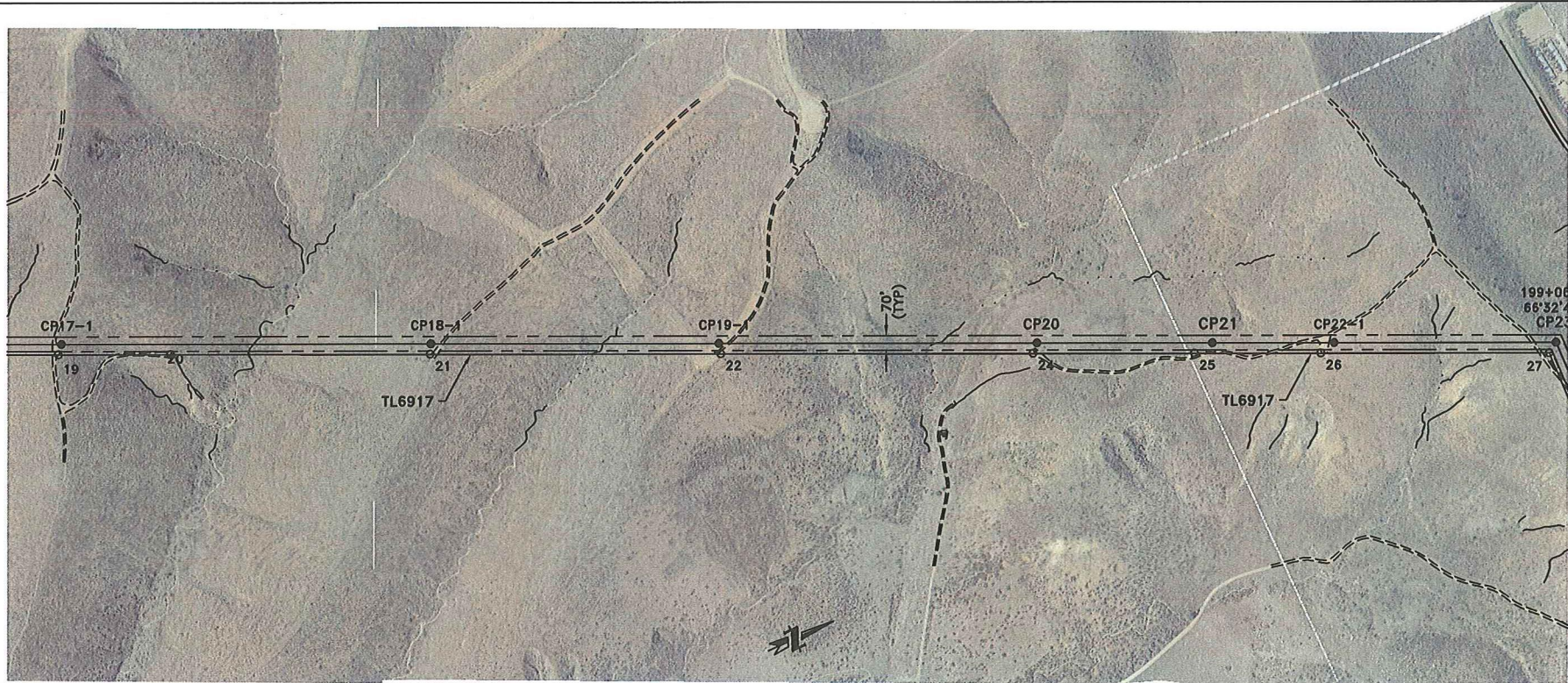
						SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING SUNRISE POWERLINK PROJECT TL23054/55		230KV PLAN & PROFILE LEGEND AND NOTES	
0	ISSUED FOR CONSTRUCTION	JPB	CC	8/2/10					DRAWING NUMBER
REF	CHANGE	DWH	CRKD	APPY	DATE	SCALE	SHEET 1 OF 1	SPL-T-109	



SYCAMORE SUB DE STA=0+00.00 HT=66.00 ELE=889.23	CP2 230 DE DC POLE W/ 2 SW ATTACH STA=3+76.69 HT=150.00 ELE=886.61	CP3 230 DE DC POLE STA=5+00.00 HT=105.00 ELE=907.24	CP6-1 230 STRAIN DC POLE STA=17+94.73 HT=125.00 ELE=896.66	CP7 230 TAN DC POLE STA=23+15.00 HT=135.00 ELE=945.16	CP8-2 230 TAN DC POLE STA=34+71.79 HT=115.00 ELE=1062.78	CP8-1 230 TAN DC POLE STA=32+25.72 HT=115.00 ELE=1026.90	CP10 230 DEADEND DC POLE STA=58+20.20 HT=122.00 ELE=911.68	CP11-1 230 DEADEND DC POLE STA=63+93.24 HT=131.00 ELE=872.00	CP12-1 230 TAN DC POLE STA=83+53.61 HT=170.00 ELE=1046.66	CP13-2 CXRS - STRAIN LATTICE TOWER STA=94+79.00 HT=122.42 ELE=929.43	CP14 CXRS - STRAIN LATTICE TOWER STA=110+20.87 HT=147.00 ELE=1025.22	CP15-1 CXSD - DEADEND LATTICE TOWER STA=119+00.87 HT=141.00 ELE=1027.29	CP16-1 CXPT - TANGENT LATTICE TOWER STA=119+69.53 HT=107.83 ELE=1011.77
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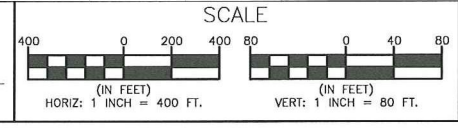


LAND SERVICES REVISIONS: _____ _____ _____	PROFILE KEY CENTERLINE PROFILE ——— 12' LEFT PROFILE - - - - - 12' RIGHT PROFILE - - - - - MARKER BALL REQUIRED ●	TANGENT ATTACH. ○ DEADEND ATTACH. □ ROW EDGE - - - - -	SCALE (IN FEET) HORIZ: 1 INCH = 400 FT. VERT: 1 INCH = 80 FT.	<table border="1"> <tr> <td>ISSUED FOR CONSTRUCTION</td> <td>JPB</td> <td>CC</td> <td>B/2/10</td> </tr> <tr> <td>CHANGE</td> <td>DWN</td> <td>CHKD</td> <td>APPY</td> </tr> <tr> <td>REV</td> <td>DATE</td> <td></td> <td></td> </tr> </table>	ISSUED FOR CONSTRUCTION	JPB	CC	B/2/10	CHANGE	DWN	CHKD	APPY	REV	DATE			BURNS & MCDONNELL SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING SUNRISE POWERLINK PROJECT TL23054/55 SCALE: HORIZ: 1"=400' VERT: 1"=80' SHEET 1 OF 3	230KV PLAN AND PROFILE SYCAMORE CANYON TO SUNCREST SECTION 4A DRAWING NUMBER SPL-T-110 PLS-CADD MODEL: SECTION_4A_RB.XYZ
ISSUED FOR CONSTRUCTION	JPB	CC	B/2/10															
CHANGE	DWN	CHKD	APPY															
REV	DATE																	



LAND SERVICES	
REVISIONS:	

PROFILE KEY	
CENTERLINE PROFILE	— TANGENT ATTACH. ○
12' LEFT PROFILE	- - - - - DEADEND ATTACH. □
12' RIGHT PROFILE	- - - - - ROW EDGE
MARKER BALL REQUIRED	●



ISSUED FOR CONSTRUCTION	
CHANGE	DATE
0	8/2/10

SAN DIEGO GAS & ELECTRIC
 TRANSMISSION ENGINEERING
 Burns & McDonnell
 SUNRISE POWERLINK PROJECT
 TL23054/55

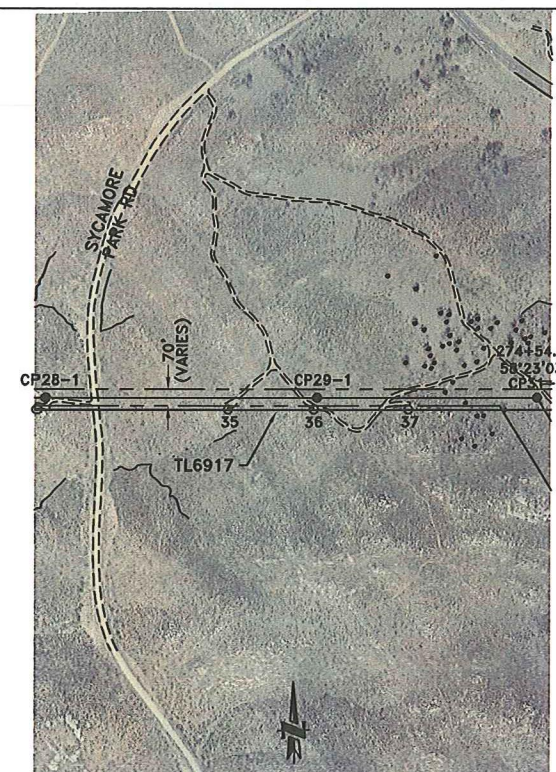
230kV PLAN AND PROFILE
 SYCAMORE CANYON TO SUNCREST
 SECTION 4A

DRAWING NUMBER
 SPL-T-110

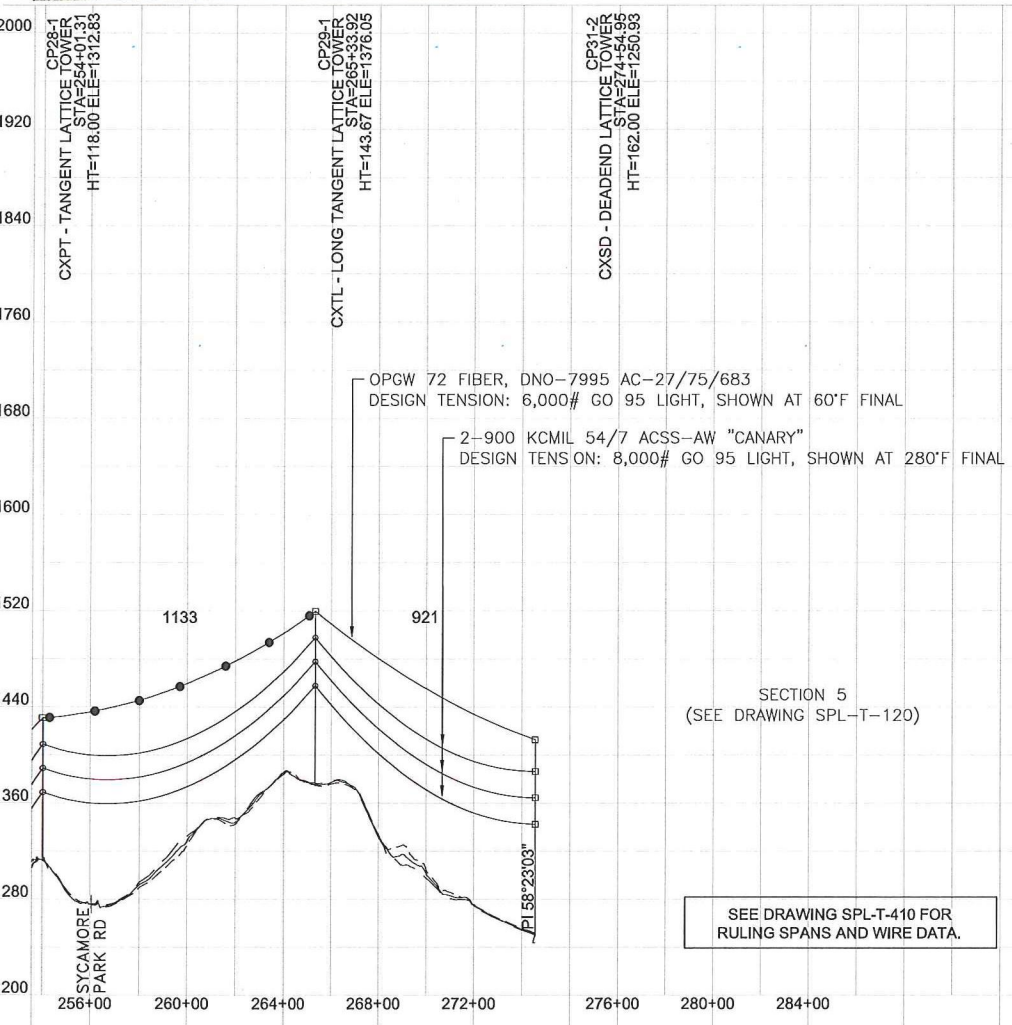
SCALE: HORIZ: 1"=400'
 VERT: 1"=80'

SHEET 2 OF 3

PLS-CADD MODEL: SECTION_4A_R8.XYZ



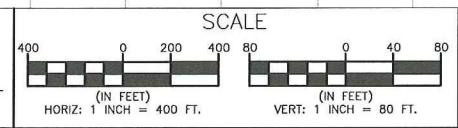
SECTION 5
(SEE DRAWING SPL-T-120)



SEE DRAWING SPL-T-410 FOR RULING SPANS AND WIRE DATA.



PROFILE KEY	
CENTERLINE PROFILE	—
12' LEFT PROFILE	- - - -
12' RIGHT PROFILE	- · - · -
MARKER BALL REQUIRED	●
TANGENT ATTACH.	○
DEADEND ATTACH.	□
ROW EDGE	- - - -



REV	CHANGE	DWN	CHKD	APPY	DATE
0	ISSUED FOR CONSTRUCTION				8/2/10

SAN DIEGO GAS & ELECTRIC
TRANSMISSION ENGINEERING

Burns & McDermott

SUNRISE POWERLINK PROJECT
TL23054/55

SCALE: HORIZ: 1"=400'
VERT: 1"=80'

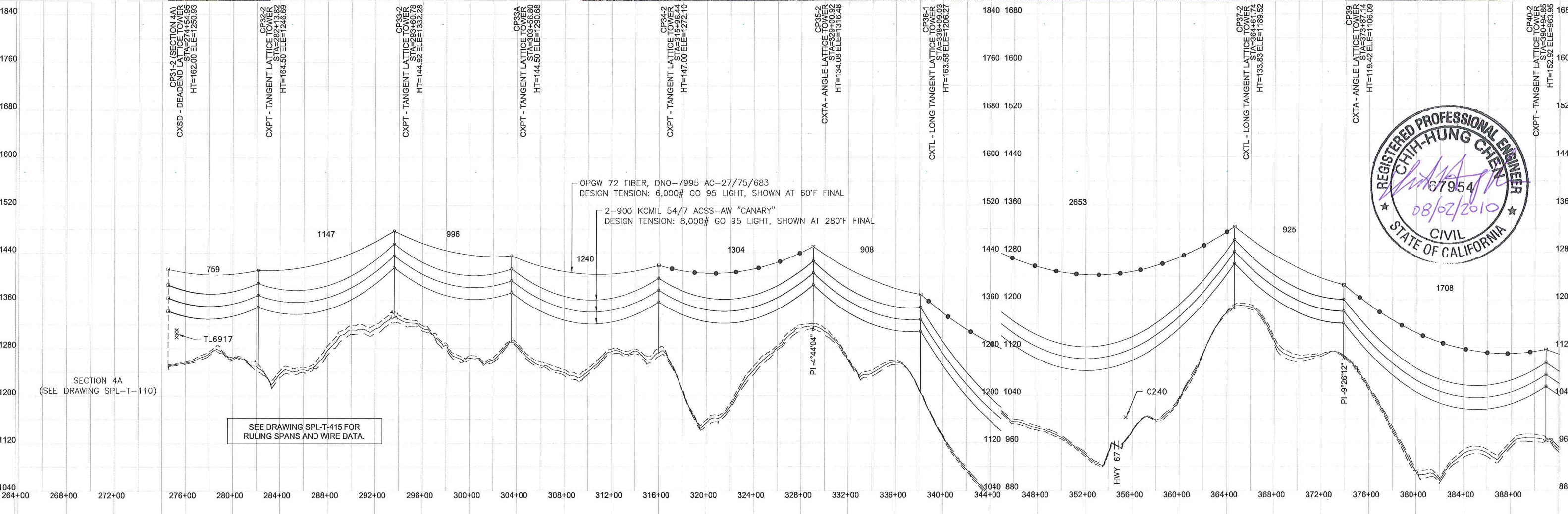
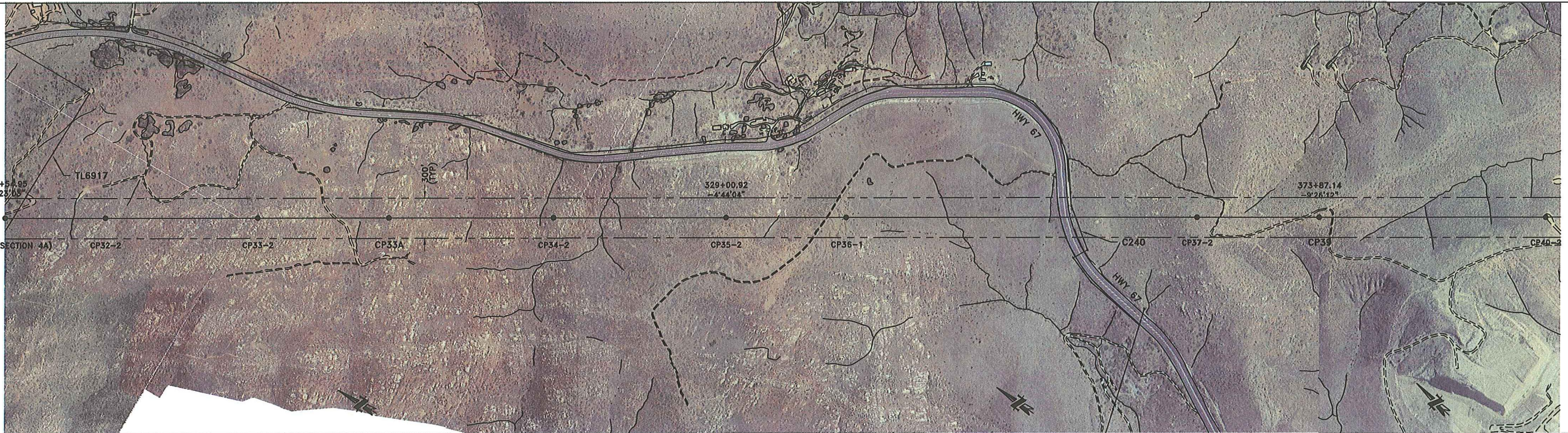
SHEET 3 OF 3

230kV PLAN AND PROFILE
SYCAMORE CANYON TO SUNCREST
SECTION 4A

DRAWING NUMBER
SPL-T-110

PLS-CADD MODEL: SECTION_4A_R6.XYZ

SECTION 4A
(SEE DRAWING SPL-T-110)



OPGW 72 FIBER, DNO-7995 AC-27/75/683
DESIGN TENSION: 6,000# GO 95 LIGHT, SHOWN AT 60°F FINAL

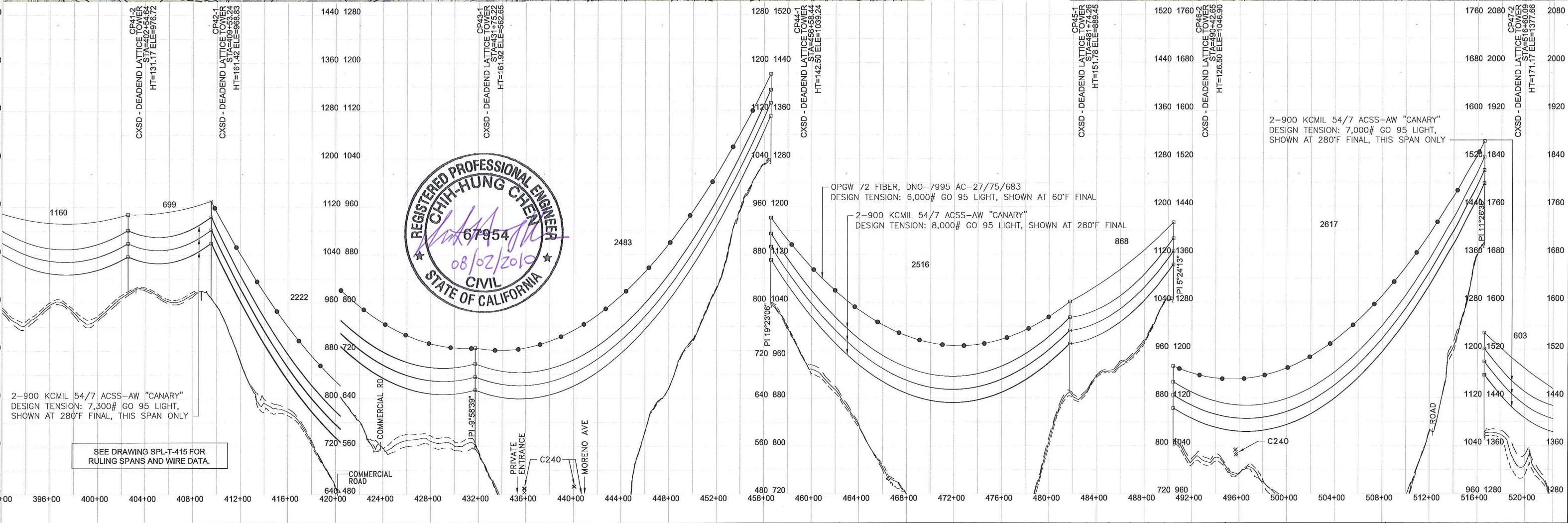
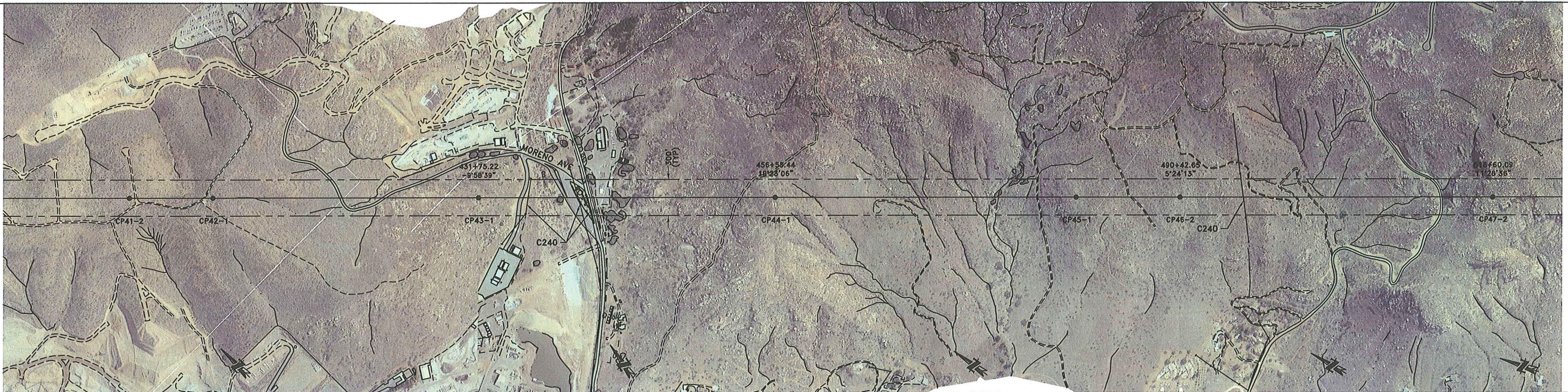
2-900 KCMIL 54/7 ACSS-AW "CANARY"
DESIGN TENSION: 8,000# GO 95 LIGHT, SHOWN AT 280°F FINAL

SEE DRAWING SPL-T-415 FOR RULING SPANS AND WIRE DATA.



LAND SERVICES REVISIONS:		PROFILE KEY CENTERLINE PROFILE ——— TANGENT ATTACH. ○ 12' LEFT PROFILE - - - - - DEADEND ATTACH. □ 12' RIGHT PROFILE - - - - - ROW EDGE - - - - - MARKER BALL REQUIRED ●		SCALE (IN FEET) HORIZ: 1 INCH = 400 FT. VERT: 1 INCH = 80 FT.		ISSUED FOR CONSTRUCTION CHANGE		JPB CC 8/2/10 DWN CHD APPV DATE		SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING SUNRISE POWERLINK PROJECT TL23054/55		230KV PLAN AND PROFILE SYCAMORE CANYON TO SUNCREST SECTION 5 DRAWING NUMBER SPL-T-120	
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PLS-CADD MODEL: SECTION_5_R9 WITH GROUND TIN.XYZ

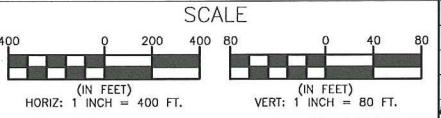


LAND SERVICES

REVISIONS:

PROFILE KEY

CENTERLINE PROFILE	TANGENT ATTACH.	○
12' LEFT PROFILE	DEADEND ATTACH.	□
12' RIGHT PROFILE	ROW EDGE	- - -
MARKER BALL REQUIRED		●

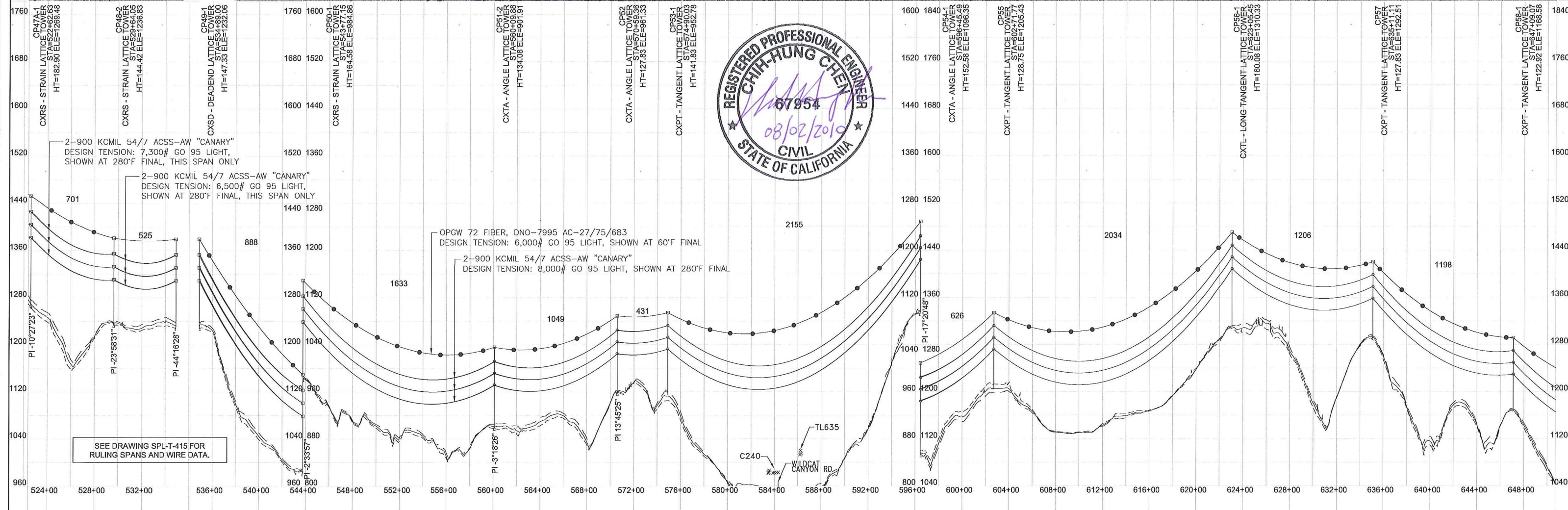


ISSUED FOR CONSTRUCTION	JPB	CC	8/2/10
CHANGE	DWN	CHKD	APPY

Burns & McDonnell
SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING
 SUNRISE POWERLINK PROJECT
 TL23054/55

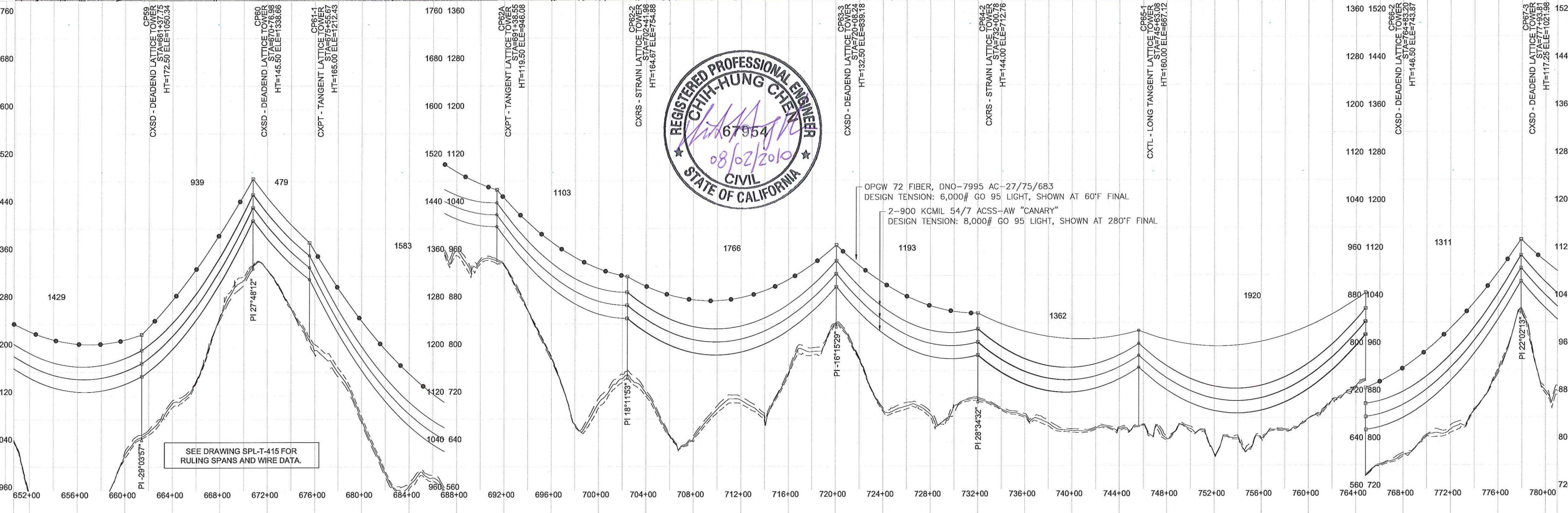
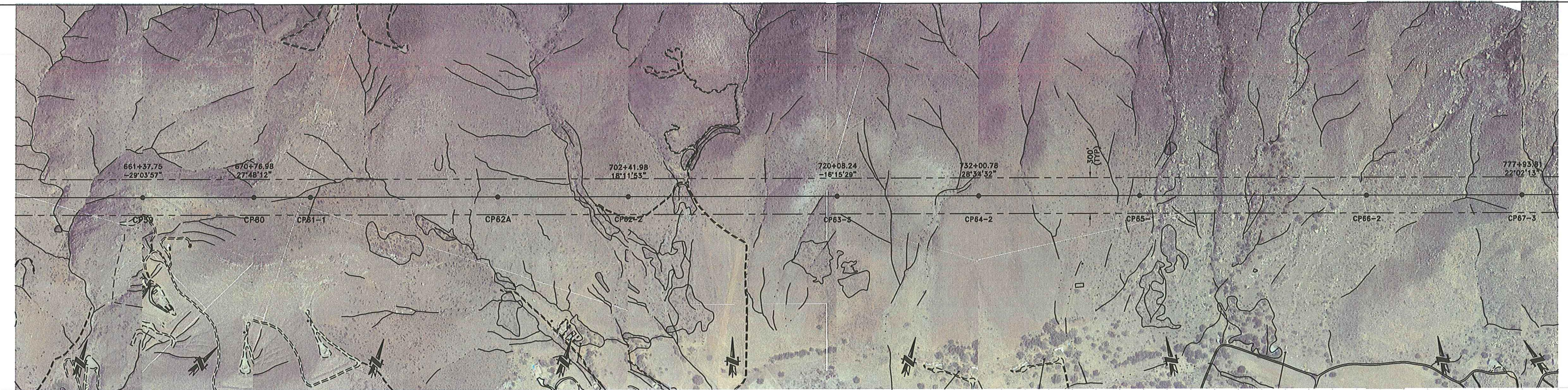
230kV PLAN AND PROFILE
 SYCAMORE CANYON TO SUNCREST
 SECTION 5
 DRAWING NUMBER
 SPL-T-120

PLS-CADD MODEL: SECTION_5_R9 WITH GROUND TIN.XYZ



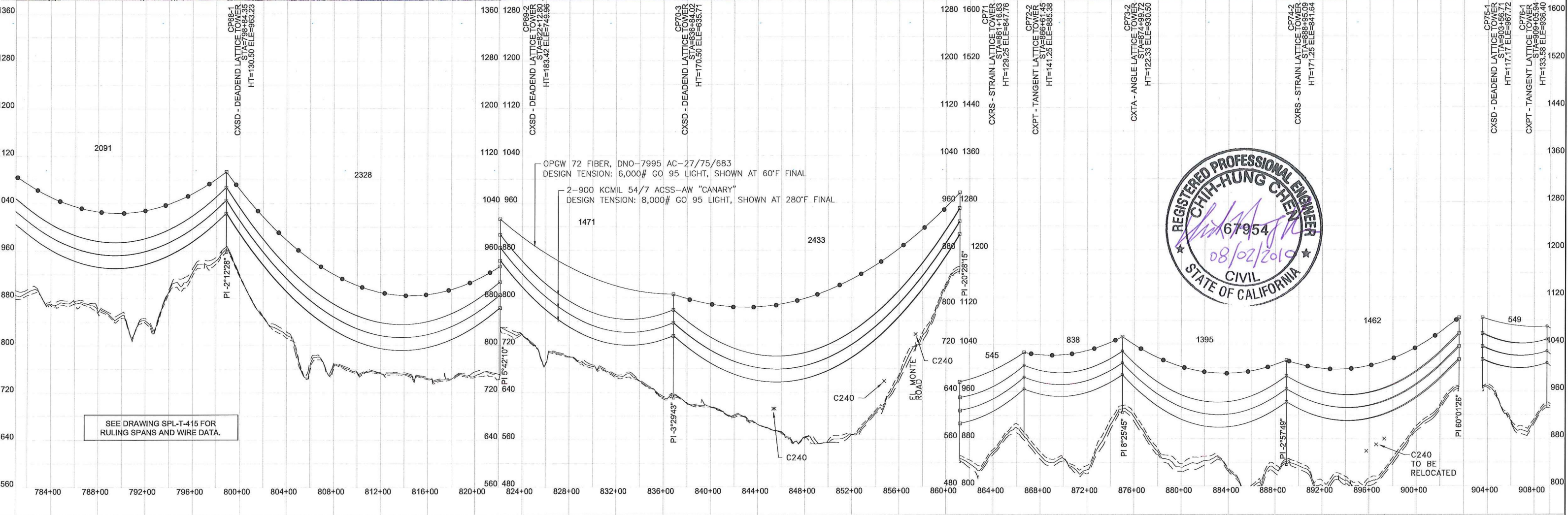
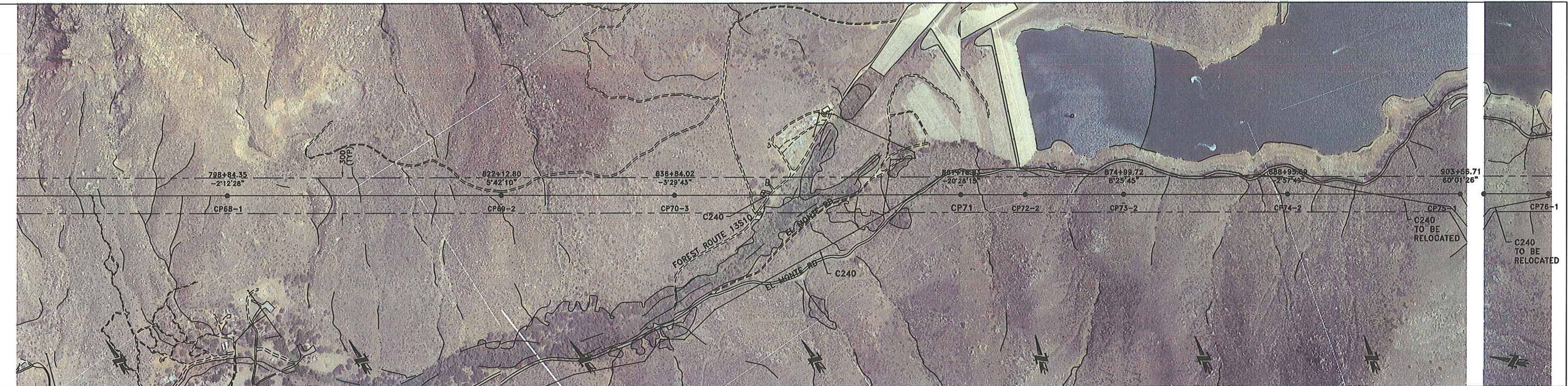
SEE DRAWING SPL-T-415 FOR RULING SPANS AND WIRE DATA.

LAND SERVICES REVISIONS:		PROFILE KEY CENTERLINE PROFILE ——— TANGENT ATTACH. ○ 12' LEFT PROFILE - - - - - DEADEND ATTACH. □ 12' RIGHT PROFILE - - - - - ROW EDGE - - - - - MARKER BALL REQUIRED ●		SCALE (IN FEET) HORIZ: 1" = 400 FT. VERT: 1" = 80 FT.		ISSUED FOR CONSTRUCTION JPB CC 8/2/10 CHANGES:		BURNS & McDONNELL SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING SUNRISE POWERLINK PROJECT TL23054/55		230KV PLAN AND PROFILE SYCAMORE CANYON TO SUNCREST SECTION 5 DRAWING NUMBER SPL-T-120	
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LAND SERVICES REVISIONS:		PROFILE KEY CENTERLINE PROFILE ——— TANGENT ATTACH. ○ 12' LEFT PROFILE - - - - - DEADEND ATTACH. □ 12' RIGHT PROFILE - - - - - ROW EDGE MARKER BALL REQUIRED ●		SCALE (IN FEET) HORIZ: 1 INCH = 400 FT. VERT: 1 INCH = 80 FT.		ISSUED FOR CONSTRUCTION CHANGE JPB CC 8/2/10 DWN CHKD APPY DATE		SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING Burns & McDonnell SUNRISE POWERLINK PROJECT TL23054/55		230kV PLAN AND PROFILE SYCAMORE CANYON TO SUNCREST SECTION 5 DRAWING NUMBER SPL-T-120	
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PLS-CADD MODEL: SECTION_5_R9 WITH GROUND TIN.XYZ

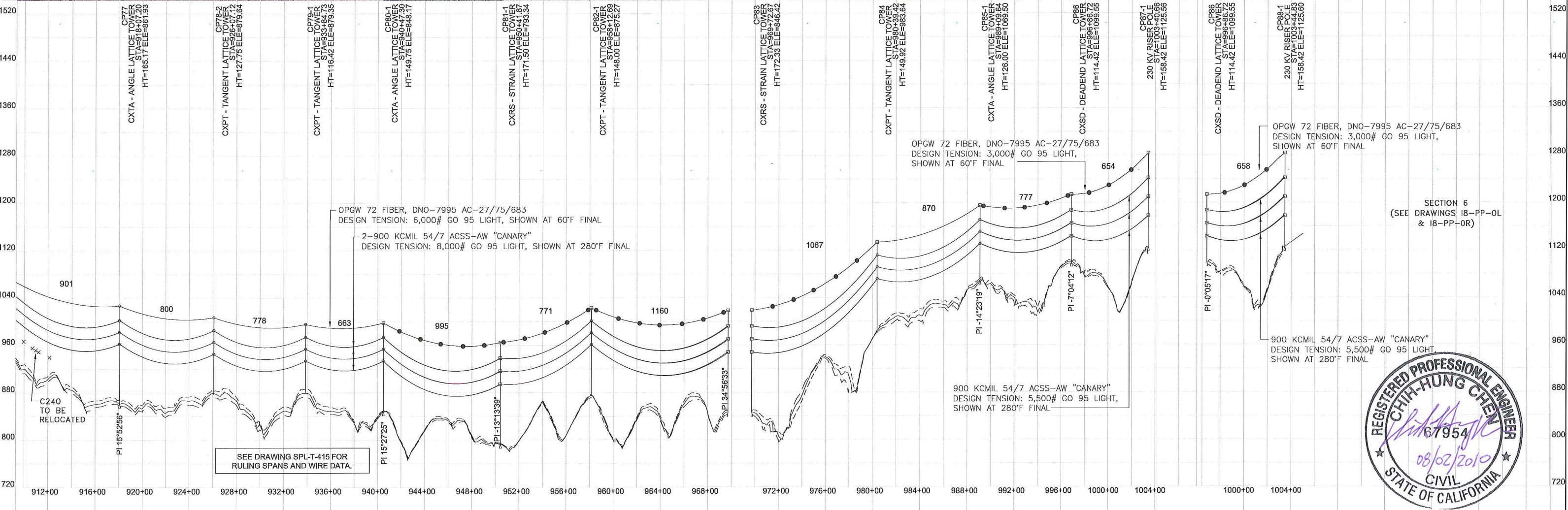
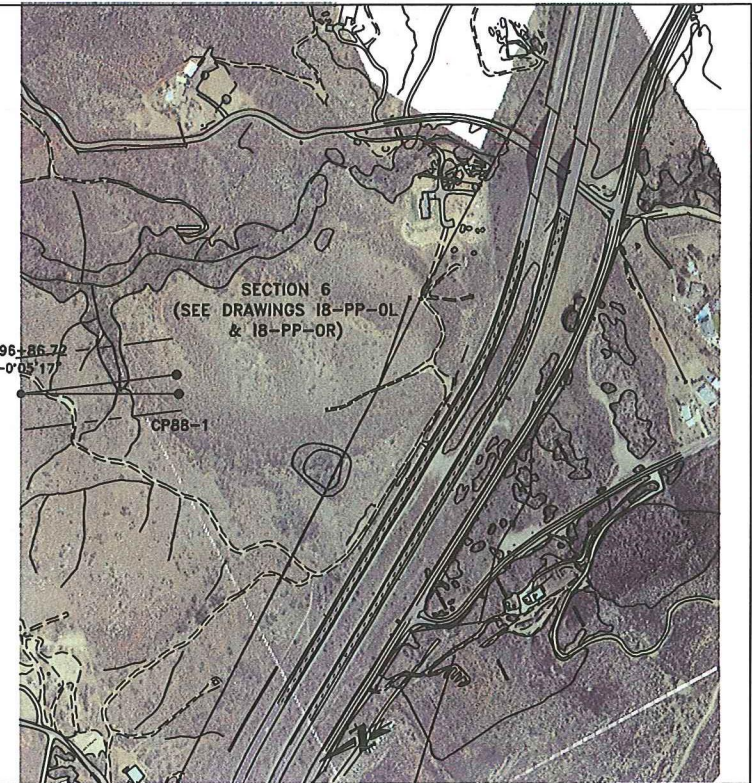
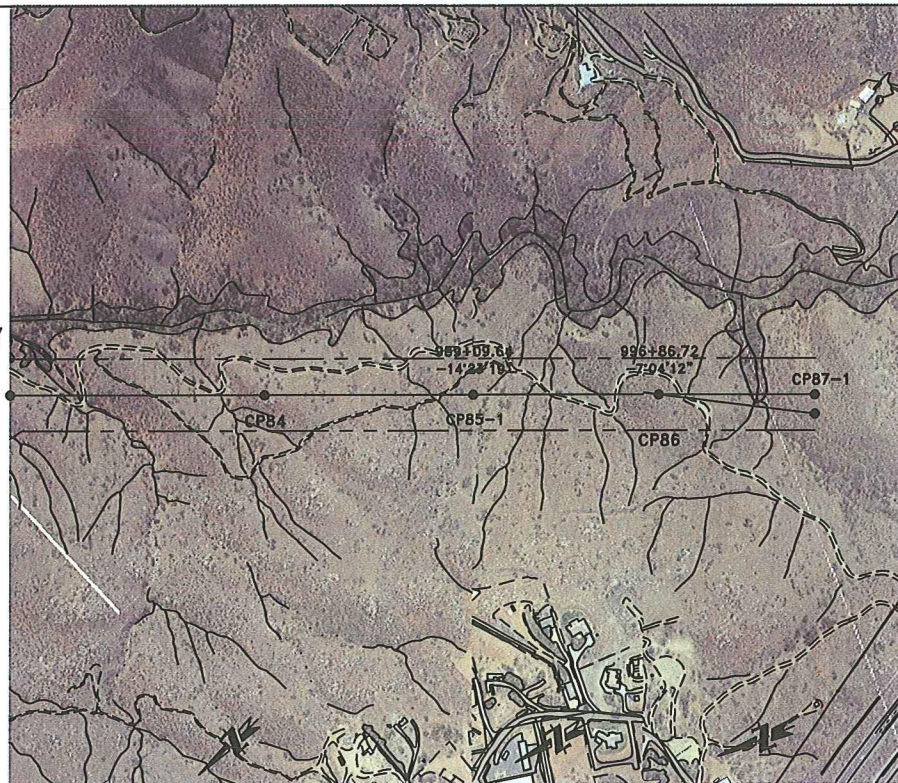
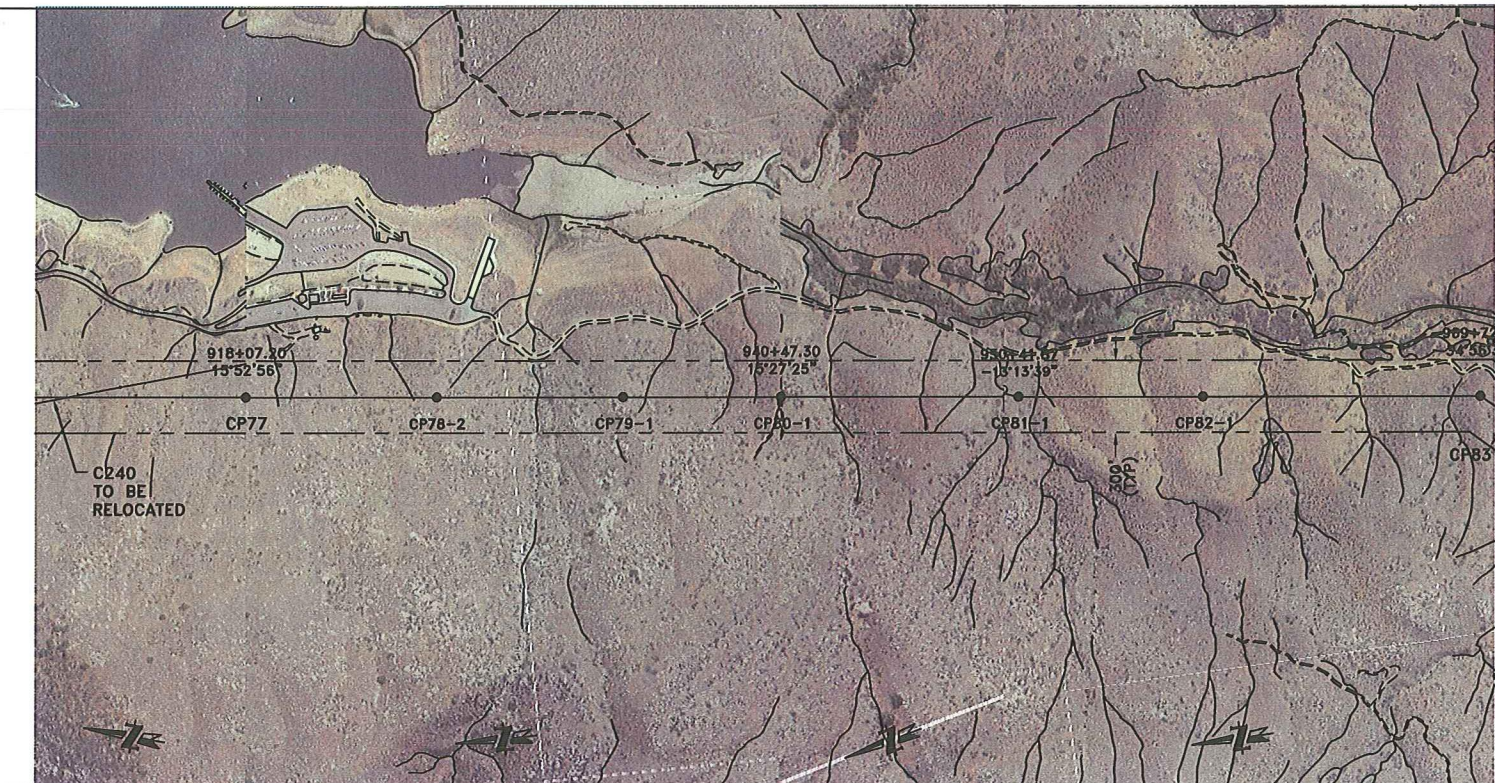


SEE DRAWING SPL-T-415 FOR RULING SPANS AND WIRE DATA.

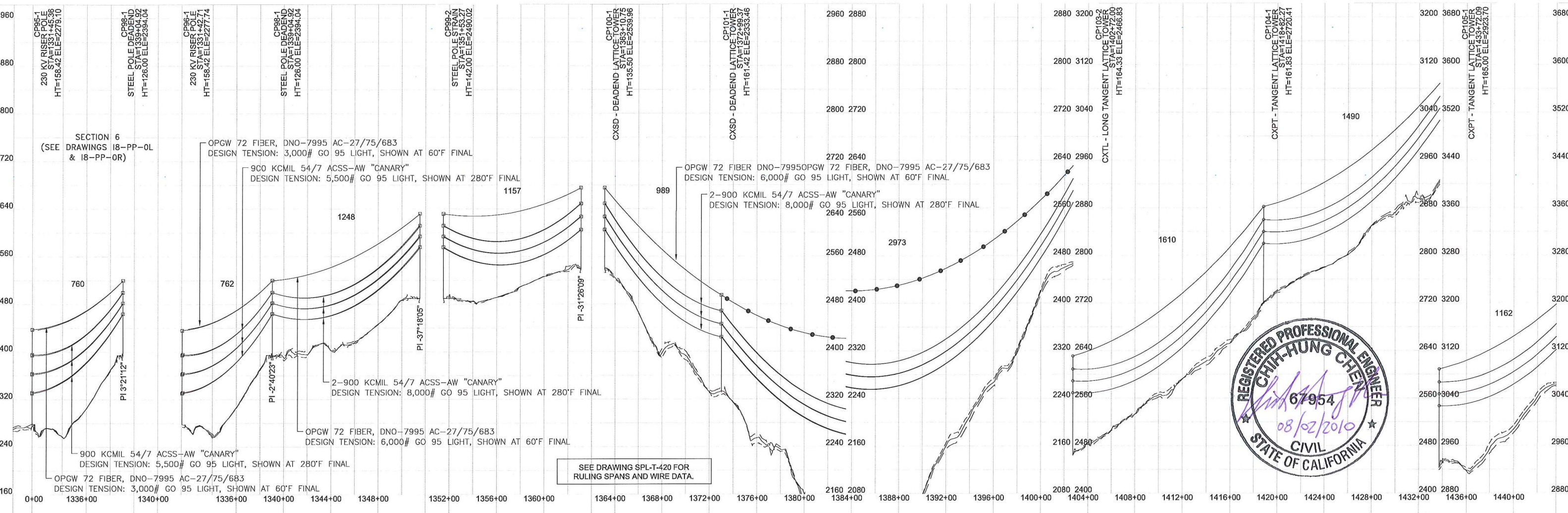
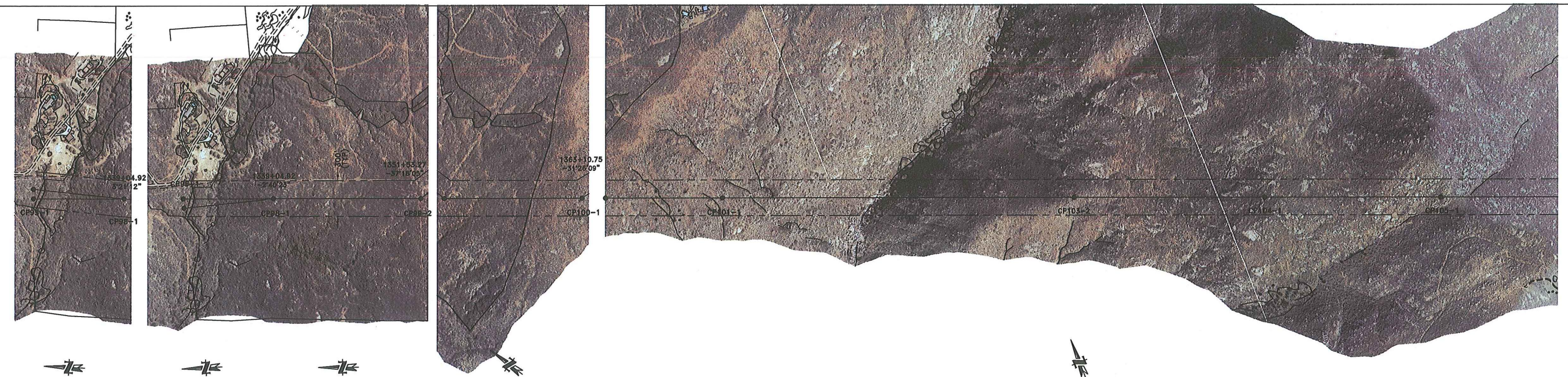
OPGW 72 FIBER, DNO-7995 AC-27/75/683
 DESIGN TENSION: 6,000# GO 95 LIGHT, SHOWN AT 60°F FINAL
 2-900 KCMIL 54/7 ACSS-AW "CANARY"
 DESIGN TENSION: 8,000# GO 95 LIGHT, SHOWN AT 280°F FINAL

LAND SERVICES REVISIONS:		PROFILE KEY CENTERLINE PROFILE ——— TANGENT ATTACH. ○ 12' LEFT PROFILE - - - - - DEADEND ATTACH. □ 12' RIGHT PROFILE - - - - - ROW EDGE MARKER BALL REQUIRED ●		SCALE (IN FEET) HORIZ: 1 INCH = 400 FT. VERT: 1 INCH = 80 FT.		ISSUED FOR CONSTRUCTION CHANGE		JPB CC 8/2/10 DWN CRD APPY DATE		BURNS & MCDONNELL TRANSMISSION ENGINEERING SUNRISE POWERLINK PROJECT TL23054/55		230kV PLAN AND PROFILE SYCAMORE CANYON TO SUNCREST SECTION 5 DRAWING NUMBER SPL-T-120	
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PLS-CADD MODEL: SECTION_5_R9 WITH GROUND TIN.XYZ

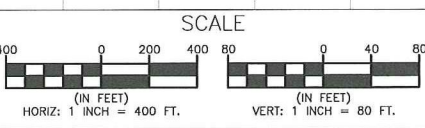


LAND SERVICES REVISIONS:		PROFILE KEY CENTERLINE PROFILE ——— 12' LEFT PROFILE - - - - - 12' RIGHT PROFILE - - - - - MARKER BALL REQUIRED ●		SCALE (IN FEET) HORIZ: 1 INCH = 400 FT. VERT: 1 INCH = 80 FT.		ISSUED FOR CONSTRUCTION CHANGE		JPB CC 8/2/10 DWN CHD APPY DATE		BURNS & MCDONNELL SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING SUNRISE POWERLINK PROJECT TL23054/55 SCALE HORIZ: 1"=400' VERT: 1"=80' SHEET 6 OF 6		230KV PLAN AND PROFILE SYCAMORE CANYON TO SUNCREST SECTION 5 DRAWING NUMBER SPL-T-120 PLS-CADD MODEL: SECTION_5_R9 WITH GROUND TIN.XYZ	
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LAND SERVICES	
REVISIONS:	

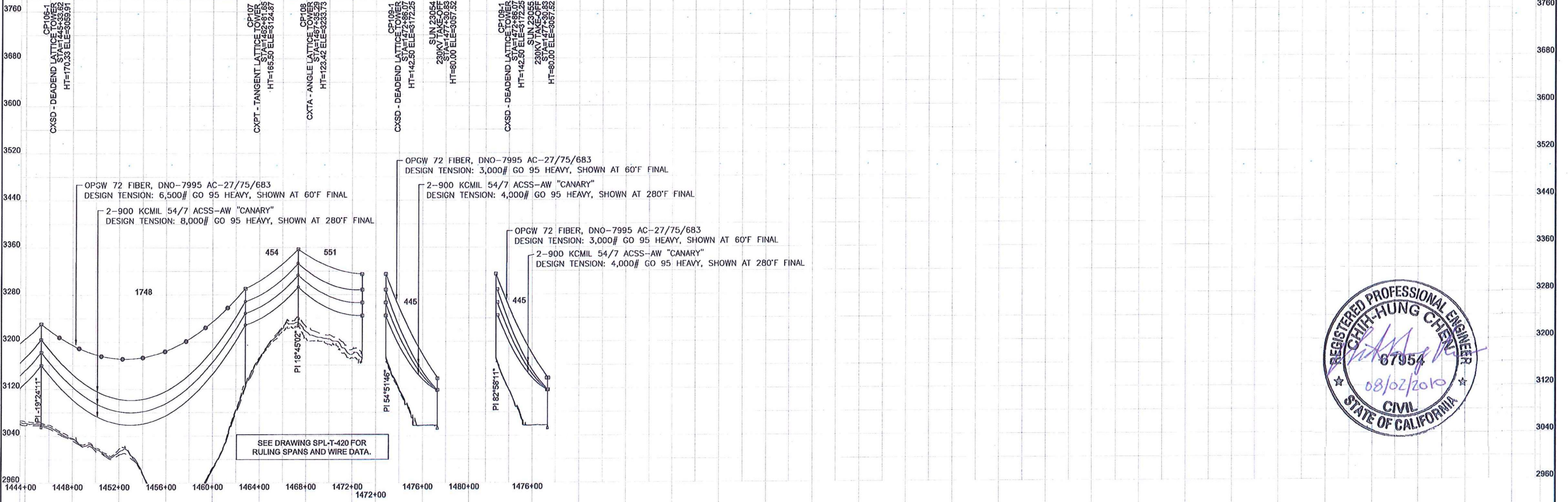
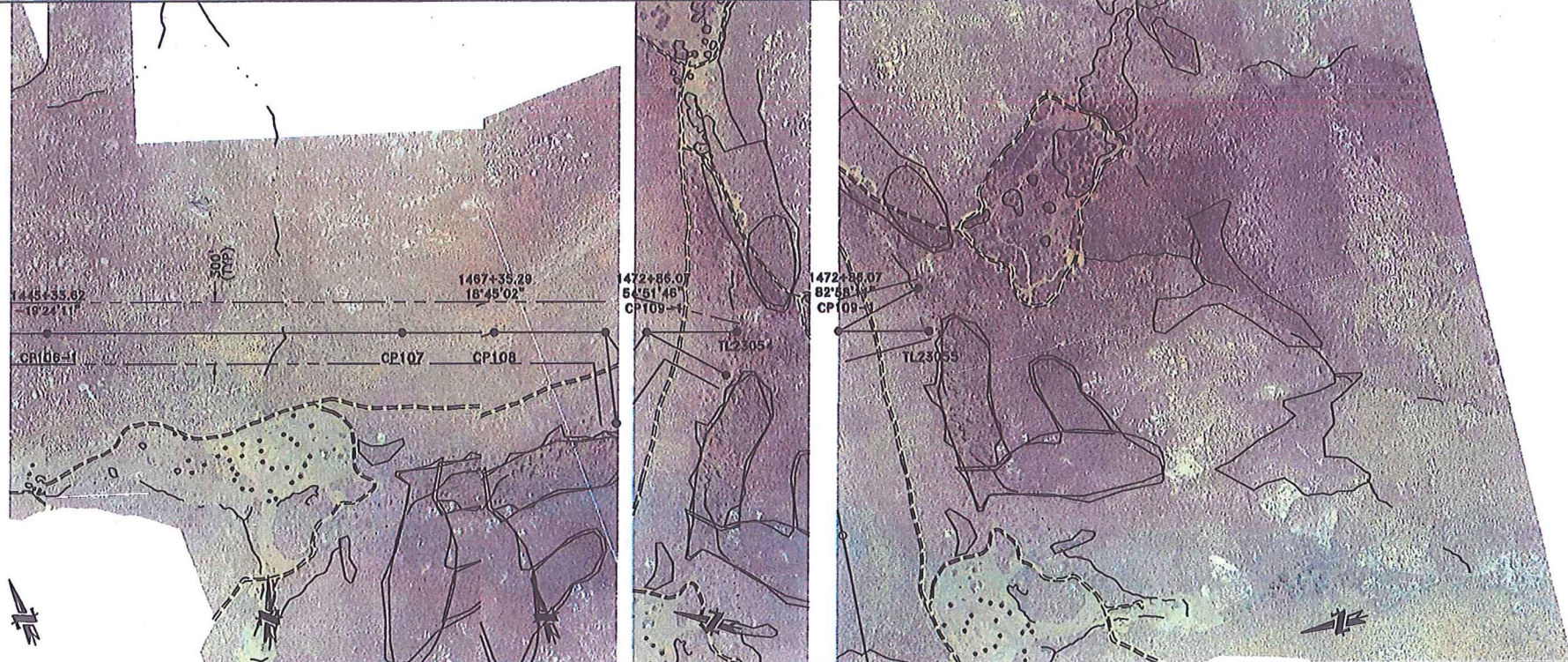
PROFILE KEY	
CENTERLINE PROFILE	—
12' LEFT PROFILE	- - - -
12' RIGHT PROFILE	- - - -
MARKER BALL REQUIRED	●
TANGENT ATTACH.	○
DEADEND ATTACH.	□
ROW EDGE	- - - -



ISSUED FOR CONSTRUCTION	
CHANGE	DATE

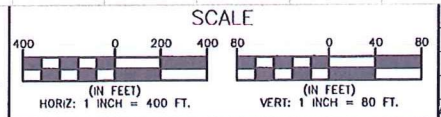
SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING
 SUNRISE POWERLINK PROJECT
 TL23054/55
 SCALE: HORIZ: 1"=400', VERT: 1"=80' SHEET 1 OF 2

230KV PLAN AND PROFILE SYCAMORE CANYON TO SUNCREST SECTION 7
 DRAWING NUMBER: SPL-T-130
 PLS-CADD MODEL: SECTION_7_R9.XYZ



LAND SERVICES	
REVISIONS:	

PROFILE KEY	
—	TANGENT ATTACH. ○
- - -	DEADEND ATTACH. □
- - -	ROW EDGE
●	MARKER BALL REQUIRED



ISSUED FOR CONSTRUCTION	JFB	CC	8/2/10
CHANGE	DWN	CHKD	APPY

SAN DIEGO GAS & ELECTRIC
TRANSMISSION ENGINEERING
SUNRISE POWERLINK PROJECT
TL23054/55

SCALE: HORIZ: 1"=400'
VERT: 1"=80' SHEET 2 OF 2

230KV PLAN AND PROFILE
SYCAMORE CANYON TO SUNCREST
SECTION 7

DRAWING NUMBER
SPL-T-130
PLS-CADD MODEL: SECTION_7_R9.XYZ